Appendix C-2

2019 Treatability Study Data Validation Memoranda

Memorandum

May 5, 2020
Revision1: May 13, 2020
Revision 2: May 19, 2020
Revision 3: May 27, 2020

To:	Charles Munce	Ref. No.:	11187072
	DJB		
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CC:	Janie Smith, Stefanie Castracane		

Subject: **Analytical Results and Reduced Validation**
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

1. Introduction

This document details a reduced validation of analytical results for soil and water samples collected in support of the Predesign Investigation Sampling Event - Pilot Study and Treatability in support of the San Jacinto River Waste Pits Superfund Site Investigation during September 2019 through February 2020. Samples were submitted to Eurofins/TestAmerica Laboratories located in Pittsburg, Pennsylvania. Sample collection and analysis summaries are presented in Tables 1A and 1B. The validated analytical results are summarized in Tables 2A and 2B. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS).

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) Quality Assurance Project Plan, Final Second Phase Pre-Design Investigation", San Jacinto River Waste Pits Site, Harris County, Texas, Report No 6, June 3 2019

ii) "National Functional Guidelines for High Resolution Superfund Methods Data Review", OLEM 9200.3-115, EPA 542-B-16-001, April 2016

iii) “USEPA National Functional Guidelines for Superfund Inorganic Methods Data Review”, USEPA 540-R-2016-001, September 2016

iv) “USEPA National Functional Guidelines for Superfund Organic Methods Data Review”, USEPA 540-R-2016-002, September 2016

Items ii), iii), and iv) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times with the exception of several samples for pH, nitrate as nitrogen, nitrite as nitrogen, and ferrous iron. The results analyzed outside of hold time were either qualified or rejected as shown in Table 4.

All samples were properly preserved (where necessary), delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

Leachate blanks are prepared from a purified matrix, are subject to the toxicity characteristic leaching procedure and analyzed with investigative samples to determine the existence and magnitude of contamination introduced during the leaching process.

For this study, laboratory blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

All leachate and method blank results were non-detect with the exception of several low concentrations of dioxins and furans. Most investigative samples associated with the contaminated laboratory blanks yielded either non-detect concentrations or concentrations significantly greater than the associated blank concentrations for dioxins and furans. Qualification of the sample data was not required on this basis. Those samples with results comparable to the blank concentrations were qualified as non-detect as shown in Table 5.

Inorganic Analyses

All leachate and method blank results were non-detect with the exception of several low concentrations of metals and general chemistry parameters. Most investigative samples associated with the contaminated laboratory blanks yielded either non-detect concentrations or concentrations greater than five times the associated blank concentrations. Qualification of the sample data was not required on this basis. Those samples with results comparable to the blank concentrations were qualified as non-detect as shown in Table 6.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC), semi-volatile organic compound (SVOC), total petroleum hydrocarbon (TPH), pesticide, dioxin and furan, herbicide and polychlorinated biphenyl (PCB) determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of semi-volatile organic compound (SVOC) analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits with the exception some low surrogate recoveries reported for dioxins and furans. Associated sample results were qualified as estimated as shown in Table 7.

5. Laboratory Control Sample Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the exception of several recoveries for dioxins and furans. Sample results associated with these outlying recoveries were qualified as shown in Table 8.

Inorganic Analyses

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries (and RPDs) were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analytes of concern and analyzed as MS or MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS or MS/MSD analyses were performed as specified in Table 1A. The laboratory performed additional site-specific MS or MS/MSD analyses internally.

Organic Analyses

The MS or MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the exception of several recoveries for SVOCs and dioxins and furans. Associated results were qualified as shown in Tables 9 and 10 for SVOCs and dioxins and furans, respectively.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision with the exception of several recoveries for mercury and several general chemistry parameters. Associated results were qualified as shown in Table 11.

7. Duplicate Sample Analyses – Inorganic Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for inorganic analyses as specified in Table 1A. The laboratory performed additional site-specific duplicate analyses internally. The duplicate results were evaluated per the "Guidelines". All duplicate analyses performed were acceptable, demonstrating acceptable analytical precision.

8. Field QA/QC Samples – Trip Blank Analysis

The field QA/QC consisted of one trip blank sample and one field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for VOC and fumigant analysis. All results were non-detect for the compounds of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted “blind” to the laboratory as specified in Table 1A. The RPDs associated with the duplicate samples must be less than 50 percent for water. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

9. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Tables 2A and 2B unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the MDL in Tables 2A and 2B.

10. Target Compound Identification/Sample Quantitation

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time, ion abundance ratio, and chromatography were evaluated according to the identification criteria established by the methods. An erroneous identification can be either a false-positive (reporting a target compound when it is not present in the sample) or false-negative (not reporting a compound that is present in the sample).

The samples identified in Table 1A were reviewed. Most congeners reported adhered to the specified identification criteria.

Some sample results were reported as positive hits although the ion abundance ratio was not met. The associated results were qualified as the estimated maximum possible concentration. A summary of these qualified data is presented in Table 12.

11. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Tables 2A and 2B are acceptable with the specific qualifications and exceptions noted herein.

Table 1A

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

						Analysis/Parameters																											
Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	VOCs	SVOCs	Pesticides	PCBs	PCBs, Dissolved	Herbicides	Dioxins and Furans	Dioxins and Furans, Dissolved	Metals	Dissolved Metals	Bromide, Chloride, Sulfate	Fluoride	Ammonia	COD	Alkalinity	TDS	TSS	BOD	TOC	pH	Nitrate as N/Nitrite as N	Ferrous Iron	Phosphorus	Sulfide	Cyanide	Oil and Grease	Moisture	Comments
180-96144-1	11187072-CONTACT-INITIAL	Contact-Initial	Water, experimental	09/24/2019	15:00	X	X	X	X		X	X		X	X	X		X	X	X	X	X	X	X	X								MS/MSD
320-54852-1	11187072-Filter Test-1	Filter Test	Water, experimental	09/30/2019	08:00							X																					
	11187072-Filter Test-3	Filter Test	Water, experimental	09/30/2019	08:00							X																					
	11187072-Filter Test-4	Filter Test	Water, experimental	09/30/2019	08:00							X																					
	11187072-Filter Test-5	Filter Test	Water, experimental	09/30/2019	08:00							X																					
	11187072-Filter Test-6	Filter Test	Water, experimental	09/30/2019	08:00							X																					
320-56102-1	CEFF-Filtered	CEFF	Water, experimental	11/05/2019	14:00								X		X																		
	FEFF-Filtered	FEFF	Water, experimental	11/05/2019	14:00								X		X																		MS/MSD
320-57624-1	11187072-FEFF-0.1um	FEFF	Water, experimental	01/09/2020	12:00							X																					
	11187072-FEFF-0.45um	FEFF	Water, experimental	01/09/2020	12:00							X																					
	11187072-FEFF-1um	FEFF	Water, experimental	01/09/2020	12:00							X																					
320-57717-1	11187072-FEFF-0.025um	FEFF	Water, experimental	01/13/2020	12:00							X																					
	11187072-FEFF-0.050um	FEFF	Water, experimental	01/13/2020	12:00							X																					
320-58170-1	11187072-Berm-GW	Berm	Water, experimental	01/29/2020	13:30							X																					
	11187072-Berm-Solids	Berm	Sediment	01/29/2020	13:30							X																				X	
	11187072-Eastern-GW	Eastern	Water, experimental	01/29/2020	13:30							X																					
	11187072-Eastern-Solids	Eastern	Sediment	01/29/2020	13:30							X																				X	
	11187072-Western-GW	Western	Water, experimental	01/29/2020	13:30							X																					
	11187072-Western-Solids	Western	Sediment	01/29/2020	13:30							X																				X	
320-58545-1	11187072-Berm-Rock	Berm	Solid	02/11/2020	11:00							X																				X	
	11187072-Eastern Rock	Eastern	Solid	02/11/2020	11:00							X																				X	
	11187072-Western-Rock	Western	Solid	02/11/2020	11:00							X																				X	
600-191956-1 and	11187072-091319-LL-EXC-1	EXC-1	Water, experimental	09/13/2019	08:00	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X			
600-191956-2	TRIP BLANK	-	-	09/13/2019	-	X																											Trip Blank

Table 1A

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

						Analysis/Parameters																											
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**VOCs**	**SVOCs**	**Pesticides**	**PCBs**	**PCBs, Dissolved**	**Herbicides**	**Dioxins and Furans**	**Dioxins and Furans, Dissolved**	**Metals**	**Dissolved Metals**	**Bromide, Chloride, Sulfate**	**Fluoride**	**Ammonia**	**COD**	**Alkalinity**	**TDS**	**TSS**	**BOD**	**TOC**	**pH**	**Nitrate as N/Nitrite as N**	**Ferrous Iron**	**Phosphorus**	**Sulfide**	**Cyanide**	**Oil and Grease**	**Moisture**	**Comments**
600-194690-1	1. CEFF	CEFF	Water, experimental	10/25/2019	19:25							X		X		X	X	X	X	X	X	X		X	X	X		X	X				MS/MSD
	DUP	INF4	Water, experimental	10/25/2019	00:00									X											X				X		X		Field Duplicate for INF 4
	FEFF 1	FEFF	Water, experimental	10/26/2019	12:45							X		X		X	X	X	X	X	X	X		X	X	X		X	X				MS/MSD
	INF 3	INF3	Water, experimental	10/25/2019	13:30							X		X		X	X	X	X	X	X	X		X	X	X		X	X		X		MS/MSD
	INF 3 - DISSOLVED	INF3	Water, experimental	10/25/2019	13:30								X		X																		
	INF 4	INF4	Water, experimental	10/25/2019	20:50							X		X		X		X	X	X	X	X		X	X	X		X	X		X		MS/MSD
	INF 4 - DISSOLVED	INF4	Water, experimental	10/26/2019	22:10								X		X																		MS/MSD
	SS	SS	Water, experimental	10/26/2019	14:30																	X											
	CUI	CUI	Water, experimental	10/26/2019	14:30																	X											

Notes:

MS/MSD - Matrix Spike/Matrix Spike Duplicate
VOCs - Volatile Organic Compounds
SVOCs - Semi-volatile Organic Compounds
PCBs - Polychlorinated Biphenyls
BOD - Biochemical Oxygen Demand
COD - Chemical Oxygen Demand
TDS - Total Dissolved Solids
TSS - Total Suspended Solids
TOC - Total Organic Carbon
N - Nitrogen
\- - Not Applicable

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Berm**	**Berm**	**Berm**	**CEFF**	**CEFF**
	Sample Name:	**11187072-Berm-GW**	**11187072-Berm-Solids**	**11187072-Berm-Rock**	**1. CEFF**	**CEFF-Filtered**
	Sample Date:	**01/29/2020**	**01/29/2020**	**02/11/2020**	**10/25/2019**	**11/05/2019**
Parameters	**Unit**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Berm	Berm	Berm	CEFF	CEFF
Sample Name:		11187072-Berm-GW	11187072-Berm-Solids	11187072-Berm-Rock	1. CEFF	CEFF-Filtered
Sample Date:		01/29/2020	01/29/2020	02/11/2020	10/25/2019	11/05/2019
Parameters	**Unit**					
Volatile Organic Compounds						
Hexachlorobutadiene	µg/L	--	--	--	--	--
m&p-Xylenes	µg/L	--	--	--	--	--
o-Xylene	µg/L	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--
Trichloroethene	µg/L	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--
Xylenes (total)	µg/L	--	--	--	--	--
Semivolatile Organic Compounds						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--	--	--
2,4,5-Trichlorophenol	µg/L	--	--	--	--	--
2,4,6-Trichlorophenol	µg/L	--	--	--	--	--
2,4-Dichlorophenol	µg/L	--	--	--	--	--
2,4-Dimethylphenol	µg/L	--	--	--	--	--
2,4-Dinitrophenol	µg/L	--	--	--	--	--
2,4-Dinitrotoluene	µg/L	--	--	--	--	--
2,6-Dinitrotoluene	µg/L	--	--	--	--	--
2-Chloronaphthalene	µg/L	--	--	--	--	--
2-Chlorophenol	µg/L	--	--	--	--	--
2-Methylnaphthalene	µg/L	--	--	--	--	--
2-Methylphenol	µg/L	--	--	--	--	--
2-Nitroaniline	µg/L	--	--	--	--	--
2-Nitrophenol	µg/L	--	--	--	--	--
3&4-Methylphenol	µg/L	--	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	--	--	--
3-Nitroaniline	µg/L	--	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Berm	Berm	Berm	CEFF	CEFF
Sample Name:		11187072-Berm-GW	11187072-Berm-Solids	11187072-Berm-Rock	1. CEFF	CEFF-Filtered
Sample Date:		01/29/2020	01/29/2020	02/11/2020	10/25/2019	11/05/2019
Parameters	**Unit**					
Semivolatile Organic Compounds						
4-Bromophenyl phenyl ether	µg/L	--	--	--	--	--
4-Chloro-3-methylphenol	µg/L	--	--	--	--	--
4-Chloroaniline	µg/L	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	--	--	--
4-Nitroaniline	µg/L	--	--	--	--	--
4-Nitrophenol	µg/L	--	--	--	--	--
Acenaphthene	µg/L	--	--	--	--	--
Acenaphthylene	µg/L	--	--	--	--	--
Acetophenone	µg/L	--	--	--	--	--
Anthracene	µg/L	--	--	--	--	--
Atrazine	µg/L	--	--	--	--	--
Benzaldehyde	µg/L	--	--	--	--	--
Benzo(a)anthracene	µg/L	--	--	--	--	--
Benzo(a)pyrene	µg/L	--	--	--	--	--
Benzo(b)fluoranthene	µg/L	--	--	--	--	--
Benzo(g,h,i)perylene	µg/L	--	--	--	--	--
Benzo(k)fluoranthene	µg/L	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	--	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	--	--	--
Caprolactam	µg/L	--	--	--	--	--
Carbazole	µg/L	--	--	--	--	--
Chrysene	µg/L	--	--	--	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--	--	--
Dibenz(a,h)anthracene	µg/L	--	--	--	--	--
Dibenzofuran	µg/L	--	--	--	--	--
Diethyl phthalate	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Berm	Berm	Berm	CEFF	CEFF
	Sample Name:	11187072-Berm-GW	11187072-Berm-Solids	11187072-Berm-Rock	1. CEFF	CEFF-Filtered
	Sample Date:	01/29/2020	01/29/2020	02/11/2020	10/25/2019	11/05/2019
Parameters	**Unit**					
Semivolatile Organic Compounds						
Dimethyl phthalate	µg/L	--	--	--	--	--
Fluoranthene	µg/L	--	--	--	--	--
Fluorene	µg/L	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--
Hexachlorobutadiene	µg/L	--	--	--	--	--
Hexachlorocyclopentadiene	µg/L	--	--	--	--	--
Hexachloroethane	µg/L	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--	--
Isophorone	µg/L	--	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--	--	--	--
N-Nitrosodiphenylamine	µg/L	--	--	--	--	--
Naphthalene	µg/L	--	--	--	--	--
Nitrobenzene	µg/L	--	--	--	--	--
Pentachlorophenol	µg/L	--	--	--	--	--
Phenanthrene	µg/L	--	--	--	--	--
Phenol	µg/L	--	--	--	--	--
Pyrene	µg/L	--	--	--	--	--
Pyridine	µg/L	--	--	--	--	--
Herbicides						
2,4,5-TP (Silvex)	µg/L	--	--	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		**Berm**	**Berm**	**Berm**	**CEFF**	**CEFF**
Sample Name:		**11187072-Berm-GW**	**11187072-Berm-Solids**	**11187072-Berm-Rock**	**1. CEFF**	**CEFF-Filtered**
Sample Date:		**01/29/2020**	**01/29/2020**	**02/11/2020**	**10/25/2019**	**11/05/2019**
Parameters	**Unit**					
Polychlorinated Biphenyls (PCBs)						
Aroclor-1016 (PCB-1016)	µg/L	--	--	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	--	--	--	--	--
Pesticides						
alpha-Chlordane	µg/L	--	--	--	--	--
Chlordane	µg/L	--	--	--	--	--
Endrin	µg/L	--	--	--	--	--
gamma-BHC (lindane)	µg/L	--	--	--	--	--
gamma-Chlordane	µg/L	--	--	--	--	--
Heptachlor	µg/L	--	--	--	--	--
Heptachlor epoxide	µg/L	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--
Methoxychlor	µg/L	--	--	--	--	--
Toxaphene	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Berm**	**Berm**	**Berm**	**CEFF**	**CEFF**
	Sample Name:	**11187072-Berm-GW**	**11187072-Berm-Solids**	**11187072-Berm-Rock**	**1. CEFF**	**CEFF-Filtered**
	Sample Date:	**01/29/2020**	**01/29/2020**	**02/11/2020**	**10/25/2019**	**11/05/2019**
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	--	320	9.6 J	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	--	5.0 J	0.57 U	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	0.61 U	0.59 J	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	--	1.9 J	0.229 U	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	--	0.30 U	0.18 J	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	0.48 U	0.24 U	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	0.27 U	0.085 U	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	0.86 J	0.046 U	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	0.23 U	0.076 U	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	0.62 J	0.042 U	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	--	0.18 U	0.27 U	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	0.15 U	0.093 J	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	0.12 U	0.17 J	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	0.16 U	0.084 J	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	0.13 U	0.050 U	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	0.56 J	0.059 U	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	--	0.73 J	0.11 J	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	20 J	1.3 J	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/g	--	3.8 J	0.46 J	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	5.0 J	0.24 J	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/g	--	0.69 J	0.35 J	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	0.15 U	0.093 J	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/g	--	0.69 J	0.17 J	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	0.56 J	0.059 U	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/g	--	0.73 J	0.23 J	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	--	0.898	0.128	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	--	1.06	0.204	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	83 U	--	--	44 U	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	--	--	--	--	21 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	21 U	--	--	6.4 U	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID: Sample Name: Sample Date:		Berm 11187072-Berm-GW 01/29/2020	Berm 11187072-Berm-Solids 01/29/2020	Berm 11187072-Berm-Rock 02/11/2020	CEFF 1. CEFF 10/25/2019	CEFF CEFF-Filtered 11/05/2019
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	--	--	--	13 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	9.52 U	--	--	4.9 J	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	--	--	--	--	2.4 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	7.54 U	--	--	2.9 U	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	2.5 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	5.85 U	--	--	1.4 U	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	1.1 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	7.72 U	--	--	2.6 U	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--	--	--	2.9 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	5.92 U	--	--	3.9 J	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	0.91 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.48 U	--	--	1.6 J	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--	--	--	1.1 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	6.14 U	--	--	1.7 J	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	0.89 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	6.10 U	--	--	1.4 U	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--	--	--	0.97 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	6.25 U	--	--	2.0 U	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	1.9 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	6.12 U	--	--	0.94 U	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	3.1 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.46 U	--	--	2.5 J	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	1.2 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	5.39 U	--	--	1.2 U	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	1.5 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.51 U	--	--	0.65 U	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	1.2 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	0.60 U	--	--	13	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	1.1 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	0.28 U	--	--	37	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Berm	Berm	Berm	CEFF	CEFF
Sample Name:		**11187072-Berm-GW**	**11187072-Berm-Solids**	**11187072-Berm-Rock**	**1. CEFF**	**CEFF-Filtered**
Sample Date:		**01/29/2020**	**01/29/2020**	**02/11/2020**	**10/25/2019**	**11/05/2019**
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	2.7 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	15 J	--	--	8.2 J	--
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--	--	--	2.4 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	13 J	--	--	4.3 J	--
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	2.5 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	5.0 J	--	--	5.6 J	--
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	2.9 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	6.8 J	--	--	8.8 J	--
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	3.4 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.1 J	--	--	0.94 U	--
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	4.4 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	0.51 U	--	--	2.5 J	--
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	1.3 U
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	0.60 U	--	--	13 J	--
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	1.1 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	0.28 U	--	--	68 J	--
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	2.7 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	--	--	--	17.5	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	5.49	--	--	18.5	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Berm	Berm	Berm	CEFF	CEFF
	Sample Name:	11187072-Berm-GW	11187072-Berm-Solids	11187072-Berm-Rock	1. CEFF	CEFF-Filtered
	Sample Date:	01/29/2020	01/29/2020	02/11/2020	10/25/2019	11/05/2019
Parameters	**Unit**					
Metals						
Aluminum	mg/L	--	--	--	--	--
Aluminum (dissolved)	mg/L	--	--	--	--	0.048 U
Antimony	mg/L	--	--	--	0.0039 U	--
Antimony (dissolved)	mg/L	--	--	--	--	0.0098 U
Arsenic	mg/L	--	--	--	0.0029 U	--
Arsenic (dissolved)	mg/L	--	--	--	--	0.012 U
Barium	mg/L	--	--	--	0.29	--
Barium (dissolved)	mg/L	--	--	--	--	0.30
Beryllium	mg/L	--	--	--	0.00042 U	--
Beryllium (dissolved)	mg/L	--	--	--	--	0.00030 U
Boron	mg/L	--	--	--	0.21	--
Boron (dissolved)	mg/L	--	--	--	--	--
Cadmium	mg/L	--	--	--	0.00040 J	--
Cadmium (dissolved)	mg/L	--	--	--	--	0.00050 U
Calcium	mg/L	--	--	--	55	--
Calcium (dissolved)	mg/L	--	--	--	--	59
Chromium	mg/L	--	--	--	0.0016 U	--
Chromium (dissolved)	mg/L	--	--	--	--	0.0012 U
Cobalt	mg/L	--	--	--	0.00040 J	--
Cobalt (dissolved)	mg/L	--	--	--	--	0.0030 U
Copper	mg/L	--	--	--	0.0081 U	--
Copper (dissolved)	mg/L	--	--	--	--	0.0072 J
Iron	mg/L	--	--	--	0.29 J	--
Iron (dissolved)	mg/L	--	--	--	--	0.056 J
Lead	mg/L	--	--	--	0.0022 U	--
Lead (dissolved)	mg/L	--	--	--	--	0.0025 U
Magnesium	mg/L	--	--	--	33	--
Magnesium (dissolved)	mg/L	--	--	--	--	32
Manganese	mg/L	--	--	--	0.088	--
Manganese (dissolved)	mg/L	--	--	--	--	0.064

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Berm	Berm	Berm	CEFF	CEFF
	Sample Name:	11187072-Berm-GW	11187072-Berm-Solids	11187072-Berm-Rock	1. CEFF	CEFF-Filtered
	Sample Date:	01/29/2020	01/29/2020	02/11/2020	10/25/2019	11/05/2019
Parameters	**Unit**					
Metals						
Mercury	mg/L	--	--	--	--	--
Mercury (dissolved)	mg/L	--	--	--	--	--
Molybdenum	mg/L	--	--	--	0.010	--
Molybdenum (dissolved)	mg/L	--	--	--	--	0.010 J
Nickel	mg/L	--	--	--	0.0021 J	--
Nickel (dissolved)	mg/L	--	--	--	--	0.0024 U
Phosphorus	mg/L	--	--	--	--	--
Phosphorus (dissolved)	mg/L	--	--	--	--	0.050 U
Potassium	mg/L	--	--	--	12	--
Potassium (dissolved)	mg/L	--	--	--	--	14
Selenium	mg/L	--	--	--	0.0029 U	--
Selenium (dissolved)	mg/L	--	--	--	--	0.013 U
Silver	mg/L	--	--	--	0.0013 U	--
Silver (dissolved)	mg/L	--	--	--	--	0.00084 U
Sodium	mg/L	--	--	--	350	--
Sodium (dissolved)	mg/L	--	--	--	--	330
Strontium	mg/L	--	--	--	0.48	--
Strontium (dissolved)	mg/L	--	--	--	--	0.51
Thallium	mg/L	--	--	--	0.0042 U	--
Thallium (dissolved)	mg/L	--	--	--	--	0.0090 U
Tin	mg/L	--	--	--	0.00059 U	--
Tin (dissolved)	mg/L	--	--	--	--	--
Titanium	mg/L	--	--	--	0.0011 J	--
Titanium (dissolved)	mg/L	--	--	--	--	--
Vanadium	mg/L	--	--	--	0.0036 J	--
Vanadium (dissolved)	mg/L	--	--	--	--	0.0038 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Berm	Berm	Berm	CEFF	CEFF
	Sample Name:	11187072-Berm-GW	11187072-Berm-Solids	11187072-Berm-Rock	1. CEFF	CEFF-Filtered
	Sample Date:	01/29/2020	01/29/2020	02/11/2020	10/25/2019	11/05/2019
Parameters	**Unit**					
Metals						
Zinc	mg/L	--	--	--	0.045	--
Zinc (dissolved)	mg/L	--	--	--	--	0.012
Mercury	ng/L	--	--	--	18 J	--
Mercury (dissolved)	ng/L	--	--	--	--	1.7
Mercury	µg/L	--	--	--	--	--
Mercury (dissolved)	µg/L	--	--	--	--	--
Thallium	µg/L	--	--	--	--	--
Thallium (dissolved)	µg/L	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)						
2-Ethoxyethanol	mg/L	--	--	--	--	--
Ethylene glycol	mg/L	--	--	--	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--	--	--	--
General Chemistry						
Percent solids	%	--	99.6	99.7	--	--
Ignitability	Deg F	--	--	--	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	160 J	--
Alkalinity, carbonate	mg/L	--	--	--	20 UJ	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	160 J	--
Ammonia-N	mg/L	--	--	--	0.067 U	--
Biochemical oxygen demand (BOD)	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	0.20 J	--
Chemical oxygen demand (COD)	mg/L	--	--	--	27	--
Chloride	mg/L	--	--	--	480	--
Ferrous iron	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Berm**	**Berm**	**Berm**	**CEFF**	**CEFF**
	Sample Name:	**11187072-Berm-GW**	**11187072-Berm-Solids**	**11187072-Berm-Rock**	**1. CEFF**	**CEFF-Filtered**
	Sample Date:	**01/29/2020**	**01/29/2020**	**02/11/2020**	**10/25/2019**	**11/05/2019**
Parameters	**Unit**					
General Chemistry						
Fluoride	mg/L	--	--	--	0.34	--
Hydrogen sulfide	mg/L	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	R	--
Nitrite (as N)	mg/L	--	--	--	R	--
Oil and grease (HEM), total	mg/L	--	--	--	--	--
Oil and grease (SGT HEM), non-polar material	mg/L	--	--	--	--	--
Phosphorus	mg/L	--	--	--	0.066	--
Phosphorus, total (as PO4)	mg/L	--	--	--	0.20	--
Sulfate	mg/L	--	--	--	1.9 U	--
Sulfide	mg/L	--	--	--	0.0090 U	--
TOC average duplicates	mg/L	--	--	--	--	--
Total dissolved solids (TDS)	mg/L	--	--	--	1300	--
Total organic carbon (TOC)	mg/L	--	--	--	5.0 J	--
Total suspended solids (TSS)	mg/L	--	--	--	11	--
Free liquid	none	--	--	--	--	--
pH, lab	s.u.	--	--	--	7.7 J	--
Cyanide (total)	µg/L	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
 - Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Contact-Initial**	**CUI**	**Eastern**	**Eastern**	**Eastern**
	Sample Name:	**11187072-CONTACT-INITIAL**	**CUI**	**11187072-Eastern-GW**	**11187072-Eastern-Solids**	**11187072-Eastern Rock**
	Sample Date:	**09/24/2019**	**10/26/2019**	**01/29/2020**	**01/29/2020**	**02/11/2020**
Parameters	**Unit**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	2.5 U	--	--	--	--
1,1,2-Trichloroethane	µg/L	2.4 U	--	--	--	--
1,1-Dichloroethane	µg/L	1.8 U	--	--	--	--
1,1-Dichloroethene	µg/L	2.9 U	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	3.7 U	--	--	--	--
1,2-Dichlorobenzene	µg/L	2.0 U	--	--	--	--
1,2-Dichloroethane	µg/L	1.5 U	--	--	--	--
1,2-Dichloropropane	µg/L	2.5 U	--	--	--	--
1,3-Dichlorobenzene	µg/L	1.6 U	--	--	--	--
1,4-Dichlorobenzene	µg/L	1.0 U	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	2.9 U	--	--	--	--
Benzene	µg/L	2.0 U	--	--	--	--
Bromodichloromethane	µg/L	2.4 U	--	--	--	--
Bromoform	µg/L	2.6 U	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	3.3 U	--	--	--	--
Chlorobenzene	µg/L	1.6 U	--	--	--	--
Chloroethane	µg/L	2.6 U	--	--	--	--
Chloroform (Trichloromethane)	µg/L	2.1 U	--	--	--	--
cis-1,2-Dichloroethene	µg/L	1.6 U	--	--	--	--
cis-1,3-Dichloropropene	µg/L	1.6 U	--	--	--	--
Ethylbenzene	µg/L	2.2 U	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Contact-Initial	CUI	Eastern	Eastern	Eastern
	Sample Name:	11187072-CONTACT-INITIAL	CUI	11187072-Eastern-GW	11187072-Eastern-Solids	11187072-Eastern Rock
	Sample Date:	09/24/2019	10/26/2019	01/29/2020	01/29/2020	02/11/2020
Parameters	**Unit**					
Volatile Organic Compounds						
Hexachlorobutadiene	µg/L	--	--	--	--	--
m&p-Xylenes	µg/L	1.9 U	--	--	--	--
o-Xylene	µg/L	2.4 U	--	--	--	--
Tetrachloroethene	µg/L	2.0 U	--	--	--	--
Toluene	µg/L	1.7 U	--	--	--	--
trans-1,2-Dichloroethene	µg/L	2.5 U	--	--	--	--
trans-1,3-Dichloropropene	µg/L	1.7 U	--	--	--	--
Trichloroethene	µg/L	1.5 U	--	--	--	--
Vinyl chloride	µg/L	3.7 U	--	--	--	--
Xylenes (total)	µg/L	4.3 U	--	--	--	--
Semivolatile Organic Compounds						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	0.56 U	--	--	--	--
2,4,5-Trichlorophenol	µg/L	0.59 U	--	--	--	--
2,4,6-Trichlorophenol	µg/L	0.65 UJ	--	--	--	--
2,4-Dichlorophenol	µg/L	0.49 UJ	--	--	--	--
2,4-Dimethylphenol	µg/L	0.39 UJ	--	--	--	--
2,4-Dinitrophenol	µg/L	15 U	--	--	--	--
2,4-Dinitrotoluene	µg/L	0.49 U	--	--	--	--
2,6-Dinitrotoluene	µg/L	0.58 U	--	--	--	--
2-Chloronaphthalene	µg/L	0.57 UJ	--	--	--	--
2-Chlorophenol	µg/L	0.62 UJ	--	--	--	--
2-Methylnaphthalene	µg/L	0.60 UJ	--	--	--	--
2-Methylphenol	µg/L	2.9 UJ	--	--	--	--
2-Nitroaniline	µg/L	5.3 U	--	--	--	--
2-Nitrophenol	µg/L	0.59 U	--	--	--	--
3&4-Methylphenol	µg/L	3.6 UJ	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	5.6 U	--	--	--	--
3-Nitroaniline	µg/L	0.64 U	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	14 U	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Contact-Initial	CUI	Eastern	Eastern	Eastern
	Sample Name:	11187072-CONTACT-INITIAL	CUI	11187072-Eastern-GW	11187072-Eastern-Solids	11187072-Eastern Rock
	Sample Date:	09/24/2019	10/26/2019	01/29/2020	01/29/2020	02/11/2020
Parameters	**Unit**					
Semivolatile Organic Compounds						
4-Bromophenyl phenyl ether	µg/L	0.61 U	--	--	--	--
4-Chloro-3-methylphenol	µg/L	0.59 U	--	--	--	--
4-Chloroaniline	µg/L	0.42 UJ	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	0.59 UJ	--	--	--	--
4-Nitroaniline	µg/L	0.56 U	--	--	--	--
4-Nitrophenol	µg/L	1.4 U	--	--	--	--
Acenaphthene	µg/L	0.63 UJ	--	--	--	--
Acenaphthylene	µg/L	0.63 UJ	--	--	--	--
Acetophenone	µg/L	0.60 U	--	--	--	--
Anthracene	µg/L	0.47 U	--	--	--	--
Atrazine	µg/L	6.1 U	--	--	--	--
Benzaldehyde	µg/L	1.1 U	--	--	--	--
Benzo(a)anthracene	µg/L	0.72 U	--	--	--	--
Benzo(a)pyrene	µg/L	0.51 U	--	--	--	--
Benzo(b)fluoranthene	µg/L	0.93 U	--	--	--	--
Benzo(g,h,i)perylene	µg/L	0.66 UJ	--	--	--	--
Benzo(k)fluoranthene	µg/L	0.85 U	--	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	0.57 UJ	--	--	--	--
bis(2-Chloroethoxy)methane	µg/L	0.64 UJ	--	--	--	--
bis(2-Chloroethyl)ether	µg/L	0.38 UJ	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	60 U	--	--	--	--
Butyl benzylphthalate (BBP)	µg/L	4.4 U	--	--	--	--
Caprolactam	µg/L	4.5 U	--	--	--	--
Carbazole	µg/L	0.49 U	--	--	--	--
Chrysene	µg/L	0.78 U	--	--	--	--
Di-n-butylphthalate (DBP)	µg/L	7.1 U	--	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	6.6 U	--	--	--	--
Dibenz(a,h)anthracene	µg/L	0.69 U	--	--	--	--
Dibenzofuran	µg/L	0.70 UJ	--	--	--	--
Diethyl phthalate	µg/L	5.5 U	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Contact-Initial	CUI	Eastern	Eastern	Eastern
Sample Name:		11187072-CONTACT-INITIAL	CUI	11187072-Eastern-GW	11187072-Eastern-Solids	11187072-Eastern Rock
Sample Date:		09/24/2019	10/26/2019	01/29/2020	01/29/2020	02/11/2020
Parameters	**Unit**					
Semivolatile Organic Compounds						
Dimethyl phthalate	µg/L	0.54 U	--	--	--	--
Fluoranthene	µg/L	0.58 U	--	--	--	--
Fluorene	µg/L	0.66 UJ	--	--	--	--
Hexachlorobenzene	µg/L	0.54 U	--	--	--	--
Hexachlorobutadiene	µg/L	0.66 UJ	--	--	--	--
Hexachlorocyclopentadiene	µg/L	R	--	--	--	--
Hexachloroethane	µg/L	0.60 UJ	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	0.82 U	--	--	--	--
Isophorone	µg/L	0.52 U	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	0.68 U	--	--	--	--
N-Nitrosodiphenylamine	µg/L	1.1 U	--	--	--	--
Naphthalene	µg/L	0.57 UJ	--	--	--	--
Nitrobenzene	µg/L	4.8 U	--	--	--	--
Pentachlorophenol	µg/L	8.1 U	--	--	--	--
Phenanthrene	µg/L	0.53 U	--	--	--	--
Phenol	µg/L	4.7 UJ	--	--	--	--
Pyrene	µg/L	0.52 U	--	--	--	--
Pyridine	µg/L	5.2 UJ	--	--	--	--
Herbicides						
2,4,5-TP (Silvex)	µg/L	0.29 U	--	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	1.9 U	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Contact-Initial	CUI	Eastern	Eastern	Eastern
	Sample Name:	11187072-CONTACT-INITIAL	CUI	11187072-Eastern-GW	11187072-Eastern-Solids	11187072-Eastern Rock
	Sample Date:	09/24/2019	10/26/2019	01/29/2020	01/29/2020	02/11/2020
Parameters	**Unit**					
Polychlorinated Biphenyls (PCBs)						
Aroclor-1016 (PCB-1016)	µg/L	0.18 U	--	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	0.22 U	--	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	0.20 U	--	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	0.34 U	--	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	0.11 U	--	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	0.36 U	--	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	0.15 U	--	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	--	--	--	--	--
Pesticides						
alpha-Chlordane	µg/L	--	--	--	--	--
Chlordane	µg/L	0.27 U	--	--	--	--
Endrin	µg/L	0.0086 U	--	--	--	--
gamma-BHC (lindane)	µg/L	0.011 U	--	--	--	--
gamma-Chlordane	µg/L	--	--	--	--	--
Heptachlor	µg/L	0.017 U	--	--	--	--
Heptachlor epoxide	µg/L	0.013 U	--	--	--	--
Hexachlorobenzene	µg/L	0.016 U	--	--	--	--
Methoxychlor	µg/L	0.029 U	--	--	--	--
Toxaphene	µg/L	1.9 U	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Contact-Initial	CUI	Eastern	Eastern	Eastern
Sample Name:		11187072-CONTACT-INITIAL	CUI	11187072-Eastern-GW	11187072-Eastern-Solids	11187072-Eastern Rock
Sample Date:		09/24/2019	10/26/2019	01/29/2020	01/29/2020	02/11/2020
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	--	--	--	280	61
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	--	--	--	4.0 J	0.58 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	12	4.4 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	0.75 U	0.27 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	0.24 U	0.027 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	0.46 U	0.27 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	0.18 J	0.098 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	0.38 J	0.26 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	0.14 U	0.090 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	0.48 J	0.13 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	0.24 J	0.18 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	0.18 U	0.11 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	0.12 J	0.16 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	0.095 U	0.059 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	0.12 U	0.060 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	0.98 J	0.14 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	2.2	0.15 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	33 J	12 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	2.0 J	0.38 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	4.9 J	1.1 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	1.2 J	0.18 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	0.18 U	0.11 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	0.12 J	0.16 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	0.98 J	0.14 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	3.6 J	0.15 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	--	--	--	1.54	0.345
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	--	--	--	1.68	0.404
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	3300	--	94 U	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	130	--	14 U	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Contact-Initial	CUI	Eastern	Eastern	Eastern
	Sample Name:	11187072-CONTACT-INITIAL	CUI	11187072-Eastern-GW	11187072-Eastern-Solids	11187072-Eastern Rock
	Sample Date:	09/24/2019	10/26/2019	01/29/2020	01/29/2020	02/11/2020
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	150	--	9.52 U	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	160	--	7.54 U	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	58	--	5.85 U	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.8 U	--	7.72 U	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	410	--	5.92 U	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	4.1 U	--	0.52 U	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	110	--	0.81 U	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.8 U	--	6.10 U	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	4.2 U	--	6.25 U	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	18 U	--	6.12 U	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	200	--	0.48 U	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	12 U	--	0.55 U	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	110	--	0.55 U	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	1500	--	0.44 U	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	3900	--	0.36 U	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Contact-Initial**	**CUI**	**Eastern**	**Eastern**	**Eastern**
	Sample Name:	**11187072-CONTACT-INITIAL**	**CUI**	**11187072-Eastern-GW**	**11187072-Eastern-Solids**	**11187072-Eastern Rock**
	Sample Date:	**09/24/2019**	**10/26/2019**	**01/29/2020**	**01/29/2020**	**02/11/2020**
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	370 J	--	16 J	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	280 J	--	8.9 J	--	--
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	35 J	--	3.4 J	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	620 J	--	3.9 J	--	--
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	20 J	--	0.62 J	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	490 J	--	0.55 U	--	--
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	1600 J	--	0.44 U	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	8100 J	--	0.36 U	--	--
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	1990	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	2000	--	4.91	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Contact-Initial**	**CUI**	**Eastern**	**Eastern**	**Eastern**
	Sample Name:	**11187072-CONTACT-INITIAL**	**CUI**	**11187072-Eastern-GW**	**11187072-Eastern-Solids**	**11187072-Eastern Rock**
	Sample Date:	**09/24/2019**	**10/26/2019**	**01/29/2020**	**01/29/2020**	**02/11/2020**
Parameters	**Unit**					
Metals						
Aluminum	mg/L	0.048 U	--	--	--	--
Aluminum (dissolved)	mg/L	0.048 U	--	--	--	--
Antimony	mg/L	0.0098 U	--	--	--	--
Antimony (dissolved)	mg/L	0.0098 U	--	--	--	--
Arsenic	mg/L	0.012 U	--	--	--	--
Arsenic (dissolved)	mg/L	0.012 U	--	--	--	--
Barium	mg/L	0.17	--	--	--	--
Barium (dissolved)	mg/L	0.18	--	--	--	--
Beryllium	mg/L	0.00037 J	--	--	--	--
Beryllium (dissolved)	mg/L	0.00030 U	--	--	--	--
Boron	mg/L	--	--	--	--	--
Boron (dissolved)	mg/L	--	--	--	--	--
Cadmium	mg/L	0.00050 U	--	--	--	--
Cadmium (dissolved)	mg/L	0.00050 U	--	--	--	--
Calcium	mg/L	35	--	--	--	--
Calcium (dissolved)	mg/L	37	--	--	--	--
Chromium	mg/L	0.0012 U	--	--	--	--
Chromium (dissolved)	mg/L	0.0012 U	--	--	--	--
Cobalt	mg/L	0.0030 U	--	--	--	--
Cobalt (dissolved)	mg/L	0.0030 U	--	--	--	--
Copper	mg/L	0.011 U	--	--	--	--
Copper (dissolved)	mg/L	0.014	--	--	--	--
Iron	mg/L	0.022 J	--	--	--	--
Iron (dissolved)	mg/L	0.020 U	--	--	--	--
Lead	mg/L	0.0025 U	--	--	--	--
Lead (dissolved)	mg/L	0.0025 U	--	--	--	--
Magnesium	mg/L	22	--	--	--	--
Magnesium (dissolved)	mg/L	22	--	--	--	--
Manganese	mg/L	0.14	--	--	--	--
Manganese (dissolved)	mg/L	0.15	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Contact-Initial**	**CUI**	**Eastern**	**Eastern**	**Eastern**
	Sample Name:	**11187072-CONTACT-INITIAL**	**CUI**	**11187072-Eastern-GW**	**11187072-Eastern-Solids**	**11187072-Eastern Rock**
	Sample Date:	**09/24/2019**	**10/26/2019**	**01/29/2020**	**01/29/2020**	**02/11/2020**
Parameters	**Unit**					
Metals						
Mercury	mg/L	0.00010 U	--	--	--	--
Mercury (dissolved)	mg/L	0.00037	--	--	--	--
Molybdenum	mg/L	0.0079 J	--	--	--	--
Molybdenum (dissolved)	mg/L	0.0076 J	--	--	--	--
Nickel	mg/L	0.0024 U	--	--	--	--
Nickel (dissolved)	mg/L	0.0024 U	--	--	--	--
Phosphorus	mg/L	0.050 U	--	--	--	--
Phosphorus (dissolved)	mg/L	0.066 J	--	--	--	--
Potassium	mg/L	12	--	--	--	--
Potassium (dissolved)	mg/L	11	--	--	--	--
Selenium	mg/L	0.013 U	--	--	--	--
Selenium (dissolved)	mg/L	0.013 U	--	--	--	--
Silver	mg/L	0.00084 U	--	--	--	--
Silver (dissolved)	mg/L	0.00084 U	--	--	--	--
Sodium	mg/L	250	--	--	--	--
Sodium (dissolved)	mg/L	260	--	--	--	--
Strontium	mg/L	0.31	--	--	--	--
Strontium (dissolved)	mg/L	0.32	--	--	--	--
Thallium	mg/L	0.0090 U	--	--	--	--
Thallium (dissolved)	mg/L	0.0090 U	--	--	--	--
Tin	mg/L	--	--	--	--	--
Tin (dissolved)	mg/L	--	--	--	--	--
Titanium	mg/L	--	--	--	--	--
Titanium (dissolved)	mg/L	--	--	--	--	--
Vanadium	mg/L	0.0019 U	--	--	--	--
Vanadium (dissolved)	mg/L	0.0019 U	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Contact-Initial	CUI	Eastern	Eastern	Eastern
Sample Name:		**11187072-CONTACT-INITIAL**	**CUI**	**11187072-Eastern-GW**	**11187072-Eastern-Solids**	**11187072-Eastern Rock**
Sample Date:		**09/24/2019**	**10/26/2019**	**01/29/2020**	**01/29/2020**	**02/11/2020**
Parameters	**Unit**					
Metals						
Zinc	mg/L	0.011 U	--	--	--	--
Zinc (dissolved)	mg/L	0.013 U	--	--	--	--
Mercury	ng/L	--	--	--	--	--
Mercury (dissolved)	ng/L	--	--	--	--	--
Mercury	µg/L	--	--	--	--	--
Mercury (dissolved)	µg/L	--	--	--	--	--
Thallium	µg/L	--	--	--	--	--
Thallium (dissolved)	µg/L	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)						
2-Ethoxyethanol	mg/L	--	--	--	--	--
Ethylene glycol	mg/L	--	--	--	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--	--	--	--
General Chemistry						
Percent solids	%	--	--	--	99.6	94.4
Ignitability	Deg F	--	--	--	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	210	--	--	--	--
Alkalinity, bicarbonate	mg/L	210	--	--	--	--
Alkalinity, carbonate	mg/L	5.0 U	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--
Ammonia-N	mg/L	2.7	--	--	--	--
Biochemical oxygen demand (BOD)	mg/L	6.0 U	--	--	--	--
Bromide	mg/L	1.5	--	--	--	--
Chemical oxygen demand (COD)	mg/L	92	--	--	--	--
Chloride	mg/L	400	--	--	--	--
Ferrous iron	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Contact-Initial**	**CUI**	**Eastern**	**Eastern**	**Eastern**
	Sample Name:	**11187072-CONTACT-INITIAL**	**CUI**	**11187072-Eastern-GW**	**11187072-Eastern-Solids**	**11187072-Eastern Rock**
	Sample Date:	**09/24/2019**	**10/26/2019**	**01/29/2020**	**01/29/2020**	**02/11/2020**
Parameters	**Unit**					
General Chemistry						
Fluoride	mg/L	--	--	--	--	--
Hydrogen sulfide	mg/L	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	--	--
Nitrite (as N)	mg/L	--	--	--	--	--
Oil and grease (HEM), total	mg/L	--	--	--	--	--
Oil and grease (SGT HEM), non-polar material	mg/L	--	--	--	--	--
Phosphorus	mg/L	--	--	--	--	--
Phosphorus, total (as PO4)	mg/L	--	--	--	--	--
Sulfate	mg/L	8.7	--	--	--	--
Sulfide	mg/L	--	--	--	--	--
TOC average duplicates	mg/L	4.5	--	--	--	--
Total dissolved solids (TDS)	mg/L	910	--	--	--	--
Total organic carbon (TOC)	mg/L	--	--	--	--	--
Total suspended solids (TSS)	mg/L	3400	16000	--	--	--
Free liquid	none	--	--	--	--	--
pH, lab	s.u.	7.8 J	--	--	--	--
Cyanide (total)	µg/L	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
 - Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	EXC-1	FEFF	FEFF	FEFF
	Sample Name:	11187072-091319-LL-EXC-1	FEFF 1	FEFF-Filtered	11187072-FEFF-0.1um
	Sample Date:	09/13/2019	10/26/2019	11/05/2019	01/09/2020
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/L	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--
1,1-Dichloroethene	µg/L	0.76 U	--	--	--
1,2,4-Trichlorobenzene	µg/L	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--
1,2-Dichloroethane	µg/L	1.0 U	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--
1,4-Dichlorobenzene	µg/L	0.91 U	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.6 U	--	--	--
Benzene	µg/L	0.56 U	--	--	--
Bromodichloromethane	µg/L	--	--	--	--
Bromoform	µg/L	--	--	--	--
Carbon disulfide	µg/L	1.7 U	--	--	--
Carbon tetrachloride	µg/L	0.92 U	--	--	--
Chlorobenzene	µg/L	0.82 U	--	--	--
Chloroethane	µg/L	--	--	--	--
Chloroform (Trichloromethane)	µg/L	0.82 U	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Volatile Organic Compounds					
Hexachlorobutadiene	µg/L	1.2 U	--	--	--
m&p-Xylenes	µg/L	1.3 U	--	--	--
o-Xylene	µg/L	0.93 U	--	--	--
Tetrachloroethene	µg/L	1.2 U	--	--	--
Toluene	µg/L	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--
Trichloroethene	µg/L	1.6 U	--	--	--
Vinyl chloride	µg/L	0.85 U	--	--	--
Xylenes (total)	µg/L	2.0 U	--	--	--
Semivolatile Organic Compounds					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--	--
2,4,5-Trichlorophenol	µg/L	4.4 U	--	--	--
2,4,6-Trichlorophenol	µg/L	3.5 U	--	--	--
2,4-Dichlorophenol	µg/L	--	--	--	--
2,4-Dimethylphenol	µg/L	--	--	--	--
2,4-Dinitrophenol	µg/L	--	--	--	--
2,4-Dinitrotoluene	µg/L	2.2 U	--	--	--
2,6-Dinitrotoluene	µg/L	2.9 U	--	--	--
2-Chloronaphthalene	µg/L	--	--	--	--
2-Chlorophenol	µg/L	--	--	--	--
2-Methylnaphthalene	µg/L	--	--	--	--
2-Methylphenol	µg/L	1.5 U	--	--	--
2-Nitroaniline	µg/L	--	--	--	--
2-Nitrophenol	µg/L	--	--	--	--
3&4-Methylphenol	µg/L	1.4 U	--	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	--	--
3-Nitroaniline	µg/L	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Semivolatile Organic Compounds					
4-Bromophenyl phenyl ether	µg/L	--	--	--	--
4-Chloro-3-methylphenol	µg/L	--	--	--	--
4-Chloroaniline	µg/L	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	--	--
4-Nitroaniline	µg/L	--	--	--	--
4-Nitrophenol	µg/L	--	--	--	--
Acenaphthene	µg/L	--	--	--	--
Acenaphthylene	µg/L	--	--	--	--
Acetophenone	µg/L	--	--	--	--
Anthracene	µg/L	--	--	--	--
Atrazine	µg/L	--	--	--	--
Benzaldehyde	µg/L	--	--	--	--
Benzo(a)anthracene	µg/L	--	--	--	--
Benzo(a)pyrene	µg/L	--	--	--	--
Benzo(b)fluoranthene	µg/L	--	--	--	--
Benzo(g,h,i)perylene	µg/L	--	--	--	--
Benzo(k)fluoranthene	µg/L	--	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	--	--
Caprolactam	µg/L	--	--	--	--
Carbazole	µg/L	--	--	--	--
Chrysene	µg/L	--	--	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--	--
Dibenz(a,h)anthracene	µg/L	--	--	--	--
Dibenzofuran	µg/L	--	--	--	--
Diethyl phthalate	µg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID: Sample Name: Sample Date:	EXC-1 11187072-091319-LL-EXC-1 09/13/2019	FEFF FEFF 1 10/26/2019	FEFF FEFF-Filtered 11/05/2019	FEFF 11187072-FEFF-0.1um 01/09/2020
Parameters	**Unit**				
Semivolatile Organic Compounds					
Dimethyl phthalate	µg/L	--	--	--	--
Fluoranthene	µg/L	--	--	--	--
Fluorene	µg/L	--	--	--	--
Hexachlorobenzene	µg/L	3.4 U	--	--	--
Hexachlorobutadiene	µg/L	2.7 U	--	--	--
Hexachlorocyclopentadiene	µg/L	--	--	--	--
Hexachloroethane	µg/L	3.4 U	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--
Isophorone	µg/L	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--	--	--
N-Nitrosodiphenylamine	µg/L	--	--	--	--
Naphthalene	µg/L	--	--	--	--
Nitrobenzene	µg/L	2.7 U	--	--	--
Pentachlorophenol	µg/L	3.3 U	--	--	--
Phenanthrene	µg/L	--	--	--	--
Phenol	µg/L	--	--	--	--
Pyrene	µg/L	--	--	--	--
Pyridine	µg/L	2.3 U	--	--	--
Herbicides					
2,4,5-TP (Silvex)	µg/L	0.020 U	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	0.040 U	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Polychlorinated Biphenyls (PCBs)					
Aroclor-1016 (PCB-1016)	µg/L	0.56 U	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	0.64 U	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	0.46 U	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	0.52 U	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	0.13 U	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	0.14 U	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	0.17 U	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	0.19 U	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	0.21 U	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	0.24 U	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	0.15 U	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	0.17 U	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	0.35 U	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	0.40 U	--	--	--
Pesticides					
alpha-Chlordane	µg/L	0.10 U	--	--	--
Chlordane	µg/L	0.13 U	--	--	--
Endrin	µg/L	0.015 U	--	--	--
gamma-BHC (lindane)	µg/L	0.013 U	--	--	--
gamma-Chlordane	µg/L	0.015 U	--	--	--
Heptachlor	µg/L	0.013 U	--	--	--
Heptachlor epoxide	µg/L	0.015 U	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--
Methoxychlor	µg/L	0.019 U	--	--	--
Toxaphene	µg/L	5.1 U	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	90 J	44 U	--	14 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	17 UJ	--	29 U	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	5.8 U	5.5 U	--	2.1 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		EXC-1	FEFF	FEFF	FEFF
Sample Name:		**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
Sample Date:		**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	2.1 U	--	22 J	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	4.1 U	6.7 J	--	1.7 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	1.1 U	--	6.4 J	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	6.9 U	1.9 U	--	0.95 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	3.6 J	--	6.0 J	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	1.8 U	1.3 U	--	0.27 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	2.8 J	--	4.9 J	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.82 U	0.83 U	--	1.8 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	1.2 U	--	4.9 J	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	19 J	1.6 J	--	0.50 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	7.6 J	--	3.1 J	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.83 U	0.79 U	--	0.33 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	1.2 U	--	4.4 J	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	5.6 J	0.77 U	--	0.50 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	2.7 J	--	3.5 J	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.74 U	0.73 U	--	0.29 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	1.1 U	--	4.8 J	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.68 U	0.52 U	--	0.50 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	2.0 U	--	3.8 J	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.1 U	0.99 U	--	0.35 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	1.6 U	--	4.6 J	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	11 J	1.5 J	--	0.32 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	3.4 U	--	3.2 J	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.73 U	0.52 U	--	0.34 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	0.71 U	--	3.0 J	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	6.2 J	0.63 U	--	0.35 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	1.7 U	--	1.3 U	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	61	3.2 J	--	0.48 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	7.1 J	--	1.6 U	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	220	7.1 J	--	0.24 U

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	EXC-1	FEFF	FEFF	FEFF
	Sample Name:	11187072-091319-LL-EXC-1	FEFF 1	FEFF-Filtered	11187072-FEFF-0.1um
	Sample Date:	09/13/2019	10/26/2019	11/05/2019	01/09/2020
Parameters	**Unit**				
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)					
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	21	--	1.1 U	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	10 J	13 J	--	3.2 J
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	1.1 U	--	6.4 J	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	11 J	1.9 J	--	0.95 J
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	6.4 J	--	11 J	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.83 U	0.83 U	--	1.8 J
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	1.2 U	--	14 J	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	25 J	1.6 J	--	0.50 J
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	12 J	--	13 J	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.1 U	0.99 U	--	0.35 U
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	1.6 U	--	4.6 J	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	26 J	1.5 J	--	0.43 U
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	3.4 J	--	3.2 J	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	66 J	3.2 J	--	0.48 U
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	7.1 J	--	1.6 U	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	390 J	11 J	--	0.24 U
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	39 J	--	1.1 U	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	87.7	4.18	--	0.0506
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	88.5	5.00	--	0.740

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Metals					
Aluminum	mg/L	--	--	--	--
Aluminum (dissolved)	mg/L	--	--	0.048 U	--
Antimony	mg/L	0.0039 U	0.0039 U	--	--
Antimony (dissolved)	mg/L	0.0039 U	--	0.0098 U	--
Arsenic	mg/L	0.089	0.0029 U	--	--
Arsenic (dissolved)	mg/L	0.037	--	0.012 U	--
Barium	mg/L	2.1	0.28	--	--
Barium (dissolved)	mg/L	1.9	--	0.32	--
Beryllium	mg/L	0.00042 U	0.00042 U	--	--
Beryllium (dissolved)	mg/L	0.00042 U	--	0.00030 U	--
Boron	mg/L	1.1	0.20	--	--
Boron (dissolved)	mg/L	1.1	--	--	--
Cadmium	mg/L	0.00080 J	0.00028 U	--	--
Cadmium (dissolved)	mg/L	0.00080 J	--	0.00050 U	--
Calcium	mg/L	250	53	--	--
Calcium (dissolved)	mg/L	240	--	57	--
Chromium	mg/L	0.0017 J	0.0016 U	--	--
Chromium (dissolved)	mg/L	0.0016 U	--	0.0012 U	--
Cobalt	mg/L	0.0066 J	0.00031 U	--	--
Cobalt (dissolved)	mg/L	0.0064 J	--	0.0030 U	--
Copper	mg/L	0.0081 U	0.0081 U	--	--
Copper (dissolved)	mg/L	0.0081 U	--	0.0053 J	--
Iron	mg/L	13	0.13 J	--	--
Iron (dissolved)	mg/L	0.12 J	--	0.020 U	--
Lead	mg/L	0.0022 U	0.0022 U	--	--
Lead (dissolved)	mg/L	0.0022 U	--	0.0025 U	--
Magnesium	mg/L	250	31	--	--
Magnesium (dissolved)	mg/L	250	--	31	--
Manganese	mg/L	2.7	0.029	--	--
Manganese (dissolved)	mg/L	2.6	--	0.028	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Metals					
Mercury	mg/L	--	--	--	--
Mercury (dissolved)	mg/L	--	--	--	--
Molybdenum	mg/L	0.0068 J	0.010	--	--
Molybdenum (dissolved)	mg/L	0.011	--	0.0096 J	--
Nickel	mg/L	0.0036 J	0.0020 J	--	--
Nickel (dissolved)	mg/L	0.0050 J	--	0.0024 U	--
Phosphorus	mg/L	--	--	--	--
Phosphorus (dissolved)	mg/L	--	--	0.050 U	--
Potassium	mg/L	27	12	--	--
Potassium (dissolved)	mg/L	27	--	13	--
Selenium	mg/L	0.0029 U	0.0029 U	--	--
Selenium (dissolved)	mg/L	0.0029 U	--	0.013 U	--
Silver	mg/L	0.0013 U	0.0013 U	--	--
Silver (dissolved)	mg/L	0.0013 U	--	0.00084 U	--
Sodium	mg/L	2400	360	--	--
Sodium (dissolved)	mg/L	2400	--	330	--
Strontium	mg/L	2.5	0.46	--	--
Strontium (dissolved)	mg/L	2.4	--	0.49	--
Thallium	mg/L	--	0.026 U	--	--
Thallium (dissolved)	mg/L	--	--	0.0090 U	--
Tin	mg/L	0.00059 U	0.00059 U	--	--
Tin (dissolved)	mg/L	0.0014 J	--	--	--
Titanium	mg/L	0.0077 J	0.00070 J	--	--
Titanium (dissolved)	mg/L	0.0022 J	--	--	--
Vanadium	mg/L	0.00047 U	0.0028 J	--	--
Vanadium (dissolved)	mg/L	0.00047 U	--	0.0035 J	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**EXC-1**	**FEFF**	**FEFF**	**FEFF**
	Sample Name:	**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
	Sample Date:	**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
Metals					
Zinc	mg/L	0.031	0.036	--	--
Zinc (dissolved)	mg/L	0.015 U	--	0.014	--
Mercury	ng/L	--	2.5 J	--	--
Mercury (dissolved)	ng/L	--	--	1.7	--
Mercury	µg/L	0.10 U	--	--	--
Mercury (dissolved)	µg/L	0.10 U	--	--	--
Thallium	µg/L	0.14 U	--	--	--
Thallium (dissolved)	µg/L	0.14 J	--	--	--
Total Petroleum Hydrocarbons (TPH)					
2-Ethoxyethanol	mg/L	--	--	--	--
Ethylene glycol	mg/L	--	--	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--	--	--
General Chemistry					
Percent solids	%	--	--	--	--
Ignitability	Deg F	--	--	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--
Alkalinity, bicarbonate	mg/L	1000	140	--	--
Alkalinity, carbonate	mg/L	20 U	20 U	--	--
Alkalinity, total (as CaCO3)	mg/L	1000	140	--	--
Ammonia-N	mg/L	7.1	0.067 U	--	--
Biochemical oxygen demand (BOD)	mg/L	10 U	--	--	--
Bromide	mg/L	9.9	0.30 J	--	--
Chemical oxygen demand (COD)	mg/L	82	16	--	--
Chloride	mg/L	4200	820	--	--
Ferrous iron	mg/L	0.016 UJ	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		**EXC-1**	**FEFF**	**FEFF**	**FEFF**
Sample Name:		**11187072-091319-LL-EXC-1**	**FEFF 1**	**FEFF-Filtered**	**11187072-FEFF-0.1um**
Sample Date:		**09/13/2019**	**10/26/2019**	**11/05/2019**	**01/09/2020**
Parameters	**Unit**				
General Chemistry					
Fluoride	mg/L	--	0.060 UJ	--	--
Hydrogen sulfide	mg/L	0.048 U	--	--	--
Nitrate (as N)	mg/L	0.025 U	R	--	--
Nitrite (as N)	mg/L	0.030 U	R	--	--
Oil and grease (HEM), total	mg/L	--	--	--	--
Oil and grease (SGT HEM), non-polar material	mg/L	--	--	--	--
Phosphorus	mg/L	0.031 J	0.095	--	--
Phosphorus, total (as PO4)	mg/L	0.095 J	0.29	--	--
Sulfate	mg/L	6.5	62	--	--
Sulfide	mg/L	0.045 U	0.0090 U	--	--
TOC average duplicates	mg/L	--	--	--	--
Total dissolved solids (TDS)	mg/L	8800	1300	--	--
Total organic carbon (TOC)	mg/L	24	4.3 J	--	--
Total suspended solids (TSS)	mg/L	240	2.2	--	--
Free liquid	none	--	--	--	--
pH, lab	s.u.	6.9 J	7.8 J	--	--
Cyanide (total)	µg/L	3.1 U	--	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
- Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Volatile Organic Compounds						
Hexachlorobutadiene	µg/L	--	--	--	--	--
m&p-Xylenes	µg/L	--	--	--	--	--
o-Xylene	µg/L	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--
Trichloroethene	µg/L	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--
Xylenes (total)	µg/L	--	--	--	--	--
Semivolatile Organic Compounds						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--	--	--
2,4,5-Trichlorophenol	µg/L	--	--	--	--	--
2,4,6-Trichlorophenol	µg/L	--	--	--	--	--
2,4-Dichlorophenol	µg/L	--	--	--	--	--
2,4-Dimethylphenol	µg/L	--	--	--	--	--
2,4-Dinitrophenol	µg/L	--	--	--	--	--
2,4-Dinitrotoluene	µg/L	--	--	--	--	--
2,6-Dinitrotoluene	µg/L	--	--	--	--	--
2-Chloronaphthalene	µg/L	--	--	--	--	--
2-Chlorophenol	µg/L	--	--	--	--	--
2-Methylnaphthalene	µg/L	--	--	--	--	--
2-Methylphenol	µg/L	--	--	--	--	--
2-Nitroaniline	µg/L	--	--	--	--	--
2-Nitrophenol	µg/L	--	--	--	--	--
3&4-Methylphenol	µg/L	--	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	--	--	--
3-Nitroaniline	µg/L	--	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Semivolatile Organic Compounds						
4-Bromophenyl phenyl ether	µg/L	--	--	--	--	--
4-Chloro-3-methylphenol	µg/L	--	--	--	--	--
4-Chloroaniline	µg/L	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	--	--	--
4-Nitroaniline	µg/L	--	--	--	--	--
4-Nitrophenol	µg/L	--	--	--	--	--
Acenaphthene	µg/L	--	--	--	--	--
Acenaphthylene	µg/L	--	--	--	--	--
Acetophenone	µg/L	--	--	--	--	--
Anthracene	µg/L	--	--	--	--	--
Atrazine	µg/L	--	--	--	--	--
Benzaldehyde	µg/L	--	--	--	--	--
Benzo(a)anthracene	µg/L	--	--	--	--	--
Benzo(a)pyrene	µg/L	--	--	--	--	--
Benzo(b)fluoranthene	µg/L	--	--	--	--	--
Benzo(g,h,i)perylene	µg/L	--	--	--	--	--
Benzo(k)fluoranthene	µg/L	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	--	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	--	--	--
Caprolactam	µg/L	--	--	--	--	--
Carbazole	µg/L	--	--	--	--	--
Chrysene	µg/L	--	--	--	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--	--	--
Dibenz(a,h)anthracene	µg/L	--	--	--	--	--
Dibenzofuran	µg/L	--	--	--	--	--
Diethyl phthalate	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID: Sample Name: Sample Date:	FEFF 11187072-FEFF-0.45um 01/09/2020	FEFF 11187072-FEFF-1um 01/09/2020	FEFF 11187072-FEFF-0.025um 01/13/2020	FEFF 11187072-FEFF-0.050um 01/13/2020	Filter Test 11187072-Filter Test-1 09/30/2019
Parameters	**Unit**					
Semivolatile Organic Compounds						
Dimethyl phthalate	µg/L	--	--	--	--	--
Fluoranthene	µg/L	--	--	--	--	--
Fluorene	µg/L	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--
Hexachlorobutadiene	µg/L	--	--	--	--	--
Hexachlorocyclopentadiene	µg/L	--	--	--	--	--
Hexachloroethane	µg/L	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--	--
Isophorone	µg/L	--	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--	--	--	--
N-Nitrosodiphenylamine	µg/L	--	--	--	--	--
Naphthalene	µg/L	--	--	--	--	--
Nitrobenzene	µg/L	--	--	--	--	--
Pentachlorophenol	µg/L	--	--	--	--	--
Phenanthrene	µg/L	--	--	--	--	--
Phenol	µg/L	--	--	--	--	--
Pyrene	µg/L	--	--	--	--	--
Pyridine	µg/L	--	--	--	--	--
Herbicides						
2,4,5-TP (Silvex)	µg/L	--	--	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	FEFF	FEFF	FEFF	FEFF	Filter Test
	Sample Name:	11187072-FEFF-0.45um	11187072-FEFF-1um	11187072-FEFF-0.025um	11187072-FEFF-0.050um	11187072-Filter Test-1
	Sample Date:	01/09/2020	01/09/2020	01/13/2020	01/13/2020	09/30/2019
Parameters	**Unit**					
Polychlorinated Biphenyls (PCBs)						
Aroclor-1016 (PCB-1016)	µg/L	--	--	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	--	--	--	--	--
Pesticides						
alpha-Chlordane	µg/L	--	--	--	--	--
Chlordane	µg/L	--	--	--	--	--
Endrin	µg/L	--	--	--	--	--
gamma-BHC (lindane)	µg/L	--	--	--	--	--
gamma-Chlordane	µg/L	--	--	--	--	--
Heptachlor	µg/L	--	--	--	--	--
Heptachlor epoxide	µg/L	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--
Methoxychlor	µg/L	--	--	--	--	--
Toxaphene	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		FEFF	FEFF	FEFF	FEFF	Filter Test
Sample Name:		11187072-FEFF-0.45um	11187072-FEFF-1um	11187072-FEFF-0.025um	11187072-FEFF-0.050um	11187072-Filter Test-1
Sample Date:		01/09/2020	01/09/2020	01/13/2020	01/13/2020	09/30/2019
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	3.6 U	9.3 U	14 U	3.7 U	1900
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	1.0 J	1.5 J	0.93 U	1.3 J	61 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	0.722 U	1.1 U	1.3 J	0.73 J	75
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	0.52 U	0.51 U	0.84 U	0.67 U	84
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	0.20 U	0.29 U	0.96 U	0.80 U	28 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.6 U	1.8 U	1.8 J	1.6 J	2.7 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.41 U	0.40 U	0.72 U	0.65 U	210
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.30 U	0.30 U	0.85 J	0.66 J	2.7 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.42 U	0.41 U	0.71 U	0.63 U	53
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.50 J	0.26 U	0.52 U	0.44 U	2.3 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.30 U	0.29 U	0.68 U	0.96 U	4.5 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.40 U	0.40 U	1.2 U	1.1 U	9.4 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.33 U	0.25 U	0.78 U	0.59 U	100
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.31 U	0.30 U	0.48 U	0.41 U	7.0 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.33 U	0.26 U	0.80 U	0.62 U	59
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	0.41 U	0.40 U	0.70 U	0.62 U	800
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	0.21 U	0.22 U	0.41 U	0.34 U	2500

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
Sample Name:		**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
Sample Date:		**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	0.72 J	2.5 J	2.9 J	1.8 J	190 J
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	0.52 J	0.51 J	0.96 U	0.80 U	140 J
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.1 J	1.8 J	2.6 J	5.6 J	27 J
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	0.42 U	0.41 U	0.68 J	0.96 J	310 J
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.40 U	0.40 U	1.2 U	1.1 U	9.4 J
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	0.33 U	0.30 U	0.80 U	0.62 U	250 J
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	0.41 U	0.40 U	0.90 J	1.0 J	860 J
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	0.21 U	0.22 U	0.41 U	0.34 U	4200 J
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	0.0503	0.00045	0.278	0.234	1110
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	0.695	0.653	1.55	1.37	11100

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Metals						
Aluminum	mg/L	--	--	--	--	--
Aluminum (dissolved)	mg/L	--	--	--	--	--
Antimony	mg/L	--	--	--	--	--
Antimony (dissolved)	mg/L	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--
Barium	mg/L	--	--	--	--	--
Barium (dissolved)	mg/L	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--
Beryllium (dissolved)	mg/L	--	--	--	--	--
Boron	mg/L	--	--	--	--	--
Boron (dissolved)	mg/L	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--
Cadmium (dissolved)	mg/L	--	--	--	--	--
Calcium	mg/L	--	--	--	--	--
Calcium (dissolved)	mg/L	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--
Chromium (dissolved)	mg/L	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--
Cobalt (dissolved)	mg/L	--	--	--	--	--
Copper	mg/L	--	--	--	--	--
Copper (dissolved)	mg/L	--	--	--	--	--
Iron	mg/L	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--
Lead	mg/L	--	--	--	--	--
Lead (dissolved)	mg/L	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--
Magnesium (dissolved)	mg/L	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
Metals						
Mercury	mg/L	--	--	--	--	--
Mercury (dissolved)	mg/L	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--
Molybdenum (dissolved)	mg/L	--	--	--	--	--
Nickel	mg/L	--	--	--	--	--
Nickel (dissolved)	mg/L	--	--	--	--	--
Phosphorus	mg/L	--	--	--	--	--
Phosphorus (dissolved)	mg/L	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--
Potassium (dissolved)	mg/L	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--
Silver	mg/L	--	--	--	--	--
Silver (dissolved)	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Sodium (dissolved)	mg/L	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--
Strontium (dissolved)	mg/L	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--
Thallium (dissolved)	mg/L	--	--	--	--	--
Tin	mg/L	--	--	--	--	--
Tin (dissolved)	mg/L	--	--	--	--	--
Titanium	mg/L	--	--	--	--	--
Titanium (dissolved)	mg/L	--	--	--	--	--
Vanadium	mg/L	--	--	--	--	--
Vanadium (dissolved)	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		FEFF	FEFF	FEFF	FEFF	Filter Test
Sample Name:		11187072-FEFF-0.45um	11187072-FEFF-1um	11187072-FEFF-0.025um	11187072-FEFF-0.050um	11187072-Filter Test-1
Sample Date:		01/09/2020	01/09/2020	01/13/2020	01/13/2020	09/30/2019
Parameters	**Unit**					
Metals						
Zinc	mg/L	--	--	--	--	--
Zinc (dissolved)	mg/L	--	--	--	--	--
Mercury	ng/L	--	--	--	--	--
Mercury (dissolved)	ng/L	--	--	--	--	--
Mercury	µg/L	--	--	--	--	--
Mercury (dissolved)	µg/L	--	--	--	--	--
Thallium	µg/L	--	--	--	--	--
Thallium (dissolved)	µg/L	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)						
2-Ethoxyethanol	mg/L	--	--	--	--	--
Ethylene glycol	mg/L	--	--	--	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--	--	--	--
General Chemistry						
Percent solids	%	--	--	--	--	--
Ignitability	Deg F	--	--	--	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--
Biochemical oxygen demand (BOD)	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--
Chemical oxygen demand (COD)	mg/L	--	--	--	--	--
Chloride	mg/L	--	--	--	--	--
Ferrous iron	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**FEFF**	**FEFF**	**FEFF**	**FEFF**	**Filter Test**
	Sample Name:	**11187072-FEFF-0.45um**	**11187072-FEFF-1um**	**11187072-FEFF-0.025um**	**11187072-FEFF-0.050um**	**11187072-Filter Test-1**
	Sample Date:	**01/09/2020**	**01/09/2020**	**01/13/2020**	**01/13/2020**	**09/30/2019**
Parameters	**Unit**					
General Chemistry						
Fluoride	mg/L	--	--	--	--	--
Hydrogen sulfide	mg/L	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	--	--
Nitrite (as N)	mg/L	--	--	--	--	--
Oil and grease (HEM), total	mg/L	--	--	--	--	--
Oil and grease (SGT HEM), non-polar material	mg/L	--	--	--	--	--
Phosphorus	mg/L	--	--	--	--	--
Phosphorus, total (as PO4)	mg/L	--	--	--	--	--
Sulfate	mg/L	--	--	--	--	--
Sulfide	mg/L	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--
Total dissolved solids (TDS)	mg/L	--	--	--	--	--
Total organic carbon (TOC)	mg/L	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--
Free liquid	none	--	--	--	--	--
pH, lab	s.u.	--	--	--	--	--
Cyanide (total)	µg/L	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
- Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Filter Test	Filter Test	Filter Test	Filter Test	INF3
	Sample Name:	11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
	Sample Date:	09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Parameters	**Unit**					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		Filter Test	Filter Test	Filter Test	Filter Test	INF3
Sample Name:		11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
Sample Date:		09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Parameters	**Unit**					
Volatile Organic Compounds						
Hexachlorobutadiene	µg/L	--	--	--	--	--
m&p-Xylenes	µg/L	--	--	--	--	--
o-Xylene	µg/L	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--
Trichloroethene	µg/L	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--
Xylenes (total)	µg/L	--	--	--	--	--
Semivolatile Organic Compounds						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--	--	--
2,4,5-Trichlorophenol	µg/L	--	--	--	--	--
2,4,6-Trichlorophenol	µg/L	--	--	--	--	--
2,4-Dichlorophenol	µg/L	--	--	--	--	--
2,4-Dimethylphenol	µg/L	--	--	--	--	--
2,4-Dinitrophenol	µg/L	--	--	--	--	--
2,4-Dinitrotoluene	µg/L	--	--	--	--	--
2,6-Dinitrotoluene	µg/L	--	--	--	--	--
2-Chloronaphthalene	µg/L	--	--	--	--	--
2-Chlorophenol	µg/L	--	--	--	--	--
2-Methylnaphthalene	µg/L	--	--	--	--	--
2-Methylphenol	µg/L	--	--	--	--	--
2-Nitroaniline	µg/L	--	--	--	--	--
2-Nitrophenol	µg/L	--	--	--	--	--
3&4-Methylphenol	µg/L	--	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	--	--	--
3-Nitroaniline	µg/L	--	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Filter Test**	**Filter Test**	**Filter Test**	**Filter Test**	**INF3**
	Sample Name:	**11187072-Filter Test-3**	**11187072-Filter Test-4**	**11187072-Filter Test-5**	**11187072-Filter Test-6**	**INF 3**
	Sample Date:	**09/30/2019**	**09/30/2019**	**09/30/2019**	**09/30/2019**	**10/25/2019**
Parameters	**Unit**					
Semivolatile Organic Compounds						
4-Bromophenyl phenyl ether	µg/L	--	--	--	--	--
4-Chloro-3-methylphenol	µg/L	--	--	--	--	--
4-Chloroaniline	µg/L	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	--	--	--
4-Nitroaniline	µg/L	--	--	--	--	--
4-Nitrophenol	µg/L	--	--	--	--	--
Acenaphthene	µg/L	--	--	--	--	--
Acenaphthylene	µg/L	--	--	--	--	--
Acetophenone	µg/L	--	--	--	--	--
Anthracene	µg/L	--	--	--	--	--
Atrazine	µg/L	--	--	--	--	--
Benzaldehyde	µg/L	--	--	--	--	--
Benzo(a)anthracene	µg/L	--	--	--	--	--
Benzo(a)pyrene	µg/L	--	--	--	--	--
Benzo(b)fluoranthene	µg/L	--	--	--	--	--
Benzo(g,h,i)perylene	µg/L	--	--	--	--	--
Benzo(k)fluoranthene	µg/L	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	--	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	--	--	--
Caprolactam	µg/L	--	--	--	--	--
Carbazole	µg/L	--	--	--	--	--
Chrysene	µg/L	--	--	--	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--	--	--
Dibenz(a,h)anthracene	µg/L	--	--	--	--	--
Dibenzofuran	µg/L	--	--	--	--	--
Diethyl phthalate	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameters	Unit	Filter Test 11187072-Filter Test-3 09/30/2019	Filter Test 11187072-Filter Test-4 09/30/2019	Filter Test 11187072-Filter Test-5 09/30/2019	Filter Test 11187072-Filter Test-6 09/30/2019	INF3 INF 3 10/25/2019
Location ID:		Filter Test	Filter Test	Filter Test	Filter Test	INF3
Sample Name:		11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
Sample Date:		09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Semivolatile Organic Compounds						
Dimethyl phthalate	µg/L	--	--	--	--	--
Fluoranthene	µg/L	--	--	--	--	--
Fluorene	µg/L	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--
Hexachlorobutadiene	µg/L	--	--	--	--	--
Hexachlorocyclopentadiene	µg/L	--	--	--	--	--
Hexachloroethane	µg/L	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--	--
Isophorone	µg/L	--	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--	--	--	--
N-Nitrosodiphenylamine	µg/L	--	--	--	--	--
Naphthalene	µg/L	--	--	--	--	--
Nitrobenzene	µg/L	--	--	--	--	--
Pentachlorophenol	µg/L	--	--	--	--	--
Phenanthrene	µg/L	--	--	--	--	--
Phenol	µg/L	--	--	--	--	--
Pyrene	µg/L	--	--	--	--	--
Pyridine	µg/L	--	--	--	--	--
Herbicides						
2,4,5-TP (Silvex)	µg/L	--	--	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Filter Test**	**Filter Test**	**Filter Test**	**Filter Test**	**INF3**
	Sample Name:	**11187072-Filter Test-3**	**11187072-Filter Test-4**	**11187072-Filter Test-5**	**11187072-Filter Test-6**	**INF 3**
	Sample Date:	**09/30/2019**	**09/30/2019**	**09/30/2019**	**09/30/2019**	**10/25/2019**
Parameters	**Unit**					
Polychlorinated Biphenyls (PCBs)						
Aroclor-1016 (PCB-1016)	µg/L	--	--	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	--	--	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	--	--	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	--	--	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	--	--	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	--	--	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	--	--	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	--	--	--	--	--
Pesticides						
alpha-Chlordane	µg/L	--	--	--	--	--
Chlordane	µg/L	--	--	--	--	--
Endrin	µg/L	--	--	--	--	--
gamma-BHC (lindane)	µg/L	--	--	--	--	--
gamma-Chlordane	µg/L	--	--	--	--	--
Heptachlor	µg/L	--	--	--	--	--
Heptachlor epoxide	µg/L	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--
Methoxychlor	µg/L	--	--	--	--	--
Toxaphene	µg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Filter Test	Filter Test	Filter Test	Filter Test	INF3
	Sample Name:	11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
	Sample Date:	09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	850	12 U	4.0 U	4.6 U	15000 J+
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	24 U	0.90 U	1.9 U	1.8 U	590

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		**Filter Test**	**Filter Test**	**Filter Test**	**Filter Test**	**INF3**
Sample Name:		**11187072-Filter Test-3**	**11187072-Filter Test-4**	**11187072-Filter Test-5**	**11187072-Filter Test-6**	**INF 3**
Sample Date:		**09/30/2019**	**09/30/2019**	**09/30/2019**	**09/30/2019**	**10/25/2019**
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	30 J	1.7 U	0.53 U	1.4 U	840
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	30 J	0.75 U	1.1 U	1.2 U	880 J-
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	11 J	0.87 U	0.47 U	0.47 U	320
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.7 U	2.0 U	1.9 U	1.9 U	11 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	74	1.1 U	0.60 U	1.2 U	3100
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.84 U	0.45 U	0.62 U	1.3 U	30 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	20 J	0.44 U	1.2 U	0.86 U	790
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.60 U	0.71 U	0.57 U	1.5 U	18 J-
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	2.1 U	0.67 U	0.75 U	1.1 U	53
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	4.2 J	0.92 U	1.0 U	1.2 U	160
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	39 J	0.53 U	0.60 U	0.64 U	2100
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	2.8 U	0.36 U	0.94 U	0.47 U	93
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	22 J	0.56 U	0.57 U	0.66 U	1200
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	270	3.6 J	0.76 U	0.65 U	18000
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	820	8.7 J	1.6 J	0.93 J	50000

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Filter Test	Filter Test	Filter Test	Filter Test	INF3
	Sample Name:	11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
	Sample Date:	09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Parameters	**Unit**					
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)						
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	78 J	3.9 J	0.53 U	2.3 J	2000 J
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	52 J	1.6 J	1.1 J	1.2 J	1600 J
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	7.5 J	2.7 J	2.5 J	4.6 J	260 J
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	110 J	1.8 J	2.9 J	3.2 J	4600 J
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	4.2 J	0.92 U	1.0 U	1.2 U	190 J
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	91 J	0.56 U	0.69 U	0.66 U	5000 J
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	290 J	5.0 J	0.76 U	0.65 U	20000 J
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	1400 J	13 J	1.6 J	0.93 J	100000 J
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	374	4.47	0.160	0.0930	24000
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	3740	5.33	1.47	1.56	24000

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Filter Test	Filter Test	Filter Test	Filter Test	INF3
	Sample Name:	11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
	Sample Date:	09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Parameters	**Unit**					
Metals						
Aluminum	mg/L	--	--	--	--	--
Aluminum (dissolved)	mg/L	--	--	--	--	--
Antimony	mg/L	--	--	--	--	0.0039 U
Antimony (dissolved)	mg/L	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	0.026
Arsenic (dissolved)	mg/L	--	--	--	--	--
Barium	mg/L	--	--	--	--	1.1
Barium (dissolved)	mg/L	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	0.0074
Beryllium (dissolved)	mg/L	--	--	--	--	--
Boron	mg/L	--	--	--	--	0.26
Boron (dissolved)	mg/L	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	0.0028 J
Cadmium (dissolved)	mg/L	--	--	--	--	--
Calcium	mg/L	--	--	--	--	130
Calcium (dissolved)	mg/L	--	--	--	--	--
Chromium	mg/L	--	--	--	--	0.12
Chromium (dissolved)	mg/L	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	0.051
Cobalt (dissolved)	mg/L	--	--	--	--	--
Copper	mg/L	--	--	--	--	0.11
Copper (dissolved)	mg/L	--	--	--	--	--
Iron	mg/L	--	--	--	--	110
Iron (dissolved)	mg/L	--	--	--	--	--
Lead	mg/L	--	--	--	--	0.12
Lead (dissolved)	mg/L	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	58
Magnesium (dissolved)	mg/L	--	--	--	--	--
Manganese	mg/L	--	--	--	--	1.1
Manganese (dissolved)	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Filter Test	Filter Test	Filter Test	Filter Test	INF3
	Sample Name:	11187072-Filter Test-3	11187072-Filter Test-4	11187072-Filter Test-5	11187072-Filter Test-6	INF 3
	Sample Date:	09/30/2019	09/30/2019	09/30/2019	09/30/2019	10/25/2019
Parameters	**Unit**					
Metals						
Mercury	mg/L	--	--	--	--	--
Mercury (dissolved)	mg/L	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	0.0084 J
Molybdenum (dissolved)	mg/L	--	--	--	--	--
Nickel	mg/L	--	--	--	--	0.095
Nickel (dissolved)	mg/L	--	--	--	--	--
Phosphorus	mg/L	--	--	--	--	--
Phosphorus (dissolved)	mg/L	--	--	--	--	--
Potassium	mg/L	--	--	--	--	25
Potassium (dissolved)	mg/L	--	--	--	--	--
Selenium	mg/L	--	--	--	--	0.0029 U
Selenium (dissolved)	mg/L	--	--	--	--	--
Silver	mg/L	--	--	--	--	0.0013 U
Silver (dissolved)	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	340
Sodium (dissolved)	mg/L	--	--	--	--	--
Strontium	mg/L	--	--	--	--	0.84
Strontium (dissolved)	mg/L	--	--	--	--	--
Thallium	mg/L	--	--	--	--	0.0042 U
Thallium (dissolved)	mg/L	--	--	--	--	--
Tin	mg/L	--	--	--	--	0.0048 J
Tin (dissolved)	mg/L	--	--	--	--	--
Titanium	mg/L	--	--	--	--	0.23
Titanium (dissolved)	mg/L	--	--	--	--	--
Vanadium	mg/L	--	--	--	--	0.20
Vanadium (dissolved)	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Filter Test**	**Filter Test**	**Filter Test**	**Filter Test**	**INF3**
	Sample Name:	**11187072-Filter Test-3**	**11187072-Filter Test-4**	**11187072-Filter Test-5**	**11187072-Filter Test-6**	**INF 3**
	Sample Date:	**09/30/2019**	**09/30/2019**	**09/30/2019**	**09/30/2019**	**10/25/2019**
Parameters	**Unit**					
Metals						
Zinc	mg/L	--	--	--	--	0.40
Zinc (dissolved)	mg/L	--	--	--	--	--
Mercury	ng/L	--	--	--	--	28 J
Mercury (dissolved)	ng/L	--	--	--	--	--
Mercury	µg/L	--	--	--	--	--
Mercury (dissolved)	µg/L	--	--	--	--	--
Thallium	µg/L	--	--	--	--	--
Thallium (dissolved)	µg/L	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)						
2-Ethoxyethanol	mg/L	--	--	--	--	--
Ethylene glycol	mg/L	--	--	--	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--	--	--	--
General Chemistry						
Percent solids	%	--	--	--	--	--
Ignitability	Deg F	--	--	--	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	190 J
Alkalinity, carbonate	mg/L	--	--	--	--	20 UJ
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	190 J
Ammonia-N	mg/L	--	--	--	--	0.073 J
Biochemical oxygen demand (BOD)	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	--	0.12 J
Chemical oxygen demand (COD)	mg/L	--	--	--	--	170
Chloride	mg/L	--	--	--	--	540
Ferrous iron	mg/L	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID: Sample Name: Sample Date:		Filter Test 11187072-Filter Test-3 09/30/2019	Filter Test 11187072-Filter Test-4 09/30/2019	Filter Test 11187072-Filter Test-5 09/30/2019	Filter Test 11187072-Filter Test-6 09/30/2019	INF3 INF 3 10/25/2019
Parameters	**Unit**					
General Chemistry						
Fluoride	mg/L	--	--	--	--	1.2 U
Hydrogen sulfide	mg/L	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	--	R
Nitrite (as N)	mg/L	--	--	--	--	R
Oil and grease (HEM), total	mg/L	--	--	--	--	2.0 J
Oil and grease (SGT HEM), non-polar material	mg/L	--	--	--	--	1.0 U
Phosphorus	mg/L	--	--	--	--	1.1
Phosphorus, total (as PO4)	mg/L	--	--	--	--	3.3
Sulfate	mg/L	--	--	--	--	37
Sulfide	mg/L	--	--	--	--	0.57
TOC average duplicates	mg/L	--	--	--	--	--
Total dissolved solids (TDS)	mg/L	--	--	--	--	980
Total organic carbon (TOC)	mg/L	--	--	--	--	17 J
Total suspended solids (TSS)	mg/L	--	--	--	--	3500
Free liquid	none	--	--	--	--	--
pH, lab	s.u.	--	--	--	--	8.2 J
Cyanide (total)	µg/L	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
- Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		INF3	INF4	INF4	INF4	SS	Western
Sample Name:		INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVE	SS	11187072-Western-GW
Sample Date:		10/25/2019	10/25/2019	10/25/2019	10/26/2019	10/26/2019	01/29/2020
				Duplicate			
Parameters	**Unit**						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	--	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		INF3	INF4	INF4	INF4	SS	Western
Sample Name:		INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVE	SS	11187072-Western-GW
Sample Date:		10/25/2019	10/25/2019	10/25/2019	10/26/2019	10/26/2019	01/29/2020
				Duplicate			
Parameters	**Unit**						
Volatile Organic Compounds							
Hexachlorobutadiene	µg/L	--	--	--	--	--	--
m&p-Xylenes	µg/L	--	--	--	--	--	--
o-Xylene	µg/L	--	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--	--
Trichloroethene	µg/L	--	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--	--
Xylenes (total)	µg/L	--	--	--	--	--	--
Semivolatile Organic Compounds							
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--	--	--	--
2,4,5-Trichlorophenol	µg/L	--	--	--	--	--	--
2,4,6-Trichlorophenol	µg/L	--	--	--	--	--	--
2,4-Dichlorophenol	µg/L	--	--	--	--	--	--
2,4-Dimethylphenol	µg/L	--	--	--	--	--	--
2,4-Dinitrophenol	µg/L	--	--	--	--	--	--
2,4-Dinitrotoluene	µg/L	--	--	--	--	--	--
2,6-Dinitrotoluene	µg/L	--	--	--	--	--	--
2-Chloronaphthalene	µg/L	--	--	--	--	--	--
2-Chlorophenol	µg/L	--	--	--	--	--	--
2-Methylnaphthalene	µg/L	--	--	--	--	--	--
2-Methylphenol	µg/L	--	--	--	--	--	--
2-Nitroaniline	µg/L	--	--	--	--	--	--
2-Nitrophenol	µg/L	--	--	--	--	--	--
3&4-Methylphenol	µg/L	--	--	--	--	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	--	--	--	--
3-Nitroaniline	µg/L	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	INF3	INF4	INF4	INF4	SS	Western
	Sample Name:	INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVI	SS	11187072-Western-GW
	Sample Date:	10/25/2019	10/25/2019	10/25/2019	10/26/2019	10/26/2019	01/29/2020
				Duplicate			
Parameters	**Unit**						
Semivolatile Organic Compounds							
4-Bromophenyl phenyl ether	µg/L	--	--	--	--	--	--
4-Chloro-3-methylphenol	µg/L	--	--	--	--	--	--
4-Chloroaniline	µg/L	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	--	--	--	--
4-Nitroaniline	µg/L	--	--	--	--	--	--
4-Nitrophenol	µg/L	--	--	--	--	--	--
Acenaphthene	µg/L	--	--	--	--	--	--
Acenaphthylene	µg/L	--	--	--	--	--	--
Acetophenone	µg/L	--	--	--	--	--	--
Anthracene	µg/L	--	--	--	--	--	--
Atrazine	µg/L	--	--	--	--	--	--
Benzaldehyde	µg/L	--	--	--	--	--	--
Benzo(a)anthracene	µg/L	--	--	--	--	--	--
Benzo(a)pyrene	µg/L	--	--	--	--	--	--
Benzo(b)fluoranthene	µg/L	--	--	--	--	--	--
Benzo(g,h,i)perylene	µg/L	--	--	--	--	--	--
Benzo(k)fluoranthene	µg/L	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	--	--	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	--	--	--	--
Caprolactam	µg/L	--	--	--	--	--	--
Carbazole	µg/L	--	--	--	--	--	--
Chrysene	µg/L	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--	--	--	--
Dibenz(a,h)anthracene	µg/L	--	--	--	--	--	--
Dibenzofuran	µg/L	--	--	--	--	--	--
Diethyl phthalate	µg/L	--	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		INF3	INF4	INF4	INF4	SS	Western
Sample Name:		**INF 3 - DISSOLVED**	**INF 4**	**DUP**	**F 4 - DISSOLVE**	**SS**	**11187072-Western-GW**
Sample Date:		**10/25/2019**	**10/25/2019**	**10/25/2019**	**10/26/2019**	**10/26/2019**	**01/29/2020**
				Duplicate			
Parameters	**Unit**						
Semivolatile Organic Compounds							
Dimethyl phthalate	µg/L	--	--	--	--	--	--
Fluoranthene	µg/L	--	--	--	--	--	--
Fluorene	µg/L	--	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--	--
Hexachlorobutadiene	µg/L	--	--	--	--	--	--
Hexachlorocyclopentadiene	µg/L	--	--	--	--	--	--
Hexachloroethane	µg/L	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--	--	--
Isophorone	µg/L	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--	--	--	--	--
N-Nitrosodiphenylamine	µg/L	--	--	--	--	--	--
Naphthalene	µg/L	--	--	--	--	--	--
Nitrobenzene	µg/L	--	--	--	--	--	--
Pentachlorophenol	µg/L	--	--	--	--	--	--
Phenanthrene	µg/L	--	--	--	--	--	--
Phenol	µg/L	--	--	--	--	--	--
Pyrene	µg/L	--	--	--	--	--	--
Pyridine	µg/L	--	--	--	--	--	--
Herbicides							
2,4,5-TP (Silvex)	µg/L	--	--	--	--	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	--	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		INF3	INF4	INF4	INF4	SS	Western
Sample Name:		INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVI	SS	11187072-Western-GW
Sample Date:		10/25/2019	10/25/2019	10/25/2019 Duplicate	10/26/2019	10/26/2019	01/29/2020
Parameters	**Unit**						
Polychlorinated Biphenyls (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	--	--	--	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	µg/L	--	--	--	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	µg/L	--	--	--	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	µg/L	--	--	--	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	µg/L	--	--	--	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	--	--	--	--	--	--
Aroclor-1254 (PCB-1254)	µg/L	--	--	--	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	µg/L	--	--	--	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	--	--	--	--	--	--
Pesticides							
alpha-Chlordane	µg/L	--	--	--	--	--	--
Chlordane	µg/L	--	--	--	--	--	--
Endrin	µg/L	--	--	--	--	--	--
gamma-BHC (lindane)	µg/L	--	--	--	--	--	--
gamma-Chlordane	µg/L	--	--	--	--	--	--
Heptachlor	µg/L	--	--	--	--	--	--
Heptachlor epoxide	µg/L	--	--	--	--	--	--
Hexachlorobenzene	µg/L	--	--	--	--	--	--
Methoxychlor	µg/L	--	--	--	--	--	--
Toxaphene	µg/L	--	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		**INF3**	**INF4**	**INF4**	**INF4**	**SS**	**Western**
Sample Name:		**INF 3 - DISSOLVED**	**INF 4**	**DUP**	**F 4 - DISSOLVE**	**SS**	**11187072-Western-GW**
Sample Date:		**10/25/2019**	**10/25/2019**	**10/25/2019**	**10/26/2019**	**10/26/2019**	**01/29/2020**
				Duplicate			
Parameters	**Unit**						
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)							
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	--	--	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/g	--	--	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	--	--	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/g	--	--	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	--	--	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/g	--	--	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	--	--	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/g	--	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	--	--	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	--	8800 J	--	--	--	51 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	5400 J+	--	--	280 J+	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	--	370 J-	--	--	--	13.8 U

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		INF3	INF4	INF4	INF4	SS	Western
Sample Name:		INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVE	SS	11187072-Western-GW
Sample Date:		10/25/2019	10/25/2019	10/25/2019 Duplicate	10/26/2019	10/26/2019	01/29/2020
Parameters	**Unit**						
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)							
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	170	--	--	11 U	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	540 J-	--	--	--	9.52 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	250	--	--	27 J	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	--	600 J-	--	--	--	7.54 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	240	--	--	12 J	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	--	240 J-	--	--	--	0.71 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	88	--	--	4.9 U	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	4.9 U	--	--	--	7.72 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	4.6 U	--	--	3.1 U	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	2500 J-	--	--	--	0.79 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	750	--	--	31 J	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	20 J-	--	--	--	0.48 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	6.7 J	--	--	2.1 J	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	650 J-	--	--	--	0.70 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	190	--	--	9.8 J	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	8.5 J-	--	--	--	6.10 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	5.7 J	--	--	1.7 U	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	--	40 J-	--	--	--	0.53 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	14 J	--	--	4.8 U	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	130	--	--	--	0.47 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	40 J	--	--	3.0 J	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	1900	--	--	--	0.42 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	450	--	--	20 J	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	73 J-	--	--	--	0.49 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	23 J	--	--	2.8 U	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	1100	--	--	--	0.46 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	250	--	--	11 J	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	15000	--	--	--	3.4 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	3800	--	--	150 J	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	--	46000	--	--	--	0.35 U

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	INF3	INF4	INF4	INF4	SS	Western
	Sample Name:	INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVE	SS	11187072-Western-GW
	Sample Date:	10/25/2019	10/25/2019	10/25/2019	10/26/2019	10/26/2019	01/29/2020
				Duplicate			
Parameters	**Unit**						
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)							
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	11000	--	--	540 J	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	1300 J	--	--	--	8.3 J
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	630 J	--	--	51 J	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	--	1100 J	--	--	--	3.2 J
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	430 J	--	--	20 J	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	180 J	--	--	--	4.1 J
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	74 J	--	--	6.9 J	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	--	3800 J	--	--	--	0.79 U
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	1100 J	--	--	48 J	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	160 J	--	--	--	0.47 U
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	51 J	--	--	3.0 J	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	--	4600 J	--	--	--	0.46 U
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	1100 J	--	--	44 J	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	16000 J	--	--	--	3.4 J
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	4000 J	--	--	170 J	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	--	100000 J	--	--	--	0.35 U
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	21000 J	--	--	920 J	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	--	20500	--	--	--	3.4
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	--	20500	--	--	--	4.67

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**INF3**	**INF4**	**INF4**	**INF4**	**SS**	**Western**
	Sample Name:	**INF 3 - DISSOLVED**	**INF 4**	**DUP**	**F 4 - DISSOLVE**	**SS**	**11187072-Western-GW**
	Sample Date:	**10/25/2019**	**10/25/2019**	**10/25/2019**	**10/26/2019**	**10/26/2019**	**01/29/2020**
				Duplicate			
Parameters	**Unit**						
Metals							
Aluminum	mg/L	--	--	--	--	--	--
Aluminum (dissolved)	mg/L	--	--	--	--	--	--
Antimony	mg/L	--	0.0039 U	--	--	--	--
Antimony (dissolved)	mg/L	0.0039 U	--	--	0.0039 U	--	--
Arsenic	mg/L	--	0.023	--	--	--	--
Arsenic (dissolved)	mg/L	0.014	--	--	0.0041 J	--	--
Barium	mg/L	--	0.96	--	--	--	--
Barium (dissolved)	mg/L	0.55	--	--	0.30	--	--
Beryllium	mg/L	--	0.0062	--	--	--	--
Beryllium (dissolved)	mg/L	0.0026 J	--	--	0.00042 U	--	--
Boron	mg/L	--	0.25	--	--	--	--
Boron (dissolved)	mg/L	0.22	--	--	0.20	--	--
Cadmium	mg/L	--	0.0025 J	--	--	--	--
Cadmium (dissolved)	mg/L	0.0013 J	--	--	0.00040 J	--	--
Calcium	mg/L	--	120	--	--	--	--
Calcium (dissolved)	mg/L	67	--	--	55	--	--
Chromium	mg/L	--	0.11	--	--	--	--
Chromium (dissolved)	mg/L	0.048	--	--	0.0039 J	--	--
Cobalt	mg/L	--	0.043	--	--	--	--
Cobalt (dissolved)	mg/L	0.017	--	--	0.0012 J	--	--
Copper	mg/L	--	0.093	--	--	--	--
Copper (dissolved)	mg/L	0.036	--	--	0.0081 U	--	--
Iron	mg/L	--	88	--	--	--	--
Iron (dissolved)	mg/L	40	--	--	2.9	--	--
Lead	mg/L	--	0.098	--	--	--	--
Lead (dissolved)	mg/L	0.037	--	--	0.0022 U	--	--
Magnesium	mg/L	--	54	--	--	--	--
Magnesium (dissolved)	mg/L	42	--	--	32	--	--
Manganese	mg/L	--	1.0	--	--	--	--
Manganese (dissolved)	mg/L	0.34	--	--	0.035	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	INF3	INF4	INF4	INF4	SS	Western
	Sample Name:	INF 3 - DISSOLVED	INF 4	DUP	F 4 - DISSOLVE	SS	11187072-Western-GW
	Sample Date:	10/25/2019	10/25/2019	10/25/2019 Duplicate	10/26/2019	10/26/2019	01/29/2020
Parameters	**Unit**						
Metals							
Mercury	mg/L	--	--	--	--	--	--
Mercury (dissolved)	mg/L	--	--	--	--	--	--
Molybdenum	mg/L	--	0.0090 J	--	--	--	--
Molybdenum (dissolved)	mg/L	0.0084 J	--	--	0.010	--	--
Nickel	mg/L	--	0.081	--	--	--	--
Nickel (dissolved)	mg/L	0.033	--	--	0.0030 J	--	--
Phosphorus	mg/L	--	--	--	--	--	--
Phosphorus (dissolved)	mg/L	--	--	--	--	--	--
Potassium	mg/L	--	23	--	--	--	--
Potassium (dissolved)	mg/L	17	--	--	13	--	--
Selenium	mg/L	--	0.0029 U	--	--	--	--
Selenium (dissolved)	mg/L	0.0029 U	--	--	0.0029 U	--	--
Silver	mg/L	--	0.0013 U	--	--	--	--
Silver (dissolved)	mg/L	0.0013 U	--	--	0.0013 U	--	--
Sodium	mg/L	--	350	--	--	--	--
Sodium (dissolved)	mg/L	340	--	--	350	--	--
Strontium	mg/L	--	0.79	--	--	--	--
Strontium (dissolved)	mg/L	0.57	--	--	0.47	--	--
Thallium	mg/L	--	0.0042 U	--	--	--	--
Thallium (dissolved)	mg/L	0.0042 U	--	--	0.0042 U	--	--
Tin	mg/L	--	0.0057 J	--	--	--	--
Tin (dissolved)	mg/L	0.0012 J	--	--	0.00059 U	--	--
Titanium	mg/L	--	0.22	--	--	--	--
Titanium (dissolved)	mg/L	0.17	--	--	0.025	--	--
Vanadium	mg/L	--	0.17	--	--	--	--
Vanadium (dissolved)	mg/L	0.086	--	--	0.012	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		INF3	INF4	INF4	INF4	SS	Western
Sample Name:		**INF 3 - DISSOLVED**	**INF 4**	**DUP**	**F 4 - DISSOLV**	**SS**	**11187072-Western-GW**
Sample Date:		**10/25/2019**	**10/25/2019**	**10/25/2019**	**10/26/2019**	**10/26/2019**	**01/29/2020**
				Duplicate			
Parameters	**Unit**						
Metals							
Zinc	mg/L	--	0.36	--	--	--	--
Zinc (dissolved)	mg/L	0.15	--	--	0.026 J	--	--
Mercury	ng/L	--	--	6.3 J	--	--	--
Mercury (dissolved)	ng/L	--	--	--	22 J	--	--
Mercury	µg/L	--	--	--	--	--	--
Mercury (dissolved)	µg/L	--	--	--	--	--	--
Thallium	µg/L	--	--	--	--	--	--
Thallium (dissolved)	µg/L	--	--	--	--	--	--
Total Petroleum Hydrocarbons (TPH)							
2-Ethoxyethanol	mg/L	--	--	--	--	--	--
Ethylene glycol	mg/L	--	--	--	--	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--	--	--	--	--
General Chemistry							
Percent solids	%	--	--	--	--	--	--
Ignitability	Deg F	--	--	--	--	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	170 J	--	--	--	--
Alkalinity, carbonate	mg/L	--	20 UJ	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	170 J	--	--	--	--
Ammonia-N	mg/L	--	0.23	--	--	--	--
Biochemical oxygen demand (BOD)	mg/L	--	--	--	--	--	--
Bromide	mg/L	--	0.15 J	--	--	--	--
Chemical oxygen demand (COD)	mg/L	--	310	--	--	--	--
Chloride	mg/L	--	500	--	--	--	--
Ferrous iron	mg/L	--	--	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Location ID:		**INF3**	**INF4**	**INF4**	**INF4**	**SS**	**Western**
Sample Name:		**INF 3 - DISSOLVED**	**INF 4**	**DUP**	**F 4 - DISSOLVI**	**SS**	**11187072-Western-GW**
Sample Date:		**10/25/2019**	**10/25/2019**	**10/25/2019**	**10/26/2019**	**10/26/2019**	**01/29/2020**
				Duplicate			
Parameters	**Unit**						
General Chemistry							
Fluoride	mg/L	--	0.26 J	--	--	--	--
Hydrogen sulfide	mg/L	--	--	--	--	--	--
Nitrate (as N)	mg/L	--	R	--	--	--	--
Nitrite (as N)	mg/L	--	R	--	--	--	--
Oil and grease (HEM), total	mg/L	--	2.1 J	1.8 J	--	--	--
Oil and grease (SGT HEM), non-polar material	mg/L	--	1.0 U	1.0 U	--	--	--
Phosphorus	mg/L	--	0.25	--	--	--	--
Phosphorus, total (as PO4)	mg/L	--	0.77	--	--	--	--
Sulfate	mg/L	--	36	--	--	--	--
Sulfide	mg/L	--	0.061	0.19	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--
Total dissolved solids (TDS)	mg/L	--	1100	--	--	--	--
Total organic carbon (TOC)	mg/L	--	9.2 J	--	--	--	--
Total suspended solids (TSS)	mg/L	--	4600	--	--	110000	--
Free liquid	none	--	--	--	--	--	--
pH, lab	s.u.	--	7.9 J	8.9 J	--	--	--
Cyanide (total)	µg/L	--	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
- Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/L	--	--
1,1,2-Trichloroethane	µg/L	--	--
1,1-Dichloroethane	µg/L	--	--
1,1-Dichloroethene	µg/L	--	--
1,2,4-Trichlorobenzene	µg/L	--	--
1,2-Dichlorobenzene	µg/L	--	--
1,2-Dichloroethane	µg/L	--	--
1,2-Dichloropropane	µg/L	--	--
1,3-Dichlorobenzene	µg/L	--	--
1,4-Dichlorobenzene	µg/L	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--
Benzene	µg/L	--	--
Bromodichloromethane	µg/L	--	--
Bromoform	µg/L	--	--
Carbon disulfide	µg/L	--	--
Carbon tetrachloride	µg/L	--	--
Chlorobenzene	µg/L	--	--
Chloroethane	µg/L	--	--
Chloroform (Trichloromethane)	µg/L	--	--
cis-1,2-Dichloroethene	µg/L	--	--
cis-1,3-Dichloropropene	µg/L	--	--
Ethylbenzene	µg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Volatile Organic Compounds			
Hexachlorobutadiene	µg/L	--	--
m&p-Xylenes	µg/L	--	--
o-Xylene	µg/L	--	--
Tetrachloroethene	µg/L	--	--
Toluene	µg/L	--	--
trans-1,2-Dichloroethene	µg/L	--	--
trans-1,3-Dichloropropene	µg/L	--	--
Trichloroethene	µg/L	--	--
Vinyl chloride	µg/L	--	--
Xylenes (total)	µg/L	--	--
Semivolatile Organic Compounds			
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--
2,4,5-Trichlorophenol	µg/L	--	--
2,4,6-Trichlorophenol	µg/L	--	--
2,4-Dichlorophenol	µg/L	--	--
2,4-Dimethylphenol	µg/L	--	--
2,4-Dinitrophenol	µg/L	--	--
2,4-Dinitrotoluene	µg/L	--	--
2,6-Dinitrotoluene	µg/L	--	--
2-Chloronaphthalene	µg/L	--	--
2-Chlorophenol	µg/L	--	--
2-Methylnaphthalene	µg/L	--	--
2-Methylphenol	µg/L	--	--
2-Nitroaniline	µg/L	--	--
2-Nitrophenol	µg/L	--	--
3&4-Methylphenol	µg/L	--	--
3,3'-Dichlorobenzidine	µg/L	--	--
3-Nitroaniline	µg/L	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Semivolatile Organic Compounds			
4-Bromophenyl phenyl ether	µg/L	--	--
4-Chloro-3-methylphenol	µg/L	--	--
4-Chloroaniline	µg/L	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--
4-Nitroaniline	µg/L	--	--
4-Nitrophenol	µg/L	--	--
Acenaphthene	µg/L	--	--
Acenaphthylene	µg/L	--	--
Acetophenone	µg/L	--	--
Anthracene	µg/L	--	--
Atrazine	µg/L	--	--
Benzaldehyde	µg/L	--	--
Benzo(a)anthracene	µg/L	--	--
Benzo(a)pyrene	µg/L	--	--
Benzo(b)fluoranthene	µg/L	--	--
Benzo(g,h,i)perylene	µg/L	--	--
Benzo(k)fluoranthene	µg/L	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--
bis(2-Chloroethyl)ether	µg/L	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--
Caprolactam	µg/L	--	--
Carbazole	µg/L	--	--
Chrysene	µg/L	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--
Dibenz(a,h)anthracene	µg/L	--	--
Dibenzofuran	µg/L	--	--
Diethyl phthalate	µg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Semivolatile Organic Compounds			
Dimethyl phthalate	µg/L	--	--
Fluoranthene	µg/L	--	--
Fluorene	µg/L	--	--
Hexachlorobenzene	µg/L	--	--
Hexachlorobutadiene	µg/L	--	--
Hexachlorocyclopentadiene	µg/L	--	--
Hexachloroethane	µg/L	--	--
Indeno(1,2,3-cd)pyrene	µg/L	--	--
Isophorone	µg/L	--	--
N-Nitrosodi-n-propylamine	µg/L	--	--
N-Nitrosodiphenylamine	µg/L	--	--
Naphthalene	µg/L	--	--
Nitrobenzene	µg/L	--	--
Pentachlorophenol	µg/L	--	--
Phenanthrene	µg/L	--	--
Phenol	µg/L	--	--
Pyrene	µg/L	--	--
Pyridine	µg/L	--	--
Herbicides			
2,4,5-TP (Silvex)	µg/L	--	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	µg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Polychlorinated Biphenyls (PCBs)			
Aroclor-1016 (PCB-1016)	µg/L	--	--
Aroclor-1016 (PCB-1016) (dissolved)	µg/L	--	--
Aroclor-1221 (PCB-1221)	µg/L	--	--
Aroclor-1221 (PCB-1221) (dissolved)	µg/L	--	--
Aroclor-1232 (PCB-1232)	µg/L	--	--
Aroclor-1232 (PCB-1232) (dissolved)	µg/L	--	--
Aroclor-1242 (PCB-1242)	µg/L	--	--
Aroclor-1242 (PCB-1242) (dissolved)	µg/L	--	--
Aroclor-1248 (PCB-1248)	µg/L	--	--
Aroclor-1248 (PCB-1248) (dissolved)	µg/L	--	--
Aroclor-1254 (PCB-1254)	µg/L	--	--
Aroclor-1254 (PCB-1254) (dissolved)	µg/L	--	--
Aroclor-1260 (PCB-1260)	µg/L	--	--
Aroclor-1260 (PCB-1260) (dissolved)	µg/L	--	--
Pesticides			
alpha-Chlordane	µg/L	--	--
Chlordane	µg/L	--	--
Endrin	µg/L	--	--
gamma-BHC (lindane)	µg/L	--	--
gamma-Chlordane	µg/L	--	--
Heptachlor	µg/L	--	--
Heptachlor epoxide	µg/L	--	--
Hexachlorobenzene	µg/L	--	--
Methoxychlor	µg/L	--	--
Toxaphene	µg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Western	Western
	Sample Name:	11187072-Western-Solids	11187072-Western-Rock
	Sample Date:	01/29/2020	02/11/2020
Parameters	**Unit**		
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	540	160
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	12 J	3.4 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	26	12
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	3.2 J	1.2 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.29 U	0.14 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.69 U	0.30 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.21 U	0.13 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.67 J	0.33 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.17 U	0.11 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.68 J	0.26 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.11 U	0.20 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.17 U	0.058 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.13 U	0.13 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.12 U	0.068 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.17 U	0.057 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1.0 J	0.15 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	2.5	0.18 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	62 J	26 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	9.6 J	3.7 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.9 J	2.1 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	1.9 J	0.98 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.20 J	0.24 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	1.4 J	0.13 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1.0 J	0.15 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	5.0 J	0.18 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1.84	0.379
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2.02	0.474
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolv	pg/L	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolv	pg/L	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved	pg/L	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Western	Western
	Sample Name:	11187072-Western-Solids	11187072-Western-Rock
	Sample Date:	01/29/2020	02/11/2020
Parameters	**Unit**		
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)			
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	--	--
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	--	--
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	--	--
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	--	--
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Metals			
Aluminum	mg/L	--	--
Aluminum (dissolved)	mg/L	--	--
Antimony	mg/L	--	--
Antimony (dissolved)	mg/L	--	--
Arsenic	mg/L	--	--
Arsenic (dissolved)	mg/L	--	--
Barium	mg/L	--	--
Barium (dissolved)	mg/L	--	--
Beryllium	mg/L	--	--
Beryllium (dissolved)	mg/L	--	--
Boron	mg/L	--	--
Boron (dissolved)	mg/L	--	--
Cadmium	mg/L	--	--
Cadmium (dissolved)	mg/L	--	--
Calcium	mg/L	--	--
Calcium (dissolved)	mg/L	--	--
Chromium	mg/L	--	--
Chromium (dissolved)	mg/L	--	--
Cobalt	mg/L	--	--
Cobalt (dissolved)	mg/L	--	--
Copper	mg/L	--	--
Copper (dissolved)	mg/L	--	--
Iron	mg/L	--	--
Iron (dissolved)	mg/L	--	--
Lead	mg/L	--	--
Lead (dissolved)	mg/L	--	--
Magnesium	mg/L	--	--
Magnesium (dissolved)	mg/L	--	--
Manganese	mg/L	--	--
Manganese (dissolved)	mg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Metals			
Mercury	mg/L	--	--
Mercury (dissolved)	mg/L	--	--
Molybdenum	mg/L	--	--
Molybdenum (dissolved)	mg/L	--	--
Nickel	mg/L	--	--
Nickel (dissolved)	mg/L	--	--
Phosphorus	mg/L	--	--
Phosphorus (dissolved)	mg/L	--	--
Potassium	mg/L	--	--
Potassium (dissolved)	mg/L	--	--
Selenium	mg/L	--	--
Selenium (dissolved)	mg/L	--	--
Silver	mg/L	--	--
Silver (dissolved)	mg/L	--	--
Sodium	mg/L	--	--
Sodium (dissolved)	mg/L	--	--
Strontium	mg/L	--	--
Strontium (dissolved)	mg/L	--	--
Thallium	mg/L	--	--
Thallium (dissolved)	mg/L	--	--
Tin	mg/L	--	--
Tin (dissolved)	mg/L	--	--
Titanium	mg/L	--	--
Titanium (dissolved)	mg/L	--	--
Vanadium	mg/L	--	--
Vanadium (dissolved)	mg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
Metals			
Zinc	mg/L	--	--
Zinc (dissolved)	mg/L	--	--
Mercury	ng/L	--	--
Mercury (dissolved)	ng/L	--	--
Mercury	µg/L	--	--
Mercury (dissolved)	µg/L	--	--
Thallium	µg/L	--	--
Thallium (dissolved)	µg/L	--	--
Total Petroleum Hydrocarbons (TPH)			
2-Ethoxyethanol	mg/L	--	--
Ethylene glycol	mg/L	--	--
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	--	--
General Chemistry			
Percent solids	%	99.7	94.2
Ignitability	Deg F	--	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--
Alkalinity, bicarbonate	mg/L	--	--
Alkalinity, carbonate	mg/L	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--
Ammonia-N	mg/L	--	--
Biochemical oxygen demand (BOD)	mg/L	--	--
Bromide	mg/L	--	--
Chemical oxygen demand (COD)	mg/L	--	--
Chloride	mg/L	--	--
Ferrous iron	mg/L	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Western**	**Western**
	Sample Name:	**11187072-Western-Solids**	**11187072-Western-Rock**
	Sample Date:	**01/29/2020**	**02/11/2020**
Parameters	**Unit**		
General Chemistry			
Fluoride	mg/L	--	--
Hydrogen sulfide	mg/L	--	--
Nitrate (as N)	mg/L	--	--
Nitrite (as N)	mg/L	--	--
Oil and grease (HEM), total	mg/L	--	--
Oil and grease (SGT HEM), non-polar material	mg/L	--	--
Phosphorus	mg/L	--	--
Phosphorus, total (as PO4)	mg/L	--	--
Sulfate	mg/L	--	--
Sulfide	mg/L	--	--
TOC average duplicates	mg/L	--	--
Total dissolved solids (TDS)	mg/L	--	--
Total organic carbon (TOC)	mg/L	--	--
Total suspended solids (TSS)	mg/L	--	--
Free liquid	none	--	--
pH, lab	s.u.	--	--
Cyanide (total)	µg/L	--	--

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
- Not detected; associated reporting limit is estimated
R - Rejected
-- - Not applicable
s.u. - Standard Units

Table 1B

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters															Comments
						VOCs, TCLP	SVOCs, TCLP	Pesticides, TCLP	PCBs, TCLP	Herbicides, TCLP	Dioxins and Furans, TCLP	Metals, TCLP	TPH	Ignitability/Flashpoint	Cyanide	Sulfide	pH	Free Liquid	Mosture	Methomyl, TCLP	
180-100205-1	11187072-N.TREATMENT AREA #2	Area 2	Water, experimental	12/18/2019	13:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	11187072-N.TREATMENT AREA #3	Area 3	Water, experimental	12/18/2019	14:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	11187072-N.TREATMENT AREA #4	Area 4	Water, experimental	12/18/2019	14:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
180-97287-1 and 180-97287-2	11187072-NORTH-IMPCT-INITIALS	Inital	Water, experimental	10/15/2019	15:00	X	X	X	X	X	X	X	X	X	X	X	X	X		X	

Notes:

Notes:

TCLP - Toxicity Characteristic Leaching Procedure
VOCs - Volatile Organic Compounds
SVOCs - Semi-volatile Organic Compounds
PCBs - Polychlorinated Biphenyls
TPH - Total Petroleum Hydrocarbons

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 2**	**Area 3**
	Sample Name:	**11187072-N.TREATMENT AREA #2**	**11187072-N.TREATMENT AREA #3**
	Sample Date:	**12/18/2019**	**12/18/2019**
Parameters	**Unit**		
Volatile Organic Compounds, TCLP			
1,1,1,2-Tetrachloroethane	mg/L	0.16 U	0.16 U
1,1,1-Trichloroethane	mg/L	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	mg/L	0.12 U	0.12 U
1,1,2-Trichloroethane	mg/L	0.096 U	0.096 U
1,1-Dichloroethene	mg/L	0.11 U	0.11 U
1,2,3-Trichloropropane	mg/L	0.11 U	0.11 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.11 U	0.11 U
1,2-Dichloroethane	mg/L	0.058 U	0.058 U
1,3-Dichloropropene	mg/L	0.13 U	0.13 U
1,4-Dichlorobenzene	mg/L	0.041 U	0.041 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.12 U	0.12 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.074 U	0.074 U
Acetone	mg/L	0.13 U	0.13 U
Acetonitrile	mg/L	2.0 U	2.0 U
Acrylonitrile	mg/L	1.3 U	1.3 U
Benzene	mg/L	0.079 U	0.079 U
Bromodichloromethane	mg/L	0.094 U	0.094 U
Bromoform	mg/L	0.10 U	0.10 U
Bromomethane (Methyl bromide)	mg/L	0.18 U	0.18 U
Carbon disulfide	mg/L	0.12 U	0.12 U
Carbon tetrachloride	mg/L	0.13 U	0.13 U
Chlorobenzene	mg/L	0.063 U	0.063 U
Chloroform (Trichloromethane)	mg/L	0.085 U	0.085 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.12 U	0.12 U
Ethylbenzene	mg/L	0.086 U	0.086 U
Hexachlorobutadiene	mg/L	0.073 U	0.073 U
Isobutanol (isobutyl alcohol)	mg/L	3.6 U	3.6 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 2**	**Area 3**
	Sample Name:	**11187072-N.TREATMENT AREA #2**	**11187072-N.TREATMENT AREA #3**
	Sample Date:	**12/18/2019**	**12/18/2019**
Parameters	**Unit**		
Volatile Organic Compounds, TCLP			
Methyl acrylonitrile	mg/L	1.6 U	1.6 U
Methylene chloride	mg/L	0.15 U	0.15 U
Styrene	mg/L	0.053 U	0.053 U
Tetrachloroethene	mg/L	0.080 U	0.080 U
Toluene	mg/L	0.067 U	0.067 U
trans-1,3-Dichloropropene	mg/L	0.069 U	0.069 U
Trichloroethene	mg/L	0.060 U	0.060 U
Trichlorofluoromethane (CFC-11)	mg/L	0.058 U	0.058 U
Vinyl chloride	mg/L	0.15 U	0.15 U
Xylenes (total)	mg/L	0.17 U	0.17 U
Semivolatile Organic Compounds, TCLP			
1,4-Dichlorobenzene	mg/L	0.0045 U	0.0045 U
2,4,5-Trichlorophenol	mg/L	0.0079 U	0.0079 U
2,4,6-Trichlorophenol	mg/L	0.0095 U	0.0095 U
2,4-Dinitrotoluene	mg/L	0.0079 U	0.0079 U
2-Methylphenol	mg/L	0.0040 U	0.0040 U
3&4-Methylphenol	mg/L	0.0079 U	0.0079 U
Hexachlorobenzene	mg/L	0.0055 U	0.0055 U
Hexachlorobutadiene	mg/L	0.0084 U	0.0084 U
Hexachloroethane	mg/L	0.0040 U	0.0040 U
Nitrobenzene	mg/L	0.012 U	0.012 U
Pentachlorophenol	mg/L	0.0075 U	0.0075 U
Pyridine	mg/L	0.0082 U	0.0082 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Area 2	Area 3
	Sample Name:	11187072-N.TREATMENT AREA #2	11187072-N.TREATMENT AREA #3
	Sample Date:	12/18/2019	12/18/2019
Parameters	**Unit**		
Herbicides, TCLP			
2,4,5-TP (Silvex)	mg/L	0.0030 U	0.0030 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	0.020 U	0.020 U
Dinoseb	mg/L	0.038 U	0.038 U
PCBs, TCLP			
Aroclor-1016 (PCB-1016)	mg/L	0.00019 U	0.00019 U
Aroclor-1221 (PCB-1221)	mg/L	0.00022 U	0.00023 U
Aroclor-1232 (PCB-1232)	mg/L	0.00020 U	0.00021 U
Aroclor-1242 (PCB-1242)	mg/L	0.00036 U	0.00036 U
Aroclor-1248 (PCB-1248)	mg/L	0.00012 U	0.00012 U
Aroclor-1254 (PCB-1254)	mg/L	0.00037 U	0.00038 U
Aroclor-1260 (PCB-1260)	mg/L	0.00015 U	0.00016 U
Pesticides, TCLP			
4,4'-DDD	mg/L	0.00021 U	0.00021 U
4,4'-DDE	mg/L	0.00012 U	0.00012 U
4,4'-DDT	mg/L	0.00012 U	0.00012 U
alpha-Chlordane	mg/L	0.00015 U	0.00015 U
Chlordane	mg/L	0.0029 U	0.0029 U
Dieldrin	mg/L	0.00011 U	0.00011 U
Endosulfan I	mg/L	0.00027 U	0.00027 U
Endosulfan II	mg/L	0.00013 U	0.00013 U
Endosulfan sulfate	mg/L	0.00026 U	0.00026 U
Endrin	mg/L	0.000091 U	0.000091 U
gamma-BHC (lindane)	mg/L	0.00012 U	0.00012 U
gamma-Chlordane	mg/L	0.00016 U	0.00016 U
Heptachlor	mg/L	0.00018 U	0.00018 U
Heptachlor epoxide	mg/L	0.00014 U	0.00014 U
Methoxychlor	mg/L	0.00031 U	0.00031 U
Mirex	mg/L	0.000084 U	0.000084 U
Toxaphene	mg/L	0.020 U	0.020 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameters	Unit	Area 2	Area 3
Location ID:		Area 2	Area 3
Sample Name:		11187072-N.TREATMENT AREA #2	11187072-N.TREATMENT AREA #3
Sample Date:		12/18/2019	12/18/2019
Dioxins, Furans, TCLP			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	77 J	11 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	95 J	19 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	23 J	7.5 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	9.0 U	8.5 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	31 J	12 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	20 J	8.7 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	15 U	12 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	7.9 U	9.2 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	13 U	11 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	6.7 U	7.9 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	15 J	7.3 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	19 U	20 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	10 U	8.4 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	9.2 U	7.5 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	11 U	9.2 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	12 U	12 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	11 J	6.5 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	23 J	7.5 U
Total heptachlorodibenzofuran (HpCDF)	pg/L	31 J	12 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	20 J	9.2 U
Total hexachlorodibenzofuran (HxCDF)	pg/L	15 J	12 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	19 U	20 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	11 U	9.2 U
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	12 U	12 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	11 J	6.5 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	Area 2	Area 3
	Sample Name:	11187072-N.TREATMENT AREA #2	11187072-N.TREATMENT AREA #3
	Sample Date:	12/18/2019	12/18/2019
Parameters	**Unit**		
Metals, TCLP			
Arsenic	mg/L	0.041 U	0.041 U
Barium	mg/L	0.53 J	0.44 J
Cadmium	mg/L	0.0028 U	0.0028 U
Chromium	mg/L	0.0078 U	0.011 J
Lead	mg/L	0.029 U	0.029 U
Mercury	mg/L	0.00010 U	0.00010 U
Selenium	mg/L	0.036 U	0.036 U
Silver	mg/L	0.0085 U	0.0085 U
General Chemistry, TCLP			
Methomyl	µg/L	0.13 U	0.12 U
Total Petroleum Hydrocarbons (TPH)			
2-Ethoxyethanol	mg/L	2.5 U	2.5 U
Ethylene glycol	mg/L	1.9 U	1.9 U
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	2.4 U	2.4 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 2**	**Area 3**
	Sample Name:	**11187072-N.TREATMENT AREA #2**	**11187072-N.TREATMENT AREA #3**
	Sample Date:	**12/18/2019**	**12/18/2019**
Parameters	**Unit**		
General Chemistry			
Percent solids	%	71.4	67.4
Ignitability	Deg F	140 >	140 >
Cyanide (total)	mg/kg	0.37 U	0.40 U
Sulfide	mg/kg	72	59
Free liquid	none	U	U
pH, lab	s.u.	8.5 J	8.7 J

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
TCLP - Toxicity Characteristic Leaching Procedure
PCBs - Polychlorinated Biphenyls

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 4**	**Inital**
	Sample Name:	**11187072-N.TREATMENT AREA #4**	**11187072-NORTH-IMPCT-INITIALS**
	Sample Date:	**12/18/2019**	**10/15/2019**
Parameters	**Unit**		
Volatile Organic Compounds, TCLP			
1,1,1,2-Tetrachloroethane	mg/L	0.16 U	0.16 U
1,1,1-Trichloroethane	mg/L	0.10 U	0.10 U
1,1,2,2-Tetrachloroethane	mg/L	0.12 U	0.12 U
1,1,2-Trichloroethane	mg/L	0.096 U	0.096 U
1,1-Dichloroethene	mg/L	0.11 U	0.11 U
1,2,3-Trichloropropane	mg/L	0.11 U	0.11 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.11 U	0.11 U
1,2-Dichloroethane	mg/L	0.058 U	0.058 U
1,3-Dichloropropene	mg/L	0.13 U	0.13 U
1,4-Dichlorobenzene	mg/L	0.041 U	0.041 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.12 U	0.12 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.074 U	0.074 U
Acetone	mg/L	0.13 U	0.13 U
Acetonitrile	mg/L	2.0 U	2.0 U
Acrylonitrile	mg/L	1.3 U	1.3 U
Benzene	mg/L	0.079 U	0.079 U
Bromodichloromethane	mg/L	0.094 U	0.094 U
Bromoform	mg/L	0.10 U	0.10 U
Bromomethane (Methyl bromide)	mg/L	0.18 U	0.18 U
Carbon disulfide	mg/L	0.12 U	0.12 U
Carbon tetrachloride	mg/L	0.13 U	0.13 U
Chlorobenzene	mg/L	0.063 U	0.063 U
Chloroform (Trichloromethane)	mg/L	0.085 U	0.085 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.12 U	0.12 U
Ethylbenzene	mg/L	0.086 U	0.086 U
Hexachlorobutadiene	mg/L	0.073 U	0.073 U
Isobutanol (isobutyl alcohol)	mg/L	3.6 U	3.6 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 4**	**Inital**
	Sample Name:	**11187072-N.TREATMENT AREA #4**	**11187072-NORTH-IMPCT-INITIALS**
	Sample Date:	**12/18/2019**	**10/15/2019**
Parameters	**Unit**		
Volatile Organic Compounds, TCLP			
Methyl acrylonitrile	mg/L	1.6 U	1.6 U
Methylene chloride	mg/L	0.15 U	0.15 U
Styrene	mg/L	0.053 U	0.053 U
Tetrachloroethene	mg/L	0.080 U	0.080 U
Toluene	mg/L	0.067 U	0.067 U
trans-1,3-Dichloropropene	mg/L	0.069 U	0.069 U
Trichloroethene	mg/L	0.060 U	0.060 U
Trichlorofluoromethane (CFC-11)	mg/L	0.058 U	0.058 U
Vinyl chloride	mg/L	0.15 U	0.15 U
Xylenes (total)	mg/L	0.17 U	0.17 U
Semivolatile Organic Compounds, TCLP			
1,4-Dichlorobenzene	mg/L	0.0045 U	0.0045 U
2,4,5-Trichlorophenol	mg/L	0.0079 U	0.0079 U
2,4,6-Trichlorophenol	mg/L	0.0095 U	0.0095 U
2,4-Dinitrotoluene	mg/L	0.0079 U	0.0079 U
2-Methylphenol	mg/L	0.0040 U	0.0040 U
3&4-Methylphenol	mg/L	0.0079 U	0.0079 U
Hexachlorobenzene	mg/L	0.0055 U	0.0055 U
Hexachlorobutadiene	mg/L	0.0084 U	0.0084 U
Hexachloroethane	mg/L	0.0040 U	0.0040 U
Nitrobenzene	mg/L	0.012 U	0.012 U
Pentachlorophenol	mg/L	0.0075 U	0.0075 U
Pyridine	mg/L	0.0082 U	0.0082 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 4**	**Inital**
	Sample Name:	**11187072-N.TREATMENT AREA #4**	**11187072-NORTH-IMPCT-INITIALS**
	Sample Date:	**12/18/2019**	**10/15/2019**
Parameters	**Unit**		
Herbicides, TCLP			
2,4,5-TP (Silvex)	mg/L	0.0030 U	0.0030 U
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	0.020 U	0.020 U
Dinoseb	mg/L	0.038 U	0.038 U
PCBs, TCLP			
Aroclor-1016 (PCB-1016)	mg/L	0.00019 U	0.00018 U
Aroclor-1221 (PCB-1221)	mg/L	0.00023 U	0.00022 U
Aroclor-1232 (PCB-1232)	mg/L	0.00021 U	0.00020 U
Aroclor-1242 (PCB-1242)	mg/L	0.00036 U	0.00035 U
Aroclor-1248 (PCB-1248)	mg/L	0.00012 U	0.00012 U
Aroclor-1254 (PCB-1254)	mg/L	0.00038 U	0.00037 U
Aroclor-1260 (PCB-1260)	mg/L	0.00016 U	0.00015 U
Pesticides, TCLP			
4,4'-DDD	mg/L	0.00021 U	0.00021 U
4,4'-DDE	mg/L	0.00012 U	0.00012 U
4,4'-DDT	mg/L	0.00012 U	0.00012 U
alpha-Chlordane	mg/L	0.00015 U	--
Chlordane	mg/L	0.0029 U	0.0029 U
Dieldrin	mg/L	0.00011 U	0.00011 U
Endosulfan I	mg/L	0.00027 U	0.00027 U
Endosulfan II	mg/L	0.00013 U	0.00013 U
Endosulfan sulfate	mg/L	0.00026 U	0.00026 U
Endrin	mg/L	0.000091 U	0.000091 U
gamma-BHC (lindane)	mg/L	0.00012 U	0.00012 U
gamma-Chlordane	mg/L	0.00016 U	--
Heptachlor	mg/L	0.00018 U	0.00018 U
Heptachlor epoxide	mg/L	0.00014 U	0.00014 U
Methoxychlor	mg/L	0.00031 U	0.00031 U
Mirex	mg/L	0.000084 U	0.000084 U
Toxaphene	mg/L	0.020 U	0.020 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 4**	**Inital**
	Sample Name:	**11187072-N.TREATMENT AREA #4**	**11187072-NORTH-IMPCT-INITIALS**
	Sample Date:	**12/18/2019**	**10/15/2019**
Parameters	**Unit**		
Dioxins, Furans, TCLP			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	9.9 U	34 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	16 U	7.6 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	5.9 U	3.4 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	8.3 U	5.3 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	11 U	6.2 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	6.9 U	4.5 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	10 U	2.9 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	7.5 U	4.7 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	11 U	3.1 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	6.3 U	4.3 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	7.1 U	2.2 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	16 U	8.4 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	8.3 U	4.6 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	6.8 U	2.5 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	9.4 U	4.6 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	12 U	3.4 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	6.6 U	2.8 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	5.9 U	10 U
Total heptachlorodibenzofuran (HpCDF)	pg/L	11 U	6.2 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	7.5 U	4.7 U
Total hexachlorodibenzofuran (HxCDF)	pg/L	11 U	3.1 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	16 U	8.4 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	9.4 U	4.6 U
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	12 U	4.4 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	6.6 U	2.8 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 4**	**Inital**
	Sample Name:	**11187072-N.TREATMENT AREA #4**	**11187072-NORTH-IMPCT-INITIALS**
	Sample Date:	**12/18/2019**	**10/15/2019**
Parameters	**Unit**		
Metals, TCLP			
Arsenic	mg/L	0.041 U	0.041 U
Barium	mg/L	0.48 J	1.1 J
Cadmium	mg/L	0.0028 U	0.0028 U
Chromium	mg/L	0.0078 U	0.0078 U
Lead	mg/L	0.029 U	0.029 U
Mercury	mg/L	0.00010 U	0.00010 U
Selenium	mg/L	0.036 U	0.036 U
Silver	mg/L	0.0085 U	0.0085 U
General Chemistry, TCLP			
Methomyl	µg/L	0.13 U	0.12 U
Total Petroleum Hydrocarbons (TPH)			
2-Ethoxyethanol	mg/L	2.5 U	2.5 U
Ethylene glycol	mg/L	1.9 U	1.9 U
Ethylene glycol monomethyl ether (2-methyoxyethanol)	mg/L	2.4 U	2.4 U

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event
San Jacinto, Harris County, Texas
September 2019 through February 2020

	Location ID:	**Area 4**	**Inital**
	Sample Name:	**11187072-N.TREATMENT AREA #4**	**11187072-NORTH-IMPCT-INITIALS**
	Sample Date:	**12/18/2019**	**10/15/2019**
Parameters	**Unit**		
General Chemistry			
Percent solids	%	66.7	--
Ignitability	Deg F	140 >	140 >
Cyanide (total)	mg/kg	0.40 U	0.43 U
Sulfide	mg/kg	24 J	76 J
Free liquid	none	U	0 U
pH, lab	s.u.	7.9 J	7.9 J

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
-- - Not applicable
TCLP - Toxicity Characteristic Leaching Procedure
PCBs - Polychlorinated Biphenyls

Table 3

Analytical Methods
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

				Holding Time	
Parameter		**Method**	**Matrix**	**Collection to Extraction (Days)**	**Collection or Extraction to Analysis (Days)**
Volatile Organic Compounds (VOCs)		SW-846 8260B	Water, experimental	--	14
Semivolatile Organic Compounds		SW-846 8270	Water, experimental	7	40
Pesticides		SW-846 8081	Water, experimental	7	40
Polychlorinated Biphenyls (PCBs)		SW-846 8082	Water, experimental	7	40
Chorinated Herbicides		SW-846 8151A	Water, experimental	7	40
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (P		EPA 1613	Water, experimental	--	360
Metals	- Low Level Mercury	EPA 1631	Water, experimental	--	28
	- Metals - ICP/AES or ICP/MS	SW-846 6010/6020	Water, experimental	--	180
	- Mercury	SW-846 7470	Water, experimental	--	28
General Chemistry	- Bromide, Chloride, Fluoride, Sulfate	EPA 300-28DAY	Water, experimental	--	28
	- Ammonia as Nitrogen	EPA 350.1	Water, experimental	--	28
	- Ferrous Iron	HACH-FE3	Water, experimental	--	Immediately
	- Total Dissolved Solids (TDS)	SM2540C	Water, experimental	--	7
	- Sulfide	SM4500-S2-D	Water, experimental	--	7
	- pH	SW-846 9040	Water, experimental	--	Immediately
	- TOC	SW-846 9060	Water, experimental	--	28
Phosphorus		SM 4500 P E	Water, experimental	--	28

Table 3

Analytical Methods
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter		**Method**	**Matrix**	**Holding Time** Collection to Extraction (Days)	**Holding Time** Collection or Extraction to Analysis (Days)
Cyanide		SW-846 9012	Water, experimental	--	14
Total Suspended Solids (TSS)		SM 2540 D	Water, experimental	--	7
Oil & Grease		EPA 1664A	Water, experimental	--	28
Chemical Oxygen Demand (COD)		EPA 410.4/H8000	Water, experimental	--	28
Biochemical Oxygen Demand (BOD)		SM 5210 B	Water, experimental	--	48 hours
Anions	- Nitrate as Nitrogen, Nitrite as Nitrogen	EPA 300.0	Water, experimental	--	48 hours
Alkalinity		SM 2320 B	Water, experimental	--	14
Volatile and Non-Volatile Leaching Procedure		SW-846 1311	Solid	Varies	Varies

Notes:

SW-846	- "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions
SM	- "Standard Methods for the Examination of Water and Wastewater", 20th Edition, 1998(with all subsequent revisions).
EPA	- '"Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983 (with all subsequent revisions).
HACH	- Hach Company catalog, 1990
--	- Not Applicable

Table 4

Qualified Sample Data Due To Sample Holding Time Violations
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Result	Units
General Chemistry	11187072-N.TREATMENT AREA #2	13	Immediately	pH, lab	8.5 J	s.u.
	11187072-N.TREATMENT AREA #3	13			8.7 J	s.u.
	11187072-N.TREATMENT AREA #4	13			7.9 J	s.u.
	11187072-CONTACT-INITIAL	7			7.8 J	s.u.
	11187072-091319-LL-EXC-1	4			6.9 J	s.u.
	1. CEFF	11			7.7 J	s.u.
	INF 4	11			7.9 J	s.u.
	FEFF 1	5			7.8 J	s.u.
	DUP	11			8.9 J	s.u.
	INF 3	6			8.2 J	s.u.
General Chemistry	11187072-091319-LL-EXC-1	7	Immediately	Ferrous iron	0.016 UJ	mg/L
General Chemistry	1. CEFF	>48 hours	48 hours	Nitrate (as N)	R	mg/L
	INF 4			Nitrate (as N)	R	mg/L
	FEFF 1			Nitrate (as N)	R	mg/L
	INF 3			Nitrate (as N)	R	mg/L
General Chemistry	1. CEFF	>48 hours	48 hours	Nitrite (as N)	R	mg/L
	INF 4			Nitrite (as N)	R	mg/L
	FEFF 1			Nitrite (as N)	R	mg/L
	INF 3			Nitrite (as N)	R	mg/L

Notes:

J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated
R - Rejected
N - Nitrogen
s.u. - Standard Units

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
240-122669-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	11/22/2019	2.63J	11187072-Berm Rock	4.0 J	4.0 U	pg/L
					11187072-Eastern Rock	3.8 J	3.8 U	pg/L
					11187072-Western Rock	3.3 J	3.3 U	pg/L
240-122669-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/22/2019	12.0J	11187072-Berm Rock	21 J	21 U	pg/L
					11187072-Eastern Rock	22 J	22 U	pg/L
240-122669-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11/22/2019	1.33J	11187072-Berm Rock	1.3 J	1.33 U	pg/L
					11187072-Eastern Rock	1.1 J	1.33 U	pg/L
					11187072-Western Rock	1.1 J	1.33 U	pg/L
240-122669-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	11/22/2019	1.82J	11187072-Berm Rock	2.8 J	2.8 U	pg/L
					11187072-Eastern Rock	2.3 J	2.3 U	pg/L
					11187072-Western Rock	6.0 J	6.0 U	pg/L
240-122669-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	11/22/2019	1.93J	11187072-Berm Rock	2.1 J	2.1 U	pg/L
					11187072-Eastern Rock	1.8 J	1.93 U	pg/L
					11187072-Western Rock	1.3 J	1.93 U	pg/L
240-122669-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	11/22/2019	1.01J	11187072-Berm Rock	1.4 J	1.4 U	pg/L
					11187072-Eastern Rock	1.5 J	1.5 U	pg/L
					11187072-Western Rock	1.1 J	1.1 U	pg/L
240-122669-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	11/22/2019	1.20J	11187072-Berm Rock	1.4 J	1.4 U	pg/L
					11187072-Eastern Rock	1.1 J	1.20 U	pg/L
240-122669-1	Dioxins and Furans	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	11/22/2019	0.814J	11187072-Berm Rock	0.72 J	0.814 U	pg/L
					11187072-Eastern Rock	0.92 J	0.92 U	pg/L
					11187072-Western Rock	0.93 J	0.93 U	pg/L
	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	01/31/2020	13.8J	11187072-Berm-GW	21 J	21 U	pg/L
					11187072-Eastern-GW	14 J	14 U	pg/L
					11187072-Western-GW	3.4 J	13.8 U	pg/L
	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	01/31/2020	28.2J	11187072-Berm-GW	83 J	83 U	pg/L
					11187072-Eastern-GW	94 J	94 U	pg/L
					11187072-Western-GW	51 J	51 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
240-122669-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/31/2020	7.54J	11187072-Berm-GW	7.4 J	7.54 U	pg/L
					11187072-Eastern-GW	6.1 J	7.54 U	pg/L
					11187072-Western-GW	2.0 J	7.54 U	pg/L
	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	01/31/2020	9.52J	11187072-Berm-GW	8.7 J	9.52 U	pg/L
					11187072-Eastern-GW	7.7 J	9.52 U	pg/L
					11187072-Western-GW	3.9 J	9.52 U	pg/L
	Dioxins and Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	01/31/2020	5.85J	11187072-Berm-GW	2.6 J	5.85 U	pg/L
					11187072-Eastern-GW	1.2 J	5.85 U	pg/L
	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	01/31/2020	5.92J	11187072-Berm-GW	1.2 J	5.92 U	pg/L
					11187072-Eastern-GW	2.8 J	5.92 U	pg/L
	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	01/31/2020	7.72J	11187072-Berm-GW	2.9 J	7.72 U	pg/L
					11187072-Eastern-GW	2.1 J	7.72 U	pg/L
					11187072-Western-GW	3.1 J	7.72 U	pg/L
	Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	01/31/2020	6.14J	11187072-Berm-GW	1.2 J	6.14 U	pg/L
	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	01/31/2020	6.25J	11187072-Berm-GW	2.7 J	6.25 U	pg/L
					11187072-Eastern-GW	1.1 J	6.25 U	pg/L
	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	01/31/2020	6.10J	11187072-Berm-GW	2.1 J	6.10 U	pg/L
					11187072-Eastern-GW	1.3 J	6.10 U	pg/L
					11187072-Western-GW	1.1 J	6.10 U	pg/L
	Dioxins and Furans	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	01/31/2020	6.12J	11187072-Berm-GW	1.1 J	6.12 U	pg/L
					11187072-Eastern-GW	0.62 J	6.12 U	pg/L
	Dioxins and Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	01/31/2020	5.39J	11187072-Berm-GW	0.58 J	5.39 U	pg/L
	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/31/2020	0.0842J	11187072-Eastern-Solids	0.75 J	0.75 U	pg/g
	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	01/31/2020	0.173J	11187072-Berm-Solids	0.48 J	0.48 U	pg/g
					11187072-Eastern-Solids	0.46 J	0.46 U	pg/g
					11187072-Western-Solids	0.69 J	0.69 U	pg/g

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
240-122669-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	02/13/2020	0.431J	11187072-Berm-Rock	0.57 J	0.57 U	pg/g
					11187072-Eastern Rock	0.58 J	0.58 U	pg/g
					11187072-Western-Rock	3.4 J	3.4 U	pg/g
	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	02/13/2020	0.229J	11187072-Berm-Rock	0.19 J	0.229 U	pg/g
					11187072-Eastern Rock	0.27 J	0.27 U	pg/g
	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	02/13/2020	0.222J	11187072-Berm-Rock	0.24 J	0.24 U	pg/g
					11187072-Eastern Rock	0.27 J	0.27 U	pg/g
					11187072-Western-Rock	0.30 J	0.30 U	pg/g
	Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	02/13/2020	0.110J	11187072-Eastern Rock	0.26 J	0.26 U	pg/g
					11187072-Western-Rock	0.33 J	0.33 U	pg/g
	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	02/13/2020	0.0929J	11187072-Berm-Rock	0.27 J	0.27 U	pg/g
					11187072-Eastern Rock	0.18 J	0.18 U	pg/g
					11187072-Western-Rock	0.20 J	0.20 U	pg/g
320-324498-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	09/18/2019	4.87 J	11187072-091319-LL-EXC-1	5.8 J	5.8 U	pg/L
320-324498-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	09/18/2019	3.16 J	11187072-091319-LL-EXC-1	6.9 J	6.9 U	pg/L
320-324498-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	09/18/2019	5.28 J	11187072-091319-LL-EXC-1	4.1 J	4.1 U	pg/L
320-324498-1	Dioxins and Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	09/18/2019	3.26 J	11187072-091319-LL-EXC-1	1.8 J	1.8 U	pg/L
320-324499-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	09/18/2019	3.96J	11187072-091319-LL-EXC-1	17 J	17 UJ	pg/L
320-324499-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	09/18/2019	1.34J	11187072-091319-LL-EXC-1	2.0 J	2.0 U	pg/L
320-324499-1	Dioxins and Furans	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	09/18/2019	1.88J	11187072-091319-LL-EXC-1	3.4 J	3.4 U	pg/L
320-327320-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	09/30/2019	8.56J	11187072-CONTACT-INITIAL	2.8 J	2.8 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
320-327320-1	Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	09/30/2019	6.29J	11187072-CONTACT-INITIAL	4.1 J	4.1 U	pg/L
		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	09/30/2019	6.29J	CONC_CONTACT_WATER	24 J	24 U	pg/L
320-327320-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	09/30/2019	6.32J	11187072-CONTACT-INITIAL	4.2 J	4.2 U	pg/L
320-327320-1	Dioxins and Furans	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	09/30/2019	7.71J	11187072-CONTACT-INITIAL	18 J	18 U	pg/L
320-327320-1	Dioxins and Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	09/30/2019	5.51J	11187072-CONTACT-INITIAL	12 J	12 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	10/08/2019	5.52J	11187072-Filter Test-3	24 J	24 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	10/08/2019	5.52J	11187072-Filter Test-5	1.9 J	1.9 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	10/08/2019	5.52J	11187072-Filter Test-6	1.8 J	1.8 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/08/2019	8.11J	11187072-Filter Test-4	12 J	12 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/08/2019	8.11J	11187072-Filter Test-5	4.0 J	4.0 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/08/2019	8.11J	11187072-Filter Test-6	4.6 J	4.6 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	10/08/2019	2.14J	11187072-Filter Test-4	0.75 J	0.75 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	10/08/2019	2.14J	11187072-Filter Test-5	1.1 J	1.1 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	10/08/2019	2.14J	11187072-Filter Test-6	1.2 J	1.2 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	10/08/2019	2.32J	11187072-Filter Test-4	1.7 J	1.7 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	10/08/2019	2.32J	11187072-Filter Test-6	1.4 J	1.4 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	10/08/2019	1.95J	11187072-Filter Test-4	0.87 J	0.87 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.22J	11187072-Filter Test-4	1.1 J	1.1 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.22J	11187072-Filter Test-6	1.2 J	1.2 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.39J	11187072-Filter Test-1	2.7 J	2.7 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.39J	11187072-Filter Test-3	1.7 J	1.7 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.39J	11187072-Filter Test-4	2.0 J	2.0 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.39J	11187072-Filter Test-5	1.9 J	1.9 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.39J	11187072-Filter Test-6	1.9 J	1.9 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
320-329339-1	Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.18J	11187072-Filter Test-5	1.2 J	1.2 U	pg/L
		1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.18J	11187072-Filter Test-6	0.86 J	0.86 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	1.30J	11187072-Filter Test-1	2.7 J	2.7 U	pg/L
		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	1.30J	11187072-Filter Test-3	0.84 J	0.84 U	pg/L
		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	1.30J	11187072-Filter Test-6	1.3 J	1.3 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.28J	11187072-Filter Test-1	4.5 J	4.5 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.28J	11187072-Filter Test-3	2.1 J	2.1 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.28J	11187072-Filter Test-4	0.67 J	0.67 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.28J	11187072-Filter Test-5	0.75 J	0.75 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.28J	11187072-Filter Test-6	1.1 J	1.1 U	pg/L
320-329339-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.03J	11187072-Filter Test-1	2.3 J	2.3 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.03J	11187072-Filter Test-4	0.71 J	0.71 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.03J	11187072-Filter Test-5	0.57 J	0.57 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	10/08/2019	2.03J	11187072-Filter Test-6	1.5 J	1.5 U	pg/L
320-329339-1	Dioxins and Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.18J	11187072-Filter Test-3	2.8 J	2.8 U	pg/L
		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/08/2019	1.18J	11187072-Filter Test-5	0.94 J	0.94 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	11/01/2019	3.85 J	1. CEFF	6.4 J	6.4 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/01/2019	9.40 J	1. CEFF	44 J	44 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11/01/2019	1.76 J	1. CEFF	2.9 J	2.9 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	11/01/2019	1.16 J	1. CEFF	1.4 J	1.4 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	11/01/2019	3.72 J	1. CEFF	2.6 J	2.6 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks

San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
320-335248-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	11/01/2019	1.44 J	1. CEFF	2.0 J	2.0 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	11/01/2019	1.01 J	1. CEFF	1.4 J	1.4 U	pg/L
320-335248-1	Dioxins and Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	11/01/2019	0.888 J	1. CEFF	1.2 J	1.2 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	11/01/2019	3.85J	FEFF 1	5.5 J	5.5 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	11/01/2019	3.85J	INF 4 - DISSOLVED	11 J	11 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/01/2019	9.40J	FEFF 1	44 J	44 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11/01/2019	1.76J	FEFF 1	1.9 J	1.9 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	11/01/2019	1.16J	INF 4 - DISSOLVED	4.9 J	4.9 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	11/01/2019	3.72J	INF 3	11 J	11 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	11/01/2019	3.72J	INF 4	4.9 J	4.9 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	11/01/2019	3.72J	INF 3 - DISSOLVED	4.6 J	4.6 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	11/01/2019	3.72J	INF 4 - DISSOLVED	3.1 J	3.1 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	11/01/2019	1.44J	INF 4 - DISSOLVED	4.8 J	4.8 U	pg/L
320-335248-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	11/01/2019	1.01J	INF 4 - DISSOLVED	1.7 J	1.7 U	pg/L
320-335248-1	Dioxins and Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	11/01/2019	0.888J	INF 4 - DISSOLVED	2.8 J	2.8 U	pg/L
320-337526-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/11/2019	6.14 J	11187072-CEFF-10MG-POST	39 J	39 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/11/2019	6.14 J	11187072-CEFF-5MG-POST	47 J	47 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/11/2019	6.14 J	11187072-CEFF-CON-POST	23 J	23 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method/Leachate Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
320-337526-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	11/11/2019	6.14 J	CEFF-Filtered	21 J	21 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	11/11/2019	6.14 J	FEFF-Filtered	29 J	29 U	pg/L
320-350417-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/13/2020	0.595 J	11187072-FEFF-0.1um	0.95 J	0.95 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/13/2020	0.595 J	11187072-FEFF-0.45um	0.52 J	0.52 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/13/2020	0.595 J	11187072-FEFF-1um	0.51 J	0.51 U	pg/L
320-350417-1	Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	01/13/2020	0.722 J	11187072-FEFF-0.1um	1.7 J	1.7 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	01/13/2020	0.722 J	11187072-FEFF-0.45um	0.72 J	0.722 U	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	01/13/2020	0.722 J	11187072-FEFF-1um	1.1 J	1.1 U	pg/L
320-350417-1	Dioxins and Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	01/13/2020	1.64 J	11187072-FEFF-0.1um	1.8 J	1.8 U	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	01/13/2020	1.64 J	11187072-FEFF-0.45um	1.6 J	1.6 U	pg/L
320-350857-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	01/15/2020	4.55 J	11187072-FEFF-0.025um	14 J	14 U	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	01/15/2020	4.55 J	11187072-FEFF-0.050um	3.7 J	3.7 U	pg/L
320-350857-1	Dioxins and Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	01/15/2020	0.657 J	11187072-FEFF-0.025um	0.68 J	0.68 U	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	01/15/2020	0.657 J	11187072-FEFF-0.050um	0.96 J	0.96 U	pg/L
180-97287-1	Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/28/2019	4.94J	11187072-NORTH-IMPCT-INITIALS	34 J	34 U	pg/L

Notes:

*	- Blank result adjusted for sample factors where applicable
U	- Not detected at the associated reporting limit
J	- Estimated concentration
UJ	- Not detected; associated reporting limit is estimated

Table 6

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Sample Delivery Group	Parameter	Analyte	Analysis Date	Blank Result *	Sample ID	Original Result	Qualified Result	Units
240-412509	Metals	Mercury	11/25/2019	0.212 J	11187072-BERM ROCK	0.82	0.82 U	ng/L
240-412509	Metals	Mercury (dissolved)	11/25/2019	0.212 J	11187072-BERM ROCK	0.59	0.59 U	ng/L
320-327228	Metals	Copper	09/30/2019	0.00293 J	11187072-CONTACT-INITIAL	0.011	0.011 U	mg/L
320-327228	Metals	Zinc	09/30/2019	0.00452 J	11187072-CONTACT-INITIAL	0.011	0.011 U	mg/L
320-327230	Metals	Zinc (dissolved)	09/30/2019	0.00334 J	11187072-CONTACT-INITIAL	0.013	0.013 U	mg/L
600-275211	Metals	Zinc (dissolved)	09/19/2019	0.0144 J	11187072-091319-LL-EXC-1	0.015 J	0.015 U	mg/L
600-279634	Metals	Thallium	11/06/2019	0.00830 J	FEFF 1	0.026 J	0.026 U	mg/L

Notes:

*	- Blank result adjusted for sample factors where applicable
U	- Not detected at the associated reporting limit
J	- Estimated concentration

Table 7

Qualified Sample Data Due to Outlying of Surrogate Recoveries
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Analyte	Qualified Result	Units
Dioxins and Furans	INF 3	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) C13	20	28 - 143	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	880 J-	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) C13	31	32 - 141	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	18 J-	pg/L
Dioxins and Furans	INF 4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	14	17 - 157	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	370 J-	pg/L
		1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) C13	21	26 - 138	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8800 J	pg/L
		1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) C13	25	26 - 152	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	600 J-	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) C13	25	32 - 141	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	540 J-	pg/L
		1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) C13	23	26 - 123	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	240 J-	pg/L
		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) C13	22	28 - 130	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2500 J-	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) C13	26	29 - 147	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	650 J-	pg/L
		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) C13	24	28 - 136	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	20 J-	pg/L
					1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	40 J-	pg/L
					1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.5 J-	pg/L
					2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	73 J-	pg/L

Notes:

J- - Estimated concentration, potential low bias

Table 8

Qualified Sample Results Due to Outlying LCS/LCSD Results
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Analyte	LCS Date (mm/dd/yyyy)	LCS % Recovery	LCSD % Recovery	RPD (percent)	Control Limits		Associated Sample ID	Qualified Result	Units
						% Recovery	RPD			
Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	09/18/2019	126	136	8	84 - 130	50	11187072-091319-LL-EXC-1	5.6 J	pg/L
Dioxins and Furans	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	09/18/2019	124	137	10	80 - 134	50	11187072-091319-LL-EXC-1	11 J	pg/L
Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	09/18/2019	68	74	9	78-144	50	11187072-091319-LL-EXC-1	17 UJ	pg/L
Dioxins and Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	09/18/2019	71	77	8	82-122	50	11187072-091319-LL-EXC-1	3.6 J	pg/L
Dioxins and Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	09/18/2019	76	78	2	78-138	50	11187072-091319-LL-EXC-1	2.8 J	pg/L
Dioxins and Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	09/18/2019	83	85	3	84-130	50	11187072-091319-LL-EXC-1	2.7 J	pg/L
Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/05/2019	153	-	-	78 - 144	-	INF 3 INF 4	15000 J+ 8800 J+	pg/L pg/L
Dioxins and Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	11/05/2019	153	-	-	78 - 144	-	INF 3 - DISSOLVED INF 4 - DISSOLVED	5400 J+ 280 J+	pg/L pg/L

Notes:

LCS	- Laboratory Control Sample
LCSD	- Laboratory Control Sample Duplicate
RPD	- Relative Percent Difference
J	- Estimated concentration
UJ	- Not detected; associated reporting limit is estimated
J+	- Estimated concentration, potential high bias
-	- Not Applicable

Table 9

Qualified Sample Results Due to Outlying MS Results
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Analyte	MS % Recovery	Control Limits % Recovery	Qualified Result		Units
Semivolatile Organic Compounds	11187072-CONTACT-INITIAL	2,4,6-Trichlorophenol	51	53 - 100	0.65	UJ	µg/L
		2,4-Dichlorophenol	53	51 - 100	0.49	UJ	µg/L
		2,4-Dimethylphenol	41	51 - 100	0.39	UJ	µg/L
		2-Chloronaphthalene	43	52 - 100	0.57	UJ	µg/L
		2-Chlorophenol	45	54 - 100	0.62	UJ	µg/L
		2-Methylnaphthalene	46	52 - 100	0.60	UJ	µg/L
		2-Methylphenol	45	53 - 100	2.9	UJ	µg/L
		3&4-Methylphenol	48	50 - 100	3.6	UJ	µg/L
		4-Chloroaniline	46	50 - 100	0.42	UJ	µg/L
		4-Chlorophenyl phenyl ether	49	52 - 100	0.59	UJ	µg/L
		Acenaphthene	46	51 - 100	0.63	UJ	µg/L
		Acenaphthylene	46	47 - 100	0.63	UJ	µg/L
		Benzo(g,h,i)perylene	44	50 - 100	0.66	UJ	µg/L
		Biphenyl (1,1-Biphenyl)	45	51 - 100	0.57	UJ	µg/L
		bis(2-Chloroethoxy)methane	47	53 - 100	0.64	UJ	µg/L
		bis(2-Chloroethyl)ether	43	43 - 100	0.38	UJ	µg/L
		Dibenzofuran	45	51 - 100	0.70	UJ	µg/L
		Fluorene	48	52 - 100	0.66	UJ	µg/L
		Hexachlorobutadiene	36	43 - 100	0.66	UJ	µg/L
		Hexachlorocyclopentadiene	7	36 - 100	4.8	R	µg/L
		Hexachloroethane	29	53 - 100	0.60	UJ	µg/L
		Naphthalene	43	53 - 100	0.57	UJ	µg/L
		Phenol	44	50 - 100	4.7	UJ	µg/L
		Pyridine	44	47 - 100	5.2	UJ	µg/L

Notes:

MS - Matrix Spike
UJ - Not detected; associated reporting limit is estimated
R - Rejected

Table 10

Qualified Sample Results Due to Outlying MS/MSD Results
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability Associated with Southern Impoundment Area
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result		Units
Dioxins and Furans	INF 4 - DISSOLVED	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	904	530	48	78-144	50	280	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	237	164	32	70-140	50	12	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	277	179	39	82-122	50	27	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	897	413	70	72-134	50	31	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	288	188	38	84-130	50	9.8	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	661	354	57	80-134	50	20	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	419	249	47	68-160	50	11	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	20781	9745	69	67-158	50	150	J	pg/L
Dioxins and Furans	INF 4 - DISSOLVED	2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	54002	32281	47	75-158	50	540	J	pg/L

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
J - Estimated concentration

Table 11

Qualified Sample Results Due to Outlying MS/MSD Results
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
Metals	FEFF 1	Mercury	67	69	1	75 - 125	20	2.5 J	ng/L
	1. CEFF							18 J	ng/L
	INF 3							28 J	ng/L
	INF 4 - DISSOLVED	Mercury (dissolved)						22 J	ng/L
General Chemistry	INF 3	Bromide	125	125	0	80 - 120	20	0.12 J	mg/L
	INF 4							0.15 J	mg/L
	FEFF 1							0.30 J	mg/L
General Chemistry	INF 4	Fluoride	70	70	0	80 - 120	20	0.26 J	mg/L
	FEFF 1							0.060 UJ	mg/L
General Chemistry	1. CEFF	Total organic carbon (TOC)	135	132	1	75 - 125	20	5.0 J	mg/L
	FEFF 1							4.3 J	mg/L
	INF 3							17 J	mg/L
	INF 4							9.2 J	mg/L
General Chemistry	1. CEFF	Alkalinity, bicarbonate	48	49	0	75 - 125	20	160 J	mg/L
	INF 3	Alkalinity, bicarbonate						190 J	mg/L
	INF 4	Alkalinity, bicarbonate						170 J	mg/L
	1. CEFF	Alkalinity, carbonate						20 UJ	mg/L
	INF 3	Alkalinity, carbonate						20 UJ	mg/L
	INF 4	Alkalinity, carbonate						20 UJ	mg/L
	1. CEFF	Alkalinity, total (as CaCO3)						160 J	mg/L
	INF 4	Alkalinity, total (as CaCO3)						170 J	mg/L
General Chemistry	INF 4	Chemical oxygen demand (COD)	4	1	1	75 - 125	20	180 J	mg/L
General Chemistry	11187072-NORTH-IMPCT-INITIALS	Sulfide	40	37	3	75 - 125	20	76 J	mg/kg

Notes:

MS - Matrix Spike
MSD- Matrix Spike Duplicate
RPD- Relative Percent Difference
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 12

Qualified Sample Results Due to Outlying Identification Criteria
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins and Furans	11187072-Filter Test-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	9.4 J	pg/L
	INF 3 - DISSOLVED	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	6.7 J	pg/L
	INF 4 - DISSOLVED	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	3.0 J	pg/L
	FEFF 1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3.2 J	pg/L
	11187072-FEFF-0.025um	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.3 J	pg/L
	11187072-FEFF-0.050um	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.3 J	pg/L
	11187072-FEFF-0.050um	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6 J	pg/L
	11187072-FEFF-0.050um	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.66 J	pg/L
	11187072-FEFF-0.1um	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.50 J	pg/L
	11187072-FEFF-0.45um	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.0 J	pg/L
	11187072-091319-LL-EXC-1	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	3.6 J	pg/L
	11187072-091319-LL-EXC-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.6 J	pg/L
	11187072-091319-LL-EXC-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	2.8 J	pg/L
	CEFF-Filtered	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	2.4 J	pg/L
	FEFF-Filtered	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	4.9 J	pg/L
	FEFF-Filtered	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	4.6 J	pg/L
	FEFF-Filtered	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	3.0 J	pg/L
	11187072-N.TREATMENT AREA #2	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	31 J	pg/L
	11187072-N.TREATMENT AREA #2	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	20 J	pg/L
	11187072-N.TREATMENT AREA #2	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	15 J	pg/L
	11187072-Eastern Rock	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.78 J	pg/L
	11187072-Western Rock	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.56 J	pg/L
	11187072-Berm-Solids	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9 J	pg/g

Table 12

Qualified Sample Results Due to Outlying Identification Criteria
San Jacinto River Waste Pits Superfund Site Investigation
Predesign Investigation Sampling Event - Pilot Study and Treatability
San Jacinto, Harris County, Texas
September 2019 through February 2020

Parameter	Sample ID	Analyte	Qualified Result		Units
Dioxins and Furans	11187072-Berm-Solids	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.62	J	pg/g
	11187072-Eastern-Solids	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.18	J	pg/g
	11187072-Eastern-Solids	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.38	J	pg/g
	11187072-Eastern-Solids	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.12	J	pg/g
	11187072-Eastern-Solids	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.98	J	pg/g
	11187072-Western-Solids	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.68	J	pg/g
	11187072-Berm-Rock	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.17	J	pg/g
	11187072-Berm-Rock	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.093	J	pg/g
	11187072-Berm-Rock	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.084	J	pg/g
	11187072-Eastern Rock	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.13	J	pg/g
	11187072-Eastern Rock	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.11	J	pg/g
	11187072-Eastern Rock	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.15	J	pg/g
	11187072-Eastern Rock	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.14	J	pg/g
	11187072-Western-Rock	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.14	J	pg/g
	11187072-Western-Rock	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.13	J	pg/g
	11187072-Western-Rock	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.15	J	pg/g

Notes:

J - Estimated concentration

Appendix C-3

2019 Treatability Study Photographic Log

Photo 1 – ProAct treatment trailer housing sand filter (green trailer), clarifier, and frac tanks that were used in the on-Site pilot testing.

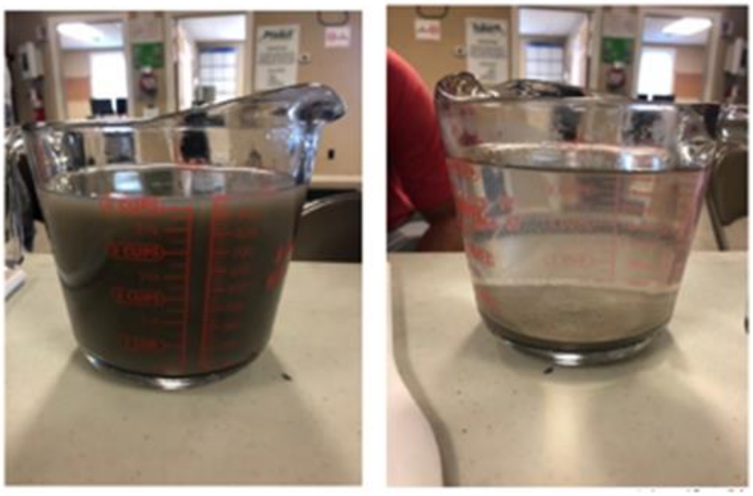

Photo 2 – Photographs showing raw contact water and water after flocculants and polymers were added in the bench-scale testing.

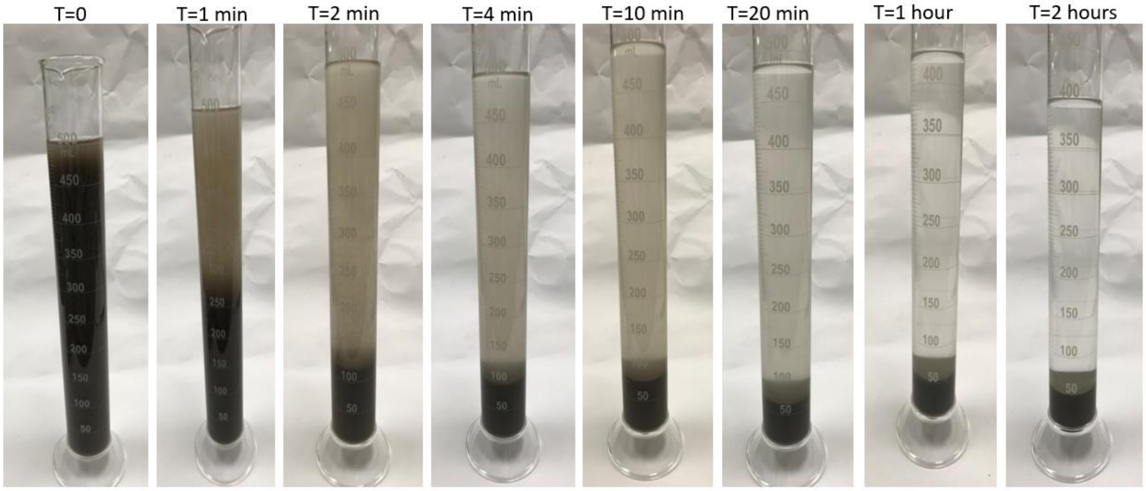

Photo 3 – Results of the clarifier underflow settling tests.

Photo 4 – Non-homogenized contact water prior to filtration.

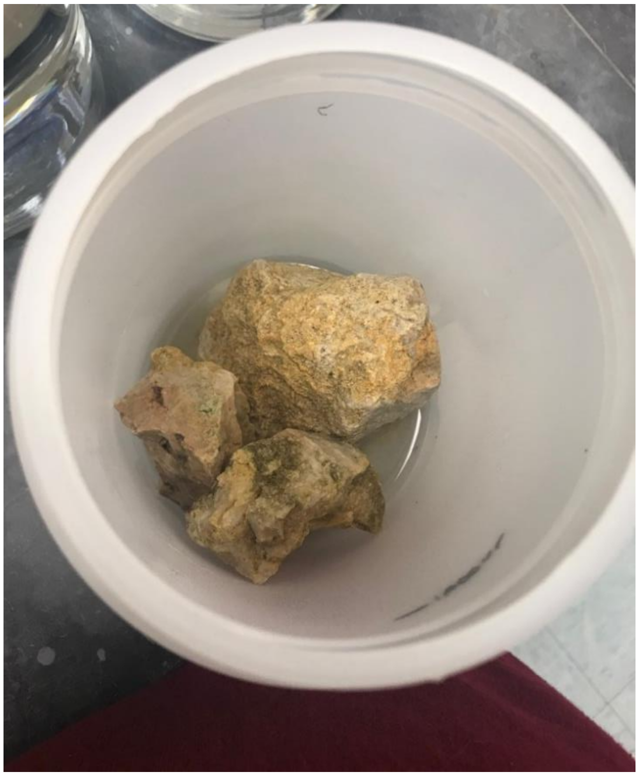

Photo 5 – Armored cap rocks used for generating elutriate.

Photo 6 – Pocket penetrometer testing.

Appendix C-4

Additional Treatability Studies Laboratory Reports

ANALYTICAL REPORT

Job Number: 320-62886-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
8/5/2020 9:28 AM

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Definitions/Glossary

Client: GHD Services Inc.
Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-62886-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 07/21/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 5.4 C.

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

METALS

The following samples were diluted to bring the concentration of target analytes within the calibration range: 11215702-Initial (320-62886-1), 11215702-Control (320-62886-2), 11215702-Treatment-1 (320-62886-3) and 11215702-Treatment-2 (320-62886-4). Elevated reporting limits (RLs) are provided.

Calcium, Sodium and Iron were detected in method blank MB 320-397139/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Antimony failed the recovery criteria low for the MS/MSD of sample 11215702-Initial MS/MSD (320-62886-1) in batch 320-398458. Titanium, Sodium and Iron failed the recovery criteria high. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

The instrument blank (CCB) for analytical batch 320-398458 contained Sodium (Na) greater than the reporting limit (RL), and was not re-analyzed because the associated sample results were 10x greater than the CCB. The data has been qualified and reported.

DIOXINS

Samples 11215702-Initial (320-62886-1) and 11215702-Control (320-62886-2) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV072720). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-398796/1), (LCS 320-397938/2-A), (LCSD 320-397938/3-A), (MB 320-397938/1-A) and (WDM 320-398796/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Initial (320-62886-1), 11215702-Control (320-62886-2), 11215702-Treatment-1 (320-62886-3), 11215702-Treatment-2 (320-62886-4), (CCV 320-399515/2) and (CCV 320-398798/14). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Initial (320-62886-1), 11215702-Control (320-62886-2) and (CCV 320-399843/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Ion abundance ratios are outside criteria for the Isotope Dilution Analyte (IDA) associated with the following sample: 11215702-Control (320-62886-2). The theoretical area for the IDA was used to quantitate recovery and target concentration.

Several analytes were detected in method blank MB 320-397938/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Detection Summary

Client Sample ID: 11215702-Initial Lab Sample ID: 320-62886-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	37	J	47	1.4	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	560		47	4.0	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	270		47	4.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.3	J q B	47	0.45	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	5.9	J	47	0.49	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.7	J q	47	0.44	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	1600		47	6.0	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	670		47	6.3	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	25	J	47	6.1	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	75		47	5.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	190	B	47	1.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1000	B	47	4.9	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	240		47	4.6	pg/L	1		1613B	Total/NA
OCDD	3100	B	95	5.5	pg/L	1		1613B	Total/NA
OCDF	610		95	1.8	pg/L	1		1613B	Total/NA
Total TCDD	4100		9.5	9.1	pg/L	1		1613B	Total/NA
Total TCDF	21000	G	49	49	pg/L	1		1613B	Total/NA
Total PeCDD	41	J q	47	1.4	pg/L	1		1613B	Total/NA
Total PeCDF	1300	q	47	4.0	pg/L	1		1613B	Total/NA
Total HxCDD	41	J q B	47	0.46	pg/L	1		1613B	Total/NA
Total HxCDF	2500		47	6.1	pg/L	1		1613B	Total/NA
Total HpCDD	380	B	47	1.8	pg/L	1		1613B	Total/NA
Total HpCDF	1400	B	47	4.8	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	3500		47	18	pg/L	5		1613B	Total/NA
2,3,7,8-TCDF - RADL	11000		47	21	pg/L	5		1613B	Total/NA
Barium	0.52		0.0050	0.0025	mg/L	1		6010C	Total/NA
Beryllium	0.0013	J	0.0020	0.00030	mg/L	1		6010C	Total/NA
Boron	0.12		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	280	B	0.50	0.050	mg/L	1		6010C	Total/NA
Cadmium	0.0029		0.0020	0.00050	mg/L	1		6010C	Total/NA
Cobalt	0.013		0.0050	0.0030	mg/L	1		6010C	Total/NA
Chromium	0.048		0.0080	0.0012	mg/L	1		6010C	Total/NA
Copper	0.16		0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	26	B	0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	100		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	200		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	1.6		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0048	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	2500	B	10	2.5	mg/L	10		6010C	Total/NA
Nickel	0.044		0.0050	0.0024	mg/L	1		6010C	Total/NA
Phosphorus	2.6		0.50	0.050	mg/L	1		6010C	Total/NA
Lead	0.10		0.0050	0.0025	mg/L	1		6010C	Total/NA
Vanadium	0.058		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.49		0.010	0.0030	mg/L	1		6010C	Total/NA
Tin	0.0072	J	0.020	0.0050	mg/L	1		6010C	Total/NA
Titanium	0.23	F1	0.010	0.0021	mg/L	1		6010C	Total/NA
Strontium	0.71		0.050	0.0050	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client Sample ID: 11215702-Control Lab Sample ID: 320-62886-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	160		47	9.0	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	2100		47	28	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	1200		47	29	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	21	J q	47	2.7	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	9.6	J q	47	2.6	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	3300		47	12	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	960		47	13	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	58		47	11	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	110		47	12	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	840	B	47	8.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1100	B	47	10	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	370		47	11	pg/L	1		1613B	Total/NA
OCDD	12000	B	94	21	pg/L	1		1613B	Total/NA
OCDF	710		94	8.6	pg/L	1		1613B	Total/NA
Total TCDD	19000	G	53	53	pg/L	1		1613B	Total/NA
Total TCDF	94000	G	290	290	pg/L	1		1613B	Total/NA
Total PeCDD	160		47	9.0	pg/L	1		1613B	Total/NA
Total PeCDF	5000	q	47	28	pg/L	1		1613B	Total/NA
Total HxCDD	140	q B	47	2.6	pg/L	1		1613B	Total/NA
Total HxCDF	4900		47	12	pg/L	1		1613B	Total/NA
Total HpCDD	1700	B	47	8.8	pg/L	1		1613B	Total/NA
Total HpCDF	1900	B	47	10	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	17000		190	39	pg/L	20		1613B	Total/NA
2,3,7,8-TCDF - RADL	46000		190	62	pg/L	20		1613B	Total/NA
Barium	0.36		0.0050	0.0025	mg/L	1		6010C	Total/NA
Beryllium	0.00097	J	0.0020	0.00030	mg/L	1		6010C	Total/NA
Boron	0.12		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	200	B	0.50	0.050	mg/L	1		6010C	Total/NA
Cadmium	0.0020		0.0020	0.00050	mg/L	1		6010C	Total/NA
Cobalt	0.0085		0.0050	0.0030	mg/L	1		6010C	Total/NA
Chromium	0.035		0.0080	0.0012	mg/L	1		6010C	Total/NA
Copper	0.11		0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	19	B	0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	100		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	210		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.95		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0043	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	2500	B ^	10	2.5	mg/L	10		6010C	Total/NA
Nickel	0.034		0.0050	0.0024	mg/L	1		6010C	Total/NA
Phosphorus	1.7		0.50	0.050	mg/L	1		6010C	Total/NA
Lead	0.066		0.0050	0.0025	mg/L	1		6010C	Total/NA
Vanadium	0.046		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.34		0.010	0.0030	mg/L	1		6010C	Total/NA
Tin	0.0055	J	0.020	0.0050	mg/L	1		6010C	Total/NA
Titanium	0.19		0.010	0.0021	mg/L	1		6010C	Total/NA
Strontium	0.48		0.050	0.0050	mg/L	1		6010C	Total/NA

Client Sample ID: 11215702-Treatment-1 Lab Sample ID: 320-62886-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	9.2	J q	9.4	1.6	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Treatment-1 (Continued) Lab Sample ID: 320-62886-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	12	J q	47	0.91	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	11	J q	47	0.56	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	9.4	J	47	0.55	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	15	J B	47	0.47	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	16	J	47	0.52	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	17	J	47	0.46	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	18	J	47	0.52	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	18	J	47	0.53	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	20	J	47	0.48	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	14	J	47	0.48	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	38	J B	47	0.72	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	65	B	47	0.88	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	18	J	47	0.81	pg/L	1		1613B	Total/NA
OCDD	240	B	94	0.69	pg/L	1		1613B	Total/NA
OCDF	110		94	1.3	pg/L	1		1613B	Total/NA
Total TCDD	9.2	J q	9.4	1.6	pg/L	1		1613B	Total/NA
Total TCDF	43		9.4	0.80	pg/L	1		1613B	Total/NA
Total PeCDD	12	J q	47	0.91	pg/L	1		1613B	Total/NA
Total PeCDF	20	J q	47	0.55	pg/L	1		1613B	Total/NA
Total HxCDD	51	q B	47	0.48	pg/L	1		1613B	Total/NA
Total HxCDF	78		47	0.50	pg/L	1		1613B	Total/NA
Total HpCDD	72	B	47	0.72	pg/L	1		1613B	Total/NA
Total HpCDF	94	B	47	0.84	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	24		9.4	0.98	pg/L	1		1613B	Total/NA
Barium	0.10		0.0050	0.0025	mg/L	1		6010C	Total/NA
Boron	0.075	J	0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	99	B	0.50	0.050	mg/L	1		6010C	Total/NA
Cadmium	0.00071	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Chromium	0.0012	J	0.0080	0.0012	mg/L	1		6010C	Total/NA
Copper	0.0067	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	0.16	B	0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	79		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	160		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.20		0.0050	0.0025	mg/L	1		6010C	Total/NA
Sodium	2500	B ^	10	2.5	mg/L	10		6010C	Total/NA
Nickel	0.0068		0.0050	0.0024	mg/L	1		6010C	Total/NA
Zinc	0.047		0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.19		0.050	0.0050	mg/L	1		6010C	Total/NA

Client Sample ID: 11215702-Treatment-2 Lab Sample ID: 320-62886-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	36		9.4	1.7	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	4.7	J q	47	0.57	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	3.1	J q	47	0.56	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.8	J B	47	0.29	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.7	J	47	0.30	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	7.5	J	47	0.32	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	2.6	J q	47	0.34	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	1.2	J q	47	0.30	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1.5	J	47	0.31	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Treatment-2 (Continued)

Lab Sample ID: 320-62886-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	15	J B	47	0.64	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	5.1	J B	47	0.37	pg/L	1		1613B	Total/NA
OCDD	120	B	94	0.64	pg/L	1		1613B	Total/NA
OCDF	7.9	J	94	0.98	pg/L	1		1613B	Total/NA
Total TCDD	36		9.4	1.7	pg/L	1		1613B	Total/NA
Total TCDF	170		9.4	1.1	pg/L	1		1613B	Total/NA
Total PeCDF	10	J q	47	0.56	pg/L	1		1613B	Total/NA
Total HxCDD	6.9	J B	47	0.31	pg/L	1		1613B	Total/NA
Total HxCDF	14	J q	47	0.32	pg/L	1		1613B	Total/NA
Total HpCDD	49	B	47	0.64	pg/L	1		1613B	Total/NA
Total HpCDF	7.3	J B	47	0.37	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	89		9.4	1.1	pg/L	1		1613B	Total/NA
Silver	0.00084	J	0.0050	0.00084	mg/L	1		6010C	Total/NA
Barium	0.099		0.0050	0.0025	mg/L	1		6010C	Total/NA
Boron	0.13		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	97	B	0.50	0.050	mg/L	1		6010C	Total/NA
Cadmium	0.00060	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Copper	0.0029	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	0.055	J B	0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	80		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	160		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.18		0.0050	0.0025	mg/L	1		6010C	Total/NA
Sodium	2200	B ^	10	2.5	mg/L	10		6010C	Total/NA
Nickel	0.0068		0.0050	0.0024	mg/L	1		6010C	Total/NA
Zinc	0.049		0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.18		0.050	0.0050	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GHD Services Inc. Job ID: 320-62886-1

Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Initial Lab Sample ID: 320-62886-1

Date Collected: 07/20/20 10:00 **Matrix: Water**

Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**37**	**J**	47	1.4	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,7,8-PeCDF	**560**		47	4.0	pg/L		07/24/20 12:28	07/28/20 07:37	1
2,3,4,7,8-PeCDF	**270**		47	4.0	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,4,7,8-HxCDD	**2.3**	**J q B**	47	0.45	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,6,7,8-HxCDD	**5.9**	**J**	47	0.49	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,7,8,9-HxCDD	**2.7**	**J q**	47	0.44	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,4,7,8-HxCDF	**1600**		47	6.0	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,6,7,8-HxCDF	**670**		47	6.3	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,7,8,9-HxCDF	**25**	**J**	47	6.1	pg/L		07/24/20 12:28	07/28/20 07:37	1
2,3,4,6,7,8-HxCDF	**75**		47	5.8	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,4,6,7,8-HpCDD	**190**	**B**	47	1.8	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,4,6,7,8-HpCDF	**1000**	**B**	47	4.9	pg/L		07/24/20 12:28	07/28/20 07:37	1
1,2,3,4,7,8,9-HpCDF	**240**		47	4.6	pg/L		07/24/20 12:28	07/28/20 07:37	1
OCDD	**3100**	**B**	95	5.5	pg/L		07/24/20 12:28	07/28/20 07:37	1
OCDF	**610**		95	1.8	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total TCDD	**4100**		9.5	9.1	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total TCDF	**21000**	**G**	49	49	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total PeCDD	**41**	**J q**	47	1.4	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total PeCDF	**1300**	**q**	47	4.0	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total HxCDD	**41**	**J q B**	47	0.46	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total HxCDF	**2500**		47	6.1	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total HpCDD	**380**	**B**	47	1.8	pg/L		07/24/20 12:28	07/28/20 07:37	1
Total HpCDF	**1400**	**B**	47	4.8	pg/L		07/24/20 12:28	07/28/20 07:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*59*		*25 - 164*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,7,8-PeCDF	*65*		*24 - 185*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,4,7,8-HxCDD	*66*		*32 - 141*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,6,7,8-HxCDD	*63*		*28 - 130*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,6,7,8-HxCDF	*68*		*26 - 123*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,7,8,9-HxCDF	*69*		*29 - 147*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*28 - 136*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*66*		*23 - 140*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*28 - 143*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*26 - 138*	*07/24/20 12:28*	*07/28/20 07:37*	*1*
13C-OCDD	*80*		*17 - 157*	*07/24/20 12:28*	*07/28/20 07:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*92*		*35 - 197*	*07/24/20 12:28*	*07/28/20 07:37*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**3500**		47	18	pg/L		07/24/20 12:28	07/30/20 20:05	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*07/24/20 12:28*	*07/30/20 20:05*	*5*

Client Sample ID: 11215702-Initial

Lab Sample ID: 320-62886-1

Date Collected: 07/20/20 10:00
Matrix: Water
Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-2,3,4,7,8-PeCDF	*69*		*21 - 178*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,4,7,8-HxCDD	*64*		*32 - 141*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,6,7,8-HxCDD	*63*		*28 - 130*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,6,7,8-HxCDF	*63*		*26 - 123*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,7,8,9-HxCDF	*64*		*29 - 147*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-2,3,4,6,7,8-HxCDF	*65*		*28 - 136*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,4,6,7,8-HpCDD	*66*		*23 - 140*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*28 - 143*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*26 - 138*	*07/24/20 12:28*	*07/30/20 20:05*	*5*
13C-OCDD	*72*		*17 - 157*	*07/24/20 12:28*	*07/30/20 20:05*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*92*		*35 - 197*	*07/24/20 12:28*	*07/30/20 20:05*	*5*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**11000**		47	21	pg/L		07/24/20 12:28	07/30/20 15:43	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*59*		*24 - 169*	*07/24/20 12:28*	*07/30/20 15:43*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*07/24/20 12:28*	*07/30/20 15:43*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		07/22/20 12:38	07/24/20 14:21	1
Arsenic	ND		0.020	0.012	mg/L		07/22/20 12:38	07/23/20 17:49	1
Barium	**0.52**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 17:49	1
Beryllium	**0.0013**	**J**	0.0020	0.00030	mg/L		07/22/20 12:38	07/23/20 17:49	1
Boron	**0.12**		0.10	0.021	mg/L		07/22/20 12:38	07/23/20 17:49	1
Calcium	**280**	**B**	0.50	0.050	mg/L		07/22/20 12:38	07/23/20 17:49	1
Cadmium	**0.0029**		0.0020	0.00050	mg/L		07/22/20 12:38	07/23/20 17:49	1
Cobalt	**0.013**		0.0050	0.0030	mg/L		07/22/20 12:38	07/23/20 17:49	1
Chromium	**0.048**		0.0080	0.0012	mg/L		07/22/20 12:38	07/23/20 17:49	1
Copper	**0.16**		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 17:49	1
Iron	**26**	**B**	0.10	0.020	mg/L		07/22/20 12:38	07/24/20 14:21	1
Potassium	**100**		1.0	0.093	mg/L		07/22/20 12:38	07/23/20 17:49	1
Magnesium	**200**		0.50	0.040	mg/L		07/22/20 12:38	07/23/20 17:49	1
Manganese	**1.6**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 17:49	1
Molybdenum	**0.0048**	**J**	0.020	0.0027	mg/L		07/22/20 12:38	07/23/20 17:49	1
Sodium	**2500**	**B**	10	2.5	mg/L		07/22/20 12:38	07/24/20 13:26	10
Nickel	**0.044**		0.0050	0.0024	mg/L		07/22/20 12:38	07/23/20 17:49	1
Phosphorus	**2.6**		0.50	0.050	mg/L		07/22/20 12:38	07/23/20 17:49	1
Lead	**0.10**		0.0050	0.0025	mg/L		07/22/20 12:38	07/24/20 14:21	1
Selenium	ND		0.020	0.013	mg/L		07/22/20 12:38	07/23/20 17:49	1
Vanadium	**0.058**		0.0050	0.0019	mg/L		07/22/20 12:38	07/23/20 17:49	1
Zinc	**0.49**		0.010	0.0030	mg/L		07/22/20 12:38	07/23/20 17:49	1

Client Sample ID: 11215702-Initial

Lab Sample ID: 320-62886-1

Date Collected: 07/20/20 10:00
Date Received: 07/21/20 09:35
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	F1	0.020	0.0098	mg/L		07/22/20 12:38	07/23/20 17:49	1
Thallium	ND		0.020	0.0090	mg/L		07/22/20 12:38	07/23/20 17:49	1
Tin	**0.0072**	**J**	0.020	0.0050	mg/L		07/22/20 12:38	07/23/20 17:49	1
Titanium	**0.23**	**F1**	0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 17:49	1
Strontium	**0.71**		0.050	0.0050	mg/L		07/22/20 12:38	07/23/20 17:49	1

Client Sample ID: 11215702-Control

Lab Sample ID: 320-62886-2

Date Collected: 07/20/20 11:00
Date Received: 07/21/20 09:35
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**160**		47	9.0	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,7,8-PeCDF	**2100**		47	28	pg/L		07/24/20 12:28	07/28/20 08:25	1
2,3,4,7,8-PeCDF	**1200**		47	29	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,4,7,8-HxCDD	ND		47	2.7	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,6,7,8-HxCDD	**21**	**J q**	47	2.7	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,7,8,9-HxCDD	**9.6**	**J q**	47	2.6	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,4,7,8-HxCDF	**3300**		47	12	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,6,7,8-HxCDF	**960**		47	13	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,7,8,9-HxCDF	**58**		47	11	pg/L		07/24/20 12:28	07/28/20 08:25	1
2,3,4,6,7,8-HxCDF	**110**		47	12	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,4,6,7,8-HpCDD	**840**	**B**	47	8.8	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,4,6,7,8-HpCDF	**1100**	**B**	47	10	pg/L		07/24/20 12:28	07/28/20 08:25	1
1,2,3,4,7,8,9-HpCDF	**370**		47	11	pg/L		07/24/20 12:28	07/28/20 08:25	1
OCDD	**12000**	**B**	94	21	pg/L		07/24/20 12:28	07/28/20 08:25	1
OCDF	**710**		94	8.6	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total TCDD	**19000**	**G**	53	53	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total TCDF	**94000**	**G**	290	290	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total PeCDD	**160**		47	9.0	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total PeCDF	**5000**	**q**	47	28	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total HxCDD	**140**	**q B**	47	2.6	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total HxCDF	**4900**		47	12	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total HpCDD	**1700**	**B**	47	8.8	pg/L		07/24/20 12:28	07/28/20 08:25	1
Total HpCDF	**1900**	**B**	47	10	pg/L		07/24/20 12:28	07/28/20 08:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*21 - 178*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,4,7,8-HxCDD	*67*		*32 - 141*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,6,7,8-HxCDD	*67*		*28 - 130*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 147*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*28 - 136*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*61*		*23 - 140*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*28 - 143*	*07/24/20 12:28*	*07/28/20 08:25*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*26 - 138*	*07/24/20 12:28*	*07/28/20 08:25*	*1*

Client Sample ID: 11215702-Control
Lab Sample ID: 320-62886-2

Date Collected: 07/20/20 11:00
Matrix: Water
Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-OCDD	*74*		*17 - 157*	*07/24/20 12:28*	*07/28/20 08:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*105*		*35 - 197*	*07/24/20 12:28*	*07/28/20 08:25*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**17000**		190	39	pg/L		07/24/20 12:28	07/30/20 20:53	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*59*		*25 - 164*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,7,8-PeCDD	*51*	*q*	*25 - 181*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-2,3,4,7,8-PeCDF	*64*		*21 - 178*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,4,7,8-HxCDD	*65*		*32 - 141*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,6,7,8-HxCDD	*62*		*28 - 130*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,6,7,8-HxCDF	*64*		*26 - 123*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-2,3,4,6,7,8-HxCDF	*63*		*28 - 136*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*23 - 140*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,4,6,7,8-HpCDF	*63*		*28 - 143*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-1,2,3,4,7,8,9-HpCDF	*70*		*26 - 138*	*07/24/20 12:28*	*07/30/20 20:53*	*20*
13C-OCDD	*62*		*17 - 157*	*07/24/20 12:28*	*07/30/20 20:53*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*07/24/20 12:28*	*07/30/20 20:53*	*20*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**46000**		190	62	pg/L		07/24/20 12:28	07/30/20 16:21	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*57*		*24 - 169*	*07/24/20 12:28*	*07/30/20 16:21*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*83*		*35 - 197*	*07/24/20 12:28*	*07/30/20 16:21*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		07/22/20 12:38	07/24/20 14:48	1
Arsenic	ND		0.020	0.012	mg/L		07/22/20 12:38	07/23/20 18:09	1
Barium	**0.36**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 18:09	1
Beryllium	**0.00097**	**J**	0.0020	0.00030	mg/L		07/22/20 12:38	07/23/20 18:09	1
Boron	**0.12**		0.10	0.021	mg/L		07/22/20 12:38	07/23/20 18:09	1
Calcium	**200**	**B**	0.50	0.050	mg/L		07/22/20 12:38	07/23/20 18:09	1
Cadmium	**0.0020**		0.0020	0.00050	mg/L		07/22/20 12:38	07/23/20 18:09	1
Cobalt	**0.0085**		0.0050	0.0030	mg/L		07/22/20 12:38	07/23/20 18:09	1
Chromium	**0.035**		0.0080	0.0012	mg/L		07/22/20 12:38	07/23/20 18:09	1
Copper	**0.11**		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 18:09	1
Iron	**19**	**B**	0.10	0.020	mg/L		07/22/20 12:38	07/24/20 14:48	1

Client Sample ID: 11215702-Control

Lab Sample ID: 320-62886-2

Date Collected: 07/20/20 11:00
Matrix: Water
Date Received: 07/21/20 09:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**100**		1.0	0.093	mg/L		07/22/20 12:38	07/23/20 18:09	1
Magnesium	**210**		0.50	0.040	mg/L		07/22/20 12:38	07/23/20 18:09	1
Manganese	**0.95**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 18:09	1
Molybdenum	**0.0043**	**J**	0.020	0.0027	mg/L		07/22/20 12:38	07/23/20 18:09	1
Sodium	**2500**	**B ^**	10	2.5	mg/L		07/22/20 12:38	07/24/20 13:53	10
Nickel	**0.034**		0.0050	0.0024	mg/L		07/22/20 12:38	07/23/20 18:09	1
Phosphorus	**1.7**		0.50	0.050	mg/L		07/22/20 12:38	07/23/20 18:09	1
Lead	**0.066**		0.0050	0.0025	mg/L		07/22/20 12:38	07/24/20 14:48	1
Selenium	ND		0.020	0.013	mg/L		07/22/20 12:38	07/23/20 18:09	1
Vanadium	**0.046**		0.0050	0.0019	mg/L		07/22/20 12:38	07/23/20 18:09	1
Zinc	**0.34**		0.010	0.0030	mg/L		07/22/20 12:38	07/23/20 18:09	1
Antimony	ND		0.020	0.0098	mg/L		07/22/20 12:38	07/23/20 18:09	1
Thallium	ND		0.020	0.0090	mg/L		07/22/20 12:38	07/23/20 18:09	1
Tin	**0.0055**	**J**	0.020	0.0050	mg/L		07/22/20 12:38	07/23/20 18:09	1
Titanium	**0.19**		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 18:09	1
Strontium	**0.48**		0.050	0.0050	mg/L		07/22/20 12:38	07/23/20 18:09	1

Client Sample ID: 11215702-Treatment-1

Lab Sample ID: 320-62886-3

Date Collected: 07/20/20 13:00
Matrix: Water
Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**9.2**	**J q**	9.4	1.6	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,7,8-PeCDD	**12**	**J q**	47	0.91	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,7,8-PeCDF	**11**	**J q**	47	0.56	pg/L		07/24/20 12:28	07/28/20 09:13	1
2,3,4,7,8-PeCDF	**9.4**	**J**	47	0.55	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,4,7,8-HxCDD	**15**	**J B**	47	0.47	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,6,7,8-HxCDD	**16**	**J**	47	0.52	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,7,8,9-HxCDD	**17**	**J**	47	0.46	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,4,7,8-HxCDF	**18**	**J**	47	0.52	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,6,7,8-HxCDF	**18**	**J**	47	0.53	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,7,8,9-HxCDF	**20**	**J**	47	0.48	pg/L		07/24/20 12:28	07/28/20 09:13	1
2,3,4,6,7,8-HxCDF	**14**	**J**	47	0.48	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,4,6,7,8-HpCDD	**38**	**J B**	47	0.72	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,4,6,7,8-HpCDF	**65**	**B**	47	0.88	pg/L		07/24/20 12:28	07/28/20 09:13	1
1,2,3,4,7,8,9-HpCDF	**18**	**J**	47	0.81	pg/L		07/24/20 12:28	07/28/20 09:13	1
OCDD	**240**	**B**	94	0.69	pg/L		07/24/20 12:28	07/28/20 09:13	1
OCDF	**110**		94	1.3	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total TCDD	**9.2**	**J q**	9.4	1.6	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total TCDF	**43**		9.4	0.80	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total PeCDD	**12**	**J q**	47	0.91	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total PeCDF	**20**	**J q**	47	0.55	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total HxCDD	**51**	**q B**	47	0.48	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total HxCDF	**78**		47	0.50	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total HpCDD	**72**	**B**	47	0.72	pg/L		07/24/20 12:28	07/28/20 09:13	1
Total HpCDF	**94**	**B**	47	0.84	pg/L		07/24/20 12:28	07/28/20 09:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*57*		*25 - 164*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*07/24/20 12:28*	*07/28/20 09:13*	*1*

Client Sample Results

Client: GHD Services Inc. Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Treatment-1 Lab Sample ID: 320-62886-3

Date Collected: 07/20/20 13:00 **Matrix: Water**
Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*55*		*25 - 181*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,7,8-PeCDF	*58*		*24 - 185*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-2,3,4,7,8-PeCDF	*65*		*21 - 178*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*63*		*32 - 141*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*59*		*28 - 130*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*67*		*26 - 152*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*62*		*26 - 123*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*29 - 147*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*62*		*28 - 136*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*61*		*23 - 140*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*62*		*28 - 143*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*26 - 138*	*07/24/20 12:28*	*07/28/20 09:13*	*1*
13C-OCDD	*72*		*17 - 157*	*07/24/20 12:28*	*07/28/20 09:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*86*		*35 - 197*	*07/24/20 12:28*	*07/28/20 09:13*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**24**		9.4	0.98	pg/L		07/24/20 12:28	07/29/20 15:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*07/24/20 12:28*	*07/29/20 15:21*	*1*
13C-2,3,7,8-TCDF	*55*		*24 - 169*	*07/24/20 12:28*	*07/29/20 15:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*07/24/20 12:28*	*07/29/20 15:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		07/22/20 12:38	07/24/20 14:52	1
Arsenic	ND		0.020	0.012	mg/L		07/22/20 12:38	07/23/20 18:13	1
Barium	**0.10**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 18:13	1
Beryllium	ND		0.0020	0.00030	mg/L		07/22/20 12:38	07/23/20 18:13	1
Boron	**0.075**	**J**	0.10	0.021	mg/L		07/22/20 12:38	07/23/20 18:13	1
Calcium	**99**	**B**	0.50	0.050	mg/L		07/22/20 12:38	07/23/20 18:13	1
Cadmium	**0.00071**	**J**	0.0020	0.00050	mg/L		07/22/20 12:38	07/23/20 18:13	1
Cobalt	ND		0.0050	0.0030	mg/L		07/22/20 12:38	07/23/20 18:13	1
Chromium	**0.0012**	**J**	0.0080	0.0012	mg/L		07/22/20 12:38	07/23/20 18:13	1
Copper	**0.0067**	**J**	0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 18:13	1
Iron	**0.16**	**B**	0.10	0.020	mg/L		07/22/20 12:38	07/24/20 14:52	1
Potassium	**79**		1.0	0.093	mg/L		07/22/20 12:38	07/23/20 18:13	1
Magnesium	**160**		0.50	0.040	mg/L		07/22/20 12:38	07/23/20 18:13	1
Manganese	**0.20**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 18:13	1
Molybdenum	ND		0.020	0.0027	mg/L		07/22/20 12:38	07/23/20 18:13	1
Sodium	**2500**	**B ^**	10	2.5	mg/L		07/22/20 12:38	07/24/20 13:57	10
Nickel	**0.0068**		0.0050	0.0024	mg/L		07/22/20 12:38	07/23/20 18:13	1
Phosphorus	ND		0.50	0.050	mg/L		07/22/20 12:38	07/23/20 18:13	1
Lead	ND		0.0050	0.0025	mg/L		07/22/20 12:38	07/24/20 14:52	1
Selenium	ND		0.020	0.013	mg/L		07/22/20 12:38	07/23/20 18:13	1
Vanadium	ND		0.0050	0.0019	mg/L		07/22/20 12:38	07/23/20 18:13	1

Client Sample ID: 11215702-Treatment-1 Lab Sample ID: 320-62886-3

Date Collected: 07/20/20 13:00 **Matrix: Water**
Date Received: 07/21/20 09:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	**0.047**		0.010	0.0030	mg/L		07/22/20 12:38	07/23/20 18:13	1
Antimony	ND		0.020	0.0098	mg/L		07/22/20 12:38	07/23/20 18:13	1
Thallium	ND		0.020	0.0090	mg/L		07/22/20 12:38	07/23/20 18:13	1
Tin	ND		0.020	0.0050	mg/L		07/22/20 12:38	07/23/20 18:13	1
Titanium	ND		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 18:13	1
Strontium	**0.19**		0.050	0.0050	mg/L		07/22/20 12:38	07/23/20 18:13	1

Client Sample ID: 11215702-Treatment-2 Lab Sample ID: 320-62886-4

Date Collected: 07/20/20 14:30 **Matrix: Water**
Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**36**		9.4	1.7	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,7,8-PeCDD	ND		47	0.94	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,7,8-PeCDF	**4.7**	**J q**	47	0.57	pg/L		07/24/20 12:28	07/28/20 10:01	1
2,3,4,7,8-PeCDF	**3.1**	**J q**	47	0.56	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,4,7,8-HxCDD	**2.8**	**J B**	47	0.29	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,6,7,8-HxCDD	ND		47	0.34	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,7,8,9-HxCDD	**1.7**	**J**	47	0.30	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,4,7,8-HxCDF	**7.5**	**J**	47	0.32	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,6,7,8-HxCDF	**2.6**	**J q**	47	0.34	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,7,8,9-HxCDF	**1.2**	**J q**	47	0.30	pg/L		07/24/20 12:28	07/28/20 10:01	1
2,3,4,6,7,8-HxCDF	**1.5**	**J**	47	0.31	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	47	0.64	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,4,6,7,8-HpCDF	**5.1**	**J B**	47	0.37	pg/L		07/24/20 12:28	07/28/20 10:01	1
1,2,3,4,7,8,9-HpCDF	ND		47	0.36	pg/L		07/24/20 12:28	07/28/20 10:01	1
OCDD	**120**	**B**	94	0.64	pg/L		07/24/20 12:28	07/28/20 10:01	1
OCDF	**7.9**	**J**	94	0.98	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total TCDD	**36**		9.4	1.7	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total TCDF	**170**		9.4	1.1	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total PeCDD	ND		47	0.94	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total PeCDF	**10**	**J q**	47	0.56	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total HxCDD	**6.9**	**J B**	47	0.31	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total HxCDF	**14**	**J q**	47	0.32	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total HpCDD	**49**	**B**	47	0.64	pg/L		07/24/20 12:28	07/28/20 10:01	1
Total HpCDF	**7.3**	**J B**	47	0.37	pg/L		07/24/20 12:28	07/28/20 10:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*58*		*25 - 164*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,7,8-PeCDD	*56*		*25 - 181*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,7,8-PeCDF	*58*		*24 - 185*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*61*		*32 - 141*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*58*		*28 - 130*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,4,7,8-HxCDF	*67*		*26 - 152*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,6,7,8-HxCDF	*62*		*26 - 123*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-2,3,4,6,7,8-HxCDF	*63*		*28 - 136*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*60*		*23 - 140*	*07/24/20 12:28*	*07/28/20 10:01*	*1*

Client Sample ID: 11215702-Treatment-2

Lab Sample ID: 320-62886-4

Date Collected: 07/20/20 14:30
Matrix: Water
Date Received: 07/21/20 09:35

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDF	*62*		*28 - 143*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*70*		*26 - 138*	*07/24/20 12:28*	*07/28/20 10:01*	*1*
13C-OCDD	*72*		*17 - 157*	*07/24/20 12:28*	*07/28/20 10:01*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*86*		*35 - 197*	*07/24/20 12:28*	*07/28/20 10:01*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**89**		9.4	1.1	pg/L		07/24/20 12:28	07/29/20 15:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*57*		*25 - 164*	*07/24/20 12:28*	*07/29/20 15:59*	*1*
13C-2,3,7,8-TCDF	*58*		*24 - 169*	*07/24/20 12:28*	*07/29/20 15:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*07/24/20 12:28*	*07/29/20 15:59*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.00084**	**J**	0.0050	0.00084	mg/L		07/22/20 12:38	07/24/20 14:56	1
Arsenic	ND		0.020	0.012	mg/L		07/22/20 12:38	07/23/20 18:17	1
Barium	**0.099**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 18:17	1
Beryllium	ND		0.0020	0.00030	mg/L		07/22/20 12:38	07/23/20 18:17	1
Boron	**0.13**		0.10	0.021	mg/L		07/22/20 12:38	07/23/20 18:17	1
Calcium	**97**	**B**	0.50	0.050	mg/L		07/22/20 12:38	07/23/20 18:17	1
Cadmium	**0.00060**	**J**	0.0020	0.00050	mg/L		07/22/20 12:38	07/23/20 18:17	1
Cobalt	ND		0.0050	0.0030	mg/L		07/22/20 12:38	07/23/20 18:17	1
Chromium	ND		0.0080	0.0012	mg/L		07/22/20 12:38	07/23/20 18:17	1
Copper	**0.0029**	**J**	0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 18:17	1
Iron	**0.055**	**J B**	0.10	0.020	mg/L		07/22/20 12:38	07/24/20 14:56	1
Potassium	**80**		1.0	0.093	mg/L		07/22/20 12:38	07/23/20 18:17	1
Magnesium	**160**		0.50	0.040	mg/L		07/22/20 12:38	07/23/20 18:17	1
Manganese	**0.18**		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 18:17	1
Molybdenum	ND		0.020	0.0027	mg/L		07/22/20 12:38	07/23/20 18:17	1
Sodium	**2200**	**B ^**	10	2.5	mg/L		07/22/20 12:38	07/24/20 14:01	10
Nickel	**0.0068**		0.0050	0.0024	mg/L		07/22/20 12:38	07/23/20 18:17	1
Phosphorus	ND		0.50	0.050	mg/L		07/22/20 12:38	07/23/20 18:17	1
Lead	ND		0.0050	0.0025	mg/L		07/22/20 12:38	07/24/20 14:56	1
Selenium	ND		0.020	0.013	mg/L		07/22/20 12:38	07/23/20 18:17	1
Vanadium	ND		0.0050	0.0019	mg/L		07/22/20 12:38	07/23/20 18:17	1
Zinc	**0.049**		0.010	0.0030	mg/L		07/22/20 12:38	07/23/20 18:17	1
Antimony	ND		0.020	0.0098	mg/L		07/22/20 12:38	07/23/20 18:17	1
Thallium	ND		0.020	0.0090	mg/L		07/22/20 12:38	07/23/20 18:17	1
Tin	ND		0.020	0.0050	mg/L		07/22/20 12:38	07/23/20 18:17	1
Titanium	ND		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 18:17	1
Strontium	**0.18**		0.050	0.0050	mg/L		07/22/20 12:38	07/23/20 18:17	1

Toxicity Summary

Client: GHD Services Inc.
Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Initial

Lab Sample ID: 320-62886-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**37**	**J**	47	1.4	pg/L	1	**37**	1613B
1,2,3,7,8-PeCDF	**560**		47	4.0	pg/L	0.03	**17**	1613B
2,3,4,7,8-PeCDF	**270**		47	4.0	pg/L	0.3	**81**	1613B
1,2,3,4,7,8-HxCDD	**2.3**	**J q B**	47	0.45	pg/L	0.1	**0.23**	1613B
1,2,3,6,7,8-HxCDD	**5.9**	**J**	47	0.49	pg/L	0.1	**0.59**	1613B
1,2,3,7,8,9-HxCDD	**2.7**	**J q**	47	0.44	pg/L	0.1	**0.27**	1613B
1,2,3,4,7,8-HxCDF	**1600**		47	6.0	pg/L	0.1	**160**	1613B
1,2,3,6,7,8-HxCDF	**670**		47	6.3	pg/L	0.1	**67**	1613B
1,2,3,7,8,9-HxCDF	**25**	**J**	47	6.1	pg/L	0.1	**2.5**	1613B
2,3,4,6,7,8-HxCDF	**75**		47	5.8	pg/L	0.1	**7.5**	1613B
1,2,3,4,6,7,8-HpCDD	**190**	**B**	47	1.8	pg/L	0.01	**1.9**	1613B
1,2,3,4,6,7,8-HpCDF	**1000**	**B**	47	4.9	pg/L	0.01	**10**	1613B
1,2,3,4,7,8,9-HpCDF	**240**		47	4.6	pg/L	0.01	**2.4**	1613B
OCDD	**3100**	**B**	95	5.5	pg/L	0.0003	**0.93**	1613B
OCDF	**610**		95	1.8	pg/L	0.0003	**0.18**	1613B
2,3,7,8-TCDD - DL	**3500**		47	18	pg/L	1	**3500**	1613B
2,3,7,8-TCDF - RADL	**11000**		47	21	pg/L	0.1	**1100**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		5000	TEQ
Total TEQ					pg/L		5000	TEQ

Client Sample ID: 11215702-Control

Lab Sample ID: 320-62886-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**160**		47	9.0	pg/L	1	**160**	1613B
1,2,3,7,8-PeCDF	**2100**		47	28	pg/L	0.03	**63**	1613B
2,3,4,7,8-PeCDF	**1200**		47	29	pg/L	0.3	**360**	1613B
1,2,3,4,7,8-HxCDD	ND		47	2.7	pg/L	0.1	0.14	1613B
1,2,3,6,7,8-HxCDD	**21**	**J q**	47	2.7	pg/L	0.1	**2.1**	1613B
1,2,3,7,8,9-HxCDD	**9.6**	**J q**	47	2.6	pg/L	0.1	**0.96**	1613B
1,2,3,4,7,8-HxCDF	**3300**		47	12	pg/L	0.1	**330**	1613B
1,2,3,6,7,8-HxCDF	**960**		47	13	pg/L	0.1	**96**	1613B
1,2,3,7,8,9-HxCDF	**58**		47	11	pg/L	0.1	**5.8**	1613B
2,3,4,6,7,8-HxCDF	**110**		47	12	pg/L	0.1	**11**	1613B
1,2,3,4,6,7,8-HpCDD	**840**	**B**	47	8.8	pg/L	0.01	**8.4**	1613B
1,2,3,4,6,7,8-HpCDF	**1100**	**B**	47	10	pg/L	0.01	**11**	1613B
1,2,3,4,7,8,9-HpCDF	**370**		47	11	pg/L	0.01	**3.7**	1613B
OCDD	**12000**	**B**	94	21	pg/L	0.0003	**3.6**	1613B
OCDF	**710**		94	8.6	pg/L	0.0003	**0.21**	1613B
2,3,7,8-TCDD - DL	**17000**		190	39	pg/L	1	**17000**	1613B
2,3,7,8-TCDF - RADL	**46000**		190	62	pg/L	0.1	**4600**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Control (Continued) Lab Sample ID: 320-62886-2

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
Total Dioxin/Furan TEQ					pg/L		23000	TEQ
Total TEQ					pg/L		23000	TEQ

Client Sample ID: 11215702-Treatment-1 Lab Sample ID: 320-62886-3

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
2,3,7,8-TCDD	**9.2**	**J q**	9.4	1.6	pg/L	1	**9.2**	1613B
1,2,3,7,8-PeCDD	**12**	**J q**	47	0.91	pg/L	1	**12**	1613B
1,2,3,7,8-PeCDF	**11**	**J q**	47	0.56	pg/L	0.03	**0.33**	1613B
2,3,4,7,8-PeCDF	**9.4**	**J**	47	0.55	pg/L	0.3	**2.8**	1613B
1,2,3,4,7,8-HxCDD	**15**	**J B**	47	0.47	pg/L	0.1	**1.5**	1613B
1,2,3,6,7,8-HxCDD	**16**	**J**	47	0.52	pg/L	0.1	**1.6**	1613B
1,2,3,7,8,9-HxCDD	**17**	**J**	47	0.46	pg/L	0.1	**1.7**	1613B
1,2,3,4,7,8-HxCDF	**18**	**J**	47	0.52	pg/L	0.1	**1.8**	1613B
1,2,3,6,7,8-HxCDF	**18**	**J**	47	0.53	pg/L	0.1	**1.8**	1613B
1,2,3,7,8,9-HxCDF	**20**	**J**	47	0.48	pg/L	0.1	**2.0**	1613B
2,3,4,6,7,8-HxCDF	**14**	**J**	47	0.48	pg/L	0.1	**1.4**	1613B
1,2,3,4,6,7,8-HpCDD	**38**	**J B**	47	0.72	pg/L	0.01	**0.38**	1613B
1,2,3,4,6,7,8-HpCDF	**65**	**B**	47	0.88	pg/L	0.01	**0.65**	1613B
1,2,3,4,7,8,9-HpCDF	**18**	**J**	47	0.81	pg/L	0.01	**0.18**	1613B
OCDD	**240**	**B**	94	0.69	pg/L	0.0003	**0.072**	1613B
OCDF	**110**		94	1.3	pg/L	0.0003	**0.033**	1613B
2,3,7,8-TCDF - RA	**24**		9.4	0.98	pg/L	0.1	**2.4**	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
Total Dioxin/Furan TEQ					pg/L		40	TEQ
Total TEQ					pg/L		40	TEQ

Client Sample ID: 11215702-Treatment-2 Lab Sample ID: 320-62886-4

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
2,3,7,8-TCDD	**36**		9.4	1.7	pg/L	1	**36**	1613B
1,2,3,7,8-PeCDD	ND		47	0.94	pg/L	1	0.47	1613B
1,2,3,7,8-PeCDF	**4.7**	**J q**	47	0.57	pg/L	0.03	**0.14**	1613B
2,3,4,7,8-PeCDF	**3.1**	**J q**	47	0.56	pg/L	0.3	**0.93**	1613B
1,2,3,4,7,8-HxCDD	**2.8**	**J B**	47	0.29	pg/L	0.1	**0.28**	1613B
1,2,3,6,7,8-HxCDD	ND		47	0.34	pg/L	0.1	0.017	1613B
1,2,3,7,8,9-HxCDD	**1.7**	**J**	47	0.30	pg/L	0.1	**0.17**	1613B
1,2,3,4,7,8-HxCDF	**7.5**	**J**	47	0.32	pg/L	0.1	**0.75**	1613B
1,2,3,6,7,8-HxCDF	**2.6**	**J q**	47	0.34	pg/L	0.1	**0.26**	1613B
1,2,3,7,8,9-HxCDF	**1.2**	**J q**	47	0.30	pg/L	0.1	**0.12**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Treatment-2 (Continued) Lab Sample ID: 320-62886-4

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
2,3,4,6,7,8-HxCDF	**1.5**	**J**	47	0.31	pg/L	0.1	**0.15**	1613B
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	47	0.64	pg/L	0.01	**0.15**	1613B
1,2,3,4,6,7,8-HpCDF	**5.1**	**J B**	47	0.37	pg/L	0.01	**0.051**	1613B
1,2,3,4,7,8,9-HpCDF	ND		47	0.36	pg/L	0.01	0.0018	1613B
OCDD	**120**	**B**	94	0.64	pg/L	0.0003	**0.036**	1613B
OCDF	**7.9**	**J**	94	0.98	pg/L	0.0003	**0.0024**	1613B
2,3,7,8-TCDF - RA	**89**		9.4	1.1	pg/L	0.1	**8.9**	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
Total Dioxin/Furan TEQ					pg/L		48	TEQ
Total TEQ					pg/L		48	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc.
Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Method: 6010C - Metals (ICP)

Prep: 3010A

Analyte	RL	MDL	Units
Antimony	0.020	0.0098	mg/L
Arsenic	0.020	0.012	mg/L
Barium	0.0050	0.0025	mg/L
Beryllium	0.0020	0.00030	mg/L
Boron	0.10	0.021	mg/L
Cadmium	0.0020	0.00050	mg/L
Calcium	0.50	0.050	mg/L
Chromium	0.0080	0.0012	mg/L
Cobalt	0.0050	0.0030	mg/L
Copper	0.010	0.0021	mg/L
Iron	0.10	0.020	mg/L
Lead	0.0050	0.0025	mg/L
Magnesium	0.50	0.040	mg/L
Manganese	0.0050	0.0025	mg/L
Molybdenum	0.020	0.0027	mg/L
Nickel	0.0050	0.0024	mg/L
Phosphorus	0.50	0.050	mg/L
Potassium	1.0	0.093	mg/L
Selenium	0.020	0.013	mg/L
Silver	0.0050	0.00084	mg/L
Sodium	1.0	0.25	mg/L
Strontium	0.050	0.0050	mg/L

Method: 6010C - Metals (ICP) (Continued)

Prep: 3010A

Analyte	RL	MDL	Units
Thallium	0.020	0.0090	mg/L
Tin	0.020	0.0050	mg/L
Titanium	0.010	0.0021	mg/L
Vanadium	0.0050	0.0019	mg/L
Zinc	0.010	0.0030	mg/L

Surrogate Summary

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-62886-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
320-62886-1	11215702-Initial	92
320-62886-1 - DL	11215702-Initial	92
320-62886-1 - RADL	11215702-Initial	94
320-62886-2	11215702-Control	105
320-62886-2 - DL	11215702-Control	96
320-62886-2 - RADL	11215702-Control	83
320-62886-3	11215702-Treatment-1	86
320-62886-3 - RA	11215702-Treatment-1	101
320-62886-4	11215702-Treatment-2	86
320-62886-4 - RA	11215702-Treatment-2	101
MB 320-397938/1-A	Method Blank	88

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-397938/2-A	Lab Control Sample	90
LCSD 320-397938/3-A	Lab Control Sample Dup	94

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc. Job ID: 320-62886-1

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (25-164)**	**TCDF (24-169)**	**PeCDD (25-181)**	**PeCDF (24-185)**	**PeCF (21-178)**	**HxCDD (32-141)**	**HxDD (28-130)**	**HxCDF (26-152)**
320-62886-1	11215702-Initial	59	65	60	65	70	66	63	73
320-62886-1 - DL	11215702-Initial	62	64	61	62	69	64	63	73
320-62886-1 - RADL	11215702-Initial		59						
320-62886-2	11215702-Control	63	70	61	67	72	67	67	73
320-62886-2 - DL	11215702-Control	59	65	51 q	59	64	65	62	68
320-62886-2 - RADL	11215702-Control		57						
320-62886-3	11215702-Treatment-1	57	61	55	58	65	63	59	67
320-62886-3 - RA	11215702-Treatment-1	60	55						
320-62886-4	11215702-Treatment-2	58	61	56	58	66	61	58	67
320-62886-4 - RA	11215702-Treatment-2	57	58						
MB 320-397938/1-A	Method Blank	71	76	67	70	79	69	68	76

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HxDF (26-123)**	**HxCF (29-147)**	**13CHxCF (28-136)**	**HpCDD (23-140)**	**HpCDF (28-143)**	**HpCDF2 (26-138)**	**OCDD (17-157)**
320-62886-1	11215702-Initial	68	69	68	66	68	78	80
320-62886-1 - DL	11215702-Initial	63	64	65	66	66	76	72
320-62886-1 - RADL	11215702-Initial							
320-62886-2	11215702-Control	65	71	68	61	68	74	74
320-62886-2 - DL	11215702-Control	64	66	63	67	63	70	62
320-62886-2 - RADL	11215702-Control							
320-62886-3	11215702-Treatment-1	62	65	62	61	62	73	72
320-62886-3 - RA	11215702-Treatment-1							
320-62886-4	11215702-Treatment-2	62	66	63	60	62	70	72
320-62886-4 - RA	11215702-Treatment-2							
MB 320-397938/1-A	Method Blank	70	74	74	67	68	75	77

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (20-175)**	**TCDF (22-152)**	**PeCDD (21-227)**	**PeCDF (21-192)**	**PeCF (13-328)**	**HxCDD (21-193)**	**HxDD (25-163)**	**HxCDF (19-202)**
LCS 320-397938/2-A	Lab Control Sample	60	70	61	64	72	64	62	69

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCSD 320-397938/3-A	Lab Control Sample Dup	61	69	66	66	78	62	57	67

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-397938/2-A	Lab Control Sample	65	67	66	60	61	71	73
LCSD 320-397938/3-A	Lab Control Sample Dup	63	67	65	59	60	68	70

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-397938/1-A
Matrix: Water
Analysis Batch: 398796

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397938

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	1.8	pg/L		07/24/20 12:28	07/27/20 19:16	1
2,3,7,8-TCDF	ND		10	0.38	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,7,8-PeCDD	ND		50	0.80	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,7,8-PeCDF	ND		50	0.45	pg/L		07/24/20 12:28	07/27/20 19:16	1
2,3,4,7,8-PeCDF	ND		50	0.45	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,4,7,8-HxCDD	1.92	J q	50	0.22	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,6,7,8-HxCDD	ND		50	0.24	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,7,8,9-HxCDD	ND		50	0.22	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,4,7,8-HxCDF	ND		50	0.21	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,6,7,8-HxCDF	ND		50	0.22	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,7,8,9-HxCDF	ND		50	0.20	pg/L		07/24/20 12:28	07/27/20 19:16	1
2,3,4,6,7,8-HxCDF	ND		50	0.19	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,4,6,7,8-HpCDD	0.888	J q	50	0.35	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,4,6,7,8-HpCDF	1.14	J	50	0.16	pg/L		07/24/20 12:28	07/27/20 19:16	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.15	pg/L		07/24/20 12:28	07/27/20 19:16	1
OCDD	3.56	J	100	0.13	pg/L		07/24/20 12:28	07/27/20 19:16	1
OCDF	ND		100	0.95	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total TCDD	ND		10	1.8	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total TCDF	ND		10	0.38	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total PeCDD	ND		50	0.80	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total PeCDF	ND		50	0.45	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total HxCDD	1.92	J q	50	0.23	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total HxCDF	ND		50	0.27	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total HpCDD	0.888	J q	50	0.35	pg/L		07/24/20 12:28	07/27/20 19:16	1
Total HpCDF	1.14	J	50	0.16	pg/L		07/24/20 12:28	07/27/20 19:16	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-2,3,4,7,8-PeCDF	*79*		*21 - 178*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,4,7,8-HxCDD	*69*		*32 - 141*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,4,7,8-HxCDF	*76*		*26 - 152*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,6,7,8-HxCDF	*70*		*26 - 123*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-2,3,4,6,7,8-HxCDF	*74*		*28 - 136*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*23 - 140*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*28 - 143*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*26 - 138*	*07/24/20 12:28*	*07/27/20 19:16*	*1*
13C-OCDD	*77*		*17 - 157*	*07/24/20 12:28*	*07/27/20 19:16*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*88*		*35 - 197*	*07/24/20 12:28*	*07/27/20 19:16*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-397938/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 398796 **Prep Batch: 397938**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	210		pg/L		105	67 - 158
2,3,7,8-TCDF	200	218		pg/L		109	75 - 158
1,2,3,7,8-PeCDD	1000	1010		pg/L		101	70 - 142
1,2,3,7,8-PeCDF	1000	1010		pg/L		101	80 - 134
2,3,4,7,8-PeCDF	1000	954		pg/L		95	68 - 160
1,2,3,4,7,8-HxCDD	1000	885		pg/L		88	70 - 164
1,2,3,6,7,8-HxCDD	1000	923		pg/L		92	76 - 134
1,2,3,7,8,9-HxCDD	1000	923		pg/L		92	64 - 162
1,2,3,4,7,8-HxCDF	1000	903		pg/L		90	72 - 134
1,2,3,6,7,8-HxCDF	1000	973		pg/L		97	84 - 130
1,2,3,7,8,9-HxCDF	1000	988		pg/L		99	78 - 130
2,3,4,6,7,8-HxCDF	1000	989		pg/L		99	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	926		pg/L		93	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	942		pg/L		94	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	846		pg/L		85	78 - 138
OCDD	2000	1790		pg/L		89	78 - 144
OCDF	2000	2000		pg/L		100	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*60*		*20 - 175*
13C-2,3,7,8-TCDF	*70*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*61*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*64*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*72*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*64*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*62*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*69*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*65*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*67*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*66*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*60*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*61*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*71*		*20 - 186*
13C-OCDD	*73*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*90*		*31 - 191*

Lab Sample ID: LCSD 320-397938/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 398796 **Prep Batch: 397938**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	233		pg/L		117	67 - 158	10	50
2,3,7,8-TCDF	200	243		pg/L		122	75 - 158	11	50
1,2,3,7,8-PeCDD	1000	1090		pg/L		109	70 - 142	8	50
1,2,3,7,8-PeCDF	1000	1150		pg/L		115	80 - 134	13	50
2,3,4,7,8-PeCDF	1000	1030		pg/L		103	68 - 160	7	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-397938/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 398796 **Prep Batch: 397938**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	1000		pg/L		100	70 - 164	12	50
1,2,3,6,7,8-HxCDD	1000	1110		pg/L		111	76 - 134	18	50
1,2,3,7,8,9-HxCDD	1000	1090		pg/L		109	64 - 162	16	50
1,2,3,4,7,8-HxCDF	1000	1050		pg/L		105	72 - 134	15	50
1,2,3,6,7,8-HxCDF	1000	1100		pg/L		110	84 - 130	13	50
1,2,3,7,8,9-HxCDF	1000	1090		pg/L		109	78 - 130	10	50
2,3,4,6,7,8-HxCDF	1000	1100		pg/L		110	70 - 156	11	50
1,2,3,4,6,7,8-HpCDD	1000	1040		pg/L		104	70 - 140	12	50
1,2,3,4,6,7,8-HpCDF	1000	1090		pg/L		109	82 - 122	14	50
1,2,3,4,7,8,9-HpCDF	1000	1000		pg/L		100	78 - 138	17	50
OCDD	2000	2070		pg/L		103	78 - 144	14	50
OCDF	2000	2300		pg/L		115	63 - 170	14	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*61*		*20 - 175*
13C-2,3,7,8-TCDF	*69*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*66*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*66*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*78*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*62*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*57*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*67*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*63*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*67*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*65*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*59*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*60*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*68*		*20 - 186*
13C-OCDD	*70*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*94*		*31 - 191*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 320-397139/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 397772 **Prep Batch: 397139**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.012	mg/L		07/22/20 12:38	07/23/20 15:42	1
Barium	ND		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 15:42	1
Beryllium	ND		0.0020	0.00030	mg/L		07/22/20 12:38	07/23/20 15:42	1
Boron	ND		0.10	0.021	mg/L		07/22/20 12:38	07/23/20 15:42	1
Calcium	0.130	J	0.50	0.050	mg/L		07/22/20 12:38	07/23/20 15:42	1
Cadmium	ND		0.0020	0.00050	mg/L		07/22/20 12:38	07/23/20 15:42	1
Cobalt	ND		0.0050	0.0030	mg/L		07/22/20 12:38	07/23/20 15:42	1
Chromium	ND		0.0080	0.0012	mg/L		07/22/20 12:38	07/23/20 15:42	1
Copper	ND		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 15:42	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 320-397139/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 397772 **Prep Batch: 397139**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	ND		1.0	0.093	mg/L		07/22/20 12:38	07/23/20 15:42	1
Magnesium	ND		0.50	0.040	mg/L		07/22/20 12:38	07/23/20 15:42	1
Manganese	ND		0.0050	0.0025	mg/L		07/22/20 12:38	07/23/20 15:42	1
Molybdenum	ND		0.020	0.0027	mg/L		07/22/20 12:38	07/23/20 15:42	1
Sodium	0.893	J	1.0	0.25	mg/L		07/22/20 12:38	07/23/20 15:42	1
Nickel	ND		0.0050	0.0024	mg/L		07/22/20 12:38	07/23/20 15:42	1
Phosphorus	ND		0.50	0.050	mg/L		07/22/20 12:38	07/23/20 15:42	1
Selenium	ND		0.020	0.013	mg/L		07/22/20 12:38	07/23/20 15:42	1
Vanadium	ND		0.0050	0.0019	mg/L		07/22/20 12:38	07/23/20 15:42	1
Zinc	ND		0.010	0.0030	mg/L		07/22/20 12:38	07/23/20 15:42	1
Antimony	ND		0.020	0.0098	mg/L		07/22/20 12:38	07/23/20 15:42	1
Thallium	ND		0.020	0.0090	mg/L		07/22/20 12:38	07/23/20 15:42	1
Tin	ND		0.020	0.0050	mg/L		07/22/20 12:38	07/23/20 15:42	1
Titanium	ND		0.010	0.0021	mg/L		07/22/20 12:38	07/23/20 15:42	1
Strontium	ND		0.050	0.0050	mg/L		07/22/20 12:38	07/23/20 15:42	1

Lab Sample ID: MB 320-397139/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 398458 **Prep Batch: 397139**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		07/22/20 12:38	07/24/20 14:13	1
Iron	0.0265	J	0.10	0.020	mg/L		07/22/20 12:38	07/24/20 14:13	1
Lead	ND		0.0050	0.0025	mg/L		07/22/20 12:38	07/24/20 14:13	1

Lab Sample ID: LCS 320-397139/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 397772 **Prep Batch: 397139**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.500	0.442		mg/L		88	80 - 120
Barium	0.500	0.480		mg/L		96	80 - 120
Beryllium	0.250	0.239		mg/L		96	80 - 120
Boron	4.98	4.46		mg/L		90	80 - 120
Calcium	25.0	24.8		mg/L		99	80 - 120
Cadmium	0.250	0.235		mg/L		94	80 - 120
Cobalt	0.250	0.236		mg/L		95	80 - 120
Chromium	0.250	0.232		mg/L		93	80 - 120
Copper	0.250	0.230		mg/L		92	80 - 120
Potassium	25.0	23.5		mg/L		94	80 - 120
Magnesium	25.0	22.9		mg/L		92	80 - 120
Manganese	0.250	0.235		mg/L		94	80 - 120
Molybdenum	0.250	0.241		mg/L		97	80 - 120
Sodium	25.0	24.1		mg/L		96	80 - 120
Nickel	0.250	0.234		mg/L		93	80 - 120
Phosphorus	4.98	4.83		mg/L		97	80 - 120
Selenium	0.500	0.439		mg/L		88	80 - 120
Vanadium	0.250	0.233		mg/L		93	80 - 120
Zinc	0.500	0.475		mg/L		95	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 320-397139/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 397772
Prep Batch: 397139

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.498	0.440		mg/L		88	80 - 120
Thallium	0.500	0.459		mg/L		92	80 - 120
Tin	0.500	0.487		mg/L		97	80 - 120
Titanium	0.250	0.232		mg/L		93	80 - 120
Strontium	0.250	0.239		mg/L		96	80 - 120

Lab Sample ID: LCS 320-397139/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 398458
Prep Batch: 397139

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.0498	0.0455		mg/L		91	80 - 120
Iron	5.00	4.77		mg/L		95	80 - 120
Lead	0.250	0.230		mg/L		92	80 - 120

Lab Sample ID: 320-62886-1 MS
Client Sample ID: 11215702-Initial
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 397772
Prep Batch: 397139

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.500	0.472		mg/L		94	75 - 125
Barium	0.52		0.500	1.05		mg/L		104	75 - 125
Beryllium	0.0013	J	0.250	0.232		mg/L		92	75 - 125
Boron	0.12		4.98	4.21		mg/L		82	75 - 125
Calcium	280	B	25.0	309	4	mg/L		125	75 - 125
Cadmium	0.0029		0.250	0.223		mg/L		88	75 - 125
Cobalt	0.013		0.250	0.237		mg/L		90	75 - 125
Chromium	0.048		0.250	0.290		mg/L		97	75 - 125
Copper	0.16		0.250	0.407		mg/L		97	75 - 125
Potassium	100		25.0	130	4	mg/L		117	75 - 125
Magnesium	200		25.0	235	4	mg/L		120	75 - 125
Manganese	1.6		0.250	1.86	4	mg/L		113	75 - 125
Molybdenum	0.0048	J	0.250	0.232		mg/L		91	75 - 125
Nickel	0.044		0.250	0.267		mg/L		89	75 - 125
Phosphorus	2.6		4.98	7.76		mg/L		103	75 - 125
Selenium	ND		0.500	0.437		mg/L		87	75 - 125
Vanadium	0.058		0.250	0.316		mg/L		103	75 - 125
Zinc	0.49		0.500	0.994		mg/L		100	75 - 125
Antimony	ND	F1	0.498	0.365	F1	mg/L		73	75 - 125
Thallium	ND		0.500	0.386		mg/L		77	75 - 125
Tin	0.0072	J	0.500	0.456		mg/L		90	75 - 125
Titanium	0.23	F1	0.250	0.588	F1	mg/L		143	75 - 125
Strontium	0.71		0.250	0.978		mg/L		106	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 320-62886-1 MS
Matrix: Water
Analysis Batch: 398458

Client Sample ID: 11215702-Initial
Prep Type: Total/NA
Prep Batch: 397139

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	2500	B	25.0	2550	4	mg/L		333	75 - 125

Lab Sample ID: 320-62886-1 MS
Matrix: Water
Analysis Batch: 398458

Client Sample ID: 11215702-Initial
Prep Type: Total/NA
Prep Batch: 397139

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	ND		0.0498	0.0498		mg/L		100	75 - 125
Iron	26	B	5.00	34.0	4	mg/L		167	75 - 125
Lead	0.10		0.250	0.311		mg/L		84	75 - 125

Lab Sample ID: 320-62886-1 MSD
Matrix: Water
Analysis Batch: 397772

Client Sample ID: 11215702-Initial
Prep Type: Total/NA
Prep Batch: 397139

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.500	0.459		mg/L		92	75 - 125	3	20
Barium	0.52		0.500	1.02		mg/L		98	75 - 125	3	20
Beryllium	0.0013	J	0.250	0.227		mg/L		90	75 - 125	2	20
Boron	0.12		4.98	4.15		mg/L		81	75 - 125	1	20
Calcium	280	B	25.0	304	4	mg/L		106	75 - 125	2	20
Cadmium	0.0029		0.250	0.218		mg/L		86	75 - 125	2	20
Cobalt	0.013		0.250	0.232		mg/L		87	75 - 125	2	20
Chromium	0.048		0.250	0.283		mg/L		94	75 - 125	3	20
Copper	0.16		0.250	0.396		mg/L		93	75 - 125	3	20
Potassium	100		25.0	127	4	mg/L		108	75 - 125	2	20
Magnesium	200		25.0	230	4	mg/L		103	75 - 125	2	20
Manganese	1.6		0.250	1.83	4	mg/L		99	75 - 125	2	20
Molybdenum	0.0048	J	0.250	0.228		mg/L		89	75 - 125	2	20
Nickel	0.044		0.250	0.260		mg/L		86	75 - 125	3	20
Phosphorus	2.6		4.98	7.61		mg/L		100	75 - 125	2	20
Selenium	ND		0.500	0.425		mg/L		85	75 - 125	3	20
Vanadium	0.058		0.250	0.306		mg/L		99	75 - 125	3	20
Zinc	0.49		0.500	0.978		mg/L		97	75 - 125	2	20
Antimony	ND	F1	0.498	0.360	F1	mg/L		72	75 - 125	1	20
Thallium	ND		0.500	0.378		mg/L		76	75 - 125	2	20
Tin	0.0072	J	0.500	0.444		mg/L		87	75 - 125	3	20
Titanium	0.23	F1	0.250	0.565	F1	mg/L		134	75 - 125	4	20
Strontium	0.71		0.250	0.959		mg/L		99	75 - 125	2	20

Lab Sample ID: 320-62886-1 MSD
Matrix: Water
Analysis Batch: 398458

Client Sample ID: 11215702-Initial
Prep Type: Total/NA
Prep Batch: 397139

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	2500	B	25.0	2530	4	mg/L		226	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 320-62886-1 MSD
Client Sample ID: 11215702-Initial
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 398458
Prep Batch: 397139

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	ND		0.0498	0.0487		mg/L		98	75 - 125	2	20
Iron	26	B	5.00	33.3	4	mg/L		152	75 - 125	2	20
Lead	0.10		0.250	0.308		mg/L		82	75 - 125	1	20

Specialty Organics

Prep Batch: 397938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1 - RADL	11215702-Initial	Total/NA	Water	1613B	
320-62886-1	11215702-Initial	Total/NA	Water	1613B	
320-62886-1 - DL	11215702-Initial	Total/NA	Water	1613B	
320-62886-2 - RADL	11215702-Control	Total/NA	Water	1613B	
320-62886-2	11215702-Control	Total/NA	Water	1613B	
320-62886-2 - DL	11215702-Control	Total/NA	Water	1613B	
320-62886-3 - RA	11215702-Treatment-1	Total/NA	Water	1613B	
320-62886-3	11215702-Treatment-1	Total/NA	Water	1613B	
320-62886-4 - RA	11215702-Treatment-2	Total/NA	Water	1613B	
320-62886-4	11215702-Treatment-2	Total/NA	Water	1613B	
MB 320-397938/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-397938/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-397938/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 398796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-397938/1-A	Method Blank	Total/NA	Water	1613B	397938
LCS 320-397938/2-A	Lab Control Sample	Total/NA	Water	1613B	397938
LCSD 320-397938/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	397938

Analysis Batch: 398798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1	11215702-Initial	Total/NA	Water	1613B	397938
320-62886-2	11215702-Control	Total/NA	Water	1613B	397938
320-62886-3	11215702-Treatment-1	Total/NA	Water	1613B	397938
320-62886-4	11215702-Treatment-2	Total/NA	Water	1613B	397938

Analysis Batch: 399540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-3 - RA	11215702-Treatment-1	Total/NA	Water	1613B	397938
320-62886-4 - RA	11215702-Treatment-2	Total/NA	Water	1613B	397938

Analysis Batch: 399843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1 - DL	11215702-Initial	Total/NA	Water	1613B	397938
320-62886-2 - DL	11215702-Control	Total/NA	Water	1613B	397938

Analysis Batch: 399853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1 - RADL	11215702-Initial	Total/NA	Water	1613B	397938
320-62886-2 - RADL	11215702-Control	Total/NA	Water	1613B	397938

Metals

Prep Batch: 397139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1	11215702-Initial	Total/NA	Water	3010A	
320-62886-2	11215702-Control	Total/NA	Water	3010A	
320-62886-3	11215702-Treatment-1	Total/NA	Water	3010A	
320-62886-4	11215702-Treatment-2	Total/NA	Water	3010A	
MB 320-397139/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 397139 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-397139/2-A	Lab Control Sample	Total/NA	Water	3010A	
320-62886-1 MS	11215702-Initial	Total/NA	Water	3010A	
320-62886-1 MSD	11215702-Initial	Total/NA	Water	3010A	

Analysis Batch: 397772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-2	11215702-Control	Total/NA	Water	6010C	397139
320-62886-3	11215702-Treatment-1	Total/NA	Water	6010C	397139
320-62886-4	11215702-Treatment-2	Total/NA	Water	6010C	397139
MB 320-397139/1-A	Method Blank	Total/NA	Water	6010C	397139
LCS 320-397139/2-A	Lab Control Sample	Total/NA	Water	6010C	397139
320-62886-1 MS	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-1 MSD	11215702-Initial	Total/NA	Water	6010C	397139

Analysis Batch: 398458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-62886-1	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-1	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-2	11215702-Control	Total/NA	Water	6010C	397139
320-62886-2	11215702-Control	Total/NA	Water	6010C	397139
320-62886-3	11215702-Treatment-1	Total/NA	Water	6010C	397139
320-62886-3	11215702-Treatment-1	Total/NA	Water	6010C	397139
320-62886-4	11215702-Treatment-2	Total/NA	Water	6010C	397139
320-62886-4	11215702-Treatment-2	Total/NA	Water	6010C	397139
MB 320-397139/1-A	Method Blank	Total/NA	Water	6010C	397139
LCS 320-397139/2-A	Lab Control Sample	Total/NA	Water	6010C	397139
320-62886-1 MS	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-1 MS	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-1 MSD	11215702-Initial	Total/NA	Water	6010C	397139
320-62886-1 MSD	11215702-Initial	Total/NA	Water	6010C	397139

Client Sample ID: 11215702-Initial

Lab Sample ID: 320-62886-1
Date Collected: 07/20/20 10:00
Matrix: Water
Date Received: 07/21/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RADL		397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B	RADL	5	399853	07/30/20 15:43	ALM	TAL SAC
Total/NA	Prep	1613B			397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B		1	398798	07/28/20 07:37	AS	TAL SAC
Total/NA	Prep	1613B	DL		397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B	DL	5	399843	07/30/20 20:05	ALM	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	397772	07/23/20 17:49	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		10	398458	07/24/20 13:26	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	398458	07/24/20 14:21	SP	TAL SAC

Client Sample ID: 11215702-Control

Lab Sample ID: 320-62886-2
Date Collected: 07/20/20 11:00
Matrix: Water
Date Received: 07/21/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RADL		397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B	RADL	20	399853	07/30/20 16:21	ALM	TAL SAC
Total/NA	Prep	1613B			397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B		1	398798	07/28/20 08:25	AS	TAL SAC
Total/NA	Prep	1613B	DL		397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B	DL	20	399843	07/30/20 20:53	ALM	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	397772	07/23/20 18:09	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		10	398458	07/24/20 13:53	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	398458	07/24/20 14:48	SP	TAL SAC

Client Sample ID: 11215702-Treatment-1

Lab Sample ID: 320-62886-3
Date Collected: 07/20/20 13:00
Matrix: Water
Date Received: 07/21/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	399540	07/29/20 15:21	ALM	TAL SAC
Total/NA	Prep	1613B			397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B		1	398798	07/28/20 09:13	AS	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	397772	07/23/20 18:13	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		10	398458	07/24/20 13:57	SP	TAL SAC

Lab Chronicle

Client Sample ID: 11215702-Treatment-1

Lab Sample ID: 320-62886-3

Date Collected: 07/20/20 13:00
Matrix: Water
Date Received: 07/21/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	398458	07/24/20 14:52	SP	TAL SAC

Client Sample ID: 11215702-Treatment-2

Lab Sample ID: 320-62886-4

Date Collected: 07/20/20 14:30
Matrix: Water
Date Received: 07/21/20 09:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	399540	07/29/20 15:59	ALM	TAL SAC
Total/NA	Prep	1613B			397938	07/24/20 12:28	NR	TAL SAC
Total/NA	Analysis	1613B		1	398798	07/28/20 10:01	AS	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	397772	07/23/20 18:17	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		10	398458	07/24/20 14:01	SP	TAL SAC
Total/NA	Prep	3010A			397139	07/22/20 12:38	JP	TAL SAC
Total/NA	Analysis	6010C		1	398458	07/24/20 14:56	SP	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010C	3010A	Water	Antimony
6010C	3010A	Water	Arsenic
6010C	3010A	Water	Barium
6010C	3010A	Water	Beryllium
6010C	3010A	Water	Boron
6010C	3010A	Water	Cadmium
6010C	3010A	Water	Calcium
6010C	3010A	Water	Chromium
6010C	3010A	Water	Cobalt
6010C	3010A	Water	Copper
6010C	3010A	Water	Iron
6010C	3010A	Water	Lead
6010C	3010A	Water	Magnesium
6010C	3010A	Water	Manganese
6010C	3010A	Water	Molybdenum
6010C	3010A	Water	Nickel
6010C	3010A	Water	Phosphorus
6010C	3010A	Water	Potassium
6010C	3010A	Water	Selenium
6010C	3010A	Water	Silver
6010C	3010A	Water	Sodium
6010C	3010A	Water	Strontium
6010C	3010A	Water	Thallium
6010C	3010A	Water	Tin
6010C	3010A	Water	Titanium
6010C	3010A	Water	Vanadium
6010C	3010A	Water	Zinc
TEQ		Water	Total Dioxin/Furan TEQ
TEQ		Water	Total TEQ

Method Summary

Client: GHD Services Inc.
Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
6010C	Metals (ICP)	SW846	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC
3010A	Preparation, Total Metals	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-62886-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-62886-1	11215702-Initial	Water	07/20/20 10:00	07/21/20 09:35	
320-62886-2	11215702-Control	Water	07/20/20 11:00	07/21/20 09:35	
320-62886-3	11215702-Treatment-1	Water	07/20/20 13:00	07/21/20 09:35	
320-62886-4	11215702-Treatment-2	Water	07/20/20 14:30	07/21/20 09:35	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 399540

Lab Sample ID: 320-62886-3 RA Client Sample ID: 11215702-Treatment-1 RA

Date Analyzed: 07/29/20 15:21 Lab File ID: 29JL2011D2_008.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.99	Baseline	messecara	07/29/20 21:51

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 399853

Lab Sample ID: 320-62886-2 RADL Client Sample ID: 11215702-Control RADL

Date Analyzed: 07/30/20 16:21 Lab File ID: 30JL2011D2_006.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,7,8-TCDF	16.99	Split Peak	messecara	07/30/20 22:49

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 383168

Lab Sample ID: WDM 320-383168/1 Client Sample ID:

Date Analyzed: 06/03/20 12:28 Lab File ID: 03jn20dfs1_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,8,9-PeCDD	30.80	Peak assignment corrected	stephensk	06/04/20 08:20

Lab Sample ID: IC 320-383168/3 Client Sample ID:

Date Analyzed: 06/03/20 14:05 Lab File ID: 03jn20dfs1_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.35	Incomplete Integration	stephensk	06/04/20 08:12
13C-1,2,3,4-TCDD	21.30	Peak assignment corrected	stephensk	06/03/20 16:25
2,3,7,8-TCDD	21.70	Incomplete Integration	stephensk	06/04/20 08:13
13C-1,2,3,4,7,8-HxCDD	36.17	Peak assignment corrected	stephensk	06/03/20 16:26
13C-1,2,3,6,7,8-HxCDD	36.28	Peak assignment corrected	stephensk	06/03/20 16:26
13C-1,2,3,7,8,9-HxCDD	36.65	Peak assignment corrected	stephensk	06/03/20 16:25

Lab Sample ID: IC 320-383168/4 Client Sample ID:

Date Analyzed: 06/03/20 14:53 Lab File ID: 03jn20dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.32	Incomplete Integration	stephensk	06/04/20 08:15

Lab Sample ID: IC 320-383168/6 Client Sample ID:

Date Analyzed: 06/03/20 16:30 Lab File ID: 03jn20dfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,4,7,8-PeCDF	28.84	Peak assignment corrected	stephensk	06/04/20 08:11
13C-1,2,3,4,7,8-HxCDF	34.99	Peak assignment corrected	stephensk	06/04/20 08:11
13C-1,2,3,4,7,8-HxCDD	36.18	Peak assignment corrected	stephensk	06/04/20 08:11
13C-1,2,3,4,7,8,9-HpCDF	39.89	Peak assignment corrected	stephensk	06/04/20 08:11

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 383168

Lab Sample ID: ICV 320-383168/10 Client Sample ID:

Date Analyzed: 06/03/20 20:01 Lab File ID: 03jn20dfs1_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.31	Peak assignment corrected	arghestanis	06/08/20 08:40
13C-1,2,3,4-TCDD	21.28	Peak assignment corrected	stephensk	06/04/20 08:22

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 398796

Lab Sample ID: MB 320-397938/1-A Client Sample ID:

Date Analyzed: 07/27/20 19:16 Lab File ID: 27jl20bdfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDF		Invalid Compound ID	dadunj	07/29/20 09:22
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	07/29/20 09:22
1,2,3,6,7,8-HxCDF		Invalid Compound ID	dadunj	07/29/20 09:22
1,2,3,4,7,8-HxCDD	36.42	Split Peak	dadunj	07/29/20 09:22
1,2,3,4,6,7,8-HpCDF	38.83	Split Peak	dadunj	07/29/20 09:22
1,2,3,4,6,7,8-HpCDD	39.74	Split Peak	dadunj	07/29/20 09:23
OCDD	42.22	Split Peak	dadunj	07/29/20 09:23

Lab Sample ID: LCS 320-397938/2-A Client Sample ID:

Date Analyzed: 07/27/20 20:04 Lab File ID: 27jl20bdfs1_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	22.23	Split Peak	dadunj	07/29/20 09:24

Lab Sample ID: LCSD 320-397938/3-A Client Sample ID:

Date Analyzed: 07/27/20 20:52 Lab File ID: 27jl20bdfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	22.24	Split Peak	dadunj	07/29/20 09:26

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 398798

Lab Sample ID: 320-62886-1 Client Sample ID: 11215702-Initial

Date Analyzed: 07/28/20 07:37 Lab File ID: 27jl20bdfs1_21.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,6,7,8-HxCDF	36.22	Split Peak	dadunj	07/30/20 09:49
1,2,3,7,8,9-HxCDF	37.08	Invalid Compound ID	dadunj	07/30/20 09:49

Lab Sample ID: 320-62886-2 Client Sample ID: 11215702-Control

Date Analyzed: 07/28/20 08:25 Lab File ID: 27jl20bdfs1_22.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDD		Invalid Compound ID	dadunj	07/30/20 09:52
1,2,3,7,8-PeCDD	30.19	Split Peak	dadunj	07/30/20 09:52
1,2,3,7,8,9-HxCDD	36.89	Split Peak	dadunj	07/30/20 09:53

Lab Sample ID: 320-62886-3 Client Sample ID: 11215702-Treatment-1

Date Analyzed: 07/28/20 09:13 Lab File ID: 27jl20bdfs1_23.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.79	Split Peak	dadunj	07/30/20 09:54
2,3,7,8-TCDD	22.22	Split Peak	dadunj	07/30/20 09:55
1,2,3,7,8-PeCDF	27.71	Split Peak	dadunj	07/30/20 09:55
2,3,4,7,8-PeCDF	29.26	Split Peak	dadunj	07/30/20 09:55
1,2,3,7,8-PeCDD	30.17	Baseline	dadunj	07/30/20 09:56
1,2,3,7,8,9-HxCDD	36.87	Split Peak	dadunj	07/30/20 09:56
1,2,3,4,6,7,8-HpCDD	39.73	Split Peak	dadunj	07/30/20 09:57
1,2,3,4,7,8,9-HpCDF	40.03	Split Peak	dadunj	07/30/20 09:56

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 398798

Lab Sample ID: 320-62886-4 Client Sample ID: 11215702-Treatment-2

Date Analyzed: 07/28/20 10:01 Lab File ID: 27jl20bdfs1_24.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	07/30/20 09:59
1,2,3,7,8-PeCDD		Invalid Compound ID	dadunj	07/30/20 09:59
2,3,7,8-TCDD	22.24	Split Peak	dadunj	07/30/20 09:58
1,2,3,7,8-PeCDF	27.73	Baseline	dadunj	07/30/20 09:58
2,3,4,7,8-PeCDF	29.34	Baseline	dadunj	07/30/20 09:59
2,3,4,6,7,8-HxCDF	36.22	Baseline	dadunj	07/30/20 09:59
1,2,3,4,7,8-HxCDD	36.41	Split Peak	dadunj	07/30/20 09:59
1,2,3,7,8,9-HxCDD	36.89	Split Peak	dadunj	07/30/20 10:00
1,2,3,4,6,7,8-HpCDF	38.83	Split Peak	dadunj	07/30/20 10:00

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00379	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00431	01/31/21	06/16/20	Acetone, Lot 0000242181	500 mL	HRDXNIDA_00379	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL1_00031	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	62.5 uL	37Cl4-2,3,7,8-TCDD	0.25 ng/mL
					HRDXNTA_00120	250 uL	1,2,3,4,6,7,8-HpCDD	1.25 ng/mL
							1,2,3,4,6,7,8-HpCDF	1.25 ng/mL
							1,2,3,4,7,8,9-HpCDF	1.25 ng/mL
							1,2,3,4,7,8-HxCDD	1.25 ng/mL
							1,2,3,4,7,8-HxCDF	1.25 ng/mL
							1,2,3,6,7,8-HxCDD	1.25 ng/mL
							1,2,3,6,7,8-HxCDF	1.25 ng/mL
							1,2,3,7,8,9-HxCDD	1.25 ng/mL
							1,2,3,7,8,9-HxCDF	1.25 ng/mL
							1,2,3,7,8-PeCDD	1.25 ng/mL
							1,2,3,7,8-PeCDF	1.25 ng/mL
							2,3,4,6,7,8-HxCDF	1.25 ng/mL
							2,3,4,7,8-PeCDF	1.25 ng/mL
							2,3,7,8-TCDD	0.25 ng/mL
							2,3,7,8-TCDF	0.25 ng/mL
							OCDD	2.5 ng/mL
							OCDF	2.5 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00120	03/04/21	05/05/20	Isooctane, Lot 0000211197	10 mL	HRDXNTA_00119	0.5 mL	1,2,3,4,6,7,8-HpCDD	1 ng/mL
							1,2,3,4,6,7,8-HpCDF	1 ng/mL
							1,2,3,4,7,8,9-HpCDF	1 ng/mL
							1,2,3,4,7,8-HxCDD	1 ng/mL
							1,2,3,4,7,8-HxCDF	1 ng/mL
							1,2,3,6,7,8-HxCDD	1 ng/mL
							1,2,3,6,7,8-HxCDF	1 ng/mL
							1,2,3,7,8,9-HxCDD	1 ng/mL
							1,2,3,7,8,9-HxCDF	1 ng/mL
							1,2,3,7,8-PeCDD	1 ng/mL
							1,2,3,7,8-PeCDF	1 ng/mL
							2,3,4,6,7,8-HxCDF	1 ng/mL
							2,3,4,7,8-PeCDF	1 ng/mL
							2,3,7,8-TCDD	0.2 ng/mL
							2,3,7,8-TCDF	0.2 ng/mL
							OCDD	2 ng/mL
							OCDF	2 ng/mL
..HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
...HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00379	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00093	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00239	06/16/21	06/16/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00121	06/02/21	06/02/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
MT6010CCV_00098	10/25/20	07/15/20	HNO3/HCL, Lot --	500 mL	MT-CALSTD1_00032	250 mL	Al	25 mg/L
							Calcium	25 mg/L
							Iron	25 mg/L
							Magnesium	25 mg/L
							Potassium	25 mg/L
							Sodium	25 mg/L
							Silver	0.498 mg/L
							Arsenic	0.5 mg/L
							Barium	2.5 mg/L
							Beryllium	0.498 mg/L
							Boron	1.001 mg/L
							Cadmium	0.5 mg/L
							Cobalt	2.4925 mg/L
							Chromium	2.5075 mg/L
							Copper	2.4775 mg/L
							Manganese	2.5025 mg/L
							Molybdenum	0.999 mg/L
							Nickel	2.5075 mg/L
							Lead	0.5045 mg/L
							Phosphorus	2.505 mg/L
							Antimony	0.498 mg/L
							Selenium	0.502 mg/L
							Tin	2.4975 mg/L
							Strontium	2.49 mg/L
							Titanium	0.998 mg/L
							Thallium	0.501 mg/L
							Vanadium	2.5075 mg/L
							Zinc	2.5125 mg/L
.MT-CALSTD1_00032	10/25/20	06/16/20	HNO3/HCL, Lot --	1000 mL	MT_CalMix2_00003	25 mL	Al	50 mg/L
							Calcium	50 mg/L
							Iron	50 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Magnesium	50 mg/L
							Potassium	50 mg/L
							Sodium	50 mg/L
					MTAgXXXTA_00012	1 mL	Silver	0.996 mg/L
					MTAsXXXTA_00010	1 mL	Arsenic	1 mg/L
					MTBaXXXTA_00010	5 mL	Barium	5 mg/L
					MTBeXXXTA_00009	1 mL	Beryllium	0.996 mg/L
					MTBXXXXTA_00011	2 mL	Boron	2.002 mg/L
					MTCdXXXTA_00009	1 mL	Cadmium	1 mg/L
					MTCoXXXTA_00009	5 mL	Cobalt	4.985 mg/L
					MTCrXXXTA_00010	5 mL	Chromium	5.015 mg/L
					MTCuXXXTA_00009	5 mL	Copper	4.955 mg/L
					MTMnXXXTA_00009	5 mL	Manganese	5.005 mg/L
					MTMoXXXTA_00009	2 mL	Molybdenum	1.998 mg/L
					MTNiXXXTA_00009	5 mL	Nickel	5.015 mg/L
					MTPbXXXTA_00011	1 mL	Lead	1.009 mg/L
					MTPXXXTA_00004	5 mL	Phosphorus	5.01 mg/L
					MTSbXXXTA_00009	1 mL	Antimony	0.996 mg/L
					MTSeXXXTA_00009	1 mL	Selenium	1.004 mg/L
					MTSnXXXTA_00011	5 mL	Tin	4.995 mg/L
					MTSrXXXTA_00009	5 mL	Strontium	4.98 mg/L
					MTTiXXXTA_00009	2 mL	Titanium	1.996 mg/L
					MTTlXXXTA_00010	1 mL	Thallium	1.002 mg/L
					MTVXXXXTA_00010	5 mL	Vanadium	5.015 mg/L
					MTZnXXXTA_00012	5 mL	Zinc	5.025 mg/L
..MT_CalMix2_00003	11/14/20	CPI International, Lot 1018877-1			(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2000 mg/L
..MTAgXXXTA_00012	10/28/20	CPI International, Lot 975475-80			(Purchased Reagent)		Silver	996 ug/mL
..MTAsXXXTA_00010	10/25/20	CPI, Lot 175385-53			(Purchased Reagent)		Arsenic	1000 ug/mL
..MTBaXXXTA_00010	11/25/20	CPI international, Lot 273421-73			(Purchased Reagent)		Barium	1000 ug/mL
..MTBeXXXTA_00009	11/25/20	CPI international, Lot 660981-51			(Purchased Reagent)		Beryllium	996 ug/mL
..MTBXXXXTA_00011	11/21/20	CPI, Lot 982524-63			(Purchased Reagent)		Boron	1001 ug/mL
..MTCdXXXTA_00009	11/25/20	CPI International, Lot 160499-113			(Purchased Reagent)		Cadmium	1000 ug/mL
..MTCoXXXTA_00009	11/25/20	CPI, Lot 979906-18			(Purchased Reagent)		Cobalt	997 ug/mL
..MTCrXXXTA_00010	11/25/20	CPI International, Lot 975466-82			(Purchased Reagent)		Chromium	1003 ug/mL
..MTCuXXXTA_00009	11/25/20	CPI International, Lot 982446-23			(Purchased Reagent)		Copper	991 ug/mL
..MTMnXXXTA_00009	11/25/20	CPI International, Lot 167539-89			(Purchased Reagent)		Manganese	1001 ug/mL
..MTMoXXXTA_00009	11/25/20	CPI International, Lot 169424-57			(Purchased Reagent)		Molybdenum	999 ug/mL
..MTNiXXXTA_00009	11/25/20	CPI, Lot 984273-10			(Purchased Reagent)		Nickel	1003 ug/mL
..MTPbXXXTA_00011	11/25/20	CPI, Lot 981329-43			(Purchased Reagent)		Lead	1009 ug/mL
..MTPXXXTA_00004	11/25/20	CPI, Lot 978200-13			(Purchased Reagent)		Phosphorus	1002 ug/mL
..MTSbXXXTA_00009	10/28/20	CPI, Lot 1013797-6			(Purchased Reagent)		Antimony	996 ug/mL
..MTSeXXXTA_00009	11/25/20	CPI, Lot 982461-24			(Purchased Reagent)		Selenium	1004 ug/mL
..MTSnXXXTA_00011	11/25/20	CPI, Lot 977645-7			(Purchased Reagent)		Tin	999 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MTSrXXXTA_00009	11/25/20		CPI, Lot 998106-28		(Purchased Reagent)		Strontium	996 ug/mL
..MTTiXXXTA_00009	11/25/20		CPI, Lot 987438-5		(Purchased Reagent)		Titanium	998 ug/mL
..MTTlXXXTA_00010	11/25/20		CPI, Lot 148983-103		(Purchased Reagent)		Thallium	1002 ug/mL
..MTVXXXXTA_00010	11/25/20		CPI International, Lot 990117-53		(Purchased Reagent)		Vanadium	1003 ug/mL
..MTZnXXXTA_00012	10/28/20		CPI International, Lot 984272-63		(Purchased Reagent)		Zinc	1005 ug/mL
MT6010CRI_QSM_00064	11/23/20	07/02/20	HNO3/HCL, Lot --	100 mL	MT6010QSMLL_00008	1 mL	Al	0.2 mg/L
							Antimony	0.02998 mg/L
							Arsenic	0.03997 mg/L
							Barium	0.02001 mg/L
							Beryllium	0.002996 mg/L
							Boron	0.2 mg/L
							Cadmium	0.002998 mg/L
							Calcium	0.4996 mg/L
							Chromium	0.01 mg/L
							Cobalt	0.01001 mg/L
							Copper	0.015 mg/L
							Iron	0.1 mg/L
							Lead	0.01 mg/L
							Magnesium	0.4995 mg/L
							Manganese	0.01001 mg/L
							Molybdenum	0.01999 mg/L
							Nickel	0.01001 mg/L
							Phosphorus	0.4996 mg/L
							Potassium	1 mg/L
							Selenium	0.04 mg/L
							Silver	0.005 mg/L
							Sodium	0.5 mg/L
							Strontium	0.05002 mg/L
							Thallium	0.02999 mg/L
							Tin	0.02 mg/L
							Titanium	0.01 mg/L
							Vanadium	0.02 mg/L
							Zinc	0.02001 mg/L
.MT6010QSMLL_00008	11/23/20		Inorganic Ventures, Lot P2-MEB686159		(Purchased Reagent)		Al	20 mg/L
							Antimony	2.998 mg/L
							Arsenic	3.997 mg/L
							Barium	2.001 mg/L
							Beryllium	0.2996 mg/L
							Boron	20 mg/L
							Cadmium	0.2998 mg/L
							Calcium	49.96 mg/L
							Chromium	1 mg/L
							Cobalt	1.001 mg/L
							Copper	1.5 mg/L
							Iron	10 mg/L
							Lead	1 mg/L
							Magnesium	49.95 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Manganese	1.001 mg/L
							Molybdenum	1.999 mg/L
							Nickel	1.001 mg/L
							Phosphorus	49.96 mg/L
							Potassium	100 mg/L
							Selenium	4 mg/L
							Silver	0.5 mg/L
							Sodium	50 mg/L
							Strontium	5.002 mg/L
							Thallium	2.999 mg/L
							Tin	2 mg/L
							Titanium	1 mg/L
							Vanadium	2 mg/L
							Zinc	2.001 mg/L
MT6010CRI_STD_00041	11/23/20	07/15/20	HNO3/HCL, Lot --	100 mL	MT6010LLSTD_00016	1 mL	Antimony	0.01999 mg/L
							Arsenic	0.02 mg/L
							Barium	0.004995 mg/L
							Beryllium	0.002 mg/L
							Boron	0.1 mg/L
							Cadmium	0.002 mg/L
							Calcium	0.4996 mg/L
							Chromium	0.005006 mg/L
							Cobalt	0.004994 mg/L
							Copper	0.01 mg/L
							Iron	0.1 mg/L
							Lead	0.004998 mg/L
							Magnesium	0.5004 mg/L
							Manganese	0.004998 mg/L
							Molybdenum	0.01999 mg/L
							Nickel	0.005003 mg/L
							Phosphorus	0.5003 mg/L
							Potassium	0.999 mg/L
							Selenium	0.01999 mg/L
							Silver	0.005 mg/L
							Sodium	0.5003 mg/L
							Strontium	0.05004 mg/L
							Thallium	0.02001 mg/L
							Tin	0.02 mg/L
							Titanium	0.01 mg/L
							Vanadium	0.005 mg/L
							Zinc	0.01 mg/L
.MT6010LLSTD_00016	11/23/20	Inorganic Ventures, Lot P2-MEB686161			(Purchased Reagent)		Antimony	1.999 ug/mL
							Arsenic	2 ug/mL
							Barium	0.4995 ug/mL
							Beryllium	0.2 ug/mL
							Boron	10 ug/mL
							Cadmium	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Calcium	49.96 ug/mL
							Chromium	0.5006 ug/mL
							Cobalt	0.4994 ug/mL
							Copper	1 ug/mL
							Iron	10 ug/mL
							Lead	0.4998 ug/mL
							Magnesium	50.04 ug/mL
							Manganese	0.4998 ug/mL
							Molybdenum	1.999 ug/mL
							Nickel	0.5003 ug/mL
							Phosphorus	50.03 ug/mL
							Potassium	99.9 ug/mL
							Selenium	1.999 ug/mL
							Silver	0.5 ug/mL
							Sodium	50.03 ug/mL
							Strontium	5.004 ug/mL
							Thallium	2.001 ug/mL
							Tin	2 ug/mL
							Titanium	1 ug/mL
							Vanadium	0.5 ug/mL
							Zinc	1 ug/mL
MT6010ICSA_00057	01/08/21	06/29/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 ug/mL
							Calcium	500 ug/mL
							Iron	200 ug/mL
							Magnesium	500 ug/mL
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
MT6010ICSAB_00041	01/08/21	07/09/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 mg/L
							Calcium	500 mg/L
							Iron	200 mg/L
							Magnesium	500 mg/L
					MT-ICP-ICSB2_00002	1 mL	Arsenic	1 mg/L
							Barium	1.001 mg/L
							Beryllium	0.5 mg/L
							Boron	10 mg/L
							Cadmium	1 mg/L
							Chromium	1.001 mg/L
							Cobalt	1 mg/L
							Copper	1.001 mg/L
							Lead	1 mg/L
							Manganese	1 mg/L
							Nickel	1.001 mg/L
							Phosphorus	10 mg/L
							Potassium	10 mg/L
							Selenium	1 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Silver	1 mg/L
							Sodium	10 mg/L
							Strontium	1 mg/L
							Thallium	1 mg/L
							Vanadium	1.001 mg/L
							Zinc	1 mg/L
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
.MT-ICP-ICSB2_00002	01/08/21		CPI, Lot 992185-1		(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100.1 mg/L
							Beryllium	50 mg/L
							Boron	1000 mg/L
							Cadmium	100 mg/L
							Chromium	100.1 mg/L
							Cobalt	100 mg/L
							Copper	100.1 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100.1 mg/L
							Phosphorus	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Strontium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100.1 mg/L
							Zinc	100 mg/L
MT6010ICV_00052	11/21/20	06/29/20	5% HCl +2%HNO3, Lot NA	100 mL	MT_CalMix1-SS_00002	1 mL	Antimony	1 ppm
							Arsenic	1.001 ppm
							Barium	1 ppm
							Beryllium	1 ppm
							Cadmium	1 ppm
							Chromium	1 ppm
							Cobalt	1 ppm
							Copper	1 ppm
							Lead	1 ppm
							Manganese	1 ppm
							Molybdenum	1.001 ppm
							Nickel	1 ppm
							Selenium	1 ppm
							Strontium	1.001 ppm
							Thallium	1 ppm
							Tin	1 ppm
							Titanium	1 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vanadium	1 ppm
					MT_CalMix2-SS_00002	0.5 mL	Al	10 ppm
							Calcium	10 ppm
							Iron	10 ppm
							Magnesium	10 ppm
							Potassium	10 ppm
							Sodium	10.005 ppm
					MT_CalMix3-SS_00002	0.2 mL	Phosphorus	2 ppm
					MTAgXXXTA-SS_00002	0.025 mL	Silver	0.2505 ppm
					MTBXXXXTA_00011	0.05 mL	Boron	0.5005 ppm
					MTZnXXXTA-SS_00002	0.1 mL	Zinc	1 ppm
.MT_CalMix1-SS_00002	11/21/20		CPI International, Lot 992738-1		(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100.1 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Molybdenum	100.1 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Strontium	100.1 mg/L
							Thallium	100 mg/L
							Tin	100 mg/L
							Titanium	100 mg/L
							Vanadium	100 mg/L
.MT_CalMix2-SS_00002	11/21/20		CPI International, Lot 992740-2		(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2001 mg/L
.MT_CalMix3-SS_00002	11/21/20		CPI International, Lot 987270-1		(Purchased Reagent)		Phosphorus	1000 mg/L
.MTAgXXXTA-SS_00002	11/21/20		Inorganic Ventures, Lot P2-AG678505		(Purchased Reagent)		Silver	1002 ug/mL
.MTBXXXXTA_00011	11/21/20		CPI, Lot 982524-63		(Purchased Reagent)		Boron	1001 ug/mL
.MTZnXXXTA-SS_00002	11/21/20		Inorganic Ventures, Lot P2-ZN675323		(Purchased Reagent)		Zinc	1000 ug/mL
MT6010LCS1_00017	01/30/21	06/01/20	5% HNO3, Lot na	1000 mL	MT_spike1_00005	250 mL	Arsenic	50 mg/L
							Barium	50 mg/L
							Beryllium	24.9975 mg/L
							Cadmium	25 mg/L
							Chromium	25 mg/L
							Cobalt	24.995 mg/L
							Copper	25 mg/L
							Lead	25 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Li	25 mg/L
							Manganese	25 mg/L
							Molybdenum	25 mg/L
							Nickel	25 mg/L
							Selenium	50 mg/L
							Si	50 mg/L
							Strontium	25 mg/L
							Thallium	50 mg/L
							Tin	50 mg/L
							Titanium	25 mg/L
							Vanadium	25 mg/L
.MT_spike1_00005	01/30/21		CPI, Lot 1021235-1		(Purchased Reagent)		Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	99.99 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	99.98 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Li	100 mg/L
							Manganese	100 mg/L
							Molybdenum	100 mg/L
							Nickel	100 mg/L
							Selenium	200 mg/L
							Si	200 mg/L
							Strontium	100 mg/L
							Thallium	200 mg/L
							Tin	200 mg/L
							Titanium	100 mg/L
							Vanadium	100 mg/L
MT6010LCS2_00017	10/04/20	06/01/20	5% HNO3, Lot na	1000 mL	MT_spike2_00006	500 mL	Al	500 mg/L
							Calcium	2500 mg/L
							Iron	500 mg/L
							Magnesium	2500 mg/L
							Potassium	2500 mg/L
							Sodium	2500 mg/L
.MT_spike2_00006	10/04/20		CPI, Lot 992745-2		(Purchased Reagent)		Al	1000 mg/L
							Calcium	5000 mg/L
							Iron	1000 mg/L
							Magnesium	5000 mg/L
							Potassium	5000 mg/L
							Sodium	5000 mg/L
MT6010LCS3_00038	10/28/20	07/09/20	5%HNO3, Lot na	100 mL	MTAgXXXTA_00012	0.5 mL	Silver	4.98 mg/L
					MTBXXXXTA_00013	10 mL	Boron	498.1 mg/L
					MTPXXXTA_00006	5 mL	Phosphorus	497.85 mg/L
					MTSbXXXTA_00010	5 mL	Antimony	49.8 mg/L
					MTSiXXXTA_00020	4.5 mL	Si	448.65 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							SiO2	930.015 mg/L
					MTSXXXXTA_00017	5 mL	Sulfur	498.3 mg/L
					MTZnXXXTA_00013	5 mL	Zinc	50 mg/L
.MTAgXXXTA_00012	10/28/20		CPI International, Lot 975475-80		(Purchased Reagent)		Silver	996 ug/mL
.MTBXXXXTA_00013	05/21/21		CPI, Lot 1009207-4		(Purchased Reagent)		Boron	4981 ug/mL
.MTPXXXTA_00006	06/22/21		CPI, Lot 979480-31		(Purchased Reagent)		Phosphorus	9957 ug/mL
.MTSbXXXTA_00010	10/08/21		CPI, Lot 1013797-6		(Purchased Reagent)		Antimony	996 ug/mL
.MTSiXXXTA_00020	04/14/21		CPI, Lot 977647-58		(Purchased Reagent)		Si	9970 ug/mL
							SiO2	20667 ug/mL
.MTSXXXXTA_00017	05/14/21		CPI, Lot 996813-5		(Purchased Reagent)		Sulfur	9966 ug/mL
.MTZnXXXTA_00013	09/20/21		CPI International, Lot 1007922-57		(Purchased Reagent)		Zinc	1000 ug/mL
MT6010PDS_00009	07/30/20	05/27/20	5% HNO3, Lot n/a	100 mL	MT-ICP-ICSA_00002	5 mL	Calcium	250 mg/L
							Iron	100 mg/L
							Magnesium	250 mg/L
					MT-ICP-ICSB1_00002	2.5 mL	Antimony	2.5 mg/L
							Molybdenum	2.5 mg/L
							Tin	2.5025 mg/L
							Titanium	2.5 mg/L
					MT-ICP-ICSB2_00002	2.5 mL	Arsenic	2.5 mg/L
							Barium	2.5025 mg/L
							Beryllium	1.25 mg/L
							Boron	25 mg/L
							Cadmium	2.5 mg/L
							Chromium	2.5025 mg/L
							Cobalt	2.5 mg/L
							Copper	2.5025 mg/L
							Lead	2.5 mg/L
							Manganese	2.5 mg/L
							Nickel	2.5025 mg/L
							Phosphorus	25 mg/L
							Potassium	249.213 mg/L
							Selenium	2.5 mg/L
							Silver	2.5 mg/L
							Sodium	251.575 mg/L
							Strontium	2.5 mg/L
							Thallium	2.5 mg/L
							Vanadium	2.5025 mg/L
							Zinc	2.5 mg/L
					MTKXXXXTA_00015	2.25 mL	Potassium	249.213 mg/L
					MTNaXXXXTA_00004	2.25 mL	Sodium	251.575 mg/L
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
.MT-ICP-ICSB1_00002	01/08/21		CPI, Lot 1023499-1		(Purchased Reagent)		Antimony	100 mg/L
							Molybdenum	100 mg/L
							Tin	100.1 mg/L
							Titanium	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MT-ICP-ICSB2_00002	01/08/21	CPI, Lot 992185-1			(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100.1 mg/L
							Beryllium	50 mg/L
							Boron	1000 mg/L
							Cadmium	100 mg/L
							Chromium	100.1 mg/L
							Cobalt	100 mg/L
							Copper	100.1 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100.1 mg/L
							Phosphorus	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Strontium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100.1 mg/L
							Zinc	100 mg/L
.MTKXXXXTA_00015	07/30/20	CPI International, Lot 172053-80			(Purchased Reagent)		Potassium	9965 ug/mL
.MTNaXXXXTA_00004	07/30/20	CPI International, Lot 752887-33			(Purchased Reagent)		Sodium	10070 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 KSS

(pg 1/6)

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

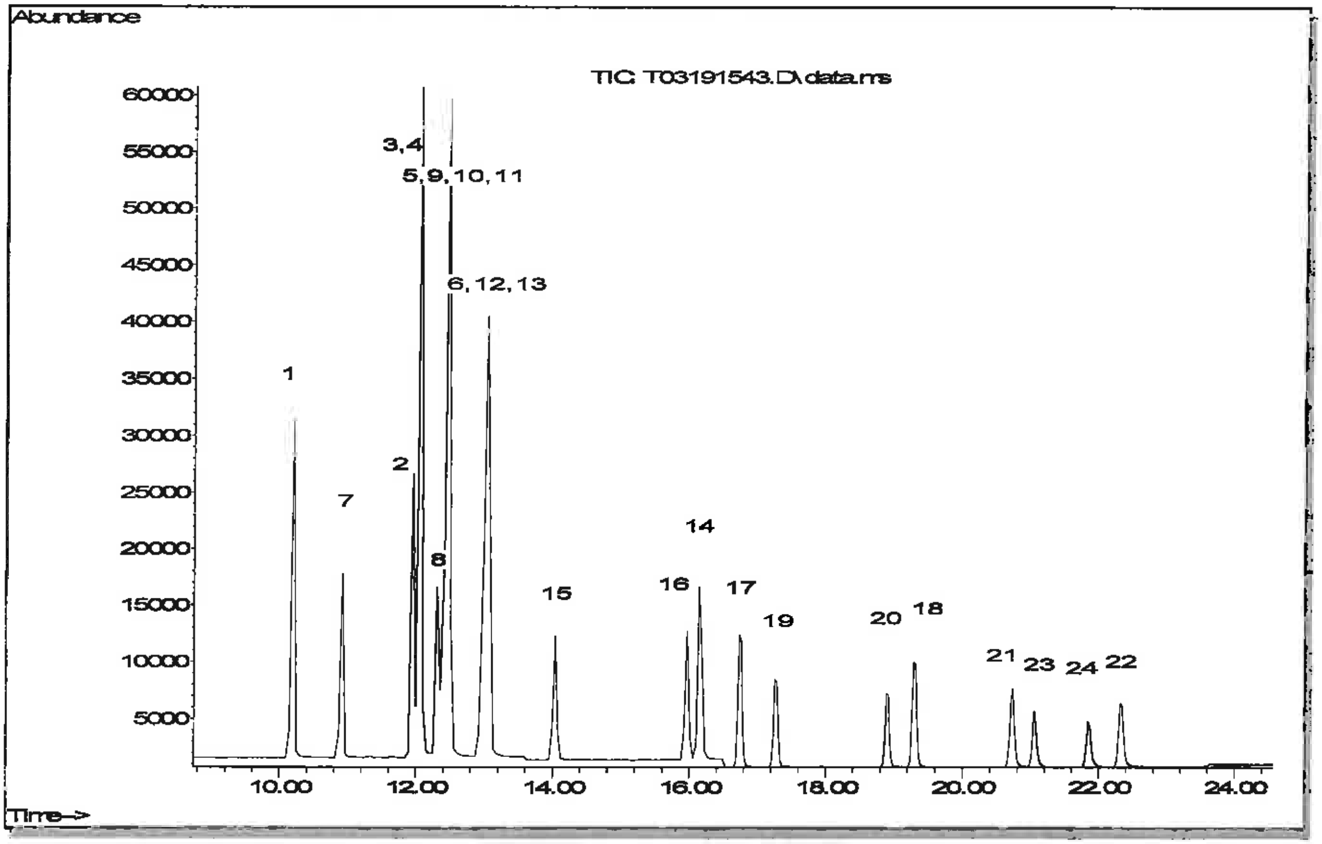

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00375

r: 4/8/19 BWS

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

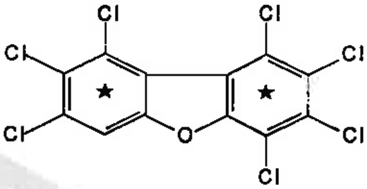

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data (cont.)

GC/FID

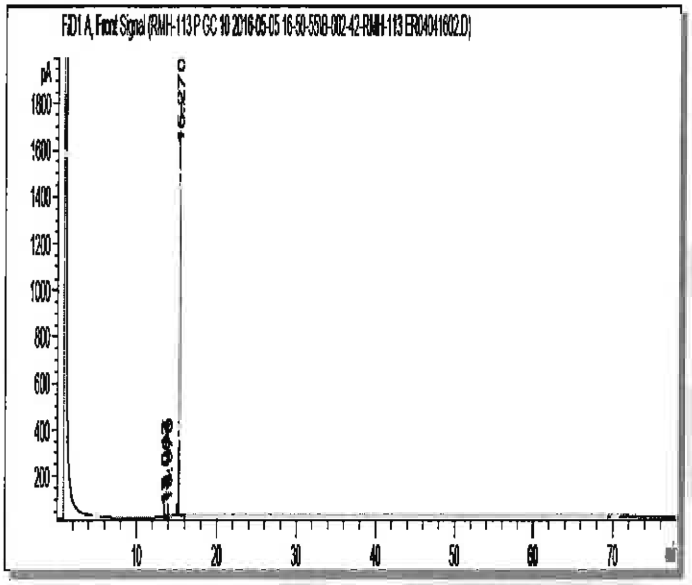

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13 51	8.76	2.52	0.12
2	13 68	17.42	7.45	0.24
3	13 97	39.65	15.48	0.54
4	15 27	7226 95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

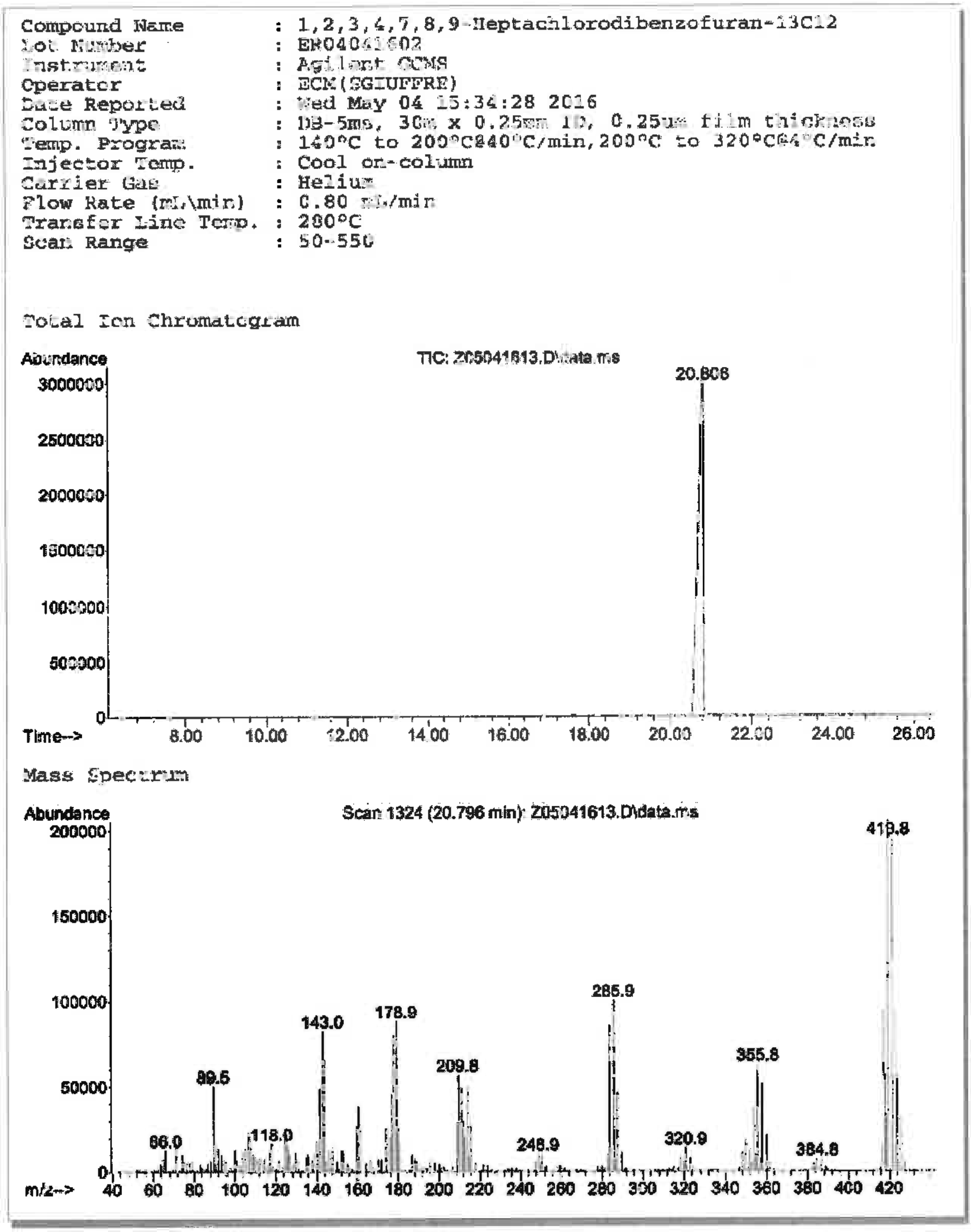

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Compound Name           : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number              : ER04041602
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Wed May 04 15:34:28 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

TIC: Z05041613.D\data.ms

Mass Spectrum

Scan 1324 (20.796 min): Z05041613.D\data.ms

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00376

R: 4/8/19 SW

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CIL

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

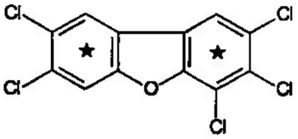

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		**98.33%**

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

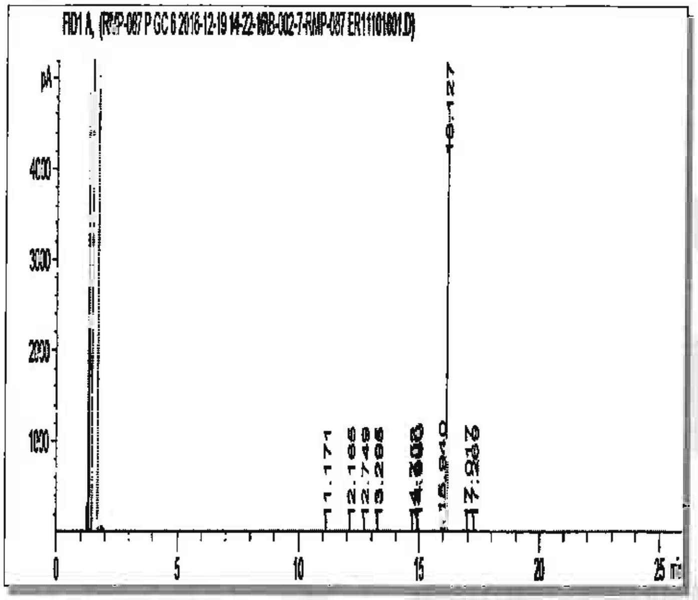

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

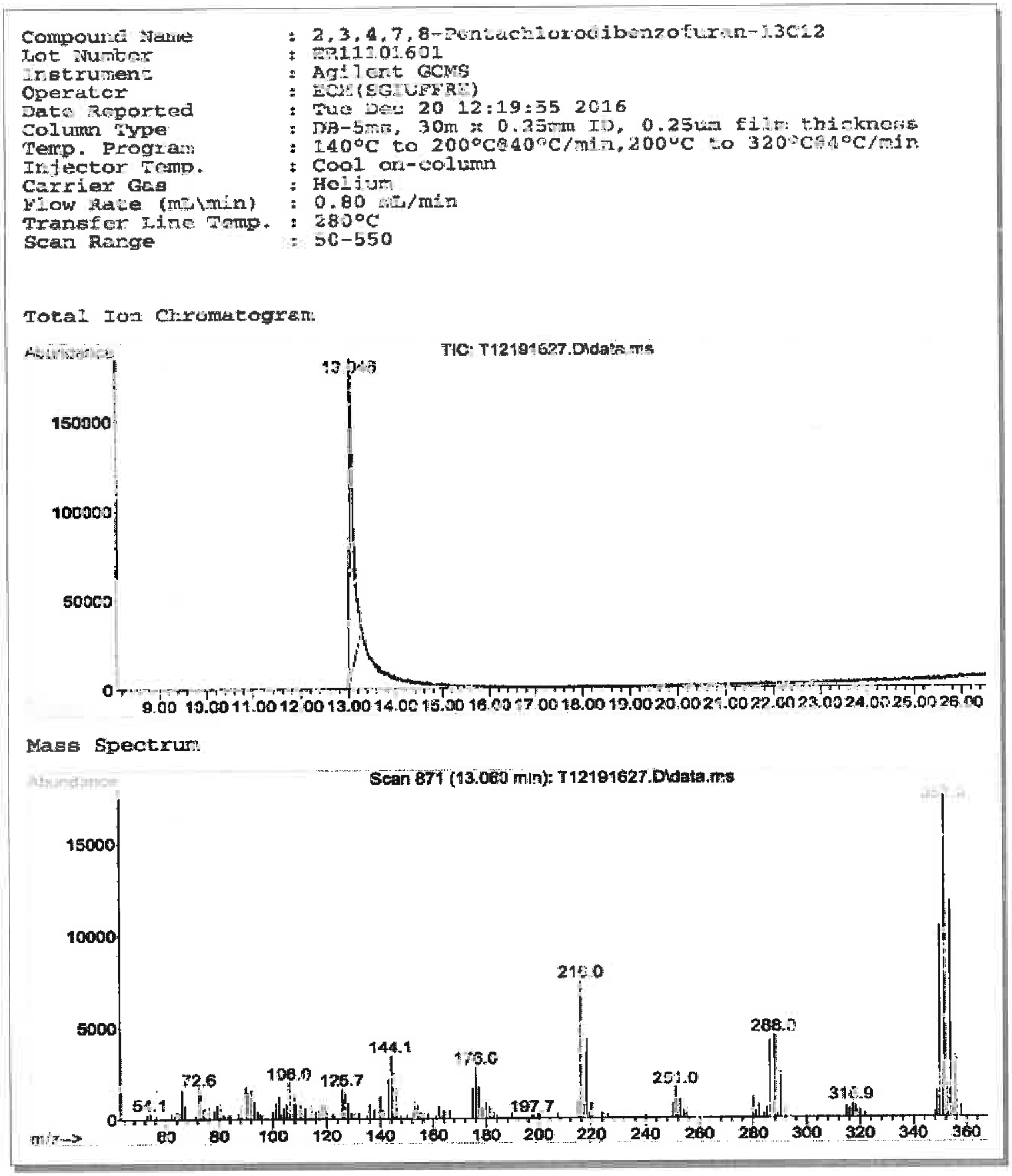

Compound Name	: 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number	: ER11101601
Instrument	: Agilent GCMS
Operator	: ECM(SGIUFFRE)
Date Reported	: Tue Dec 20 12:19:55 2016
Column Type	: DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program	: 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.	: Cool on-column
Carrier Gas	: Helium
Flow Rate (mL\min)	: 0.80 mL/min
Transfer Line Temp.	: 280°C
Scan Range	: 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00377

r: 4/8/19 SKJ

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

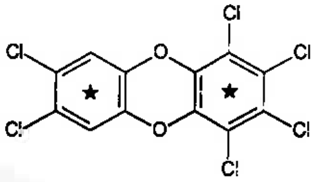

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

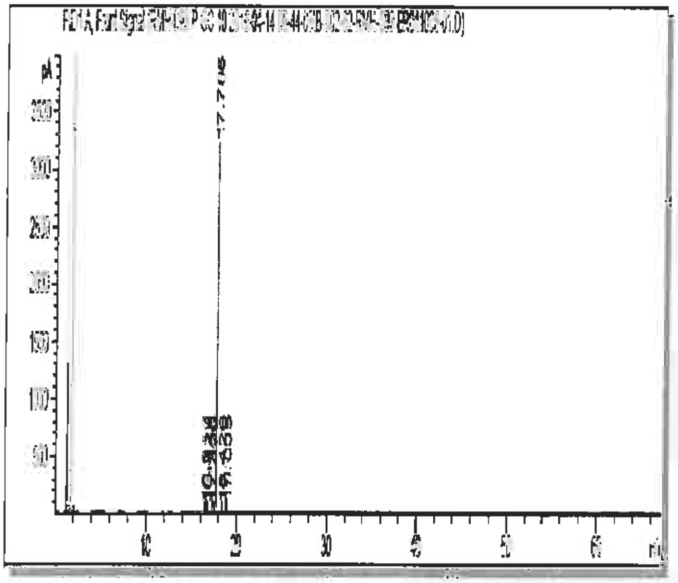

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

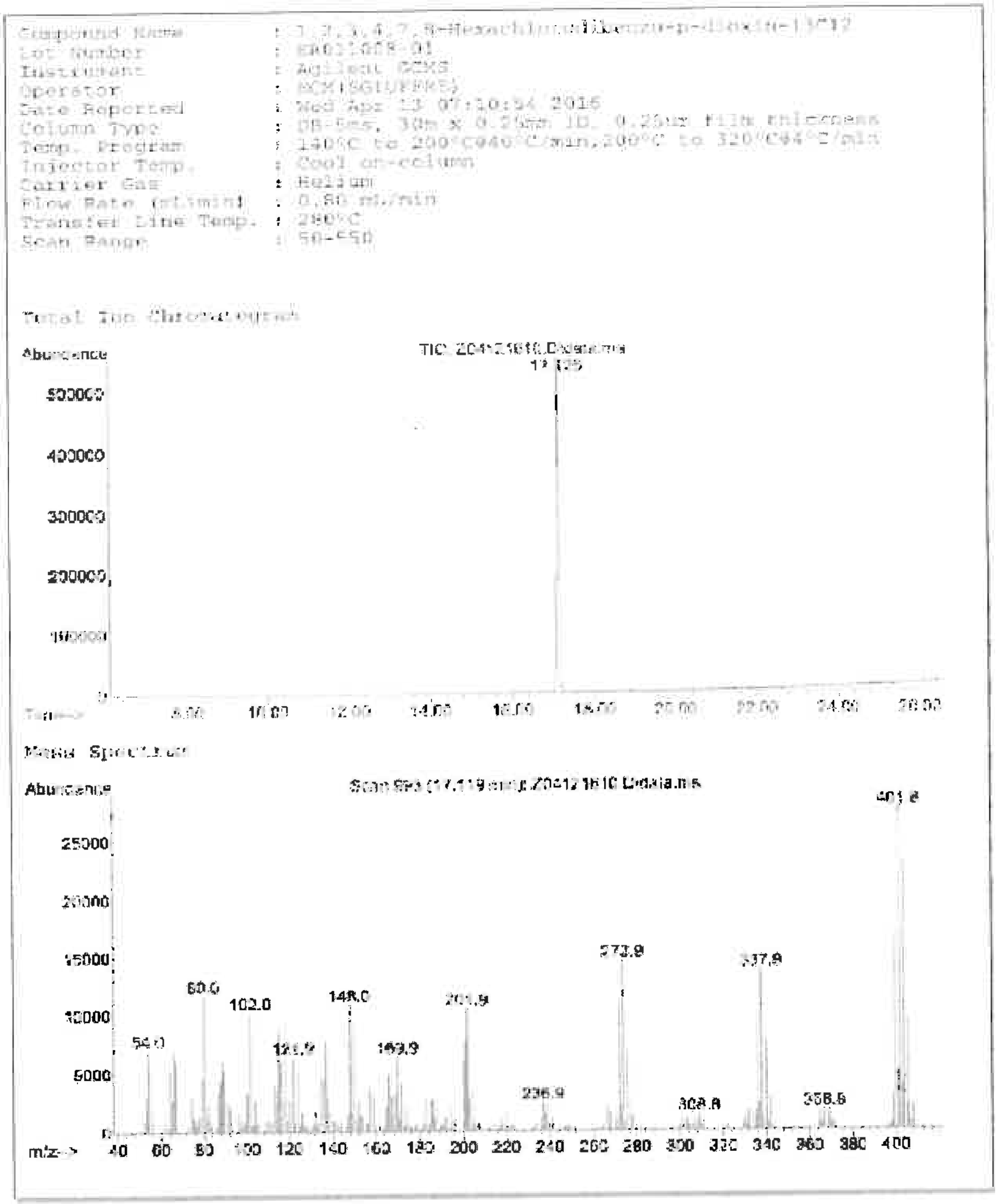

```
Compound Name          : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number             : ER021618-01
Instrument             : Agilent GCMS
Operator               : ACM(SGIUPRMS)
Date Reported          : Wed Apr 13 07:10:34 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL/min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00378

r: 4/8/19 SKD

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Revision 00
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

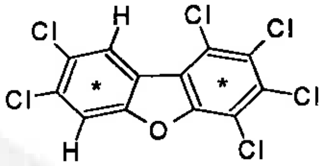

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11281601

Chemical Formula: $^{13}C_{12}Cl_6H_2O$
CAS Number: 114423-98-2
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

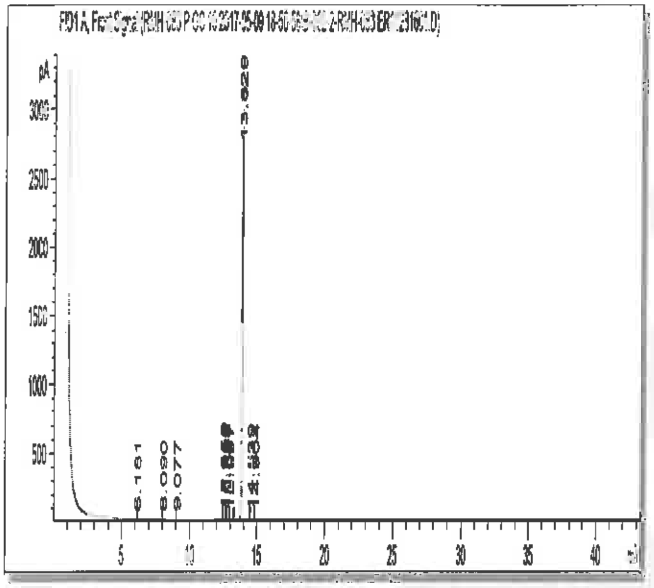

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2 00	0.70	0.02
3	9 08	1.17	0.48	0.01
4	12 55	14.76	7.25	0.16
5	12 73	32.67	11.32	0.36
6	12 84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

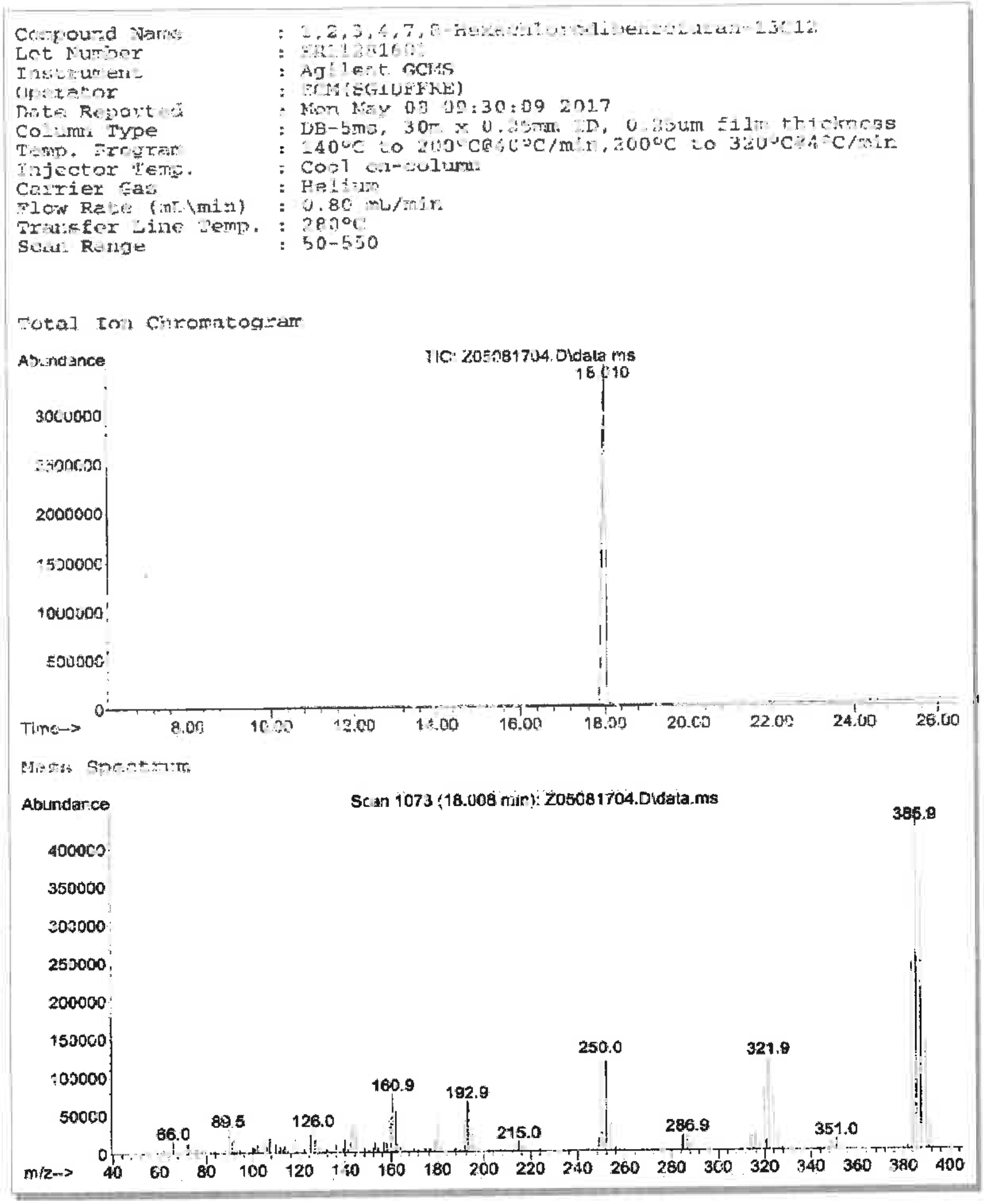

```
Compound Name           : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number              : FR11281602
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Mon May 08 09:30:09 2017
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00398

9280 I#24
Received 11-4-19
[illegible]

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Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 00
Page 1 of 4

Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

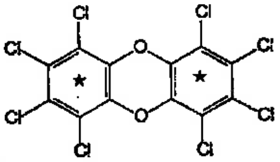

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 70°C to 200°C at 40°C/min
200°C to 280°C at 10°C/min hold 15 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 3
Linearity (r): 0.997

Neat Material Data

Compound Name: Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER04041601
Chemical Formula: $^{13}C_{12}Cl_8O_2$
CAS Number: 114423-97-1
Molecular Weight: 471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

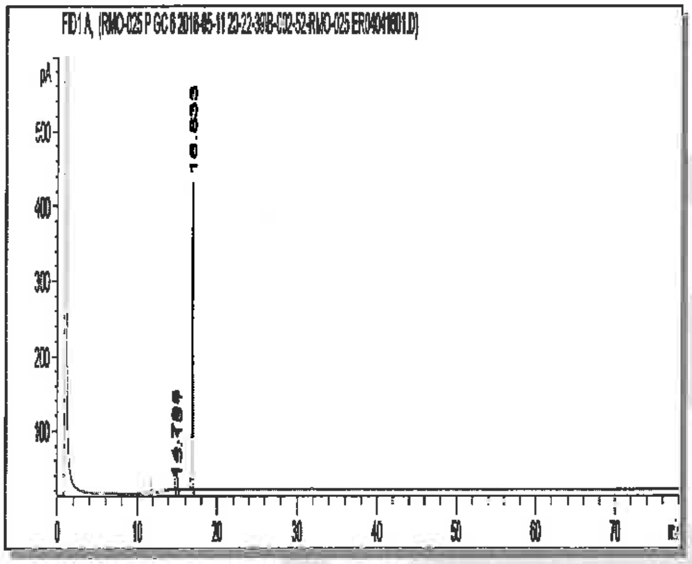

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14 80	12 12	3.62	0.61
2	15 15	4 72	1.32	0.24
3	16 83	1980 56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : Octachlorodibenzo-p-dioxin-13C12
Lot Number             : ER04041601
Instrument             : Agilent GCMS
Operator               : ECM(SCIUFFRE)
Date Reported          : Wed May 04 13:45:40 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

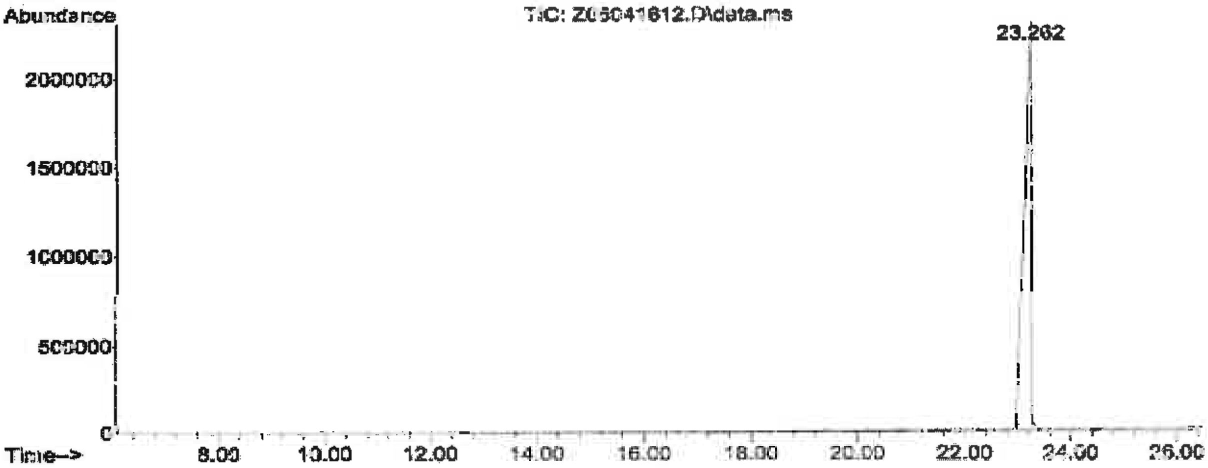

Mass Spectrum

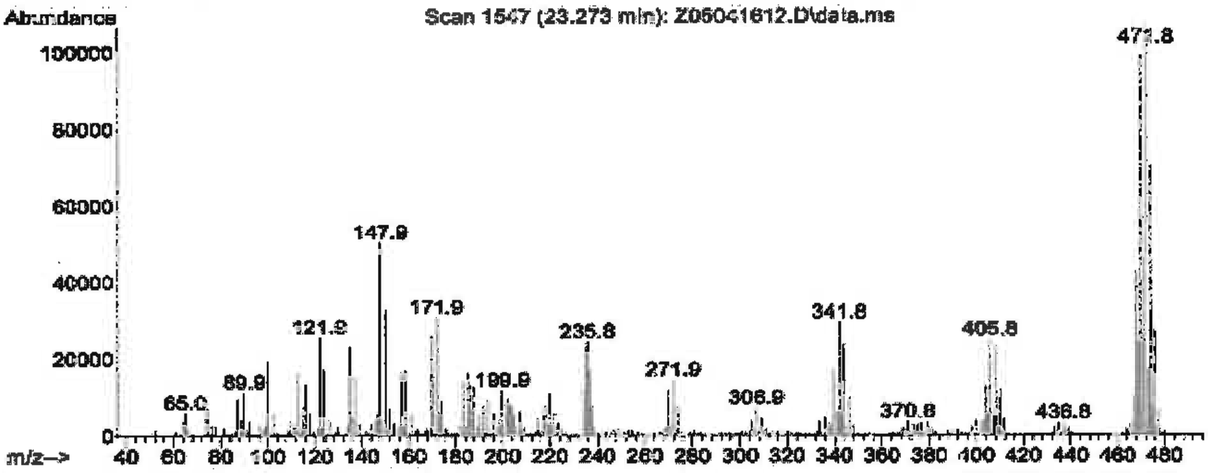

Reagent

HRDXNIDA_00407

Received 11-21-19

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

Revision 00
Page 1 of 5

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

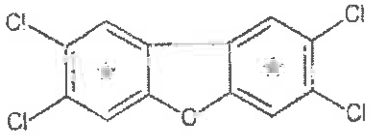

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

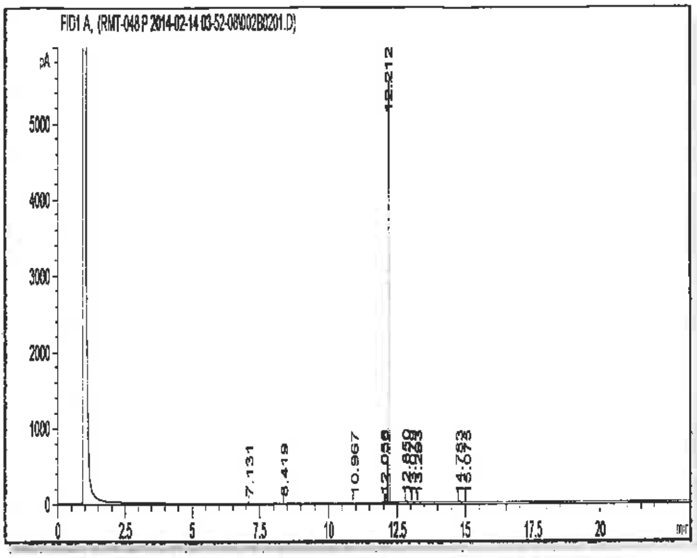

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument:	GC#10
Sample Name:	ER01161401
Acquired:	February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

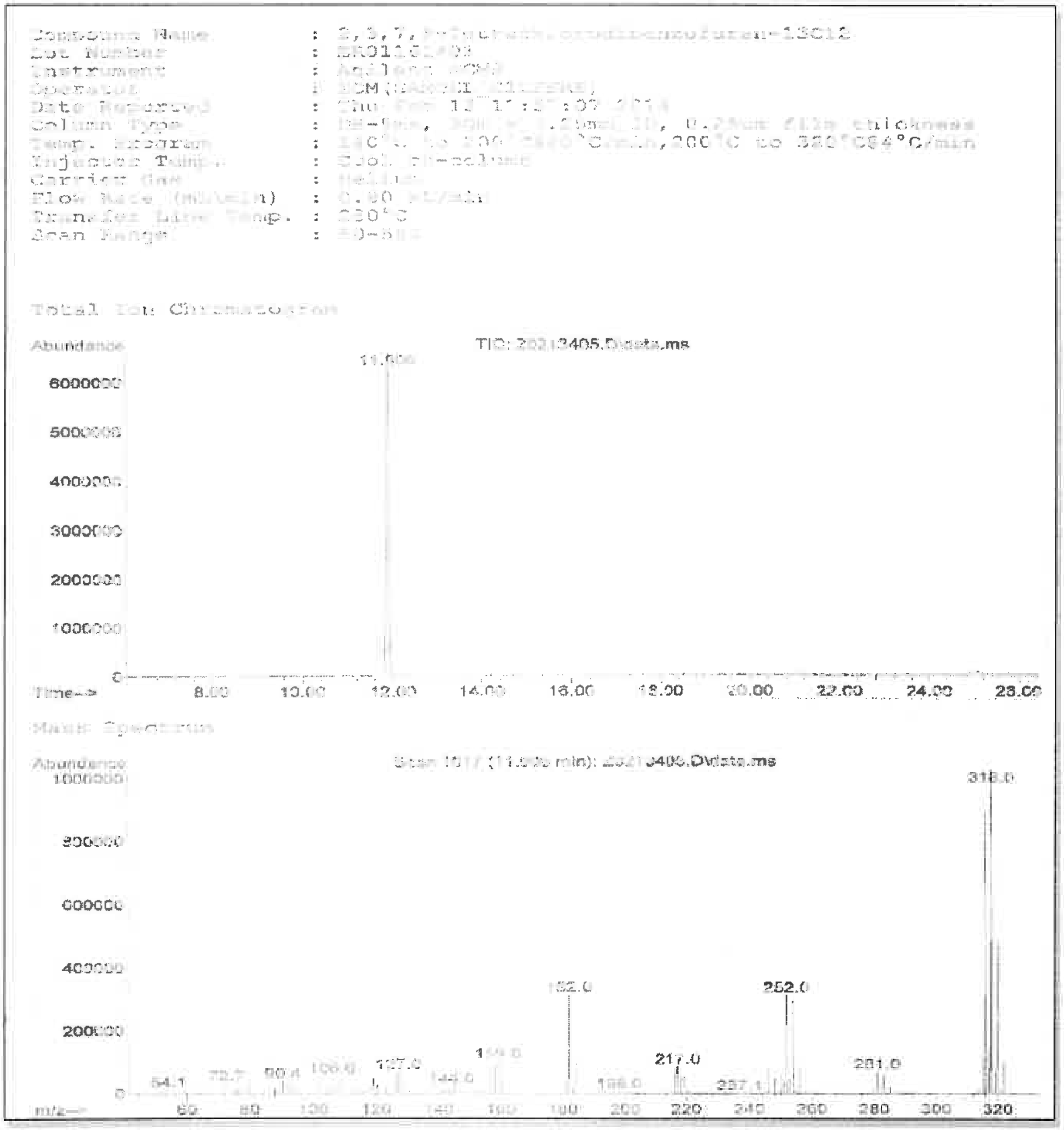

Compound Name : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number : ER01[illegible]-03
Instrument : Agilent GCMS
Operator : BCM([illegible])
Date Reported : Thu [illegible] 13 1[illegible]:07 [illegible]
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-500

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-18

Cerilliant
Analytical Reference Standards
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Revision 01
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Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

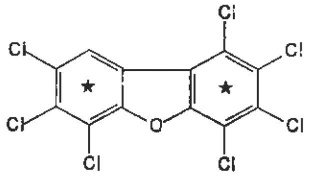

Catalog Number:	EF-974
Solution Lot:	ER08101404
Expiration Date:	November 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

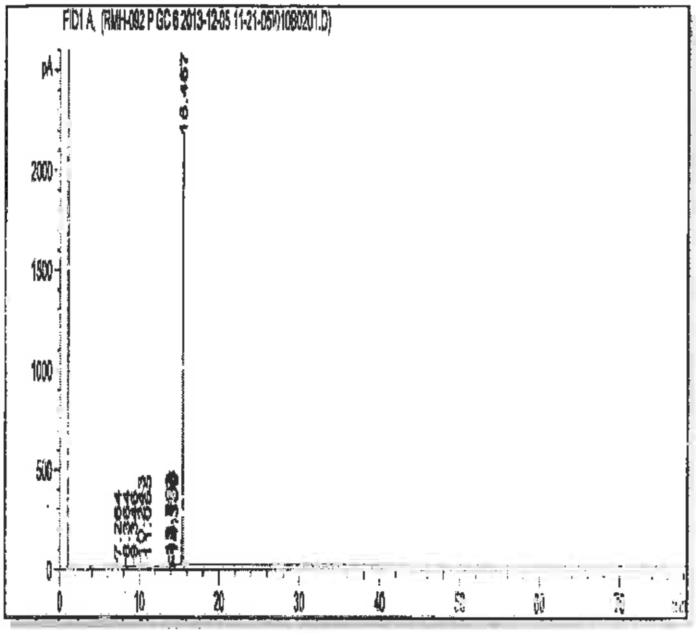

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

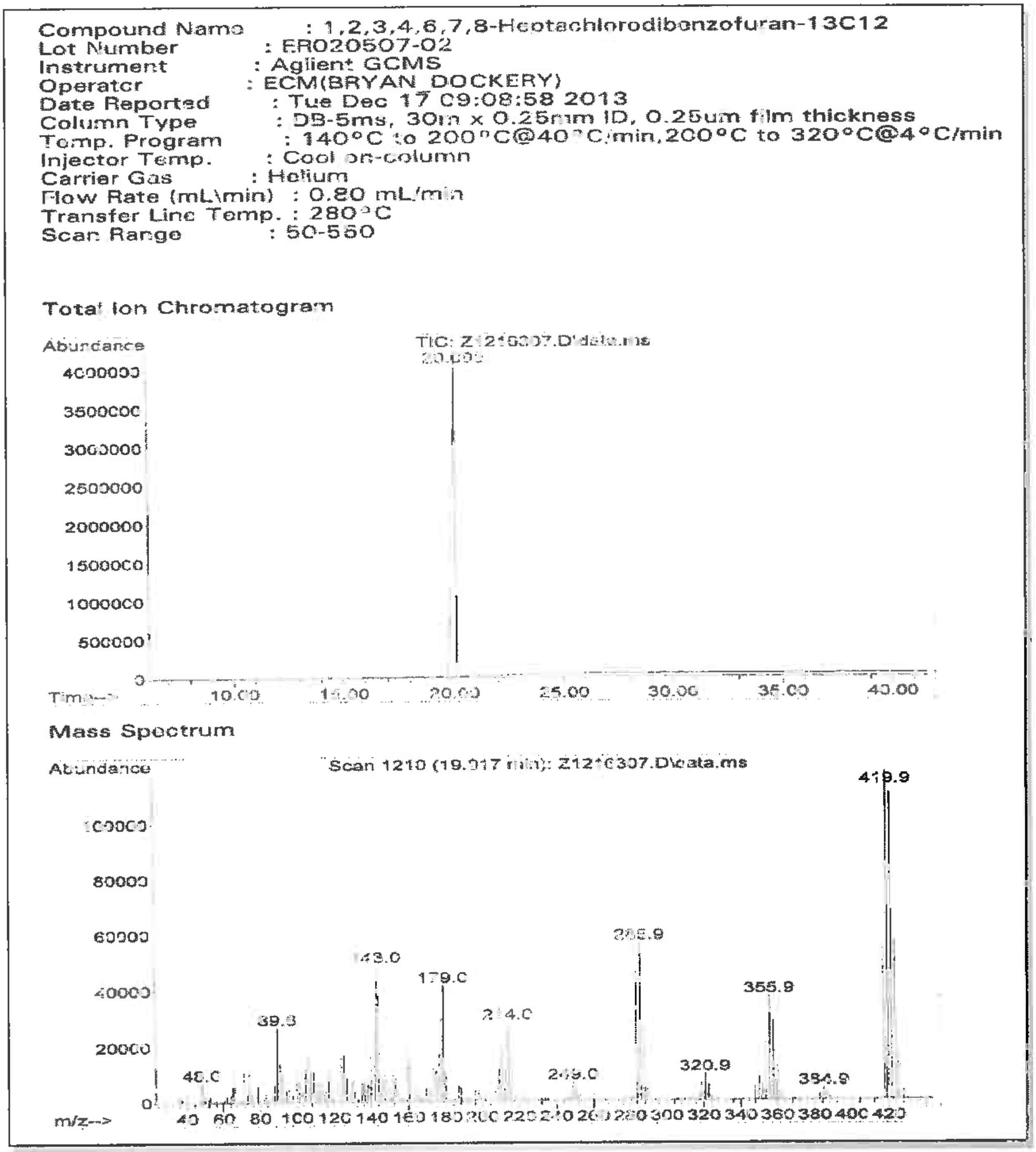

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

TIC: Z1216307.D\data.ms

Mass Spectrum

Scan 1210 (19.917 min): Z1216307.D\data.ms

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-21-18

Cerilliant
Analytical Reference Standards
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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

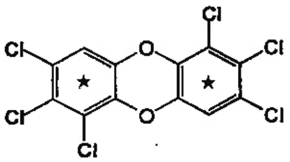

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802

Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

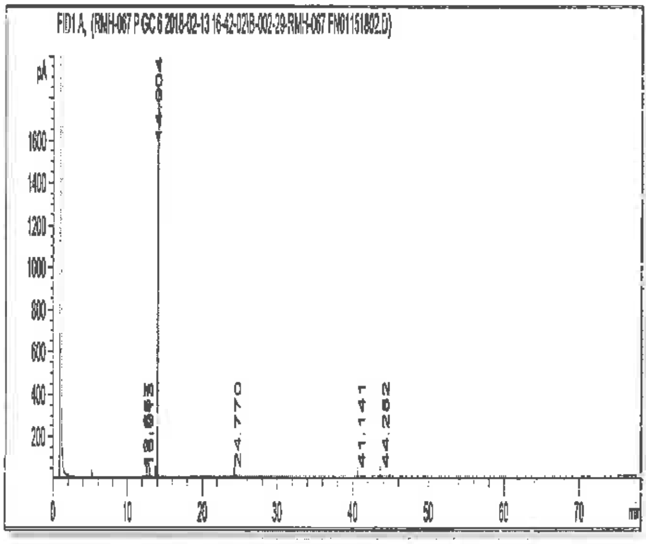

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

GC/MS

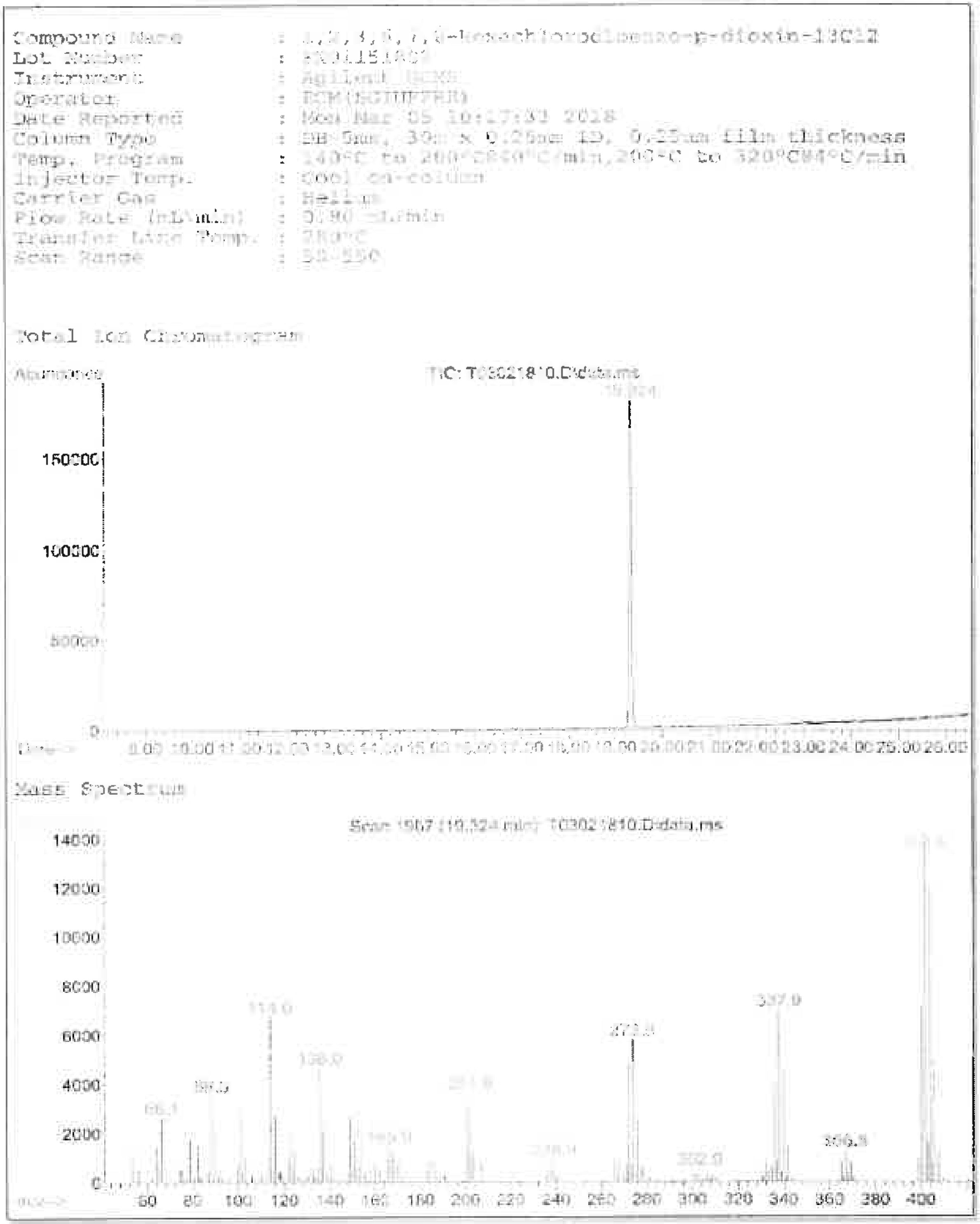

```
Compound Name         : 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number            : [illegible]
Instrument            : Agilent GCMS
Operator              : ECM(SCHAFFER)
Date Reported         : Mon Mar 05 10:17:33 2018
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.90 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Reagent

HRDXNIDA_00410

Rec'ed 11-21-16

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

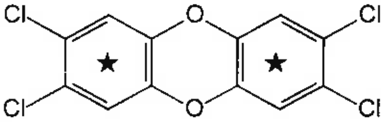

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

March 24, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405

Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

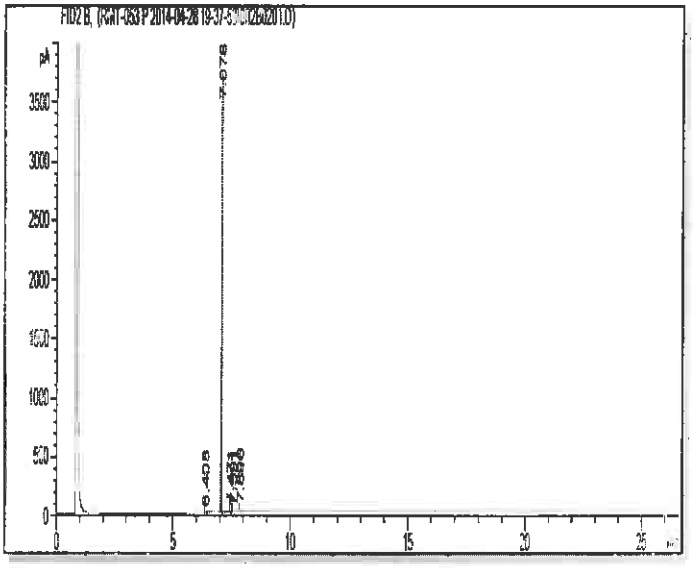

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

Spectral and Physical Data (cont.)

GC/MS

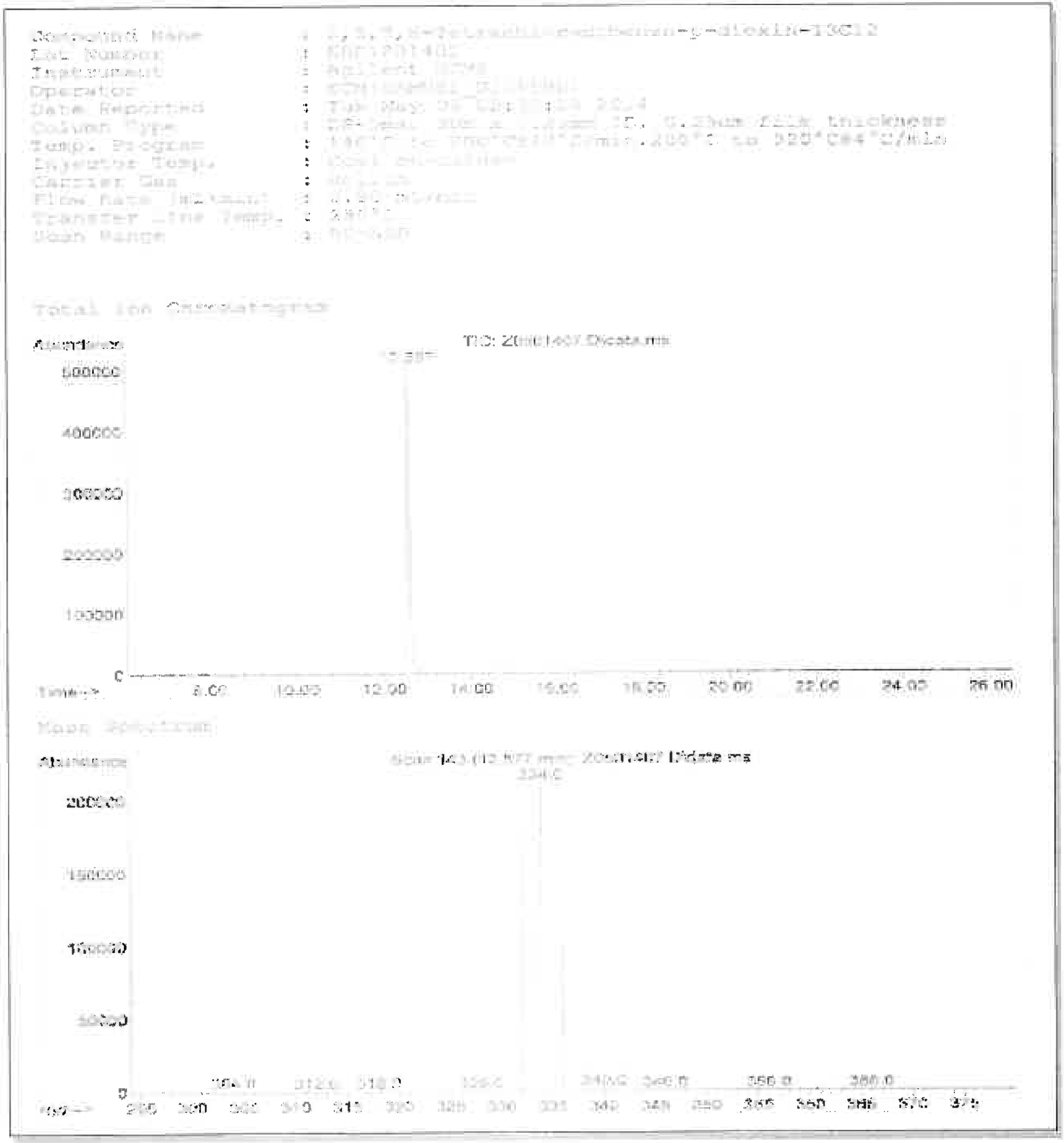

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent GCMS
Operator : [illegible]
Date Reported : Tue May [illegible] 2014
Column Type : DB-5MS, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@15°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 1.00 mL/min
Transfer Line Temp. : 280°C
Scan Range : [illegible]

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

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Cerilliant Quality
ISO GUIDE 34 CERTIFICATE AR1353
ISO/IEC 17025 CERTIFICATE AT1352
ISO 9001:2008 CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

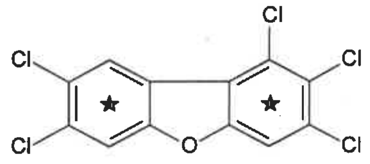

Catalog Number:	EF-952
Solution Lot:	ER012111-01
Expiration Date:	January 2021
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Crtieria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER090110-01
Chemical Formula:	$^{13}C_{12}H_3OCl_5$
CAS Number:	109719-77-9
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

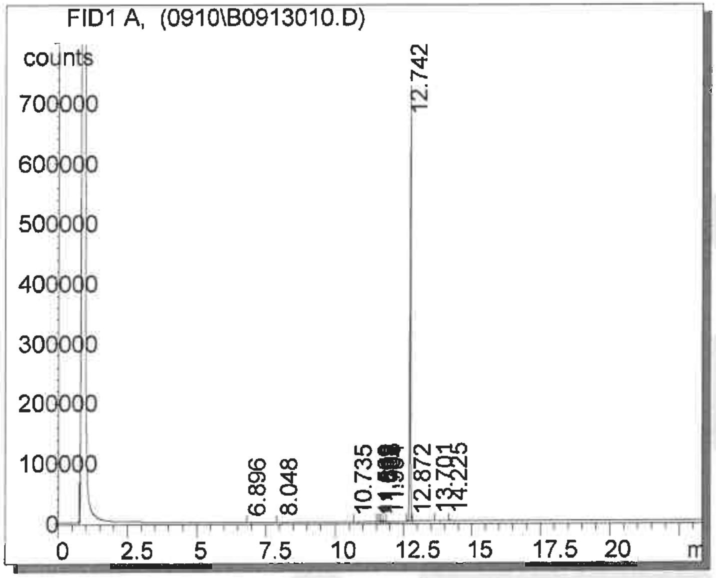

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

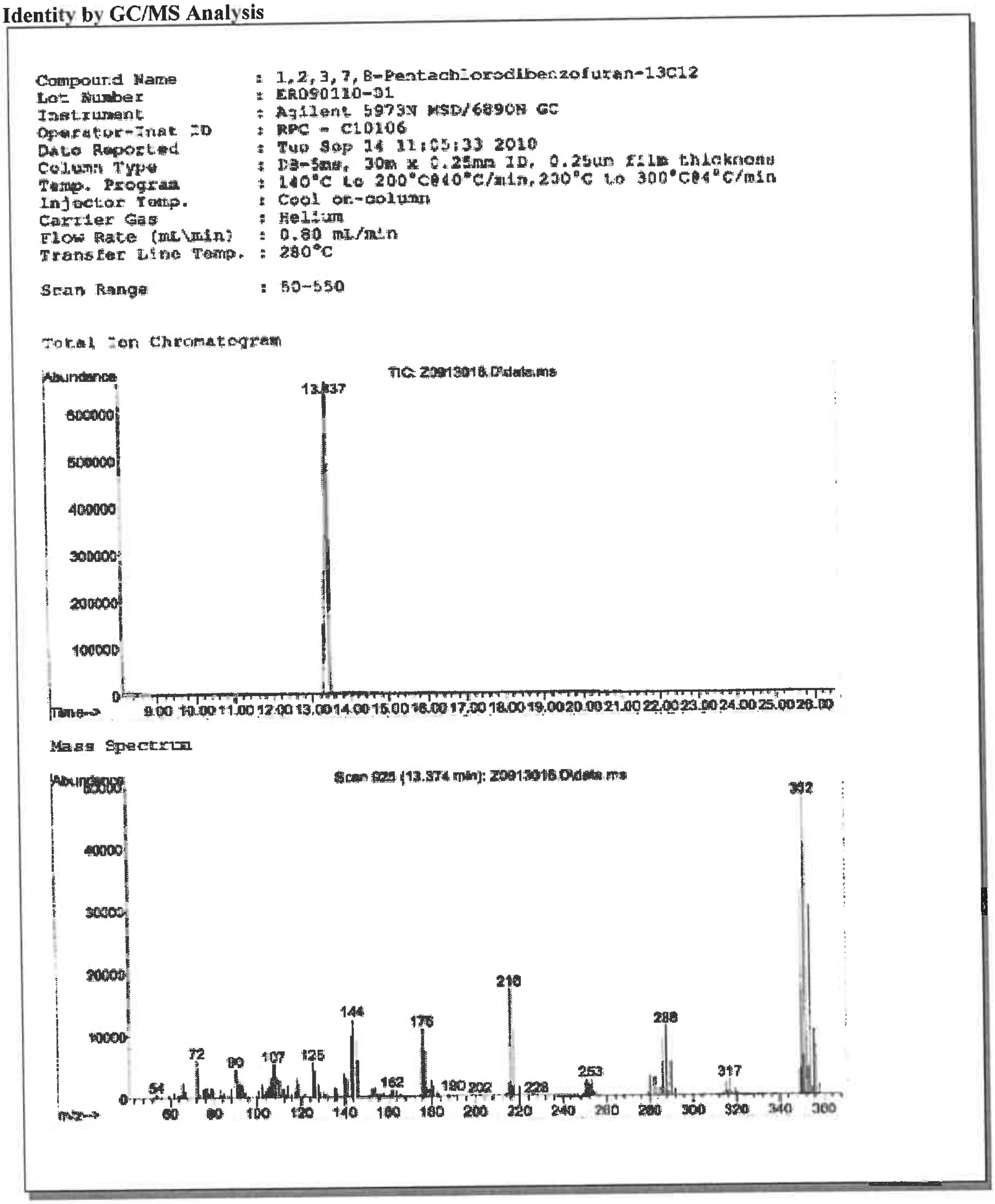

```
Compound Name         : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number            : ER090110-01
Instrument            : Agilent 5973N MSD/6890N GC
Operator-Inst ID      : RPC - C10106
Date Reported         : Tue Sep 14 11:05:33 2010
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@10°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C

Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

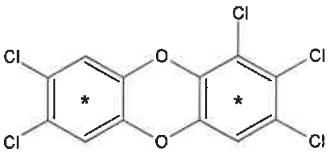

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculate based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

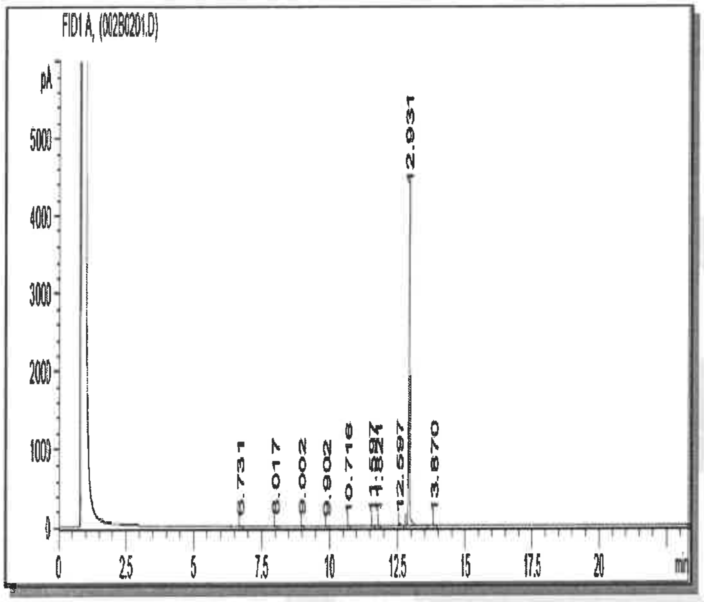

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

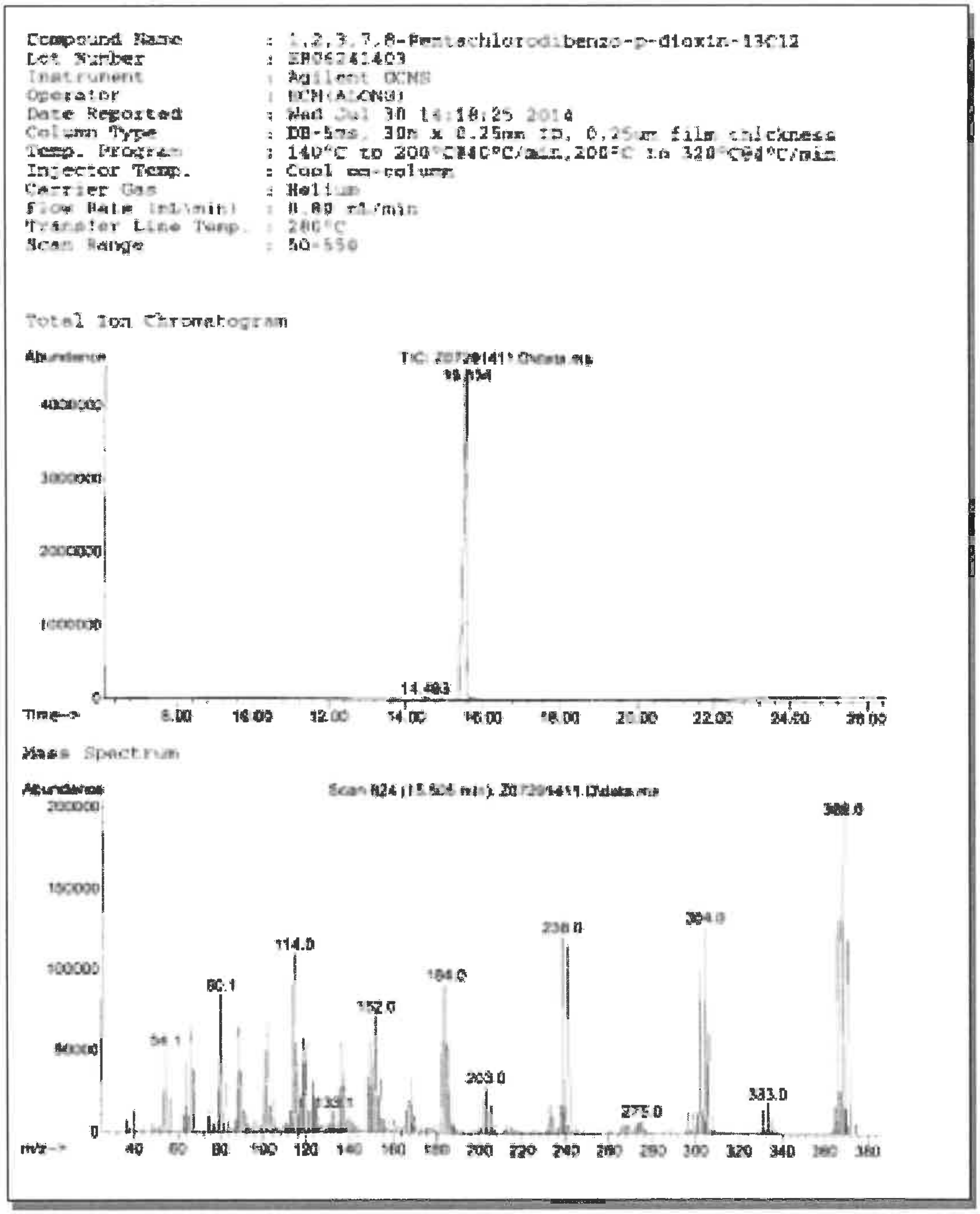

Compound Name : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number : ER06241403
Instrument : Agilent GCMS
Operator : HCH(ALONG)
Date Reported : Wed Jul 30 14:18:25 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

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Revision 00
Page 1 of 4

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

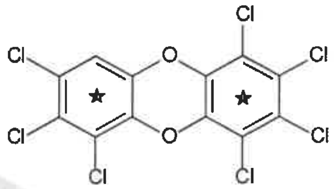

Catalog Number: ED-972
Solution Lot: ER09271601
Expiration Date: October 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	0.999

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER100110-01

Chemical Formula:	$^{13}C_{12}HCl_7O_2$
CAS Number:	109719-83-7
Molecular Weight:	437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

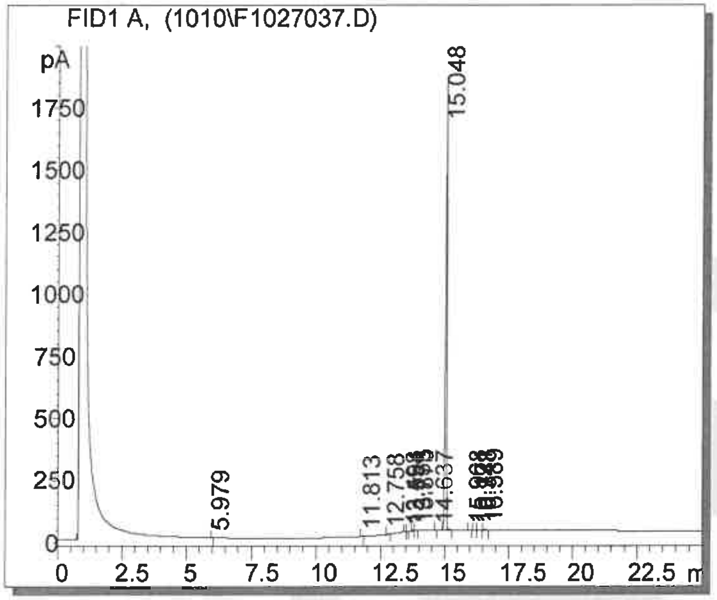

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

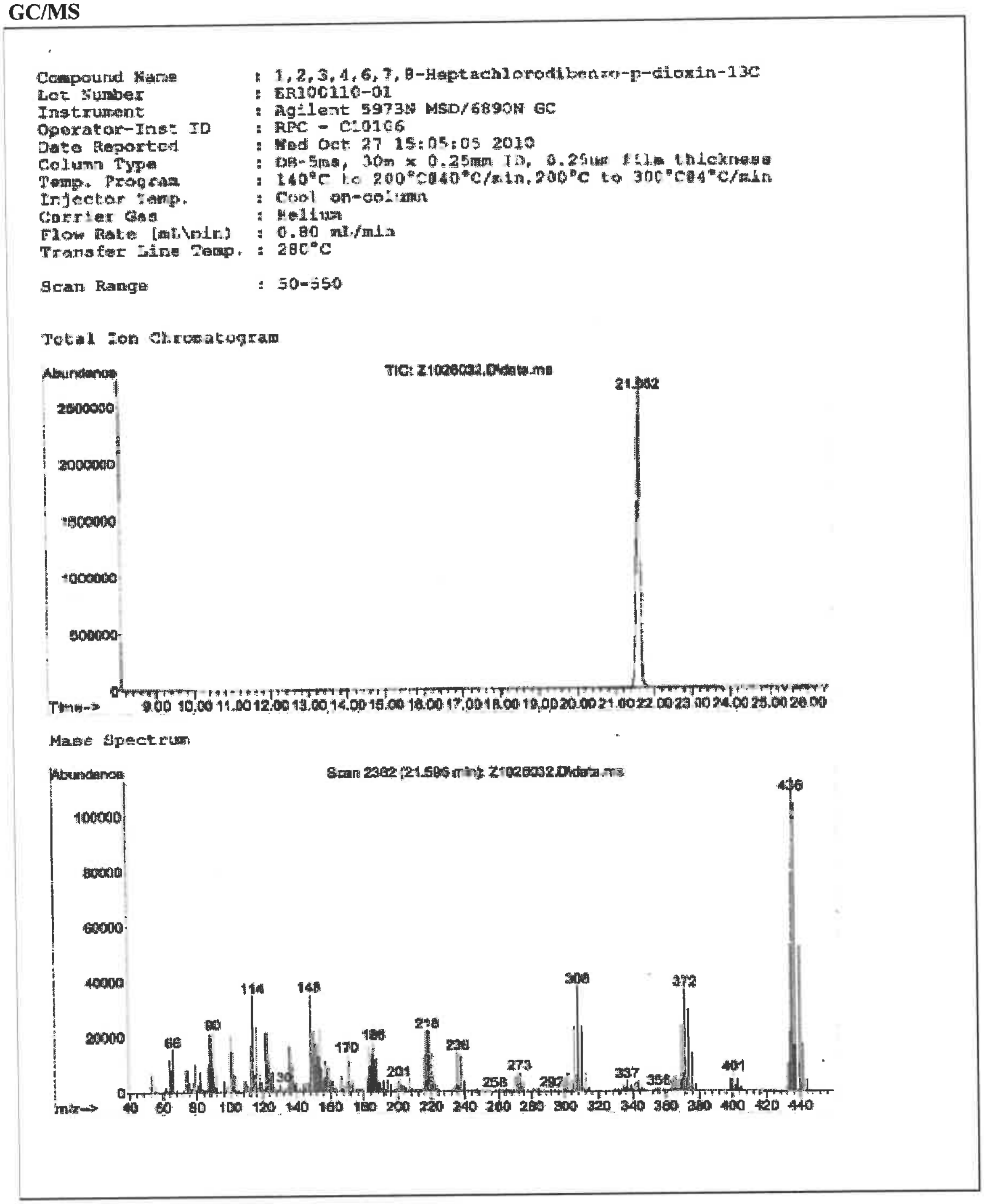

```
Compound Name          : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number             : ER100110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Wed Oct 27 15:05:05 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

r: 4/21/20 SKV

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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-986
Solution Lot: ER01062016
Expiration Date: January 2030
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

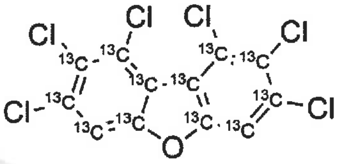

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

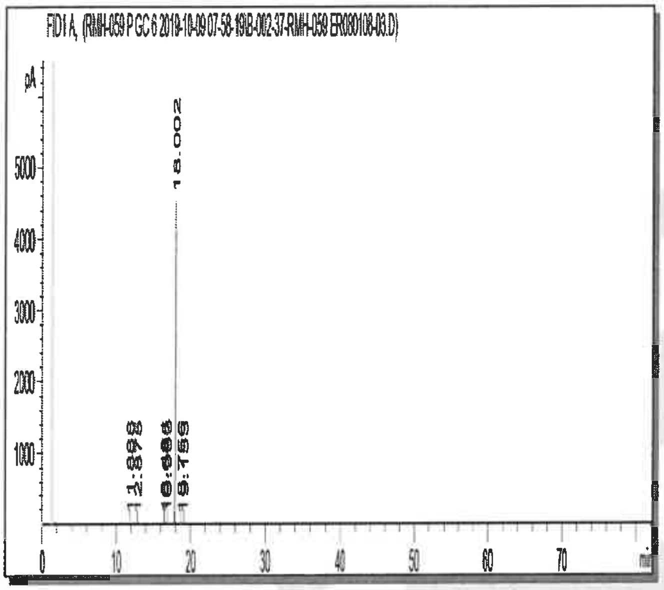

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER080108-03
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number : ER080108-03
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Oct 08 10:54:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

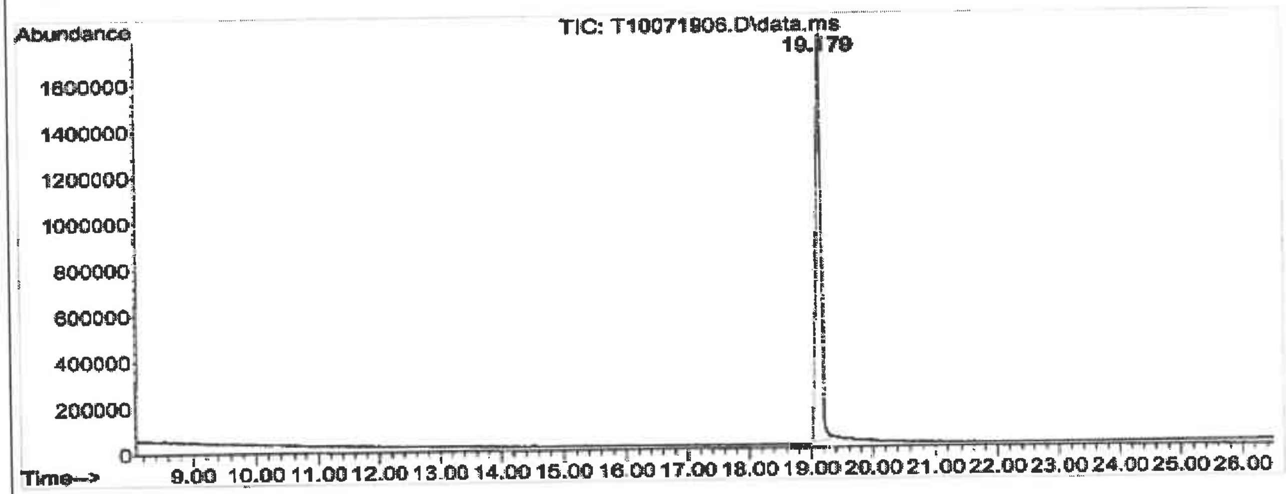

Mass Spectrum

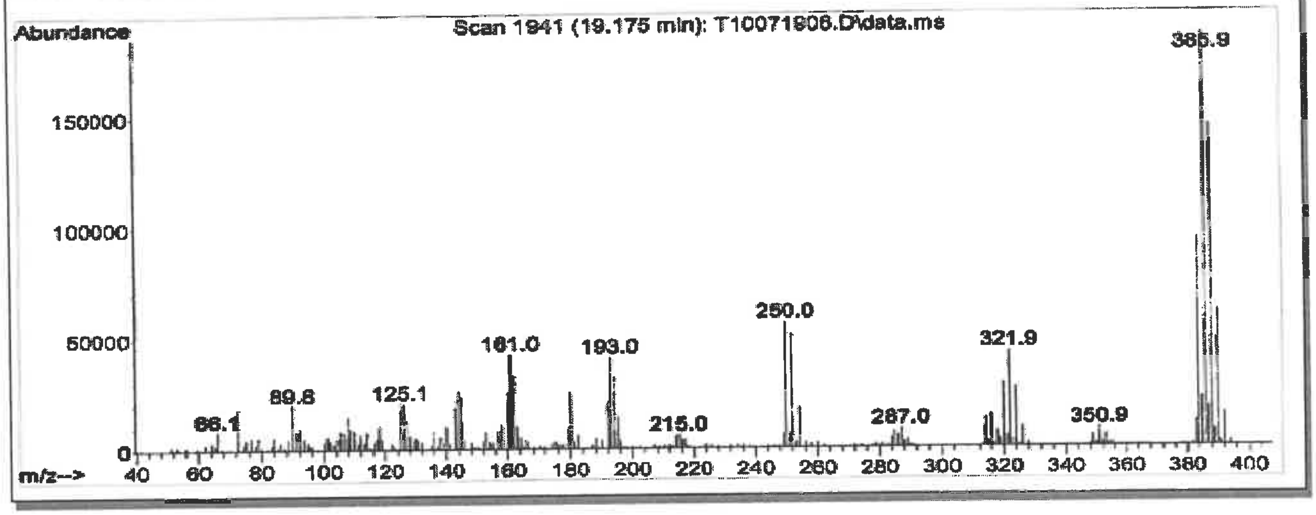

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skv

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Revision 0
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Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

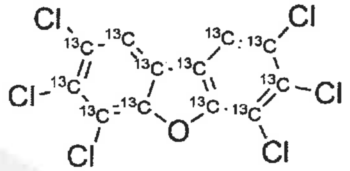

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801

Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

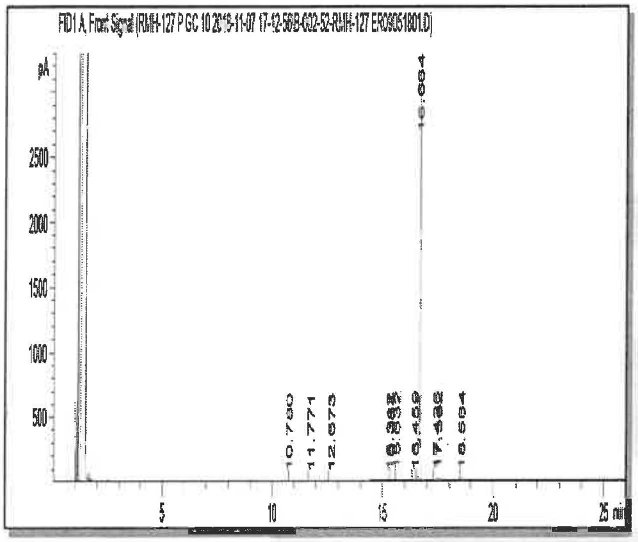

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

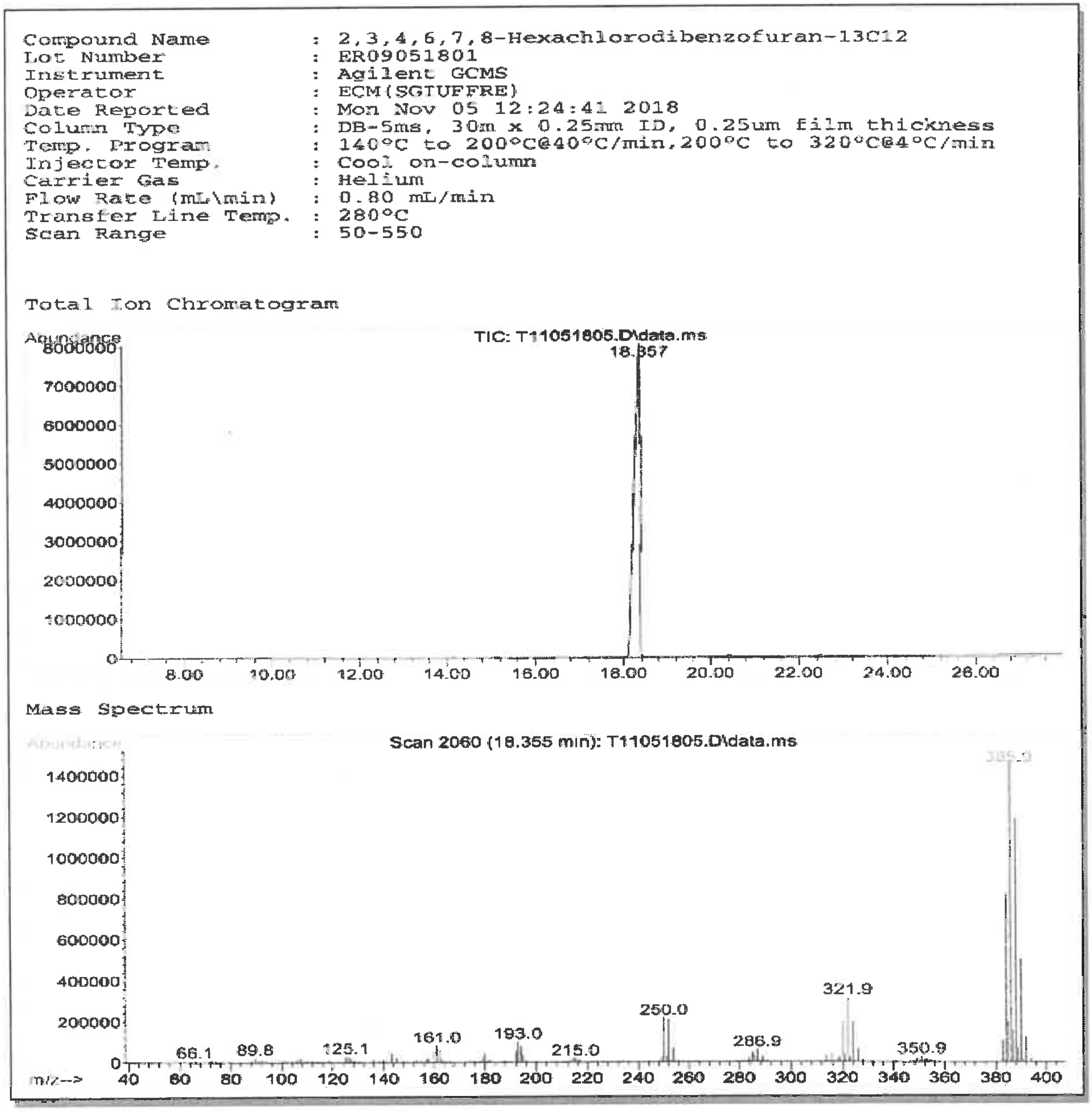

Compound Name : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER09051801
Instrument : Agilent GCMS
Operator : ECM(SGTUFFRE)
Date Reported : Mon Nov 05 12:24:41 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20 [illegible]

Cerilliant
Analytical Reference Standards
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Revision 0
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

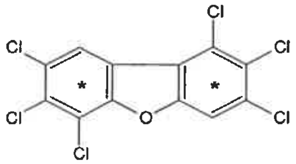

Catalog Number: EF-985
Solution Lot: ER02241603
Expiration Date: April 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER051607-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-03-9
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

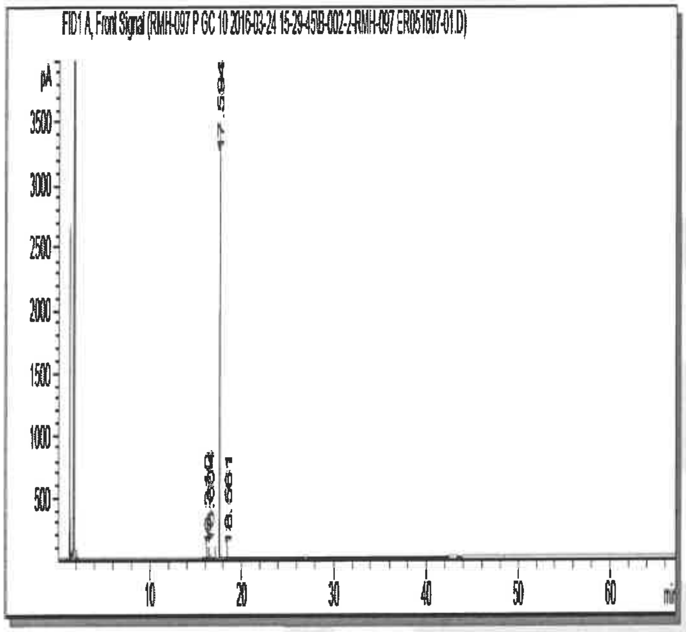

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER051607-01
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Fri Mar 18 07:08:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

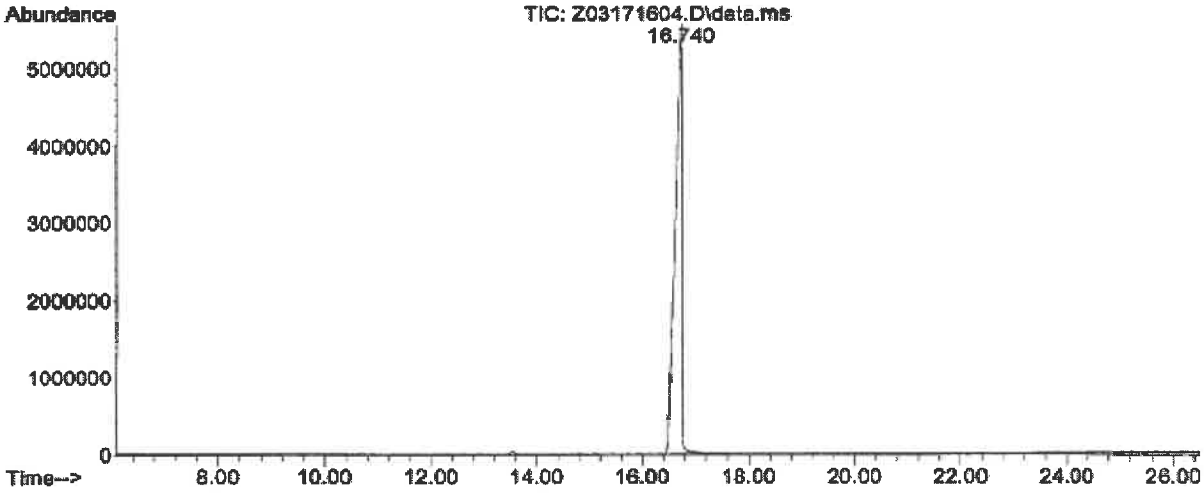

Mass Spectrum

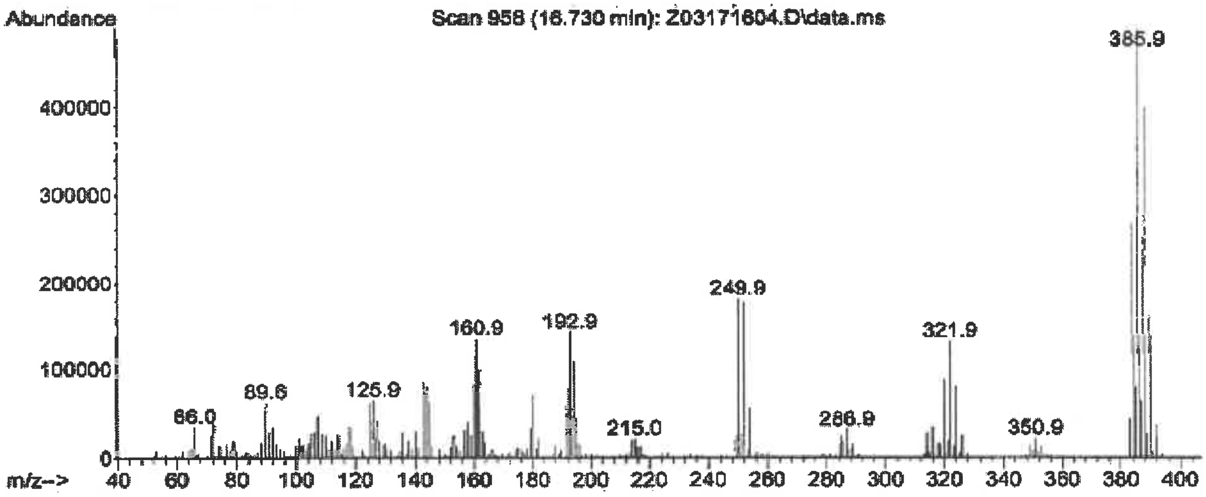

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

Rec'd. 3/26/20 SW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

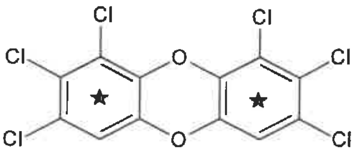

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

	August 16, 2019
Darron Ellsworth, Quality Assurance Manager	Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER110510-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-82-6
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

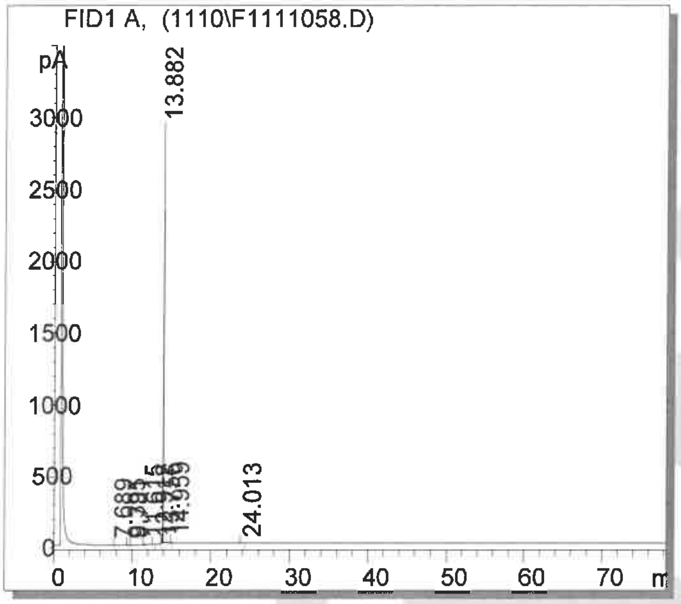

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

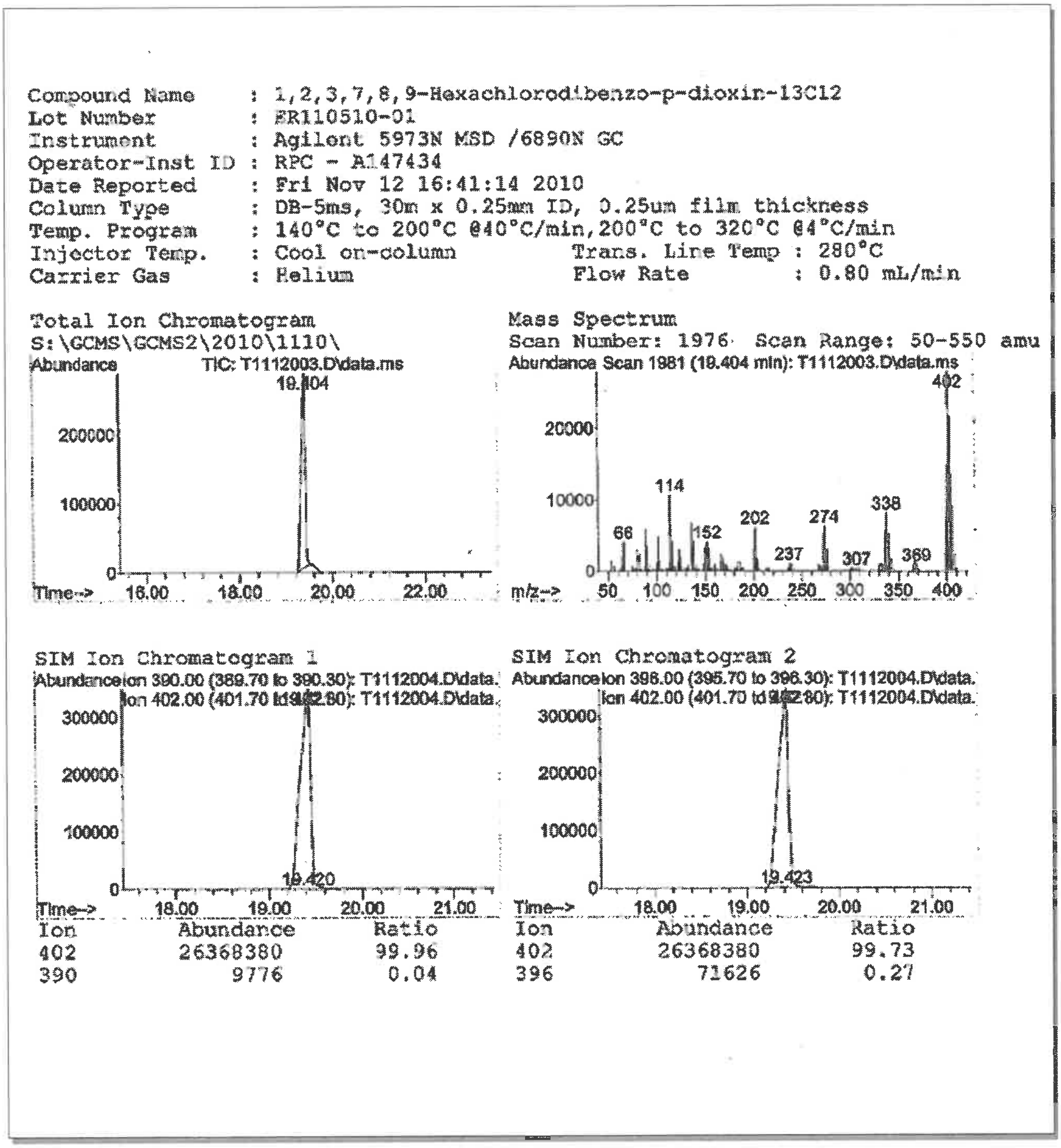

```
Compound Name      : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number         : FR110510-01
Instrument         : Agilent 5973N MSD /6890N GC
Operator-Inst ID   : RPC - A147434
Date Reported      : Fri Nov 12 16:41:14 2010
Column Type        : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program      : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.     : Cool on-column          Trans. Line Temp : 280°C
Carrier Gas        : Helium                  Flow Rate        : 0.80 mL/min
```

```
Total Ion Chromatogram                       Mass Spectrum
S:\GCMS\GCMS2\2010\1110\                     Scan Number: 1976  Scan Range: 50-550 amu
```

```
SIM Ion Chromatogram 1                       SIM Ion Chromatogram 2
```

```
Ion    Abundance    Ratio            Ion    Abundance    Ratio
402    26368380     99.96            402    26368380     99.73
390        9776      0.04            396       71626      0.27
```

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKW

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

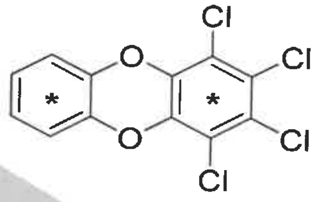

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

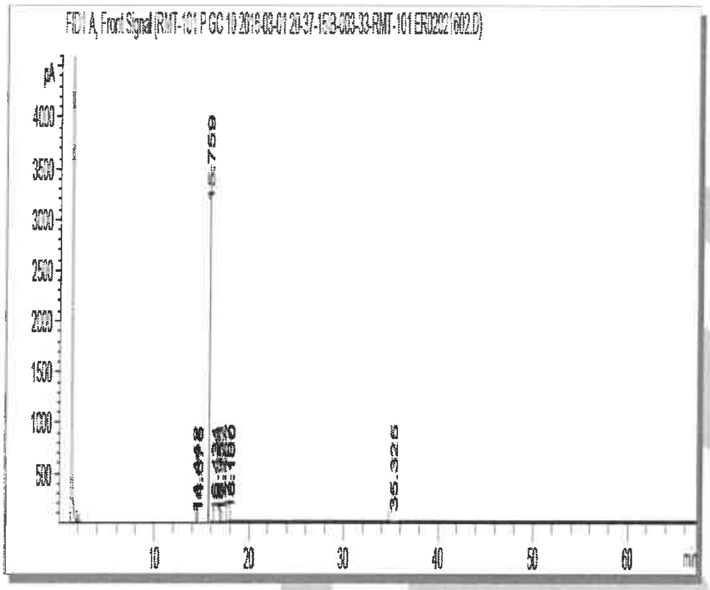

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

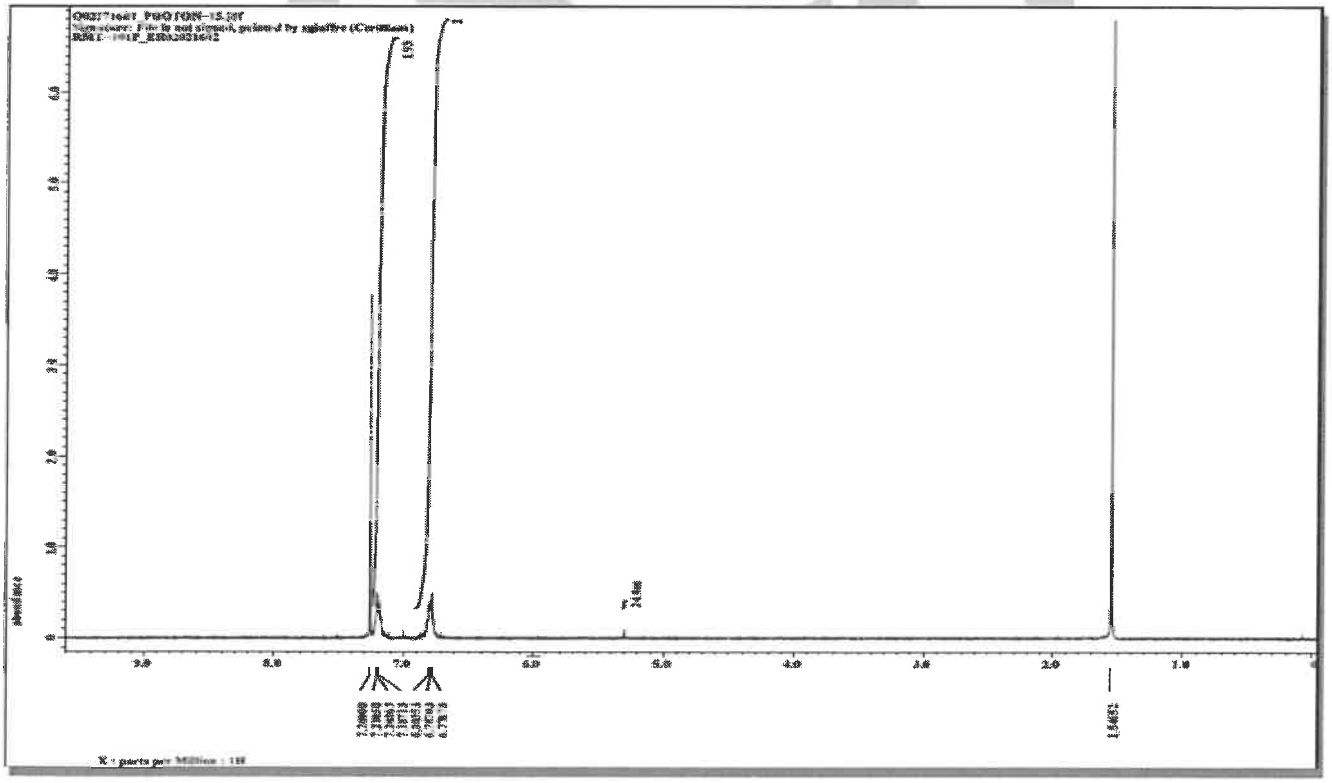

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

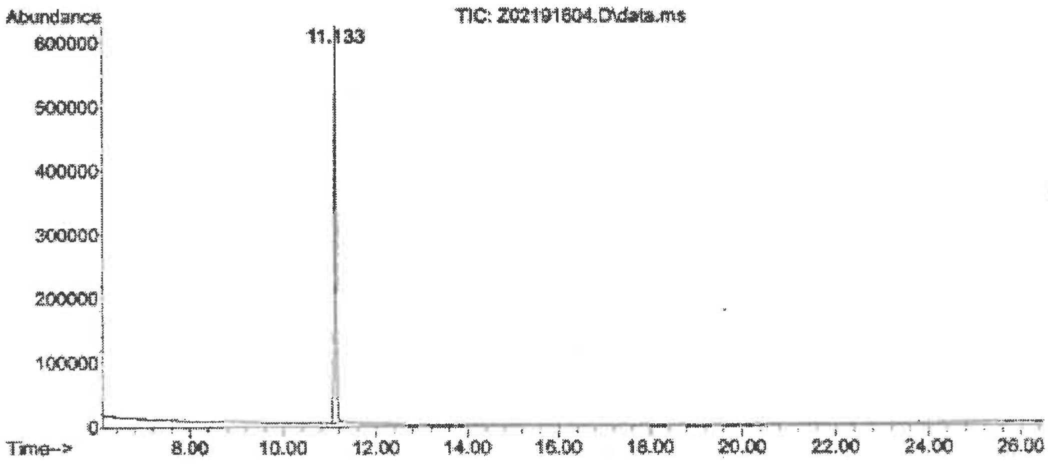

Mass Spectrum

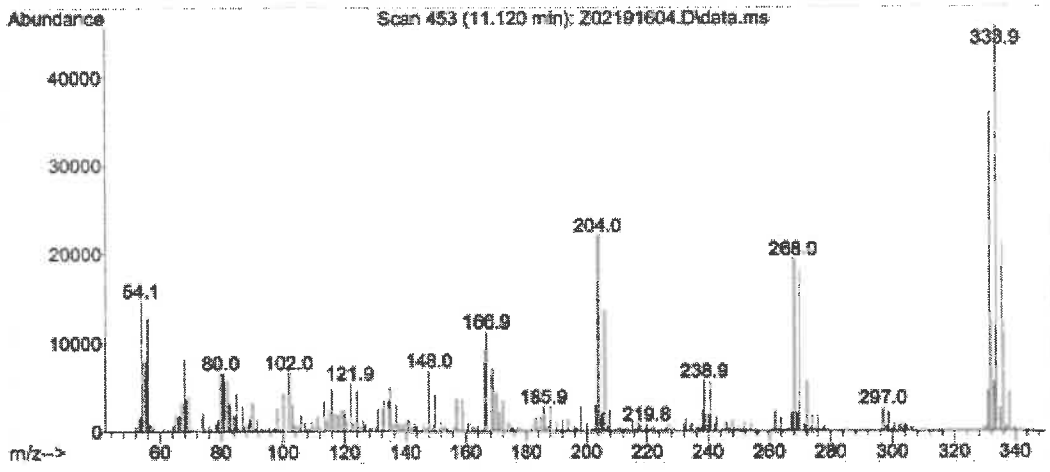

Reagent

HRDXNTA_00108

②

P: 4/26/19 SKJ

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-1613PAR

**U.S. EPA Method 1613 Native PCDD/PCDF
Precision and Recovery Stock Solution**

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ______________________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

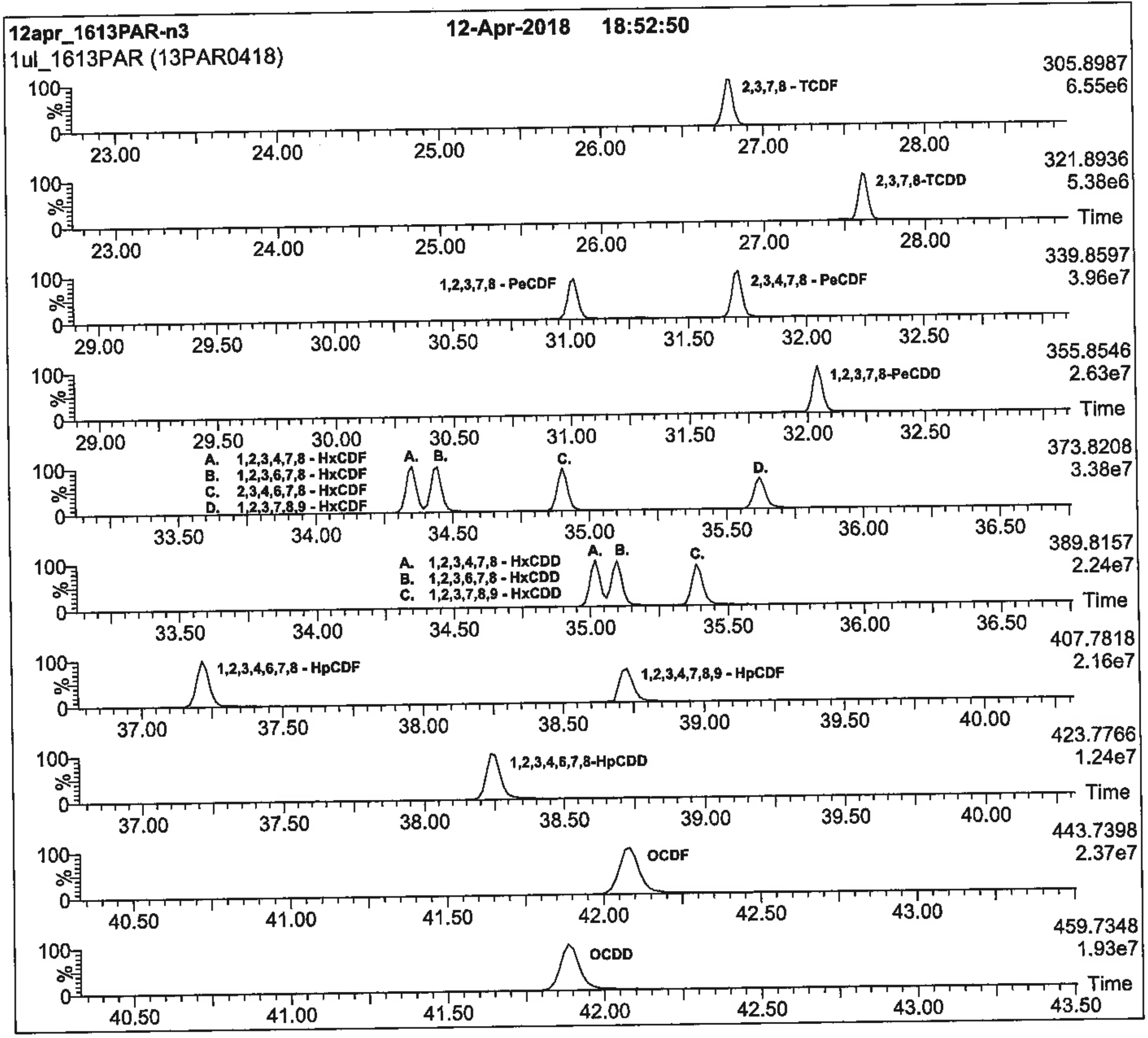

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 μm film thickness) Agilent J&W

Flow: Constant at 1 ml/min
Injector: 280 °C (Splitless Injection)
Ionization: EI+
Detector: 280 °C
SIR at 10,000 mass resolving power

Oven:
150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/15 SKV

Cerilliant
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Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/ECD
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
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2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

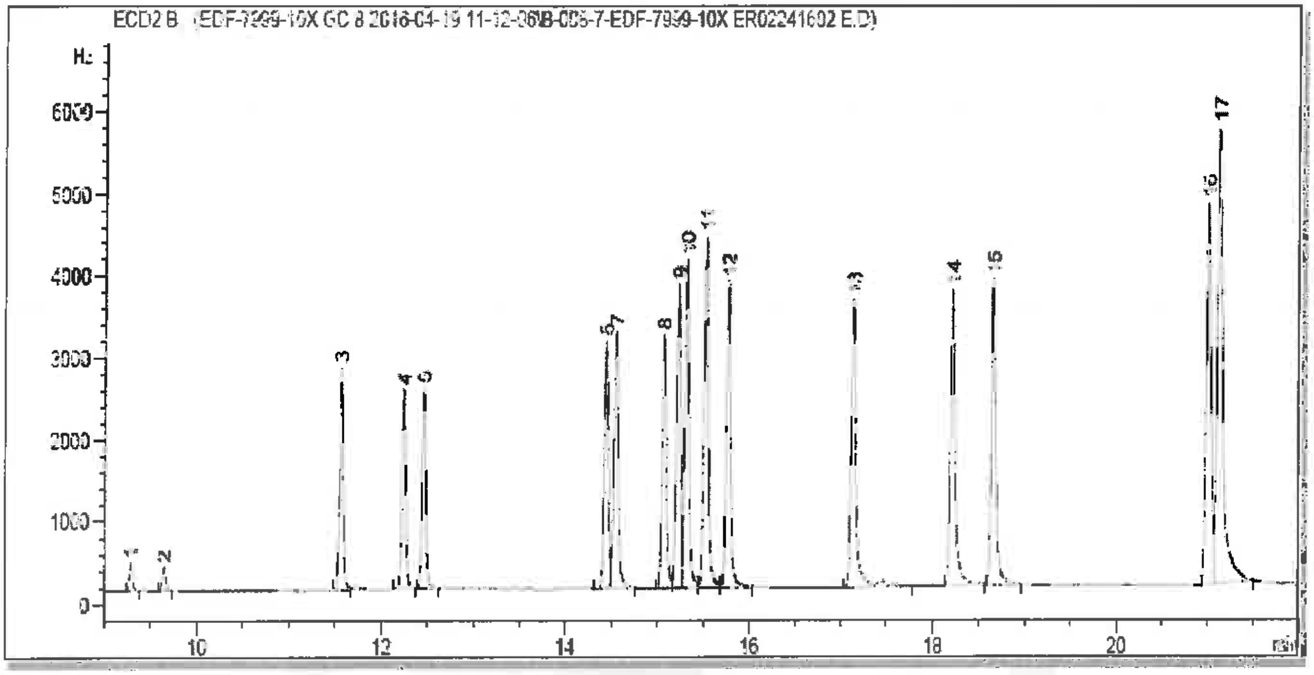

Peak:	**Analyte:**
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
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4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
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14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

r: 4/30/16 SKV

Cerilliant
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Revision 01
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Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
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Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

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Calibration Curve:	Linear Regression
Number of Points:	1

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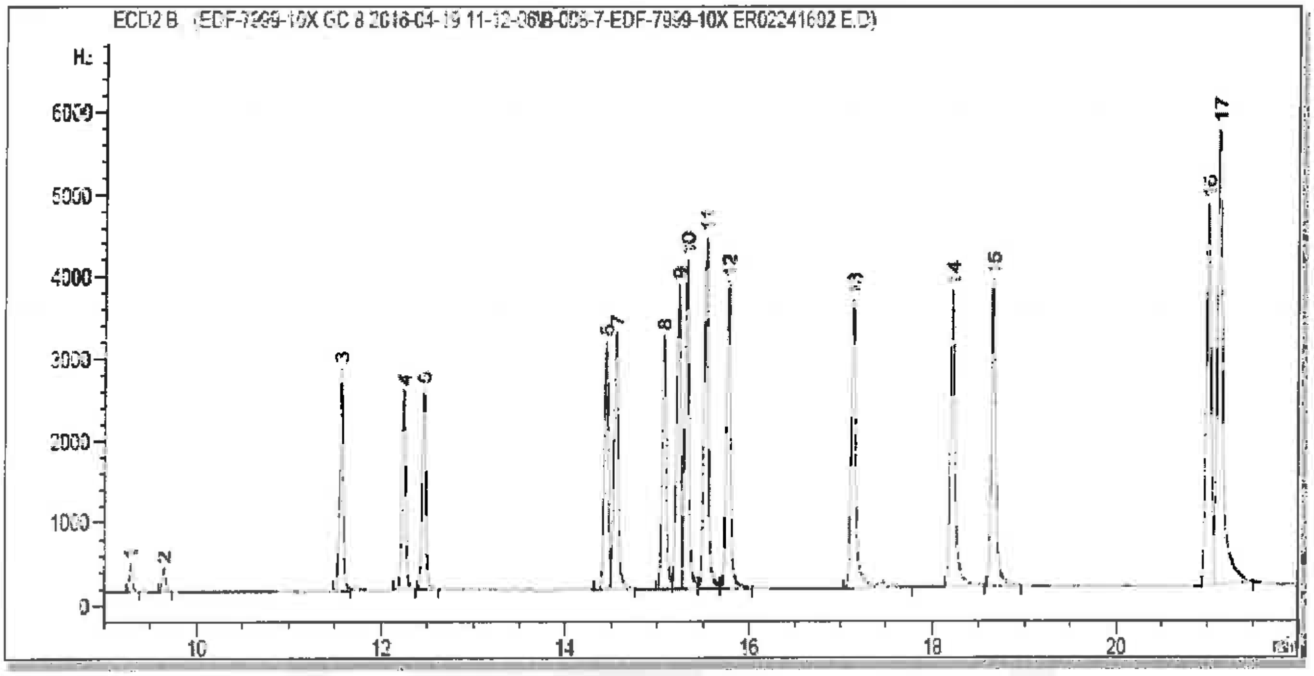

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17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

MT-ICP-ICSA_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM RC: 12/6/19 JMO

Product #: TA-ICP-ICSA

ICP ICSA Mix

1863494
ID: MT-ICP-ICSA_00002
Exp:01/08/21 Prpd:GSH Opn:01/08/20
ICSA mix for ICP

Lot #: 1025879-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	5000 ± 25 mg/L	Fe	2000 ± 10 mg/L
Ca	5000 ± 25 mg/L	Mg	5000 ± 25 mg/L

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#
Al	992545	Fe	1004971
Ca	150704	Mg	738337

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT-ICP-ICSB1_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

RC: 10|01|19 amo Product #: TA-ICP-ICSAB-1

ICP ICSAB Mix Solution 1

Lot #: 1023499-1

Matrix: 5% HNO_3/0.5% HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Mo	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L	Ti	100.0 ± 0.5 mg/L
Sb	100.0 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L		

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
Mo	175215	Si	977647	Ti	161694
Sb	987317	Sn	171360		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), hydrofluoric acid (HF) and diluted with filtered (0.22 μm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 μL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT-ICP-ICSB2_00002

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICP-ICSAB-2

ICP ICSAB Mix Solution 2

1863495
ID: MT-ICP-ICSB2_00002
Exp:01/08/21 Prpd:GSH Opn:01/08/20
ICSAB Solution2 for ICP

Rc; 10/01/19 JMO

Lot #: 992185-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag	100.0 ± 0.5 mg/L	Cr	100.1 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L
As	100.0 ± 0.5 mg/L	Cu	100.1 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L
B	1000 ± 5 mg/L	K	1000 ± 5 mg/L	Sr	100.0 ± 0.5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Be	50.00 ± 0.25 mg/L	Na	1000 ± 5 mg/L	V	100.1 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.1 ± 0.5 mg/L	Zn	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	P	1000 ± 5 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

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- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix1-SS_00002

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1-SS

Re: 10/01/19 omo

ICP ICPMS CAL Mix # 1

Lot #: 992738-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	100.1 ± 0.5 mg/L	Li	100.1 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Sn	100.0 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.1 ± 0.5 mg/L	Sr	100.1 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Sb	100.0 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cu	100.0 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

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    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix2-SS_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Rc: 10/01/19 OMD Product #: TA-CAL2-SS

ICP ICPMS CAL Mix # 2

Lot #: 992740-2

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

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Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

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Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix2_00003

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

RC: 10/01/19 GMD

Multi-Element Aqueous CRM

Product #: TA-CAL2

ICP ICPMS CAL Mix # 2

Lot #: 1018877-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
Al	992545	Fe	1004971	Mg	738337
Ca	150704	K	983959	Na	994710

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix3-SS_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Rc: 10/01/19 JMD Product #: TA-CAL3-SS

ICP ICPMS CAL Mix # 3

Lot #: 987270-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
P	1000 ± 5 mg/L	U	100.0 ± 0.5 mg/L
S	1000 ± 5 mg/L	W	100.0 ± 0.5 mg/L

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_spike1_00005

CPI INTERNATIONAL

rec: 8/14/19
open: 6/1/2020

CERTIFICATE OF ANALYSIS

2016270
ID MT_spike1_00005
Exp:01/30/21 Prod:GSH Opn:06/01/20
spike mix #1 for ICP-AES

Multi-Element Aqueous CRM

Product #: TA-SPIKE1+

Spike Mix # 1

Lot #: 1021235-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	200.0 ± 1.0 mg/L	Li	100.0 ± 0.5 mg/L	Sn	200.0 ± 1.0 mg/L
Ba	200.0 ± 1.0 mg/L	Mn	100.0 ± 0.5 mg/L	Sr	100.0 ± 0.5 mg/L
Be	99.99 ± 0.50 mg/L	Mo	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Tl	200.0 ± 1.0 mg/L
Co	99.98 ± 0.50 mg/L	Pb	100.0 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Se	200.0 ± 1.0 mg/L		
Cu	100.0 ± 0.5 mg/L	Si	200.0 ± 1.0 mg/L		

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
As	166531	Li	170237	Sn	171360
Ba	150283r	Mn	985851	Sr	976606
Be	989234	Mo	118881r	Ti	148663
Cd	173171	Ni	752769	Tl	983036
Co	979870	Pb	168223	V	983037
Cr	880115	Se	929078		
Cu	148793	Si	977647		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 μm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 30, 2019

Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_spike2_00006

rec: 8/14/19

open: 6/1/2020

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE2

2016271
ID MT_spike2_00006
Exp 10/04/20 Prod.GSH Opn.06/01/20
spike mix2 for ICP/ICPMS

Spike Mix # 2

Lot #: 992745-2

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	**1000 ± 5 mg/L**	**Fe**	**1000 ± 5 mg/L**	**Mg**	**5000 ± 25 mg/L**
Ca	**5000 ± 25 mg/L**	**K**	**5000 ± 25 mg/L**	**Na**	**5000 ± 25 mg/L**

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

April 4, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

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Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT6010LLSTD_00016

INORGANIC™
VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

Re: 1117-119 OMD

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: 6010 STD LL

Lot Number: P2-MEB686161

Matrix: 7% (v/v) HNO3
tr. HF

Value / Analyte(s):

100 µg/mL ea:
Potassium,

50 µg/mL ea:
Magnesium, Calcium, Sodium,
Phosphorus, Sulfur, Silicon,

20 µg/mL ea:
Aluminum,

10 µg/mL ea:
Boron, Iron,

5 µg/mL ea:
Strontium,

2 µg/mL ea:
Thallium, Tin, Antimony,
Selenium, Molybdenum, Arsenic,

1 µg/mL ea:
Lithium, Copper, Titanium,
Zinc,

0.5 µg/mL ea:
Vanadium, Lead, Nickel,
Silver, Manganese, Barium,
Cobalt, Chromium,

0.2 µg/mL ea:
Cadmium, Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	19.99 ± 0.10 µg/mL	Antimony, Sb	1.999 ± 0.014 µg/mL
Arsenic, As	2.000 ± 0.017 µg/mL	Barium, Ba	0.4995 ± 0.0028 µg/mL
Beryllium, Be	0.2000 ± 0.0012 µg/mL	Boron, B	10.00 ± 0.07 µg/mL
Cadmium, Cd	0.2000 ± 0.0012 µg/mL	Calcium, Ca	49.96 ± 0.22 µg/mL
Chromium, Cr	0.5006 ± 0.0031 µg/mL	Cobalt, Co	0.4994 ± 0.0028 µg/mL
Copper, Cu	1.000 ± 0.004 µg/mL	Iron, Fe	10.00 ± 0.05 µg/mL
Lead, Pb	0.4998 ± 0.0025 µg/mL	Lithium, Li	1.000 ± 0.006 µg/mL
Magnesium, Mg	50.04 ± 0.20 µg/mL	Manganese, Mn	0.4998 ± 0.0023 µg/mL
Molybdenum, Mo	1.999 ± 0.013 µg/mL	Nickel, Ni	0.5003 ± 0.0025 µg/mL
Phosphorus, P	50.03 ± 0.23 µg/mL	Potassium, K	99.9 ± 0.4 µg/mL
Selenium, Se	1.999 ± 0.015 µg/mL	Silicon, Si	50.02 ± 0.32 µg/mL
Silver, Ag	0.4996 ± 0.0035 µg/mL	Sodium, Na	50.03 ± 0.18 µg/mL
Strontium, Sr	5.004 ± 0.030 µg/mL	Sulfur, S	49.99 ± 0.24 µg/mL
Thallium, Tl	2.001 ± 0.013 µg/mL	Tin, Sn	2.000 ± 0.011 µg/mL
Titanium, Ti	1.000 ± 0.007 µg/mL	Vanadium, V	0.5000 ± 0.0029 µg/mL
Zinc, Zn	1.000 ± 0.006 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	Calculated		See Sec. 4.2
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Ca	Calculated		See Sec. 4.2
Cd	Calculated		See Sec. 4.2
Co	Calculated		See Sec. 4.2
Cr	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
S	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	130912
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Ti	Calculated		See Sec. 4.2
Tl	Calculated		See Sec. 4.2
V	Calculated		See Sec. 4.2
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ____________________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MT6010QSMLL_00008

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

11/7/19

Product Code: Multi Analyte Custom Grade Solution

Catalog Number: 6010 QSM LL

Lot Number: P2-MEB686159

Matrix: 7% (v/v) HNO3
tr. HF

Value / Analyte(s):

100 µg/mL ea:
Potassium,

50 µg/mL ea:
Magnesium, Calcium, Sodium,
Phosphorus, Sulfur, Silicon,

20 µg/mL ea:
Aluminum, Boron,

10 µg/mL ea:
Iron,

5 µg/mL ea:
Strontium,

4 µg/mL ea:
Selenium, Arsenic,

3 µg/mL ea:
Thallium, Antimony,

2 µg/mL ea:
Tin, Vanadium, Zinc,
Barium, Molybdenum, Lithium,

1.5 µg/mL ea:
Copper,

1 µg/mL ea:
Manganese, Cobalt, Chromium,
Titanium, Lead, Nickel,

0.5 µg/mL ea:
Silver,

0.3 µg/mL ea:
Cadmium, Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	20.00 ± 0.10 µg/mL	Antimony, Sb	2.998 ± 0.021 µg/mL
Arsenic, As	3.997 ± 0.027 µg/mL	Barium, Ba	2.001 ± 0.011 µg/mL
Beryllium, Be	0.2996 ± 0.0016 µg/mL	Boron, B	20.00 ± 0.14 µg/mL
Cadmium, Cd	0.2998 ± 0.0018 µg/mL	Calcium, Ca	49.96 ± 0.22 µg/mL
Chromium, Cr	1.000 ± 0.006 µg/mL	Cobalt, Co	1.001 ± 0.006 µg/mL
Copper, Cu	1.500 ± 0.006 µg/mL	Iron, Fe	10.00 ± 0.05 µg/mL
Lead, Pb	1.000 ± 0.005 µg/mL	Lithium, Li	1.999 ± 0.011 µg/mL
Magnesium, Mg	49.95 ± 0.20 µg/mL	Manganese, Mn	1.001 ± 0.005 µg/mL
Molybdenum, Mo	1.999 ± 0.013 µg/mL	Nickel, Ni	1.001 ± 0.005 µg/mL
Phosphorus, P	49.96 ± 0.23 µg/mL	Potassium, K	100.0 ± 0.4 µg/mL
Selenium, Se	4.000 ± 0.024 µg/mL	Silicon, Si	49.99 ± 0.32 µg/mL
Silver, Ag	0.4998 ± 0.0035 µg/mL	Sodium, Na	50.00 ± 0.18 µg/mL
Strontium, Sr	5.002 ± 0.030 µg/mL	Sulfur, S	50.01 ± 0.24 µg/mL
Thallium, Tl	2.999 ± 0.021 µg/mL	Tin, Sn	2.000 ± 0.011 µg/mL
Titanium, Ti	1.000 ± 0.007 µg/mL	Vanadium, V	2.000 ± 0.011 µg/mL
Zinc, Zn	2.001 ± 0.012 µg/mL		

Density: 1.036 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	Calculated		See Sec. 4.2
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Ca	Calculated		See Sec. 4.2
Cd	Calculated		See Sec. 4.2
Co	Calculated		See Sec. 4.2
Cr	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
S	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	130912
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Ti	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
V	Calculated		See Sec. 4.2
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ______________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTAgXXXTA-SS_00002

INORGANIC™ VENTURES
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Christiansburg, VA 24073 · USA
inorganicventures.com

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	P2-AG678505
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2217
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1002 ± 6 µg/mL
Density:	1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**1001 ± 5 µg/mL** ICP Assay NIST SRM 3151 Lot Number: 160729
Assay Method #2	**1003 ± 3 µg/mL** Volhard NIST SRM 999c Lot Number: 999c
Assay Method #3	**1000 ± 3 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000253	O	Na		0.000572	M	Se	<	0.018179	M	Zn		0.000596
O	Al		0.000647	O	Fe		0.000301	M	Nb	<	0.000253	M	Si		0.002313	M	Zr	<	0.005559
M	As	<	0.002403	M	Ga	<	0.000253	M	Nd	<	0.000253	M	Sm	<	0.000253				
M	Au		0.000168	M	Gd	<	0.000253	O	Ni	<	0.005472	M	Sn		0.000198				
O	B	<	0.009978	M	Ge	<	0.000754	M	Os	<	0.000254	O	Sr		0.000008				
M	Ba	<	0.000785	M	Hf	<	0.000253	M	P	<	0.053784	M	Ta	<	0.000253				
M	Be	<	0.002407	M	Hg	<	0.001332	M	Pb		0.000337	M	Tb	<	0.000253				
M	Bi		0.000171	M	Ho	<	0.000253	M	Pd	<	0.001382	M	Te	<	0.003715				
O	Ca		0.000732	M	In	<	0.003483	M	Pr	<	0.000253	M	Th	<	0.000253				
M	Cd	<	0.000253	M	Ir	<	0.000254	M	Pt	<	0.000253	M	Ti	<	0.002706				
M	Ce	<	0.000573	O	K		0.000412	M	Rb	<	0.000253	M	Tl	<	0.000253				
M	Co	<	0.000253	M	La	<	0.000253	M	Re	<	0.000253	M	Tm	<	0.000253				
O	Cr	<	0.005043	O	Li	<	0.000214	M	Rh	<	0.000253	M	U	<	0.000253				
M	Cs	<	0.002769	M	Lu	<	0.000253	M	Ru	<	0.000254	M	V	<	0.000822				
O	Cu		0.000474	O	Mg		0.000106	M	S	<	0.560935	M	W	<	0.002146				
M	Dy	<	0.000253	M	Mn	<	0.000253	M	Sb	<	0.006899	M	Y	<	0.000253				
M	Er	<	0.000253	M	Mo	<	0.000479	M	Sc	<	0.000733	M	Yb	<	0.000253				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 Ag(H2O)6+
Chemical Compatibility -Stable in HNO3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [AgClx1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HNO3); Ores (Digestion with conc. HNO3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 06, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 06, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ______________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTAgXXXTA_00012

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM   Rc: 10|11|19

SE Std Silver (Ag) – 1000 µg/mL

Matrix: 5% HNO_3

Product #: TA-1000511

Lot #: 975475-80

Element	Certified Concentration & Uncertainty
Ag	996 ± 3 µg/mL (w/v)
	987 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure silver (Ag) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151, lot #992212**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	MAJOR	Co	<0.5	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<1	Hf	<0.2	Mg	<5	Pb	2	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	3	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	2	Cu	9	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	2	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTAsXXXTA_00010

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rc: 10/01/19 OMD

Product #: TA-100031

SE Std Arsenic (As) – 1000 µg/mL

Lot #: 175385-53

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
As	**1000 ± 2 µg/mL (w/v)**
	983 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure arsenic (As) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3103a, lot #100818**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	MAJOR	Cr	0.7	Hg	<0.5	Mo	0.7	Pt	<0.5	Sn	1	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	2	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	13	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	3	Ru	6	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

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Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

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Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBaXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 OMD Product #: TA-100041

SE Std Barium (Ba) – 1000 µg/mL

Lot #: 273421-73

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ba	1000 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure barium nitrate [$Ba(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3104a, lot #140909**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	3	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	0.9	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	0.7	Pt	<0.5	Sn	<0.5	Y	1
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	2	Sr	3	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	MAJOR	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	14	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	2	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBeXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

RE: 10/01/19 MMD

Product #: TA-100051

SE Std Beryllium (Be) – 1000 µg/mL

Lot #: 660981-51

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Be	**996 ± 5 µg/mL (w/v)**
	983 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure beryllium acetate [$Be_4O(C_2H_3O_2)_6$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3105a, lot #090514**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBXXXXTA_00011

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM RC: 10/01/19 Product #: TA-100074

SE Std Boron (B) – 1000 µg/mL Lot #: 982524-63

Matrix: H_2O

Element	Certified Concentration & Uncertainty
B	1001 ± 2 µg/mL (w/v)
	1003 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9995% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3107, lot #110830**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<5	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	MAJOR	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
  - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBXXXXTA_00013

CPI
INTERNATIONAL

REPORT OF ANALYSIS

rec: 1/6/2020

Single-Element Aqueous RM

Boron (B) – 5000 µg/mL

Matrix: H_2O

2006159
ID: MTBXXXXTA_00013
Exp:05/21/21 Prpd:GSH Opn:05/21/20
Boron 5,000 ug/mL

Product #: S4400-5M74

Lot #: 1009207-4

Element	Certified Concentration
B	**4981 µg/mL**

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This RM was prepared to a nominal concentration of 5000 µg/mL by gravimetric methods using 99.9995% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to **NIST SRM 3107**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

December 13, 2019
Certification Date

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5580 Skylane Boulevard P: 707.525.5788
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Reagent

MTCdXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Cadmium (Cd) – 1000 µg/mL

Matrix: 5% HNO_3

Re: 10/01/19
MWO

Product #: TA-100081

Lot #: 160499-113

Element	Certified Concentration & Uncertainty
Cd	**1000 ± 5 µg/mL (w/v)**
	997 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9997% pure cadmium (Cd) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3108, lot #130116**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	<5	Hf	<2	Mn	22	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	10	Cu	<10	Ho	<2	Na	<250	Rb	<5	Sr	<10	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	<10	Er	<2	Ir	<2	Nd	<2	Rh	6	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	6	Sb	<5	Ti	<20		
Cd	MAJOR	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	12		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	17		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCoXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Cobalt (Co) – 1000 µg/mL

Matrix: 5% HNO_3

Re: 10/01/19 OYWO

Product #: TA-1000131

Product Lot #: 979906-18

Source Material Lot #: COD12017A1

Element	Certified Concentration & Uncertainty
Co	997 ± 2 µg/mL (w/v)
	994 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.998% pure cobalt (Co) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3113, lot #000630**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	MAJOR	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	~~Te~~	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	6	Pb	<1	Sc	<5	~~Ti~~	<2
As	60	Cr	<0.5	Hg	<0.5	Mn	8	Pd	100	Se	15	~~Tl~~	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	~~Tm~~	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	~~V~~	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	~~W~~	<0.5
Bi	0.4	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	~~Y~~	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	~~Yb~~	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	~~Zn~~	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCrXXXTA_00010

CERTIFICATE OF ANALYSIS

Re: 10/01/19

Single-Element Aqueous CRM — Product #: TA-1000121

SE Std Chromium (Cr) – 1000 µg/mL — Lot #: 975466-82

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cr	1003 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure chromium (Cr) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3112a, lot #030730.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	2	Co	<1	Ge	<0.5	Mg	<5	Pd	2	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	MAJOR	Hg	<0.5	Mo	2	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	16	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCuXXXTA_00009

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

re: 10/01/19
GMD

Product #: TA-1000141

SE Std Copper (Cu) – 1000 µg/mL

Lot #: 982446-23

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cu	991 ± 2 µg/mL (w/v)
	988 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure copper (Cu) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3114, lot #121207**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	MAJOR	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTKXXXXTA_00015

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-10M411

SE Std Potassium (K) – 10,000 µg/mL

RO: 6/24/19

Lot #: 172053-80

Matrix: 5% HNO_3

1687334
ID: MTKXXXXTA_30015
Exp 07/30/20 Prod JMC Opn 07/30/19
Potassium 10 000 ug/mL

Element	Certified Concentration & Uncertainty
K	9965 ± 50 µg/mL (w/v)
	9744 ± 50 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure potassium nitrate (KNO_3) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3141a, lot #140813** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	<5	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	<250	Rb	79	Sr	<10	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	<10	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	MAJOR	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 14, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTMnXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 GMO

Product #: TA-1000321

SE Std Manganese (Mn) – 1000 µg/mL

Lot #: 167539-89

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Mn	1001 ± 3 µg/mL (w/v)
	995 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.98% pure manganese (Mn) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3132, lot #050429**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	2	Ge	<0.5	Mg	63	Pd	<0.5	Si	<100	V	3
Al	3	Cs	<0.5	Hf	<0.2	Mn	MAJOR	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	2	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTMoXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rev: 10/01/19
MWO

Product #: TA-1000343

SE Std Molybdenum (Mo) – 1000 μg/mL

Lot #: 169424-57

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Mo	999 ± 3 μg/mL (w/v)
	980 ± 3 μg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 μg/mL by gravimetric methods using 99.999% pure molybdenum (Mo) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 μm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3134, lot #891307**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (μg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	60
As	<2	Cr	<0.5	Hg	<0.5	Mo	MAJOR	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	1	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	6	Ta	2	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<5		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 μL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTNaXXXXTA_00004

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-10M521

RC: 6/24/19

SE Std Sodium (Na) – 10,000 µg/mL

Lot #: 752887-33

Matrix: 5% HNO_3

[illegible]
ID: [illegible]NaXXXXTA_00004
Exp 07/30/20 Prod JMD Con 07/[illegible]-19
Sodium 10 000 ug/mL

Element	Certified Concentration & Uncertainty
Na	10,070 ± 20 µg/mL (w/v)
	9771 ± 24 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure sodium carbonate (Na_2CO_3) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3152a, lot #120715.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	11	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	MAJOR	Rb	70	Sr	14	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	26	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 10, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTNiXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

re: 10/01/19

Product #: TA-1000361

SE Std Nickel (Ni) – 1000 µg/mL

Lot #: 984273-10

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ni	**1003 ± 4 µg/mL (w/v)**
	996 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure nickel (Ni) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3136, lot #120619**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	33	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	MAJOR	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPbXXXTA_00011

CERTIFICATE OF ANALYSIS

Re: 10/01/19
OMW

Single-Element Aqueous CRM | Product #: TA-1000281

SE Std Lead (Pb) – 1000 µg/mL | Lot #: 981329-43

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Pb	1009 ± 2 µg/mL (w/v)
	1003 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure lead (Pb) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3128, lot #101026**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	1	Hf	<0.2	Mg	<5	Pb	MAJOR	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	0.9
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPXXXTA_00004

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Rec'd 10/01/19 OWP

Single-Element Aqueous CRM

SE Std Phosphorous (P) – 1000 µg/mL

Matrix: 5% HNO_3

Product #: TA-1000391

Lot #: 978200-13

Element	Certified Concentration & Uncertainty
P	1002 ± 4 µg/mL (w/v)
	997 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.7% pure phosphoric acid (H_3PO_4) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a, lot #060717**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	MAJOR	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPXXXTA_00006

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Phosphorus (P) – 10,000 µg/mL

Matrix: 0.05% HNO_3

2046236
ID: MTPXXXTA_00006
Exp:06/22/21 Prpd:GSH Opn:06/22/20
Phosphorus 10,000 ug/mL

Product #: S4400-10M391

Lot #: 979480-31

Element	Certified Concentration & Uncertainty
P	**9957 ± 39 µg/mL (w/v)**
	9851 ± 39 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure phosphoric acid (H_3PO_4). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a, lot #060717**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	MAJOR	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	<5	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

April 6, 2020
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements
  (Registrar: TUV NORD)

Reagent

MTSbXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 omb Product #: TA-100023

SE Std Antimony (Sb) – 1000 µg/mL

Lot #: 1013797-6

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Sb	**996 ± 4 µg/mL (w/v)**
	977 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001, ISO 17034**, and **ISO/IEC 17025.** This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure antimony (Sb) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3102a, lot #140911.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	MAJOR	Te	<1
Al	98	Cs	<0.5	Hf	2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	370	Dy	<0.2	In	nd	Na	190	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	1	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	1	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSbXXXTA_00010

CPI INTERNATIONAL

Rec: 4/6/2020
Open: 4/8/2020

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-100023

SE Std Antimony (Sb) – 1000 µg/mL

Lot #: 1013797-6

Matrix: 5% HNO_3/tr. HF

1967575
D MTSbXXXTA_00010
Exp 10/06/21 Prod DPM
Antimony 1000 ug/mL

Element	Certified Concentration & Uncertainty
Sb	**996 ± 4 µg/mL (w/v)**
	977 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025.** This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure antimony (Sb) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3102a, lot #140911**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	MAJOR	Te	<1
Al	98	Cs	<0.5	Hf	2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	370	Dy	<0.2	In	nd	Na	190	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	1	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	1	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

January 23, 2020
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSeXXXTA_00009

CERTIFICATE OF ANALYSIS

rev: 10/01/19
omp

Single-Element Aqueous CRM

Product #: TA-1000491

SE Std Selenium (Se) – 1000 µg/mL

Lot #: 982461-24

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Se	1004 ± 7 µg/mL (w/v)
	996 ± 7 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure selenium (Se) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3149, lot #100901**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	MAJOR	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSnXXXTA_00011

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Re: 10/01/19
OMO

Single-Element Aqueous CRM

Product #: TA-1000613

SE Std Tin (Sn) – 1000 µg/mL

Lot #: 977645-7

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Sn	999 ± 3 µg/mL (w/v)
	979 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure tin (Sn) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3161a, lot #140917.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	6	Lu	<0.2	P	<100	Sb	3	Te	<1
Al	10	Cs	0.8	Hf	<0.2	Mg	16	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	0.8	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<1000	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	MAJOR	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	0.9	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	20	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSrXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rec: 10/02/19
MWD

Product #: TA-1000531

SE Std Strontium (Sr) – 1000 µg/mL

Lot #: 998106-28

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Sr	**996 ± 5 µg/mL (w/v)**
	991 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9965% pure strontium nitrate [$Sr(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3153a, lot #990906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	370	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	MAJOR	Y	1
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSXXXXTA_00017

CPI INTERNATIONAL

REPORT OF ANALYSIS

Single-Element Aqueous RM Re: 11/20/19 omo Product #: S4400-10M544

Sulfur (S) – 10,000 µg/mL opened : 5/14/2020 Lot #: 987745-19

Matrix: H_2O

1998822
ID: MTSXXXXTA_00017
Exp:05/14/21 Prpd:GSH Opn:05/14/20
Sulfur 10,000ug/mL

Element	Certified Concentration
S	**9966 µg/mL (w/v)**
	9790 µg/g (w/w)

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This RM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure ammonium sulfate [$(NH_4)_2SO_4$] dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to **NIST SRM 3154**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	289	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	6	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 7, 2019
Certification Date

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The Netherlands

www.cpiinternational.com

Reagent

MTTiXXXTA_00009

CERTIFICATE OF ANALYSIS

re: 10/01/19
DMP

Single-Element Aqueous CRM

SE Std Titanium (Ti) – 1000 µg/mL

Matrix: 5% HNO_3/tr. HF

Product #: TA-1000623

Lot #: 987438-5

Element	Certified Concentration & Uncertainty
Ti	998 ± 2 µg/mL (w/v)
	978 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99+% pure titanium (Ti) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3162a, lot #130925**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	0.7	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	1	Mg	<5	Pb	<1	Sc	<5	Ti	MAJOR
As	<2	Cr	1	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	15	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	0.8	Rb	<0.5	Sn	2	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	23	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTTlXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rc': 10/01/19
OMO

Product #: TA-1000581

SE Std Thallium (Tl) – 1000 µg/mL

Lot #: 148983-103

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Tl	1002 ± 3 µg/mL (w/v)
	997 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure thallium (Tl) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3158, lot #993012**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<1	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	13	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	2	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	0.3	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	MAJOR		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	5	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTVXXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rec. 10/02/19

gmp

Product #: TA-1000651

SE Std Vanadium (V) – 1000 µg/mL

Lot #: 990117-53

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
V	1003 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure vanadium pentoxide (V_2O_5) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3165, lot #160906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	35	Te	<1
Al	7	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	20
As	<2	Cr	111	Hg	<0.5	Mn	5	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	7	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	MAJOR
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	124	La	0.8	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	0.9	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTZnXXXTA-SS_00002

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CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	P2-ZN675323
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zinc
Starting Material:	Zn Metal
Starting Material Lot#:	580919
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1000 ± 5 µg/mL
Density:	1.011 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**999 ± 4 µg/mL** ICP Assay NIST SRM 3168a Lot Number: 120629
Assay Method #2	**1000 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000726	M	Eu	<	0.000500	O	Na		0.001897	O	Se	<	0.020160	s	Zn	<	
O	Al		0.000545	O	Fe		0.004817	M	Nb	<	0.000500	O	Si		0.001251	M	Zr	<	0.000500
M	As	<	0.005009	M	Ga	<	0.008015	M	Nd	<	0.000500	M	Sm	<	0.000500				
M	Au	<	0.001497	M	Gd	<	0.000500	O	Ni		0.002729	M	Sn	<	0.004007				
O	B	<	0.044800	M	Ge	<	0.004508	M	Os	<	0.011977	O	Sr		0.000022				
M	Ba		0.000078	M	Hf	<	0.000500	O	P	<	0.022400	M	Ta	<	0.000500				
M	Be	<	0.000500	M	Hg	<	0.002994	M	Pb		0.012073	M	Tb	<	0.000500				
M	Bi	<	0.001502	M	Ho	<	0.000500	M	Pd	<	0.001001	M	Te	<	0.000500				
O	Ca		0.002536	M	In	<	0.002003	M	Pr	<	0.000500	M	Th	<	0.000500				
M	Cd		0.000548	M	Ir	<	0.002495	M	Pt	<	0.000500	O	Ti	<	0.001568				
M	Ce	<	0.000500	M	K		0.000727	M	Rb	<	0.004007	M	Tl	<	0.002003				
M	Co	<	0.005009	M	La	<	0.000500	M	Re	<	0.000500	M	Tm	<	0.000500				
M	Cr	<	0.001001	O	Li	<	0.000112	M	Rh	<	0.000500	M	U	<	0.000500				
M	Cs	<	0.000500	M	Lu	<	0.000500	O	Ru	<	0.007840	M	V	<	0.001001				
O	Cu		0.004694	O	Mg		0.000550	O	S	<	0.044800	M	W	<	0.001001				
M	Dy	<	0.000500	O	Mn		0.001433	M	Sb	<	0.009017	M	Y	<	0.000500				
M	Er	<	0.000500	M	Mo	<	0.003506	M	Sc	<	0.002003	M	Yb	<	0.000500				

M - Checked by ICP-MS   O - Checked by ICP-OES   i - Spectral Interference
n - Not Checked For   s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 25, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 25, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ____________________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTZnXXXTA_00012

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rec. 10/01/19
GMO

Product #: TA-1000681

SE Std Zinc (Zn) – 1000 µg/mL

Lot #: 984272-63

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Zn	**1005 ± 3 µg/mL (w/v)**
	998 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure zinc (Zn) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3168a, lot #120629**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	6	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	12	W	<0.5
Bi	<0.2	Eu	<0.2	K	296	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	1	Tb	<0.5	Zn	MAJOR
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-397938/2-A	70	60	90	64	72	61	69	65
	LCSD 320-397938/3-A	69	61	94	66	78	66	67	63

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-397938/2-A	66	64	62	67	61	60	71	73
	LCSD 320-397938/3-A	65	62	57	67	60	59	68	70

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-225   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Initial RADL	320-62886-1 RADL	59	94
11215702-Control RADL	320-62886-2 RADL	57	83

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #
11215702-Treatment -1 RA	320-62886-3 RA	55	60	101
11215702-Treatment -2 RA	320-62886-4 RA	58	57	101

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Initial	320-62886-1	65	59	92	65	70	60	73	68
11215702-Initial DL	320-62886-1 DL	64	62	92	62	69	61	73	63
11215702-Control	320-62886-2	70	63	105	67	72	61	73	65
11215702-Control DL	320-62886-2 DL	65	59	96	59	64	51 q	68	64
11215702-Treatment -1	320-62886-3	61	57	86	58	65	55	67	62
11215702-Treatment -2	320-62886-4	61	58	86	58	66	56	67	62
	MB 320-397938/1-A	76	71	88	70	79	67	76	70

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Initial	320-62886-1	68	66	63	69	68	66	78	80
11215702-Initial DL	320-62886-1 DL	65	64	63	64	66	66	76	72
11215702-Control	320-62886-2	68	67	67	71	68	61	74	74
11215702-Control DL	320-62886-2 DL	63	65	62	66	63	67	70	62
11215702-Treatment -1	320-62886-3	62	63	59	65	62	61	73	72
11215702-Treatment -2	320-62886-4	63	61	58	66	62	60	70	72
	MB 320-397938/1-A	74	69	68	74	68	67	75	77

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 27jl20bdfs1_6.d

Lab ID: LCS 320-397938/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	210	105	67-158	
2,3,7,8-TCDF	200	218	109	75-158	
1,2,3,7,8-PeCDD	1000	1010	101	70-142	
1,2,3,7,8-PeCDF	1000	1010	101	80-134	
2,3,4,7,8-PeCDF	1000	954	95	68-160	
1,2,3,4,7,8-HxCDD	1000	885	88	70-164	
1,2,3,6,7,8-HxCDD	1000	923	92	76-134	
1,2,3,7,8,9-HxCDD	1000	923	92	64-162	
1,2,3,4,7,8-HxCDF	1000	903	90	72-134	
1,2,3,6,7,8-HxCDF	1000	973	97	84-130	
1,2,3,7,8,9-HxCDF	1000	988	99	78-130	
2,3,4,6,7,8-HxCDF	1000	989	99	70-156	
1,2,3,4,6,7,8-HpCDD	1000	926	93	70-140	
1,2,3,4,6,7,8-HpCDF	1000	942	94	82-122	
1,2,3,4,7,8,9-HpCDF	1000	846	85	78-138	
OCDD	2000	1790	89	78-144	
OCDF	2000	2000	100	63-170	
13C-2,3,7,8-TCDD	2000	1210	60	20-175	
13C-2,3,7,8-TCDF	2000	1400	70	22-152	
13C-1,2,3,7,8-PeCDD	2000	1220	61	21-227	
13C-1,2,3,7,8-PeCDF	2000	1270	64	21-192	
13C-2,3,4,7,8-PeCDF	2000	1450	72	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1270	64	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1240	62	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1380	69	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1300	65	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1340	67	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1320	66	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1200	60	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1220	61	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1420	71	20-186	
13C-OCDD	4000	2910	73	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Matrix: Water   Level: Low   Lab File ID: 27jl20bdfs1_7.d

Lab ID: LCSD 320-397938/3-A   Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	200	233	117	10	50	67-158	
2,3,7,8-TCDF	200	243	122	11	50	75-158	
1,2,3,7,8-PeCDD	1000	1090	109	8	50	70-142	
1,2,3,7,8-PeCDF	1000	1150	115	13	50	80-134	
2,3,4,7,8-PeCDF	1000	1030	103	7	50	68-160	
1,2,3,4,7,8-HxCDD	1000	1000	100	12	50	70-164	
1,2,3,6,7,8-HxCDD	1000	1110	111	18	50	76-134	
1,2,3,7,8,9-HxCDD	1000	1090	109	16	50	64-162	
1,2,3,4,7,8-HxCDF	1000	1050	105	15	50	72-134	
1,2,3,6,7,8-HxCDF	1000	1100	110	13	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1090	109	10	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1100	110	11	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1040	104	12	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1090	109	14	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1000	100	17	50	78-138	
OCDD	2000	2070	103	14	50	78-144	
OCDF	2000	2300	115	14	50	63-170	
13C-2,3,7,8-TCDD	2000	1230	61			20-175	
13C-2,3,7,8-TCDF	2000	1390	69			22-152	
13C-1,2,3,7,8-PeCDD	2000	1320	66			21-227	
13C-1,2,3,7,8-PeCDF	2000	1320	66			21-192	
13C-2,3,4,7,8-PeCDF	2000	1560	78			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1230	62			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1140	57			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1330	67			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1260	63			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1350	67			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1290	65			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1180	59			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1190	60			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1370	68			20-186	
13C-OCDD	4000	2790	70			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab File ID: 27jl20bdfs1_5.d Lab Sample ID: MB 320-397938/1-A

Matrix: Water Date Extracted: 07/24/2020 12:28

Instrument ID: DFS 1 Date Analyzed: 07/27/2020 19:16

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-397938/2-A	27jl20bdfs1_6.d	07/27/2020 20:04
	LCSD 320-397938/3-A	27jl20bdfs1_7.d	07/27/2020 20:52
11215702-Initial	320-62886-1	27jl20bdfs1_21.d	07/28/2020 07:37
11215702-Control	320-62886-2	27jl20bdfs1_22.d	07/28/2020 08:25
11215702-Treatment-1	320-62886-3	27jl20bdfs1_23.d	07/28/2020 09:13
11215702-Treatment-2	320-62886-4	27jl20bdfs1_24.d	07/28/2020 10:01
11215702-Treatment-1 RA	320-62886-3 RA	29JL2011D2_008.d	07/29/2020 15:21
11215702-Treatment-2 RA	320-62886-4 RA	29JL2011D2_009.d	07/29/2020 15:59
11215702-Initial RADL	320-62886-1 RADL	30JL2011D2_005.d	07/30/2020 15:43
11215702-Control RADL	320-62886-2 RADL	30JL2011D2_006.d	07/30/2020 16:21
11215702-Initial DL	320-62886-1 DL	30jl20dfs1_12.d	07/30/2020 20:05
11215702-Control DL	320-62886-2 DL	30jl20dfs1_13.d	07/30/2020 20:53

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Initial	Lab Sample ID: 320-62886-1
Matrix: Water	Lab File ID: 27jl20bdfs1_21.d
Analysis Method: 1613B	Date Collected: 07/20/2020 10:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1054.4(mL)	Date Analyzed: 07/28/2020 07:37
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	37	J	47	1.4
57117-41-6	1,2,3,7,8-PeCDF	560		47	4.0
57117-31-4	2,3,4,7,8-PeCDF	270		47	4.0
39227-28-6	1,2,3,4,7,8-HxCDD	2.3	J q B	47	0.45
57653-85-7	1,2,3,6,7,8-HxCDD	5.9	J	47	0.49
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J q	47	0.44
70648-26-9	1,2,3,4,7,8-HxCDF	1600		47	6.0
57117-44-9	1,2,3,6,7,8-HxCDF	670		47	6.3
72918-21-9	1,2,3,7,8,9-HxCDF	25	J	47	6.1
60851-34-5	2,3,4,6,7,8-HxCDF	75		47	5.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	190	B	47	1.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	1000	B	47	4.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	240		47	4.6
3268-87-9	OCDD	3100	B	95	5.5
39001-02-0	OCDF	610		95	1.8
41903-57-5	Total TCDD	4100		9.5	9.1
30402-14-3	Total TCDF	21000	G	49	49
36088-22-9	Total PeCDD	41	J q	47	1.4
30402-15-4	Total PeCDF	1300	q	47	4.0
34465-46-8	Total HxCDD	41	J q B	47	0.46
55684-94-1	Total HxCDF	2500		47	6.1
37871-00-4	Total HpCDD	380	B	47	1.8
38998-75-3	Total HpCDF	1400	B	47	4.8

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Initial	Lab Sample ID: 320-62886-1
Matrix: Water	Lab File ID: 27jl20bdfs1_21.d
Analysis Method: 1613B	Date Collected: 07/20/2020 10:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1054.4(mL)	Date Analyzed: 07/28/2020 07:37
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		25-164
89059-46-1	13C-2,3,7,8-TCDF	65		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	60		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	65		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	66		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	68		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	69		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	68		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	78		26-138
114423-97-1	13C-OCDD	80		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	92		35-197

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d
Lims ID: 320-62886-A-1-A
Client ID: 11215702-Initial
Sample Type: Client
Inject. Date: 28-Jul-2020 07:37:00 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 09:51:17 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: shardaa Date: 29-Jul-2020 10:29:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.820	2445579	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.789	2379976	0.77	1.4977	65.0	65.0	0.4651	0.4651	64.98	
2,3,7,8-TCDF	20.815	17244564	0.81	1.1312	640.5	640.5	2.584	2.584		E
A Non-2,3,7,8-sub-TCDF	20.169	13005800	0.81	1.1312	483.1	483.1	2.584	273.3		M
S Total TCDF					1123.6	1123.6	2.584	2.584		
D 13C-2,3,7,8-TCDD	22.198	1504637	0.81	1.0367	59.3	59.3	0.5426	0.5426	59.34	
2,3,7,8-TCDD	22.232	3576937	0.82	1.1849	200.6	200.6	0.4780	0.4780		E
$ 37Cl4-2,3,7,8-TCDD	22.232	1012356		1.1208	36.9	36.9	0.1042	0.1042	92.34	
A Non-2,3,7,8-sub-TCDD	21.044	283166	0.80	1.1849	15.9	15.9	0.4780	15.9		
S Total TCDD					216.5	216.5	0.4780	0.4780		
D 13C-1,2,3,7,8-PeCDF	27.706	2078293	1.62	1.3057	65.1	65.1	0.2643	0.2643	65.08	
1,2,3,7,8-PeCDF	27.732	673697	1.58	1.1060	29.3	29.3	0.2132	0.2132		
D 13C-2,3,4,7,8-PeCDF	29.281	2643075	1.59	1.5420	70.1	70.1	0.2238	0.2238	70.09	
2,3,4,7,8-PeCDF	29.315	345719	1.58	0.9067	14.4	14.4	0.2121	0.2121		
A F1 PeCDFs	24.932	5696	1.49	1.0063	0.2398	0.2398	0.005283	0.2398		
A Non-2,3,7,8-sub-PeCDF	28.540	585209	1.55	1.0063	24.9	24.6	0.2105	11.1		RQ
S Total PeCDF					68.8	68.6	0.2127	0.2127		RQ
D 13C-1,2,3,7,8-PeCDD	30.115	1211328	1.60	0.8294	59.7	59.7	0.2004	0.2004	59.72	
1,2,3,7,8-PeCDD	30.183	26183	1.66	1.1062	1.954	1.954	0.0717	0.0717		
A Non-2,3,7,8-sub-PeCDD	28.887	2989	1.55	1.1062	0.2676	0.2231	0.0717	0.2231		RQ
S Total PeCDD					2.222	2.177	0.0717	0.0717		RQ
D 13C-1,2,3,4,7,8-HxCDF	35.255	2702485	0.54	1.4619	73.2	73.2	0.2707	0.2707	73.19	
1,2,3,4,7,8-HxCDF	35.272	2291422	1.27	1.0087	84.1	84.1	0.3141	0.3141		
D 13C-1,2,3,6,7,8-HxCDF	35.415	2195538	0.54	1.2866	67.6	67.6	0.3075	0.3075	67.57	
1,2,3,6,7,8-HxCDF	35.432	961641	1.26	1.2432	35.2	35.2	0.3346	0.3346		
D 13C-2,3,4,6,7,8-HxCDF	36.199	2051658	0.53	1.1988	67.8	67.8	0.3301	0.3301	67.76	
2,3,4,6,7,8-HxCDF	36.216	103022	1.22	1.2736	3.943	3.943	0.3064	0.3064		M
D 13C-1,2,3,7,8,9-HxCDF	37.058	1865917	0.55	1.0687	69.1	69.1	0.3702	0.3702	69.13	
1,2,3,7,8,9-HxCDF	37.075	31587	1.26	1.2882	1.314	1.314	0.3236	0.3236		Ma
A Non-2,3,7,8-sub-HxCDF	35.385	193974	1.24	1.2034	7.314	7.314	0.3159	5.484		
S Total HxCDF					131.9	131.9	0.3197	0.3197		

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.864	2525664	1.25	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.393	1840692	1.30	1.1046	66.0	66.0	0.1923	0.1923	65.98	
1,2,3,4,7,8-HxCDD	36.426	2108	1.24	0.9336	0.1355	0.1227	0.0238	0.0238		RQ
D 13C-1,2,3,6,7,8-HxCDD	36.511	1561738	1.25	0.9871	62.6	62.6	0.2152	0.2152	62.64	
1,2,3,6,7,8-HxCDD	36.519	5234	1.20	1.0802	0.3103	0.3103	0.0258	0.0258		
1,2,3,7,8,9-HxCDD	36.856	2521	1.24	1.0574	0.1568	0.1401	0.0234	0.0234		RQ
A Non-2,3,7,8-sub-HxCDD	35.717	27253	1.24	1.0237	1.565	1.565	0.0242	0.7995		
S Total HxCDD					2.167	2.138	0.0243	0.0243		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.806	1548769	0.43	0.9035	67.9	67.9	0.6239	0.6239	67.87	
1,2,3,4,6,7,8-HpCDF	38.815	1339506	1.05	1.5957	54.2	54.2	0.2592	0.2592		
D 13C-1,2,3,4,7,8,9-HpCDF	40.027	2067028	0.45	1.0480	78.1	78.1	0.5378	0.5378	78.09	
1,2,3,4,7,8,9-HpCDF	40.035	305216	1.06	1.1693	12.6	12.6	0.2418	0.2418		
A Non-2,3,7,8-sub-HpCDF	39.413	212988	1.06	1.3825	8.521	8.521	0.2430	8.521		
S Total HpCDF					75.4	75.4	0.2505	0.2505		
D 13C-1,2,3,4,6,7,8-HpCDD	39.724	1469799	1.04	0.8875	65.6	65.6	0.2703	0.2703	65.57	
1,2,3,4,6,7,8-HpCDD	39.733	164657	1.04	1.1150	10.0	10.0	0.0967	0.0967		
A Non-2,3,7,8-sub-HpCDD	39.555	162502	1.03	1.1150	9.916	9.916	0.0967	9.916		
S Total HpCDD					20.0	20.0	0.0967	0.0967		
D 13C-OCDD	42.212	2536576	0.88	0.6297	159.5	159.5	0.2778	0.2778	79.74	
OCDF	42.313	602135	0.91	1.4809	32.1	32.1	0.0930	0.0930		
OCDD	42.220	2505880	0.91	1.1948	165.4	165.4	0.2913	0.2913		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d
Lims ID: 320-62886-A-1-A
Client ID: 11215702-Initial
Sample Type: Client
Inject. Date: 28-Jul-2020 07:37:00 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 09:51:17 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: shardaa Date: 29-Jul-2020 10:29:19

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.820	21.805	1		1082437	146819	547	1367	268		
333.9338	21.811	21.805	0		1363142	191289	214	535	894	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.789	20.783	0	0.953	1036798	158160	520	1300	304		
317.9389	20.789	20.783	0	0.953	1343178	201141	422	1055	477	0.77(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.815	20.808	0	1.001	7717024	1073804	1761	4402	610		
305.8987	20.815	20.808	0	1.001	9527540	1330336	2440	6100	545	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											M
303.9016	17.672	20.169	-150	0.850	51825	10316	1761	4402	6		M
305.8987	17.680	20.169	-149	0.850	68865	12004	2440	6100	5	0.75(0.65-0.89)	M
303.9016	18.161	20.169	-120	0.874	269124	47687	1761	4402	27		
305.8987	18.170	20.169	-120	0.874	314264	56190	2440	6100	23	0.86(0.65-0.89)	
303.9016	18.668	20.169	-90	0.898	375422	48475	1761	4402	28		
305.8987	18.677	20.169	-89	0.898	455674	61937	2440	6100	25	0.82(0.65-0.89)	
303.9016	19.114	20.169	-63	0.919	267147	37284	1761	4402	21		
305.8987	19.123	20.169	-63	0.920	327559	43574	2440	6100	18	0.82(0.65-0.89)	
303.9016	19.527	20.169	-38	0.939	360226	52711	1761	4402	30		
305.8987	19.518	20.169	-39	0.939	439432	61569	2440	6100	25	0.82(0.65-0.89)	
303.9016	20.059	20.169	-7	0.965	3284723	512210	1761	4402	291		
305.8987	20.059	20.169	-7	0.965	4074135	635958	2440	6100	261	0.81(0.65-0.89)	
303.9016	20.489	20.169	19	0.986	173793	25397	1761	4402	14		
305.8987	20.489	20.169	19	0.986	208884	30524	2440	6100	13	0.83(0.65-0.89)	
303.9016	21.648	20.169	89	1.041	489984	73243	1761	4402	42		
305.8987	21.648	20.169	89	1.041	614991	91698	2440	6100	38	0.80(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	23.975	20.169	228	1.153	561243	114812	1761	4402	65		
305.8987	23.975	20.169	228	1.153	668509	143843	2440	6100	59	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.198	22.200	0	1.017	673831	96004	547	1367	176		
333.9338	22.198	22.200	0	1.017	830806	112666	214	535	526	0.81(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	22.232	22.243	-1	1.002	1614285	225546	287	717	786		
321.8936	22.232	22.243	-1	1.002	1962652	272893	186	465	1467	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.232	22.243	-1	1.019	1012356	140643	158	395	890		
A Non-2,3,7,8-sub-TCDD											
319.8965	22.945	21.044	114	1.034	125726	15619	287	717	54		
321.8936	22.962	21.044	115	1.034	157440	20816	186	465	112	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.706	27.708	0	1.270	1285014	208900	290	725	720		
353.8970	27.706	27.708	0	1.270	793279	129155	177	442	730	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.732	27.734	0	1.001	412478	66520	159	397	418		
341.8567	27.732	27.734	0	1.001	261219	41445	160	400	259	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.281	29.284	0	1.342	1622380	252114	290	725	869		
353.8970	29.281	29.284	0	1.342	1020695	162249	177	442	917	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.315	29.326	-1	1.001	211521	33236	159	397	209		
341.8567	29.307	29.326	-1	1.001	134198	20583	160	400	129	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.422	24.932	-31	0.881	3409	666	1	2	666		
341.8567	24.388	24.932	-33	0.880	2287	717	7	17	102	1.49(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.198	28.540	-140	0.946	163874	29739	159	397	187		
341.8567	26.207	28.540	-140	0.946	100402	17413	160	400	109	1.63(1.32-1.78)	
339.8597	27.142	28.540	-84	0.980	12903	2417	159	397	15		
	Empc Correction				11080	2013	159	397	13		
341.8567	27.150	28.540	-83	0.980	7149	1299	160	400	8	1.80(1.32-1.78)	
339.8597	27.605	28.540	-56	0.996	27443	6244	159	397	39		
	Empc Correction				23744	6026	159	397	38		
341.8567	27.597	28.540	-56	0.996	15319	3888	160	400	24	1.79(1.32-1.78)	
339.8597	28.338	28.540	-12	1.023	98542	15541	159	397	98		
341.8567	28.355	28.540	-11	1.023	61658	9916	160	400	62	1.60(1.32-1.78)	
339.8597	29.660	28.540	67	1.071	51234	7347	159	397	46		
341.8567	29.677	28.540	68	1.071	34948	4893	160	400	31	1.47(1.32-1.78)	
339.8597	31.446	28.540	174	1.135	10447	1716	159	397	11		
341.8567	31.446	28.540	174	1.135	6812	1090	160	400	7	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.115	30.143	-2	1.380	746028	105867	149	372	711		
369.8919	30.132	30.143	-1	1.381	465300	64273	76	190	846	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											
355.8546	30.183	30.160	1	1.002	16350	2268	36	90	63		
357.8516	30.149	30.160	-1	1.001	9833	1657	18	45	92	1.66(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	27.875	28.887	-61	0.926	1817	373	36	90	10		
357.8516	27.867	28.887	-61	0.925	1769	289	18	45	16	1.03(1.32-1.78)	
	Empc Correction				1172	240	18	45	13		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.255	35.259	0	0.956	946099	231987	381	952	609		
385.8610	35.255	35.259	0	0.956	1756386	426096	696	1740	612	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.272	35.276	0	1.000	1281828	304201	462	1155	658		
375.8178	35.272	35.276	0	1.000	1009594	240944	372	930	648	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.415	35.419	0	0.961	769429	175172	381	952	460		
385.8610	35.415	35.419	0	0.961	1426109	326072	696	1740	468	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.432	35.436	0	1.000	535576	120240	462	1155	260		
375.8178	35.432	35.436	0	1.000	426065	97434	372	930	262	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.199	36.203	0	0.982	713601	182928	381	952	480		
385.8610	36.199	36.203	0	0.982	1338057	351382	696	1740	505	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	36.216	36.219	0	1.000	56663	15605	462	1155	34		
375.8178	36.208	36.219	-1	1.000	46359	12676	372	930	34	1.22(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.058	37.061	0	1.005	660052	176079	381	952	462		
385.8610	37.058	37.061	0	1.005	1205865	324013	696	1740	466	0.55(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	37.075	37.078	0	1.000	17595	5590	462	1155	12		M
375.8178	37.066	37.078	-1	1.000	13992	4268	372	930	11	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.866	35.385	-91	0.961	81292	16109	462	1155	35		
375.8178	33.866	35.385	-91	0.961	64160	13599	372	930	37	1.27(1.05-1.43)	
373.8208	34.683	35.385	-42	0.984	25900	6134	462	1155	13		
375.8178	34.683	35.385	-42	0.984	22622	5299	372	930	14	1.14(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.864	36.868	0		1404220	377467	299	747	1262		
403.8529	36.856	36.868	-1		1121444	302890	279	697	1086	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.393	36.405	-1	0.987	1041428	288761	299	747	966		
403.8529	36.393	36.405	-1	0.987	799264	228658	279	697	820	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8158	36.426	36.413	1	1.001	1167	370	22	55	17		
391.8127	36.418	36.413	0	1.001	1162	356	24	60	15	1.00(1.05-1.43)	
	Empc Correction				941	298	24	60	12		

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Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.511	36.514	0	0.990	868863	233761	299	747	782		
403.8529	36.511	36.514	0	0.990	692875	178690	279	697	640	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.519	36.531	-1	1.000	2860	692	22	55	31		
391.8127	36.527	36.531	0	1.000	2374	769	24	60	32	1.20(1.05-1.43)	
1,2,3,7,8,9-HxCDD											RQ
389.8158	36.856	36.885	-2	1.013	1396	350	22	55	16		
391.8127	36.864	36.885	-1	1.013	1425	410	24	60	17	0.98(1.05-1.43)	
	Empc Correction				1125	282	24	60	12		
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.599	35.717	-67	0.948	7118	1629	22	55	74		
391.8127	34.607	35.717	-66	0.948	6210	1521	24	60	63	1.15(1.05-1.43)	
389.8158	35.668	35.717	-3	0.977	7991	1837	22	55	84		
391.8127	35.668	35.717	-3	0.977	5934	1330	24	60	55	1.35(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.806	38.807	0	1.053	465038	156483	516	1290	303		
419.8220	38.806	38.807	0	1.053	1083731	340932	1018	2545	335	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.815	38.816	0	1.000	685504	221418	442	1105	501		
409.7788	38.815	38.816	0	1.000	654002	210047	381	952	551	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.027	40.028	0	1.086	638939	224374	516	1290	435		
419.8220	40.027	40.028	0	1.086	1428089	503028	1018	2545	494	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.035	40.037	0	1.000	156706	54405	442	1105	123		
409.7788	40.035	40.037	0	1.000	148510	52261	381	952	137	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.168	39.413	-15	1.009	109631	36199	442	1105	82		
409.7788	39.168	39.413	-15	1.009	103357	33815	381	952	89	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.724	39.725	0	1.078	750585	259086	341	852	760		
437.8140	39.724	39.725	0	1.078	719214	250845	312	780	804	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.733	39.733	0	1.000	83915	29129	120	300	243		
425.7737	39.733	39.733	0	1.000	80742	28083	100	250	281	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.109	39.555	-27	0.985	82616	28886	120	300	241		
425.7737	39.109	39.555	-27	0.985	79886	29093	100	250	291	1.03(0.88-1.20)	
13C-OCDD											
469.7780	42.212	42.215	0	1.145	1184904	371722	211	527	1762		
471.7750	42.212	42.215	0	1.145	1351672	422457	265	662	1594	0.88(0.76-1.02)	
OCDF											
441.7428	42.313	42.316	0	1.002	286477	87007	91	227	956		
443.7399	42.313	42.316	0	1.002	315658	95172	128	320	744	0.91(0.76-1.02)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	42.220	42.223	0	1.000	1193973	371150	256	640	1450		
459.7348	42.220	42.223	0	1.000	1311907	408965	297	742	1377	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

Non-2,3,7,8-sub-TCDF, RT: 20.169

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	2379976	359301

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	2379976	359301

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.672	51825	10316	68865	12004	4.48	0.75	M
18.161	269124	47687	314264	56190	21.7	0.86	
18.668	375422	48475	455674	61937	30.9	0.82	
19.114	267147	37284	327559	43574	22.1	0.82	
19.527	360226	52711	439432	61569	29.7	0.82	
20.059	3284723	512210	4074135	635958	273.3	0.81	
20.489	173793	25397	208884	30524	14.2	0.83	
21.648	489984	73243	614991	91698	41.0	0.80	
23.975	561243	114812	668509	143843	45.7	0.84	
Signal Totals:							
	5833487	922135	7172313	1137297			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13005800	2059432				0.81	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 483.066 = (13005800 * 100.000) / (2379976 * 1.131)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d
Lims ID: 320-62886-A-1-A
Client ID: 11215702-Initial
Inject. Date: 28-Jul-2020 07:37:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398798
Lims Sample ID: 19

Non-2,3,7,8-sub-TCDD, RT: 21.044

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	1504637	208670

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	1504637	208670

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
22.945	125726	15619	157440	20816	15.9	0.80	
Signal Totals:							
	125726	15619	157440	20816			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	283166	36435				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 15.883 = (283166 * 100.000) / (1504637 * 1.185)

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

F1 PeCDFs, RT: 24.932

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	2078293	338055
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2643075	414363

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2360684	376209

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.422	3409	666	2287	717	0.2398	1.49	
Signal Totals:							
	3409	666	2287	717			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5696	1383				1.49	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.2398 = (5696 * 100.000) / (2360684 * 1.006)

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

Non-2,3,7,8-sub-PeCDF, RT: 28.540

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	2078293	338055
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2643075	414363

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2360684	376209

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.198	163874	29739	100402	17413	11.1	1.63	
27.142	12903	2417	7149	1299	0.8441	1.80	RQ
27.142	11080	2013	7149	1299	0.7673		Empc Correction
27.605	27443	6244	15319	3888	1.80	1.79	RQ
27.605	23744	6026	15319	3888	1.64		Empc Correction
28.338	98542	15541	61658	9916	6.74	1.60	
29.660	51234	7347	34948	4893	3.63	1.47	
31.446	10447	1716	6812	1090	0.7265	1.53	
Signal Totals:							
	358921	62382	226288	38499			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	590731	101503				1.61	RQ
	585209	100881					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 24.866 = (590731 * 100.000) / (2360684 * 1.006)
Empc Amount: 24.634 = (585209 * 100.000) / (2360684 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

Non-2,3,7,8-sub-PeCDD, RT: 28.887

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	1211328	170140

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	1211328	170140

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
27.875	1817	373	1769	289	0.2676	1.03	RQ
27.875	1817	373	1172	240	0.2231		Empc Correction
Signal Totals:							
	1817	373	1172	240			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3586	662				1.03	RQ
	2989	613					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2676 = (3586 * 100.000) / (1211328 * 1.106)
Empc Amount: 0.2231 = (2989 * 100.000) / (1211328 * 1.106)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

Non-2,3,7,8-sub-HxCDF, RT: 35.385

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	2702485	658083
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	2195538	501244
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	2051658	534310
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	1865917	500092

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		100.000	2203899	548432

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.866	81292	16109	64160	13599	5.48	1.27	
34.683	25900	6134	22622	5299	1.83	1.14	
Signal Totals:							
	107192	22243	86782	18898			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	193974	41141				1.24	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 7.314 = (193974 * 100.000) / (2203899 * 1.203)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d
Lims ID: 320-62886-A-1-A
Client ID: 11215702-Initial
Inject. Date: 28-Jul-2020 07:37:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398798
Lims Sample ID: 19

Non-2,3,7,8-sub-HxCDD, RT: 35.717

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	1840692	517419
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	1561738	412451
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		100.000	1701215	464935

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.599	7118	1629	6210	1521	0.7653	1.15	
35.668	7991	1837	5934	1330	0.7995	1.35	
Signal Totals:							
	15109	3466	12144	2851			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27253	6317				1.24	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.565 = (27253 * 100.000) / (1701215 * 1.024)

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

Non-2,3,7,8-sub-HpCDF, RT: 39.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1548769	497415
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2067028	727402

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		100.000	1807898	612408

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.168	109631	36199	103357	33815	8.52	1.06	
Signal Totals:							
	109631	36199	103357	33815			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	212988	70014				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.521 = (212988 * 100.000) / (1807898 * 1.383)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	28-Jul-2020 07:37:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	19

Non-2,3,7,8-sub-HpCDD, RT: 39.555

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.115	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1469799	509931

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.115		100.000	1469799	509931

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.109	82616	28886	79886	29093	9.92	1.03	
Signal Totals:							
	82616	28886	79886	29093			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	162502	57979				1.03	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 9.916 = (162502 * 100.000) / (1469799 * 1.115)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d				
Injection Date:	28-Jul-2020 07:37:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-1-A	Lab Sample ID:	320-62886-1		
Client ID:	11215702-Initial				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (16.33- 24.01)

Signal: 1

Not Detected
RT: 16.33- 24.01

Processing Integration Results

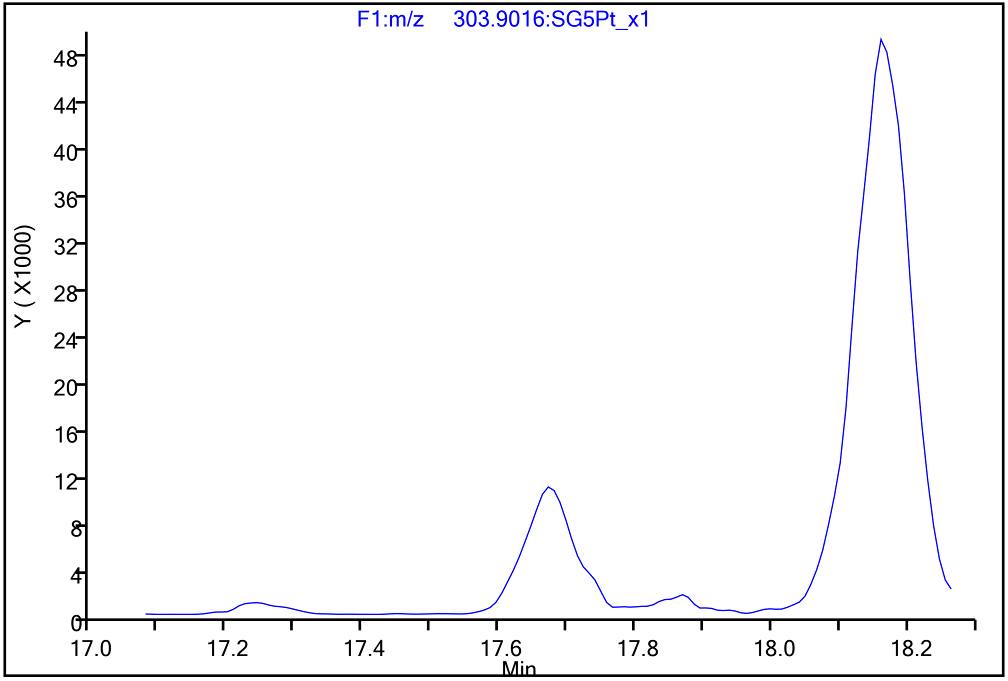

RT = 17.672 Area = 51825 M

Manual Integration Results

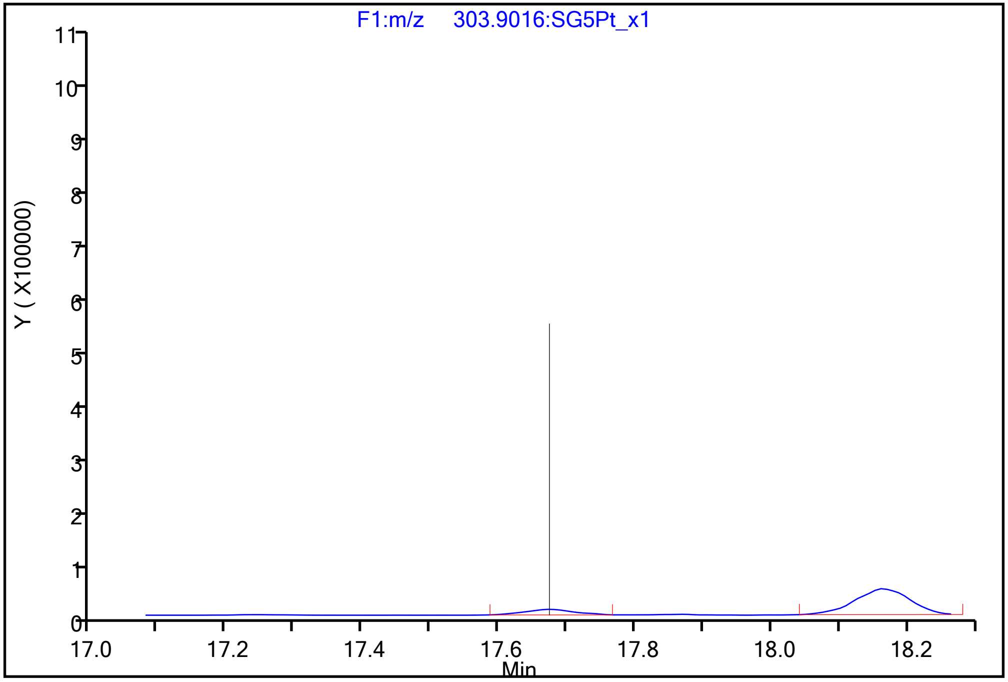

Reviewer: dadunj, 30-Jul-2020 09:44:50

Audit Action: Manually Integrated Audit Reason: Assign Peak

Report Date: 30-Jul-2020 09:51:17

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Injection Date:	28-Jul-2020 07:37:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-1-A	Lab Sample ID:	320-62886-1
Client ID:	11215702-Initial		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (16.33- 24.01)

Signal: 2

Not Detected

RT: 16.33- 24.01

Processing Integration Results

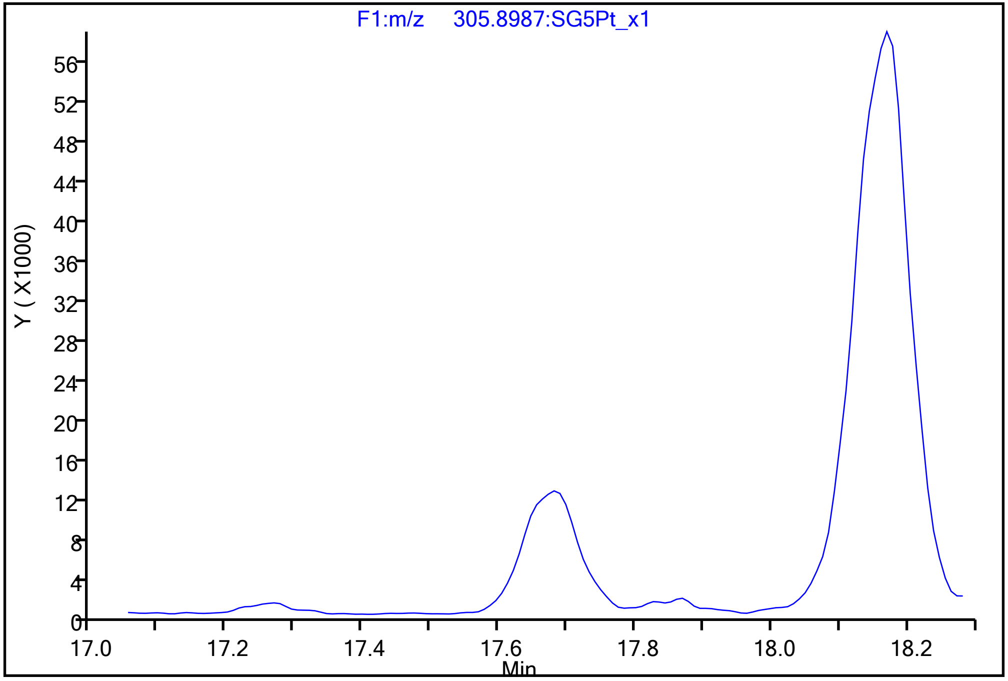

RT = 17.680 Area = 68865 M

Manual Integration Results

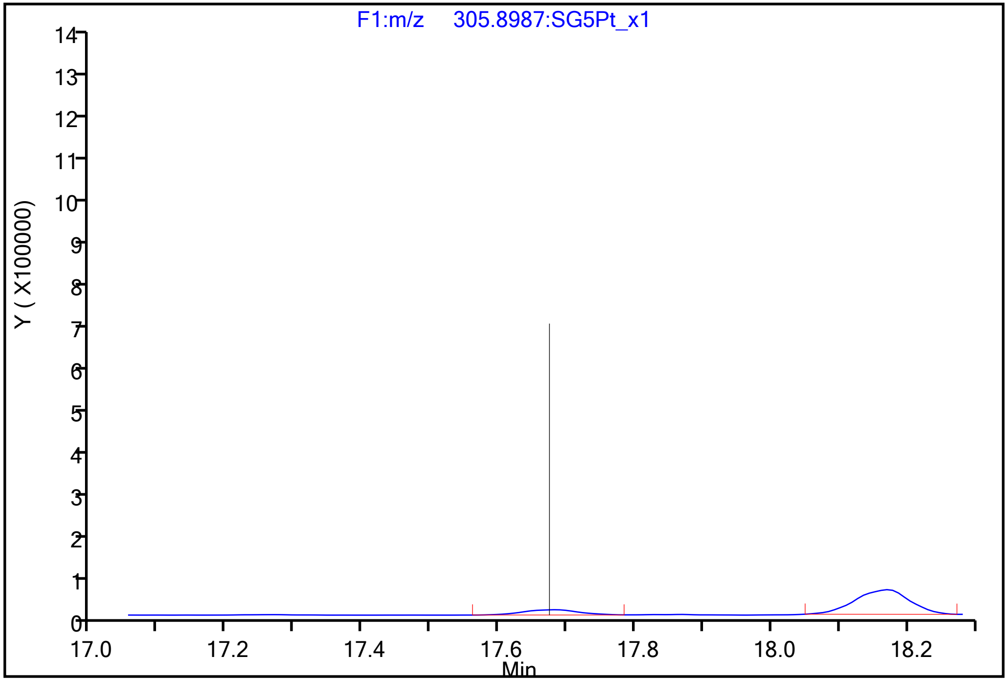

Reviewer: dadunj, 30-Jul-2020 09:45:00

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d				
Injection Date:	28-Jul-2020 07:37:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-1-A	Lab Sample ID:	320-62886-1		
Client ID:	11215702-Initial				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT:	36.21
Area:	60833
Amount:	4.496761
Amount Units:	pg/ul

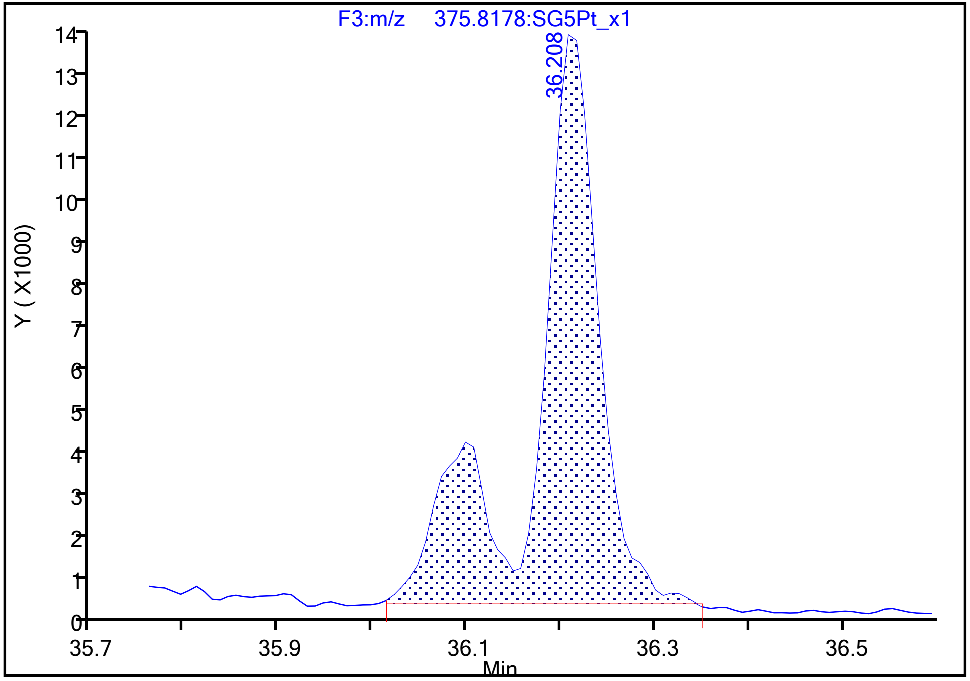

Manual Integration Results

RT:	36.21
Area:	46359
Amount:	3.942818
Amount Units:	pg/ul

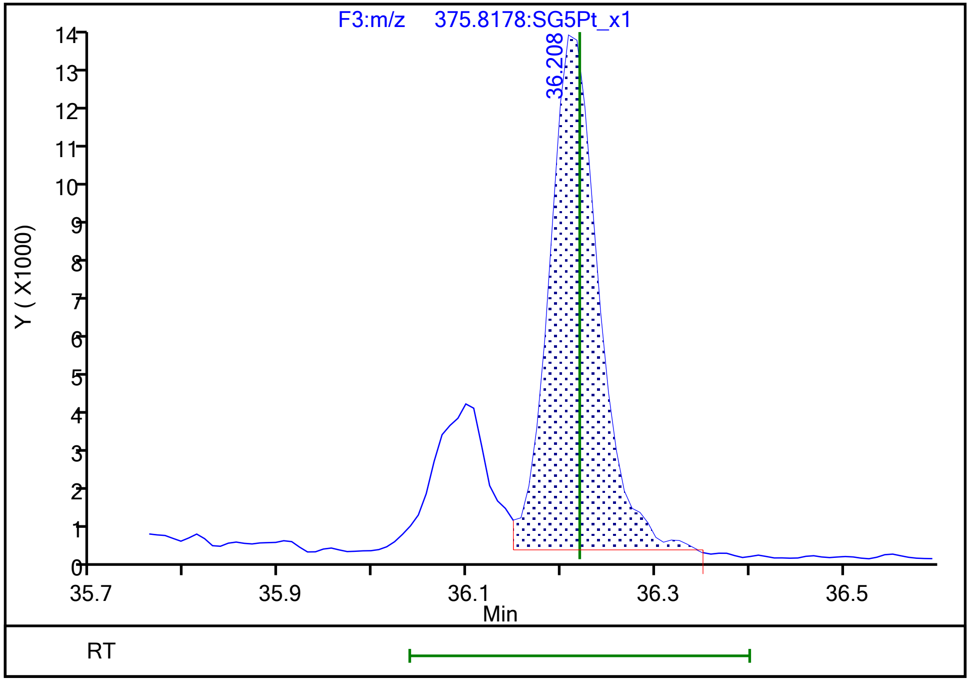

Reviewer: dadunj, 30-Jul-2020 09:49:20

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Injection Date:	28-Jul-2020 07:37:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-1-A	Lab Sample ID:	320-62886-1
Client ID:	11215702-Initial		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT:	37.17
Area:	46898
Amount:	3.641624
Amount Units:	pg/ul

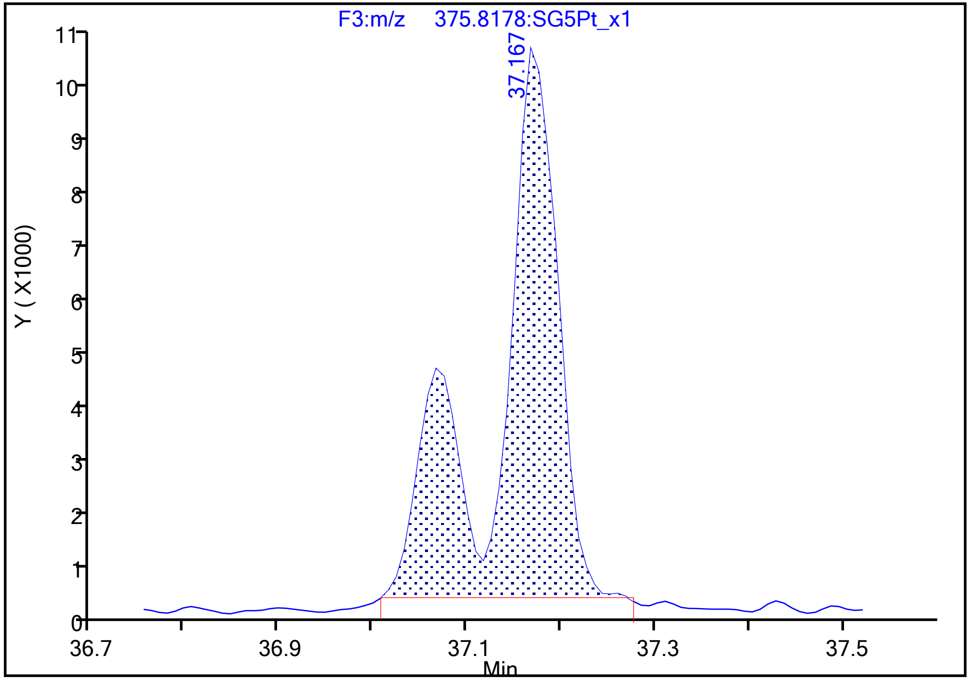

Manual Integration Results

RT:	37.07
Area:	13992
Amount:	1.314110
Amount Units:	pg/ul

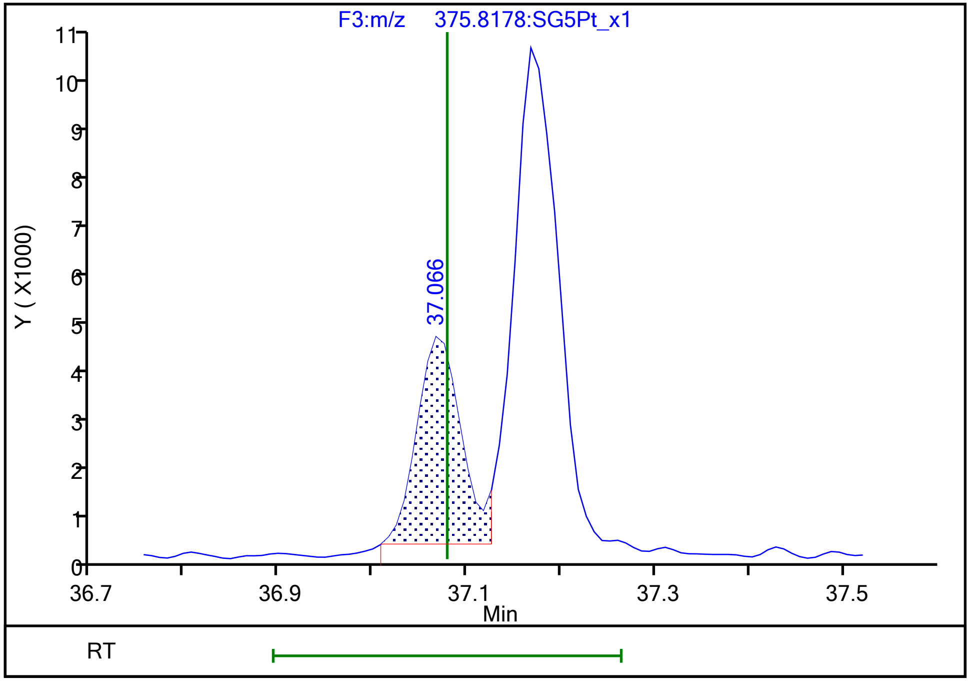

Reviewer: dadunj, 30-Jul-2020 09:49:32

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d				
Injection Date:	28-Jul-2020 07:37:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-1-A	Lab Sample ID:	320-62886-1		
Client ID:	11215702-Initial				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 3

Processing Integration Results

RT:	37.18
Area:	87533
Amount:	3.641624
Amount Units:	pg/ul

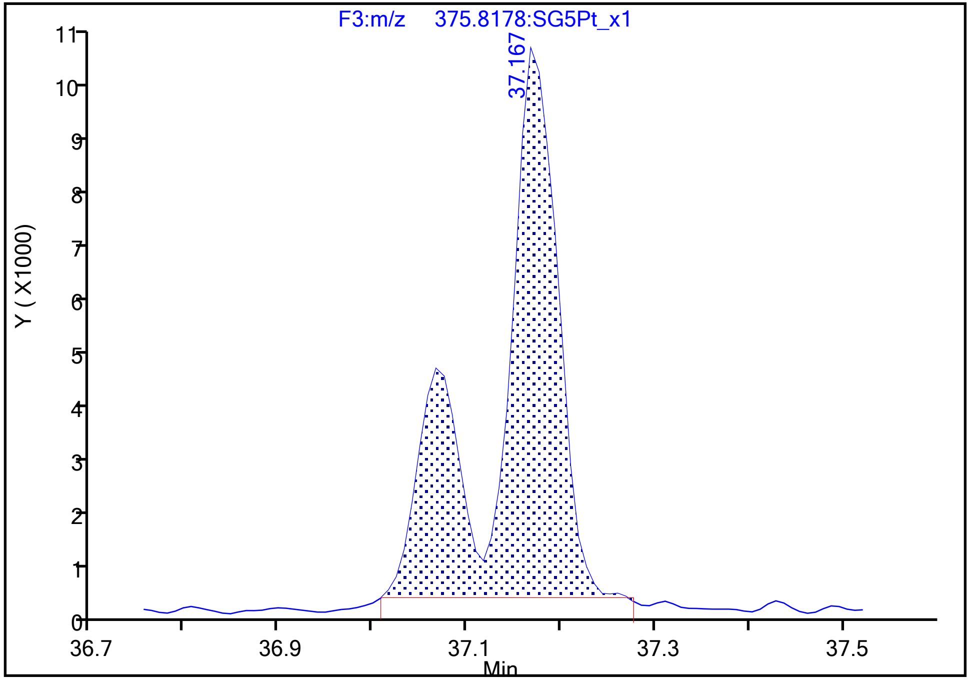

Manual Integration Results

RT:	37.07
Area:	31587
Amount:	1.314110
Amount Units:	pg/ul

Reviewer: dadunj, 30-Jul-2020 09:49:32

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 30-Jul-2020 09:51:17

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Injection Date:	28-Jul-2020 07:37:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-1-A	Lab Sample ID:	320-62886-1
Client ID:	11215702-Initial		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	37.18
Area:	40635
Amount:	3.641624
Amount Units:	pg/ul

Processing Integration Results

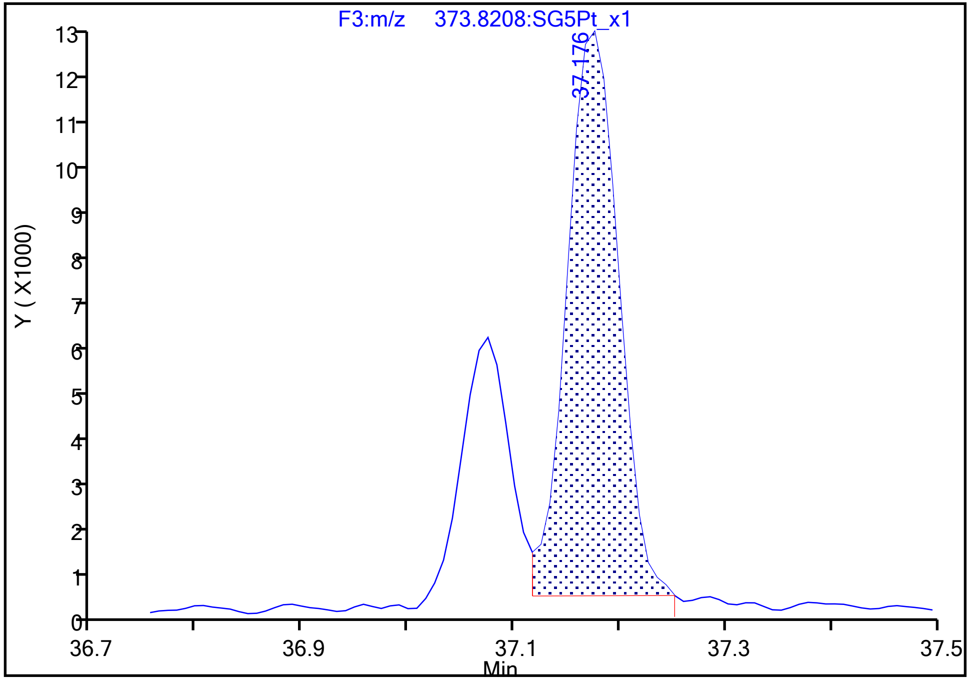

RT:	37.07
Area:	17595
Amount:	1.314110
Amount Units:	pg/ul

Manual Integration Results

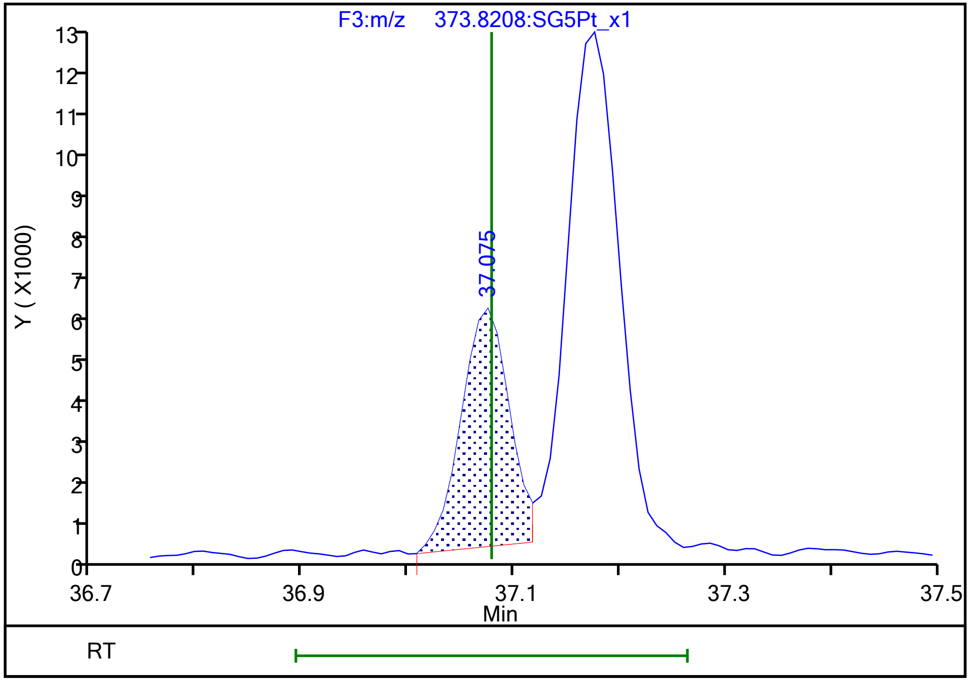

Reviewer: dadunj, 30-Jul-2020 09:49:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:51:17
Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d
Injection Date: 28-Jul-2020 07:37:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 398798
Sample Line#: 19
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

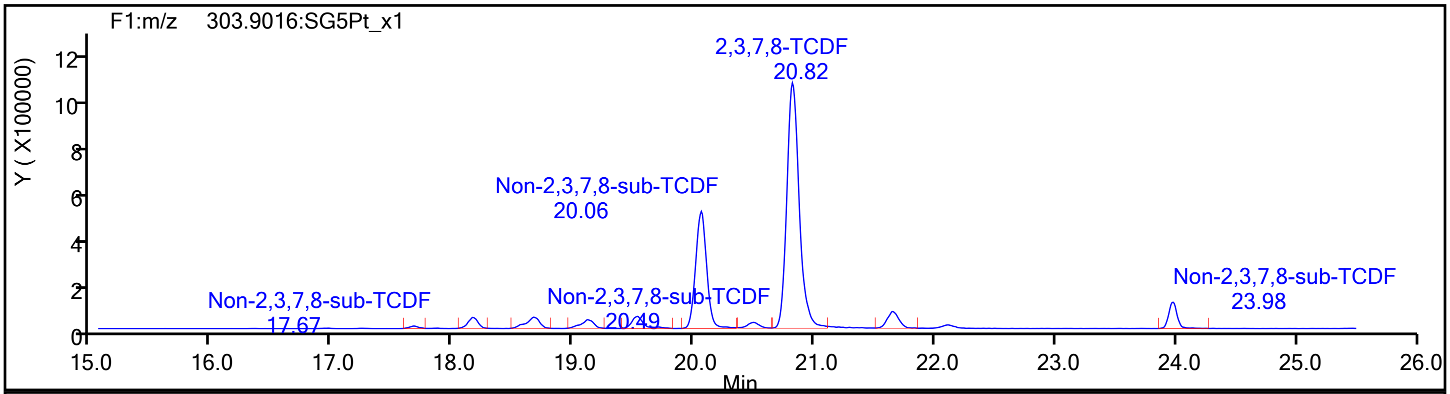

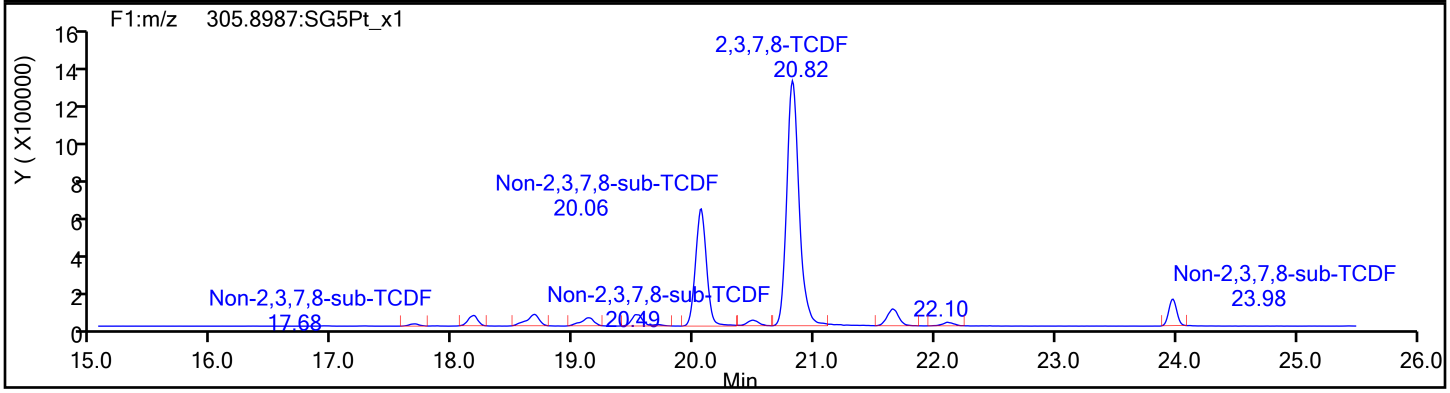

TCDF Standards

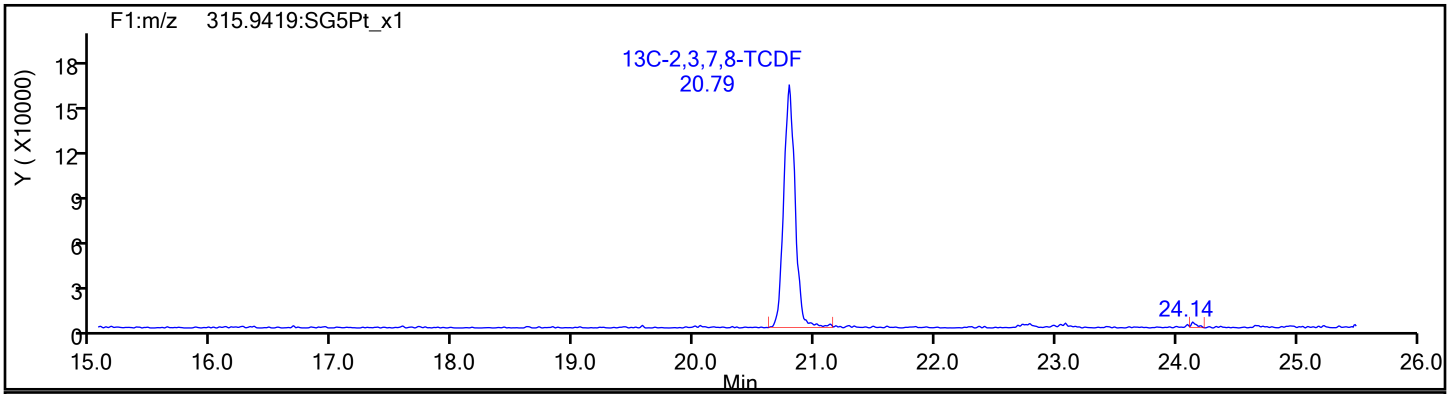

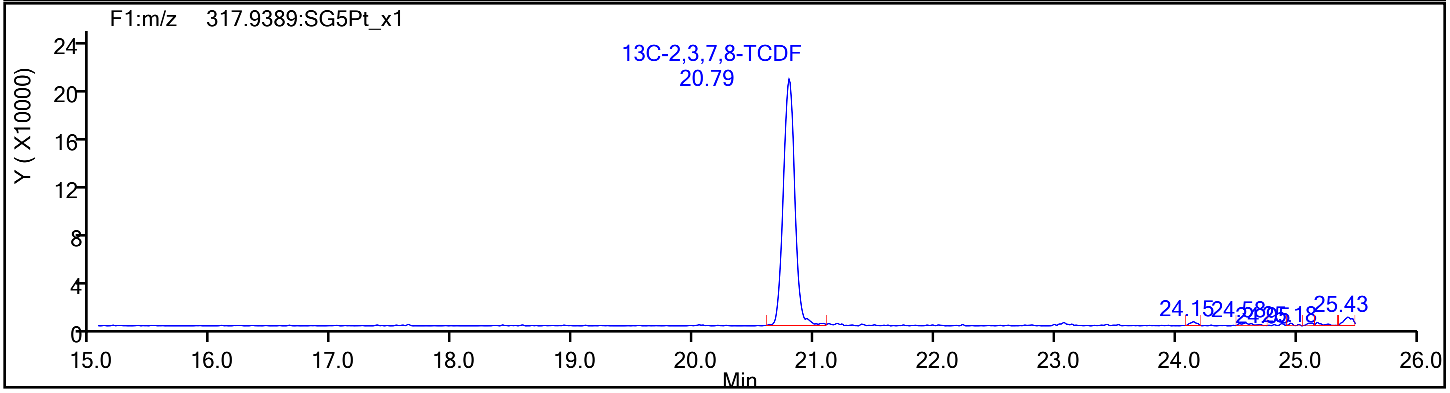

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d

Injection Date: 28-Jul-2020 07:37:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 398798
Sample Line#: 19

Column Type: DB-5
Column Dia: 0.32 mm

TCDF

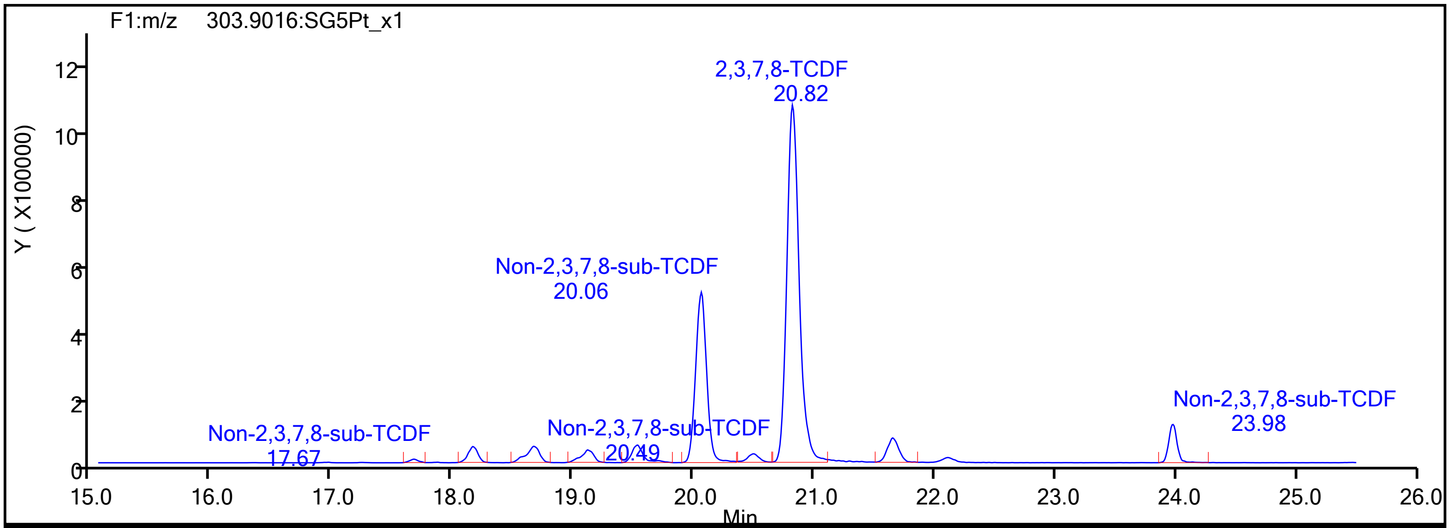

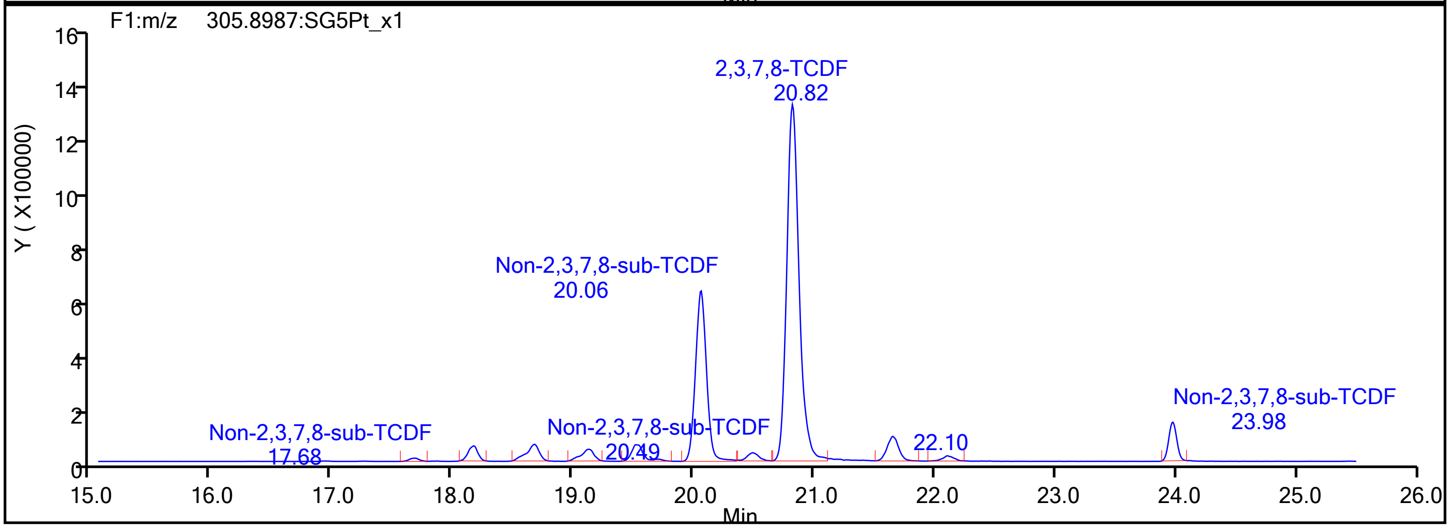

TCDF Interference Mass

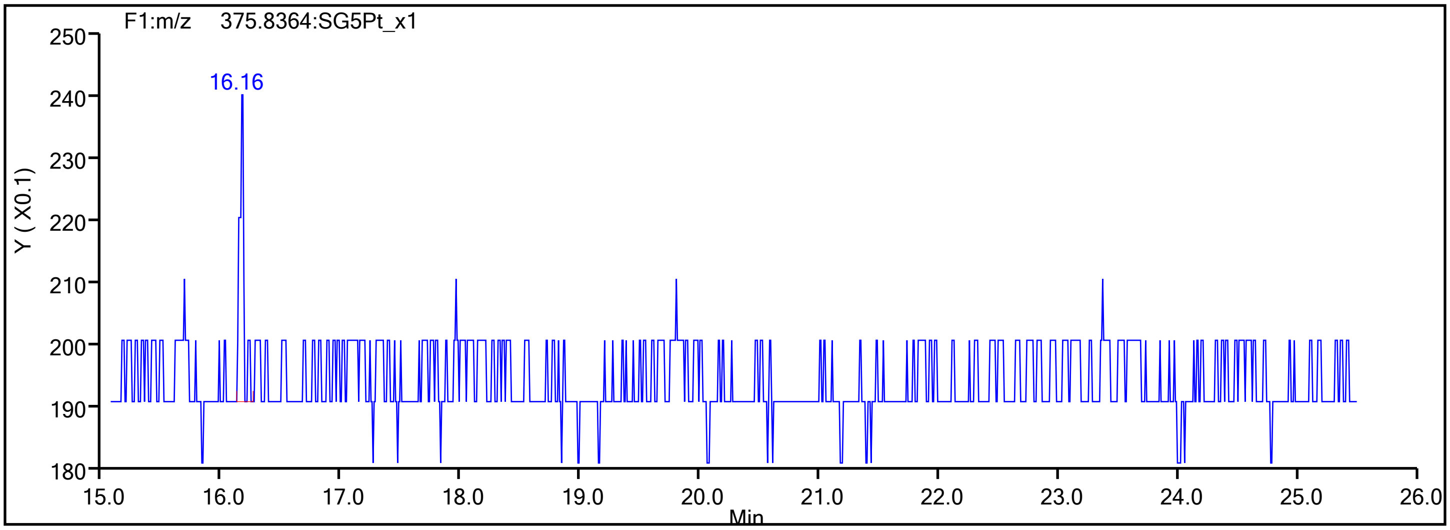

Report Date: 30-Jul-2020 09:51:17
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d
Injection Date: 28-Jul-2020 07:37:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 398798
Sample Line#: 19
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

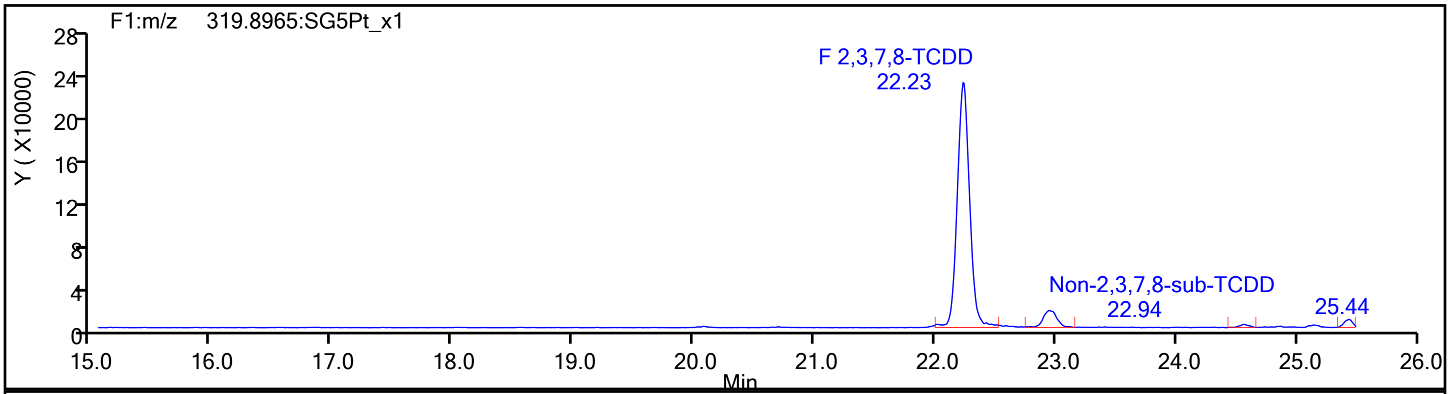

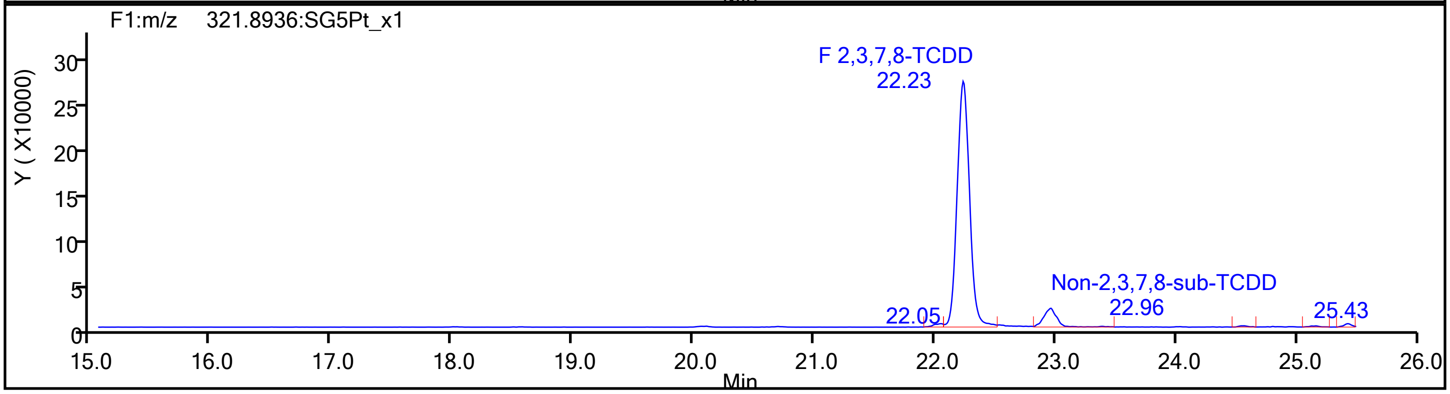

TCDD Standards

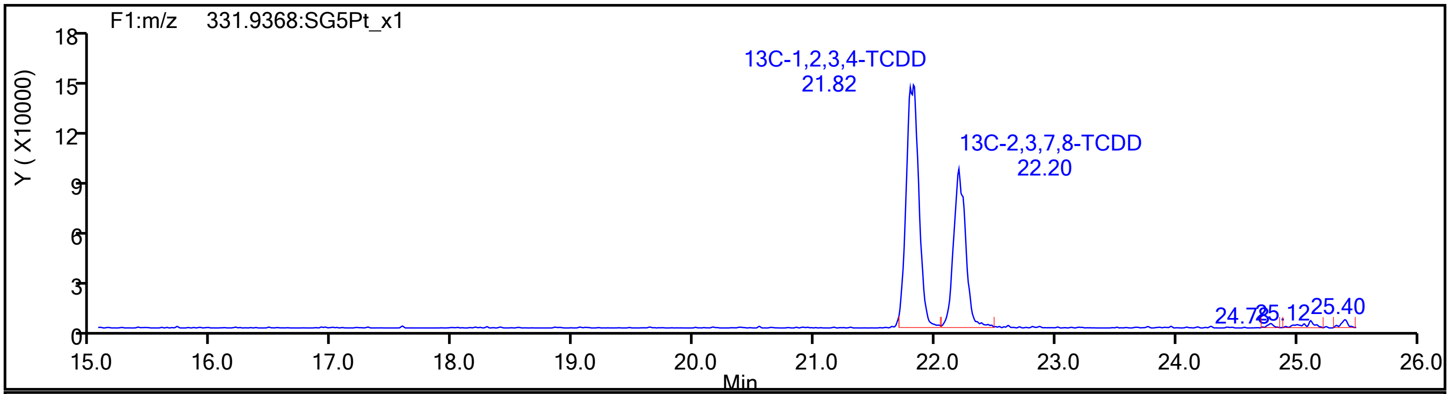

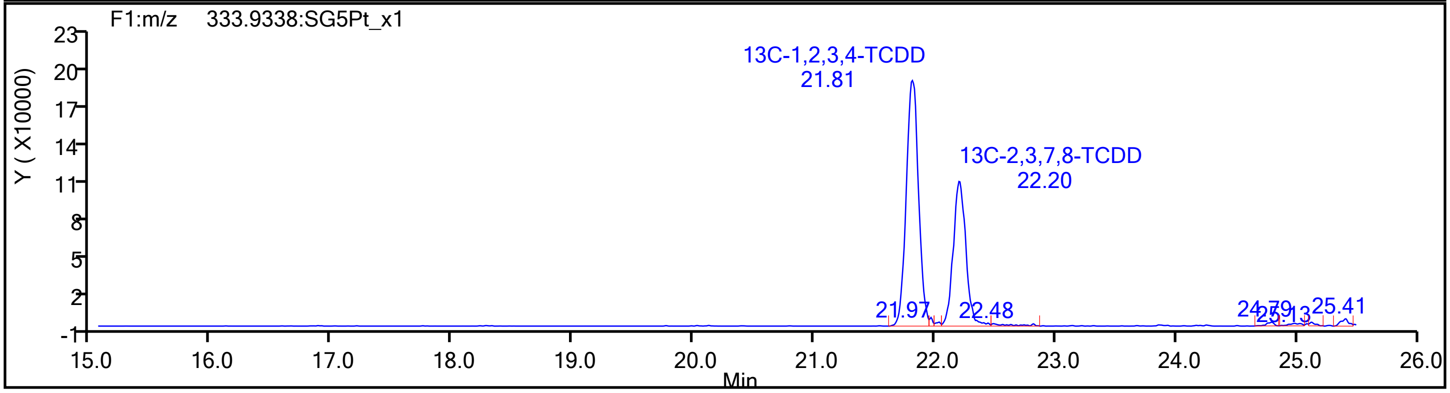

Report Date: 30-Jul-2020 09:51:17 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d

Injection Date:	28-Jul-2020 07:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	398798	Sample Line#:	19
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37Cl4-TCDD

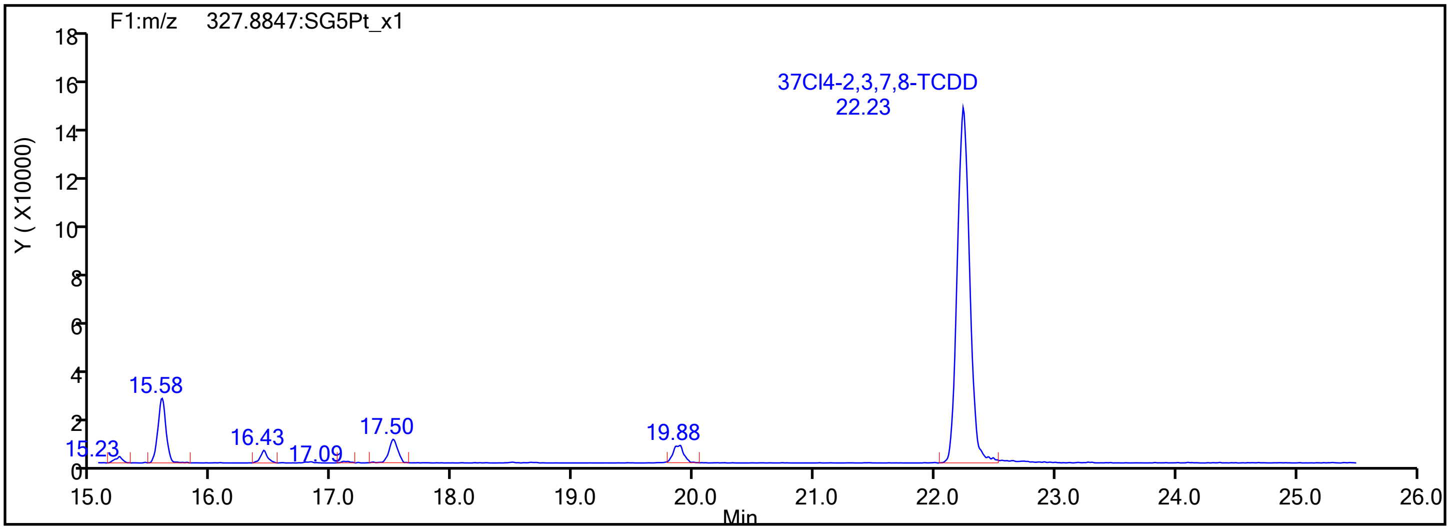

37Cl4-TCDD Standards

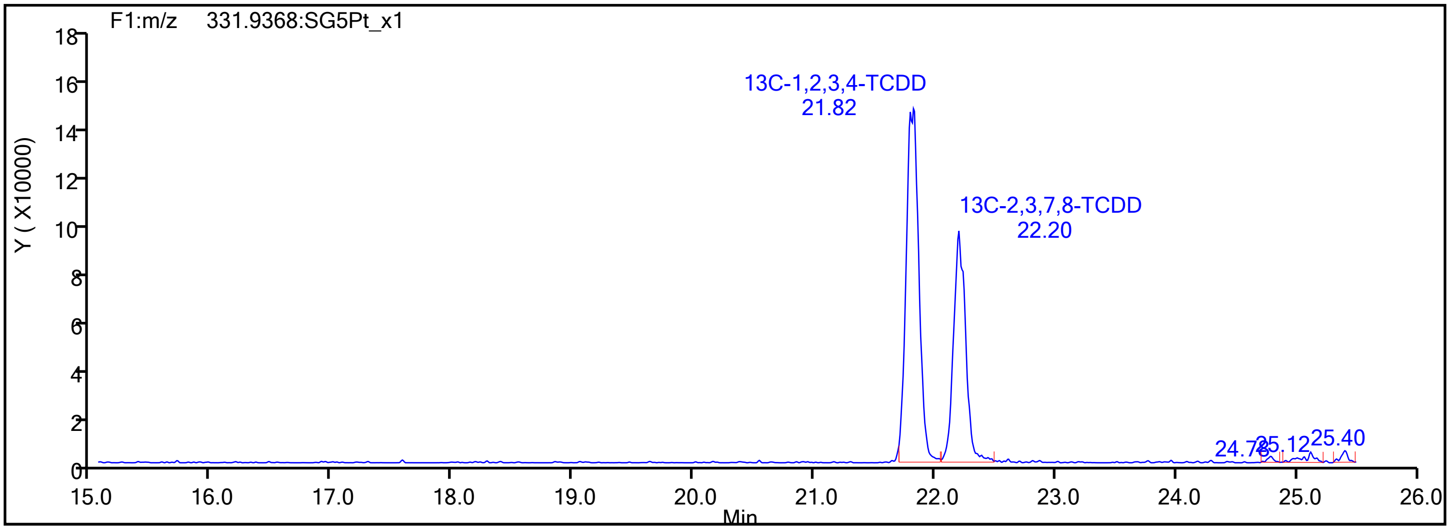

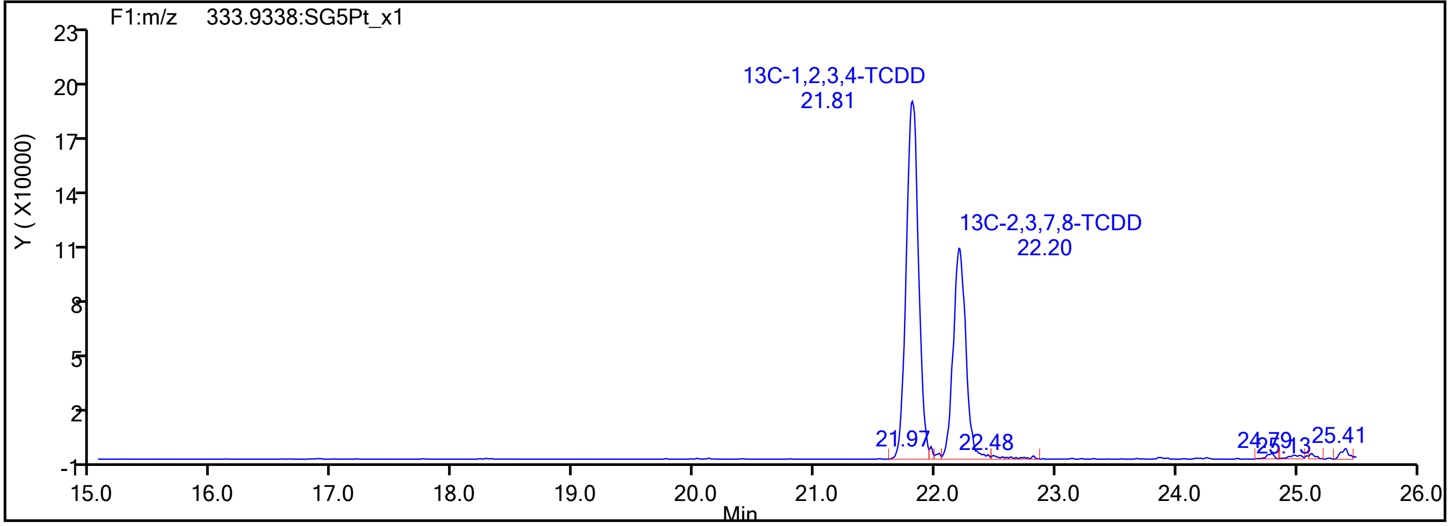

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

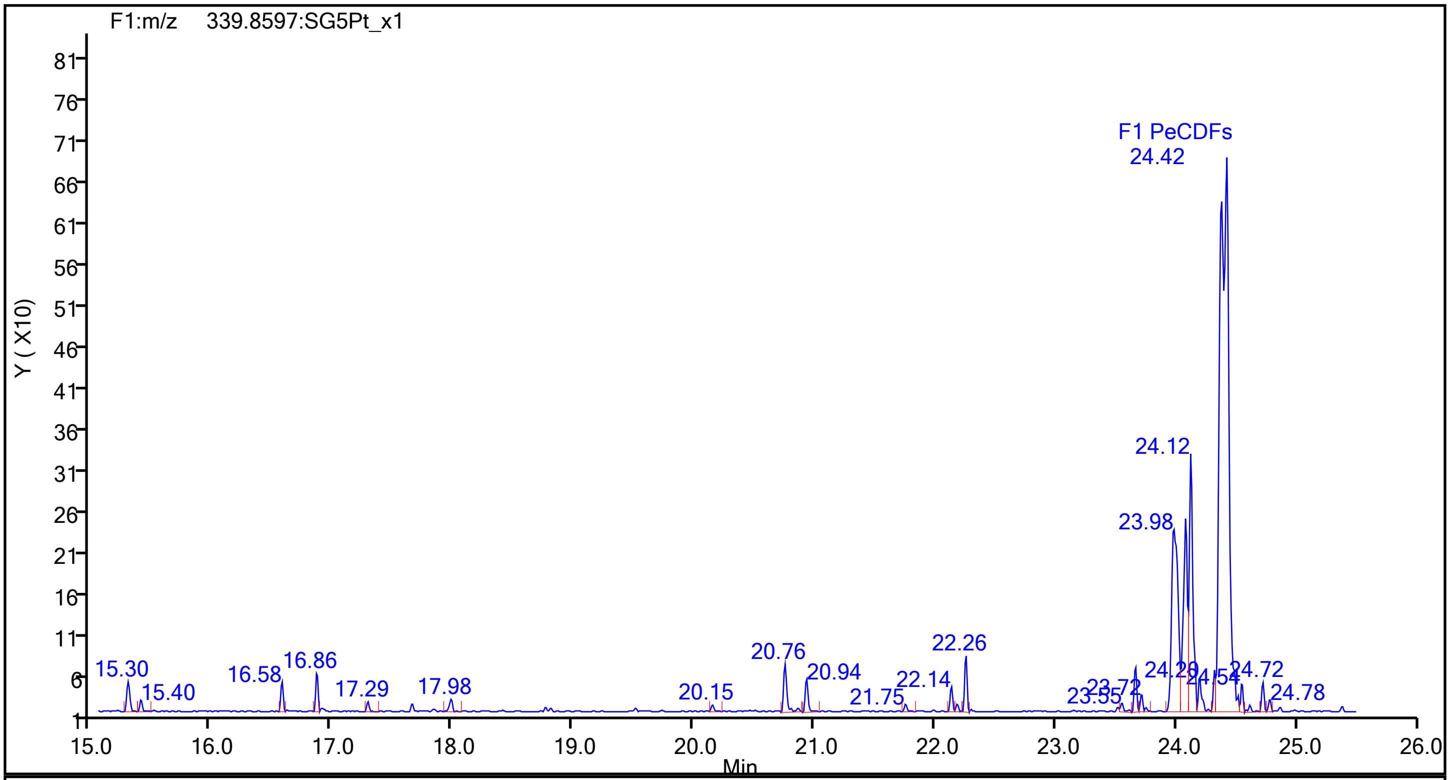

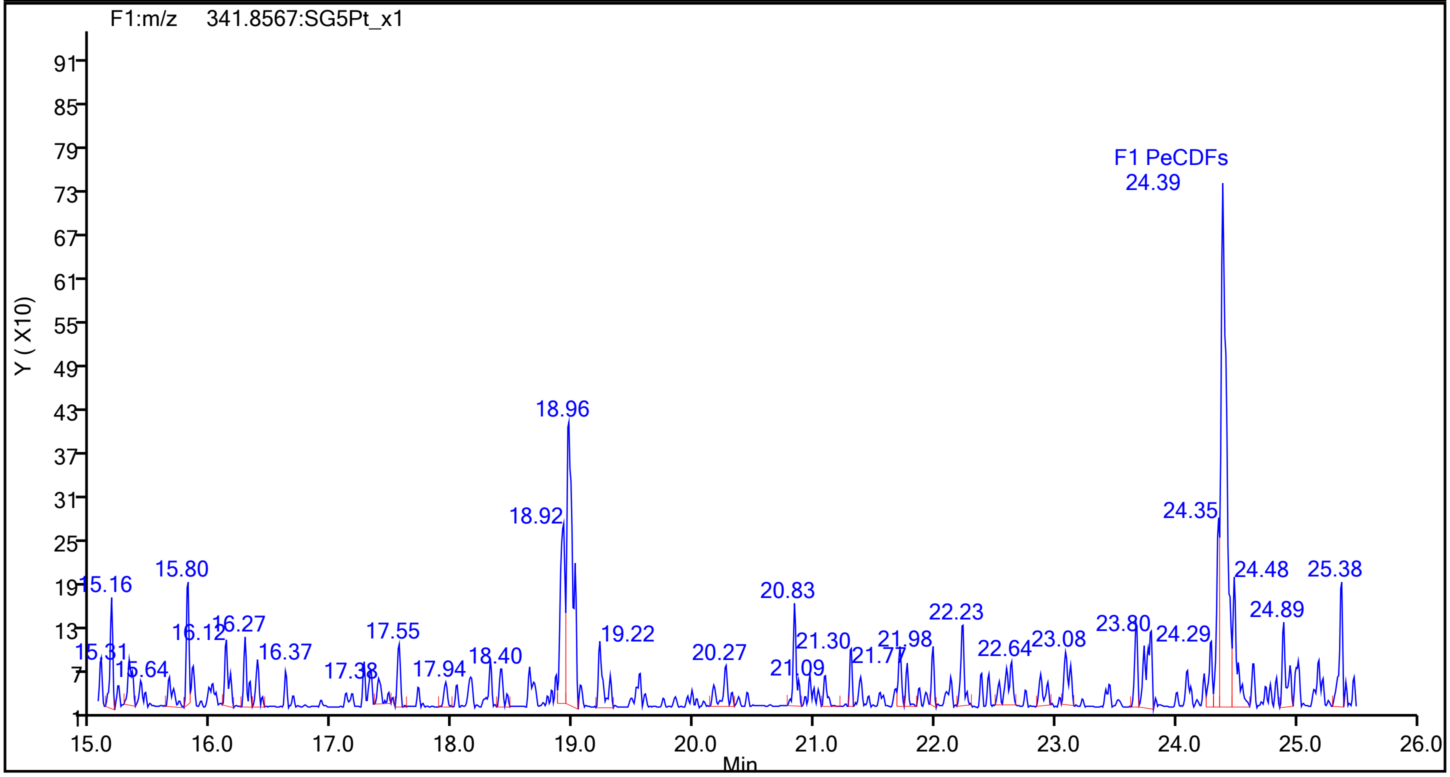

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Eurofins TestAmerica, Sacramento

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Sample Line#: 19
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F1 PeCDFs

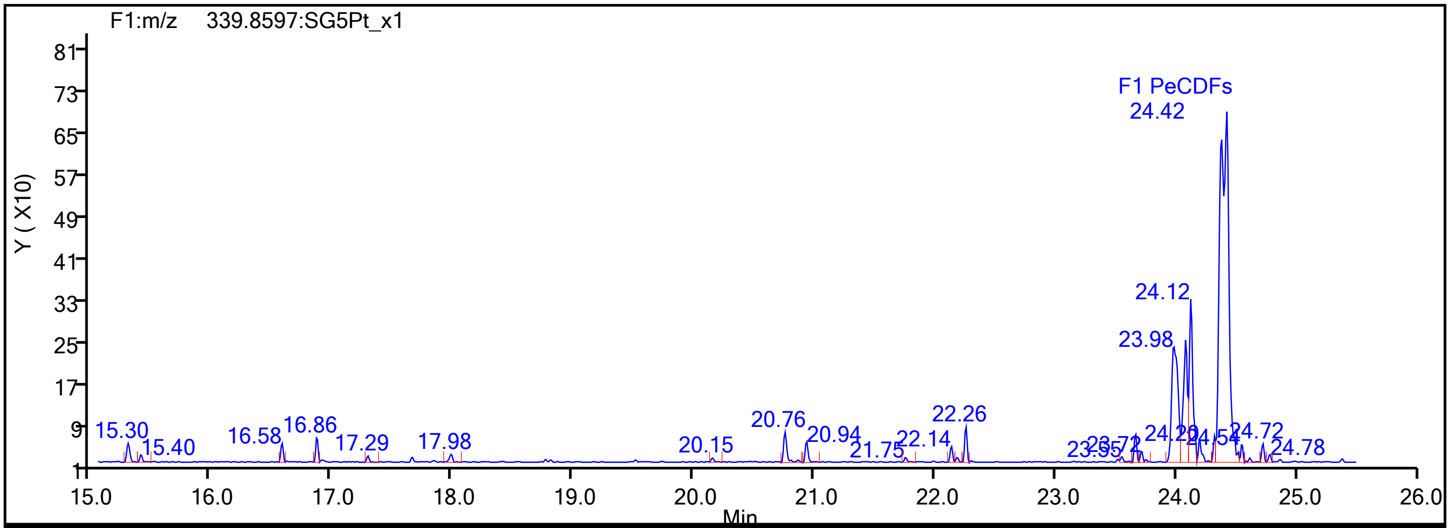

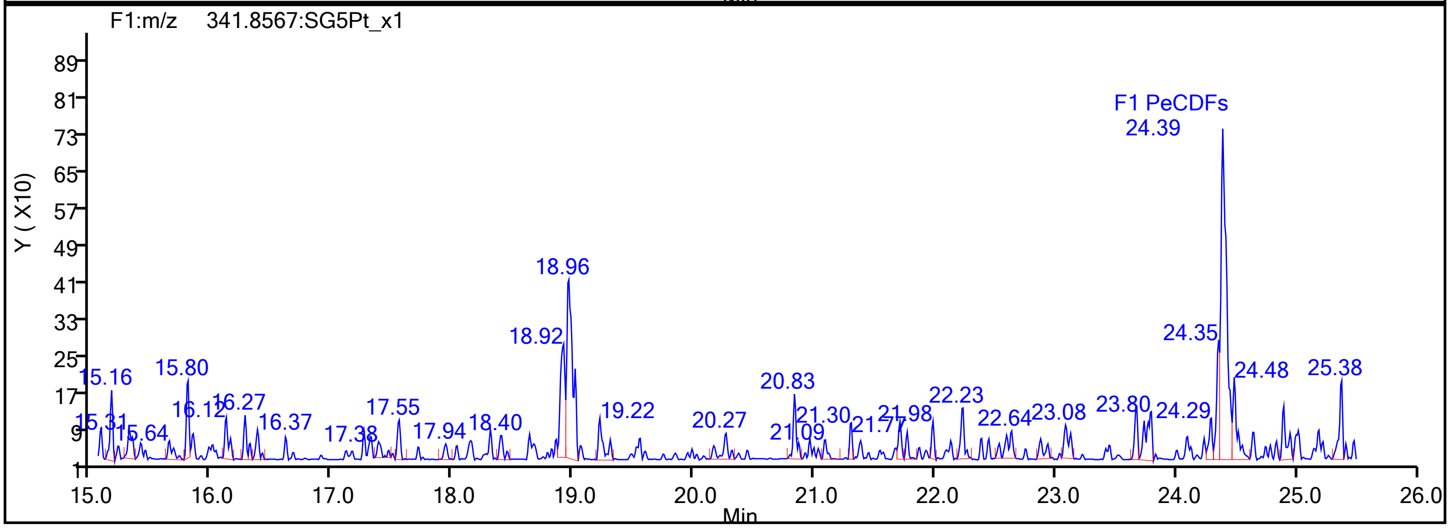

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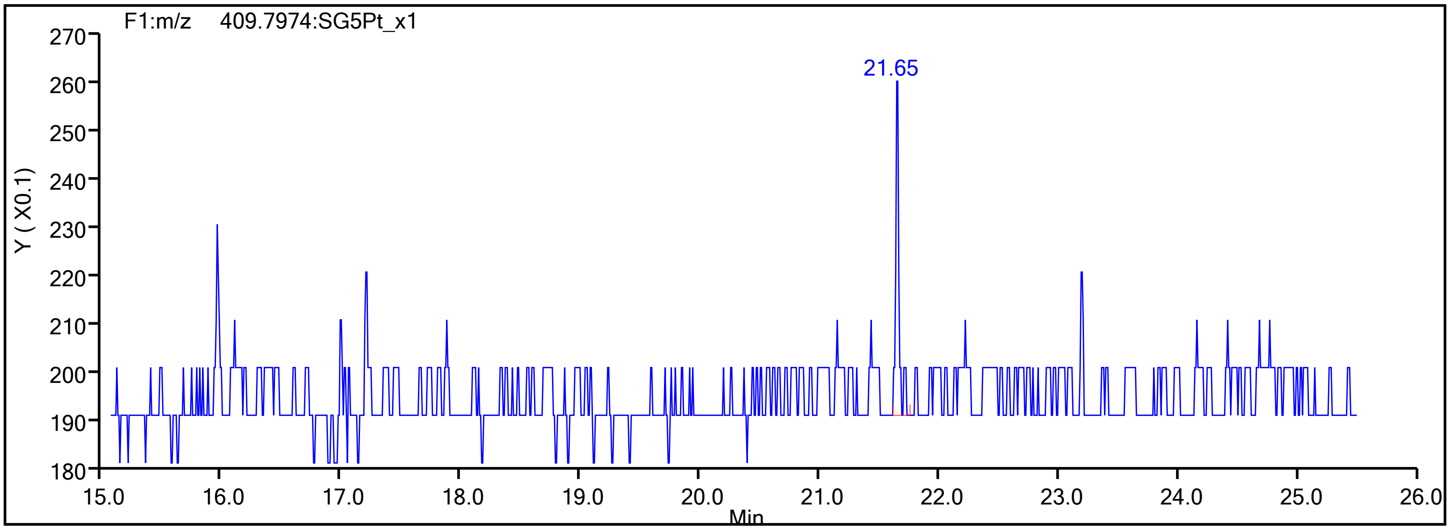

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDF

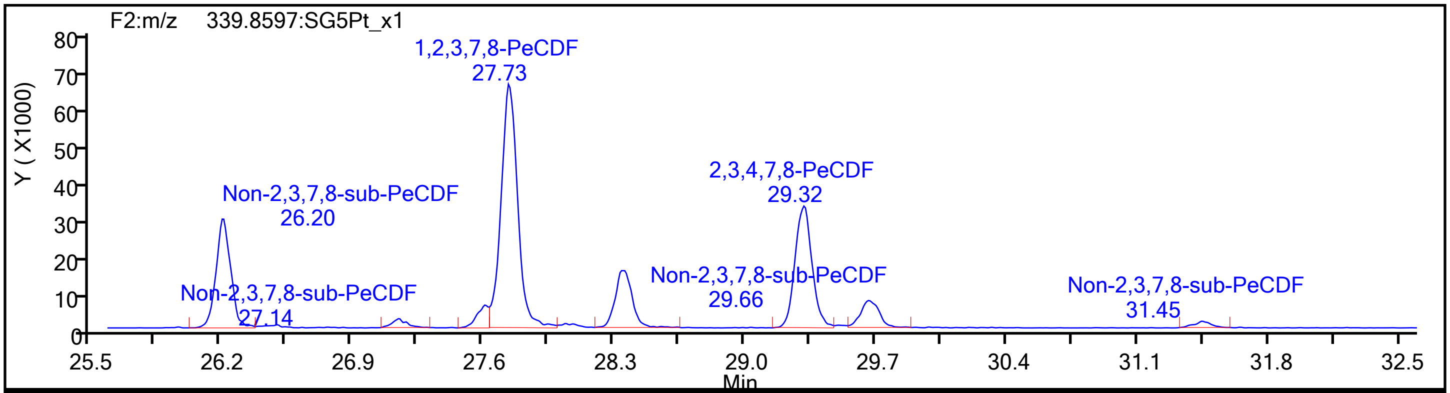

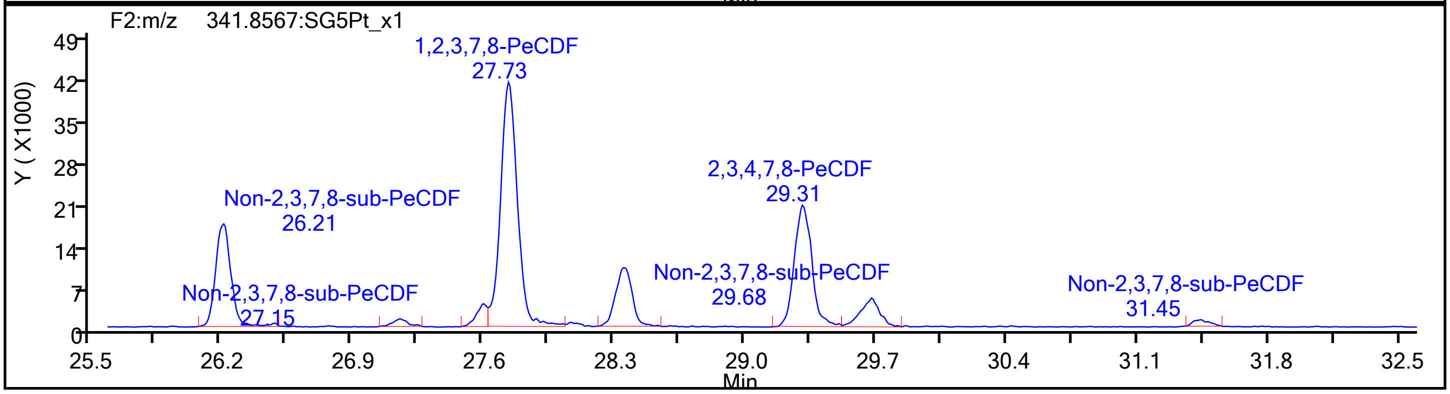

PeCDF Standards

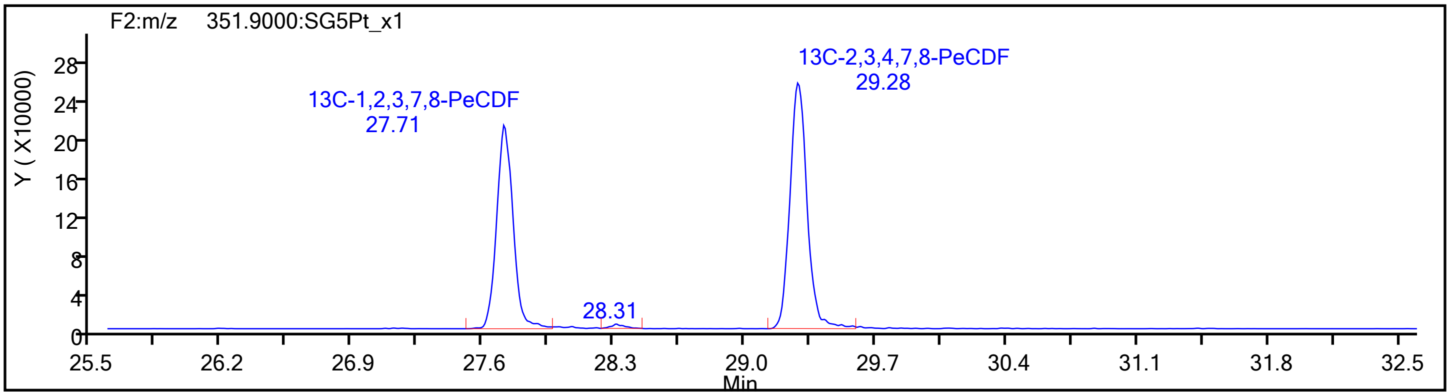

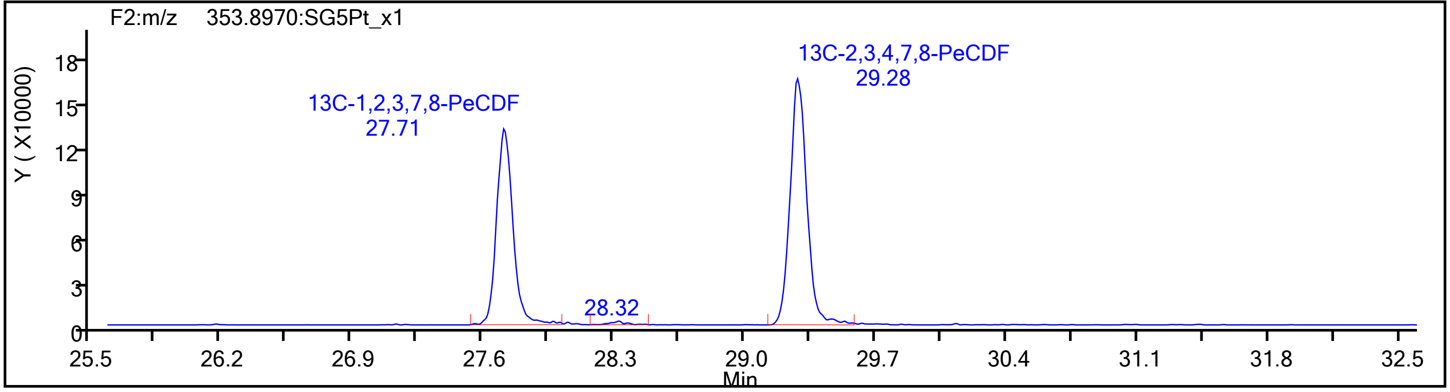

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Eurofins TestAmerica, Sacramento

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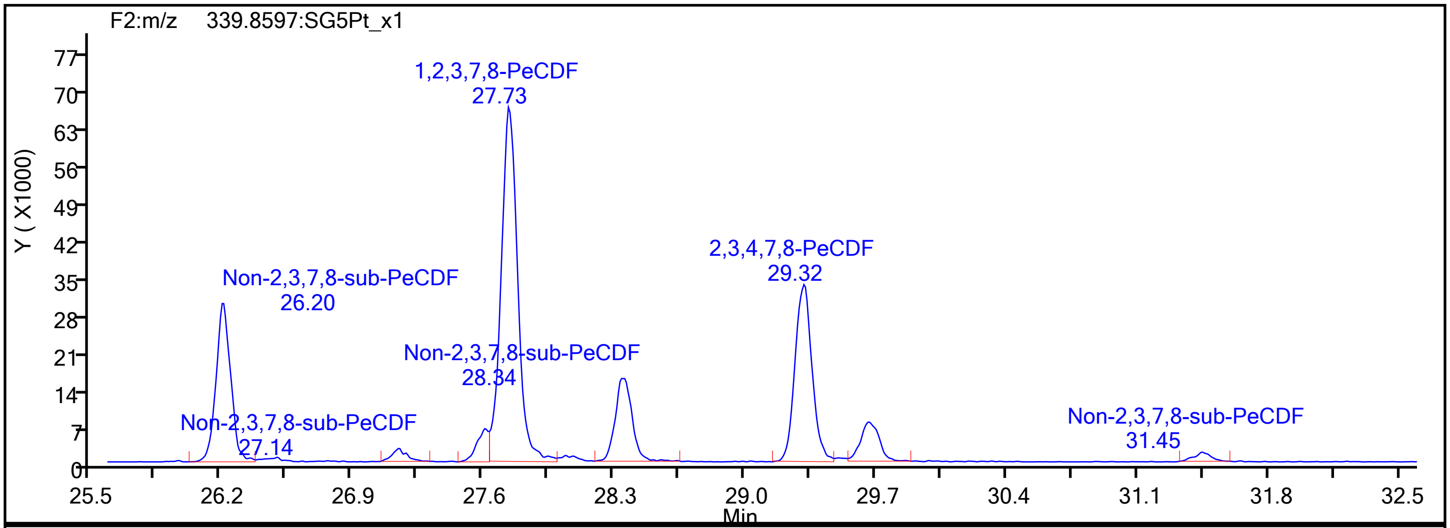

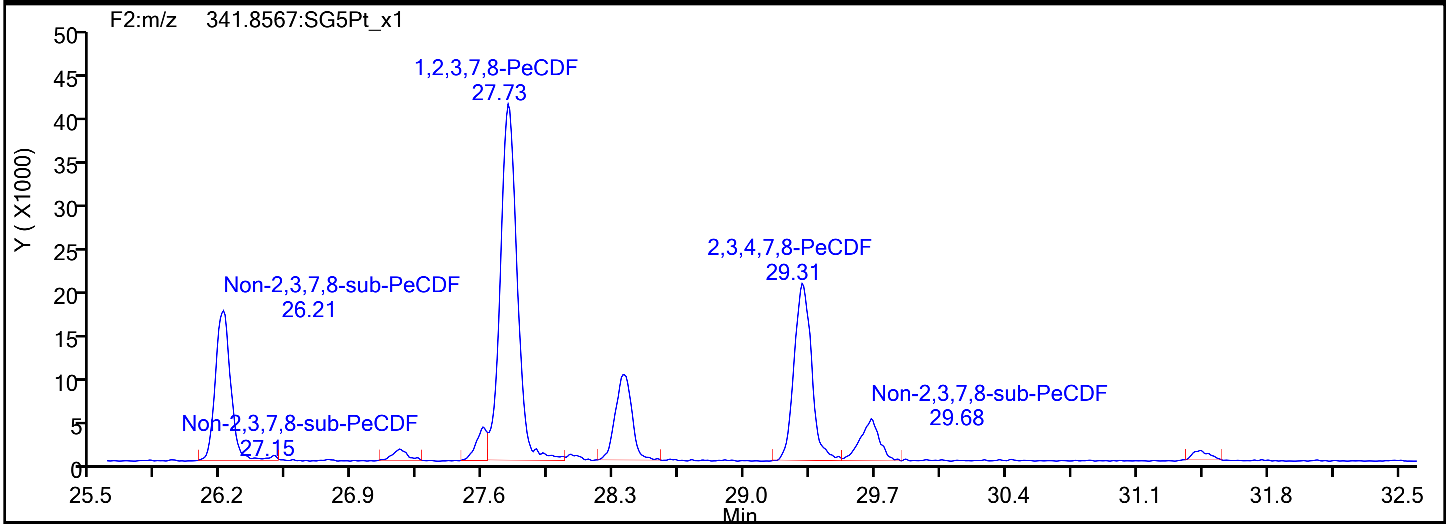

PeCDF Interference Mass

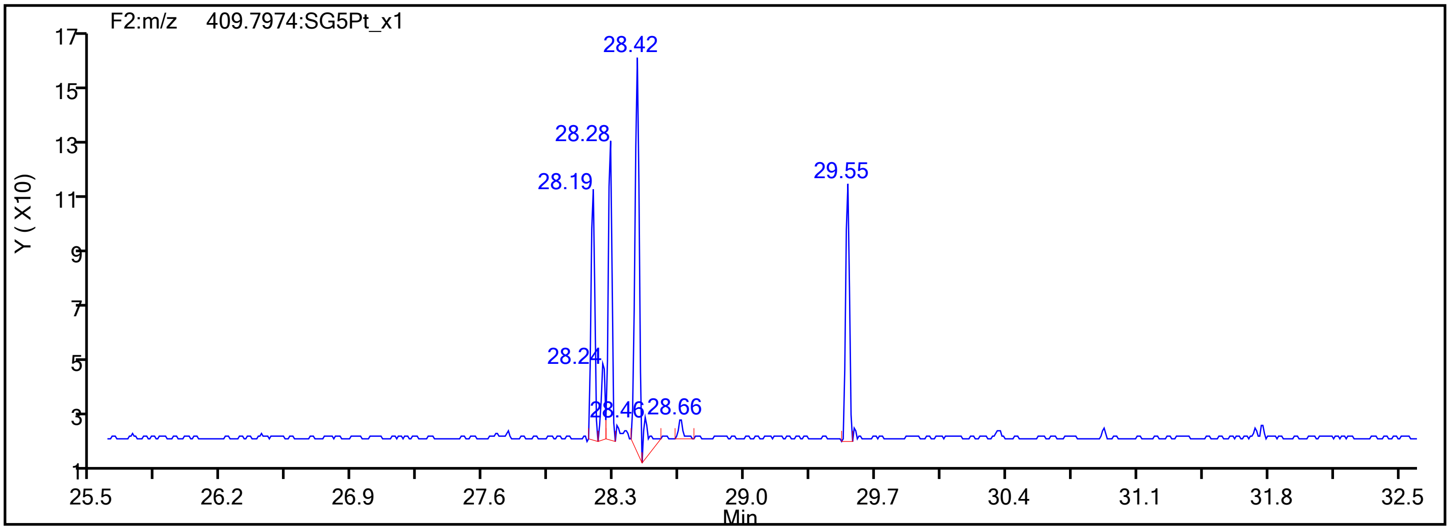

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Eurofins TestAmerica, Sacramento

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PeCDD

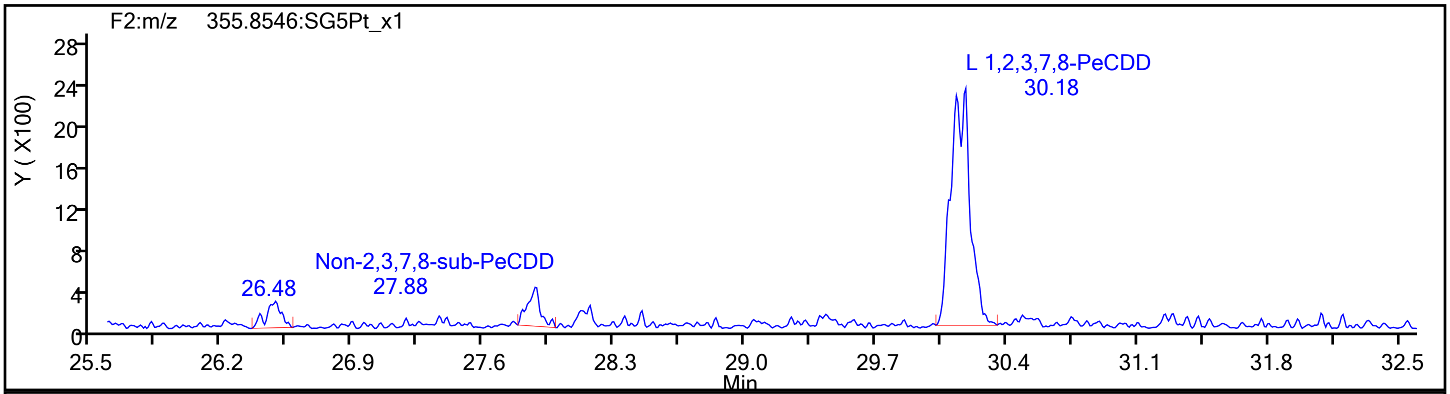

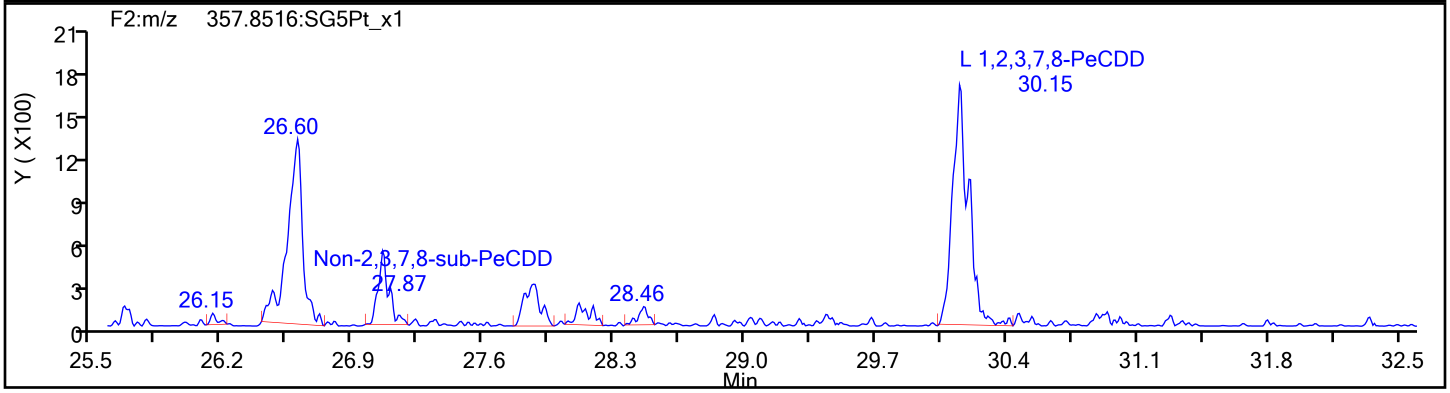

PeCDD Standards

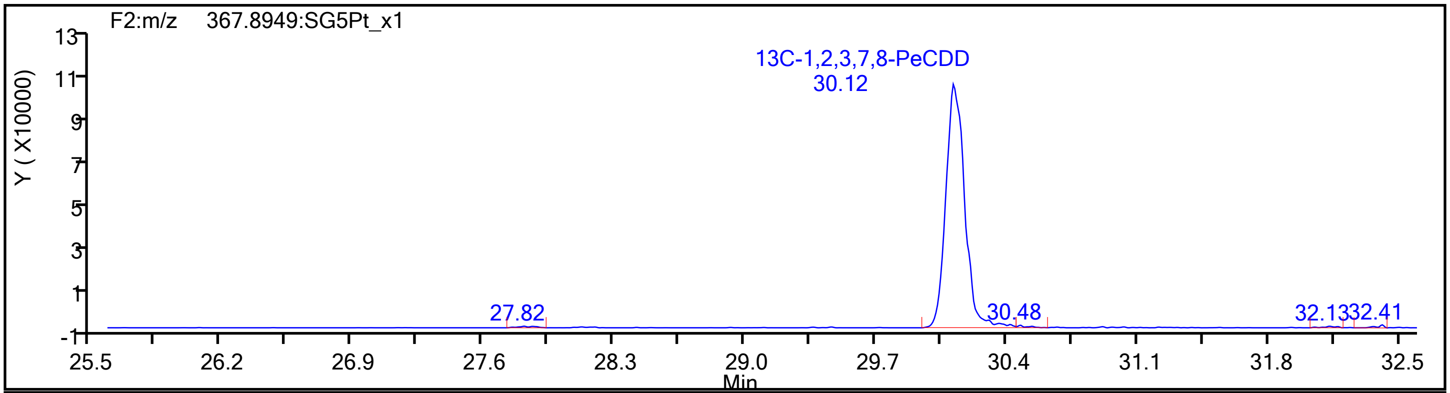

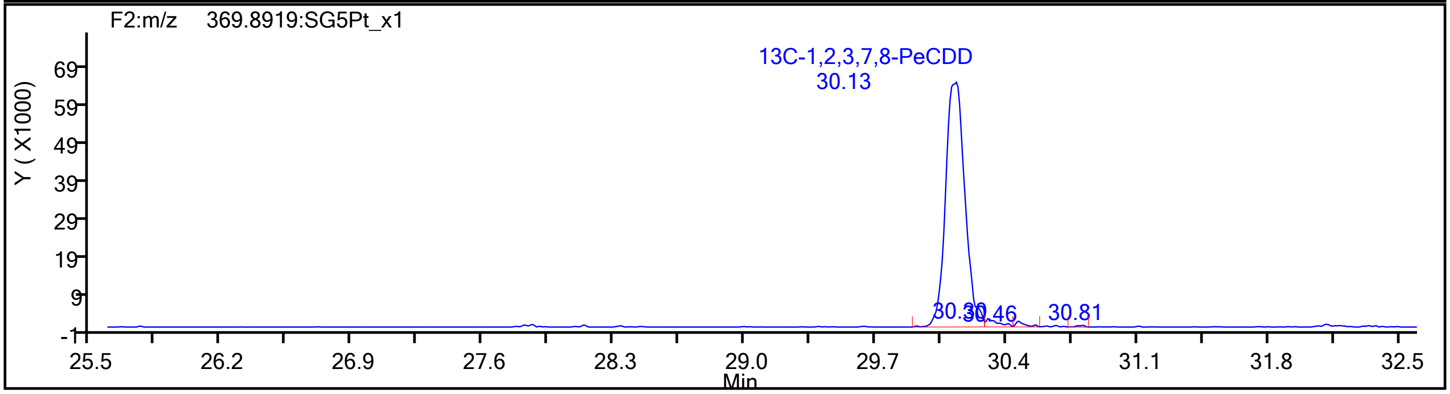

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Eurofins TestAmerica, Sacramento

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HxCDF

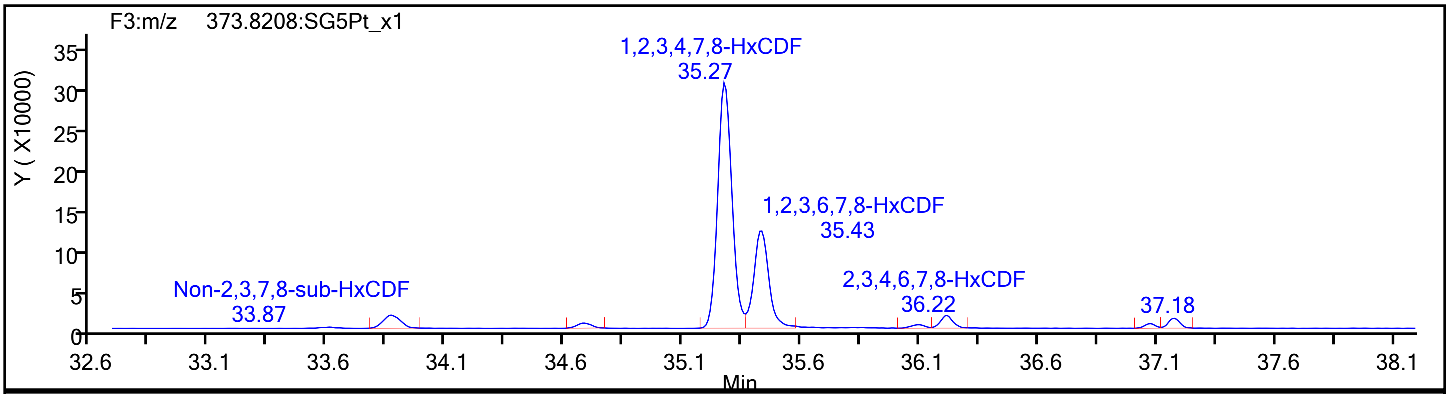

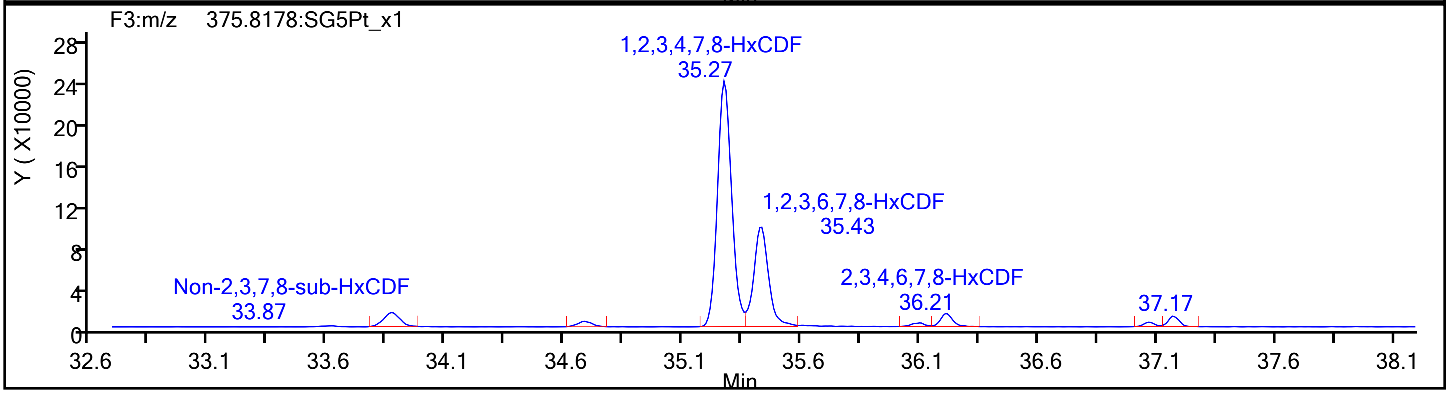

HxCDF Standards

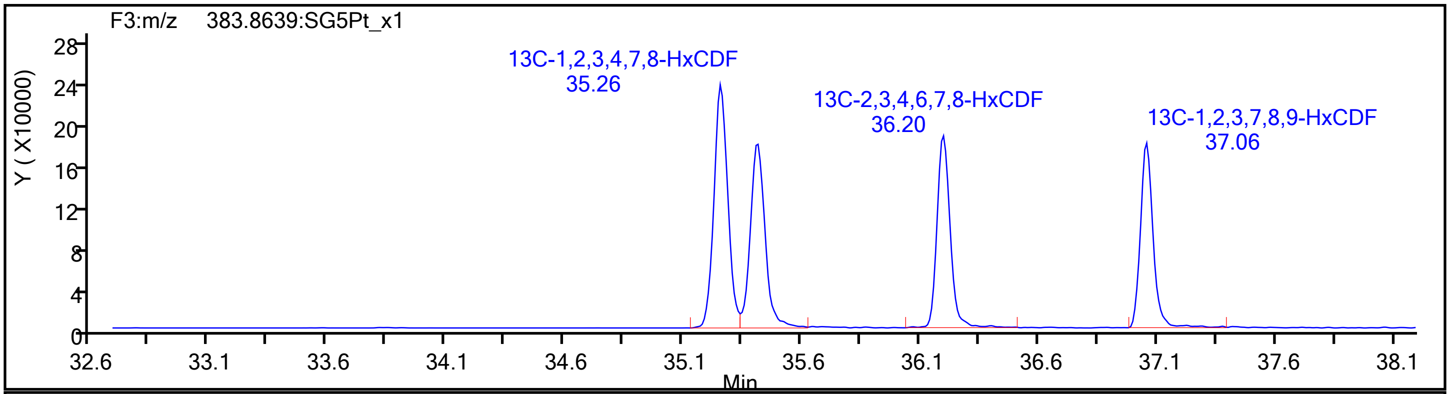

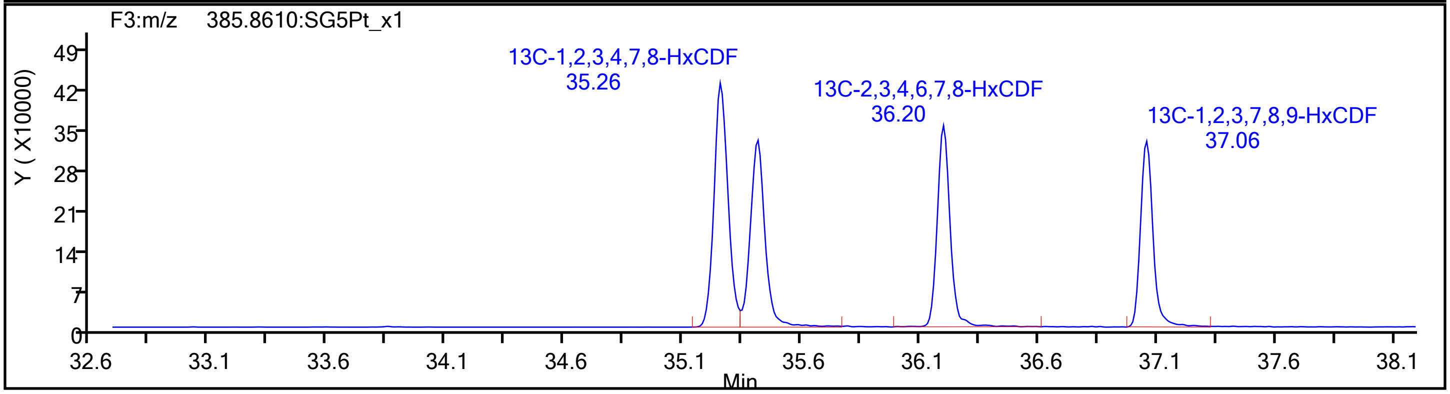

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Eurofins TestAmerica, Sacramento

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Injection Date: 28-Jul-2020 07:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 398798 Sample Line#: 19

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

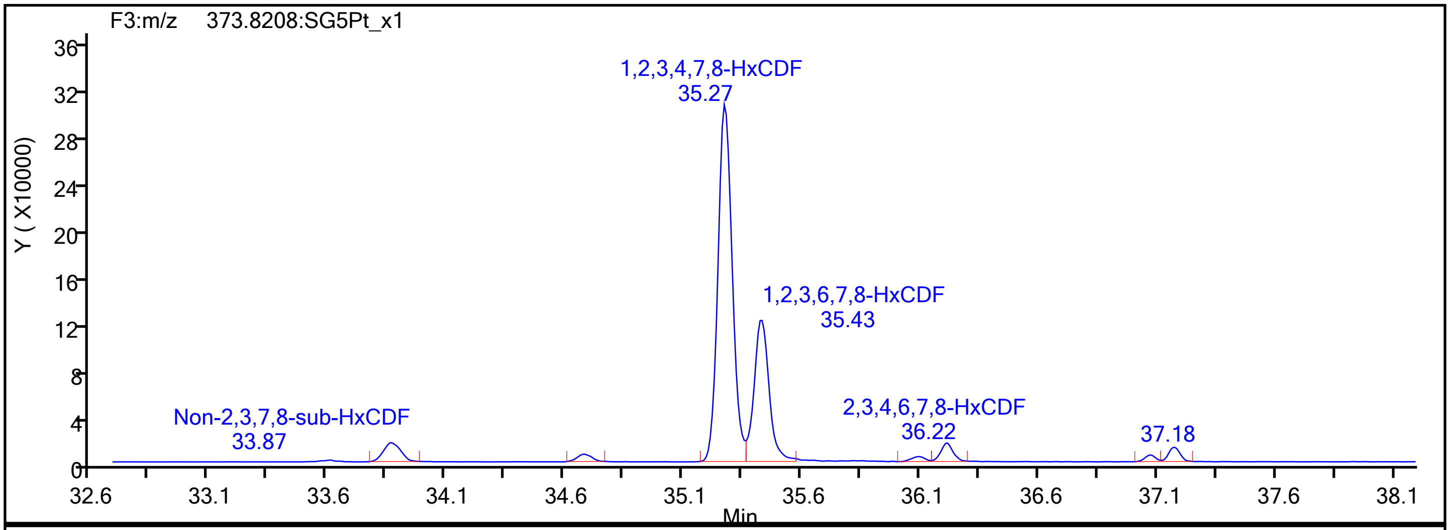

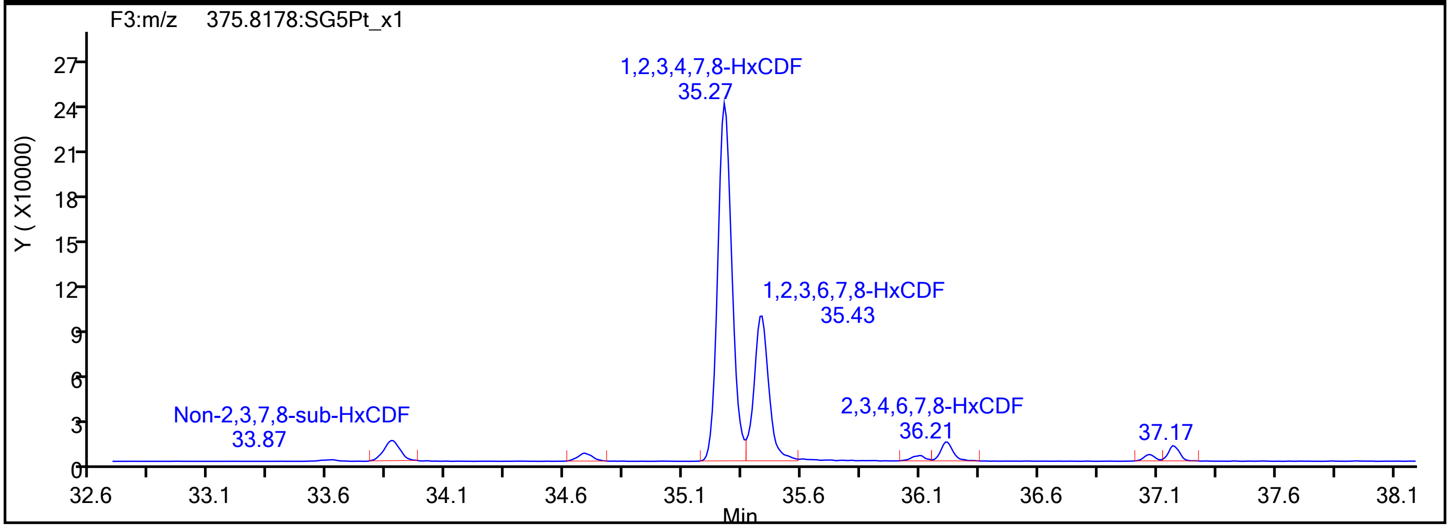

HxCDF Interference Mass

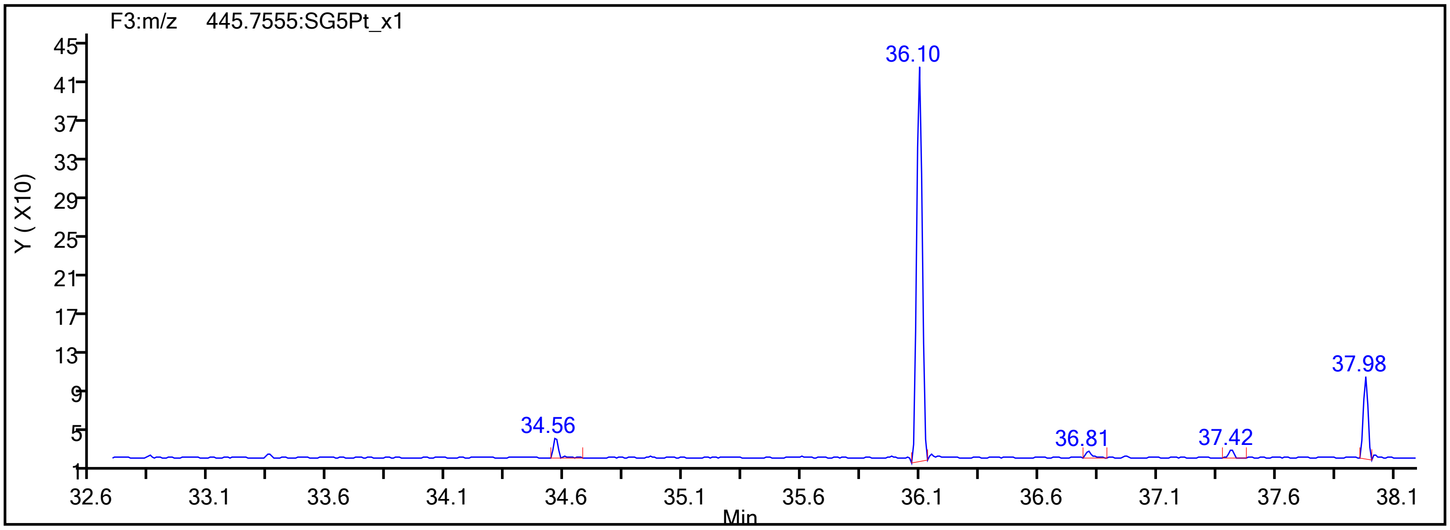

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Injection Date: 28-Jul-2020 07:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 398798 Sample Line#: 19

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

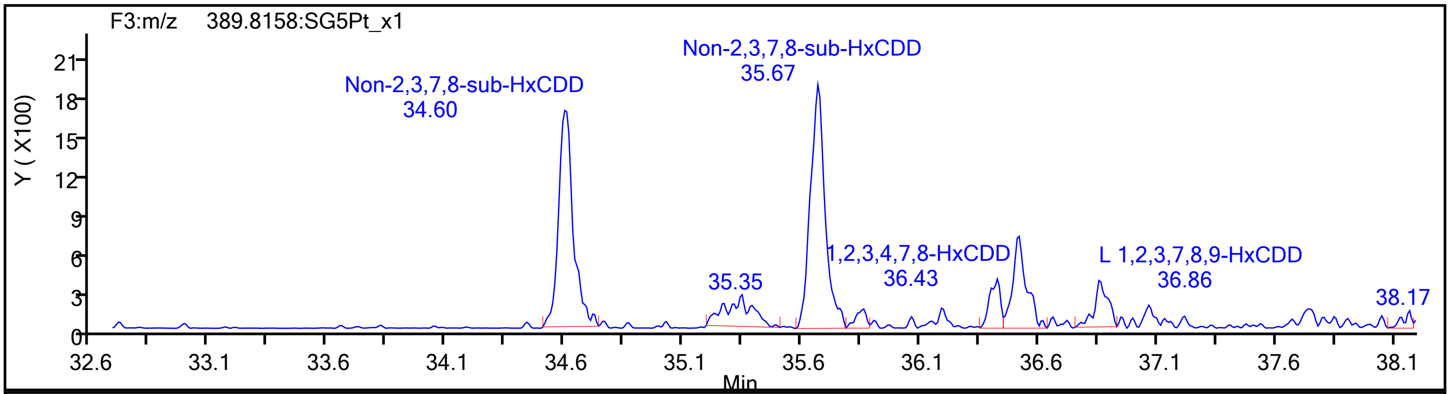

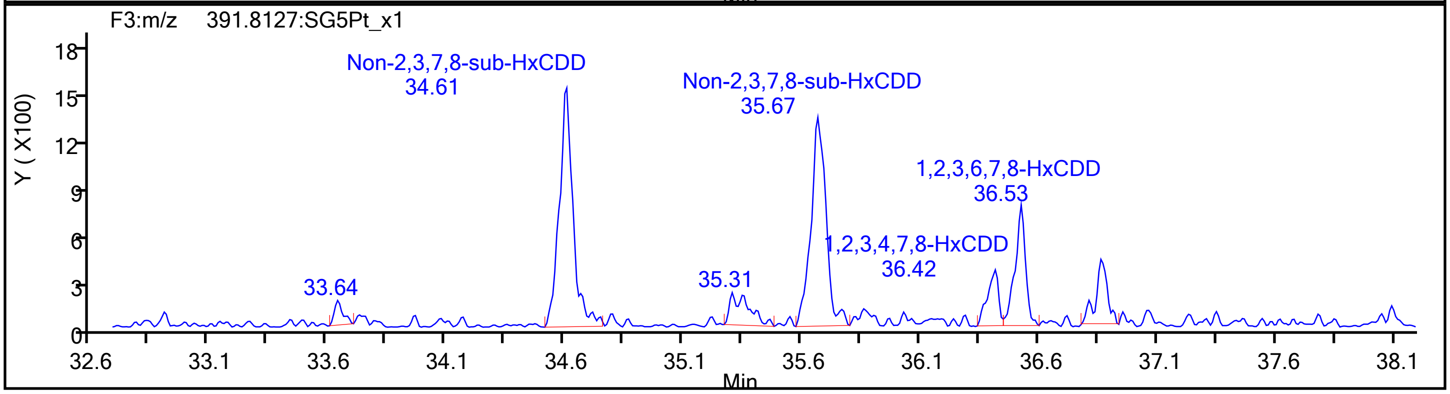

HxCDD Standards

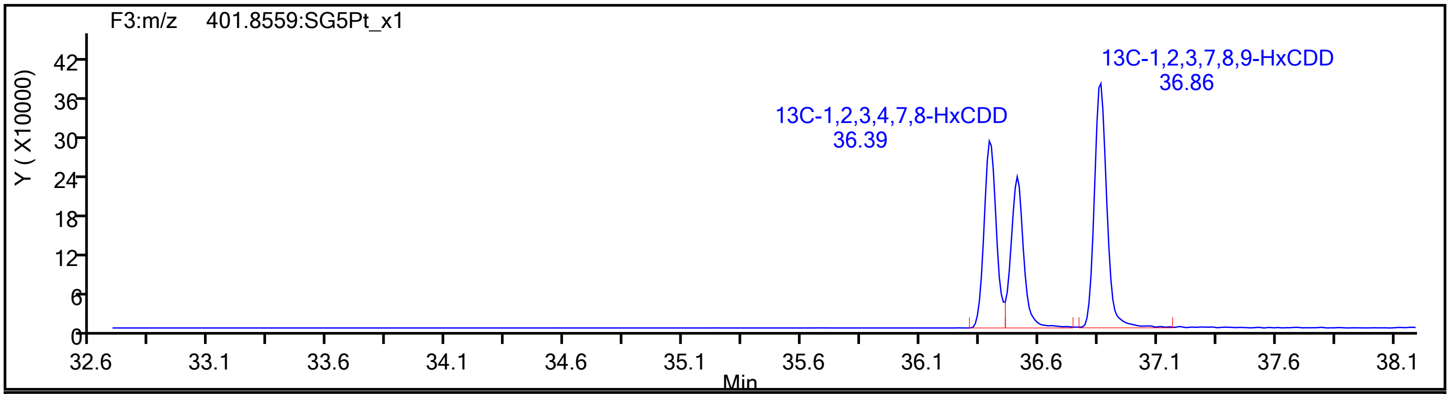

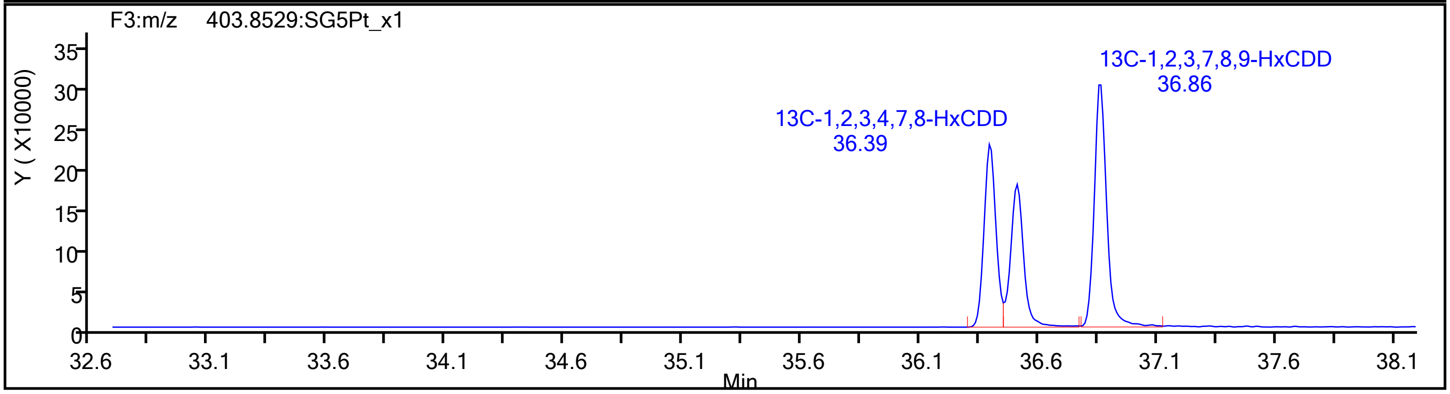

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Eurofins TestAmerica, Sacramento

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HpCDF

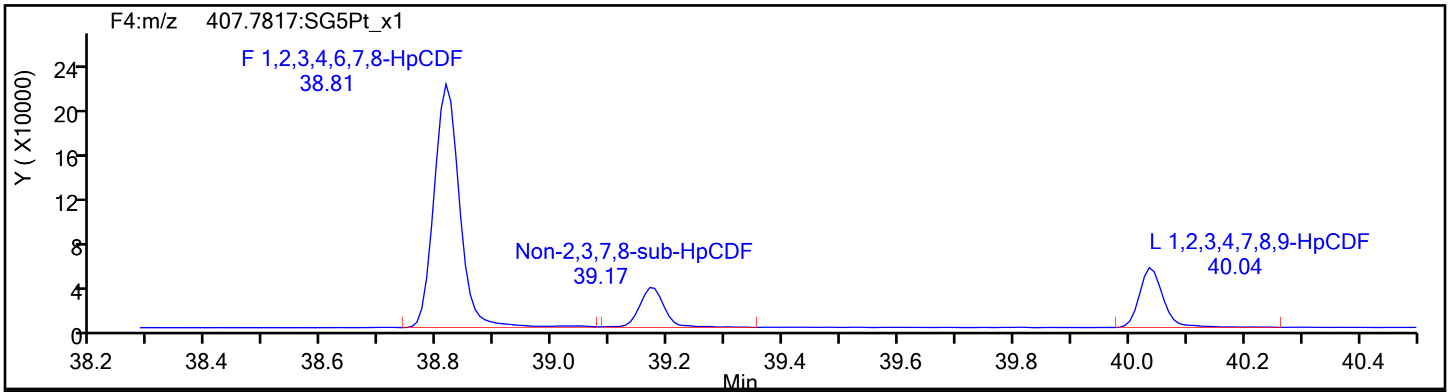

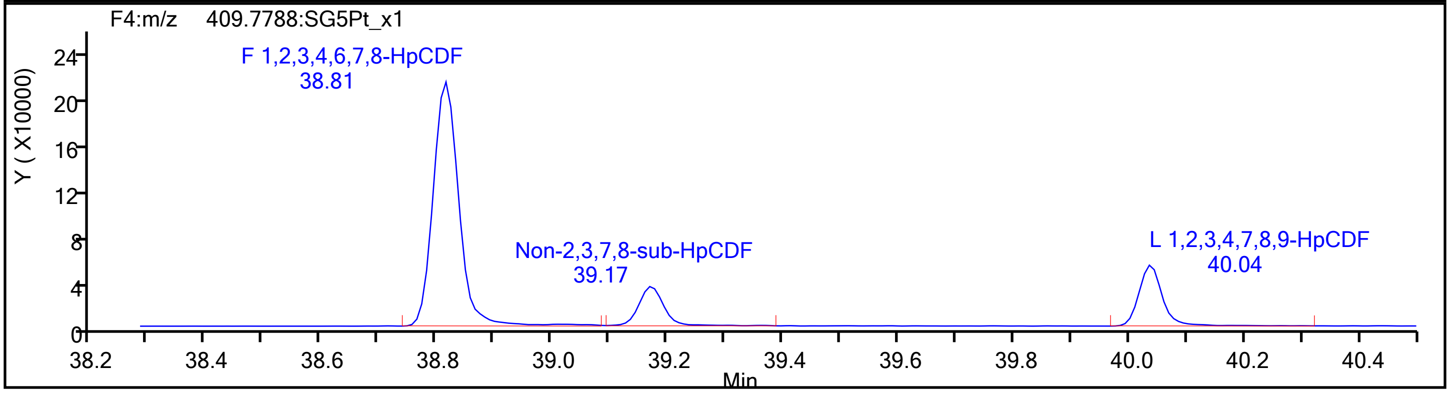

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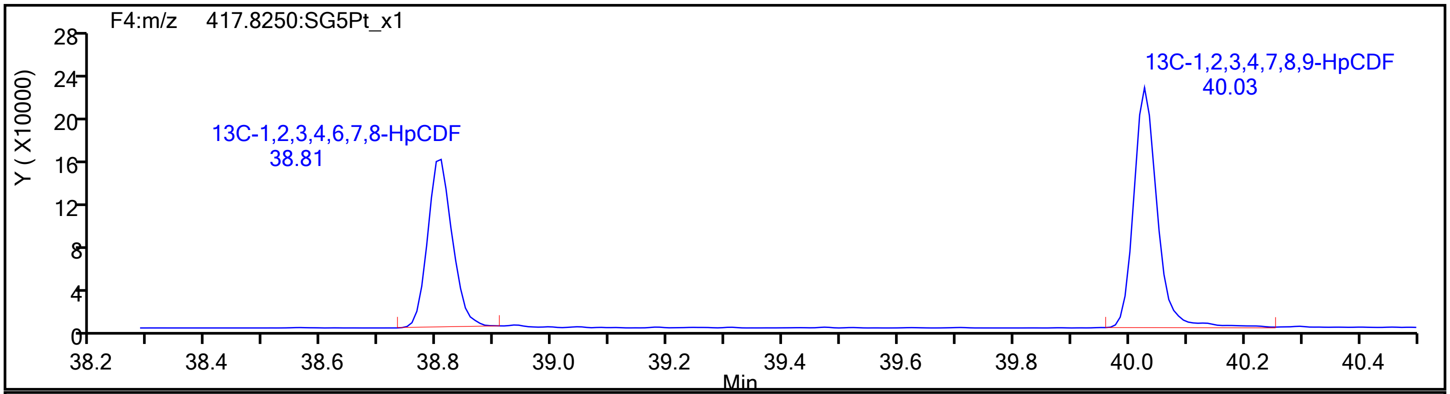

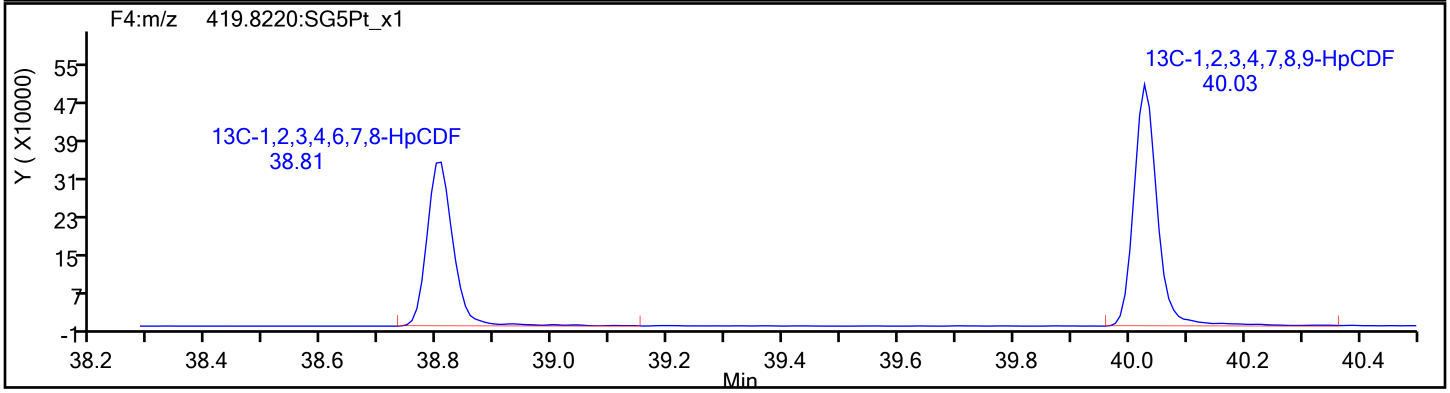

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HpCDF

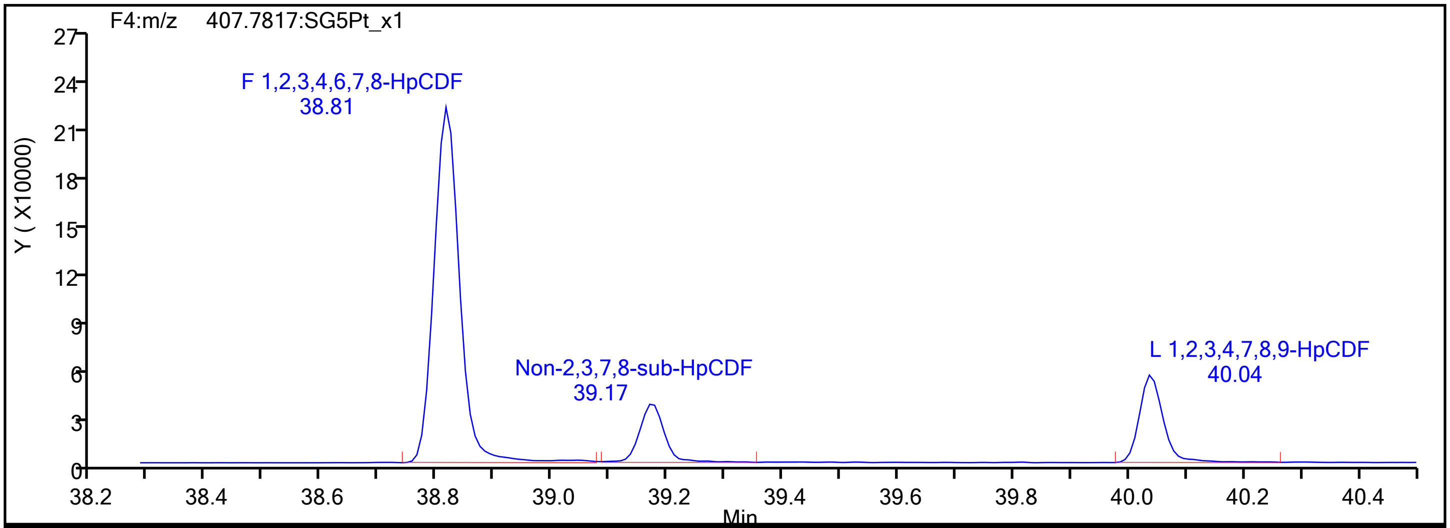

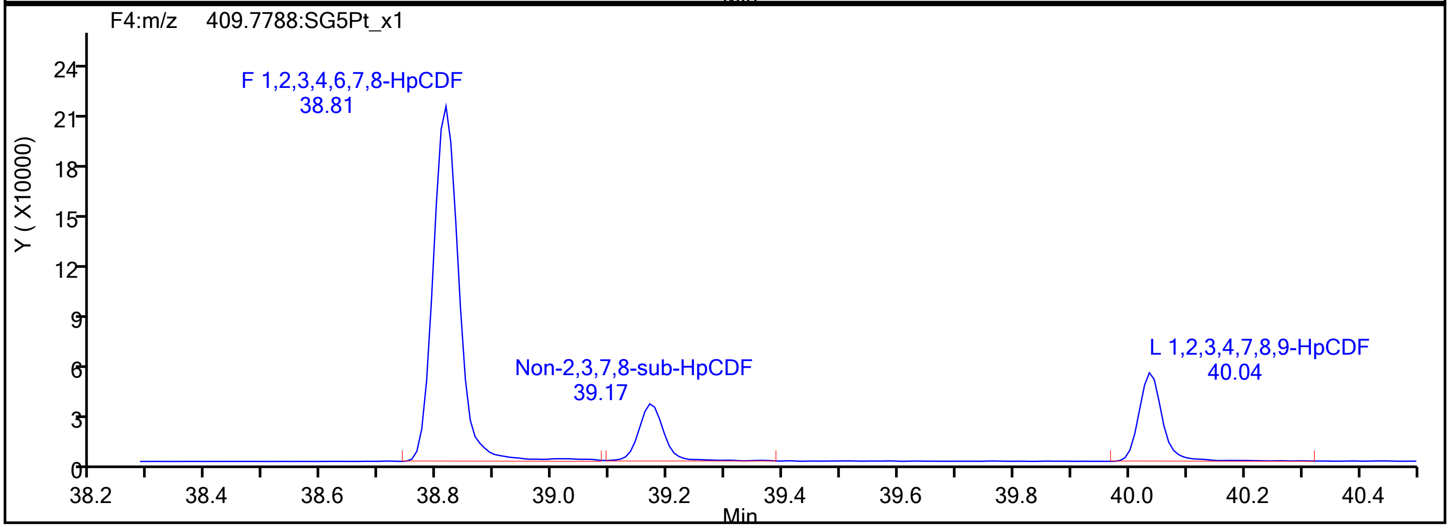

HpCDF Interference Mass

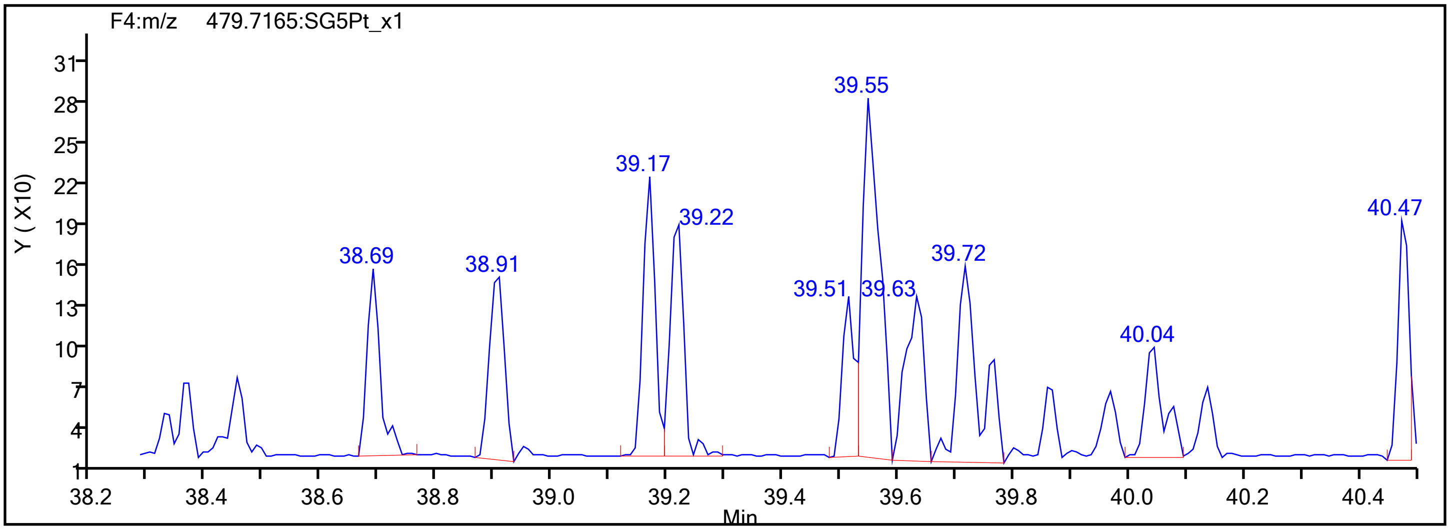

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Eurofins TestAmerica, Sacramento

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HpCDD

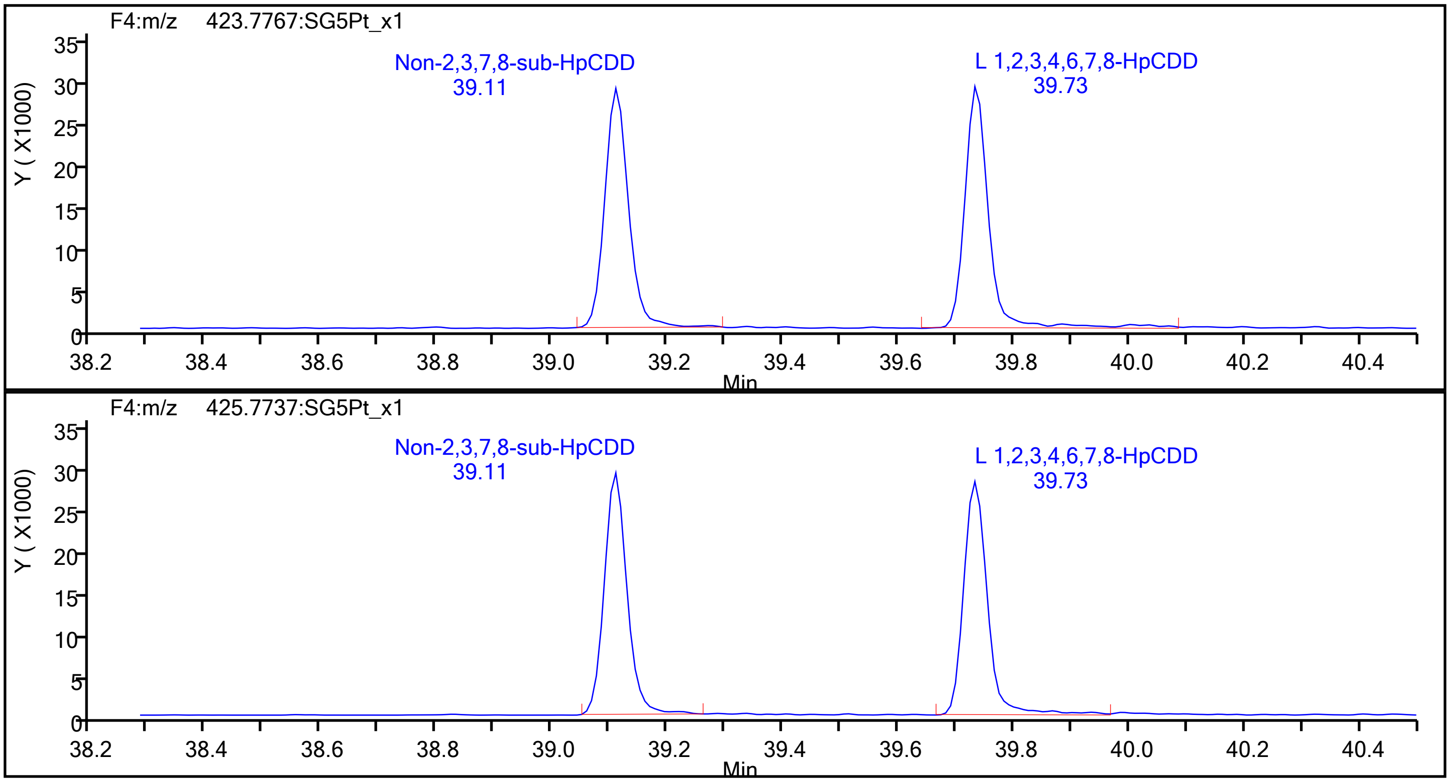

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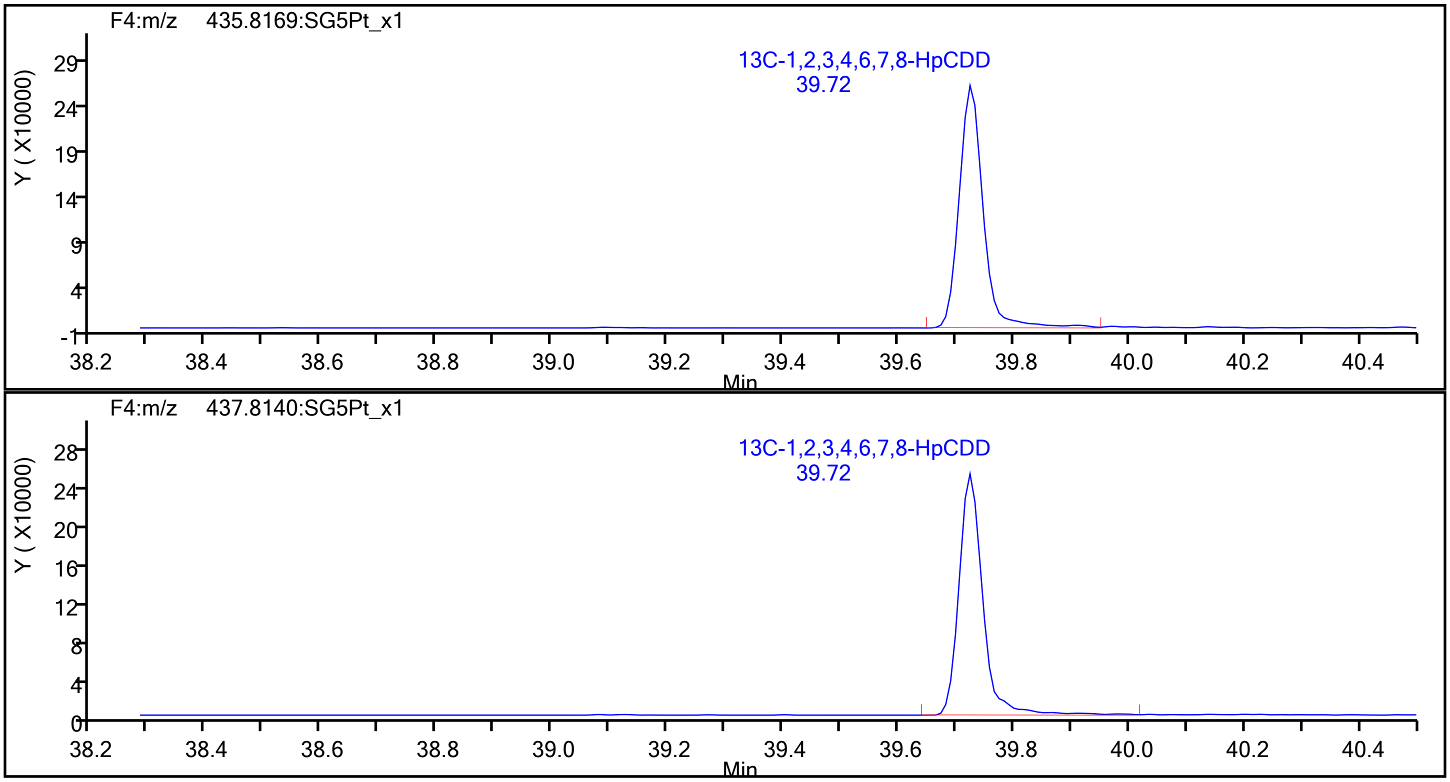

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Eurofins TestAmerica, Sacramento

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Injection Date: 28-Jul-2020 07:37:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 398798

Sample Line#: 19

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

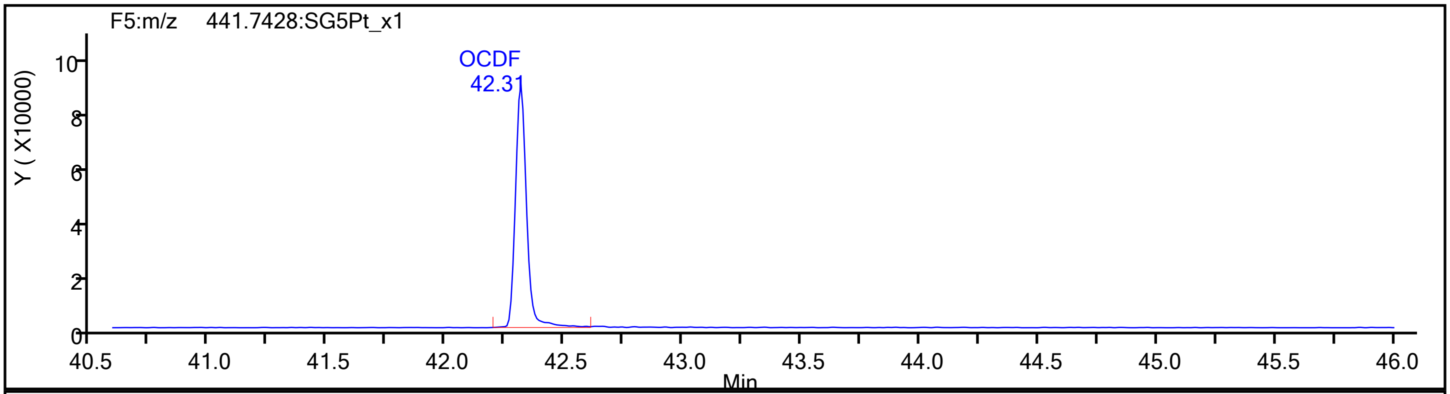

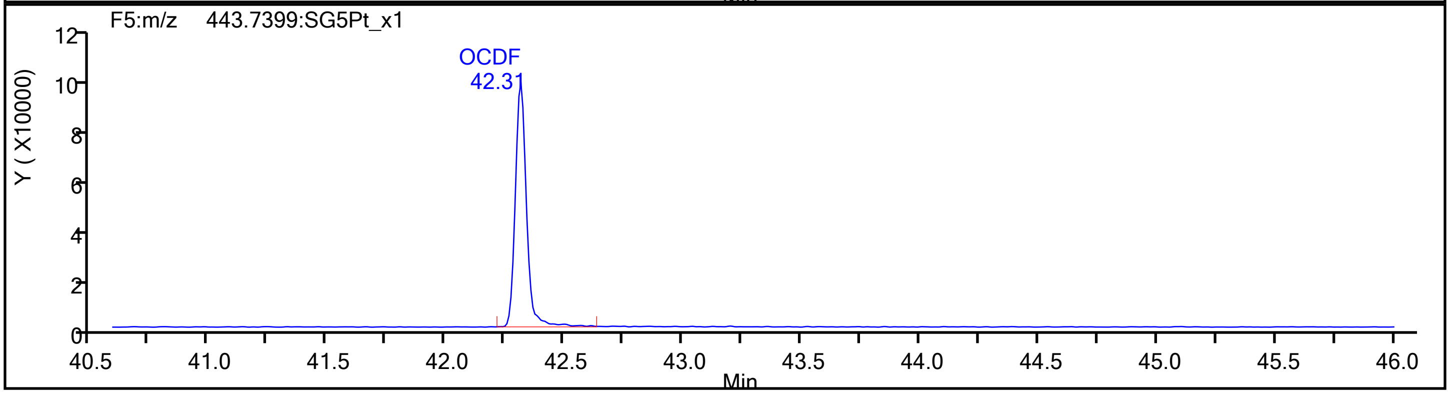

OCDF Standards

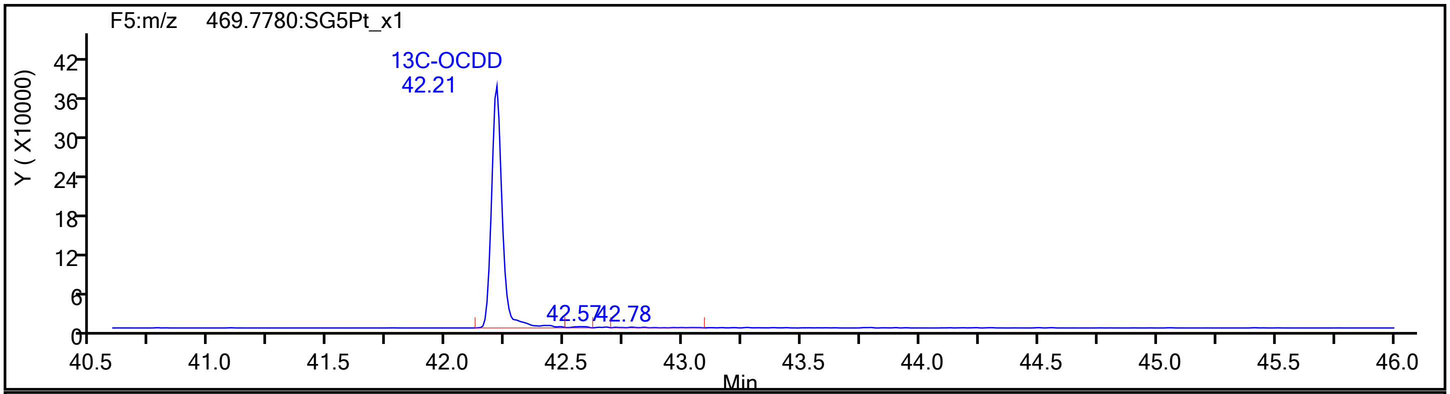

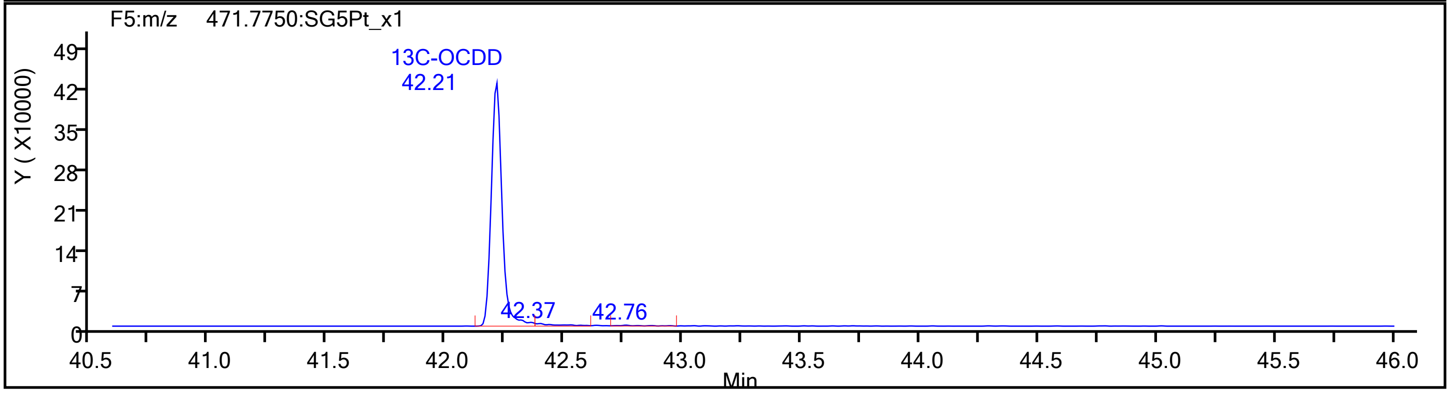

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Eurofins TestAmerica, Sacramento

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OCDF

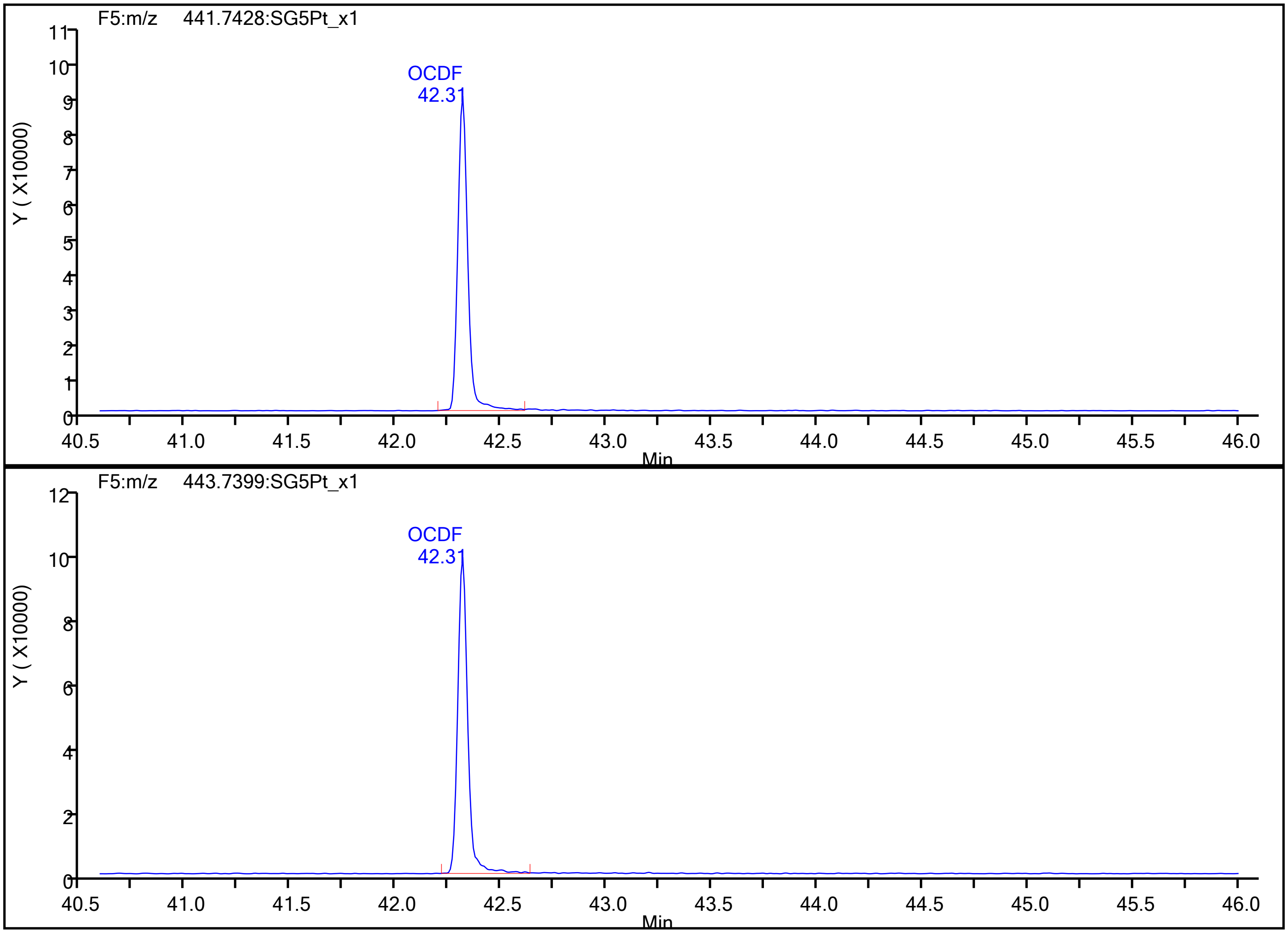

OCDF Interference Mass

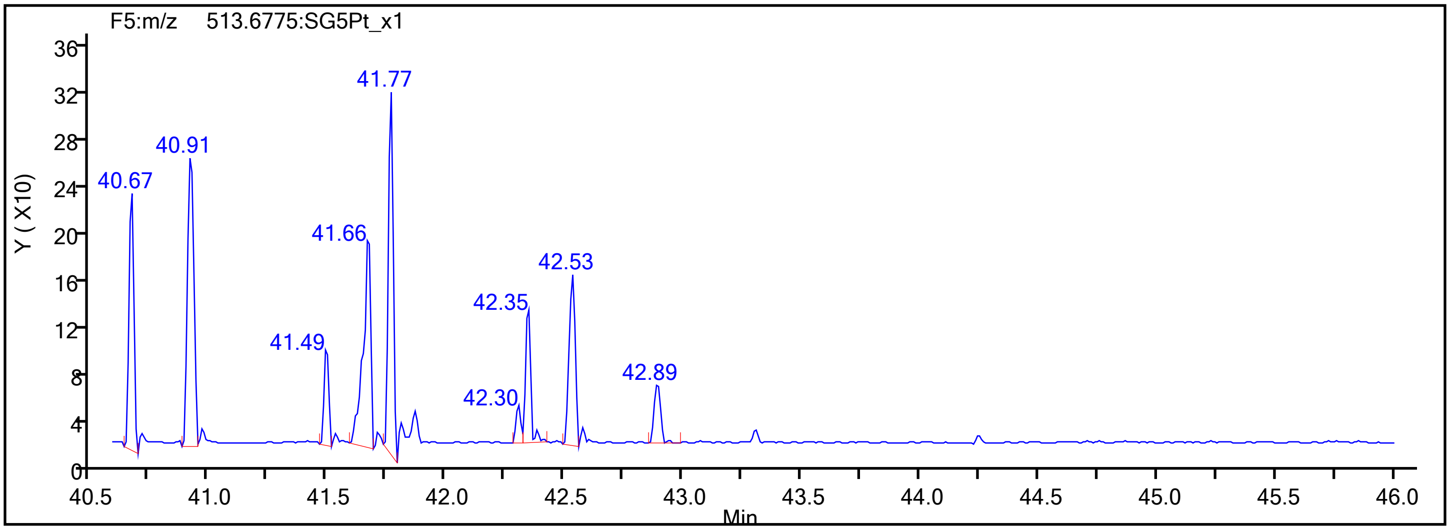

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

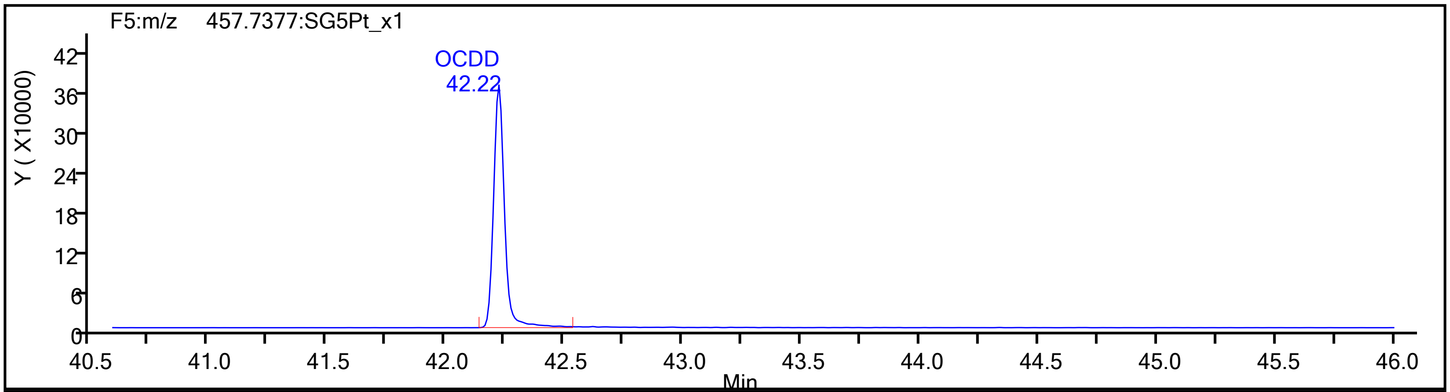

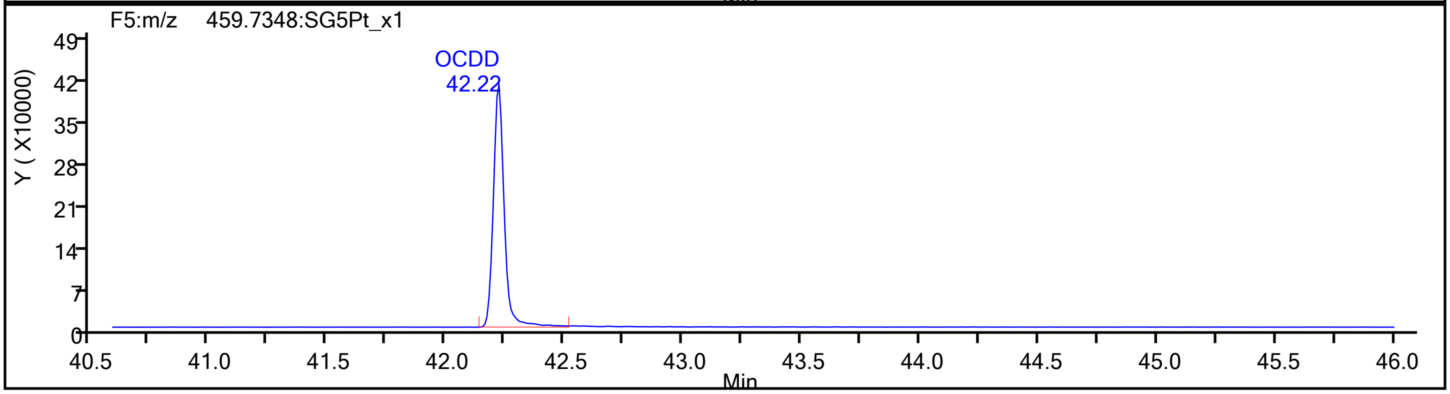

OCDD Standards

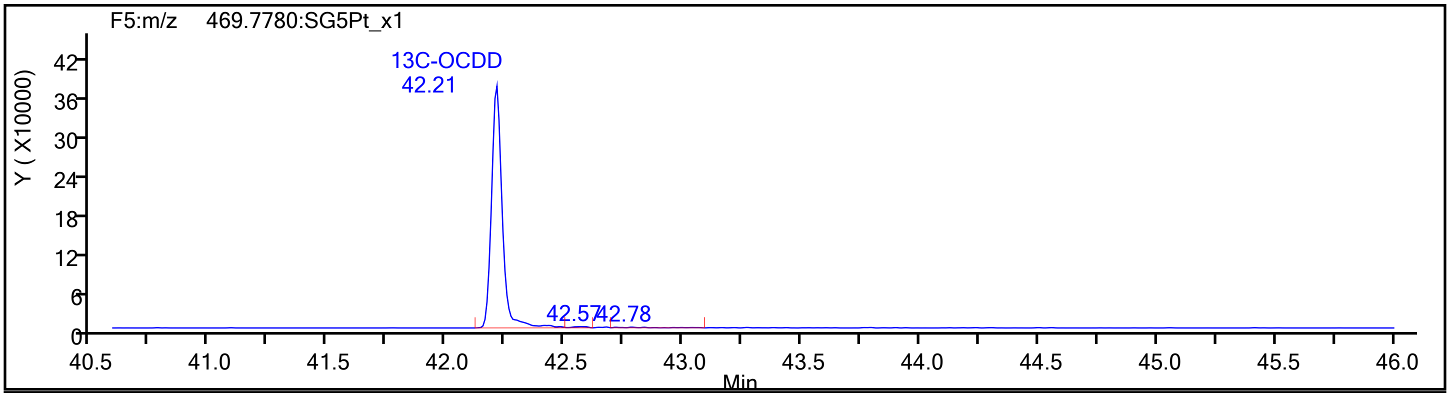

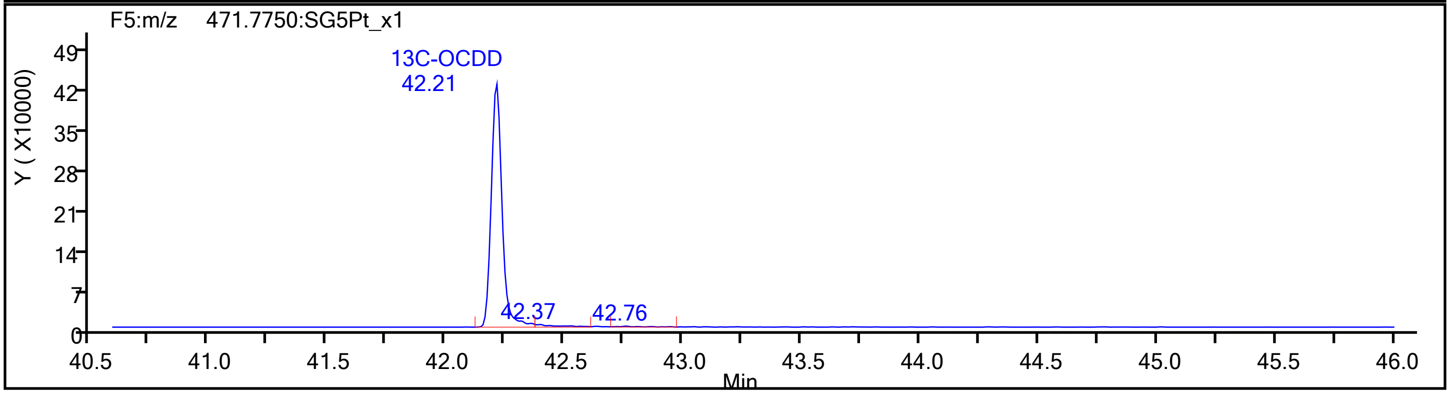

Report Date: 30-Jul-2020 09:51:18 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d

Injection Date: 28-Jul-2020 07:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 398798 Sample Line#: 19

Column Type: DB-5 Column Dia: 0.32 mm

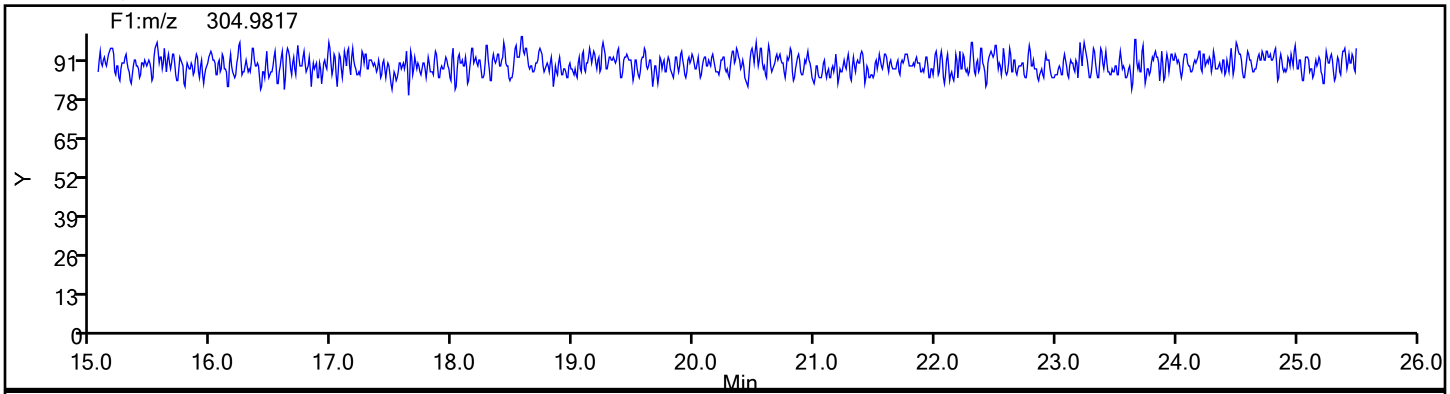
F1:m/z 304.9817

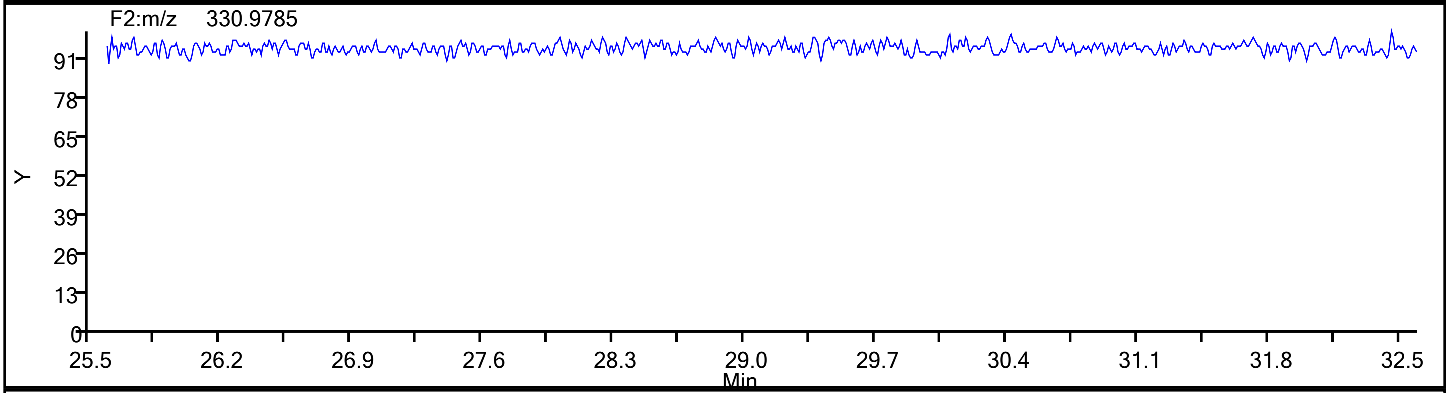
F2:m/z 330.9785

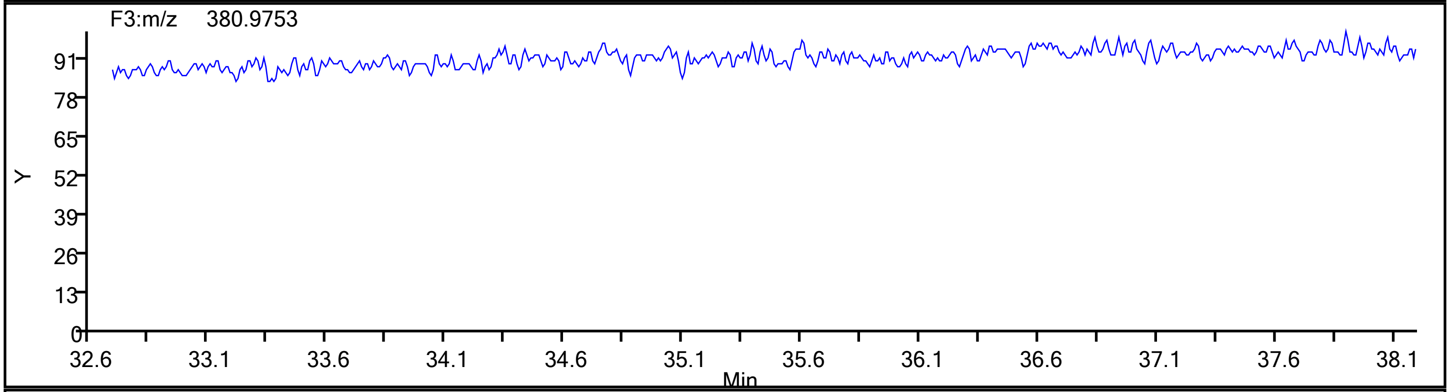
F3:m/z 380.9753

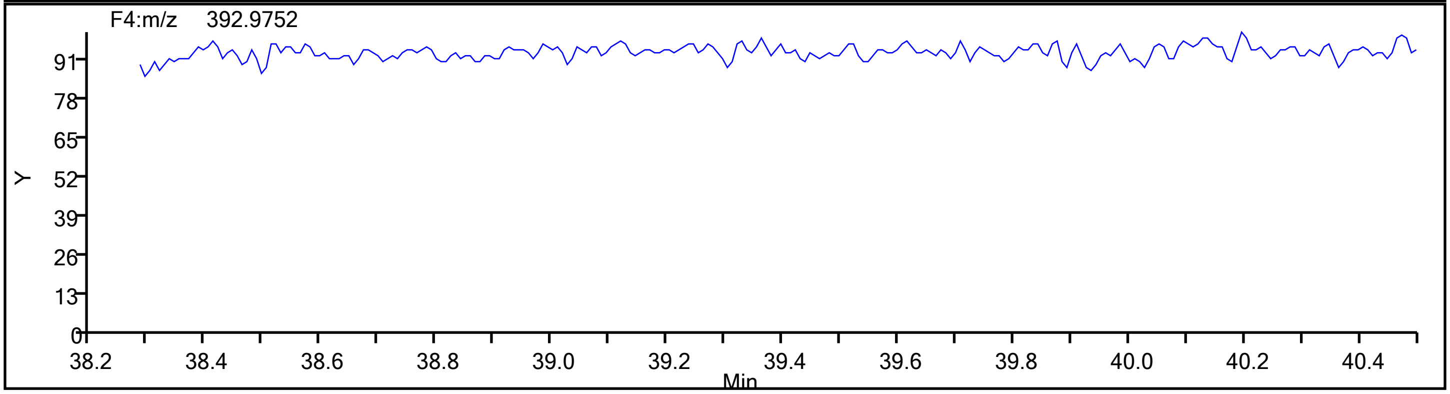
F4:m/z 392.9752

Report Date: 30-Jul-2020 09:51:18 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_21.d		
Injection Date:	28-Jul-2020 07:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	398798	Sample Line#:	19
Column Type:	DB-5	Column Dia:	0.32 mm

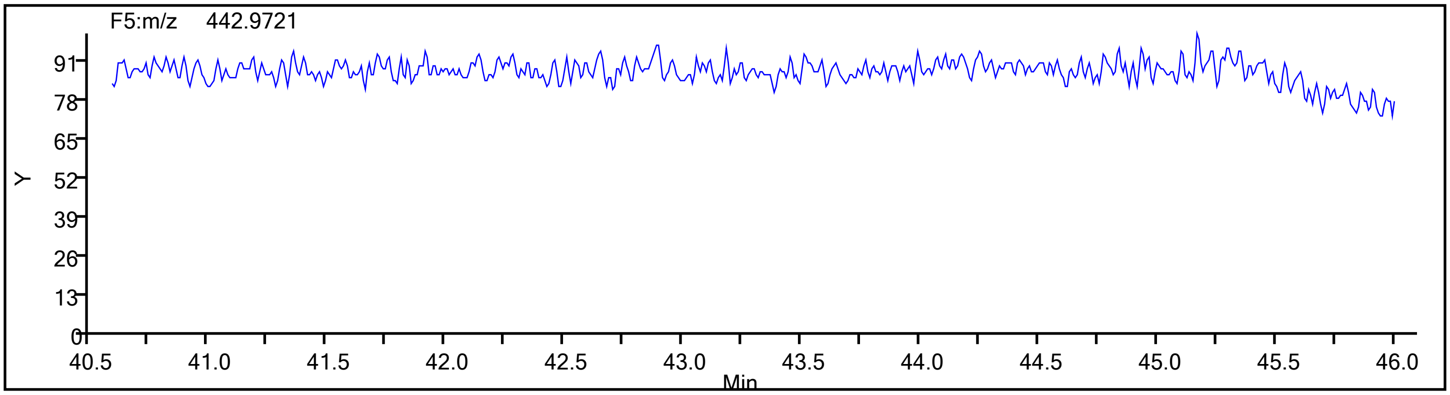

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Initial RADL	Lab Sample ID: 320-62886-1 RADL
Matrix: Water	Lab File ID: 30JL2011D2_005.d
Analysis Method: 1613B	Date Collected: 07/20/2020 10:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1054.4(mL)	Date Analyzed: 07/30/2020 15:43
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 5
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 399853	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	11000		47	21

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	59		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_005.d				
Lims ID:	320-62886-A-1-A				
Client ID:	11215702-Initial				
Sample Type:	Client				
Inject. Date:	30-Jul-2020 15:43:18	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	5.0000		
Sample Info:	320-62886-A-1-A (5X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	30-Jul-2020 22:56:28	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1069				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	20253678	0.82	1.2E+06	20.0	20.0				
D 13C-2,3,7,8-TCDF	16.970	18825885	0.80	1.5708	11.8	11.8	0.4429	0.4429	59.17	
2,3,7,8-TCDF	16.997	108570174	0.77	0.9943	116.0	116.0	0.2258	0.2258		
D 13C-2,3,7,8-TCDD	15.529	11420484	0.76	0.9834	11.5	11.5	2.094	2.094	57.34	
2,3,7,8-TCDD	15.543	29159311	0.76	1.2822	39.8	39.8	0.3638	0.3638		
$ 37Cl4-2,3,7,8-TCDD	15.543	7545521		0.9945	7.492	7.492	0.0714	0.0714	93.65	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_005.d				
Lims ID:	320-62886-A-1-A				
Client ID:	11215702-Initial				
Sample Type:	Client				
Inject. Date:	30-Jul-2020 15:43:18	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	5.0000		
Sample Info:	320-62886-A-1-A (5X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	30-Jul-2020 22:56:28	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1069				

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		9148961	1884114	90702	226755	21		
333.9339	15.776	15.780	0		11104717	2311258	82059	205147	28	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.970	16.974	0	1.076	8339980	1335400	35595	88987	38		
317.9389	16.983	16.974	1	1.077	10485905	1760900	22774	56935	77	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.002	47172431	8744176	6086	15215	1437		
305.8987	16.997	17.001	0	1.002	61397743	11309928	7817	19542	1447	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.529	15.533	0	0.984	4945579	1100821	90702	226755	12		
333.9339	15.529	15.533	0	0.984	6474905	1257826	82059	205147	15	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.543	15.547	0	1.001	12548750	2447881	13542	33855	181		
321.8936	15.543	15.547	0	1.001	16610561	3302288	8464	21160	390	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.543	15.547	0	0.985	7545521	1558487	5958	14895	262		

Report Date: 30-Jul-2020 22:56:30		Chrom Revision: 2.3 30-Jun-2020 12:05:54	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_005.d		
Injection Date:	30-Jul-2020 15:43:18	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399853	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

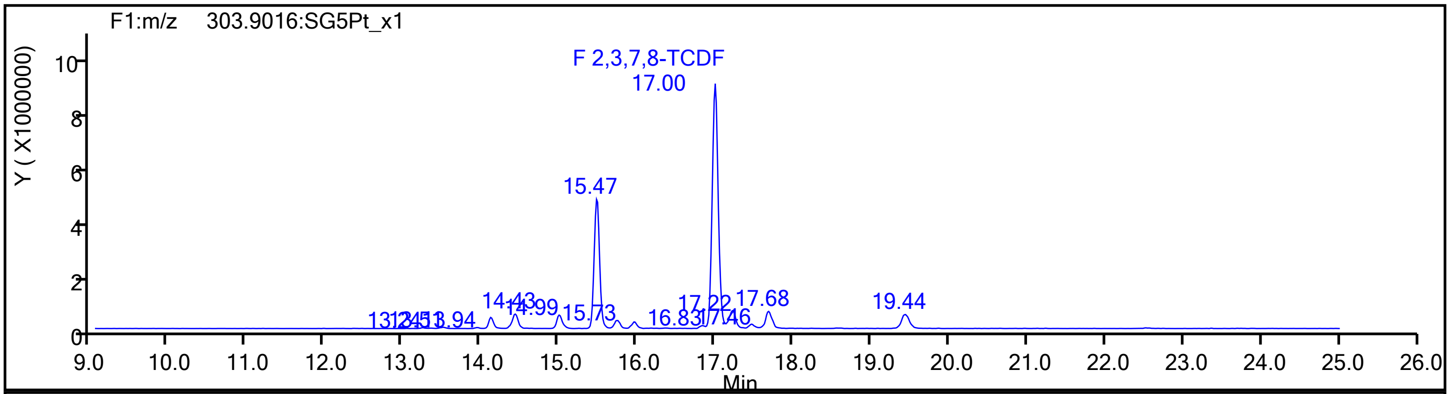

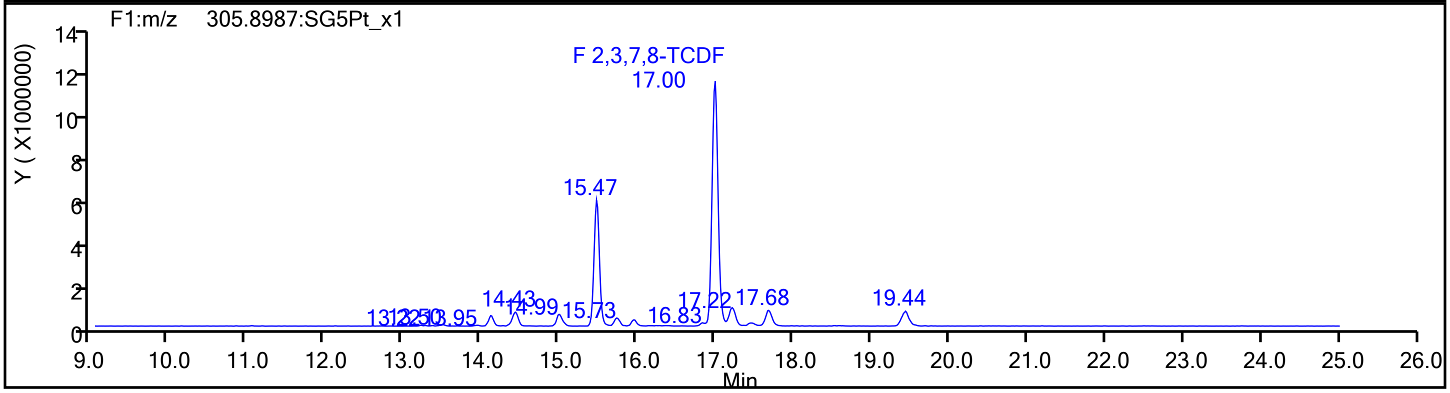

TCDF Standards

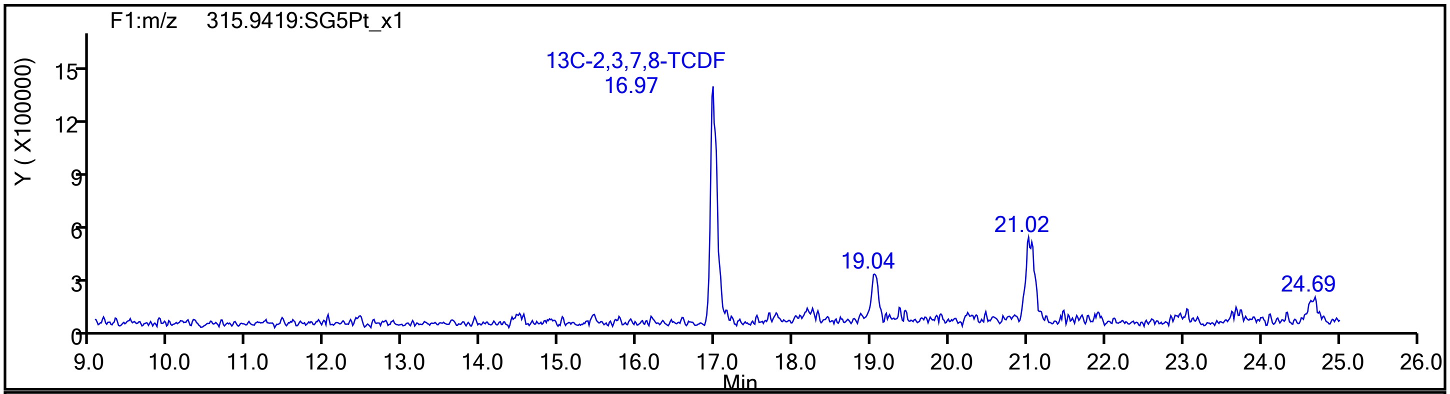

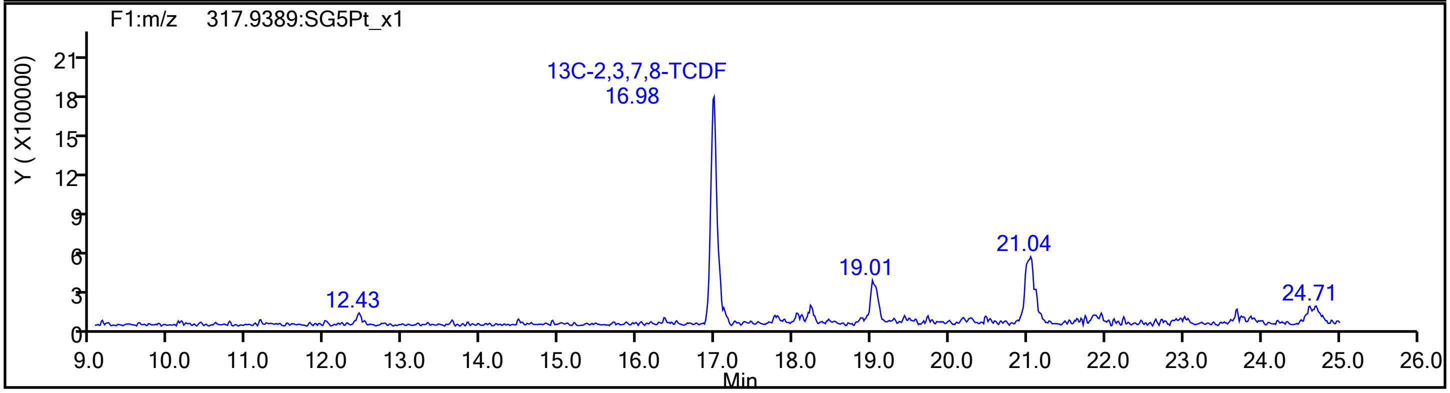

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_005.d		
Injection Date:	30-Jul-2020 15:43:18	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399853	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

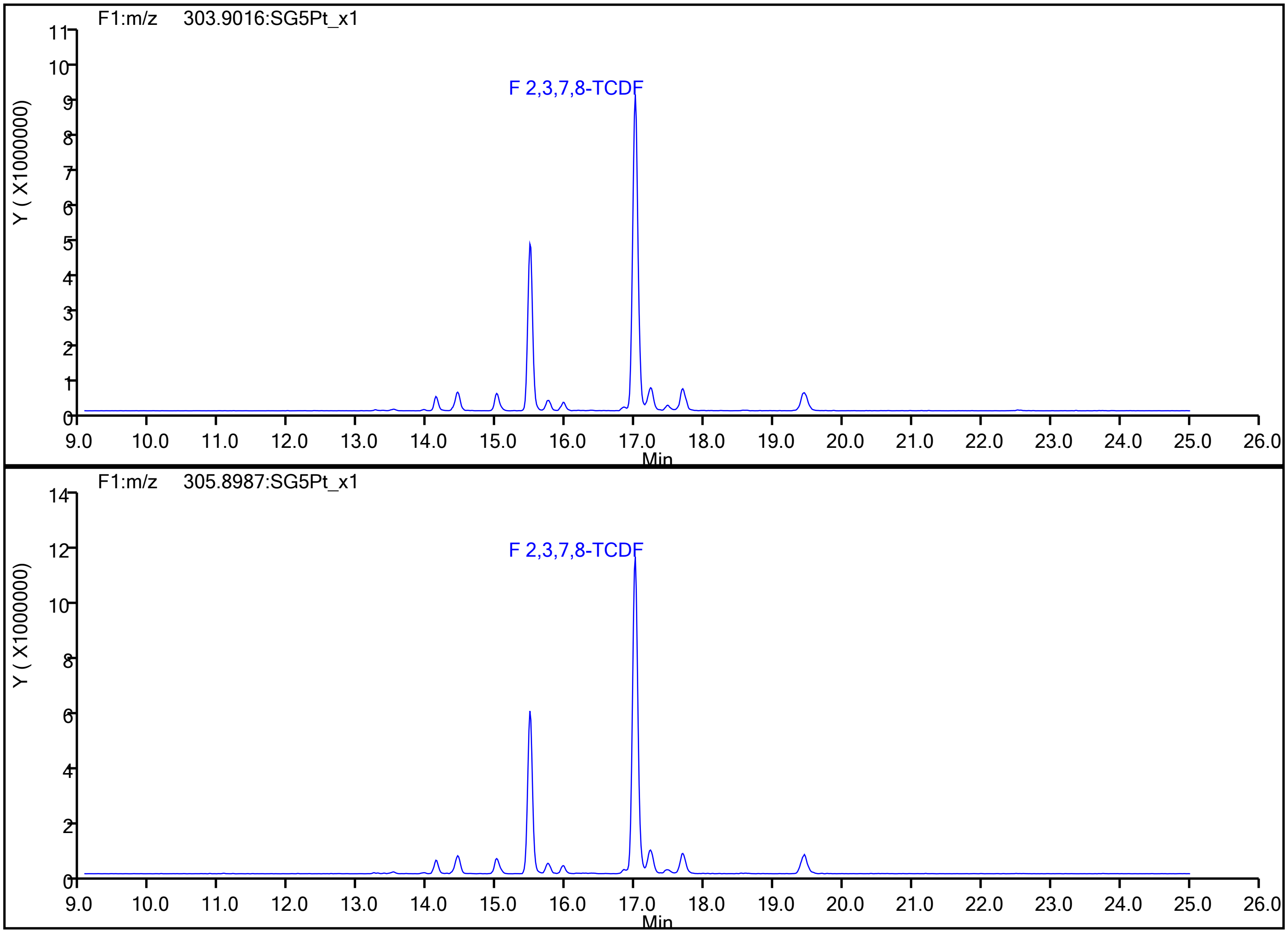

TCDF Interference Mass

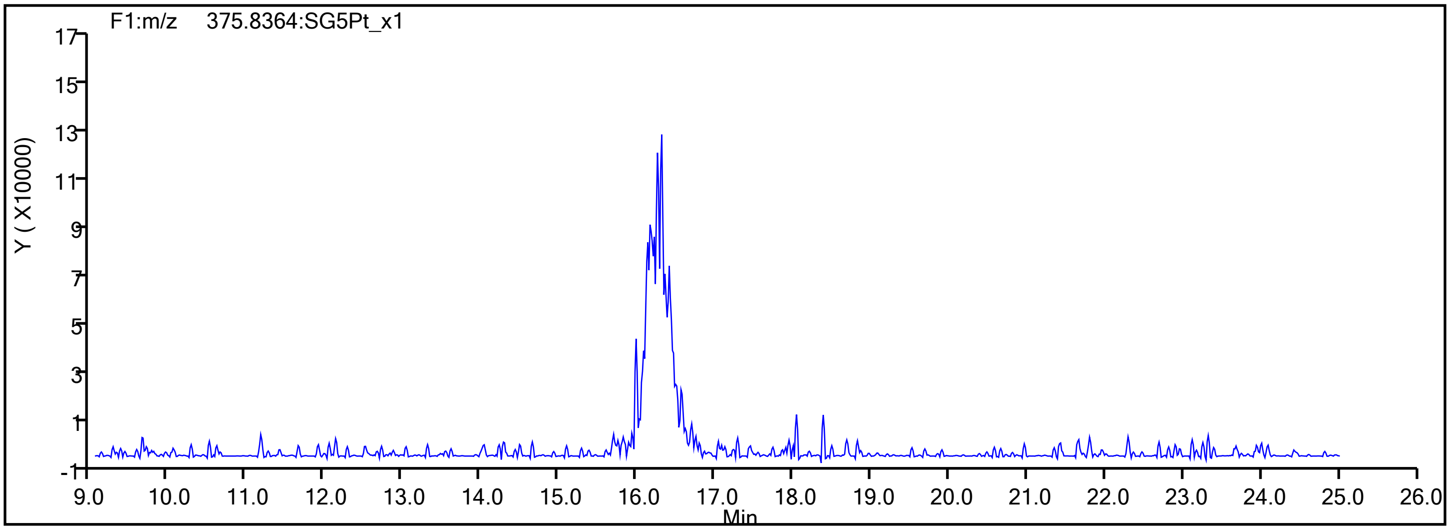

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_005.d

Injection Date: 30-Jul-2020 15:43:18 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 399853 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

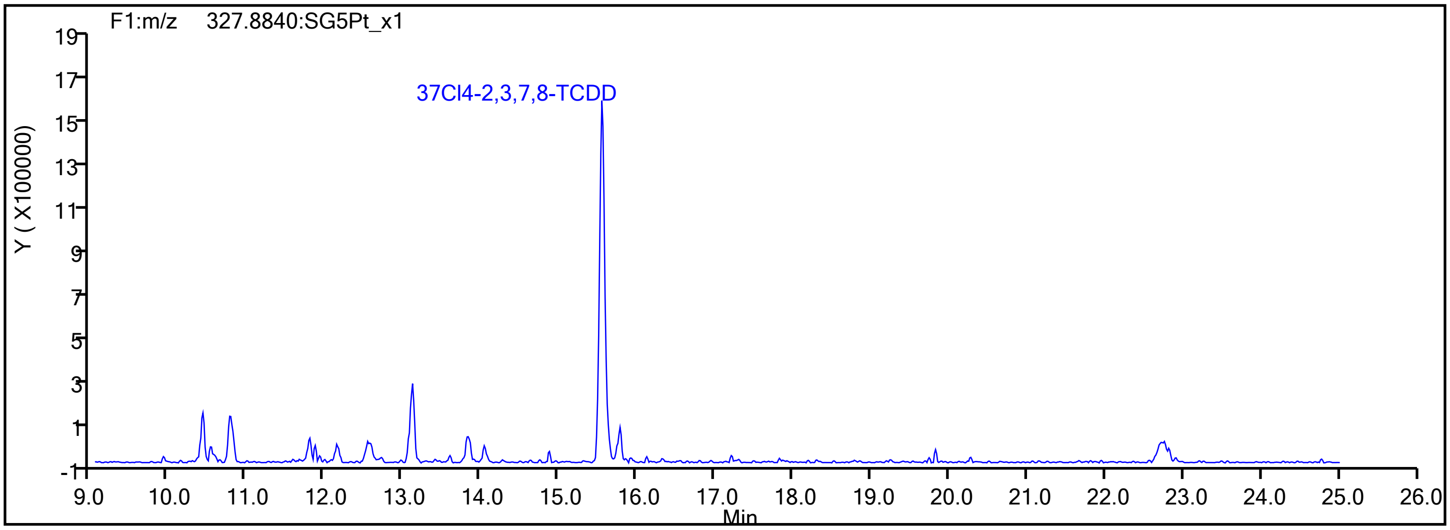

37Cl4-TCDD Standards

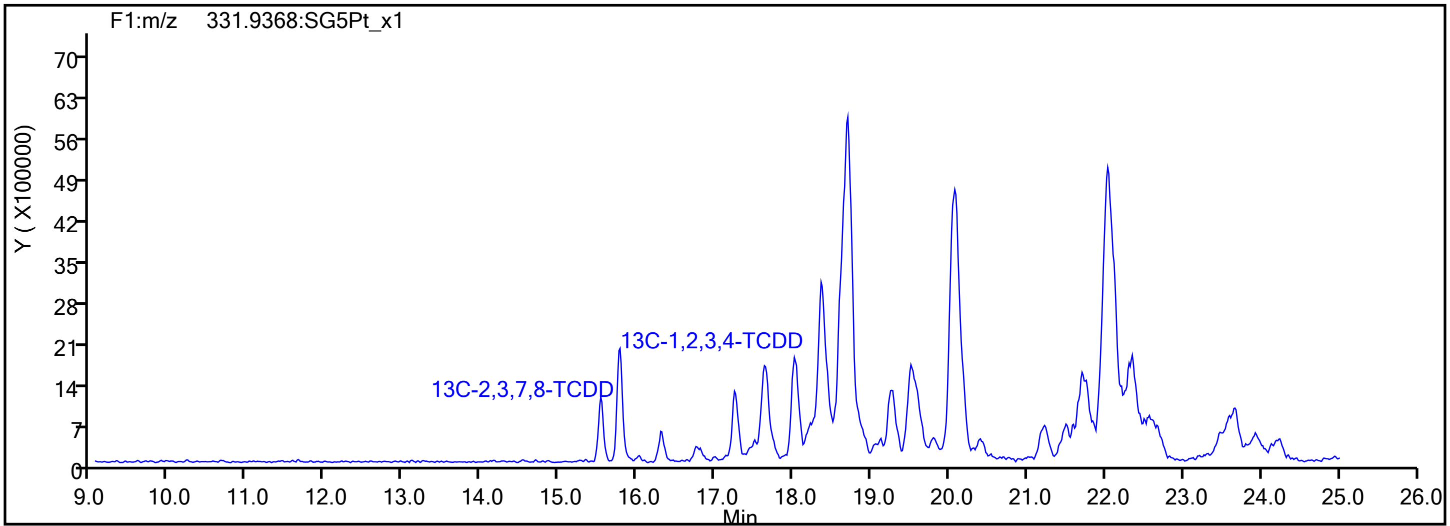

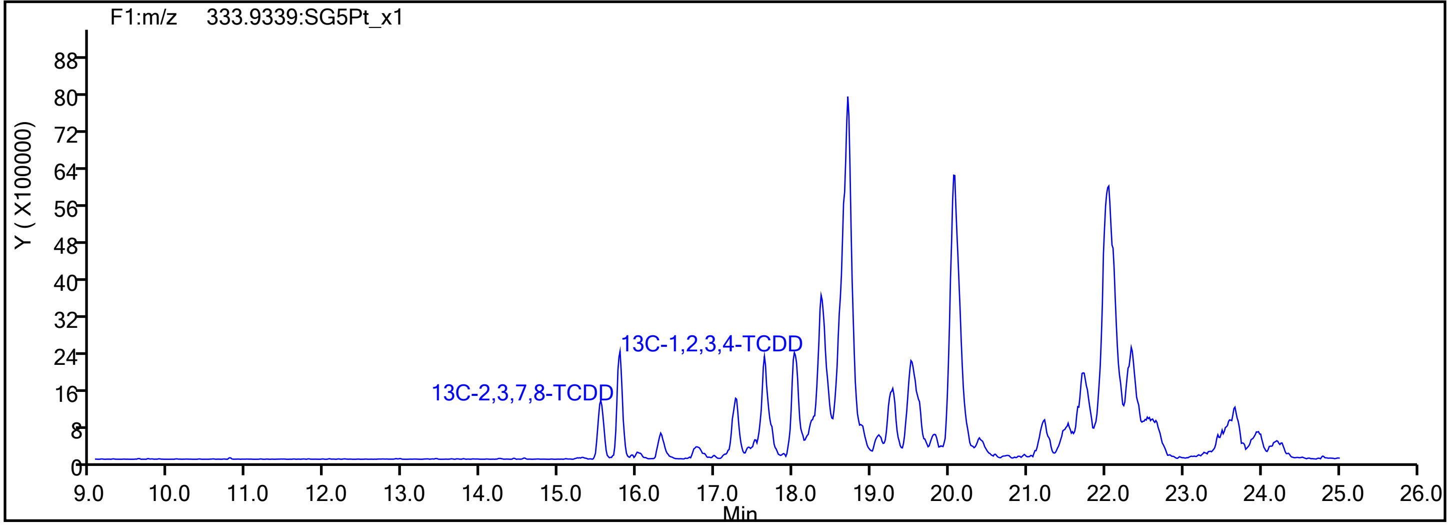

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_005.d		
Injection Date:	30-Jul-2020 15:43:18	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399853	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

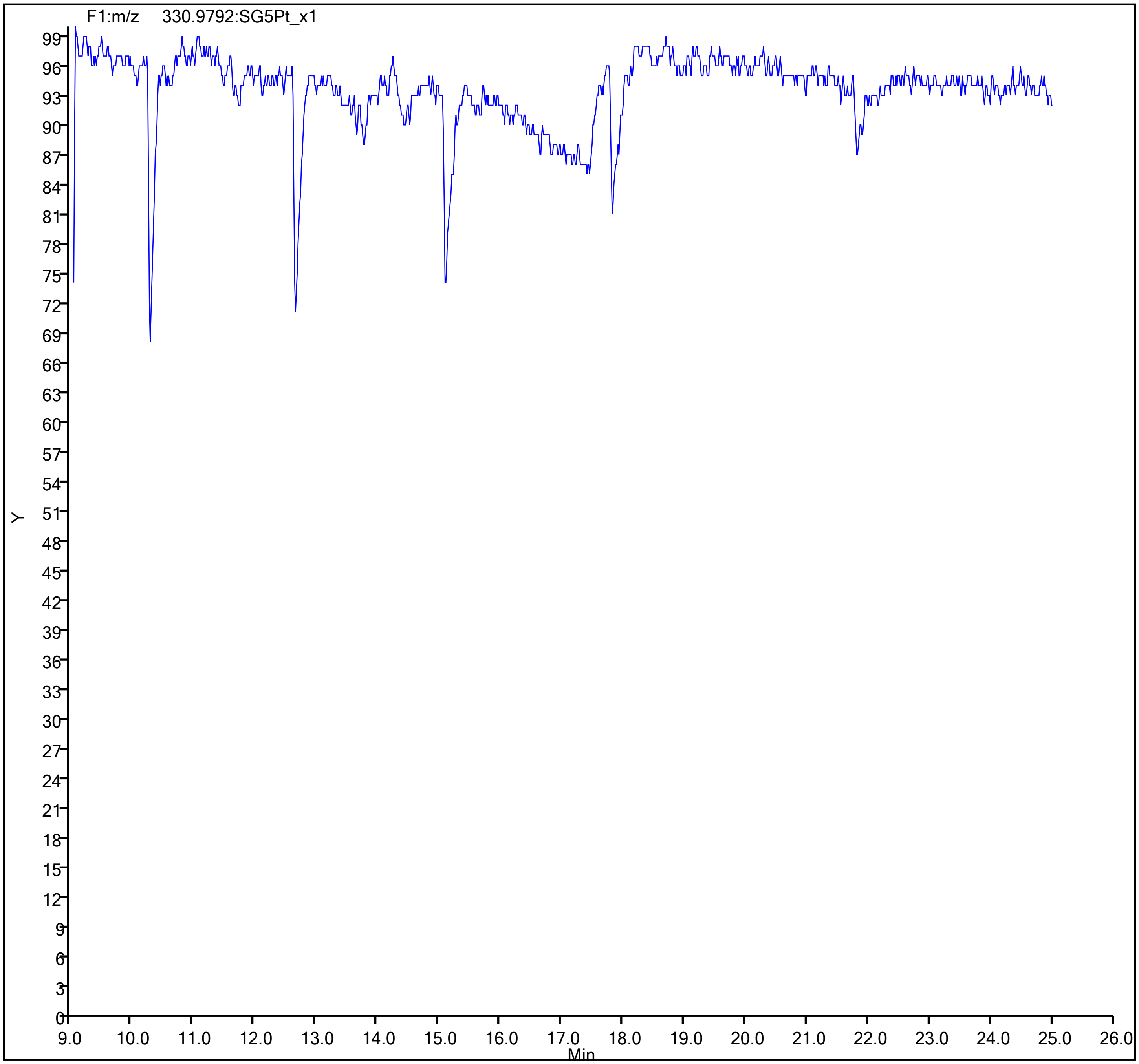

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG No.:

Client Sample ID: 11215702-Initial DL

Lab Sample ID: 320-62886-1 DL

Matrix: Water

Lab File ID: 30jl20dfs1_12.d

Analysis Method: 1613B

Date Collected: 07/20/2020 10:00

Extract. Method: 1613B

Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1054.4(mL)

Date Analyzed: 07/30/2020 20:05

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 5

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 399843

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	3500		47	18

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		25-164
89059-46-1	13C-2,3,7,8-TCDF	64		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	61		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	62		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	69		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	63		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	64		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	65		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	76		26-138
114423-97-1	13C-OCDD	72		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	92		35-197

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Lims ID: 320-62886-A-1-A
Client ID: 11215702-Initial
Sample Type: Client
Inject. Date: 30-Jul-2020 20:05:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 5.0000
Sample Info: 320-62886-A-1-A (5X)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Aug-2020 09:25:43 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1027

First Level Reviewer: shardaa Date: 31-Jul-2020 10:22:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.764	517989	0.77	5.4E+04	20.0	20.0				M
D 13C-2,3,7,8-TCDF	20.725	495342	0.74	1.4977	12.8	12.8	0.2607	0.2607	63.85	
2,3,7,8-TCDF	20.768	3298529	0.80	1.1312	117.7	117.7	0.4996	0.4996		
A Non-2,3,7,8-sub-TCDF	20.170	2545146	0.77	1.1312	91.0	90.8	0.4996	50.8		RQ
S Total TCDF					208.7	208.6	0.4996	0.4996		RQ
D 13C-2,3,7,8-TCDD	22.134	331364	0.87	1.0367	12.3	12.3	0.2204	0.2204	61.70	
2,3,7,8-TCDD	22.177	722922	0.78	1.1849	36.8	36.8	0.1858	0.1858		
$ 37Cl4-2,3,7,8-TCDD	22.185	214513		1.1208	7.390	7.390	0.0182	0.0182	92.38	
A Non-2,3,7,8-sub-TCDD	21.037	59067	0.71	1.1849	3.009	3.009	0.1858	3.009		
S Total TCDD					39.8	39.8	0.1858	0.1858		
D 13C-1,2,3,7,8-PeCDF	27.659	421518	1.63	1.3057	12.5	12.5	0.0624	0.0624	62.32	
1,2,3,7,8-PeCDF	27.692	130074	1.64	1.1060	5.580	5.580	0.0721	0.0721		
D 13C-2,3,4,7,8-PeCDF	29.241	549984	1.63	1.5420	13.8	13.8	0.0528	0.0528	68.86	
2,3,4,7,8-PeCDF	29.275	65840	1.55	0.9067	2.641	2.641	0.0780	0.0780		
A F1 PeCDFs	24.929						0.0118	0.0447		RQU
A Non-2,3,7,8-sub-PeCDF	28.532	112205	1.68	1.0063	4.591	4.591	0.0745	2.254		
S Total PeCDF					12.8	12.8	0.0750	0.0750		
D 13C-1,2,3,7,8-PeCDD	30.092	263558	1.46	0.8294	12.3	12.3	0.0195	0.0195	61.35	
1,2,3,7,8-PeCDD	30.126	5756	1.57	1.1062	0.3949	0.3949	0.0559	0.0559		M
A Non-2,3,7,8-sub-PeCDD	28.879						0.0559	0.0559		
S Total PeCDD					0.3949	0.3949	0.0559	0.0559		
D 13C-1,2,3,4,7,8-HxCDF	35.226	533410	0.52	1.4619	14.5	14.5	0.0537	0.0537	72.60	
1,2,3,4,7,8-HxCDF	35.243	409980	1.26	1.0087	15.2	15.2	0.0696	0.0696		
D 13C-1,2,3,6,7,8-HxCDF	35.369	408179	0.54	1.2866	12.6	12.6	0.0611	0.0611	63.12	
1,2,3,6,7,8-HxCDF	35.395	181547	1.21	1.2432	7.155	7.155	0.0758	0.0758		
D 13C-2,3,4,6,7,8-HxCDF	36.169	391180	0.57	1.1988	13.0	13.0	0.0655	0.0655	64.93	
2,3,4,6,7,8-HxCDF	36.178	18997	1.26	1.2736	0.7626	0.7626	0.0677	0.0677		
D 13C-1,2,3,7,8,9-HxCDF	37.028	341579	0.53	1.0687	12.7	12.7	0.0735	0.0735	63.60	
1,2,3,7,8,9-HxCDF	37.028	5351	1.24	1.2882	0.2768	0.2432	0.0727	0.0727		RQ
A Non-2,3,7,8-sub-HxCDF	35.386	57082	1.24	1.2034	2.306	2.266	0.0705	1.143		RQ
S Total HxCDF					25.7	25.7	0.0714	0.0714		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.835	502591	1.30	5E+04	20.0	20.0				
D 13C-1,2,3,4,7,8-HxCDD	36.363	356315	1.36	1.1046	12.8	12.8	0.0650	0.0650	64.18	
1,2,3,4,7,8-HxCDD	36.472						0.0155	0.0155		RQU
D 13C-1,2,3,6,7,8-HxCDD	36.481	311027	1.24	0.9871	12.5	12.5	0.0727	0.0727	62.69	
1,2,3,6,7,8-HxCDD	36.472						0.0175	0.0175		RQU
1,2,3,7,8,9-HxCDD	36.861						0.0155	0.0155		
A Non-2,3,7,8-sub-HxCDD	35.714	3487	1.05	1.0237	0.2042	0.2042	0.0160	0.2042		
S Total HxCDD					0.2042	0.2042	0.0162	0.0162		
D 13C-1,2,3,4,6,7,8-HpCDF	38.777	298805	0.46	0.9035	13.2	13.2	0.1407	0.1407	65.80	
1,2,3,4,6,7,8-HpCDF	38.785	243947	1.03	1.5957	10.2	10.2	0.0599	0.0599		
D 13C-1,2,3,4,7,8,9-HpCDF	40.007	398939	0.44	1.0480	15.1	15.1	0.1213	0.1213	75.74	
1,2,3,4,7,8,9-HpCDF	40.007	54593	1.07	1.1693	2.341	2.341	0.0609	0.0609		
A Non-2,3,7,8-sub-HpCDF	39.424	41345	1.04	1.3825	1.714	1.714	0.0591	1.714		
S Total HpCDF					14.3	14.3	0.0604	0.0604		
D 13C-1,2,3,4,6,7,8-HpCDD	39.696	296411	0.98	0.8875	13.3	13.3	0.0834	0.0834	66.45	
1,2,3,4,6,7,8-HpCDD	39.712	32826	1.10	1.1150	1.986	1.986	0.0390	0.0390		M
A Non-2,3,7,8-sub-HpCDD	39.555	33233	1.03	1.1150	2.011	2.011	0.0390	2.011		M
S Total HpCDD					3.997	3.997	0.0390	0.0390		
D 13C-OCDD	42.179	457550	0.89	0.6297	28.9	28.9	0.0961	0.0961	72.28	
OCDF	42.280	102573	0.87	1.4809	6.055	6.055	0.0693	0.0693		
OCDD	42.195	413392	0.93	1.1948	30.2	30.2	0.0827	0.0827		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Lims ID: 320-62886-A-1-A
Client ID: 11215702-Initial
Sample Type: Client
Inject. Date: 30-Jul-2020 20:05:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 5.0000
Sample Info: 320-62886-A-1-A (5X)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Aug-2020 09:25:43 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1027

First Level Reviewer: shardaa Date: 31-Jul-2020 10:22:28

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											M
331.9368	21.764	21.727	2		224743	34330	302	755	114		M
333.9338	21.764	21.727	2		293246	45923	65	162	707	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.725	20.705	1	0.952	209868	31928	492	1230	65		
317.9389	20.733	20.705	2	0.953	285474	41677	135	337	309	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.768	20.739	2	1.002	1465369	202494	314	785	645		
305.8987	20.759	20.739	1	1.002	1833160	248937	518	1295	481	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	18.122	20.170	-123	0.874	55515	9395	314	785	30		
305.8987	18.122	20.170	-123	0.874	63169	10914	518	1295	21	0.88(0.65-0.89)	
303.9016	18.620	20.170	-93	0.898	70092	10291	314	785	33		
305.8987	18.620	20.170	-93	0.898	84858	12967	518	1295	25	0.83(0.65-0.89)	
303.9016	19.076	20.170	-66	0.920	52492	7004	314	785	22		
305.8987	19.067	20.170	-66	0.920	73593	8981	518	1295	17	0.71(0.65-0.89)	
303.9016	19.479	20.170	-41	0.940	73651	11664	314	785	37		
305.8987	19.470	20.170	-42	0.939	85340	12405	518	1295	24	0.86(0.65-0.89)	
303.9016	20.012	20.170	-9	0.966	629222	97773	314	785	311		
305.8987	20.012	20.170	-9	0.966	794370	125917	518	1295	243	0.79(0.65-0.89)	
303.9016	20.458	20.170	17	0.987	33315	5095	314	785	16		
305.8987	20.433	20.170	16	0.986	40596	6103	518	1295	12	0.82(0.65-0.89)	
303.9016	21.592	20.170	85	1.042	93407	13593	314	785	43		
305.8987	21.592	20.170	85	1.042	124177	17214	518	1295	33	0.75(0.65-0.89)	
303.9016	22.065	20.170	113	1.065	16128	2591	314	785	8		
305.8987	22.074	20.170	114	1.065	25965	3490	518	1295	7	0.62(0.65-0.89)	
	Empc Correction				20945	3364	518	1295	6		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	23.928	20.170	225	1.155	105158	22638	314	785	72		
305.8987	23.937	20.170	226	1.155	129118	27460	518	1295	53	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.134	22.122	1	1.017	154152	22595	302	755	75		
333.9338	22.151	22.122	2	1.018	177212	24360	65	162	375	0.87(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.177	22.156	1	1.002	317579	41617	140	350	297		
321.8936	22.194	22.156	2	1.003	405343	54377	67	167	812	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.185	22.156	2	1.019	214513	30610	33	82	928		
A Non-2,3,7,8-sub-TCDD											
319.8965	22.915	21.037	112	1.035	24558	3438	140	350	25		
321.8936	22.898	21.037	111	1.035	34509	4737	67	167	71	0.71(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.659	27.647	1	1.271	261453	46215	76	190	608		
353.8970	27.659	27.647	1	1.271	160065	28308	55	137	515	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.692	27.672	1	1.001	80885	14491	52	130	279		
341.8567	27.692	27.672	1	1.001	49189	7645	67	167	114	1.64(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.241	29.222	1	1.344	340601	51537	76	190	678		
353.8970	29.233	29.222	1	1.343	209383	32448	55	137	590	1.63(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.275	29.247	2	1.001	40039	6781	52	130	130		
341.8567	29.275	29.247	2	1.001	25801	4184	67	167	62	1.55(1.32-1.78)	
A F1 PeCDFs											U
339.8597	24.383	24.929	-33	0.882	796	165	1	2	165		
	Empc Correction				664	392	1	2	392		
341.8567	24.375	24.929	-33	0.881	429	253	18	45	14	1.86(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.160	28.532	-142	0.946	35295	6468	52	130	124		
341.8567	26.143	28.532	-143	0.945	19795	3583	67	167	53	1.78(1.32-1.78)	
339.8597	27.583	28.532	-57	0.997	5139	1215	52	130	23		
341.8567	27.549	28.532	-59	0.996	3785	847	67	167	13	1.36(1.32-1.78)	
339.8597	28.290	28.532	-14	1.023	20040	3157	52	130	61		
341.8567	28.307	28.532	-13	1.023	12453	2360	67	167	35	1.61(1.32-1.78)	
339.8597	29.646	28.532	67	1.072	9858	1440	52	130	28		
341.8567	29.604	28.532	64	1.070	5840	820	67	167	12	1.69(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.092	30.064	2	1.383	156406	21780	17	42	1281		
369.8919	30.075	30.064	1	1.382	107152	15434	9	22	1715	1.46(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	30.126	30.090	2	1.001	3515	555	42	105	13		
357.8516	30.084	30.090	0	1.000	2241	486	4	10	122	1.57(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.879						42	105			
357.8516	28.879						4	10			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.226	35.223	0	0.956	182894	42693	63	157	678		
385.8610	35.234	35.223	1	0.957	350516	80454	146	365	551	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.243	35.240	0	1.000	228645	53912	111	277	486		
375.8178	35.243	35.240	0	1.000	181335	43079	62	155	695	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.369	35.383	-1	0.960	143746	34468	63	157	547		
385.8610	35.378	35.383	0	0.960	264433	57201	146	365	392	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.395	35.400	0	1.001	99511	22308	111	277	201		
375.8178	35.395	35.400	0	1.001	82036	16522	62	155	266	1.21(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.169	36.167	0	0.982	142155	36327	63	157	577		
385.8610	36.169	36.167	0	0.982	249025	63882	146	365	438	0.57(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.178	36.184	0	1.000	10591	2639	111	277	24		
375.8178	36.186	36.184	0	1.000	8406	2221	62	155	36	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.028	37.026	0	1.005	118194	32437	63	157	515		
385.8610	37.028	37.026	0	1.005	223385	59792	146	365	410	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQ
373.8208	37.028	37.043	-1	1.000	3702	995	111	277	9		
	Empc Correction				2962	978	111	277	9		
375.8178	37.045	37.043	0	1.000	2389	789	62	155	13	1.55(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	33.836	35.386	-93	0.961	16423	3544	111	277	32		
375.8178	33.819	35.386	-94	0.960	12367	2353	62	155	38	1.33(1.05-1.43)	
373.8208	34.653	35.386	-44	0.984	5060	1166	111	277	11		
375.8178	34.636	35.386	-45	0.983	3947	1010	62	155	16	1.28(1.05-1.43)	
373.8208	36.068	35.386	41	1.024	3631	982	111	277	9		
	Empc Correction				2633	616	111	277	6		
375.8178	36.068	35.386	41	1.024	2124	497	62	155	8	1.71(1.05-1.43)	
373.8208	37.146	35.386	105	1.055	8275	2312	111	277	21		
375.8178	37.138	35.386	105	1.054	6253	1820	62	155	29	1.32(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.835	36.833	0		284080	76782	94	235	817		
403.8529	36.826	36.833	0		218511	56111	97	242	578	1.30(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.363	36.369	0	0.987	205436	62929	94	235	669		
403.8529	36.363	36.369	0	0.987	150879	43412	97	242	448	1.36(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDD											RQU
389.8158	36.378						7	17			
391.8127	36.378						24	60			
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.481	36.479	0	0.990	172267	44727	94	235	476		
403.8529	36.481	36.479	0	0.990	138760	36865	97	242	380	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQU
389.8158	36.496						7	17			
391.8127	36.496						24	60			
1,2,3,7,8,9-HxCDD											
389.8158	36.849						7	17			
391.8127	36.849						24	60			
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.577	35.714	-68	0.948	1782	533	7	17	76		
391.8127	34.552	35.714	-70	0.947	1705	349	24	60	15	1.05(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.777	38.781	0	1.053	94199	31326	132	330	237		
419.8220	38.777	38.781	0	1.053	204606	64851	206	515	315	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.785	38.798	-1	1.000	123947	39307	100	250	393		
409.7788	38.785	38.798	-1	1.000	120000	39595	84	210	471	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.007	40.011	0	1.086	122625	40676	132	330	308		
419.8220	40.007	40.011	0	1.086	276314	88422	206	515	429	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.007	40.020	-1	1.000	28274	10081	100	250	101		
409.7788	40.007	40.020	-1	1.000	26319	8707	84	210	104	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.139	39.424	-17	1.009	21044	7121	100	250	71		
409.7788	39.139	39.424	-17	1.009	20301	6419	84	210	76	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.696	39.708	-1	1.078	146759	47436	120	300	395		
437.8140	39.704	39.708	0	1.078	149652	49110	77	192	638	0.98(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	39.712	39.716	0	1.000	17219	5823	52	130	112		M
425.7737	39.704	39.716	-1	1.000	15607	5530	32	80	173	1.10(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											M
423.7767	39.080	39.555	-28	0.985	16833	5598	52	130	108		M
425.7737	39.080	39.555	-28	0.985	16400	5414	32	80	169	1.03(0.88-1.20)	M
13C-OCDD											
469.7780	42.179	42.187	-1	1.145	215361	63312	70	175	904		
471.7750	42.187	42.187	0	1.145	242189	75104	91	227	825	0.89(0.76-1.02)	
OCDF											
441.7428	42.280	42.297	-1	1.002	47625	14680	36	90	408		
443.7399	42.280	42.297	-1	1.002	54948	16693	106	265	157	0.87(0.76-1.02)	

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											M
457.7377	42.195	42.204	-1	1.000	198706	60603	58	145	1045		
459.7348	42.195	42.204	-1	1.000	214686	66238	79	197	838	0.93(0.76-1.02)	M

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected

Report Date: 03-Aug-2020 09:25:44　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 20.170

Initial Calibration RRF　　IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	495342	73605

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		20.000	495342	73605

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.122	55515	9395	63169	10914	4.24	0.88	
18.620	70092	10291	84858	12967	5.53	0.83	
19.076	52492	7004	73593	8981	4.50	0.71	
19.479	73651	11664	85340	12405	5.67	0.86	
20.012	629222	97773	794370	125917	50.8	0.79	
20.458	33315	5095	40596	6103	2.64	0.82	
21.592	93407	13593	124177	17214	7.77	0.75	
22.065	16128	2591	25965	3490	1.50	0.62	RQ
22.065	16128	2591	20945	3364	1.32		Empc Correction
23.928	105158	22638	129118	27460	8.36	0.81	
Signal Totals:							
	1128980	180044	1416166	225325			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2550166	405495				0.79	RQ
	2545146	405369					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 91.020 = (2550166 * 20.000) / (495342 * 1.131)
Empc Amount: 90.840 = (2545146 * 20.000) / (495342 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDD, RT: 21.037

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	331364	46955

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		20.000	331364	46955

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
22.915	24558	3438	34509	4737	3.01	0.71	
Signal Totals:							
	24558	3438	34509	4737			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59067	8175				0.71	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 3.009 = (59067 * 20.000) / (331364 * 1.185)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

F1 PeCDFs, RT: 24.929

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	421518	74523
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	549984	83985

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		20.000	485751	79254

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.383	796	165	429	253	0.0501	1.86	RQ
24.383	664	392	429	253	0.0447		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 28.532

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	421518	74523
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	549984	83985

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		20.000	485751	79254

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.160	35295	6468	19795	3583	2.25	1.78	
27.583	5139	1215	3785	847	0.3651	1.36	
28.290	20040	3157	12453	2360	1.33	1.61	
29.646	9858	1440	5840	820	0.6423	1.69	
Signal Totals:							
	70332	12280	41873	7610			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	112205	19890				1.68	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.591 = (112205 * 20.000) / (485751 * 1.006)

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDF, RT: 35.386

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	533410	123147
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	408179	91669
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	391180	100209
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	341579	92229

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		20.000	418587	101813

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.836	16423	3544	12367	2353	1.14	1.33	
34.653	5060	1166	3947	1010	0.3576	1.28	
36.068	3631	982	2124	497	0.2285	1.71	RQ
36.068	2633	616	2124	497	0.1889		Empc Correction
37.146	8275	2312	6253	1820	0.5768	1.32	
Signal Totals:							
	32391	7638	24691	5680			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	58080	13684				1.35	RQ
	57082	13318					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.306 = (58080 * 20.000) / (418587 * 1.203)
Empc Amount: 2.266 = (57082 * 20.000) / (418587 * 1.203)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDD, RT: 35.714

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	356315	106341
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	311027	81592
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		20.000	333671	93966

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.577	1782	533	1705	349	0.2042	1.05	
Signal Totals:							
	1782	533	1705	349			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3487	882				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2042 = (3487 * 20.000) / (333671 * 1.024)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDF, RT: 39.424

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	298805	96177
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	398939	129098

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		20.000	348872	112637

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.139	21044	7121	20301	6419	1.71	1.04	
Signal Totals:							
	21044	7121	20301	6419			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41345	13540				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.714 = (41345 * 20.000) / (348872 * 1.383)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Lims ID:	320-62886-A-1-A		
Client ID:	11215702-Initial		
Inject. Date:	30-Jul-2020 20:05:00	Dil. Factor:	5.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDD, RT: 39.555

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.115	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	296411	96546

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.115		20.000	296411	96546

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.080	16833	5598	16400	5414	2.01	1.03	M
Signal Totals:							
	16833	5598	16400	5414			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	33233	11012				1.03	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.011 = (33233 * 20.000) / (296411 * 1.115)

QC Flag Legend

Review Flags
M - Manually Integrated

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Injection Date: 30-Jul-2020 20:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

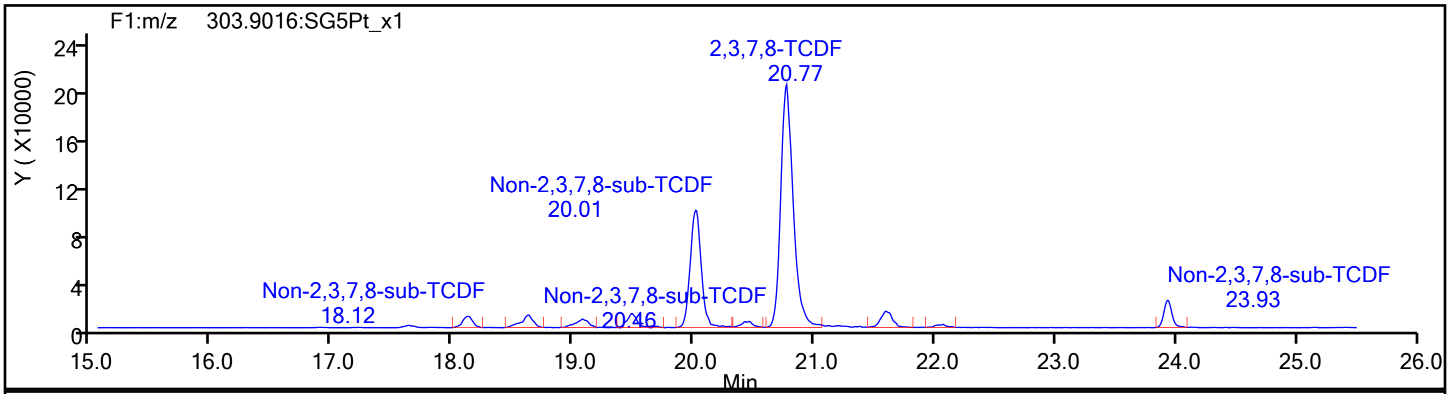

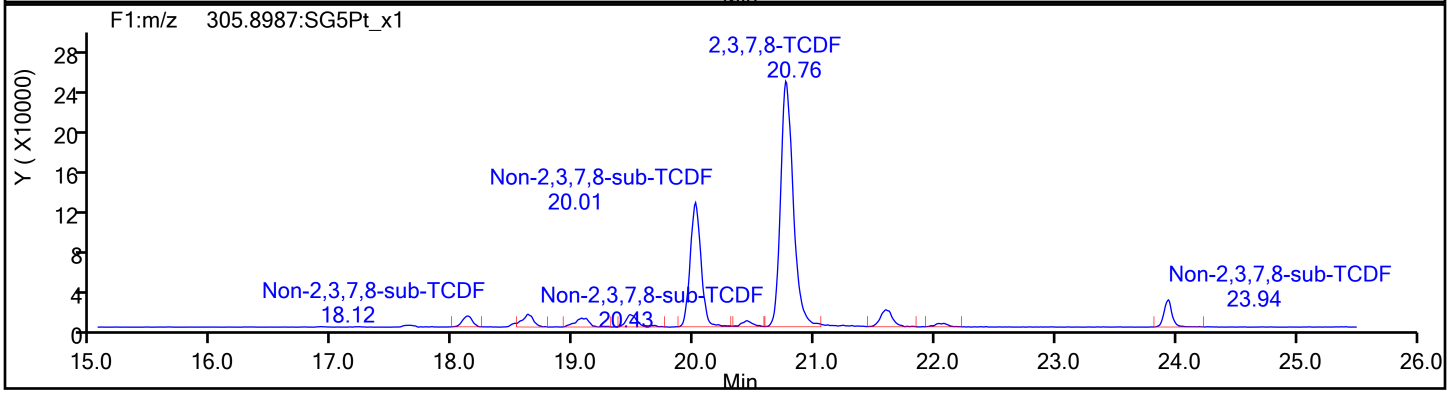

TCDF Standards

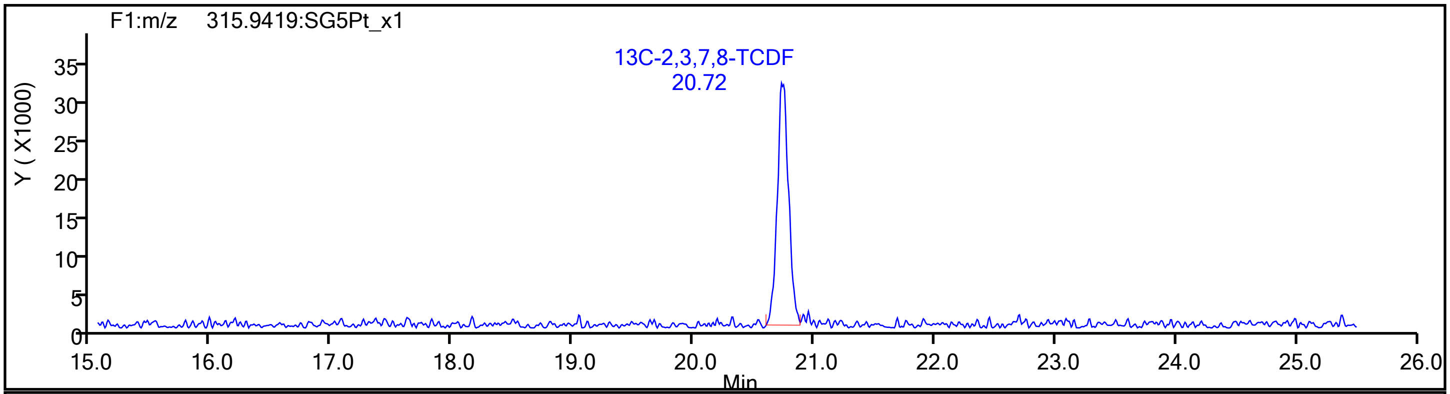

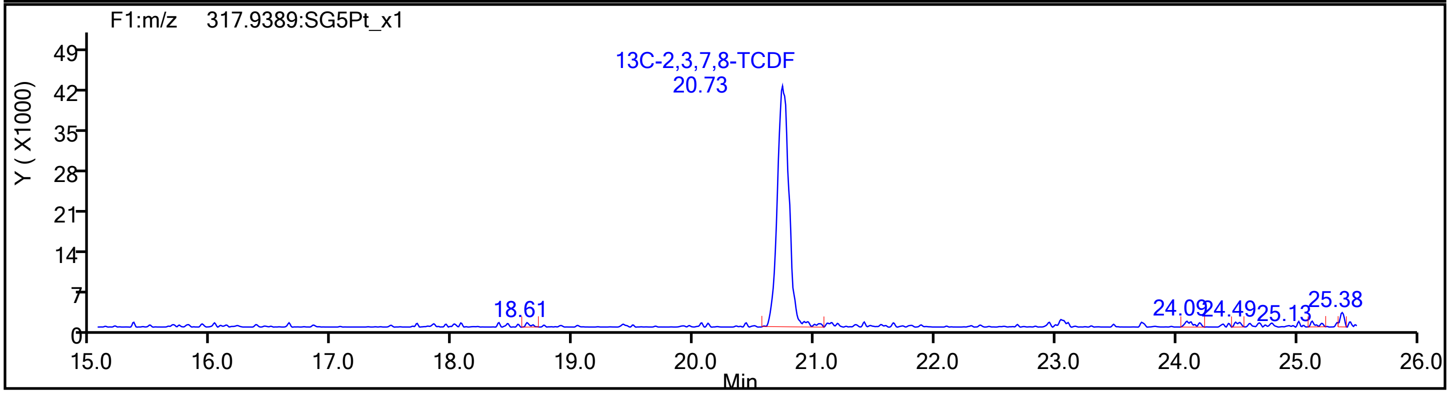

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d

Injection Date: 30-Jul-2020 20:05:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 399843 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

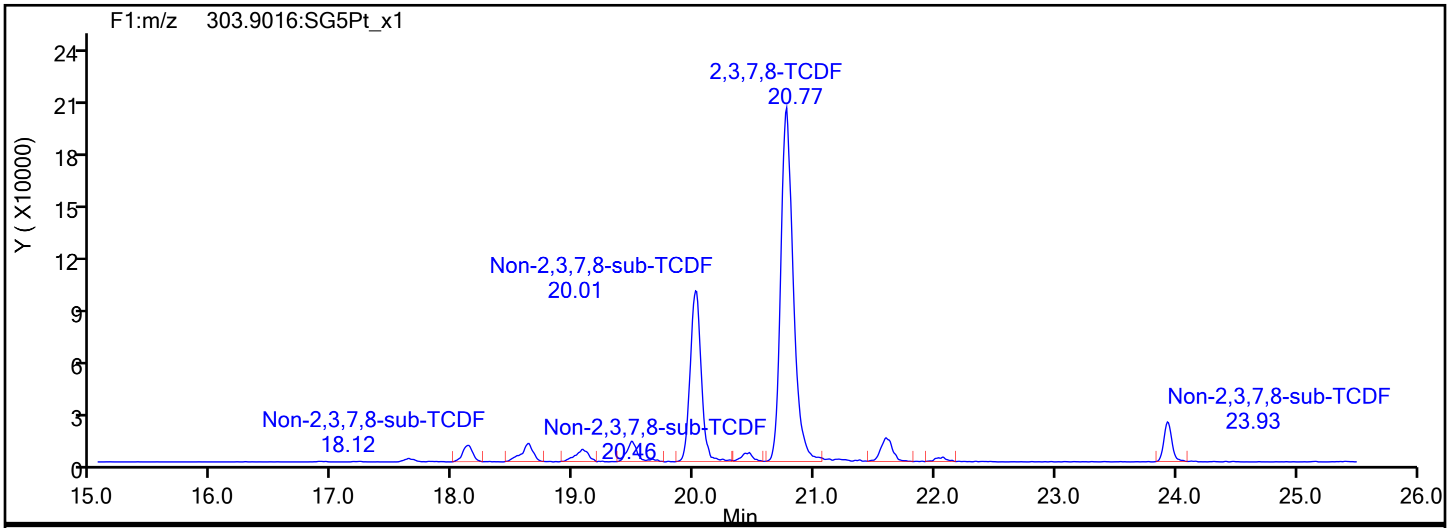

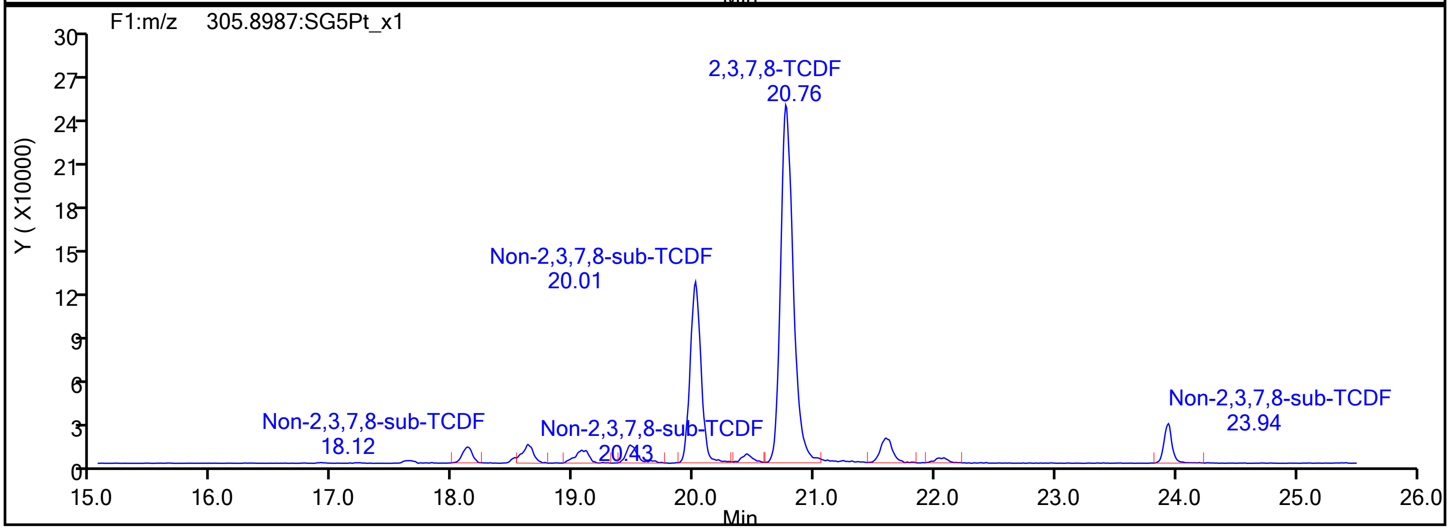

TCDF Interference Mass

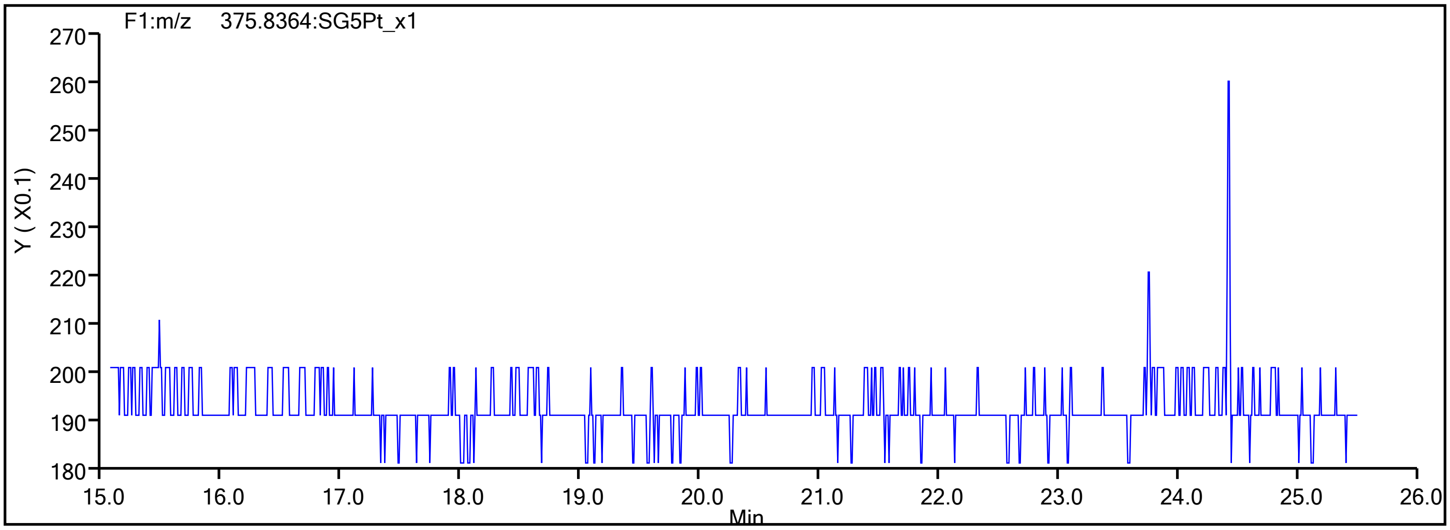

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Injection Date: 30-Jul-2020 20:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

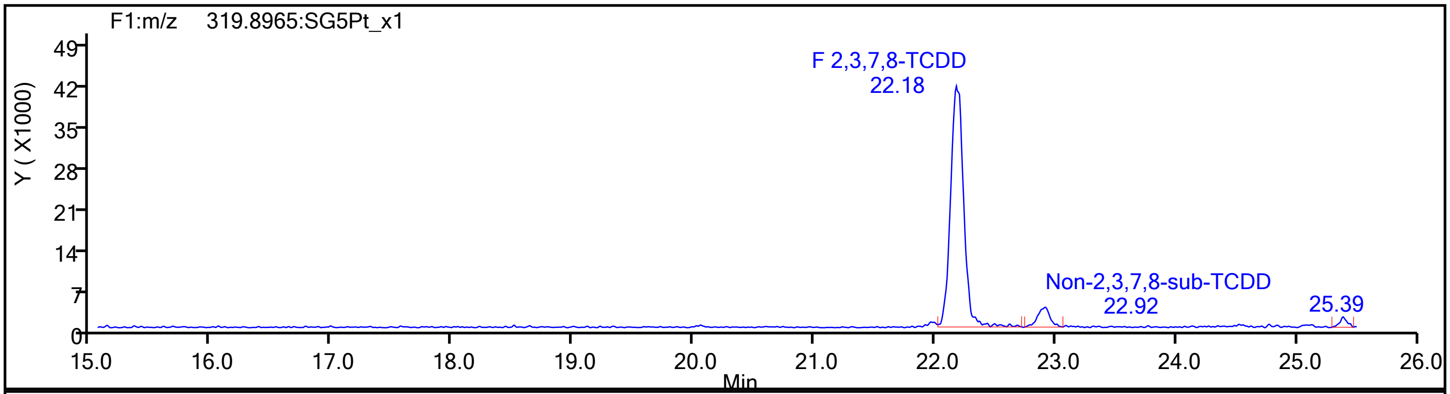

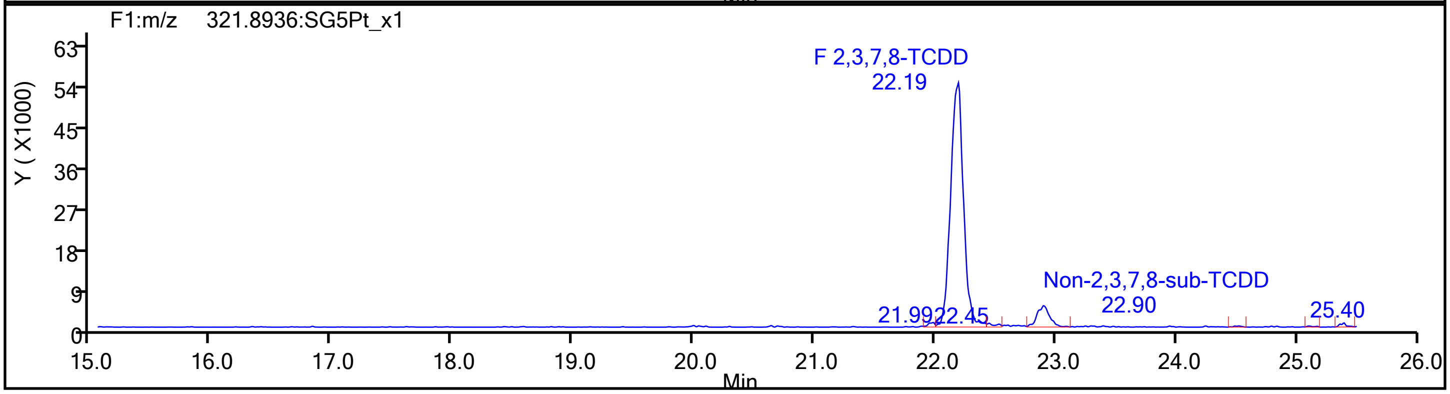

TCDD Standards

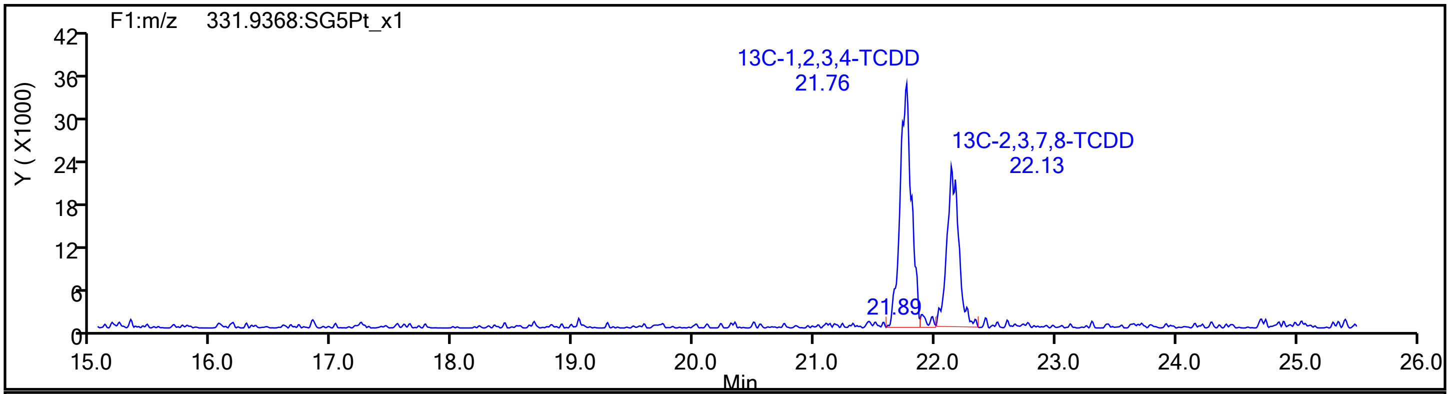

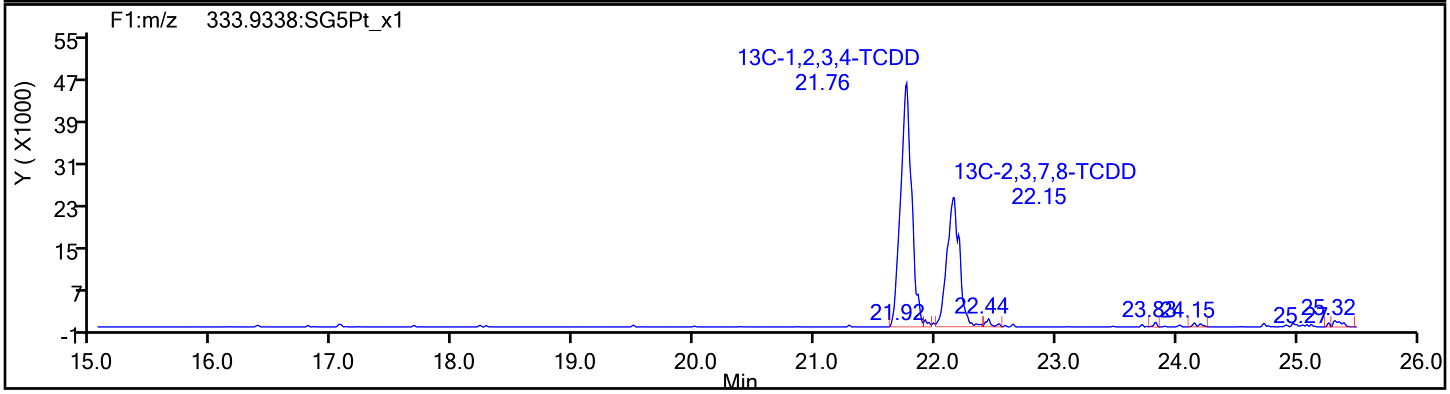

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Injection Date: 30-Jul-2020 20:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

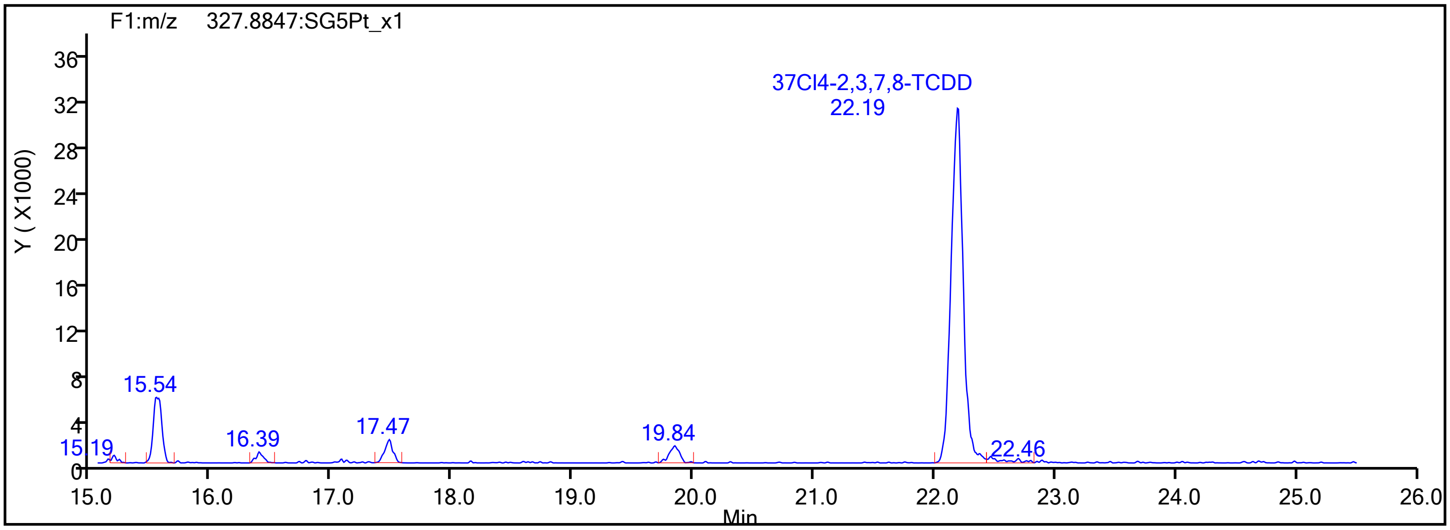

37Cl4-TCDD Standards

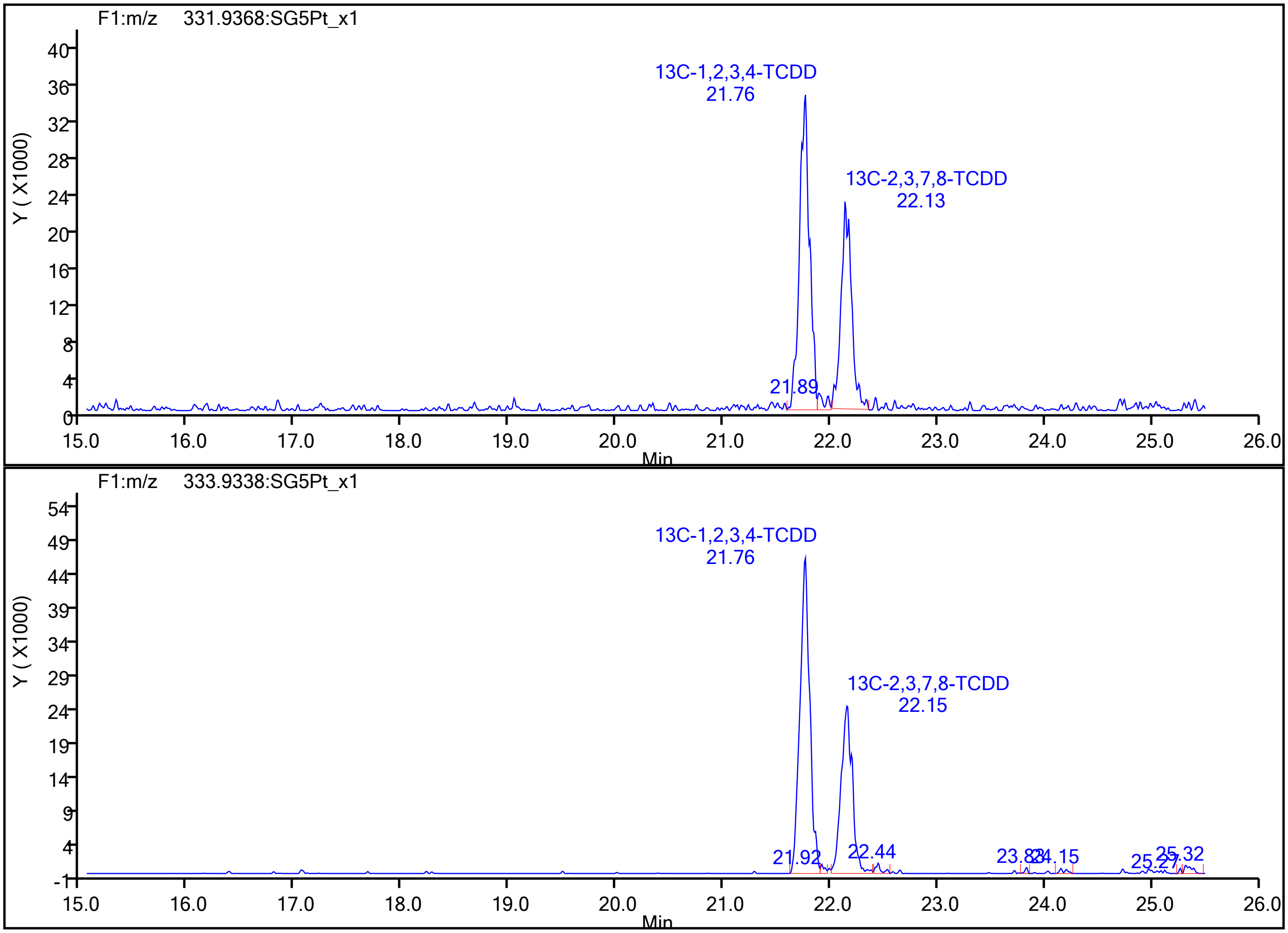

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Injection Date:	30-Jul-2020 20:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

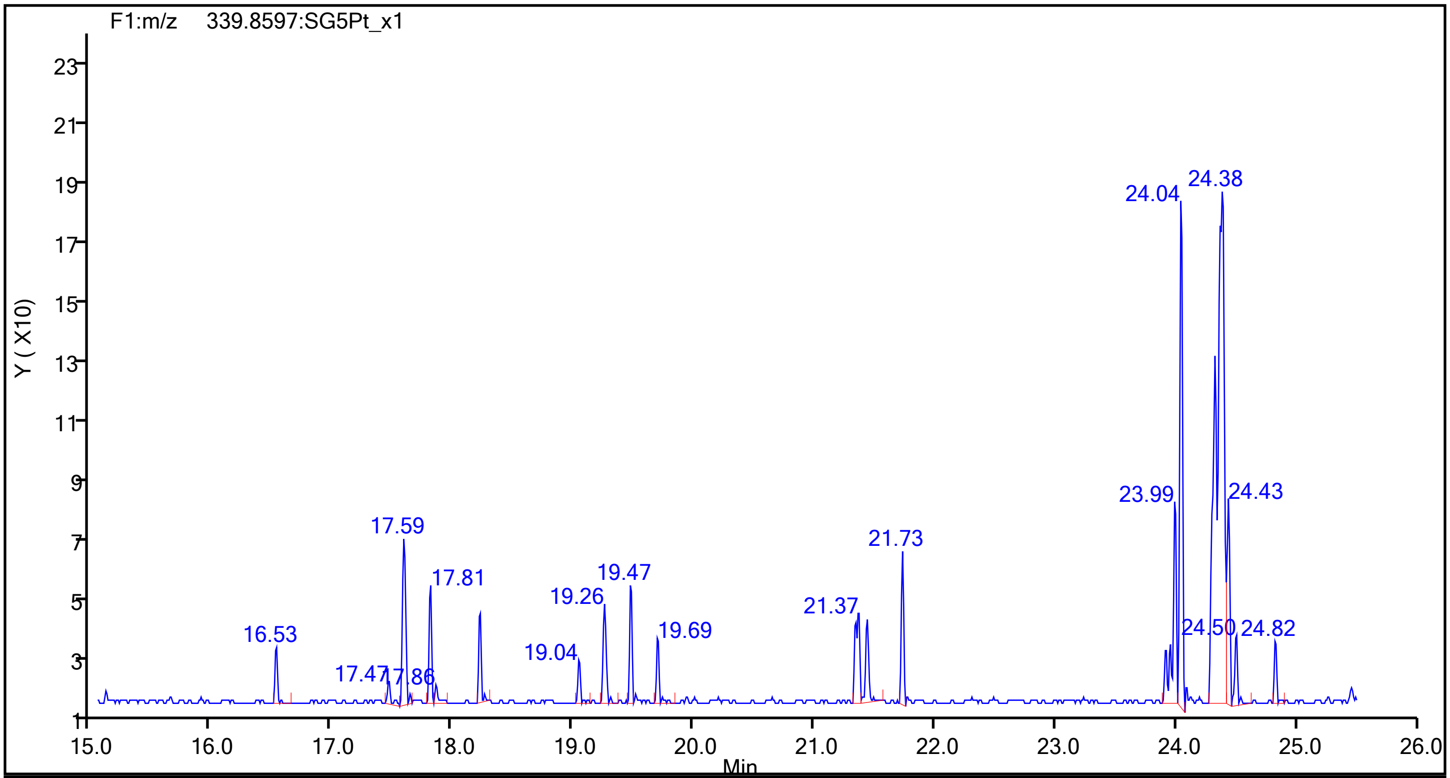

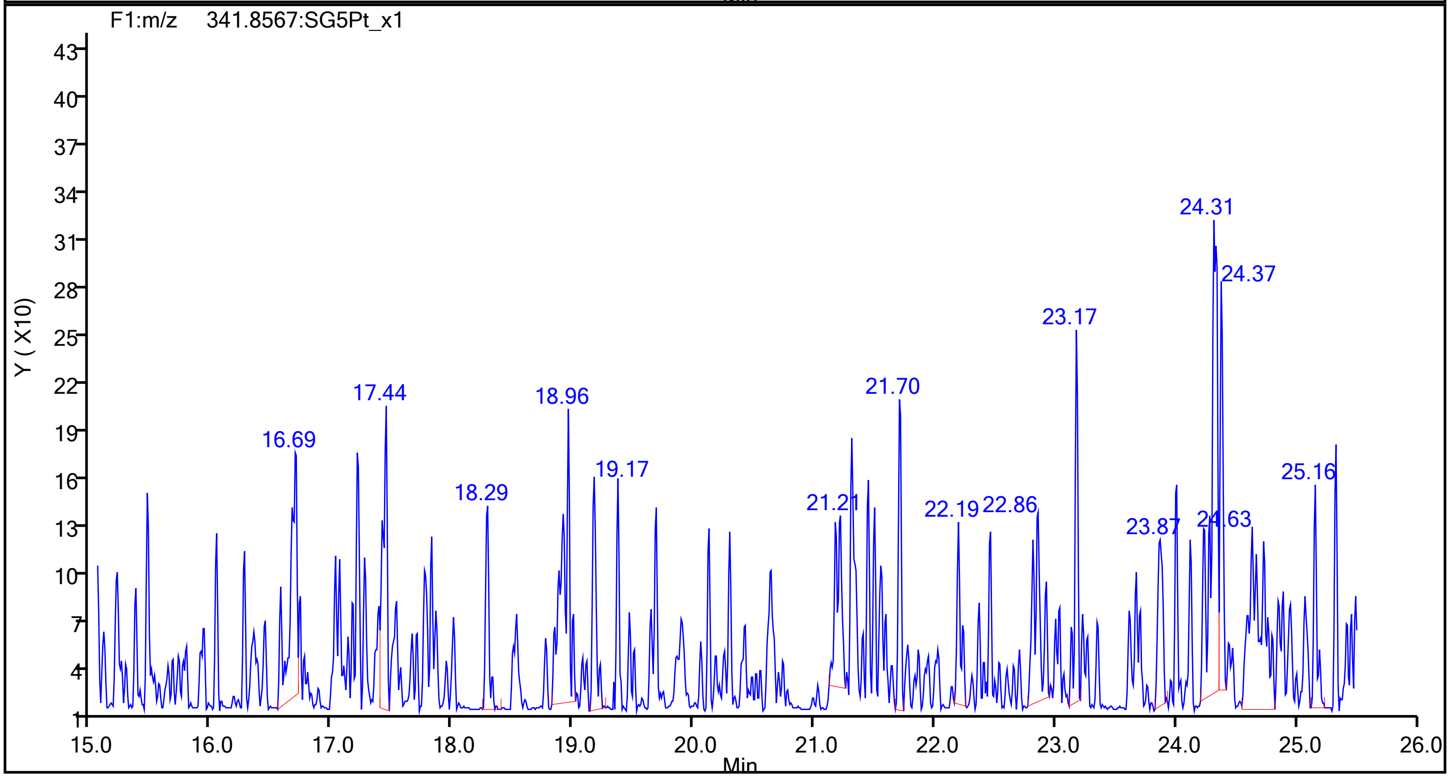

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Injection Date:	30-Jul-2020 20:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

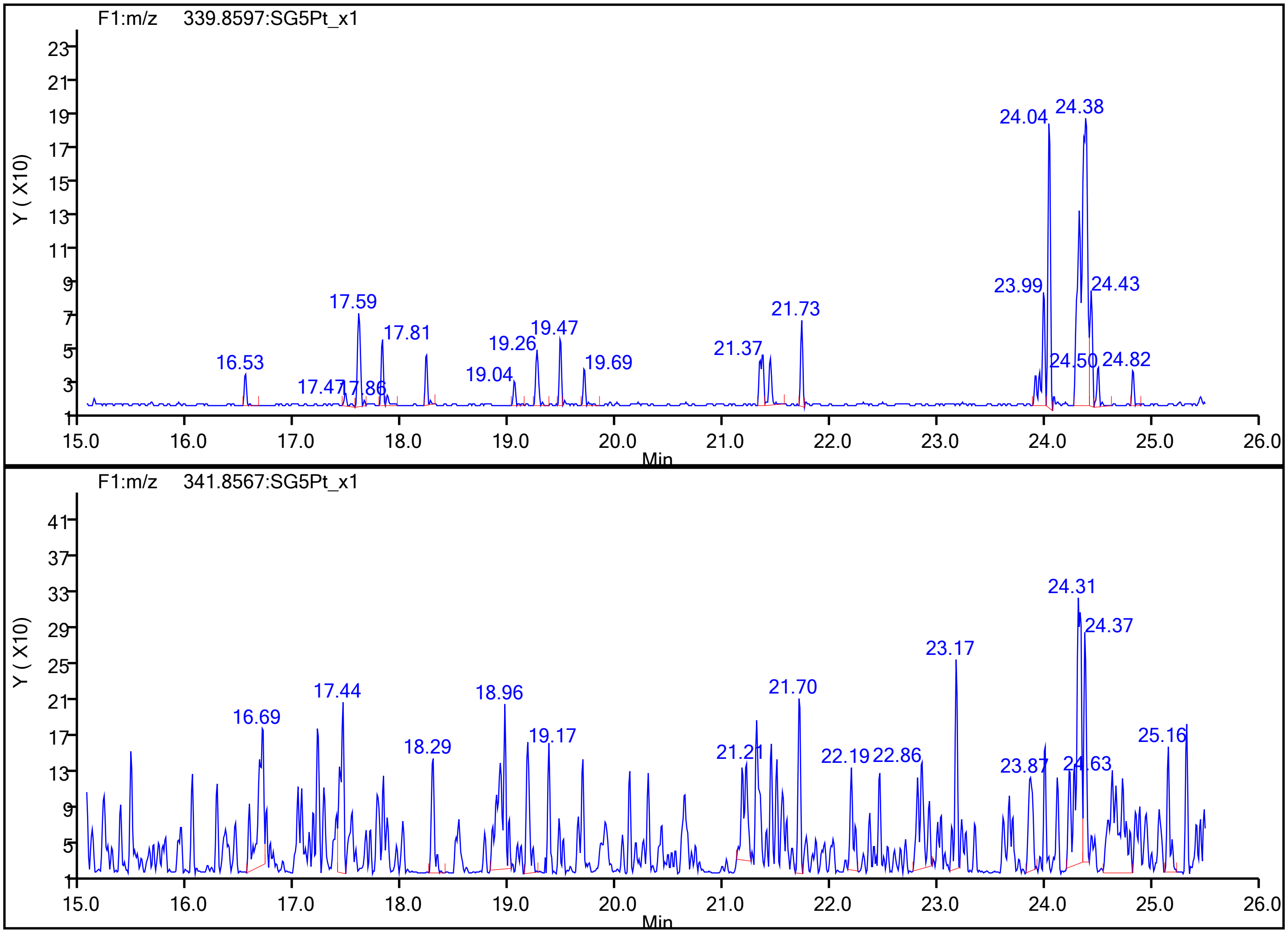

F1 PeCDFs Interference Mass

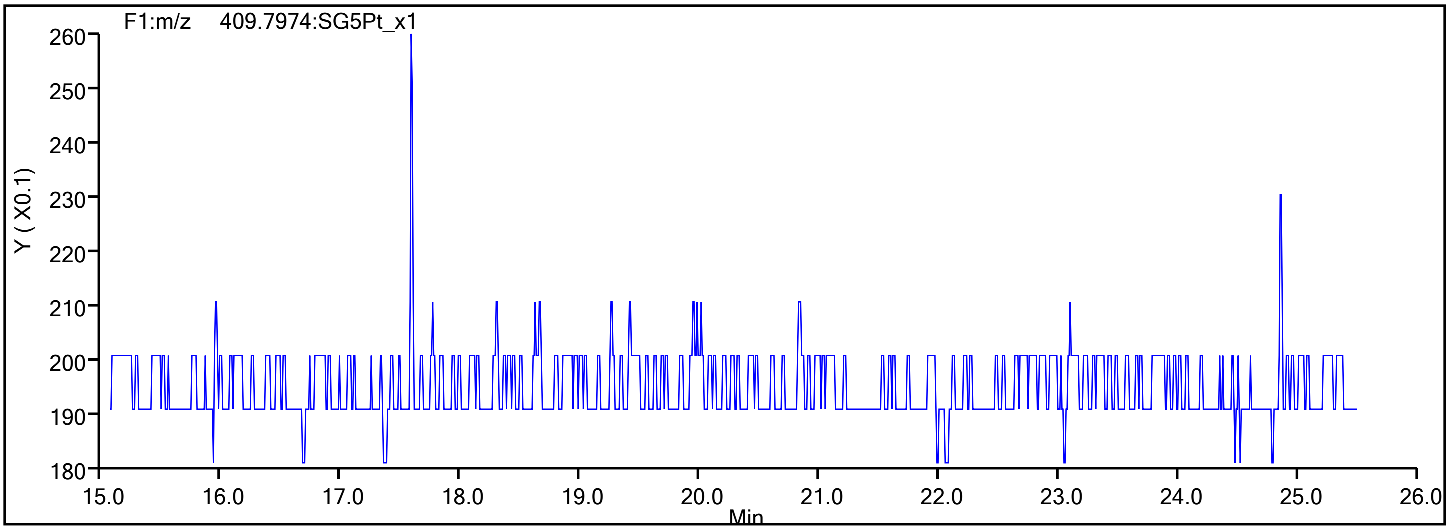

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d

Injection Date: 30-Jul-2020 20:05:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 399843

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

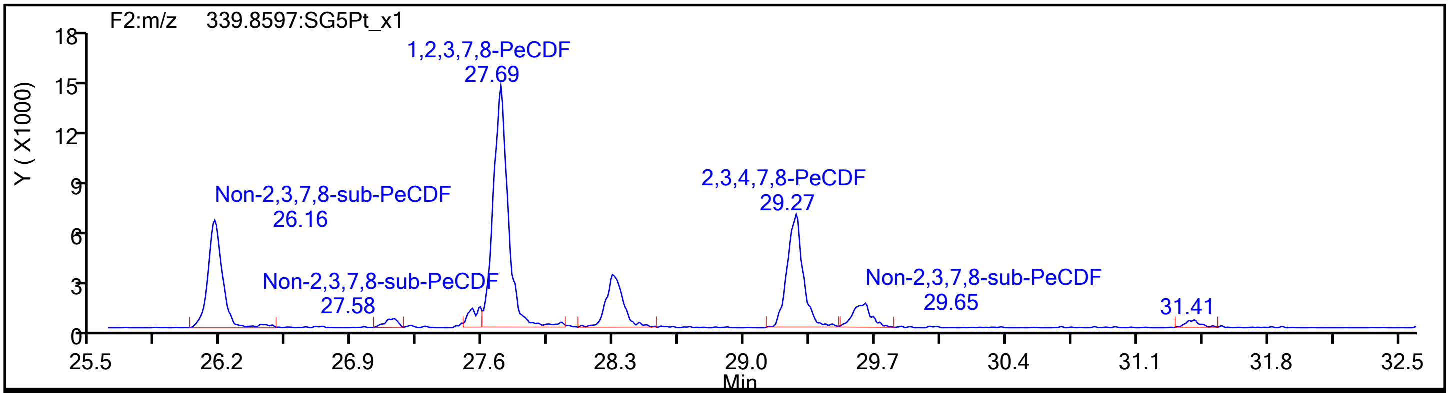

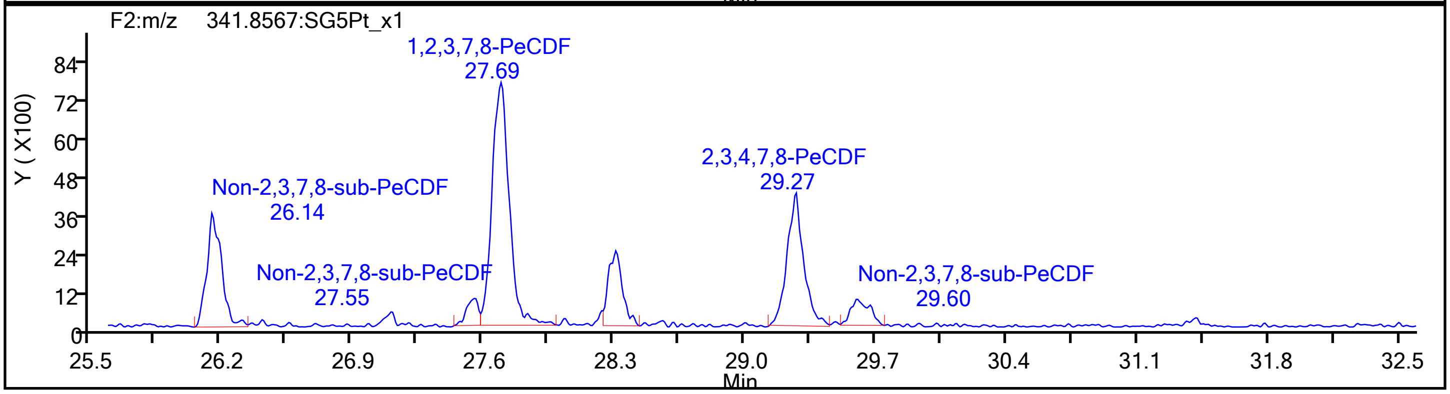

PeCDF Standards

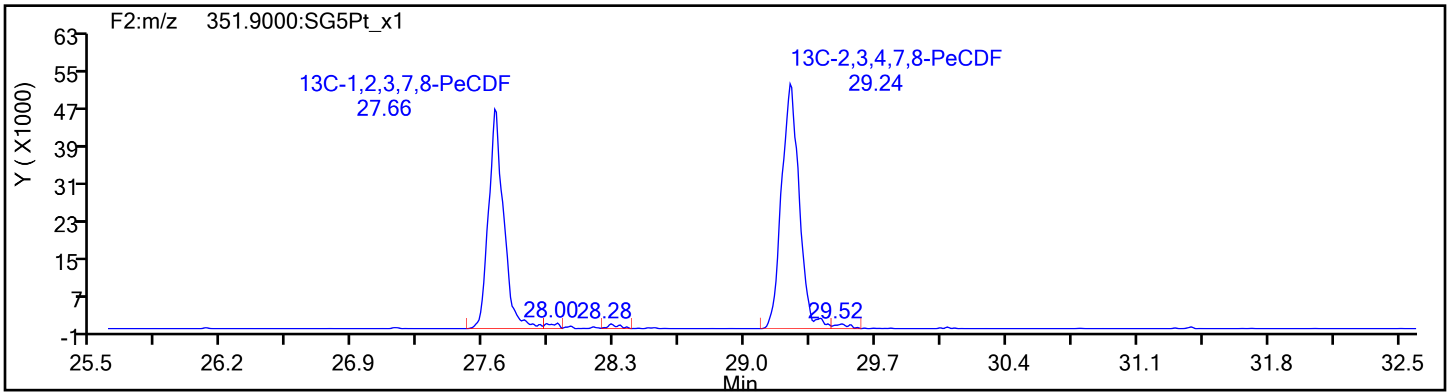

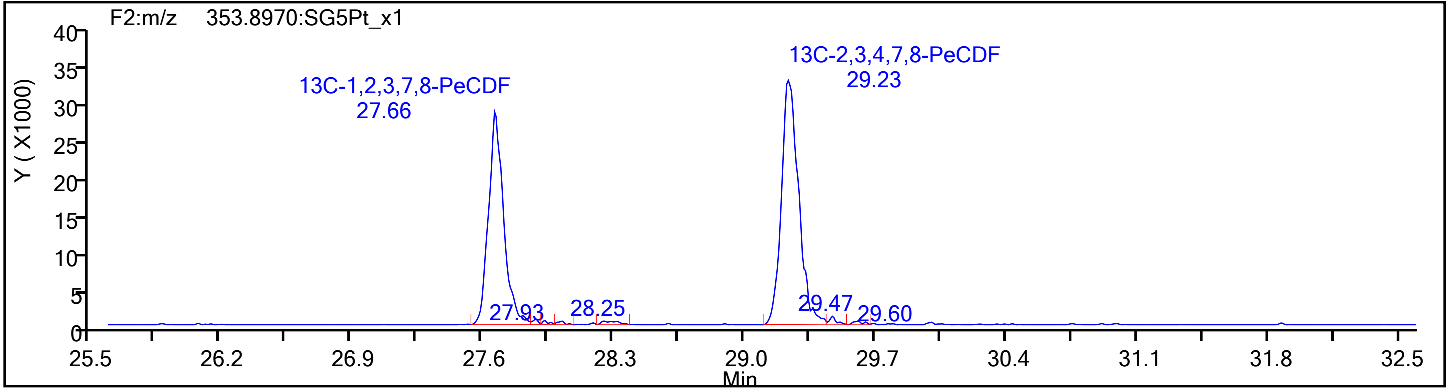

Report Date: 03-Aug-2020 09:25:44 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Injection Date:	30-Jul-2020 20:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

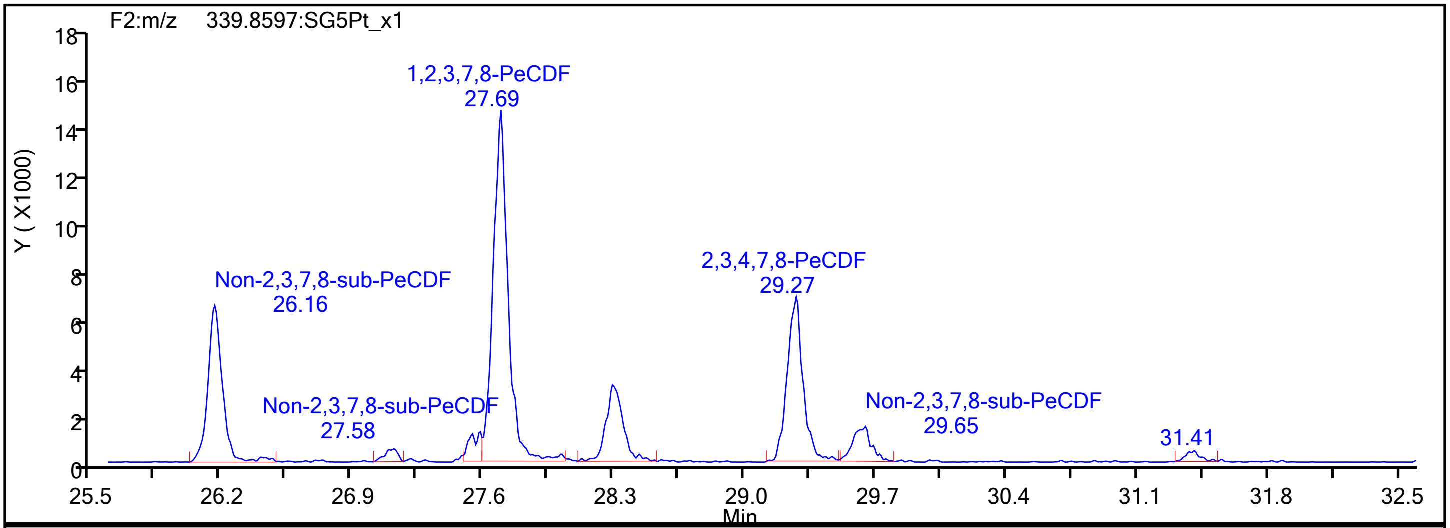

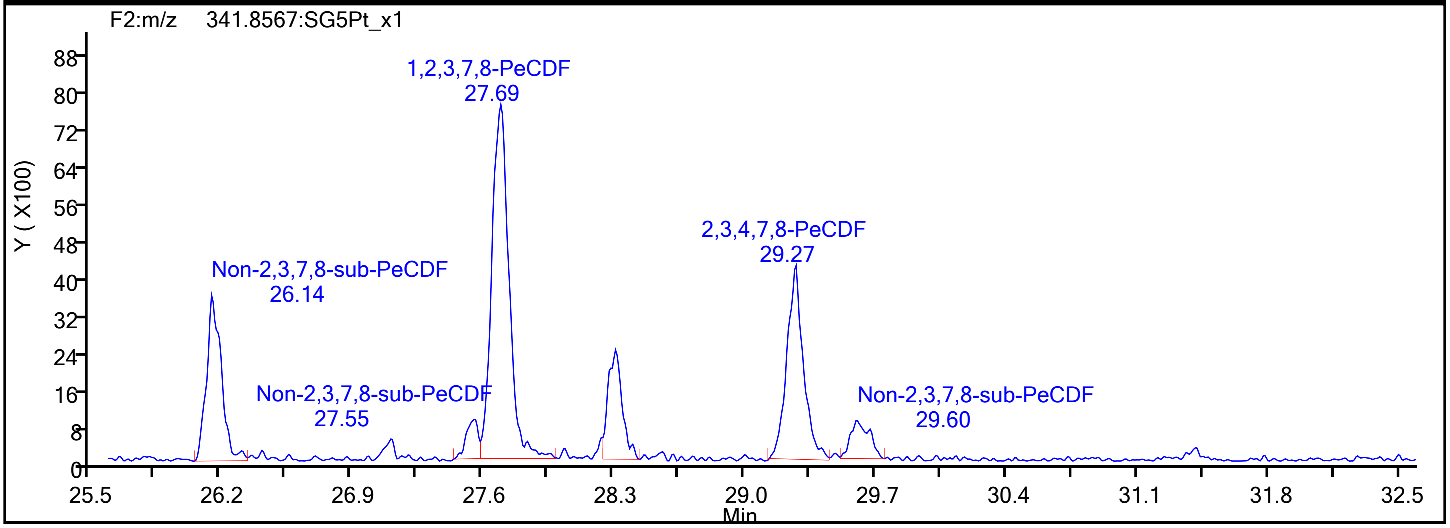

PeCDF Interference Mass

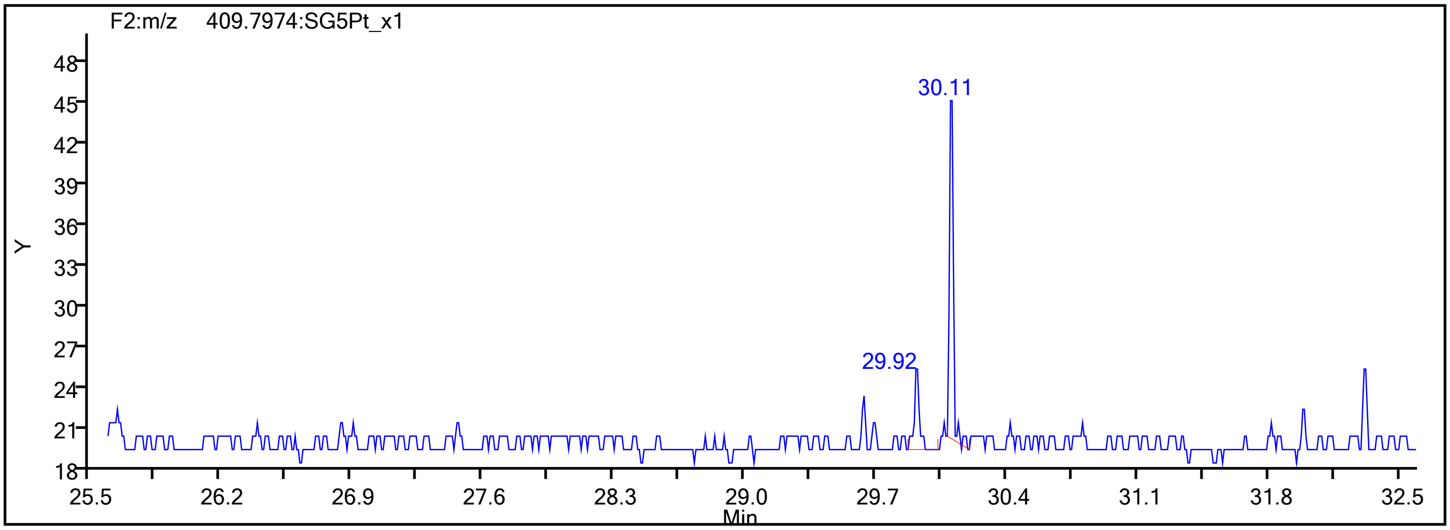

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d

Injection Date: 30-Jul-2020 20:05:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 399843

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

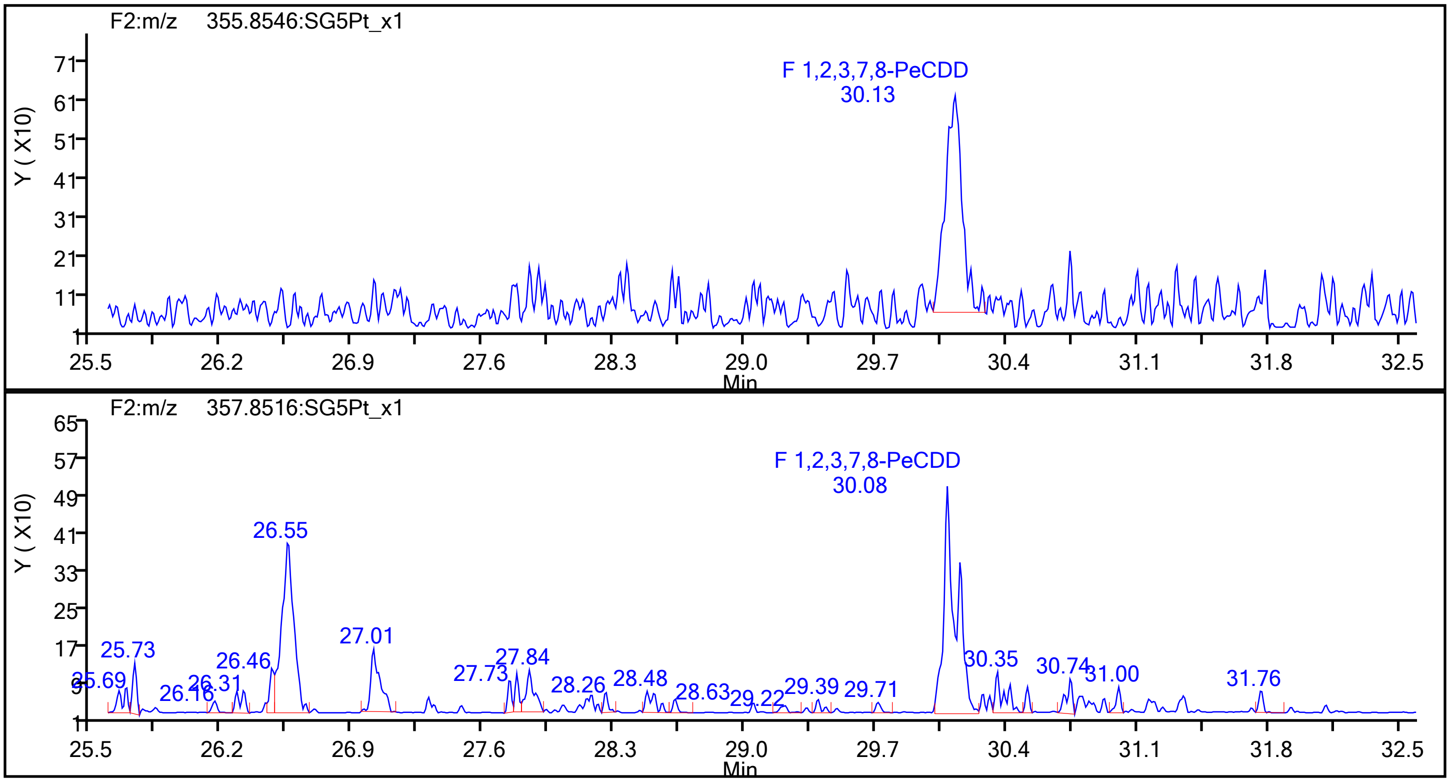

PeCDD Standards

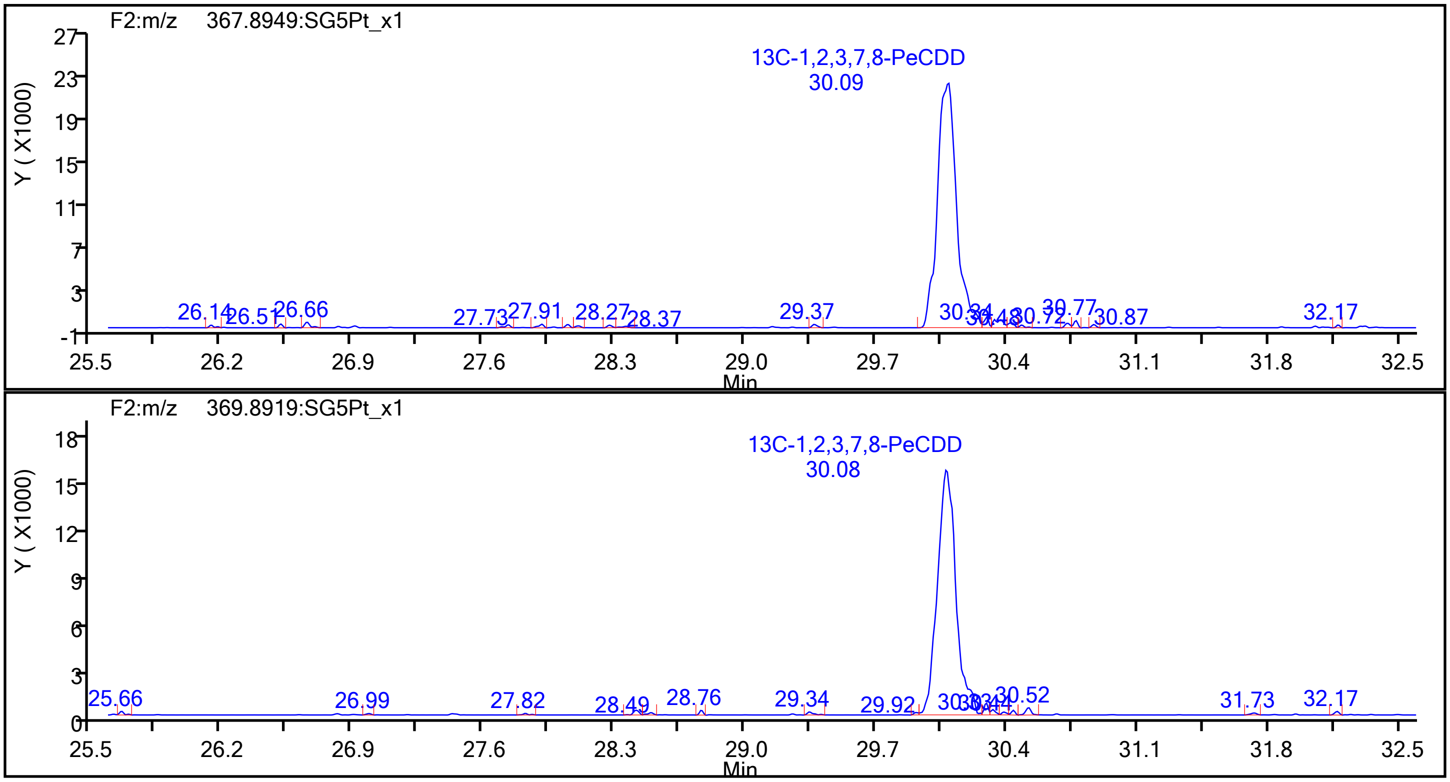

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d

Injection Date: 30-Jul-2020 20:05:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Initial

Worklist#: 399843

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

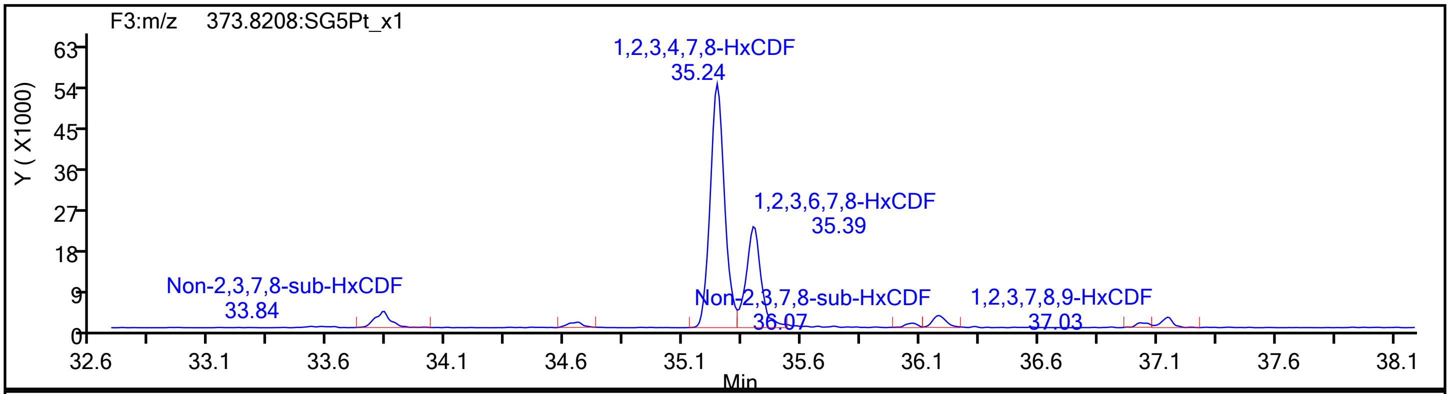

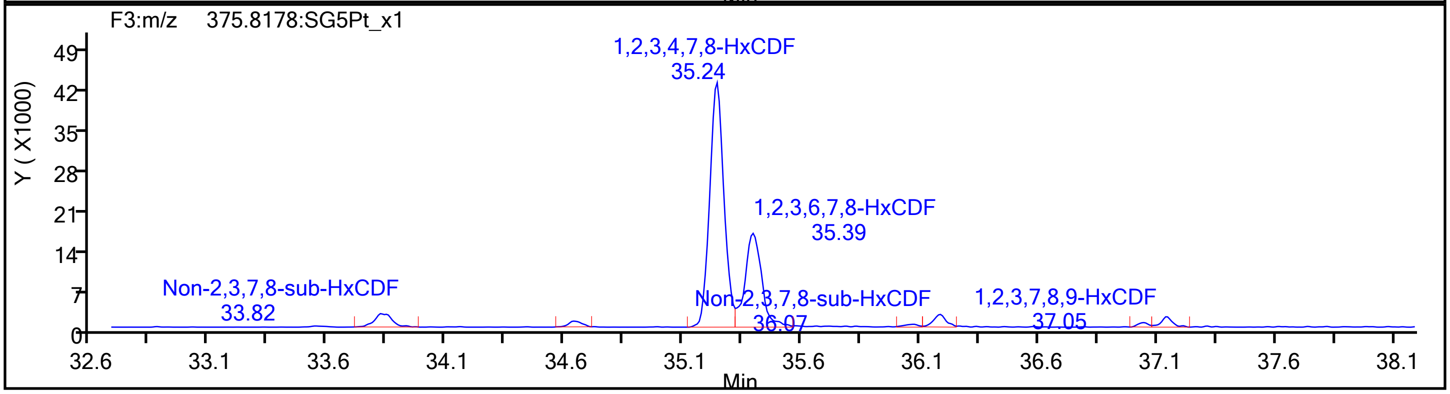

HxCDF Standards

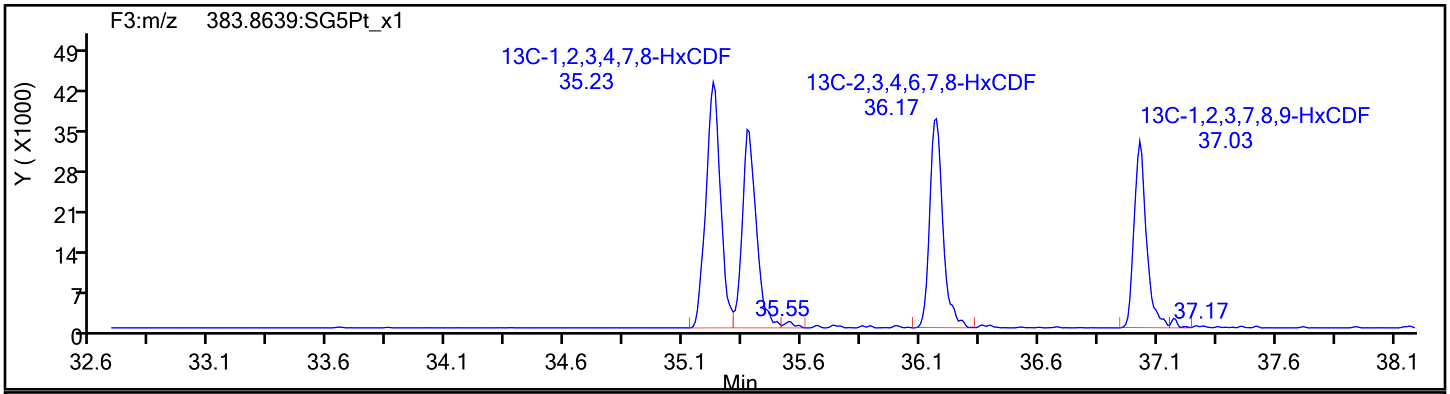

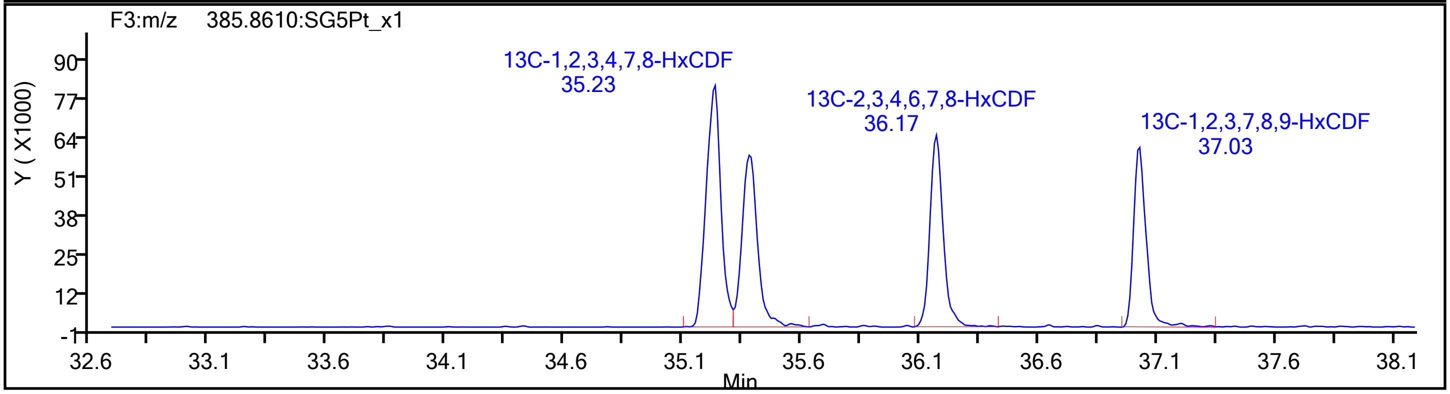

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Injection Date:	30-Jul-2020 20:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

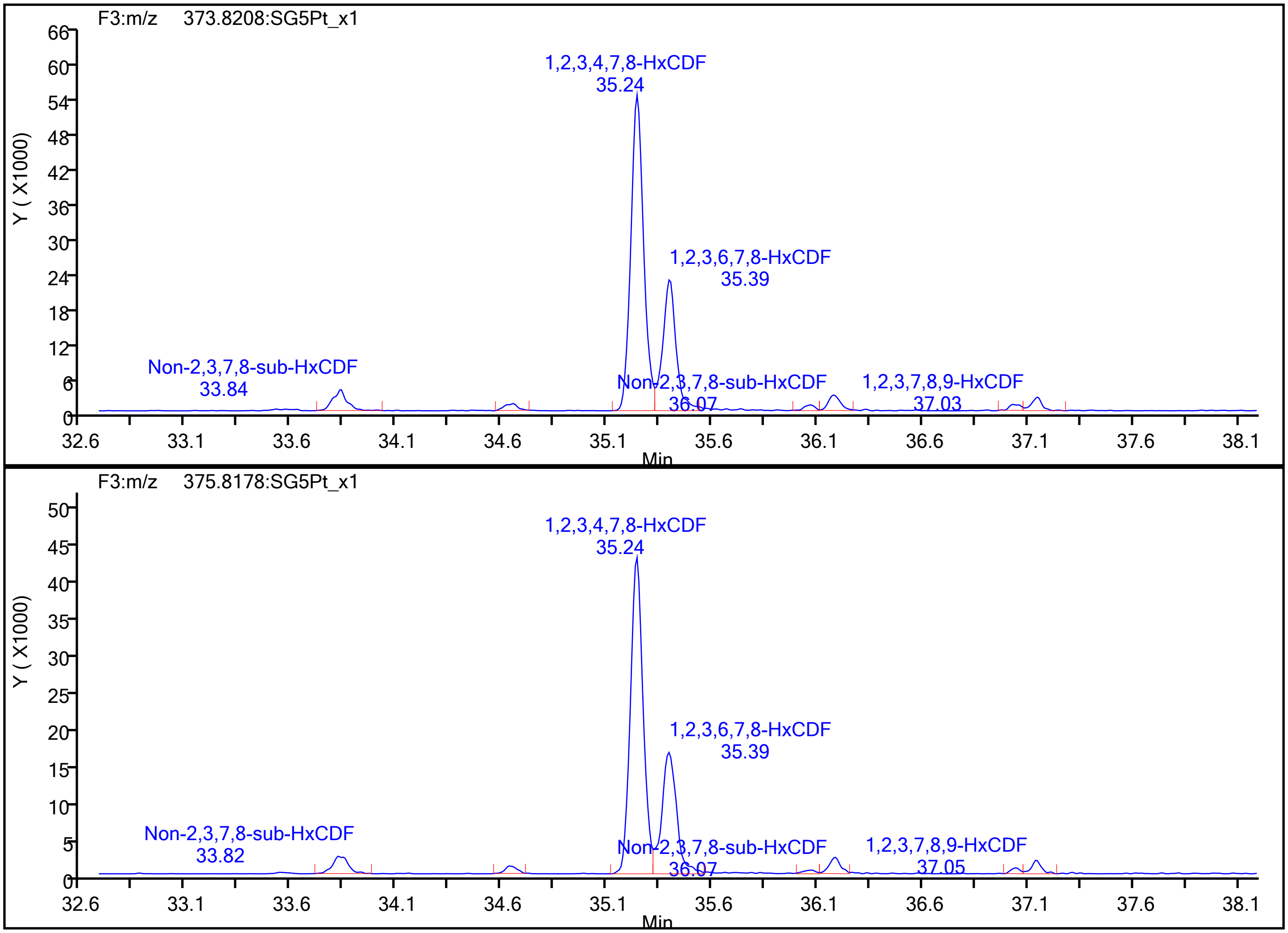

HxCDF Interference Mass

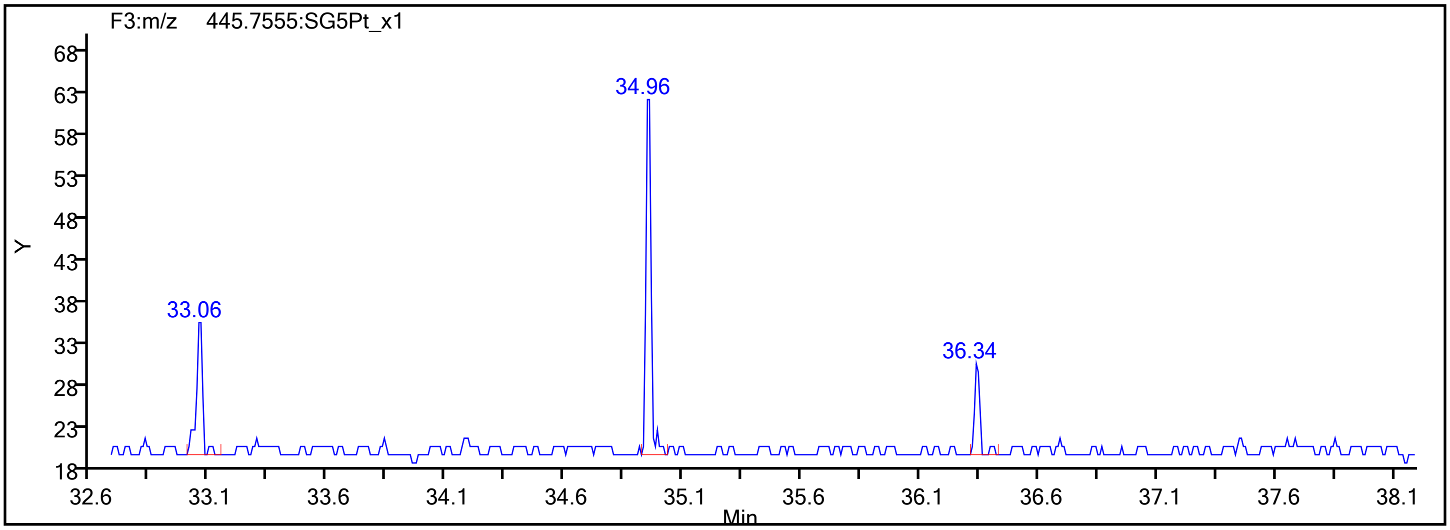

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Injection Date: 30-Jul-2020 20:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

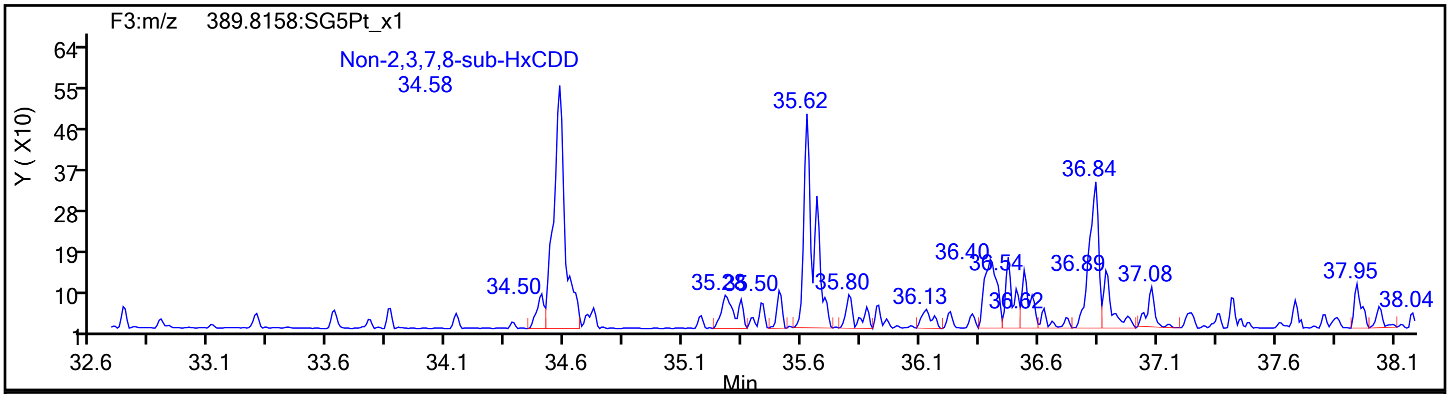

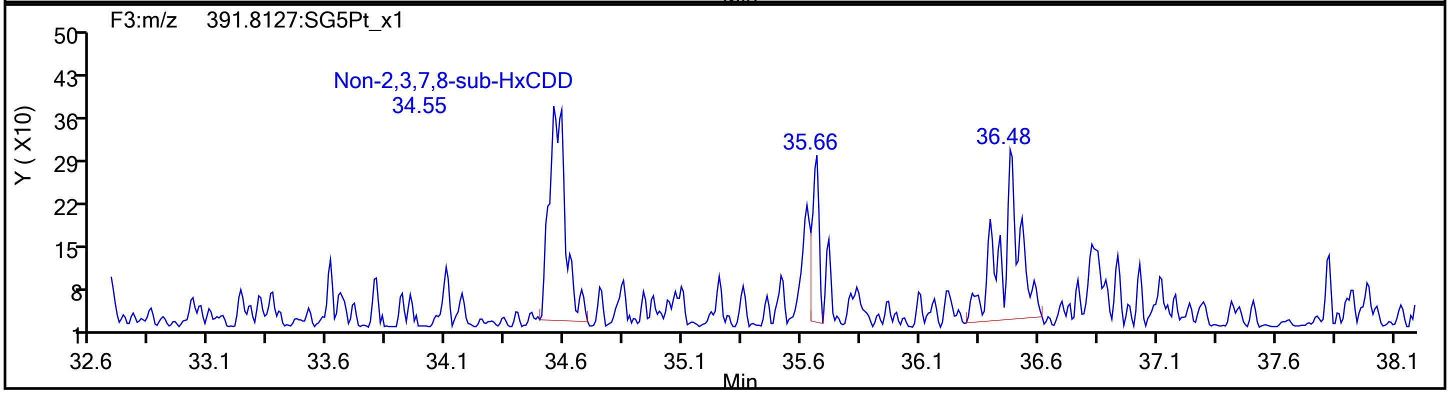

HxCDD Standards

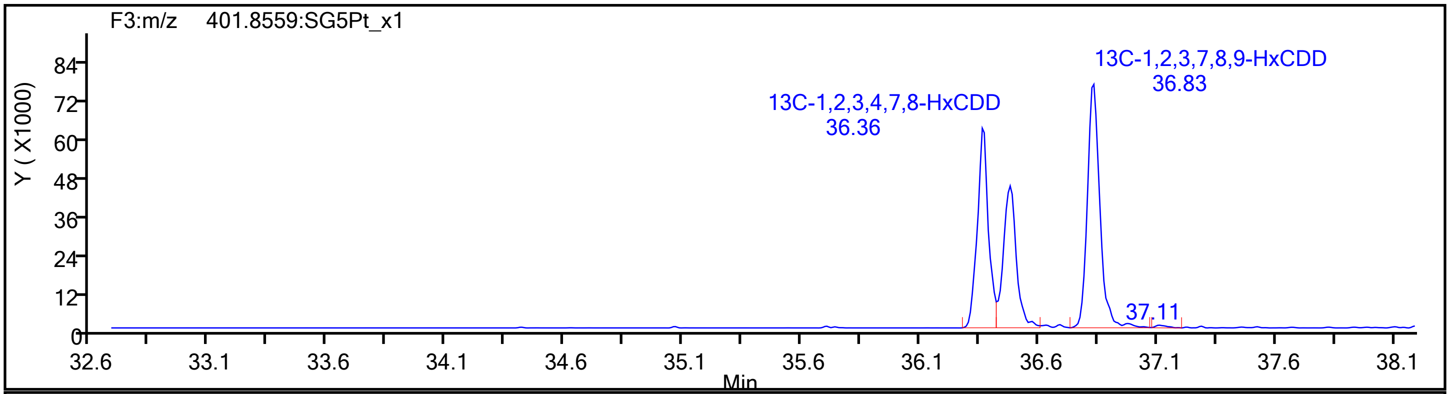

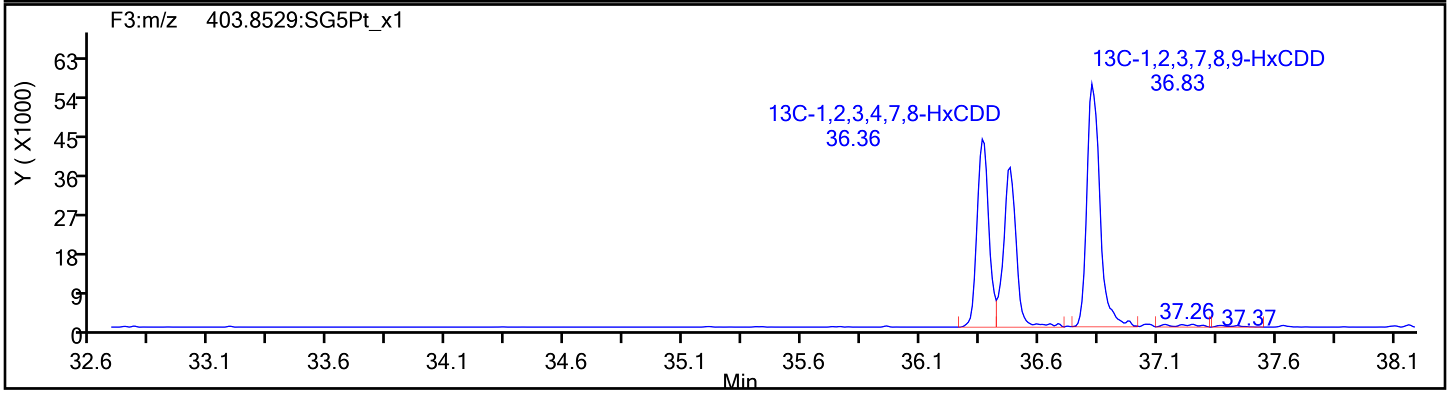

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Injection Date: 30-Jul-2020 20:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

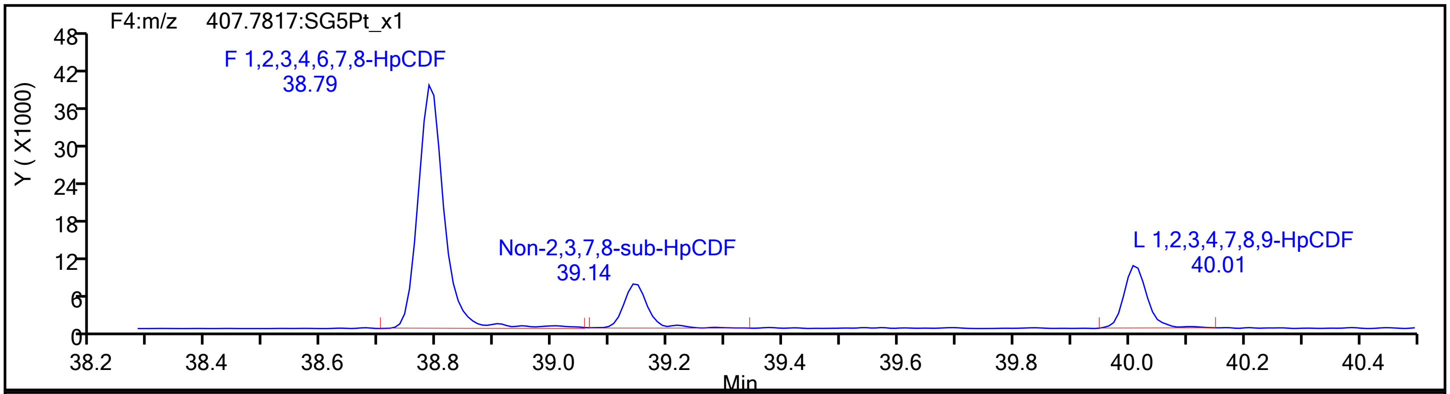

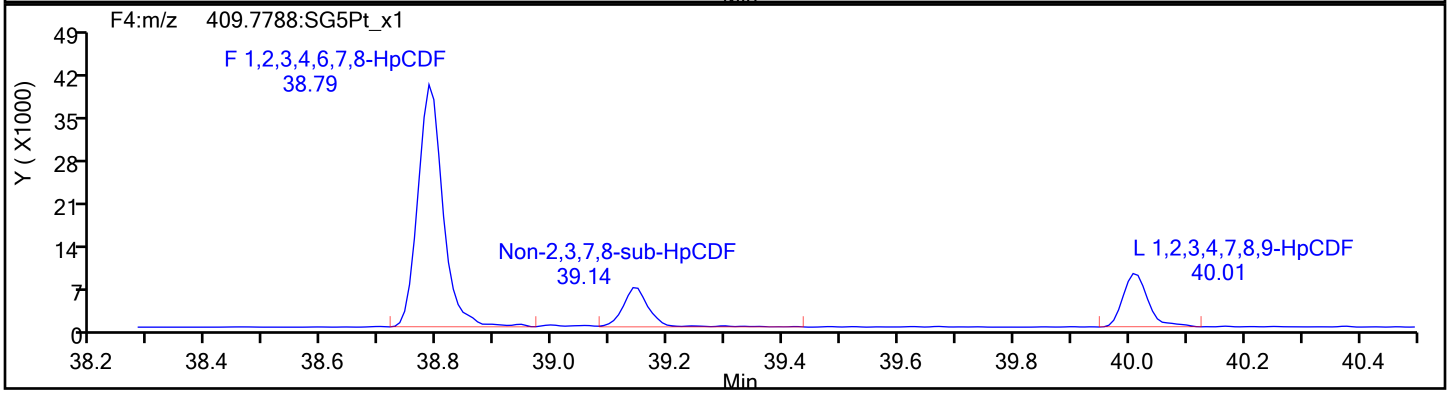

HpCDF Standards

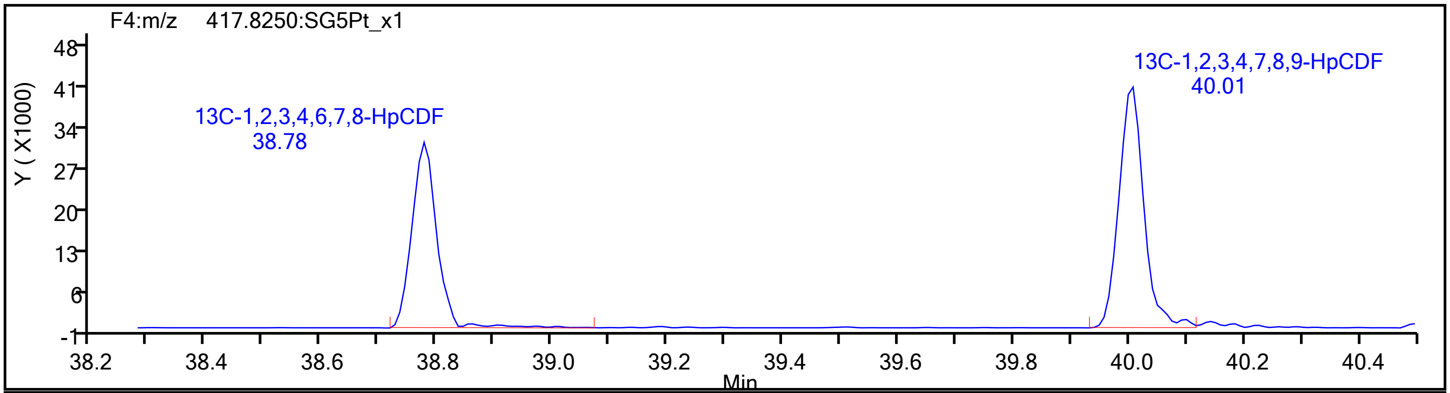

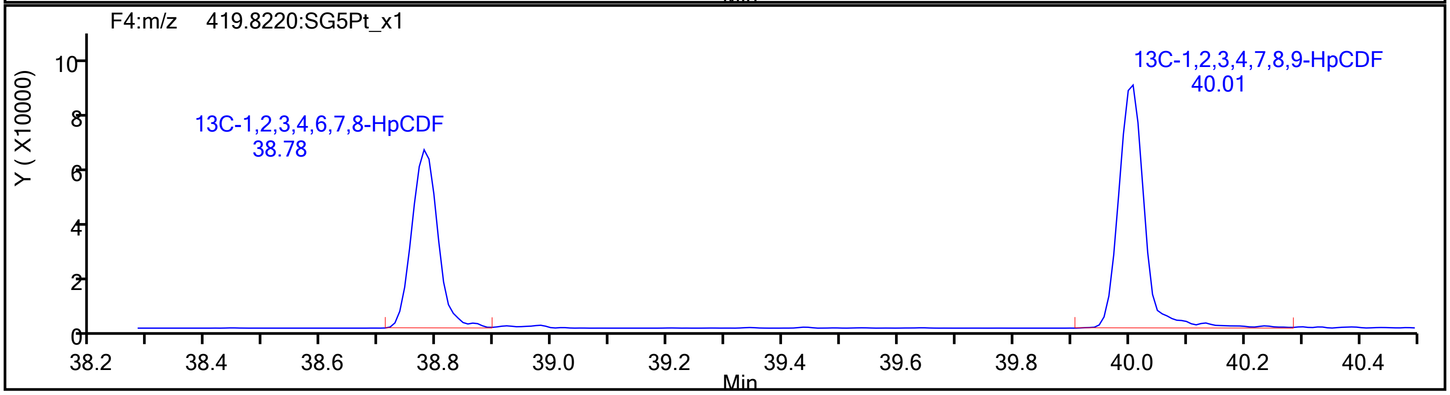

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

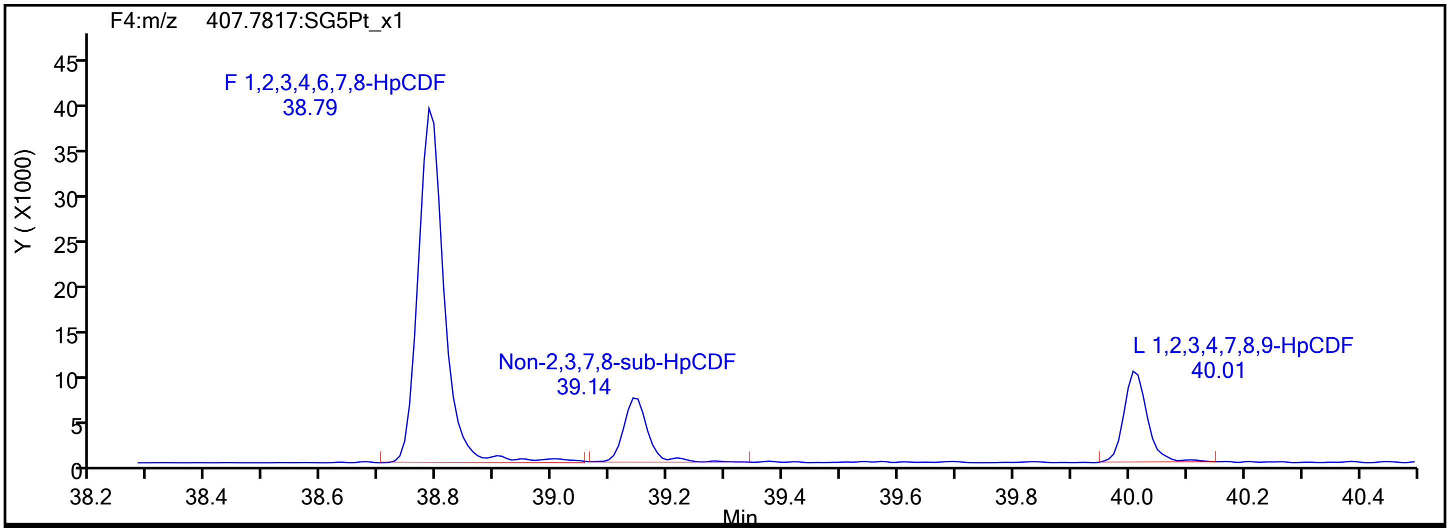

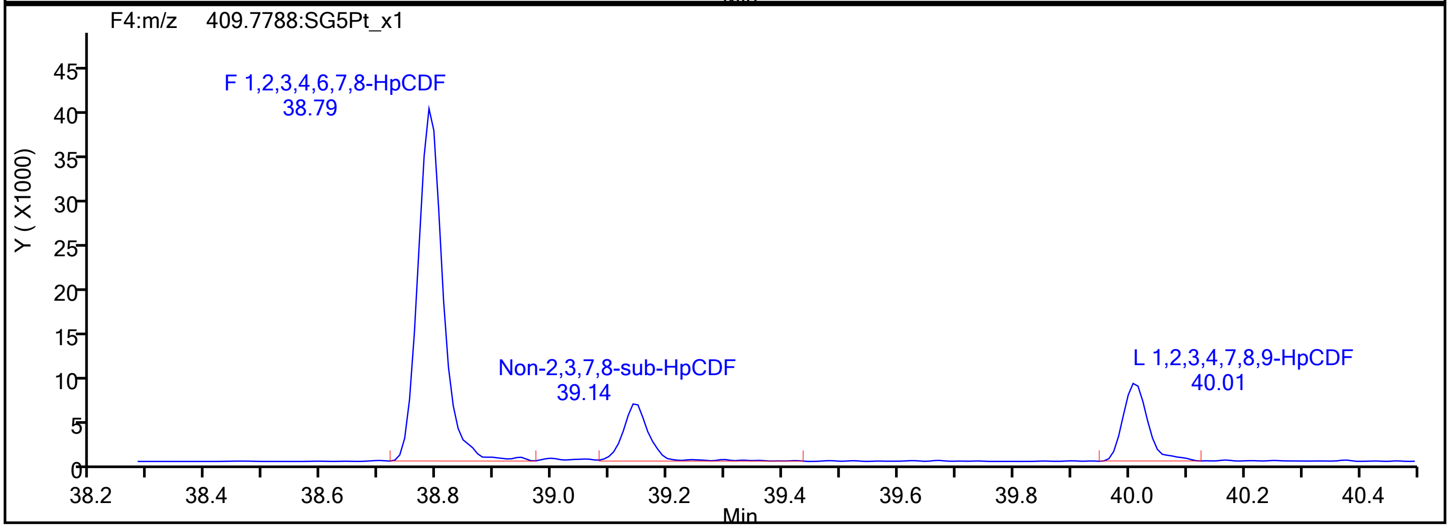

HpCDF Interference Mass

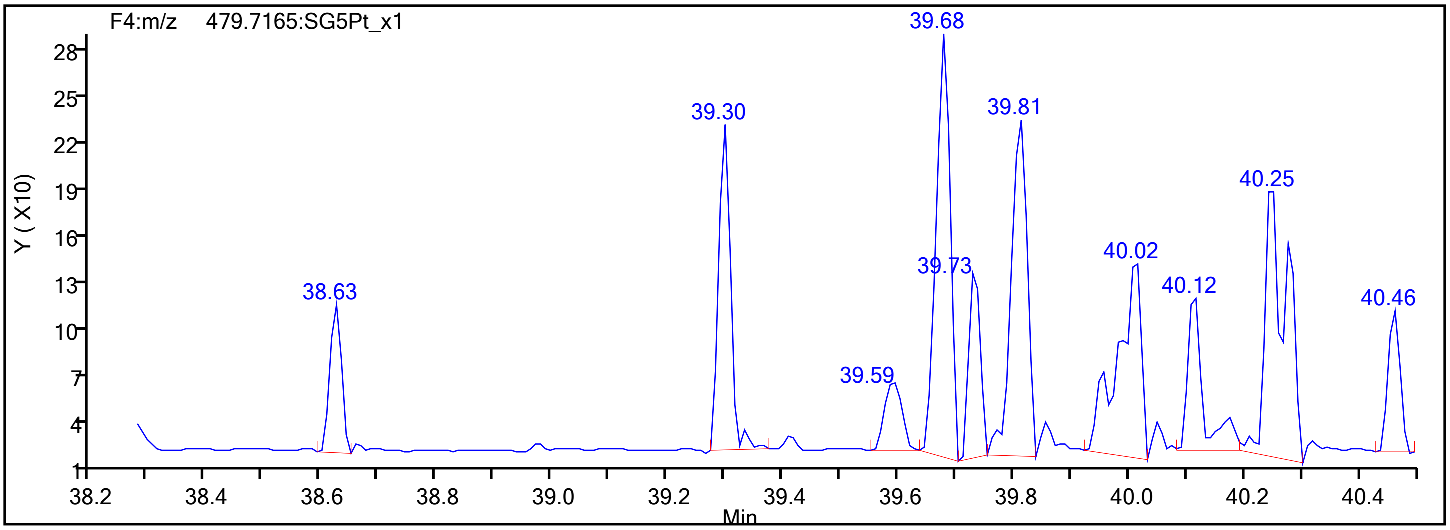

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

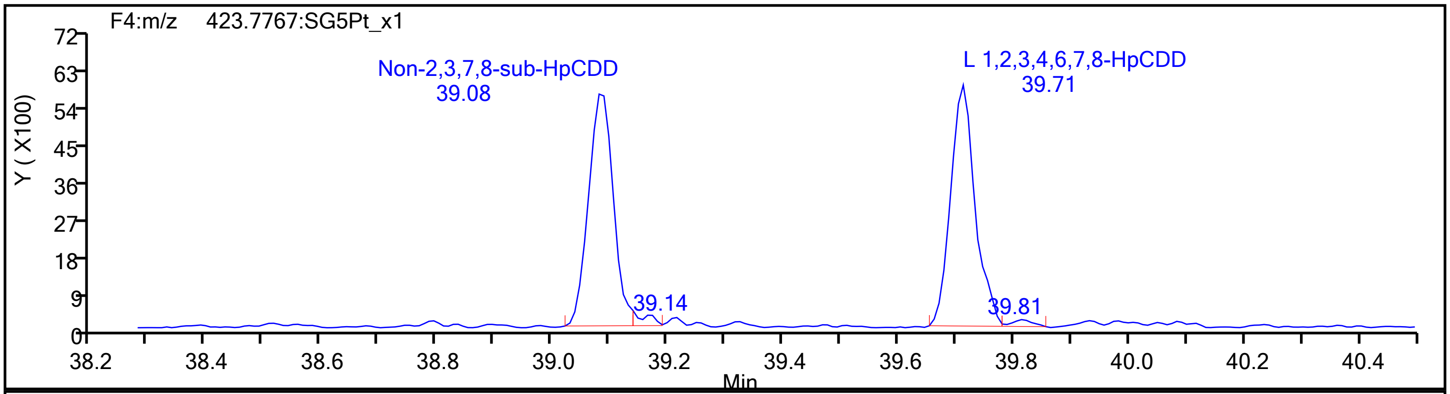

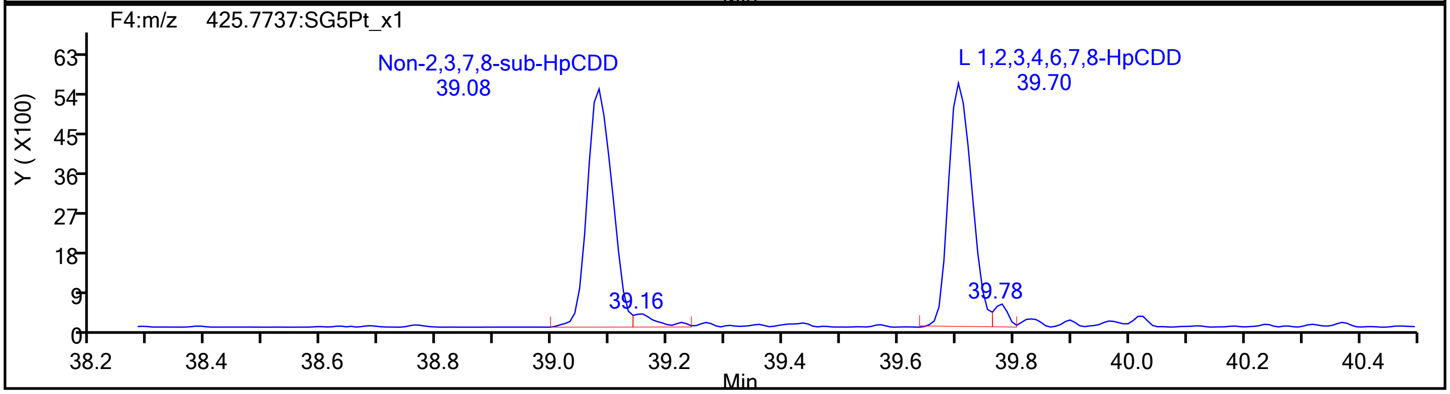

HpCDD Standards

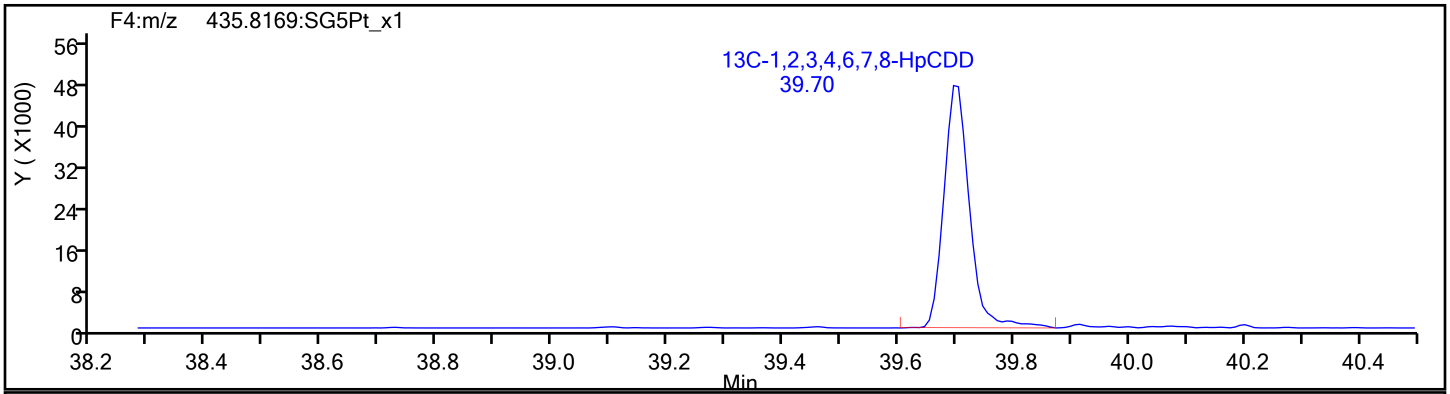

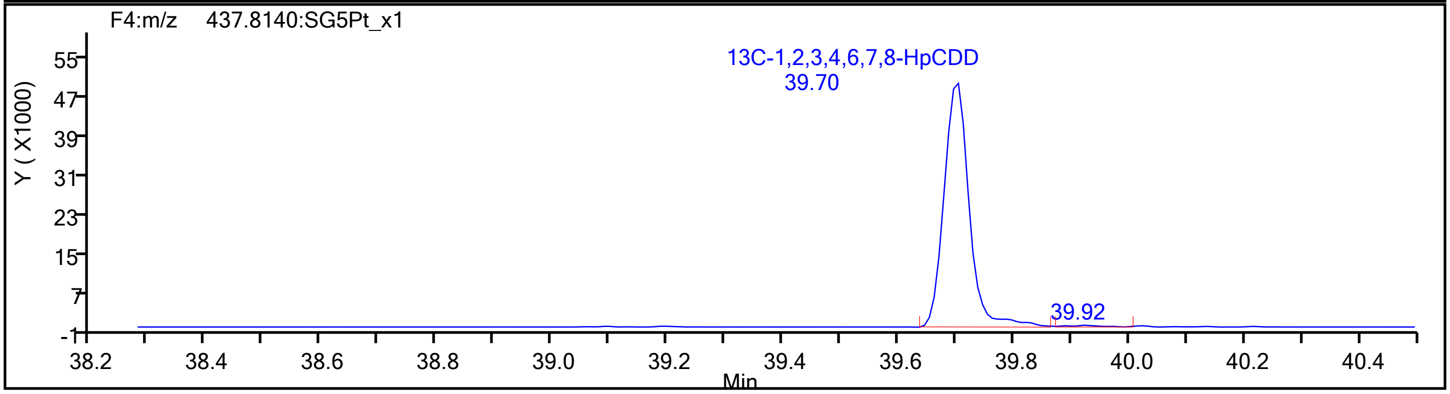

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
Injection Date:	30-Jul-2020 20:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

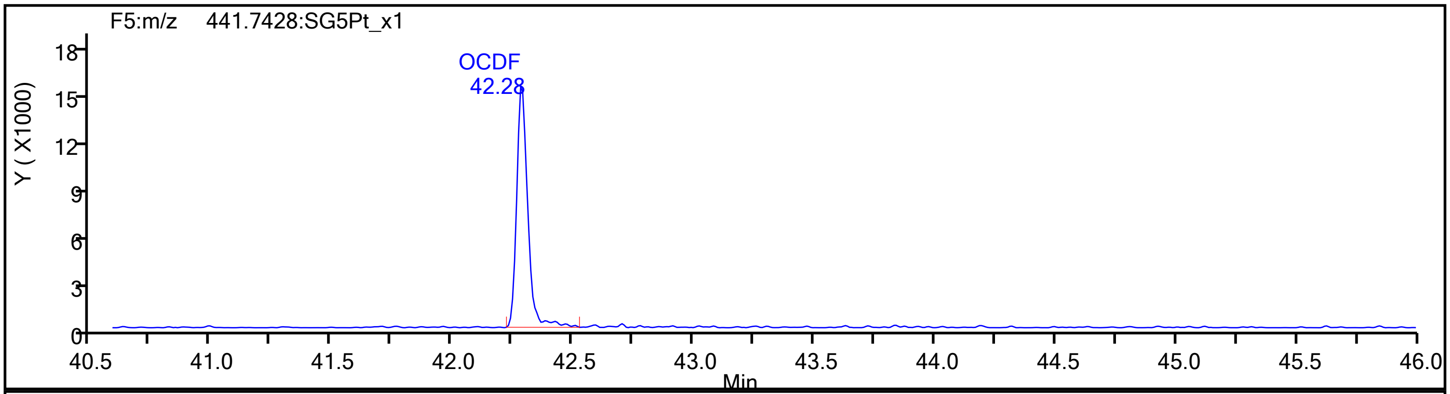

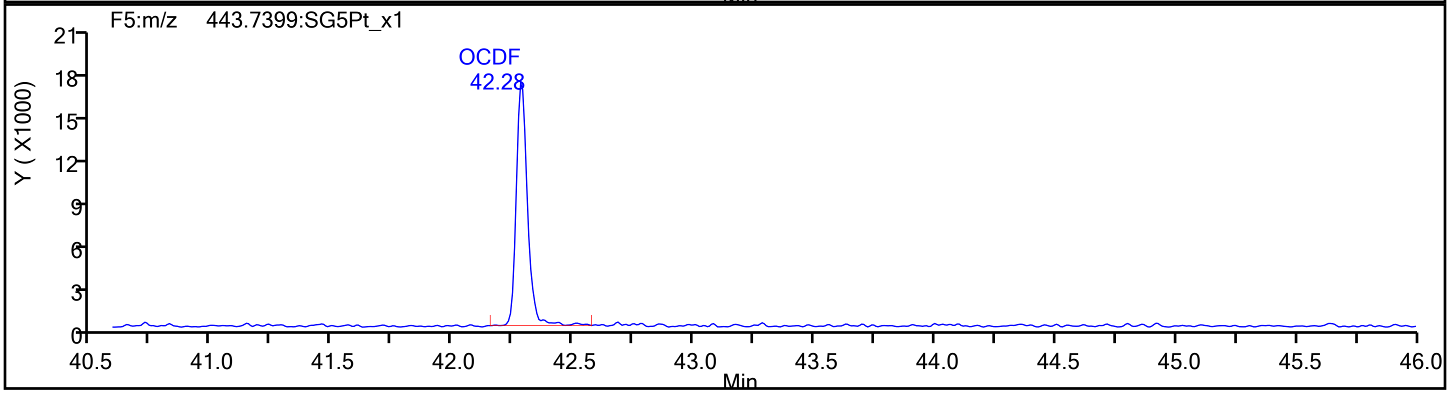

OCDF Standards

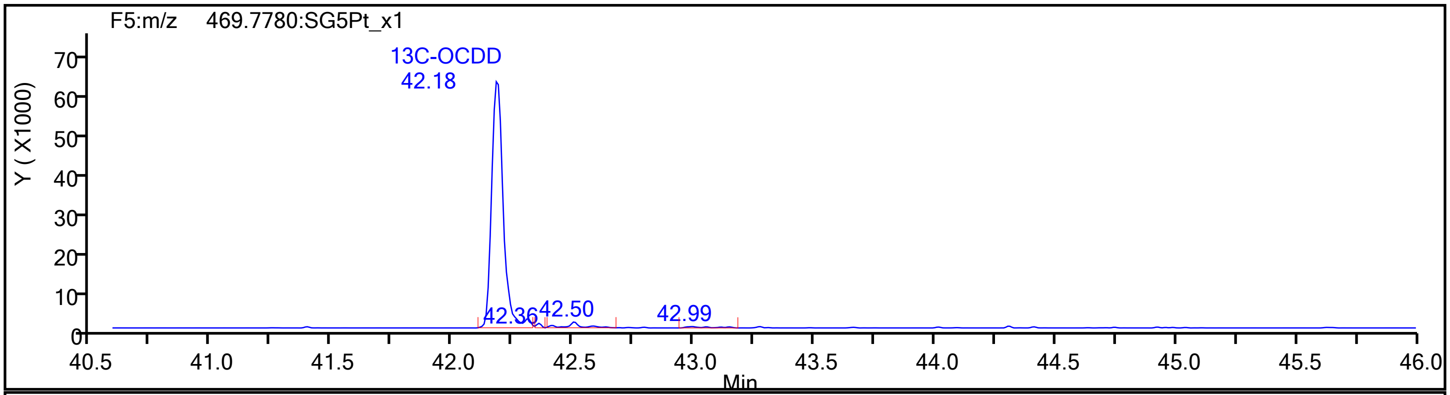

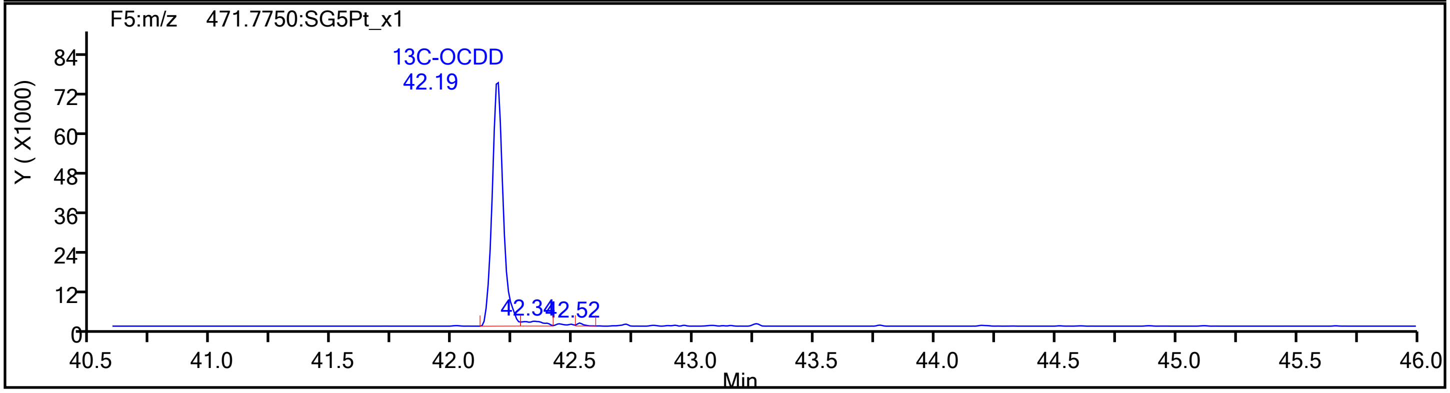

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

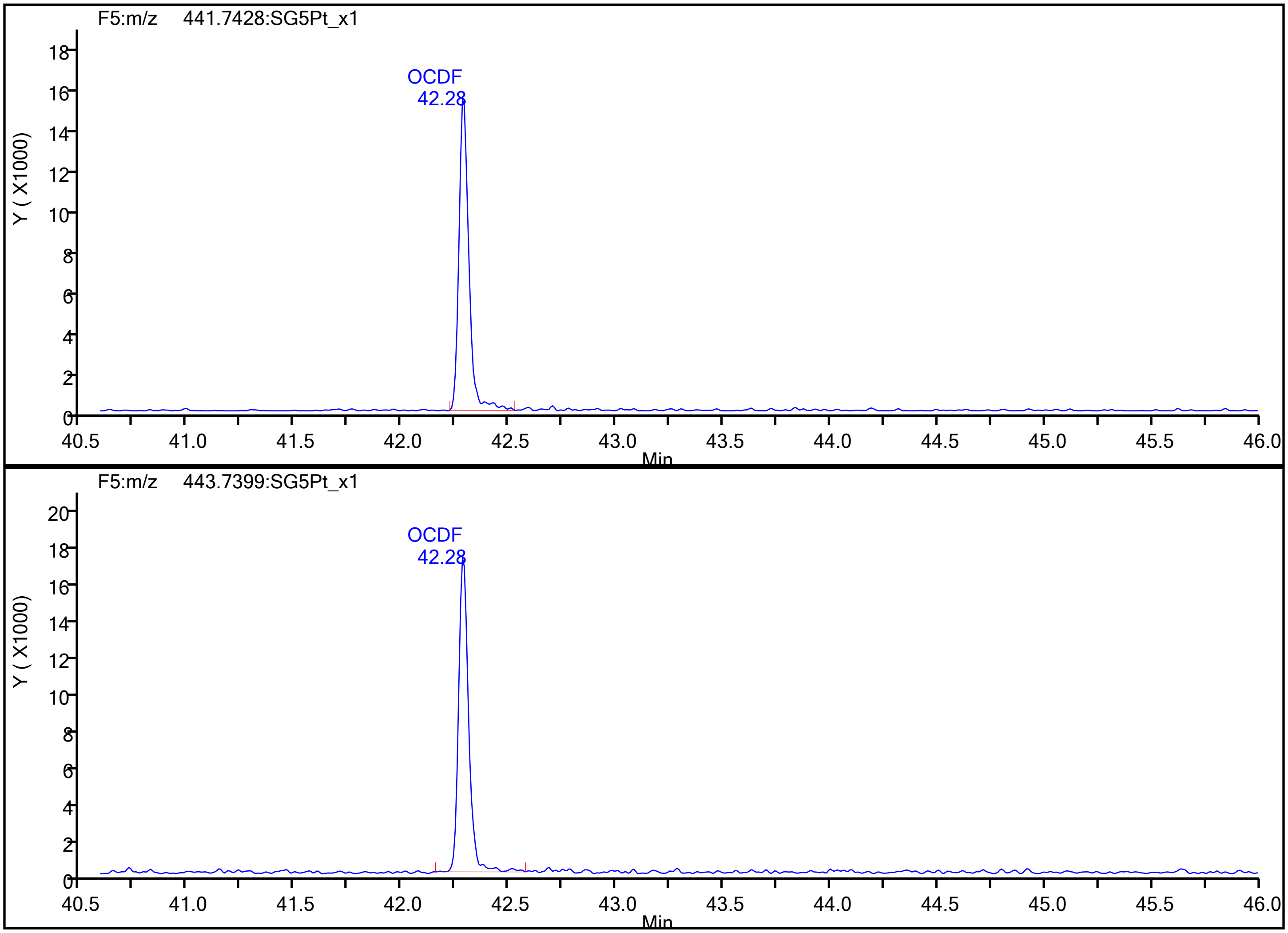

OCDF Interference Mass

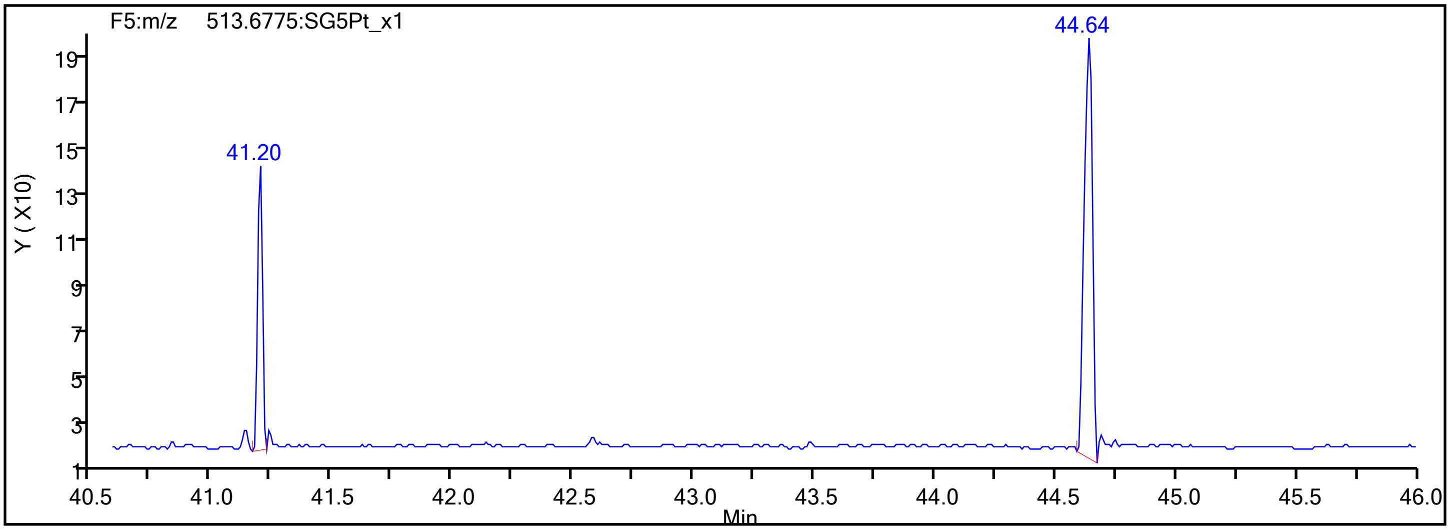

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Injection Date:	30-Jul-2020 20:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Initial		
Worklist#:	399843	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

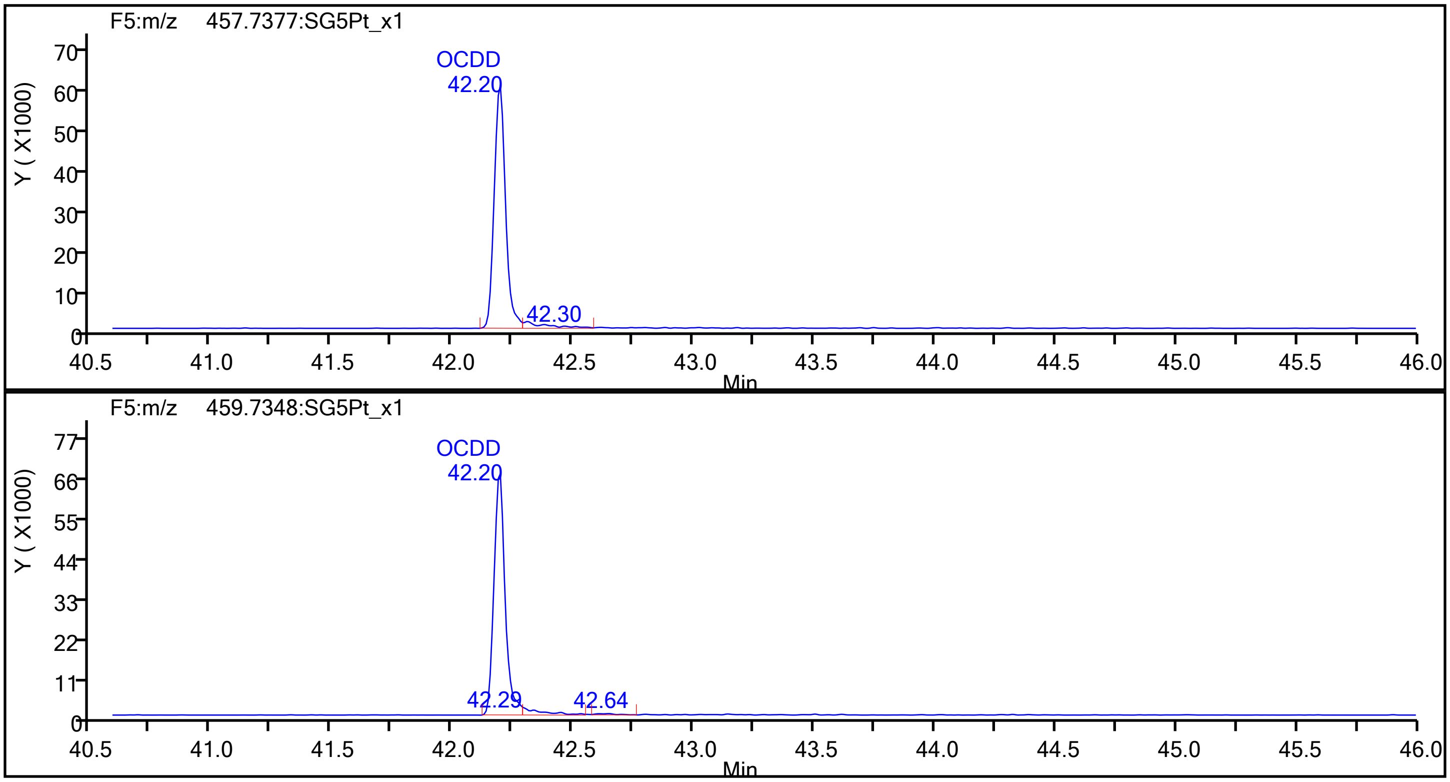

OCDD Standards

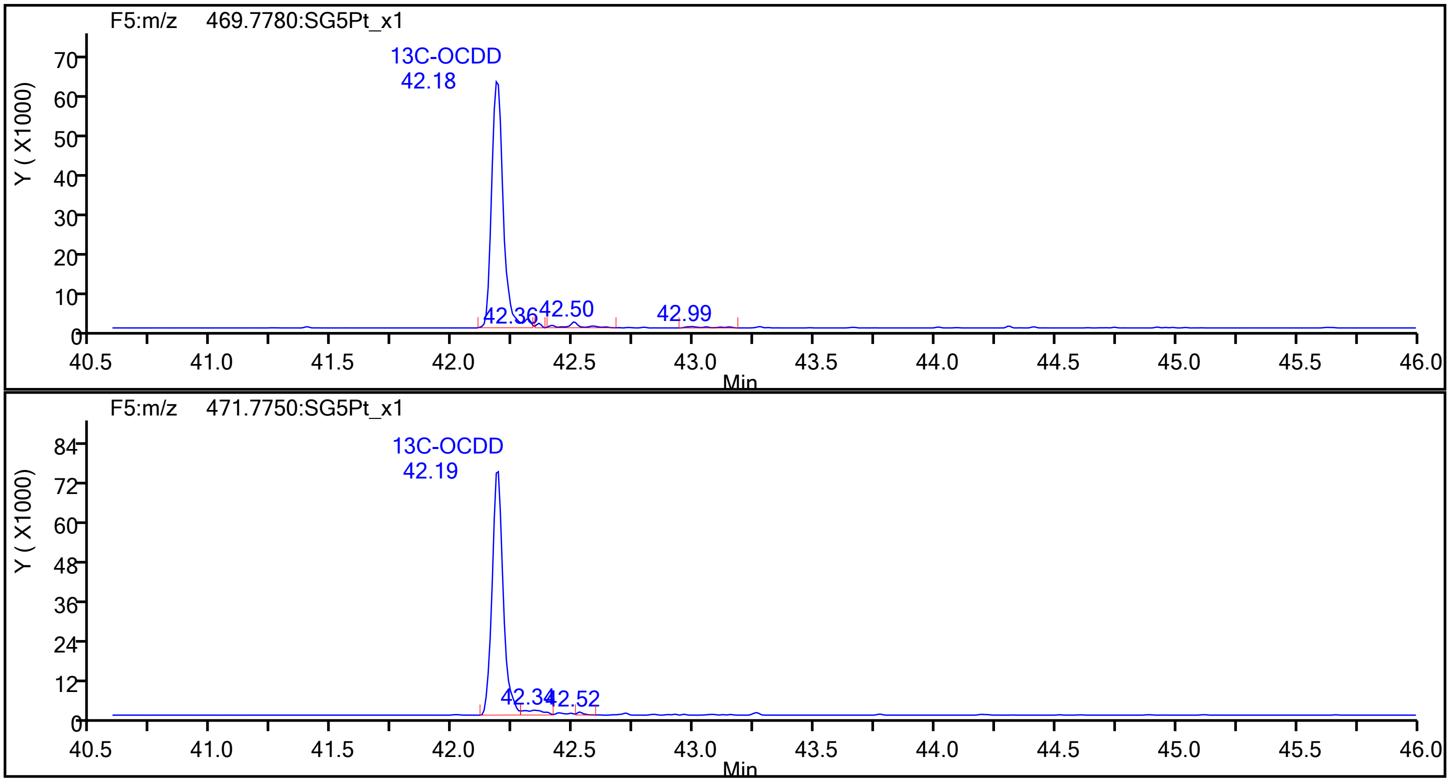

Report Date: 03-Aug-2020 09:25:45 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
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Injection Date: 30-Jul-2020 20:05:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843 Sample Line#: 11
Column Type: DB-5 Column Dia: 0.32 mm

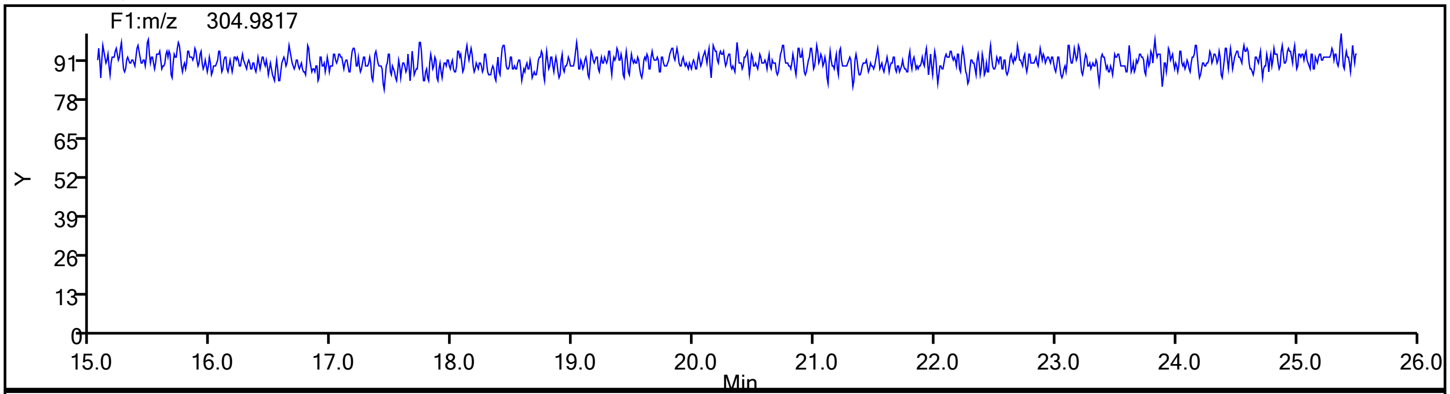

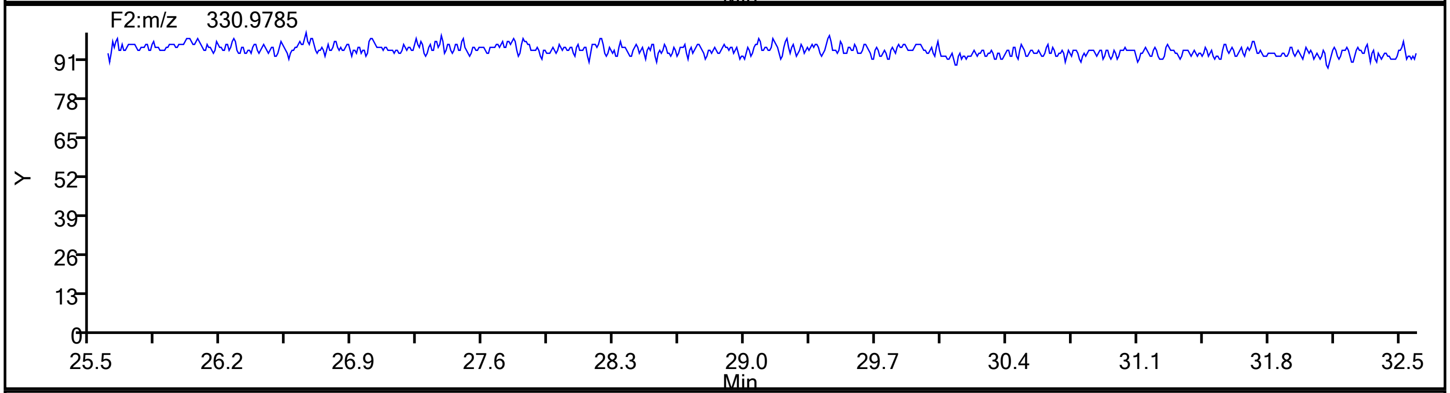

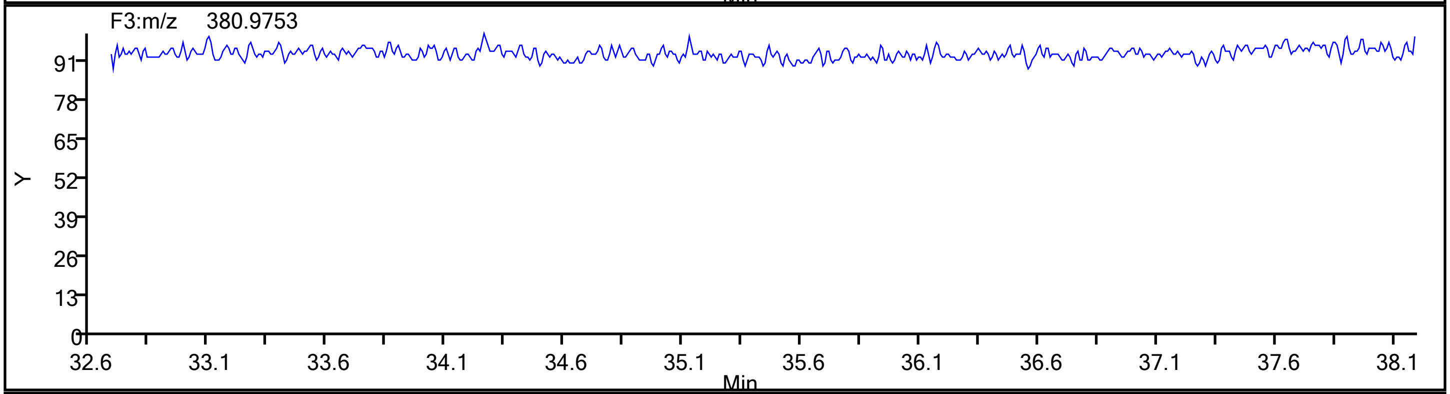

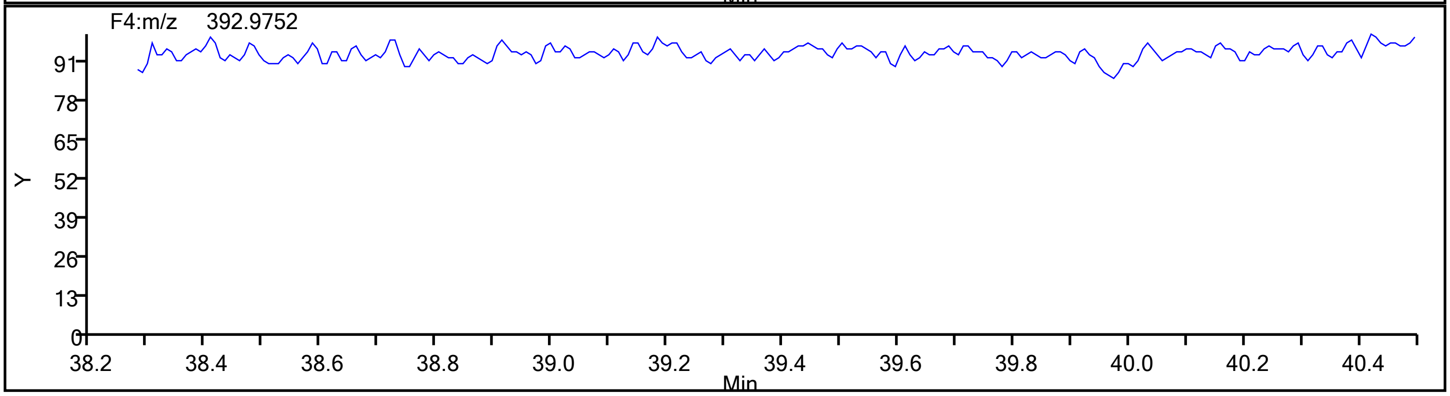

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_12.d
Injection Date: 30-Jul-2020 20:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Initial
Worklist#: 399843
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

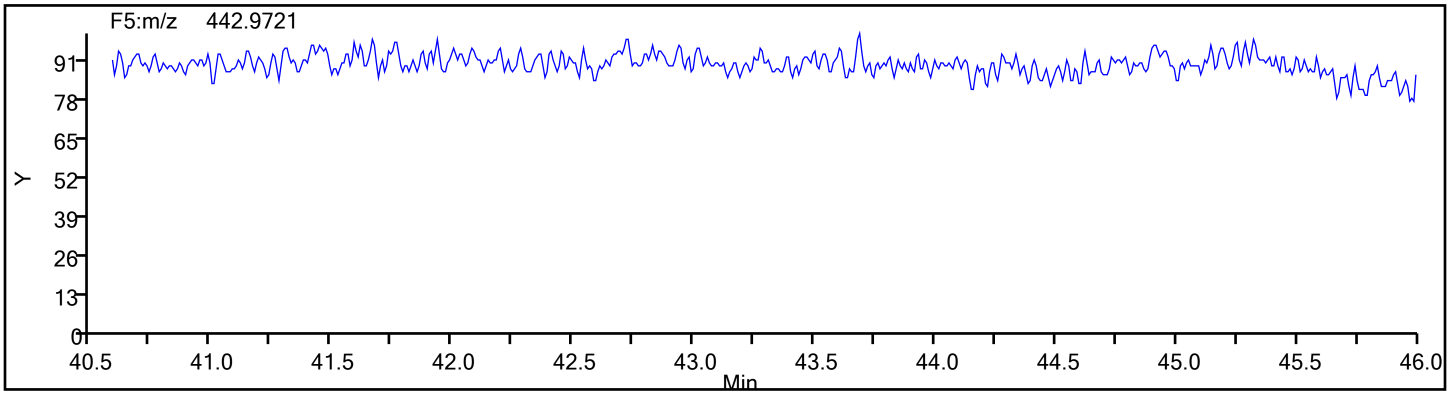

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Control	Lab Sample ID: 320-62886-2
Matrix: Water	Lab File ID: 27jl20bdfs1_22.d
Analysis Method: 1613B	Date Collected: 07/20/2020 11:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1059.3(mL)	Date Analyzed: 07/28/2020 08:25
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	160		47	9.0
57117-41-6	1,2,3,7,8-PeCDF	2100		47	28
57117-31-4	2,3,4,7,8-PeCDF	1200		47	29
39227-28-6	1,2,3,4,7,8-HxCDD	ND		47	2.7
57653-85-7	1,2,3,6,7,8-HxCDD	21	J q	47	2.7
19408-74-3	1,2,3,7,8,9-HxCDD	9.6	J q	47	2.6
70648-26-9	1,2,3,4,7,8-HxCDF	3300		47	12
57117-44-9	1,2,3,6,7,8-HxCDF	960		47	13
72918-21-9	1,2,3,7,8,9-HxCDF	58		47	11
60851-34-5	2,3,4,6,7,8-HxCDF	110		47	12
35822-46-9	1,2,3,4,6,7,8-HpCDD	840	B	47	8.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	1100	B	47	10
55673-89-7	1,2,3,4,7,8,9-HpCDF	370		47	11
3268-87-9	OCDD	12000	B	94	21
39001-02-0	OCDF	710		94	8.6
41903-57-5	Total TCDD	19000	G	53	53
30402-14-3	Total TCDF	94000	G	290	290
36088-22-9	Total PeCDD	160		47	9.0
30402-15-4	Total PeCDF	5000	q	47	28
34465-46-8	Total HxCDD	140	q B	47	2.6
55684-94-1	Total HxCDF	4900		47	12
37871-00-4	Total HpCDD	1700	B	47	8.8
38998-75-3	Total HpCDF	1900	B	47	10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Control	Lab Sample ID: 320-62886-2
Matrix: Water	Lab File ID: 27jl20bdfs1_22.d
Analysis Method: 1613B	Date Collected: 07/20/2020 11:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1059.3(mL)	Date Analyzed: 07/28/2020 08:25
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		25-164
89059-46-1	13C-2,3,7,8-TCDF	70		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	61		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	67		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	72		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	67		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	65		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	71		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	68		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	74		26-138
114423-97-1	13C-OCDD	74		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	105		35-197

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Sample Type: Client
Inject. Date: 28-Jul-2020 08:25:00 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 09:54:36 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: dadunj Date: 30-Jul-2020 09:54:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.803	291524	0.77	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.781	303826	0.83	1.4977	69.6	69.6	2.126	2.126	69.59	
2,3,7,8-TCDF	20.815	9829406	0.81	1.1312	2859.9	2859.9	15.3	15.3		E
A Non-2,3,7,8-sub-TCDF	20.169	7235801	0.81	1.1312	2105.2	2105.2	15.3	1209.4		
S Total TCDF					4965.1	4965.1	15.3	15.3		
D 13C-2,3,7,8-TCDD	22.181	188963	0.74	1.0367	62.5	62.5	1.585	1.585	62.52	
2,3,7,8-TCDD	22.241	2058700	0.80	1.1849	919.5	919.5	2.794	2.794		E
$ 37Cl4-2,3,7,8-TCDD	22.232	136661		1.1208	41.8	41.8	0.2672	0.2672	105	
A Non-2,3,7,8-sub-TCDD	21.044	172877	0.80	1.1849	77.2	77.2	2.794	77.2		
S Total TCDD					996.7	996.7	2.794	2.794		
D 13C-1,2,3,7,8-PeCDF	27.730	255069	1.71	1.3057	67.0	67.0	0.4804	0.4804	67.01	
1,2,3,7,8-PeCDF	27.755	307545	1.70	1.1060	109.0	109.0	1.470	1.470		
D 13C-2,3,4,7,8-PeCDF	29.305	324138	1.51	1.5420	72.1	72.1	0.4068	0.4068	72.10	
2,3,4,7,8-PeCDF	29.339	181467	1.56	0.9067	61.7	61.7	1.520	1.520		
A F1 PeCDFs	24.932	3286	1.64	1.0063	1.128	1.128	0.0473	1.128		
A Non-2,3,7,8-sub-PeCDF	28.540	277450	1.55	1.0063	96.2	95.2	1.482	43.3		RQ
S Total PeCDF					268.1	267.1	1.495	1.495		RQ
D 13C-1,2,3,7,8-PeCDD	30.182	148321	1.56	0.8294	61.3	61.3	0.3162	0.3162	61.34	
1,2,3,7,8-PeCDD	30.190	13910	1.37	1.1062	8.478	8.478	0.4741	0.4741		M
A Non-2,3,7,8-sub-PeCDD	28.887						0.4741	0.8880		RQU
S Total PeCDD					8.478	8.478	0.4741	0.4741		
D 13C-1,2,3,4,7,8-HxCDF	35.271	332790	0.54	1.4619	72.5	72.5	0.4375	0.4375	72.50	
1,2,3,4,7,8-HxCDF	35.288	578813	1.28	1.0087	172.4	172.4	0.6615	0.6615		
D 13C-1,2,3,6,7,8-HxCDF	35.431	263367	0.55	1.2866	65.2	65.2	0.4971	0.4971	65.19	
1,2,3,6,7,8-HxCDF	35.448	165843	1.36	1.2432	50.7	50.7	0.7132	0.7132		
D 13C-2,3,4,6,7,8-HxCDF	36.214	256131	0.58	1.1988	68.0	68.0	0.5336	0.5336	68.05	
2,3,4,6,7,8-HxCDF	36.223	18164	1.16	1.2736	5.568	5.568	0.6204	0.6204		
D 13C-1,2,3,7,8,9-HxCDF	37.073	237960	0.49	1.0687	70.9	70.9	0.5985	0.5985	70.92	
1,2,3,7,8,9-HxCDF	37.082	9367	1.13	1.2882	3.056	3.056	0.6087	0.6087		
A Non-2,3,7,8-sub-HxCDF	35.385	97199	1.23	1.2034	29.6	29.6	0.6432	13.1		
S Total HxCDF					261.3	261.3	0.6510	0.6510		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.871	313985	1.34	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.408	233829	1.41	1.1046	67.4	67.4	0.3921	0.3921	67.42	
1,2,3,4,7,8-HxCDD	36.534						0.1421	0.1421		RQU
D 13C-1,2,3,6,7,8-HxCDD	36.526	206985	1.33	0.9871	66.8	66.8	0.4388	0.4388	66.78	
1,2,3,6,7,8-HxCDD	36.534	2513	1.24	1.0802	1.384	1.124	0.1434	0.1434		RQ
1,2,3,7,8,9-HxCDD	36.888	1188	1.24	1.0574	0.6217	0.5097	0.1352	0.1352		RQM
A Non-2,3,7,8-sub-HxCDD	35.717	13496	1.24	1.0237	6.319	5.981	0.1396	3.276		RQM
S Total HxCDD					8.325	7.615	0.1402	0.1402		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.811	191656	0.43	0.9035	67.6	67.6	0.8298	0.8298	67.56	
1,2,3,4,6,7,8-HpCDF	38.819	177321	1.07	1.5957	58.0	58.0	0.5303	0.5303		
D 13C-1,2,3,4,7,8,9-HpCDF	40.032	244770	0.49	1.0480	74.4	74.4	0.7154	0.7154	74.38	
1,2,3,4,7,8,9-HpCDF	40.040	56153	1.09	1.1693	19.6	19.6	0.5565	0.5565		
A Non-2,3,7,8-sub-HpCDF	39.413	63886	1.01	1.3825	21.2	21.2	0.5321	21.2		M
S Total HpCDF					98.8	98.8	0.5434	0.5434		
D 13C-1,2,3,4,6,7,8-HpCDD	39.729	171226	1.02	0.8875	61.4	61.4	0.3211	0.3211	61.44	
1,2,3,4,6,7,8-HpCDD	39.737	85188	1.07	1.1150	44.6	44.6	0.4647	0.4647		
A Non-2,3,7,8-sub-HpCDD	39.555	82303	1.05	1.1150	43.1	43.1	0.4647	43.1		
S Total HpCDD					87.7	87.7	0.4647	0.4647		
D 13C-OCDD	42.216	292379	0.93	0.6297	147.9	147.9	0.5672	0.5672	73.94	
OCDF	42.317	81171	0.90	1.4809	37.5	37.5	0.4541	0.4541		
OCDD	42.224	1084563	0.90	1.1948	620.9	620.9	1.126	1.126		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Sample Type: Client
Inject. Date: 28-Jul-2020 08:25:00 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 09:54:36 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: dadunj Date: 30-Jul-2020 09:54:36

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.803	21.805	0		127119	18880	239	597	79		
333.9338	21.828	21.805	1		164405	26870	62	155	433	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.781	20.783	0	0.953	138238	18939	404	1010	47		
317.9389	20.781	20.783	0	0.953	165588	26114	179	447	146	0.83(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.815	20.808	0	1.002	4398782	565634	1436	3590	394		
305.8987	20.815	20.808	0	1.002	5430624	692755	1680	4200	412	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.153	20.169	-121	0.874	145731	24245	1436	3590	17		
305.8987	18.153	20.169	-121	0.874	179504	28885	1680	4200	17	0.81(0.65-0.89)	
303.9016	18.660	20.169	-90	0.898	199292	24863	1436	3590	17		
305.8987	18.660	20.169	-90	0.898	245815	31873	1680	4200	19	0.81(0.65-0.89)	
303.9016	19.115	20.169	-63	0.920	143427	19722	1436	3590	14		
305.8987	19.115	20.169	-63	0.920	175044	23304	1680	4200	14	0.82(0.65-0.89)	
303.9016	19.527	20.169	-38	0.940	187540	25541	1436	3590	18		
305.8987	19.519	20.169	-39	0.939	231911	30979	1680	4200	18	0.81(0.65-0.89)	
303.9016	20.051	20.169	-7	0.965	1859416	266423	1436	3590	186		
305.8987	20.051	20.169	-7	0.965	2297479	330617	1680	4200	197	0.81(0.65-0.89)	
303.9016	20.489	20.169	19	0.986	108520	14284	1436	3590	10		
305.8987	20.489	20.169	19	0.986	135628	18141	1680	4200	11	0.80(0.65-0.89)	
303.9016	21.657	20.169	89	1.042	269459	36017	1436	3590	25		
305.8987	21.657	20.169	89	1.042	340810	44368	1680	4200	26	0.79(0.65-0.89)	
303.9016	23.975	20.169	228	1.154	322953	60573	1436	3590	42		
305.8987	23.975	20.169	228	1.154	393272	75406	1680	4200	45	0.82(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	22.181	22.200	-1	1.017	80449	10127	239	597	42		
333.9338	22.181	22.200	-1	1.017	108514	14548	62	155	235	0.74(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	22.241	22.243	0	1.003	913937	117054	237	592	494		
321.8936	22.241	22.243	0	1.003	1144763	145105	90	225	1612	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.232	22.243	-1	1.020	136661	16820	55	137	306		
A Non-2,3,7,8-sub-TCDD											
319.8965	22.970	21.044	115	1.036	76632	9984	237	592	42		
321.8936	22.962	21.044	115	1.035	96245	10848	90	225	121	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.730	27.708	1	1.272	160779	25667	69	172	372		
353.8970	27.738	27.708	2	1.272	94290	16775	46	115	365	1.71(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.755	27.734	1	1.001	193700	28740	155	387	185		
341.8567	27.755	27.734	1	1.001	113845	17235	121	302	142	1.70(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.305	29.284	1	1.344	195163	31262	69	172	453		
353.8970	29.322	29.284	2	1.345	128975	18819	46	115	409	1.51(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.339	29.326	1	1.001	110445	16456	155	387	106		
341.8567	29.339	29.326	1	1.001	71022	9927	121	302	82	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.387	24.932	-33	0.879	2043	551	1	2	551		
341.8567	24.413	24.932	-31	0.880	1243	312	8	20	39	1.64(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.222	28.540	-139	0.946	77396	13862	155	387	89		
341.8567	26.231	28.540	-138	0.946	48738	7882	121	302	65	1.59(1.32-1.78)	
339.8597	27.182	28.540	-81	0.980	5705	964	155	387	6		
341.8567	27.191	28.540	-81	0.981	3442	600	121	302	5	1.66(1.32-1.78)	
339.8597	27.612	28.540	-56	0.996	8941	2389	155	387	15		
341.8567	27.629	28.540	-55	0.996	8644	1885	121	302	16	1.03(1.32-1.78)	
	Empc Correction				5768	1541	121	302	13		
339.8597	28.370	28.540	-10	1.023	51503	8052	155	387	52		
341.8567	28.353	28.540	-11	1.022	31710	4957	121	302	41	1.62(1.32-1.78)	
339.8597	29.701	28.540	70	1.071	27843	3474	155	387	22		
341.8567	29.693	28.540	69	1.071	16404	2219	121	302	18	1.70(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.182	30.143	2	1.384	90369	12274	17	42	722		
369.8919	30.148	30.143	0	1.383	57952	8701	31	77	281	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	30.190	30.160	2	1.000	8045	1424	34	85	42		M
357.8516	30.182	30.160	1	1.000	5865	868	10	25	87	1.37(1.32-1.78)	

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.467	28.887	-145	0.877	886	209	34	85	6		
357.8516	26.610	28.887	-136	0.882	10900	2027	10	25	203	0.08(1.32-1.78)	
	Empc Correction				571	134	10	25	13		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.271	35.259	1	0.957	117108	27019	71	177	381		
385.8610	35.271	35.259	1	0.957	215682	51668	131	327	394	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.288	35.276	1	1.000	324419	76984	133	332	579		
375.8178	35.288	35.276	1	1.000	254394	58973	77	192	766	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.431	35.419	1	0.961	93187	21883	71	177	308		
385.8610	35.423	35.419	0	0.961	170180	37325	131	327	285	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.448	35.436	1	1.000	95591	21487	133	332	162		
375.8178	35.440	35.436	0	1.000	70252	15460	77	192	201	1.36(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.214	36.203	1	0.982	93909	23946	71	177	337		
385.8610	36.206	36.203	0	0.982	162222	42498	131	327	324	0.58(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.223	36.219	0	1.000	9748	2604	133	332	20		
375.8178	36.214	36.219	0	1.000	8416	1858	77	192	24	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.073	37.061	1	1.005	78653	22496	71	177	317		
385.8610	37.073	37.061	1	1.005	159307	44454	131	327	339	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.082	37.078	0	1.000	4977	1548	133	332	12		
375.8178	37.082	37.078	0	1.000	4390	1292	77	192	17	1.13(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.890	35.385	-90	0.961	23938	5098	133	332	38		
375.8178	33.890	35.385	-90	0.961	18961	3369	77	192	44	1.26(1.05-1.43)	
373.8208	34.699	35.385	-41	0.984	11236	3064	133	332	23		
375.8178	34.690	35.385	-42	0.984	10050	2438	77	192	32	1.12(1.05-1.43)	
373.8208	37.183	35.385	108	1.054	18355	5186	133	332	39		
375.8178	37.183	35.385	108	1.054	14659	3953	77	192	51	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.871	36.868	0		179626	45430	72	180	631		
403.8529	36.871	36.868	0		134359	33526	65	162	516	1.34(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.408	36.405	0	0.987	136651	36149	72	180	502		
403.8529	36.400	36.405	0	0.987	97178	25654	65	162	395	1.41(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQU
389.8158	36.413						12	30			
391.8127	36.413						21	52			

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.526	36.514	1	0.991	118301	30109	72	180	418		
403.8529	36.518	36.514	0	0.990	88684	22817	65	162	351	1.33(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQ
389.8158	36.534	36.531	0	1.000	1973	717	12	30	60		
	Empc Correction				1391	493	12	30	41		
391.8127	36.534	36.531	0	1.000	1122	398	21	52	19	1.76(1.05-1.43)	
1,2,3,7,8,9-HxCDD											RQM
389.8158	36.888	36.885	0	1.013	658	226	12	30	19		M
391.8127	36.888	36.885	0	1.013	791	243	21	52	12	0.83(1.05-1.43)	M
	Empc Correction				530	182	21	52	9		
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	34.614	35.717	-66	0.948	3379	724	12	30	60		
391.8127	34.623	35.717	-66	0.948	3486	772	21	52	37	0.97(1.05-1.43)	M
	Empc Correction				2724	583	21	52	28		
389.8158	35.676	35.717	-2	0.977	3833	866	12	30	72		
391.8127	35.692	35.717	-1	0.977	3560	780	21	52	37	1.08(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.811	38.807	0	1.053	57636	19138	100	250	191		
419.8220	38.811	38.807	0	1.053	134020	45510	137	342	332	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.819	38.816	0	1.000	91568	28724	132	330	218		
409.7788	38.819	38.816	0	1.000	85753	27833	87	217	320	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.032	40.028	0	1.086	80498	28269	100	250	283		
419.8220	40.032	40.028	0	1.086	164272	55793	137	342	407	0.49(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.040	40.037	0	1.000	29343	10069	132	330	76		
409.7788	40.040	40.037	0	1.000	26810	8780	87	217	101	1.09(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7817	39.181	39.413	-14	1.010	32131	11321	132	330	86		
409.7788	39.173	39.413	-14	1.009	31755	10104	87	217	116	1.01(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.729	39.725	0	1.077	86490	29631	42	105	706		
437.8140	39.729	39.725	0	1.077	84736	29233	48	120	609	1.02(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.737	39.733	0	1.000	43965	14534	68	170	214		
425.7737	39.737	39.733	0	1.000	41223	14412	54	135	267	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.114	39.555	-26	0.985	42112	13378	68	170	197		
425.7737	39.114	39.555	-26	0.985	40191	13682	54	135	253	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.216	42.215	0	1.145	140908	44984	67	167	671		
471.7750	42.207	42.215	0	1.145	151471	48703	46	115	1059	0.93(0.76-1.02)	
OCDF											
441.7428	42.317	42.316	0	1.002	38485	11623	36	90	323		
443.7399	42.317	42.316	0	1.002	42686	12812	90	225	142	0.90(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	42.224	42.223	0	1.000	512906	158599	130	325	1220		
459.7348	42.224	42.223	0	1.000	571657	171392	122	305	1405	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Inject. Date: 28-Jul-2020 08:25:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398798 Lims Sample ID: 20

Non-2,3,7,8-sub-TCDF, RT: 20.169

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	303826	45053

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	303826	45053

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.153	145731	24245	179504	28885	94.6	0.81	
18.660	199292	24863	245815	31873	129.5	0.81	
19.115	143427	19722	175044	23304	92.7	0.82	
19.527	187540	25541	231911	30979	122.0	0.81	
20.051	1859416	266423	2297479	330617	1209.4	0.81	
20.489	108520	14284	135628	18141	71.0	0.80	
21.657	269459	36017	340810	44368	177.6	0.79	
23.975	322953	60573	393272	75406	208.4	0.82	
Signal Totals:							
	3236338	471668	3999463	583573			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7235801	1055241				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2105.2 = (7235801 * 100.000) / (303826 * 1.131)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Lims ID: 320-62886-A-2-A

Client ID: 11215702-Control

Inject. Date: 28-Jul-2020 08:25:00 Dil. Factor: 1.0000

Sample Type: Client Sample

Instrument ID: DFS 1 Operator: Xcalibur_System

Lims Batch ID: 398798 Lims Sample ID: 20

Non-2,3,7,8-sub-TCDD, RT: 21.044

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	188963	24675

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	188963	24675

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
22.970	76632	9984	96245	10848	77.2	0.80	
Signal Totals:							
	76632	9984	96245	10848			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	172877	20832				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 77.210 = (172877 * 100.000) / (188963 * 1.185)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	28-Jul-2020 08:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	20

F1 PeCDFs, RT: 24.932

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	255069	42442
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	324138	50081

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	289603	46261

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.387	2043	551	1243	312	1.13	1.64	
Signal Totals:							
	2043	551	1243	312			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3286	863				1.64	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.128 = (3286 * 100.000) / (289603 * 1.006)

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	28-Jul-2020 08:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	20

Non-2,3,7,8-sub-PeCDF, RT: 28.540

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	255069	42442
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	324138	50081

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	289603	46261

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.222	77396	13862	48738	7882	43.3	1.59	
27.182	5705	964	3442	600	3.14	1.66	
27.612	8941	2389	8644	1885	6.03	1.03	RQ
27.612	8941	2389	5768	1541	5.05		Empc Correction
28.370	51503	8052	31710	4957	28.6	1.62	
29.701	27843	3474	16404	2219	15.2	1.70	
Signal Totals:							
	171388	28741	106062	17199			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	280326	46284				1.57	RQ
	277450	45940					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 96.186 = (280326 * 100.000) / (289603 * 1.006)
Empc Amount: 95.200 = (277450 * 100.000) / (289603 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	28-Jul-2020 08:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	20

Non-2,3,7,8-sub-PeCDD, RT: 28.887

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	148321	20975

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	148321	20975

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.467	886	209	10900	2027	7.18	0.08	RQ
26.467	886	209	571	134	0.8880		Empc Correction

Compound is Marked ND

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Inject. Date: 28-Jul-2020 08:25:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398798 Lims Sample ID: 20

Non-2,3,7,8-sub-HxCDF, RT: 35.385

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	332790	78687
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	263367	59208
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	256131	66444
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	237960	66950

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		100.000	272562	67822

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.890	23938	5098	18961	3369	13.1	1.26	
34.699	11236	3064	10050	2438	6.49	1.12	
37.183	18355	5186	14659	3953	10.1	1.25	
Signal Totals:							
	53529	13348	43670	9760			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	97199	23108				1.23	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 29.634 = (97199 * 100.000) / (272562 * 1.203)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	28-Jul-2020 08:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	20

Non-2,3,7,8-sub-HxCDD, RT: 35.717

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	233829	61803
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	206985	52926
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		100.000	220407	57364

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.614	3379	724	3486	772	3.04	0.97	RQM
34.614	3379	724	2724	583	2.70		Empc Correction
35.676	3833	866	3560	780	3.28	1.08	
Signal Totals:							
	7212	1590	6284	1363			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14258	3142				1.02	RQM
	13496	2953					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.319 = (14258 * 100.000) / (220407 * 1.024)
Empc Amount: 5.981 = (13496 * 100.000) / (220407 * 1.024)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	28-Jul-2020 08:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	20

Non-2,3,7,8-sub-HpCDF, RT: 39.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	191656	64648
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	244770	84062

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		100.000	218213	74355

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.181	32131	11321	31755	10104	21.2	1.01	M
Signal Totals:							
	32131	11321	31755	10104			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	63886	21425				1.01	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 21.177 = (63886 * 100.000) / (218213 * 1.383)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	28-Jul-2020 08:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	20

Non-2,3,7,8-sub-HpCDD, RT: 39.555

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.115	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	171226	58864

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.115		100.000	171226	58864

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.114	42112	13378	40191	13682	43.1	1.05	
Signal Totals:							
	42112	13378	40191	13682			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	82303	27060				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 43.109 = (82303 * 100.000) / (171226 * 1.115)

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d				
Injection Date:	28-Jul-2020 08:25:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-2-A	Lab Sample ID:	320-62886-2		
Client ID:	11215702-Control				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT:	30.19
Area:	8823
Amount:	8.952385
Amount Units:	pg/ul

Processing Integration Results

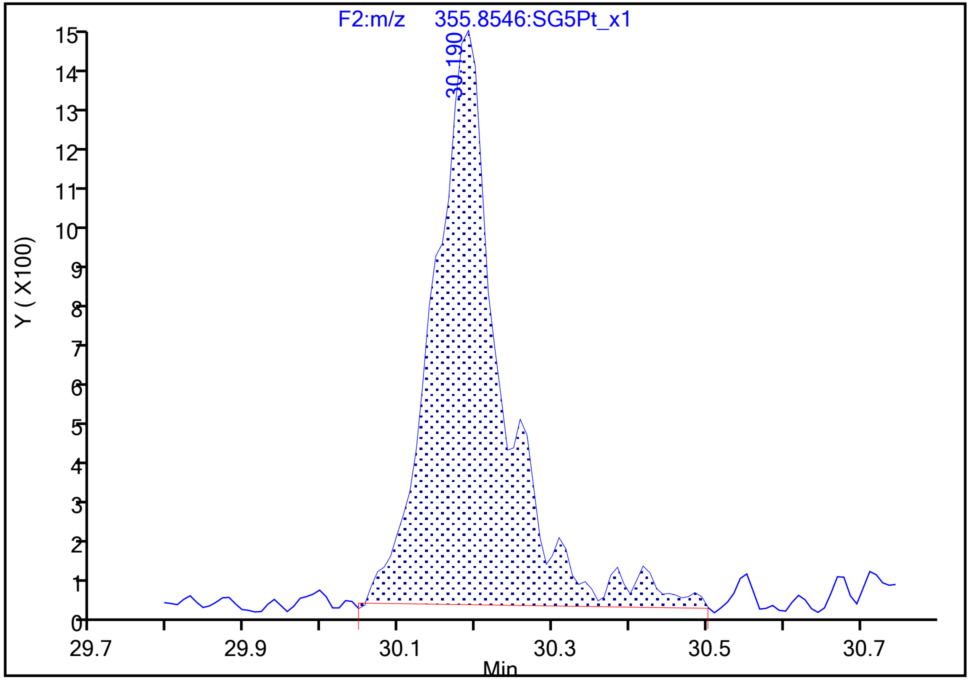

RT:	30.19
Area:	8045
Amount:	8.478191
Amount Units:	pg/ul

Manual Integration Results

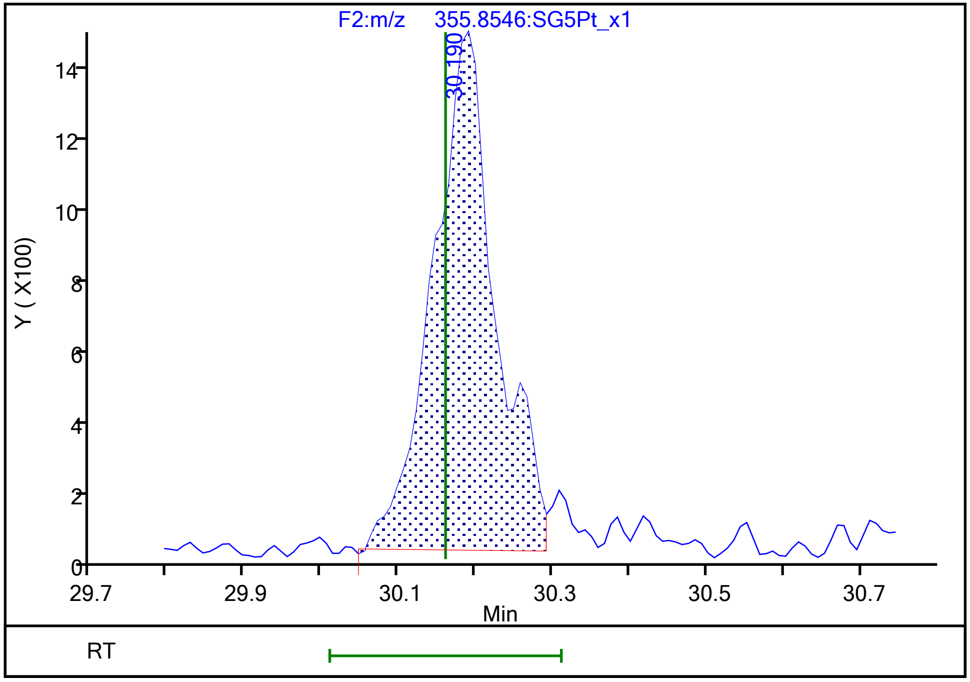

Reviewer: dadunj, 30-Jul-2020 09:52:22

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:54:36

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d				
Injection Date:	28-Jul-2020 08:25:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-2-A	Lab Sample ID:	320-62886-2		
Client ID:	11215702-Control				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

RT:	36.89
Area:	887
Amount:	0.825082
Amount Units:	pg/ul

Processing Integration Results

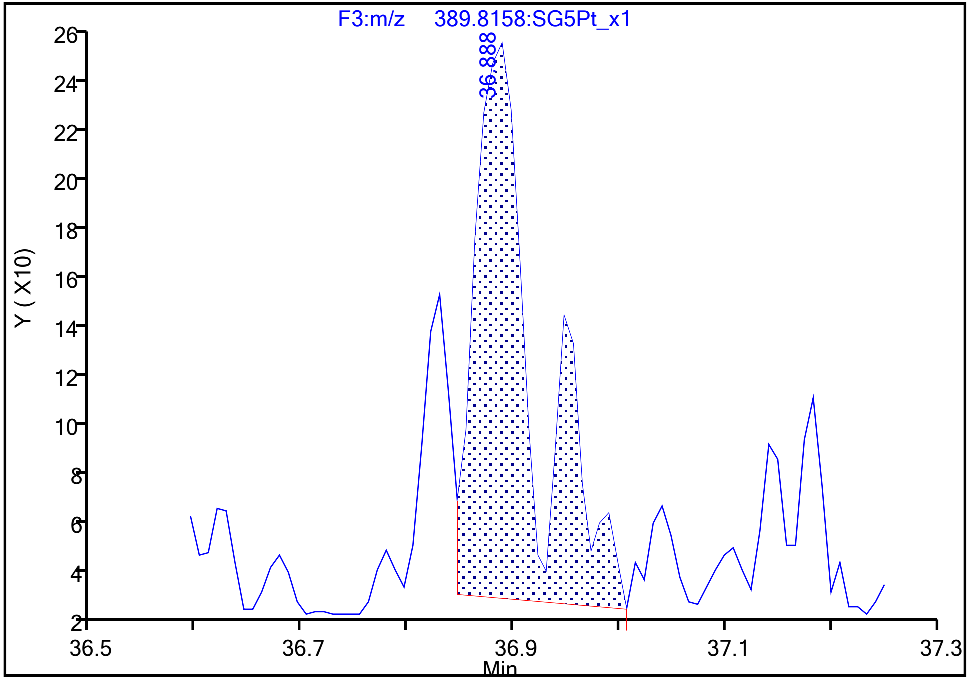

RT:	36.89
Area:	658
Amount:	0.621708
Amount Units:	pg/ul

Manual Integration Results

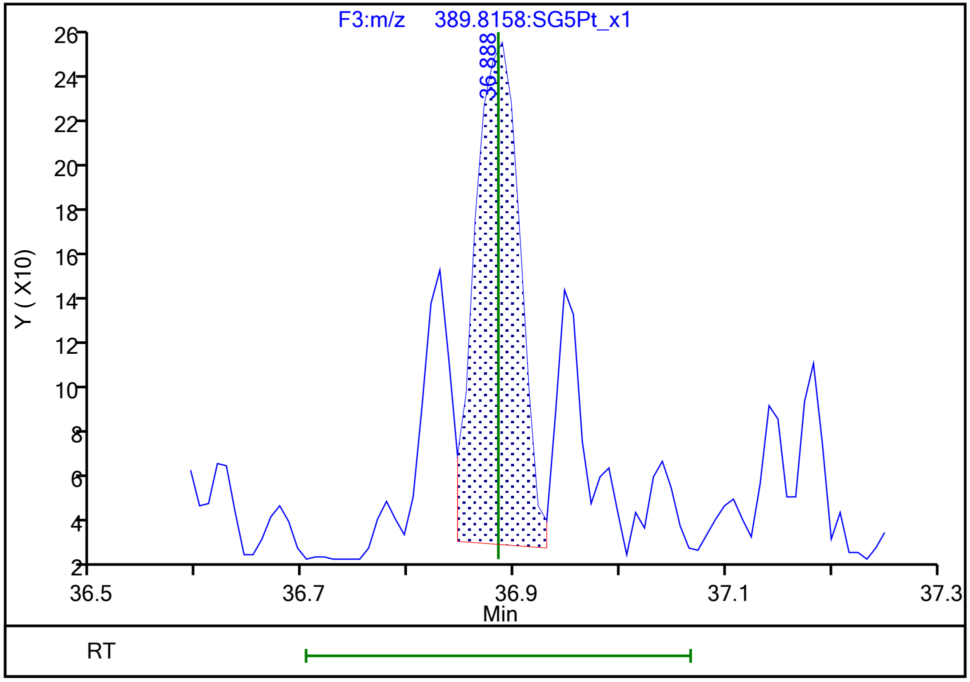

Reviewer: dadunj, 30-Jul-2020 09:53:04

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:54:36

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d				
Injection Date:	28-Jul-2020 08:25:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-2-A	Lab Sample ID:	320-62886-2		
Client ID:	11215702-Control				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT: 36.89
Area: 1036
Amount: 0.825082
Amount Units: pg/ul

Processing Integration Results

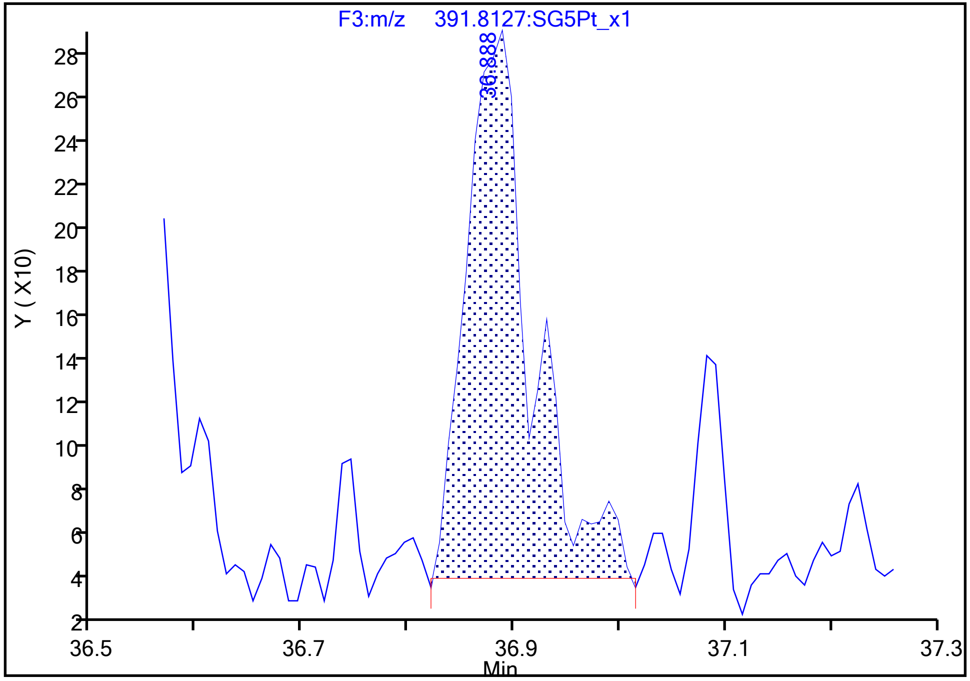

RT: 36.89
Area: 791
Amount: 0.621708
Amount Units: pg/ul

Manual Integration Results

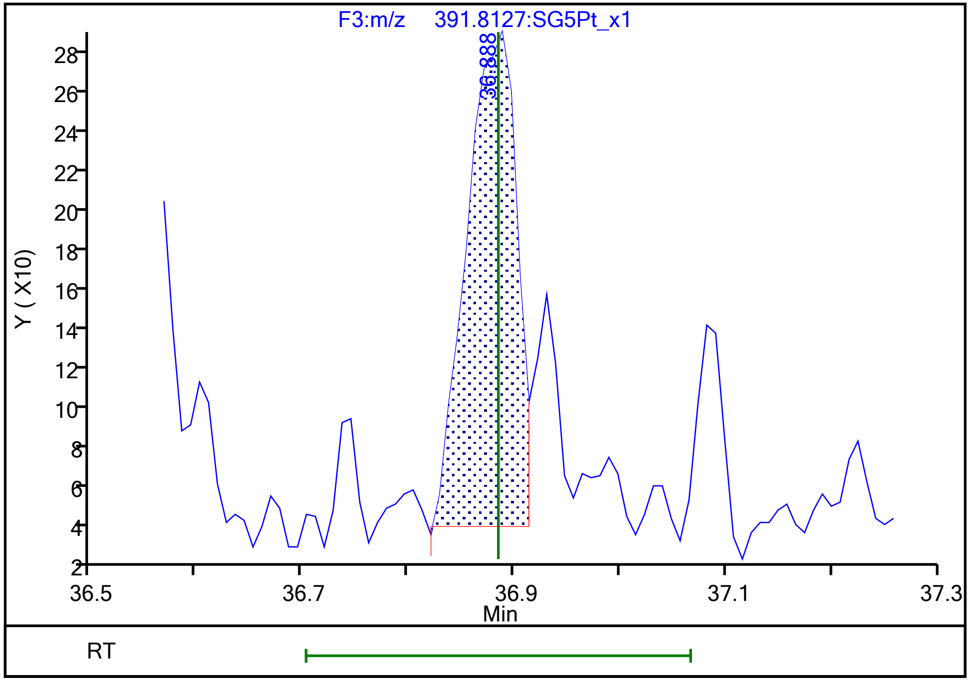

Reviewer: dadunj, 30-Jul-2020 09:53:07

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:54:36

Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d				
Injection Date:	28-Jul-2020 08:25:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-2-A	Lab Sample ID:	320-62886-2		
Client ID:	11215702-Control				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (34.58- 36.86)

Signal: 2

Processing Integration Results

RT = 34.623 Area = 3774

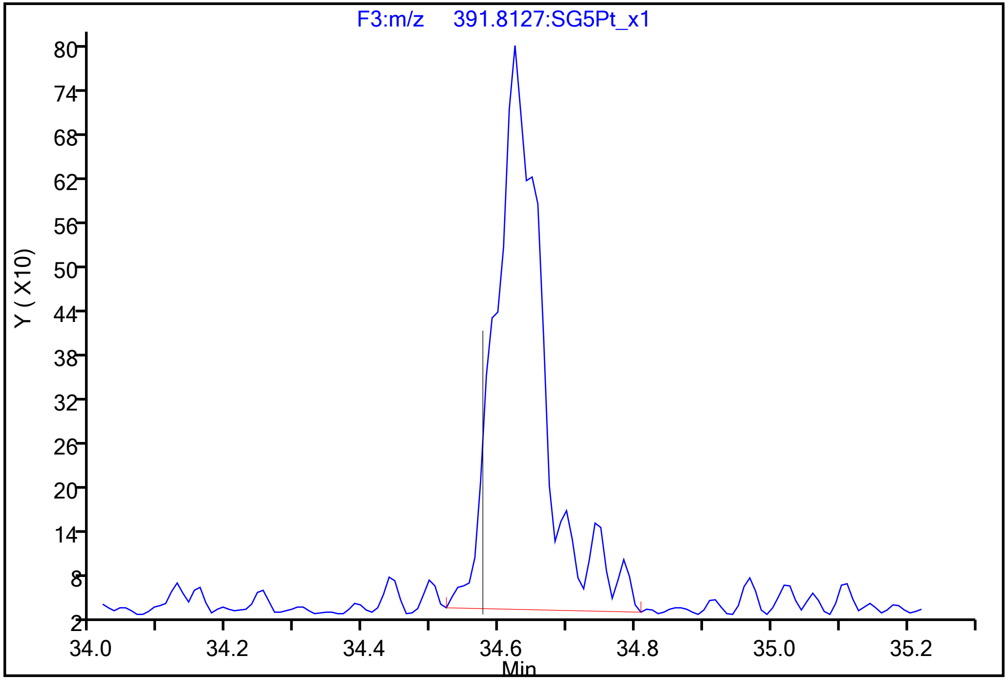

Manual Integration Results

RT = 34.623 Area = 3486 M

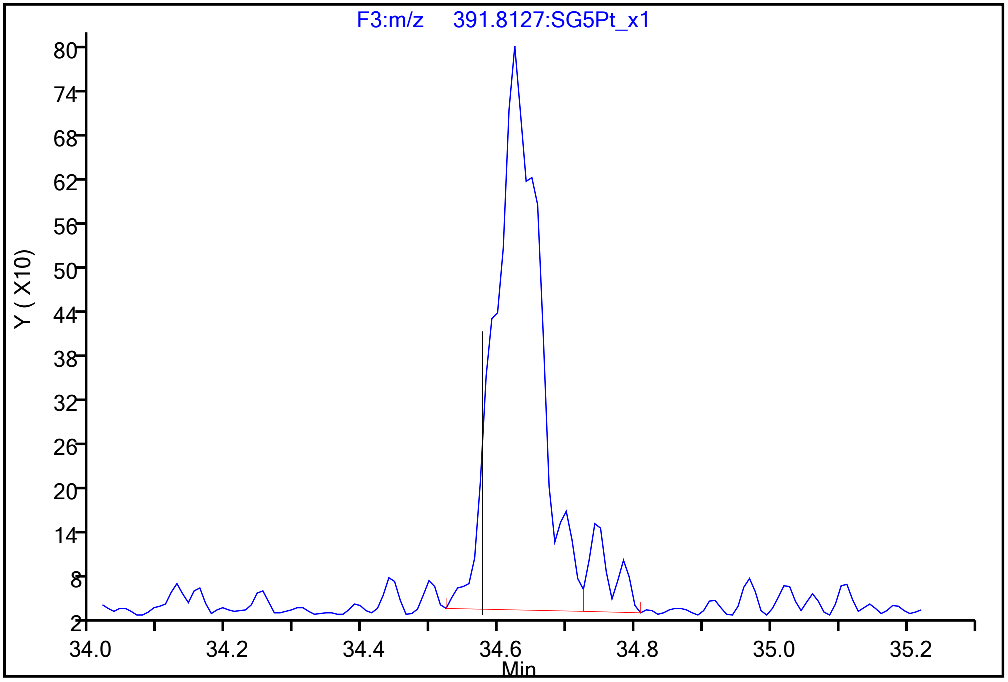

Reviewer: dadunj, 30-Jul-2020 09:53:10

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d				
Injection Date:	28-Jul-2020 08:25:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-2-A	Lab Sample ID:	320-62886-2		
Client ID:	11215702-Control				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (38.77- 40.05)

Signal: 2

Processing Integration Results

RT = 39.173 Area = 33063

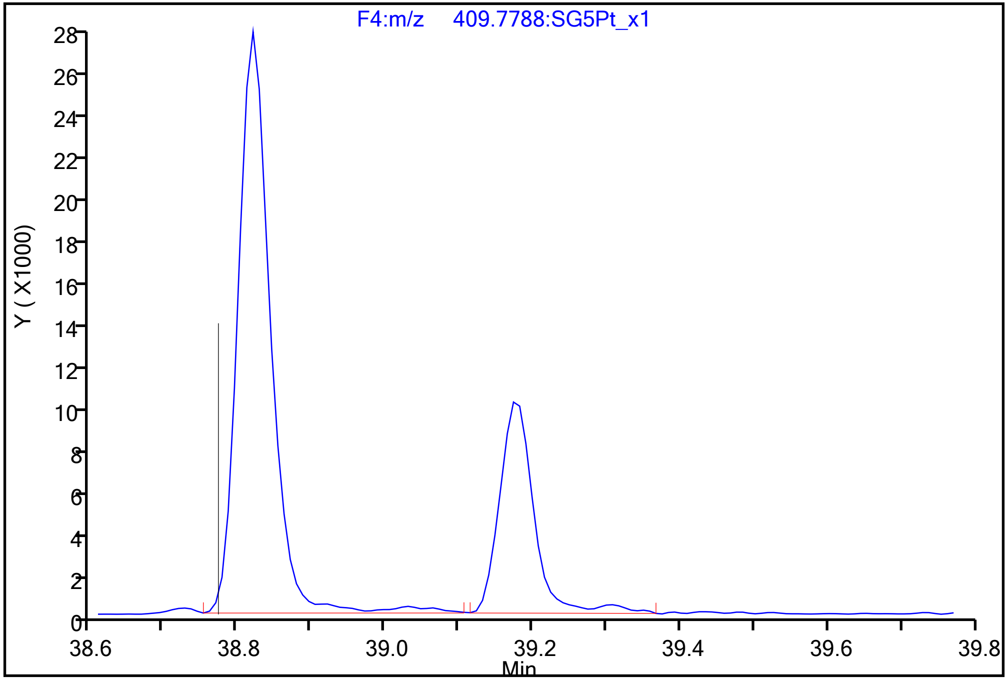

Manual Integration Results

RT = 39.173 Area = 31755 M

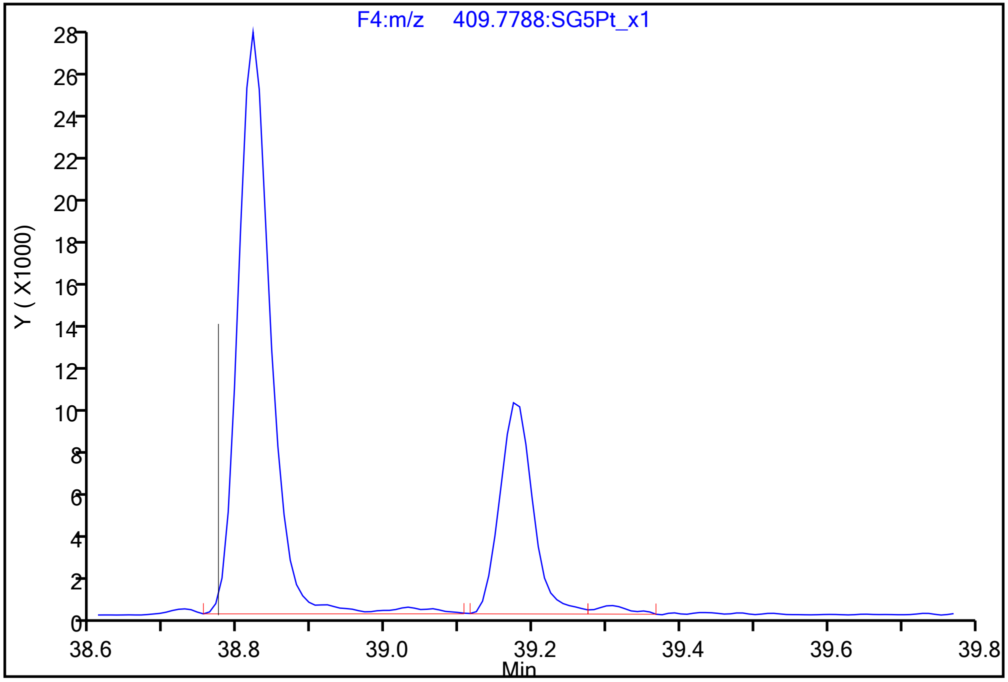

Reviewer: dadunj, 30-Jul-2020 09:53:24

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:54:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

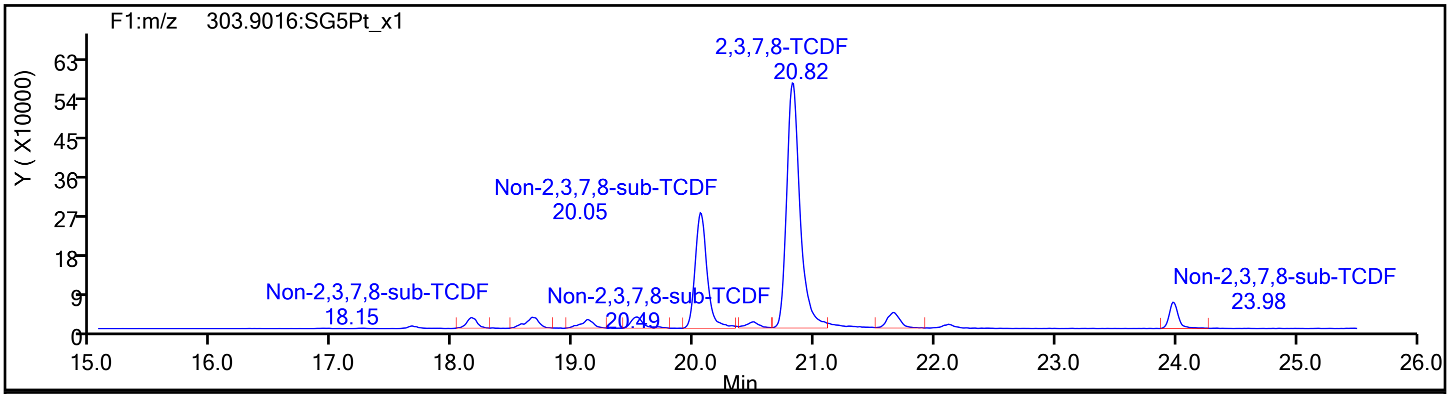

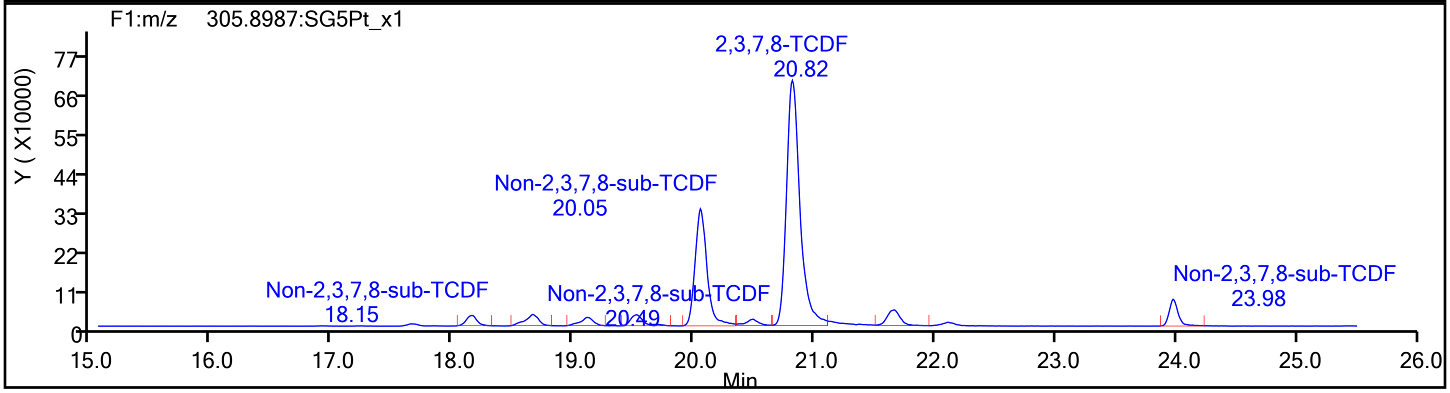

TCDF Standards

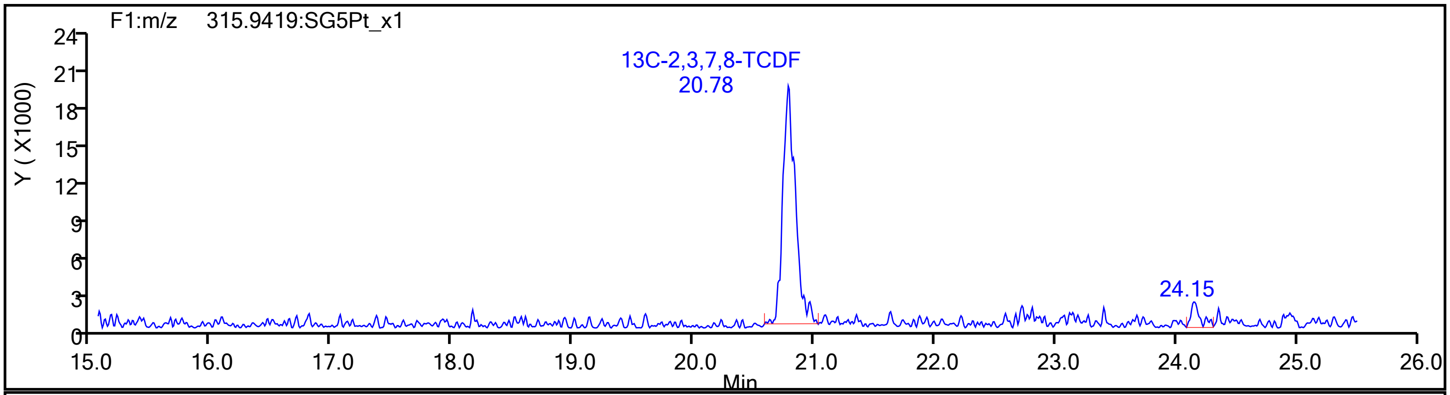

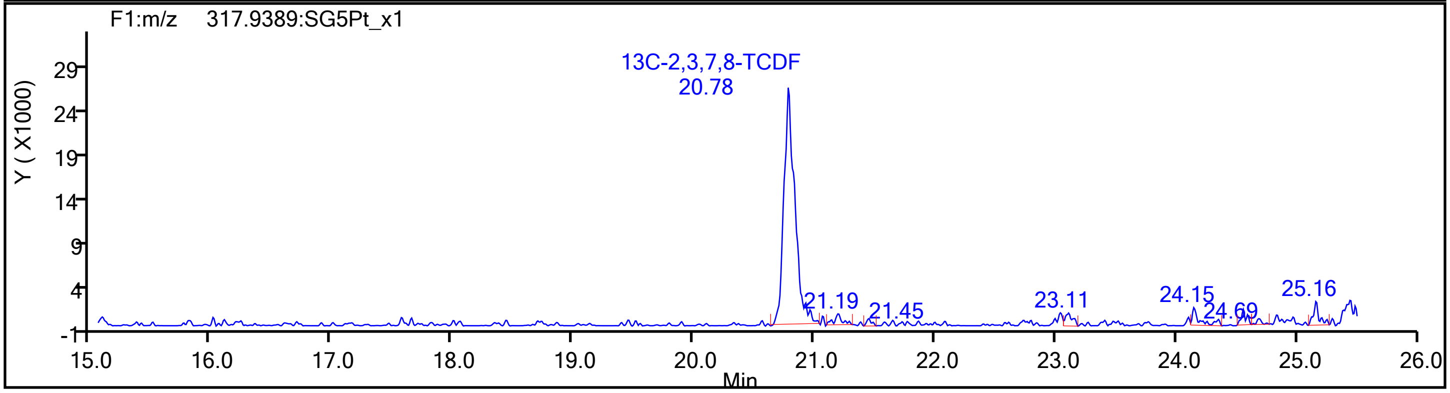

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

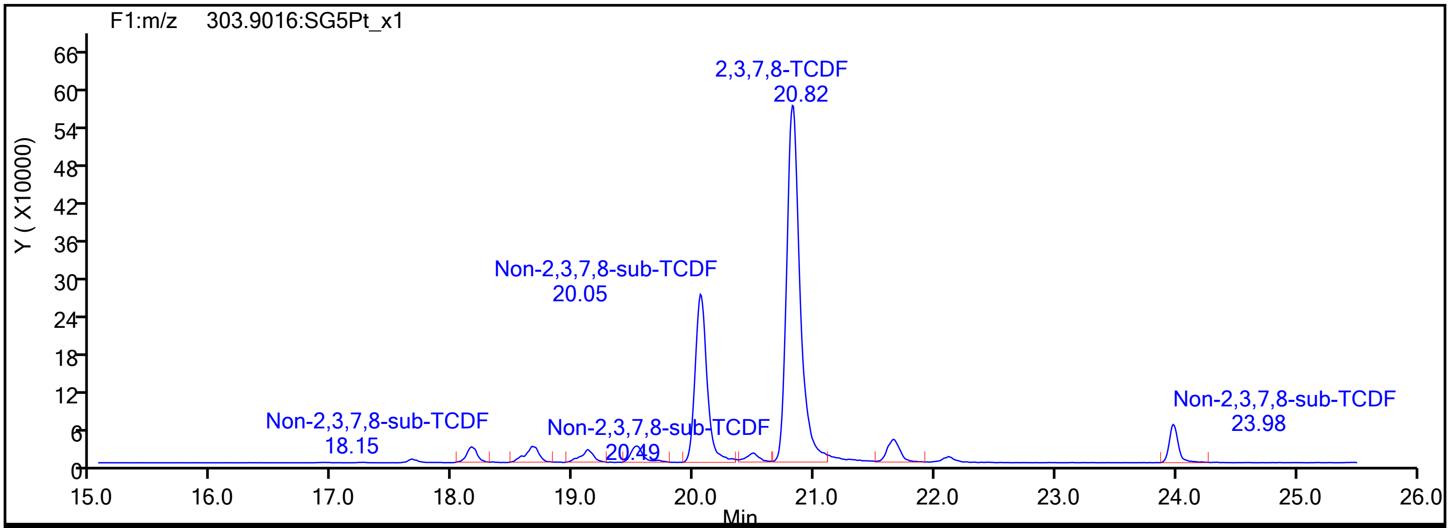

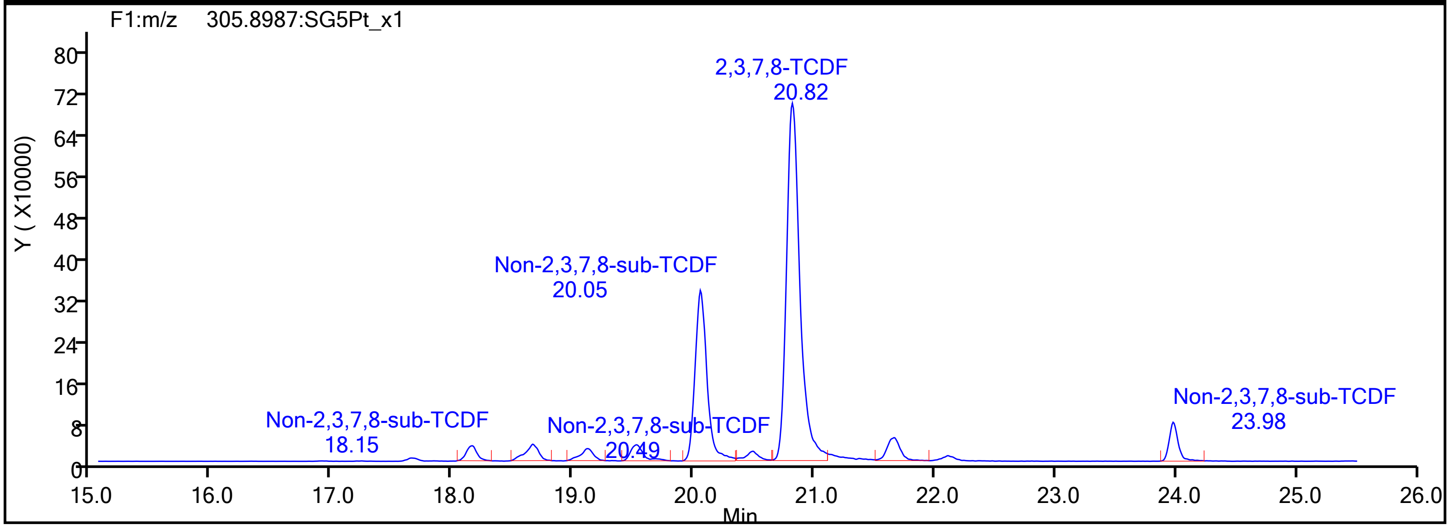

TCDF Interference Mass

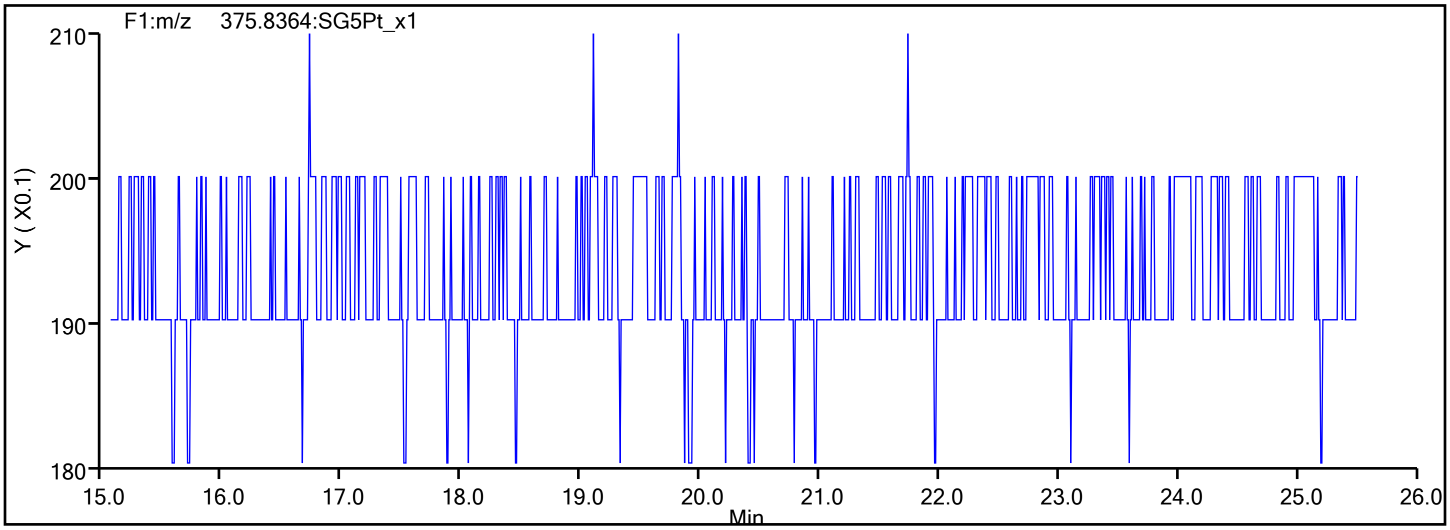

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

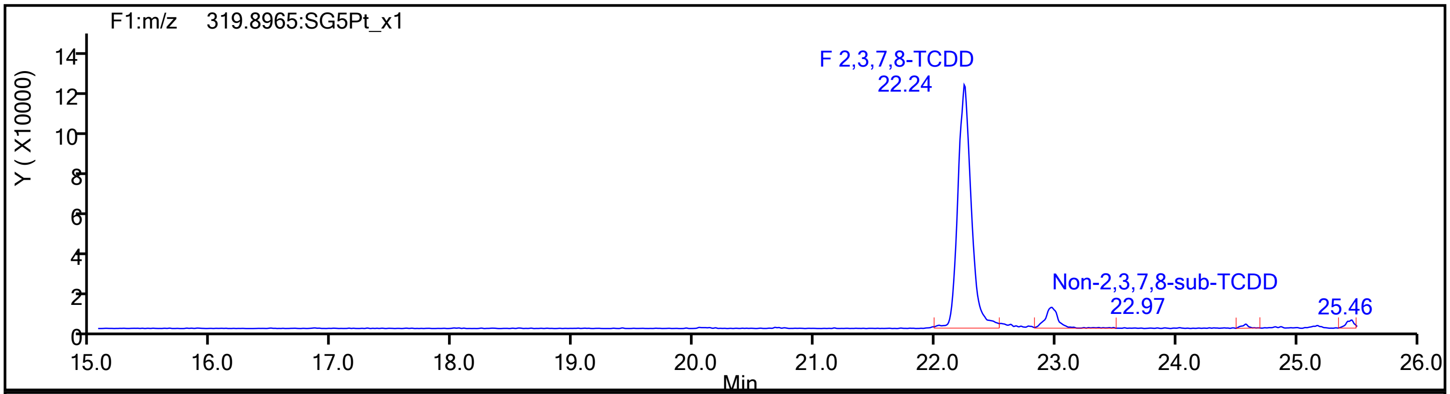

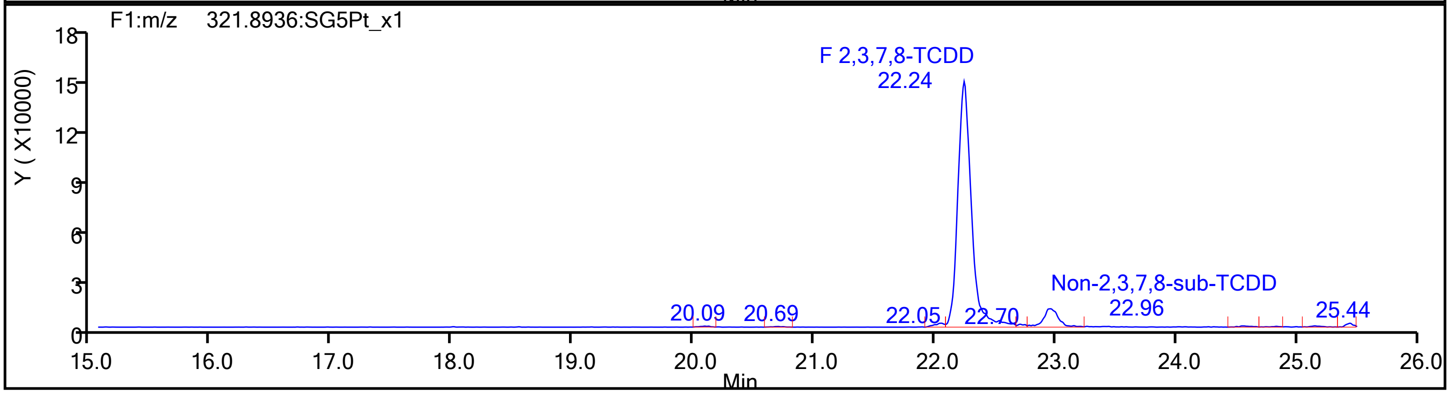

TCDD Standards

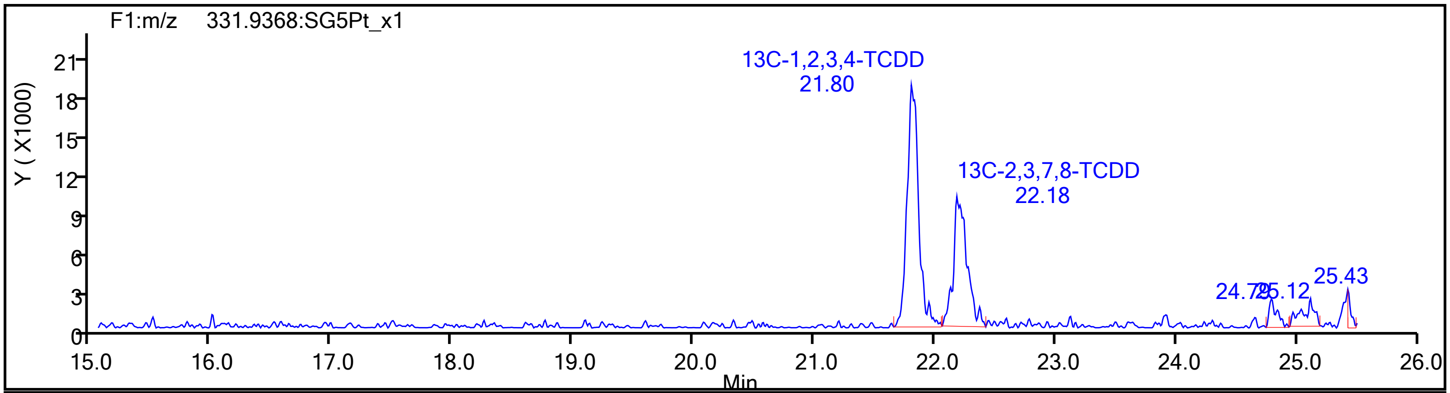

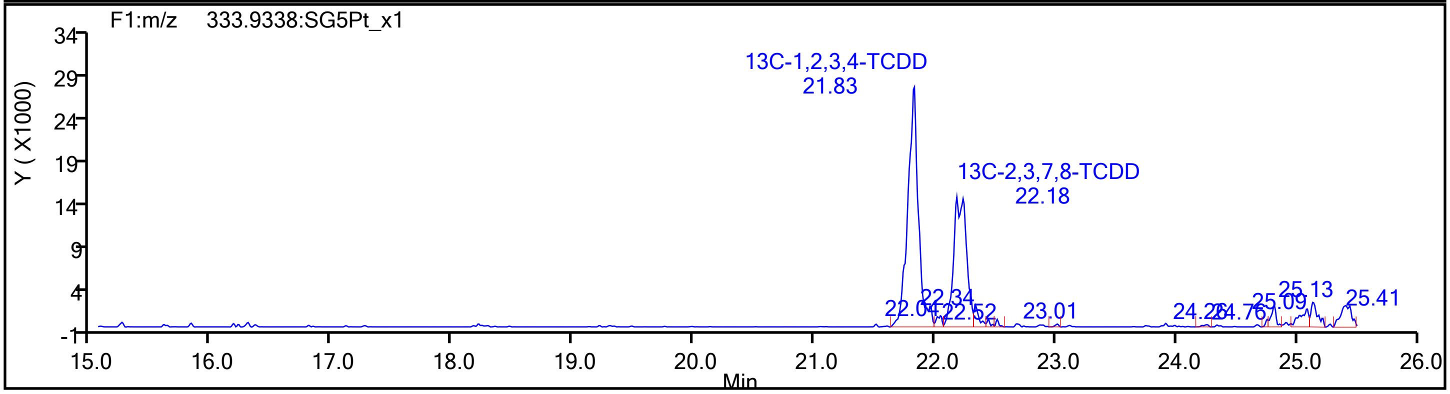

Report Date: 30-Jul-2020 09:54:37　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

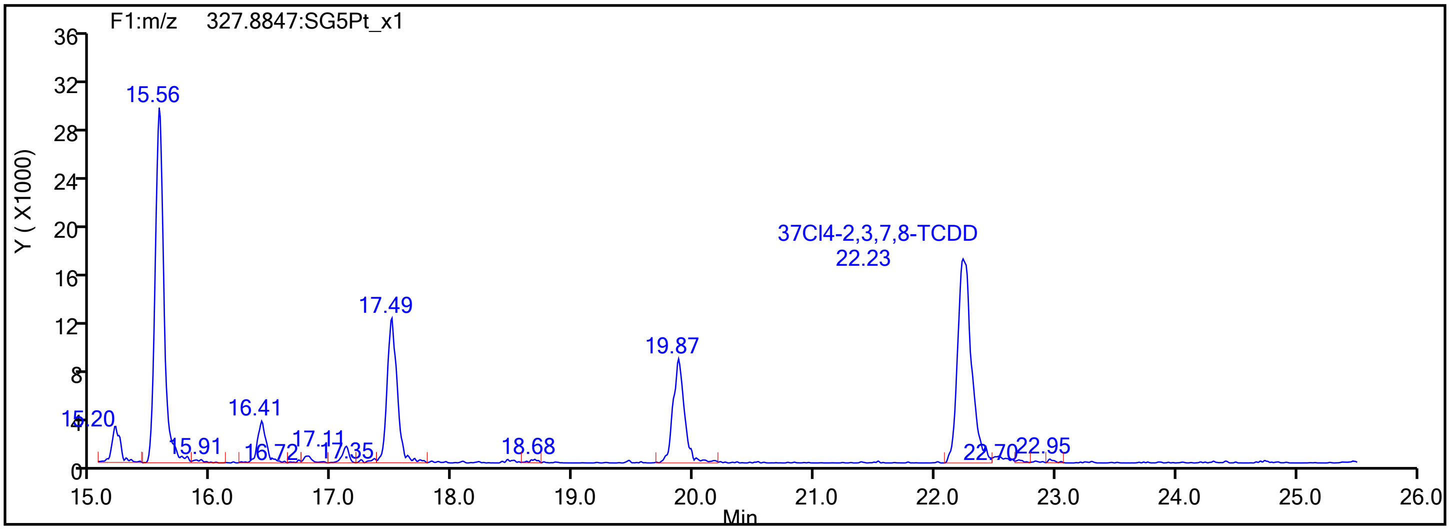

37Cl4-TCDD Standards

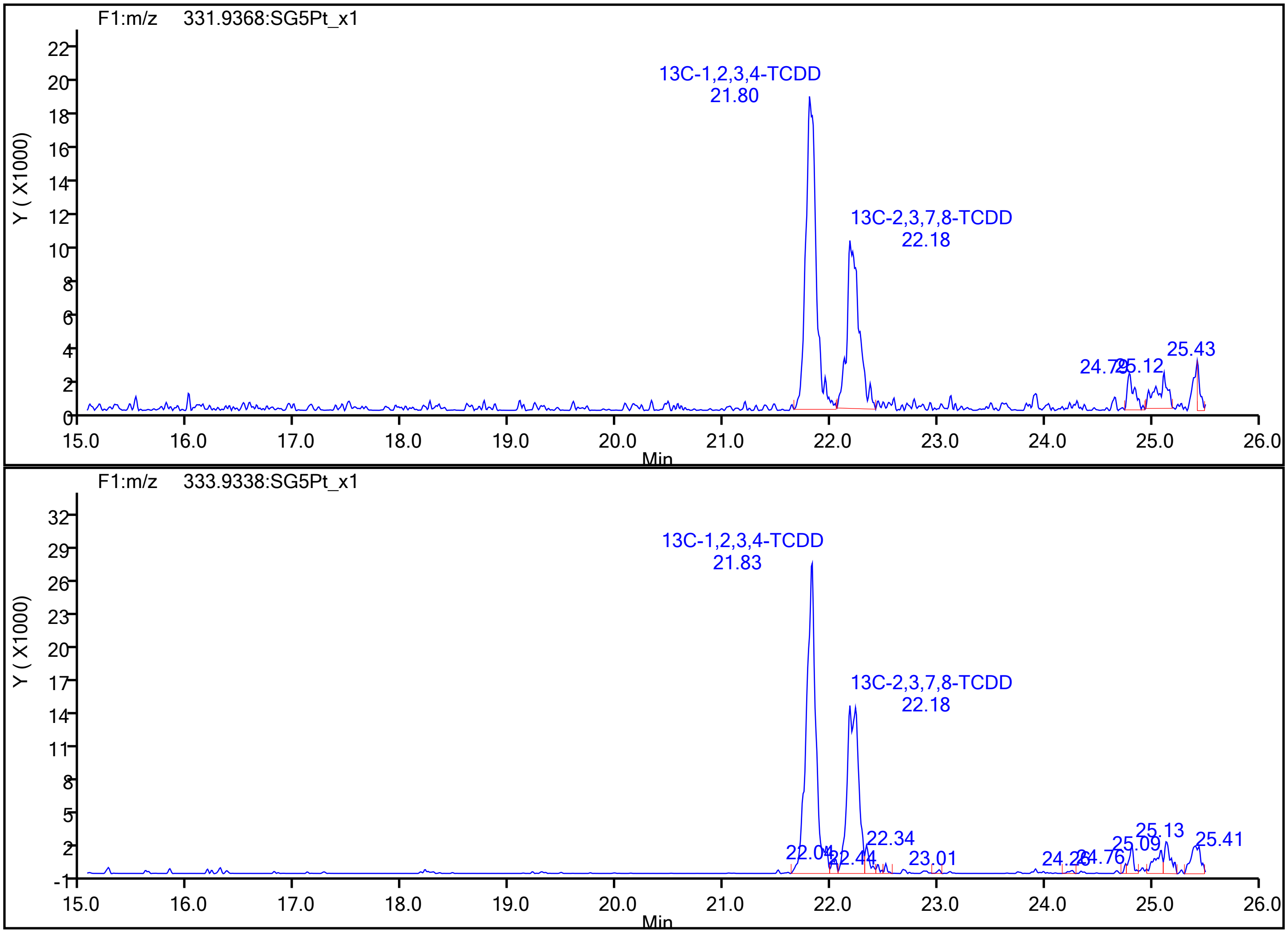

Report Date: 30-Jul-2020 09:54:37
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID: 11215702-Control
Worklist#: 398798
Sample Line#: 20
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

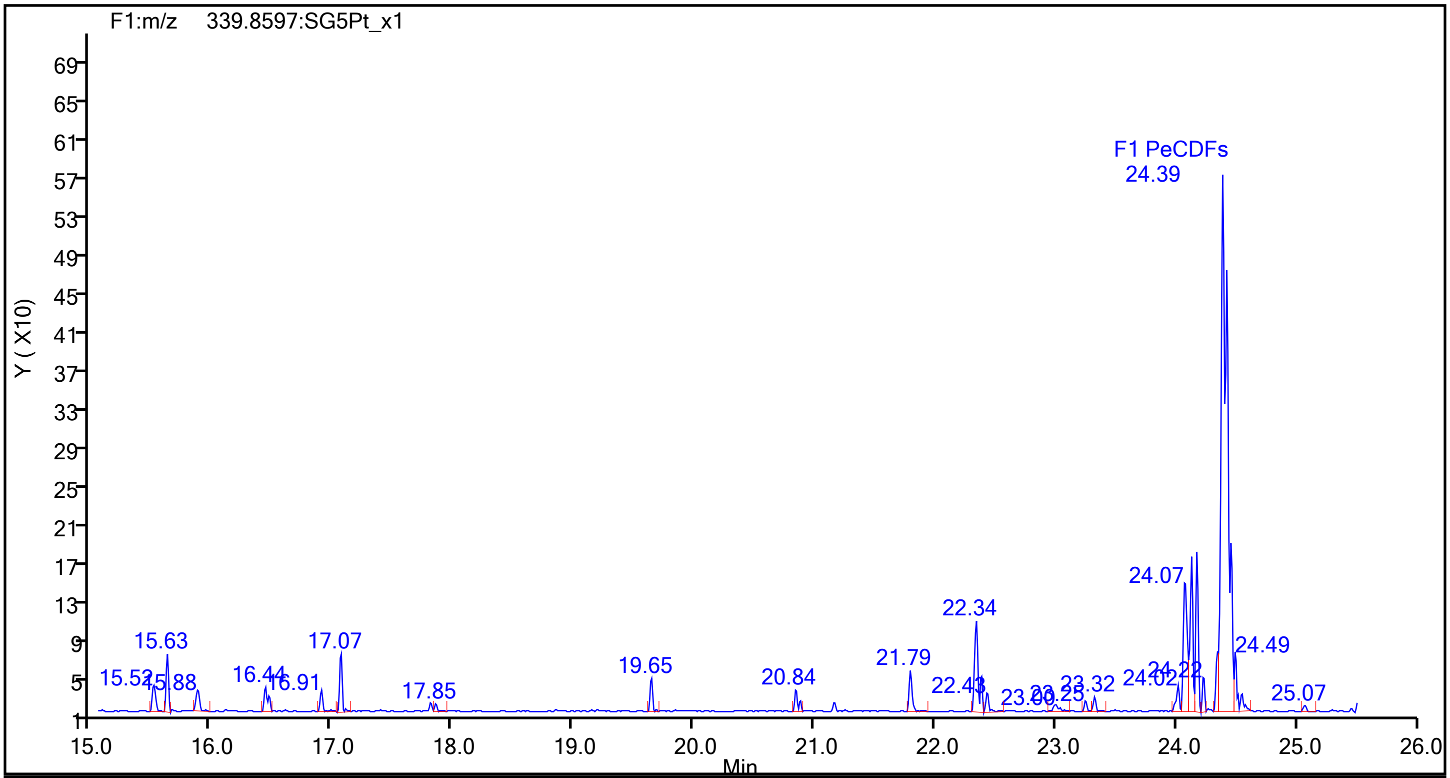

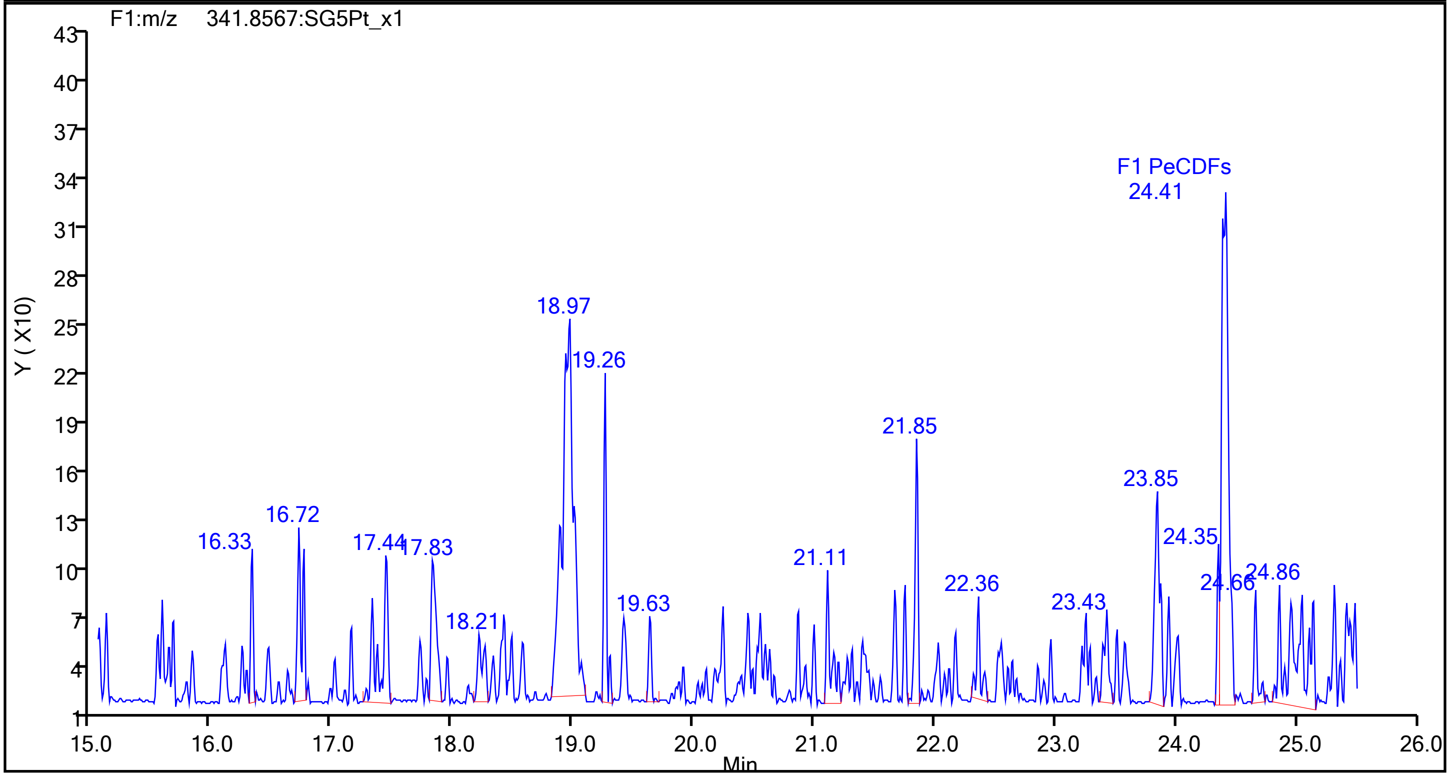

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
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Worklist#: 398798
Sample Line#: 20
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Column Dia: 0.32 mm

F1 PeCDFs

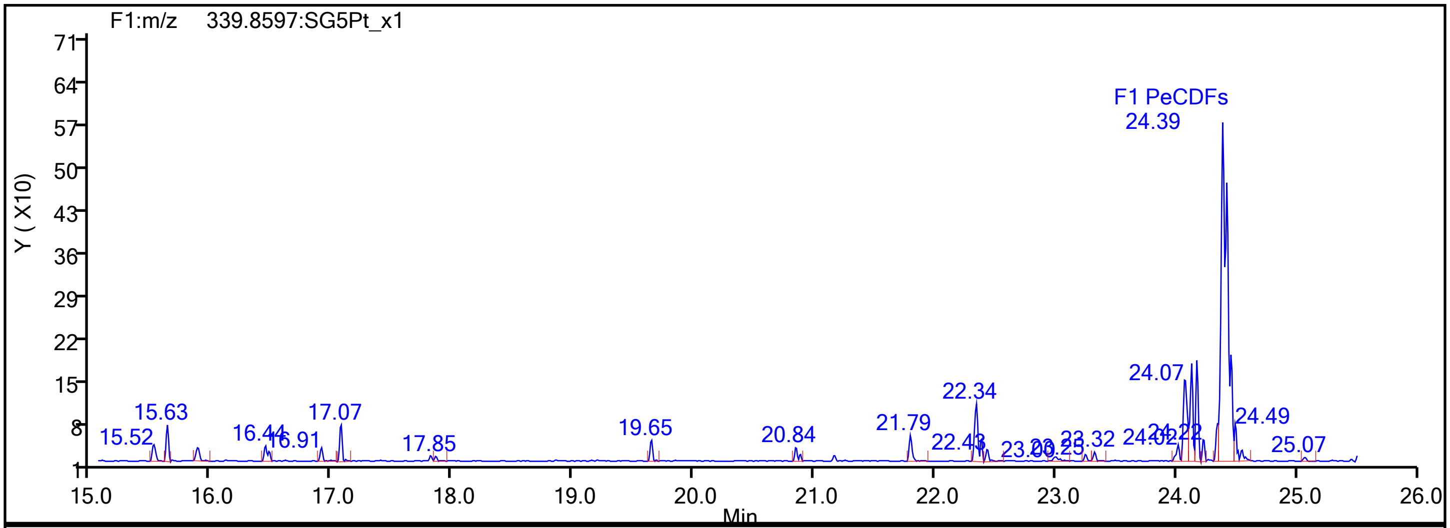

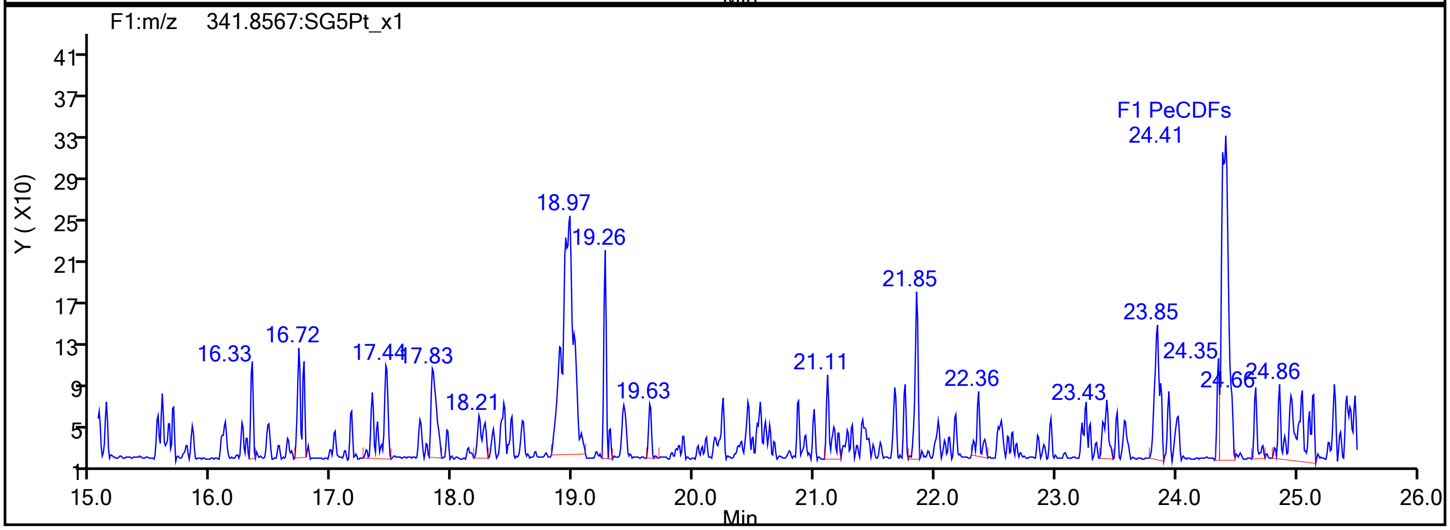

F1 PeCDFs Interference Mass

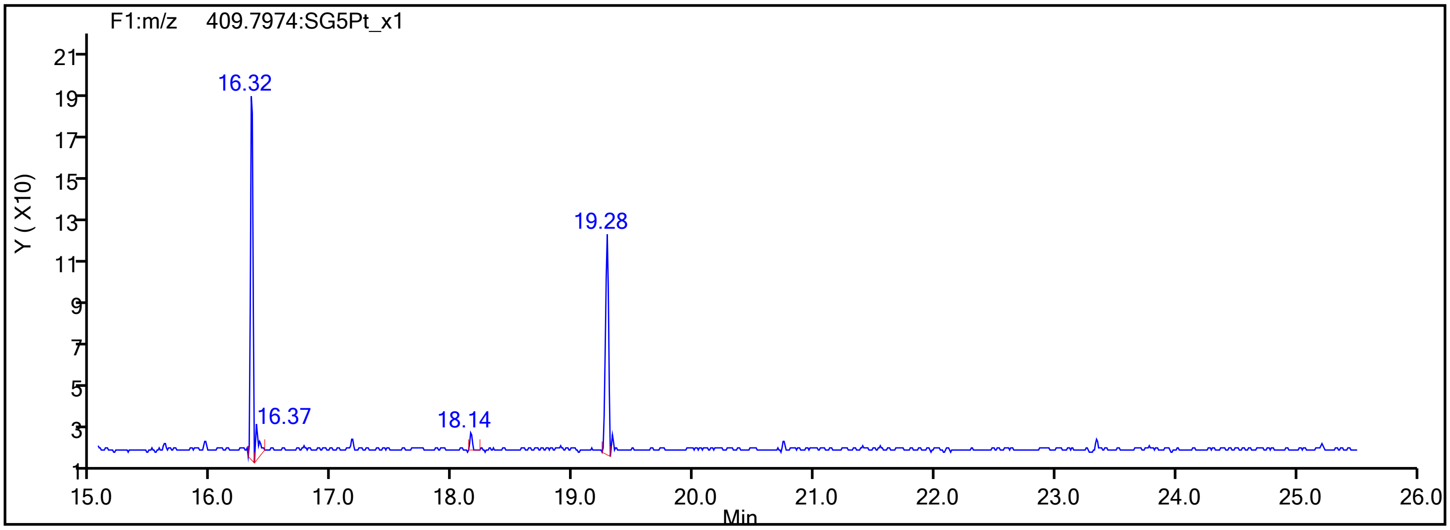

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

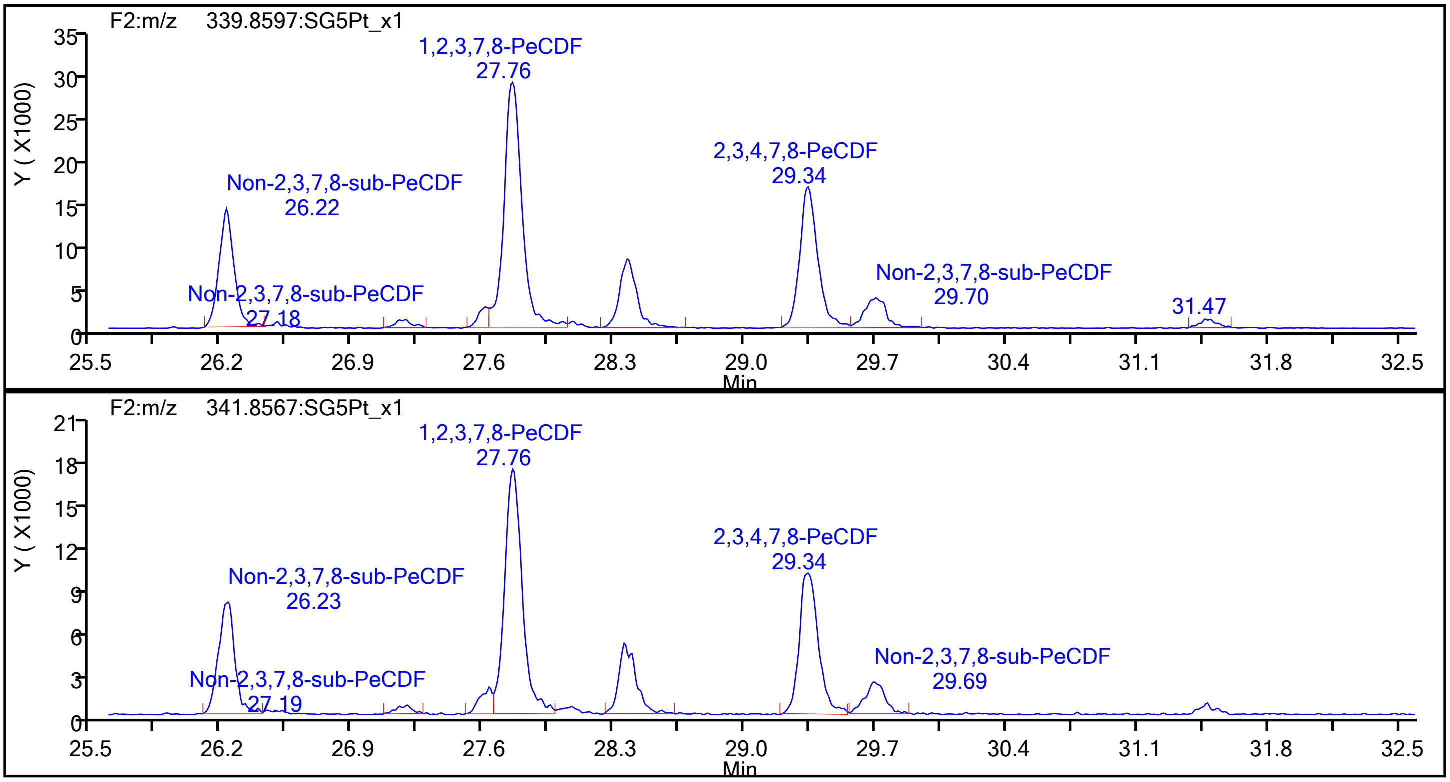

PeCDF Standards

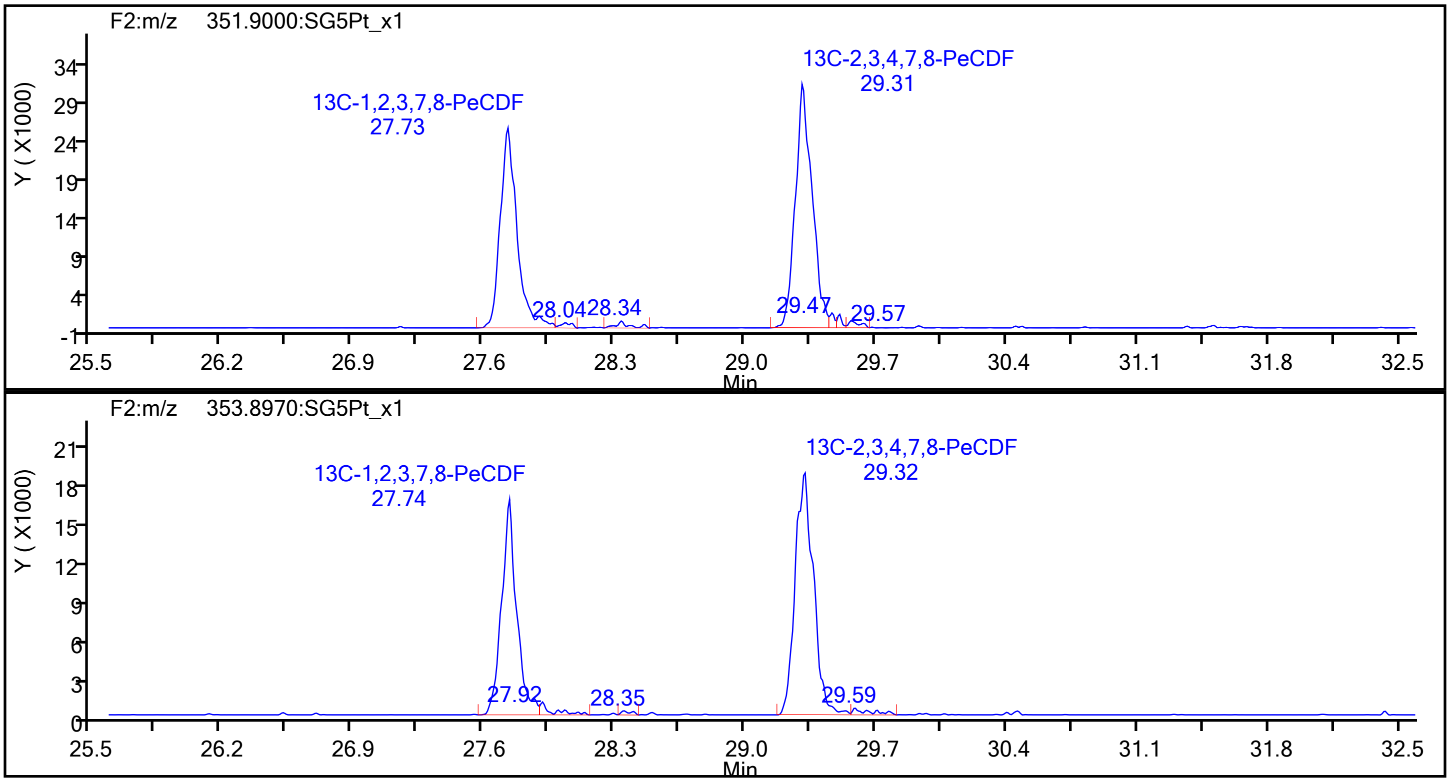

Report Date: 30-Jul-2020 09:54:37
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Injection Date: 28-Jul-2020 08:25:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 398798
Sample Line#: 20
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

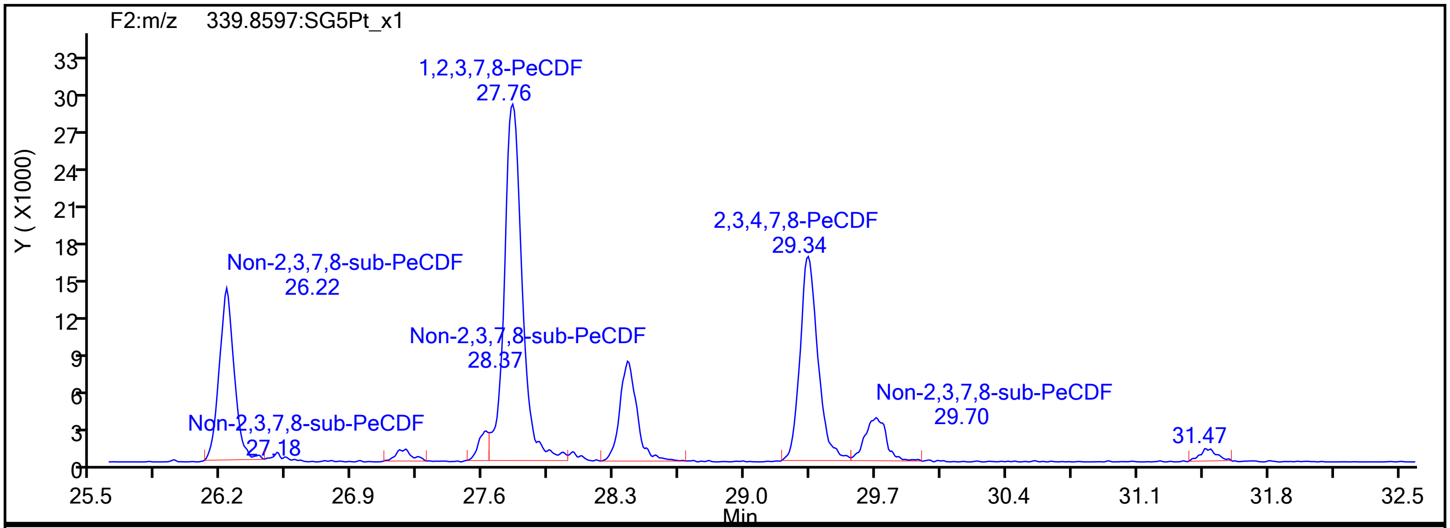

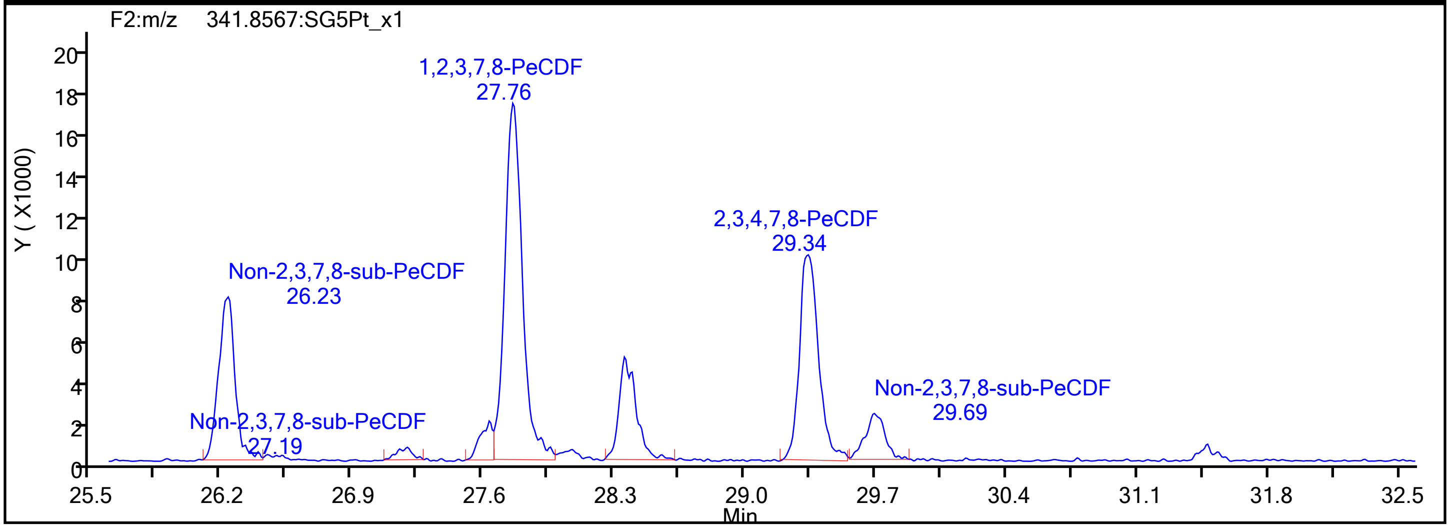

PeCDF Interference Mass

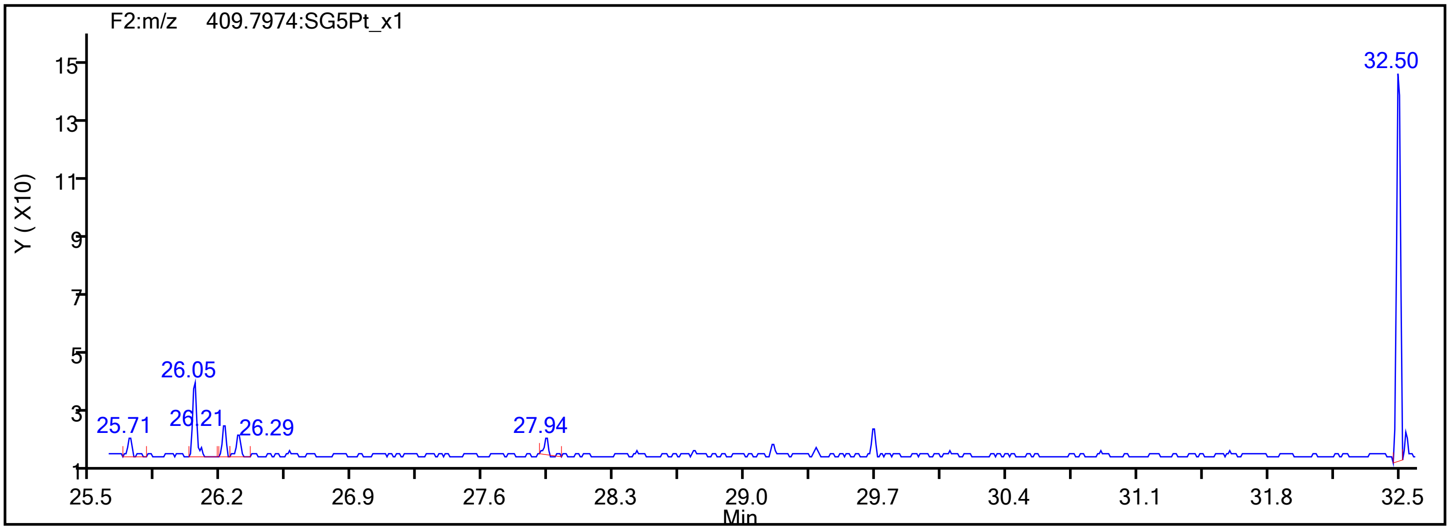

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

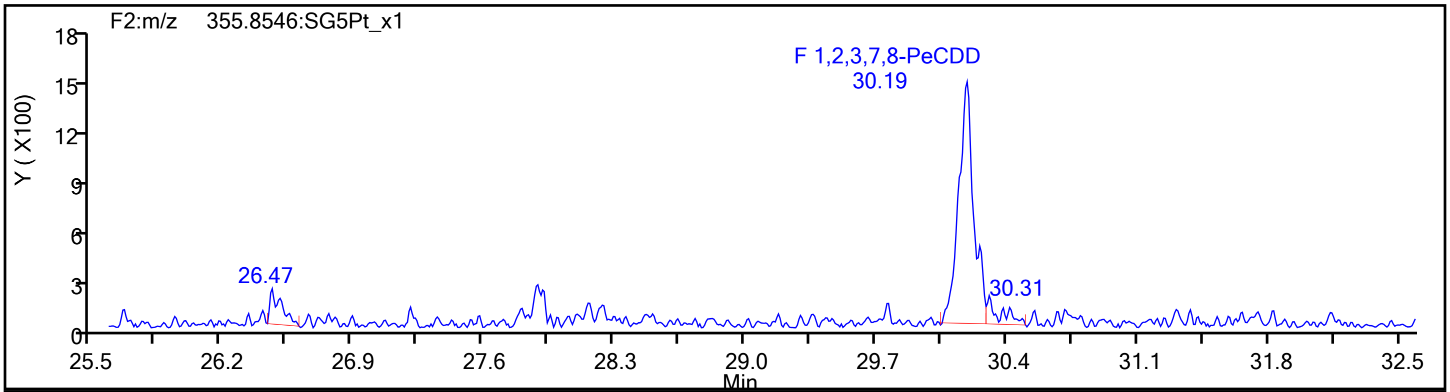

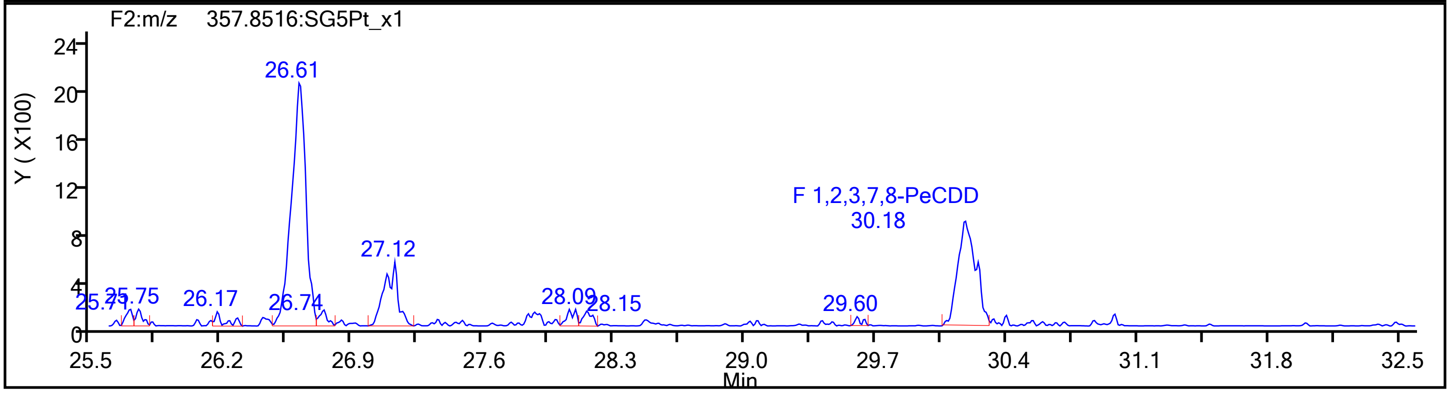

PeCDD Standards

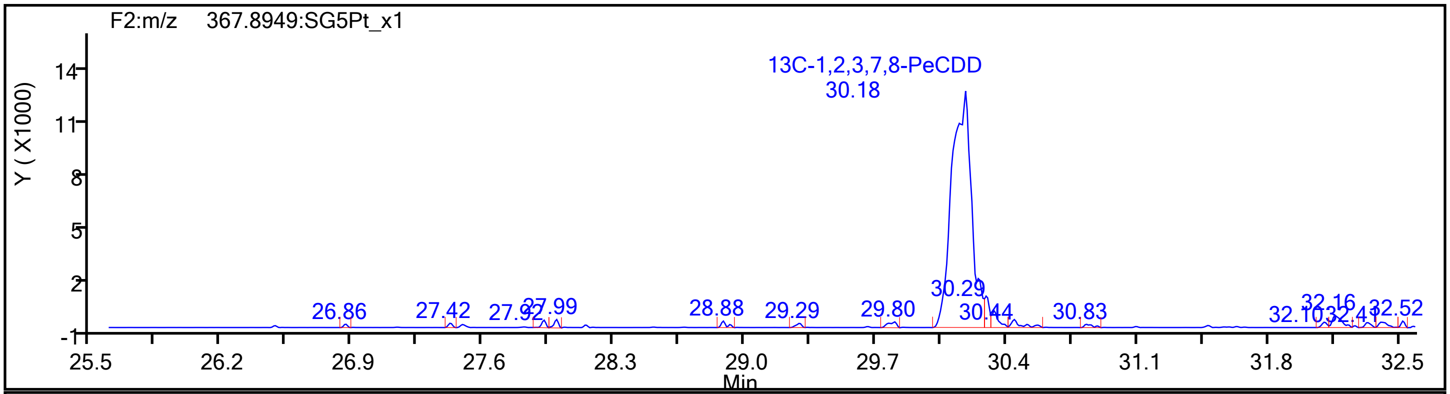

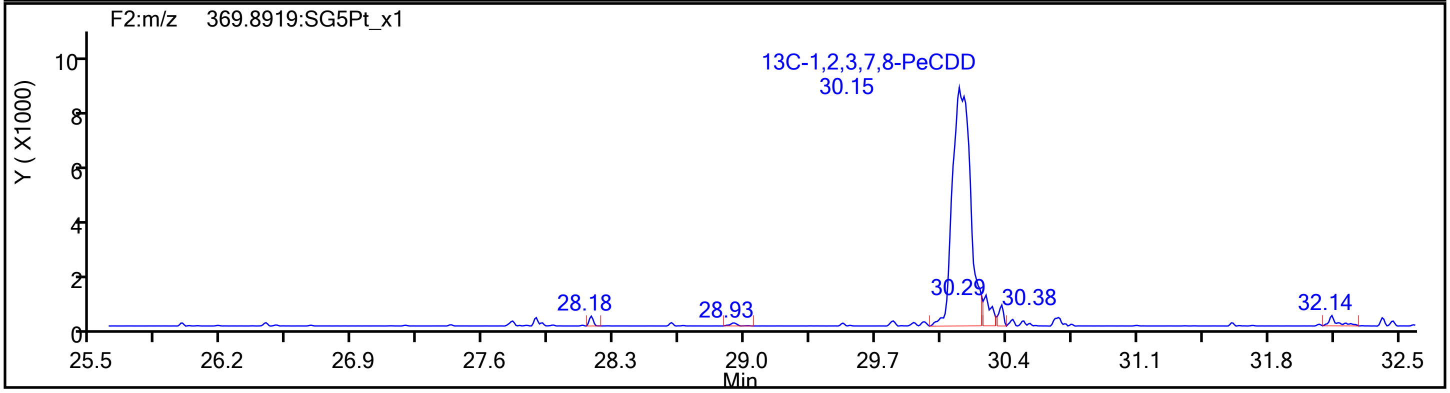

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

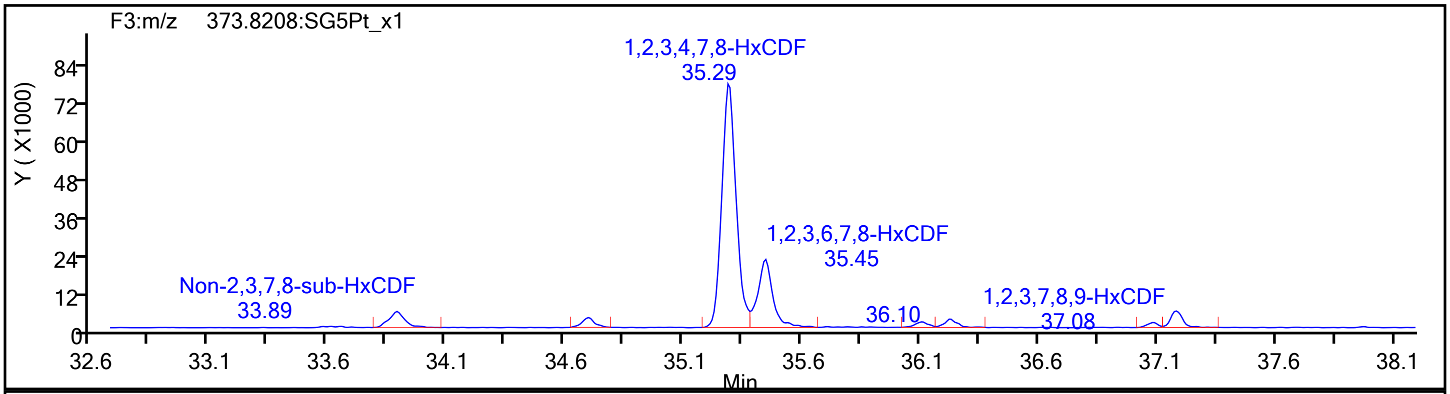

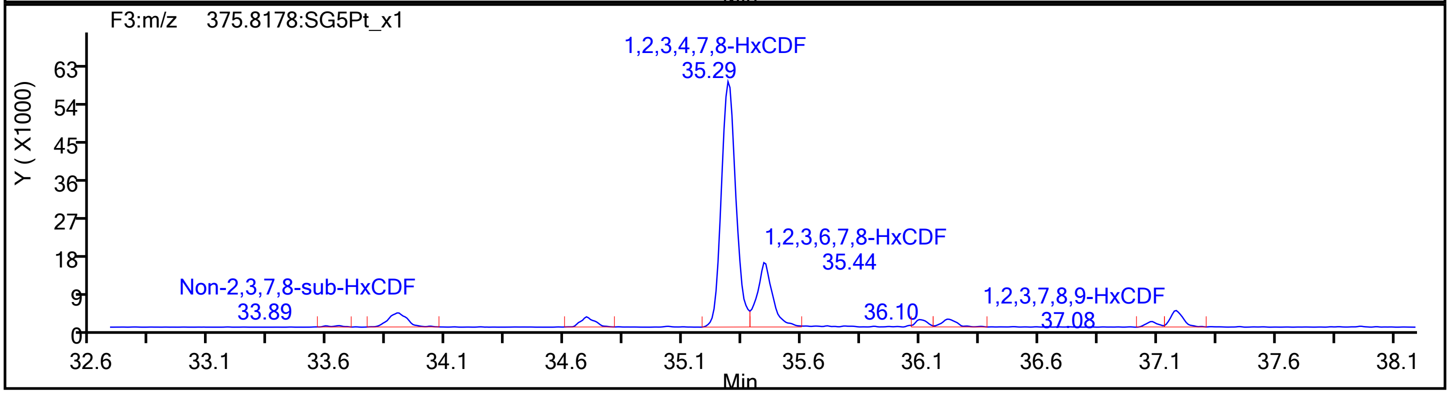

HxCDF Standards

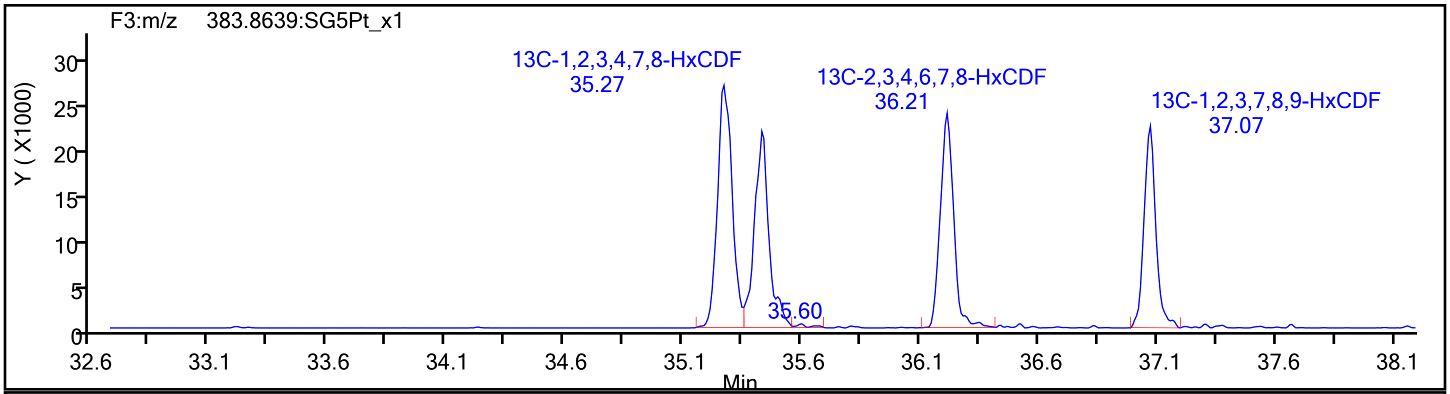

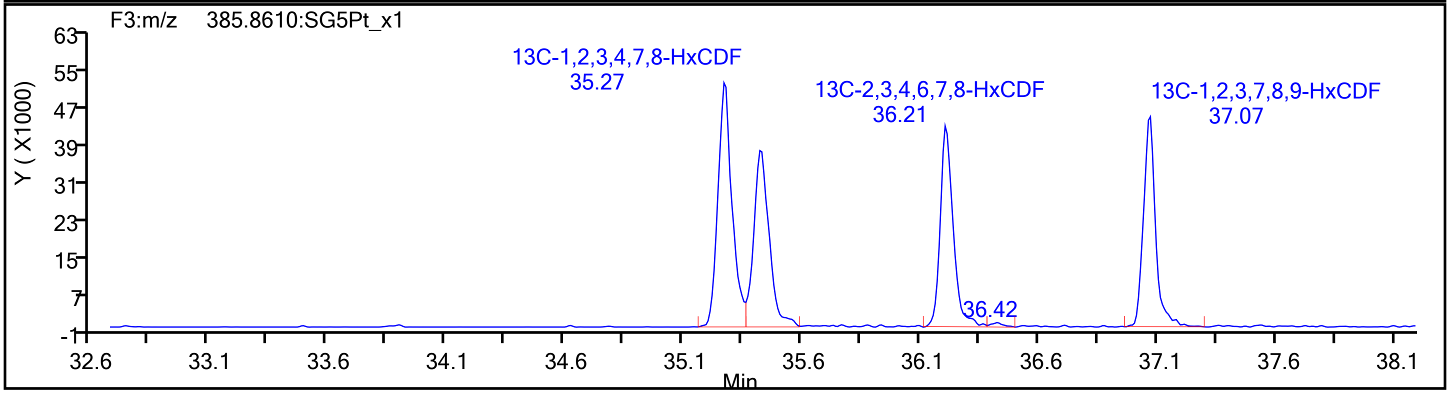

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Injection Date: 28-Jul-2020 08:25:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Control

Worklist#: 398798

Sample Line#: 20

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

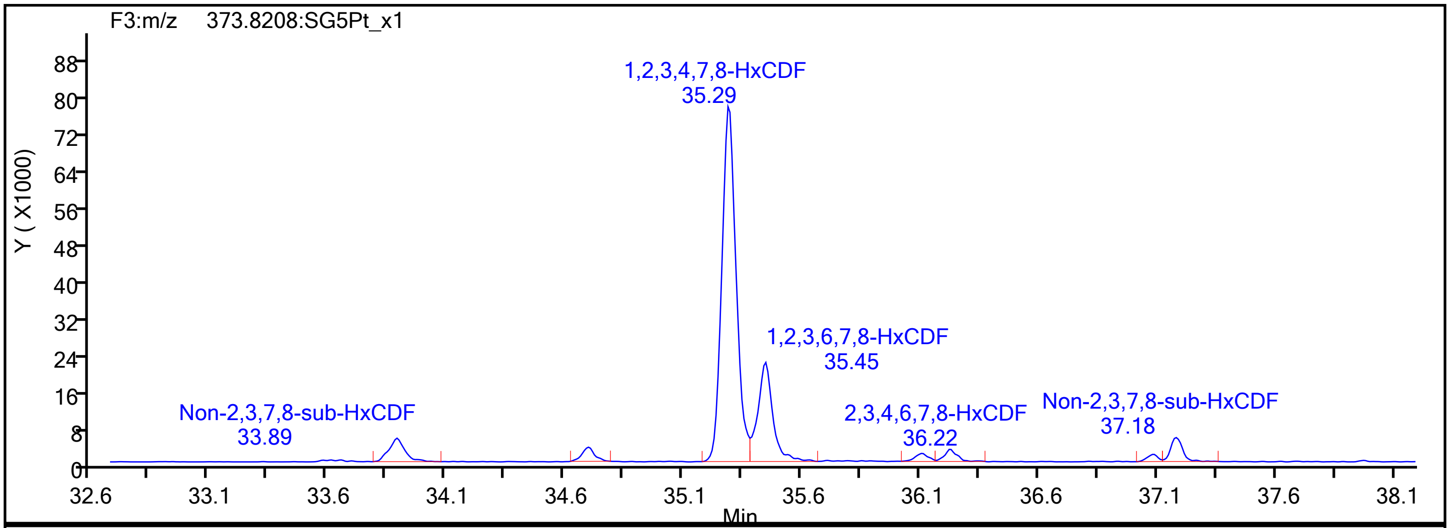

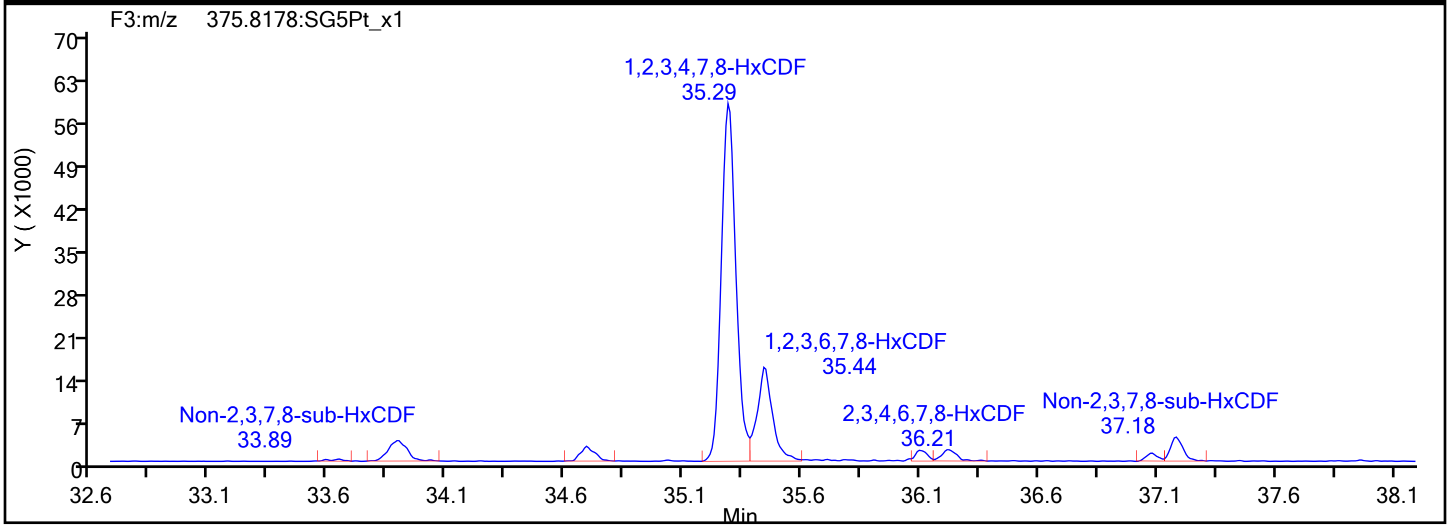

HxCDF Interference Mass

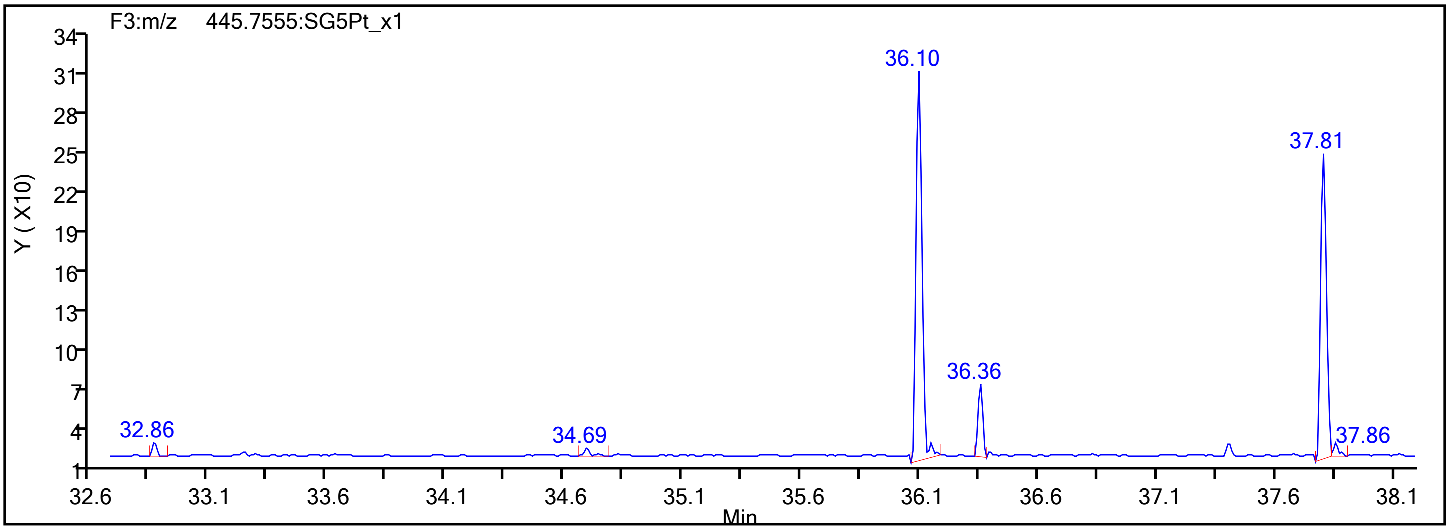

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Injection Date: 28-Jul-2020 08:25:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 398798
Sample Line#: 20
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

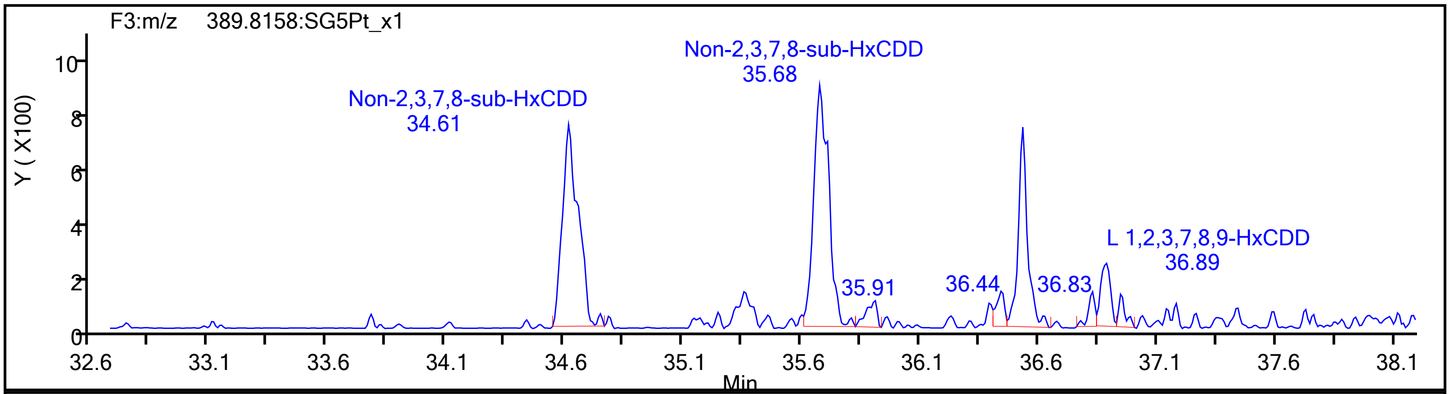

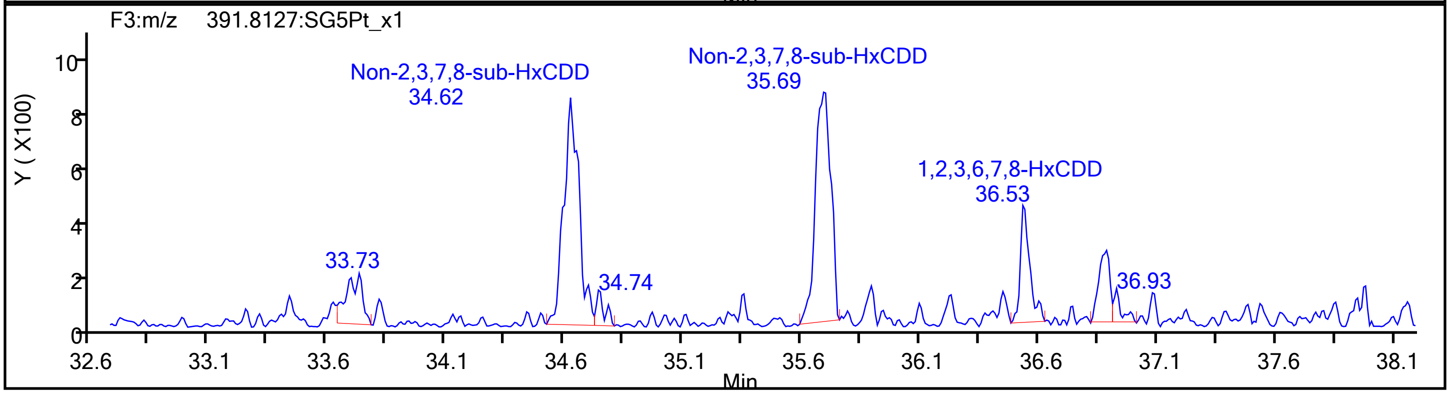

HxCDD Standards

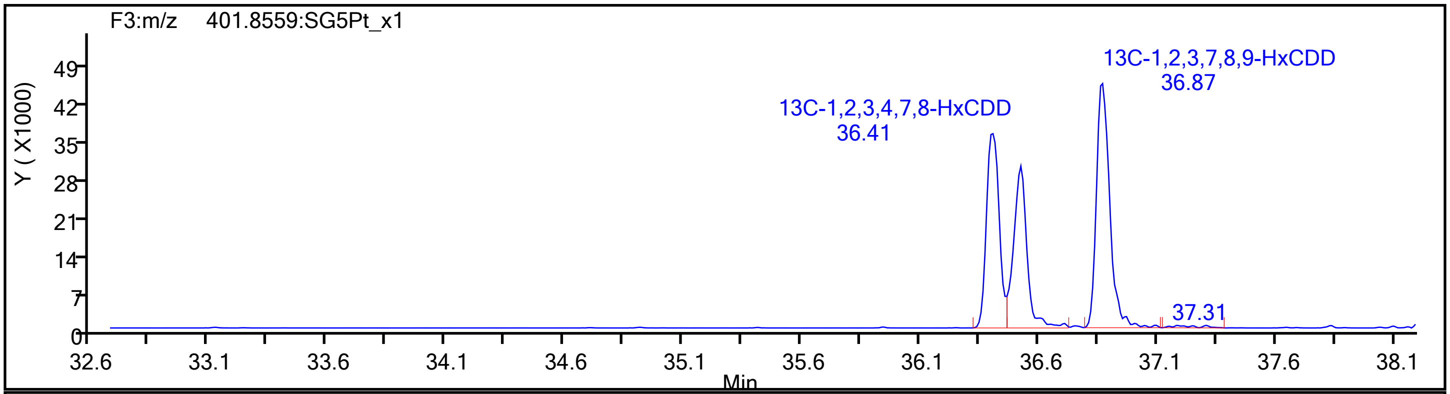

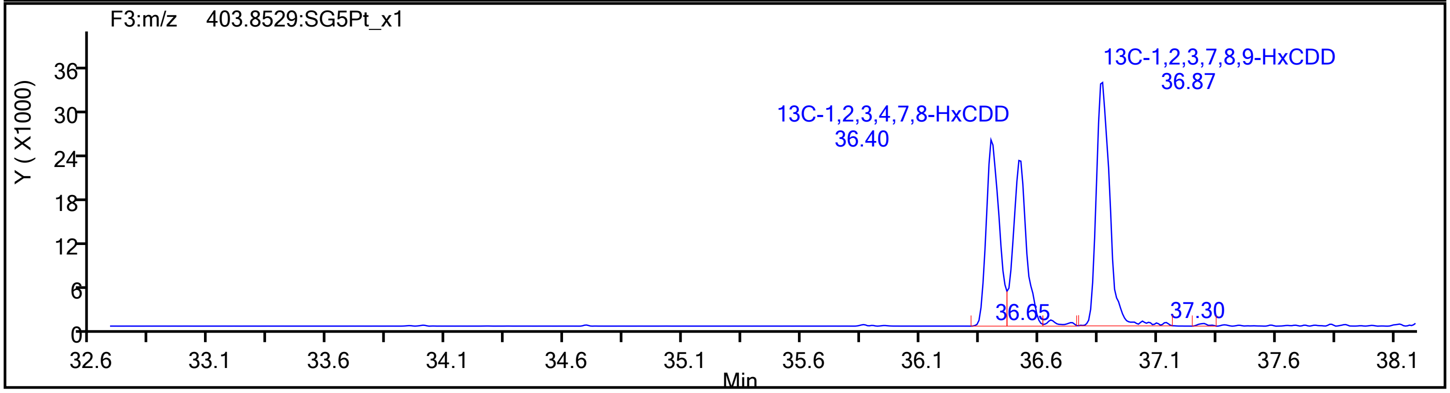

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

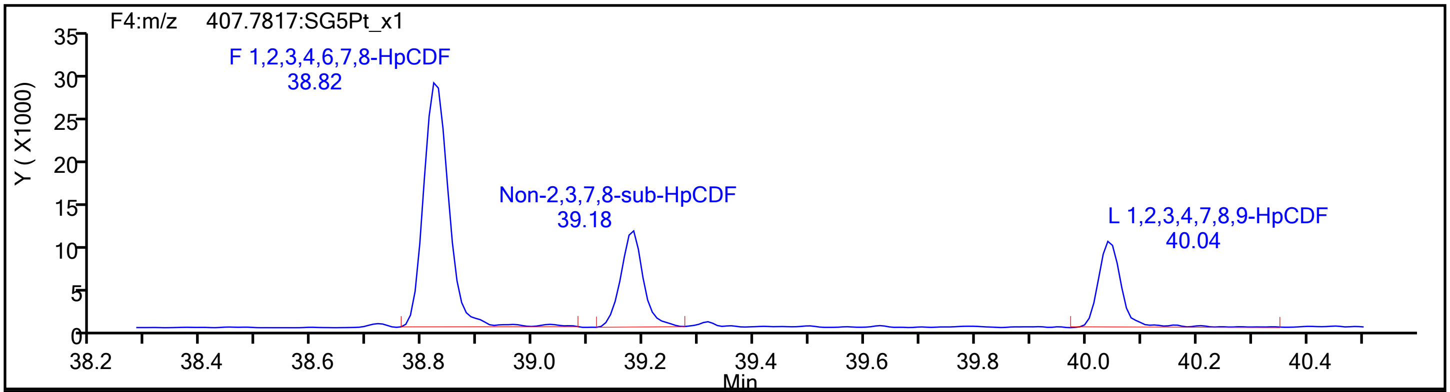

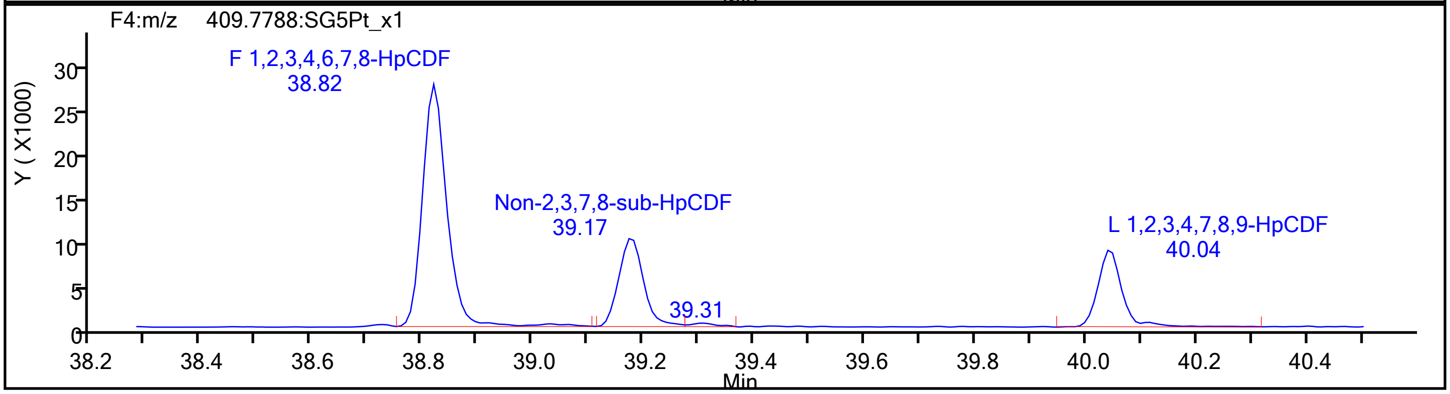

HpCDF Standards

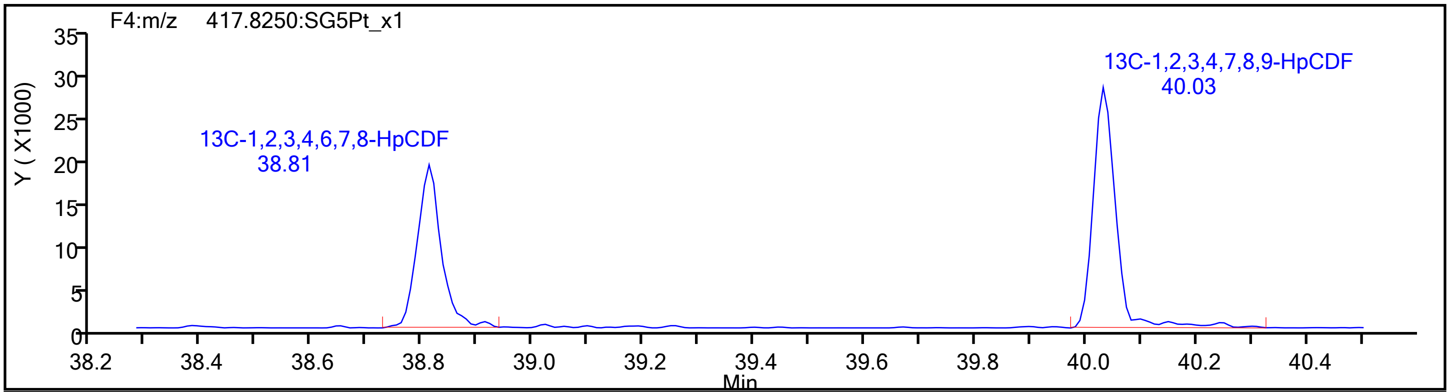

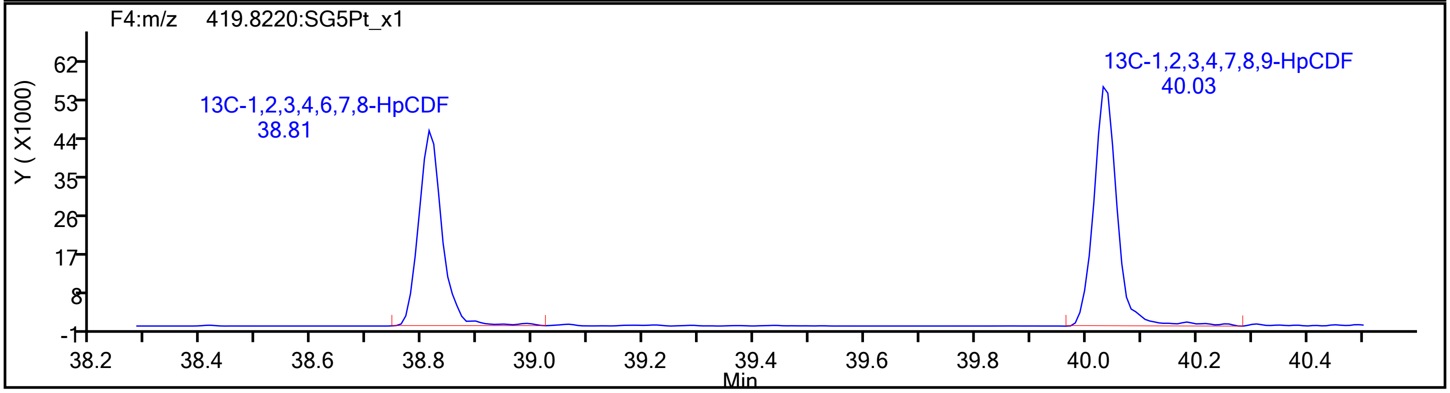

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

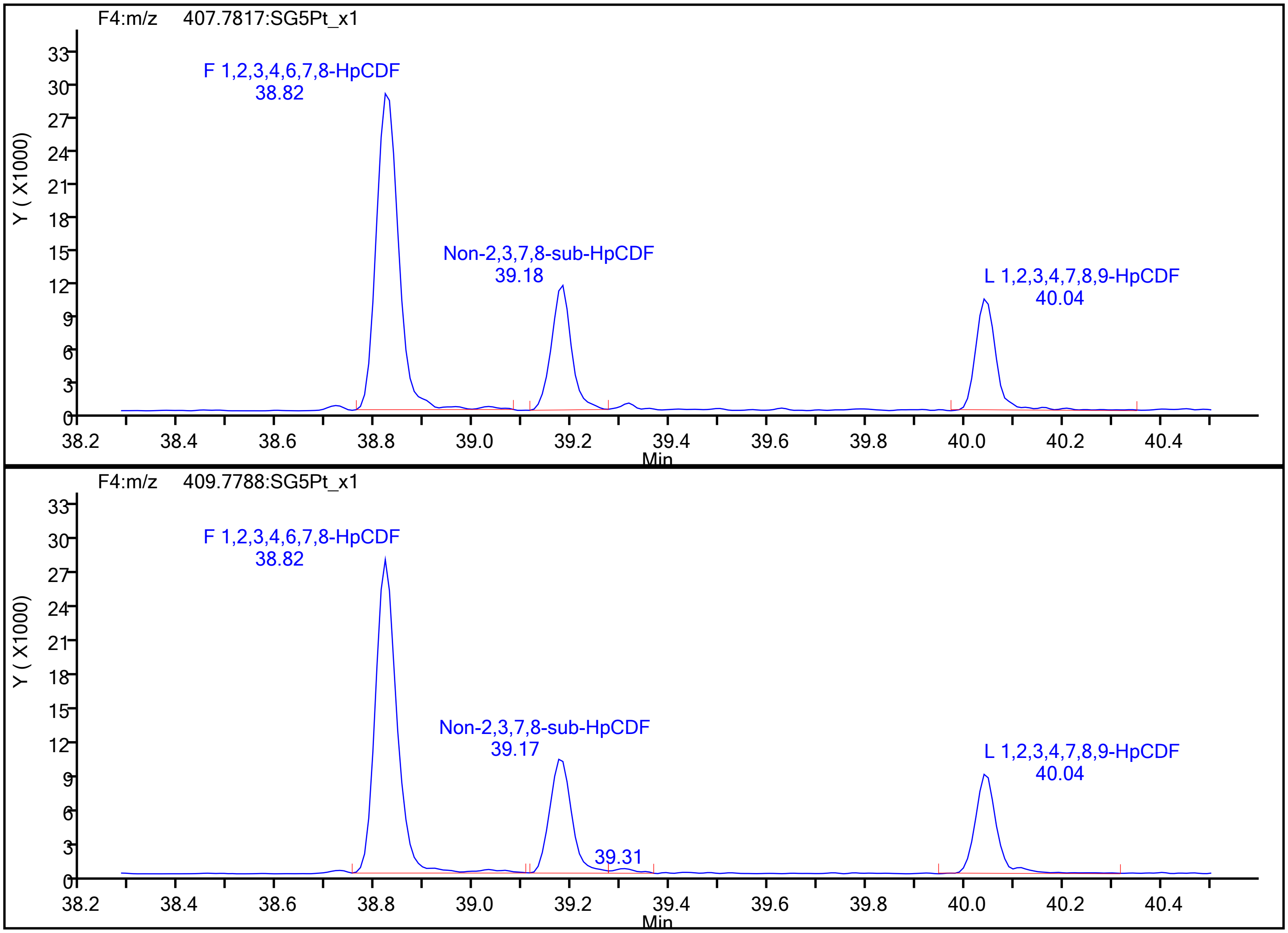

HpCDF Interference Mass

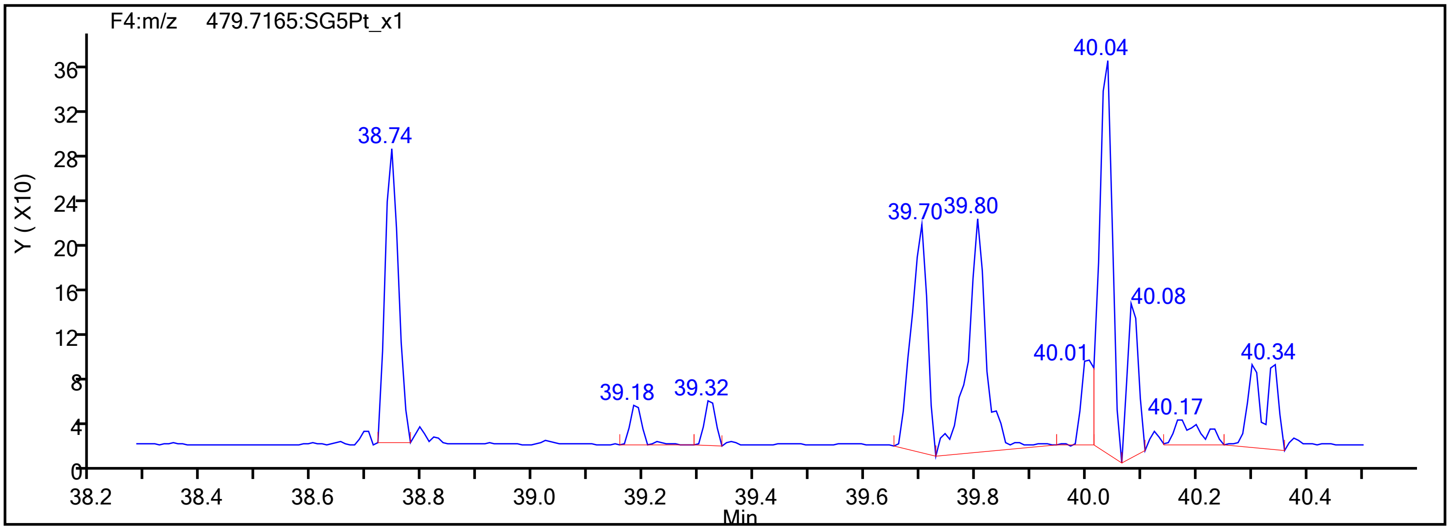

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Injection Date: 28-Jul-2020 08:25:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 398798
Sample Line#: 20
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

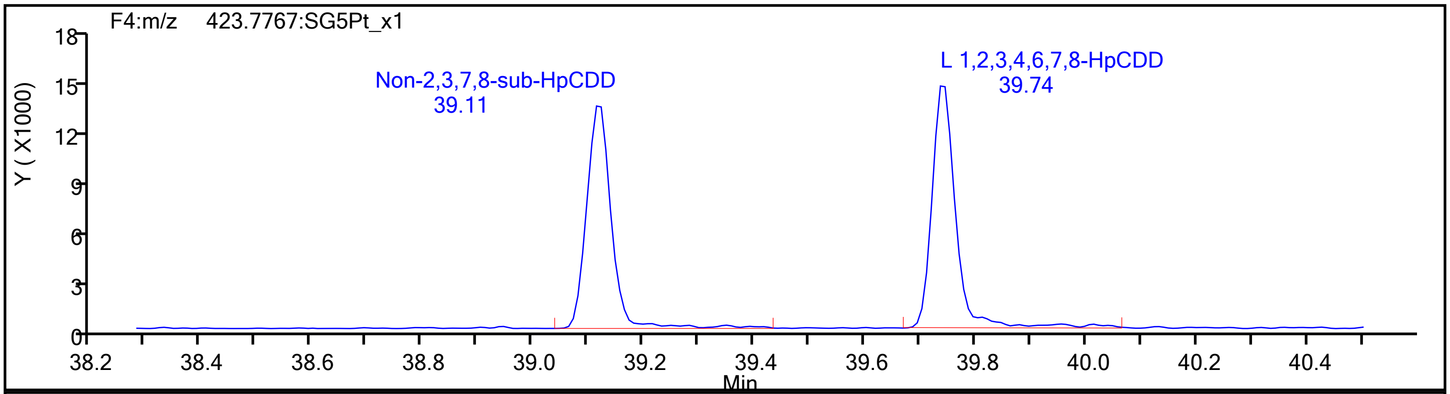

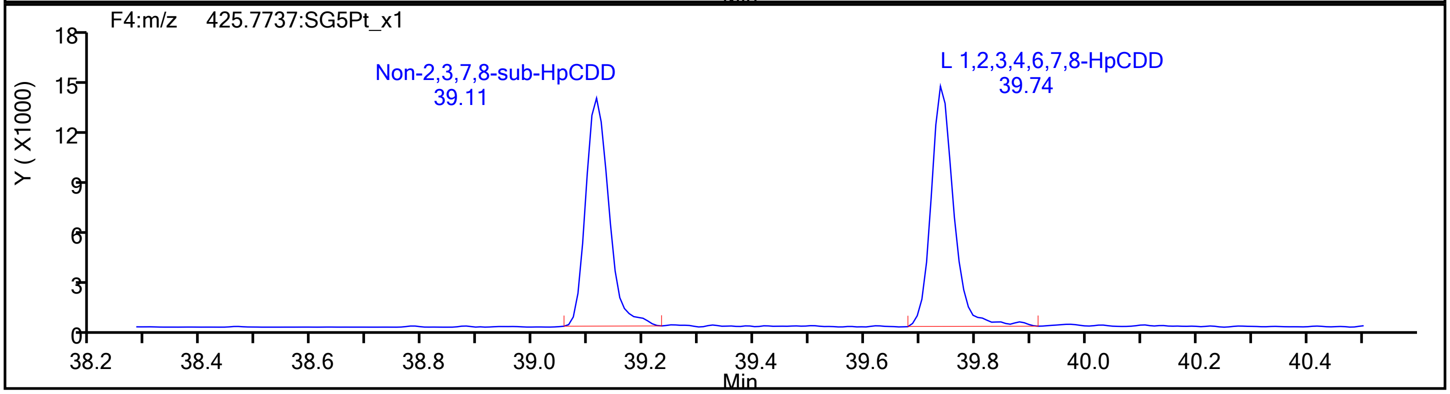

HpCDD Standards

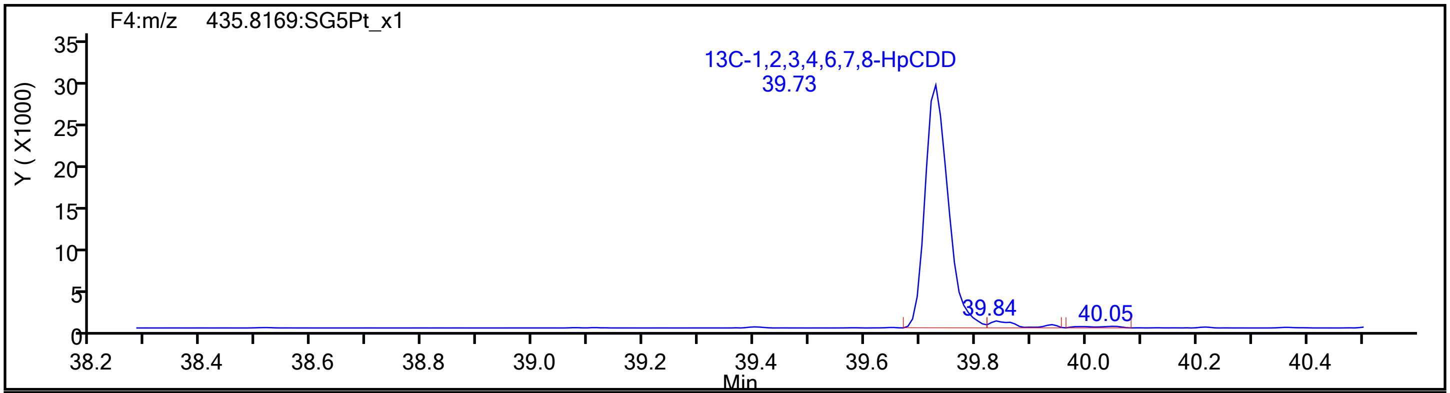

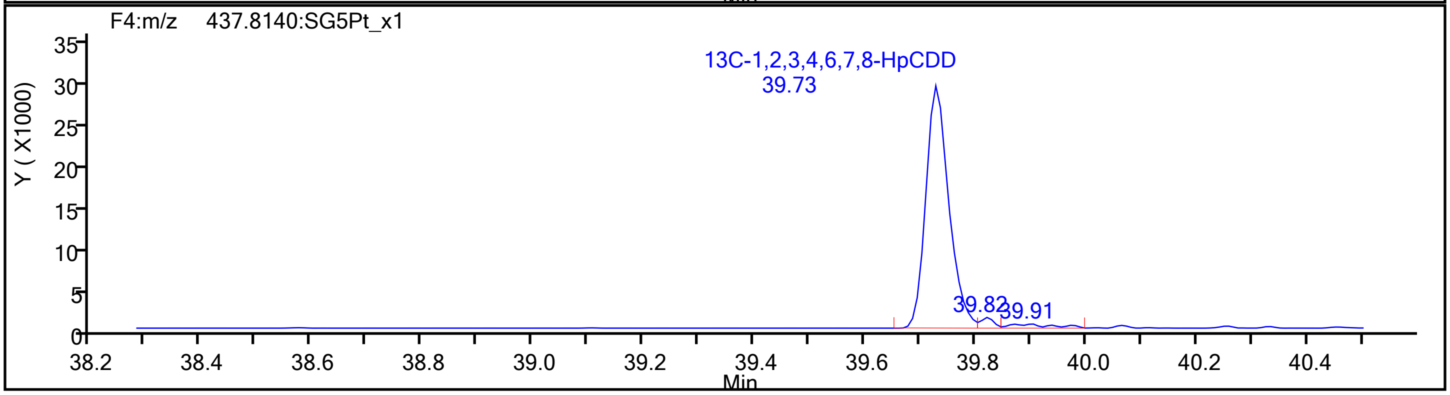

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

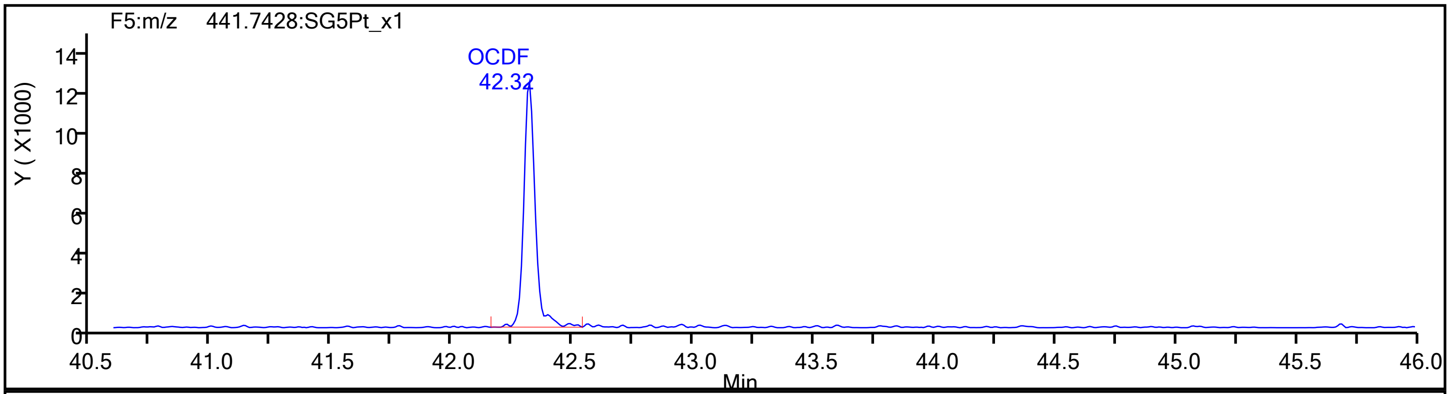

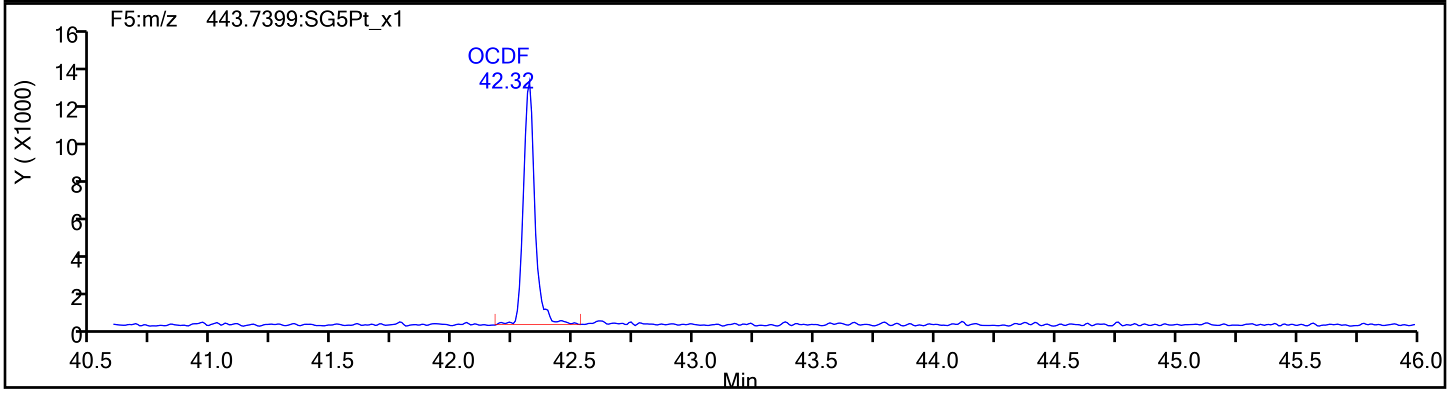

OCDF Standards

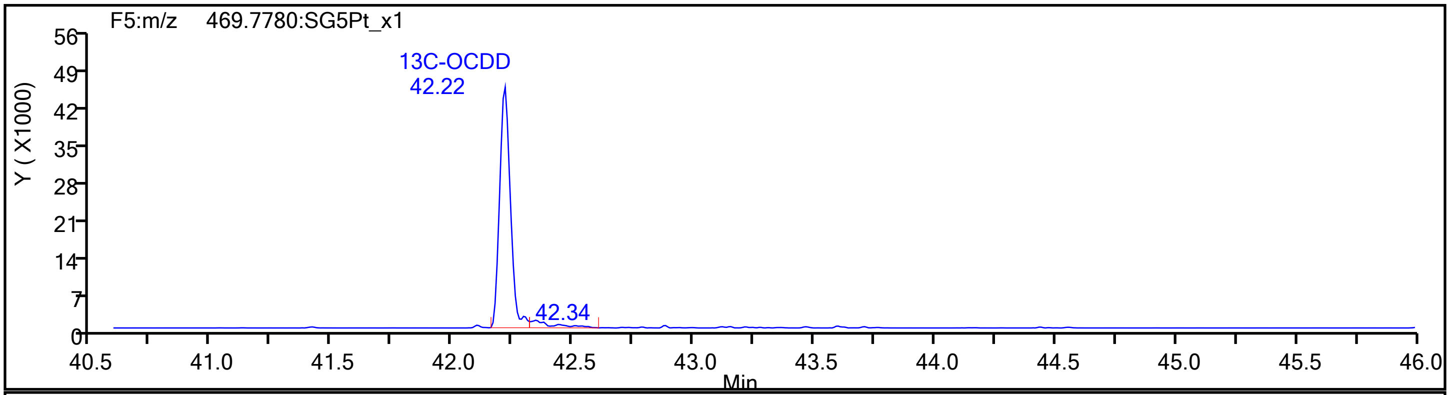

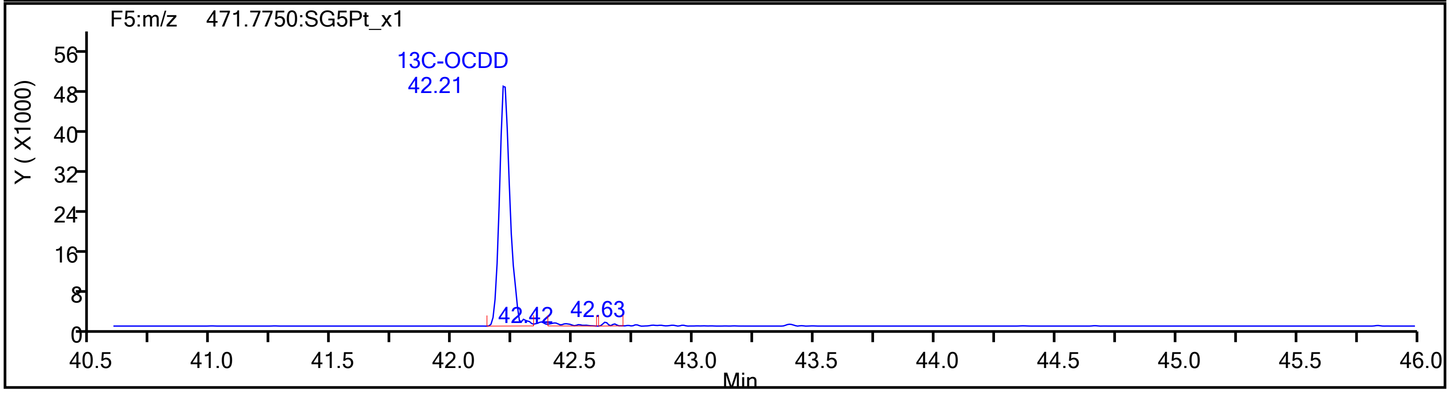

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d

Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

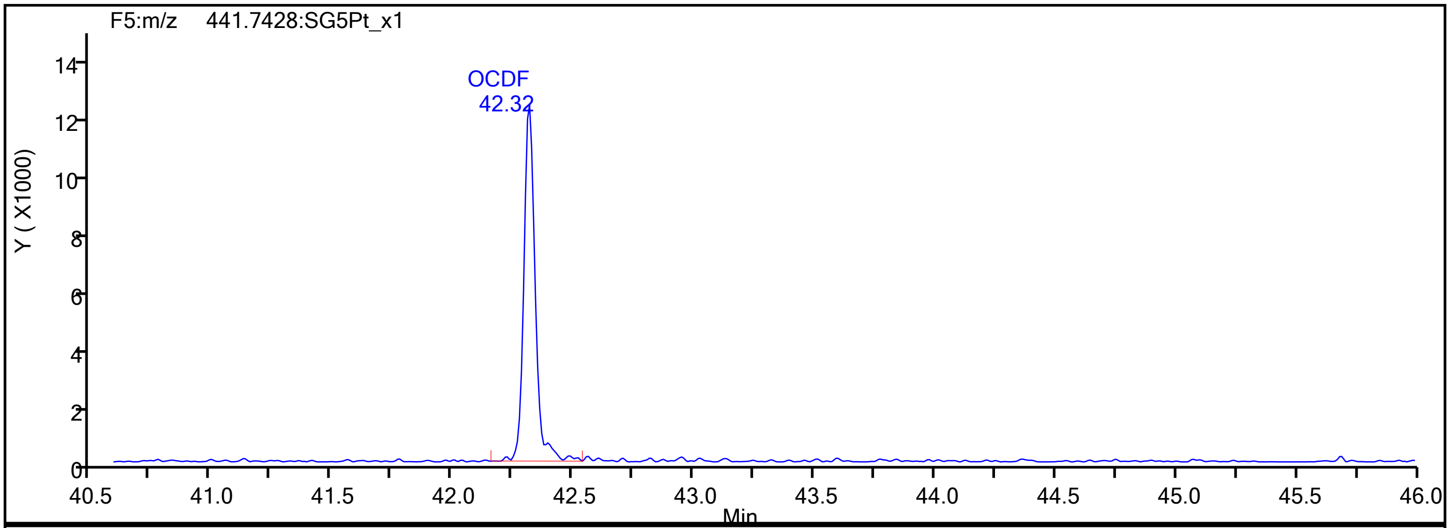

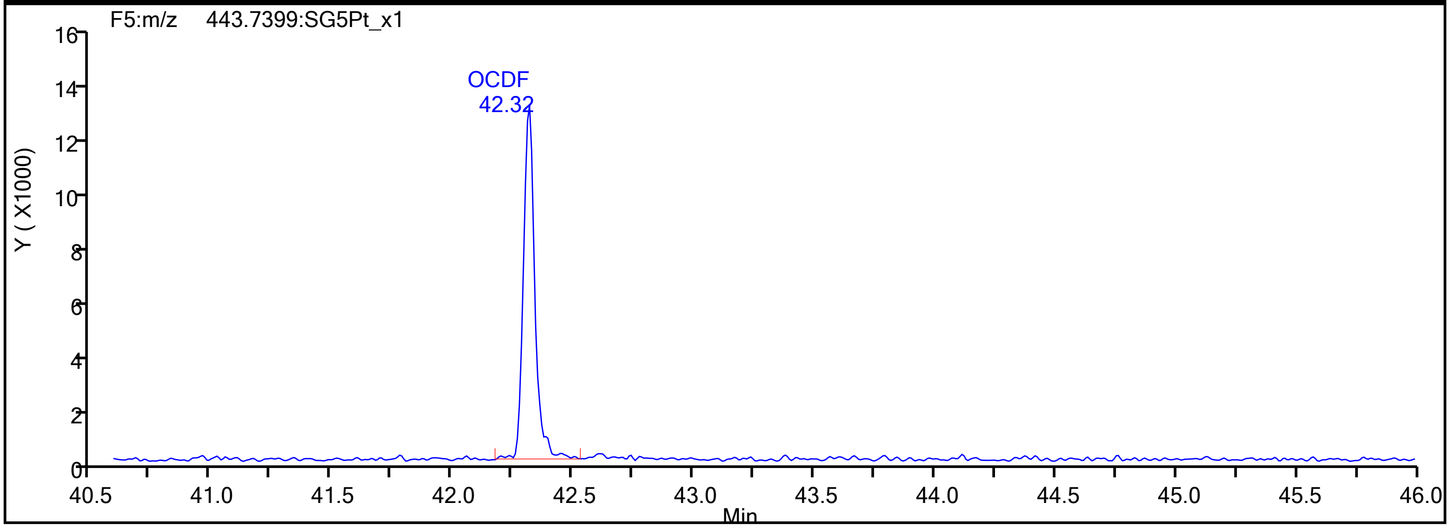

OCDF Interference Mass

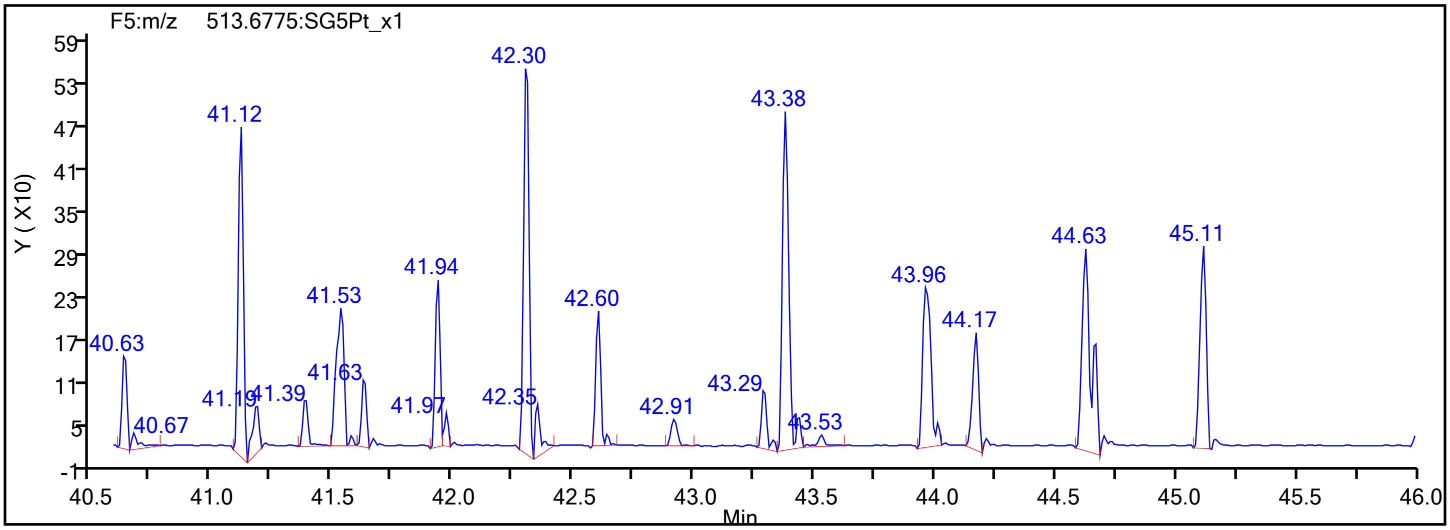

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

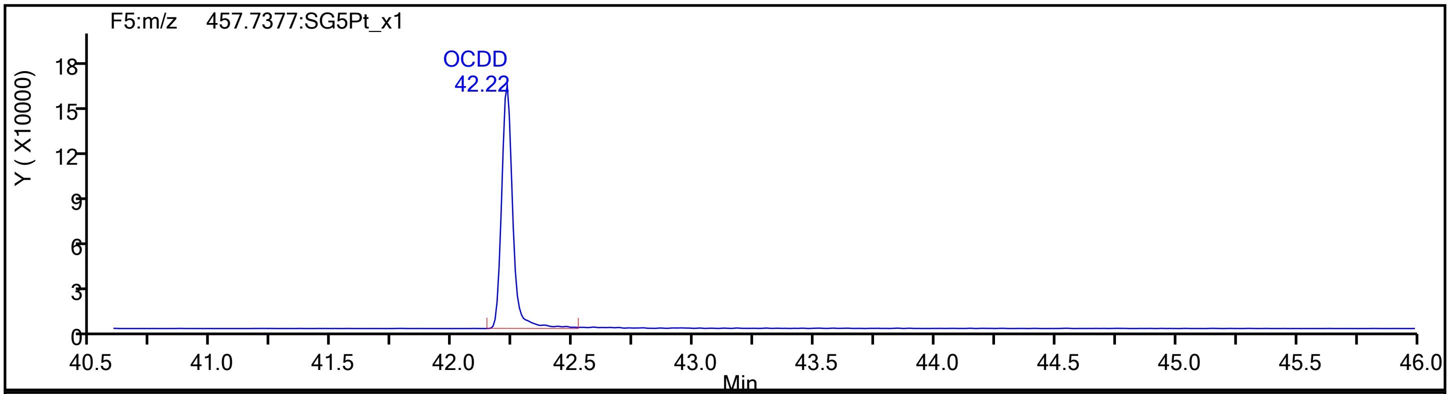

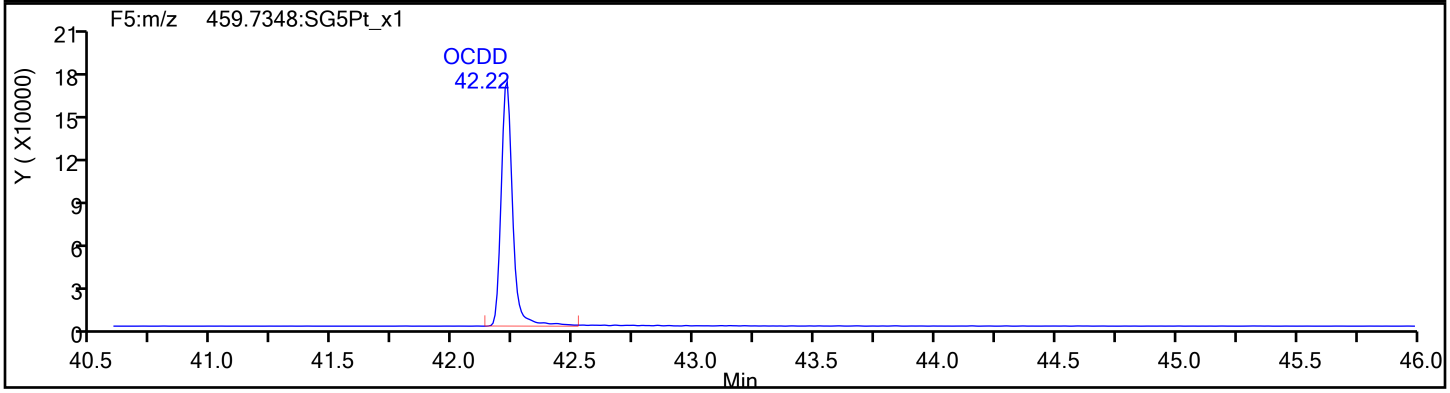

OCDD Standards

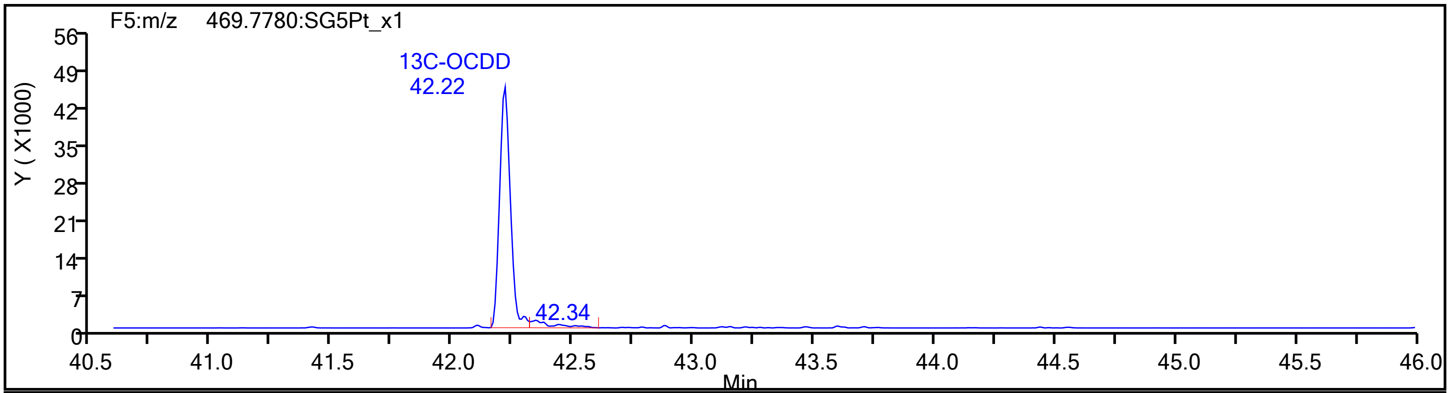

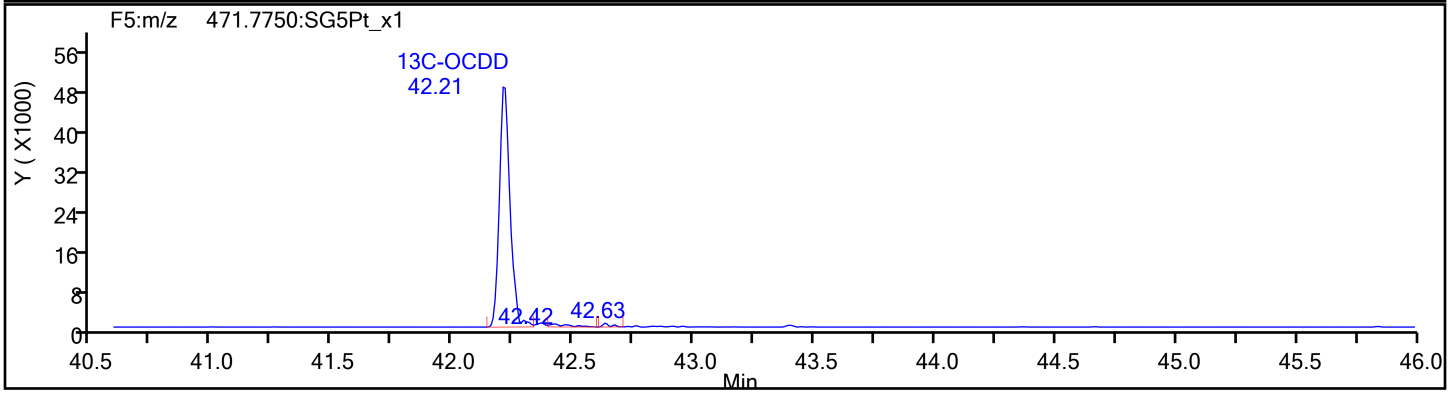

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d		
Injection Date:	28-Jul-2020 08:25:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	398798	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

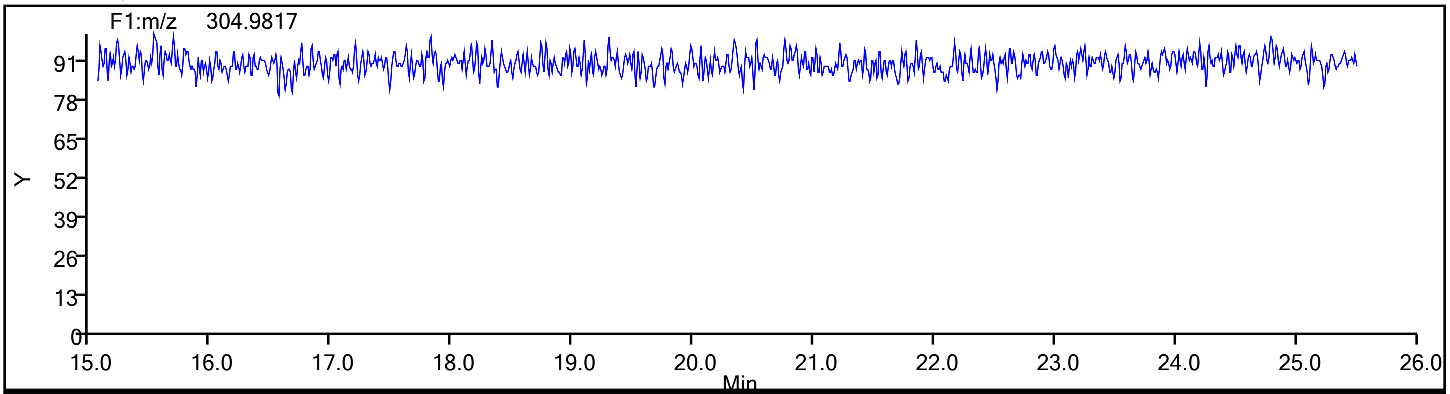

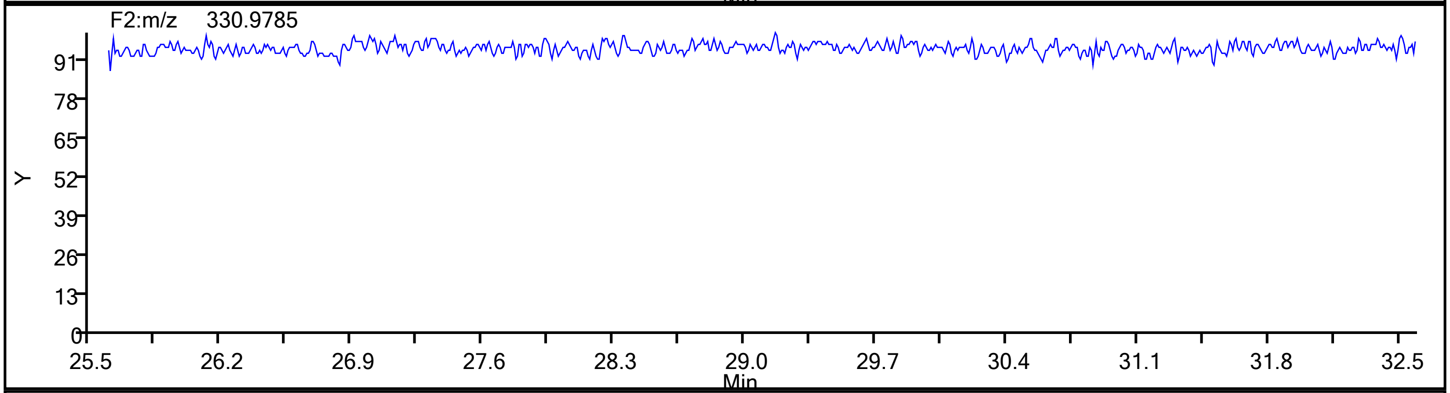

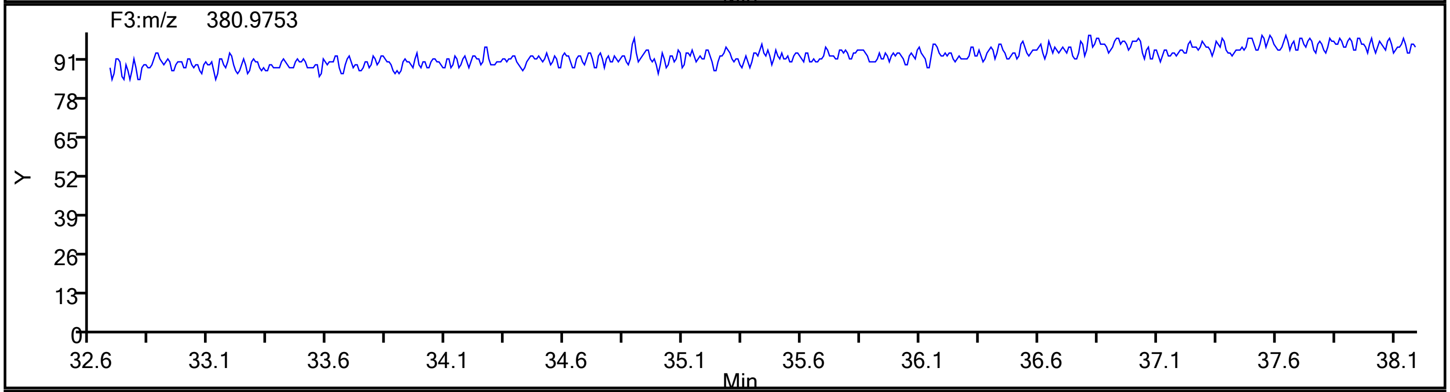

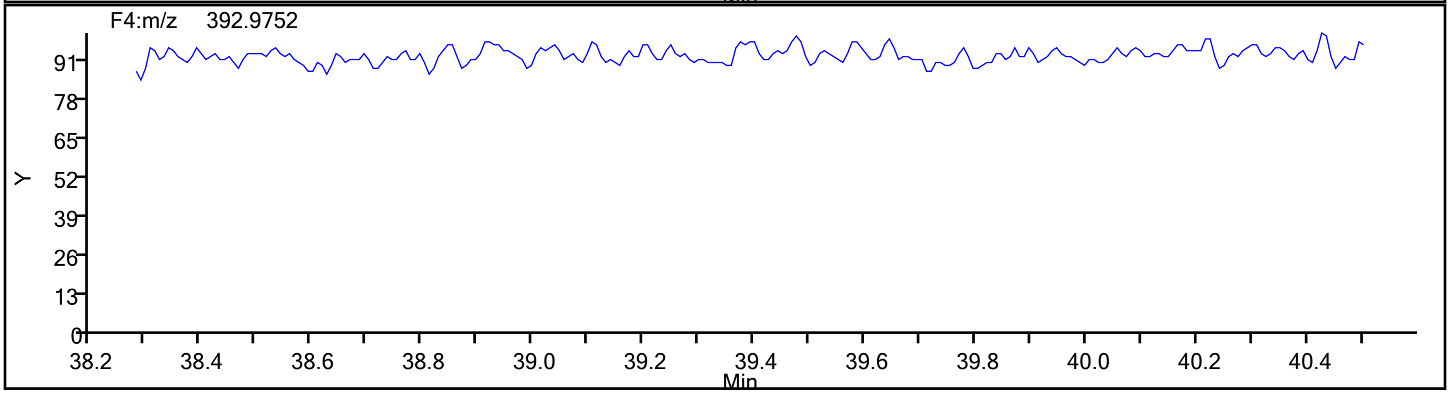

Report Date: 30-Jul-2020 09:54:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_22.d
Injection Date: 28-Jul-2020 08:25:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 398798
Sample Line#: 20
Column Type: DB-5
Column Dia: 0.32 mm

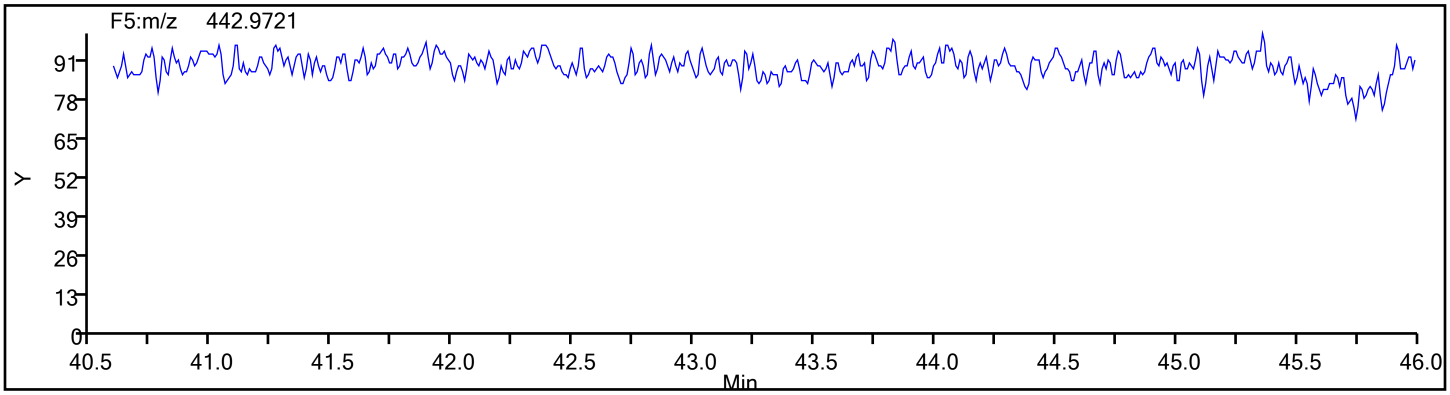

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Client Sample ID: 11215702-Control RADL Lab Sample ID: 320-62886-2 RADL

Matrix: Water Lab File ID: 30JL2011D2_006.d

Analysis Method: 1613B Date Collected: 07/20/2020 11:00

Extract. Method: 1613B Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1059.3(mL) Date Analyzed: 07/30/2020 16:21

Con. Extract Vol.: 20.0(uL) Dilution Factor: 20

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 399853 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	46000		190	62

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	57		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	83		35-197

FORM I 1613B

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d				
Lims ID:	320-62886-A-2-A				
Client ID:	11215702-Control				
Sample Type:	Client				
Inject. Date:	30-Jul-2020 16:21:39	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Sample Info:	320-62886-A-2-A (20X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	30-Jul-2020 22:56:28	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1069				

First Level Reviewer: messecara Date: 30-Jul-2020 22:41:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	14484868	0.77	1.2E+06	5.000	5.000				
D 13C-2,3,7,8-TCDF	16.986	13068449	0.88	1.5708	2.872	2.872	0.2506	0.2506	57.44	M
2,3,7,8-TCDF	17.000	317393023	0.79	0.9943	122.1	122.1	0.1654	0.1654		
D 13C-2,3,7,8-TCDD	15.532	7349438	0.73	0.9834	2.580	2.580	1.659	1.659	51.60	M
2,3,7,8-TCDD	15.545	86491029	0.77	1.2822	45.9	45.9	0.2938	0.2938		a
$ 37Cl4-2,3,7,8-TCDD	15.545	4792263		0.9945	1.663	1.663	0.0473	0.0473	83.17	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Sample Type: Client
Inject. Date: 30-Jul-2020 16:21:39 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-62886-A-2-A (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 22:56:28 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1069

First Level Reviewer: messecara Date: 30-Jul-2020 22:41:30

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		6300395	1178890	190122	475305	6		
333.9339	15.779	15.780	0		8184473	1670256	181647	454117	9	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											M
315.9419	16.986	16.974	1	1.077	6114367	1072584	49541	123852	22		M
317.9389	16.986	16.974	1	1.077	6954082	1170447	40192	100480	29	0.88(0.65-0.89)	M
2,3,7,8-TCDF											
303.9016	17.000	17.001	0	1.001	139912499	25215192	13395	33487	1882		
305.8987	17.000	17.001	0	1.001	177480524	32195421	16114	40285	1998	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											M
331.9368	15.532	15.533	0	0.984	3104055	587598	190122	475305	3		M
333.9339	15.532	15.533	0	0.984	4245383	860837	181647	454117	5	0.73(0.65-0.89)	M
2,3,7,8-TCDD											a
319.8965	15.545	15.547	0	1.001	37734231	7509646	28754	71885	261		a
321.8936	15.545	15.547	0	1.001	48756798	9564810	14896	37240	642	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.547	0	0.985	4792263	1006235	10711	26777	94		

QC Flag Legend

Review Flags

M - Manually Integrated
a - User Assigned ID

Report Date: 30-Jul-2020 22:56:30

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d
Injection Date: 30-Jul-2020 16:21:39
Instrument ID: 11D2
Lims ID: 320-62886-A-2-A
Lab Sample ID: 320-62886-2
Client ID: 11215702-Control
Operator ID:
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 2.0 ul
Dil. Factor: 20.0000
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Column: DB-225 (0.32 mm)
Detector F1:HRSIR

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 1

Processing Integration Results

RT: 16.99
Area: 8570120
Amount: 4.033526
Amount Units: pg/ul

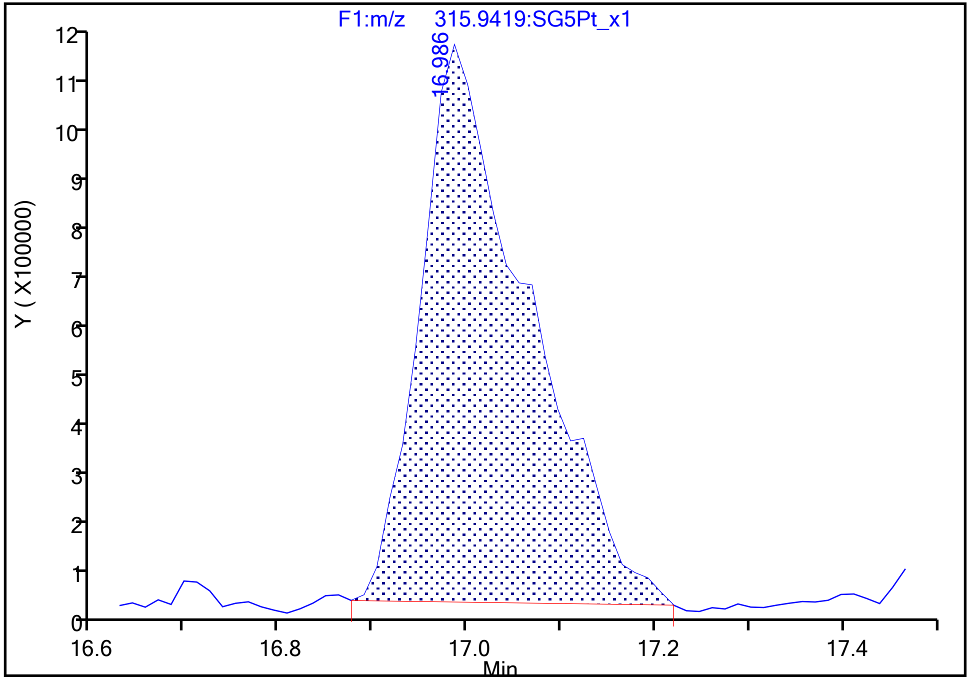

Manual Integration Results

RT: 16.99
Area: 6114367
Amount: 2.871819
Amount Units: pg/ul

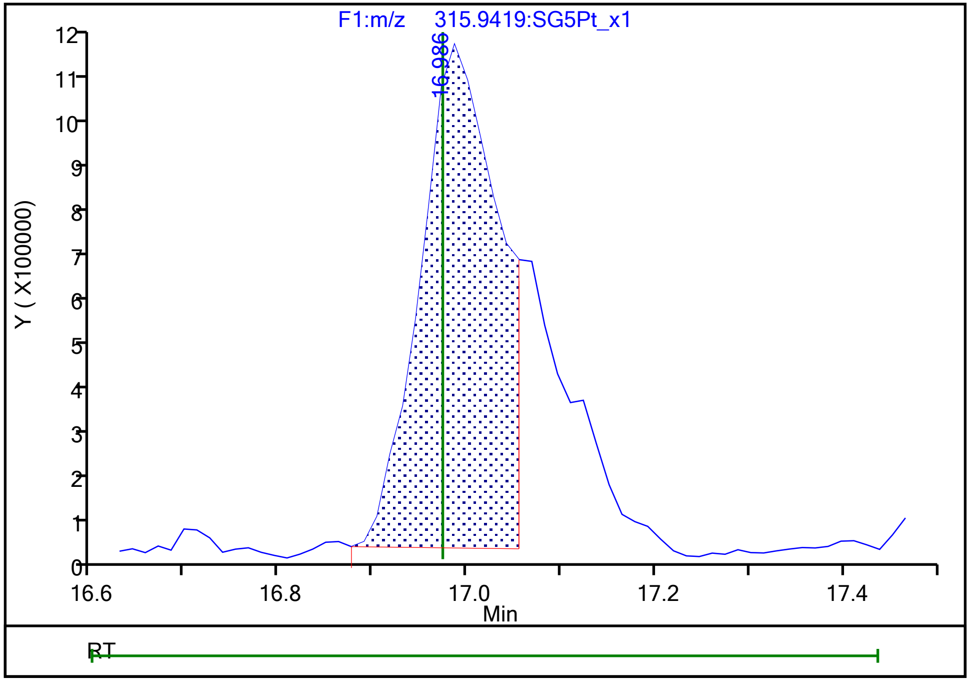

Reviewer: messecara, 30-Jul-2020 22:49:38

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d				
Injection Date:	30-Jul-2020 16:21:39	Instrument ID:	11D2		
Lims ID:	320-62886-A-2-A	Lab Sample ID:	320-62886-2		
Client ID:	11215702-Control				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 2

RT:	16.99
Area:	9784774
Amount:	4.033526
Amount Units:	pg/ul

Processing Integration Results

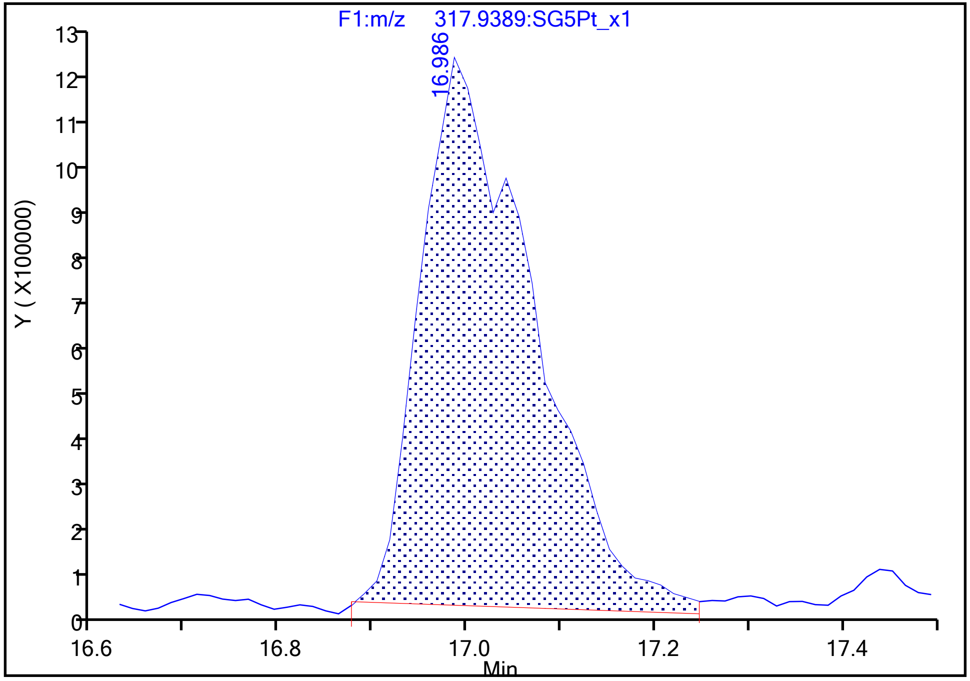

RT:	16.99
Area:	6954082
Amount:	2.871819
Amount Units:	pg/ul

Manual Integration Results

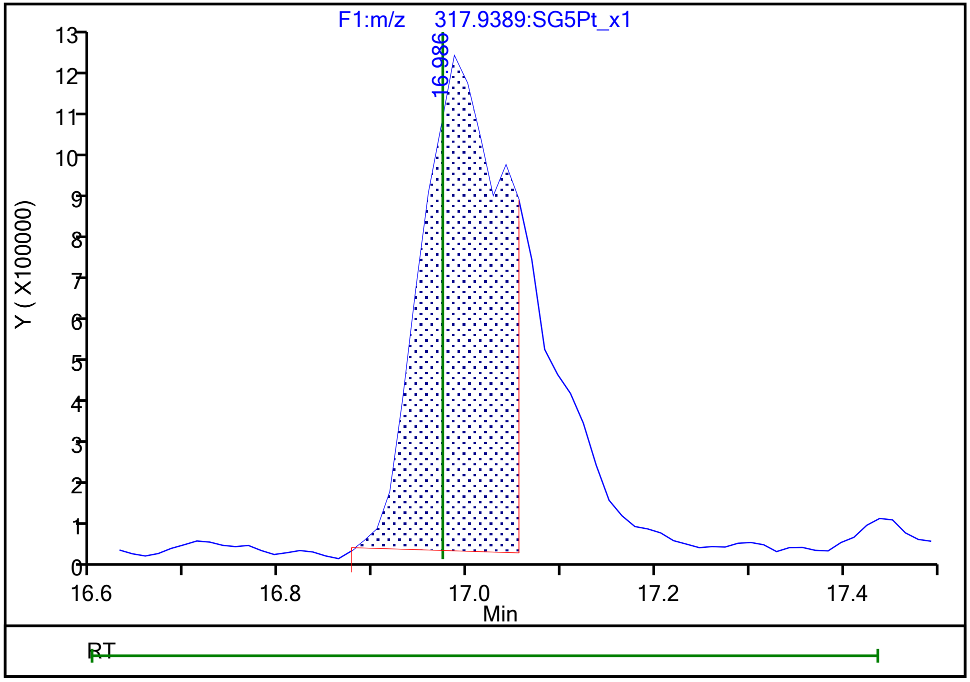

Reviewer: messecara, 30-Jul-2020 22:49:42

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 22:56:30
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d
Injection Date: 30-Jul-2020 16:21:39
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 399853
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

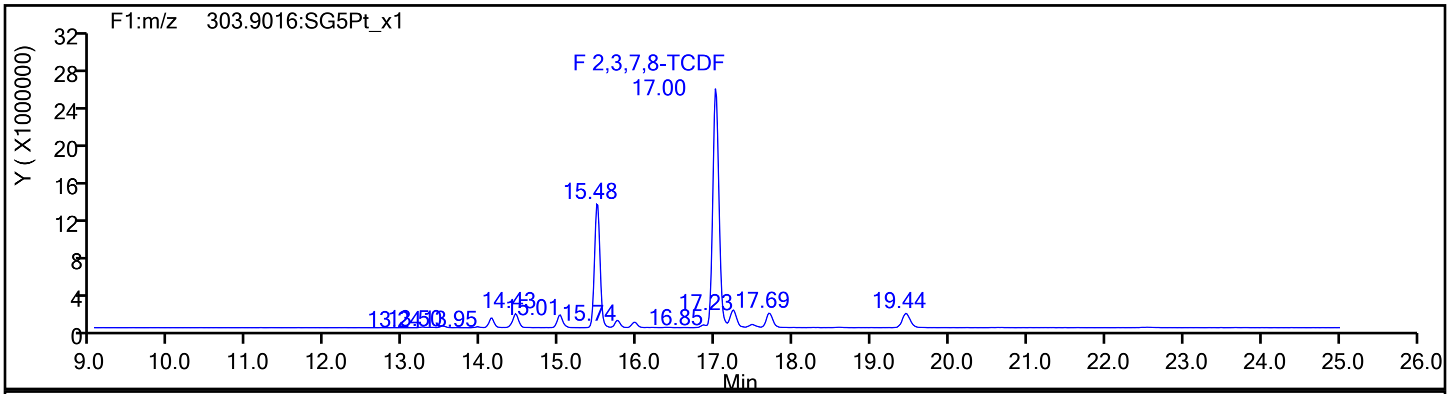

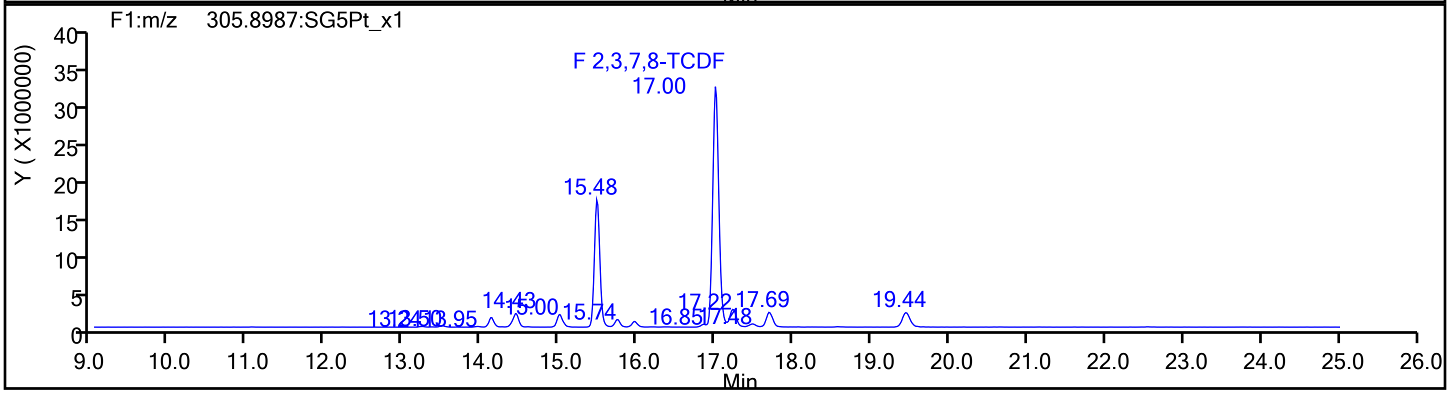

TCDF Standards

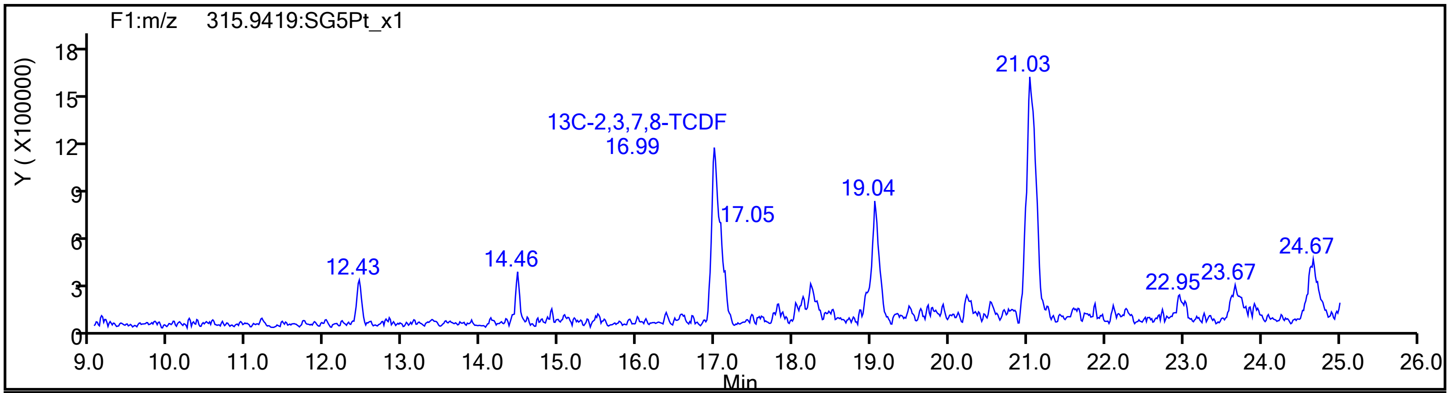

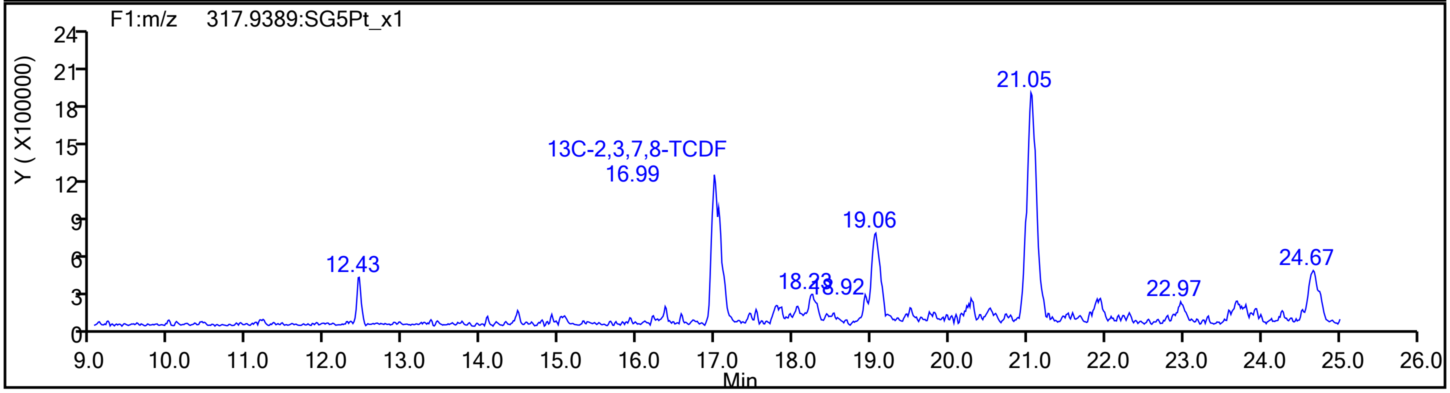

Report Date: 30-Jul-2020 22:56:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d		
Injection Date:	30-Jul-2020 16:21:39	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399853	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

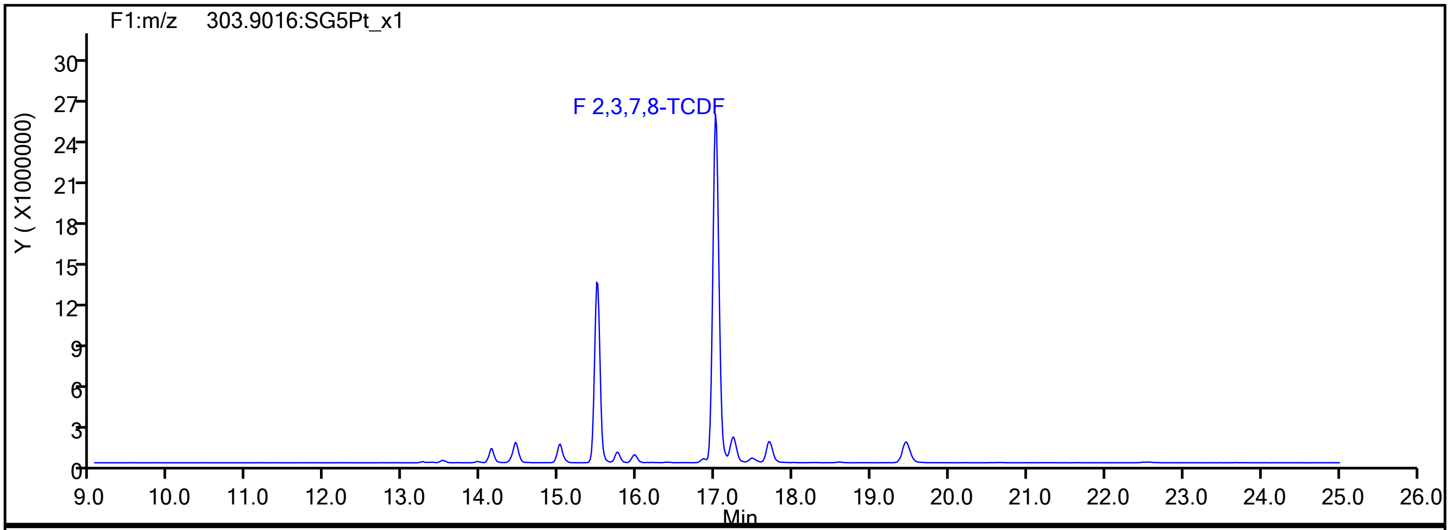

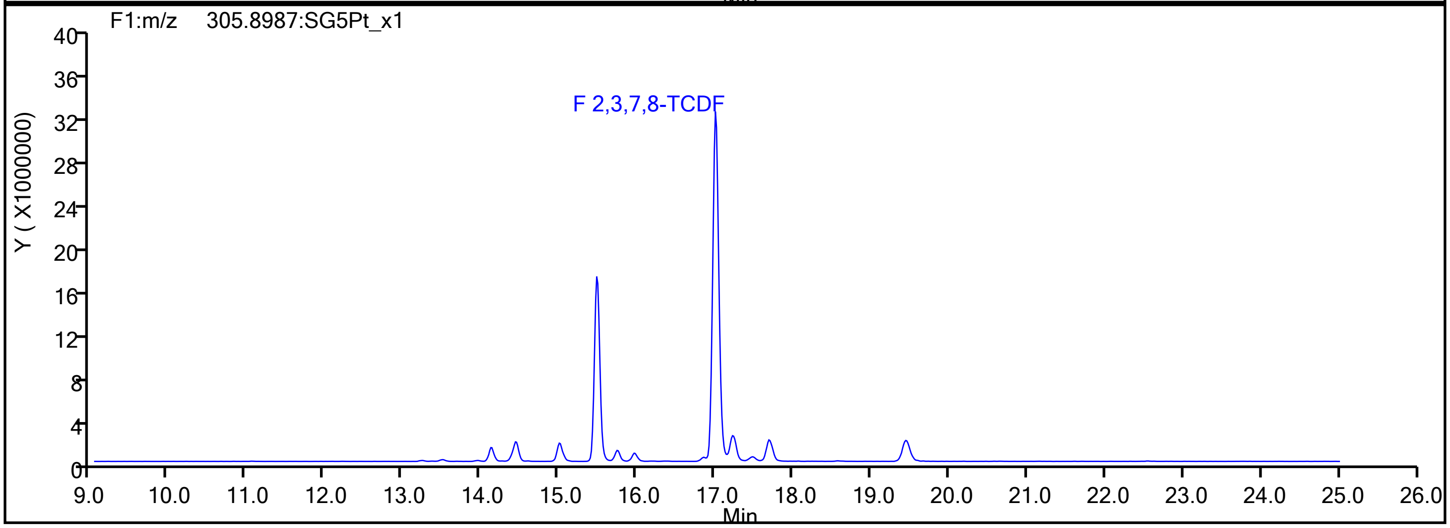

TCDF Interference Mass

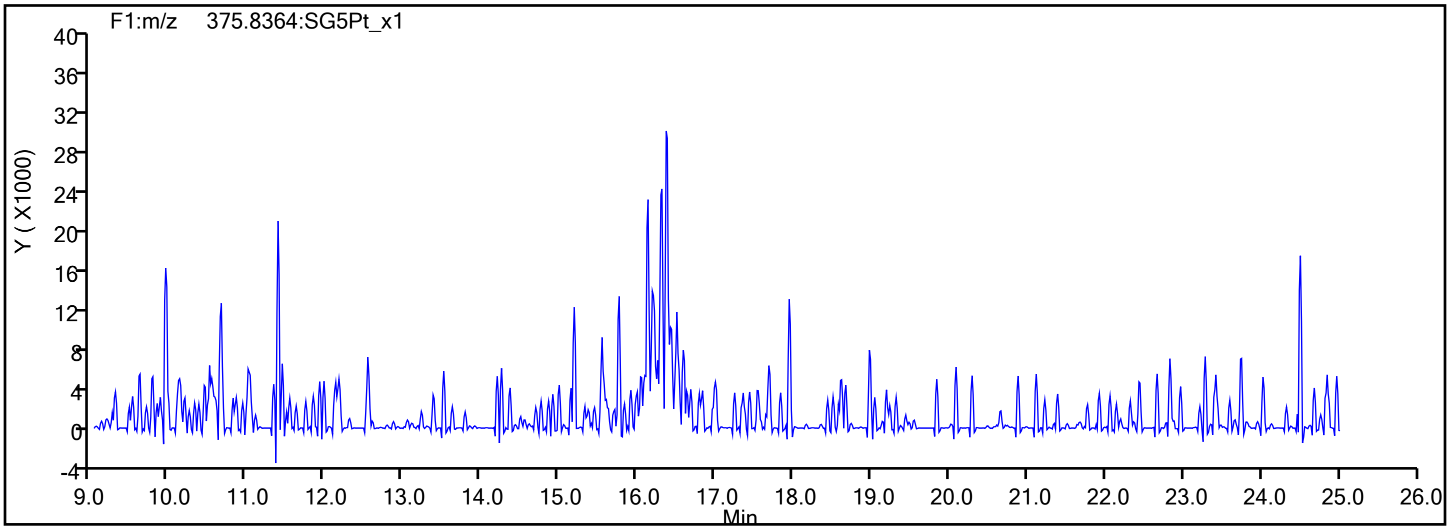

Report Date: 30-Jul-2020 22:56:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d		
Injection Date:	30-Jul-2020 16:21:39	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399853	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

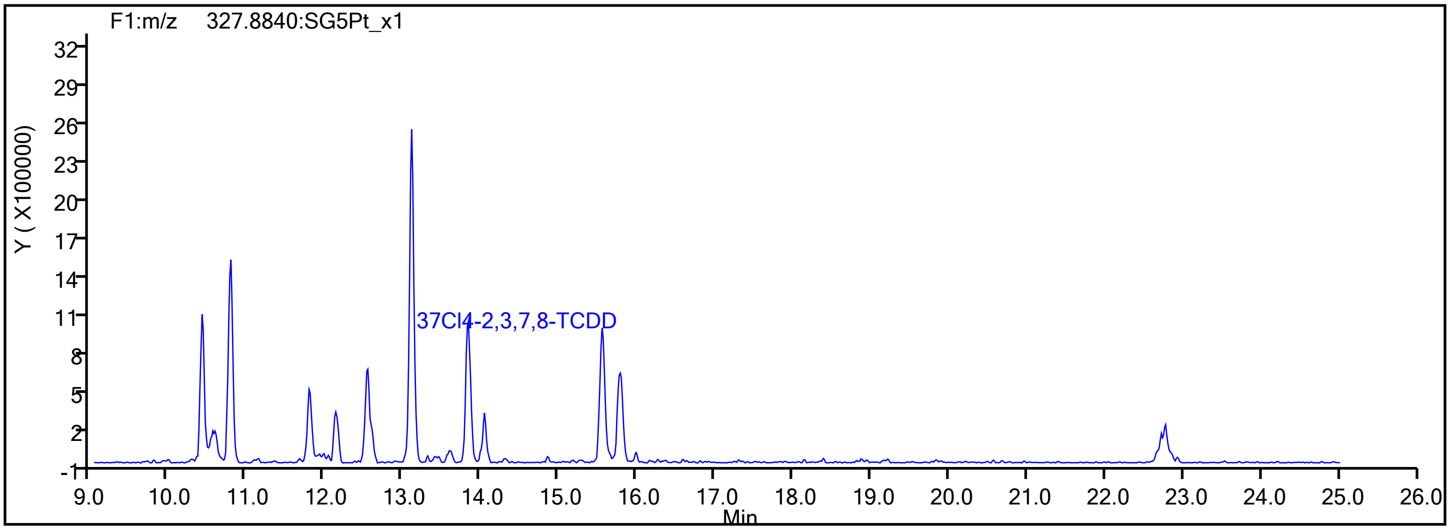

37Cl4-TCDD Standards

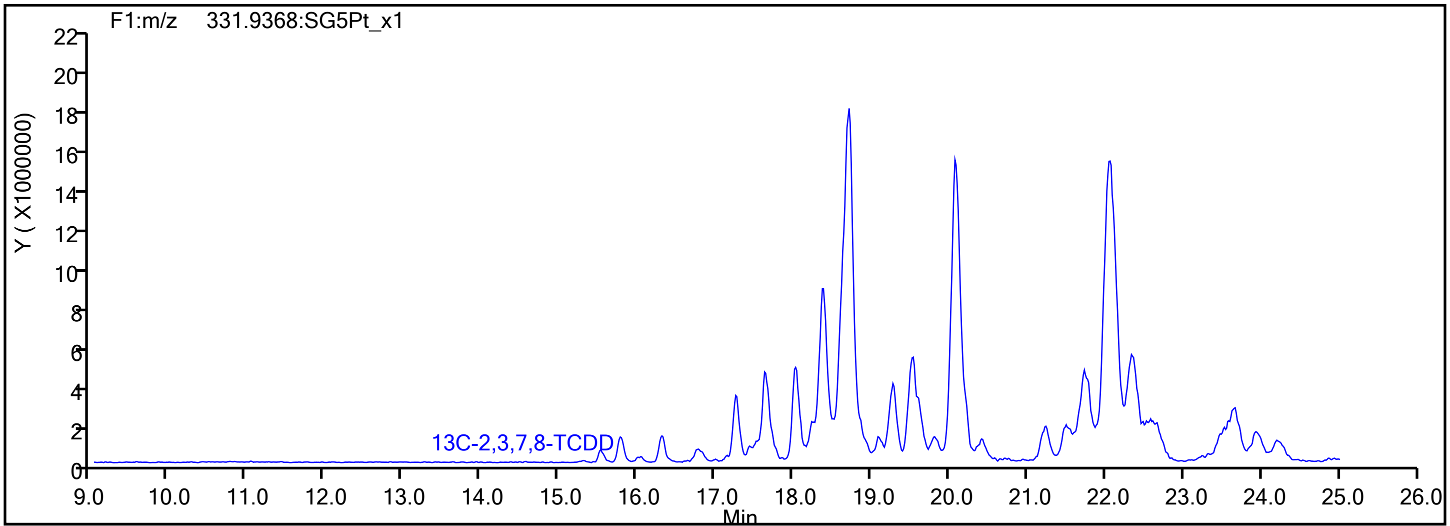

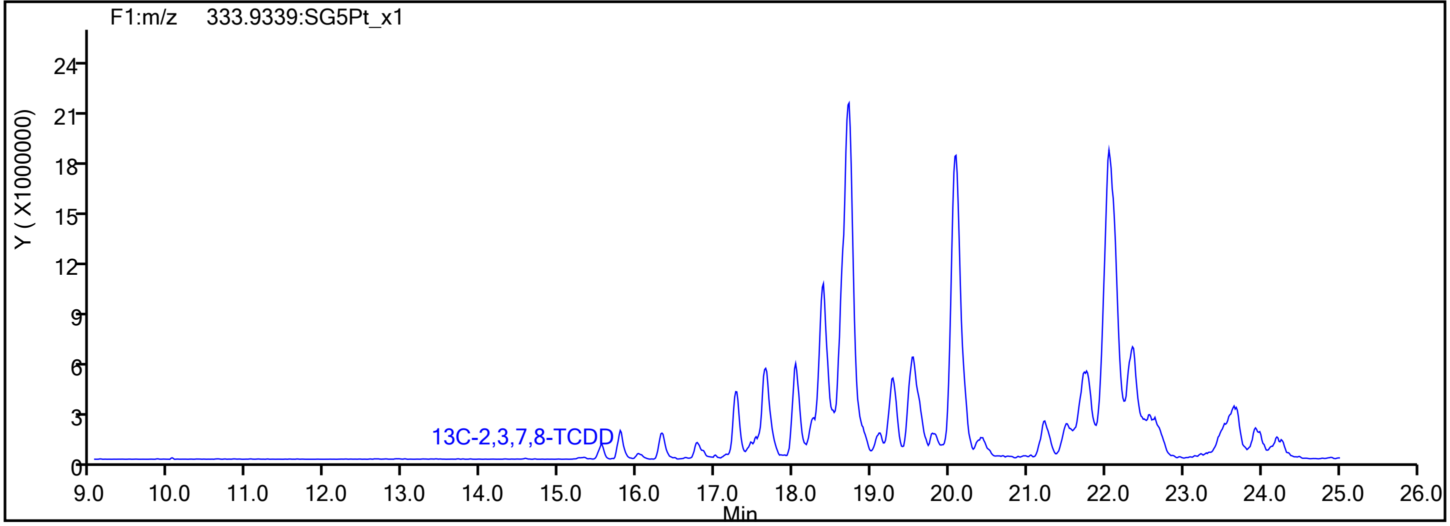

Report Date: 30-Jul-2020 22:56:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_006.d		
Injection Date:	30-Jul-2020 16:21:39	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399853	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

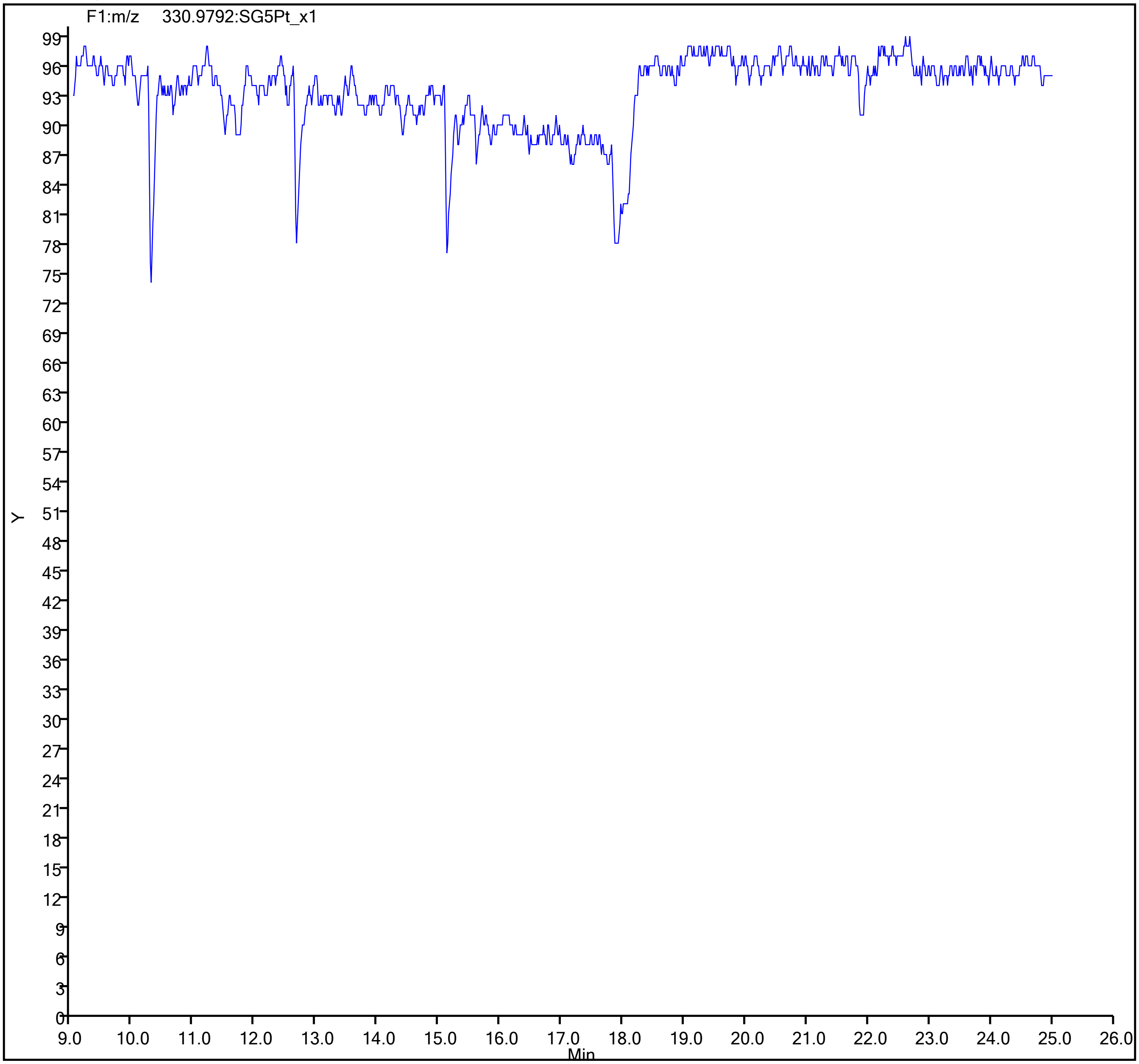

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Control DL	Lab Sample ID: 320-62886-2 DL
Matrix: Water	Lab File ID: 30jl20dfs1_13.d
Analysis Method: 1613B	Date Collected: 07/20/2020 11:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1059.3(mL)	Date Analyzed: 07/30/2020 20:53
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 20
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 399843	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	17000		190	39

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		25-164
89059-46-1	13C-2,3,7,8-TCDF	65		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	51	q	25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	59		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	64		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	65		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	68		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	64		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	66		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	63		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	63		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	70		26-138
114423-97-1	13C-OCDD	62		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Sample Type: Client
Inject. Date: 30-Jul-2020 20:53:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 20.0000
Sample Info: 320-62886-A-2-A (20X)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Aug-2020 09:29:02 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1027

First Level Reviewer: messecara Date: 31-Jul-2020 00:59:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.752	335198	0.78	5.4E+04	5.000	5.000				a
D 13C-2,3,7,8-TCDF	20.731	325827	0.85	1.4977	3.245	3.245	0.1325	0.1325	64.90	
2,3,7,8-TCDF	20.765	9292416	0.80	1.1312	126.1	126.1	0.3148	0.3148		
A Non-2,3,7,8-sub-TCDF	20.170	7309730	0.81	1.1312	99.2	99.2	0.3148	54.4		
S Total TCDF					225.2	225.2	0.3148	0.3148		
D 13C-2,3,7,8-TCDD	22.164	206488	0.71	1.0367	2.971	2.971	0.0772	0.0772	59.42	
2,3,7,8-TCDD	22.173	2142157	0.77	1.1849	43.8	43.8	0.1023	0.1023		
$ 37Cl4-2,3,7,8-TCDD	22.181	144789		1.1208	1.927	1.927	0.0157	0.0157	96.35	
A Non-2,3,7,8-sub-TCDD	21.037	166267	0.81	1.1849	3.398	3.398	0.1023	3.398		
S Total TCDD					47.2	47.2	0.1023	0.1023		
D 13C-1,2,3,7,8-PeCDF	27.673	260385	1.62	1.3057	2.975	2.975	0.0172	0.0172	59.49	
1,2,3,7,8-PeCDF	27.681	301638	1.57	1.1060	5.237	5.237	0.0628	0.0628		
D 13C-2,3,4,7,8-PeCDF	29.231	329475	1.58	1.5420	3.187	3.187	0.0146	0.0146	63.74	
2,3,4,7,8-PeCDF	29.264	174421	1.61	0.9067	2.919	2.919	0.0599	0.0599		
A F1 PeCDFs	24.929						0.005382	0.005382		
A Non-2,3,7,8-sub-PeCDF	28.532	265538	1.55	1.0063	4.507	4.473	0.0606	2.109		RQ
S Total PeCDF					12.7	12.6	0.0613	0.0613		RQ
D 13C-1,2,3,7,8-PeCDD	30.064	140624	1.55	0.8294	2.838	2.529	0.009655	0.009655	56.76	RQ
1,2,3,7,8-PeCDD	30.090	17139	1.58	1.1062	0.4910	0.4910	0.0257	0.0257		
A Non-2,3,7,8-sub-PeCDD	28.879						0.0257	0.0494		U
S Total PeCDD					0.4910	0.4910	0.0257	0.0257		
D 13C-1,2,3,4,7,8-HxCDF	35.222	327239	0.54	1.4619	3.413	3.413	0.0214	0.0214	68.26	
1,2,3,4,7,8-HxCDF	35.239	528632	1.23	1.0087	8.008	8.008	0.0258	0.0258		
D 13C-1,2,3,6,7,8-HxCDF	35.382	271339	0.50	1.2866	3.215	3.215	0.0243	0.0243	64.31	
1,2,3,6,7,8-HxCDF	35.399	147806	1.23	1.2432	2.191	2.191	0.0265	0.0265		
D 13C-2,3,4,6,7,8-HxCDF	36.166	246748	0.52	1.1988	3.138	3.138	0.0261	0.0261	62.77	
2,3,4,6,7,8-HxCDF	36.183	15525	1.24	1.2736	0.2760	0.2470	0.0254	0.0254		RQ
D 13C-1,2,3,7,8,9-HxCDF	37.025	229758	0.52	1.0687	3.278	3.278	0.0293	0.0293	65.56	
1,2,3,7,8,9-HxCDF	37.041	9841	1.32	1.2882	0.1662	0.1662	0.0232	0.0232		
A Non-2,3,7,8-sub-HxCDF	35.386	88035	1.28	1.2034	1.361	1.361	0.0250	0.5541		
S Total HxCDF					12.0	12.0	0.0252	0.0252		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.831	327945	1.28	5E+04	5.000	5.000				
D 13C-1,2,3,4,7,8-HxCDD	36.368	236781	1.37	1.1046	3.268	3.268	0.0174	0.0174	65.36	
1,2,3,4,7,8-HxCDD	36.393	1238	1.13	0.9336	0.0280	0.0280	0.007314	0.007314		Ma
D 13C-1,2,3,6,7,8-HxCDD	36.478	201181	1.19	0.9871	3.107	3.107	0.0195	0.0195	62.15	
1,2,3,6,7,8-HxCDD	36.503	2557	1.24	1.0802	0.0691	0.0588	0.007761	0.007761		RQM
1,2,3,7,8,9-HxCDD	36.839	2539	1.08	1.0574	0.0548	0.0548	0.007118	0.007118		M
A Non-2,3,7,8-sub-HxCDD	35.714	14343	1.24	1.0237	0.3341	0.3199	0.007352	0.1648		RQM
S Total HxCDD					0.4860	0.4616	0.007398	0.007398		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.770	187811	0.46	0.9035	3.169	3.169	0.0329	0.0329	63.38	
1,2,3,4,6,7,8-HpCDF	38.787	165118	1.01	1.5957	2.755	2.755	0.0253	0.0253		
D 13C-1,2,3,4,7,8,9-HpCDF	39.999	240243	0.49	1.0480	3.495	3.495	0.0284	0.0284	69.90	
1,2,3,4,7,8,9-HpCDF	40.016	53156	1.05	1.1693	0.9461	0.9461	0.0250	0.0250		
A Non-2,3,7,8-sub-HpCDF	39.424	59347	1.09	1.3825	1.003	1.003	0.0245	1.003		M
S Total HpCDF					4.704	4.704	0.0251	0.0251		
D 13C-1,2,3,4,6,7,8-HpCDD	39.696	194745	1.08	0.8875	3.345	3.345	0.0144	0.0144	66.91	
1,2,3,4,6,7,8-HpCDD	39.705	83251	1.02	1.1150	1.917	1.917	0.0206	0.0206		
A Non-2,3,7,8-sub-HpCDD	39.555	84595	1.04	1.1150	1.948	1.948	0.0206	1.948		
S Total HpCDD					3.865	3.865	0.0206	0.0206		
D 13C-OCDD	42.185	254555	0.80	0.6297	6.163	6.163	0.0274	0.0274	61.63	
OCDF	42.294	74478	0.89	1.4809	1.976	1.976	0.0300	0.0300		
OCDD	42.193	980676	0.90	1.1948	32.2	32.2	0.0656	0.0656		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Sample Type: Client
Inject. Date: 30-Jul-2020 20:53:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 20.0000
Sample Info: 320-62886-A-2-A (20X)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Aug-2020 09:29:02 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1027

First Level Reviewer: messecara Date: 31-Jul-2020 00:59:28

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.752	21.727	1		147065	23870	282	705	85		a
333.9338	21.761	21.727	2		188133	27330	46	115	594	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.731	20.705	2	0.953	149601	24879	598	1495	42		
317.9389	20.756	20.705	3	0.954	176226	25278	215	537	118	0.85(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.765	20.739	2	1.002	4133587	572276	629	1572	910		
305.8987	20.765	20.739	2	1.002	5158829	719835	800	2000	900	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.622	20.170	-153	0.850	26702	4847	629	1572	8		
305.8987	17.622	20.170	-153	0.850	36287	6739	800	2000	8	0.74(0.65-0.89)	
303.9016	18.129	20.170	-122	0.874	148028	23327	629	1572	37		
305.8987	18.111	20.170	-123	0.874	186661	32116	800	2000	40	0.79(0.65-0.89)	
303.9016	18.627	20.170	-92	0.899	205964	27155	629	1572	43		
305.8987	18.636	20.170	-92	0.899	258606	33080	800	2000	41	0.80(0.65-0.89)	
303.9016	19.090	20.170	-65	0.921	153346	19541	629	1572	31		
305.8987	19.082	20.170	-65	0.920	184980	23073	800	2000	29	0.83(0.65-0.89)	
303.9016	19.477	20.170	-42	0.940	192940	28064	629	1572	45		
305.8987	19.477	20.170	-42	0.940	239378	35050	800	2000	44	0.81(0.65-0.89)	
303.9016	20.009	20.170	-10	0.965	1807308	277434	629	1572	441		
305.8987	20.009	20.170	-10	0.965	2206034	336098	800	2000	420	0.82(0.65-0.89)	
303.9016	20.447	20.170	17	0.986	100299	14539	629	1572	23		
305.8987	20.439	20.170	16	0.986	135795	17253	800	2000	22	0.74(0.65-0.89)	
303.9016	21.589	20.170	85	1.041	268963	38577	629	1572	61		
305.8987	21.589	20.170	85	1.041	341461	49668	800	2000	62	0.79(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	22.035	20.170	112	1.063	56725	7272	629	1572	12		
305.8987	22.052	20.170	113	1.064	73607	9683	800	2000	12	0.77(0.65-0.89)	
303.9016	23.933	20.170	225	1.154	315635	64498	629	1572	103		
305.8987	23.925	20.170	225	1.154	371011	78093	800	2000	98	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.164	22.122	3	1.019	85552	13502	282	705	48		
333.9338	22.147	22.122	1	1.018	120936	16897	46	115	367	0.71(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.173	22.156	1	1.000	933971	126122	175	437	721		
321.8936	22.181	22.156	1	1.001	1208186	164550	120	300	1371	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.181	22.156	1	1.020	144789	21222	72	180	295		
A Non-2,3,7,8-sub-TCDD											
319.8965	22.903	21.037	112	1.033	74340	10014	175	437	57		
321.8936	22.911	21.037	112	1.034	91927	11886	120	300	99	0.81(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.673	27.647	2	1.272	160849	26669	58	145	460		
353.8970	27.656	27.647	1	1.271	99536	15472	34	85	455	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.681	27.672	1	1.000	184428	29147	137	342	213		
341.8567	27.698	27.672	2	1.001	117210	18560	97	242	191	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.231	29.222	1	1.344	202003	31546	58	145	544		
353.8970	29.247	29.222	2	1.345	127472	22317	34	85	656	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.264	29.247	1	1.001	107499	15250	137	342	111		
341.8567	29.256	29.247	1	1.001	66922	10218	97	242	105	1.61(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.929						1	2			
341.8567	24.929						20	50			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.164	28.532	-142	0.945	77992	13965	137	342	102		
341.8567	26.164	28.532	-142	0.945	47201	8380	97	242	86	1.65(1.32-1.78)	
339.8597	27.555	28.532	-59	0.996	12746	2874	137	342	21		
	Empc Correction				10766	2661	137	342	19		
341.8567	27.555	28.532	-59	0.996	6946	1717	97	242	18	1.84(1.32-1.78)	
339.8597	28.287	28.532	-15	1.022	50872	7908	137	342	58		
341.8567	28.304	28.532	-14	1.023	31440	4909	97	242	51	1.62(1.32-1.78)	
339.8597	29.627	28.532	66	1.071	24651	3973	137	342	29		
341.8567	29.618	28.532	65	1.070	15670	2239	97	242	23	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											RQ
367.8949	30.064	30.064	0	1.382	102645	16843	23	57	732		
	Empc Correction				85477	14808	23	57	644		
369.8919	30.064	30.064	0	1.382	55147	9554	10	25	955	1.86(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											
355.8546	30.090	30.090	0	1.001	10487	1484	49	122	30		
357.8516	30.115	30.090	2	1.002	6652	1095	11	27	100	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	27.774	28.879	-66	0.924	990	293	49	122	6		
357.8516	27.807	28.879	-64	0.925	733	165	11	27	15	1.35(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.222	35.223	0	0.956	114490	25971	100	250	260		
385.8610	35.222	35.223	0	0.956	212749	49980	132	330	379	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.239	35.240	0	1.000	291985	69251	93	232	745		
375.8178	35.239	35.240	0	1.000	236647	54875	65	162	844	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.382	35.383	0	0.961	90648	22146	100	250	221		
385.8610	35.374	35.383	-1	0.960	180691	37787	132	330	286	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.399	35.400	0	1.000	81470	17857	93	232	192		
375.8178	35.391	35.400	-1	1.000	66336	13798	65	162	212	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.166	36.167	0	0.982	84134	20792	100	250	208		
385.8610	36.166	36.167	0	0.982	162614	40215	132	330	305	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQ
373.8208	36.183	36.184	0	1.000	10413	2537	93	232	27		
	Empc Correction				8594	2307	93	232	25		
375.8178	36.183	36.184	0	1.000	6931	1861	65	162	29	1.50(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.025	37.026	0	1.005	78300	22941	100	250	229		
385.8610	37.025	37.026	0	1.005	151458	43230	132	330	328	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.041	37.043	0	1.000	5598	1559	93	232	17		
375.8178	37.033	37.043	-1	1.000	4243	1295	65	162	20	1.32(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.832	35.386	-93	0.961	19469	4167	93	232	45		
375.8178	33.824	35.386	-94	0.960	16375	3025	65	162	47	1.19(1.05-1.43)	
373.8208	34.649	35.386	-44	0.984	12430	2606	93	232	28		
375.8178	34.640	35.386	-45	0.983	9027	1707	65	162	26	1.38(1.05-1.43)	
373.8208	37.151	35.386	106	1.055	17449	4979	93	232	54		
375.8178	37.142	35.386	105	1.055	13285	3843	65	162	59	1.31(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.831	36.833	0		184144	52087	75	187	694		
403.8529	36.831	36.833	0		143801	40649	68	170	598	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.368	36.369	0	0.987	136687	39158	75	187	522		
403.8529	36.368	36.369	0	0.987	100094	28202	68	170	415	1.37(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDD											Ma
389.8158	36.393	36.378	1	1.001	658	241	11	27	22		M
391.8127	36.376	36.378	0	1.000	580	248	26	65	10	1.13(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.478	36.479	0	0.990	109441	30613	75	187	408		
403.8529	36.469	36.479	-1	0.990	91740	24262	68	170	357	1.19(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8158	36.503	36.496	0	1.001	1416	441	11	27	40		M
391.8127	36.486	36.496	-1	1.000	1587	386	26	65	15	0.89(1.05-1.43)	M
	Empc Correction				1141	355	26	65	14		
1,2,3,7,8,9-HxCDD											M
389.8158	36.839	36.849	-1	1.013	1320	293	11	27	27		M
391.8127	36.831	36.849	-1	1.013	1219	302	26	65	12	1.08(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	34.590	35.714	-67	0.948	4091	869	11	27	79		
391.8127	34.582	35.714	-68	0.948	3296	703	26	65	27	1.24(1.05-1.43)	M
389.8158	35.635	35.714	-5	0.977	3851	866	11	27	79		
391.8127	35.627	35.714	-5	0.977	3741	868	26	65	33	1.03(1.05-1.43)	
	Empc Correction				3105	698	26	65	27		
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.770	38.781	-1	1.053	59262	17255	105	262	164		
419.8220	38.778	38.781	0	1.053	128549	42284	116	290	365	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.787	38.798	-1	1.000	82818	26731	104	260	257		
409.7788	38.787	38.798	-1	1.000	82300	26524	88	220	301	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.999	40.011	-1	1.086	78517	28456	105	262	271		
419.8220	39.999	40.011	-1	1.086	161726	53785	116	290	464	0.49(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.016	40.020	0	1.000	27224	9202	104	260	88		
409.7788	40.016	40.020	0	1.000	25932	8622	88	220	98	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7817	39.140	39.424	-17	1.010	30891	10964	104	260	105		M
409.7788	39.140	39.424	-17	1.010	28456	9697	88	220	110	1.09(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.696	39.708	-1	1.078	101329	32645	49	122	666		
437.8140	39.696	39.708	-1	1.078	93416	33881	46	115	737	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.705	39.716	-1	1.000	42036	14388	71	177	203		
425.7737	39.705	39.716	-1	1.000	41215	13699	51	127	269	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.081	39.555	-28	0.985	43120	14103	71	177	199		
425.7737	39.081	39.555	-28	0.985	41475	14927	51	127	293	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.185	42.187	0	1.145	113422	35651	65	162	548		
471.7750	42.185	42.187	0	1.145	141133	43096	63	157	684	0.80(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDF											
441.7428	42.294	42.297	0	1.003	35154	11100	45	112	247		
443.7399	42.286	42.297	-1	1.002	39324	12190	95	237	128	0.89(0.76-1.02)	
OCDD											
457.7377	42.193	42.204	-1	1.000	463946	138130	126	315	1096		
459.7348	42.193	42.204	-1	1.000	516730	157024	121	302	1298	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 20.170

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	325827	50157

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		5.000	325827	50157

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.622	26702	4847	36287	6739	0.8545	0.74	
18.129	148028	23327	186661	32116	4.54	0.79	
18.627	205964	27155	258606	33080	6.30	0.80	
19.090	153346	19541	184980	23073	4.59	0.83	
19.477	192940	28064	239378	35050	5.86	0.81	
20.009	1807308	277434	2206034	336098	54.4	0.82	
20.447	100299	14539	135795	17253	3.20	0.74	
21.589	268963	38577	341461	49668	8.28	0.79	
22.035	56725	7272	73607	9683	1.77	0.77	
23.933	315635	64498	371011	78093	9.31	0.85	
Signal Totals:							
	3275910	505254	4033820	620853			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7309730	1126107				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 99.158 = (7309730 * 5.000) / (325827 * 1.131)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDD, RT: 21.037

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	206488	30399

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		5.000	206488	30399

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
22.903	74340	10014	91927	11886	3.40	0.81	
Signal Totals:							
	74340	10014	91927	11886			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	166267	21900				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.398 = (166267 * 5.000) / (206488 * 1.185)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDF, RT: 28.532

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	260385	42141
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	329475	53863

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		5.000	294930	48002

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.164	77992	13965	47201	8380	2.11	1.65	
27.555	12746	2874	6946	1717	0.3317	1.84	RQ
27.555	10766	2661	6946	1717	0.2984		Empc Correction
28.287	50872	7908	31440	4909	1.39	1.62	
29.627	24651	3973	15670	2239	0.6793	1.57	
Signal Totals:							
	164281	28507	101257	17245			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	267518	45965				1.64	RQ
	265538	45752					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.507 = (267518 * 5.000) / (294930 * 1.006)
Empc Amount: 4.473 = (265538 * 5.000) / (294930 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDD, RT: 28.879

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	157792	26397

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		5.000	157792	26397

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
27.774	990	293	733	165	0.0494	1.35	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Lims ID: 320-62886-A-2-A
Client ID: 11215702-Control
Inject. Date: 30-Jul-2020 20:53:00 Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 399843 Lims Sample ID: 12

Non-2,3,7,8-sub-HxCDF, RT: 35.386

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	327239	75951
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	271339	59933
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	246748	61007
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	229758	66171

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		5.000	268771	65765

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.832	19469	4167	16375	3025	0.5541	1.19	
34.649	12430	2606	9027	1707	0.3317	1.38	
37.151	17449	4979	13285	3843	0.4751	1.31	
Signal Totals:							
	49348	11752	38687	8575			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	88035	20327				1.28	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.361 = (88035 * 5.000) / (268771 * 1.203)

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 35.714

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	236781	67360
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	201181	54875
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		5.000	218981	61117

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.590	4091	869	3296	703	0.1648	1.24	M
35.635	3851	866	3741	868	0.1693	1.03	RQ
35.635	3851	866	3105	698	0.1551		Empc Correction
Signal Totals:							
	7942	1735	6401	1401			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14979	3306				1.13	RQM
	14343	3136					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.3341 = (14979 * 5.000) / (218981 * 1.024)

Empc Amount: 0.3199 = (14343 * 5.000) / (218981 * 1.024)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDF, RT: 39.424

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	187811	59539
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	240243	82241

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		5.000	214027	70890

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.140	30891	10964	28456	9697	1.00	1.09	M
Signal Totals:							
	30891	10964	28456	9697			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59347	20661				1.09	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.003 = (59347 * 5.000) / (214027 * 1.383)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Lims ID:	320-62886-A-2-A		
Client ID:	11215702-Control		
Inject. Date:	30-Jul-2020 20:53:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 39.555

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.115	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	194745	66526

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.115		5.000	194745	66526

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.081	43120	14103	41475	14927	1.95	1.04	
Signal Totals:							
	43120	14103	41475	14927			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	84595	29030				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1.948 = (84595 * 5.000) / (194745 * 1.115)

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

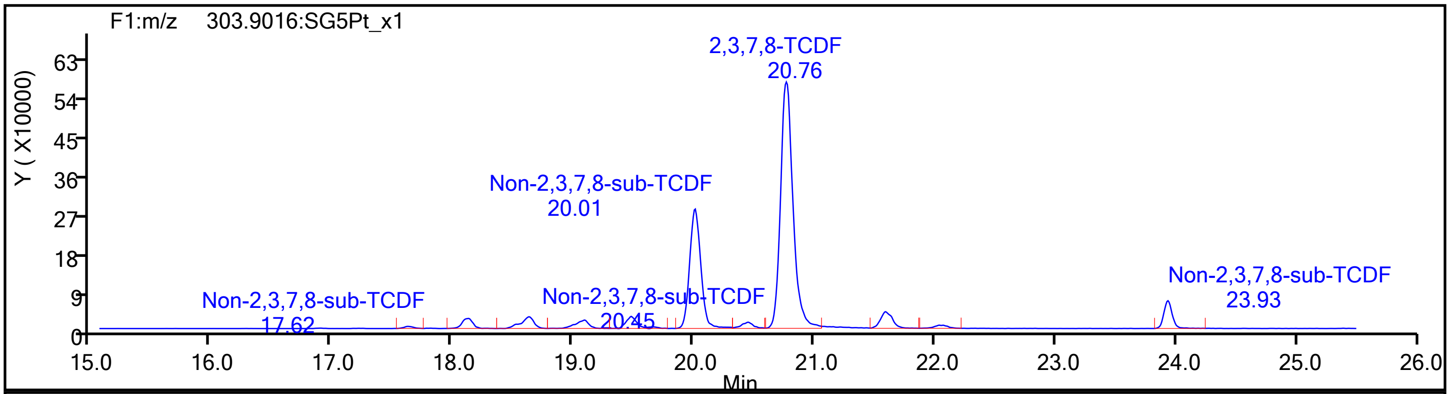

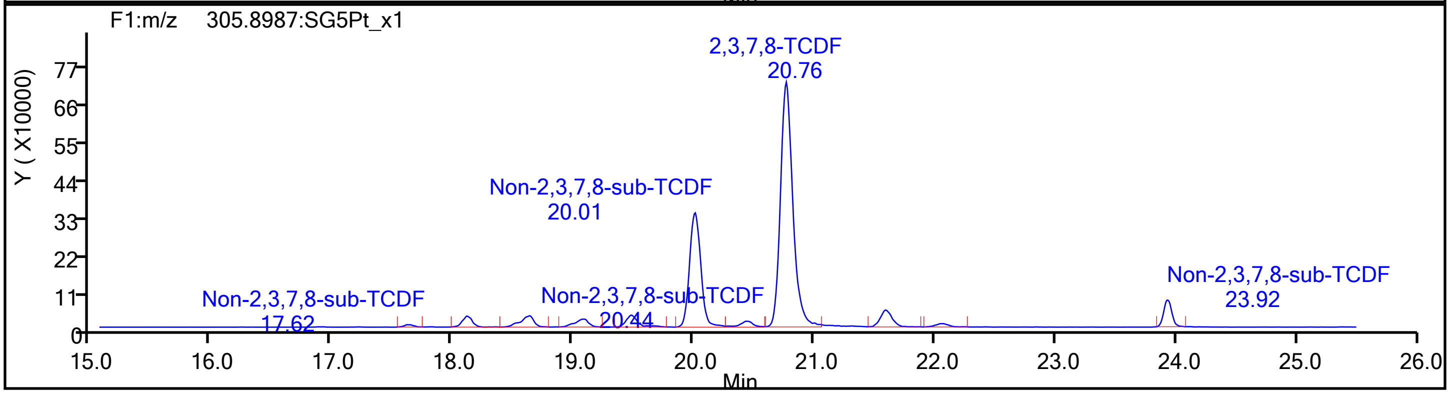

TCDF Standards

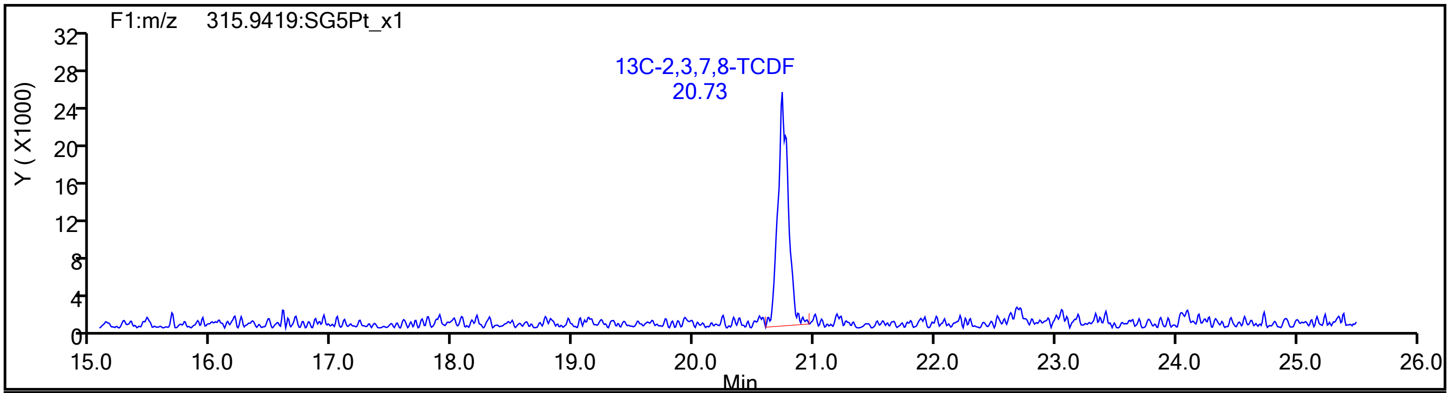

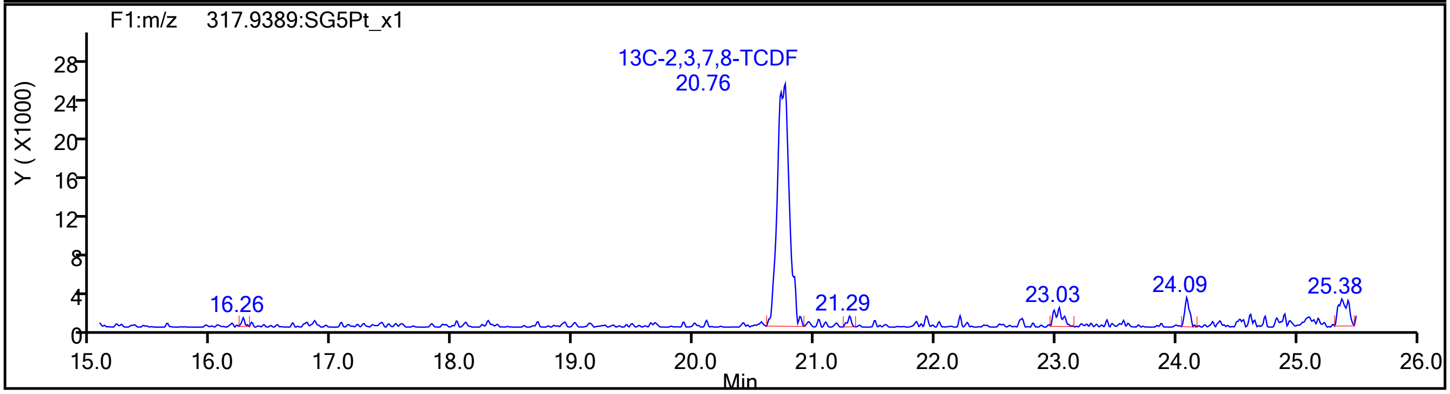

Report Date: 03-Aug-2020 09:29:02 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

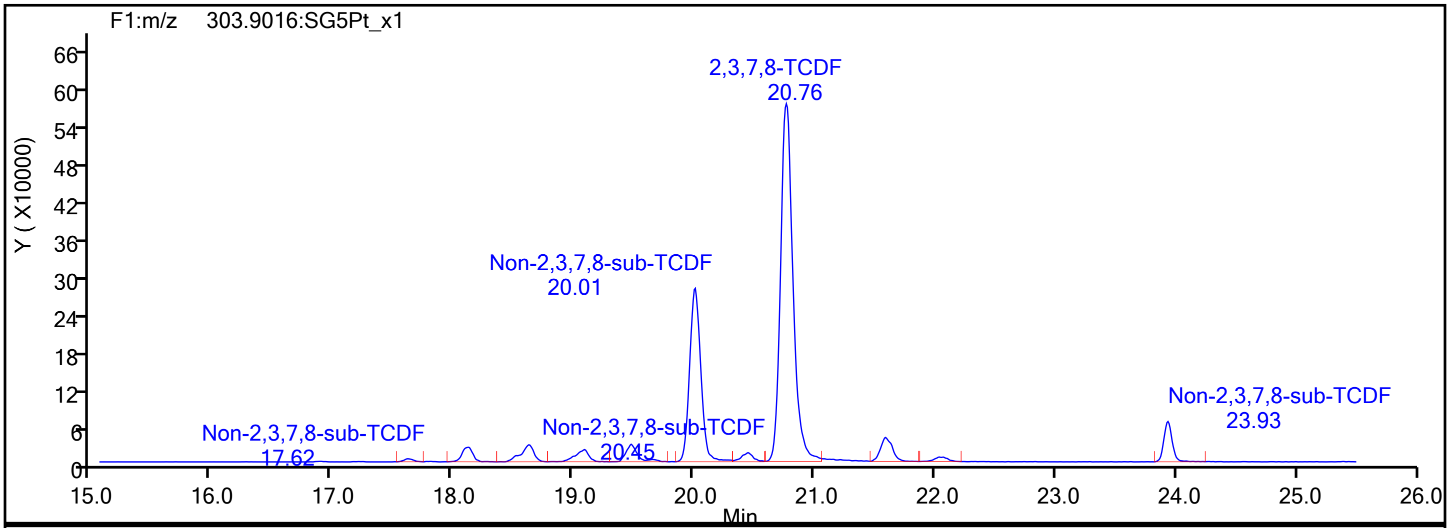

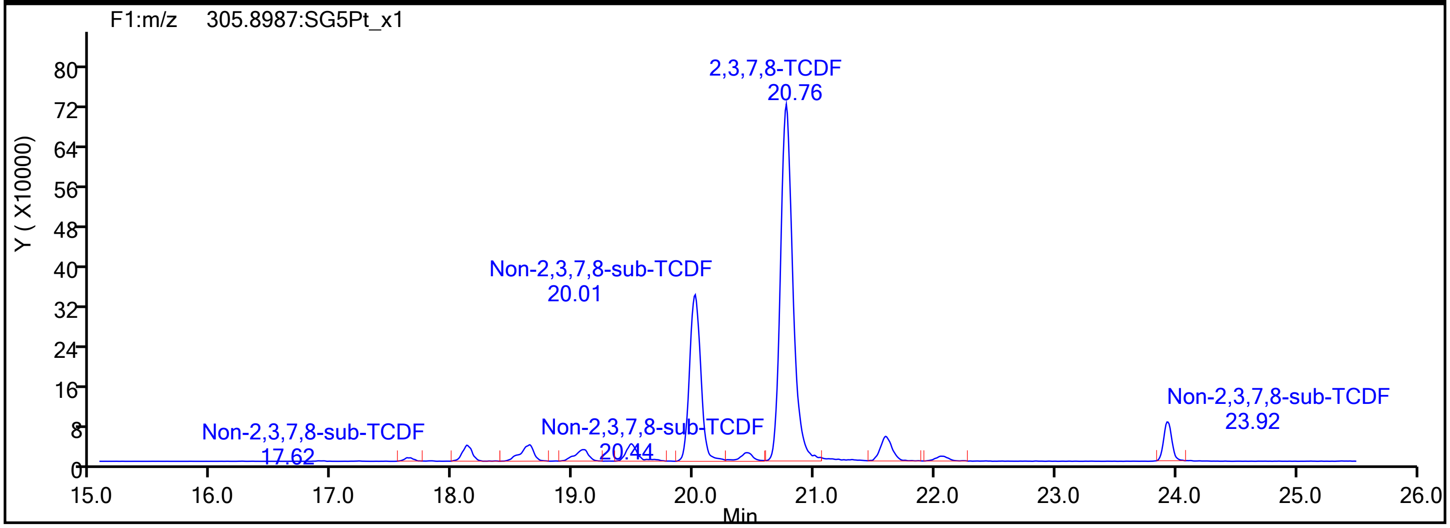

TCDF Interference Mass

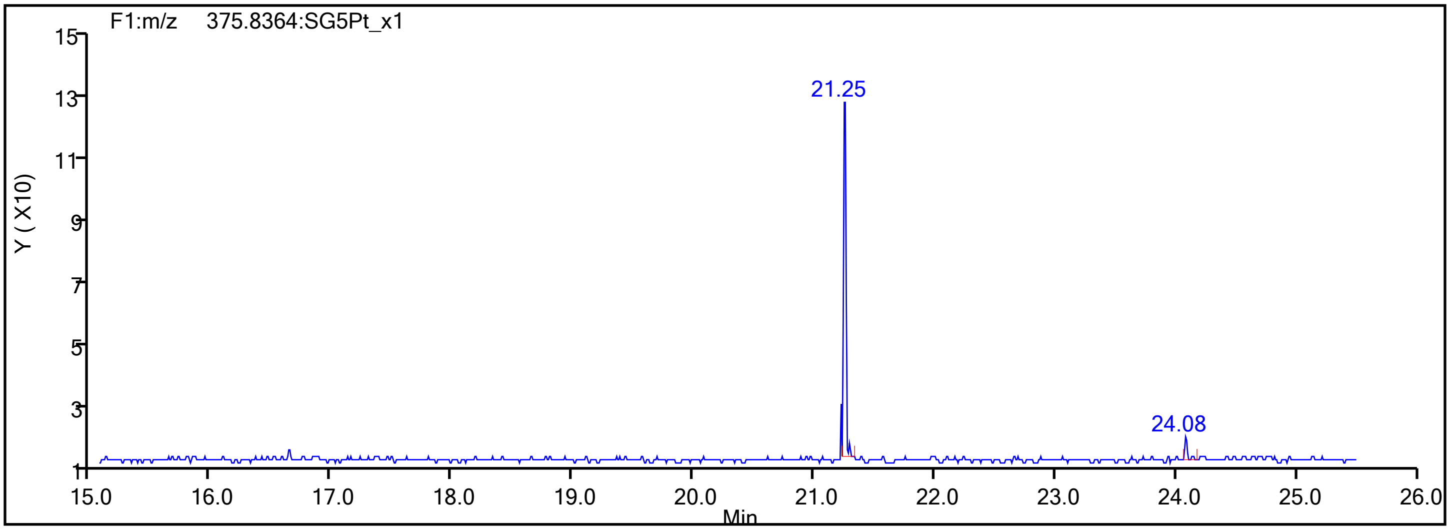

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

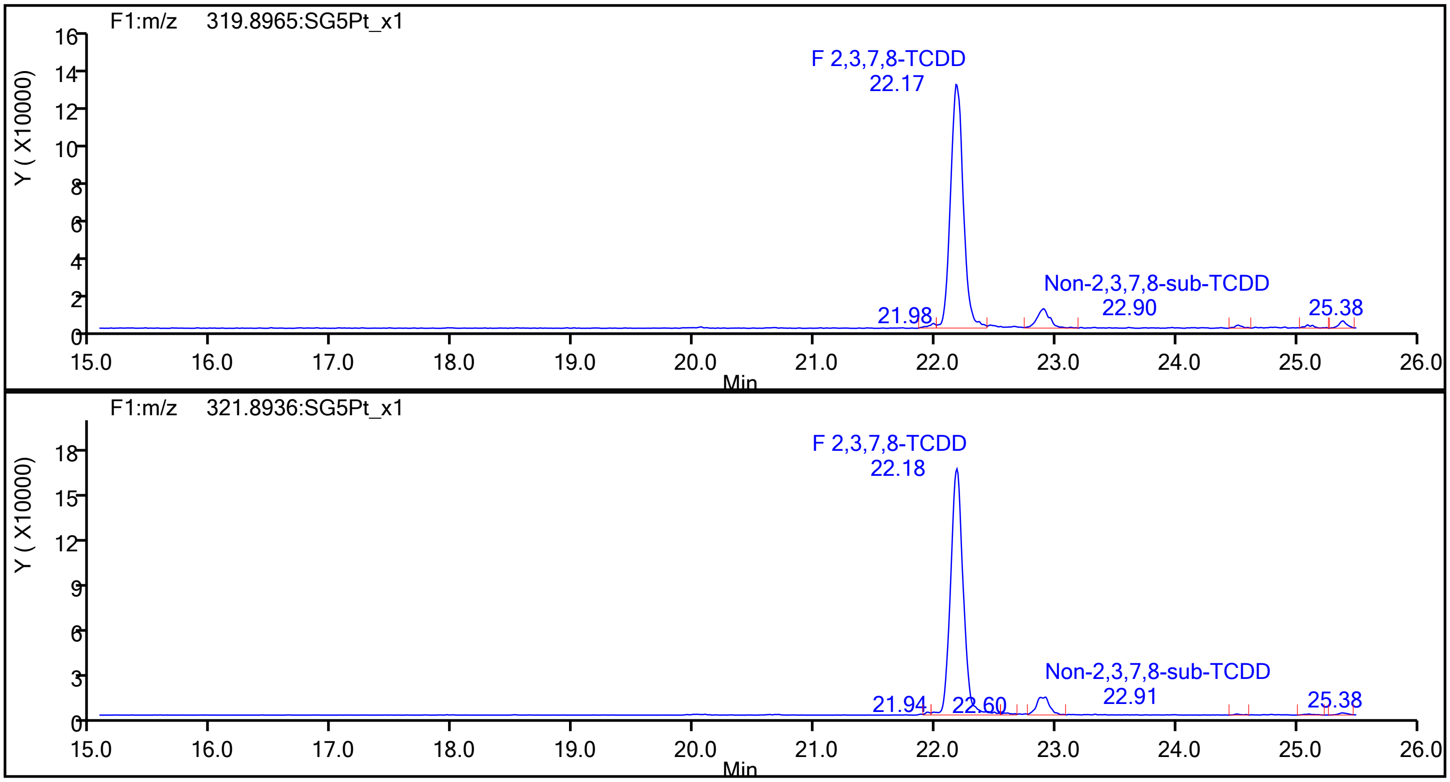

TCDD Standards

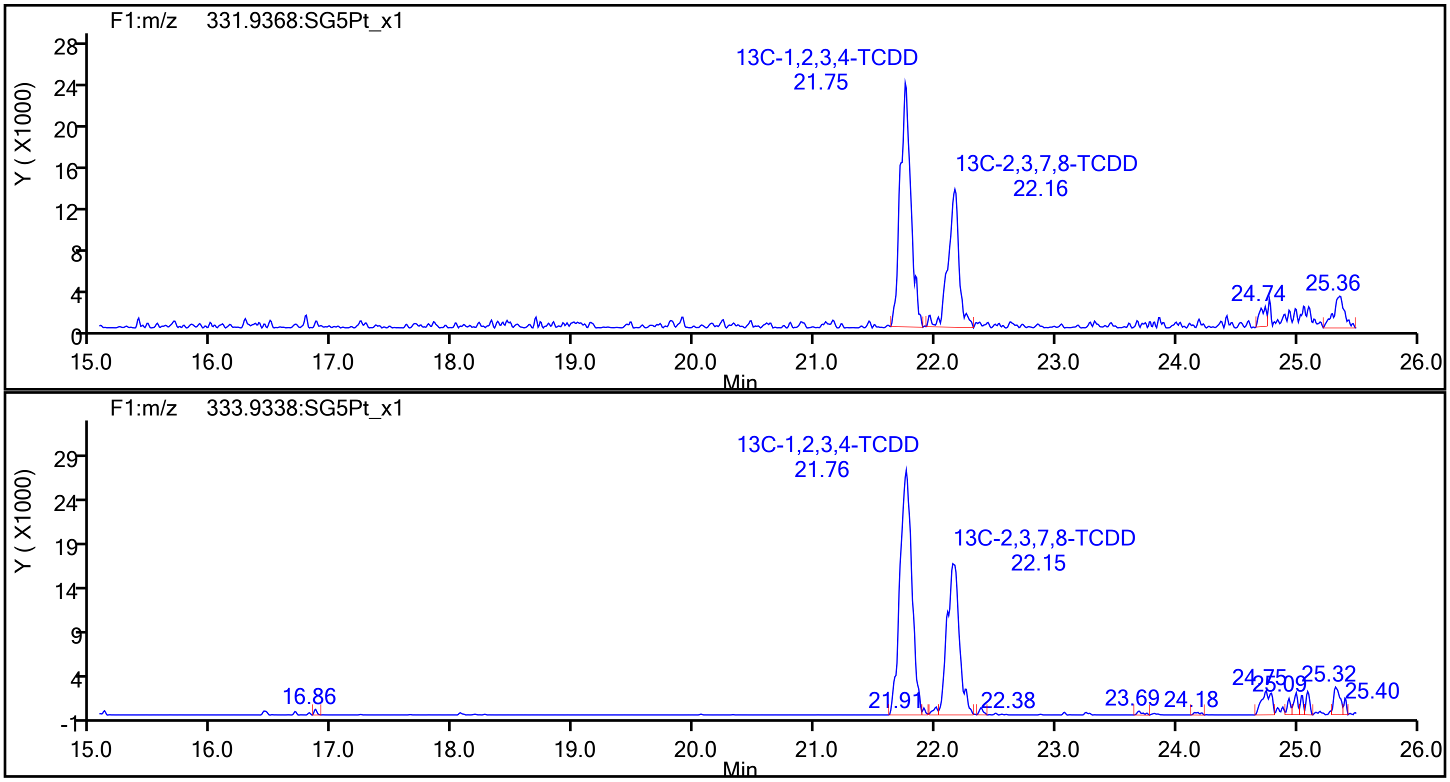

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

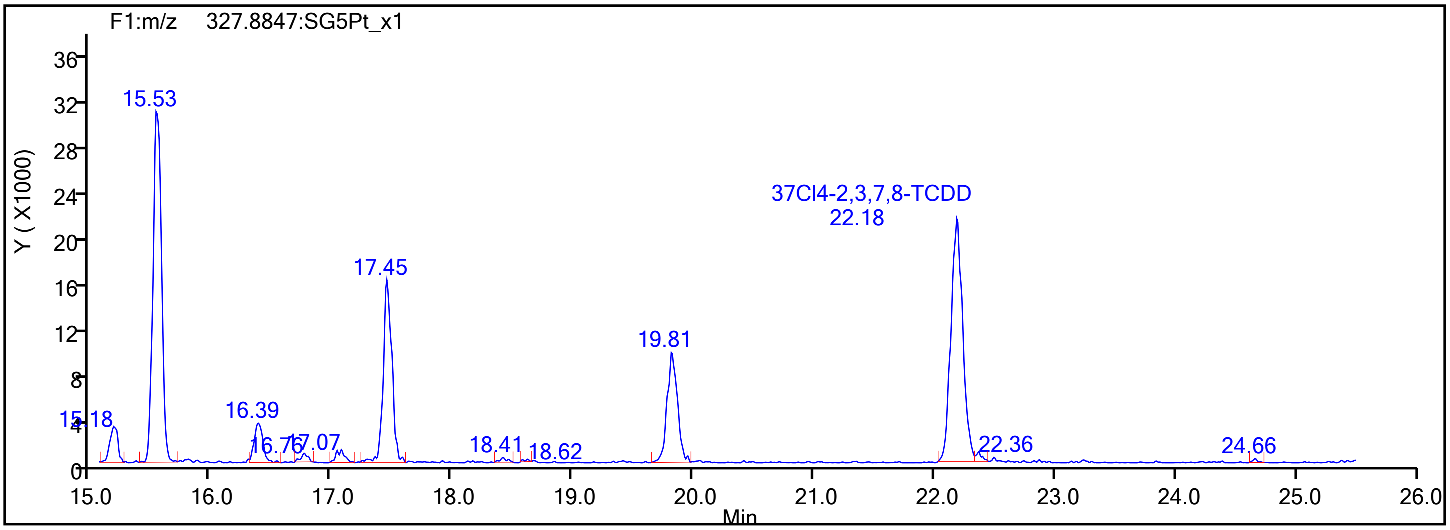

37Cl4-TCDD Standards

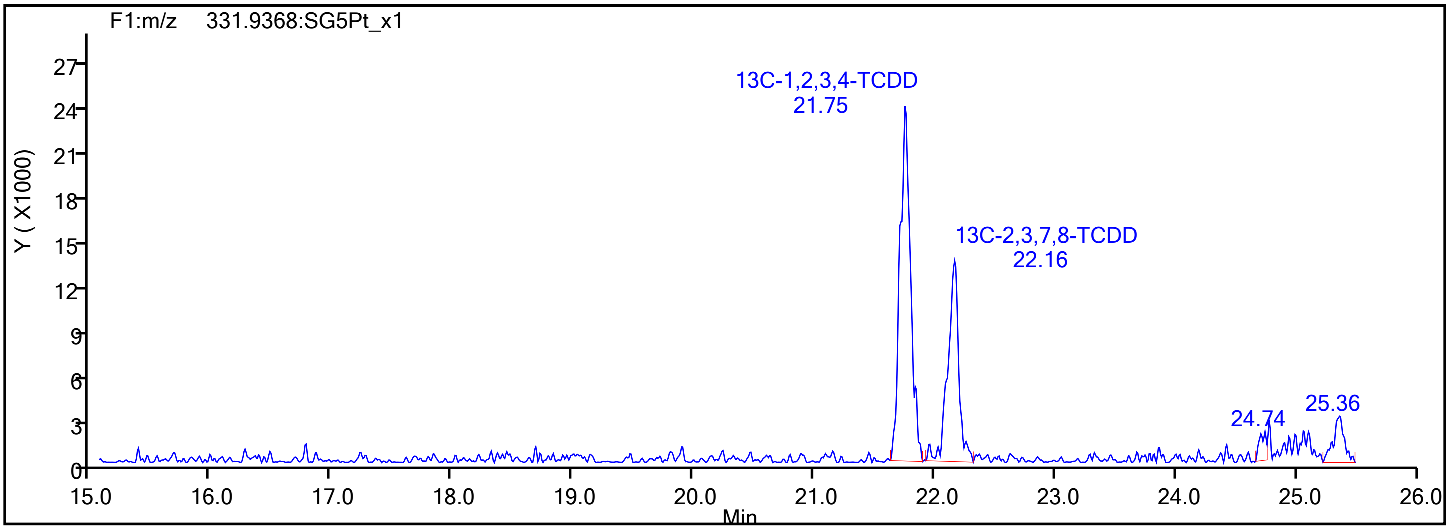

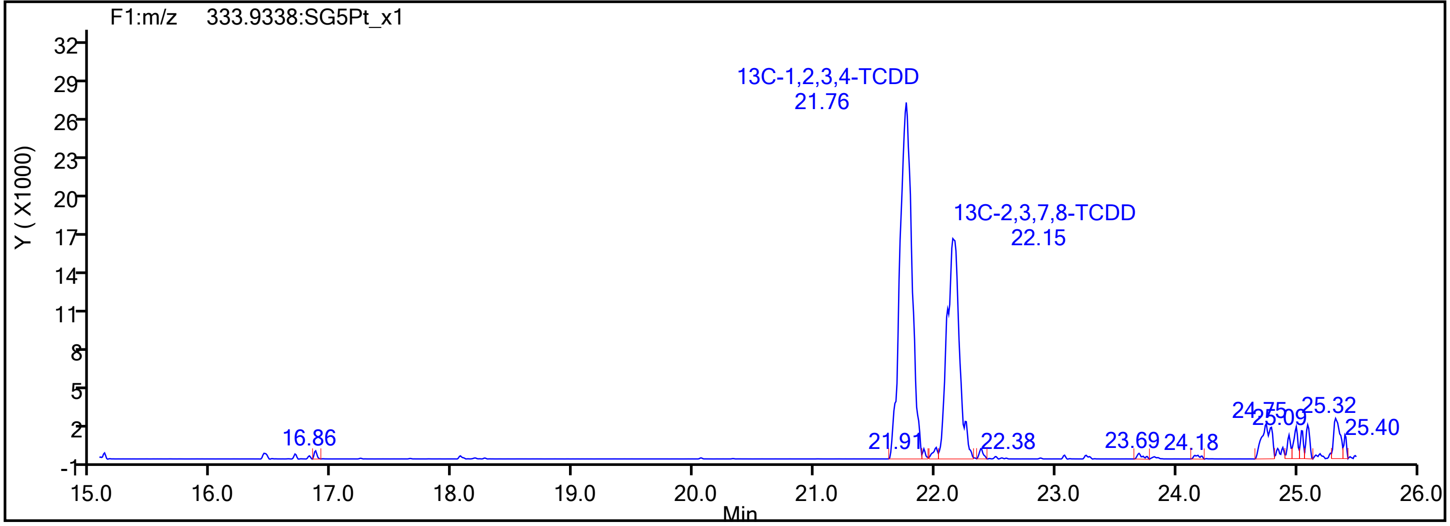

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

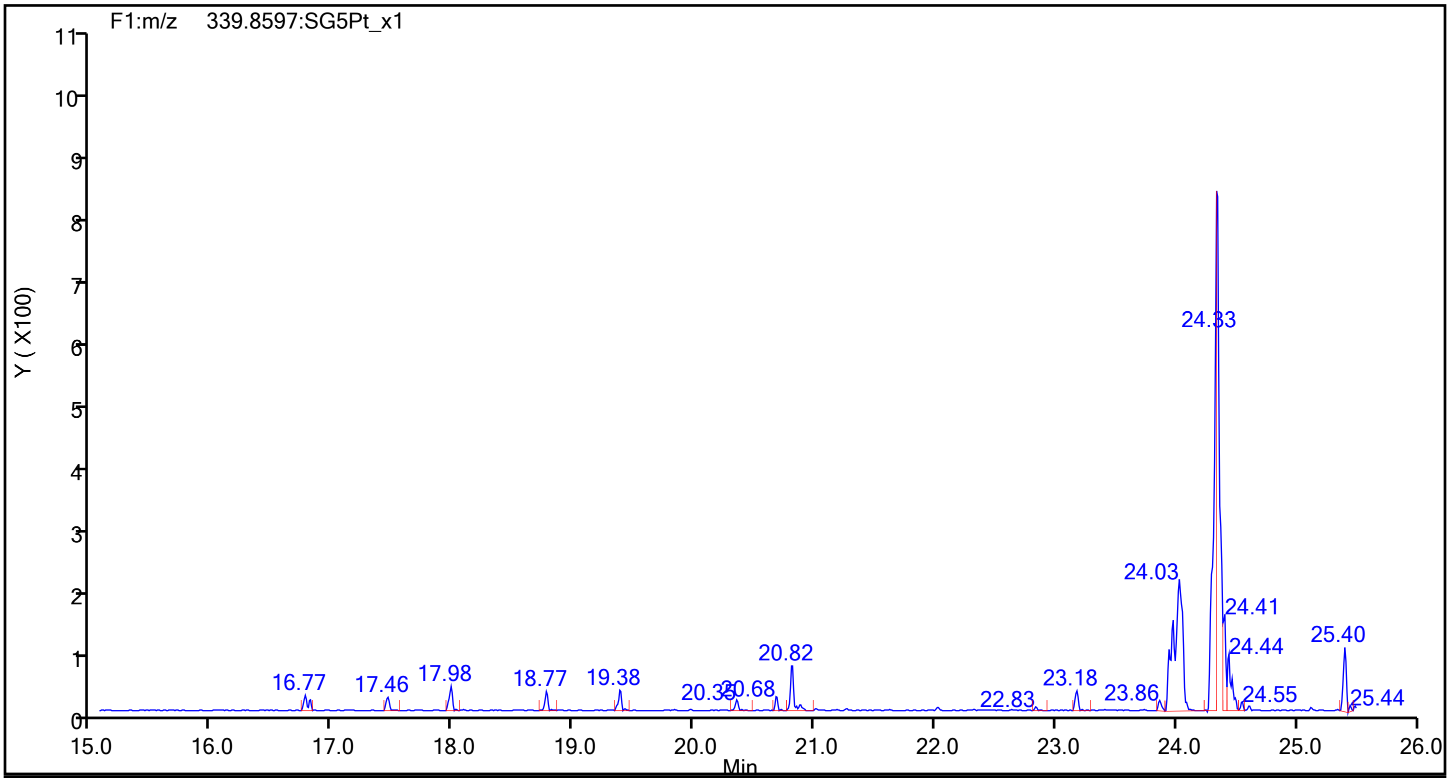

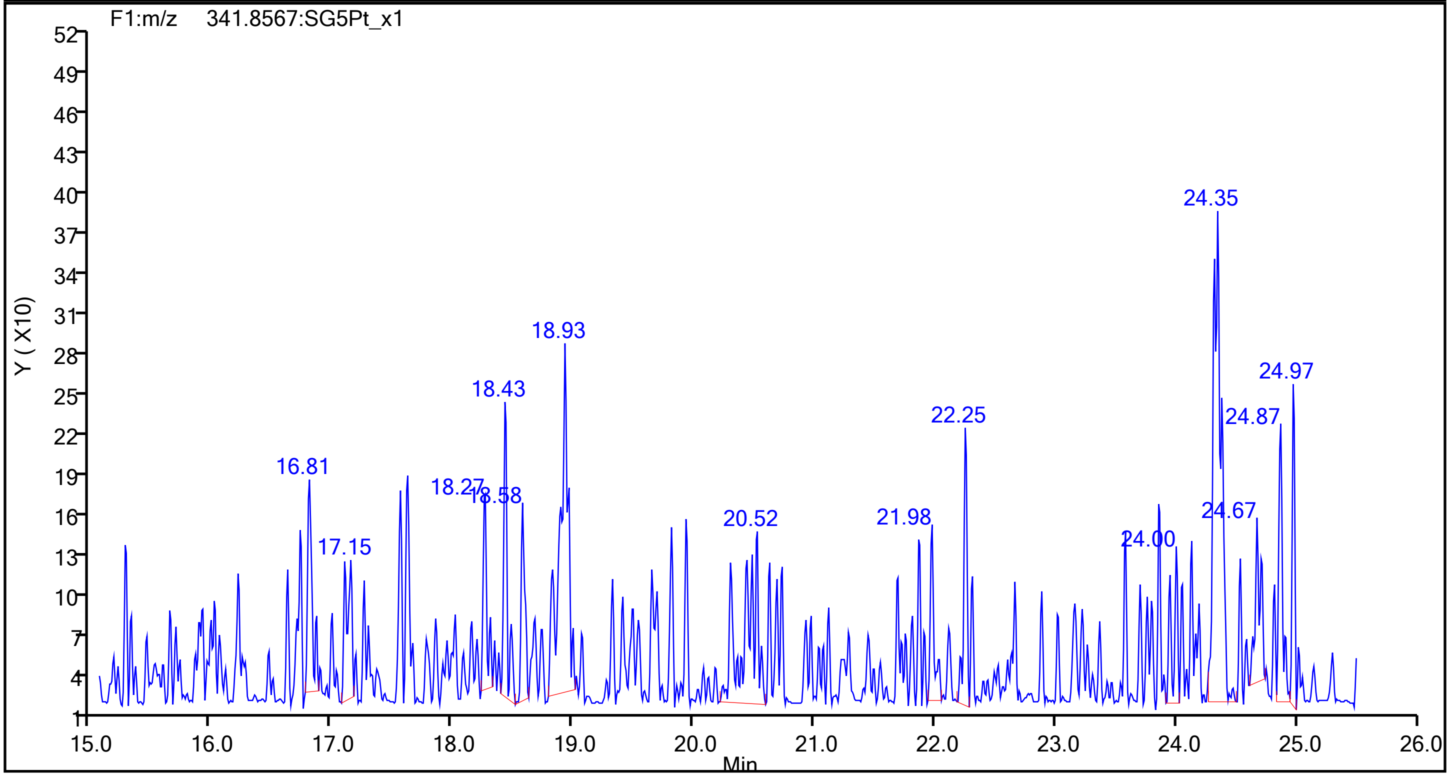

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date: 30-Jul-2020 20:53:00
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Client ID: 11215702-Control
Worklist#: 399843
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

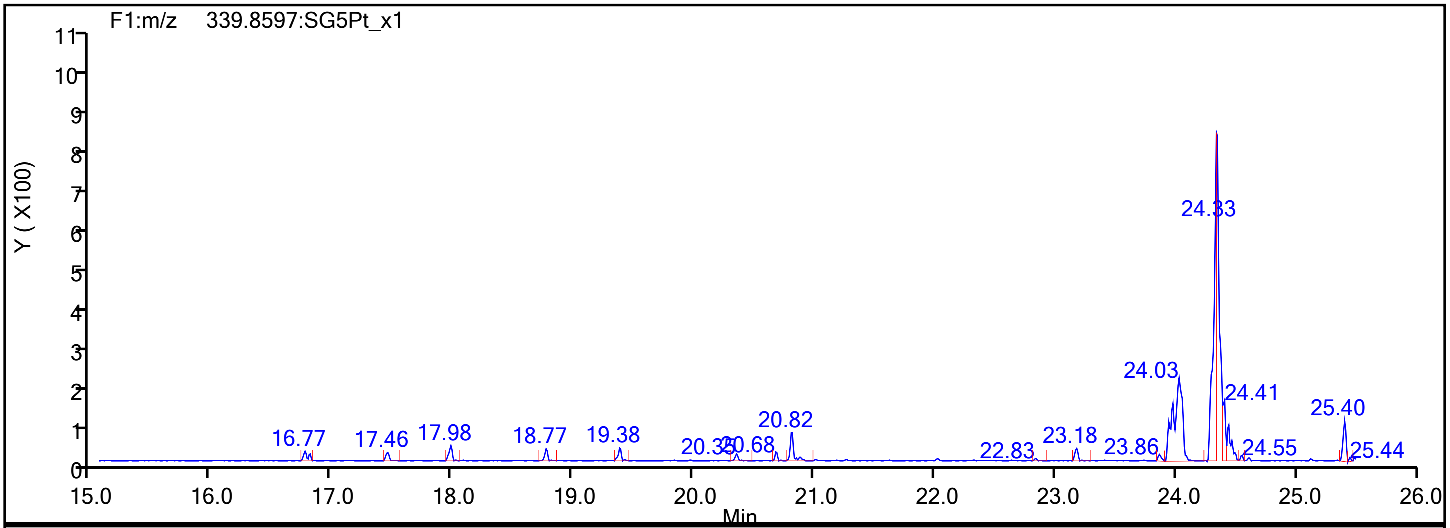

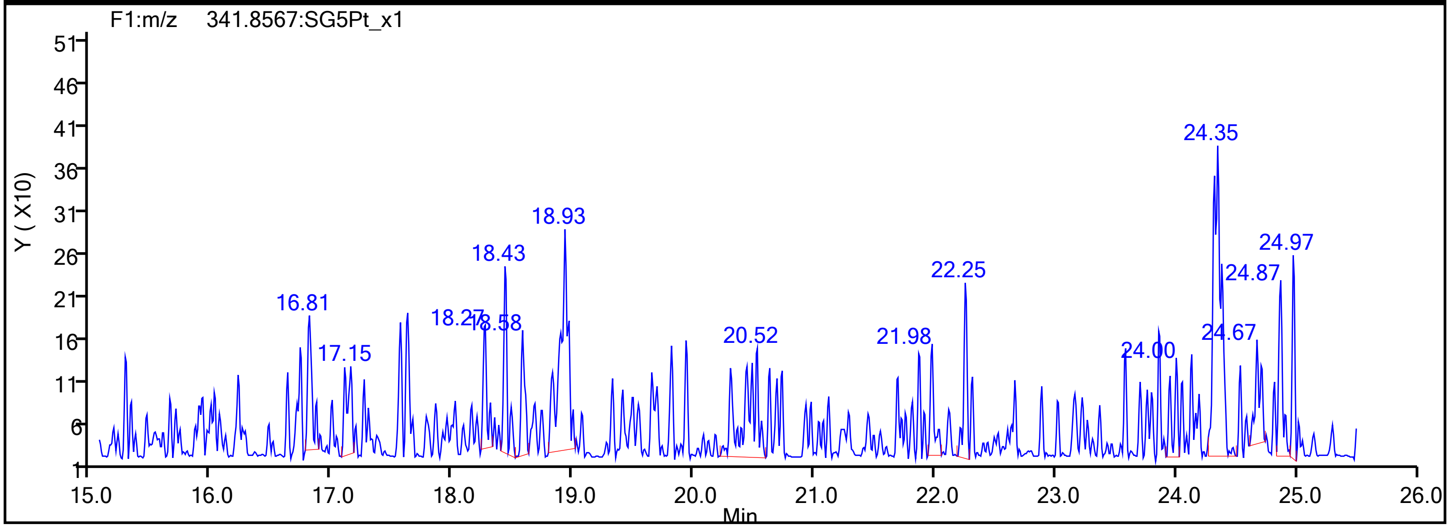

F1 PeCDFs Interference Mass

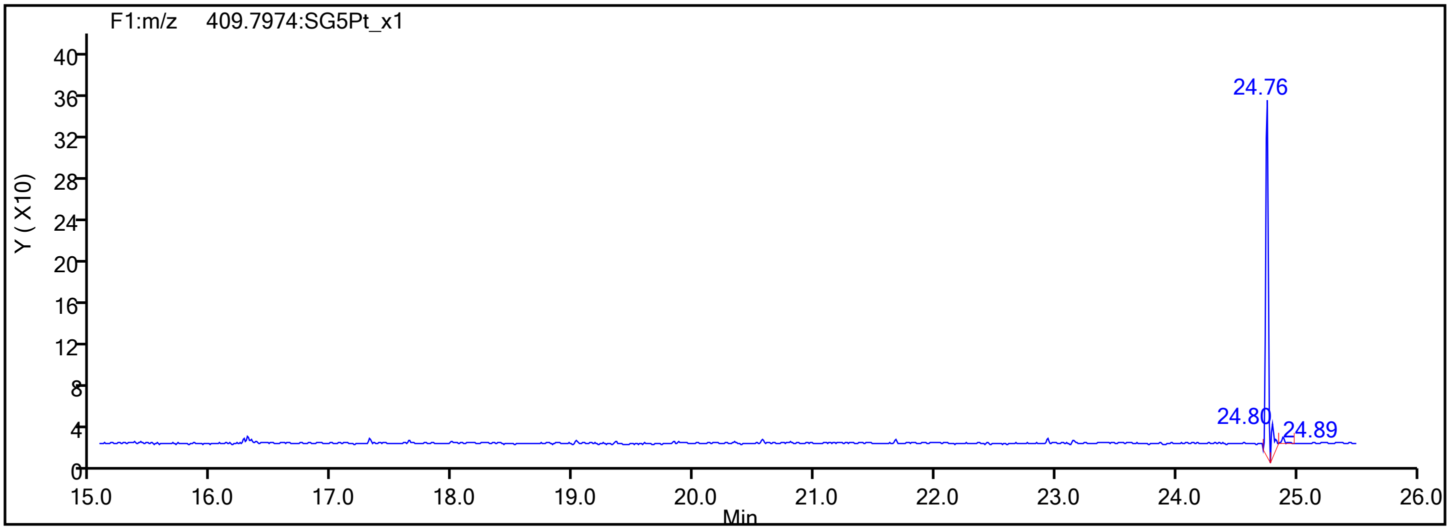

Report Date: 03-Aug-2020 09:29:03
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Injection Date: 30-Jul-2020 20:53:00
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Worklist#: 399843
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

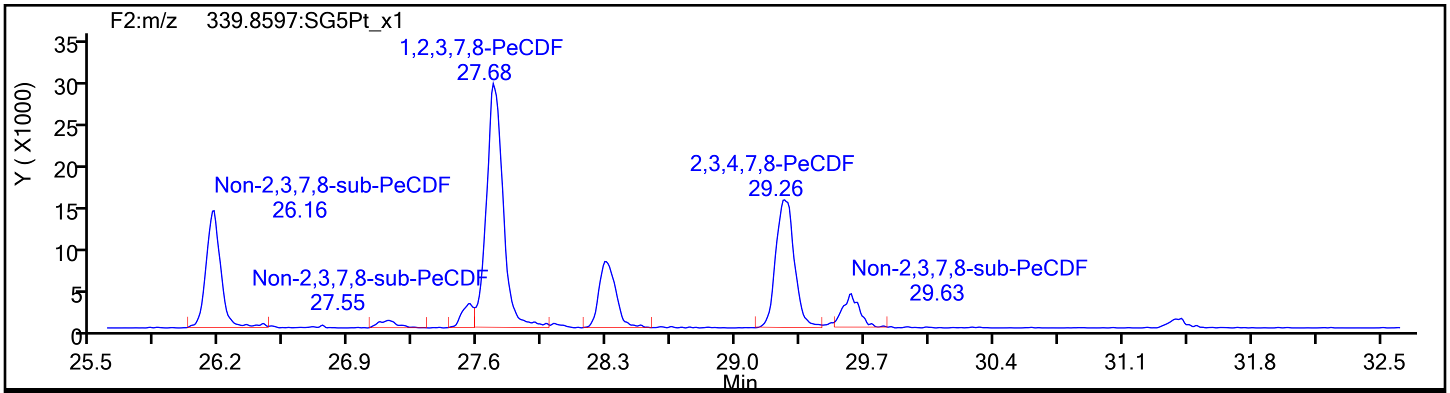

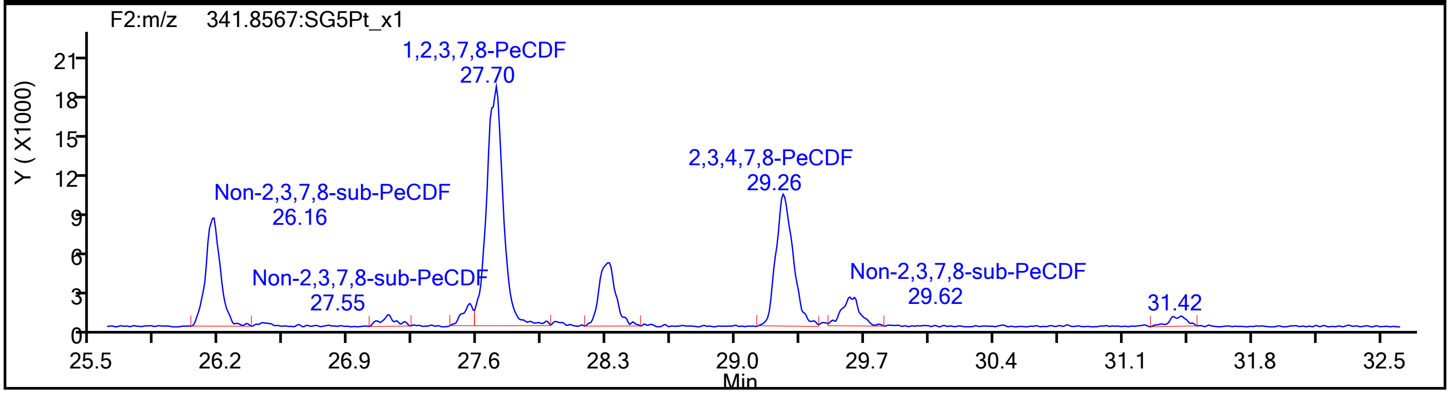

PeCDF Standards

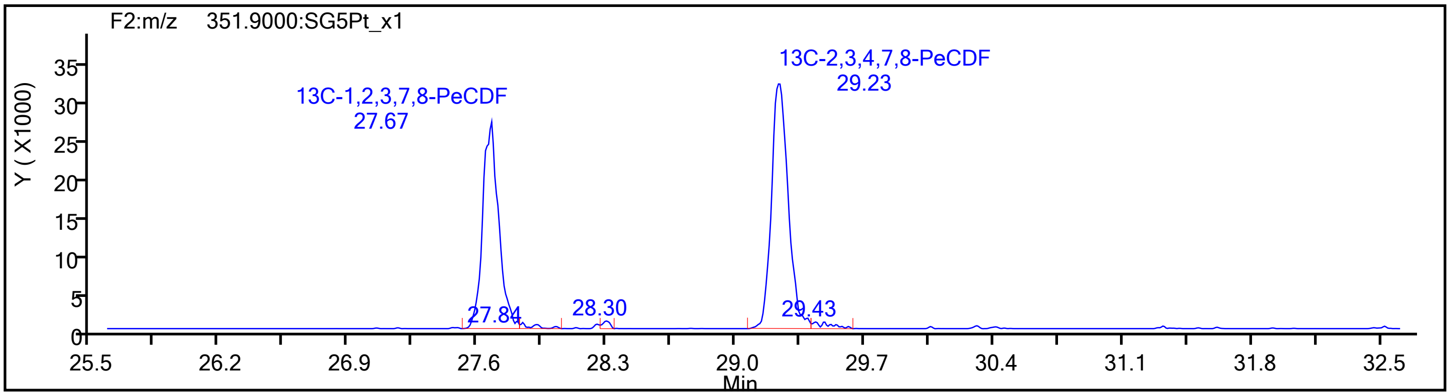

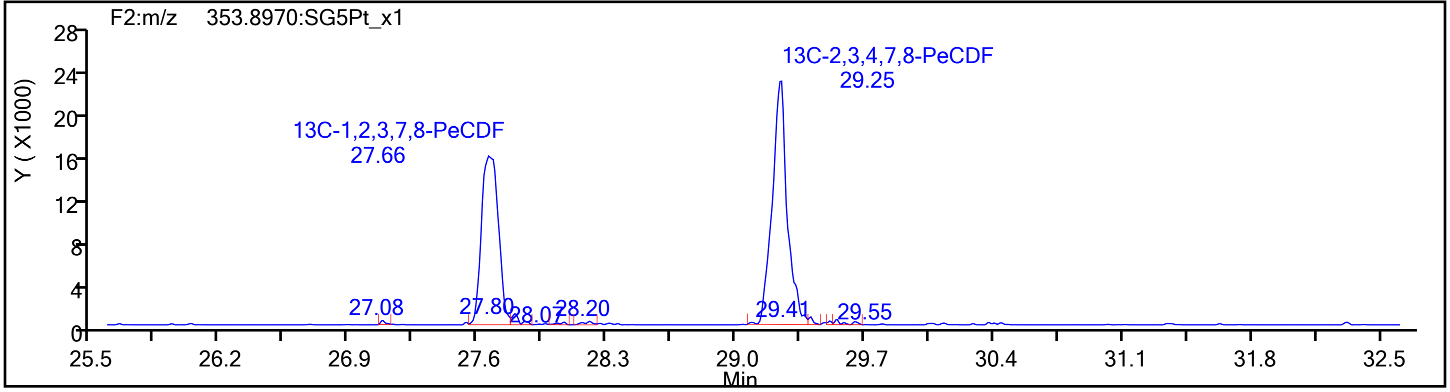

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

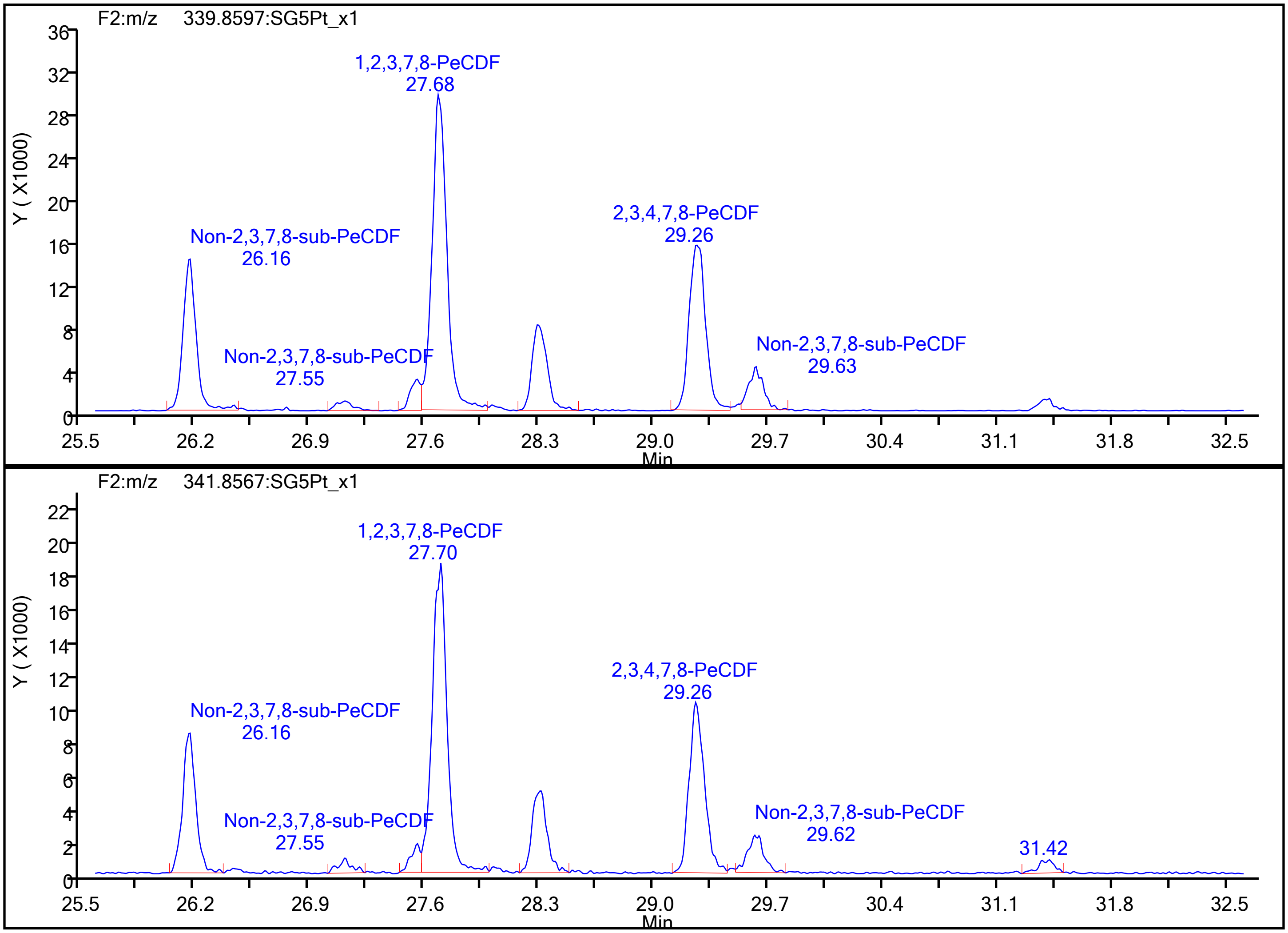

PeCDF Interference Mass

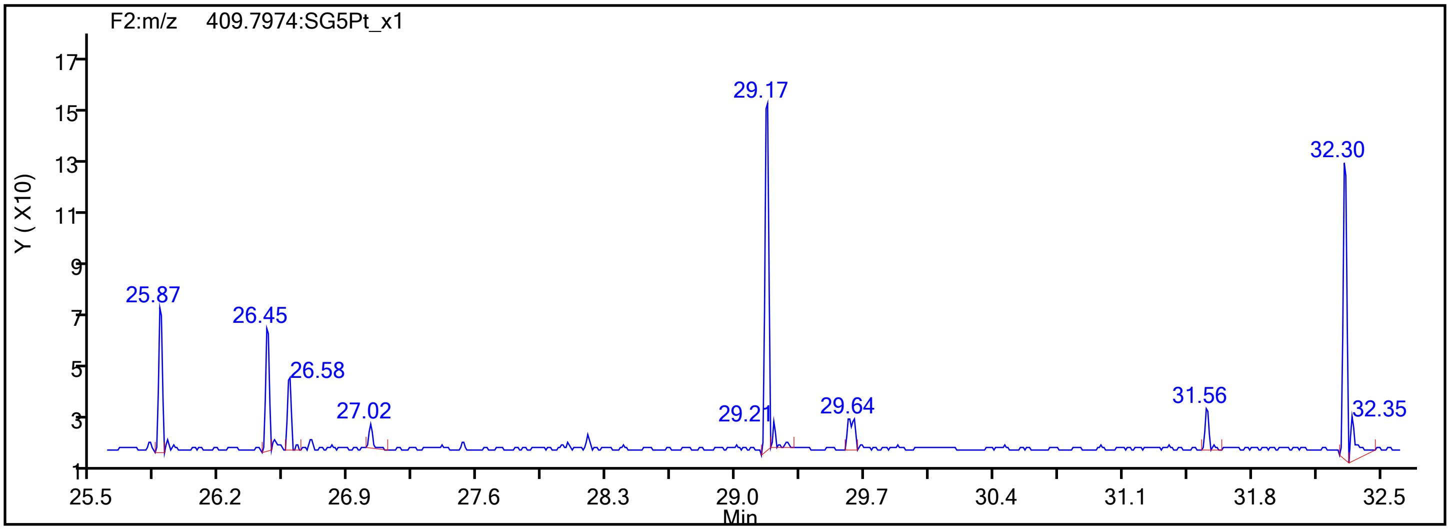

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Injection Date: 30-Jul-2020 20:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 399843
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

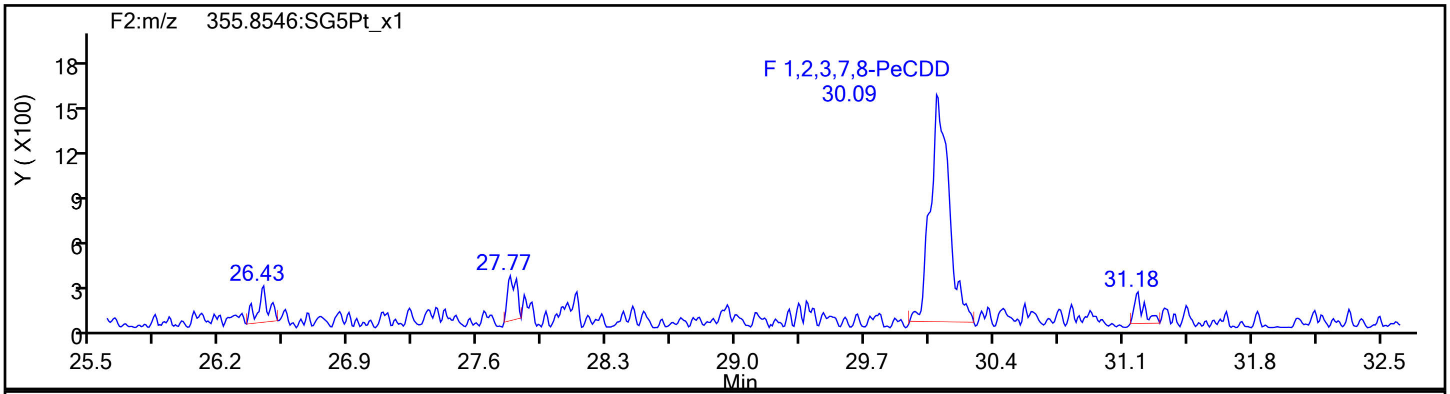

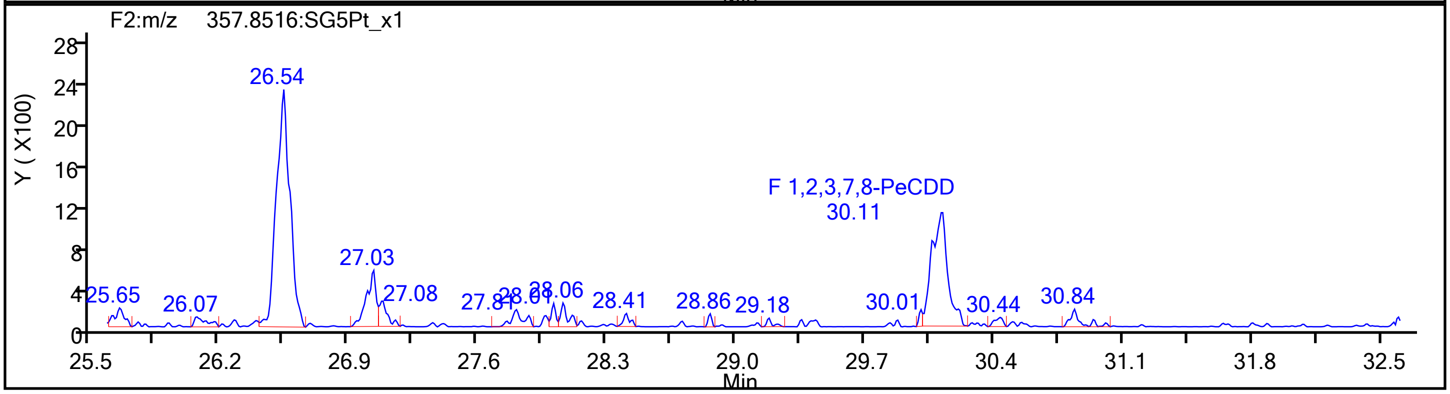

PeCDD Standards

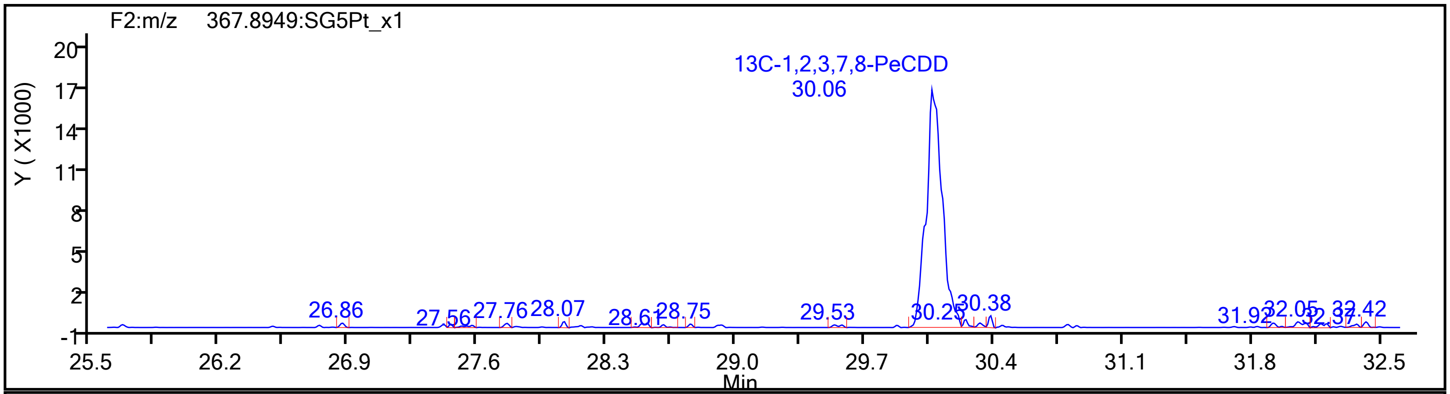

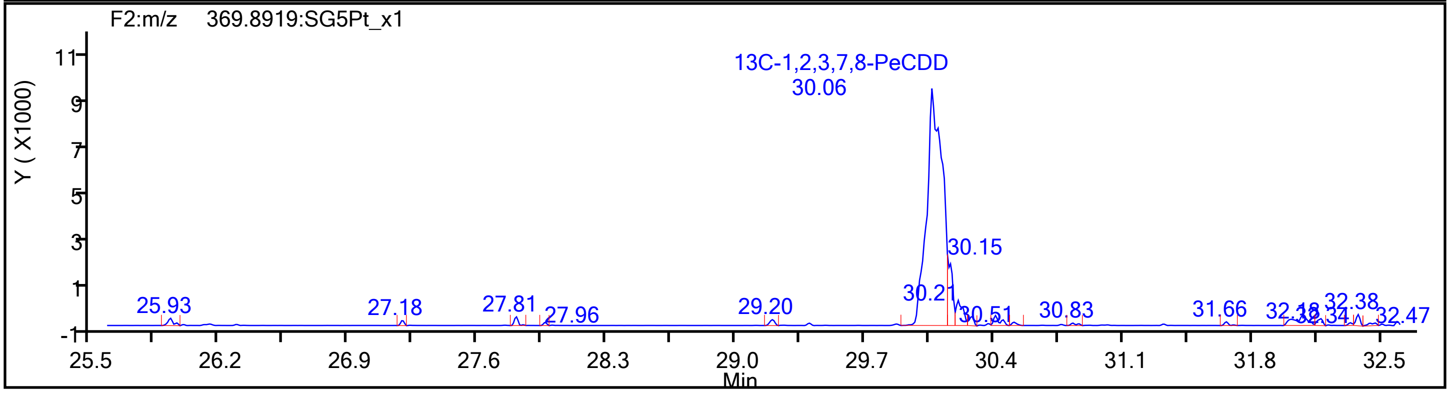

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

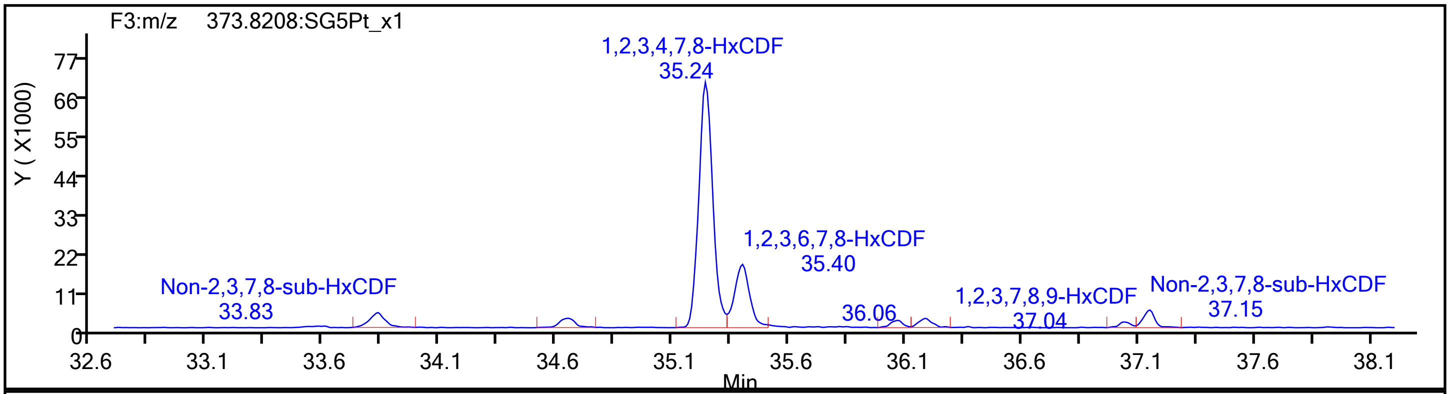

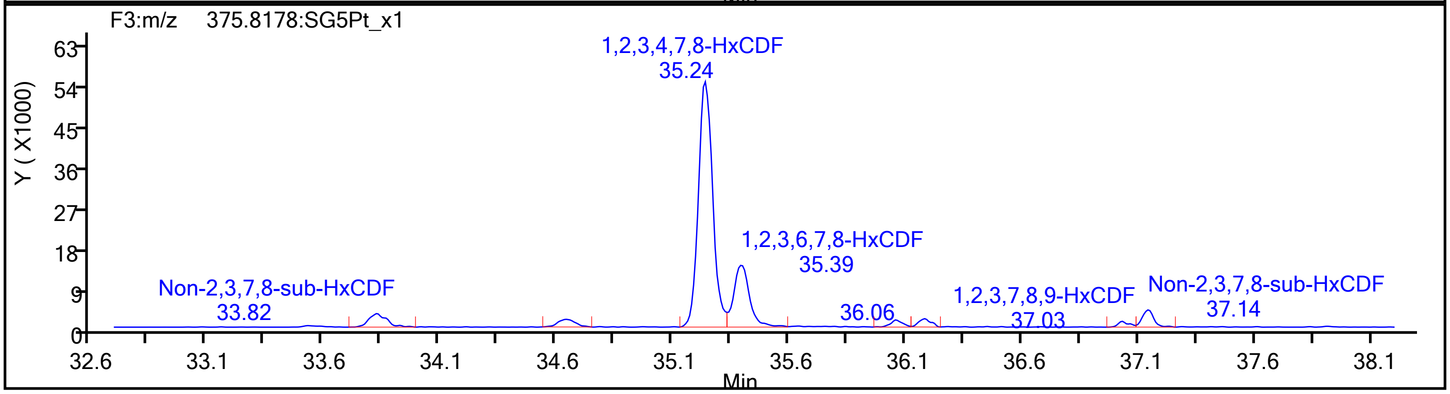

HxCDF Standards

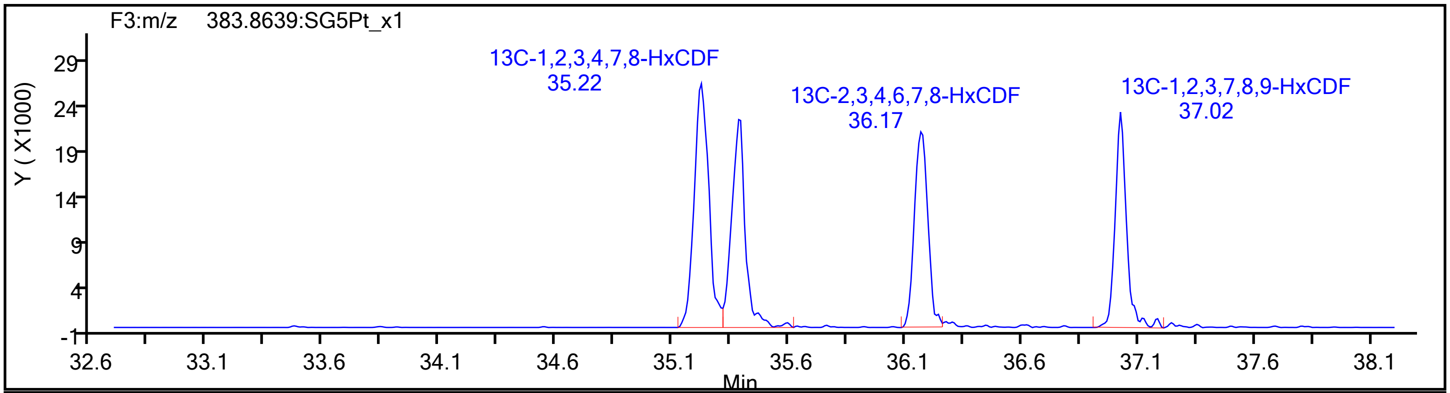

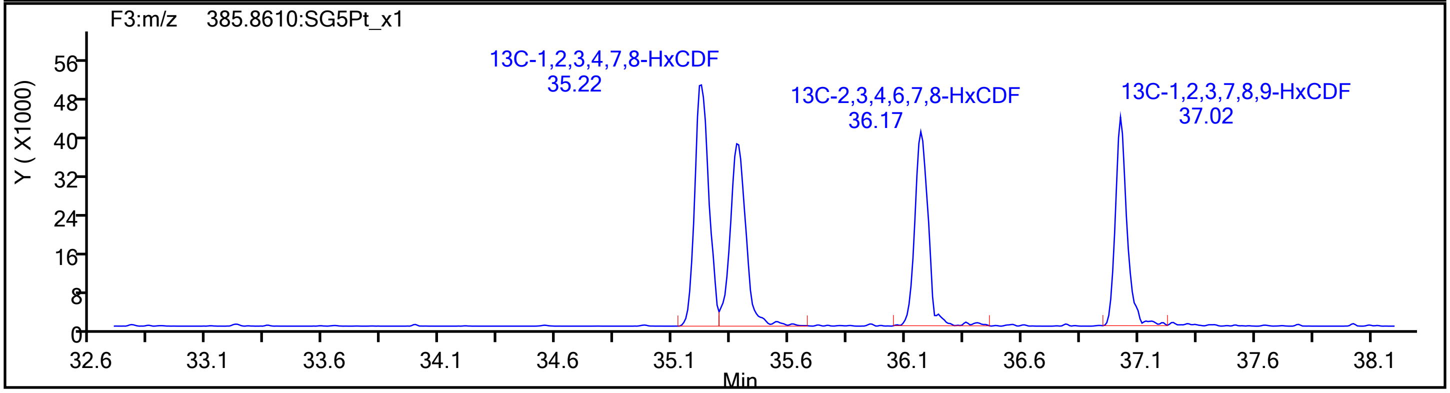

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d

Injection Date: 30-Jul-2020 20:53:00
Injection Vol: 1.0 ul
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Method: Dioxin_DFS1
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Client ID: 11215702-Control
Worklist#: 399843
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

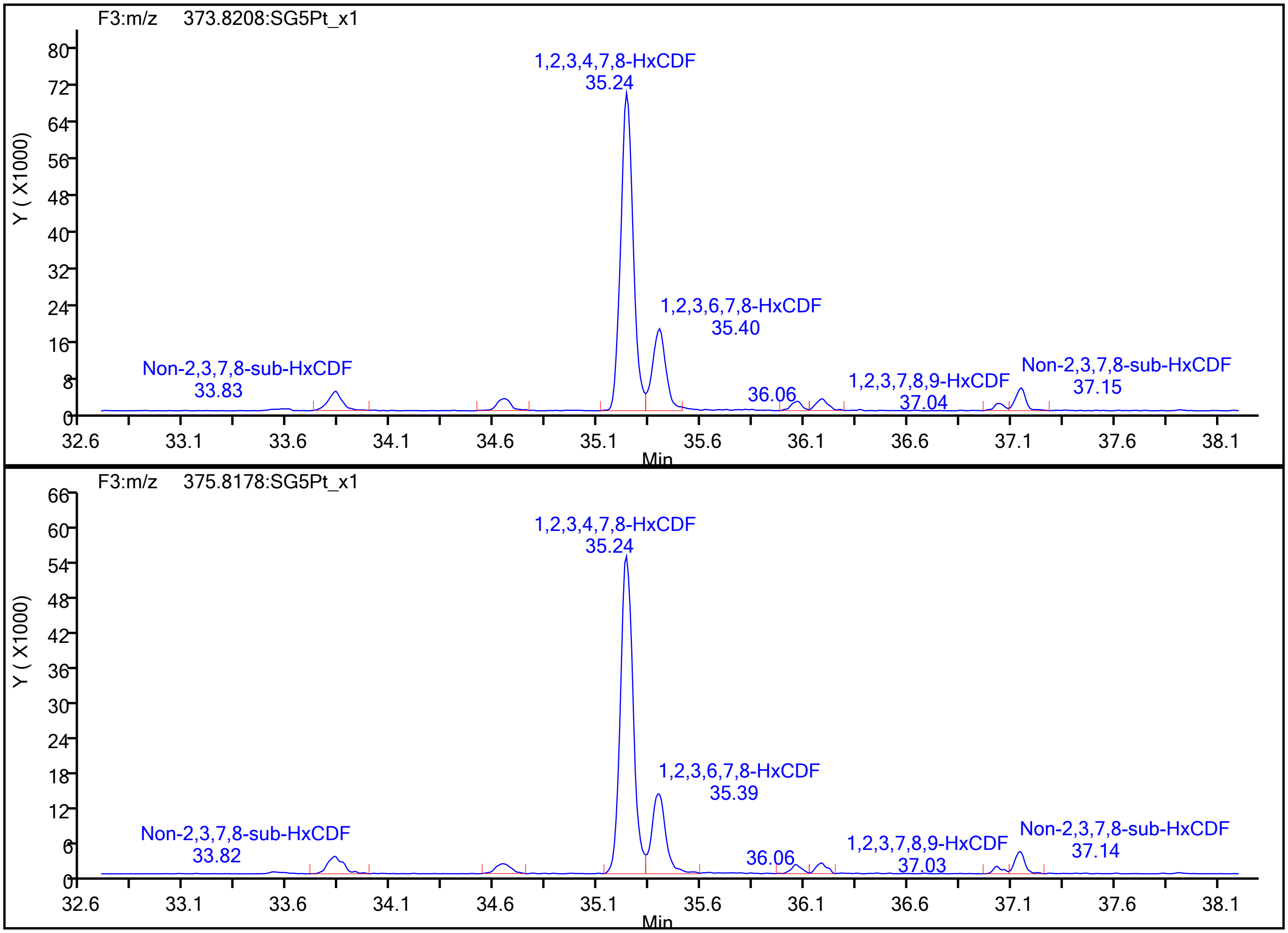

HxCDF Interference Mass

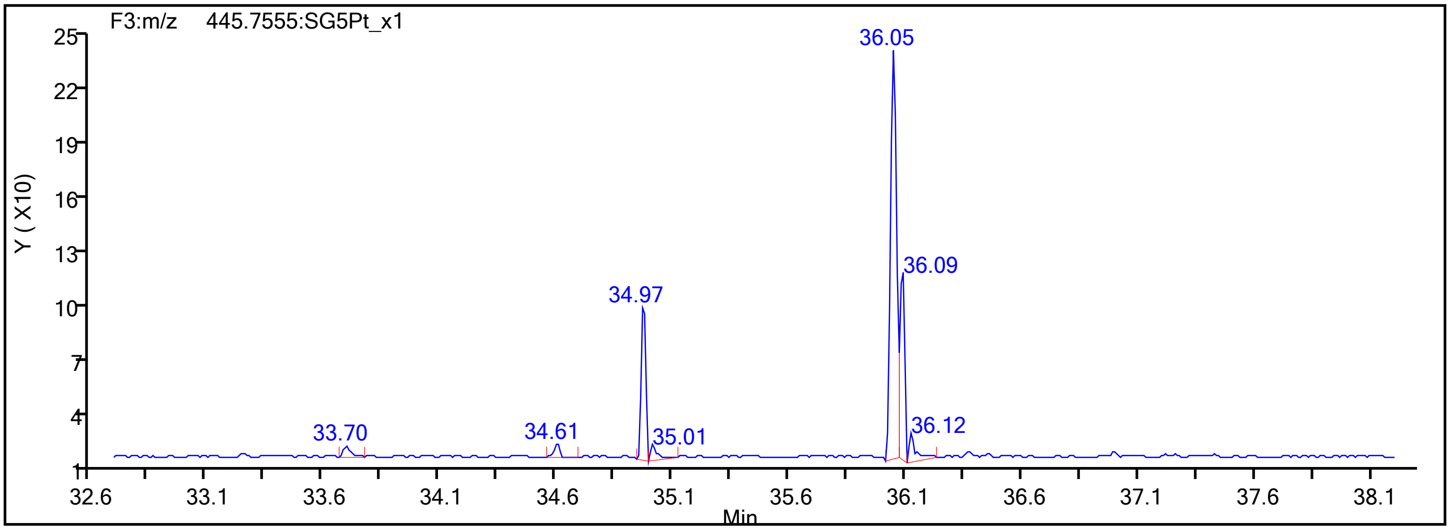

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

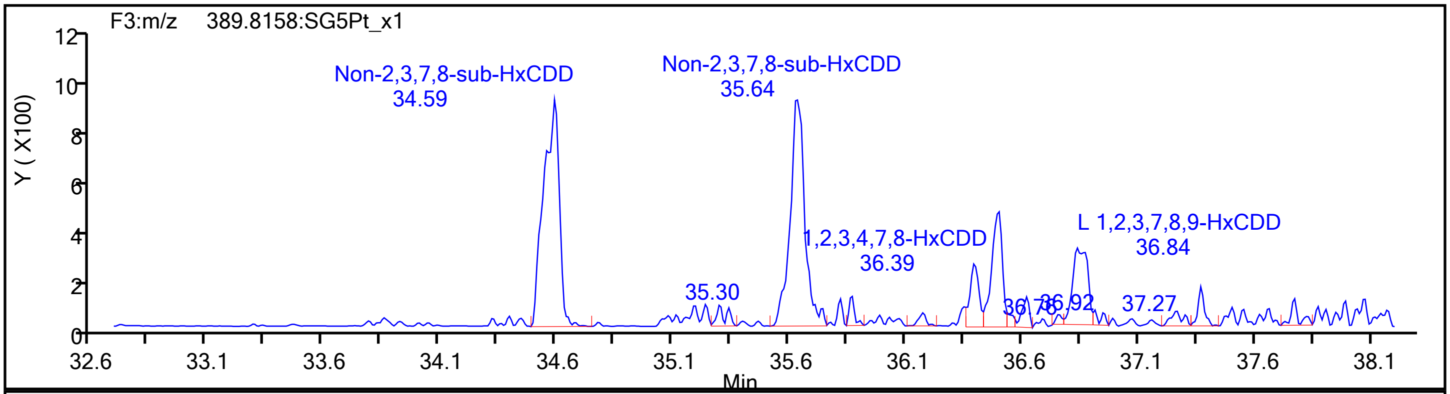

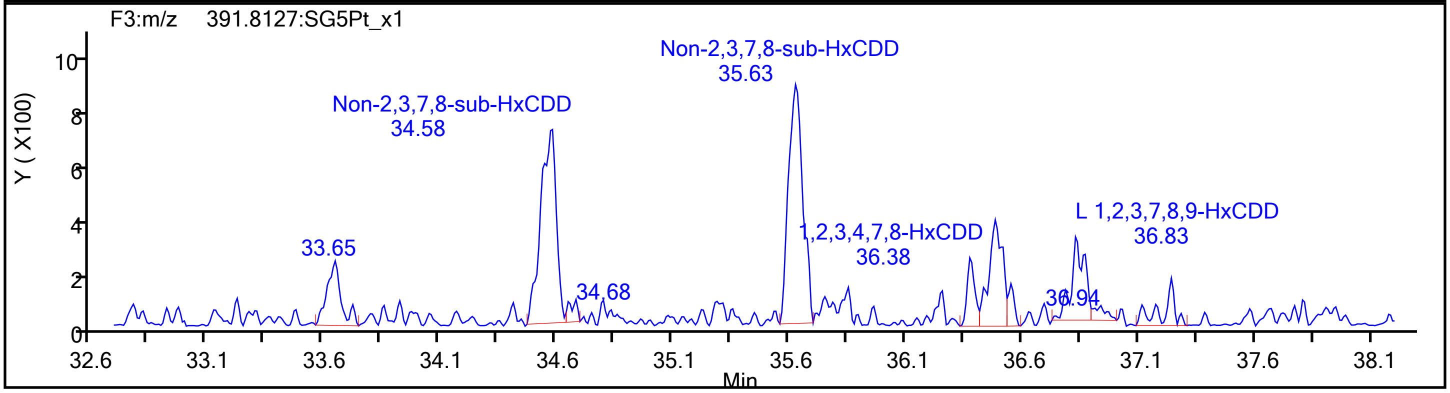

HxCDD Standards

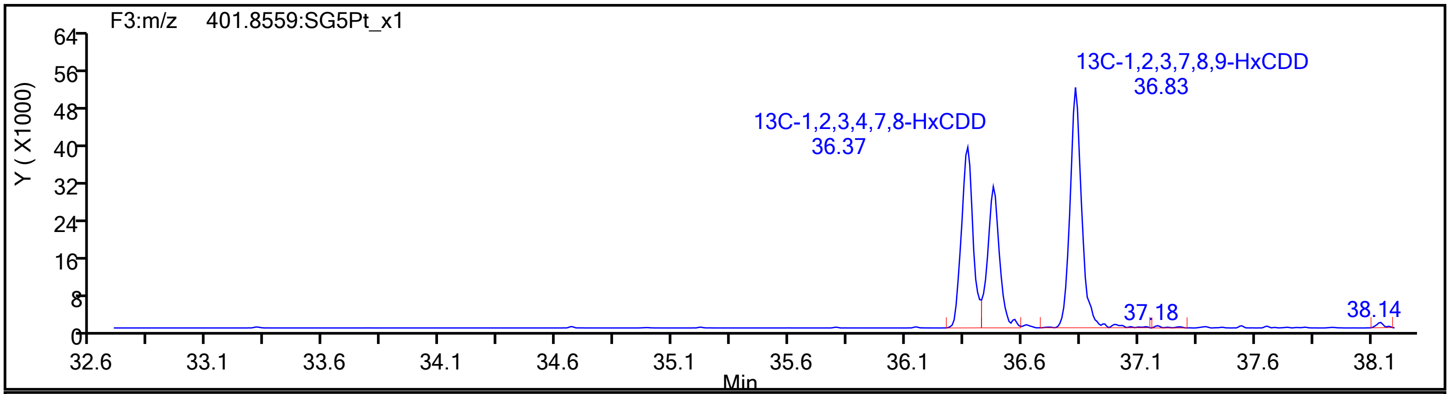

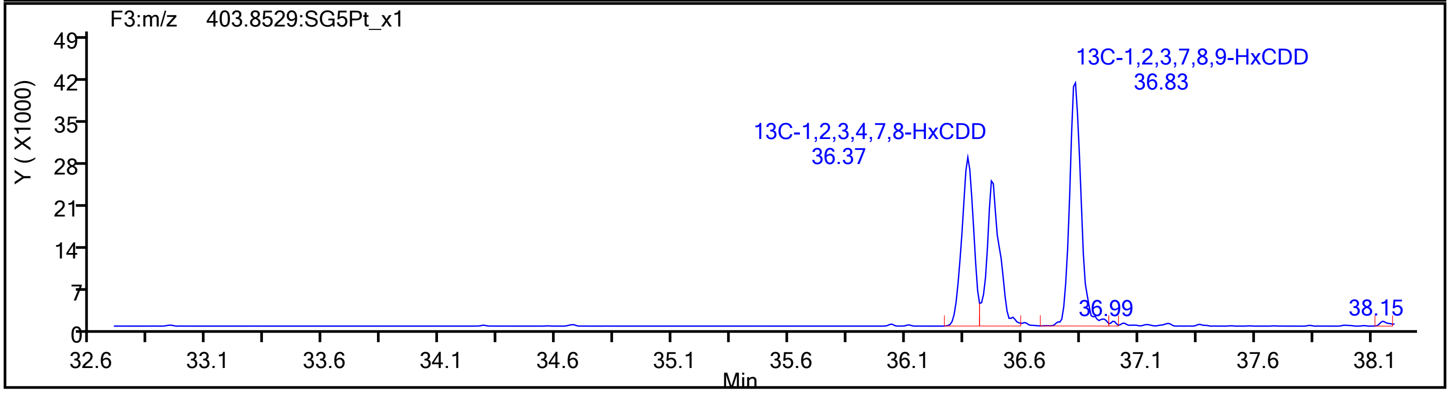

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

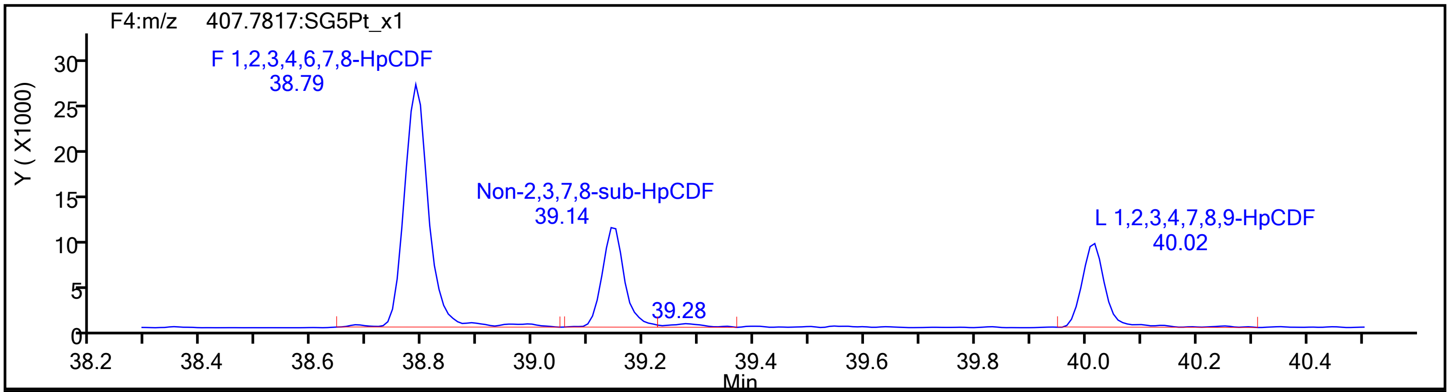

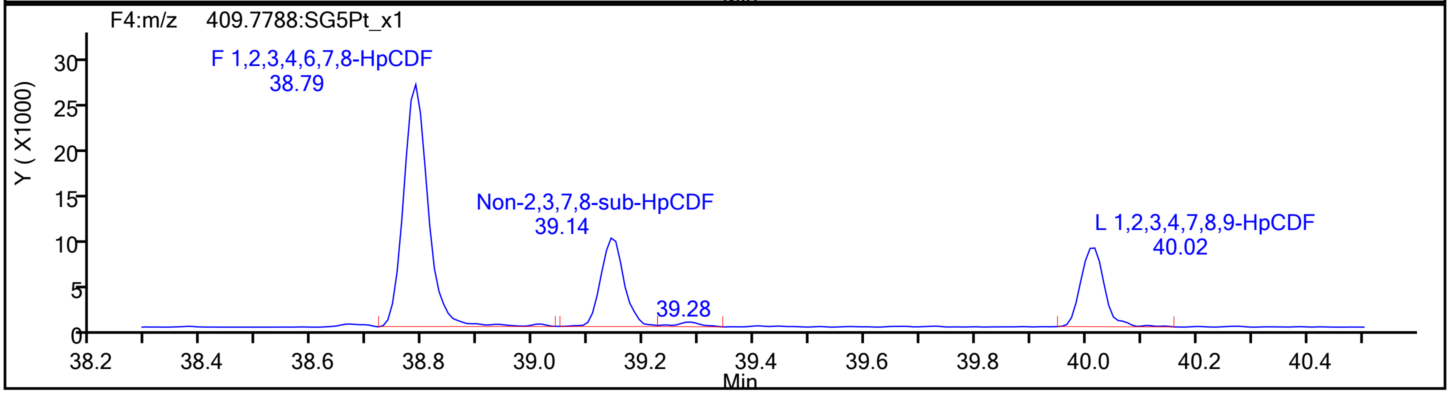

HpCDF Standards

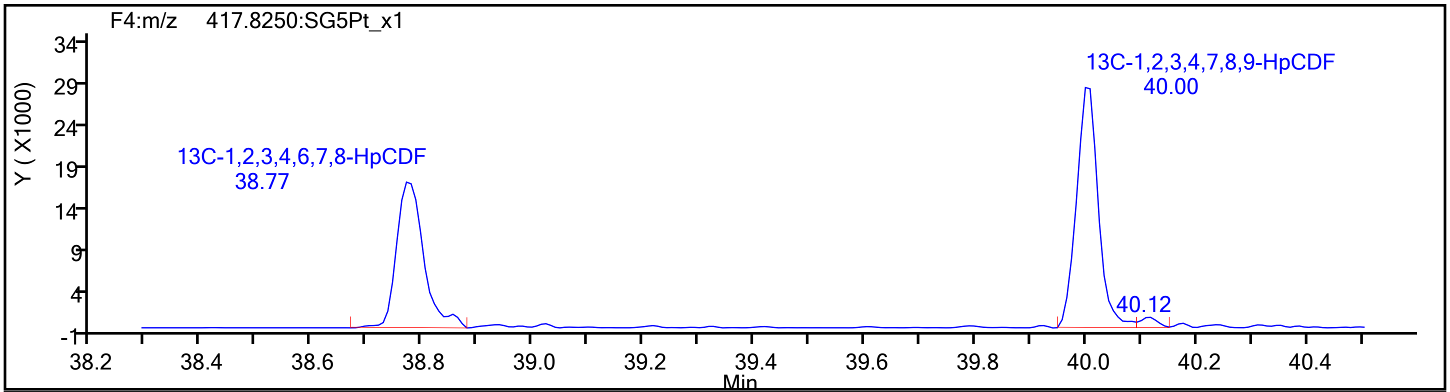

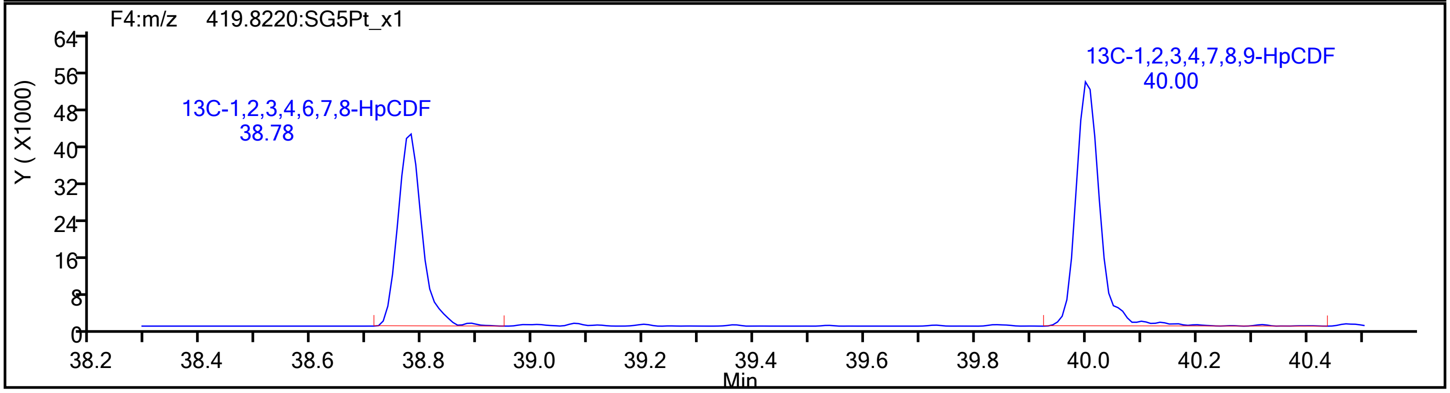

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Injection Date: 30-Jul-2020 20:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 399843
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

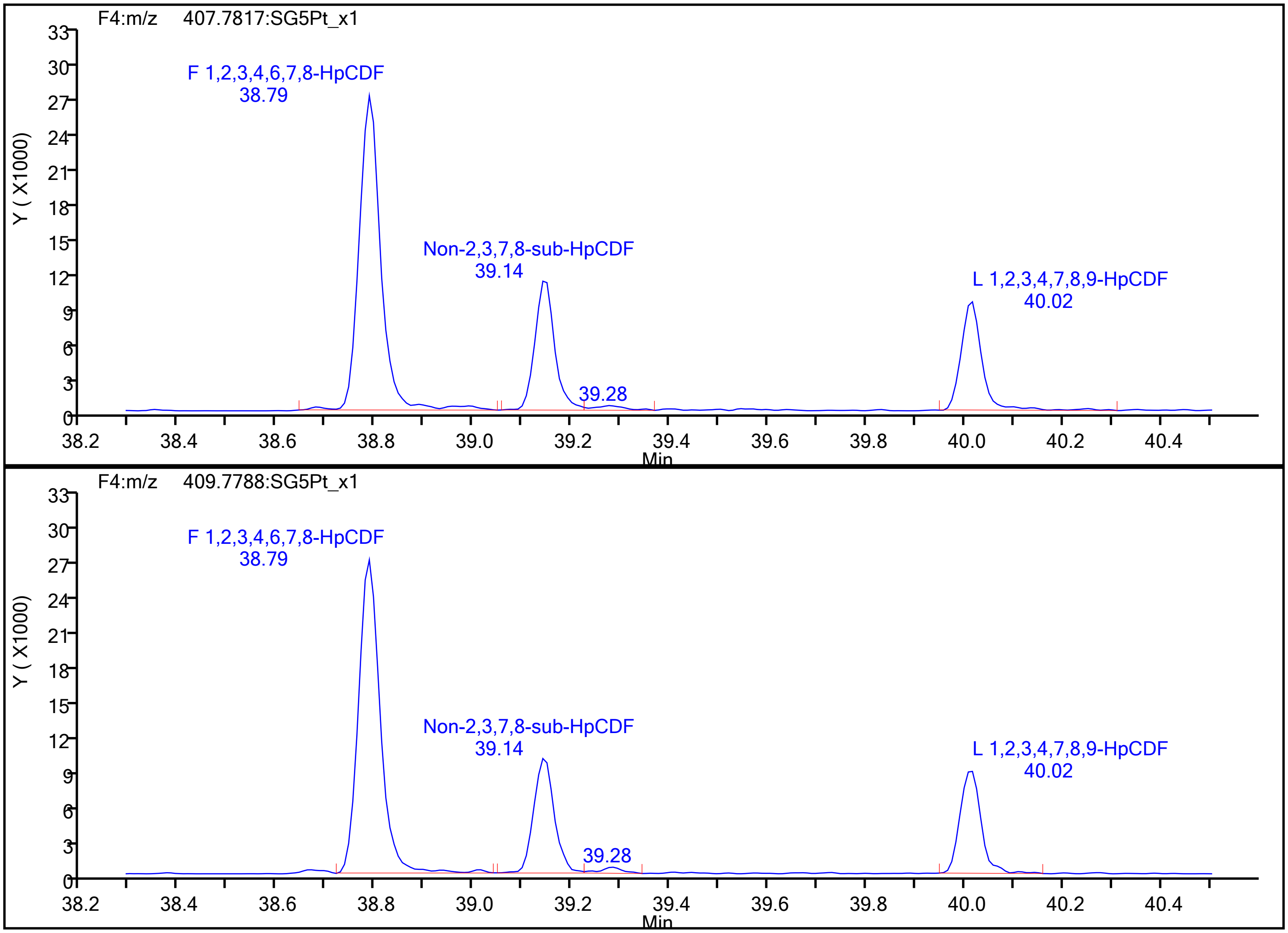

HpCDF Interference Mass

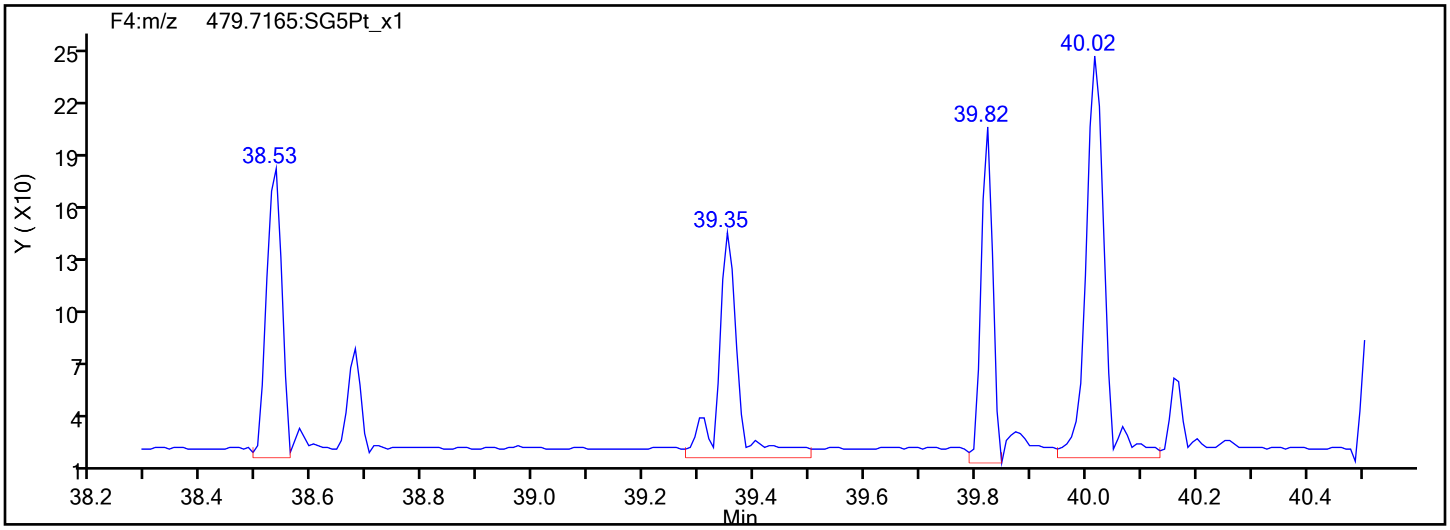

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d
Injection Date: 30-Jul-2020 20:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Control
Worklist#: 399843
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

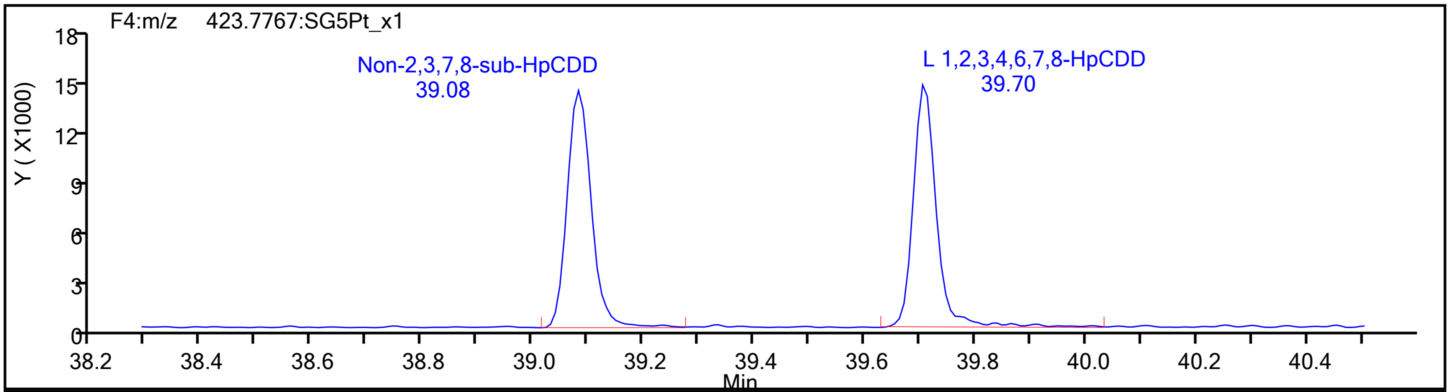

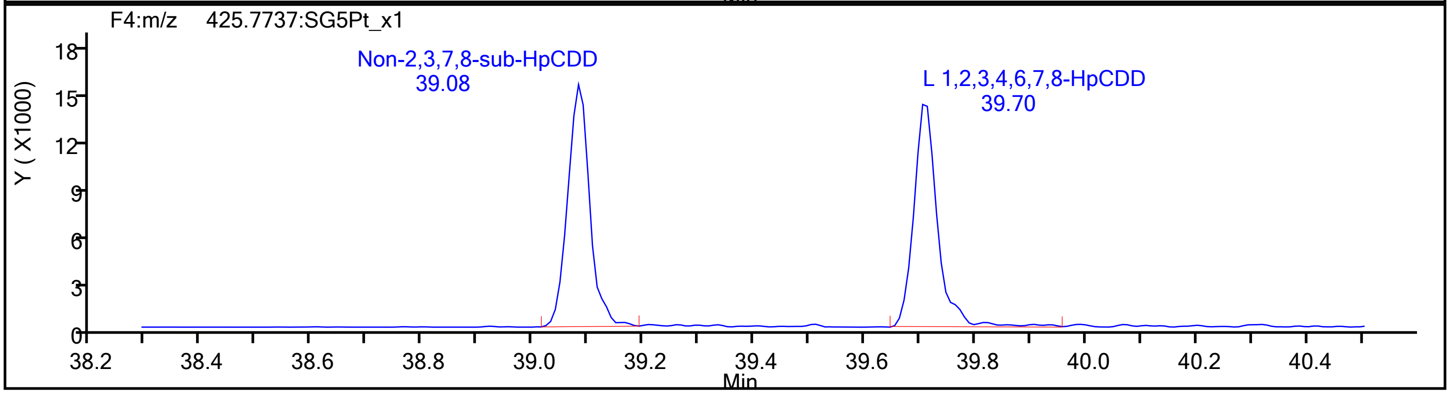

HpCDD Standards

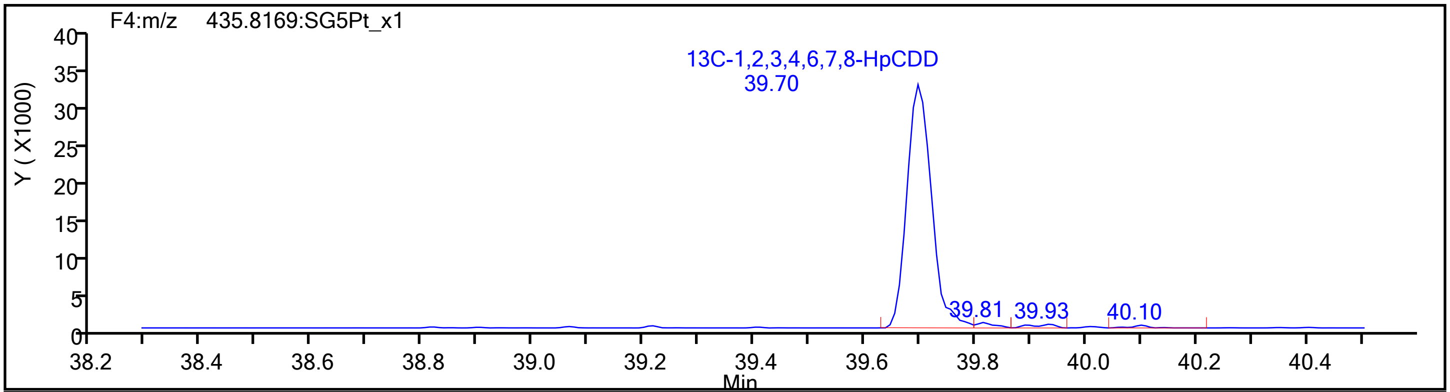

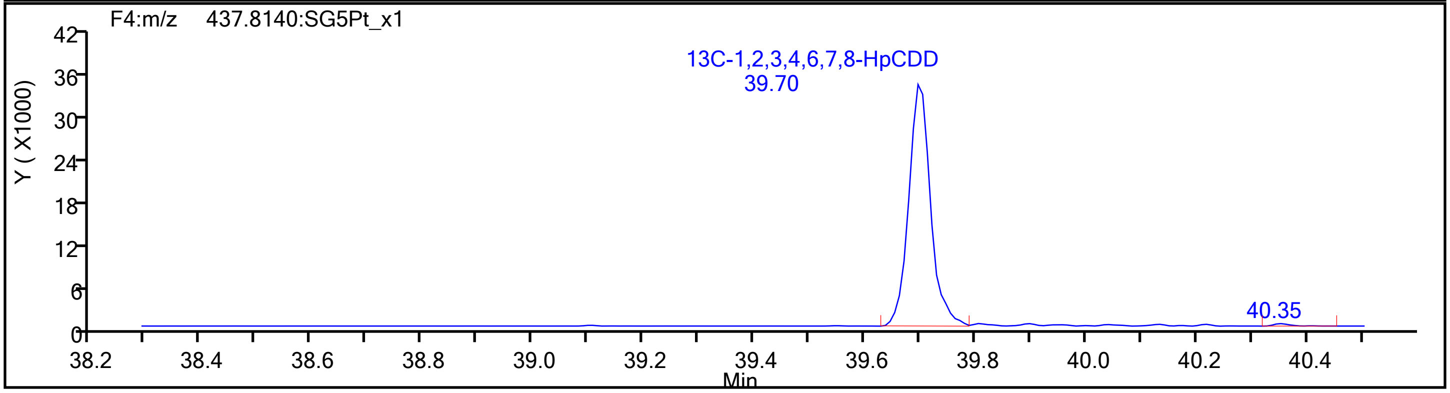

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

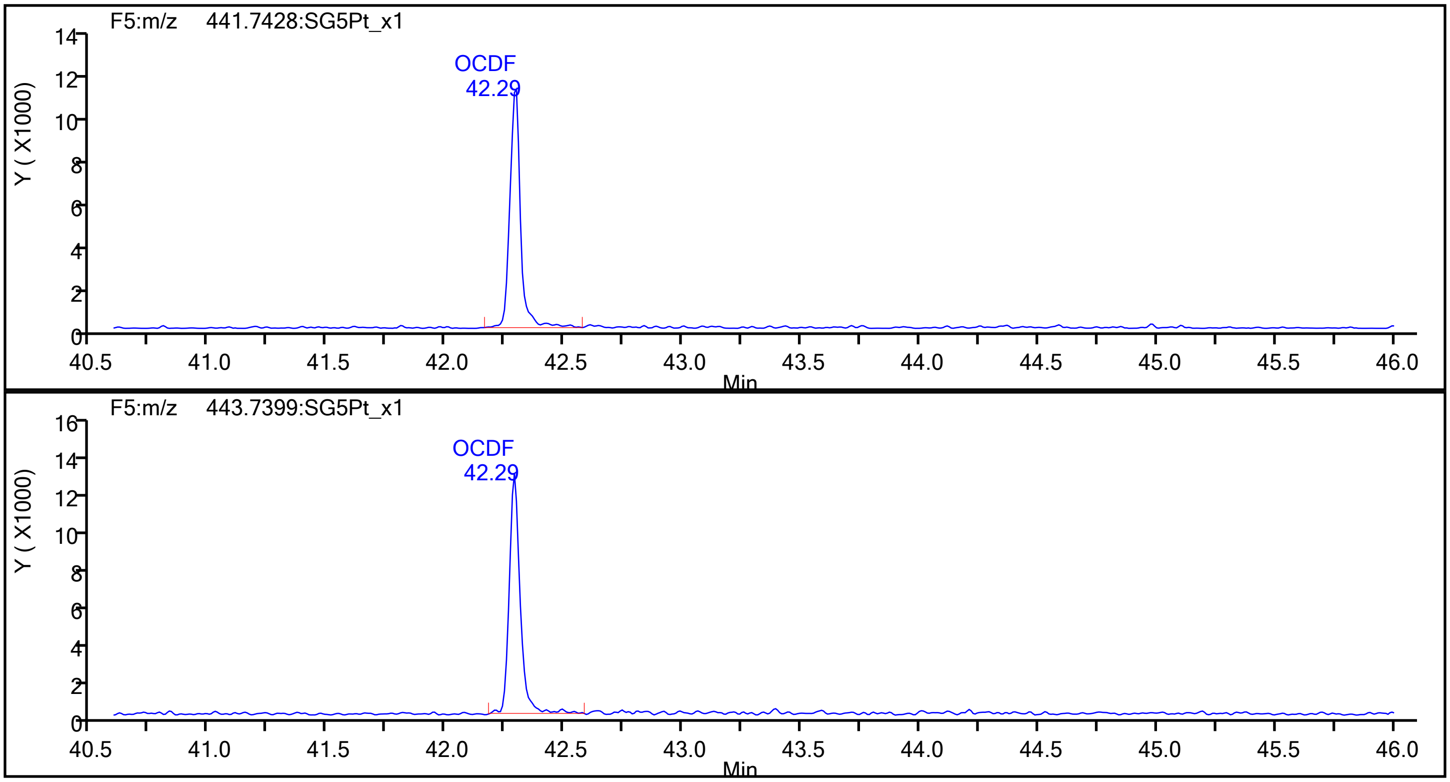

OCDF Standards

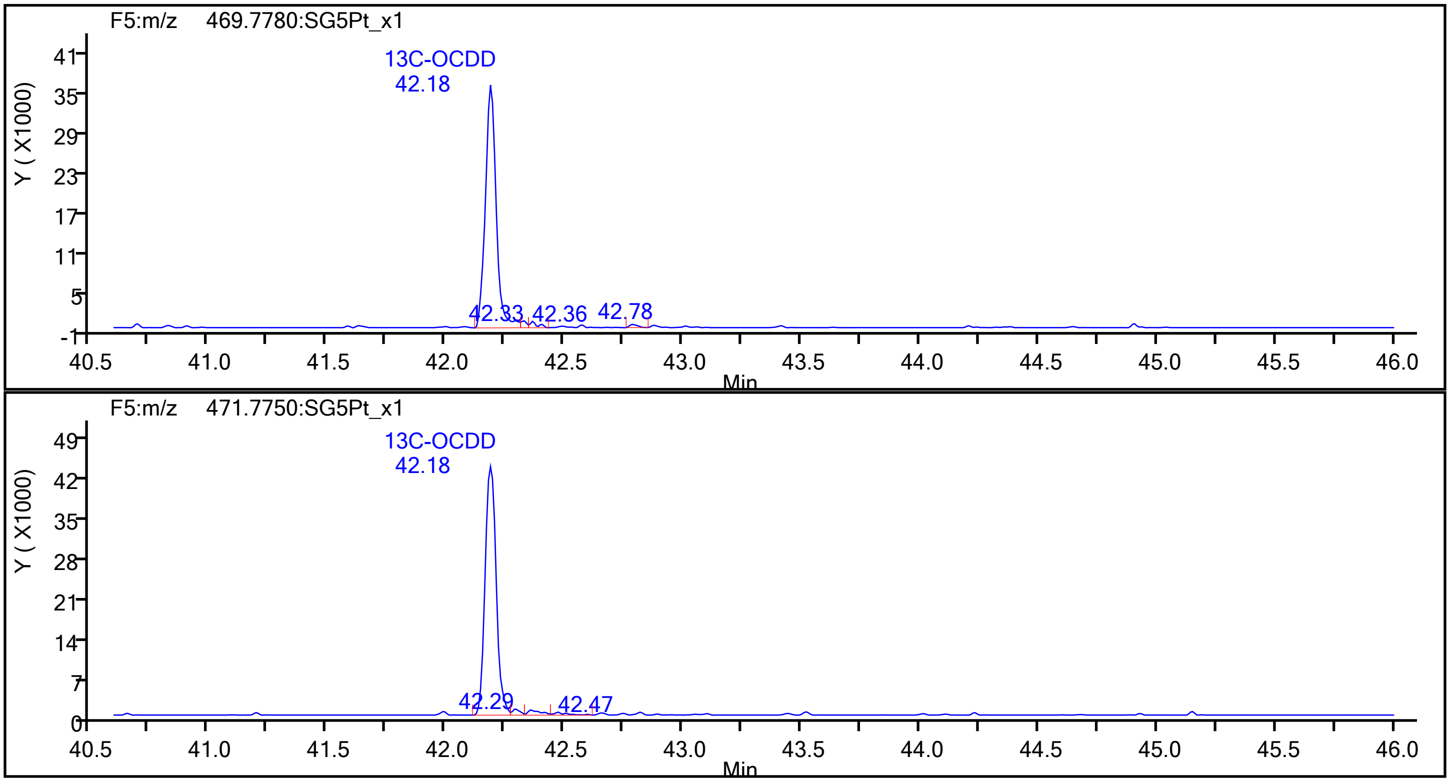

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

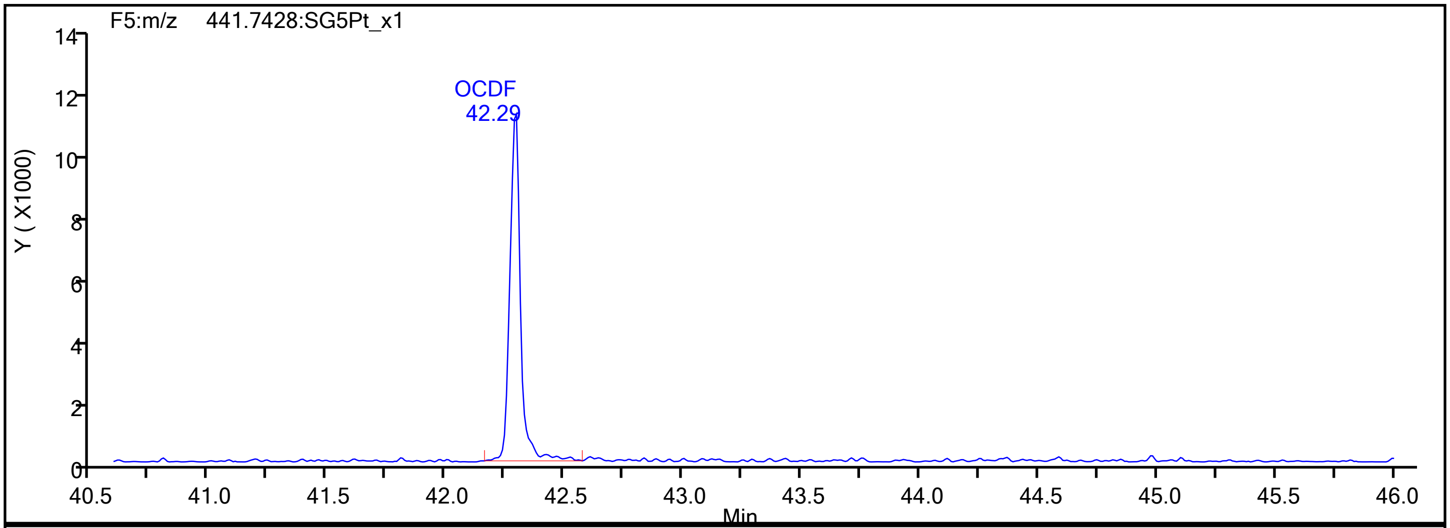

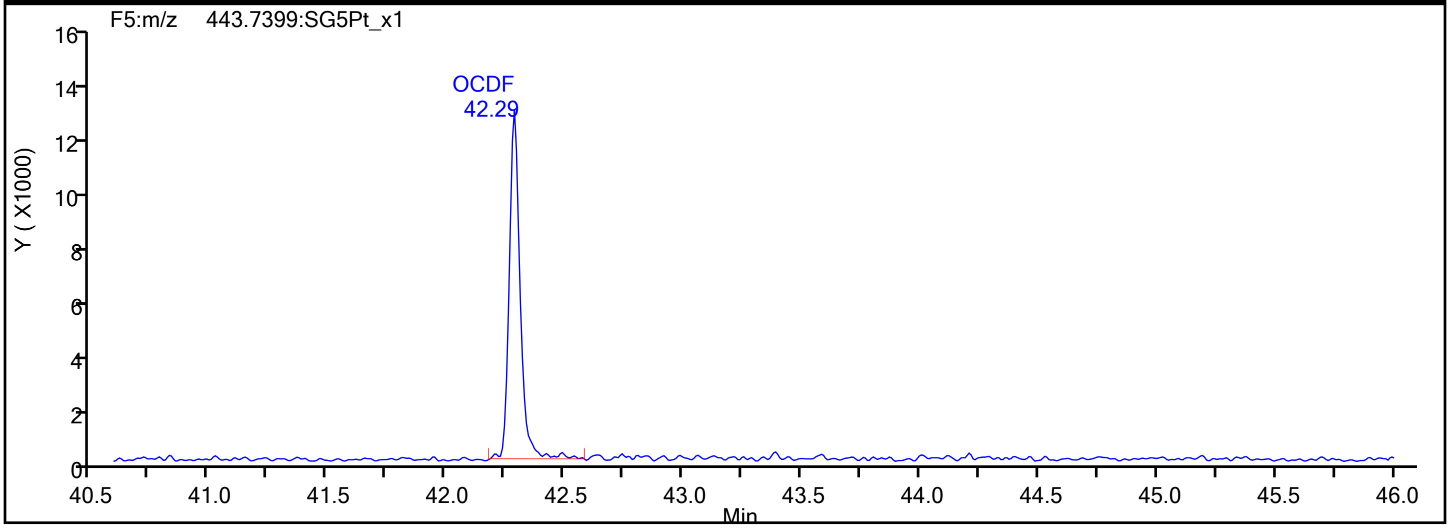

OCDF Interference Mass

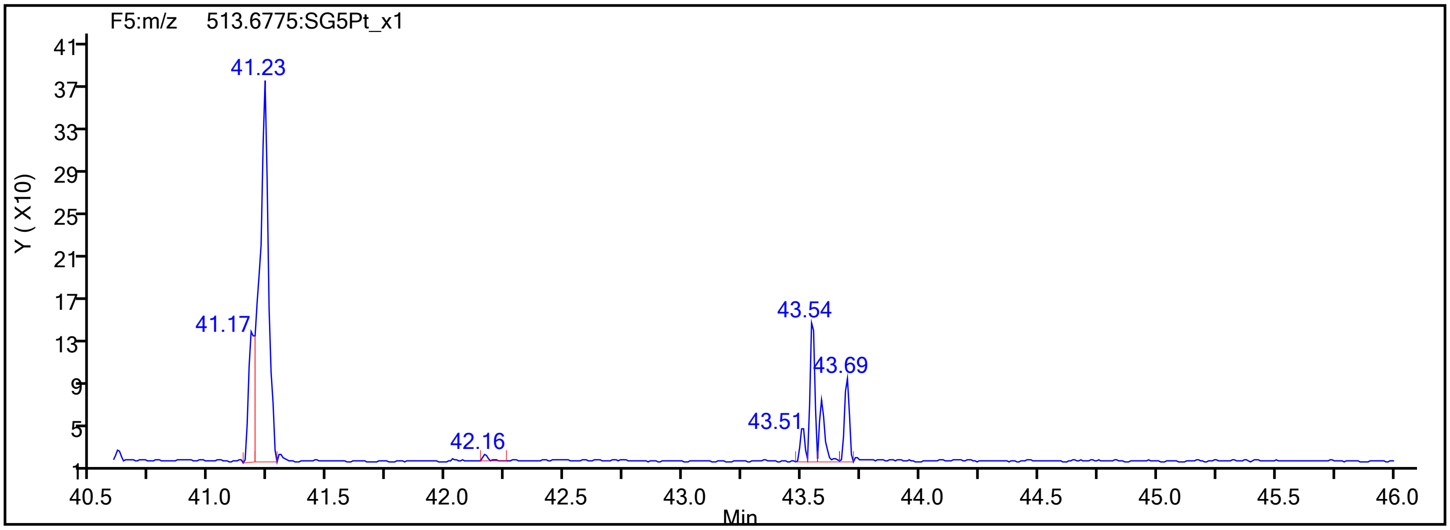

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d

Injection Date: 30-Jul-2020 20:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Control

Worklist#: 399843 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

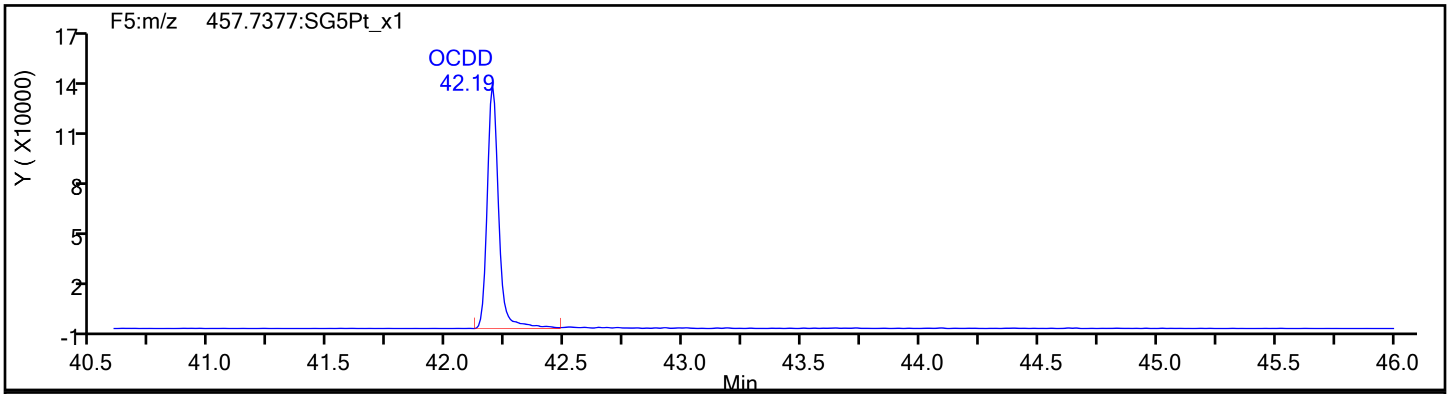

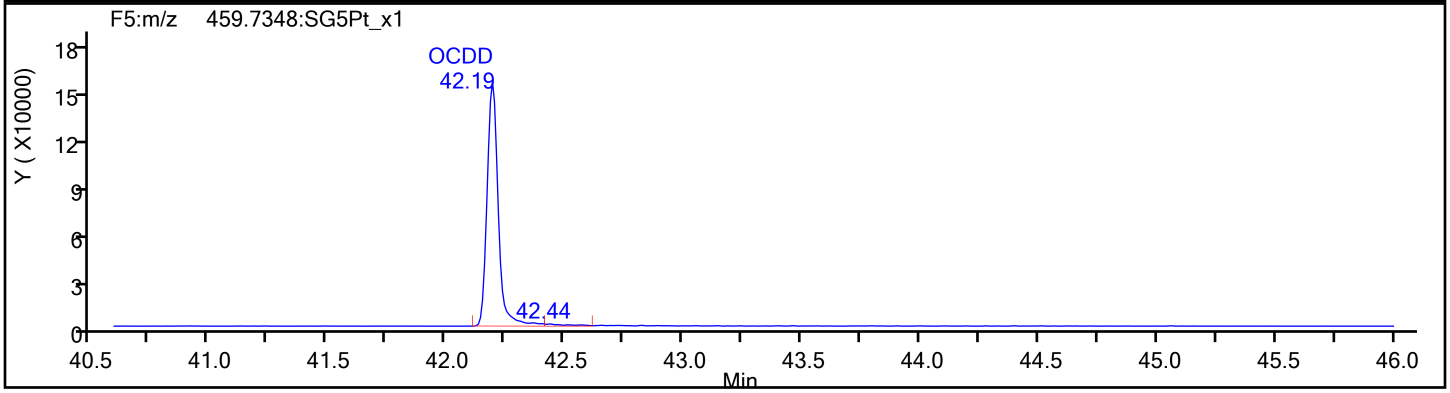

OCDD Standards

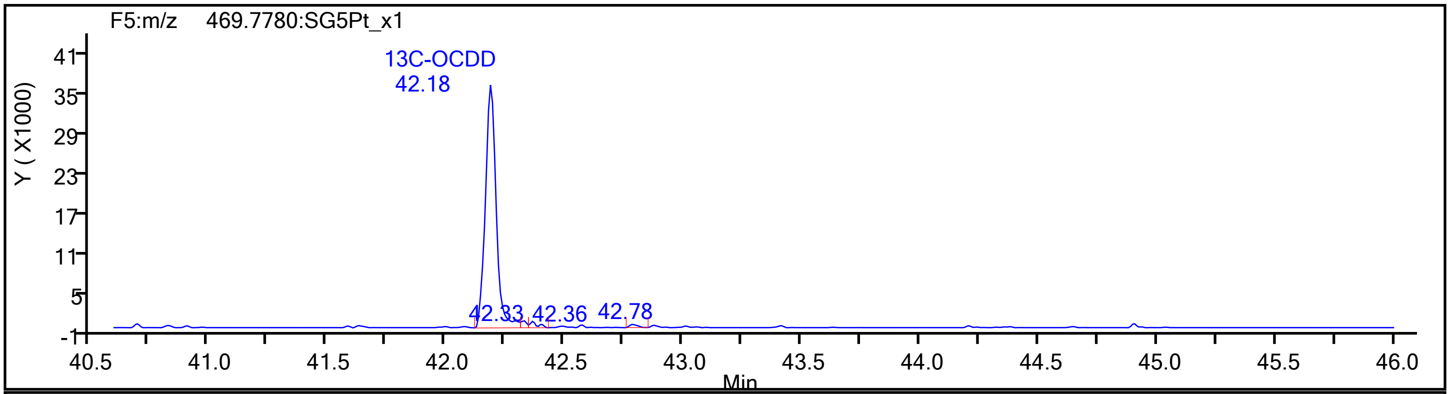

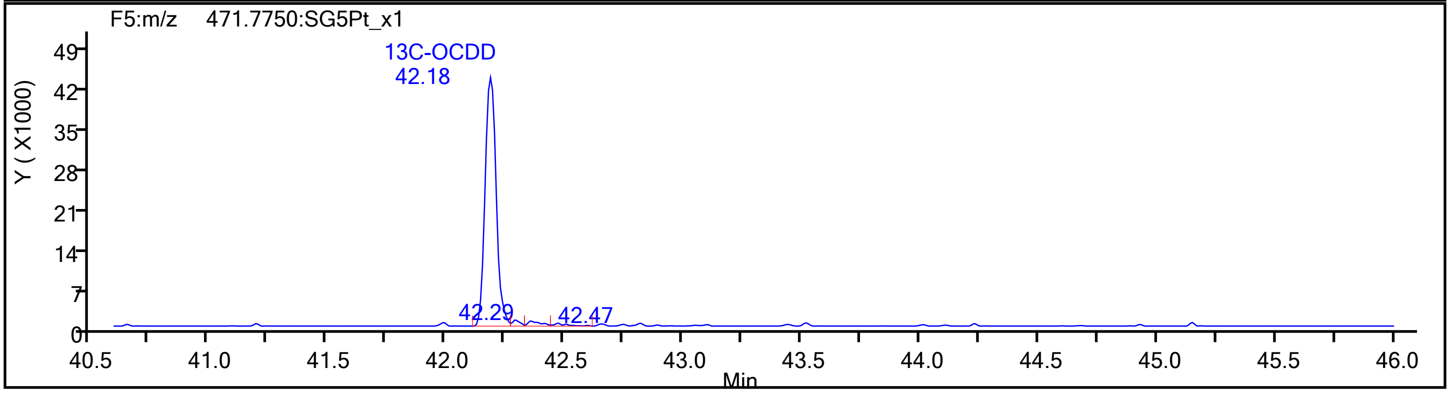

Report Date: 03-Aug-2020 09:29:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d

Injection Date: 30-Jul-2020 20:53:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Control

Worklist#: 399843

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

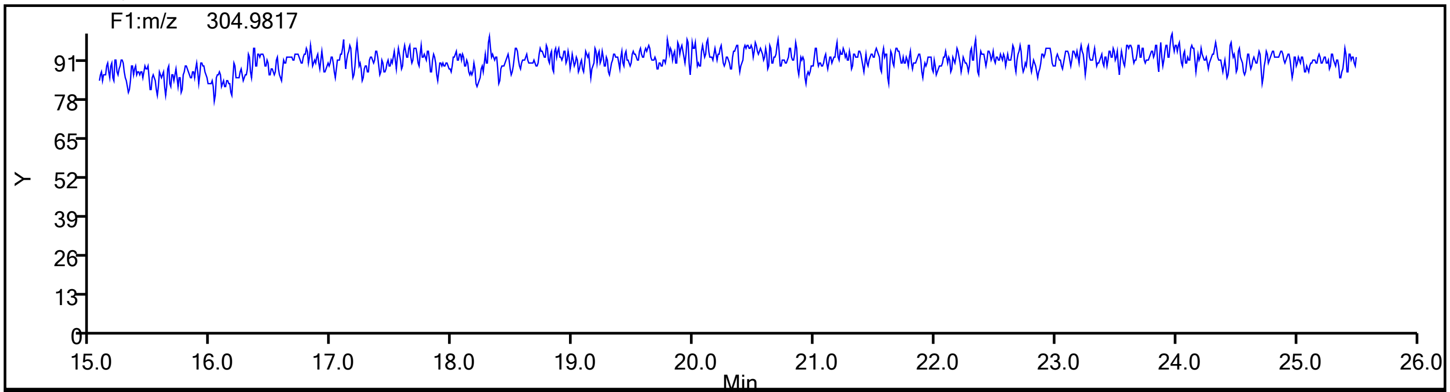

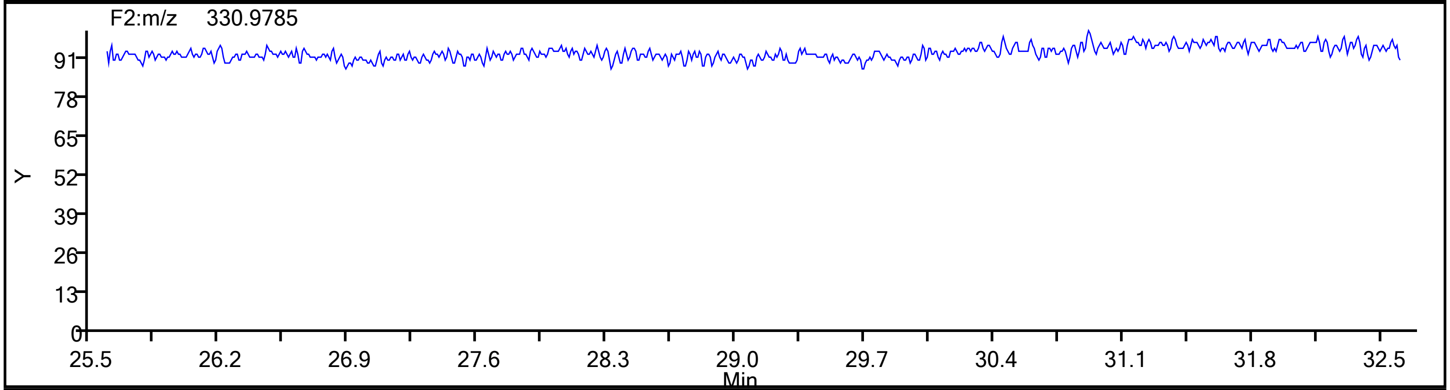

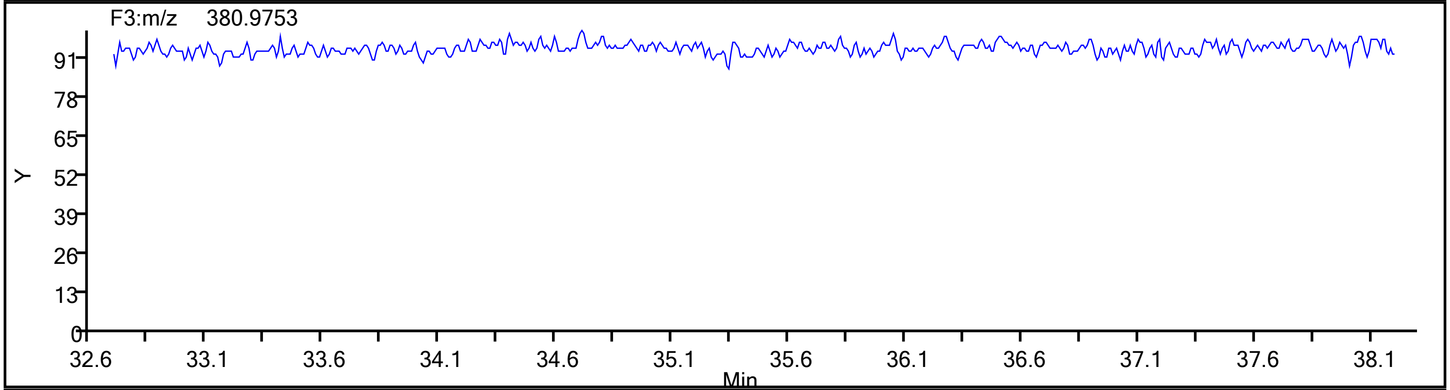

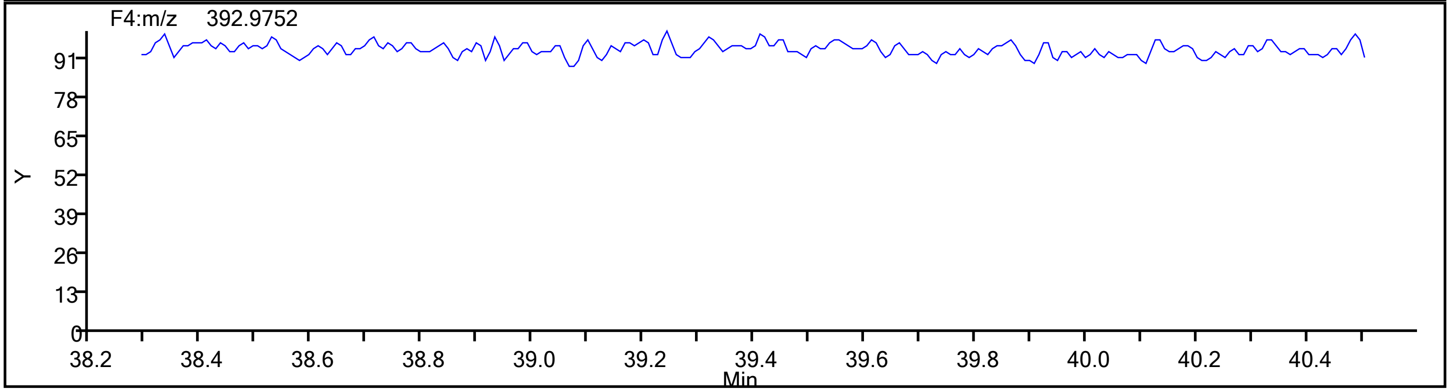

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_13.d		
Injection Date:	30-Jul-2020 20:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Control		
Worklist#:	399843	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

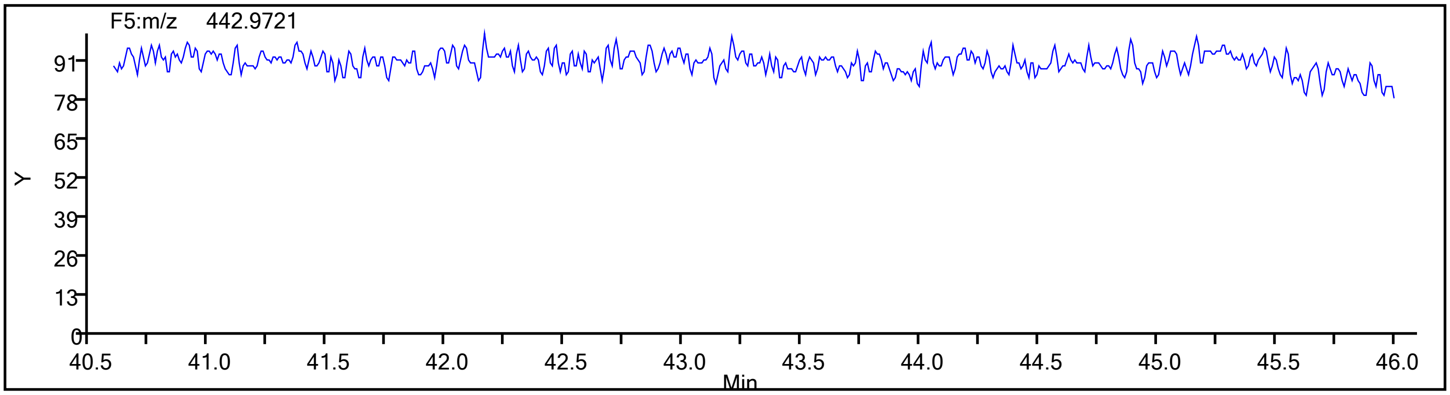

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Treatment-1	Lab Sample ID: 320-62886-3
Matrix: Water	Lab File ID: 27jl20bdfs1_23.d
Analysis Method: 1613B	Date Collected: 07/20/2020 13:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1062.5(mL)	Date Analyzed: 07/28/2020 09:13
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	9.2	J q	9.4	1.6
40321-76-4	1,2,3,7,8-PeCDD	12	J q	47	0.91
57117-41-6	1,2,3,7,8-PeCDF	11	J q	47	0.56
57117-31-4	2,3,4,7,8-PeCDF	9.4	J	47	0.55
39227-28-6	1,2,3,4,7,8-HxCDD	15	J B	47	0.47
57653-85-7	1,2,3,6,7,8-HxCDD	16	J	47	0.52
19408-74-3	1,2,3,7,8,9-HxCDD	17	J	47	0.46
70648-26-9	1,2,3,4,7,8-HxCDF	18	J	47	0.52
57117-44-9	1,2,3,6,7,8-HxCDF	18	J	47	0.53
72918-21-9	1,2,3,7,8,9-HxCDF	20	J	47	0.48
60851-34-5	2,3,4,6,7,8-HxCDF	14	J	47	0.48
35822-46-9	1,2,3,4,6,7,8-HpCDD	38	J B	47	0.72
67562-39-4	1,2,3,4,6,7,8-HpCDF	65	B	47	0.88
55673-89-7	1,2,3,4,7,8,9-HpCDF	18	J	47	0.81
3268-87-9	OCDD	240	B	94	0.69
39001-02-0	OCDF	110		94	1.3
41903-57-5	Total TCDD	9.2	J q	9.4	1.6
30402-14-3	Total TCDF	43		9.4	0.80
36088-22-9	Total PeCDD	12	J q	47	0.91
30402-15-4	Total PeCDF	20	J q	47	0.55
34465-46-8	Total HxCDD	51	q B	47	0.48
55684-94-1	Total HxCDF	78		47	0.50
37871-00-4	Total HpCDD	72	B	47	0.72
38998-75-3	Total HpCDF	94	B	47	0.84

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Treatment-1	Lab Sample ID: 320-62886-3
Matrix: Water	Lab File ID: 27jl20bdfs1_23.d
Analysis Method: 1613B	Date Collected: 07/20/2020 13:00
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1062.5(mL)	Date Analyzed: 07/28/2020 09:13
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	57		25-164
89059-46-1	13C-2,3,7,8-TCDF	61		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	55		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	58		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	65		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	63		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	67		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	62		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	65		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	62		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	73		26-138
114423-97-1	13C-OCDD	72		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	86		35-197

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Lims ID:	320-62886-A-3-A				
Client ID:	11215702-Treatment-1				
Sample Type:	Client				
Inject. Date:	28-Jul-2020 09:13:00	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-62886-A-3-A				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	30-Jul-2020 09:58:02	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1001				

First Level Reviewer: shardaa Date: 29-Jul-2020 10:30:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.777	2270577	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.755	2081462	0.78	1.4977	61.2	61.2	0.2967	0.2967	61.21	
2,3,7,8-TCDF	20.790	38589	0.79	1.1312	1.639	1.639	0.0425	0.0425		M
A Non-2,3,7,8-sub-TCDF	20.169	15645	0.70	1.1312	0.6644	0.6644	0.0425	0.6644		
S Total TCDF					2.303	2.303	0.0425	0.0425		
D 13C-2,3,7,8-TCDD	22.164	1335017	0.83	1.0367	56.7	56.7	0.2384	0.2384	56.71	
2,3,7,8-TCDD	22.215	7693	0.77	1.1849	0.6054	0.4863	0.0852	0.0852		RQM
$ 37Cl4-2,3,7,8-TCDD	22.206	876112		1.1208	34.4	34.4	0.0308	0.0308	86.07	
A Non-2,3,7,8-sub-TCDD	21.044						0.0852	0.0852		U
S Total TCDD					0.6054	0.4863	0.0852	0.0852		RQ
D 13C-1,2,3,7,8-PeCDF	27.697	1729690	1.55	1.3057	58.3	58.3	0.2177	0.2177	58.34	
1,2,3,7,8-PeCDF	27.706	10692	1.55	1.1060	0.6403	0.5589	0.0295	0.0295		RQM
D 13C-2,3,4,7,8-PeCDF	29.264	2287549	1.64	1.5420	65.3	65.3	0.1843	0.1843	65.33	
2,3,4,7,8-PeCDF	29.264	10388	1.68	0.9067	0.5009	0.5009	0.0295	0.0295		M
A F1 PeCDFs	24.932						0.0127	0.0127		
A Non-2,3,7,8-sub-PeCDF	28.540						0.0292	0.1118		U
S Total PeCDF					1.141	1.060	0.0295	0.0295		RQ
D 13C-1,2,3,7,8-PeCDD	30.115	1034404	1.55	0.8294	54.9	54.9	0.2469	0.2469	54.93	
1,2,3,7,8-PeCDD	30.165	7207	1.55	1.1062	0.7112	0.6299	0.0485	0.0485		RQM
A Non-2,3,7,8-sub-PeCDD	28.887						0.0485	0.0485		RQU
S Total PeCDD					0.7112	0.6299	0.0485	0.0485		RQ
D 13C-1,2,3,4,7,8-HxCDF	35.247	2284333	0.54	1.4619	67.2	67.2	0.2521	0.2521	67.17	
1,2,3,4,7,8-HxCDF	35.264	22418	1.20	1.0087	0.9730	0.9730	0.0274	0.0274		
D 13C-1,2,3,6,7,8-HxCDF	35.399	1847124	0.54	1.2866	61.7	61.7	0.2864	0.2864	61.72	
1,2,3,6,7,8-HxCDF	35.416	21385	1.33	1.2432	0.9313	0.9313	0.0281	0.0281		
D 13C-2,3,4,6,7,8-HxCDF	36.191	1735093	0.54	1.1988	62.2	62.2	0.3074	0.3074	62.22	
2,3,4,6,7,8-HxCDF	36.191	15947	1.27	1.2736	0.7217	0.7217	0.0257	0.0257		
D 13C-1,2,3,7,8,9-HxCDF	37.042	1616502	0.53	1.0687	65.0	65.0	0.3448	0.3448	65.02	
1,2,3,7,8,9-HxCDF	37.059	22197	1.33	1.2882	1.066	1.066	0.0256	0.0256		
A Non-2,3,7,8-sub-HxCDF	35.385	10273	1.32	1.2034	0.4563	0.4563	0.0264	0.3239		M
S Total HxCDF					4.148	4.148	0.0267	0.0267		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.848	2326227	1.31	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.385	1613827	1.34	1.1046	62.8	62.8	0.1829	0.1829	62.80	
1,2,3,4,7,8-HxCDD	36.402	12227	1.21	0.9336	0.8115	0.8115	0.0249	0.0249		
D 13C-1,2,3,6,7,8-HxCDD	36.495	1356116	1.31	0.9871	59.1	59.1	0.2047	0.2047	59.06	
1,2,3,6,7,8-HxCDD	36.511	12637	1.34	1.0802	0.8627	0.8627	0.0275	0.0275		
1,2,3,7,8,9-HxCDD	36.865	14075	1.09	1.0574	0.8963	0.8963	0.0247	0.0247		M
A Non-2,3,7,8-sub-HxCDD	35.717	2163	1.24	1.0237	0.1627	0.1423	0.0255	0.1423		RQ
S Total HxCDD					2.733	2.713	0.0257	0.0257		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.798	1302308	0.44	0.9035	62.0	62.0	0.5399	0.5399	61.96	
1,2,3,4,6,7,8-HpCDF	38.798	71353	0.98	1.5957	3.434	3.434	0.0465	0.0465		
D 13C-1,2,3,4,7,8,9-HpCDF	40.019	1788267	0.47	1.0480	73.4	73.4	0.4655	0.4655	73.35	
1,2,3,4,7,8,9-HpCDF	40.028	20410	1.09	1.1693	0.9761	0.9761	0.0428	0.0428		M
A Non-2,3,7,8-sub-HpCDF	39.413	12040	1.00	1.3825	0.5636	0.5636	0.0433	0.5636		M
S Total HpCDF					4.973	4.973	0.0447	0.0447		
D 13C-1,2,3,4,6,7,8-HpCDD	39.716	1262111	1.04	0.8875	61.1	61.1	0.2944	0.2944	61.13	
1,2,3,4,6,7,8-HpCDD	39.725	28645	1.08	1.1150	2.036	2.036	0.0380	0.0380		M
A Non-2,3,7,8-sub-HpCDD	39.555	24863	1.15	1.1150	1.767	1.767	0.0380	1.767		M
S Total HpCDD					3.802	3.802	0.0380	0.0380		
D 13C-OCDD	42.204	2123002	0.90	0.6297	144.9	144.9	0.3765	0.3765	72.46	
OCDF	42.305	89036	0.91	1.4809	5.664	5.664	0.0682	0.0682		
OCDD	42.213	161388	0.92	1.1948	12.7	12.7	0.0367	0.0367		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Lims ID: 320-62886-A-3-A
Client ID: 11215702-Treatment-1
Sample Type: Client
Inject. Date: 28-Jul-2020 09:13:00 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 09:58:02 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: shardaa Date: 29-Jul-2020 10:30:17

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.777	21.805	-2		1004730	138917	218	545	637		
333.9338	21.777	21.805	-2		1265847	179465	97	242	1850	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.755	20.783	-2	0.953	909311	130980	343	857	382		
317.9389	20.764	20.783	-1	0.953	1172151	175001	223	557	785	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	20.790	20.808	-1	1.002	17075	2900	9	22	322		
305.8987	20.798	20.808	-1	1.002	21514	2991	50	125	60	0.79(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											
303.9016	20.043	20.169	-8	0.966	6423	1254	9	22	139		
305.8987	20.017	20.169	-9	0.964	9222	1244	50	125	25	0.70(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.164	22.200	-2	1.018	605952	79281	218	545	364		
333.9338	22.164	22.200	-2	1.018	729065	104069	97	242	1073	0.83(0.65-0.89)	
2,3,7,8-TCDD											RQM
319.8965	22.215	22.243	-2	1.002	3347	745	69	172	11		M
321.8936	22.198	22.243	-3	1.002	6230	1018	5	12	204	0.54(0.65-0.89)	
	Empc Correction				4346	967	5	12	193		
37Cl4-2,3,7,8-TCDD											
327.8847	22.206	22.243	-2	1.020	876112	117976	44	110	2681		
A Non-2,3,7,8-sub-TCDD											U
319.8965	21.044						69	172			
321.8936	21.044						5	12			
13C-1,2,3,7,8-PeCDF											
351.9000	27.697	27.708	-1	1.272	1052054	171473	245	612	700		
353.8970	27.689	27.708	-1	1.271	677636	110467	117	292	944	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											RQM
339.8597	27.706	27.734	-2	1.000	8056	1438	8	20	180		M
	Empc Correction				6499	1173	8	20	147		
341.8567	27.731	27.734	0	1.001	4193	757	29	72	26	1.92(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	29.264	29.284	-1	1.344	1419915	211888	245	612	865		
353.8970	29.264	29.284	-1	1.344	867634	132637	117	292	1134	1.64(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	29.264	29.326	-4	1.000	6519	976	8	20	122		M
341.8567	29.306	29.326	-1	1.001	3869	655	29	72	23	1.68(1.32-1.78)	M
A F1 PeCDFs											
339.8597	24.932						1	2			
341.8567	24.932						15	37			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	26.164	28.540	-142	0.945	1341	252	8	20	32		
341.8567	26.181	28.540	-141	0.945	918	229	29	72	8	1.46(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.115	30.143	-2	1.383	628933	92959	89	222	1044		
369.8919	30.098	30.143	-3	1.382	405471	56308	172	430	327	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											RQM
355.8546	30.165	30.160	0	1.002	4381	729	30	75	24		M
357.8516	30.132	30.160	-2	1.001	3757	589	2	5	295	1.17(1.32-1.78)	
	Empc Correction				2826	470	2	5	235		
A Non-2,3,7,8-sub-PeCDD											U
355.8546	28.887	28.887	0	0.959	350	114	30	75			
	Empc Correction				116	37	30	75	0		
357.8516	28.887	28.887	0	0.959	75	24	2	5		4.67(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.247	35.259	-1	0.957	802589	186639	277	692	674		
385.8610	35.247	35.259	-1	0.957	1481744	344821	668	1670	516	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.264	35.276	-1	1.000	12247	3151	37	92	85		
375.8178	35.256	35.276	-1	1.000	10171	2274	22	55	103	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.399	35.419	-1	0.961	649012	148995	277	692	538		
385.8610	35.399	35.419	-1	0.961	1198112	272013	668	1670	407	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.416	35.436	-1	1.000	12190	2903	37	92	78		
375.8178	35.416	35.436	-1	1.000	9195	2121	22	55	96	1.33(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.191	36.203	-1	0.982	606448	154683	277	692	558		
385.8610	36.191	36.203	-1	0.982	1128645	294337	668	1670	441	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.191	36.219	-2	1.000	8937	1989	37	92	54		
375.8178	36.208	36.219	-1	1.000	7010	1604	22	55	73	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.042	37.061	-1	1.005	560891	158857	277	692	573		
385.8610	37.042	37.061	-1	1.005	1055611	287090	668	1670	430	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.059	37.078	-1	1.000	12689	3450	37	92	93		
375.8178	37.059	37.078	-1	1.000	9508	2783	22	55	127	1.33(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											M
373.8208	33.849	35.385	-92	0.960	4171	919	37	92	25		M
375.8178	33.858	35.385	-91	0.961	3122	529	22	55	24	1.34(1.05-1.43)	
373.8208	34.683	35.385	-42	0.984	1671	390	37	92	11		
375.8178	34.649	35.385	-44	0.983	1309	264	22	55	12	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.848	36.868	-1		1318435	361214	291	727	1241		
403.8529	36.848	36.868	-1		1007792	279809	227	567	1233	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.385	36.405	-1	0.987	924083	252576	291	727	868		
403.8529	36.385	36.405	-1	0.987	689744	198613	227	567	875	1.34(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.402	36.413	-1	1.000	6705	1872	16	40	117		
391.8127	36.402	36.413	-1	1.000	5522	1631	26	65	63	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.495	36.514	-1	0.990	767829	198157	291	727	681		
403.8529	36.495	36.514	-1	0.990	588287	155152	227	567	683	1.31(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.511	36.531	-1	1.000	7236	1825	16	40	114		
391.8127	36.503	36.531	-2	1.000	5401	1250	26	65	48	1.34(1.05-1.43)	
1,2,3,7,8,9-HxCDD											M
389.8158	36.865	36.885	-1	1.013	7335	1877	16	40	117		
391.8127	36.857	36.885	-2	1.013	6740	1885	26	65	73	1.09(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	34.582	35.717	-68	0.948	1508	336	16	40	21		
	Empc Correction				1197	372	16	40	23		
391.8127	34.607	35.717	-66	0.948	966	300	26	65	12	1.56(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.798	38.807	-1	1.053	398900	131471	387	967	340		
419.8220	38.790	38.807	-1	1.053	903408	288842	864	2160	334	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.798	38.816	-1	1.000	35392	10971	77	192	142		
409.7788	38.806	38.816	-1	1.000	35961	11665	48	120	243	0.98(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.019	40.028	-1	1.086	574338	201391	387	967	520		
419.8220	40.019	40.028	-1	1.086	1213929	421552	864	2160	488	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7817	40.028	40.037	-1	1.000	10626	3791	77	192	49		M
409.7788	40.028	40.037	-1	1.000	9784	3509	48	120	73	1.09(0.88-1.20)	

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											M
407.7817	39.160	39.413	-15	1.009	6035	2145	77	192	28		
409.7788	39.169	39.413	-15	1.010	6005	2024	48	120	42	1.00(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.716	39.725	-1	1.078	644180	221796	337	842	658		
437.8140	39.716	39.725	-1	1.078	617931	214592	333	832	644	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	39.725	39.733	-1	1.000	14903	5552	46	115	121		M
425.7737	39.725	39.733	-1	1.000	13742	4768	28	70	170	1.08(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											M
423.7767	39.101	39.555	-27	0.985	13324	4489	46	115	98		M
425.7737	39.093	39.555	-28	0.984	11539	3812	28	70	136	1.15(0.88-1.20)	M
13C-OCDD											
469.7780	42.204	42.215	-1	1.145	1002723	310868	312	780	996		
471.7750	42.204	42.215	-1	1.145	1120279	336338	296	740	1136	0.90(0.76-1.02)	
OCDF											
441.7428	42.305	42.316	-1	1.002	42317	12531	36	90	348		
443.7399	42.305	42.316	-1	1.002	46719	13837	95	237	146	0.91(0.76-1.02)	
OCDD											
457.7377	42.213	42.223	-1	1.000	77335	24379	27	67	903		
459.7348	42.204	42.223	-1	1.000	84053	27562	30	75	919	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Lims ID:	320-62886-A-3-A		
Client ID:	11215702-Treatment-1		
Inject. Date:	28-Jul-2020 09:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	21

Non-2,3,7,8-sub-TCDF, RT: 20.169

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	2081462	305981

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	2081462	305981

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
20.043	6423	1254	9222	1244	0.6644	0.70	
Signal Totals:							
	6423	1254	9222	1244			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15645	2498				0.70	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6644 = (15645 * 100.000) / (2081462 * 1.131)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Lims ID:	320-62886-A-3-A		
Client ID:	11215702-Treatment-1		
Inject. Date:	28-Jul-2020 09:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	21

Non-2,3,7,8-sub-TCDD, RT: 21.044

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	1335017	183350

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	1335017	183350

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Lims ID: 320-62886-A-3-A
Client ID: 11215702-Treatment-1
Inject. Date: 28-Jul-2020 09:13:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398798 Lims Sample ID: 21

Non-2,3,7,8-sub-PeCDF, RT: 28.540

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1729690	281940
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2287549	344525

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2008619	313232

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.164	1341	252	918	229	0.1118	1.46	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Lims ID: 320-62886-A-3-A
Client ID: 11215702-Treatment-1
Inject. Date: 28-Jul-2020 09:13:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398798 Lims Sample ID: 21

Non-2,3,7,8-sub-PeCDD, RT: 28.887

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	1034404	149267

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	1034404	149267

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.468	350	114	75	24	0.0371	4.67	RQ
30.468	116	37	75	24	0.0167		Empc Correction

Compound is Marked ND

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Lims ID:	320-62886-A-3-A		
Client ID:	11215702-Treatment-1		
Inject. Date:	28-Jul-2020 09:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	21

Non-2,3,7,8-sub-HxCDF, RT: 35.385

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	2284333	531460
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	1847124	421008
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	1735093	449020
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	1616502	445947

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		100.000	1870763	461858

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.849	4171	919	3122	529	0.3239	1.34	M
34.683	1671	390	1309	264	0.1324	1.28	
Signal Totals:							
	5842	1309	4431	793			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10273	2102				1.32	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4563 = (10273 * 100.000) / (1870763 * 1.203)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Lims ID:	320-62886-A-3-A		
Client ID:	11215702-Treatment-1		
Inject. Date:	28-Jul-2020 09:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	21

Non-2,3,7,8-sub-HxCDD, RT: 35.717

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	1613827	451189
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	1356116	353309
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		100.000	1484971	402249

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.582	1508	336	966	300	0.1627	1.56	RQ
34.582	1197	372	966	300	0.1423		Empc Correction
Signal Totals:							
	1197	372	966	300			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2474	636				1.56	RQ
	2163	672					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1627 = (2474 * 100.000) / (1484971 * 1.024)
Empc Amount: 0.1423 = (2163 * 100.000) / (1484971 * 1.024)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Lims ID:	320-62886-A-3-A		
Client ID:	11215702-Treatment-1		
Inject. Date:	28-Jul-2020 09:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	21

Non-2,3,7,8-sub-HpCDF, RT: 39.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1302308	420313
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1788267	622943

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		100.000	1545287	521628

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.160	6035	2145	6005	2024	0.5636	1.00	M
Signal Totals:							
	6035	2145	6005	2024			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12040	4169				1.00	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5636 = (12040 * 100.000) / (1545287 * 1.383)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Lims ID:	320-62886-A-3-A		
Client ID:	11215702-Treatment-1		
Inject. Date:	28-Jul-2020 09:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	21

Non-2,3,7,8-sub-HpCDD, RT: 39.555

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.115	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1262111	436388

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.115		100.000	1262111	436388

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.101	13324	4489	11539	3812	1.77	1.15	M
Signal Totals:							
	13324	4489	11539	3812			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24863	8301				1.15	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.767 = (24863 * 100.000) / (1262111 * 1.115)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00
Instrument ID: DFS 1
Lims ID: 320-62886-A-3-A
Lab Sample ID: 320-62886-3
Client ID: 11215702-Treatment-1
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 21
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 20.80
Area: 24123
Amount: 1.749642
Amount Units: pg/ul

Processing Integration Results

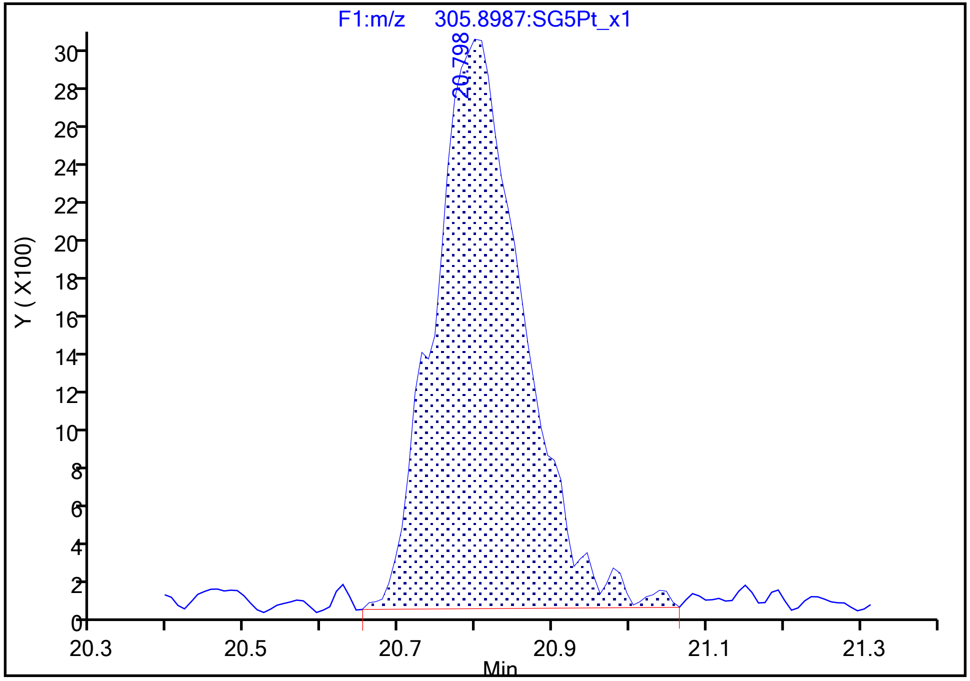

RT: 20.80
Area: 21514
Amount: 1.638841
Amount Units: pg/ul

Manual Integration Results

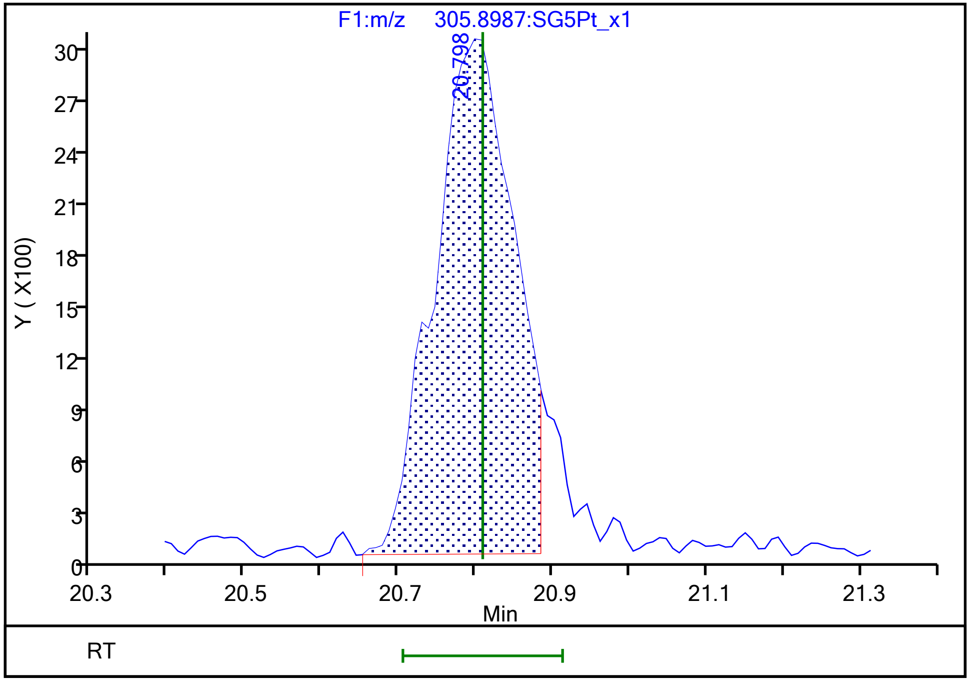

Reviewer: dadunj, 30-Jul-2020 09:54:49
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	22.21
Area:	4599
Amount:	0.684566
Amount Units:	pg/ul

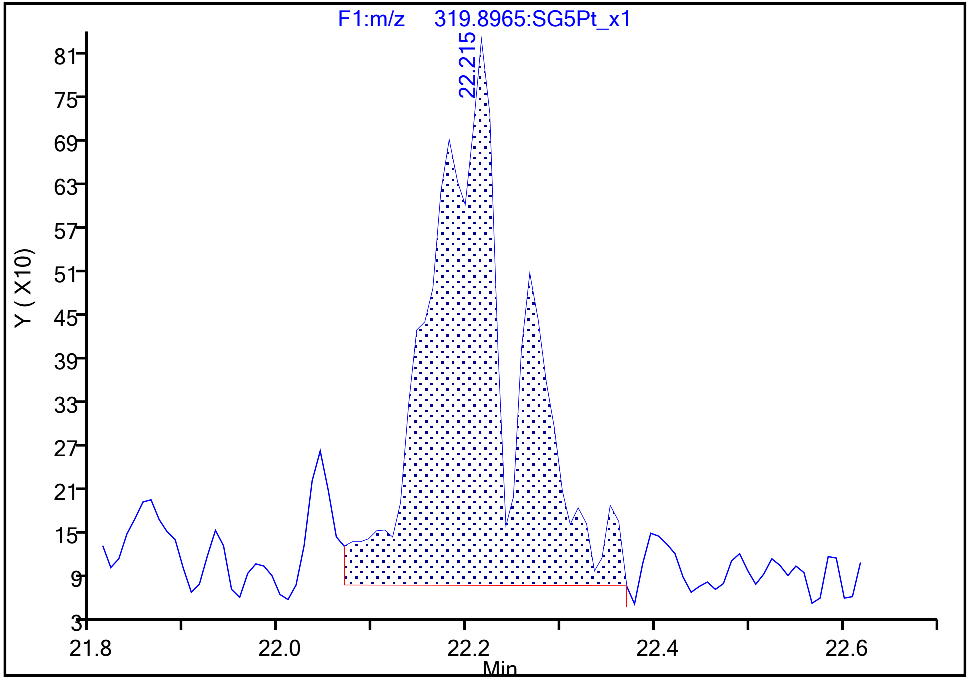

Manual Integration Results

RT:	22.21
Area:	3347
Amount:	0.605419
Amount Units:	pg/ul

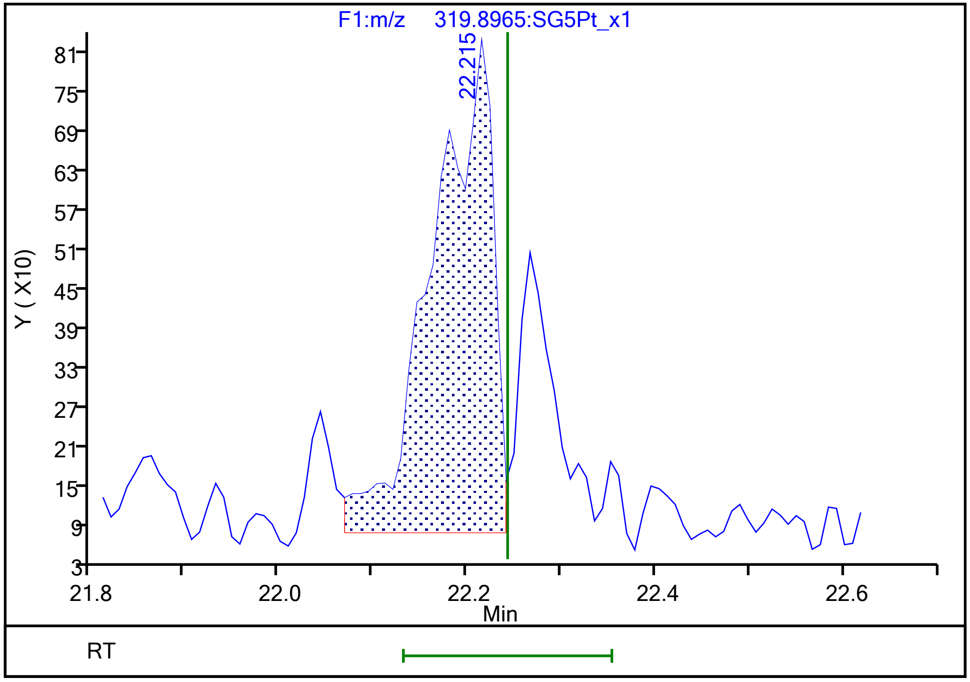

Reviewer: dadunj, 30-Jul-2020 09:55:21

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:58:03

Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	27.73
Area:	4619
Amount:	0.666677
Amount Units:	pg/ul

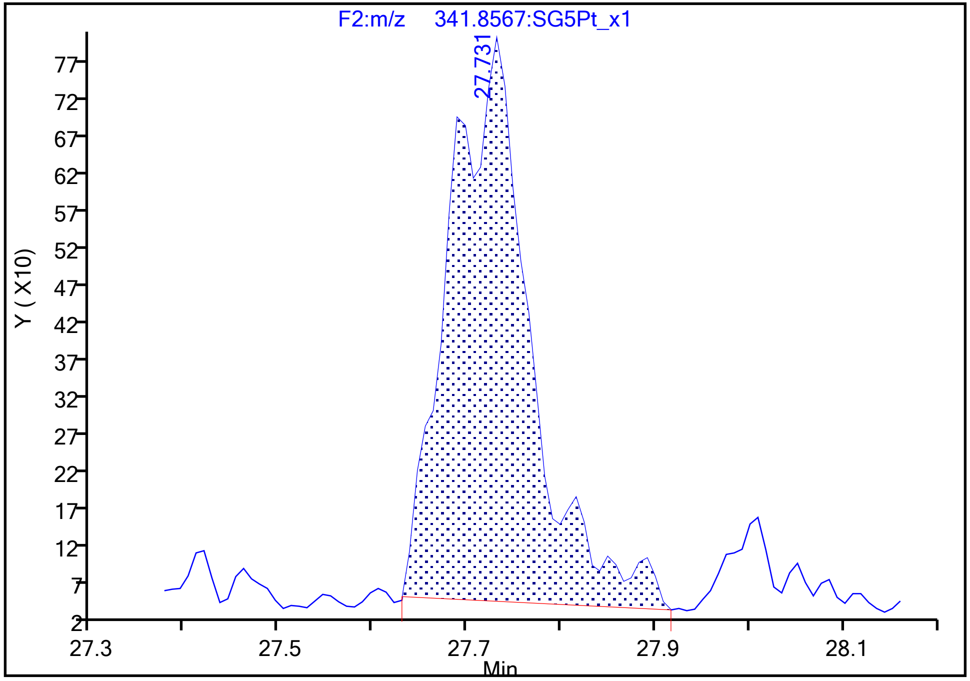

Manual Integration Results

RT:	27.73
Area:	4193
Amount:	0.640279
Amount Units:	pg/ul

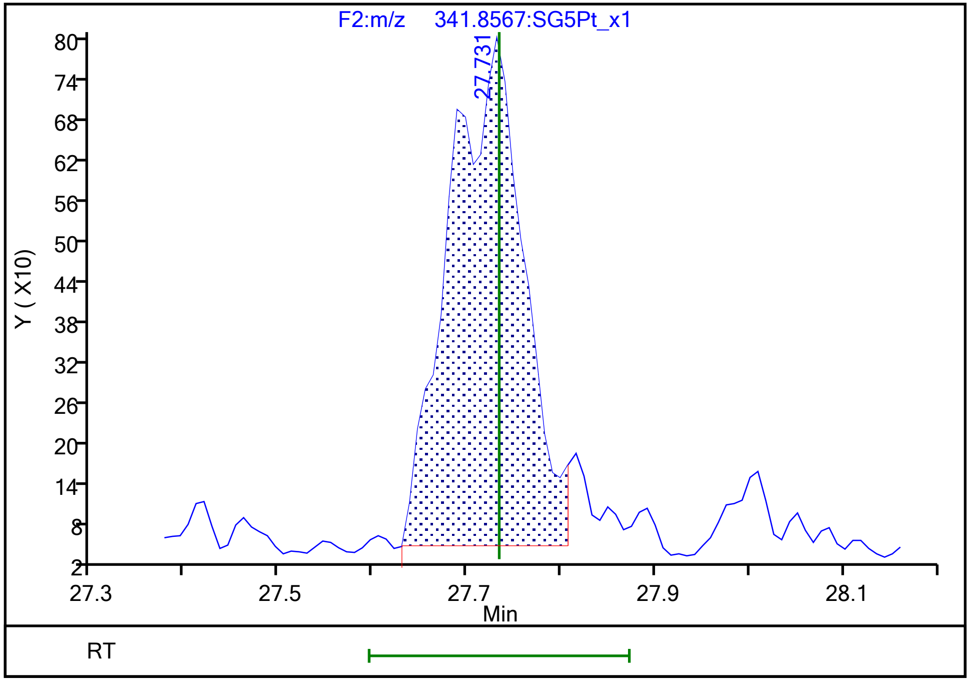

Reviewer: dadunj, 30-Jul-2020 09:55:38

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3
Client ID:	11215702-Treatment-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	27.71
Area:	8135
Amount:	0.666677
Amount Units:	pg/ul

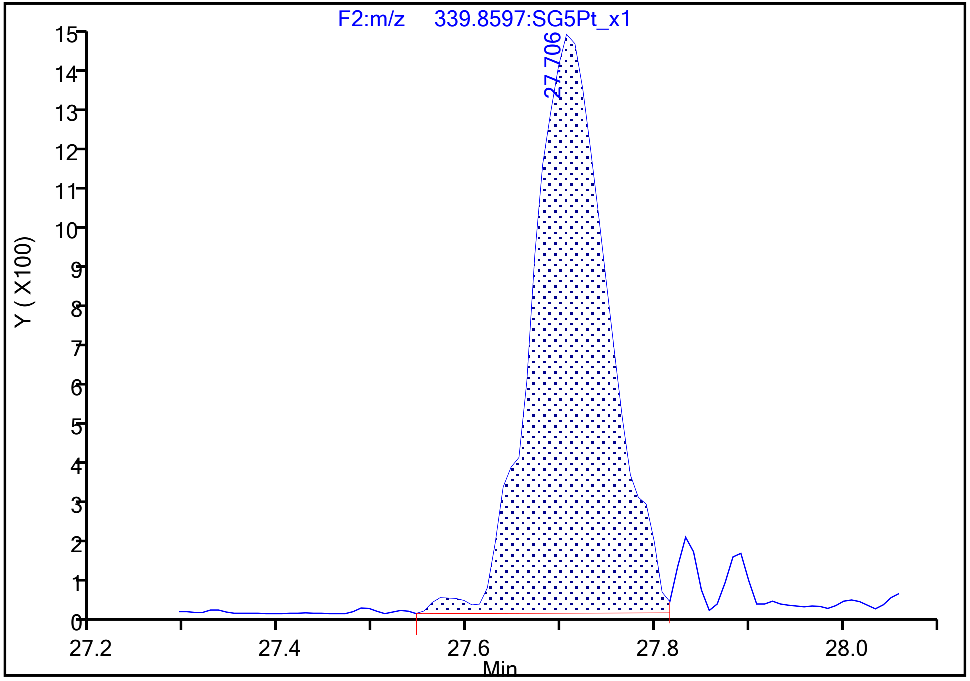

Manual Integration Results

RT:	27.71
Area:	8056
Amount:	0.640279
Amount Units:	pg/ul

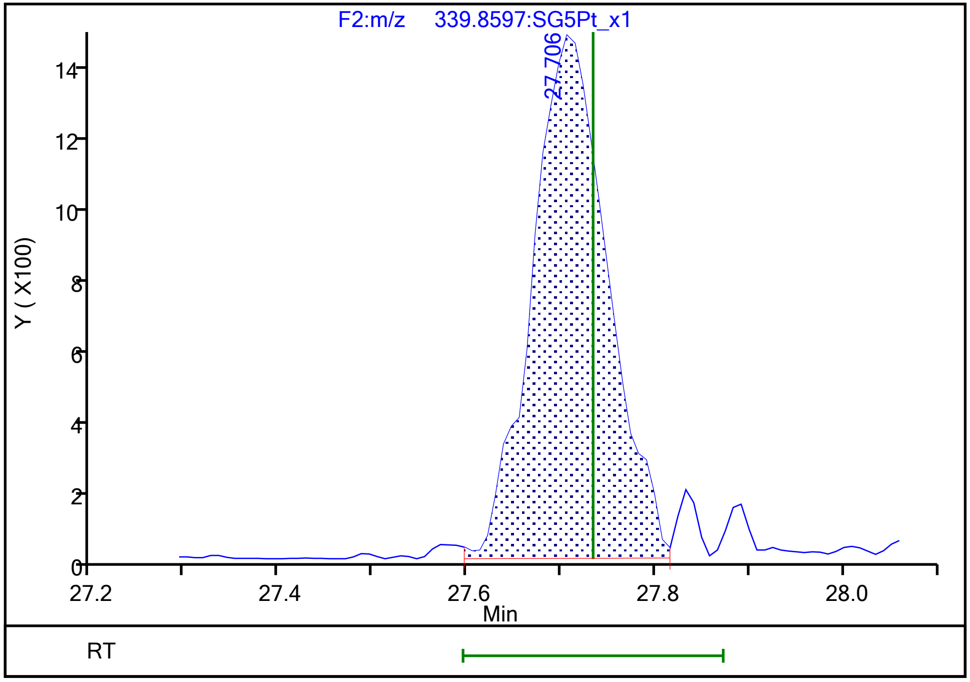

Reviewer: dadunj, 30-Jul-2020 09:55:39

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 2

Processing Integration Results

RT: 29.31
Area: 3542
Amount: 0.491310
Amount Units: pg/ul

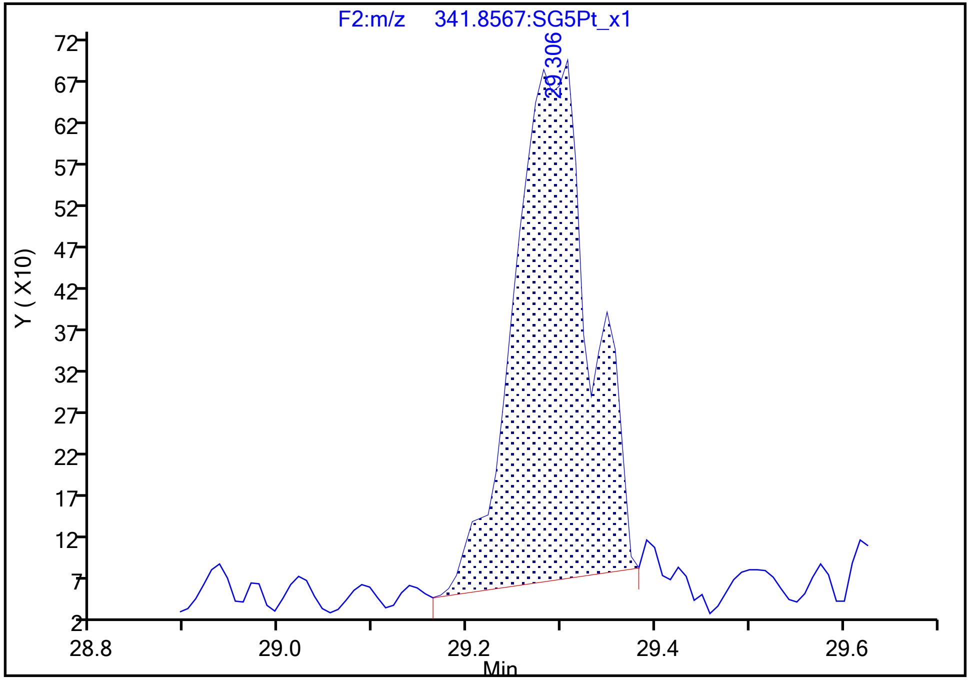

Manual Integration Results

RT: 29.31
Area: 3869
Amount: 0.500856
Amount Units: pg/ul

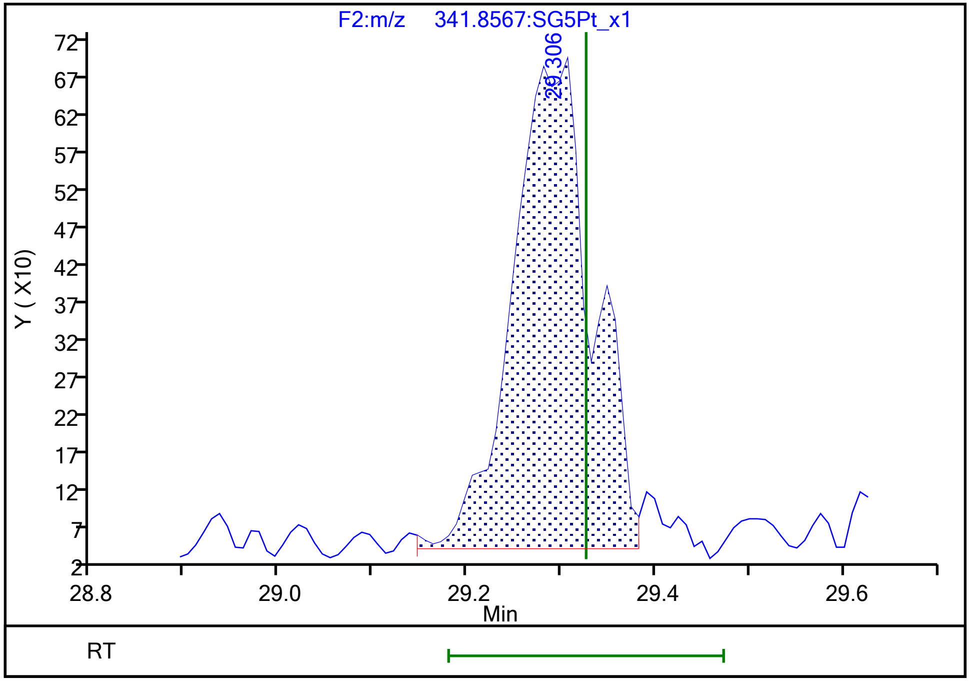

Reviewer: dadunj, 30-Jul-2020 09:55:57

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3
Client ID:	11215702-Treatment-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

RT: 29.26
Area: 6648
Amount: 0.491310
Amount Units: pg/ul

Processing Integration Results

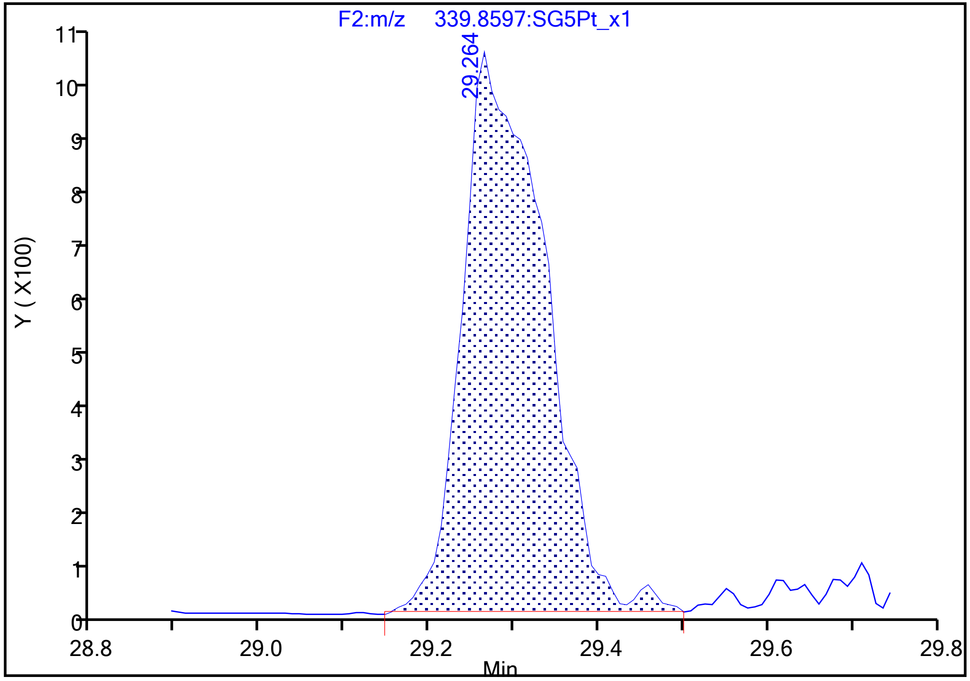

RT: 29.26
Area: 6519
Amount: 0.500856
Amount Units: pg/ul

Manual Integration Results

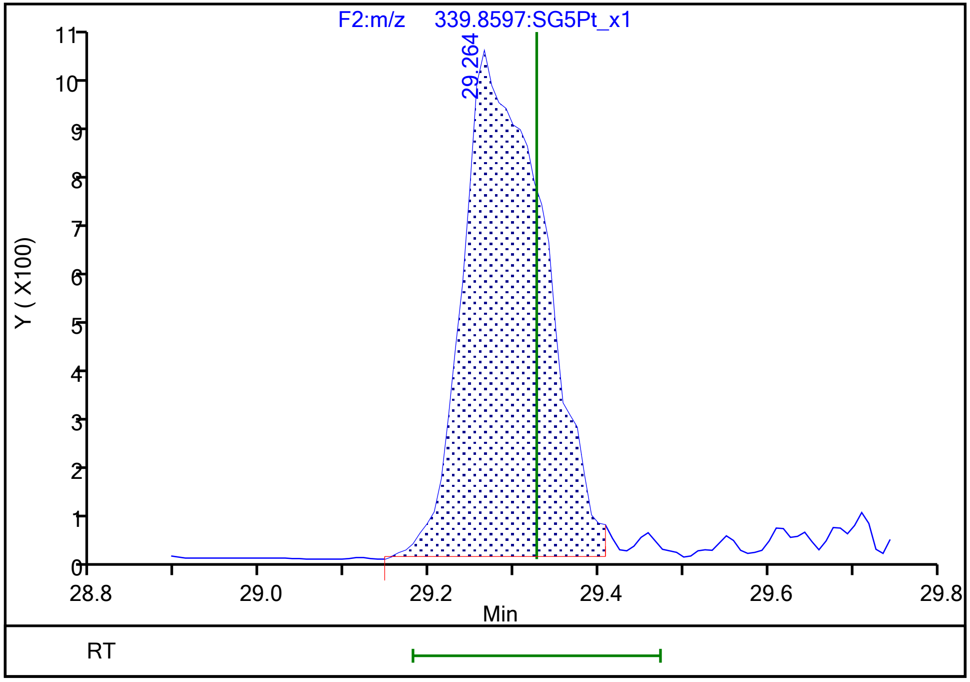

Reviewer: dadunj, 30-Jul-2020 09:55:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d

Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT: 30.17
Area: 4148
Amount: 0.690861
Amount Units: pg/ul

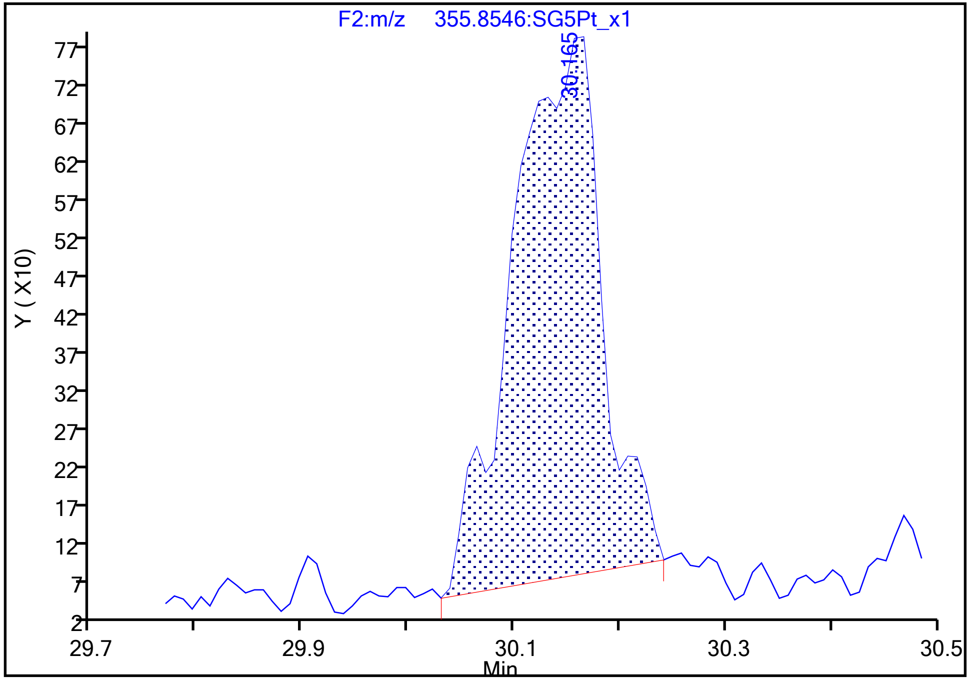

Manual Integration Results

RT: 30.17
Area: 4381
Amount: 0.711224
Amount Units: pg/ul

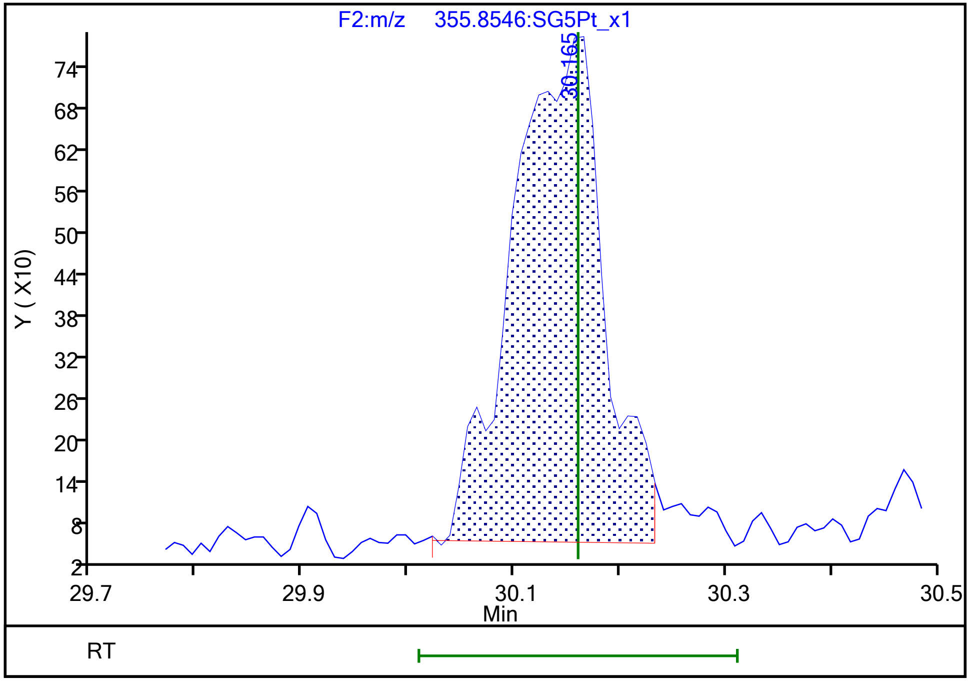

Reviewer: dadunj, 30-Jul-2020 09:56:15

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.57- 37.20)

Signal: 1

Processing Integration Results

RT = 33.849 Area = 4780

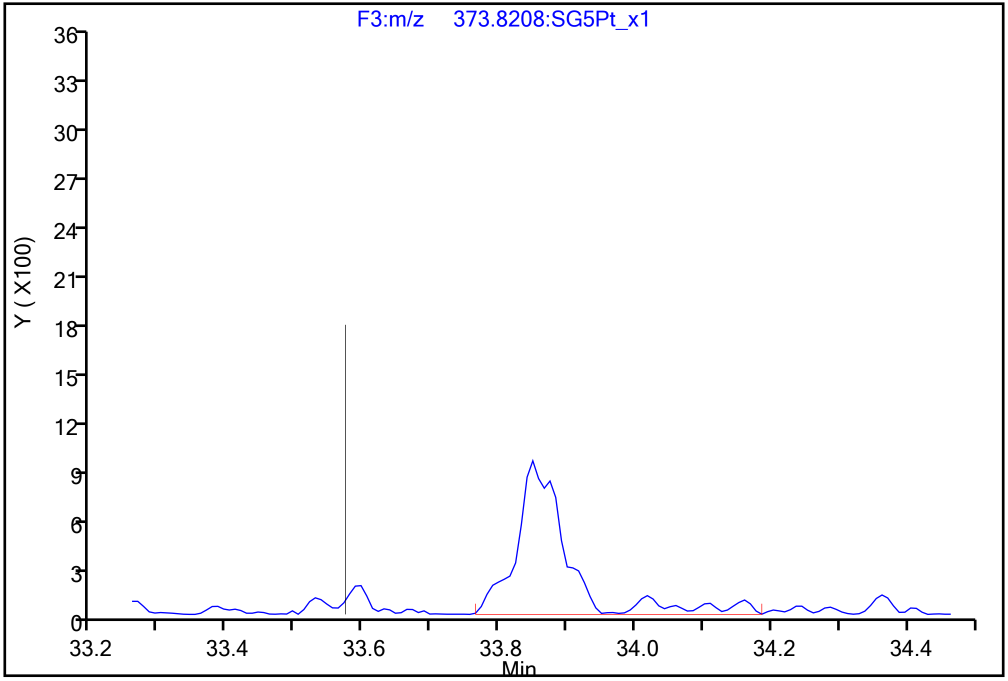

Manual Integration Results

RT = 33.849 Area = 4171 M

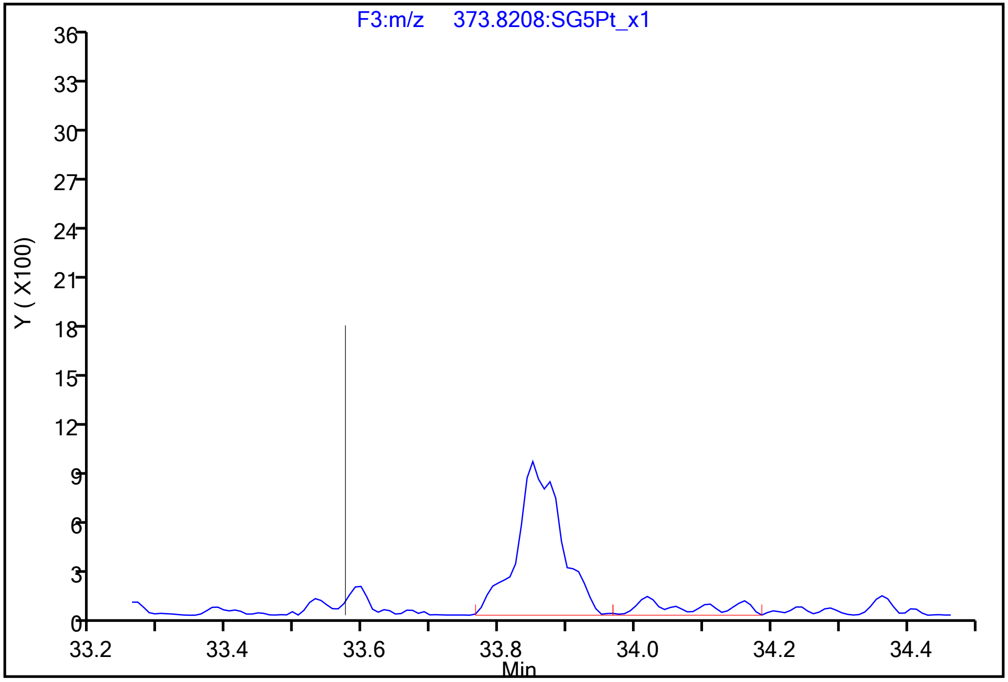

Reviewer: dadunj, 30-Jul-2020 09:56:42

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Processing Integration Results

RT:	36.86
Area:	6921
Amount:	0.907868
Amount Units:	pg/ul

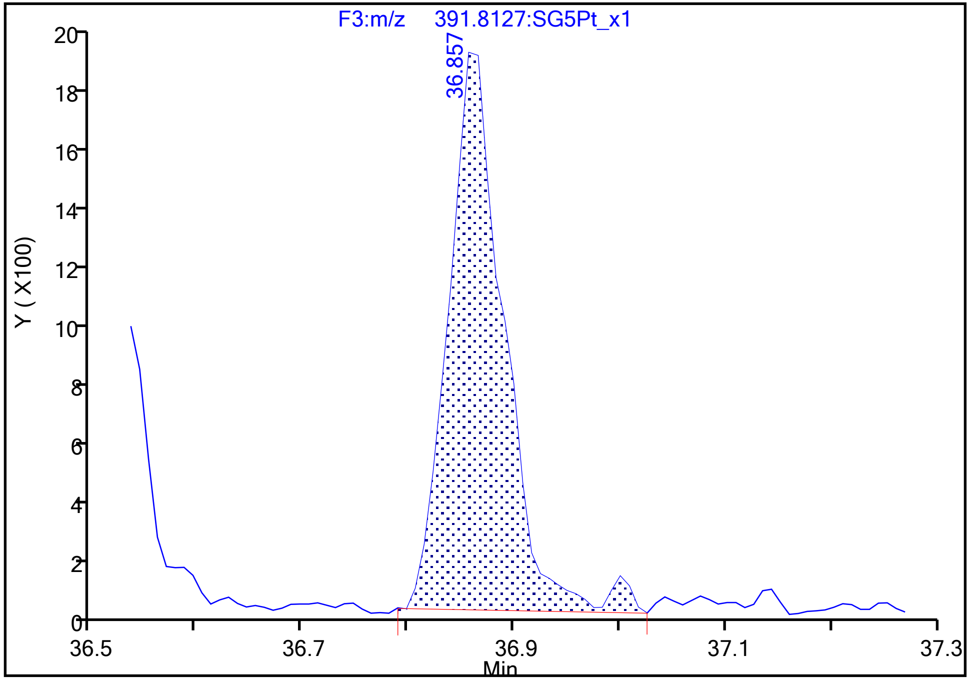

Manual Integration Results

RT:	36.86
Area:	6740
Amount:	0.896342
Amount Units:	pg/ul

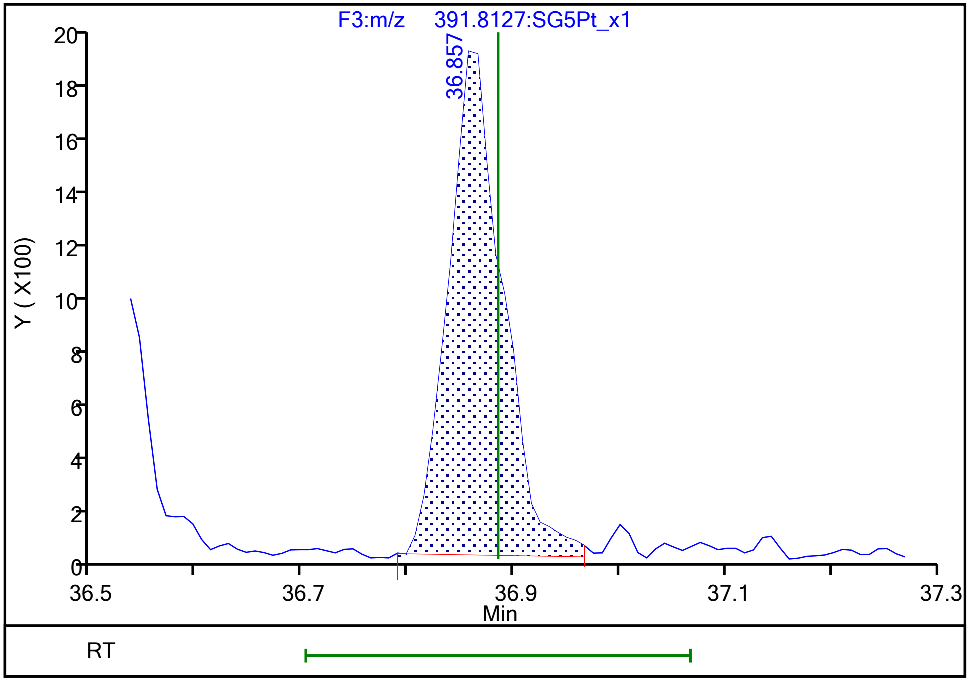

Reviewer: dadunj, 30-Jul-2020 09:56:51

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00 Instrument ID: DFS 1
Lims ID: 320-62886-A-3-A Lab Sample ID: 320-62886-3
Client ID: 11215702-Treatment-1
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F4(38.58 :41.00)

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT: 40.03
Area: 11644
Amount: 1.024748
Amount Units: pg/ul

Processing Integration Results

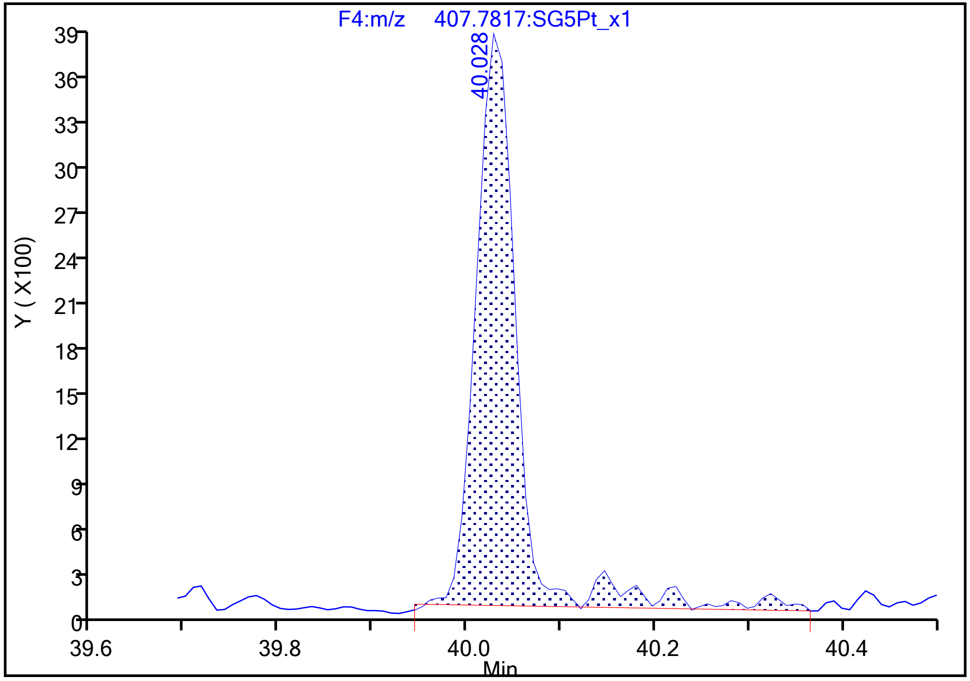

RT: 40.03
Area: 10626
Amount: 0.976064
Amount Units: pg/ul

Manual Integration Results

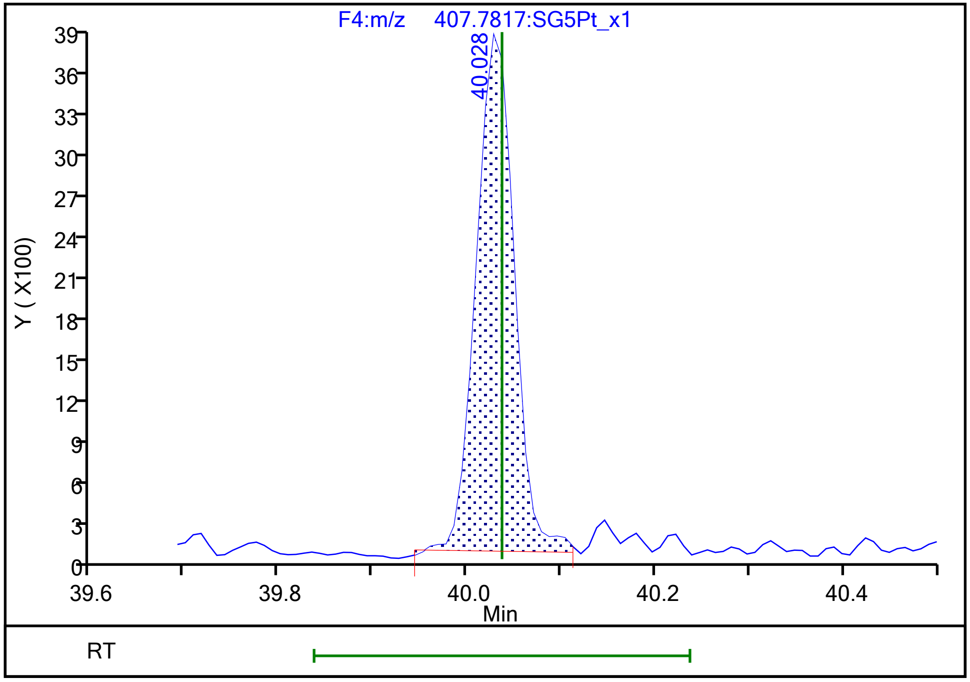

Reviewer: dadunj, 30-Jul-2020 09:56:59
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (38.77- 40.05)

Signal: 2

RT = 39.169 Area = 6559

Processing Integration Results

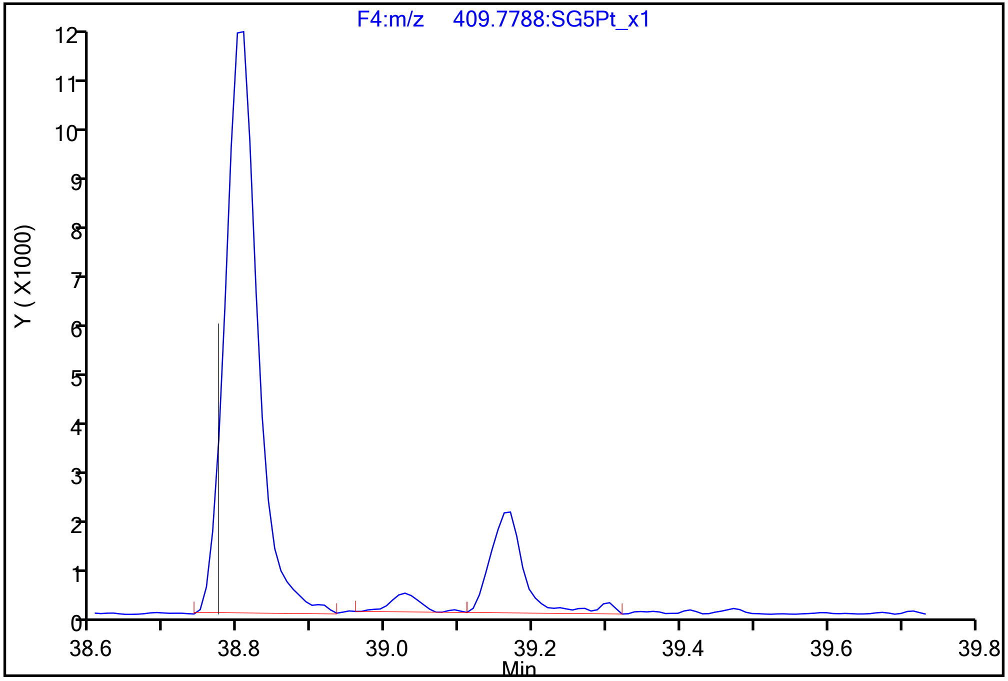

RT = 39.169 Area = 6005 M

Manual Integration Results

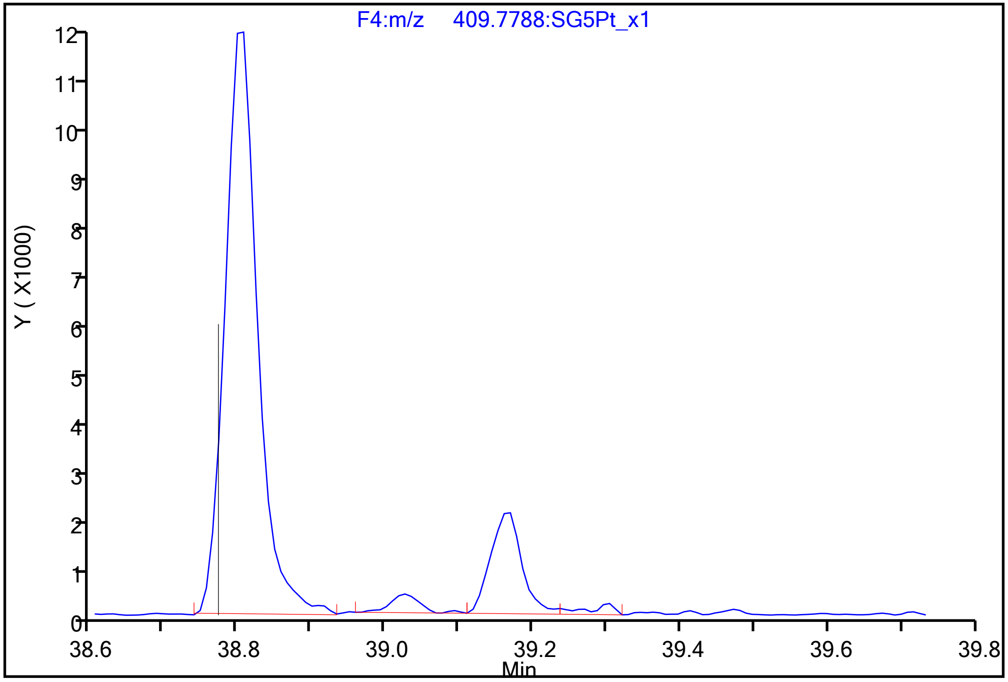

Reviewer: dadunj, 30-Jul-2020 09:57:03

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3
Client ID:	11215702-Treatment-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 39.72
Area: 14445
Amount: 2.138113
Amount Units: pg/ul

Processing Integration Results

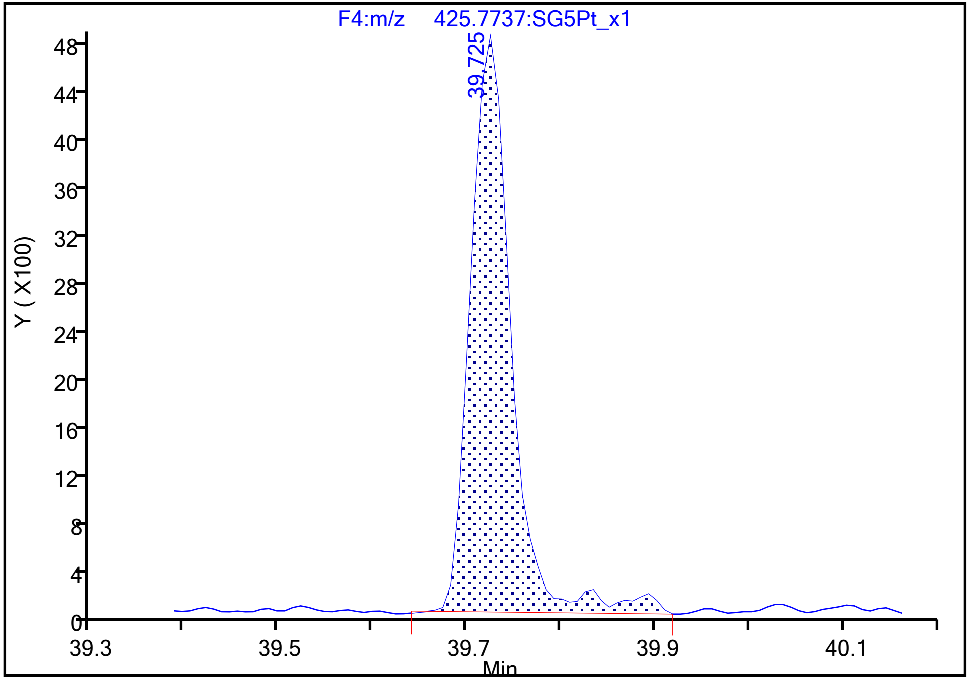

RT: 39.72
Area: 13742
Amount: 2.035503
Amount Units: pg/ul

Manual Integration Results

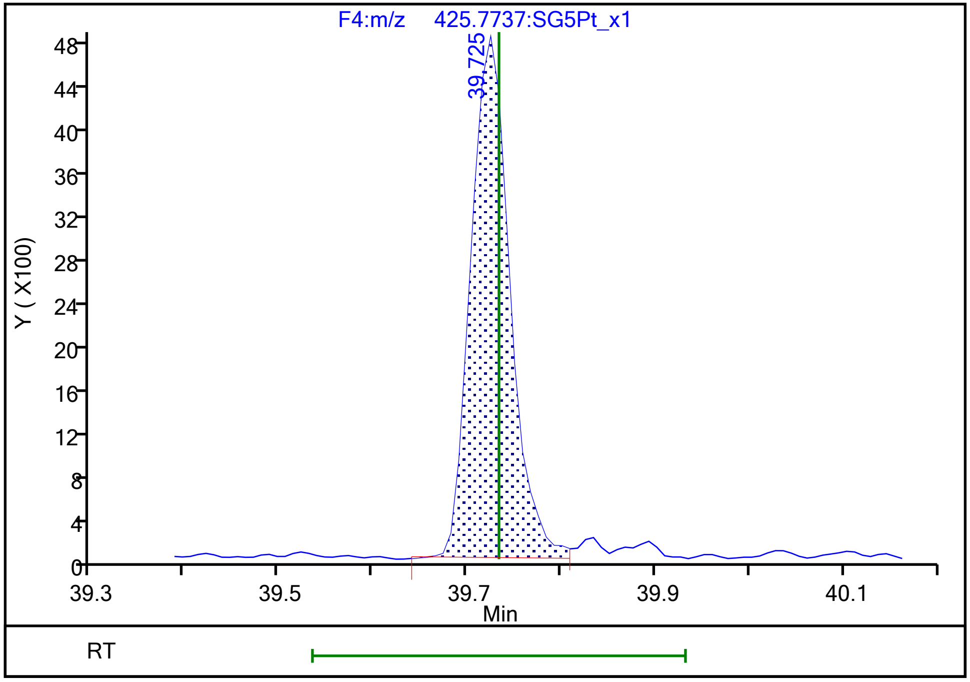

Reviewer: dadunj, 30-Jul-2020 09:57:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	39.72
Area:	15644
Amount:	2.138113
Amount Units:	pg/ul

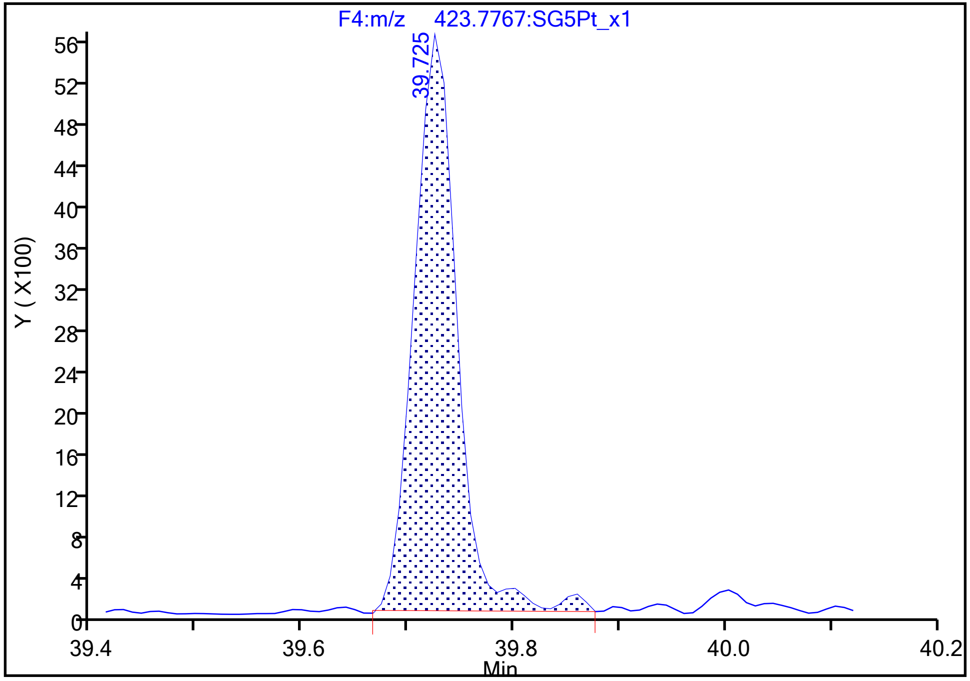

Manual Integration Results

RT:	39.72
Area:	14903
Amount:	2.035503
Amount Units:	pg/ul

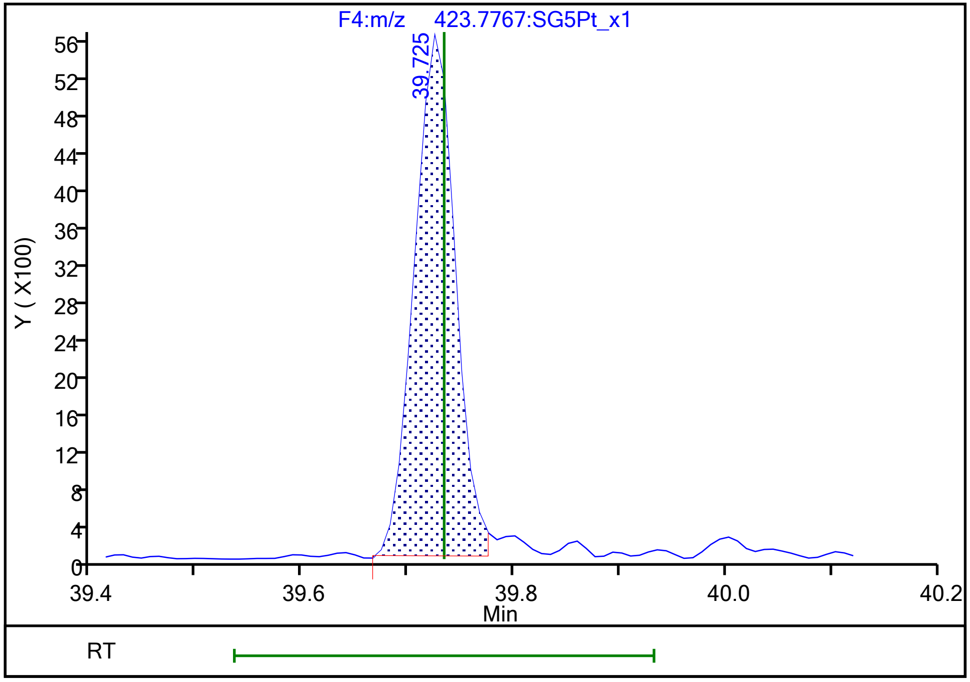

Reviewer: dadunj, 30-Jul-2020 09:57:09

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d				
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3		
Client ID:	11215702-Treatment-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (39.06- 40.05)

Signal: 1

Processing Integration Results

RT = 39.101 Area = 13724

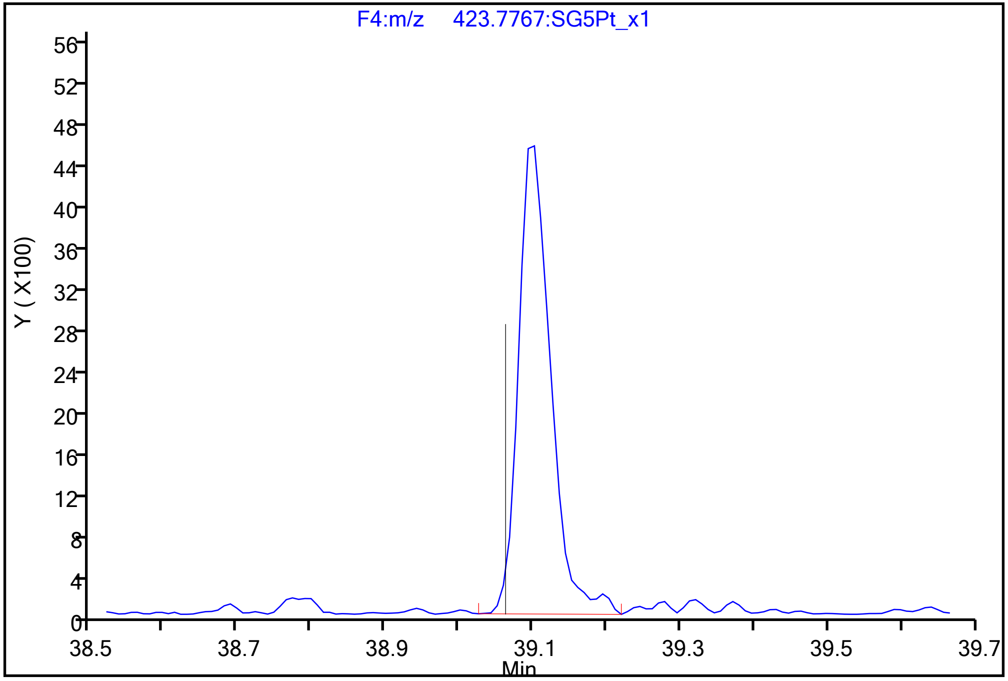

Manual Integration Results

RT = 39.101 Area = 13324 M

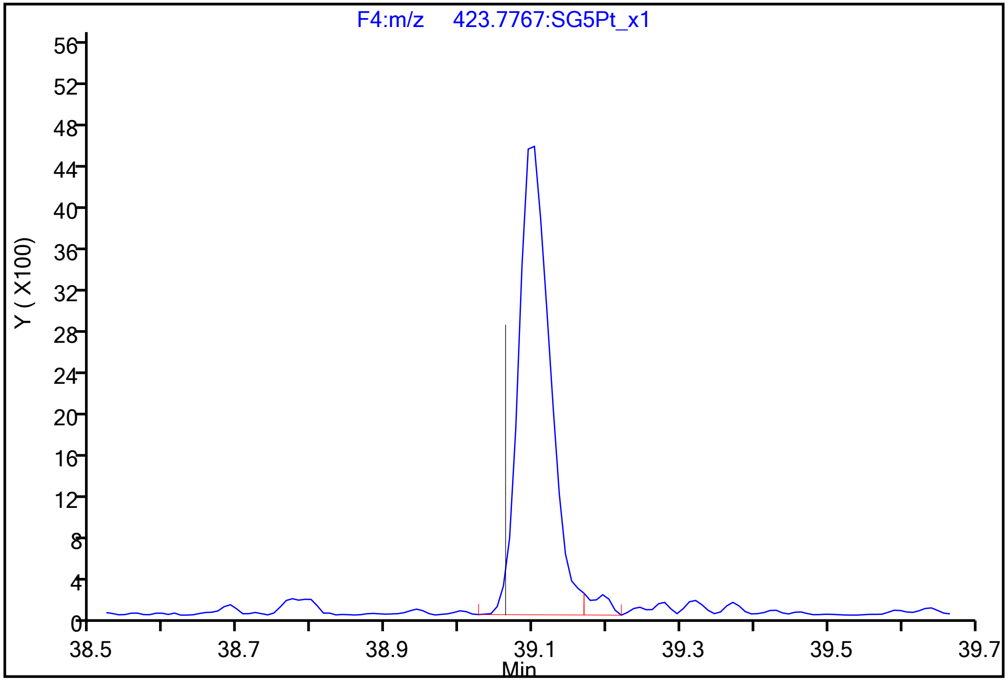

Reviewer: dadunj, 30-Jul-2020 09:57:15

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3
Client ID:	11215702-Treatment-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (39.06- 40.05)

Signal: 2

Processing Integration Results

RT = 39.093 Area = 11917

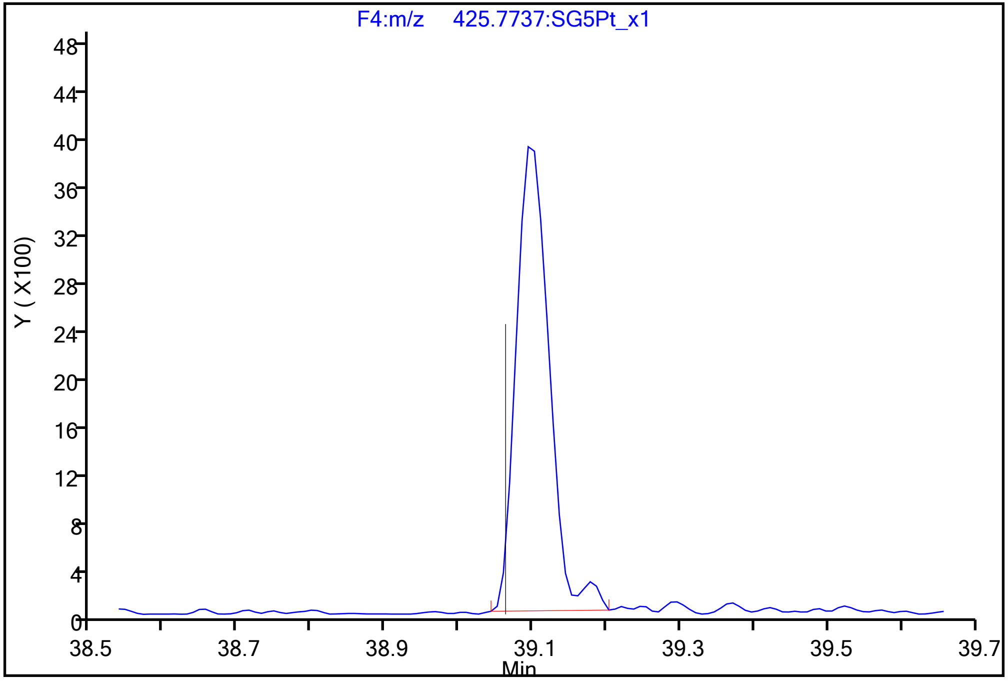

Manual Integration Results

RT = 39.093 Area = 11539 M

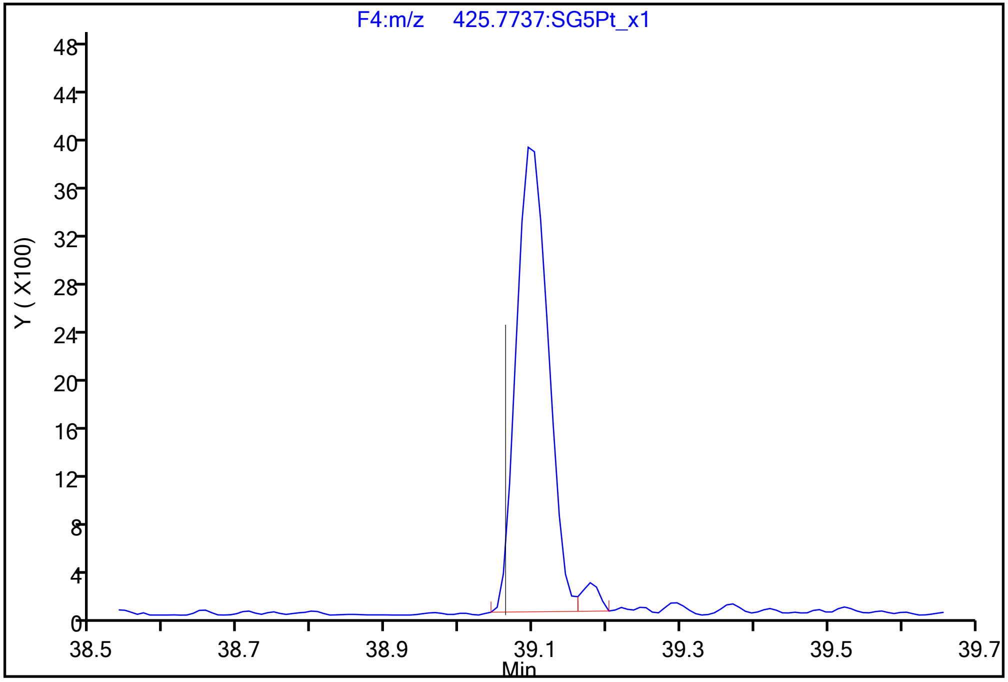

Reviewer: dadunj, 30-Jul-2020 09:57:13

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

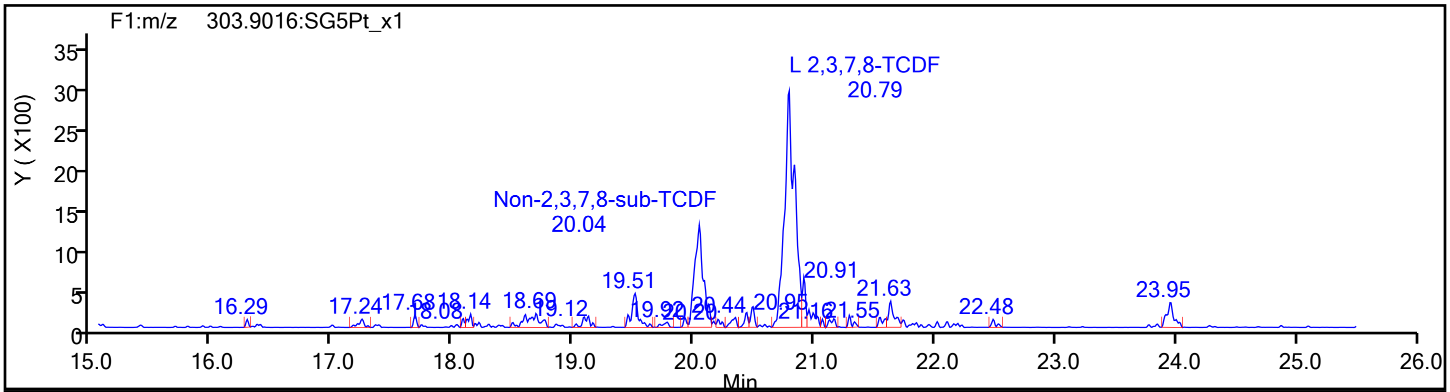

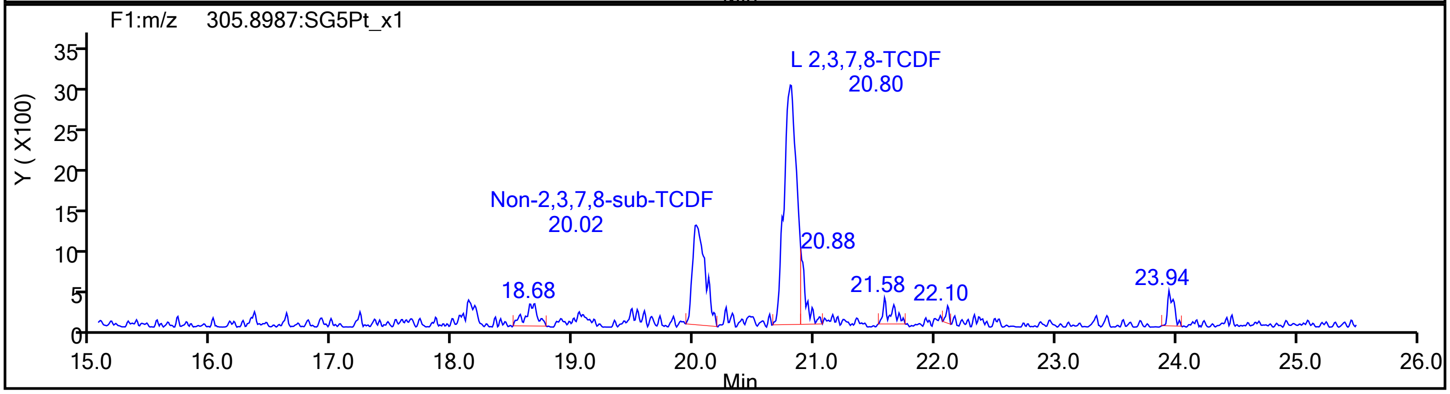

TCDF Standards

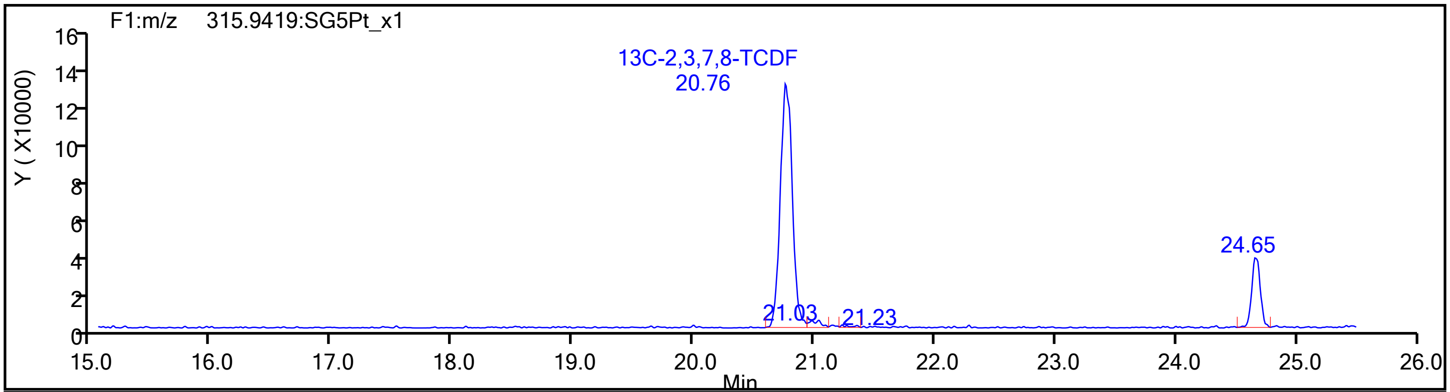

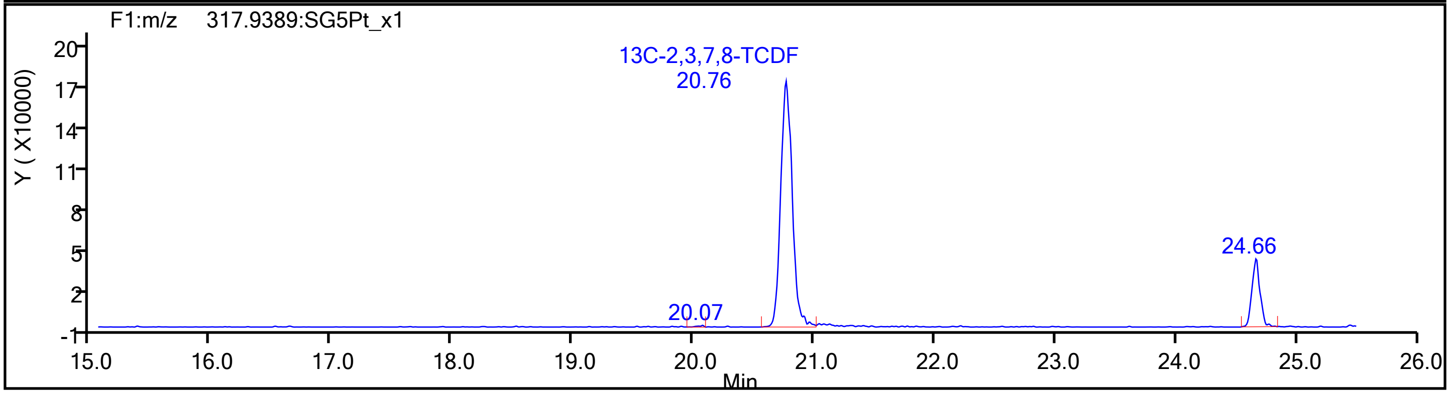

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

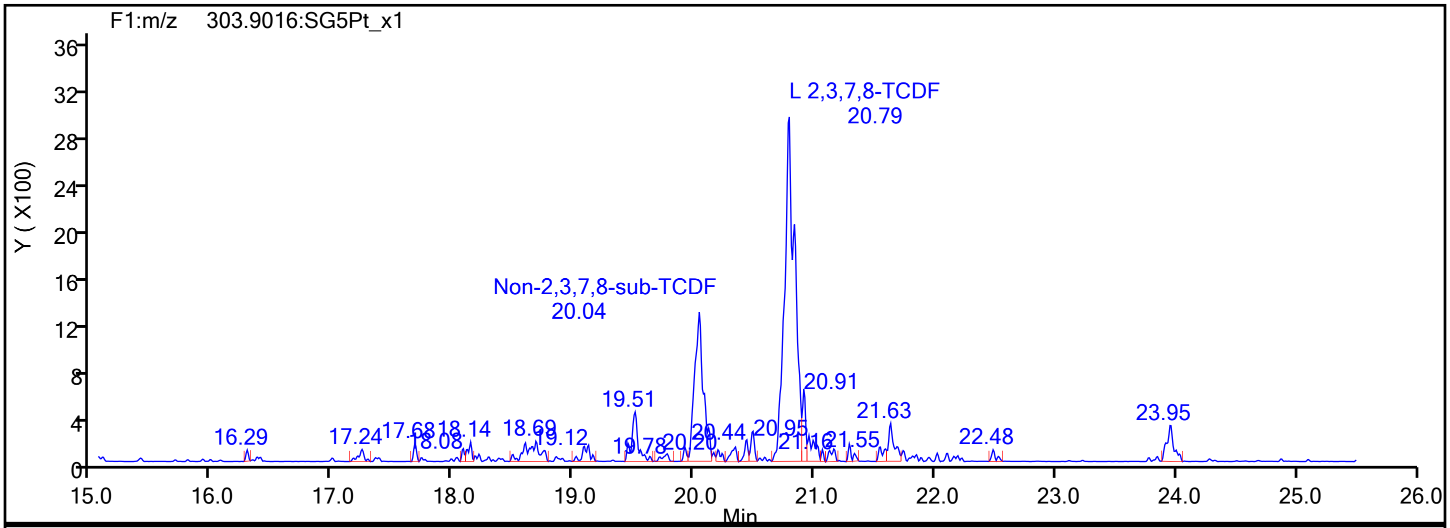

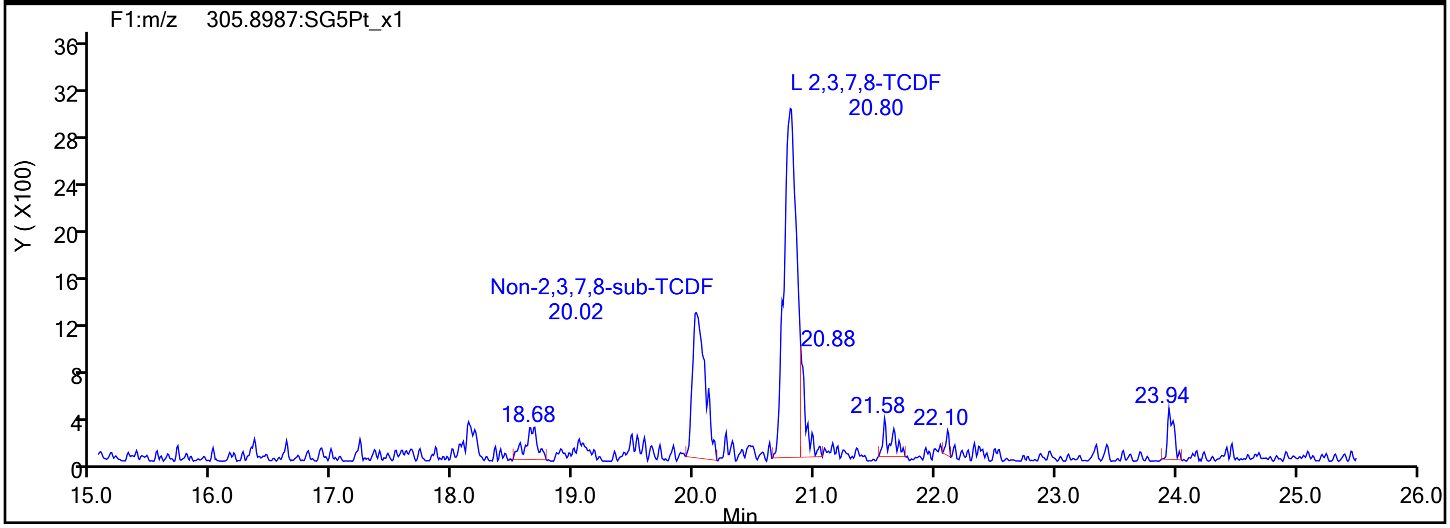

TCDF Interference Mass

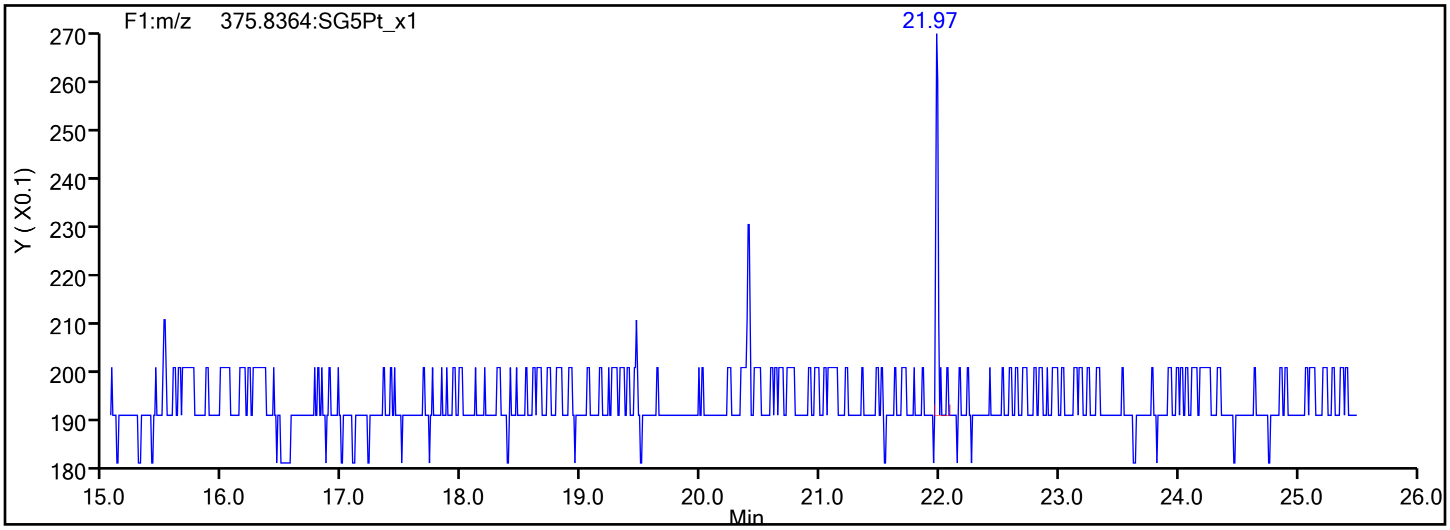

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

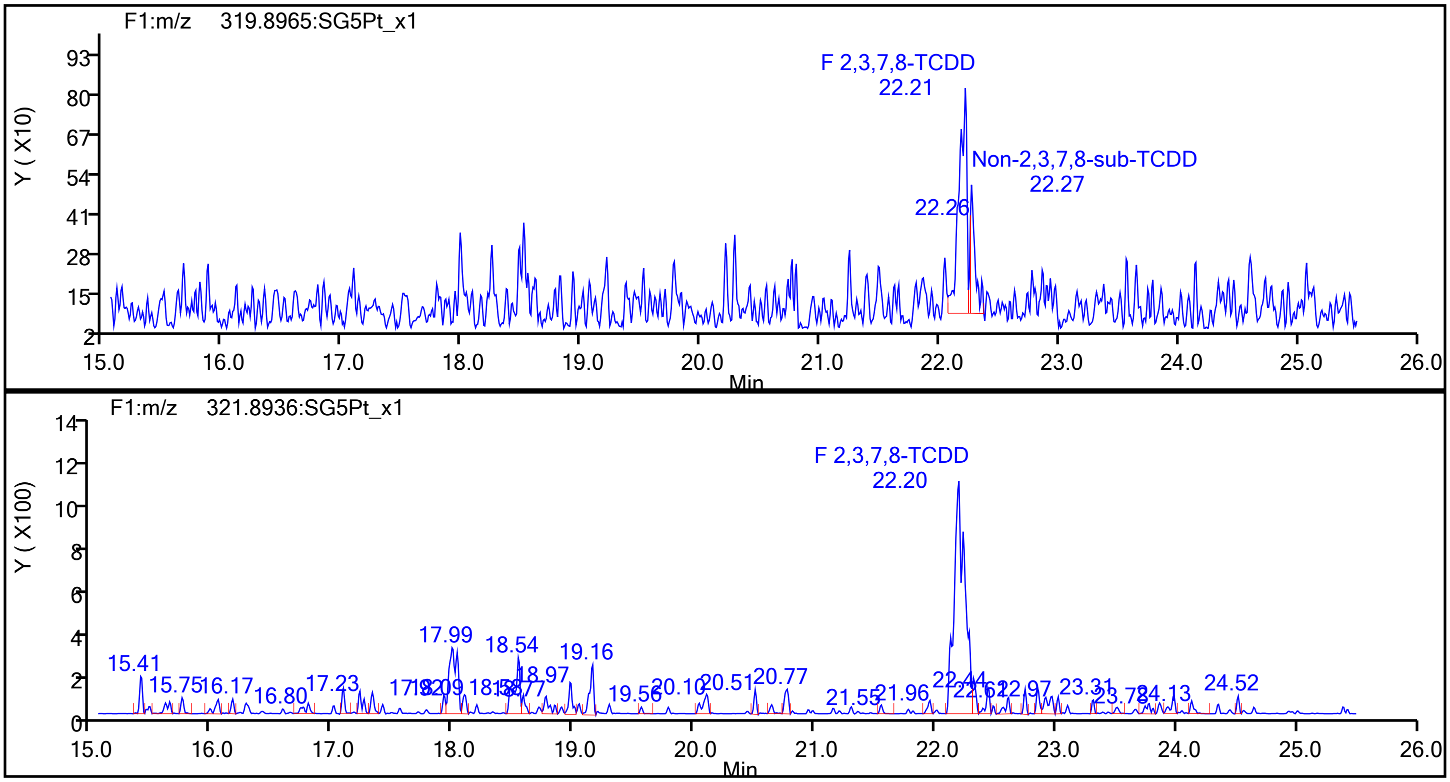

TCDD Standards

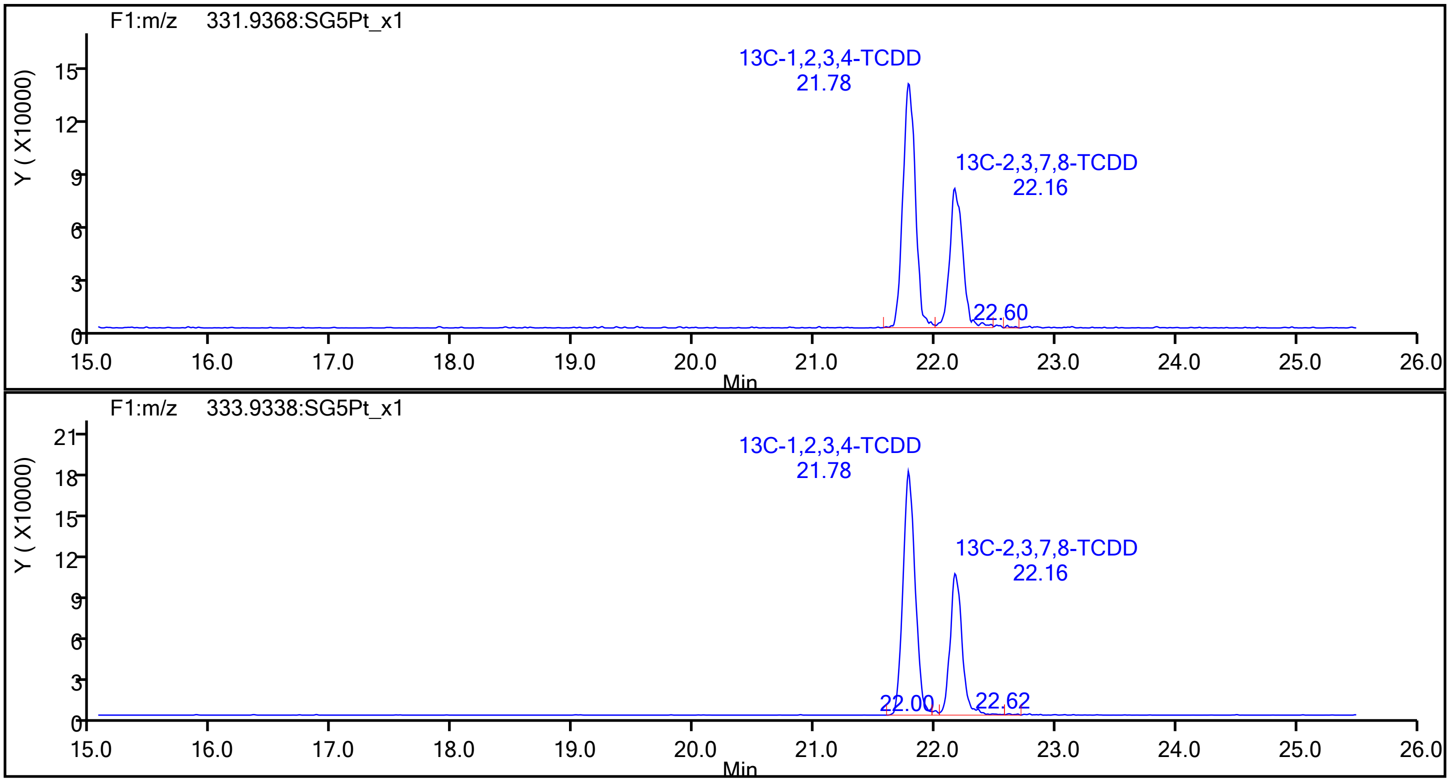

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

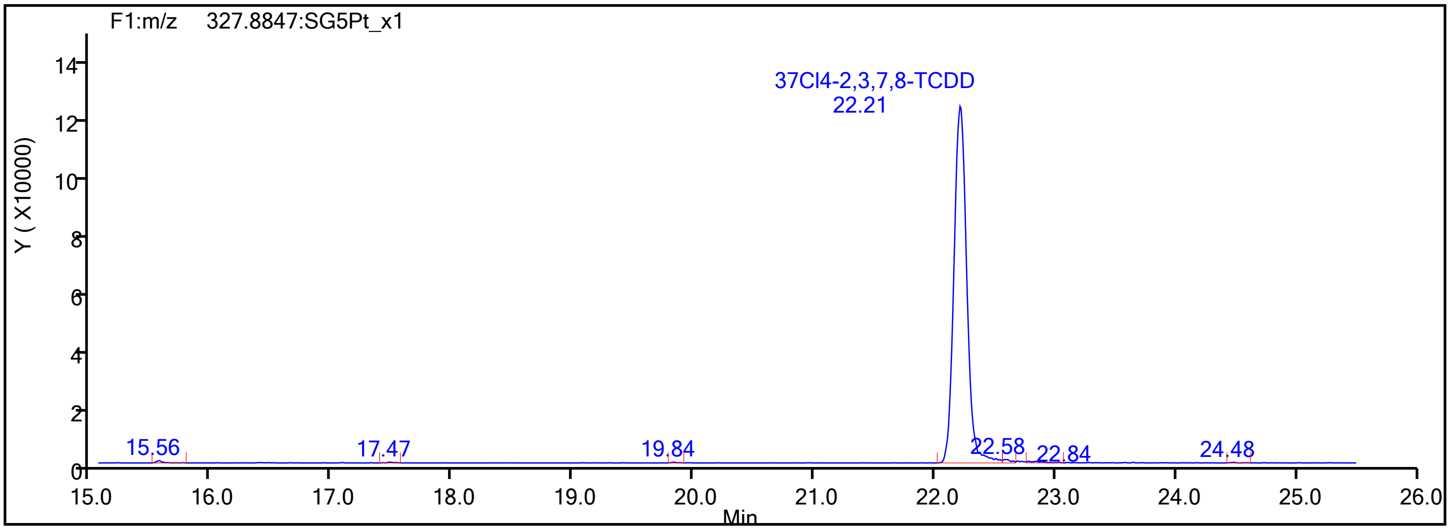

37Cl4-TCDD Standards

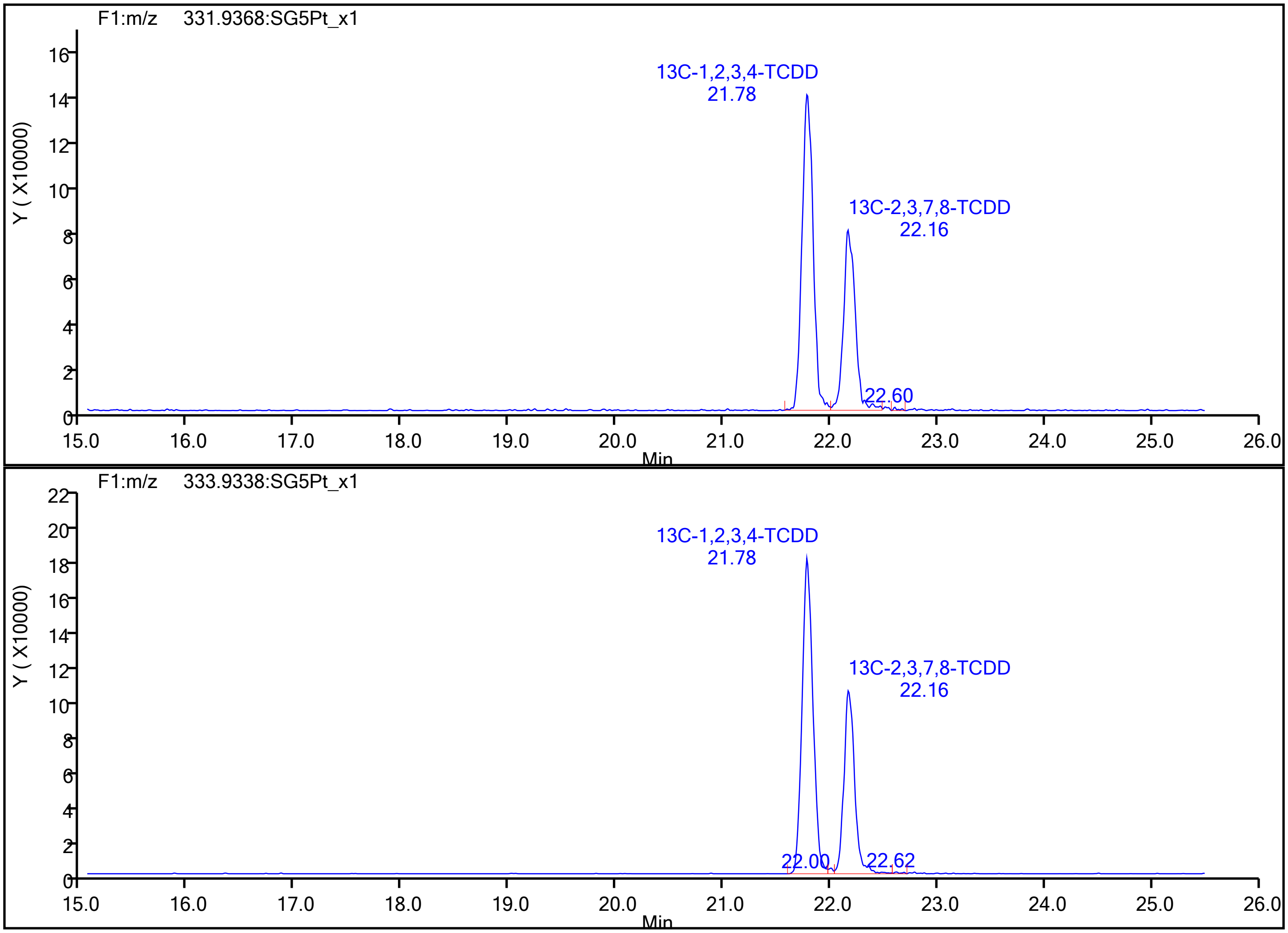

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

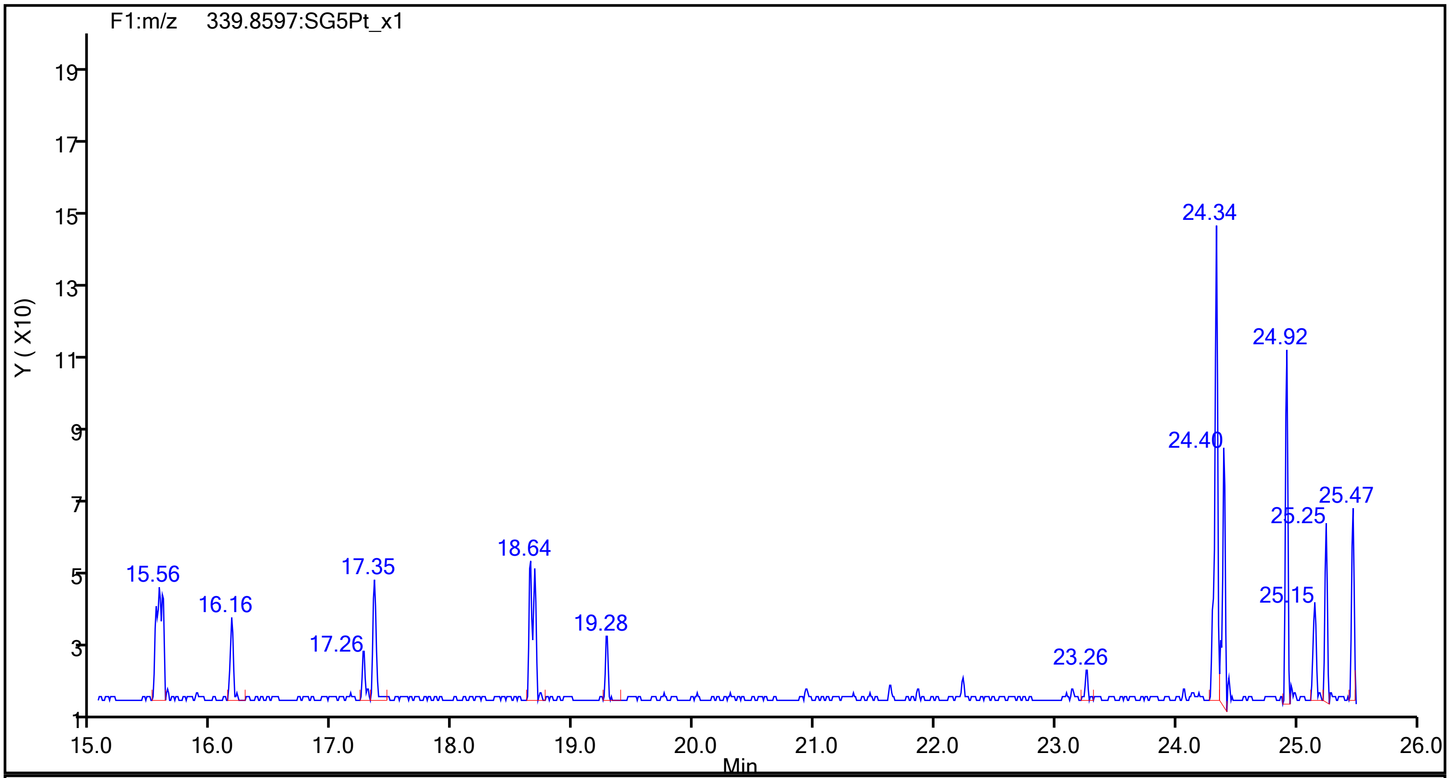

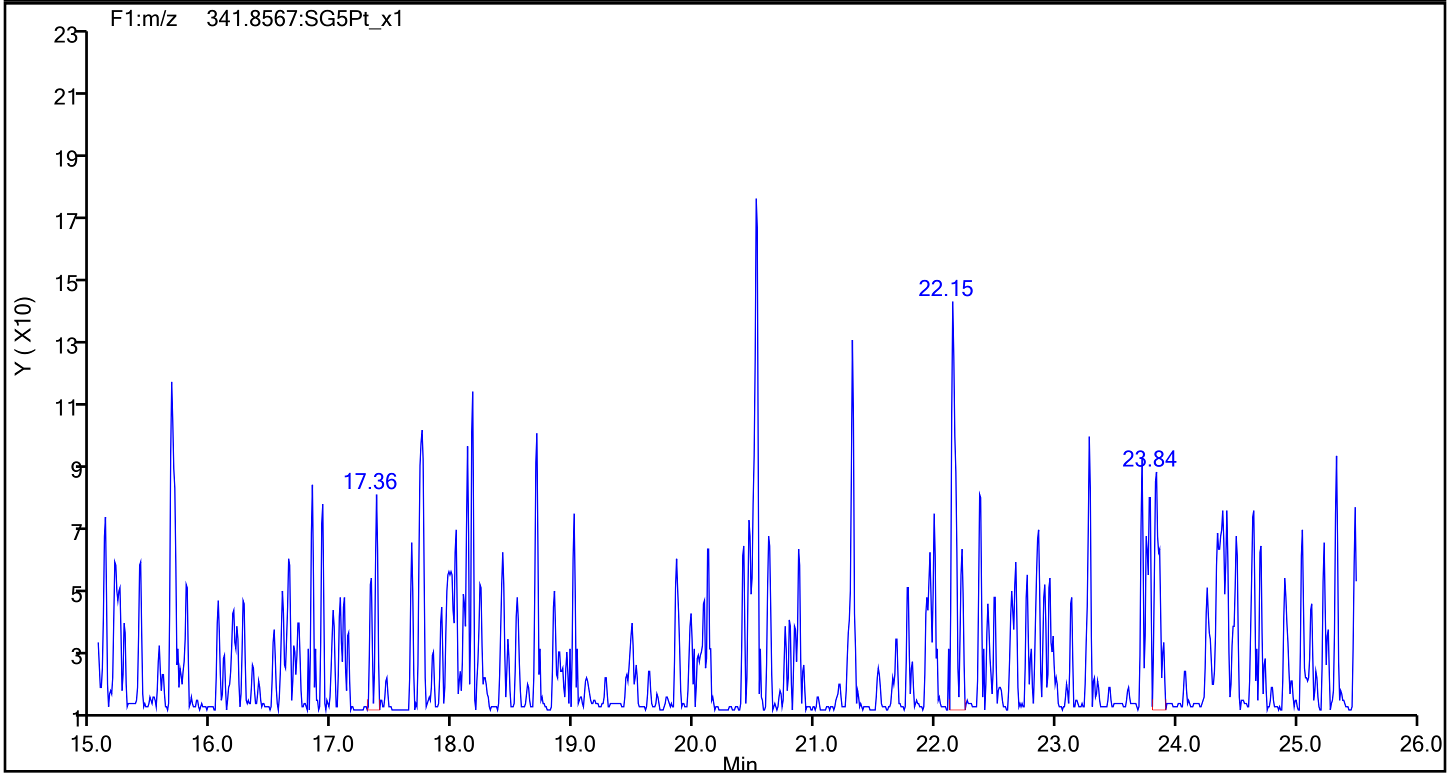

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d

Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

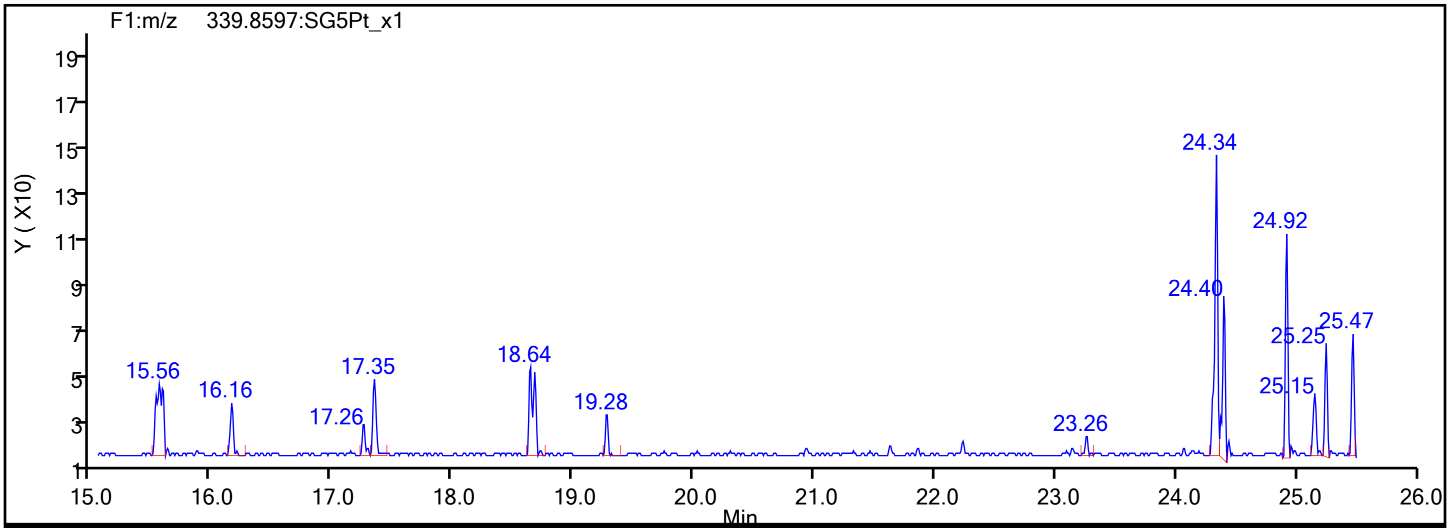

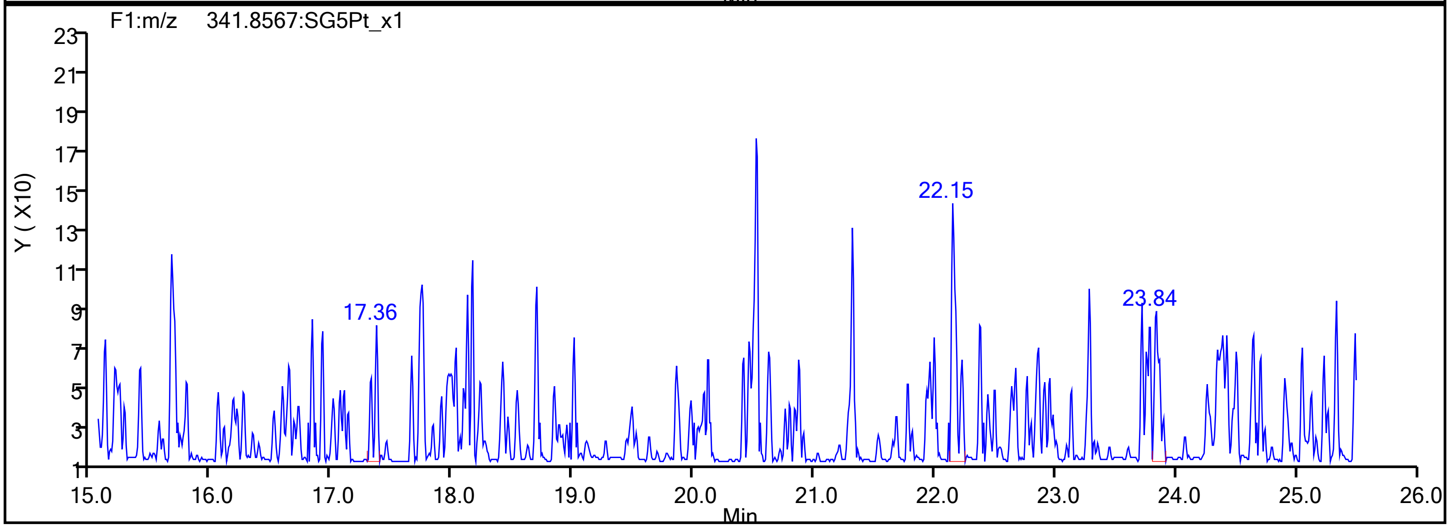

F1 PeCDFs Interference Mass

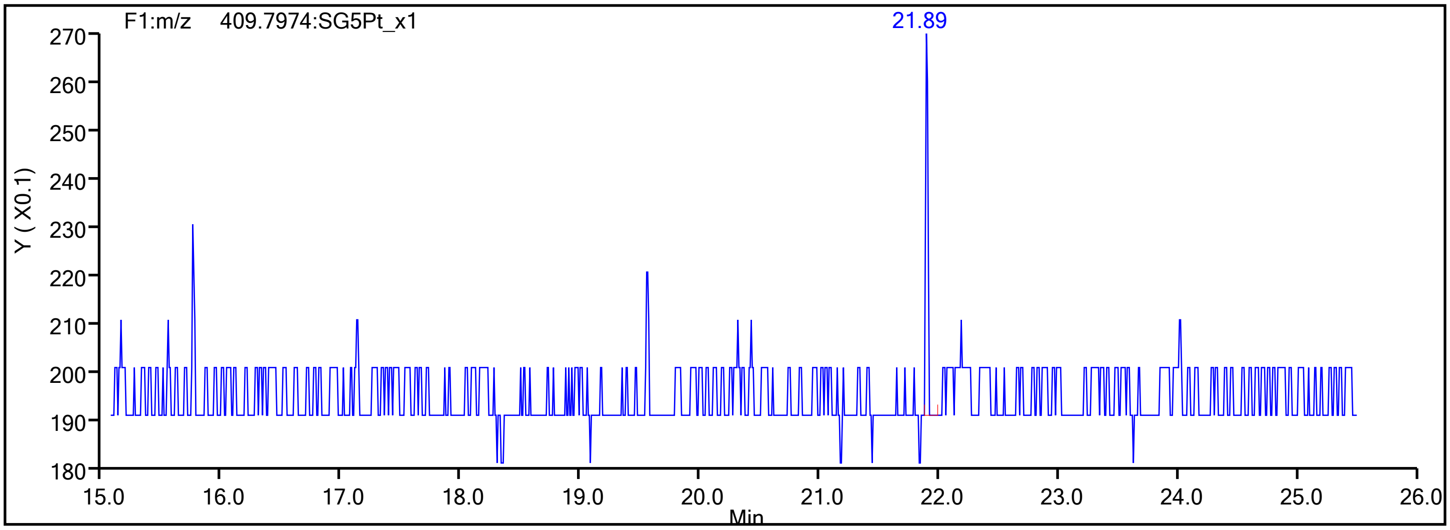

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798 Sample Line#: 21
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

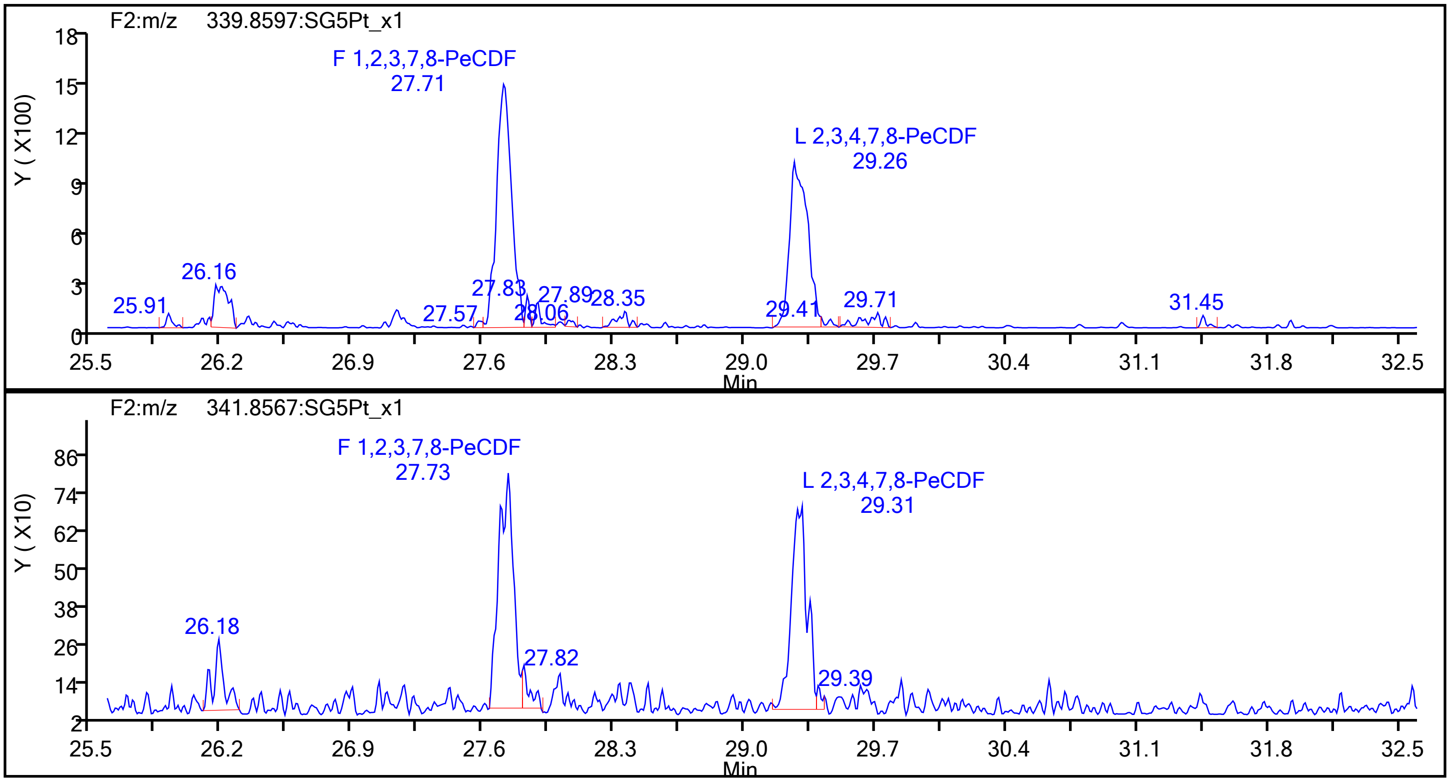

PeCDF Standards

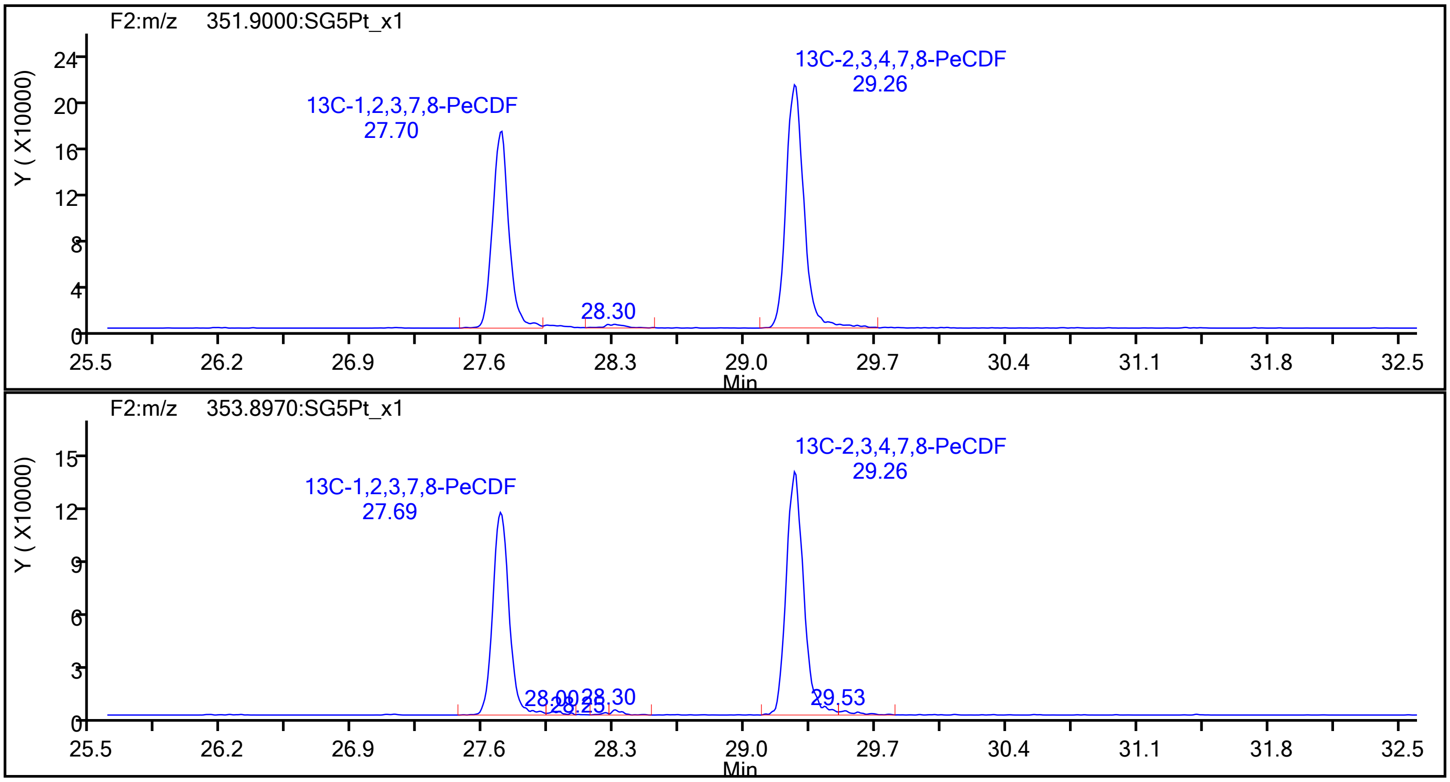

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d

Injection Date: 28-Jul-2020 09:13:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-1

Worklist#: 398798 Sample Line#: 21

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

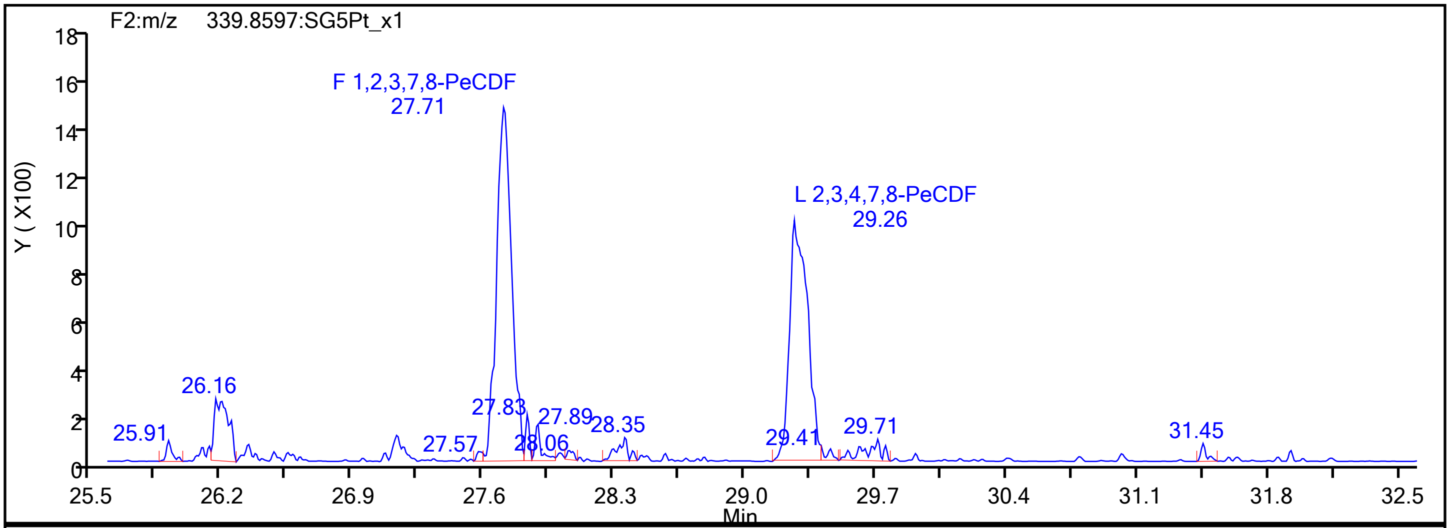

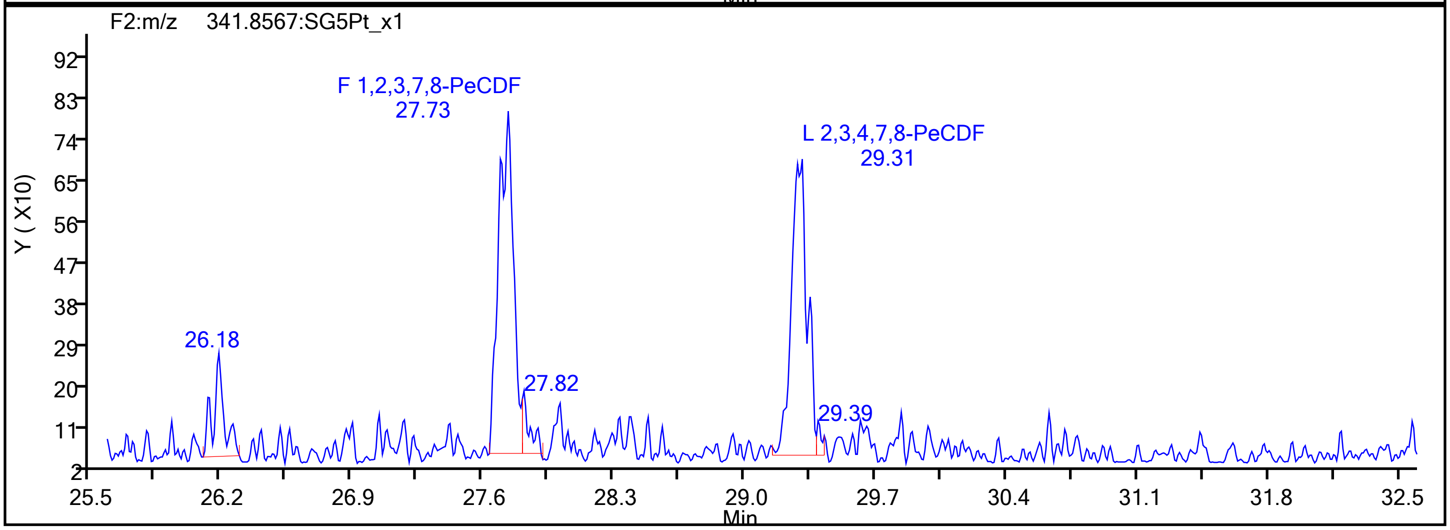

PeCDF Interference Mass

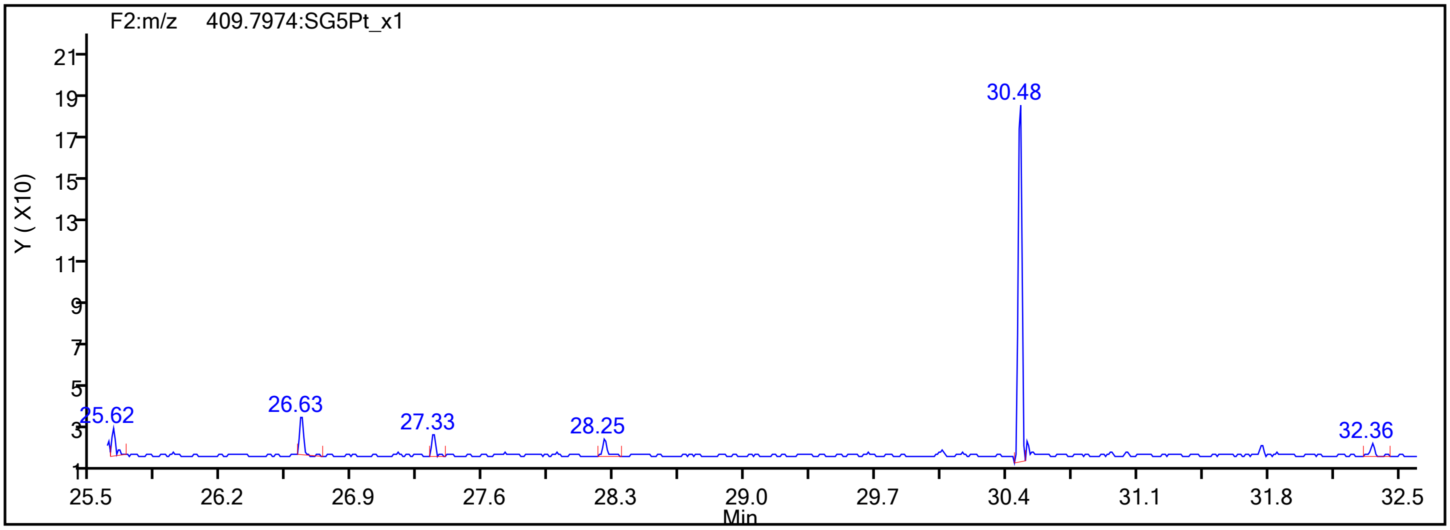

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

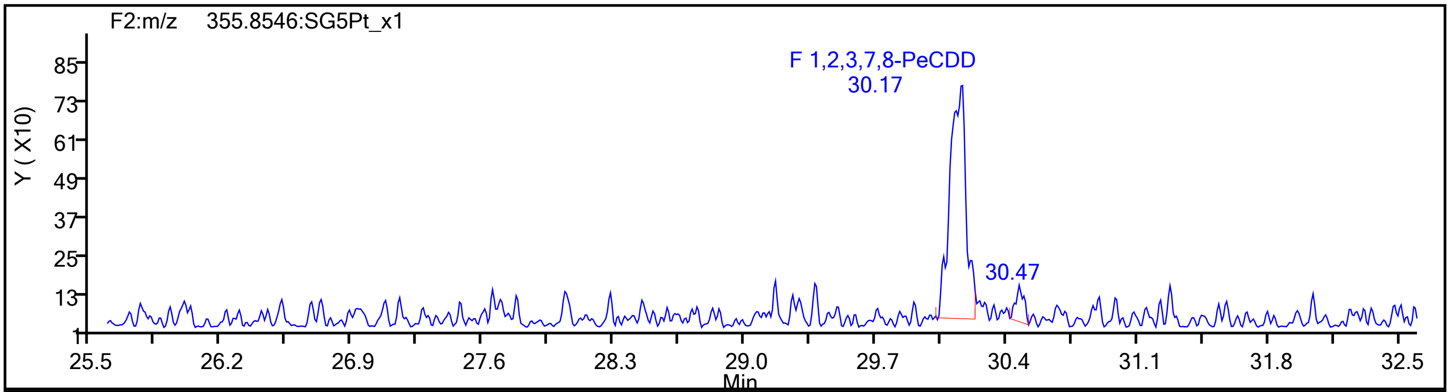

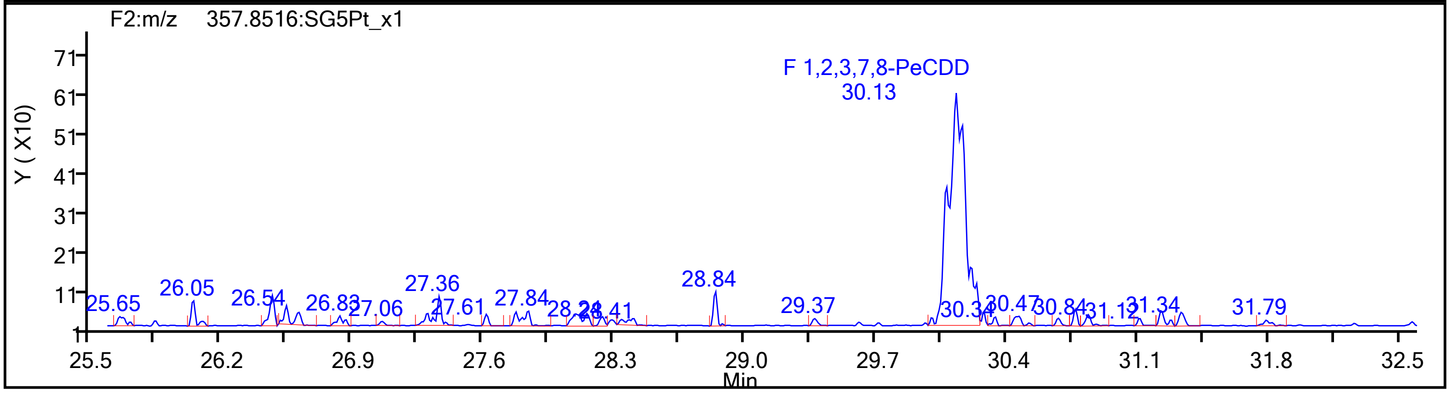

PeCDD Standards

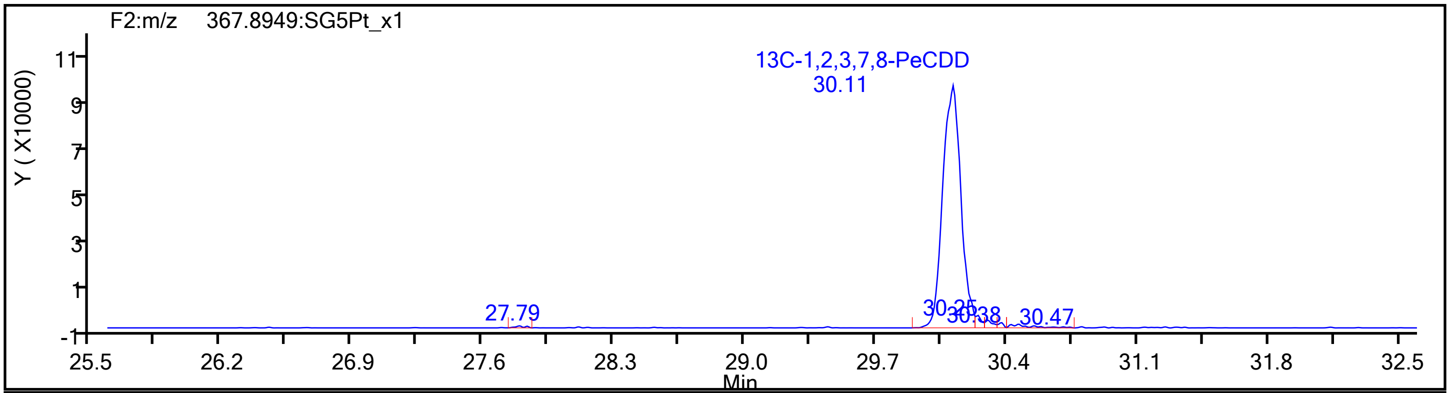

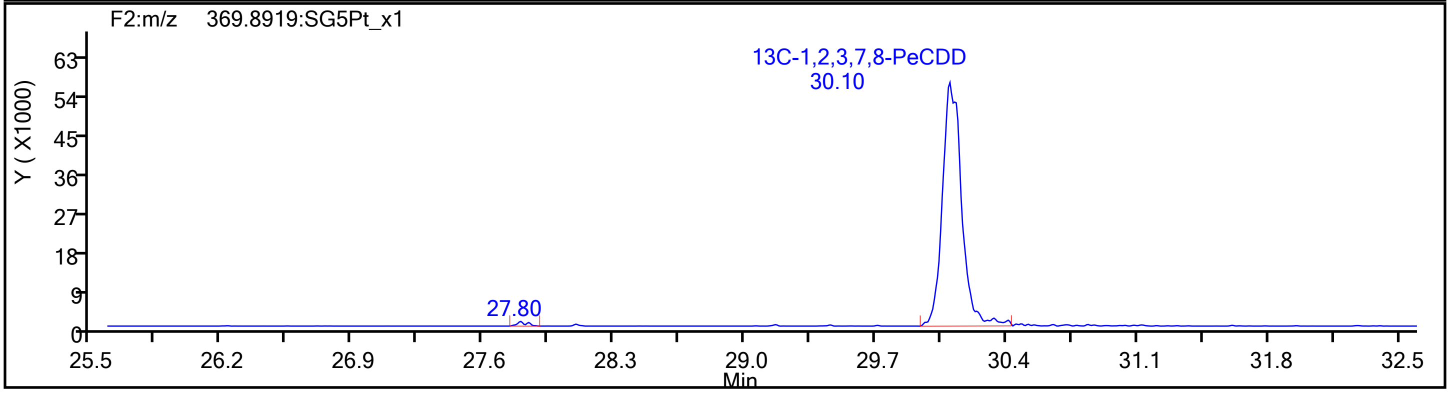

Report Date: 30-Jul-2020 09:58:03 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

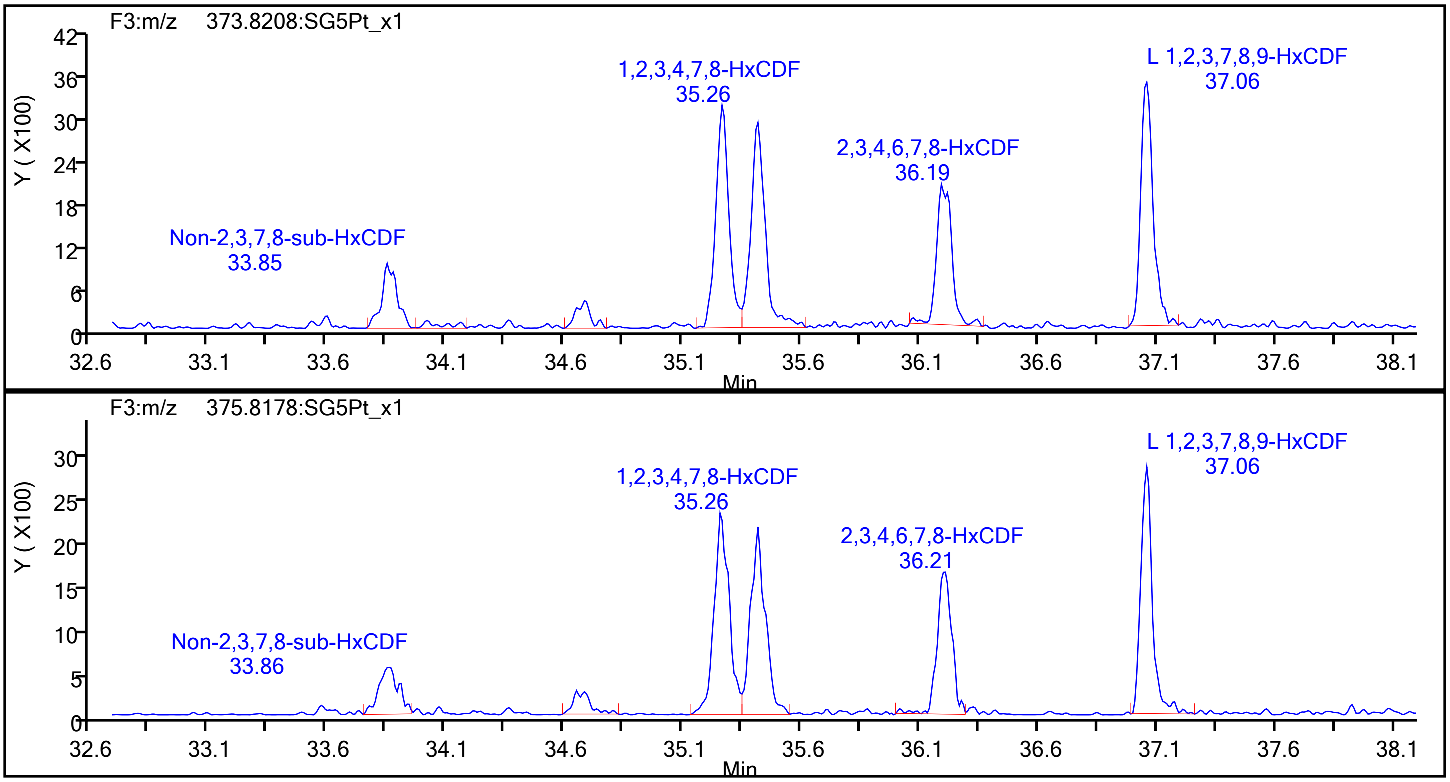

HxCDF Standards

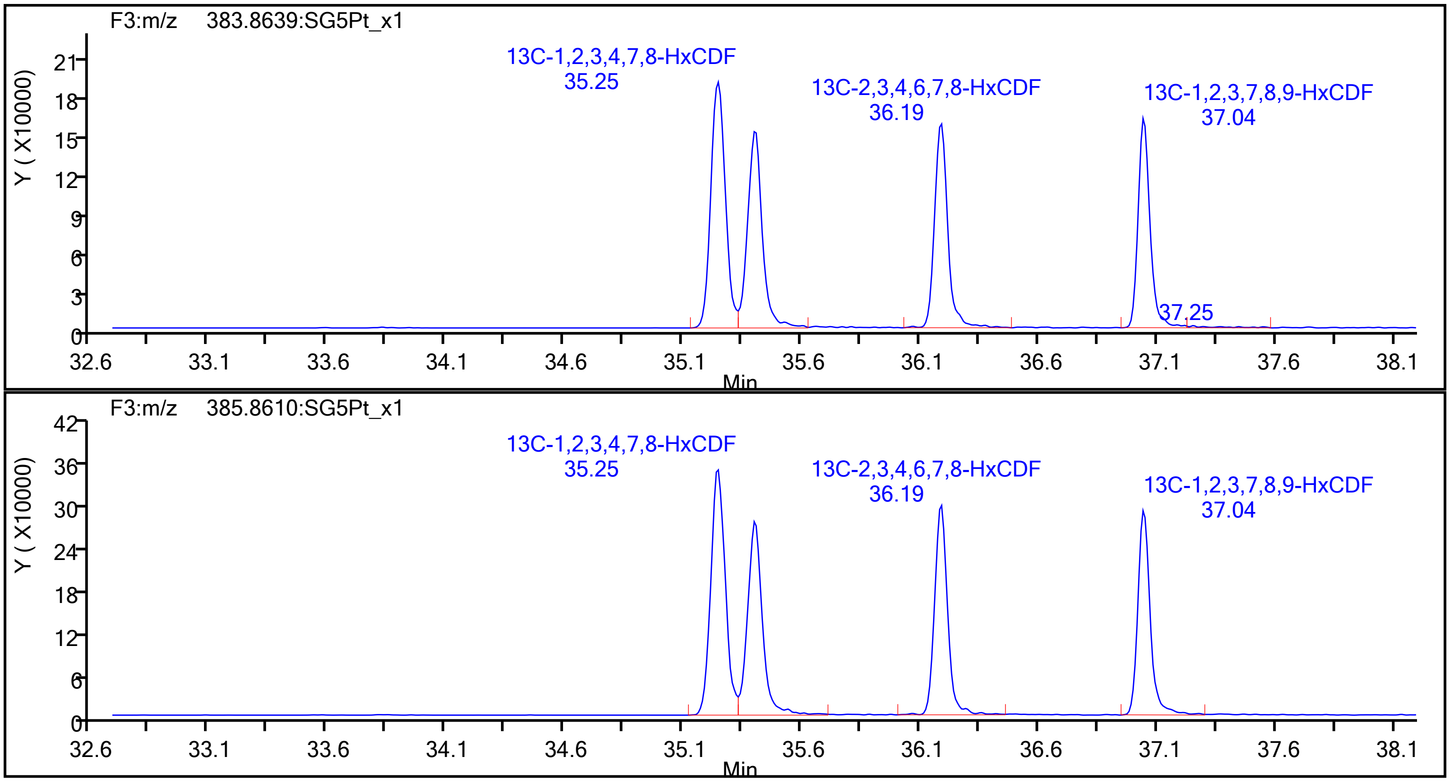

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d

Injection Date: 28-Jul-2020 09:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

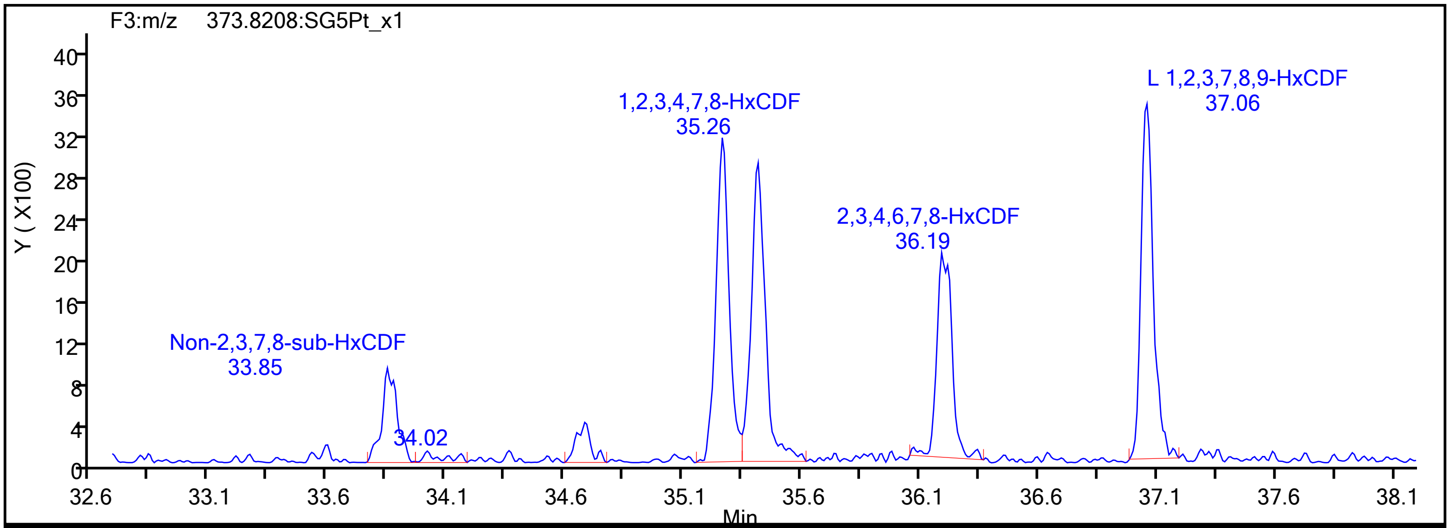

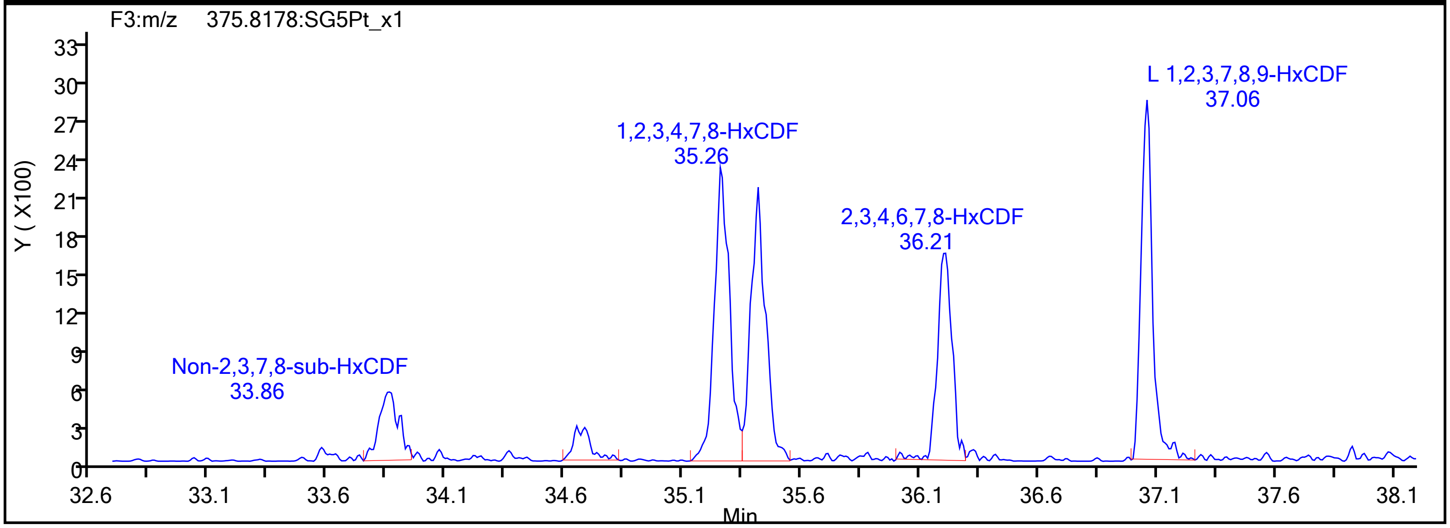

HxCDF Interference Mass

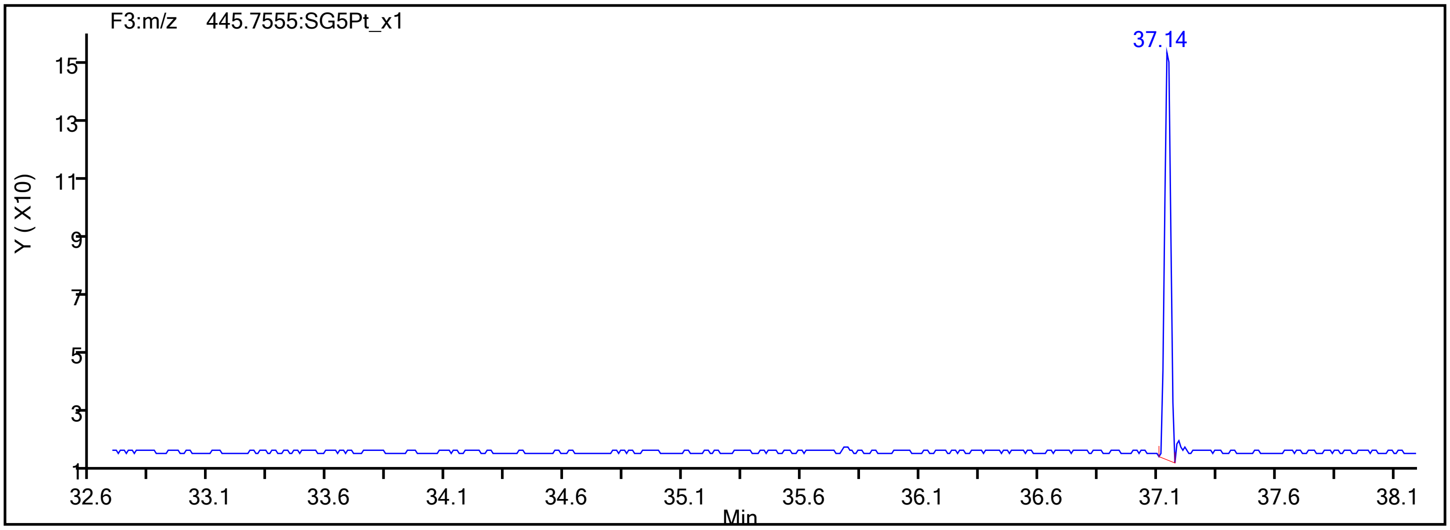

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

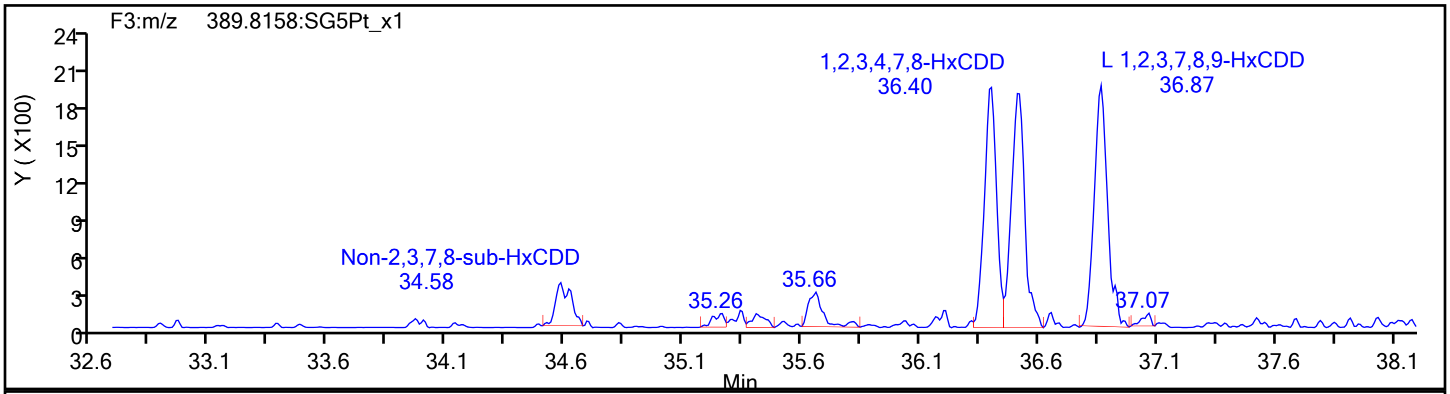

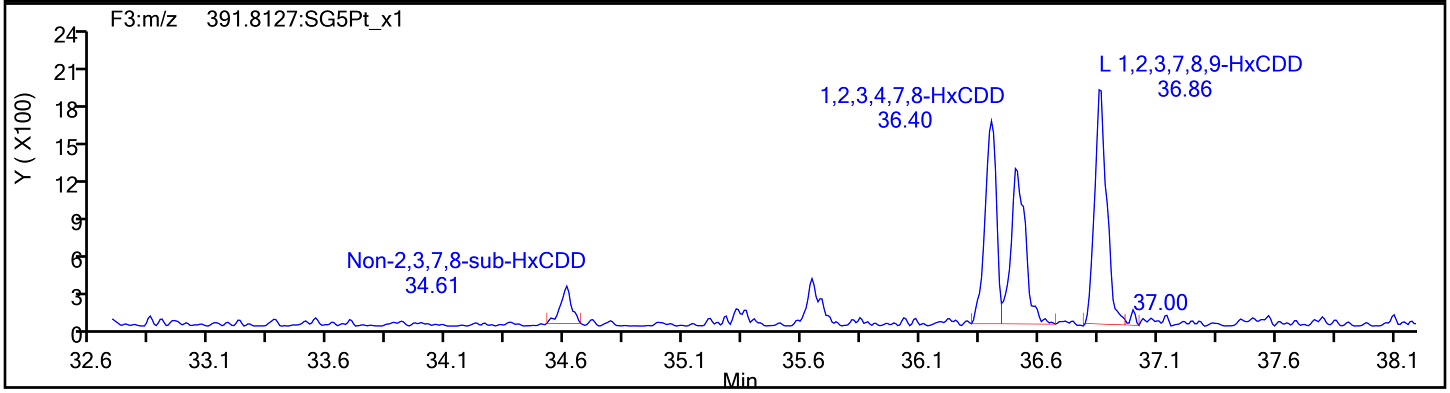

HxCDD Standards

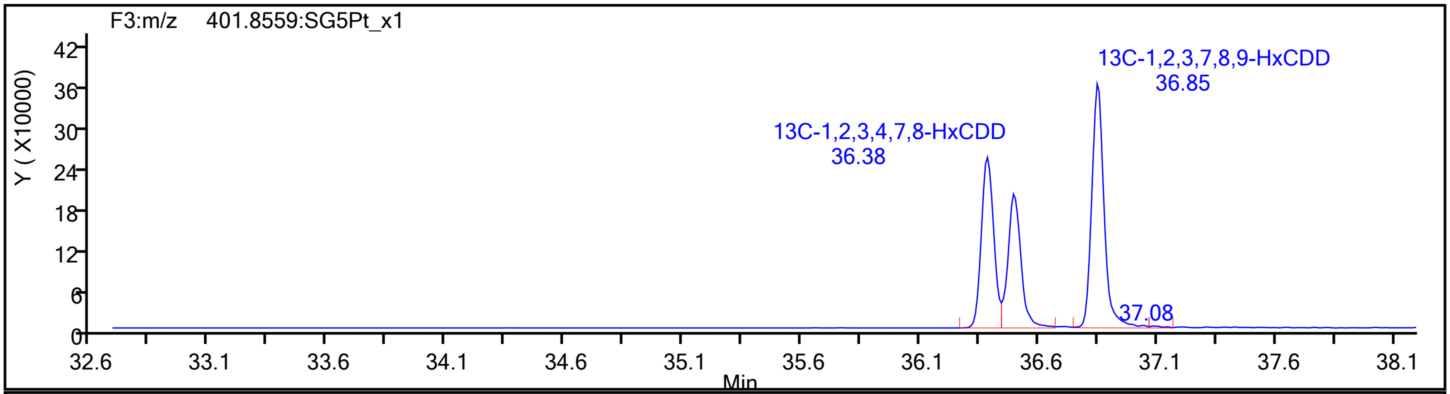

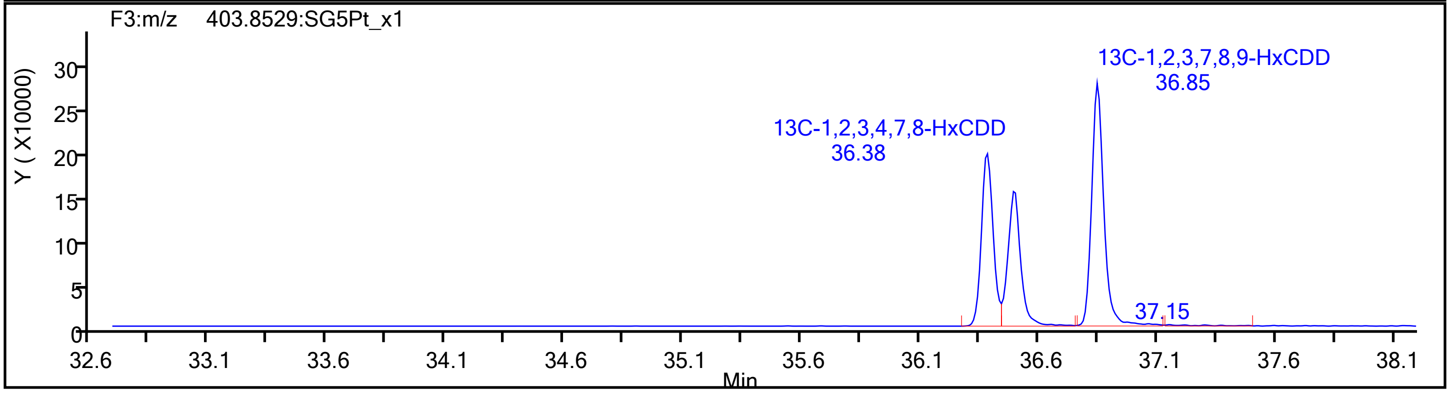

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

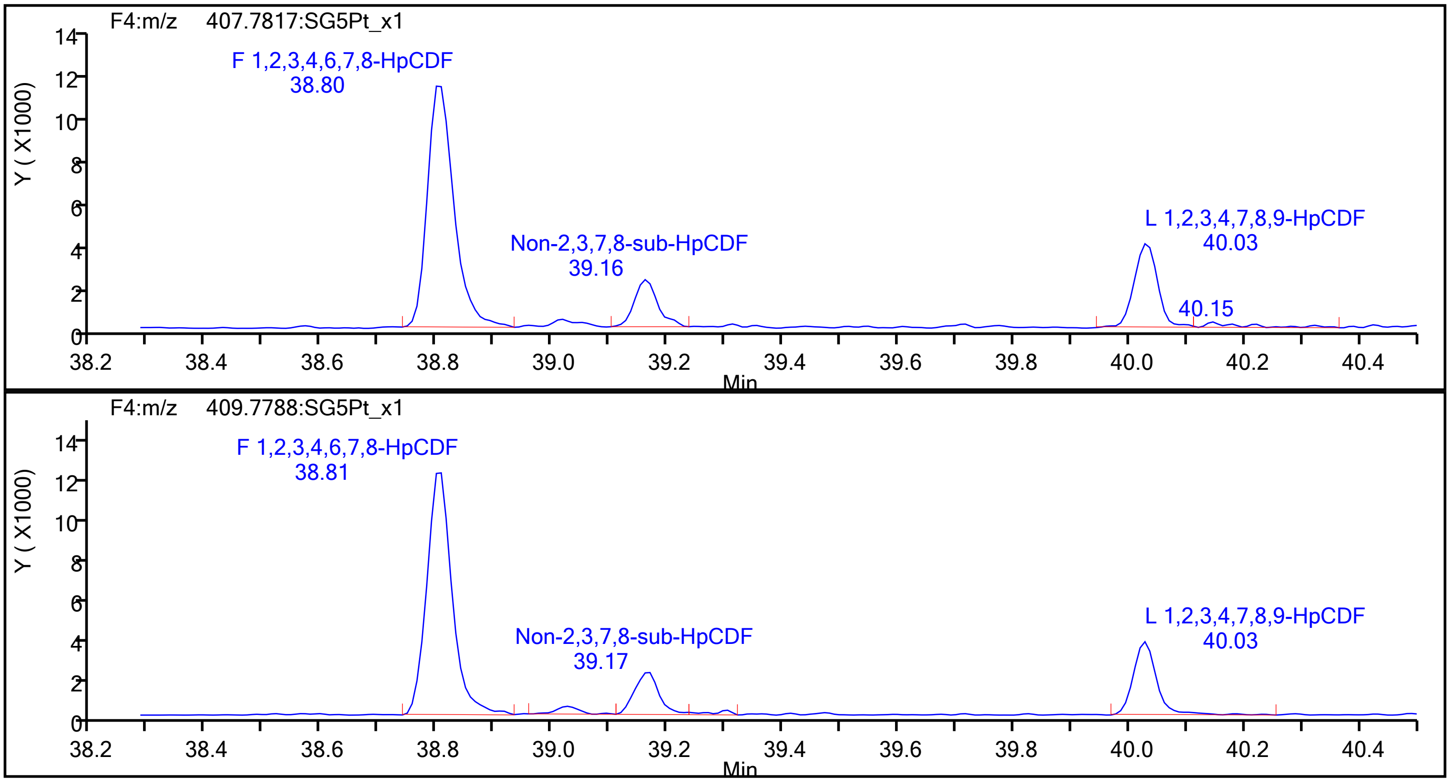

HpCDF Standards

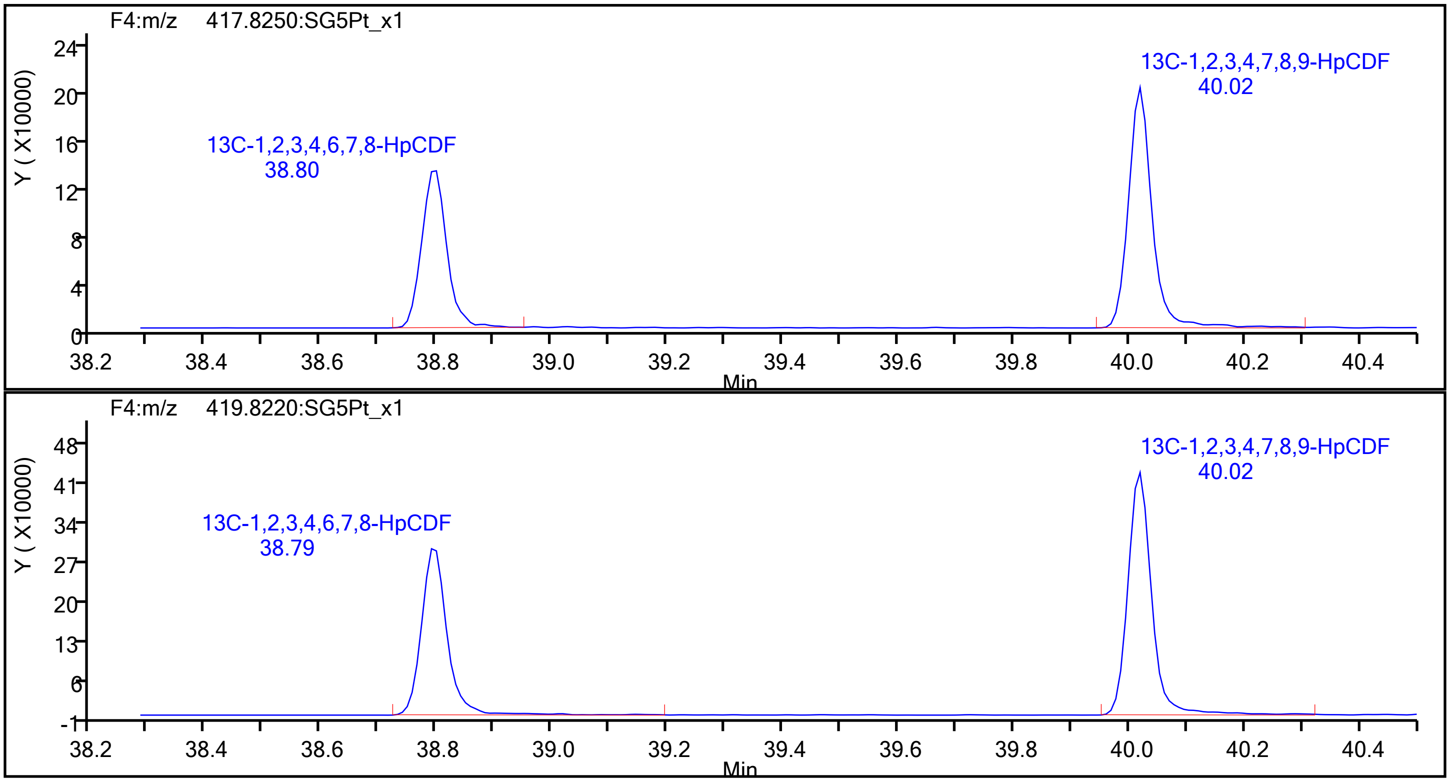

Report Date: 30-Jul-2020 09:58:04
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

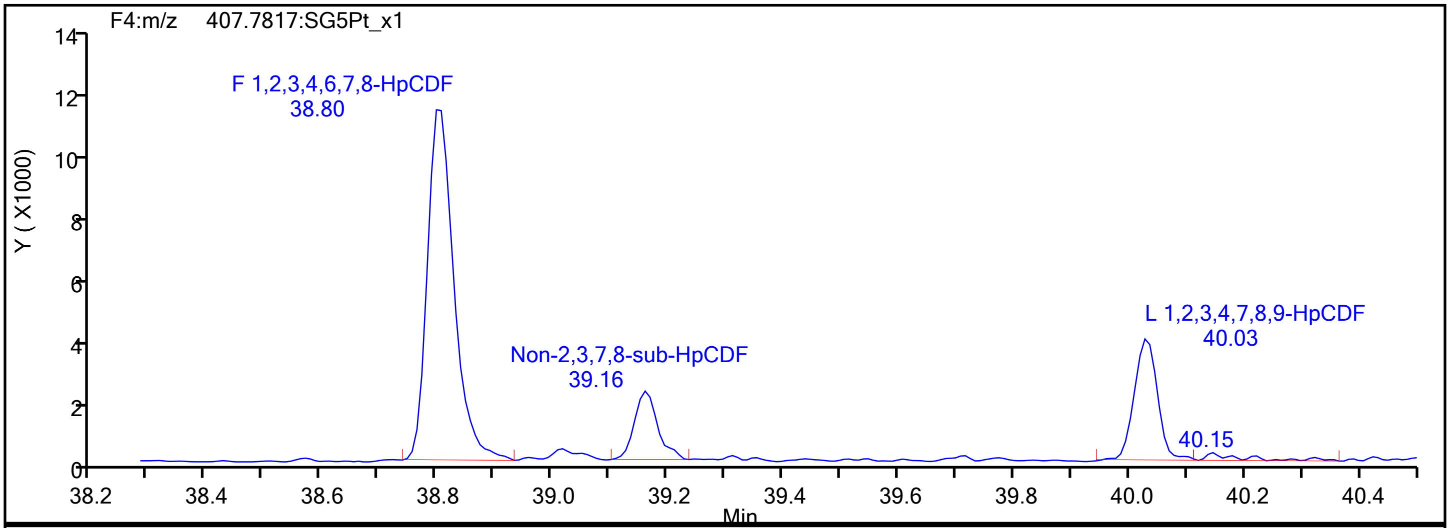

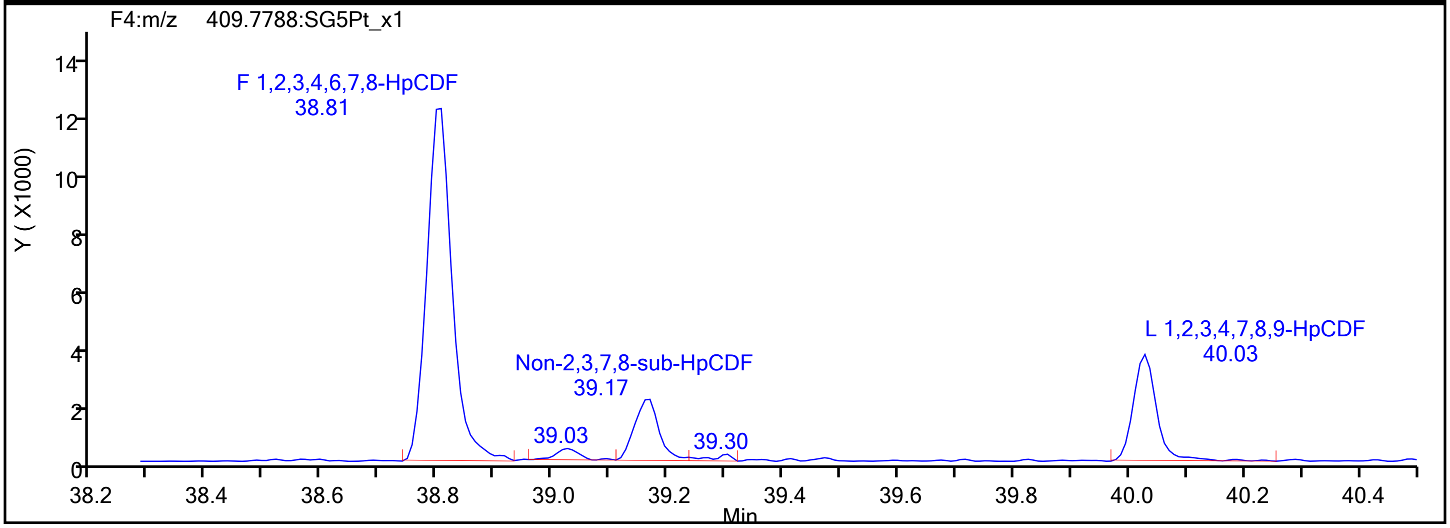

HpCDF Interference Mass

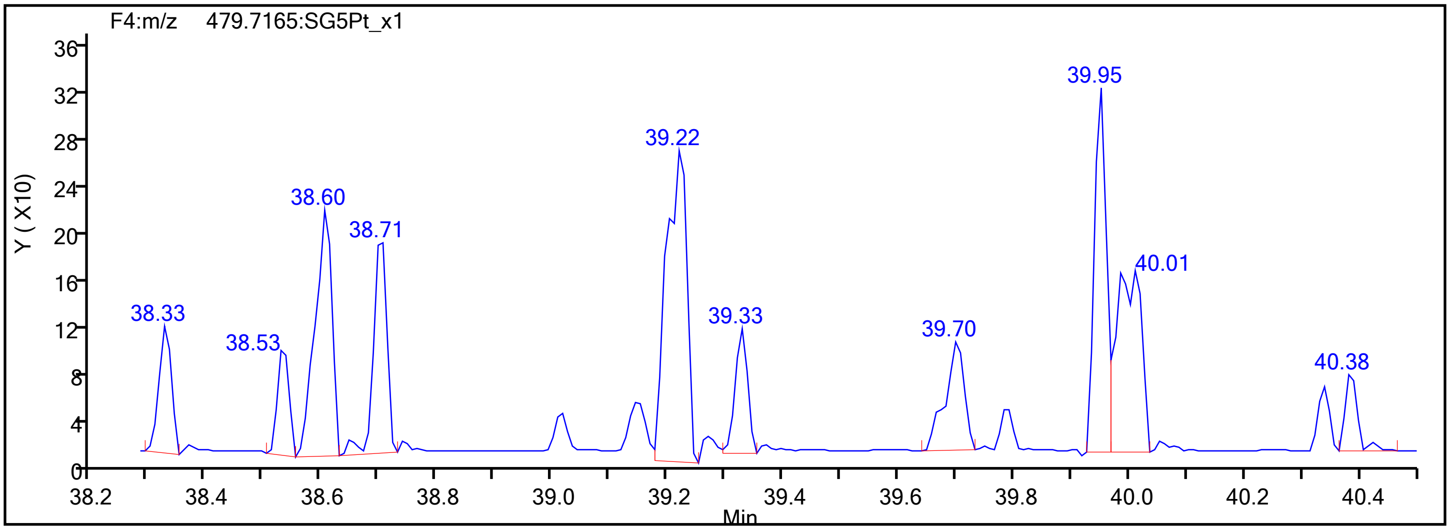

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

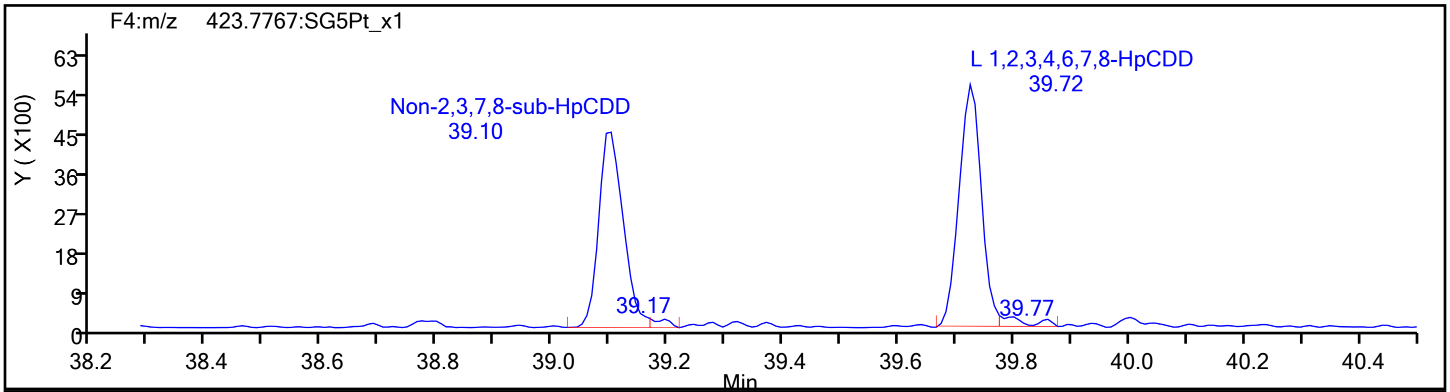

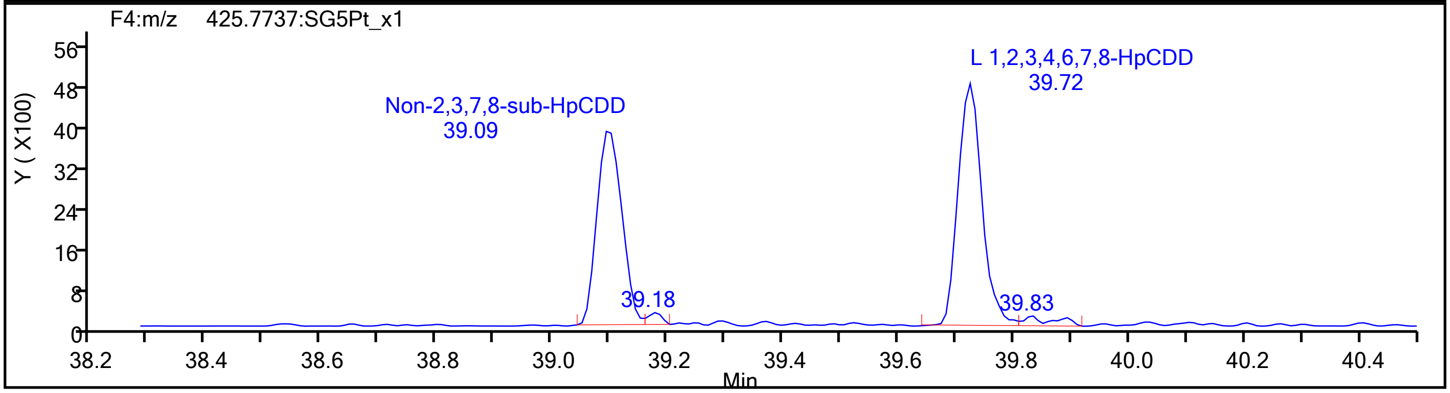

HpCDD Standards

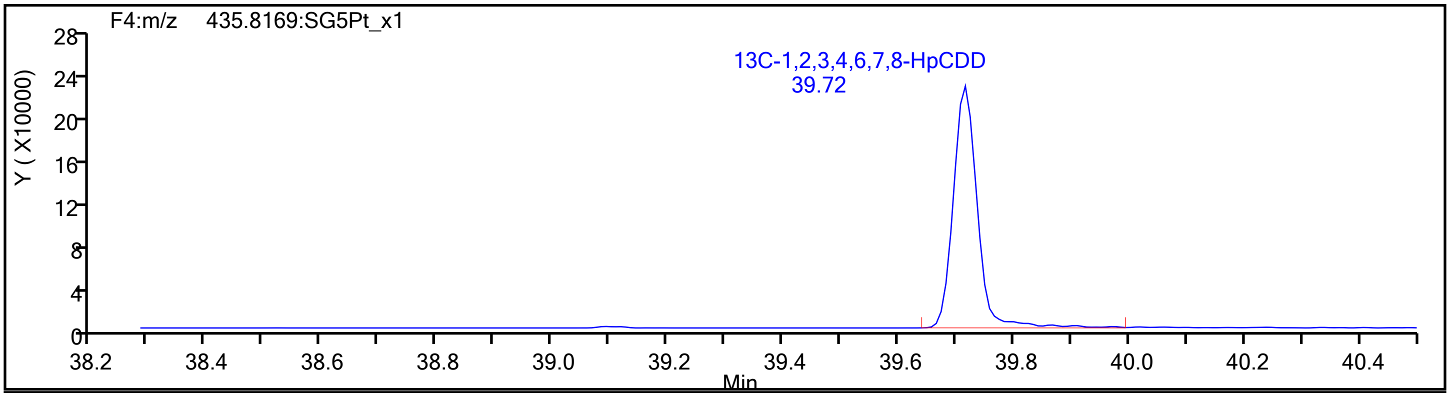

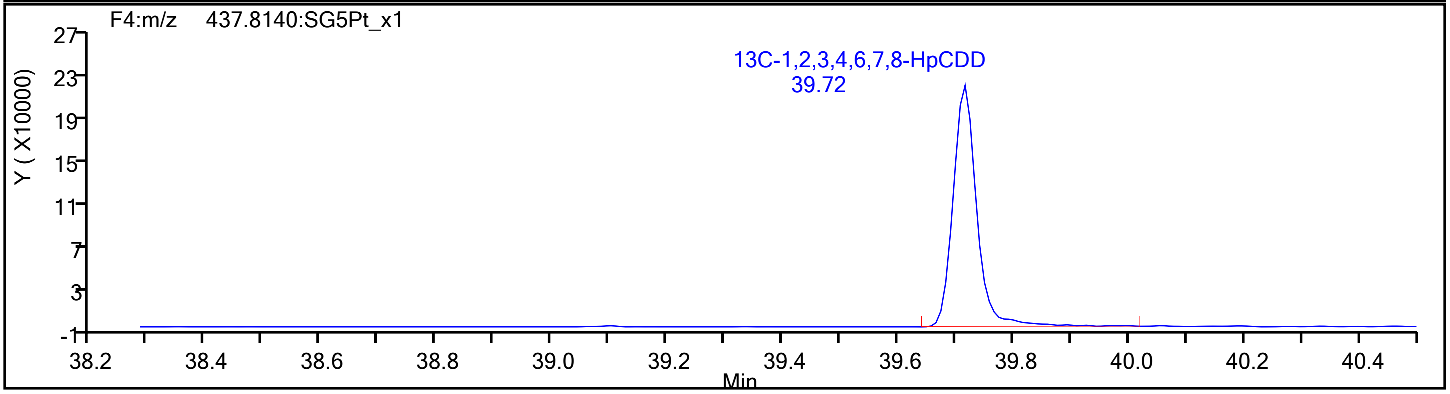

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

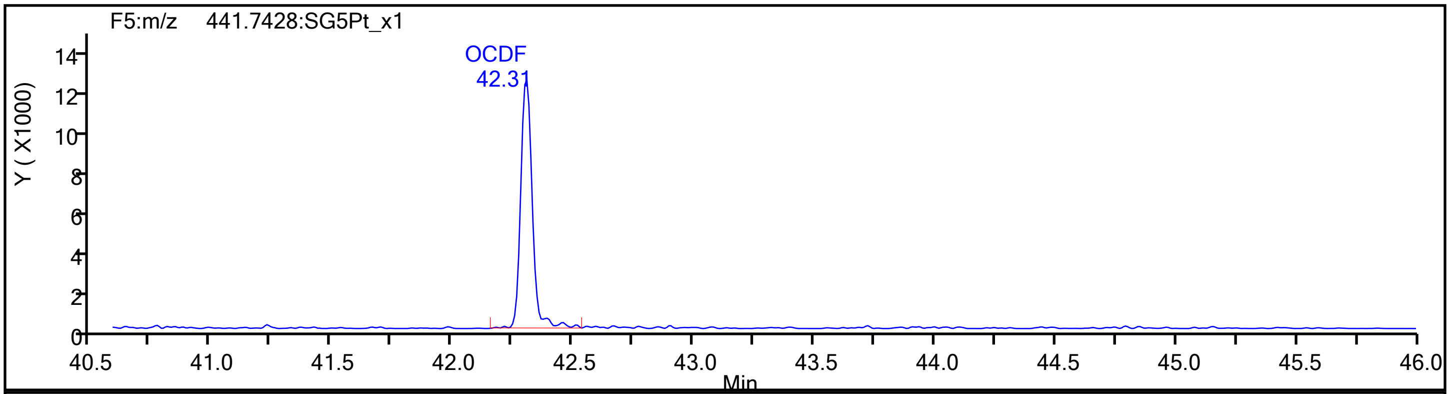

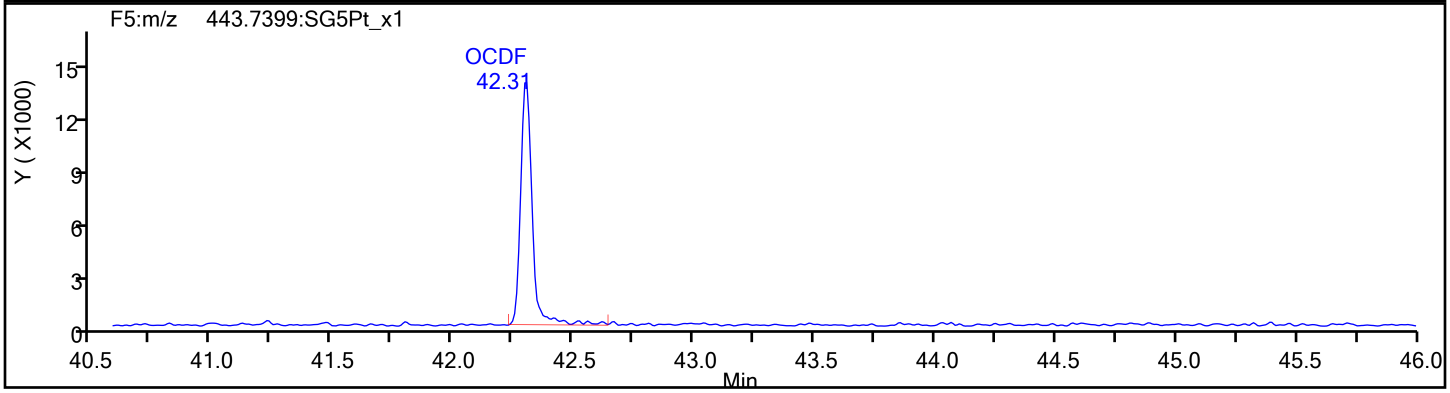

OCDF Standards

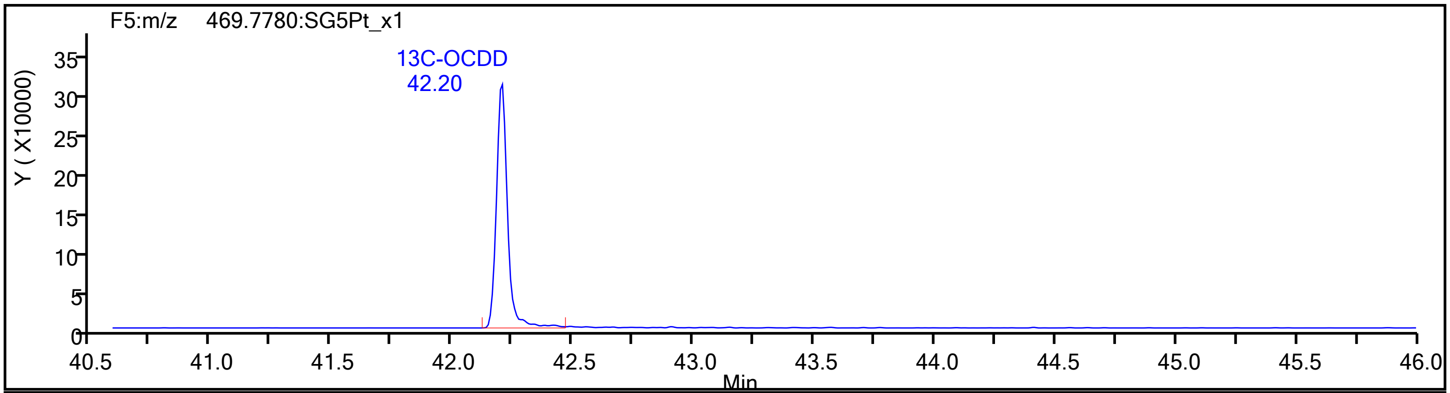

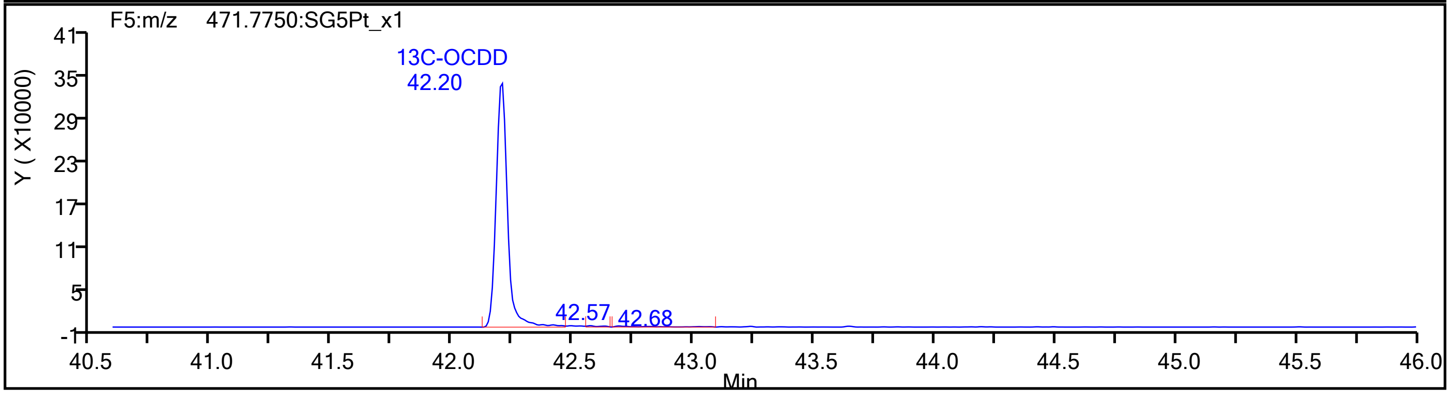

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

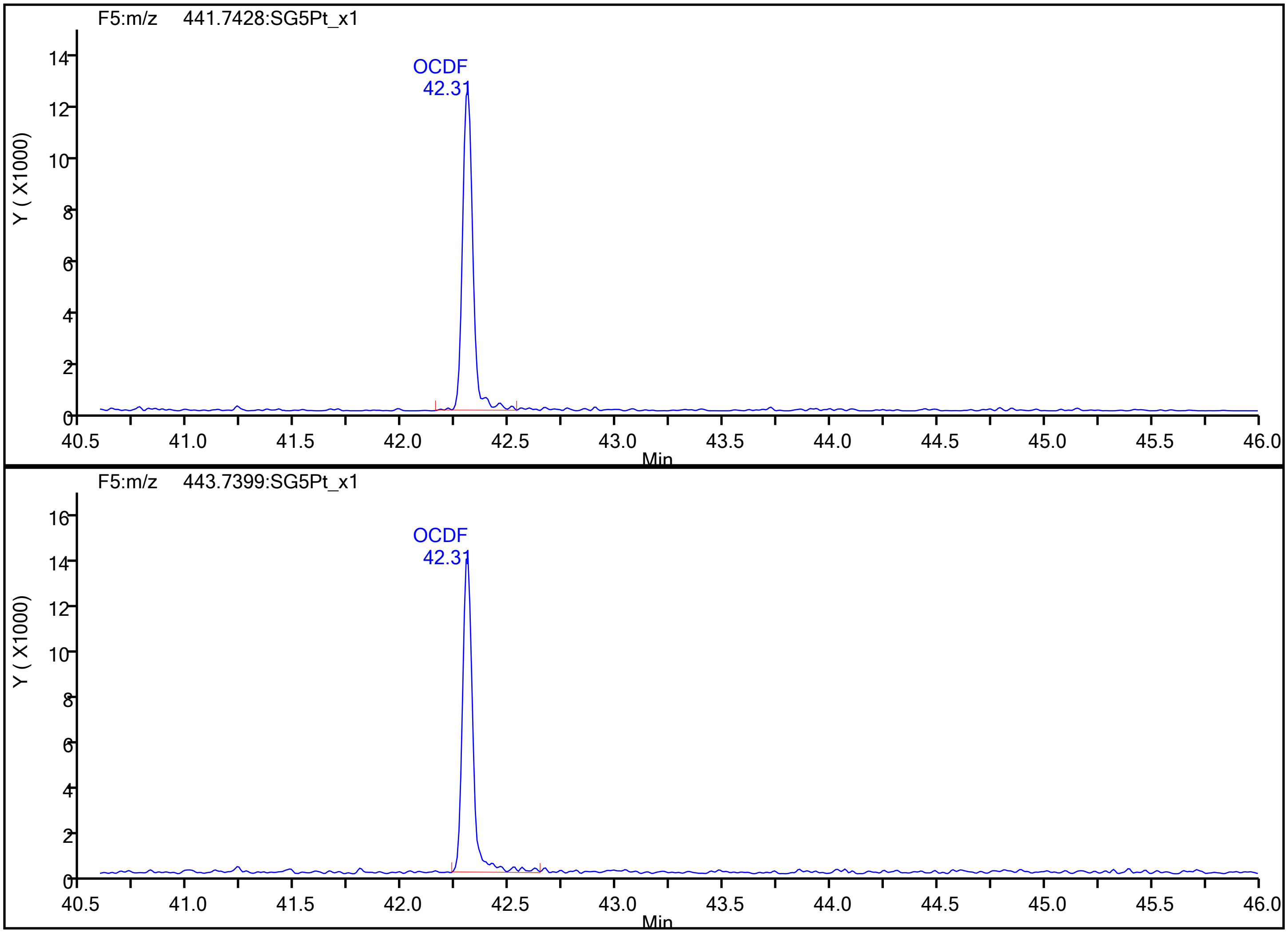

OCDF Interference Mass

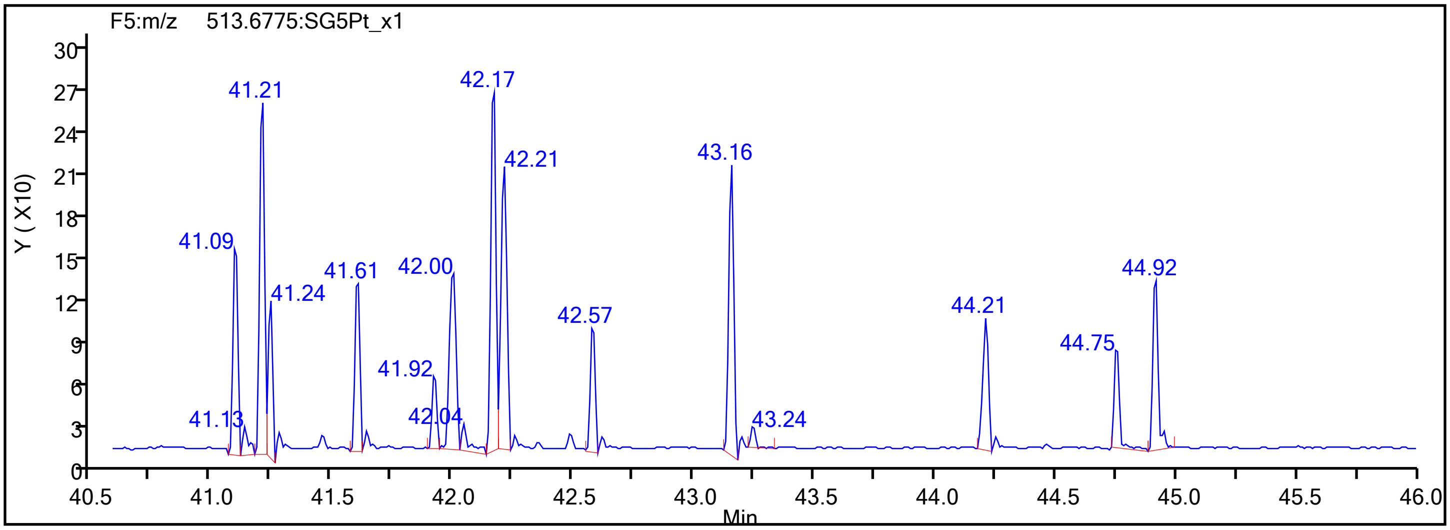

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d		
Injection Date:	28-Jul-2020 09:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	398798	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

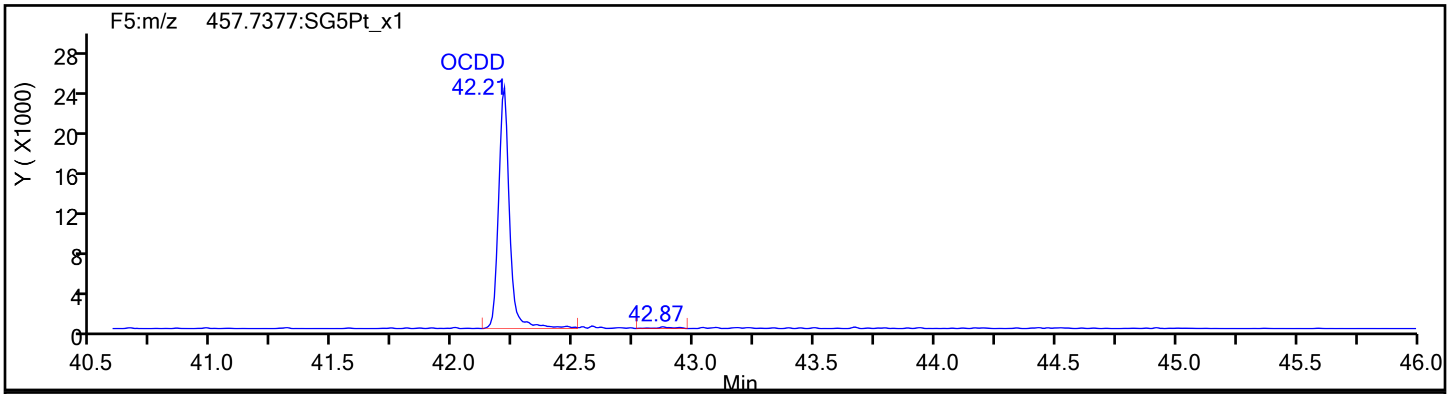

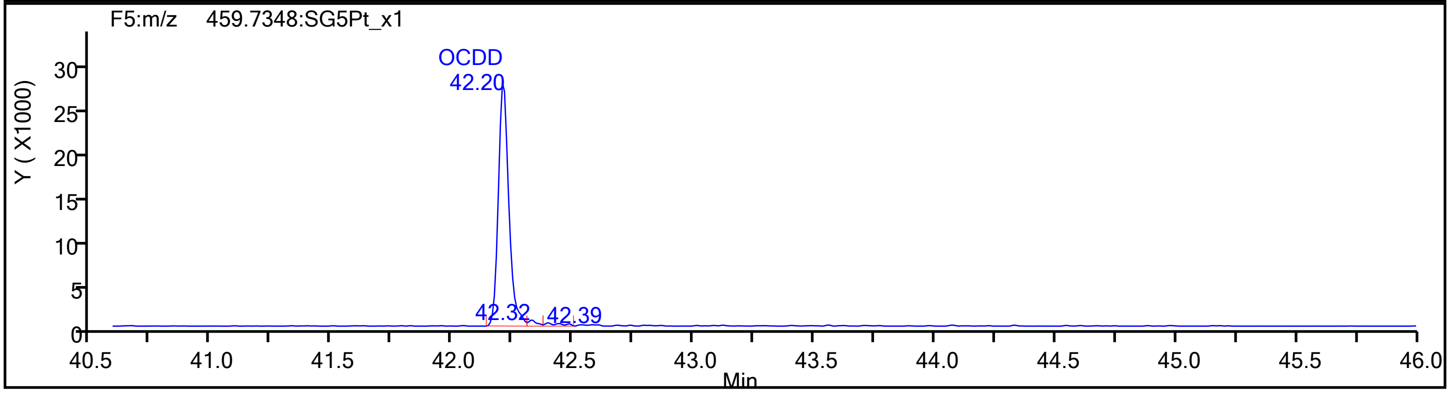

OCDD Standards

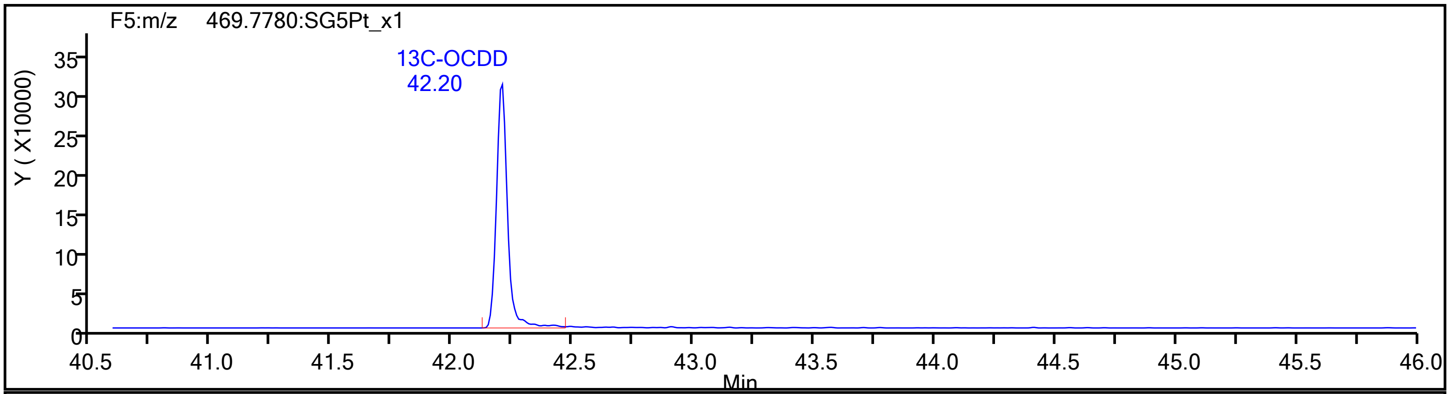

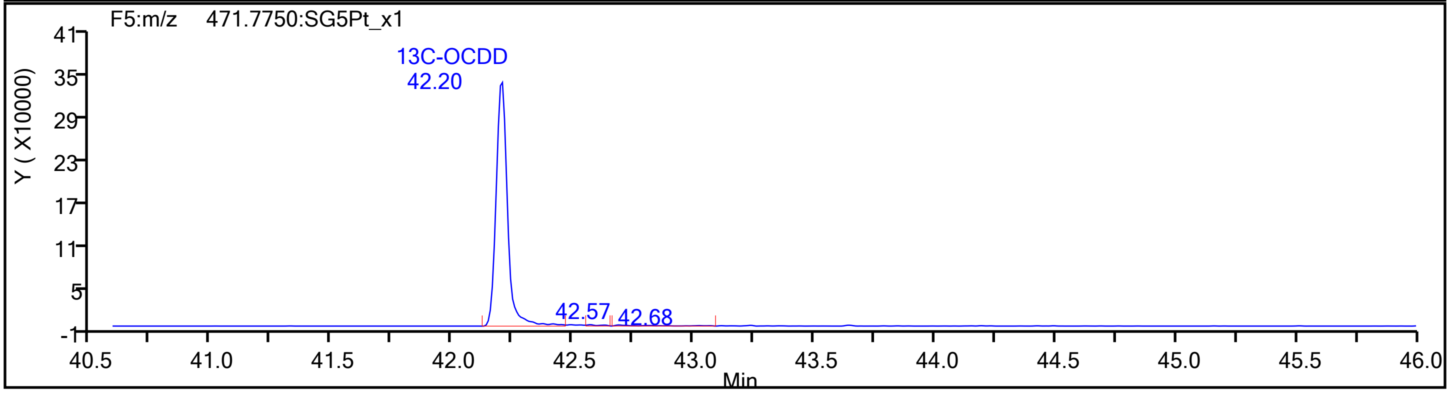

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d
Injection Date: 28-Jul-2020 09:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

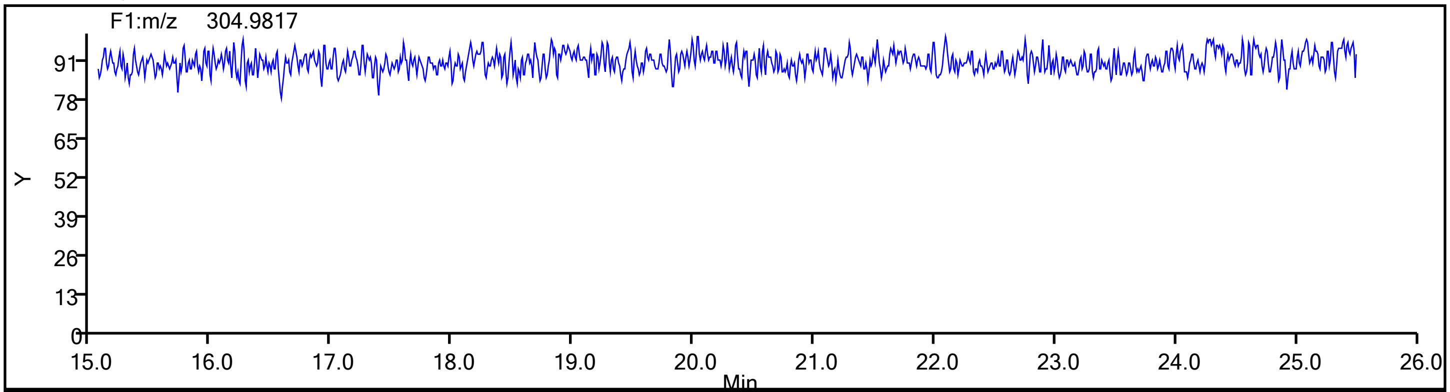

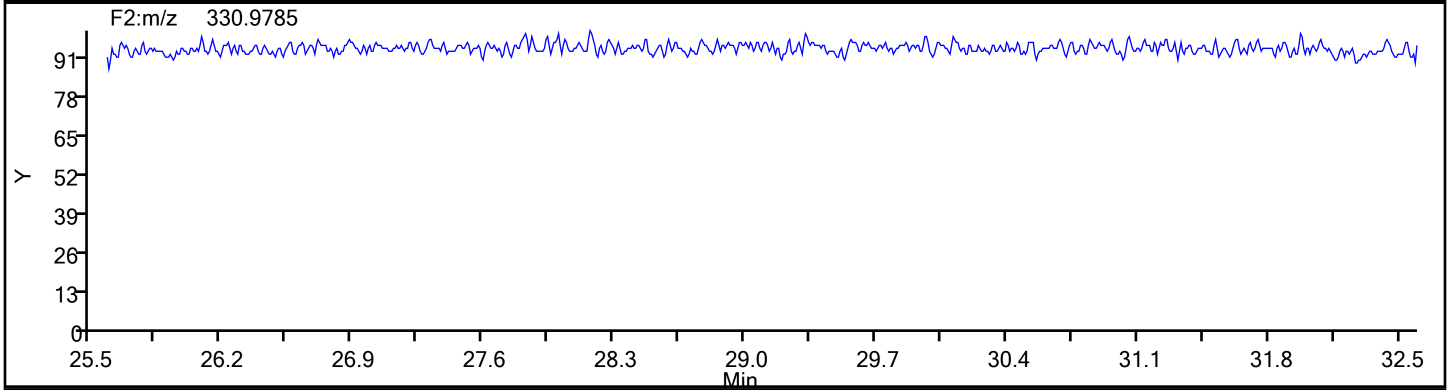

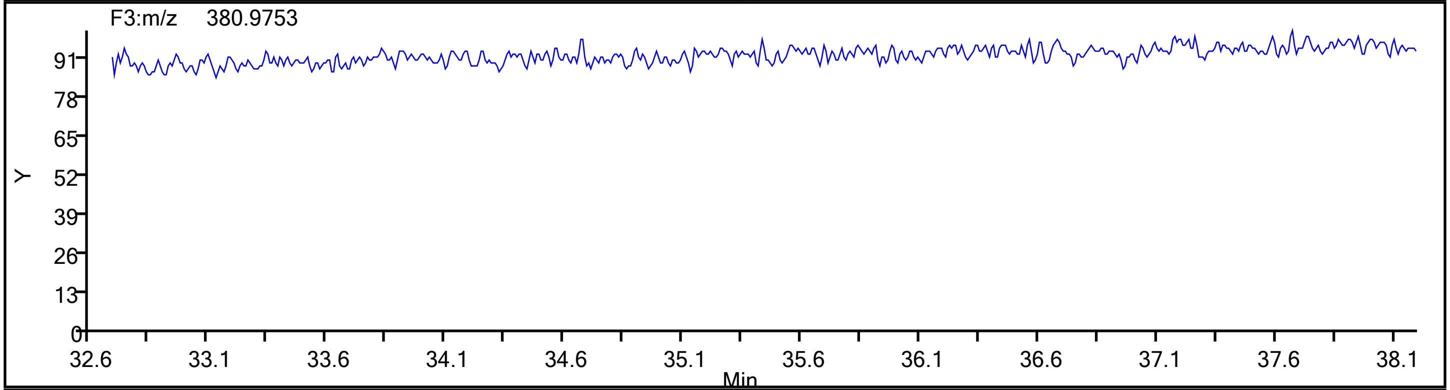

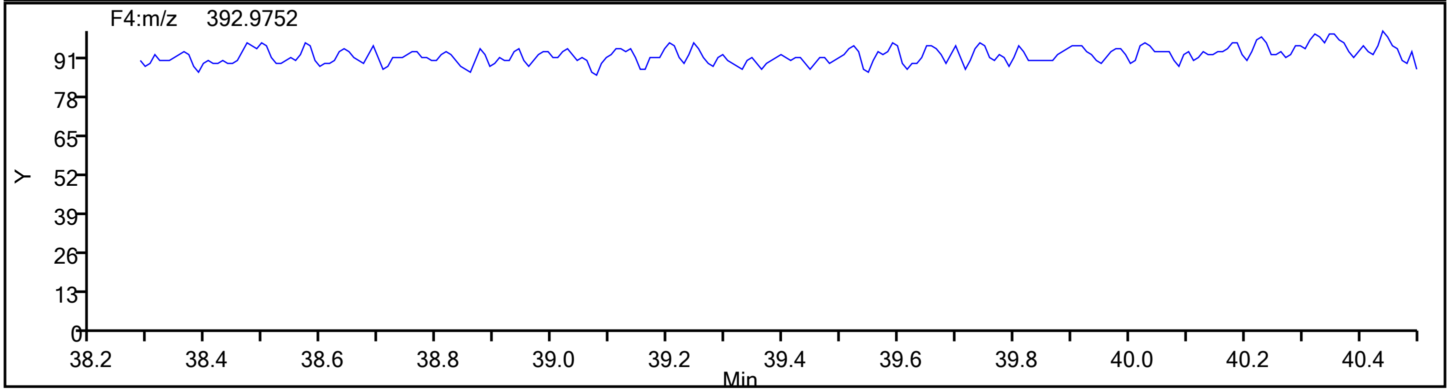

Report Date: 30-Jul-2020 09:58:04 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_23.d

Injection Date: 28-Jul-2020 09:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 398798
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

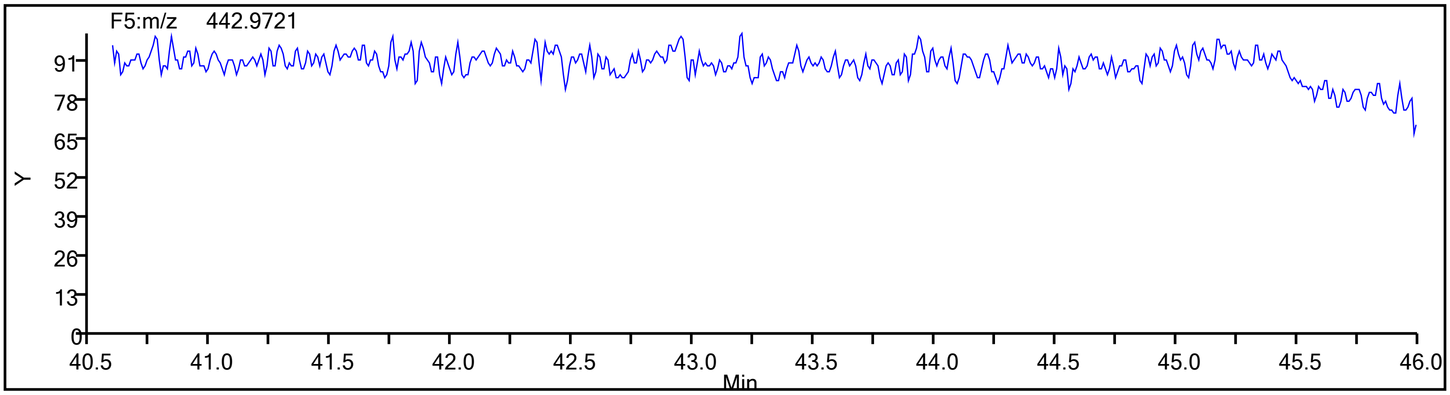

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Client Sample ID: 11215702-Treatment-1 RA Lab Sample ID: 320-62886-3 RA

Matrix: Water Lab File ID: 29JL2011D2_008.d

Analysis Method: 1613B Date Collected: 07/20/2020 13:00

Extract. Method: 1613B Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1062.5(mL) Date Analyzed: 07/29/2020 15:21

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 399540 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	24		9.4	0.98

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		25-164
89059-46-1	13C-2,3,7,8-TCDF	55		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d				
Lims ID:	320-62886-A-3-A				
Client ID:	11215702-Treatment-1				
Sample Type:	Client				
Inject. Date:	29-Jul-2020 15:21:28	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-62886-A-3-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	30-Jul-2020 13:21:35	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1059

First Level Reviewer: messecara Date: 29-Jul-2020 21:52:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.767	106200723	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.960	92461197	0.79	1.5708	55.4	55.4	0.2407	0.2407	55.43	
2,3,7,8-TCDF	16.988	1173185	0.80	0.9943	1.276	1.276	0.0522	0.0522		M
D 13C-2,3,7,8-TCDD	15.520	62341201	0.78	0.9834	59.7	59.7	0.2733	0.2733	59.69	
2,3,7,8-TCDD	15.533	472245	0.71	1.2822	0.5908	0.5908	0.0750	0.0750		M
$ 37Cl4-2,3,7,8-TCDD	15.547	42757467		0.9945	40.5	40.5	0.0608	0.0608	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d
Lims ID: 320-62886-A-3-A
Client ID: 11215702-Treatment-1
Sample Type: Client
Inject. Date: 29-Jul-2020 15:21:28 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-3-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 13:21:35 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1059

First Level Reviewer: messecara Date: 29-Jul-2020 21:52:06

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.767	15.762	0		47562616	9891962	14726	36815	672		
333.9339	15.767	15.762	0		58638107	12624449	9480	23700	1332	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.960	16.986	-1	1.076	40858818	7498211	19802	49505	379		
317.9389	16.960	16.986	-1	1.076	51602379	9807798	14258	35645	688	0.79(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.988	16.985	0	1.002	520090	95509	1300	3250	73		
305.8987	16.988	16.985	0	1.002	653095	126289	2293	5732	55	0.80(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	15.520	15.544	-1	0.984	27291646	5705832	14726	36815	387		
333.9339	15.520	15.544	-1	0.984	35049555	7363031	9480	23700	777	0.78(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	15.533	15.558	-1	1.001	195336	37427	3167	7917	12		M
321.8936	15.547	15.558	0	1.002	276909	63772	1859	4647	34	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.547	15.544	0	0.986	42757467	8970022	5449	13622	1646		

QC Flag Legend

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d		
Injection Date:	29-Jul-2020 15:21:28	Instrument ID:	11D2
Lims ID:	320-62886-A-3-A	Lab Sample ID:	320-62886-3
Client ID:	11215702-Treatment-1		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT: 16.99
Area: 565755
Amount: 1.181143
Amount Units: pg/ul

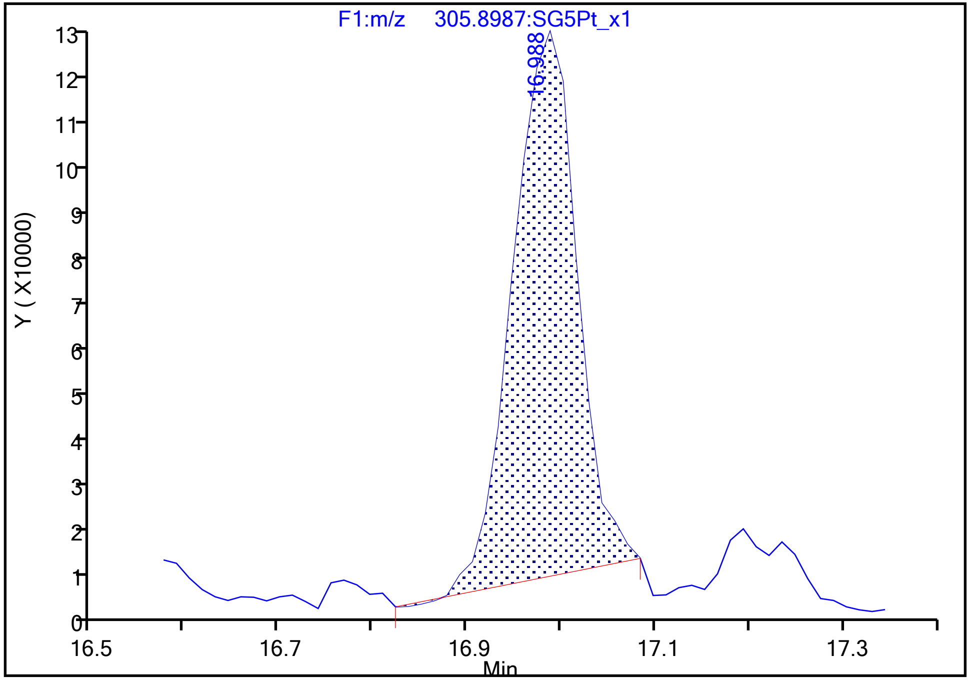

Manual Integration Results

RT: 16.99
Area: 653095
Amount: 1.276148
Amount Units: pg/ul

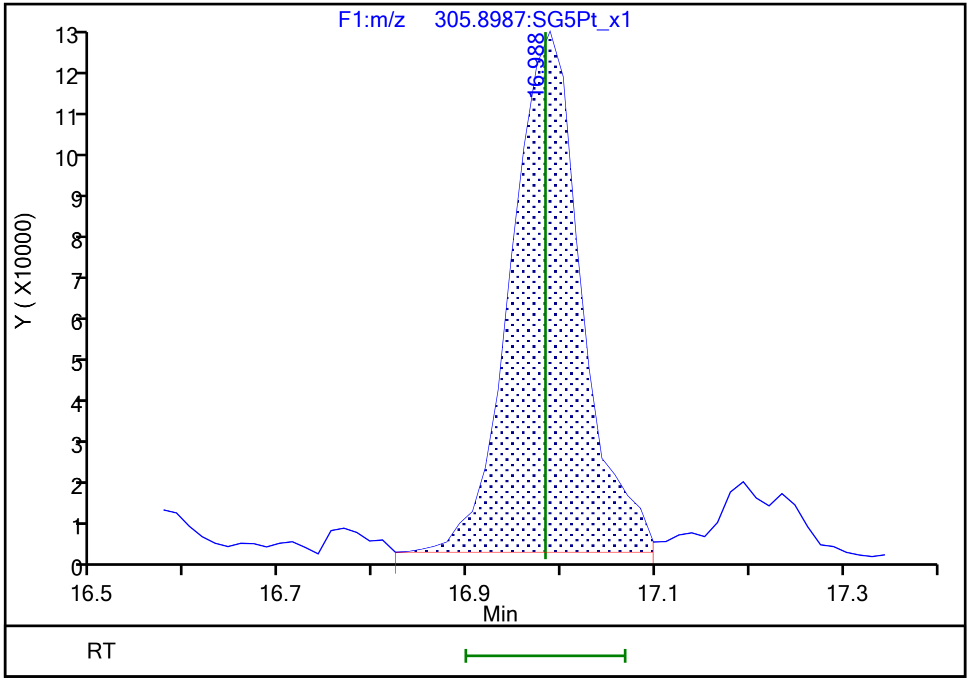

Reviewer: messecara, 29-Jul-2020 21:51:41

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d		
Injection Date:	29-Jul-2020 15:21:28	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	399540	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

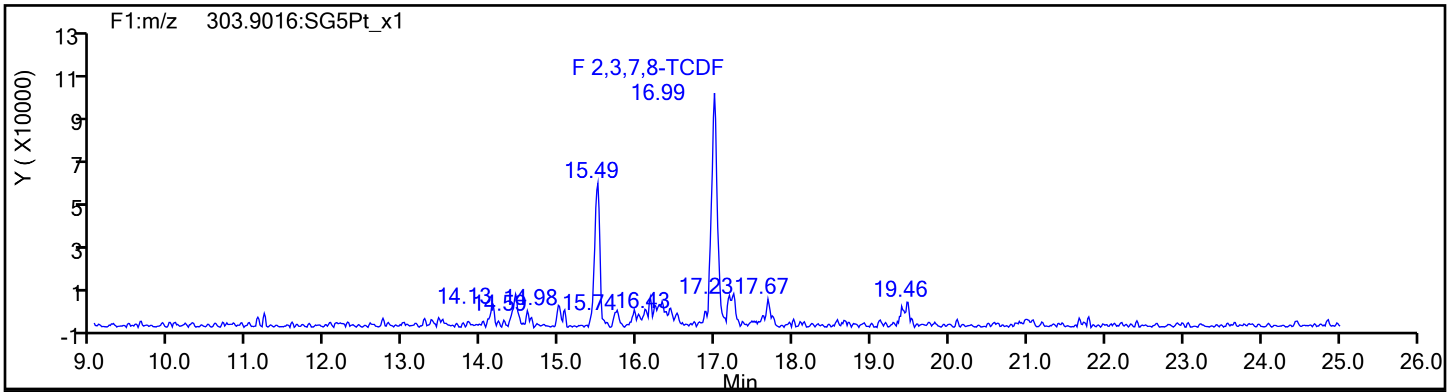

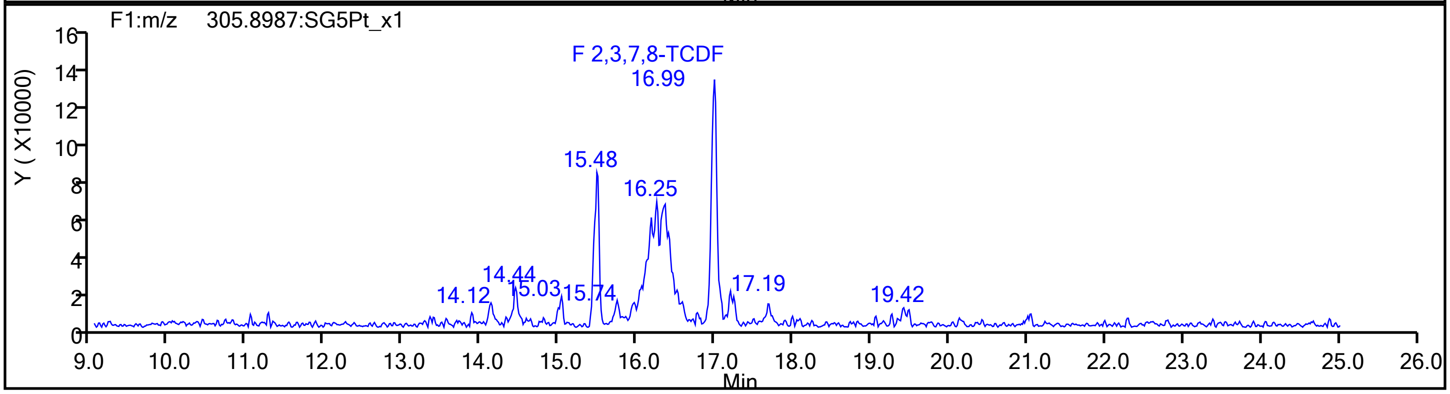

TCDF Standards

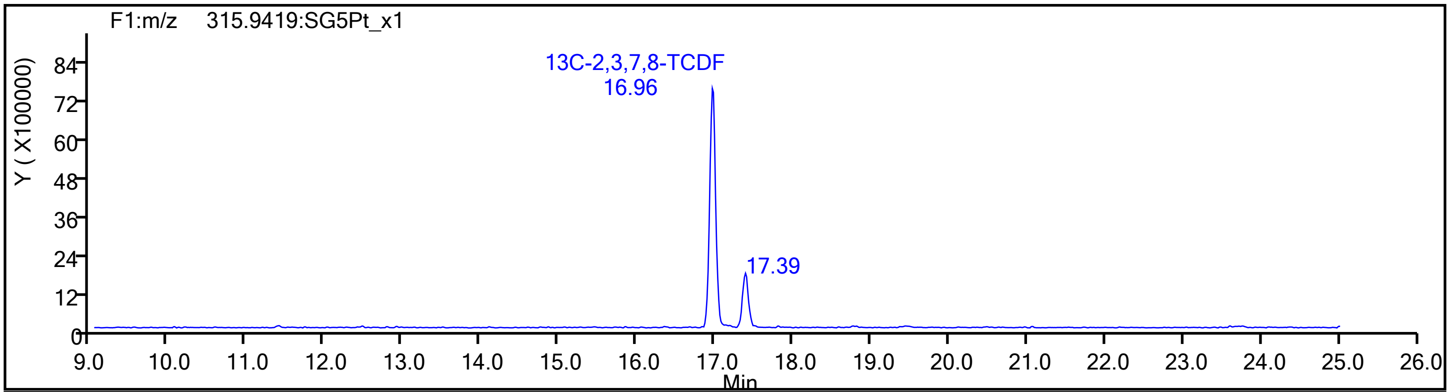

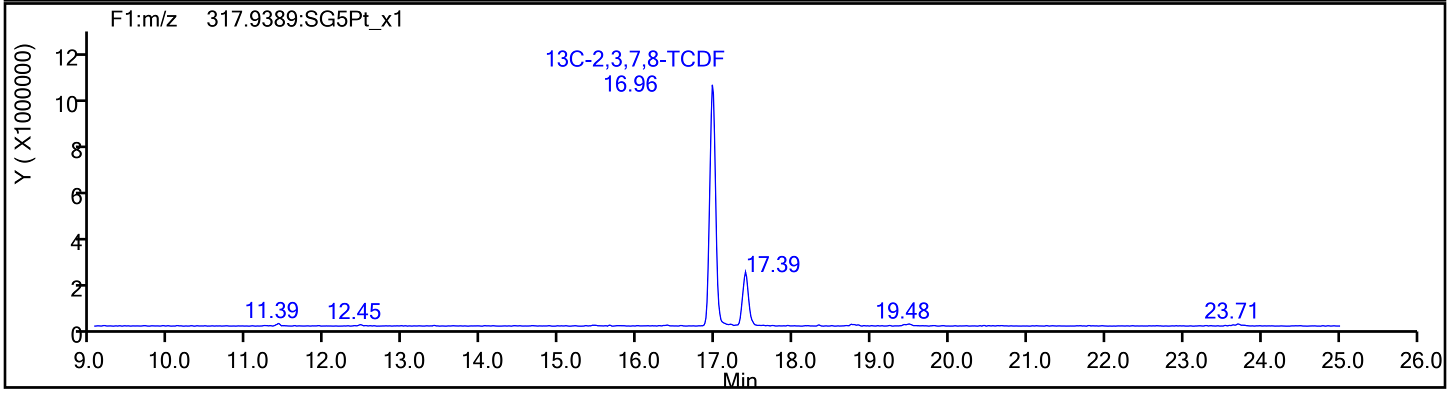

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d		
Injection Date:	29-Jul-2020 15:21:28	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	399540	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

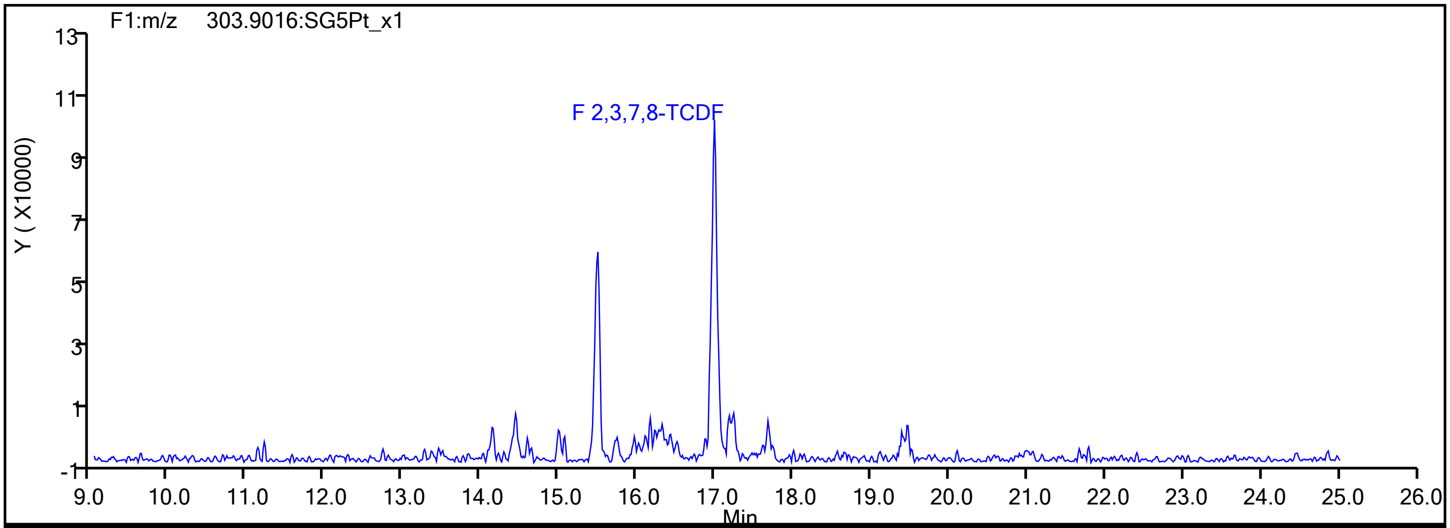

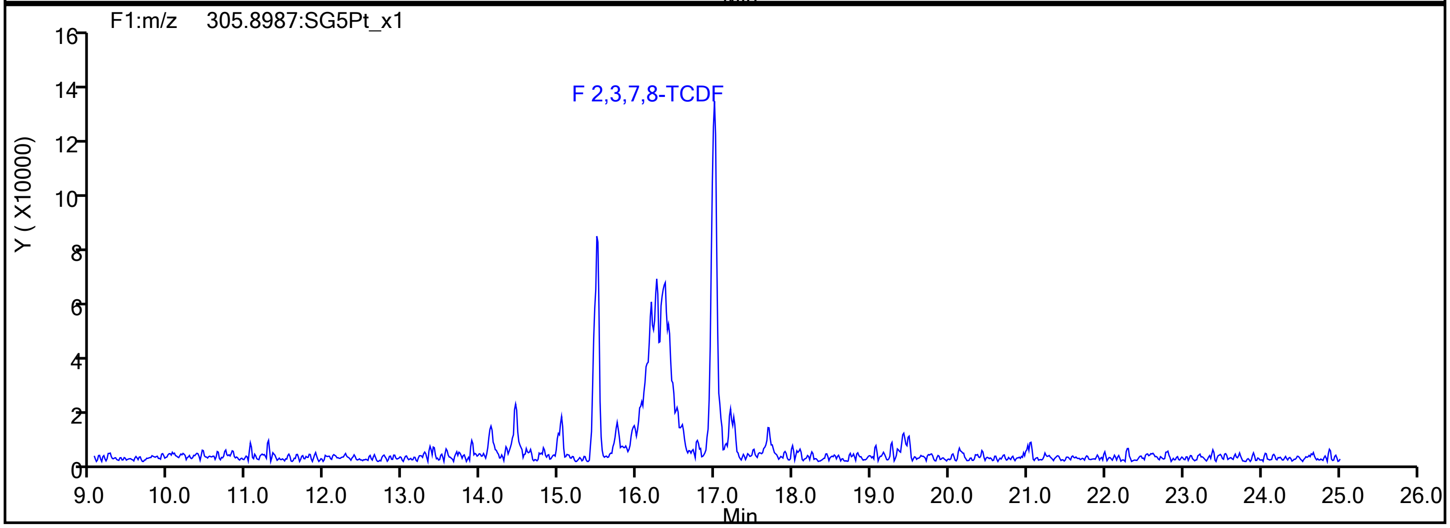

TCDF Interference Mass

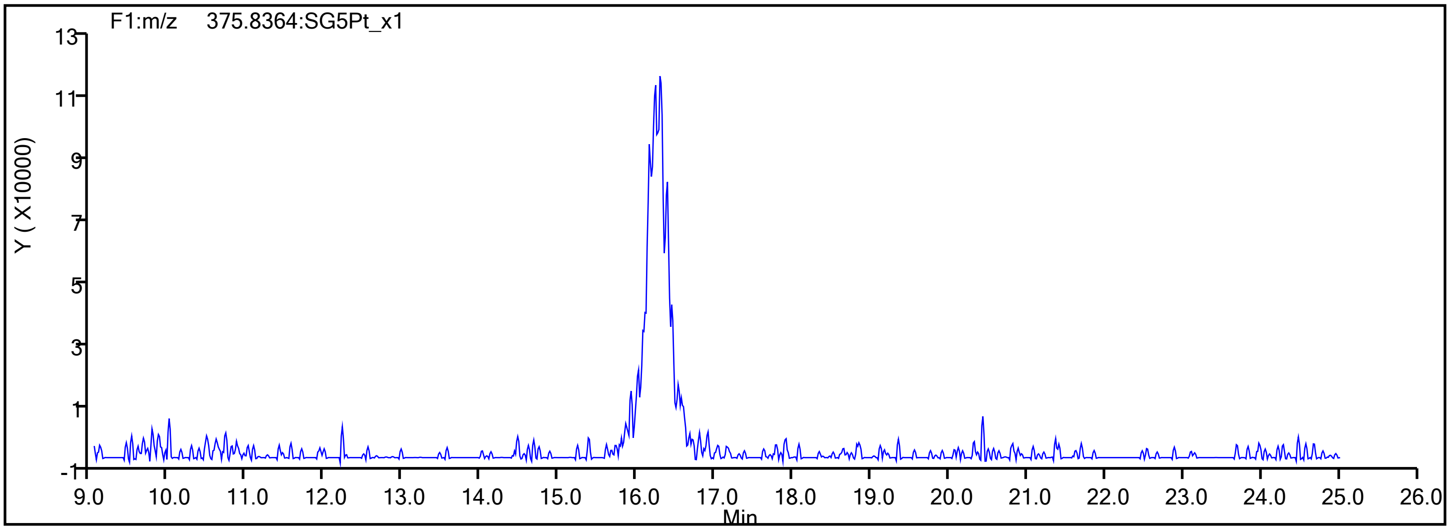

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d

Injection Date: 29-Jul-2020 15:21:28

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-1

Worklist#: 399540

Sample Line#: 8

Column Type: DB-225

Column Dia: 0.32 mm

TCDD

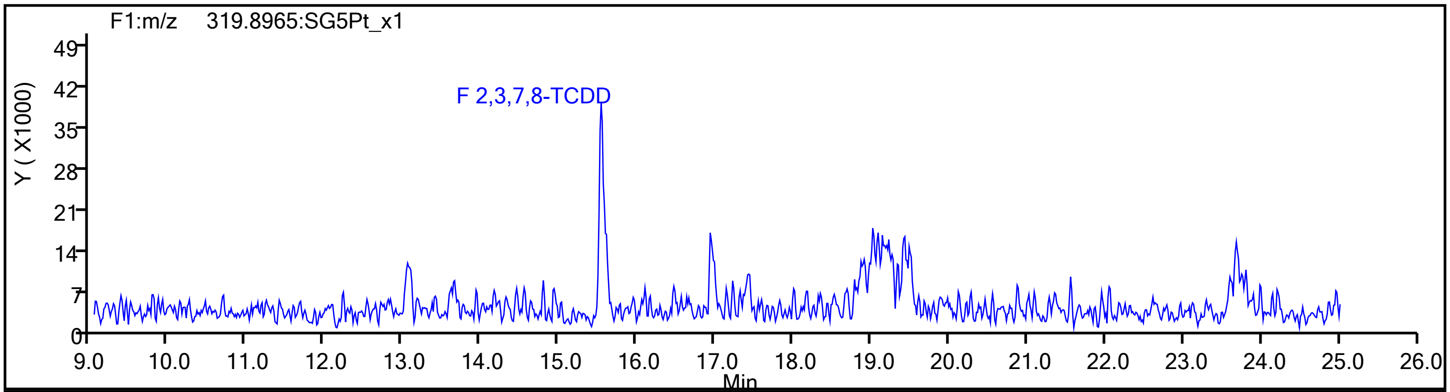

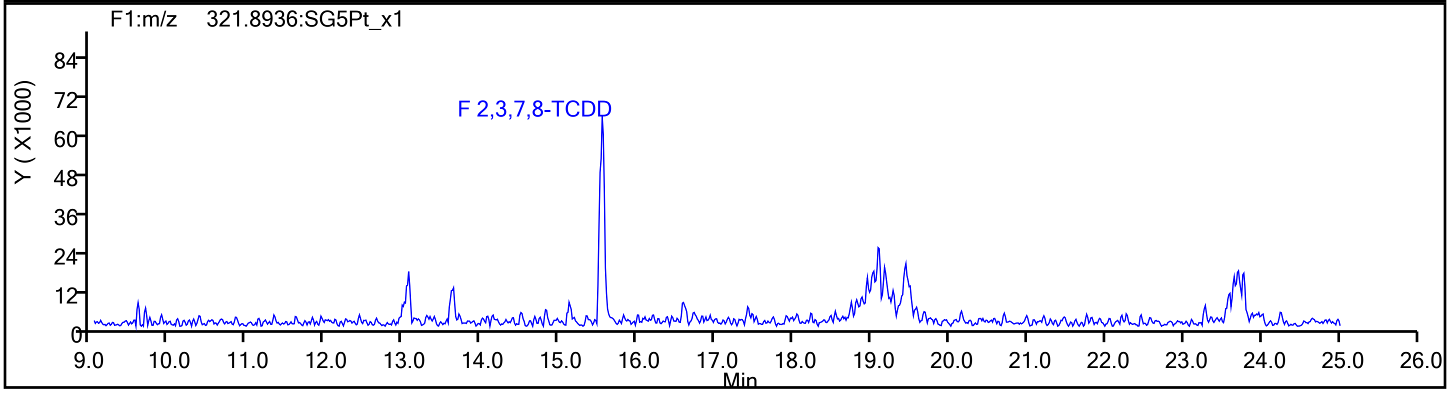

TCDD Standards

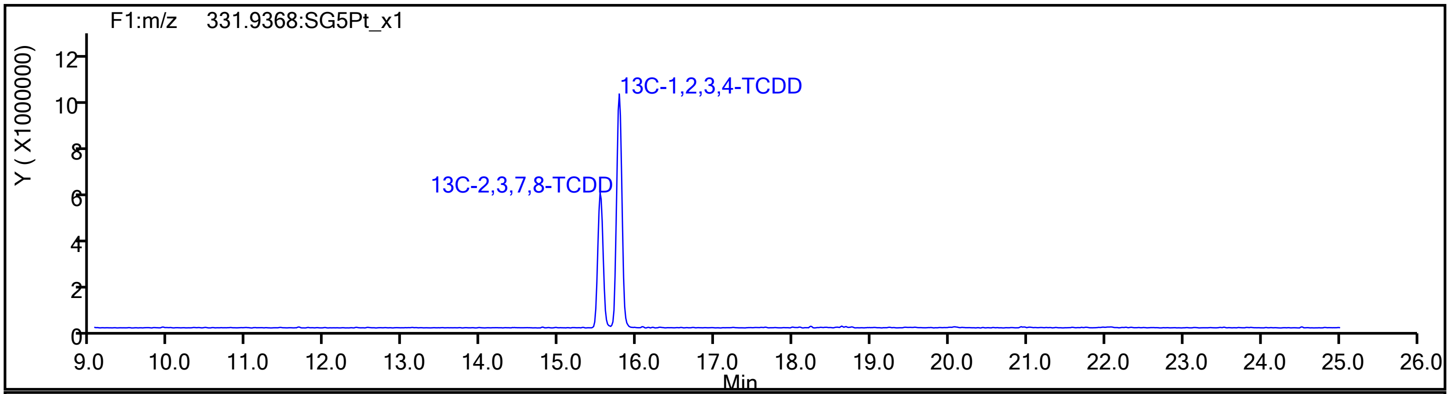

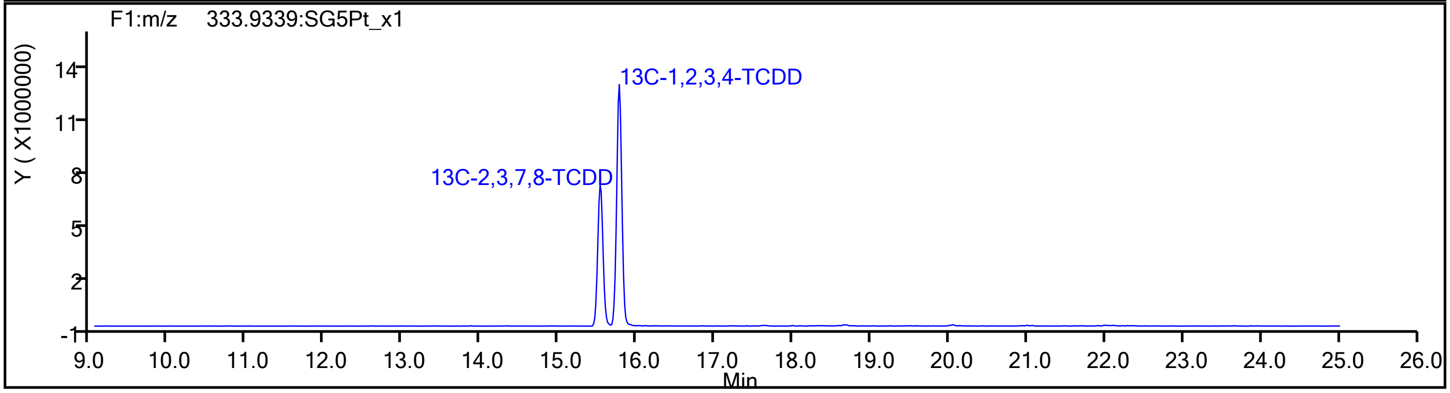

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d
Injection Date: 29-Jul-2020 15:21:28
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-1
Worklist#: 399540
Sample Line#: 8
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

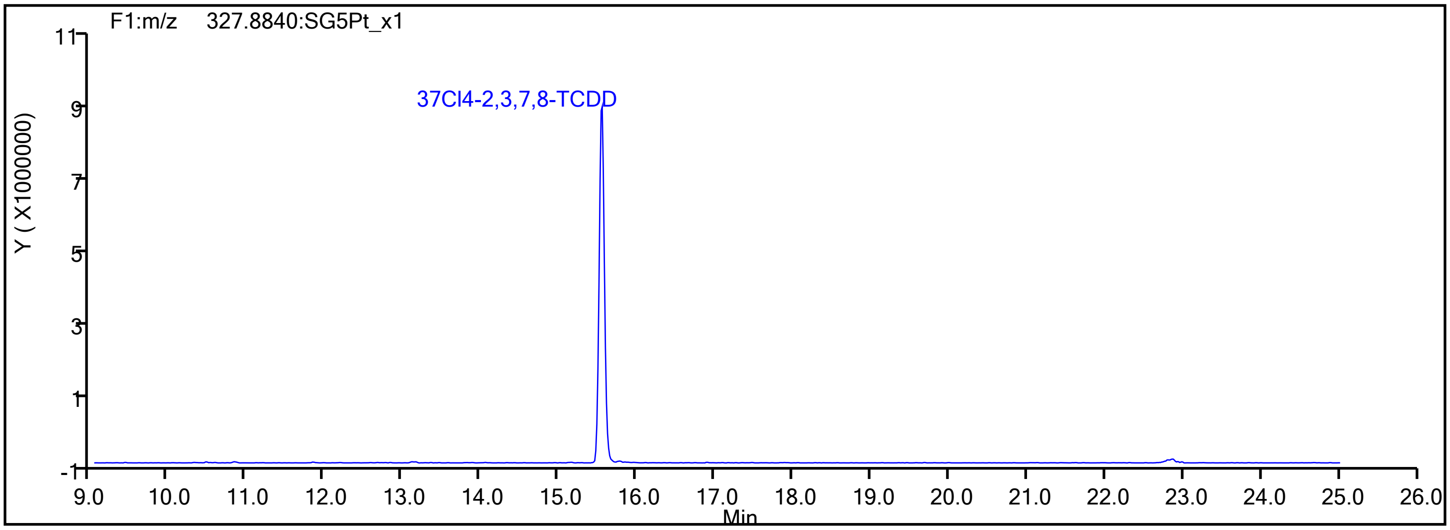

37Cl4-TCDD Standards

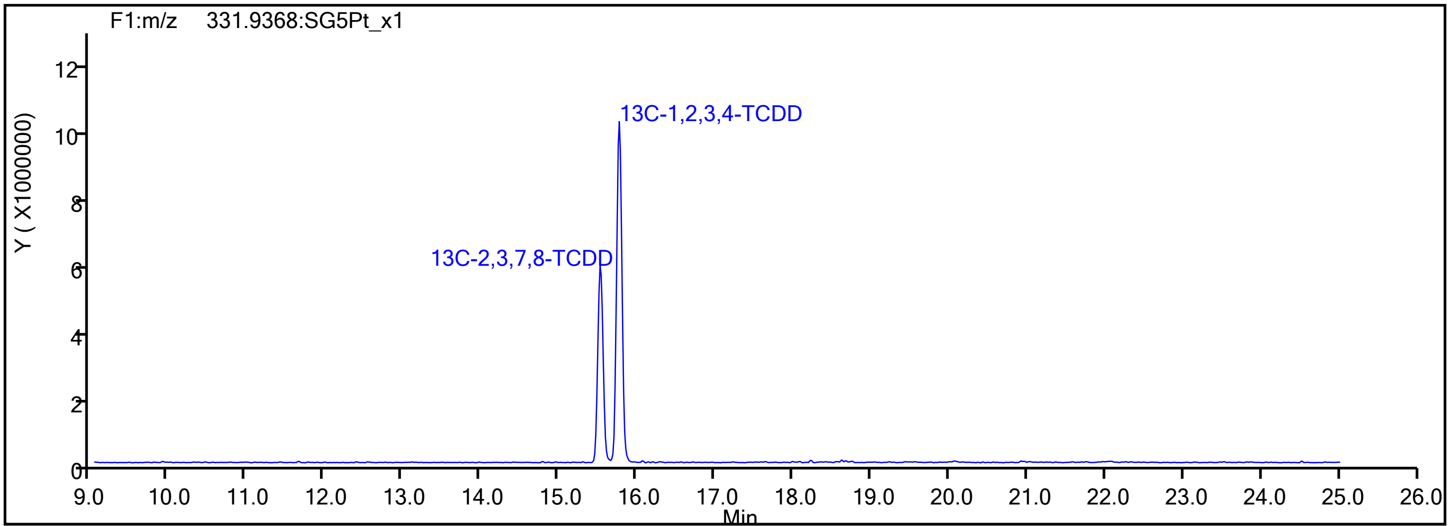

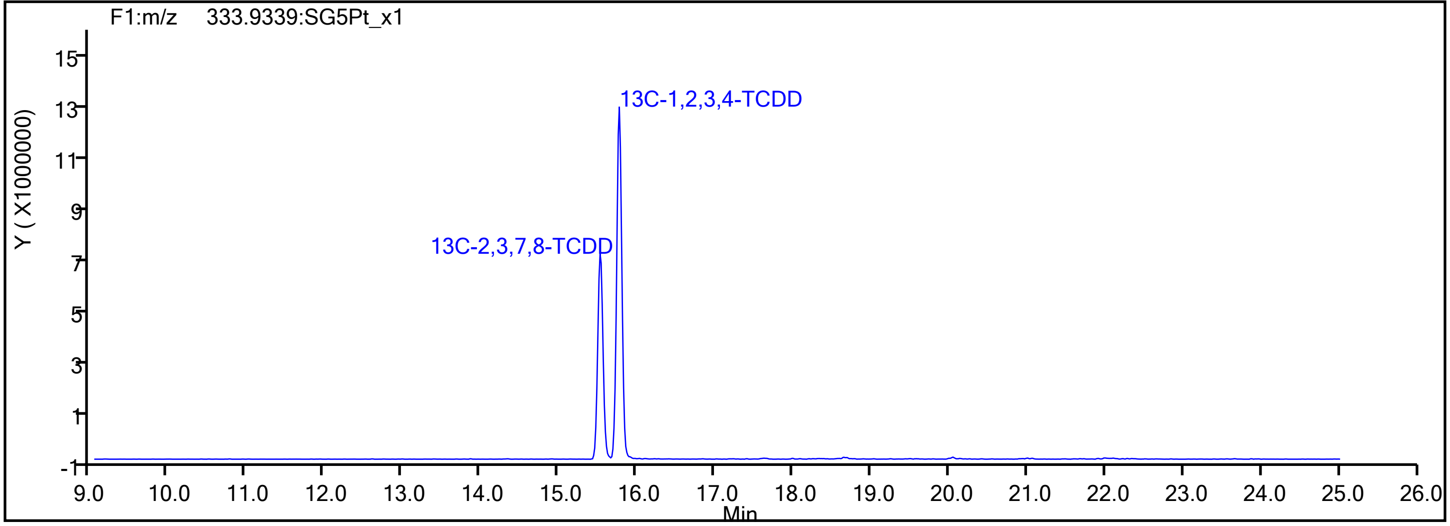

Report Date: 30-Jul-2020 13:22:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_008.d		
Injection Date:	29-Jul-2020 15:21:28	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-1		
Worklist#:	399540	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

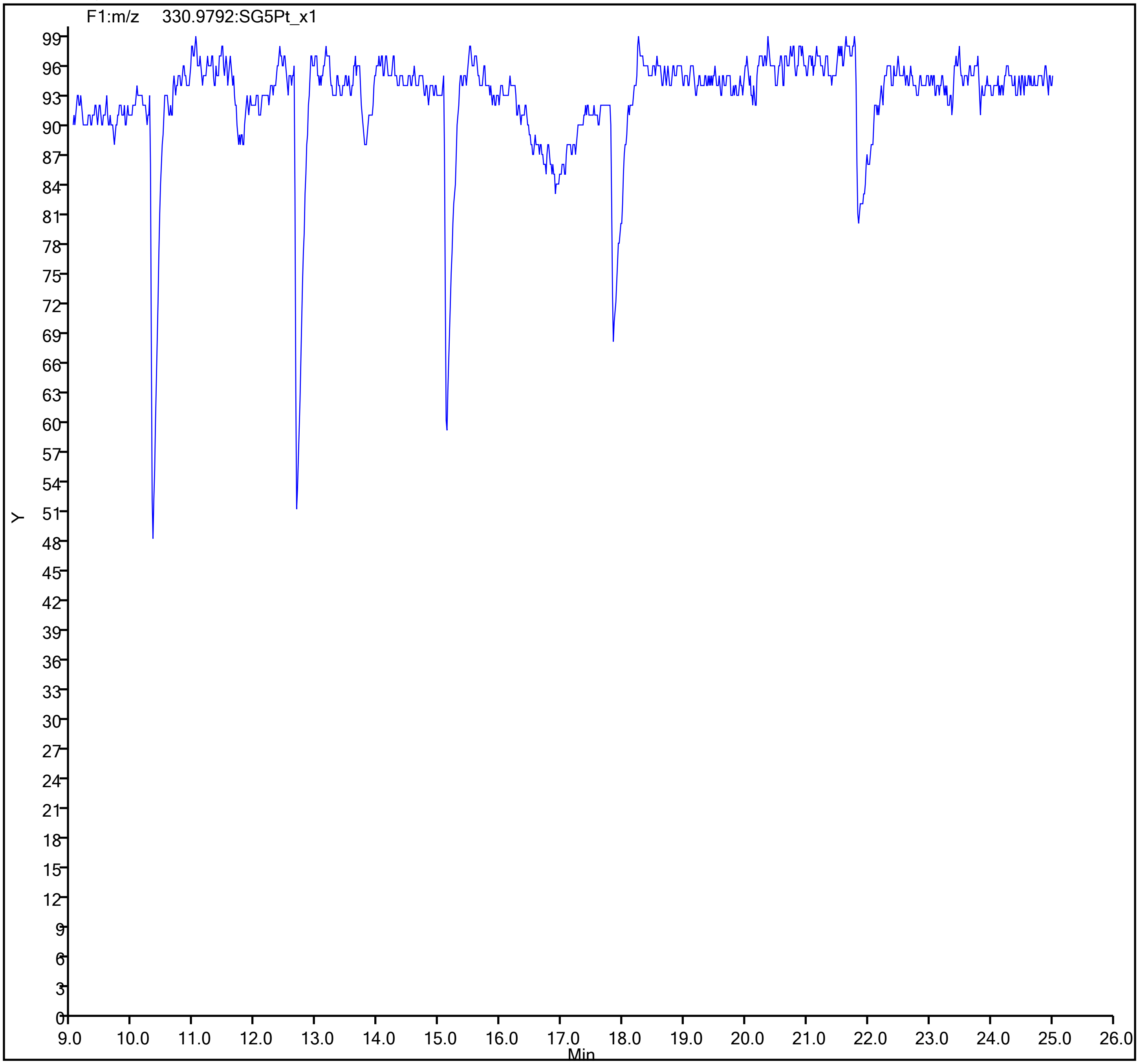

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Treatment-2	Lab Sample ID: 320-62886-4
Matrix: Water	Lab File ID: 27jl20bdfs1_24.d
Analysis Method: 1613B	Date Collected: 07/20/2020 14:30
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1059.2(mL)	Date Analyzed: 07/28/2020 10:01
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398798	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	36		9.4	1.7
40321-76-4	1,2,3,7,8-PeCDD	ND		47	0.94
57117-41-6	1,2,3,7,8-PeCDF	4.7	J q	47	0.57
57117-31-4	2,3,4,7,8-PeCDF	3.1	J q	47	0.56
39227-28-6	1,2,3,4,7,8-HxCDD	2.8	J B	47	0.29
57653-85-7	1,2,3,6,7,8-HxCDD	ND		47	0.34
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	47	0.30
70648-26-9	1,2,3,4,7,8-HxCDF	7.5	J	47	0.32
57117-44-9	1,2,3,6,7,8-HxCDF	2.6	J q	47	0.34
72918-21-9	1,2,3,7,8,9-HxCDF	1.2	J q	47	0.30
60851-34-5	2,3,4,6,7,8-HxCDF	1.5	J	47	0.31
35822-46-9	1,2,3,4,6,7,8-HpCDD	15	J B	47	0.64
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.1	J B	47	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		47	0.36
3268-87-9	OCDD	120	B	94	0.64
39001-02-0	OCDF	7.9	J	94	0.98
41903-57-5	Total TCDD	36		9.4	1.7
30402-14-3	Total TCDF	170		9.4	1.1
36088-22-9	Total PeCDD	ND		47	0.94
30402-15-4	Total PeCDF	10	J q	47	0.56
34465-46-8	Total HxCDD	6.9	J B	47	0.31
55684-94-1	Total HxCDF	14	J q	47	0.32
37871-00-4	Total HpCDD	49	B	47	0.64
38998-75-3	Total HpCDF	7.3	J B	47	0.37

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-62886-1
SDG No.:			
Client Sample ID:	11215702-Treatment-2	Lab Sample ID:	320-62886-4
Matrix:	Water	Lab File ID:	27jl20bdfs1_24.d
Analysis Method:	1613B	Date Collected:	07/20/2020 14:30
Extract. Method:	1613B	Date Extracted:	07/24/2020 12:28
Sample wt/vol:	1059.2(mL)	Date Analyzed:	07/28/2020 10:01
Con. Extract Vol.:	20.0(uL)	Dilution Factor:	1
Injection Volume:	1(uL)	Level: (low/med)	Low
% Moisture:		GPC Cleanup:(Y/N)	N
Analysis Batch No.:	398798	Units:	pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		25-164
89059-46-1	13C-2,3,7,8-TCDF	61		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	56		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	58		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	66		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	61		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	58		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	67		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	62		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	66		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	63		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	70		26-138
114423-97-1	13C-OCDD	72		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	86		35-197

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Sample Type: Client
Inject. Date: 28-Jul-2020 10:01:00 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-4-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 10:01:12 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: dadunj Date: 30-Jul-2020 10:01:12

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.800	2037588	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.787	1875342	0.83	1.4977	61.5	61.5	0.2961	0.2961	61.45	
2,3,7,8-TCDF	20.804	129721	0.80	1.1312	6.115	6.115	0.0590	0.0590		
A Non-2,3,7,8-sub-TCDF	20.169	55942	0.79	1.1312	2.637	2.637	0.0590	2.637		a
S Total TCDF					8.752	8.752	0.0590	0.0590		
D 13C-2,3,7,8-TCDD	22.195	1222642	0.86	1.0367	57.9	57.9	0.2454	0.2454	57.88	
2,3,7,8-TCDD	22.238	27704	0.82	1.1849	1.912	1.912	0.0907	0.0907		M
$ 37Cl4-2,3,7,8-TCDD	22.221	781617		1.1208	34.2	34.2	0.0273	0.0273	85.57	
A Non-2,3,7,8-sub-TCDD	21.044						0.0907	0.0907		U
S Total TCDD					1.912	1.912	0.0907	0.0907		
D 13C-1,2,3,7,8-PeCDF	27.701	1547131	1.56	1.3057	58.2	58.2	0.2360	0.2360	58.15	
1,2,3,7,8-PeCDF	27.727	4271	1.55	1.1060	0.2762	0.2496	0.0300	0.0300		RQM
D 13C-2,3,4,7,8-PeCDF	29.284	2065306	1.65	1.5420	65.7	65.7	0.1999	0.1999	65.73	
2,3,4,7,8-PeCDF	29.335	3031	1.55	0.9067	0.1884	0.1619	0.0294	0.0294		RQM
A F1 PeCDFs	24.932						0.007882	0.007882		RQU
A Non-2,3,7,8-sub-PeCDF	28.540	2626	1.43	1.0063	0.1445	0.1445	0.0294	0.1445		
S Total PeCDF					0.6091	0.5559	0.0297	0.0297		RQ
D 13C-1,2,3,7,8-PeCDD	30.127	953030	1.55	0.8294	56.4	56.4	0.1322	0.1322	56.39	
1,2,3,7,8-PeCDD	30.160						0.0500	0.0500		U
A Non-2,3,7,8-sub-PeCDD	28.887						0.0500	0.0500		U
S Total PeCDD							0.0500	0.0500		
D 13C-1,2,3,4,7,8-HxCDF	35.268	2059938	0.54	1.4619	66.7	66.7	0.2734	0.2734	66.72	
1,2,3,4,7,8-HxCDF	35.268	8283	1.38	1.0087	0.3986	0.3986	0.0169	0.0169		
D 13C-1,2,3,6,7,8-HxCDF	35.420	1675963	0.55	1.2866	61.7	61.7	0.3106	0.3106	61.68	
1,2,3,6,7,8-HxCDF	35.437	2825	1.24	1.2432	0.1530	0.1356	0.0180	0.0180		RQ
D 13C-2,3,4,6,7,8-HxCDF	36.211	1588247	0.53	1.1988	62.7	62.7	0.3334	0.3334	62.73	
2,3,4,6,7,8-HxCDF	36.220	1611	1.35	1.2736	0.0796	0.0796	0.0162	0.0162		M
D 13C-1,2,3,7,8,9-HxCDF	37.070	1494442	0.53	1.0687	66.2	66.2	0.3739	0.3739	66.21	
1,2,3,7,8,9-HxCDF	37.079	1219	1.24	1.2882	0.0727	0.0633	0.0161	0.0161		RQ
A Non-2,3,7,8-sub-HxCDF	35.385	803	1.24	1.2034	0.0467	0.0391	0.0166	0.0391		RQ
S Total HxCDF					0.7506	0.7163	0.0168	0.0168		RQ

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.868	2112032	1.27	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.405	1424756	1.29	1.1046	61.1	61.1	0.1869	0.1869	61.07	
1,2,3,4,7,8-HxCDD	36.405	1947	1.27	0.9336	0.1464	0.1464	0.0156	0.0156		M
D 13C-1,2,3,6,7,8-HxCDD	36.523	1215236	1.30	0.9871	58.3	58.3	0.2092	0.2092	58.29	
1,2,3,6,7,8-HxCDD	36.405						0.0179	0.0179		QMU
1,2,3,7,8,9-HxCDD	36.894	1251	1.33	1.0574	0.0896	0.0896	0.0157	0.0157		M
A Non-2,3,7,8-sub-HxCDD	35.717	1718	1.32	1.0237	0.1271	0.1271	0.0162	0.1271		a
S Total HxCDD					0.3631	0.3631	0.0164	0.0164		
D 13C-1,2,3,4,6,7,8-HpCDF	38.816	1190210	0.46	0.9035	62.4	62.4	0.6020	0.6020	62.37	
1,2,3,4,6,7,8-HpCDF	38.825	5170	1.02	1.5957	0.2722	0.2722	0.0194	0.0194		M
D 13C-1,2,3,4,7,8,9-HpCDF	40.038	1551083	0.47	1.0480	70.1	70.1	0.5190	0.5190	70.07	
1,2,3,4,7,8,9-HpCDF	40.037						0.0193	0.0193		
A Non-2,3,7,8-sub-HpCDF	39.413	2143	1.00	1.3825	0.1131	0.1131	0.0189	0.1131		
S Total HpCDF					0.3853	0.3853	0.0194	0.0194		
D 13C-1,2,3,4,6,7,8-HpCDD	39.735	1131739	1.08	0.8875	60.4	60.4	0.2586	0.2586	60.38	
1,2,3,4,6,7,8-HpCDD	39.743	10295	1.08	1.1150	0.8158	0.8158	0.0340	0.0340		
A Non-2,3,7,8-sub-HpCDD	39.555	22708	1.13	1.1150	1.800	1.800	0.0340	1.800		
S Total HpCDD					2.615	2.615	0.0340	0.0340		
D 13C-OCDD	42.223	1927784	0.91	0.6297	144.9	144.9	0.3155	0.3155	72.47	
OCDF	42.324	5984	0.82	1.4809	0.4192	0.4192	0.0518	0.0518		
OCDD	42.231	71837	0.98	1.1948	6.238	6.238	0.0339	0.0339		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Sample Type: Client
Inject. Date: 28-Jul-2020 10:01:00 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-4-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 10:01:12 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1001

First Level Reviewer: dadunj Date: 30-Jul-2020 10:01:12

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.800	21.805	0		899263	131230	199	497	659		
333.9338	21.800	21.805	0		1138325	162392	100	250	1624	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.787	20.783	0	0.954	851593	127212	348	870	366		
317.9389	20.778	20.783	0	0.953	1023749	164798	173	432	953	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.804	20.808	0	1.001	57667	8355	23	57	363		
305.8987	20.813	20.808	0	1.001	72054	9875	55	137	180	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											a
303.9016	20.048	20.169	-7	0.964	24708	4346	23	57	189		a
305.8987	20.066	20.169	-6	0.965	31234	4900	55	137	89	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.195	22.200	0	1.018	566405	81607	199	497	410		
333.9338	22.204	22.200	0	1.019	656237	87722	100	250	877	0.86(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	22.238	22.243	0	1.002	12496	1653	68	170	24		M
321.8936	22.247	22.243	0	1.002	15208	2290	5	12	458	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.221	22.243	-1	1.019	781617	106854	36	90	2968		
A Non-2,3,7,8-sub-TCDD											U
319.8965	21.044						68	170			
321.8936	21.044						5	12			
13C-1,2,3,7,8-PeCDF											
351.9000	27.701	27.708	0	1.271	942362	144667	189	472	765		
353.8970	27.701	27.708	0	1.271	604769	102834	173	432	594	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											RQM
339.8597	27.727	27.734	0	1.001	3052	541	6	15	90		M
	Empc Correction				2596	477	6	15	80		
341.8567	27.760	27.734	2	1.002	1675	308	27	67	11	1.82(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	29.284	29.284	0	1.343	1286391	193232	189	472	1022		
353.8970	29.301	29.284	1	1.344	778915	113974	173	432	659	1.65(1.32-1.78)	
2,3,4,7,8-PeCDF											RQM
339.8597	29.335	29.326	1	1.002	2338	359	6	15	60		
	Empc Correction				1842	534	6	15	89		
341.8567	29.318	29.326	0	1.001	1189	345	27	67	13	1.97(1.32-1.78)	M
A F1 PeCDFs											U
339.8597	24.788	24.932	-9	0.895	14	6	1	2	6		
341.8567	24.728	24.932	-12	0.893	89	55	8	20	7	0.16(1.32-1.78)	
	Empc Correction				9	3	8	20	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.202	28.540	-140	0.946	1547	322	6	15	54		
341.8567	26.169	28.540	-142	0.945	1079	253	27	67	9	1.43(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.127	30.143	-1	1.382	578885	80762	79	197	1022		
369.8919	30.127	30.143	-1	1.382	374145	58441	50	125	1169	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											U
355.8546	30.160						28	70			
357.8516	30.160						3	7			
A Non-2,3,7,8-sub-PeCDD											U
355.8546	28.887						28	70			
357.8516	28.887						3	7			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.268	35.259	1	0.957	723103	172386	301	752	573		
385.8610	35.268	35.259	1	0.957	1336835	325161	622	1555	523	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.268	35.276	0	1.000	4798	1016	24	60	42		
375.8178	35.277	35.276	0	1.000	3485	786	10	25	79	1.38(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.420	35.419	0	0.961	593671	138138	301	752	459		
385.8610	35.420	35.419	0	0.961	1082292	242426	622	1555	390	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQ
373.8208	35.437	35.436	0	1.000	1564	431	24	60	18		
375.8178	35.428	35.436	0	1.000	1623	455	10	25	46	0.96(1.05-1.43)	
	Empc Correction				1261	347	10	25	35		
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.211	36.203	1	0.982	548154	137583	301	752	457		
385.8610	36.211	36.203	1	0.982	1040093	275076	622	1555	442	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	36.220	36.219	0	1.000	926	373	24	60	16		M
375.8178	36.228	36.219	1	1.000	685	204	10	25	20	1.35(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.070	37.061	1	1.005	518582	147040	301	752	489		
385.8610	37.070	37.061	1	1.005	975860	262921	622	1555	423	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQ
373.8208	37.079	37.078	0	1.000	675	224	24	60	9		
375.8178	37.062	37.078	-1	1.000	725	239	10	25	24	0.93(1.05-1.43)	
	Empc Correction				544	180	10	25	18		
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	33.845	35.385	-92	0.960	445	130	24	60	5		
375.8178	33.896	35.385	-89	0.961	512	137	10	25	14	0.87(1.05-1.43)	
	Empc Correction				358	104	10	25	10		
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.868	36.868	0		1181632	322137	254	635	1268		
403.8529	36.868	36.868	0		930400	255153	223	557	1144	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.405	36.405	0	0.987	803485	234738	254	635	924		
403.8529	36.405	36.405	0	0.987	621271	178002	223	557	798	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	36.405	36.413	0	1.000	1091	248	6	15	41		
391.8127	36.422	36.413	1	1.000	856	330	18	45	18	1.27(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.523	36.514	1	0.991	687841	177403	254	635	698		
403.8529	36.523	36.514	1	0.991	527395	133476	223	557	599	1.30(1.05-1.43)	
1,2,3,6,7,8-HxCDD											QMU
389.8158	36.531						6	15			
391.8127	36.531						18	45			
1,2,3,7,8,9-HxCDD											M
389.8158	36.894	36.885	1	1.013	715	274	6	15	46		M
391.8127	36.868	36.885	-1	1.013	536	173	18	45	10	1.33(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											a
389.8158	34.628	35.717	-65	0.948	978	217	6	15	36		a
391.8127	34.612	35.717	-66	0.948	740	165	18	45	9	1.32(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.816	38.807	1	1.053	377703	128025	388	970	330		
419.8220	38.816	38.807	1	1.053	812507	259455	868	2170	299	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.825	38.816	1	1.000	2615	829	34	85	24		M
409.7788	38.833	38.816	1	1.000	2555	838	14	35	60	1.02(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.038	40.028	1	1.086	499041	172746	388	970	445		
419.8220	40.038	40.028	1	1.086	1052042	358694	868	2170	413	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.037						34	85			
409.7788	40.037						14	35			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.178	39.413	-14	1.009	1073	440	34	85	13		
409.7788	39.187	39.413	-14	1.010	1070	344	14	35	25	1.00(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.735	39.725	1	1.078	586818	203334	325	812	626		
437.8140	39.735	39.725	1	1.078	544921	184992	205	512	902	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.743	39.733	1	1.000	5351	1845	36	90	51		
425.7737	39.743	39.733	1	1.000	4944	1750	23	57	76	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.119	39.555	-26	0.985	12028	4229	36	90	117		
425.7737	39.119	39.555	-26	0.985	10680	3625	23	57	158	1.13(0.88-1.20)	
13C-OCDD											
469.7780	42.223	42.215	0	1.145	919137	289289	219	547	1321		
471.7750	42.223	42.215	0	1.145	1008647	303083	240	600	1263	0.91(0.76-1.02)	
OCDF											
441.7428	42.324	42.316	0	1.002	2704	921	18	45	51		
443.7399	42.324	42.316	0	1.002	3280	748	73	182	10	0.82(0.76-1.02)	
OCDD											
457.7377	42.231	42.223	0	1.000	35596	11062	20	50	553		
459.7348	42.231	42.223	0	1.000	36241	11366	28	70	406	0.98(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Lims ID:	320-62886-A-4-A		
Client ID:	11215702-Treatment-2		
Inject. Date:	28-Jul-2020 10:01:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	22

Non-2,3,7,8-sub-TCDF, RT: 20.169

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	1875342	292010

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	1875342	292010

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
20.048	24708	4346	31234	4900	2.64	0.79	a
Signal Totals:							
	24708	4346	31234	4900			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	55942	9246				0.79	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.637 = (55942 * 100.000) / (1875342 * 1.131)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Lims ID:	320-62886-A-4-A		
Client ID:	11215702-Treatment-2		
Inject. Date:	28-Jul-2020 10:01:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	22

Non-2,3,7,8-sub-TCDD, RT: 21.044

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	1222642	169329

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	1222642	169329

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Lims ID:	320-62886-A-4-A		
Client ID:	11215702-Treatment-2		
Inject. Date:	28-Jul-2020 10:01:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	22

F1 PeCDFs, RT: 24.932

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1547131	247501
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2065306	307206

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	1806218	277353

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.788	14	6	89	55	0.005667	0.16	RQ
24.788	14	6	9	3	0.001265		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Lims ID:	320-62886-A-4-A		
Client ID:	11215702-Treatment-2		
Inject. Date:	28-Jul-2020 10:01:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	22

Non-2,3,7,8-sub-PeCDF, RT: 28.540

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1547131	247501
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2065306	307206

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	1806218	277353

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.202	1547	322	1079	253	0.1445	1.43	
Signal Totals:							
	1547	322	1079	253			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2626	575				1.43	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1445 = (2626 * 100.000) / (1806218 * 1.006)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Lims ID:	320-62886-A-4-A		
Client ID:	11215702-Treatment-2		
Inject. Date:	28-Jul-2020 10:01:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	22

Non-2,3,7,8-sub-PeCDD, RT: 28.887

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	953030	139203

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	953030	139203

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Lims ID:	320-62886-A-4-A		
Client ID:	11215702-Treatment-2		
Inject. Date:	28-Jul-2020 10:01:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	22

Non-2,3,7,8-sub-HxCDF, RT: 35.385

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	2059938	497547
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	1675963	380564
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	1588247	412659
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	1494442	409961

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		100.000	1704647	425182

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.845	445	130	512	137	0.0467	0.87	RQ
33.845	445	130	358	104	0.0391		Empc Correction
Signal Totals:							
	445	130	358	104			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	957	267				0.87	RQ
	803	234					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0467 = (957 * 100.000) / (1704647 * 1.203)
Empc Amount: 0.0391 = (803 * 100.000) / (1704647 * 1.203)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Inject. Date: 28-Jul-2020 10:01:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398798
Lims Sample ID: 22

Non-2,3,7,8-sub-HxCDD, RT: 35.717

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	1424756	412740
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	1215236	310879
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		100.000	1319996	361809

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.628	978	217	740	165	0.1271	1.32	a
Signal Totals:							
	978	217	740	165			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1718	382				1.32	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1271 = (1718 * 100.000) / (1319996 * 1.024)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Inject. Date: 28-Jul-2020 10:01:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398798 Lims Sample ID: 22

Non-2,3,7,8-sub-HpCDF, RT: 39.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1190210	387480
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1551083	531440

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		100.000	1370646	459460

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.178	1073	440	1070	344	0.1131	1.00	
Signal Totals:							
	1073	440	1070	344			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2143	784				1.00	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1131 = (2143 * 100.000) / (1370646 * 1.383)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Inject. Date: 28-Jul-2020 10:01:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398798
Lims Sample ID: 22

Non-2,3,7,8-sub-HpCDD, RT: 39.555

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.115	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1131739	388326

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.115		100.000	1131739	388326

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.119	12028	4229	10680	3625	1.80	1.13	
Signal Totals:							
	12028	4229	10680	3625			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22708	7854				1.13	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.800 = (22708 * 100.000) / (1131739 * 1.115)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d				
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4		
Client ID:	11215702-Treatment-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT: 22.24
Area: 13207
Amount: 1.961381
Amount Units: pg/ul

Processing Integration Results

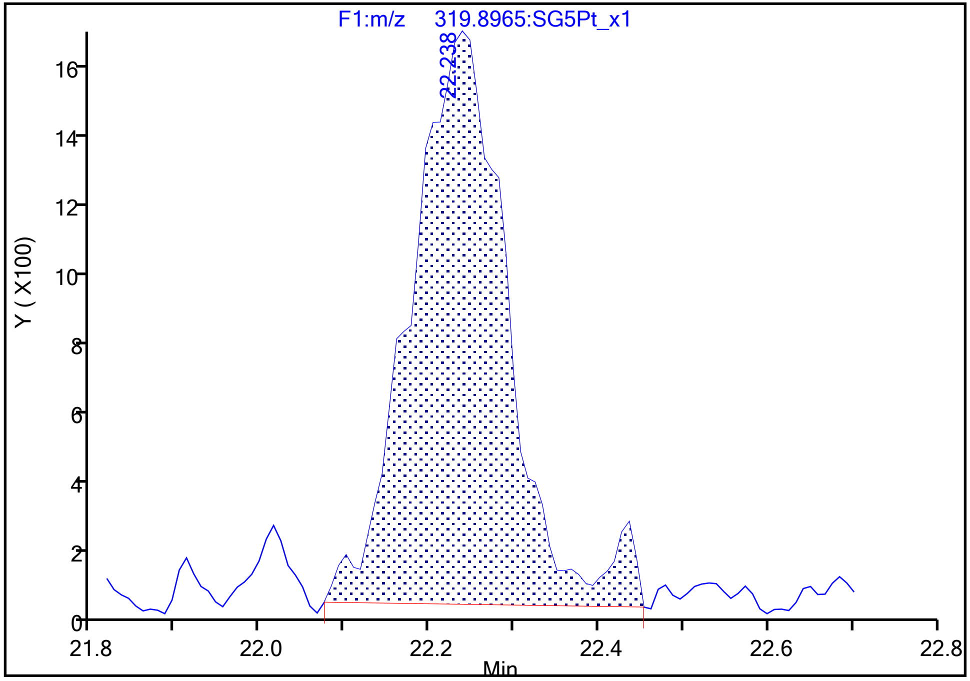

RT: 22.24
Area: 12496
Amount: 1.912304
Amount Units: pg/ul

Manual Integration Results

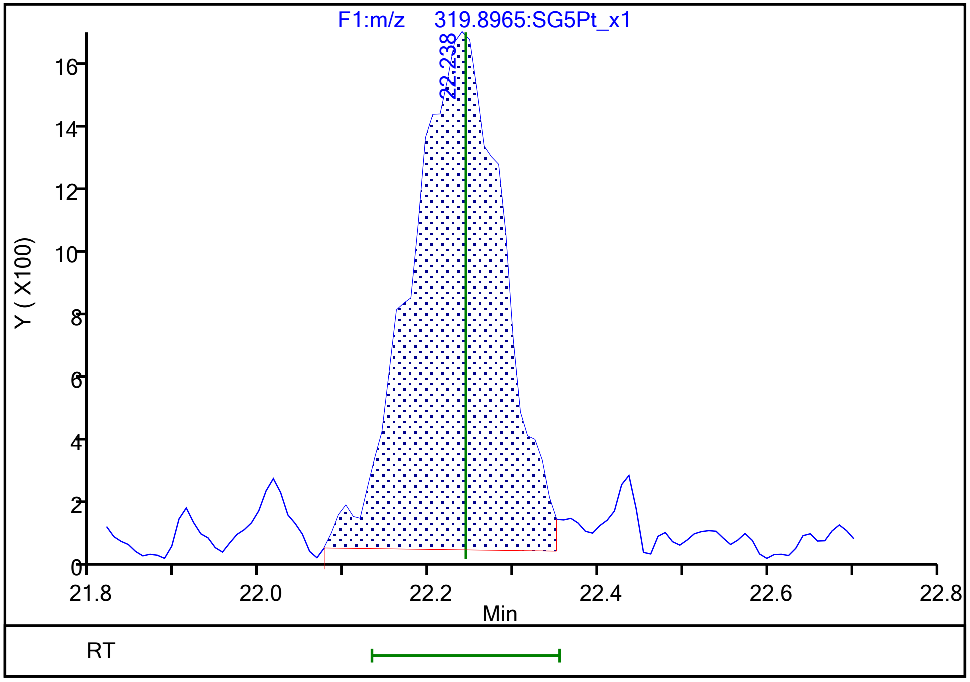

Reviewer: dadunj, 30-Jul-2020 09:58:33

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4
Client ID:	11215702-Treatment-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	27.73
Area:	940
Amount:	0.161236
Amount Units:	pg/ul

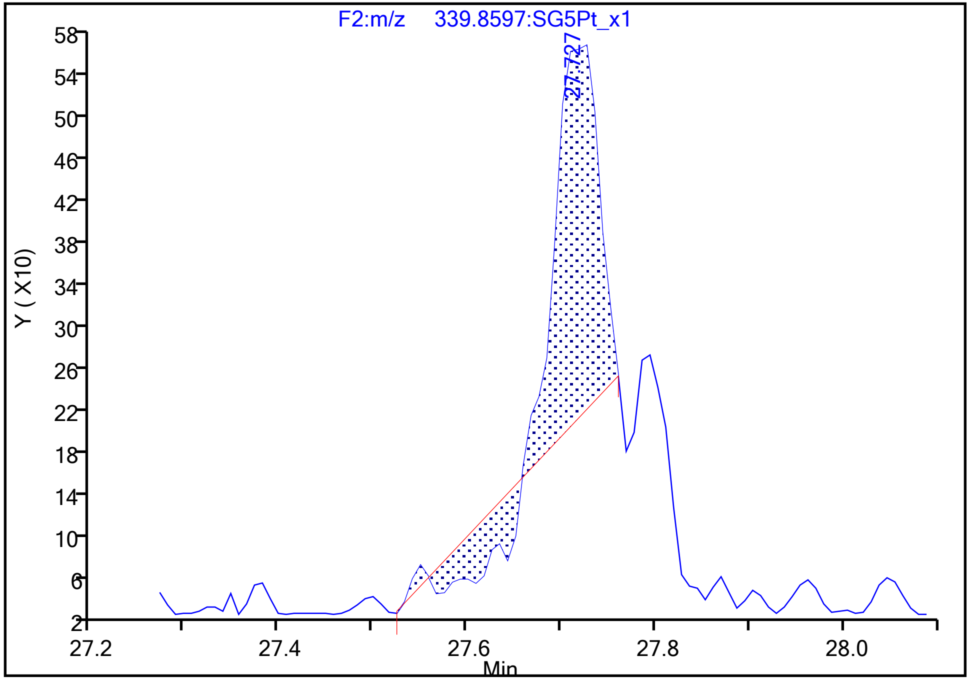

Manual Integration Results

RT:	27.73
Area:	3052
Amount:	0.276246
Amount Units:	pg/ul

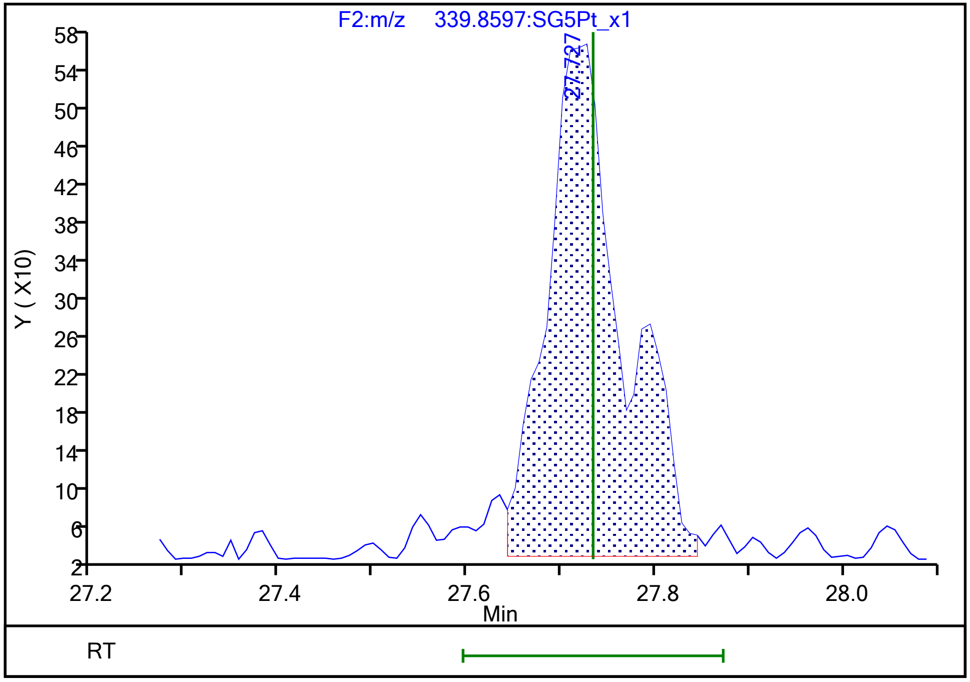

Reviewer: dadunj, 30-Jul-2020 09:58:56

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 30-Jul-2020 10:01:13

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4
Client ID:	11215702-Treatment-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	27.76
Area:	1819
Amount:	0.161236
Amount Units:	pg/ul

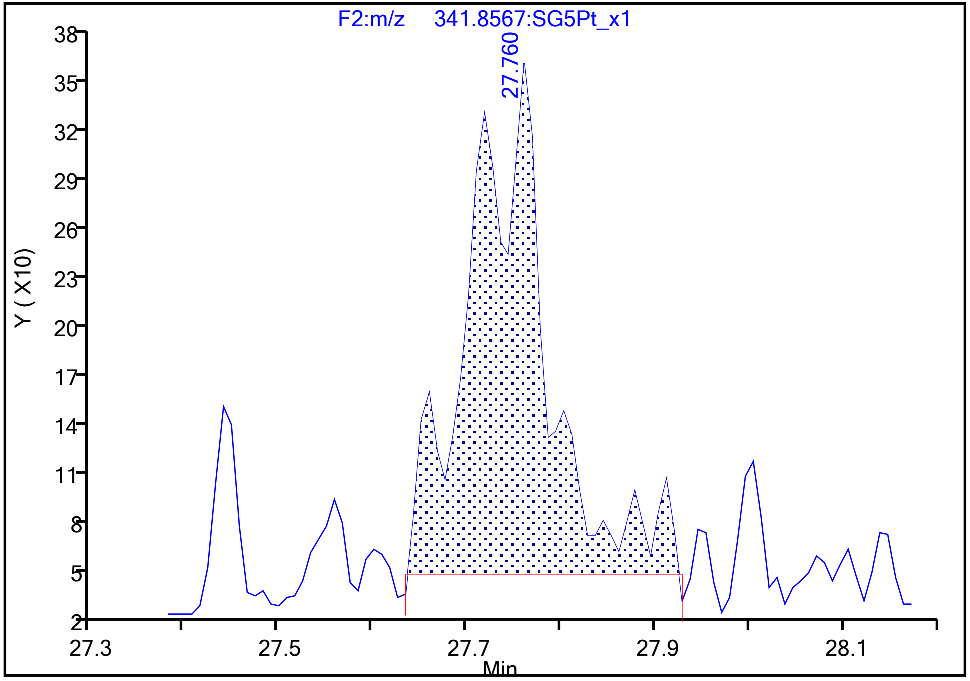

Manual Integration Results

RT:	27.76
Area:	1675
Amount:	0.276246
Amount Units:	pg/ul

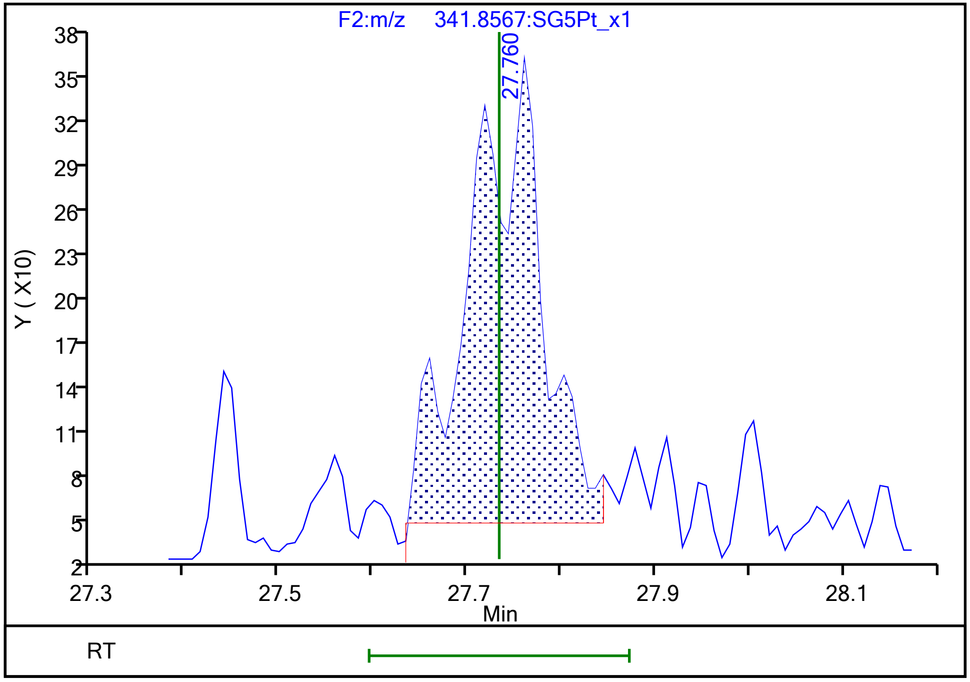

Reviewer: dadunj, 30-Jul-2020 09:58:57

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d				
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4		
Client ID:	11215702-Treatment-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 2

Processing Integration Results

RT:	29.32
Area:	664
Amount:	0.160316
Amount Units:	pg/ul

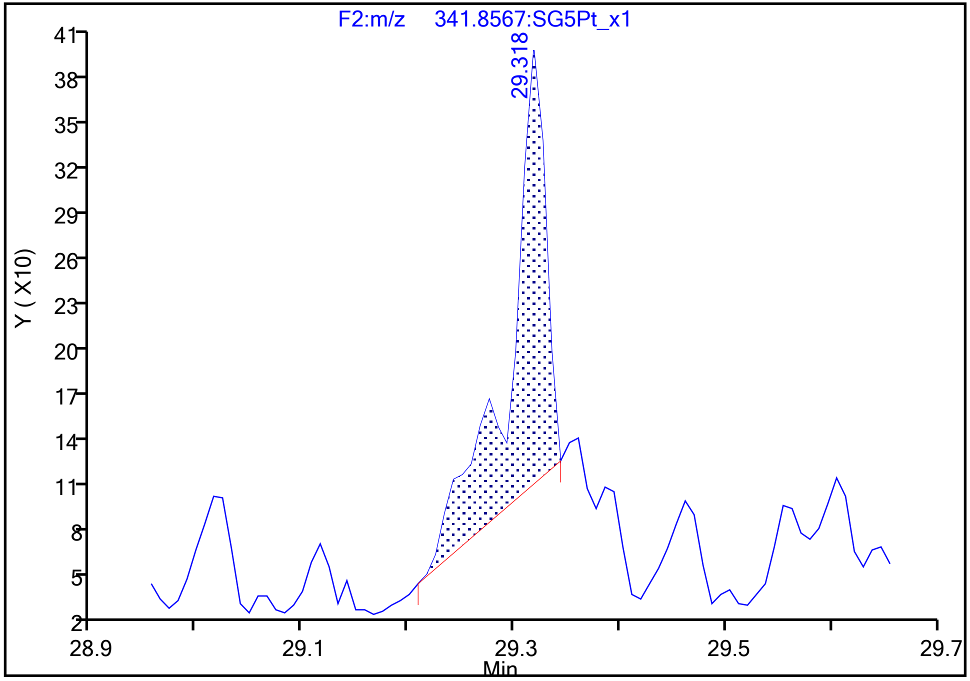

Manual Integration Results

RT:	29.32
Area:	1189
Amount:	0.188353
Amount Units:	pg/ul

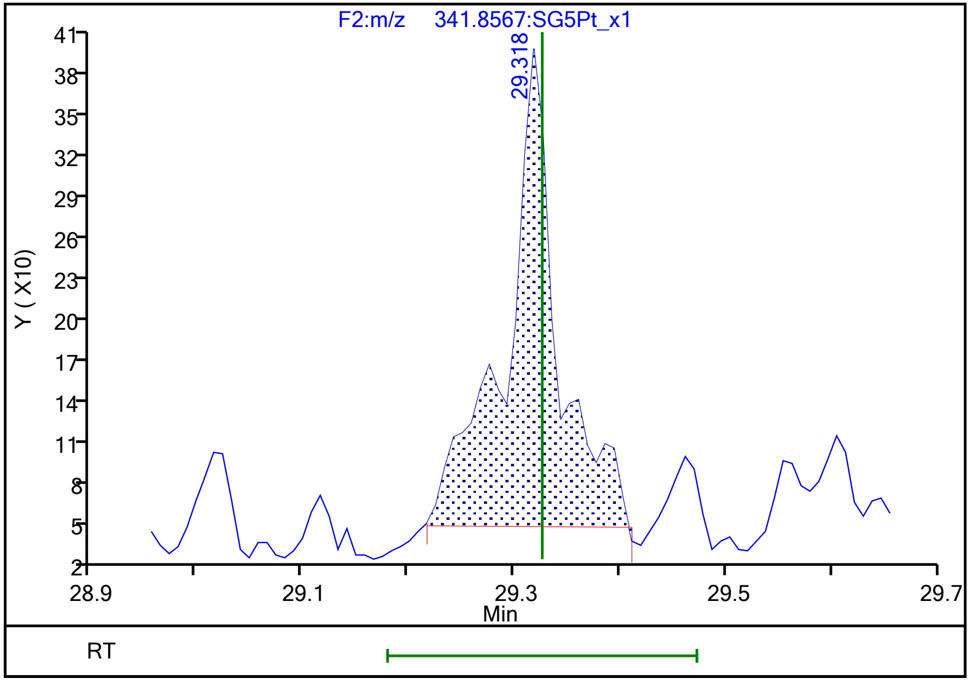

Reviewer: dadunj, 30-Jul-2020 09:59:07

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 30-Jul-2020 10:01:13

Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Instrument ID: DFS 1
Lims ID: 320-62886-A-4-A
Lab Sample ID: 320-62886-4
Client ID: 11215702-Treatment-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 22
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

Processing Integration Results

RT: 36.22
Area: 618
Amount: 0.064418
Amount Units: pg/ul

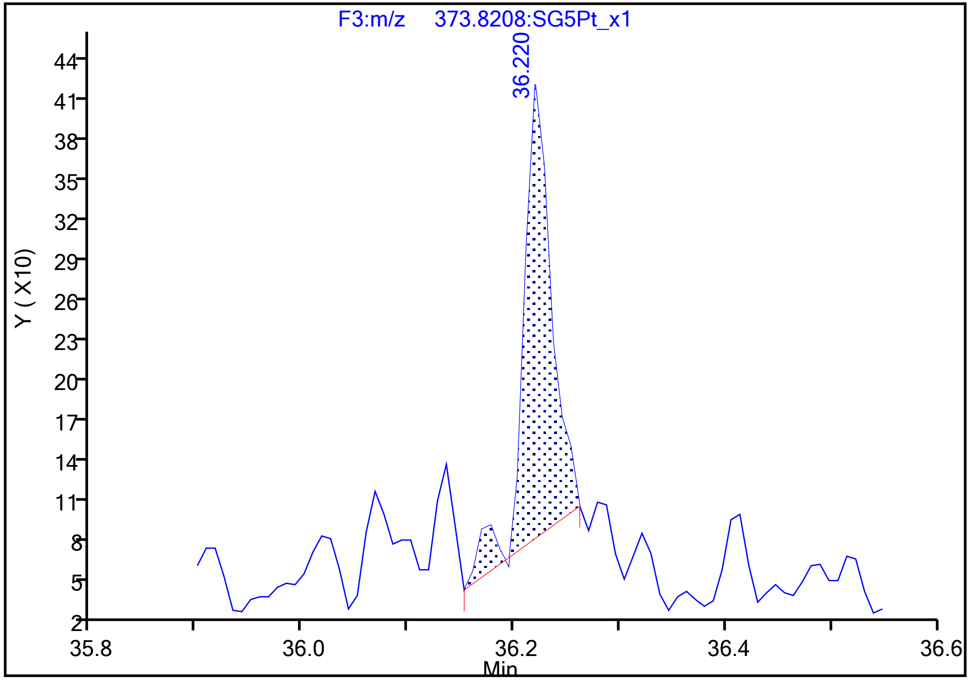

Manual Integration Results

RT: 36.22
Area: 926
Amount: 0.079645
Amount Units: pg/ul

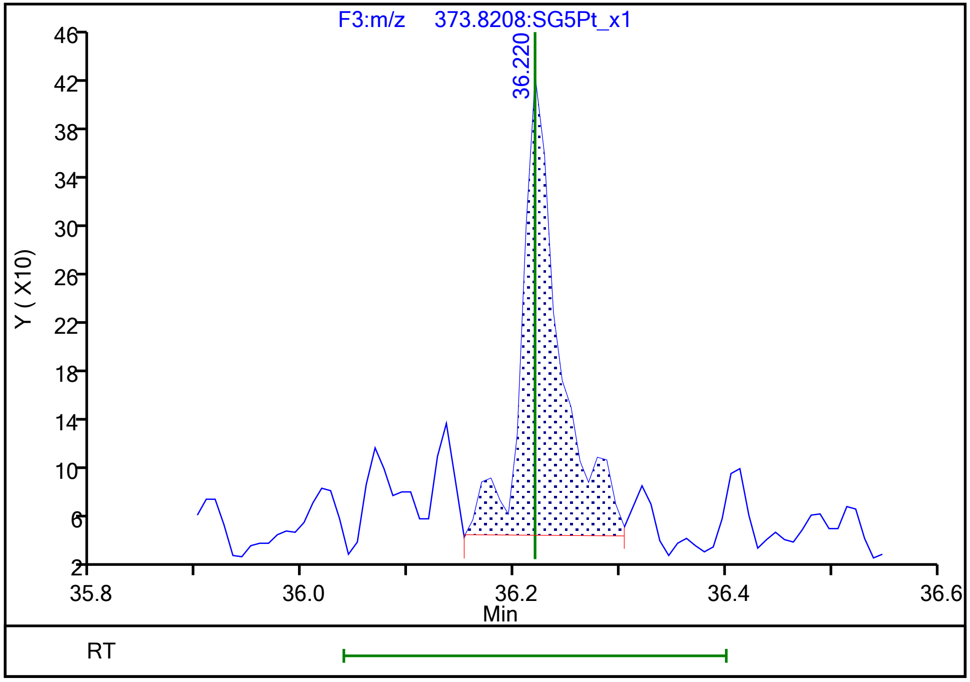

Reviewer: dadunj, 30-Jul-2020 09:59:38

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 30-Jul-2020 10:01:13

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d				
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4		
Client ID:	11215702-Treatment-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	36.42
Area:	1301
Amount:	0.179823
Amount Units:	pg/ul

Processing Integration Results

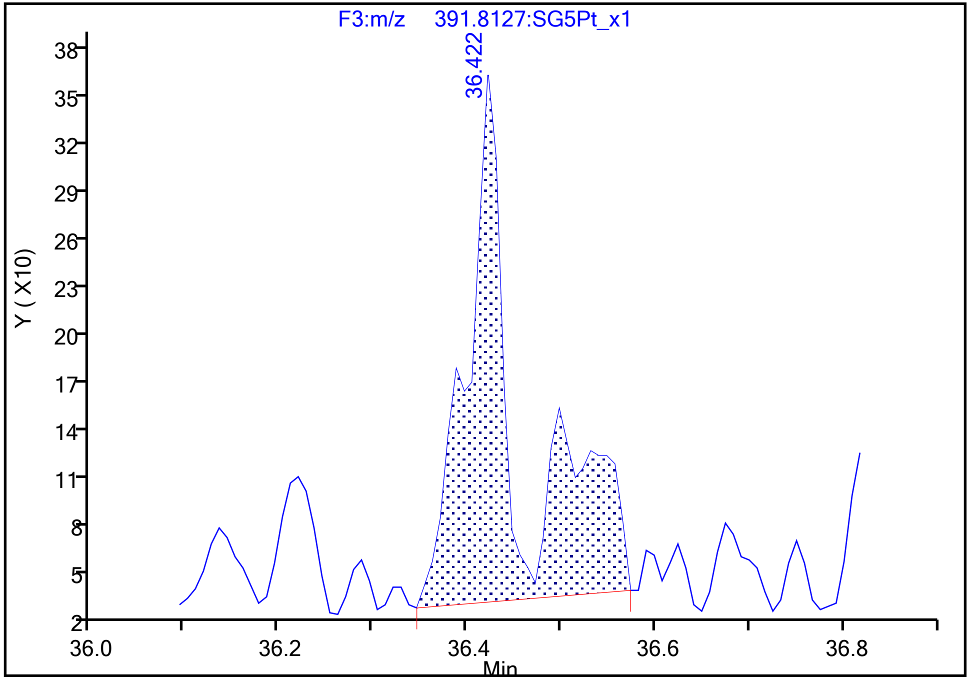

RT:	36.42
Area:	856
Amount:	0.146369
Amount Units:	pg/ul

Manual Integration Results

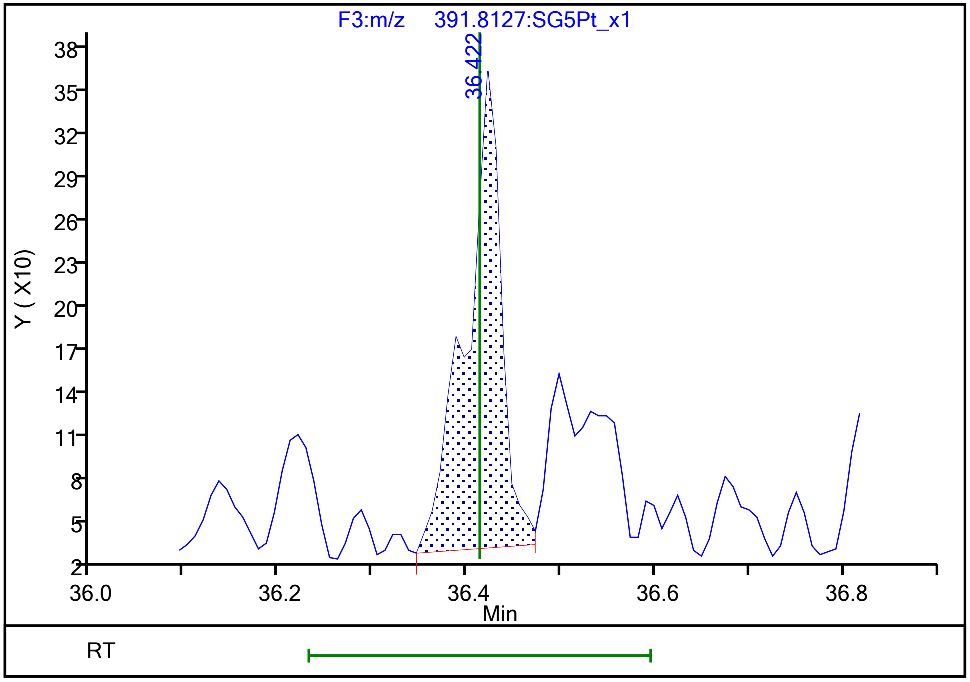

Reviewer: dadunj, 30-Jul-2020 09:59:53

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4		
Client ID:	11215702-Treatment-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Processing Integration Results

RT:	36.87
Area:	798
Amount:	0.120431
Amount Units:	pg/ul

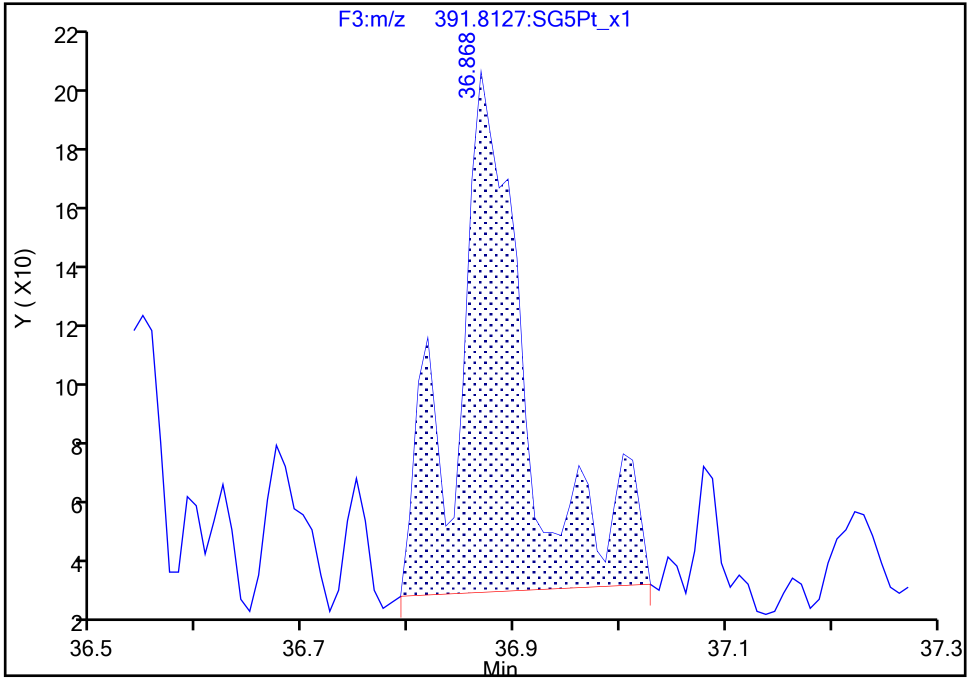

Manual Integration Results

RT:	36.87
Area:	536
Amount:	0.089625
Amount Units:	pg/ul

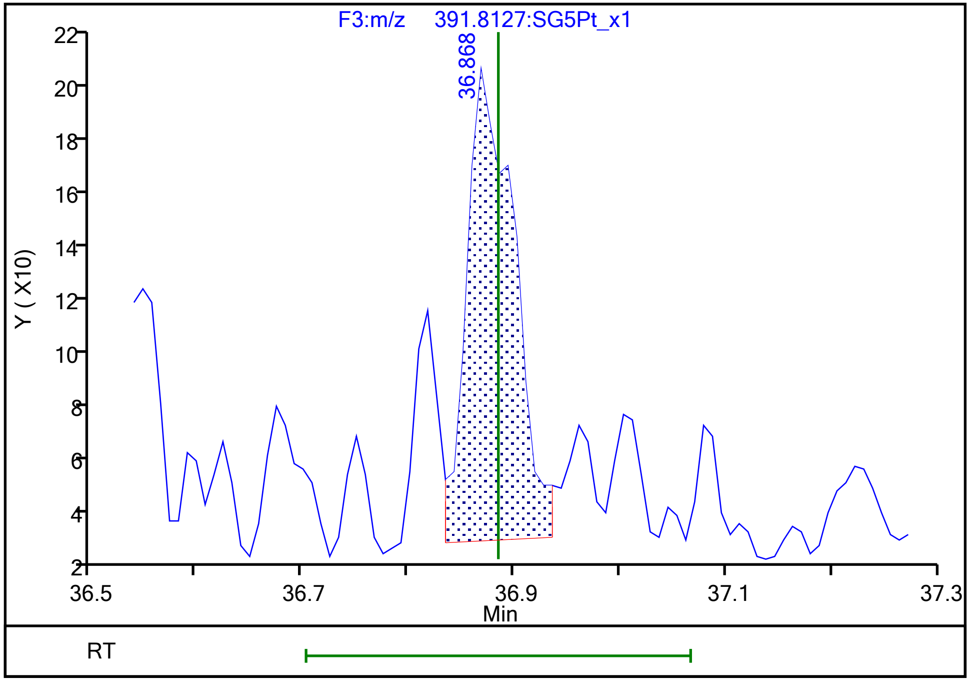

Reviewer: dadunj, 30-Jul-2020 10:00:03

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 10:01:13
Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d				
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1		
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4		
Client ID:	11215702-Treatment-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	36.89
Area:	883
Amount:	0.120431
Amount Units:	pg/ul

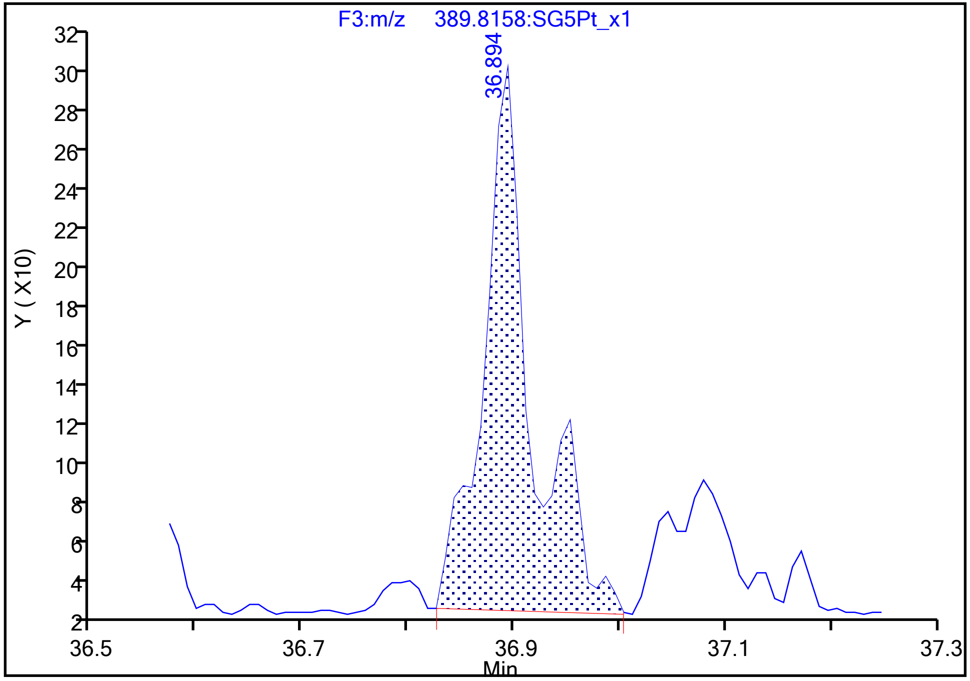

Manual Integration Results

RT:	36.89
Area:	715
Amount:	0.089625
Amount Units:	pg/ul

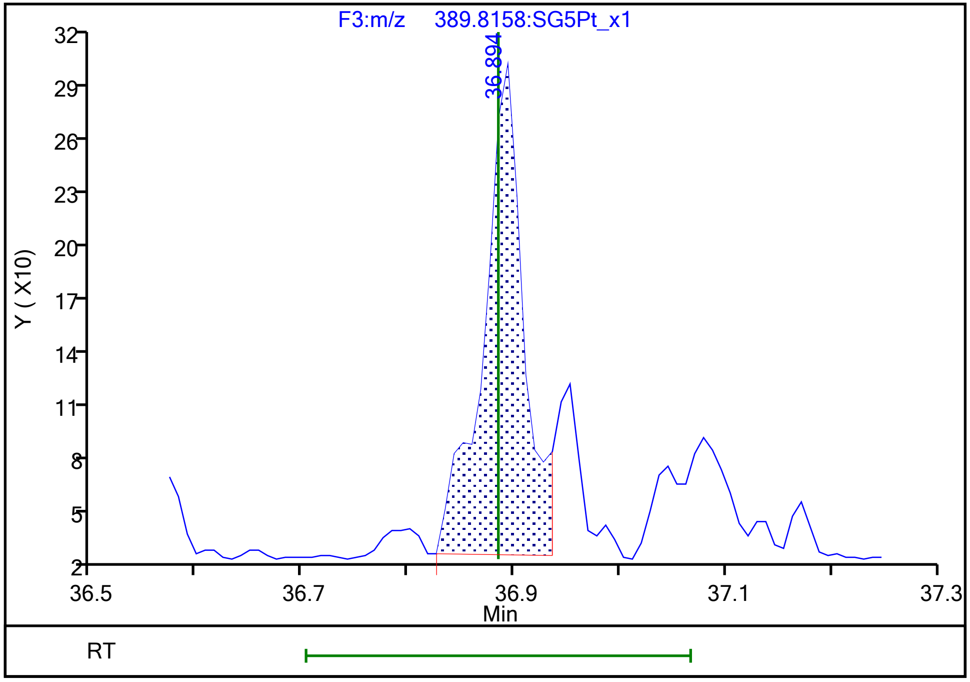

Reviewer: dadunj, 30-Jul-2020 10:00:04
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 30-Jul-2020 10:01:13
Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Instrument ID: DFS 1
Lims ID: 320-62886-A-4-A
Lab Sample ID: 320-62886-4
Client ID: 11215702-Treatment-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 22
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 38.83
Area: 2661
Amount: 0.303706
Amount Units: pg/ul

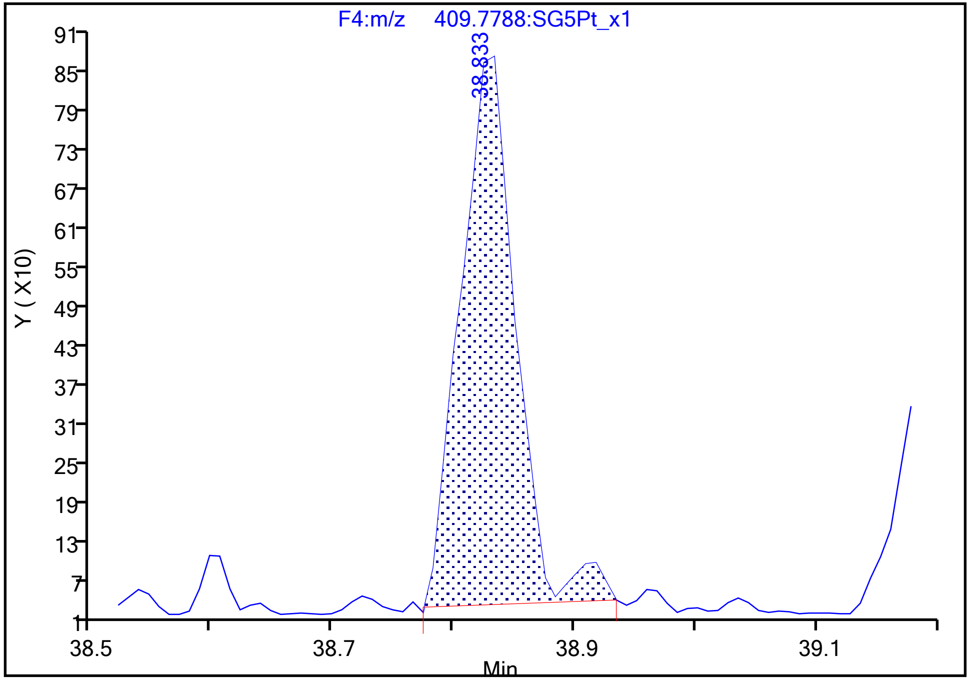

Manual Integration Results

RT: 38.83
Area: 2555
Amount: 0.272219
Amount Units: pg/ul

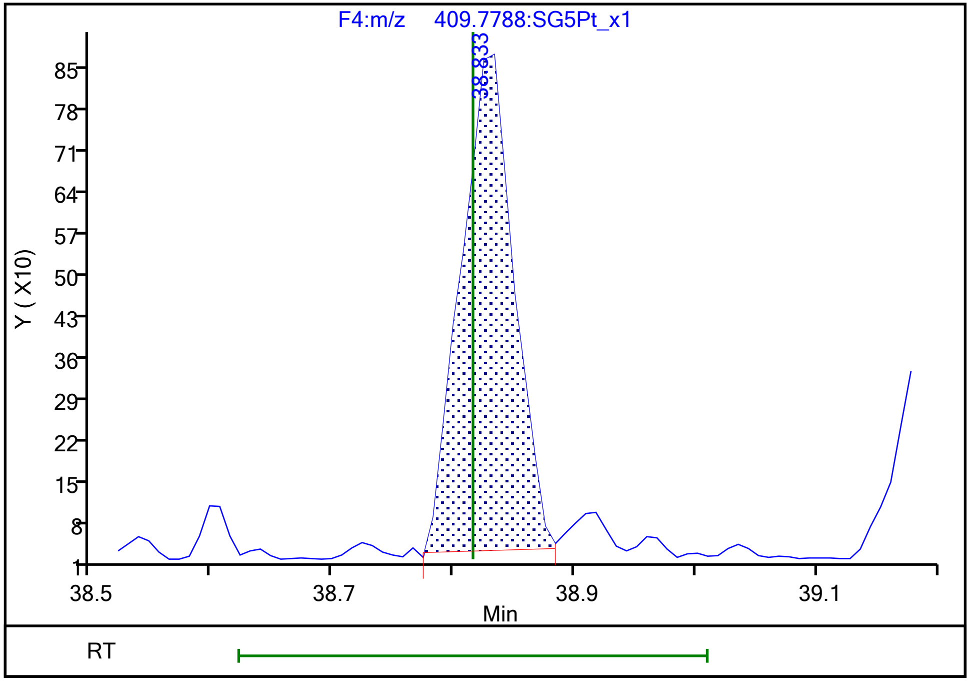

Reviewer: dadunj, 30-Jul-2020 10:00:15
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Instrument ID:	DFS 1
Lims ID:	320-62886-A-4-A	Lab Sample ID:	320-62886-4
Client ID:	11215702-Treatment-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT: 38.82
Area: 3107
Amount: 0.303706
Amount Units: pg/ul

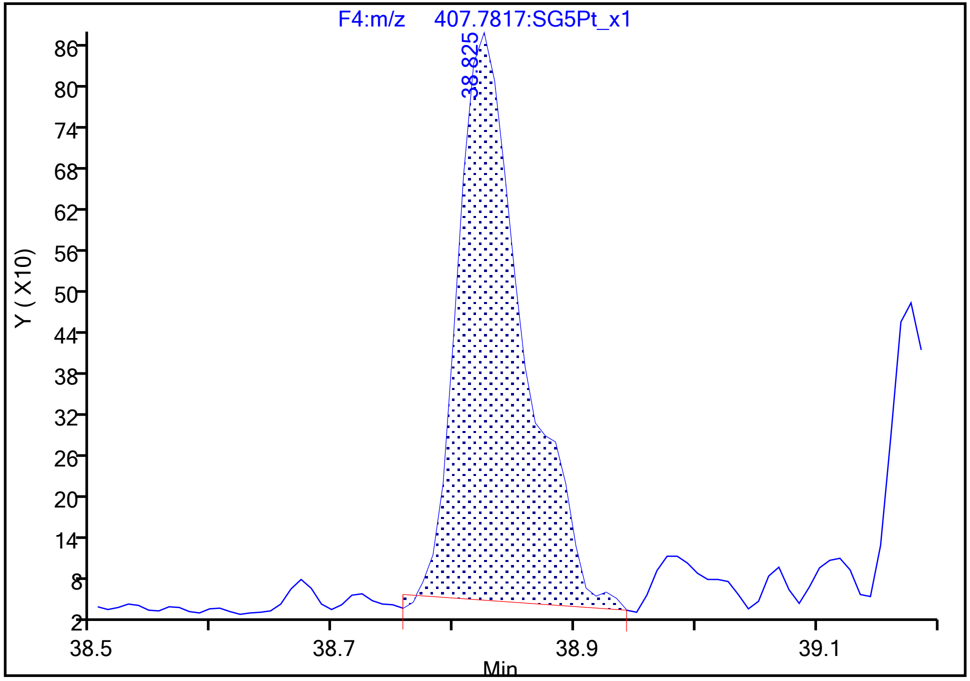

Manual Integration Results

RT: 38.82
Area: 2615
Amount: 0.272219
Amount Units: pg/ul

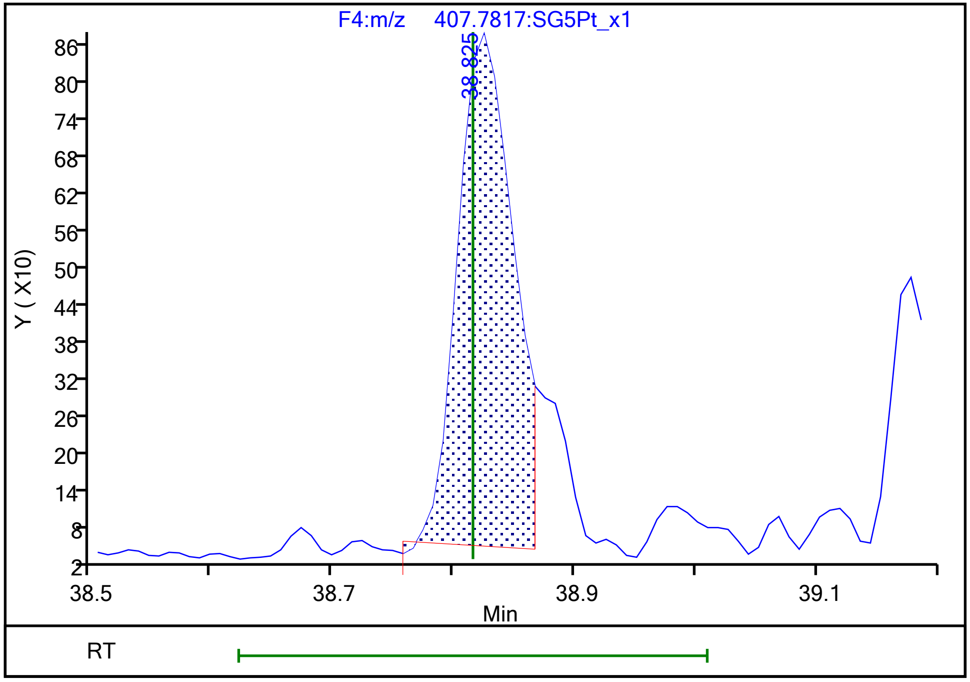

Reviewer: dadunj, 30-Jul-2020 10:00:16

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date: 28-Jul-2020 10:01:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-2

Worklist#: 398798 Sample Line#: 22

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

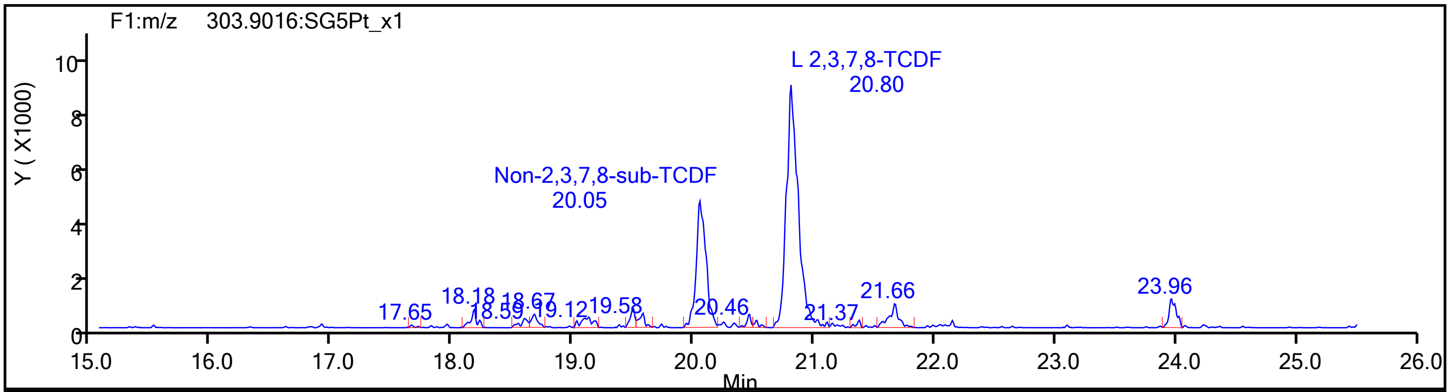

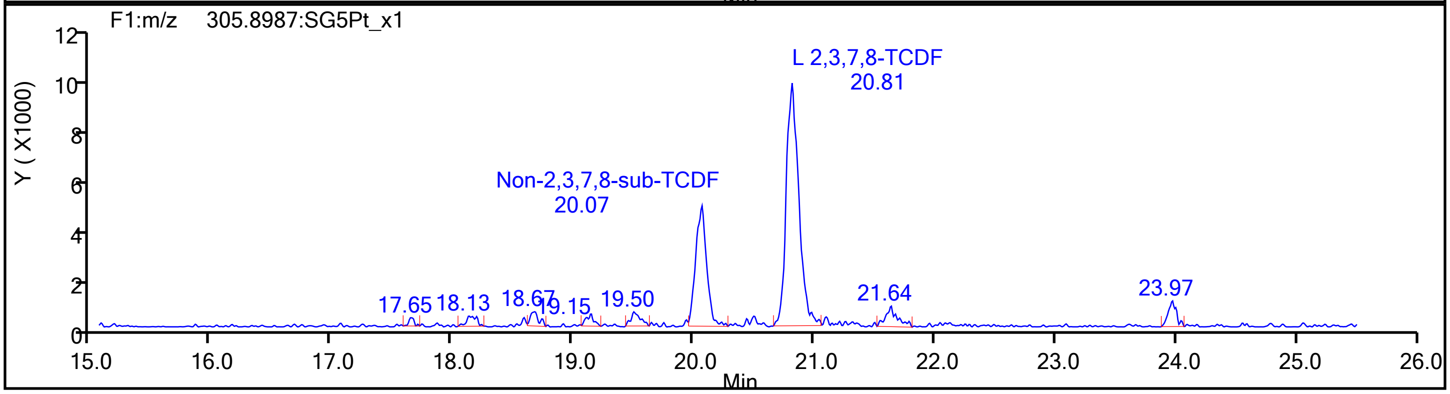

TCDF Standards

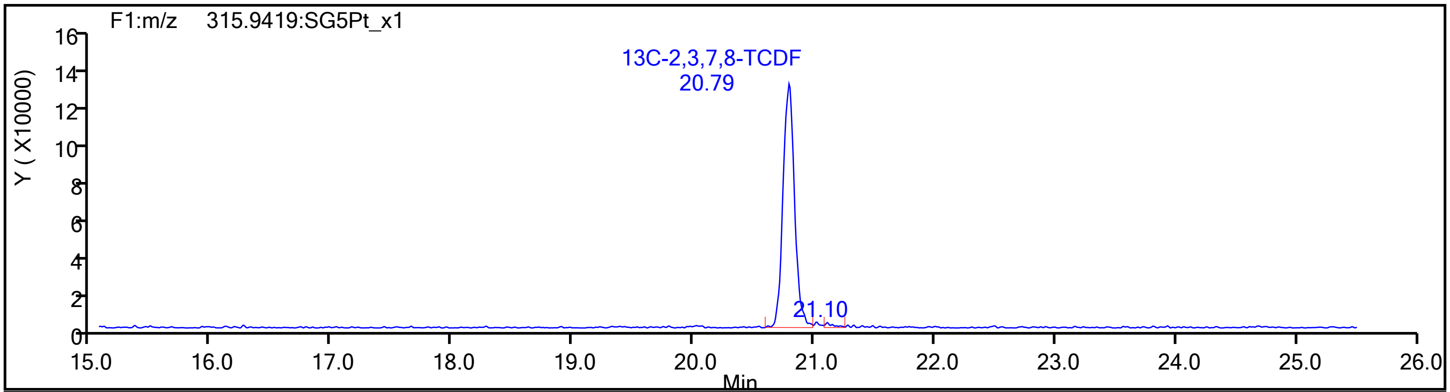

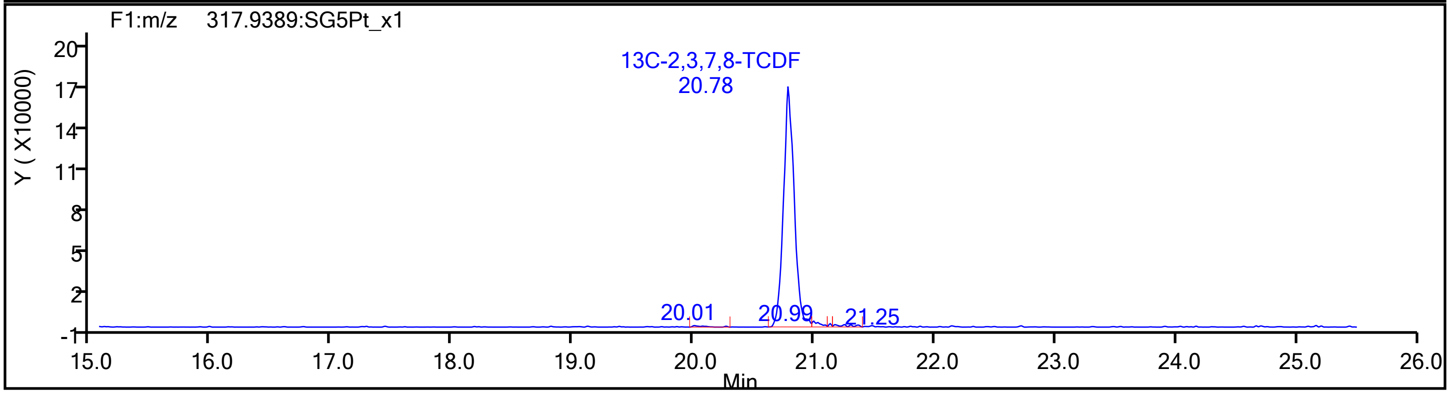

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

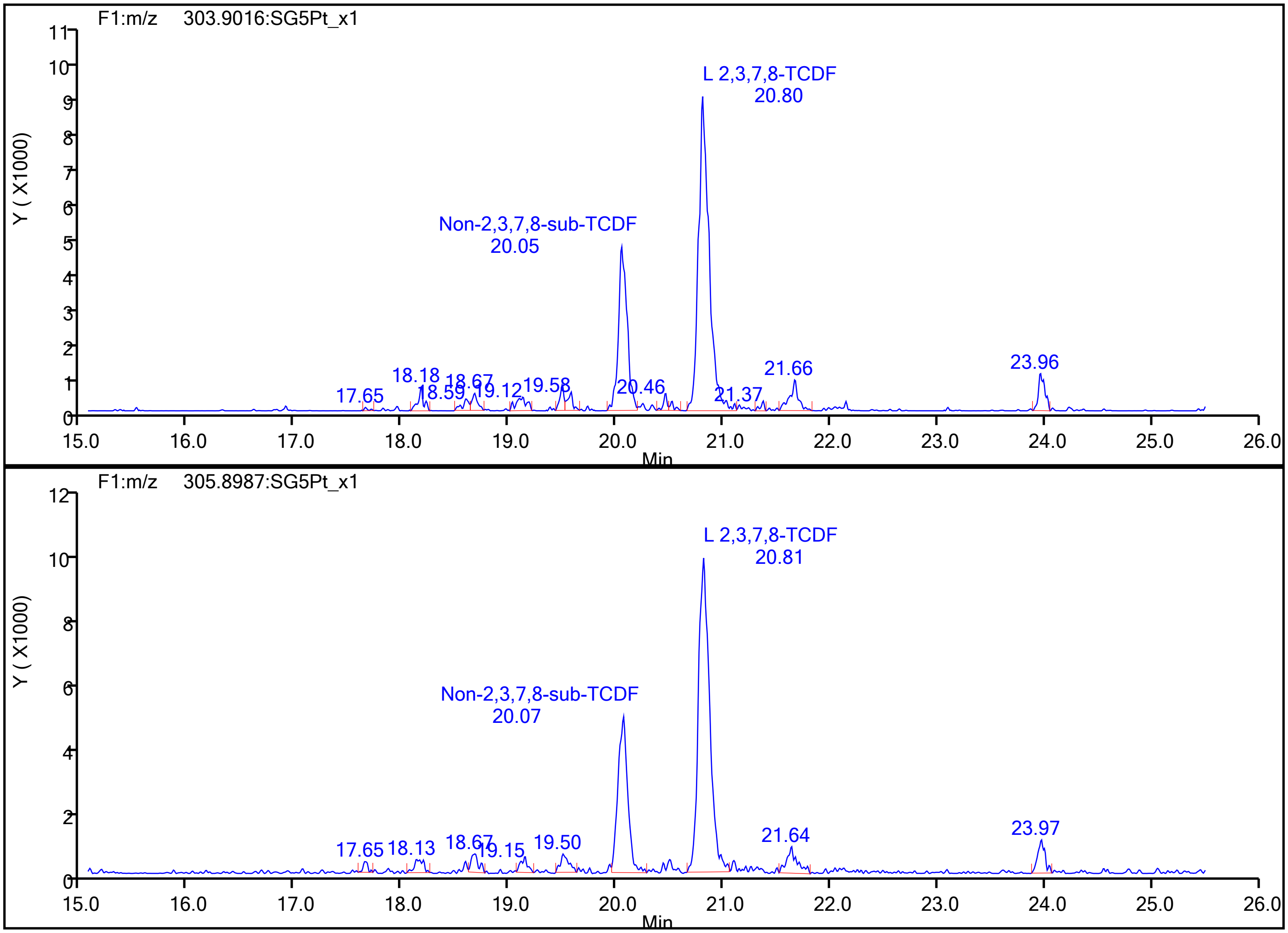

TCDF Interference Mass

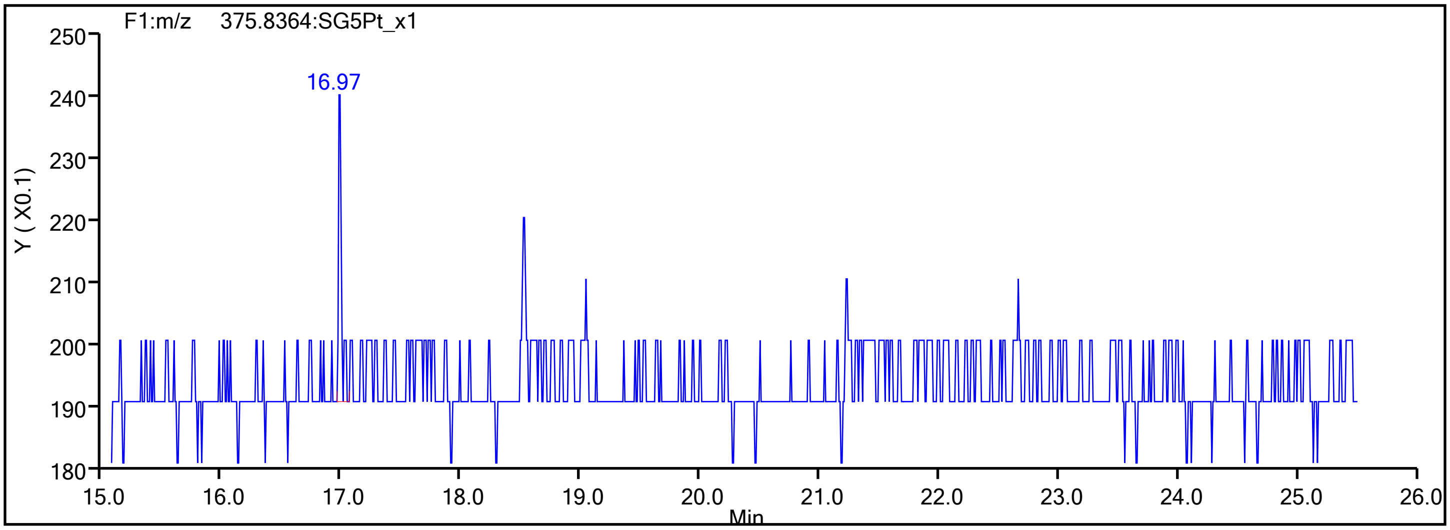

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

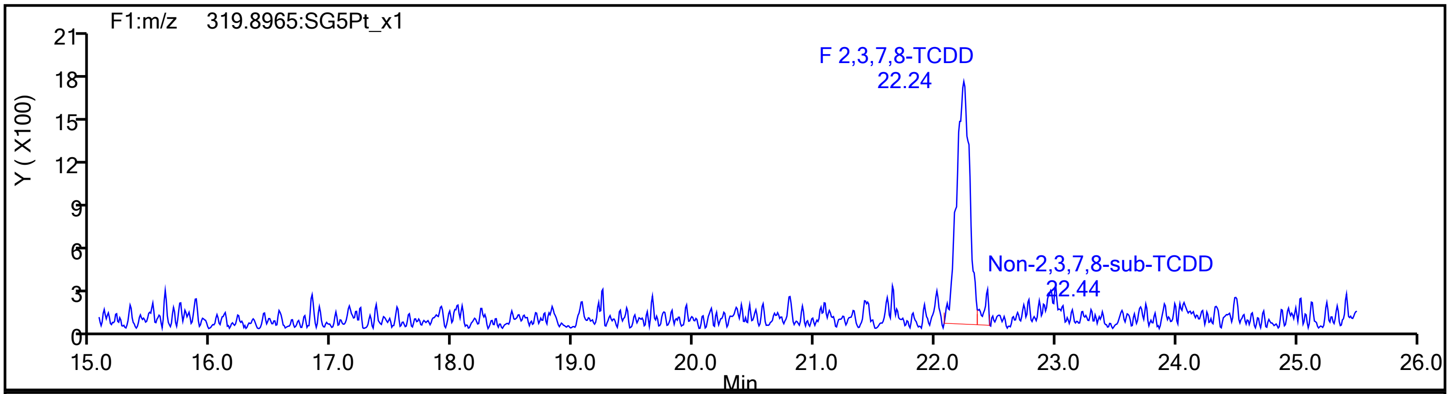

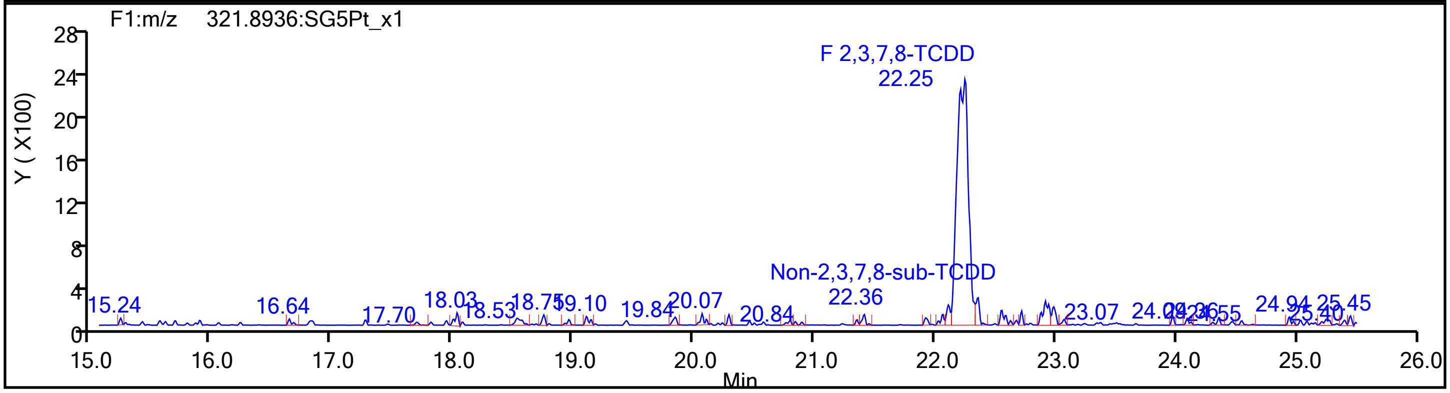

TCDD Standards

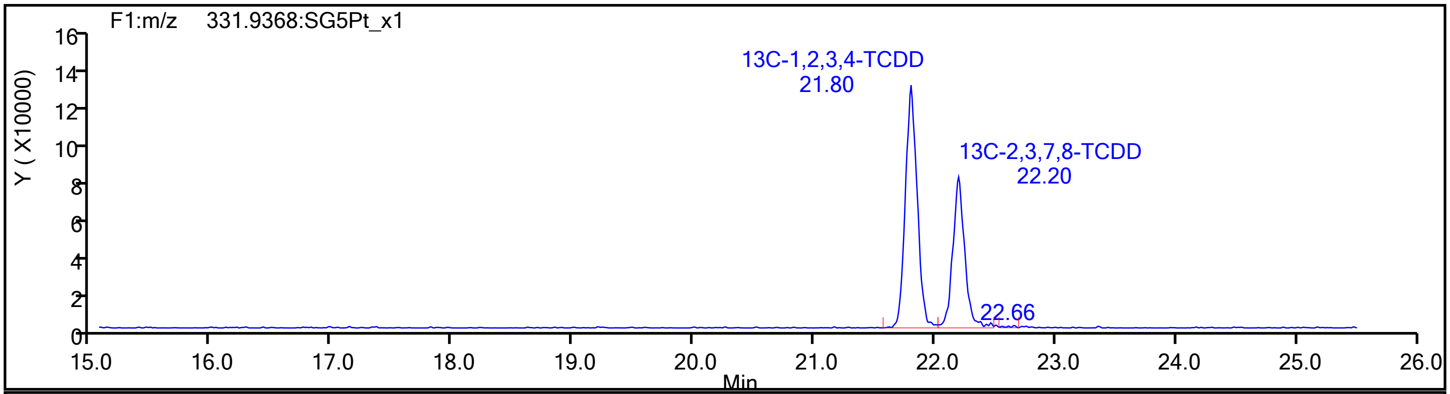

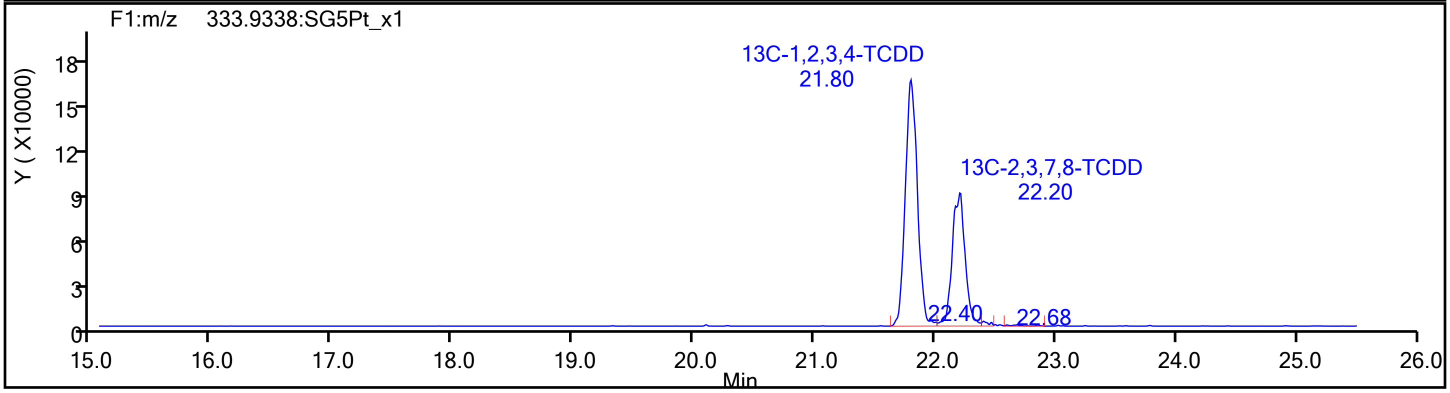

Report Date: 30-Jul-2020 10:01:13　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

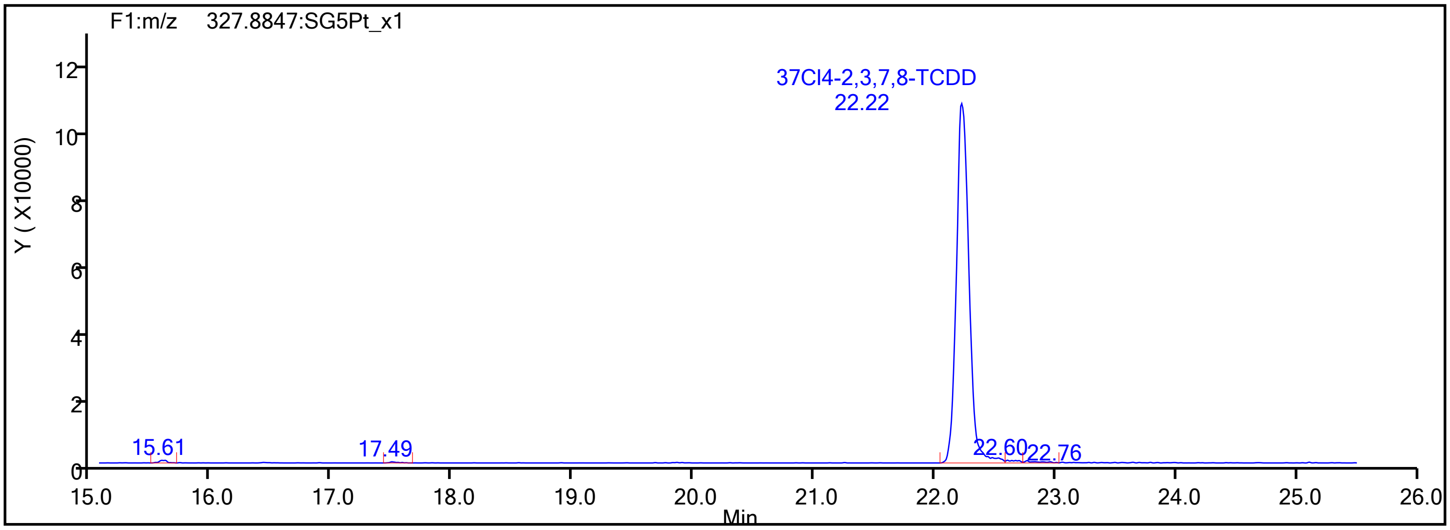

37Cl4-TCDD Standards

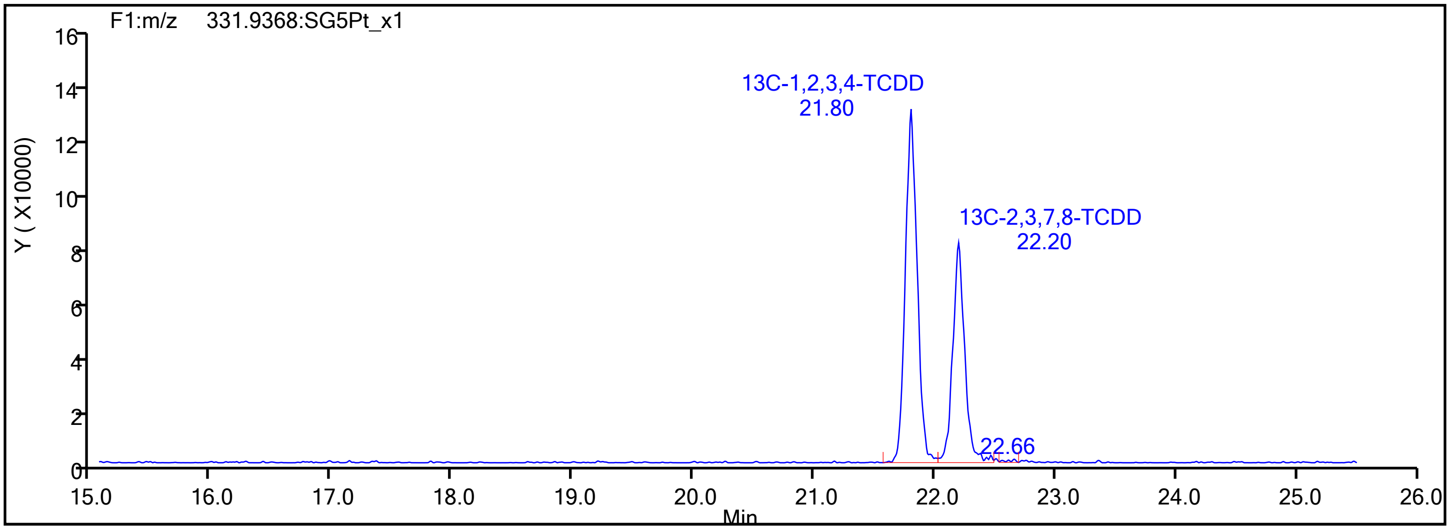

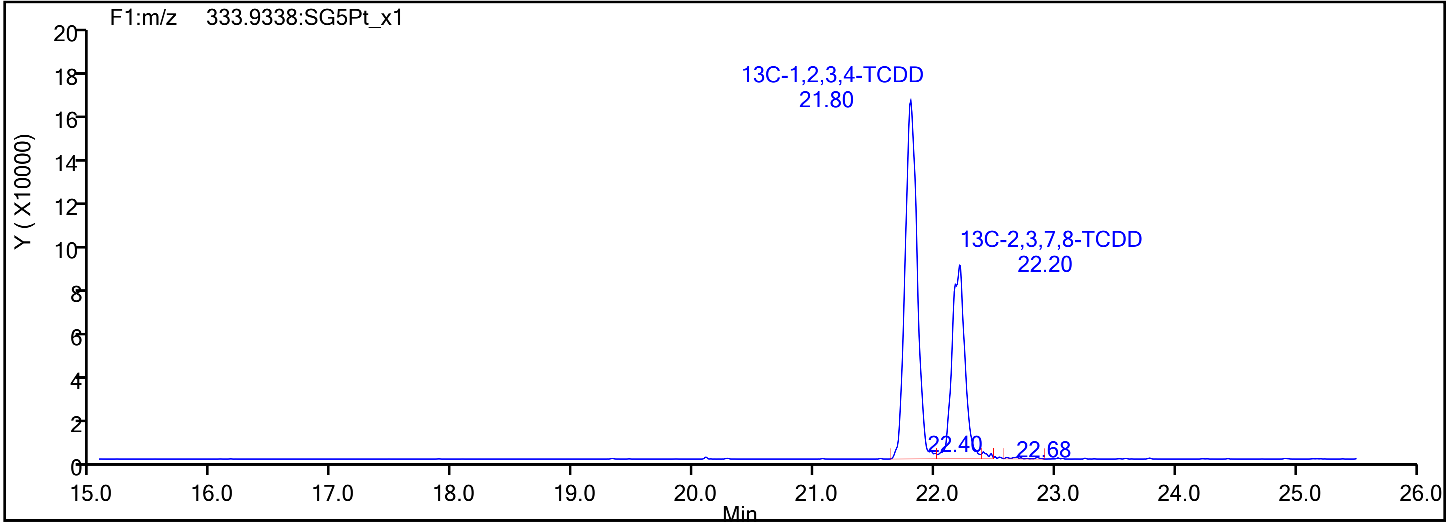

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

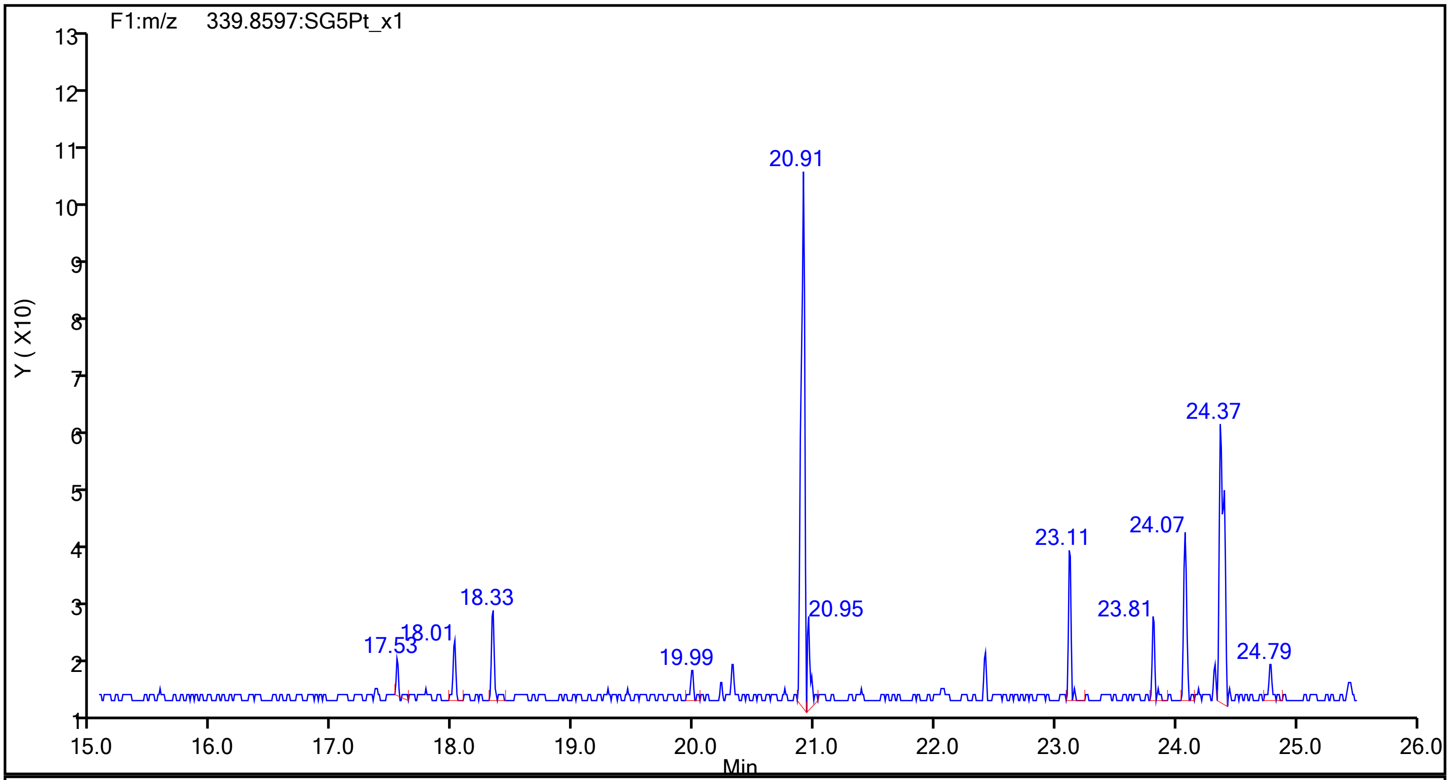

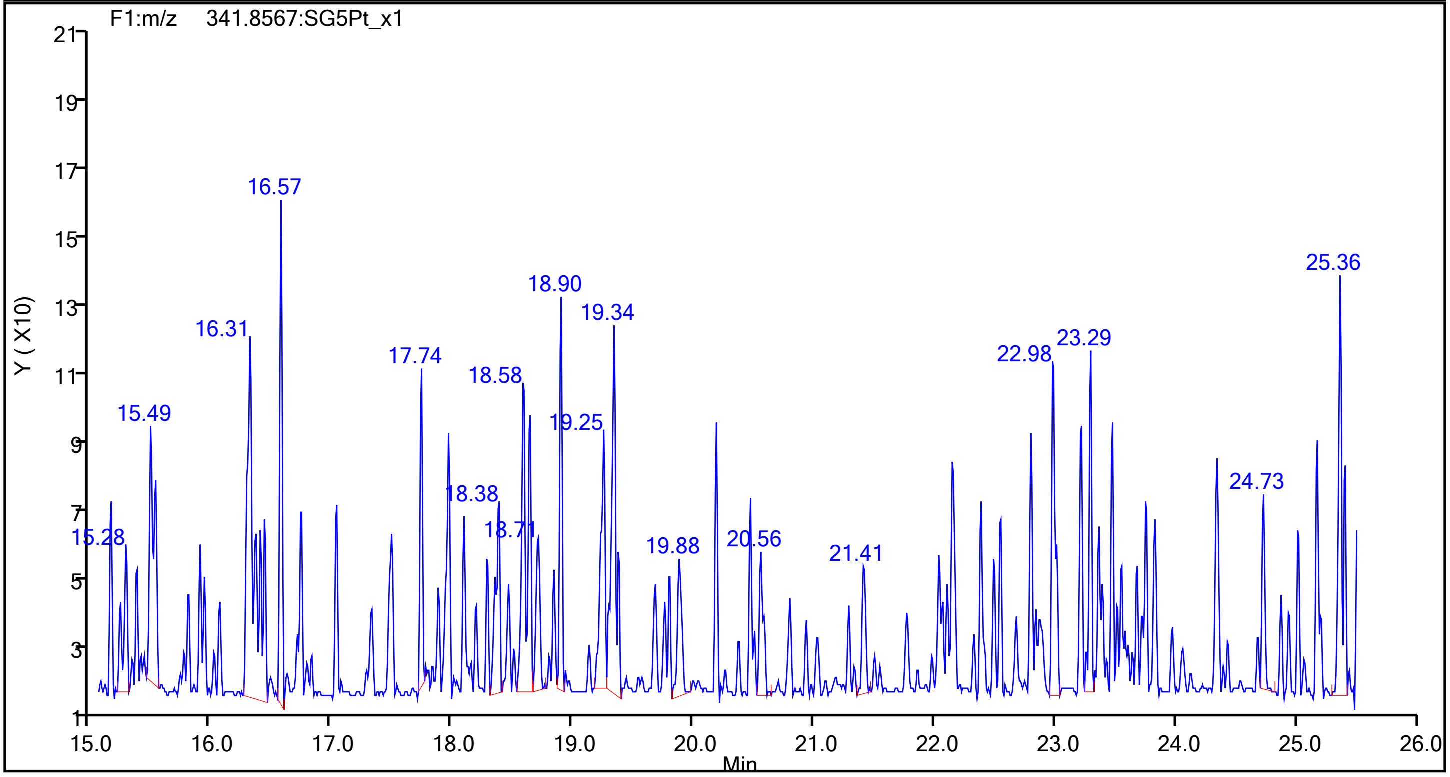

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-2
Worklist#: 398798
Sample Line#: 22
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

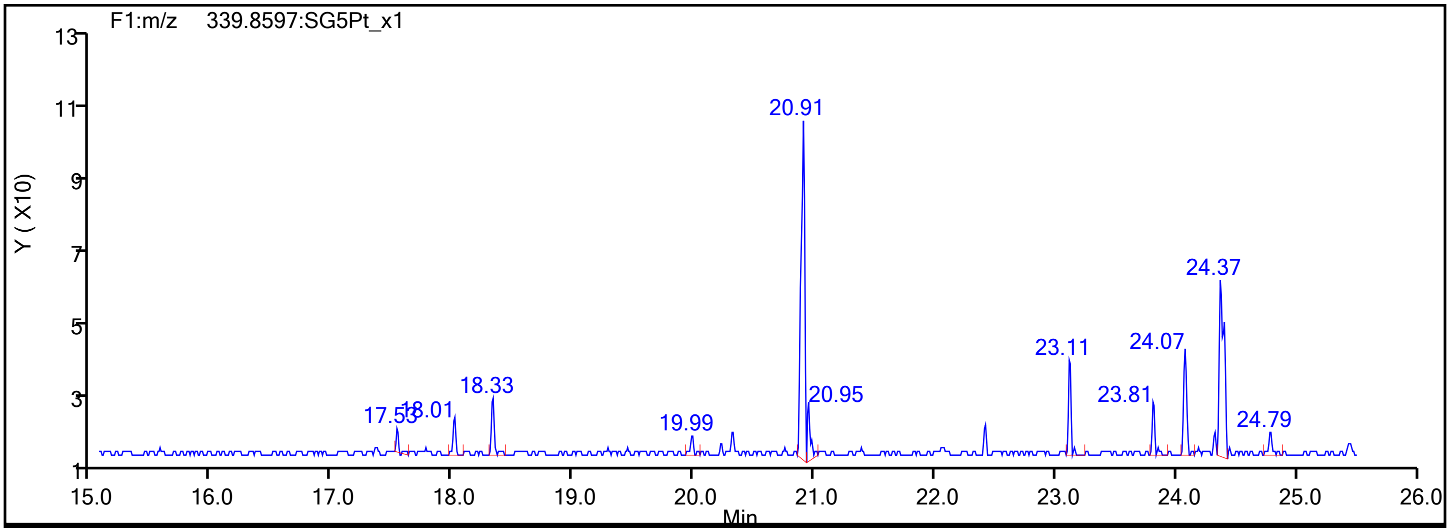

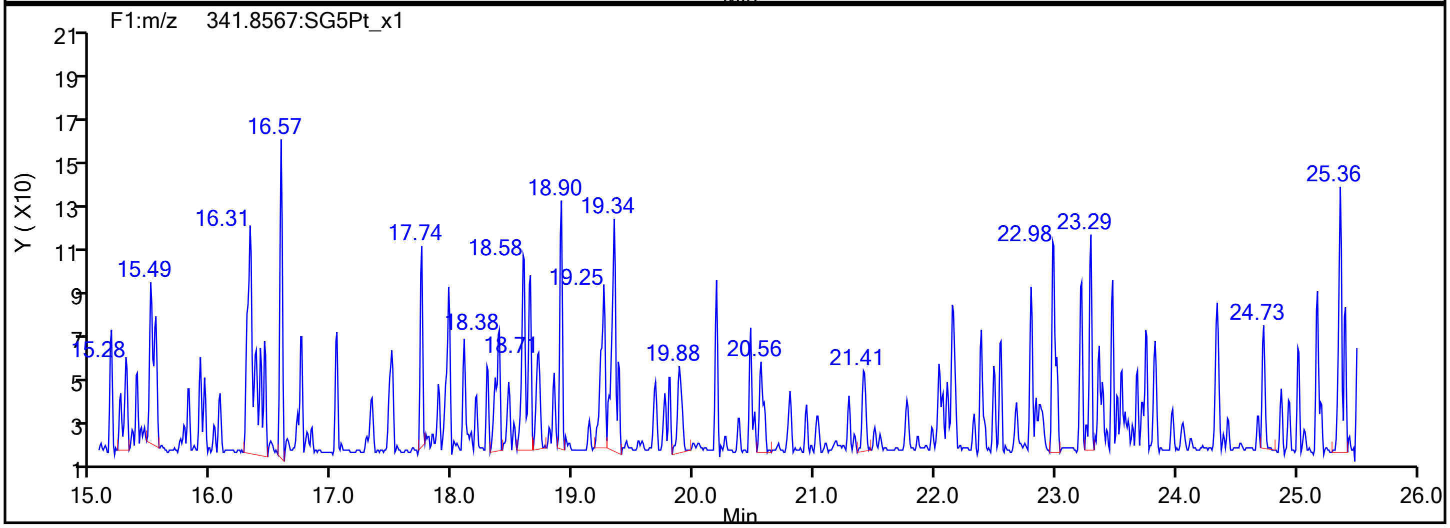

F1 PeCDFs Interference Mass

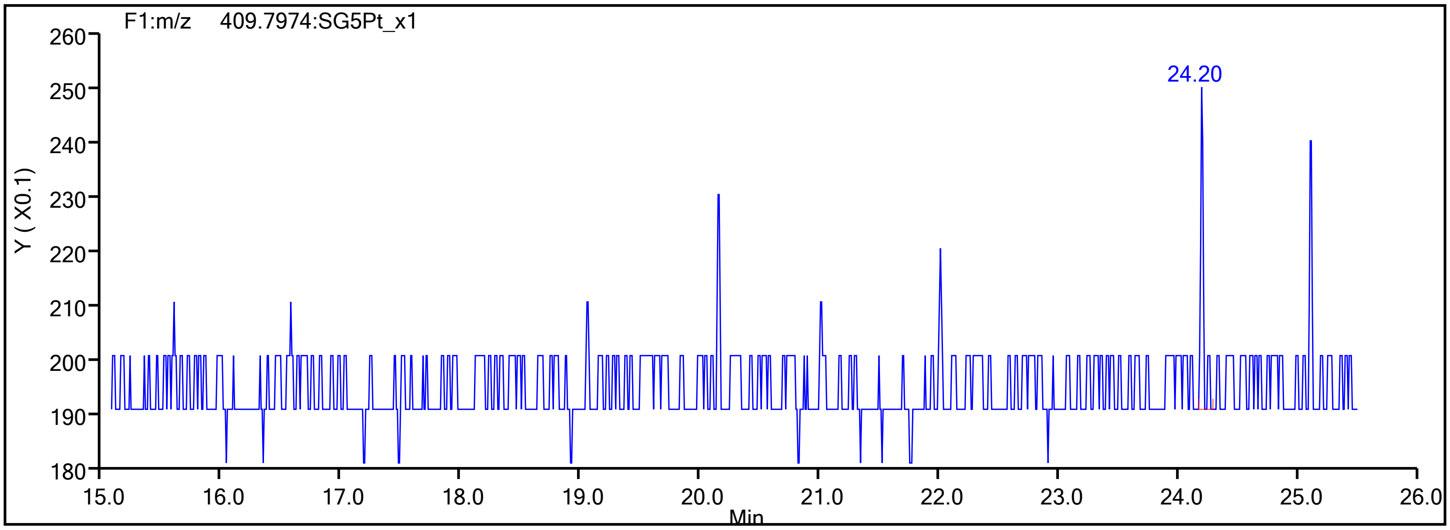

Report Date: 30-Jul-2020 10:01:13
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-2
Worklist#: 398798
Sample Line#: 22
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

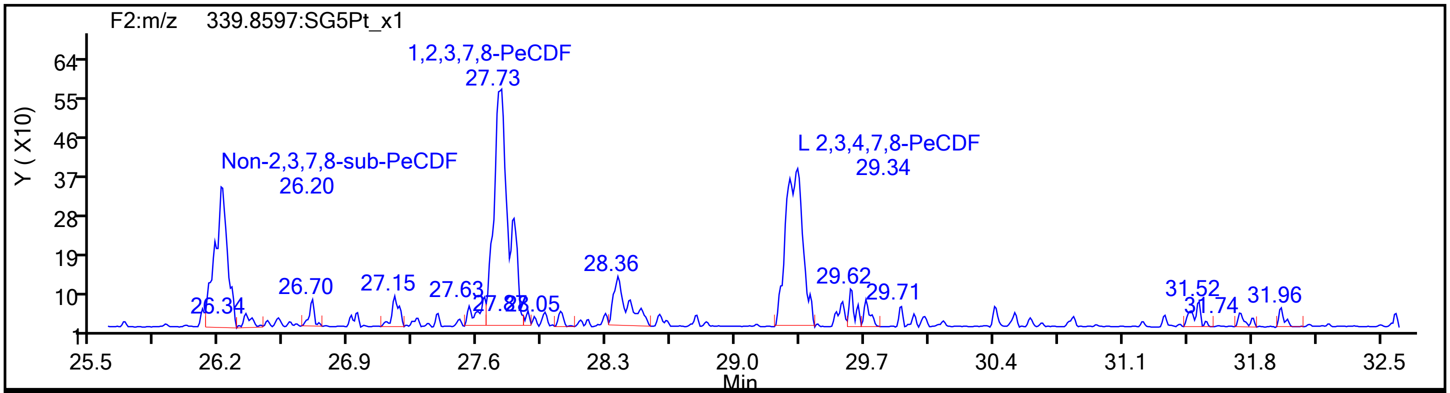

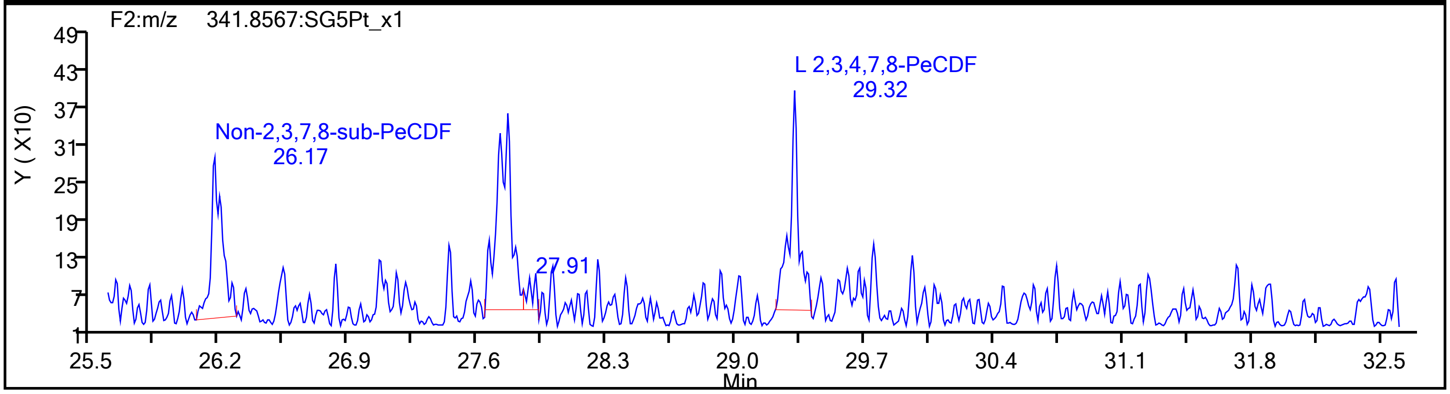

PeCDF Standards

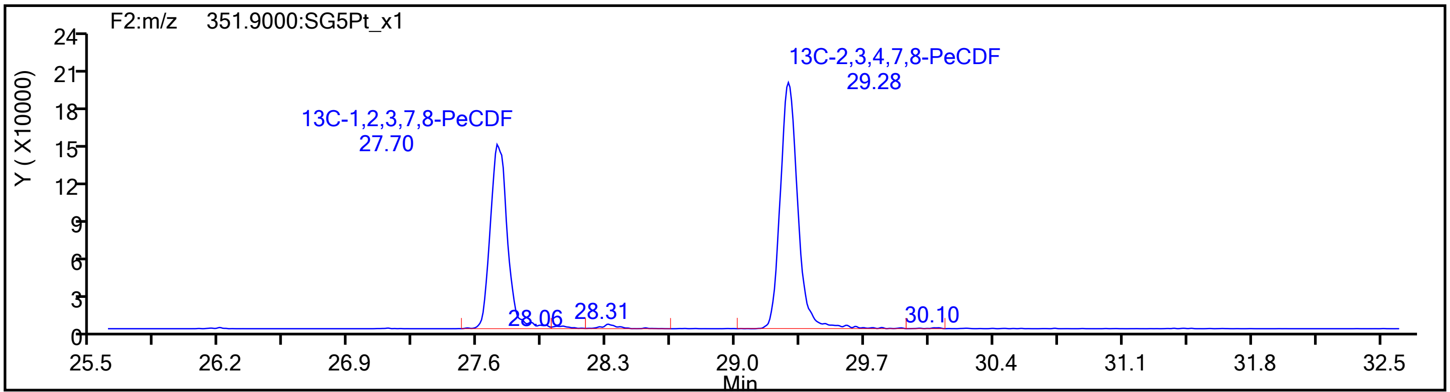

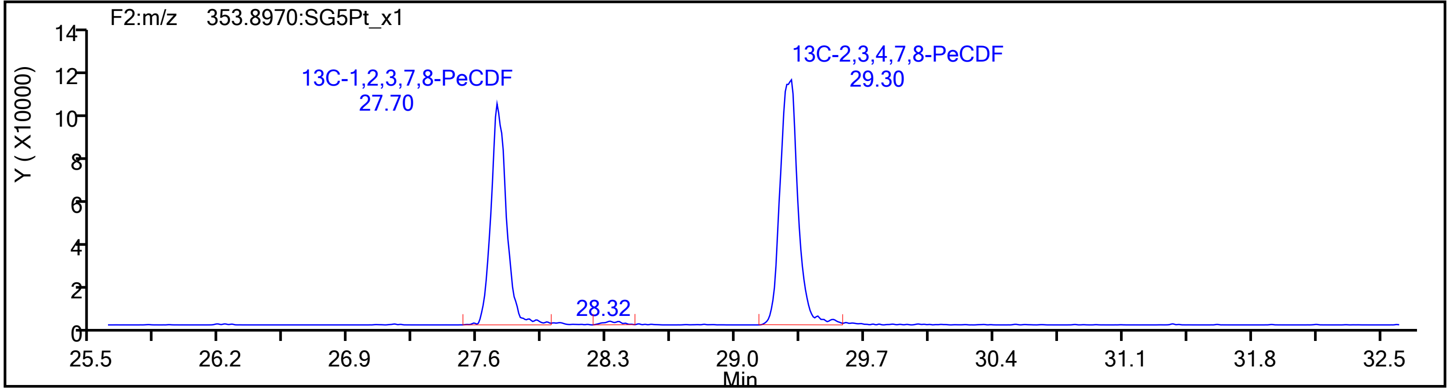

Report Date: 30-Jul-2020 10:01:13 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

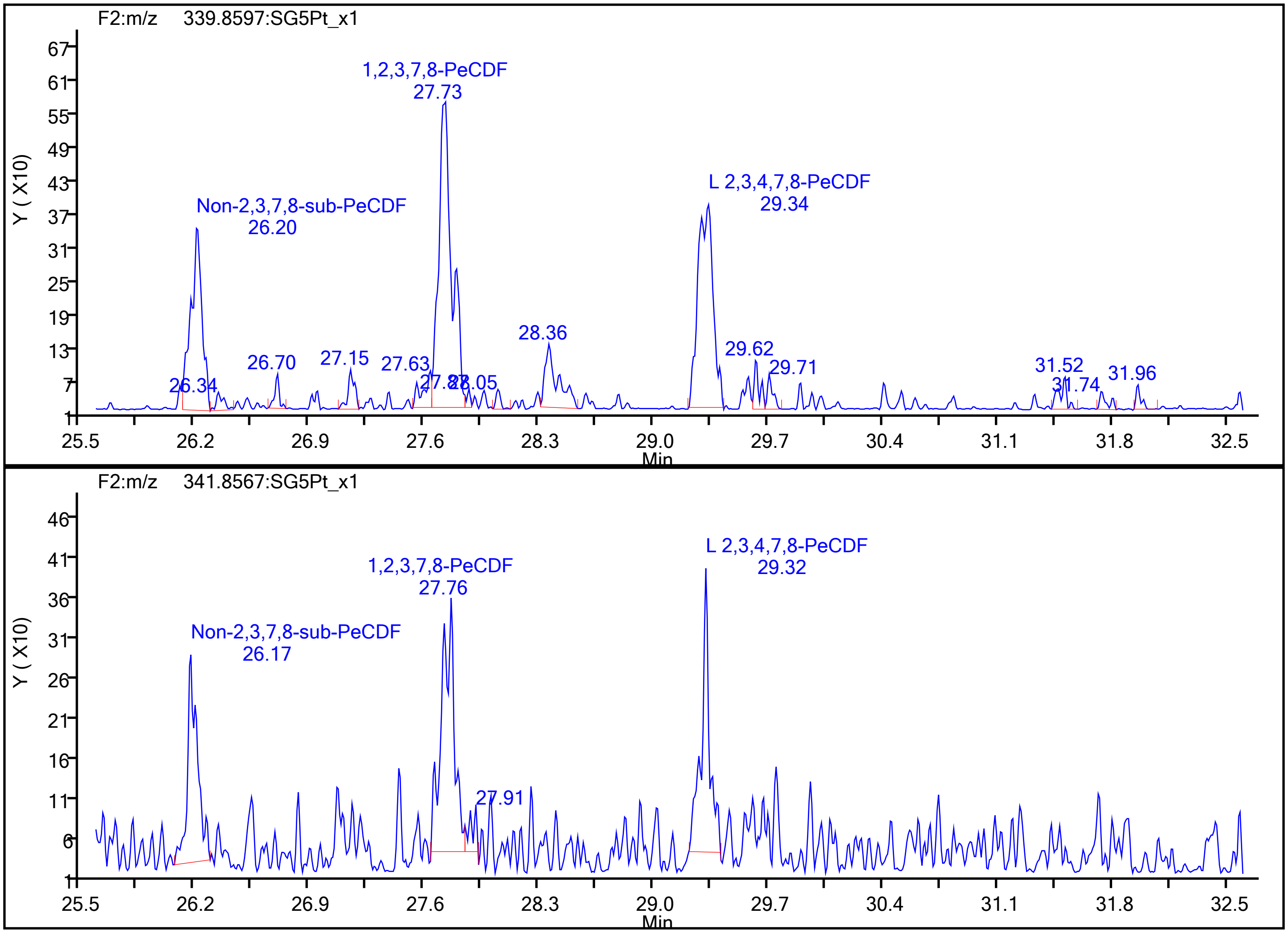

PeCDF Interference Mass

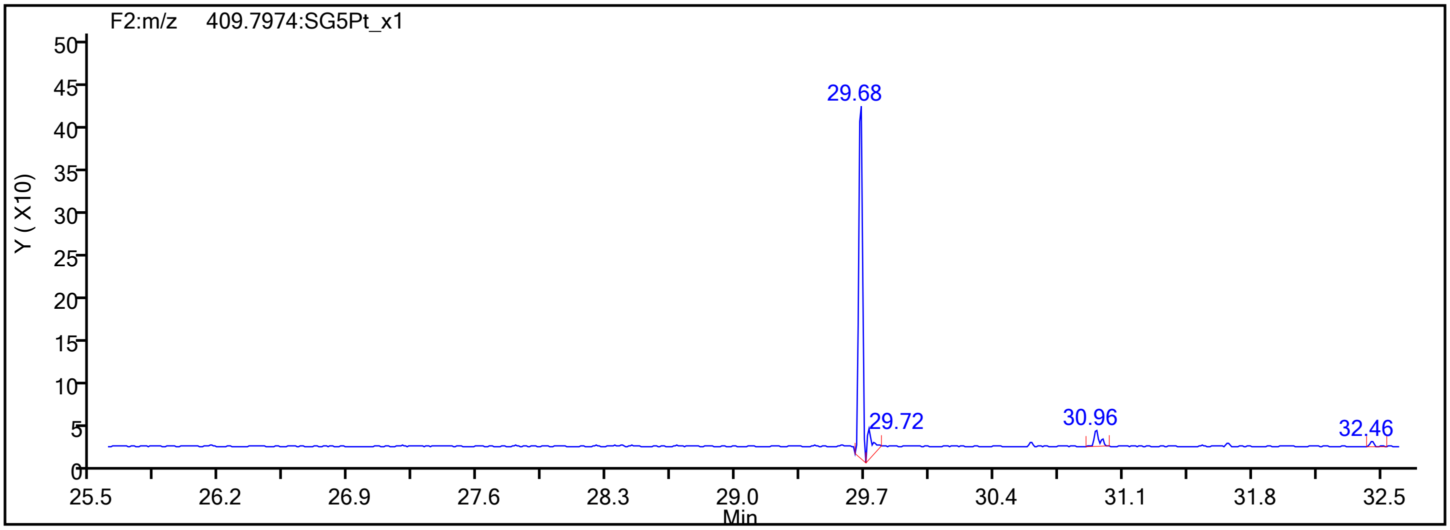

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date: 28-Jul-2020 10:01:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-2

Worklist#: 398798
Sample Line#: 22

Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

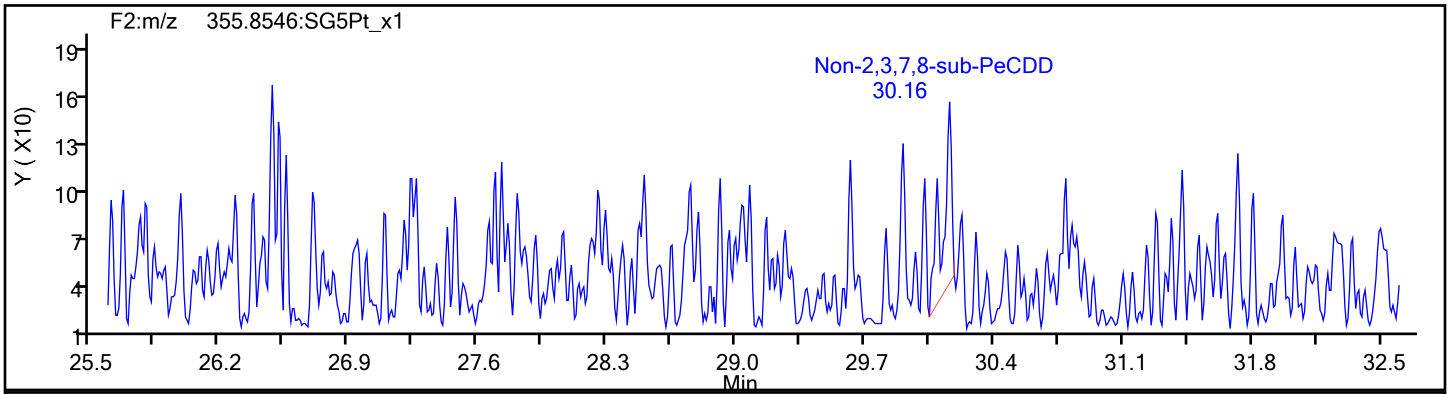

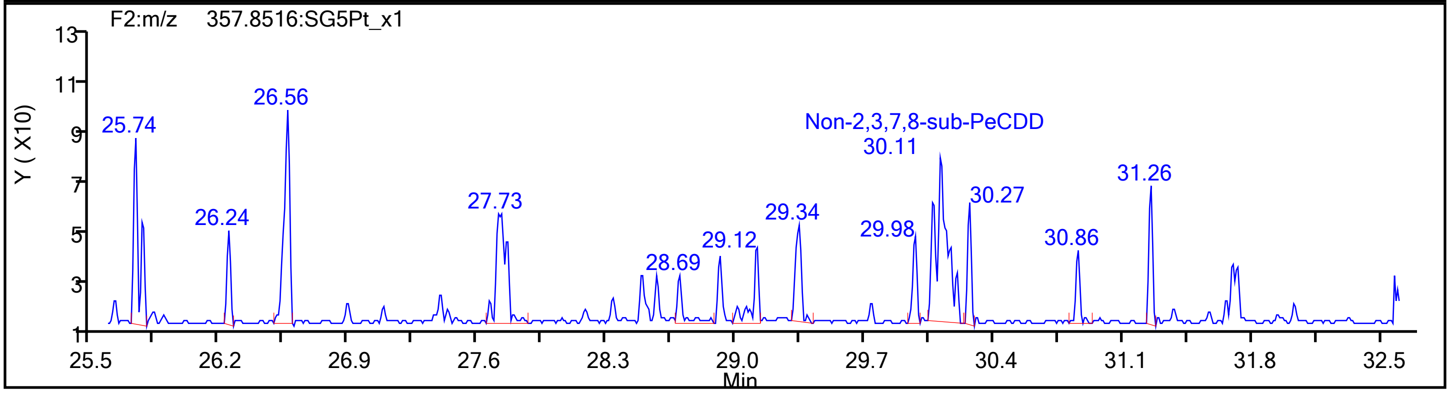

PeCDD Standards

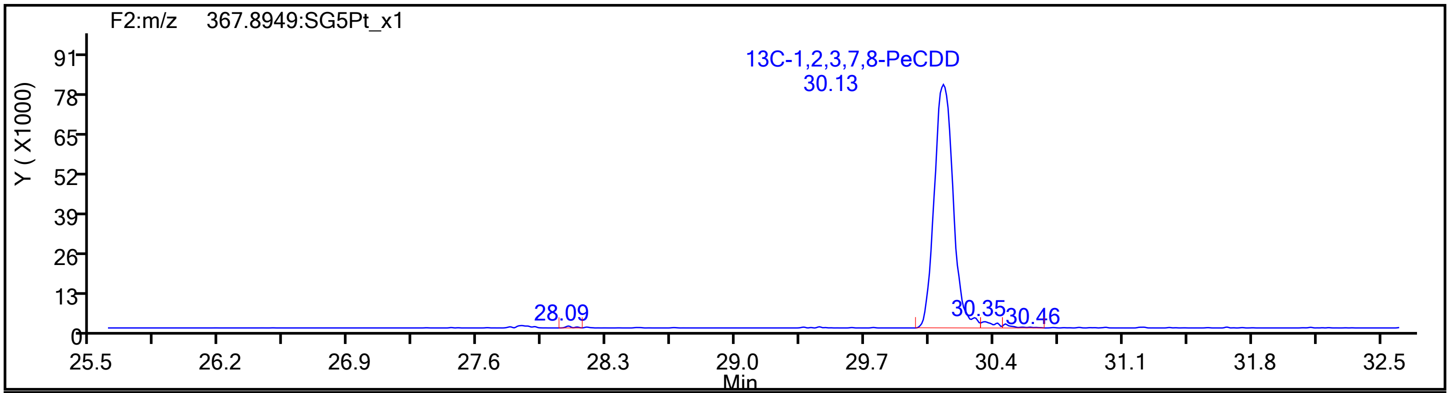

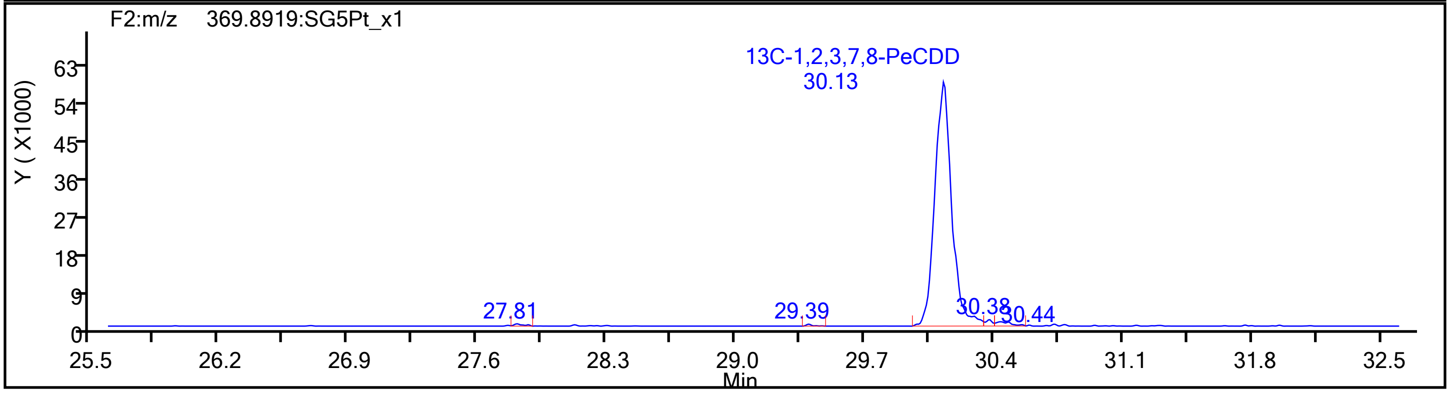

Report Date: 30-Jul-2020 10:01:14   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date: 28-Jul-2020 10:01:00   Injection Vol: 1.0 ul

Instrument ID: DFS 1   Operator ID: Xcalibur_System

Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-2

Worklist#: 398798   Sample Line#: 22

Column Type: DB-5   Column Dia: 0.32 mm

HxCDF

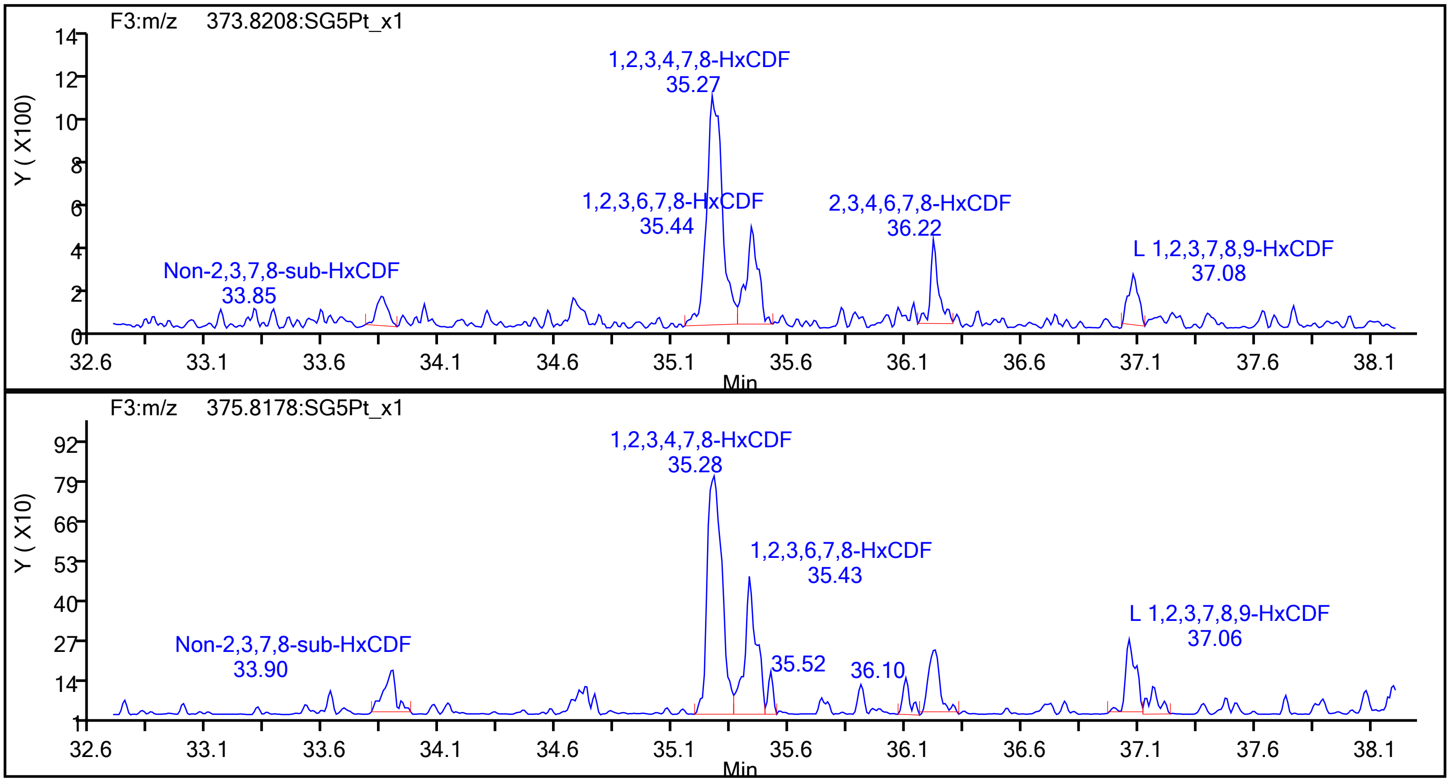

HxCDF Standards

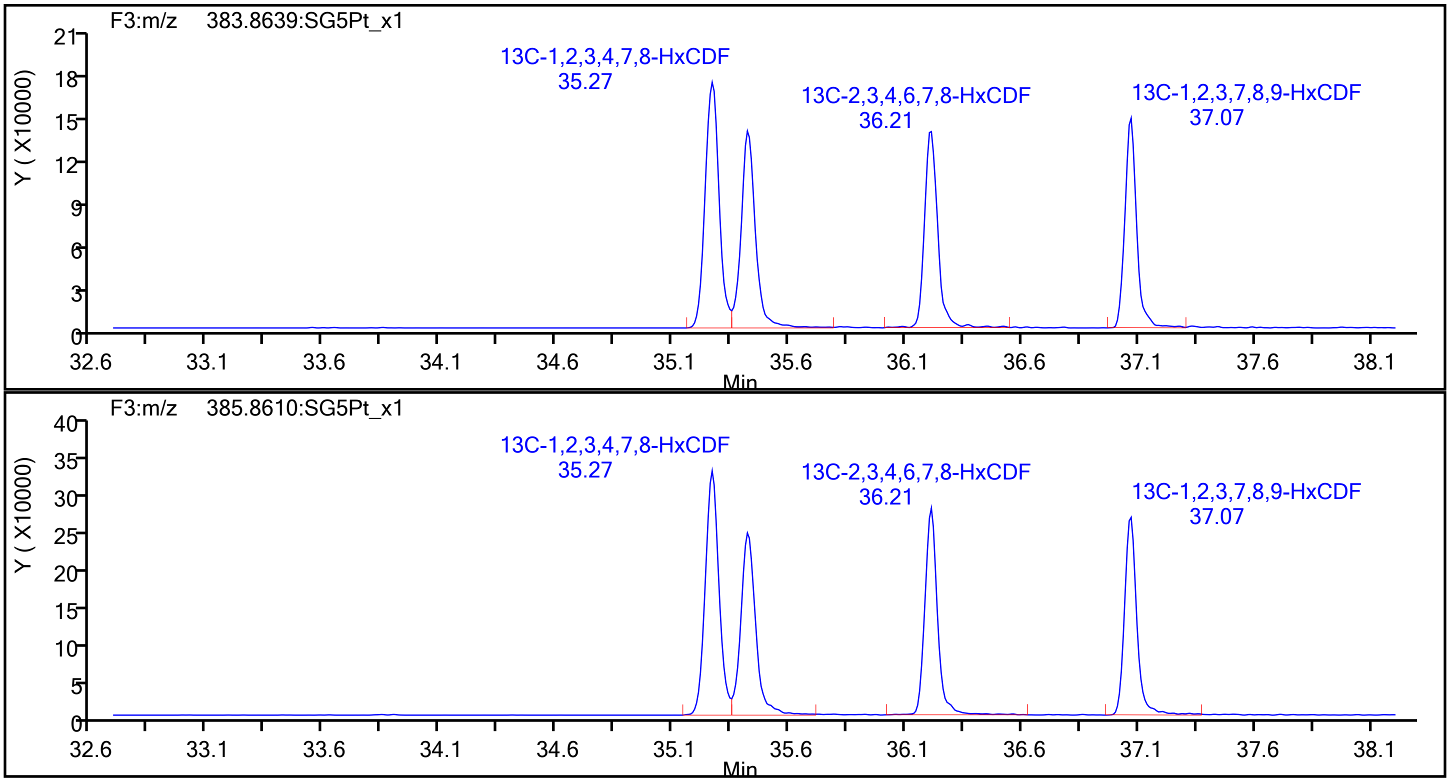

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 398798
Sample Line#: 22
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Column Dia: 0.32 mm

HxCDF

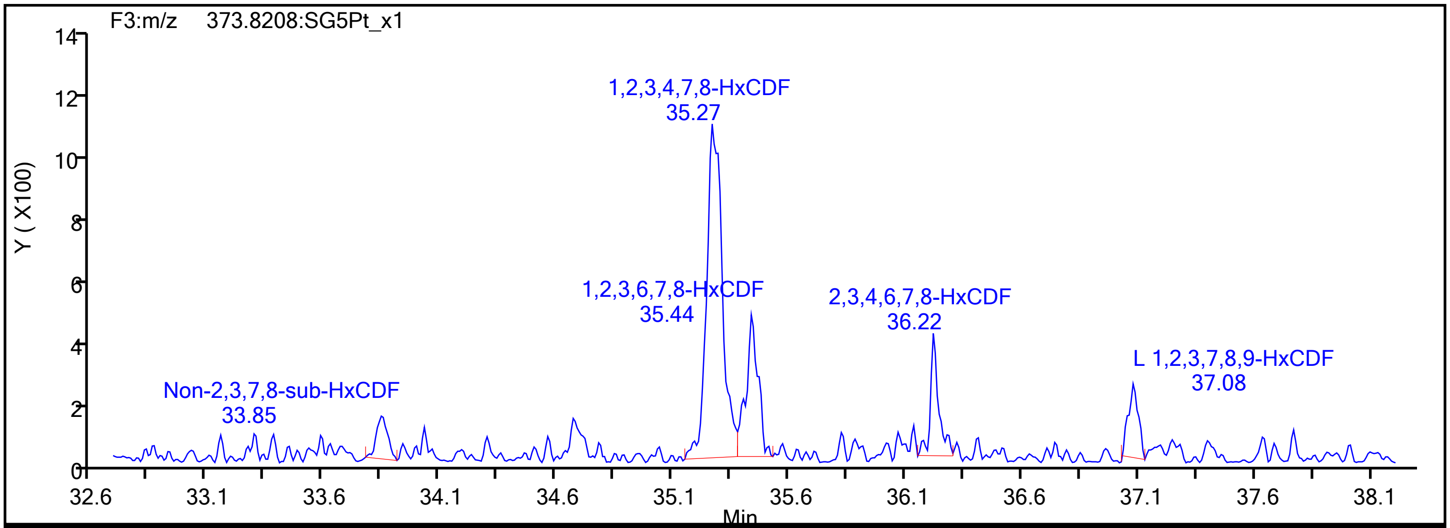

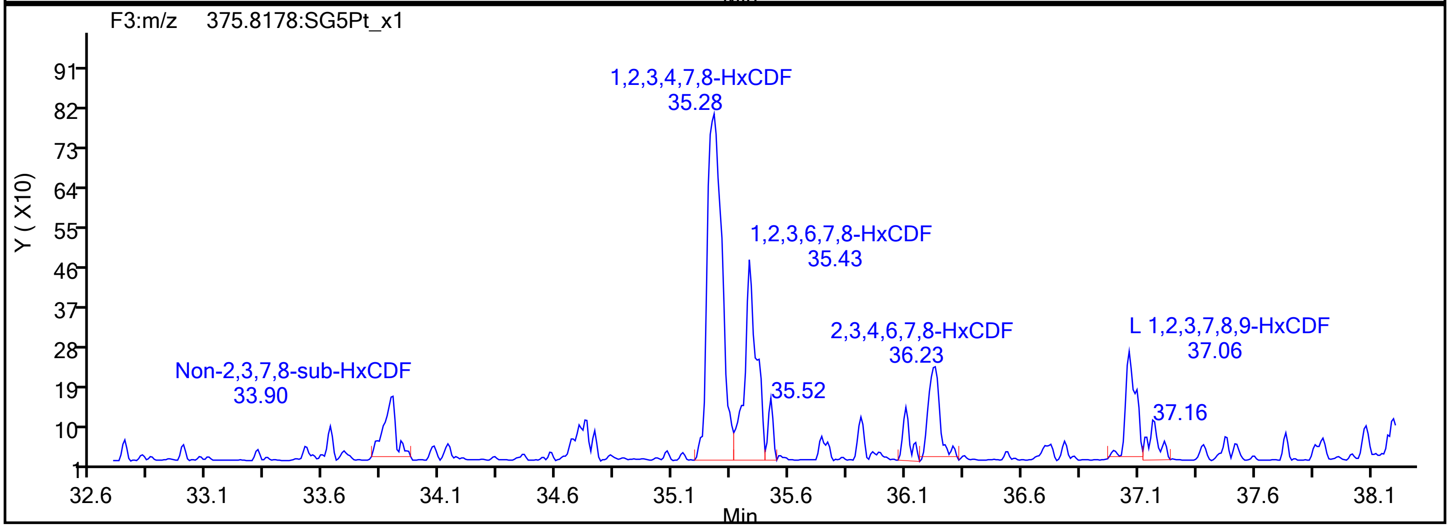

HxCDF Interference Mass

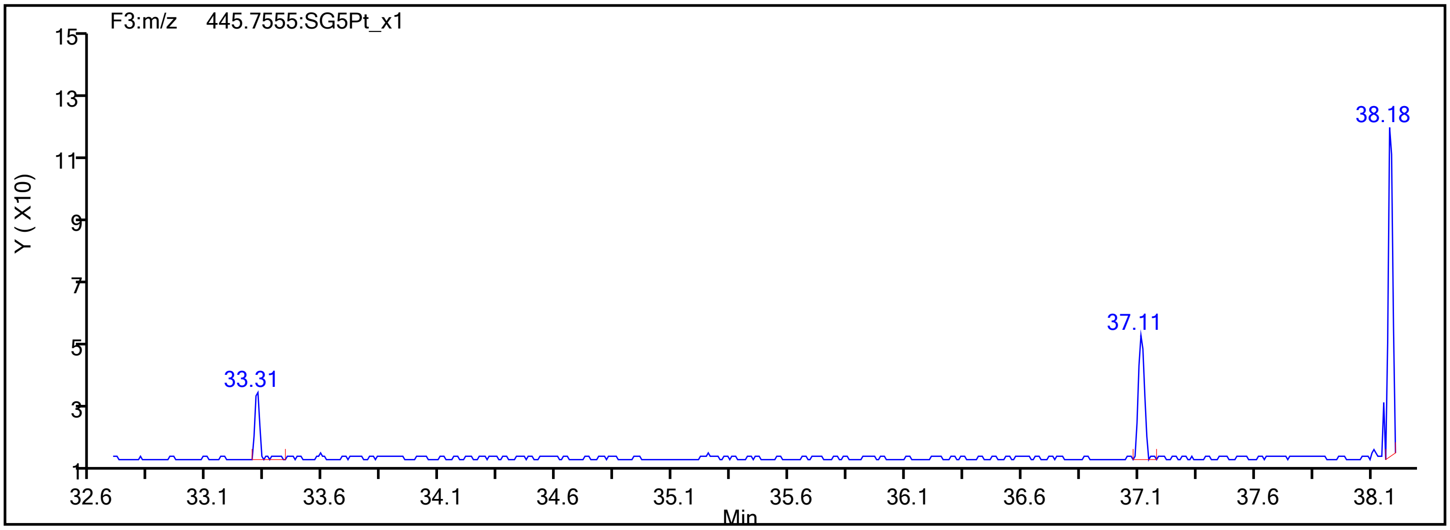

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date: 28-Jul-2020 10:01:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-2

Worklist#: 398798 Sample Line#: 22

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

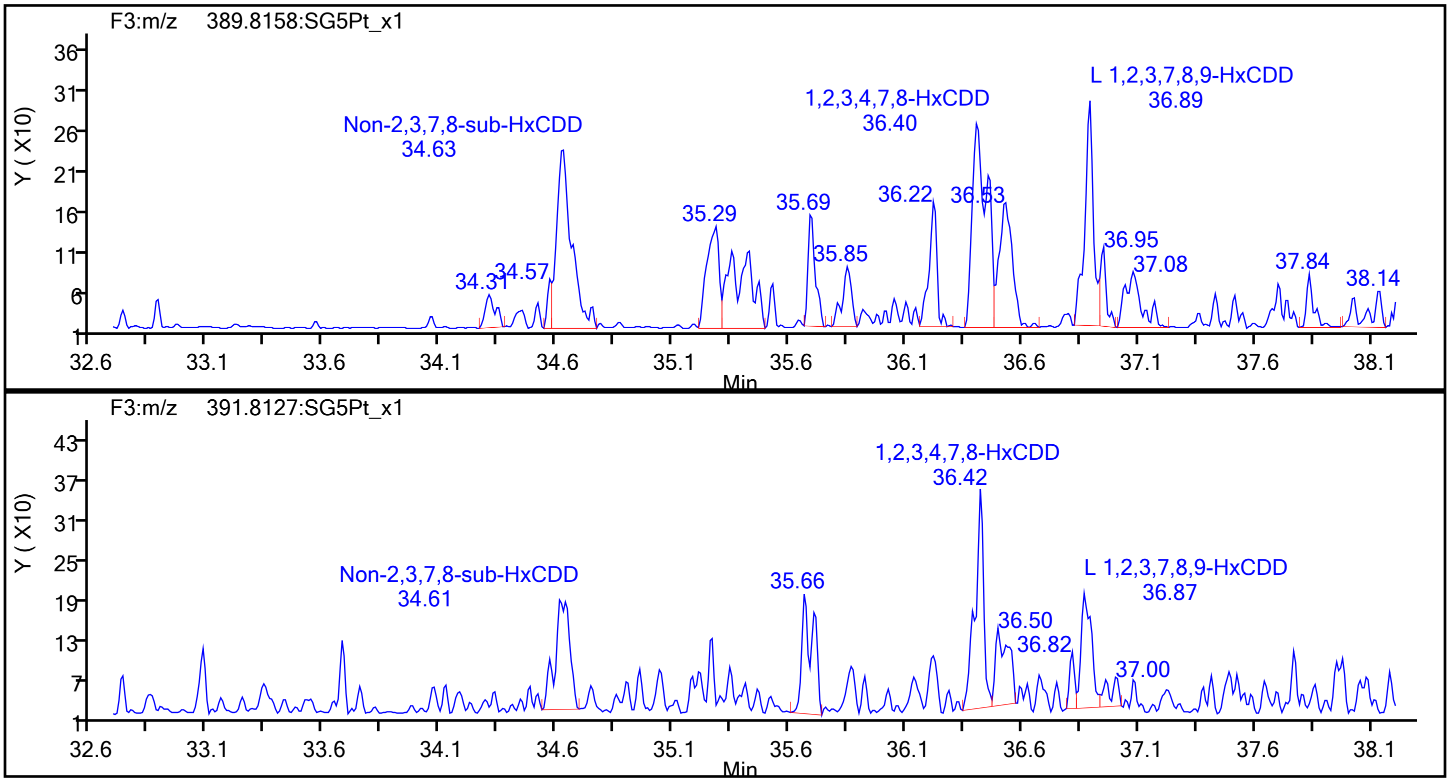

HxCDD Standards

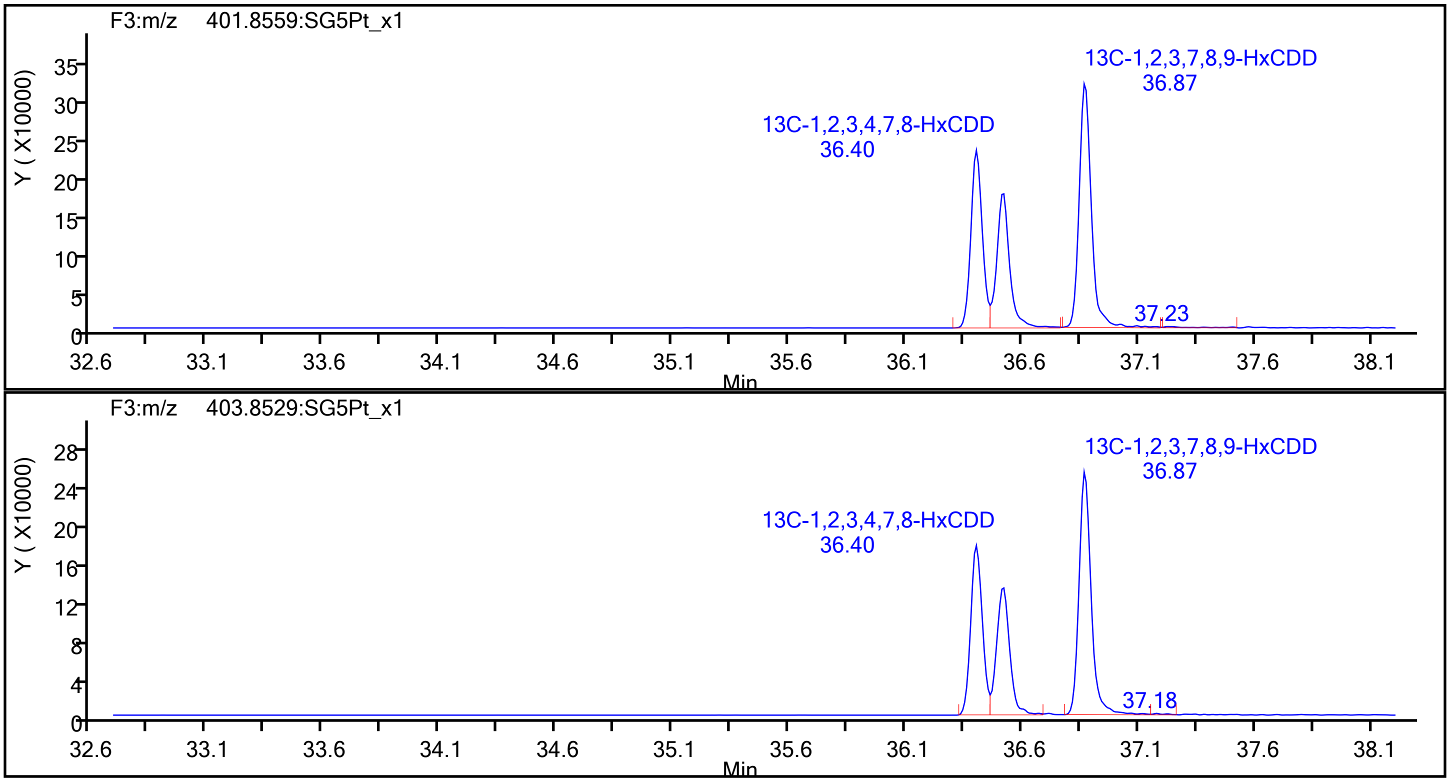

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

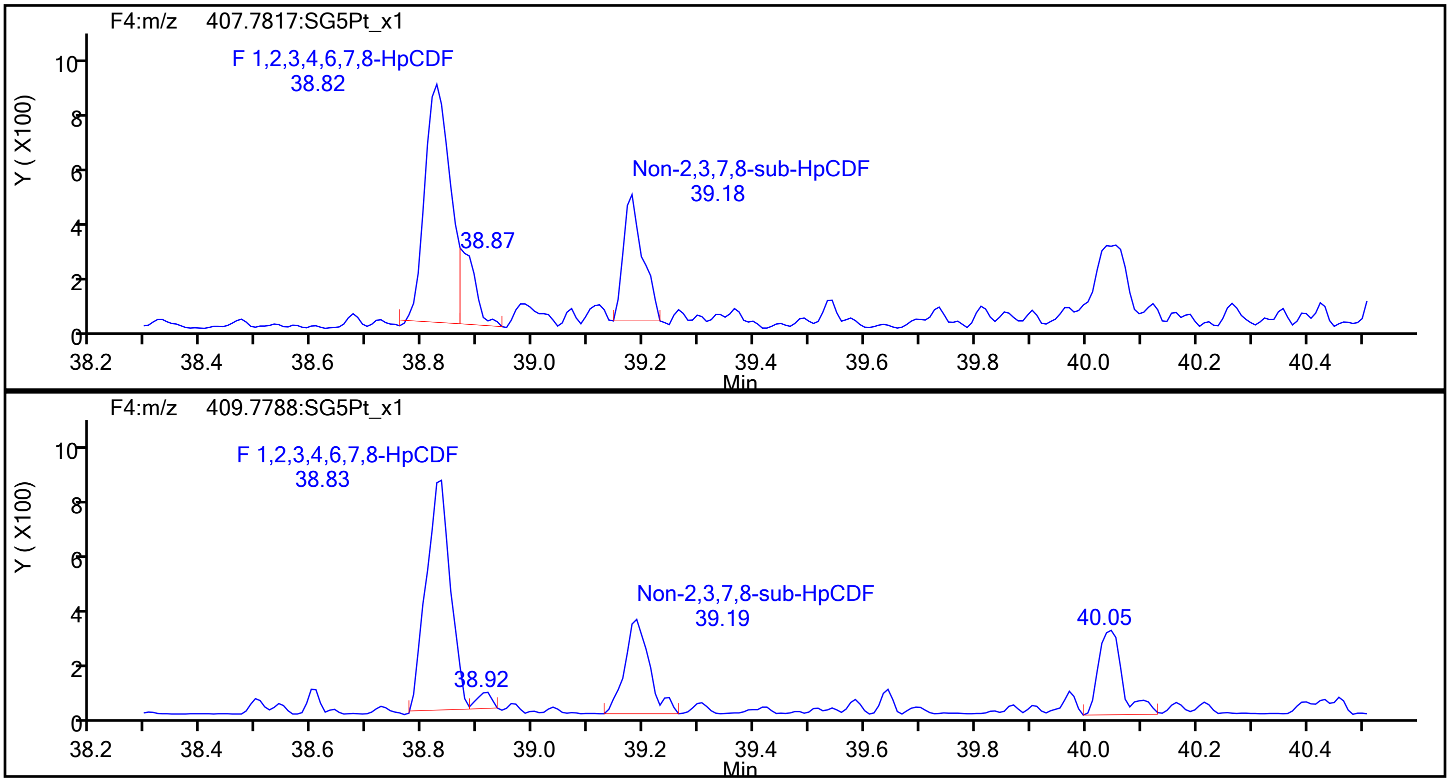

HpCDF Standards

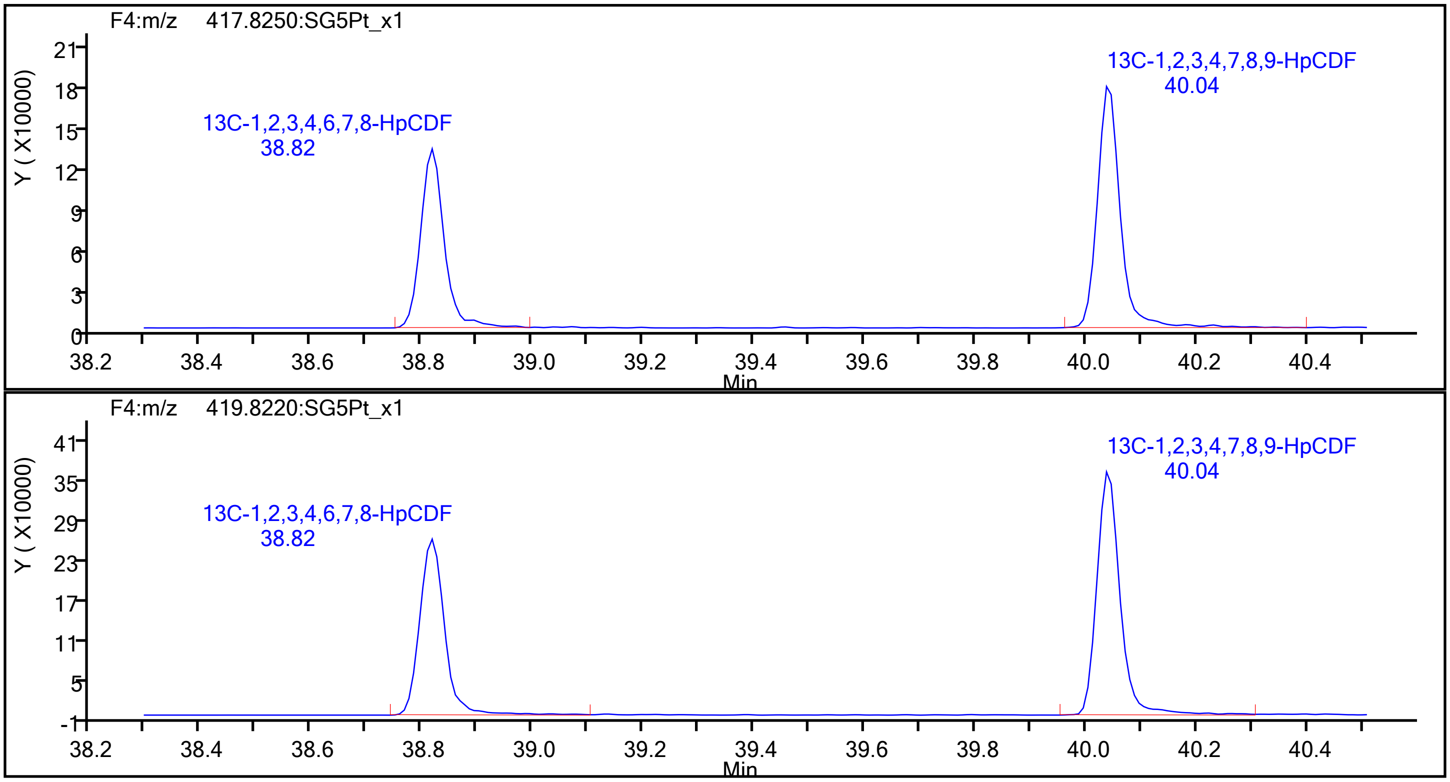

Report Date: 30-Jul-2020 10:01:14
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-2
Worklist#: 398798
Sample Line#: 22
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

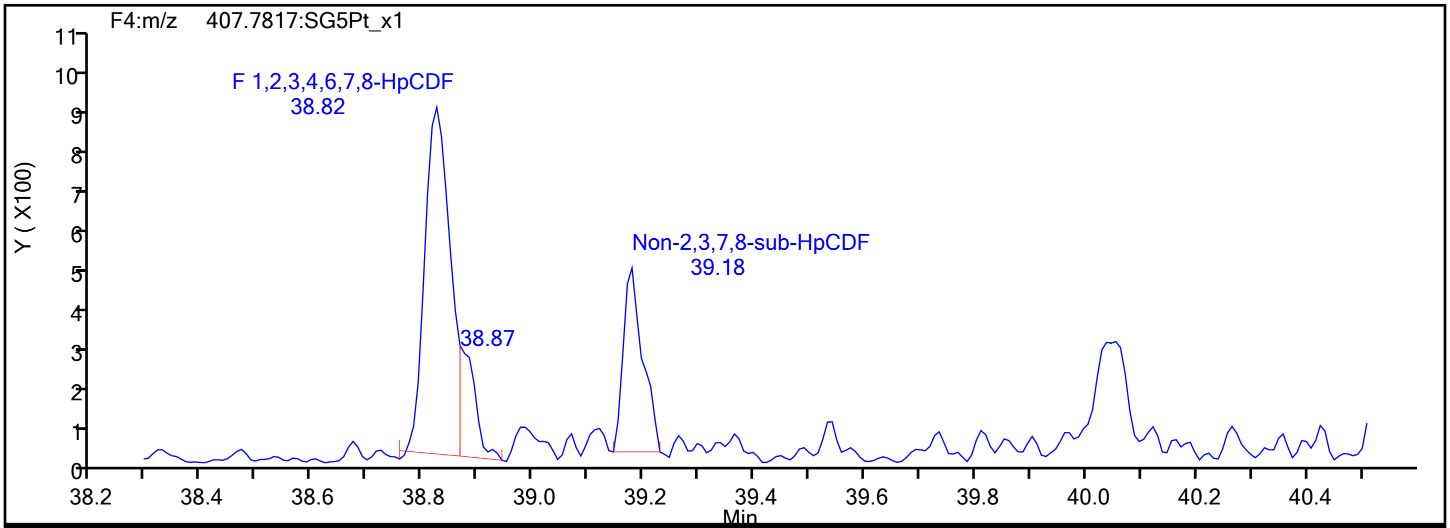

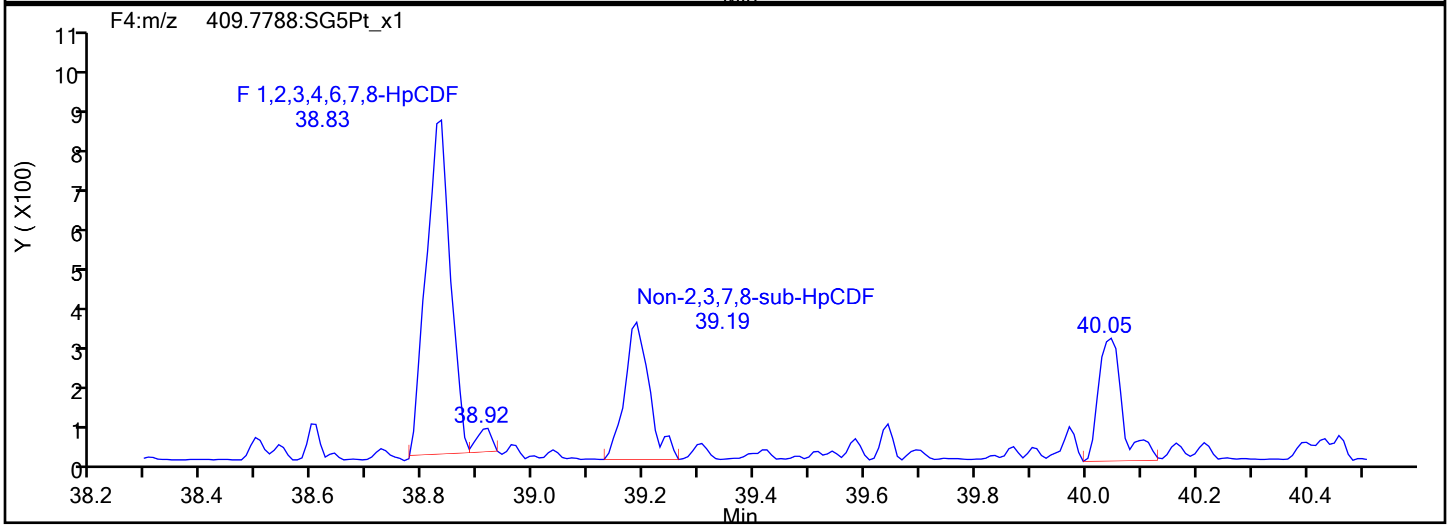

HpCDF Interference Mass

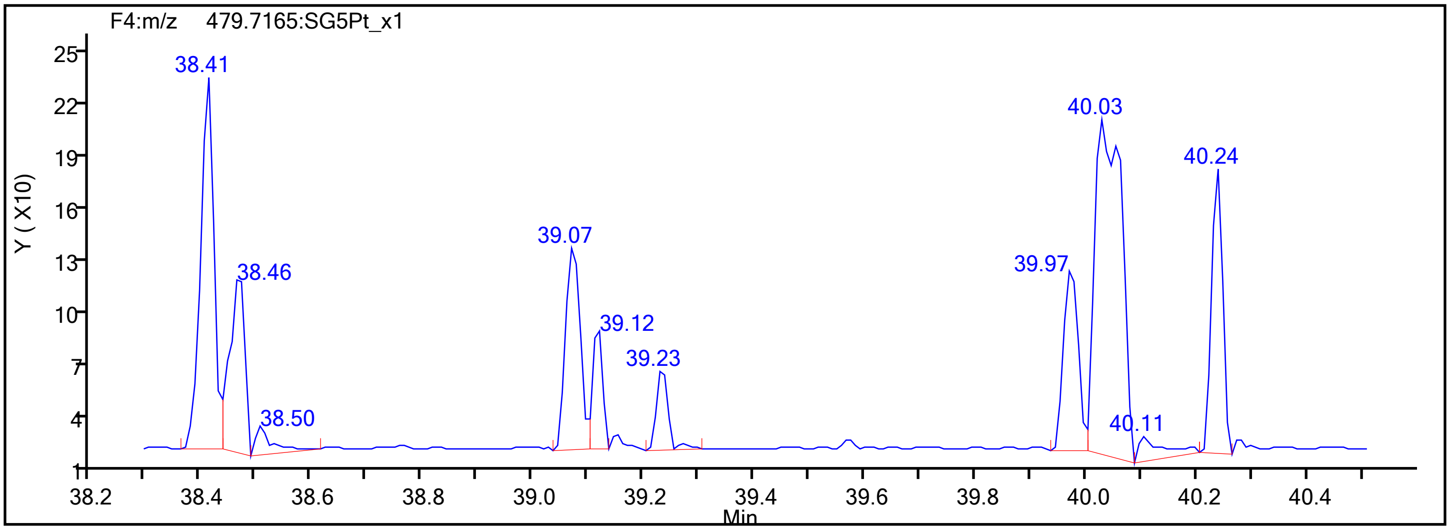

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

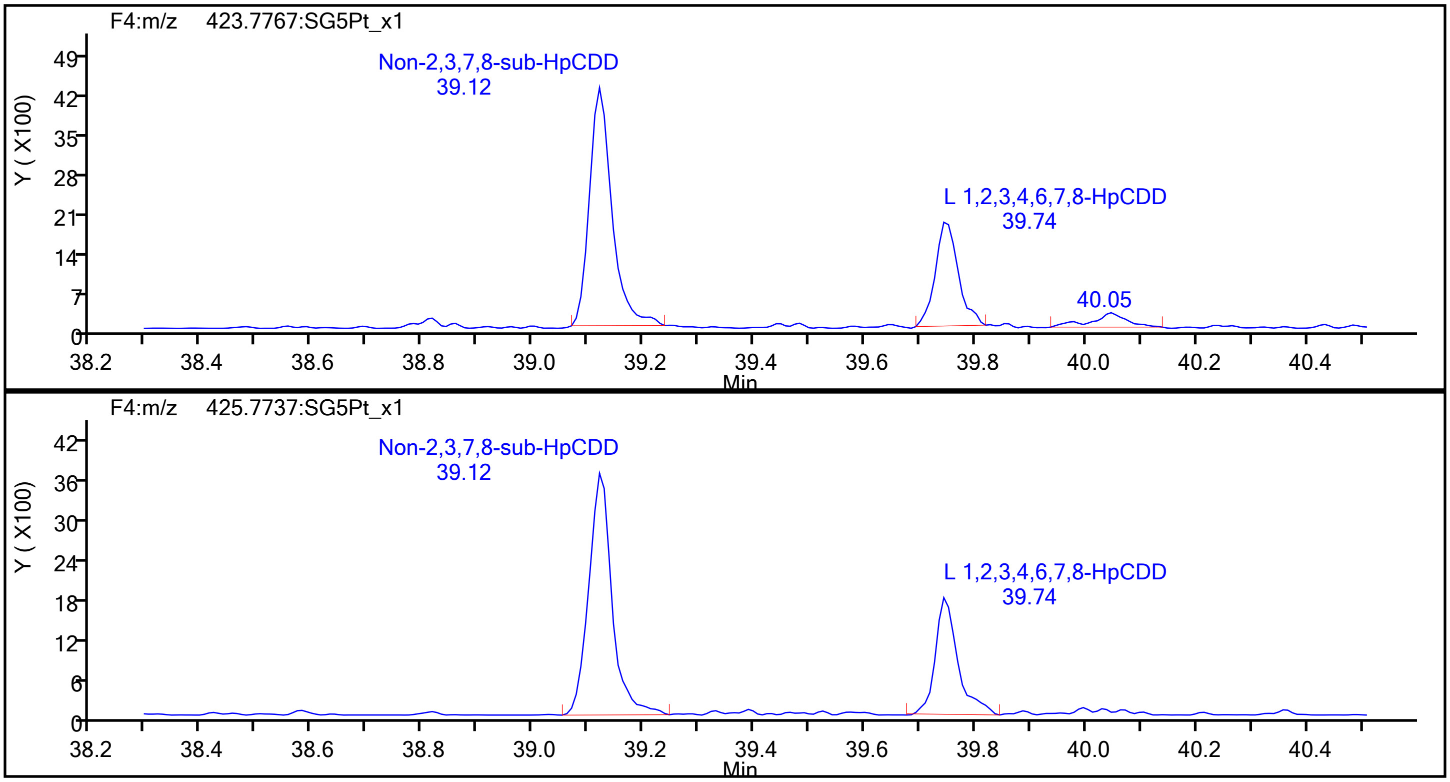

HpCDD Standards

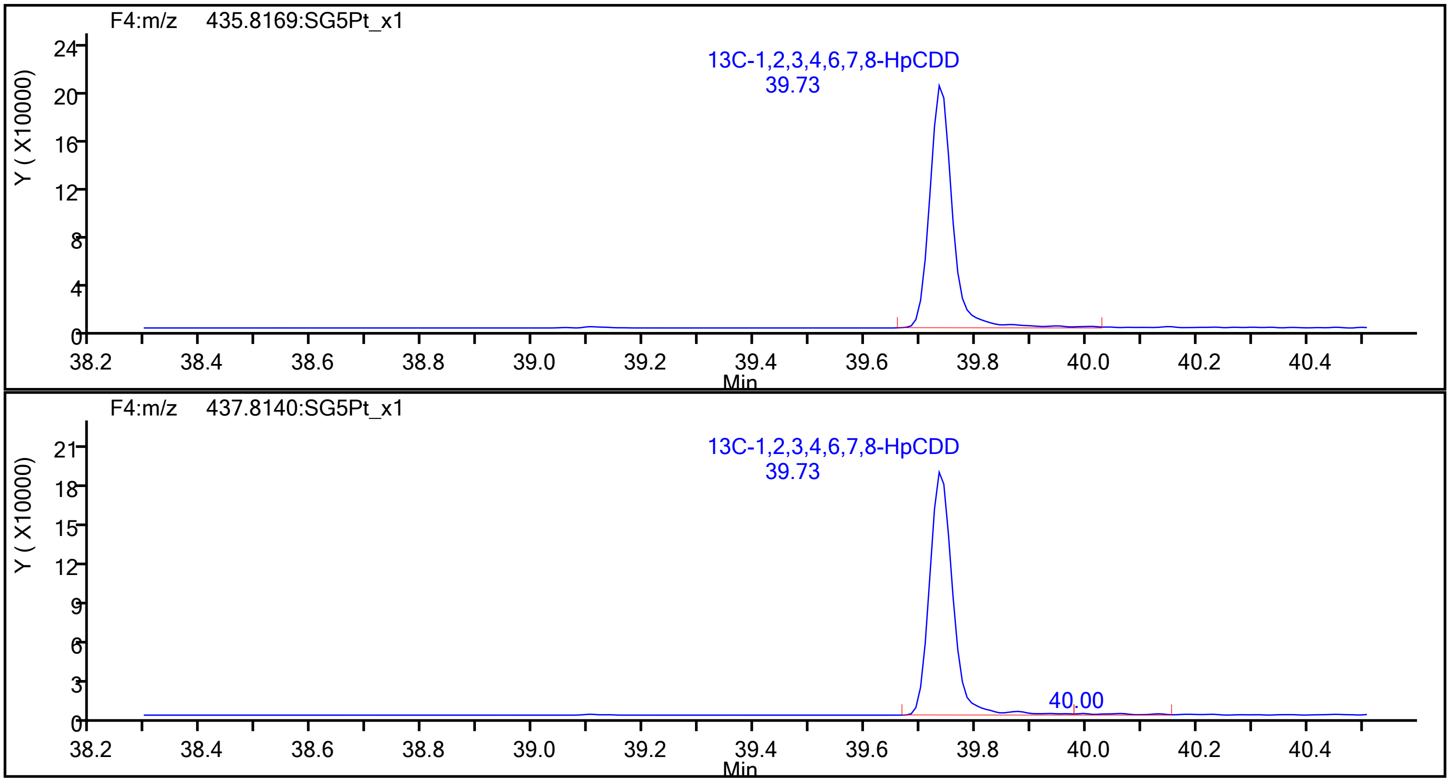

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

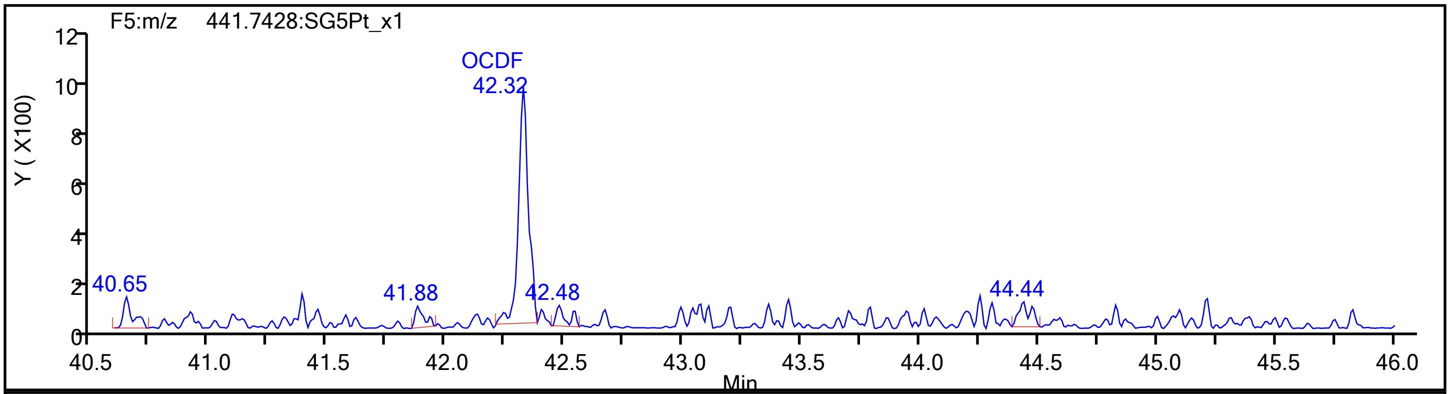

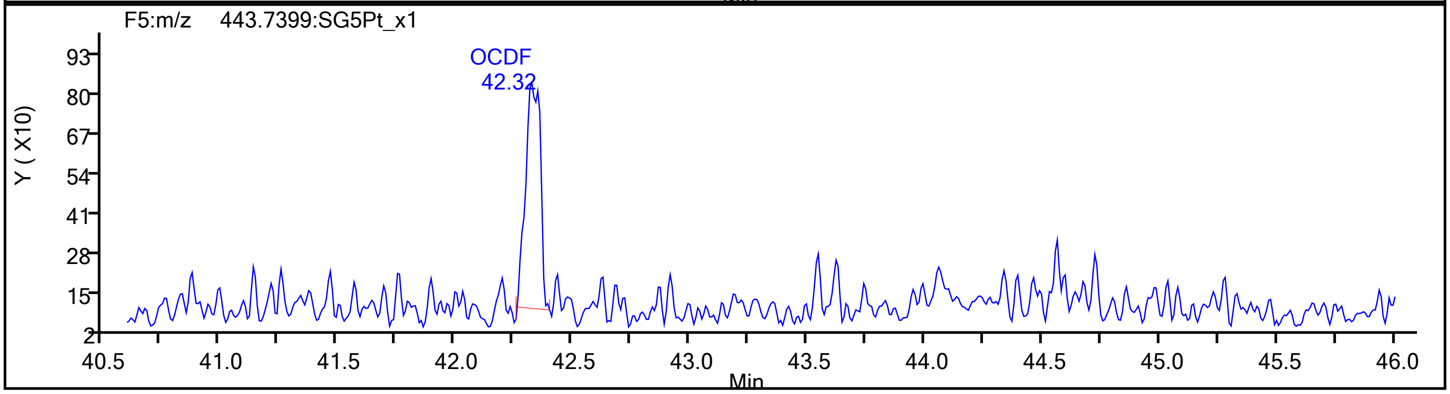

OCDF Standards

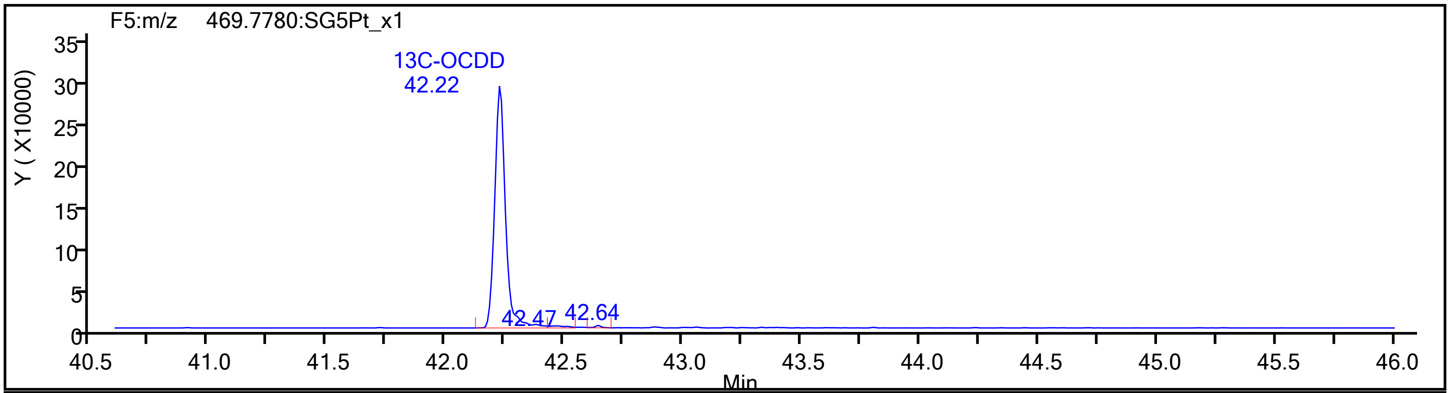

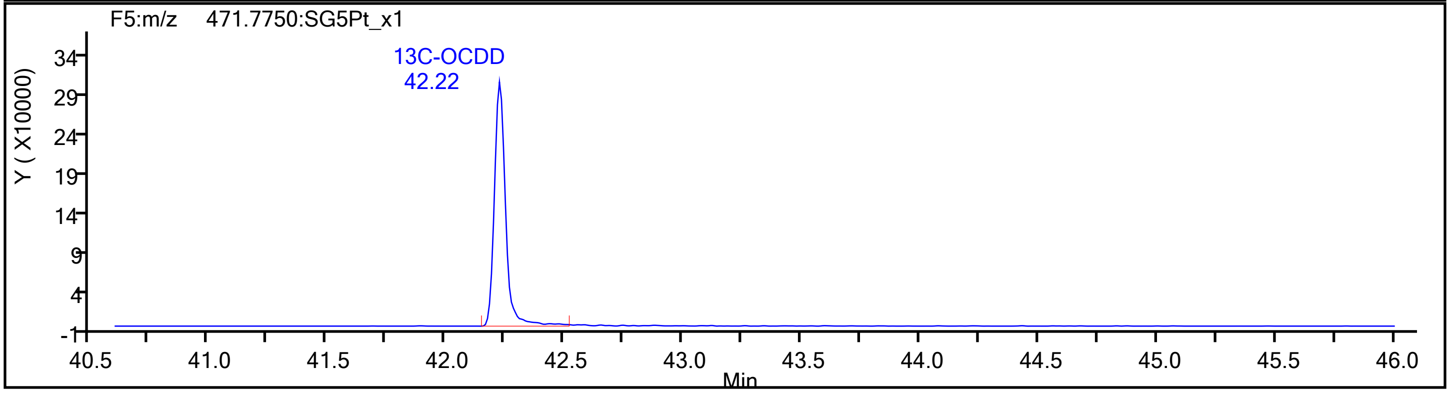

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d		
Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

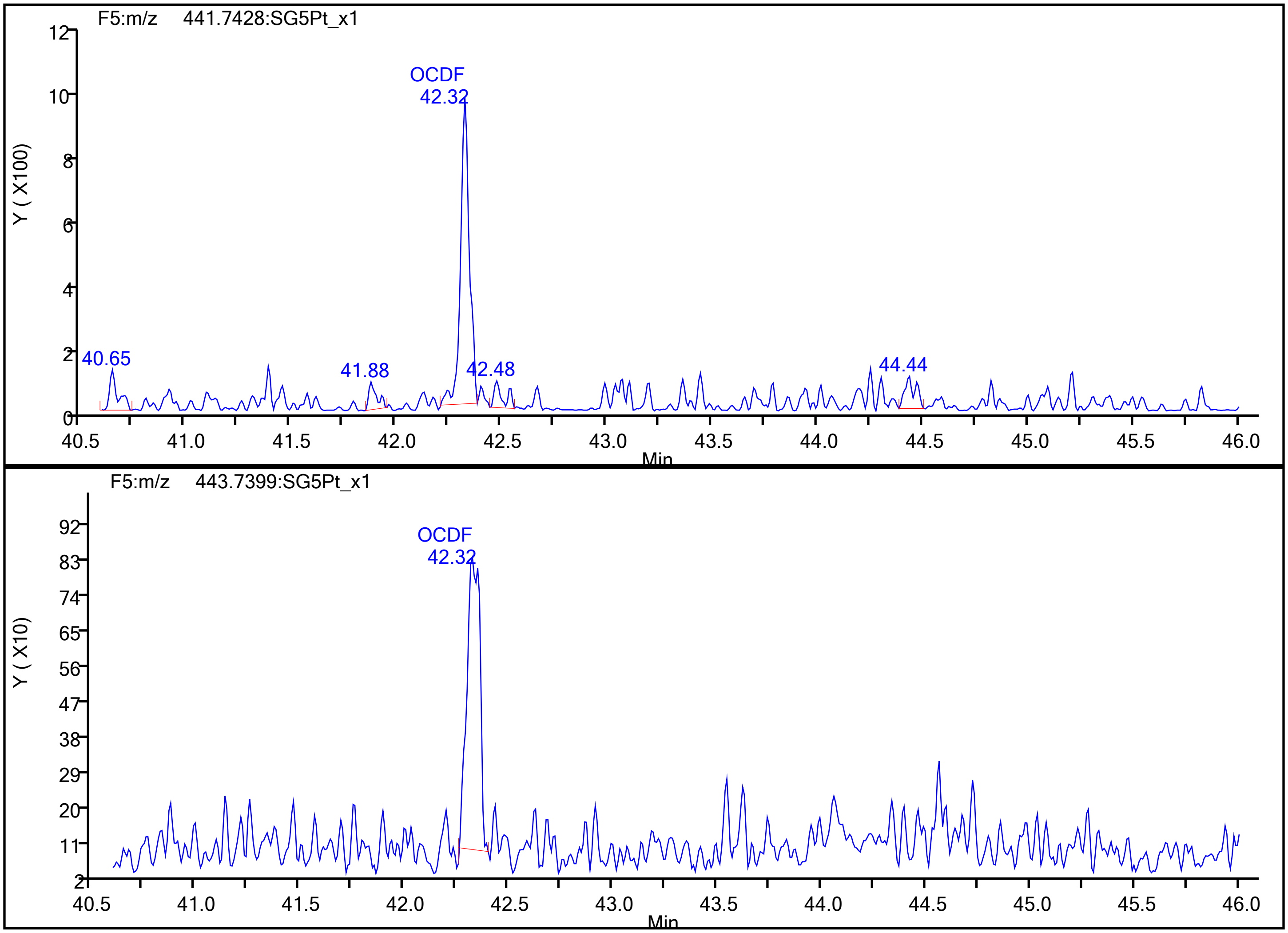

OCDF Interference Mass

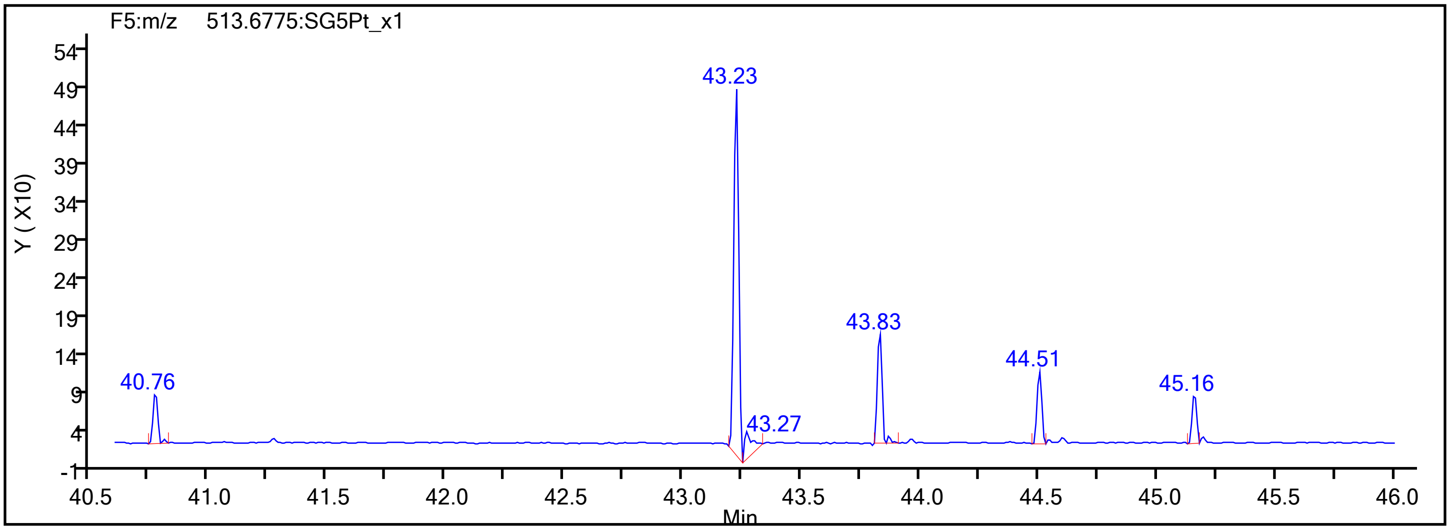

Report Date: 30-Jul-2020 10:01:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d
Injection Date: 28-Jul-2020 10:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-2
Worklist#: 398798
Sample Line#: 22
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

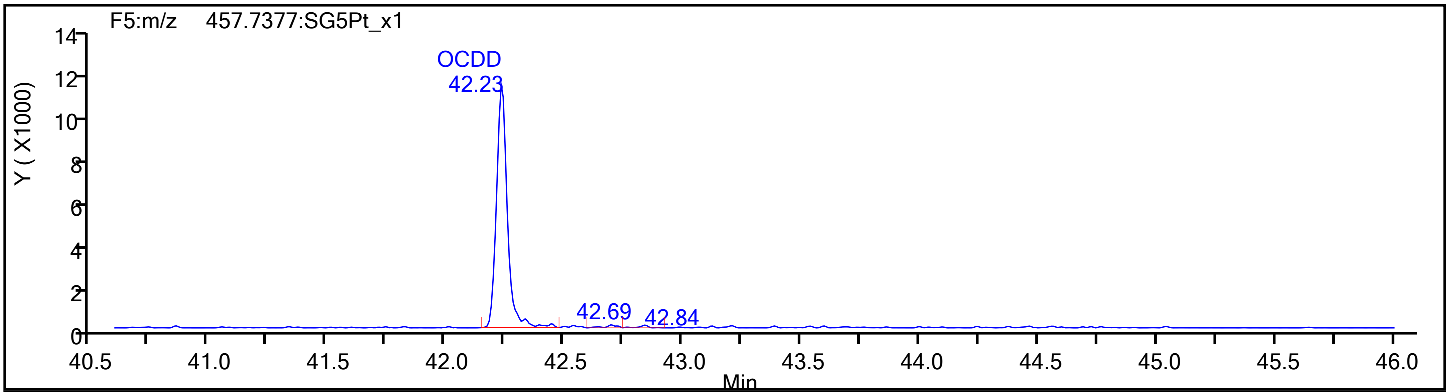

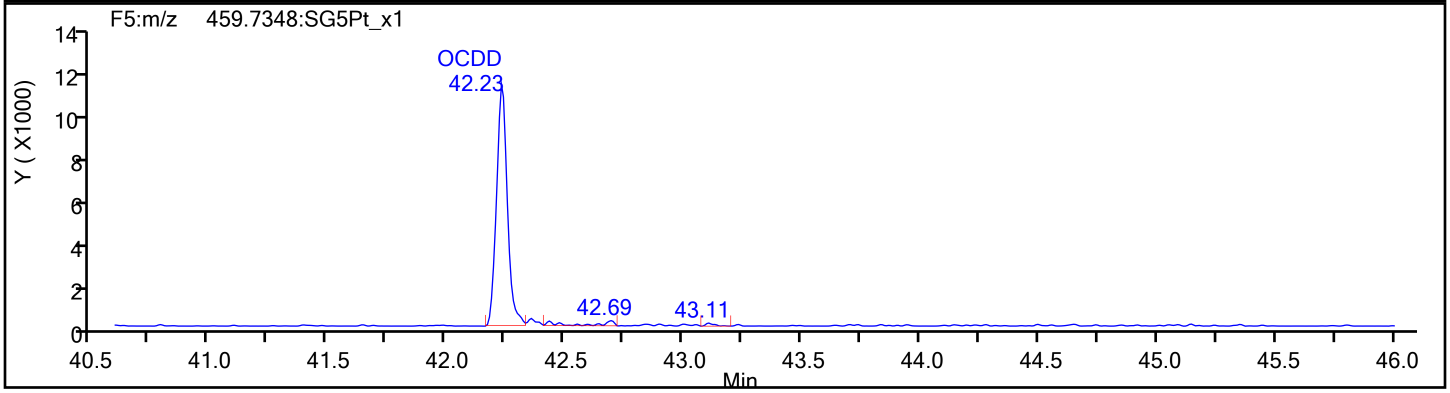

OCDD Standards

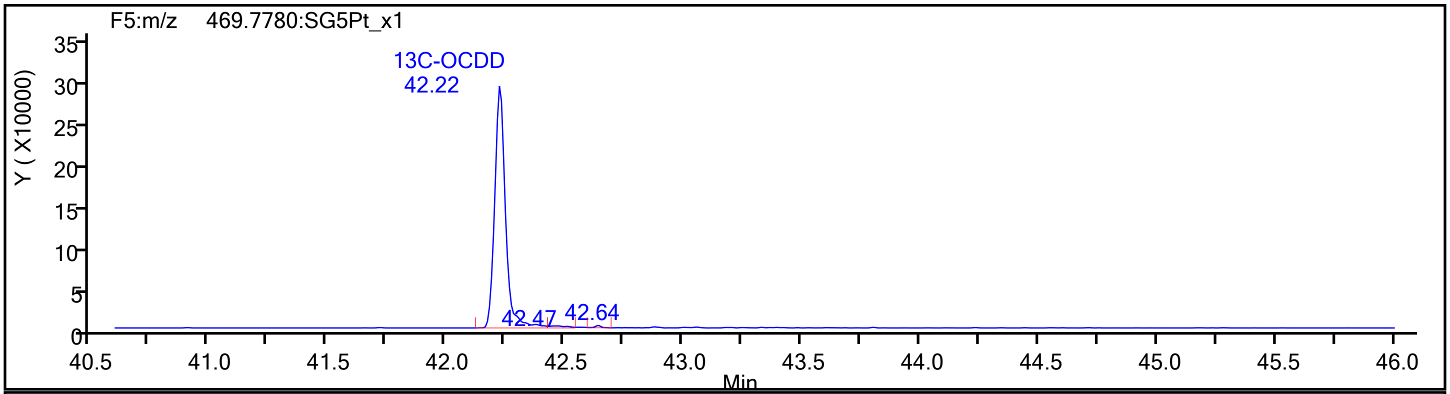

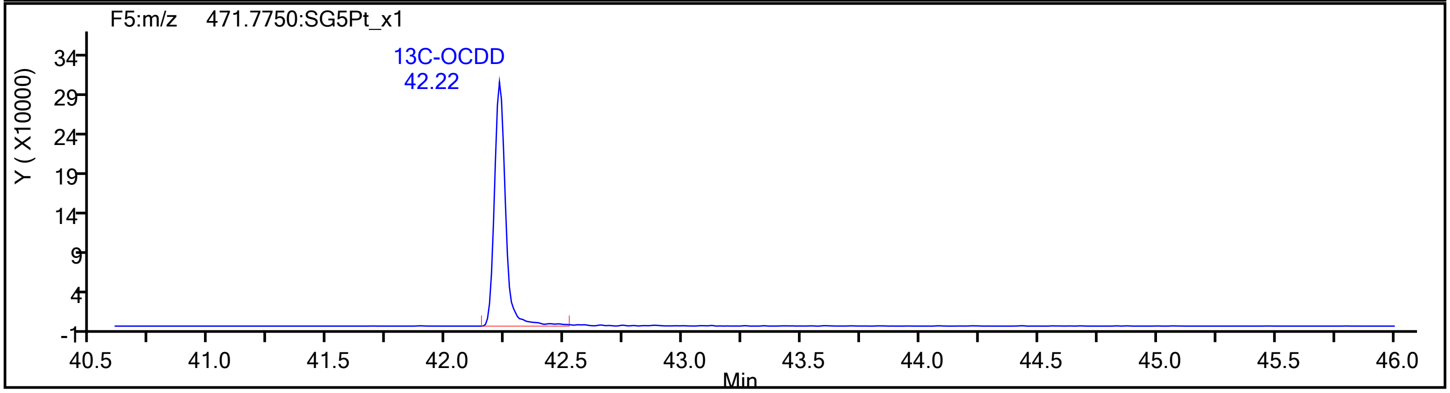

Report Date: 30-Jul-2020 10:01:14   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date: 28-Jul-2020 10:01:00   Injection Vol: 1.0 ul

Instrument ID: DFS 1   Operator ID: Xcalibur_System

Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-2

Worklist#: 398798   Sample Line#: 22

Column Type: DB-5   Column Dia: 0.32 mm

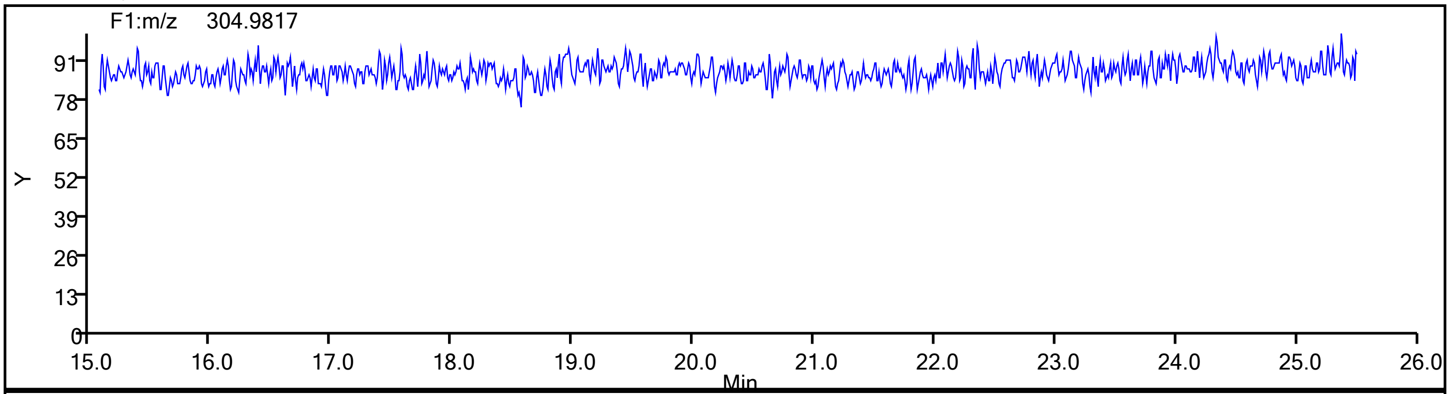

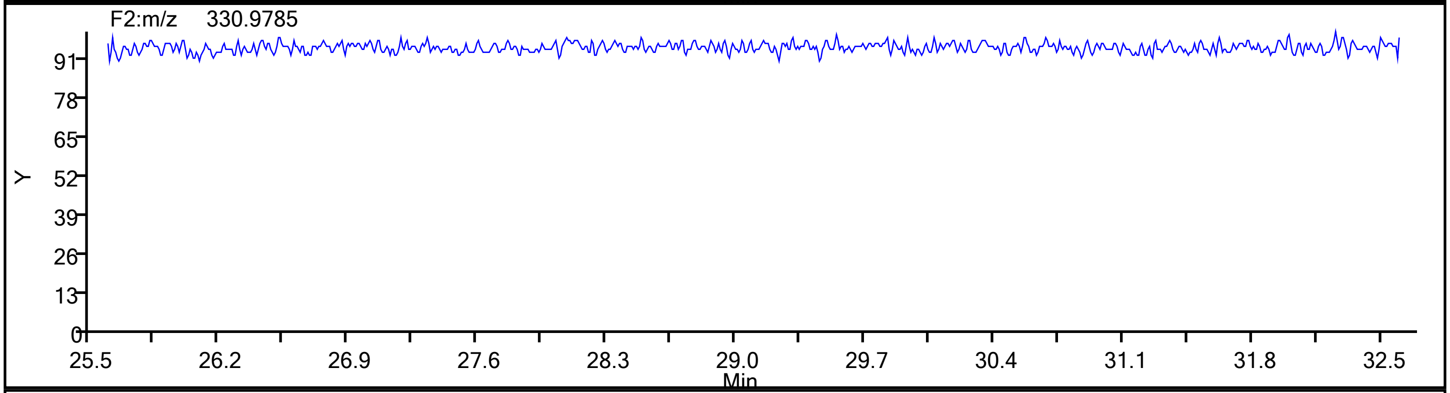

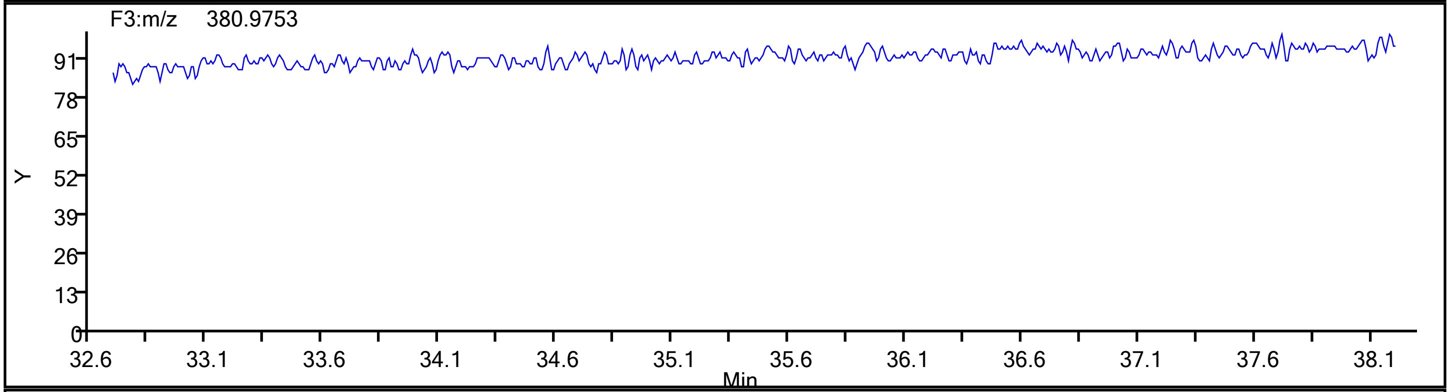

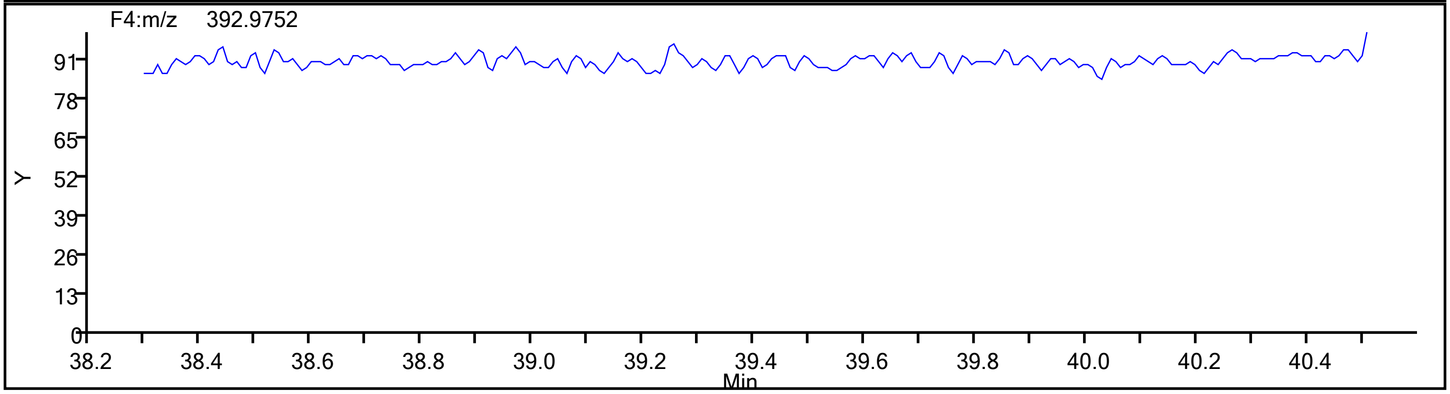

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_24.d

Injection Date:	28-Jul-2020 10:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	398798	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

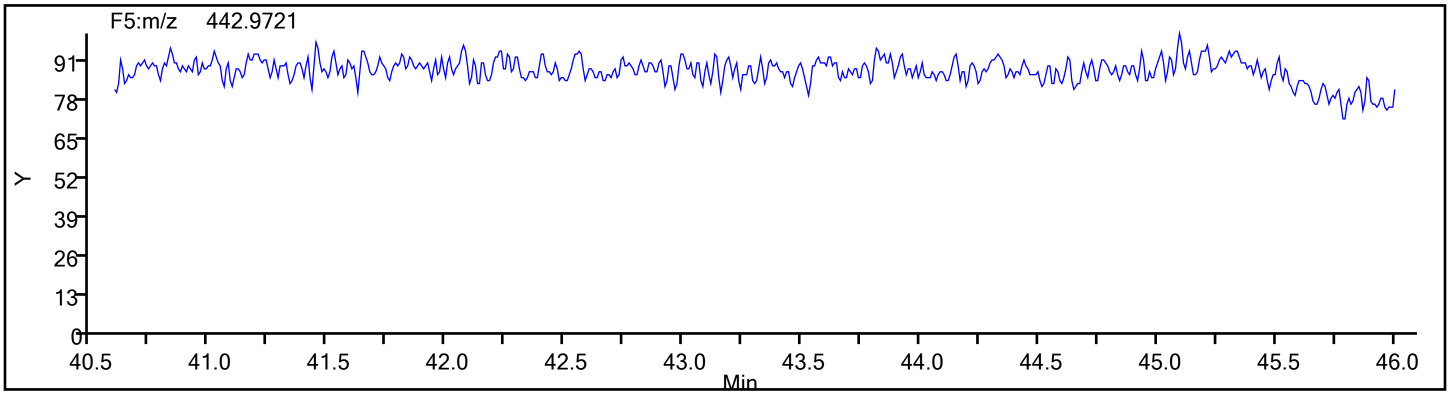

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID: 11215702-Treatment-2 RA	Lab Sample ID: 320-62886-4 RA
Matrix: Water	Lab File ID: 29JL2011D2_009.d
Analysis Method: 1613B	Date Collected: 07/20/2020 14:30
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1059.2(mL)	Date Analyzed: 07/29/2020 15:59
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 399540	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	89		9.4	1.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	57		25-164
89059-46-1	13C-2,3,7,8-TCDF	58		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Sample Type: Client
Inject. Date: 29-Jul-2020 15:59:49 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-4-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 13:21:35 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1059

First Level Reviewer: stephensk Date: 30-Jul-2020 07:54:58

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.766	104216248	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.960	95140668	0.78	1.5708	58.1	58.1	0.2275	0.2275	58.12	
2,3,7,8-TCDF	16.987	4467158	0.79	0.9943	4.722	4.722	0.0558	0.0558		
D 13C-2,3,7,8-TCDD	15.519	58043399	0.82	0.9834	56.6	56.6	0.4395	0.4395	56.64	
2,3,7,8-TCDD	15.547	1360210	0.81	1.2822	1.828	1.828	0.0820	0.0820		
$ 37Cl4-2,3,7,8-TCDD	15.547	41883494		0.9945	40.4	40.4	0.0784	0.0784	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d
Lims ID: 320-62886-A-4-A
Client ID: 11215702-Treatment-2
Sample Type: Client
Inject. Date: 29-Jul-2020 15:59:49 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-62886-A-4-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 13:21:35 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1059

First Level Reviewer: stephensk Date: 30-Jul-2020 07:54:58

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.766	15.762	0		46864217	9930267	20518	51295	484		
333.9339	15.766	15.762	0		57352031	12341345	17985	44962	686	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.960	16.986	-1	1.076	41705832	7932001	16628	41570	477		
317.9389	16.960	16.986	-1	1.076	53434836	10346800	15209	38022	680	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.987	16.985	0	1.002	1972593	370369	1756	4390	211		
305.8987	16.974	16.985	-1	1.001	2494565	467026	2301	5752	203	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.519	15.544	-1	0.984	26117481	5580346	20518	51295	272		
333.9339	15.519	15.544	-1	0.984	31925918	6864863	17985	44962	382	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.547	15.558	0	1.002	609940	116405	3269	8172	36		
321.8936	15.547	15.558	0	1.002	750270	165173	1968	4920	84	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.547	15.544	0	0.986	41883494	8635229	6943	17357	1244		

Report Date: 30-Jul-2020 13:22:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d		
Injection Date:	29-Jul-2020 15:59:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	399540	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

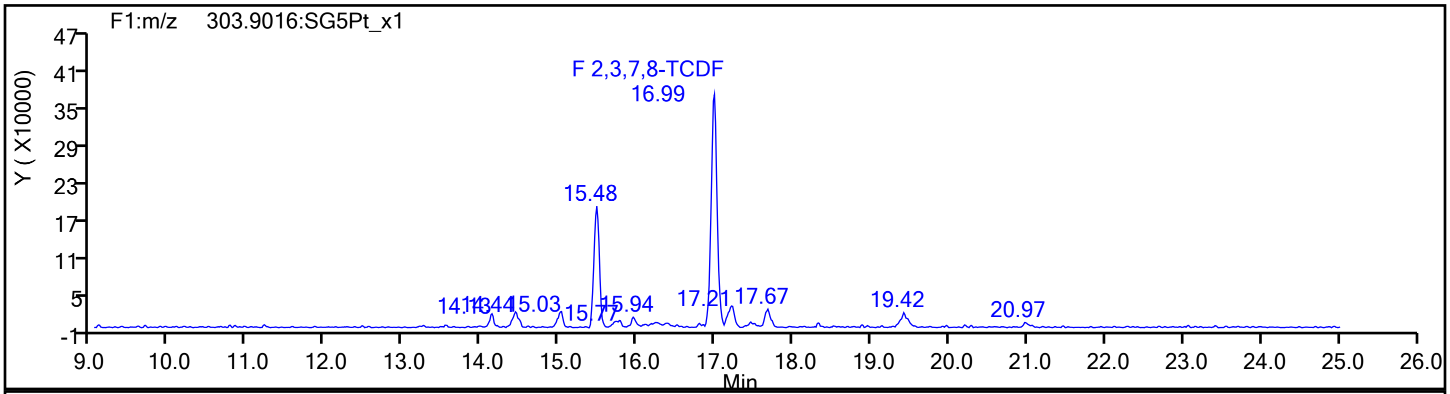

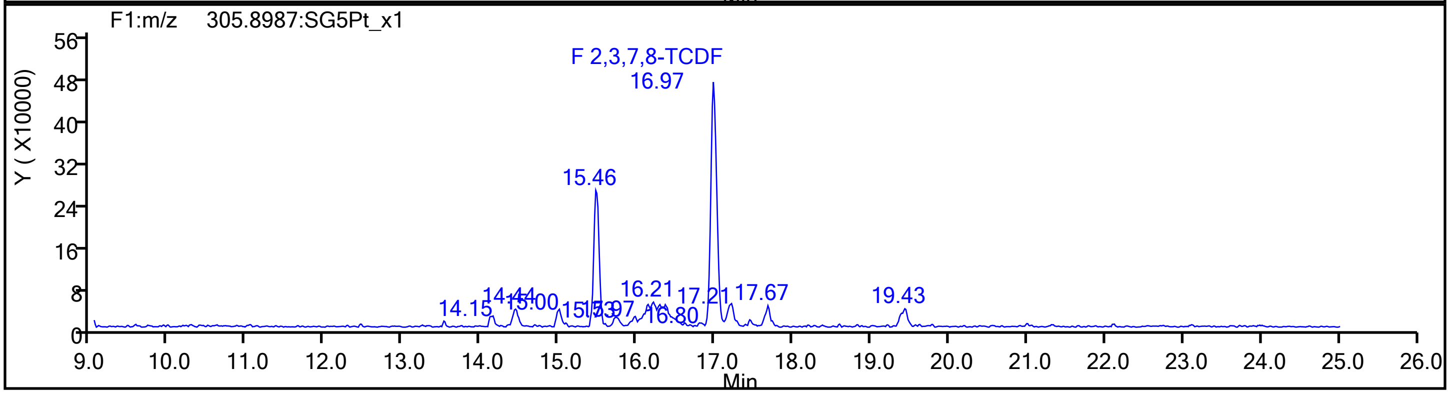

TCDF Standards

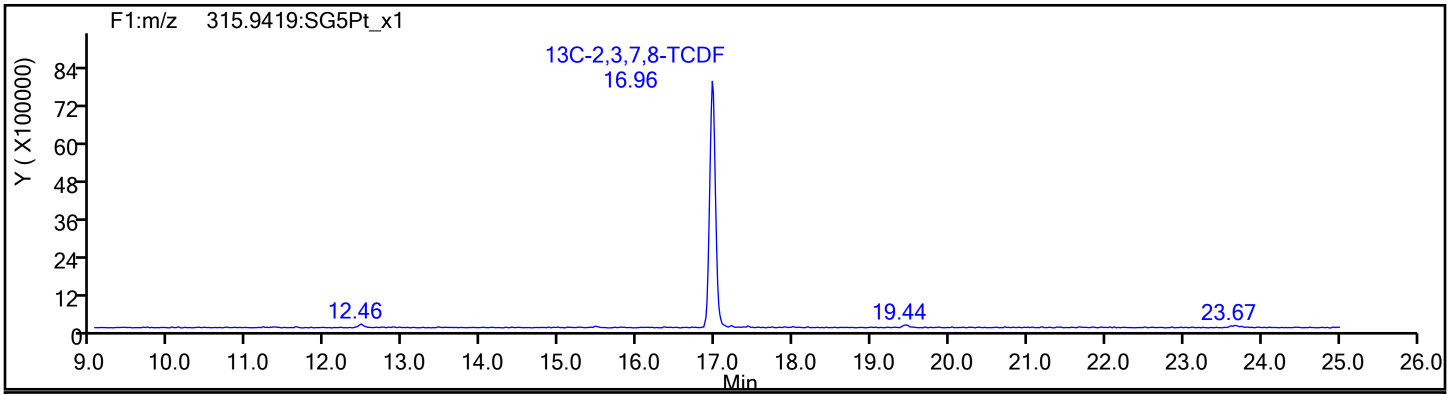

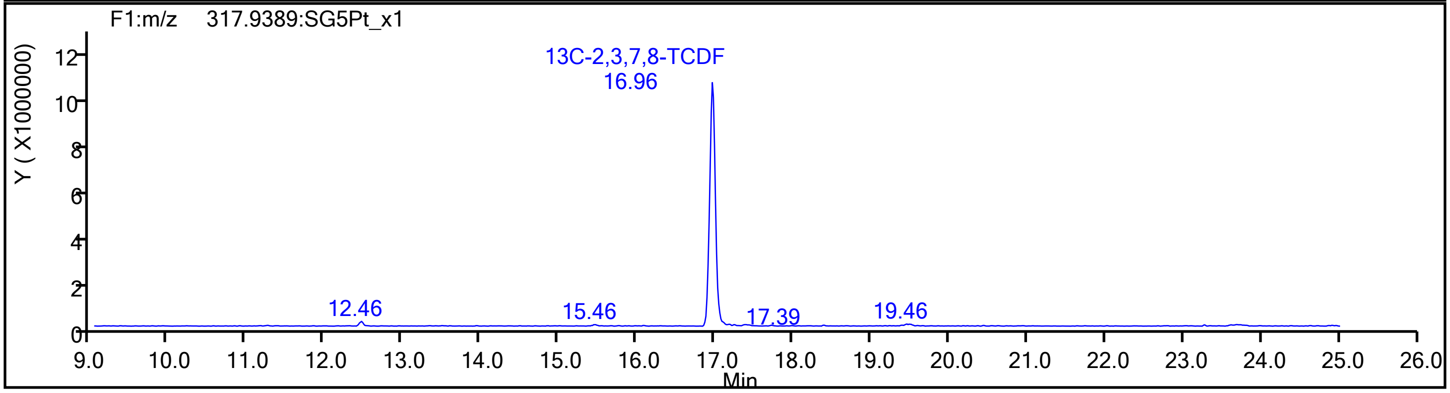

Report Date: 30-Jul-2020 13:22:31　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d		
Injection Date:	29-Jul-2020 15:59:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	399540	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

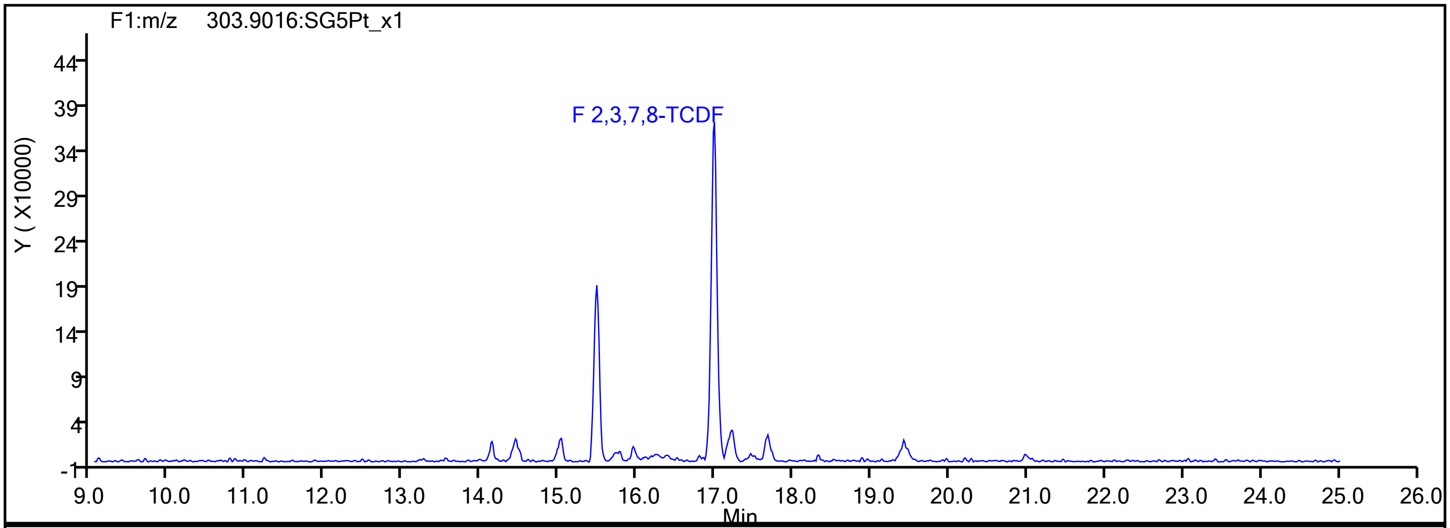

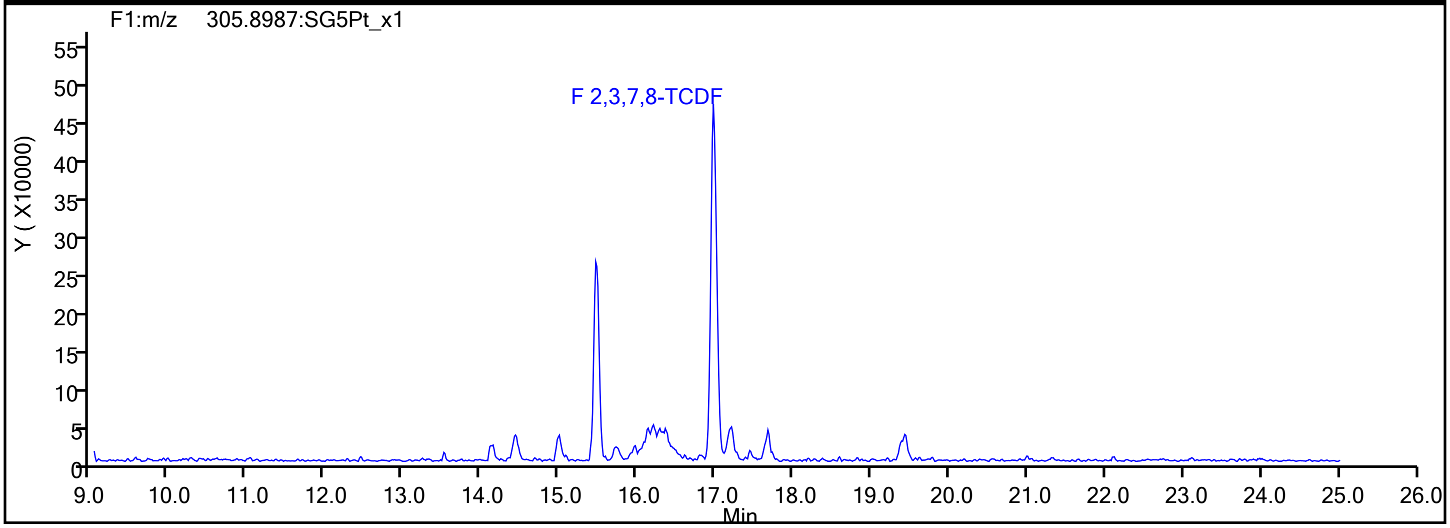

TCDF Interference Mass

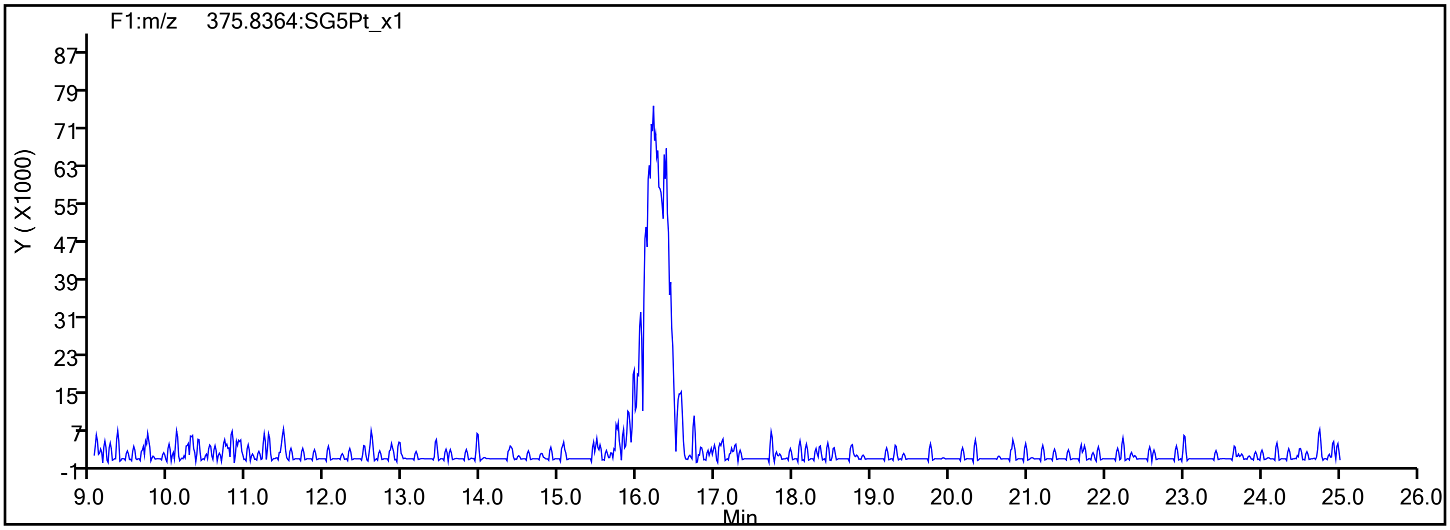

Report Date: 30-Jul-2020 13:22:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d		
Injection Date:	29-Jul-2020 15:59:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	399540	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

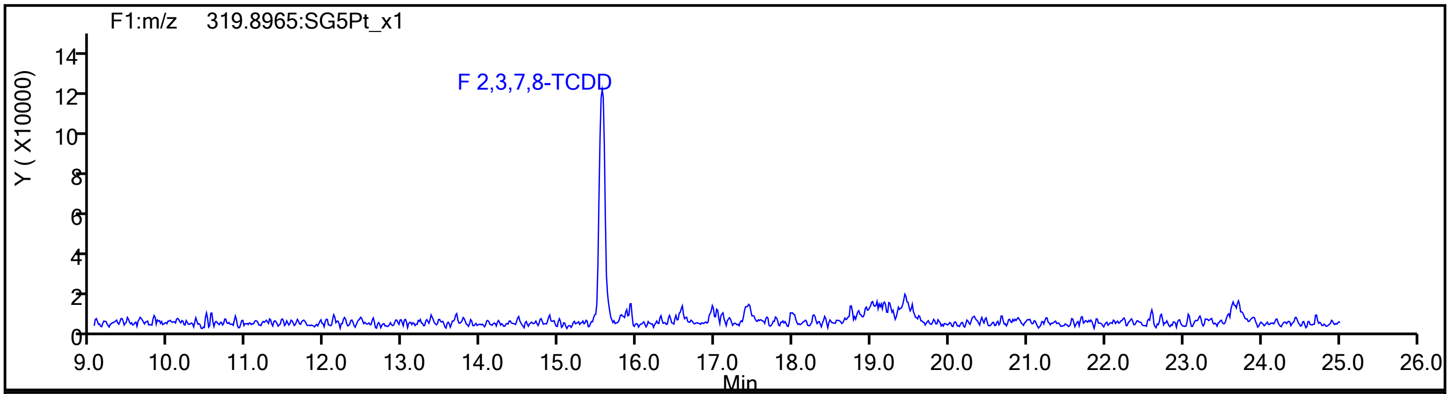

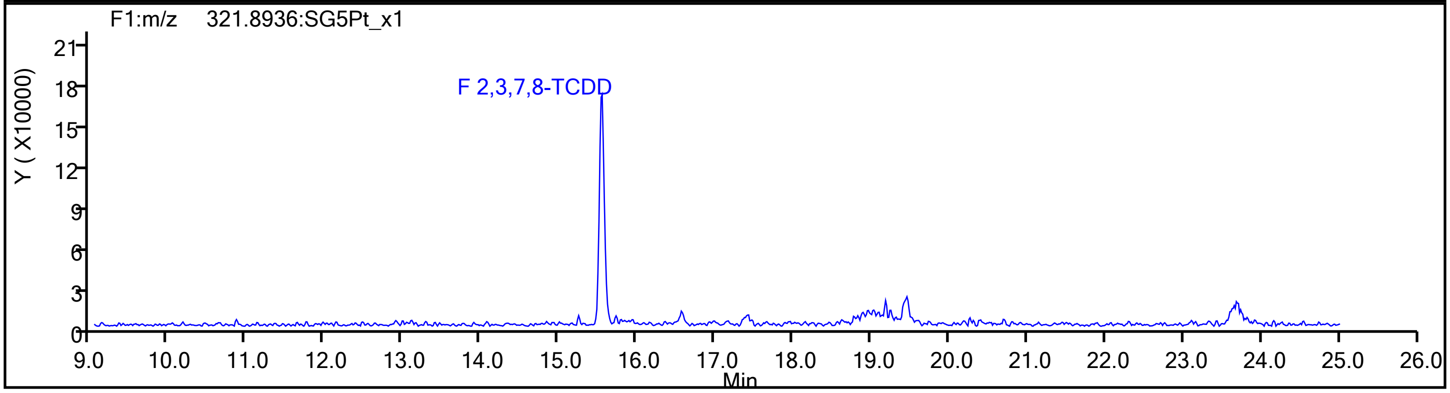

TCDD Standards

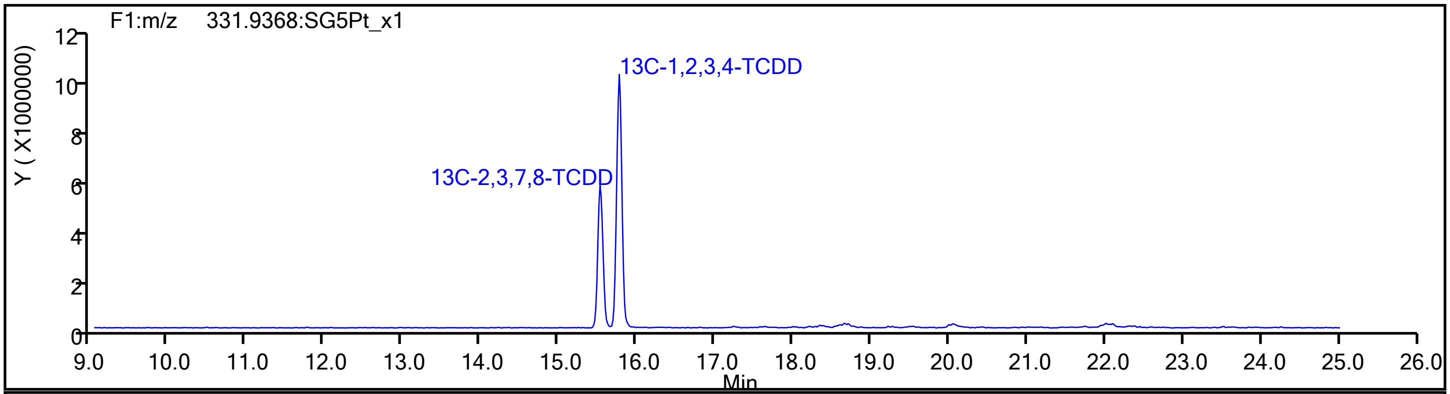

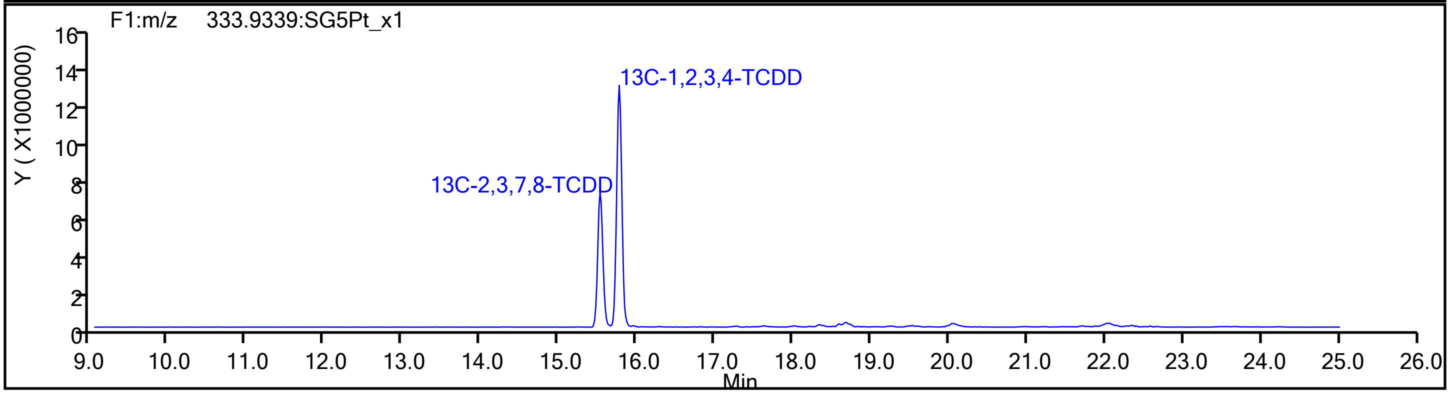

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d		
Injection Date:	29-Jul-2020 15:59:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	399540	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

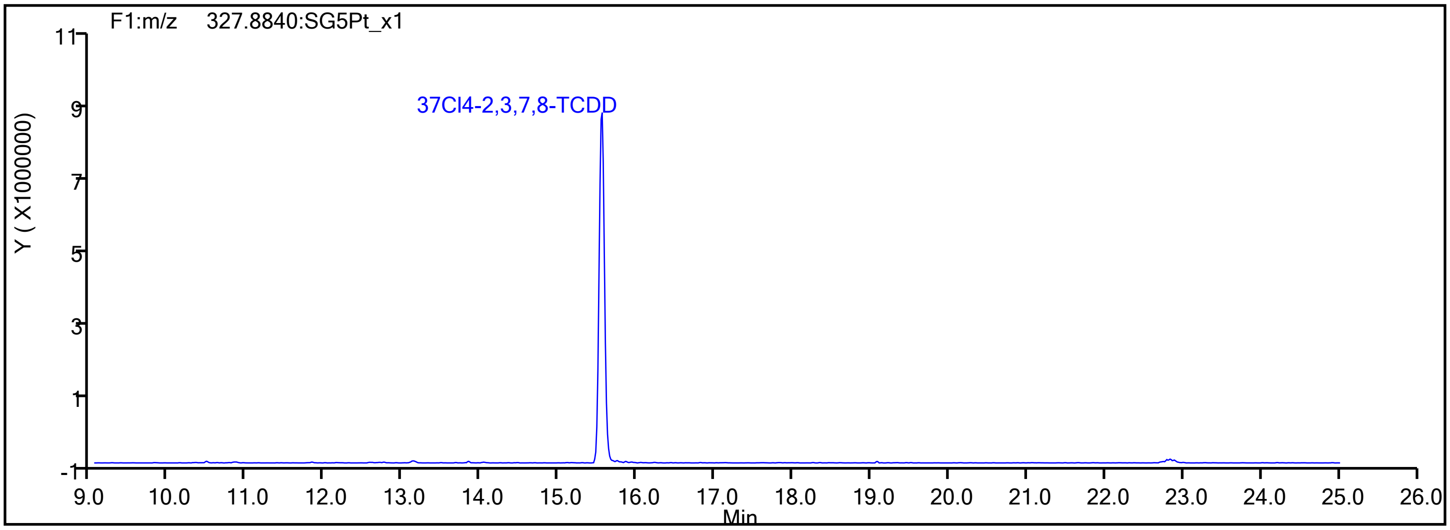

37Cl4-TCDD Standards

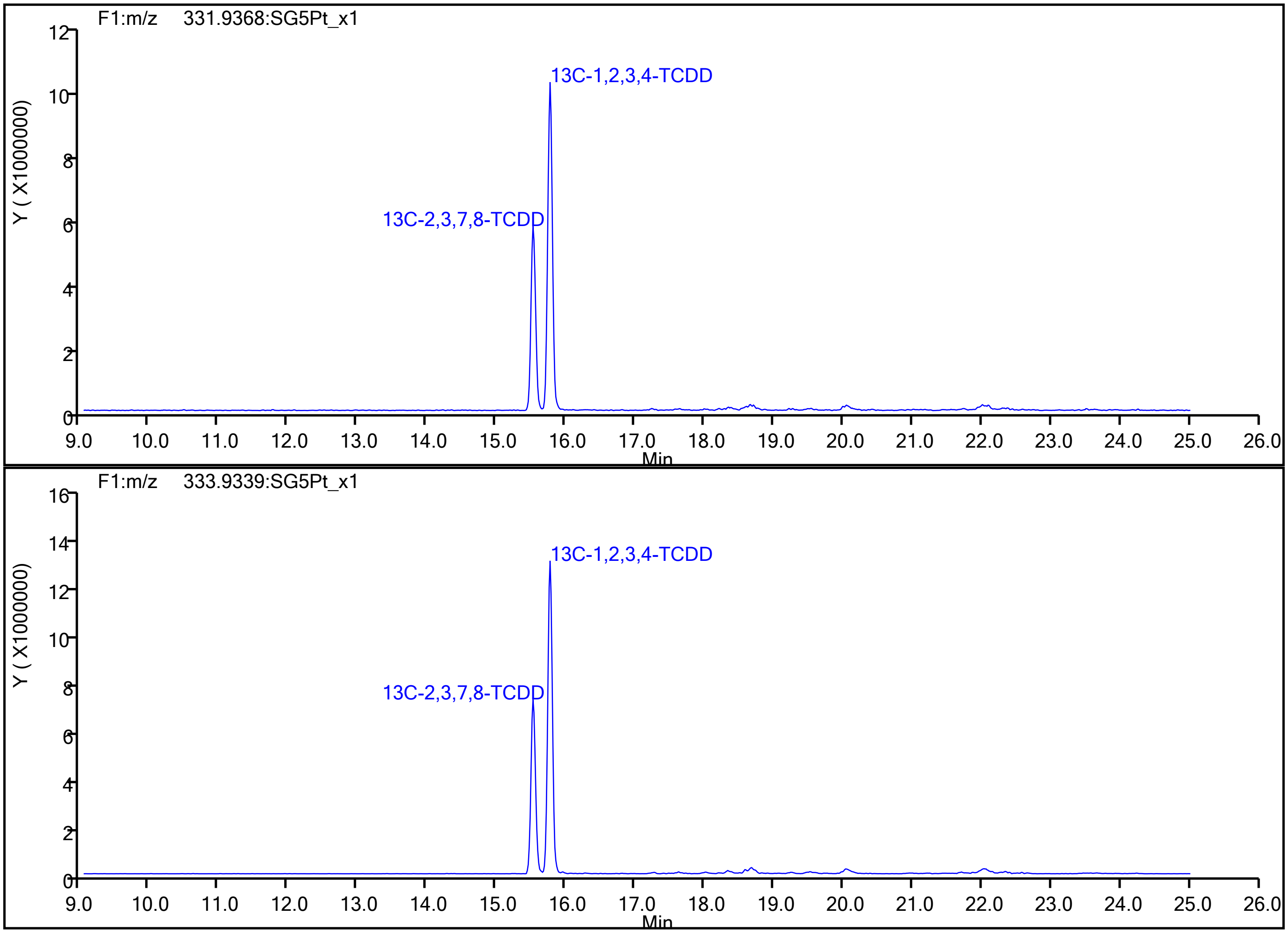

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_009.d		
Injection Date:	29-Jul-2020 15:59:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-2		
Worklist#:	399540	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

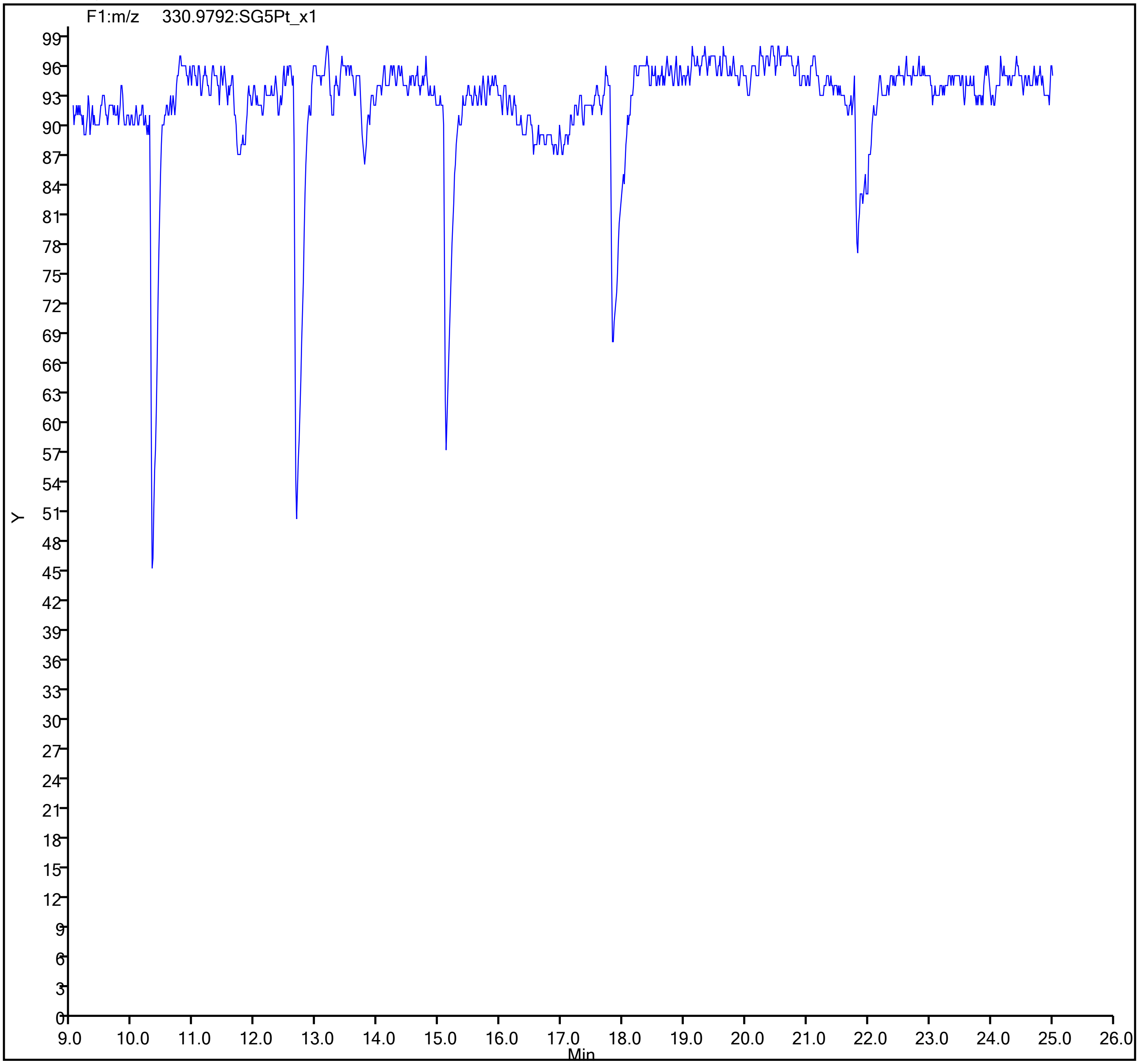

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1   Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2   GC Column: DB-225   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50   Calibration End Date: 07/25/2020 02:23   Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTC	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTC	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTC	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
24JL2011D2	1	CPS 072420	CPS HRDXNCP_00040		Dioxin		1.00000	
24JL2011D2	2	SB 072420	SB Solvent Blank C-14				1.00000	
24JL2011D2	3	IC 072420	CS-2 HRDXNL2_00029		Dioxin	ICAL	1.00000	
24JL2011D2	4	IC 072420A	CS-3 HRDXNL3_00027		Dioxin		1.00000	
24JL2011D2	5	IC 072420B	CS-4 HRDXNL4_00094		Dioxin		1.00000	
24JL2011D2	6	IC 072420C	CS-5 HRDXNL5_00030		Dioxin		1.00000	
24JL2011D2	7	IC 072420D	CS-6 HRDXNL6_00026		Dioxin		1.00000	
24JL2011D2	8	SB 072420C	SB Solvent Blank C-14				1.00000	
24JL2011D2	9	ICV 072420	ICV HRDXNIC_00045		Dioxin		1.00000	
24JL2011D2	10						1.00000	
24JL2011D2	11						1.00000	
24JL2011D2	12						1.00000	
24JL2011D2	13						1.00000	
24JL2011D2	14						1.00000	
24JL2011D2	15						1.00000	
24JL2011D2	16						1.00000	
24JL2011D2	17						1.00000	
24JL2011D2	18		ALM 07-24-20				1.00000	
24JL2011D2	19						1.00000	

Logfile ✓ id
7/27/20 KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

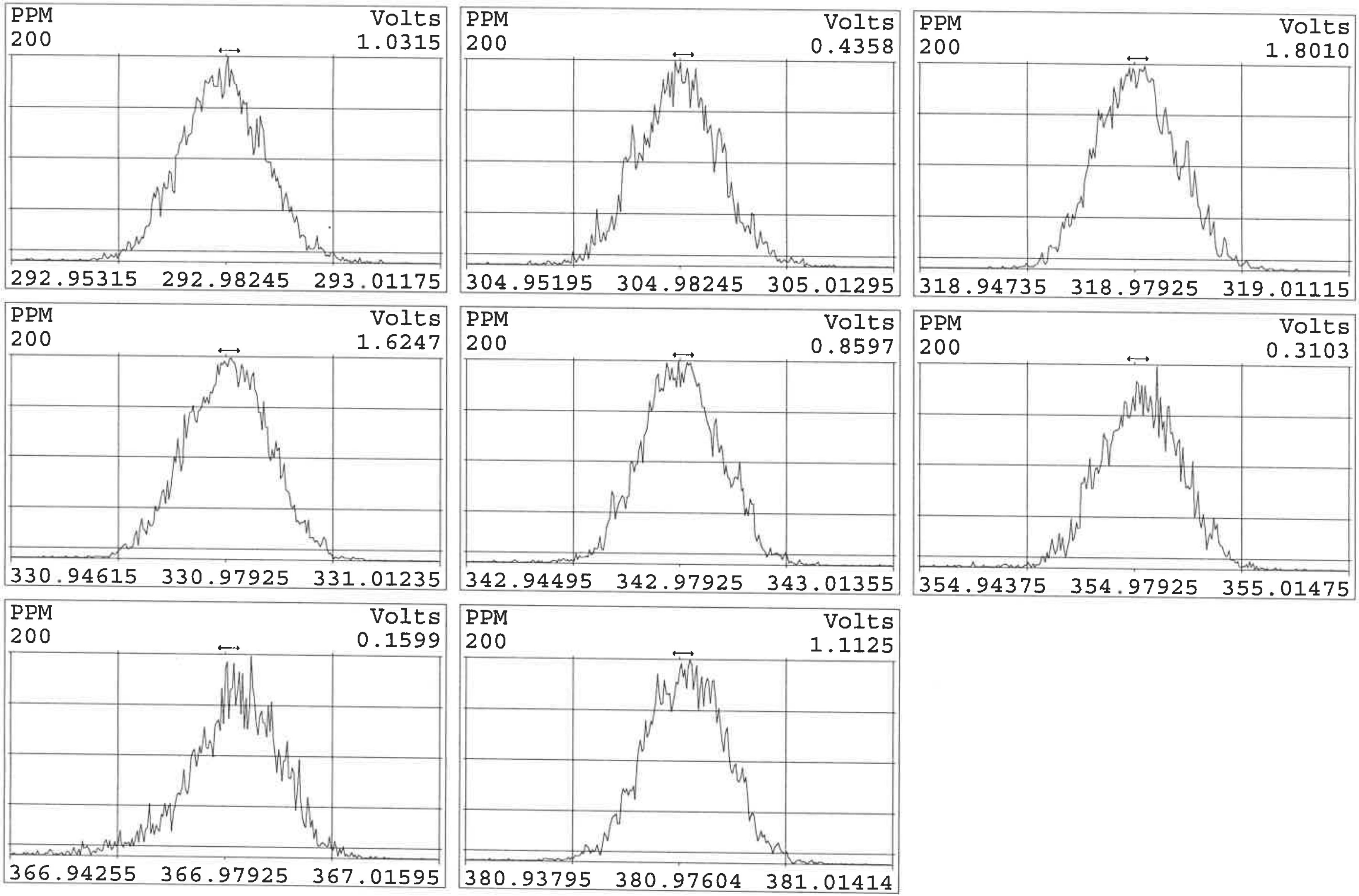

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

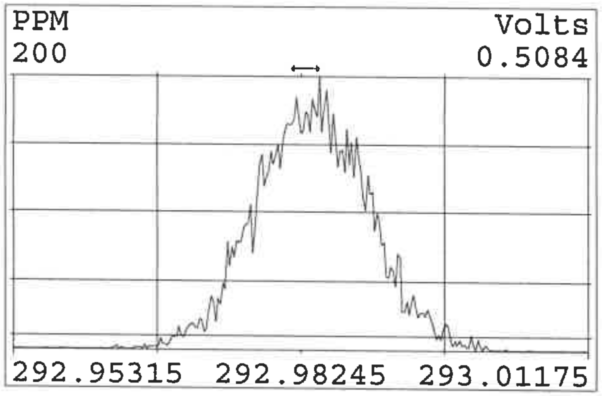

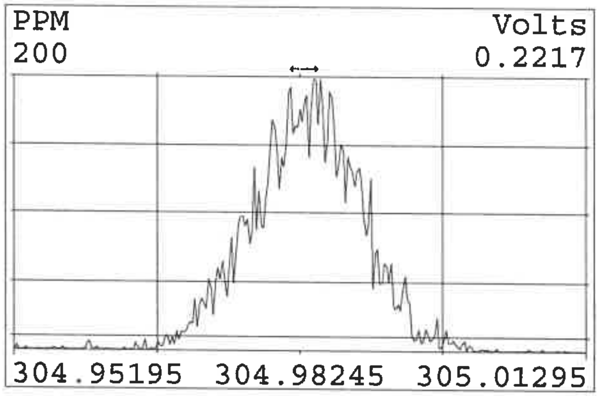

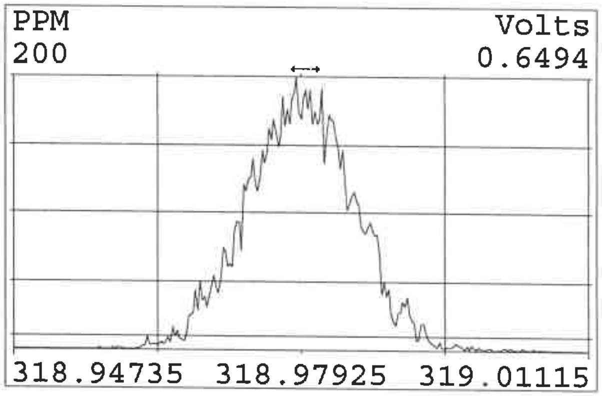

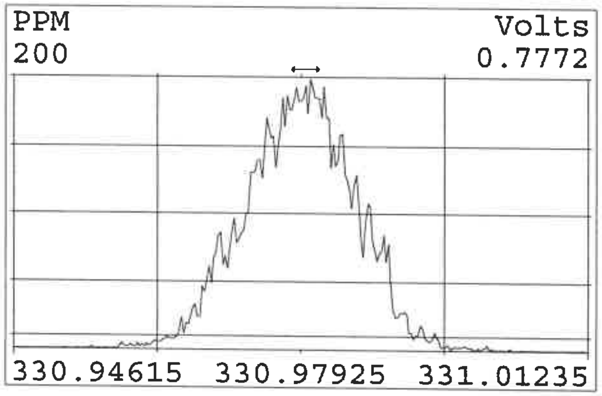

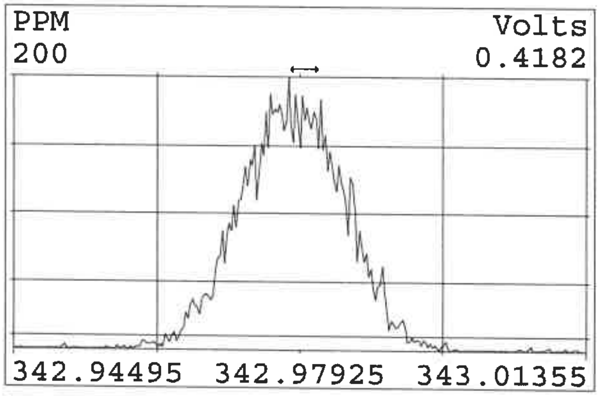

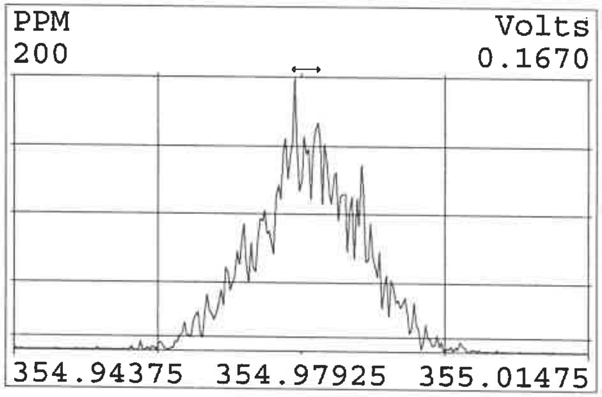

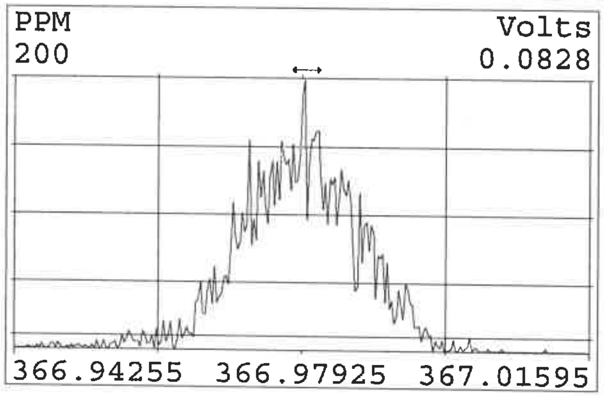

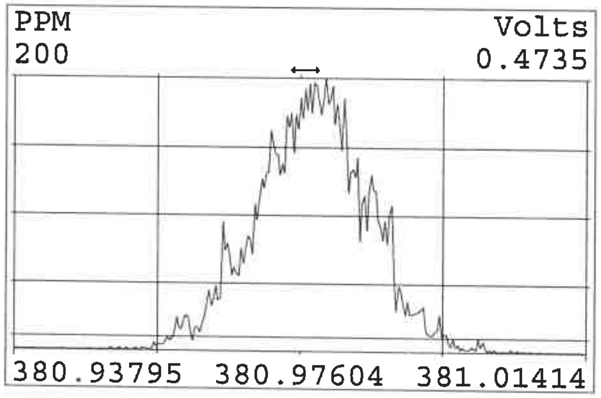

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

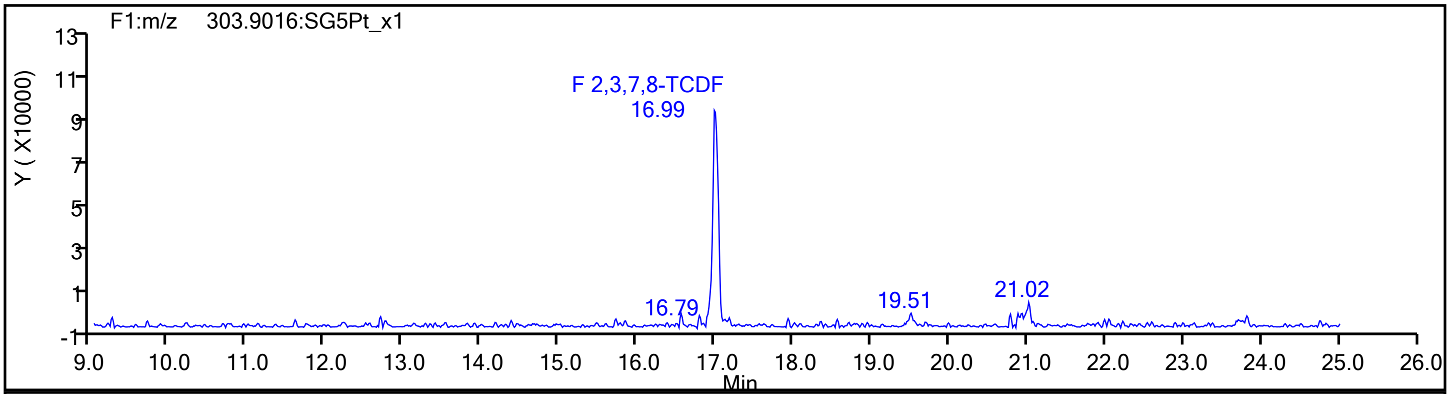

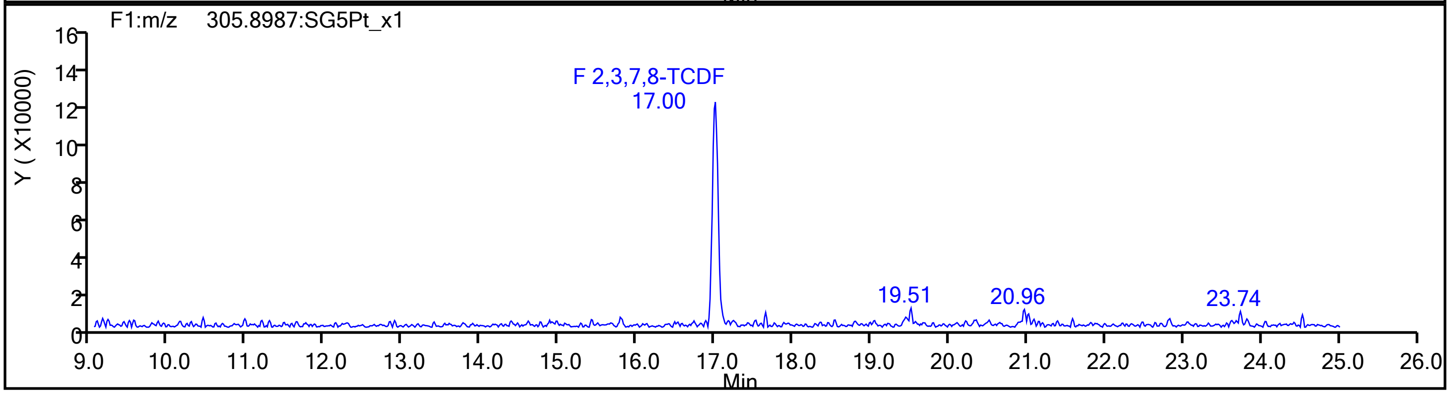

TCDF Standards

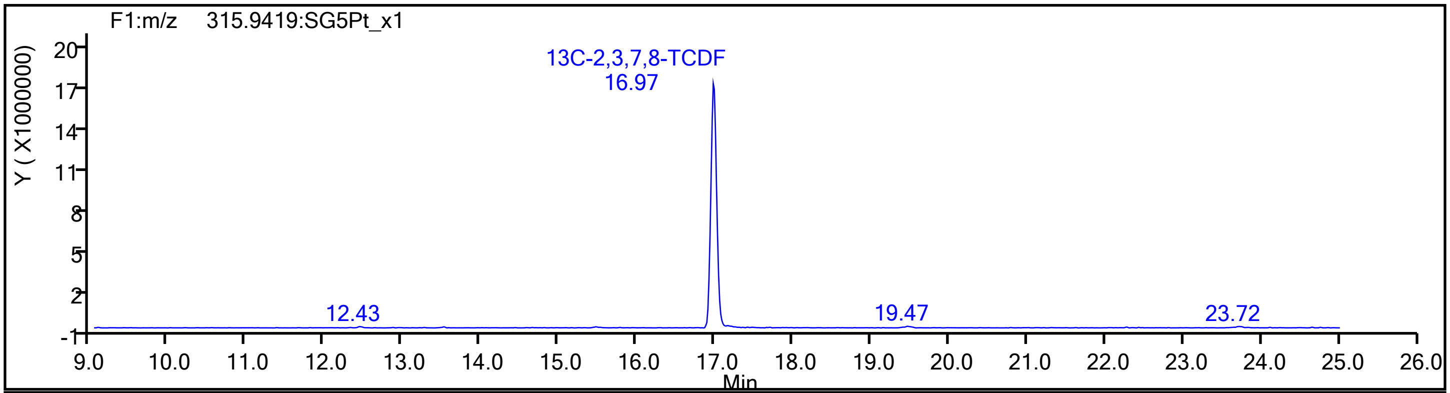

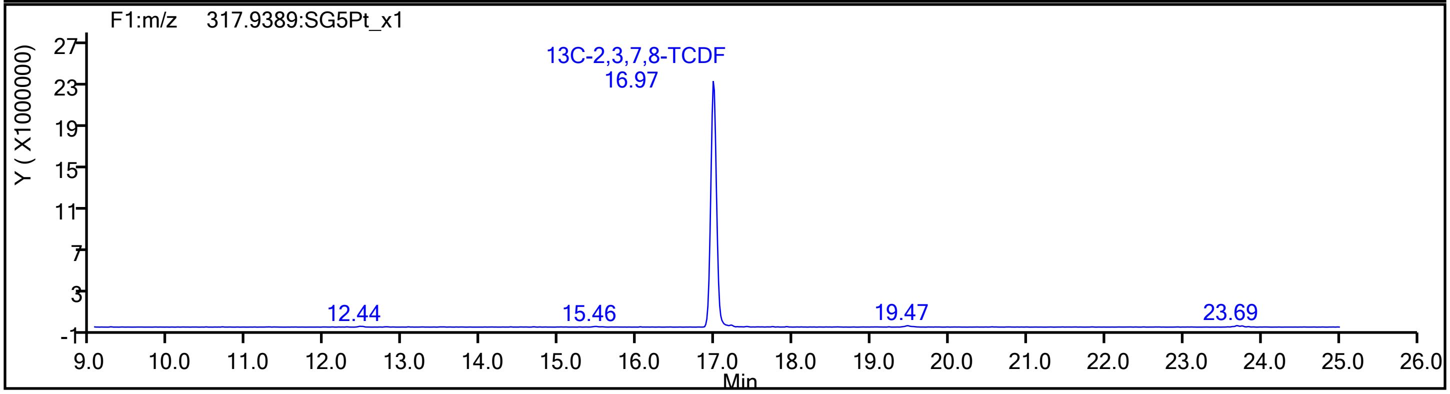

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

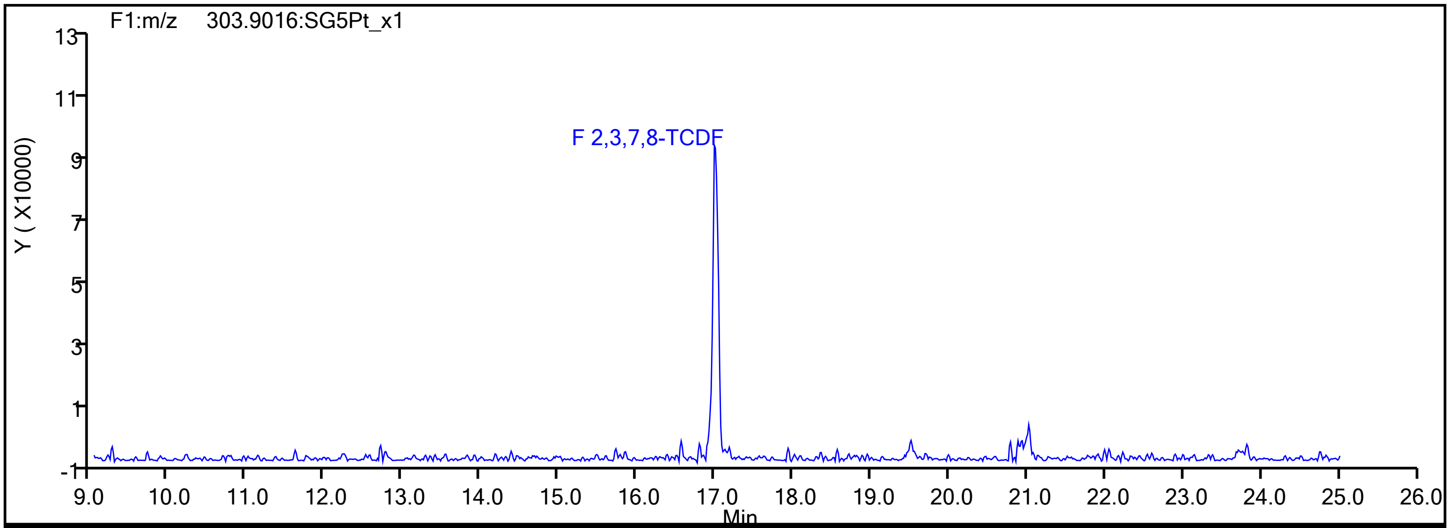

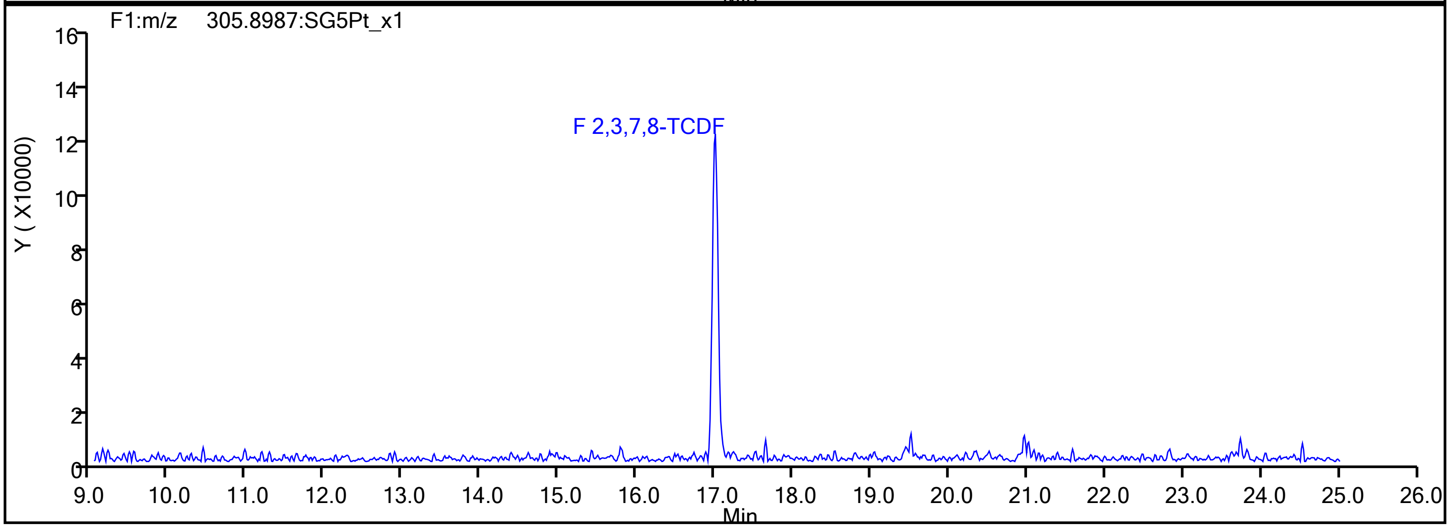

TCDF Interference Mass

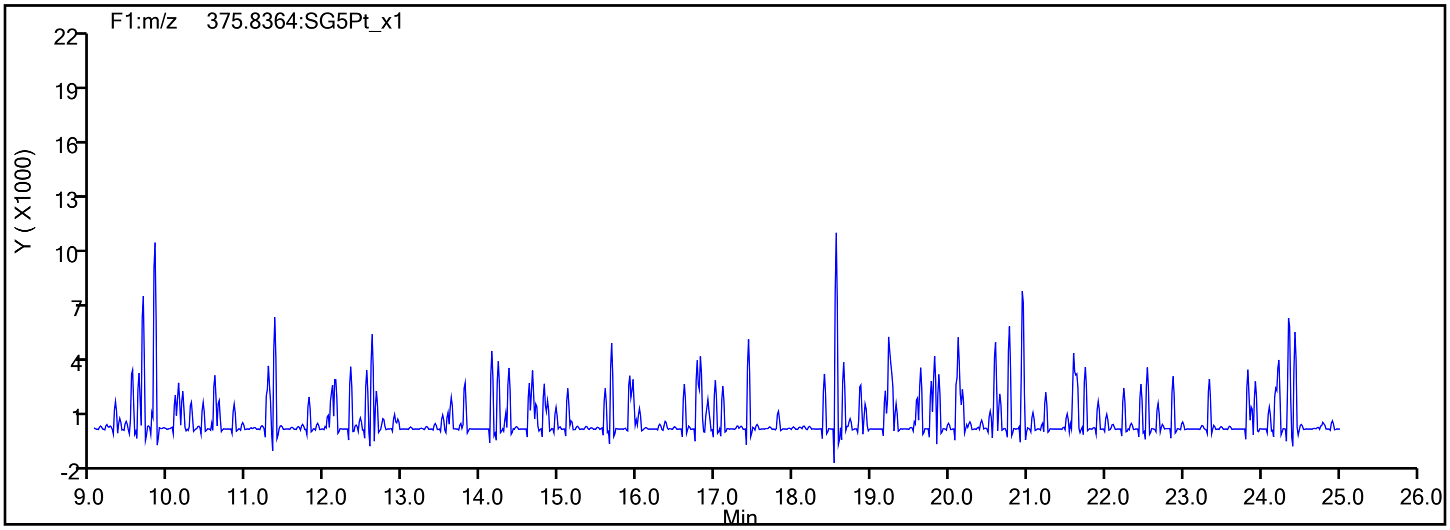

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

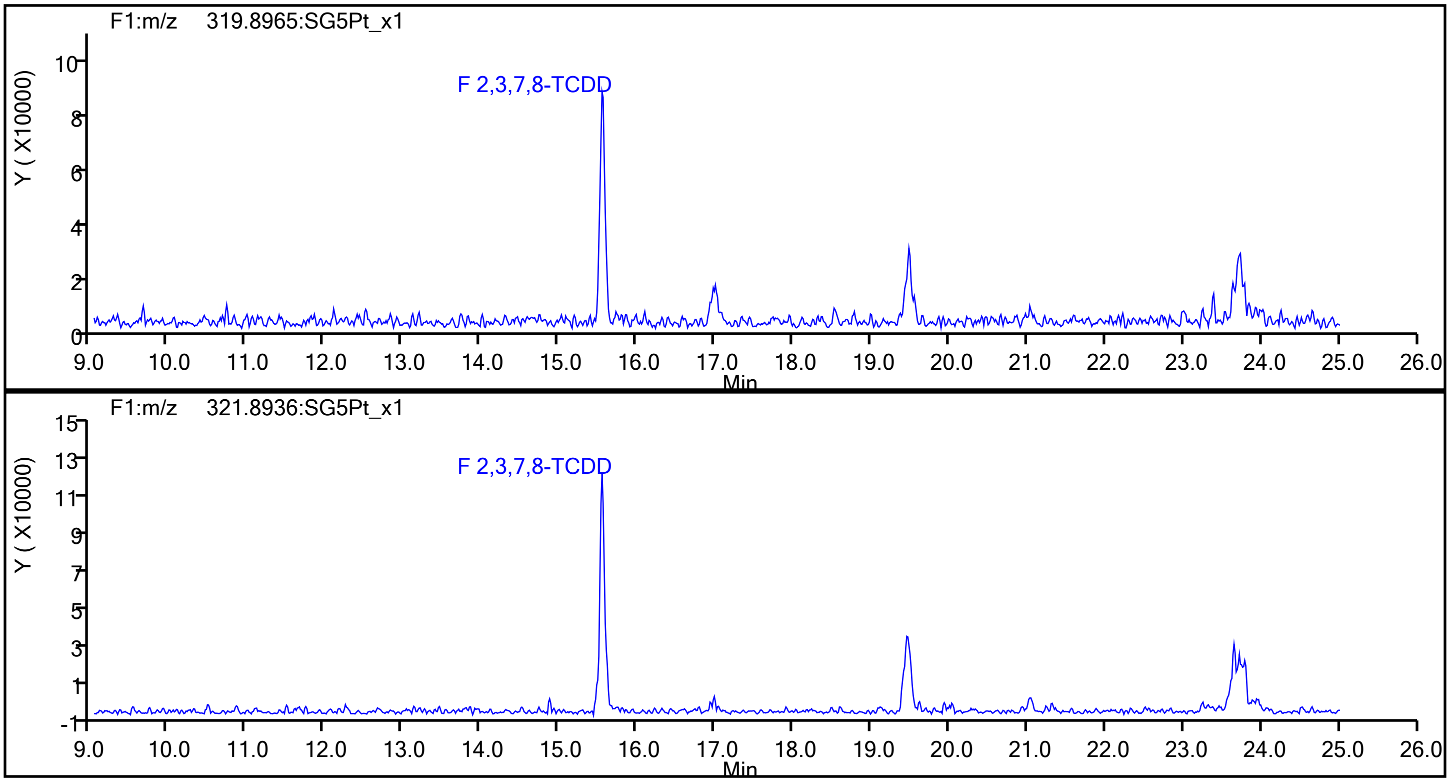

TCDD Standards

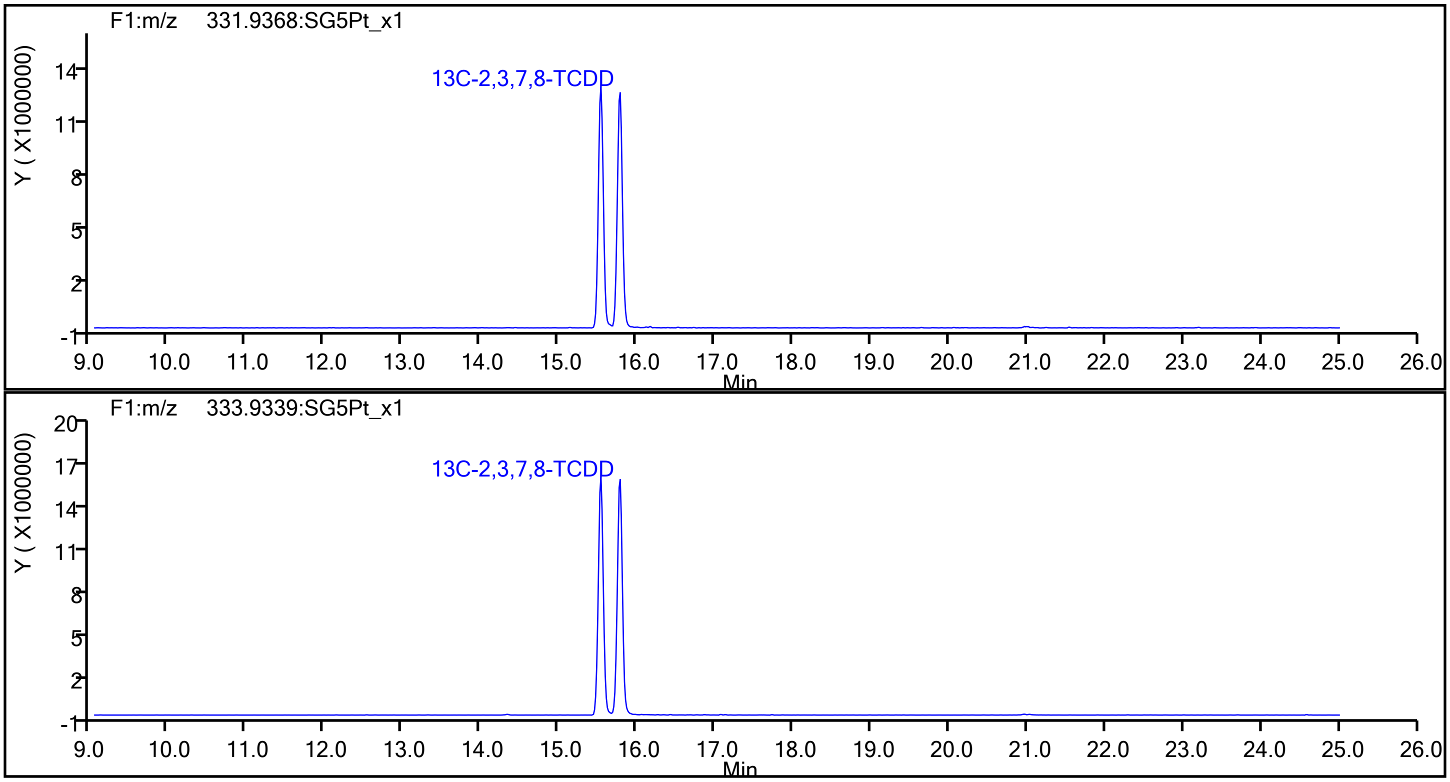

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

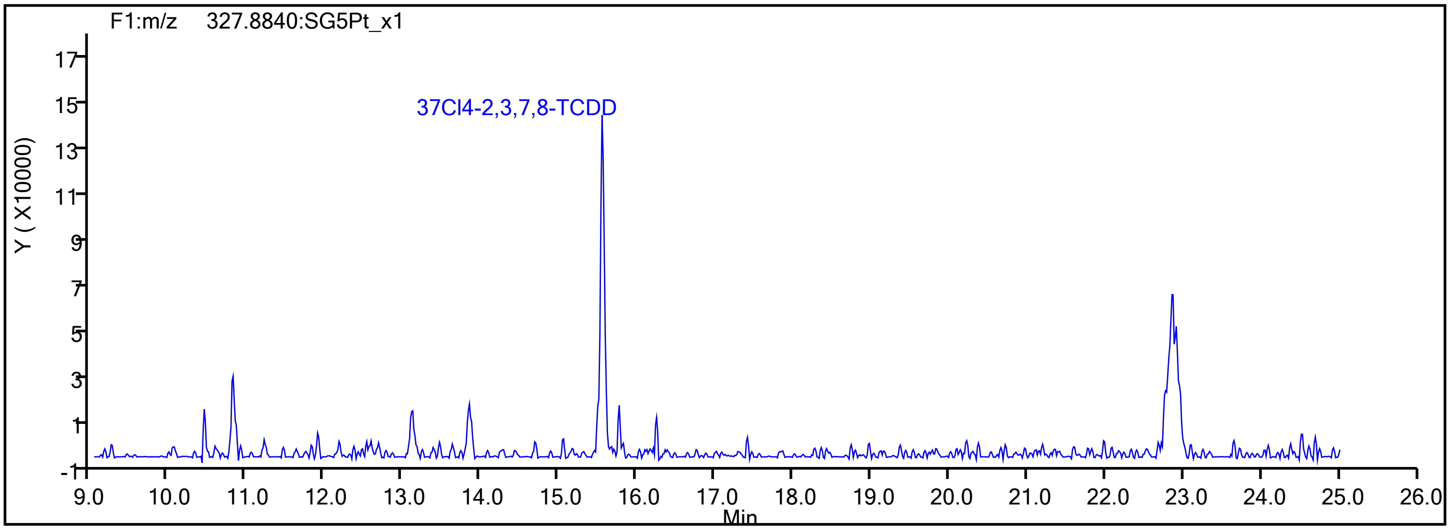

37Cl4-TCDD Standards

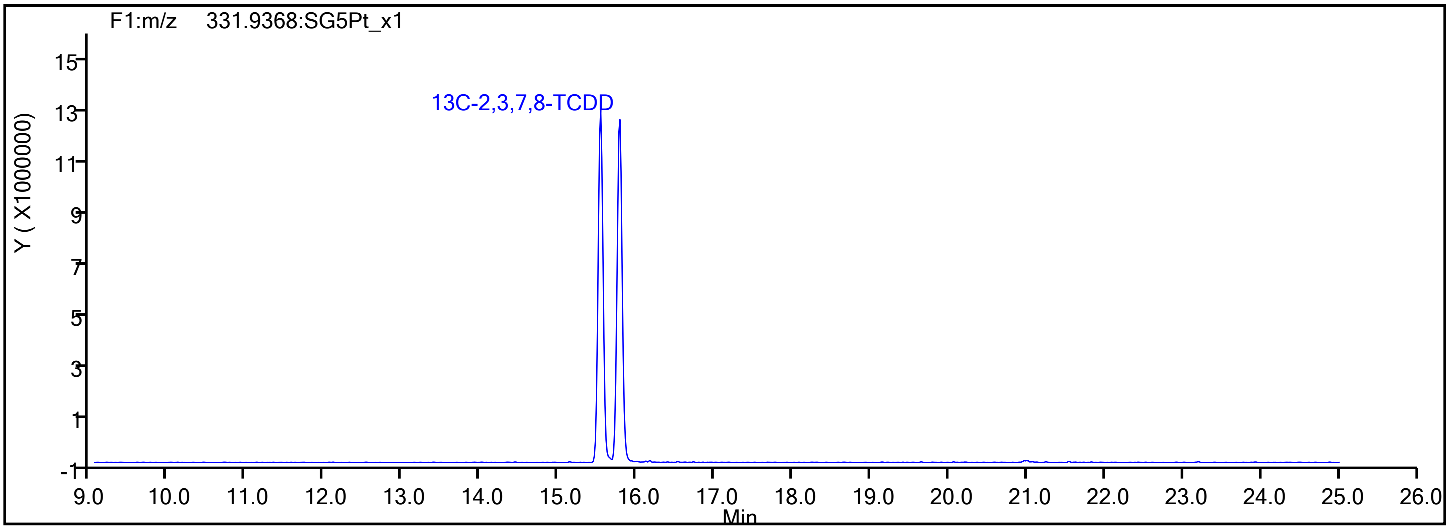

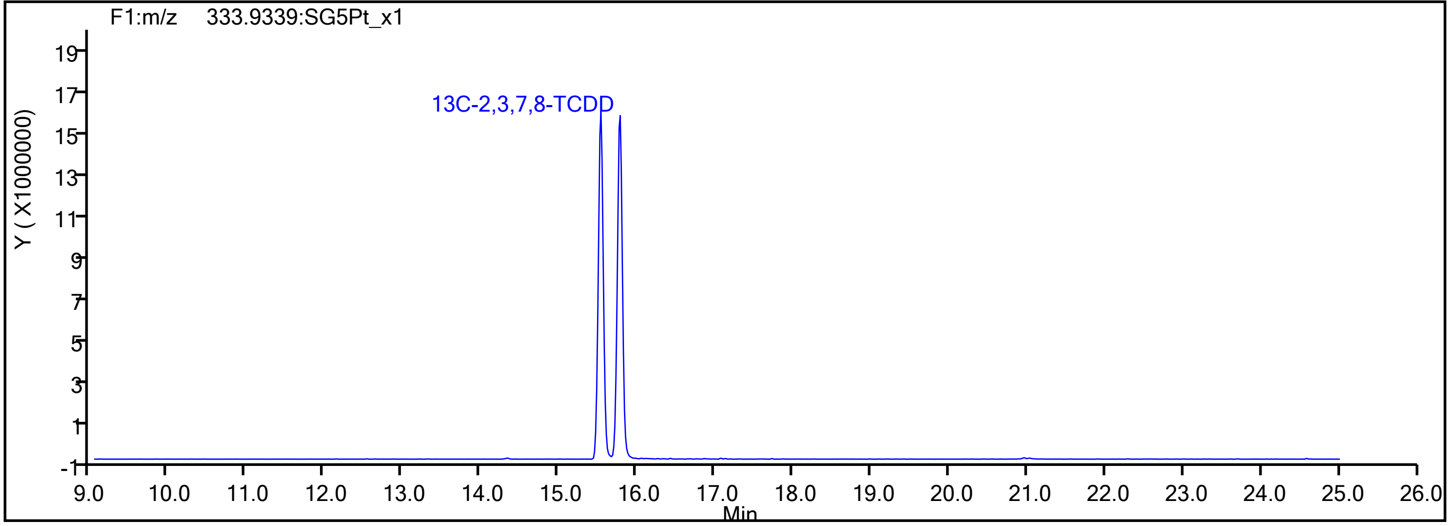

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

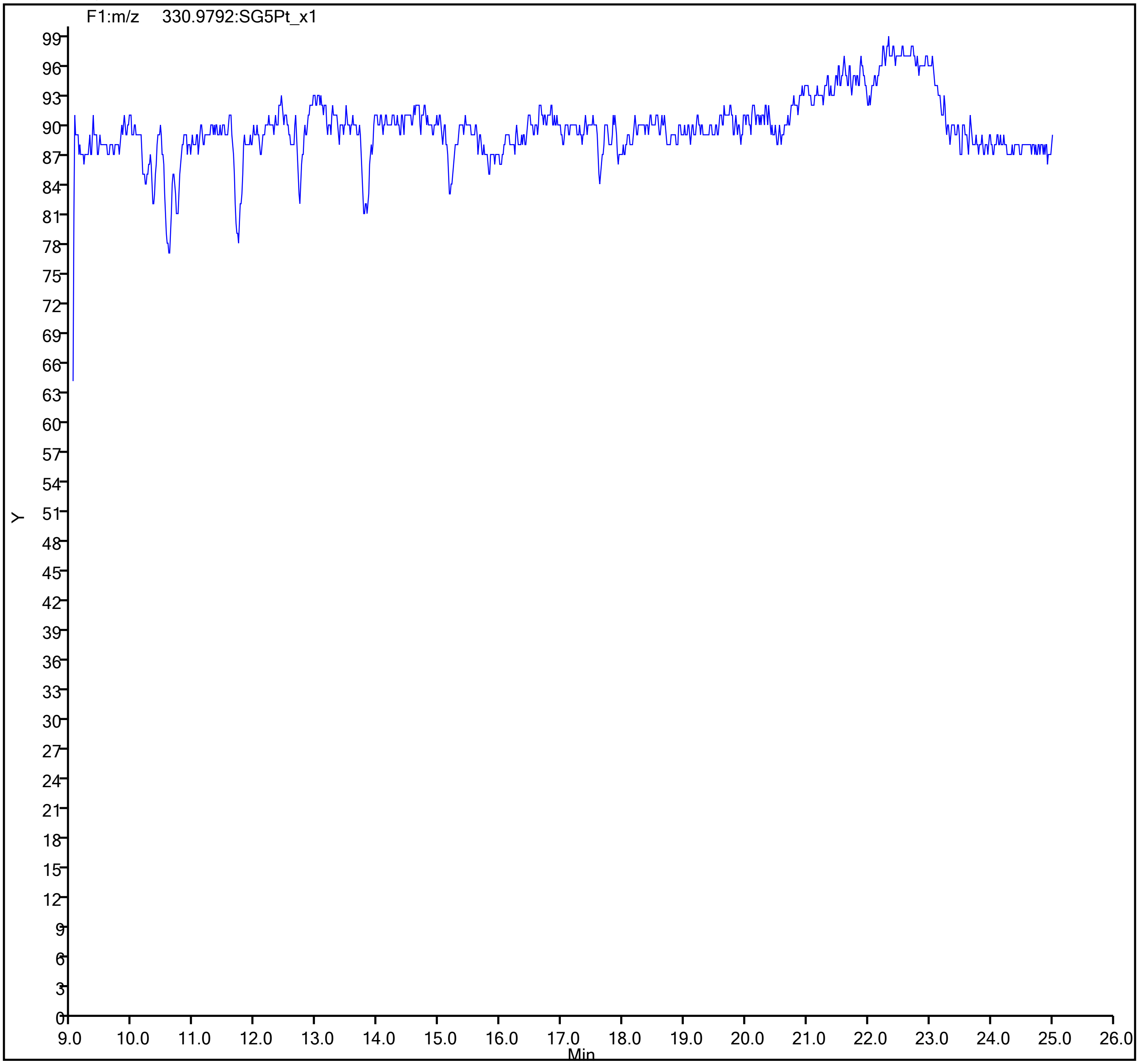

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:47		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

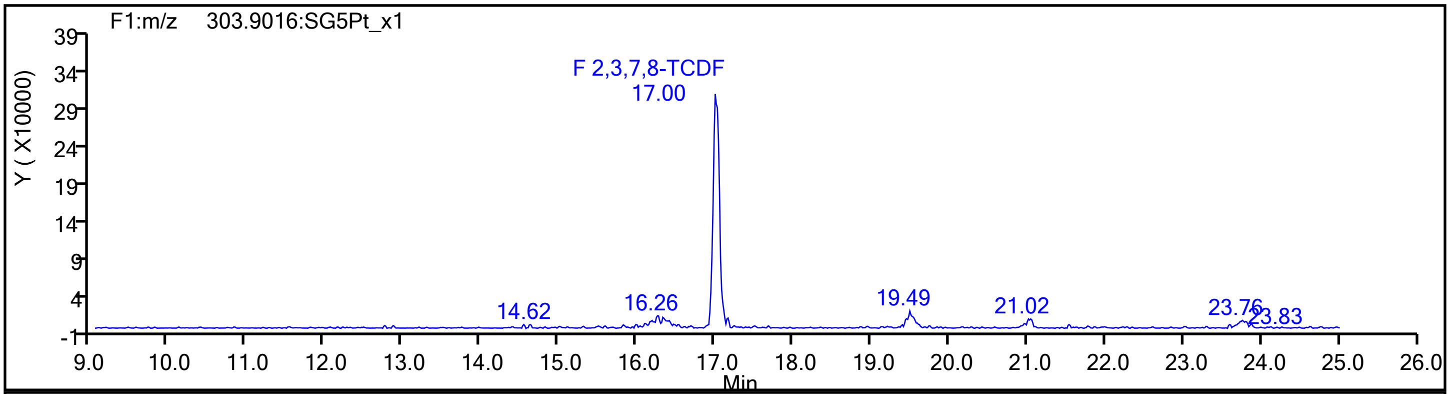

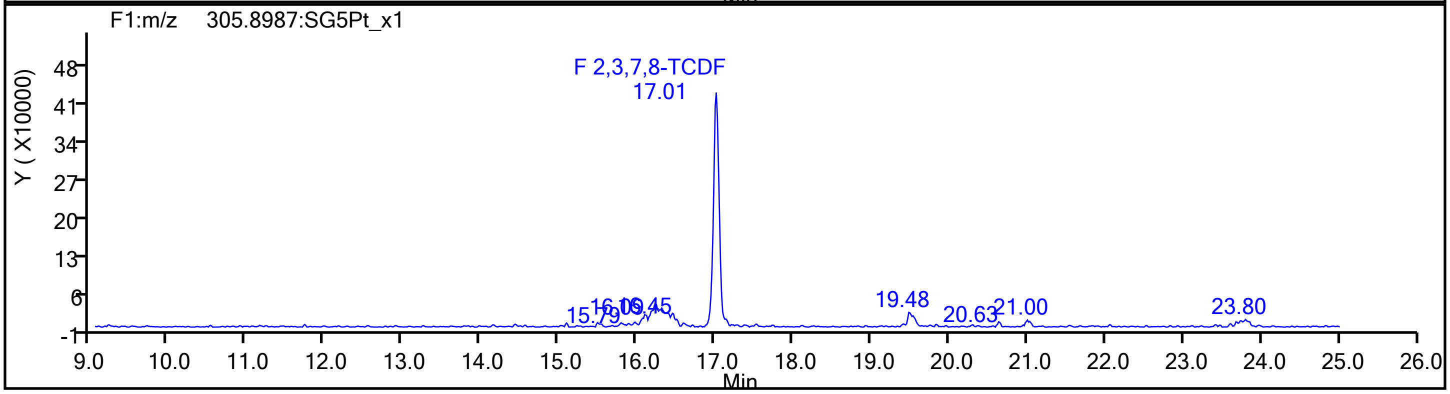

TCDF Standards

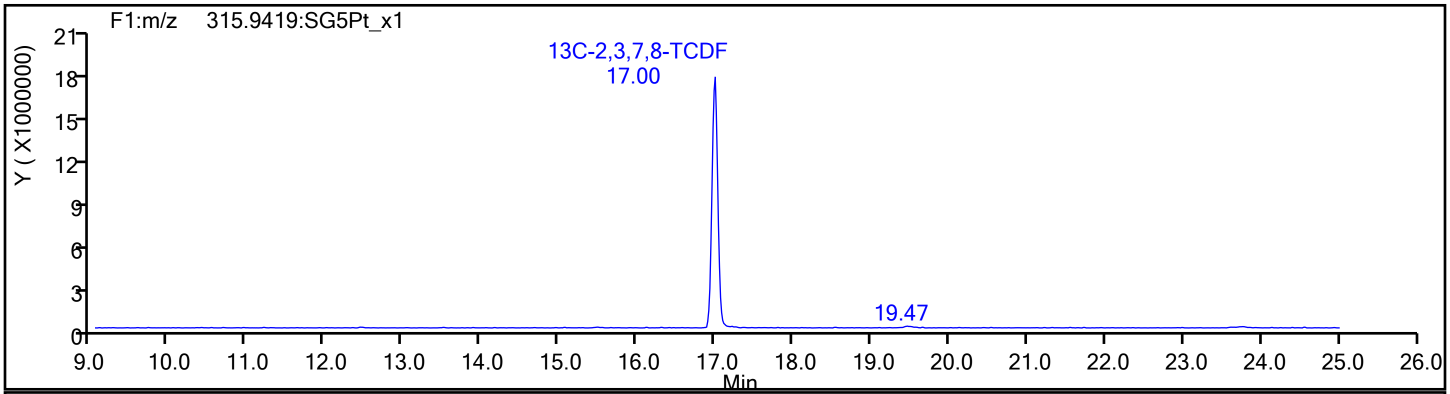

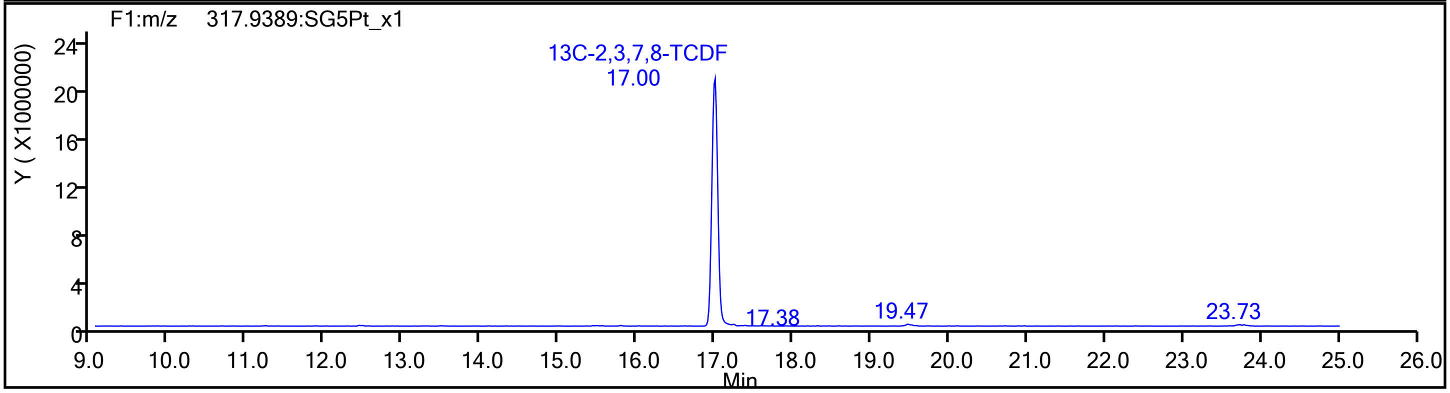

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

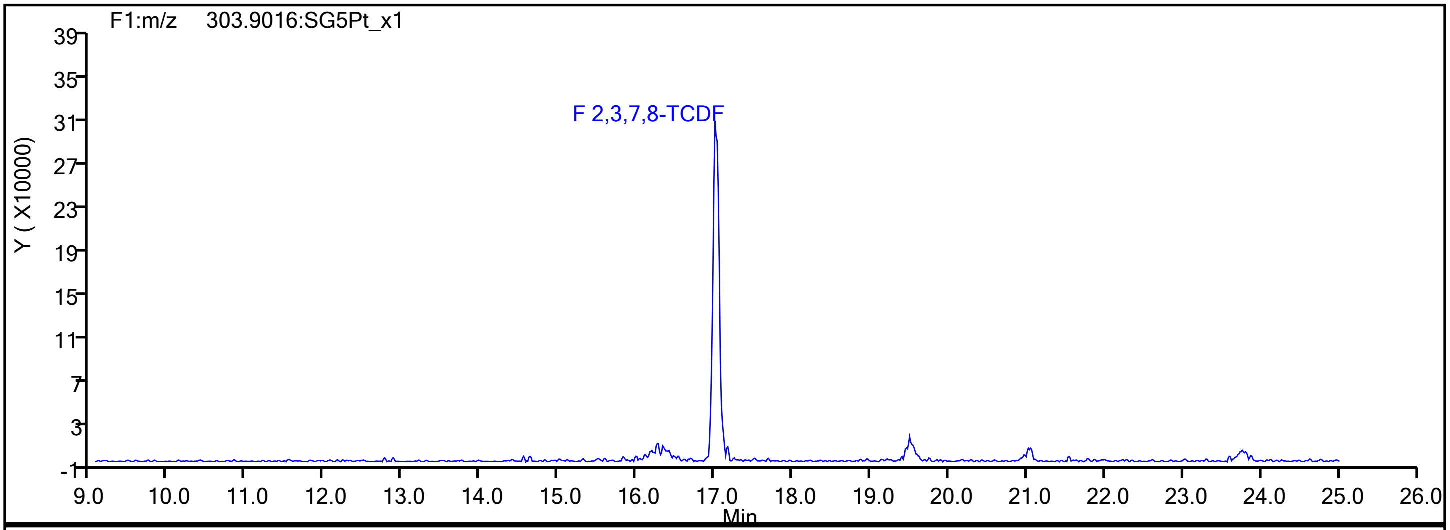

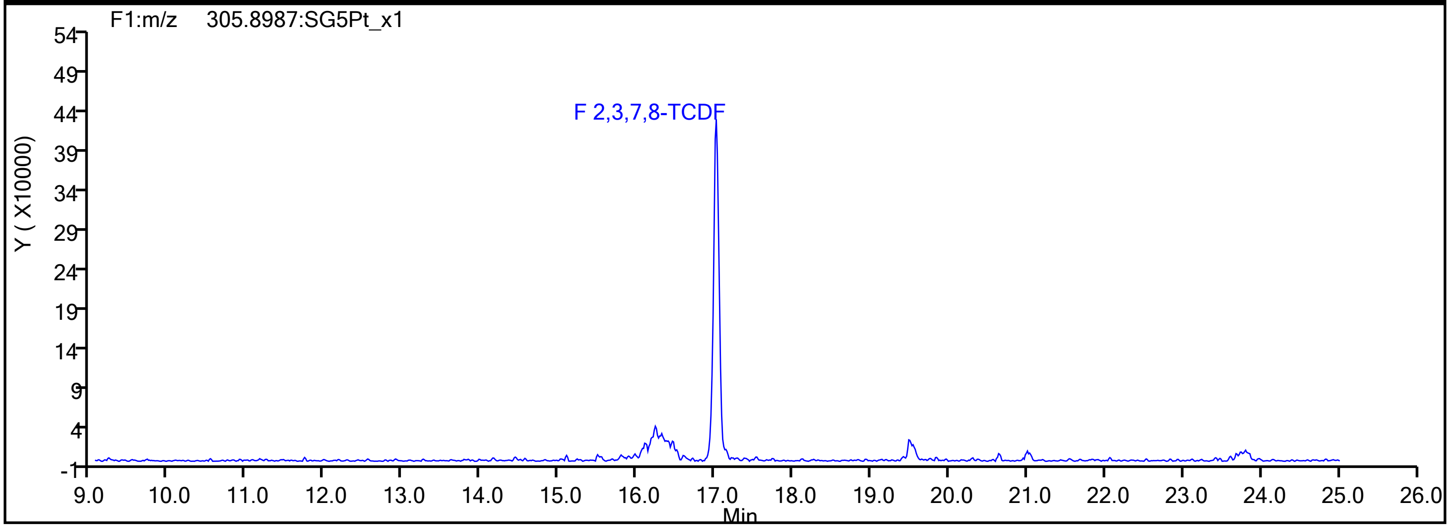

TCDF Interference Mass

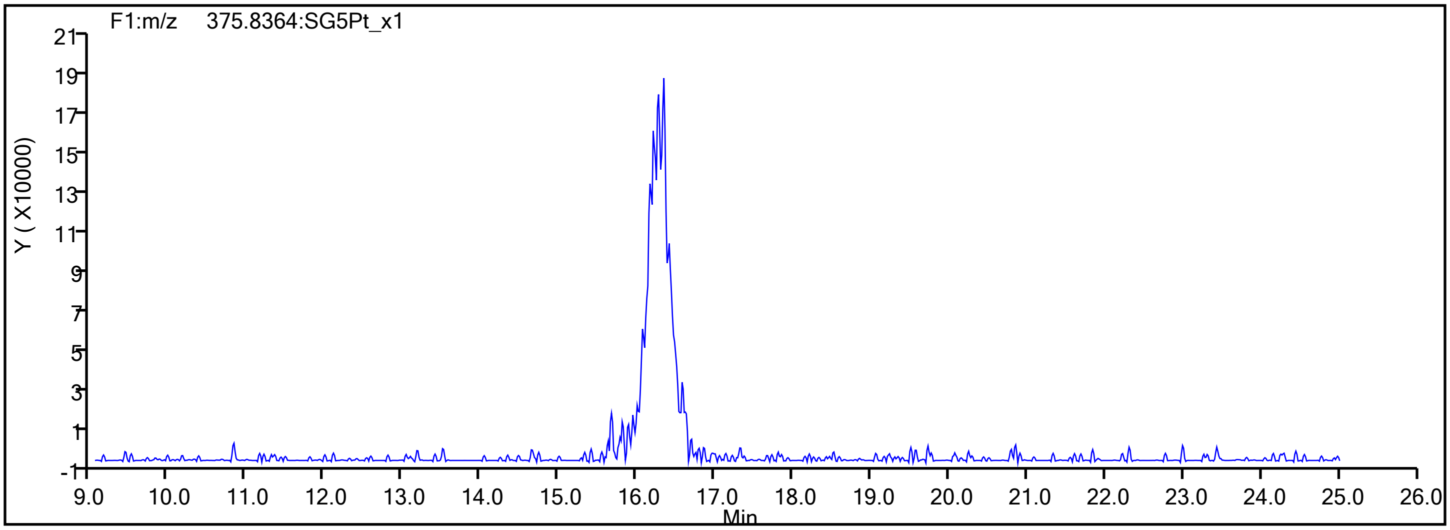

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

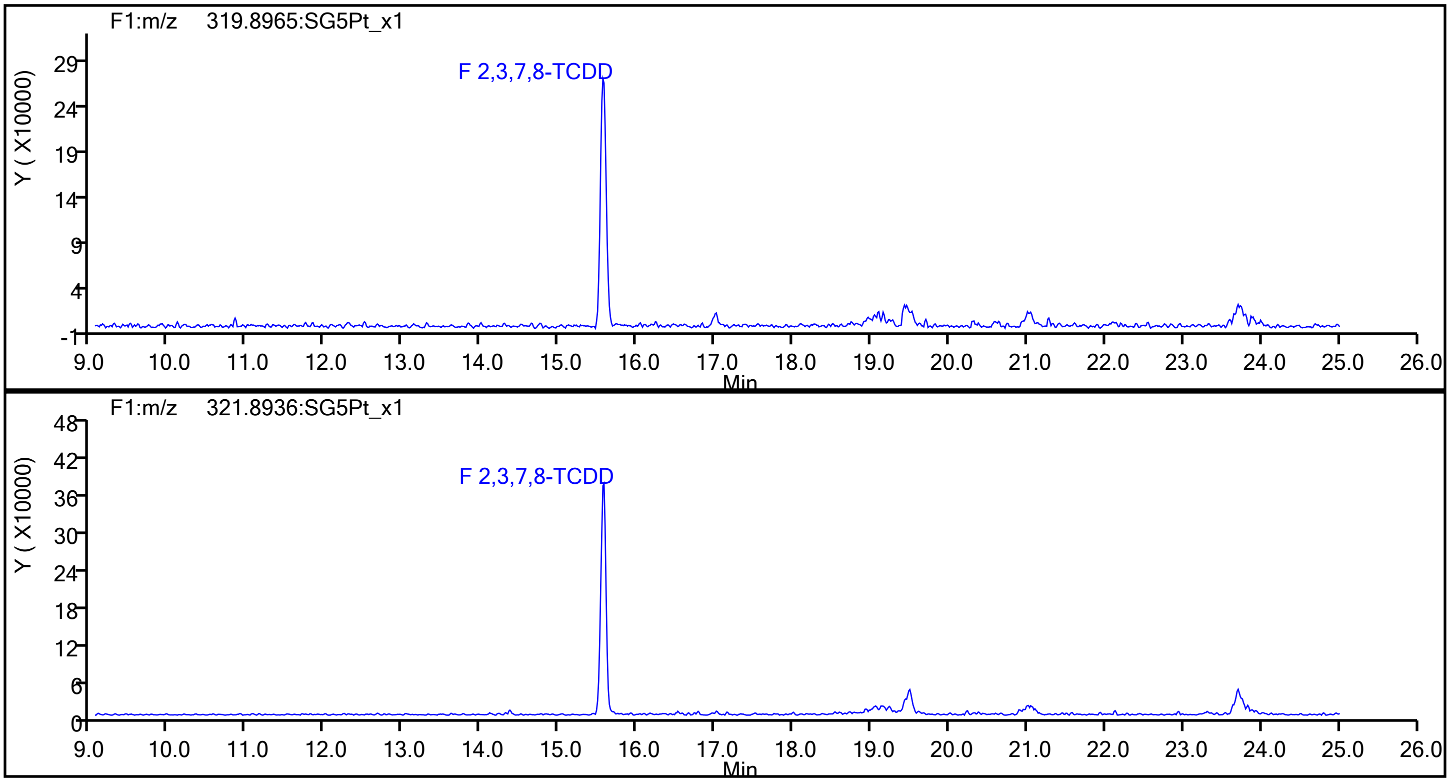

TCDD Standards

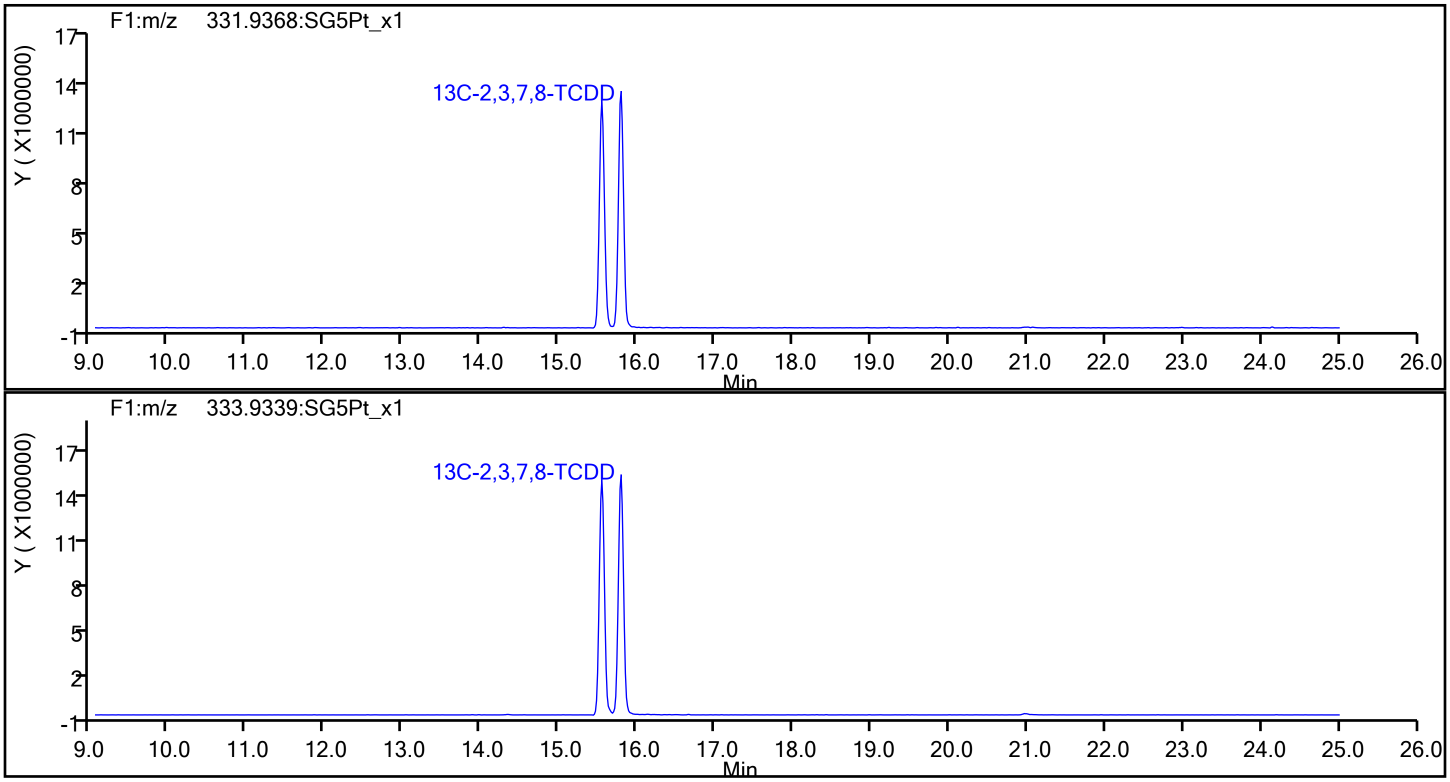

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

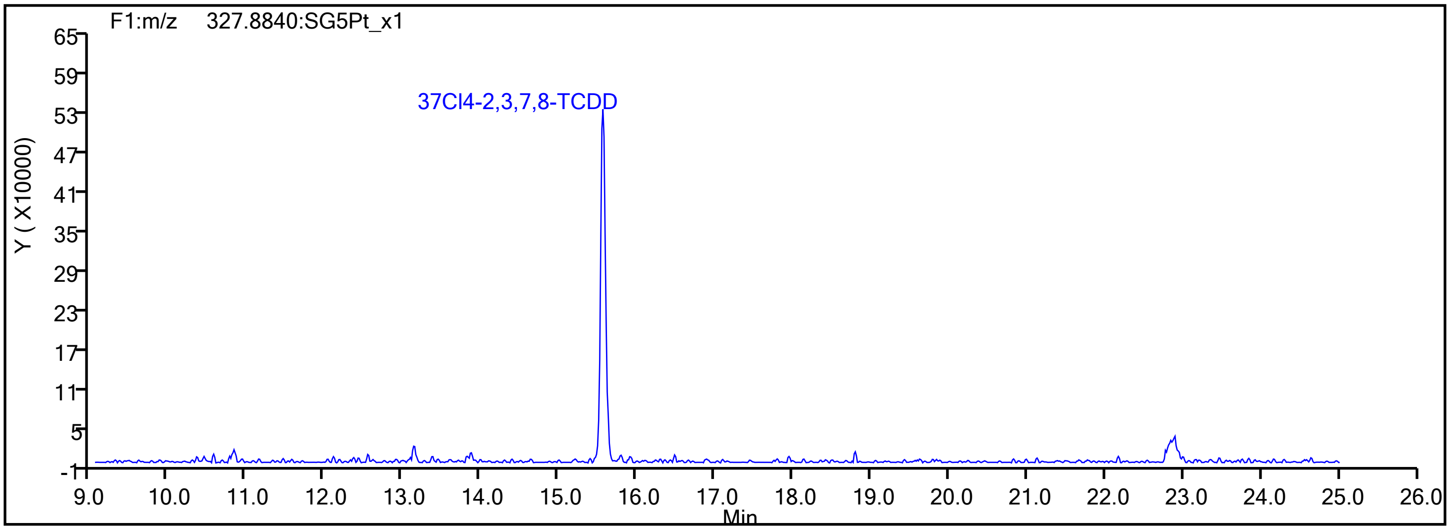

37Cl4-TCDD Standards

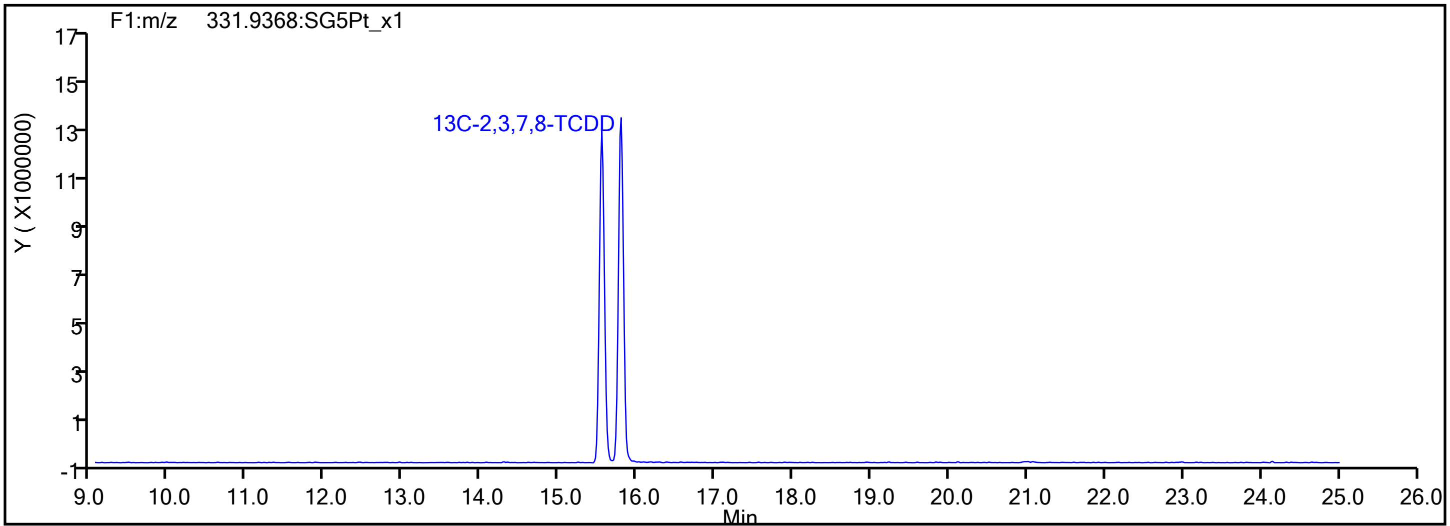

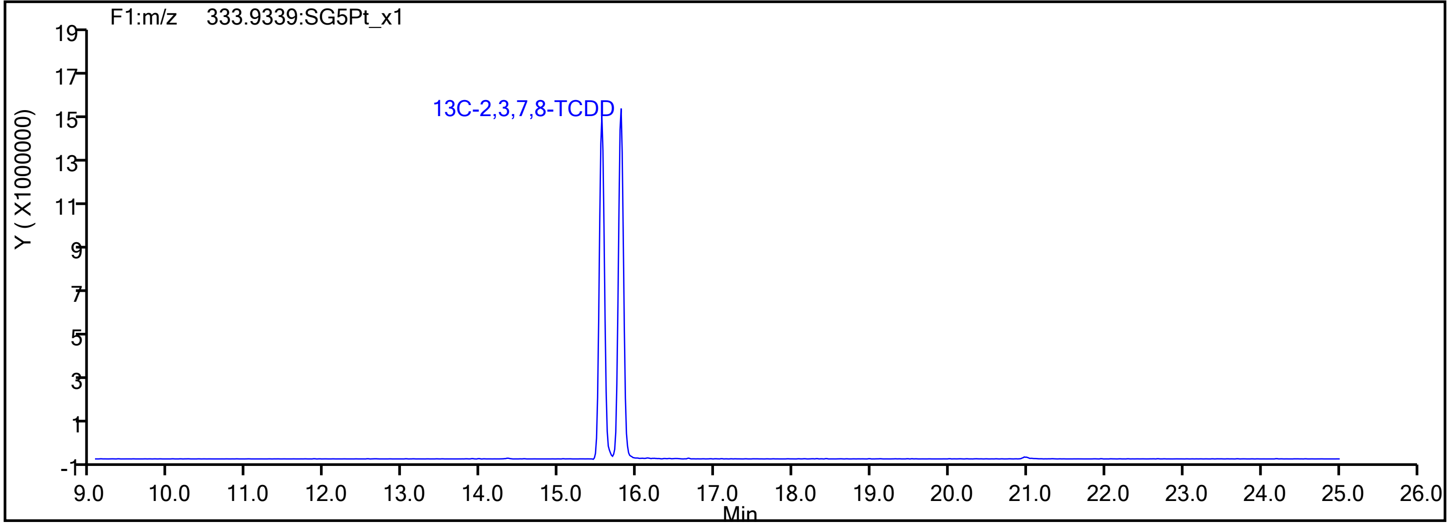

Report Date: 27-Jul-2020 12:42:56 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d

Injection Date: 25-Jul-2020 00:28:40 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 4

Column Type: DB-225 Column Dia: 0.32 mm

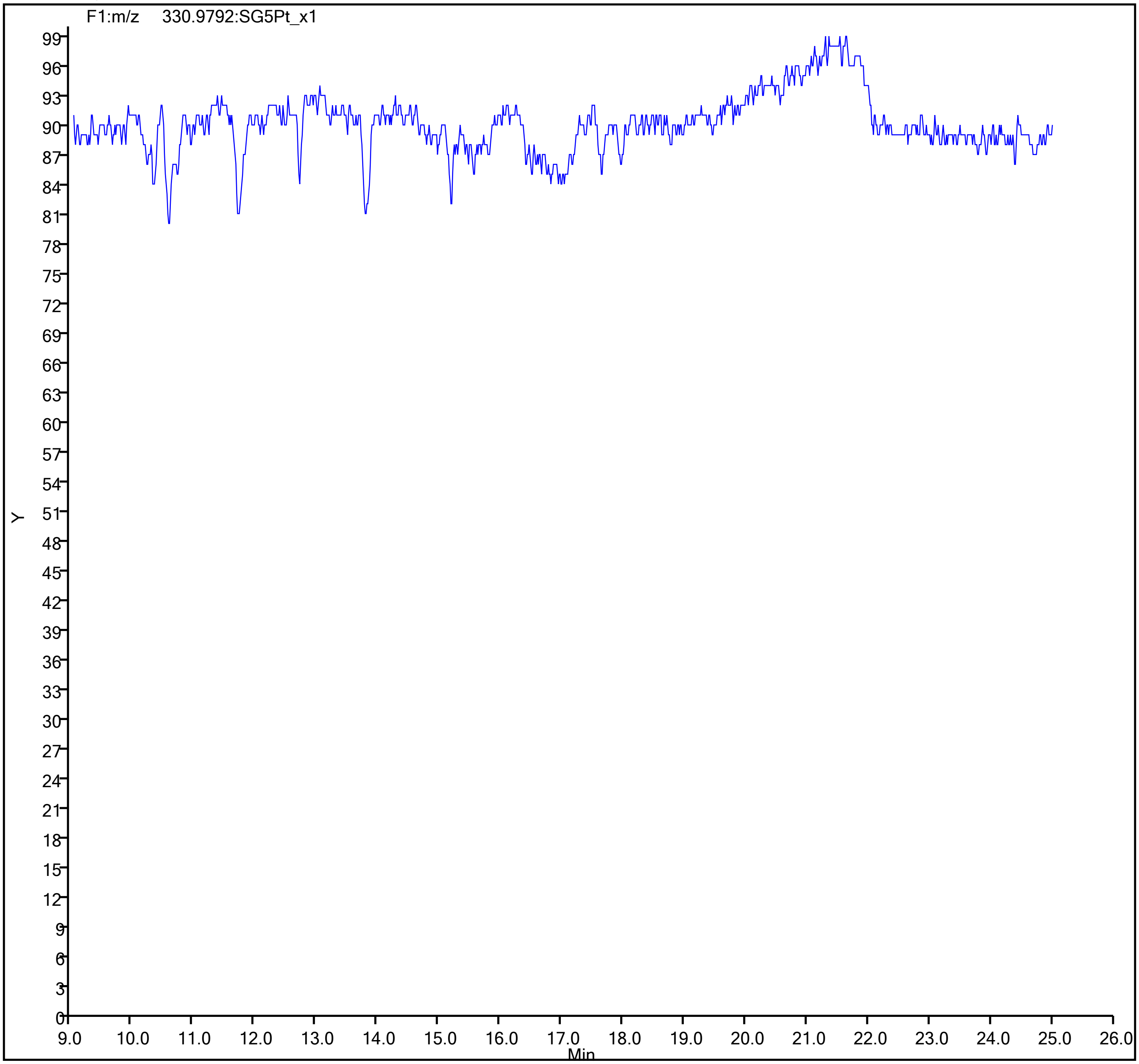

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d					
Lims ID:	IC 4					
Client ID:						
Sample Type:	IC	Calib Level:	4			
Inject. Date:	25-Jul-2020 01:07:02	ALS Bottle#:	0	Worklist Smp#:	5	
Injection Vol:	2.0 ul	Dil. Factor:	1.0000			
Sample Info:	CS-4 HRDXNL4_00094					
Misc. Info.:	DB225RES					
Operator ID:		Instrument ID:	11D2			
Sublist:	chrom-DXN_DB225_11D2*sub1					
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m					
Limit Group:	HR - 1613B - ICAL					
Last Update:	27-Jul-2020 12:42:57	Calib Date:	25-Jul-2020 02:23:46			
Integrator:	Picker					
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration			
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d					
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR			
Process Host:	CTX1056					

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC
Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02
ALS Bottle#: 0
Worklist Smp#: 5
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID:
Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57
Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)
Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa
Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

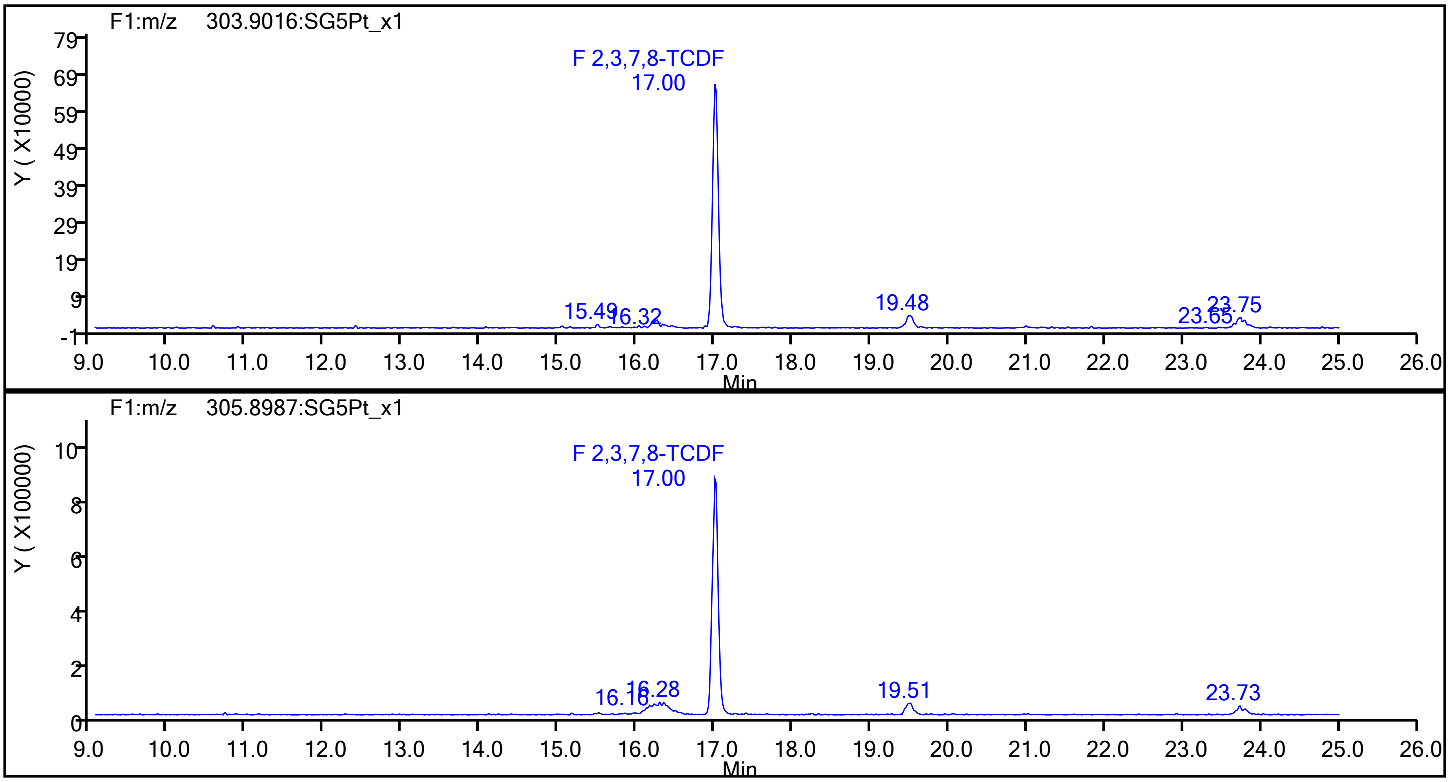

TCDF Standards

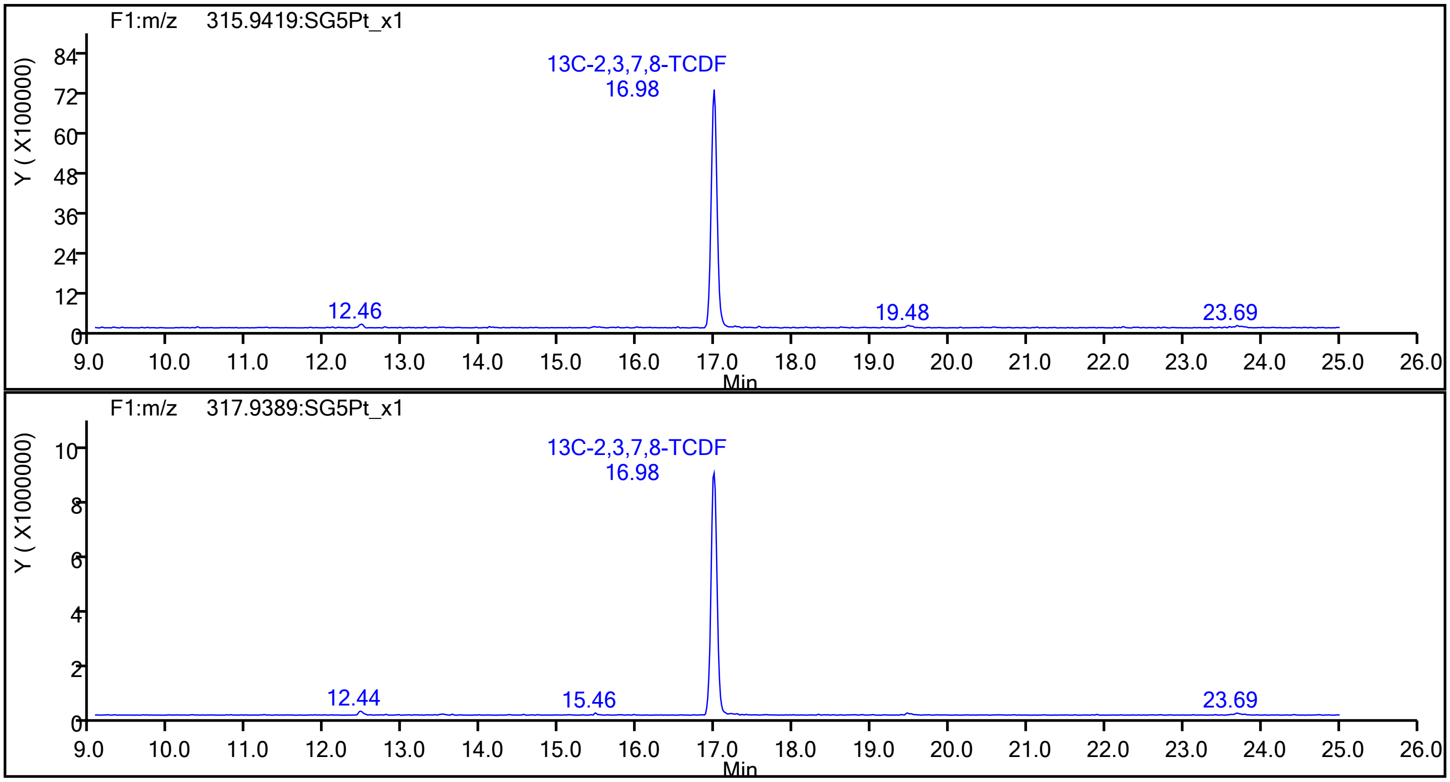

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

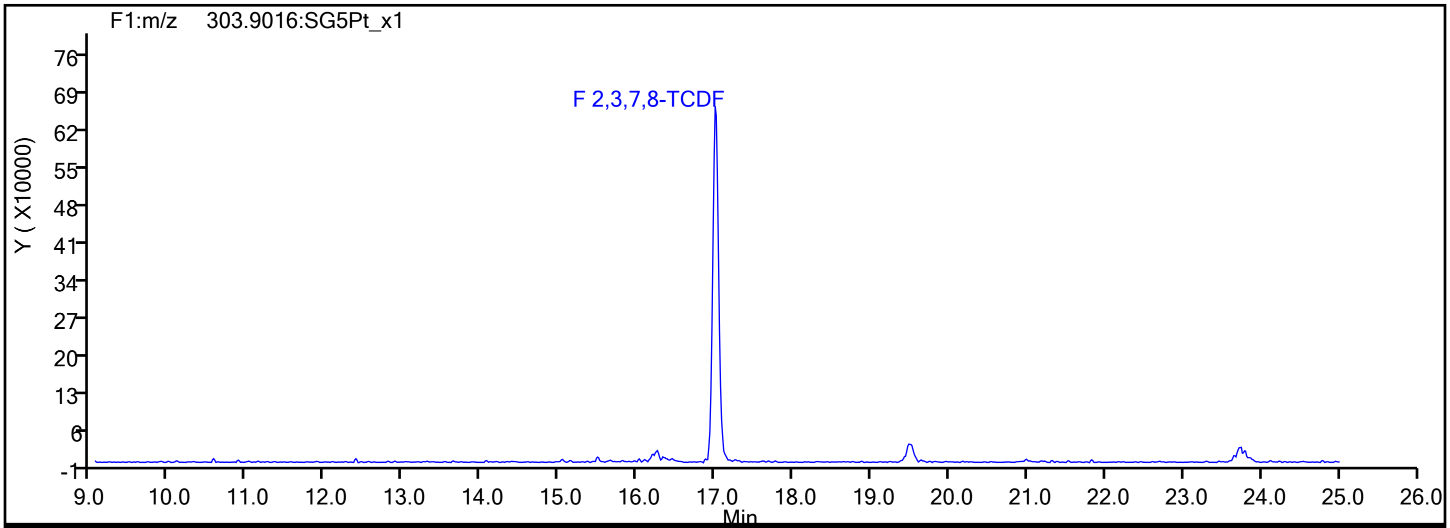

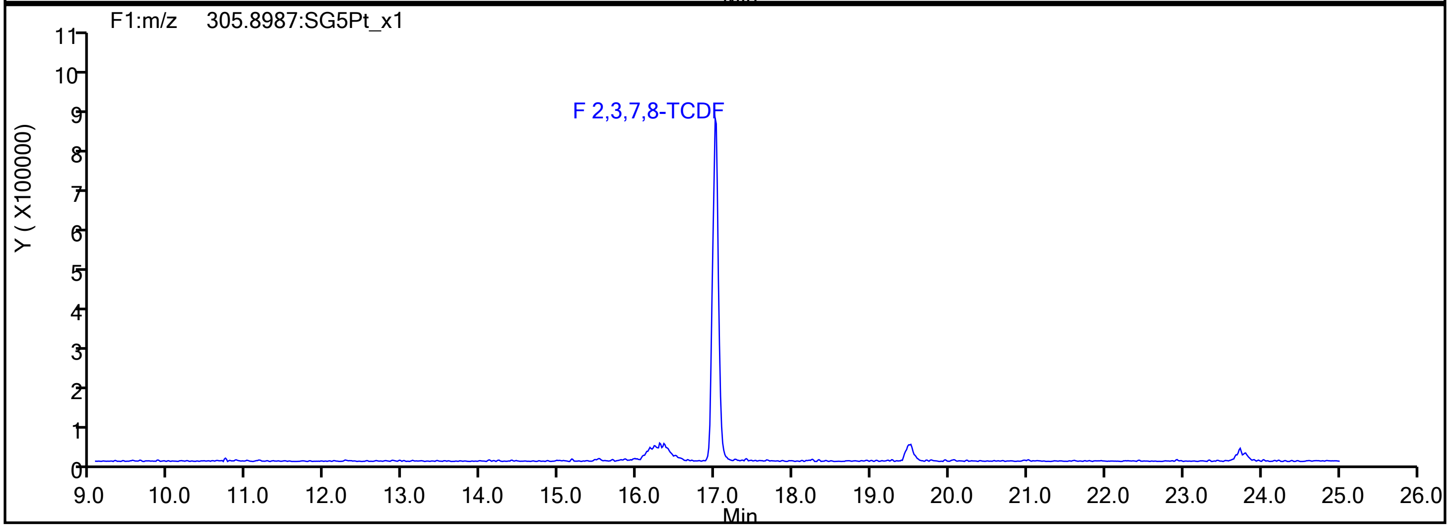

TCDF Interference Mass

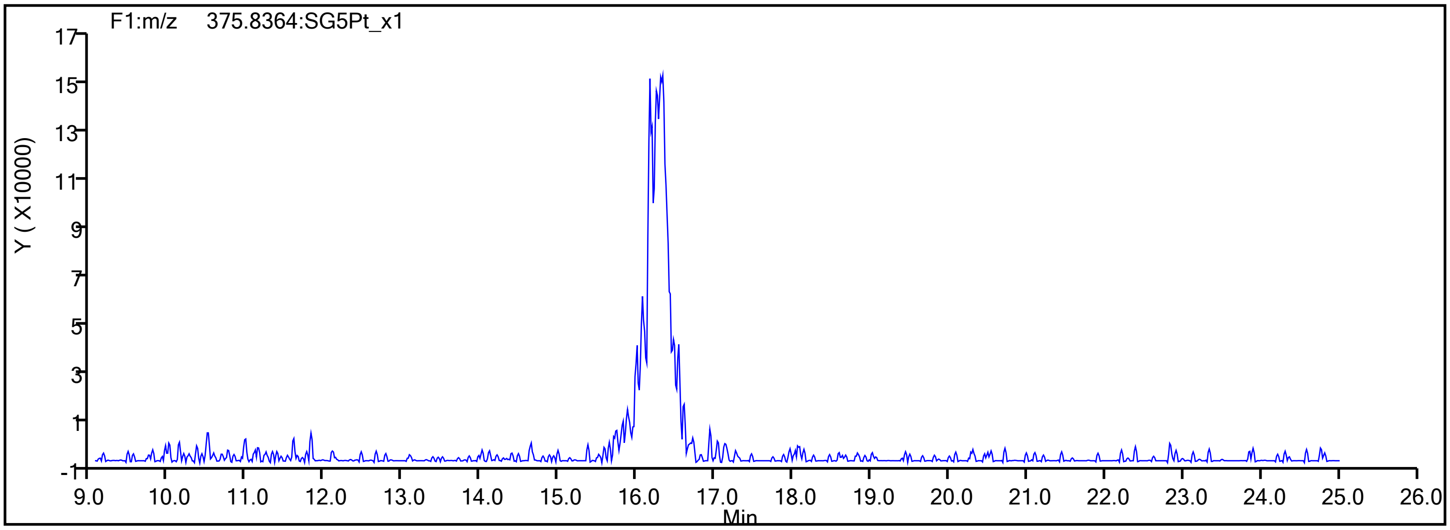

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

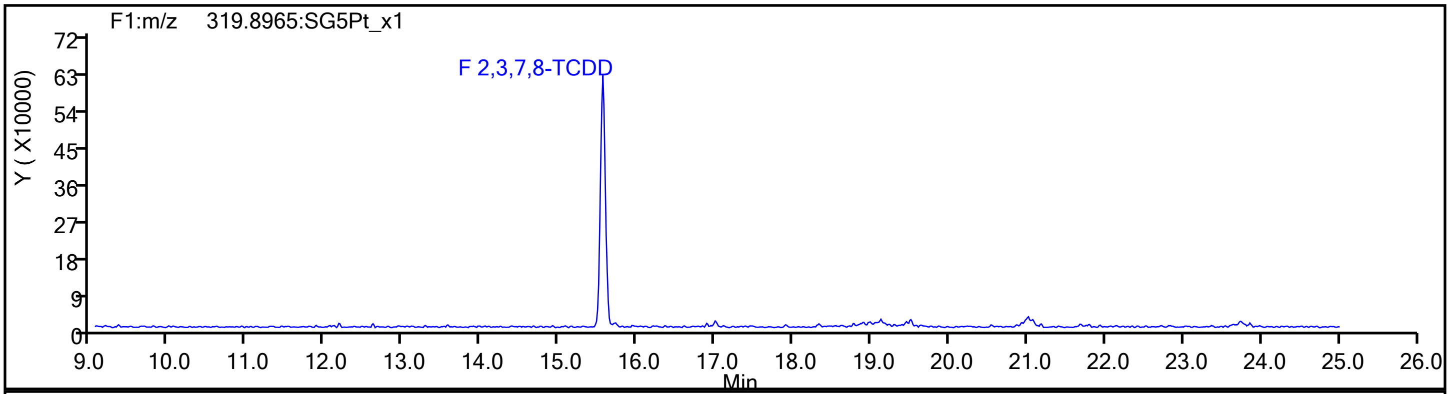

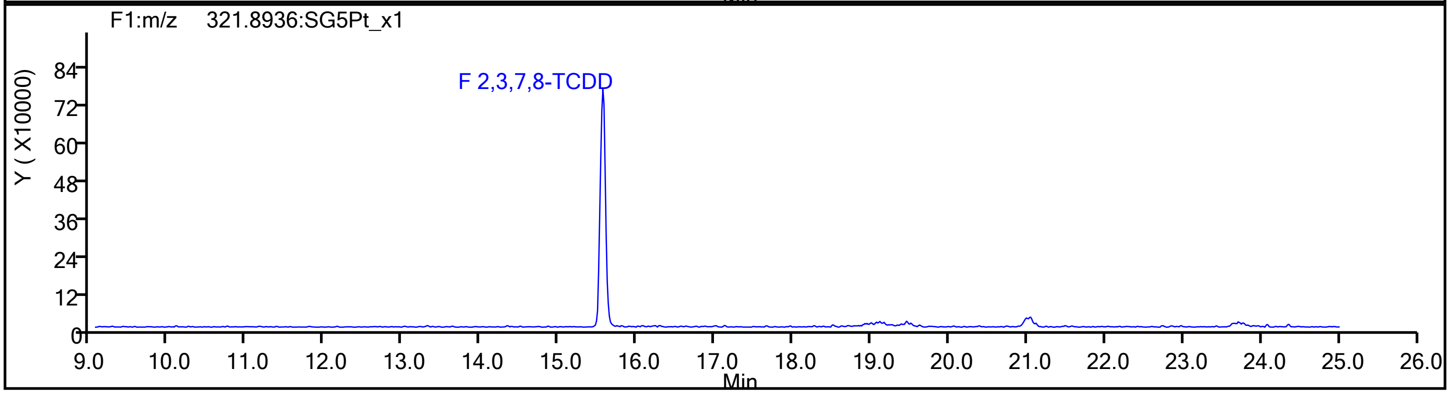

TCDD Standards

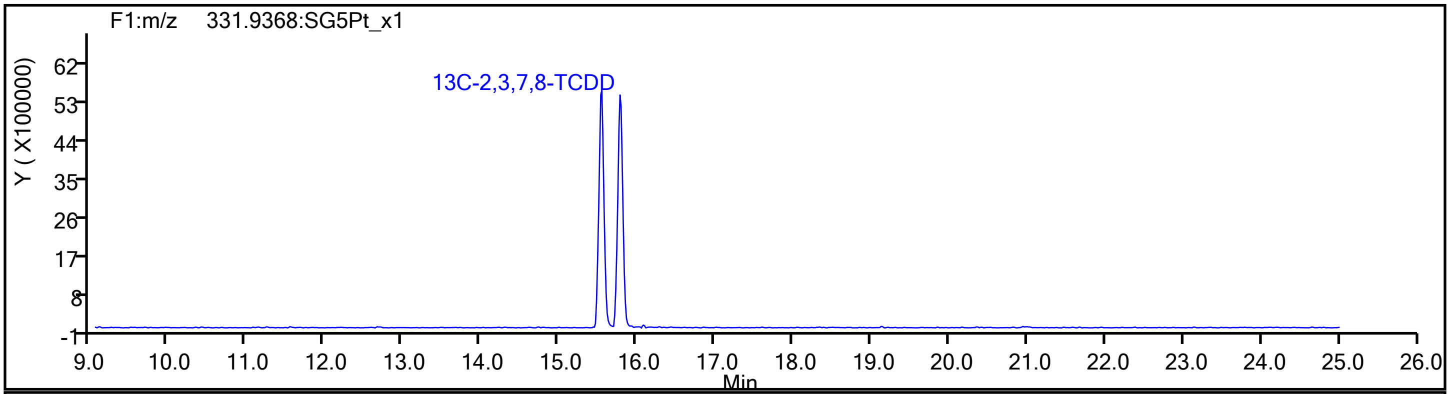

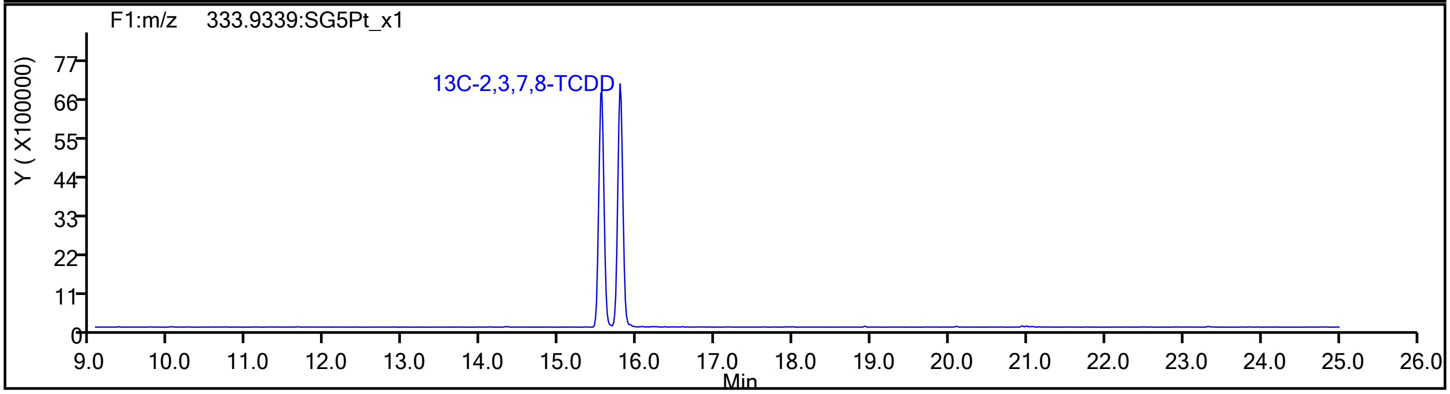

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

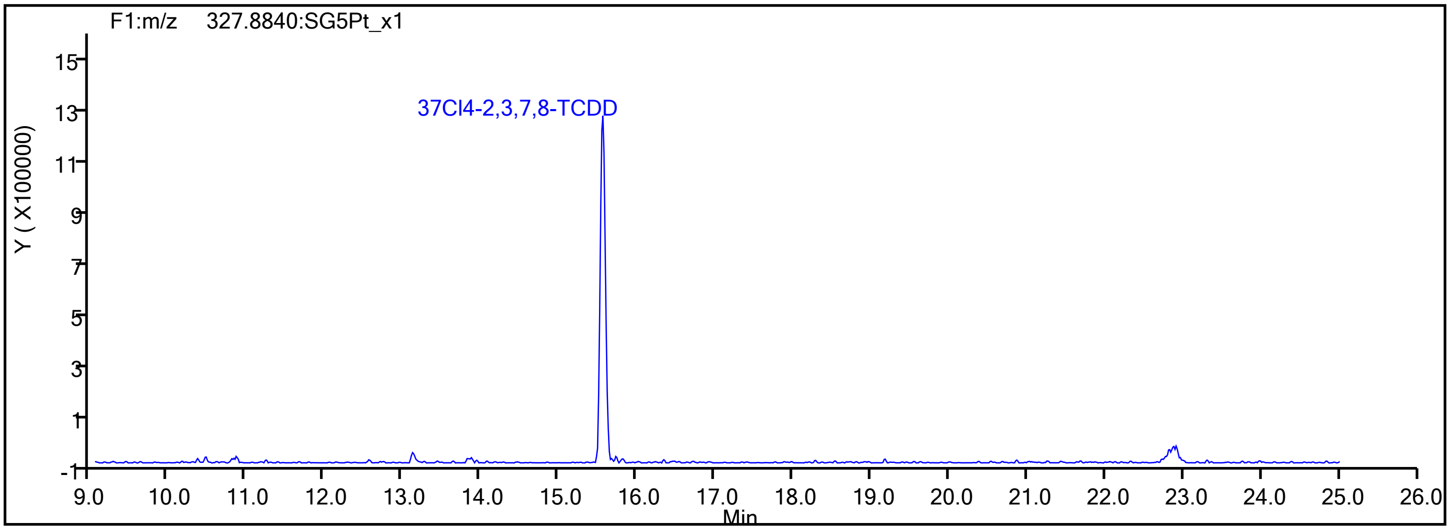

37Cl4-TCDD Standards

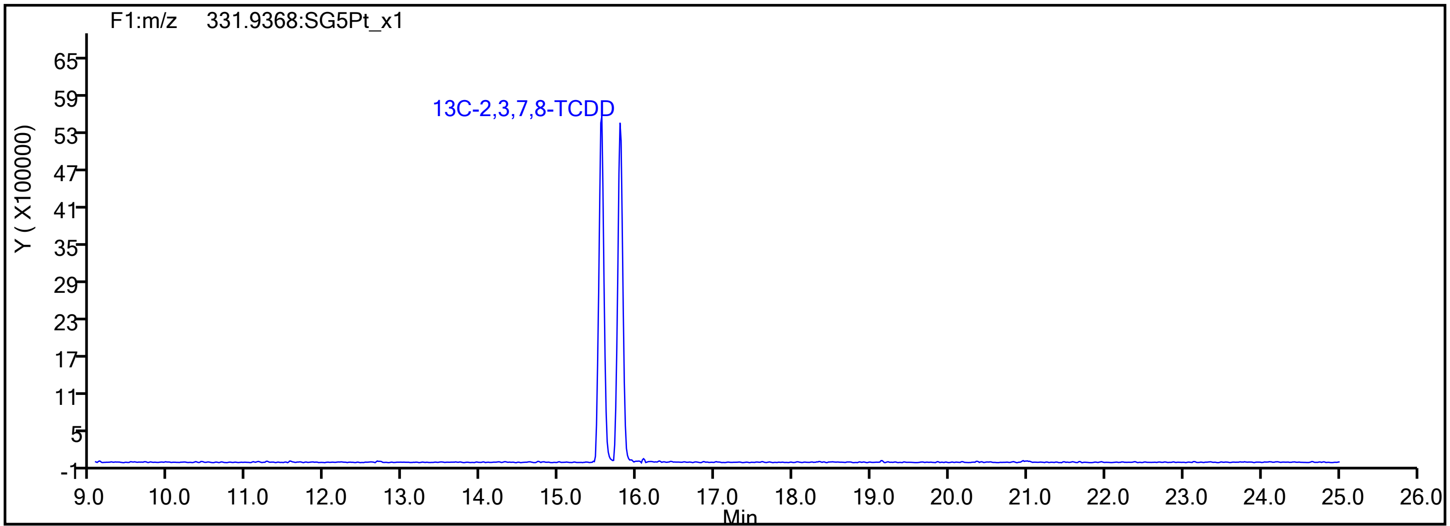

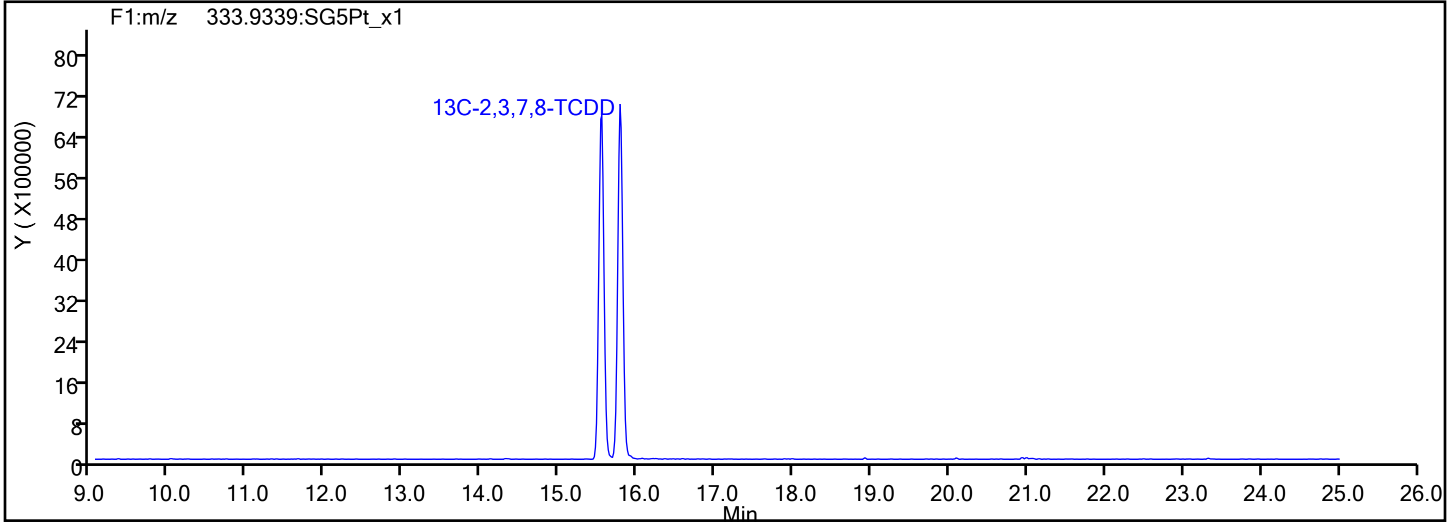

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d

Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

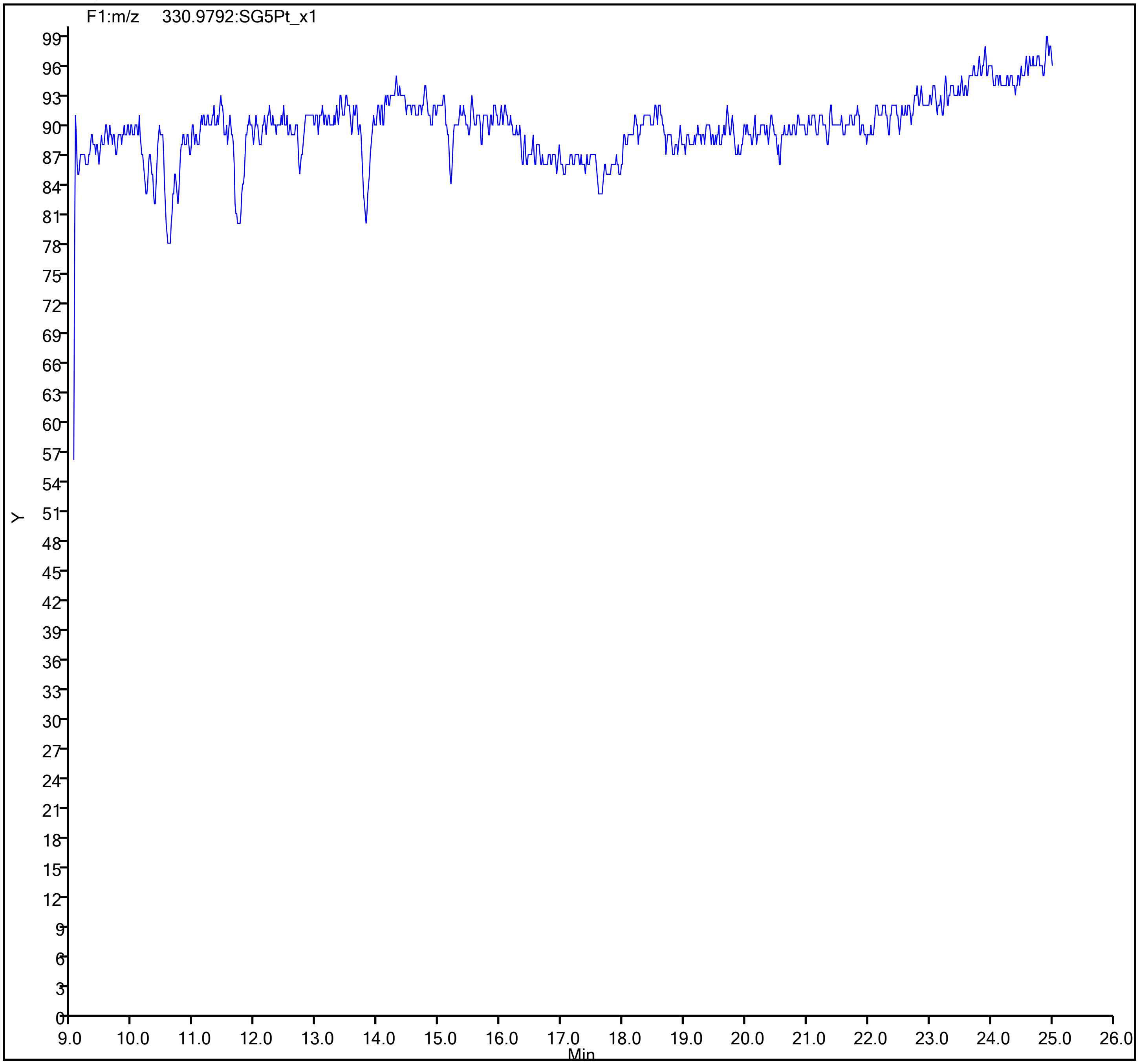

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Lims ID: IC 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 25-Jul-2020 01:45:24 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:03 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Lims ID: IC 5
Client ID:
Sample Type: IC   Calib Level: 5
Inject. Date: 25-Jul-2020 01:45:24   ALS Bottle#: 0   Worklist Smp#: 6
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:03   Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa   Date: 27-Jul-2020 12:34:06

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030   Amount Added: 2.00   Units: uL

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Injection Date: 25-Jul-2020 01:45:24 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 6
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

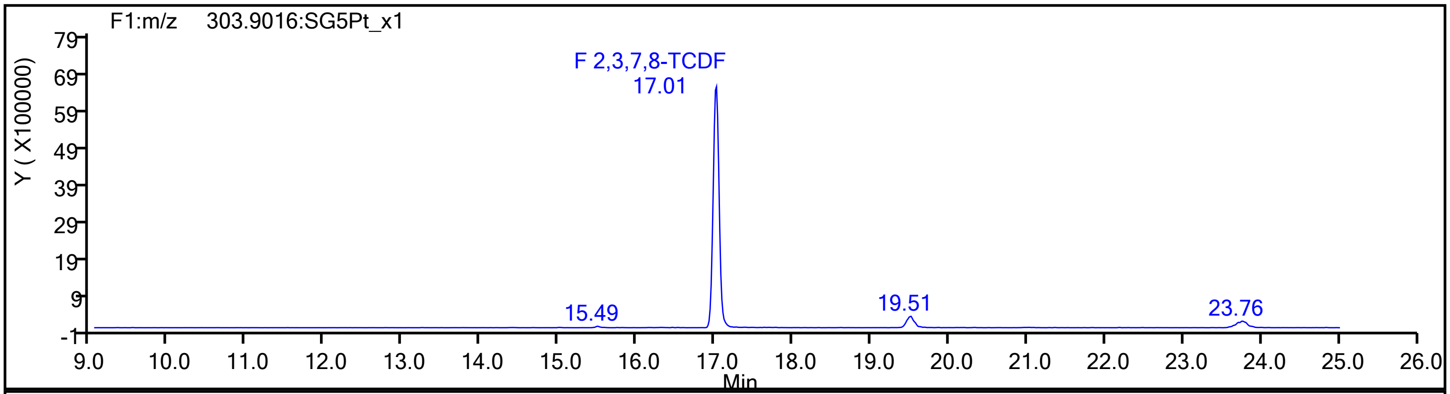

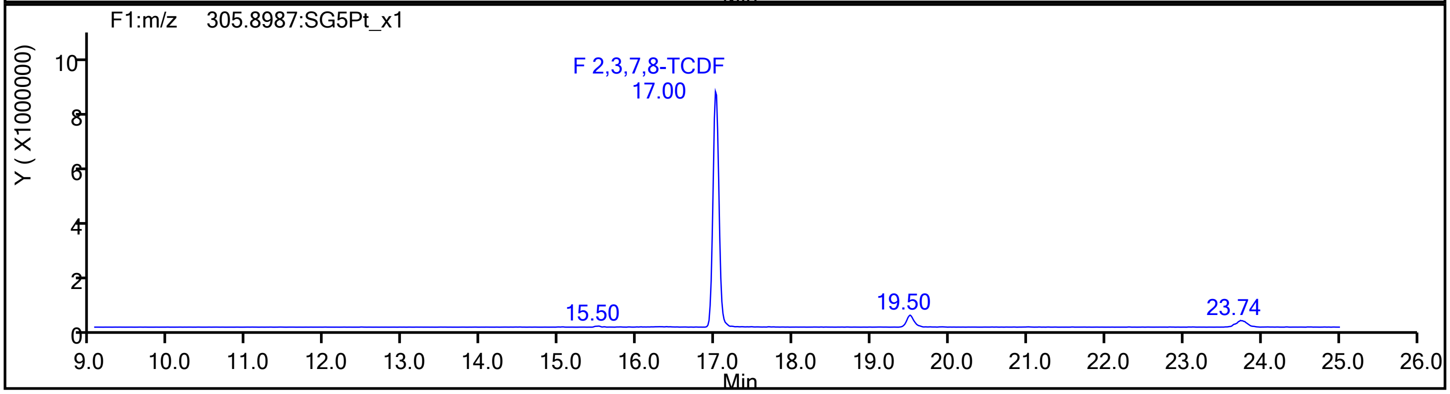

TCDF Standards

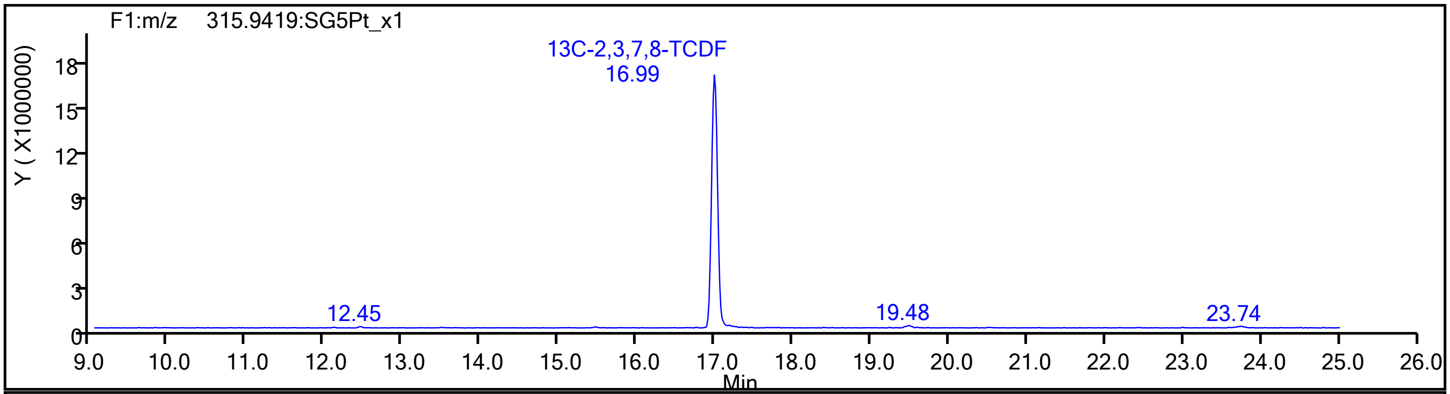

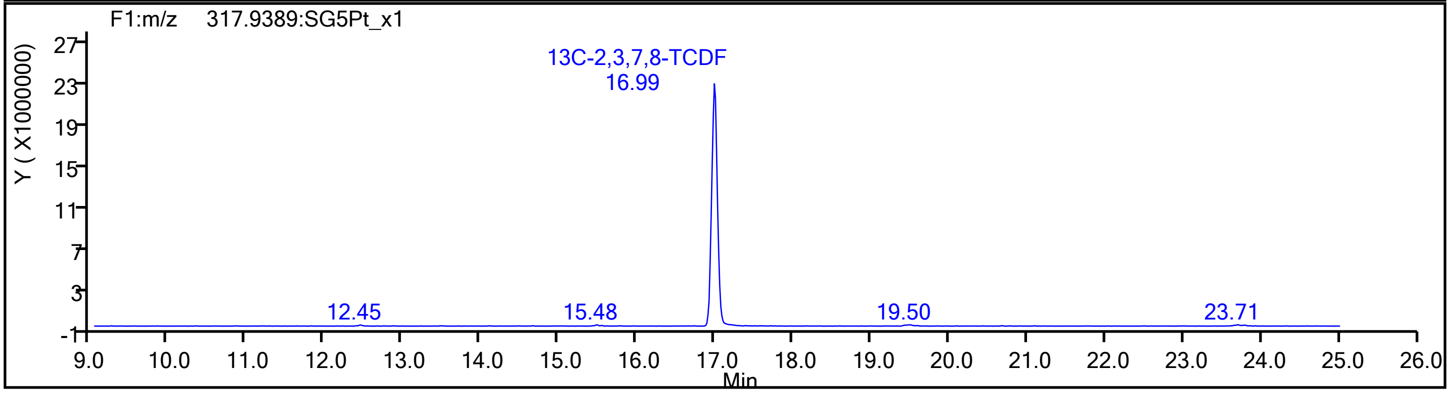

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

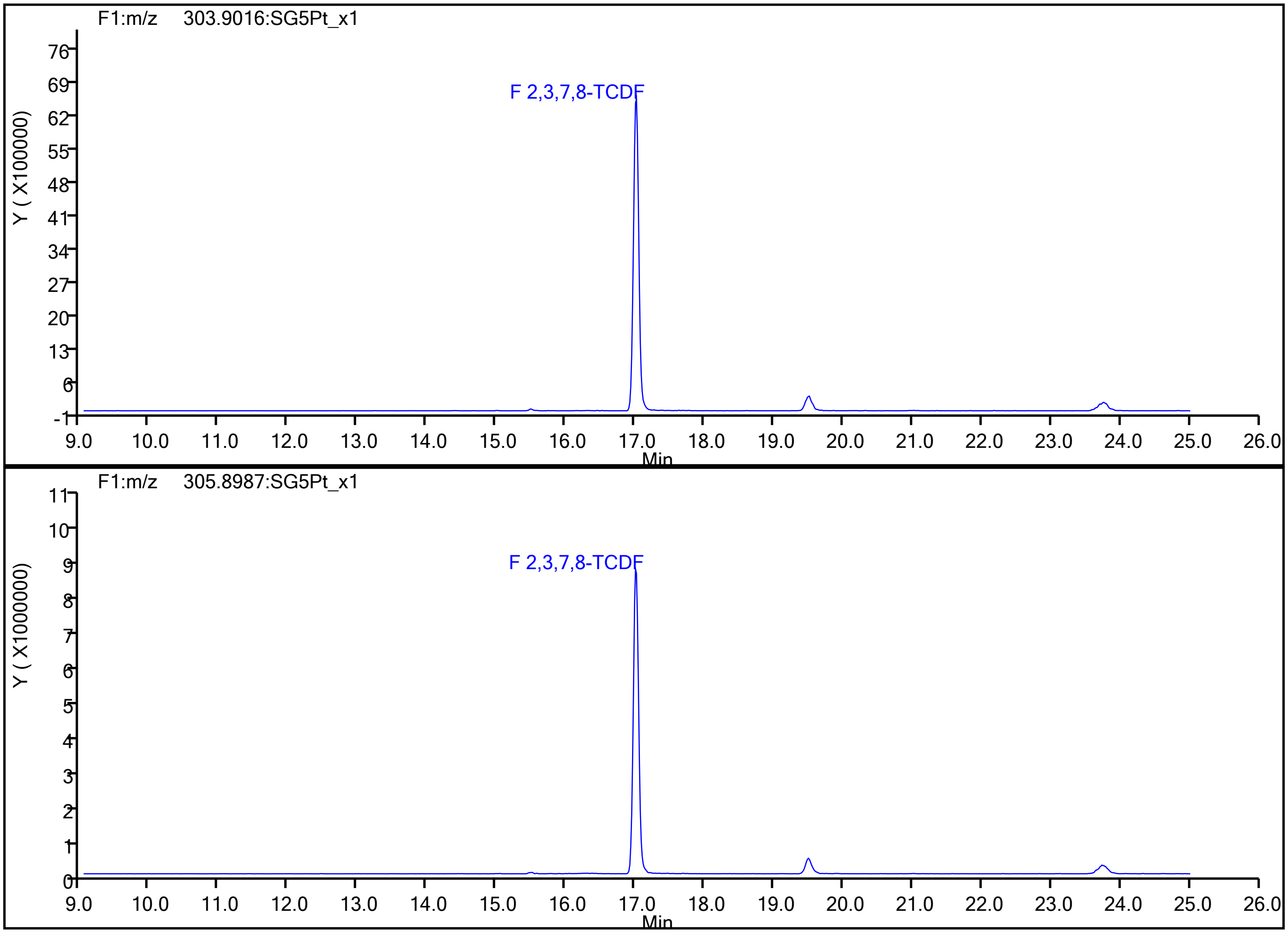

TCDF Interference Mass

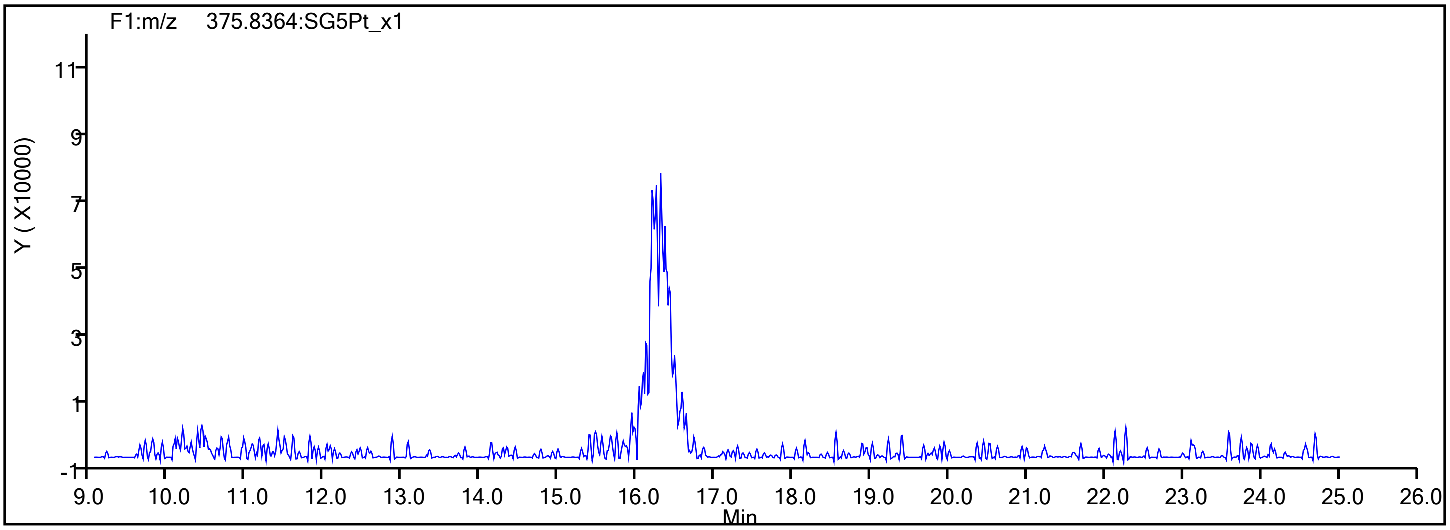

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Injection Date: 25-Jul-2020 01:45:24
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

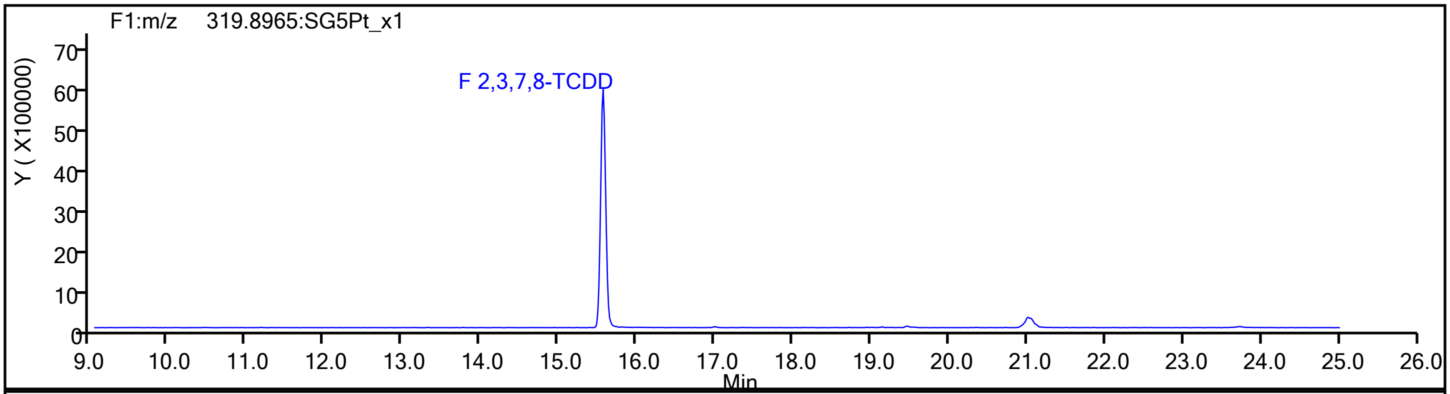

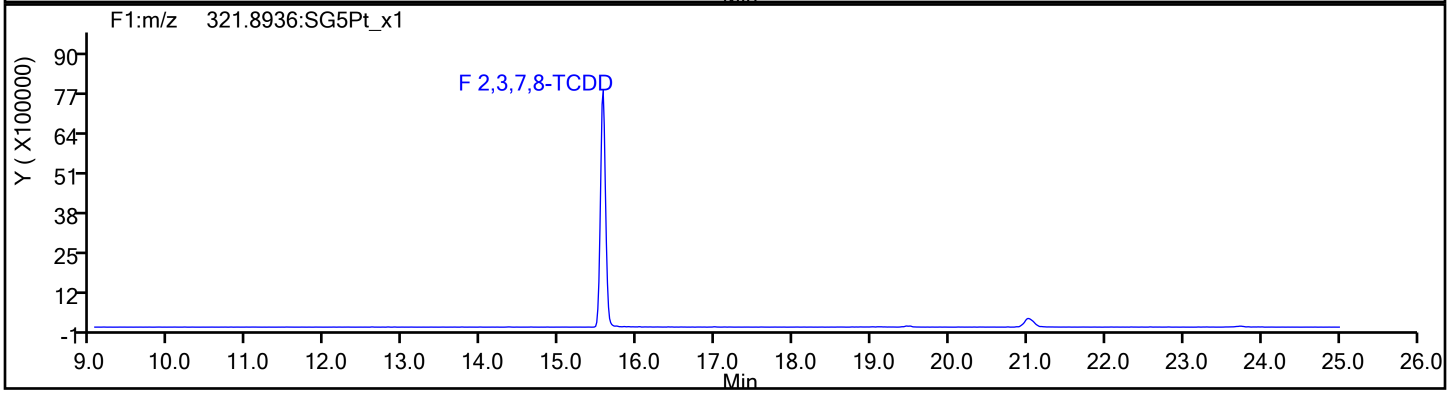

TCDD Standards

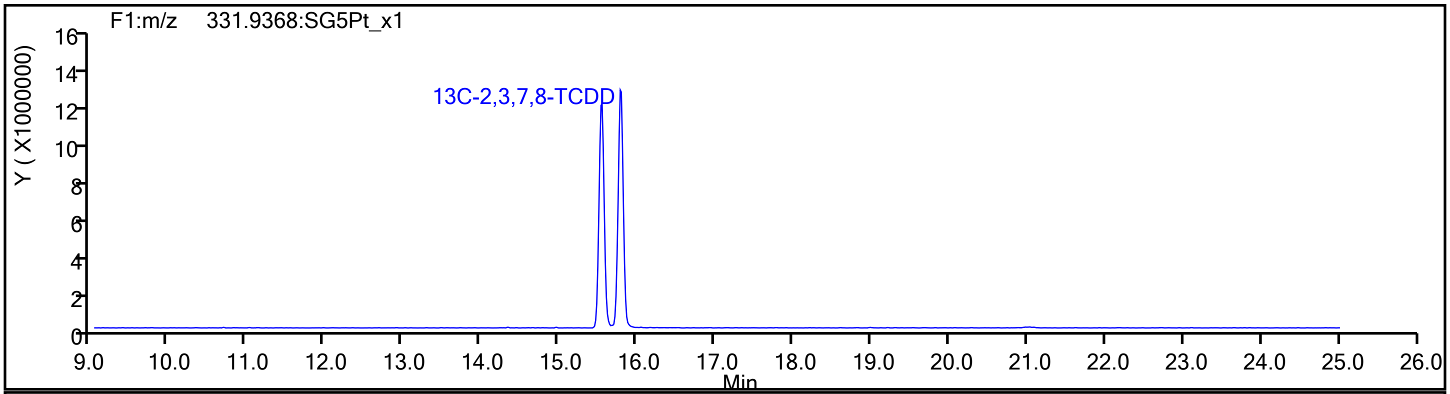

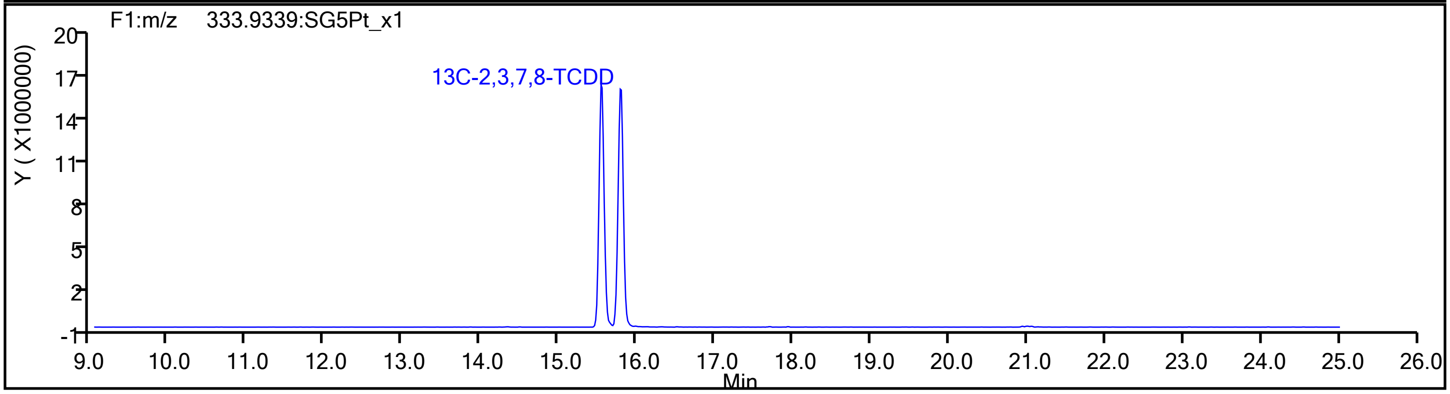

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

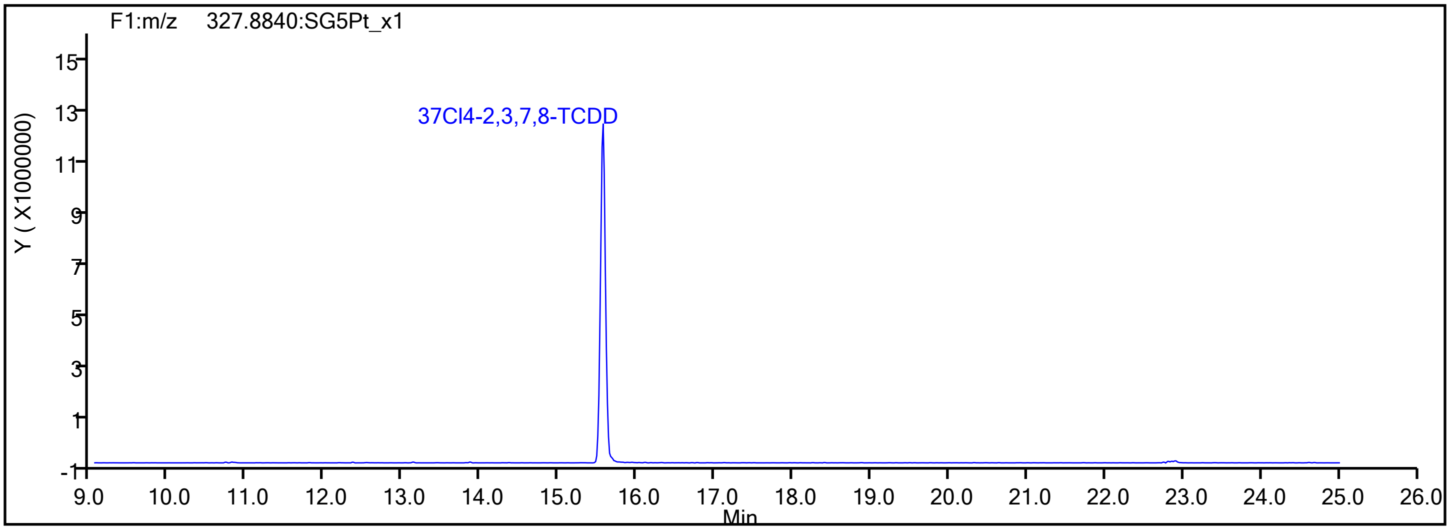

37Cl4-TCDD Standards

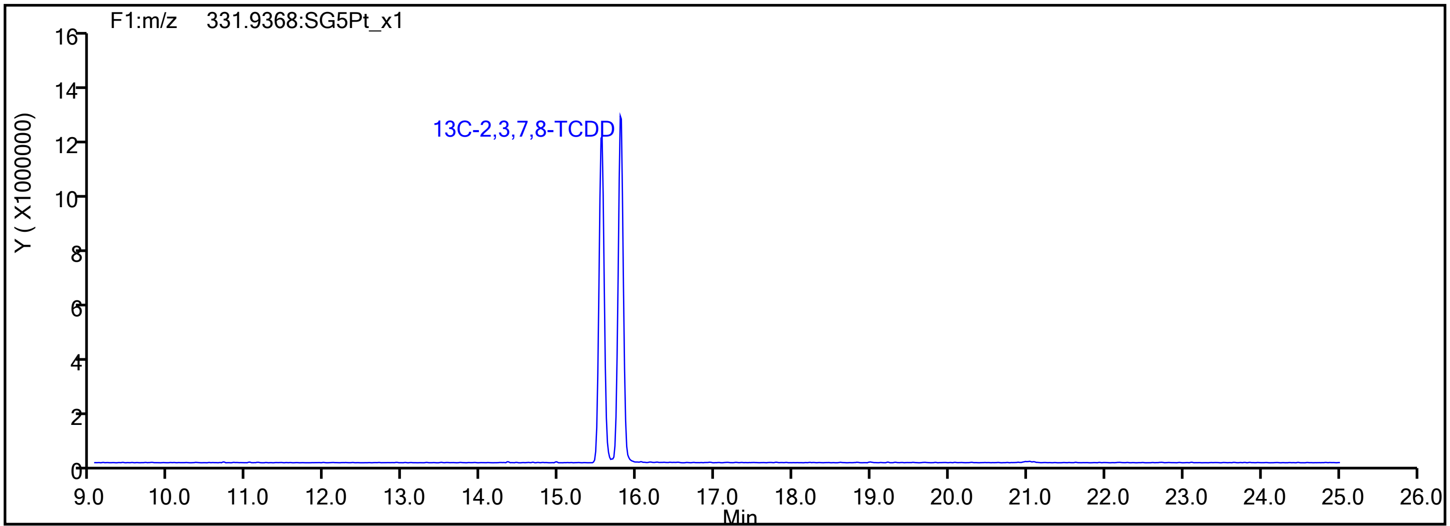

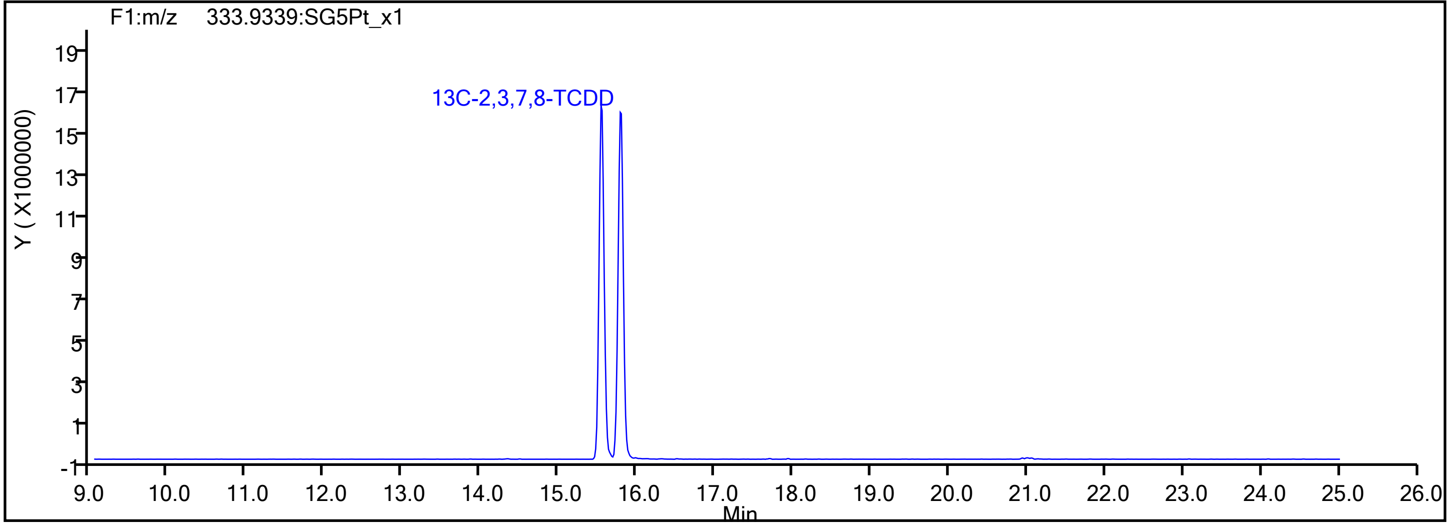

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

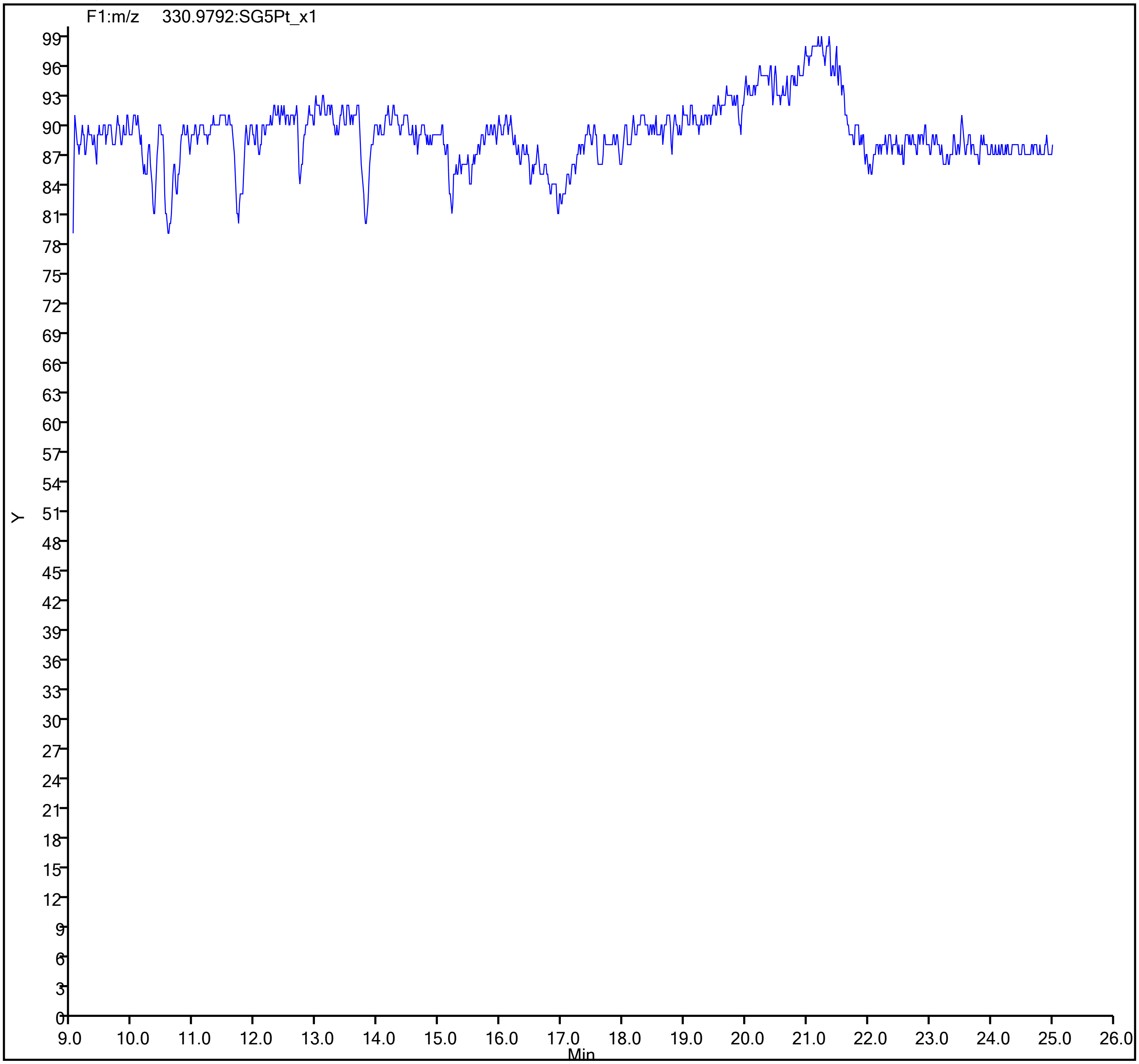

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Jul-2020 02:23:46 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:08 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Jul-2020 02:23:46 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:08 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

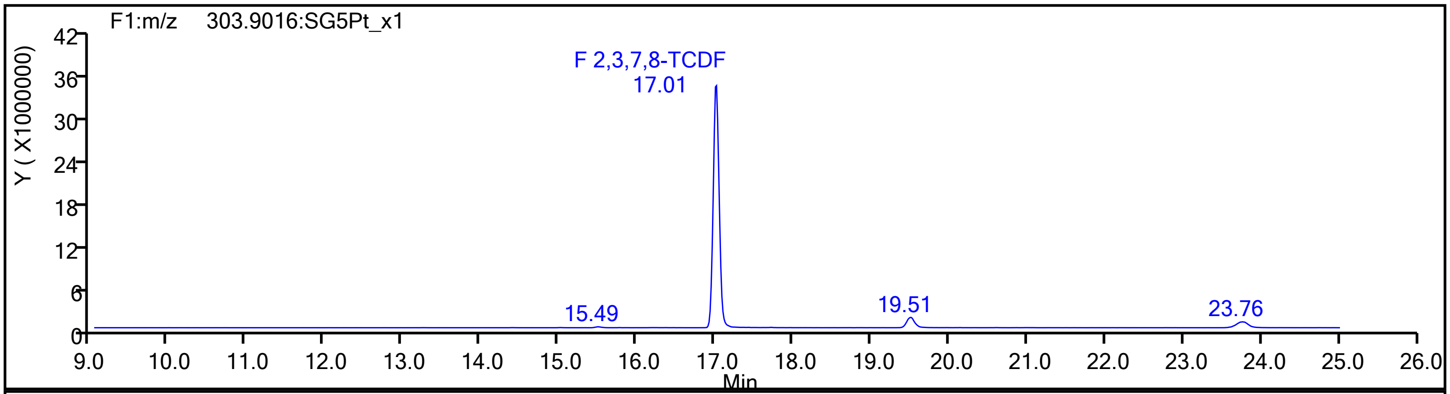

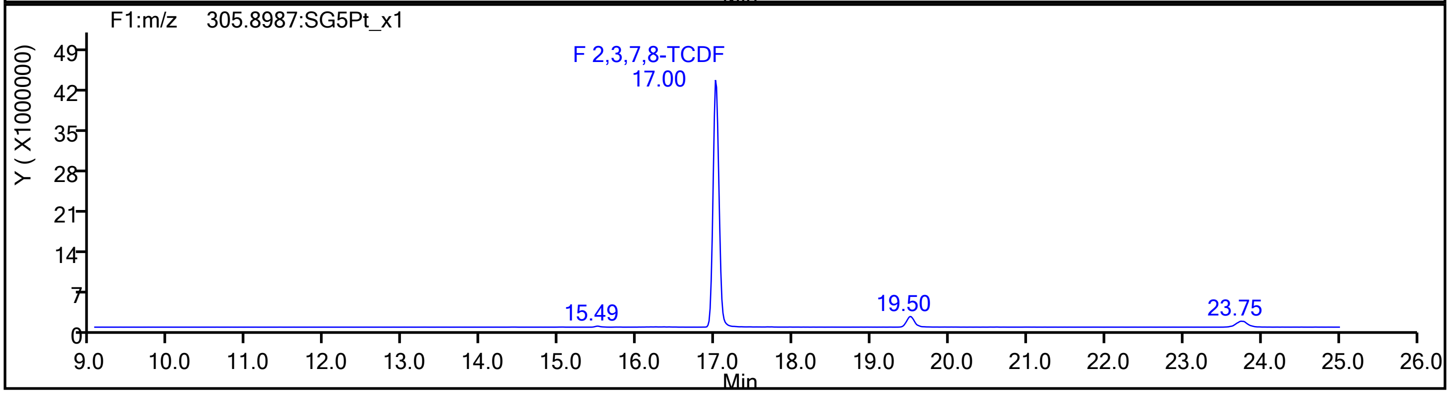

TCDF Standards

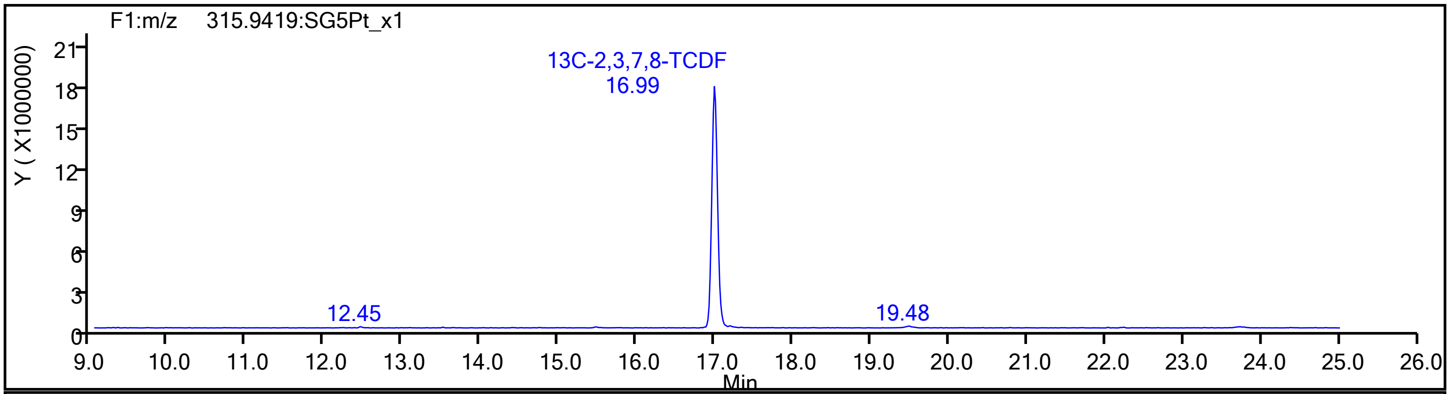

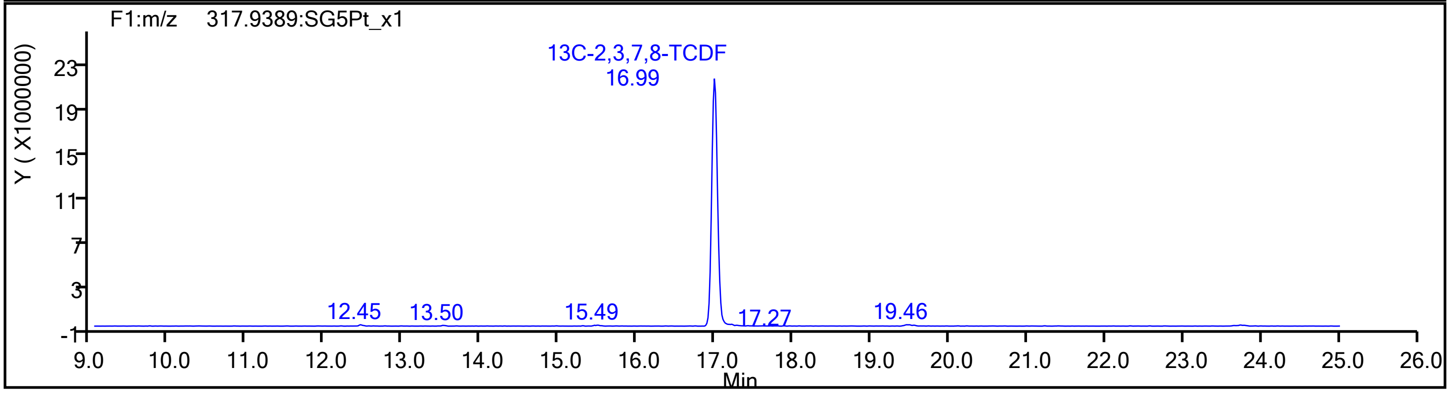

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

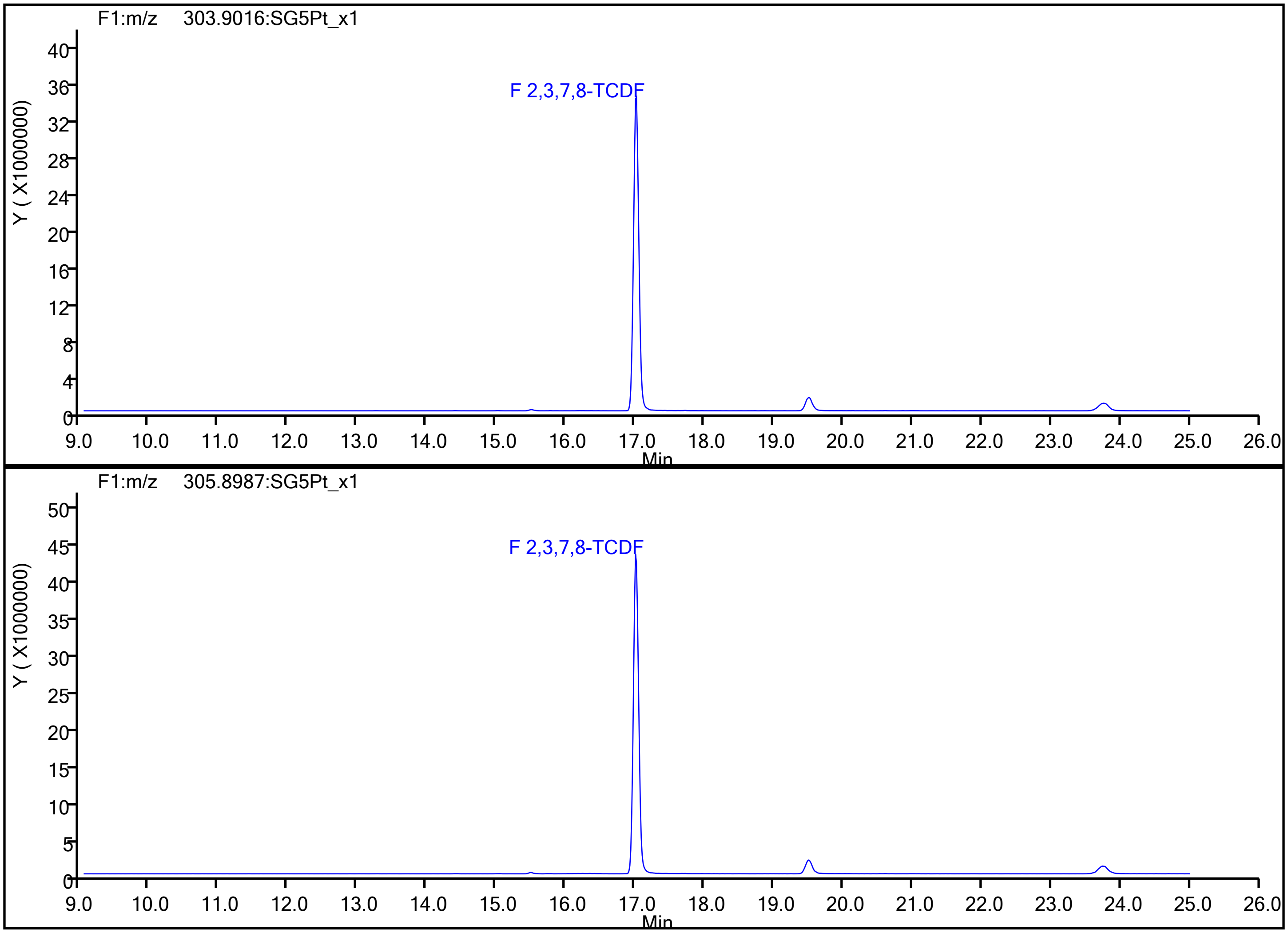

TCDF Interference Mass

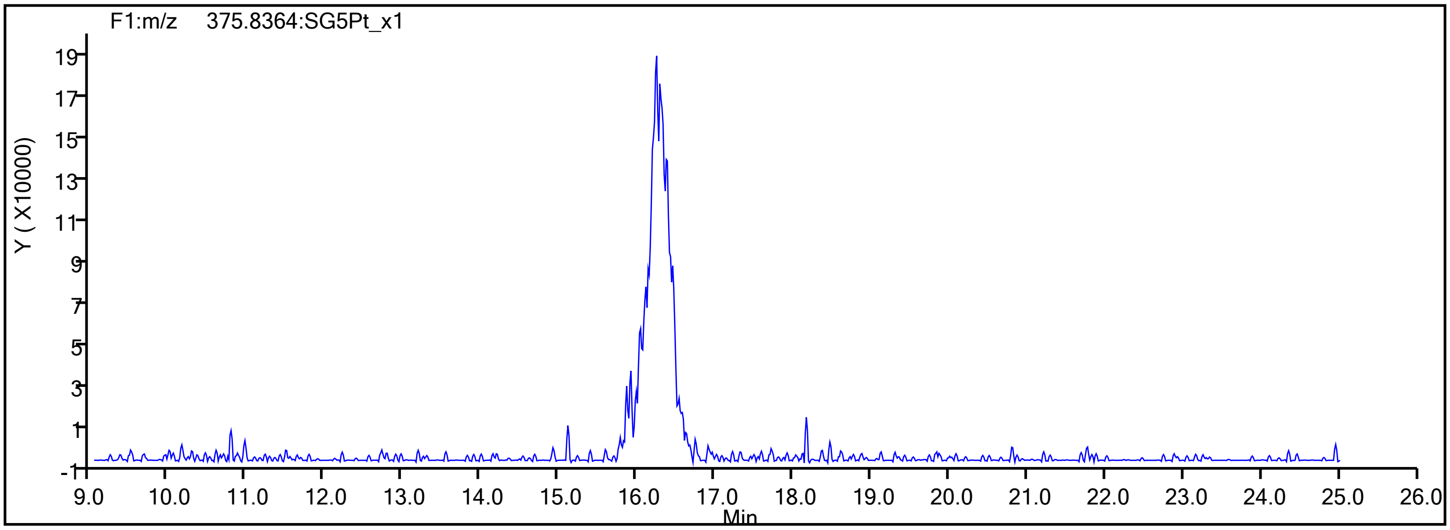

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

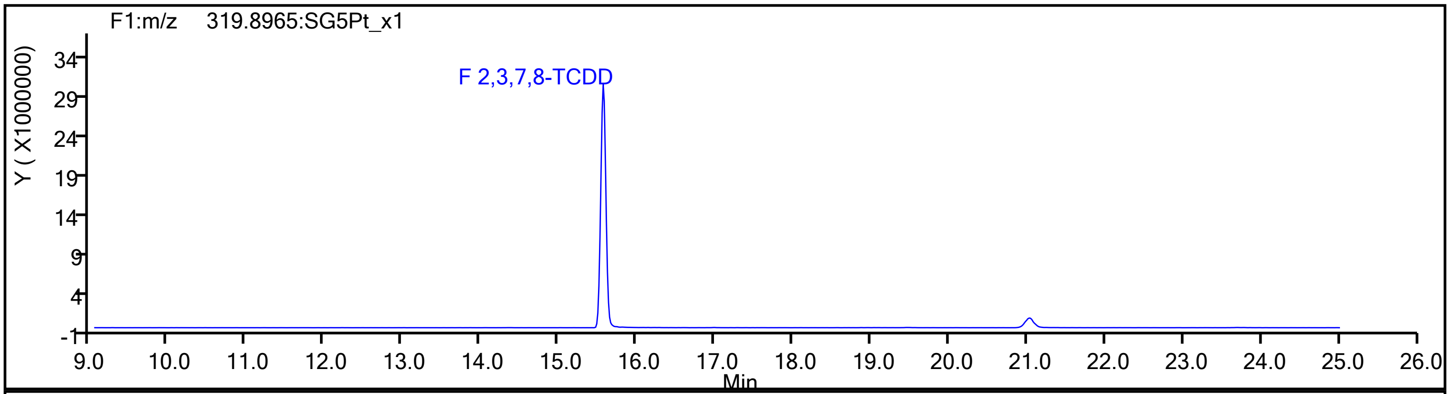

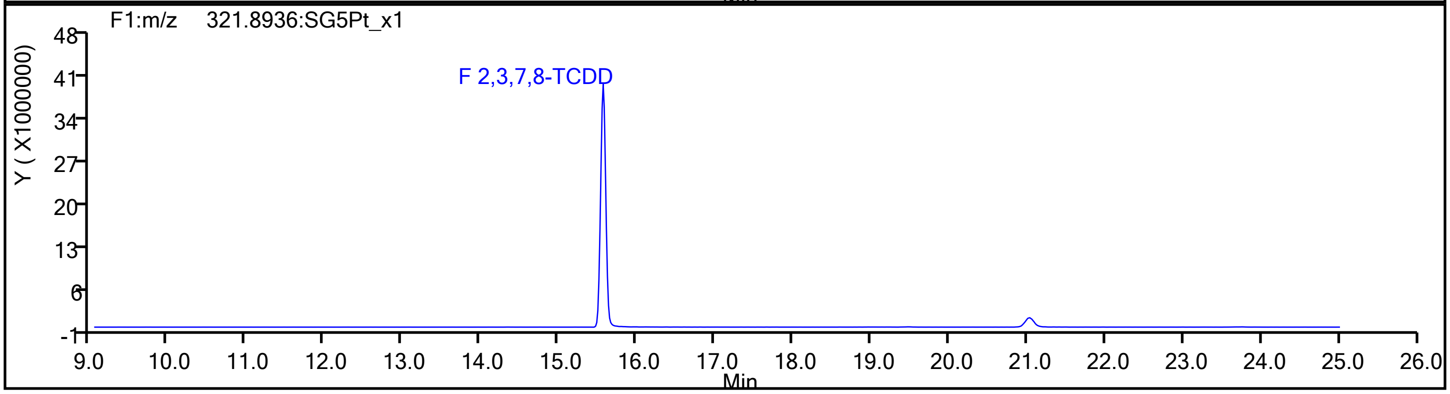

TCDD Standards

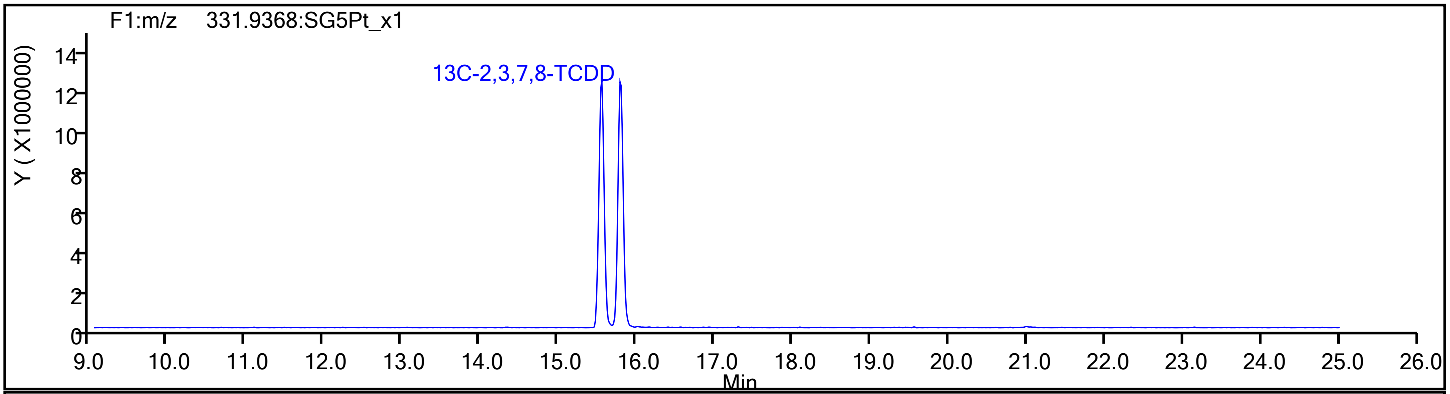

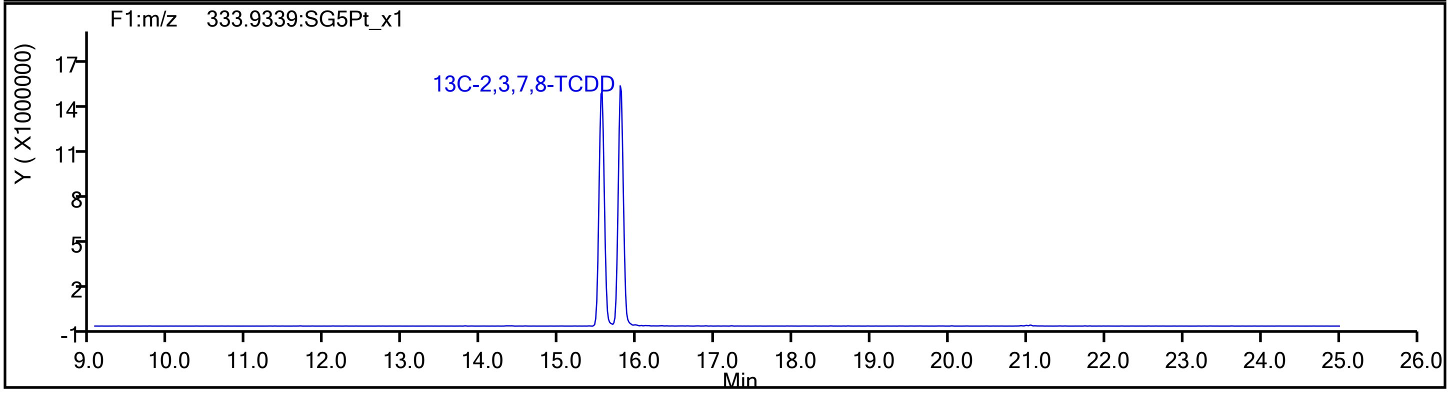

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

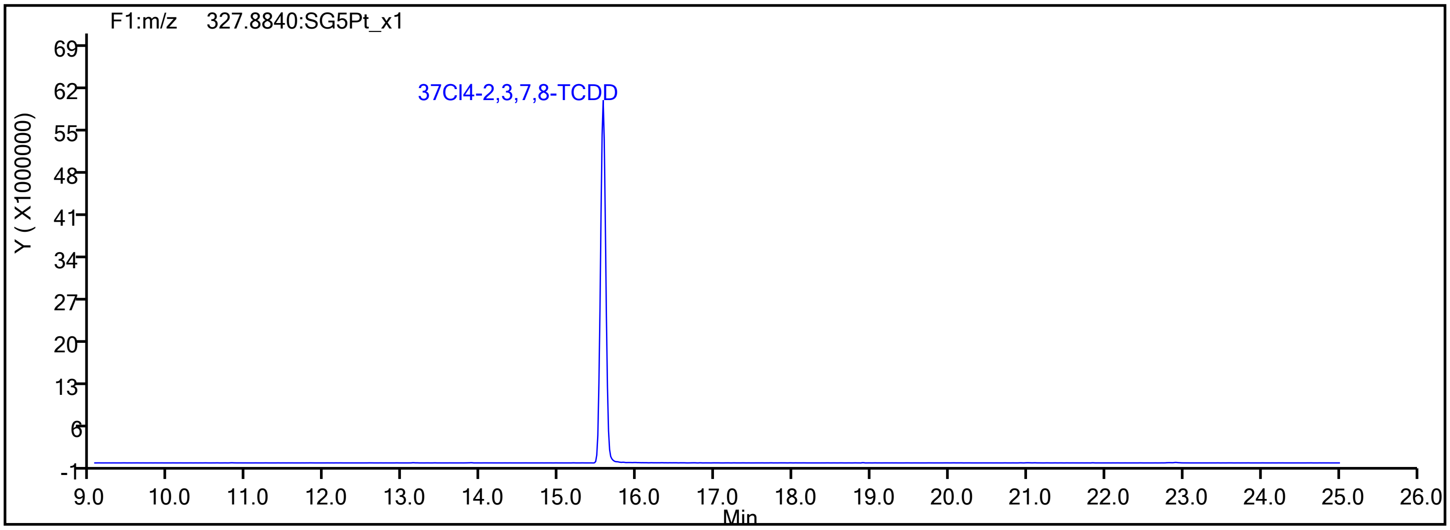

37Cl4-TCDD Standards

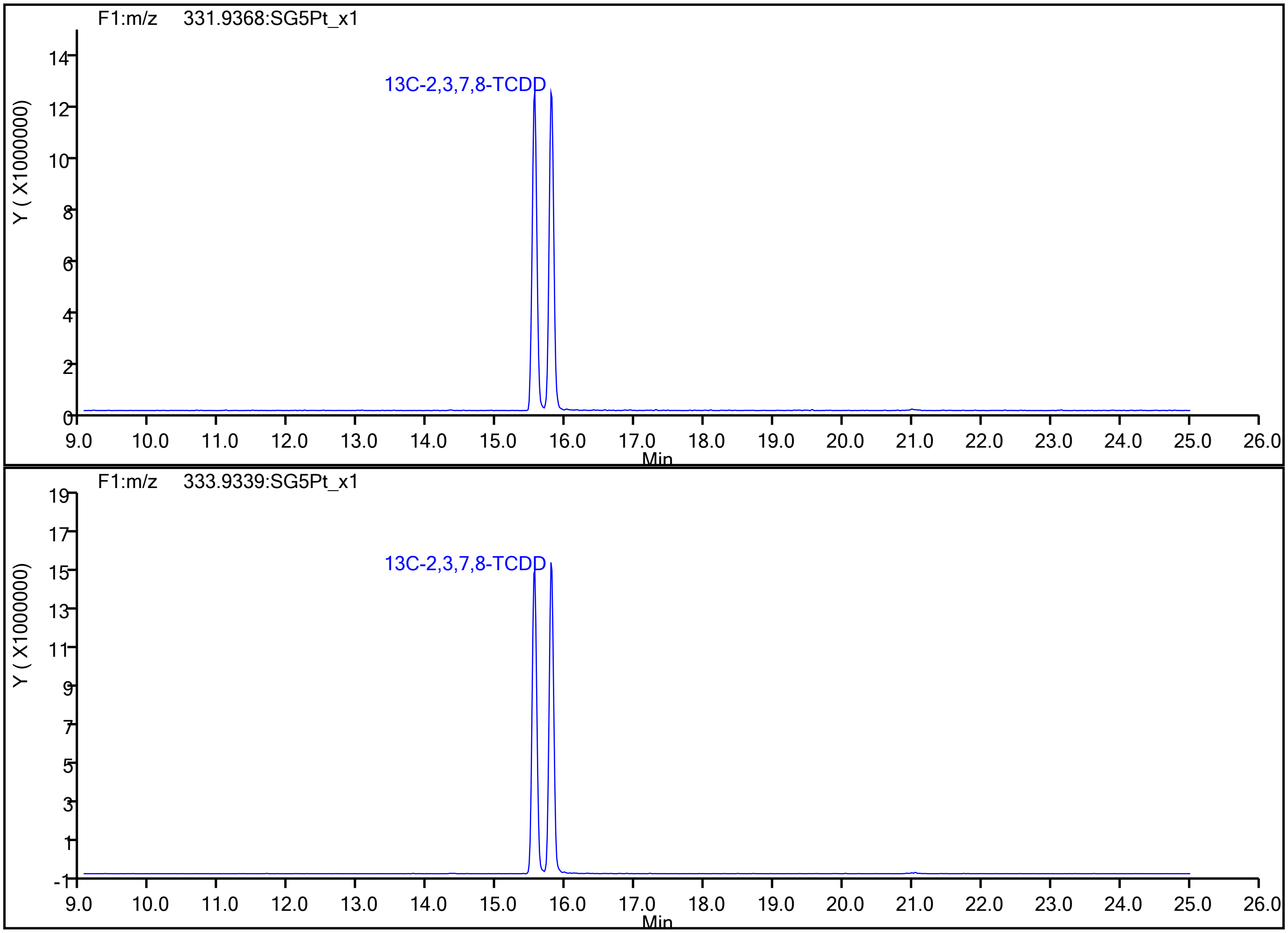

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

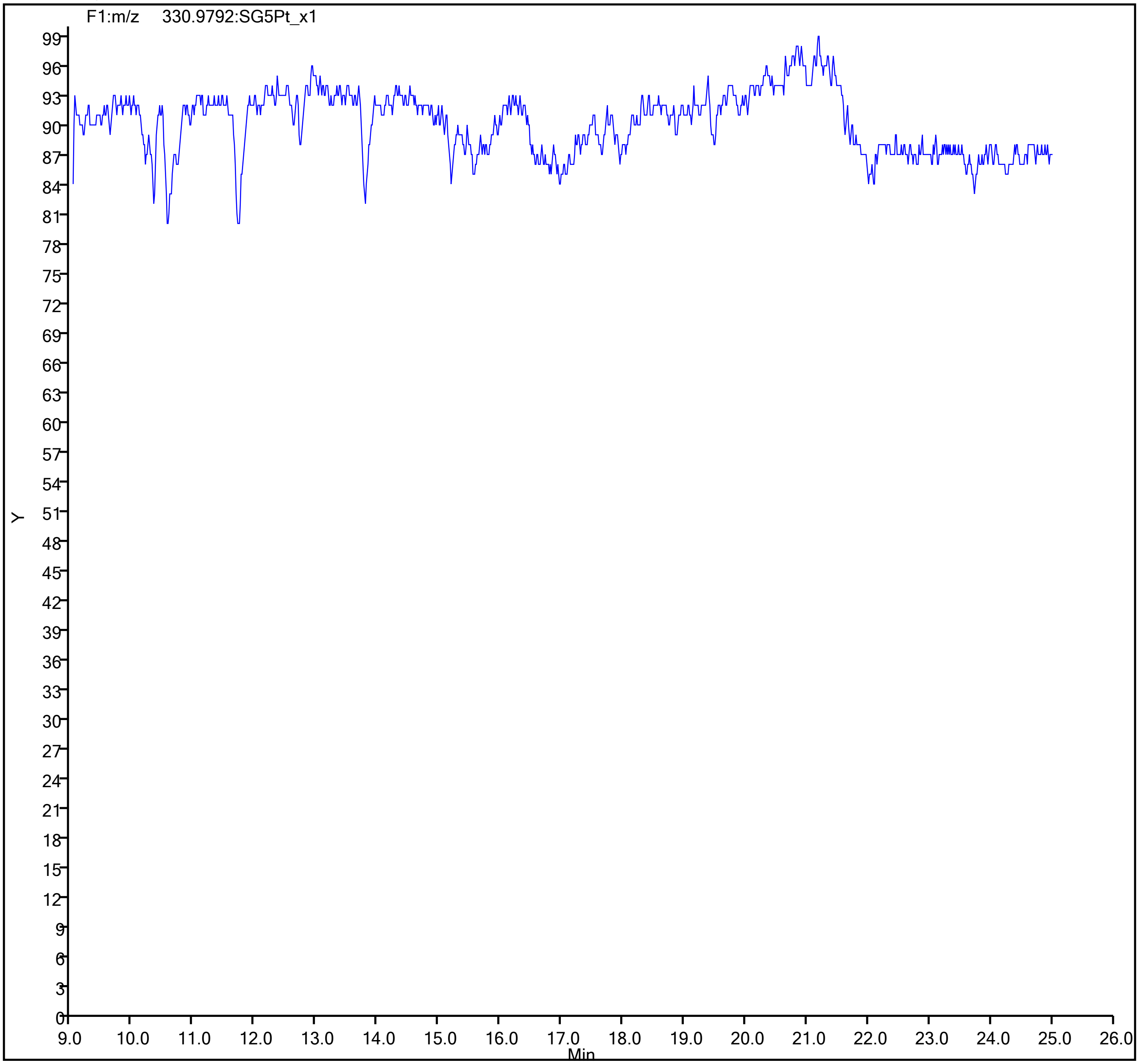

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383168/3	03jn20dfs1_4.d
Level 2	IC 320-383168/4	03jn20dfs1_5.d
Level 3	IC 320-383168/5	03jn20dfs1_6.d
Level 4	IC 320-383168/6	03jn20dfs1_7.d
Level 5	IC 320-383168/7	03jn20dfs1_8.d
Level 6	IC 320-383168/8	03jn20dfs1_9.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.2489 1.0311	1.2457	1.1199	1.0729	1.0690	AveID		1.1312				8.3		20.0			
2,3,7,8-TCDD	1.2981 1.1045	1.3019	1.1707	1.1077	1.1266	AveID		1.1849				7.8		20.0			
1,2,3,7,8-PeCDF	1.1549 1.0264	1.2012	1.1211	1.0846	1.0478	AveID		1.1060				6.0		20.0			
2,3,4,7,8-PeCDF	0.9481 0.8387	0.9928	0.8935	0.8987	0.8681	AveID		0.9067				6.1		20.0			
1,2,3,7,8-PeCDD	1.1382 1.0137	1.2141	1.1289	1.0771	1.0651	AveID		1.1062				6.3		20.0			
1,2,3,4,7,8-HxCDF	1.0703 0.9484	1.0897	0.9963	0.9883	0.9589	AveID		1.0087				5.8		20.0			
1,2,3,6,7,8-HxCDF	1.2936 1.1675	1.3499	1.2612	1.2174	1.1697	AveID		1.2432				5.8		20.0			
2,3,4,6,7,8-HxCDF	1.3615 1.1862	1.3607	1.2912	1.2421	1.1996	AveID		1.2736				6.1		20.0			
1,2,3,4,7,8-HxCDD	1.0012 0.8545	1.0651	0.9155	0.8898	0.8758	AveID		0.9336				8.8		20.0			
1,2,3,6,7,8-HxCDD	1.1274 0.9908	1.2124	1.0940	1.0531	1.0034	AveID		1.0802				7.7		20.0			
1,2,3,7,8,9-HxCDD	1.1207 0.9783	1.1970	1.0330	1.0168	0.9989	AveID		1.0574				8.0		20.0			
1,2,3,7,8,9-HxCDF	1.3836 1.2192	1.3817	1.3012	1.2385	1.2050	AveID		1.2882				6.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.6802 1.5340	1.7178	1.6558	1.5105	1.4758	AveID		1.5957				6.3		20.0			
1,2,3,4,6,7,8-HpCDD	1.1777 1.0385	1.2525	1.1244	1.0525	1.0446	AveID		1.1150				7.8		20.0			
1,2,3,4,7,8,9-HpCDF	1.2302 1.1148	1.3025	1.1475	1.1302	1.0906	AveID		1.1693				6.9		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1   Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05   Calibration End Date: 06/03/2020 18:06   Calibration ID: 50386

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
OCDD	1.2196 1.1486	1.2960	1.2379	1.1480	1.1183	AveID		1.1948				5.7		20.0			
OCDF	1.4925 1.5032	1.5719	1.4635	1.4207	1.4339	AveID		1.4809				3.7		20.0			
13C-2,3,7,8-TCDF	1.5195 1.5129	1.4658	1.5065	1.4651	1.5163	Ave		1.4977				1.7		35.0			
13C-2,3,7,8-TCDD	1.0418 1.0508	1.0331	1.0237	1.0247	1.0464	Ave		1.0367				1.1		35.0			
13C-1,2,3,7,8-PeCDF	1.2805 1.3977	1.2709	1.2945	1.2577	1.3332	Ave		1.3057				4.0		35.0			
13C-2,3,4,7,8-PeCDF	1.5085 1.6593	1.4669	1.5880	1.4594	1.5700	Ave		1.5420				5.0		35.0			
13C-1,2,3,7,8-PeCDD	0.8197 0.8948	0.7993	0.8177	0.7983	0.8467	Ave		0.8294				4.4		35.0			
13C-1,2,3,4,7,8-HxCDF	1.4650 1.4439	1.4461	1.5078	1.4675	1.4409	Ave		1.4619				1.7		35.0			
13C-1,2,3,6,7,8-HxCDF	1.3129 1.2818	1.2735	1.2873	1.2938	1.2702	Ave		1.2866				1.2		35.0			
13C-2,3,4,6,7,8-HxCDF	1.2399 1.2050	1.1720	1.1862	1.1905	1.1990	Ave		1.1988				1.9		35.0			
13C-1,2,3,4,7,8-HxCDD	1.1206 1.0995	1.0597	1.1590	1.0901	1.0987	Ave		1.1046				3.0		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0037 0.9905	0.9703	0.9936	0.9775	0.9869	Ave		0.9871				1.2		35.0			
13C-1,2,3,7,8,9-HxCDF	1.0659 1.0660	1.0821	1.0487	1.0384	1.1110	Ave		1.0687				2.4		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9129 0.9096	0.8950	0.8946	0.8960	0.9130	Ave		0.9035				1.0		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.9045 0.9044	0.8715	0.8582	0.8848	0.9018	Ave		0.8875				2.2		35.0			
13C-1,2,3,4,7,8,9-HpCDF	1.0310 1.0843	1.0096	1.0449	1.0053	1.1131	Ave		1.0480				4.1		35.0			
13C-OCDD	0.6128 0.6871	0.5863	0.5959	0.5904	0.7059	Ave		0.6297				8.4		35.0			
37Cl4-2,3,7,8-TCDD	1.1910 1.1238	1.1445	1.0672	1.0780	1.1200	Ave		1.1208				4.0					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383168/3	03jn20dfs1_4.d
Level 2	IC 320-383168/4	03jn20dfs1_5.d
Level 3	IC 320-383168/5	03jn20dfs1_6.d
Level 4	IC 320-383168/6	03jn20dfs1_7.d
Level 5	IC 320-383168/7	03jn20dfs1_8.d
Level 6	IC 320-383168/8	03jn20dfs1_9.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	36141 19184180	30510	179323	564303	4015485	0.250 200	0.500	2.00	10.0	40.0
2,3,7,8-TCDD		AveID	25755 14273681	22474	127378	407450	2920224	0.250 200	0.500	2.00	10.0	40.0
1,2,3,7,8-PeCDF		AveID	140816 88211420	127552	771318	2448425	17302938	1.25 1000	2.50	10.0	50.0	200
2,3,4,7,8-PeCDF		AveID	136191 85577950	121673	754082	2354236	16881683	1.25 1000	2.50	10.0	50.0	200
1,2,3,7,8-PeCDD		AveID	88840 55777410	81080	490548	1543250	11169661	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,7,8-HxCDF		AveID	133454 85729058	116239	724662	2250009	16431101	1.25 1000	2.50	10.0	50.0	200
1,2,3,6,7,8-HxCDF		AveID	144549 93685181	126804	783185	2443510	17668721	1.25 1000	2.50	10.0	50.0	200
2,3,4,6,7,8-HxCDF		AveID	143678 89484473	117631	738782	2293876	17105715	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,7,8-HxCDD		AveID	95486 58816794	83257	511840	1504748	11442921	1.25 1000	2.50	10.0	50.0	200
1,2,3,6,7,8-HxCDD		AveID	96309 61432617	86772	524375	1596914	11776532	1.25 1000	2.50	10.0	50.0	200
1,2,3,7,8,9-HxCDD		AveID	101310 63998716	89621	536354	1630655	12387633	1.25 1000	2.50	10.0	50.0	200
1,2,3,7,8,9-HxCDF		AveID	125519 81359736	110283	658245	1995030	15921391	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,6,7,8-HpCDF		AveID	130543 87355855	113413	714508	2099533	16024022	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,6,7,8-HpCDD		AveID	90659 58798928	80513	465468	1444510	11202668	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,7,8,9-HpCDF		AveID	107944 75677908	96999	578385	1762547	14437207	1.25 1000	2.50	10.0	50.0	200
OCDD		AveID	127218 98819349	112091	711726	2102910	18776355	2.50 2000	5.00	20.0	100	400

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
OCDF		AveID	155676 129322802	135953	841389	2602280	24073964	2.50 2000	5.00	20.0	100	400
13C-2,3,7,8-TCDF	13CTCDD	Ave	11575035 9303208	4898504	8006239	5259494	9390658	100 100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	7936120 6461409	3452470	5440325	3678459	6480345	100 100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	9753916 8594514	4247335	6879768	4514934	8256577	100 100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	11491396 10203149	4902358	8439398	5239072	9723087	100 100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	6244315 5502316	2671208	4345521	2865674	5243649	100 100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	9974678 9039472	4266858	7273246	4553149	8568017	100 100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	8939187 8024539	3757506	6209740	4014247	7552939	100 100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	8442074 7543852	3457908	5721877	3693532	7129573	100 100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	7630092 6883032	3126748	5591026	3382241	6533048	100 100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	6834320 6200617	2862915	4793122	3032823	5868202	100 100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	7257441 6673211	3192644	5058891	3221618	6606392	100 100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	6215600 5694573	2640868	4315198	2779850	5428999	100 100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	6158504 5661728	2571343	4139807	2745033	5362323	100 100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	7019746 6788271	2978774	5040340	3118998	6618644	100 100	100	100	100	100
13C-OCDD	13CHxCD	Ave	8344650 8603138	3459611	5749279	3663484	8394716	200 200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	22681 13821356	19124	113435	386993	2774592	0.250 200	0.500	2.00	10.0	40.0

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

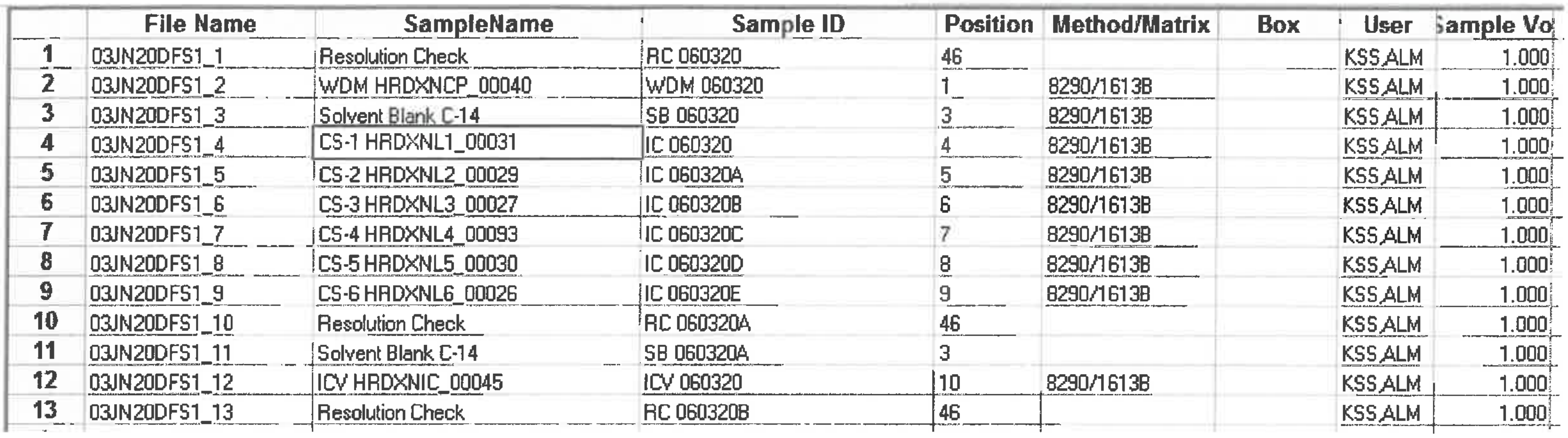

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vo
1	03JN20DFS1_1	Resolution Check	RC 060320	46			KSS,ALM	1.000
2	03JN20DFS1_2	WDM HRDXNCP_00040	WDM 060320	1	8290/1613B		KSS,ALM	1.000
3	03JN20DFS1_3	Solvent Blank C-14	SB 060320	3	8290/1613B		KSS,ALM	1.000
4	03JN20DFS1_4	CS-1 HRDXNL1_00031	IC 060320	4	8290/1613B		KSS,ALM	1.000
5	03JN20DFS1_5	CS-2 HRDXNL2_00029	IC 060320A	5	8290/1613B		KSS,ALM	1.000
6	03JN20DFS1_6	CS-3 HRDXNL3_00027	IC 060320B	6	8290/1613B		KSS,ALM	1.000
7	03JN20DFS1_7	CS-4 HRDXNL4_00093	IC 060320C	7	8290/1613B		KSS,ALM	1.000
8	03JN20DFS1_8	CS-5 HRDXNL5_00030	IC 060320D	8	8290/1613B		KSS,ALM	1.000
9	03JN20DFS1_9	CS-6 HRDXNL6_00026	IC 060320E	9	8290/1613B		KSS,ALM	1.000
10	03JN20DFS1_10	Resolution Check	RC 060320A	46			KSS,ALM	1.000
11	03JN20DFS1_11	Solvent Blank C-14	SB 060320A	3			KSS,ALM	1.000
12	03JN20DFS1_12	ICV HRDXNIC_00045	ICV 060320	10	8290/1613B		KSS,ALM	1.000
13	03JN20DFS1_13	Resolution Check	RC 060320B	46			KSS,ALM	1.000

Logfile checked
06/04/20 SMA

Resolution Check Report (DFS SN: 3441)

Date:	03 Jun 2020 12:06
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11351 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11073 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11131 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11181 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11204 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11310 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10868 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11116 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11141 [5%height]

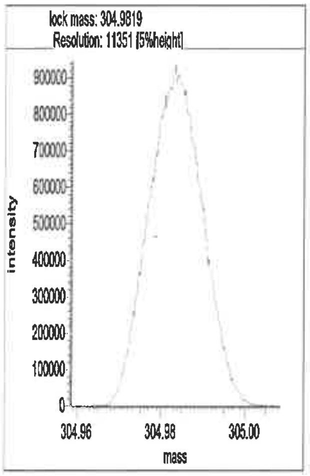

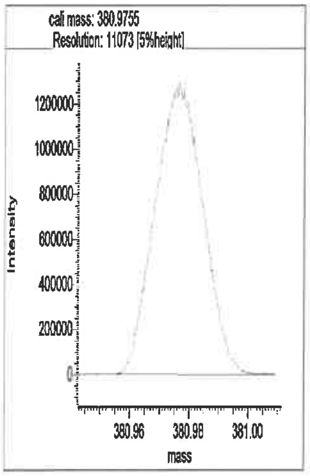

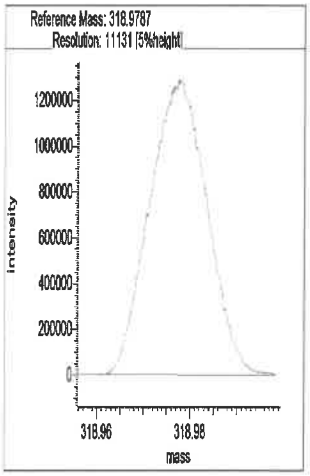

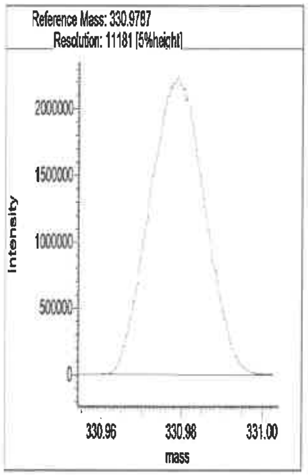

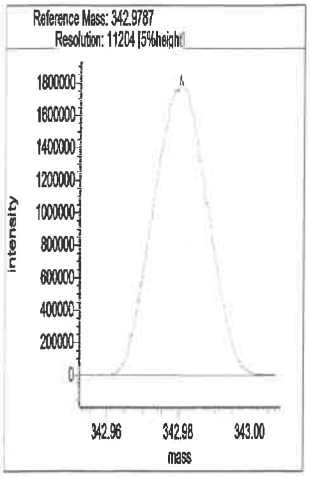

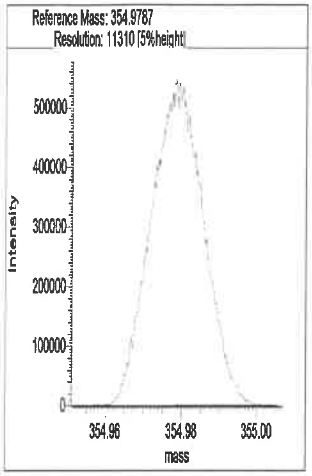

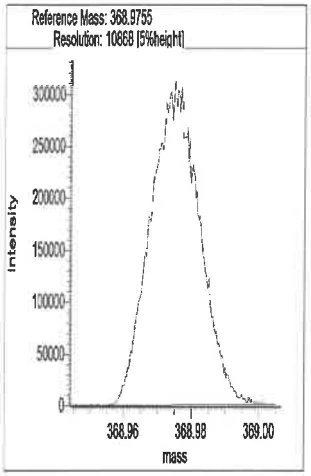

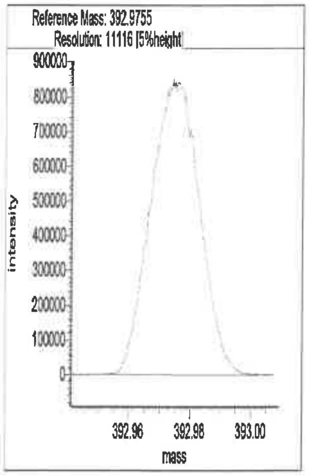

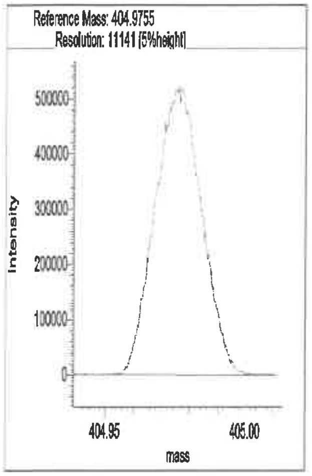

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11267 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11173 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11332 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11307 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10901 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11217 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11200 [5%height]

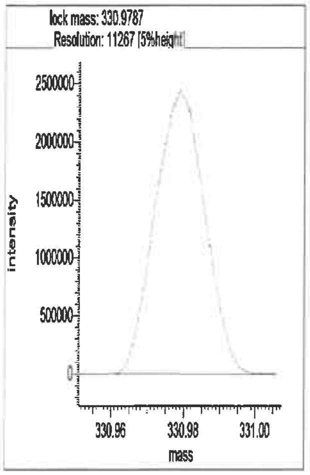

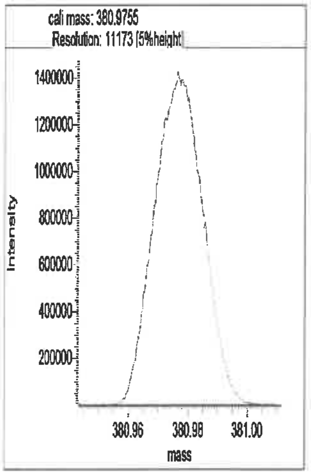

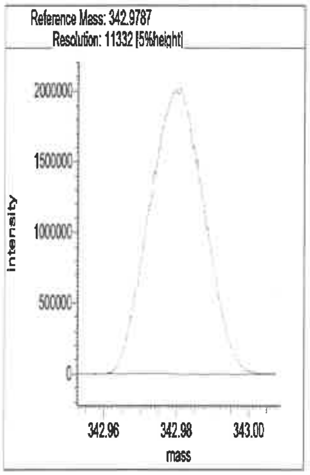

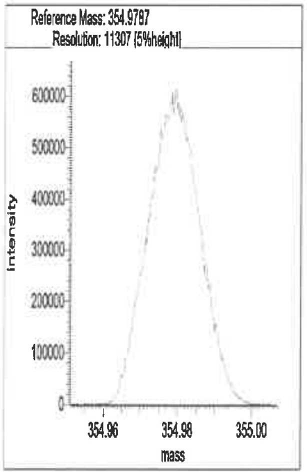

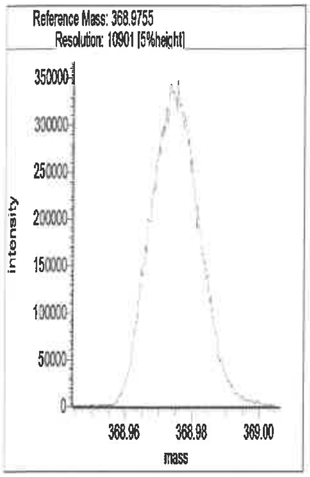

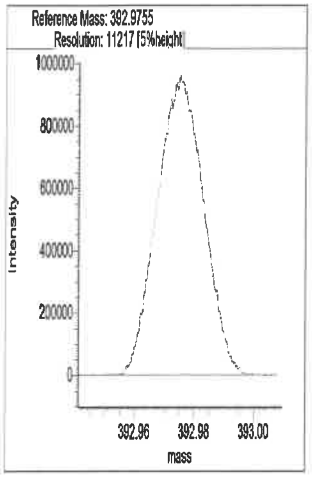

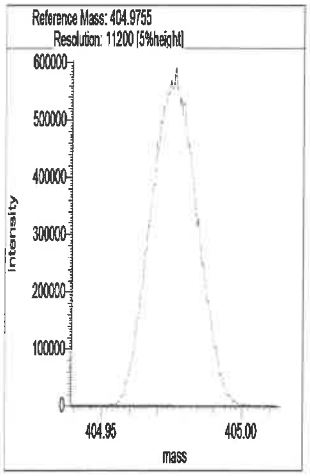

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11281 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11156 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11126 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11271 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11198 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11155 [5%height]

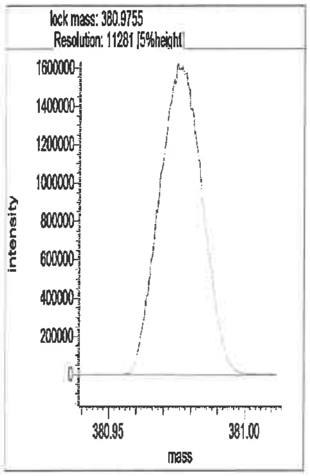

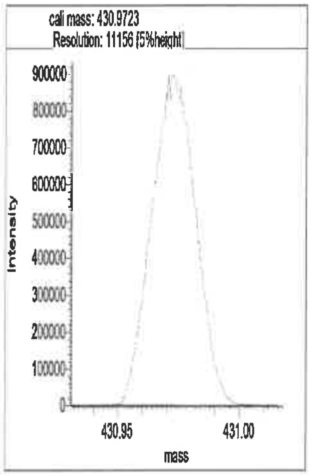

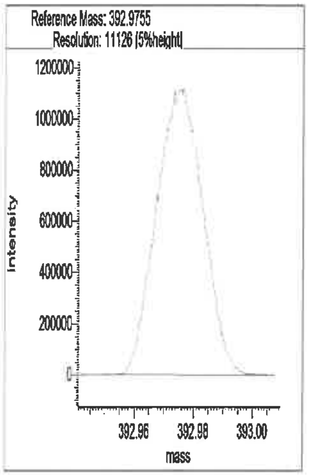

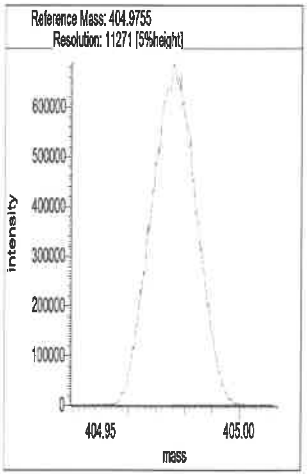

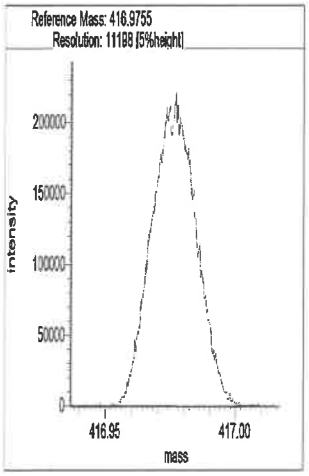

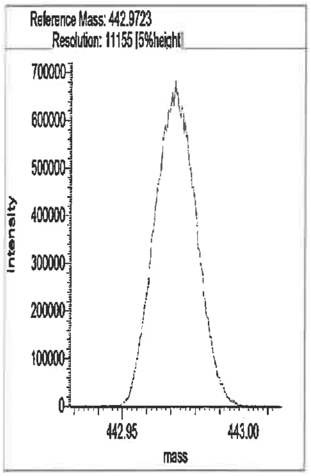

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11245 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11036 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11412 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11141 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11181 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11190 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11372 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 10863 [5%height]

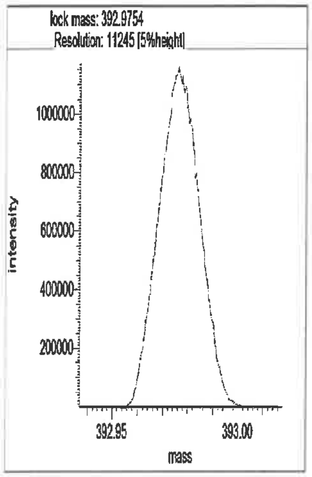

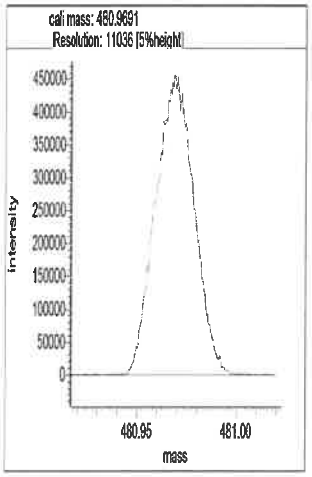

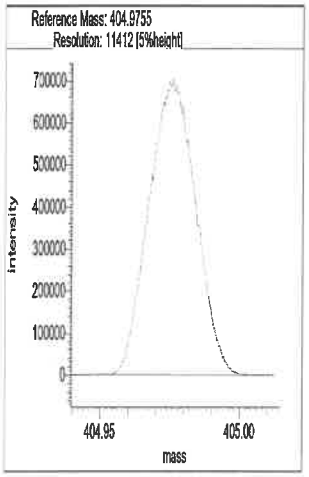

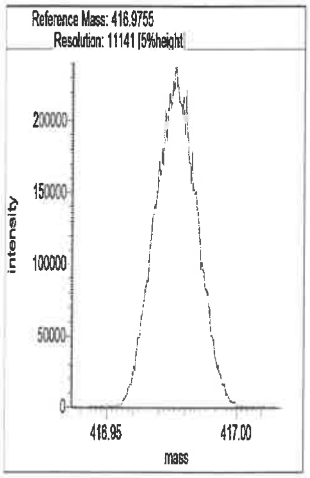

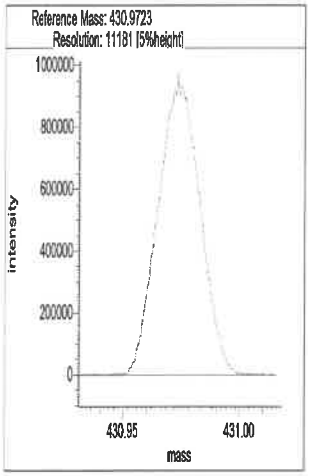

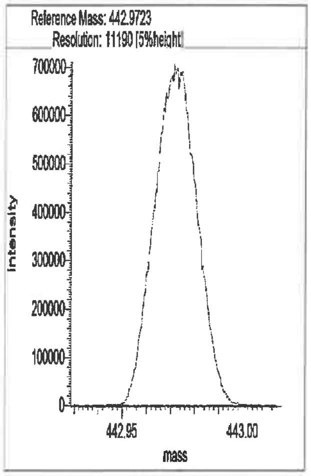

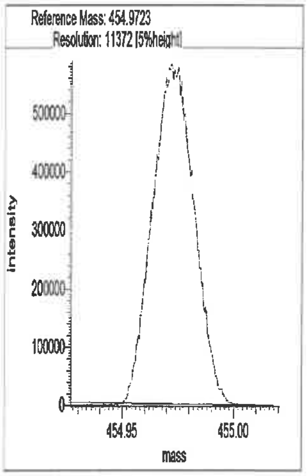

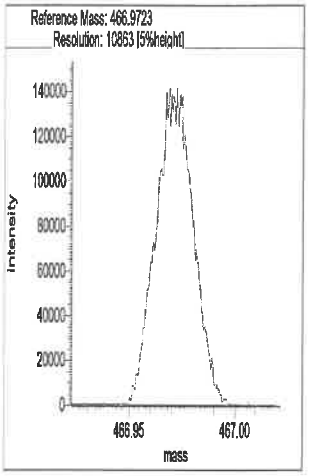

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11067 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11328 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11188 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11484 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11325 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11240 [5%height]

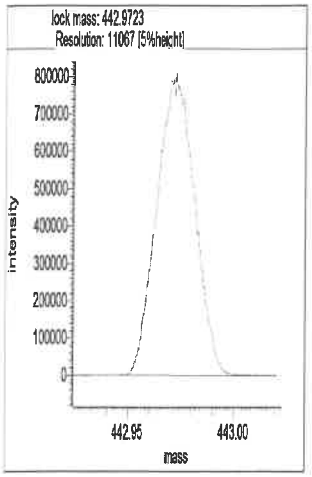
lock mass: 442.9723
Resolution: 11067 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

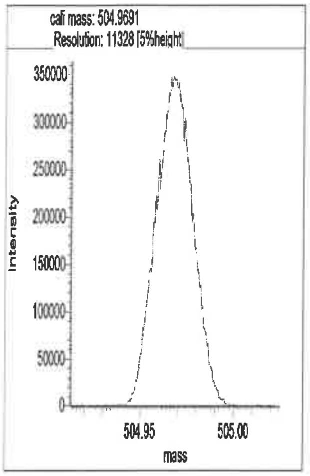
cali mass: 504.9691
Resolution: 11328 [5%height]
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

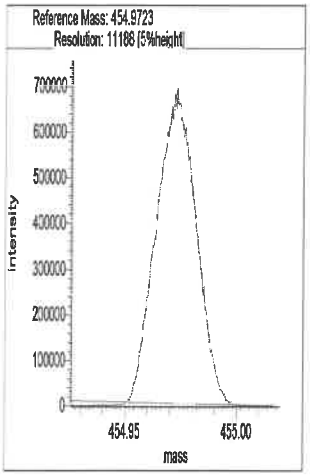
Reference Mass: 454.9723
Resolution: 11186 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

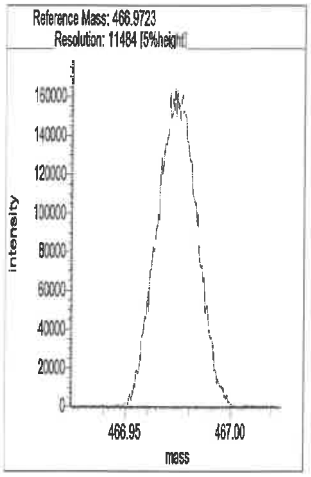
Reference Mass: 466.9723
Resolution: 11484 [5%height]
160000
140000
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

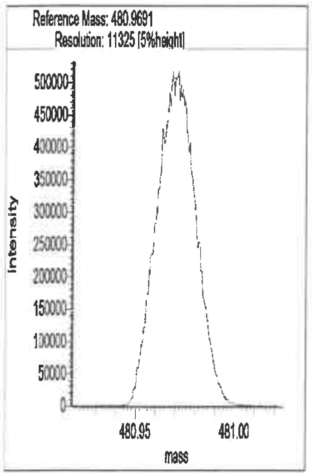
Reference Mass: 480.9691
Resolution: 11325 [5%height]
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
480.95
481.00
mass

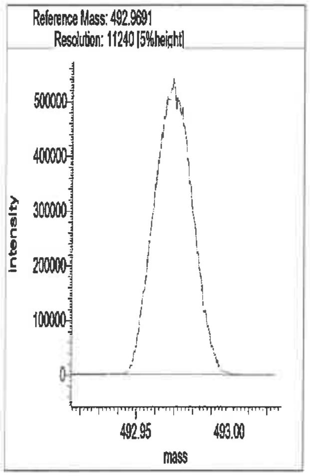
Reference Mass: 492.9691
Resolution: 11240 [5%height]
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3441)

Date:	03 Jun 2020 18:54
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11531 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11090 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11404 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11295 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11269 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11237 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10809 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11108 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11198 [5%height]

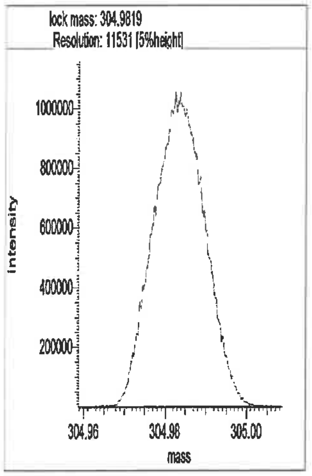

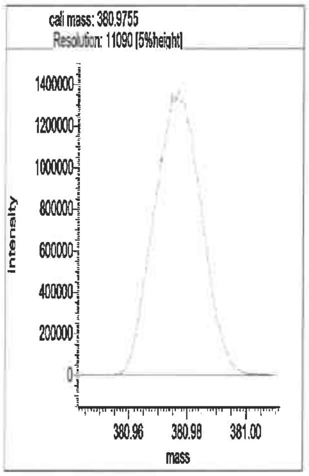

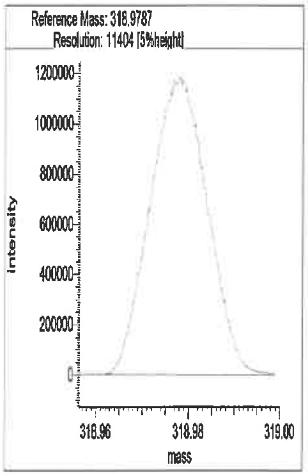

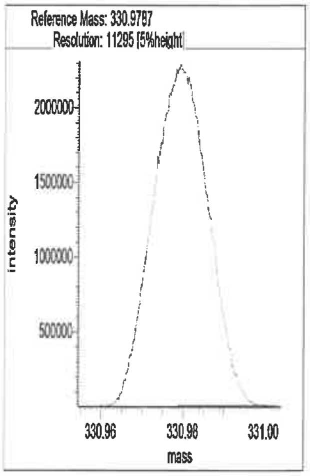

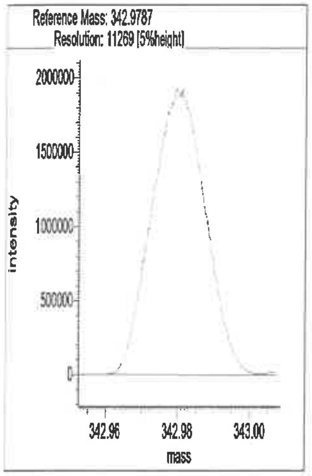

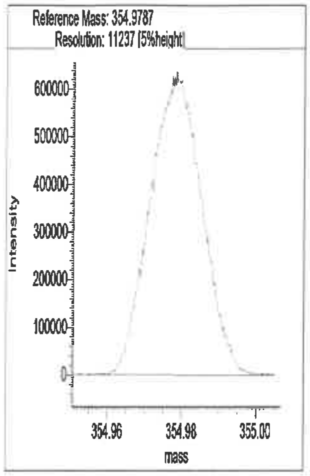

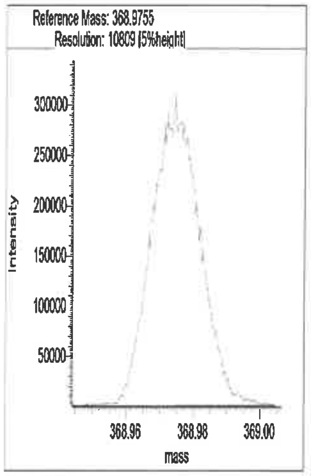

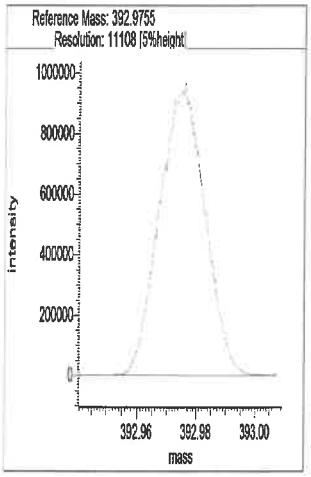

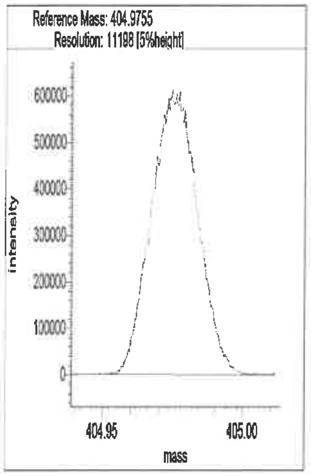

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11525 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11099 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11415 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11283 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10907 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11265 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11121 [5%height]

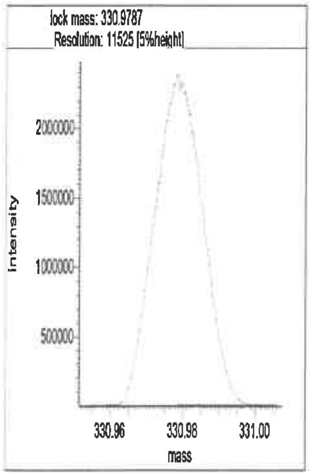

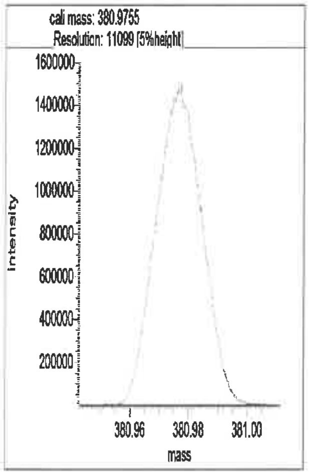

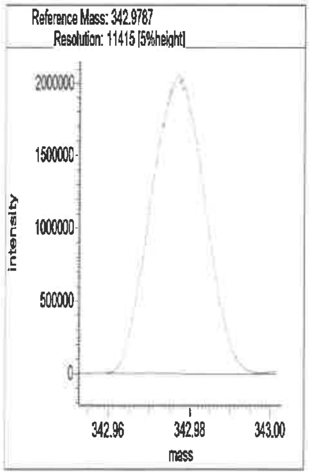

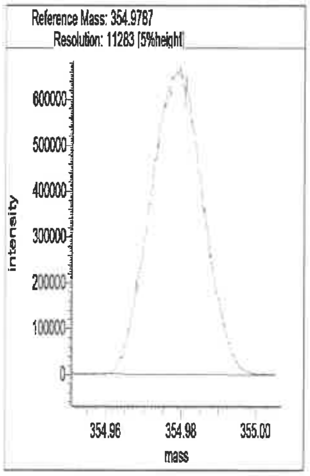

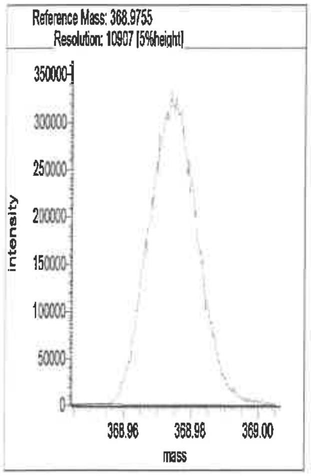

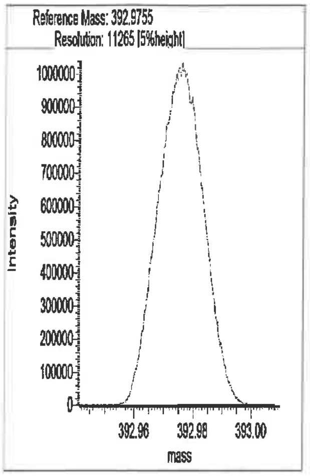

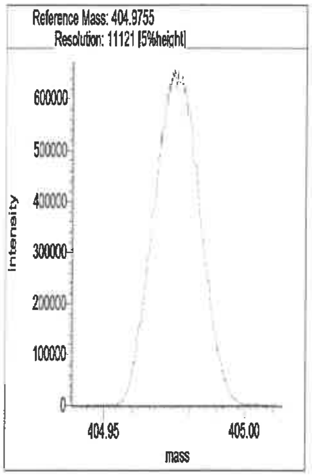

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11441 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11375 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11428 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11506 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11463 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11283 [5%height]

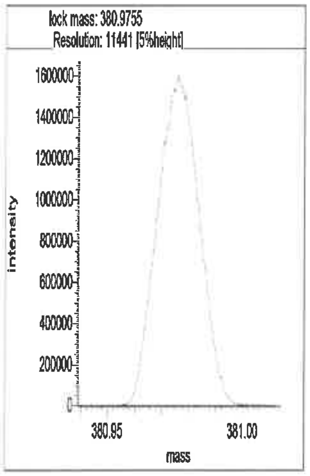

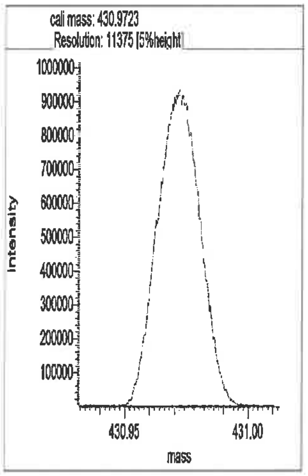

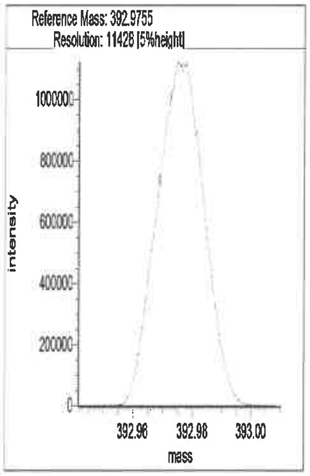

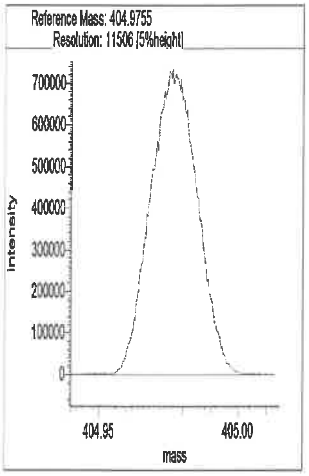

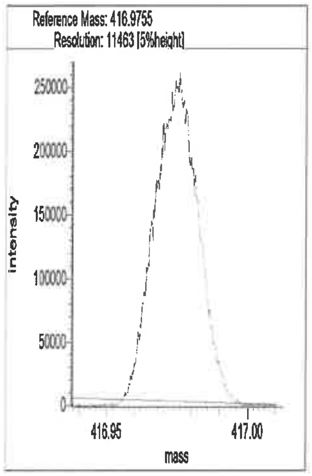

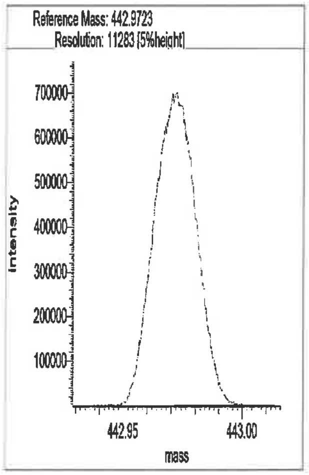

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11591 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11319 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11502 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11627 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11449 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11479 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11406 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11240 [5%height]

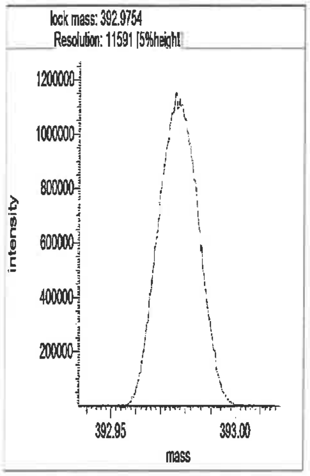

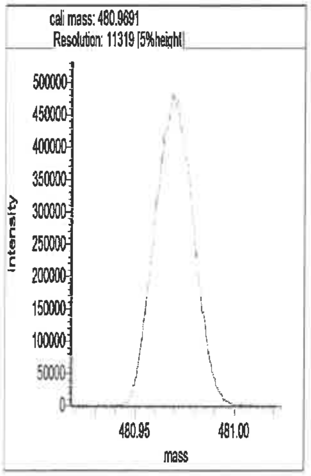

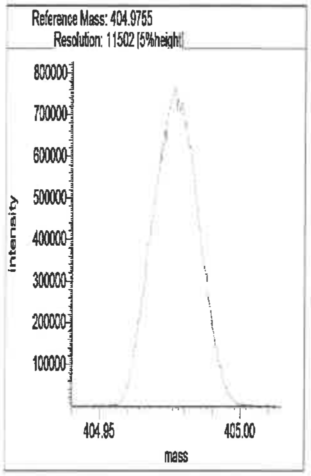

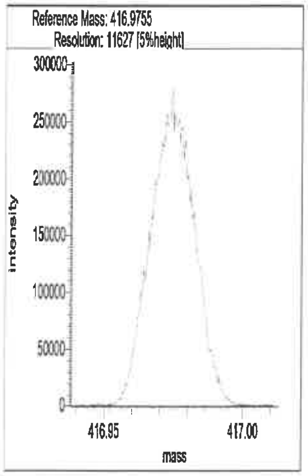

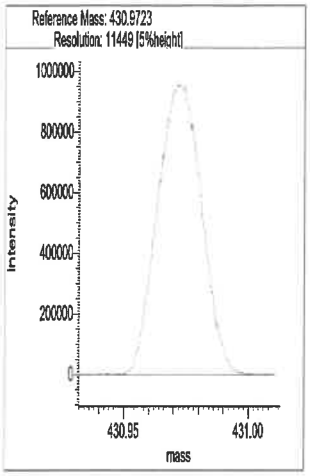

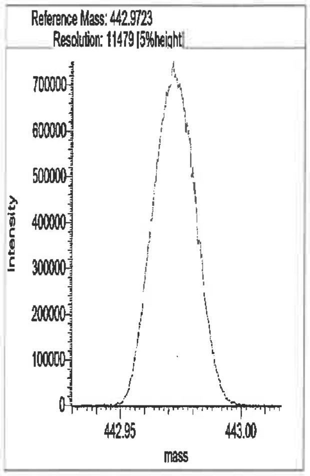

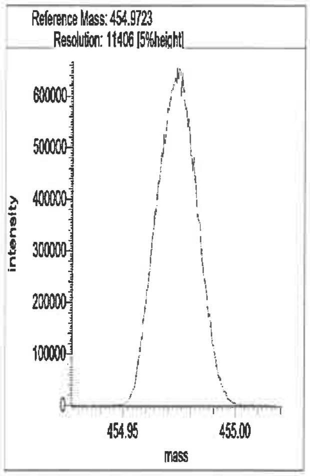

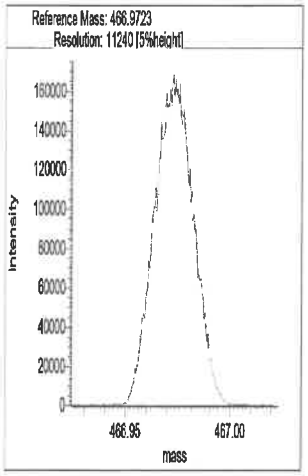

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11632 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11208 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11578 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11688 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11231 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11406 [5%height]

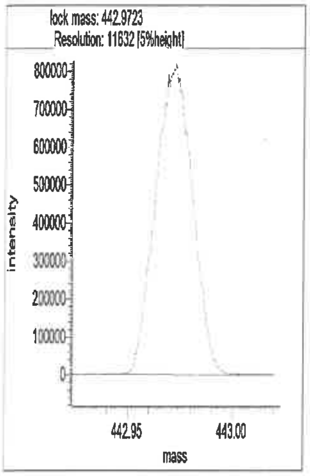
lock mass: 442.9723
Resolution: 11632 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

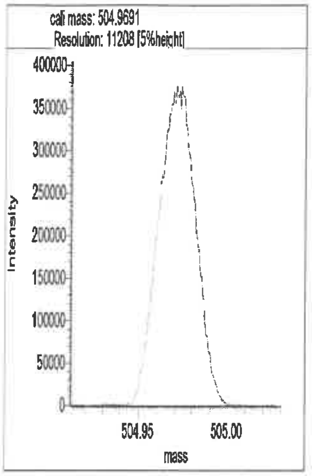
cali mass: 504.9691
Resolution: 11208 [5%height]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

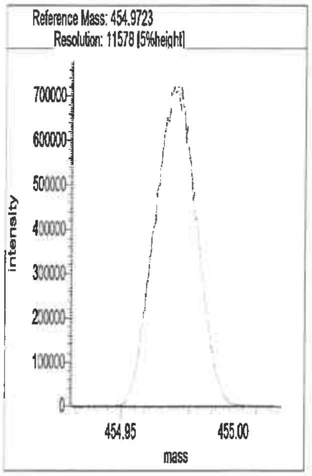
Reference Mass: 454.9723
Resolution: 11578 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

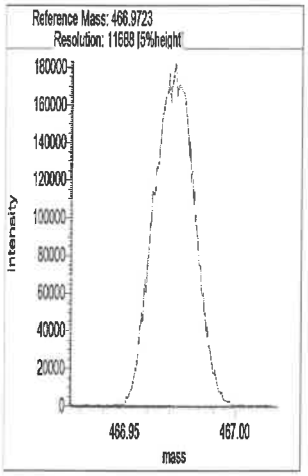
Reference Mass: 466.9723
Resolution: 11688 [5%height]
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

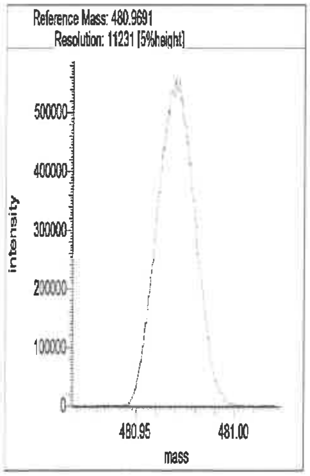
Reference Mass: 480.9691
Resolution: 11231 [5%height]
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

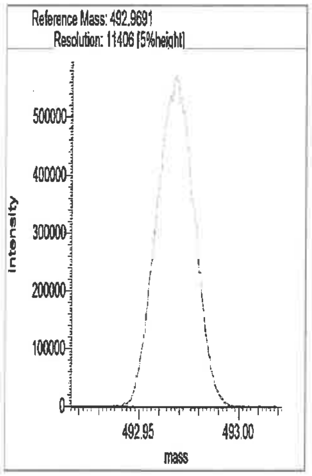
Reference Mass: 492.9691
Resolution: 11406 [5%height]
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3441)

Date:	03 Jun 2020 20:49
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11461 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11025 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11259 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11217 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11308 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11083 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10843 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 10916 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10632 [5%height]

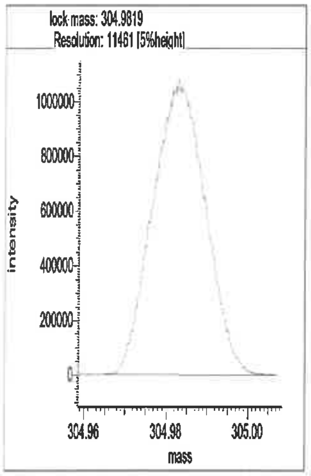

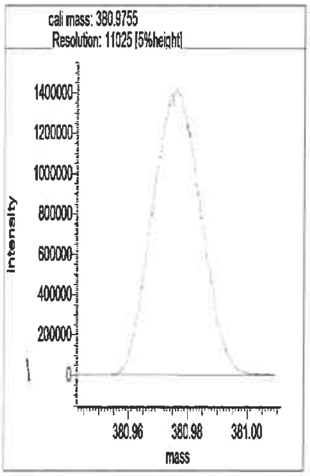

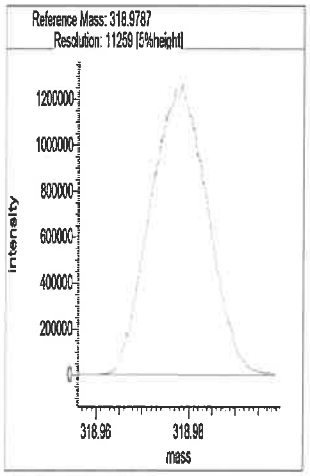

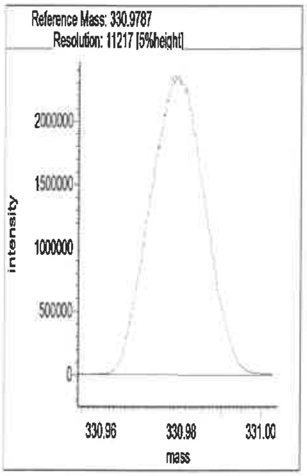

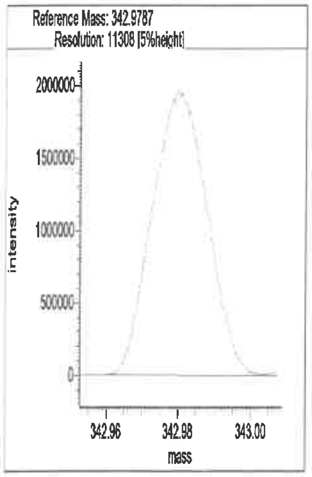

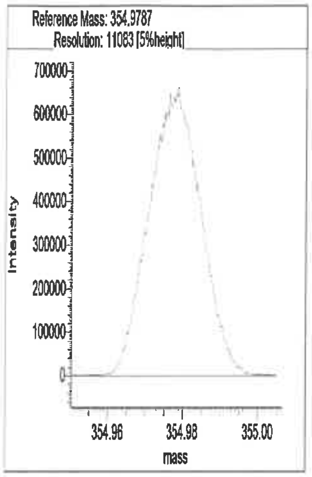

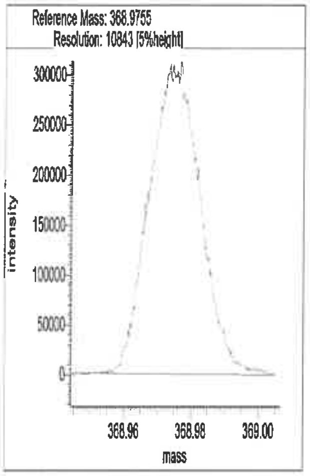

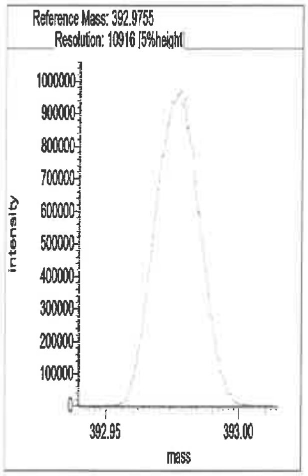

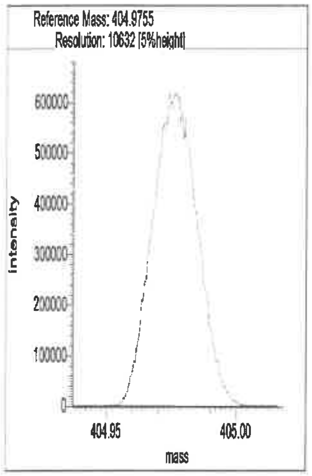

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11337 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11217 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11370 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11281 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10756 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11133 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11070 [5%height]

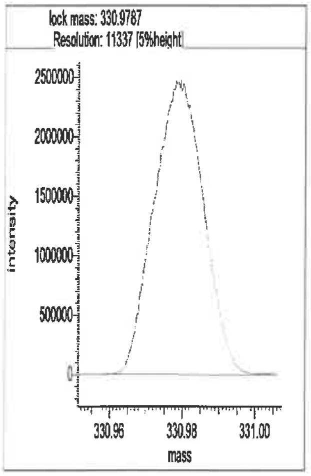

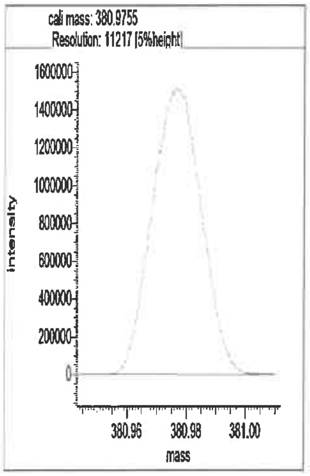

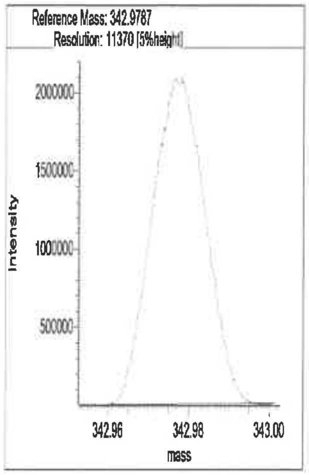

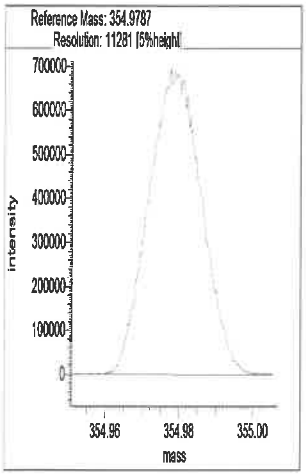

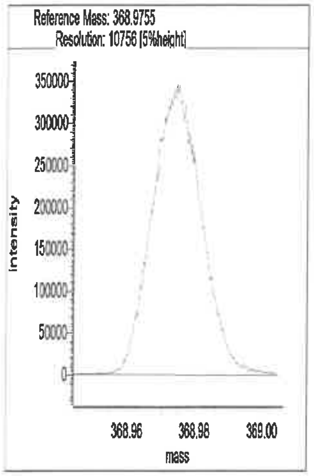

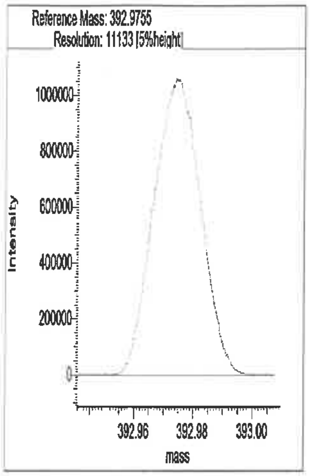

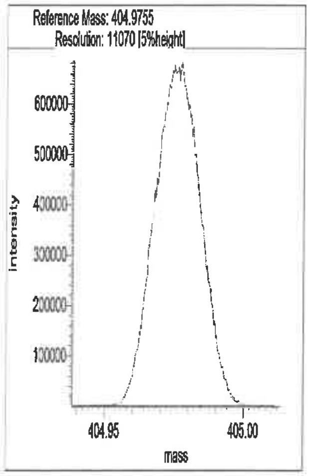

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11385 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11276 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11581 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11411 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11374 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11209 [5%height]

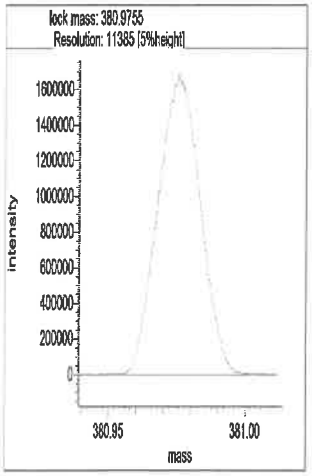

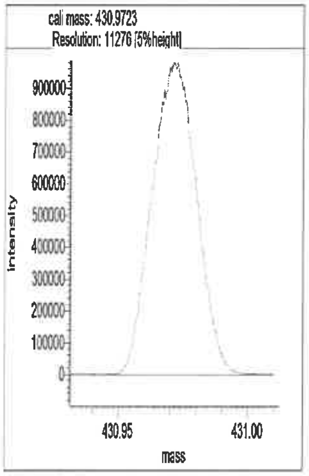

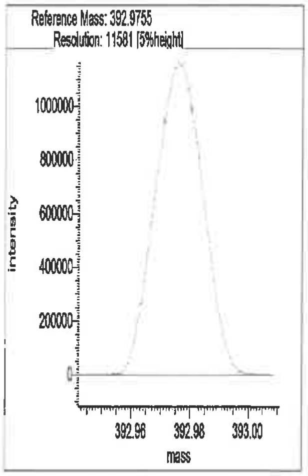

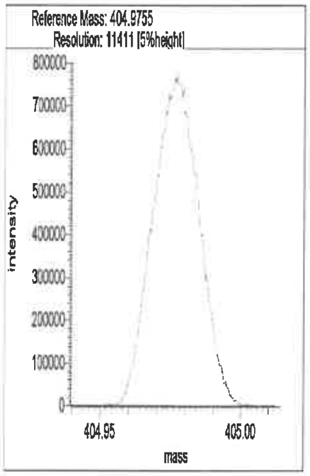

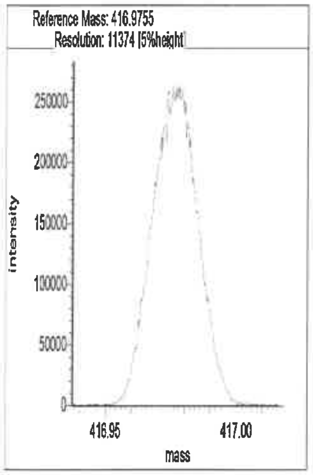

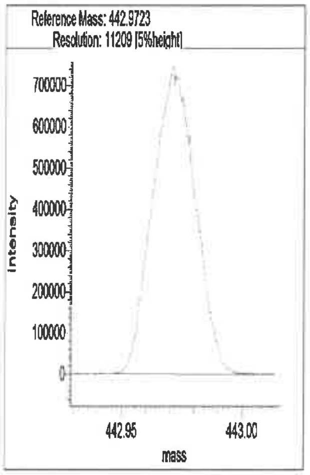

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11400 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11068 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11454 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11276 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11270 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11301 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11125 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11161 [5%height]

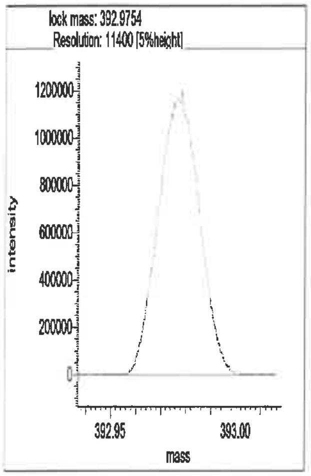

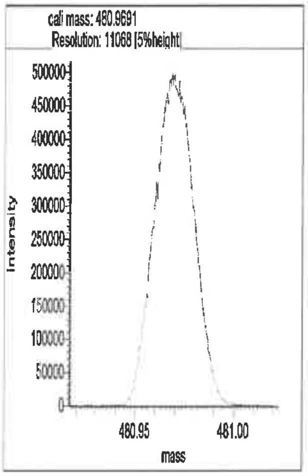

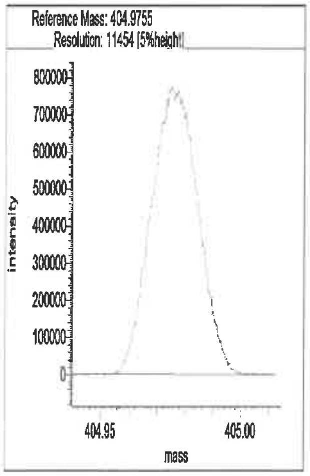

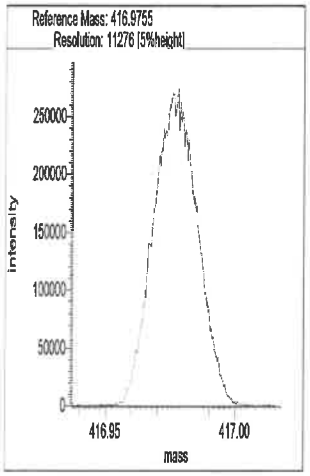

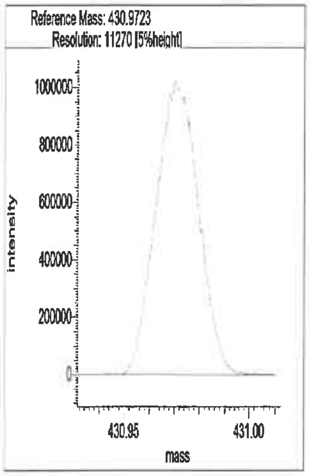

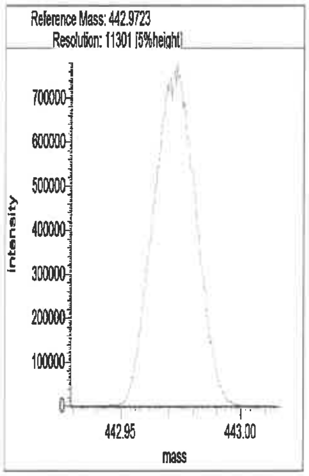

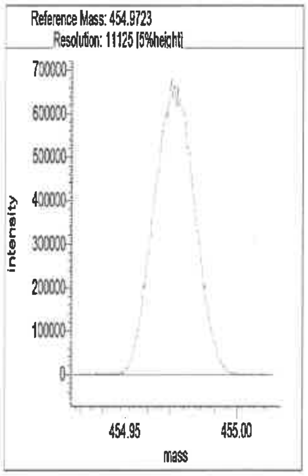

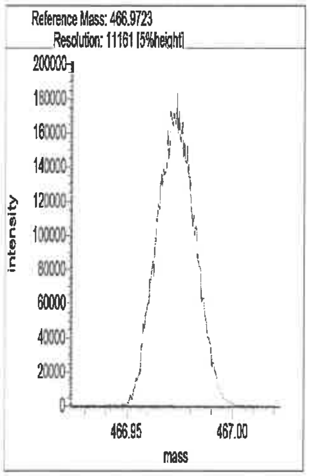

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11474 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11281 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11452 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11304 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11169 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11443 [5%height]

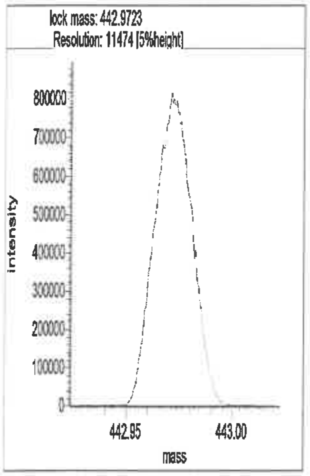
lock mass: 442.9723
Resolution: 11474 [5%height]

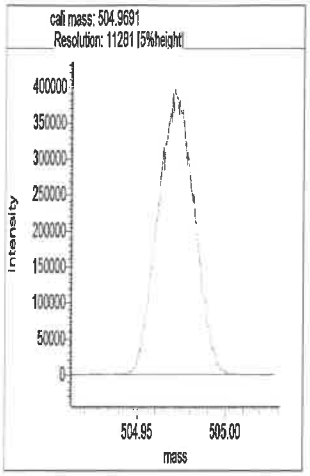
cali mass: 504.9691
Resolution: 11281 [5%height]

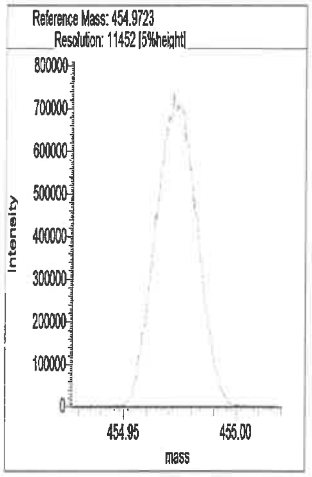
Reference Mass: 454.9723
Resolution: 11452 [5%height]

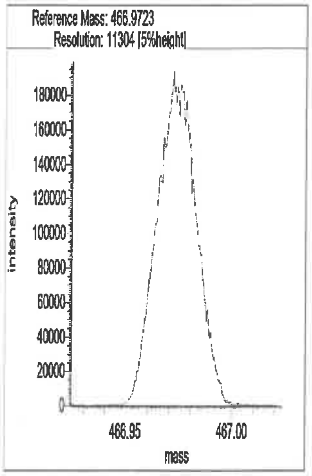
Reference Mass: 466.9723
Resolution: 11304 [5%height]

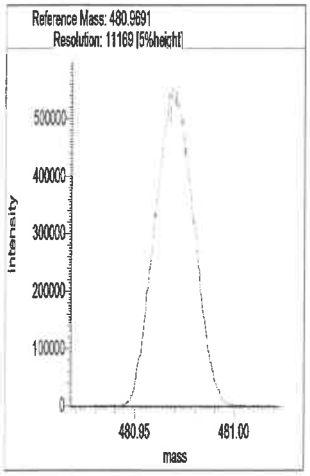
Reference Mass: 480.9691
Resolution: 11169 [5%height]

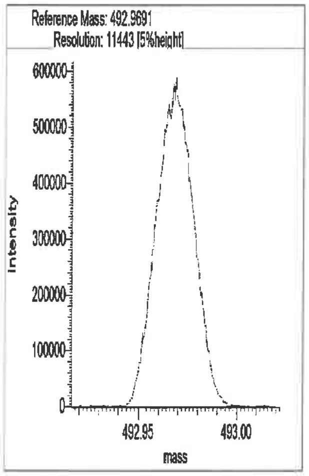
Reference Mass: 492.9691
Resolution: 11443 [5%height]

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 03-Jun-2020 14:05:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-1 HRDXNL1_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:39 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 05-Jun-2020 10:06:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.298	7617551	0.80	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.308	11575035	0.79	1.4977	101.5	101.5	0.1893	0.1893	101	
2,3,7,8-TCDF	20.351	36141	0.68	1.1312	0.2760	0.2760	0.007932	0.007932	110	M
S Total TCDF					0.2760	0.2760	0.007932	0.007932		
D 13C-2,3,7,8-TCDD	21.685	7936120	0.79	1.0367	100.5	100.5	0.1971	0.1971	100	
2,3,7,8-TCDD	21.702	25755	0.78	1.1849	0.2739	0.2739	0.0213	0.0213	110	M
$ 37Cl4-2,3,7,8-TCDD	21.728	22681		1.1208	0.2657	0.2657	0.0110	0.0110	106	
S Total TCDD					0.2739	0.2739	0.0213	0.0213		
D 13C-1,2,3,7,8-PeCDF	27.298	9753916	1.58	1.3057	98.1	98.1	0.3836	0.3836	98.06	
1,2,3,7,8-PeCDF	27.323	140816	1.55	1.1060	1.305	1.305	0.0178	0.0178	104	
D 13C-2,3,4,7,8-PeCDF	28.829	11491396	1.58	1.5420	97.8	97.8	0.3248	0.3248	97.83	
2,3,4,7,8-PeCDF	28.846	136191	1.62	0.9067	1.307	1.307	0.0193	0.0193	105	
S Total PeCDF					2.612	2.612	0.0186	0.0186		
D 13C-1,2,3,7,8-PeCDD	29.646	6244315	1.59	0.8294	98.8	98.8	0.1483	0.1483	98.83	
1,2,3,7,8-PeCDD	29.671	88840	1.57	1.1062	1.286	1.286	0.0217	0.0217	103	
S Total PeCDD					1.286	1.286	0.0217	0.0217		
D 13C-1,2,3,4,7,8-HxCDF	34.979	9974678	0.54	1.4619	100.2	100.2	0.2722	0.2722	100	
1,2,3,4,7,8-HxCDF	34.996	133454	1.28	1.0087	1.326	1.326	0.0146	0.0146	106	
D 13C-1,2,3,6,7,8-HxCDF	35.139	8939187	0.53	1.2866	102.0	102.0	0.3093	0.3093	102	
1,2,3,6,7,8-HxCDF	35.156	144549	1.27	1.2432	1.301	1.301	0.0139	0.0139	104	
D 13C-2,3,4,6,7,8-HxCDF	35.964	8442074	0.53	1.1988	103.4	103.4	0.3319	0.3319	103	
2,3,4,6,7,8-HxCDF	35.981	143678	1.25	1.2736	1.336	1.336	0.0125	0.0125	107	
D 13C-1,2,3,7,8,9-HxCDF	36.848	7257441	0.53	1.0687	99.7	99.7	0.3723	0.3723	99.74	
1,2,3,7,8,9-HxCDF	36.865	125519	1.28	1.2882	1.343	1.343	0.0132	0.0132	107	
S Total HxCDF					5.306	5.306	0.0135	0.0135		
* 13C-1,2,3,7,8,9-HxCDD	36.646	6808866	1.25	5E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	36.166	7630092	1.27	1.1046	101.4	101.4	0.1779	0.1779	101	a
1,2,3,4,7,8-HxCDD	36.183	95486	1.27	0.9336	1.340	1.340	0.0209	0.0209	107	
D 13C-1,2,3,6,7,8-HxCDD	36.284	6834320	1.26	0.9871	101.7	101.7	0.1991	0.1991	102	a
1,2,3,6,7,8-HxCDD	36.301	96309	1.25	1.0802	1.305	1.305	0.0213	0.0213	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.663	101310	1.29	1.0574	1.325	1.325	0.0200	0.0200	106	
S Total HxCDD					3.970	3.970	0.0207	0.0207		
D 13C-1,2,3,4,6,7,8-HpCDF	38.638	6215600	0.46	0.9035	101.0	101.0	0.4227	0.4227	101	
1,2,3,4,6,7,8-HpCDF	38.655	130543	1.01	1.5957	1.316	1.316	0.0161	0.0161	105	
D 13C-1,2,3,4,7,8,9-HpCDF	39.885	7019746	0.46	1.0480	98.4	98.4	0.3644	0.3644	98.37	
1,2,3,4,7,8,9-HpCDF	39.894	107944	1.09	1.1693	1.315	1.315	0.0180	0.0180	105	
S Total HpCDF					2.631	2.631	0.0171	0.0171		
D 13C-1,2,3,4,6,7,8-HpCDD	39.582	6158504	1.07	0.8875	101.9	101.9	0.3260	0.3260	102	
1,2,3,4,6,7,8-HpCDD	39.590	90659	1.05	1.1150	1.320	1.320	0.0132	0.0132	106	
S Total HpCDD					1.320	1.320	0.0132	0.0132		
D 13C-OCDD	42.031	8344650	0.91	0.6297	194.6	194.6	0.1612	0.1612	97.31	
OCDF	42.132	155676	0.89	1.4809	2.519	2.519	0.0179	0.0179	101	
OCDD	42.039	127218	0.88	1.1948	2.552	2.552	0.0151	0.0151	102	

QC Flag Legend

Review Flags

- M - Manually Integrated
- a - User Assigned ID

Reagents:

HRDXNL1_00031 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 03-Jun-2020 14:05:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-1 HRDXNL1_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:39 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 05-Jun-2020 10:06:52

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.298	21.309	-1		3390101	490691	524	1310	936		a
333.9338	21.298	21.309	-1		4227450	602843	370	925	1629	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.308	20.321	-1	0.954	5113136	746617	821	2052	909		
317.9389	20.308	20.321	-1	0.954	6461899	925048	419	1047	2208	0.79(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	20.351	20.347	0	1.002	14567	1955	13	32	150		M
305.8987	20.343	20.347	0	1.002	21574	3216	47	117	68	0.68(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	21.685	21.692	0	1.018	3495773	472331	524	1310	901		
333.9338	21.685	21.692	0	1.018	4440347	597745	370	925	1616	0.79(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	21.702	21.722	-1	1.001	11323	1687	87	217	19		M
321.8936	21.719	21.722	0	1.002	14432	1944	21	52	93	0.78(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	21.728	21.724	0	1.020	22681	3111	54	135	58		
13C-1,2,3,7,8-PeCDF											
351.9000	27.298	27.300	0	1.282	5969130	944581	1343	3357	703		
353.8970	27.298	27.300	0	1.282	3784786	601555	848	2120	709	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.323	27.325	0	1.001	85561	14411	42	105	343		
341.8567	27.323	27.325	0	1.001	55255	9325	80	200	117	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.829	28.834	0	1.354	7043748	1064837	1343	3357	793		
353.8970	28.829	28.834	0	1.354	4447648	679900	848	2120	802	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.846	28.857	-1	1.001	84250	13307	42	105	317		
341.8567	28.846	28.857	-1	1.001	51941	7642	80	200	96	1.62(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.646	29.651	0	1.392	3835956	546449	349	872	1566		
369.8919	29.646	29.651	0	1.392	2408359	356453	189	472	1886	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.671	29.682	-1	1.001	54246	7869	69	172	114		
357.8516	29.688	29.682	0	1.001	34594	5010	18	45	278	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.979	34.982	0	0.955	3481637	790179	968	2420	816		
385.8610	34.979	34.982	0	0.955	6493041	1453538	1870	4675	777	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.996	35.000	0	1.000	74858	17266	79	197	219		
375.8178	34.996	35.000	0	1.000	58596	12769	53	132	241	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.139	35.145	0	0.959	3115312	675596	968	2420	698		
385.8610	35.139	35.145	0	0.959	5823875	1238227	1870	4675	662	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.156	35.163	0	1.000	80832	17153	79	197	217		
375.8178	35.148	35.163	-1	1.000	63717	13966	53	132	264	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.964	35.966	0	0.981	2934176	722173	968	2420	746		
385.8610	35.964	35.966	0	0.981	5507898	1358722	1870	4675	727	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.981	35.981	0	1.000	79779	20713	79	197	262		
375.8178	35.981	35.981	0	1.000	63899	15895	53	132	300	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.848	36.848	0	1.006	2526941	676007	968	2420	698		
385.8610	36.848	36.848	0	1.006	4730500	1268678	1870	4675	678	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.865	36.862	0	1.000	70352	18043	79	197	228		
375.8178	36.857	36.862	0	1.000	55167	15118	53	132	285	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	36.646	36.653	0		3787421	996210	853	2132	1168		a
403.8529	36.646	36.653	0		3021445	786957	549	1372	1433	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	36.166	36.173	0	0.987	4272278	1154955	853	2132	1354		a
403.8529	36.166	36.173	0	0.987	3357814	904760	549	1372	1648	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.183	36.187	0	1.000	53352	14654	99	247	148		
391.8127	36.183	36.187	0	1.000	42134	11981	62	155	193	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	36.284	36.291	0	0.990	3803630	977918	853	2132	1146		a
403.8529	36.284	36.291	0	0.990	3030690	766852	549	1372	1397	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.301	36.304	0	1.000	53500	13838	99	247	140		
391.8127	36.301	36.304	0	1.000	42809	10703	62	155	173	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.663	36.669	0	1.014	57064	15118	99	247	153		
391.8127	36.663	36.669	0	1.014	44246	10954	62	155	177	1.29(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.638	38.640	0	1.054	1958679	627943	979	2447	641		
419.8220	38.638	38.640	0	1.054	4256921	1371970	1745	4362	786	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.655	38.655	0	1.000	65648	21623	155	387	140		
409.7788	38.646	38.655	-1	1.000	64895	20747	51	127	407	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.885	39.885	0	1.088	2227974	775107	979	2447	792		
419.8220	39.885	39.885	0	1.088	4791772	1671789	1745	4362	958	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.894	39.893	0	1.000	56354	19134	155	387	123		
409.7788	39.894	39.893	0	1.000	51590	18547	51	127	364	1.09(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.582	39.582	0	1.080	3179261	1098105	1039	2597	1057		
437.8140	39.582	39.582	0	1.080	2979243	1016135	1025	2562	991	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.590	39.590	0	1.000	46393	15653	87	217	180		
425.7737	39.590	39.590	0	1.000	44266	14958	37	92	404	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.031	42.035	0	1.147	3980257	1308931	460	1150	2846		
471.7750	42.031	42.035	0	1.147	4364393	1421029	264	660	5383	0.91(0.76-1.02)	
OCDF											
441.7428	42.132	42.131	0	1.002	73500	24385	42	105	581		
443.7399	42.123	42.131	0	1.002	82176	26537	103	257	258	0.89(0.76-1.02)	
OCDD											
457.7377	42.039	42.043	0	1.000	59700	18676	40	100	467		
459.7348	42.039	42.043	0	1.000	67518	22234	59	147	377	0.88(0.76-1.02)	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNL1_00031 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.31

Processing Integration Results

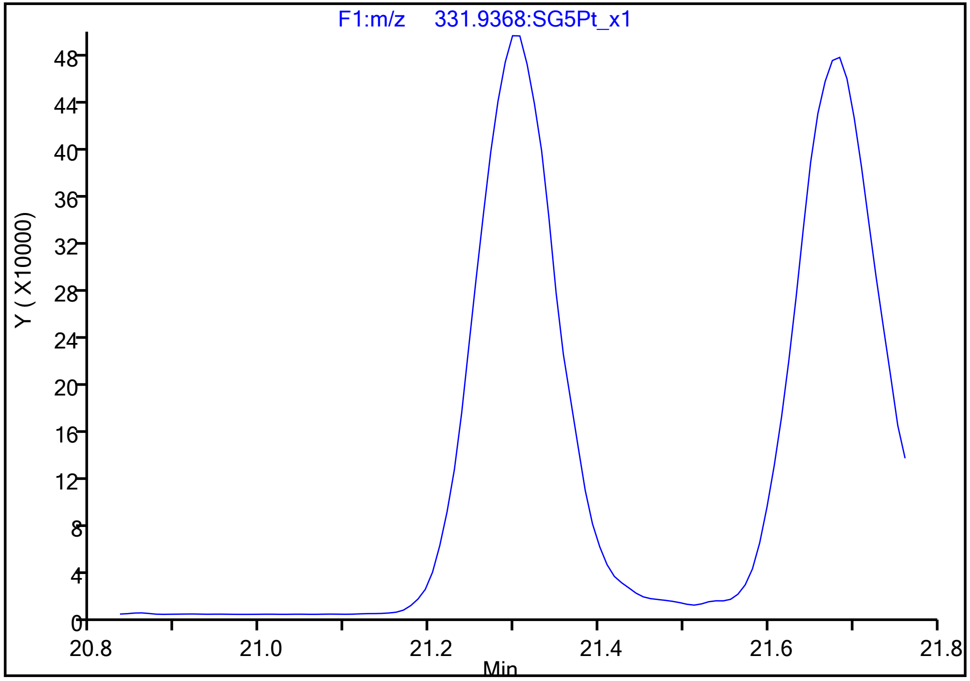

Manual Integration Results

RT: 21.30

Area: 3390101

Amount: 100.0000

Amount Units: pg/ul

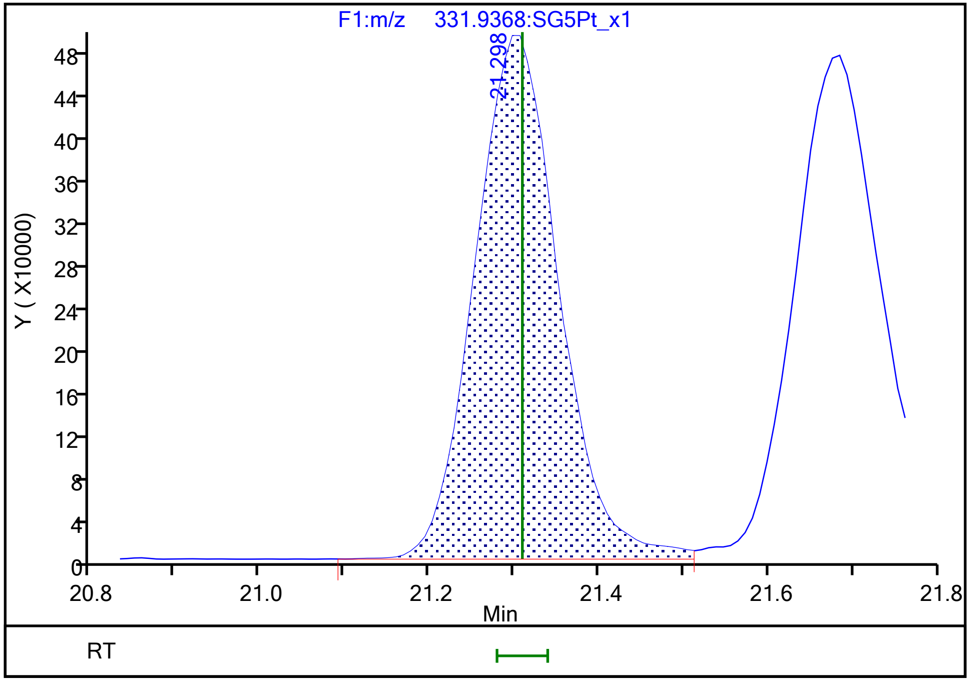

Reviewer: stephensk, 03-Jun-2020 16:25:41

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT:	20.35
Area:	13365
Amount:	0.277094
Amount Units:	pg/ul

Processing Integration Results

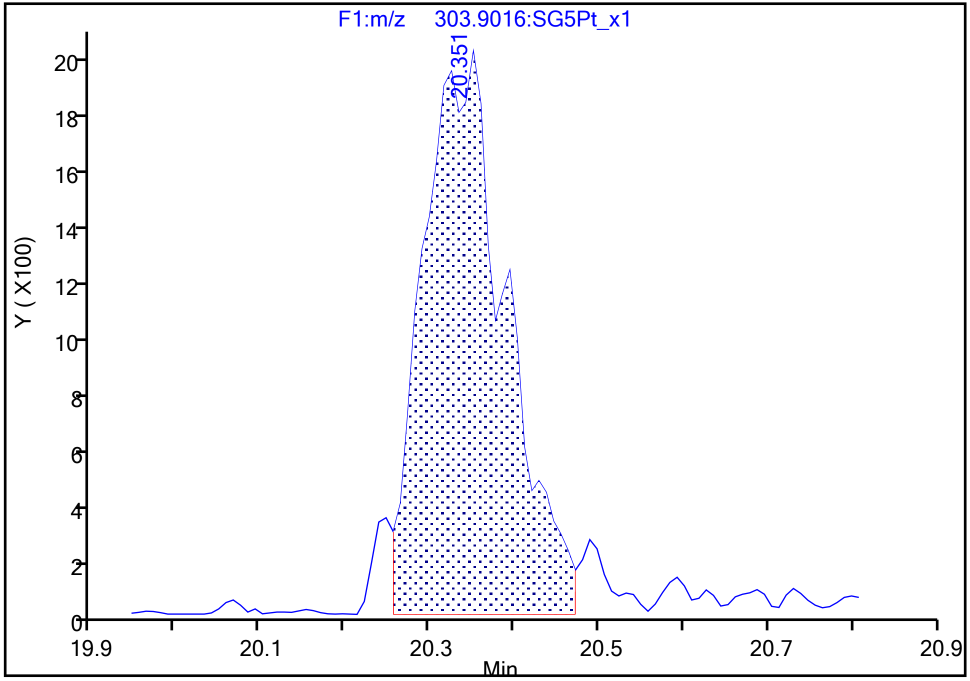

RT:	20.35
Area:	14567
Amount:	0.276007
Amount Units:	pg/ul

Manual Integration Results

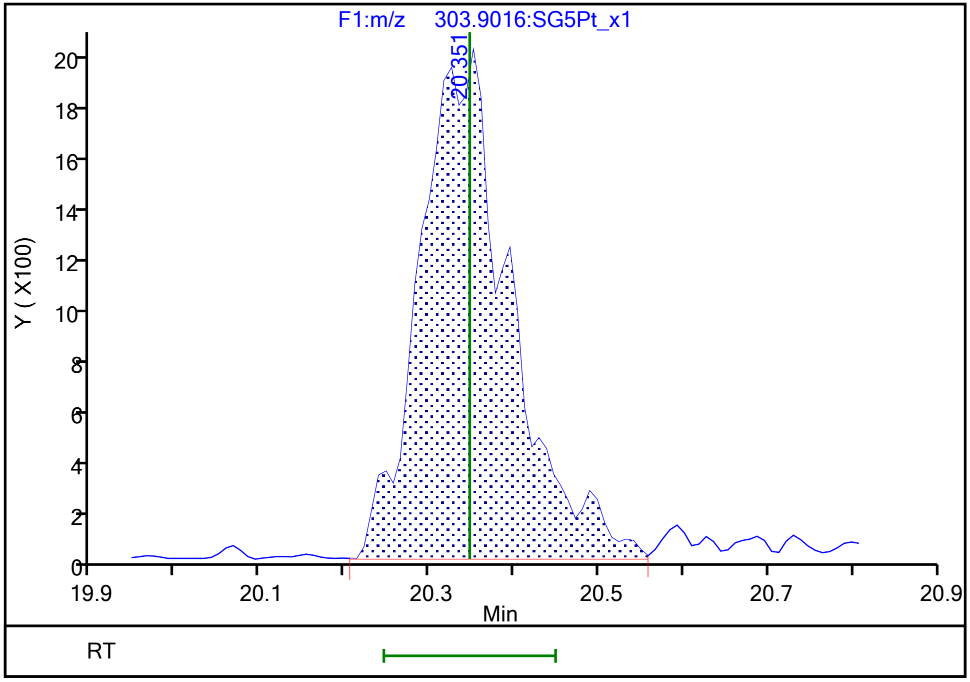

Reviewer: stephensk, 04-Jun-2020 08:12:35

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	20.34
Area:	22171
Amount:	0.277094
Amount Units:	pg/ul

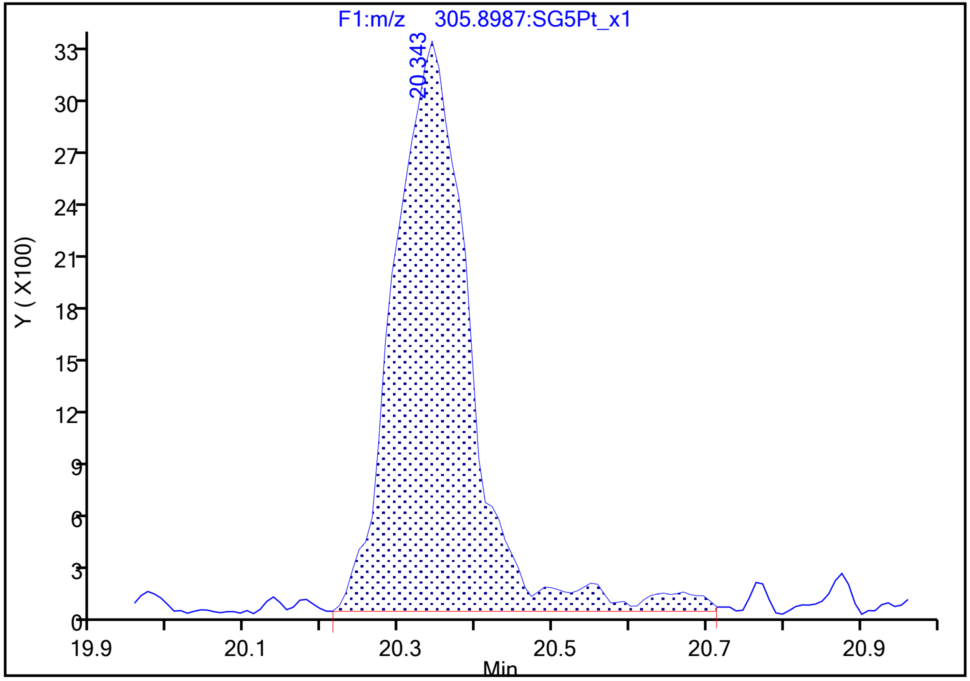

Manual Integration Results

RT:	20.34
Area:	21574
Amount:	0.276007
Amount Units:	pg/ul

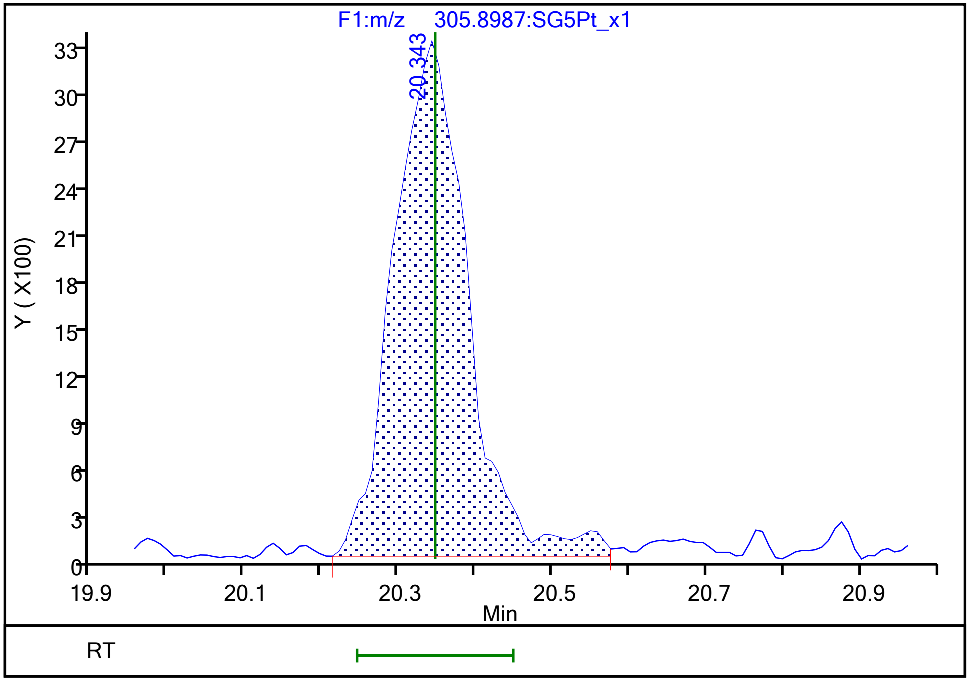

Reviewer: stephensk, 04-Jun-2020 08:12:43

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	21.70
Area:	10278
Amount:	0.261504
Amount Units:	pg/ul

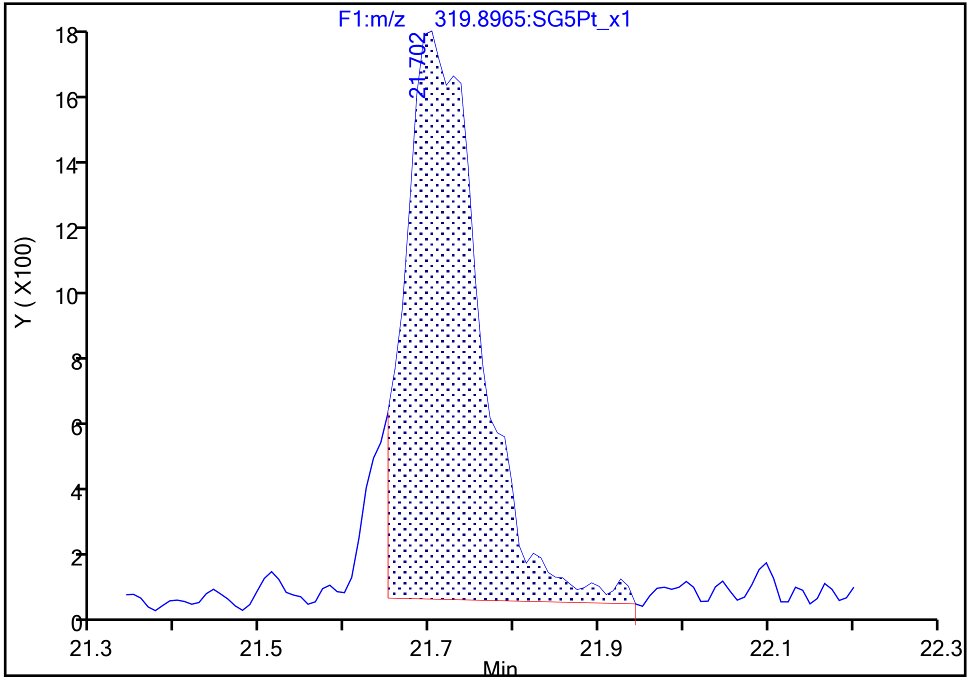

Manual Integration Results

RT:	21.70
Area:	11323
Amount:	0.273884
Amount Units:	pg/ul

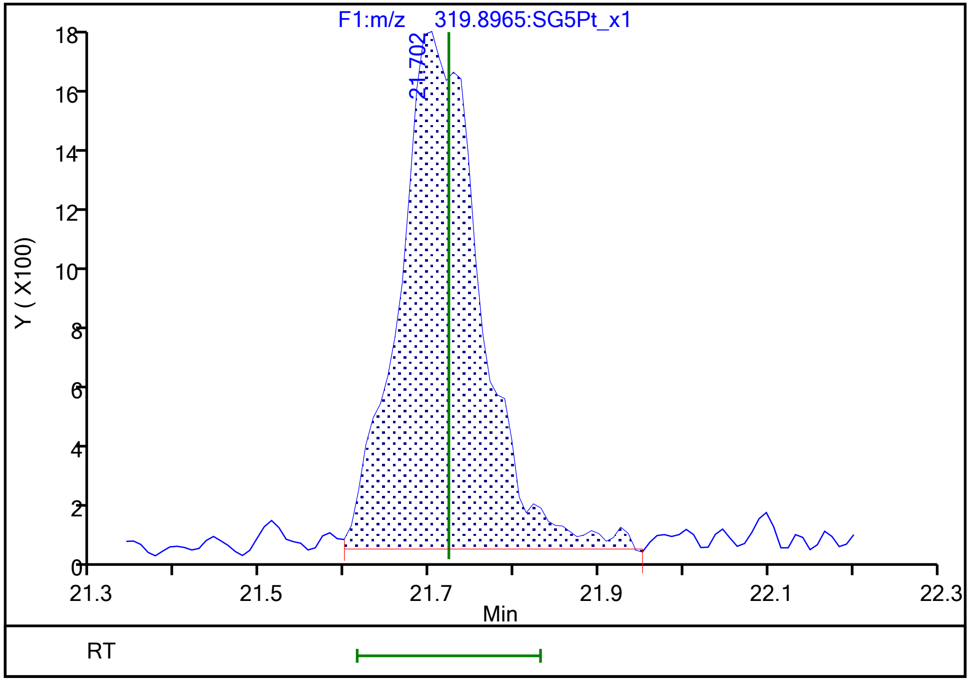

Reviewer: stephensk, 04-Jun-2020 08:13:14

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 21.72
Area: 14067
Amount: 0.261504
Amount Units: pg/ul

Processing Integration Results

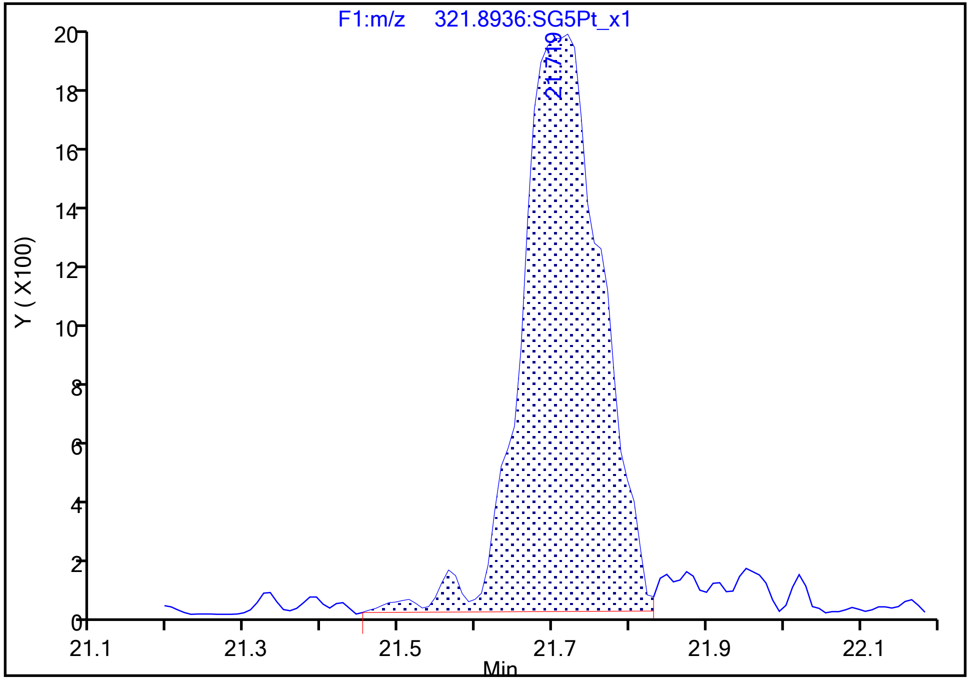

RT: 21.72
Area: 14432
Amount: 0.273884
Amount Units: pg/ul

Manual Integration Results

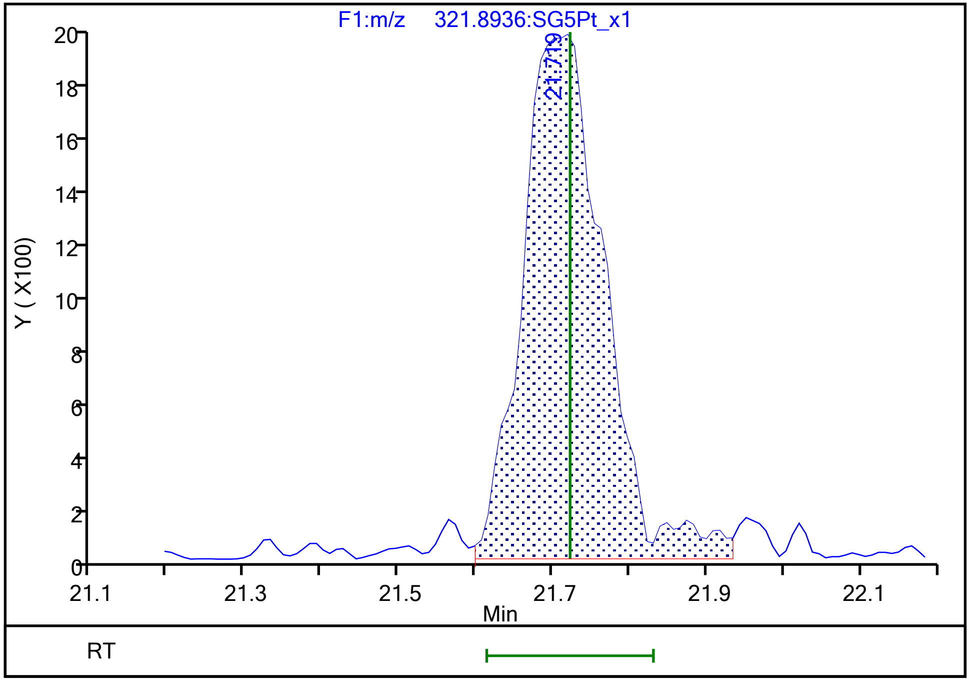

Reviewer: stephensk, 04-Jun-2020 08:13:39

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,7,8,9-HxCDD, CAS: 109719-82-6

Signal: 1

Not Detected
Expected RT: 36.65

Processing Integration Results

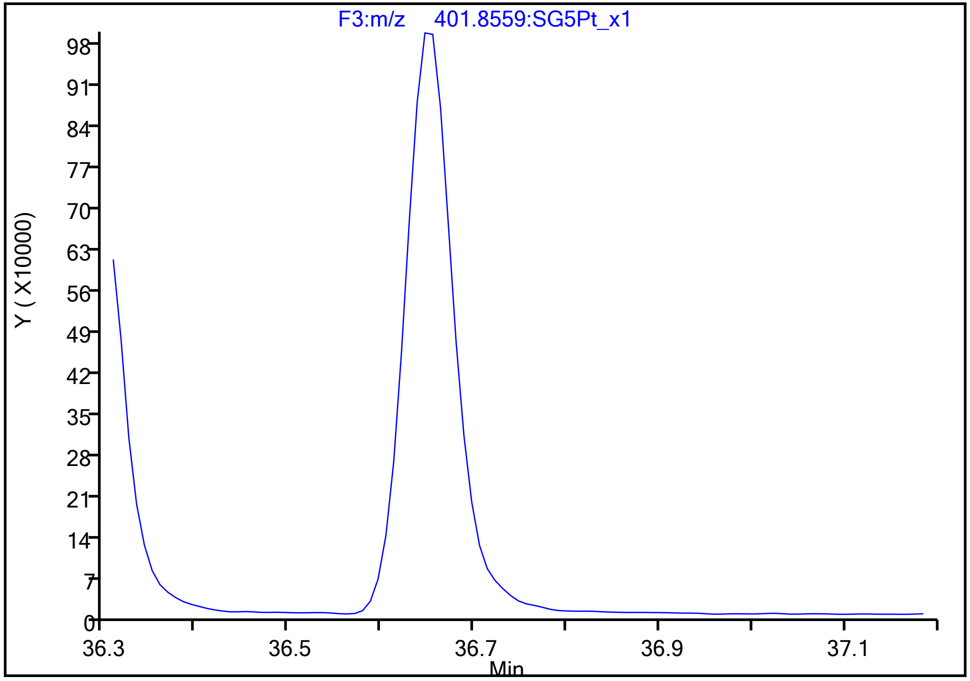

RT: 36.65
Area: 3787421
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

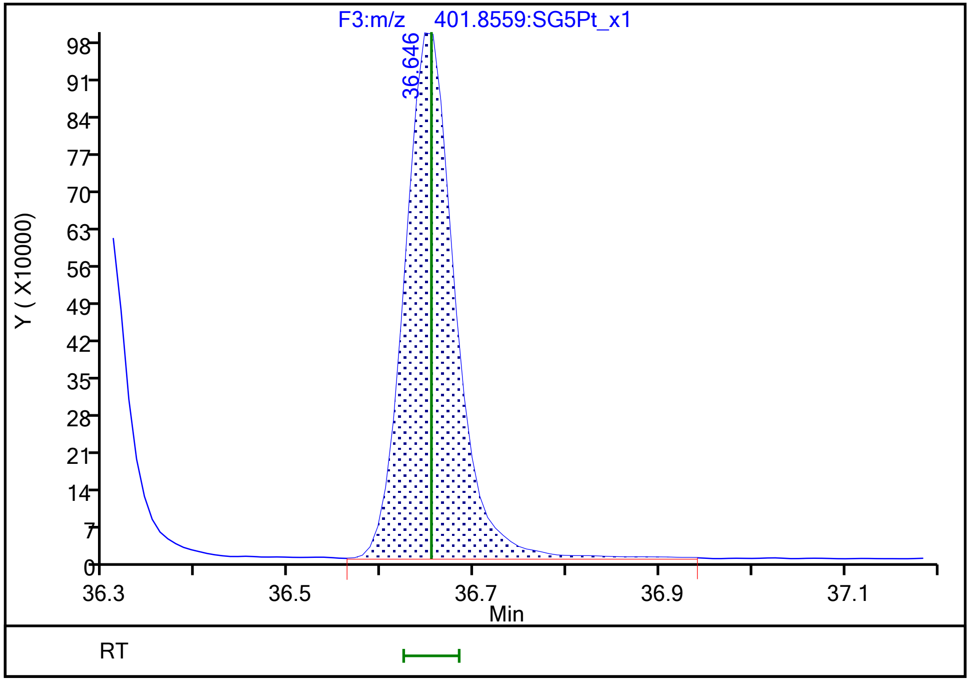

Reviewer: stephensk, 03-Jun-2020 16:25:48
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 10:10:49

Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

RT:	36.28
Area:	3803630
Amount:	100.0000
Amount Units:	pg/ul

Processing Integration Results

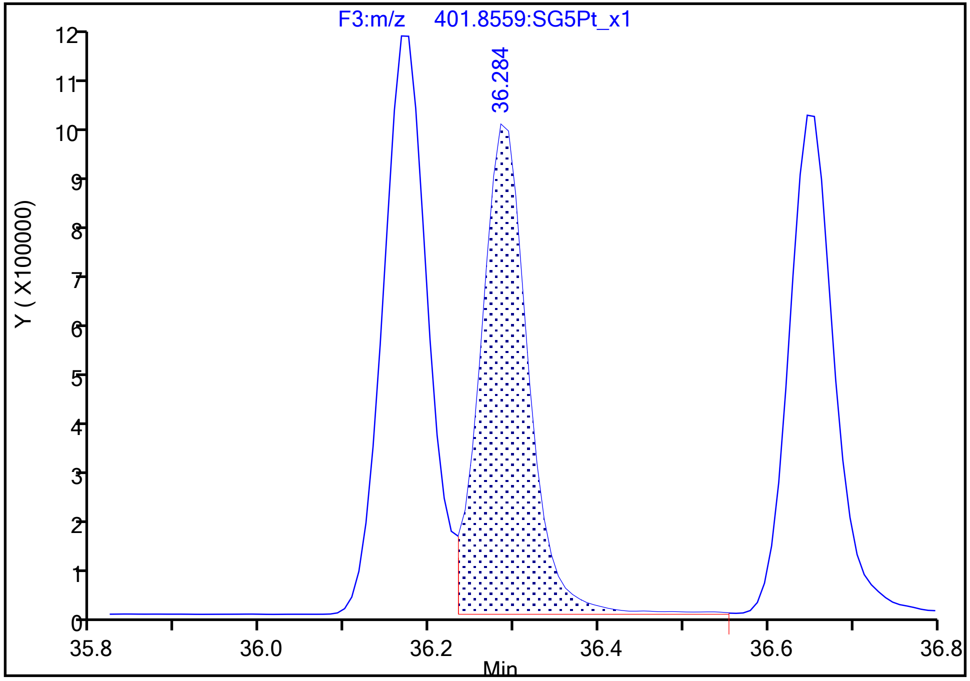

RT:	36.17
Area:	4272278
Amount:	101.4480
Amount Units:	pg/ul

Manual Integration Results

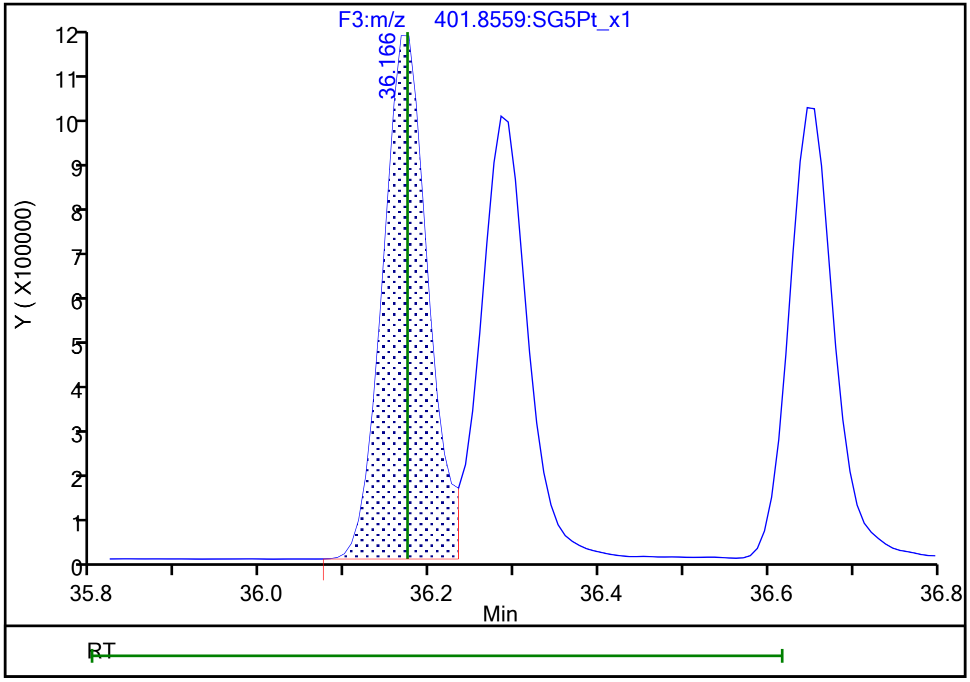

Reviewer: stephensk, 03-Jun-2020 16:26:30

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 10:10:49

Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT: 36.65
Area: 3787421
Amount: 100.0000
Amount Units: pg/ul

Processing Integration Results

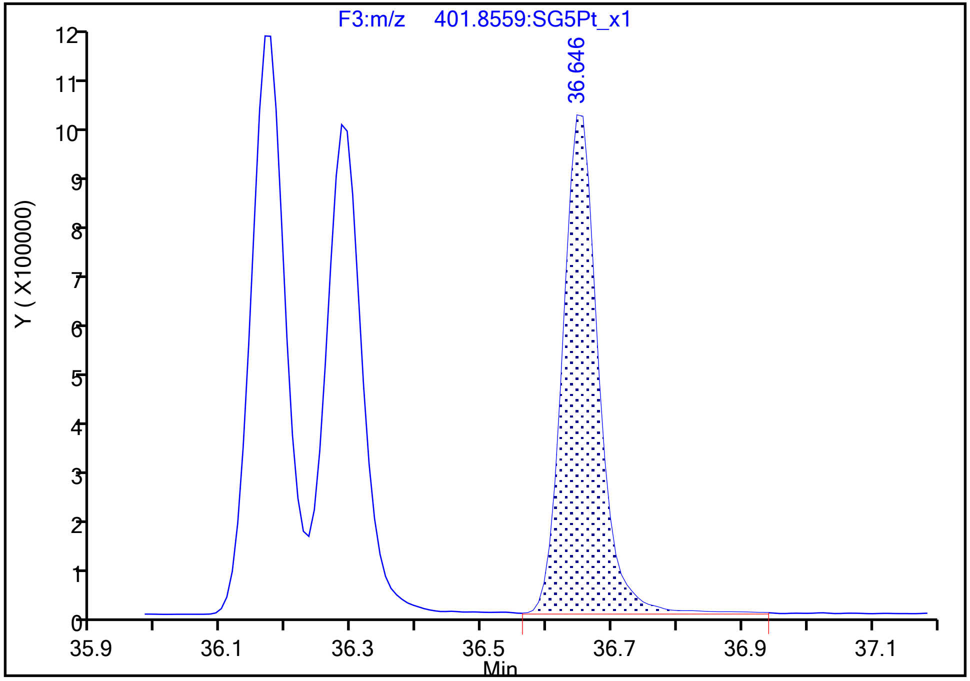

RT: 36.28
Area: 3803630
Amount: 101.6863
Amount Units: pg/ul

Manual Integration Results

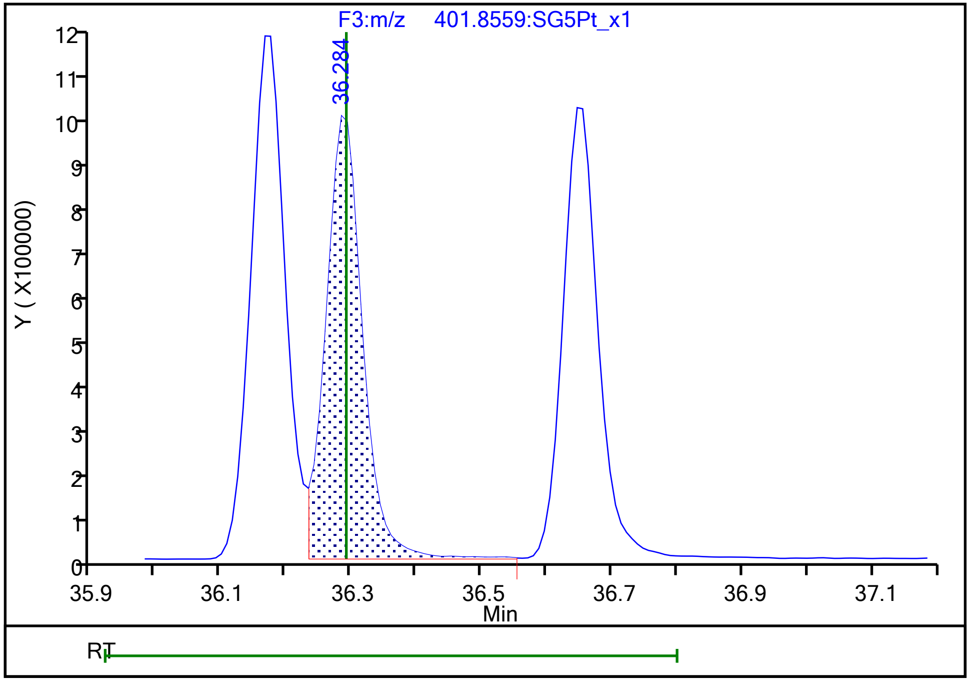

Reviewer: stephensk, 03-Jun-2020 16:26:37

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 10:10:49
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Injection Date: 03-Jun-2020 14:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

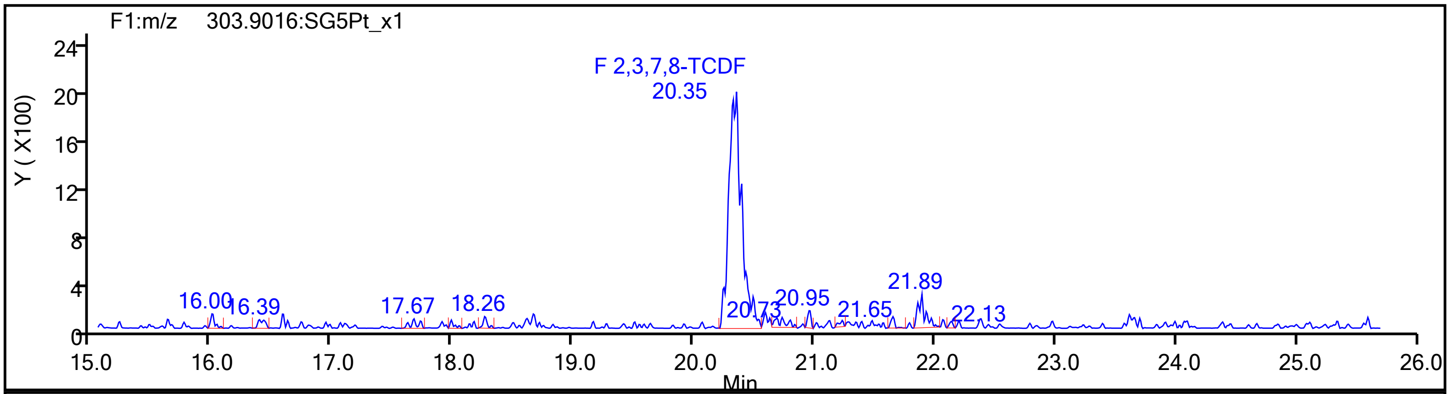

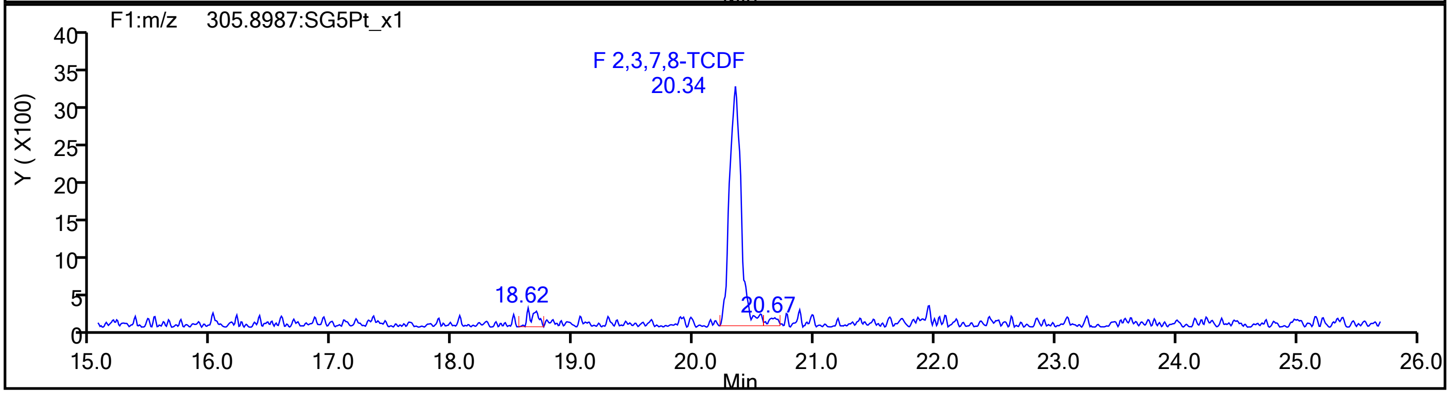

TCDF Standards

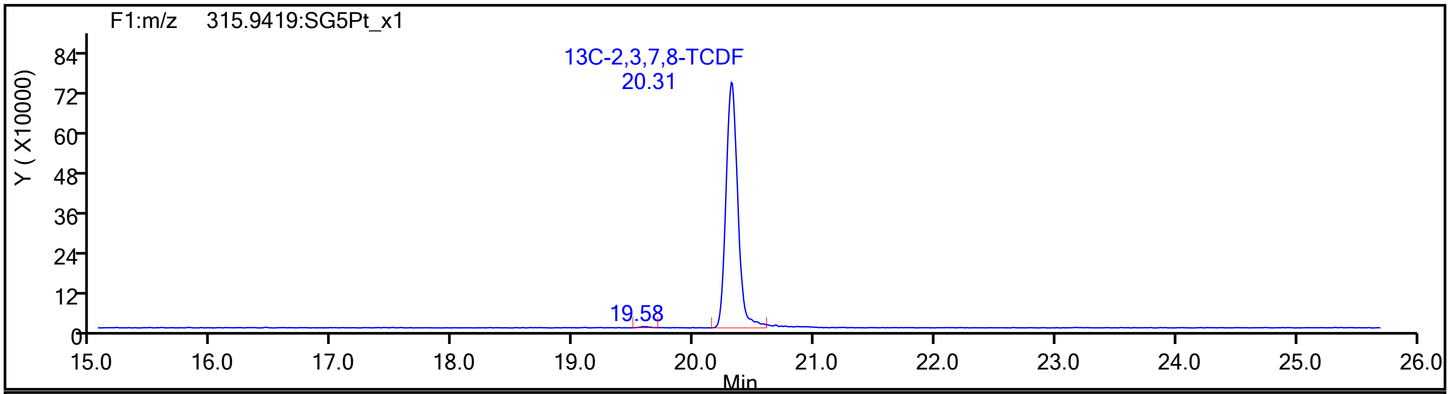

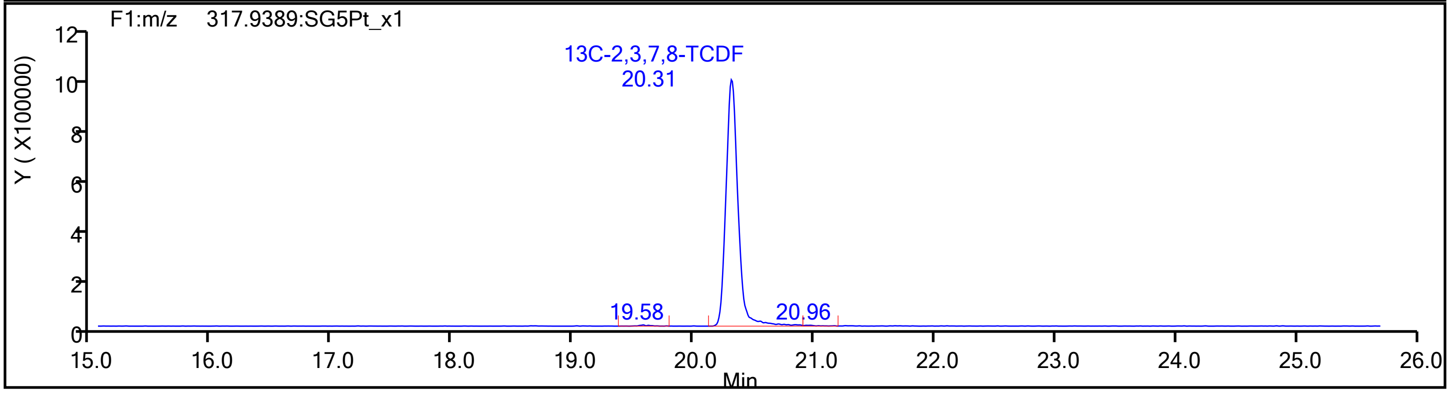

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d		
Injection Date:	03-Jun-2020 14:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

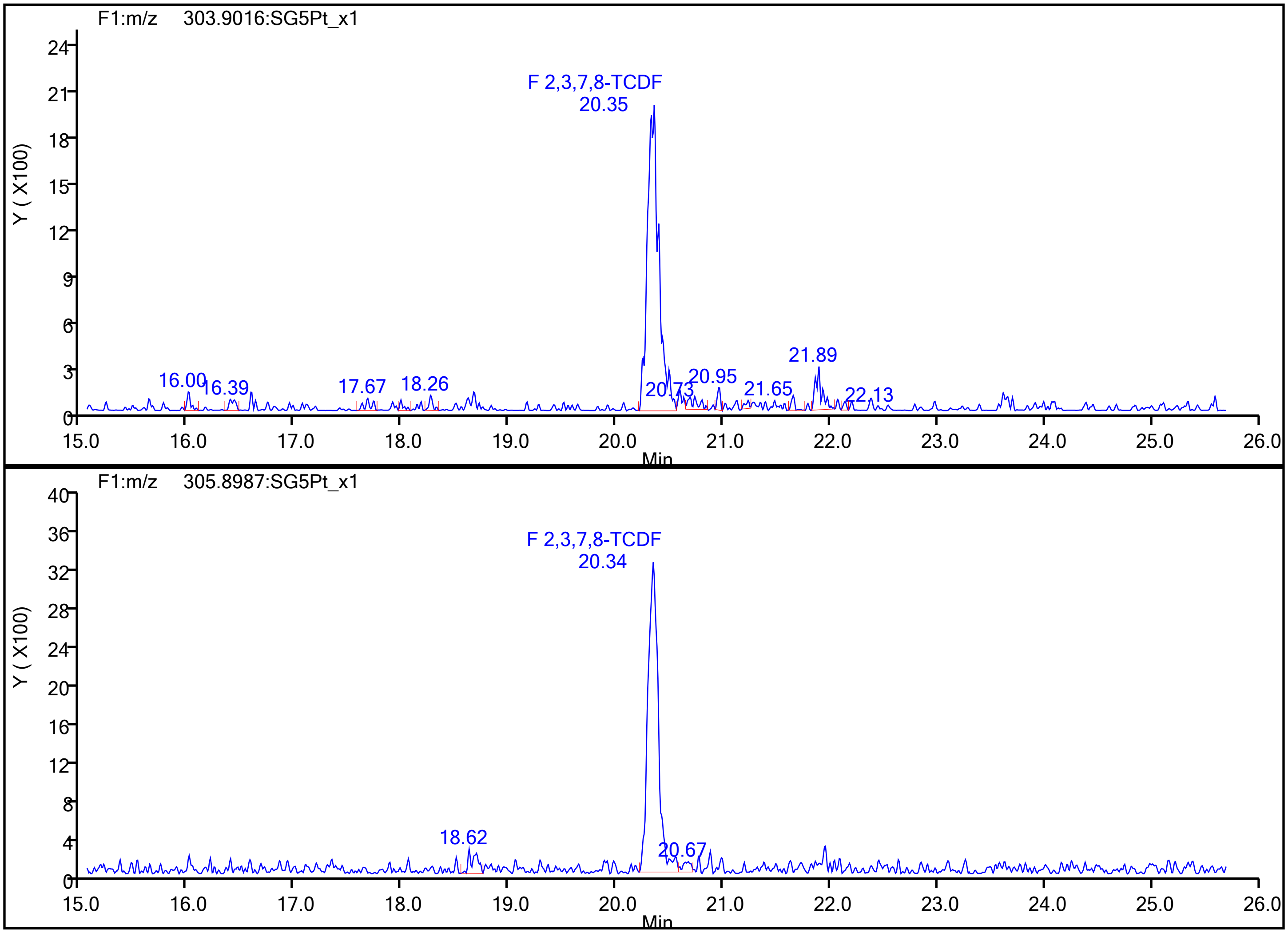

TCDF Interference Mass

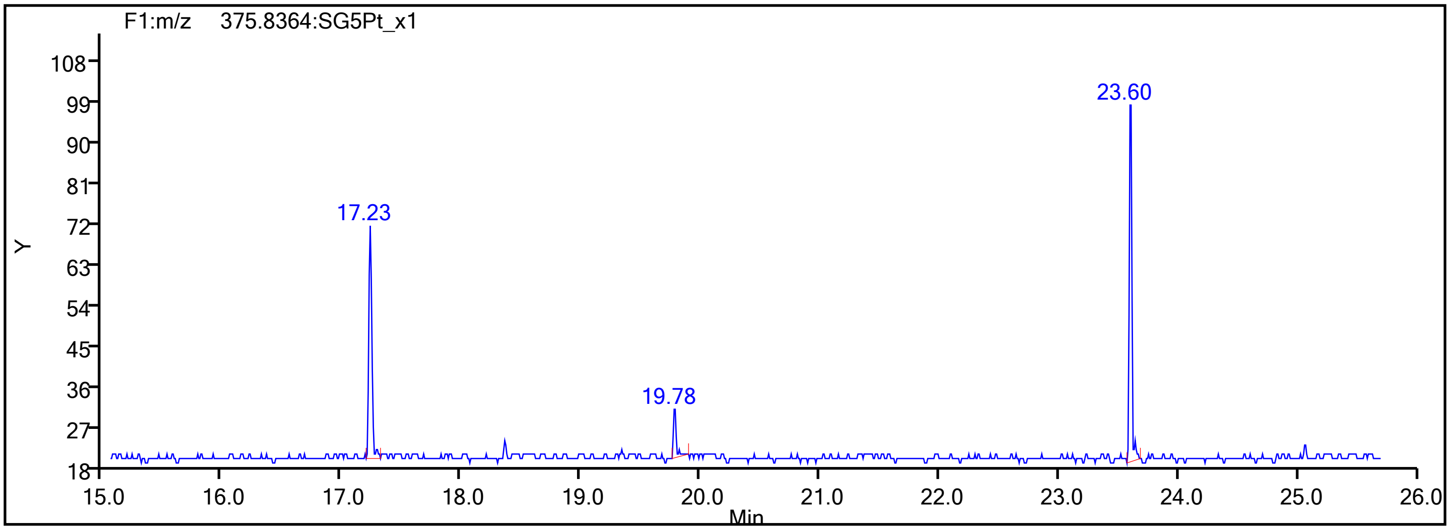

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Injection Date: 03-Jun-2020 14:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

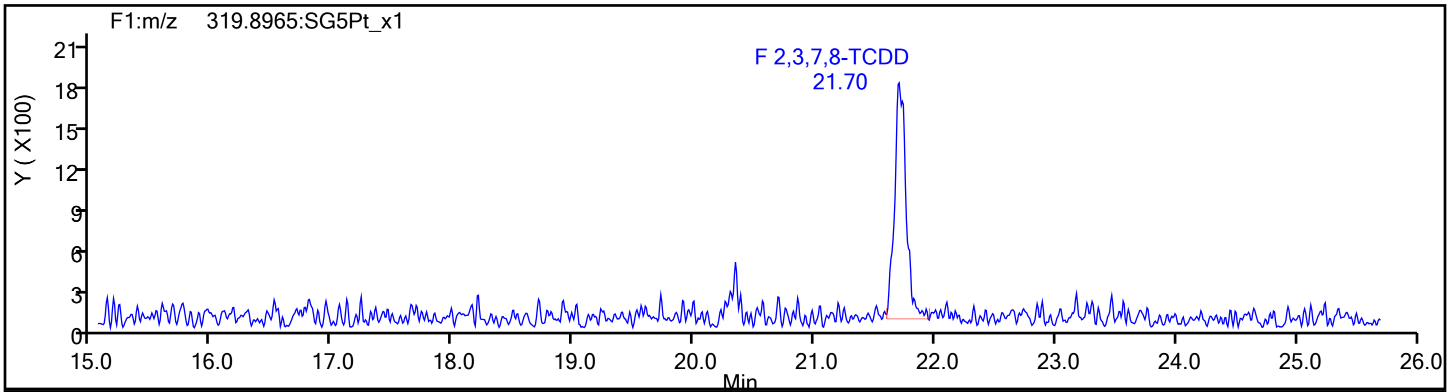

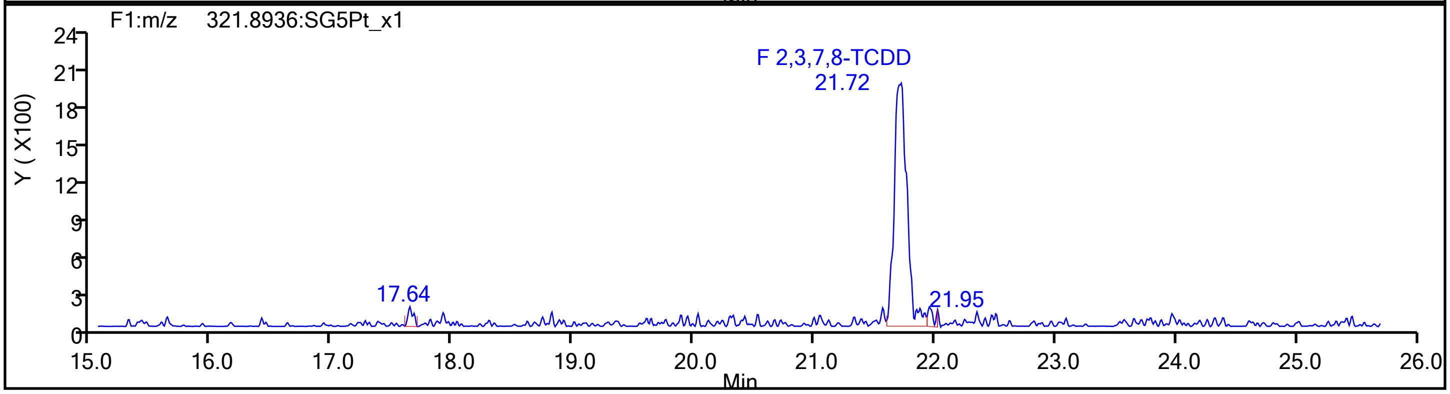

TCDD Standards

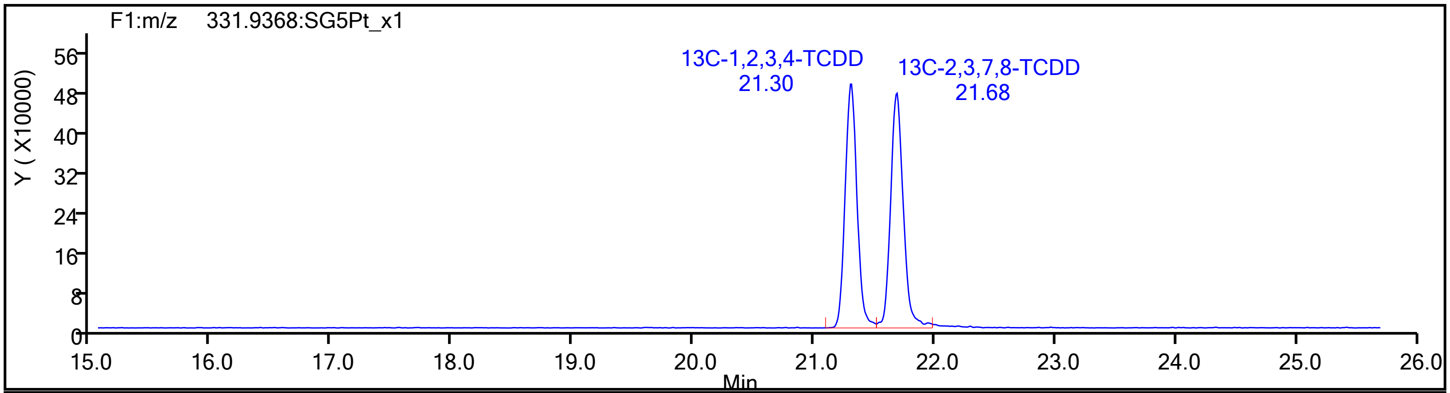

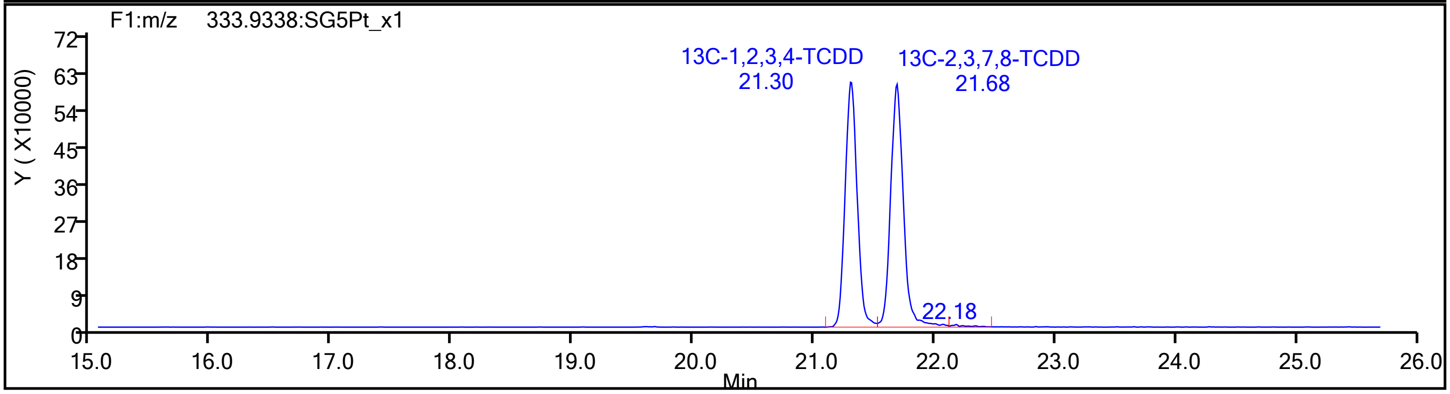

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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37Cl4-TCDD

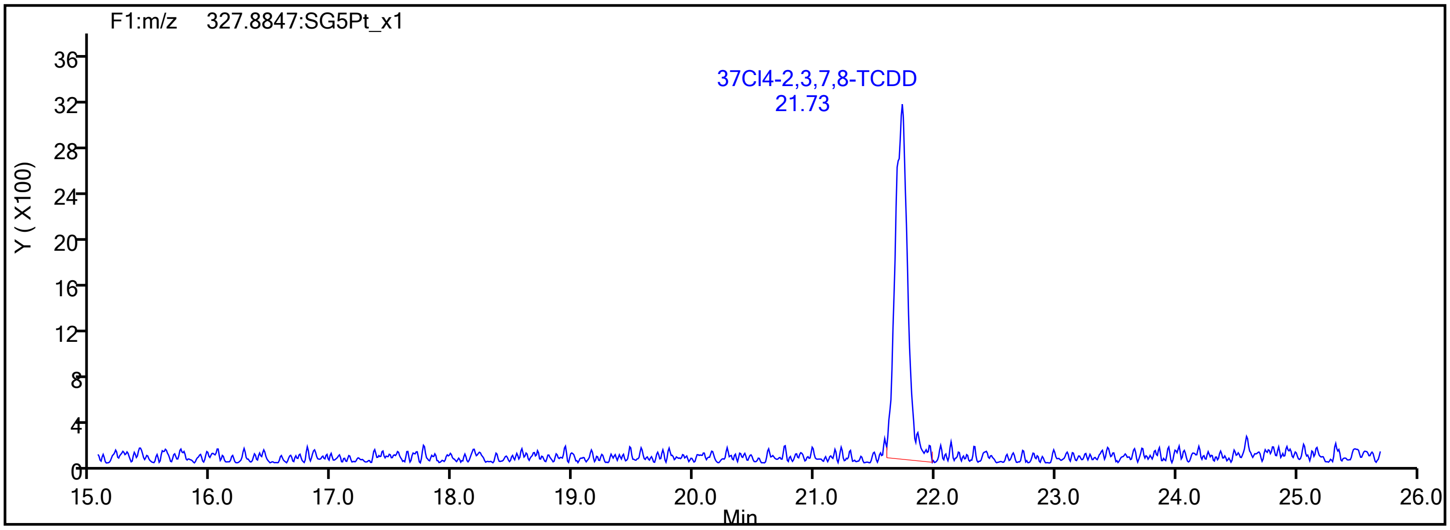

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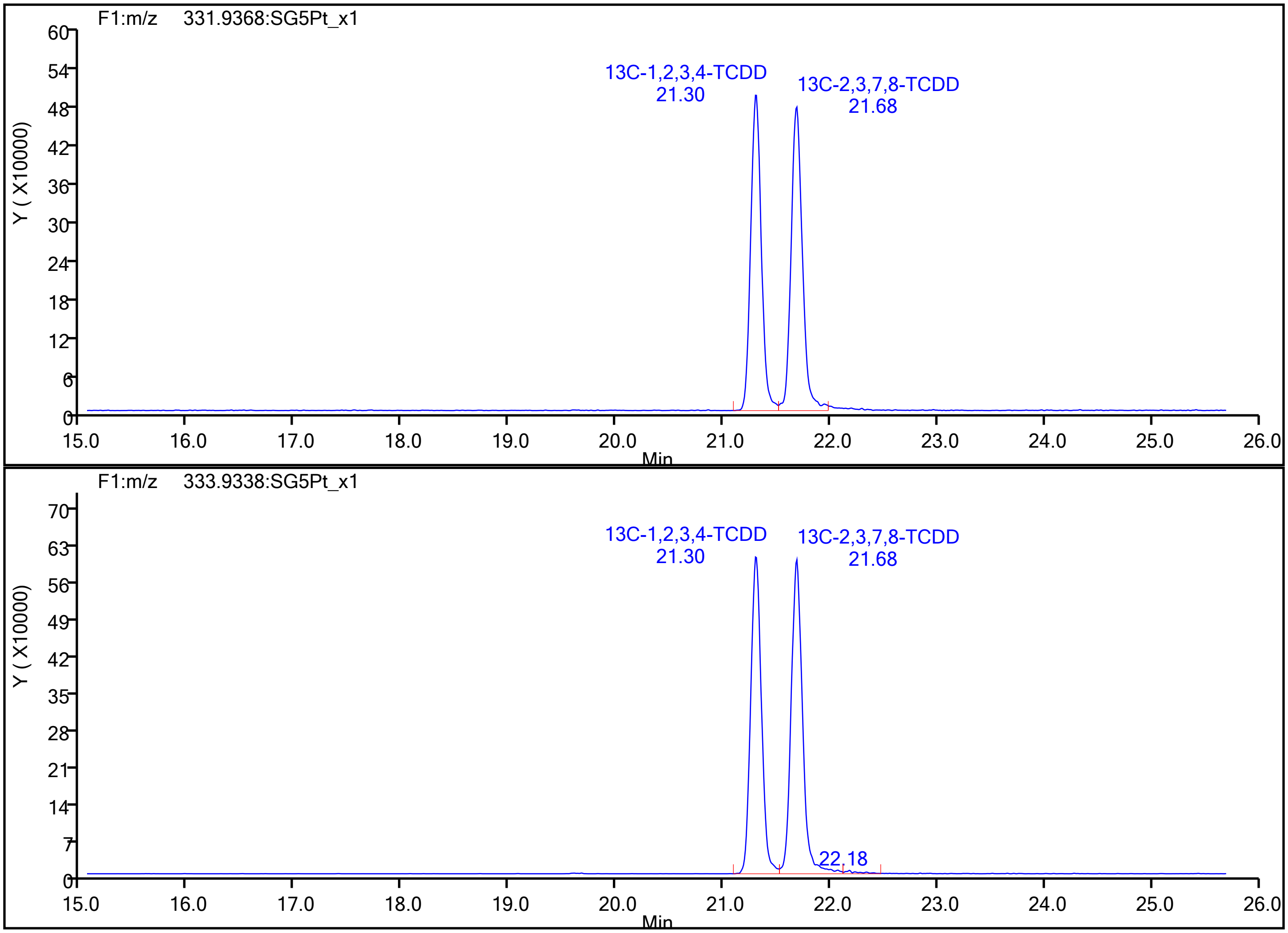

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F1 PeCDFs

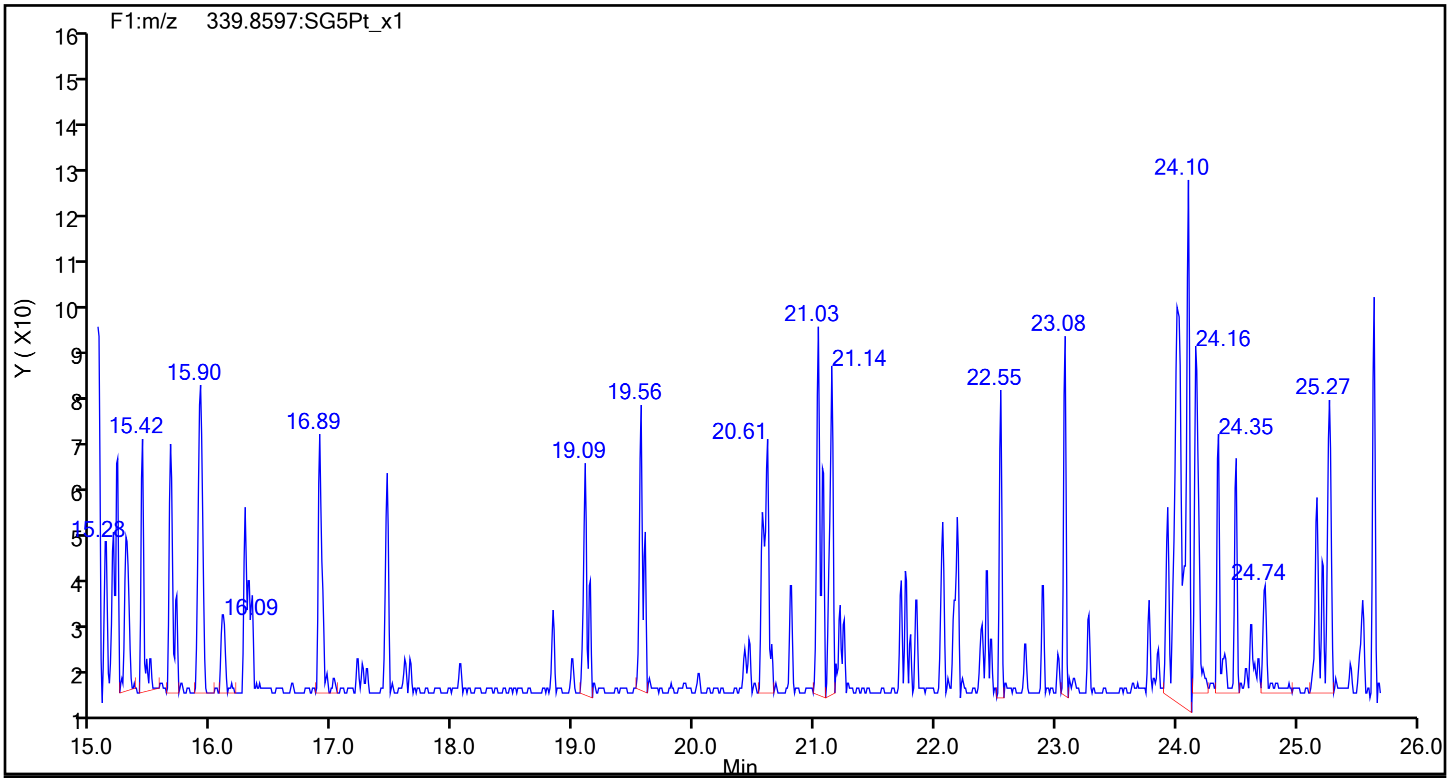

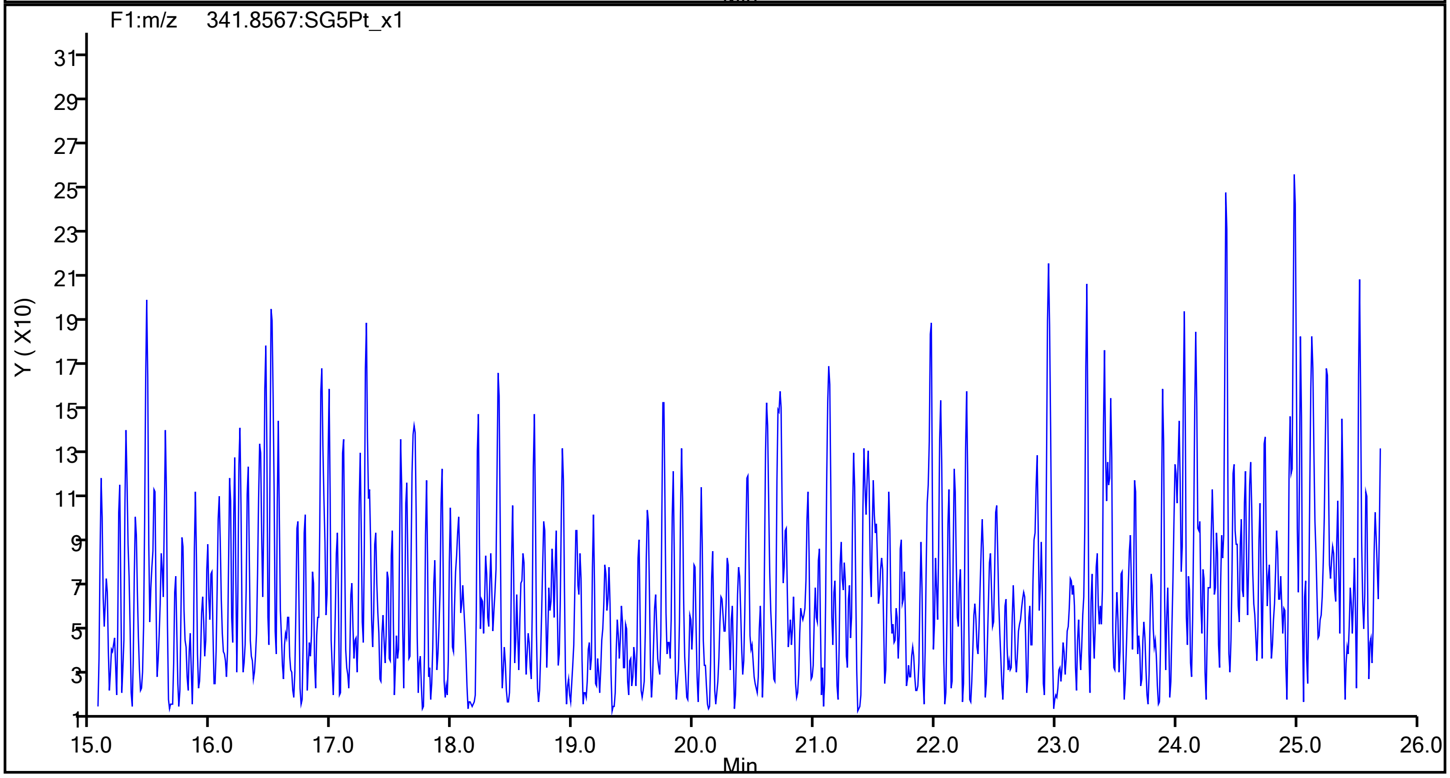

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Eurofins TestAmerica, Sacramento

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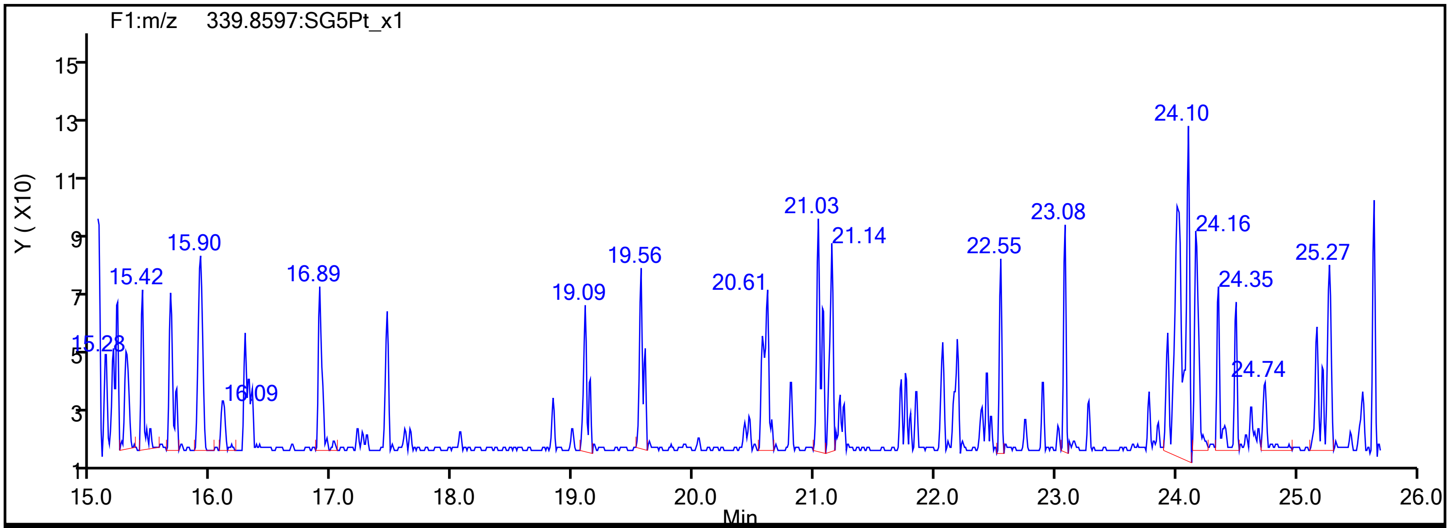

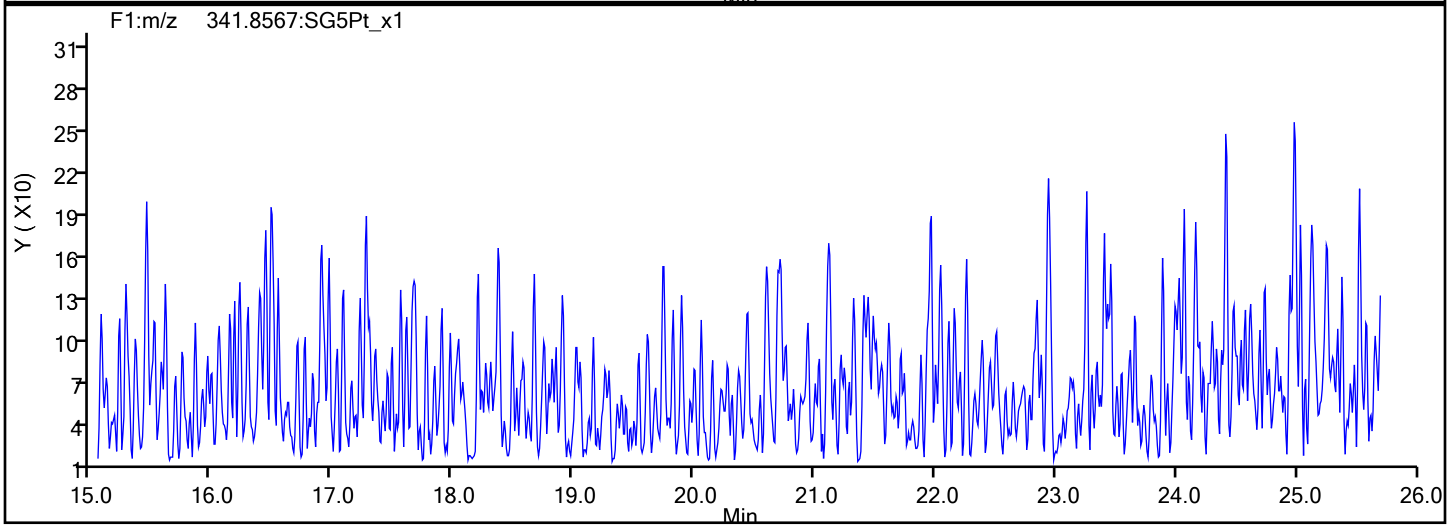

F1 PeCDFs Interference Mass

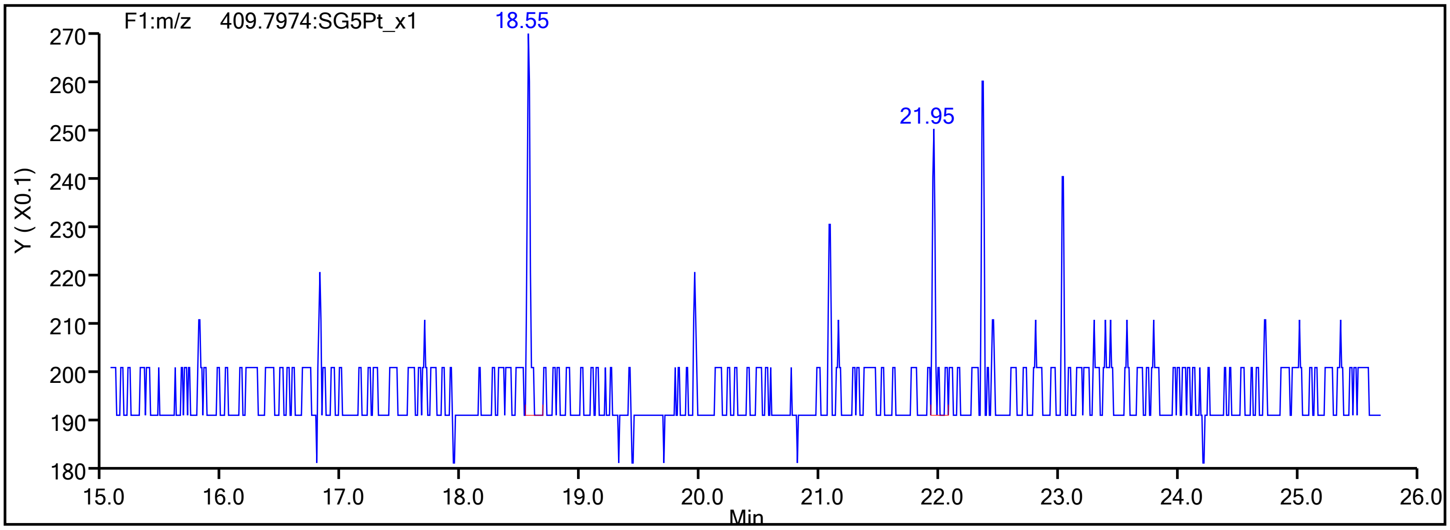

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PeCDF

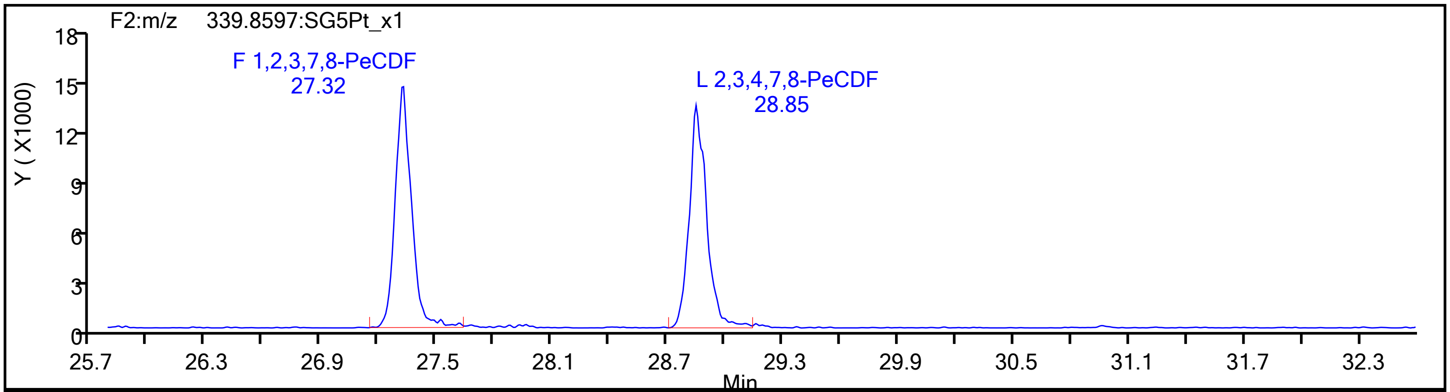

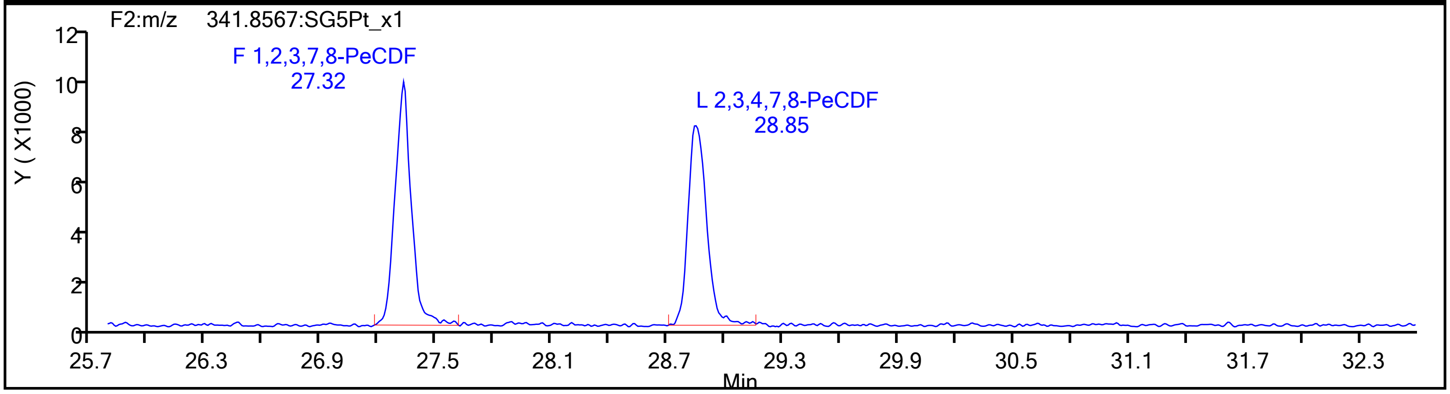

PeCDF Standards

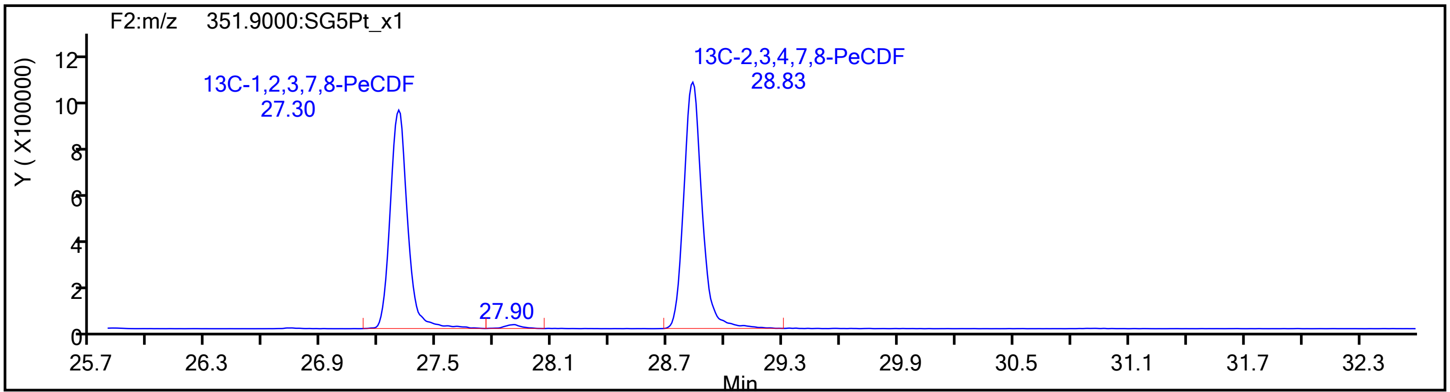

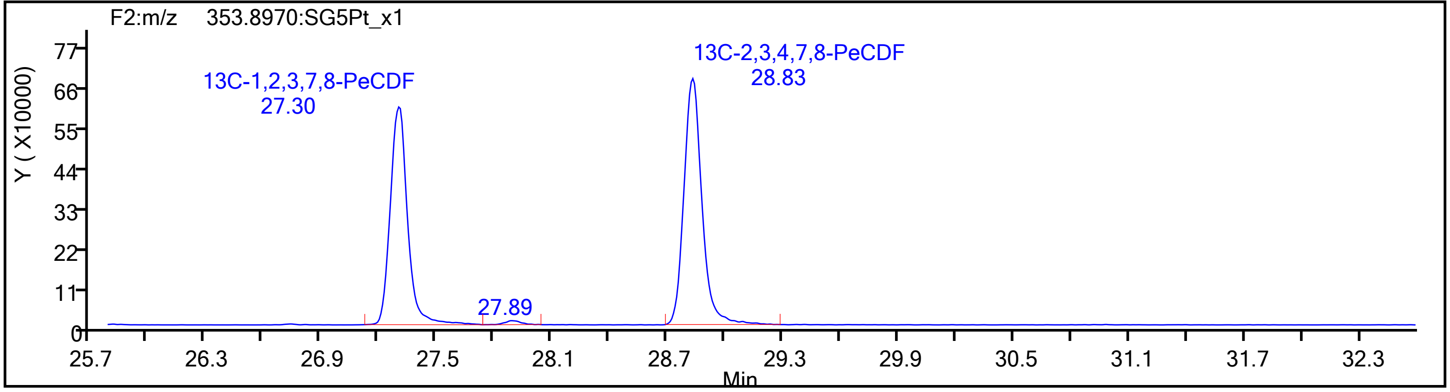

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Eurofins TestAmerica, Sacramento

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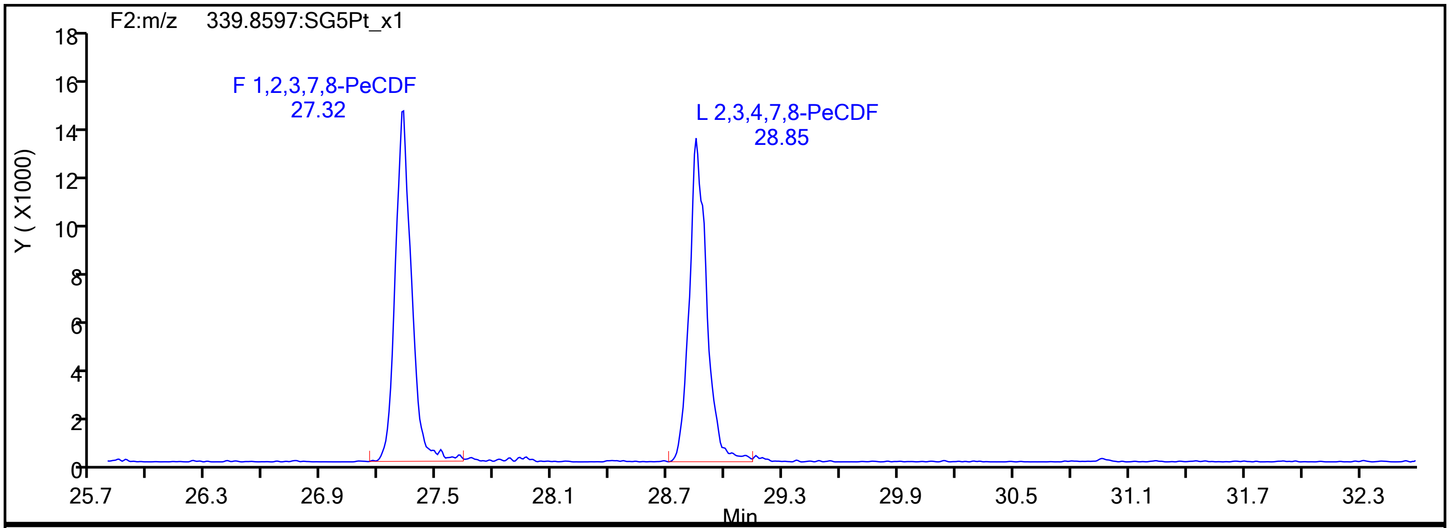

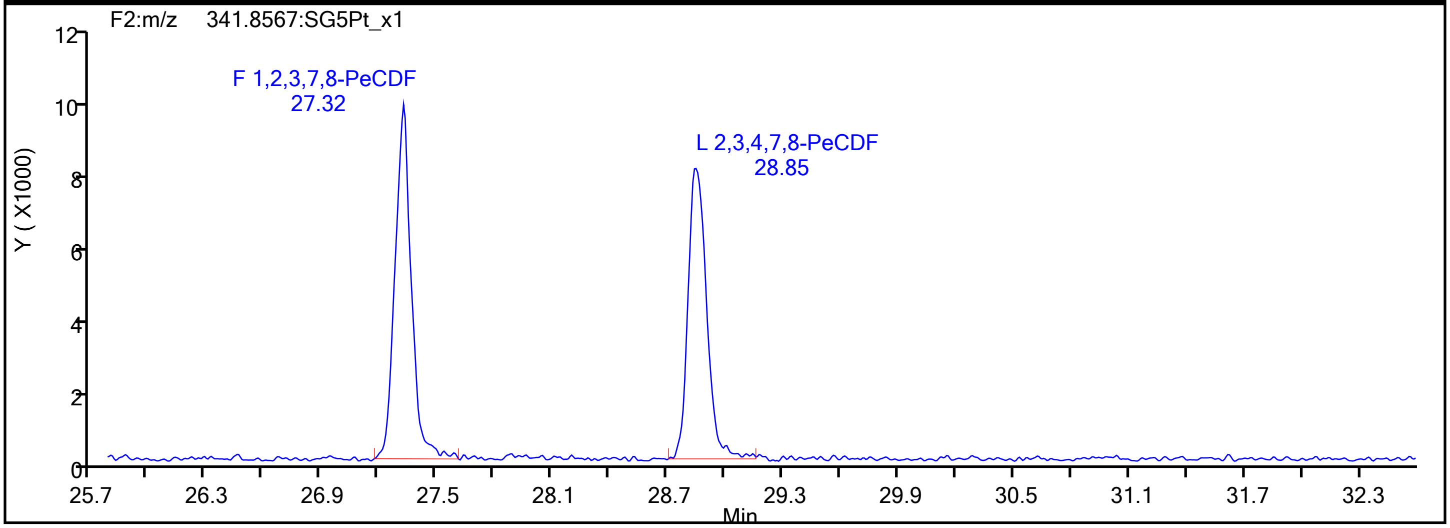

PeCDF Interference Mass

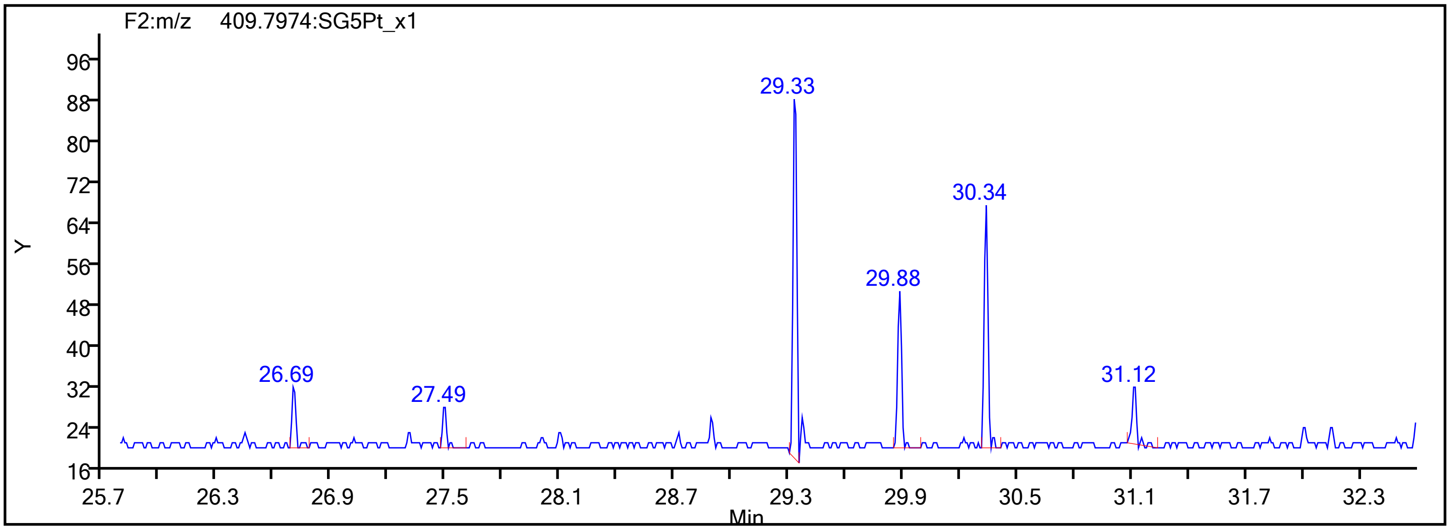

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Eurofins TestAmerica, Sacramento

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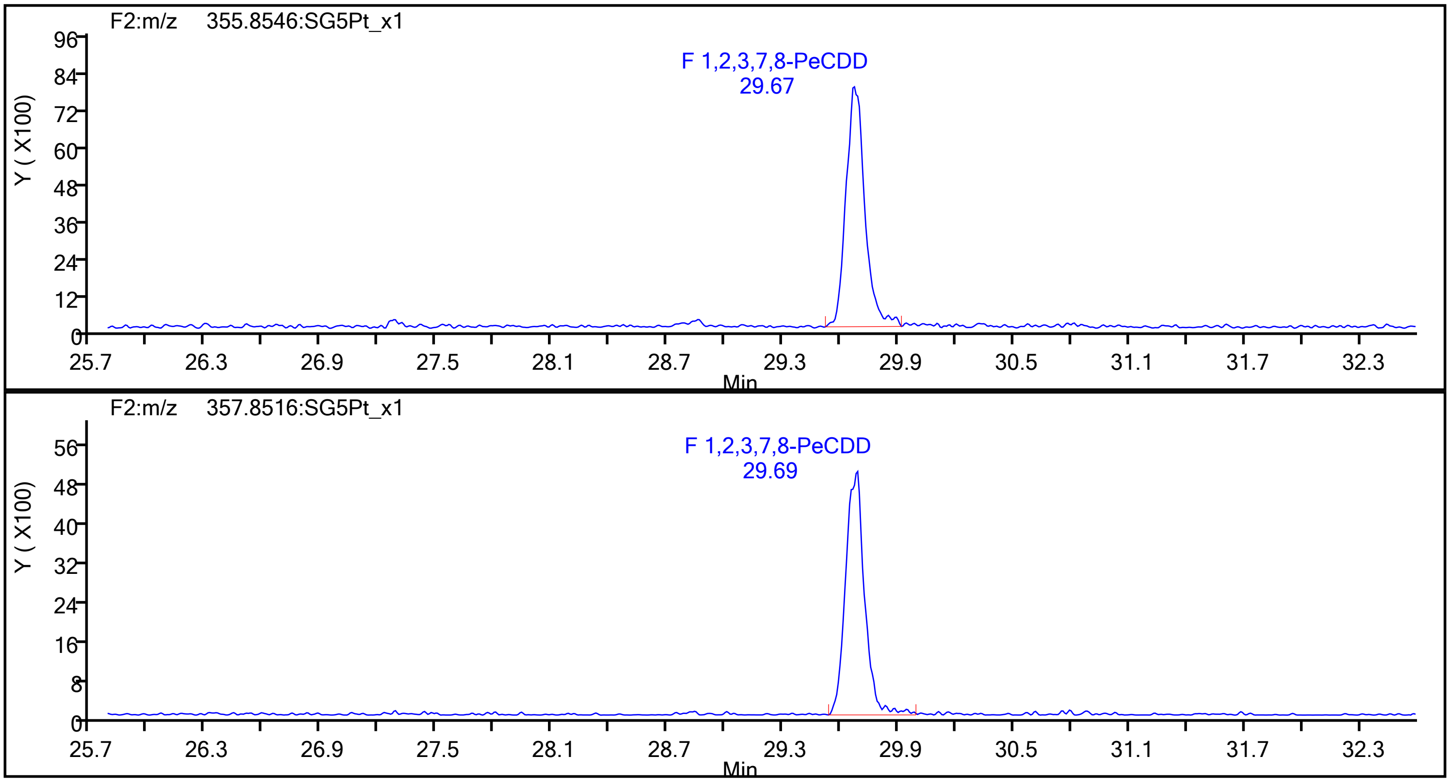

PeCDD Standards

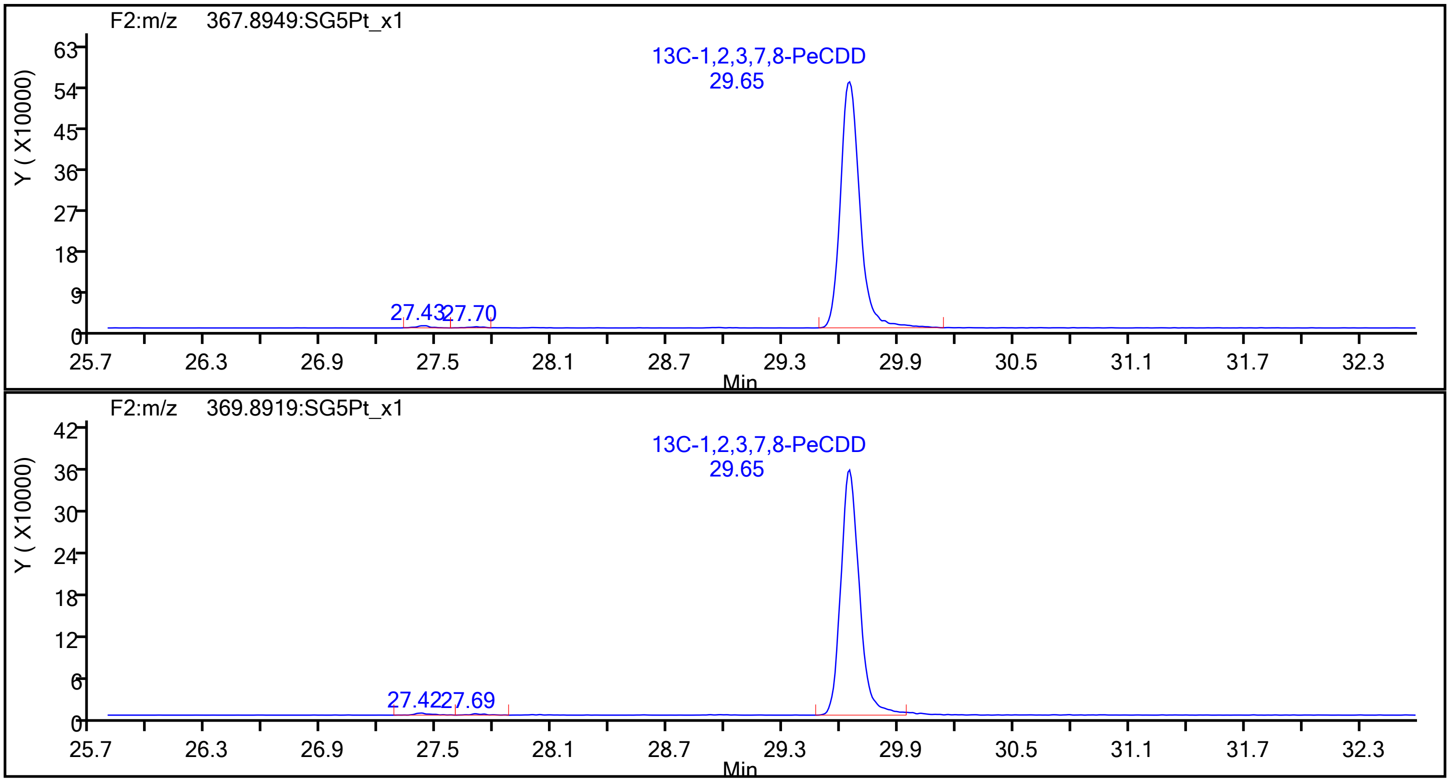

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Eurofins TestAmerica, Sacramento

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HxCDF

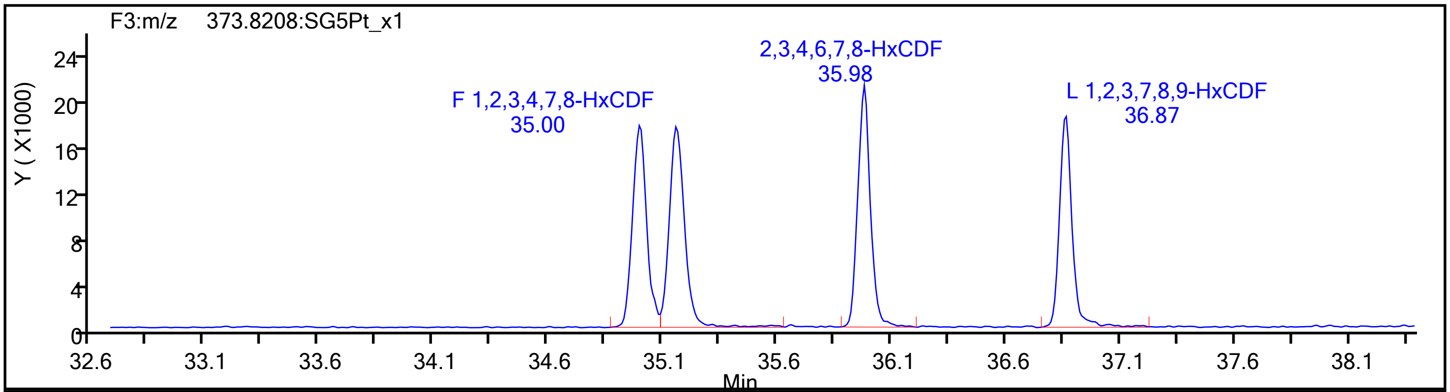

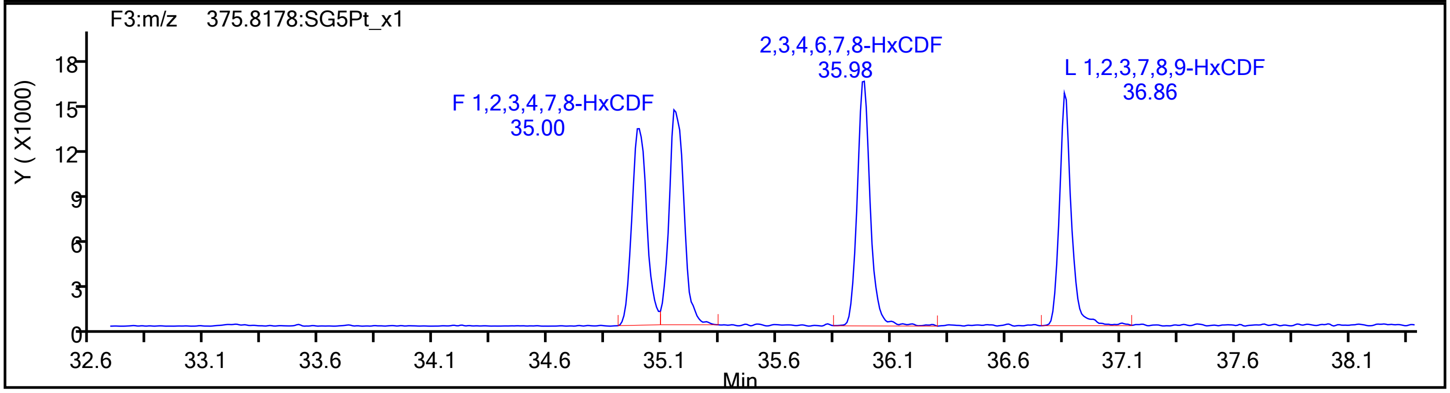

HxCDF Standards

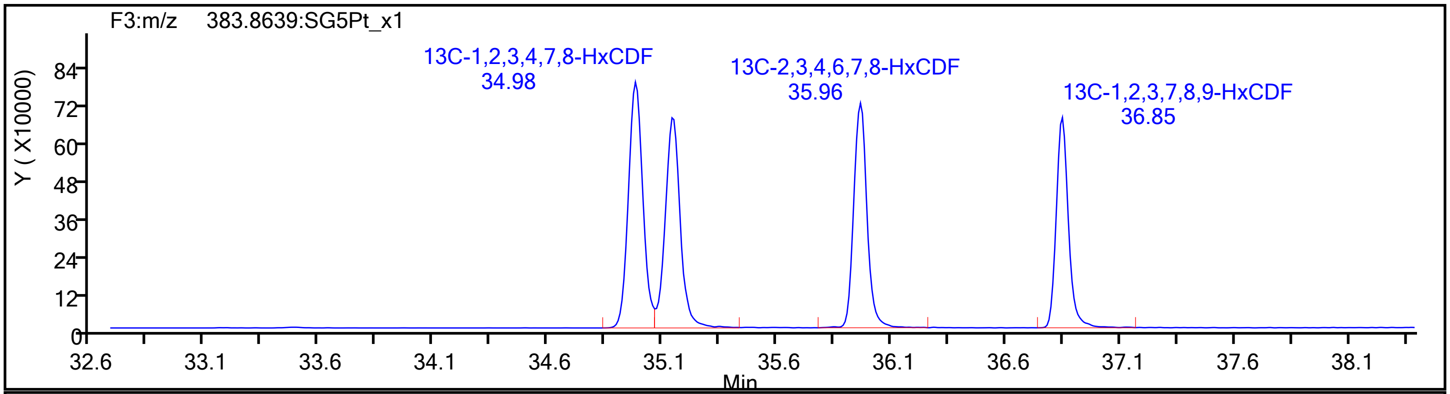

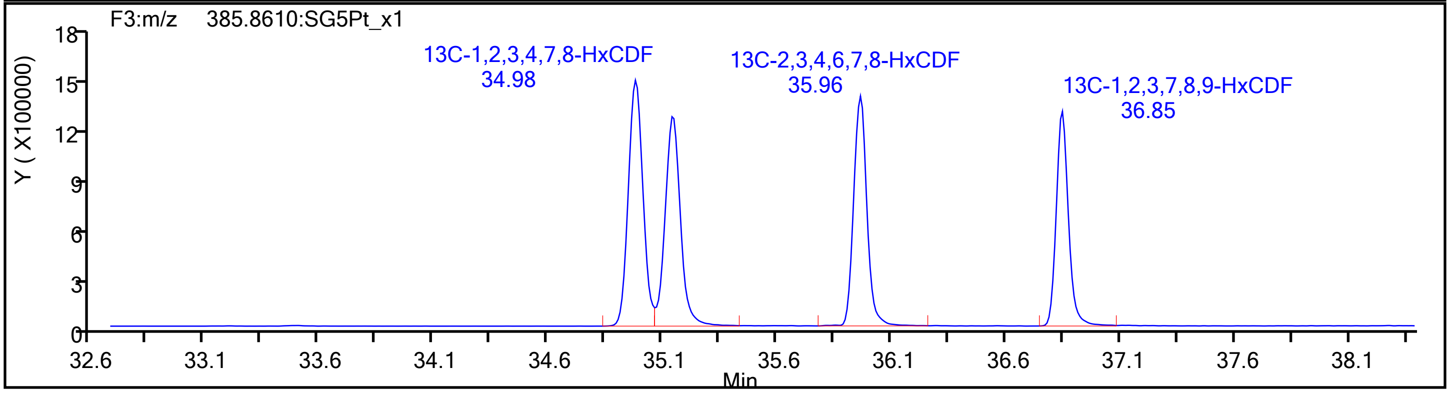

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Eurofins TestAmerica, Sacramento

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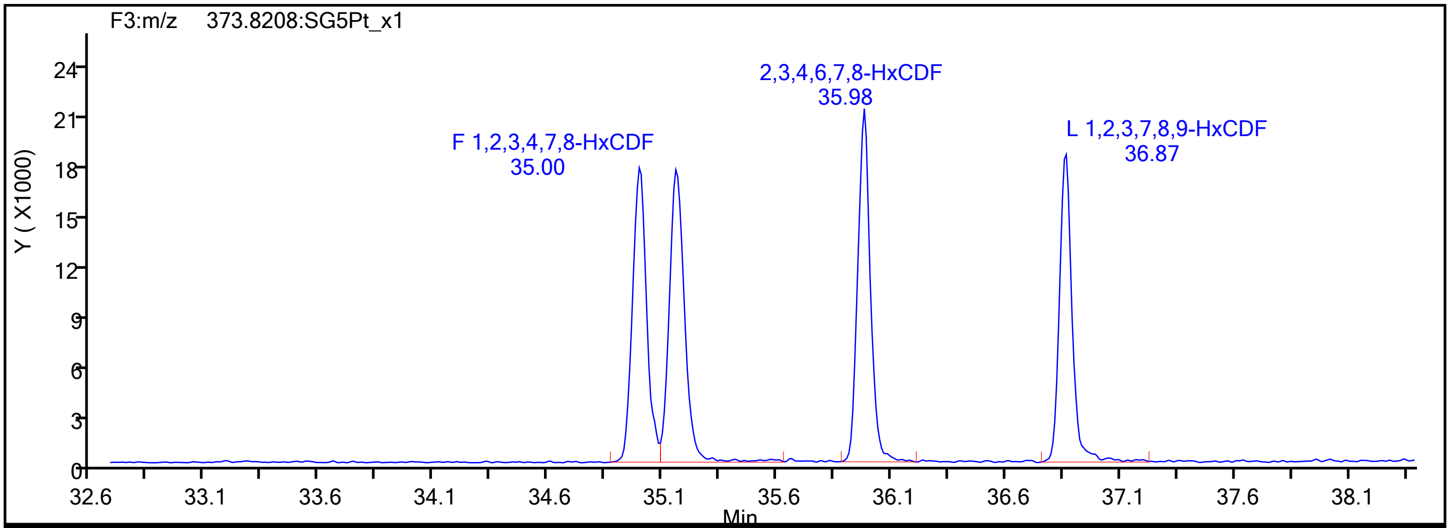

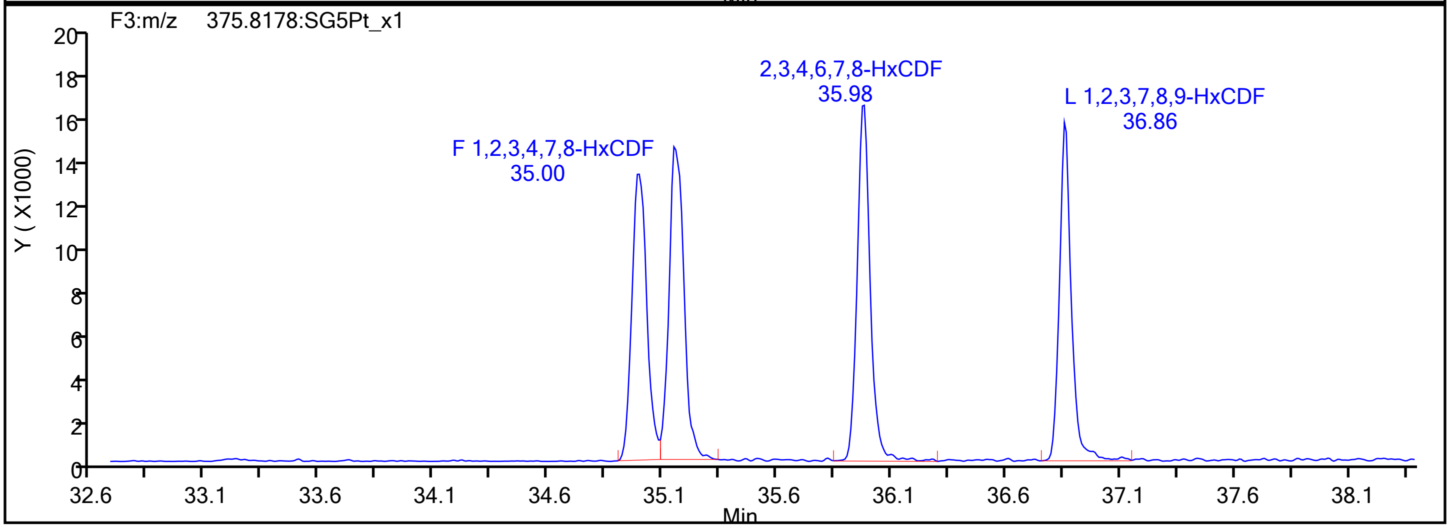

HxCDF Interference Mass

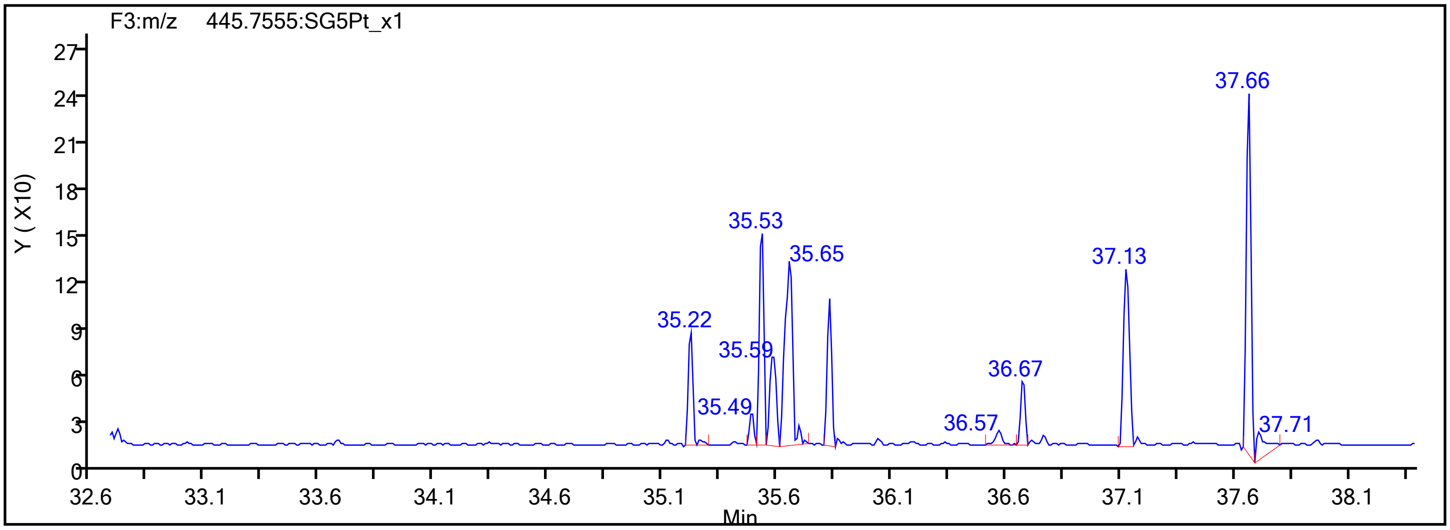

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Injection Vol: 1.0 ul

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Method: Dioxin_DFS1

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Sample Line#: 3

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HxCDD

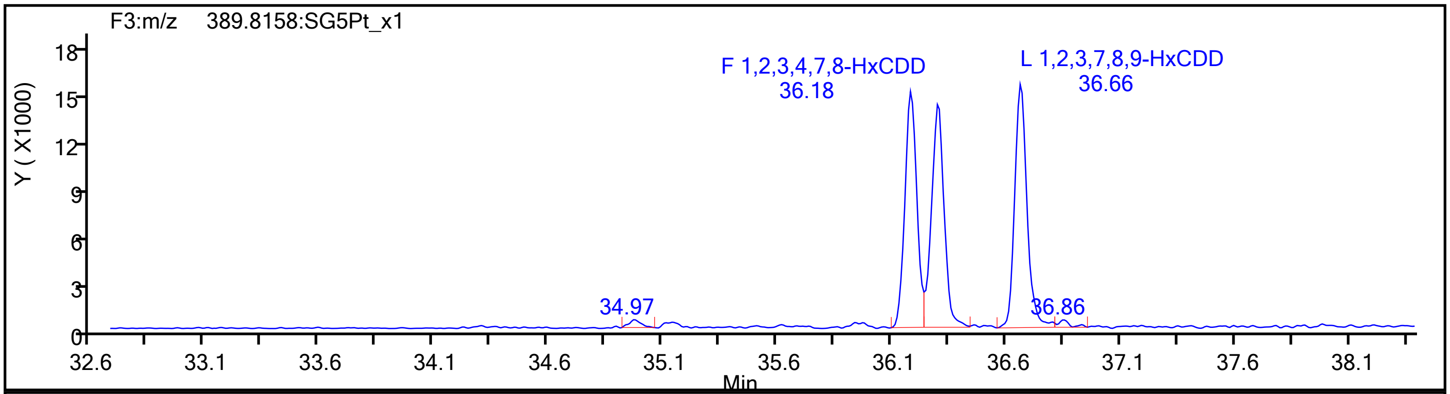

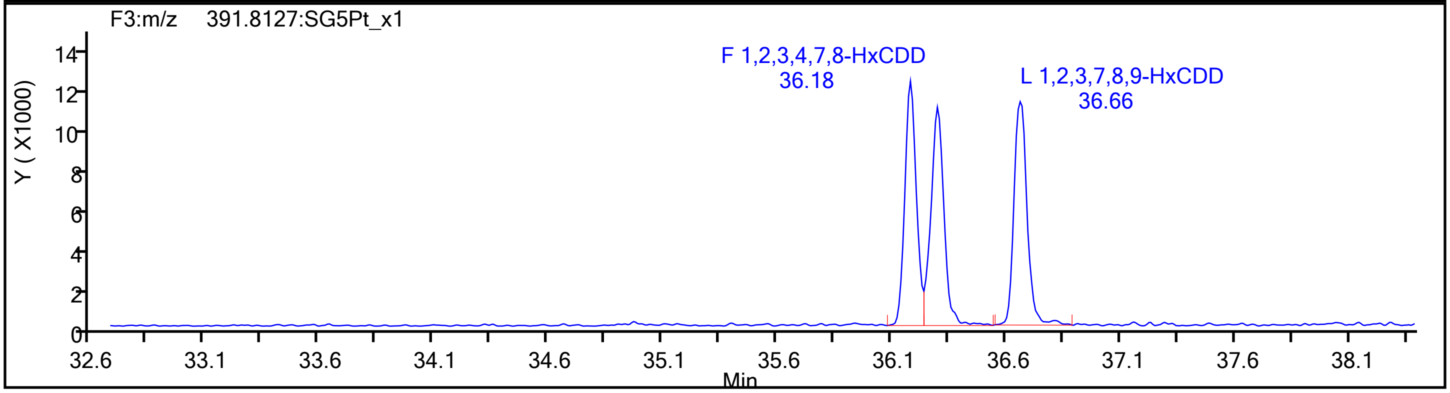

HxCDD Standards

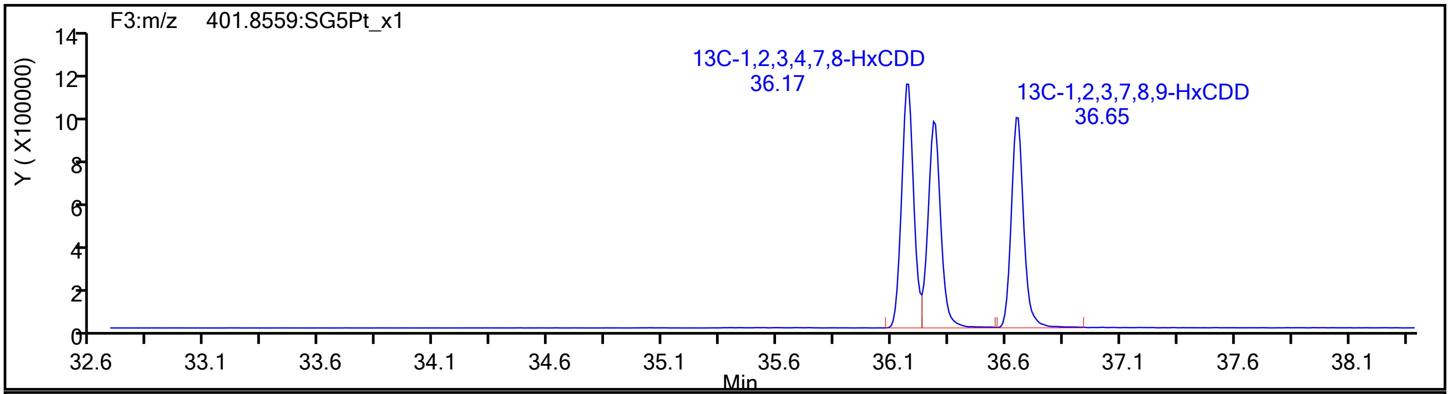

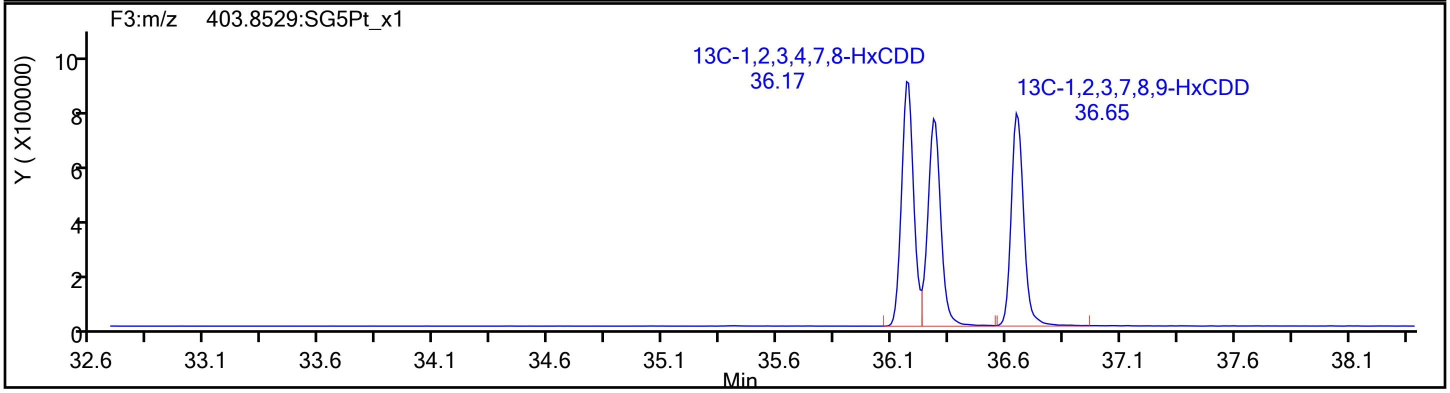

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HpCDF

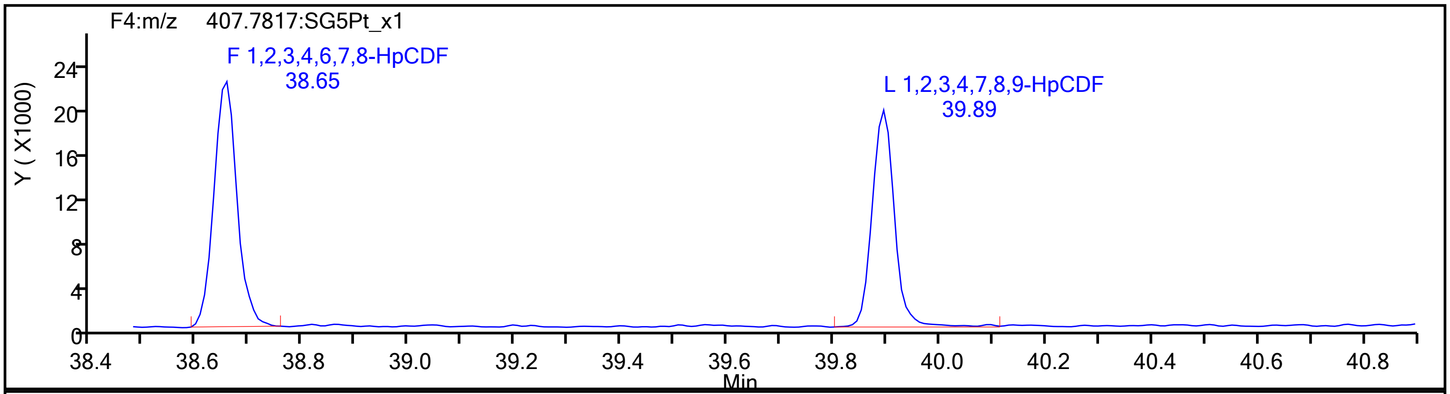

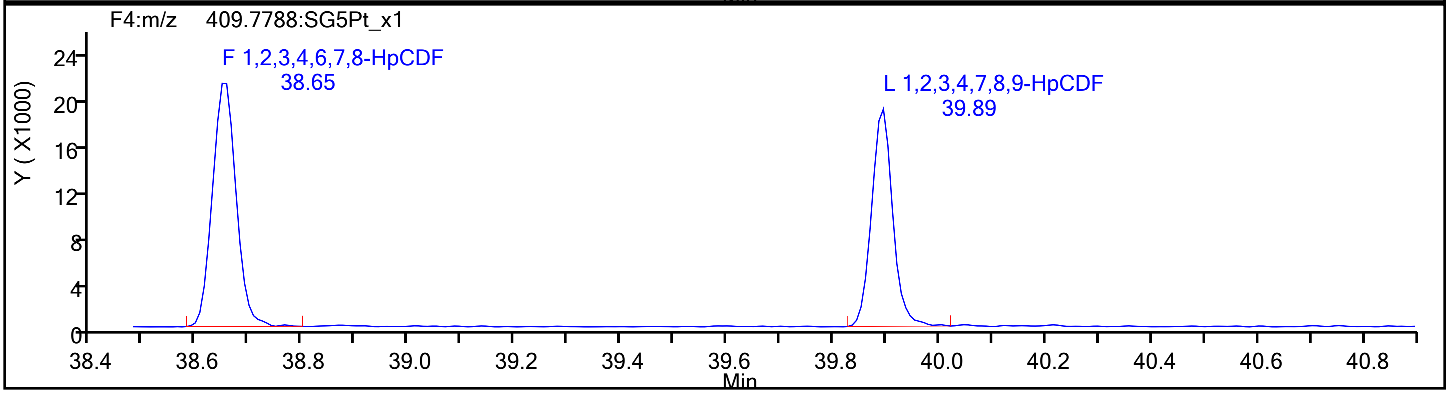

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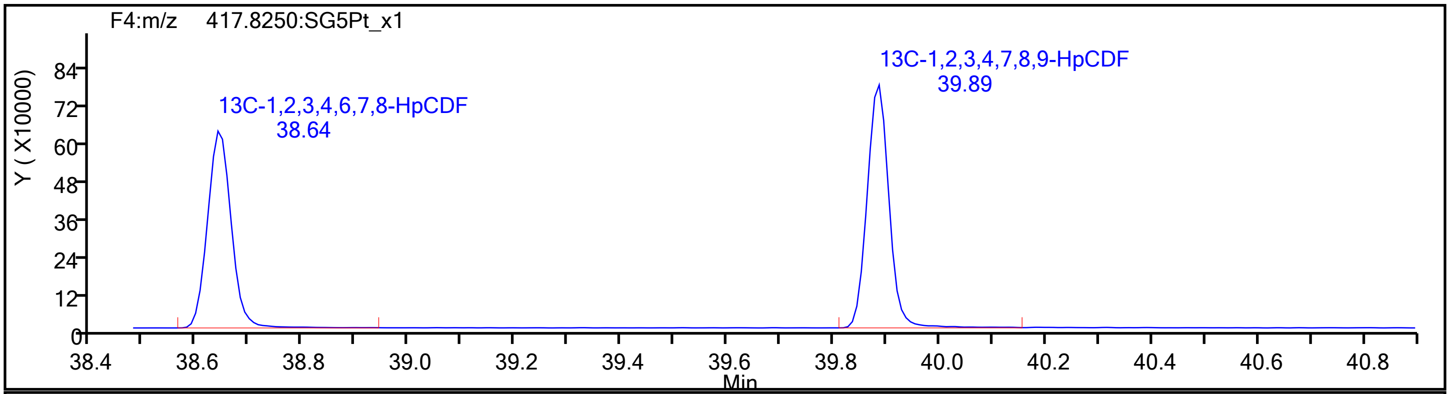

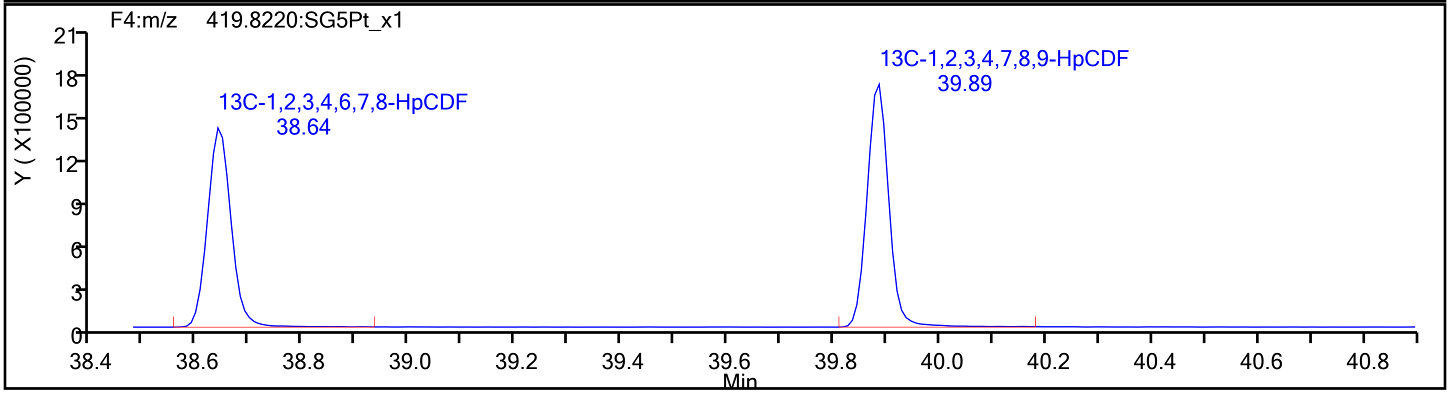

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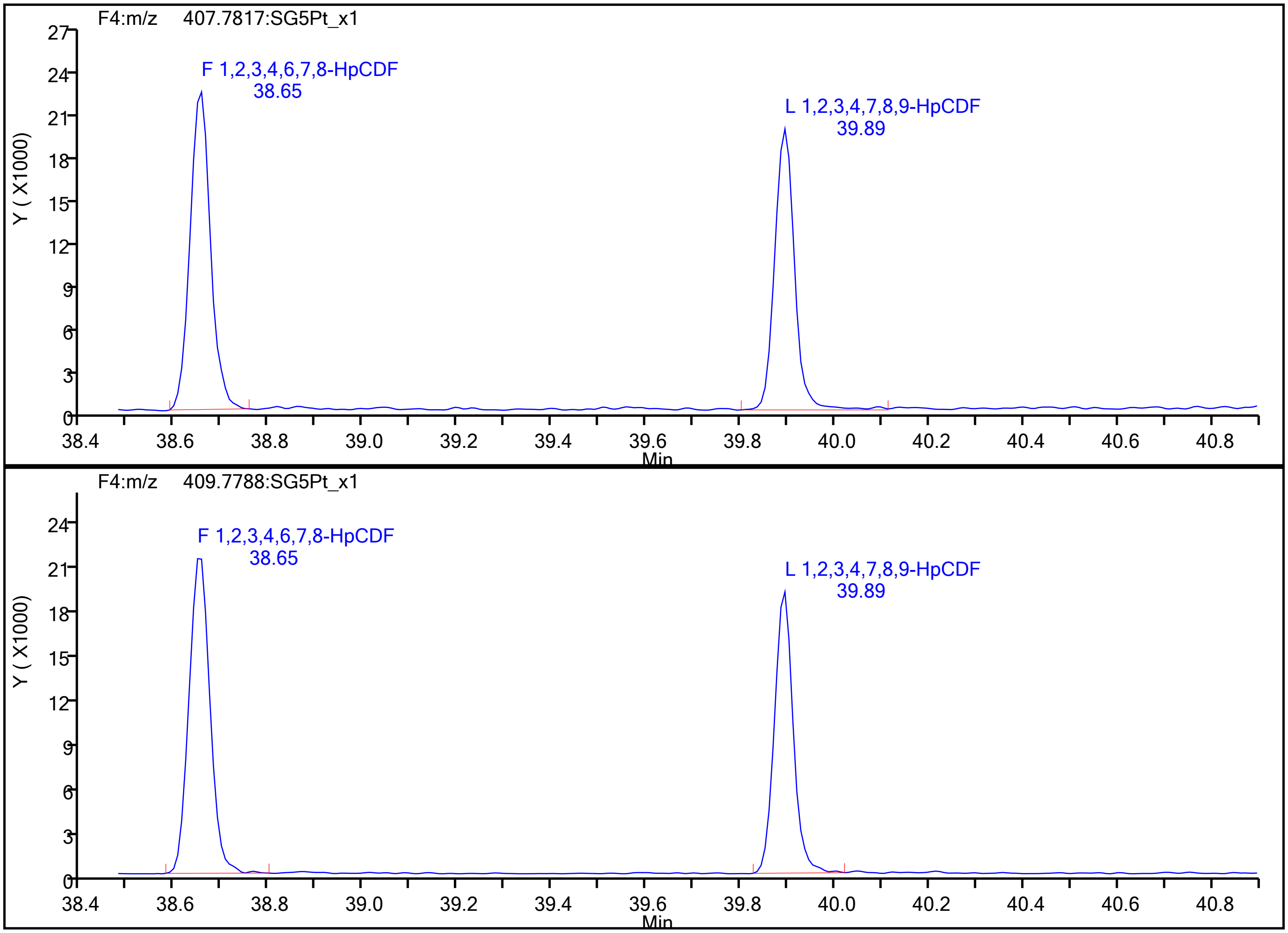

HpCDF Interference Mass

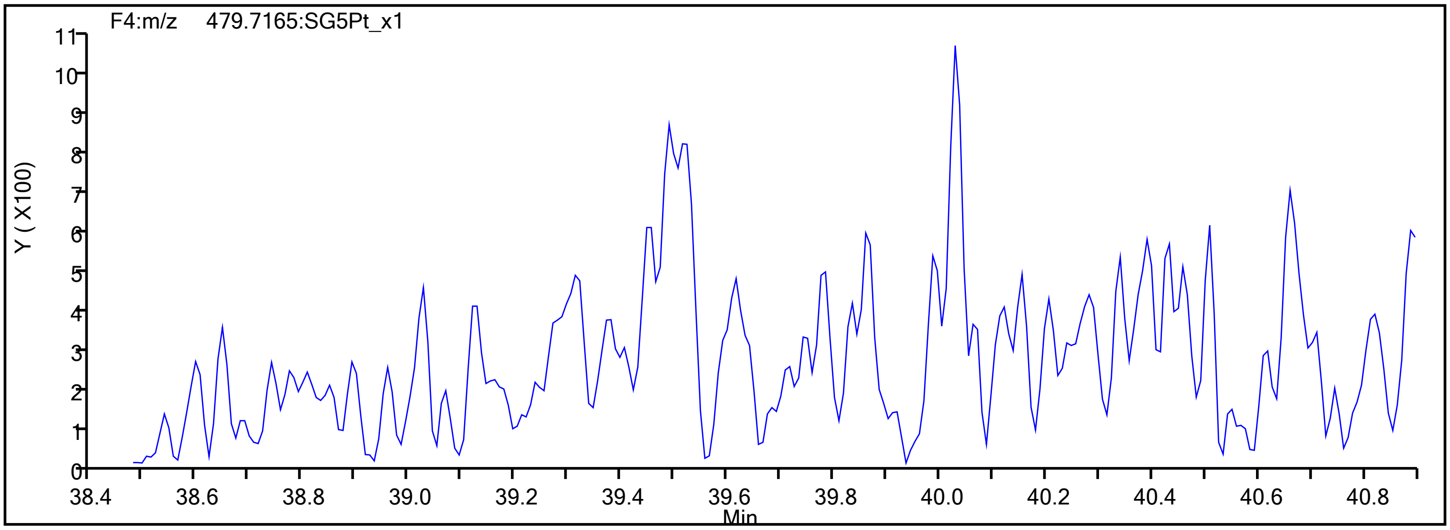

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HpCDD

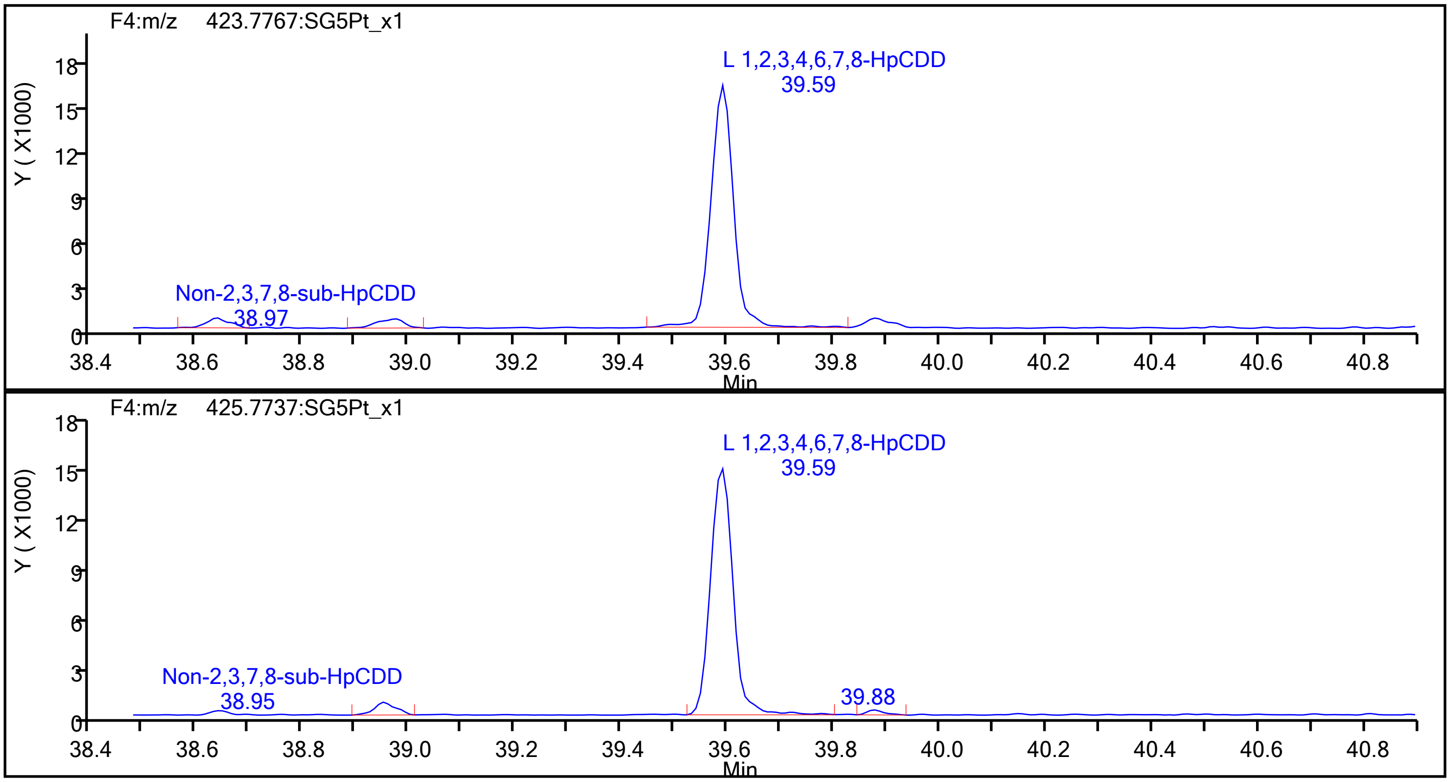

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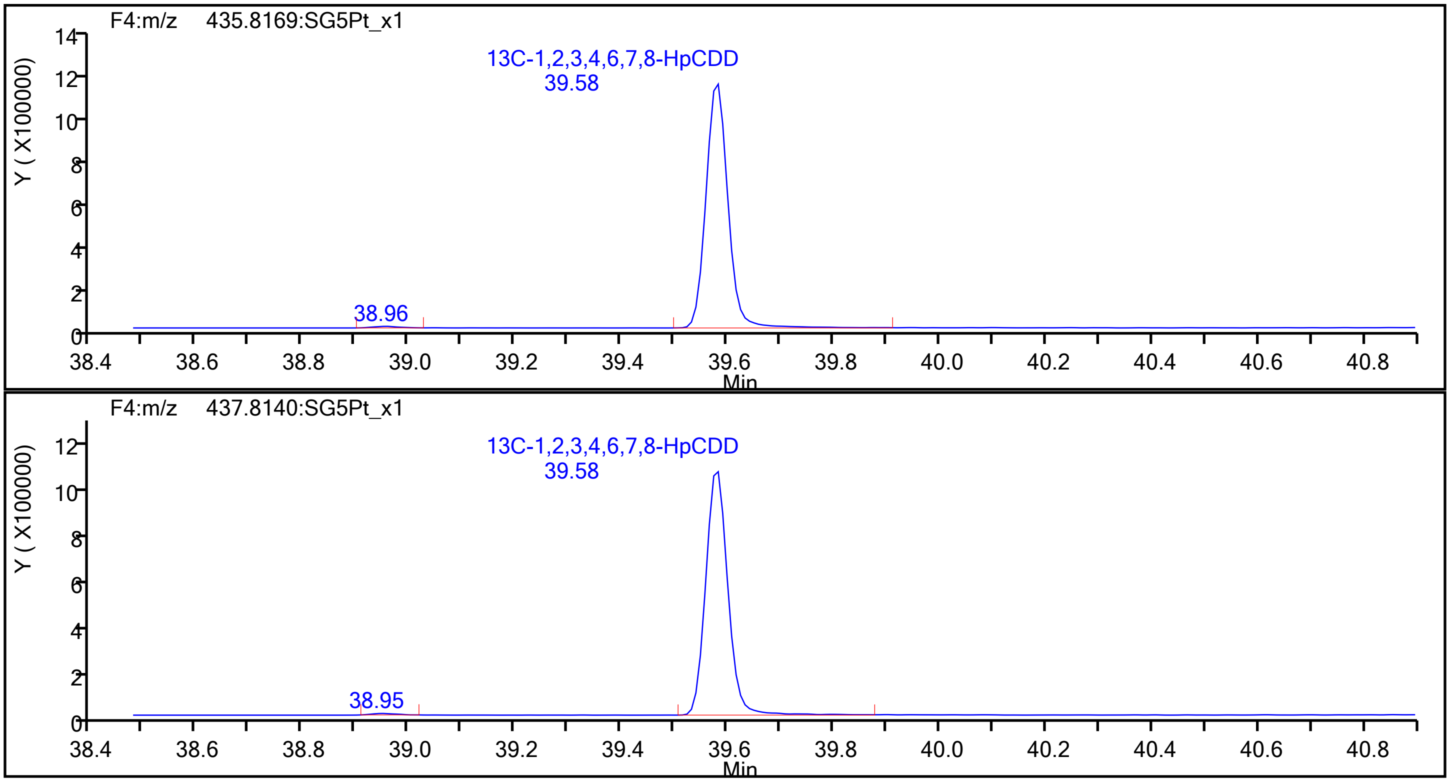

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OCDF

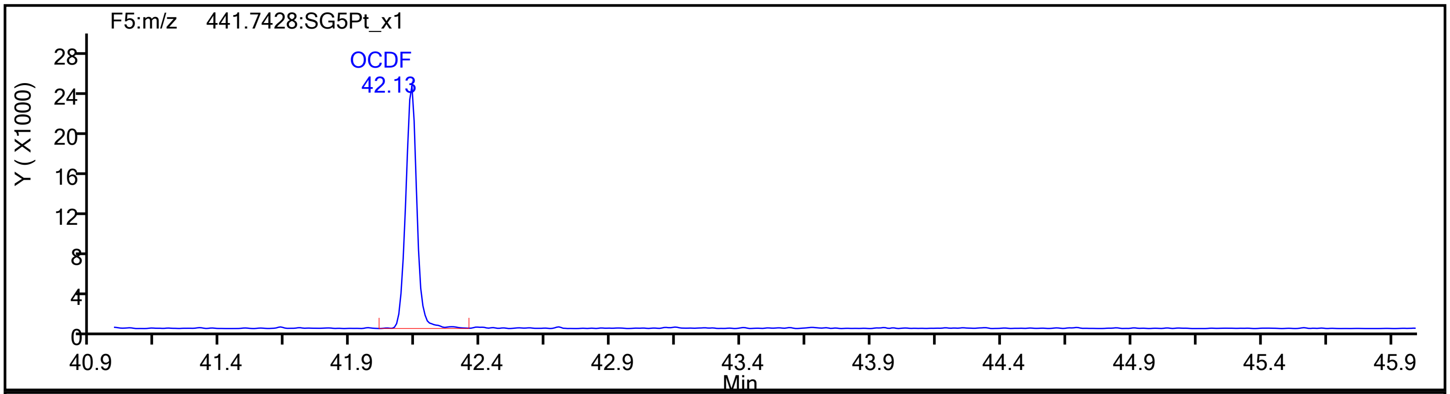

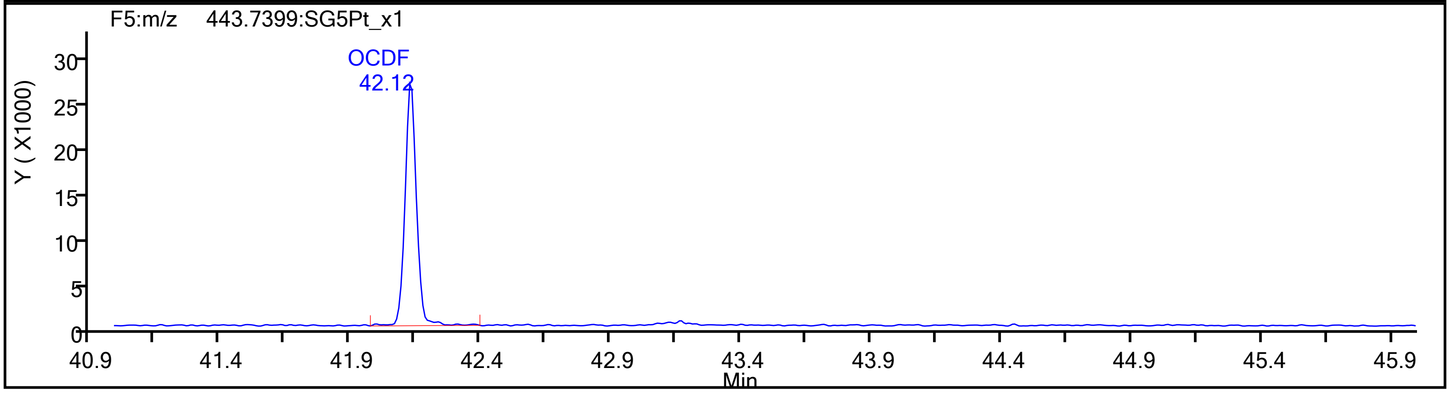

OCDF Standards

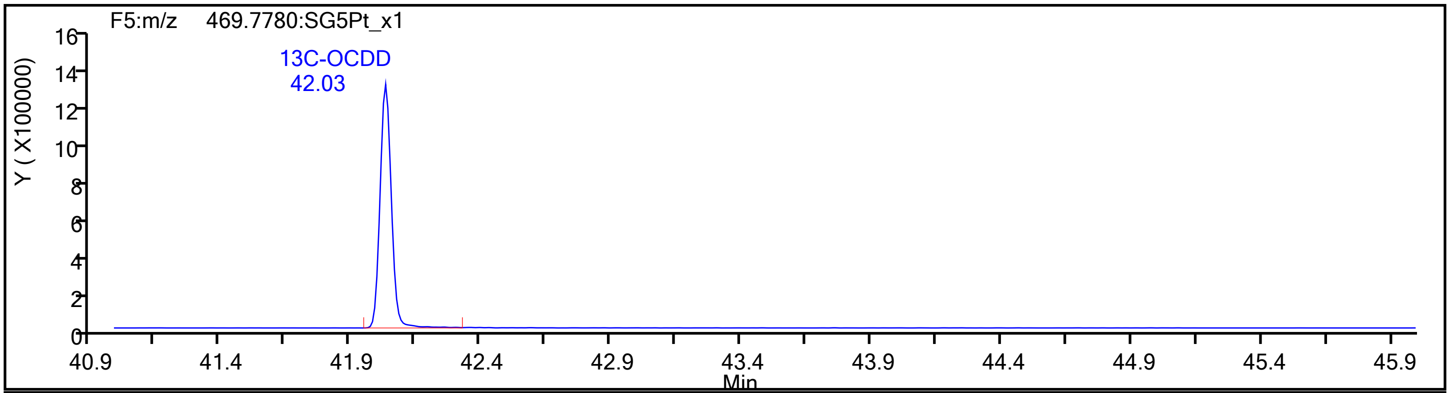

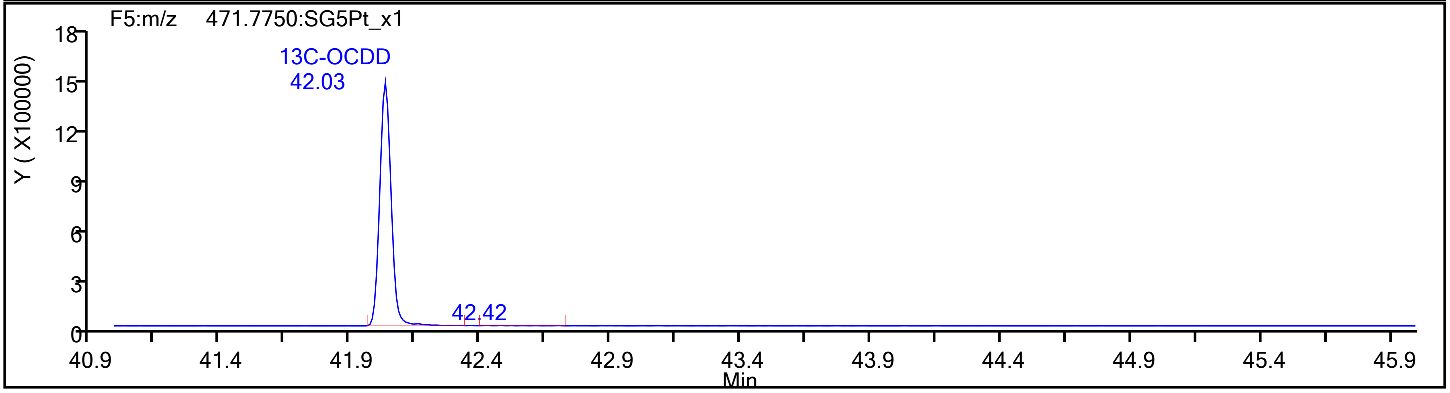

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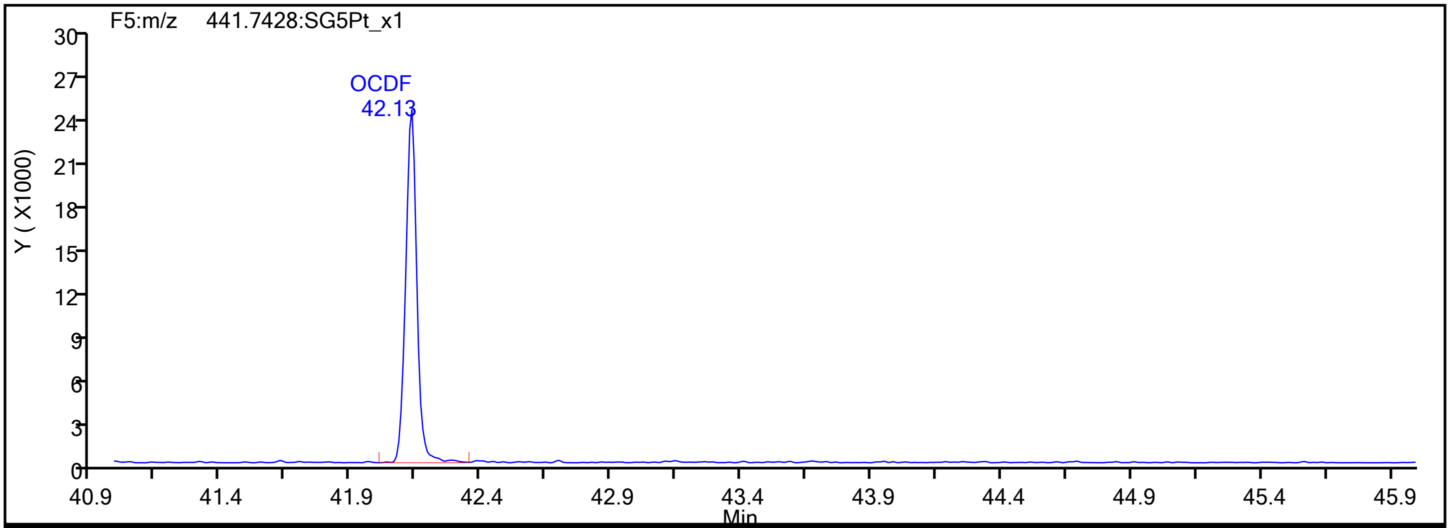

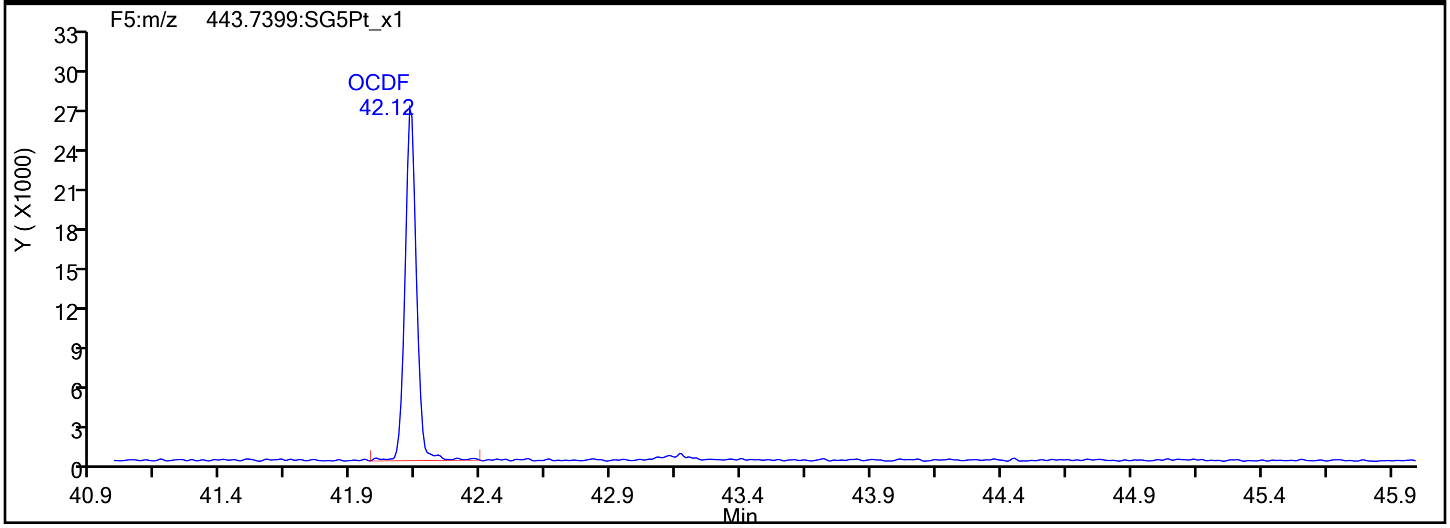

OCDF Interference Mass

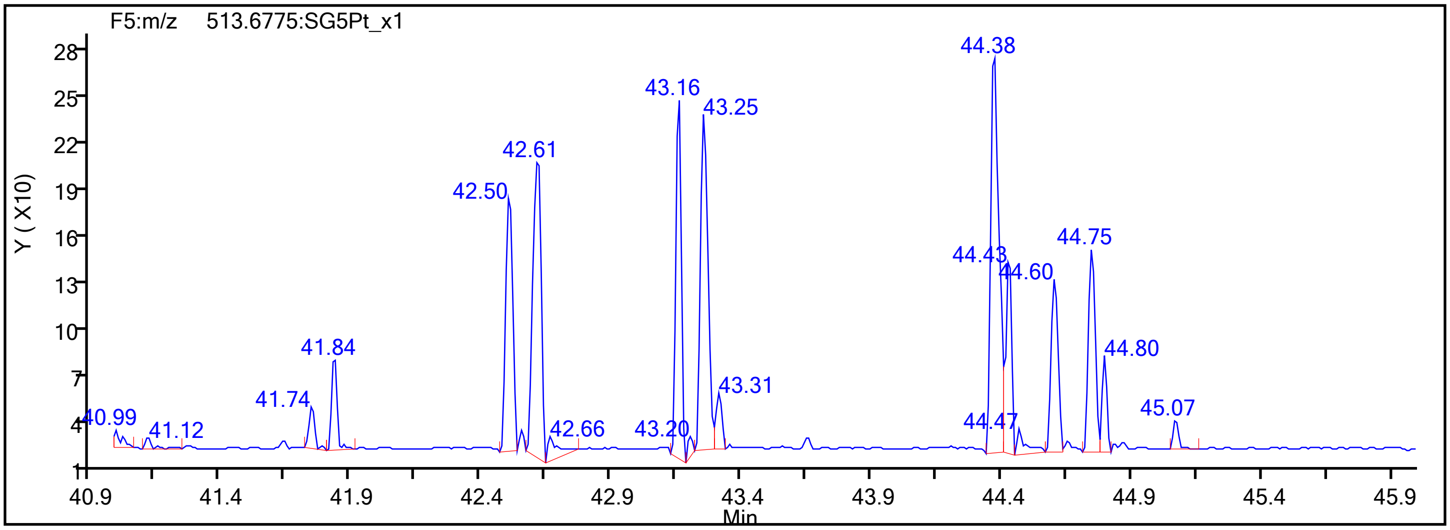

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OCDD

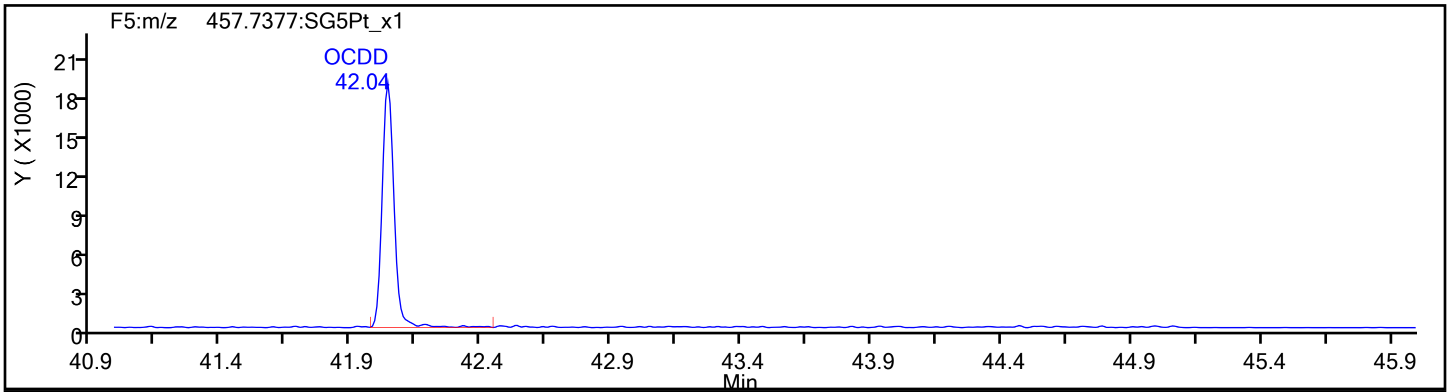

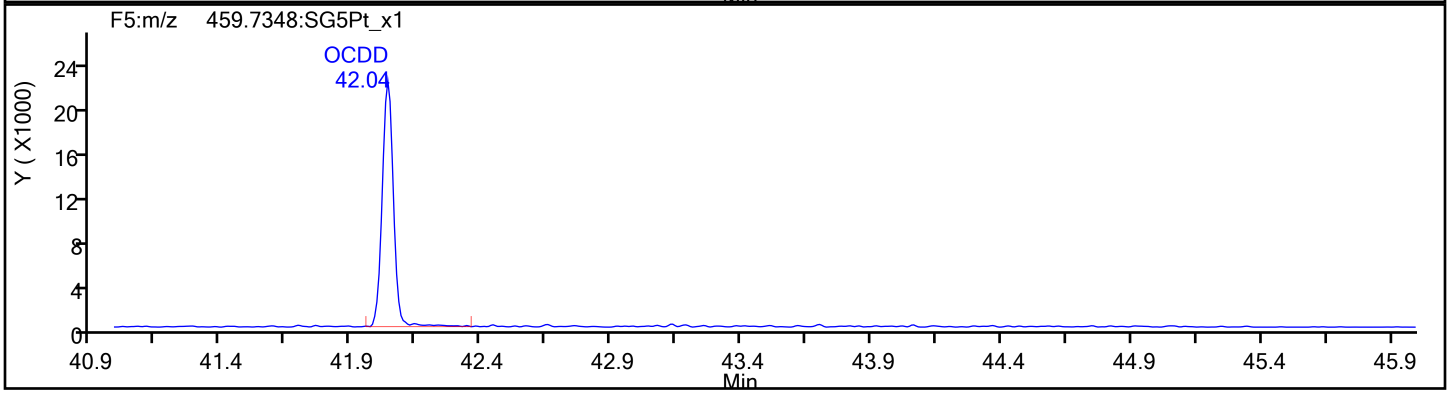

OCDD Standards

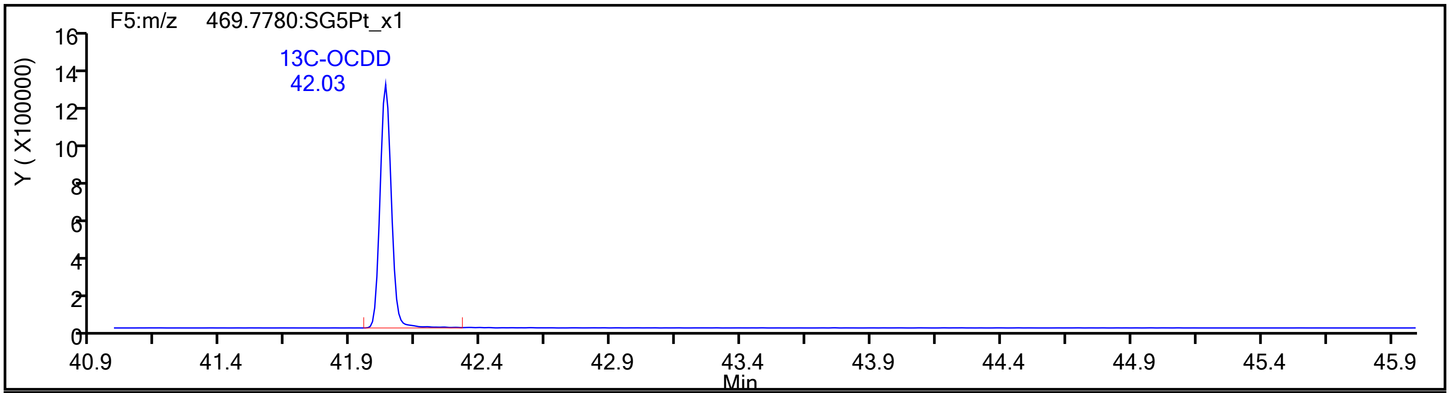

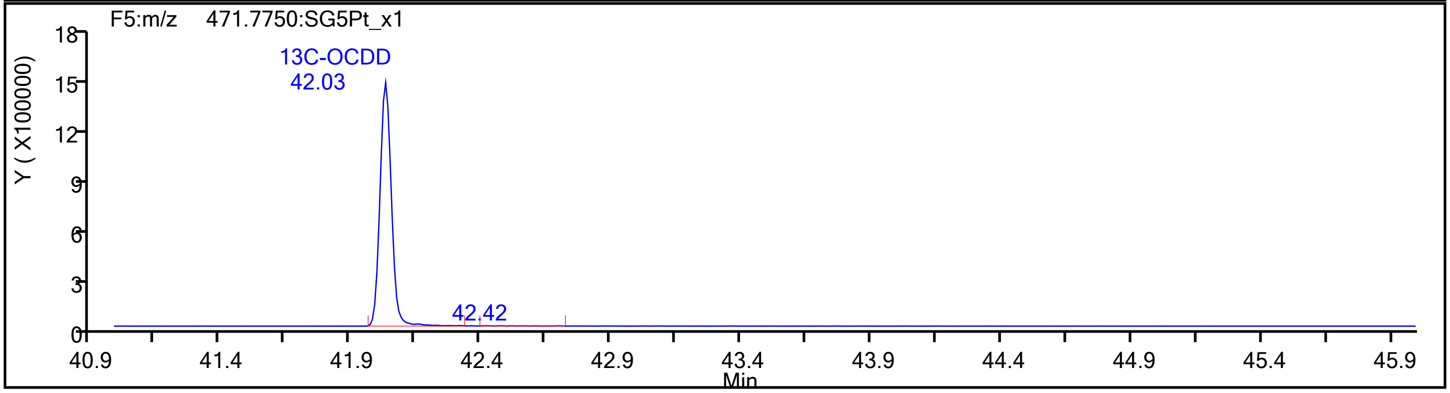

Report Date: 05-Jun-2020 10:10:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d

Injection Date: 03-Jun-2020 14:05:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

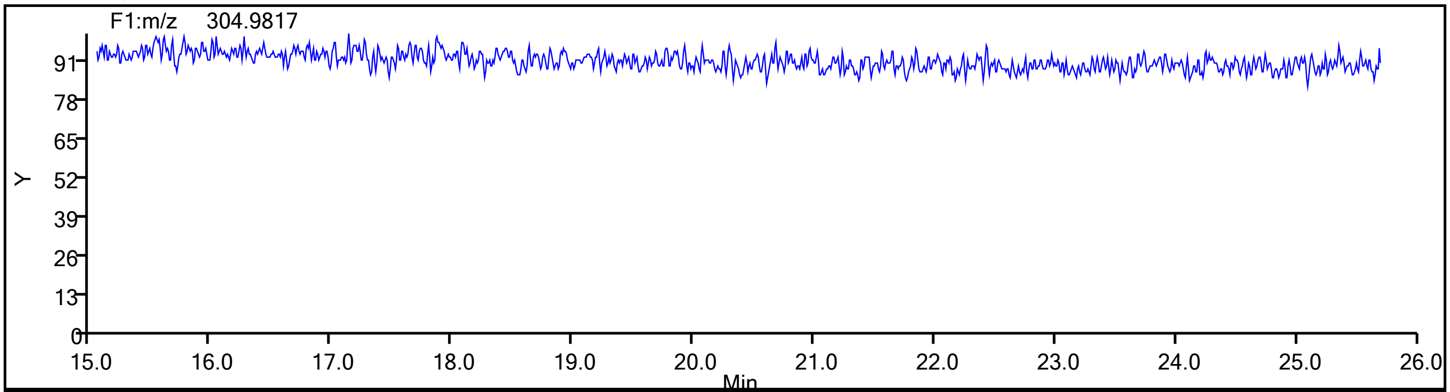

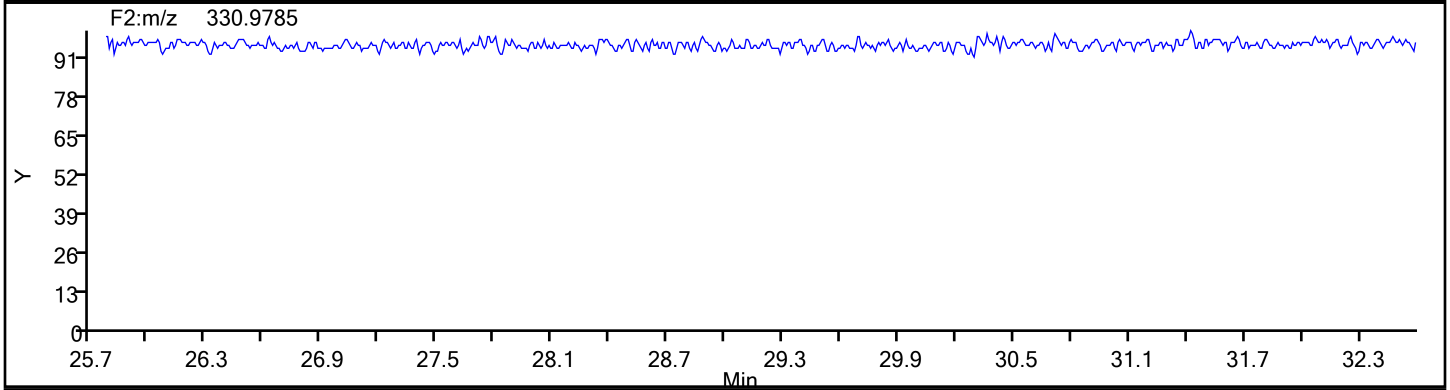

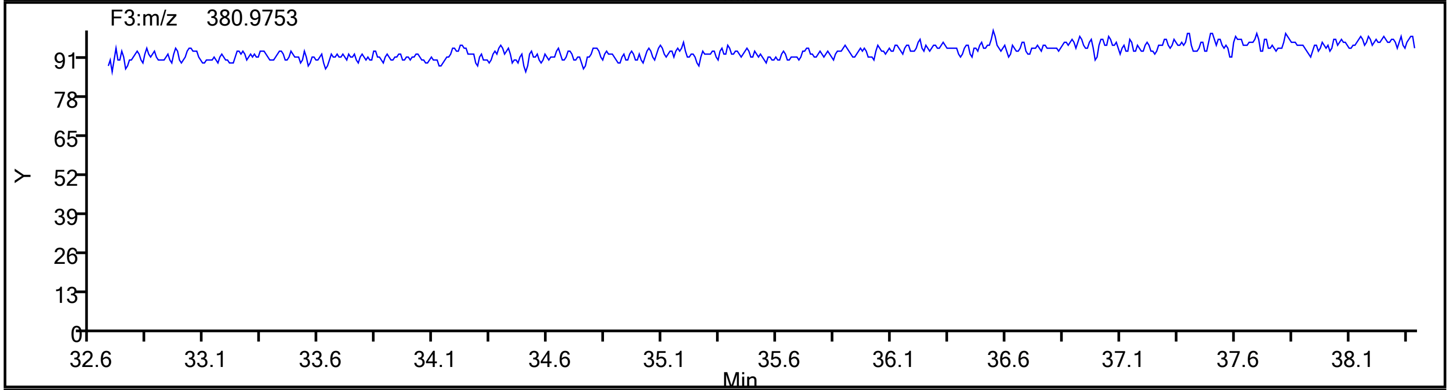

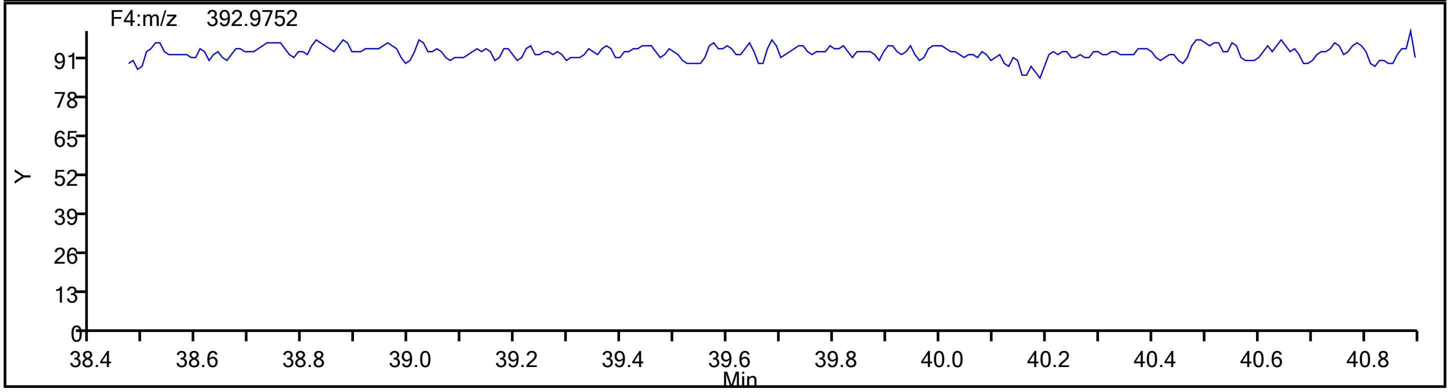

Report Date: 05-Jun-2020 10:10:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d		
Injection Date:	03-Jun-2020 14:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

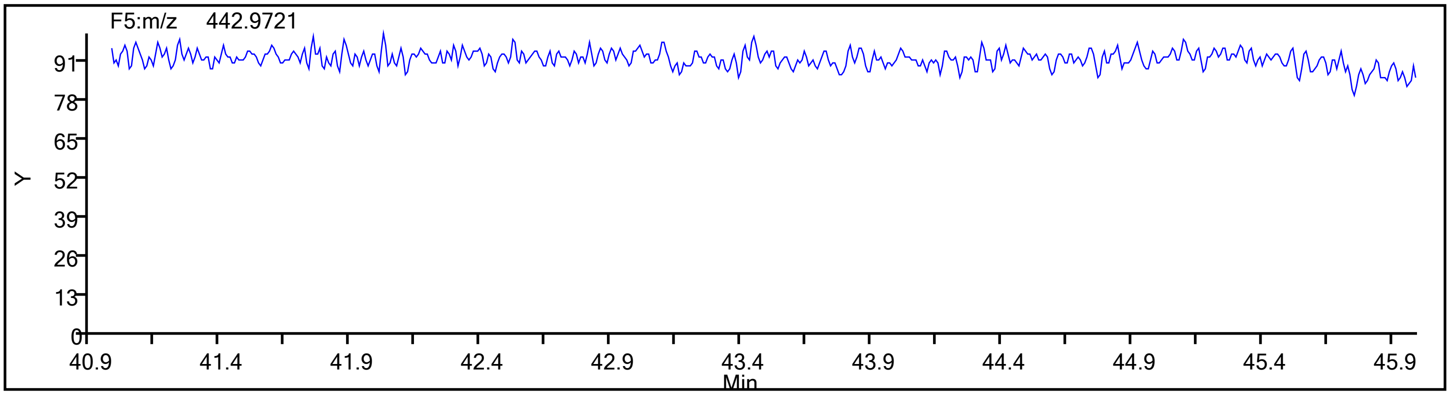

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 03-Jun-2020 14:53:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:53 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 03-Jun-2020 16:30:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.295	3341895	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.306	4898504	0.80	1.4977	97.9	97.9	0.3919	0.3919	97.87	
2,3,7,8-TCDF	20.323	30510	0.80	1.1312	0.5506	0.5506	0.0198	0.0198	110	M
S Total TCDF					0.5506	0.5506	0.0198	0.0198		
D 13C-2,3,7,8-TCDD	21.682	3452470	0.77	1.0367	99.6	99.6	0.3282	0.3282	99.65	
2,3,7,8-TCDD	21.716	22474	0.71	1.1849	0.5494	0.5494	0.0440	0.0440	110	
$ 37Cl4-2,3,7,8-TCDD	21.708	19124		1.1208	0.5106	0.5106	0.0251	0.0251	102	
S Total TCDD					0.5494	0.5494	0.0440	0.0440		
D 13C-1,2,3,7,8-PeCDF	27.286	4247335	1.59	1.3057	97.3	97.3	0.4035	0.4035	97.33	
1,2,3,7,8-PeCDF	27.311	127552	1.55	1.1060	2.715	2.715	0.0336	0.0336	109	
D 13C-2,3,4,7,8-PeCDF	28.818	4902358	1.58	1.5420	95.1	95.1	0.3416	0.3416	95.13	
2,3,4,7,8-PeCDF	28.852	121673	1.42	0.9067	2.737	2.737	0.0386	0.0386	109	
S Total PeCDF					5.453	5.453	0.0361	0.0361		
D 13C-1,2,3,7,8-PeCDD	29.635	2671208	1.55	0.8294	96.4	96.4	0.1521	0.1521	96.37	
1,2,3,7,8-PeCDD	29.677	81080	1.55	1.1062	2.744	2.744	0.0528	0.0528	110	
S Total PeCDD					2.744	2.744	0.0528	0.0528		
D 13C-1,2,3,4,7,8-HxCDF	34.968	4266858	0.52	1.4619	98.9	98.9	0.2969	0.2969	98.92	
1,2,3,4,7,8-HxCDF	34.985	116239	1.22	1.0087	2.701	2.701	0.0313	0.0313	108	
D 13C-1,2,3,6,7,8-HxCDF	35.137	3757506	0.54	1.2866	99.0	99.0	0.3374	0.3374	98.98	
1,2,3,6,7,8-HxCDF	35.154	126804	1.24	1.2432	2.714	2.714	0.0291	0.0291	109	
D 13C-2,3,4,6,7,8-HxCDF	35.954	3457908	0.52	1.1988	97.8	97.8	0.3621	0.3621	97.77	
2,3,4,6,7,8-HxCDF	35.971	117631	1.23	1.2736	2.671	2.671	0.0274	0.0274	107	
D 13C-1,2,3,7,8,9-HxCDF	36.838	3192644	0.52	1.0687	101.3	101.3	0.4062	0.4062	101	
1,2,3,7,8,9-HxCDF	36.846	110283	1.28	1.2882	2.681	2.681	0.0267	0.0267	107	
S Total HxCDF					10.8	10.8	0.0286	0.0286		
* 13C-1,2,3,7,8,9-HxCDD	36.644	2950527	1.26	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.164	3126748	1.29	1.1046	95.9	95.9	0.2433	0.2433	95.94	
1,2,3,4,7,8-HxCDD	36.173	83257	1.19	0.9336	2.852	2.852	0.0431	0.0431	114	
D 13C-1,2,3,6,7,8-HxCDD	36.282	2862915	1.30	0.9871	98.3	98.3	0.2723	0.2723	98.30	
1,2,3,6,7,8-HxCDD	36.291	86772	1.21	1.0802	2.806	2.806	0.0441	0.0441	112	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.661	89621	1.26	1.0574	2.830	2.830	0.0412	0.0412	113	
S Total HxCDD					8.488	8.488	0.0428	0.0428		
D 13C-1,2,3,4,6,7,8-HpCDF	38.628	2640868	0.44	0.9035	99.1	99.1	0.5203	0.5203	99.06	
1,2,3,4,6,7,8-HpCDF	38.645	113413	1.03	1.5957	2.691	2.691	0.0334	0.0334	108	
D 13C-1,2,3,4,7,8,9-HpCDF	39.874	2978774	0.46	1.0480	96.3	96.3	0.4486	0.4486	96.33	
1,2,3,4,7,8,9-HpCDF	39.883	96999	1.05	1.1693	2.785	2.785	0.0373	0.0373	111	
S Total HpCDF					5.476	5.476	0.0353	0.0353		
D 13C-1,2,3,4,6,7,8-HpCDD	39.571	2571343	1.07	0.8875	98.2	98.2	0.3449	0.3449	98.19	
1,2,3,4,6,7,8-HpCDD	39.580	80513	1.09	1.1150	2.808	2.808	0.0231	0.0231	112	
S Total HpCDD					2.808	2.808	0.0231	0.0231		
D 13C-OCDD	42.026	3459611	0.92	0.6297	186.2	186.2	0.2360	0.2360	93.10	
OCDF	42.119	135953	0.89	1.4809	5.307	5.307	0.0358	0.0358	106	
OCDD	42.035	112091	0.89	1.1948	5.424	5.424	0.0356	0.0356	108	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

HRDXNL2_00029 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	03-Jun-2020 14:53:00	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	05-Jun-2020 10:10:53	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1030				
First Level Reviewer: stephensk		Date:	03-Jun-2020 16:30:54		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.295	21.309	-1		1479703	218196	483	1207	452		
333.9338	21.303	21.309	0		1862192	261463	170	425	1538	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.306	20.321	-1	0.954	2180545	318369	828	2070	385		
317.9389	20.306	20.321	-1	0.954	2717959	397529	298	745	1334	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	20.323	20.347	-1	1.001	13598	1967	12	30	164		M
305.8987	20.340	20.347	0	1.002	16912	2549	52	130	49	0.80(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	21.682	21.692	-1	1.018	1505136	204759	483	1207	424		
333.9338	21.682	21.692	-1	1.018	1947334	265405	170	425	1561	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.716	21.722	0	1.002	9313	1412	78	195	18		
321.8936	21.699	21.722	-1	1.001	13161	1883	20	50	94	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.708	21.724	-1	1.019	19124	2948	54	135	55		
13C-1,2,3,7,8-PeCDF											
351.9000	27.286	27.300	-1	1.281	2607793	419385	591	1477	710		
353.8970	27.286	27.300	-1	1.281	1639542	267708	420	1050	637	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.311	27.325	-1	1.001	77540	12385	29	72	427		
341.8567	27.302	27.325	-1	1.001	50012	8086	73	182	111	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.818	28.834	-1	1.353	3003476	442235	591	1477	748		
353.8970	28.818	28.834	-1	1.353	1898882	286704	420	1050	683	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.852	28.857	0	1.001	71426	10999	29	72	379		
341.8567	28.843	28.857	-1	1.001	50247	7459	73	182	102	1.42(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.635	29.651	-1	1.392	1623523	234246	149	372	1572		
369.8919	29.643	29.651	0	1.392	1047685	150670	93	232	1620	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.677	29.682	0	1.001	49228	7245	71	177	102		
357.8516	29.669	29.682	-1	1.001	31852	4483	19	47	236	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.968	34.982	-1	0.954	1459931	319575	477	1192	670		
385.8610	34.968	34.982	-1	0.954	2806927	630595	857	2142	736	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.985	35.000	-1	1.000	63921	14435	69	172	209		
375.8178	34.994	35.000	0	1.001	52318	11613	51	127	228	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.137	35.145	0	0.959	1311382	290946	477	1192	610		
385.8610	35.137	35.145	0	0.959	2446124	538066	857	2142	628	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.154	35.163	-1	1.000	70210	15533	69	172	225		
375.8178	35.154	35.163	-1	1.000	56594	12321	51	127	242	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.954	35.966	-1	0.981	1182926	291905	477	1192	612		
385.8610	35.954	35.966	-1	0.981	2274982	568737	857	2142	664	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.971	35.981	-1	1.000	64871	16865	69	172	244		
375.8178	35.971	35.981	-1	1.000	52760	14017	51	127	275	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.838	36.848	-1	1.005	1095474	297544	477	1192	624		
385.8610	36.838	36.848	-1	1.005	2097170	573690	857	2142	669	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.846	36.862	-1	1.000	61987	16078	69	172	233		
375.8178	36.846	36.862	-1	1.000	48296	12686	51	127	249	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.644	36.653	-1		1646326	427879	469	1172	912		
403.8529	36.644	36.653	-1		1304201	340453	357	892	954	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.164	36.173	-1	0.987	1761630	475006	469	1172	1013		
403.8529	36.164	36.173	-1	0.987	1365118	375216	357	892	1051	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.173	36.187	-1	1.000	45307	12653	84	210	151		
391.8127	36.173	36.187	-1	1.000	37950	10272	53	132	194	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.282	36.291	-1	0.990	1619724	403000	469	1172	859		
403.8529	36.282	36.291	-1	0.990	1243191	315287	357	892	883	1.30(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.291	36.304	-1	1.000	47429	11831	84	210	141		
391.8127	36.299	36.304	0	1.000	39343	9883	53	132	186	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.661	36.669	0	1.014	50050	12369	84	210	147		
391.8127	36.653	36.669	-1	1.014	39571	9461	53	132	179	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.628	38.640	-1	1.054	809811	263990	564	1410	468		
419.8220	38.636	38.640	0	1.054	1831057	599435	881	2202	680	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.645	38.655	-1	1.000	57496	20114	133	332	151		
409.7788	38.645	38.655	-1	1.000	55917	18736	51	127	367	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.874	39.885	-1	1.088	942571	328249	564	1410	582		
419.8220	39.874	39.885	-1	1.088	2036203	727146	881	2202	825	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.883	39.893	-1	1.000	49759	17780	133	332	134		
409.7788	39.883	39.893	-1	1.000	47240	16478	51	127	323	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.571	39.582	-1	1.080	1328992	462264	508	1270	910		
437.8140	39.571	39.582	-1	1.080	1242351	430111	433	1082	993	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.580	39.590	-1	1.000	42003	14818	58	145	255		
425.7737	39.580	39.590	-1	1.000	38510	13431	34	85	395	1.09(0.88-1.20)	
13C-OCDD											
469.7780	42.026	42.035	-1	1.147	1657577	546027	246	615	2220		
471.7750	42.026	42.035	-1	1.147	1802034	606135	211	527	2873	0.92(0.76-1.02)	
OCDF											
441.7428	42.119	42.131	-1	1.002	63952	20245	33	82	613		
443.7399	42.119	42.131	-1	1.002	72001	23825	89	222	268	0.89(0.76-1.02)	
OCDD											
457.7377	42.035	42.043	-1	1.000	52808	18407	40	100	460		
459.7348	42.035	42.043	-1	1.000	59283	19089	58	145	329	0.89(0.76-1.02)	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00029 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d				
Injection Date:	03-Jun-2020 14:53:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 20.32
Area: 10341
Amount: 0.506910
Amount Units: pg/ul

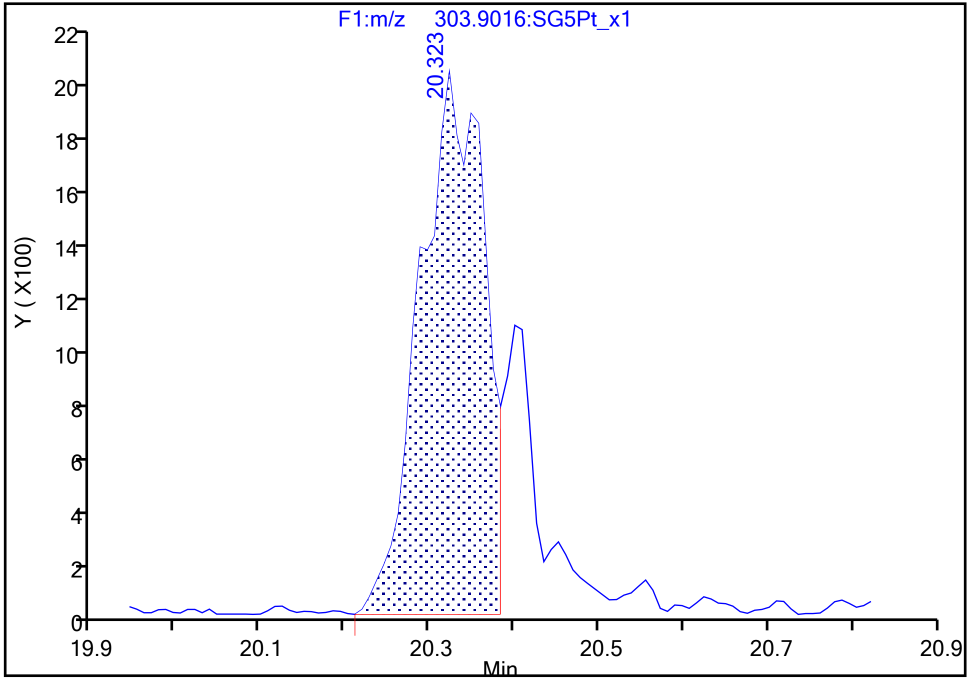

Manual Integration Results

RT: 20.32
Area: 13598
Amount: 0.550580
Amount Units: pg/ul

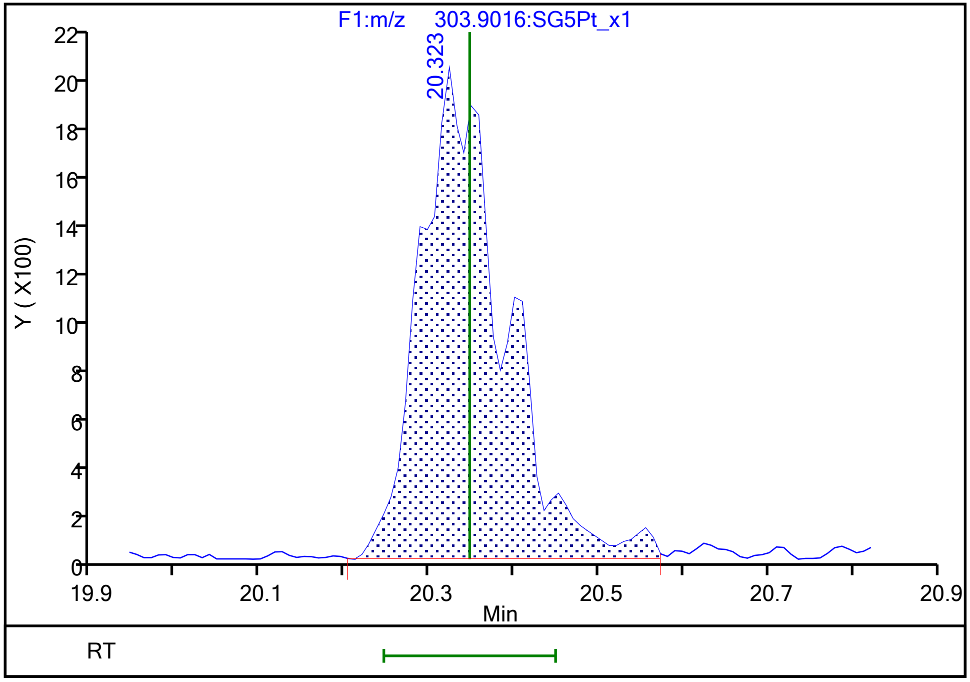

Reviewer: stephensk, 04-Jun-2020 08:15:12

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d				
Injection Date:	03-Jun-2020 14:53:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT: 20.34
Area: 17257
Amount: 0.506910
Amount Units: pg/ul

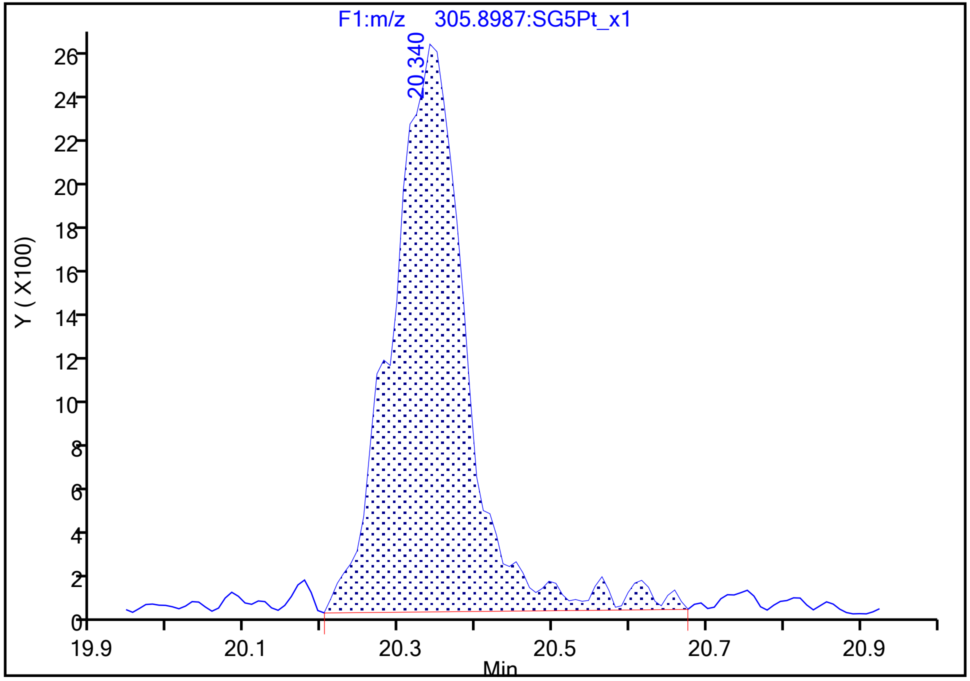

Manual Integration Results

RT: 20.34
Area: 16912
Amount: 0.550580
Amount Units: pg/ul

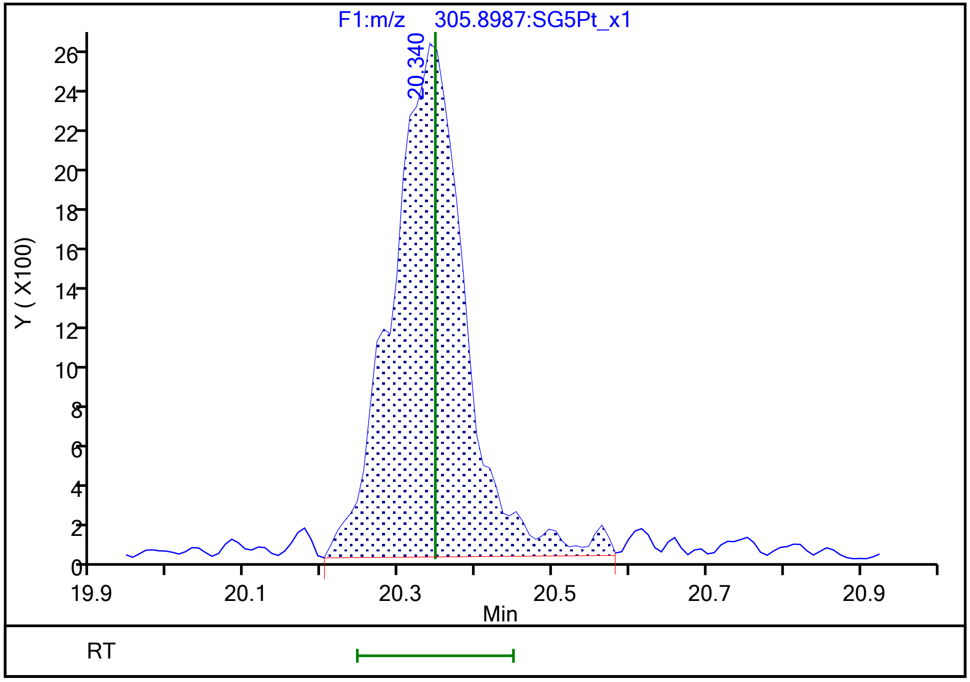

Reviewer: stephensk, 04-Jun-2020 08:15:23

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

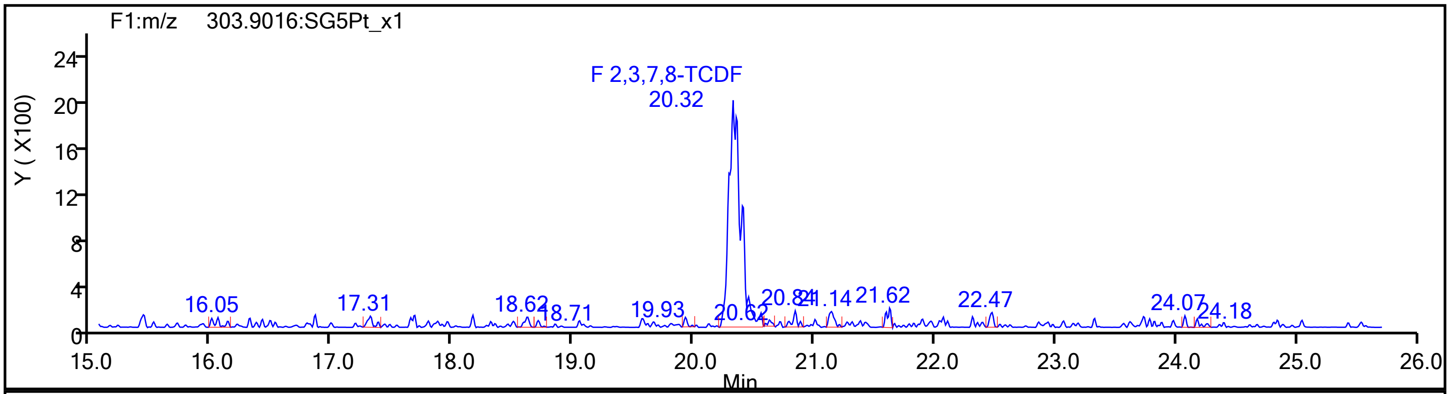

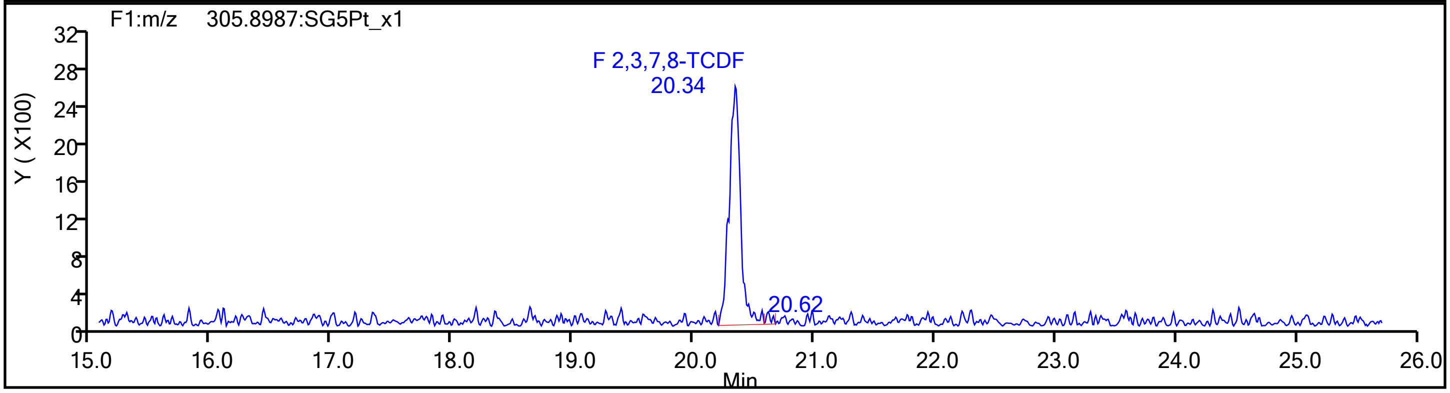

TCDF Standards

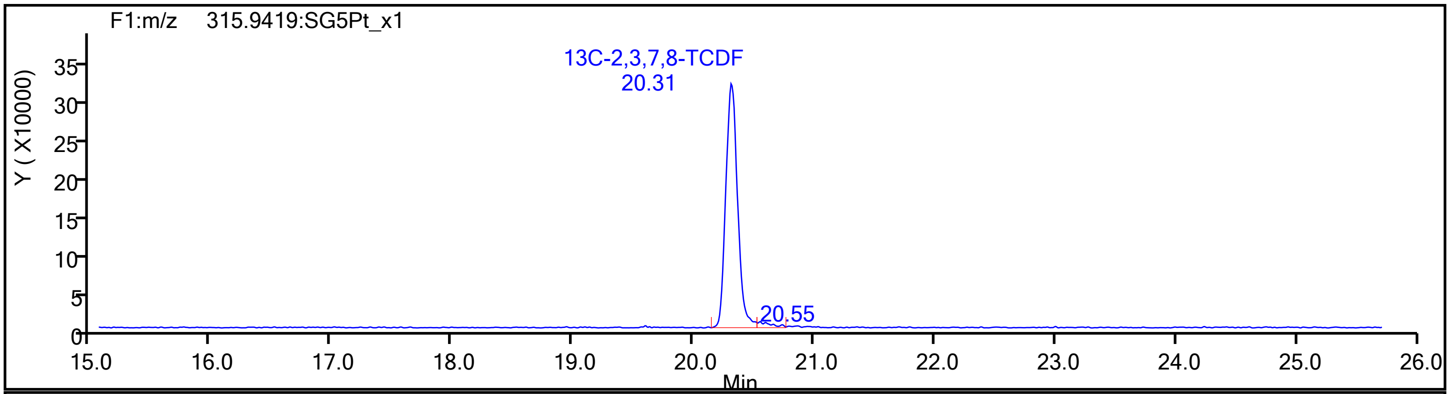

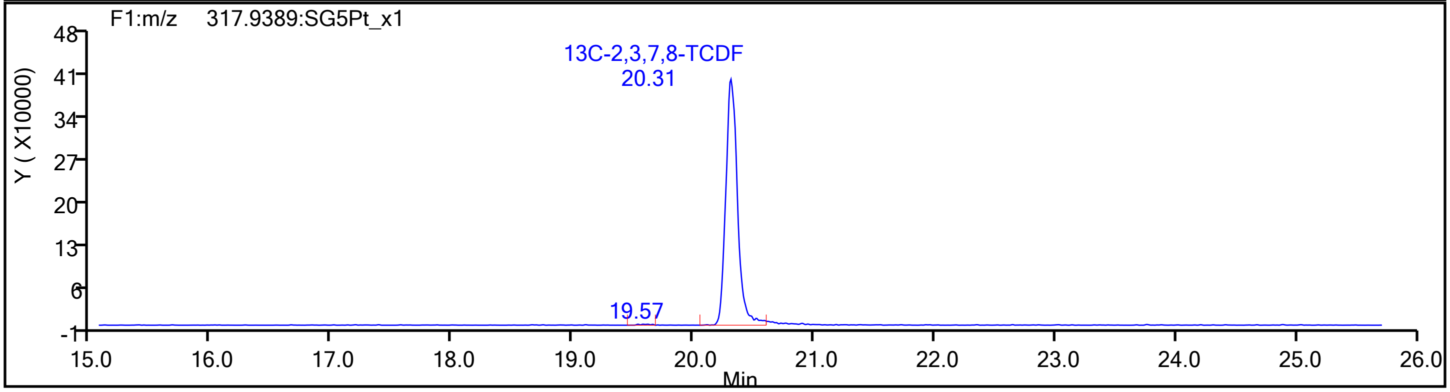

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

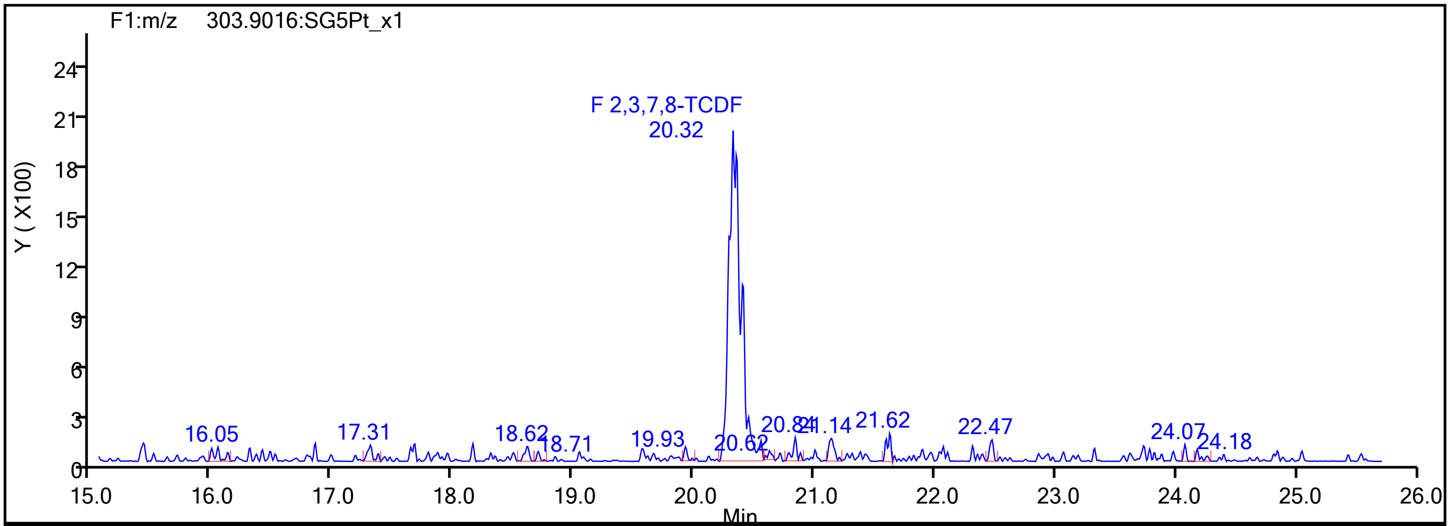

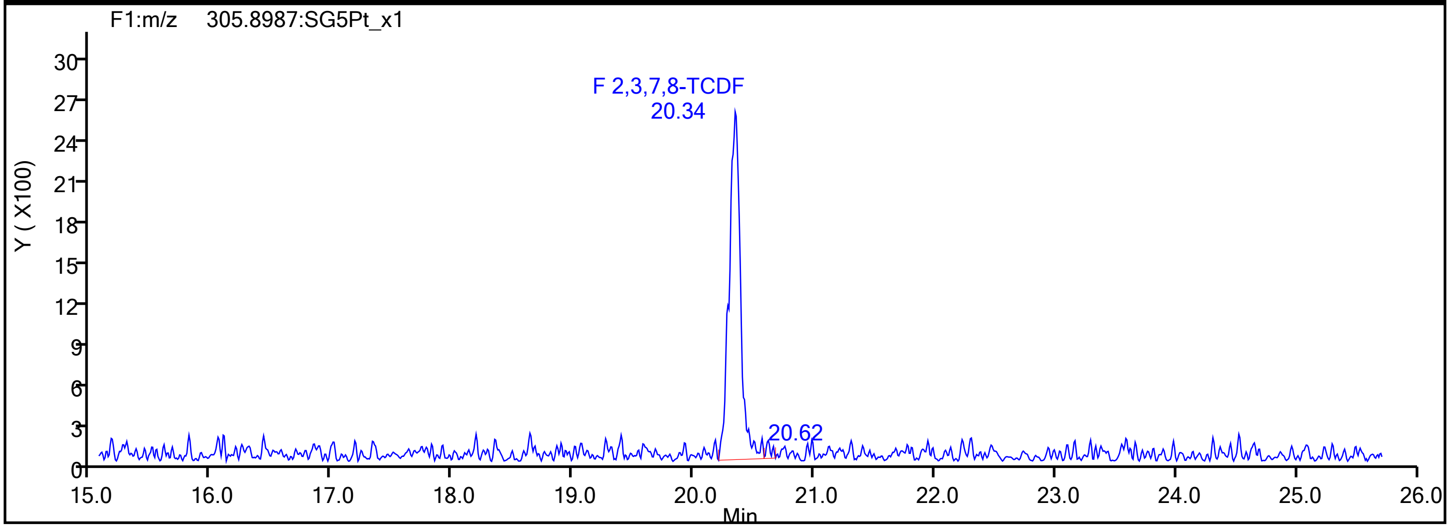

TCDF Interference Mass

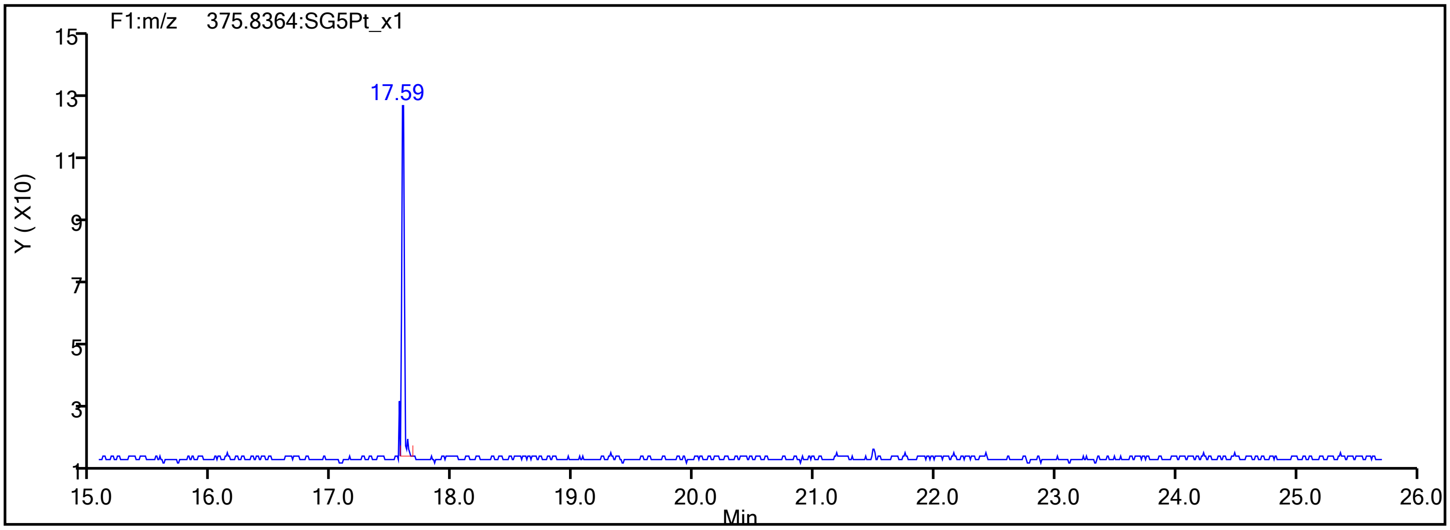

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

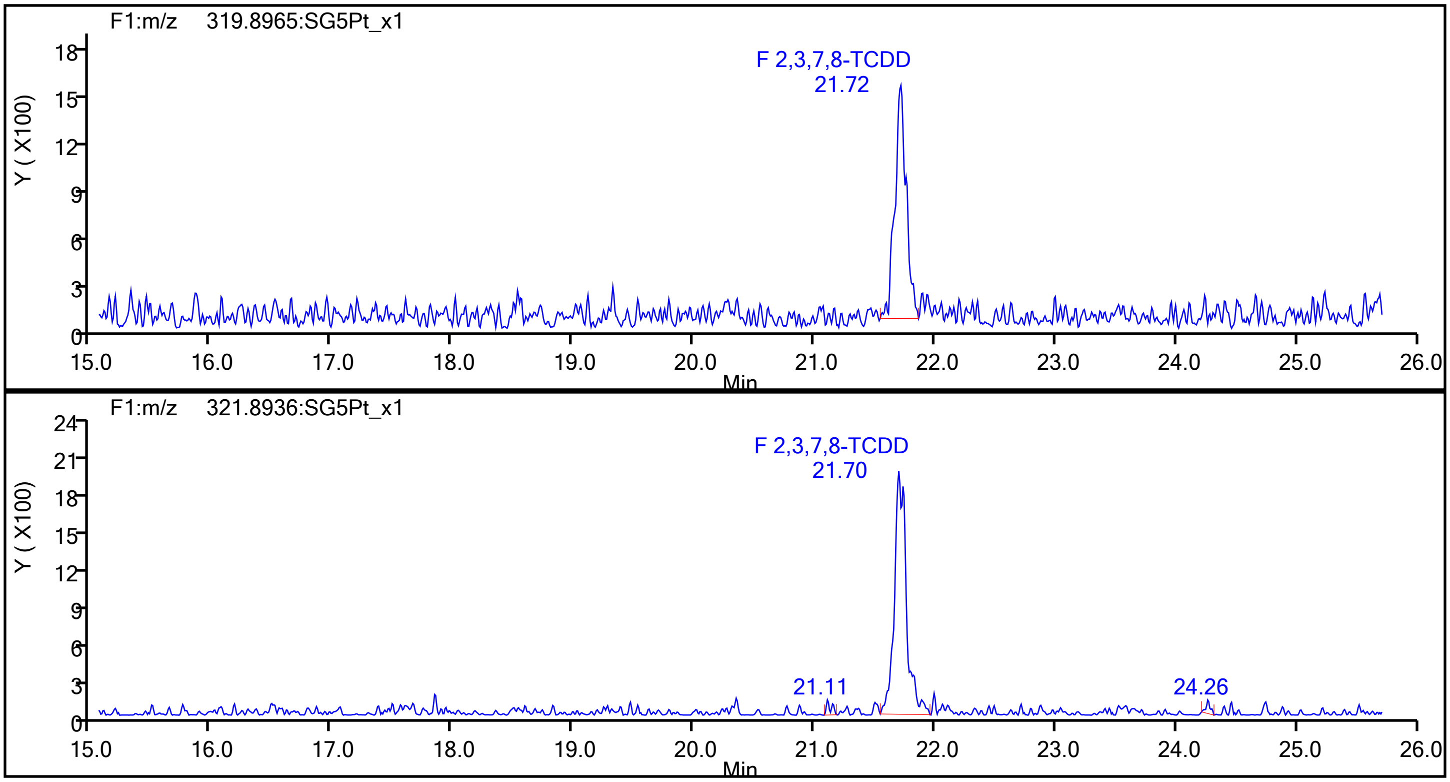

TCDD Standards

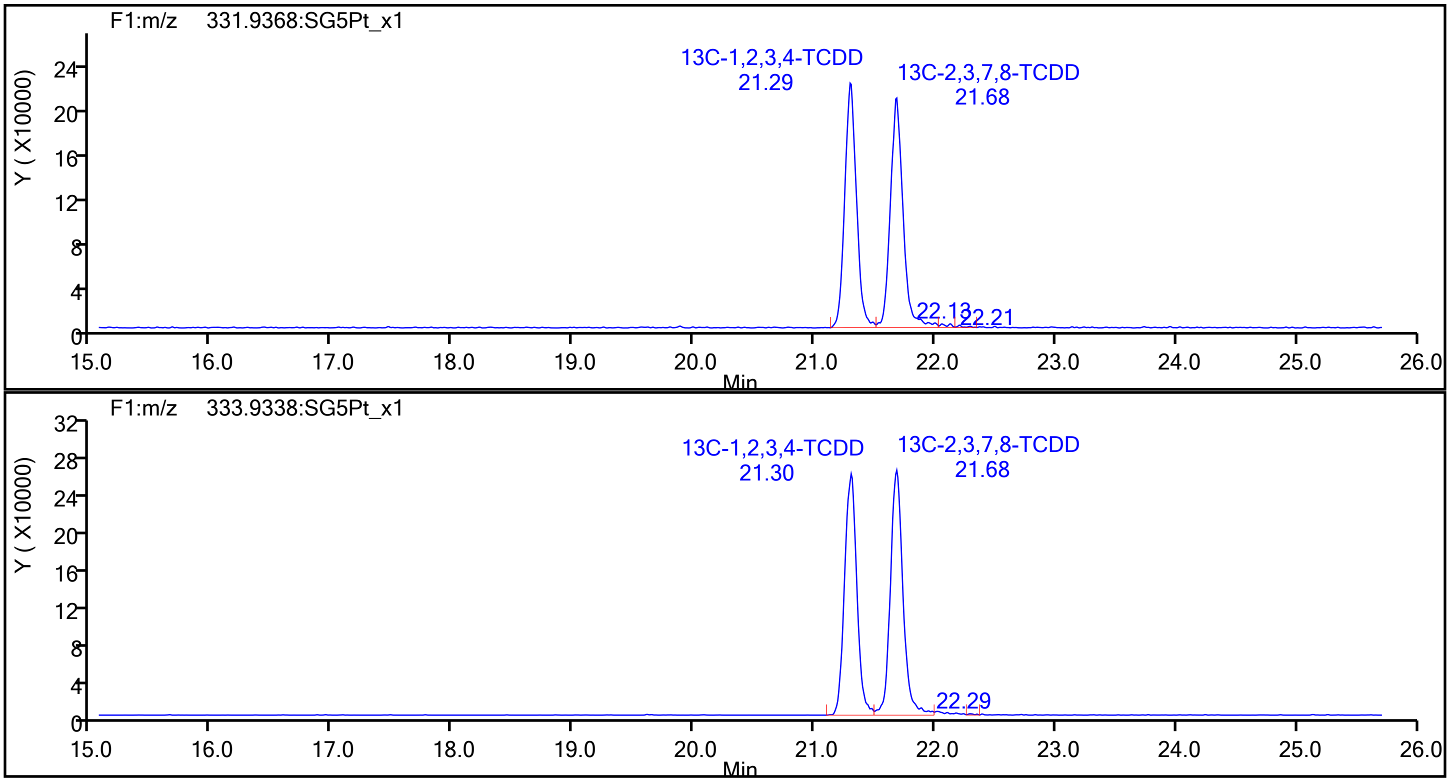

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

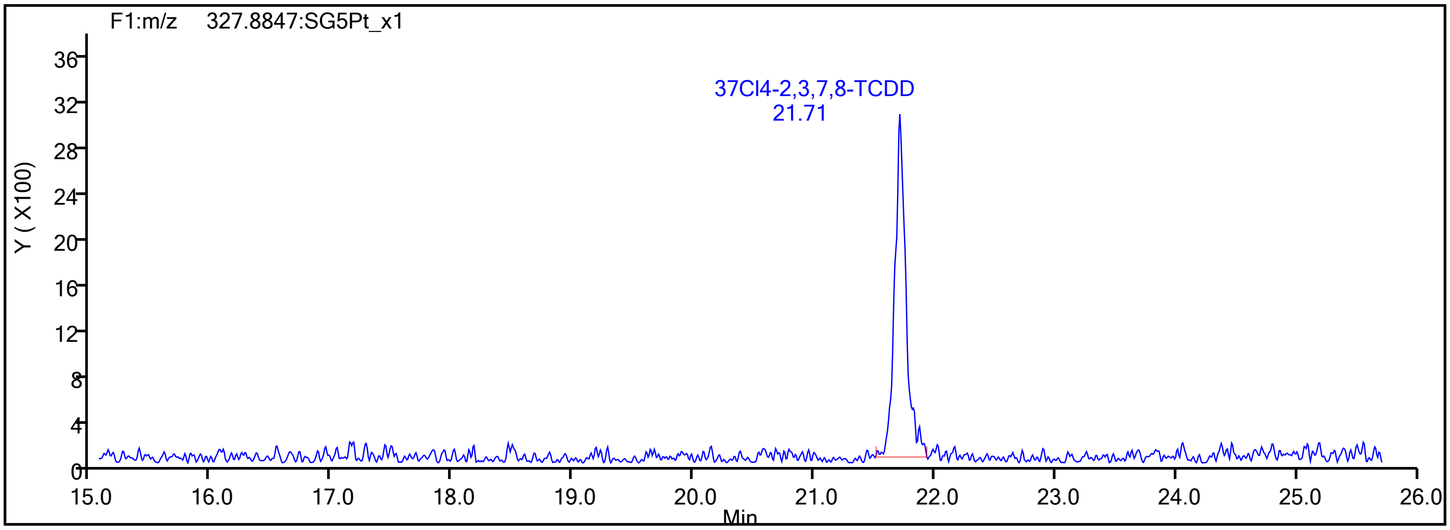

37Cl4-TCDD Standards

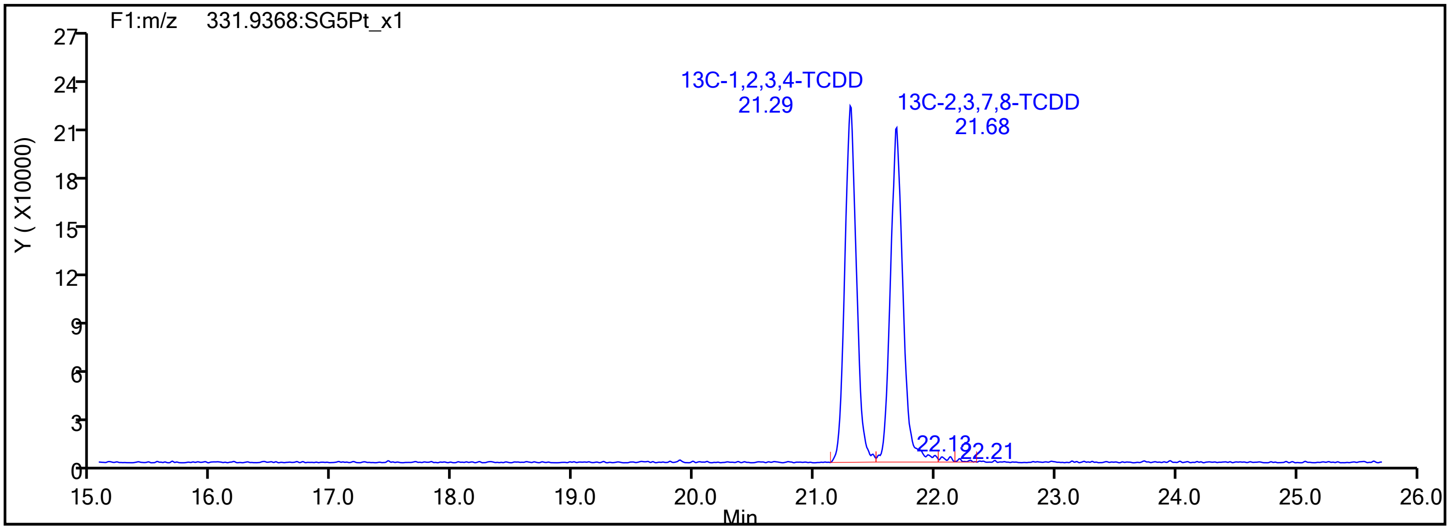

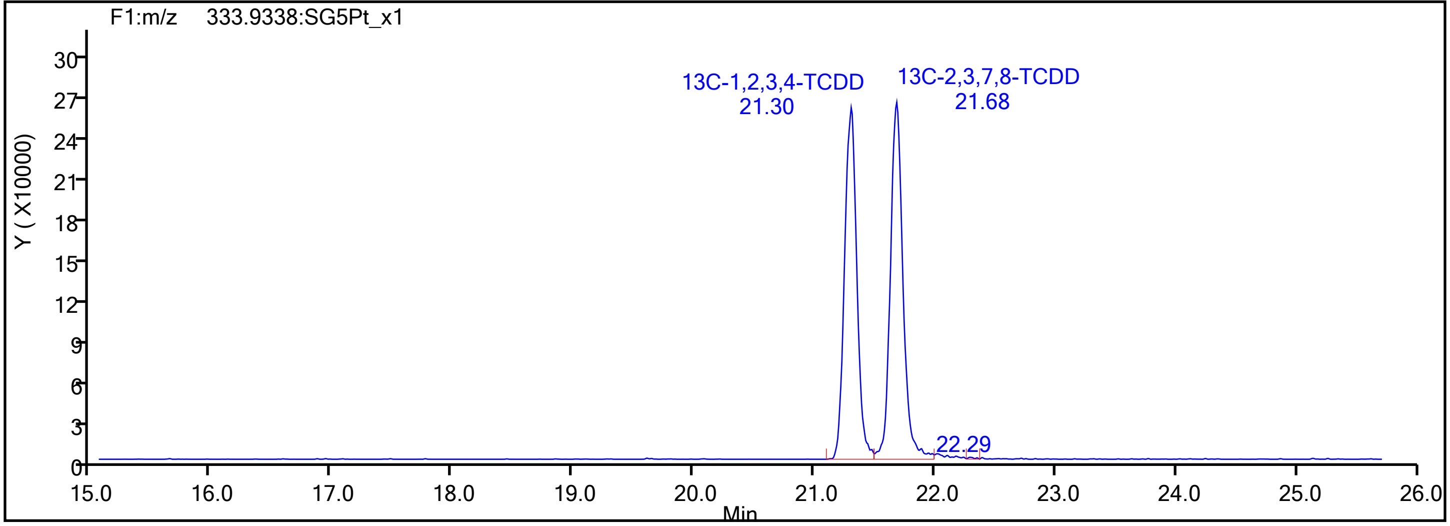

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date: 03-Jun-2020 14:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

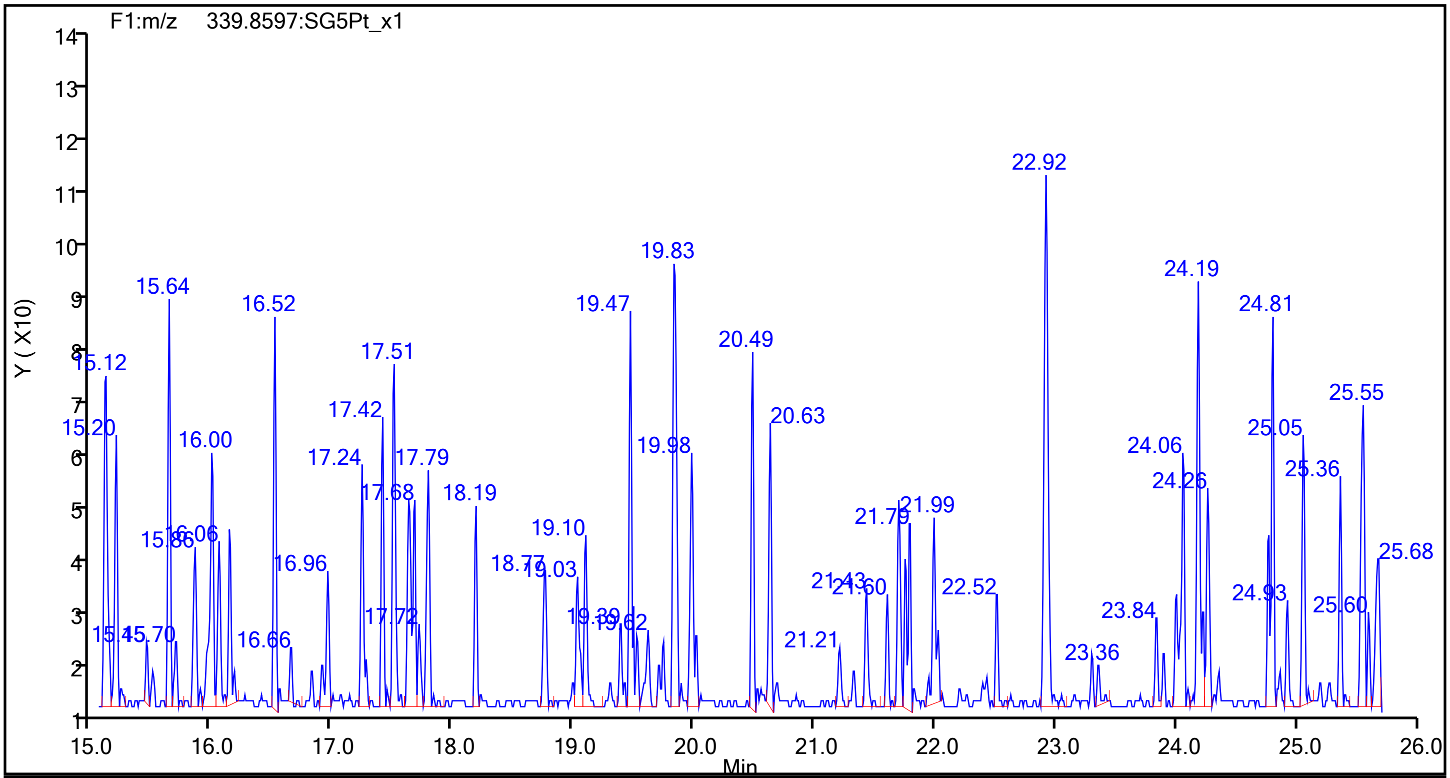

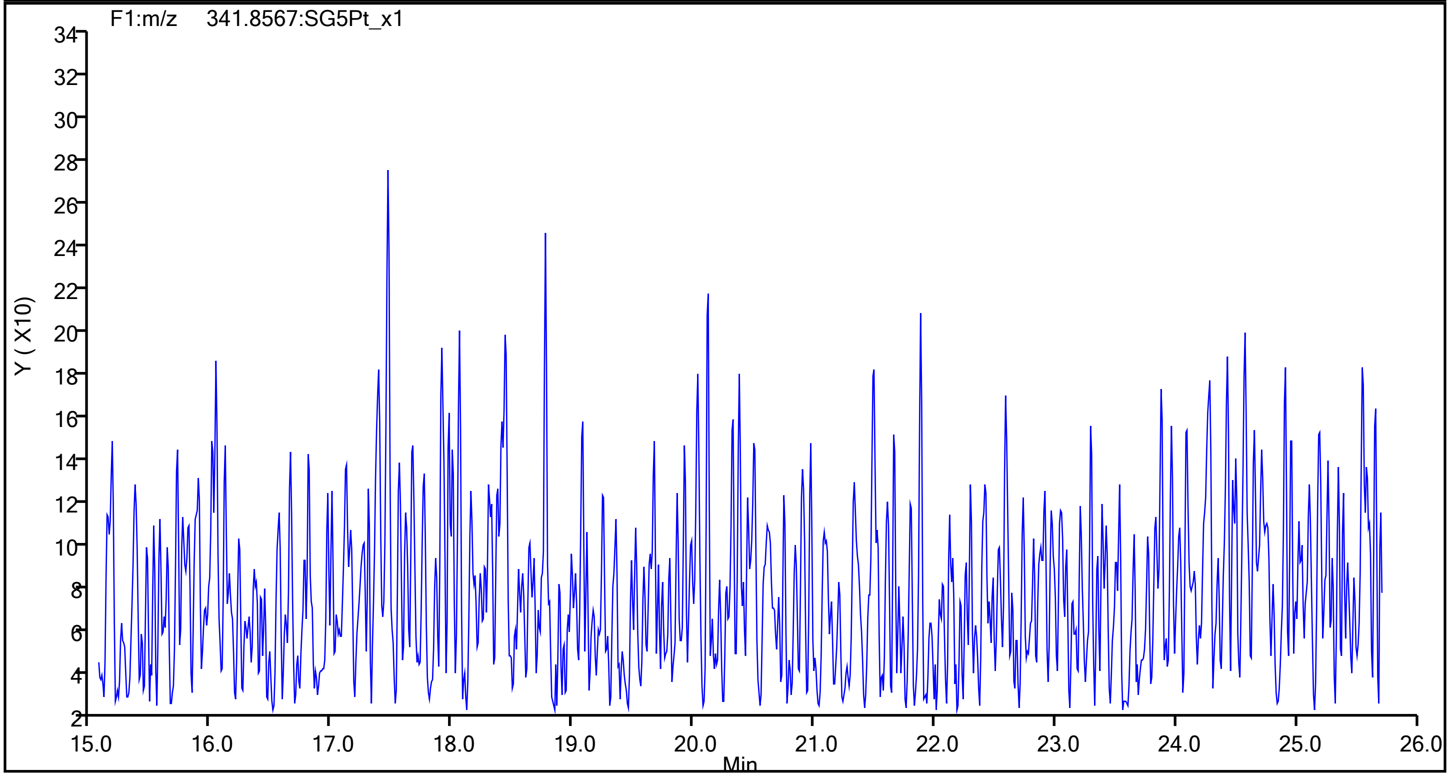

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

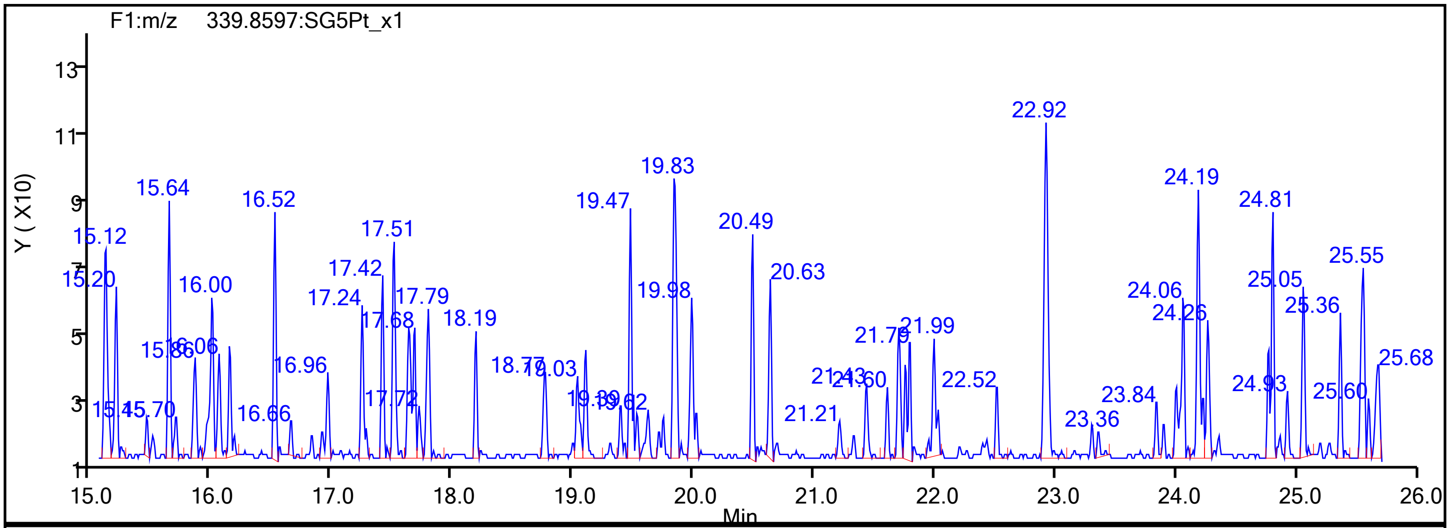

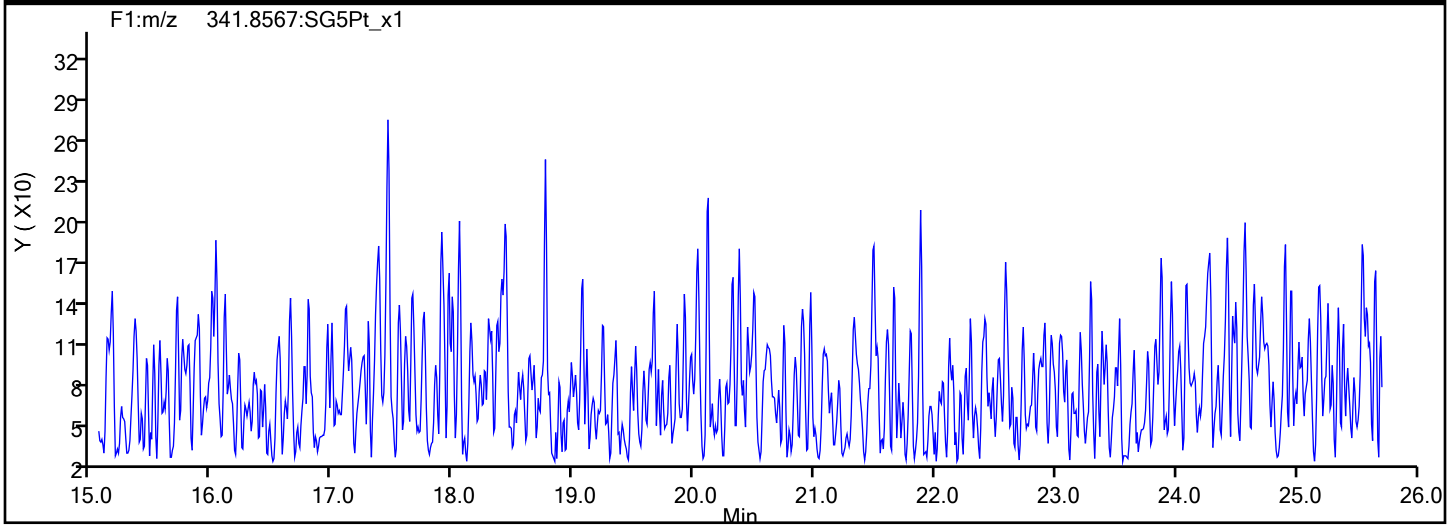

F1 PeCDFs Interference Mass

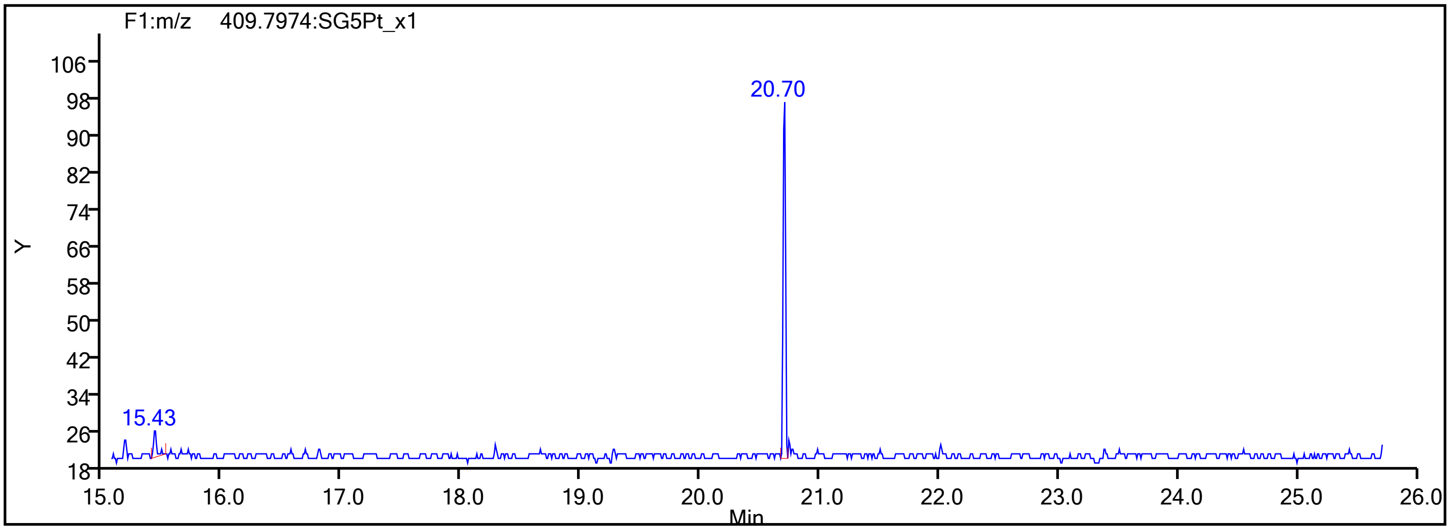

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

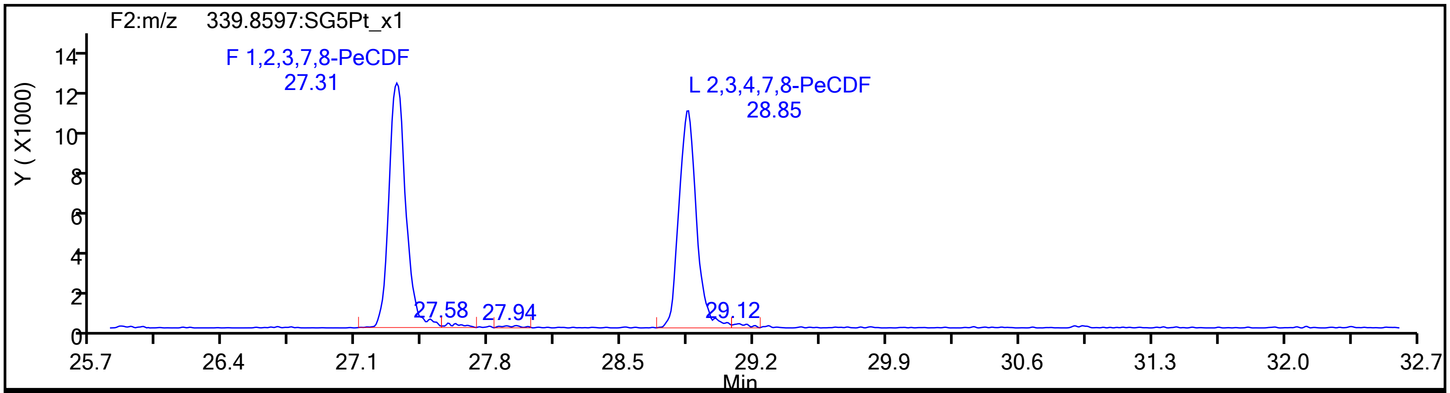

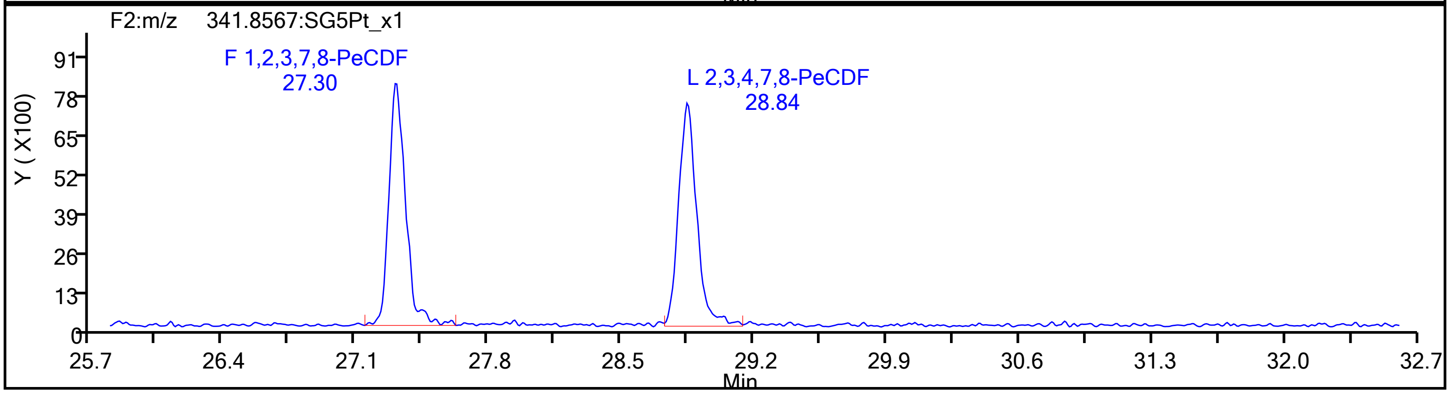

PeCDF Standards

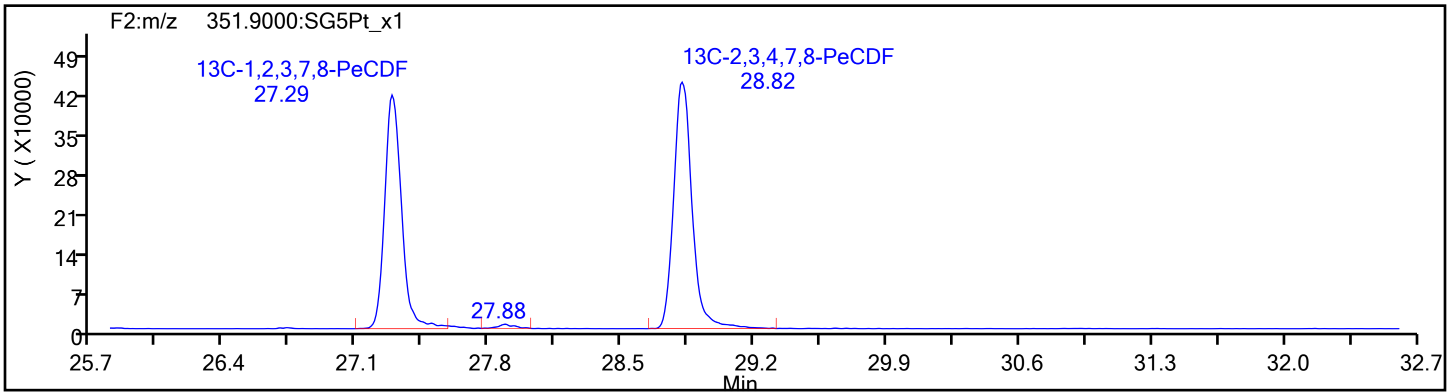

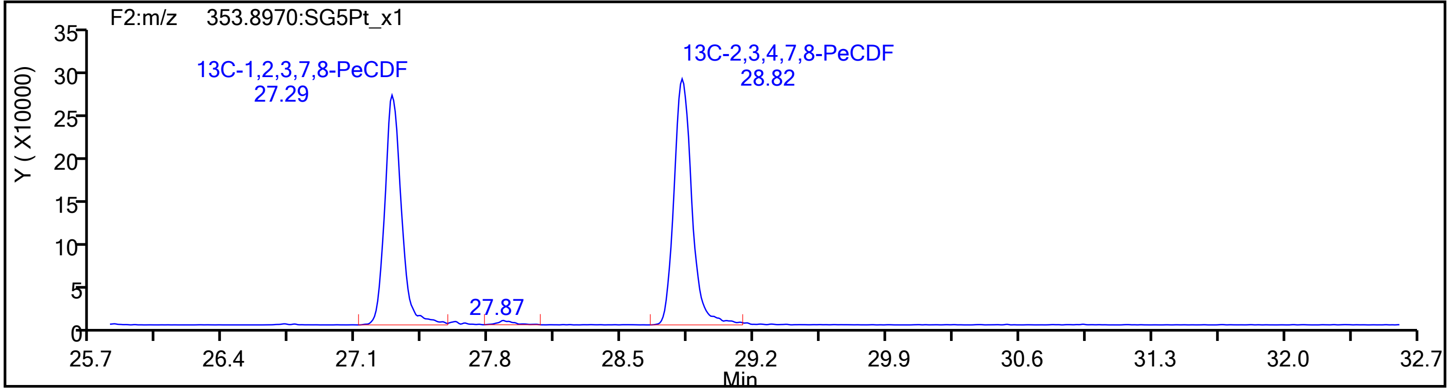

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

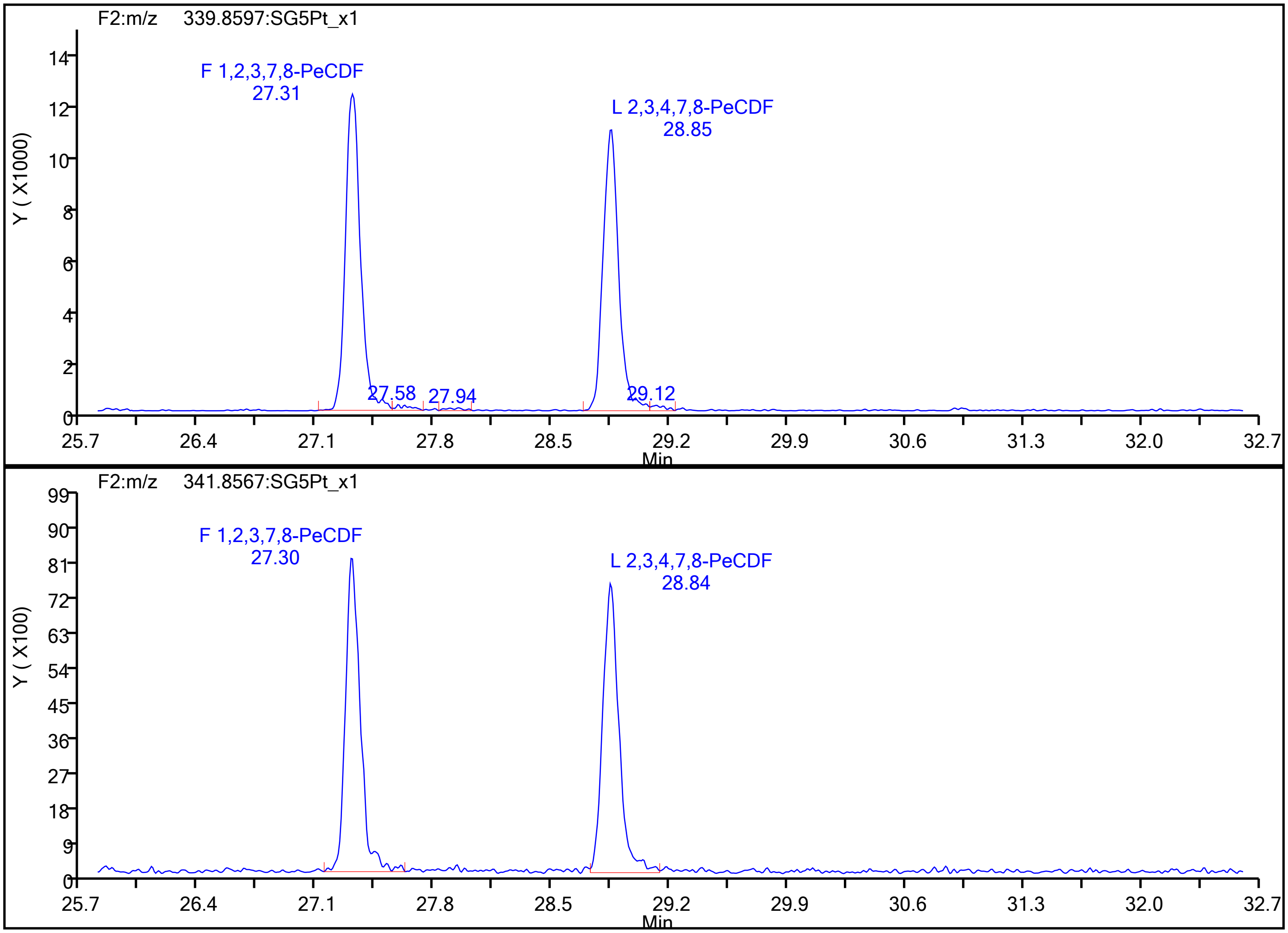

PeCDF Interference Mass

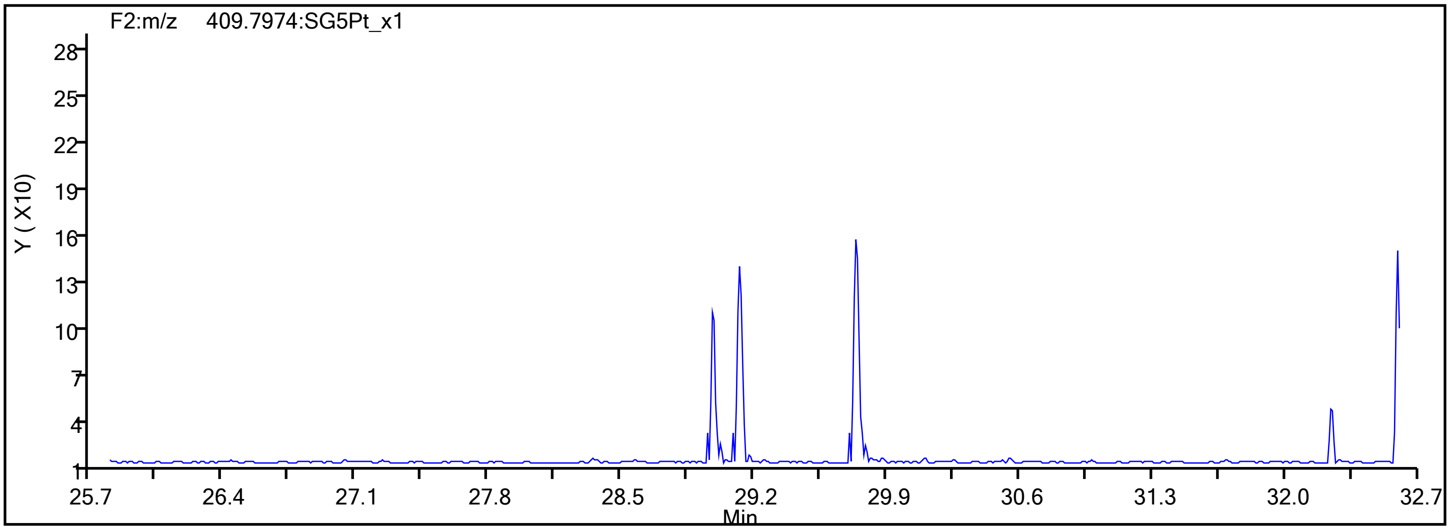

Report Date: 05-Jun-2020 10:11:03　　Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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PeCDD

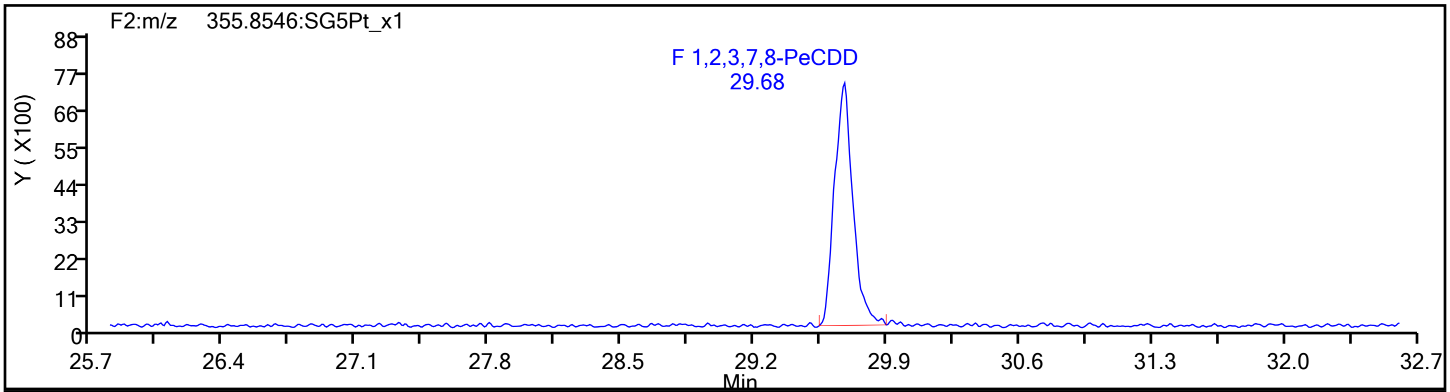

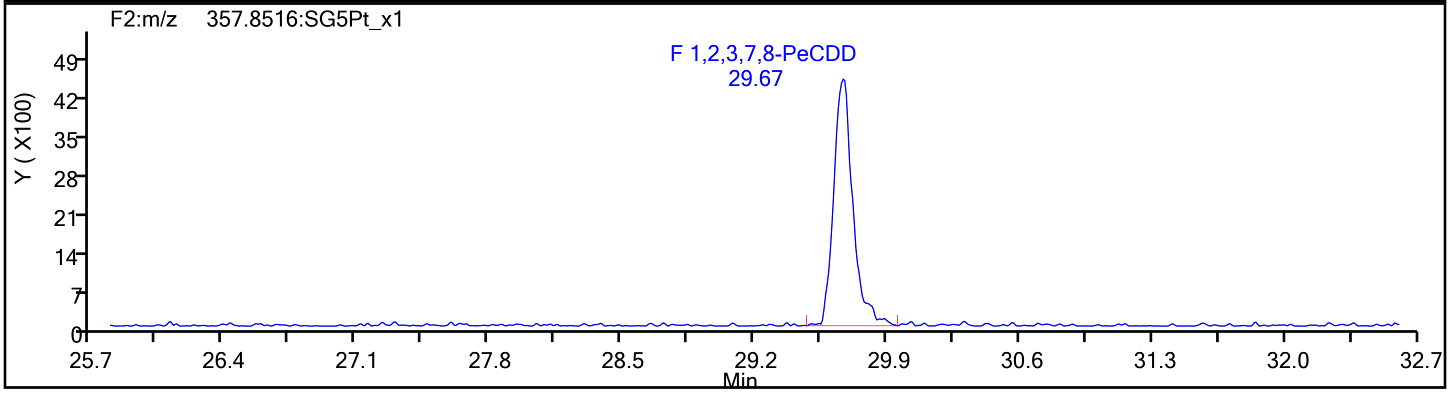

PeCDD Standards

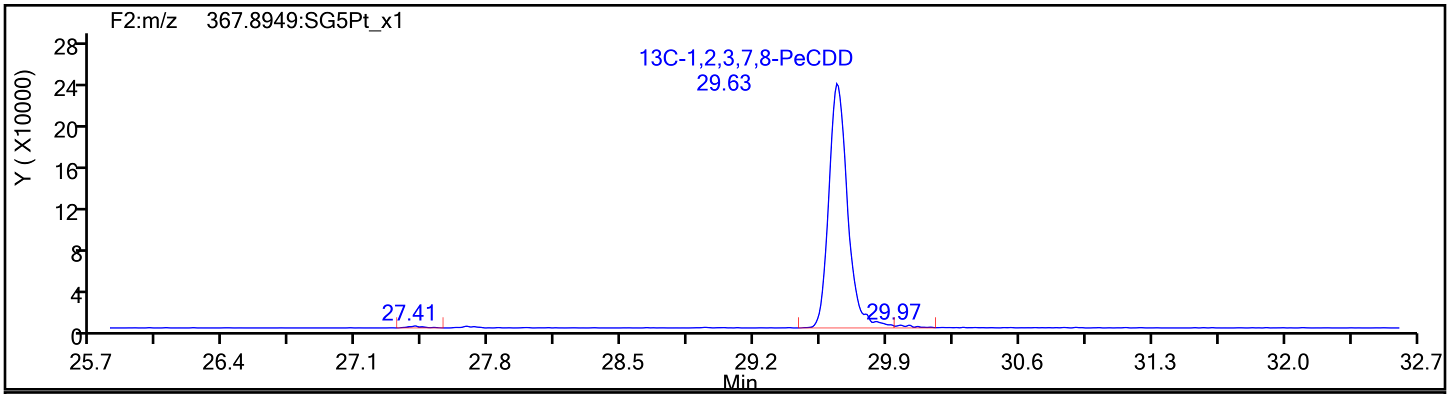

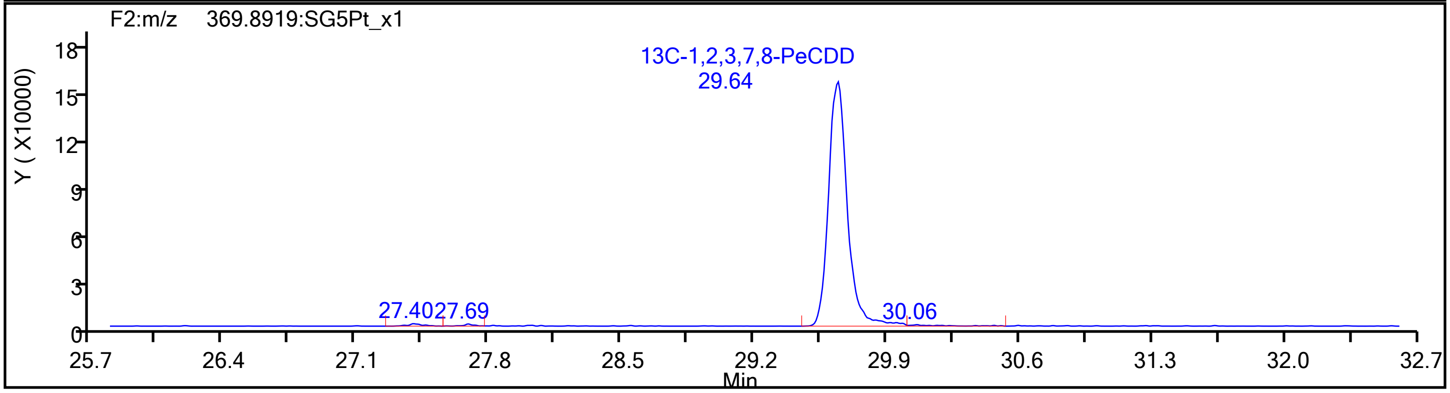

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDF

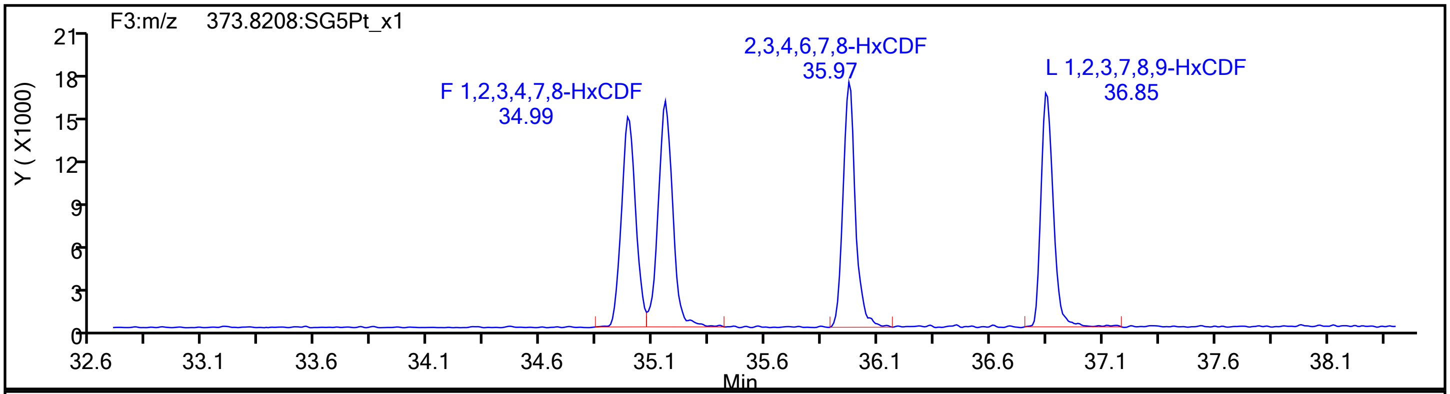

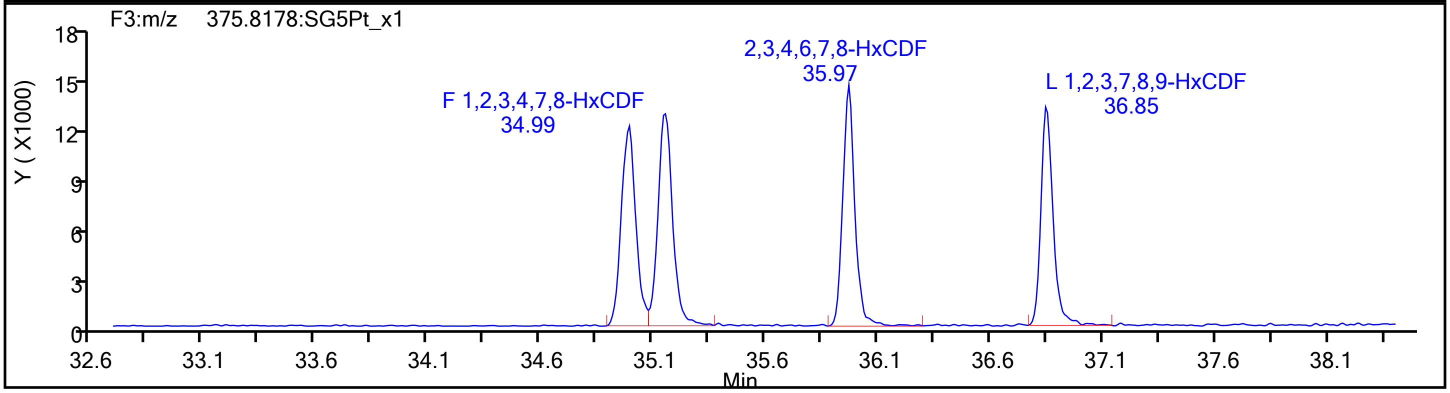

HxCDF Standards

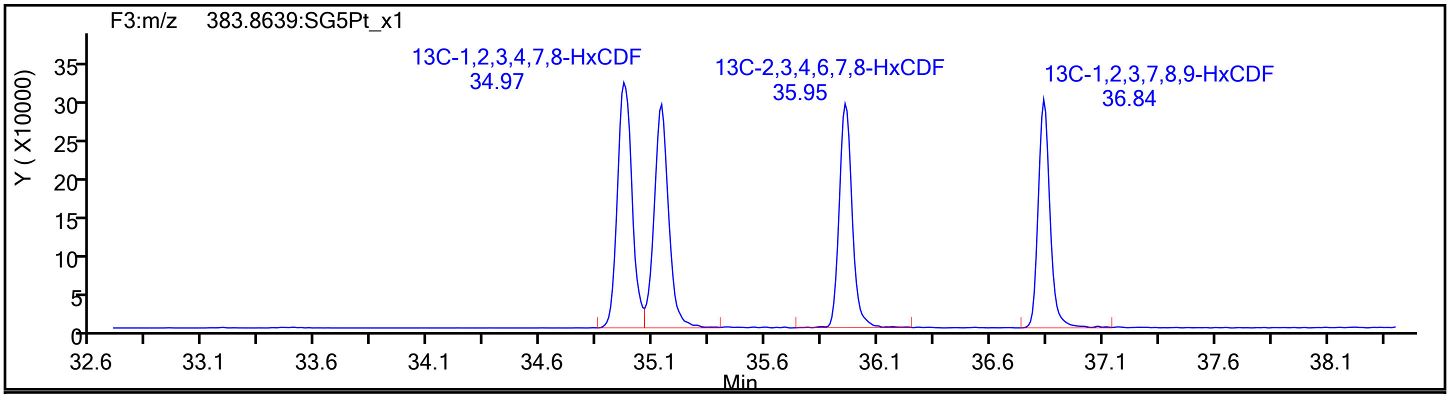

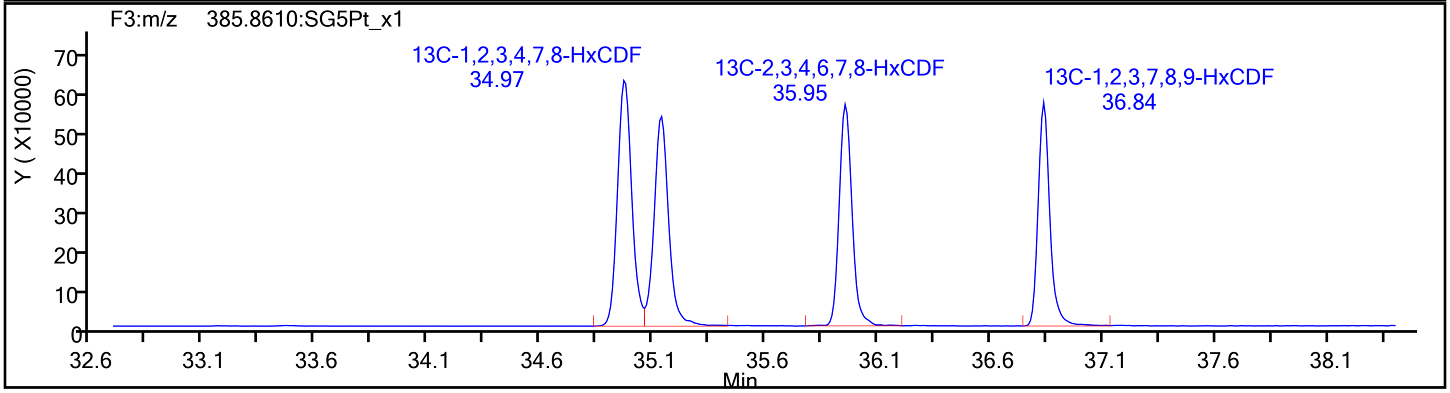

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

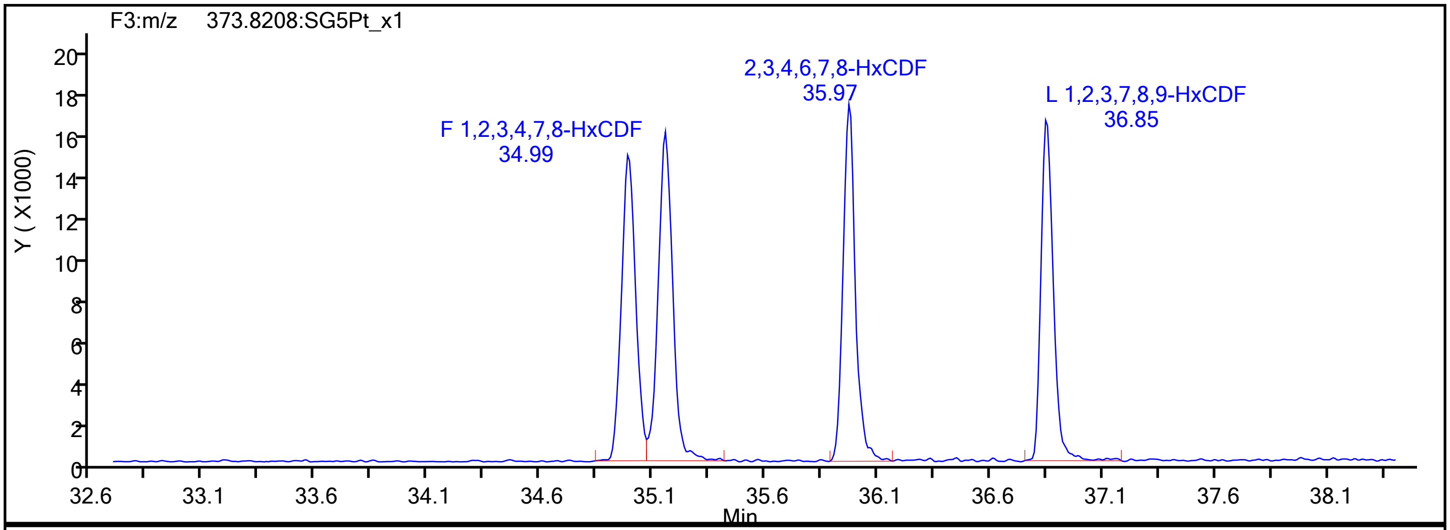

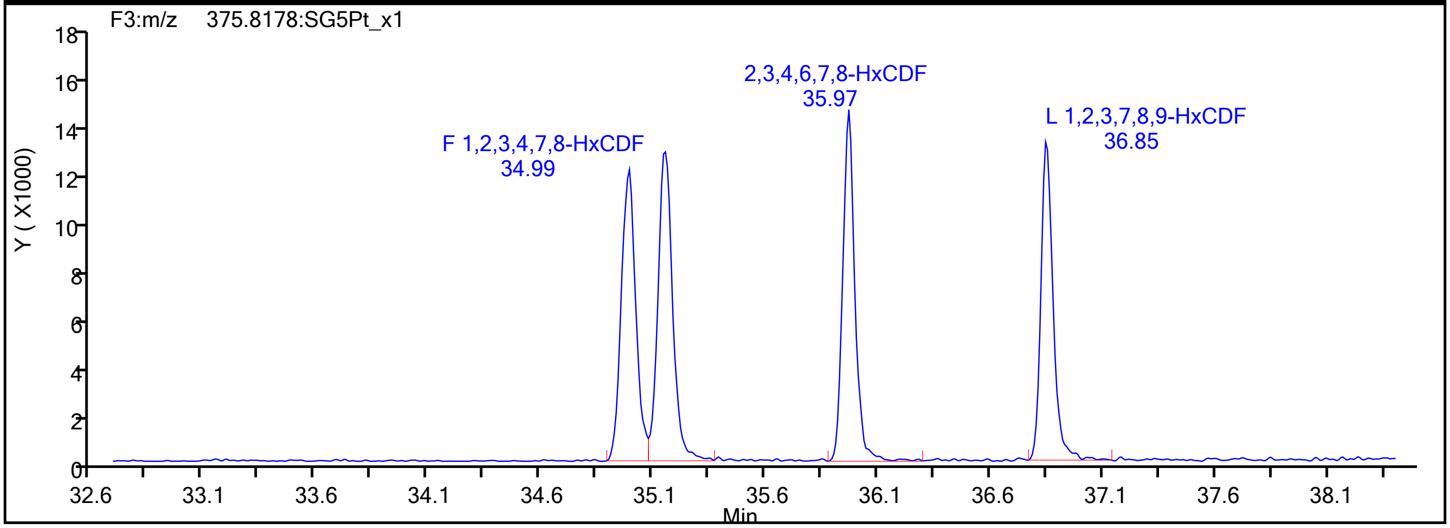

HxCDF Interference Mass

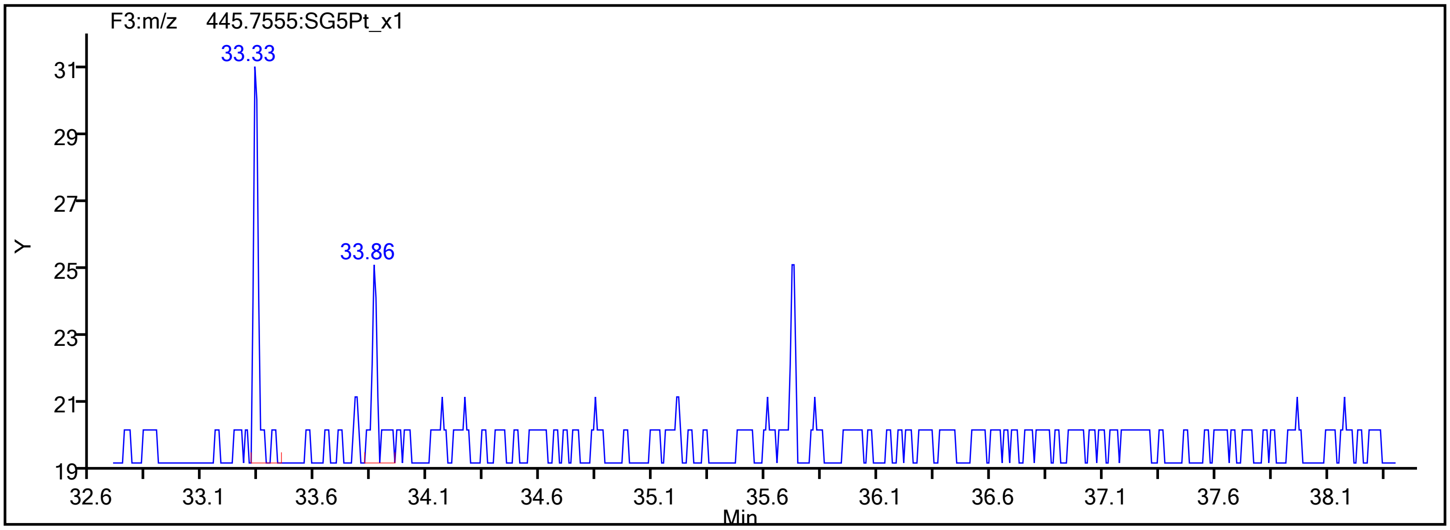

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

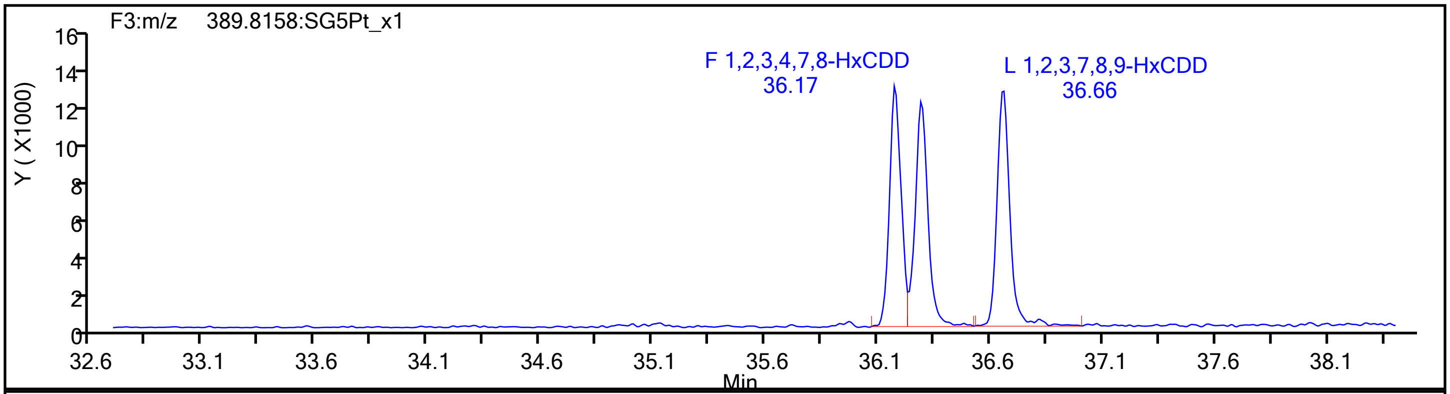

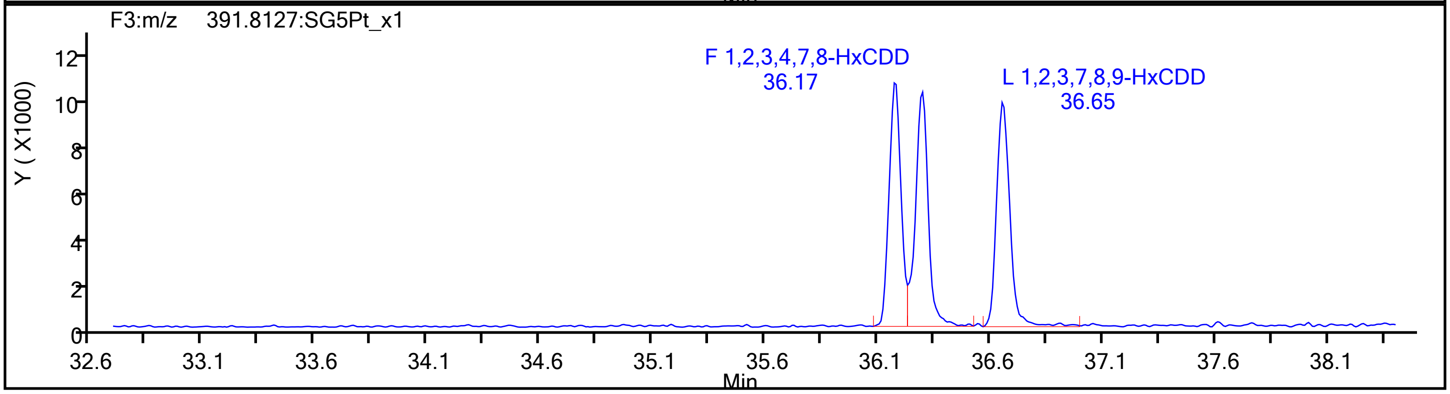

HxCDD Standards

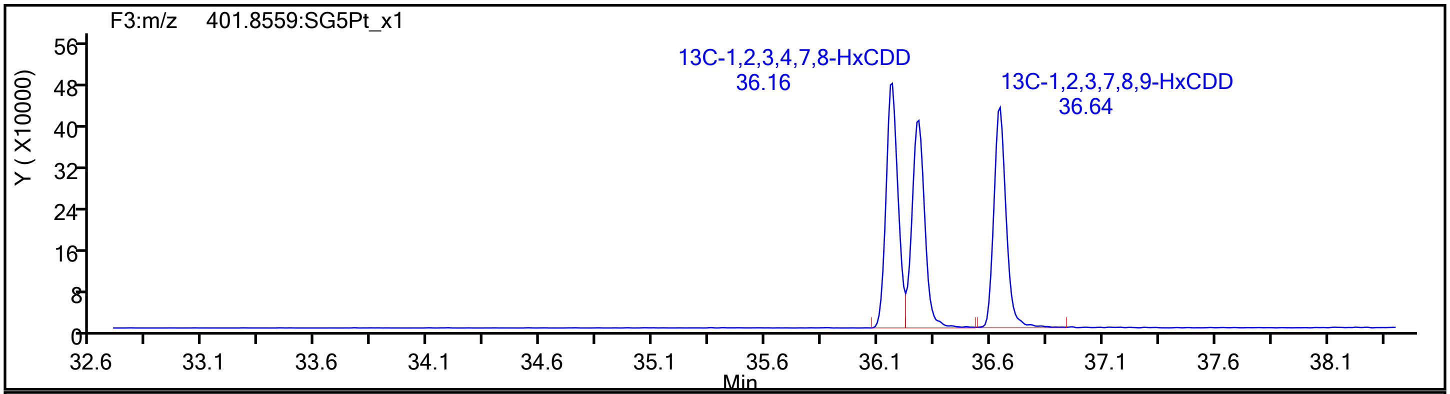

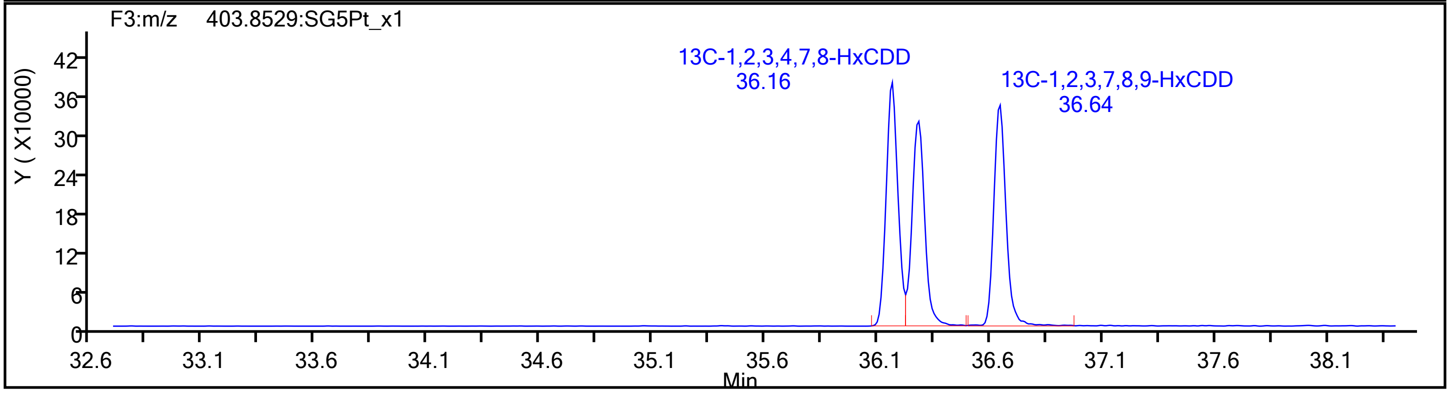

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Sample Line#: 4
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Column Dia: 0.32 mm

HpCDF

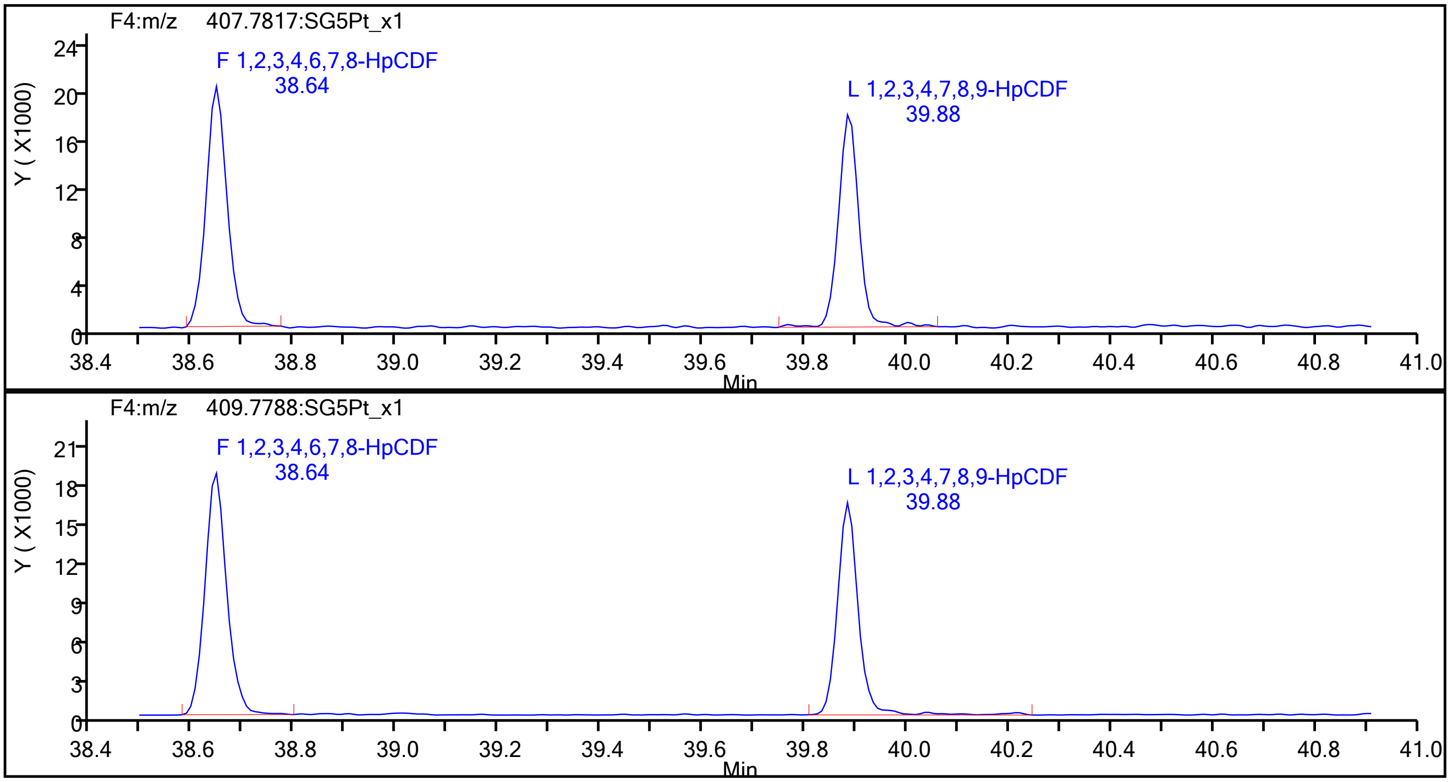

HpCDF Standards

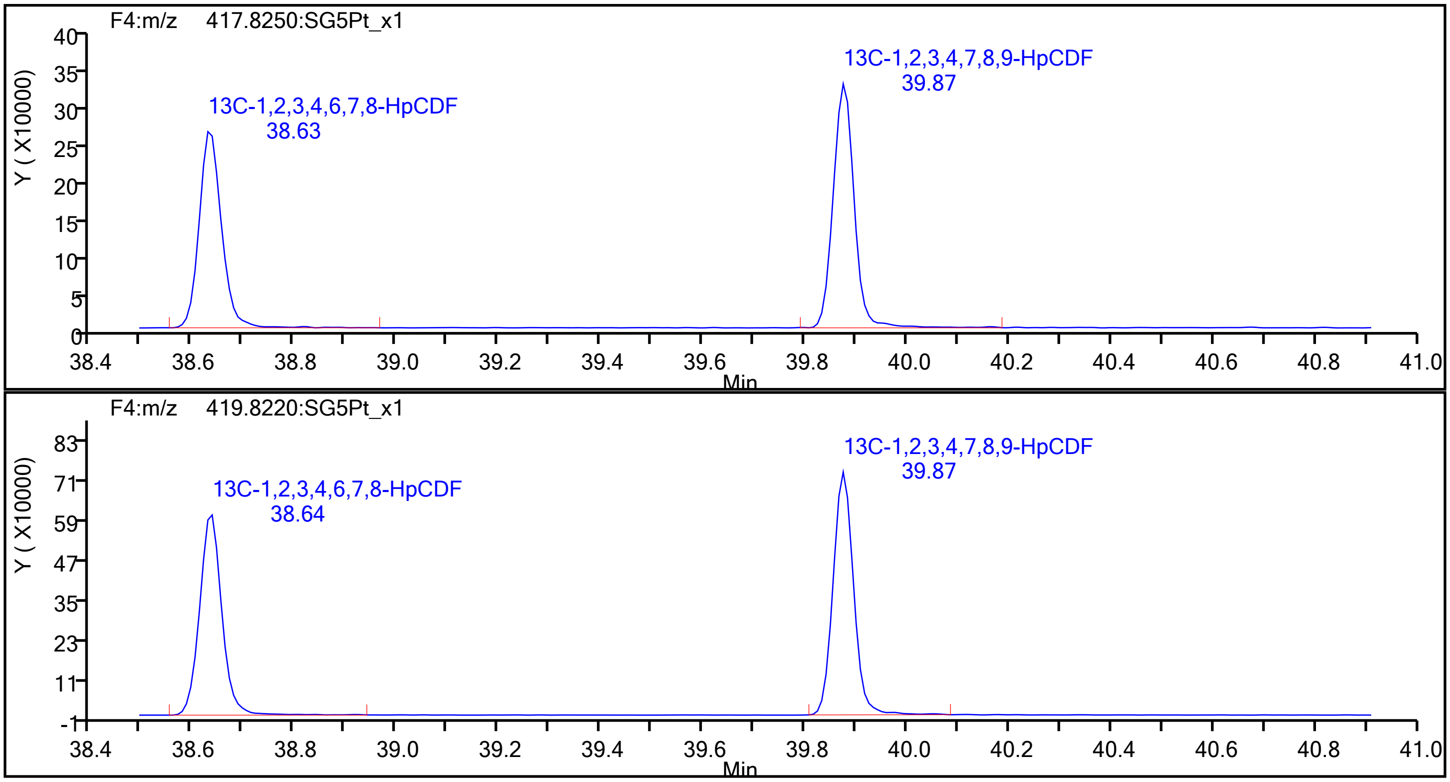

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Client ID:			
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HpCDF

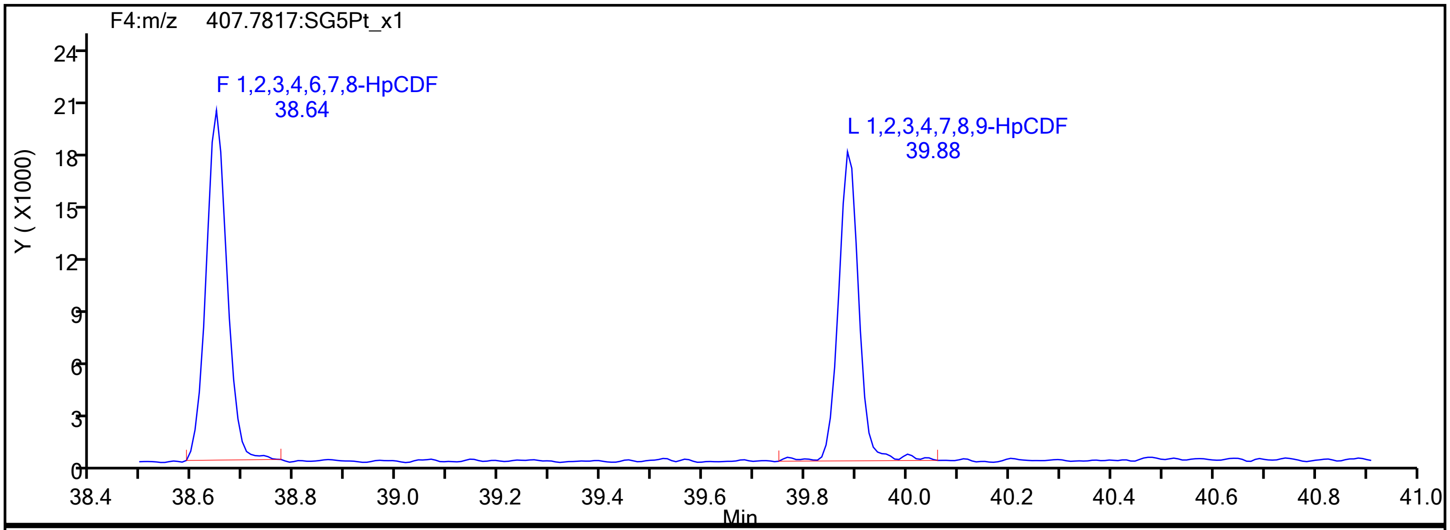

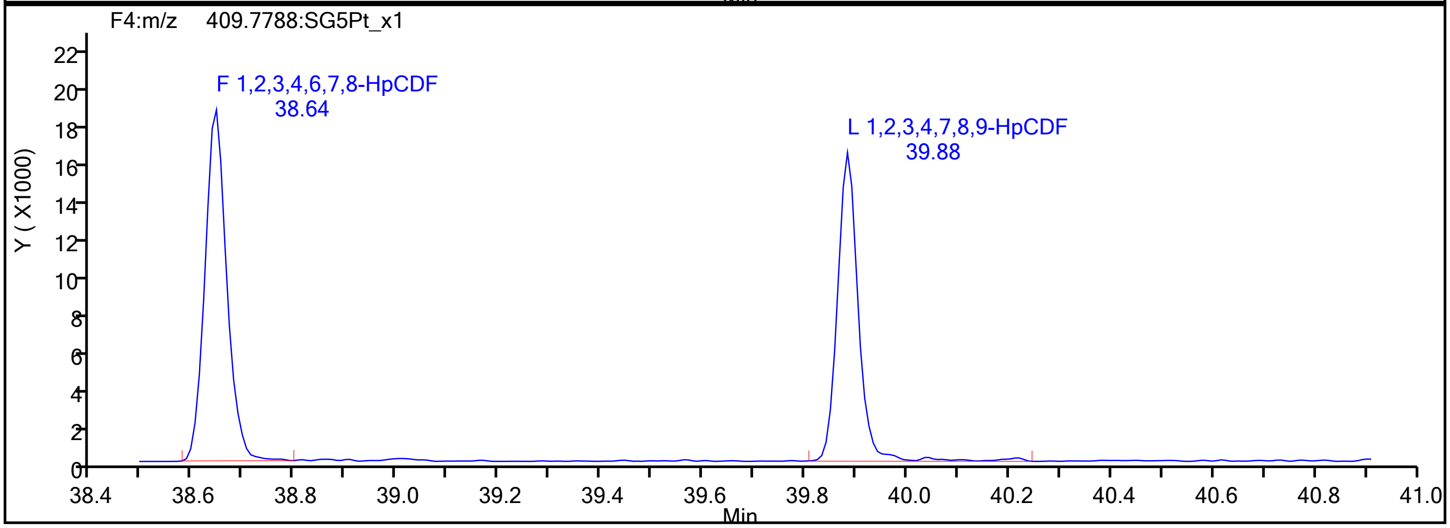

HpCDF Interference Mass

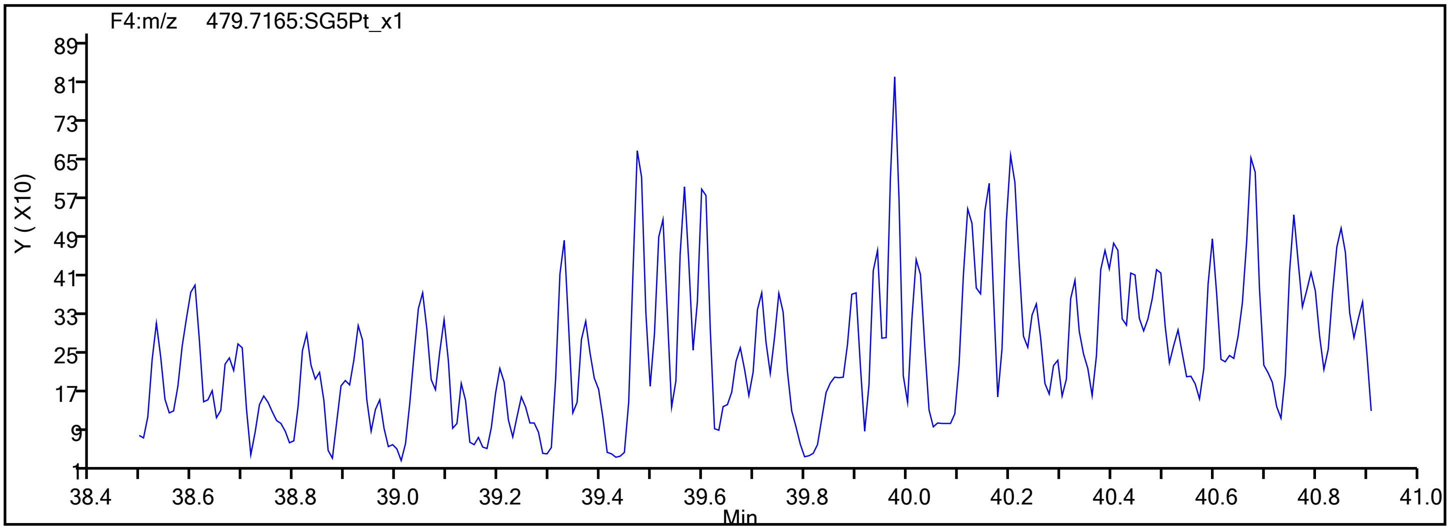

Report Date: 05-Jun-2020 10:11:03
Chrom Revision: 2.3 03-Jun-2020 23:27:16
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

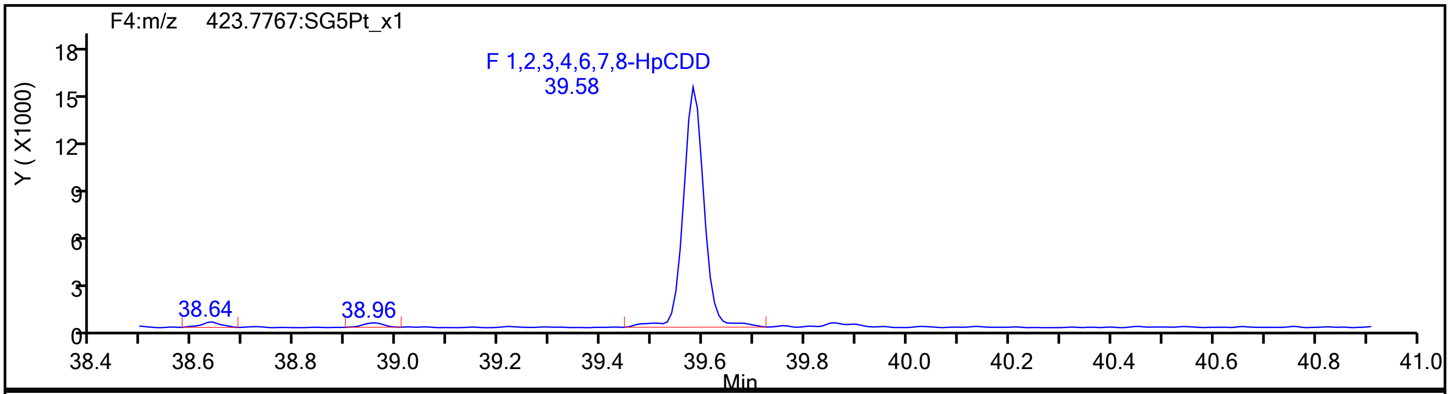

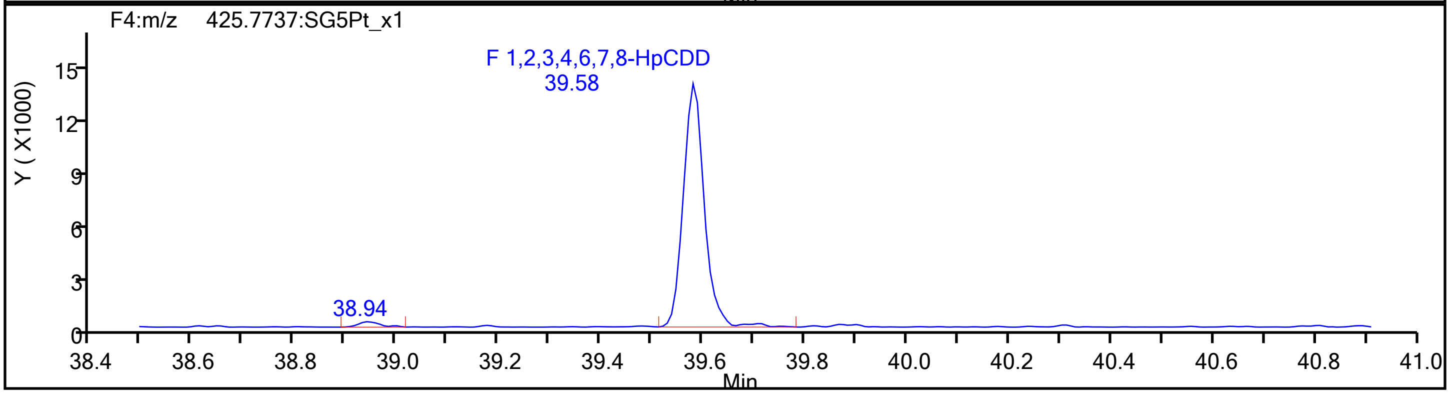

HpCDD Standards

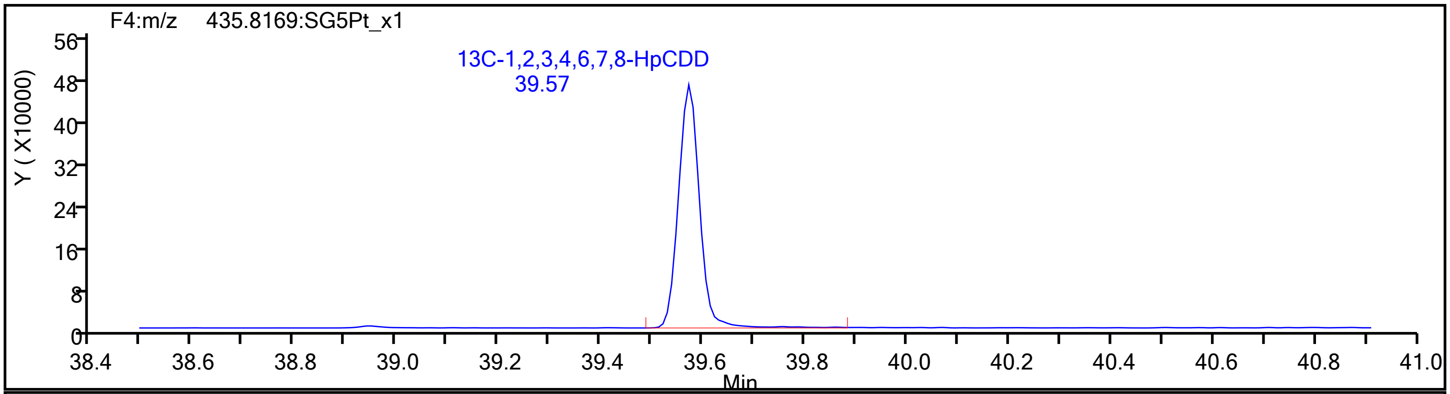

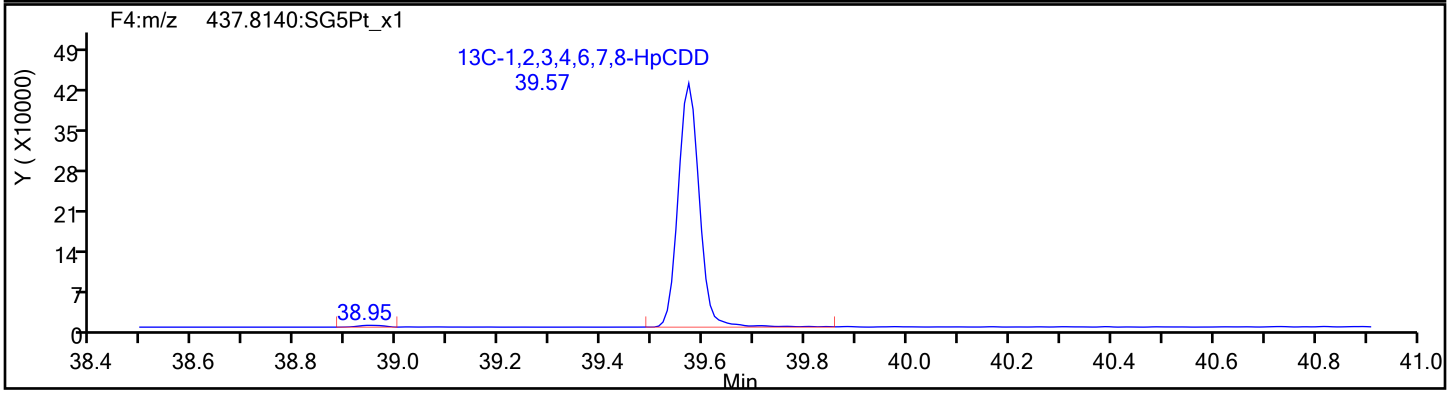

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

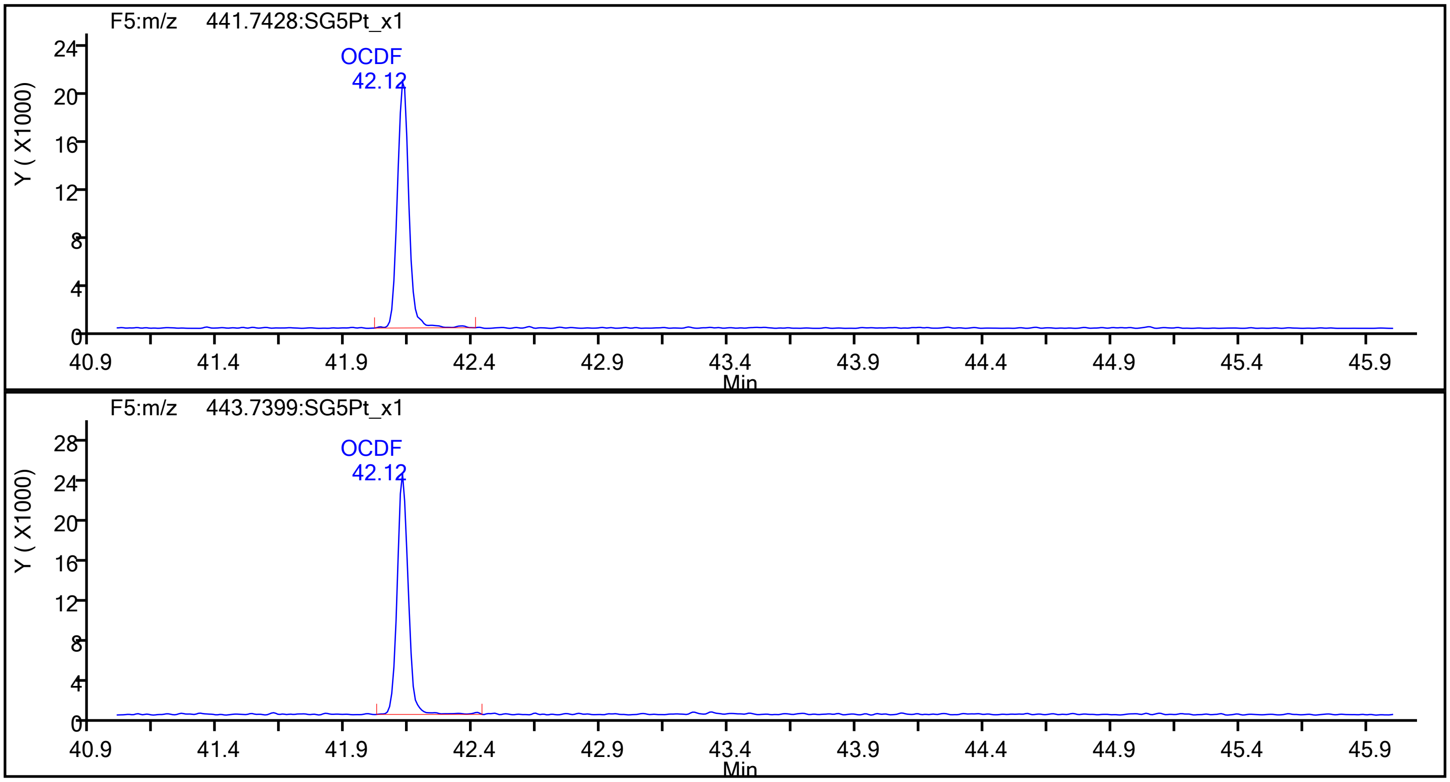

OCDF Standards

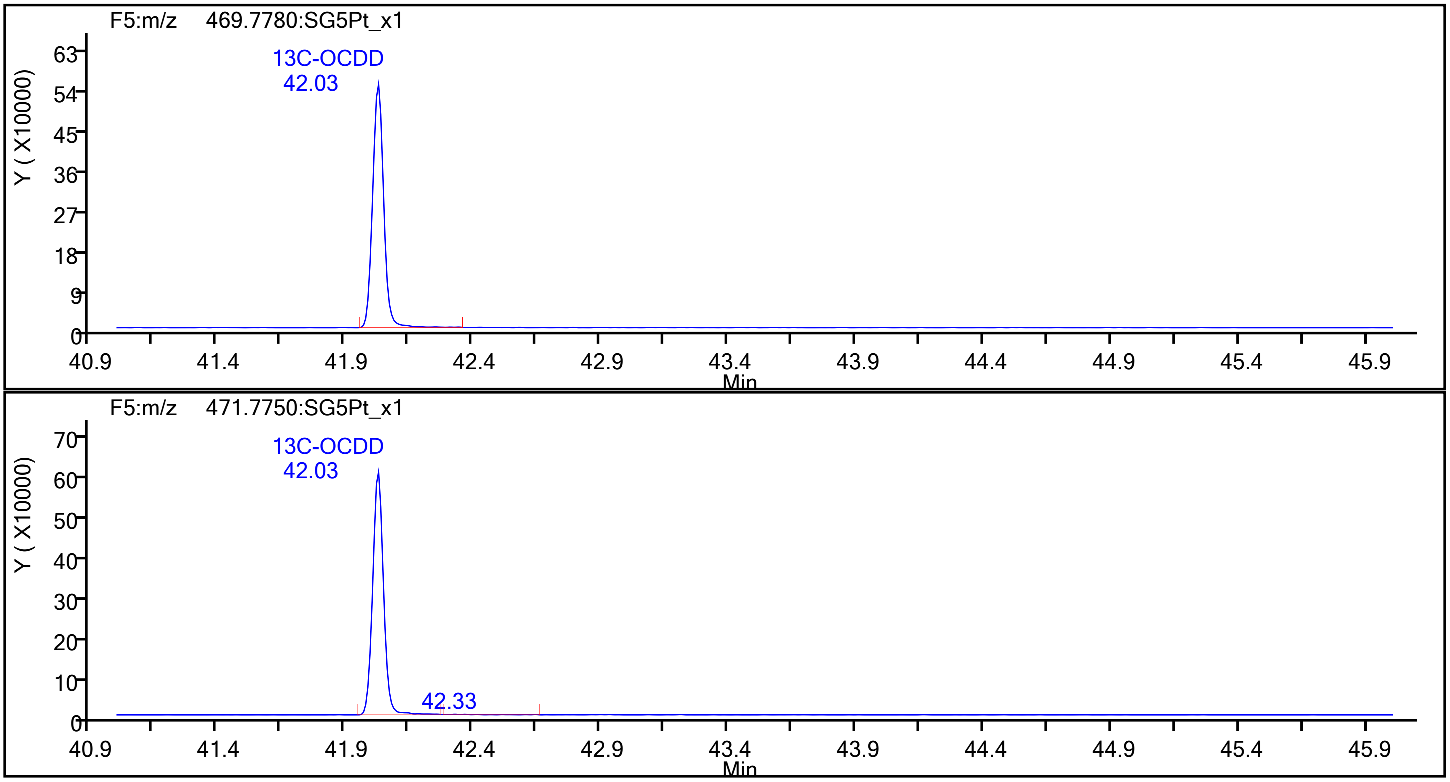

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

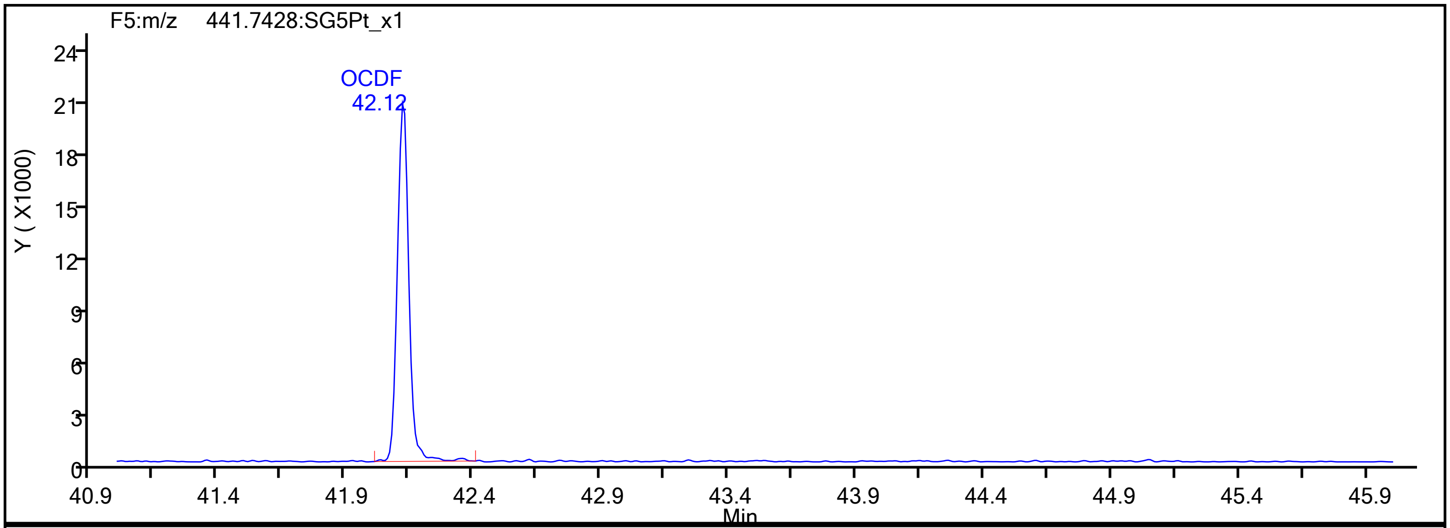

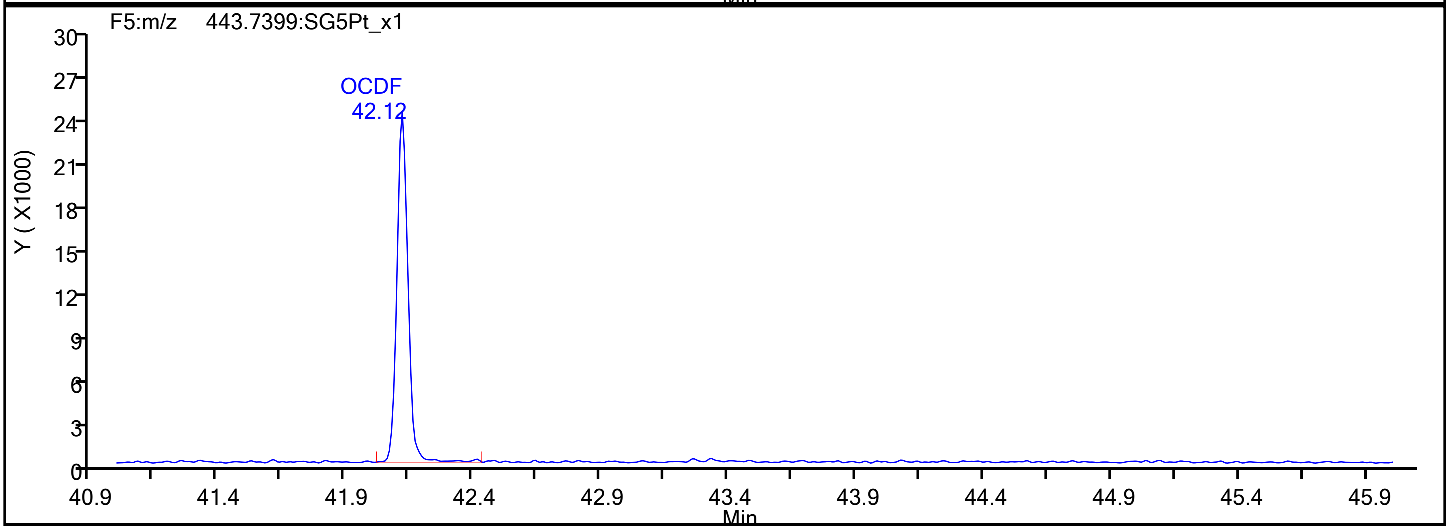

OCDF Interference Mass

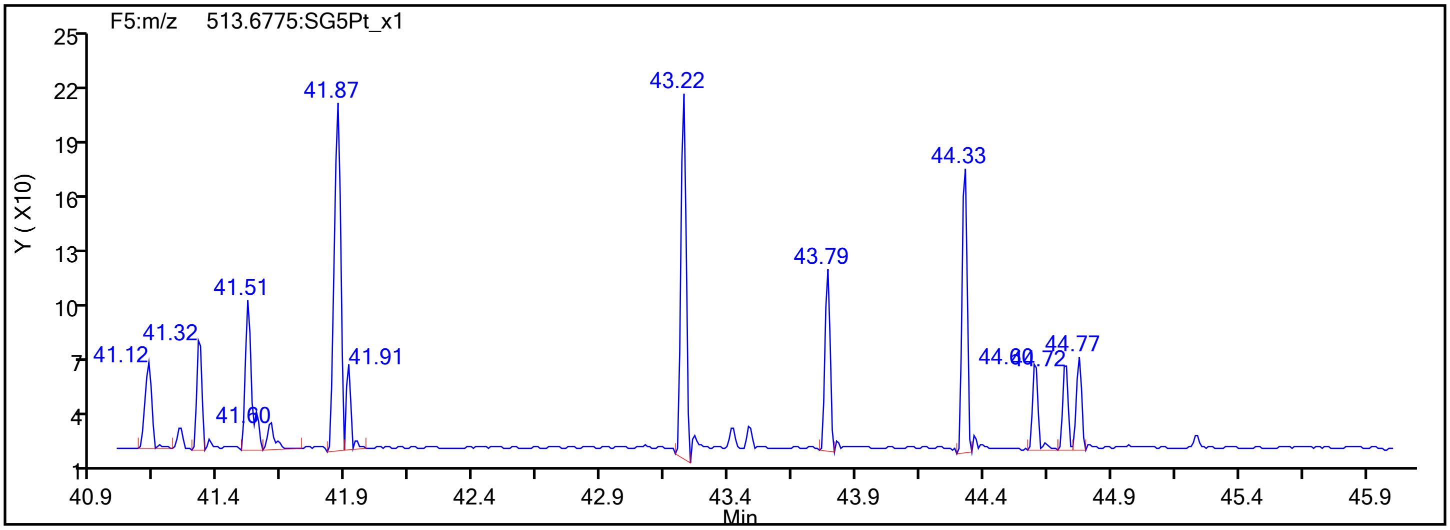

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

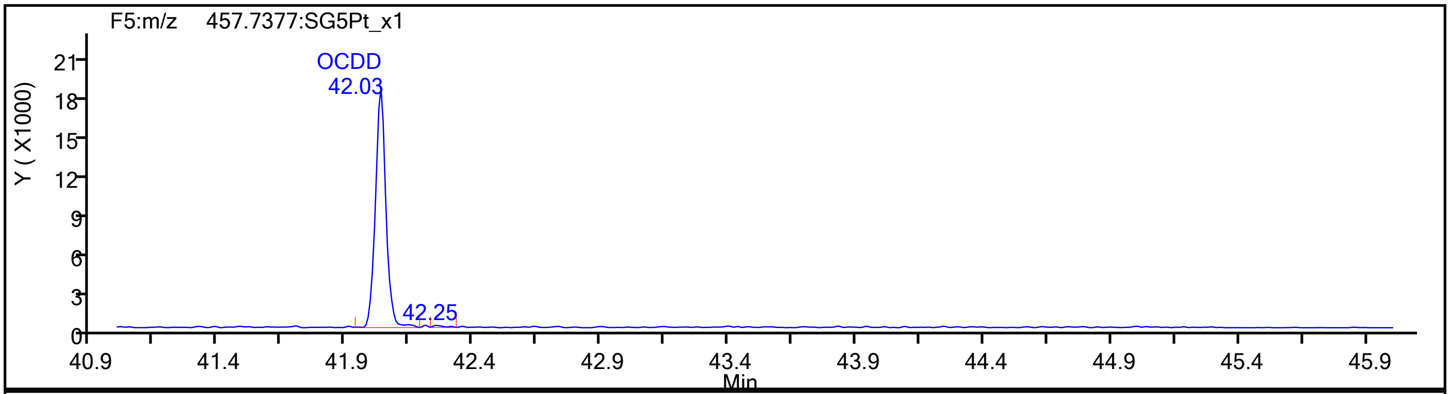

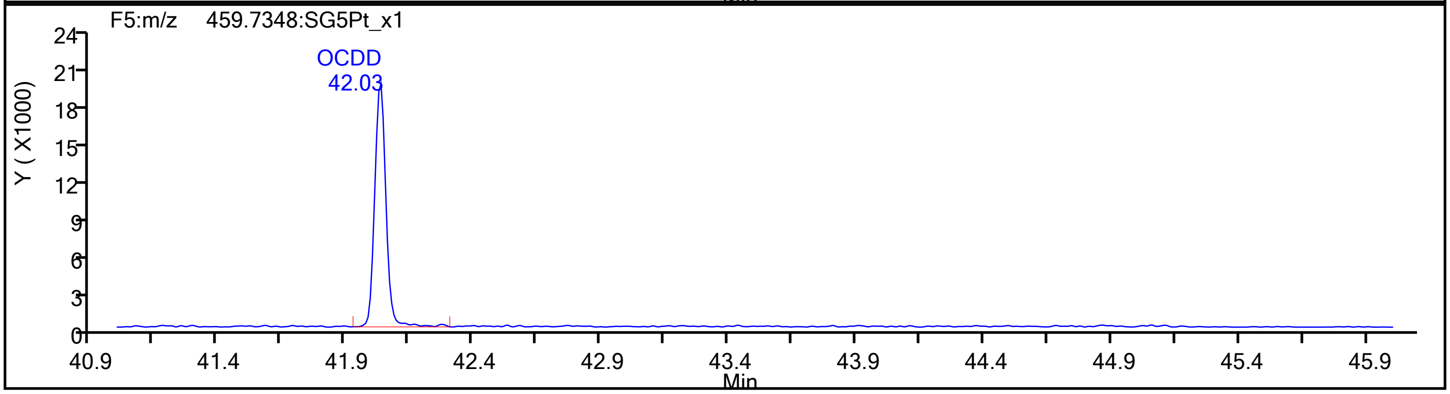

OCDD Standards

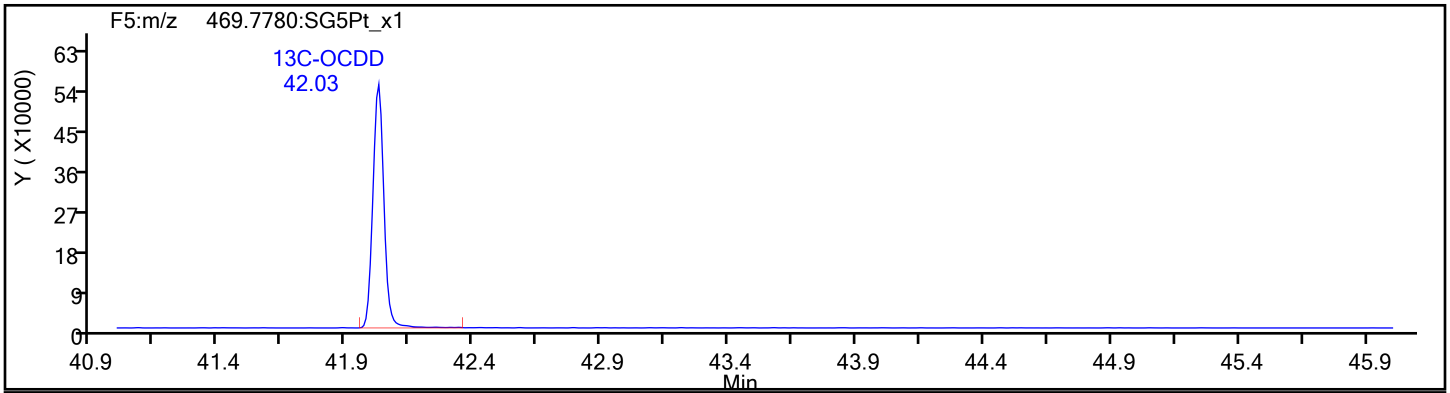

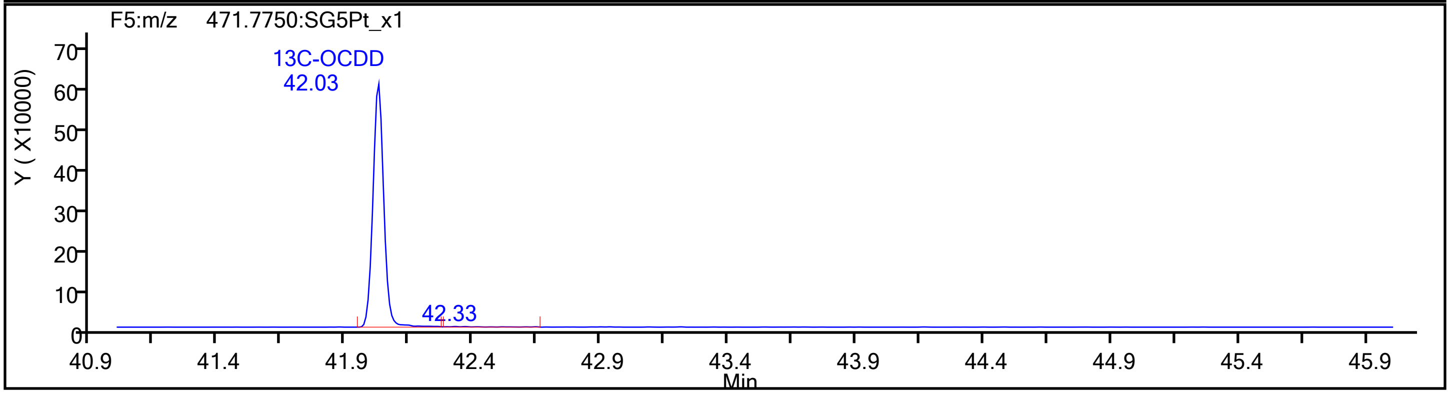

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

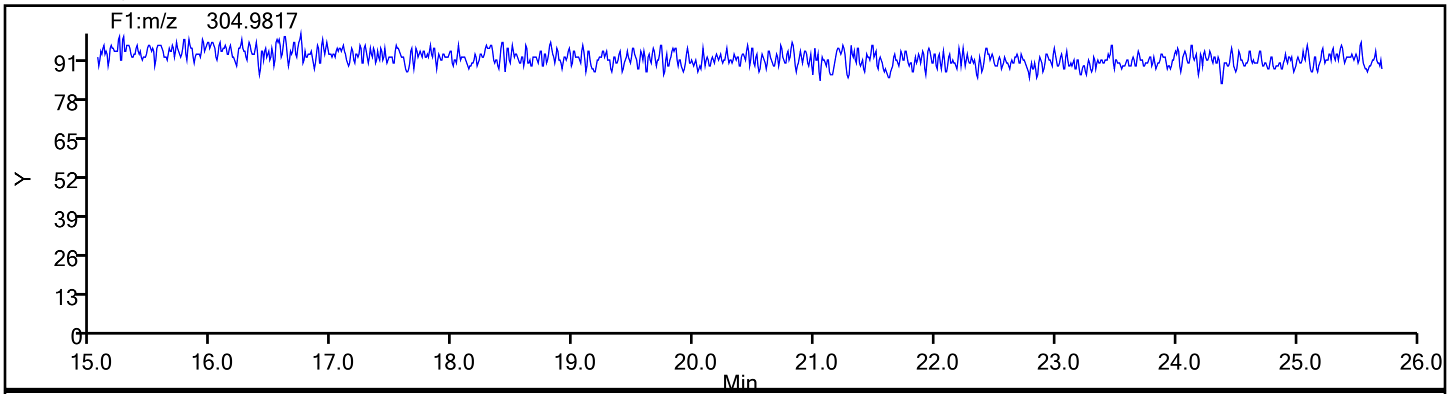

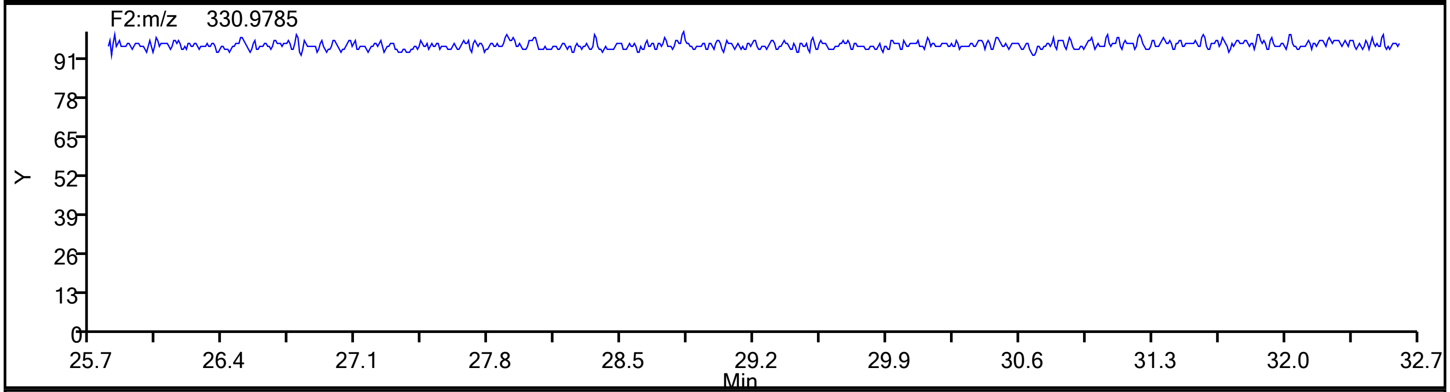

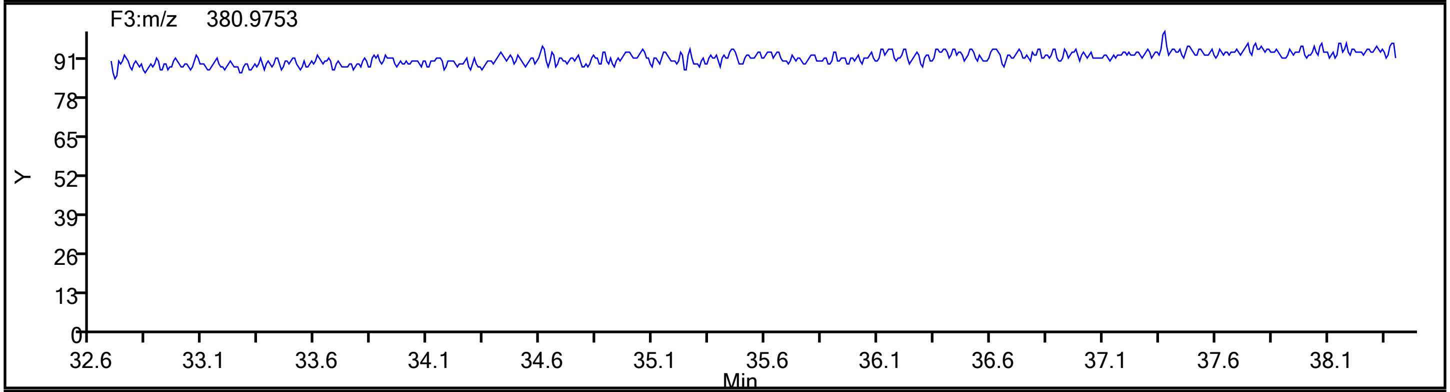

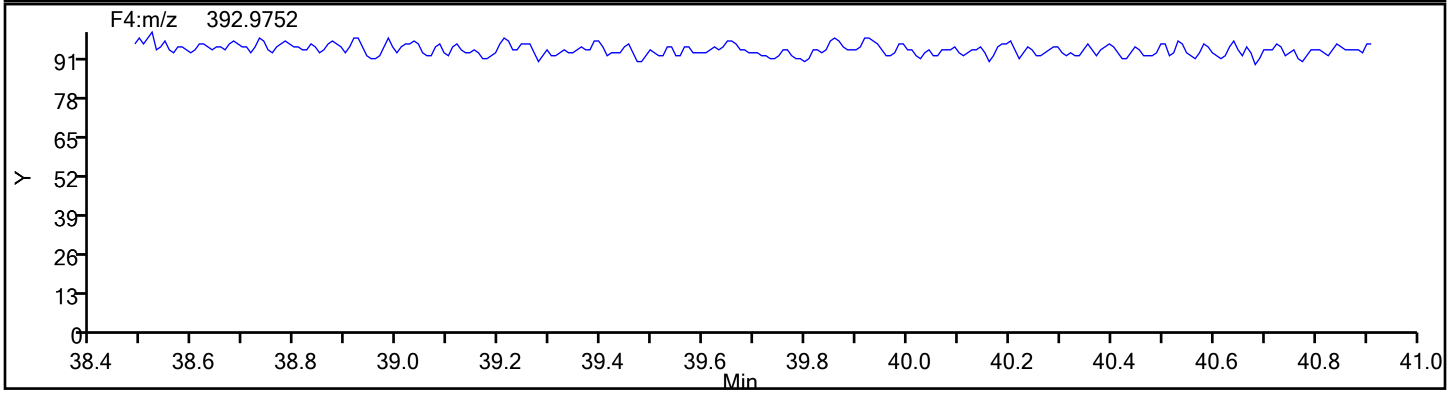

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

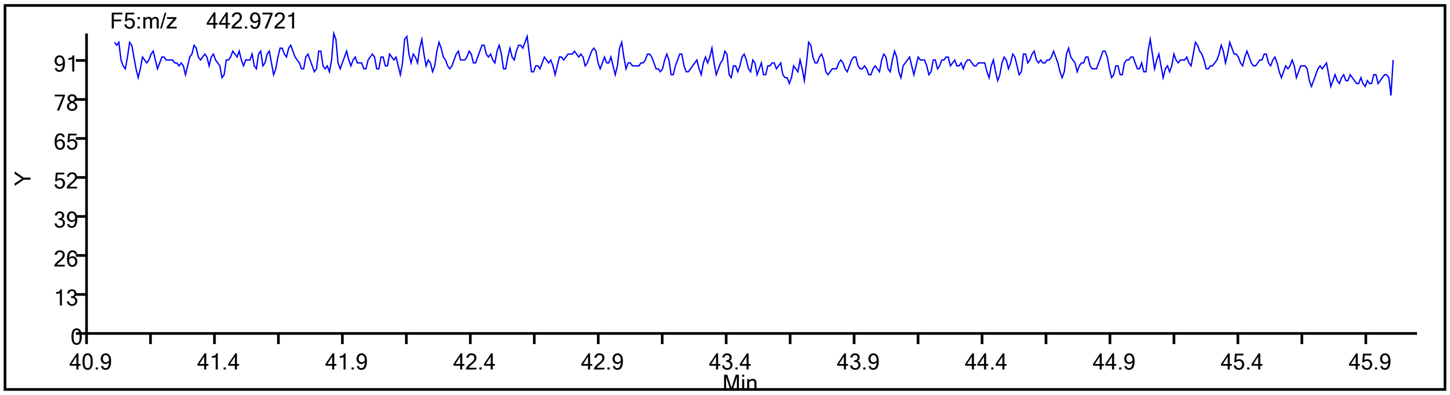

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC
Calib Level: 3
Inject. Date: 03-Jun-2020 15:42:00
ALS Bottle#: 0
Worklist Smp#: 5
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Operator ID: Xcalibur_System
Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 14:02:14
Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm)
Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: stephensk
Date: 03-Jun-2020 16:34:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.315	5314575	0.80	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.334	8006239	0.79	1.4977	100.6	100.6	0.2319	0.2319	101	
2,3,7,8-TCDF	20.351	179323	0.76	1.1312	1.980	1.980	0.0151	0.0151	99.00	
S Total TCDF					1.980	1.980	0.0151	0.0151		
D 13C-2,3,7,8-TCDD	21.702	5440325	0.79	1.0367	98.7	98.7	0.2137	0.2137	98.74	
2,3,7,8-TCDD	21.728	127378	0.74	1.1849	1.976	1.976	0.0305	0.0305	98.80	
$ 37Cl4-2,3,7,8-TCDD	21.728	113435		1.1208	1.904	1.904	0.0179	0.0179	95.22	
S Total TCDD					1.976	1.976	0.0305	0.0305		
D 13C-1,2,3,7,8-PeCDF	27.306	6879768	1.58	1.3057	99.1	99.1	0.4041	0.4041	99.14	
1,2,3,7,8-PeCDF	27.331	771318	1.58	1.1060	10.1	10.1	0.0443	0.0443	101	
D 13C-2,3,4,7,8-PeCDF	28.847	8439398	1.60	1.5420	103.0	103.0	0.3422	0.3422	103	
2,3,4,7,8-PeCDF	28.863	754082	1.57	0.9067	9.855	9.855	0.0467	0.0467	98.55	
S Total PeCDF					20.0	20.0	0.0455	0.0455		
D 13C-1,2,3,7,8-PeCDD	29.655	4345521	1.59	0.8294	98.6	98.6	0.1496	0.1496	98.58	
1,2,3,7,8-PeCDD	29.688	490548	1.53	1.1062	10.2	10.2	0.0418	0.0418	102	
S Total PeCDD					10.2	10.2	0.0418	0.0418		
D 13C-1,2,3,4,7,8-HxCDF	34.987	7273246	0.53	1.4619	103.1	103.1	0.2783	0.2783	103	
1,2,3,4,7,8-HxCDF	35.012	724662	1.25	1.0087	9.878	9.878	0.0485	0.0485	98.78	
D 13C-1,2,3,6,7,8-HxCDF	35.155	6209740	0.53	1.2866	100.1	100.1	0.3162	0.3162	100	
1,2,3,6,7,8-HxCDF	35.172	783185	1.26	1.2432	10.1	10.1	0.0483	0.0483	101	
D 13C-2,3,4,6,7,8-HxCDF	35.972	5721877	0.54	1.1988	98.9	98.9	0.3394	0.3394	98.95	
2,3,4,6,7,8-HxCDF	35.989	738782	1.28	1.2736	10.1	10.1	0.0440	0.0440	101	
D 13C-1,2,3,7,8,9-HxCDF	36.856	5058891	0.52	1.0687	98.1	98.1	0.3807	0.3807	98.13	
1,2,3,7,8,9-HxCDF	36.873	658245	1.27	1.2882	10.1	10.1	0.0458	0.0458	101	
S Total HxCDF					40.3	40.3	0.0466	0.0466		
* 13C-1,2,3,7,8,9-HxCDD	36.663	4823841	1.25	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.182	5591026	1.26	1.1046	104.9	104.9	0.2052	0.2052	105	
1,2,3,4,7,8-HxCDD	36.199	511840	1.27	0.9336	9.805	9.805	0.0345	0.0345	98.05	
D 13C-1,2,3,6,7,8-HxCDD	36.300	4793122	1.28	0.9871	100.7	100.7	0.2296	0.2296	101	
1,2,3,6,7,8-HxCDD	36.317	524375	1.24	1.0802	10.1	10.1	0.0369	0.0369	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.679	536354	1.21	1.0574	9.769	9.769	0.0337	0.0337	97.69	
S Total HxCDD					29.7	29.7	0.0350	0.0350		
D 13C-1,2,3,4,6,7,8-HpCDF	38.645	4315198	0.47	0.9035	99.0	99.0	0.4147	0.4147	99.01	
1,2,3,4,6,7,8-HpCDF	38.662	714508	1.01	1.5957	10.4	10.4	0.0570	0.0570	104	
D 13C-1,2,3,4,7,8,9-HpCDF	39.892	5040340	0.46	1.0480	99.7	99.7	0.3575	0.3575	99.70	
1,2,3,4,7,8,9-HpCDF	39.900	578385	1.03	1.1693	9.814	9.814	0.0615	0.0615	98.14	
S Total HpCDF					20.2	20.2	0.0593	0.0593		
D 13C-1,2,3,4,6,7,8-HpCDD	39.588	4139807	1.06	0.8875	96.7	96.7	0.3434	0.3434	96.70	
1,2,3,4,6,7,8-HpCDD	39.597	465468	1.04	1.1150	10.1	10.1	0.0373	0.0373	101	
S Total HpCDD					10.1	10.1	0.0373	0.0373		
D 13C-OCDD	42.042	5749279	0.90	0.6297	189.3	189.3	0.1871	0.1871	94.63	
OCDF	42.134	841389	0.91	1.4809	19.8	19.8	0.0325	0.0325	98.82	
OCDD	42.050	711726	0.90	1.1948	20.7	20.7	0.0352	0.0352	104	

Reagents:

HRDXNL3_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 03-Jun-2020 15:42:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 14:02:14 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: stephensk Date: 03-Jun-2020 16:34:37

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.315	21.309	0		2356924	340498	466	1165	731		
333.9338	21.324	21.309	1		2957651	441191	227	567	1944	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.334	20.321	1	0.954	3520988	532356	722	1805	737		
317.9389	20.325	20.321	0	0.954	4485251	669402	364	910	1839	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.351	20.347	0	1.001	77503	11907	24	60	496		
305.8987	20.351	20.347	0	1.001	101820	15057	58	145	260	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.702	21.692	1	1.018	2399434	338214	466	1165	726		
333.9338	21.702	21.692	1	1.018	3040891	415593	227	567	1831	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.728	21.722	0	1.001	54351	7998	83	207	96		
321.8936	21.754	21.722	2	1.002	73027	10309	26	65	397	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.728	21.724	0	1.019	113435	15998	63	157	254		
13C-1,2,3,7,8-PeCDF											
351.9000	27.306	27.300	0	1.281	4211758	677113	965	2412	702		
353.8970	27.314	27.300	1	1.281	2668010	428790	685	1712	626	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.331	27.325	0	1.001	472614	74619	100	250	746		
341.8567	27.340	27.325	1	1.001	298704	48008	117	292	410	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.847	28.834	1	1.353	5190403	778822	965	2412	807		
353.8970	28.847	28.834	1	1.353	3248995	502595	685	1712	734	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.863	28.857	0	1.001	460392	67566	100	250	676		
341.8567	28.863	28.857	0	1.001	293690	43461	117	292	371	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.655	29.651	0	1.391	2665792	375741	190	475	1978		
369.8919	29.663	29.651	1	1.392	1679729	240477	198	495	1215	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.688	29.682	0	1.001	297017	41931	88	220	476		
357.8516	29.697	29.682	1	1.001	193531	28320	26	65	1089	1.53(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.987	34.982	0	0.954	2519952	570418	705	1762	809		
385.8610	34.987	34.982	0	0.954	4753294	1060290	1356	3390	782	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.012	35.000	1	1.001	403019	89473	178	445	503		
375.8178	35.012	35.000	1	1.001	321643	70453	141	352	500	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.155	35.145	1	0.959	2142735	456483	705	1762	647		
385.8610	35.155	35.145	1	0.959	4067005	870626	1356	3390	642	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.172	35.163	1	1.000	437027	96553	178	445	542		
375.8178	35.172	35.163	1	1.000	346158	74869	141	352	531	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.972	35.966	0	0.981	2000221	499825	705	1762	709		
385.8610	35.972	35.966	0	0.981	3721656	920858	1356	3390	679	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.989	35.981	0	1.000	414064	106103	178	445	596		
375.8178	35.989	35.981	0	1.000	324718	81950	141	352	581	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.856	36.848	0	1.005	1728081	464964	705	1762	660		
385.8610	36.856	36.848	0	1.005	3330810	887326	1356	3390	654	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.873	36.862	1	1.000	368683	97720	178	445	549		
375.8178	36.873	36.862	1	1.000	289562	75315	141	352	534	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.663	36.653	1		2678016	703208	648	1620	1085		
403.8529	36.663	36.653	1		2145825	563188	500	1250	1126	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.182	36.173	1	0.987	3115241	836841	648	1620	1291		
403.8529	36.182	36.173	1	0.987	2475785	661026	500	1250	1322	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.199	36.187	1	1.000	286100	73242	120	300	610		
391.8127	36.191	36.187	0	1.000	225740	58343	73	182	799	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.300	36.291	1	0.990	2688113	682653	648	1620	1053		
403.8529	36.300	36.291	1	0.990	2105009	526396	500	1250	1053	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.317	36.304	1	1.000	289777	74637	120	300	622		
391.8127	36.309	36.304	0	1.000	234598	60454	73	182	828	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.679	36.669	1	1.014	293361	78785	120	300	657		
391.8127	36.679	36.669	1	1.014	242993	63912	73	182	876	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.645	38.640	0	1.054	1376232	442447	737	1842	600		
419.8220	38.645	38.640	0	1.054	2938966	969487	1161	2902	835	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.662	38.655	0	1.000	359235	116338	319	797	365		
409.7788	38.654	38.655	0	1.000	355273	111488	195	487	572	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.892	39.885	0	1.088	1594894	565882	737	1842	768		
419.8220	39.892	39.885	0	1.088	3445446	1221800	1161	2902	1052	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.900	39.893	0	1.000	294044	105213	319	797	330		
409.7788	39.900	39.893	0	1.000	284341	102194	195	487	524	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.588	39.582	0	1.080	2134165	746372	776	1940	962		
437.8140	39.588	39.582	0	1.080	2005642	702252	768	1920	914	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.597	39.590	0	1.000	236751	83736	140	350	598		
425.7737	39.597	39.590	0	1.000	228717	80520	101	252	797	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.042	42.035	0	1.147	2716730	893950	306	765	2921		
471.7750	42.042	42.035	0	1.147	3032549	1006988	291	727	3460	0.90(0.76-1.02)	
OCDF											
441.7428	42.134	42.131	0	1.002	399914	128527	65	162	1977		
443.7399	42.134	42.131	0	1.002	441475	142605	118	295	1209	0.91(0.76-1.02)	
OCDD											
457.7377	42.050	42.043	0	1.000	336937	110921	66	165	1681		
459.7348	42.050	42.043	0	1.000	374789	121137	94	235	1289	0.90(0.76-1.02)	

Reagents:

HRDXNL3_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 14:02:24   Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168   Sample Line#: 5
Column Type: DB-5   Column Dia: 0.32 mm

TCDF

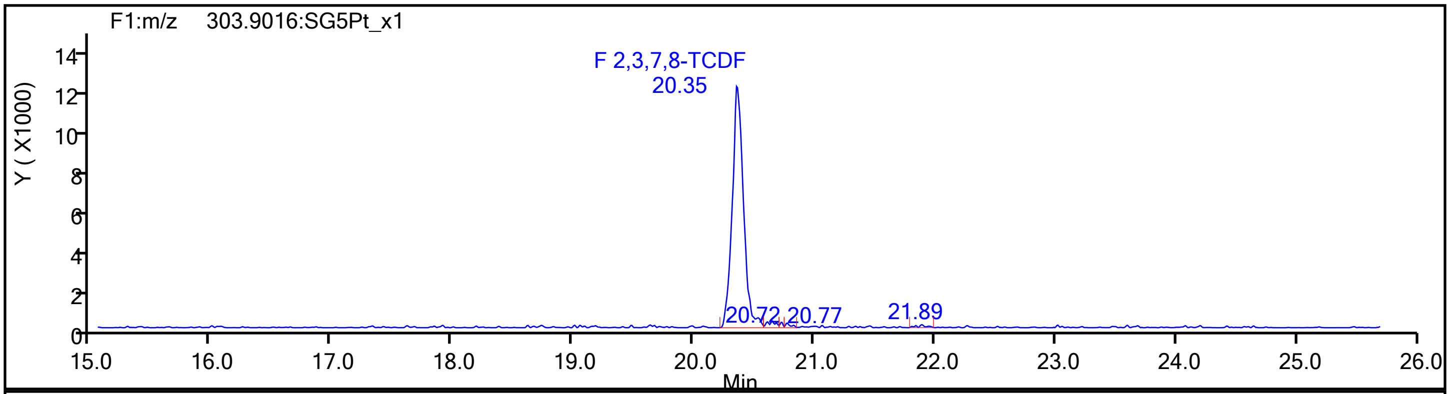

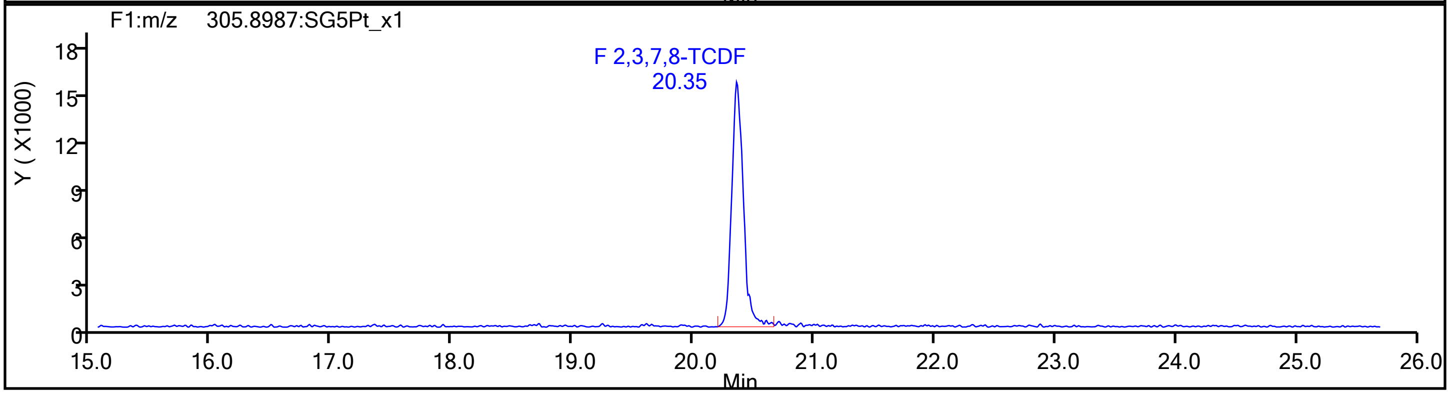

TCDF Standards

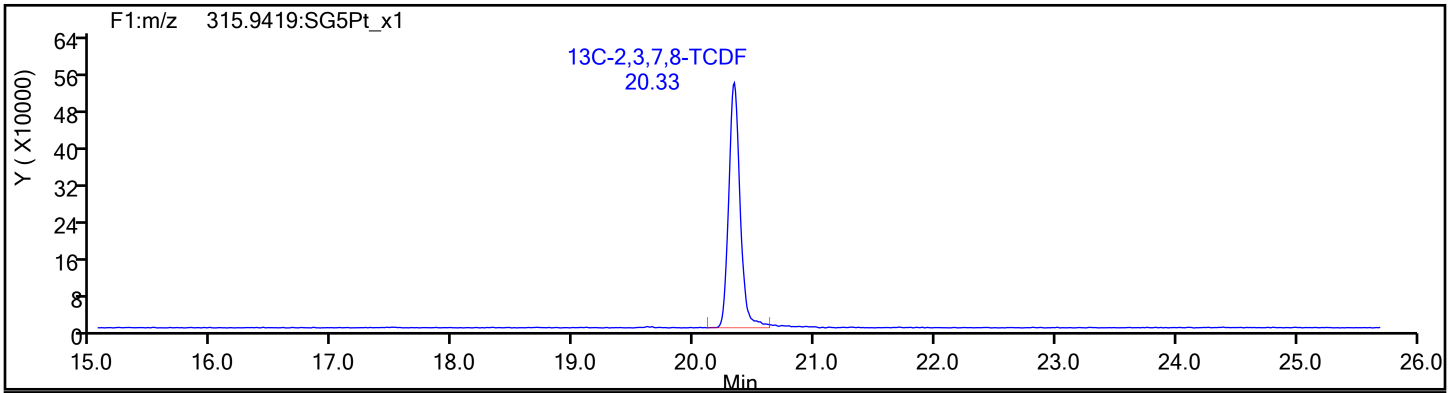

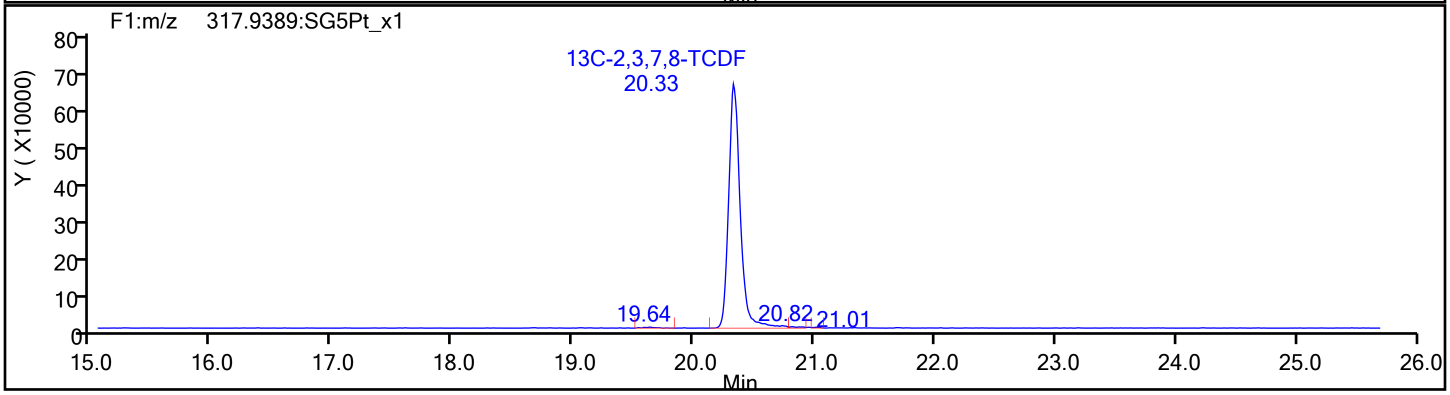

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

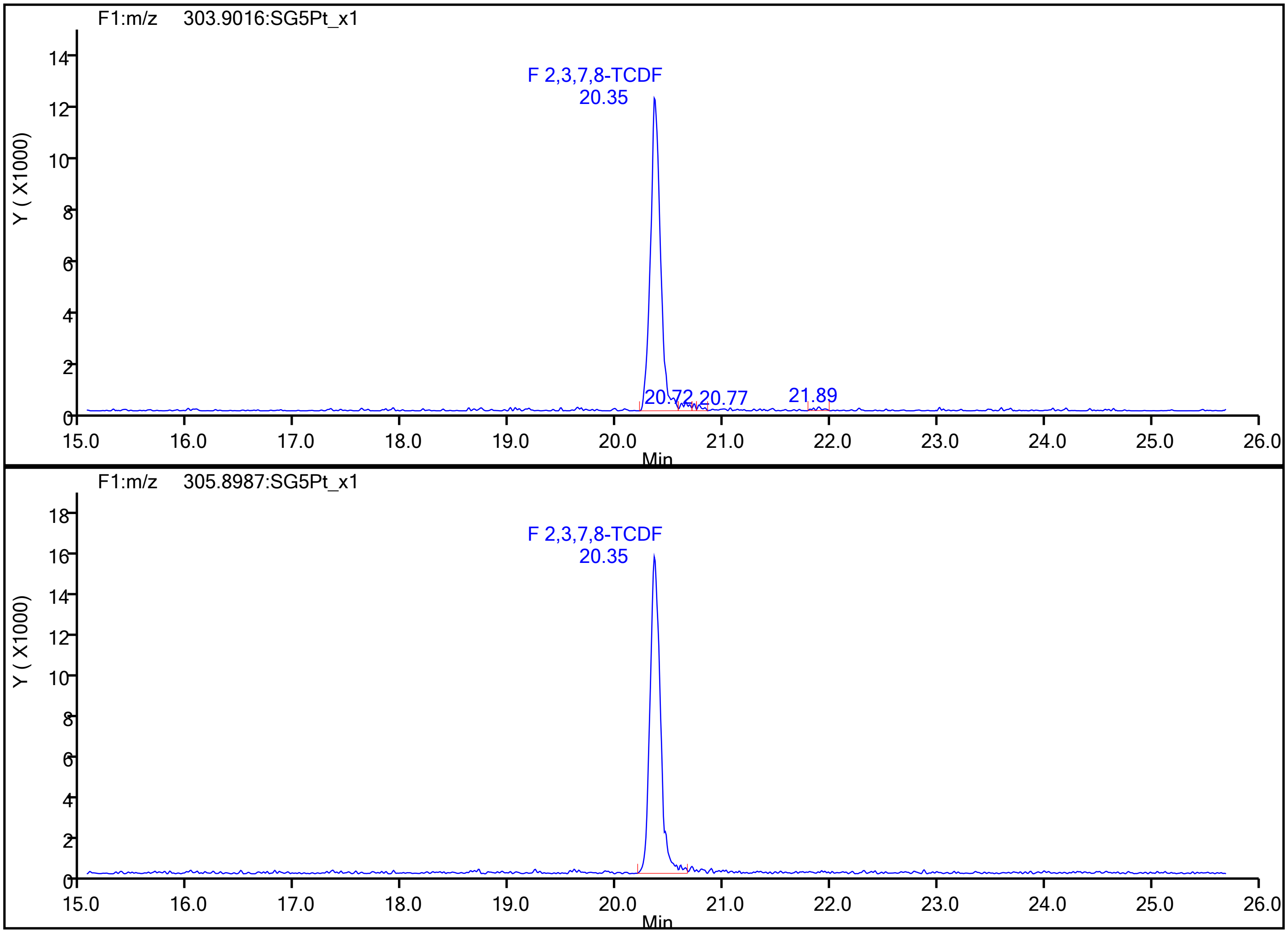

TCDF Interference Mass

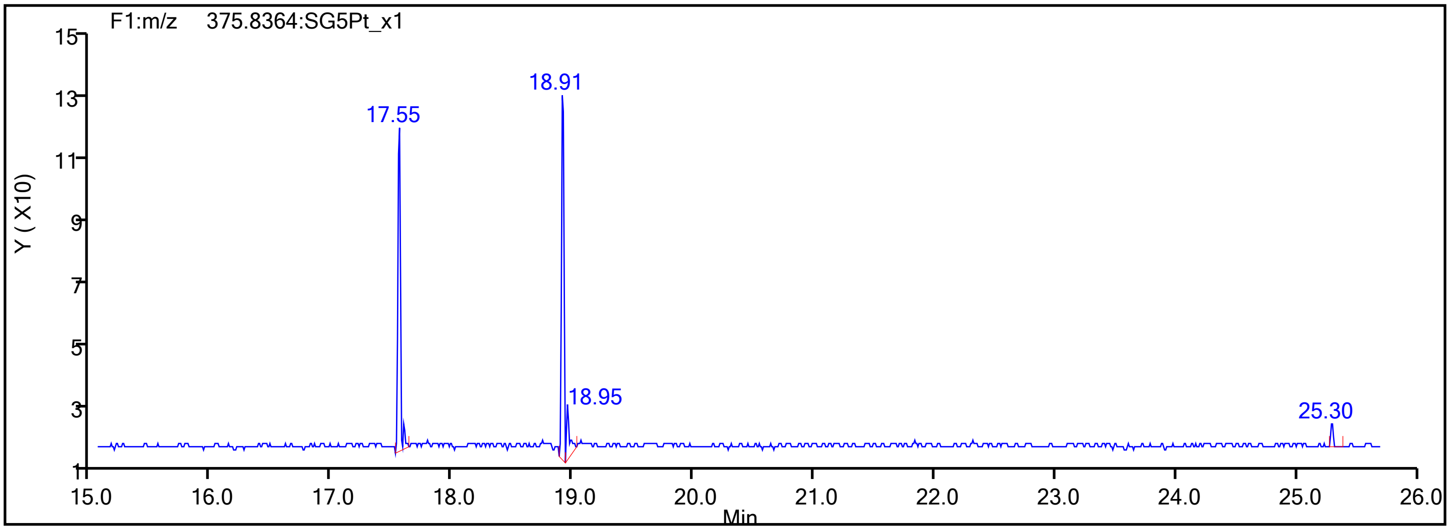

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

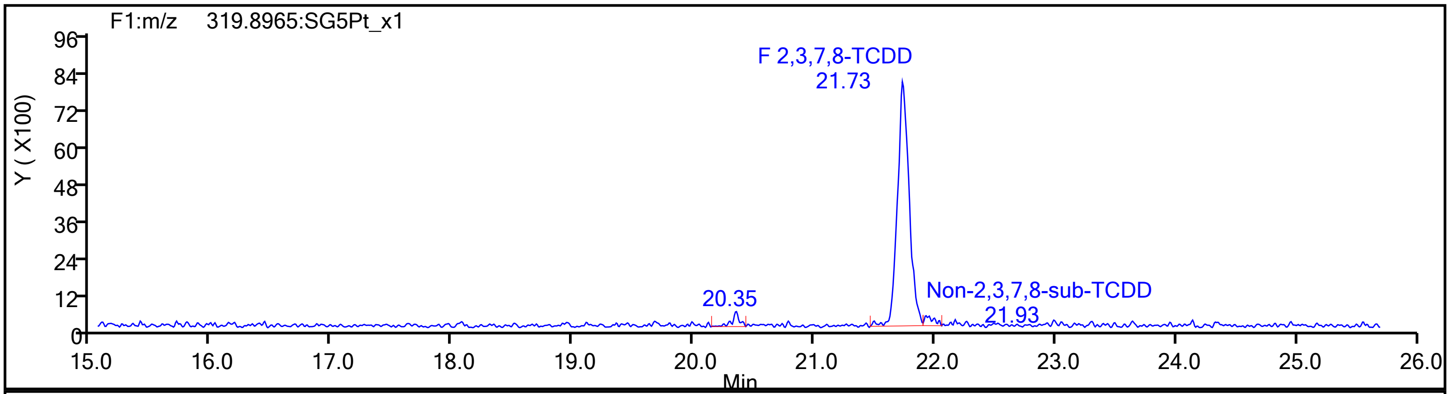

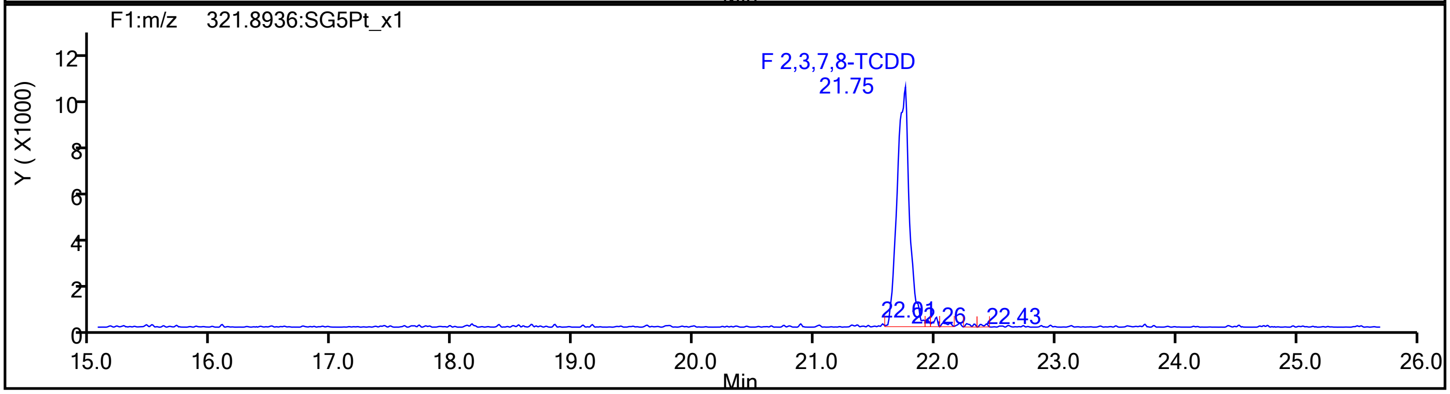

TCDD Standards

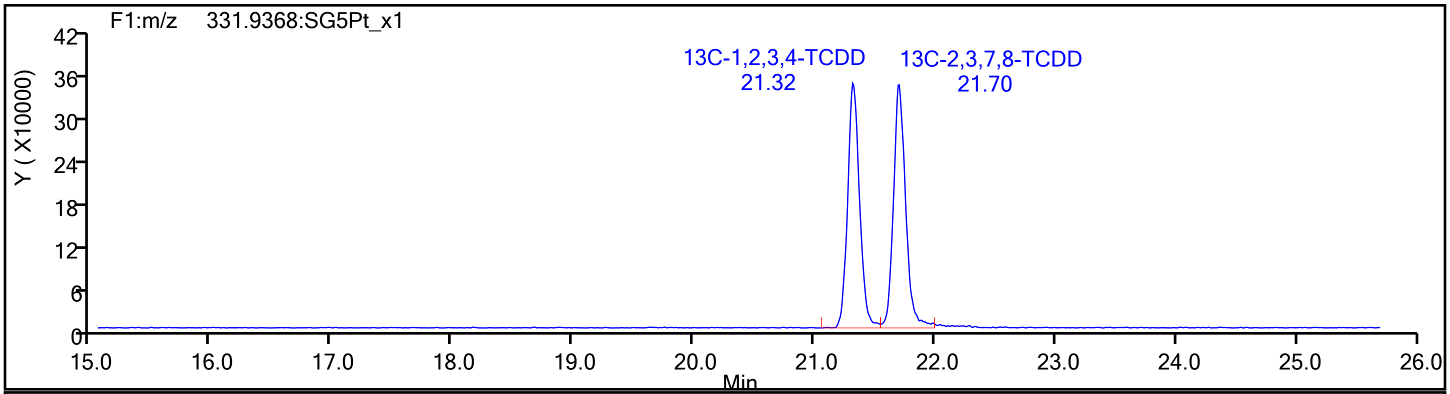

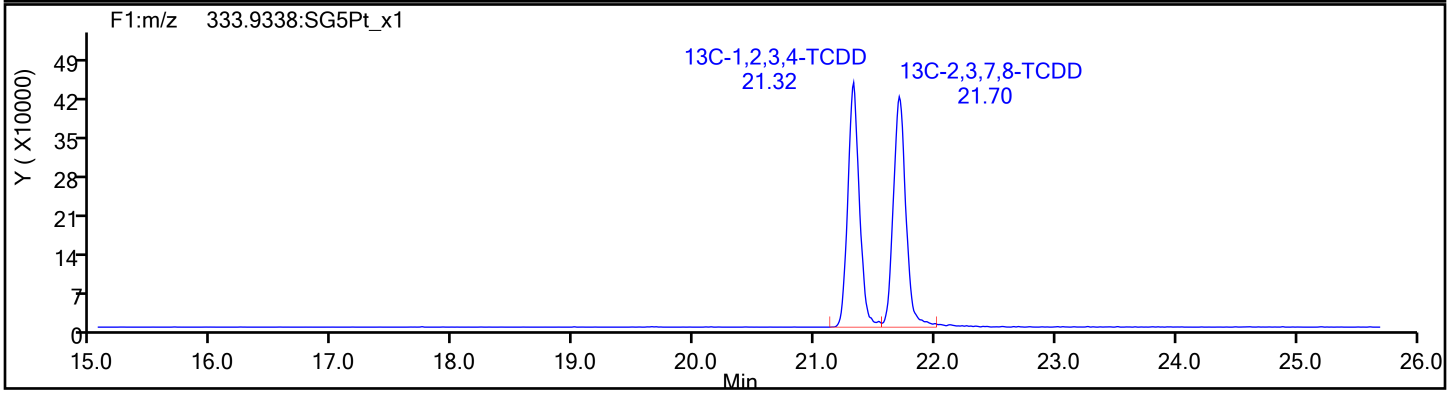

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

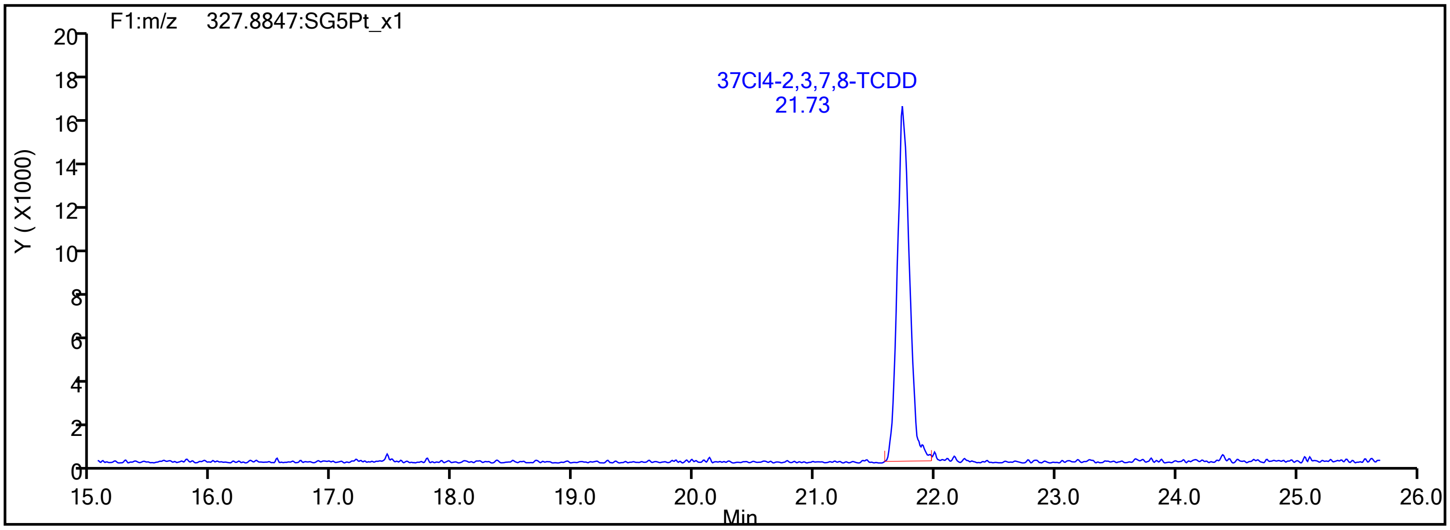

37Cl4-TCDD Standards

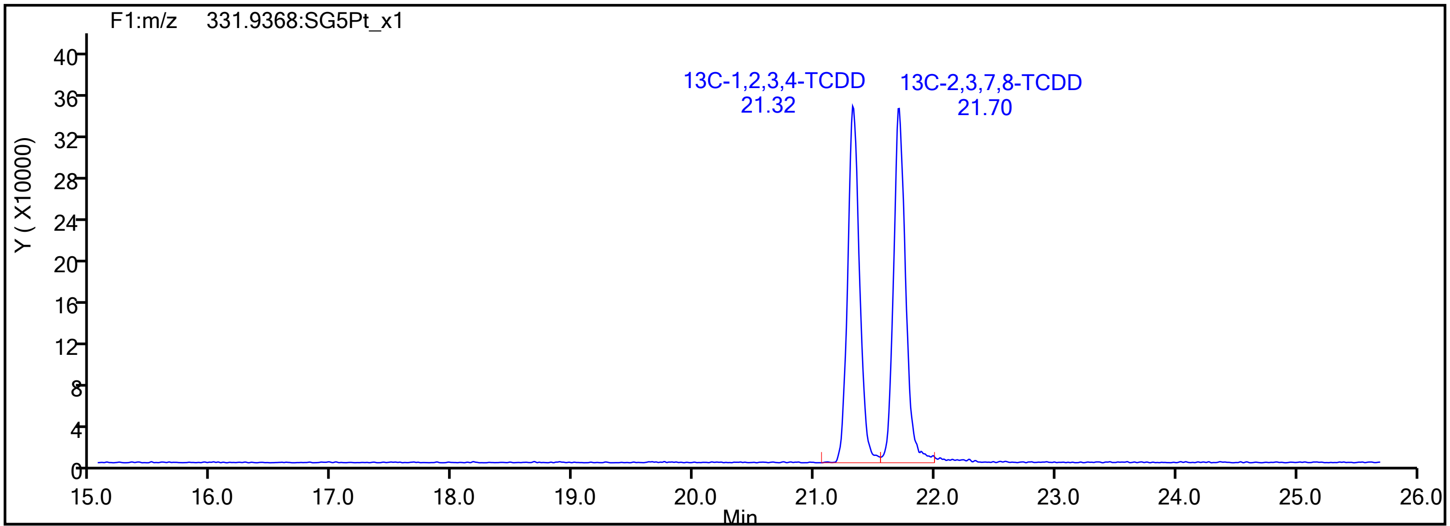

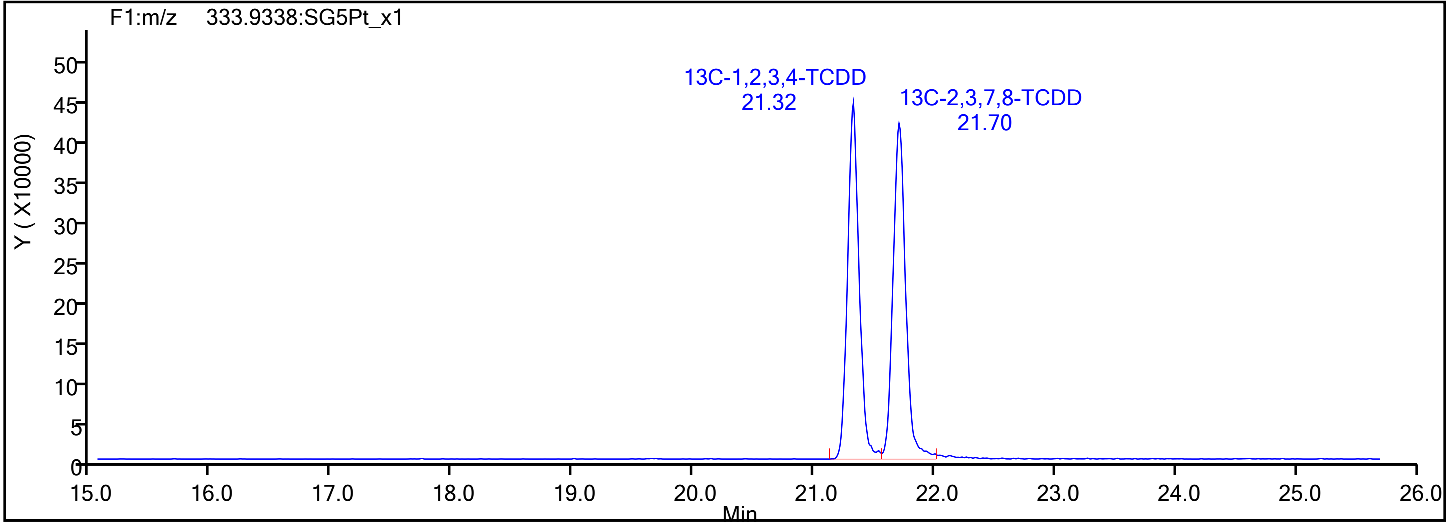

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Chrom Revision: 2.3 03-Jun-2020 23:27:16
Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

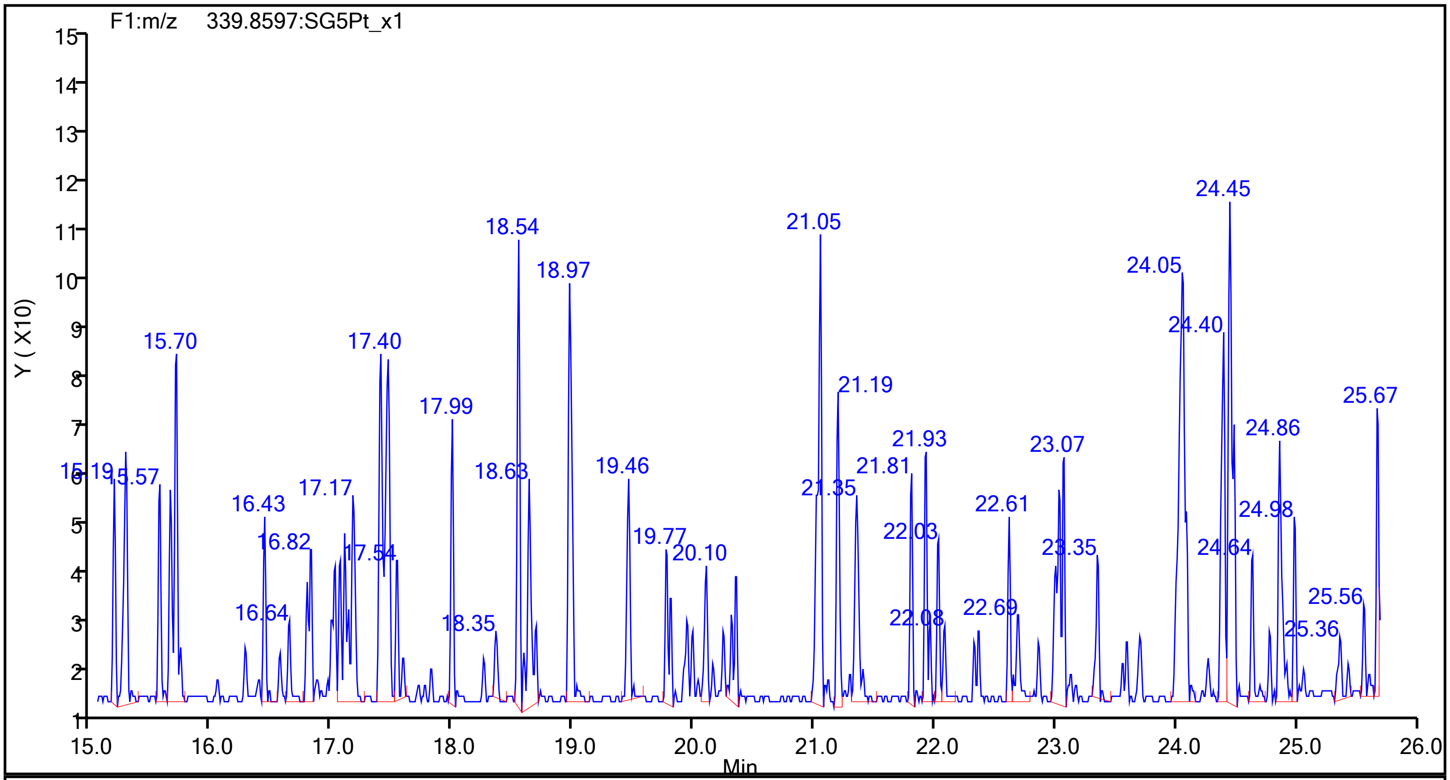

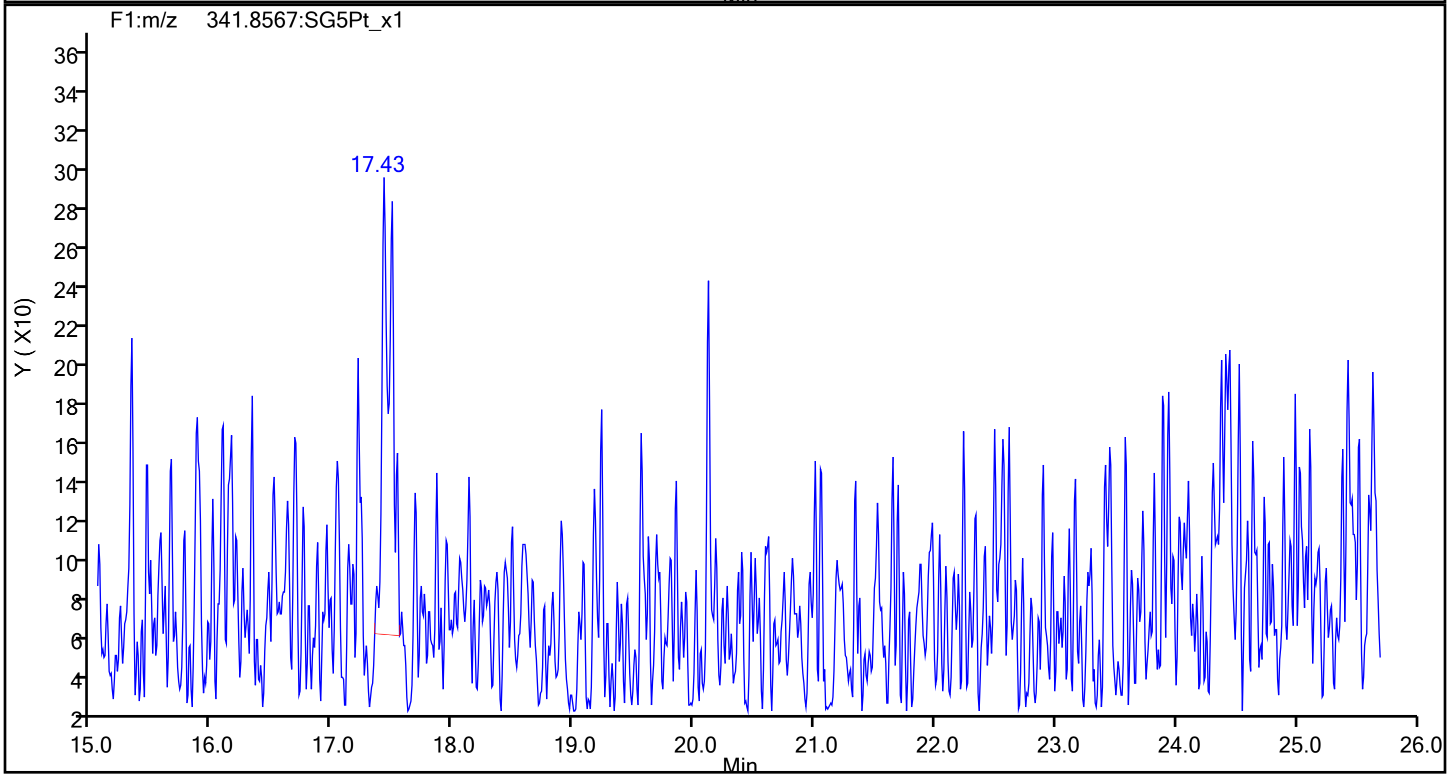

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

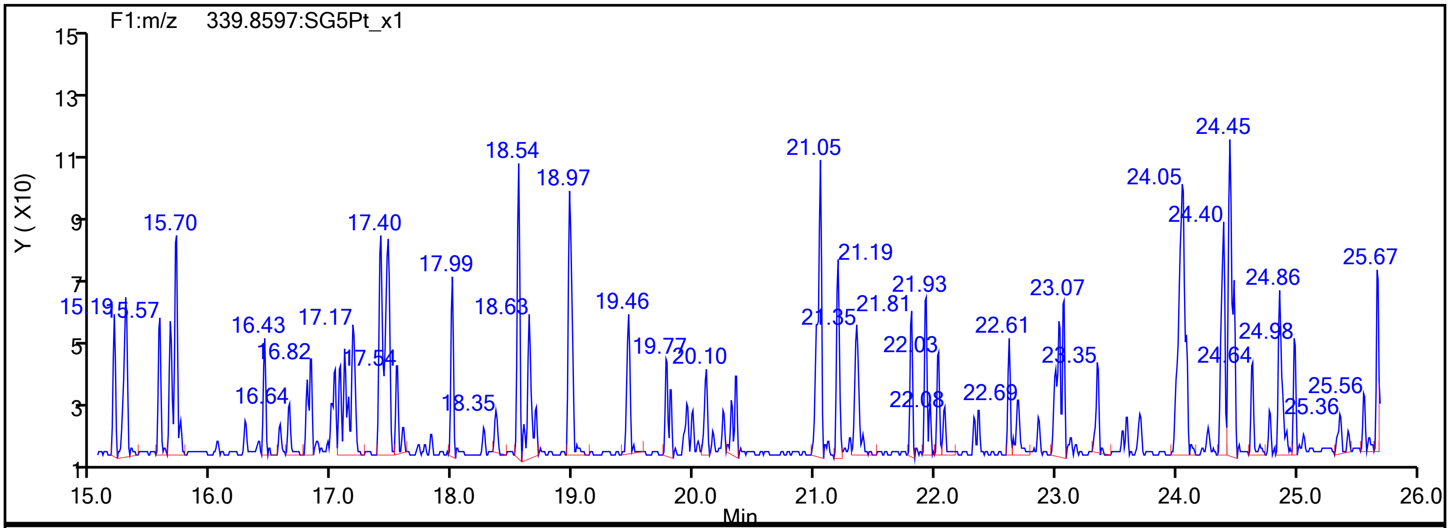

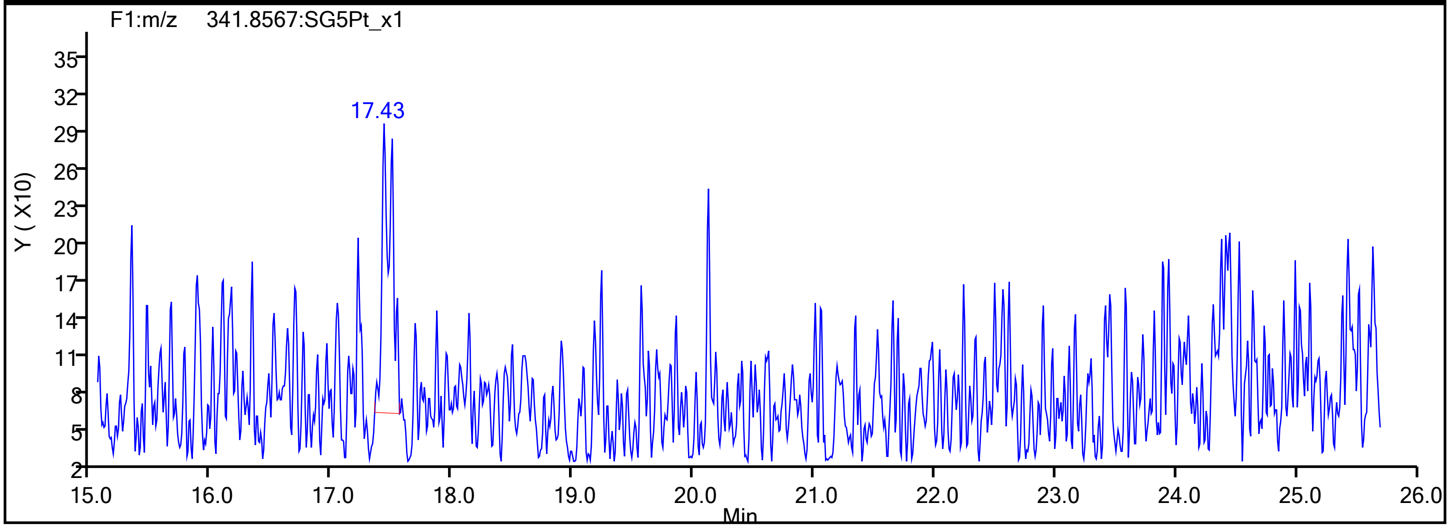

F1 PeCDFs Interference Mass

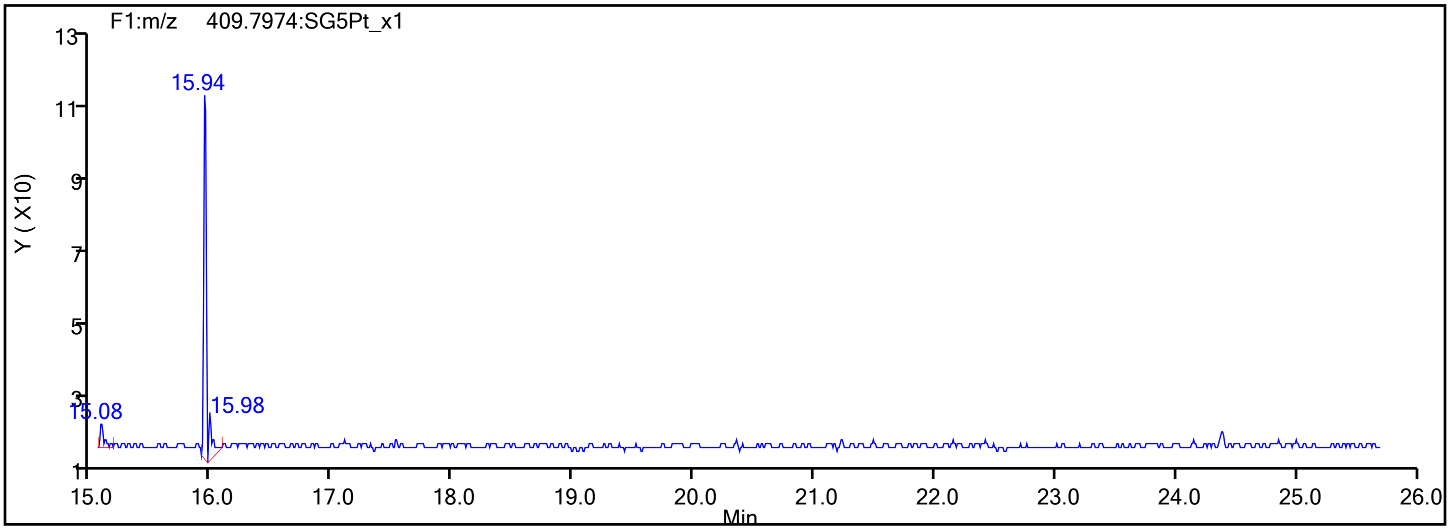

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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PeCDF

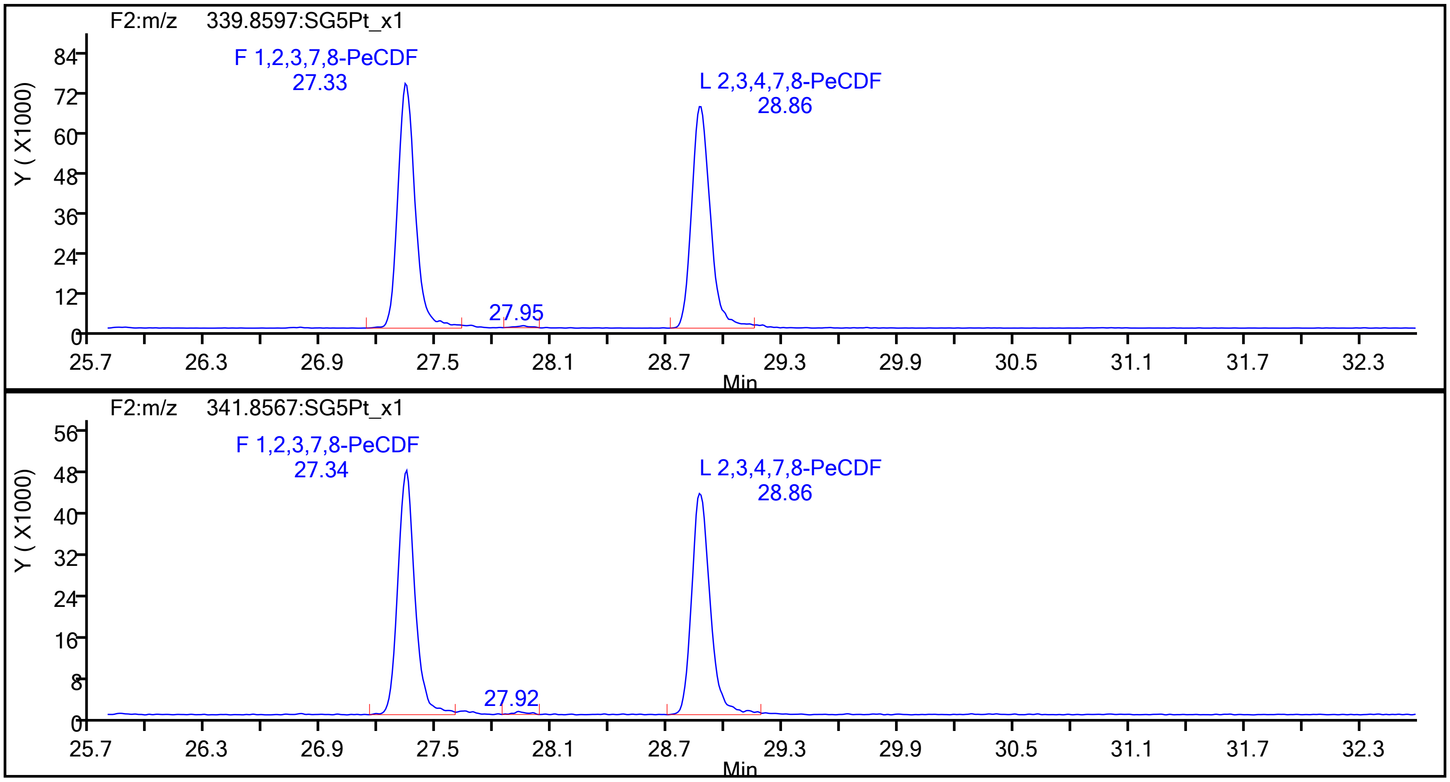

PeCDF Standards

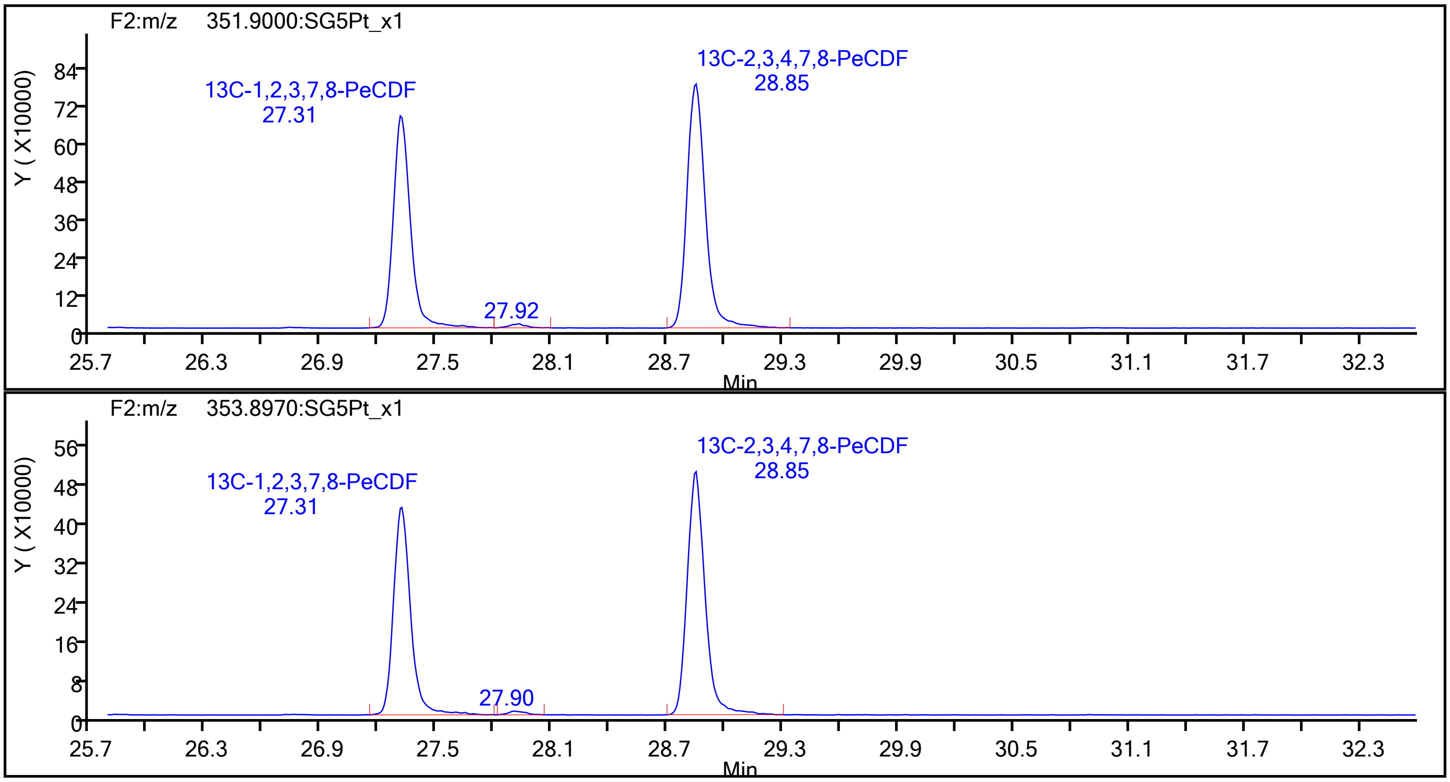

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
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PeCDF

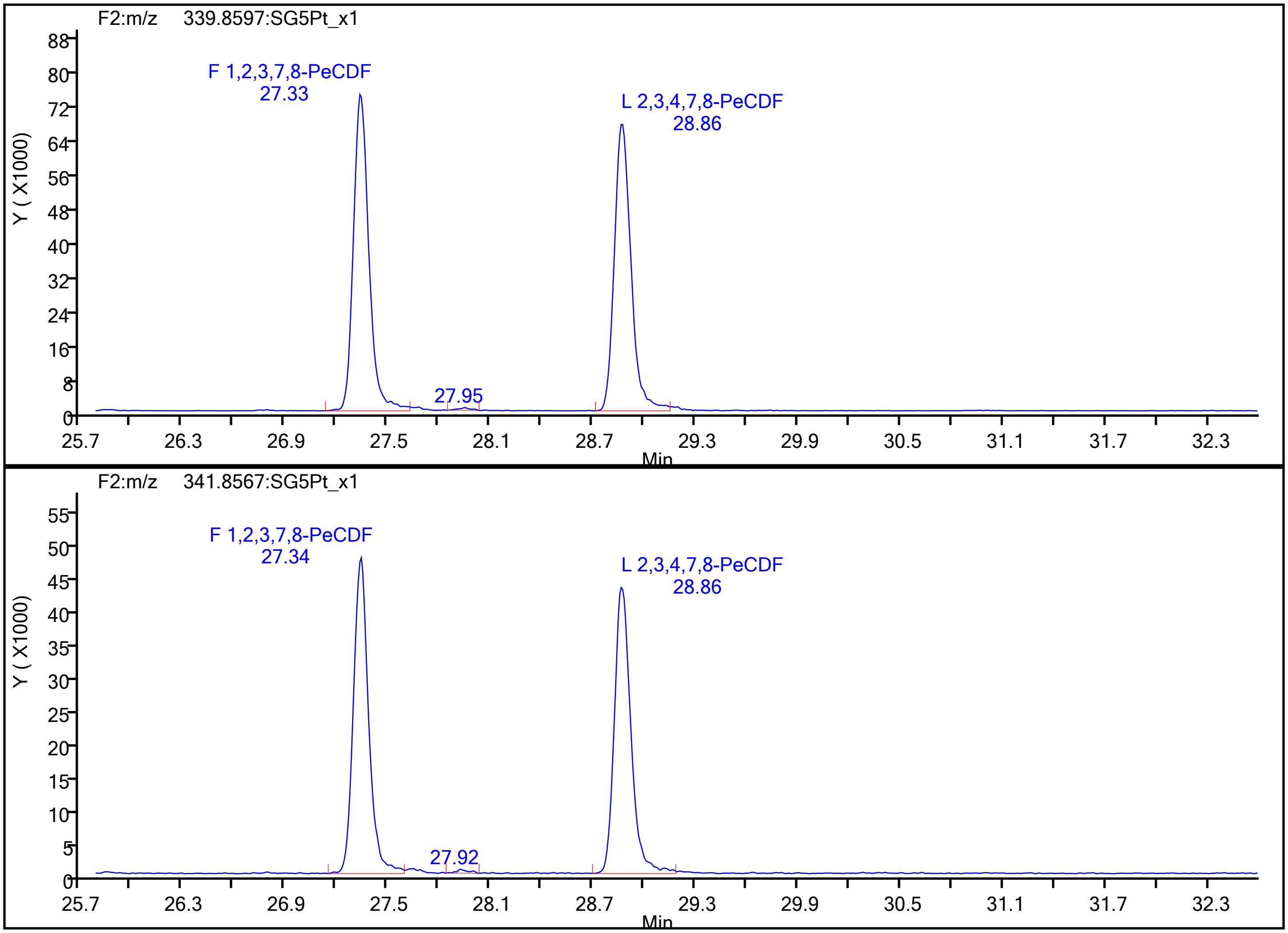

PeCDF Interference Mass

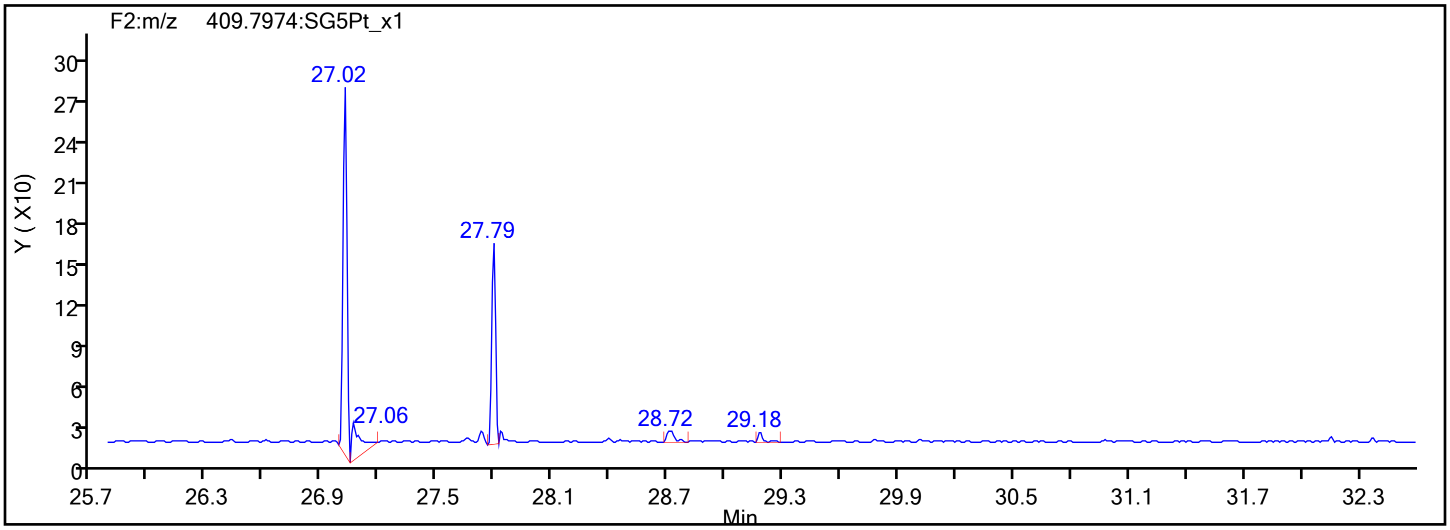

Report Date: 05-Jun-2020 14:02:24 | Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

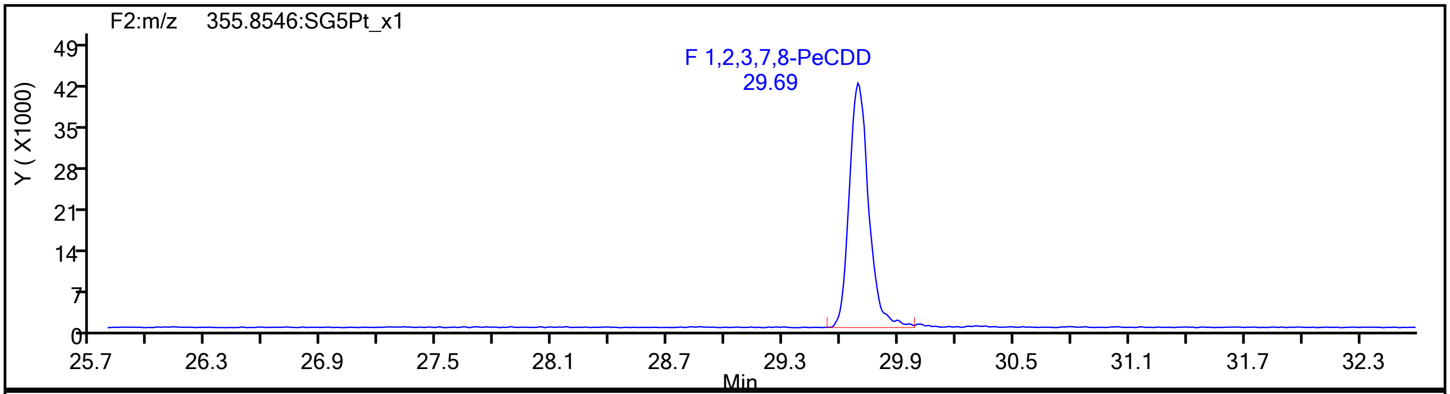

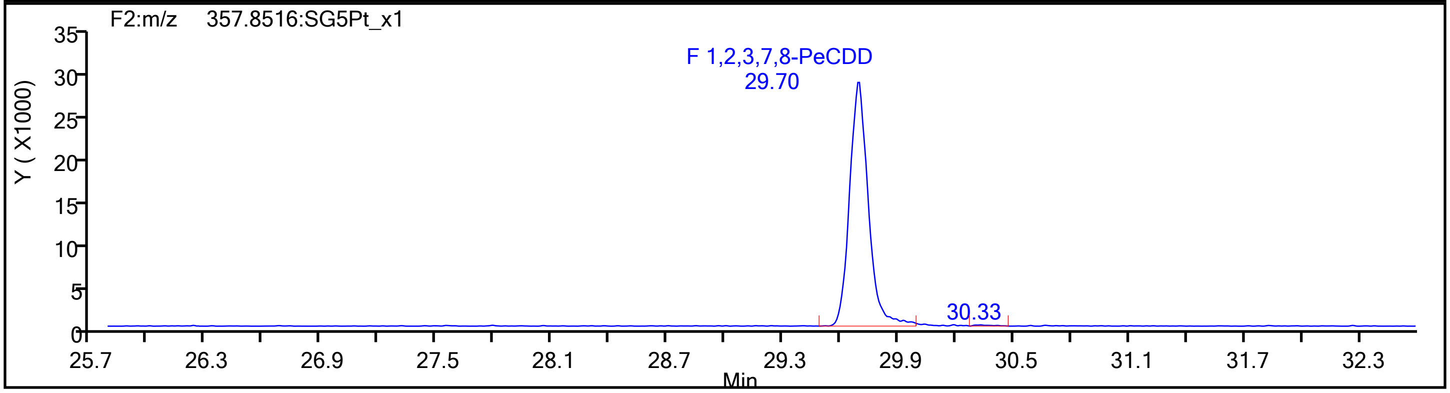

PeCDD Standards

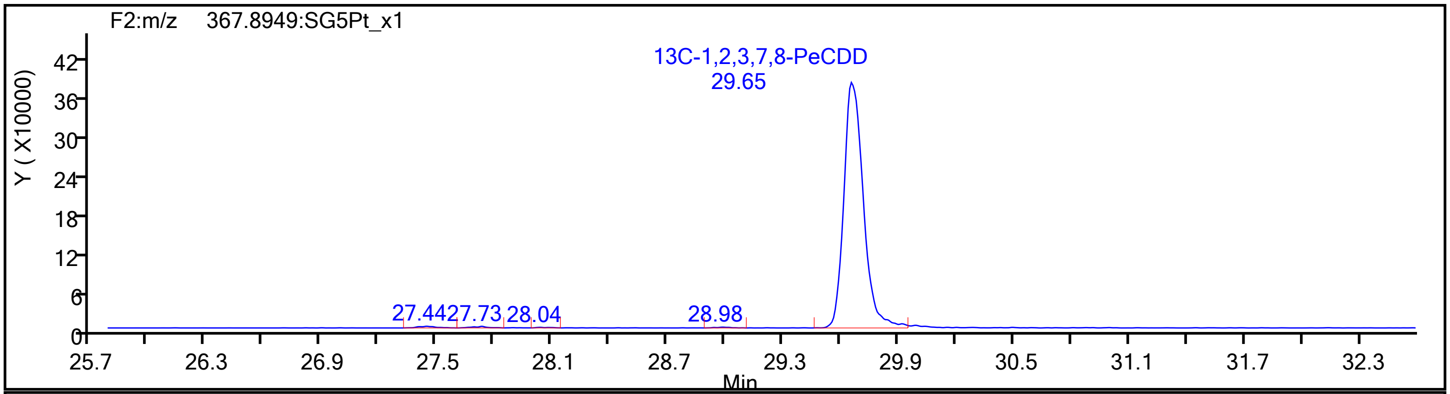

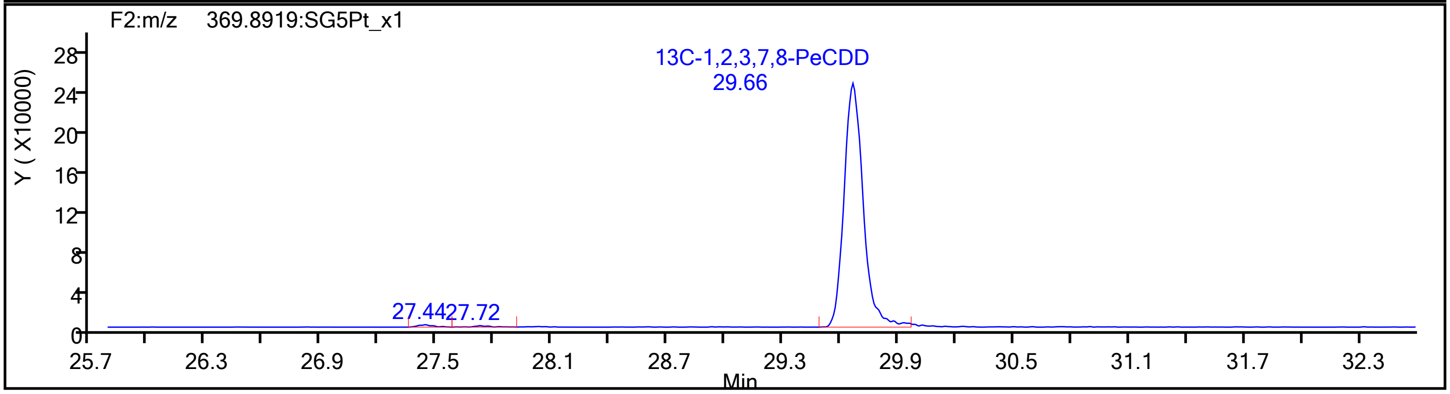

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date: 03-Jun-2020 15:42:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

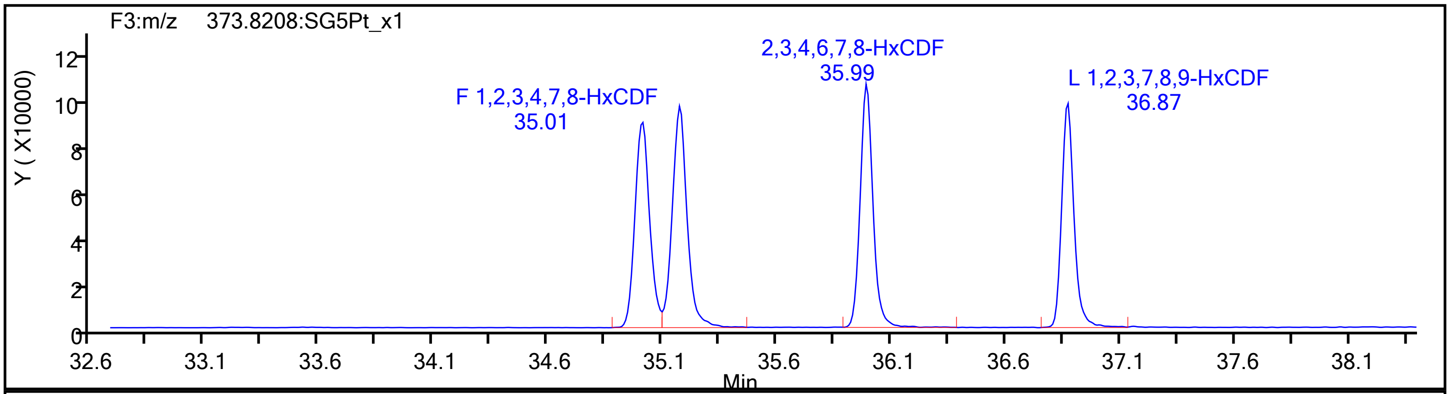

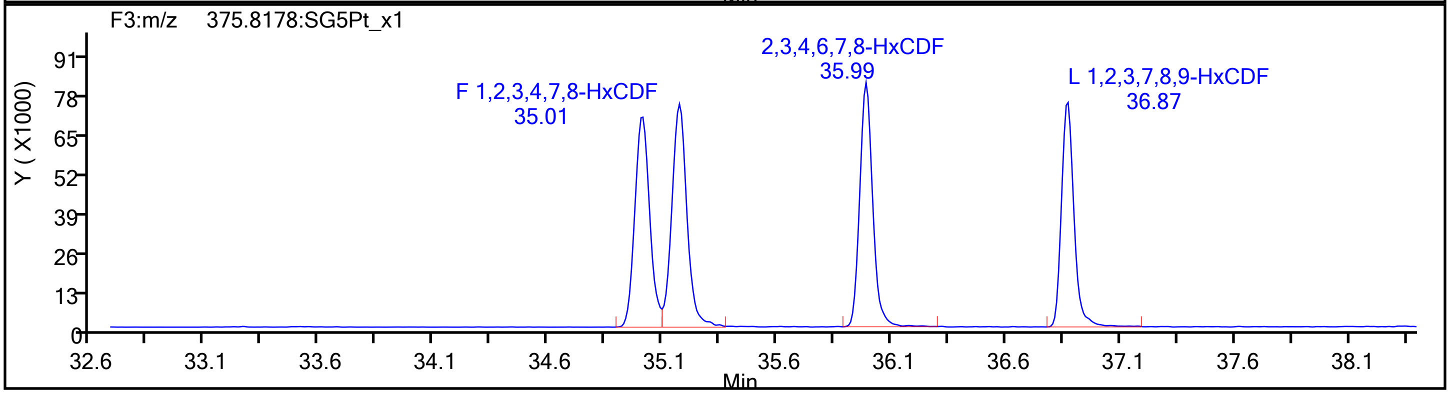

HxCDF Standards

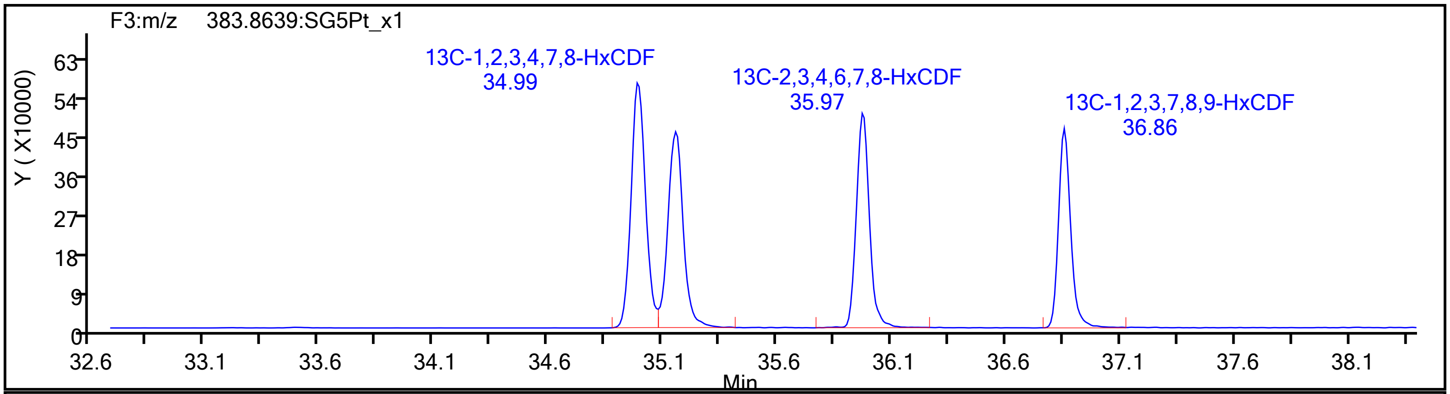

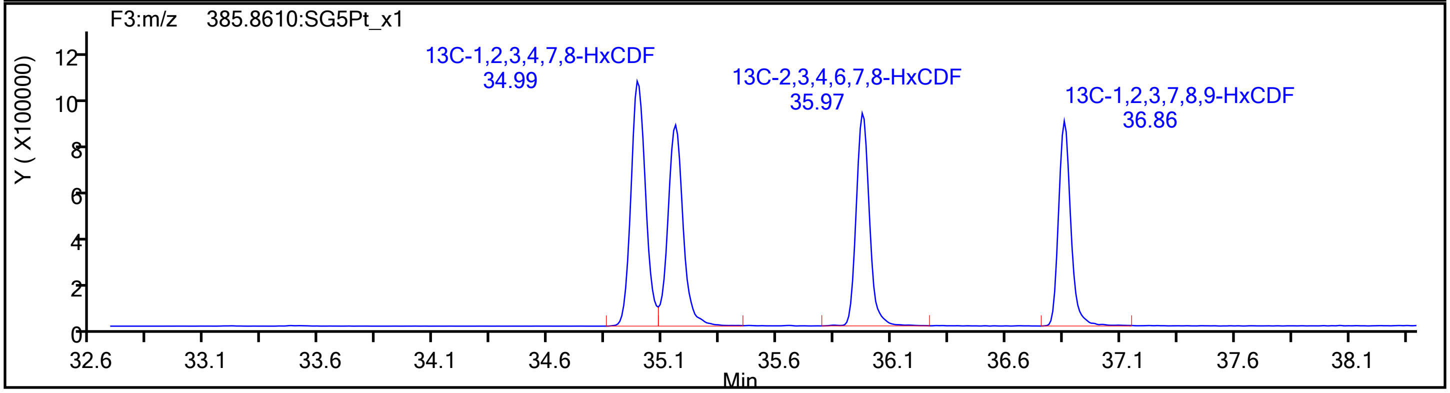

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Eurofins TestAmerica, Sacramento

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Client ID:			
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HxCDF

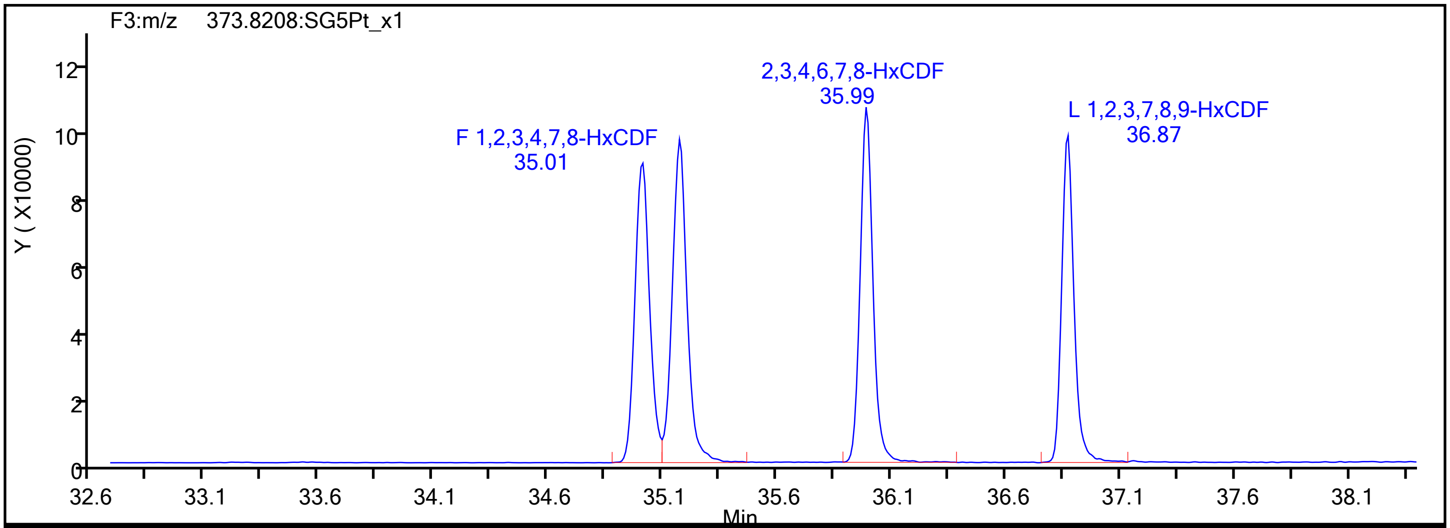

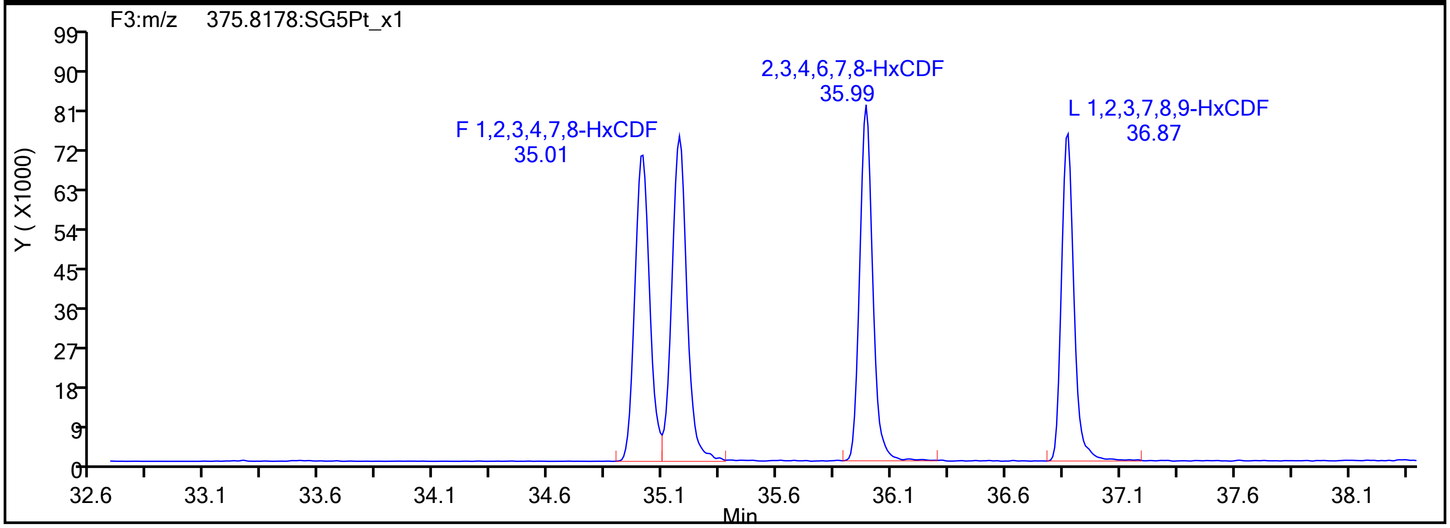

HxCDF Interference Mass

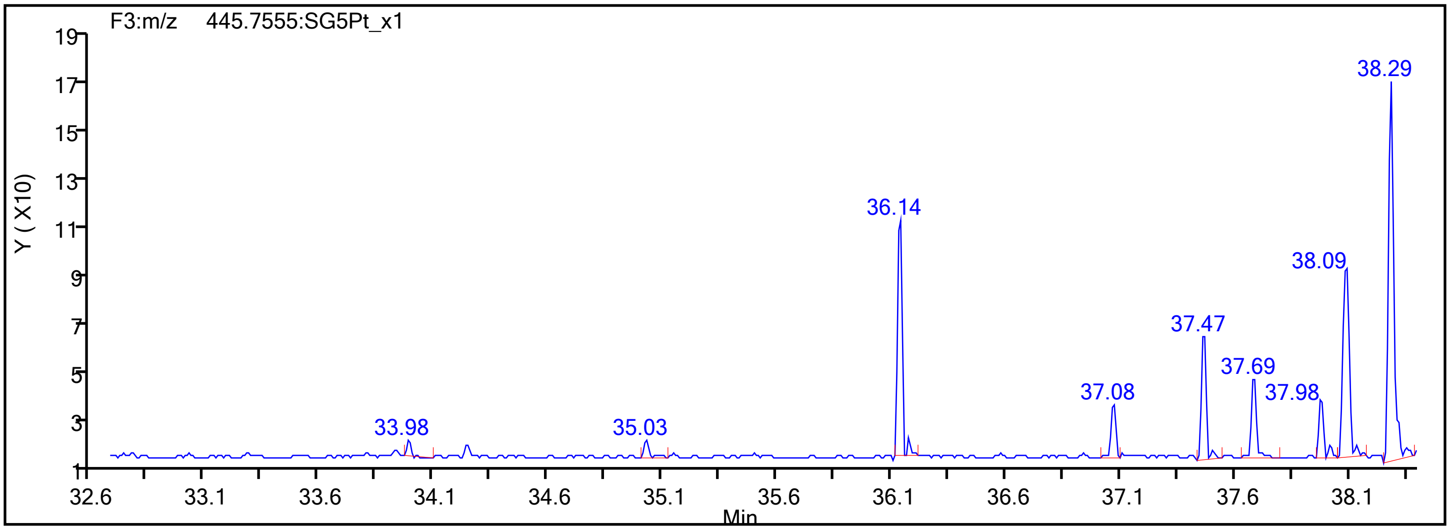

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 15:42:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

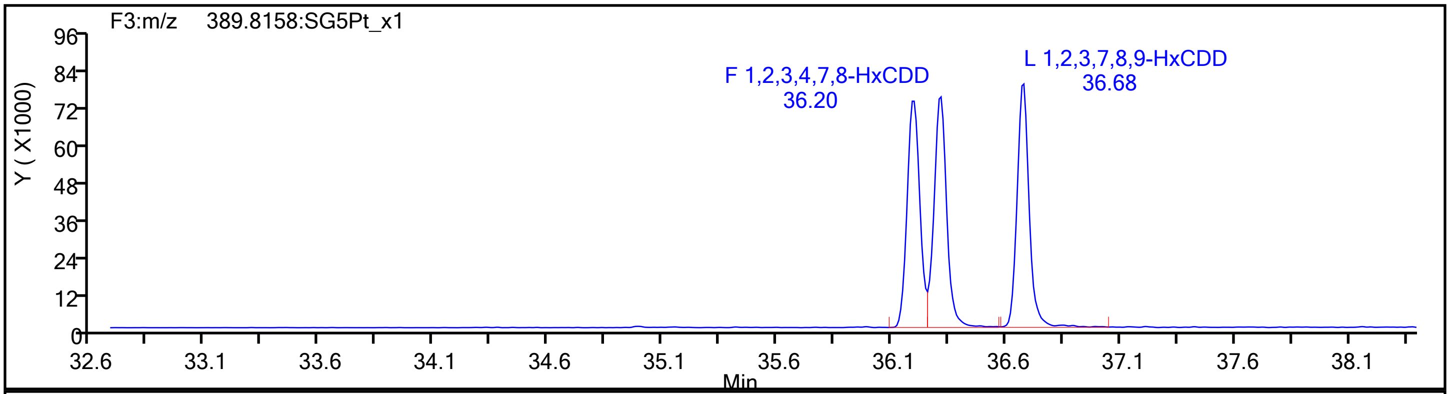

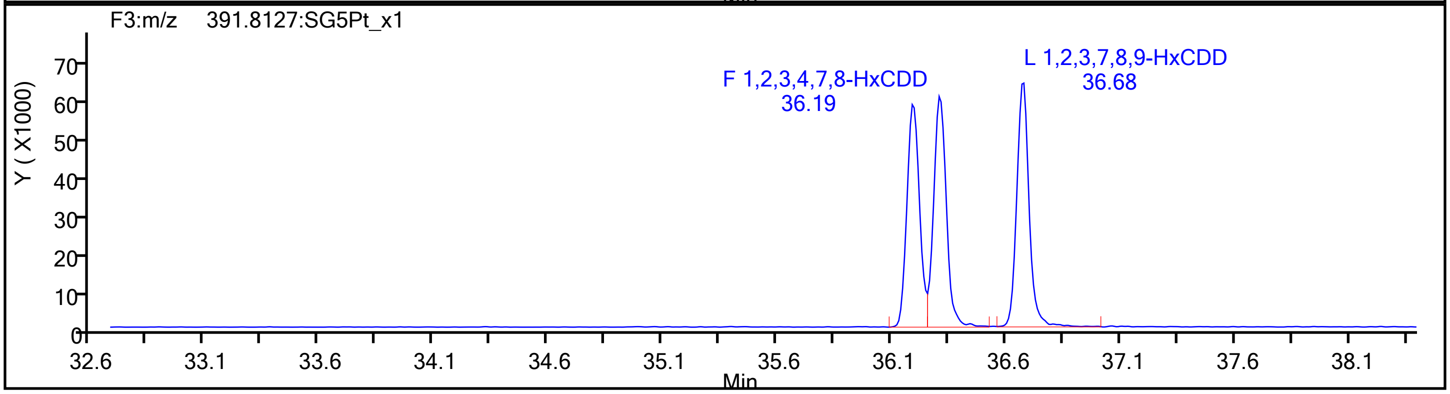

HxCDD Standards

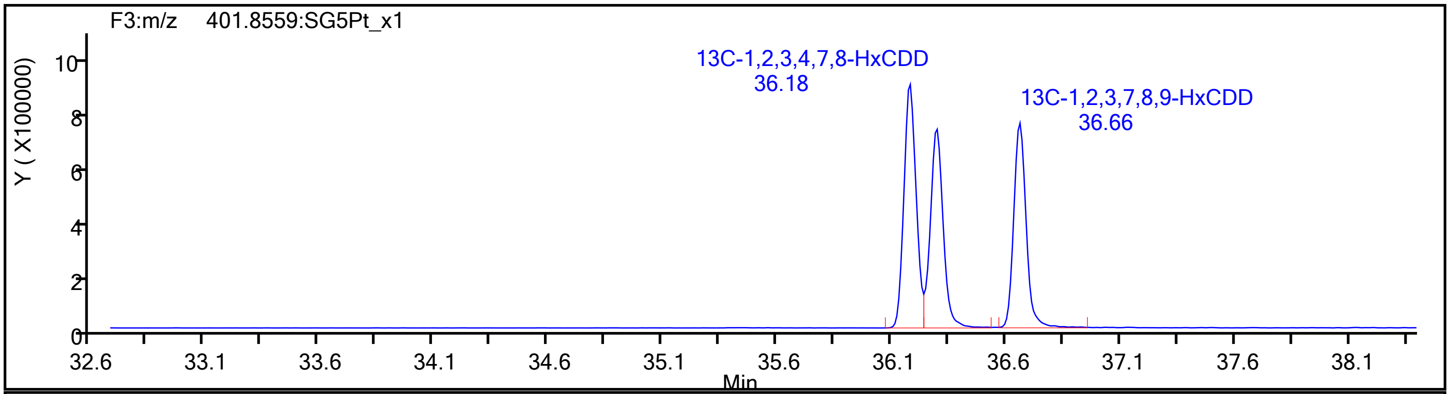

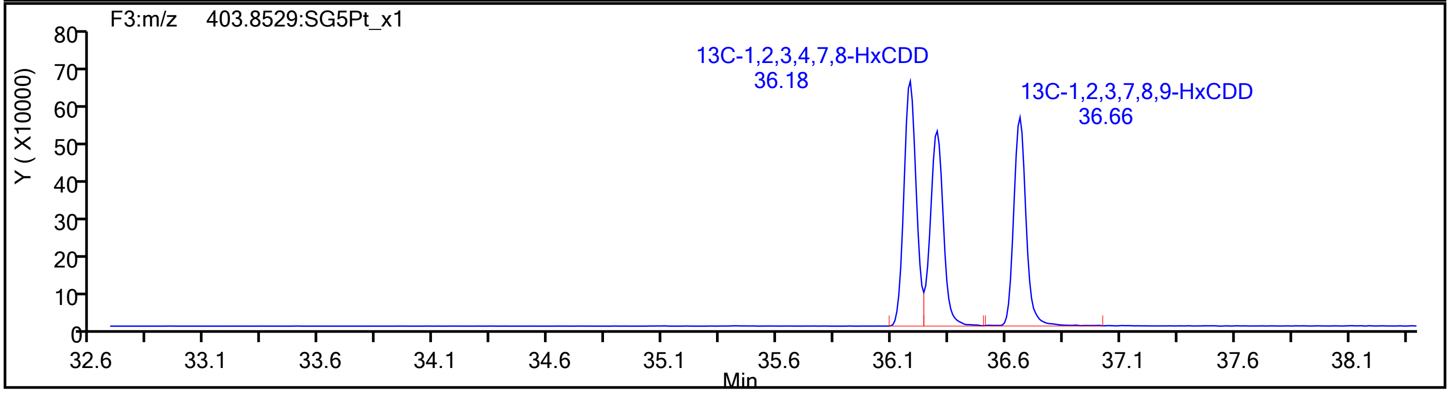

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

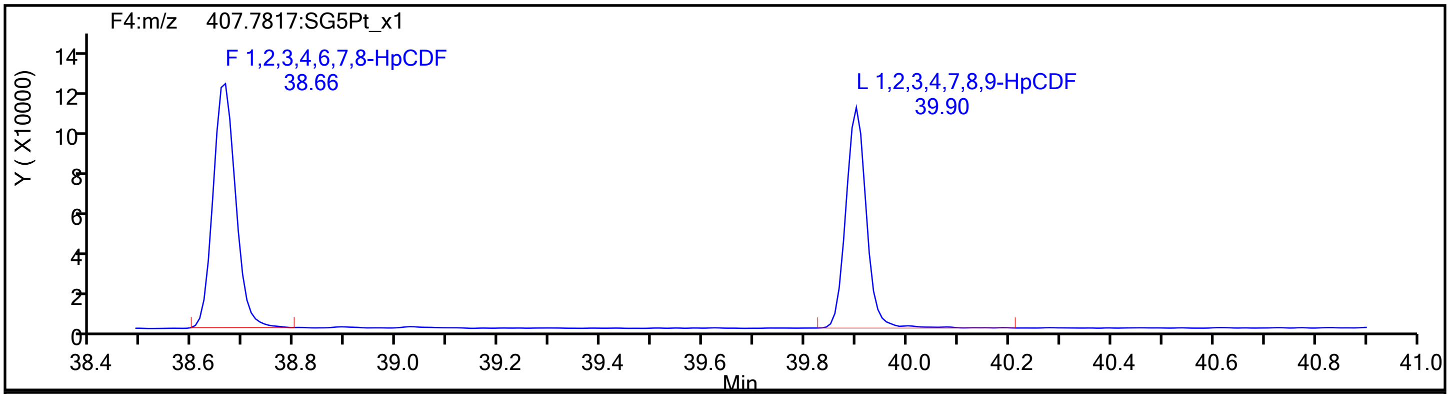

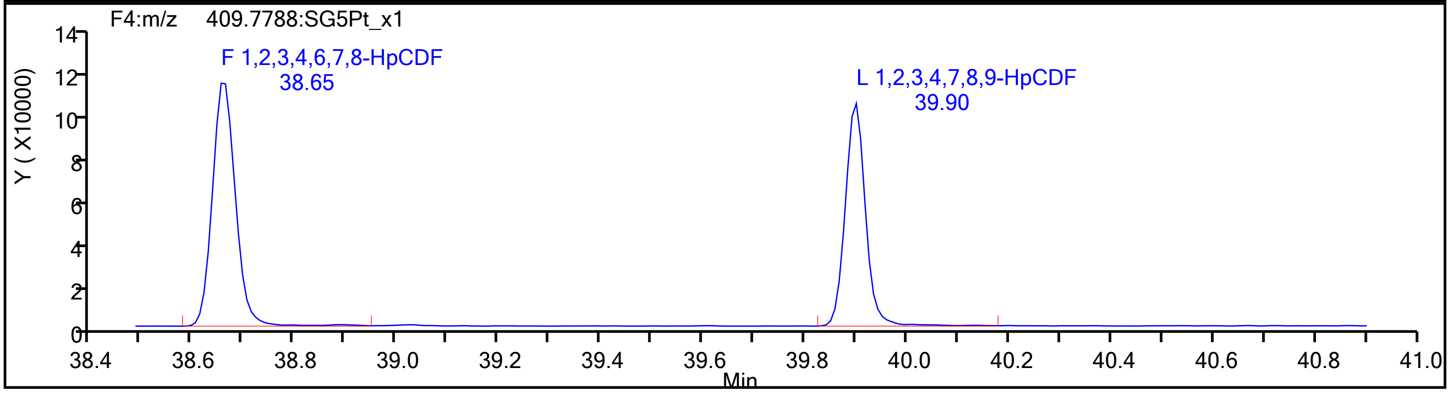

HpCDF Standards

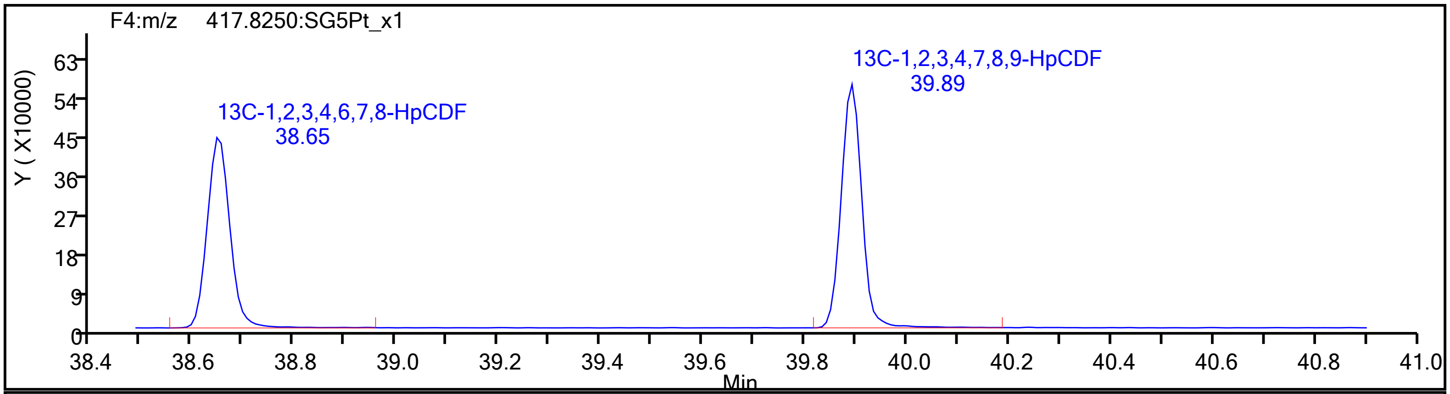

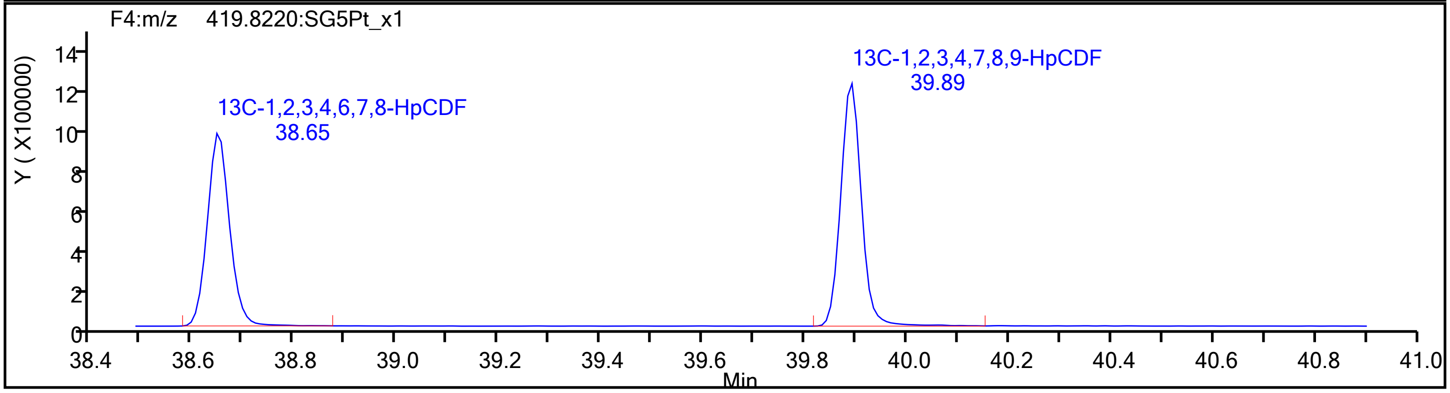

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

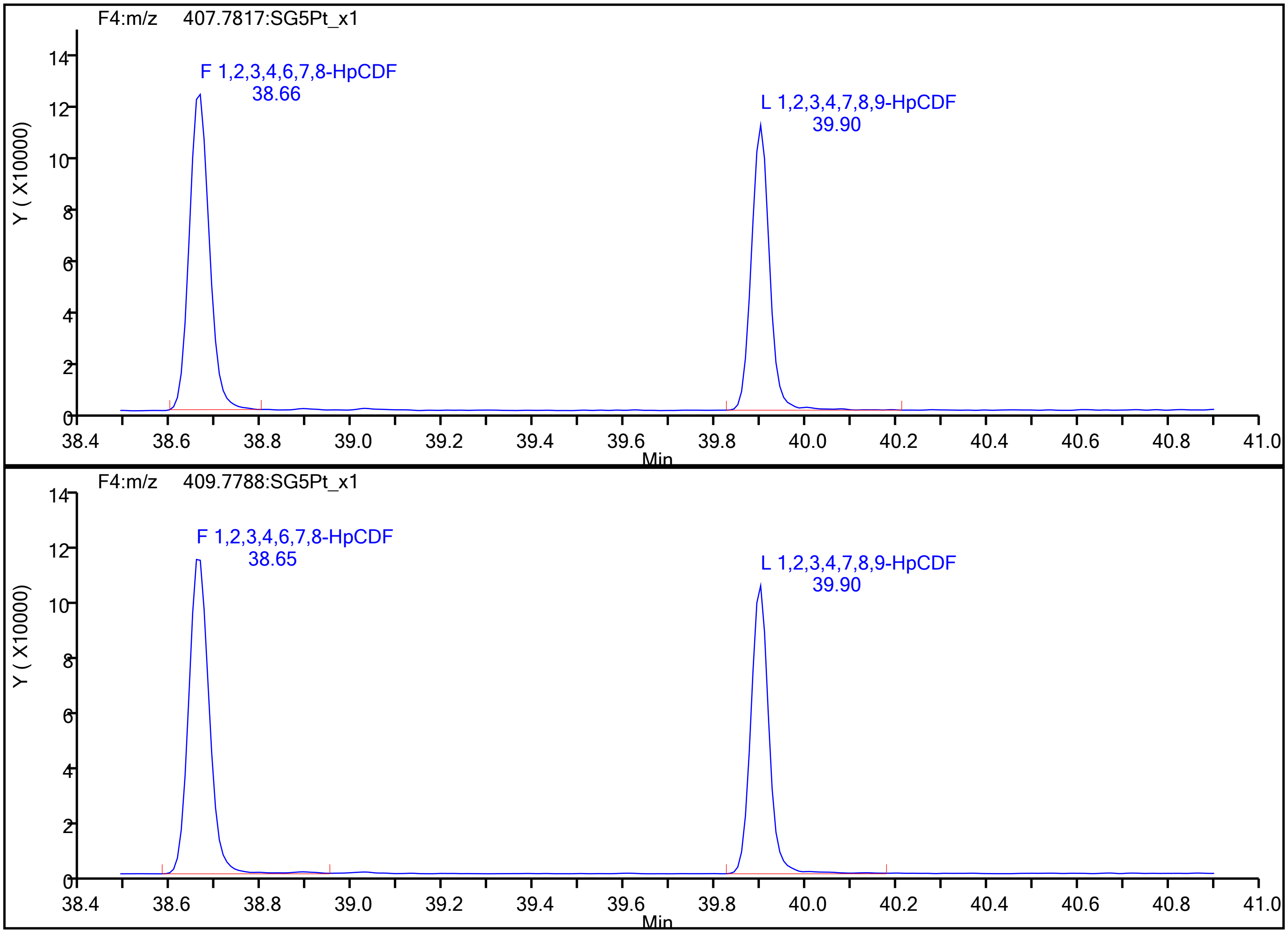

HpCDF Interference Mass

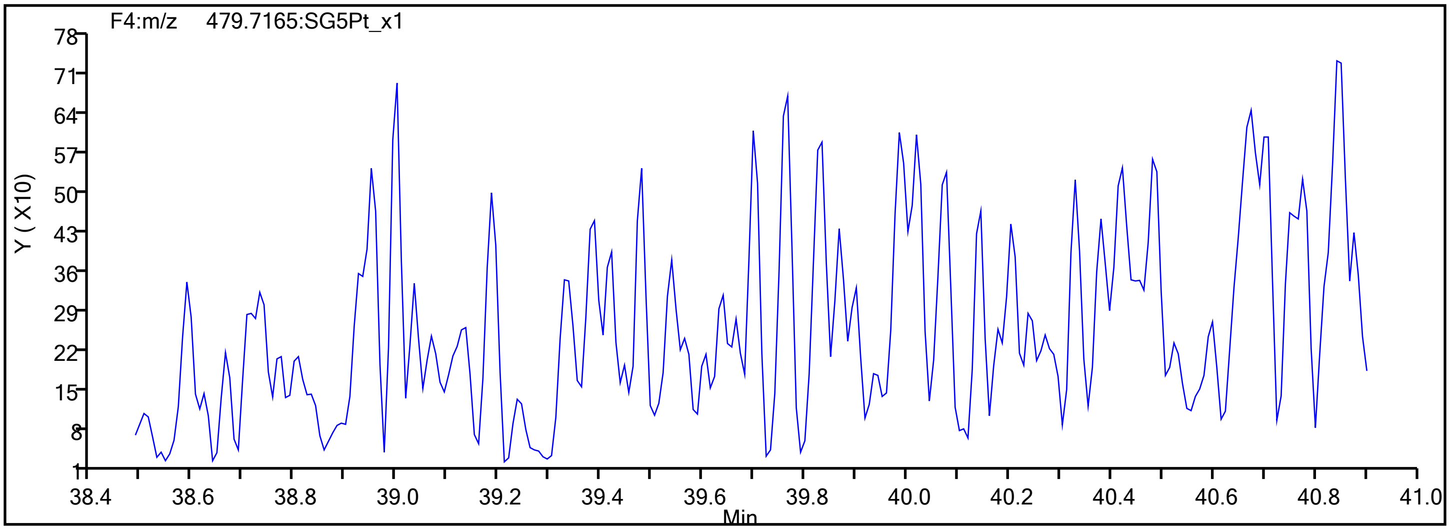

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

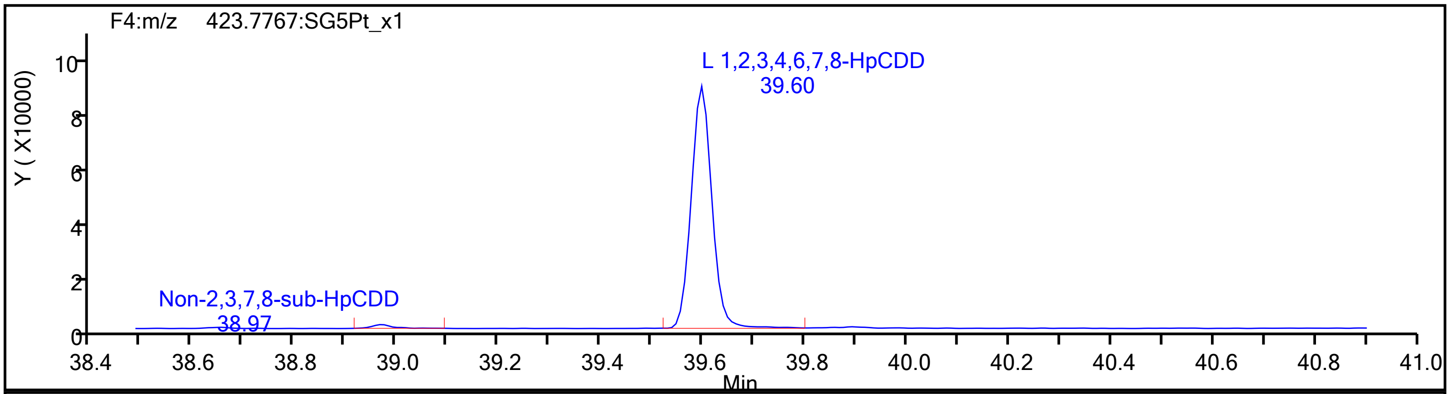

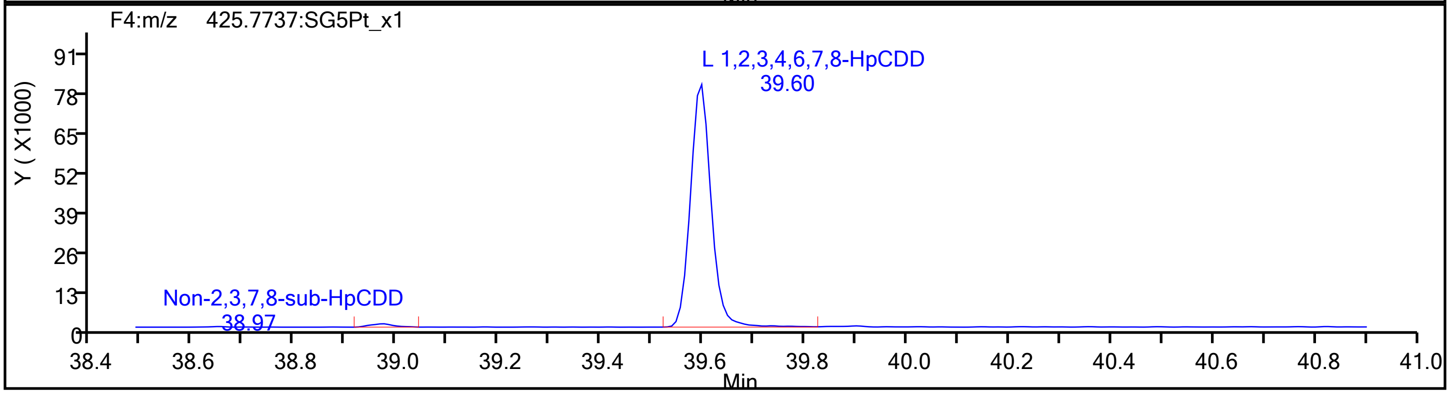

HpCDD Standards

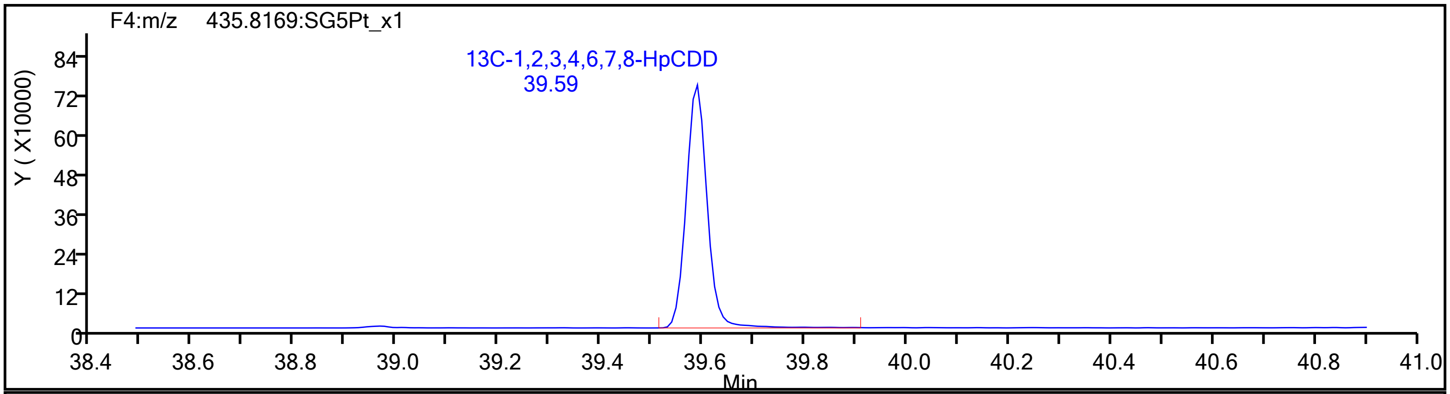

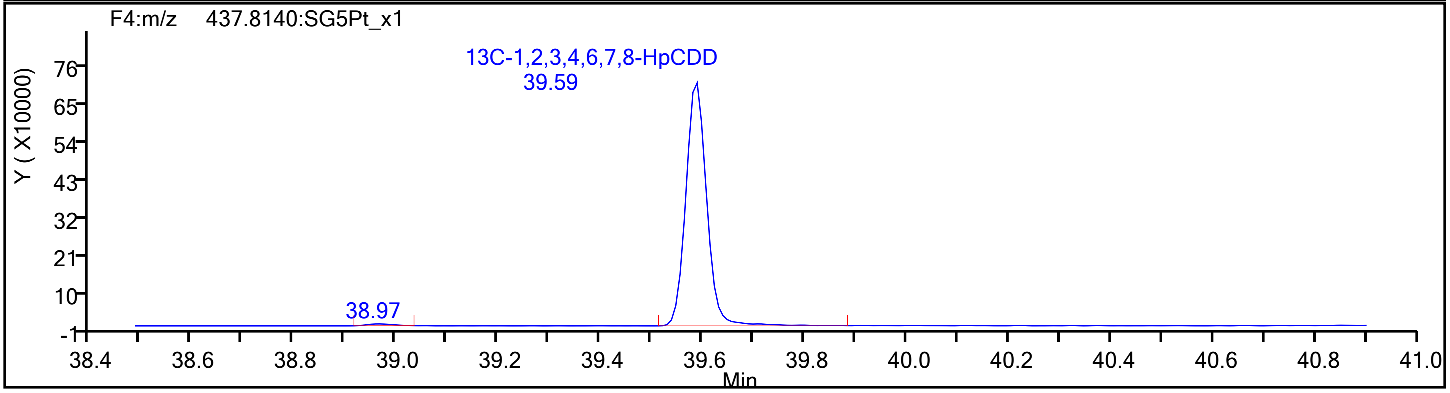

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

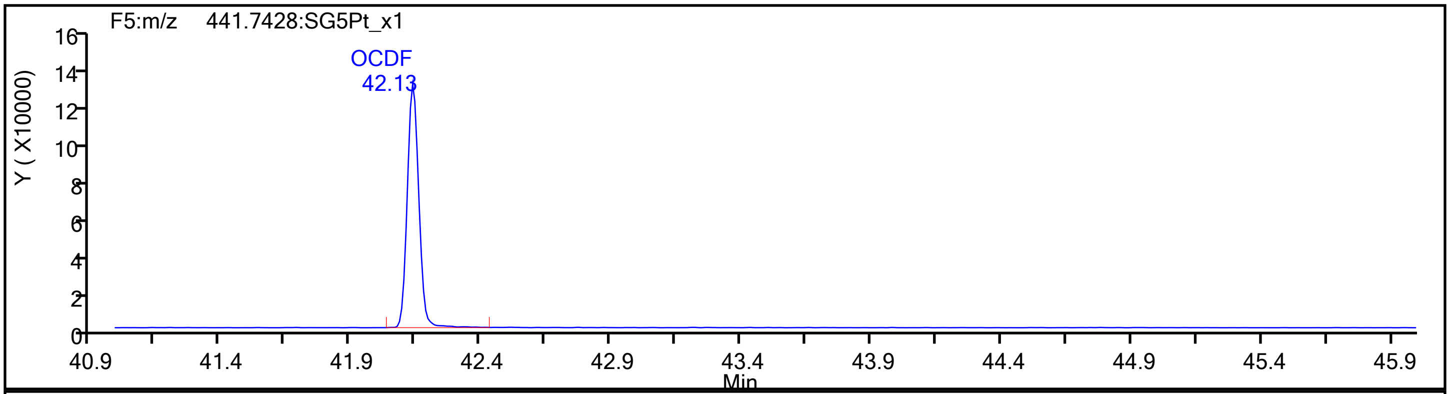

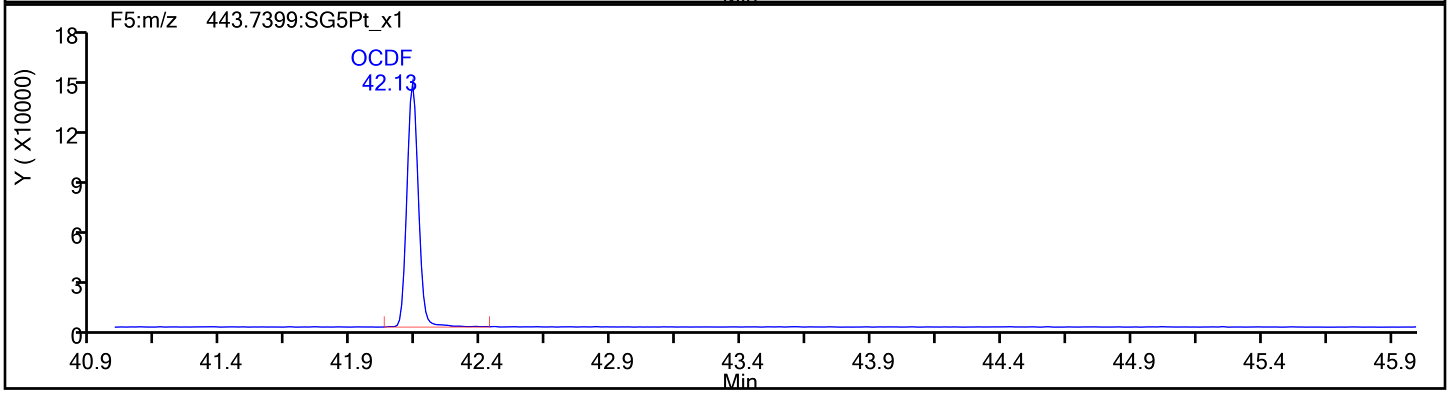

OCDF Standards

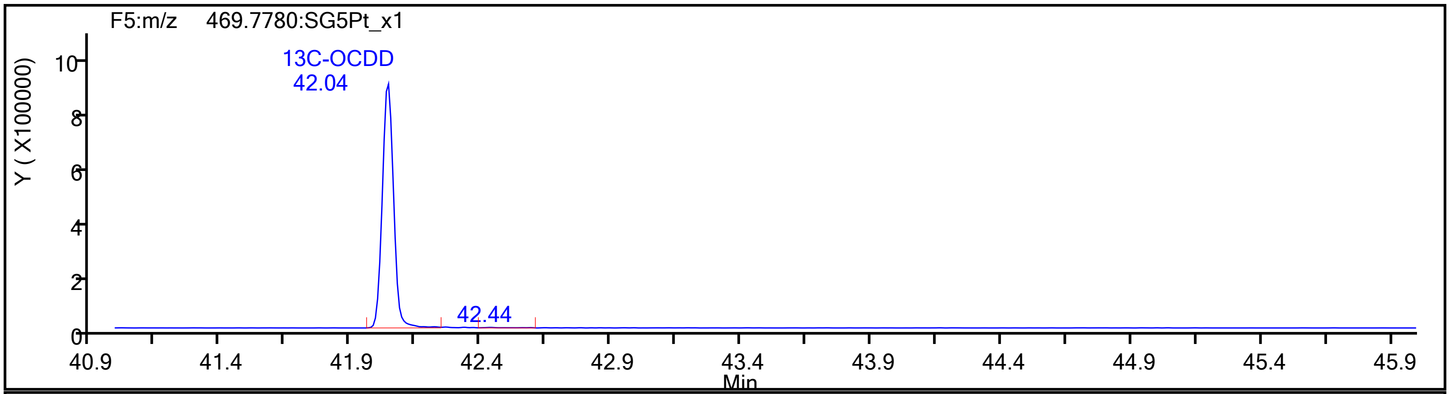

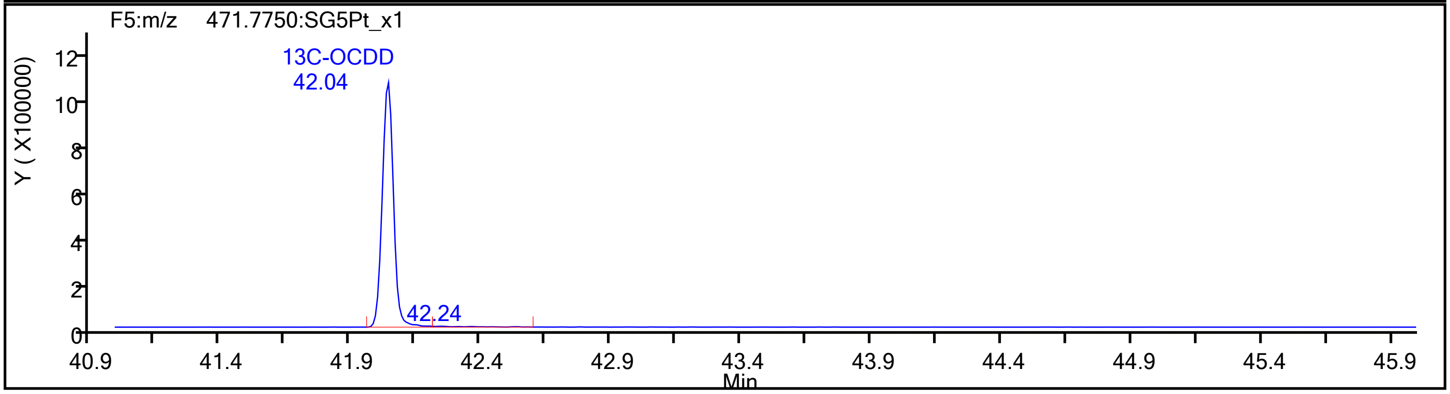

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

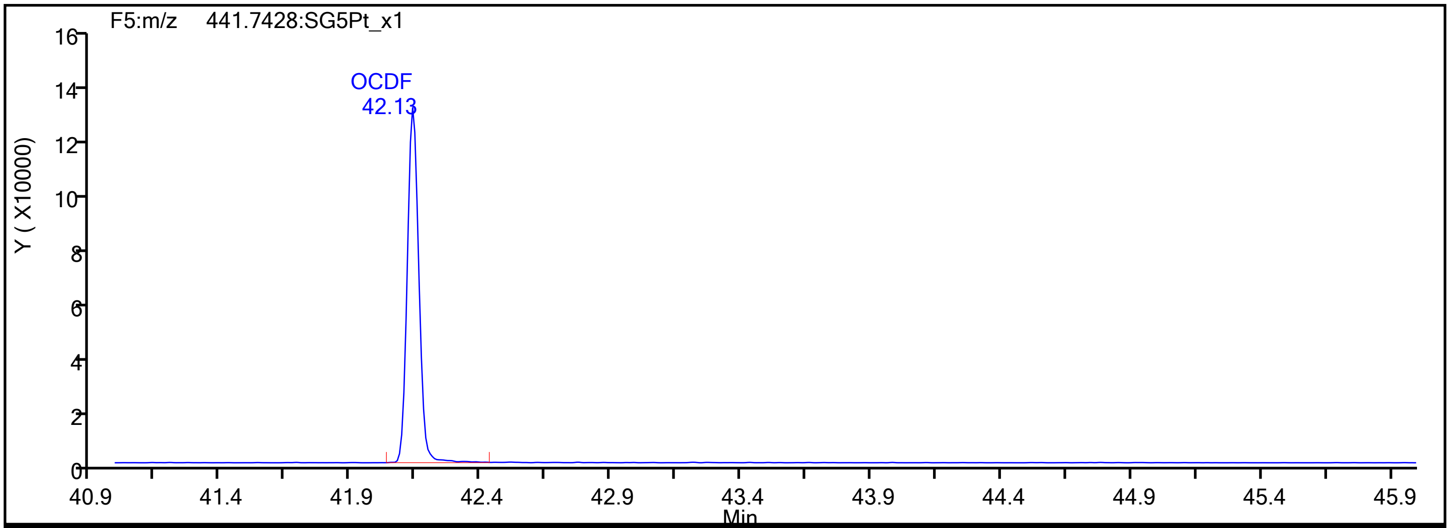

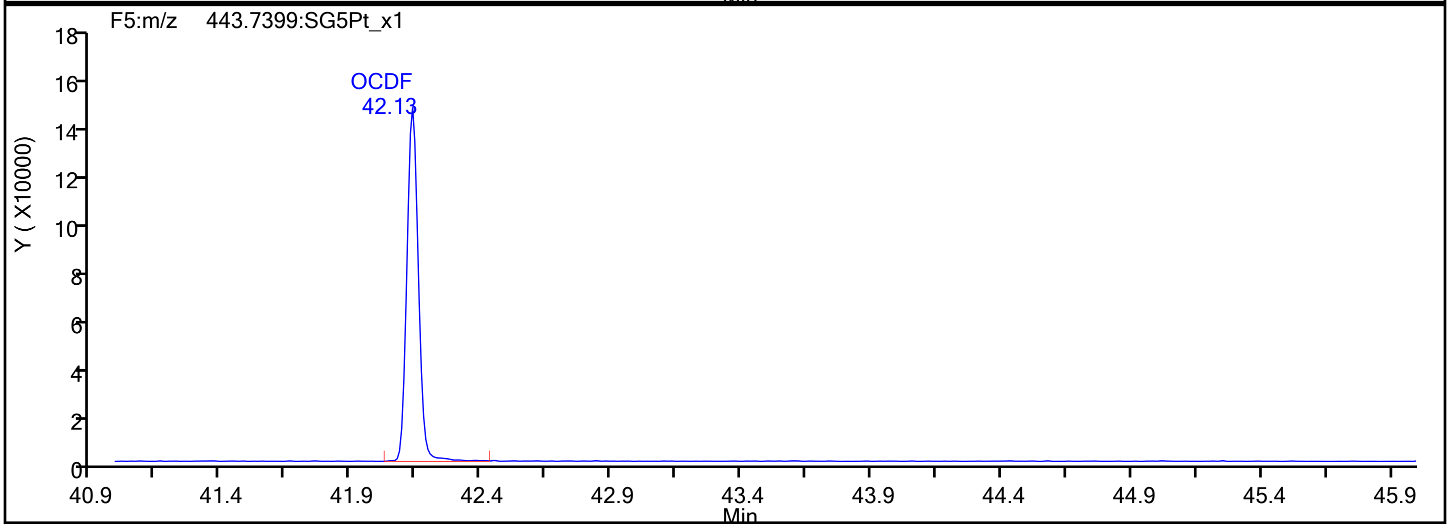

OCDF Interference Mass

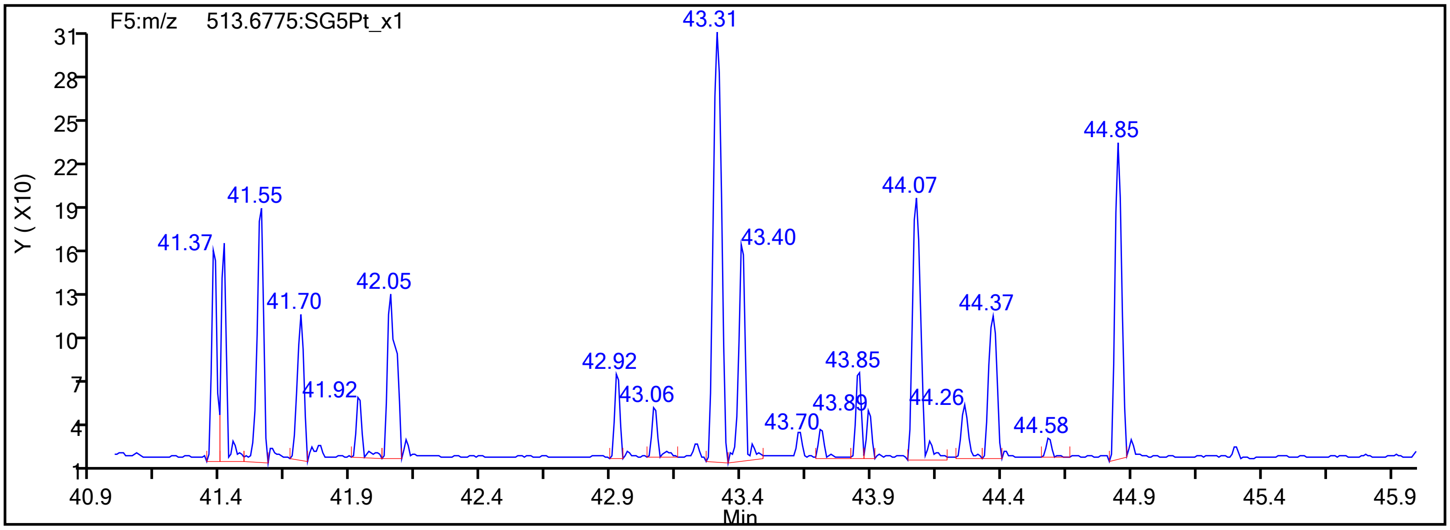

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

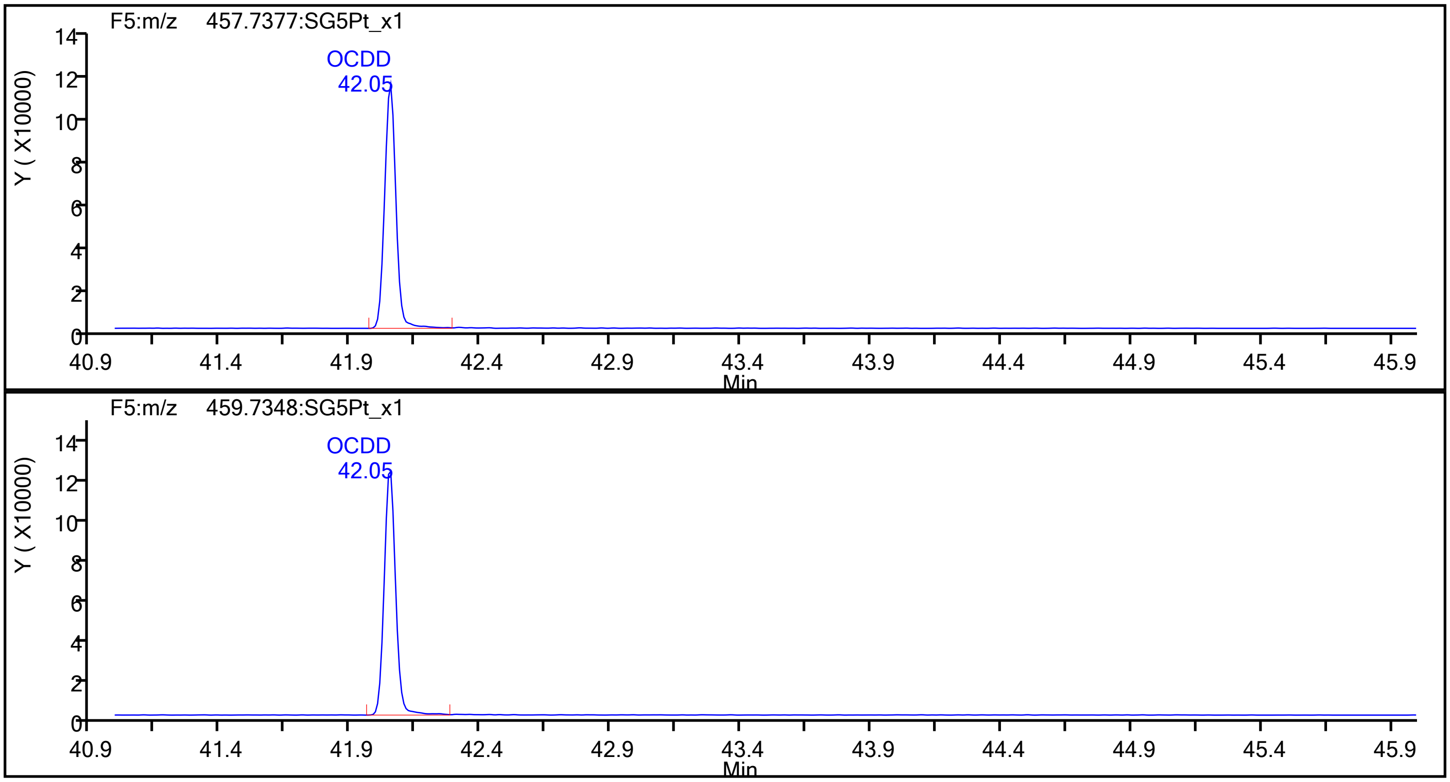

OCDD Standards

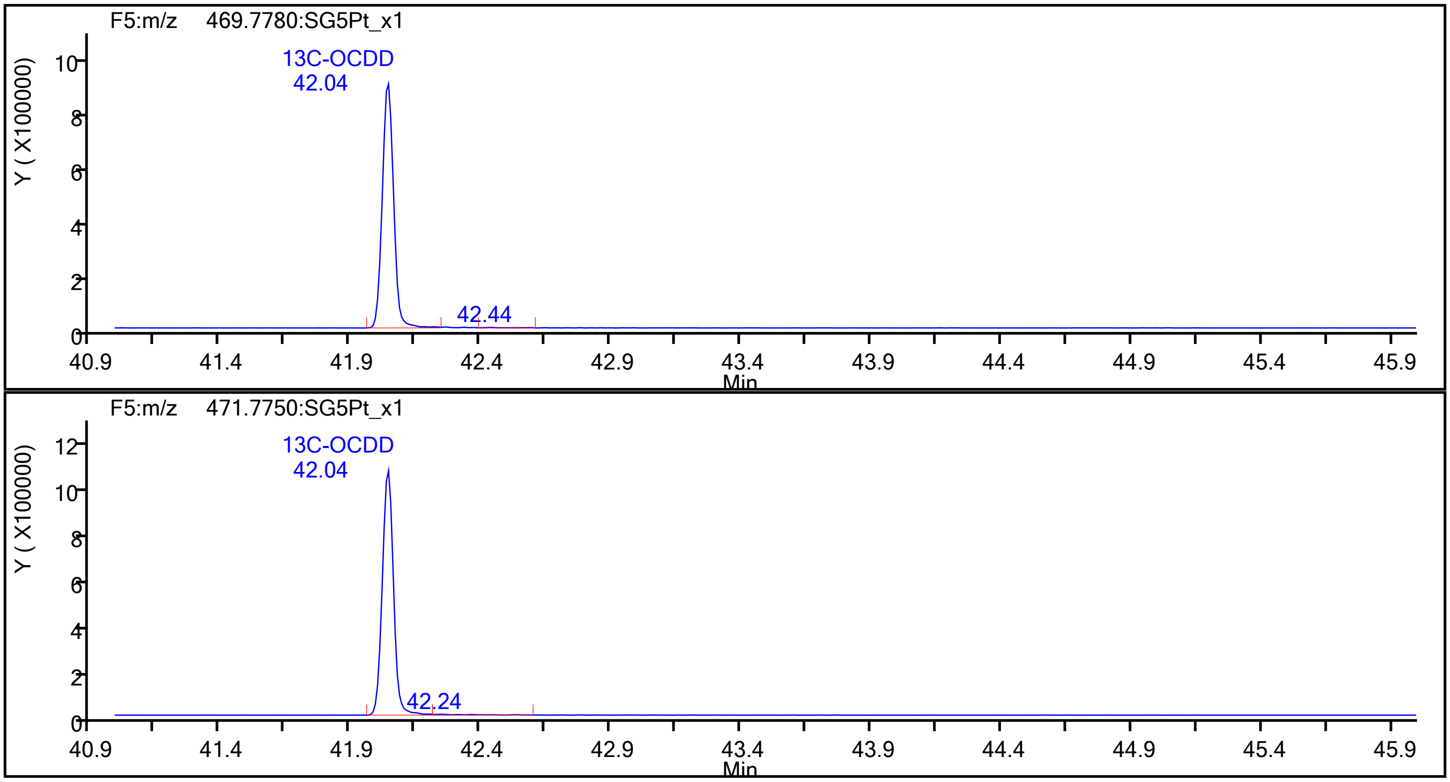

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

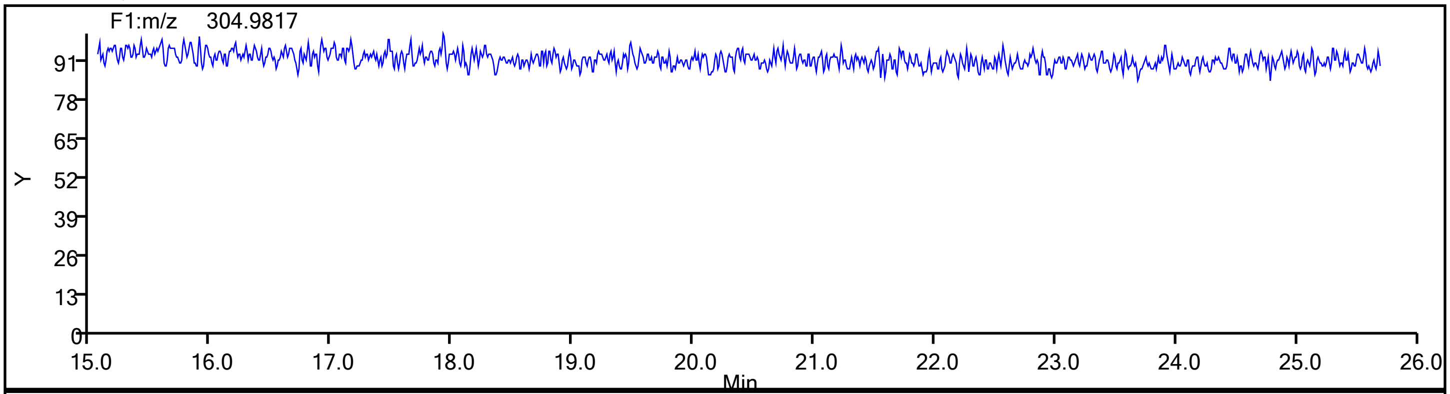

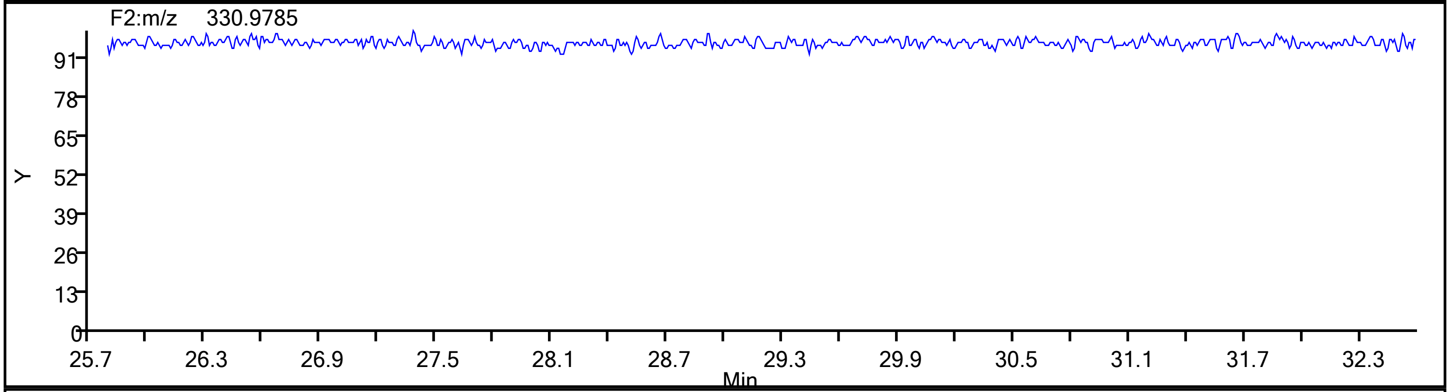

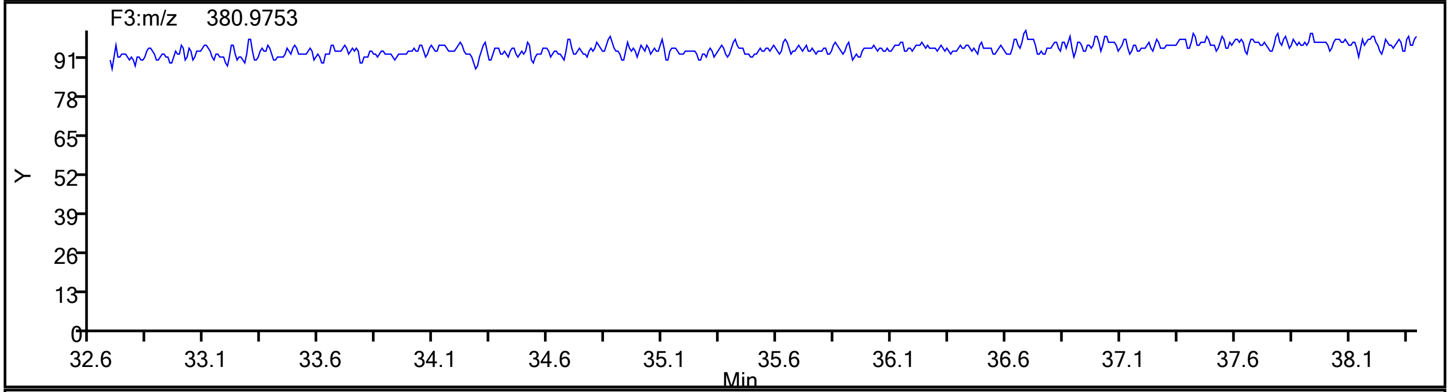

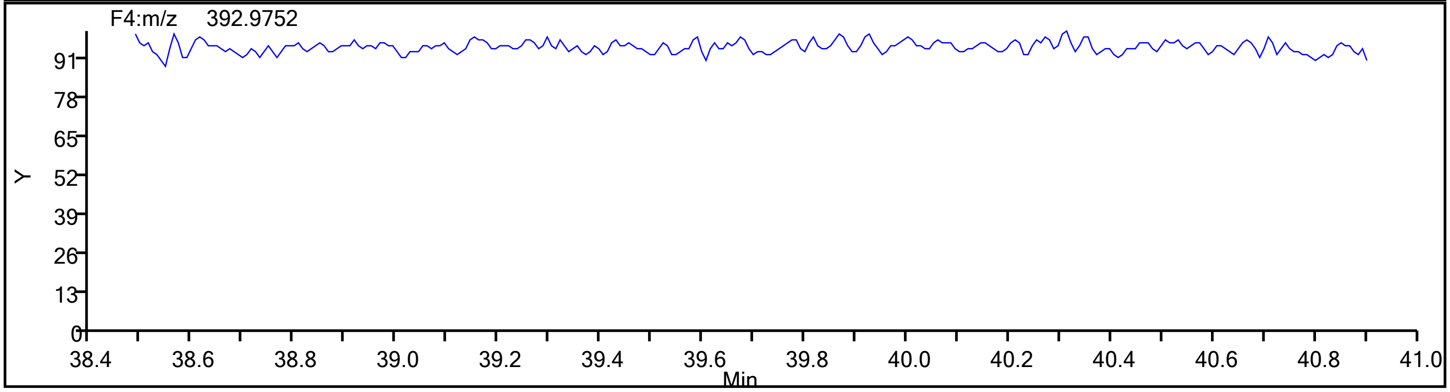

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

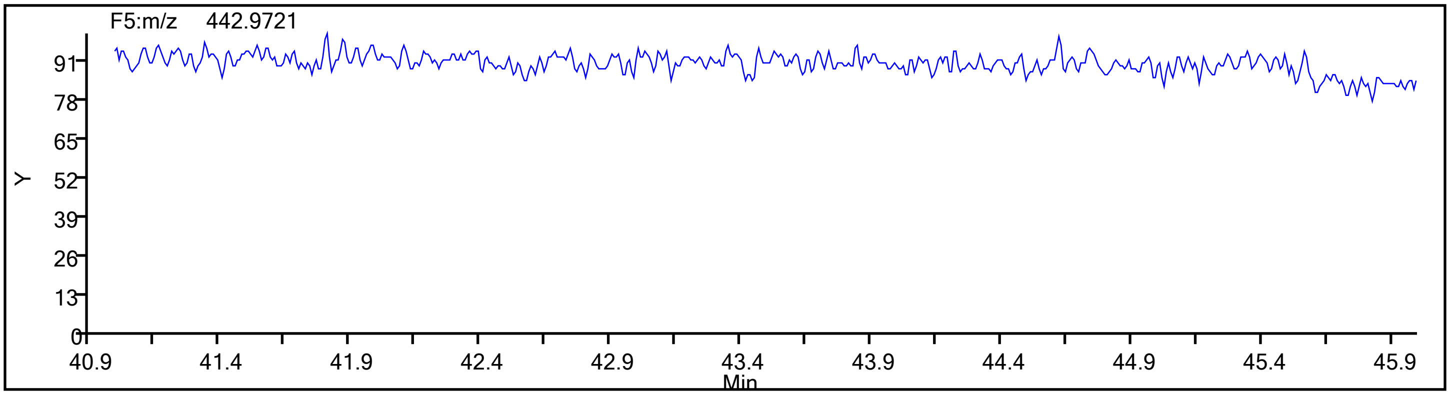

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 03-Jun-2020 16:30:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 11:34:23 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:11:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.321	3589784	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.331	5259494	0.79	1.4977	97.8	97.8	0.4078	0.4078	97.83	
2,3,7,8-TCDF	20.357	564303	0.80	1.1312	9.484	9.484	0.0378	0.0378	94.84	
S Total TCDF					9.484	9.484	0.0378	0.0378		
D 13C-2,3,7,8-TCDD	21.700	3678459	0.78	1.0367	98.8	98.8	0.2866	0.2866	98.84	
2,3,7,8-TCDD	21.743	407450	0.80	1.1849	9.348	9.348	0.0598	0.0598	93.48	
$ 37Cl4-2,3,7,8-TCDD	21.734	386993		1.1208	9.619	9.619	0.0312	0.0312	96.19	
S Total TCDD					9.348	9.348	0.0598	0.0598		
D 13C-1,2,3,7,8-PeCDF	27.312	4514934	1.56	1.3057	96.3	96.3	0.4547	0.4547	96.32	
1,2,3,7,8-PeCDF	27.337	2448425	1.57	1.1060	49.0	49.0	0.1674	0.1674	98.06	
D 13C-2,3,4,7,8-PeCDF	28.843	5239072	1.58	1.5420	94.6	94.6	0.3850	0.3850	94.64	a
2,3,4,7,8-PeCDF	28.868	2354236	1.56	0.9067	49.6	49.6	0.1938	0.1938	99.12	
S Total PeCDF					98.6	98.6	0.1806	0.1806		
D 13C-1,2,3,7,8-PeCDD	29.667	2865674	1.58	0.8294	96.2	96.2	0.2007	0.2007	96.25	
1,2,3,7,8-PeCDD	29.693	1543250	1.60	1.1062	48.7	48.7	0.0820	0.0820	97.37	
S Total PeCDD					48.7	48.7	0.0820	0.0820		
D 13C-1,2,3,4,7,8-HxCDF	34.988	4553149	0.52	1.4619	100.4	100.4	0.2876	0.2876	100	a
1,2,3,4,7,8-HxCDF	35.005	2250009	1.24	1.0087	49.0	49.0	0.1850	0.1850	97.98	
D 13C-1,2,3,6,7,8-HxCDF	35.148	4014247	0.53	1.2866	100.6	100.6	0.3268	0.3268	101	
1,2,3,6,7,8-HxCDF	35.173	2443510	1.25	1.2432	49.0	49.0	0.1796	0.1796	97.93	
D 13C-2,3,4,6,7,8-HxCDF	35.973	3693532	0.53	1.1988	99.3	99.3	0.3508	0.3508	99.31	
2,3,4,6,7,8-HxCDF	35.990	2293876	1.23	1.2736	48.8	48.8	0.1594	0.1594	97.53	
D 13C-1,2,3,7,8,9-HxCDF	36.857	3221618	0.53	1.0687	97.2	97.2	0.3935	0.3935	97.16	
1,2,3,7,8,9-HxCDF	36.866	1995030	1.27	1.2882	48.1	48.1	0.1782	0.1782	96.14	
S Total HxCDF					194.8	194.8	0.1756	0.1756		
* 13C-1,2,3,7,8,9-HxCDD	36.664	3102560	1.28	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.184	3382241	1.27	1.1046	98.7	98.7	0.2030	0.2030	98.69	a
1,2,3,4,7,8-HxCDD	36.192	1504748	1.24	0.9336	47.7	47.7	0.1031	0.1031	95.30	
D 13C-1,2,3,6,7,8-HxCDD	36.302	3032823	1.28	0.9871	99.0	99.0	0.2272	0.2272	99.03	
1,2,3,6,7,8-HxCDD	36.310	1596914	1.27	1.0802	48.7	48.7	0.1073	0.1073	97.49	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.672	1630655	1.24	1.0574	48.1	48.1	0.0995	0.0995	96.15	
S Total HxCDD					144.5	144.5	0.1033	0.1033		
D 13C-1,2,3,4,6,7,8-HpCDF	38.645	2779850	0.46	0.9035	99.2	99.2	0.4571	0.4571	99.17	
1,2,3,4,6,7,8-HpCDF	38.662	2099533	1.05	1.5957	47.3	47.3	0.2183	0.2183	94.66	
D 13C-1,2,3,4,7,8,9-HpCDF	39.892	3118998	0.46	1.0480	95.9	95.9	0.3941	0.3941	95.92	a
1,2,3,4,7,8,9-HpCDF	39.900	1762547	1.05	1.1693	48.3	48.3	0.2415	0.2415	96.65	
S Total HpCDF					95.7	95.7	0.2299	0.2299		
D 13C-1,2,3,4,6,7,8-HpCDD	39.589	2745033	1.05	0.8875	99.7	99.7	0.3010	0.3010	99.69	
1,2,3,4,6,7,8-HpCDD	39.597	1444510	1.04	1.1150	47.2	47.2	0.1276	0.1276	94.39	
S Total HpCDD					47.2	47.2	0.1276	0.1276		
D 13C-OCDD	42.042	3663484	0.90	0.6297	187.5	187.5	0.2228	0.2228	93.75	
OCDF	42.135	2602280	0.91	1.4809	95.9	95.9	0.0779	0.0779	95.93	
OCDD	42.051	2102910	0.87	1.1948	96.1	96.1	0.0855	0.0855	96.09	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00093 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 11:34:33 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 03-Jun-2020 16:30:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 11:34:23 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:11:47

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.321	21.309	1		1583062	226781	408	1020	556		
333.9338	21.321	21.309	1		2006722	288126	204	510	1412	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.331	20.321	1	0.954	2323776	339320	742	1855	457		
317.9389	20.340	20.321	1	0.954	2935718	420130	516	1290	814	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.357	20.347	1	1.001	250705	37195	44	110	845		
305.8987	20.357	20.347	1	1.001	313598	45300	86	215	527	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.700	21.692	0	1.018	1613108	215133	408	1020	527		
333.9338	21.691	21.692	0	1.017	2065351	285628	204	510	1400	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.743	21.722	1	1.002	180745	23124	91	227	254		
321.8936	21.725	21.722	0	1.001	226705	30748	51	127	603	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.734	21.724	1	1.019	386993	52715	72	180	732		
13C-1,2,3,7,8-PeCDF											
351.9000	27.312	27.300	1	1.281	2750587	449553	739	1847	608		
353.8970	27.312	27.300	1	1.281	1764347	291613	484	1210	603	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.337	27.325	1	1.001	1496247	236348	298	745	793		
341.8567	27.337	27.325	1	1.001	952178	155089	251	627	618	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	28.843	28.834	1	1.353	3206911	481192	739	1847	651		a
353.8970	28.843	28.834	1	1.353	2032161	299569	484	1210	619	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.868	28.857	1	1.001	1435337	207959	298	745	698		
341.8567	28.868	28.857	1	1.001	918899	134899	251	627	537	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.667	29.651	1	1.391	1753334	247629	153	382	1618		
369.8919	29.676	29.651	1	1.392	1112340	160290	190	475	844	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.693	29.682	1	1.001	948739	135637	106	265	1280		
357.8516	29.693	29.682	1	1.001	594511	83974	42	105	1999	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											a
383.8639	34.988	34.982	0	0.954	1566895	353279	483	1207	731		a
385.8610	34.988	34.982	0	0.954	2986254	670303	916	2290	732	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.005	35.000	0	1.000	1245850	279084	434	1085	643		
375.8178	35.005	35.000	0	1.000	1004159	223563	330	825	677	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.148	35.145	0	0.959	1382534	302697	483	1207	627		
385.8610	35.148	35.145	0	0.959	2631713	552729	916	2290	603	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.173	35.163	1	1.001	1355228	286014	434	1085	659		
375.8178	35.173	35.163	1	1.001	1088282	229932	330	825	697	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.973	35.966	0	0.981	1276459	324295	483	1207	671		
385.8610	35.973	35.966	0	0.981	2417073	616302	916	2290	673	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.990	35.981	1	1.000	1266271	320259	434	1085	738		
375.8178	35.990	35.981	1	1.000	1027605	259289	330	825	786	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.857	36.848	1	1.005	1115457	289828	483	1207	600		
385.8610	36.857	36.848	1	1.005	2106161	542082	916	2290	592	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.866	36.862	0	1.000	1115091	288848	434	1085	666		
375.8178	36.866	36.862	0	1.000	879939	231252	330	825	701	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.664	36.653	1		1744021	464904	401	1002	1159		
403.8529	36.655	36.653	0		1358539	366755	345	862	1063	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	36.184	36.173	1	0.987	1891868	509469	401	1002	1270		a
403.8529	36.184	36.173	1	0.987	1490373	399219	345	862	1157	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.192	36.187	0	1.000	832628	225512	209	522	1079		
391.8127	36.192	36.187	0	1.000	672120	183944	141	352	1305	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.302	36.291	1	0.990	1705407	425243	401	1002	1060		
403.8529	36.293	36.291	0	0.990	1327416	329373	345	862	955	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.310	36.304	0	1.000	892915	226194	209	522	1082		
391.8127	36.310	36.304	0	1.000	703999	178929	141	352	1269	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.672	36.669	0	1.013	903080	245484	209	522	1175		
391.8127	36.672	36.669	0	1.013	727575	192795	141	352	1367	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.645	38.640	0	1.054	876514	283484	540	1350	525		
419.8220	38.645	38.640	0	1.054	1903336	610730	834	2085	732	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.662	38.655	0	1.000	1076424	344769	673	1682	512		
409.7788	38.654	38.655	0	1.000	1023109	327596	573	1432	572	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8250	39.892	39.885	0	1.088	980104	348909	540	1350	646		a
419.8220	39.892	39.885	0	1.088	2138894	754248	834	2085	904	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.900	39.893	0	1.000	901552	318670	673	1682	474		
409.7788	39.900	39.893	0	1.000	860995	304051	573	1432	531	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.589	39.582	0	1.080	1403051	485433	476	1190	1020		
437.8140	39.589	39.582	0	1.080	1341982	470475	413	1032	1139	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.597	39.590	0	1.000	736933	258688	295	737	877		
425.7737	39.597	39.590	0	1.000	707577	243646	249	622	978	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.042	42.035	0	1.147	1739784	592300	263	657	2252		
471.7750	42.042	42.035	0	1.147	1923700	641803	204	510	3146	0.90(0.76-1.02)	
OCDF											
441.7428	42.135	42.131	0	1.002	1239669	410513	108	270	3801		
443.7399	42.135	42.131	0	1.002	1362611	445123	177	442	2515	0.91(0.76-1.02)	
OCDD											
457.7377	42.051	42.043	0	1.000	980762	327911	123	307	2666		
459.7348	42.042	42.043	0	1.000	1122148	369366	129	322	2863	0.87(0.76-1.02)	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00093 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d				
Injection Date:	03-Jun-2020 16:30:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Not Detected
Expected RT: 28.83

Processing Integration Results

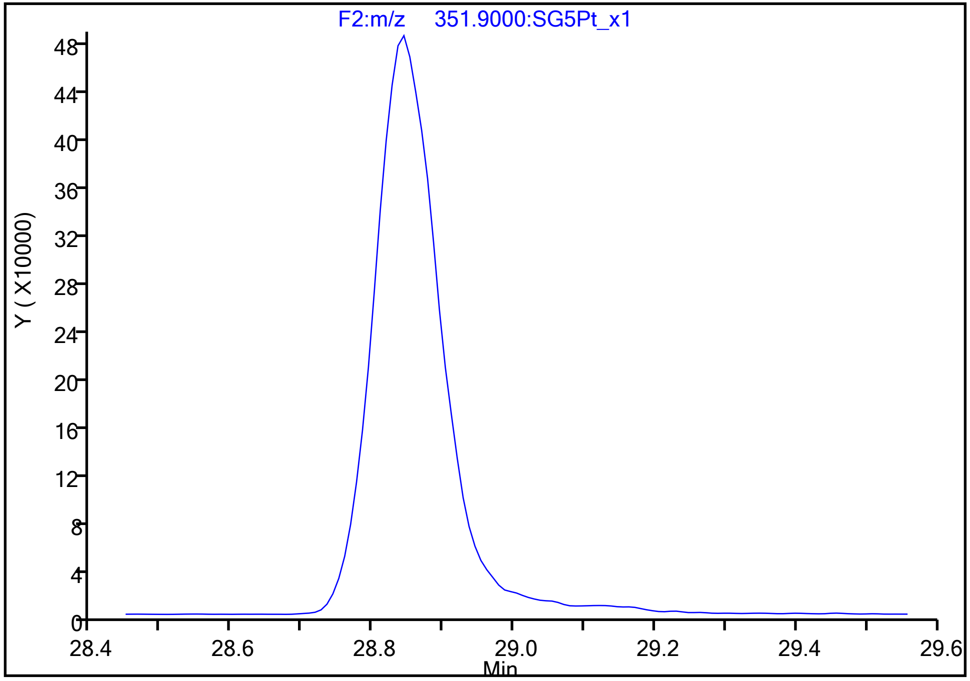

RT: 28.84
Area: 3206911
Amount: 94.644350
Amount Units: pg/ul

Manual Integration Results

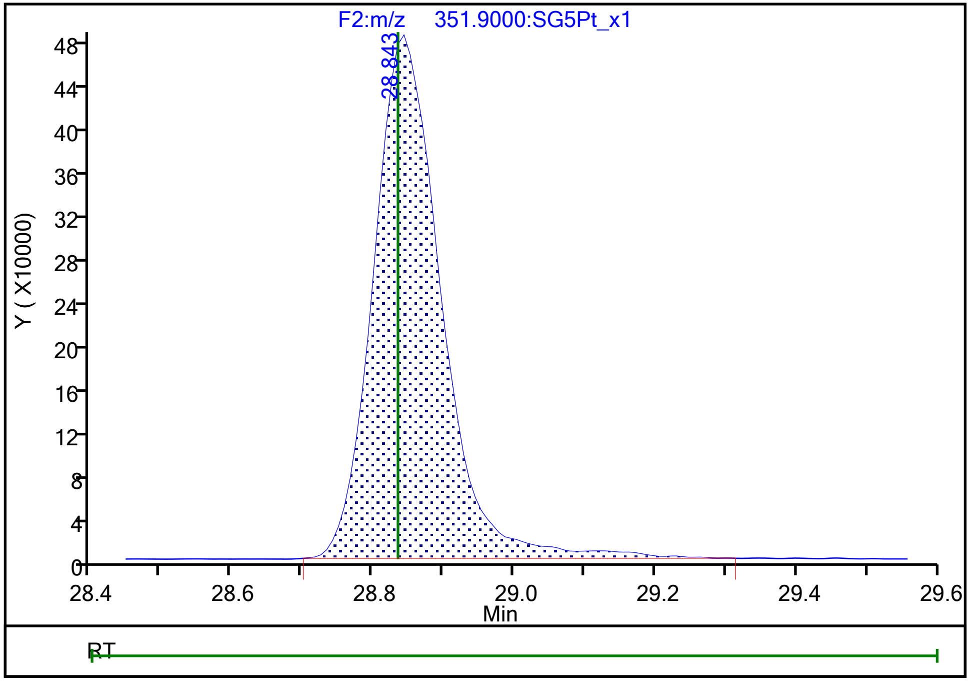

Reviewer: stephensk, 04-Jun-2020 08:11:16
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34

Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d				
Injection Date:	03-Jun-2020 16:30:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Not Detected
Expected RT: 34.98

Processing Integration Results

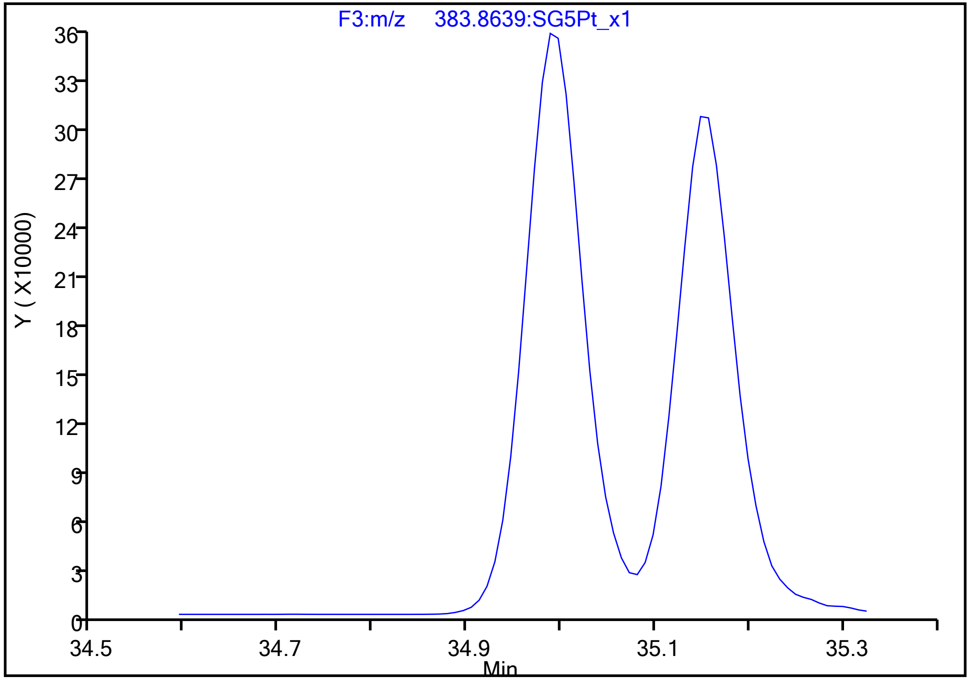

RT:	34.99
Area:	1566895
Amount:	100.3876
Amount Units:	pg/ul

Manual Integration Results

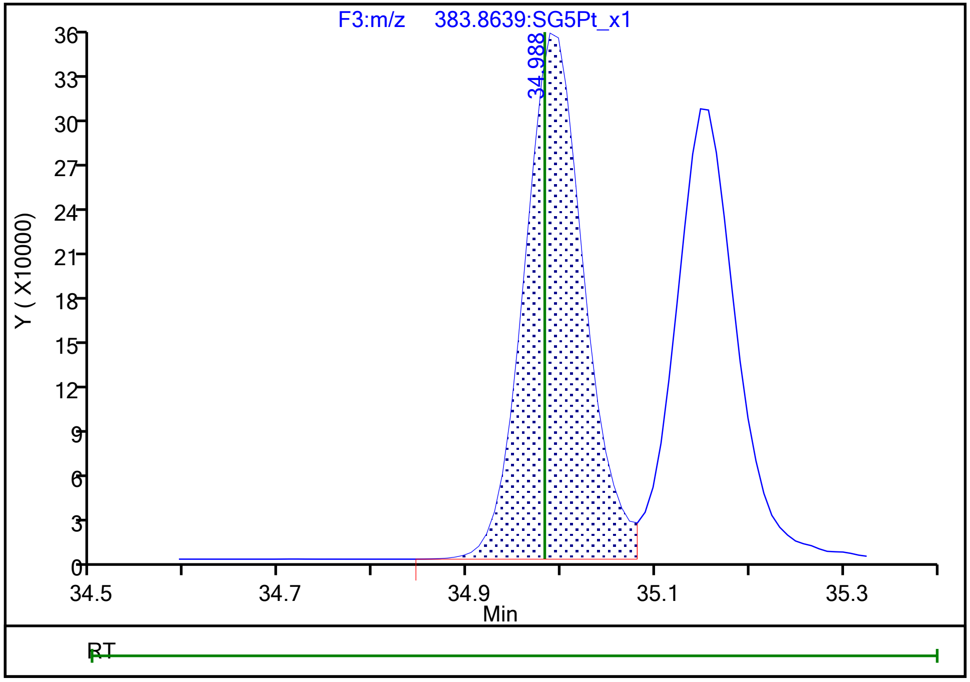

Reviewer: stephensk, 04-Jun-2020 08:11:23

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34

Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Injection Date: 03-Jun-2020 16:30:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 36.17

Processing Integration Results

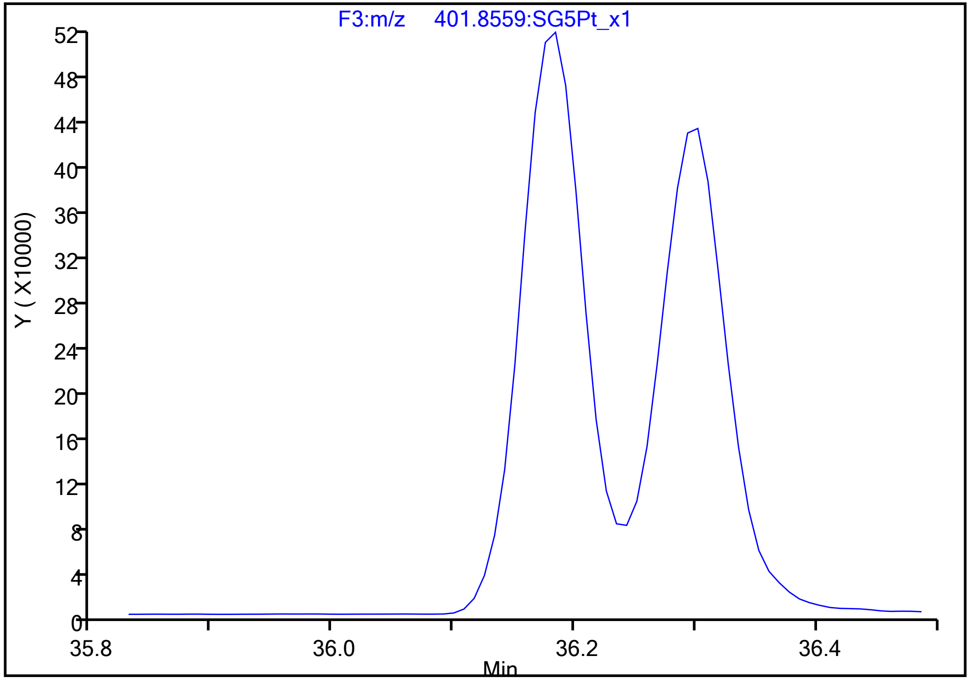

RT: 36.18
Area: 1891868
Amount: 98.689934
Amount Units: pg/ul

Manual Integration Results

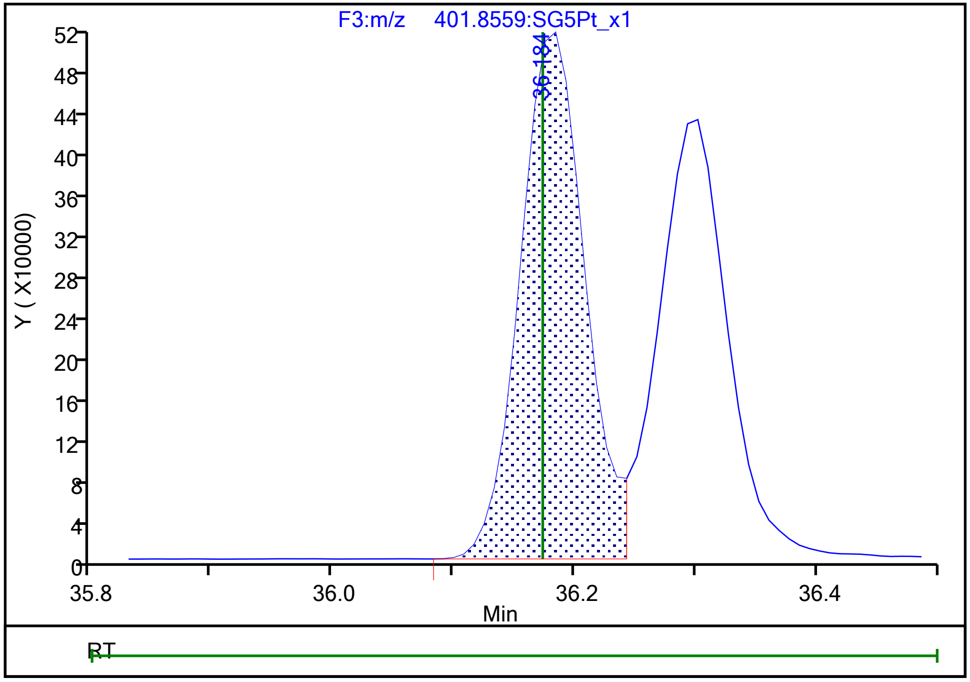

Reviewer: stephensk, 04-Jun-2020 08:11:30

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d				
Injection Date:	03-Jun-2020 16:30:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Processing Integration Results

Not Detected

Expected RT: 39.88

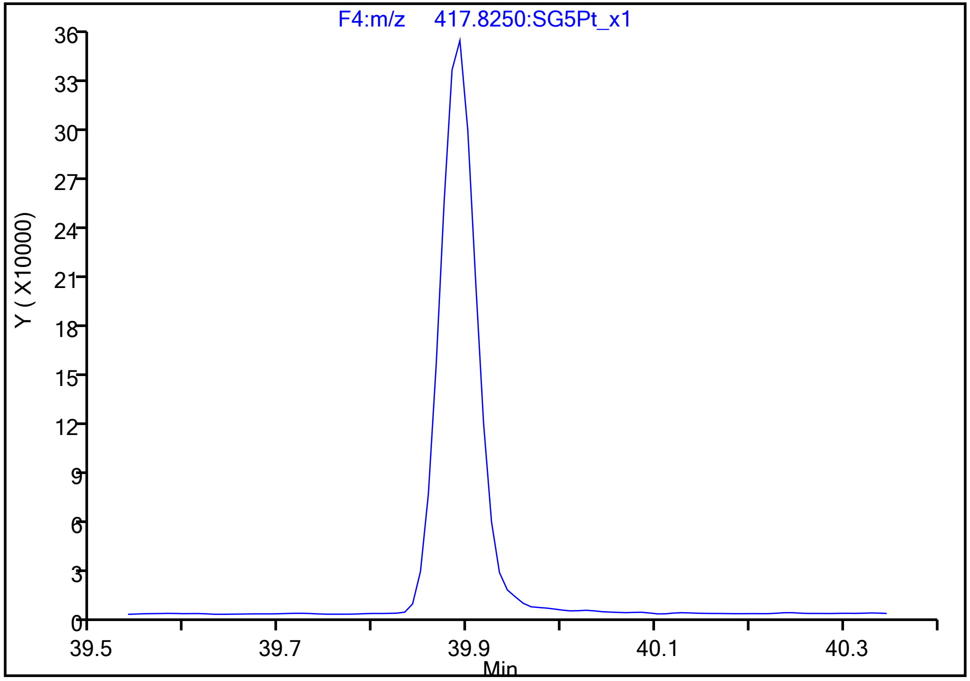

Manual Integration Results

RT: 39.89

Area: 980104

Amount: 95.922974

Amount Units: pg/ul

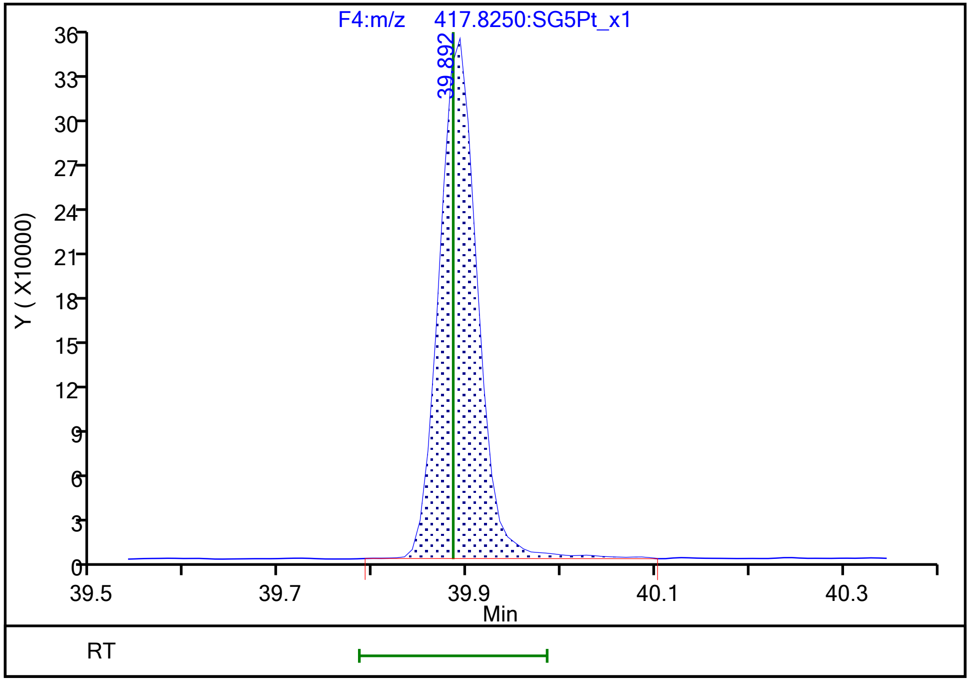

Reviewer: stephensk, 04-Jun-2020 08:11:38

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Injection Date: 03-Jun-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

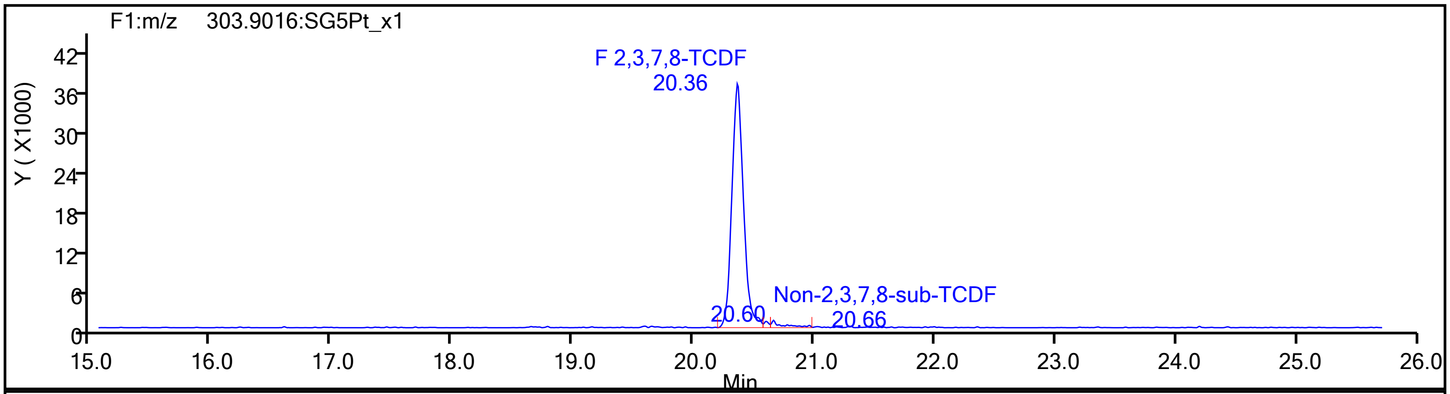

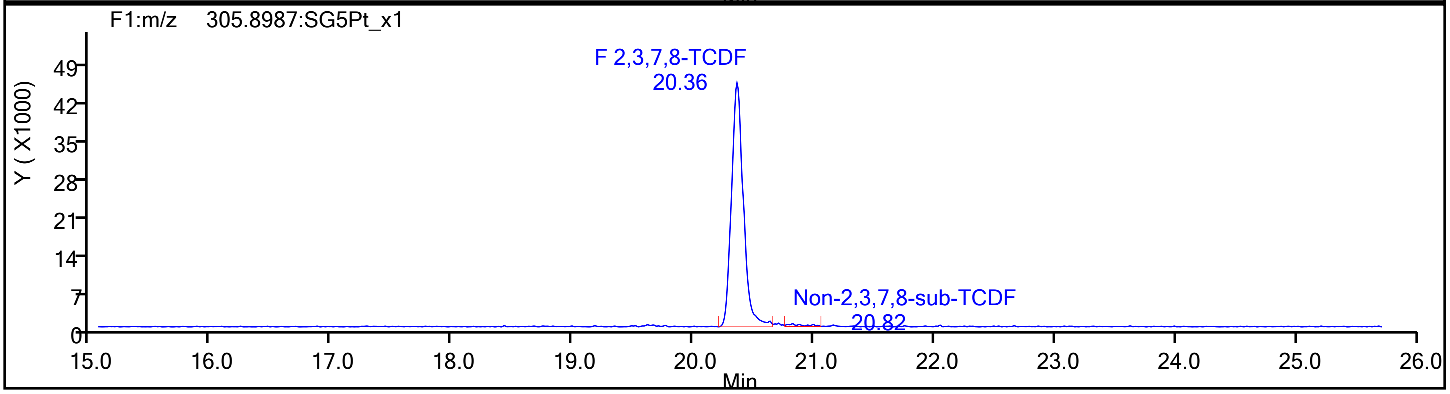

TCDF Standards

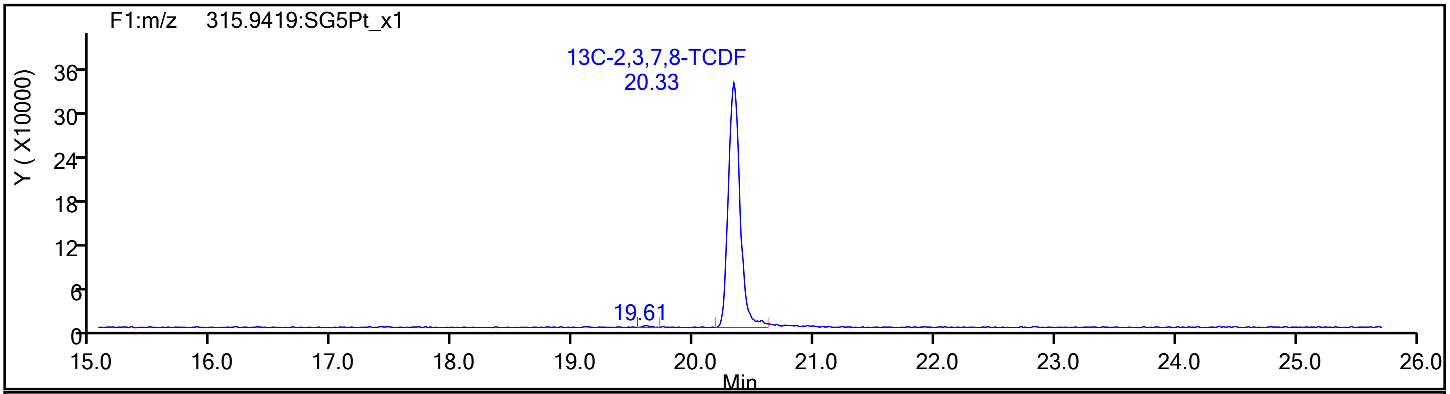

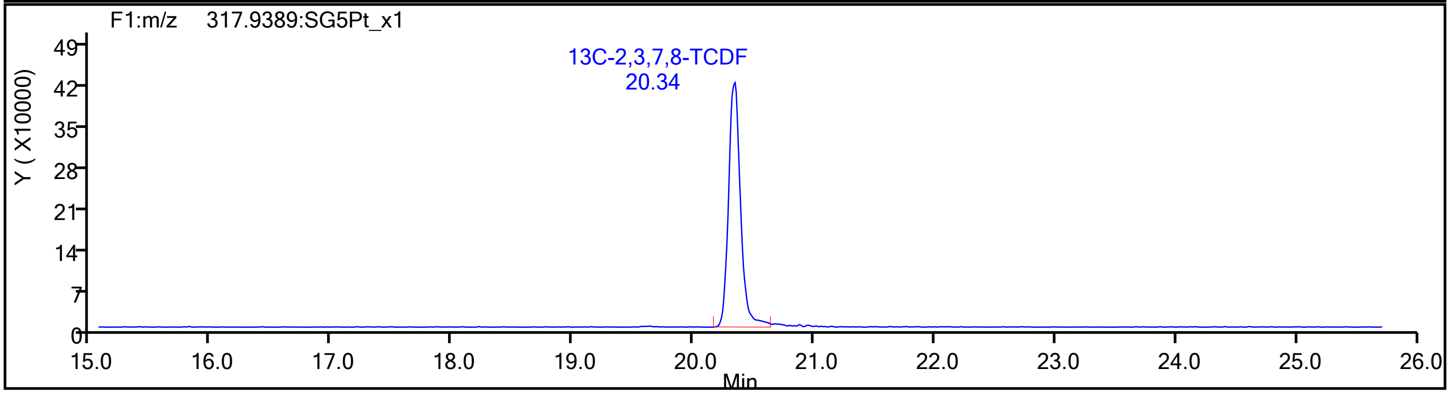

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d		
Injection Date:	03-Jun-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

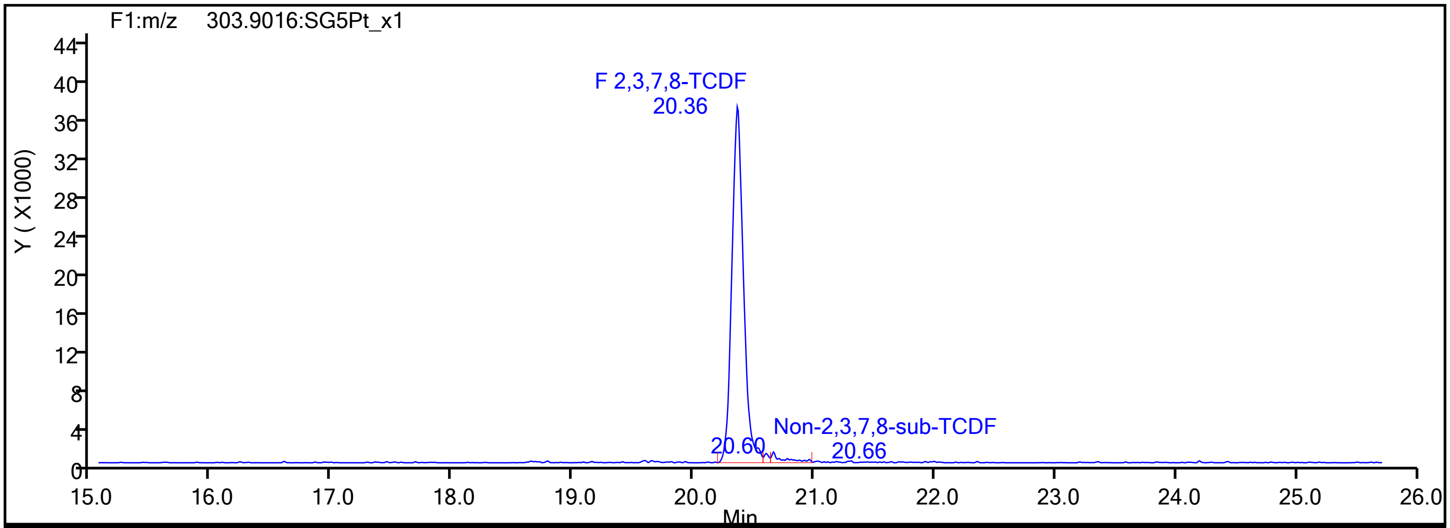

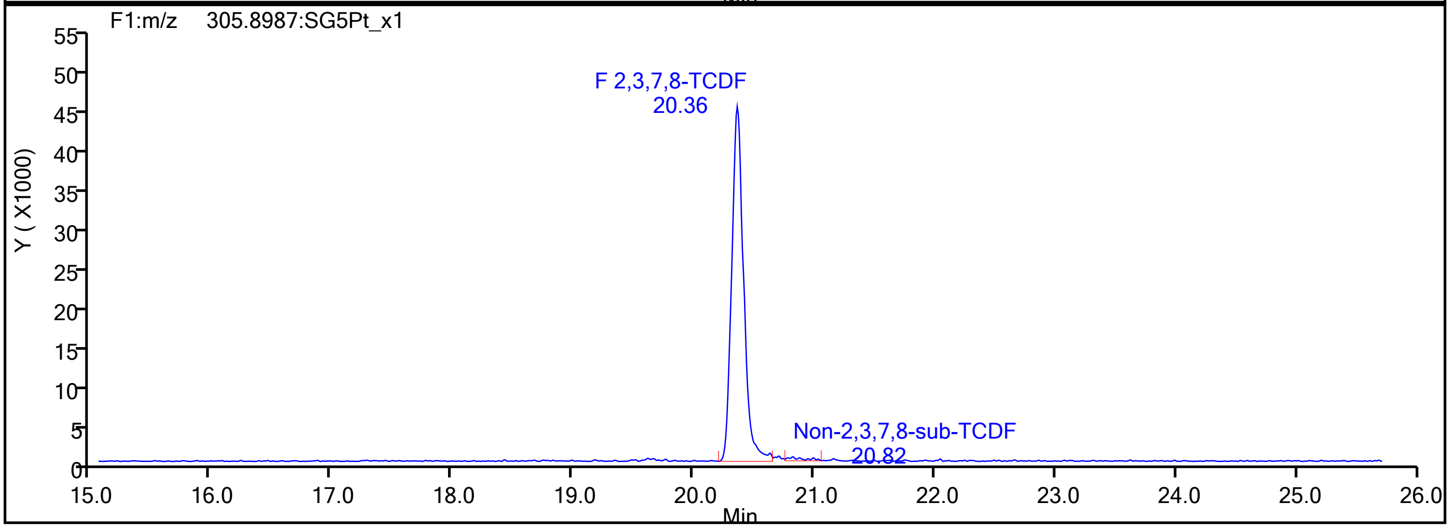

TCDF Interference Mass

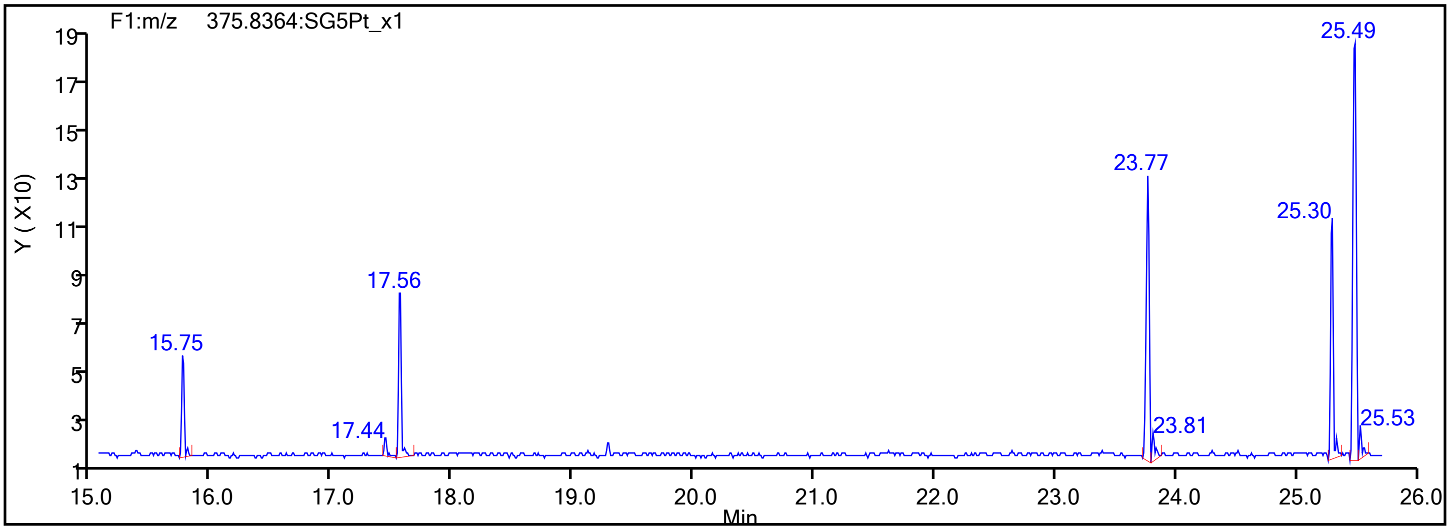

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d		
Injection Date:	03-Jun-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

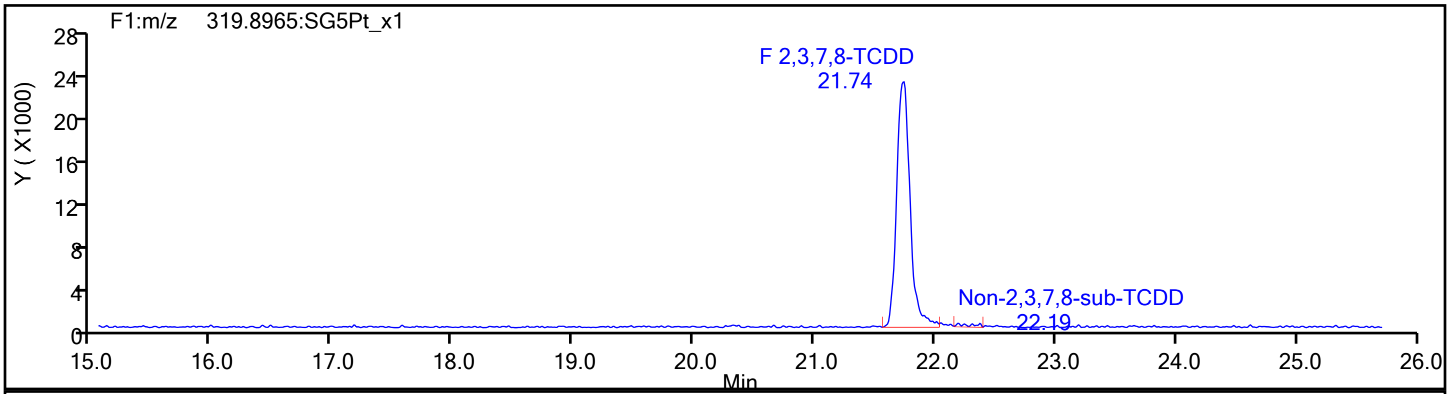

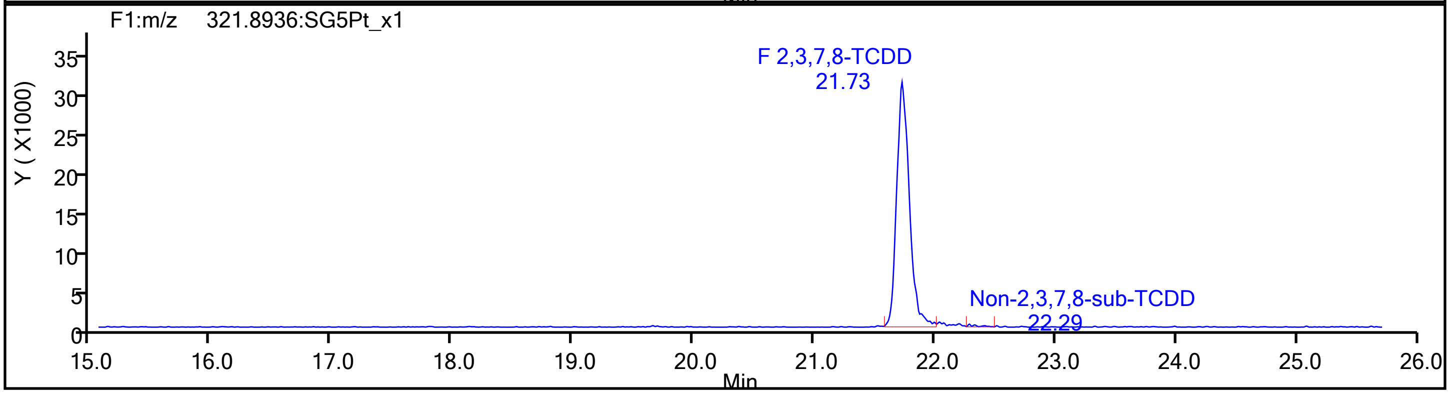

TCDD Standards

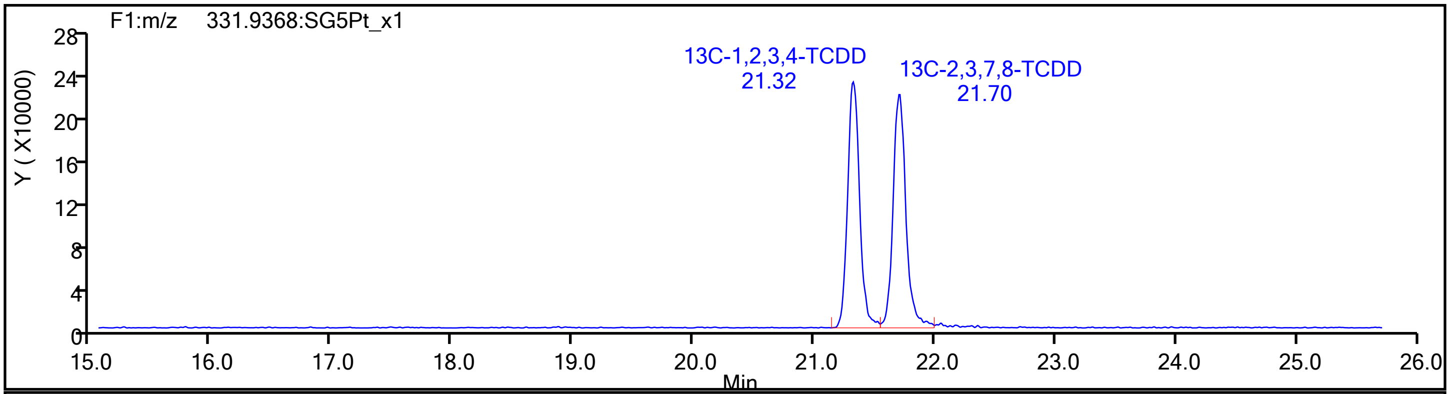

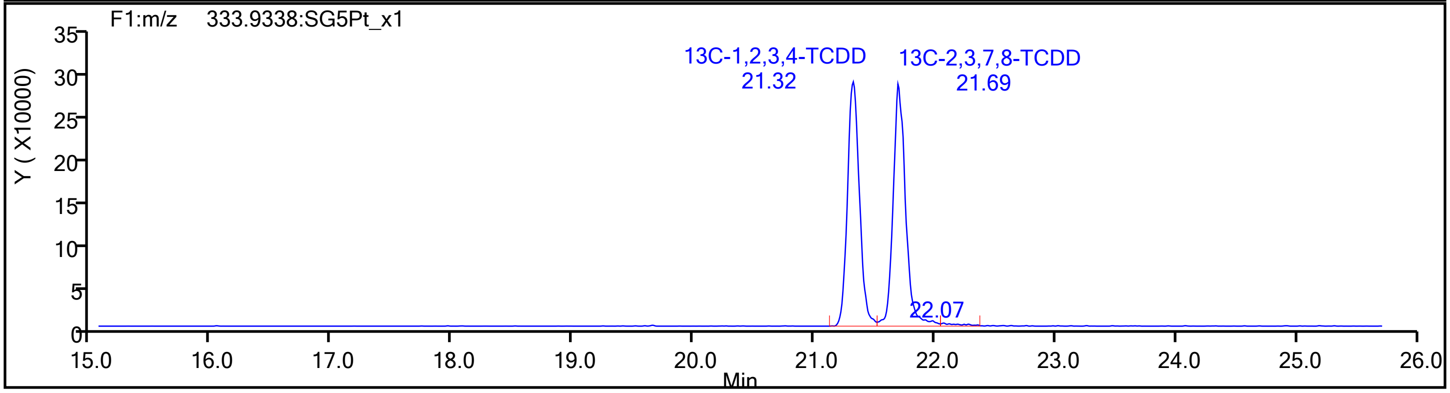

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d		
Injection Date:	03-Jun-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

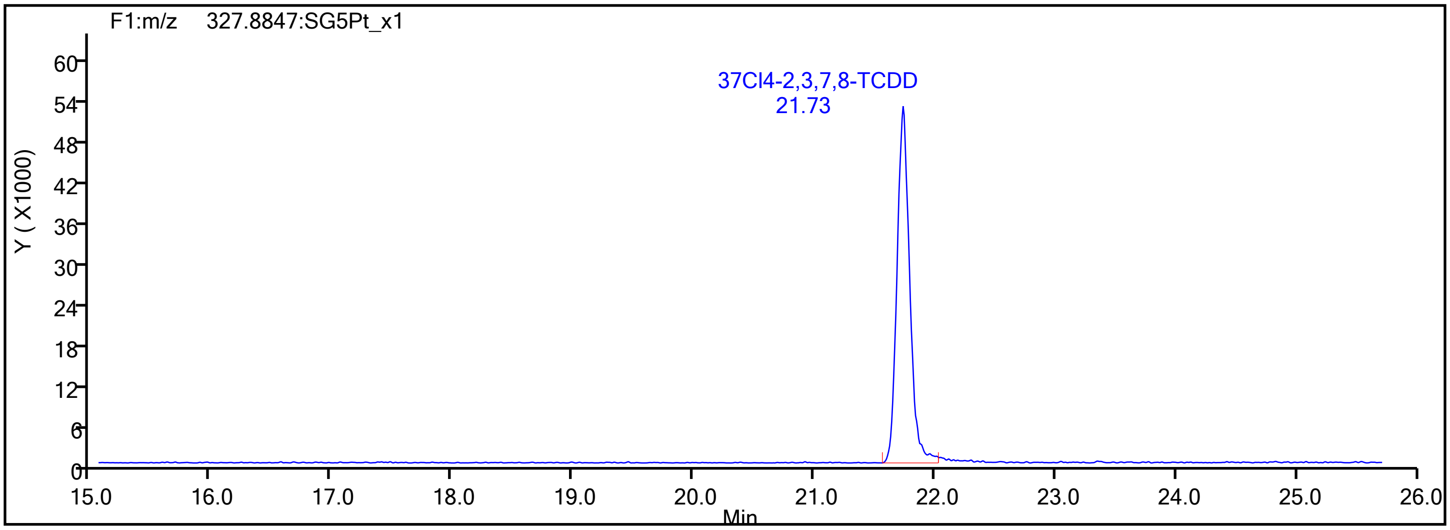

37Cl4-TCDD Standards

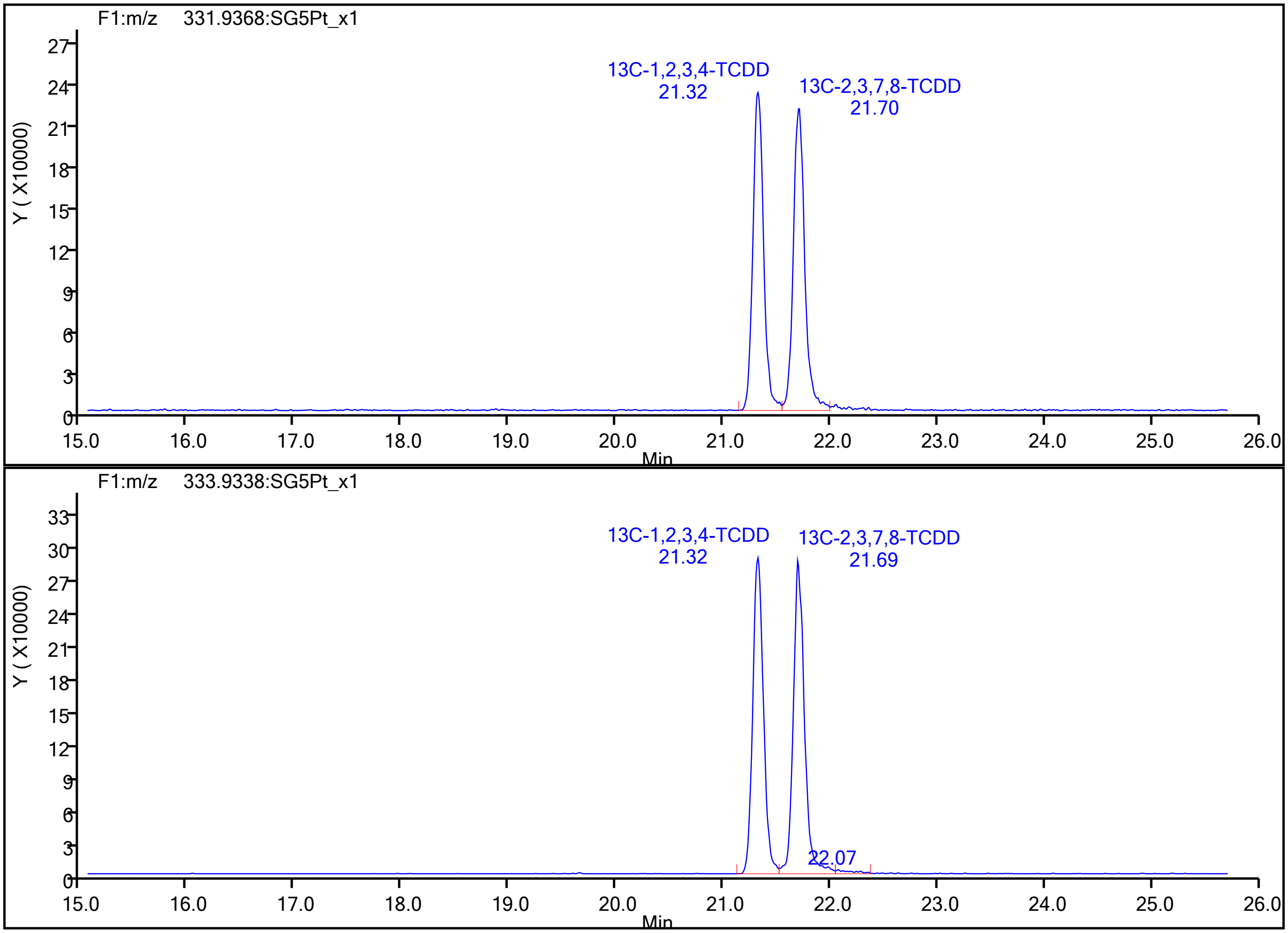

Report Date: 05-Jun-2020 11:34:34
Chrom Revision: 2.3 03-Jun-2020 23:27:16
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Injection Date: 03-Jun-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm
F1 PeCDFs

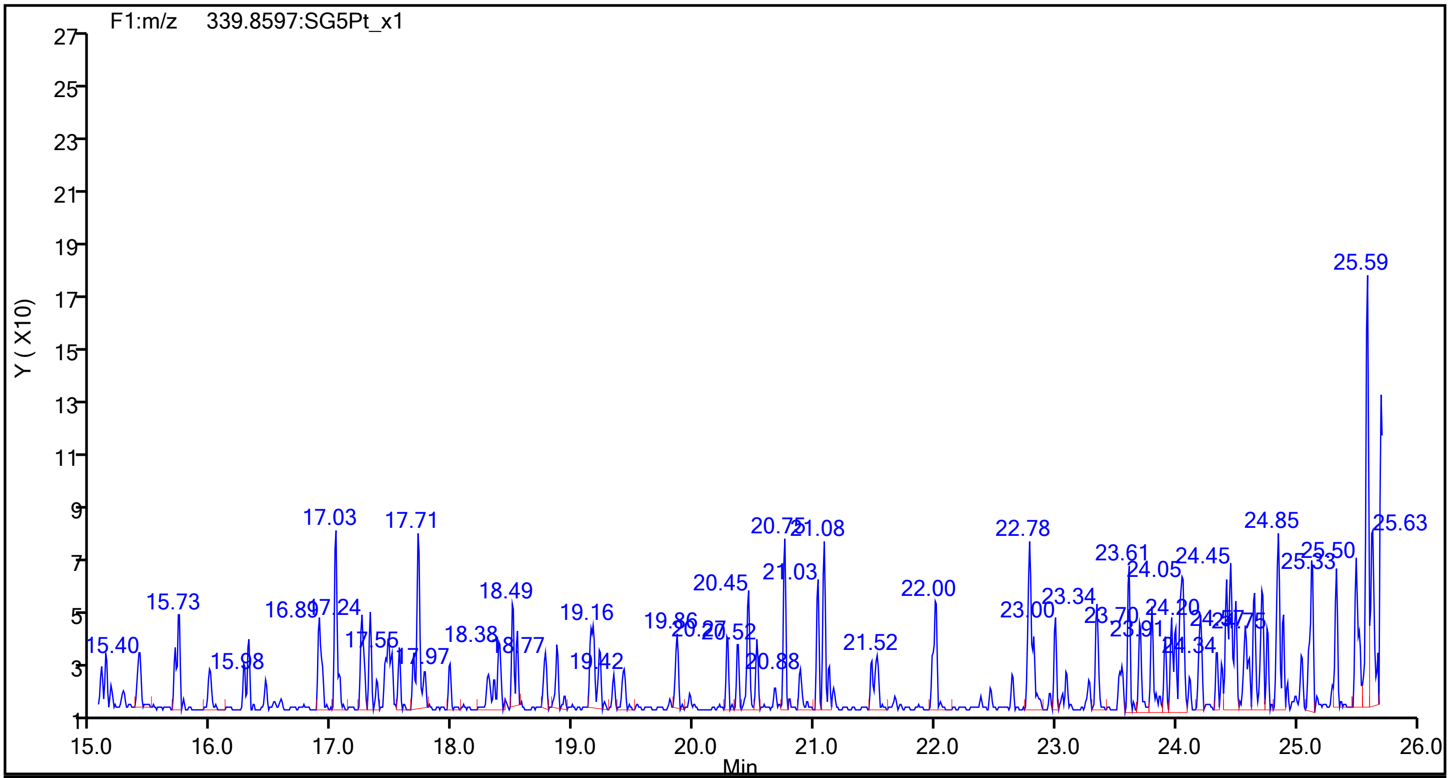

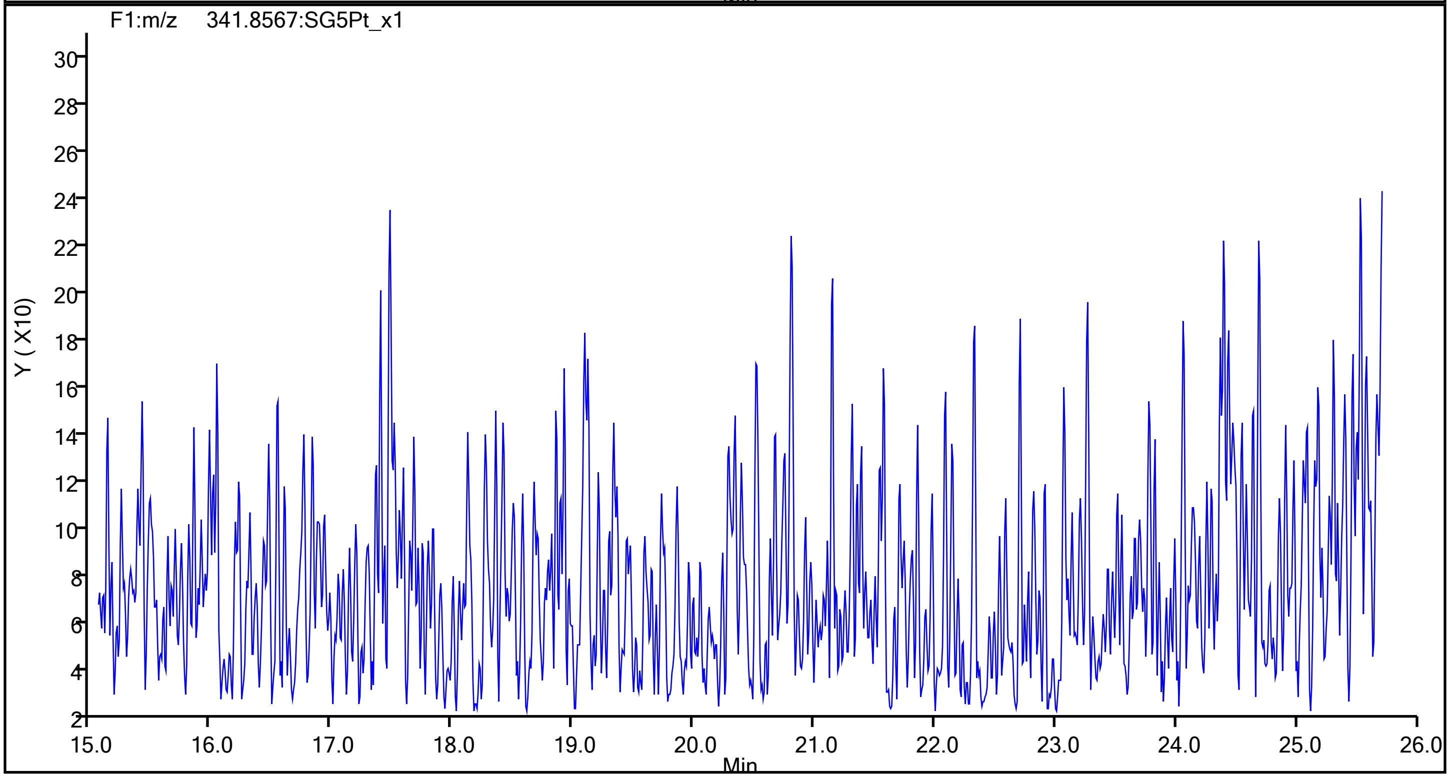

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Injection Date: 03-Jun-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

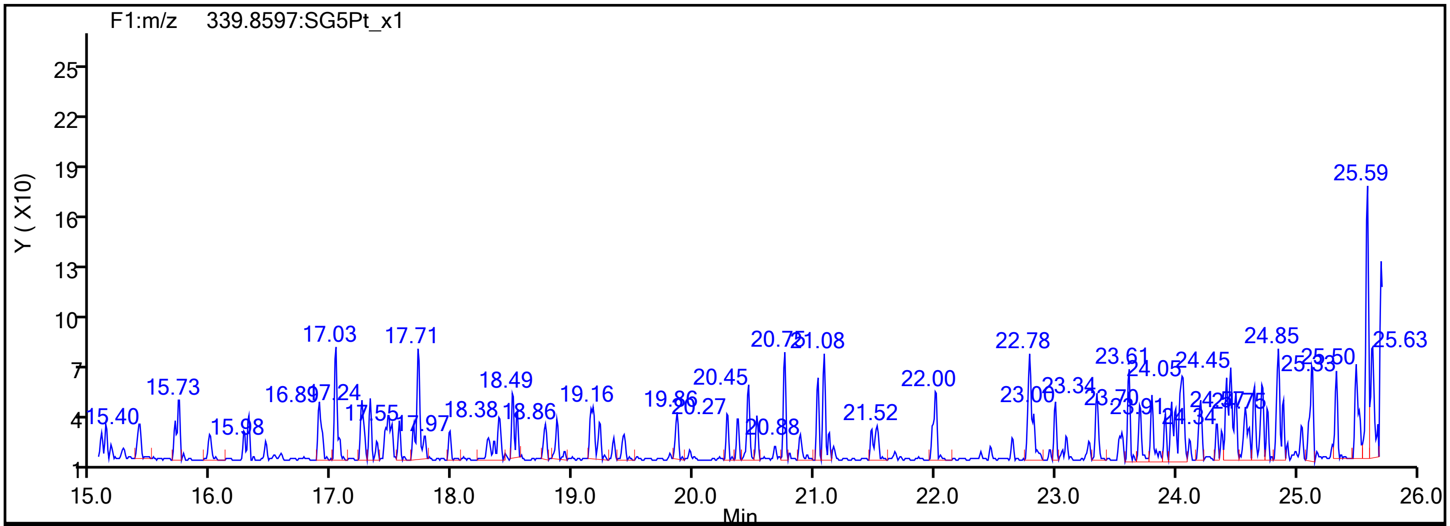

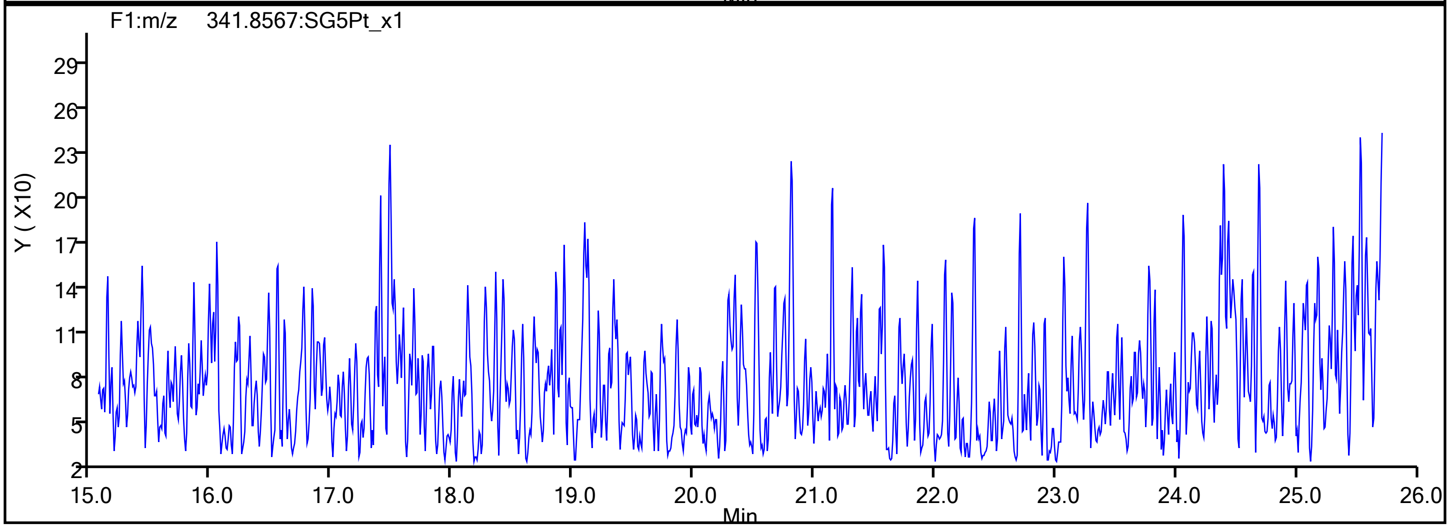

F1 PeCDFs Interference Mass

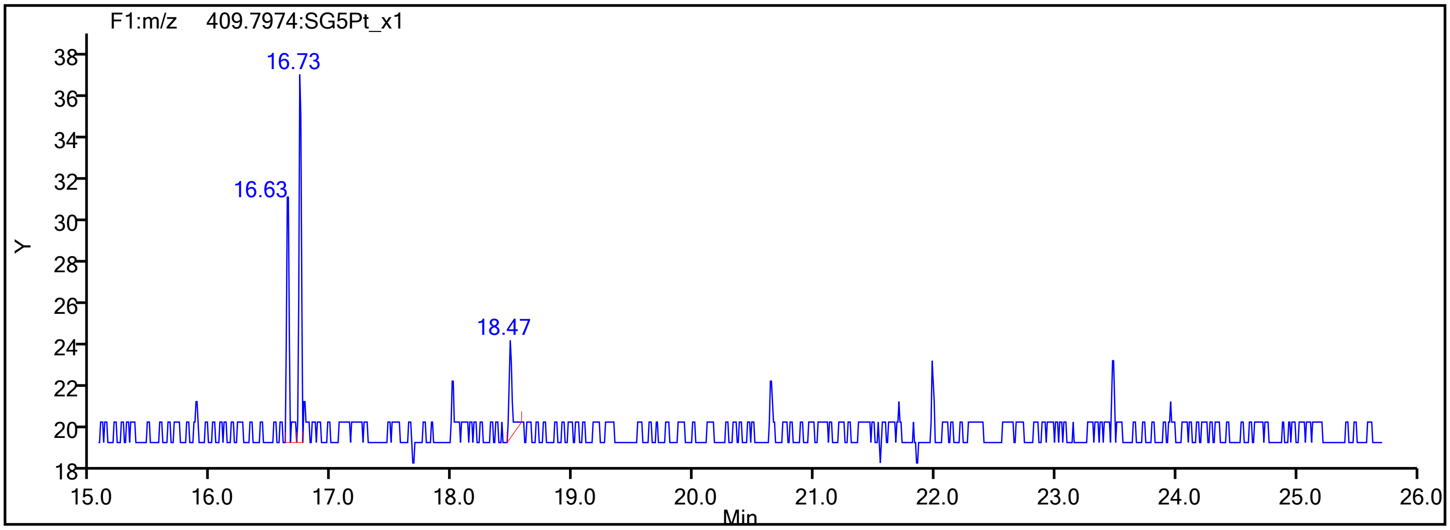

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

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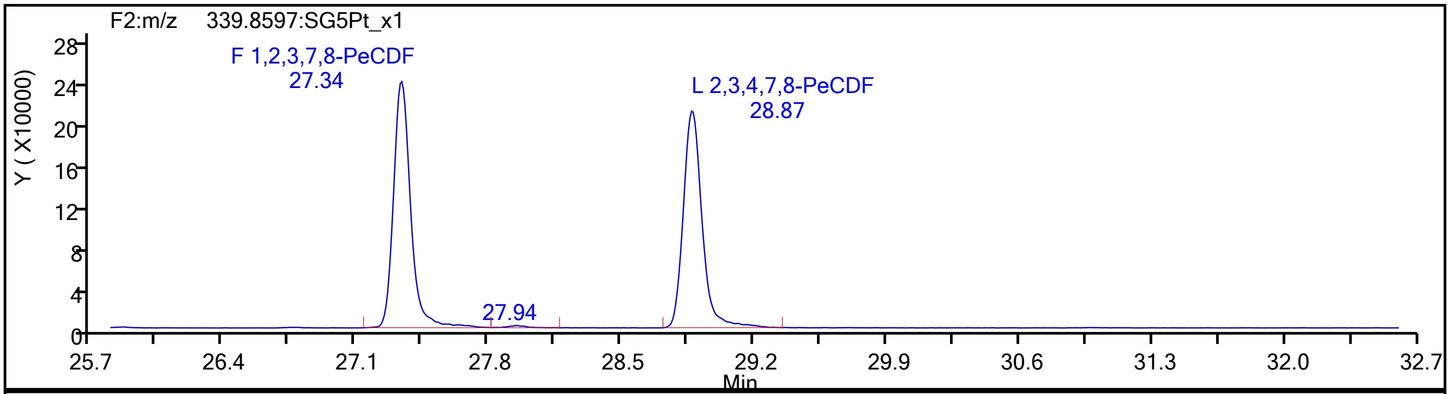

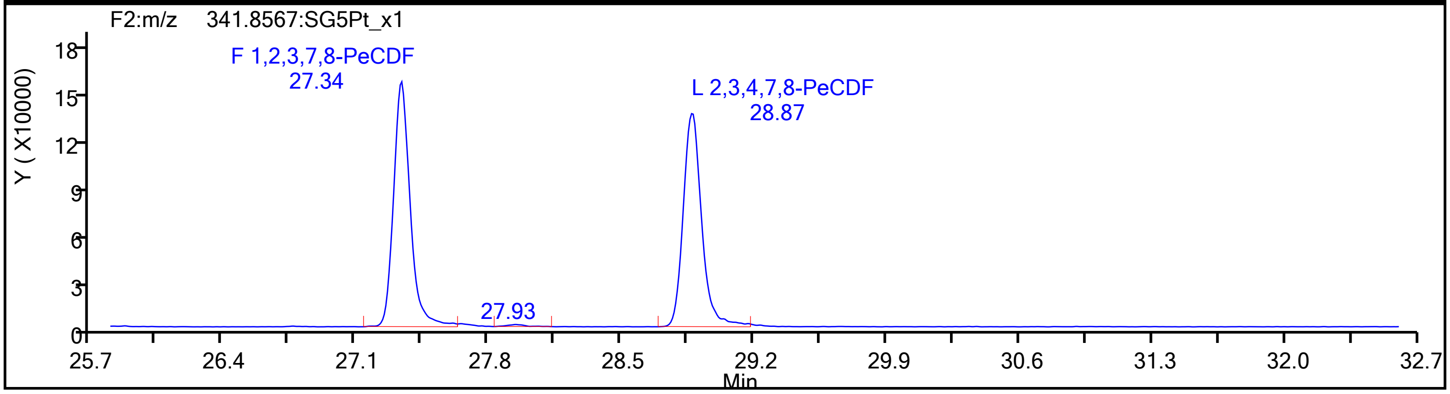

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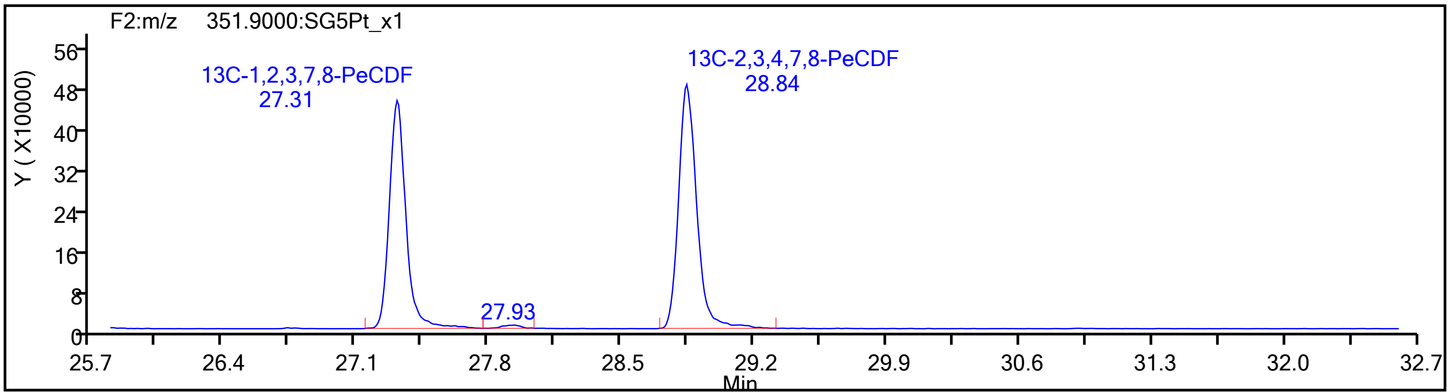

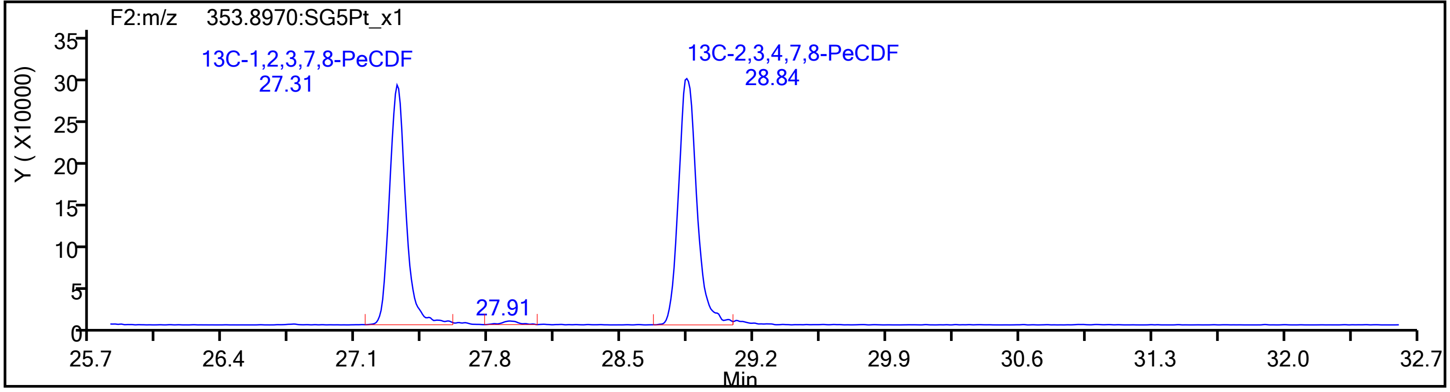

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Eurofins TestAmerica, Sacramento

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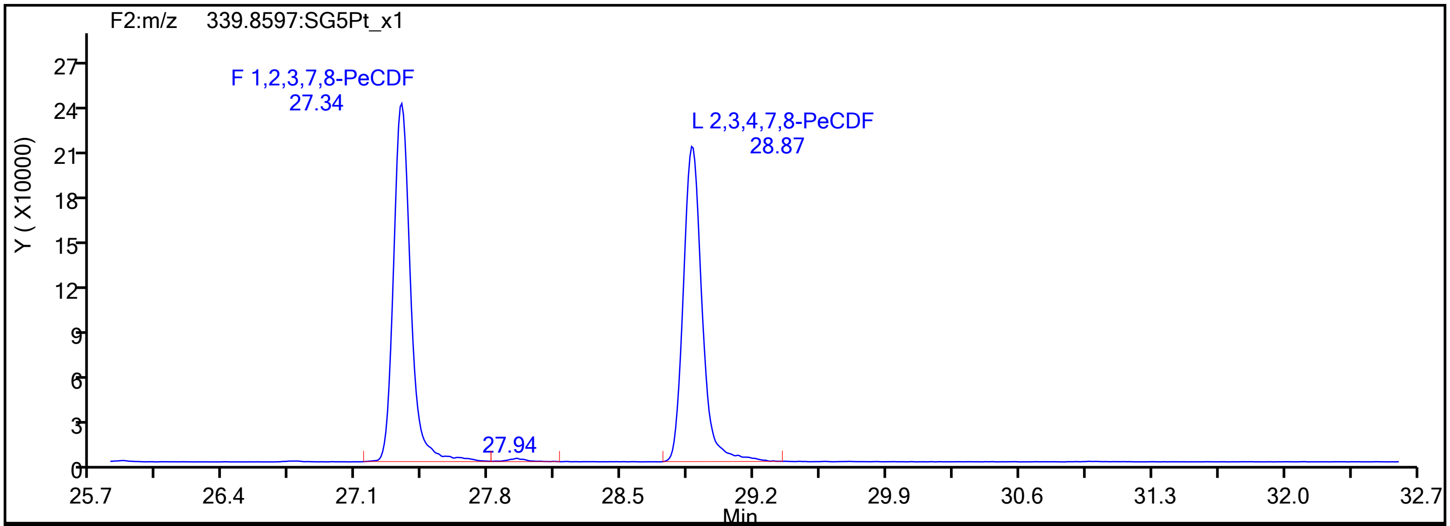

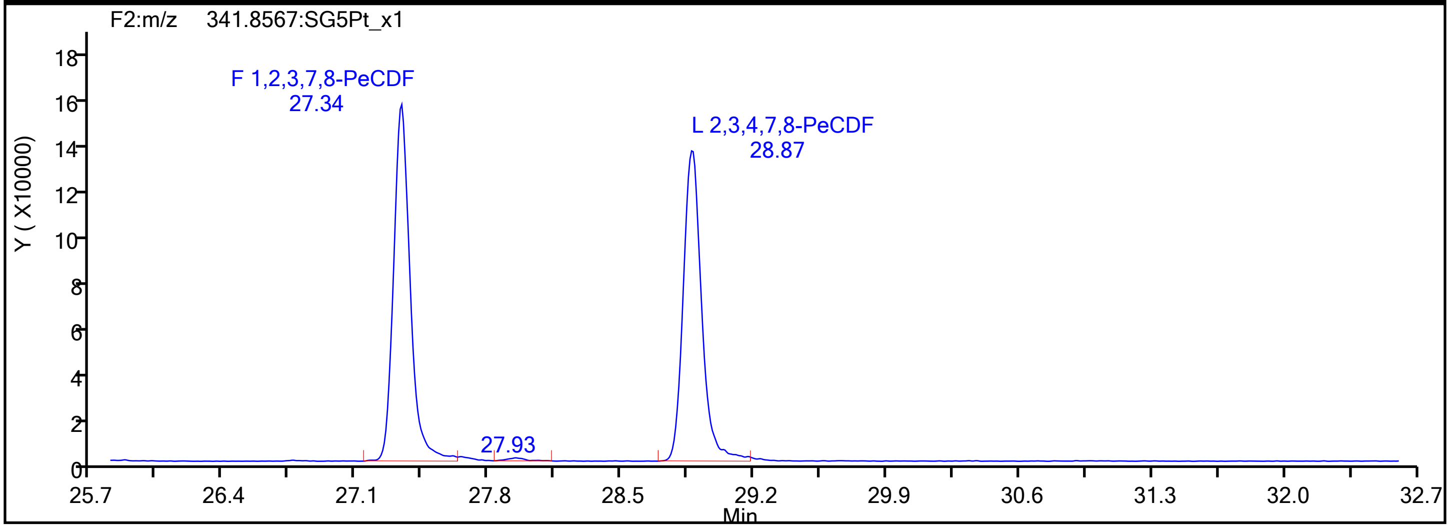

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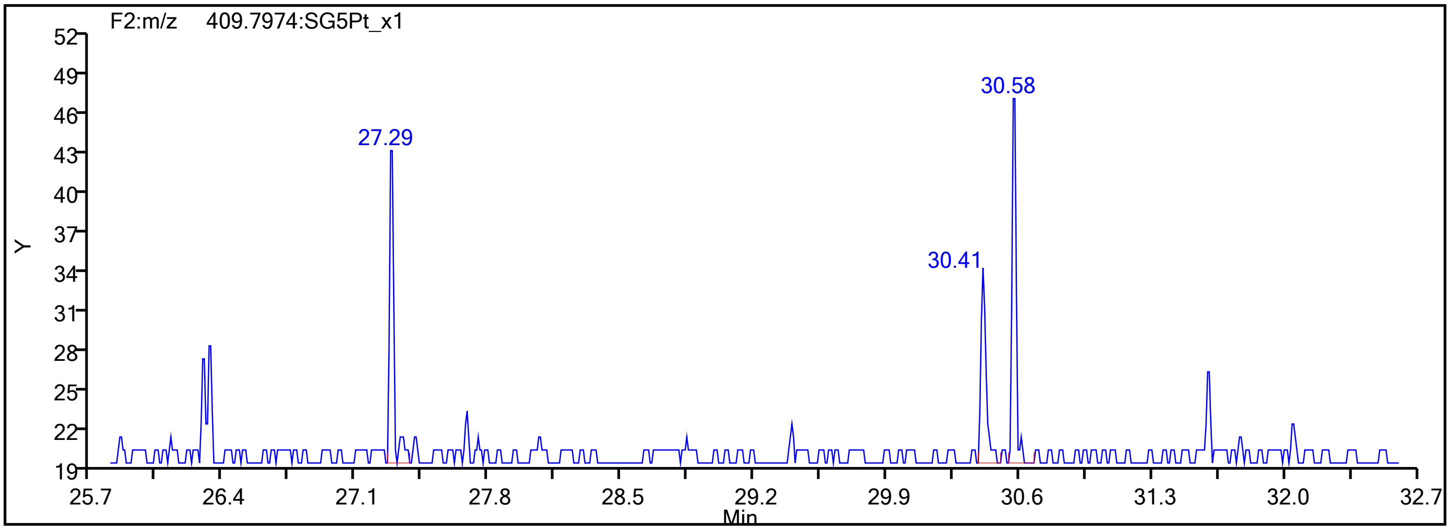

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Eurofins TestAmerica, Sacramento

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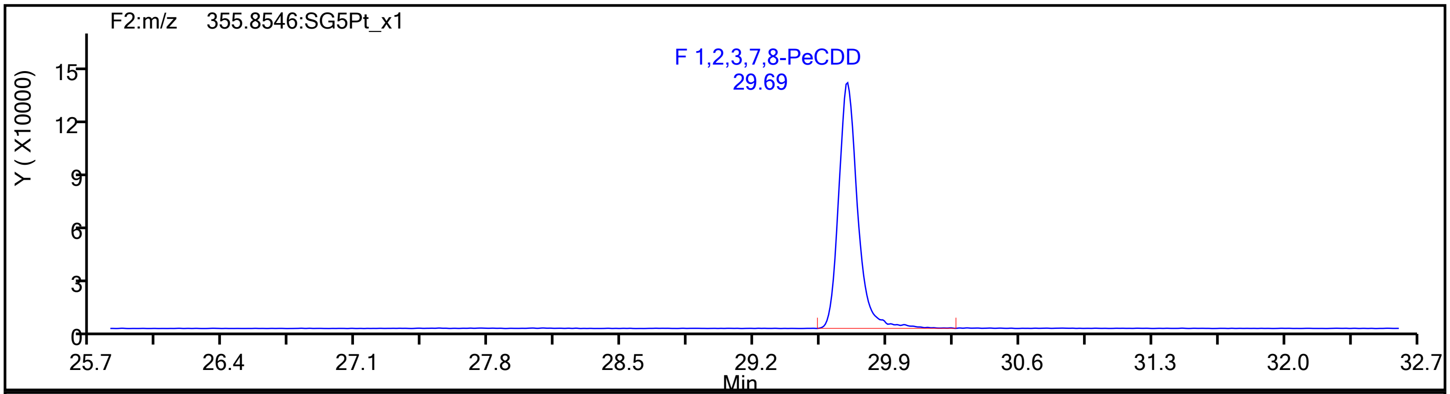

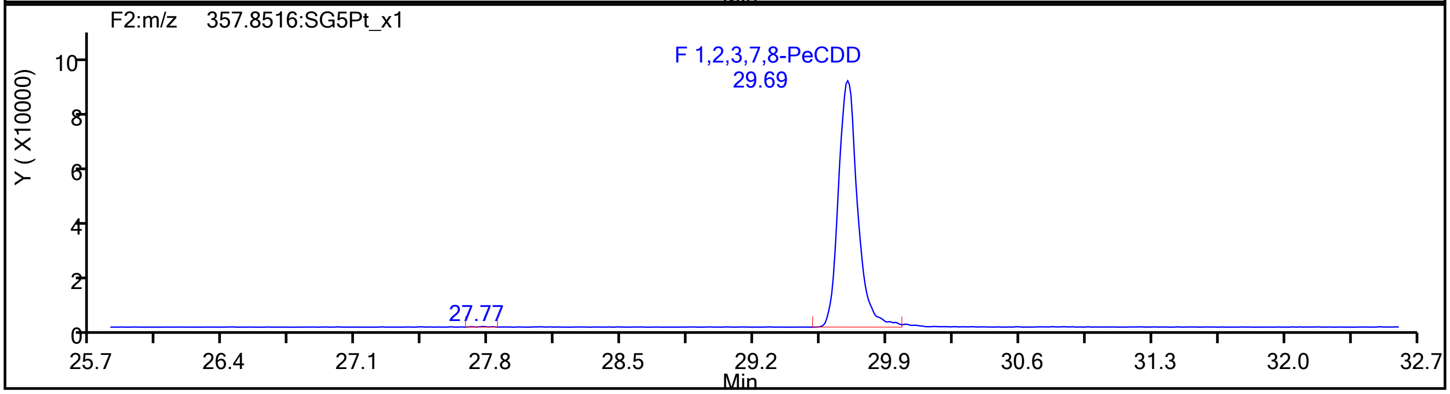

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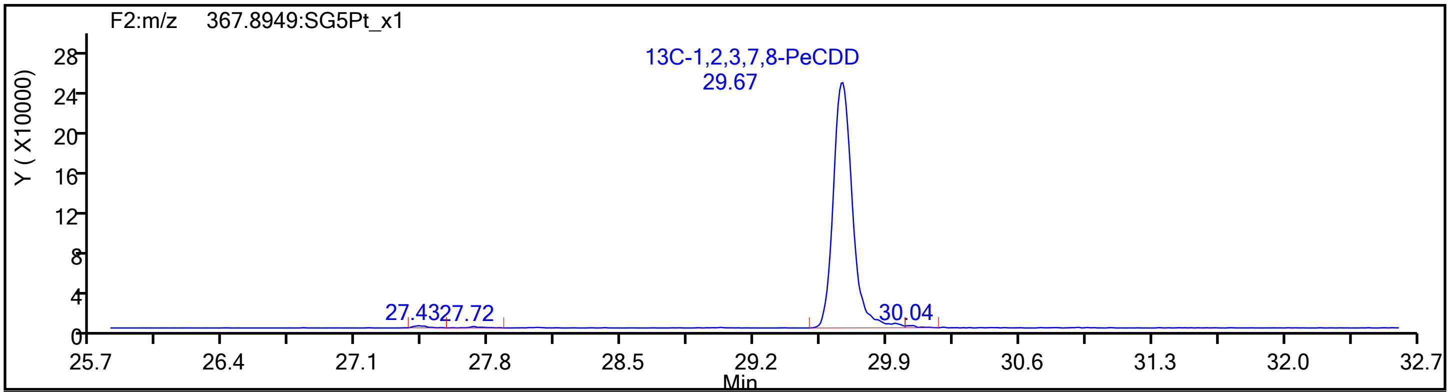

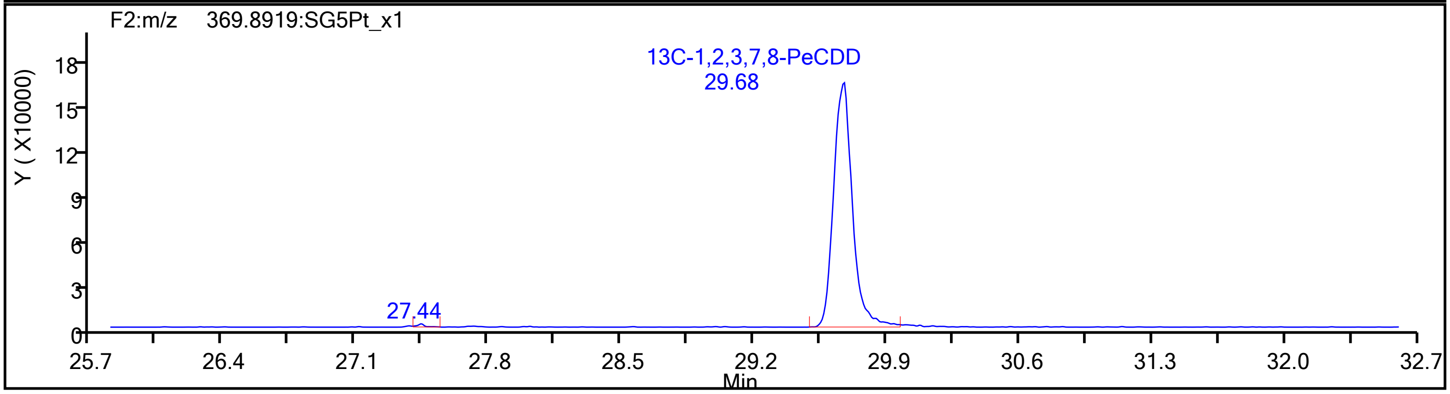

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Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 16:30:00 Injection Vol: 1.0 ul

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Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

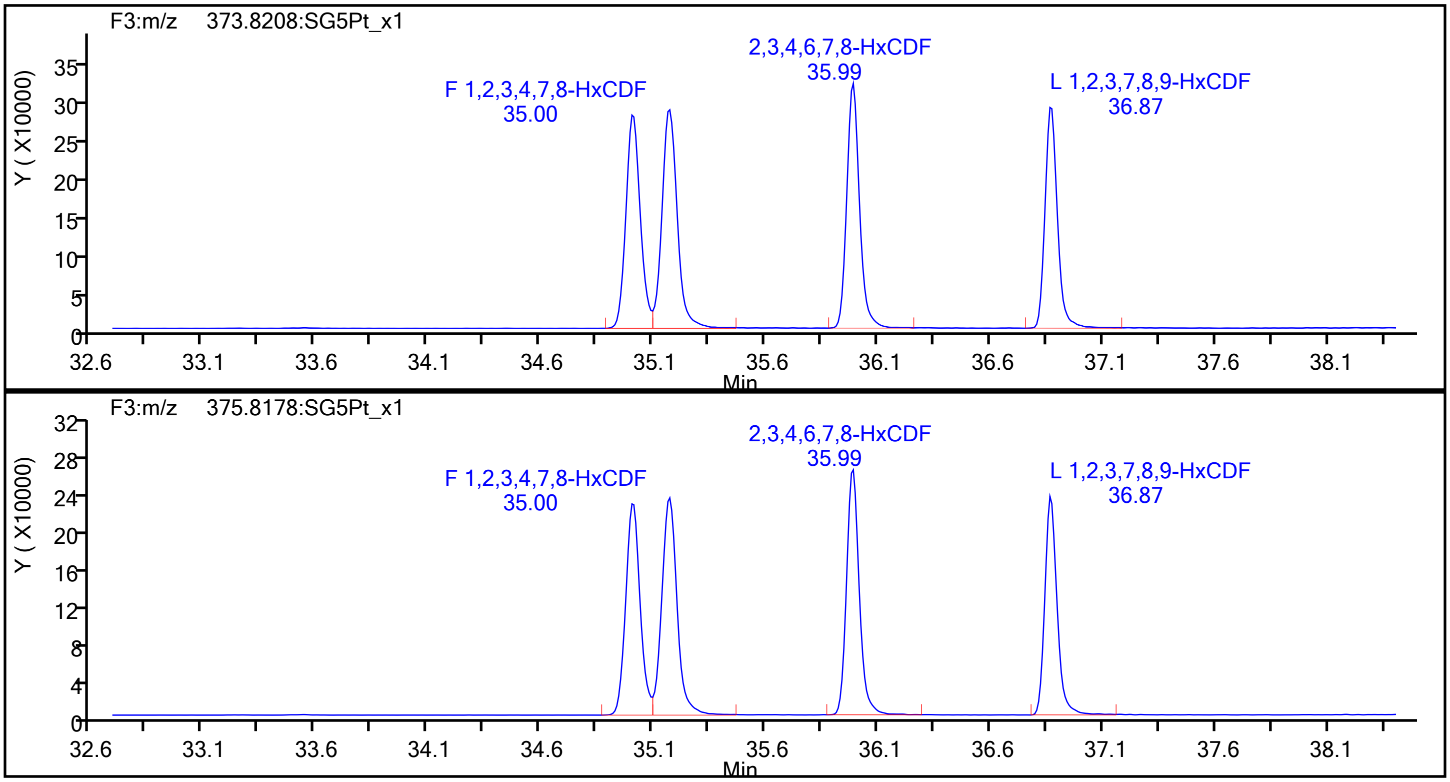

HxCDF Standards

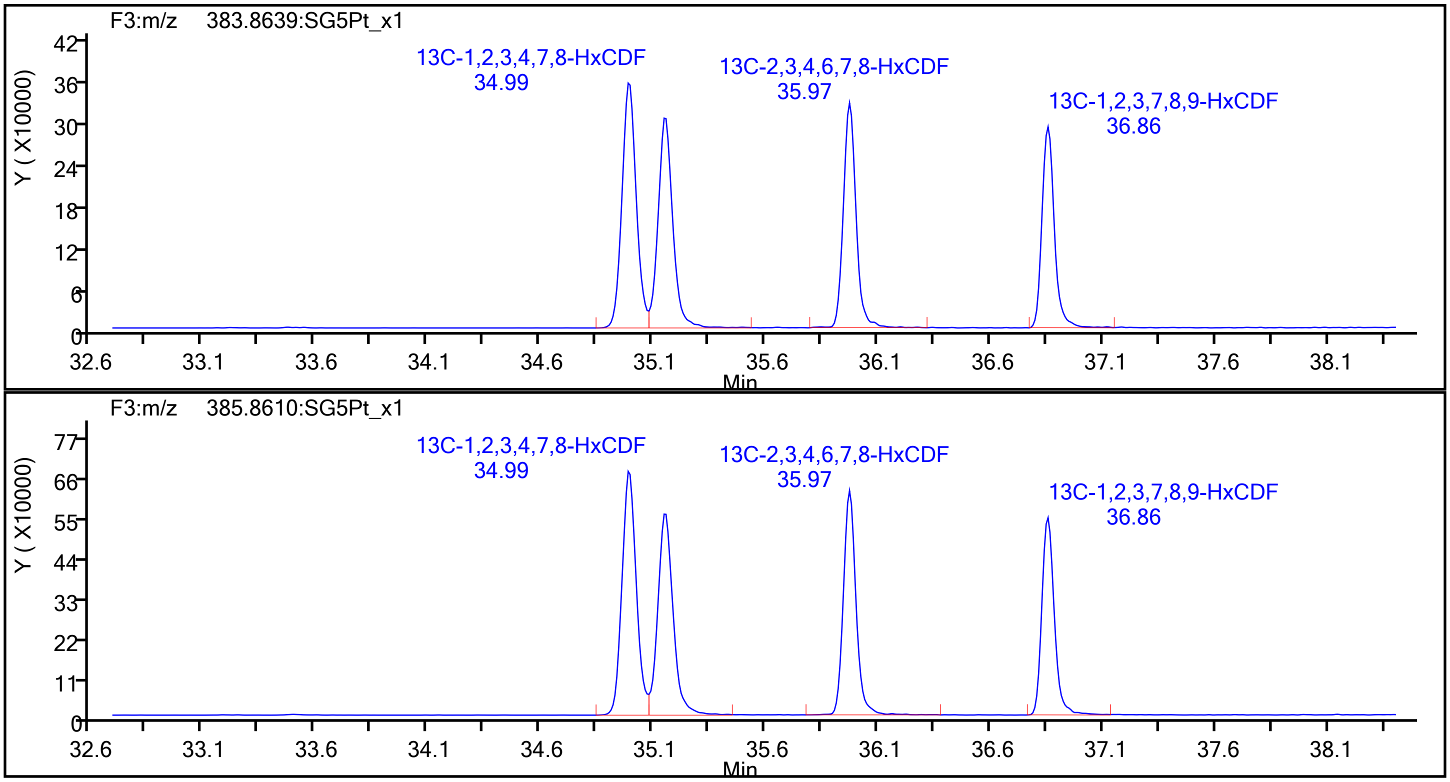

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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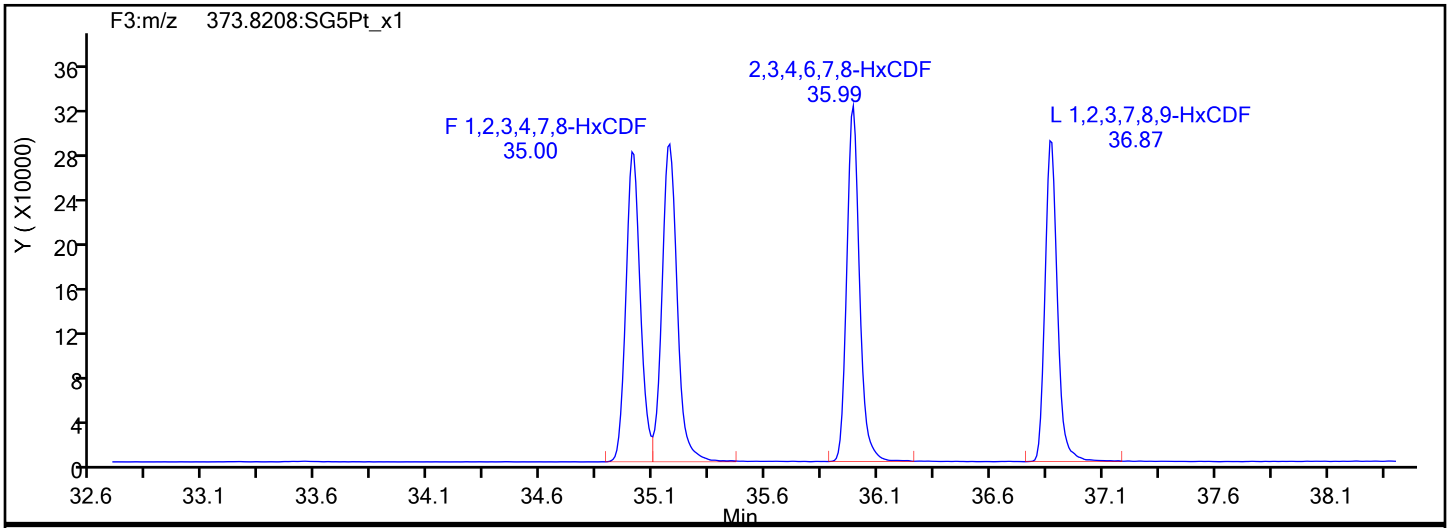

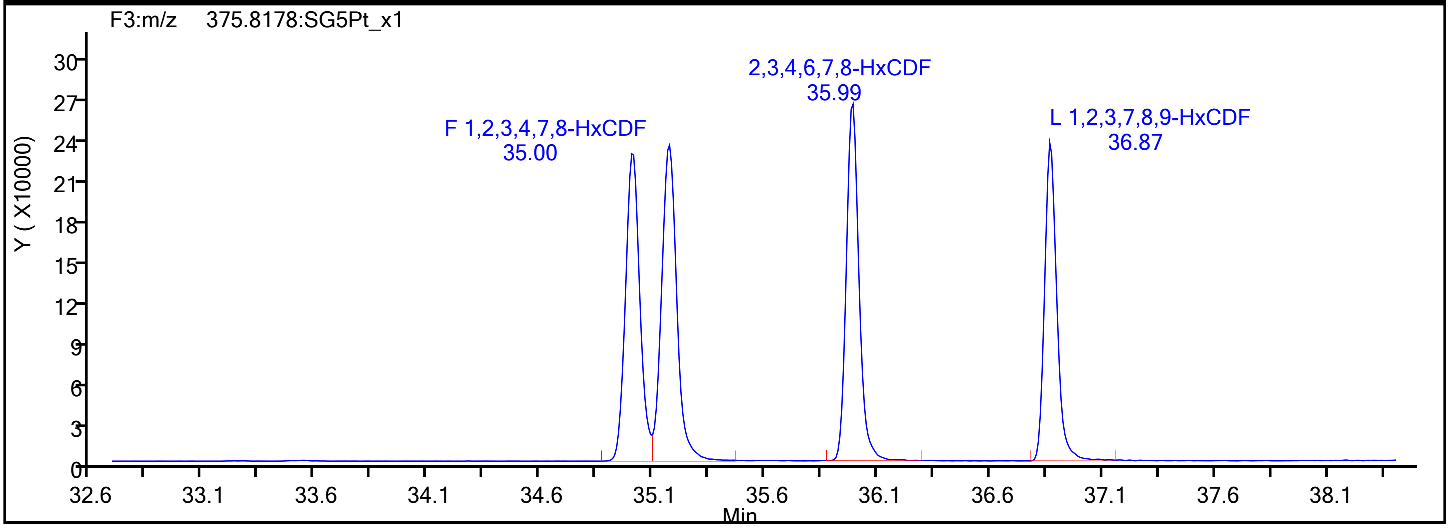

HxCDF Interference Mass

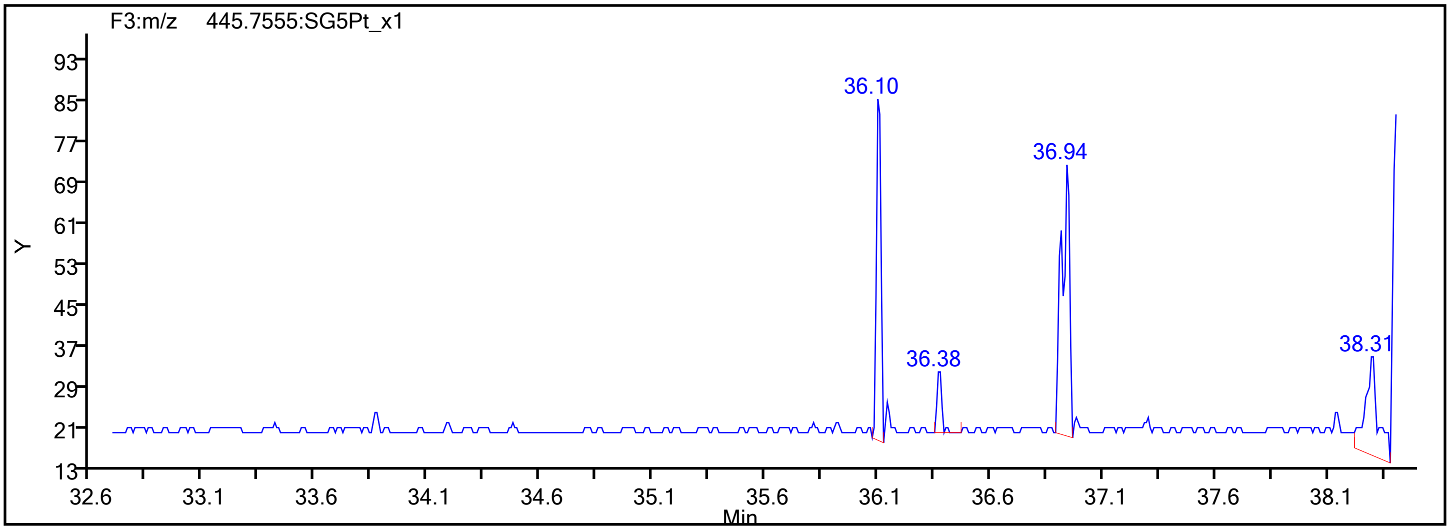

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HxCDD

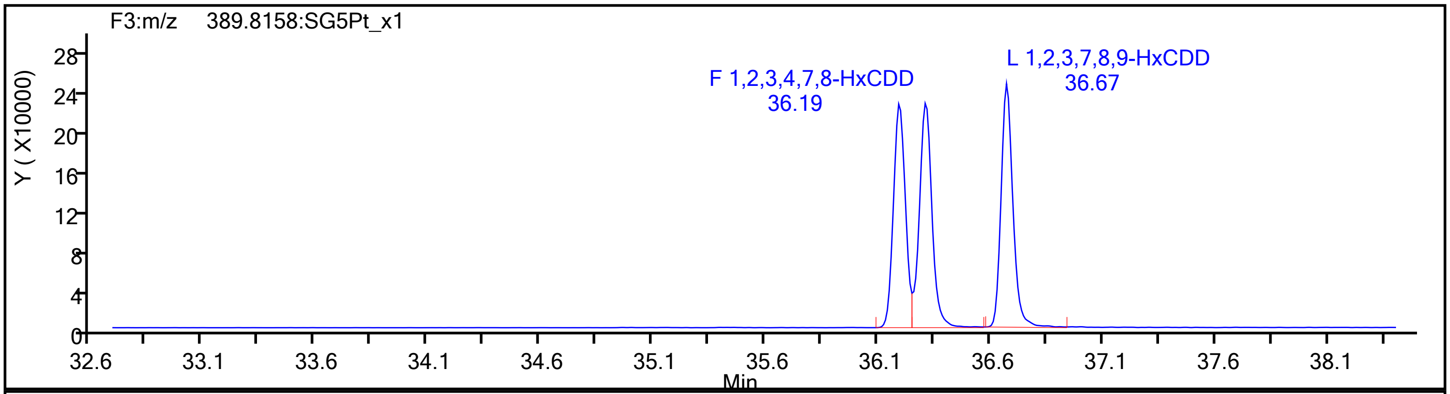

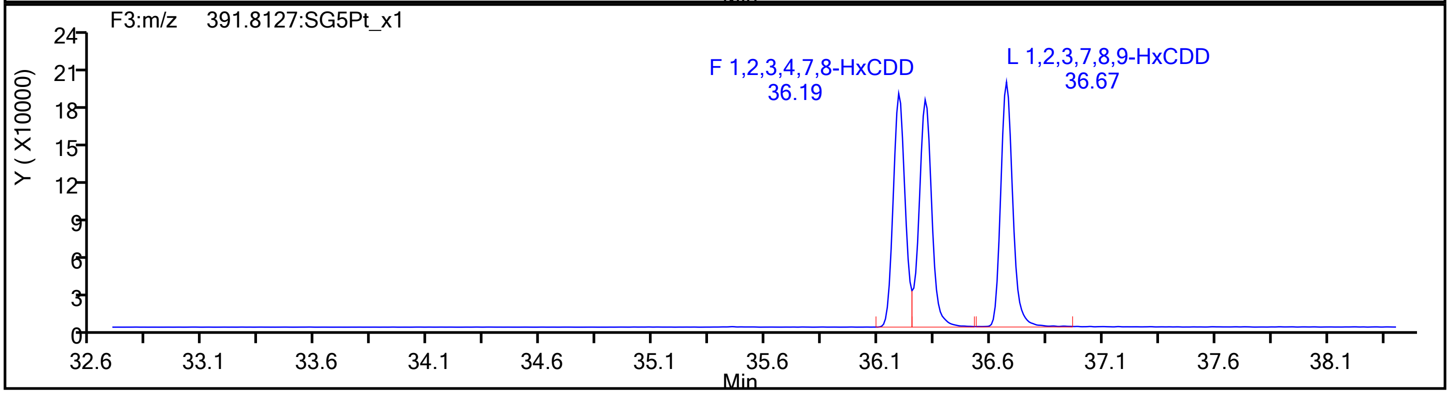

HxCDD Standards

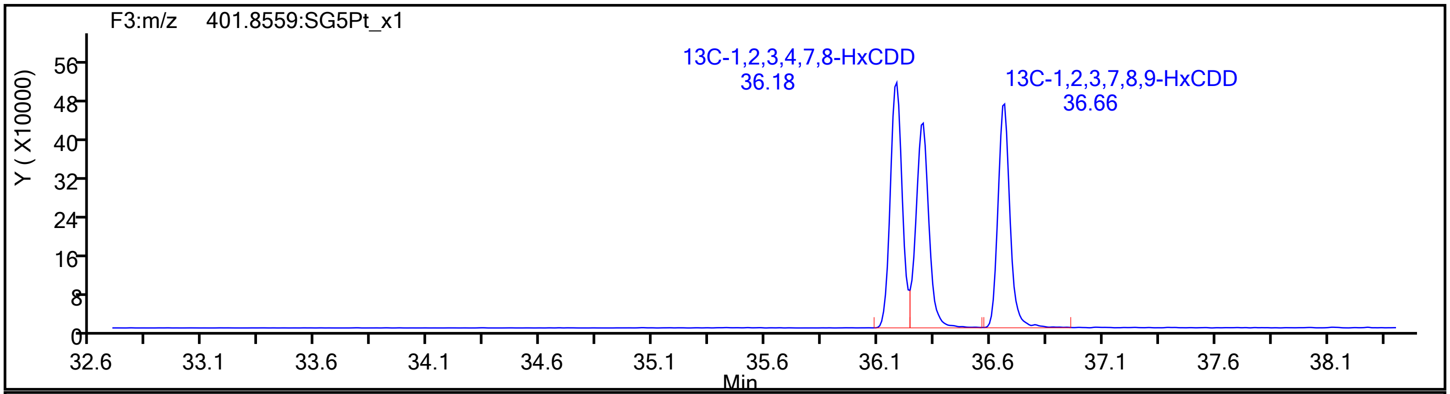

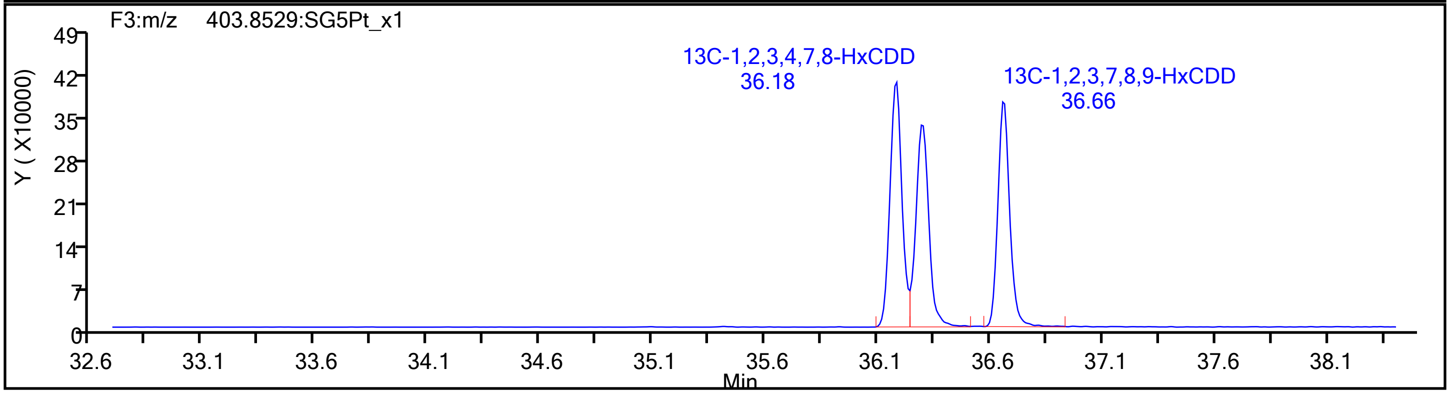

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d

Injection Date: 03-Jun-2020 16:30:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 6

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HpCDF

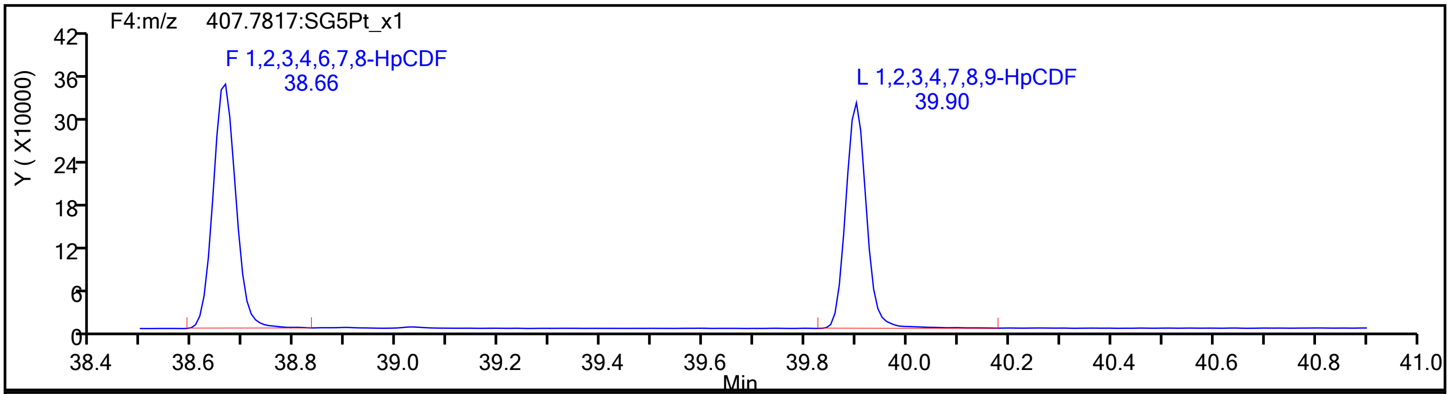

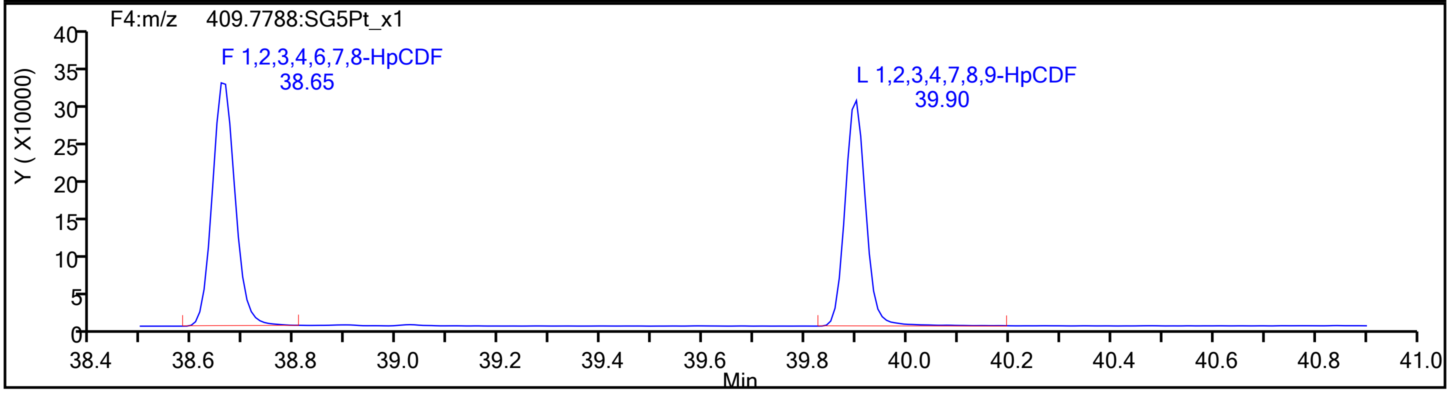

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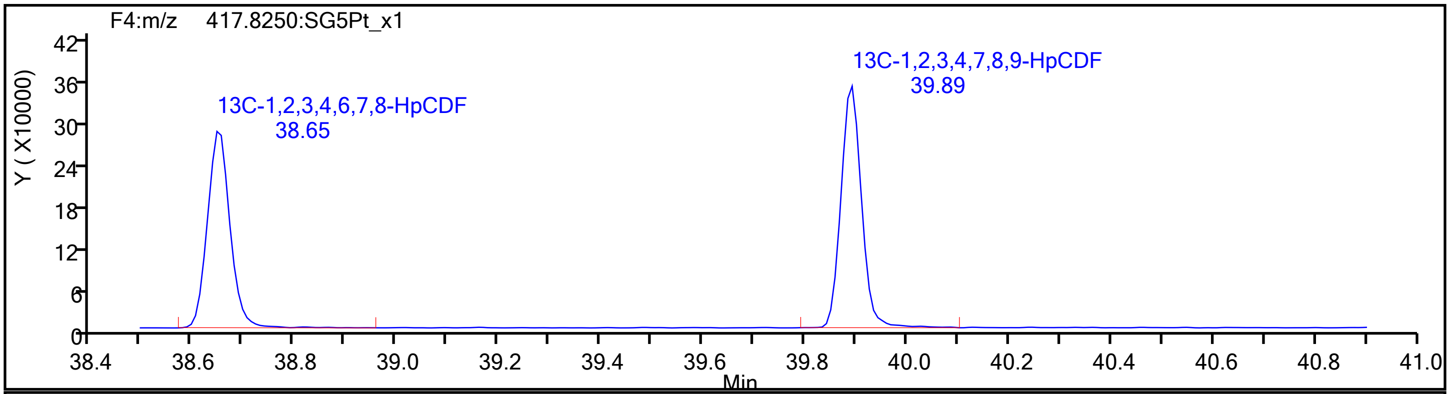

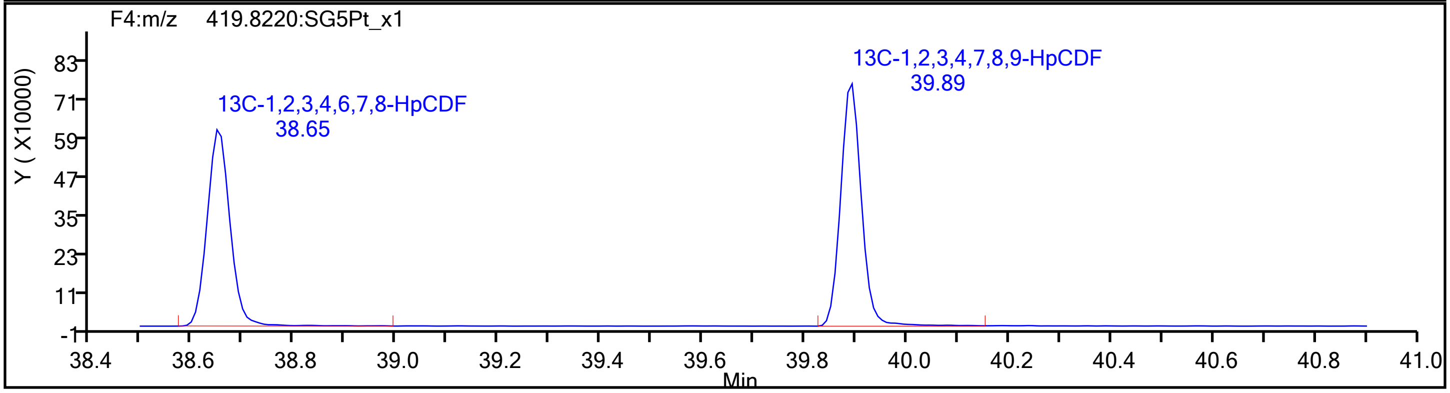

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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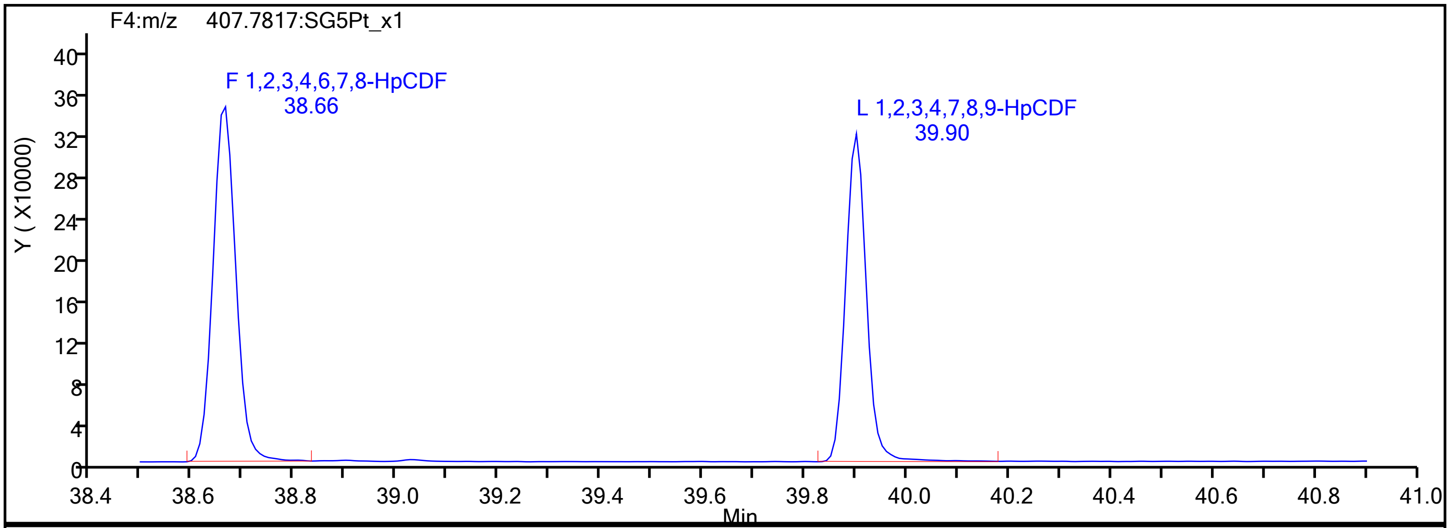

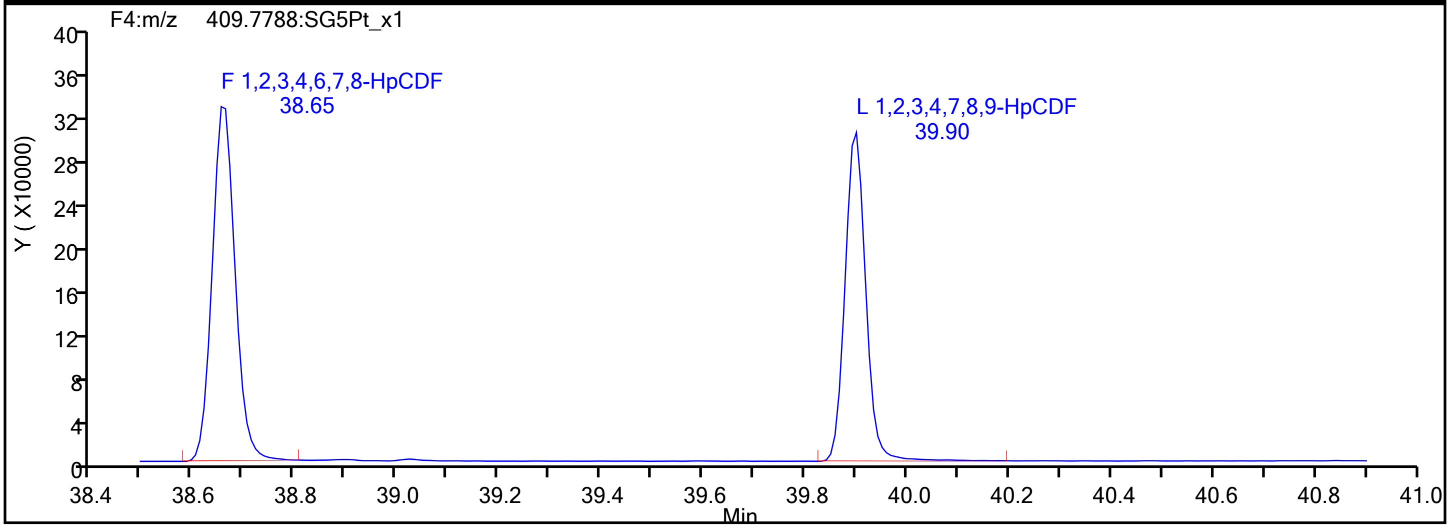

HpCDF Interference Mass

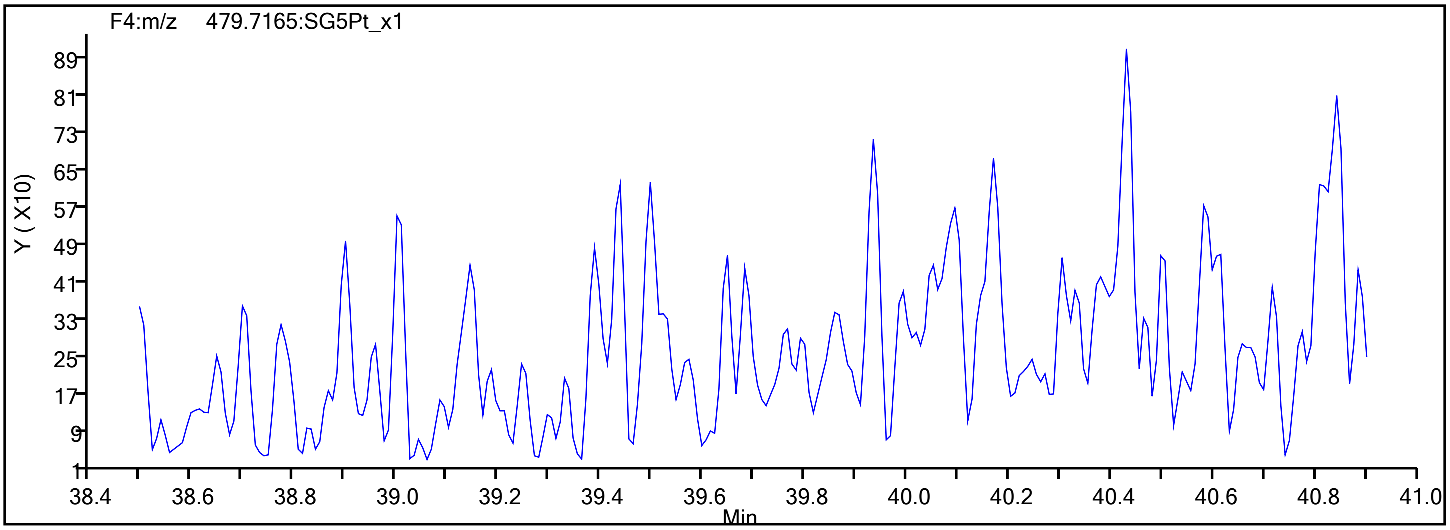

Report Date: 05-Jun-2020 11:34:35 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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HpCDD

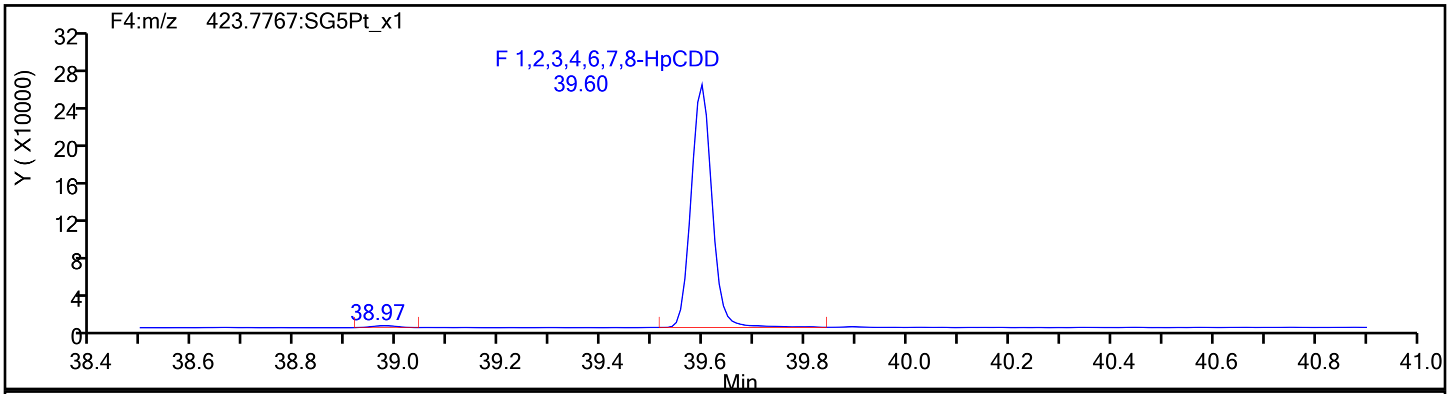

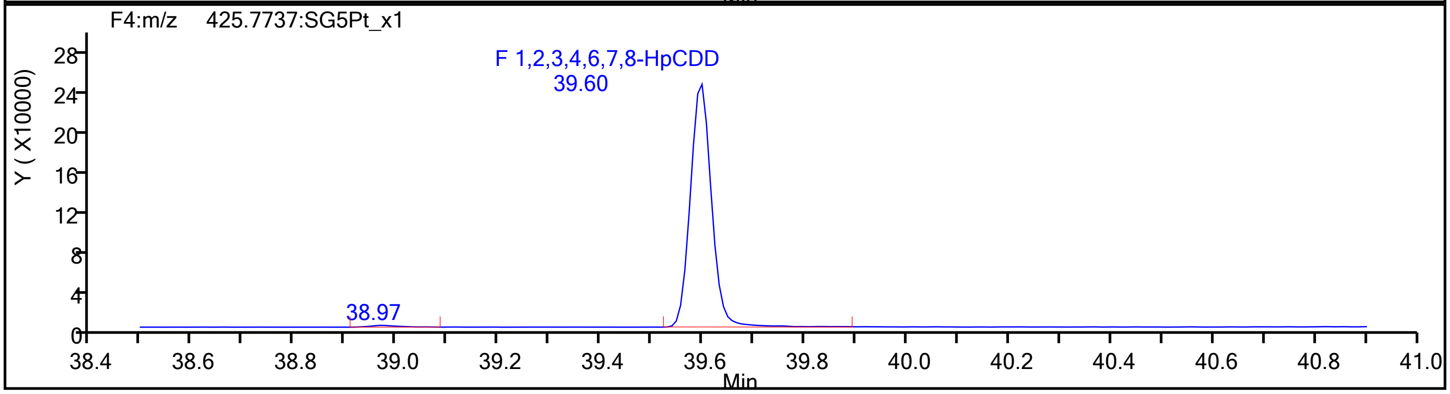

HpCDD Standards

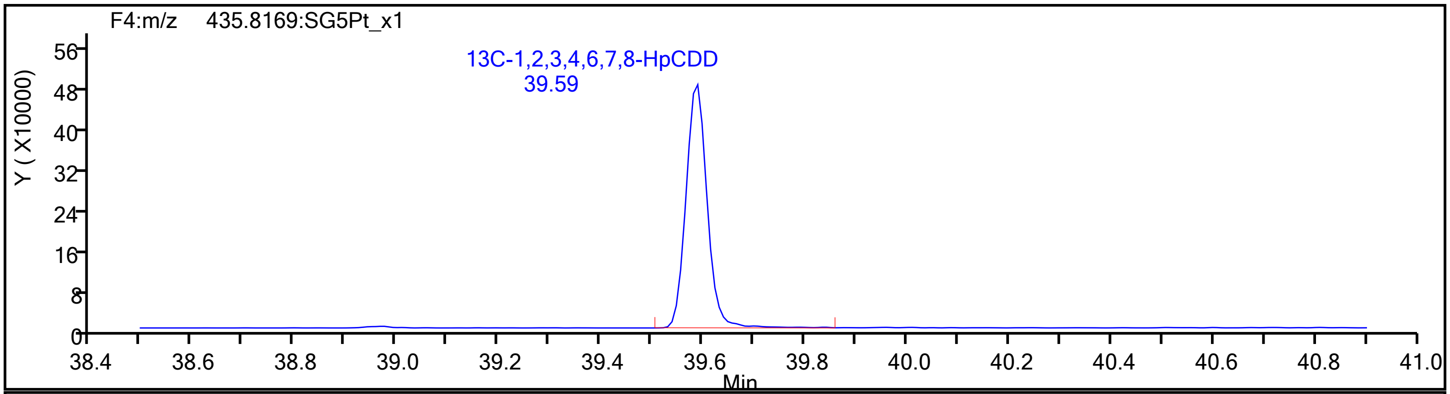

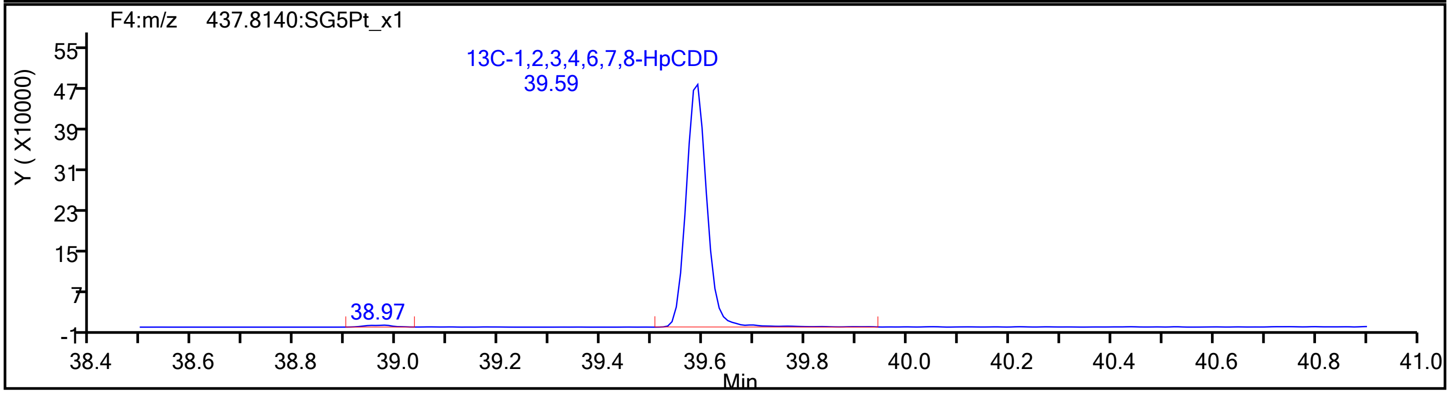

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Eurofins TestAmerica, Sacramento

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OCDF

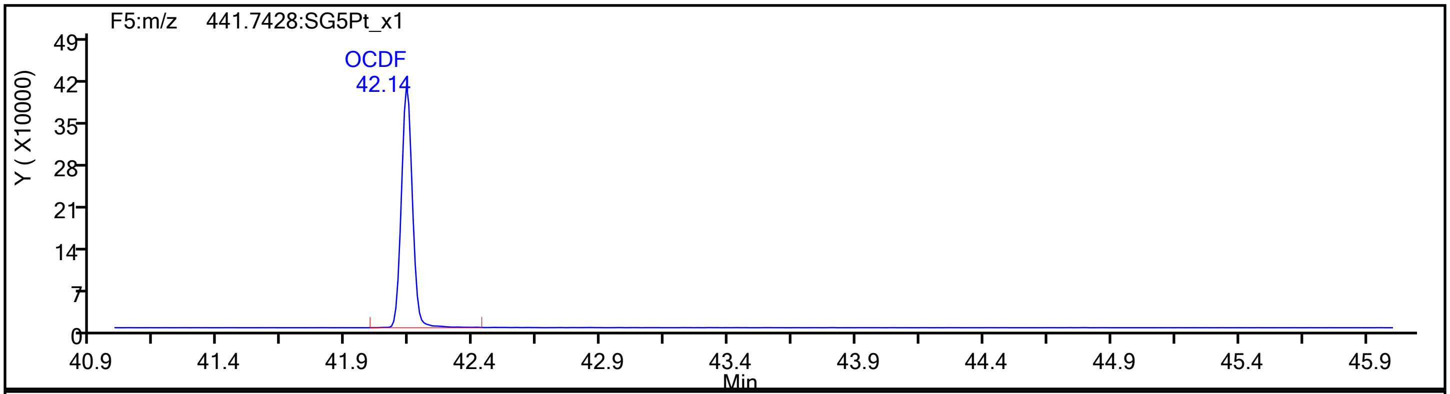

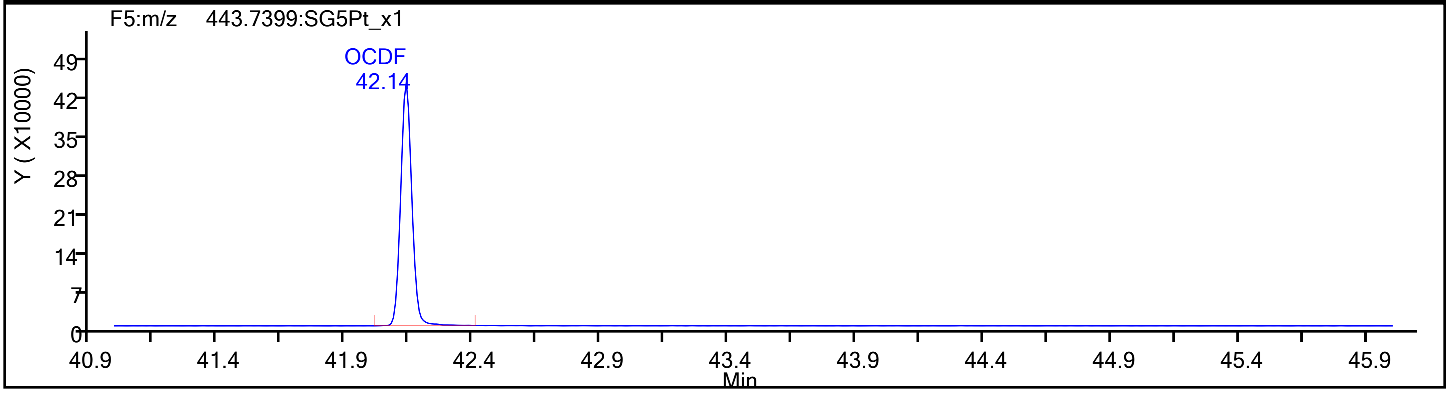

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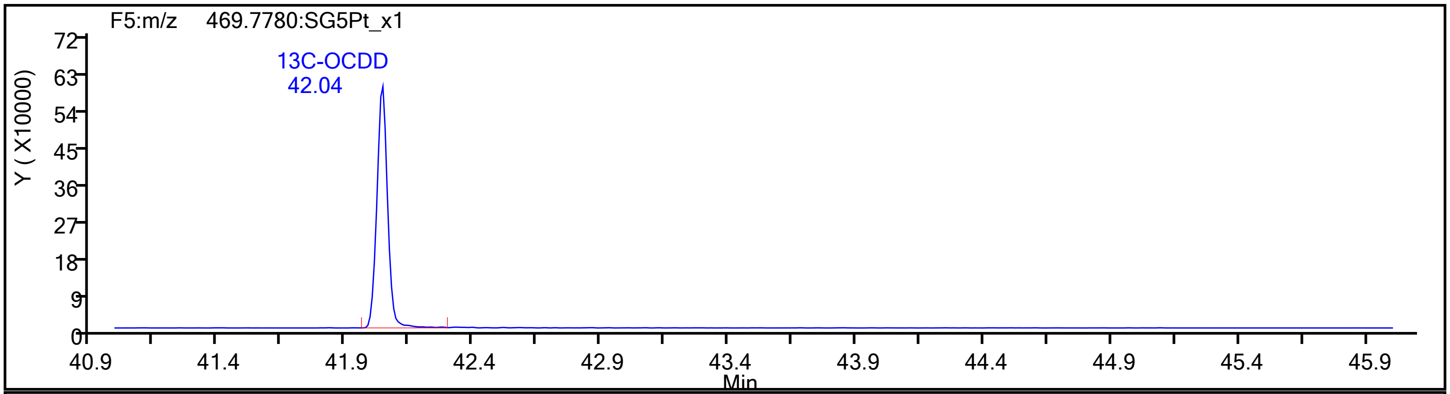

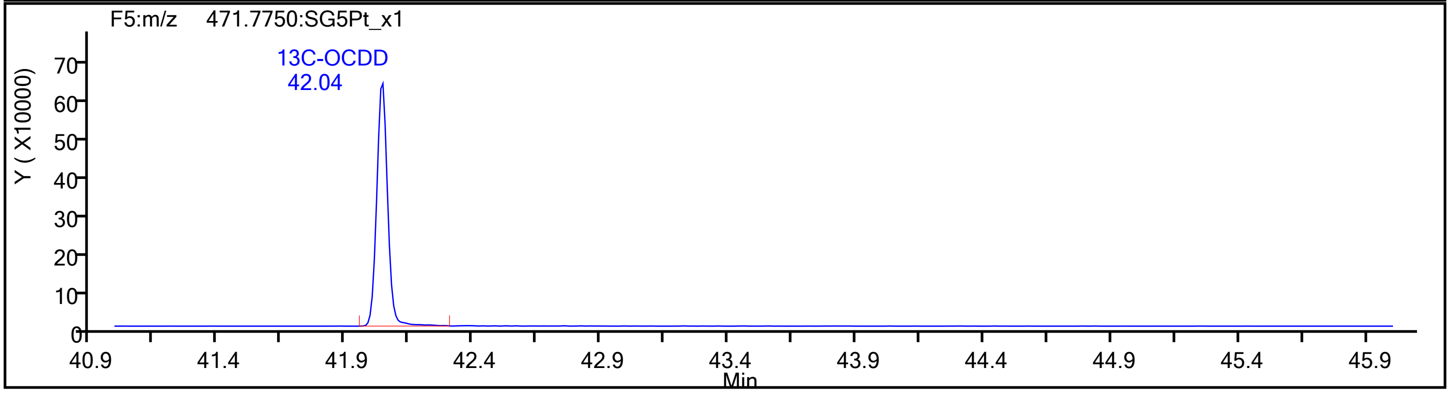

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Client ID:
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Column Dia: 0.32 mm

OCDF

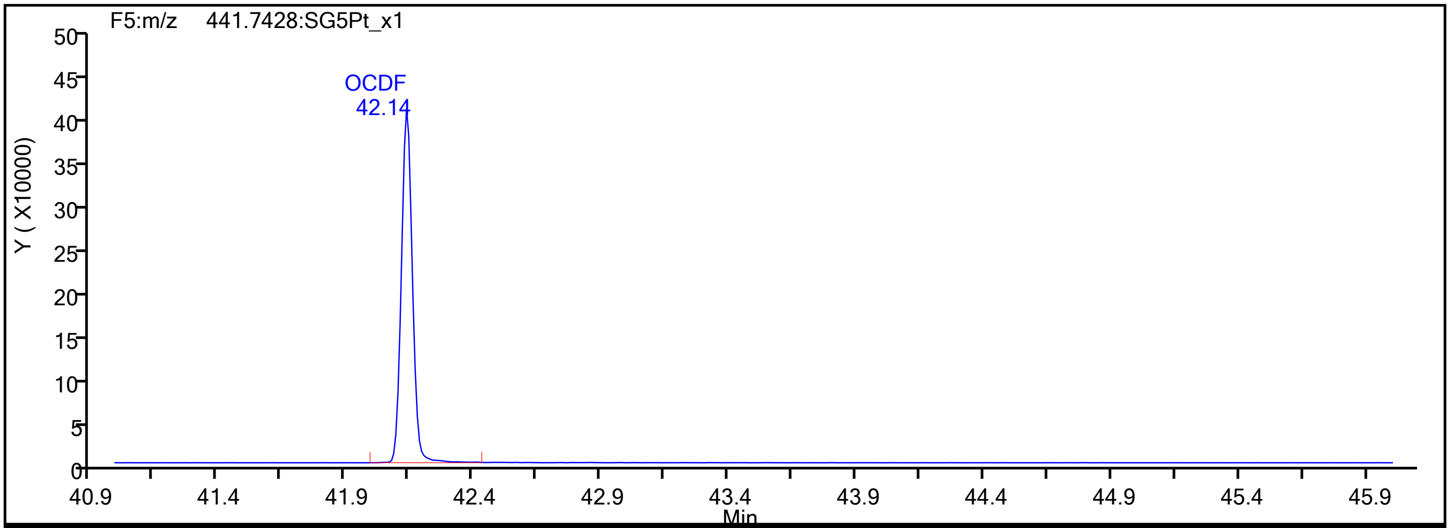

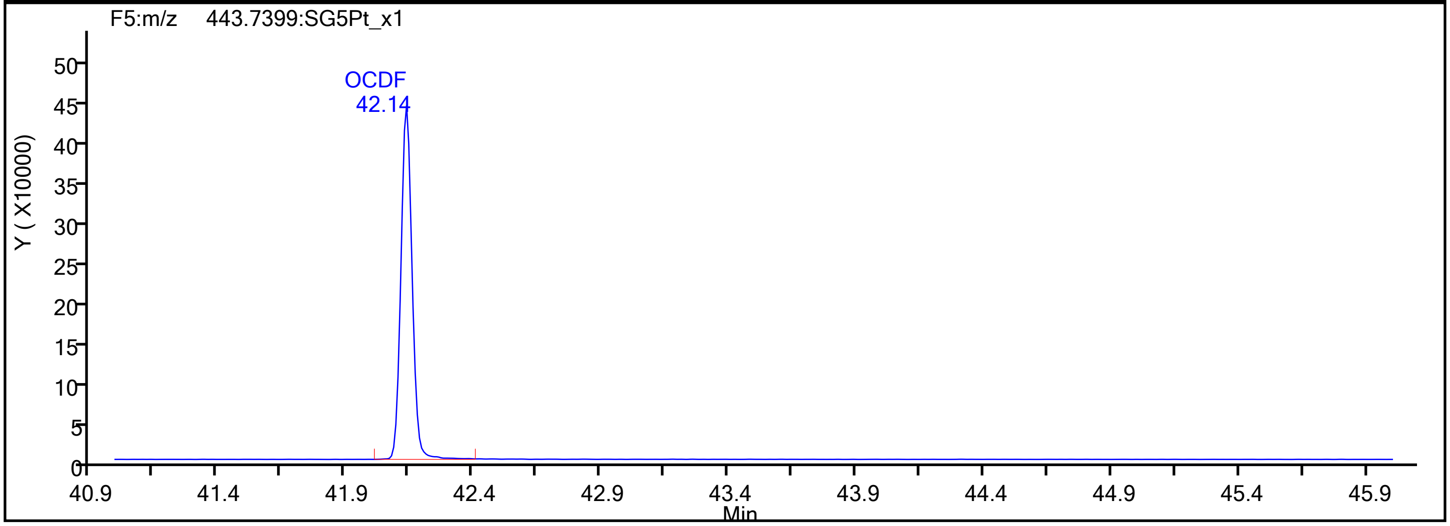

OCDF Interference Mass

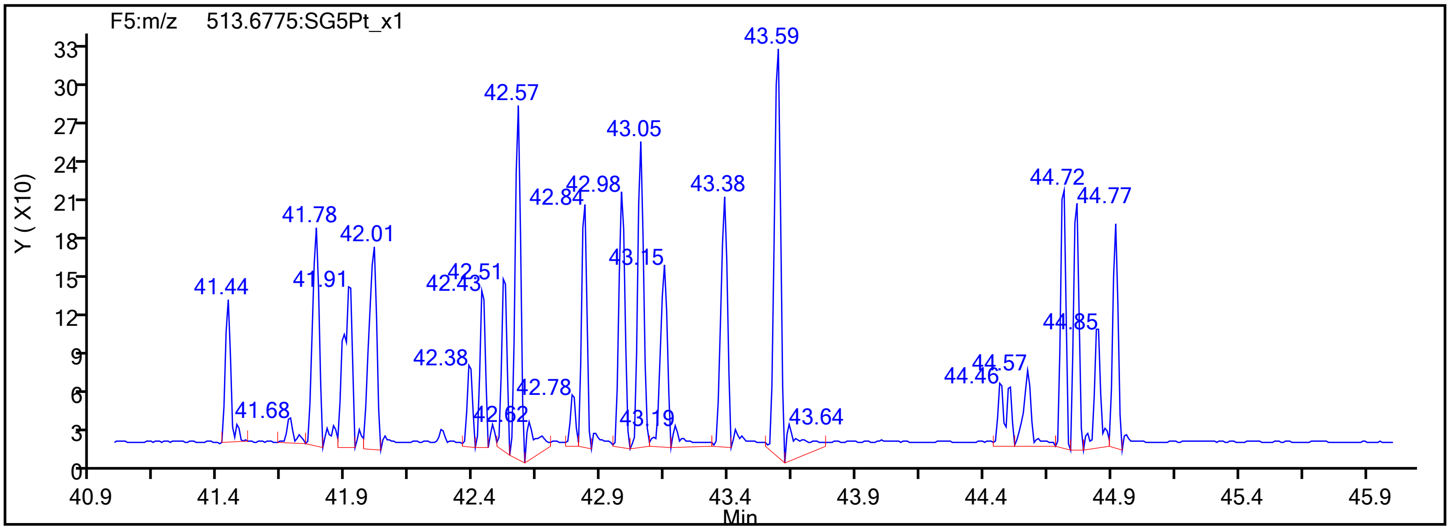

Report Date: 05-Jun-2020 11:34:35 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 6
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Column Dia: 0.32 mm

OCDD

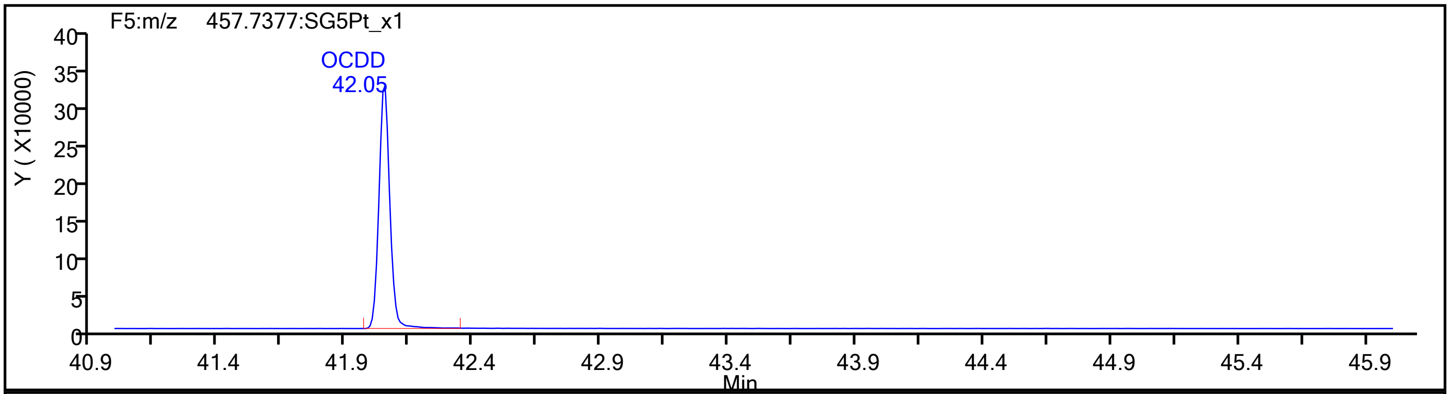

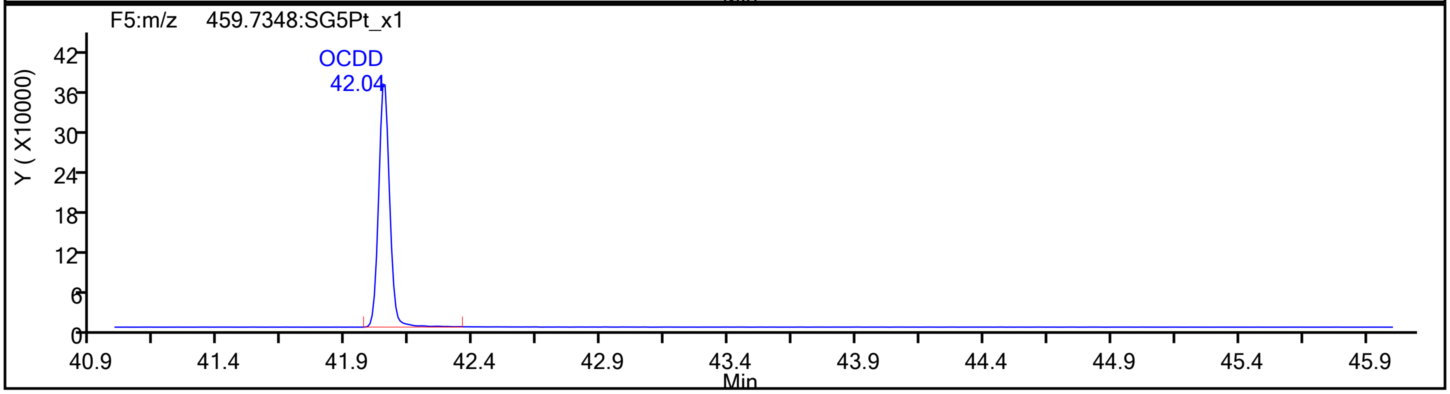

OCDD Standards

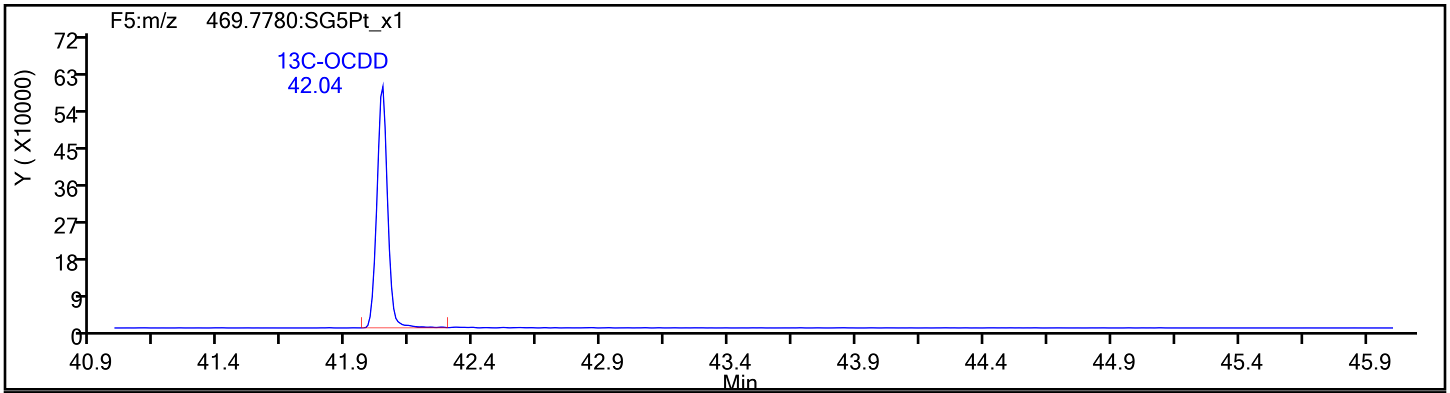

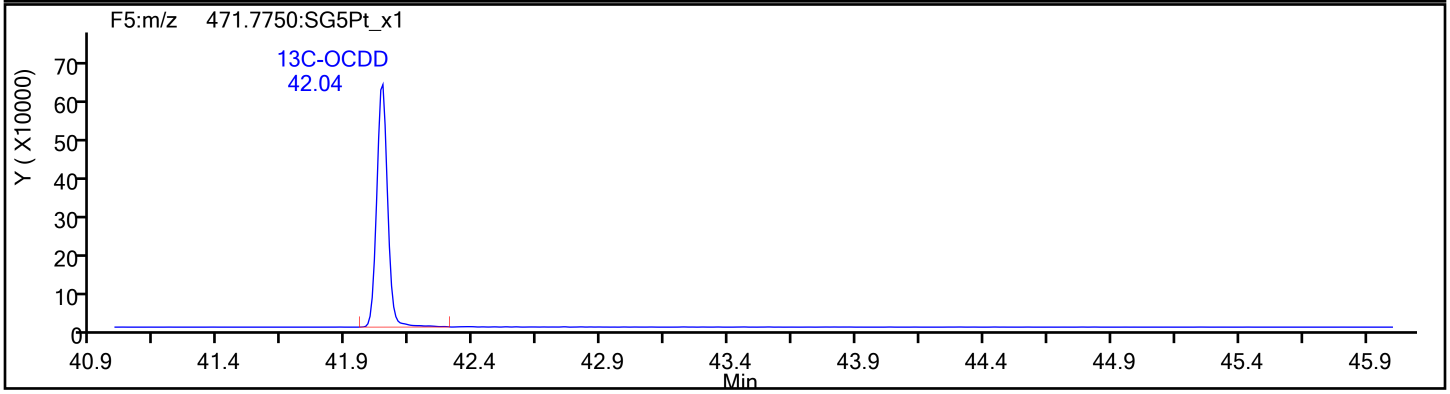

Report Date: 05-Jun-2020 11:34:35 Chron Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d

Injection Date: 03-Jun-2020 16:30:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

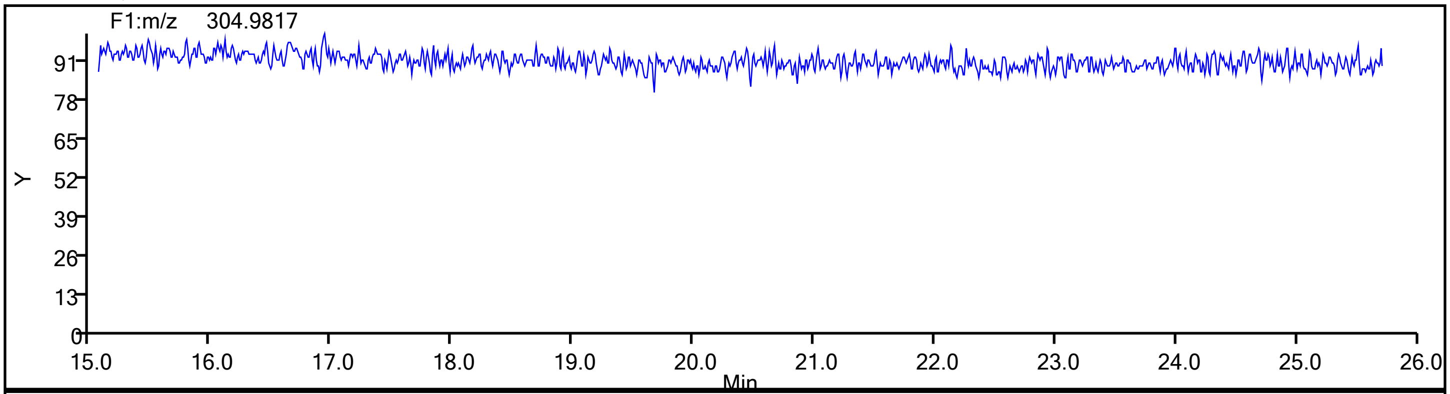

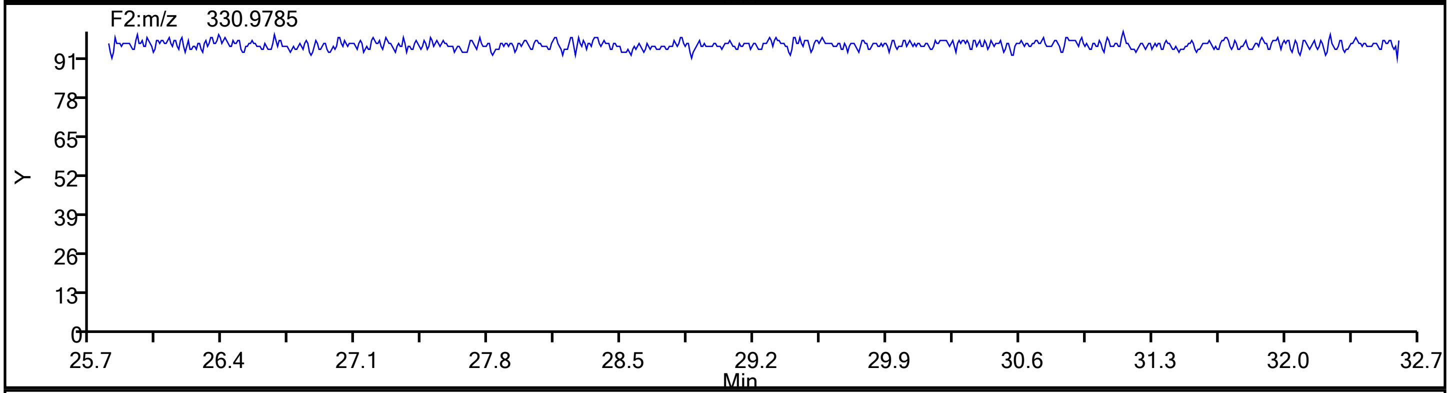

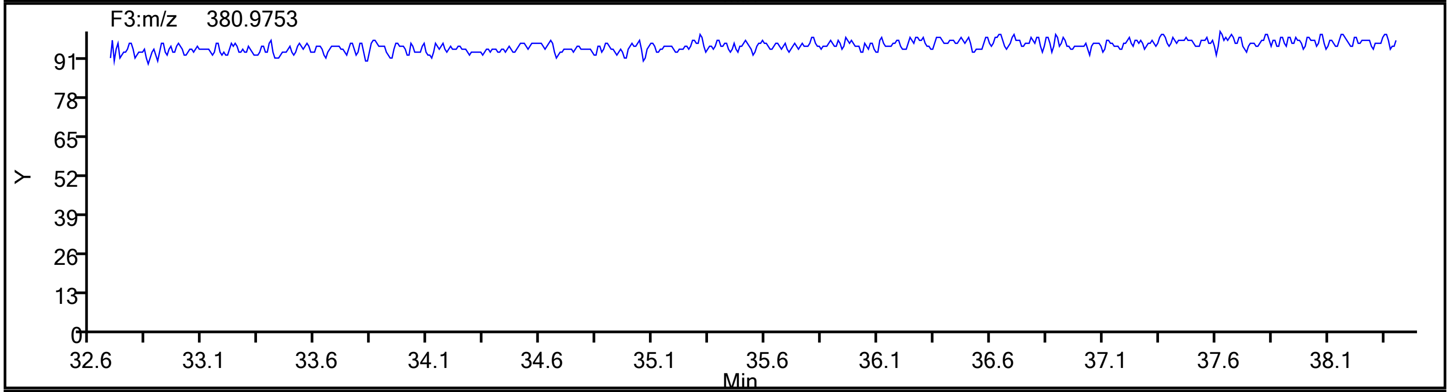

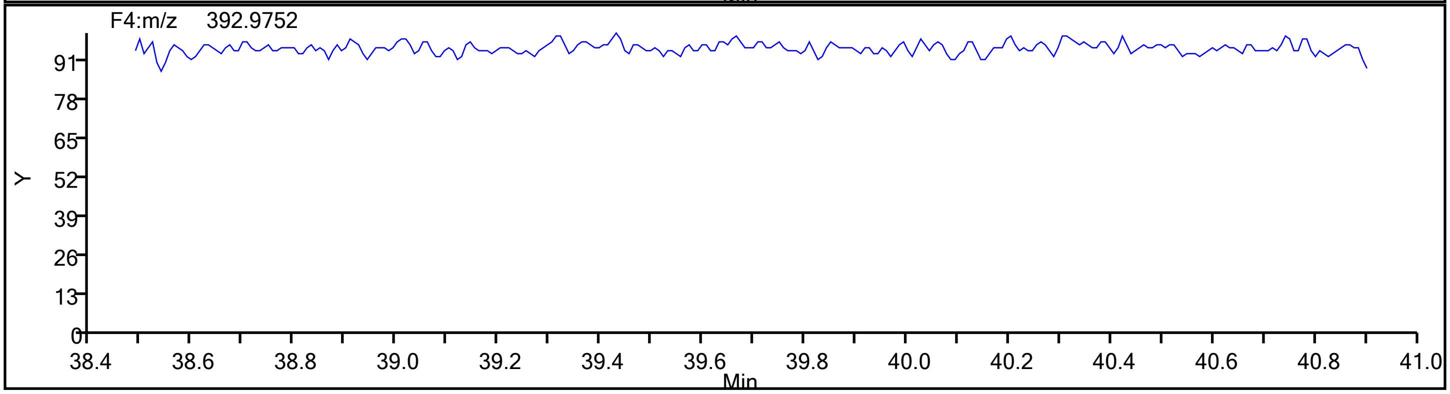

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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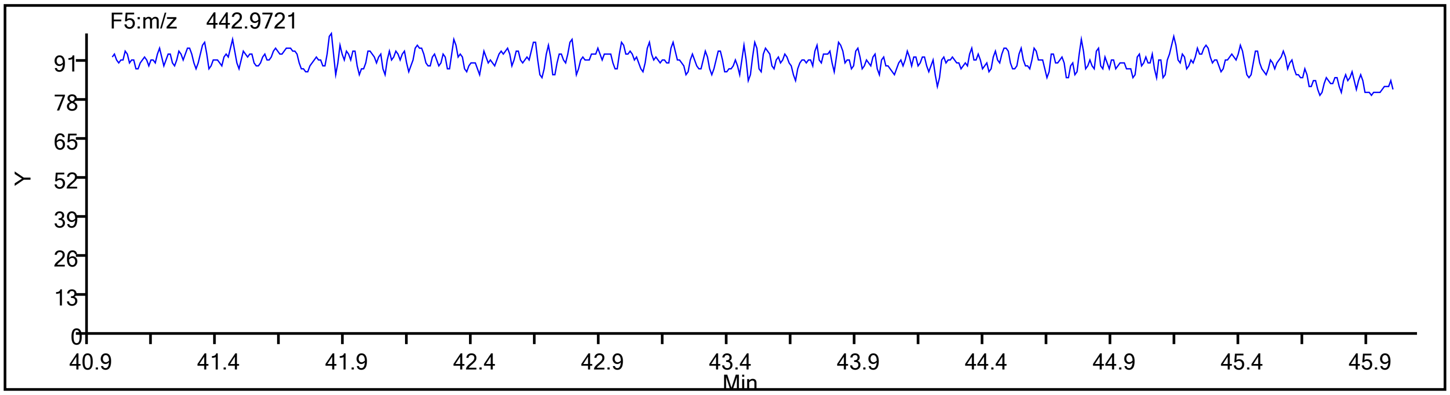

Report Date: 05-Jun-2020 10:11:41 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 03-Jun-2020 17:18:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:11:32 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:18:58

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.303	6193112	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.313	9390658	0.80	1.4977	101.2	101.2	0.2208	0.2208	101	
2,3,7,8-TCDF	20.339	4015485	0.78	1.1312	37.8	37.8	0.0509	0.0509	94.50	
S Total TCDF					37.8	37.8	0.0509	0.0509		
D 13C-2,3,7,8-TCDD	21.682	6480345	0.80	1.0367	100.9	100.9	0.1862	0.1862	101	
2,3,7,8-TCDD	21.716	2920224	0.78	1.1849	38.0	38.0	0.0489	0.0489	95.08	
$ 37Cl4-2,3,7,8-TCDD	21.707	2774592		1.1208	40.0	40.0	0.0245	0.0245	99.93	
S Total TCDD					38.0	38.0	0.0489	0.0489		
D 13C-1,2,3,7,8-PeCDF	27.287	8256577	1.58	1.3057	102.1	102.1	0.3386	0.3386	102	
1,2,3,7,8-PeCDF	27.313	17302938	1.55	1.1060	189.5	189.5	0.4765	0.4765	94.74	
D 13C-2,3,4,7,8-PeCDF	28.819	9723087	1.56	1.5420	101.8	101.8	0.2867	0.2867	102	
2,3,4,7,8-PeCDF	28.845	16881683	1.56	0.9067	191.5	191.5	0.5304	0.5304	95.75	
S Total PeCDF					381.0	381.0	0.5034	0.5034		
D 13C-1,2,3,7,8-PeCDD	29.636	5243649	1.60	0.8294	102.1	102.1	0.1220	0.1220	102	
1,2,3,7,8-PeCDD	29.669	11169661	1.55	1.1062	192.6	192.6	0.1215	0.1215	96.28	
S Total PeCDD					192.6	192.6	0.1215	0.1215		
D 13C-1,2,3,4,7,8-HxCDF	34.975	8568017	0.53	1.4619	98.6	98.6	0.2394	0.2394	98.57	
1,2,3,4,7,8-HxCDF	34.991	16431101	1.24	1.0087	190.1	190.1	0.6304	0.6304	95.06	
D 13C-1,2,3,6,7,8-HxCDF	35.134	7552939	0.54	1.2866	98.7	98.7	0.2720	0.2720	98.73	
1,2,3,6,7,8-HxCDF	35.151	17668721	1.24	1.2432	188.2	188.2	0.5985	0.5985	94.08	
D 13C-2,3,4,6,7,8-HxCDF	35.959	7129573	0.53	1.1988	100.0	100.0	0.2919	0.2919	100	
2,3,4,6,7,8-HxCDF	35.967	17105715	1.23	1.2736	188.4	188.4	0.5368	0.5368	94.20	
D 13C-1,2,3,7,8,9-HxCDF	36.834	6606392	0.54	1.0687	104.0	104.0	0.3275	0.3275	104	
1,2,3,7,8,9-HxCDF	36.851	15921391	1.25	1.2882	187.1	187.1	0.5261	0.5261	93.54	
S Total HxCDF					753.8	753.8	0.5730	0.5730		
* 13C-1,2,3,7,8,9-HxCDD	36.641	5946154	1.26	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.161	6533048	1.25	1.1046	99.5	99.5	0.1578	0.1578	99.46	
1,2,3,4,7,8-HxCDD	36.178	11442921	1.25	0.9336	187.6	187.6	0.2559	0.2559	93.80	
D 13C-1,2,3,6,7,8-HxCDD	36.279	5868202	1.26	0.9871	100.0	100.0	0.1766	0.1766	99.98	
1,2,3,6,7,8-HxCDD	36.295	11776532	1.24	1.0802	185.8	185.8	0.2545	0.2545	92.90	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.657	12387633	1.24	1.0574	188.9	188.9	0.2418	0.2418	94.46	
S Total HxCDD					562.3	562.3	0.2507	0.2507		
D 13C-1,2,3,4,6,7,8-HpCDF	38.630	5428999	0.47	0.9035	101.1	101.1	0.3952	0.3952	101	
1,2,3,4,6,7,8-HpCDF	38.647	16024022	1.04	1.5957	185.0	185.0	0.6818	0.6818	92.49	
D 13C-1,2,3,4,7,8,9-HpCDF	39.876	6618644	0.46	1.0480	106.2	106.2	0.3407	0.3407	106	
1,2,3,4,7,8,9-HpCDF	39.884	14437207	1.04	1.1693	186.5	186.5	0.6938	0.6938	93.27	
S Total HpCDF					371.5	371.5	0.6878	0.6878		
D 13C-1,2,3,4,6,7,8-HpCDD	39.573	5362323	1.07	0.8875	101.6	101.6	0.3002	0.3002	102	
1,2,3,4,6,7,8-HpCDD	39.581	11202668	1.04	1.1150	187.4	187.4	0.4043	0.4043	93.68	
S Total HpCDD					187.4	187.4	0.4043	0.4043		
D 13C-OCDD	42.027	8394716	0.90	0.6297	224.2	224.2	0.1647	0.1647	112	
OCDF	42.119	24073964	0.91	1.4809	387.3	387.3	0.1630	0.1630	96.82	
OCDD	42.035	18776355	0.89	1.1948	374.4	374.4	0.1946	0.1946	93.60	

Reagents:

HRDXNL5_00030 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 03-Jun-2020 17:18:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:11:32 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:18:58

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.303	21.309	0		2732325	393292	487	1217	808		
333.9338	21.303	21.309	0		3460787	497847	201	502	2477	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.313	20.321	0	0.954	4180901	636442	821	2052	775		
317.9389	20.313	20.321	0	0.954	5209757	813655	358	895	2273	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.339	20.347	0	1.001	1759534	266564	119	297	2240		
305.8987	20.339	20.347	0	1.001	2255951	337479	215	537	1570	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.682	21.692	-1	1.018	2882708	398692	487	1217	819		
333.9338	21.682	21.692	-1	1.018	3597637	501661	201	502	2496	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.716	21.722	0	1.002	1284221	178469	136	340	1312		
321.8936	21.716	21.722	0	1.002	1636003	226532	73	182	3103	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.707	21.724	-1	1.019	2774592	382052	98	245	3898		
13C-1,2,3,7,8-PeCDF											
351.9000	27.287	27.300	-1	1.281	5057184	852032	998	2495	854		
353.8970	27.296	27.300	0	1.281	3199393	553551	578	1445	958	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.313	27.325	-1	1.001	10525618	1810809	1827	4567	991		
341.8567	27.313	27.325	-1	1.001	6777320	1174785	1136	2840	1034	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.819	28.834	-1	1.353	5925968	936826	998	2495	939		
353.8970	28.819	28.834	-1	1.353	3797119	603398	578	1445	1044	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.845	28.857	-1	1.001	10275009	1589526	1827	4567	870		
341.8567	28.845	28.857	-1	1.001	6606674	1027804	1136	2840	905	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.636	29.651	-1	1.391	3227994	491999	187	467	2631		
369.8919	29.636	29.651	-1	1.391	2015655	308093	174	435	1771	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.669	29.682	-1	1.001	6793597	1010757	263	657	3843		
357.8516	29.669	29.682	-1	1.001	4376064	647756	167	417	3879	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.975	34.982	0	0.955	2974950	697225	802	2005	869		
385.8610	34.975	34.982	0	0.955	5593067	1285356	1553	3882	828	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.991	35.000	-1	1.000	9093358	2121704	2775	6937	765		
375.8178	34.991	35.000	-1	1.000	7337743	1718817	2268	5670	758	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.134	35.145	-1	0.959	2638588	595750	802	2005	743		
385.8610	35.134	35.145	-1	0.959	4914351	1098467	1553	3882	707	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.151	35.163	-1	1.000	9794249	2261779	2775	6937	815		
375.8178	35.151	35.163	-1	1.000	7874472	1824889	2268	5670	805	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.959	35.966	0	0.981	2468612	639080	802	2005	797		
385.8610	35.959	35.966	0	0.981	4660961	1205032	1553	3882	776	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.967	35.981	-1	1.000	9443276	2471562	2775	6937	891		
375.8178	35.967	35.981	-1	1.000	7662439	2015475	2268	5670	889	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.834	36.848	-1	1.005	2322999	659496	802	2005	822		
385.8610	36.834	36.848	-1	1.005	4283393	1200671	1553	3882	773	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.851	36.862	-1	1.000	8834683	2489386	2775	6937	897		
375.8178	36.851	36.862	-1	1.000	7086708	1998647	2268	5670	881	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.641	36.653	-1		3309897	931058	665	1662	1400		
403.8529	36.641	36.653	-1		2636257	751122	508	1270	1479	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.161	36.173	-1	0.987	3634131	1021500	665	1662	1536		
403.8529	36.161	36.173	-1	0.987	2898917	818600	508	1270	1611	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.178	36.187	-1	1.000	6346944	1788384	998	2495	1792		
391.8127	36.178	36.187	-1	1.000	5095977	1430996	761	1902	1880	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.279	36.291	-1	0.990	3266155	890357	665	1662	1339		
403.8529	36.279	36.291	-1	0.990	2602047	709104	508	1270	1396	1.26(1.05-1.43)	

Report Date: 05-Jun-2020 10:11:41 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.295	36.304	0	1.000	6526665	1764097	998	2495	1768		
391.8127	36.295	36.304	0	1.000	5249867	1423482	761	1902	1871	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.657	36.669	-1	1.014	6856309	1907554	998	2495	1911		
391.8127	36.657	36.669	-1	1.014	5531324	1535485	761	1902	2018	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.630	38.640	-1	1.054	1728151	579959	854	2135	679		
419.8220	38.630	38.640	-1	1.054	3700848	1246571	1549	3872	805	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.647	38.655	0	1.000	8162407	2747824	4068	10170	675		
409.7788	38.638	38.655	-1	1.000	7861615	2646471	3881	9702	682	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.876	39.885	-1	1.088	2074527	777402	854	2135	910		
419.8220	39.876	39.885	-1	1.088	4544117	1672177	1549	3872	1080	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.884	39.893	-1	1.000	7356730	2719041	4068	10170	668		
409.7788	39.884	39.893	-1	1.000	7080477	2608284	3881	9702	672	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.573	39.582	-1	1.080	2770436	989695	947	2367	1045		
437.8140	39.573	39.582	-1	1.080	2591887	922792	846	2115	1091	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.581	39.590	-1	1.000	5701562	2054004	1780	4450	1154		
425.7737	39.581	39.590	-1	1.000	5501106	1972622	1669	4172	1182	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.027	42.035	0	1.147	3981941	1344380	395	987	3403		
471.7750	42.027	42.035	0	1.147	4412775	1507938	303	757	4977	0.90(0.76-1.02)	
OCDF											
441.7428	42.119	42.131	-1	1.002	11472886	3907390	612	1530	6385		
443.7399	42.119	42.131	-1	1.002	12601078	4311313	765	1912	5636	0.91(0.76-1.02)	
OCDD											
457.7377	42.035	42.043	-1	1.000	8852116	3022946	646	1615	4679		
459.7348	42.035	42.043	-1	1.000	9924239	3389952	680	1700	4985	0.89(0.76-1.02)	

Reagents:

HRDXNL5_00030 Amount Added: 1.00 Units: mL

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d		
Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

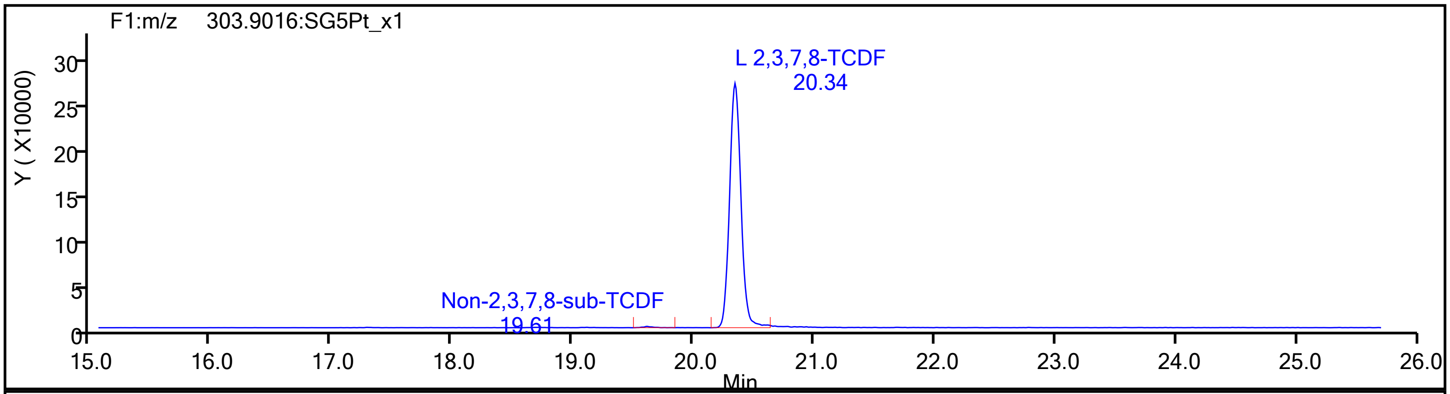

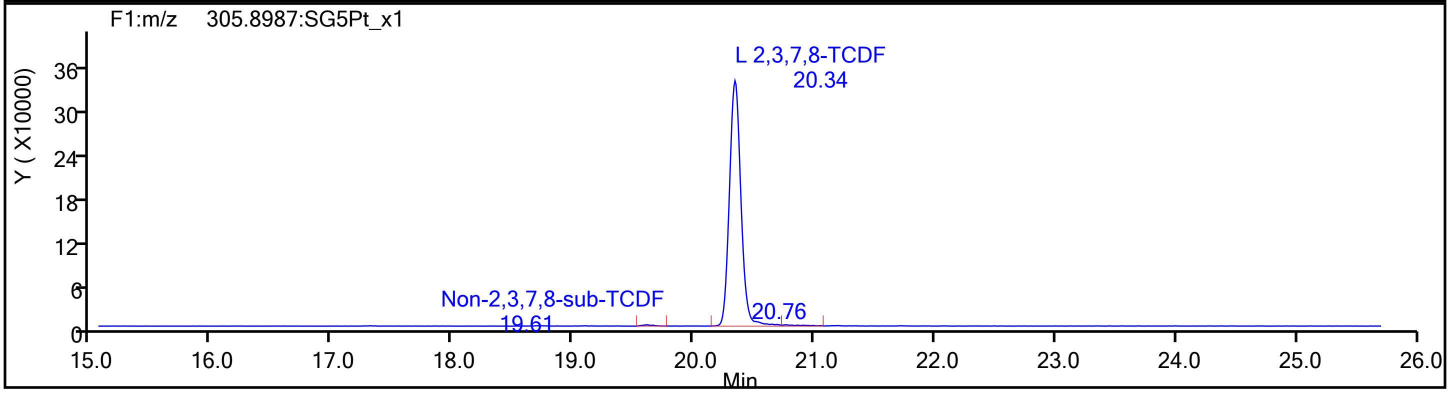

TCDF Standards

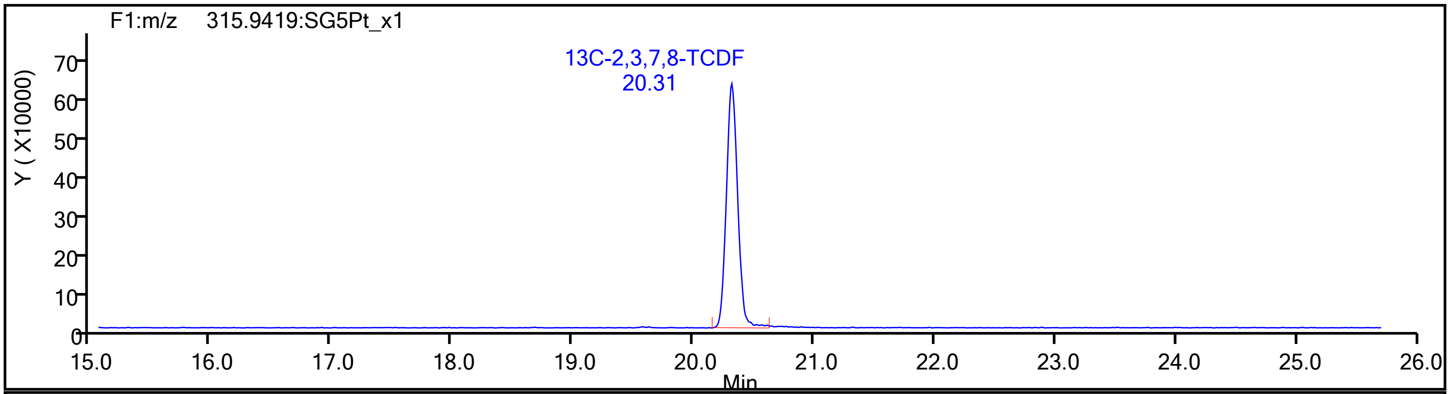

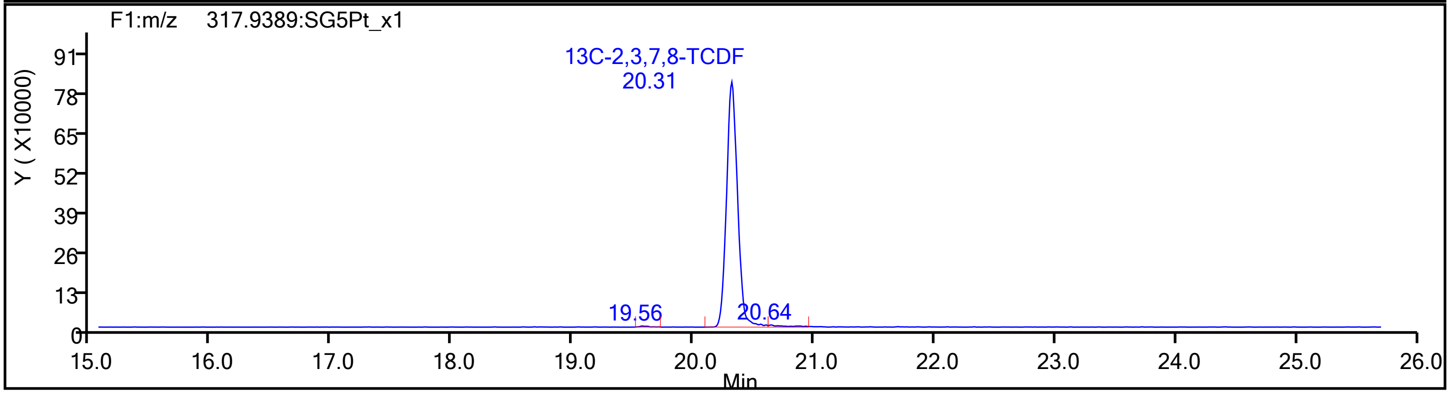

Report Date: 05-Jun-2020 10:11:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d
Injection Date: 03-Jun-2020 17:18:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

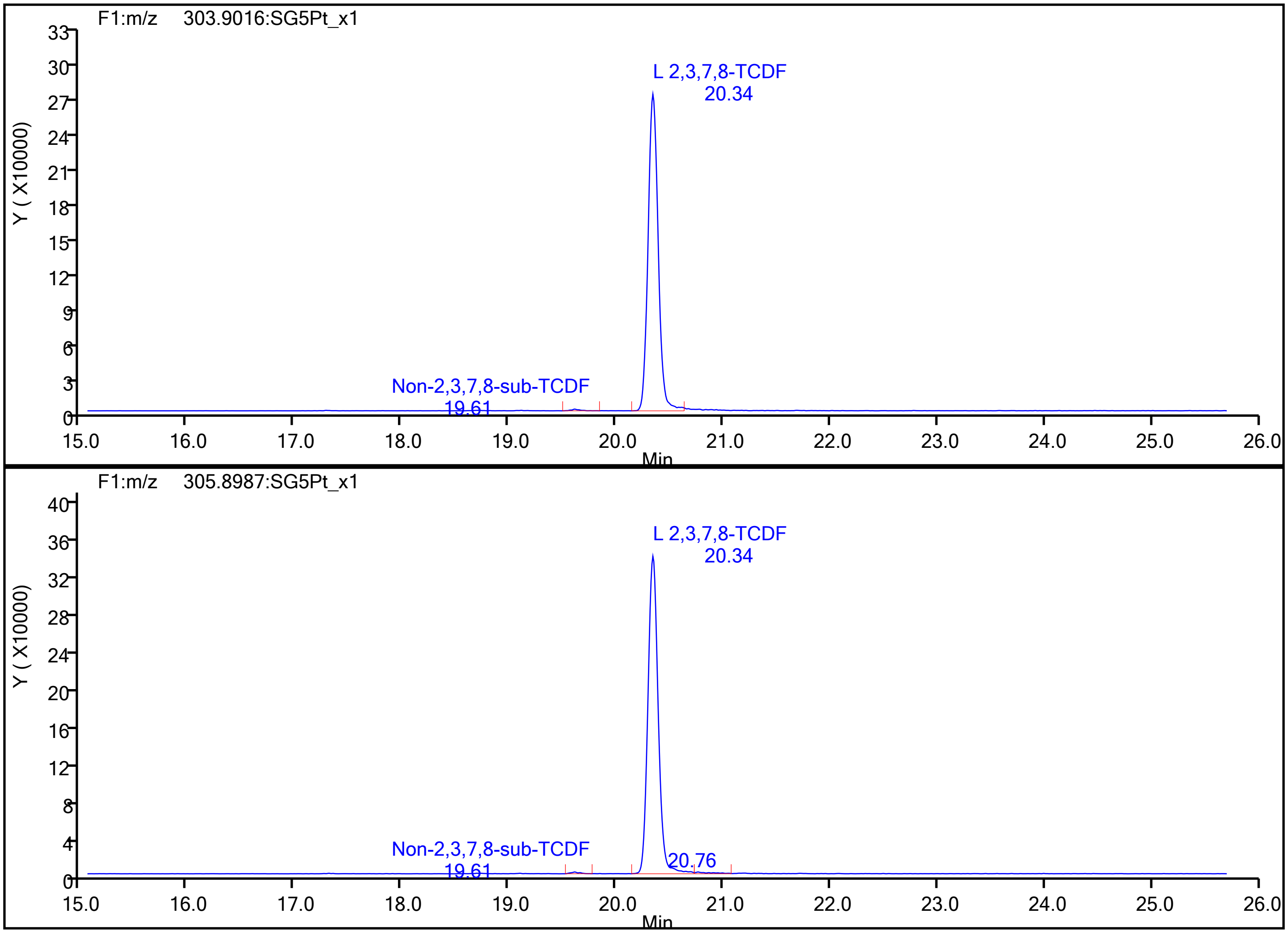

TCDF Interference Mass

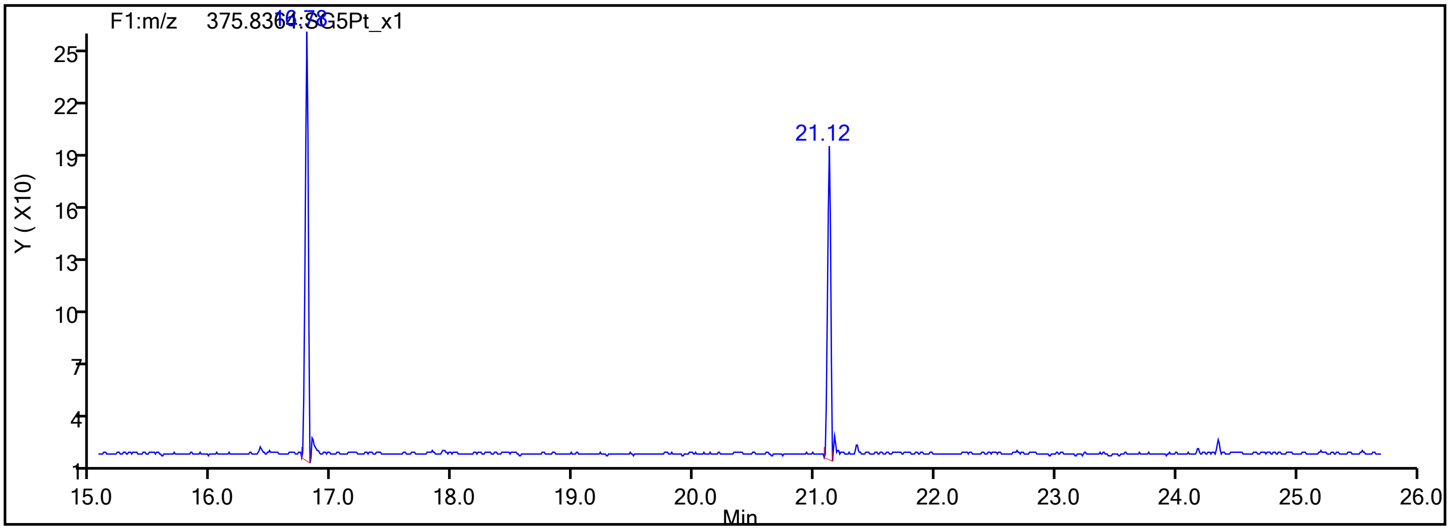

Report Date: 05-Jun-2020 10:11:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d
Injection Date: 03-Jun-2020 17:18:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

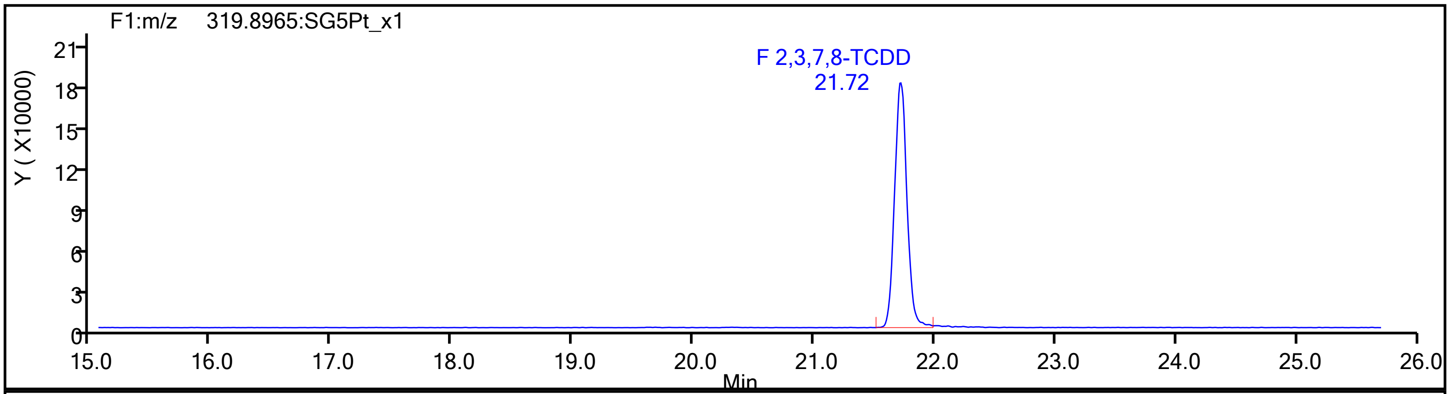

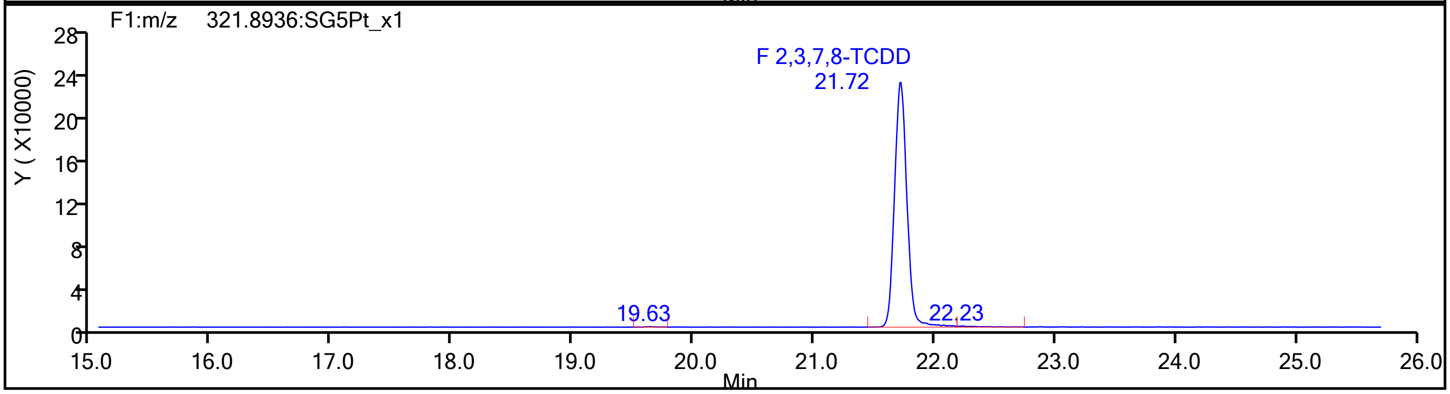

TCDD Standards

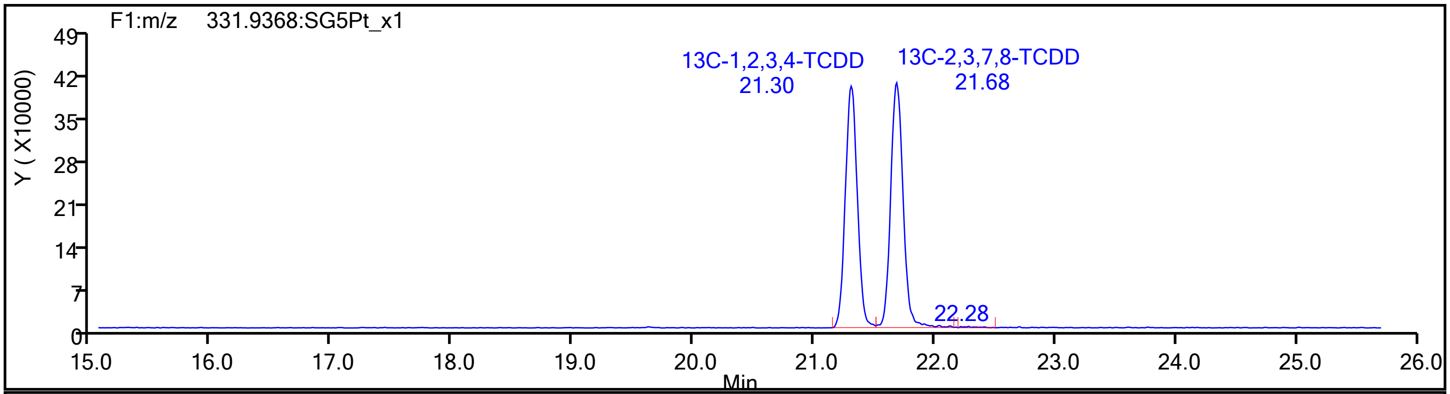

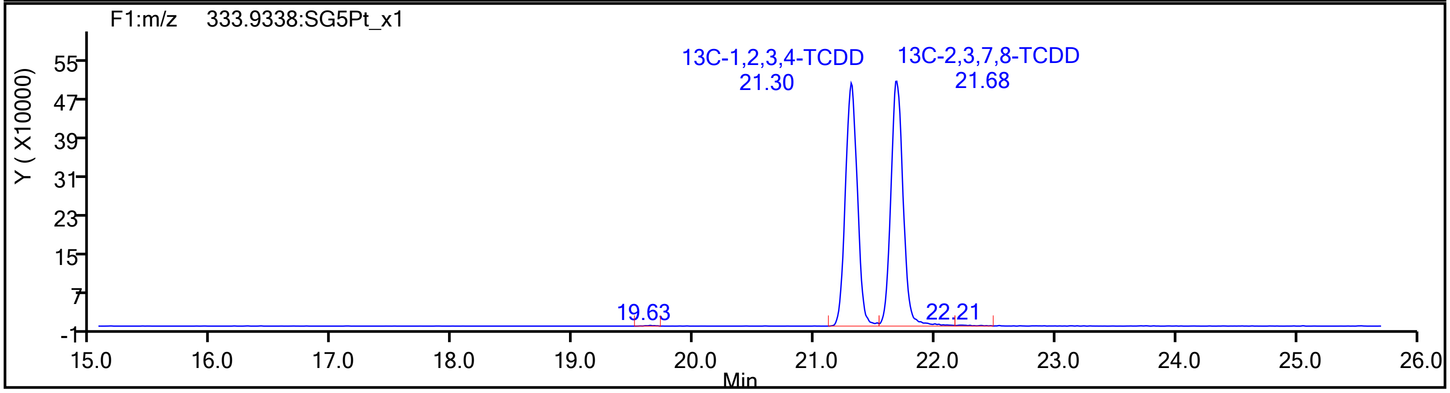

Report Date: 05-Jun-2020 10:11:42　　Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d

Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

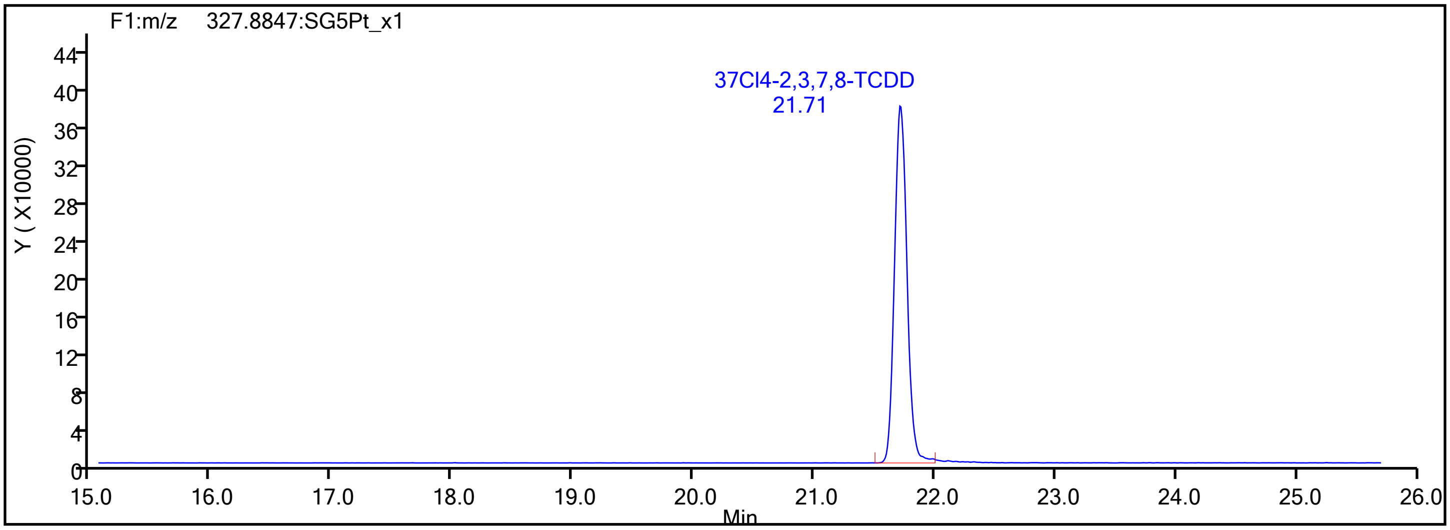

37Cl4-TCDD Standards

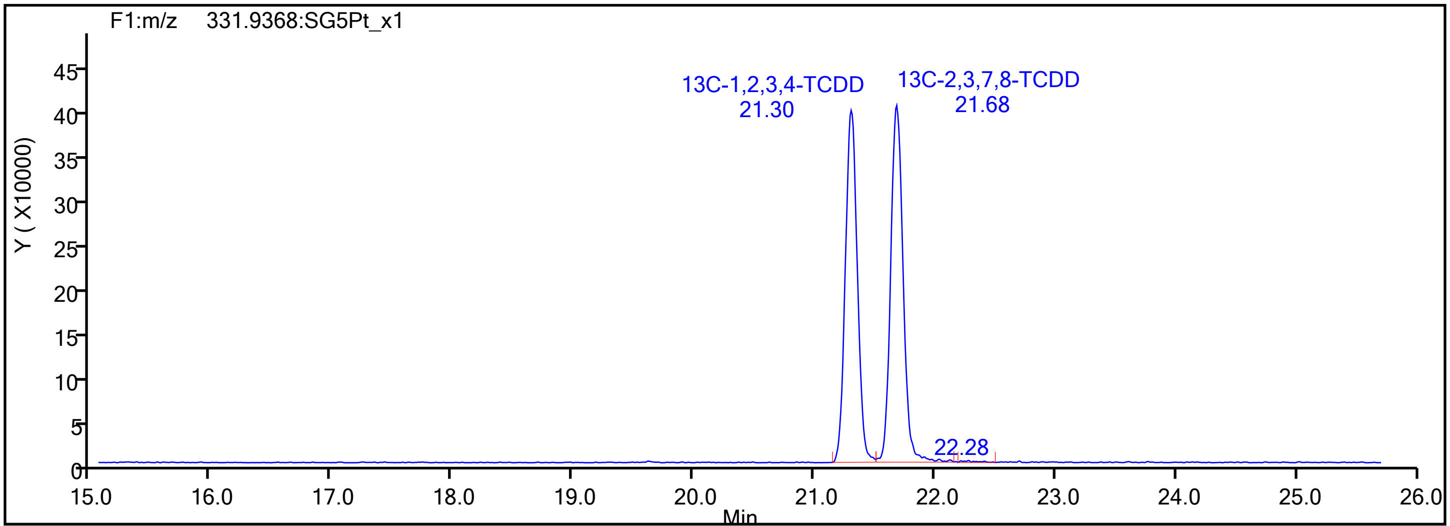

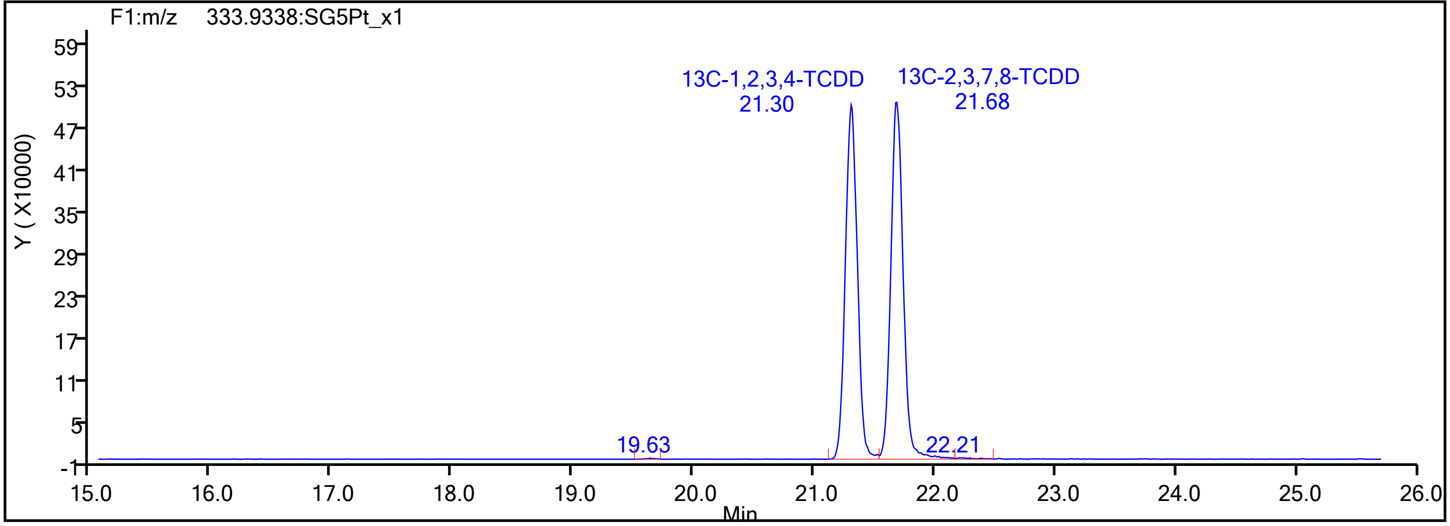

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

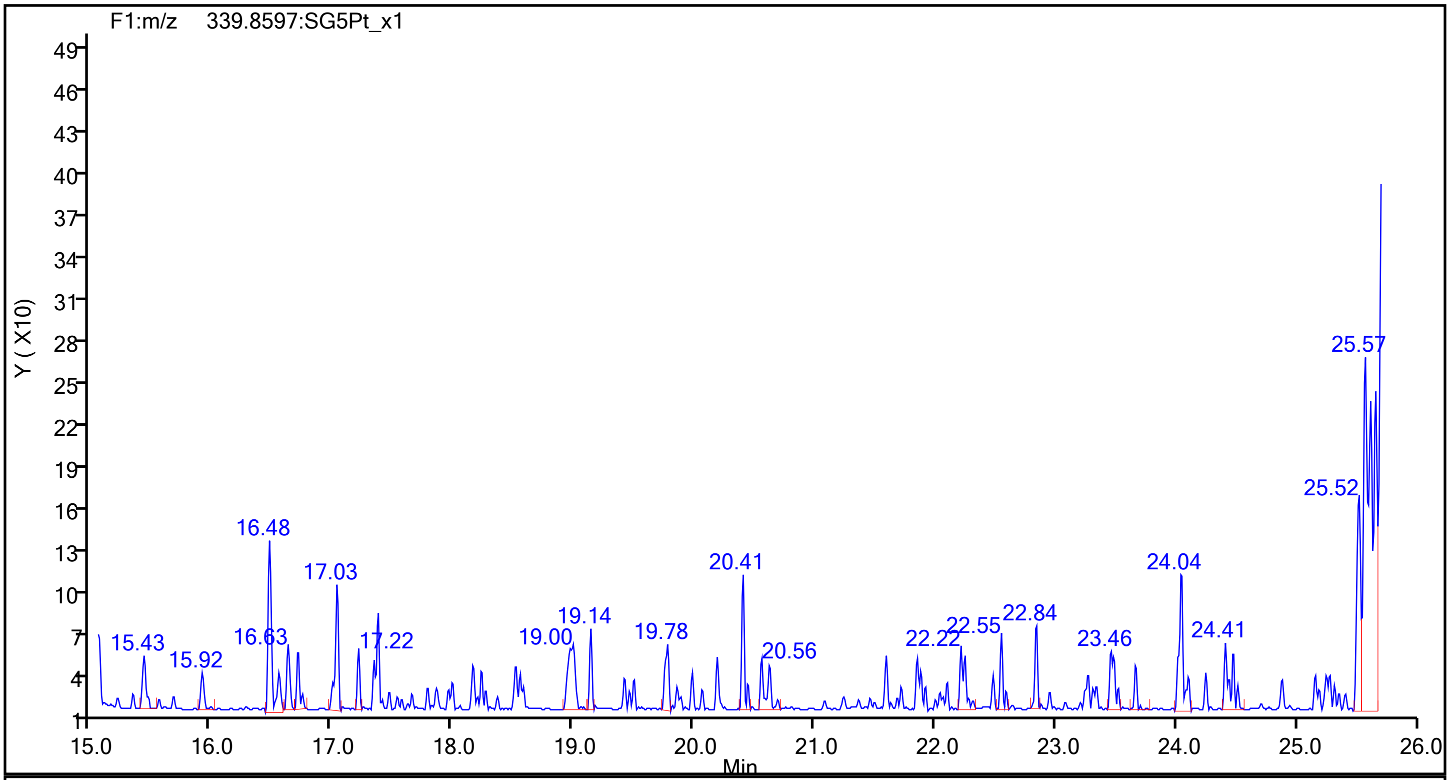

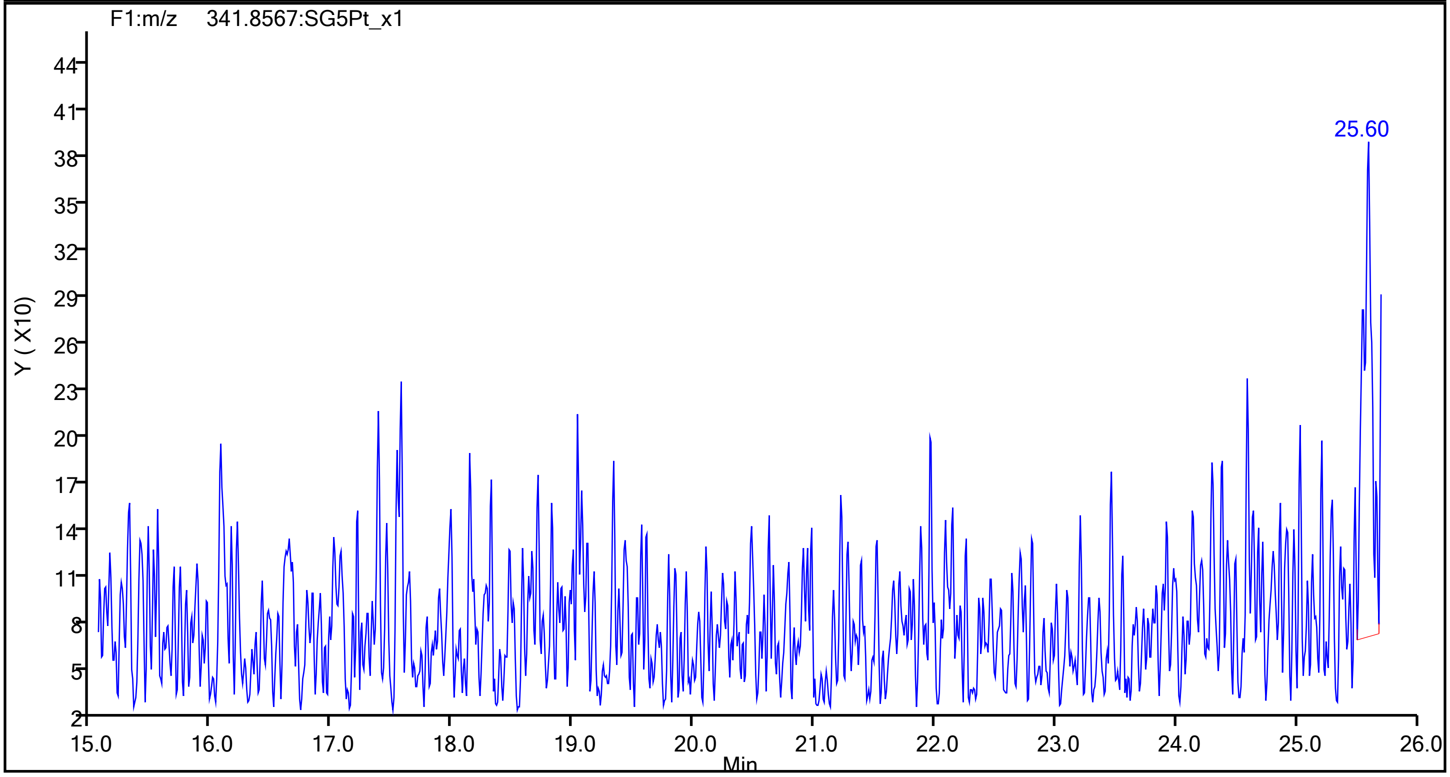

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

F1 PeCDFs

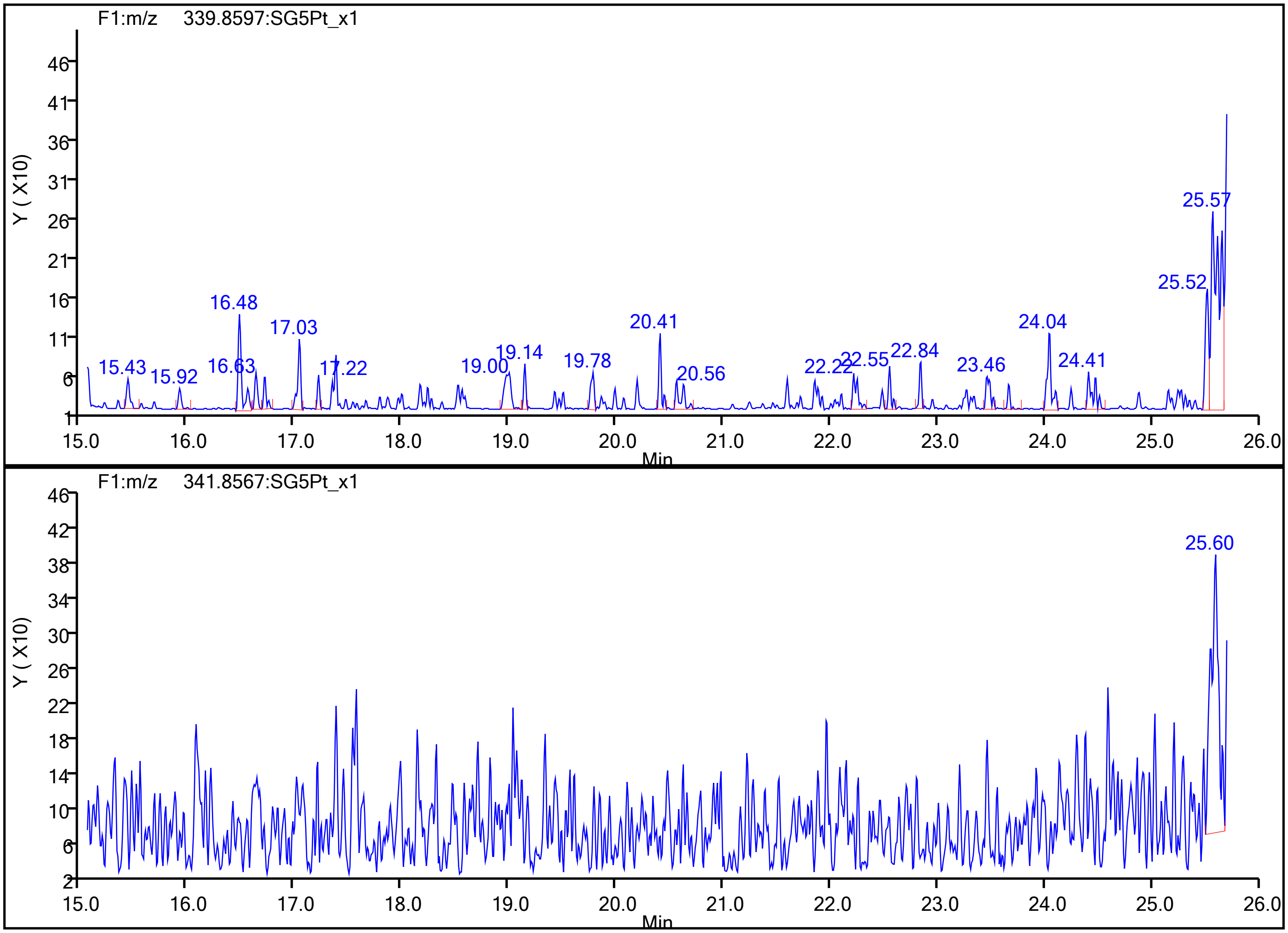

F1 PeCDFs Interference Mass

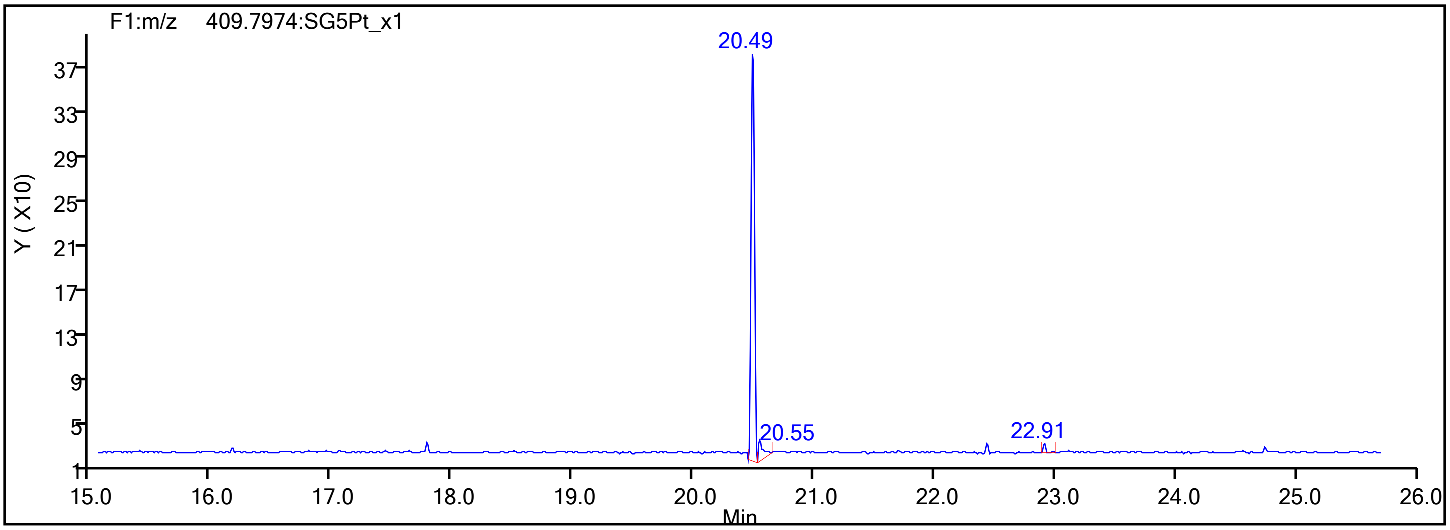

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

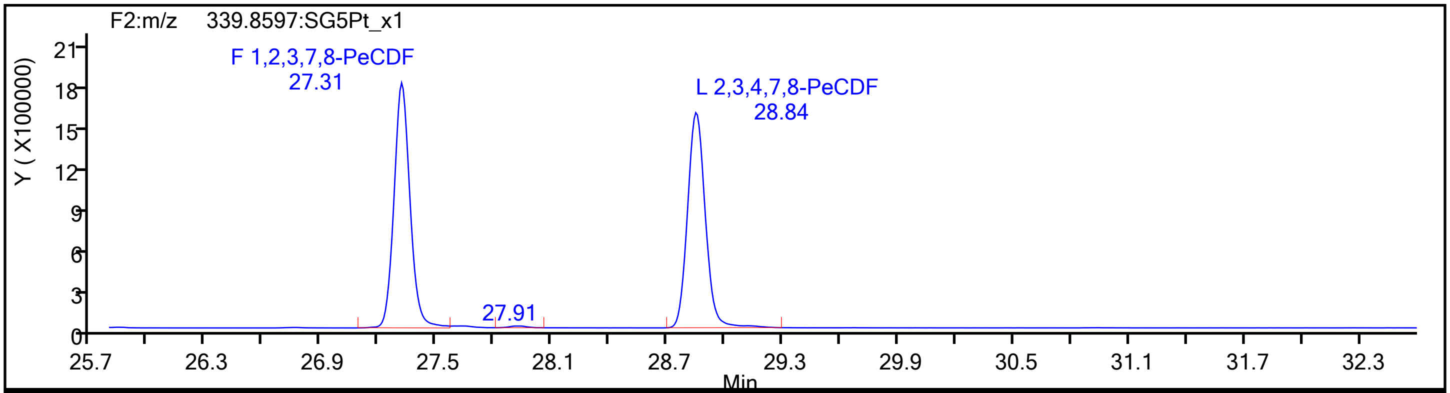

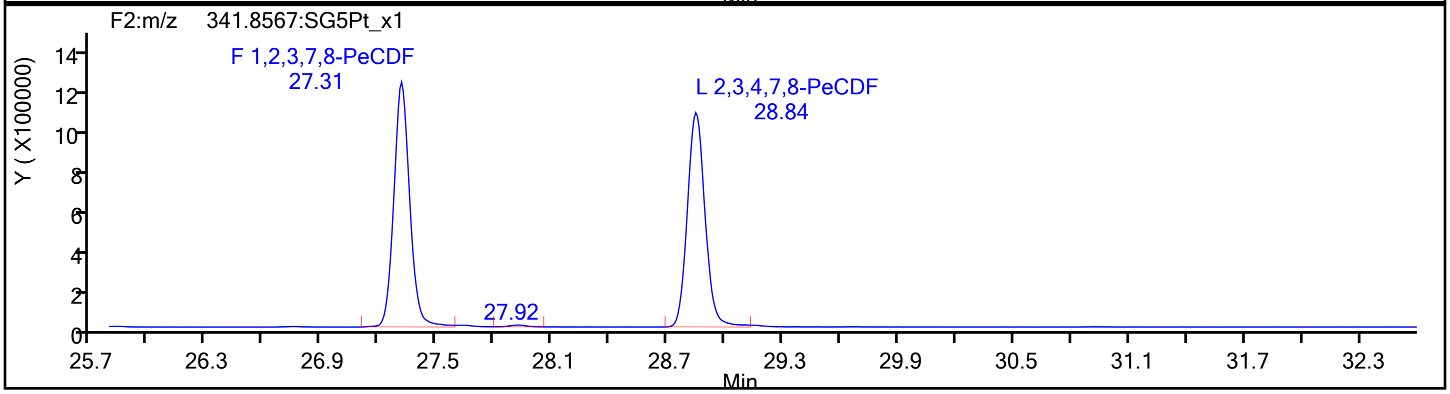

PeCDF Standards

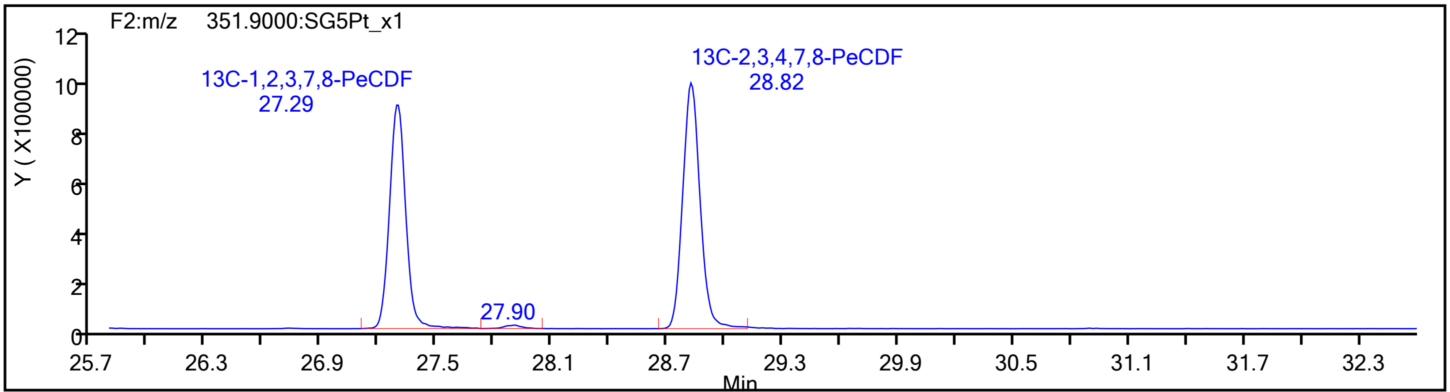

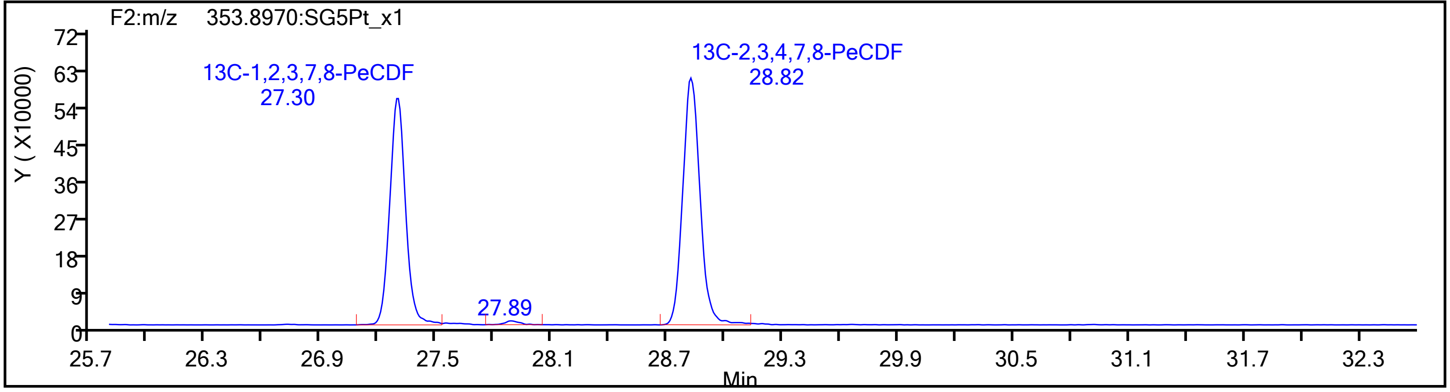

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Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 17:18:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 7

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Column Dia: 0.32 mm

PeCDF

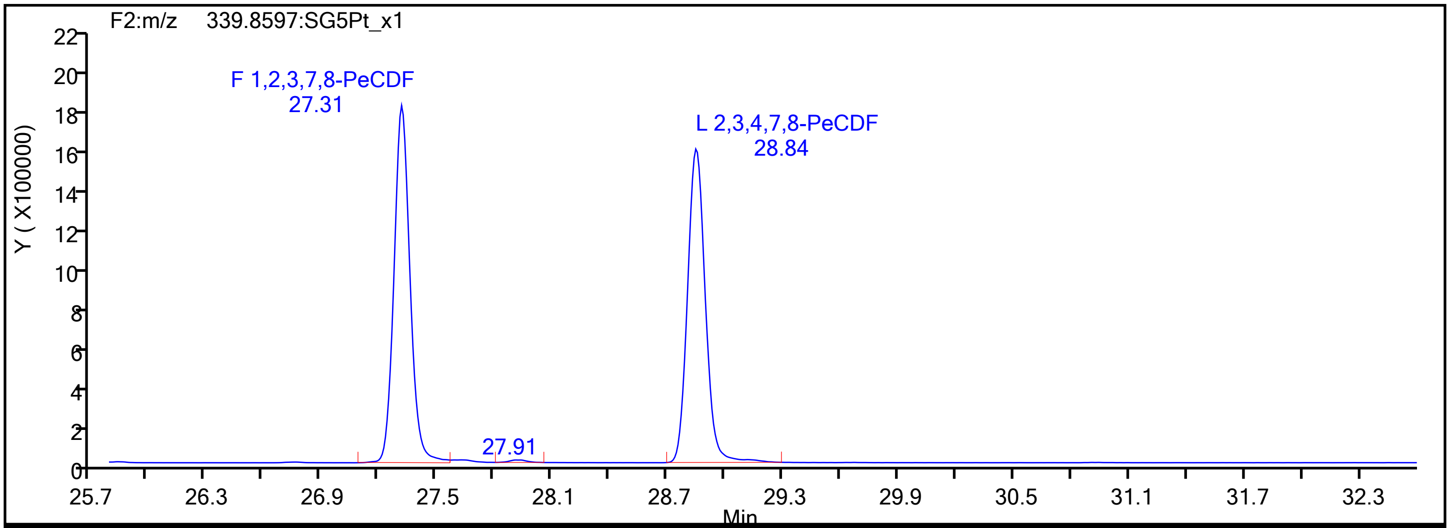

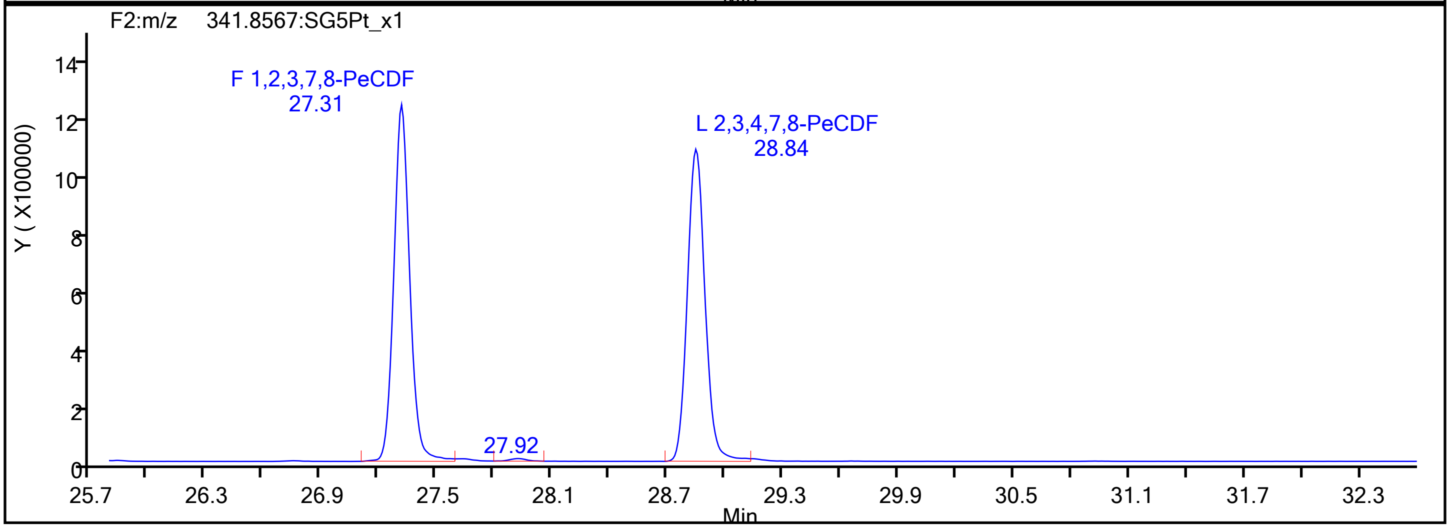

PeCDF Interference Mass

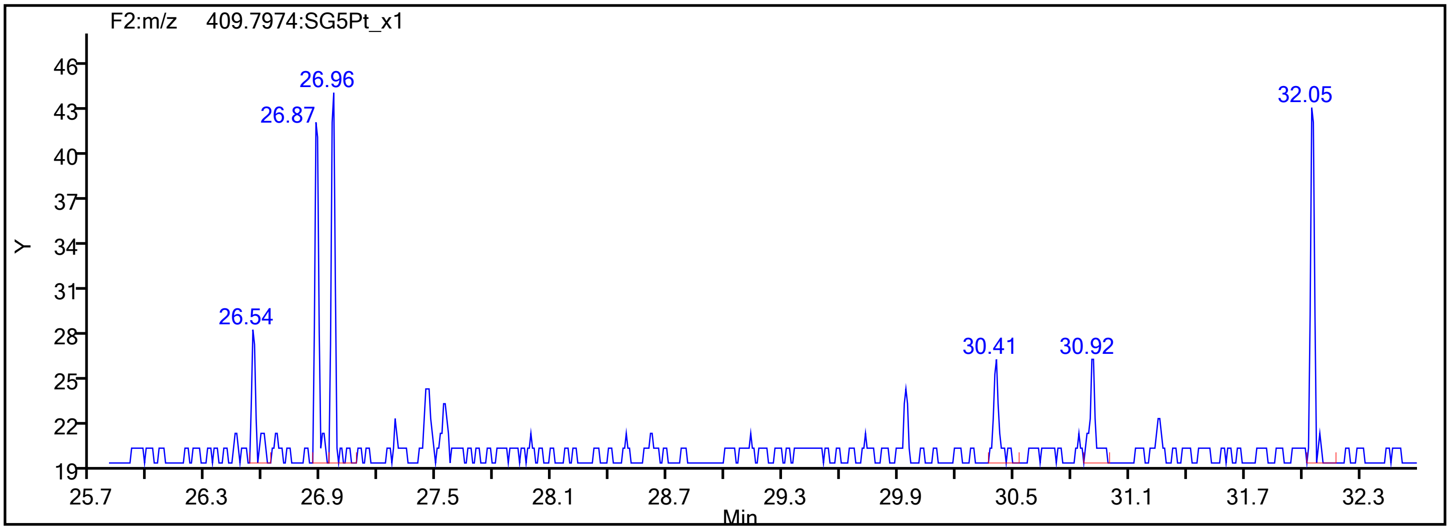

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Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDD

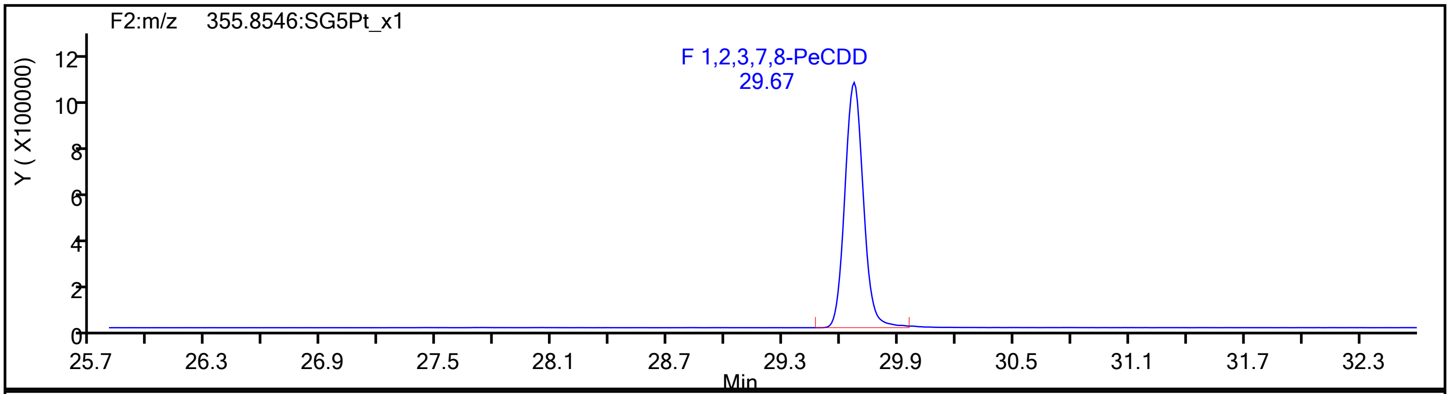

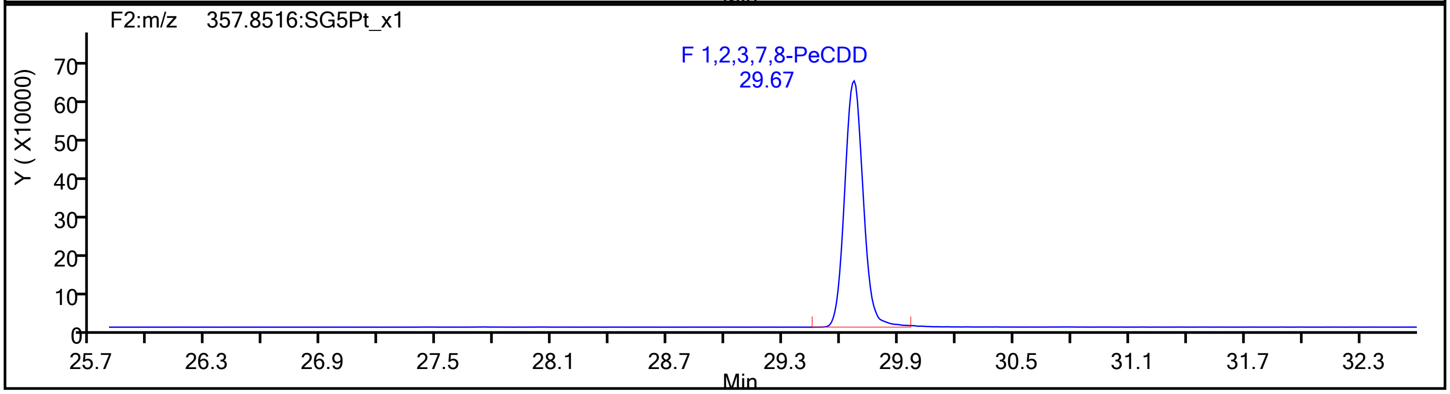

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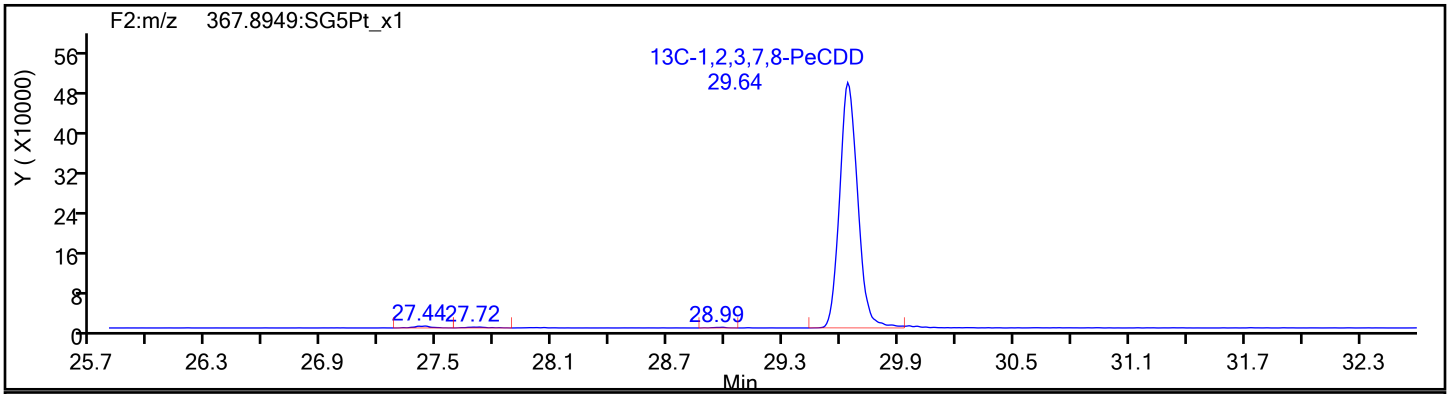

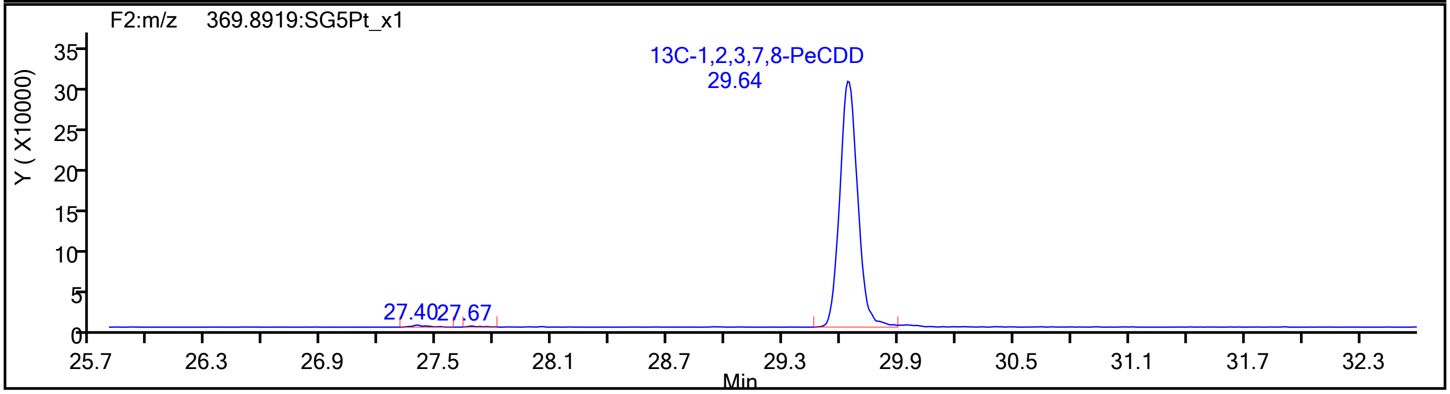

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Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

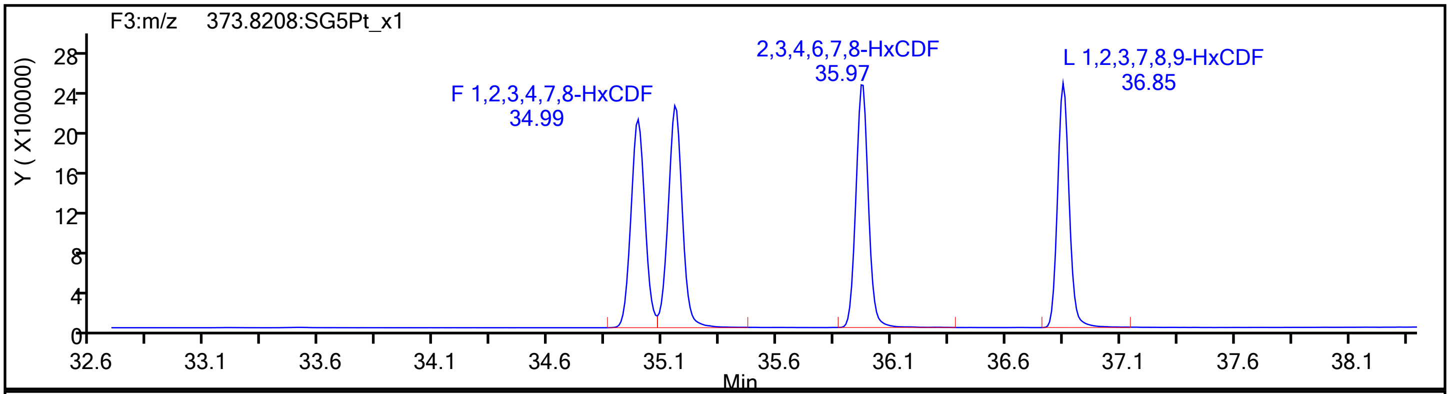

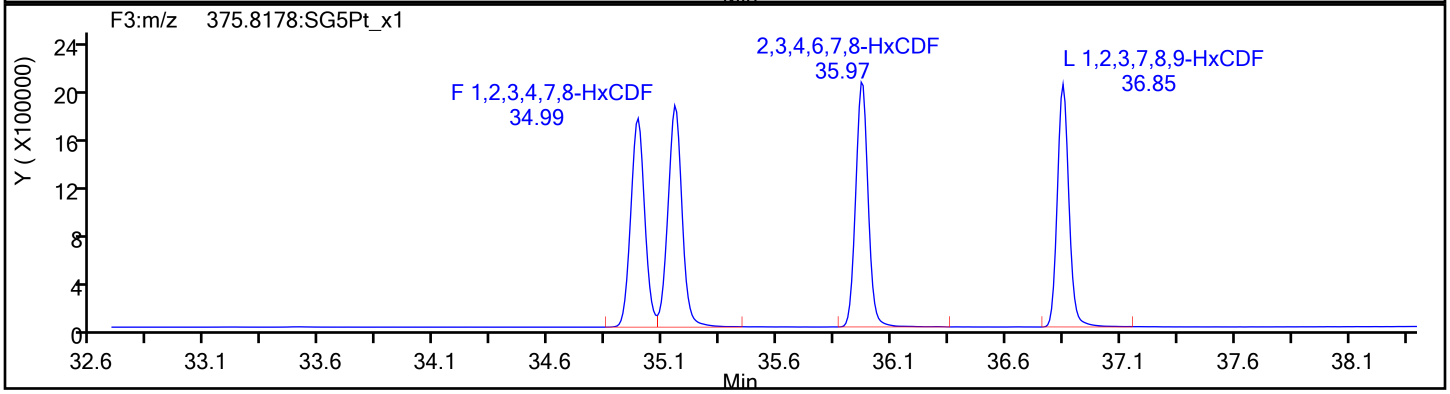

HxCDF Standards

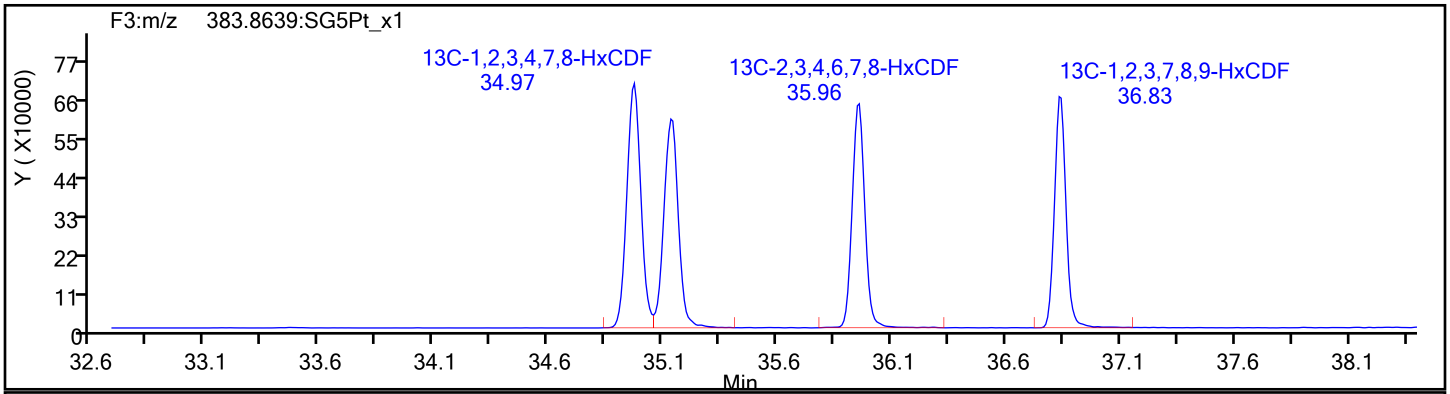

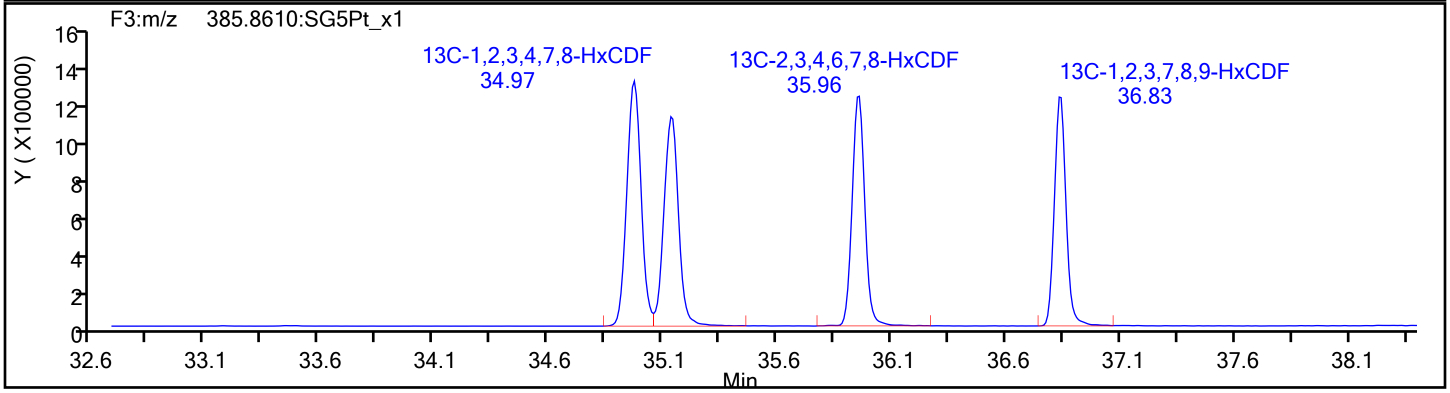

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Eurofins TestAmerica, Sacramento

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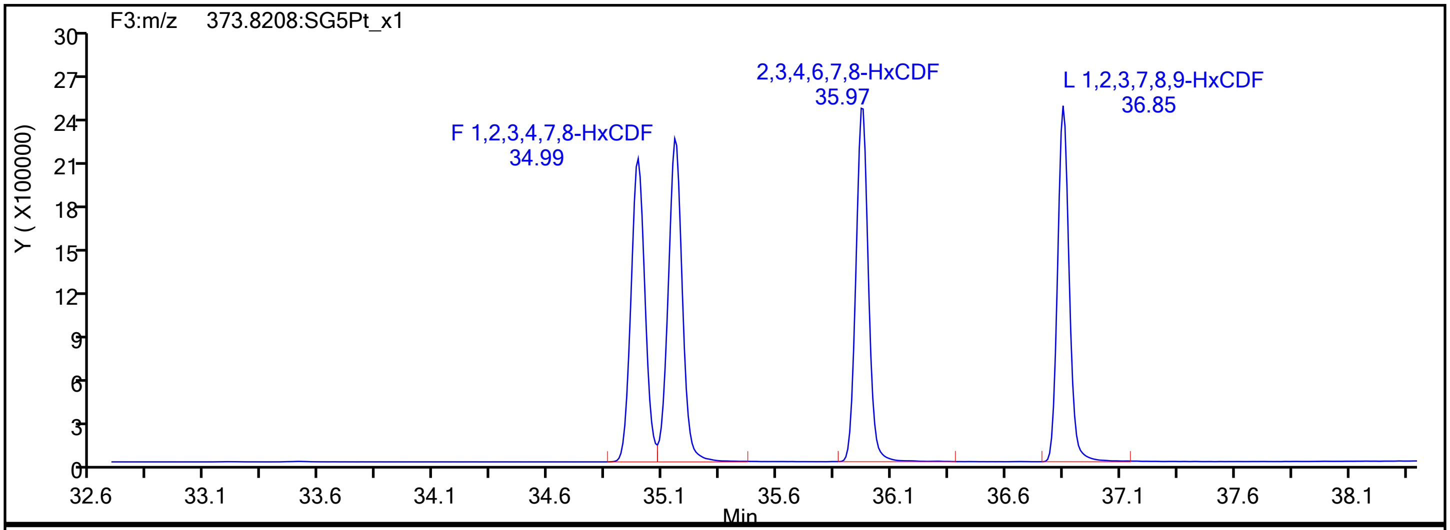

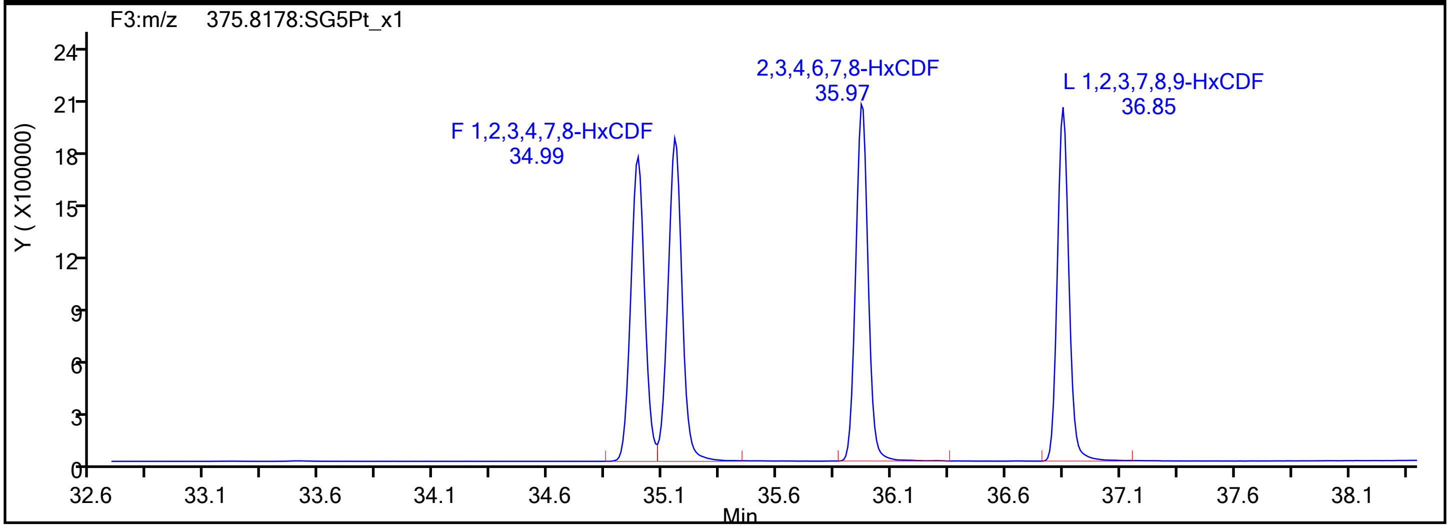

HxCDF Interference Mass

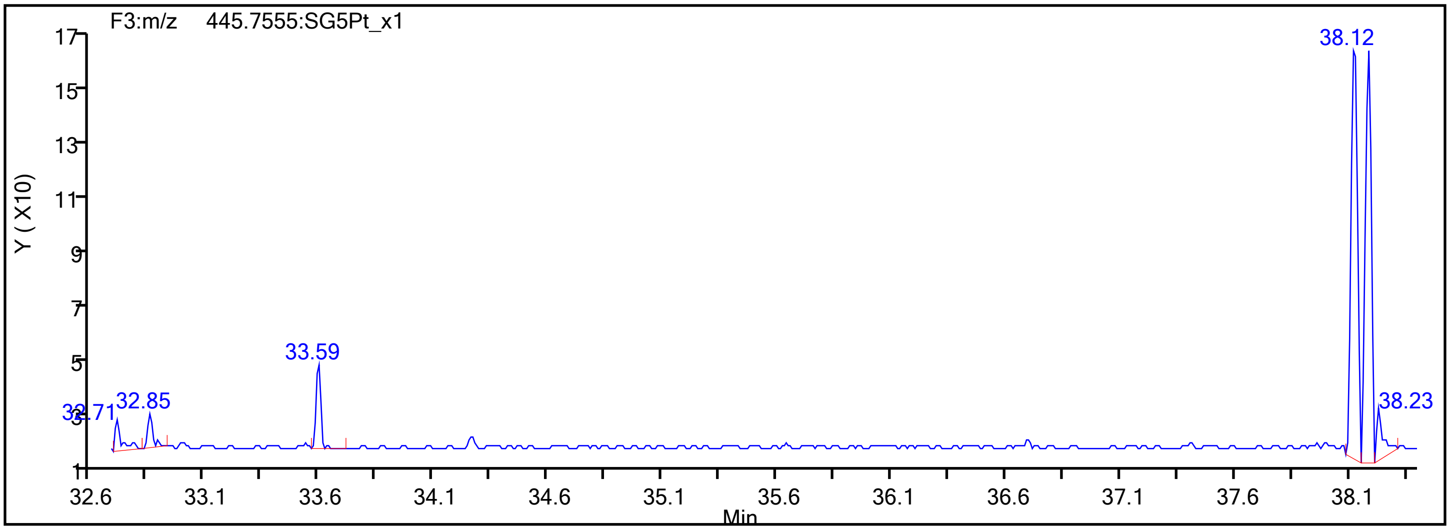

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Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 17:18:00   Injection Vol: 1.0 ul

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Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL

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Column Type: DB-5   Column Dia: 0.32 mm

HxCDD

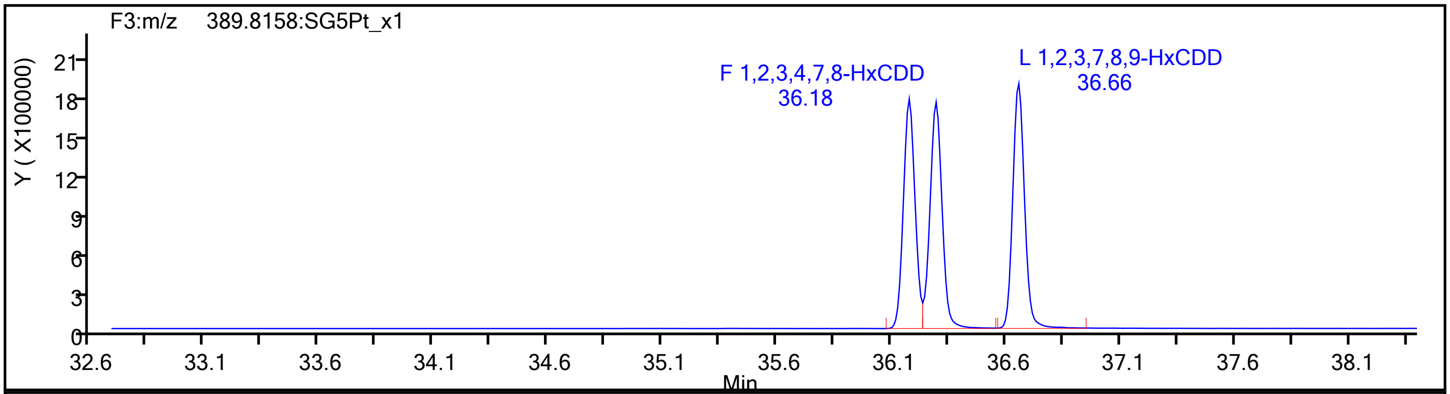

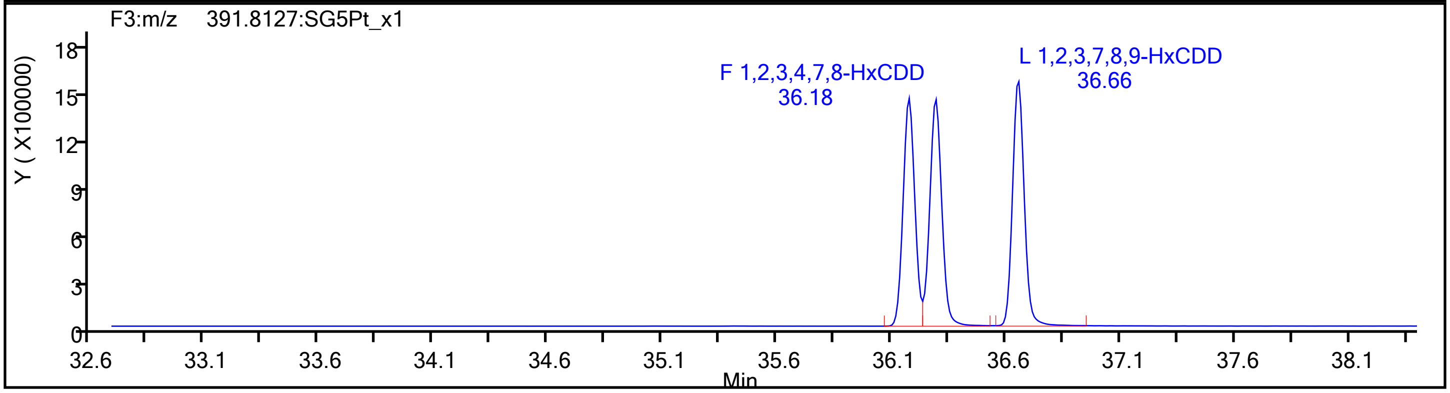

HxCDD Standards

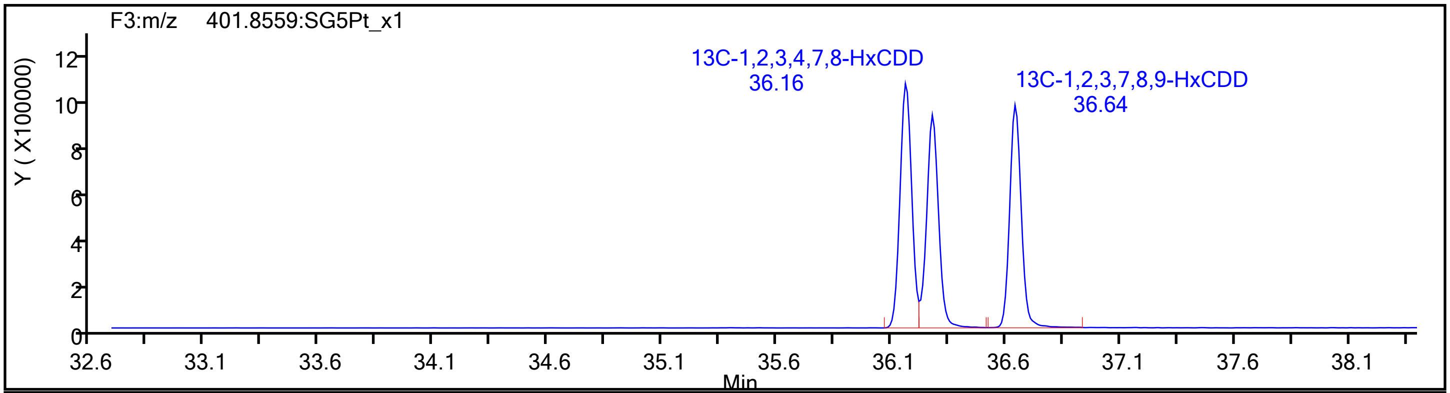

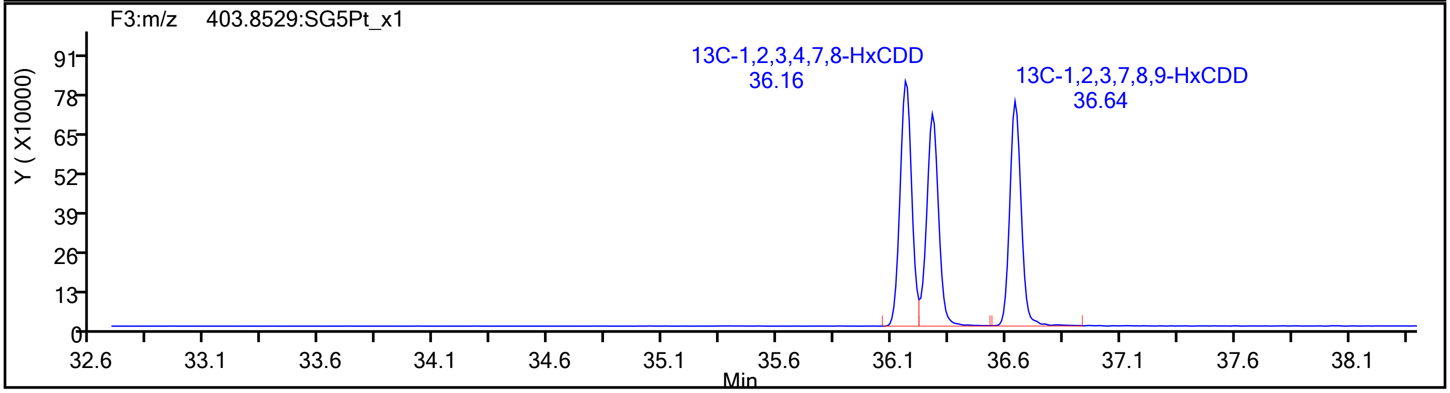

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Eurofins TestAmerica, Sacramento

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HpCDF

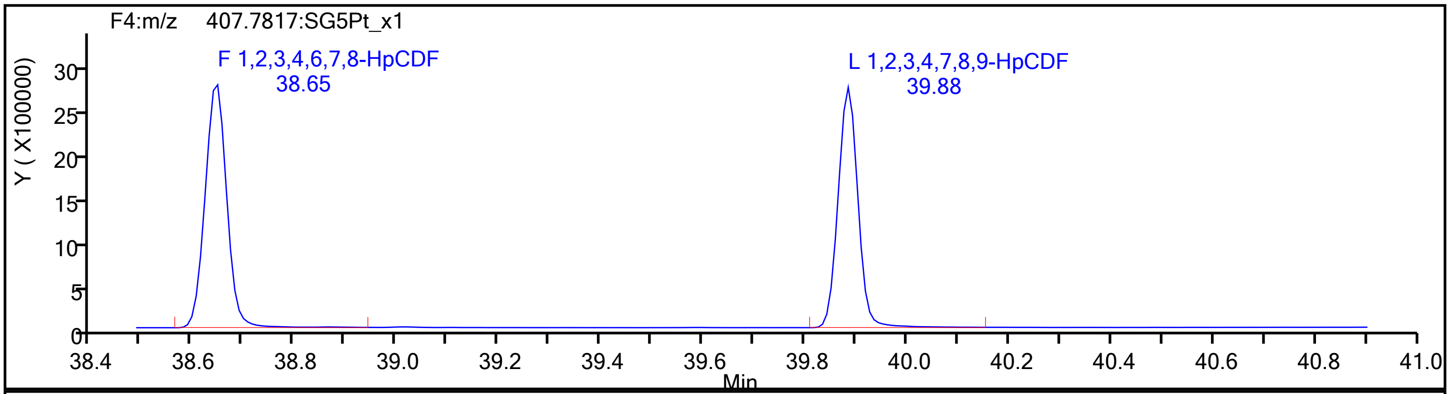

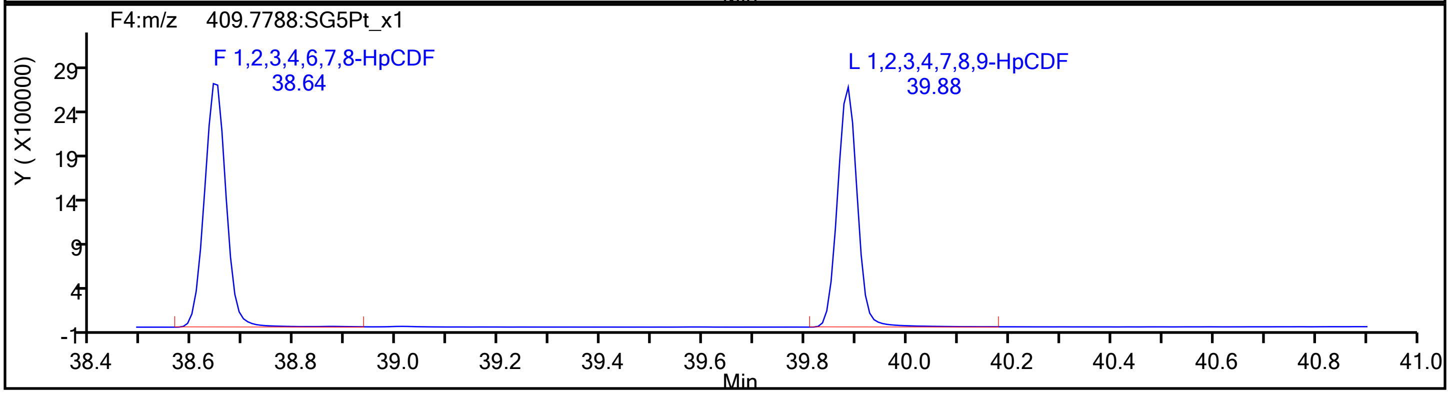

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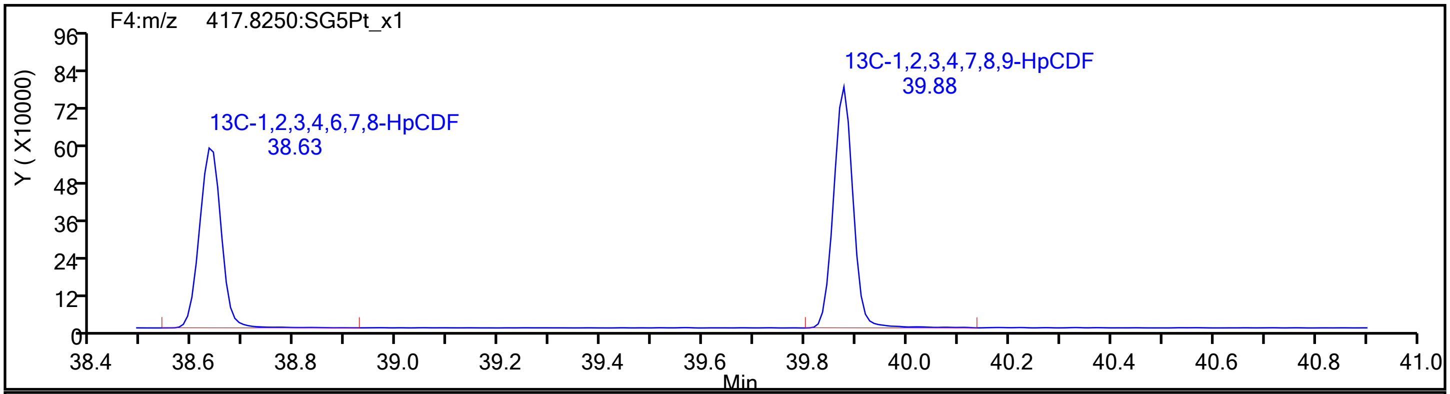

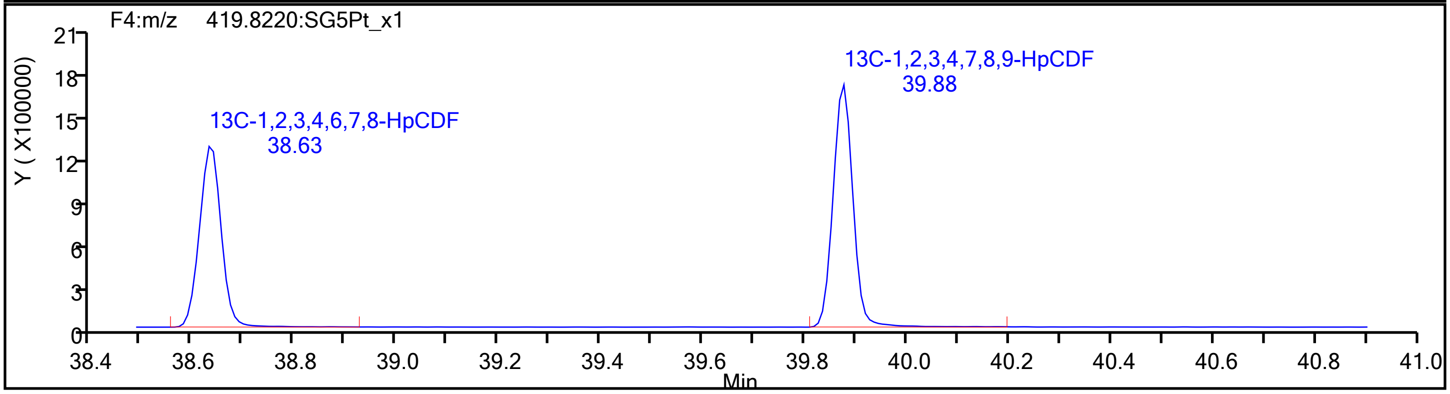

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Eurofins TestAmerica, Sacramento

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HpCDF

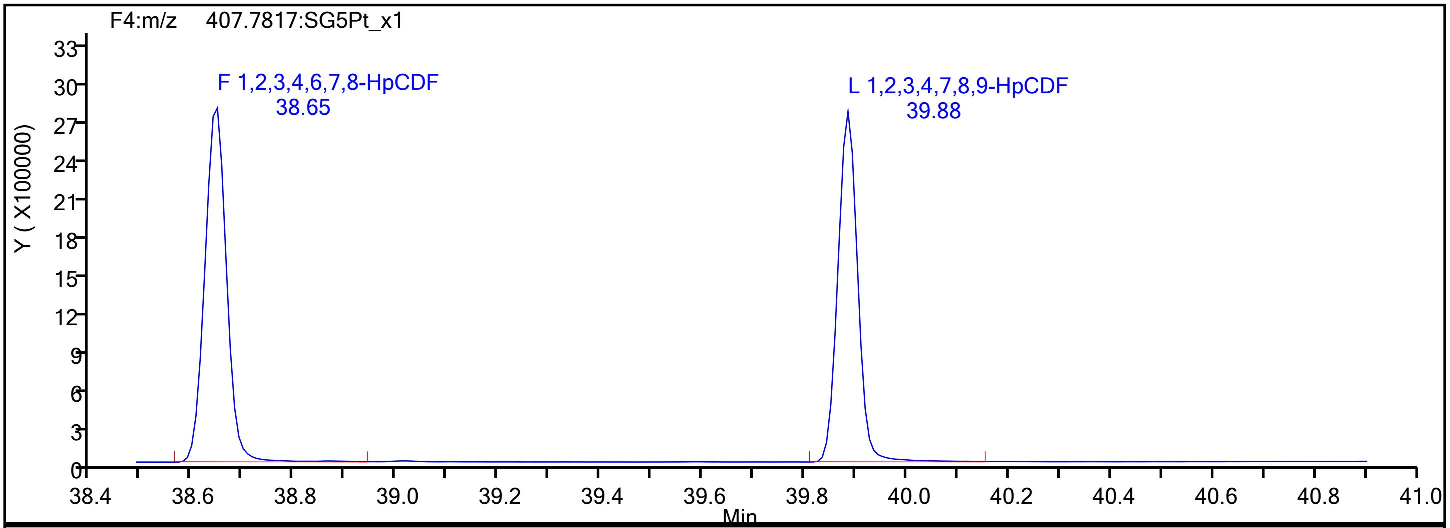

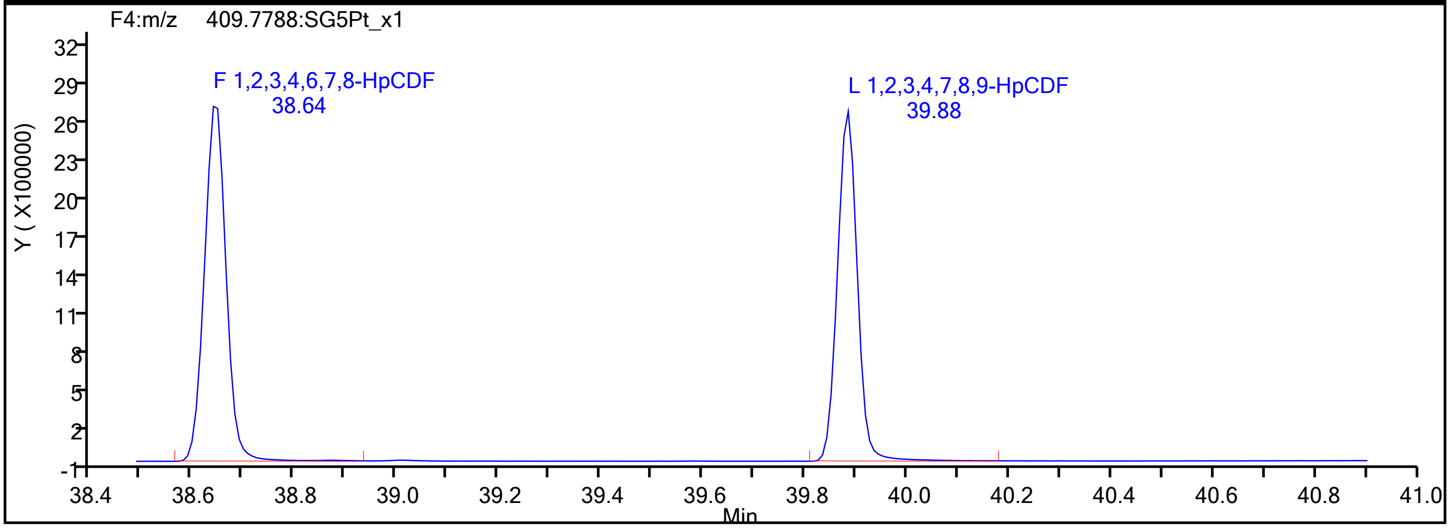

HpCDF Interference Mass

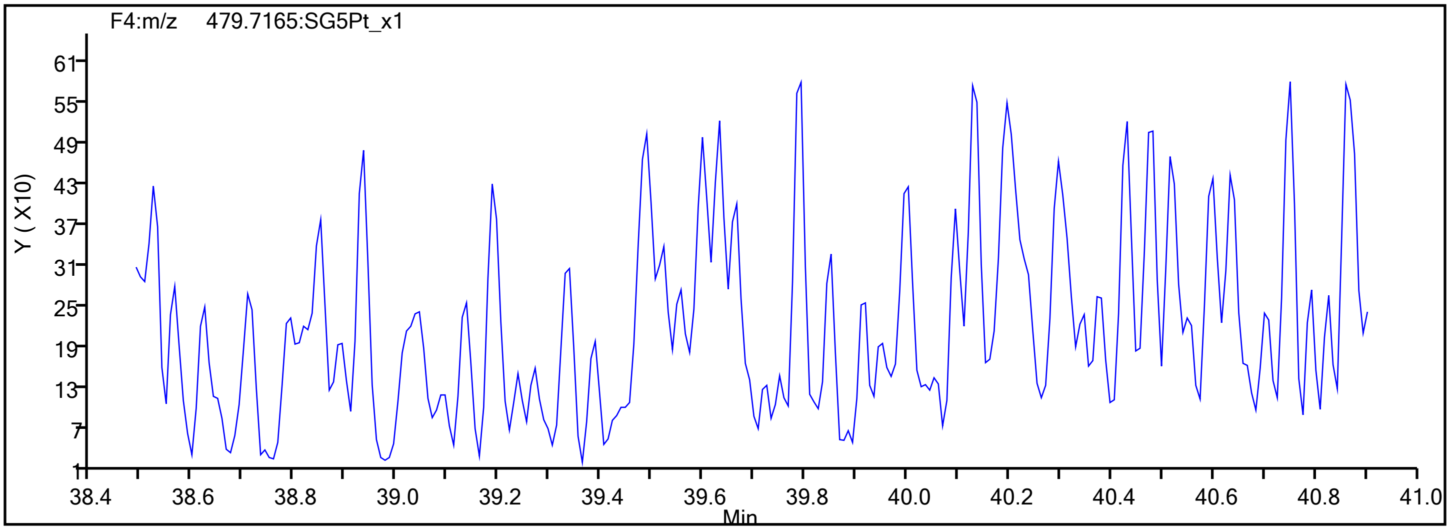

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HpCDD

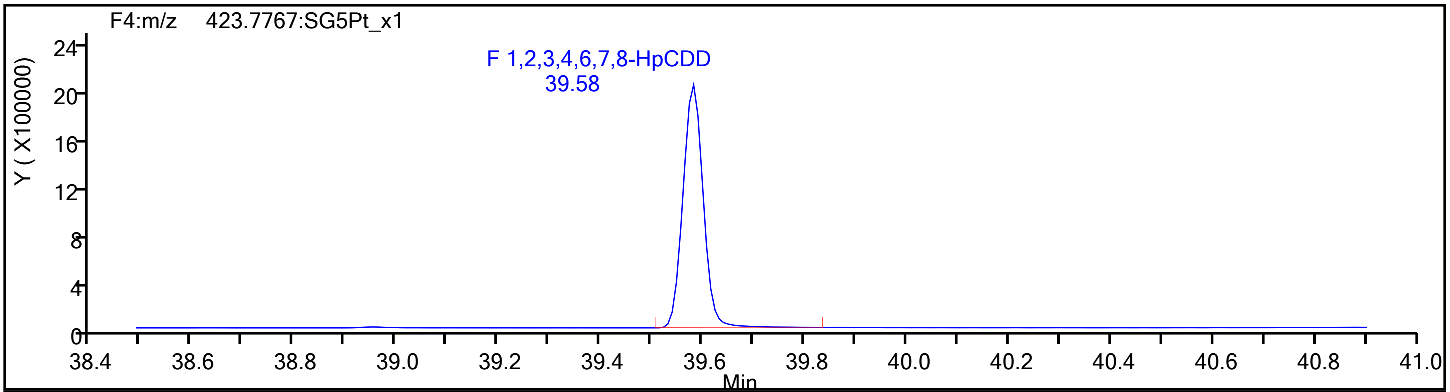

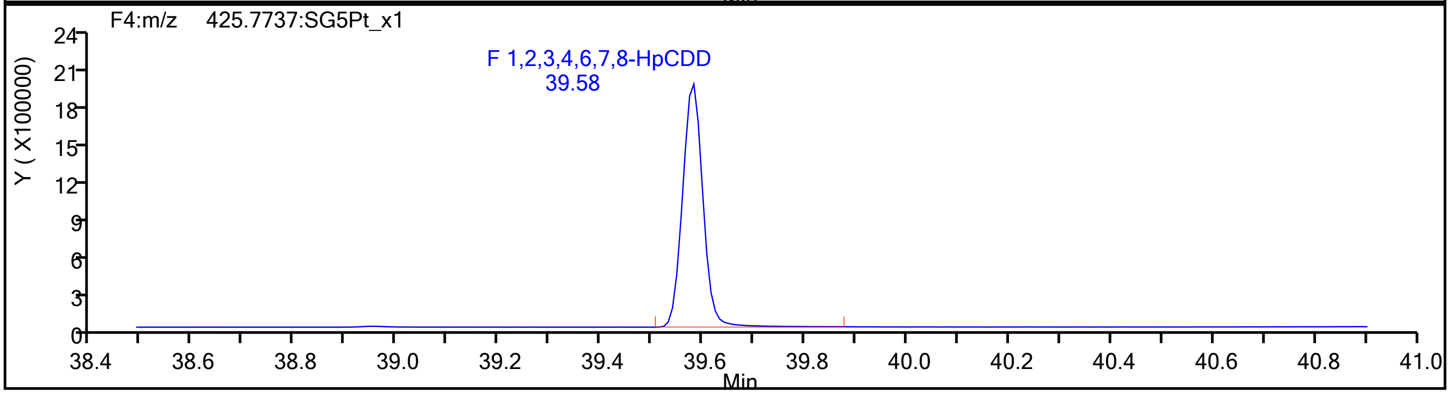

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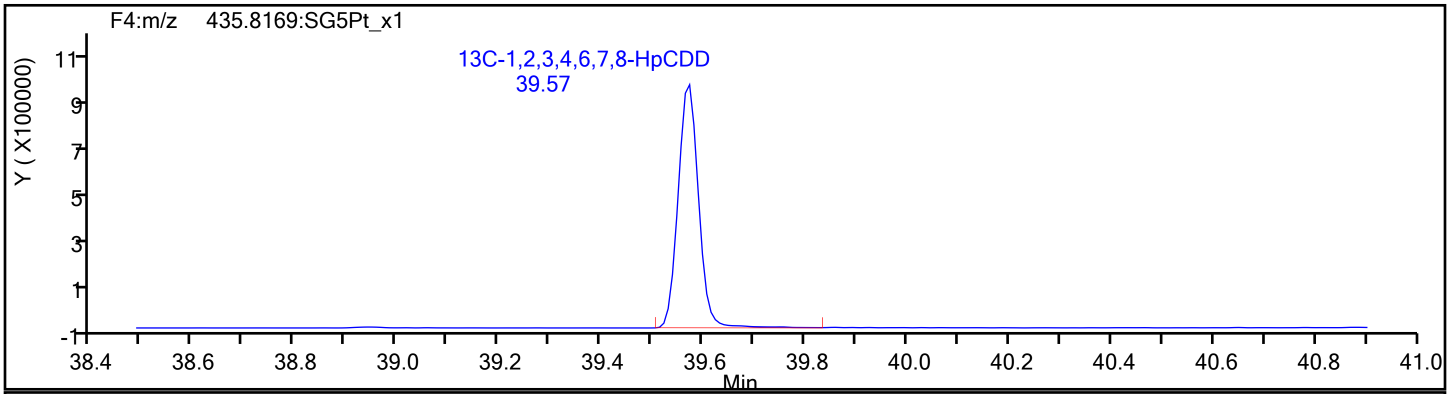

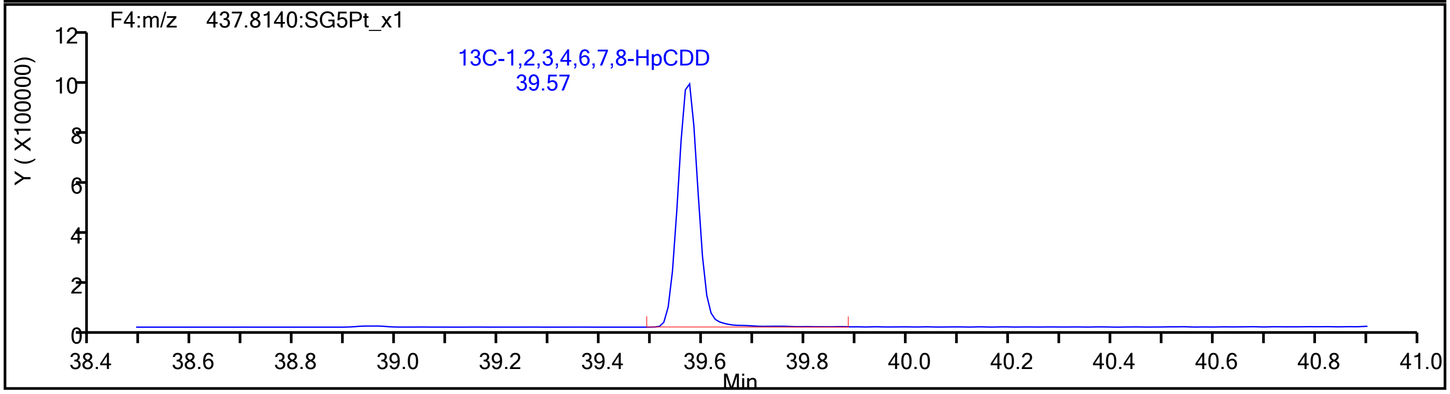

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

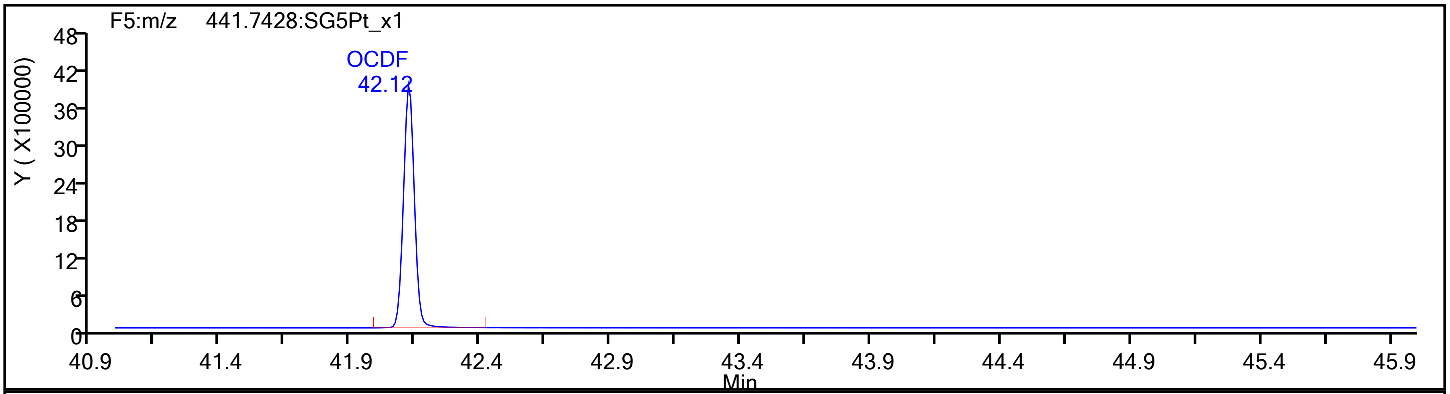

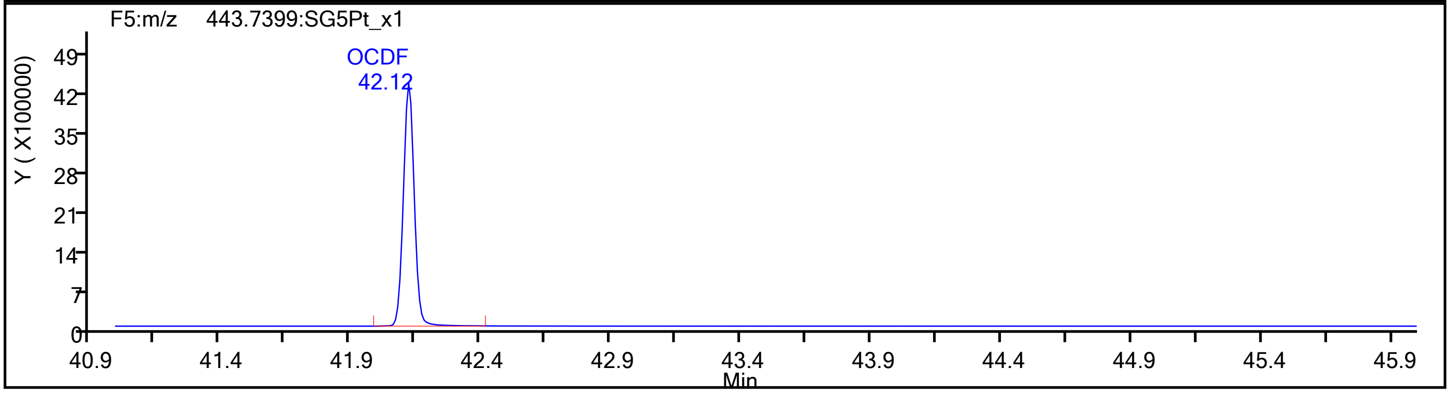

OCDF Standards

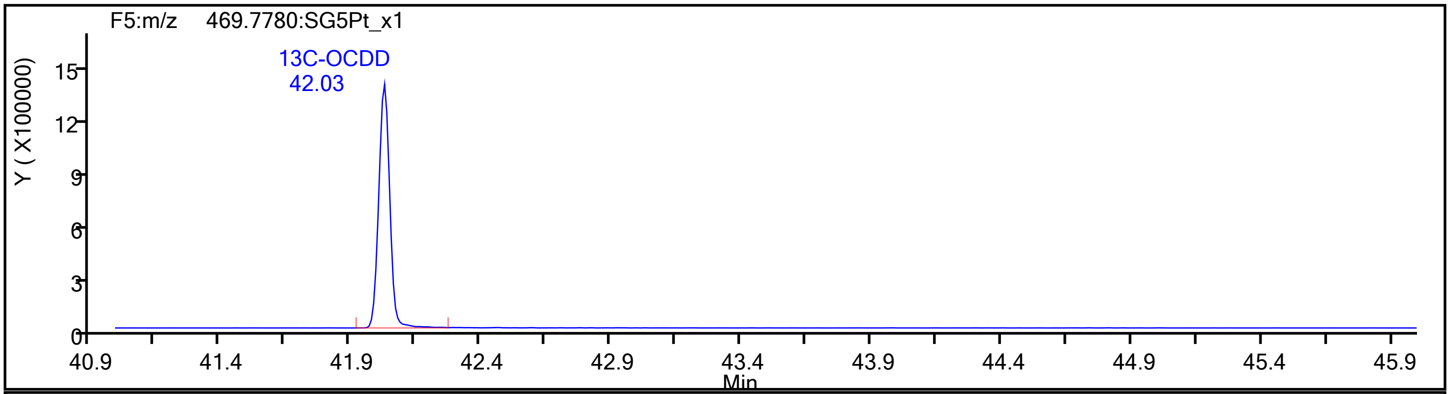

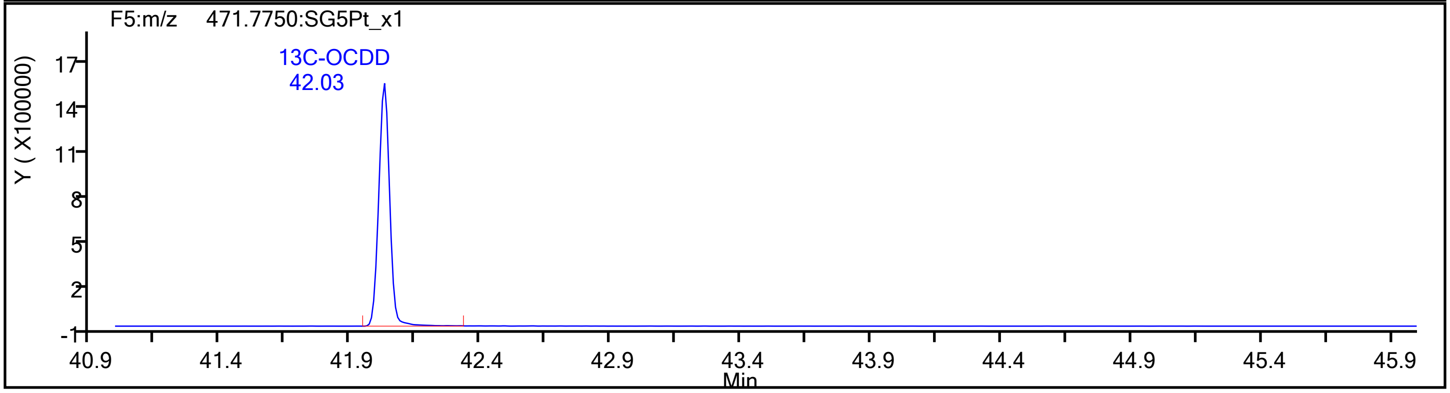

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Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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OCDF

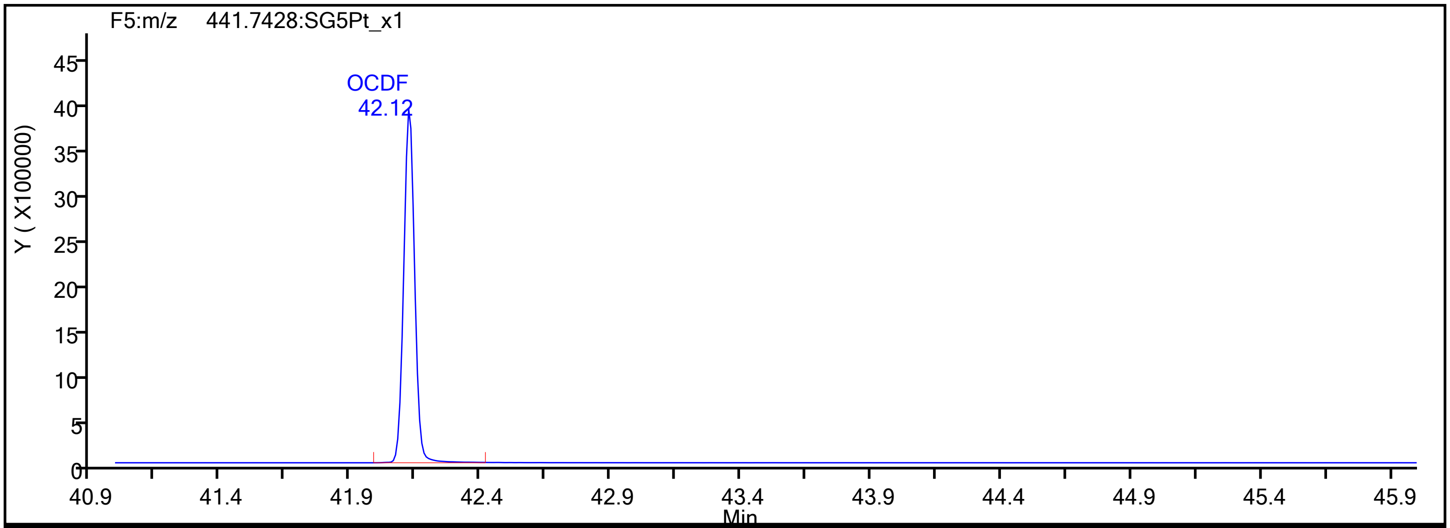

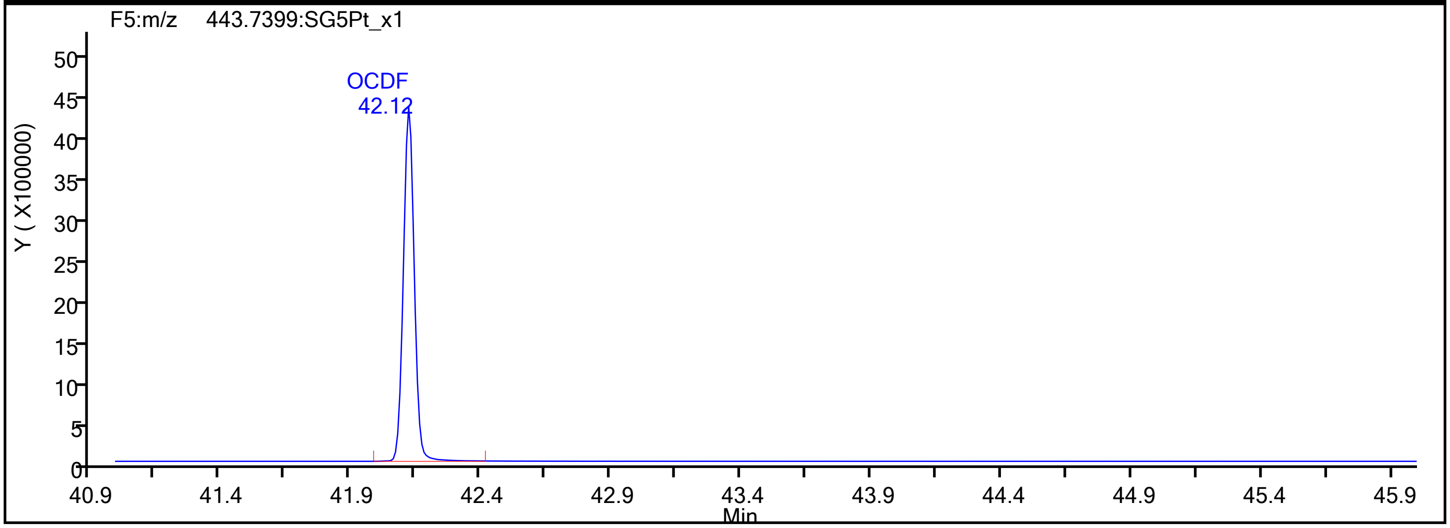

OCDF Interference Mass

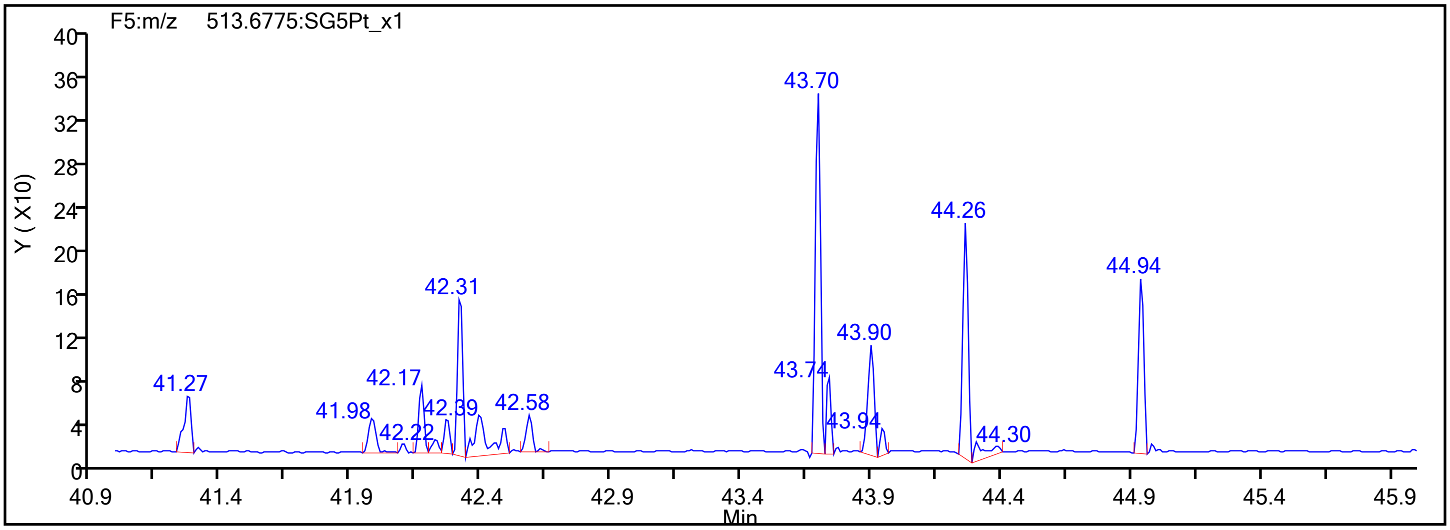

Report Date: 05-Jun-2020 10:11:43 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d
Injection Date: 03-Jun-2020 17:18:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

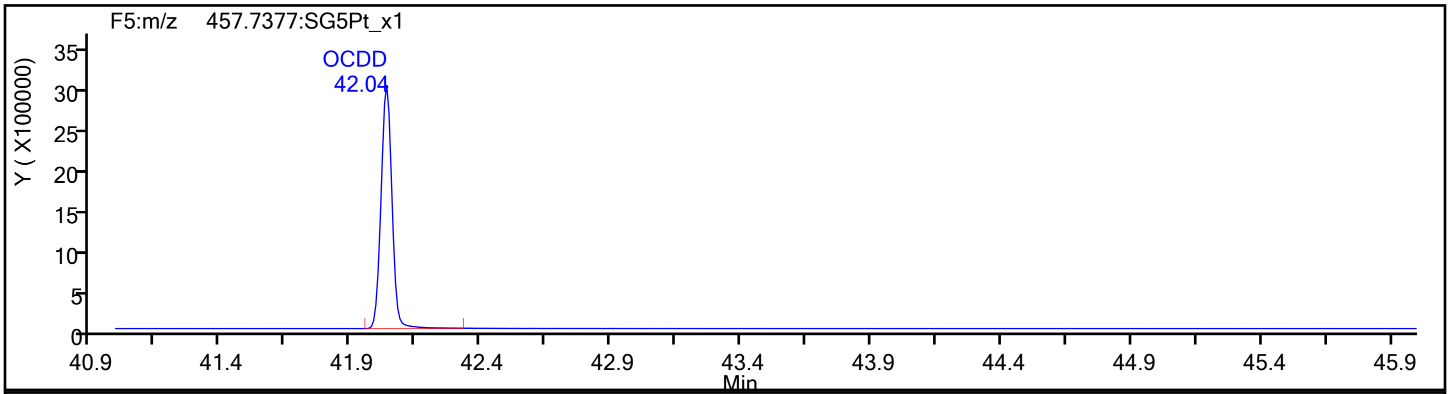

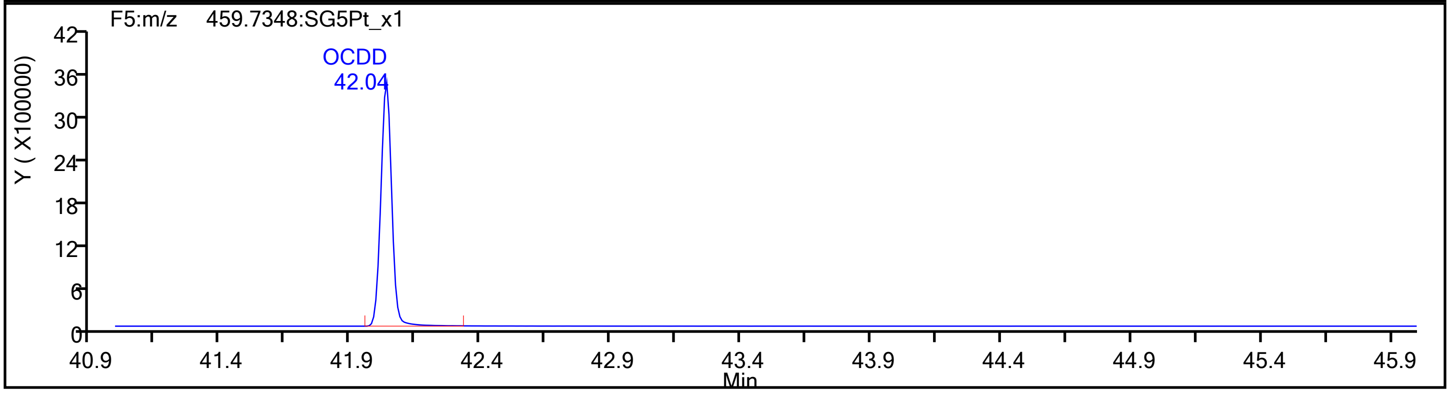

OCDD Standards

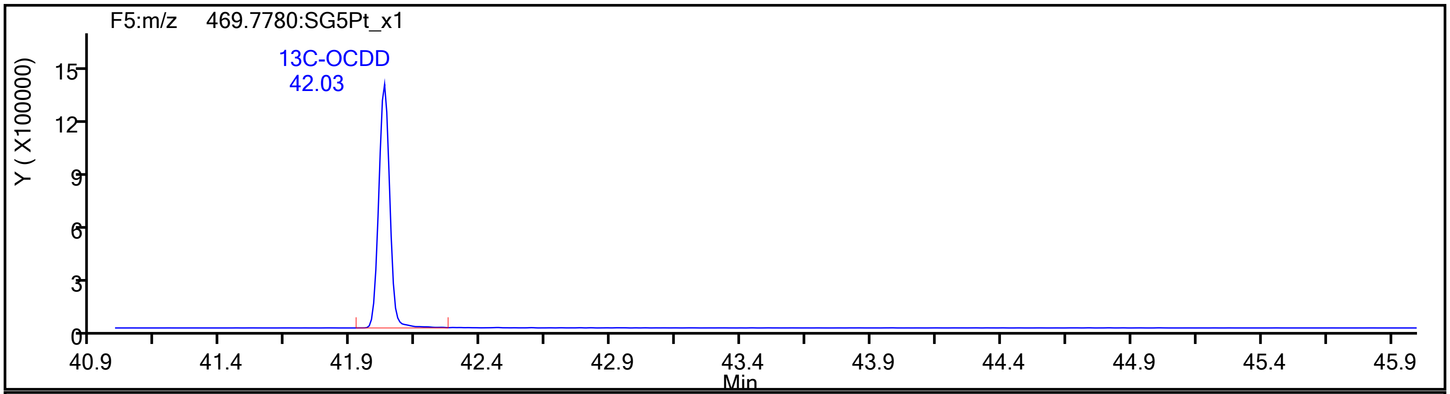

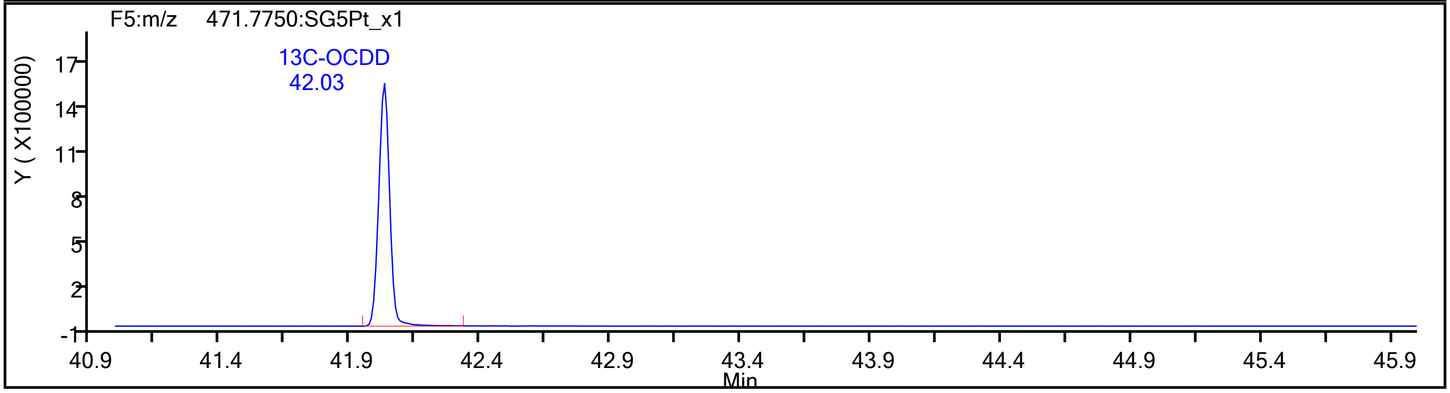

Report Date: 05-Jun-2020 10:11:43 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d

Injection Date: 03-Jun-2020 17:18:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

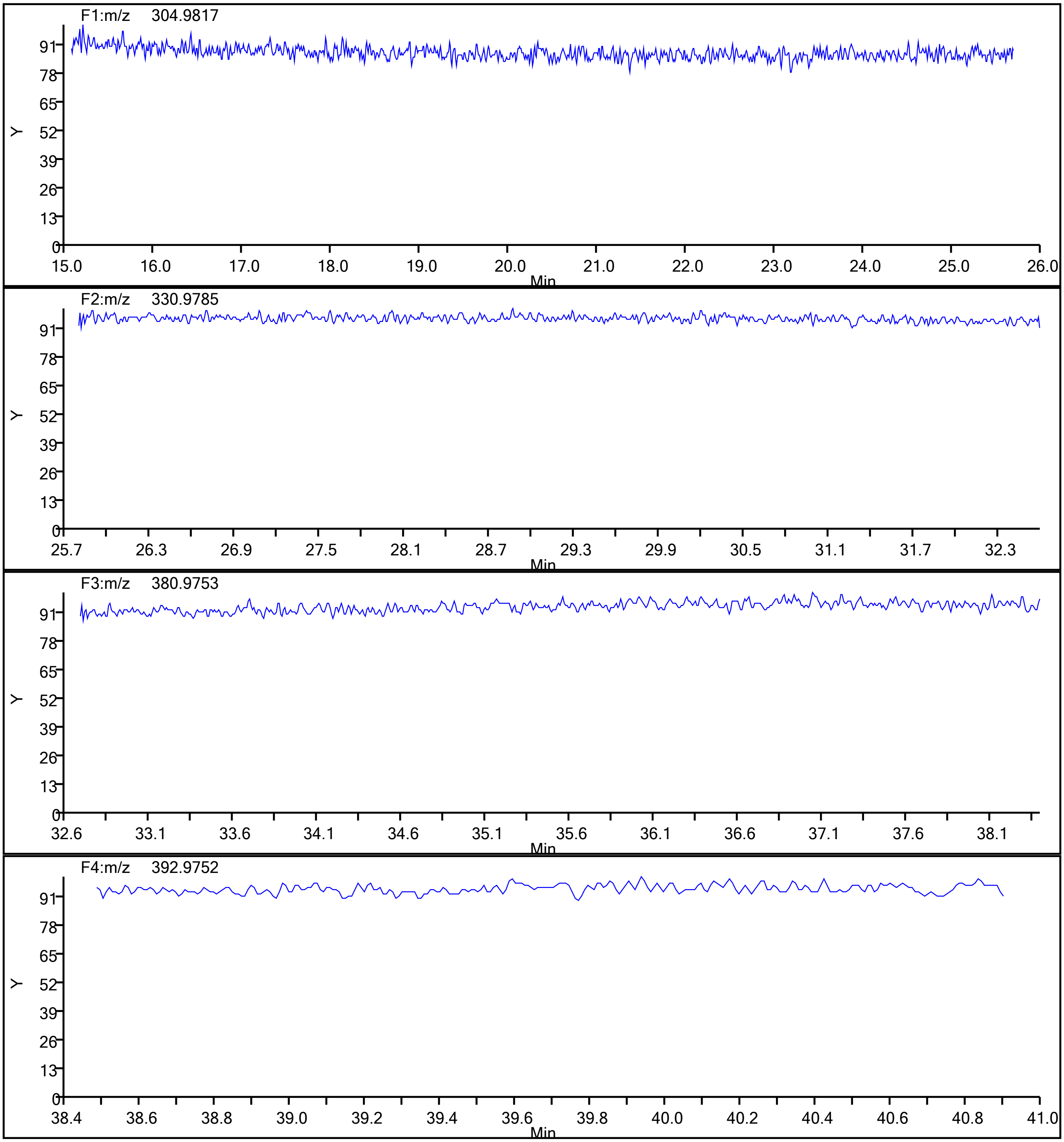

Report Date: 05-Jun-2020 10:11:43 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d		
Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

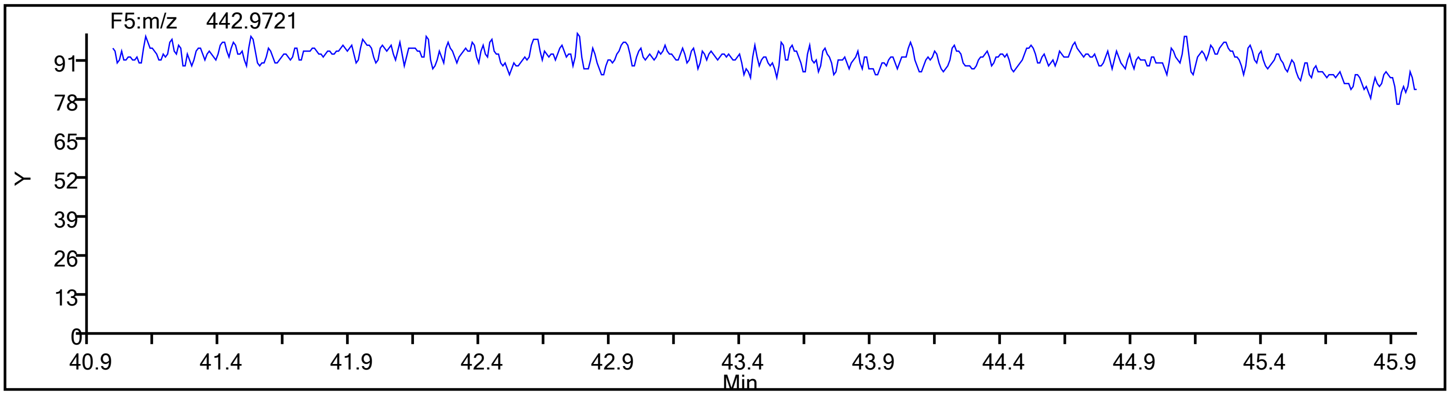

Report Date: 05-Jun-2020 10:11:56   Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	03-Jun-2020 18:06:00	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	05-Jun-2020 10:11:45	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1030				
First Level Reviewer: stephensk		Date:	05-Jun-2020 10:10:20		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.324	6149174	0.81	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.334	9303208	0.82	1.4977	101.0	101.0	0.2677	0.2677	101	
2,3,7,8-TCDF	20.360	19184180	0.79	1.1312	182.3	182.3	0.1943	0.1943	91.14	
S Total TCDF					182.3	182.3	0.1943	0.1943		
D 13C-2,3,7,8-TCDD	21.703	6461409	0.78	1.0367	101.4	101.4	0.1880	0.1880	101	
2,3,7,8-TCDD	21.728	14273681	0.78	1.1849	186.4	186.4	0.1284	0.1284	93.22	
$ 37Cl4-2,3,7,8-TCDD	21.737	13821356		1.1208	200.5	200.5	0.0959	0.0959	100	
S Total TCDD					186.4	186.4	0.1284	0.1284		
D 13C-1,2,3,7,8-PeCDF	27.310	8594514	1.59	1.3057	107.0	107.0	0.3711	0.3711	107	
1,2,3,7,8-PeCDF	27.335	88211420	1.59	1.1060	928.0	928.0	2.287	2.287	92.80	
D 13C-2,3,4,7,8-PeCDF	28.850	10203149	1.58	1.5420	107.6	107.6	0.3142	0.3142	108	
2,3,4,7,8-PeCDF	28.867	85577950	1.58	0.9067	925.1	925.1	2.564	2.564	92.51	
S Total PeCDF					1853.1	1853.1	2.426	2.426		
D 13C-1,2,3,7,8-PeCDD	29.667	5502316	1.60	0.8294	107.9	107.9	0.1212	0.1212	108	
1,2,3,7,8-PeCDD	29.692	55777410	1.57	1.1062	916.4	916.4	0.4208	0.4208	91.64	
S Total PeCDD					916.4	916.4	0.4208	0.4208		
D 13C-1,2,3,4,7,8-HxCDF	34.996	9039472	0.54	1.4619	98.8	98.8	0.2053	0.2053	98.77	
1,2,3,4,7,8-HxCDF	35.013	85729058	1.27	1.0087	940.2	940.2	2.476	2.476	94.02	
D 13C-1,2,3,6,7,8-HxCDF	35.156	8024539	0.53	1.2866	99.6	99.6	0.2333	0.2333	99.63	
1,2,3,6,7,8-HxCDF	35.173	93685181	1.24	1.2432	939.1	939.1	2.347	2.347	93.91	
D 13C-2,3,4,6,7,8-HxCDF	35.972	7543852	0.53	1.1988	100.5	100.5	0.2504	0.2504	101	
2,3,4,6,7,8-HxCDF	35.989	89484473	1.25	1.2736	931.4	931.4	2.133	2.133	93.14	
D 13C-1,2,3,7,8,9-HxCDF	36.856	6673211	0.53	1.0687	99.7	99.7	0.2809	0.2809	99.75	
1,2,3,7,8,9-HxCDF	36.872	81359736	1.26	1.2882	946.4	946.4	2.157	2.157	94.64	
S Total HxCDF					3757.2	3757.2	2.278	2.278		
* 13C-1,2,3,7,8,9-HxCDD	36.662	6260289	1.26	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.182	6883032	1.26	1.1046	99.5	99.5	0.1253	0.1253	99.53	
1,2,3,4,7,8-HxCDD	36.199	58816794	1.28	0.9336	915.3	915.3	0.9319	0.9319	91.53	
D 13C-1,2,3,6,7,8-HxCDD	36.300	6200617	1.26	0.9871	100.3	100.3	0.1402	0.1402	100	
1,2,3,6,7,8-HxCDD	36.309	61432617	1.24	1.0802	917.2	917.2	0.8849	0.8849	91.72	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.679	63998716	1.25	1.0574	925.2	925.2	0.8615	0.8615	92.52	
S Total HxCDD					2757.6	2757.6	0.8928	0.8928		
D 13C-1,2,3,4,6,7,8-HpCDF	38.652	5694573	0.46	0.9035	100.7	100.7	0.3319	0.3319	101	
1,2,3,4,6,7,8-HpCDF	38.660	87355855	1.04	1.5957	961.4	961.4	2.491	2.491	96.14	
D 13C-1,2,3,4,7,8,9-HpCDF	39.889	6788271	0.46	1.0480	103.5	103.5	0.2862	0.2862	103	
1,2,3,4,7,8,9-HpCDF	39.898	75677908	1.04	1.1693	953.4	953.4	2.608	2.608	95.34	
S Total HpCDF					1914.8	1914.8	2.550	2.550		
D 13C-1,2,3,4,6,7,8-HpCDD	39.586	5661728	1.05	0.8875	101.9	101.9	0.2156	0.2156	102	
1,2,3,4,6,7,8-HpCDD	39.595	58798928	1.04	1.1150	931.4	931.4	1.392	1.392	93.14	
S Total HpCDD					931.4	931.4	1.392	1.392		
D 13C-OCDD	42.042	8603138	0.90	0.6297	218.2	218.2	0.1414	0.1414	109	
OCDF	42.144	129322802	0.89	1.4809	2030.1	2030.1	0.5493	0.5493	102	
OCDD	42.051	98819349	0.88	1.1948	1922.8	1922.8	0.7094	0.7094	96.14	

Reagents:

HRDXNL6_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 03-Jun-2020 18:06:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:11:45 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 05-Jun-2020 10:10:20

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.324	21.309	1		2752172	384691	484	1210	795		
333.9338	21.324	21.309	1		3397002	482564	192	480	2513	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.334	20.321	1	0.954	4194069	629371	712	1780	884		
317.9389	20.334	20.321	1	0.954	5109139	793092	679	1697	1168	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.360	20.347	1	1.001	8444062	1235511	543	1357	2275		
305.8987	20.360	20.347	1	1.001	10740118	1566762	708	1770	2213	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.703	21.692	1	1.018	2837141	394858	484	1210	816		
333.9338	21.703	21.692	1	1.018	3624268	500345	192	480	2606	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.728	21.722	0	1.001	6232967	868807	275	687	3159		
321.8936	21.728	21.722	0	1.001	8040714	1093877	270	675	4051	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.737	21.724	1	1.019	13821356	1875473	373	932	5028		
13C-1,2,3,7,8-PeCDF											
351.9000	27.310	27.300	1	1.281	5274212	863845	973	2432	888		
353.8970	27.318	27.300	1	1.281	3320302	542409	708	1770	766	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.335	27.325	1	1.001	54107852	9014376	8708	21770	1035		
341.8567	27.335	27.325	1	1.001	34103568	5623120	5521	13802	1018	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.850	28.834	1	1.353	6247378	939778	973	2432	966		
353.8970	28.842	28.834	0	1.353	3955771	590146	708	1770	834	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.867	28.857	1	1.001	52415488	8204138	8708	21770	942		
341.8567	28.867	28.857	1	1.001	33162462	5132922	5521	13802	930	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.667	29.651	1	1.391	3389280	484137	209	522	2316		
369.8919	29.667	29.651	1	1.391	2113036	298228	140	350	2130	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.692	29.682	1	1.001	34073880	5054260	905	2262	5585		
357.8516	29.692	29.682	1	1.001	21703530	3178691	552	1380	5758	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.996	34.982	1	0.955	3183853	716531	719	1797	997		
385.8610	34.996	34.982	1	0.955	5855619	1336595	1361	3402	982	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.013	35.000	1	1.000	47974937	11403179	11452	28630	996		
375.8178	35.013	35.000	1	1.000	37754121	8941908	9062	22655	987	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.156	35.145	1	0.959	2767155	617033	719	1797	858		
385.8610	35.156	35.145	1	0.959	5257384	1140608	1361	3402	838	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.173	35.163	1	1.000	51919333	12149468	11452	28630	1061		
375.8178	35.173	35.163	1	1.000	41765848	9624081	9062	22655	1062	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.972	35.966	0	0.981	2619635	658867	719	1797	916		
385.8610	35.972	35.966	0	0.981	4924217	1228924	1361	3402	903	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.989	35.981	0	1.000	49658819	13234191	11452	28630	1156		
375.8178	35.989	35.981	0	1.000	39825654	10593498	9062	22655	1169	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.856	36.848	0	1.005	2308524	641159	719	1797	892		
385.8610	36.856	36.848	0	1.005	4364687	1204518	1361	3402	885	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.872	36.862	1	1.000	45393077	12710822	11452	28630	1110		
375.8178	36.872	36.862	1	1.000	35966659	10020211	9062	22655	1106	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.662	36.653	1		3488279	964837	562	1405	1717		
403.8529	36.662	36.653	1		2772010	767432	397	992	1933	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.182	36.173	1	0.987	3838925	1005153	562	1405	1789		
403.8529	36.182	36.173	1	0.987	3044107	801551	397	992	2019	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.199	36.187	1	1.000	33016057	9081328	3451	8627	2632		
391.8127	36.199	36.187	1	1.000	25800737	7128397	2837	7092	2513	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.300	36.291	1	0.990	3455058	919331	562	1405	1636		
403.8529	36.300	36.291	1	0.990	2745559	725362	397	992	1827	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.309	36.304	0	1.000	33982400	9257064	3451	8627	2682		
391.8127	36.309	36.304	0	1.000	27450217	7346182	2837	7092	2589	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.679	36.669	1	1.014	35607948	10101089	3451	8627	2927		
391.8127	36.670	36.669	0	1.013	28390768	8053038	2837	7092	2839	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.652	38.640	1	1.054	1793007	606559	767	1917	791		
419.8220	38.652	38.640	1	1.054	3901566	1300112	1311	3277	992	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.660	38.655	0	1.000	44493921	15464239	15466	38665	1000		
409.7788	38.660	38.655	0	1.000	42861934	14834081	14855	37137	999	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.889	39.885	0	1.088	2137708	783032	767	1917	1021		
419.8220	39.889	39.885	0	1.088	4650563	1702985	1311	3277	1299	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.898	39.893	0	1.000	38589368	14686761	15466	38665	950		
409.7788	39.898	39.893	0	1.000	37088540	14171025	14855	37137	954	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.586	39.582	0	1.080	2898102	1055495	684	1710	1543		
437.8140	39.586	39.582	0	1.080	2763626	1018564	642	1605	1587	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.595	39.590	0	1.000	30028589	11189281	6616	16540	1691		
425.7737	39.595	39.590	0	1.000	28770339	10751370	6256	15640	1719	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.042	42.035	0	1.147	4082304	1387130	350	875	3963		
471.7750	42.042	42.035	0	1.147	4520834	1526949	267	667	5719	0.90(0.76-1.02)	
OCDF											
441.7428	42.144	42.131	1	1.002	61049674	20950450	2235	5587	9374		
443.7399	42.135	42.131	0	1.002	68273128	23618026	2506	6265	9425	0.89(0.76-1.02)	
OCDD											
457.7377	42.051	42.043	0	1.000	46267287	16472709	2429	6072	6782		
459.7348	42.051	42.043	0	1.000	52552062	18921931	2511	6277	7536	0.88(0.76-1.02)	

Reagents:

HRDXNL6_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

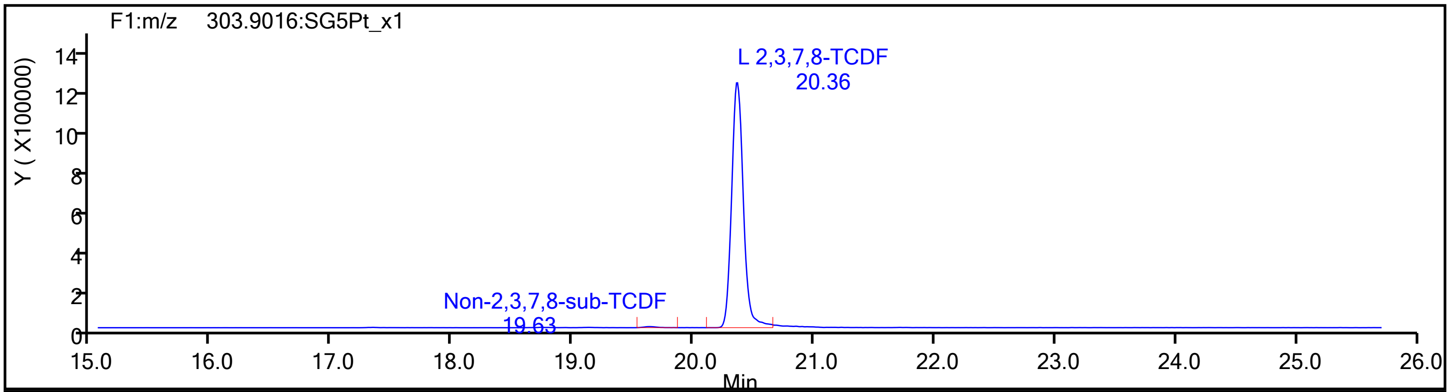

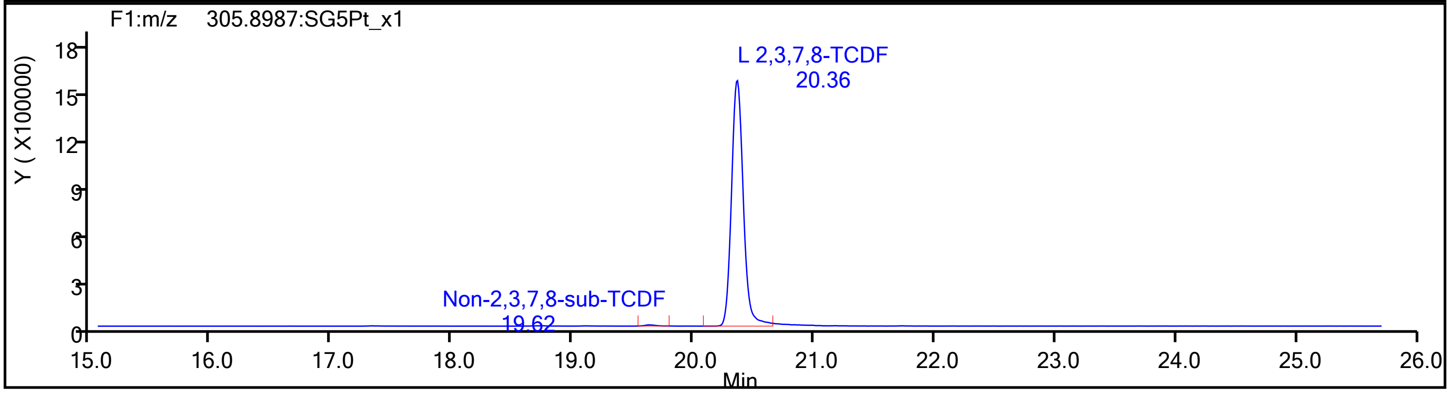

TCDF Standards

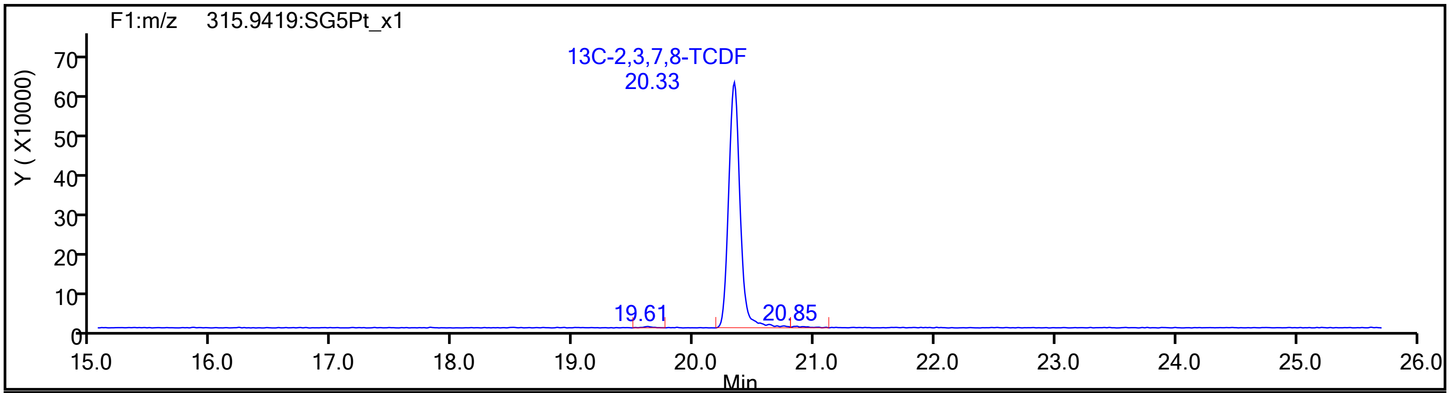

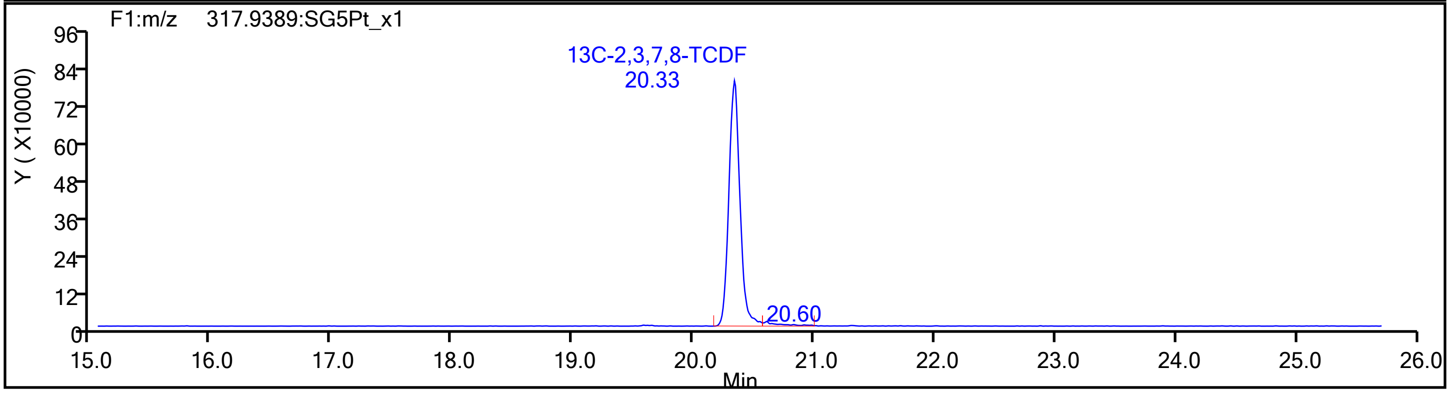

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

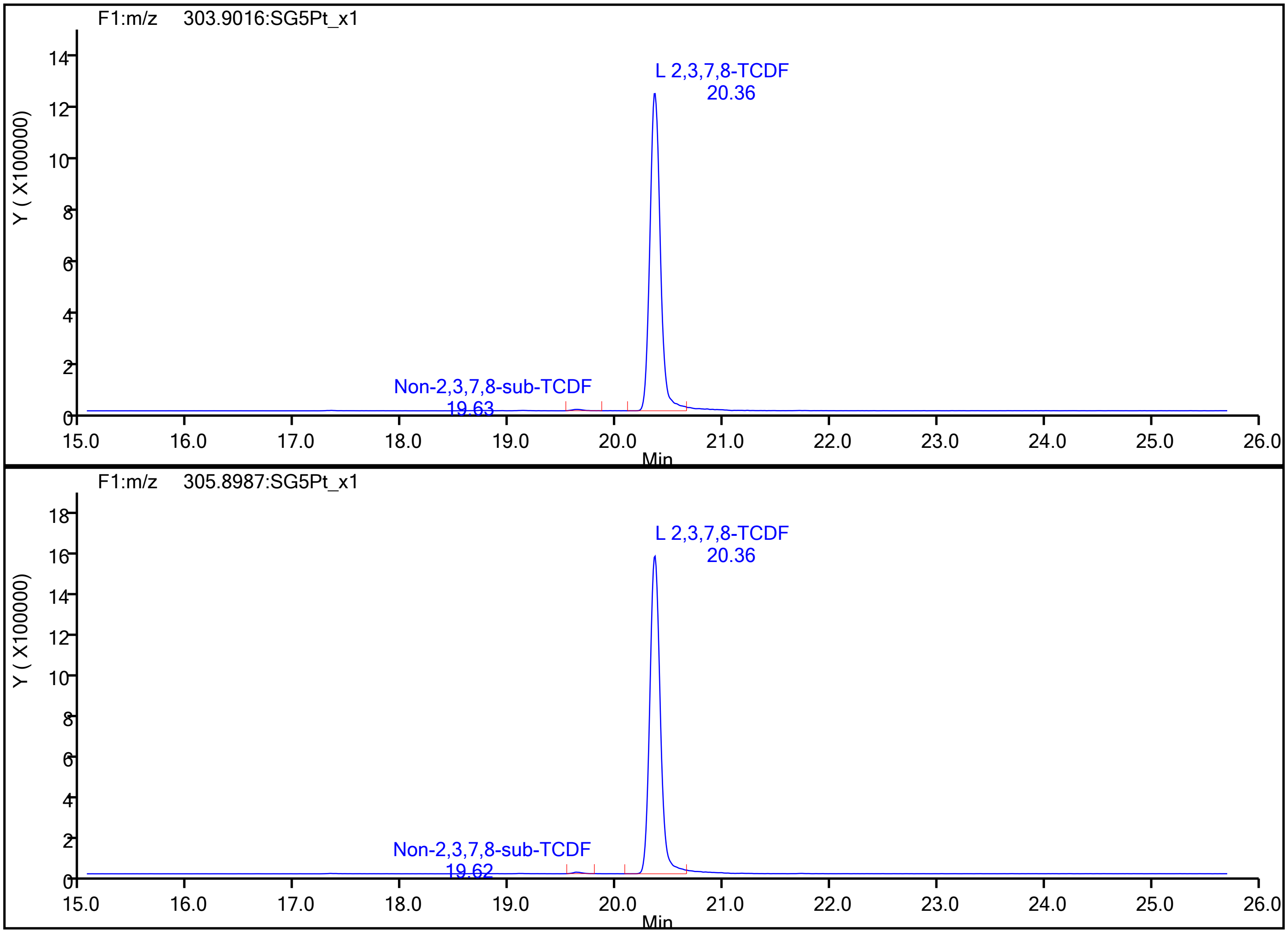

TCDF Interference Mass

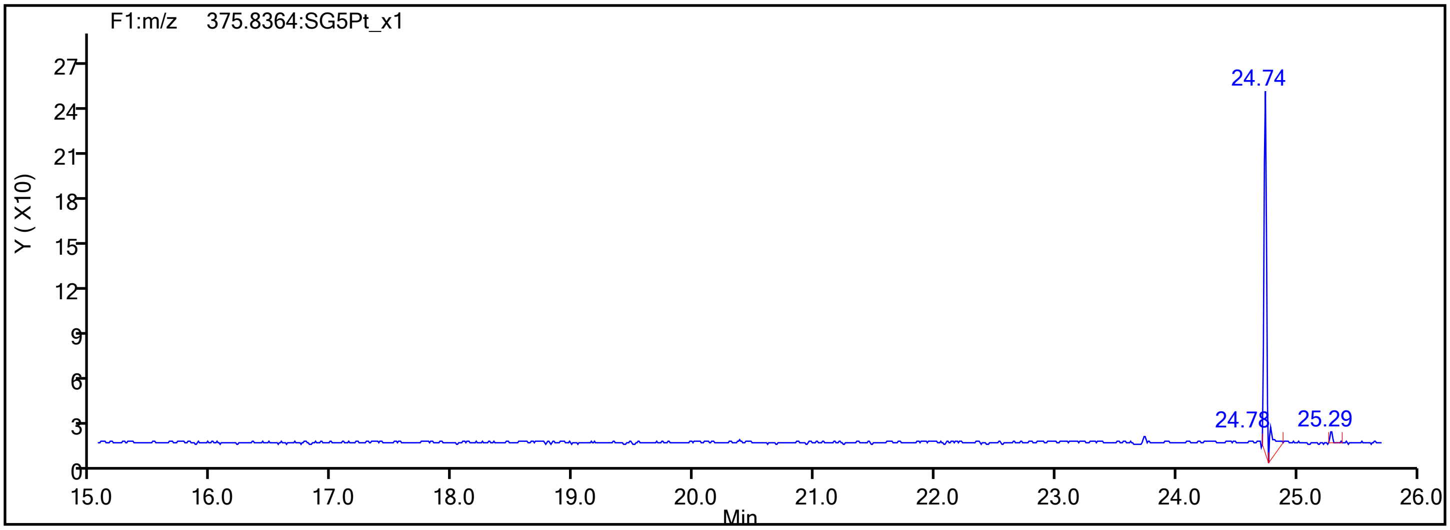

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Injection Date: 03-Jun-2020 18:06:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 8

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

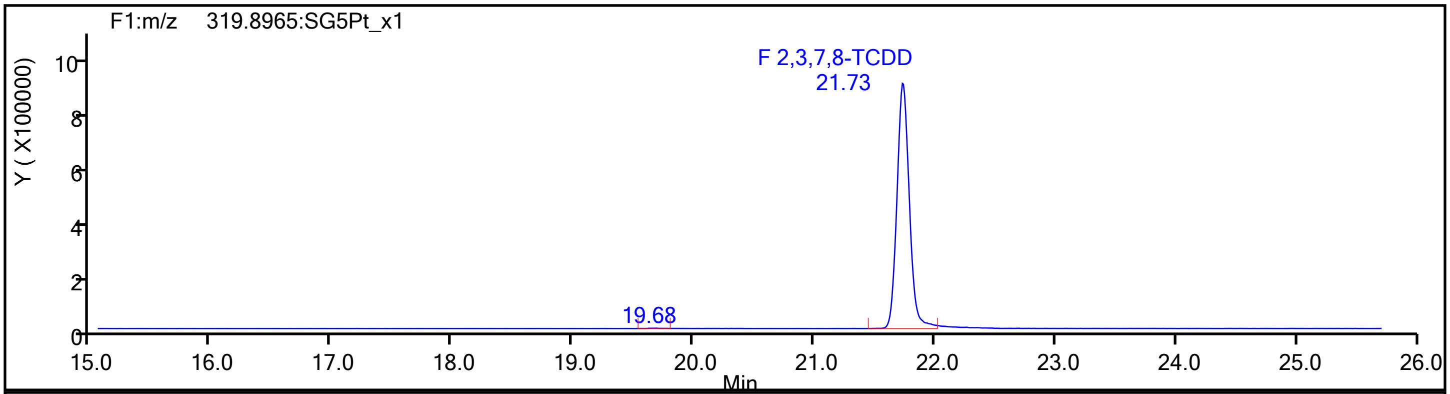

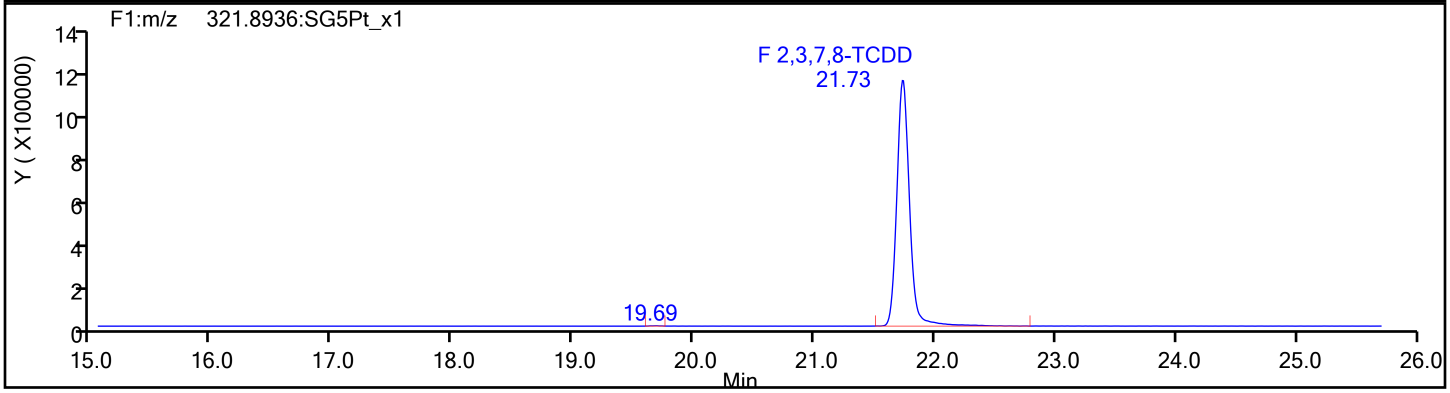

TCDD Standards

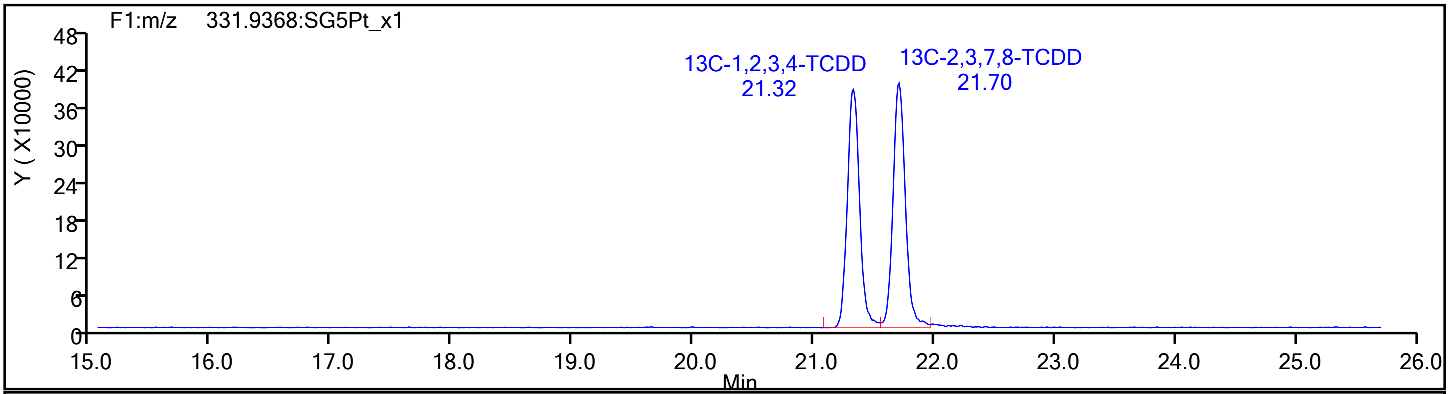

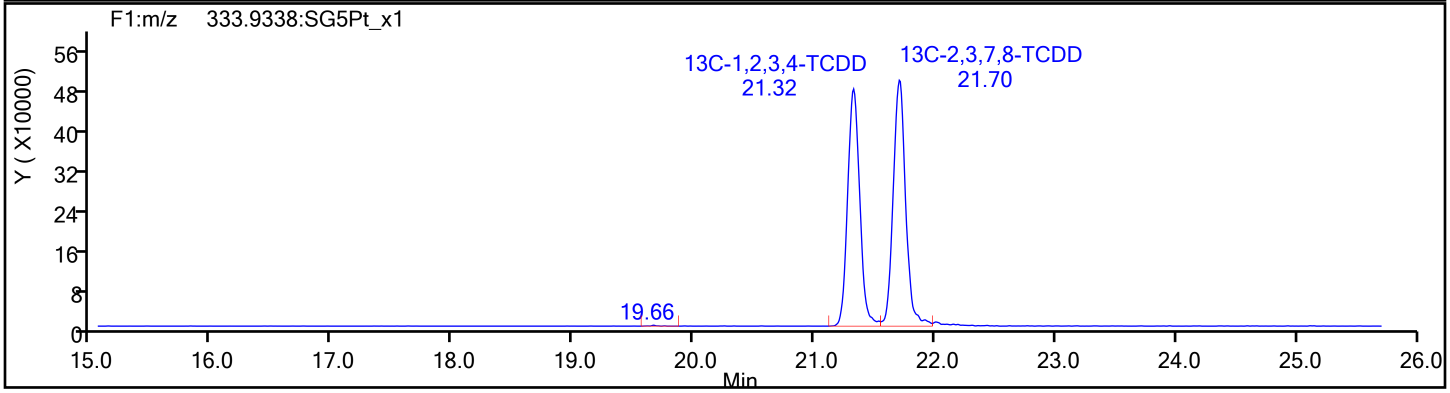

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

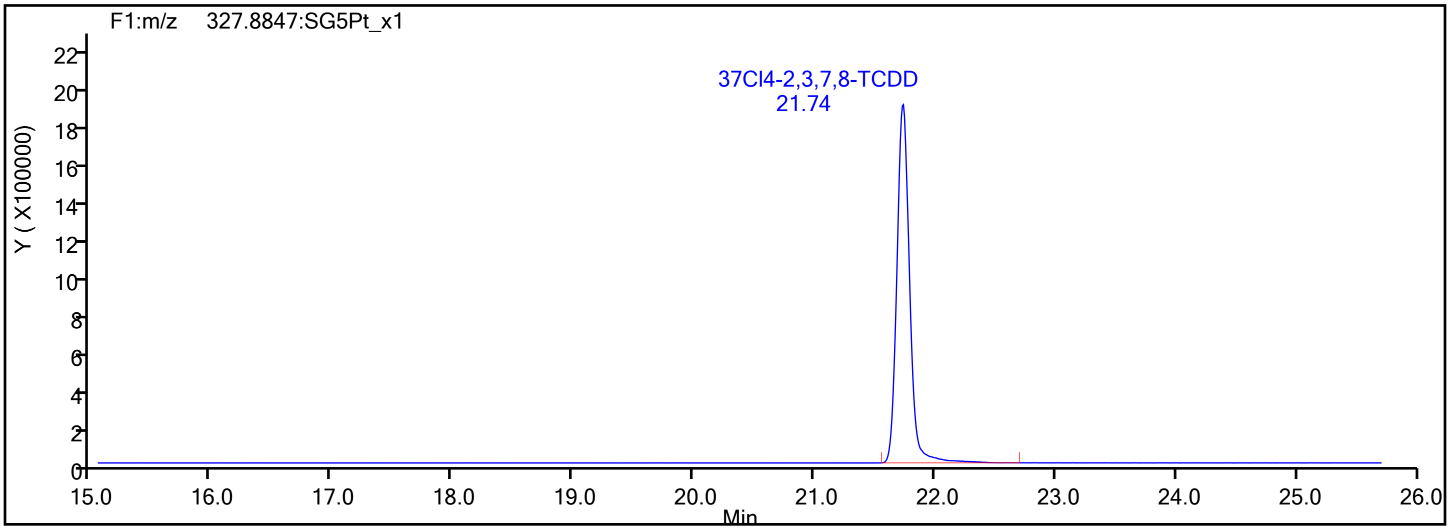

37Cl4-TCDD Standards

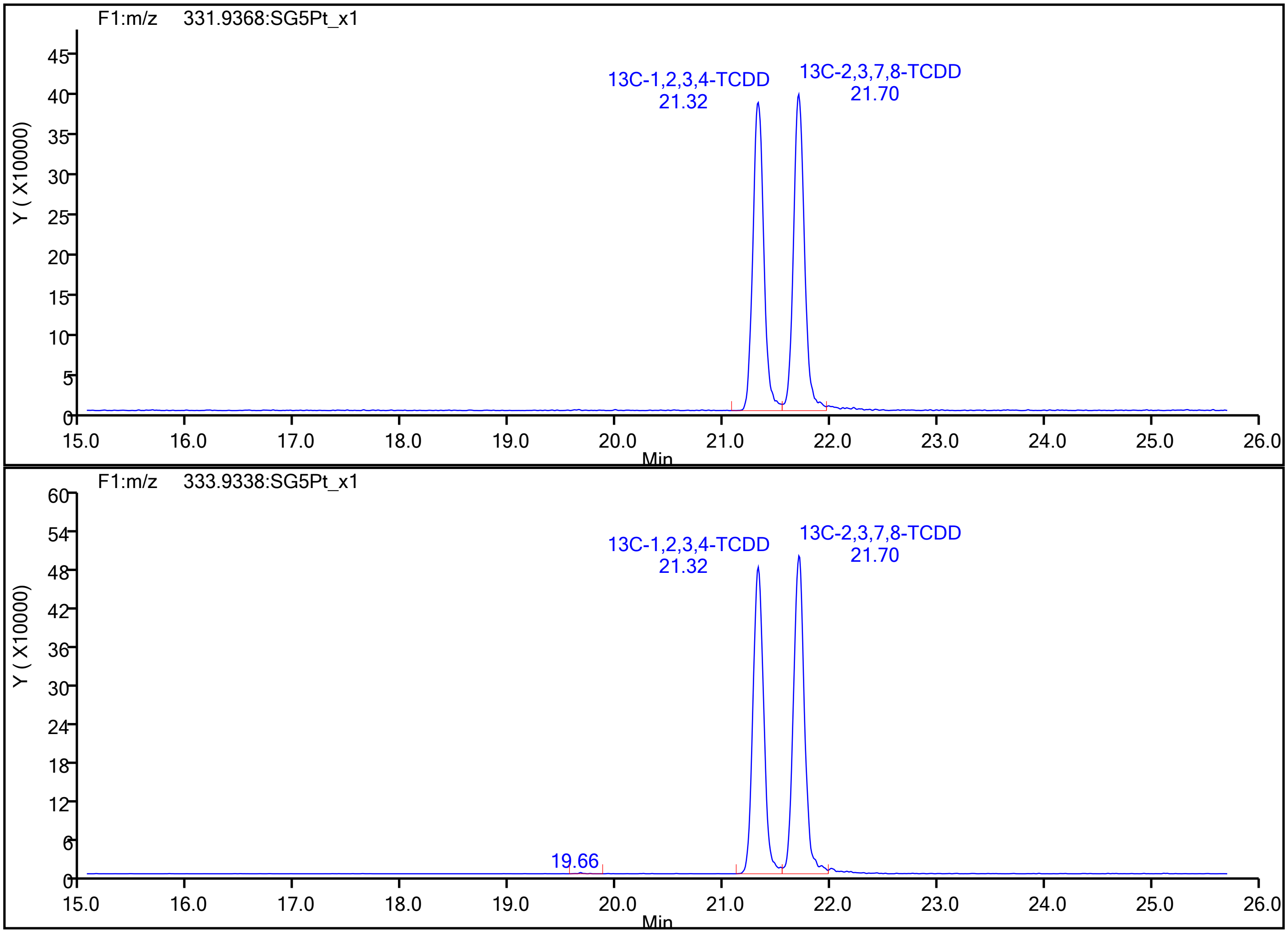

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

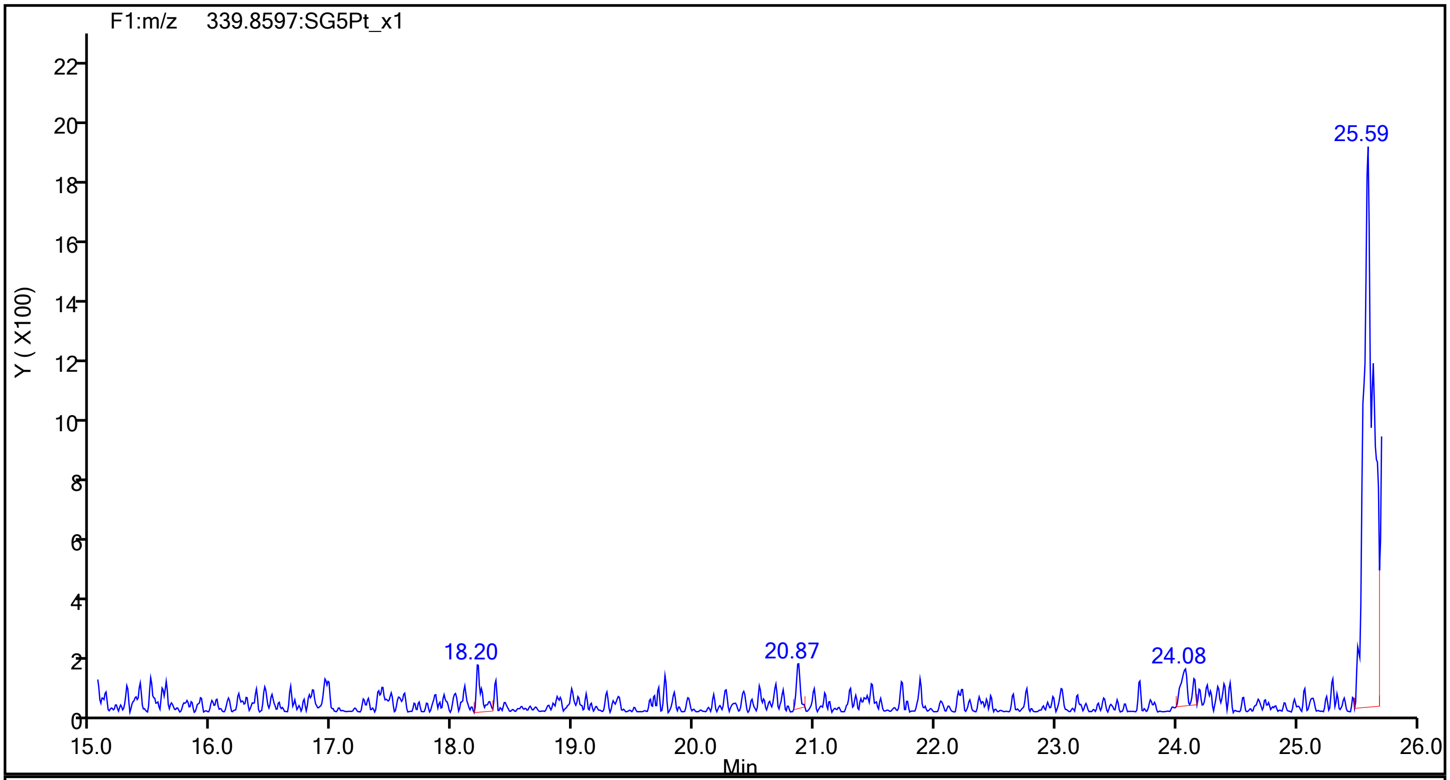

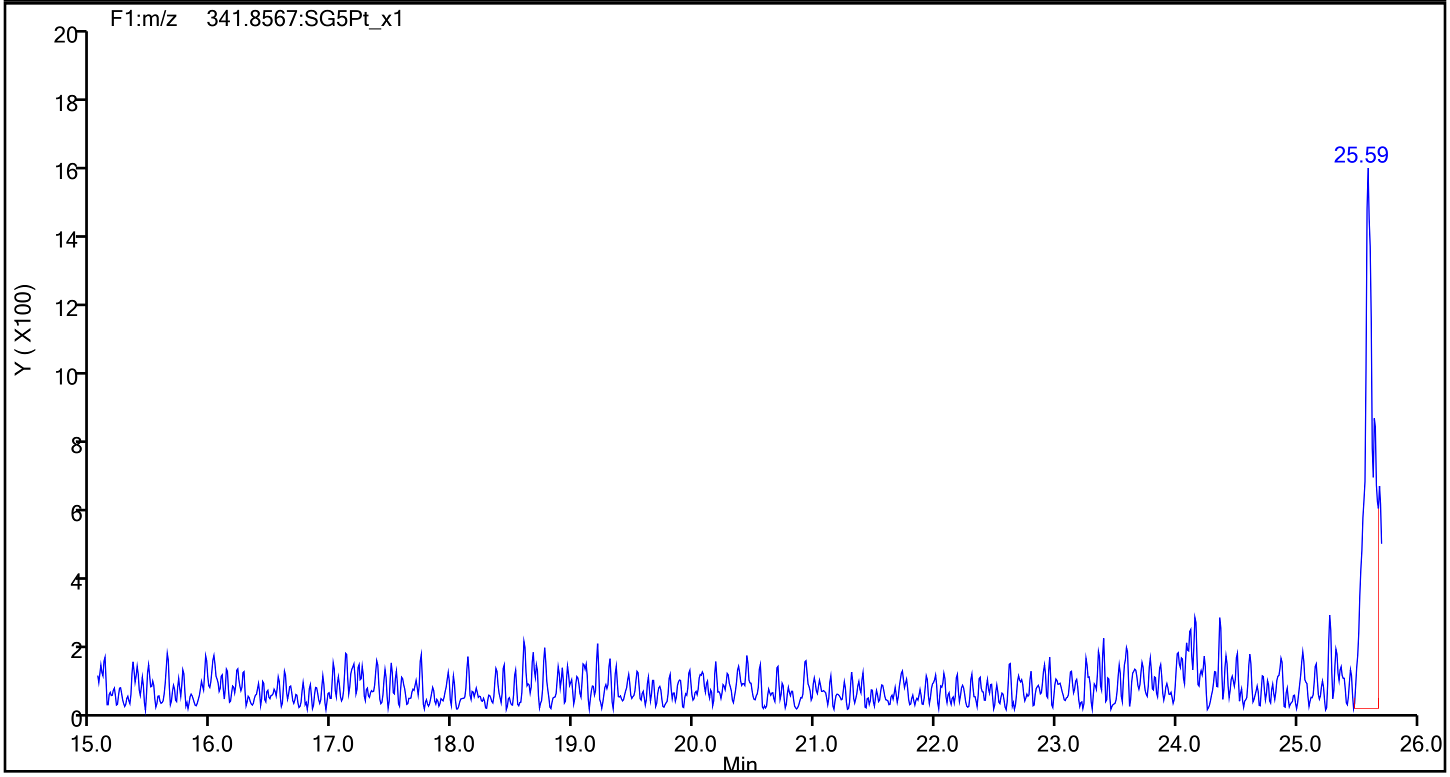

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Worklist#:	383168	Sample Line#:	8
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F1 PeCDFs

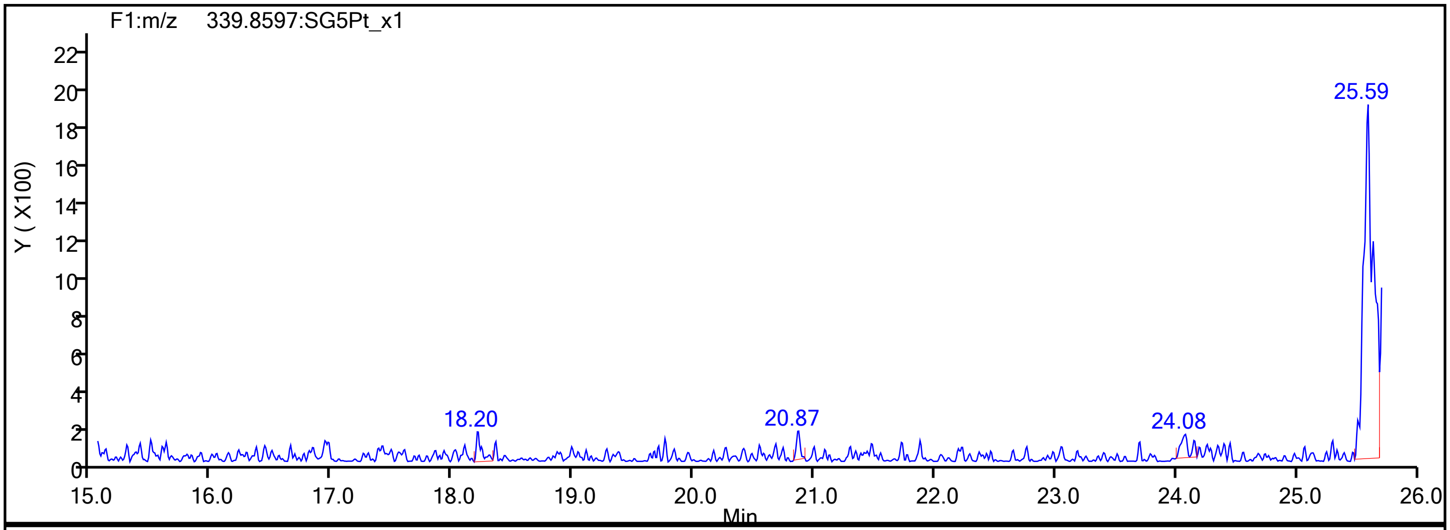

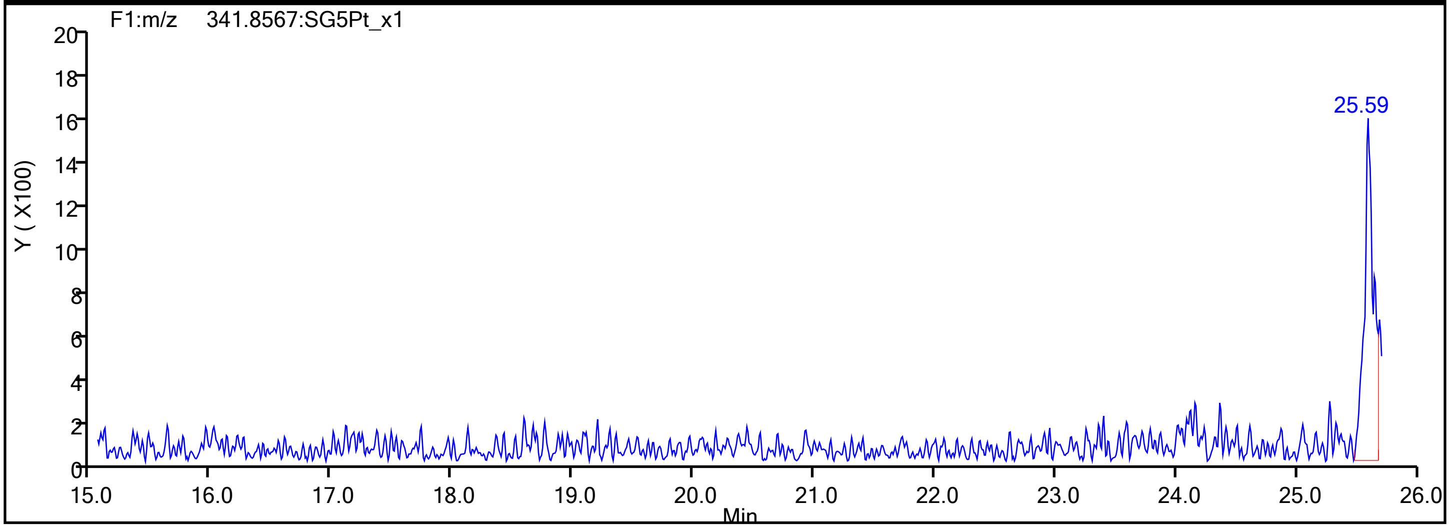

F1 PeCDFs Interference Mass

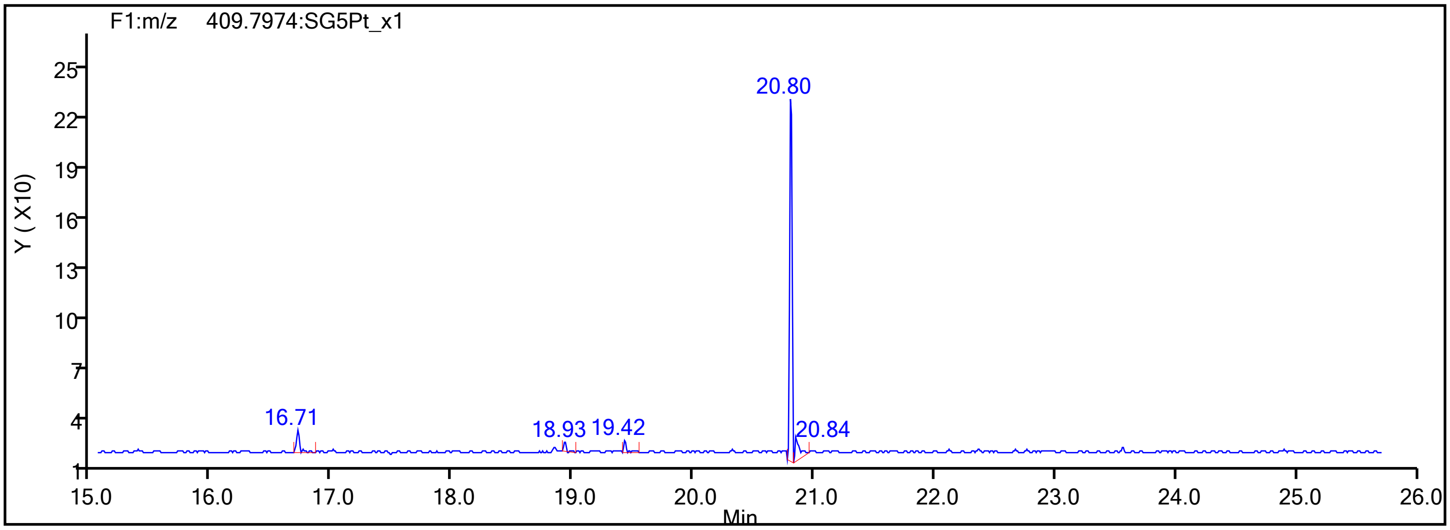

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Eurofins TestAmerica, Sacramento

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PeCDF

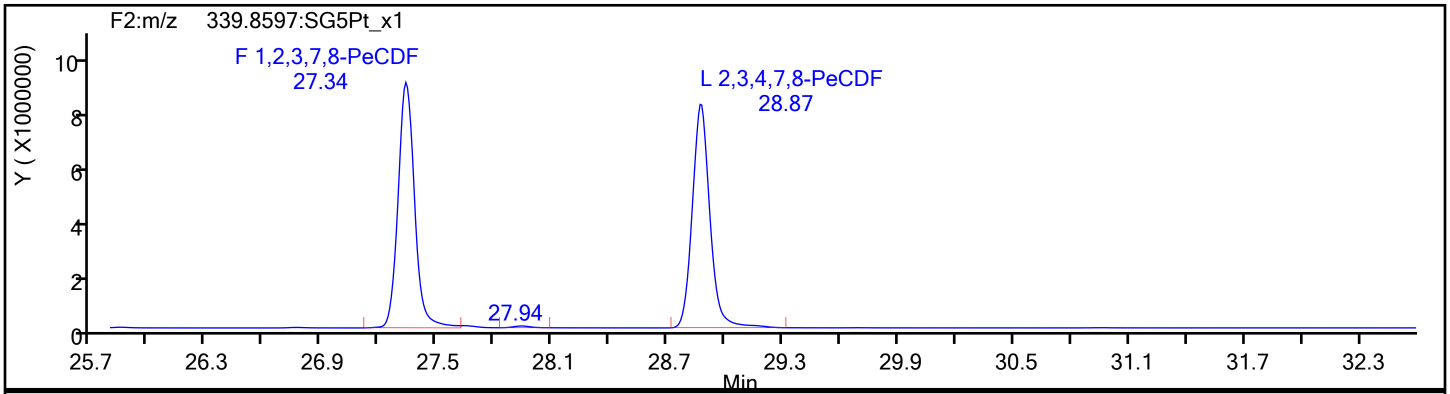

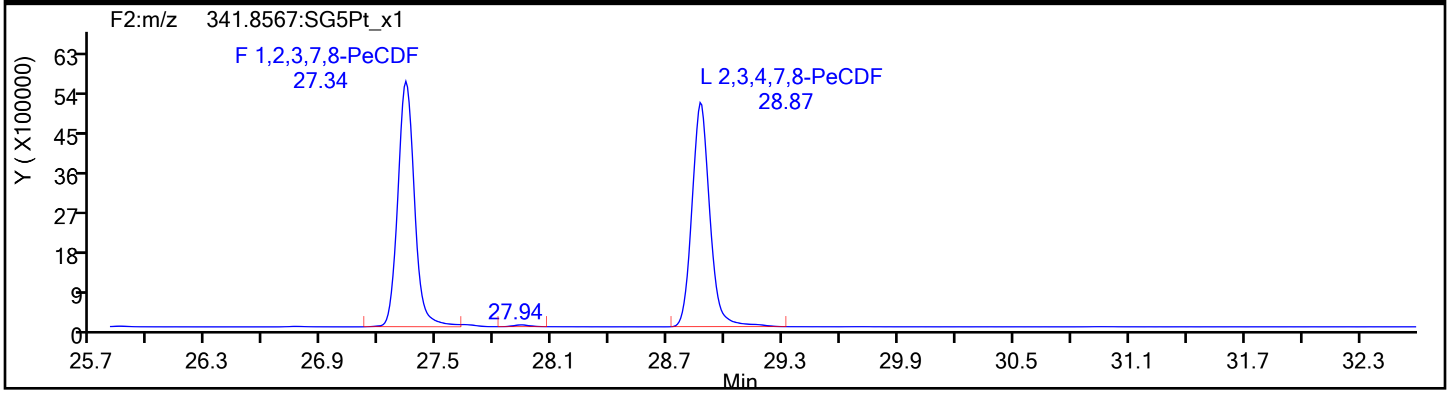

PeCDF Standards

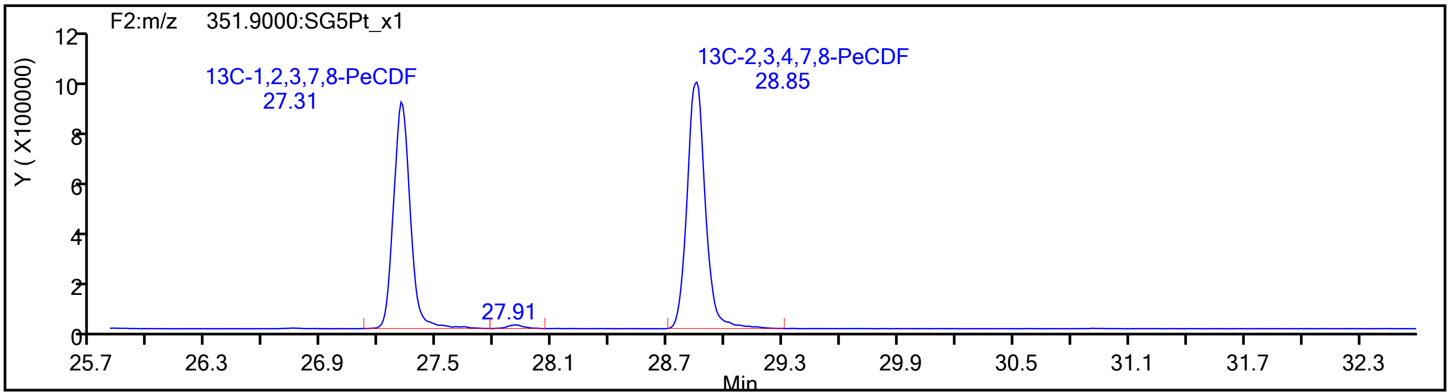

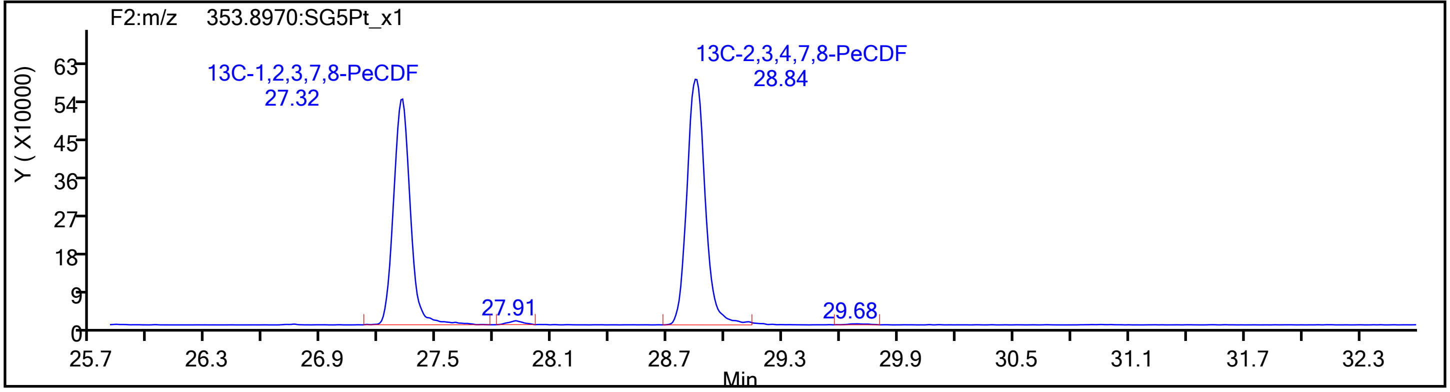

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDF

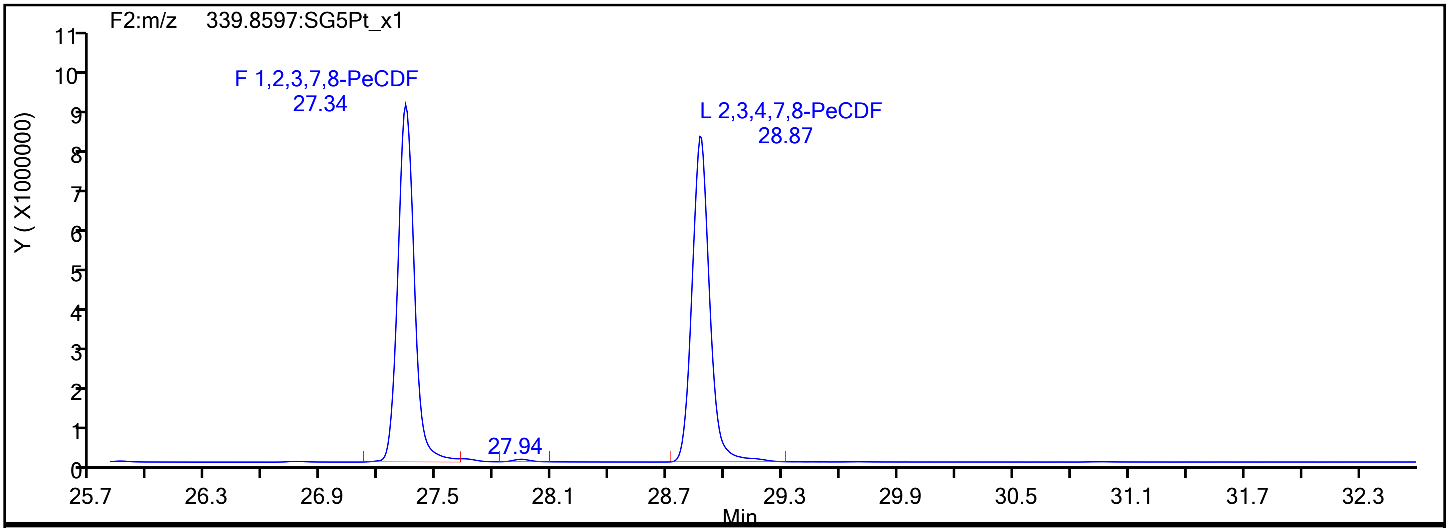

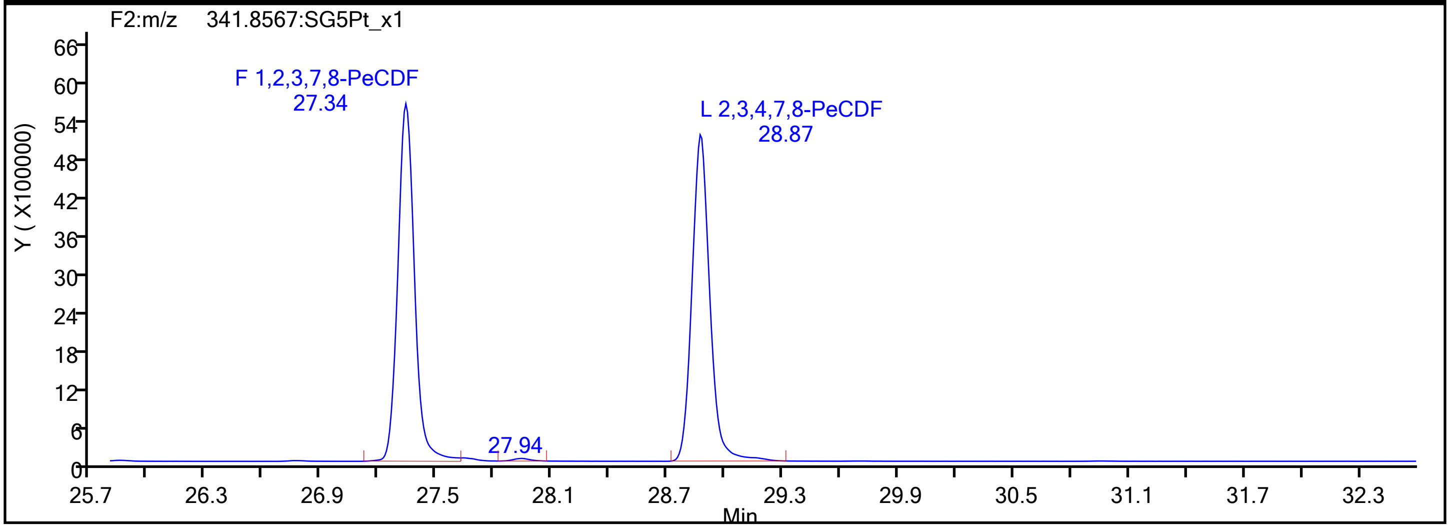

PeCDF Interference Mass

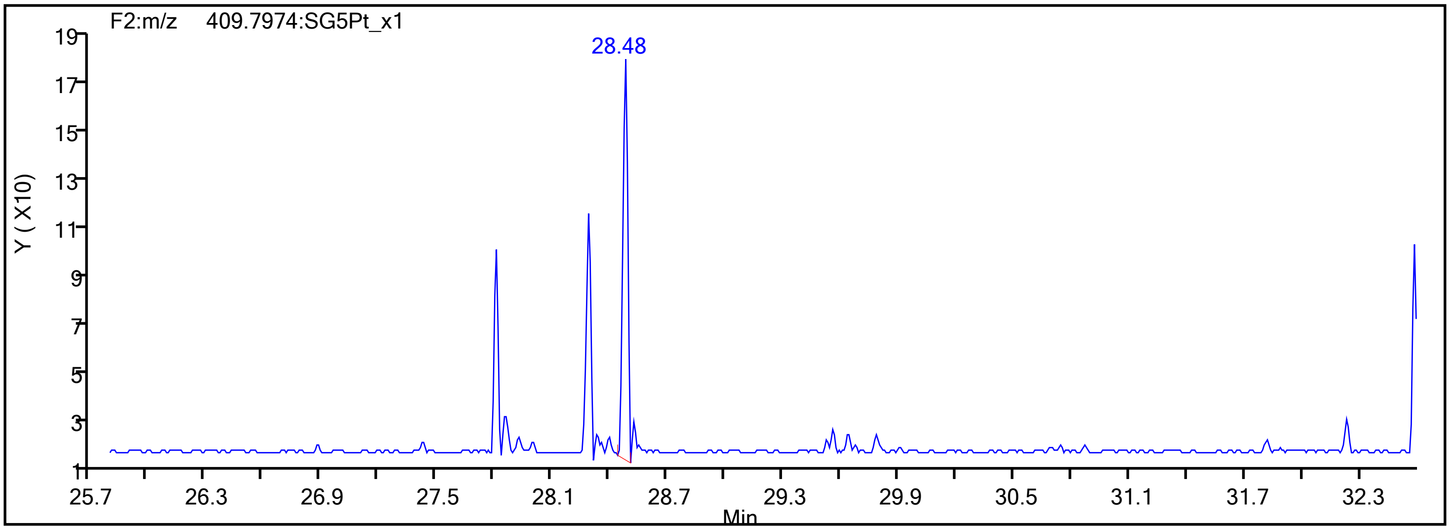

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Eurofins TestAmerica, Sacramento

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PeCDD

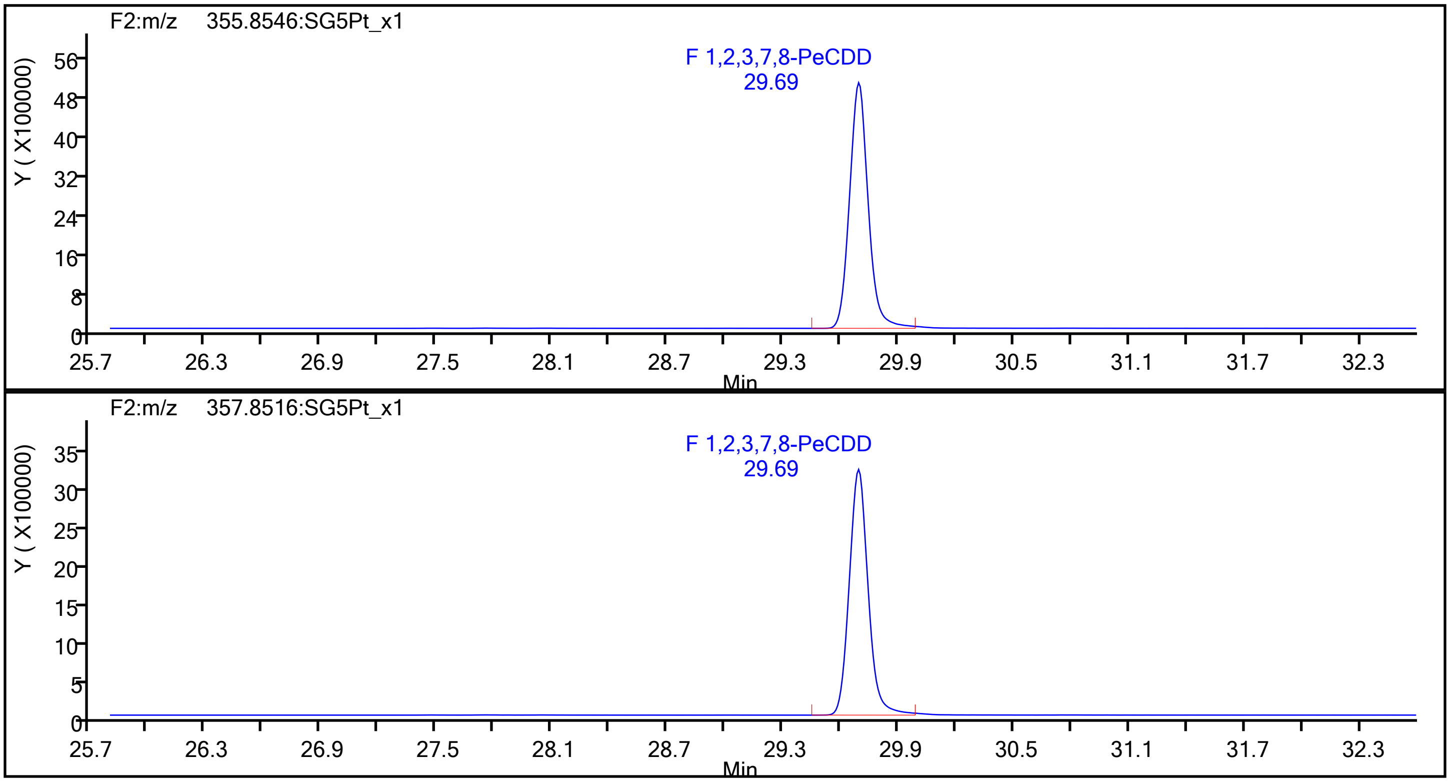

PeCDD Standards

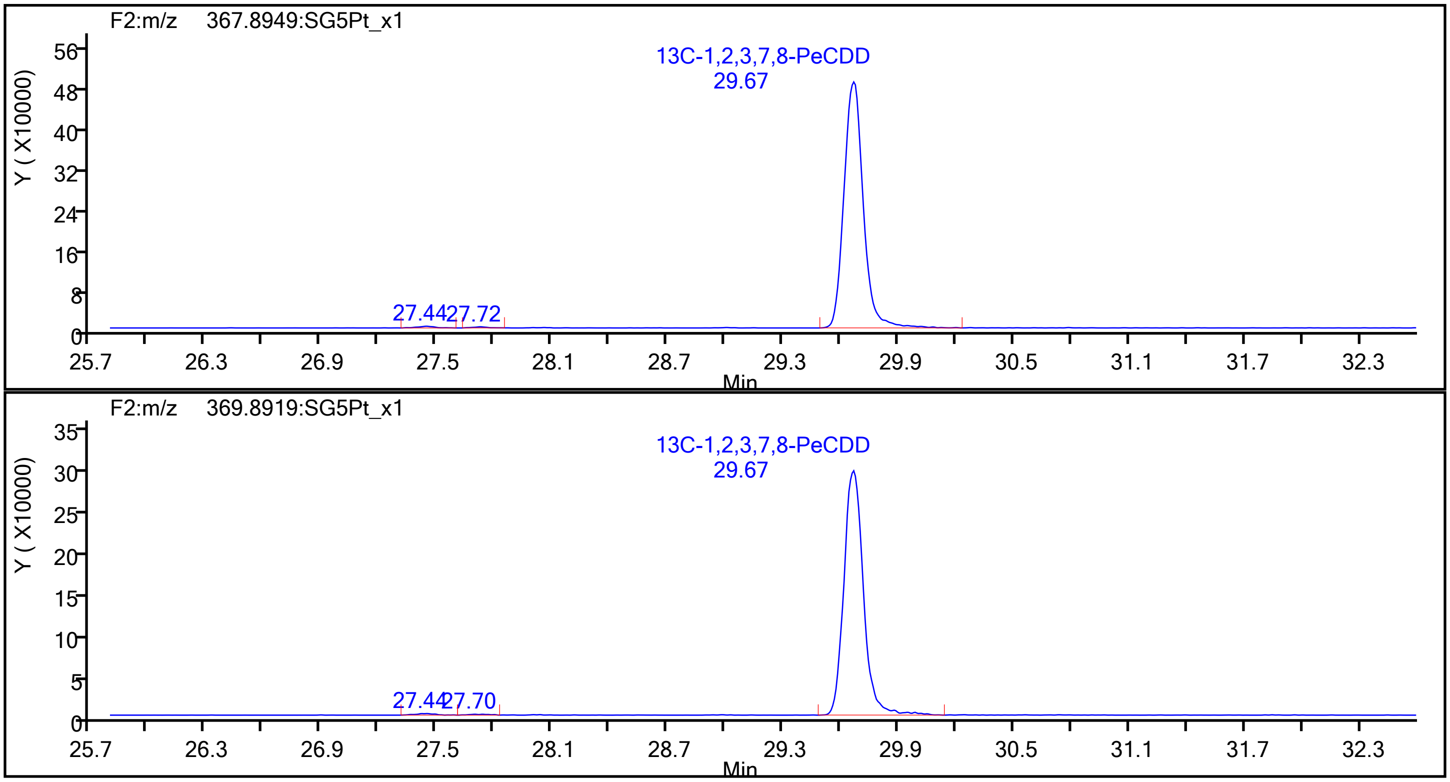

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Eurofins TestAmerica, Sacramento

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HxCDF

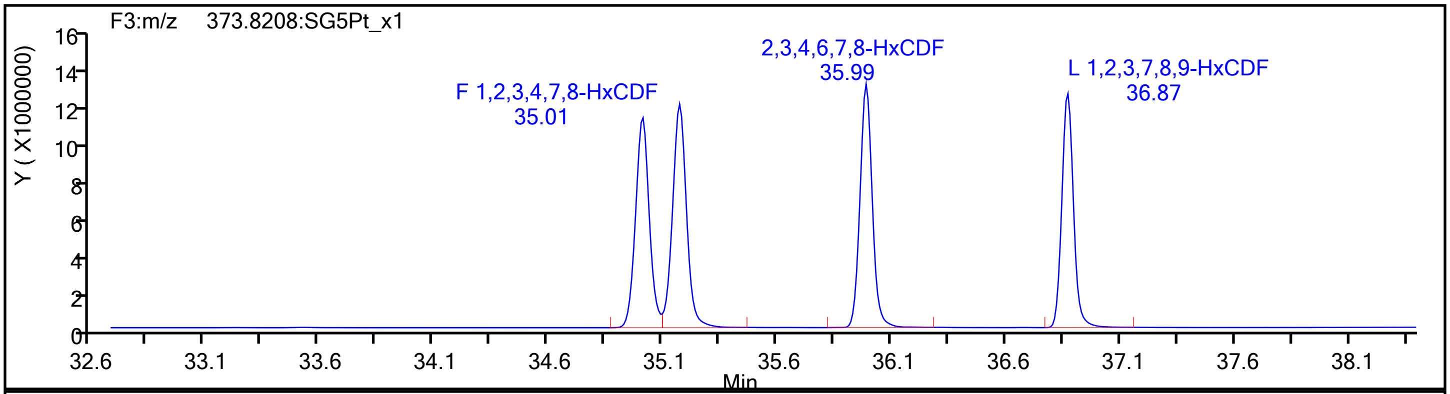

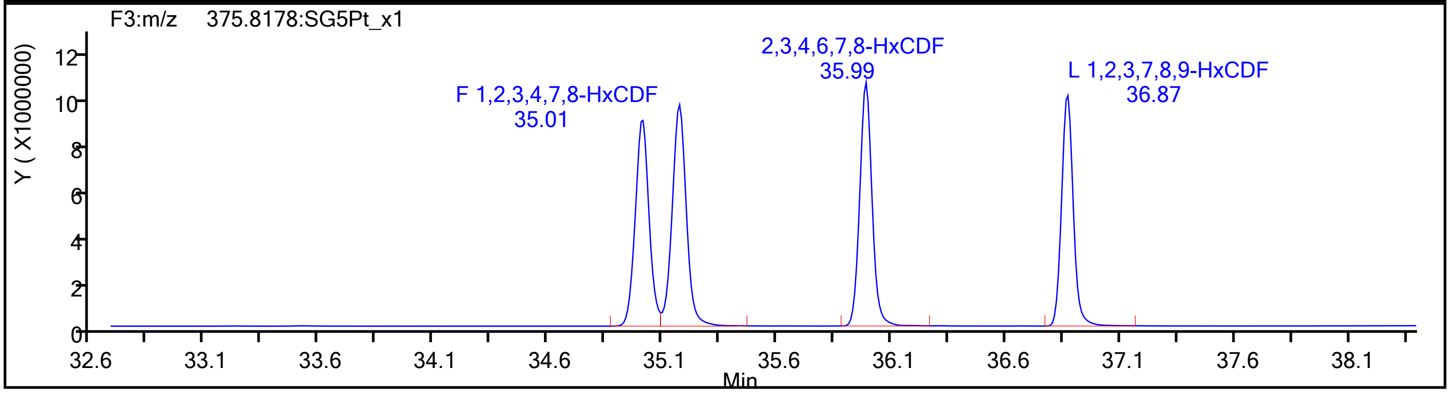

HxCDF Standards

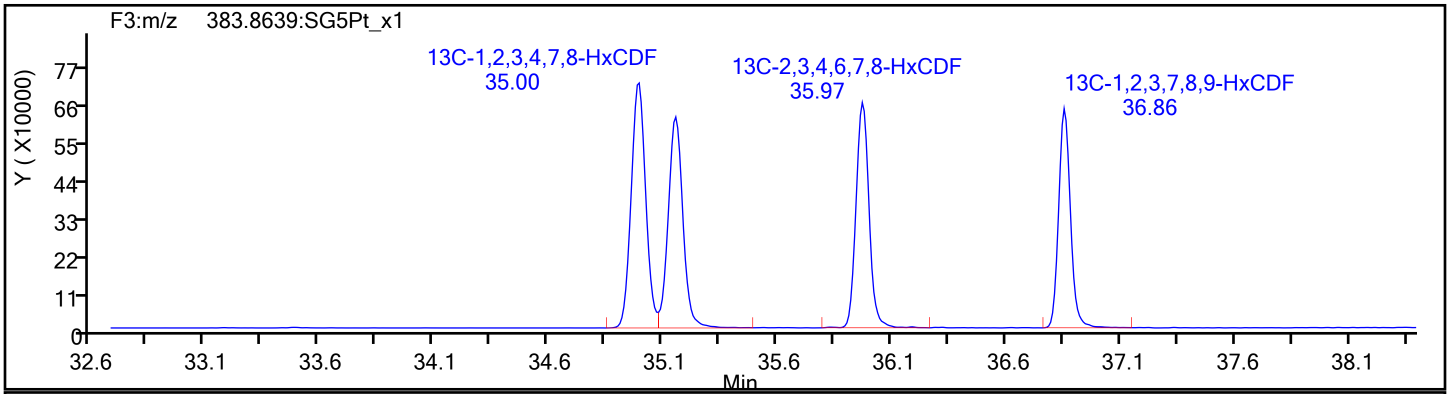

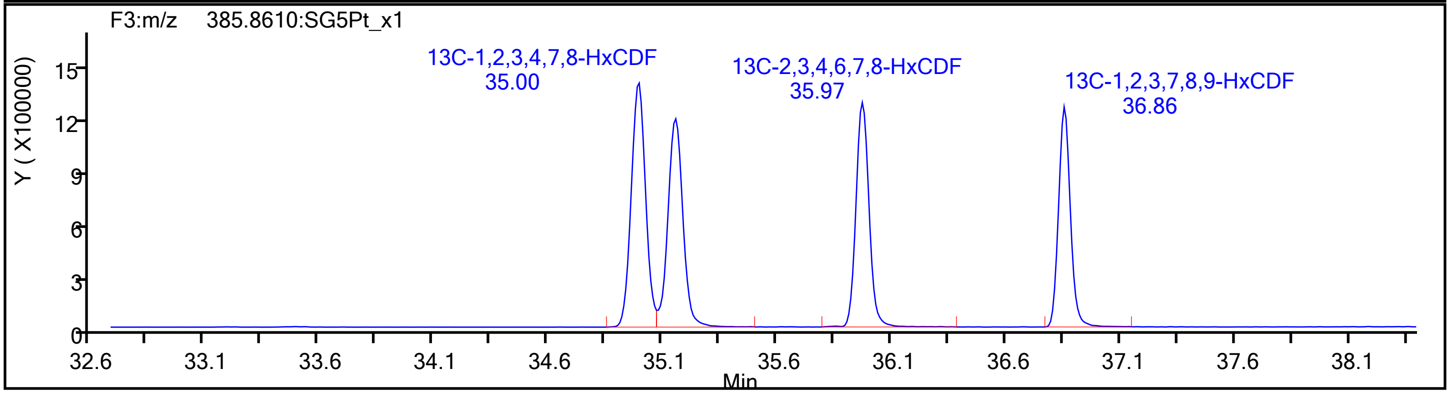

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Eurofins TestAmerica, Sacramento

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HxCDF

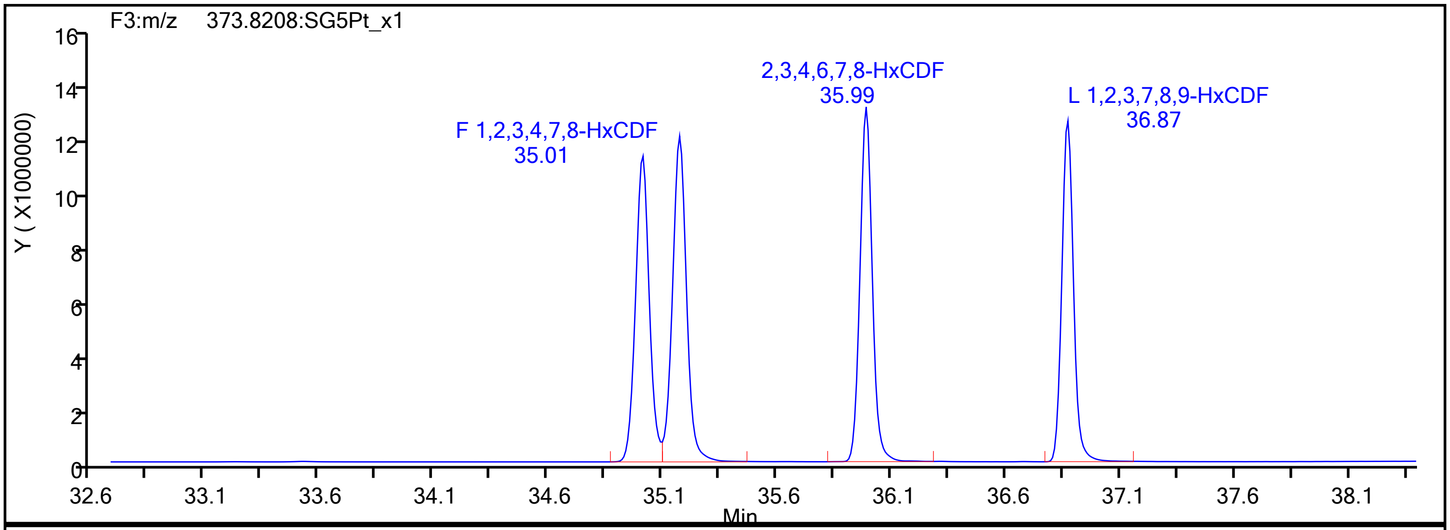

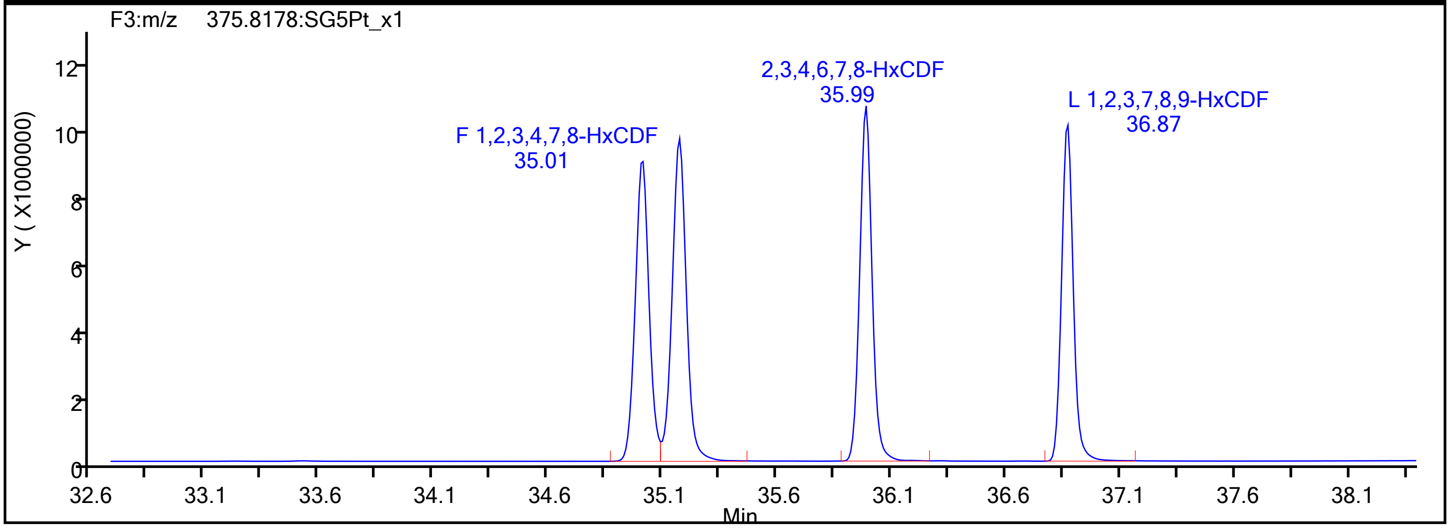

HxCDF Interference Mass

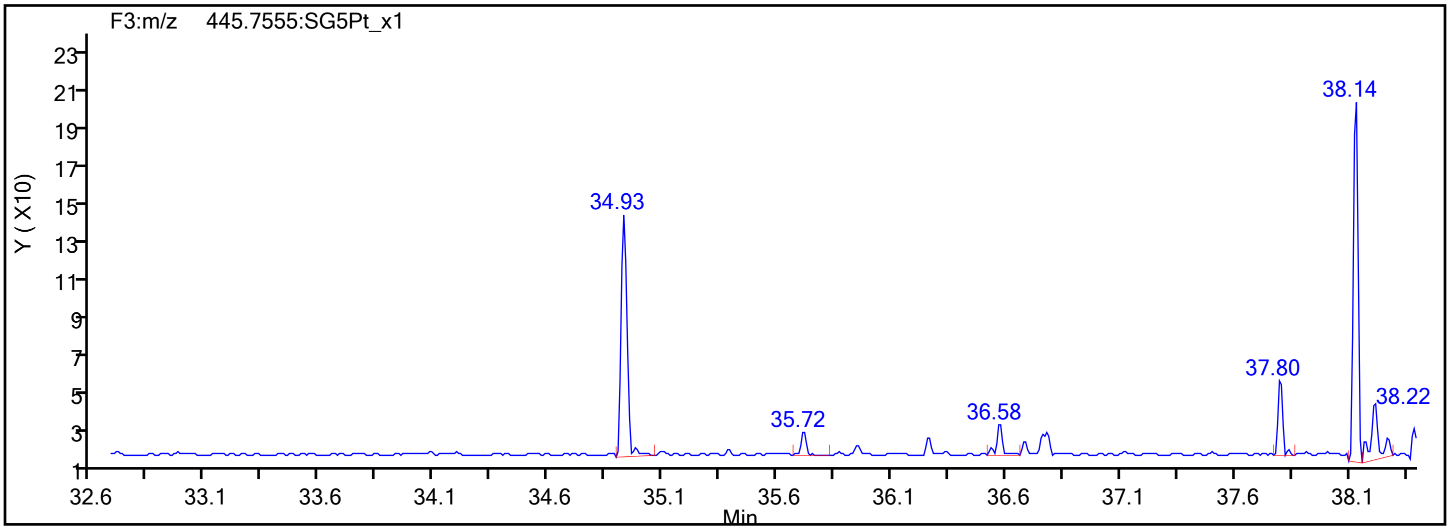

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Eurofins TestAmerica, Sacramento

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HxCDD

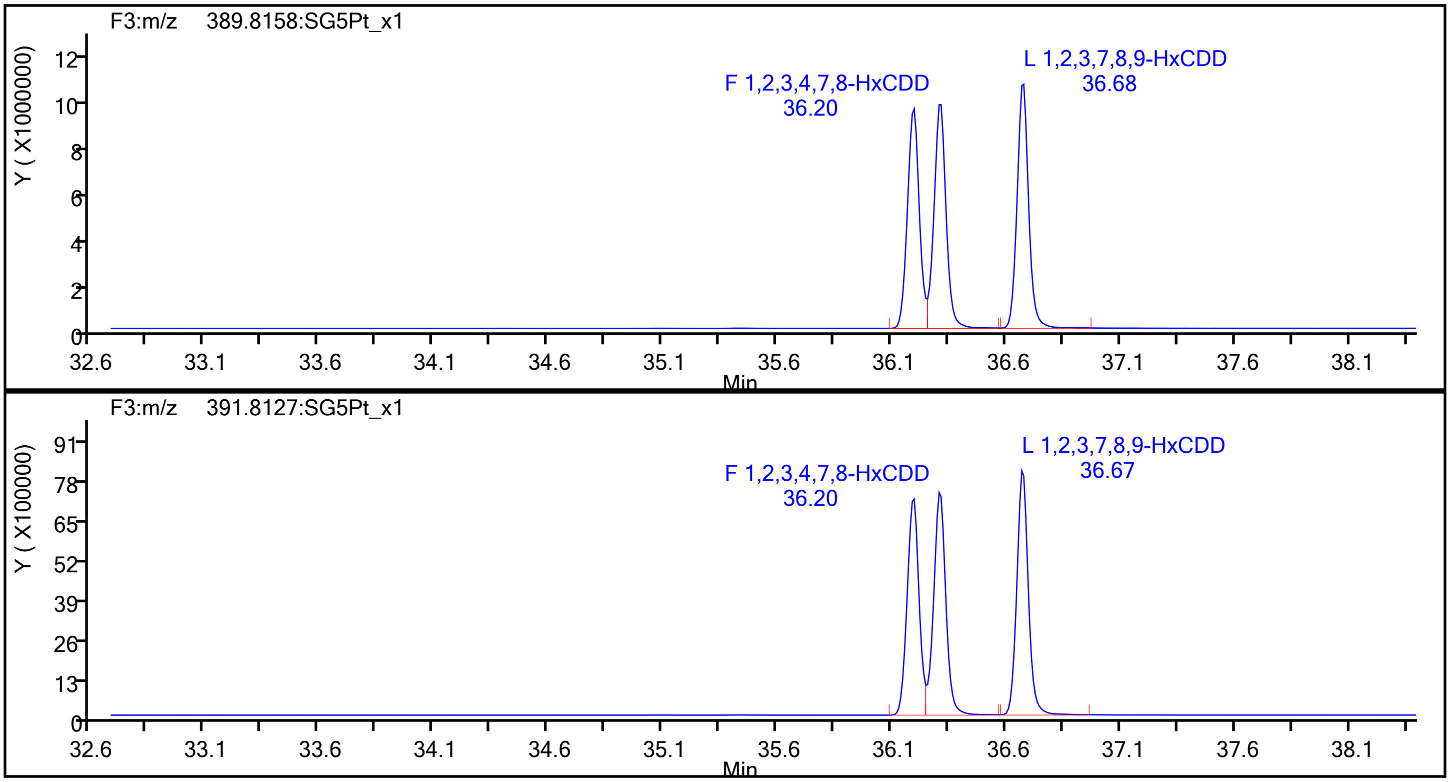

HxCDD Standards

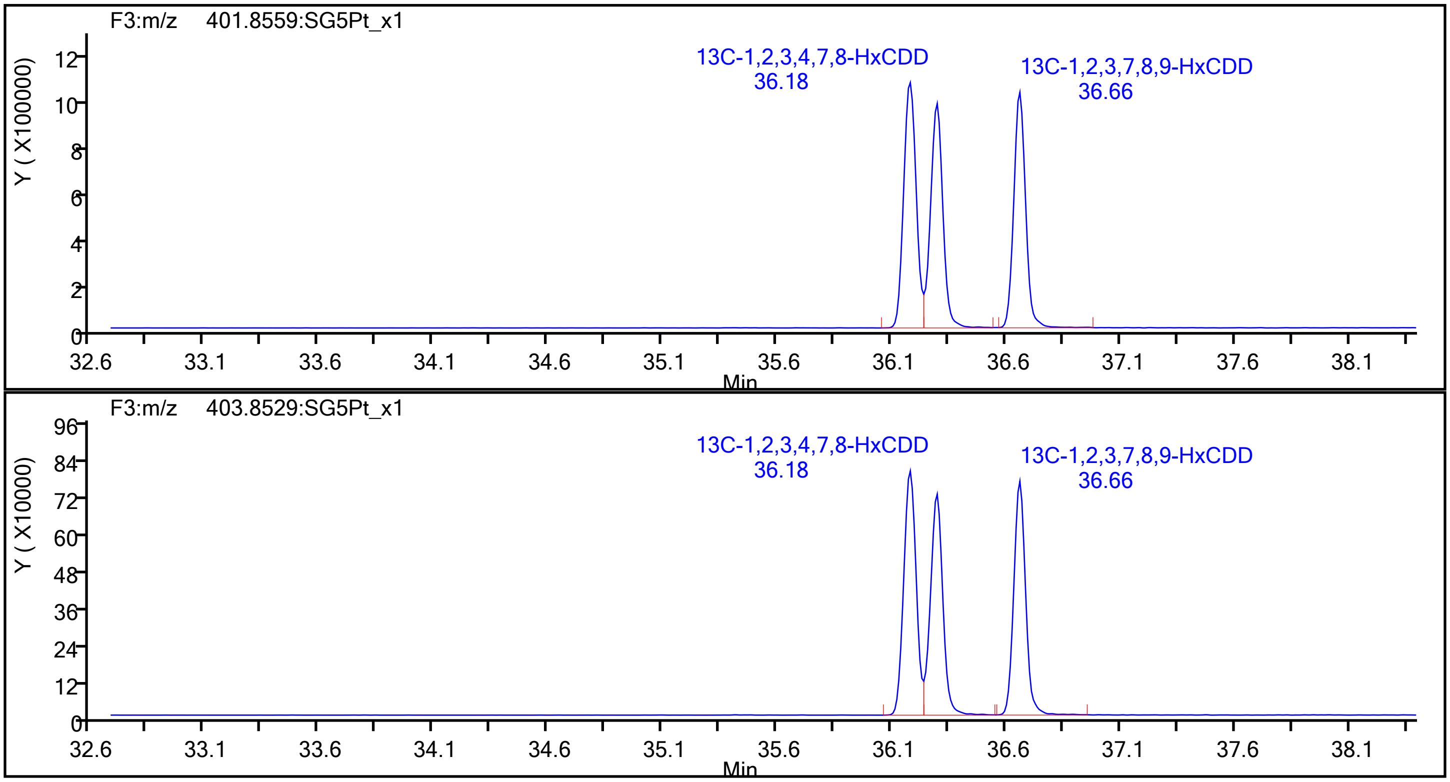

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Eurofins TestAmerica, Sacramento

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HpCDF

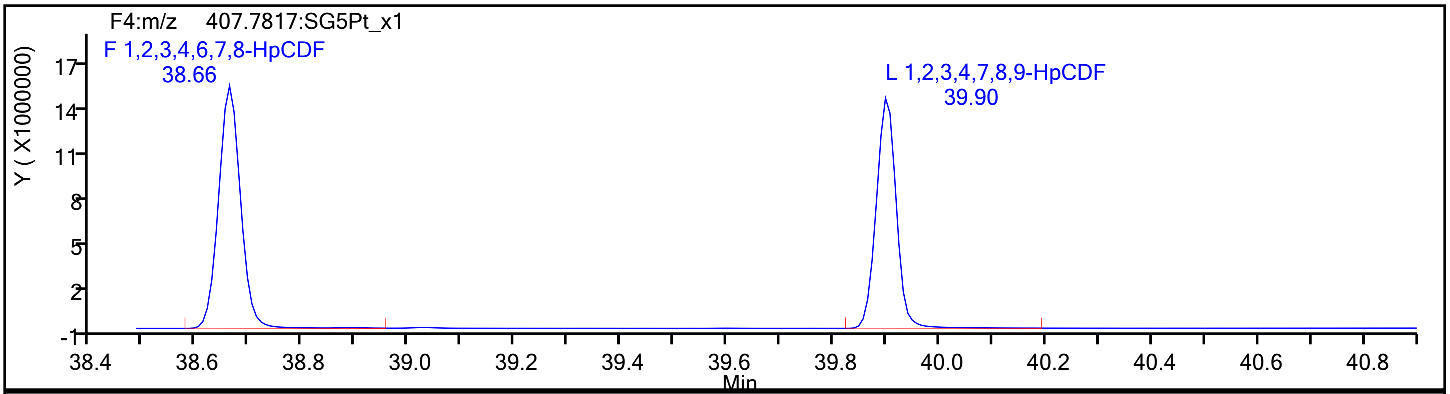

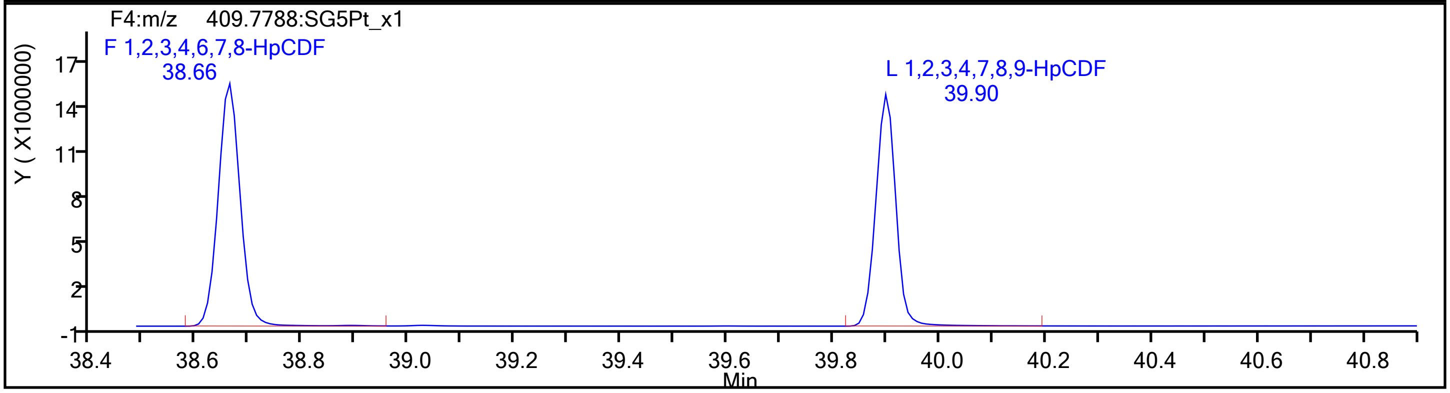

HpCDF Standards

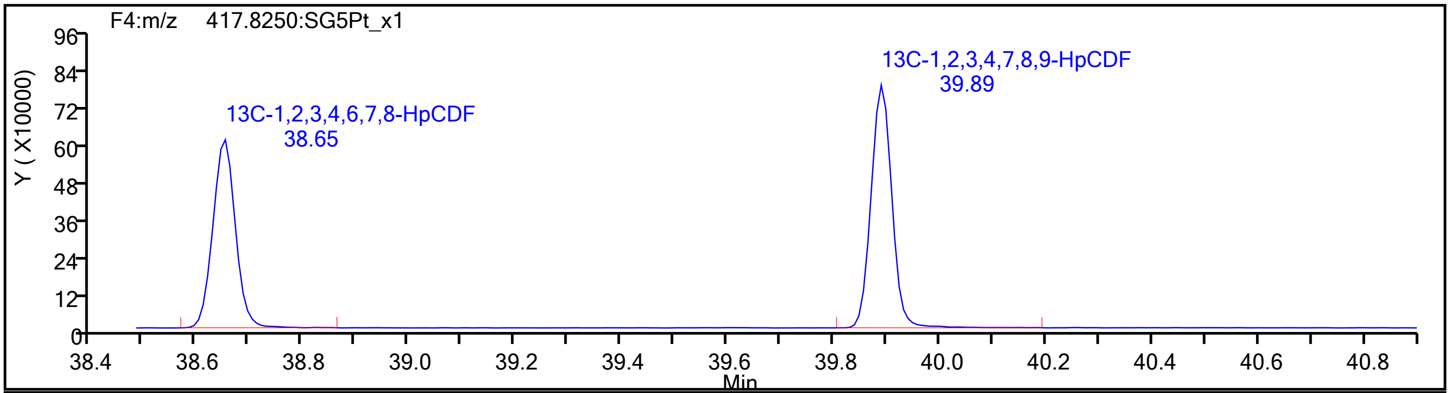

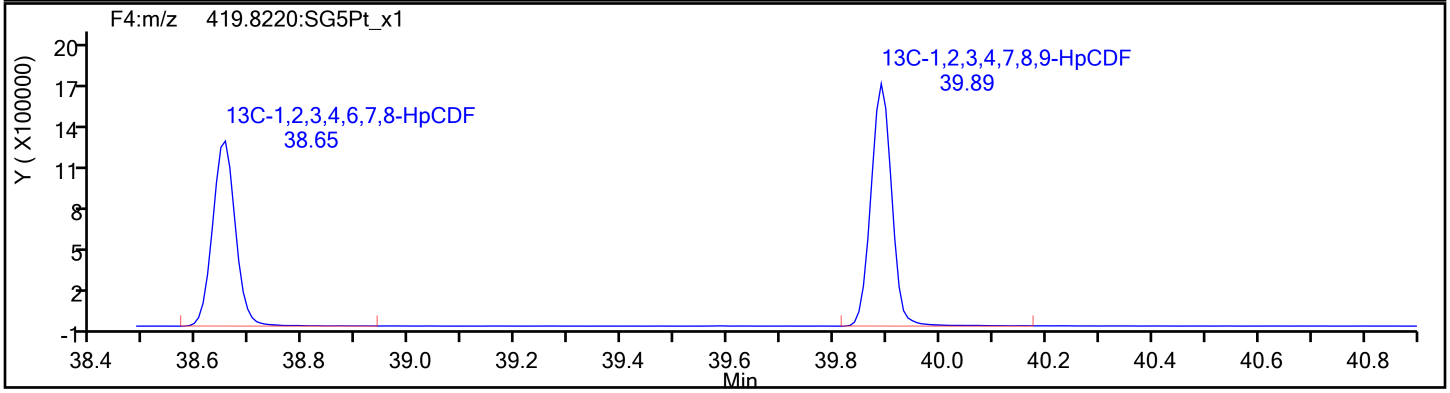

Eurofins TestAmerica, Sacramento

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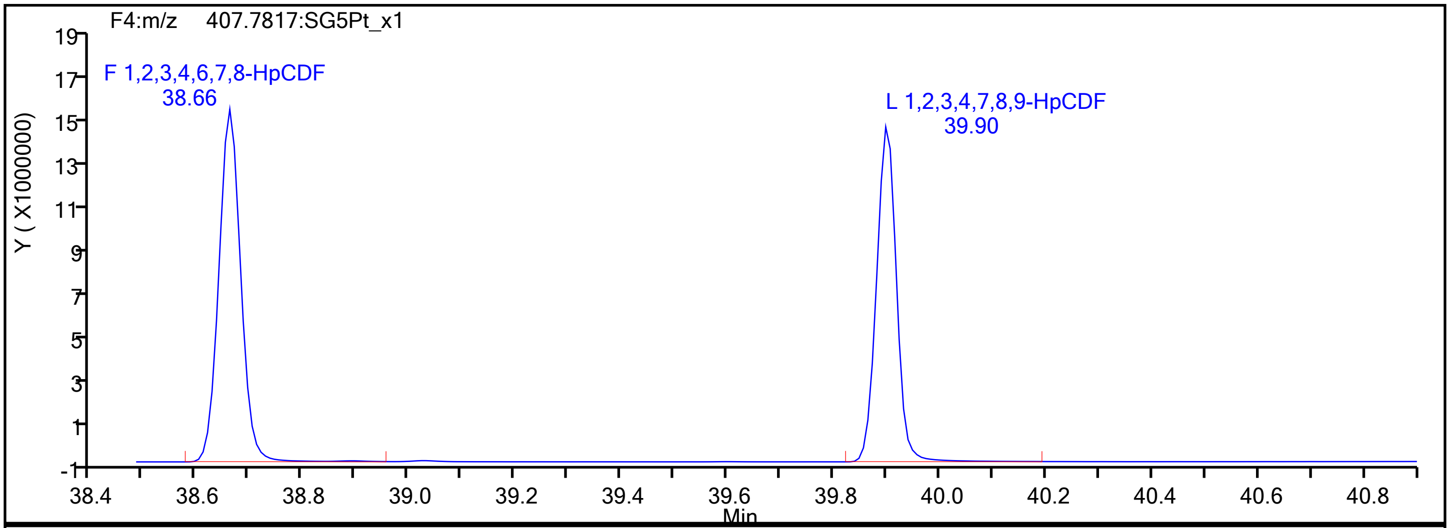

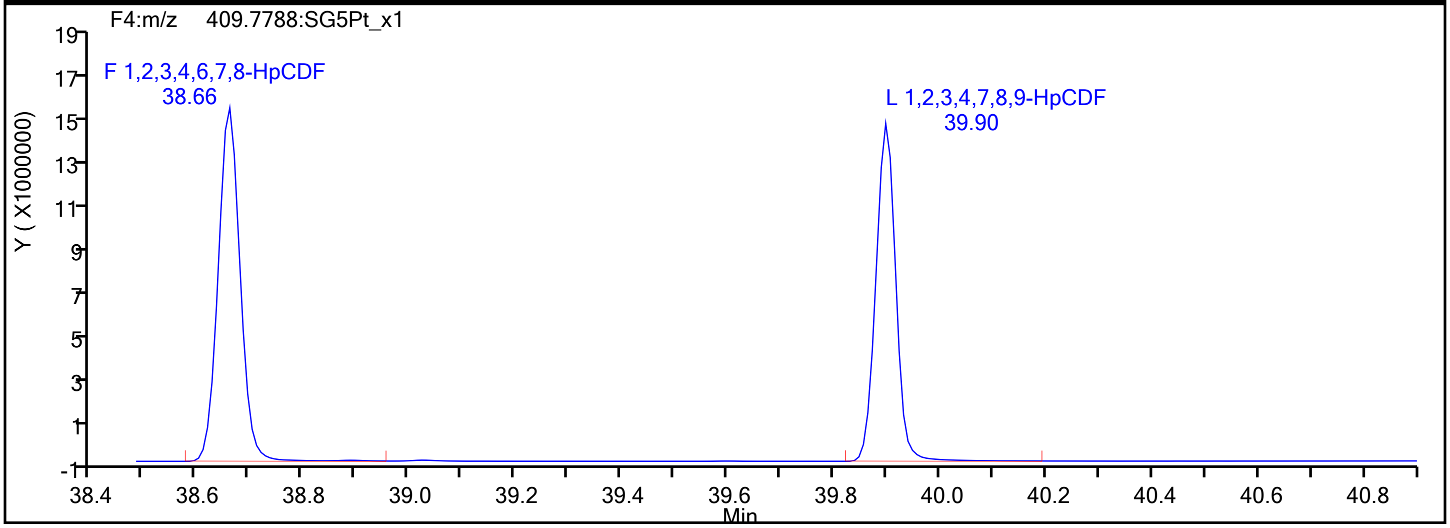

HpCDF Interference Mass

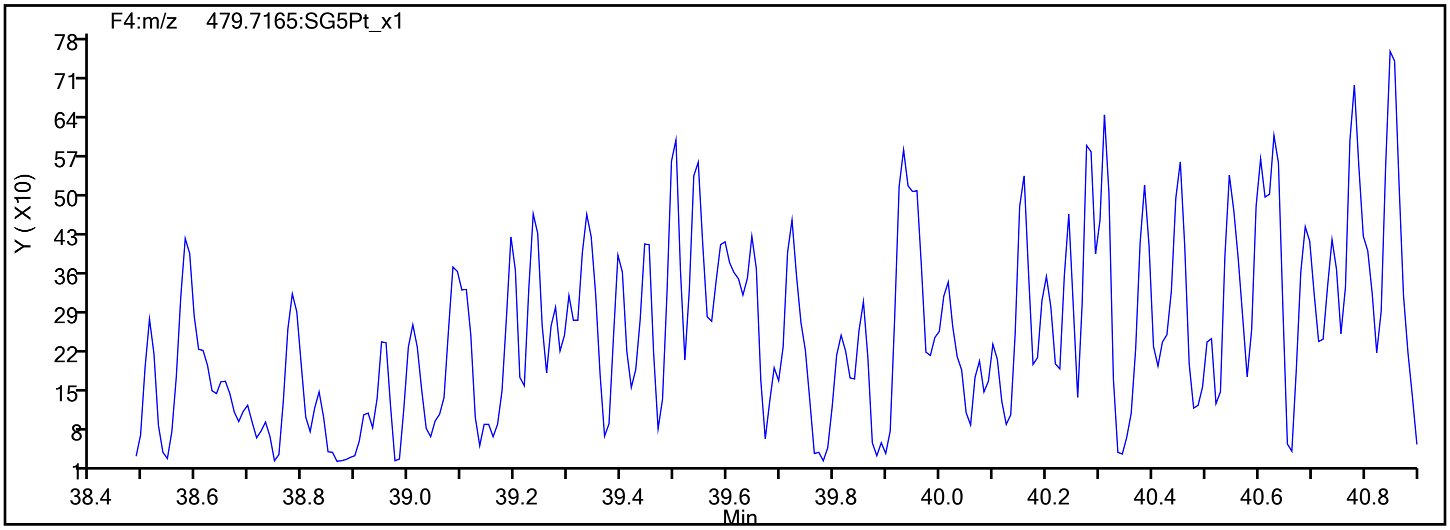

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Injection Date: 03-Jun-2020 18:06:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
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HpCDD

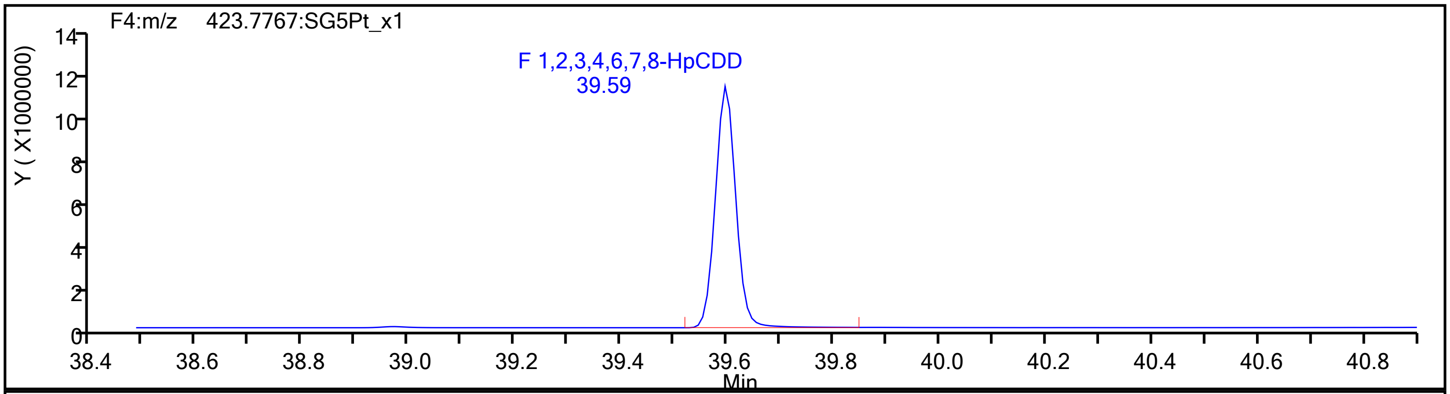

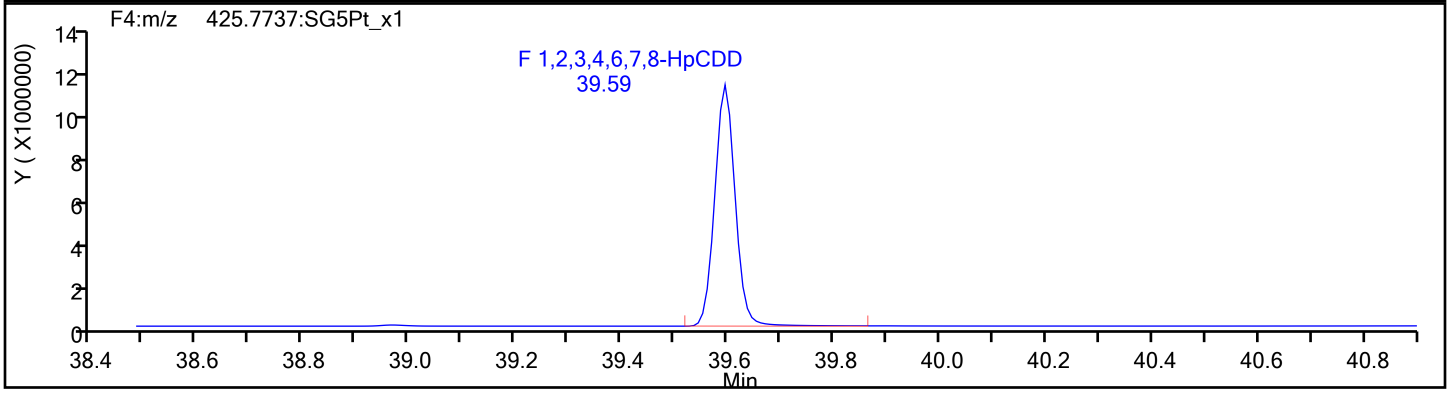

HpCDD Standards

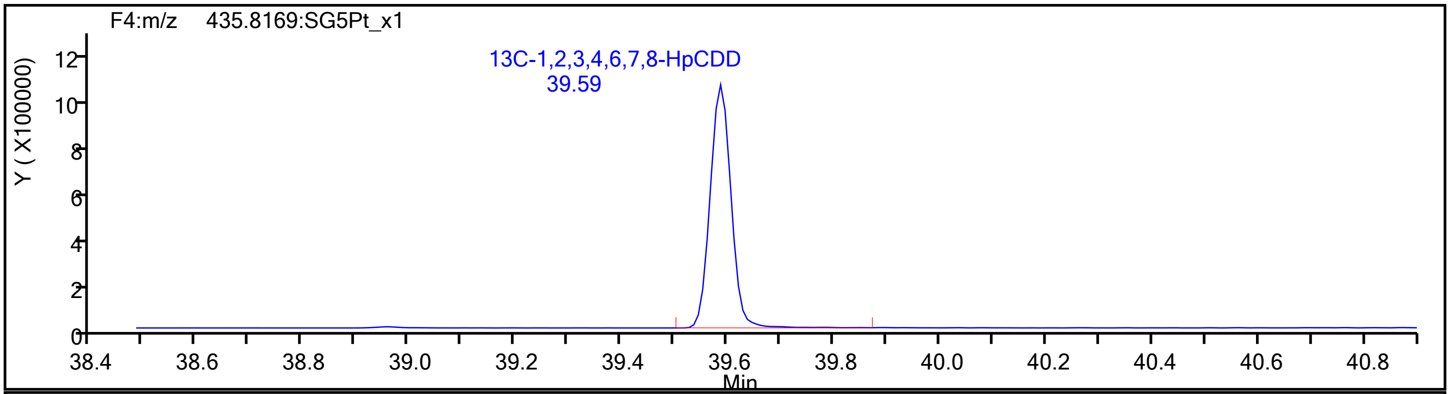

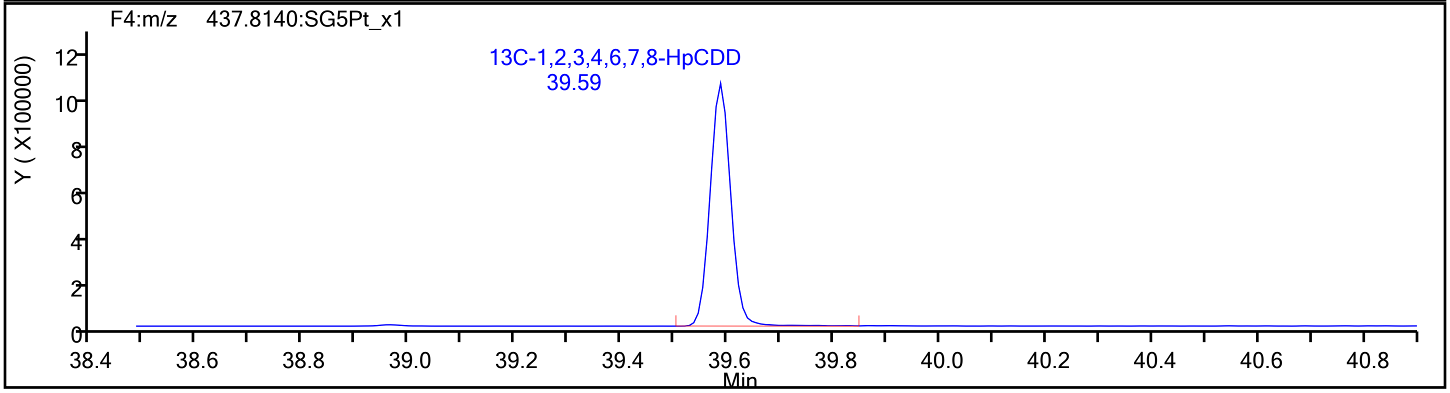

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

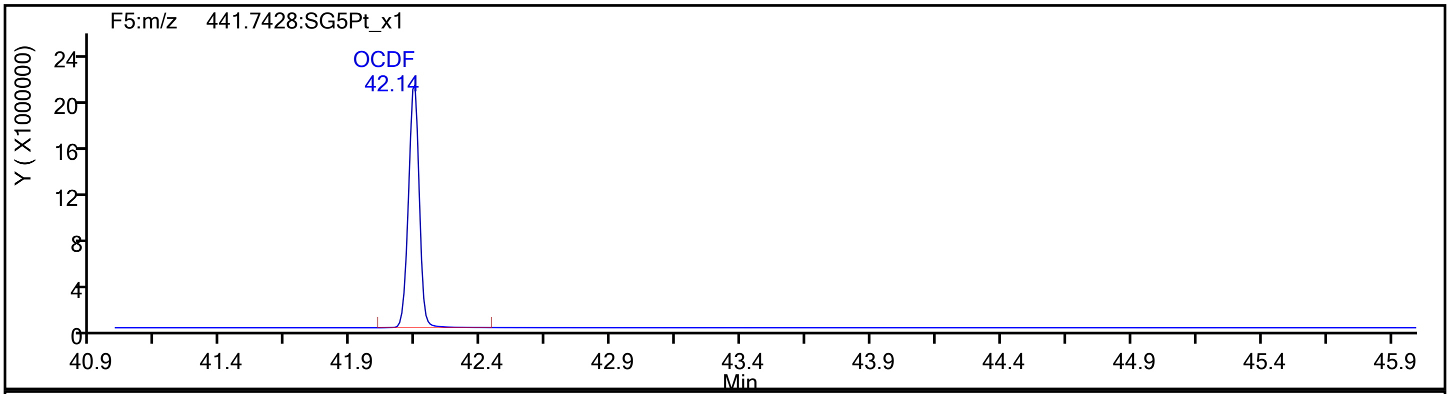

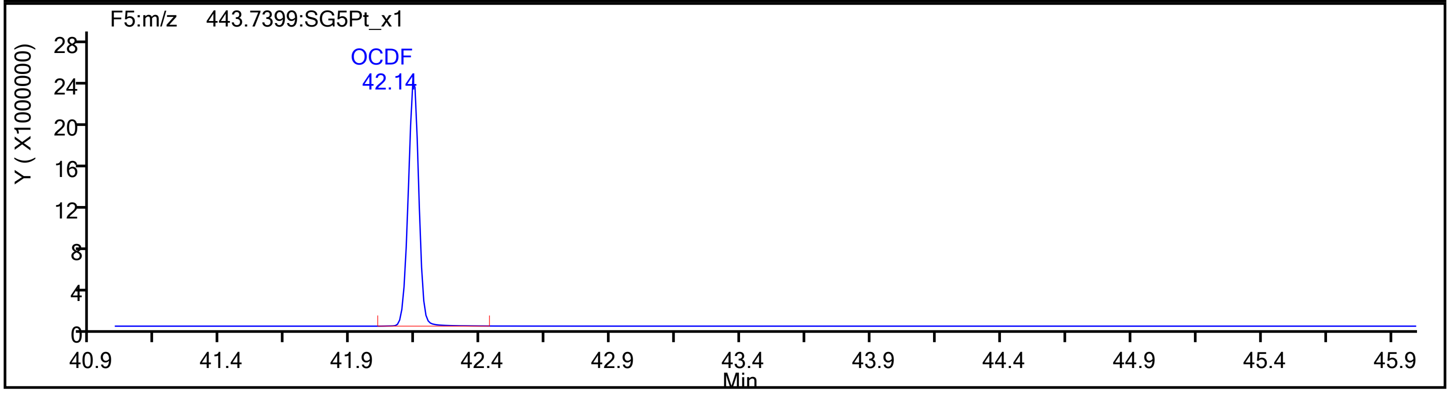

OCDF Standards

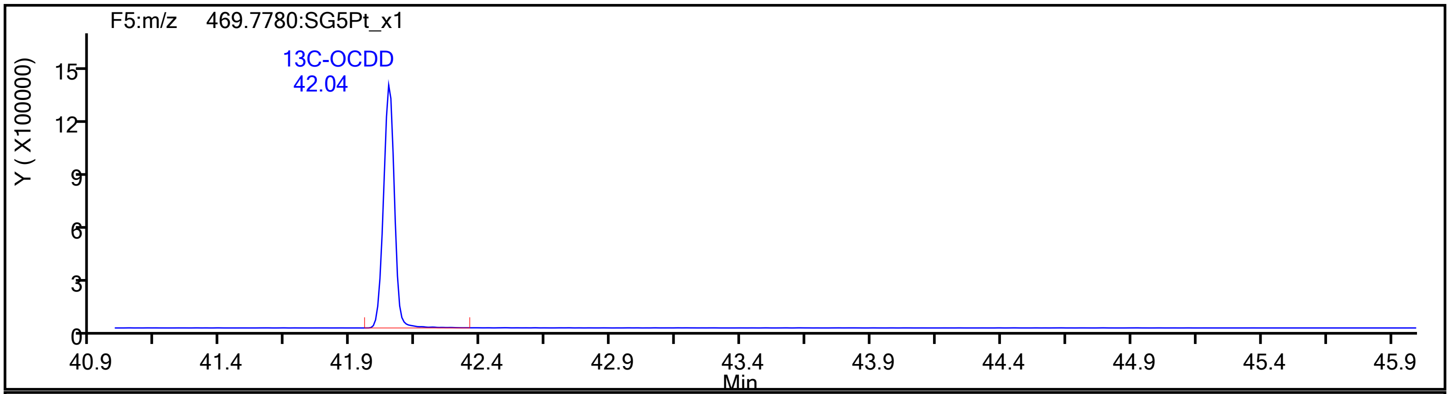

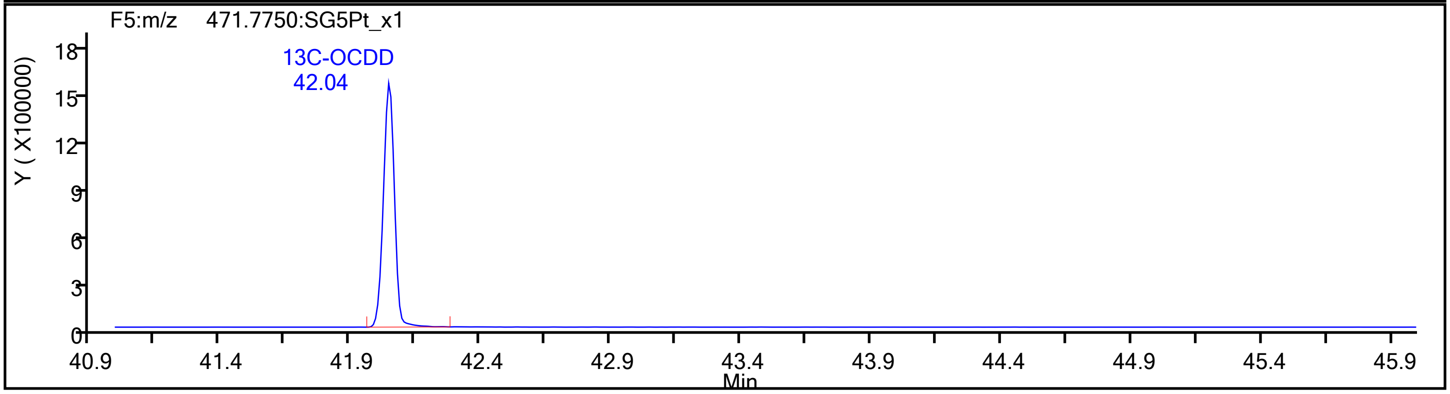

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

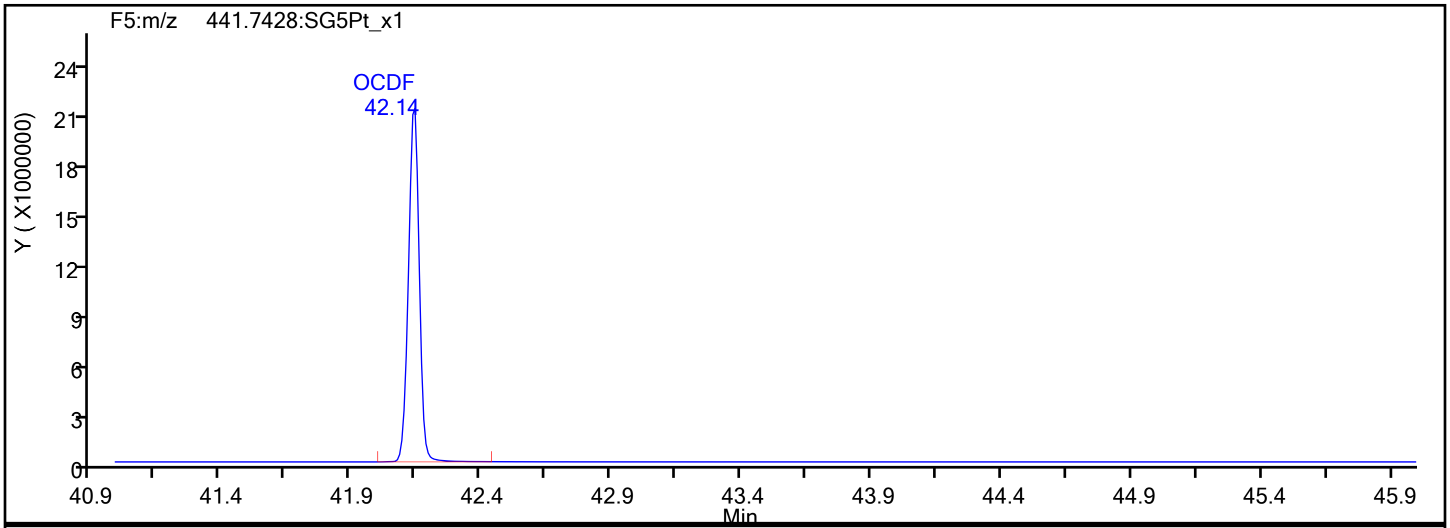

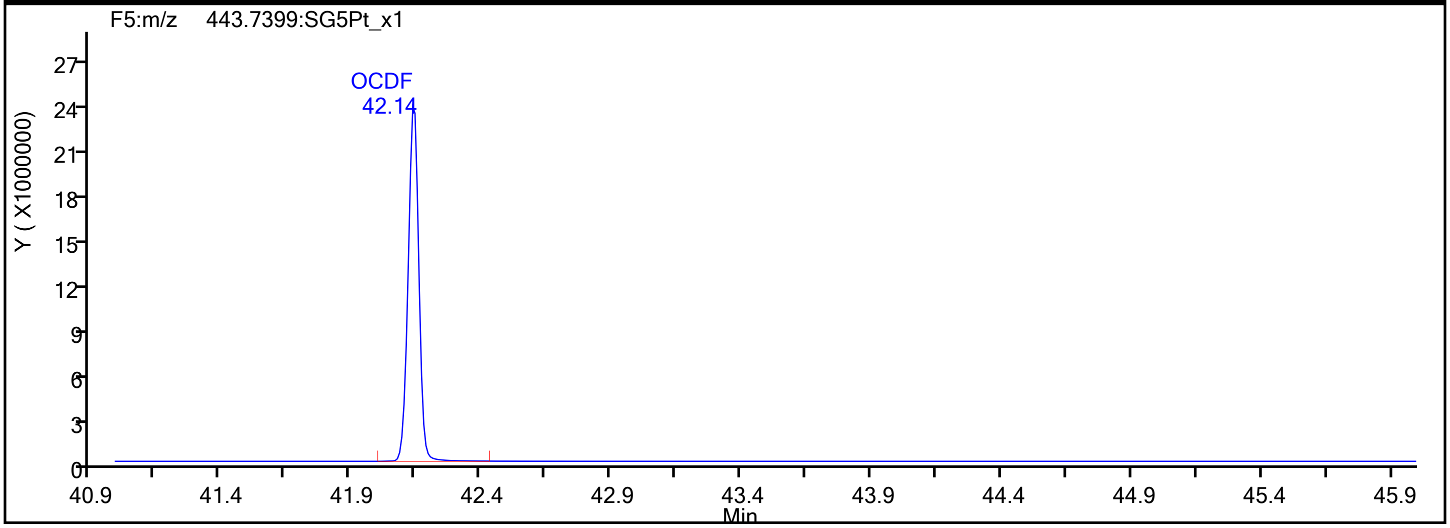

OCDF Interference Mass

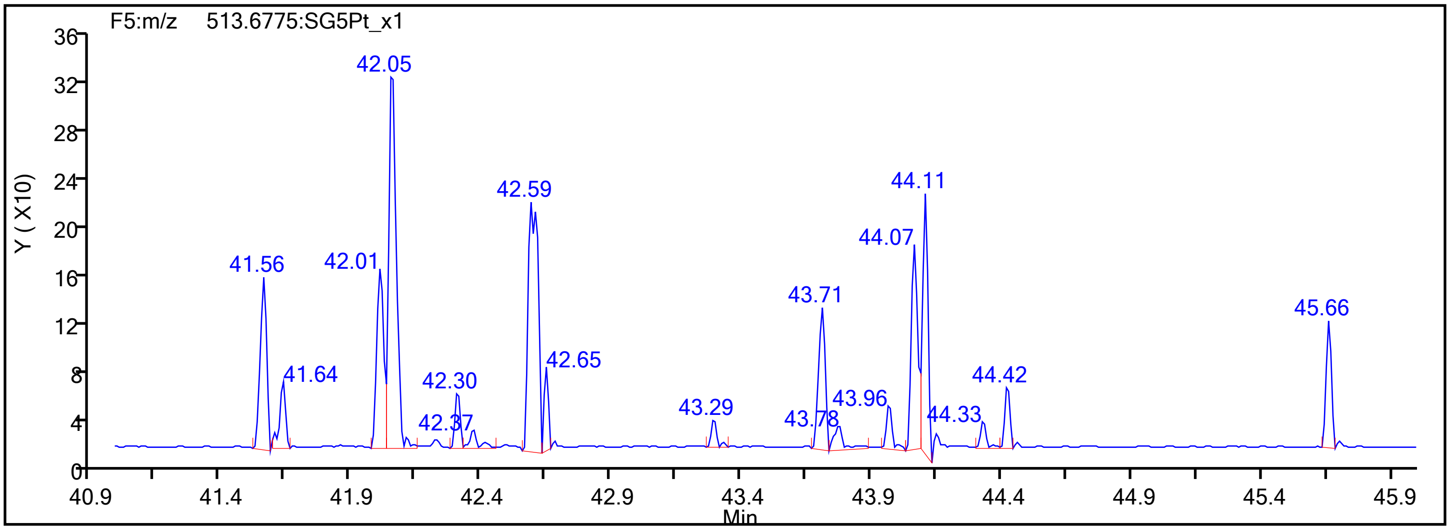

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d
Injection Date: 03-Jun-2020 18:06:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

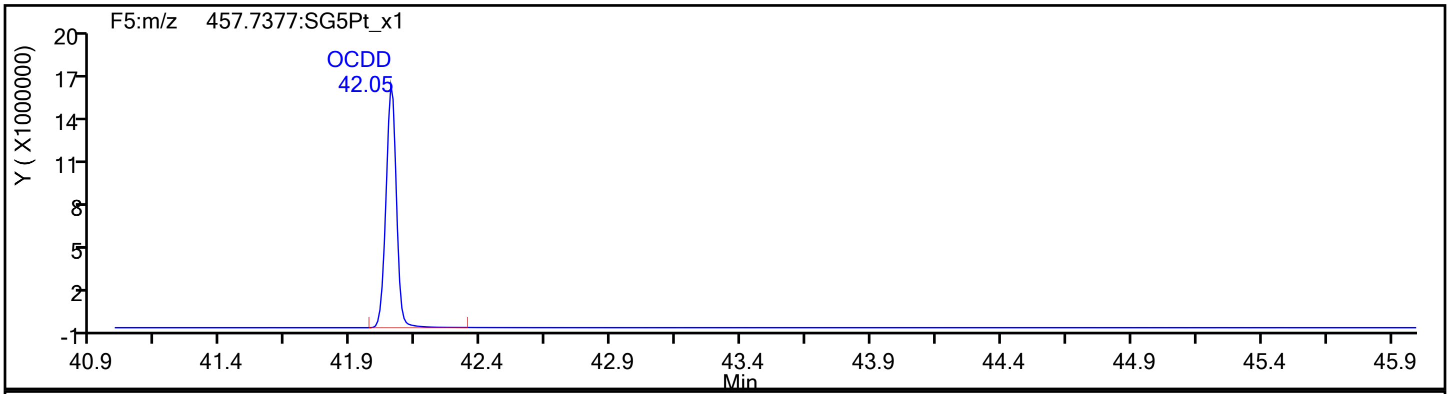

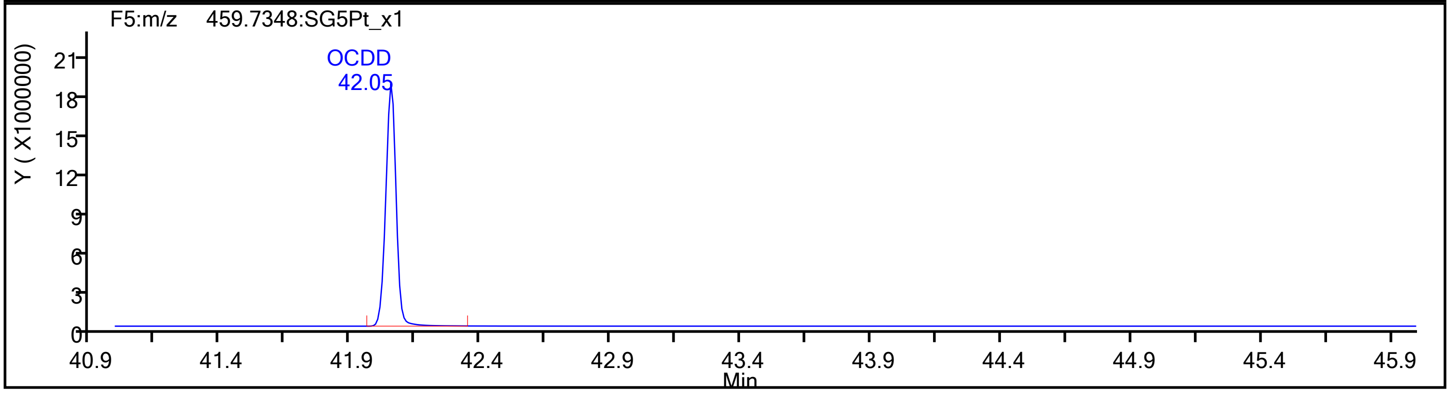

OCDD Standards

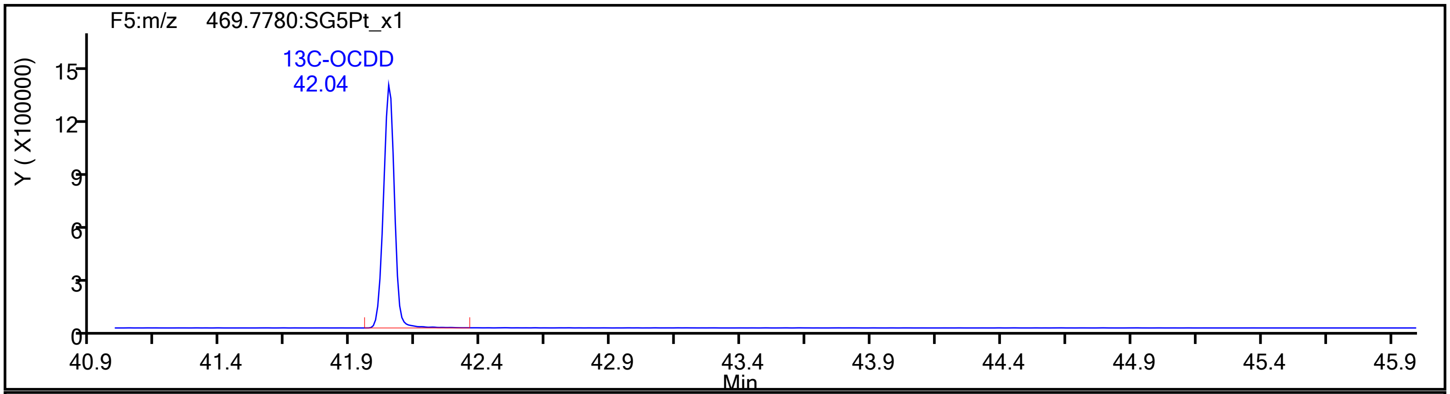

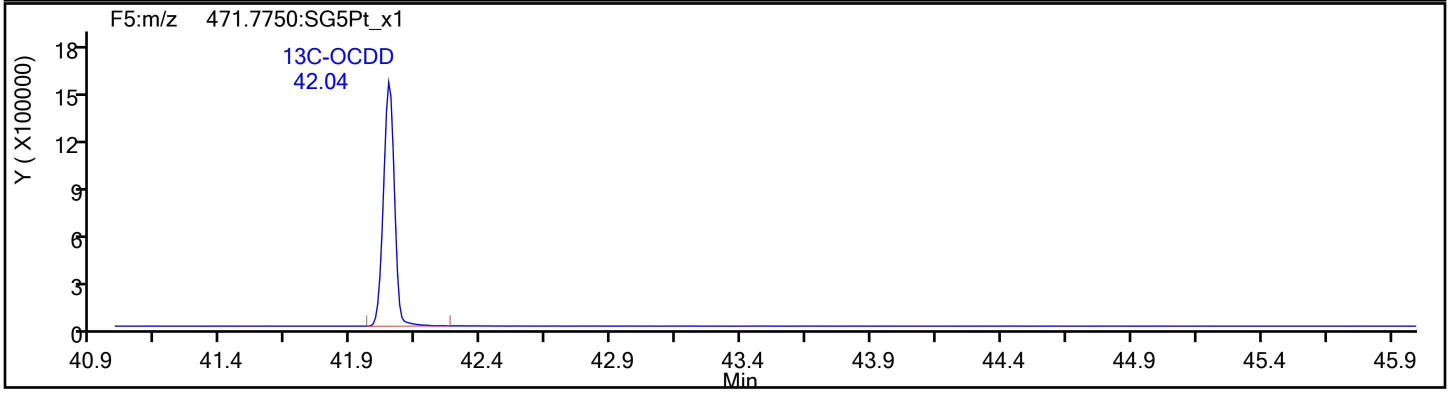

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d
Injection Date: 03-Jun-2020 18:06:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

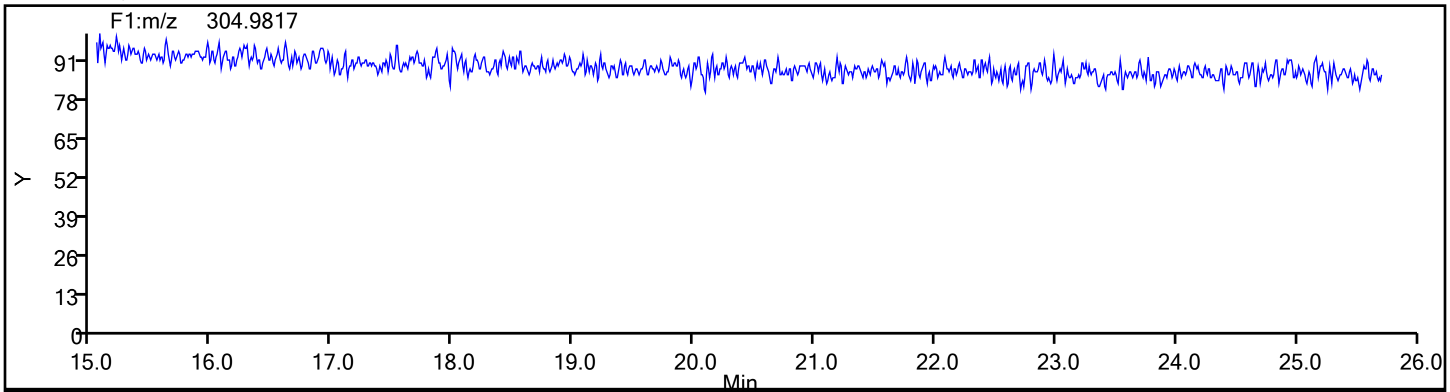

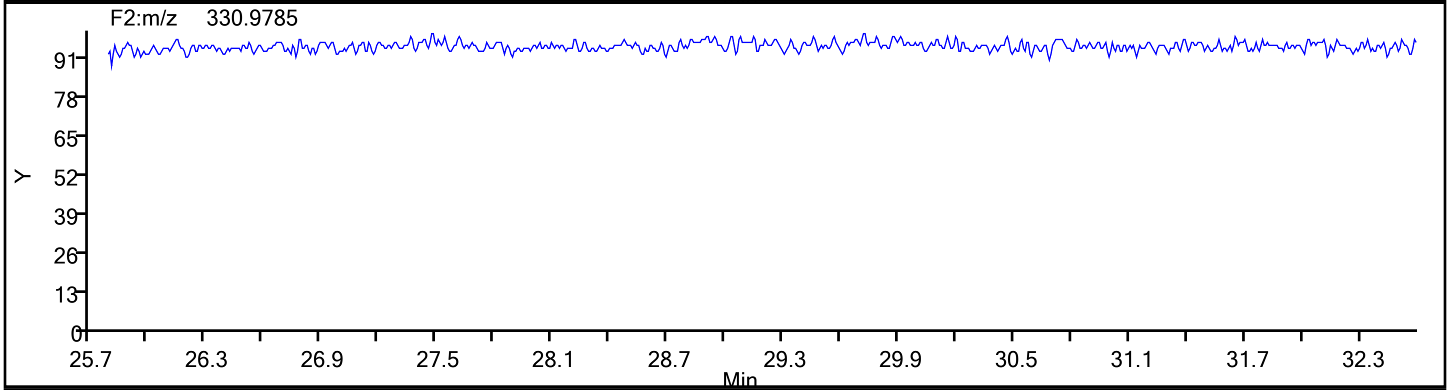

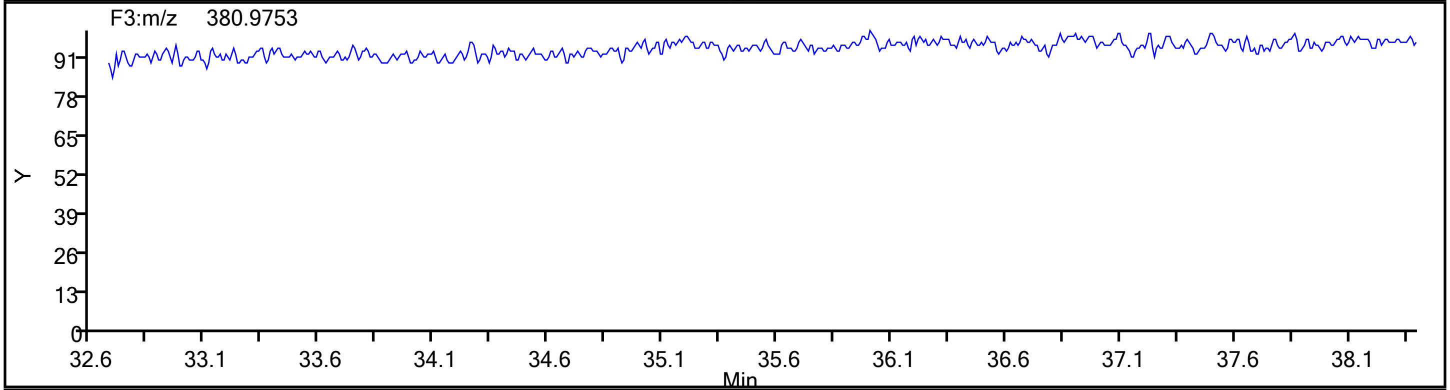

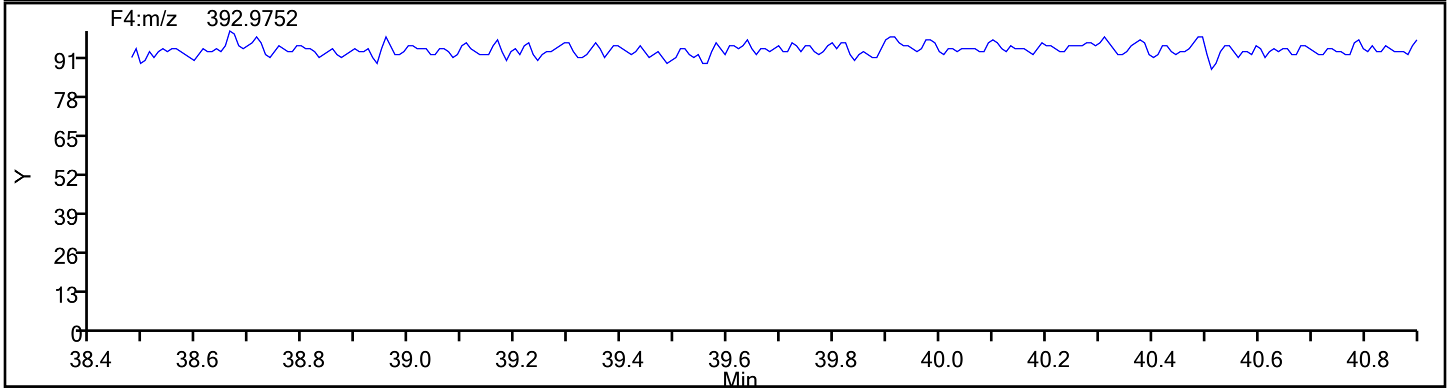

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

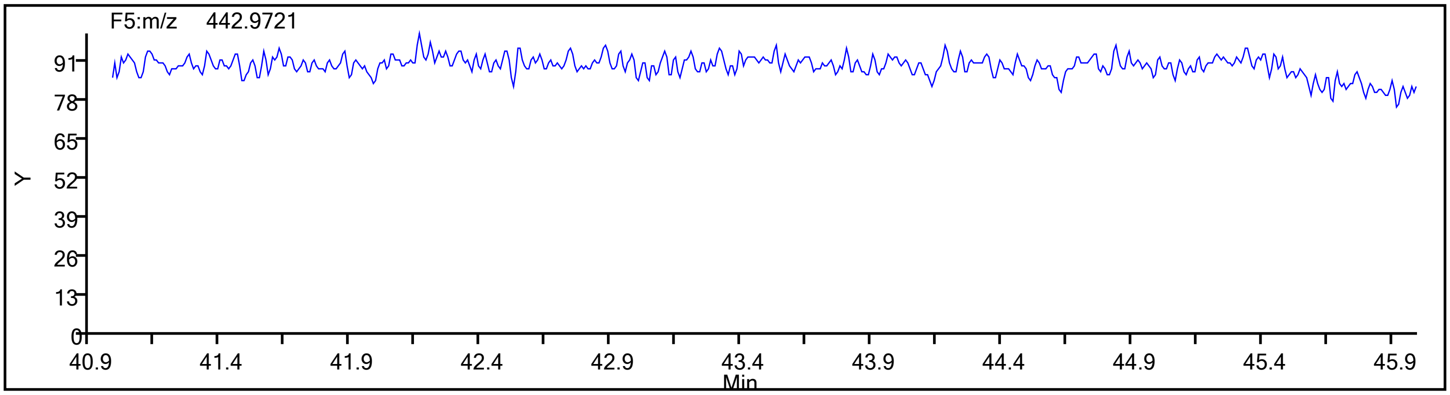

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.115

Error Coefficients

Standard Error:	26800000
Relative Standard Error:	7.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.472095	100.0	6158504.0	1.177676	Y
2	IC 320-383168/4	2.5	3.131165	100.0	2571343.0	1.252466	Y
3	IC 320-383168/5	10.0	11.243713	100.0	4139807.0	1.124371	Y
4	IC 320-383168/6	50.0	52.622682	100.0	2745033.0	1.052454	Y
5	IC 320-383168/7	200.0	208.914457	100.0	5362323.0	1.044572	Y
6	IC 320-383168/8	1000.0	1038.533253	100.0	5661728.0	1.038533	Y

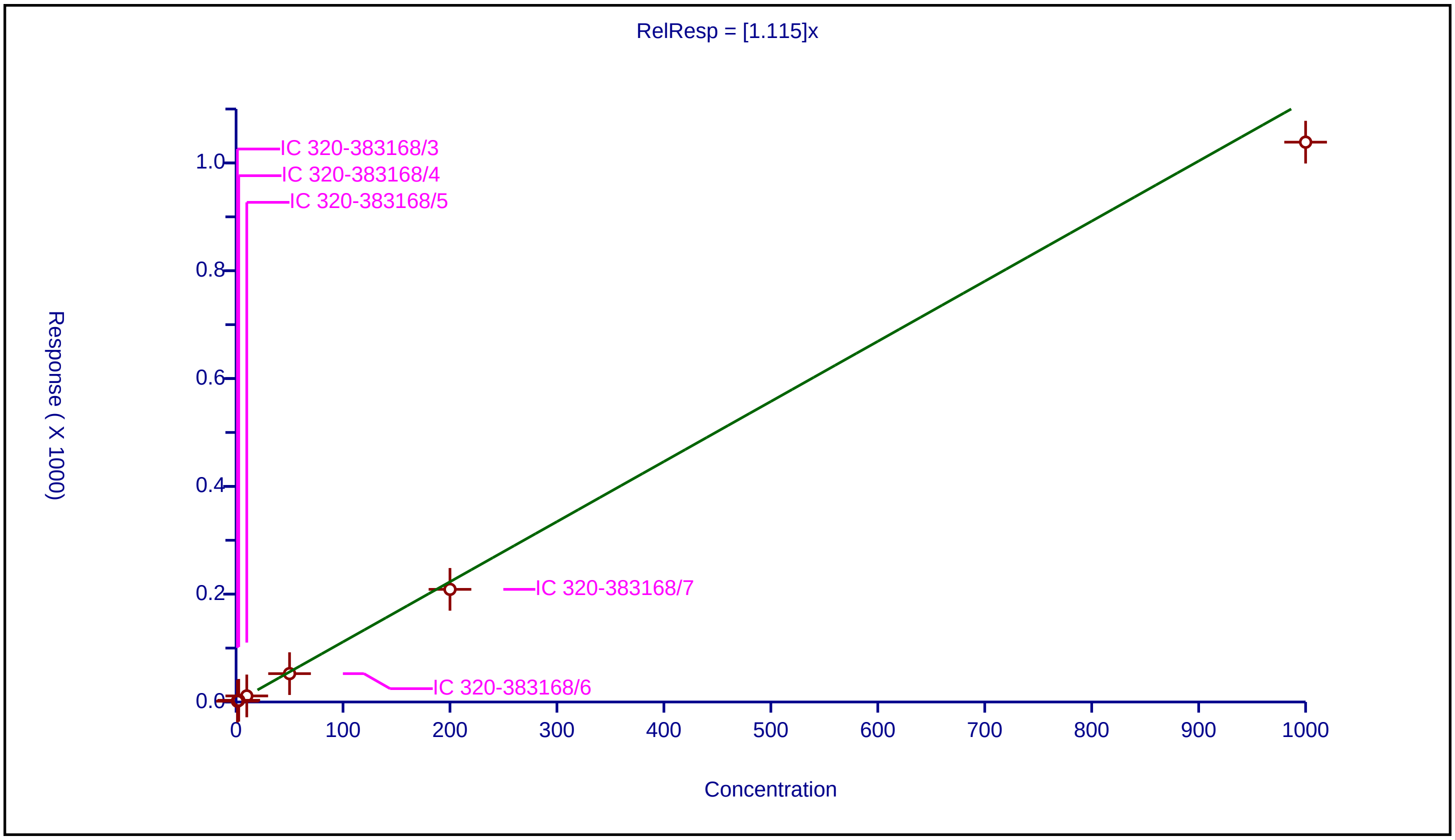

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.596

Error Coefficients

Standard Error:	39700000
Relative Standard Error:	6.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	2.100248	100.0	6215600.0	1.680198	Y
2	IC 320-383168/4	2.5	4.294535	100.0	2640868.0	1.717814	Y
3	IC 320-383168/5	10.0	16.557942	100.0	4315198.0	1.655794	Y
4	IC 320-383168/6	50.0	75.526845	100.0	2779850.0	1.510537	Y
5	IC 320-383168/7	200.0	295.156105	100.0	5428999.0	1.475781	Y
6	IC 320-383168/8	1000.0	1534.019408	100.0	5694573.0	1.534019	Y

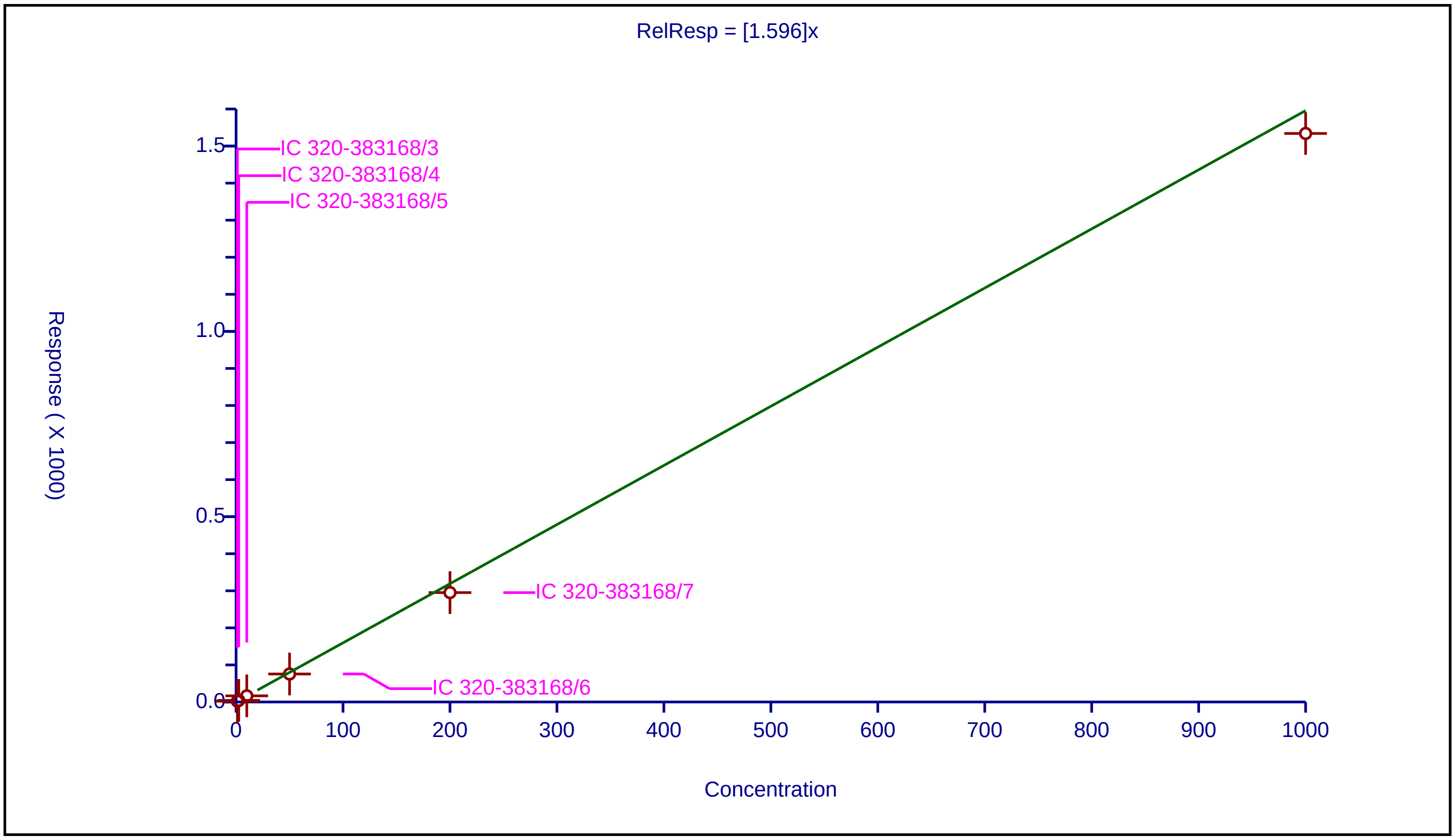

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.169

Error Coefficients

Standard Error:	34500000
Relative Standard Error:	6.9
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.537719	100.0	7019746.0	1.230176	Y
2	IC 320-383168/4	2.5	3.25634	100.0	2978774.0	1.302536	Y
3	IC 320-383168/5	10.0	11.475119	100.0	5040340.0	1.147512	Y
4	IC 320-383168/6	50.0	56.510039	100.0	3118998.0	1.130201	Y
5	IC 320-383168/7	200.0	218.129378	100.0	6618644.0	1.090647	Y
6	IC 320-383168/8	1000.0	1114.833335	100.0	6788271.0	1.114833	Y

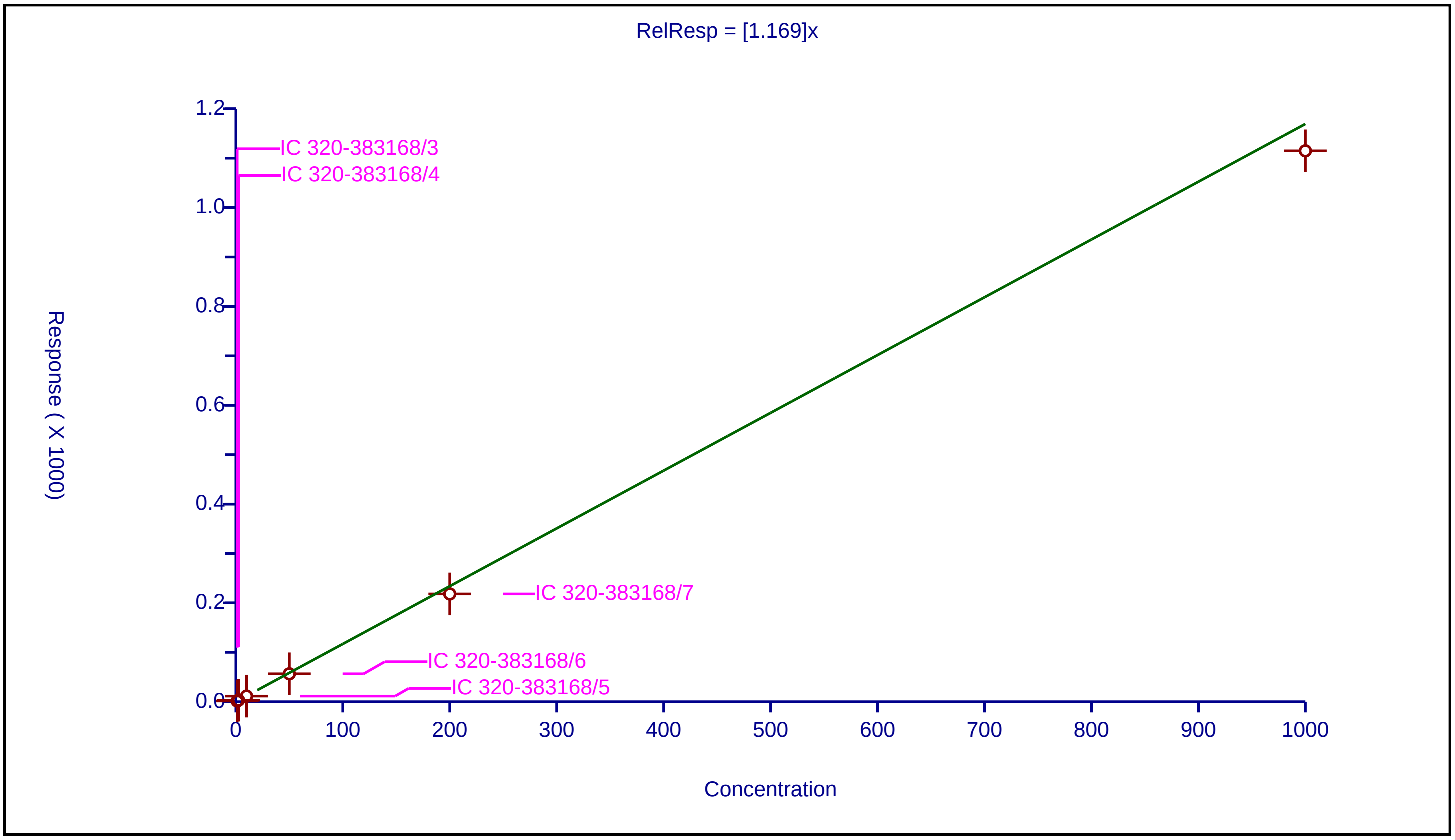

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9336

Error Coefficients

Standard Error:	26800000
Relative Standard Error:	8.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.25144	100.0	7630092.0	1.001152	Y
2	IC 320-383168/4	2.5	2.662735	100.0	3126748.0	1.065094	Y
3	IC 320-383168/5	10.0	9.15467	100.0	5591026.0	0.915467	Y
4	IC 320-383168/6	50.0	44.489674	100.0	3382241.0	0.889793	Y
5	IC 320-383168/7	200.0	175.1544	100.0	6533048.0	0.875772	Y
6	IC 320-383168/8	1000.0	854.518677	100.0	6883032.0	0.854519	Y

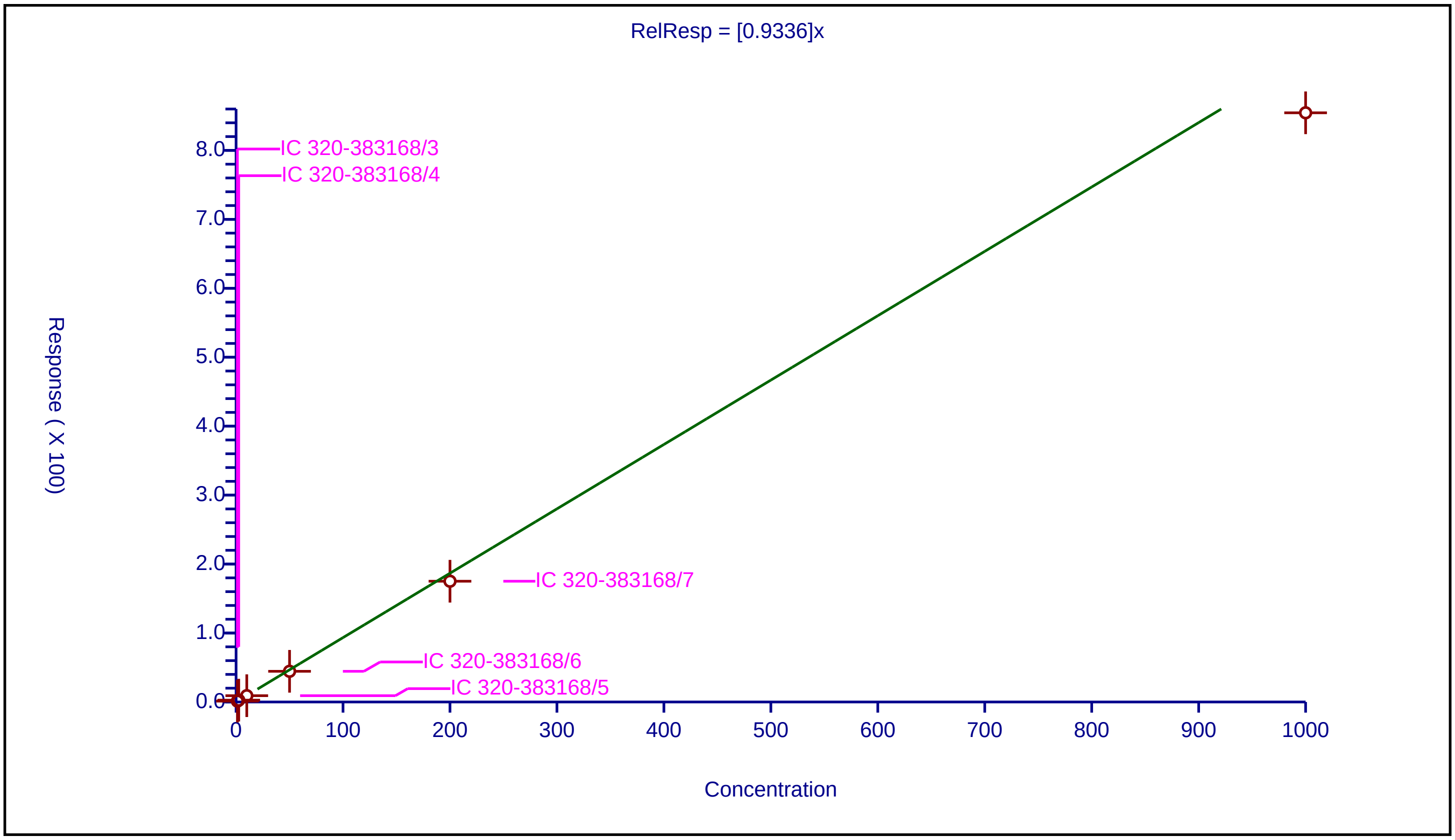

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.009

Error Coefficients

Standard Error:	39100000
Relative Standard Error:	5.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.337928	100.0	9974678.0	1.070342	Y
2	IC 320-383168/4	2.5	2.724229	100.0	4266858.0	1.089692	Y
3	IC 320-383168/5	10.0	9.963392	100.0	7273246.0	0.996339	Y
4	IC 320-383168/6	50.0	49.416547	100.0	4553149.0	0.988331	Y
5	IC 320-383168/7	200.0	191.772507	100.0	8568017.0	0.958863	Y
6	IC 320-383168/8	1000.0	948.38568	100.0	9039472.0	0.948386	Y

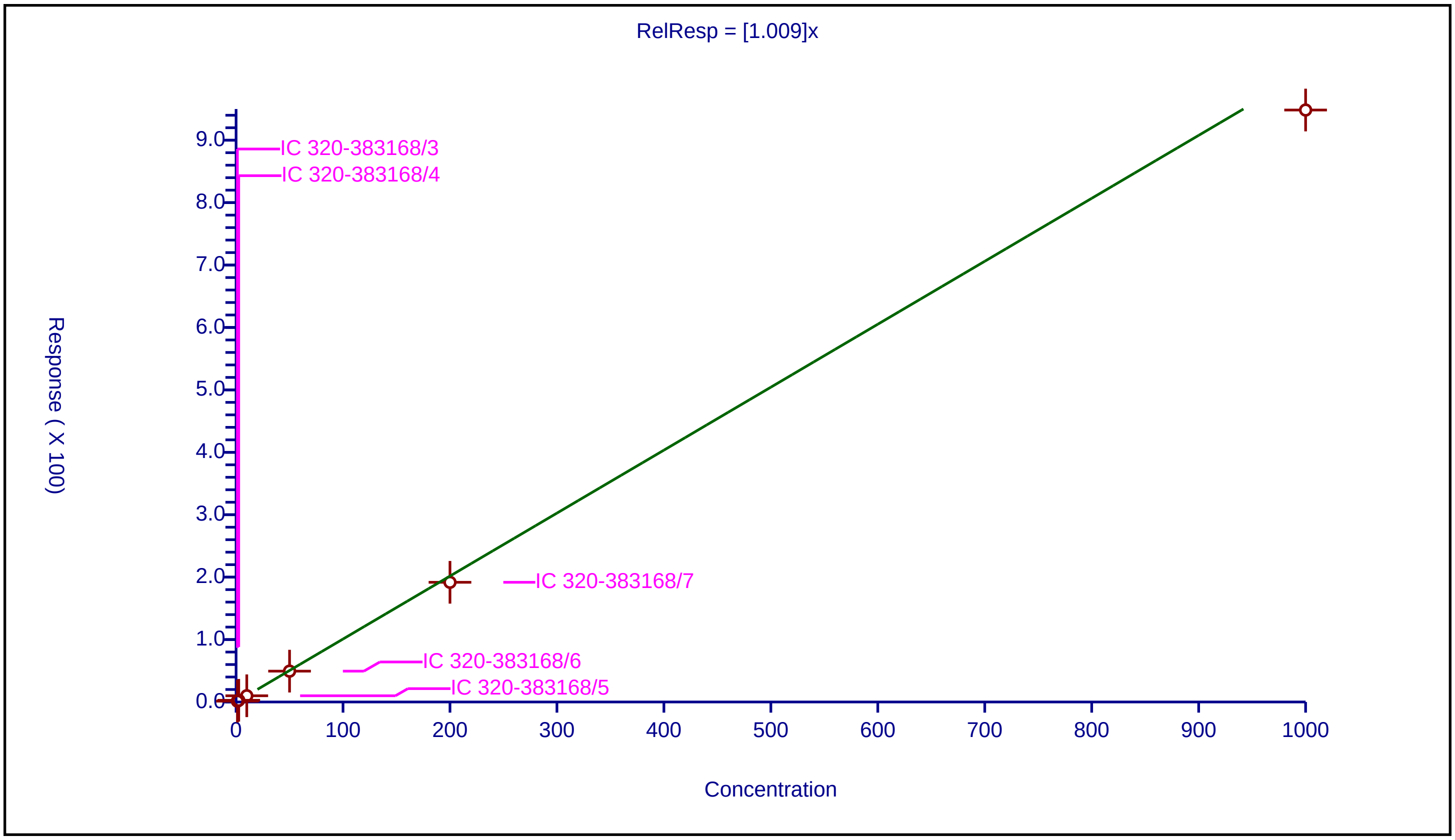

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.08

Error Coefficients

Standard Error:	28000000
Relative Standard Error:	7.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.409197	100.0	6834320.0	1.127357	Y
2	IC 320-383168/4	2.5	3.030897	100.0	2862915.0	1.212359	Y
3	IC 320-383168/5	10.0	10.940155	100.0	4793122.0	1.094016	Y
4	IC 320-383168/6	50.0	52.654375	100.0	3032823.0	1.053088	Y
5	IC 320-383168/7	200.0	200.683821	100.0	5868202.0	1.003419	Y
6	IC 320-383168/8	1000.0	990.750066	100.0	6200617.0	0.99075	Y

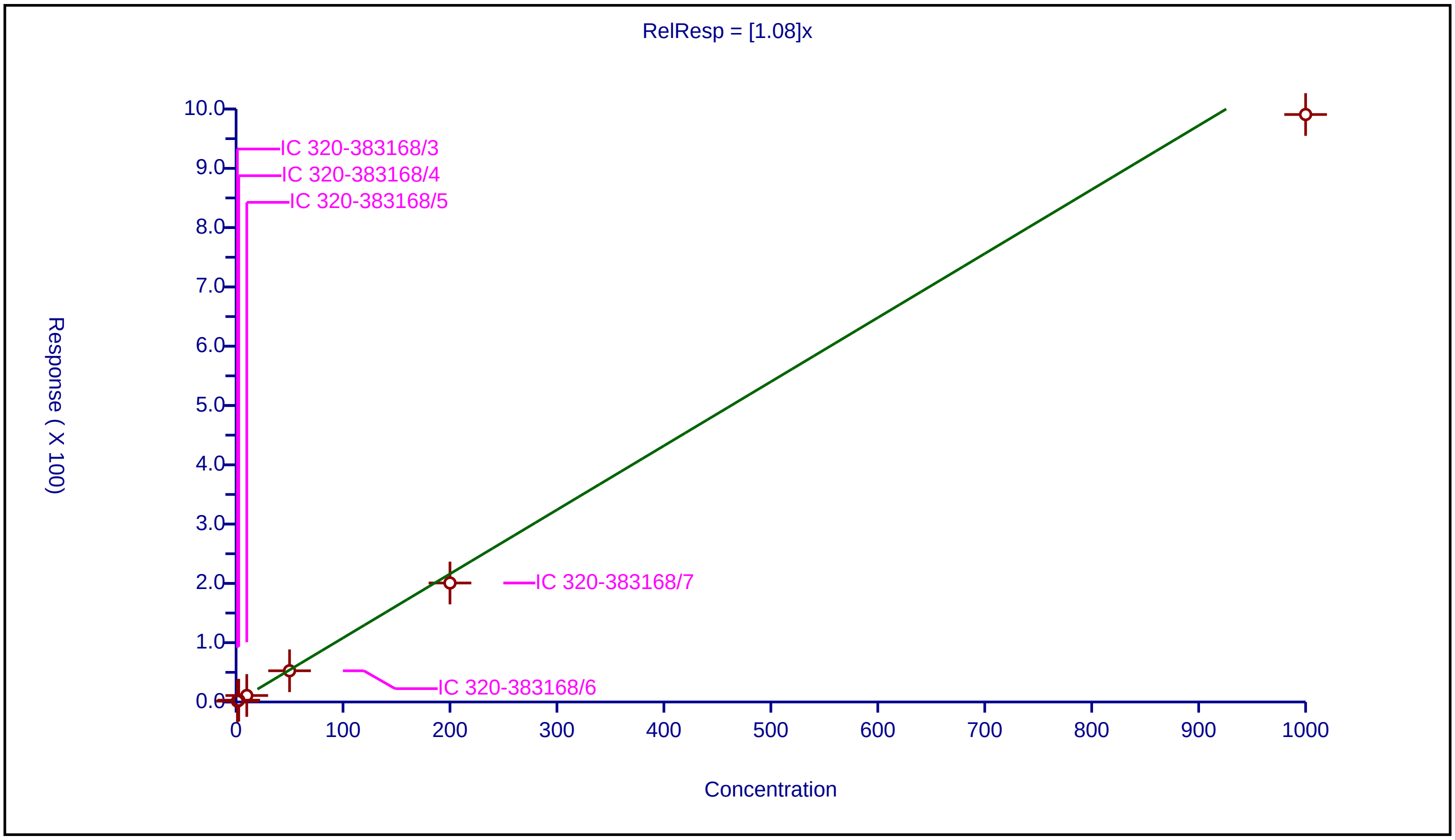

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.243

Error Coefficients

Standard Error:	42700000
Relative Standard Error:	5.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.617026	100.0	8939187.0	1.293621	Y
2	IC 320-383168/4	2.5	3.374685	100.0	3757506.0	1.349874	Y
3	IC 320-383168/5	10.0	12.612203	100.0	6209740.0	1.26122	Y
4	IC 320-383168/6	50.0	60.870943	100.0	4014247.0	1.217419	Y
5	IC 320-383168/7	200.0	233.931732	100.0	7552939.0	1.169659	Y
6	IC 320-383168/8	1000.0	1167.483652	100.0	8024539.0	1.167484	Y

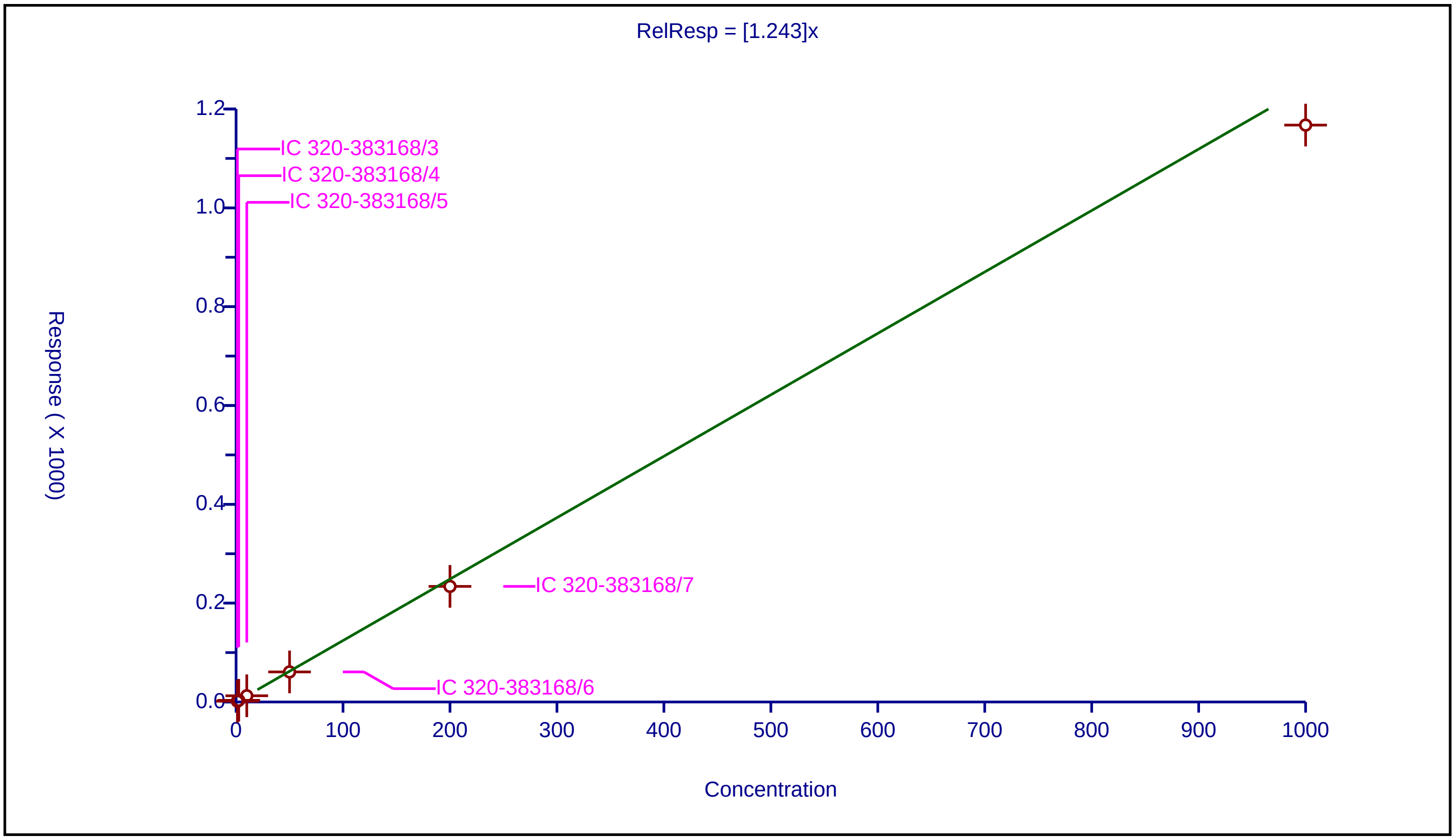

Calibration / 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.002

Error Coefficients

Standard Error:	29200000
Relative Standard Error:	8.5
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.327769	100.0	7630092.0	1.062215	Y
2	IC 320-383168/4	2.5	2.866269	100.0	3126748.0	1.146507	Y
3	IC 320-383168/5	10.0	9.593123	100.0	5591026.0	0.959312	Y
4	IC 320-383168/6	50.0	48.212265	100.0	3382241.0	0.964245	Y
5	IC 320-383168/7	200.0	189.614909	100.0	6533048.0	0.948075	Y
6	IC 320-383168/8	1000.0	929.804133	100.0	6883032.0	0.929804	Y

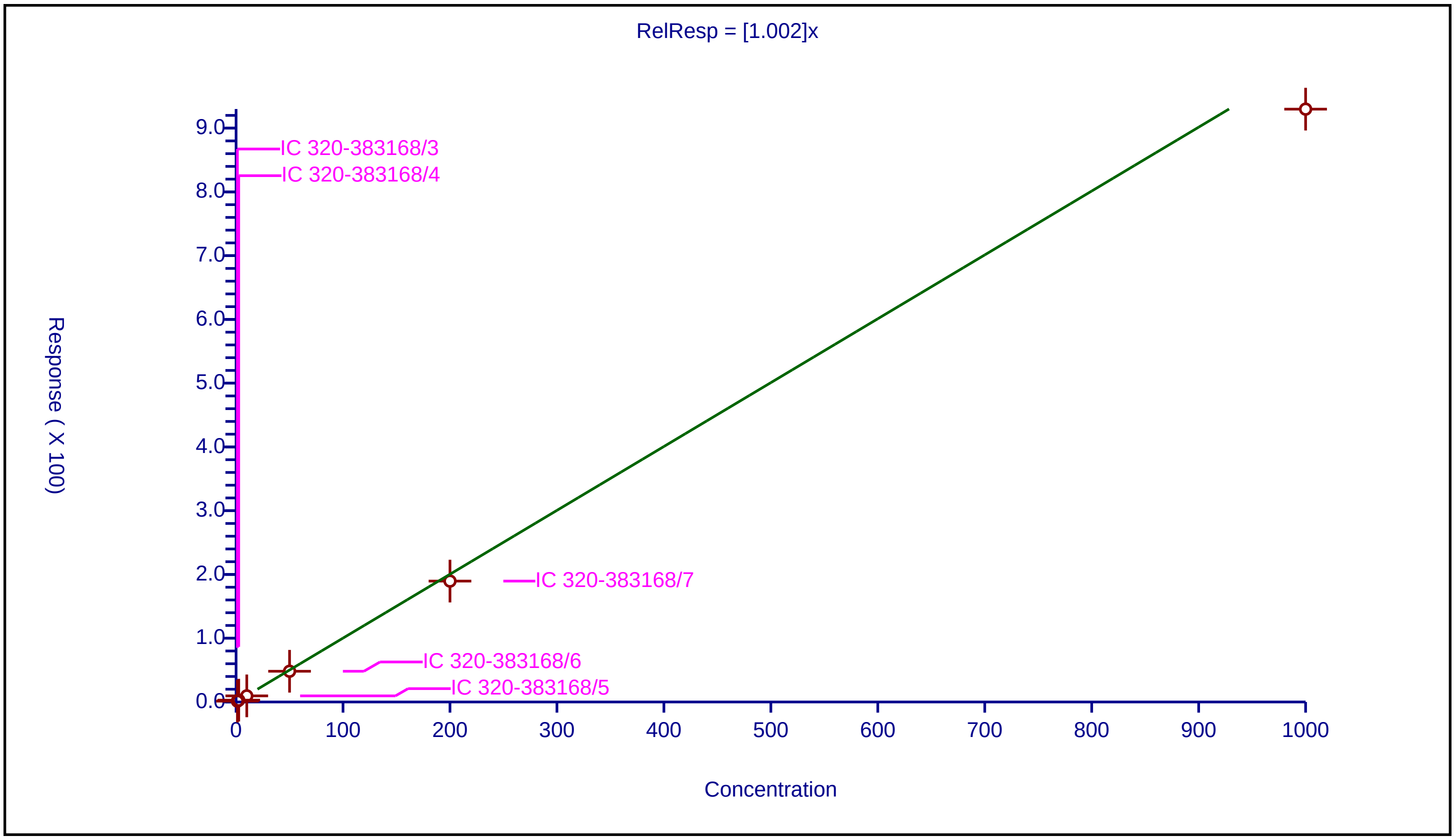

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.288

Error Coefficients

Standard Error:	37100000
Relative Standard Error:	6.2
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.729521	100.0	7257441.0	1.383617	Y
2	IC 320-383168/4	2.5	3.454284	100.0	3192644.0	1.381714	Y
3	IC 320-383168/5	10.0	13.011646	100.0	5058891.0	1.301165	Y
4	IC 320-383168/6	50.0	61.926336	100.0	3221618.0	1.238527	Y
5	IC 320-383168/7	200.0	240.999792	100.0	6606392.0	1.204999	Y
6	IC 320-383168/8	1000.0	1219.199213	100.0	6673211.0	1.219199	Y

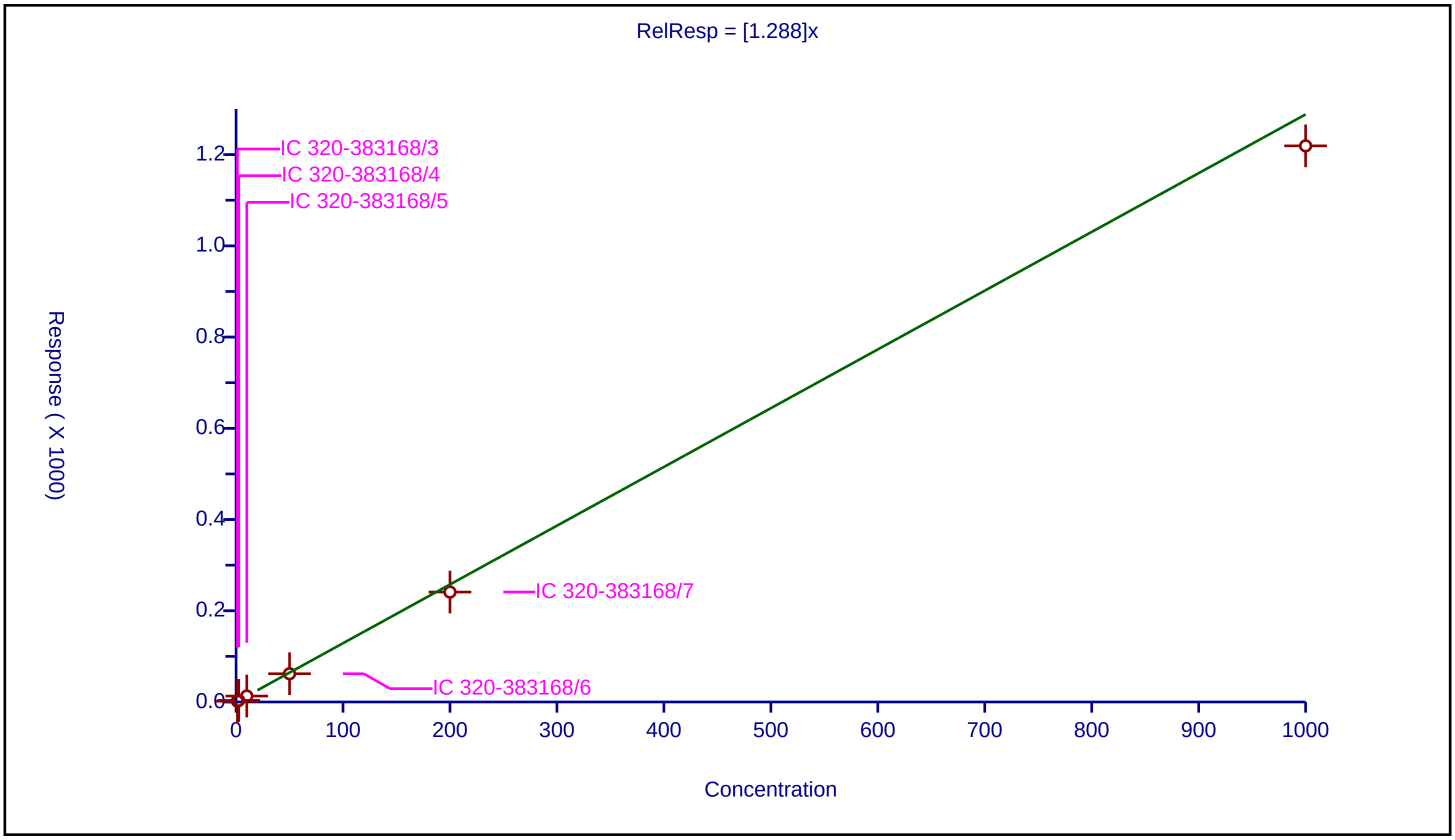

Calibration

/ 1,2,3,7,8-PeCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.106

Error Coefficients

Standard Error:	25400000
Relative Standard Error:	6.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.422734	100.0	6244315.0	1.138187	Y
2	IC 320-383168/4	2.5	3.035331	100.0	2671208.0	1.214132	Y
3	IC 320-383168/5	10.0	11.288589	100.0	4345521.0	1.128859	Y
4	IC 320-383168/6	50.0	53.85295	100.0	2865674.0	1.077059	Y
5	IC 320-383168/7	200.0	213.013133	100.0	5243649.0	1.065066	Y
6	IC 320-383168/8	1000.0	1013.707864	100.0	5502316.0	1.013708	Y

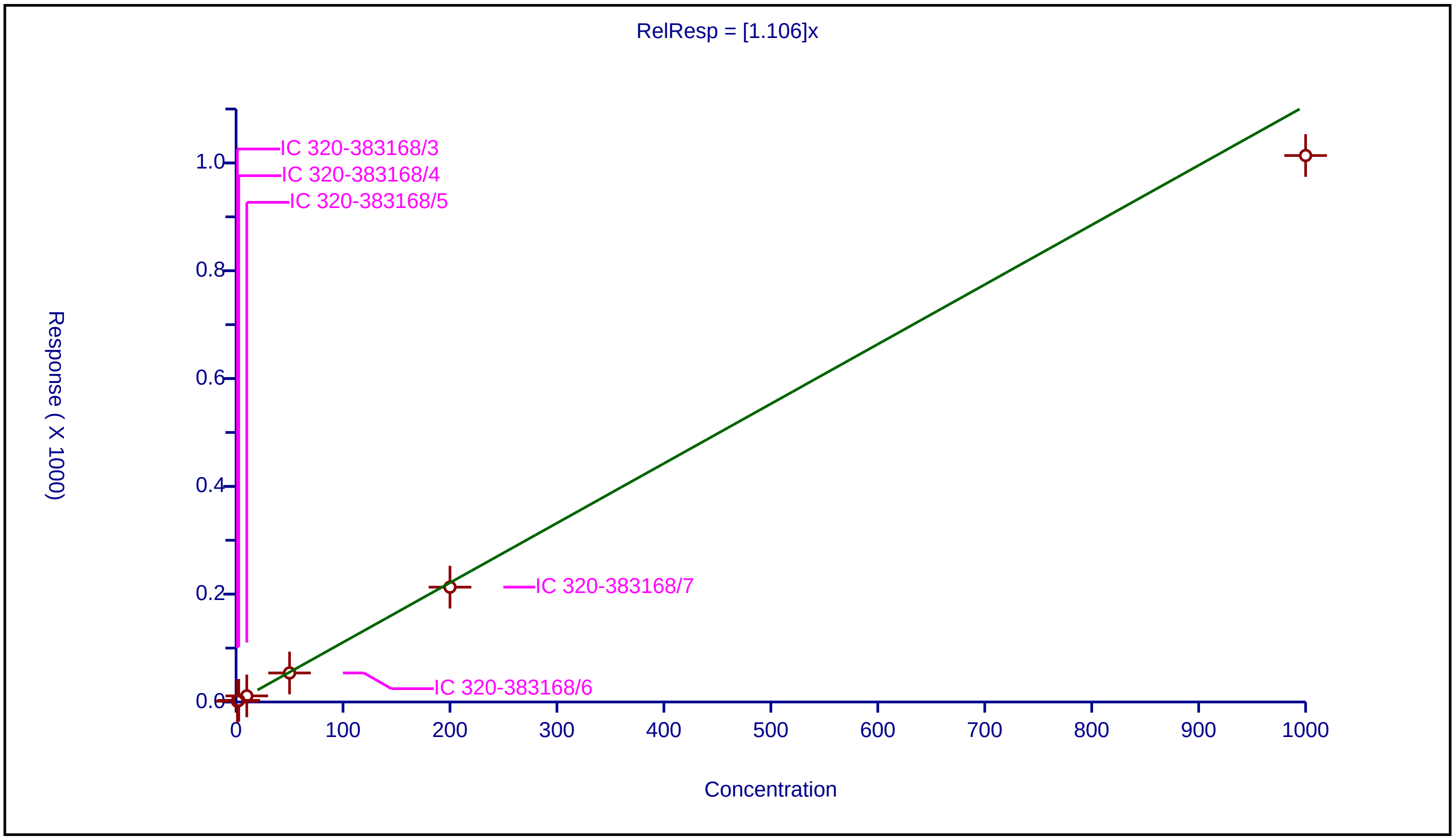

Calibration

/ 1,2,3,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.106

Error Coefficients

Standard Error:	40200000
Relative Standard Error:	6.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.443687	100.0	9753916.0	1.154949	Y
2	IC 320-383168/4	2.5	3.003107	100.0	4247335.0	1.201243	Y
3	IC 320-383168/5	10.0	11.211396	100.0	6879768.0	1.12114	Y
4	IC 320-383168/6	50.0	54.229475	100.0	4514934.0	1.084589	Y
5	IC 320-383168/7	200.0	209.565514	100.0	8256577.0	1.047828	Y
6	IC 320-383168/8	1000.0	1026.368914	100.0	8594514.0	1.026369	Y

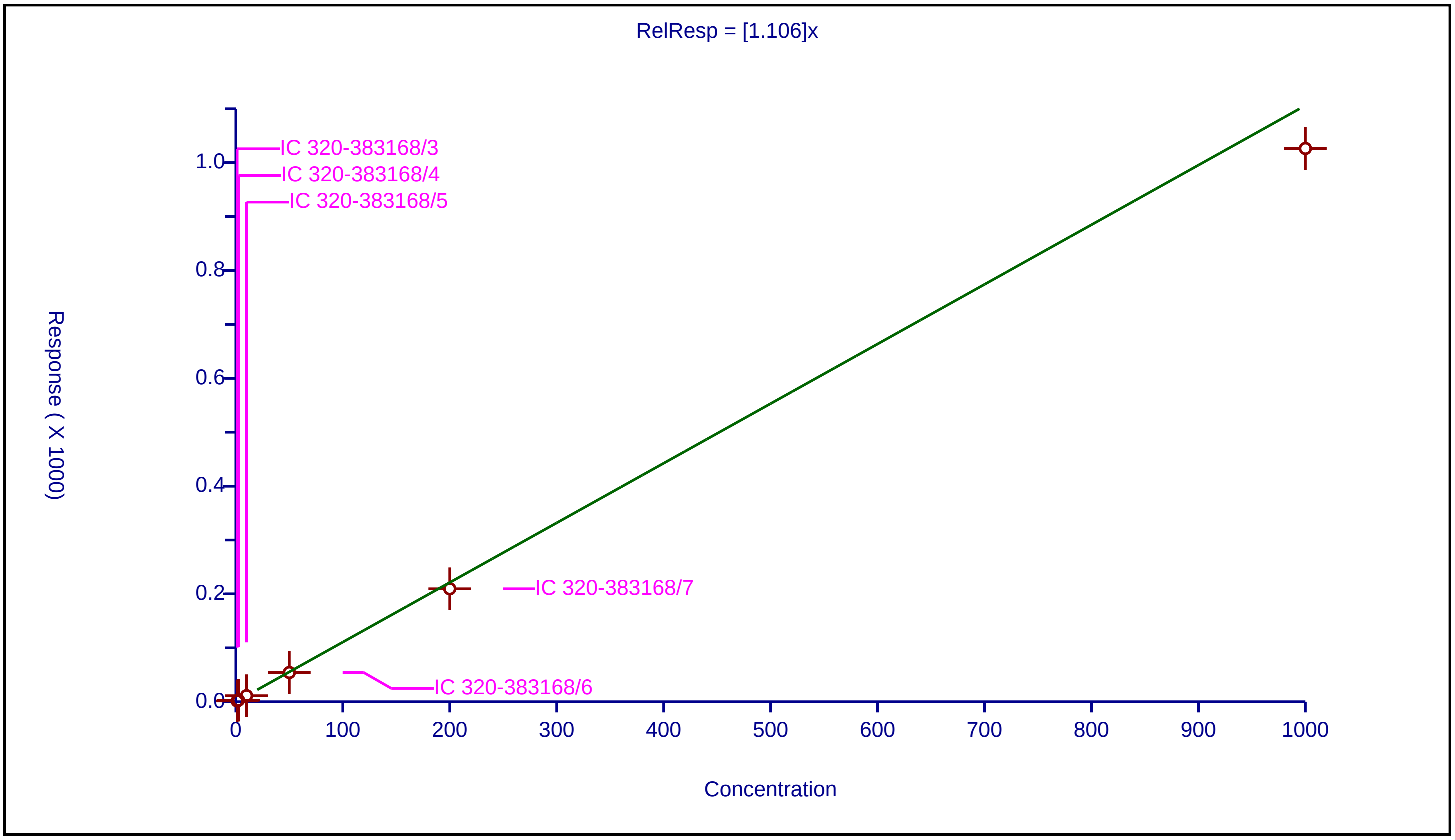

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.274

Error Coefficients

Standard Error:	40800000
Relative Standard Error:	6.1
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.701928	100.0	8442074.0	1.361542	Y
2	IC 320-383168/4	2.5	3.401797	100.0	3457908.0	1.360719	Y
3	IC 320-383168/5	10.0	12.911532	100.0	5721877.0	1.291153	Y
4	IC 320-383168/6	50.0	62.105215	100.0	3693532.0	1.242104	Y
5	IC 320-383168/7	200.0	239.92622	100.0	7129573.0	1.199631	Y
6	IC 320-383168/8	1000.0	1186.190729	100.0	7543852.0	1.186191	Y

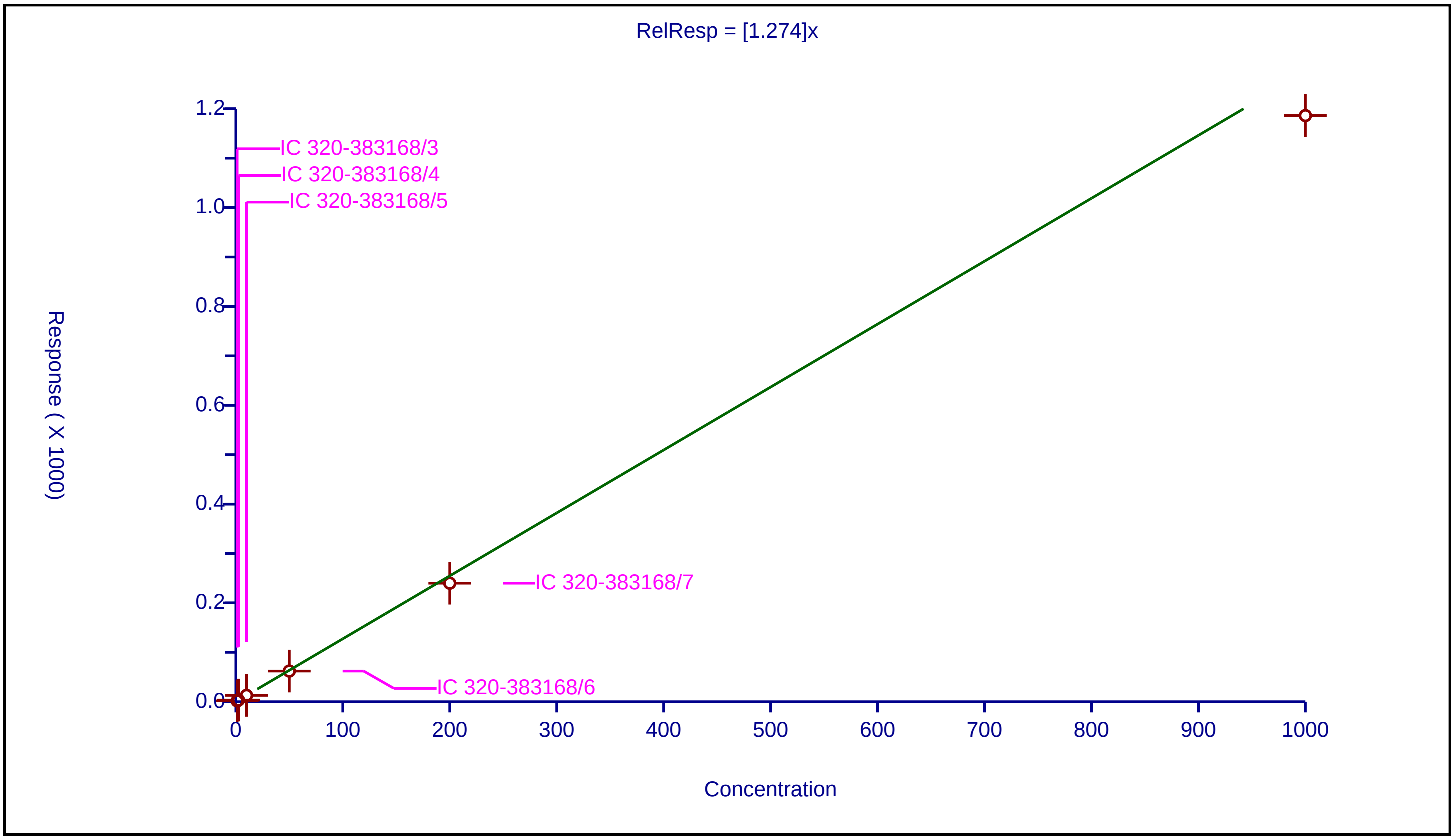

Calibration / 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9067

Error Coefficients

Standard Error:	39000000
Relative Standard Error:	6.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.185156	100.0	11491396.0	0.948125	Y
2	IC 320-383168/4	2.5	2.481928	100.0	4902358.0	0.992771	Y
3	IC 320-383168/5	10.0	8.935258	100.0	8439398.0	0.893526	Y
4	IC 320-383168/6	50.0	44.936126	100.0	5239072.0	0.898723	Y
5	IC 320-383168/7	200.0	173.624724	100.0	9723087.0	0.868124	Y
6	IC 320-383168/8	1000.0	838.740569	100.0	10203149.0	0.838741	Y

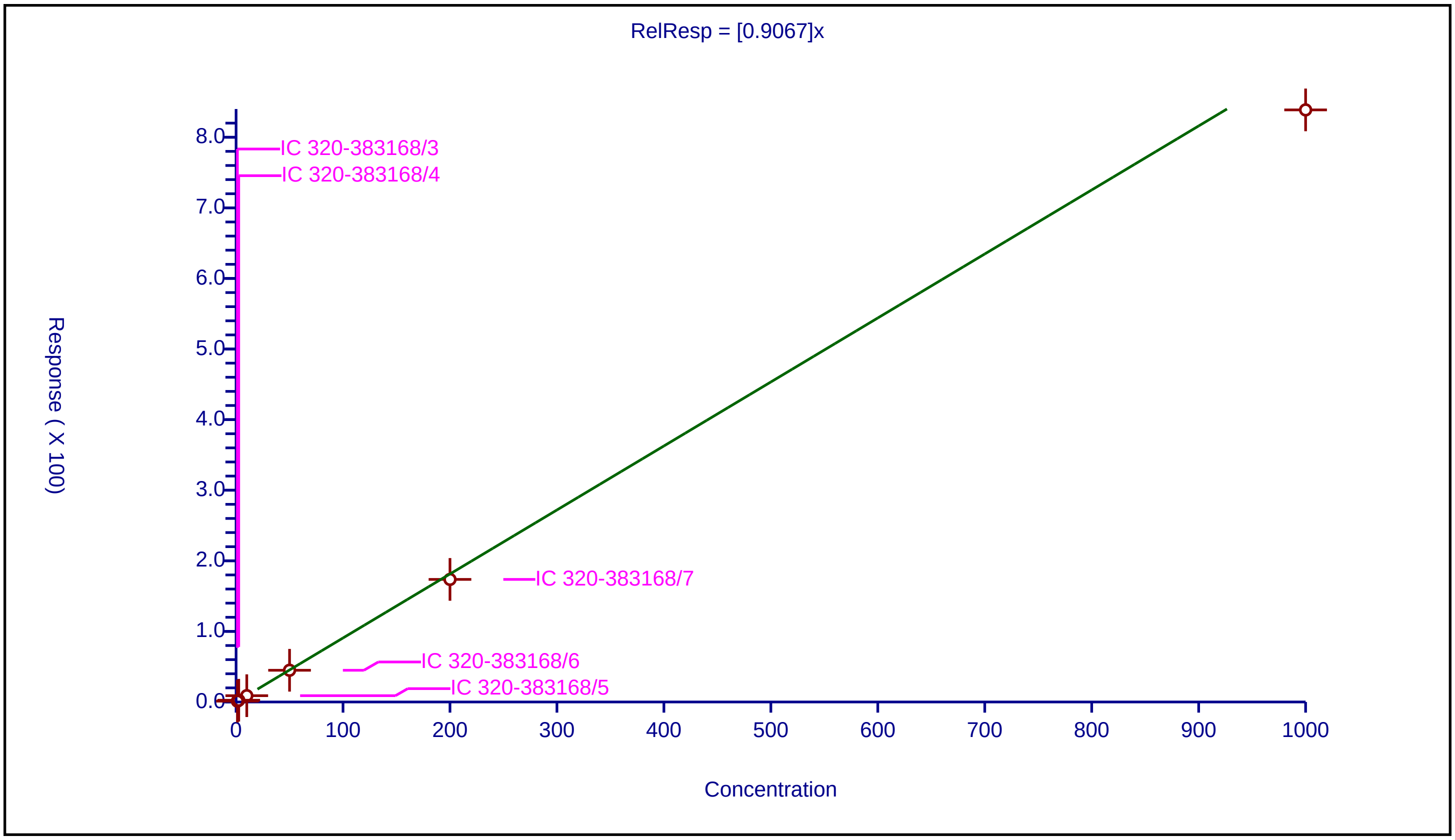

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.185

Error Coefficients

Standard Error:	6520000
Relative Standard Error:	7.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	0.25	0.324529	100.0	7936120.0	1.298115	Y
2	IC 320-383168/4	0.5	0.650954	100.0	3452470.0	1.301908	Y
3	IC 320-383168/5	2.0	2.341367	100.0	5440325.0	1.170684	Y
4	IC 320-383168/6	10.0	11.076649	100.0	3678459.0	1.107665	Y
5	IC 320-383168/7	40.0	45.062786	100.0	6480345.0	1.12657	Y
6	IC 320-383168/8	200.0	220.906632	100.0	6461409.0	1.104533	Y

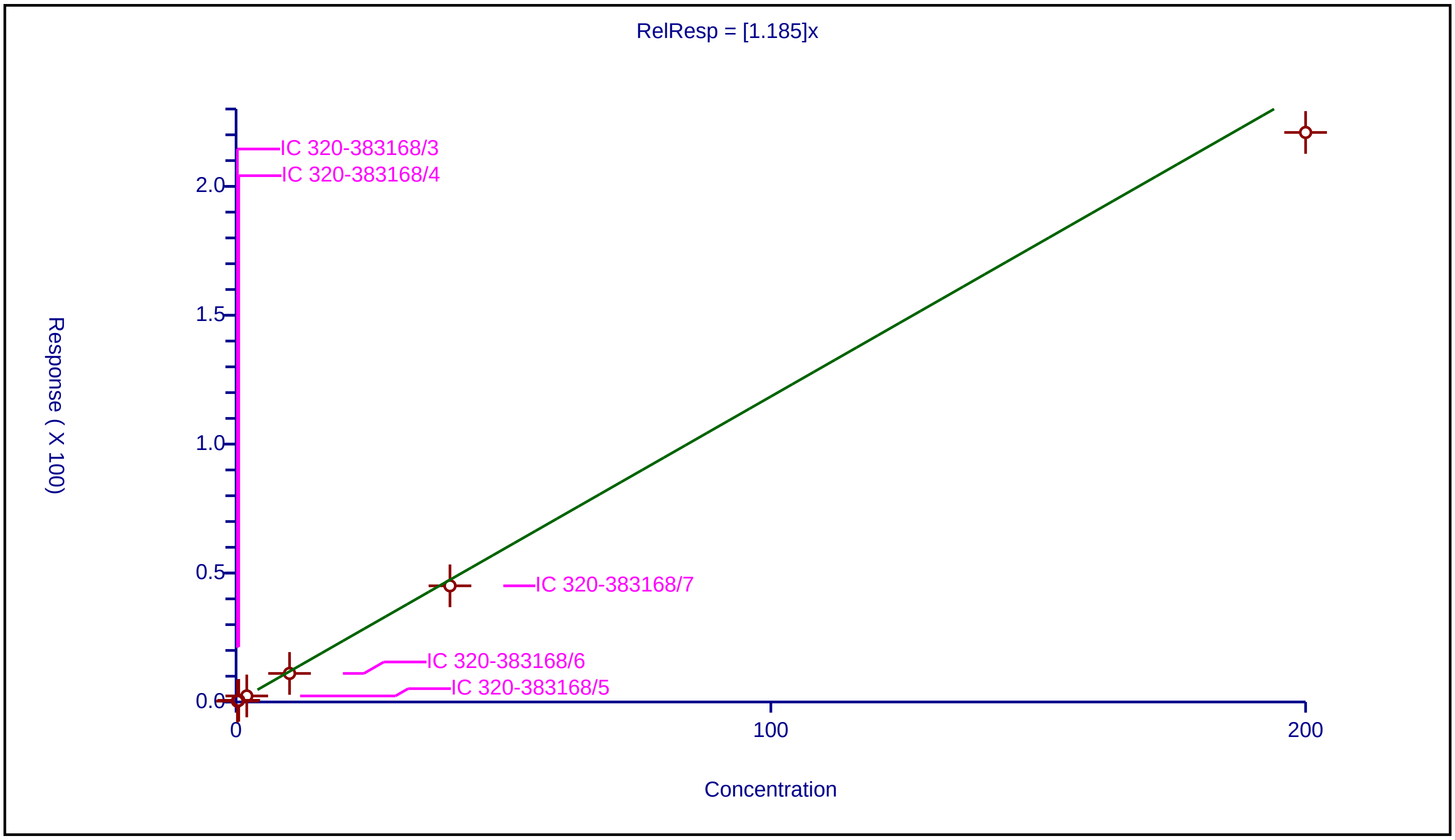

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.131

Error Coefficients

Standard Error:	8770000
Relative Standard Error:	8.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	0.25	0.312232	100.0	11575035.0	1.248929	Y
2	IC 320-383168/4	0.5	0.622843	100.0	4898504.0	1.245686	Y
3	IC 320-383168/5	2.0	2.239791	100.0	8006239.0	1.119895	Y
4	IC 320-383168/6	10.0	10.729226	100.0	5259494.0	1.072923	Y
5	IC 320-383168/7	40.0	42.760422	100.0	9390658.0	1.069011	Y
6	IC 320-383168/8	200.0	206.210374	100.0	9303208.0	1.031052	Y

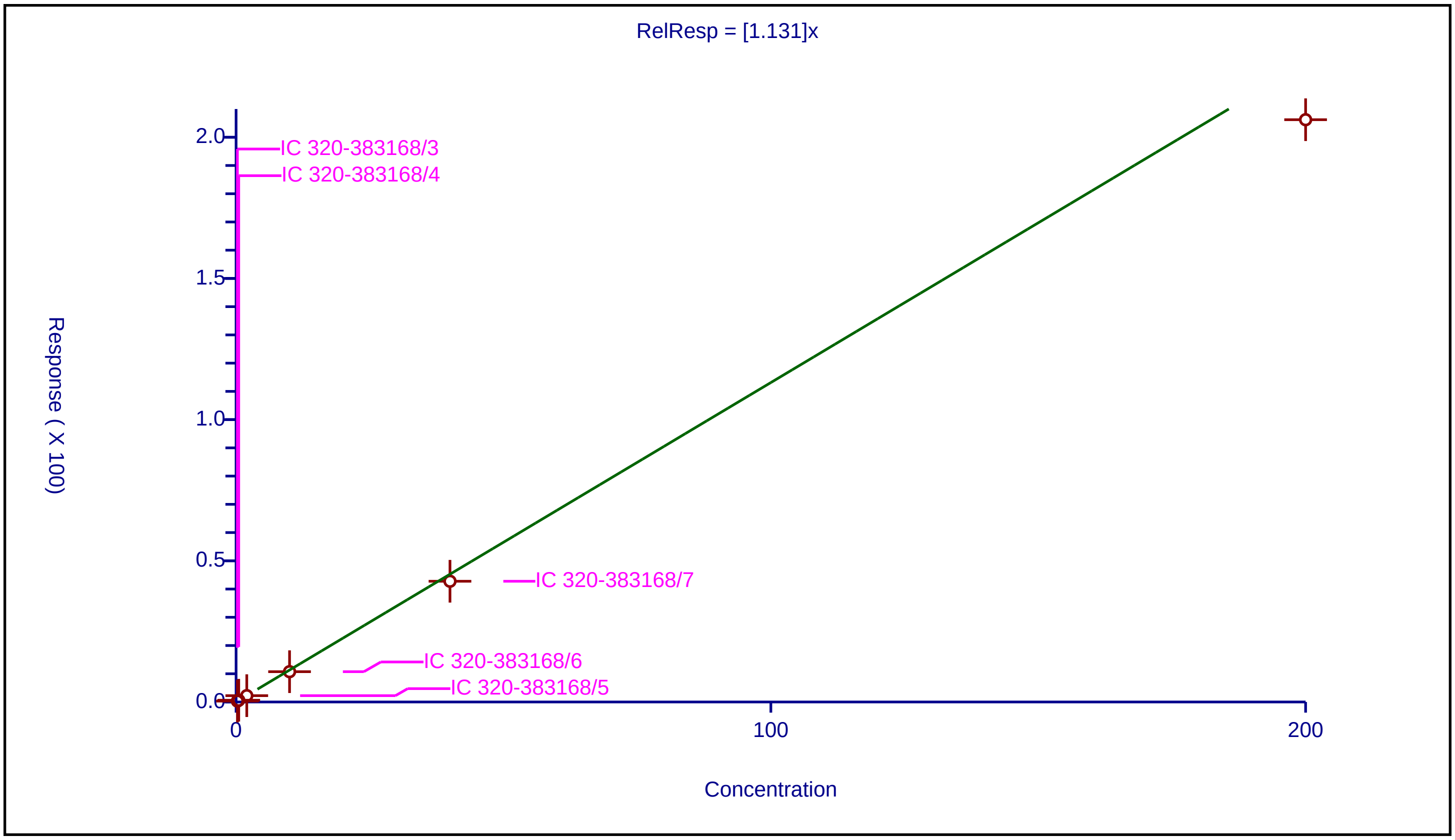

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.121

Error Coefficients

Standard Error:	6310000
Relative Standard Error:	4.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	0.25	0.297747	100.0	7617551.0	1.190986	Y
2	IC 320-383168/4	0.5	0.57225	100.0	3341895.0	1.1445	Y
3	IC 320-383168/5	2.0	2.134413	100.0	5314575.0	1.067207	Y
4	IC 320-383168/6	10.0	10.780398	100.0	3589784.0	1.07804	Y
5	IC 320-383168/7	40.0	44.801257	100.0	6193112.0	1.120031	Y
6	IC 320-383168/8	200.0	224.767684	100.0	6149174.0	1.123838	Y

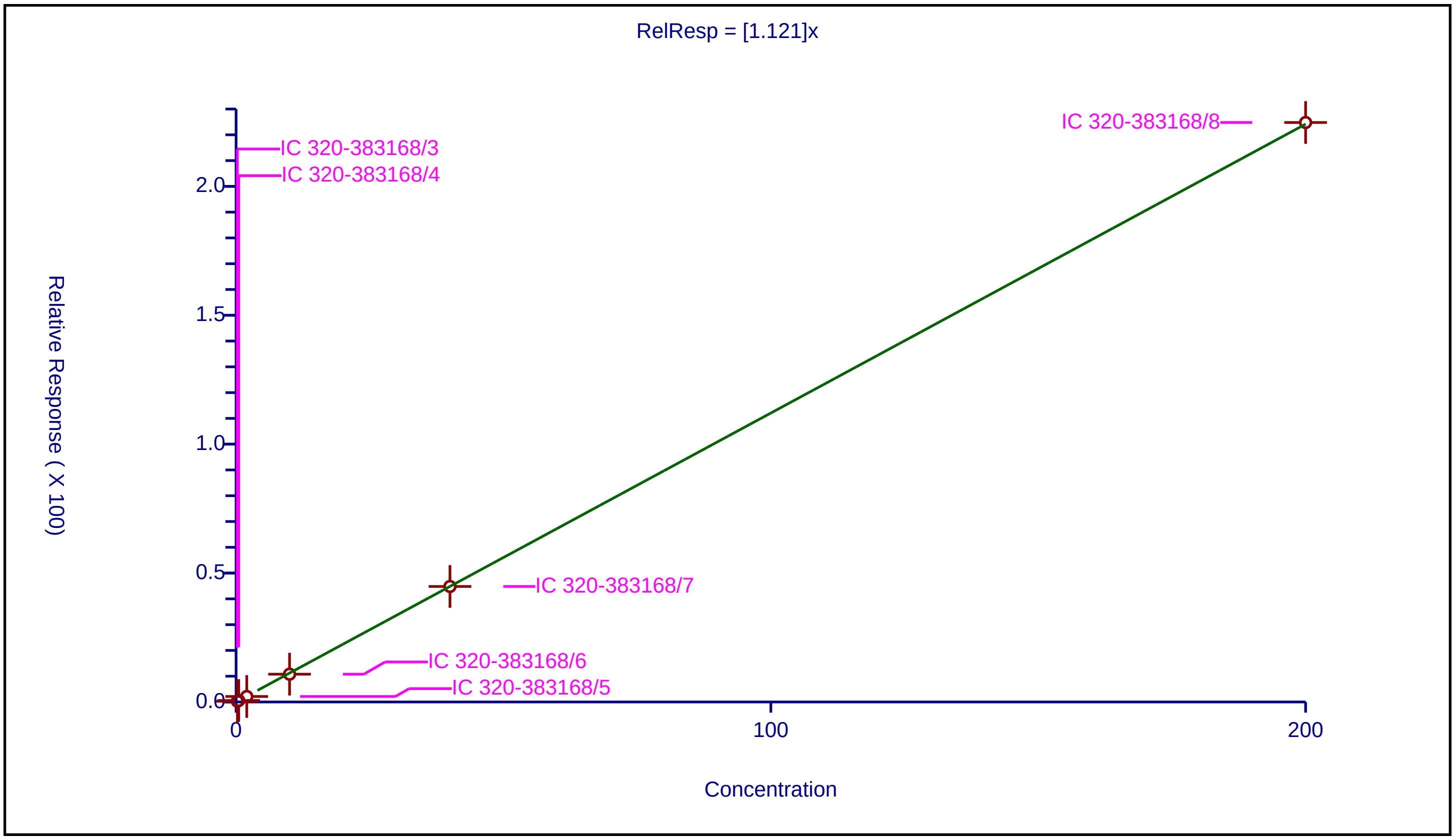

Calibration

/ OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.195

Error Coefficients

Standard Error:	45000000
Relative Standard Error:	5.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	2.5	3.049091	200.0	8344650.0	1.219637	Y
2	IC 320-383168/4	5.0	6.479977	200.0	3459611.0	1.295995	Y
3	IC 320-383168/5	20.0	24.758791	200.0	5749279.0	1.23794	Y
4	IC 320-383168/6	100.0	114.803832	200.0	3663484.0	1.148038	Y
5	IC 320-383168/7	400.0	447.337468	200.0	8394716.0	1.118344	Y
6	IC 320-383168/8	2000.0	2297.286153	200.0	8603138.0	1.148643	Y

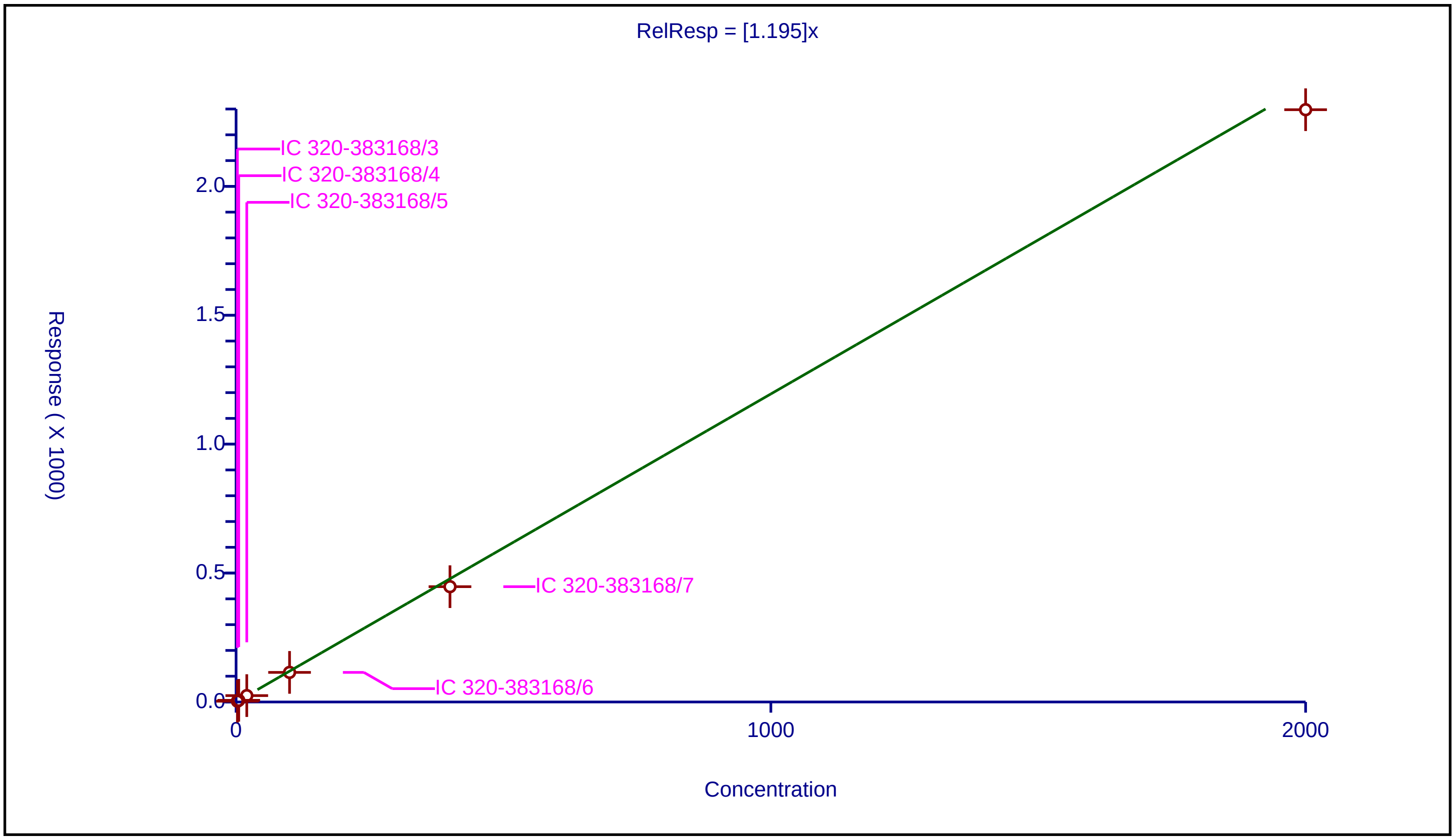

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept: 0
Slope: 1.481

Error Coefficients

Standard Error: 58800000
Relative Standard Error: 3.7
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	2.5	3.731157	200.0	8344650.0	1.492463	Y
2	IC 320-383168/4	5.0	7.859439	200.0	3459611.0	1.571888	Y
3	IC 320-383168/5	20.0	29.269374	200.0	5749279.0	1.463469	Y
4	IC 320-383168/6	100.0	142.065859	200.0	3663484.0	1.420659	Y
5	IC 320-383168/7	400.0	573.55041	200.0	8394716.0	1.433876	Y
6	IC 320-383168/8	2000.0	3006.410033	200.0	8603138.0	1.503205	Y

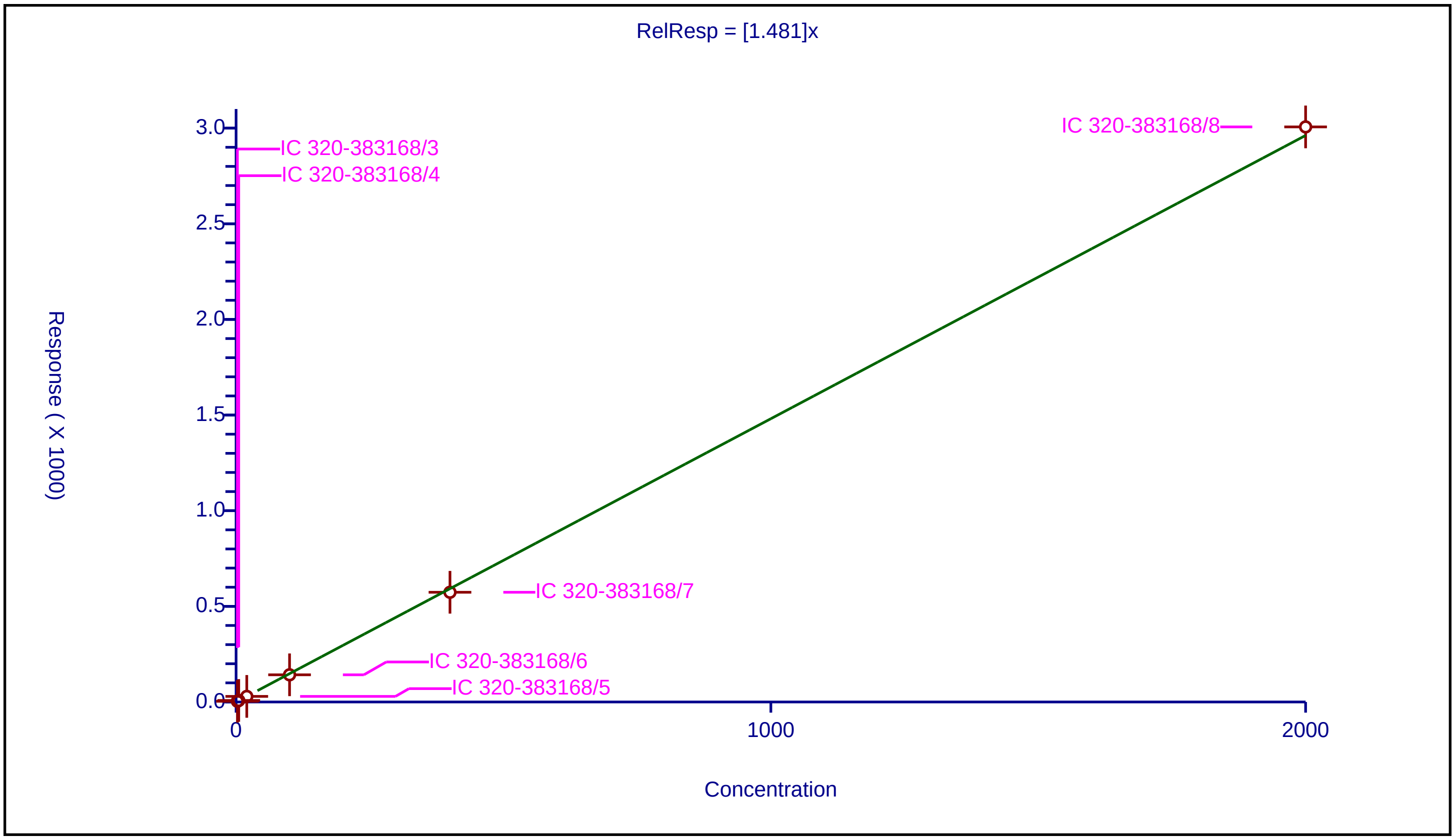

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): WDM 320-383168/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 06/03/2020 12:28

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.79	15

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d				
Injection Date:	03-Jun-2020 12:28:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 26368
H (Peak Height) = 180464

%R = 15 <= 25
Passed

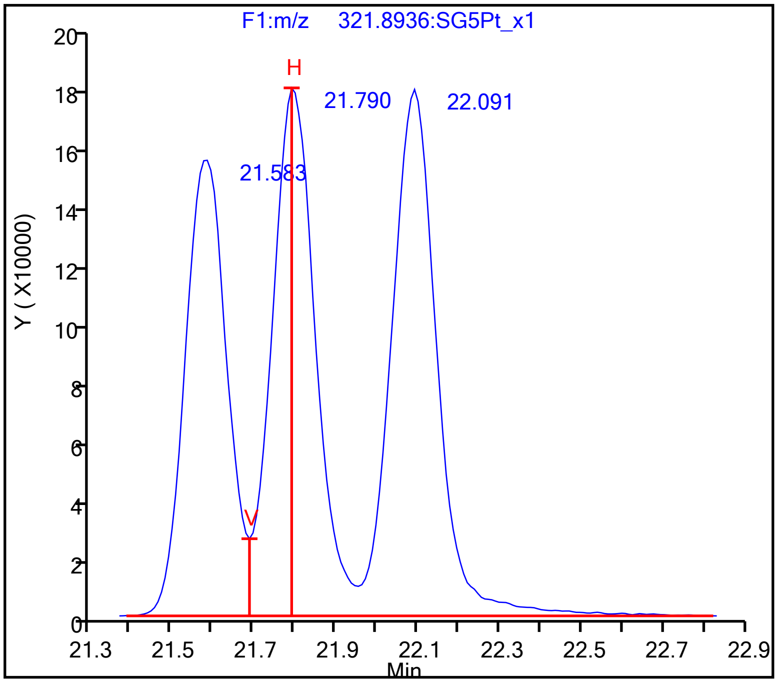

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): CPS 320-398641/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324

H (Peak Height) = 10494443

%R = 16 <= 25

Passed

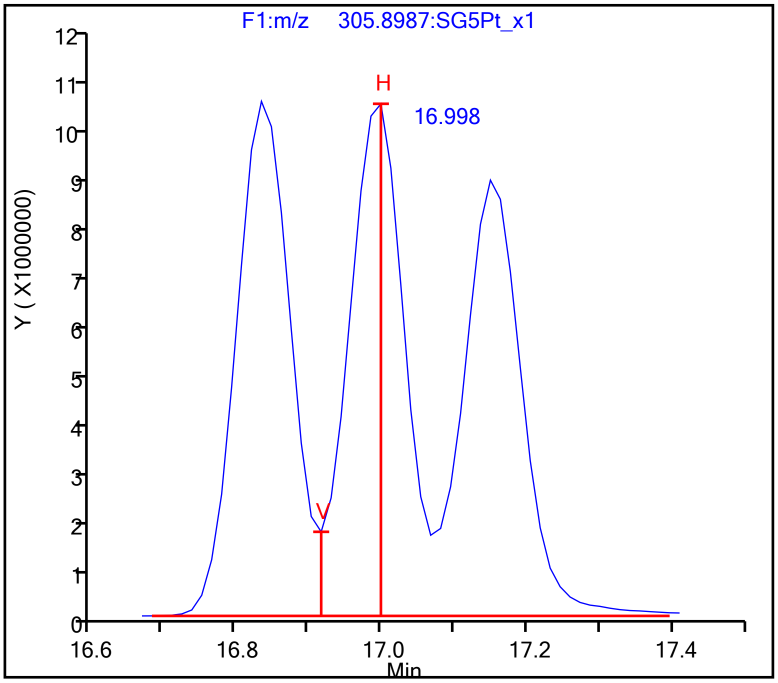

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): WDM 320-398796/2 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 07/27/2020 17:40

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.29	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d				
Injection Date:	27-Jul-2020 17:40:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 13241
H (Peak Height) = 85682

%R = 16 <= 25
Passed

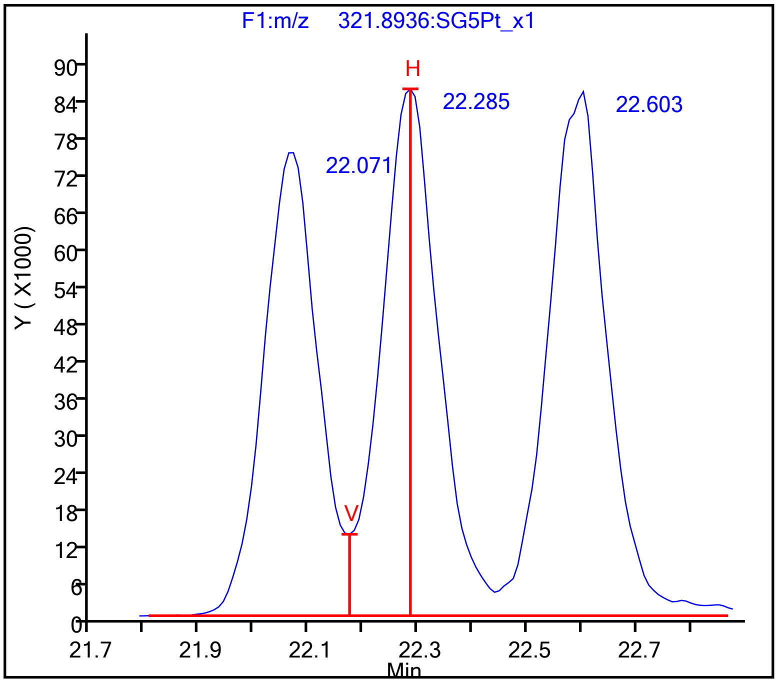

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): WDM 320-398798/13   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 07/28/2020 02:48

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.26	13

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d				
Injection Date:	28-Jul-2020 02:48:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 11238
H (Peak Height) = 85853

%R = 13 <= 25
Passed

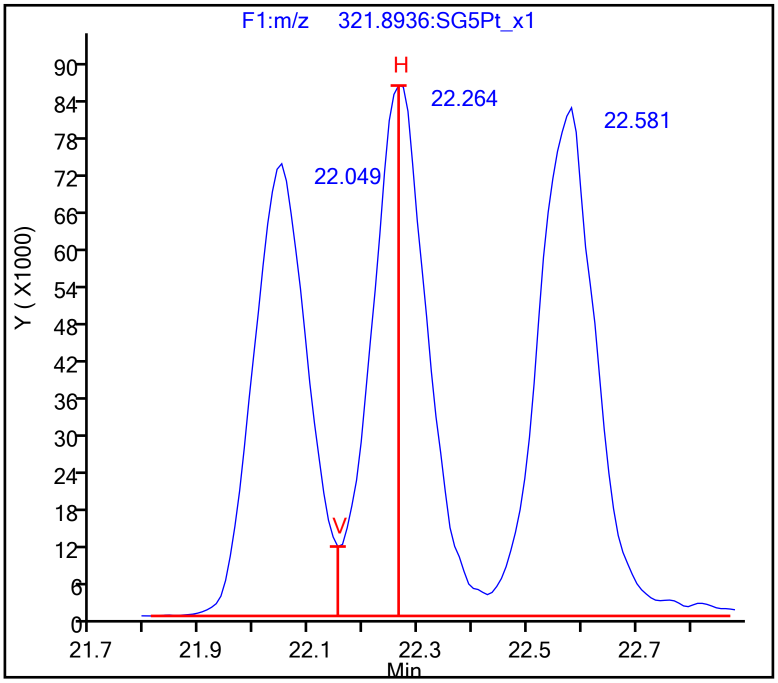

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): CPS 320-399540/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/29/2020 10:53

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.99	18

Resolution Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d
Injection Date: 29-Jul-2020 10:53:06 Instrument ID: 11D2
Lims ID: CPS
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Column: DB-225 (0.32 mm)
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2143228
H (Peak Height) = 11783149

%R = 18 <= 25
Passed

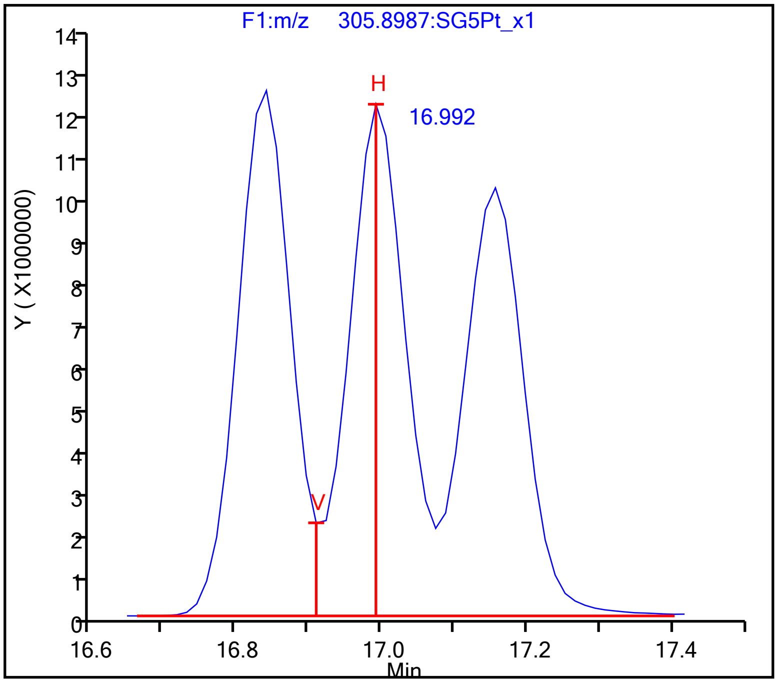

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d				
Injection Date:	29-Jul-2020 10:53:06	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): WDM 320-399843/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 07/30/2020 12:02

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.24	15

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d				
Injection Date:	30-Jul-2020 12:02:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 14888
H (Peak Height) = 102335

%R = 15 <= 25
Passed

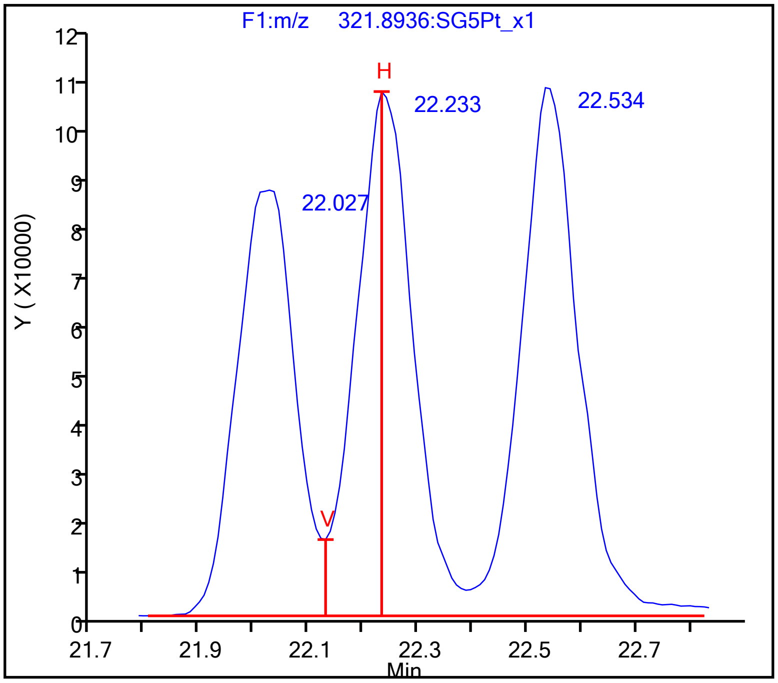

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID (1): CPS 320-399853/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/30/2020 13:09

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	20

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d				
Injection Date:	30-Jul-2020 13:09:50	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1343731
H (Peak Height) = 6682908

%R = 20 <= 25
Passed

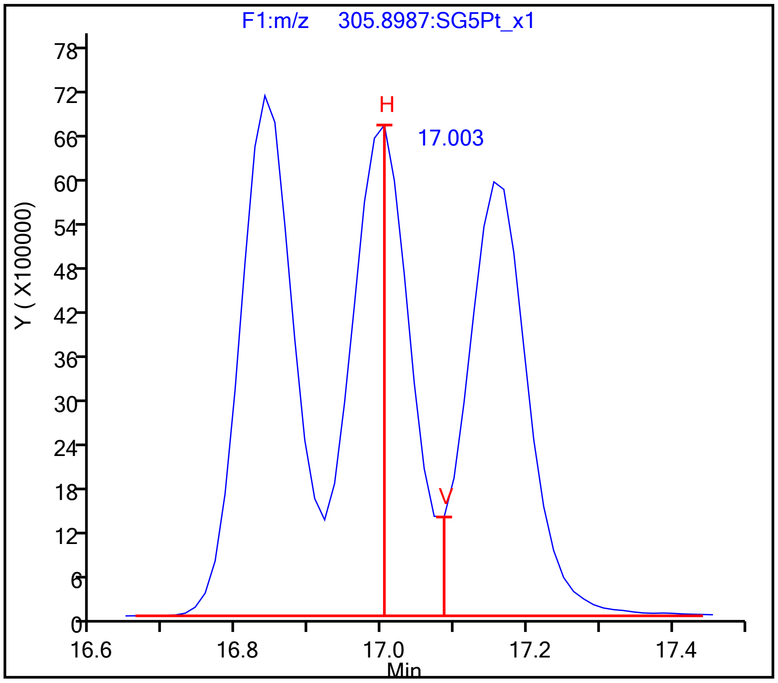

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d				
Injection Date:	30-Jul-2020 13:09:50	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID: ICV 320-398641/9 Calibration Date: 07/25/2020 03:40

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 24JL2011D2_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

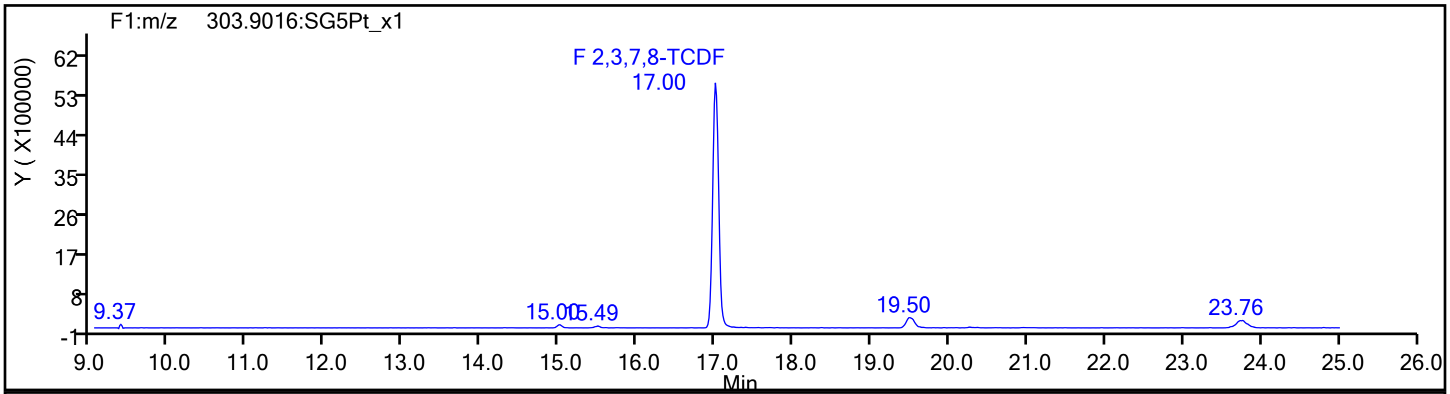

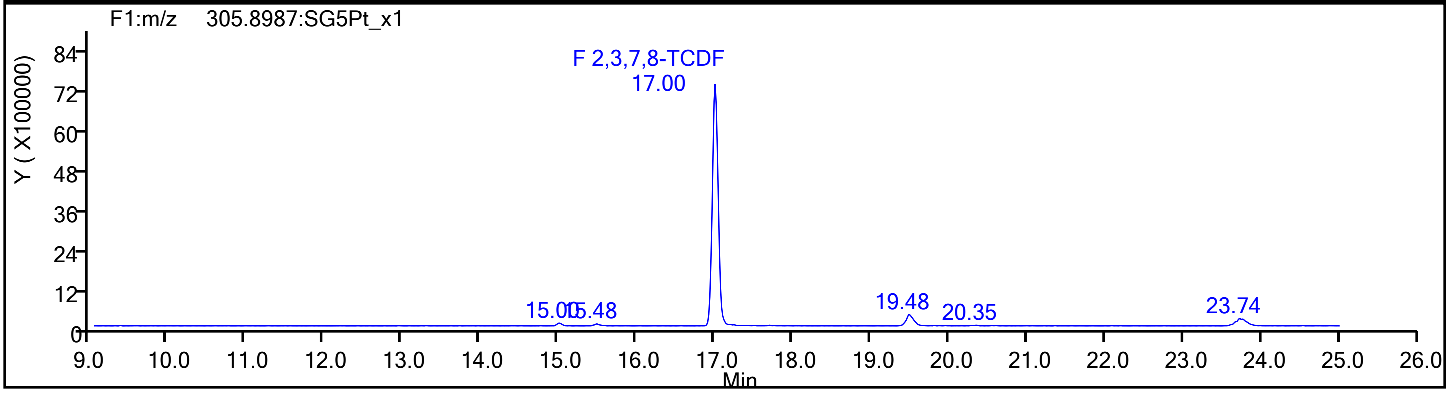

TCDF Standards

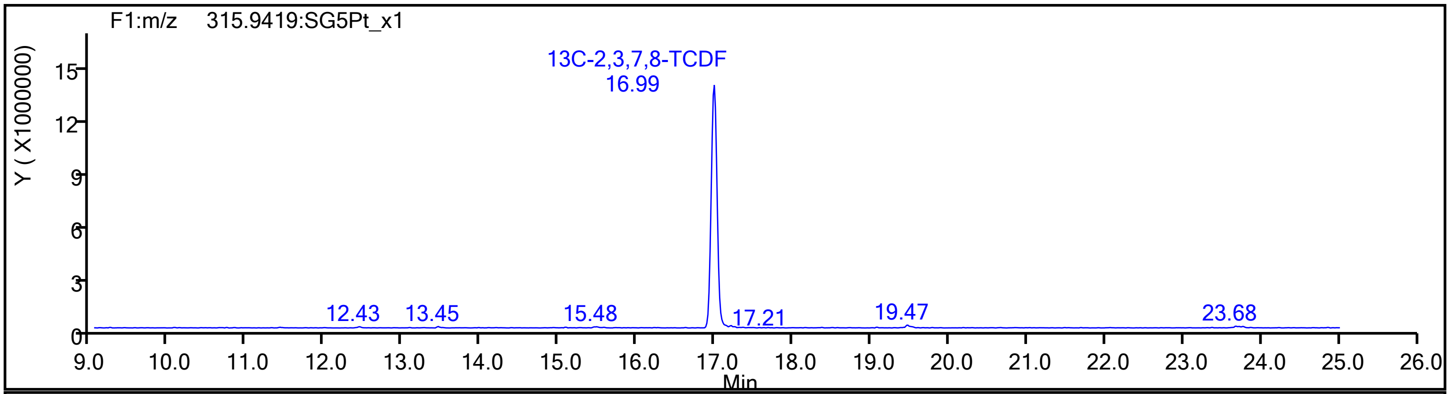

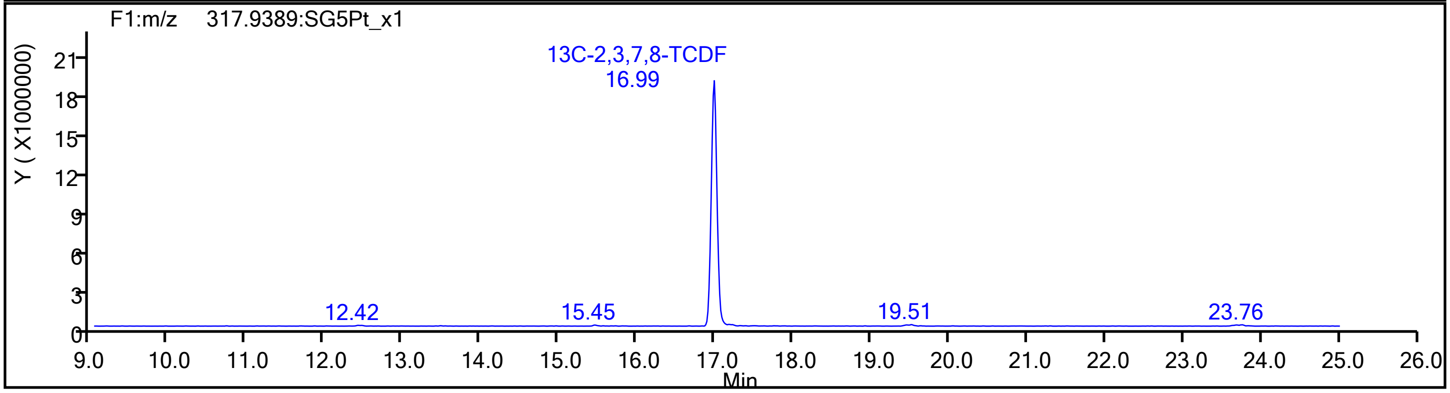

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

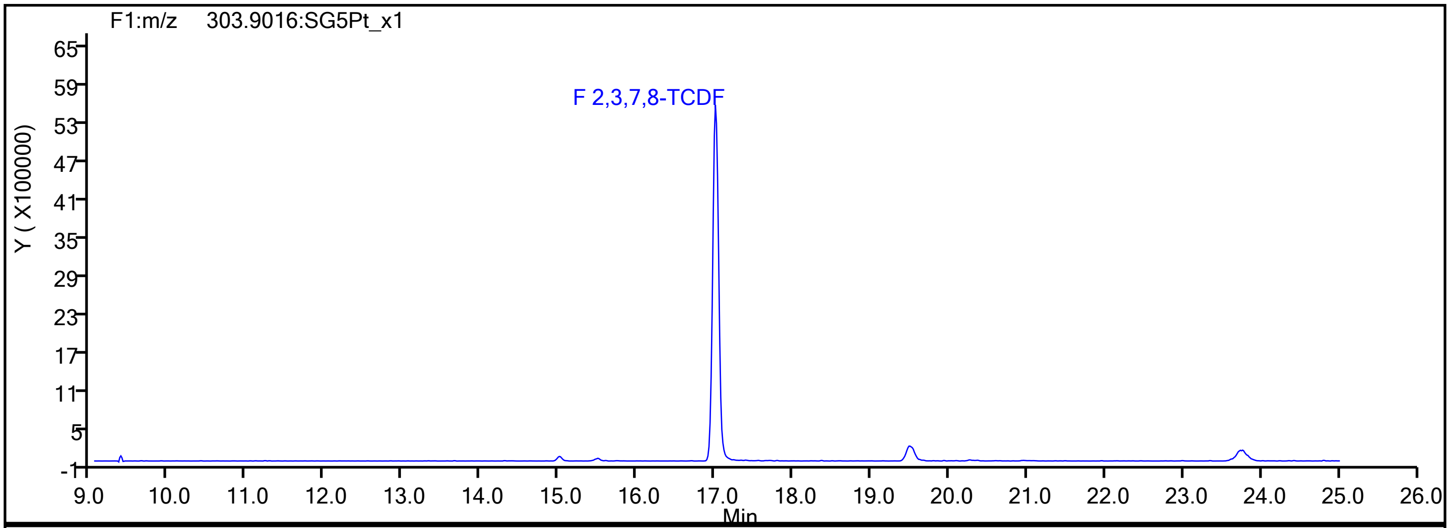

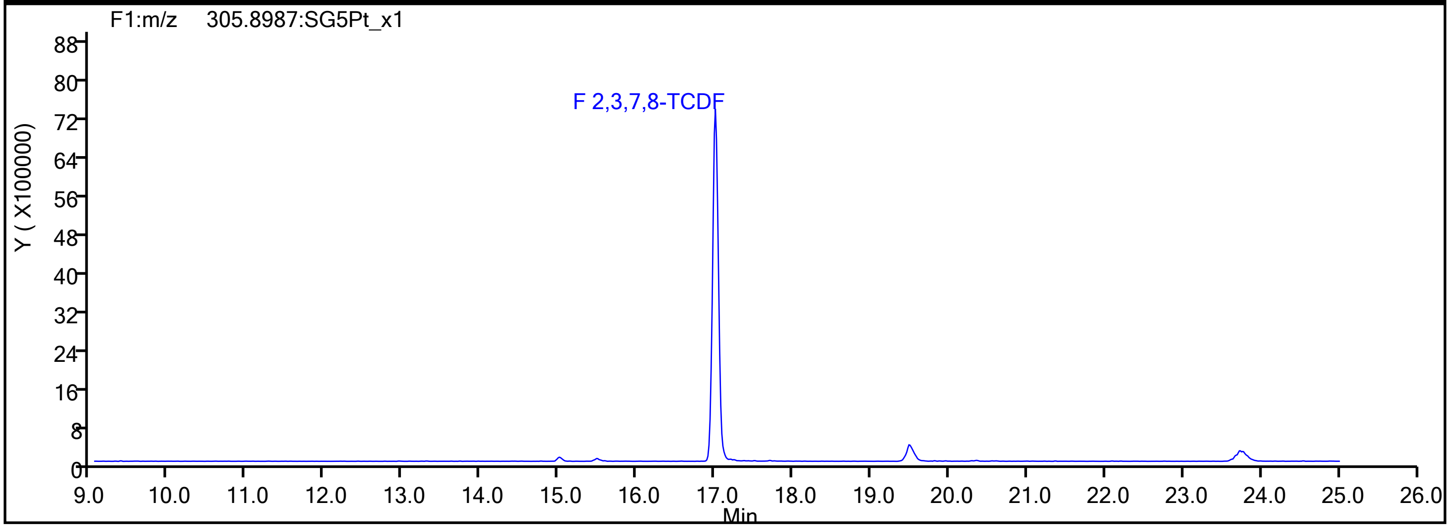

TCDF Interference Mass

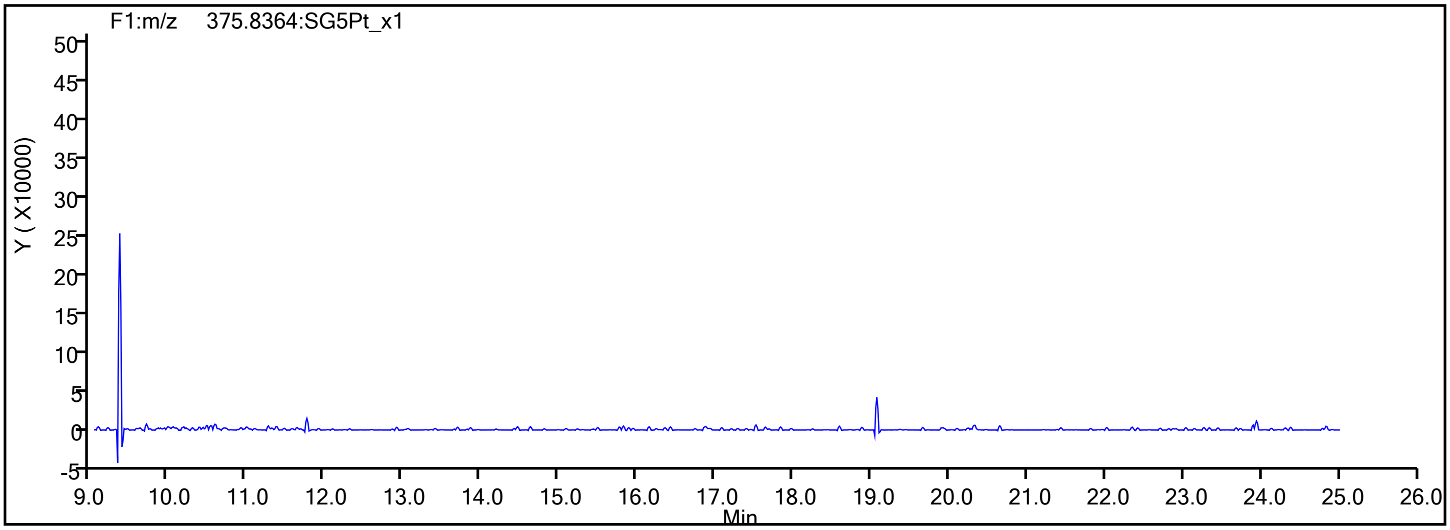

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d

Injection Date: 25-Jul-2020 03:40:30 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

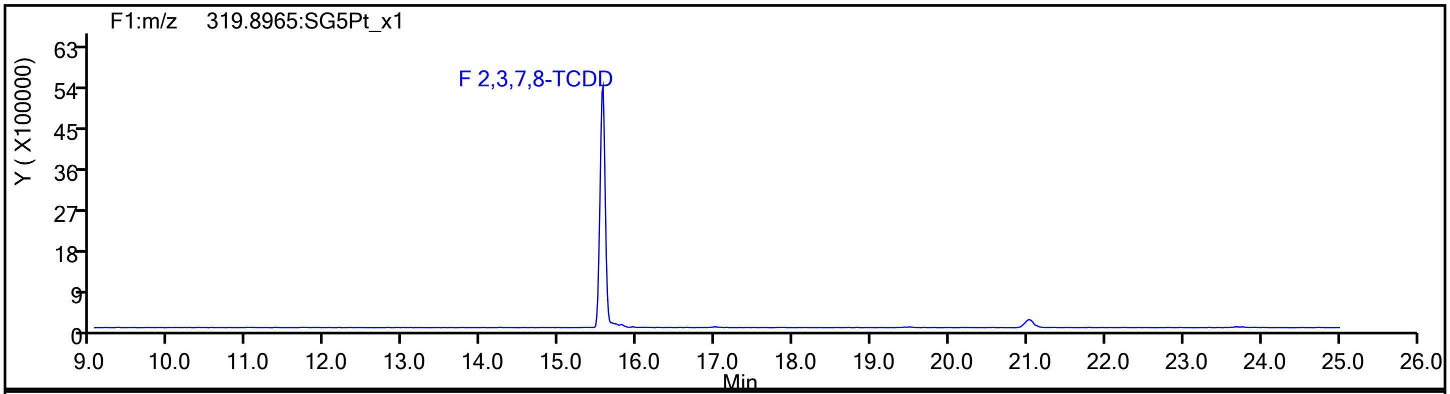

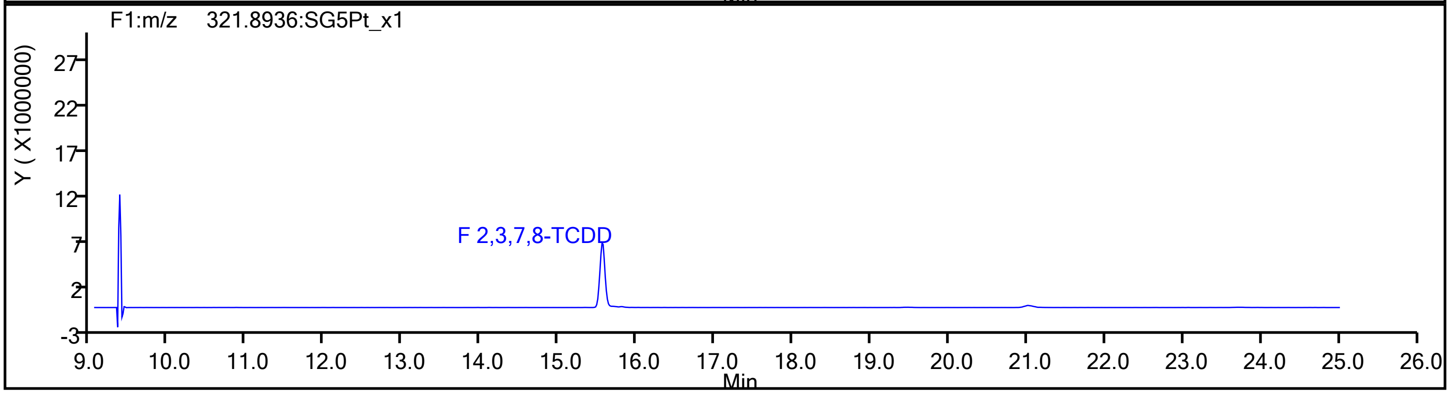

TCDD Standards

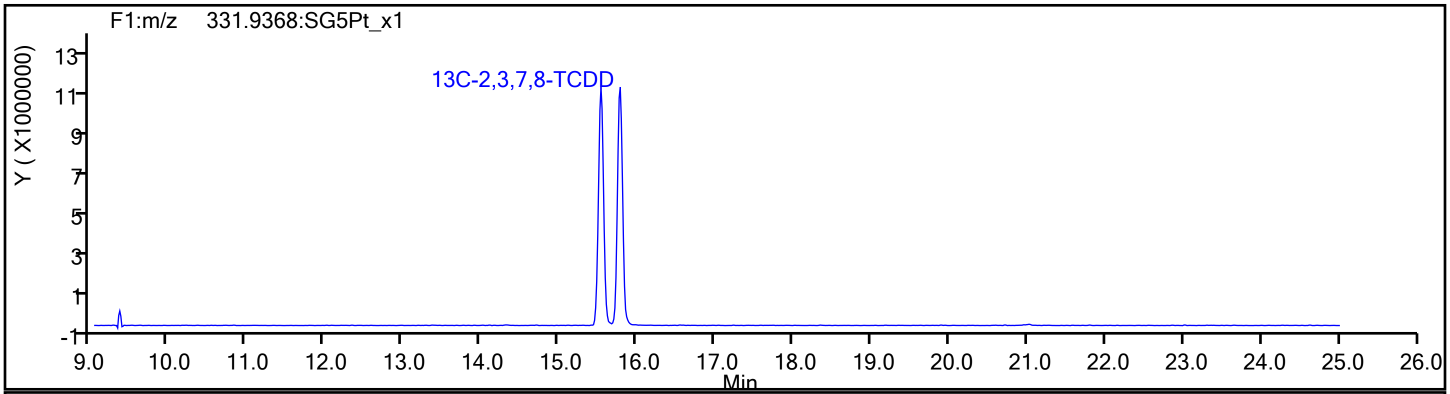

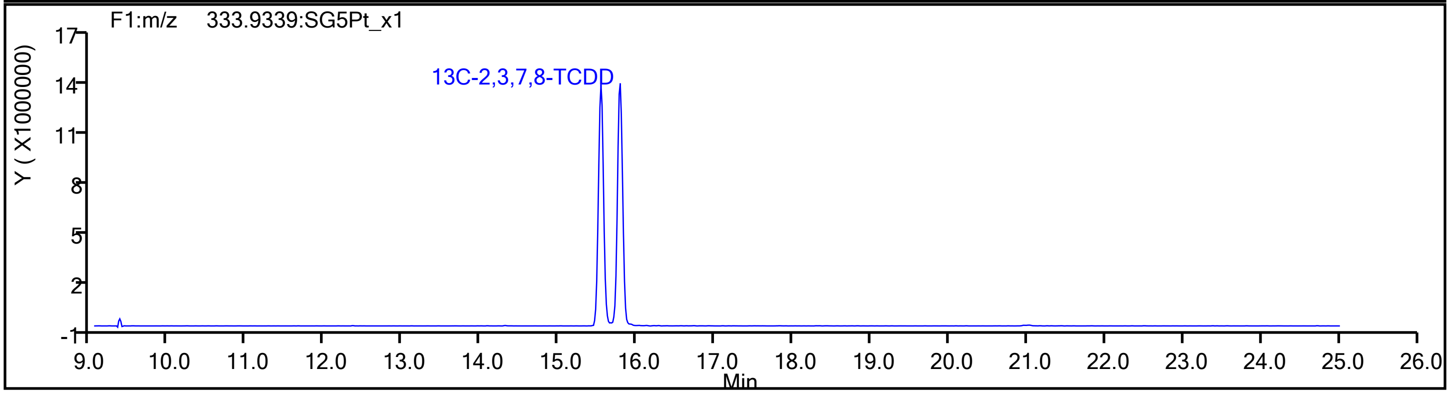

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

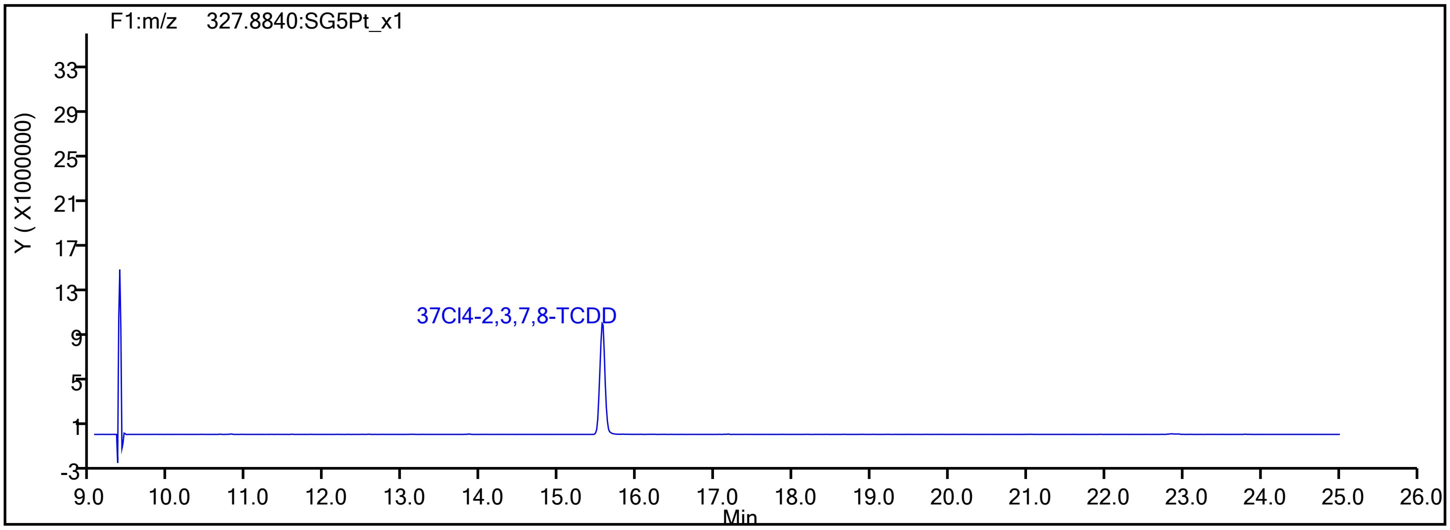

37Cl4-TCDD Standards

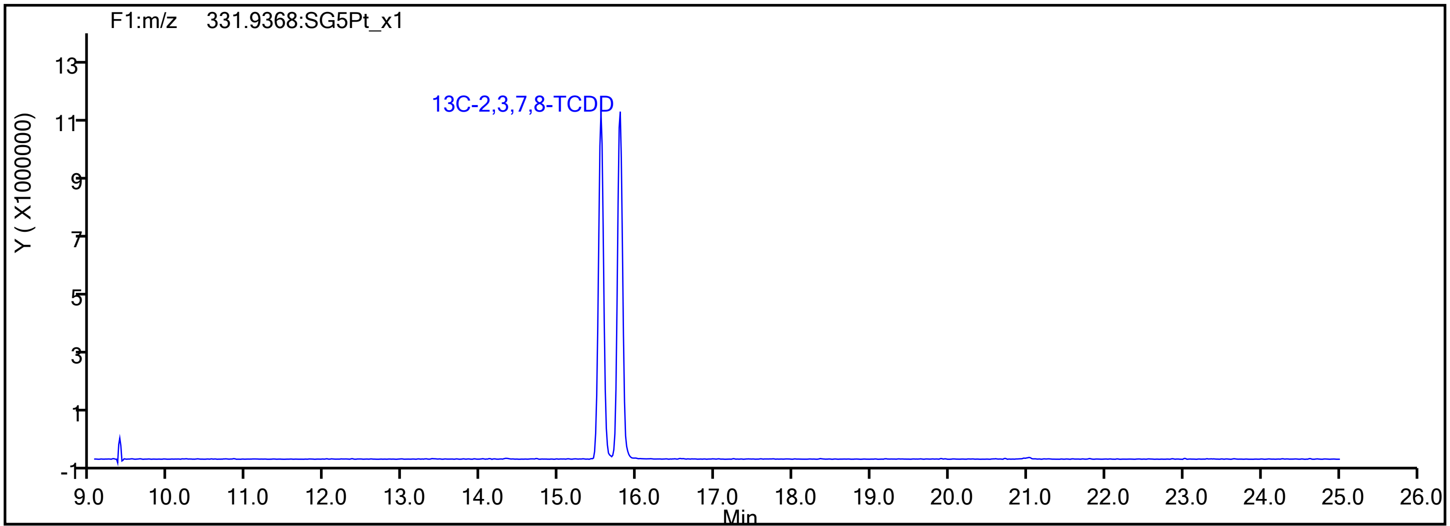

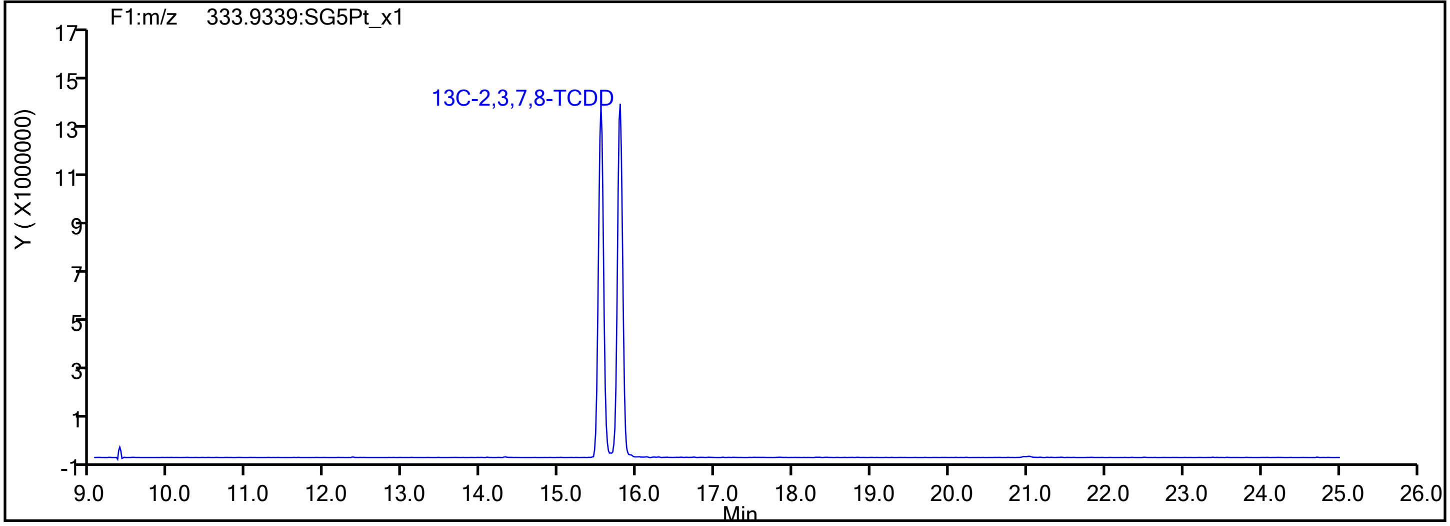

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d

Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

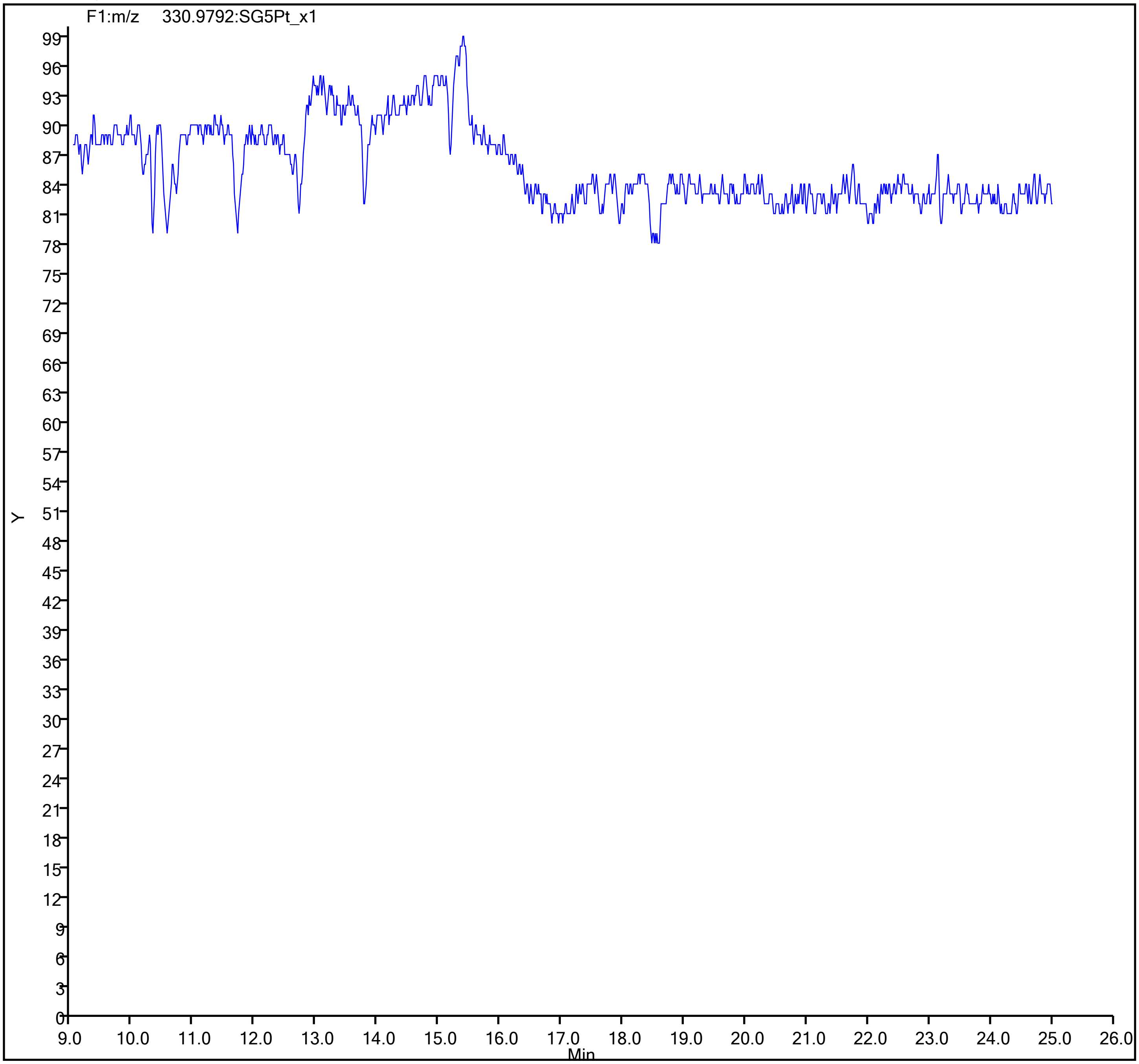

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Lab Sample ID: CCV 320-399540/2	Calibration Date: 07/29/2020 11:31
Instrument ID: 11D2	Calib Start Date: 07/24/2020 23:50
GC Column: DB-225 ID: 0.32(mm)	Calib End Date: 07/25/2020 02:23
Lab File ID: 29JL2011D2_002.d	Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.103		8.60	10.0	86	78-129
2,3,7,8-TCDF	AveID	0.9943	0.8962		9.01	10.0	90	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	0.9635		98.0	100	98	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.574		100	100	100	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9898		9.95	10.0	100	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
29JL2011D2	1	CPS 072920	CPS HRDXNCP_00040				1.00000	
29JL2011D2	2	CCV 072920	CCV CS-4 HRDXNL4_00094				1.00000	
29JL2011D2	3	SB 072920	SB Solvent Blank C-14				1.00000	
29JL2011D2	4	320-398815	MB 320-398815/1-A	20	8290A/Solid	D169	10.00000	g
29JL2011D2	5	320-398815	LCS 320-398815/2-A	20	8290A/Solid		10.00000	g
29JL2011D2	6	320-398815	LCSD 320-398815/3-A	20	8290A/Solid		10.00000	g
29JL2011D2	7	320-398815	320-63086-A-1-A	20	8290A/Solid		10.00000	g
29JL2011D2	8	320-397938	320-62886-A-3-A	20	1613B/Water	D169	1.00000	L
29JL2011D2	9	320-397938	320-62886-A-4-A	20	1613B/Water		1.00000	L
29JL2011D2	10	320-397938	320-62886-A-1-A	20	1613B/Water		1.00000	L
29JL2011D2	11	320-397938	320-62886-A-2-A	20	1613B/Water		1.00000	L
29JL2011D2	12	SB 072920A	SB Solvent Blank C-14				1.00000	
29JL2011D2	13	CCV 072920A	CCV CS-4 HRDXNL4_00094				1.00000	
29JL2011D2	14						1.00000	
29JL2011D2	15						1.00000	
29JL2011D2	16						1.00000	
29JL2011D2	17						1.00000	
29JL2011D2	18						1.00000	
29JL2011D2	19						1.00000	
29JL2011D2	20						1.00000	
29JL2011D2	21						1.00000	
29JL2011D2	22						1.00000	
29JL2011D2	23		KSS 07-29-20				1.00000	
29JL2011D2	24						1.00000	

Log file checked

AJS
07-29-20

Peak Locate Examination:29-JUL-2020:10:50 File:29JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

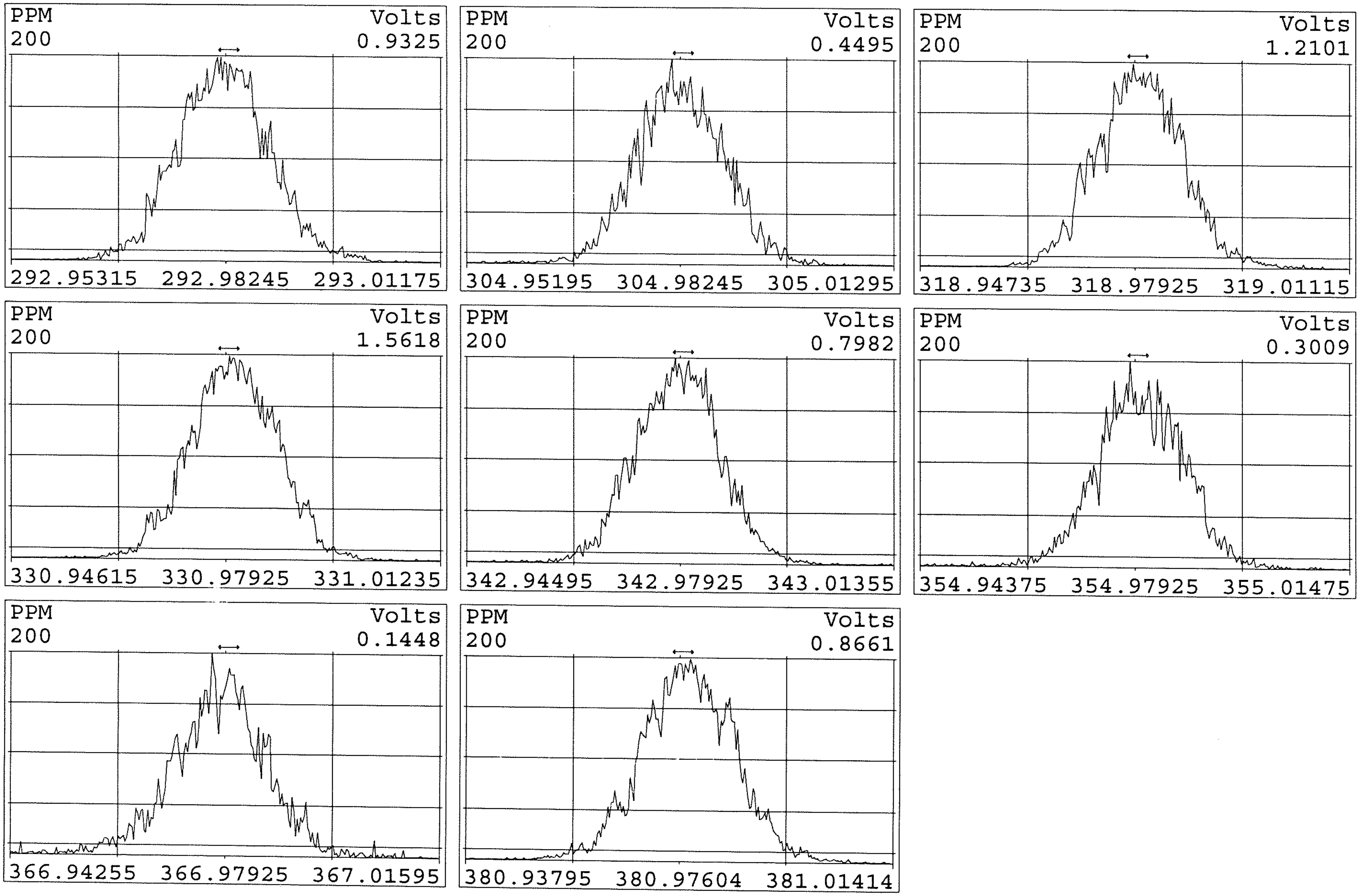

Peak Locate Examination:29-JUL-2020:19:35 File:RESCHK29JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

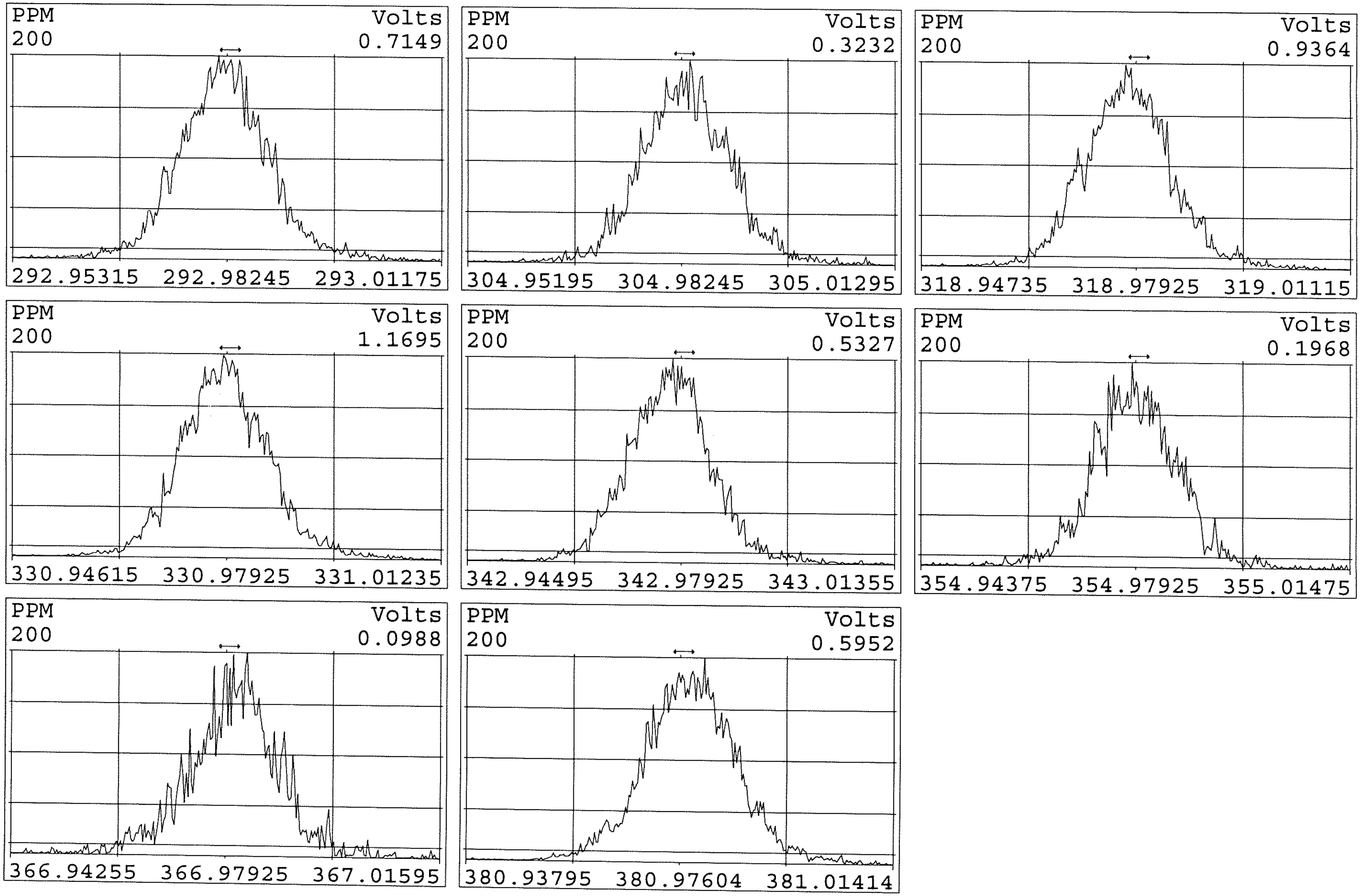

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Jul-2020 11:31:24 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 22:10:53 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1065

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.763	157730110	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.957	248299318	0.80	1.5708	100.2	100.2	0.1892	0.1892	100	
2,3,7,8-TCDF	16.984	22252663	0.77	0.9943	9.014	9.014	0.0223	0.0223	90.14	
D 13C-2,3,7,8-TCDD	15.530	151975198	0.81	0.9834	98.0	98.0	0.1562	0.1562	97.98	
2,3,7,8-TCDD	15.544	16756651	0.79	1.2822	8.599	8.599	0.0374	0.0374	85.99	
$ 37Cl4-2,3,7,8-TCDD	15.544	15611350		0.9945	9.952	9.952	0.0388	0.0388	99.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 29-Jul-2020 22:10:53 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	29-Jul-2020 11:31:24	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	29-Jul-2020 22:10:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1065				

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.763	15.763	0		71283389	14696778	13972	34930	1052		
333.9339	15.763	15.763	0		86446721	17905899	6054	15135	2958	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.957	16.957	0	1.076	110085592	20687723	22197	55492	932		
317.9389	16.957	16.957	0	1.076	138213726	25428008	16557	41392	1536	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.984	16.984	0	1.002	9709695	1760792	1466	3665	1201		
305.8987	16.984	16.984	0	1.002	12542968	2360868	2624	6560	900	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.530	15.530	0	0.985	67855861	14096445	13972	34930	1009		
333.9339	15.516	15.530	-1	0.984	84119337	17551262	6054	15135	2899	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.544	0	1.001	7376315	1568634	3192	7980	491		
321.8936	15.544	15.544	0	1.001	9380336	1996200	2878	7195	694	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.544	15.544	0	0.986	15611350	3396272	5030	12575	675		

Reagents:

HRDXNL4_00094	Amount Added: 2.00	Units: uL

Report Date: 29-Jul-2020 22:10:53 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d
Injection Date: 29-Jul-2020 11:31:24 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399540 Sample Line#: 2
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

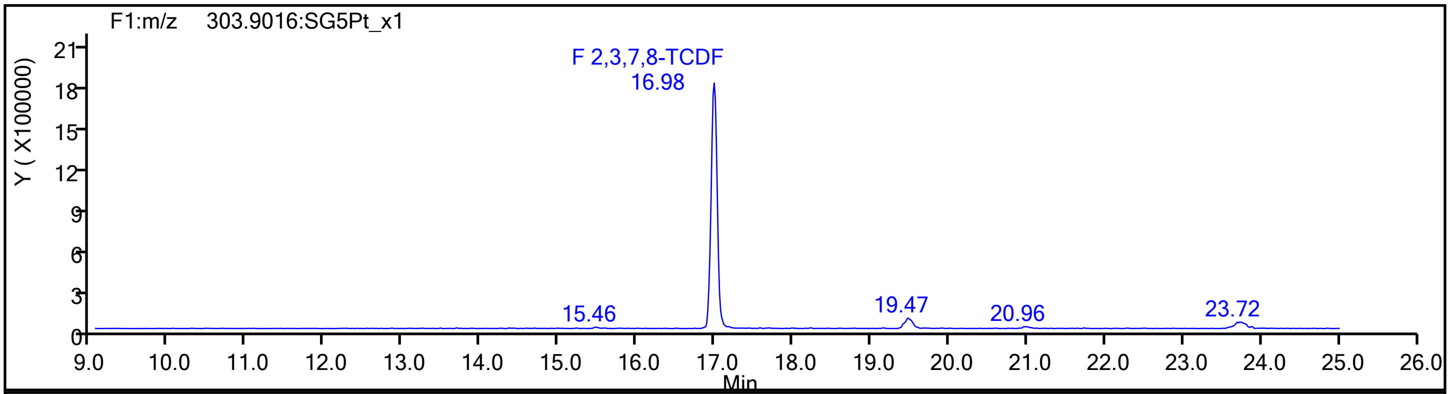

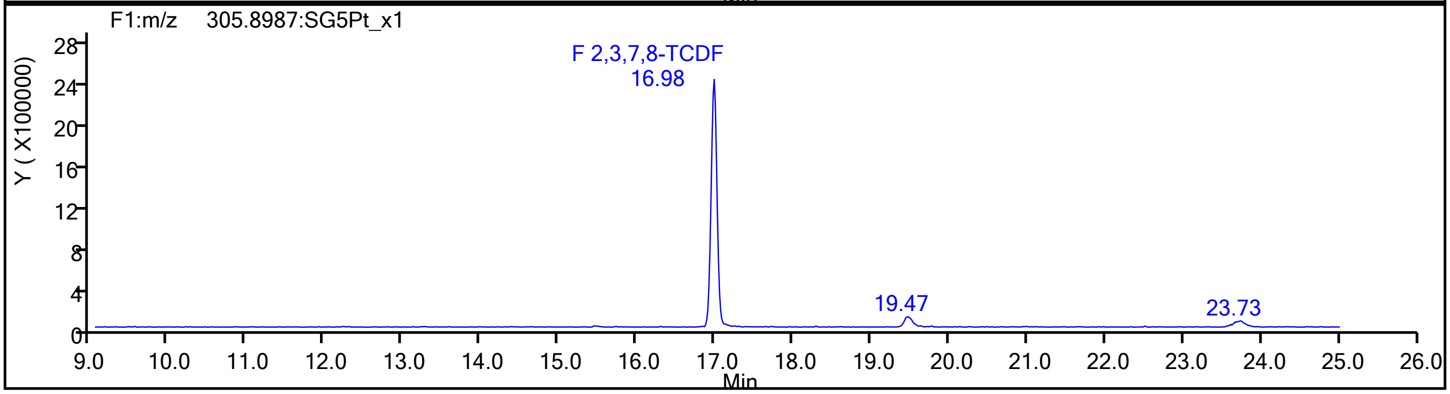

TCDF Standards

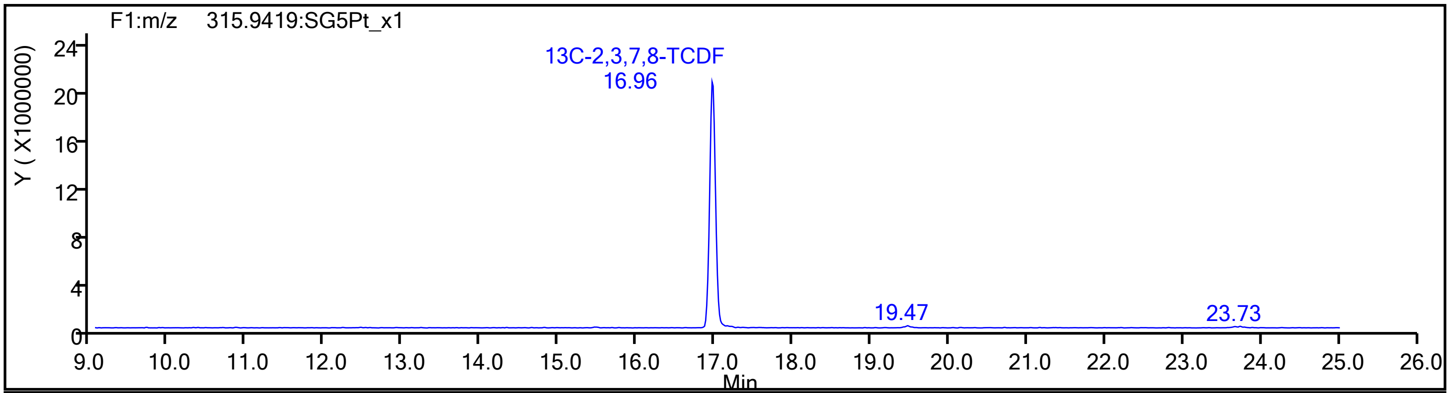

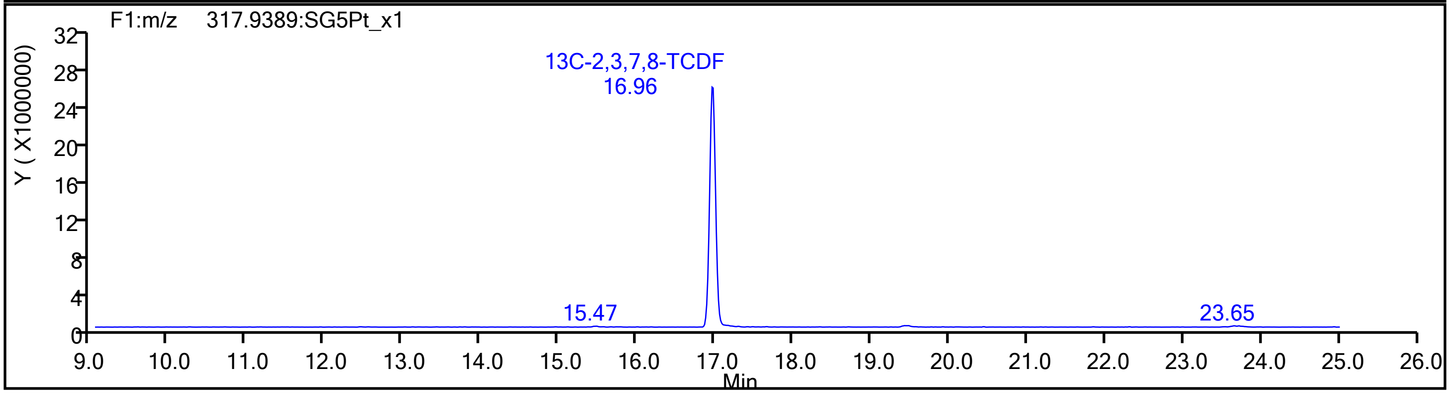

Report Date: 29-Jul-2020 22:10:53 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d		
Injection Date:	29-Jul-2020 11:31:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399540	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

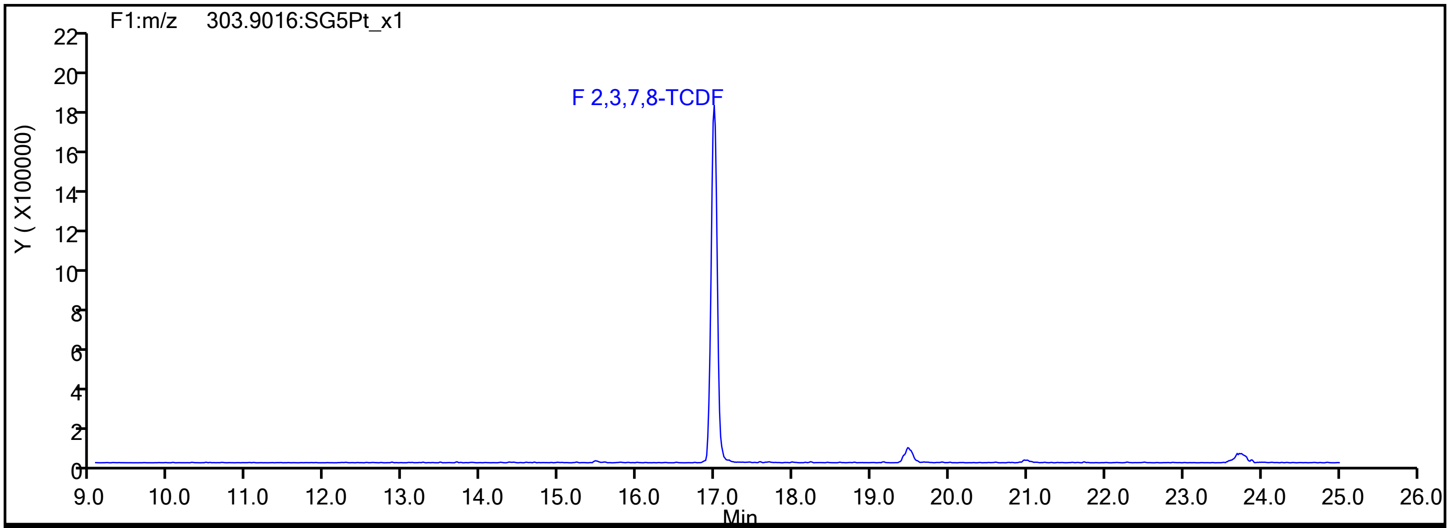

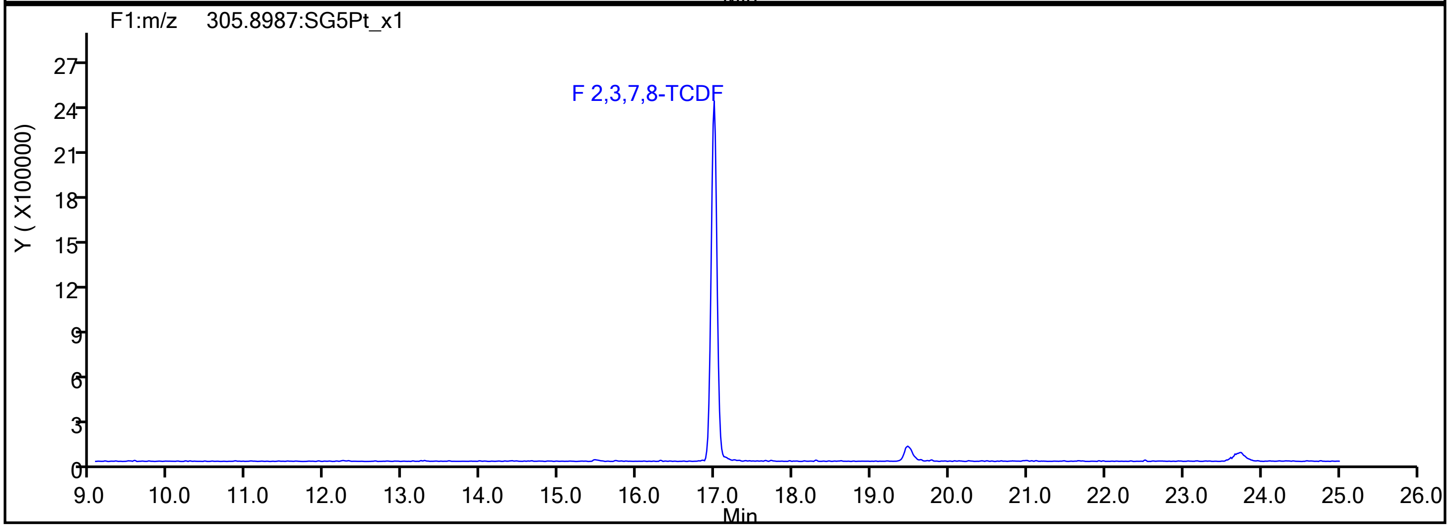

TCDF Interference Mass

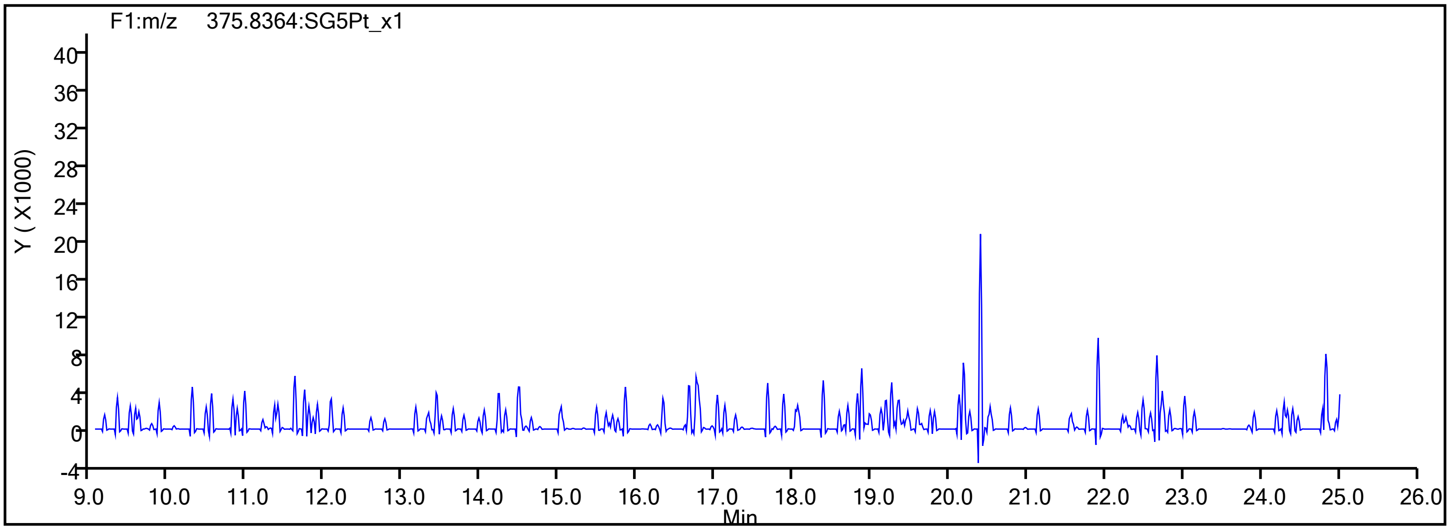

Report Date: 29-Jul-2020 22:10:53 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d
Injection Date: 29-Jul-2020 11:31:24 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399540 Sample Line#: 2
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

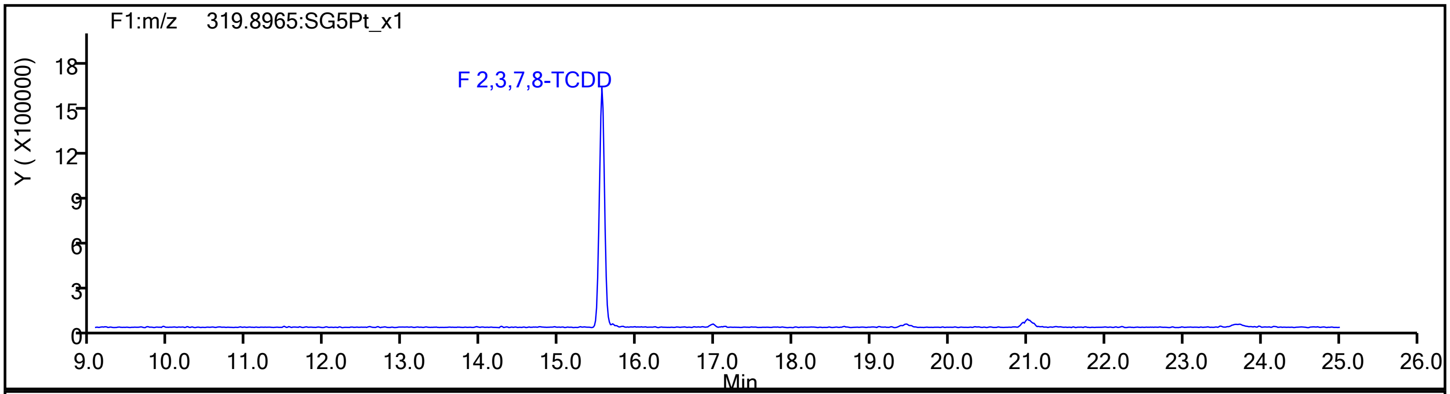

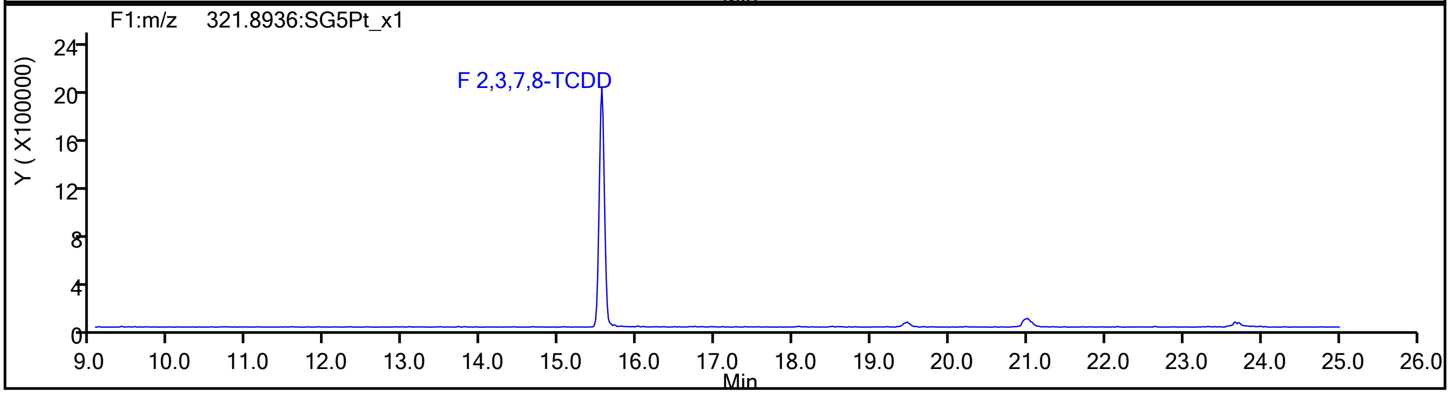

TCDD Standards

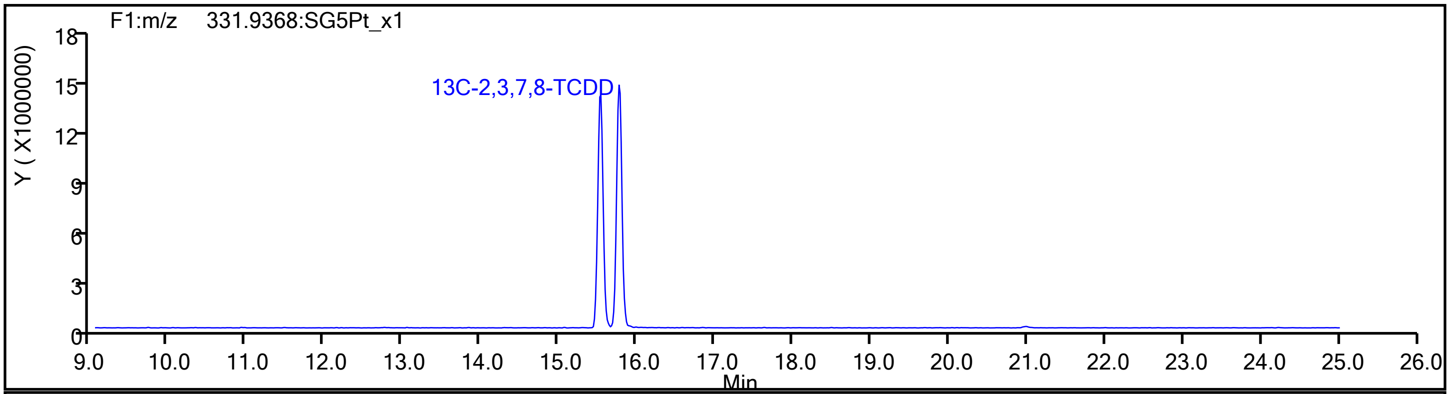

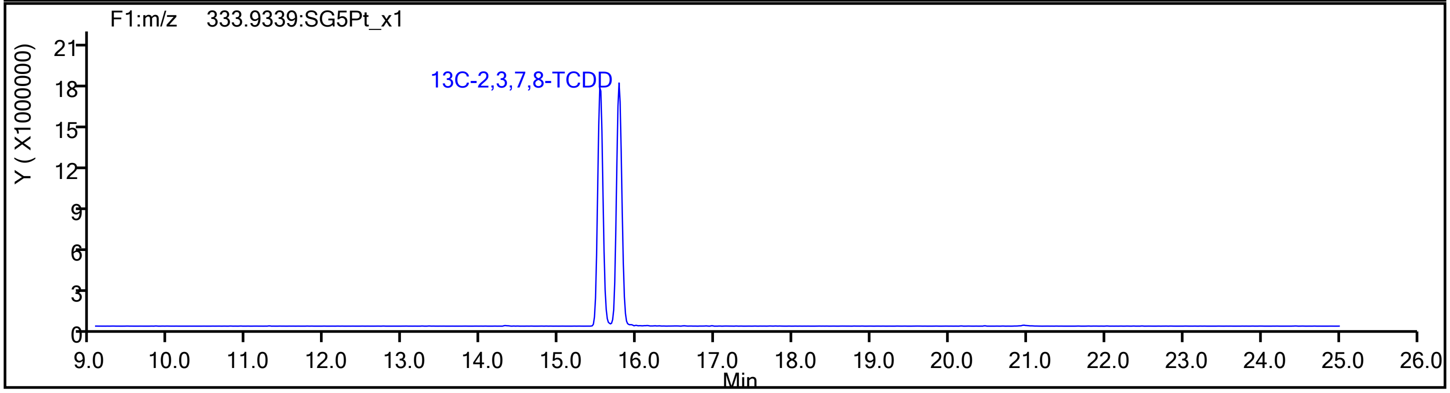

Report Date: 29-Jul-2020 22:10:53 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d		
Injection Date:	29-Jul-2020 11:31:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399540	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

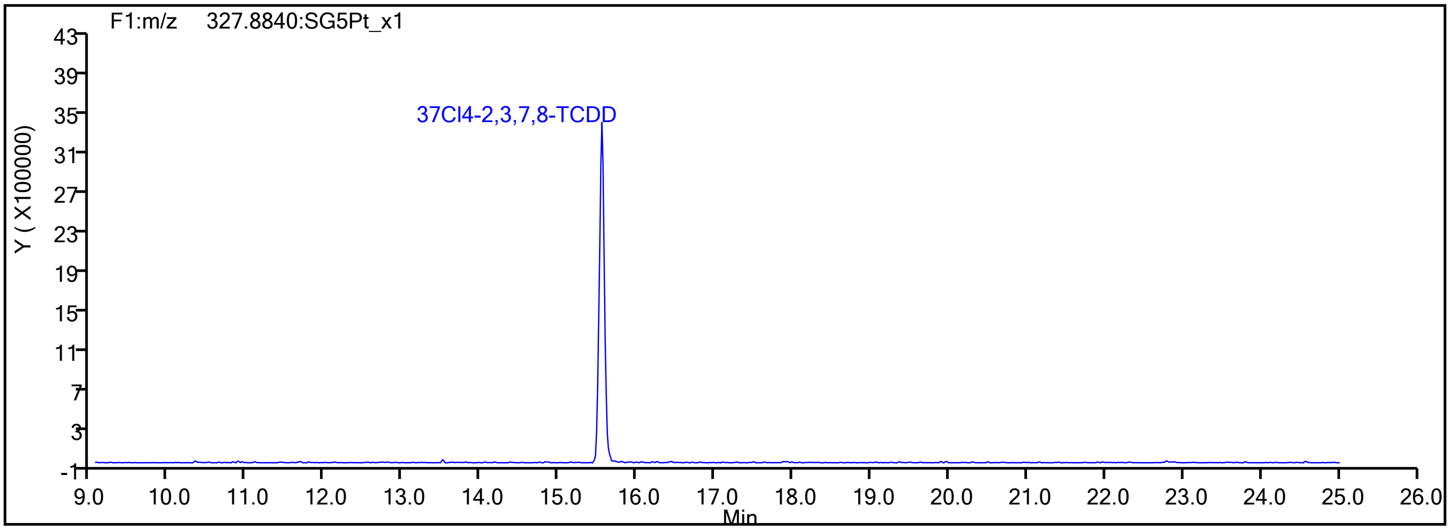

37Cl4-TCDD Standards

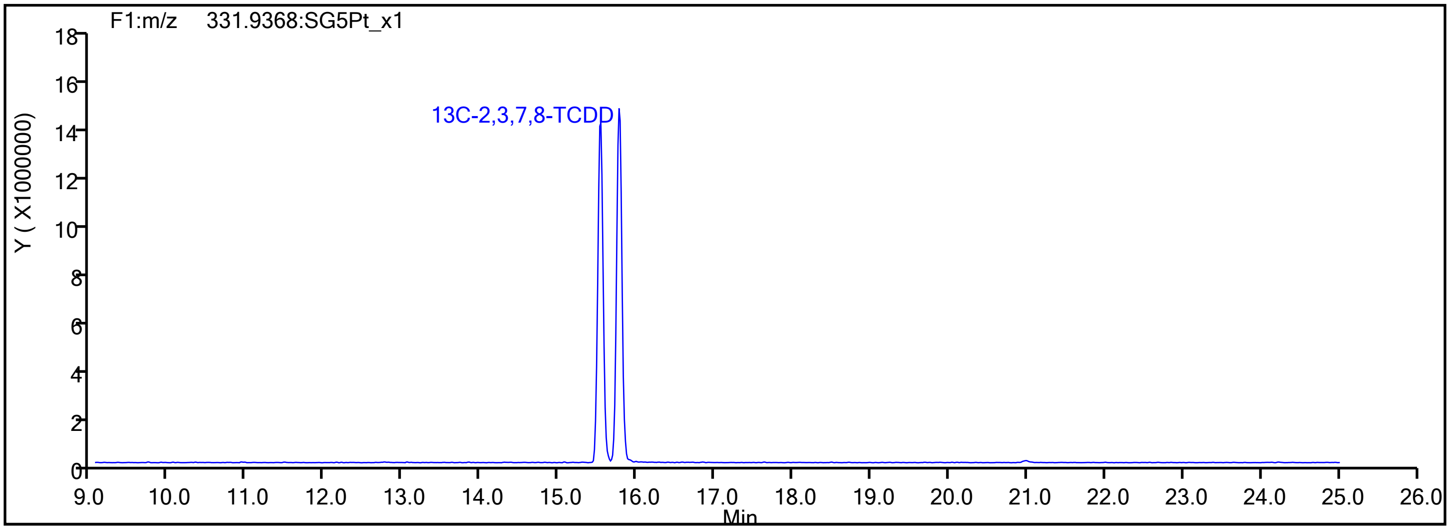

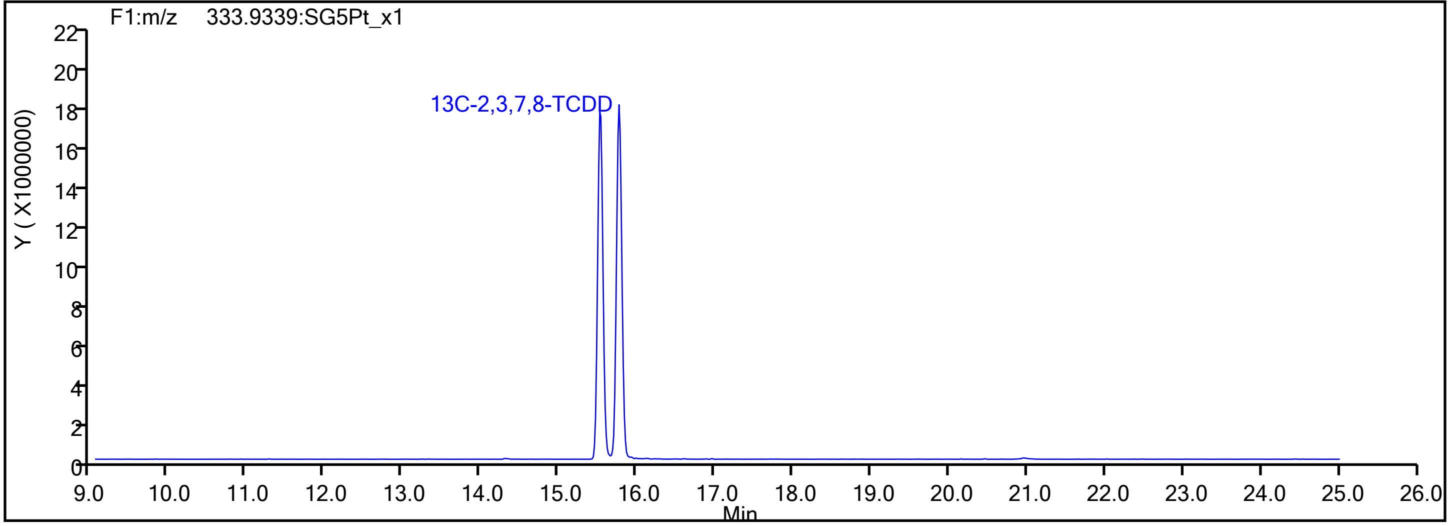

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_002.d		
Injection Date:	29-Jul-2020 11:31:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399540	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

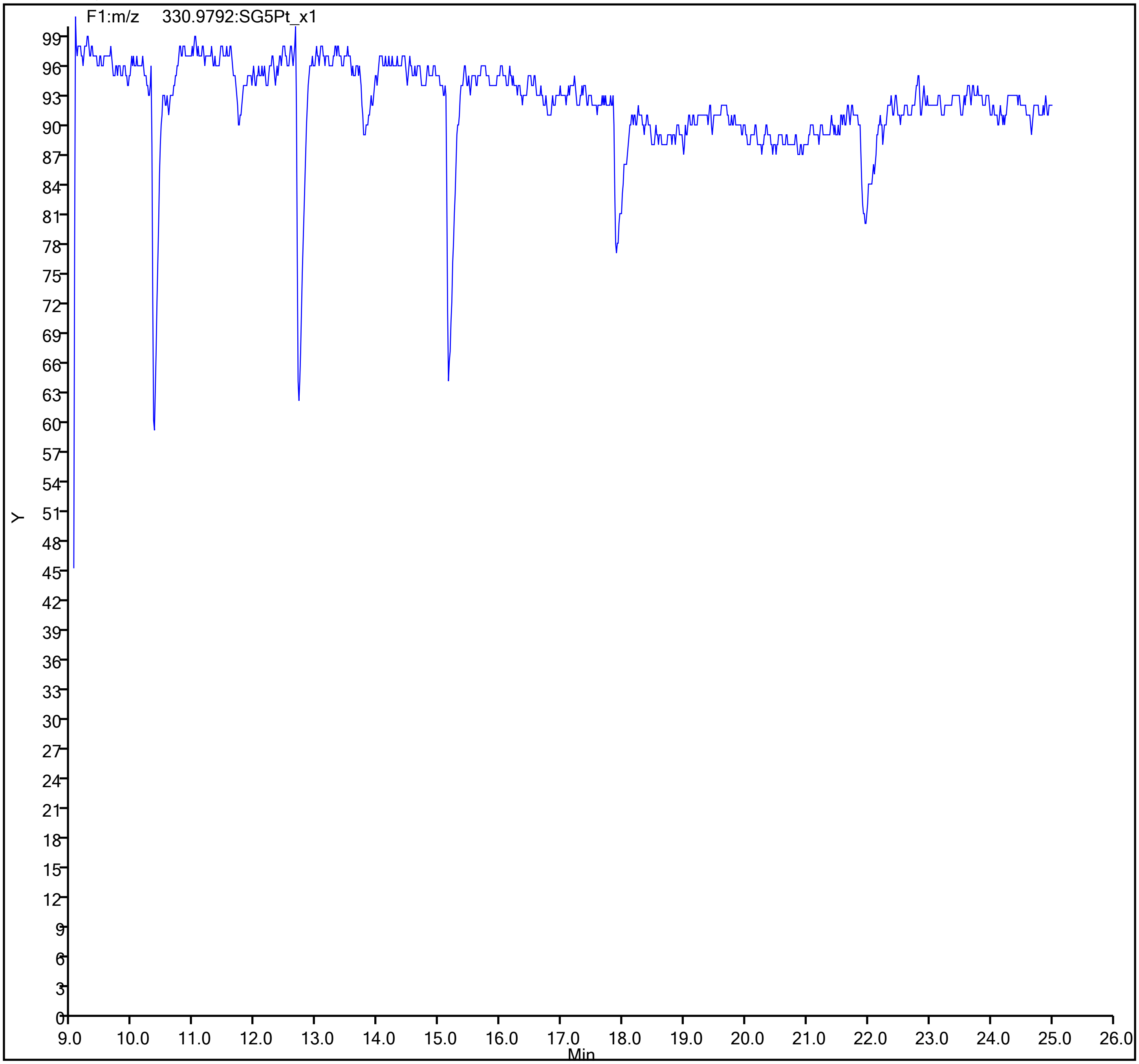

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-62886-1
SDG No.:
Lab Sample ID: CCV 320-399853/2
Calibration Date: 07/30/2020 13:48
Instrument ID: 11D2
Calib Start Date: 07/24/2020 23:50
GC Column: DB-225
ID: 0.32(mm)
Calib End Date: 07/25/2020 02:23
Lab File ID: 30JL2011D2_002.d
Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.074		8.38	10.0	84	78-129
2,3,7,8-TCDF	AveID	0.9943	0.9273		9.33	10.0	93	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	0.9628		97.9	100	98	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.422		90.5	100	91	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9382		9.43	10.0	94	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
30JL2011D2	1	CPS 073020	CPS HRDXNCP_00042				1.00000	
30JL2011D2	2	CCV 073020	CCV CS-4 HRDXNL4_00094				1.00000	
30JL2011D2	3	SB 073020	SB Solvent Blank C-14				1.00000	
30JL2011D2	4	320-398446	MB 320-398446/1-A	20	8290A_D5/Solid	D170	10.00000	g
30JL2011D2	5	320-397938	320-62886-A-1-A (5X)	20	1613B/Water	D169	1.00000	L
30JL2011D2	6	320-397938	320-62886-A-2-A (20X)	20	1613B/Water		1.00000	L
30JL2011D2	7	SB 073020A	SB Solvent Blank C-14				1.00000	
30JL2011D2	8	320-398973	MB 320-398973/1-A	10	1613B_DW	D170	1.00000	L
30JL2011D2	9	320-398973	LCS 320-398973/2-A	10	1613B_DW		1.00000	L
30JL2011D2	10	320-398973	LCSD 320-398973/3-A	10	1613B_DW		1.00000	L
30JL2011D2	11	320-398973	LLCS 320-398973/4-A	10	1613B_DW		1.00000	L
30JL2011D2	12	320-398973	550-145592-Q-1-A	10	1613B_DW		1.00000	L
30JL2011D2	13	CCV 073020A	CCV CS-4 HRDXNL4_00094				1.00000	
30JL2011D2	14						1.00000	
30JL2011D2	15						1.00000	
30JL2011D2	16						1.00000	
30JL2011D2	17						1.00000	
30JL2011D2	18						1.00000	
30JL2011D2	19						1.00000	
30JL2011D2	20						1.00000	
30JL2011D2	21		AJS 07-30-20				1.00000	
30JL2011D2	22						1.00000	

Logfile ✓'d
7/30/20
KSS

Peak Locate Examination:30-JUL-2020:13:08 File:30JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

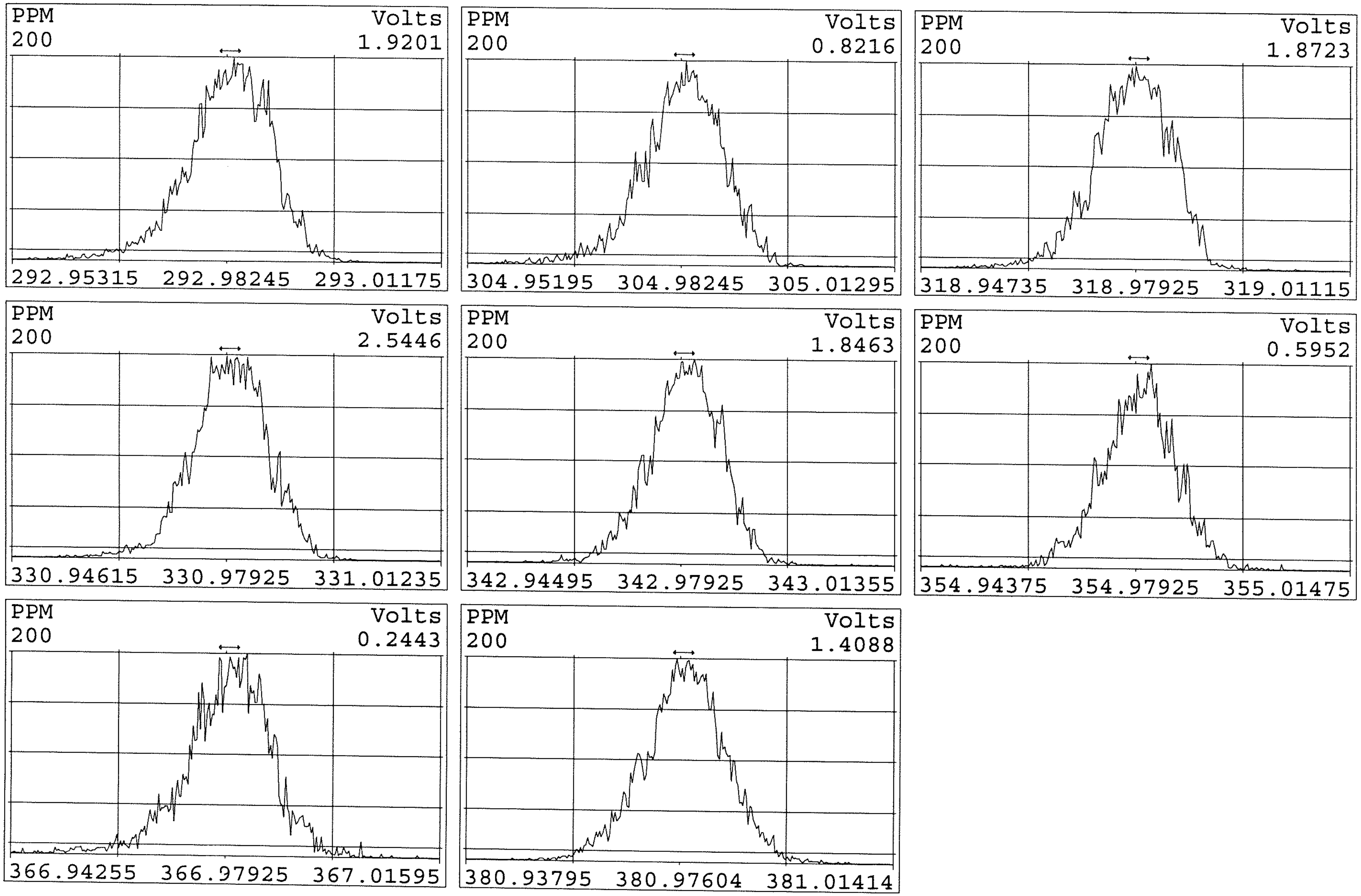

Peak Locate Examination:30-JUL-2020:21:41 File:RESCHK30JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

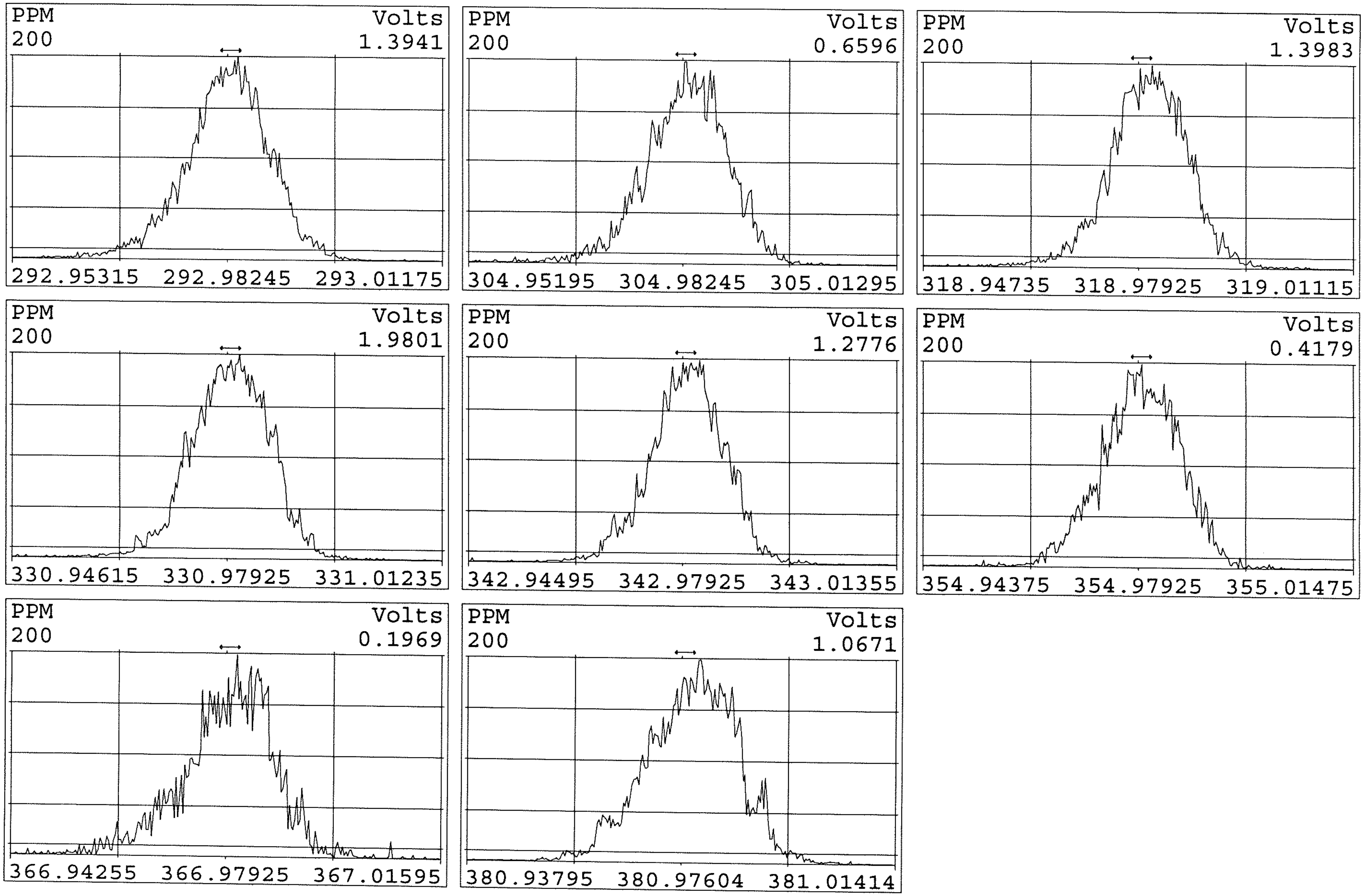

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 30-Jul-2020 13:48:12 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 22:56:28 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1069

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.780	127320928	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.974	181052115	0.77	1.5708	90.5	90.5	0.3306	0.3306	90.53	
2,3,7,8-TCDF	17.001	16789520	0.78	0.9943	9.327	9.327	0.0593	0.0593	93.27	
D 13C-2,3,7,8-TCDD	15.533	122578177	0.82	0.9834	97.9	97.9	0.2890	0.2890	97.90	
2,3,7,8-TCDD	15.547	13170258	0.80	1.2822	8.380	8.380	0.0739	0.0739	83.80	
$ 37Cl4-2,3,7,8-TCDD	15.547	11944624		0.9945	9.433	9.433	0.0422	0.0422	94.33	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 30-Jul-2020 22:56:28 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	30-Jul-2020 13:48:12	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				

Method:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	30-Jul-2020 22:56:28	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1069	

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.780	15.780	0		57070994	11677874	21290	53225	549		
333.9339	15.780	15.780	0		70249934	14097432	8009	20022	1760	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.974	16.974	0	1.076	79010096	14394853	32968	82420	437		
317.9389	16.974	16.974	0	1.076	102042019	18281326	20571	51427	889	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.001	17.001	0	1.002	7377241	1331301	2945	7362	452		
305.8987	17.001	17.001	0	1.002	9412279	1608927	4767	11917	338	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.533	15.533	0	0.984	55377206	10844400	21290	53225	509		
333.9339	15.533	15.533	0	0.984	67200971	13497704	8009	20022	1685	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.547	15.547	0	1.001	5841398	1172614	5527	13817	212		
321.8936	15.547	15.547	0	1.001	7328860	1508814	3694	9235	408	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.547	15.547	0	0.985	11944624	2419840	4332	10830	559		

Reagents:

HRDXNL4_00094	Amount Added: 2.00	Units: uL

Report Date: 30-Jul-2020 22:56:29 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d		
Injection Date:	30-Jul-2020 13:48:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

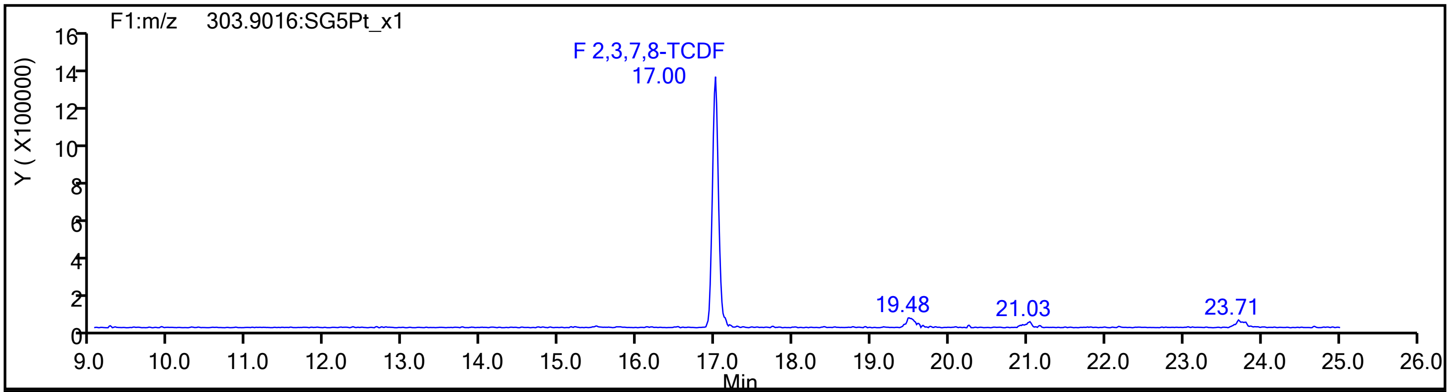

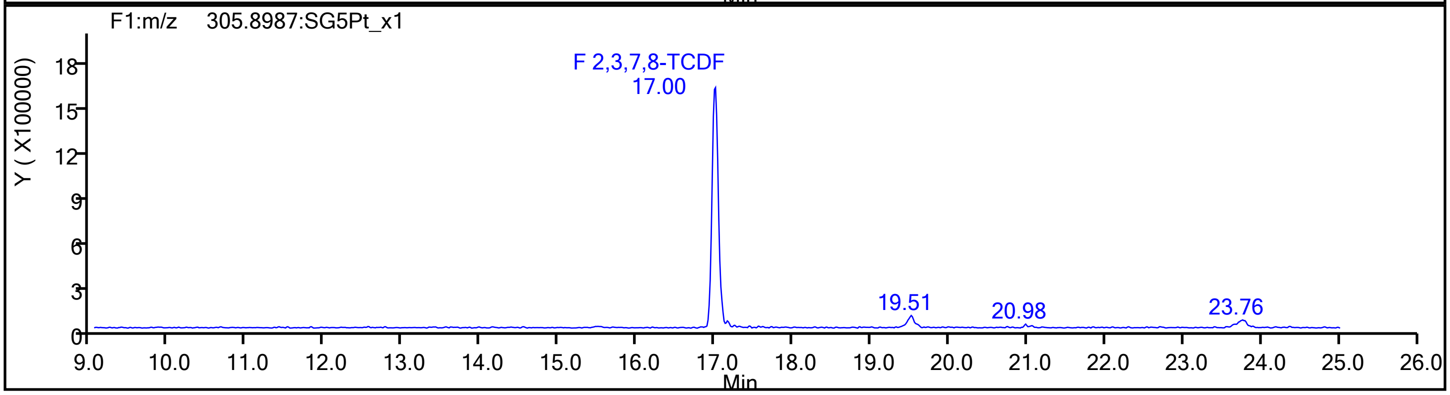

TCDF Standards

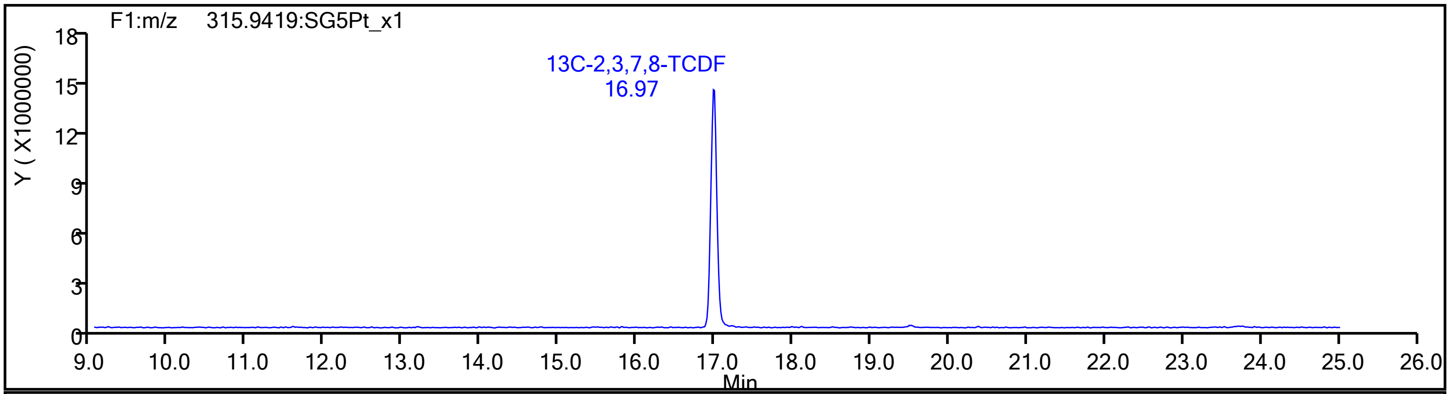

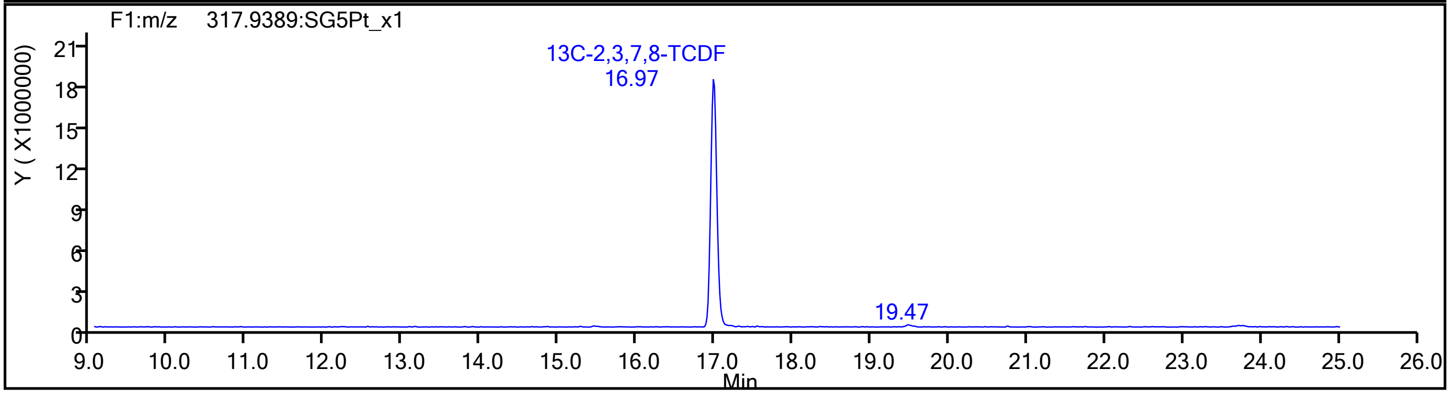

Report Date: 30-Jul-2020 22:56:29 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d		
Injection Date:	30-Jul-2020 13:48:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

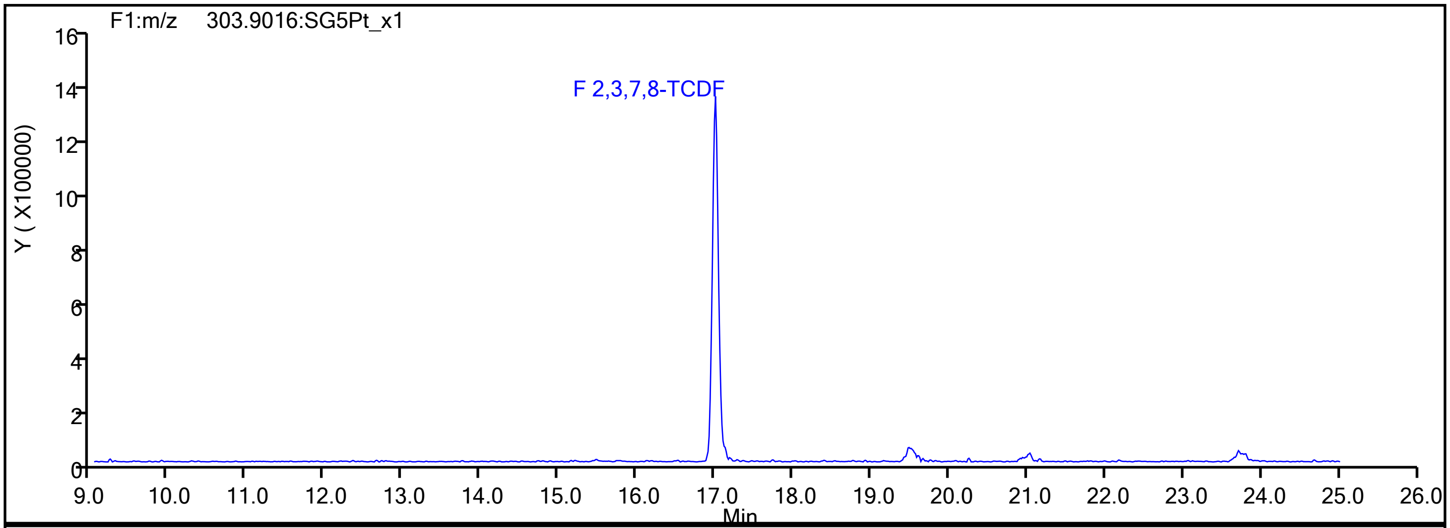

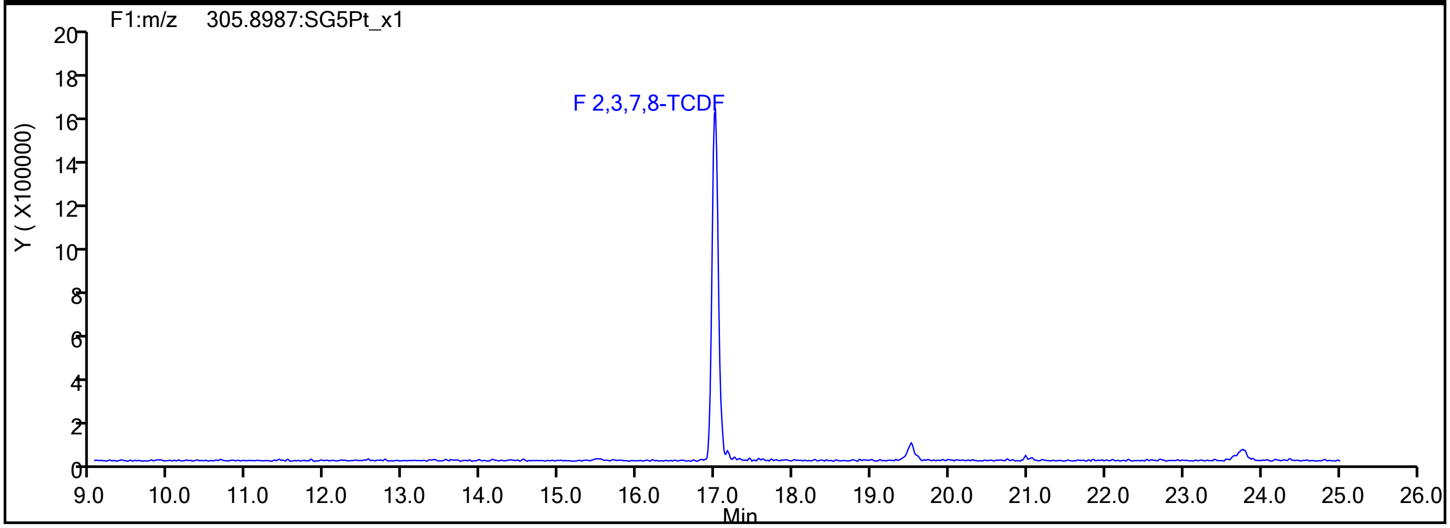

TCDF Interference Mass

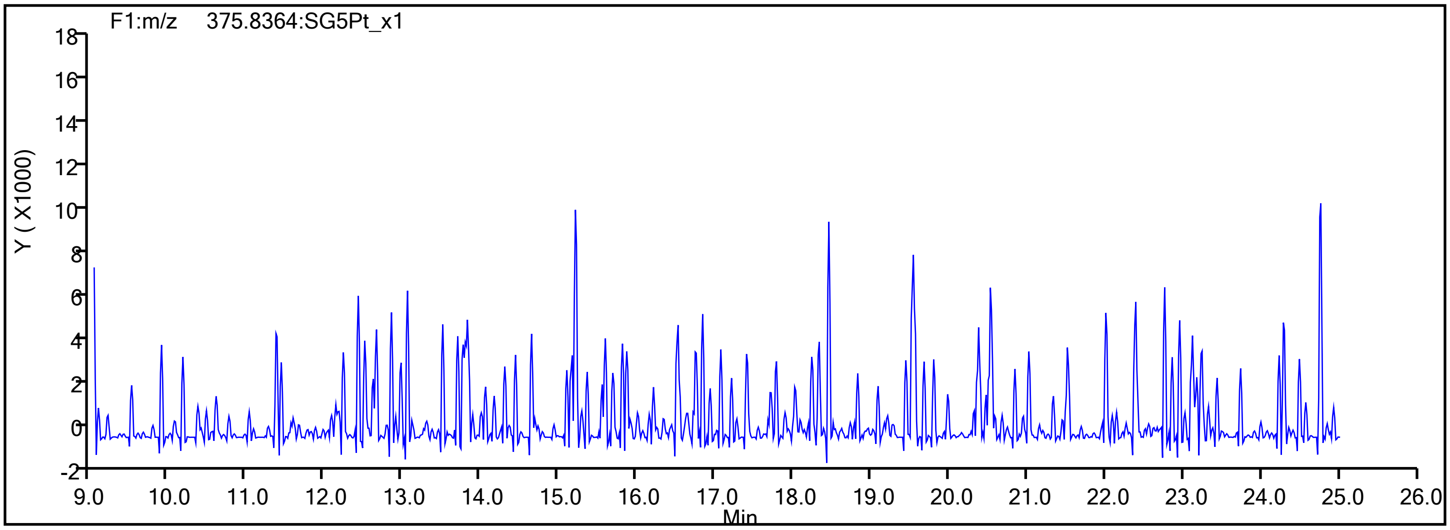

Report Date: 30-Jul-2020 22:56:29   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d
Injection Date: 30-Jul-2020 13:48:12   Injection Vol: 2.0 ul
Instrument ID: 11D2   Operator ID:
Method: DXN_DB225_11D2   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399853   Sample Line#: 2
Column Type: DB-225   Column Dia: 0.32 mm

TCDD

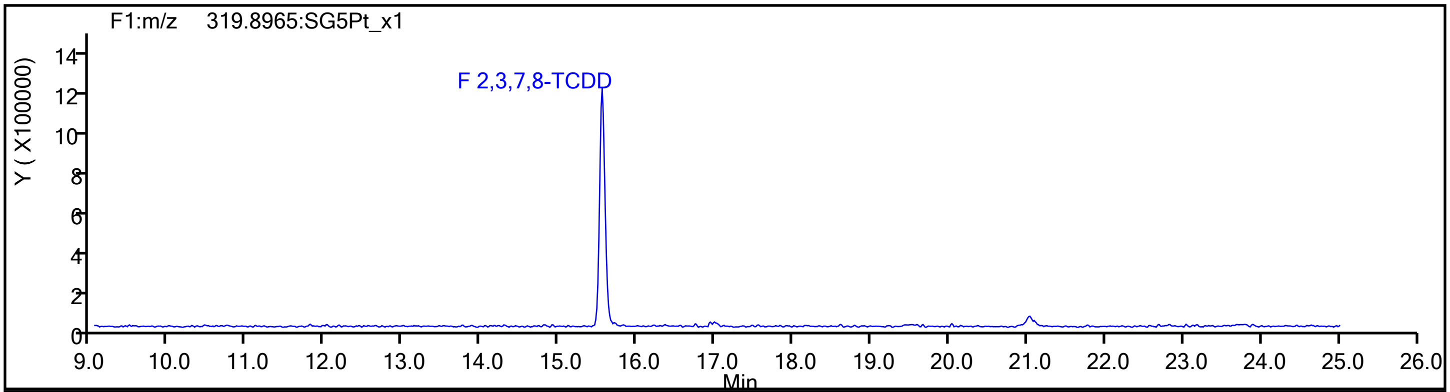

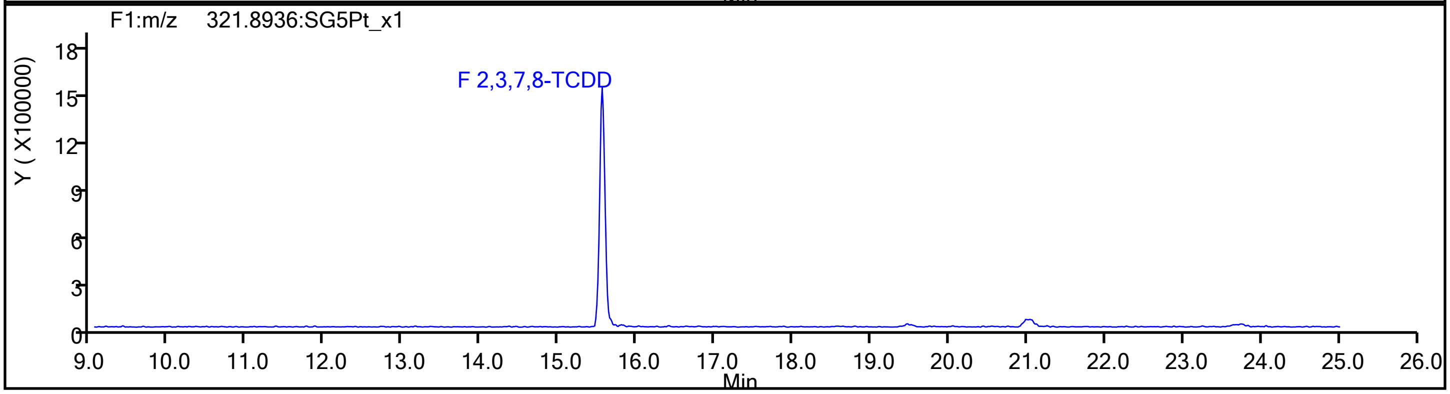

TCDD Standards

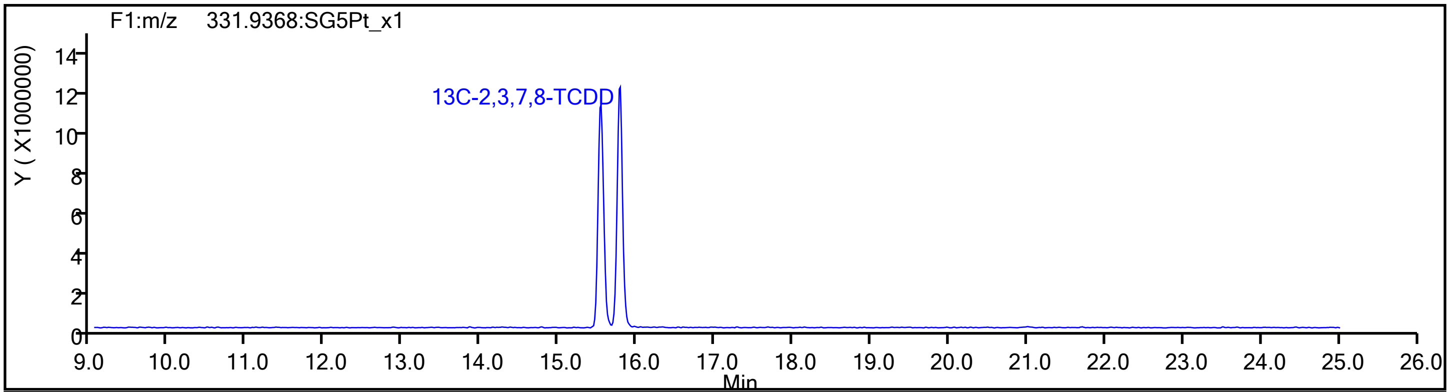

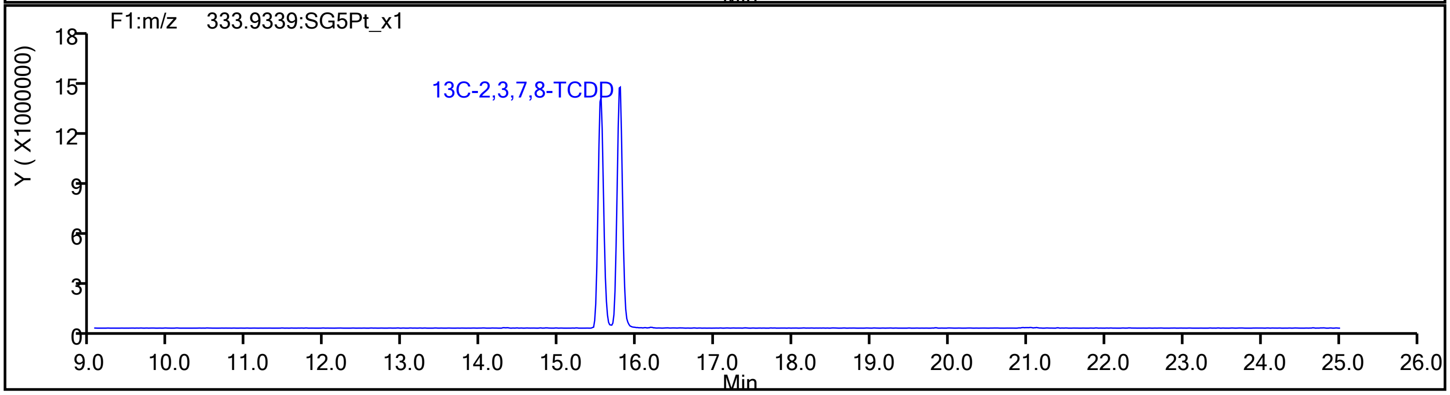

Report Date: 30-Jul-2020 22:56:29 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d
Injection Date: 30-Jul-2020 13:48:12
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399853
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

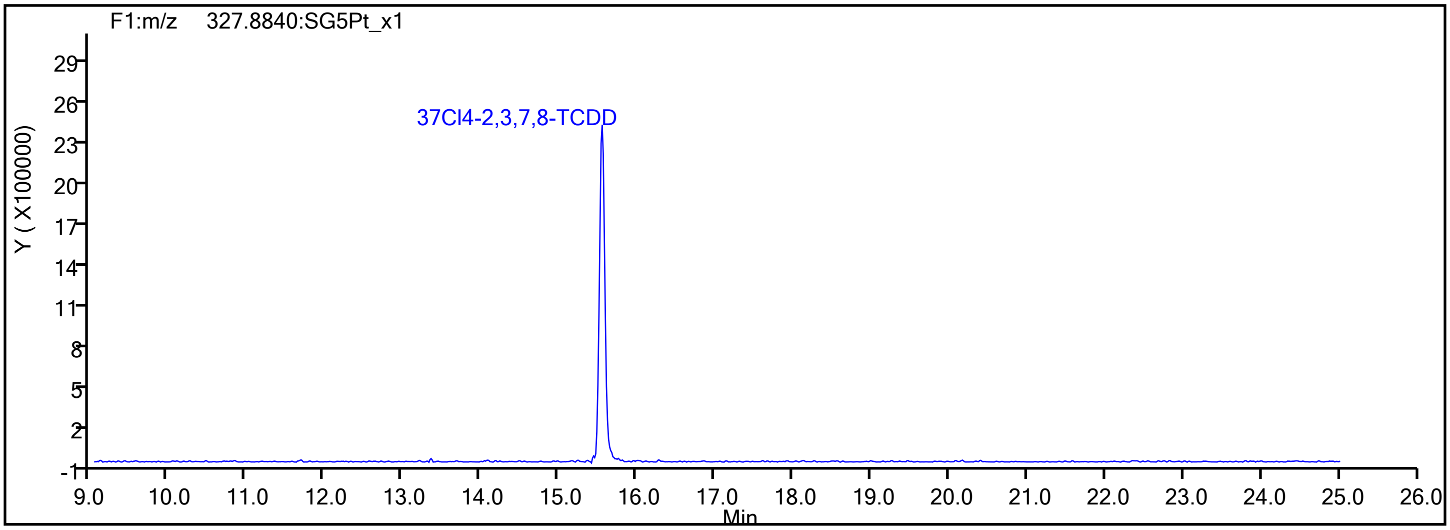

37Cl4-TCDD Standards

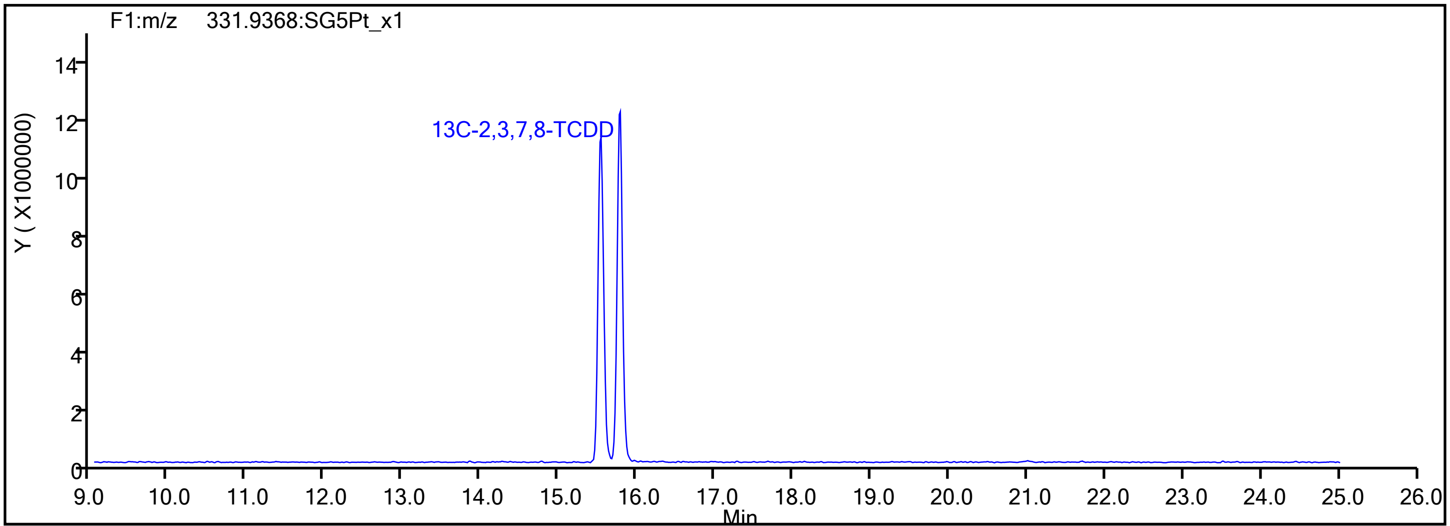

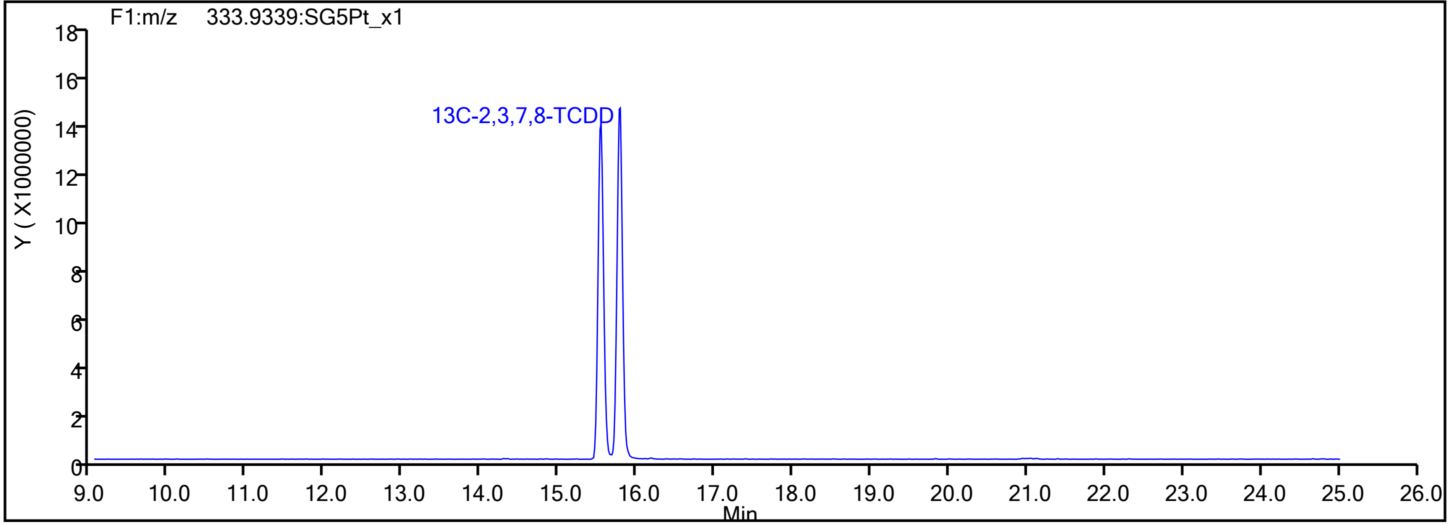

Report Date: 30-Jul-2020 22:56:29 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_002.d		
Injection Date:	30-Jul-2020 13:48:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

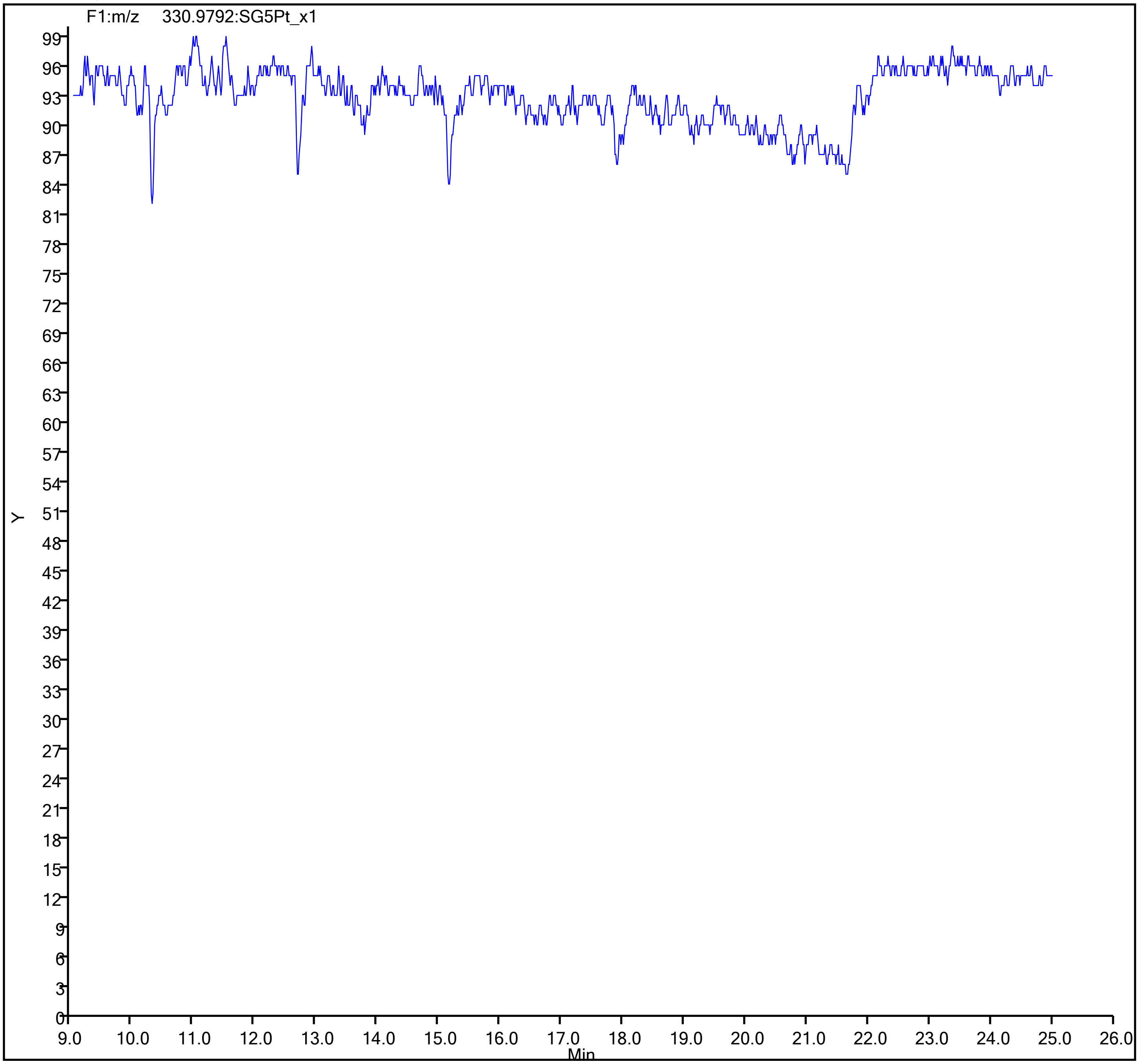

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID: ICV 320-383168/10 Calibration Date: 06/03/2020 20:01

Instrument ID: DFS 1 Calib Start Date: 06/03/2020 14:05

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/03/2020 18:06

Lab File ID: 03jn20dfs1_12.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.131	1.092		38.6	40.0	97	70-130
2,3,7,8-TCDD	AveID	1.185	1.170		39.5	40.0	99	70-130
1,2,3,7,8-PeCDF	AveID	1.106	1.045		189	200	95	70-130
2,3,4,7,8-PeCDF	AveID	0.9067	0.9637		213	200	106	70-130
1,2,3,7,8-PeCDD	AveID	1.106	1.038		188	200	94	70-130
1,2,3,4,7,8-HxCDF	AveID	1.009	1.006		199	200	100	70-130
1,2,3,6,7,8-HxCDF	AveID	1.243	1.217		196	200	98	70-130
2,3,4,6,7,8-HxCDF	AveID	1.274	1.280		201	200	100	70-130
1,2,3,4,7,8-HxCDD	AveID	0.9336	0.9235		198	200	99	70-130
1,2,3,6,7,8-HxCDD	AveID	1.080	1.099		204	200	102	70-130
1,2,3,7,8,9-HxCDD	AveID	1.057	1.024		194	200	97	70-130
1,2,3,7,8,9-HxCDF	AveID	1.288	1.219		189	200	95	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.596	1.568		197	200	98	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.085		195	200	97	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.169	1.102		189	200	94	70-130
OCDD	AveID	1.195	1.179		395	400	99	70-130
OCDF	AveID	1.481	1.444		390	400	98	70-130
13C-2,3,7,8-TCDF	Ave	1.498	1.498		100	100	100	71-140
13C-2,3,7,8-TCDD	Ave	1.037	1.049		101	100	101	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.306	1.308		100	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.542	1.530		99.2	100	99	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8294	0.8169		98.5	100	98	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.462	1.415		96.8	100	97	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.287	1.260		97.9	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.199	1.170		97.6	100	98	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	1.105	1.064		96.3	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9871	0.9470		95.9	100	96	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.069	1.109		104	100	104	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9035	0.8738		96.7	100	97	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8875	0.8859		99.8	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	1.048	1.088		104	100	104	77-129
13C-OCDD	Ave	0.6297	0.6432		204	200	102	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.121	1.041		37.2	40.0	93	79-127

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	03-Jun-2020 20:01:00	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00045				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:					

Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	08-Jun-2020 08:41:41	Calib Date:	03-Jun-2020 18:06:00
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		

Column 1 :	DB-5 (0.32 mm)	Det: F1(14.80 :26.00)
Process Host:	CTX1005	

First Level Reviewer: arghestanis Date: 08-Jun-2020 08:41:16

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.282	3829313	0.80	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.293	5736579	0.81	1.4977	100.0	100.0	0.3062	0.3062	100	
2,3,7,8-TCDF	20.310	2505820	0.79	1.1312	38.6	38.6	0.0611	0.0611	96.53	a
A Non-2,3,7,8-sub-TCDF	19.865	2548986	0.77	1.1312	39.3	39.3	0.0611	38.6		RQ
S Total TCDF					77.9	77.9	0.0611	0.0611		RQ
D 13C-2,3,7,8-TCDD	21.652	4015710	0.81	1.0367	101.2	101.2	0.2456	0.2456	101	
2,3,7,8-TCDD	21.687	1879807	0.78	1.1849	39.5	39.5	0.0930	0.0930	98.77	
$ 37Cl4-2,3,7,8-TCDD	21.687	1594870		1.1208	37.2	37.2	0.0452	0.0452	92.90	
A Non-2,3,7,8-sub-TCDD	20.722						0.0930	0.7726		U
S Total TCDD					39.5	39.5	0.0930	0.0930		
D 13C-1,2,3,7,8-PeCDF	27.283	5009619	1.61	1.3057	100.2	100.2	0.3600	0.3600	100	
1,2,3,7,8-PeCDF	27.299	10473182	1.56	1.1060	189.0	189.0	0.6855	0.6855	94.51	
D 13C-2,3,4,7,8-PeCDF	28.807	5859497	1.60	1.5420	99.2	99.2	0.3048	0.3048	99.23	
2,3,4,7,8-PeCDF	28.832	11293616	1.56	0.9067	212.6	212.6	0.7918	0.7918	106	
A F1 PeCDFs	24.878						0.0200	0.0200		
A Non-2,3,7,8-sub-PeCDF	28.397						0.7328	4.476		U
S Total PeCDF					401.6	401.6	0.7387	0.7387		
D 13C-1,2,3,7,8-PeCDD	29.632	3128203	1.61	0.8294	98.5	98.5	0.1590	0.1590	98.49	
1,2,3,7,8-PeCDD	29.657	6491040	1.56	1.1062	187.6	187.6	0.1443	0.1443	93.79	
A Non-2,3,7,8-sub-PeCDD	28.482						0.1443	0.1443		n
S Total PeCDD					187.6	187.6	0.1443	0.1443		
D 13C-1,2,3,4,7,8-HxCDF	34.965	5027181	0.53	1.4619	96.8	96.8	0.2366	0.2366	96.80	
1,2,3,4,7,8-HxCDF	34.982	10109902	1.24	1.0087	199.4	199.4	0.6612	0.6612	99.69	
D 13C-1,2,3,6,7,8-HxCDF	35.134	4474579	0.53	1.2866	97.9	97.9	0.2688	0.2688	97.90	
1,2,3,6,7,8-HxCDF	35.150	10893538	1.25	1.2432	195.8	195.8	0.6316	0.6316	97.91	
D 13C-2,3,4,6,7,8-HxCDF	35.950	4154917	0.52	1.1988	97.6	97.6	0.2885	0.2885	97.56	
2,3,4,6,7,8-HxCDF	35.967	10634822	1.24	1.2736	201.0	201.0	0.5880	0.5880	100	
D 13C-1,2,3,7,8,9-HxCDF	36.834	3938760	0.53	1.0687	103.7	103.7	0.3237	0.3237	104	
1,2,3,7,8,9-HxCDF	36.851	9598825	1.24	1.2882	189.2	189.2	0.5528	0.5528	94.59	
A Non-2,3,7,8-sub-HxCDF	35.118						0.6030	0.6030		
S Total HxCDF					785.4	785.4	0.6084	0.6084		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.641	3552595	1.28	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.161	3780155	1.26	1.1046	96.3	96.3	0.2054	0.2054	96.33	
1,2,3,4,7,8-HxCDD	36.178	6981764	1.27	0.9336	197.8	197.8	0.2894	0.2894	98.91	
D 13C-1,2,3,6,7,8-HxCDD	36.279	3364240	1.25	0.9871	95.9	95.9	0.2299	0.2299	95.94	
1,2,3,6,7,8-HxCDD	36.287	7397028	1.22	1.0802	203.6	203.6	0.2830	0.2830	102	
1,2,3,7,8,9-HxCDD	36.649	7312688	1.24	1.0574	193.6	193.6	0.2713	0.2713	96.80	
A Non-2,3,7,8-sub-HxCDD	35.480						0.2802	0.2802		
S Total HxCDD					595.0	595.0	0.2812	0.2812		
D 13C-1,2,3,4,6,7,8-HpCDF	38.631	3104266	0.46	0.9035	96.7	96.7	0.4385	0.4385	96.71	
1,2,3,4,6,7,8-HpCDF	38.640	9733791	1.04	1.5957	196.5	196.5	0.6626	0.6626	98.25	
D 13C-1,2,3,4,7,8,9-HpCDF	39.870	3866849	0.46	1.0480	103.9	103.9	0.3780	0.3780	104	
1,2,3,4,7,8,9-HpCDF	39.878	8525178	1.05	1.1693	188.5	188.5	0.6638	0.6638	94.27	
A Non-2,3,7,8-sub-HpCDF	39.283						0.6475	0.6475		
S Total HpCDF					385.0	385.0	0.6632	0.6632		
D 13C-1,2,3,4,6,7,8-HpCDD	39.567	3147288	1.05	0.8875	99.8	99.8	0.2648	0.2648	99.82	
1,2,3,4,6,7,8-HpCDD	39.575	6828961	1.05	1.1150	194.6	194.6	0.4176	0.4176	97.30	
A Non-2,3,7,8-sub-HpCDD	39.515						0.4176	0.4176		
S Total HpCDD					194.6	194.6	0.4176	0.4176		
D 13C-OCDD	42.020	4569938	0.90	0.6297	204.3	204.3	0.1956	0.1956	102	
OCDF	42.113	13197733	0.91	1.4809	390.0	390.0	0.2034	0.2034	97.50	
OCDD	42.029	10778846	0.90	1.1948	394.8	394.8	0.2110	0.2110	98.71	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- U - Marked Undetected
- a - User Assigned ID

Reagents:

HRDXNIC_00045 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Jun-2020 20:01:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Jun-2020 08:41:41 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1005

First Level Reviewer: arghestanis Date: 08-Jun-2020 08:41:16

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.282	21.315	-2		1700364	255684	435	1087	588		a
333.9338	21.282	21.315	-2		2128949	310673	142	355	2188	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.293	20.334	-2	0.954	2563633	382024	720	1800	531		
317.9389	20.284	20.334	-3	0.953	3172946	474691	319	797	1488	0.81(0.65-0.89)	
2,3,7,8-TCDF											a
303.9016	20.310	20.351	-2	1.001	1107561	159091	95	237	1675		a
305.8987	20.310	20.351	-2	1.001	1398259	201349	142	355	1418	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	19.079	19.865	-47	0.940	11559	1811	95	237	19		
305.8987	19.062	19.865	-48	0.939	14494	2212	142	355	16	0.80(0.65-0.89)	
303.9016	19.587	19.865	-17	0.965	7445	1466	95	237	15		
305.8987	19.587	19.865	-17	0.965	12020	1709	142	355	12	0.62(0.65-0.89)	
	Empc Correction				9668	1903	142	355	13		
303.9016	20.310	19.865	27	1.001	1107561	159091	95	237	1675		
305.8987	20.310	19.865	27	1.001	1398259	201349	142	355	1418	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.652	21.702	-3	1.017	1801156	241090	435	1087	554		
333.9338	21.661	21.702	-2	1.018	2214554	295898	142	355	2084	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.687	21.728	-2	1.002	826451	112675	135	337	835		
321.8936	21.687	21.728	-2	1.002	1053356	144603	102	255	1418	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.687	21.728	-2	1.019	1594870	217222	115	287	1889		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.722	20.722	0	0.957	15973	2675	135	337			
321.8936	20.722	20.722	0	0.957	20787	3440	102	255		0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.283	27.306	-1	1.282	3086918	522276	617	1542	846		
353.8970	27.283	27.306	-1	1.282	1922701	331345	448	1120	740	1.61(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.299	27.331	-2	1.001	6374511	1086398	1573	3932	691		
341.8567	27.299	27.331	-2	1.001	4098671	689290	1016	2540	678	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.807	28.847	-2	1.354	3610160	558245	617	1542	905		
353.8970	28.807	28.847	-2	1.354	2249337	343272	448	1120	766	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.832	28.863	-2	1.001	6885540	1038964	1573	3932	660		
341.8567	28.832	28.863	-2	1.001	4408076	670171	1016	2540	660	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.878						11	27			
341.8567	24.878						60	150			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	27.897	28.397	-30	1.023	148217	23798	1573	3932	15		
341.8567	27.906	28.397	-29	1.023	96559	15469	1016	2540	15	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.632	29.655	-1	1.392	1930314	300323	181	452	1659		
369.8919	29.632	29.655	-1	1.392	1197889	185075	118	295	1568	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.657	29.688	-2	1.001	3955065	607918	203	507	2995		
357.8516	29.657	29.688	-2	1.001	2535975	389100	107	267	3636	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.992	28.482	31	0.978	5970	972	203	507	5		
357.8516	28.958	28.482	28	0.977	3891	599	107	267	6	1.53(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.965	34.987	-1	0.954	1730950	406733	466	1165	873		
385.8610	34.965	34.987	-1	0.954	3296231	775147	910	2275	852	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.982	35.012	-2	1.000	5594614	1327253	1770	4425	750		
375.8178	34.982	35.012	-2	1.000	4515288	1069430	1383	3457	773	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.134	35.155	-1	0.959	1557166	343835	466	1165	738		
385.8610	35.134	35.155	-1	0.959	2917413	659916	910	2275	725	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.150	35.172	-1	1.000	6043165	1344049	1770	4425	759		
375.8178	35.142	35.172	-2	1.000	4850373	1088770	1383	3457	787	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.950	35.972	-1	0.981	1429220	361877	466	1165	777		
385.8610	35.950	35.972	-1	0.981	2725697	690737	910	2275	759	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	35.967	35.989	-1	1.000	5890163	1504518	1770	4425	850		
375.8178	35.967	35.989	-1	1.000	4744659	1211022	1383	3457	876	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.834	36.856	-1	1.005	1369581	383689	466	1165	823		
385.8610	36.834	36.856	-1	1.005	2569179	723084	910	2275	795	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.851	36.873	-1	1.000	5322904	1488982	1770	4425	841		
375.8178	36.851	36.873	-1	1.000	4275921	1187447	1383	3457	859	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.118						1770	4425			
375.8178	35.118						1383	3457			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.641	36.663	-1		1997770	555377	577	1442	963		
403.8529	36.641	36.663	-1		1554825	439174	326	815	1347	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.161	36.182	-1	0.987	2107209	570205	577	1442	988		
403.8529	36.161	36.182	-1	0.987	1672946	446357	326	815	1369	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.178	36.199	-1	1.000	3904193	1040045	610	1525	1705		
391.8127	36.169	36.199	-2	1.000	3077571	836755	489	1222	1711	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.279	36.300	-1	0.990	1870700	500180	577	1442	867		
403.8529	36.279	36.300	-1	0.990	1493540	398444	326	815	1222	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.287	36.317	-2	1.000	4063508	1078379	610	1525	1768		
391.8127	36.287	36.317	-2	1.000	3333520	875844	489	1222	1791	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.649	36.679	-2	1.014	4050701	1128092	610	1525	1849		
391.8127	36.649	36.679	-2	1.014	3261987	910704	489	1222	1862	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.480						610	1525			
391.8127	35.480						489	1222			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.631	38.645	-1	1.054	971964	334631	656	1640	510		
419.8220	38.631	38.645	-1	1.054	2132302	721063	920	2300	784	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.640	38.662	-1	1.000	4964734	1709024	2353	5882	726		
409.7788	38.640	38.662	-1	1.000	4769057	1628710	2112	5280	771	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.870	39.892	-1	1.088	1223534	452570	656	1640	690		
419.8220	39.870	39.892	-1	1.088	2643315	985428	920	2300	1071	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.878	39.900	-1	1.000	4368416	1619338	2353	5882	688		
409.7788	39.878	39.900	-1	1.000	4156762	1545573	2112	5280	732	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.283						2353	5882			
409.7788	39.283						2112	5280			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.567	39.588	-1	1.080	1611276	593070	502	1255	1181		
437.8140	39.567	39.588	-1	1.080	1536012	567017	433	1082	1310	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.575	39.597	-1	1.000	3497768	1274583	1118	2795	1140		
425.7737	39.575	39.597	-1	1.000	3331193	1226966	1043	2607	1176	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.515						1118	2795			
425.7737	39.515						1043	2607			
13C-OCDD											
469.7780	42.020	42.042	-1	1.147	2159833	714499	267	667	2676		
471.7750	42.020	42.042	-1	1.147	2410105	802648	223	557	3599	0.90(0.76-1.02)	
OCDF											
441.7428	42.113	42.134	-1	1.002	6293777	2135754	404	1010	5287		
443.7399	42.113	42.134	-1	1.002	6903956	2368076	510	1275	4643	0.91(0.76-1.02)	
OCDD											
457.7377	42.029	42.050	-1	1.000	5096470	1708906	366	915	4669		
459.7348	42.029	42.050	-1	1.000	5682376	1913680	399	997	4796	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

U - Marked Undetected

a - User Assigned ID

Reagents:

HRDXNIC_00045 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Lims ID: ICV
Client ID:
Inject. Date: 03-Jun-2020 20:01:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 383168 Lims Sample ID: 10
Sublist:

Non-2,3,7,8-sub-TCDF, RT: 19.865

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	5736579	856715

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	5736579	856715

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.079	11559	1811	14494	2212	0.4015	0.80	
19.587	7445	1466	12020	1709	0.2999	0.62	RQ
19.587	7445	1466	9668	1903	0.2637		Empc Correction
20.310	1107561	159091	1398259	201349	38.6	0.79	
Signal Totals:							
	1126565	162368	1422421	205464			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2551338	367638				0.79	RQ
	2548986	367832					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 39.315 = (2551338 * 100.000) / (5736579 * 1.131)
Empc Amount: 39.279 = (2548986 * 100.000) / (5736579 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Jun-2020 20:01:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-TCDD, RT: 20.722

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	4015710	536988

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	4015710	536988

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.506	15973	2675	20787	3440	0.7726	0.77	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Lims ID: ICV
Client ID:
Inject. Date: 03-Jun-2020 20:01:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 383168 Lims Sample ID: 10
Sublist:

Non-2,3,7,8-sub-PeCDF, RT: 28.397

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	5009619	853621
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	5859497	901517

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	5434558	877569

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.897	148217	23798	96559	15469	4.48	1.53	

Compound is Marked ND

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Injection Date: 03-Jun-2020 20:01:00 Instrument ID: DFS 1
Lims ID: ICV
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1(14.80 :26.00)

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.32

Processing Integration Results

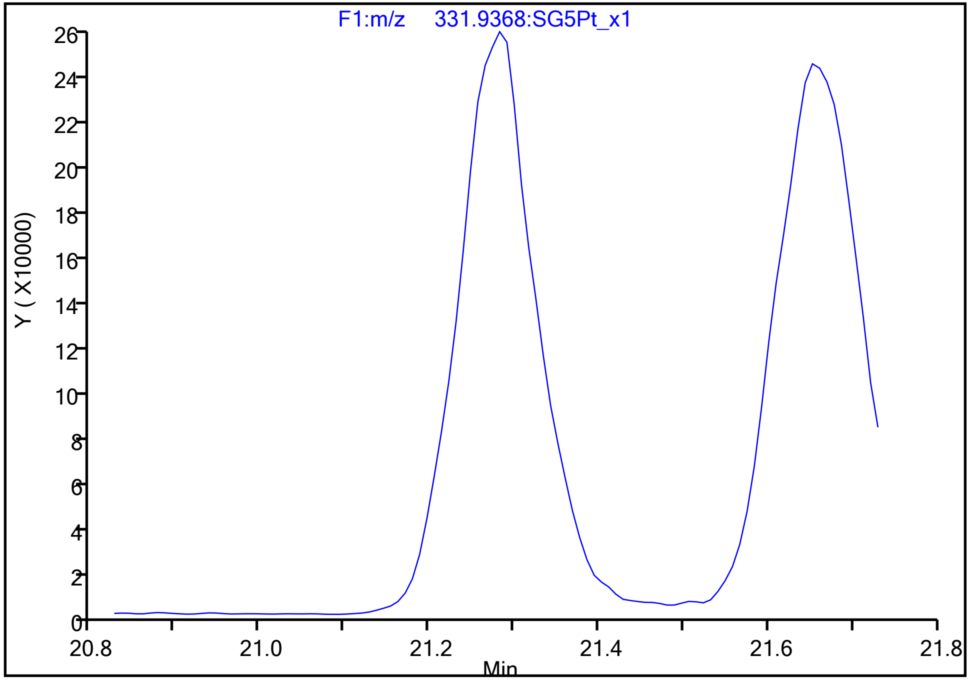

RT: 21.28
Area: 1700364
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

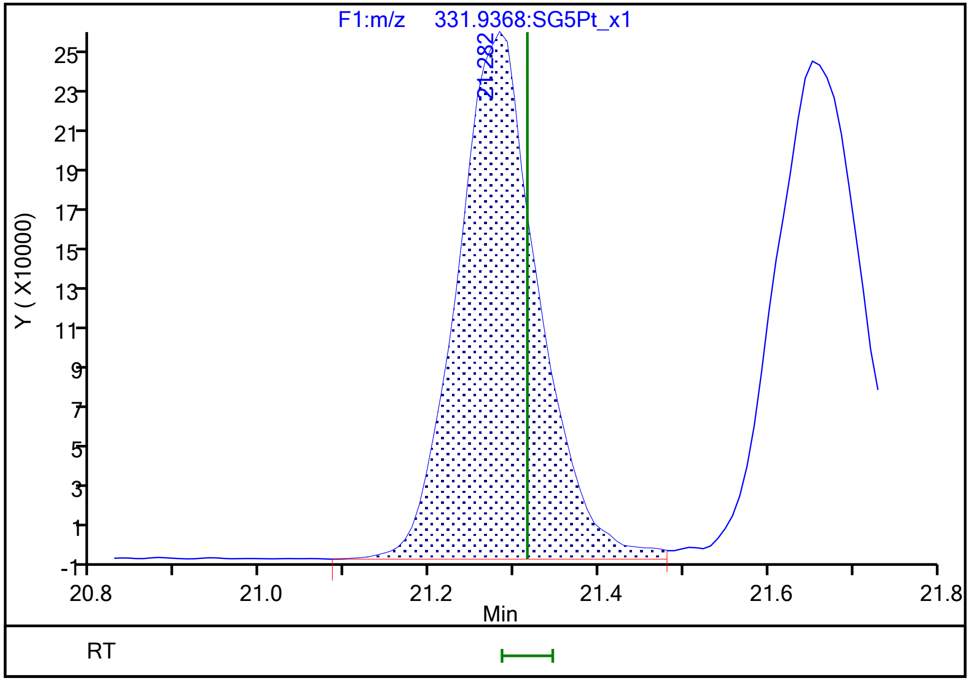

Reviewer: stephensk, 04-Jun-2020 08:22:07
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d				
Injection Date:	03-Jun-2020 20:01:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Not Detected

Expected RT: 20.35

Processing Integration Results

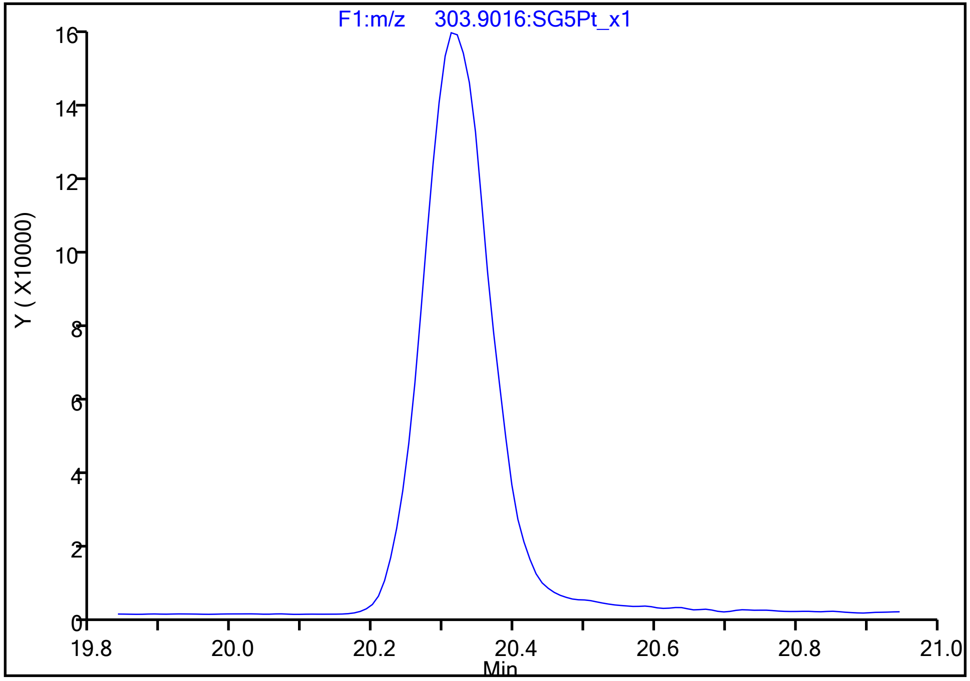

RT: 20.31

Area: 1107561

Amount: 38.613445

Amount Units: pg/ul

Manual Integration Results

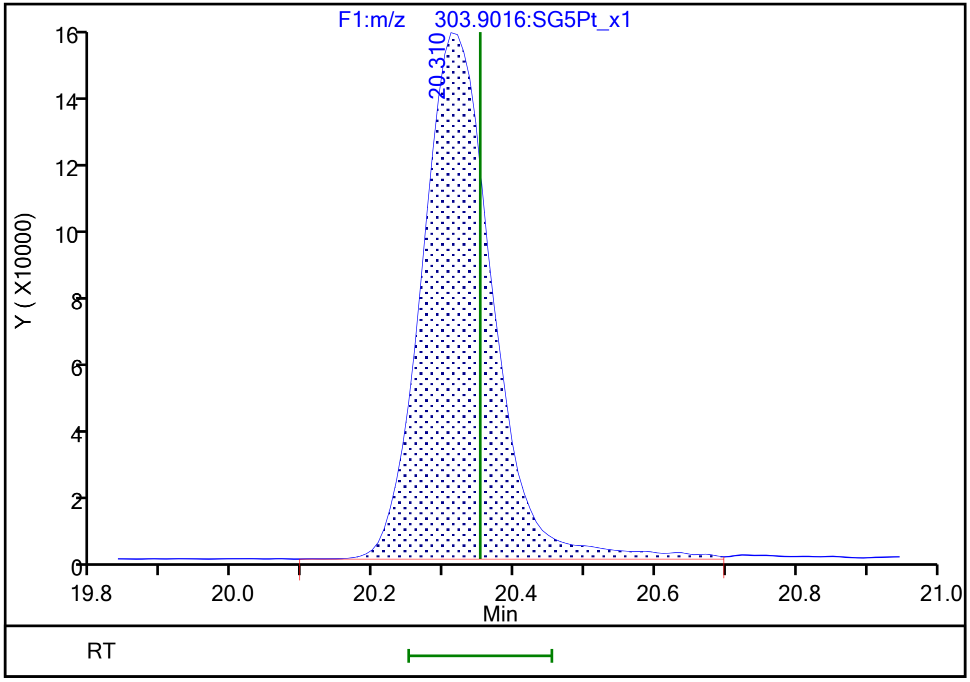

Reviewer: arghestanis, 08-Jun-2020 08:40:50

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

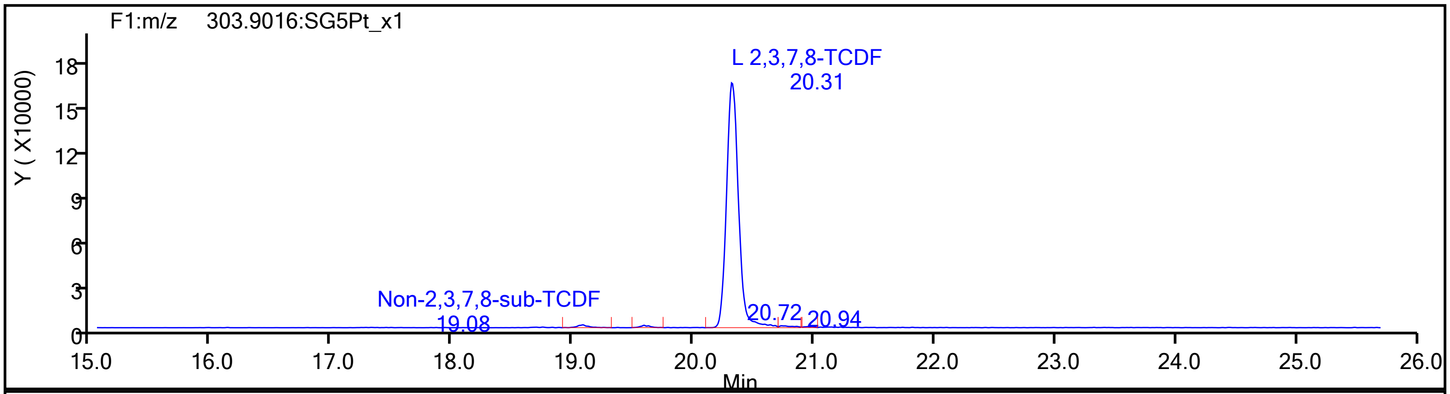

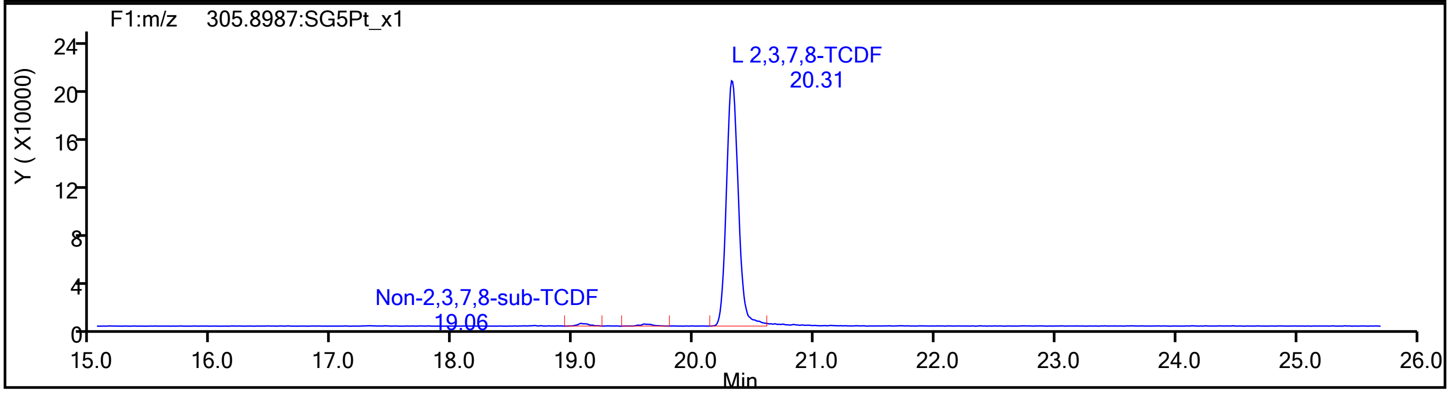

TCDF Standards

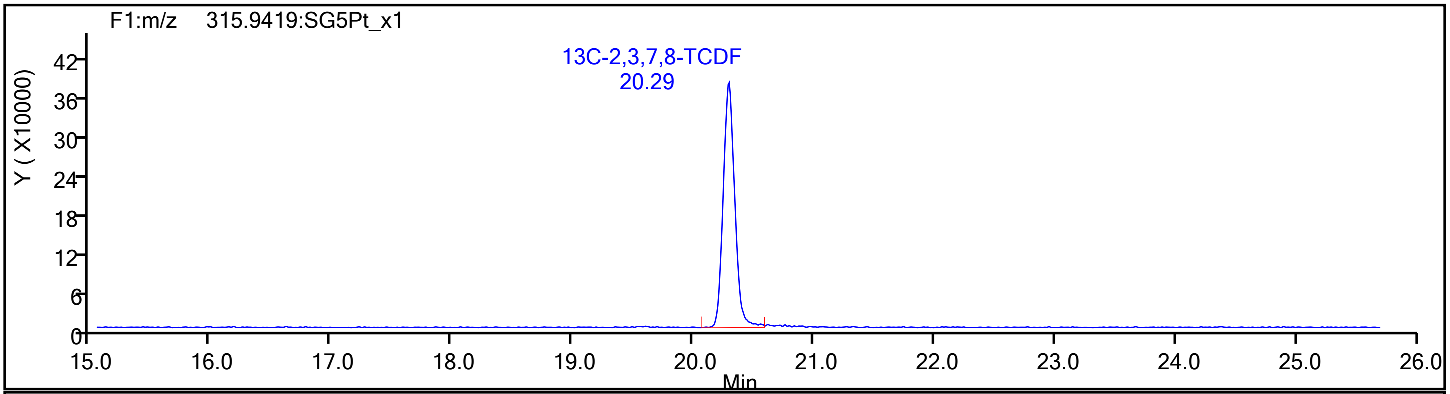

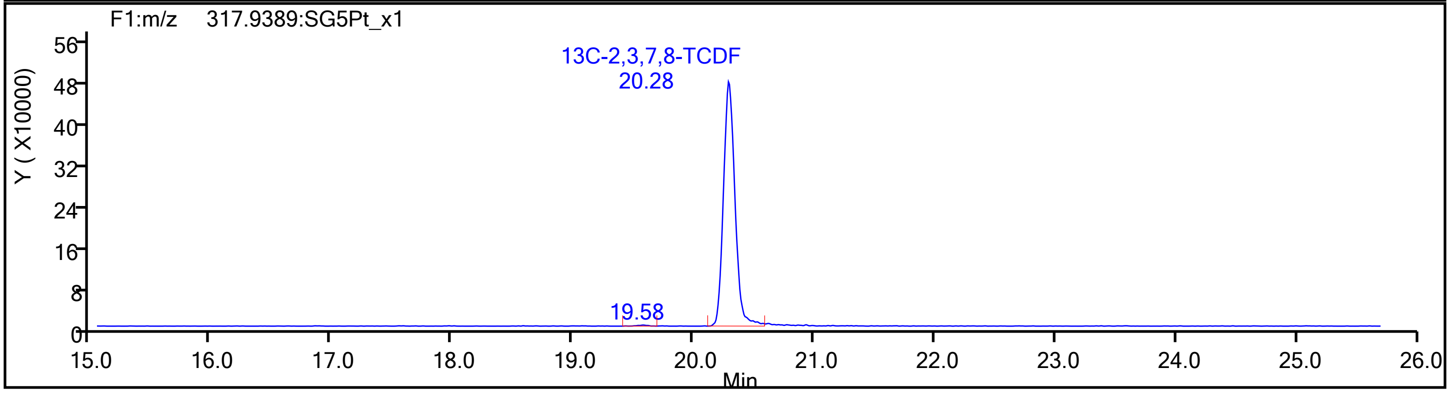

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

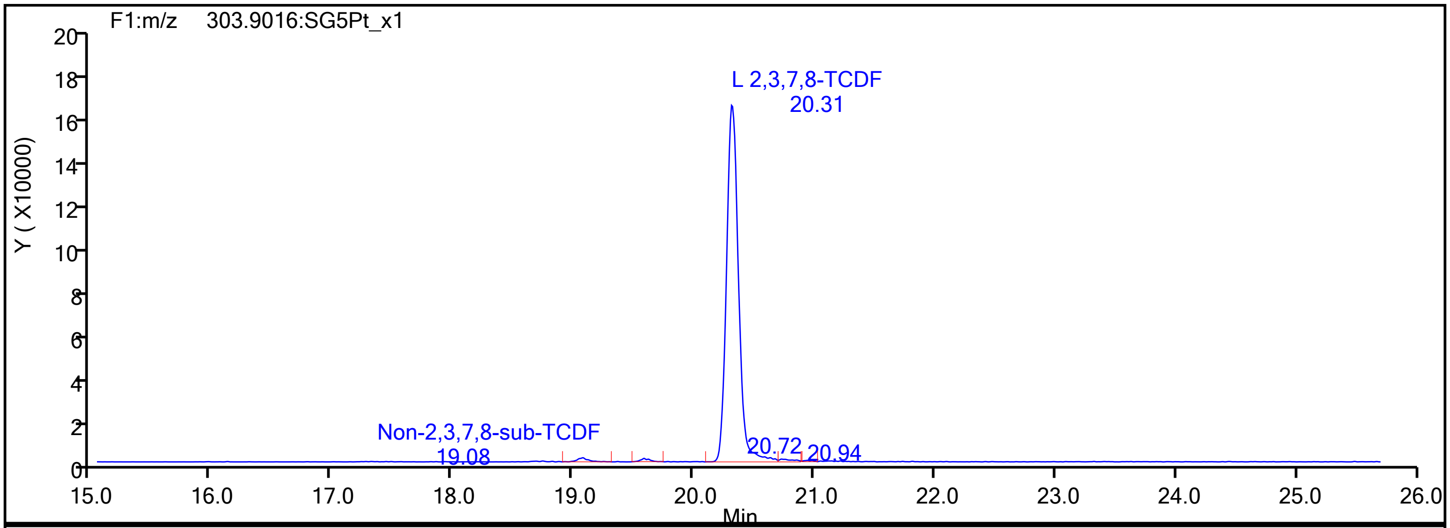

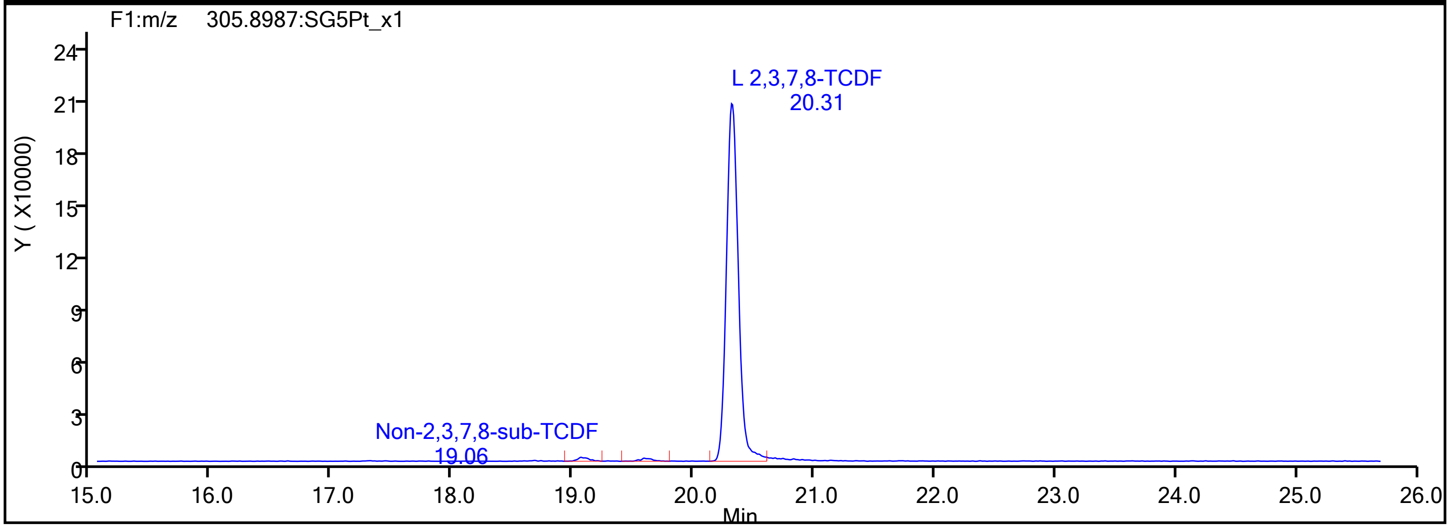

TCDF Interference Mass

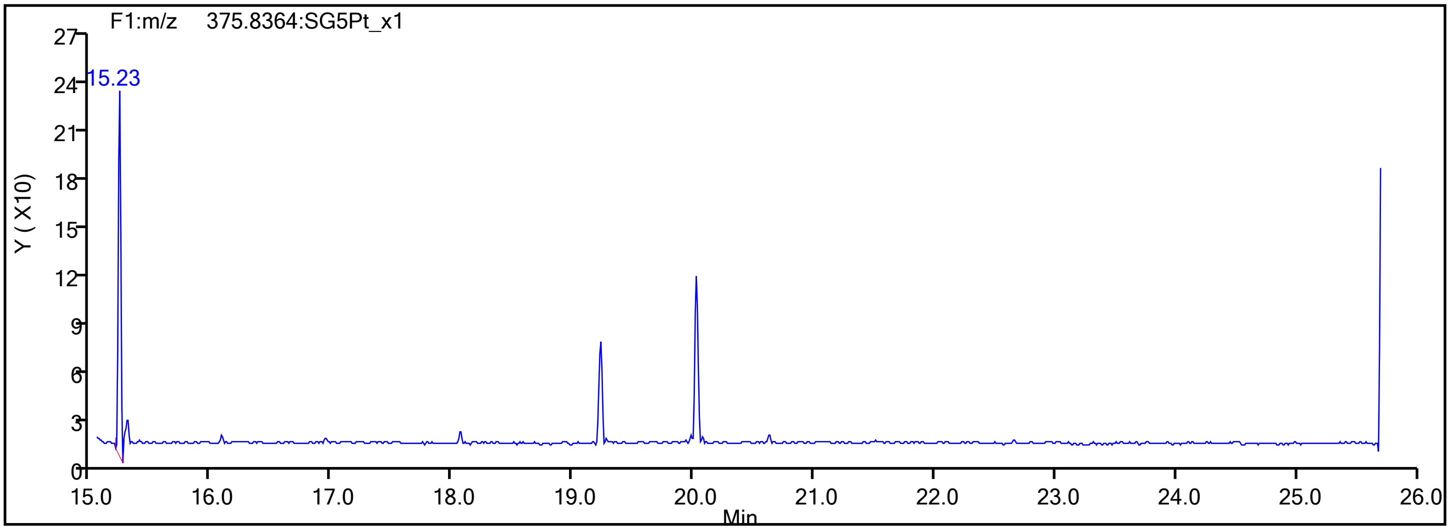

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d

Injection Date: 03-Jun-2020 20:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

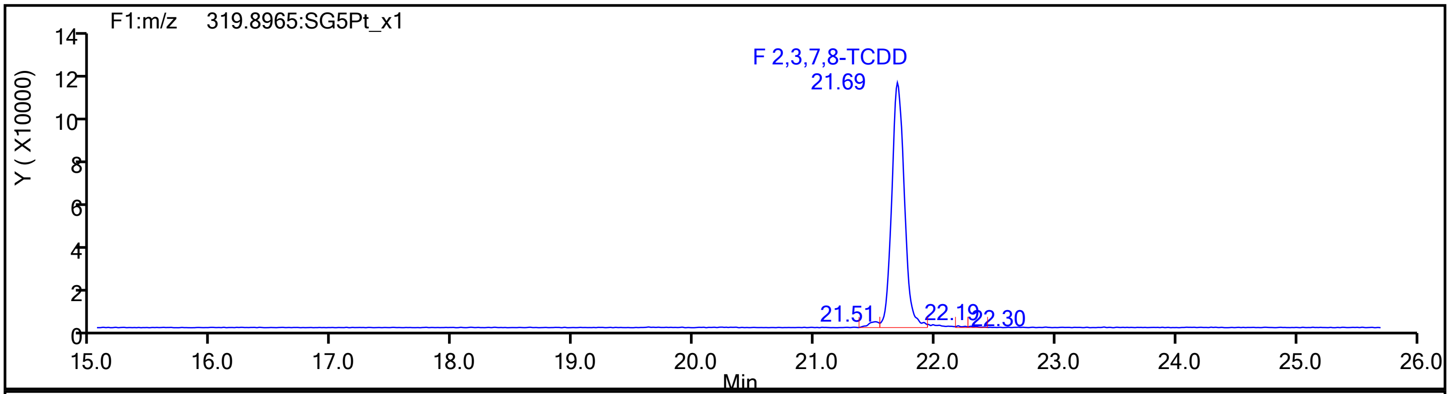

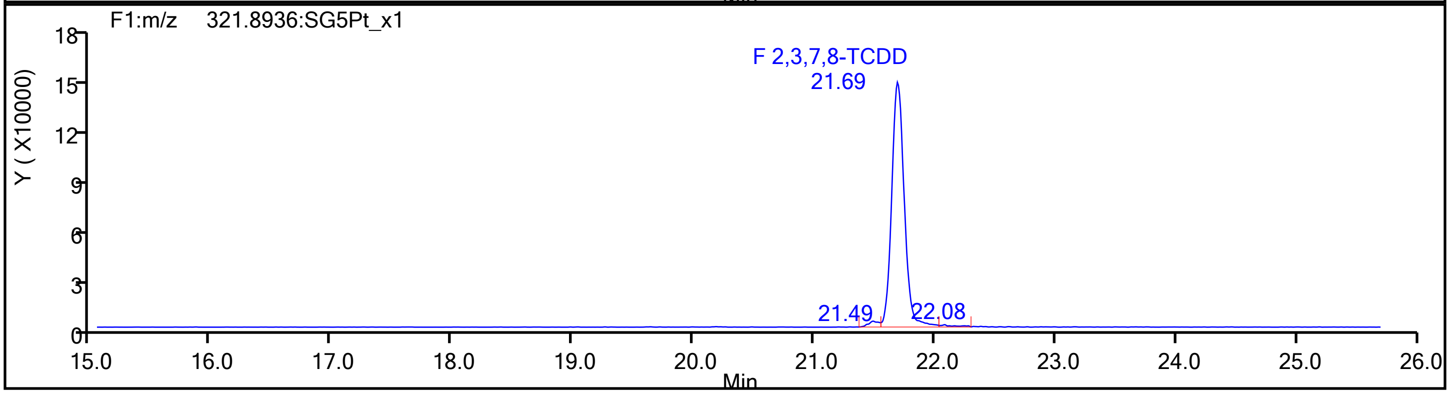

TCDD Standards

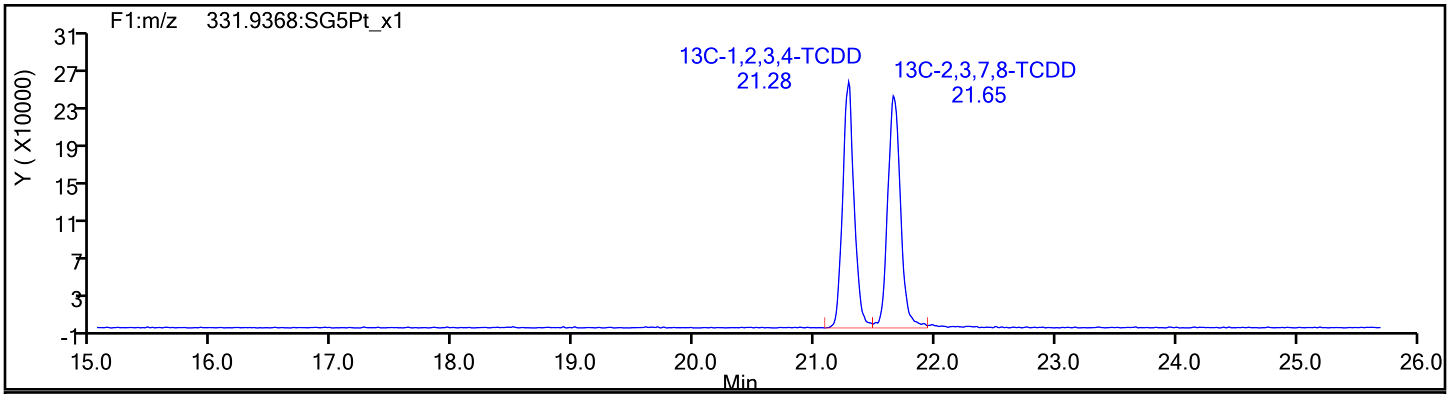

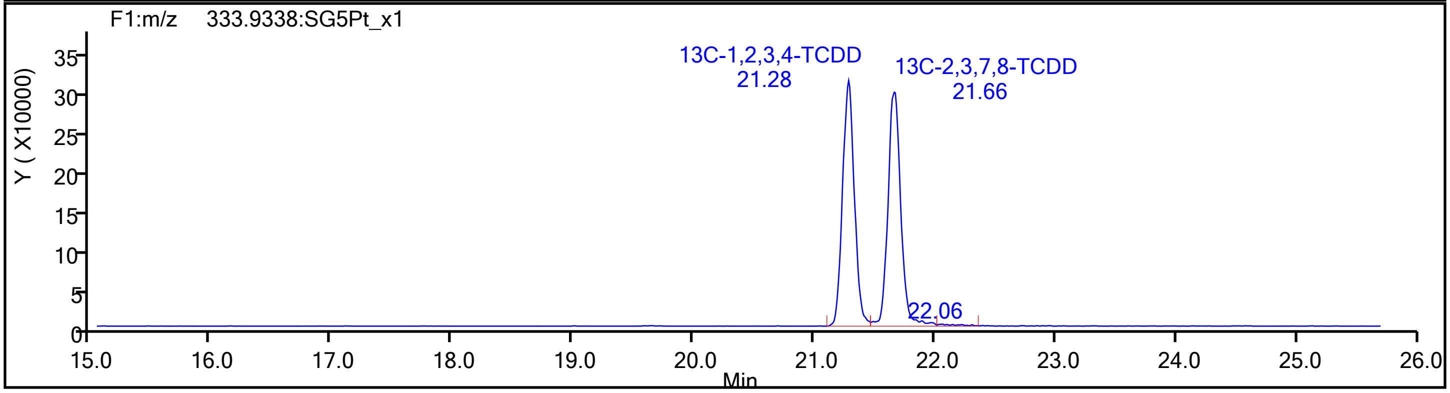

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

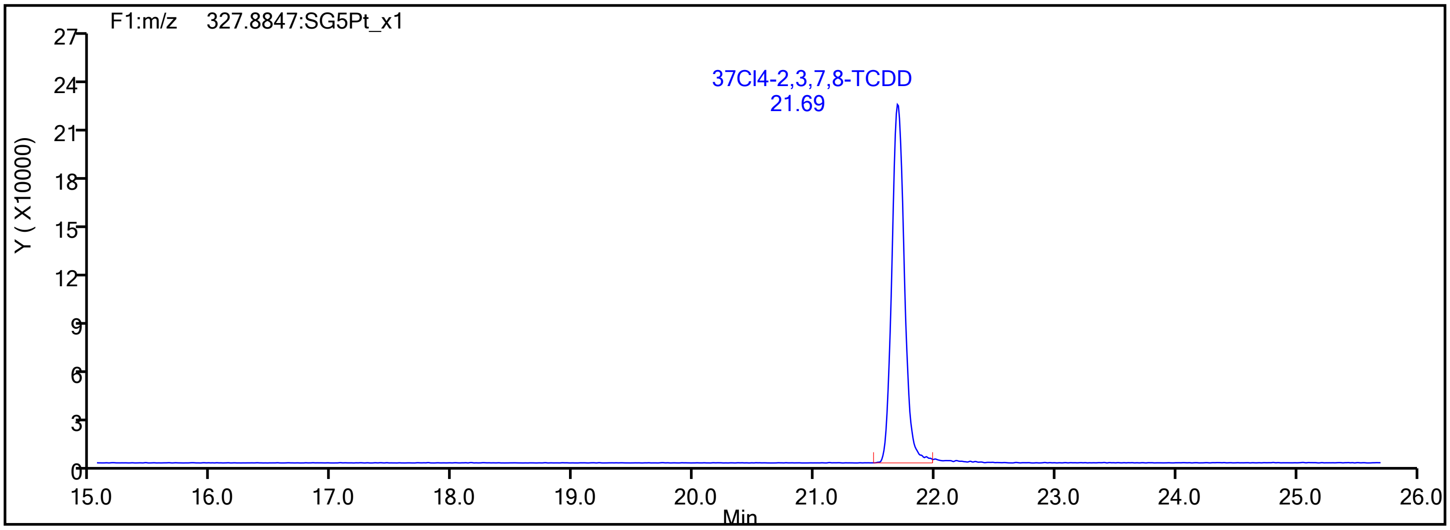

37Cl4-TCDD Standards

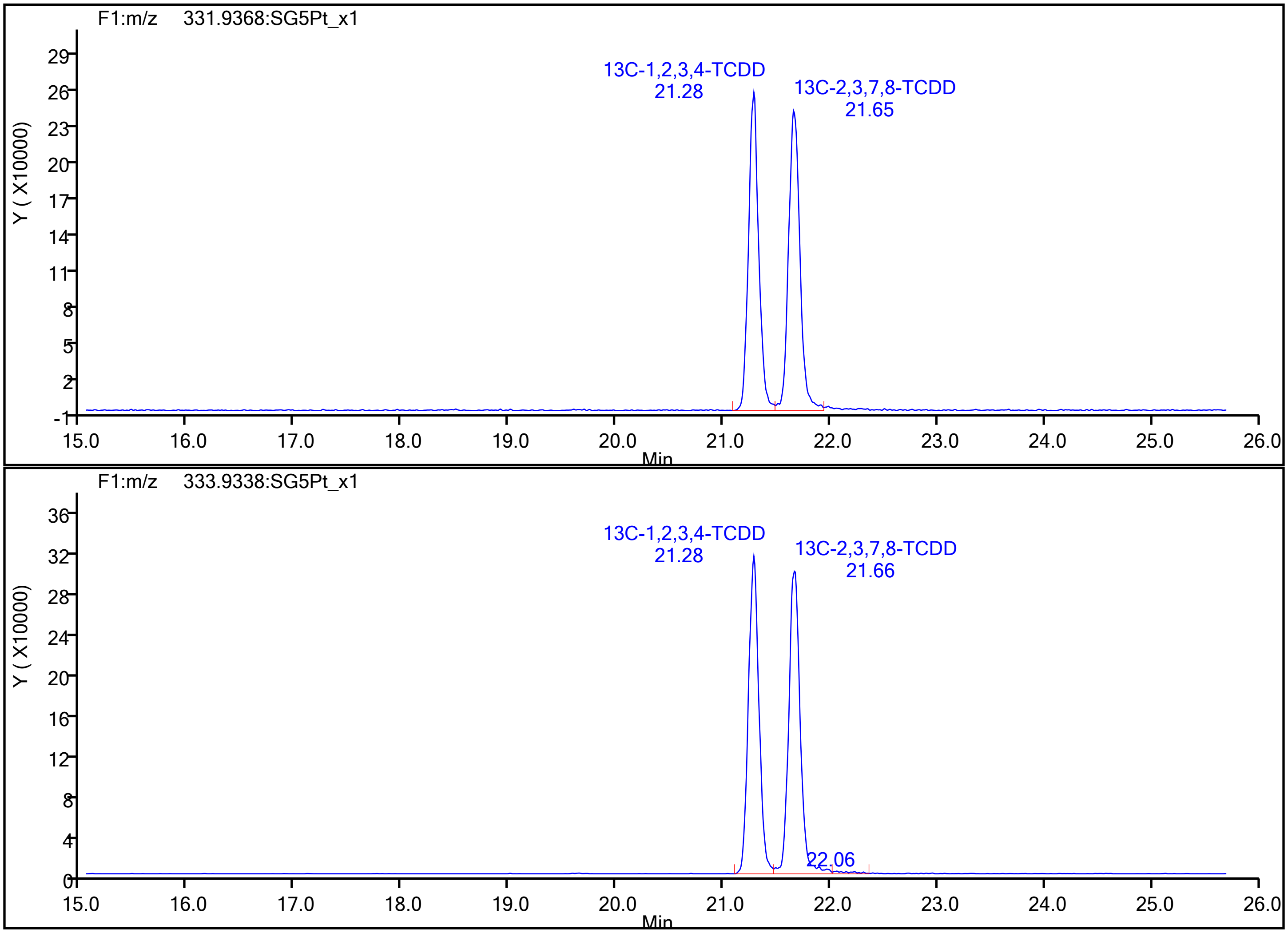

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

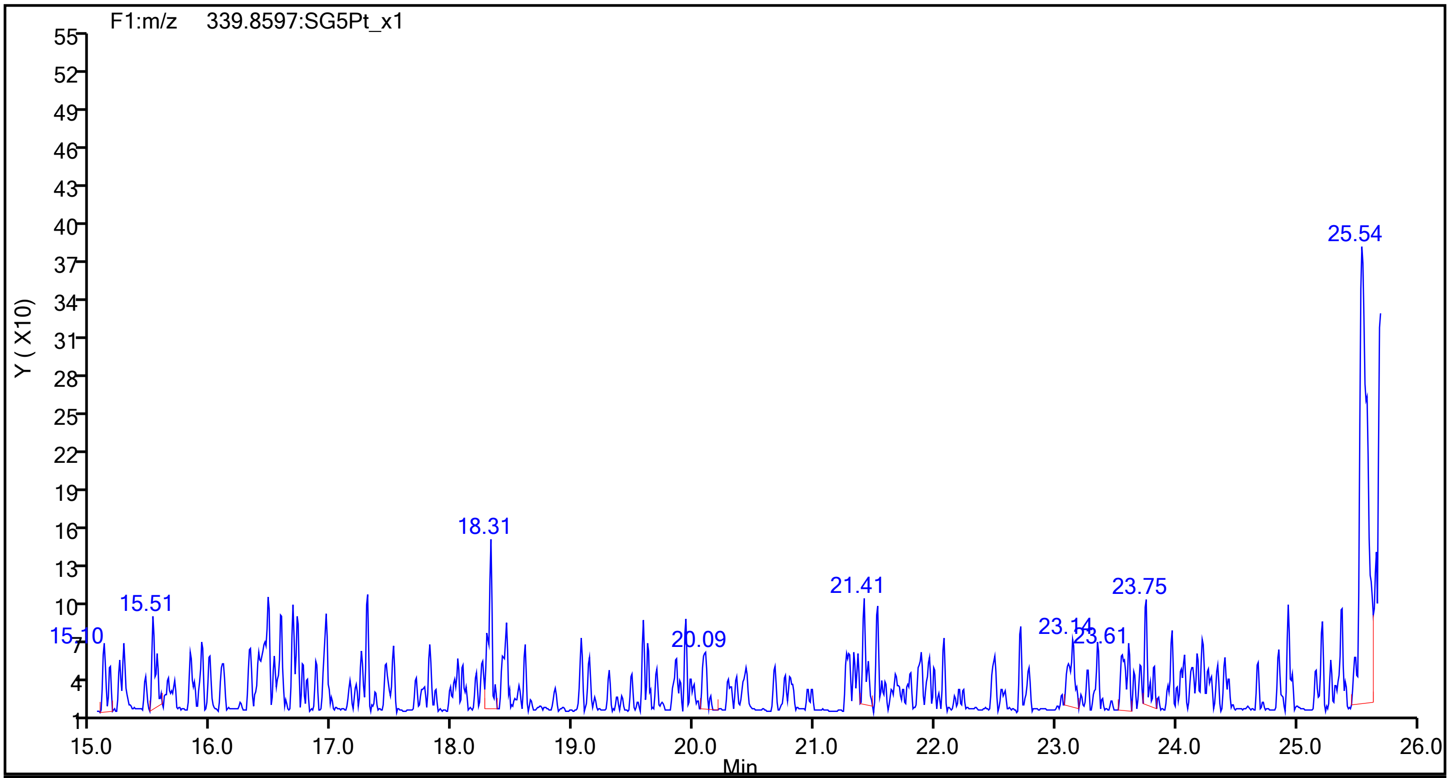

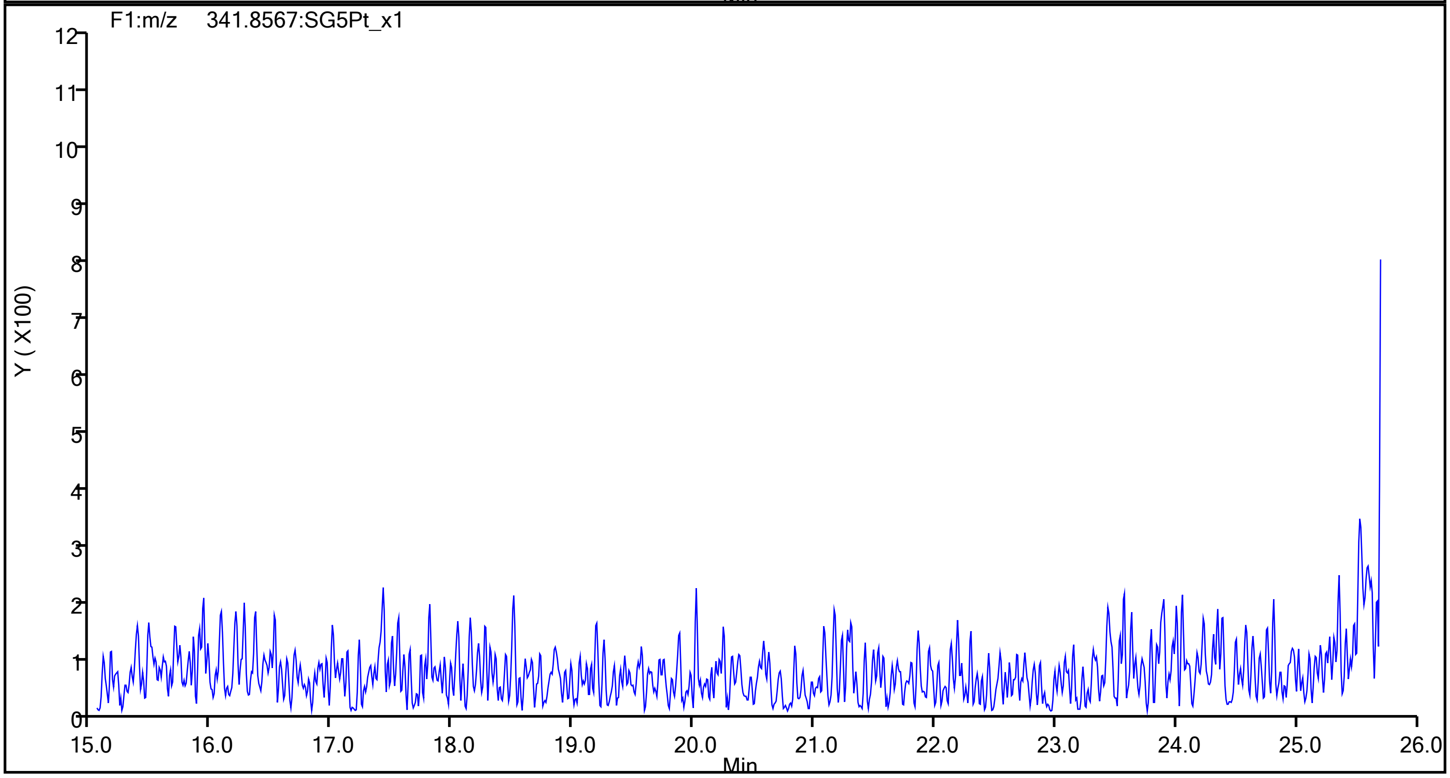

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d

Injection Date: 03-Jun-2020 20:01:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 10

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

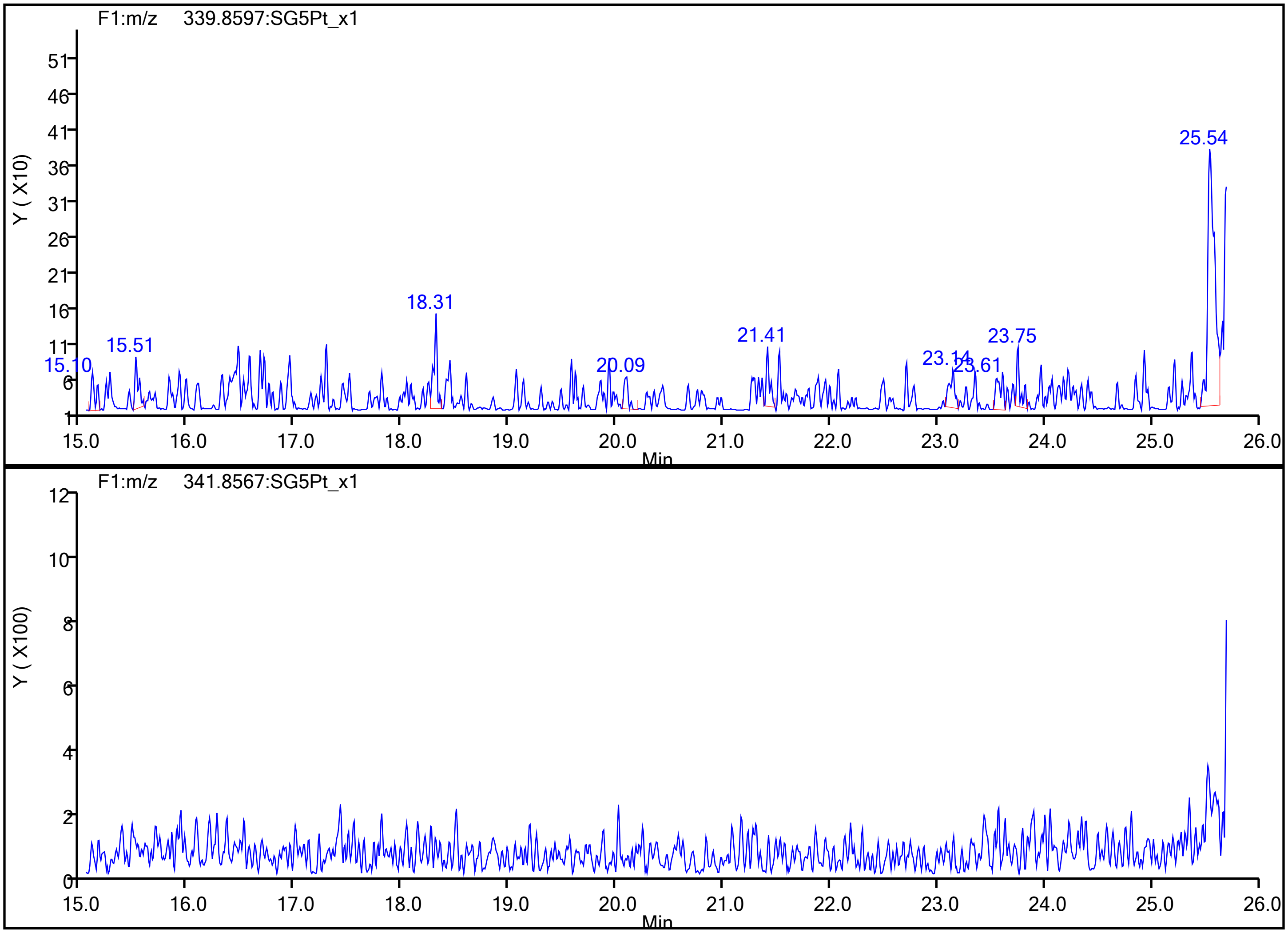

F1 PeCDFs Interference Mass

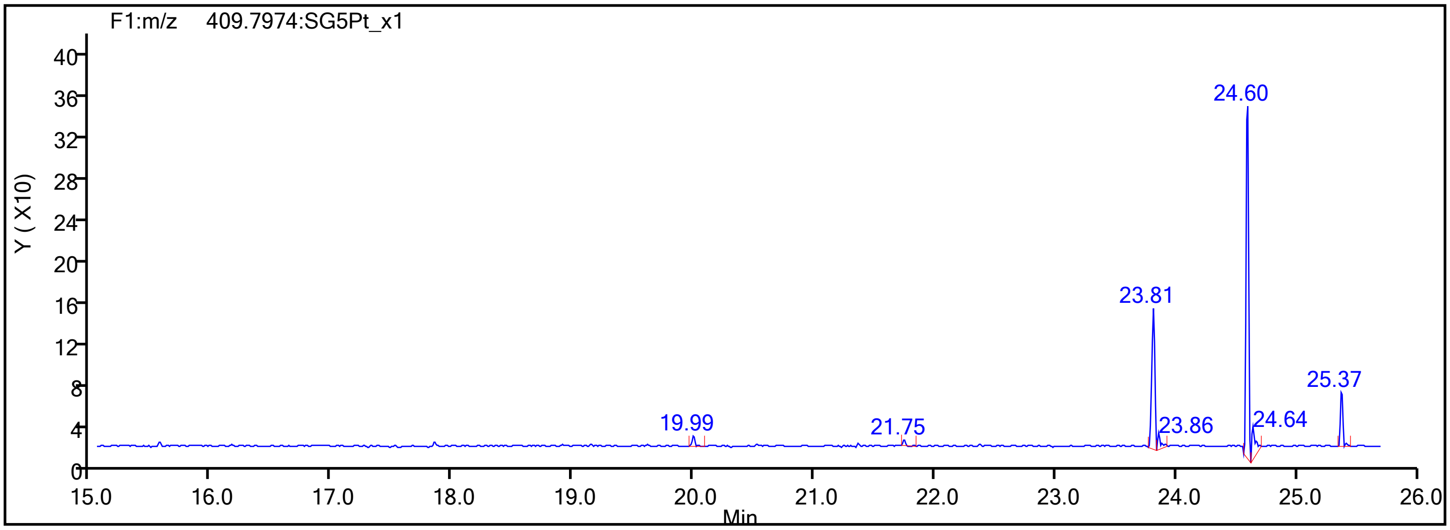

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

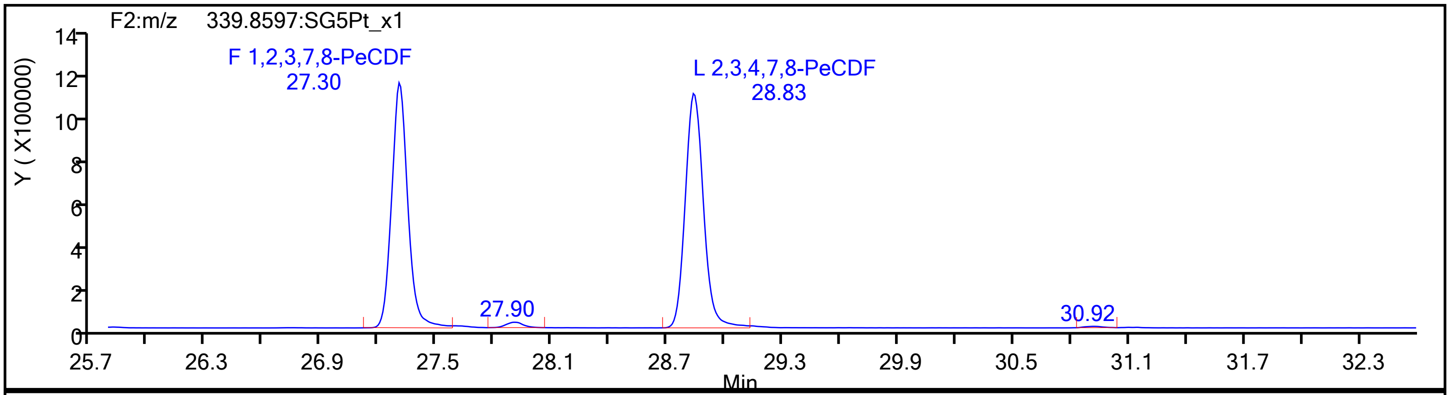

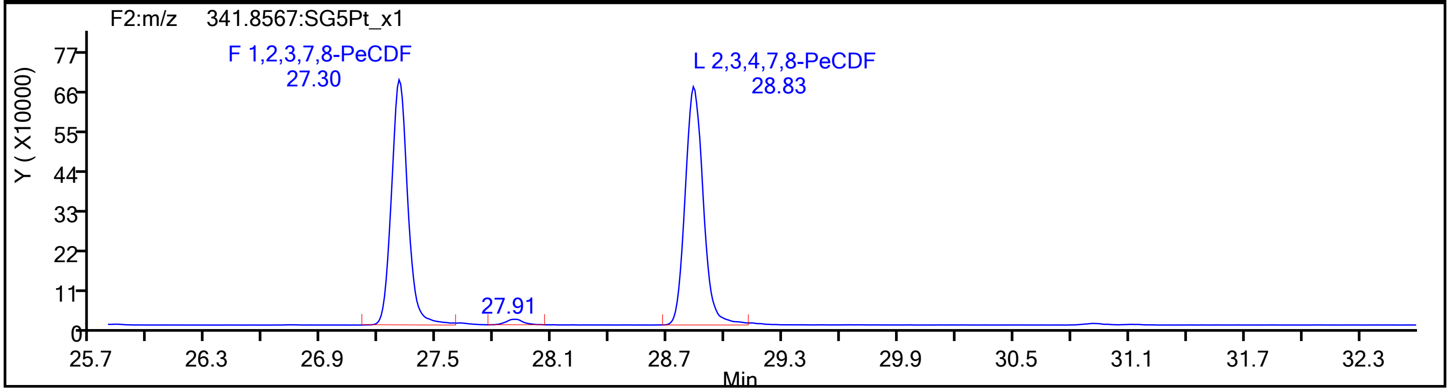

PeCDF Standards

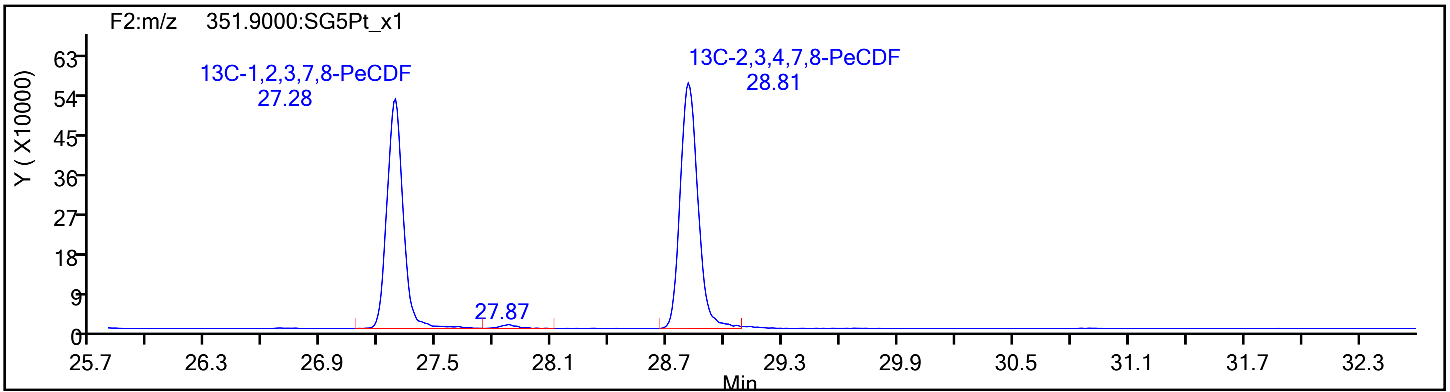

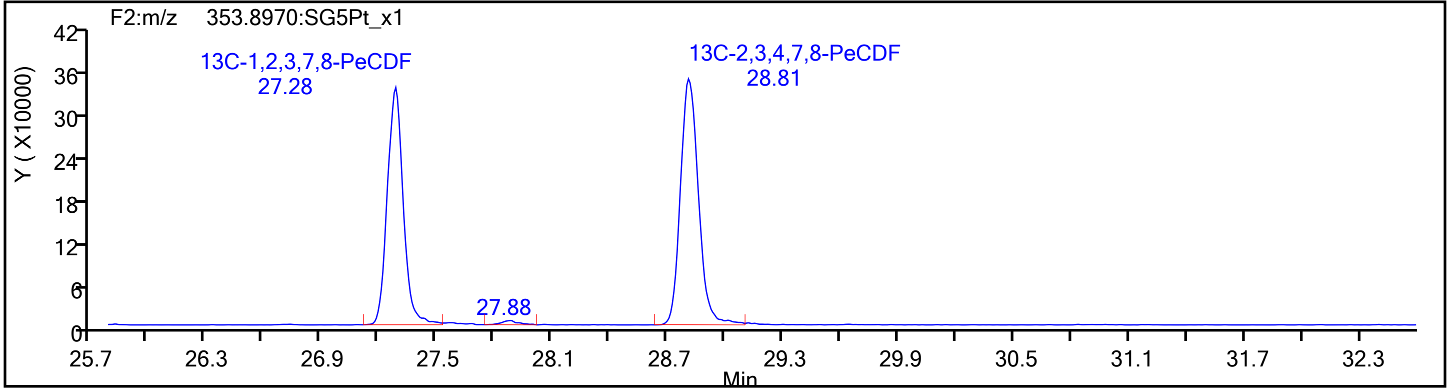

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

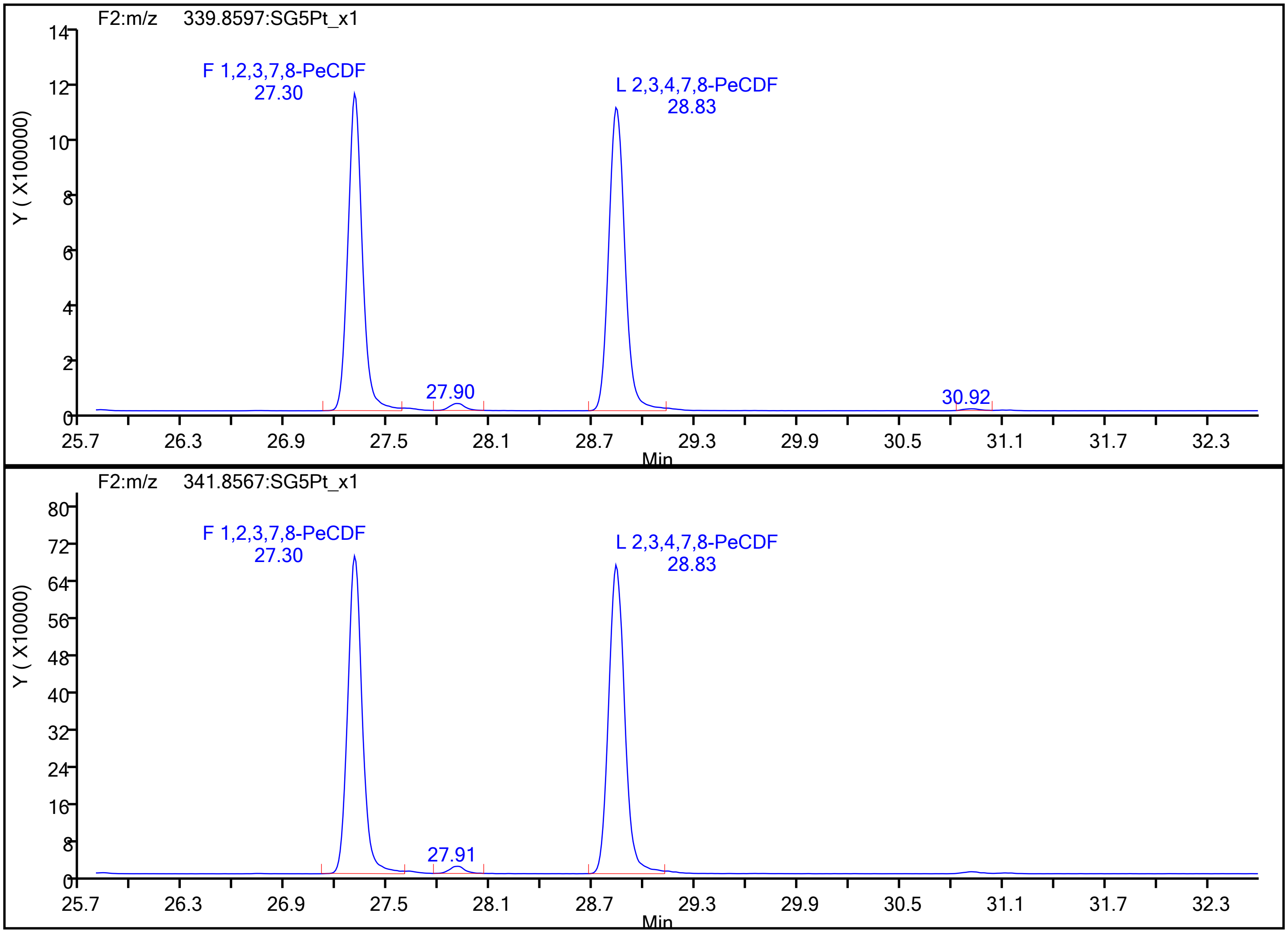

PeCDF Interference Mass

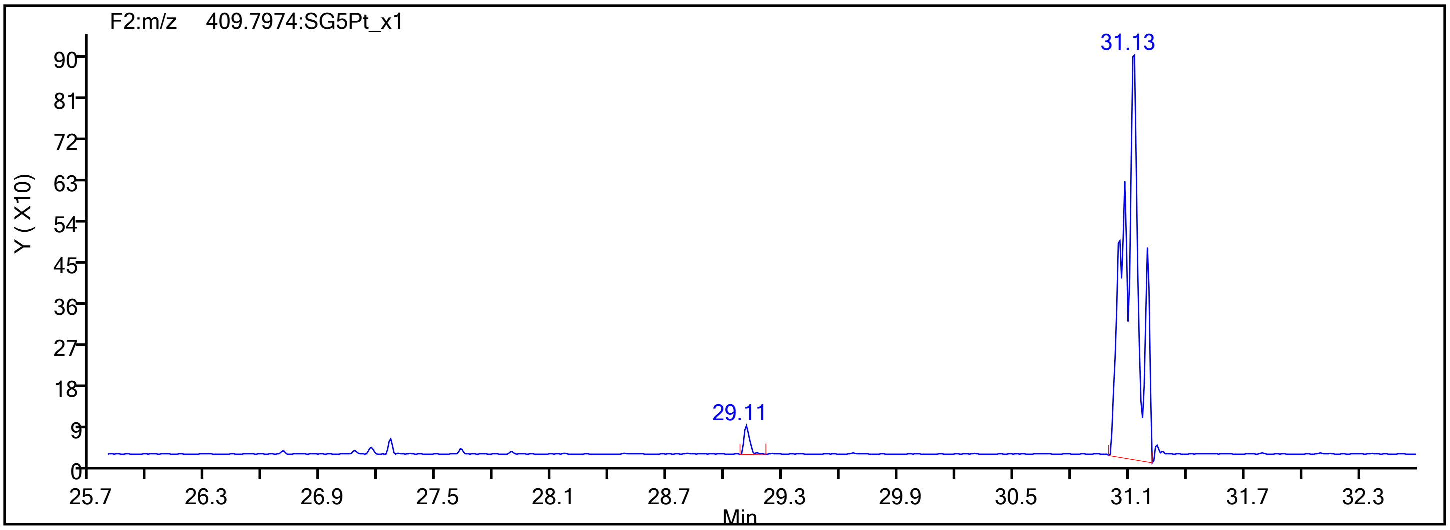

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

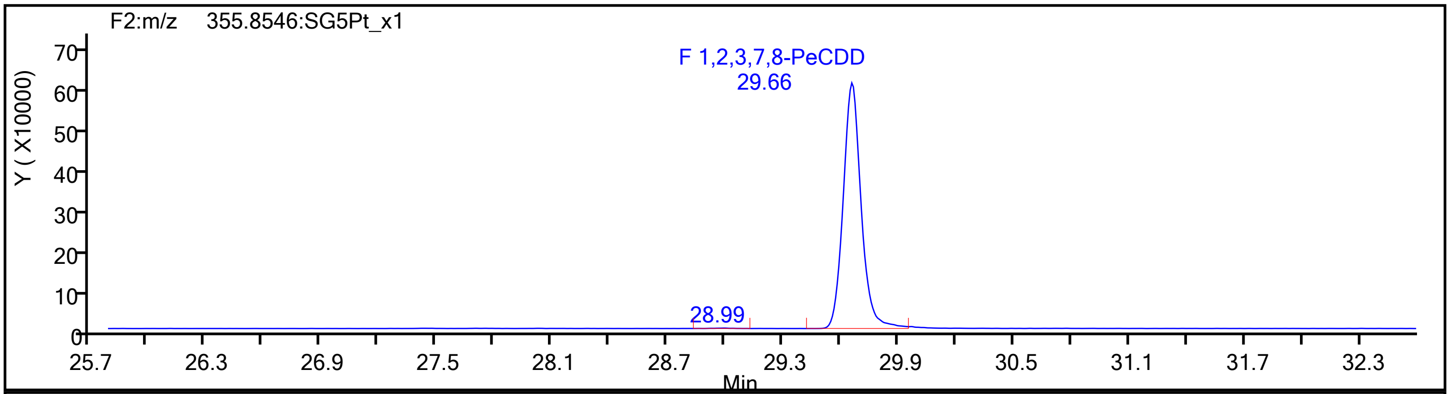

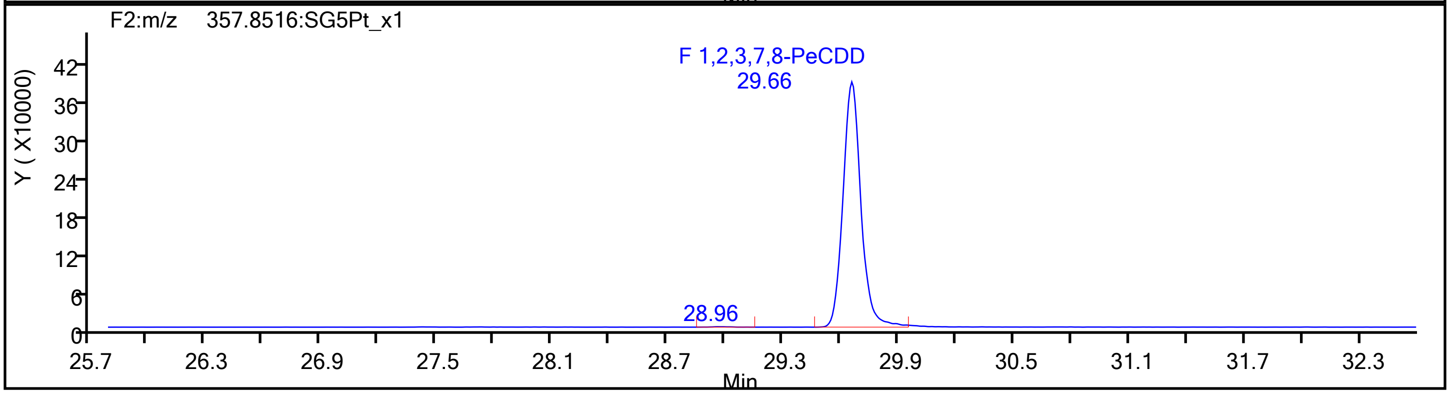

PeCDD Standards

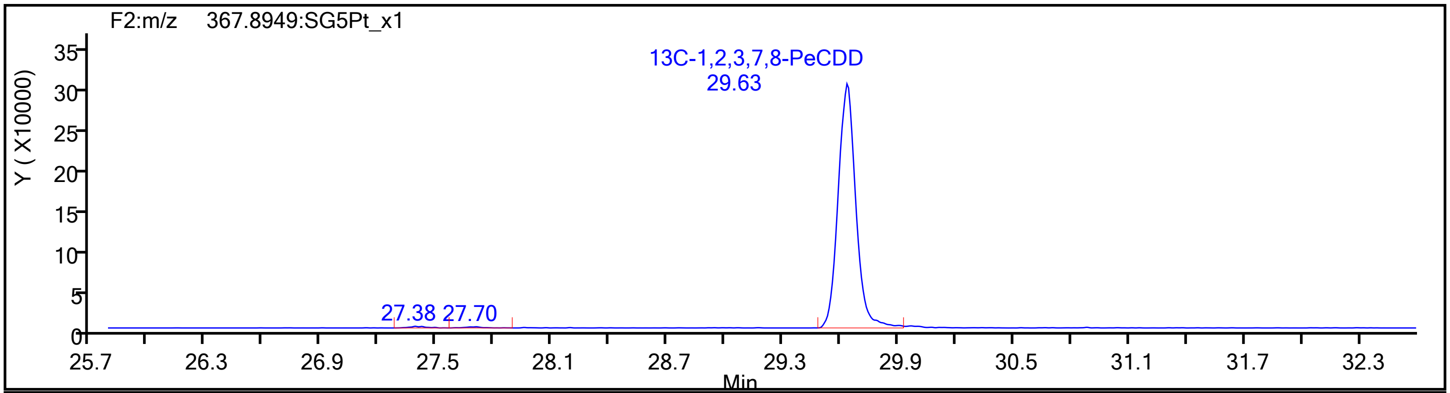

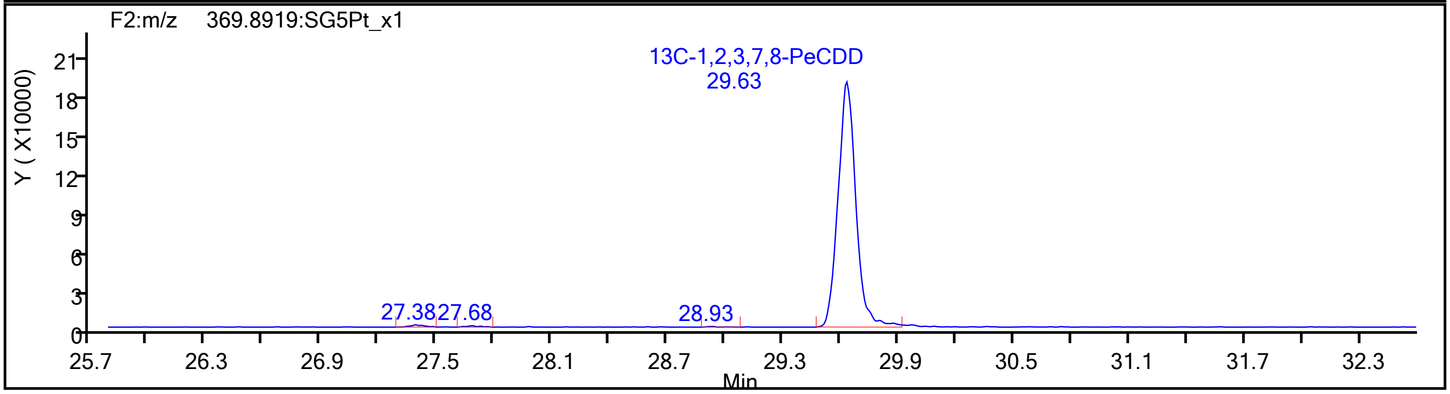

Report Date: 08-Jun-2020 08:41:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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HxCDF

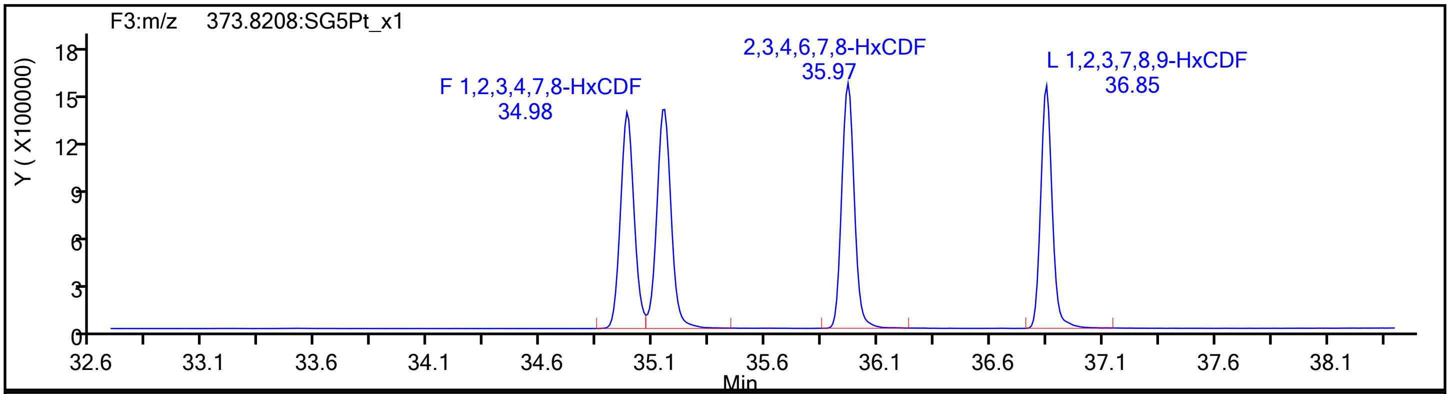

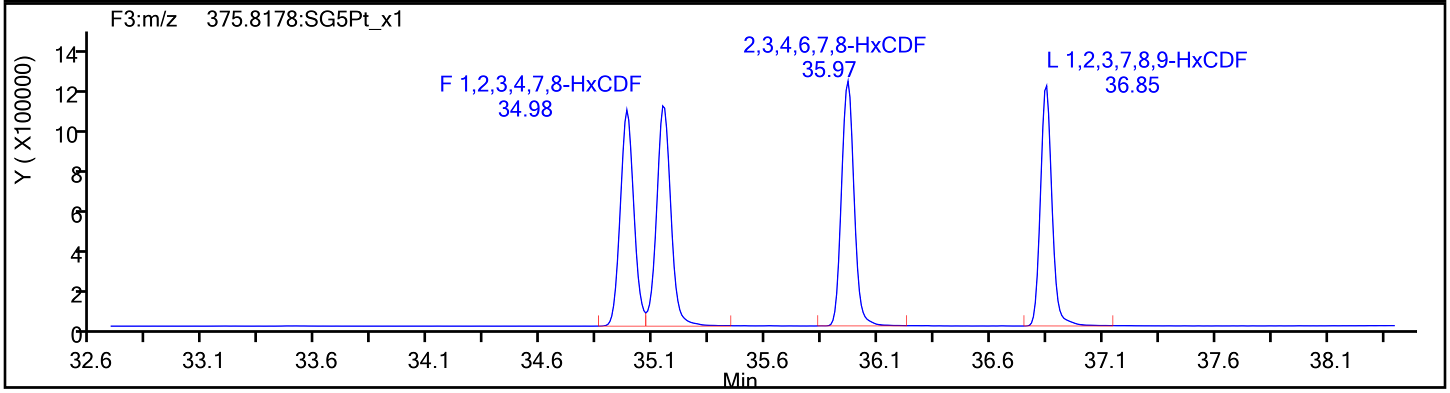

HxCDF Standards

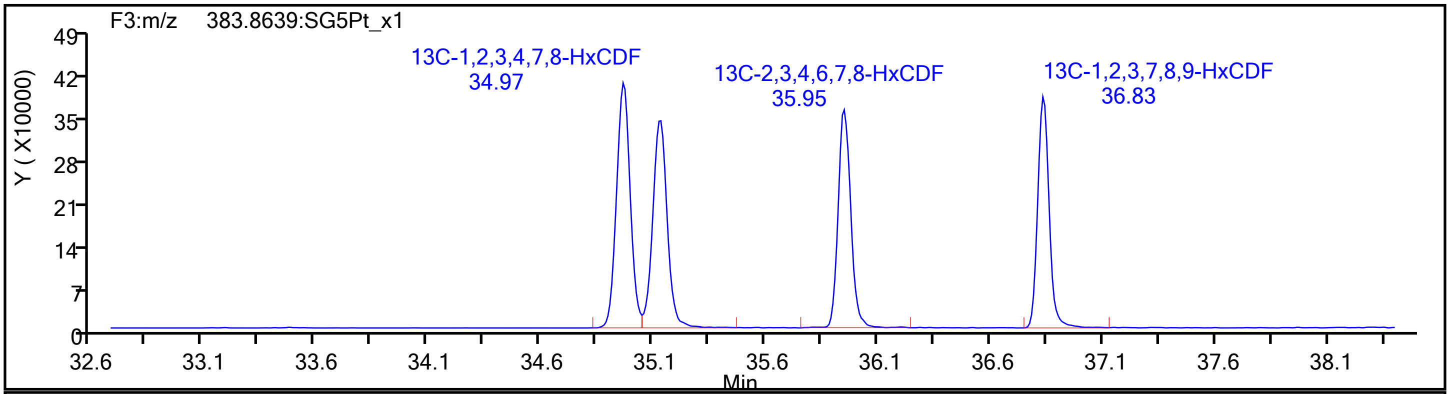

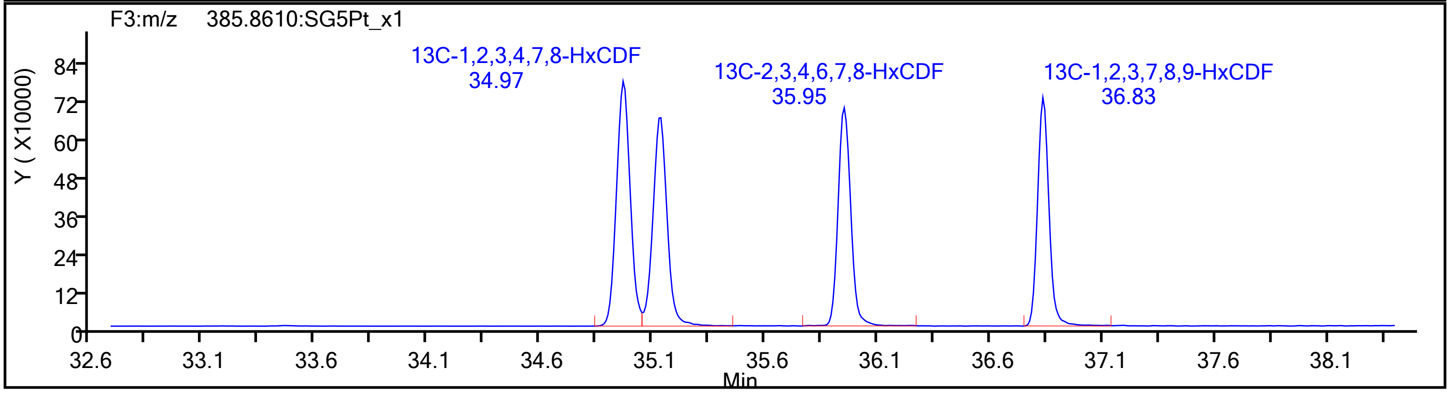

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Eurofins TestAmerica, Sacramento

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HxCDF

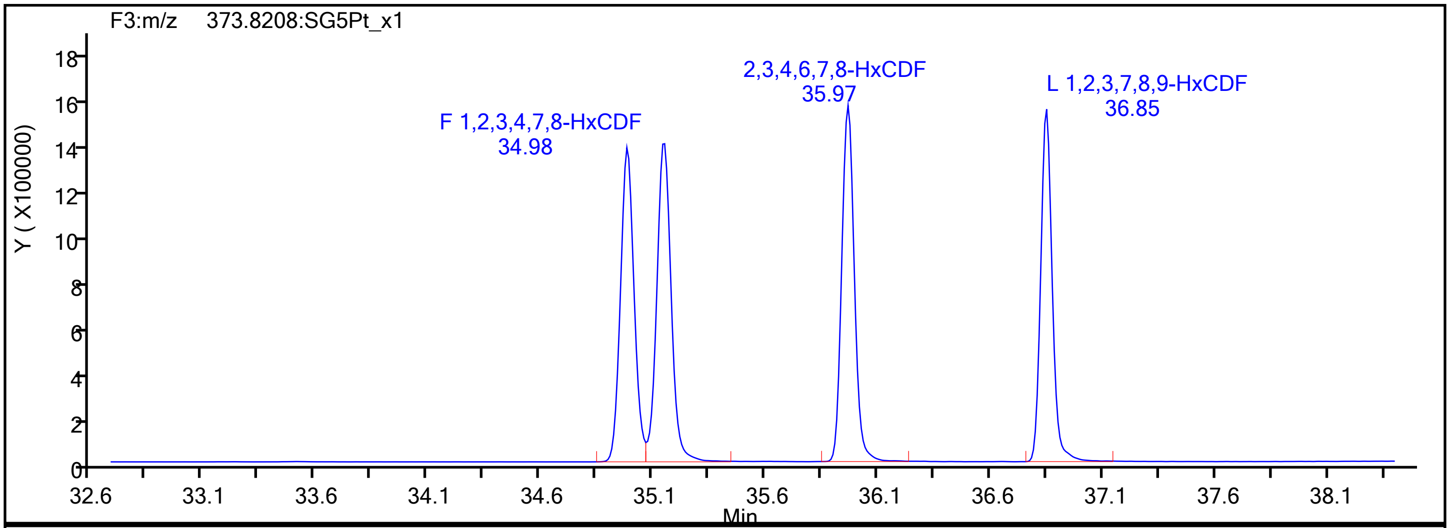

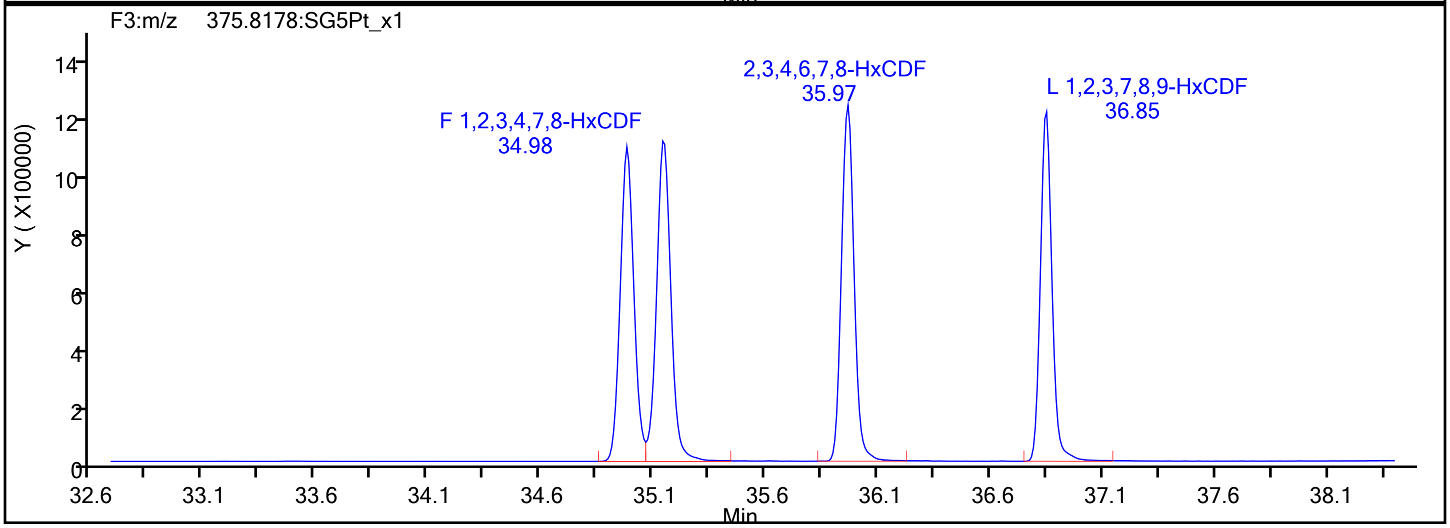

HxCDF Interference Mass

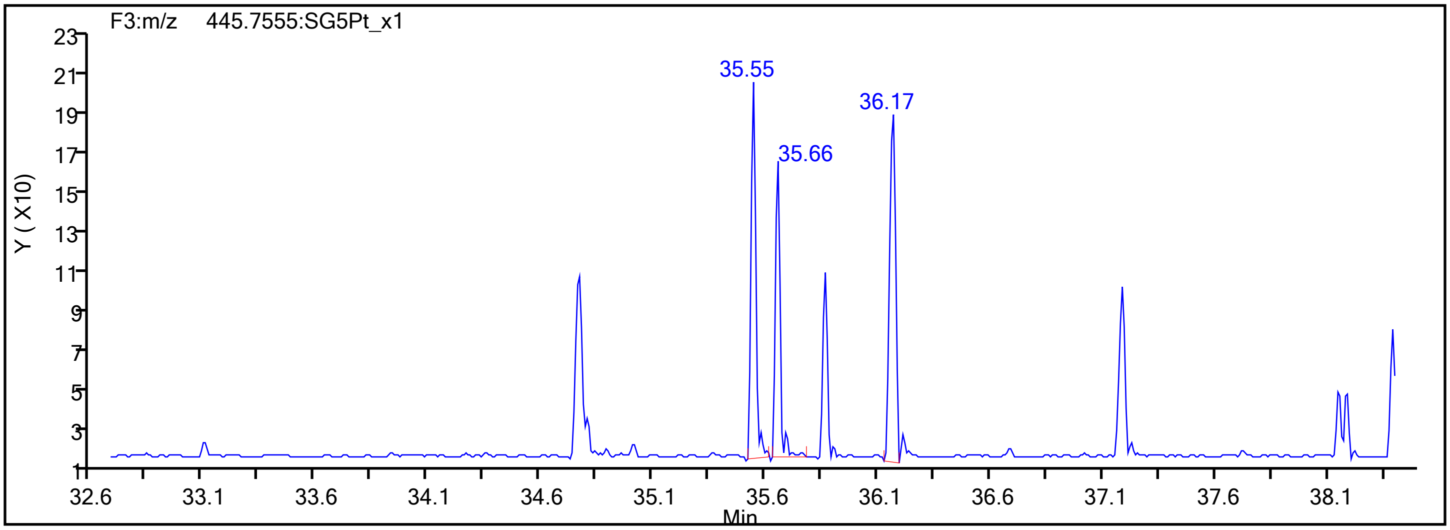

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDD

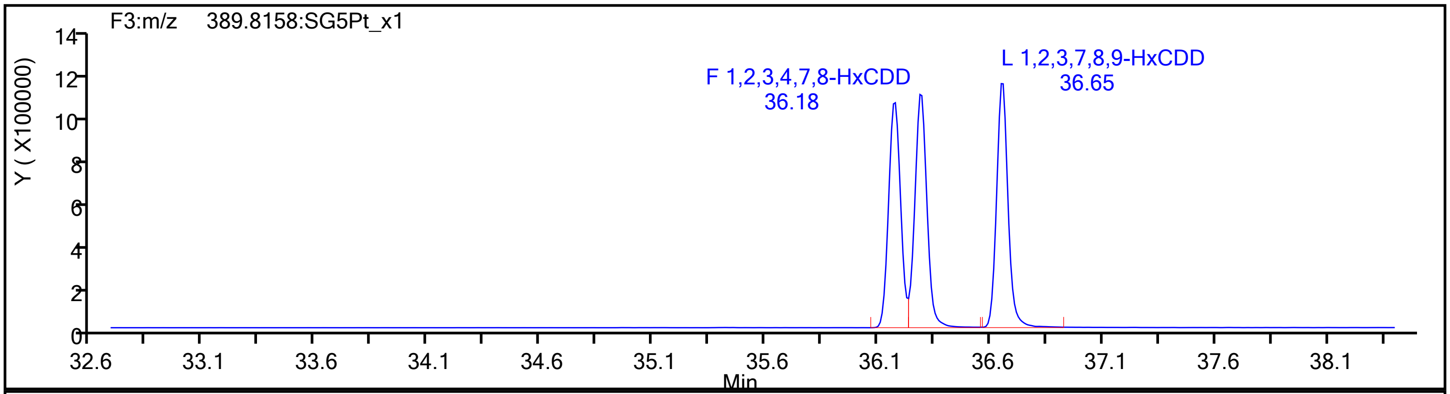

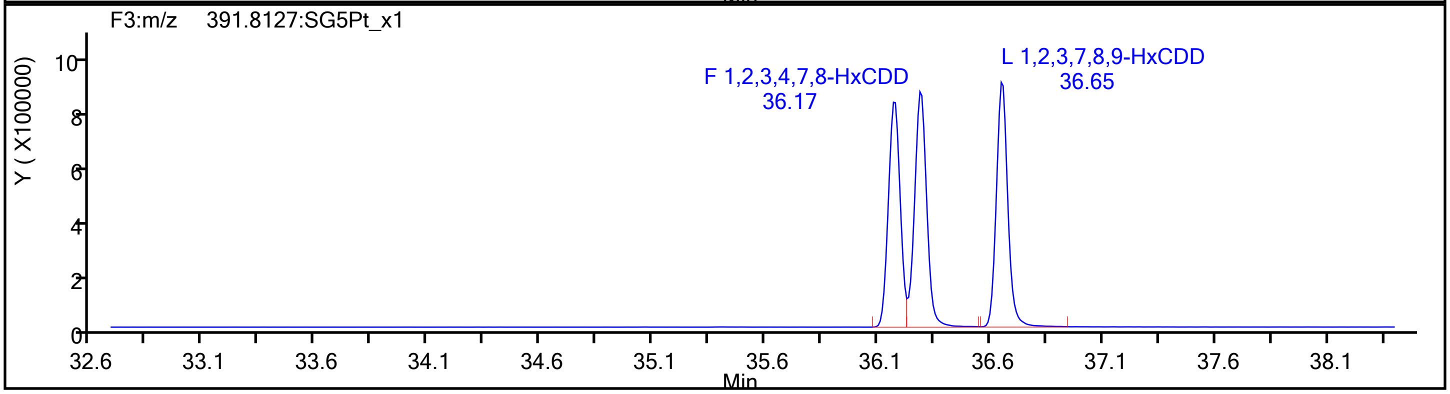

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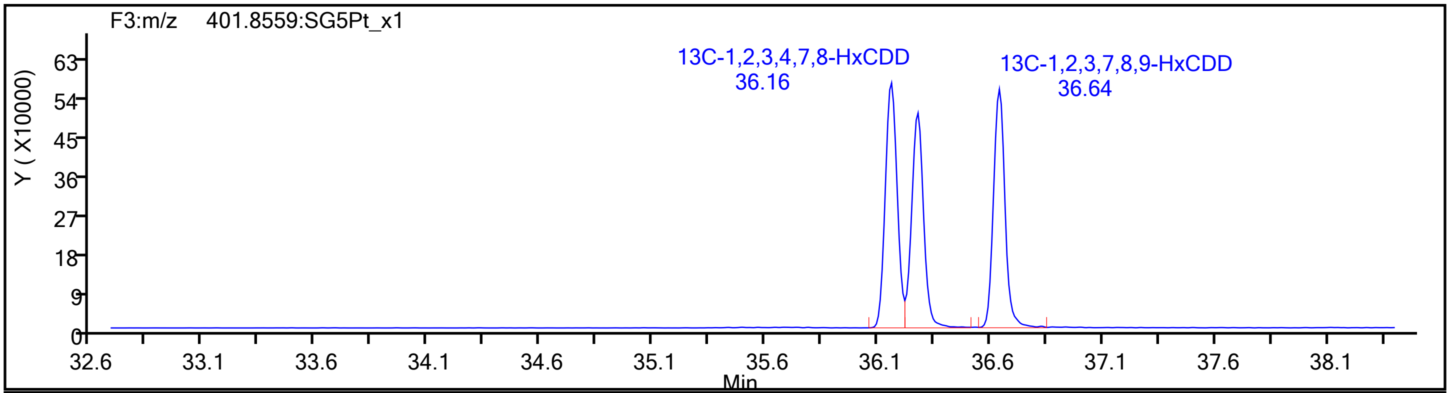

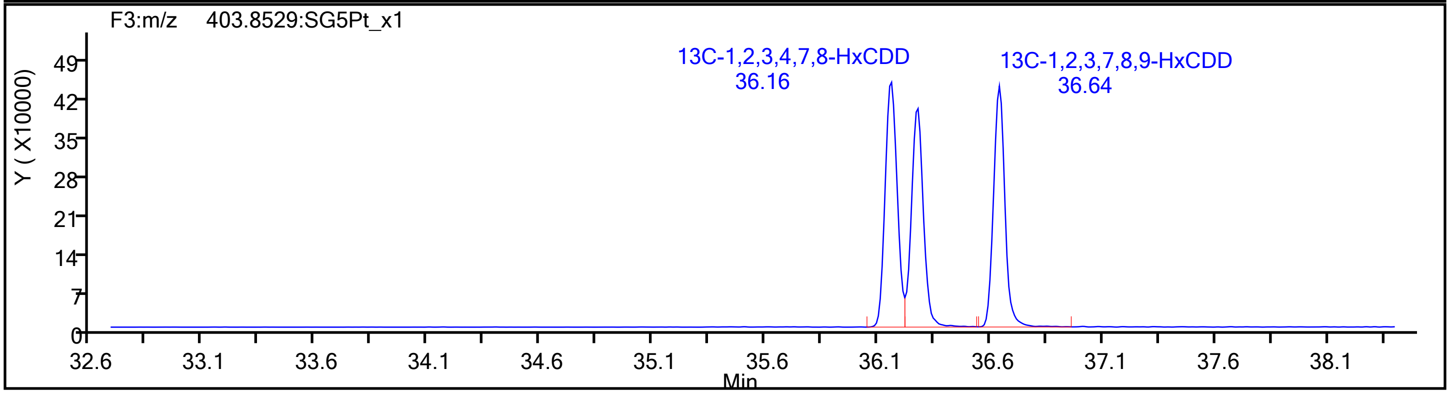

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Chrom Revision: 2.3 03-Jun-2020 23:27:16
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HpCDF

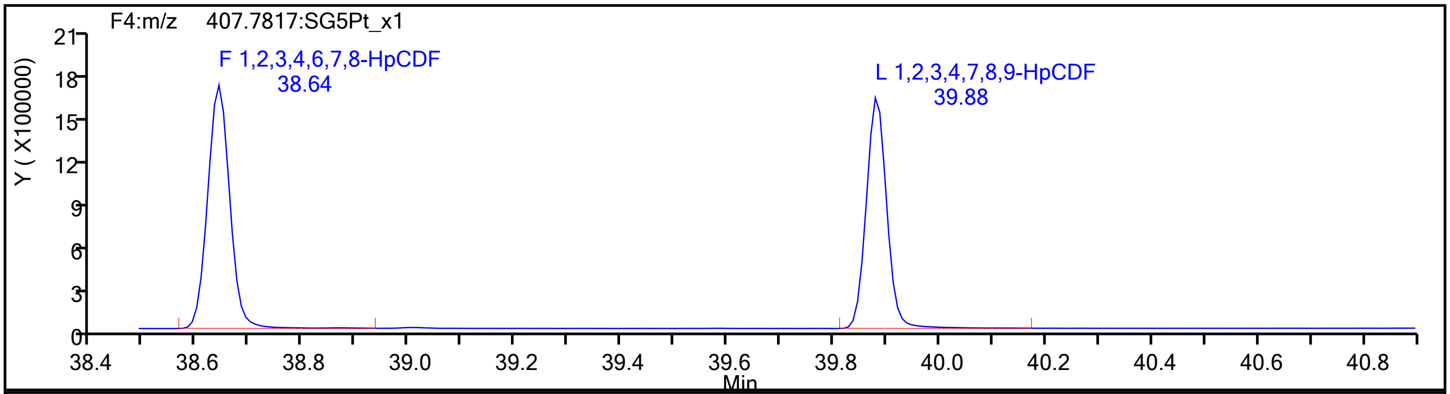

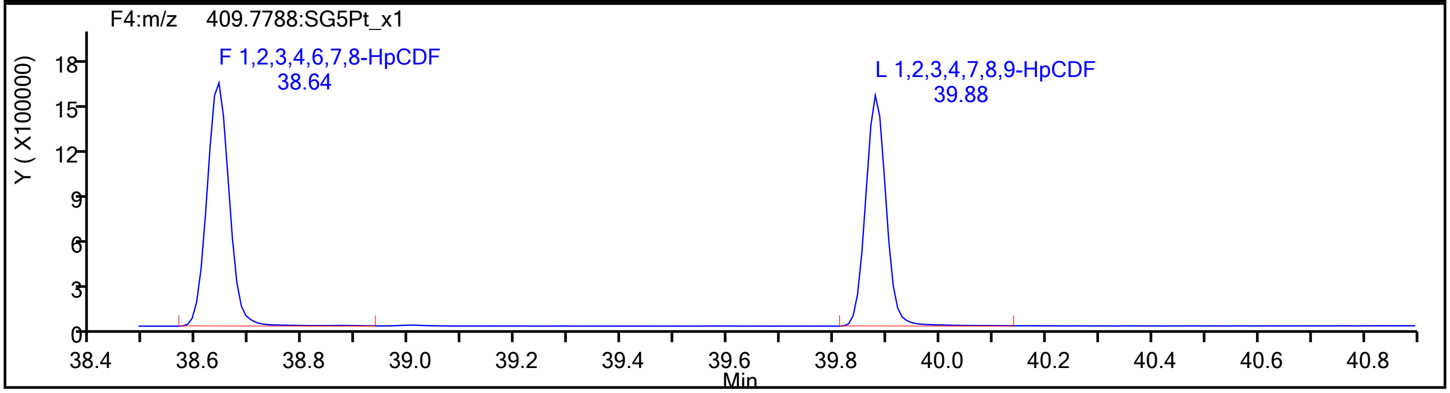

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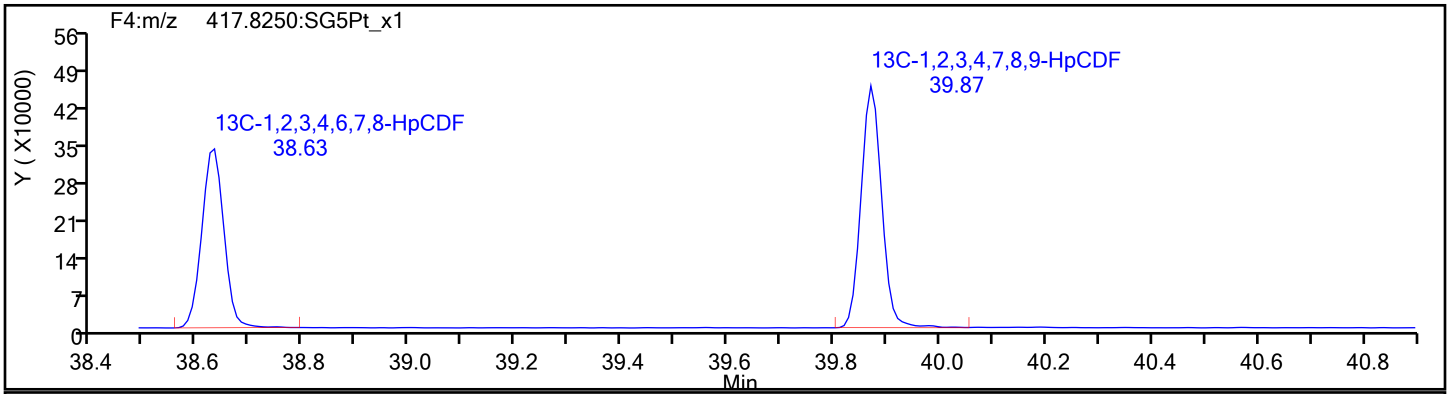

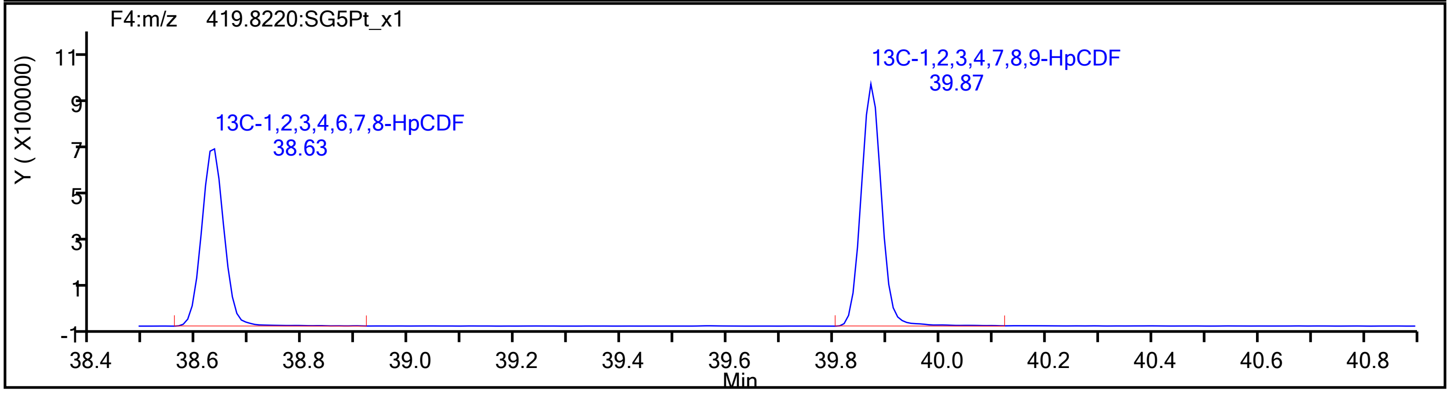

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Eurofins TestAmerica, Sacramento

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HpCDF

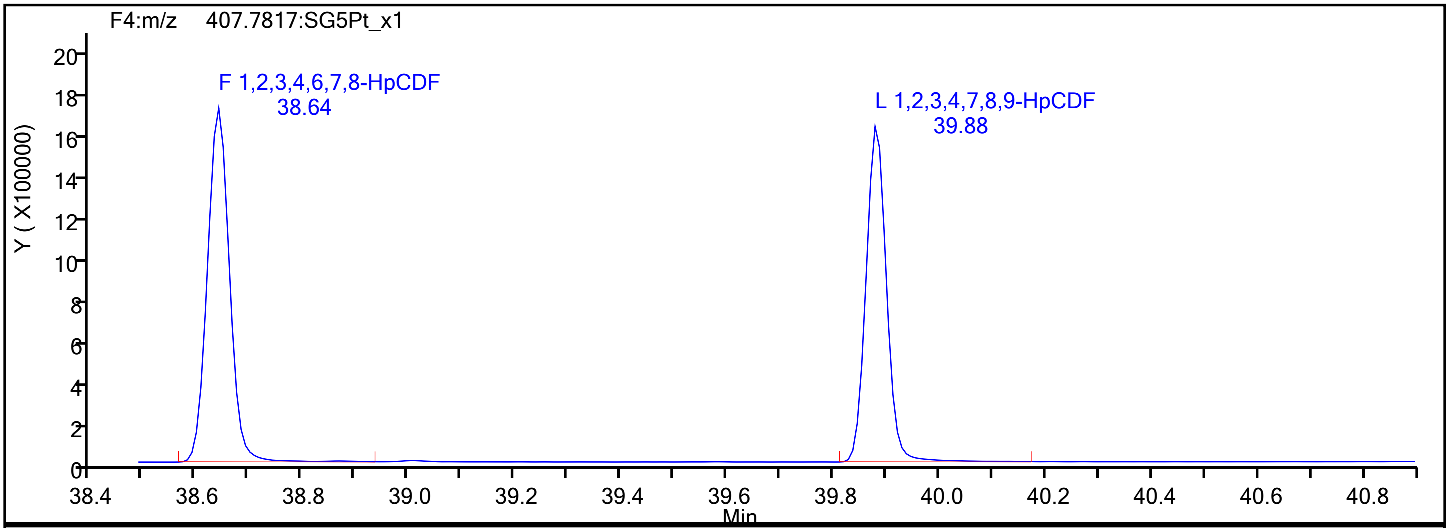

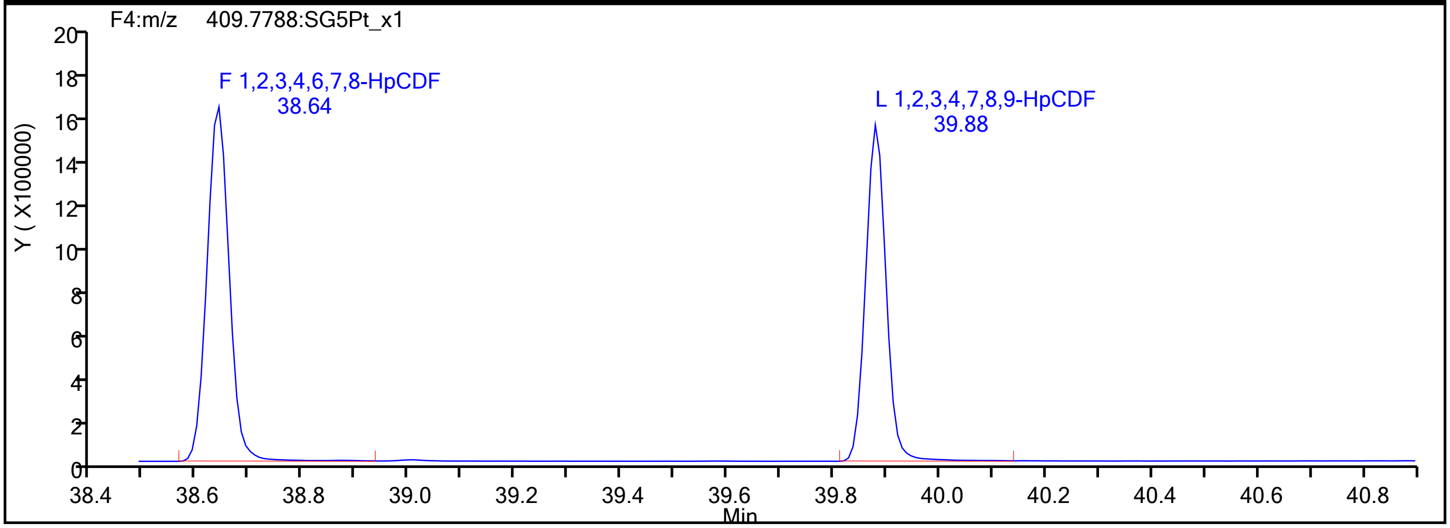

HpCDF Interference Mass

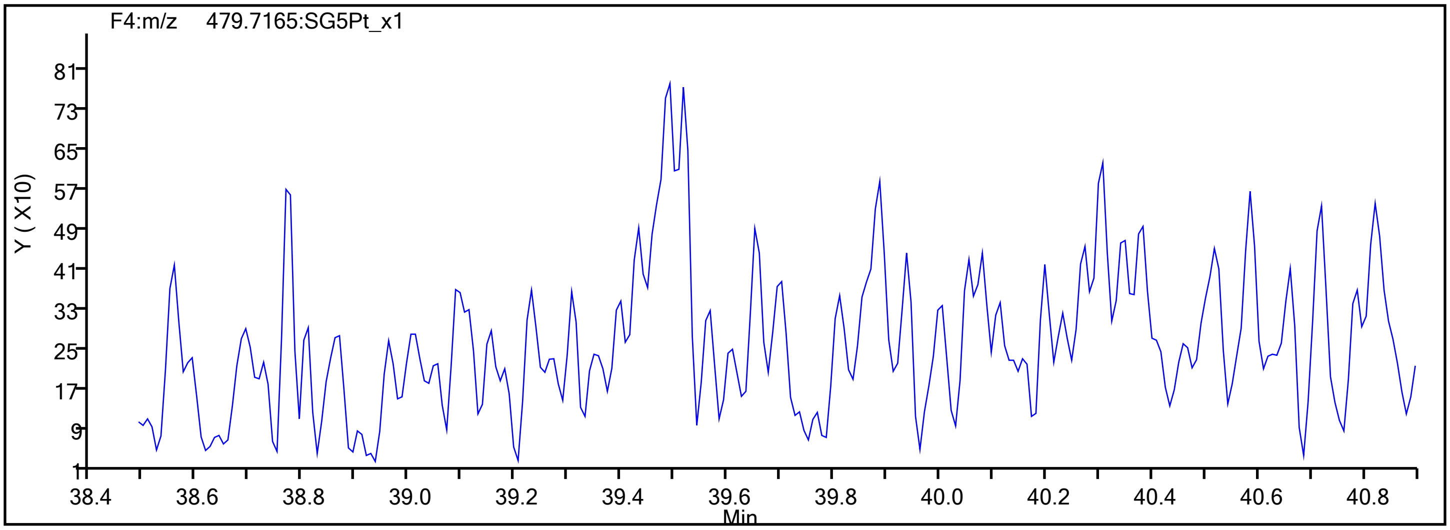

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Eurofins TestAmerica, Sacramento

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HpCDD

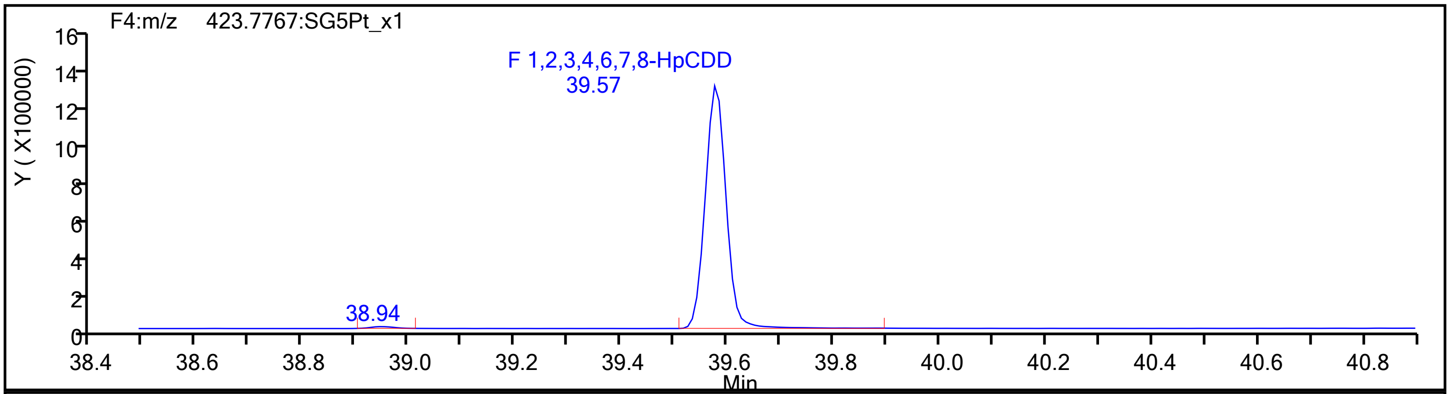

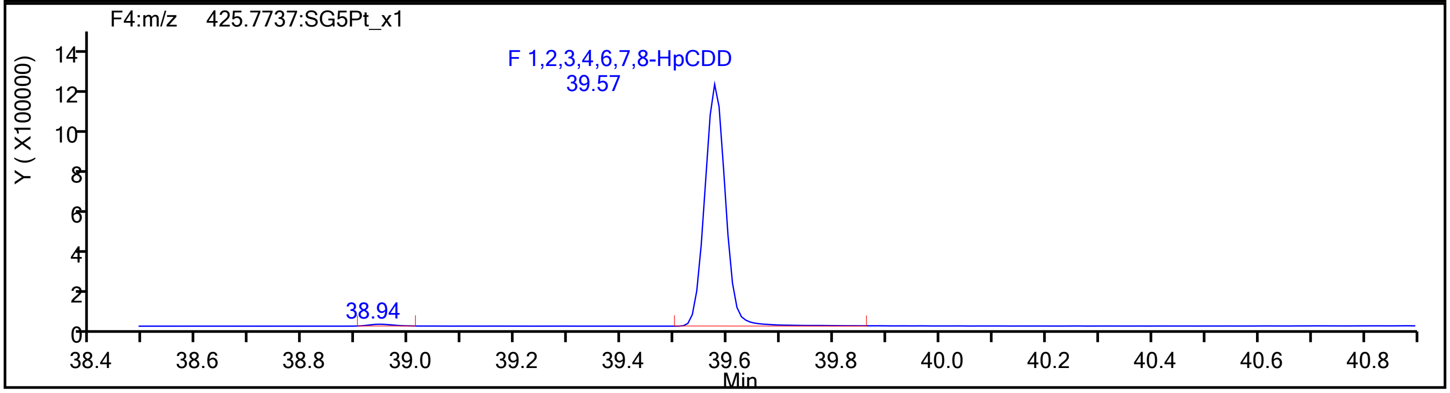

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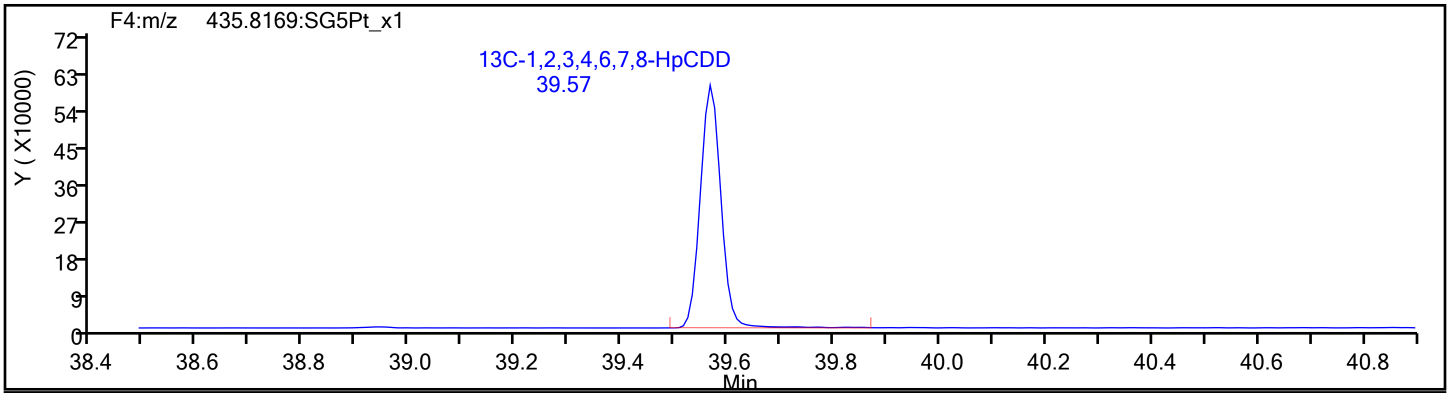

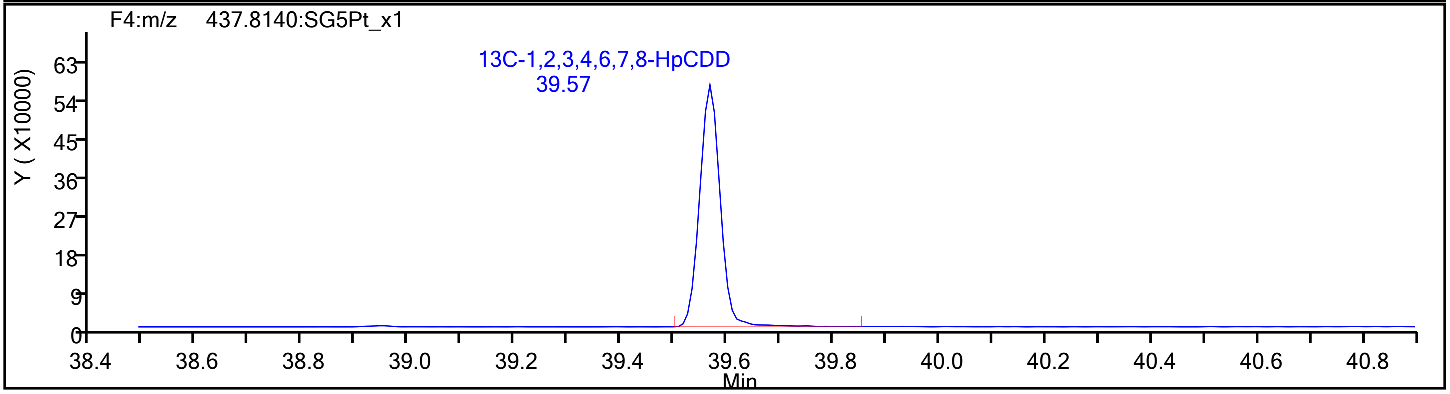

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
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OCDF

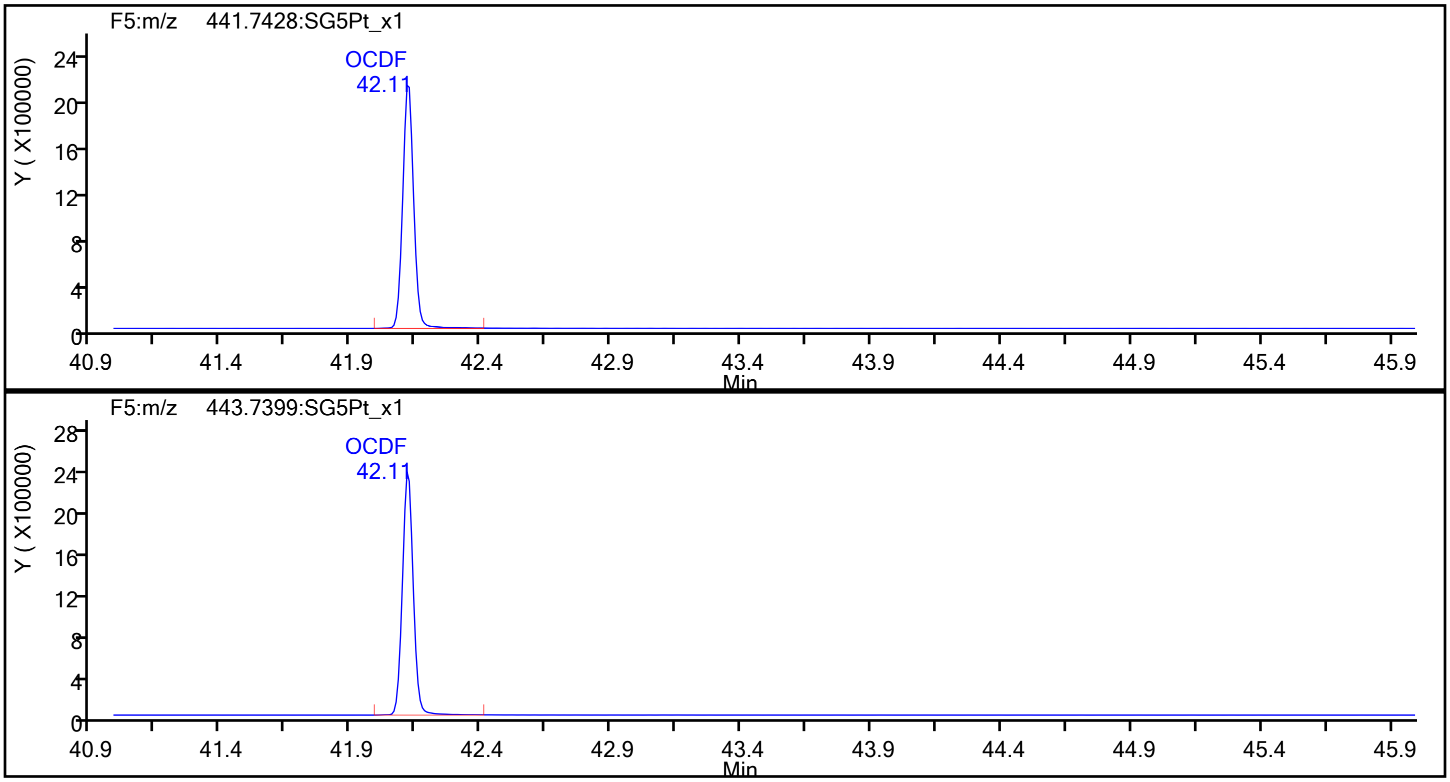

OCDF Standards

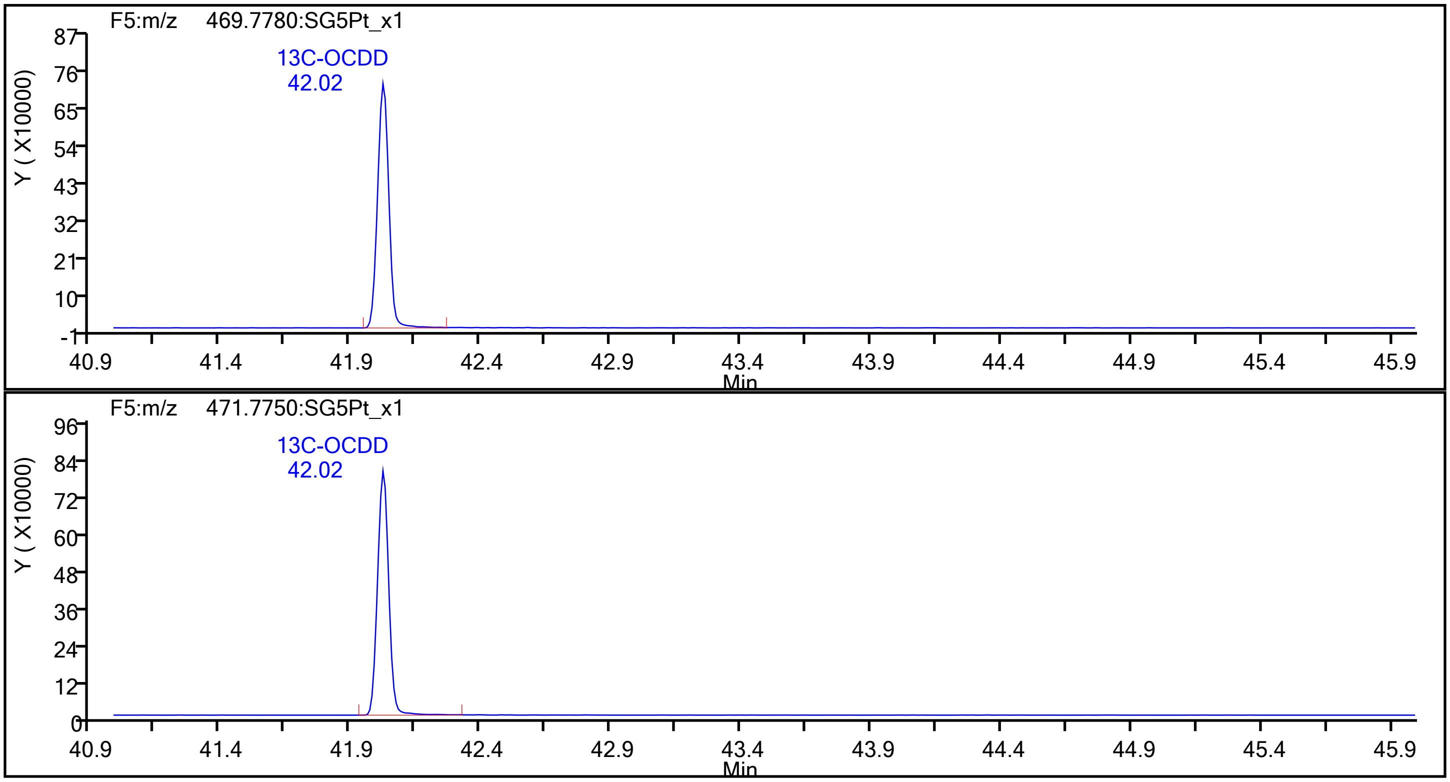

Report Date: 08-Jun-2020 08:41:56
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

OCDF

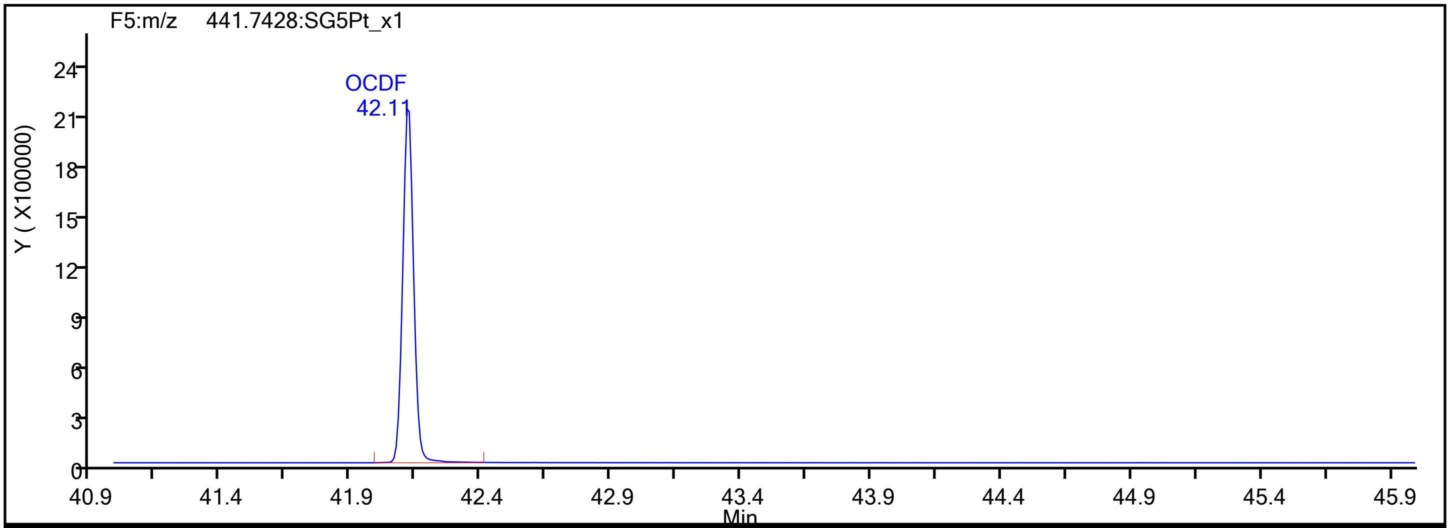

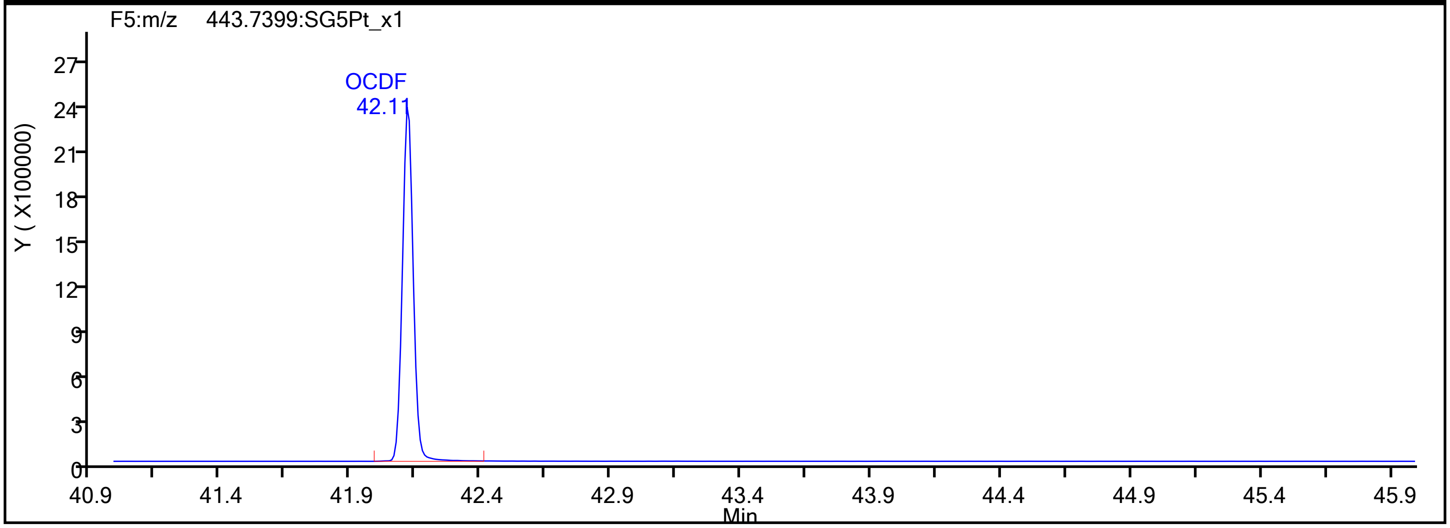

OCDF Interference Mass

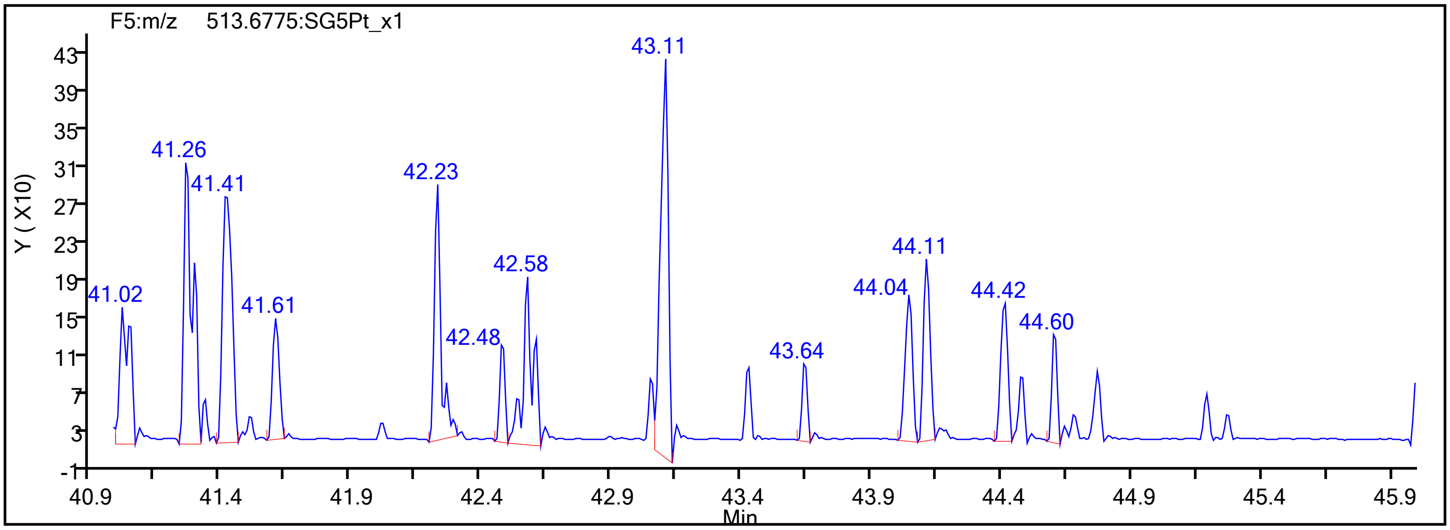

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Eurofins TestAmerica, Sacramento

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OCDD

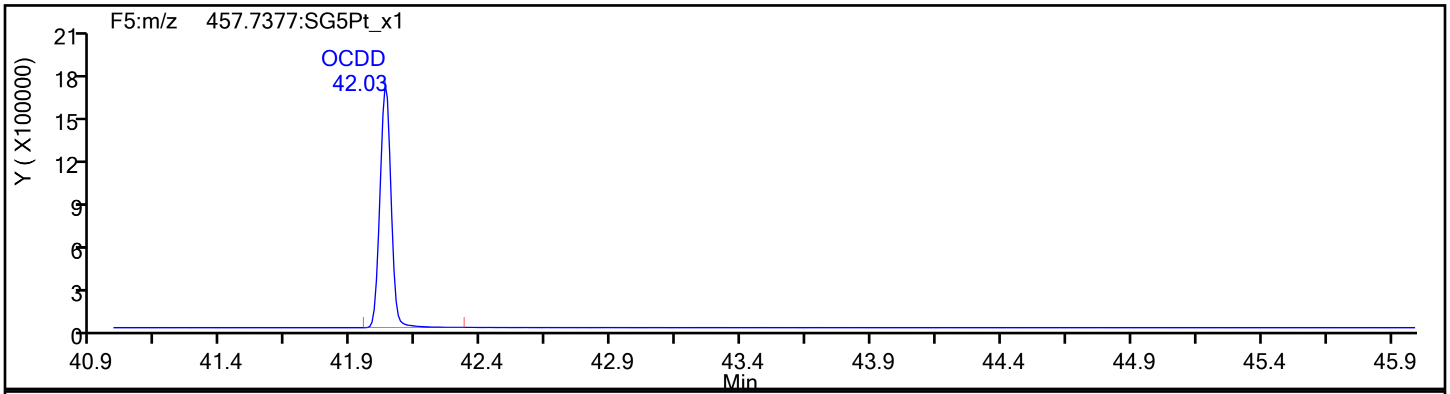

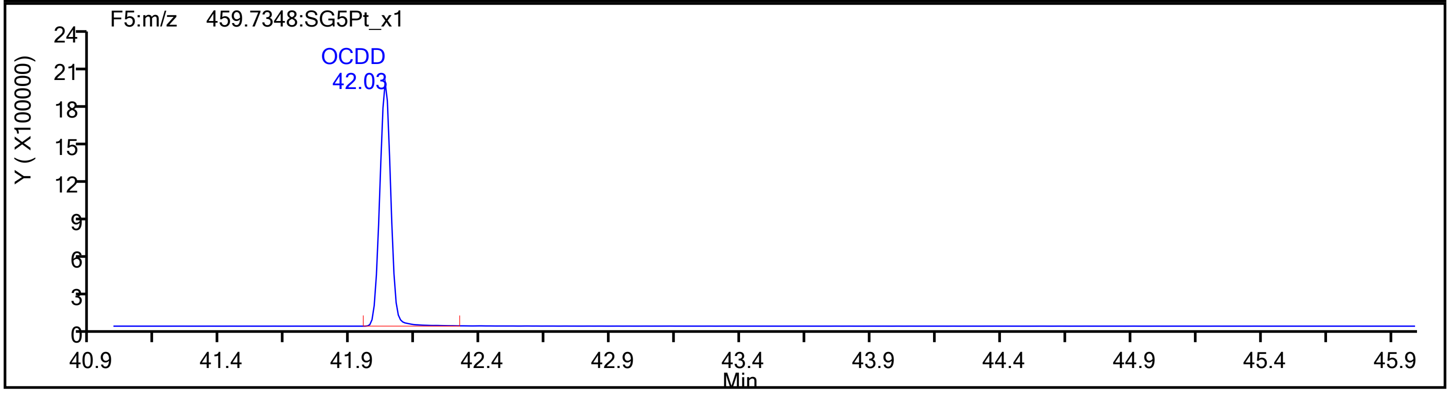

OCDD Standards

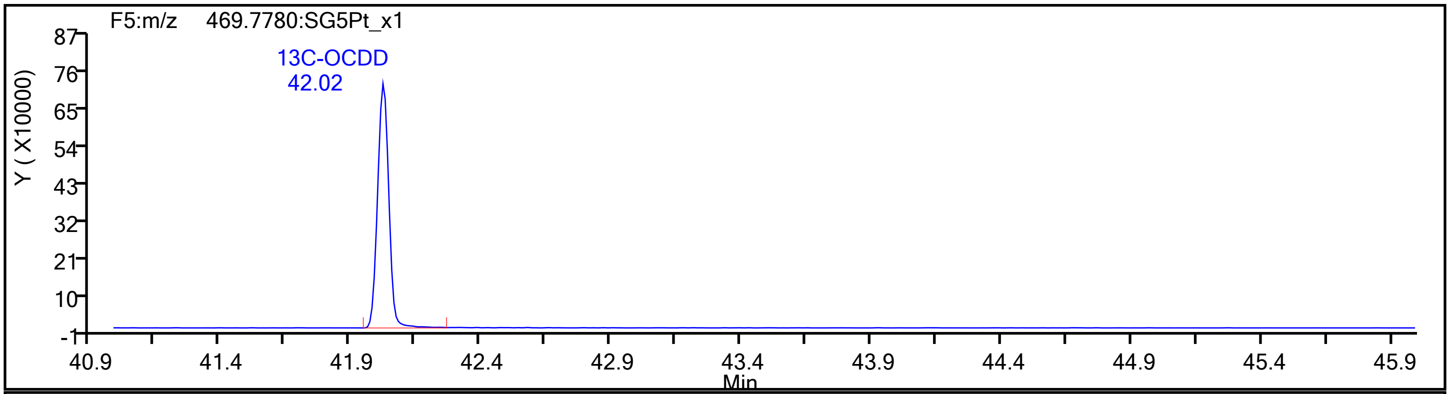

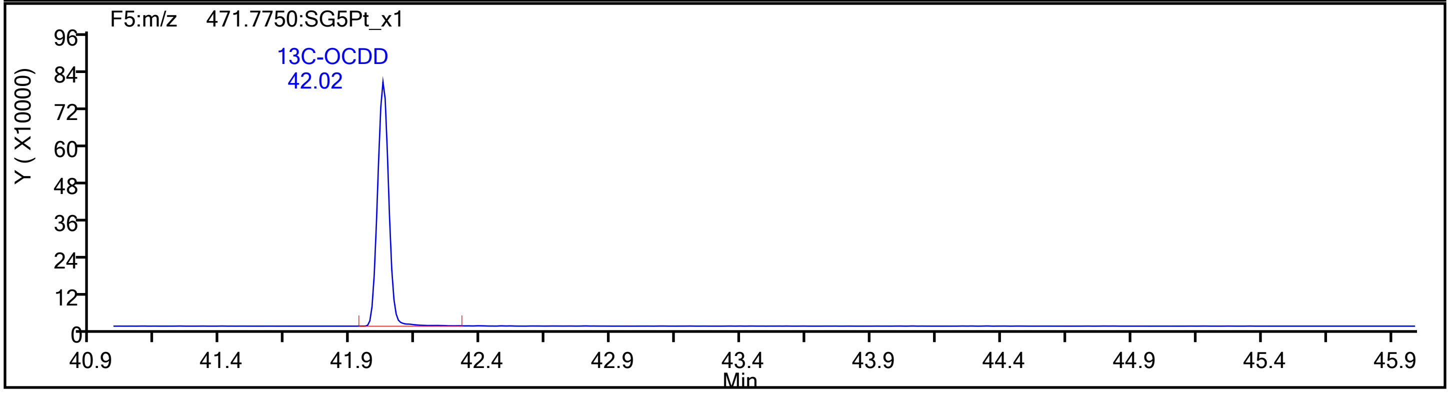

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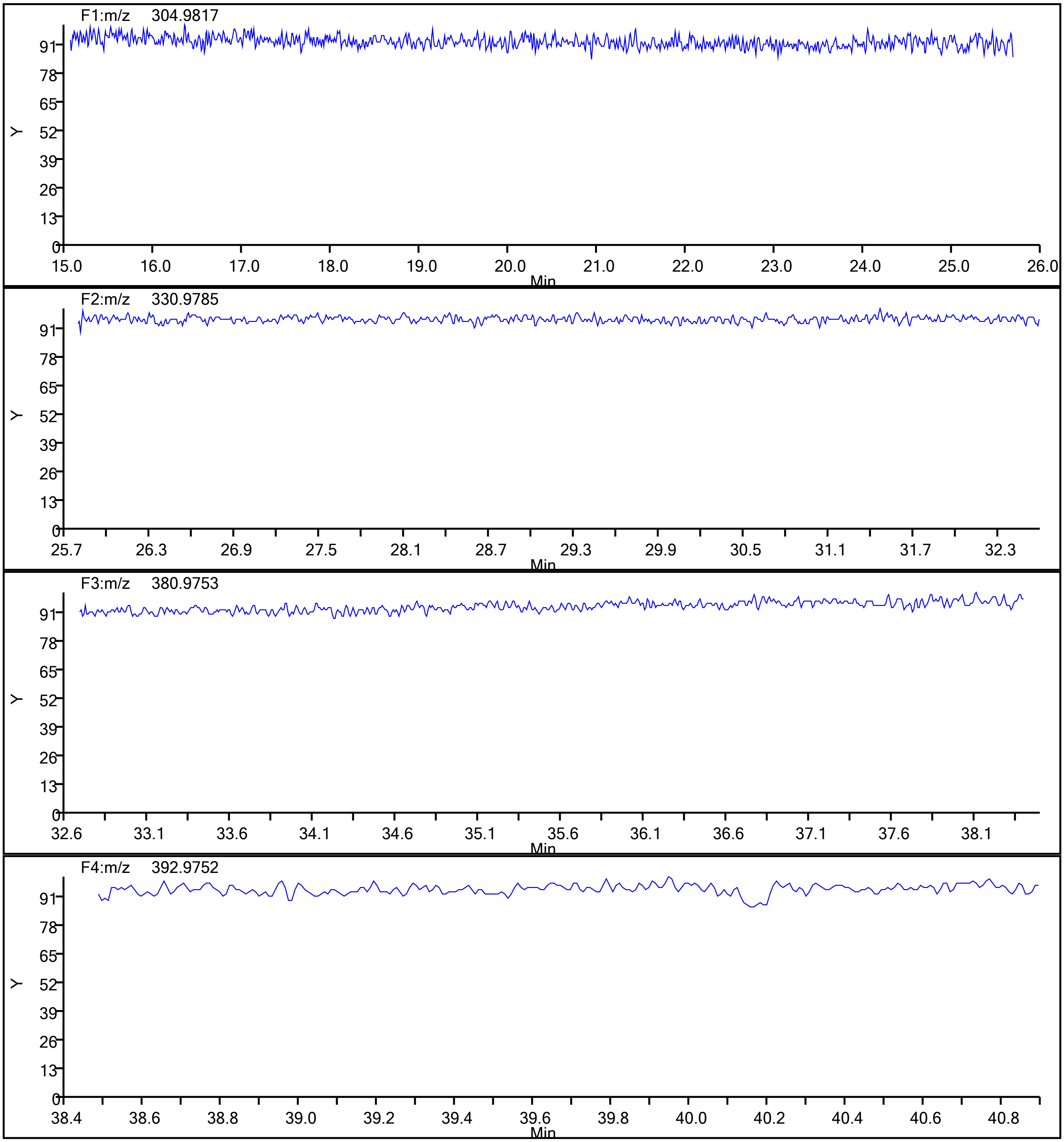

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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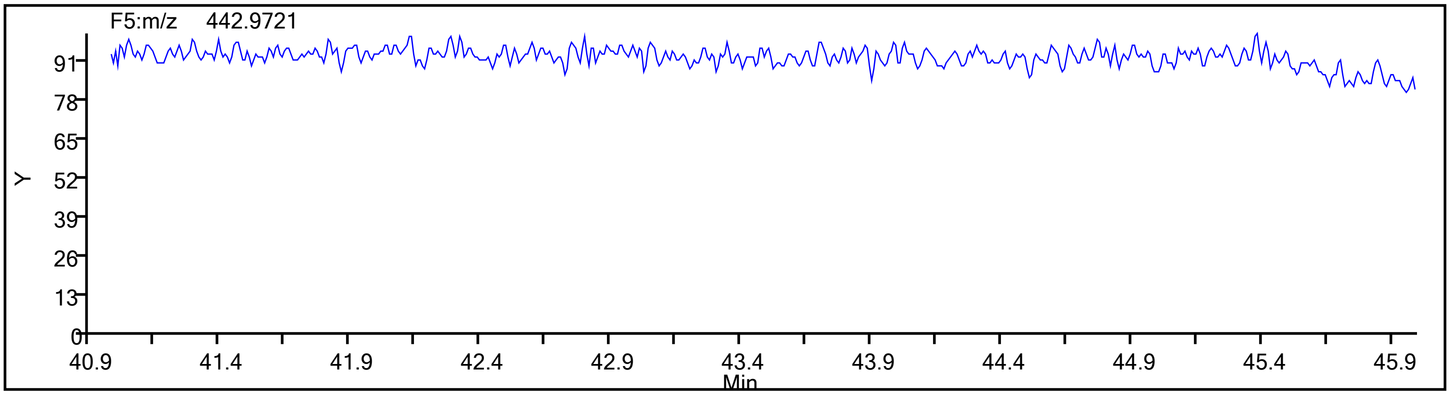

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Lab Sample ID: CCV 320-398796/1   Calibration Date: 07/27/2020 16:52

Instrument ID: DFS 1   Calib Start Date: 06/03/2020 14:05

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 06/03/2020 18:06

Lab File ID: 27jl20bdfs1_2.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.131	1.208		10.7	10.0	107	84-120
2,3,7,8-TCDD	AveID	1.185	1.221		10.3	10.0	103	78-129
1,2,3,7,8-PeCDF	AveID	1.106	1.196		54.1	50.0	108	82-120
2,3,4,7,8-PeCDF	AveID	0.9067	0.9859		54.4	50.0	109	82-122
1,2,3,7,8-PeCDD	AveID	1.106	1.153		52.1	50.0	104	78-130
1,2,3,4,7,8-HxCDF	AveID	1.009	1.112		55.1	50.0	110	90-112
1,2,3,6,7,8-HxCDF	AveID	1.243	1.341		53.9	50.0	108	88-114
2,3,4,6,7,8-HxCDF	AveID	1.274	1.361		53.4	50.0	107	88-114
1,2,3,4,7,8-HxCDD	AveID	0.9336	0.9665		51.8	50.0	104	78-128
1,2,3,6,7,8-HxCDD	AveID	1.080	1.135		52.5	50.0	105	78-128
1,2,3,7,8,9-HxCDD	AveID	1.057	1.120		53.0	50.0	106	82-122
1,2,3,7,8,9-HxCDF	AveID	1.288	1.373		53.3	50.0	107	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.596	1.630		51.1	50.0	102	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.118		50.1	50.0	100	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.169	1.188		50.8	50.0	102	86-116
OCDD	AveID	1.195	1.191		99.6	100	100	79-126
OCDF	AveID	1.481	1.648		111	100	111	63-159
13C-2,3,7,8-TCDF	Ave	1.498	1.641		110	100	110	71-140
13C-2,3,7,8-TCDD	Ave	1.037	0.9932		95.8	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.306	1.304		99.9	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.542	1.538		99.7	100	100	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8294	0.7698		92.8	100	93	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.462	1.487		102	100	102	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.287	1.379		107	100	107	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.199	1.271		106	100	106	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	1.105	1.027		92.9	100	93	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9871	0.9651		97.8	100	98	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.069	1.140		107	100	107	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9035	0.9464		105	100	105	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8875	0.8761		98.7	100	99	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	1.048	1.123		107	100	107	77-129
13C-OCDD	Ave	0.6297	0.7679		244	200	122	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.121	1.077		9.61	10.0	96	79-127

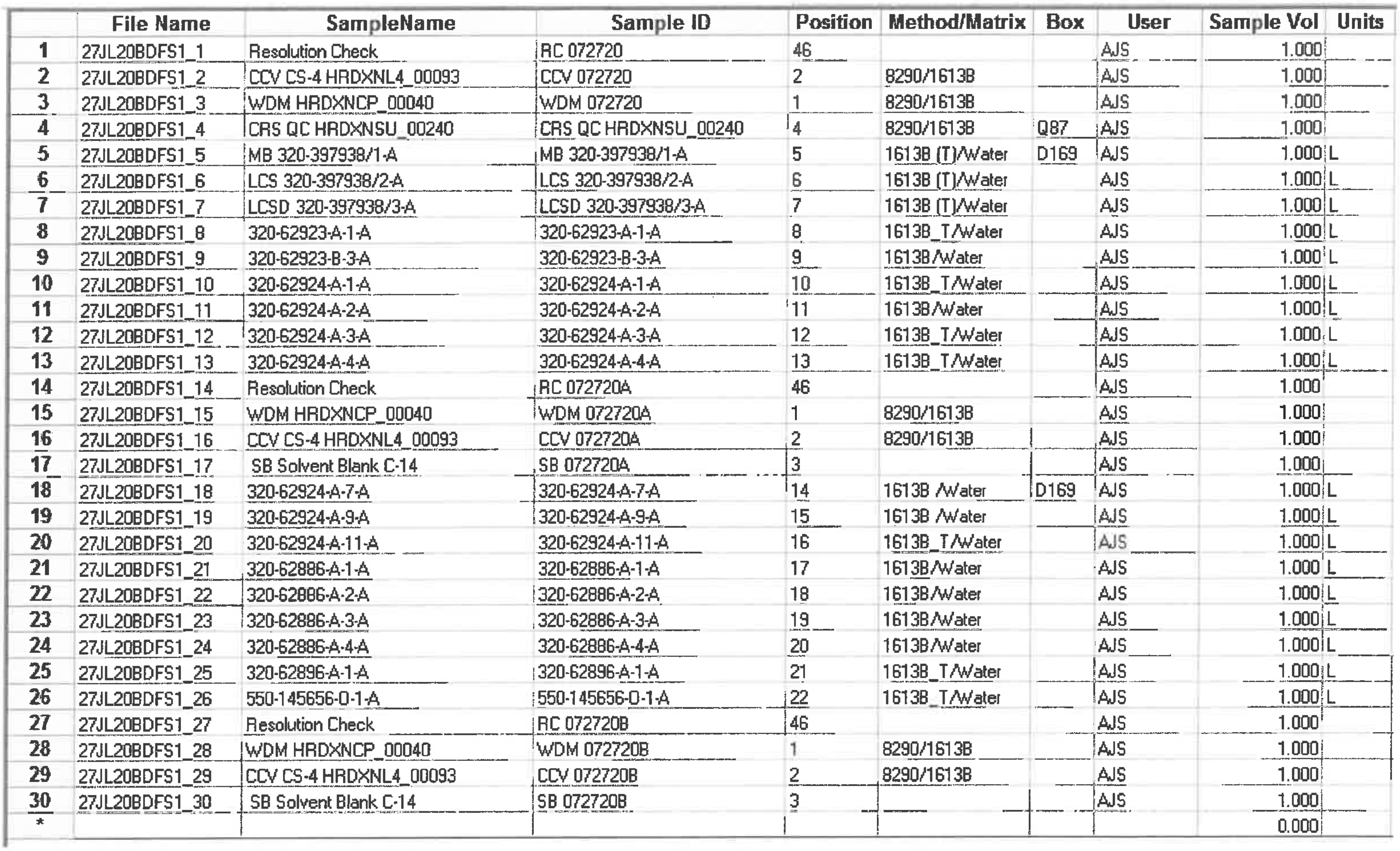

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	27JL20BDFS1_1	Resolution Check	RC 072720	46			AJS	1.000	
2	27JL20BDFS1_2	CCV CS-4 HRDXNL4_00093	CCV 072720	2	8290/1613B		AJS	1.000	
3	27JL20BDFS1_3	WDM HRDXNCP_00040	WDM 072720	1	8290/1613B		AJS	1.000	
4	27JL20BDFS1_4	CRS QC HRDXNSU_00240	CRS QC HRDXNSU_00240	4	8290/1613B	Q87	AJS	1.000	
5	27JL20BDFS1_5	MB 320-397938/1-A	MB 320-397938/1-A	5	1613B (T)/Water	D169	AJS	1.000	L
6	27JL20BDFS1_6	LCS 320-397938/2-A	LCS 320-397938/2-A	6	1613B (T)/Water		AJS	1.000	L
7	27JL20BDFS1_7	LCSD 320-397938/3-A	LCSD 320-397938/3-A	7	1613B (T)/Water		AJS	1.000	L
8	27JL20BDFS1_8	320-62923-A-1-A	320-62923-A-1-A	8	1613B_T/Water		AJS	1.000	L
9	27JL20BDFS1_9	320-62923-B-3-A	320-62923-B-3-A	9	1613B/Water		AJS	1.000	L
10	27JL20BDFS1_10	320-62924-A-1-A	320-62924-A-1-A	10	1613B_T/Water		AJS	1.000	L
11	27JL20BDFS1_11	320-62924-A-2-A	320-62924-A-2-A	11	1613B/Water		AJS	1.000	L
12	27JL20BDFS1_12	320-62924-A-3-A	320-62924-A-3-A	12	1613B_T/Water		AJS	1.000	L
13	27JL20BDFS1_13	320-62924-A-4-A	320-62924-A-4-A	13	1613B_T/Water		AJS	1.000	L
14	27JL20BDFS1_14	Resolution Check	RC 072720A	46			AJS	1.000	
15	27JL20BDFS1_15	WDM HRDXNCP_00040	WDM 072720A	1	8290/1613B		AJS	1.000	
16	27JL20BDFS1_16	CCV CS-4 HRDXNL4_00093	CCV 072720A	2	8290/1613B		AJS	1.000	
17	27JL20BDFS1_17	SB Solvent Blank C-14	SB 072720A	3			AJS	1.000	
18	27JL20BDFS1_18	320-62924-A-7-A	320-62924-A-7-A	14	1613B /Water	D169	AJS	1.000	L
19	27JL20BDFS1_19	320-62924-A-9-A	320-62924-A-9-A	15	1613B /Water		AJS	1.000	L
20	27JL20BDFS1_20	320-62924-A-11-A	320-62924-A-11-A	16	1613B_T/Water		AJS	1.000	L
21	27JL20BDFS1_21	320-62886-A-1-A	320-62886-A-1-A	17	1613B/Water		AJS	1.000	L
22	27JL20BDFS1_22	320-62886-A-2-A	320-62886-A-2-A	18	1613B/Water		AJS	1.000	L
23	27JL20BDFS1_23	320-62886-A-3-A	320-62886-A-3-A	19	1613B/Water		AJS	1.000	L
24	27JL20BDFS1_24	320-62886-A-4-A	320-62886-A-4-A	20	1613B/Water		AJS	1.000	L
25	27JL20BDFS1_25	320-62896-A-1-A	320-62896-A-1-A	21	1613B_T/Water		AJS	1.000	L
26	27JL20BDFS1_26	550-145656-0-1-A	550-145656-0-1-A	22	1613B_T/Water		AJS	1.000	L
27	27JL20BDFS1_27	Resolution Check	RC 072720B	46			AJS	1.000	
28	27JL20BDFS1_28	WDM HRDXNCP_00040	WDM 072720B	1	8290/1613B		AJS	1.000	
29	27JL20BDFS1_29	CCV CS-4 HRDXNL4_00093	CCV 072720B	2	8290/1613B		AJS	1.000	
30	27JL20BDFS1_30	SB Solvent Blank C-14	SB 072720B	3			AJS	1.000	
*								0.000	

logfile checked
7-28-20 ALM

Resolution Check Report (DFS SN: 3441)

Date:	27 Jul 2020 16:32
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11828 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12107 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11587 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11929 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12073 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12142 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11712 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12391 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12095 [5%height]

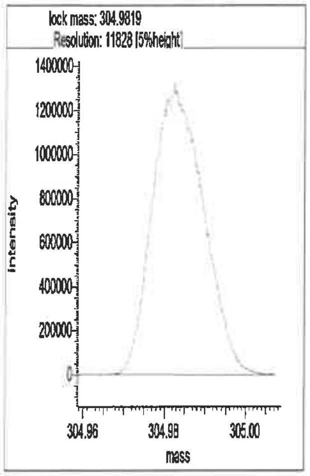

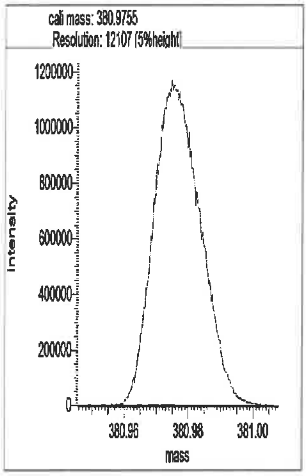

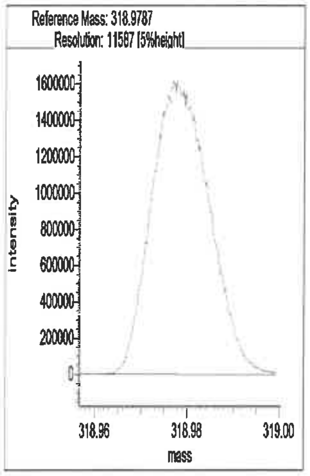

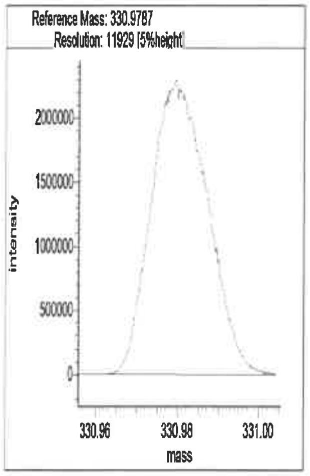

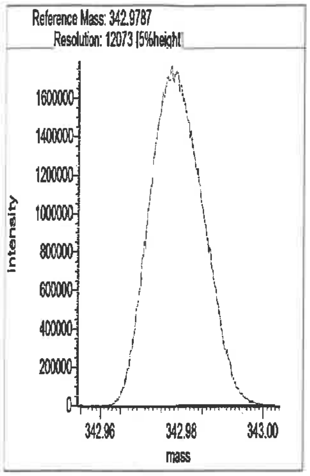
Reference Mass: 342.9787
Resolution: 12073 [5%height]

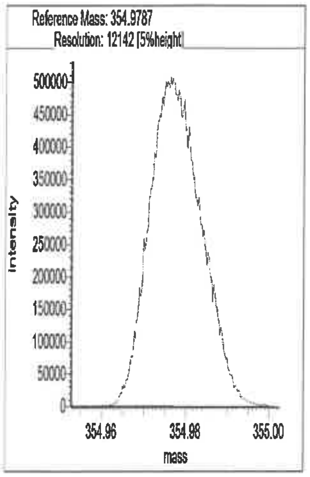
Reference Mass: 354.9787
Resolution: 12142 [5%height]

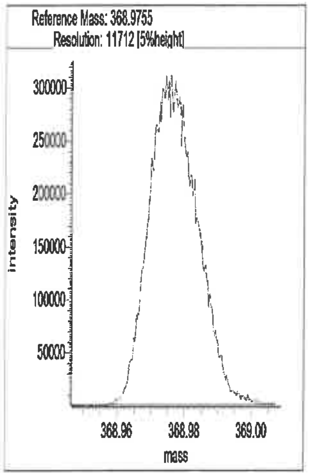
Reference Mass: 368.9755
Resolution: 11712 [5%height]

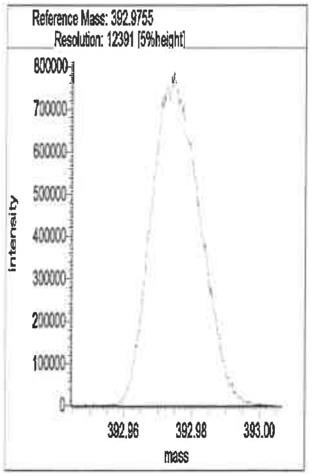
Reference Mass: 392.9755
Resolution: 12391 [5%height]

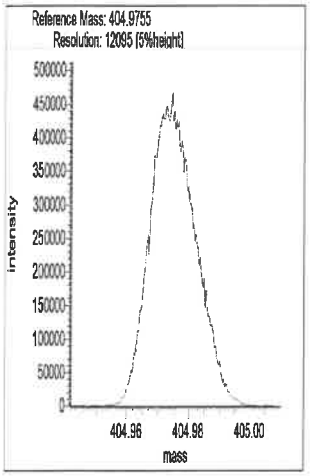
Reference Mass: 404.9755
Resolution: 12095 [5%height]

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11819 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12109 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11838 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11958 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11416 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12150 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12523 [5%height]

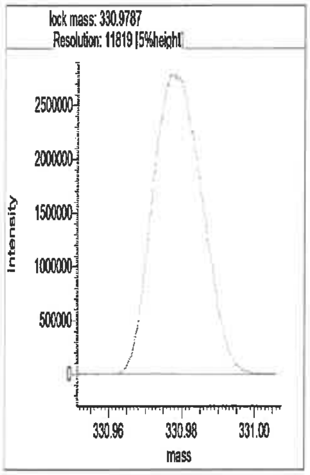
lock mass: 330.9787
Resolution: 11819 [5%height]

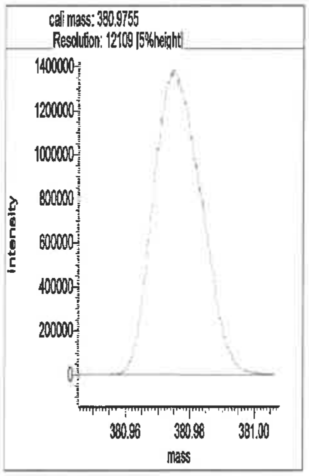
cali mass: 380.9755
Resolution: 12109 [5%height]

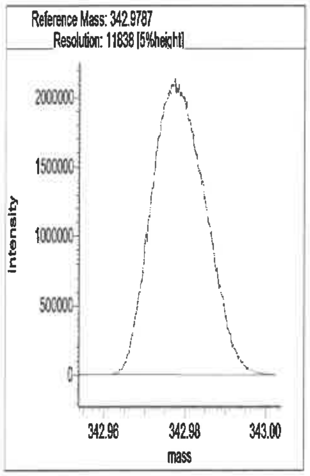
Reference Mass: 342.9787
Resolution: 11838 [5%height]

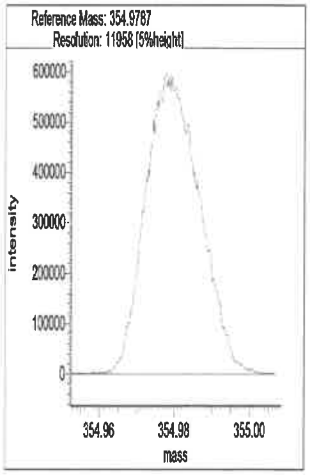
Reference Mass: 354.9787
Resolution: 11958 [5%height]

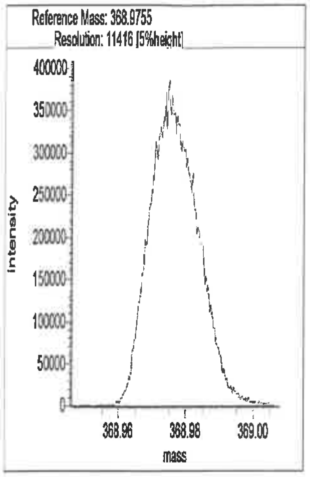

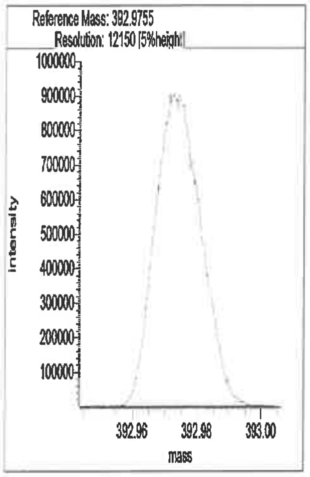

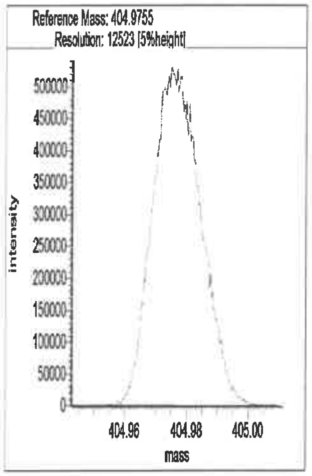

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11800 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12049 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11776 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11901 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12171 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12412 [5%height]

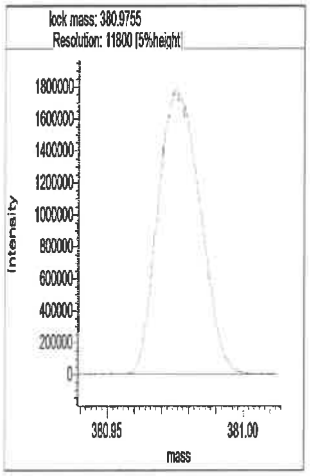

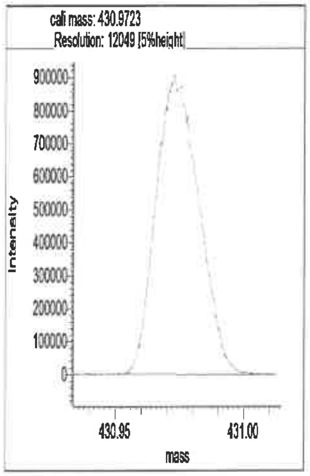

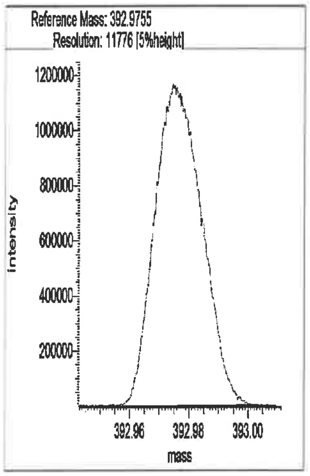

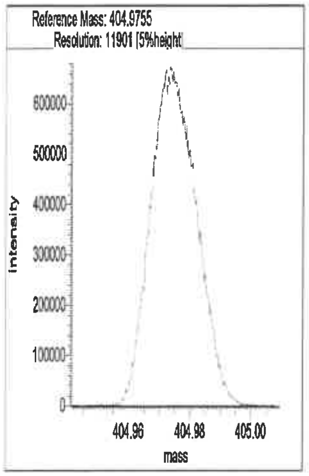

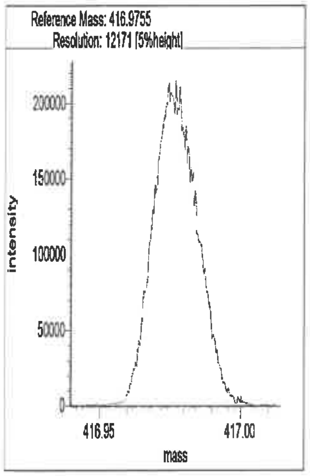

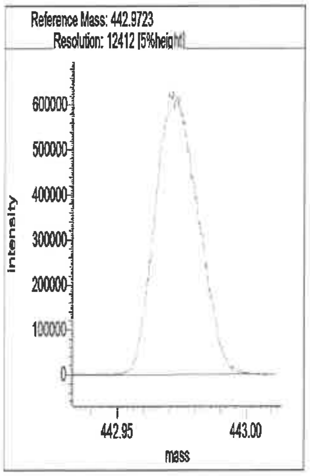

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11759 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12349 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11893 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11827 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11848 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11985 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12352 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12114 [5%height]

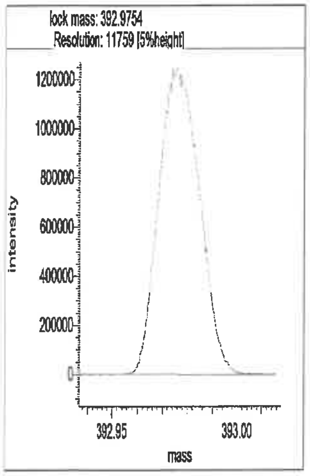

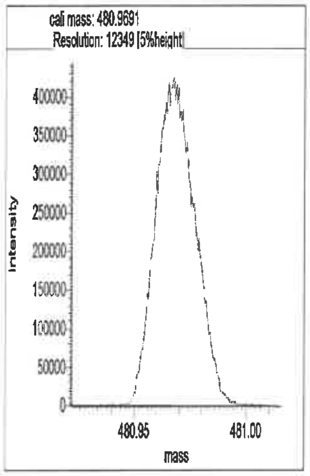

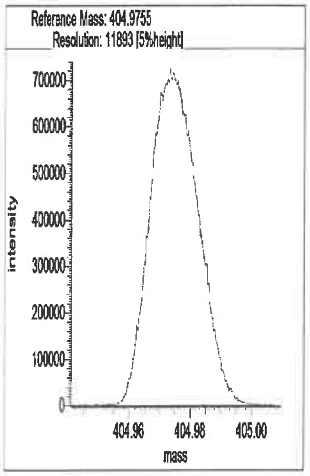

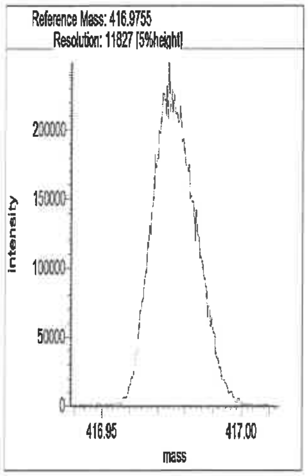

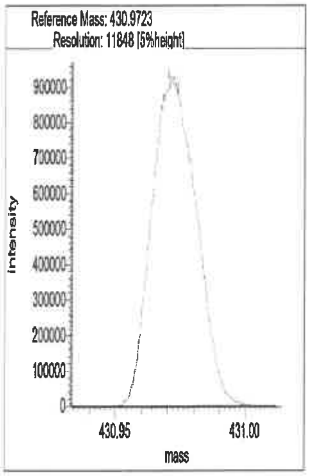

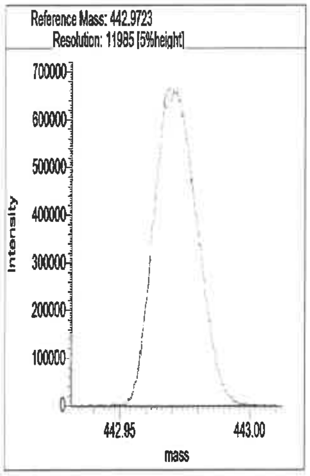

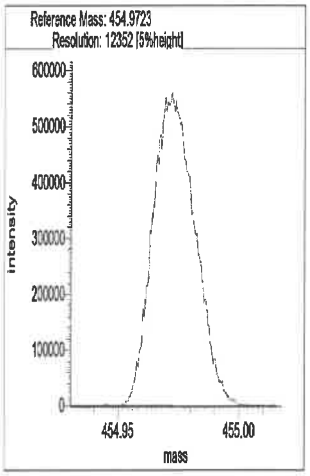

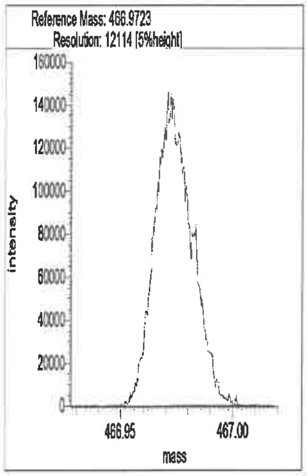

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11844 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12037 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11744 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11789 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12026 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12356 [5%height]

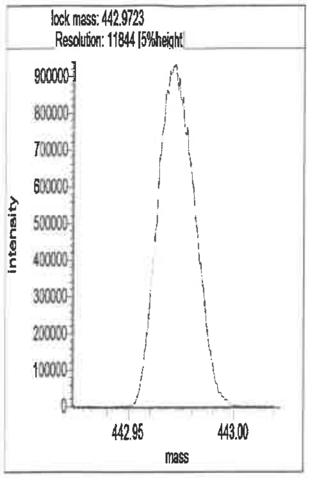
lock mass: 442.9723
Resolution: 11844 [5%height]

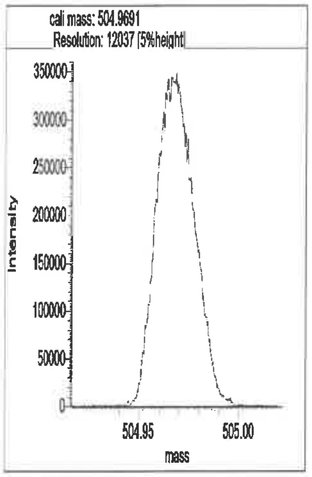
cali mass: 504.9691
Resolution: 12037 [5%height]

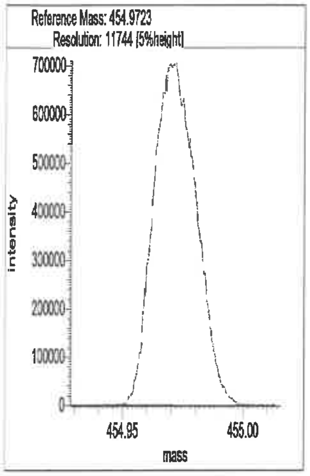
Reference Mass: 454.9723
Resolution: 11744 [5%height]

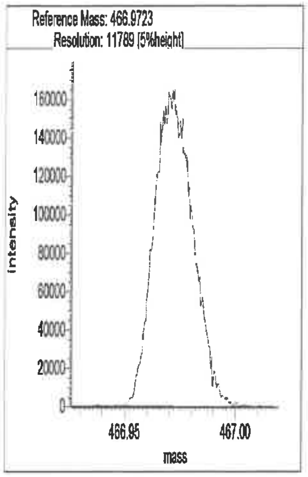
Reference Mass: 466.9723
Resolution: 11789 [5%height]

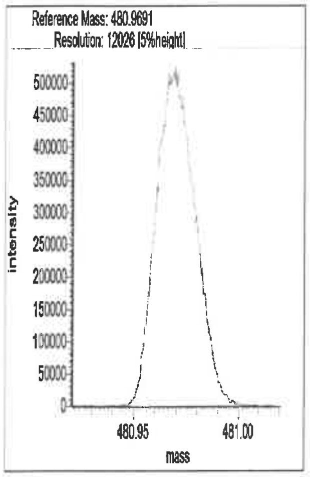
Reference Mass: 480.9691
Resolution: 12026 [5%height]

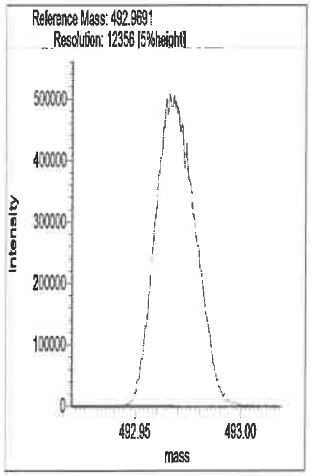
Reference Mass: 492.9691
Resolution: 12356 [5%height]

Resolution Check Report (DFS SN: 3441)

Date: 28 Jul 2020 02:29
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11724 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12235 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11638 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11841 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12359 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12131 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12003 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12478 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12289 [5%height]

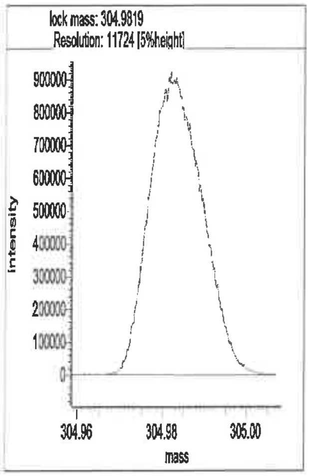

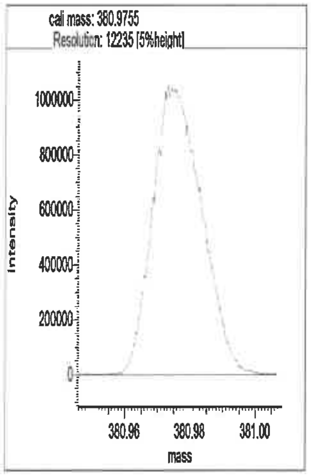

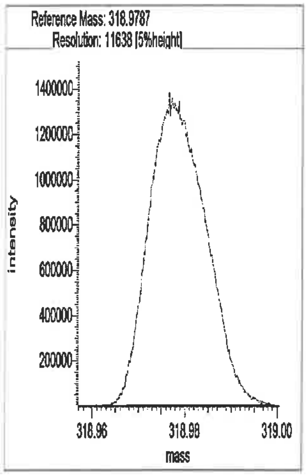

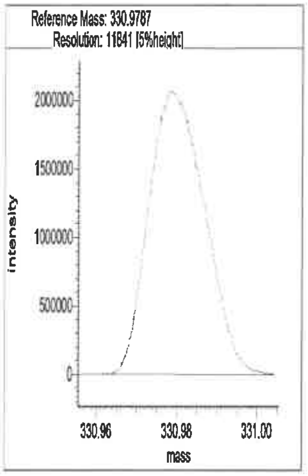

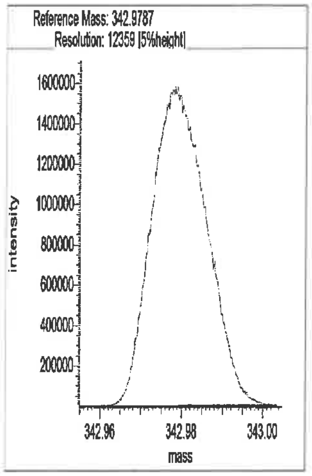
Reference Mass: 342.9787
Resolution: 12359 [5%height]

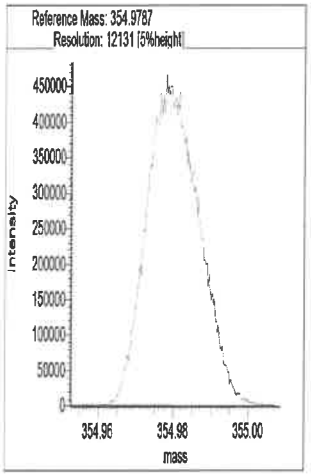
Reference Mass: 354.9787
Resolution: 12131 [5%height]

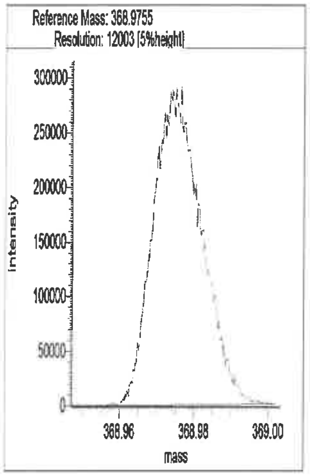
Reference Mass: 368.9755
Resolution: 12003 [5%height]

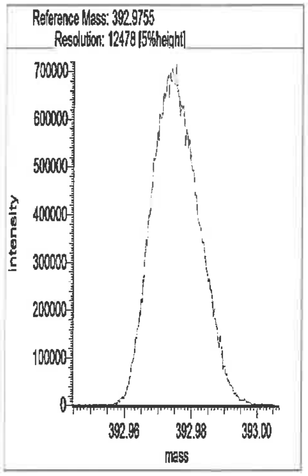
Reference Mass: 392.9755
Resolution: 12478 [5%height]

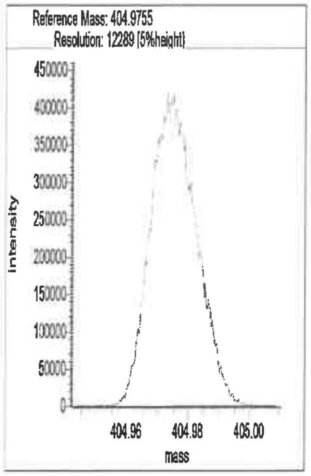
Reference Mass: 404.9755
Resolution: 12289 [5%height]

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11587 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11916 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11799 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11621 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11578 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12197 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12328 [5%height]

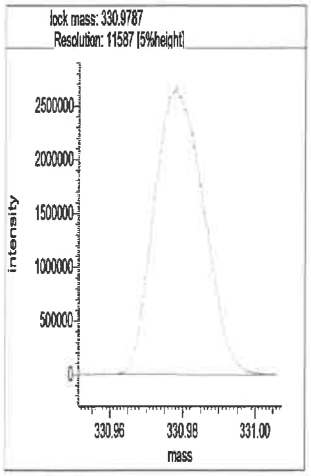
lock mass: 330.9787
Resolution: 11587 [5%height]

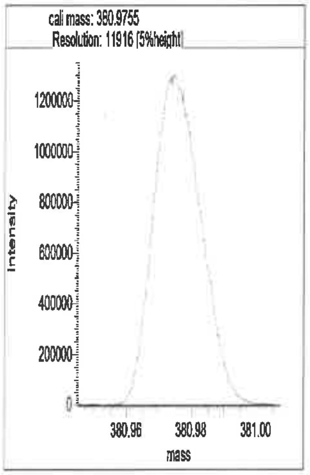
cali mass: 380.9755
Resolution: 11916 [5%height]

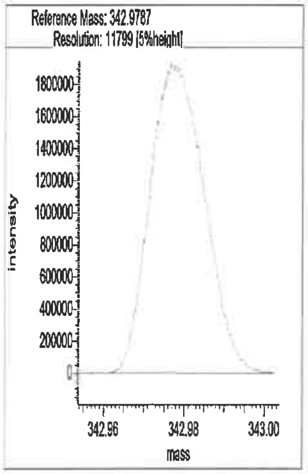
Reference Mass: 342.9787
Resolution: 11799 [5%height]

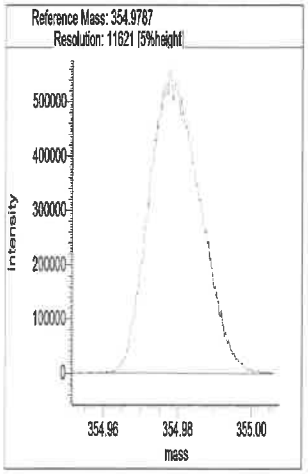
Reference Mass: 354.9787
Resolution: 11621 [5%height]

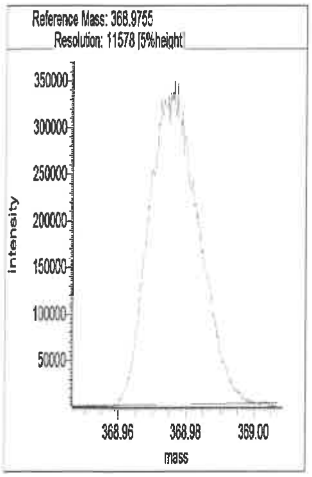

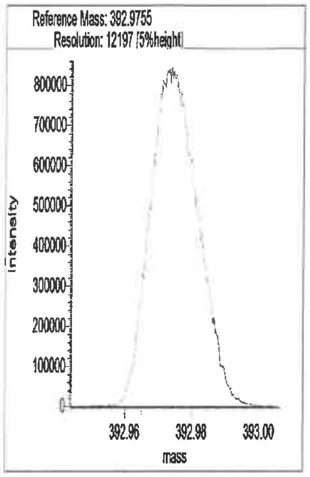

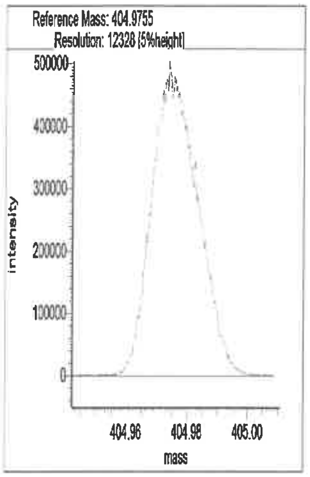

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11592 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12185 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11743 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11888 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11821 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12462 [5%height]

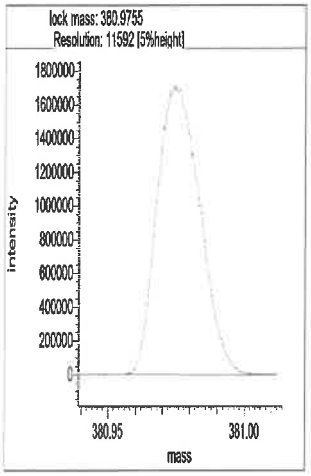

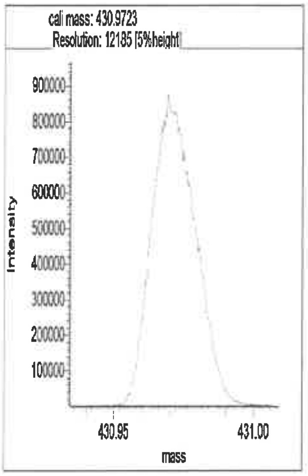

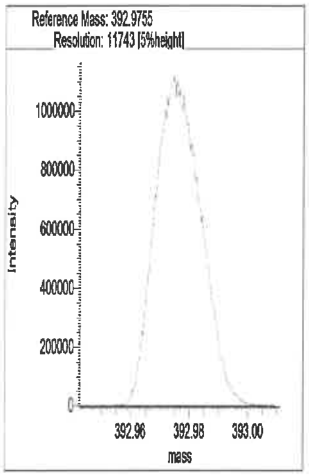

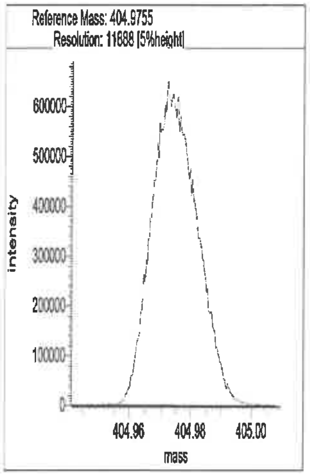

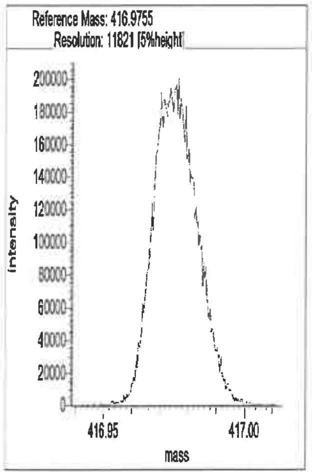

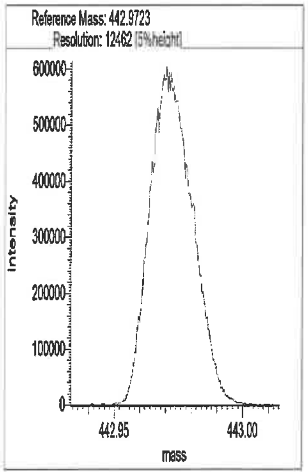

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11547 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12138 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11907 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11979 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11686 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11938 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12106 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11819 [5%height]

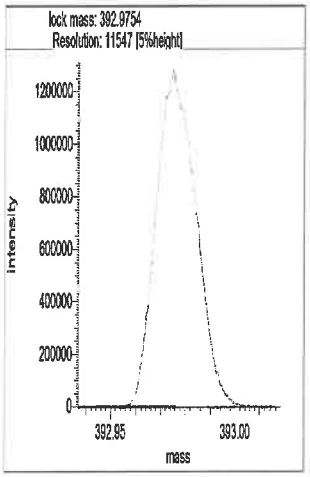

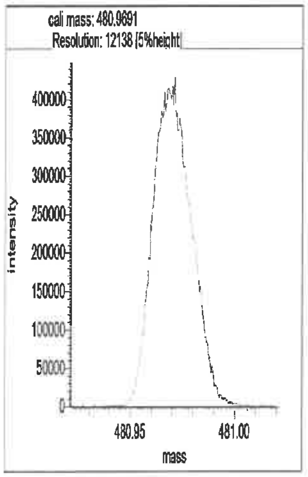

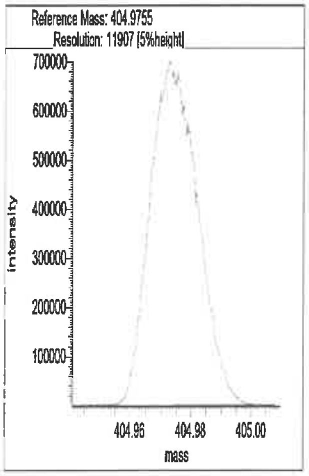

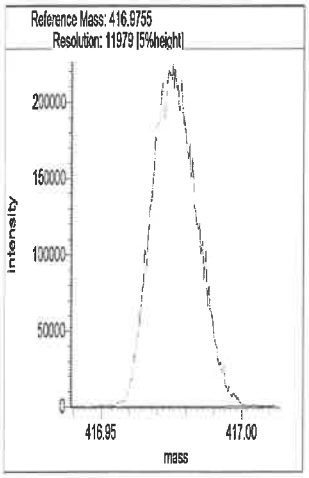

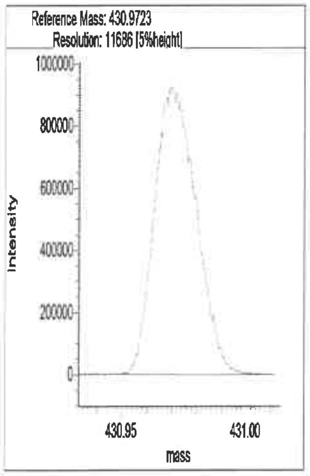

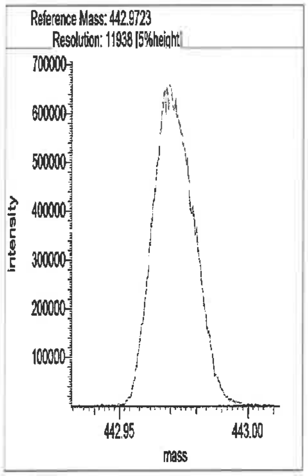

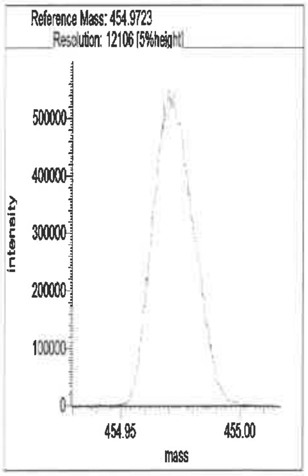

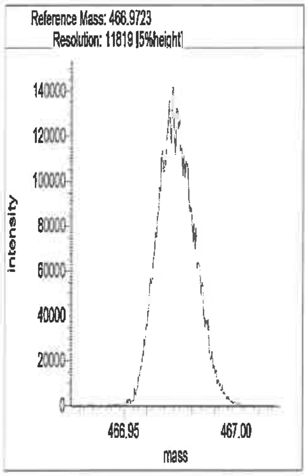

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11497 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11903 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11519 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12218 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11757 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12198 [5%height]

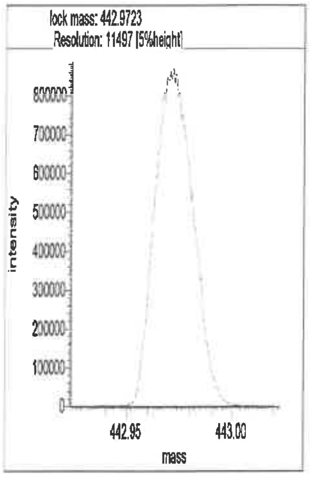
lock mass: 442.9723
Resolution: 11497 [5%height]

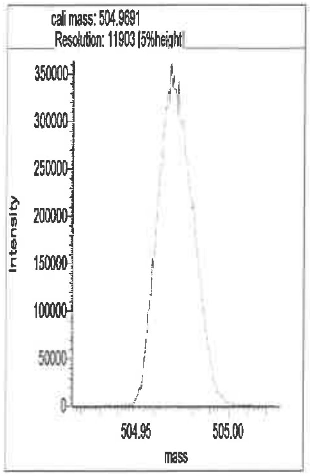
cali mass: 504.9691
Resolution: 11903 [5%height]

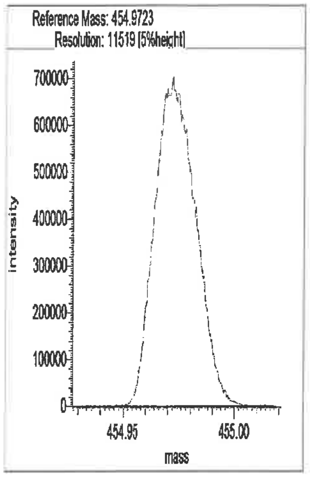
Reference Mass: 454.9723
Resolution: 11519 [5%height]

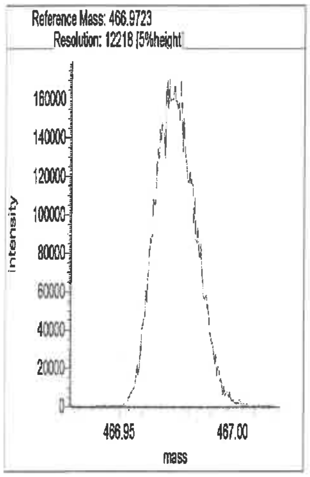
Reference Mass: 466.9723
Resolution: 12218 [5%height]

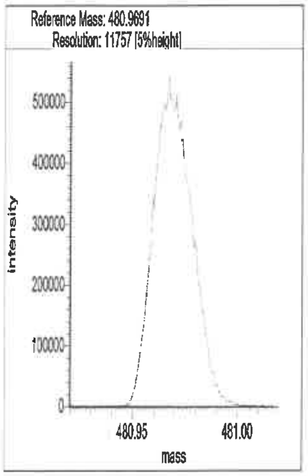
Reference Mass: 480.9691
Resolution: 11757 [5%height]

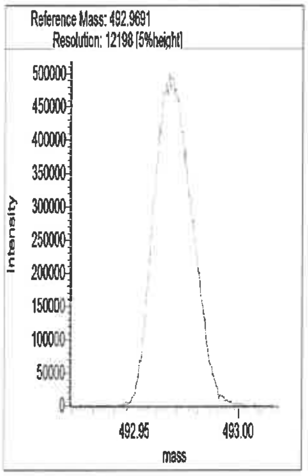
Reference Mass: 492.9691
Resolution: 12198 [5%height]

Report Date: 28-Jul-2020 08:46:30   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Jul-2020 16:52:00   ALS Bottle#: 0   Worklist Smp#: 1
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jul-2020 08:46:30   Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1006

First Level Reviewer: arghestanis   Date: 28-Jul-2020 08:18:38

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.914	1932017	0.81	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.892	3170140	0.81	1.4977	109.6	109.6	0.4130	0.4130	110	
2,3,7,8-TCDF	20.918	382830	0.80	1.1312	10.7	10.7	0.0285	0.0285	107	
A Non-2,3,7,8-sub-TCDF	20.186	5382	0.65	1.1312	0.1501	0.1501	0.0285	0.1501	0.00	
S Total TCDF					10.8	10.8	0.0285	0.0285		
D 13C-2,3,7,8-TCDD	22.301	1918777	0.80	1.0367	95.8	95.8	0.3130	0.3130	95.80	
$ 37Cl4-2,3,7,8-TCDD	22.335	208099		1.1208	9.610	9.610	0.0179	0.0179	96.10	
2,3,7,8-TCDD	22.344	234300	0.85	1.1849	10.3	10.3	0.0724	0.0724	103	
A Non-2,3,7,8-sub-TCDD	21.062						0.0724	0.0724		
S Total TCDD					10.3	10.3	0.0724	0.0724		
D 13C-1,2,3,7,8-PeCDF	27.788	2520018	1.62	1.3057	99.9	99.9	0.5049	0.5049	99.89	
1,2,3,7,8-PeCDF	27.805	1506724	1.61	1.1060	54.1	54.1	0.1842	0.1842	108	
D 13C-2,3,4,7,8-PeCDF	29.364	2970561	1.62	1.5420	99.7	99.7	0.4275	0.4275	99.71	
2,3,4,7,8-PeCDF	29.389	1464269	1.60	0.9067	54.4	54.4	0.2047	0.2047	109	
A F1 PeCDFs	24.937	29	1.55	1.0063	0.007674	0.001050	0.005210	0.005210	0.00	RQ
A Non-2,3,7,8-sub-PeCDF	28.559						0.1930	0.1930		
S Total PeCDF					108.4	108.4	0.1945	0.1945		RQ
D 13C-1,2,3,7,8-PeCDD	30.215	1487327	1.59	0.8294	92.8	92.8	0.2500	0.2500	92.82	
1,2,3,7,8-PeCDD	30.240	857311	1.59	1.1062	52.1	52.1	0.0907	0.0907	104	
A Non-2,3,7,8-sub-PeCDD	28.927						0.0907	0.0907		
S Total PeCDD					52.1	52.1	0.0907	0.0907		
D 13C-1,2,3,4,7,8-HxCDF	35.308	2964092	0.54	1.4619	101.7	101.7	0.5609	0.5609	102	
1,2,3,4,7,8-HxCDF	35.325	1648427	1.26	1.0087	55.1	55.1	0.3503	0.3503	110	
D 13C-1,2,3,6,7,8-HxCDF	35.460	2748862	0.56	1.2866	107.2	107.2	0.6373	0.6373	107	
1,2,3,6,7,8-HxCDF	35.476	1842700	1.28	1.2432	53.9	53.9	0.3195	0.3195	108	
D 13C-2,3,4,6,7,8-HxCDF	36.243	2532990	0.53	1.1988	106.0	106.0	0.6840	0.6840	106	
2,3,4,6,7,8-HxCDF	36.260	1723522	1.27	1.2736	53.4	53.4	0.3050	0.3050	107	
D 13C-1,2,3,7,8,9-HxCDF	37.094	2271409	0.52	1.0687	106.6	106.6	0.7673	0.7673	107	
1,2,3,7,8,9-HxCDF	37.111	1559646	1.27	1.2882	53.3	53.3	0.3146	0.3146	107	
A Non-2,3,7,8-sub-HxCDF	35.424						0.3199	0.3199		
S Total HxCDF					215.8	215.8	0.3223	0.3223		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.901	1993087	1.22	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.437	2046050	1.28	1.1046	92.9	92.9	0.3308	0.3308	92.93	
1,2,3,4,7,8-HxCDD	36.445	988729	1.25	0.9336	51.8	51.8	0.1771	0.1771	104	
D 13C-1,2,3,6,7,8-HxCDD	36.547	1923469	1.28	0.9871	97.8	97.8	0.3701	0.3701	97.77	
1,2,3,6,7,8-HxCDD	36.563	1091085	1.24	1.0802	52.5	52.5	0.1842	0.1842	105	
1,2,3,7,8,9-HxCDD	36.909	1111301	1.26	1.0574	53.0	53.0	0.1708	0.1708	106	
A Non-2,3,7,8-sub-HxCDD	35.752						0.1764	0.1764		
S Total HxCDD					157.2	157.2	0.1774	0.1774		
D 13C-1,2,3,4,6,7,8-HpCDF	38.834	1886314	0.46	0.9035	104.7	104.7	1.165	1.165	105	
1,2,3,4,6,7,8-HpCDF	38.842	1537546	1.05	1.5957	51.1	51.1	0.4104	0.4104	102	
D 13C-1,2,3,4,7,8,9-HpCDF	40.055	2238937	0.46	1.0480	107.2	107.2	1.005	1.005	107	
1,2,3,4,7,8,9-HpCDF	40.064	1330016	1.05	1.1693	50.8	50.8	0.4544	0.4544	102	
A Non-2,3,7,8-sub-HpCDF	39.452						0.4243	0.4243		
S Total HpCDF					101.9	101.9	0.4324	0.4324		
D 13C-1,2,3,4,6,7,8-HpCDD	39.752	1746086	1.07	0.8875	98.7	98.7	0.5012	0.5012	98.71	
1,2,3,4,6,7,8-HpCDD	39.760	975707	1.05	1.1150	50.1	50.1	0.2146	0.2146	100	
A Non-2,3,7,8-sub-HpCDD	39.555						0.2146	0.2146		
S Total HpCDD					50.1	50.1	0.2146	0.2146		
D 13C-OCDD	42.240	3060874	0.92	0.6297	243.9	243.9	0.4676	0.4676	122	
OCDF	42.341	2522819	0.91	1.4809	111.3	111.3	0.2143	0.2143	111	
OCDD	42.249	1822108	0.89	1.1948	99.6	99.6	0.1676	0.1676	99.65	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00093	Amount Added: 1.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Jul-2020 16:52:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jul-2020 08:46:30 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1006

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:18:38

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.914	21.914	0		863042	126897	285	712	445		
333.9338	21.906	21.914	-1		1068975	147959	72	180	2055	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.892	20.892	0	0.953	1417185	205411	448	1120	459		
317.9389	20.901	20.892	1	0.954	1752955	260157	232	580	1121	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.918	20.918	0	1.001	169581	25108	13	32	1931		
305.8987	20.918	20.918	0	1.001	213249	32707	47	117	696	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	21.244	20.186	63	1.017	2115	365	13	32	28		
305.8987	21.279	20.186	65	1.019	3267	442	47	117	9	0.65(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.301	22.301	0	1.018	851794	118990	285	712	418		
333.9338	22.309	22.301	1	1.018	1066983	149012	72	180	2070	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.335	22.335	0	1.019	208099	29285	22	55	1331		
2,3,7,8-TCDD											
319.8965	22.344	22.344	0	1.002	107421	15078	75	187	201		
321.8936	22.335	22.344	-1	1.002	126879	17709	17	42	1042	0.85(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.062						75	187			
321.8936	21.062						17	42			
13C-1,2,3,7,8-PeCDF											
351.9000	27.788	27.788	0	1.268	1557565	245979	459	1147	536		
353.8970	27.788	27.788	0	1.268	962453	153972	266	665	579	1.62(1.32-1.78)	

Report Date: 28-Jul-2020 08:46:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.805	27.805	0	1.001	930215	147863	195	487	758		
341.8567	27.805	27.805	0	1.001	576509	92043	131	327	703	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.364	29.364	0	1.340	1835832	270994	459	1147	590		
353.8970	29.372	29.364	1	1.340	1134729	168218	266	665	632	1.62(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.389	29.389	0	1.001	900336	130820	195	487	671		
341.8567	29.389	29.389	0	1.001	563933	83709	131	327	639	1.60(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	24.413	24.937	-31	0.879	18	5	1	2	5		
341.8567	24.465	24.937	-28	0.880	194	96	8	20	12	0.09(1.32-1.78)	
	Empc Correction				11	3	8	20	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.559						195	487			
341.8567	28.559						131	327			
13C-1,2,3,7,8-PeCDD											
367.8949	30.215	30.215	0	1.379	912284	135243	134	335	1009		
369.8919	30.198	30.215	-1	1.378	575043	81040	94	235	862	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.240	30.240	0	1.001	526466	75000	62	155	1210		
357.8516	30.240	30.240	0	1.001	330845	47397	25	62	1896	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.927						62	155			
357.8516	28.927						25	62			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.308	35.308	0	0.957	1036429	249171	557	1392	447		
385.8610	35.308	35.308	0	0.957	1927663	449917	1155	2887	390	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.325	35.325	0	1.000	919630	217972	562	1405	388		
375.8178	35.325	35.325	0	1.000	728797	175136	426	1065	411	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.460	35.460	0	0.961	983627	216173	557	1392	388		
385.8610	35.460	35.460	0	0.961	1765235	405599	1155	2887	351	0.56(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.476	35.476	0	1.000	1033892	235284	562	1405	419		
375.8178	35.476	35.476	0	1.000	808808	183770	426	1065	431	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.243	36.243	0	0.982	876337	225900	557	1392	406		
385.8610	36.243	36.243	0	0.982	1656653	410066	1155	2887	355	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.260	36.260	0	1.000	964173	247902	562	1405	441		
375.8178	36.252	36.260	-1	1.000	759349	197720	426	1065	464	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.094	37.094	0	1.005	781357	213656	557	1392	384		
385.8610	37.094	37.094	0	1.005	1490052	395876	1155	2887	343	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	37.111	37.111	0	1.000	872962	231570	562	1405	412		
375.8178	37.103	37.111	-1	1.000	686684	183207	426	1065	430	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.424						562	1405			
375.8178	35.424						426	1065			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.901	36.901	0		1095462	288913	402	1005	719		
403.8529	36.901	36.901	0		897625	233042	361	902	646	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.437	36.437	0	0.987	1148153	331590	402	1005	825		
403.8529	36.437	36.437	0	0.987	897897	259411	361	902	719	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.445	36.445	0	1.000	549241	155528	216	540	720		
391.8127	36.445	36.445	0	1.000	439488	125704	175	437	718	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.547	36.547	0	0.990	1078985	273295	402	1005	680		
403.8529	36.547	36.547	0	0.990	844484	217621	361	902	603	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.563	36.563	0	1.000	603230	150729	216	540	698		
391.8127	36.563	36.563	0	1.000	487855	120720	175	437	690	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.909	36.909	0	1.013	619519	160407	216	540	743		
391.8127	36.909	36.909	0	1.013	491782	127170	175	437	727	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.752						216	540			
391.8127	35.752						175	437			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.834	38.834	0	1.052	593152	186593	677	1692	276		
419.8220	38.834	38.834	0	1.052	1293162	405177	1521	3802	266	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.842	38.842	0	1.000	788343	248447	778	1945	319		
409.7788	38.842	38.842	0	1.000	749203	236855	772	1930	307	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.055	40.055	0	1.085	703711	230369	677	1692	340		
419.8220	40.055	40.055	0	1.085	1535226	498922	1521	3802	328	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.064	40.064	0	1.000	679708	228003	778	1945	293		
409.7788	40.064	40.064	0	1.000	650308	216484	772	1930	280	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.452						778	1945			
409.7788	39.452						772	1930			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.752	39.752	0	1.077	902029	304514	497	1242	613		
437.8140	39.752	39.752	0	1.077	844057	281411	432	1080	651	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.760	39.760	0	1.000	499886	169831	306	765	555		
425.7737	39.760	39.760	0	1.000	475821	159638	255	637	626	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						306	765			
425.7737	39.555						255	637			
13C-OCDD											
469.7780	42.240	42.240	0	1.145	1463077	408966	303	757	1350		
471.7750	42.240	42.240	0	1.145	1597797	464966	312	780	1490	0.92(0.76-1.02)	
OCDF											
441.7428	42.341	42.341	0	1.002	1202391	355878	265	662	1343		
443.7399	42.341	42.341	0	1.002	1320428	388494	290	725	1340	0.91(0.76-1.02)	
OCDD											
457.7377	42.249	42.249	0	1.000	858151	251503	135	337	1863		
459.7348	42.249	42.249	0	1.000	963957	282630	215	537	1315	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00093	Amount Added: 1.00	Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d
Lims ID: CCV
Client ID:
Inject. Date: 27-Jul-2020 16:52:00
Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398796
Lims Sample ID: 1
Sublist: chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDF, RT: 20.186

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	3170140	465568

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	3170140	465568

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
21.244	2115	365	3267	442	0.1501	0.65	n
Signal Totals:							
	2115	365	3267	442			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5382	807				0.65	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1501 = (5382 * 100.000) / (3170140 * 1.131)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Report Date: 28-Jul-2020 08:46:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d		
Lims ID:	CCV		
Client ID:			
Inject. Date:	27-Jul-2020 16:52:00	Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	1
Sublist:	chrom-Dioxin_DFS1*sub1		

F1 PeCDFs, RT: 24.937

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	2520018	399951
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2970561	439212

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2745289	419581

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.413	18	5	194	96	0.007674	0.09	RnQ
24.413	18	5	11	3	0.001050		Empc Correction
Signal Totals:							
	18	5	11	3			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	212	101				0.09	RQ
	29	8					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.007674 = (212 * 100.000) / (2745289 * 1.006)

Empc Amount: 0.001050 = (29 * 100.000) / (2745289 * 1.006)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

n - Failed Sig-To-Noise Test

Q - EMPC-Estimated Max. Possible Conc.

Report Date: 28-Jul-2020 08:46:30 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d		
Injection Date:	27-Jul-2020 16:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

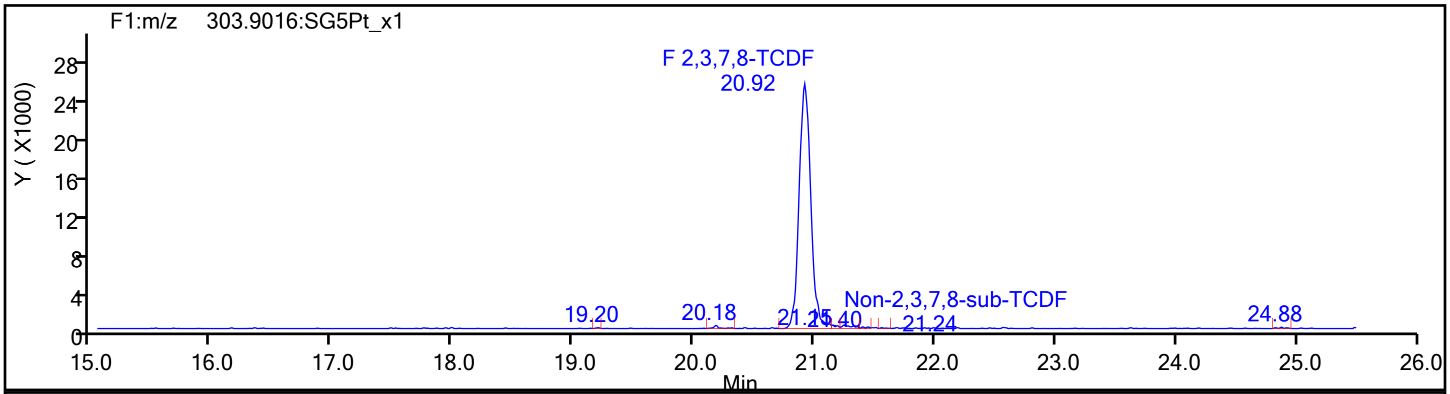

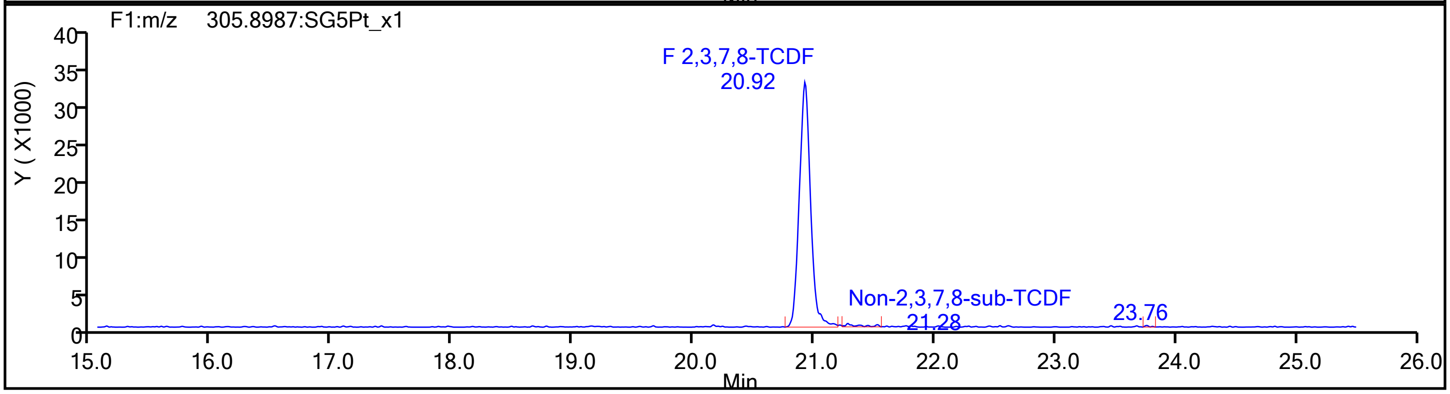

TCDF Standards

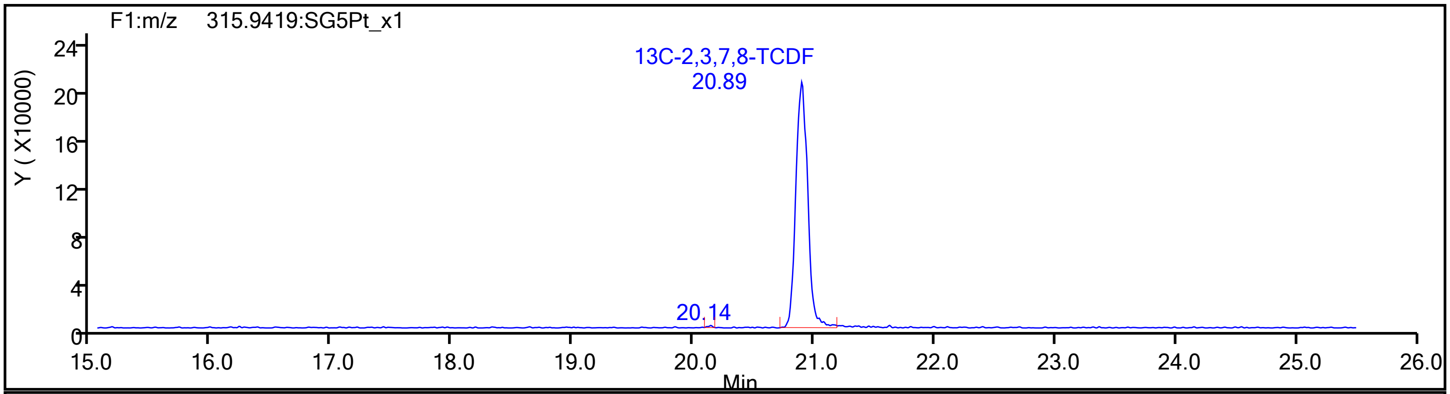

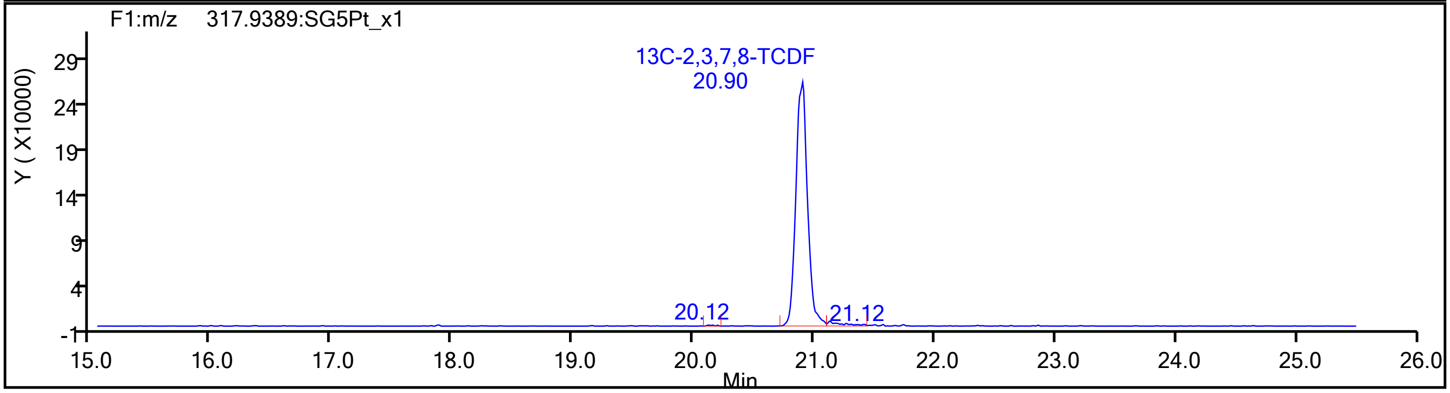

Report Date: 28-Jul-2020 08:46:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jul-2020 16:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

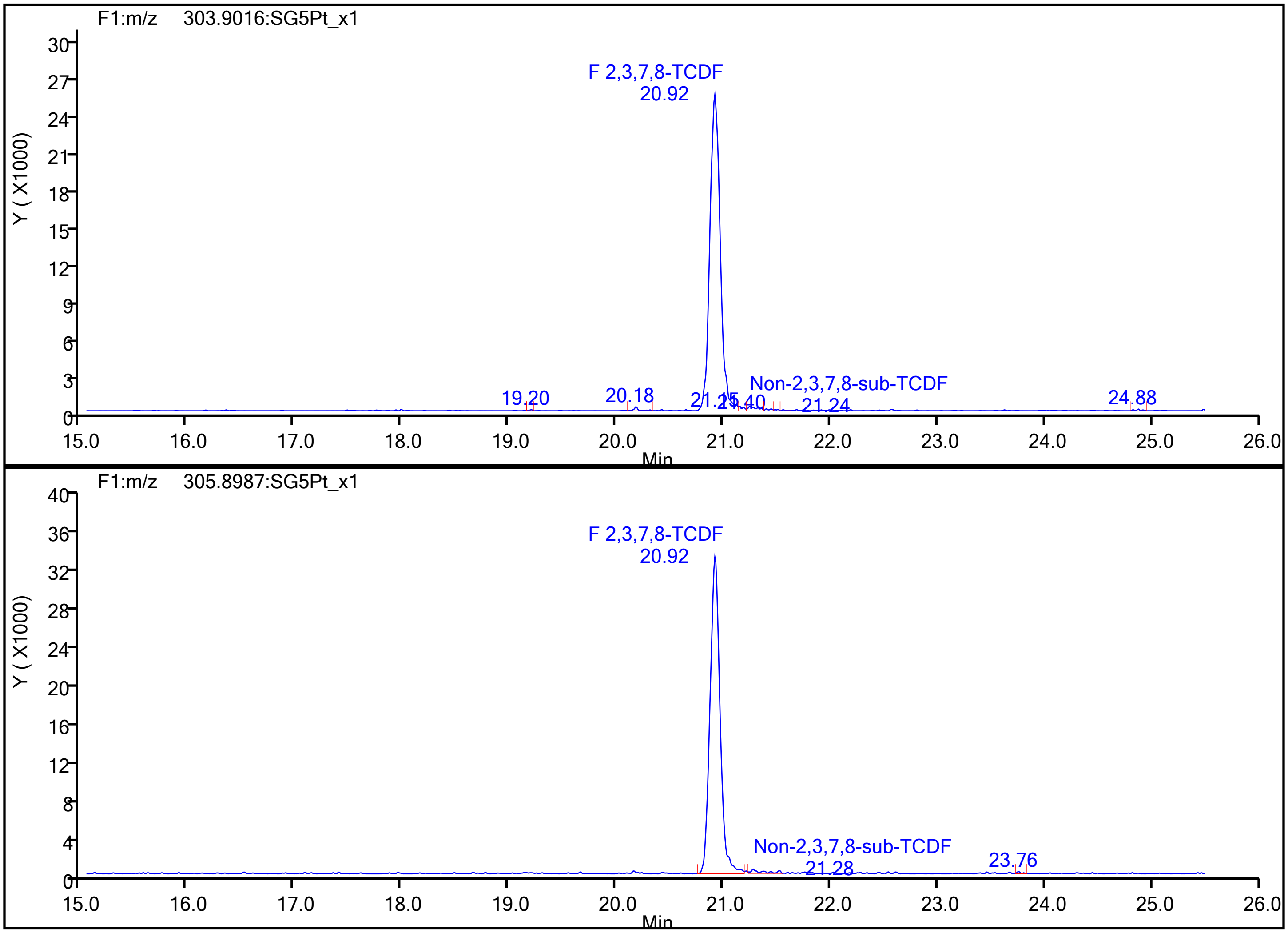

TCDF Interference Mass

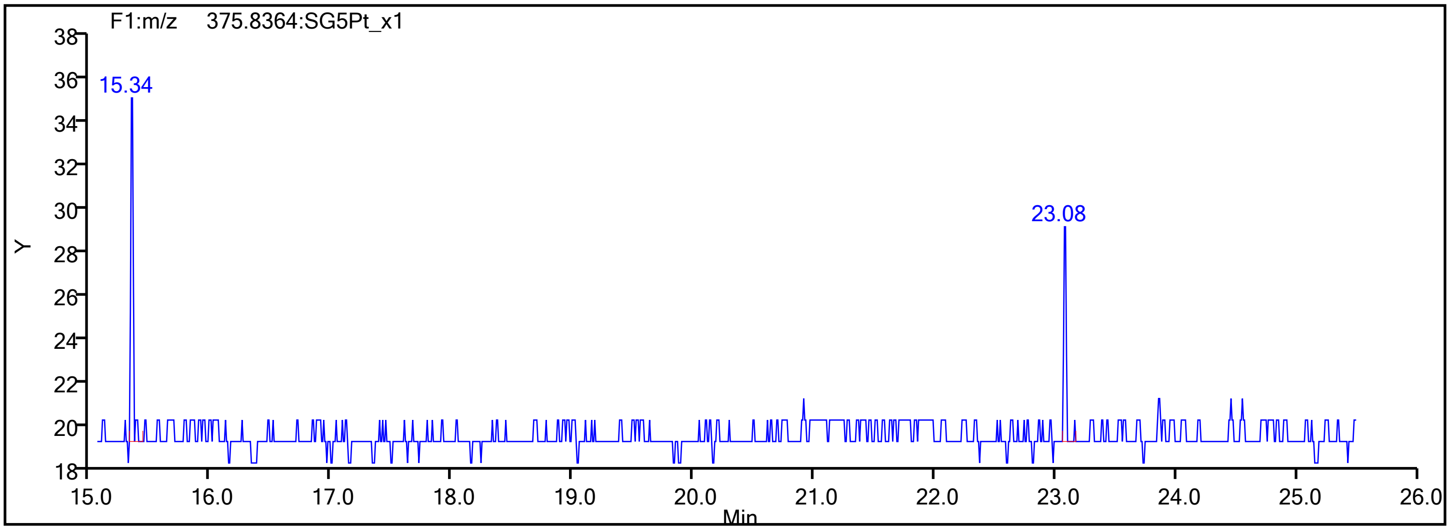

Report Date: 28-Jul-2020 08:46:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d		
Injection Date:	27-Jul-2020 16:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

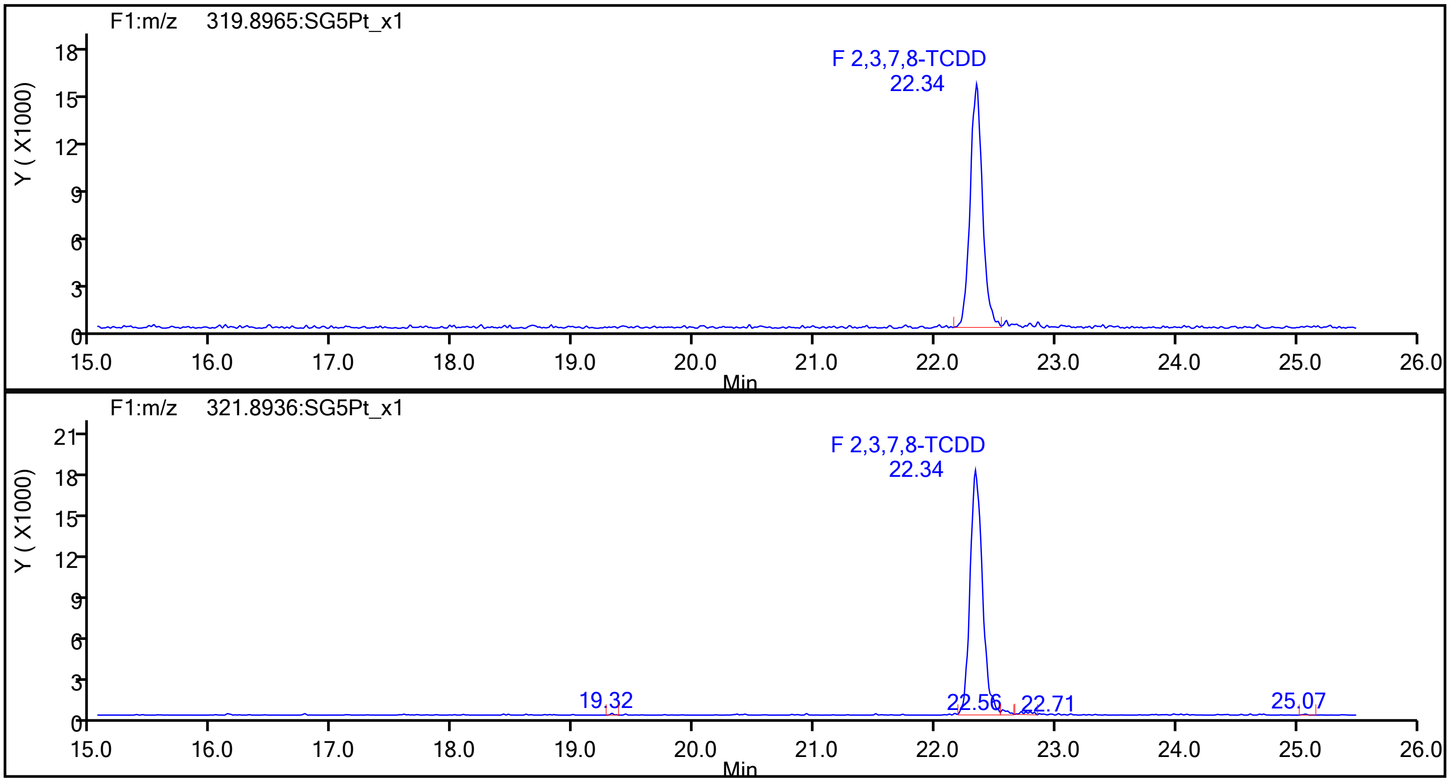

TCDD Standards

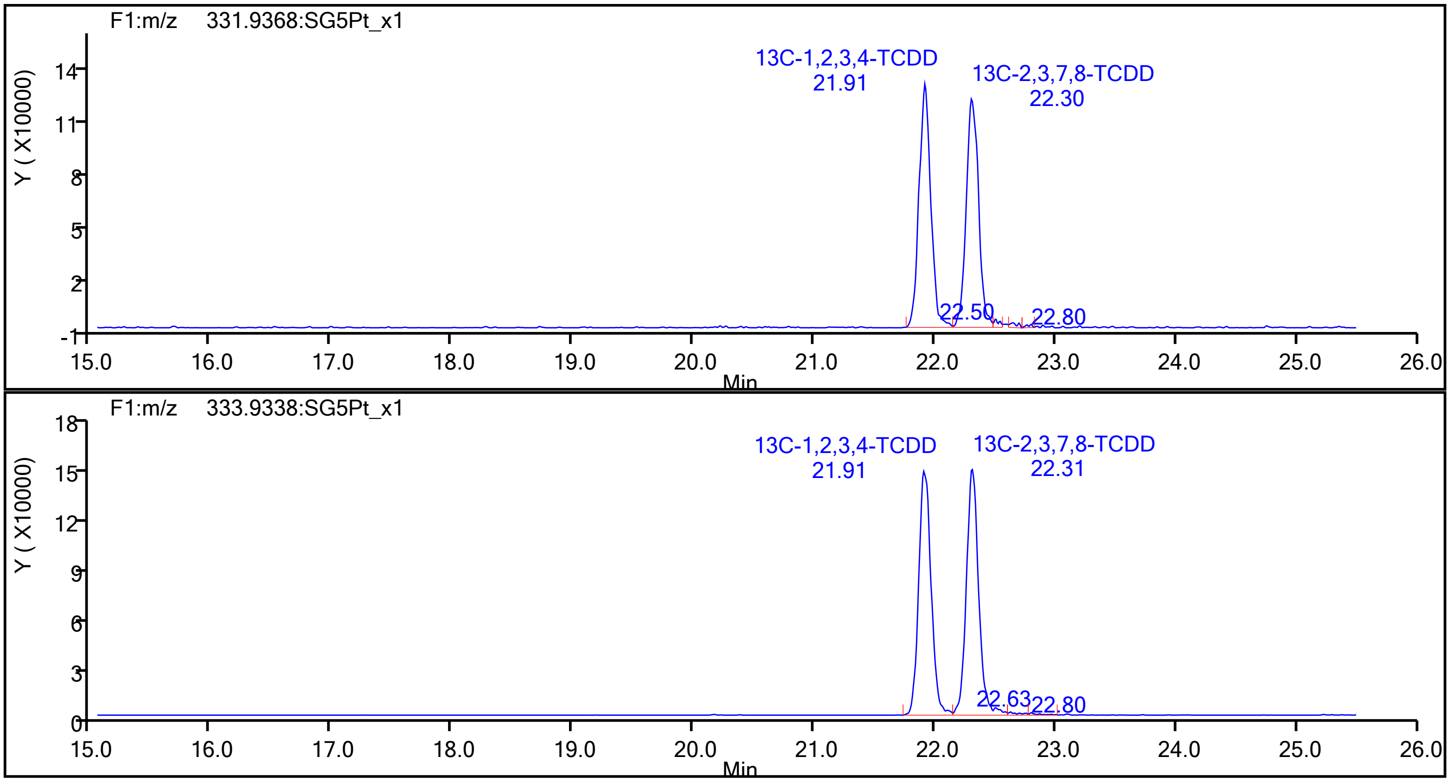

Report Date: 28-Jul-2020 08:46:31
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d
Injection Date: 27-Jul-2020 16:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

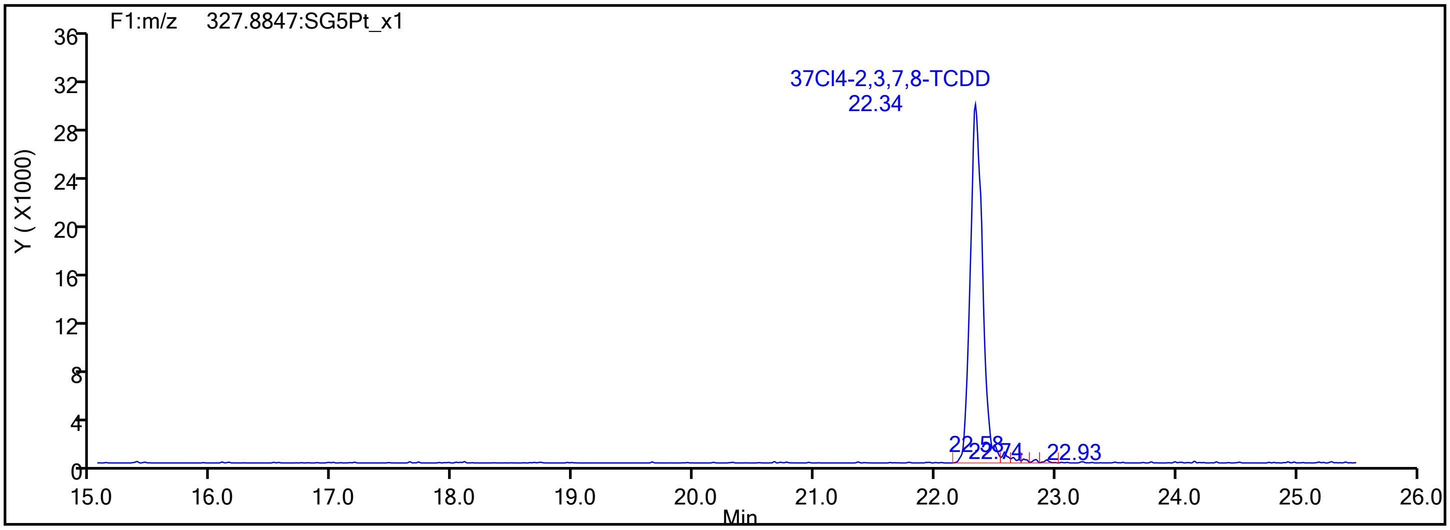

37Cl4-TCDD Standards

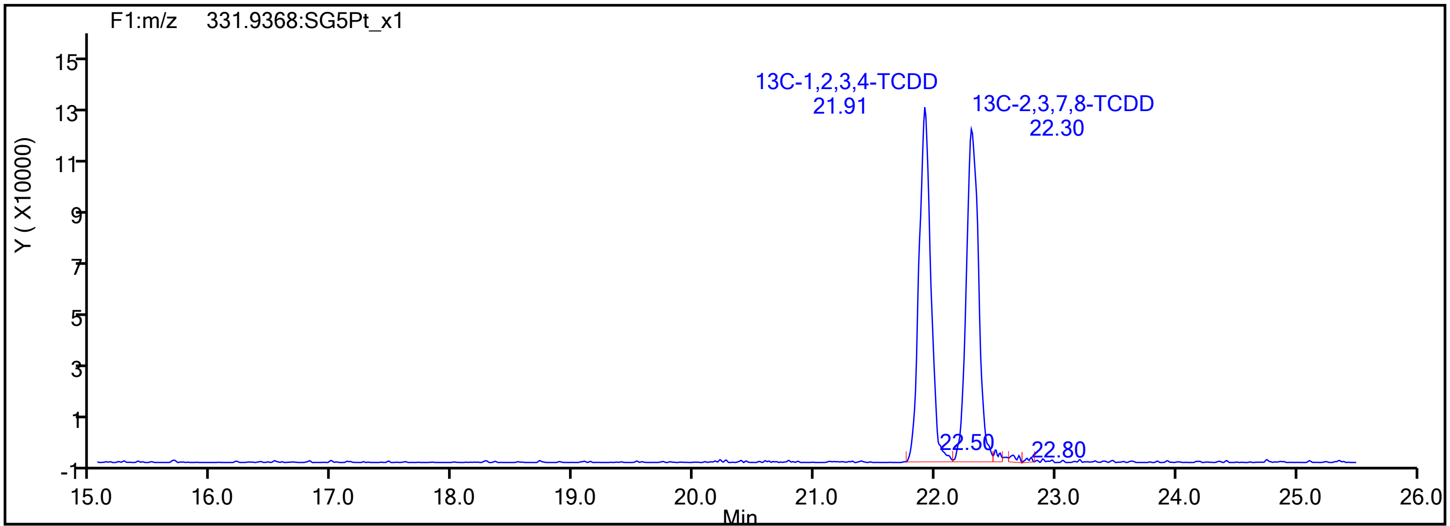

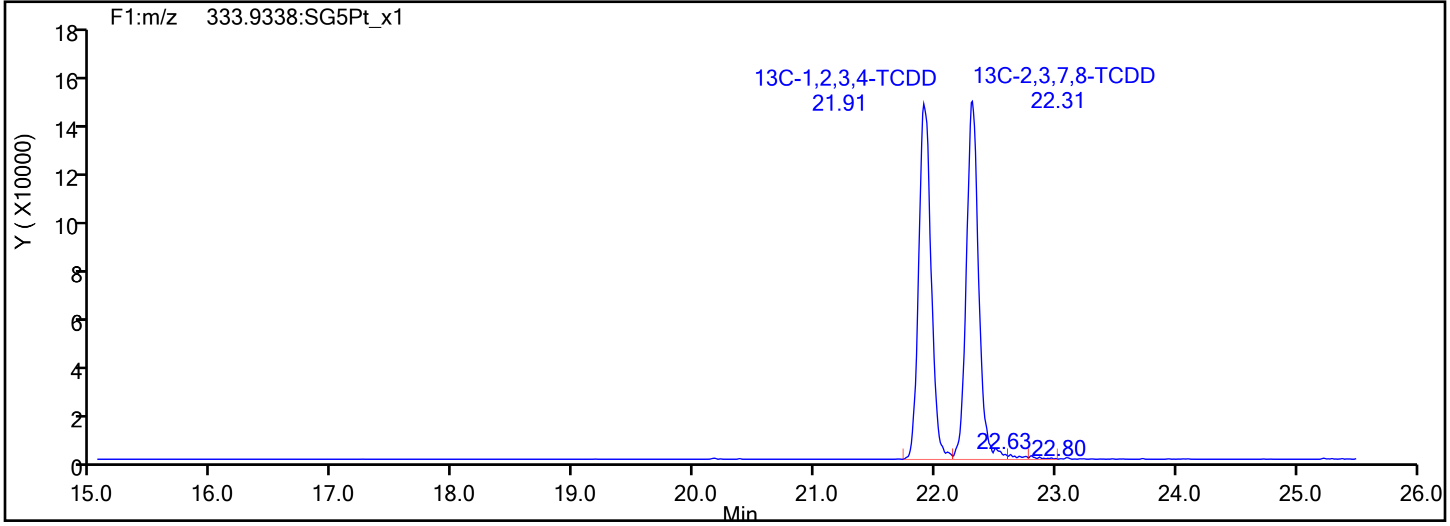

Report Date: 28-Jul-2020 08:46:31		Chrom Revision: 2.3 30-Jun-2020 12:05:54	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d		
Injection Date:	27-Jul-2020 16:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

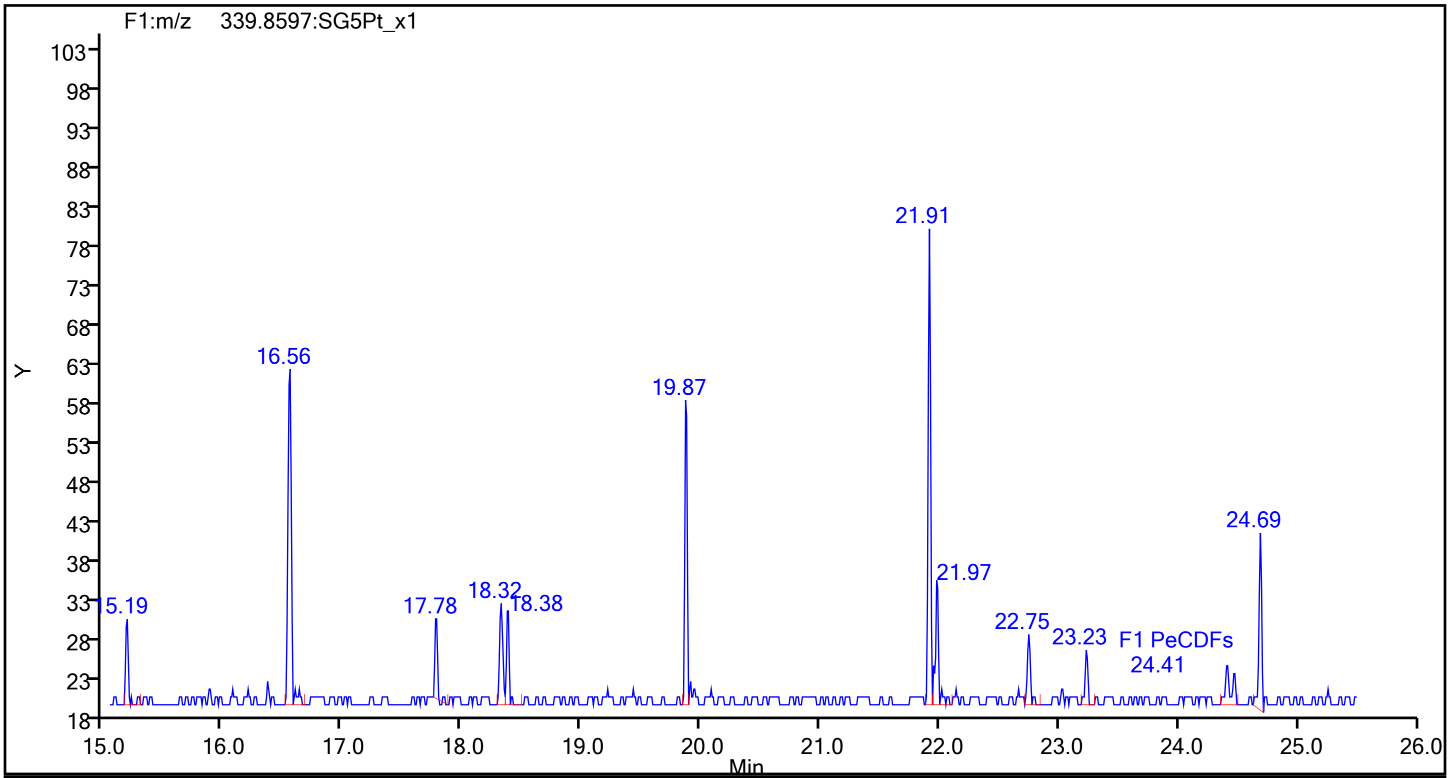

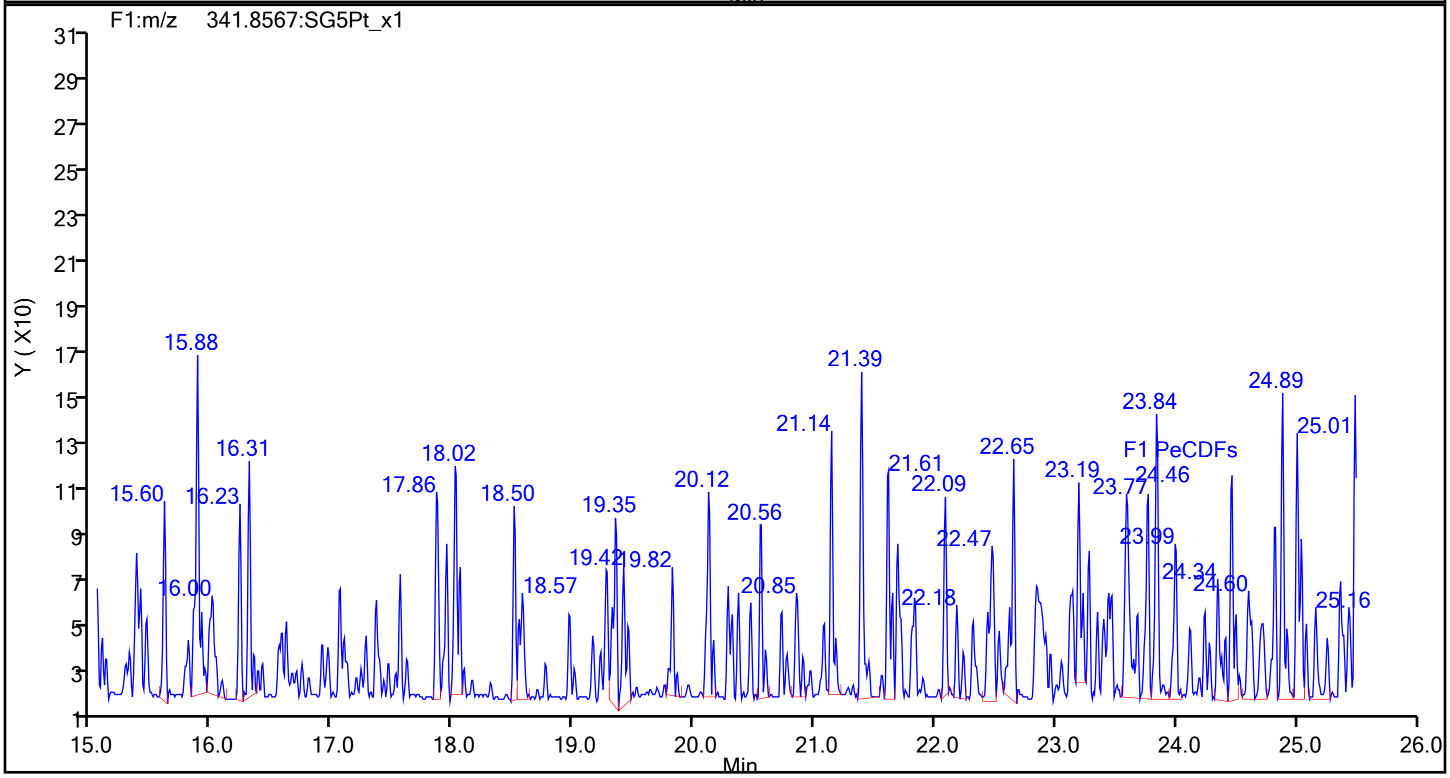

Report Date: 28-Jul-2020 08:46:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d		
Injection Date:	27-Jul-2020 16:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

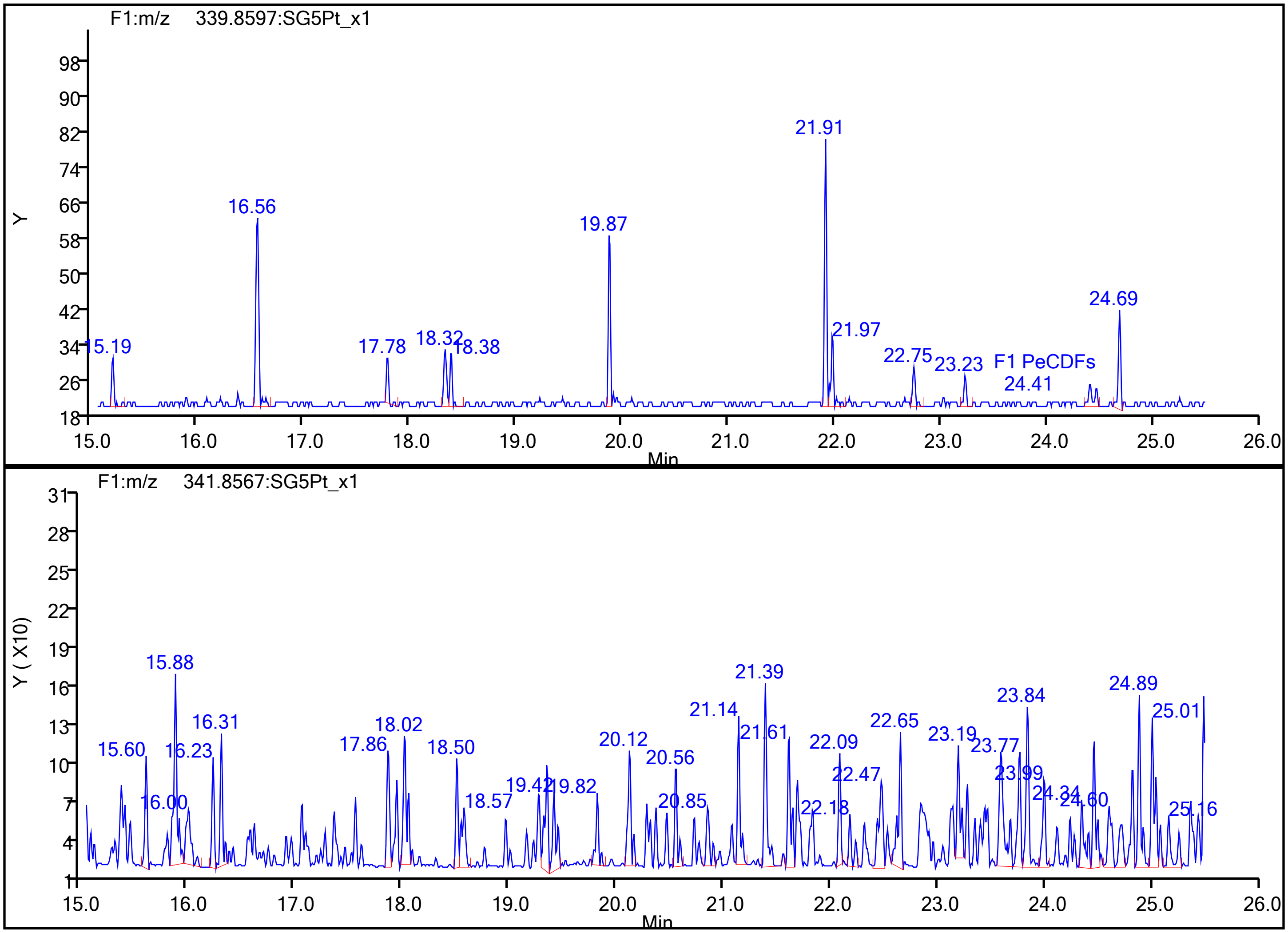

F1 PeCDFs Interference Mass

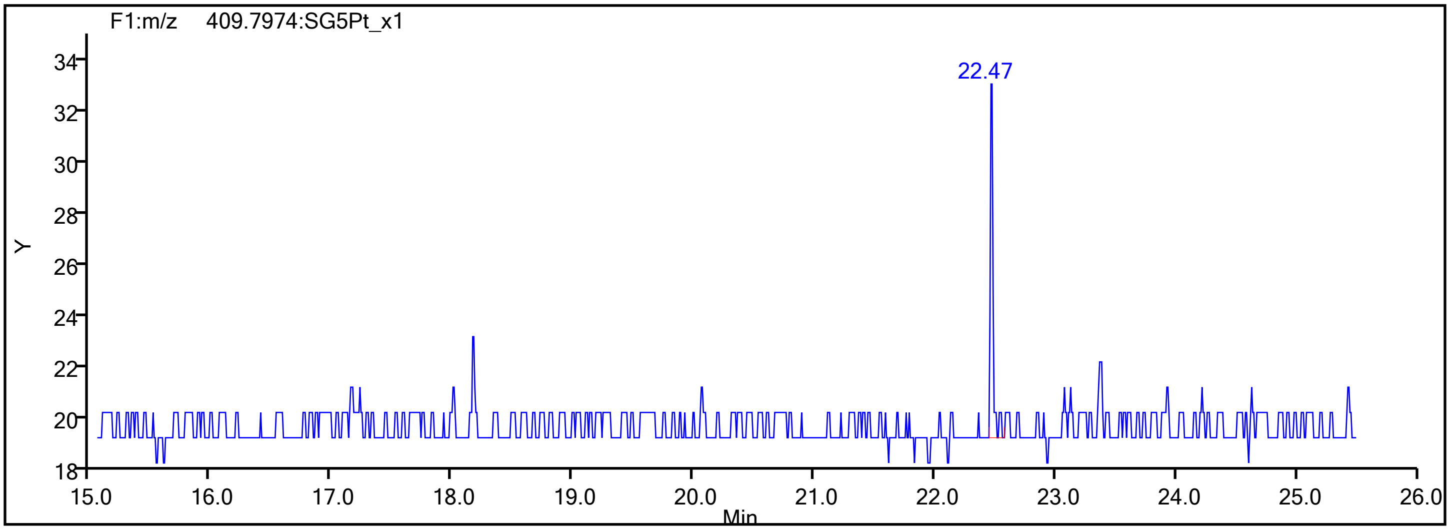

Report Date: 28-Jul-2020 08:46:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d
Injection Date: 27-Jul-2020 16:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

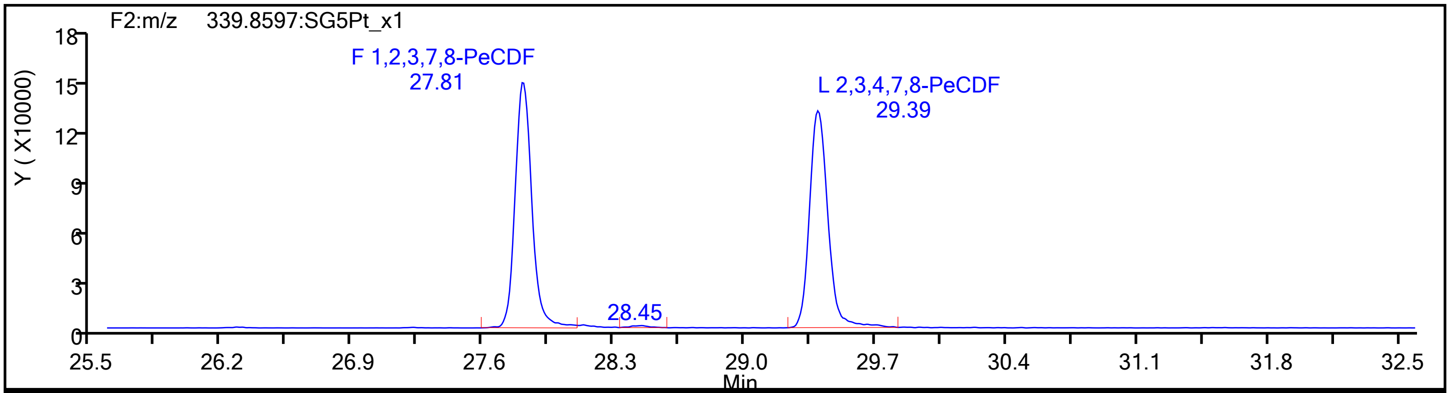

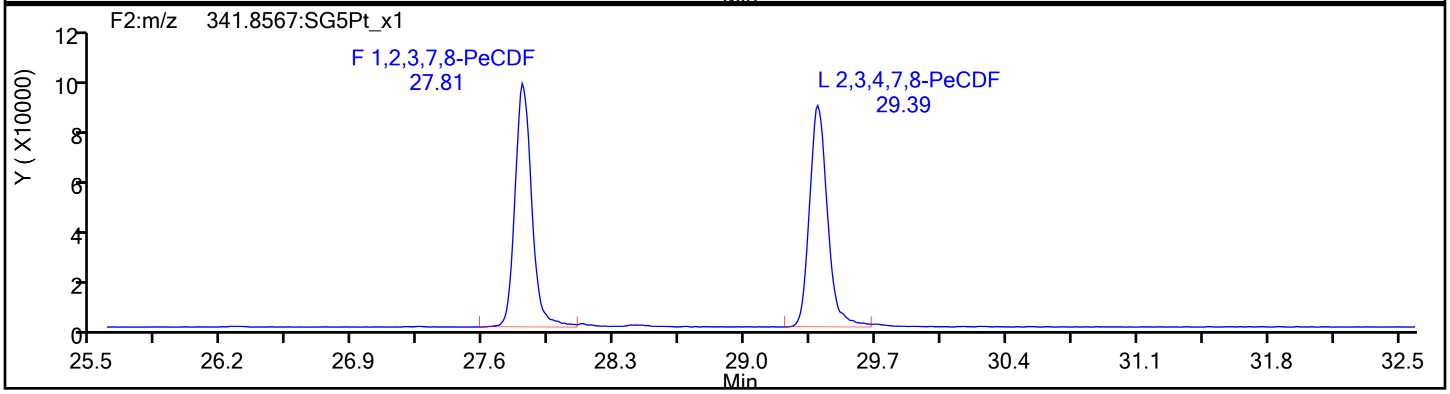

PeCDF Standards

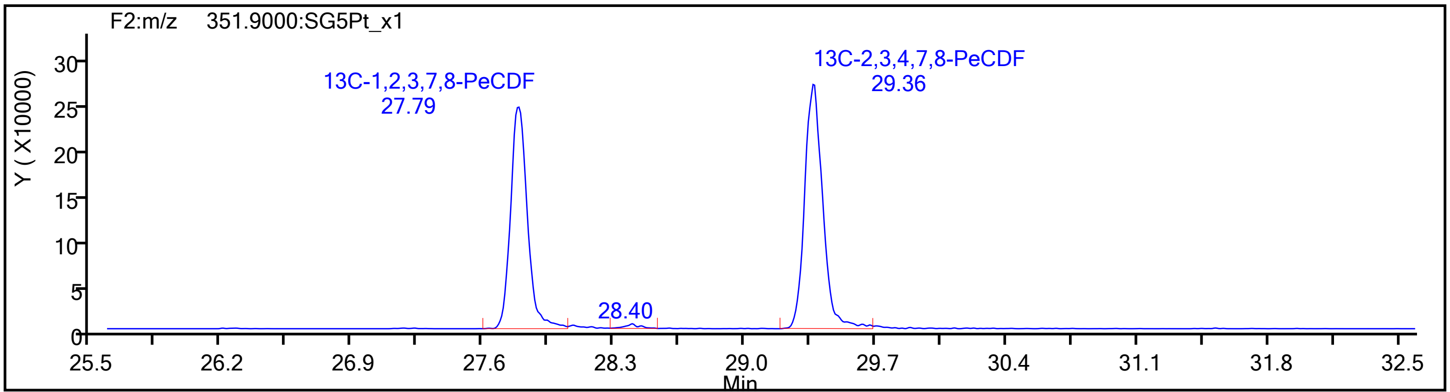

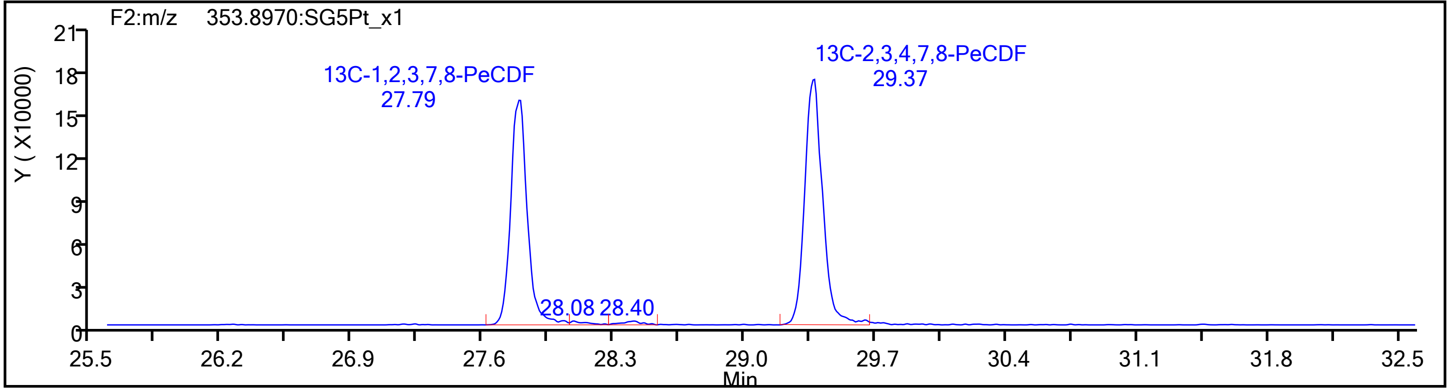

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

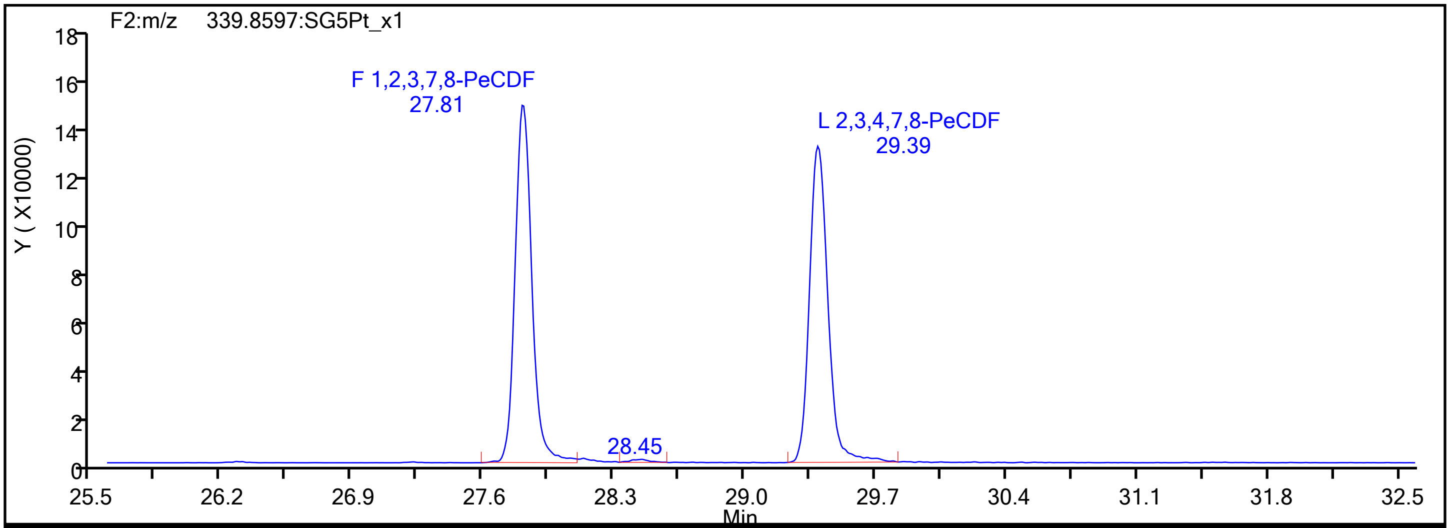

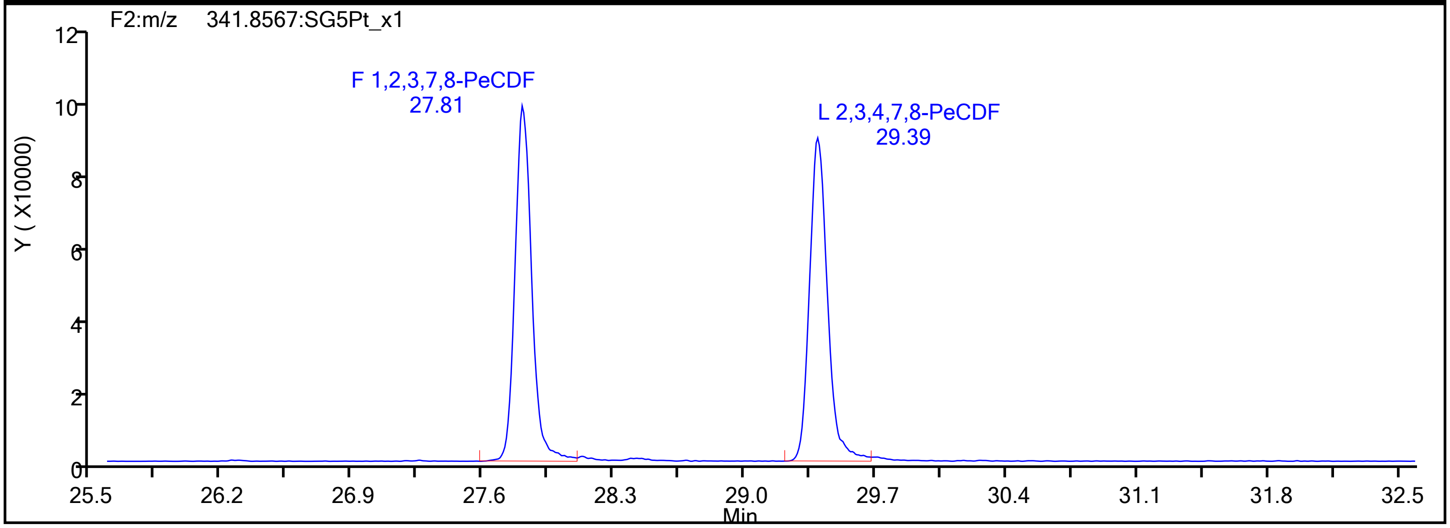

PeCDF Interference Mass

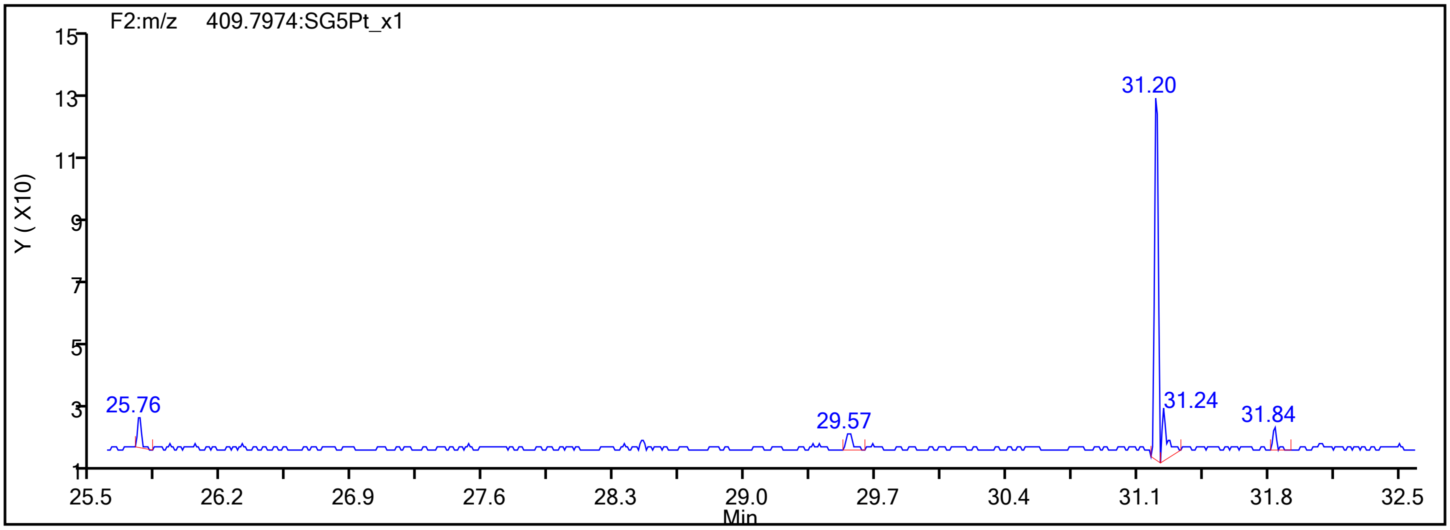

Report Date: 28-Jul-2020 08:46:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

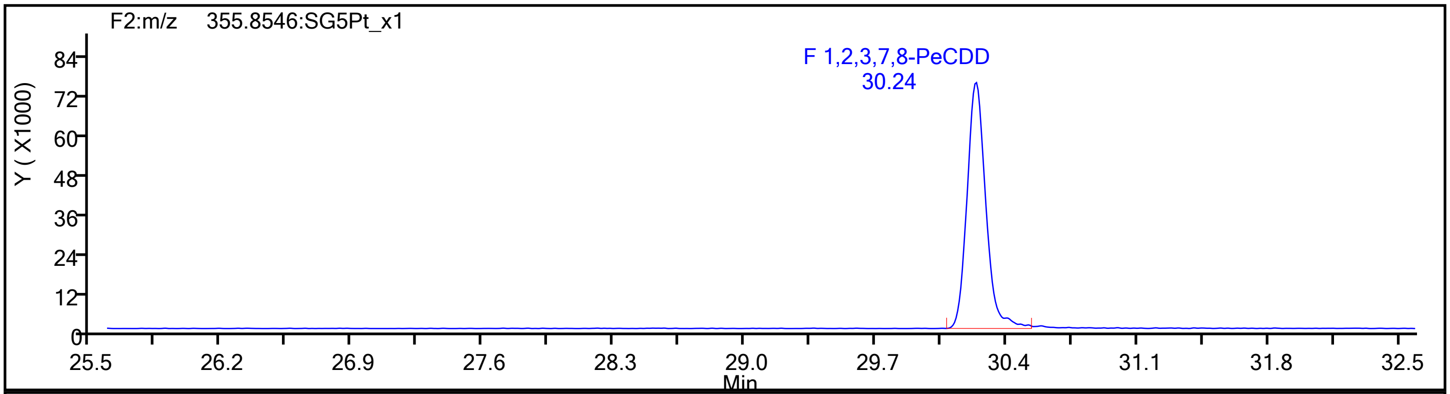

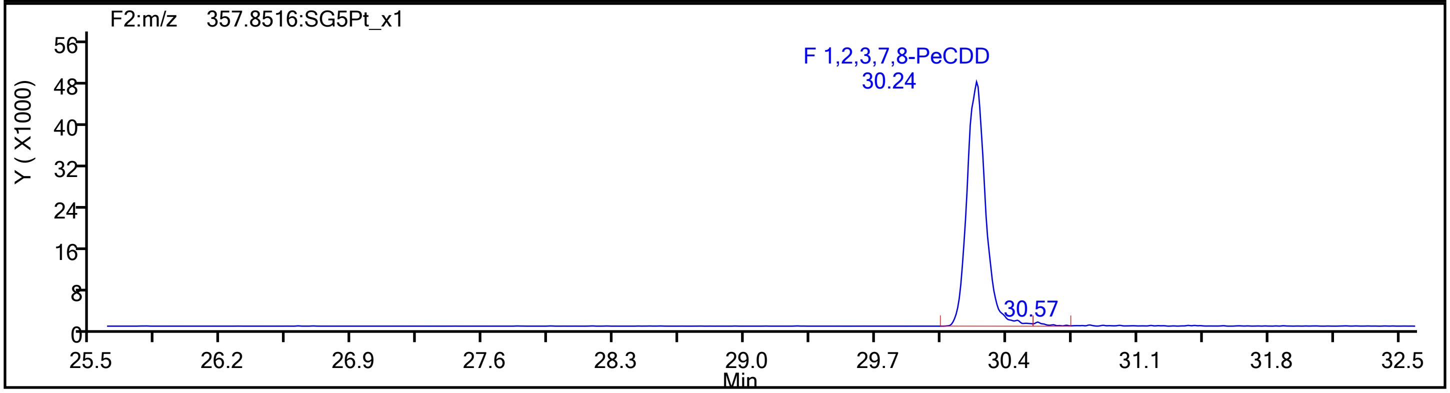

PeCDD Standards

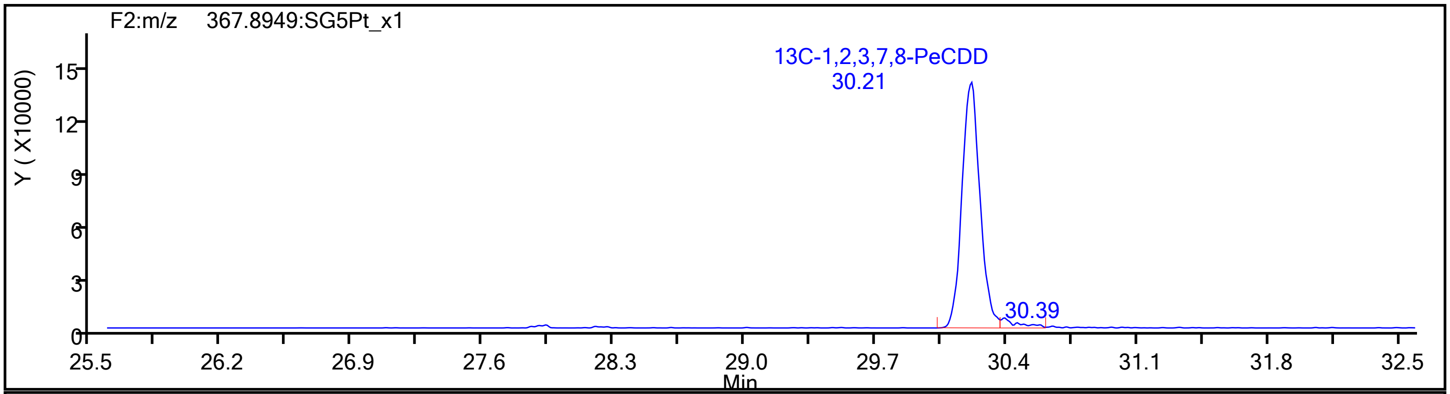

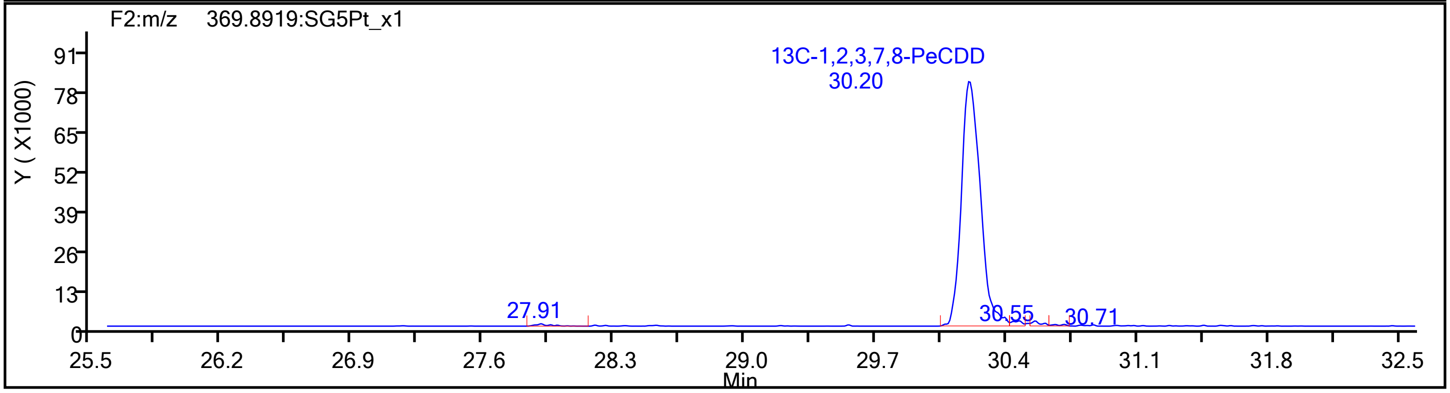

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Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
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Sample Line#: 1
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Column Dia: 0.32 mm

HxCDF

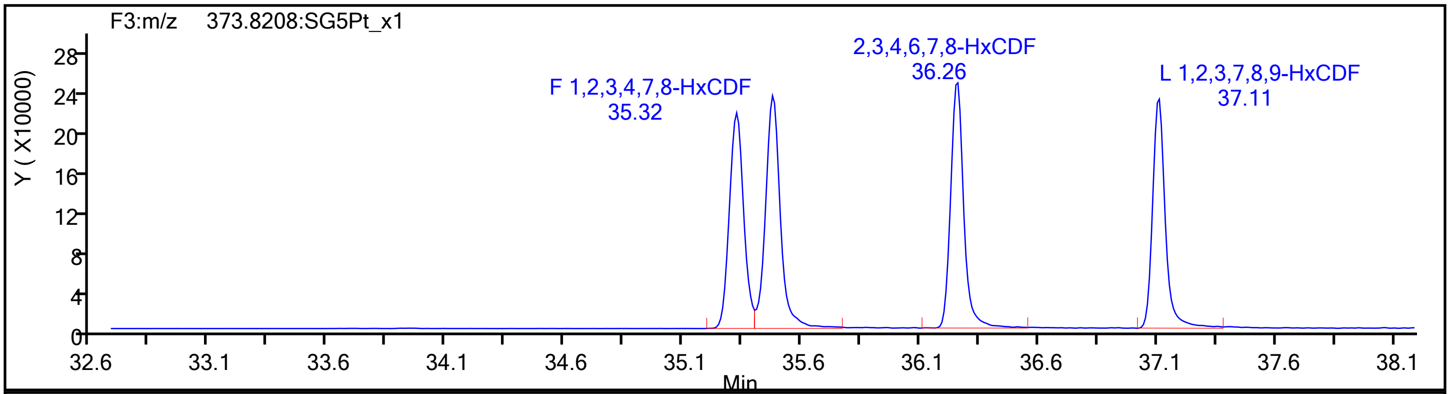

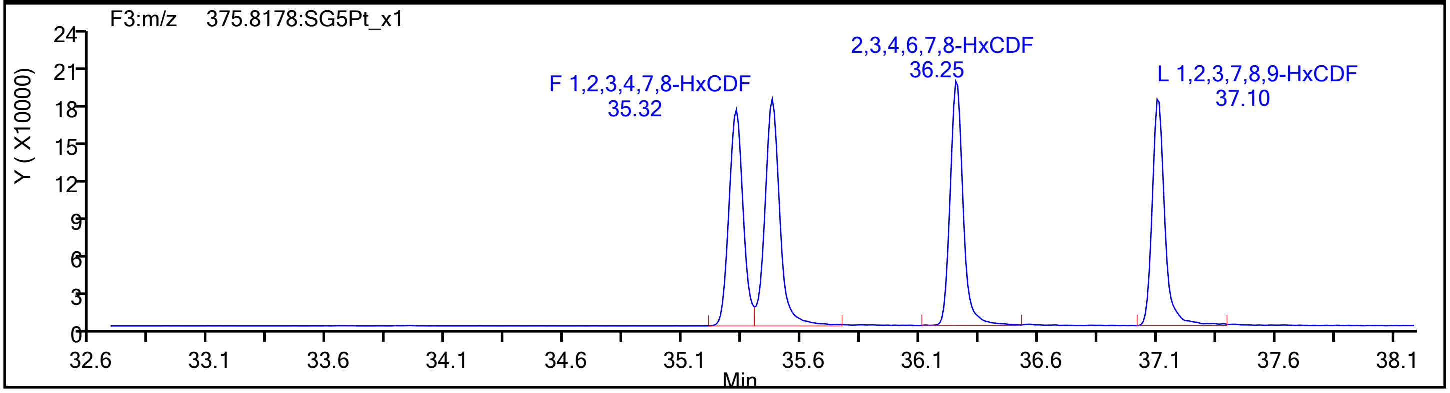

HxCDF Standards

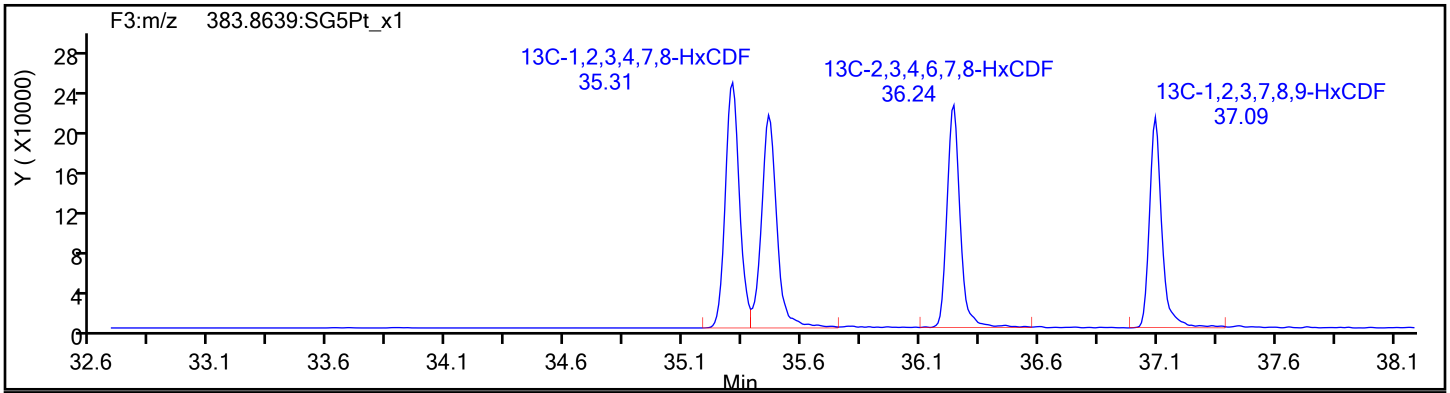

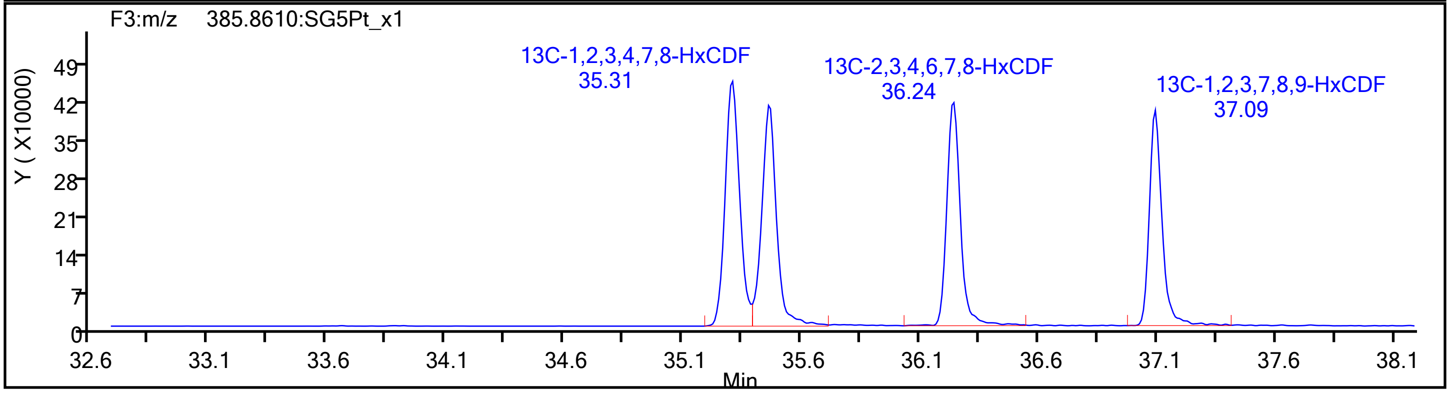

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HxCDF

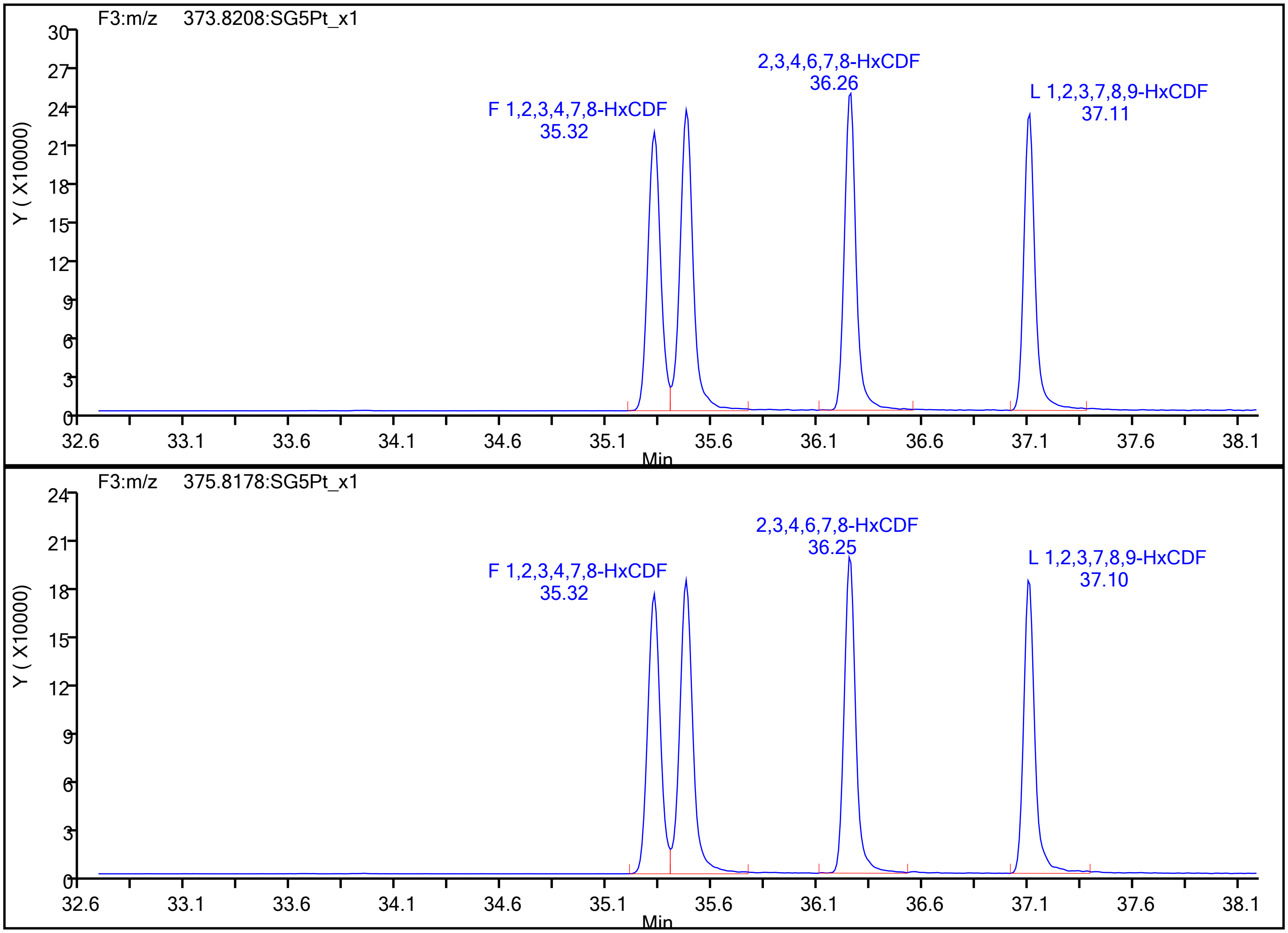

HxCDF Interference Mass

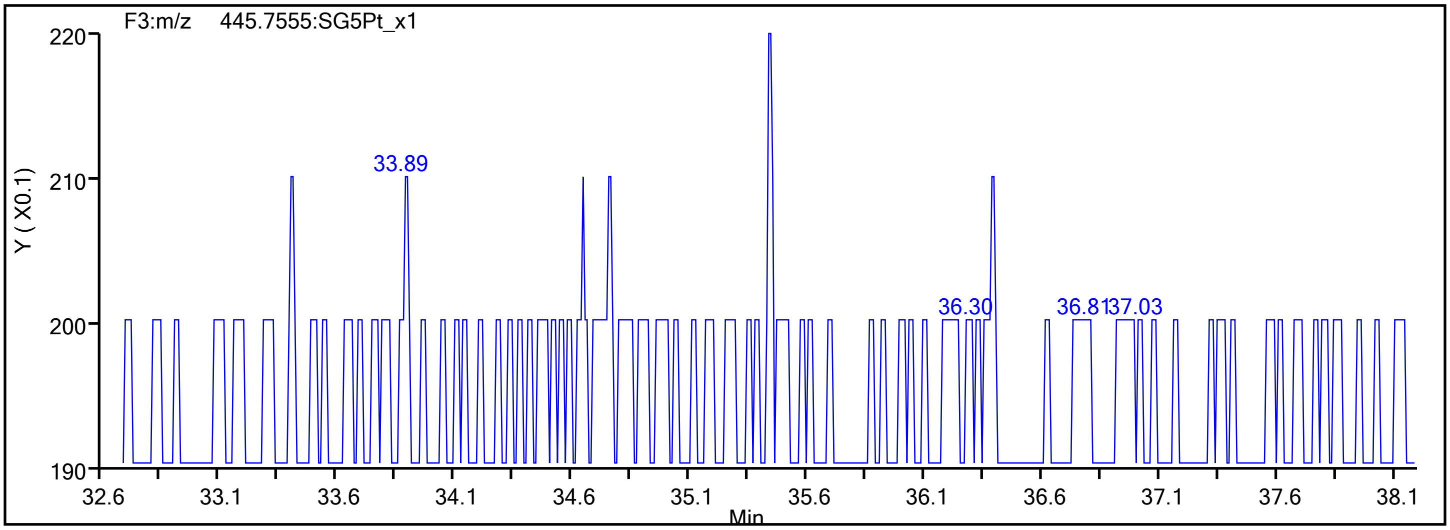

Report Date: 28-Jul-2020 08:46:31　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

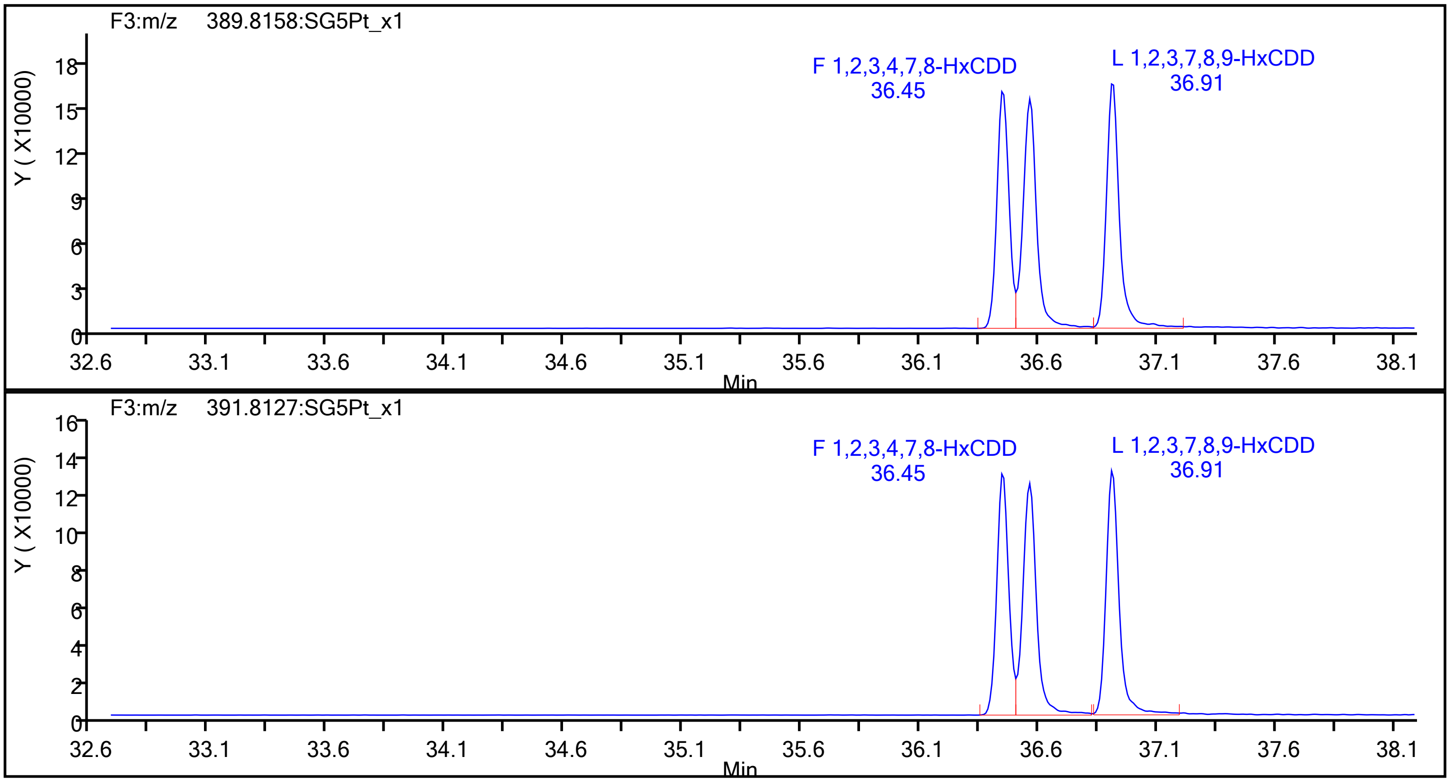

HxCDD Standards

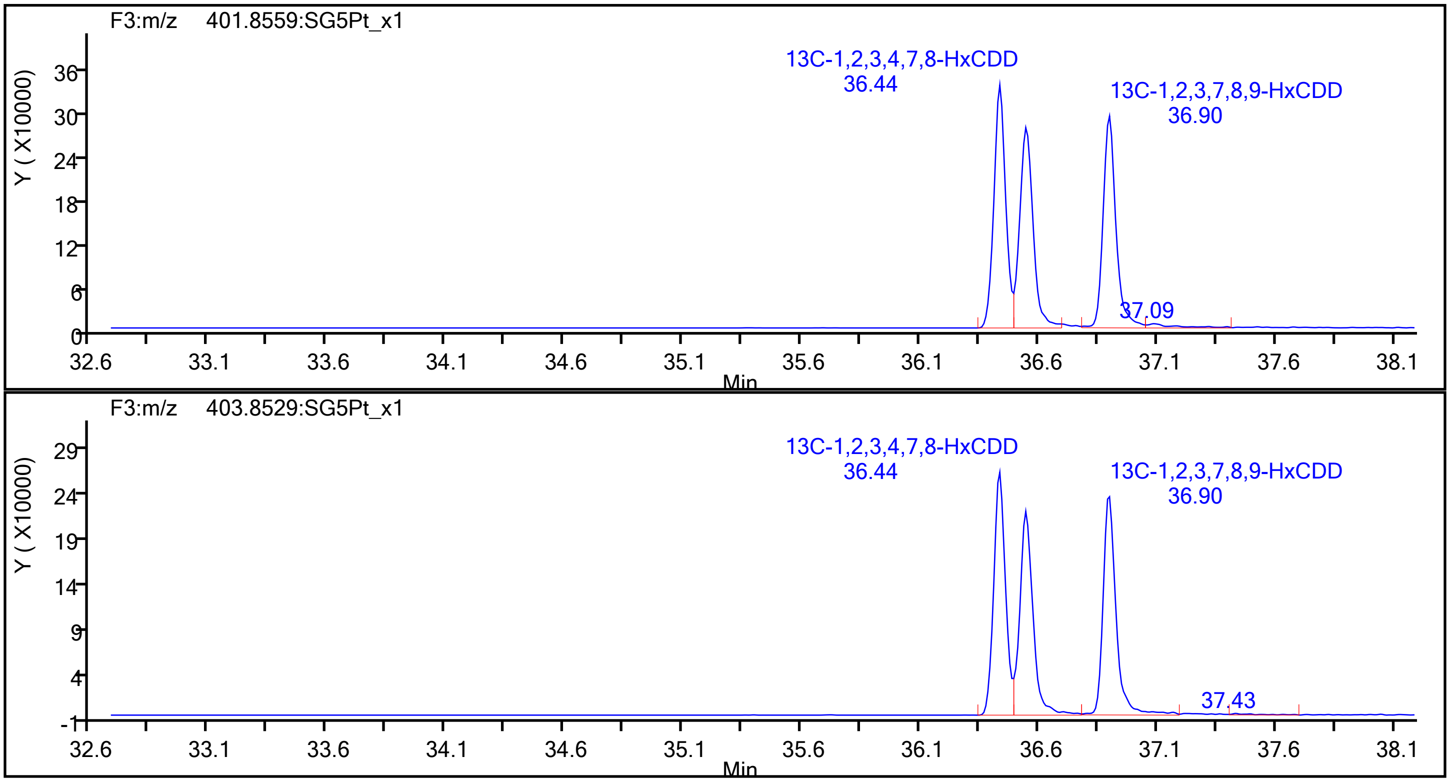

Report Date: 28-Jul-2020 08:46:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	1
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HpCDF

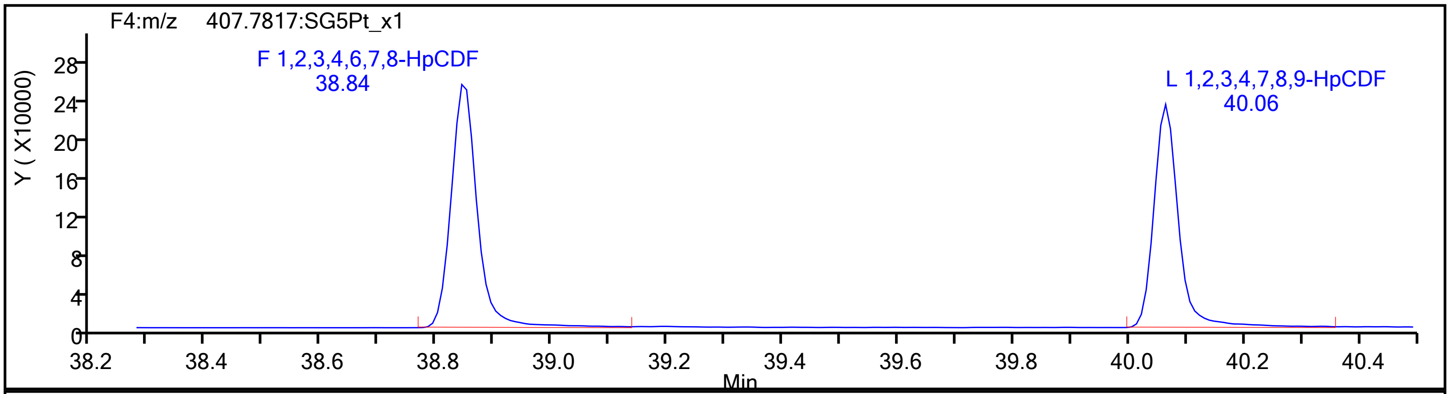

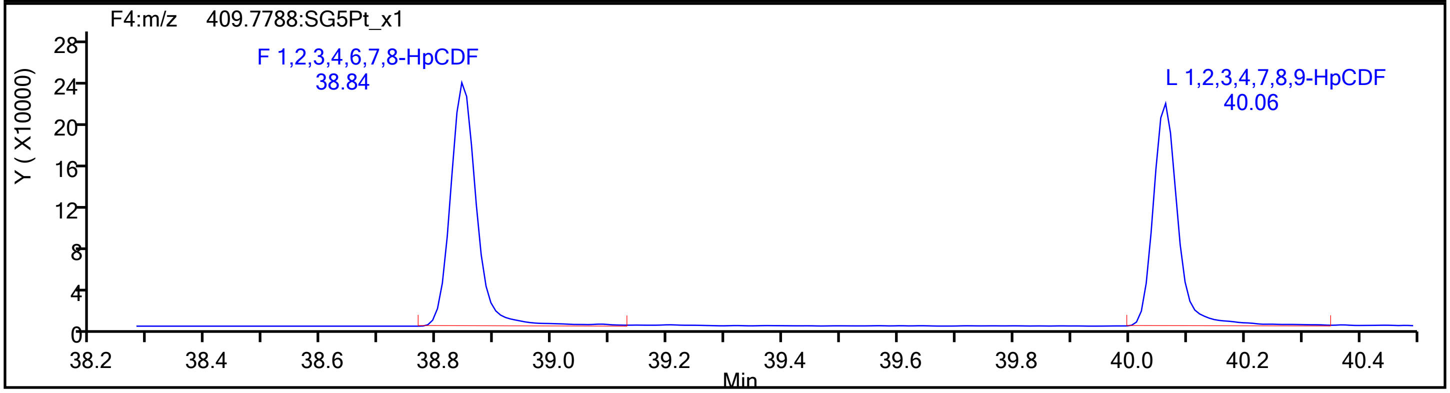

HpCDF Standards

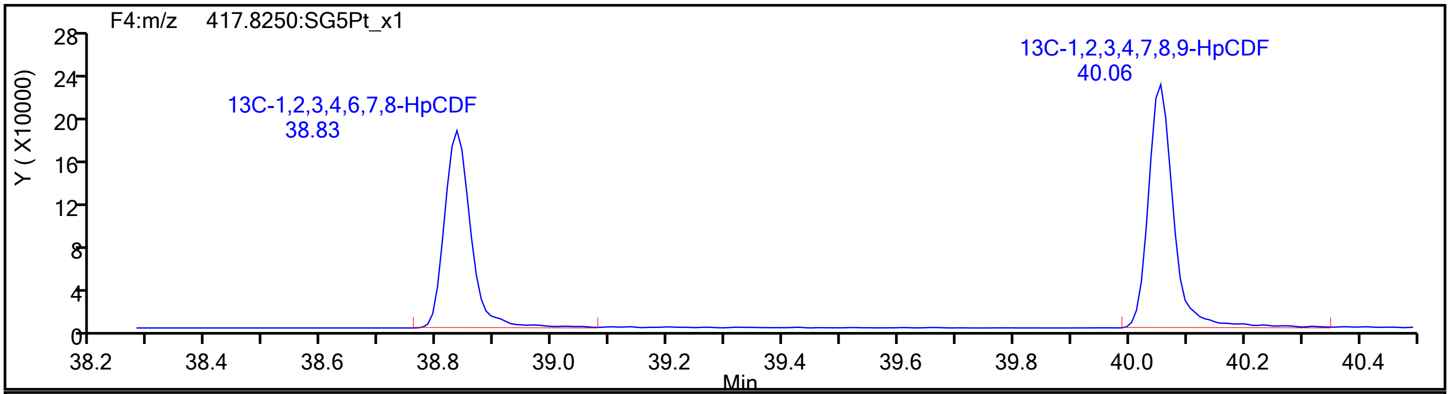

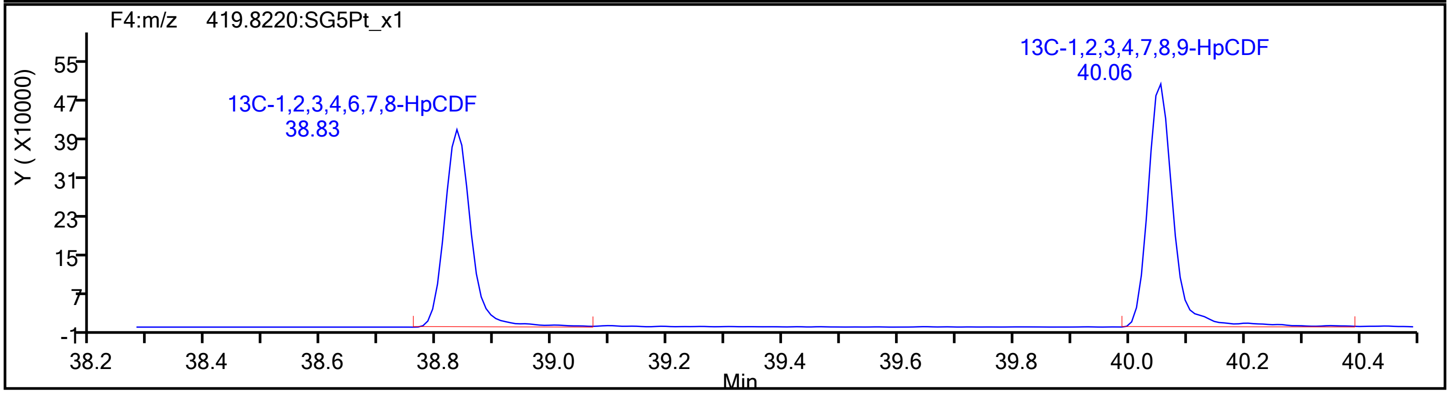

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

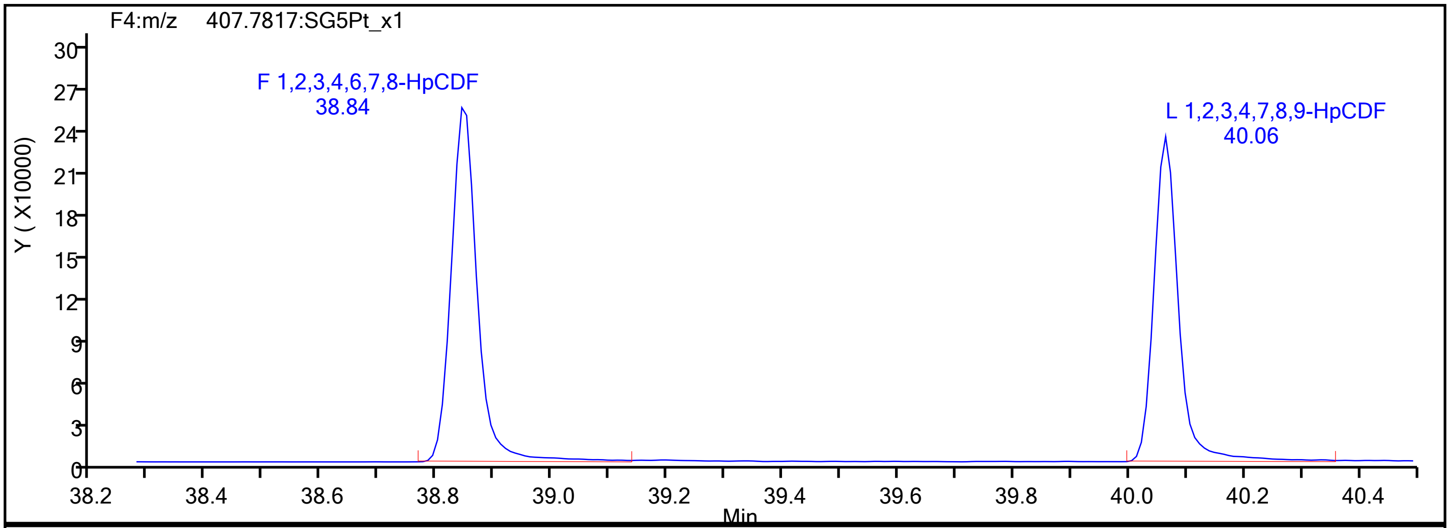

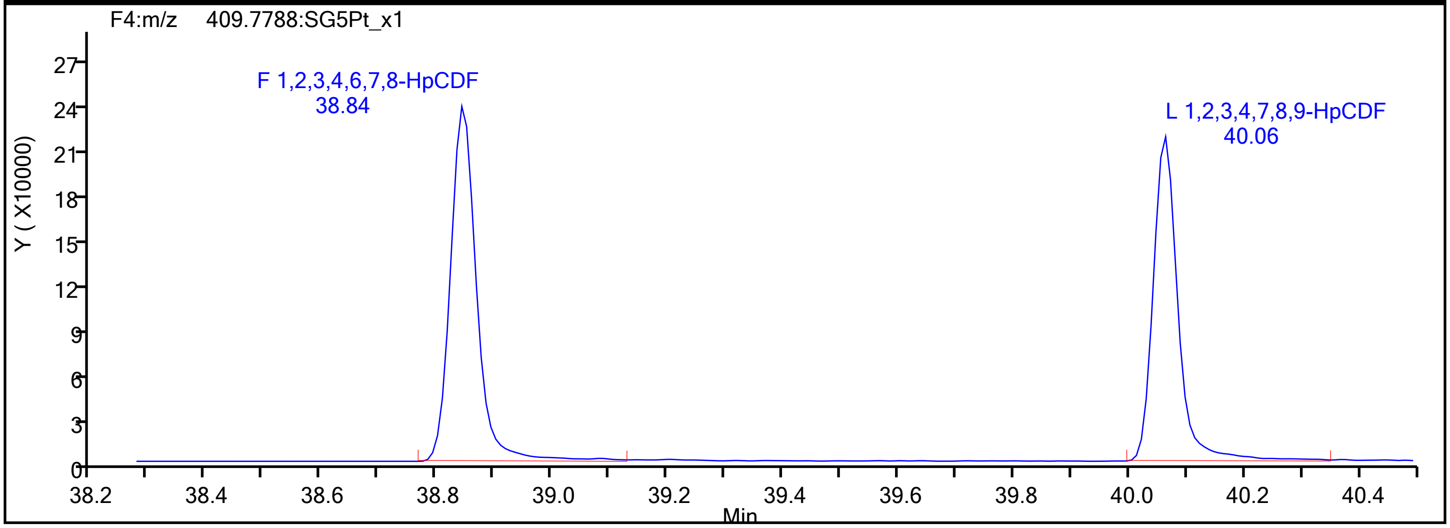

HpCDF Interference Mass

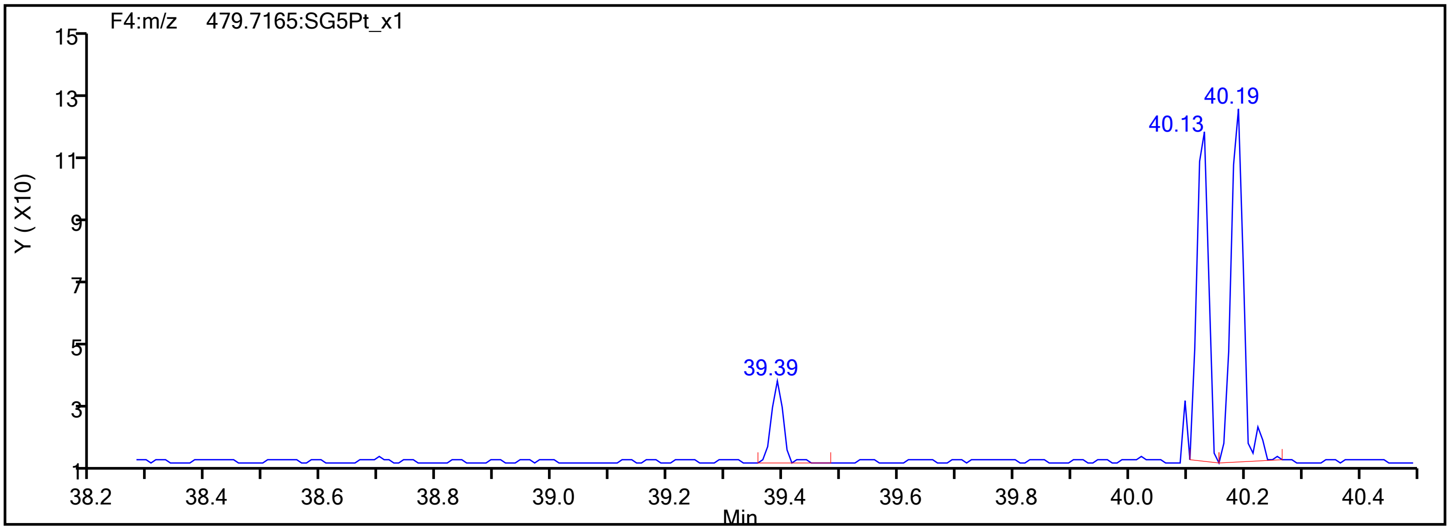

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDD

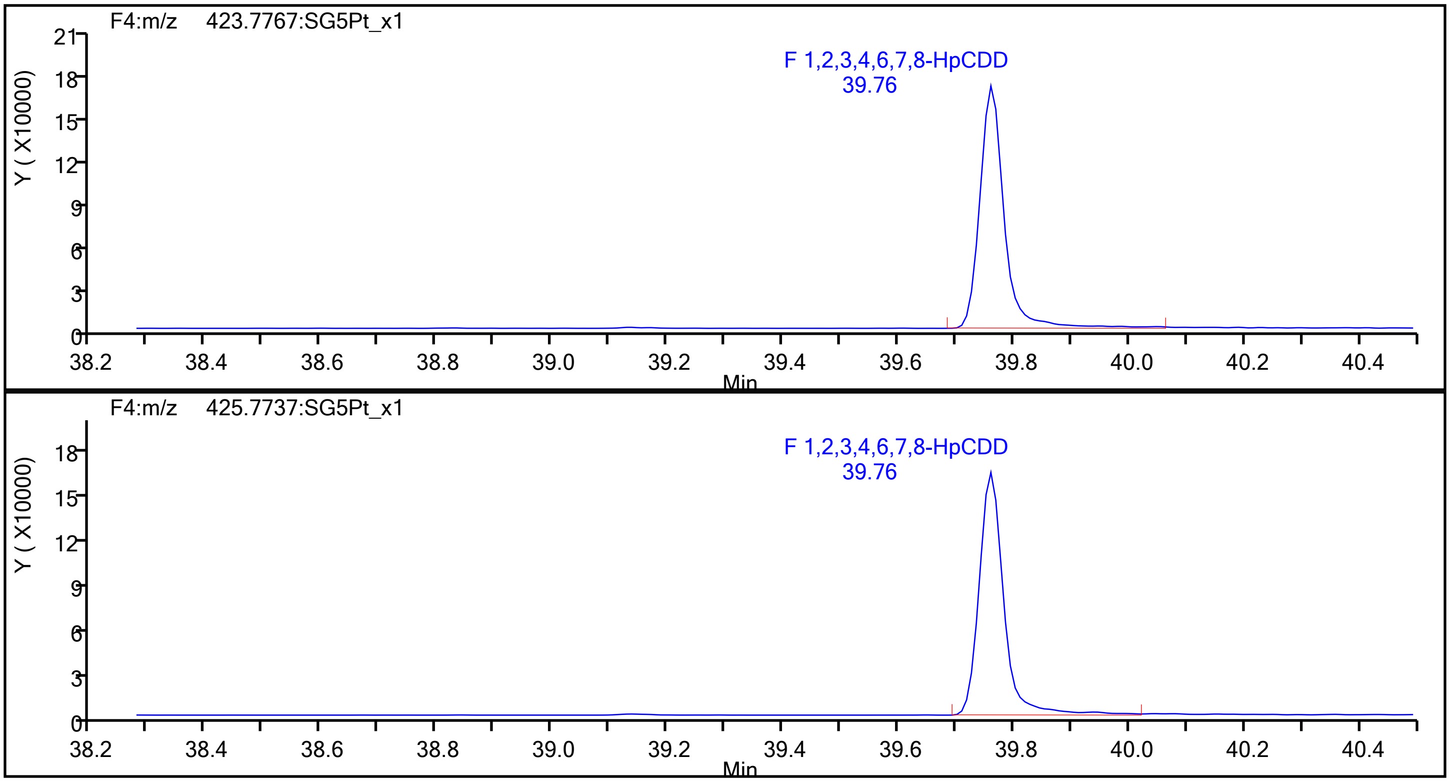

HpCDD Standards

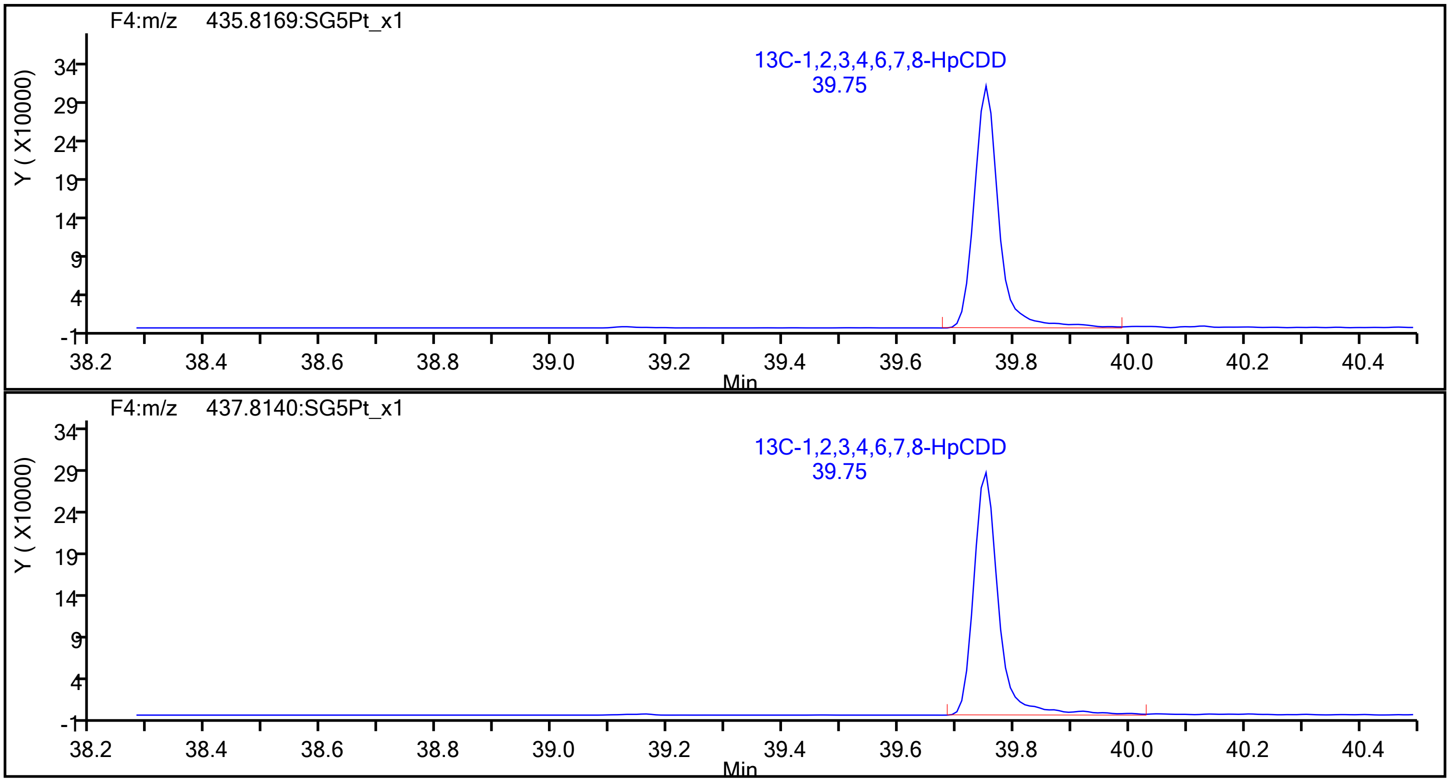

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d

Injection Date: 27-Jul-2020 16:52:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

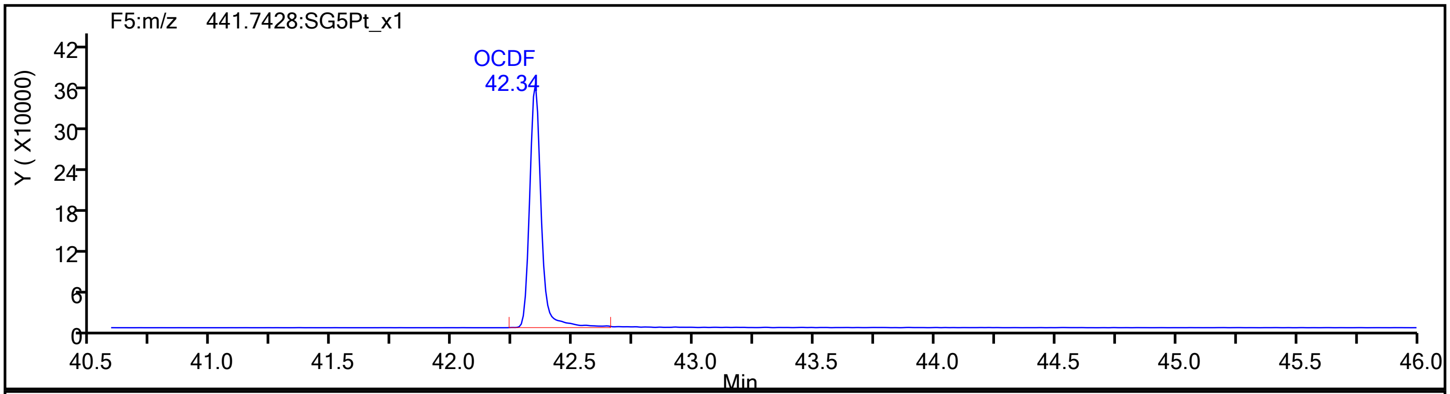

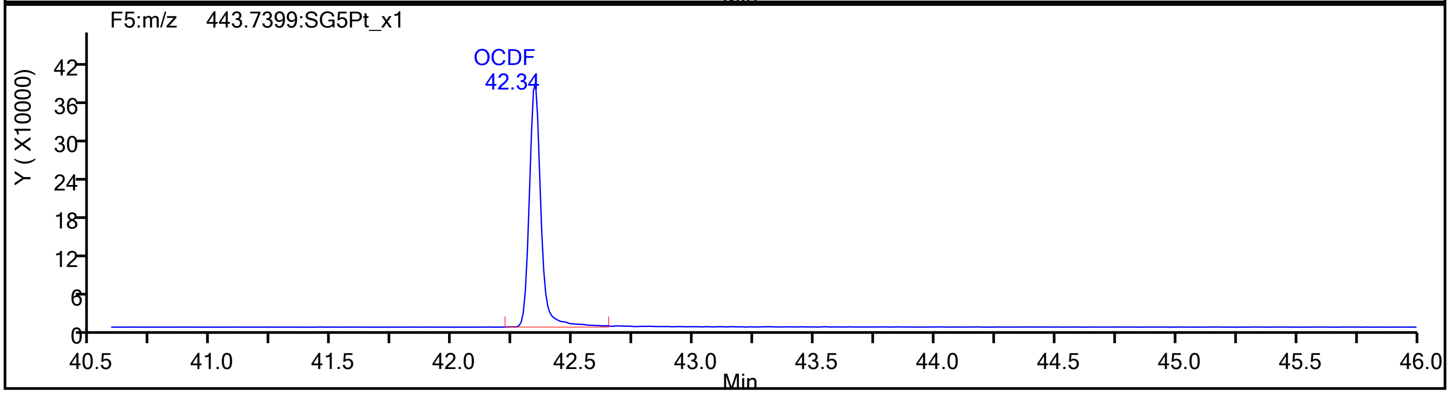

OCDF Standards

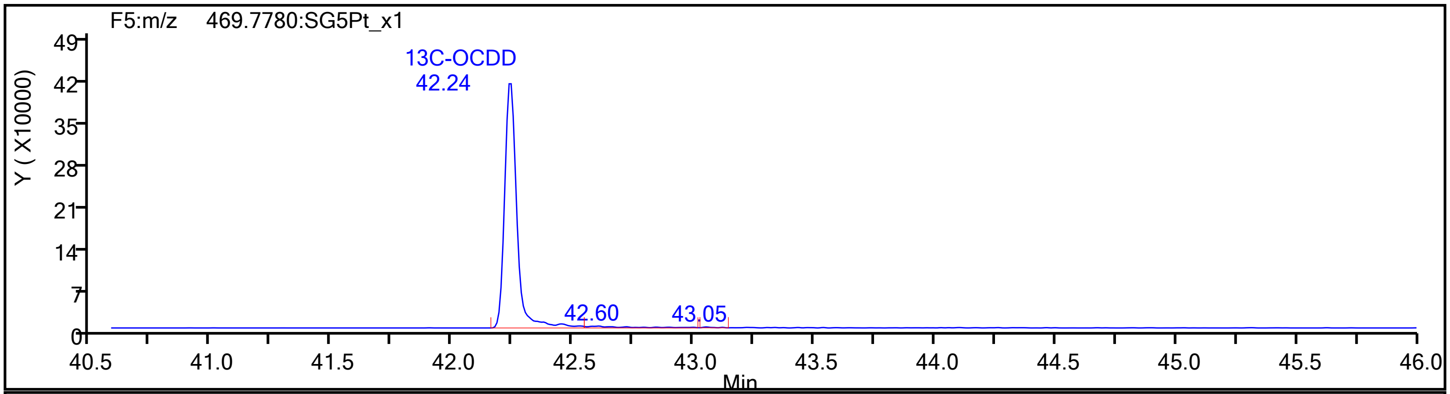

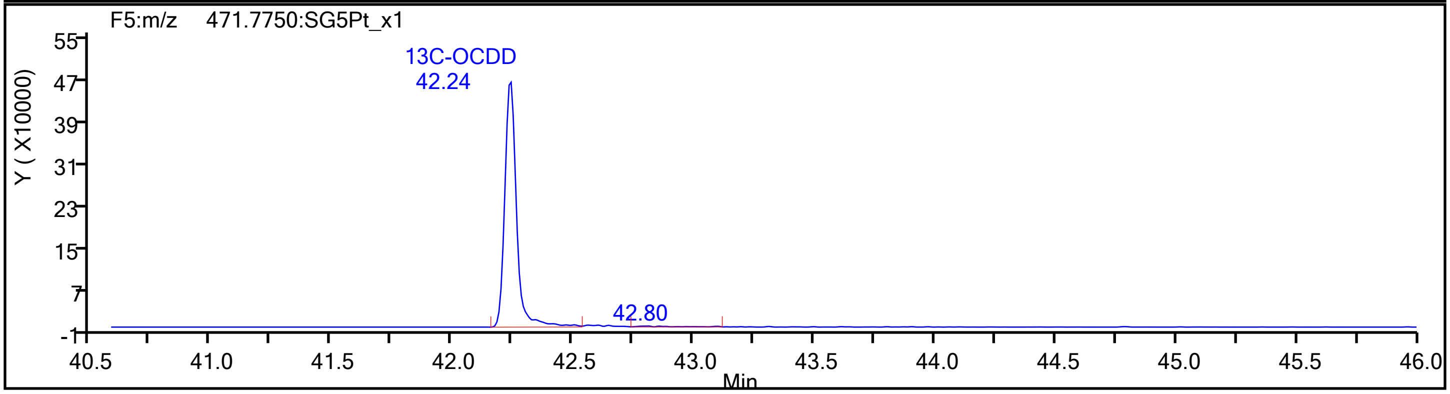

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_2.d

Injection Date: 27-Jul-2020 16:52:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

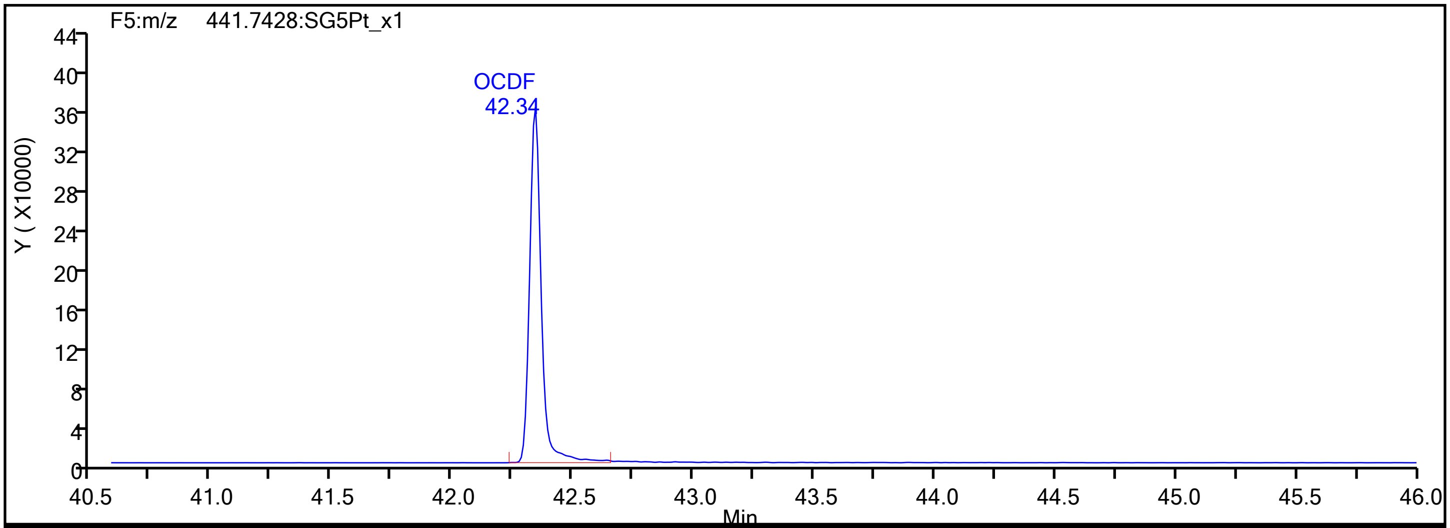

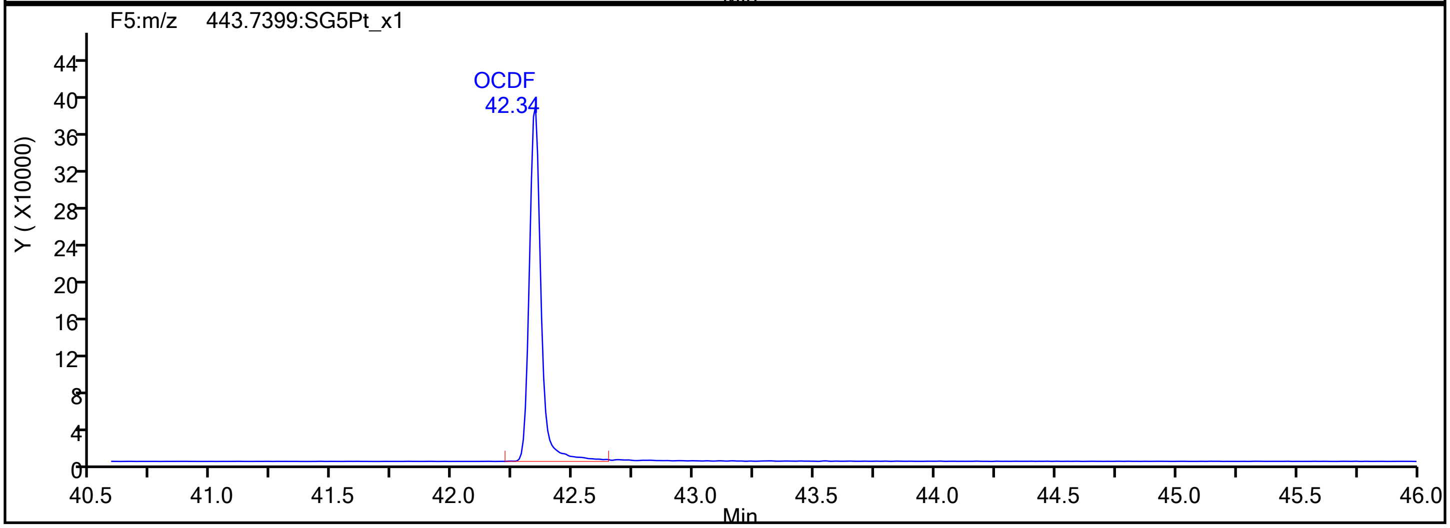

OCDF Interference Mass

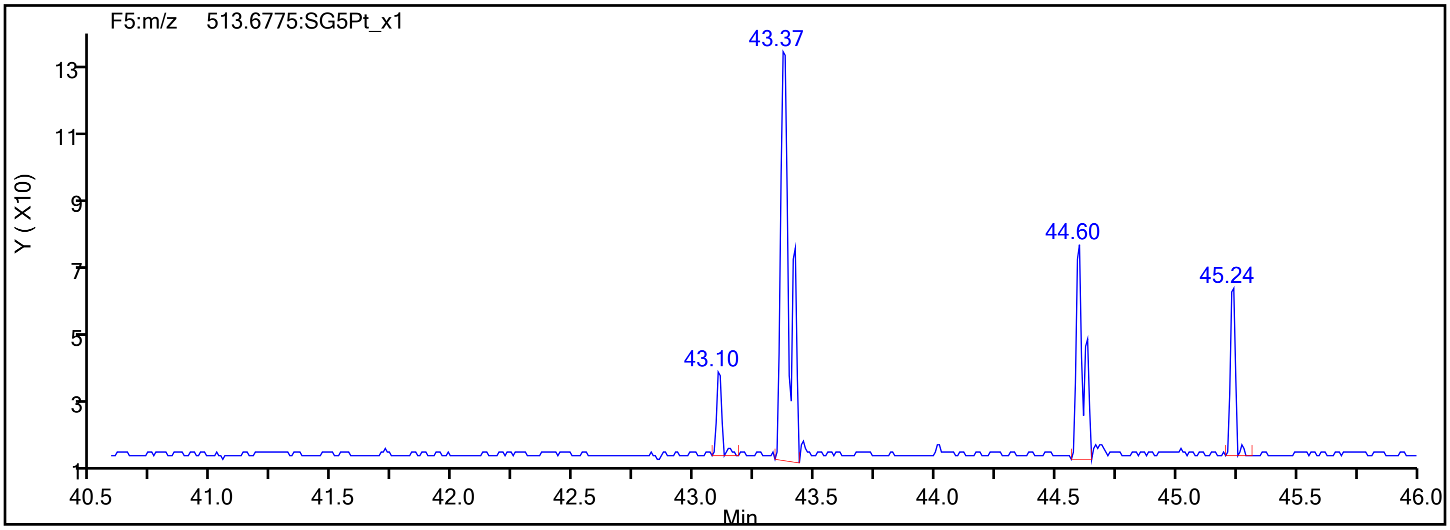

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Eurofins TestAmerica, Sacramento

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Worklist#: 398796
Sample Line#: 1
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Column Dia: 0.32 mm

OCDD

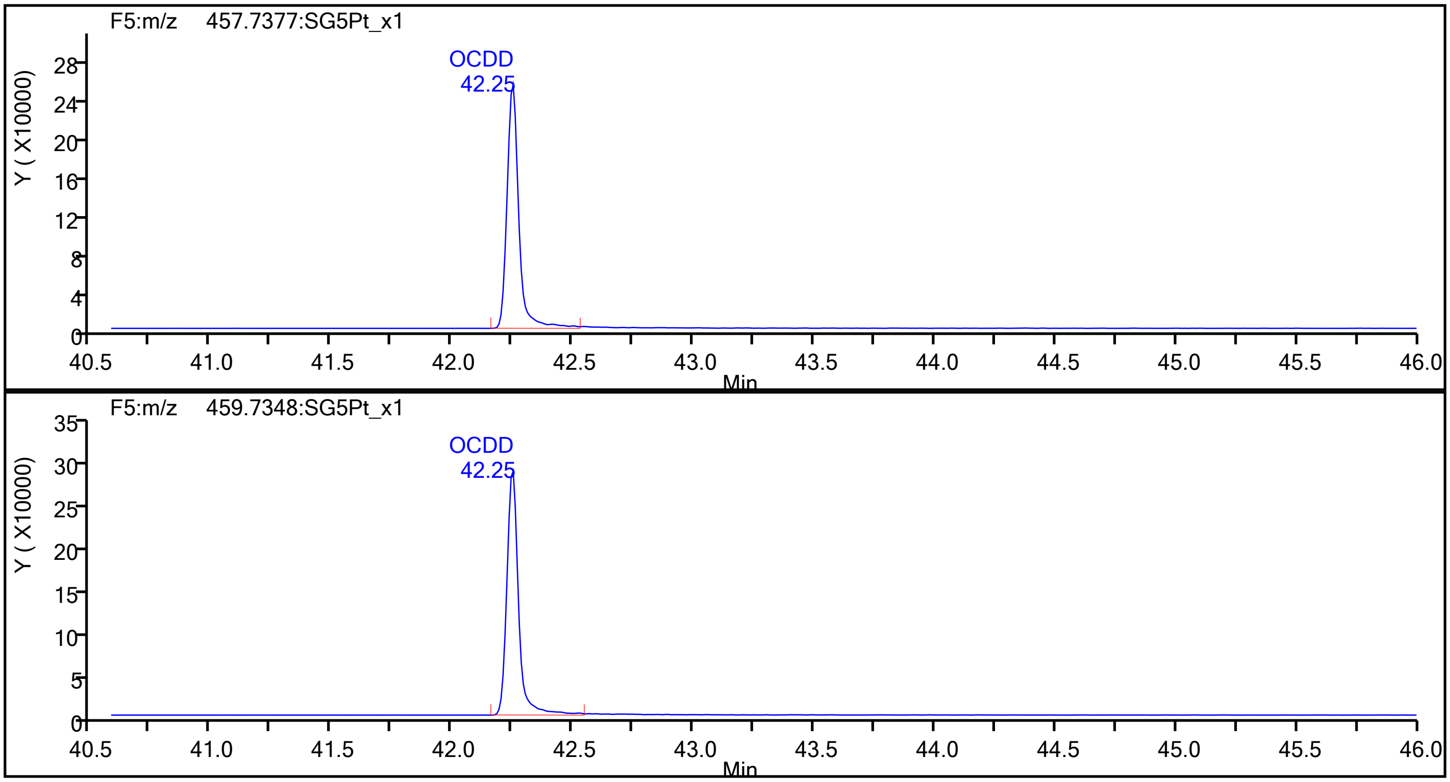

OCDD Standards

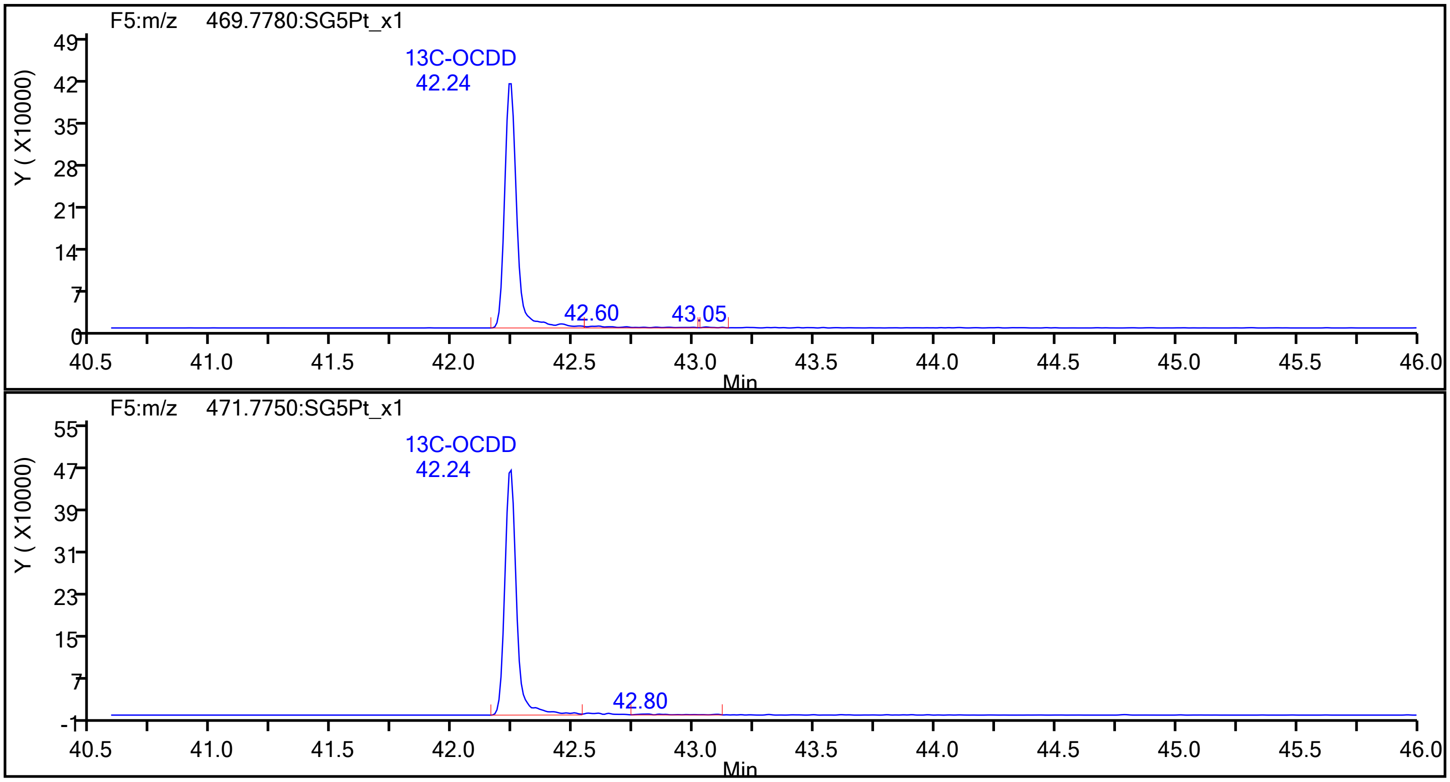

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Eurofins TestAmerica, Sacramento

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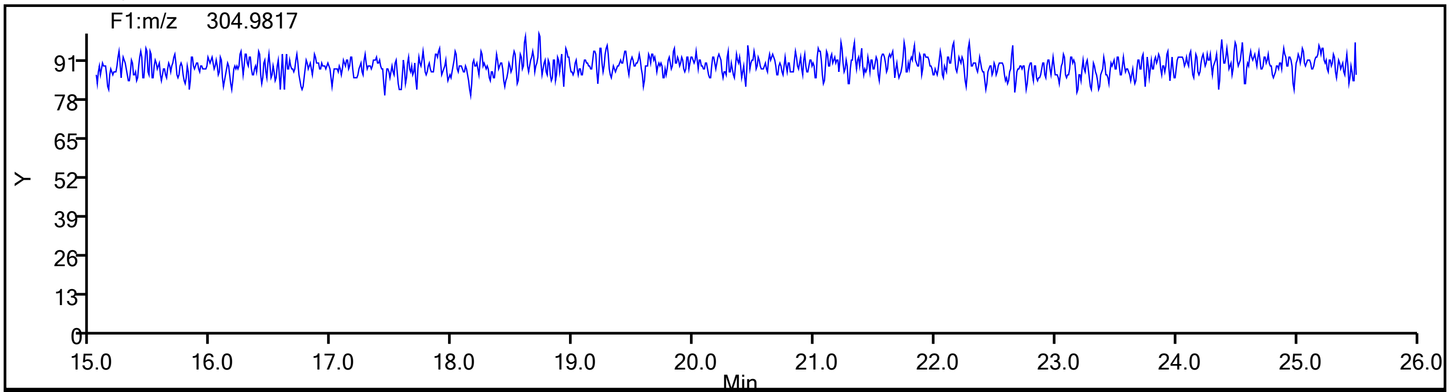

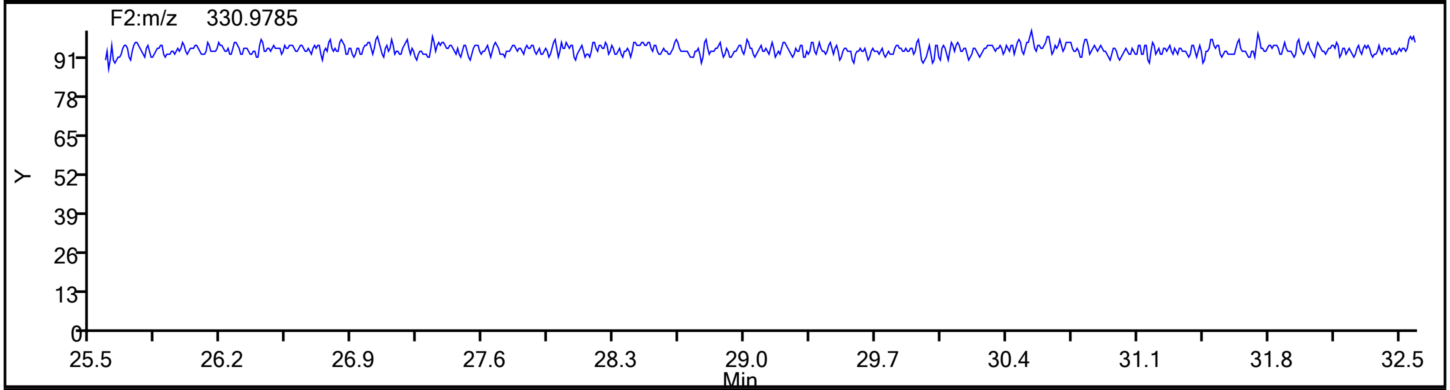

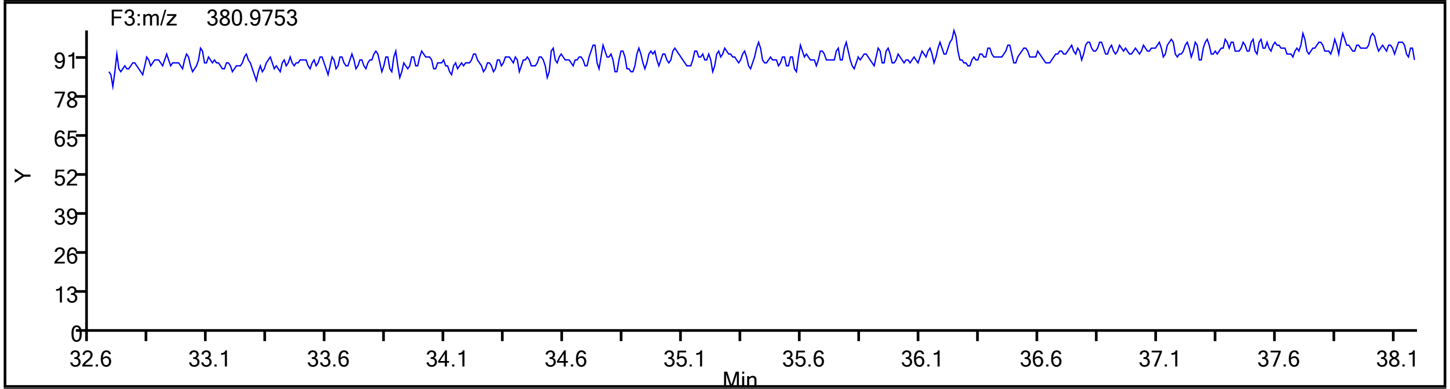

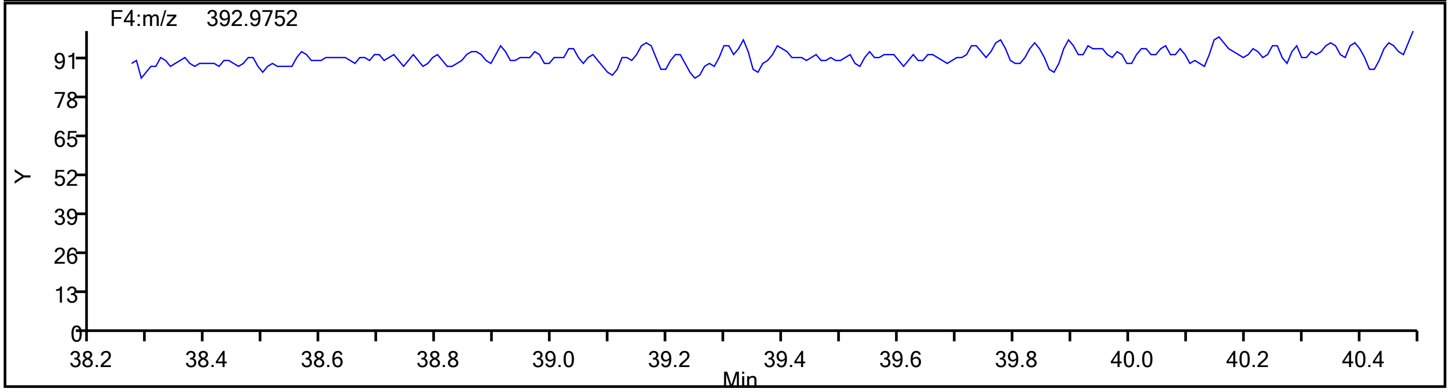

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jul-2020 16:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

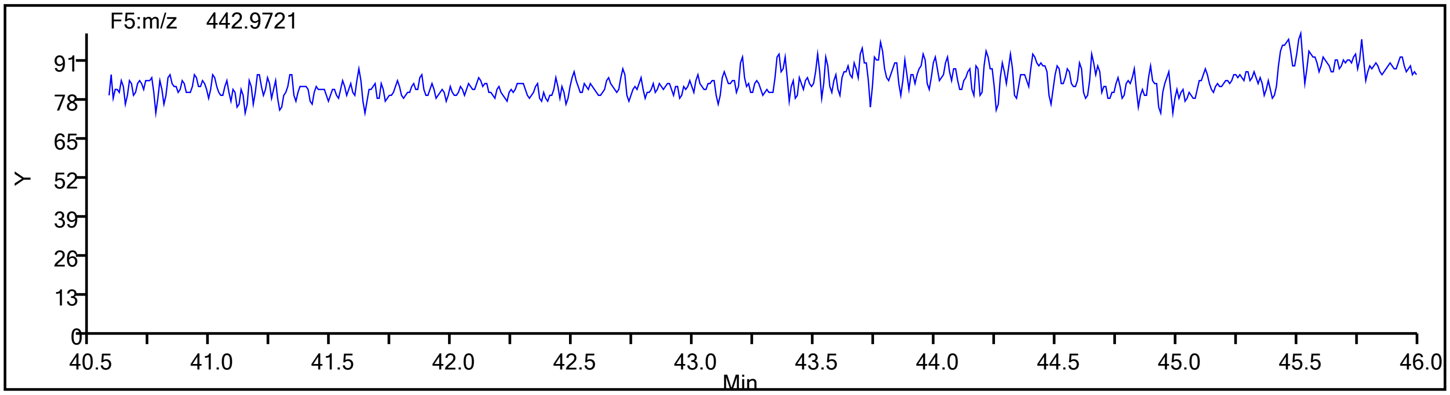

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Lab Sample ID: CCV 320-398798/14 Calibration Date: 07/28/2020 03:36

Instrument ID: DFS 1 Calib Start Date: 06/03/2020 14:05

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/03/2020 18:06

Lab File ID: 27jl20bdfs1_16.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.131	1.198		10.6	10.0	106	84-120
2,3,7,8-TCDD	AveID	1.185	1.237		10.4	10.0	104	78-129
1,2,3,7,8-PeCDF	AveID	1.106	1.197		54.1	50.0	108	82-120
2,3,4,7,8-PeCDF	AveID	0.9067	0.9622		53.1	50.0	106	82-122
1,2,3,7,8-PeCDD	AveID	1.106	1.137		51.4	50.0	103	78-130
1,2,3,4,7,8-HxCDF	AveID	1.009	1.107		54.9	50.0	110	90-112
1,2,3,6,7,8-HxCDF	AveID	1.243	1.359		54.7	50.0	109	88-114
2,3,4,6,7,8-HxCDF	AveID	1.274	1.364		53.5	50.0	107	88-114
1,2,3,4,7,8-HxCDD	AveID	0.9336	0.9639		51.6	50.0	103	78-128
1,2,3,6,7,8-HxCDD	AveID	1.080	1.128		52.2	50.0	104	78-128
1,2,3,7,8,9-HxCDD	AveID	1.057	1.118		52.9	50.0	106	82-122
1,2,3,7,8,9-HxCDF	AveID	1.288	1.365		53.0	50.0	106	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.596	1.637		51.3	50.0	103	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.092		49.0	50.0	98	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.169	1.204		51.5	50.0	103	86-116
OCDD	AveID	1.195	1.231		103	100	103	79-126
OCDF	AveID	1.481	1.689		114	100	114	63-159
13C-2,3,7,8-TCDF	Ave	1.498	1.614		108	100	108	71-140
13C-2,3,7,8-TCDD	Ave	1.037	0.9915		95.6	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.306	1.284		98.3	100	98	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.542	1.517		98.4	100	98	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8294	0.7669		92.5	100	92	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.462	1.475		101	100	101	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.287	1.335		104	100	104	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.199	1.274		106	100	106	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	1.105	1.047		94.8	100	95	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9871	0.9580		97.1	100	97	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.069	1.139		107	100	107	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9035	0.9541		106	100	106	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8875	0.9191		104	100	104	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	1.048	1.161		111	100	111	77-129
13C-OCDD	Ave	0.6297	0.7877		250	200	125	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.121	1.072		9.57	10.0	96	79-127

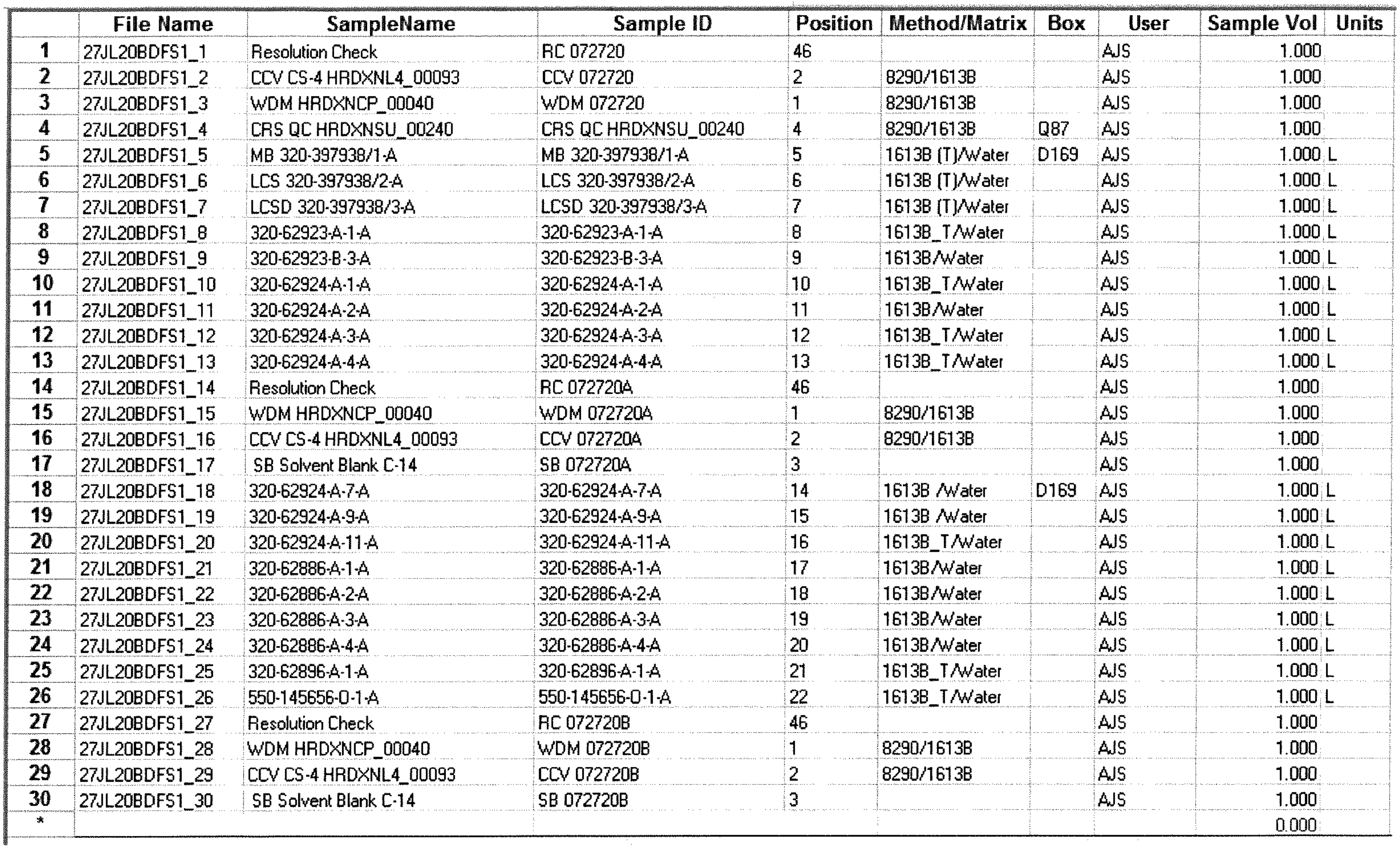

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	27JL20BDFS1_1	Resolution Check	RC 072720	46			AJS	1.000	
2	27JL20BDFS1_2	CCV CS-4 HRDXNL4_00093	CCV 072720	2	8290/1613B		AJS	1.000	
3	27JL20BDFS1_3	WDM HRDXNCP_00040	WDM 072720	1	8290/1613B		AJS	1.000	
4	27JL20BDFS1_4	CRS QC HRDXNSU_00240	CRS QC HRDXNSU_00240	4	8290/1613B	Q87	AJS	1.000	
5	27JL20BDFS1_5	MB 320-397938/1-A	MB 320-397938/1-A	5	1613B (T)/Water	D169	AJS	1.000	L
6	27JL20BDFS1_6	LCS 320-397938/2-A	LCS 320-397938/2-A	6	1613B (T)/Water		AJS	1.000	L
7	27JL20BDFS1_7	LCSD 320-397938/3-A	LCSD 320-397938/3-A	7	1613B (T)/Water		AJS	1.000	L
8	27JL20BDFS1_8	320-62923-A-1-A	320-62923-A-1-A	8	1613B_T/Water		AJS	1.000	L
9	27JL20BDFS1_9	320-62923-B-3-A	320-62923-B-3-A	9	1613B/Water		AJS	1.000	L
10	27JL20BDFS1_10	320-62924-A-1-A	320-62924-A-1-A	10	1613B_T/Water		AJS	1.000	L
11	27JL20BDFS1_11	320-62924-A-2-A	320-62924-A-2-A	11	1613B/Water		AJS	1.000	L
12	27JL20BDFS1_12	320-62924-A-3-A	320-62924-A-3-A	12	1613B_T/Water		AJS	1.000	L
13	27JL20BDFS1_13	320-62924-A-4-A	320-62924-A-4-A	13	1613B_T/Water		AJS	1.000	L
14	27JL20BDFS1_14	Resolution Check	RC 072720A	46			AJS	1.000	
15	27JL20BDFS1_15	WDM HRDXNCP_00040	WDM 072720A	1	8290/1613B		AJS	1.000	
16	27JL20BDFS1_16	CCV CS-4 HRDXNL4_00093	CCV 072720A	2	8290/1613B		AJS	1.000	
17	27JL20BDFS1_17	SB Solvent Blank C-14	SB 072720A	3			AJS	1.000	
18	27JL20BDFS1_18	320-62924-A-7-A	320-62924-A-7-A	14	1613B /Water	D169	AJS	1.000	L
19	27JL20BDFS1_19	320-62924-A-9-A	320-62924-A-9-A	15	1613B /Water		AJS	1.000	L
20	27JL20BDFS1_20	320-62924-A-11-A	320-62924-A-11-A	16	1613B_T/Water		AJS	1.000	L
21	27JL20BDFS1_21	320-62886-A-1-A	320-62886-A-1-A	17	1613B/Water		AJS	1.000	L
22	27JL20BDFS1_22	320-62886-A-2-A	320-62886-A-2-A	18	1613B/Water		AJS	1.000	L
23	27JL20BDFS1_23	320-62886-A-3-A	320-62886-A-3-A	19	1613B/Water		AJS	1.000	L
24	27JL20BDFS1_24	320-62886-A-4-A	320-62886-A-4-A	20	1613B/Water		AJS	1.000	L
25	27JL20BDFS1_25	320-62896-A-1-A	320-62896-A-1-A	21	1613B_T/Water		AJS	1.000	L
26	27JL20BDFS1_26	550-145656-O-1-A	550-145656-O-1-A	22	1613B_T/Water		AJS	1.000	L
27	27JL20BDFS1_27	Resolution Check	RC 072720B	46			AJS	1.000	
28	27JL20BDFS1_28	WDM HRDXNCP_00040	WDM 072720B	1	8290/1613B		AJS	1.000	
29	27JL20BDFS1_29	CCV CS-4 HRDXNL4_00093	CCV 072720B	2	8290/1613B		AJS	1.000	
30	27JL20BDFS1_30	SB Solvent Blank C-14	SB 072720B	3			AJS	1.000	
*								0.000	

logfile checked
7-28-20 ALM

Resolution Check Report (DFS SN: 3441)

Date:	28 Jul 2020 02:29
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11724 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12235 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11638 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11841 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12359 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12131 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12003 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12478 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12289 [5%height]

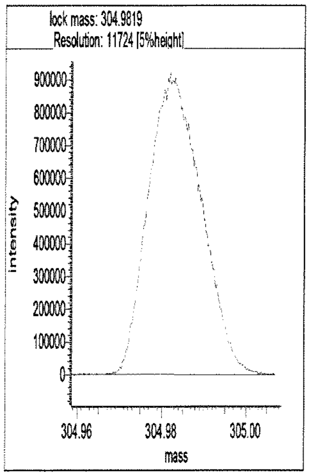

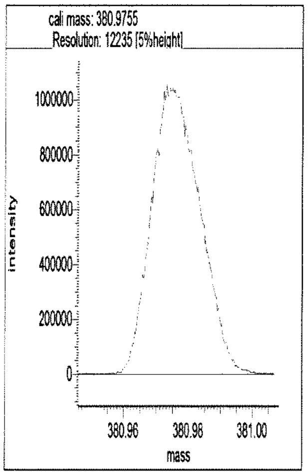

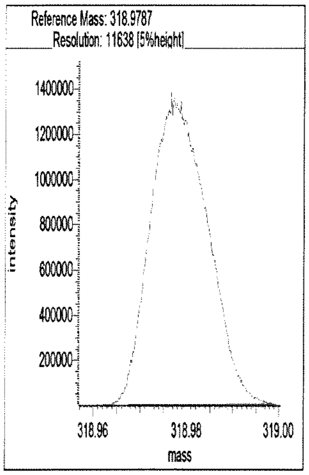

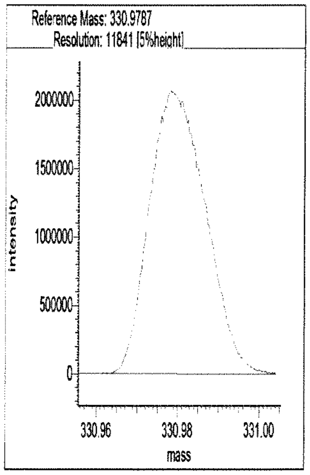

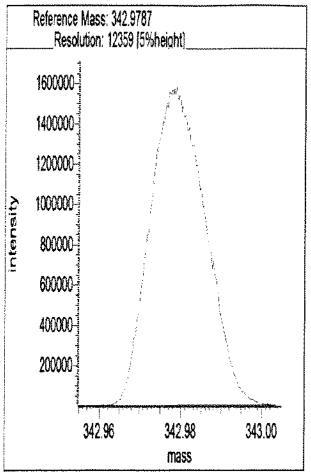

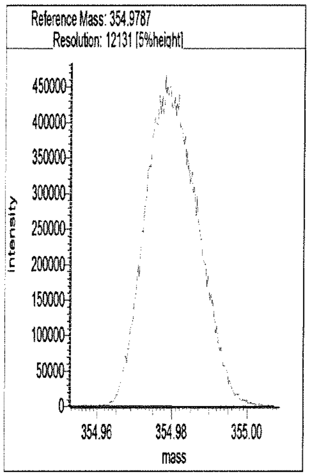

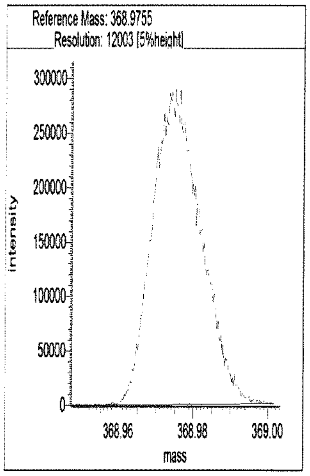

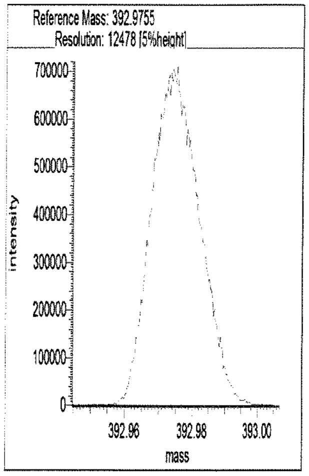

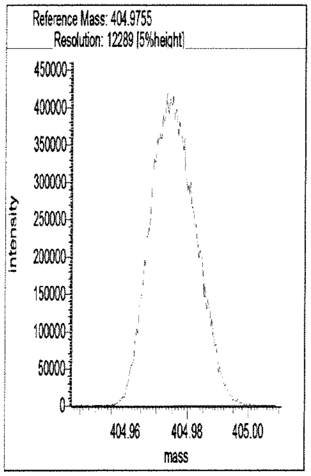

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11587 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11916 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11799 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11621 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11578 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12197 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12328 [5%height]

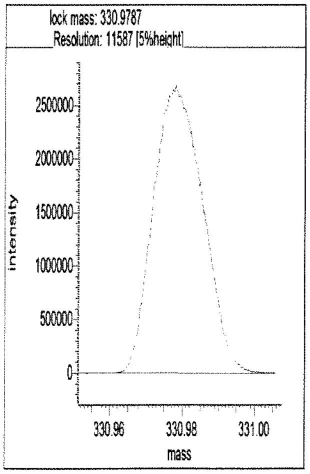

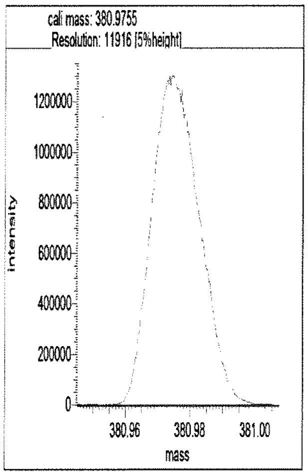

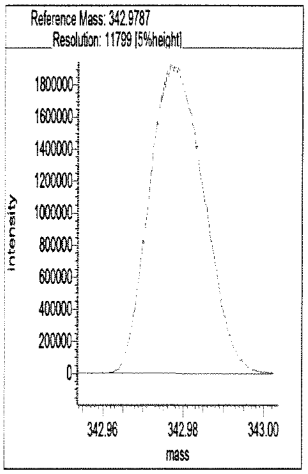

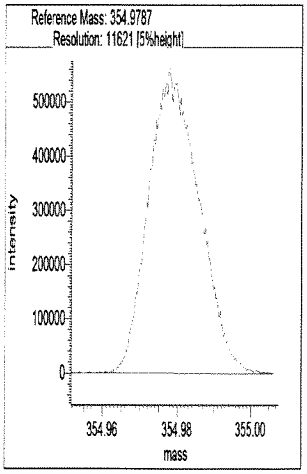

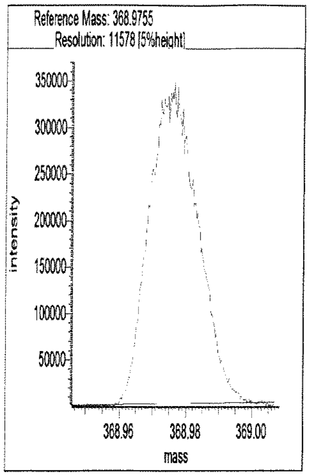

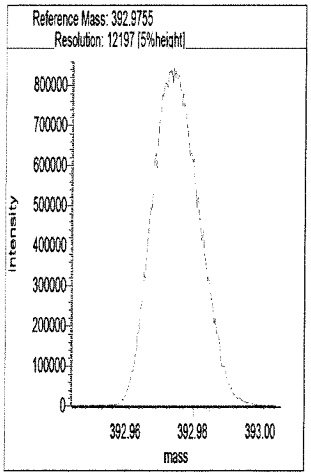

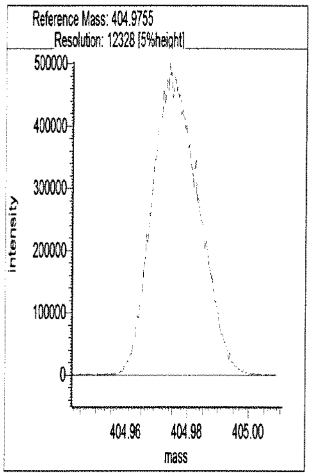

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11592 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12185 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11743 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11888 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11821 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12462 [5%height]

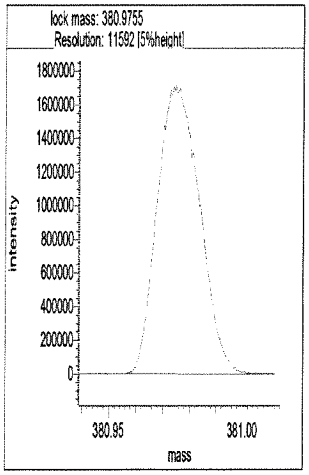

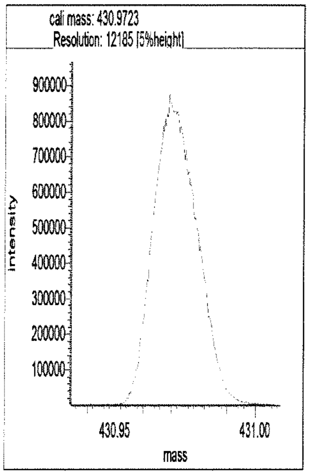

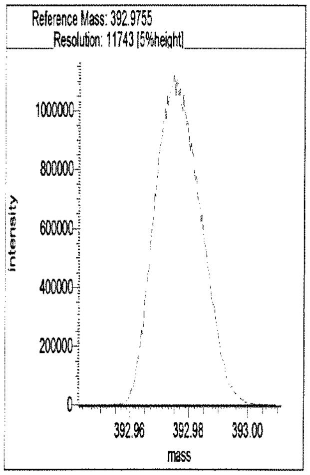

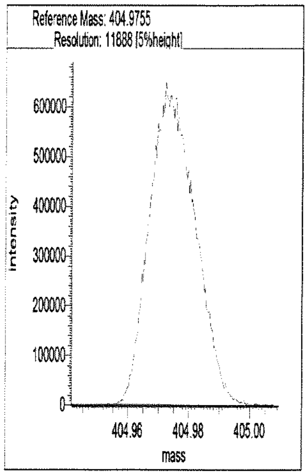

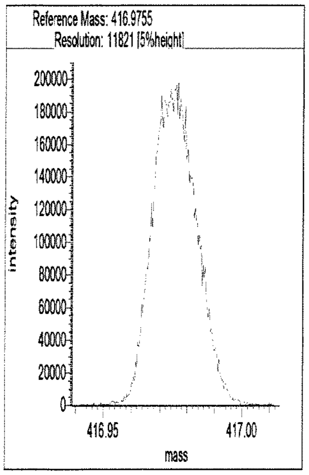

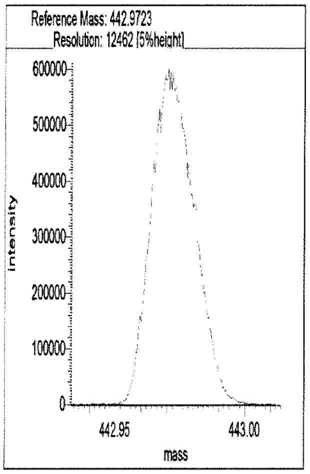

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11547 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12138 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11907 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11979 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11686 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11938 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12106 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11819 [5%height]

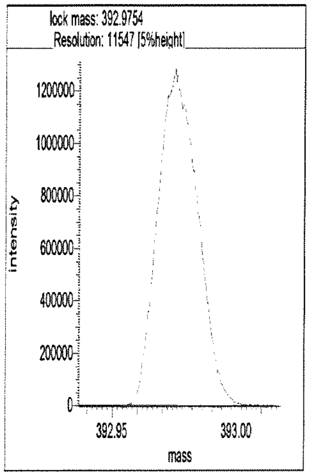

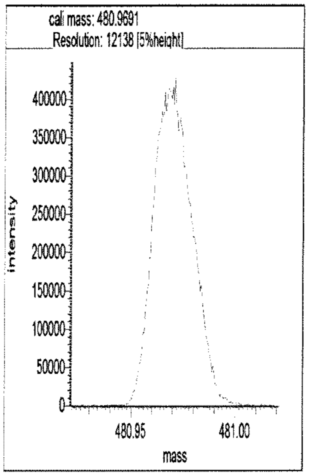

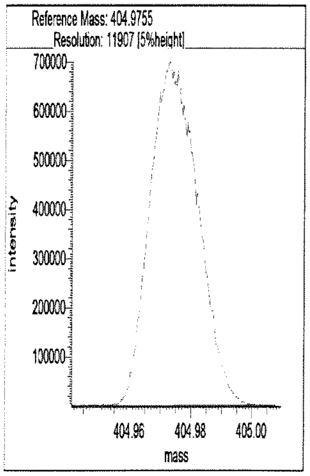

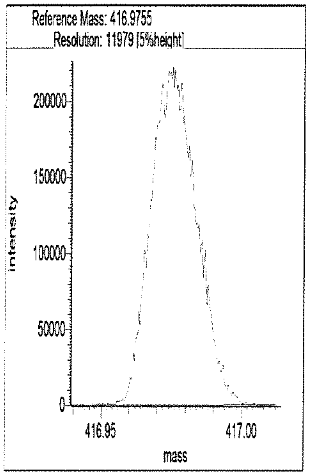

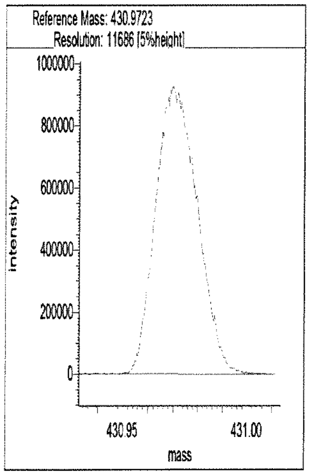

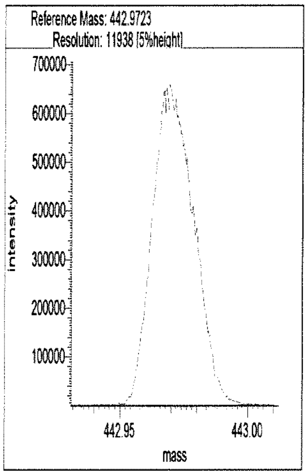

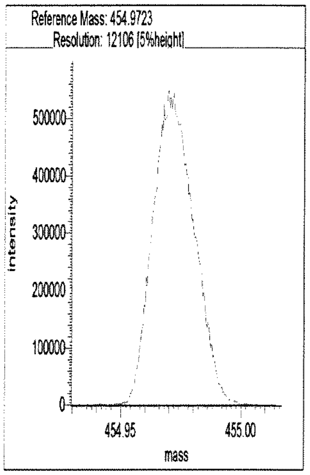

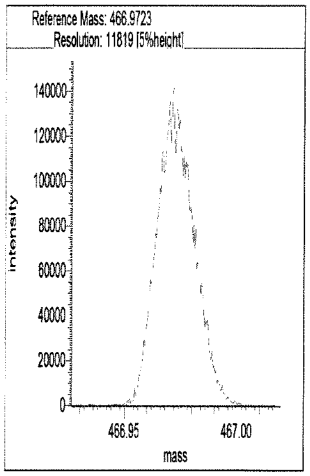

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11497 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11903 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11519 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12218 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11757 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12198 [5%height]

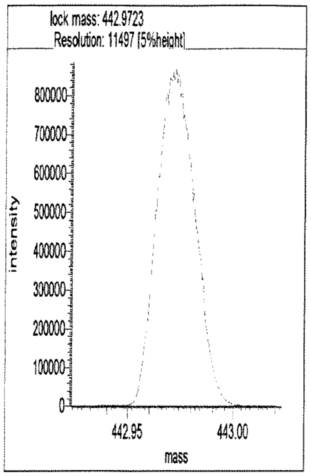

lock mass: 442.9723
Resolution: 11497 [5%height]

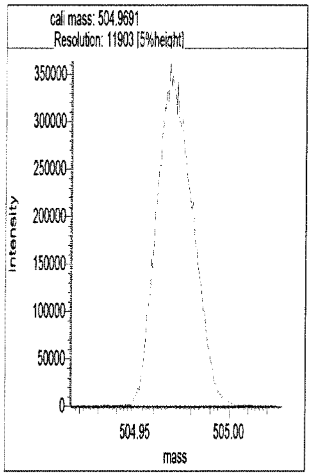

cali mass: 504.9691
Resolution: 11903 [5%height]

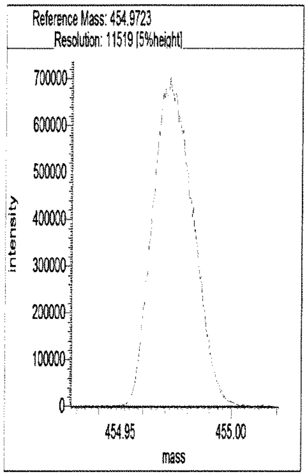

Reference Mass: 454.9723
Resolution: 11519 [5%height]

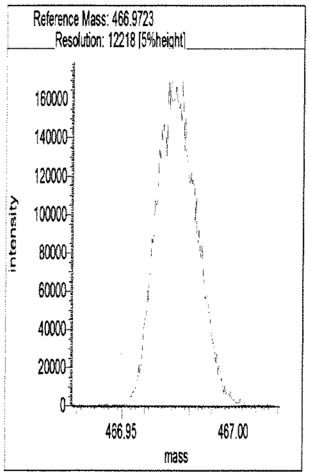

Reference Mass: 466.9723
Resolution: 12218 [5%height]

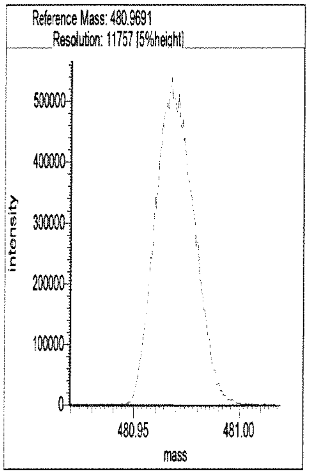

Reference Mass: 480.9691
Resolution: 11757 [5%height]

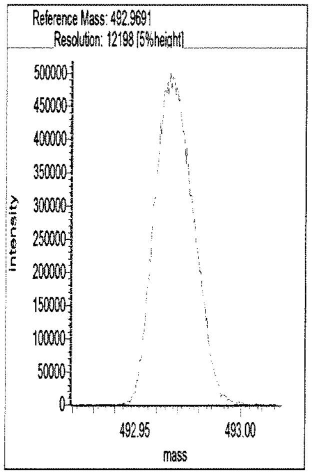

Reference Mass: 492.9691
Resolution: 12198 [5%height]

Resolution Check Report (DFS SN: 3441)

Date: 28 Jul 2020 12:25
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11588 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11932 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11437 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11514 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11762 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11830 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11776 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12111 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12061 [5%height]

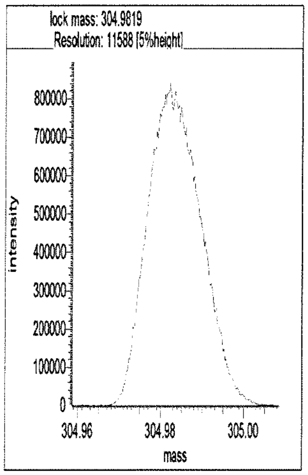

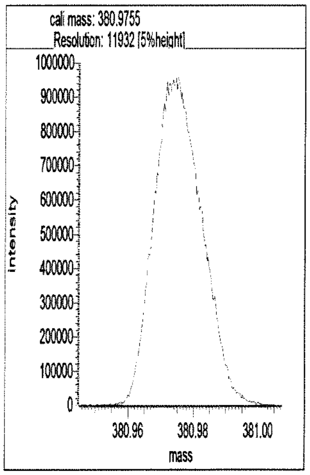

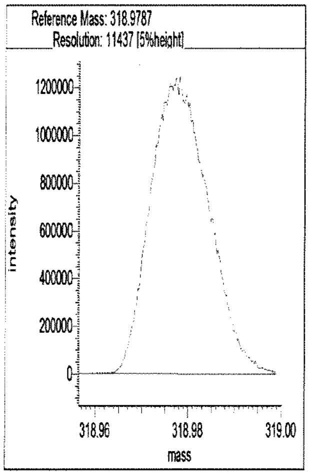

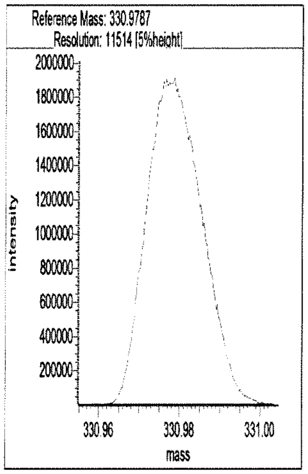

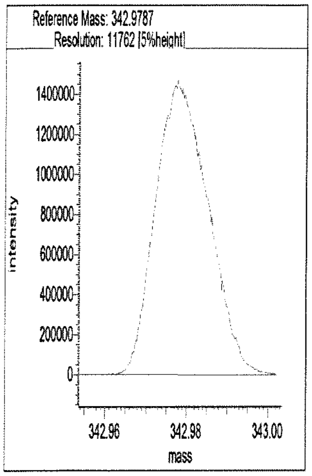

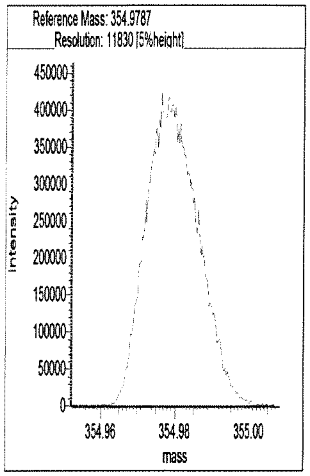

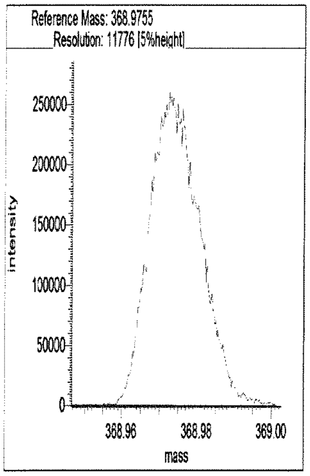

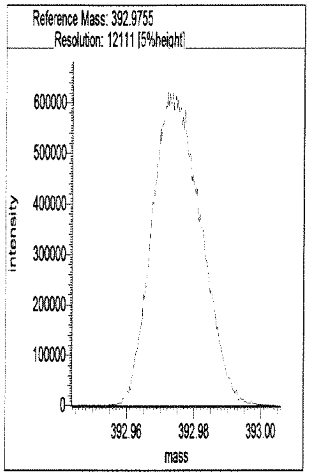

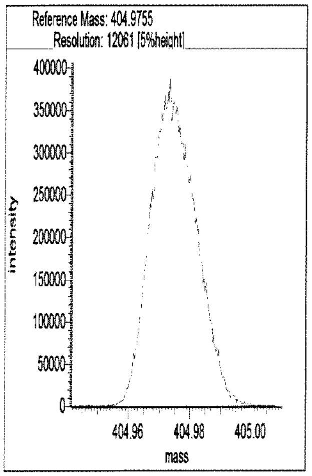

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11432 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11715 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11389 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11537 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11847 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12007 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12246 [5%height]

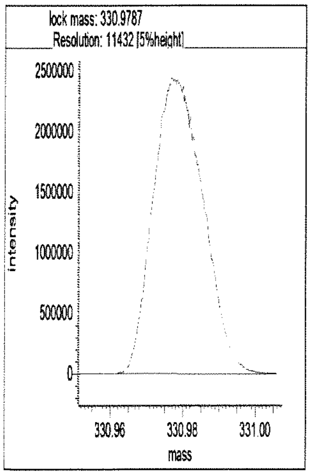

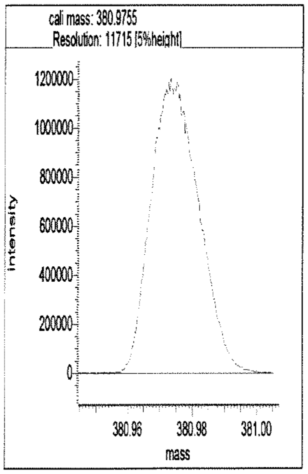

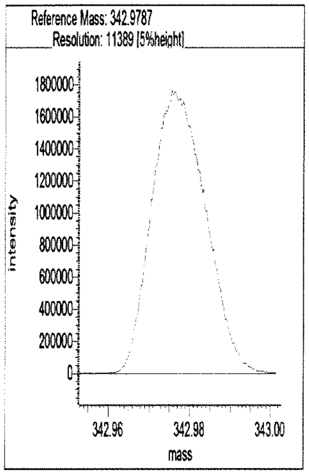

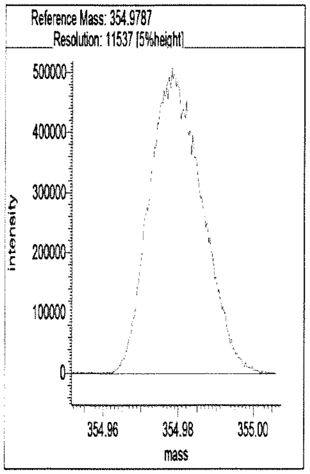

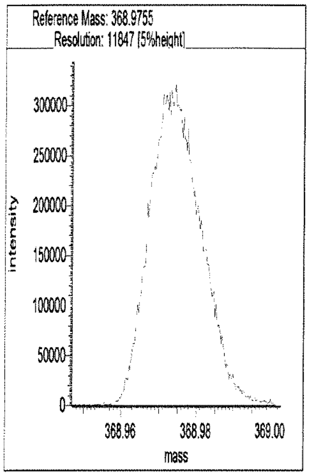

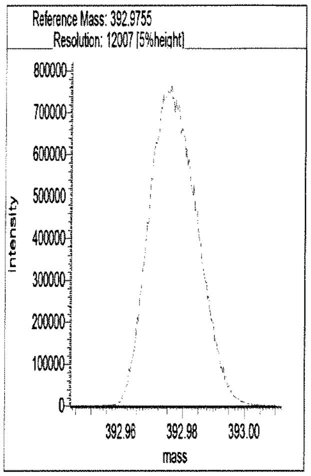

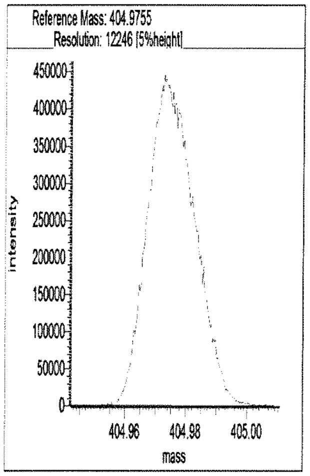

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11330 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11581 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11385 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11679 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11705 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12024 [5%height]

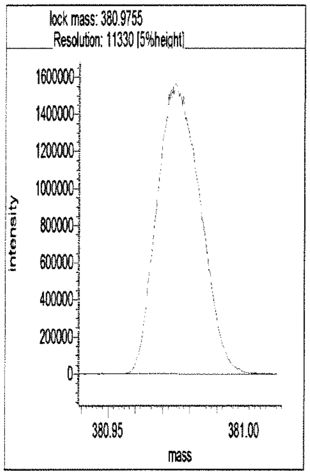

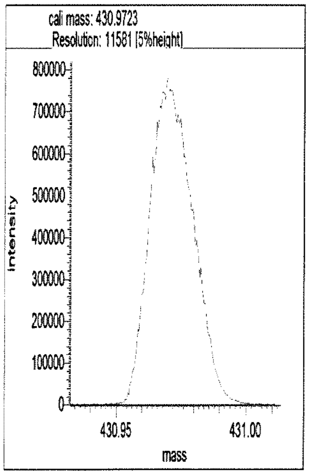

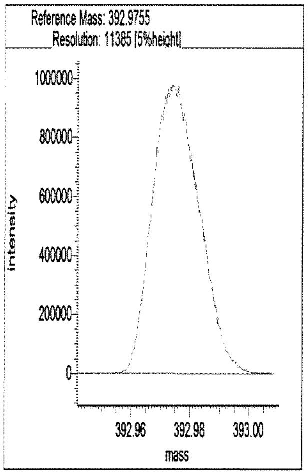

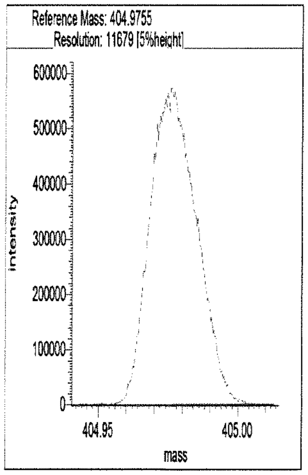

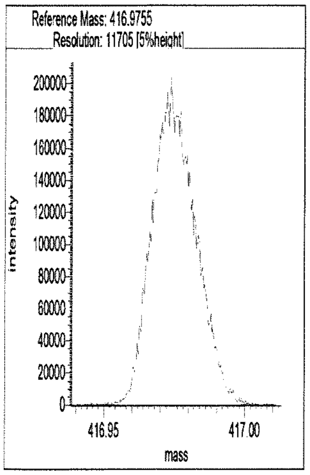

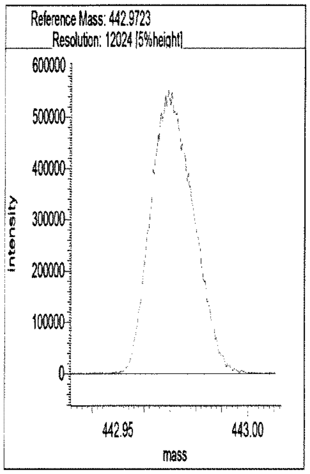

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11134 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11722 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11572 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11398 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11652 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12009 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11887 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11710 [5%height]

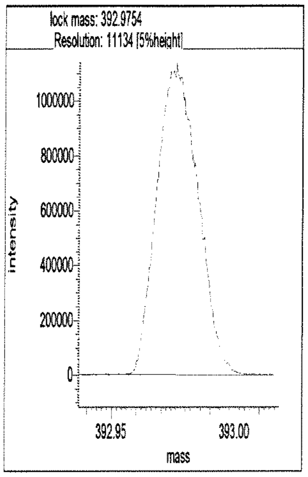

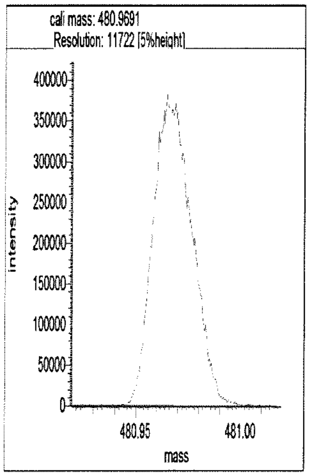

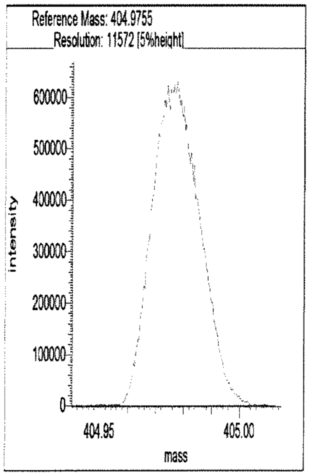

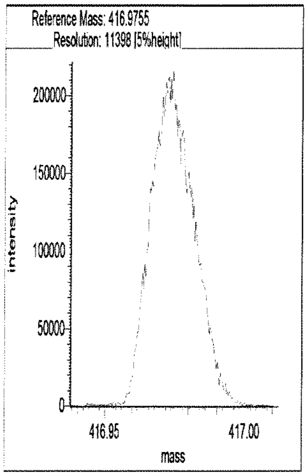

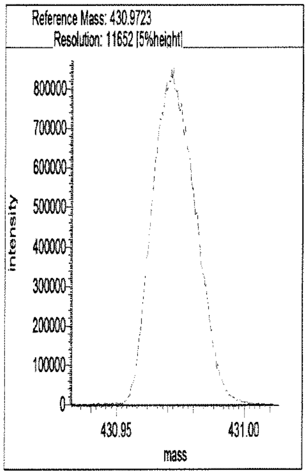

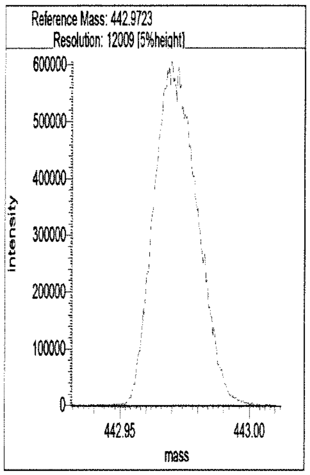

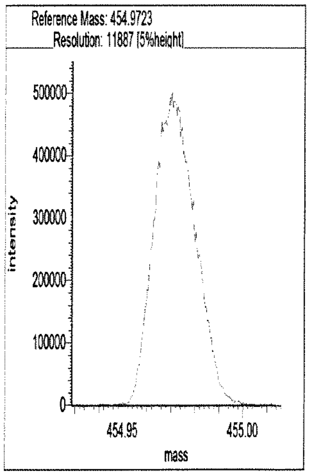

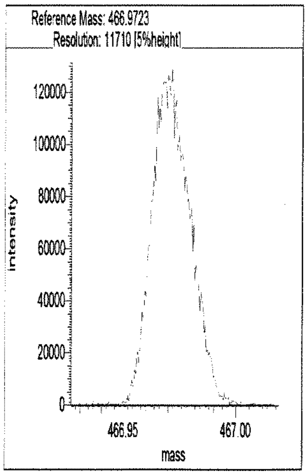

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11100 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11740 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11364 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11817 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11514 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11629 [5%height]

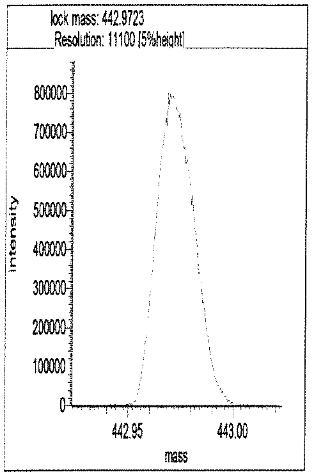
lock mass: 442.9723
Resolution: 11100 [5%height]

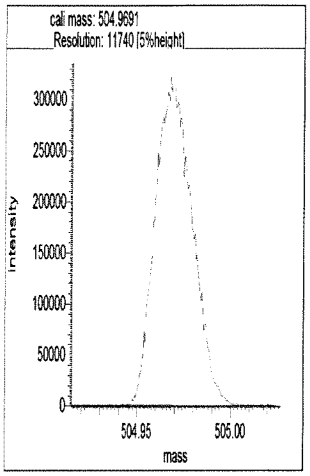
cali mass: 504.9691
Resolution: 11740 [5%height]

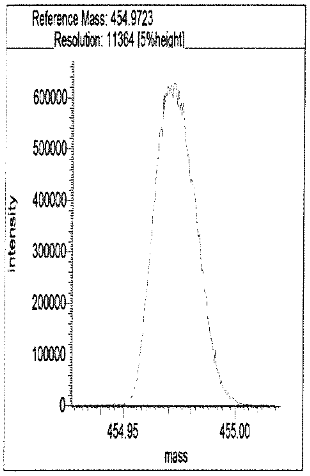
Reference Mass: 454.9723
Resolution: 11364 [5%height]

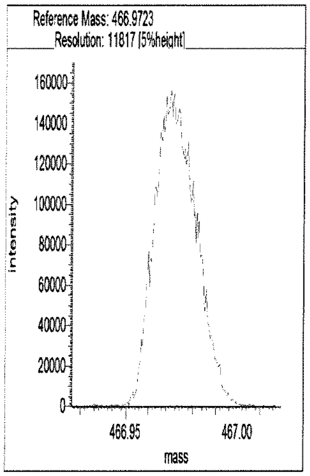
Reference Mass: 466.9723
Resolution: 11817 [5%height]

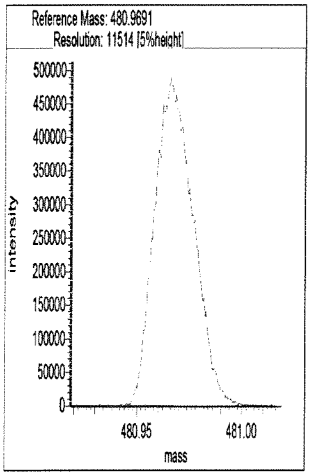
Reference Mass: 480.9691
Resolution: 11514 [5%height]

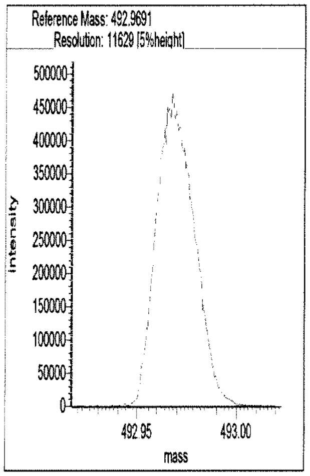
Reference Mass: 492.9691
Resolution: 11629 [5%height]

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 28-Jul-2020 03:36:00 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 10:35:14 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:25:41

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.805	1005640	0.76	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.783	1623039	0.79	1.4977	107.8	107.8	0.6067	0.6067	108	
2,3,7,8-TCDF	20.808	194462	0.78	1.1312	10.6	10.6	0.0675	0.0675	106	
A Non-2,3,7,8-sub-TCDF	20.169	3108	0.77	1.1312	0.2516	0.1693	0.0675	0.1693	0.00	RQ
S Total TCDF					10.8	10.8	0.0675	0.0675		RQ
D 13C-2,3,7,8-TCDD	22.200	997066	0.83	1.0367	95.6	95.6	0.4962	0.4962	95.63	
2,3,7,8-TCDD	22.243	123376	0.78	1.1849	10.4	10.4	0.1394	0.1394	104	
$ 37Cl4-2,3,7,8-TCDD	22.243	107813		1.1208	9.566	9.566	0.0209	0.0209	95.66	
A Non-2,3,7,8-sub-TCDD	21.044						0.1394	0.1394		
S Total TCDD					10.4	10.4	0.1394	0.1394		
D 13C-1,2,3,7,8-PeCDF	27.708	1290741	1.56	1.3057	98.3	98.3	0.4948	0.4948	98.30	
1,2,3,7,8-PeCDF	27.734	772209	1.64	1.1060	54.1	54.1	0.1791	0.1791	108	
D 13C-2,3,4,7,8-PeCDF	29.284	1525644	1.65	1.5420	98.4	98.4	0.4189	0.4189	98.38	
2,3,4,7,8-PeCDF	29.326	733954	1.59	0.9067	53.1	53.1	0.1950	0.1950	106	
A F1 PeCDFs	24.932						0.0182	0.0182		
A Non-2,3,7,8-sub-PeCDF	28.540						0.1857	0.1857		n
S Total PeCDF					107.2	107.2	0.1870	0.1870		
D 13C-1,2,3,7,8-PeCDD	30.143	771261	1.58	0.8294	92.5	92.5	0.3238	0.3238	92.47	
1,2,3,7,8-PeCDD	30.160	438336	1.57	1.1062	51.4	51.4	0.1109	0.1109	103	
A Non-2,3,7,8-sub-PeCDD	28.887						0.1109	0.1109		
S Total PeCDD					51.4	51.4	0.1109	0.1109		
D 13C-1,2,3,4,7,8-HxCDF	35.259	1555907	0.55	1.4619	100.9	100.9	0.4530	0.4530	101	
1,2,3,4,7,8-HxCDF	35.276	861297	1.26	1.0087	54.9	54.9	0.3267	0.3267	110	
D 13C-1,2,3,6,7,8-HxCDF	35.419	1408971	0.55	1.2866	103.8	103.8	0.5147	0.5147	104	
1,2,3,6,7,8-HxCDF	35.436	957325	1.28	1.2432	54.7	54.7	0.3225	0.3225	109	
D 13C-2,3,4,6,7,8-HxCDF	36.203	1344141	0.54	1.1988	106.3	106.3	0.5525	0.5525	106	
2,3,4,6,7,8-HxCDF	36.219	916561	1.27	1.2736	53.5	53.5	0.2827	0.2827	107	
D 13C-1,2,3,7,8,9-HxCDF	37.061	1201711	0.50	1.0687	106.6	106.6	0.6197	0.6197	107	
1,2,3,7,8,9-HxCDF	37.078	820265	1.27	1.2882	53.0	53.0	0.2971	0.2971	106	
A Non-2,3,7,8-sub-HxCDF	35.385						0.3044	0.3044		
S Total HxCDF					216.1	216.1	0.3072	0.3072		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.868	1055188	1.29	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.405	1104939	1.31	1.1046	94.8	94.8	0.2528	0.2528	94.80	
1,2,3,4,7,8-HxCDD	36.413	532538	1.24	0.9336	51.6	51.6	0.1746	0.1746	103	
D 13C-1,2,3,6,7,8-HxCDD	36.514	1010849	1.19	0.9871	97.1	97.1	0.2829	0.2829	97.05	
1,2,3,6,7,8-HxCDD	36.531	570053	1.24	1.0802	52.2	52.2	0.1841	0.1841	104	
1,2,3,7,8,9-HxCDD	36.885	591401	1.29	1.0574	52.9	52.9	0.1694	0.1694	106	
A Non-2,3,7,8-sub-HxCDD	35.717						0.1750	0.1750		
S Total HxCDD					156.7	156.7	0.1760	0.1760		
D 13C-1,2,3,4,6,7,8-HpCDF	38.807	1006774	0.45	0.9035	105.6	105.6	1.031	1.031	106	
1,2,3,4,6,7,8-HpCDF	38.816	823933	1.06	1.5957	51.3	51.3	0.3466	0.3466	103	
D 13C-1,2,3,4,7,8,9-HpCDF	40.028	1225309	0.46	1.0480	110.8	110.8	0.8888	0.8888	111	
1,2,3,4,7,8,9-HpCDF	40.037	737928	1.04	1.1693	51.5	51.5	0.3810	0.3810	103	
A Non-2,3,7,8-sub-HpCDF	39.413						0.3570	0.3570		
S Total HpCDF					102.8	102.8	0.3638	0.3638		
D 13C-1,2,3,4,6,7,8-HpCDD	39.725	969769	1.10	0.8875	103.6	103.6	0.5203	0.5203	104	
1,2,3,4,6,7,8-HpCDD	39.733	529728	1.06	1.1150	49.0	49.0	0.1912	0.1912	97.98	
A Non-2,3,7,8-sub-HpCDD	39.555						0.1912	0.1912		
S Total HpCDD					49.0	49.0	0.1912	0.1912		
D 13C-OCDD	42.215	1662342	0.91	0.6297	250.2	250.2	0.6765	0.6765	125	
OCDF	42.316	1403786	0.91	1.4809	114.0	114.0	0.2597	0.2597	114	
OCDD	42.223	1023259	0.91	1.1948	103.0	103.0	0.1856	0.1856	103	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00093 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 28-Jul-2020 03:36:00 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 10:35:14 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:25:41

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.805	21.805	0		434839	66420	227	567	293		
333.9338	21.796	21.805	-1		570801	83264	81	202	1028	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.783	20.783	0	0.953	716488	105002	399	997	263		
317.9389	20.783	20.783	0	0.953	906551	126654	145	362	873	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.808	20.808	0	1.001	85110	12025	20	50	601		
305.8987	20.817	20.808	1	1.002	109352	16589	51	127	325	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	20.989	20.169	49	1.010	2864	530	20	50	27		
	Empc Correction				1352	234	20	50	12		
305.8987	21.109	20.169	56	1.016	1756	304	51	127	6	1.63(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.200	22.200	0	1.018	451127	62793	227	567	277		
333.9338	22.200	22.200	0	1.018	545939	73381	81	202	906	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.243	22.243	0	1.002	54047	6954	76	190	92		
321.8936	22.234	22.243	-1	1.002	69329	9034	14	35	645	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.243	22.243	0	1.020	107813	14962	14	35	1069		
A Non-2,3,7,8-sub-TCDD											
319.8965	21.044						76	190			
321.8936	21.044						14	35			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.708	27.708	0	1.271	786306	128285	213	532	602		
353.8970	27.717	27.708	1	1.271	504435	77176	174	435	444	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.734	27.734	0	1.001	479595	75414	71	177	1062		
341.8567	27.734	27.734	0	1.001	292614	46732	92	230	508	1.64(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.284	29.284	0	1.343	949477	141620	213	532	665		
353.8970	29.292	29.284	1	1.343	576167	88611	174	435	509	1.65(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.326	29.326	0	1.001	450822	66177	71	177	932		
341.8567	29.318	29.326	-1	1.001	283132	41377	92	230	450	1.59(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.932						1	2			
341.8567	24.932						15	37			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.366	28.540	-10	1.024	6344	689	71	177	10		
341.8567	28.383	28.540	-9	1.024	3618	549	92	230	6	1.75(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.143	30.143	0	1.382	472864	65972	94	235	702		
369.8919	30.126	30.143	-1	1.382	298397	41616	67	167	621	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.160	30.160	0	1.001	267920	38551	44	110	876		
357.8516	30.169	30.160	1	1.001	170416	25061	9	22	2785	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.887						44	110			
357.8516	28.887						9	22			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.259	35.259	0	0.956	550992	132109	291	727	454		
385.8610	35.267	35.259	1	0.957	1004915	241129	449	1122	537	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.276	35.276	0	1.000	479857	111320	272	680	409		
375.8178	35.276	35.276	0	1.000	381440	88928	220	550	404	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.419	35.419	0	0.961	501688	111872	291	727	384		
385.8610	35.419	35.419	0	0.961	907283	194912	449	1122	434	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.436	35.436	0	1.000	537898	121596	272	680	447		
375.8178	35.436	35.436	0	1.000	419427	94919	220	550	431	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.203	36.203	0	0.982	469061	117585	291	727	404		
385.8610	36.203	36.203	0	0.982	875080	224076	449	1122	499	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.219	36.219	0	1.000	512043	132464	272	680	487		
375.8178	36.219	36.219	0	1.000	404518	106903	220	550	486	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.061	37.061	0	1.005	403109	107580	291	727	370		
385.8610	37.061	37.061	0	1.005	798602	213803	449	1122	476	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.078	37.078	0	1.000	458450	123271	272	680	453		
375.8178	37.070	37.078	-1	1.000	361815	96985	220	550	441	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.385						272	680			
375.8178	35.385						220	550			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.868	36.868	0		593705	153537	164	410	936		
403.8529	36.868	36.868	0		461483	125807	148	370	850	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.405	36.405	0	0.987	627617	181185	164	410	1105		
403.8529	36.396	36.405	-1	0.987	477322	132952	148	370	898	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.413	36.413	0	1.000	294408	82455	114	285	723		
391.8127	36.413	36.413	0	1.000	238130	68259	91	227	750	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.514	36.514	0	0.990	550127	141558	164	410	863		
403.8529	36.514	36.514	0	0.990	460722	115868	148	370	783	1.19(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.531	36.531	0	1.000	315917	82462	114	285	723		
391.8127	36.531	36.531	0	1.000	254136	65796	91	227	723	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.885	36.885	0	1.013	332974	89612	114	285	786		
391.8127	36.876	36.885	-1	1.013	258427	68768	91	227	756	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.717						114	285			
391.8127	35.717						91	227			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.807	38.807	0	1.053	311462	103188	347	867	297		
419.8220	38.807	38.807	0	1.053	695312	233453	694	1735	336	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.816	38.816	0	1.000	424602	139455	388	970	359		
409.7788	38.816	38.816	0	1.000	399331	129807	357	892	364	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.028	40.028	0	1.086	385919	127795	347	867	368		
419.8220	40.028	40.028	0	1.086	839390	290183	694	1735	418	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.037	40.037	0	1.000	376775	126530	388	970	326		
409.7788	40.037	40.037	0	1.000	361153	123059	357	892	345	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.413						388	970			
409.7788	39.413						357	892			

Report Date: 29-Jul-2020 10:35:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.725	39.725	0	1.077	508788	170229	279	697	610		
437.8140	39.725	39.725	0	1.077	460981	153499	237	592	648	1.10(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.733	39.733	0	1.000	273141	91112	156	390	584		
425.7737	39.733	39.733	0	1.000	256587	85587	120	300	713	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						156	390			
425.7737	39.555						120	300			
13C-OCDD											
469.7780	42.215	42.215	0	1.145	792083	236892	245	612	967		
471.7750	42.215	42.215	0	1.145	870259	270036	231	577	1169	0.91(0.76-1.02)	
OCDF											
441.7428	42.316	42.316	0	1.002	669831	208928	169	422	1236		
443.7399	42.316	42.316	0	1.002	733955	221755	221	552	1003	0.91(0.76-1.02)	
OCDD											
457.7377	42.223	42.223	0	1.000	488047	144701	103	257	1405		
459.7348	42.223	42.223	0	1.000	535212	159560	122	305	1308	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00093 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d
Lims ID: CCV
Client ID:
Inject. Date: 28-Jul-2020 03:36:00
Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398798
Lims Sample ID: 14
Sublist: chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDF, RT: 20.169

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	1623039	231656

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	1623039	231656

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
20.989	2864	530	1756	304	0.2516	1.63	RnQ
20.989	1352	234	1756	304	0.1693		Empc Correction
Signal Totals:							
	1352	234	1756	304			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4620	834				1.63	RQ
	3108	538					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2516 = (4620 * 100.000) / (1623039 * 1.131)
Empc Amount: 0.1693 = (3108 * 100.000) / (1623039 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 29-Jul-2020 10:35:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d		
Injection Date:	28-Jul-2020 03:36:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

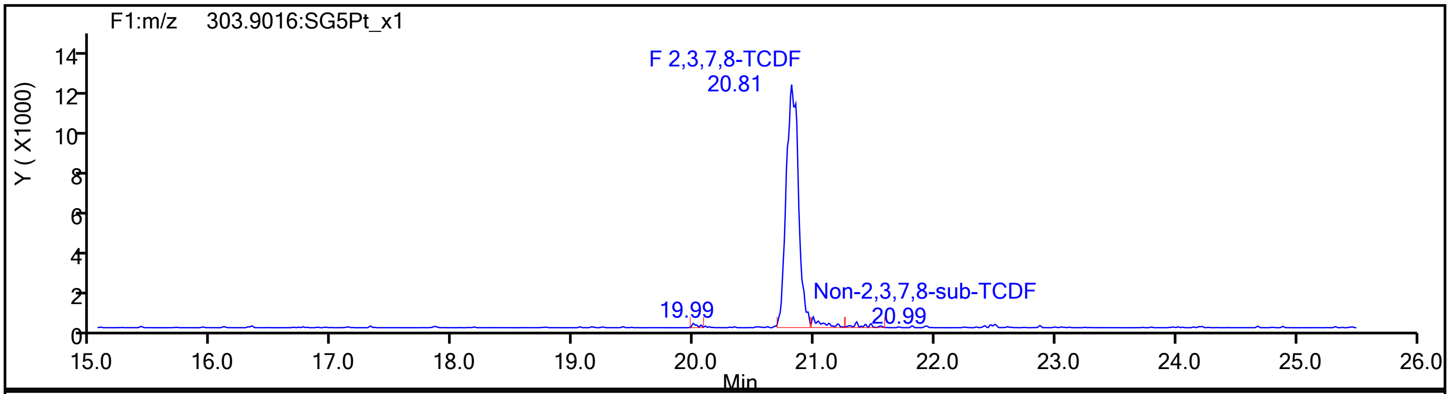

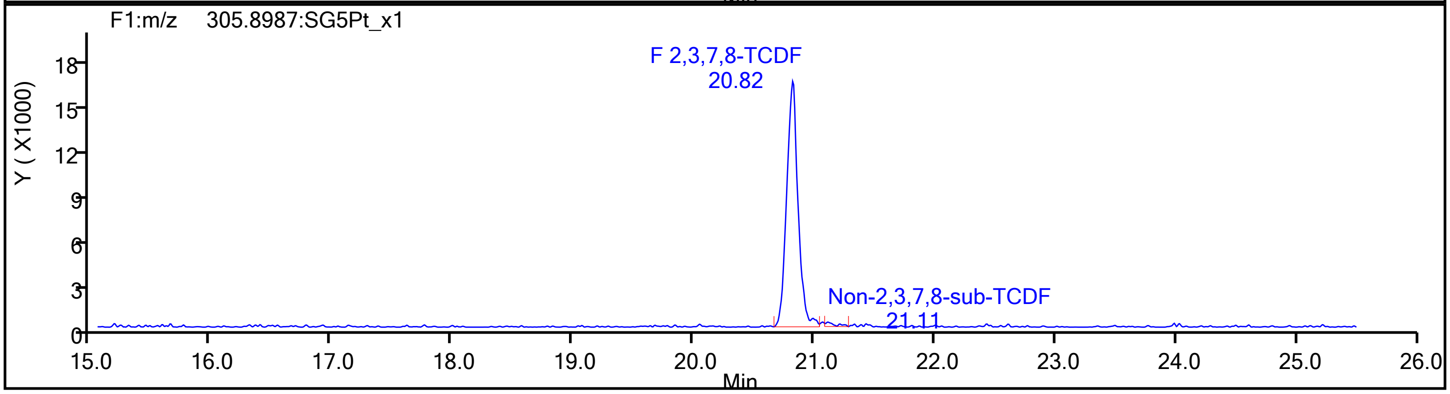

TCDF Standards

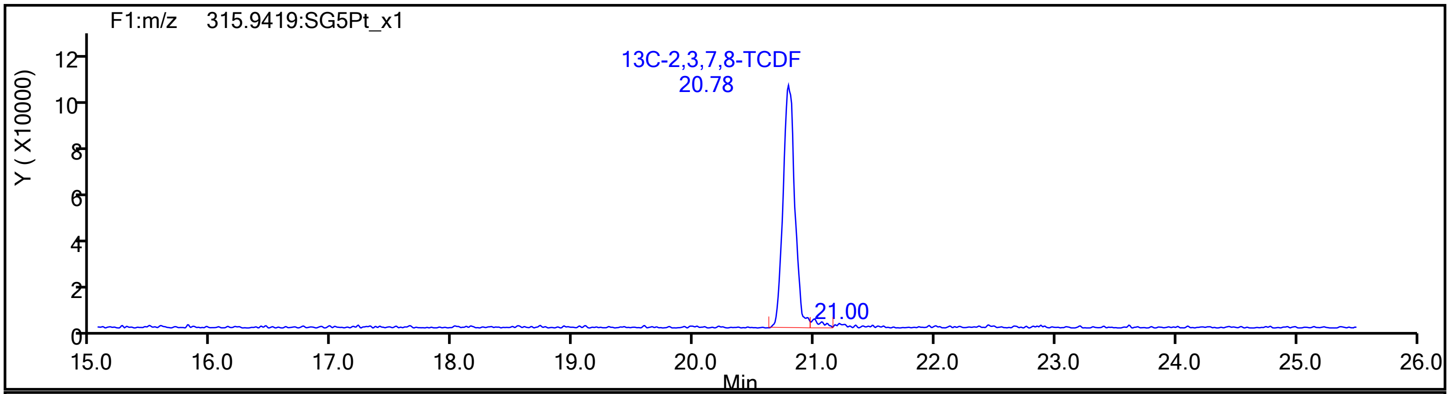

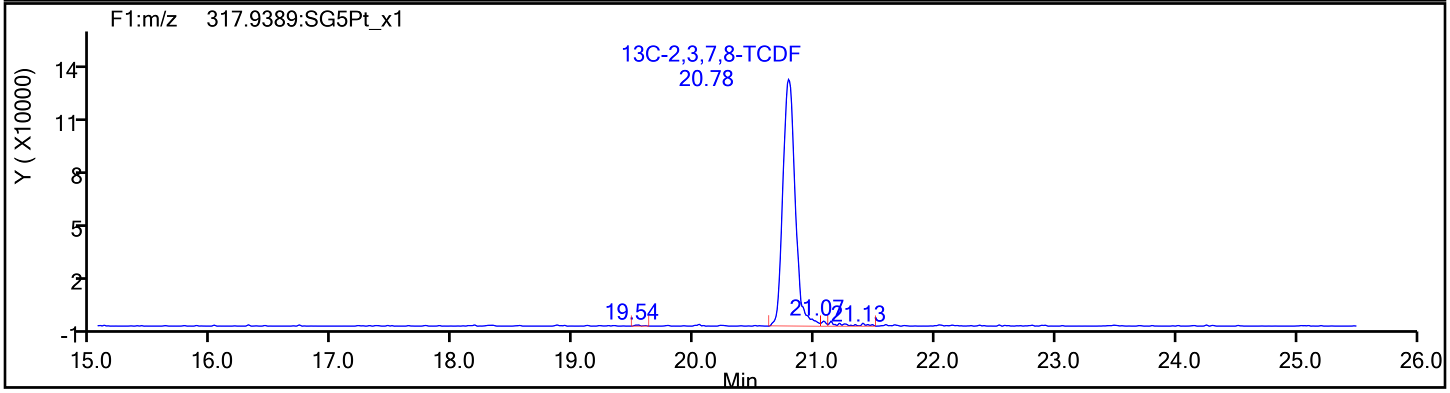

Report Date: 29-Jul-2020 10:35:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

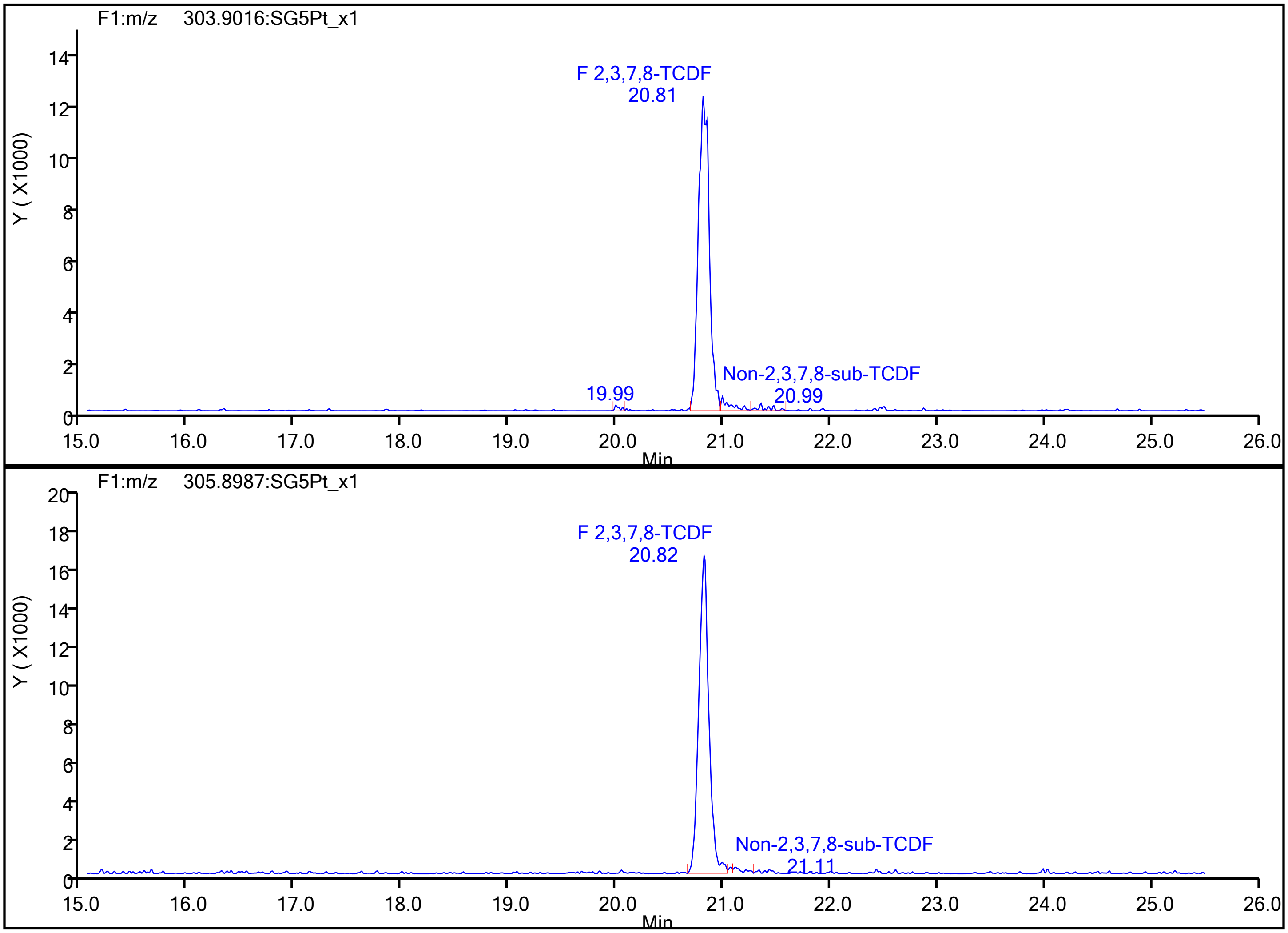

TCDF Interference Mass

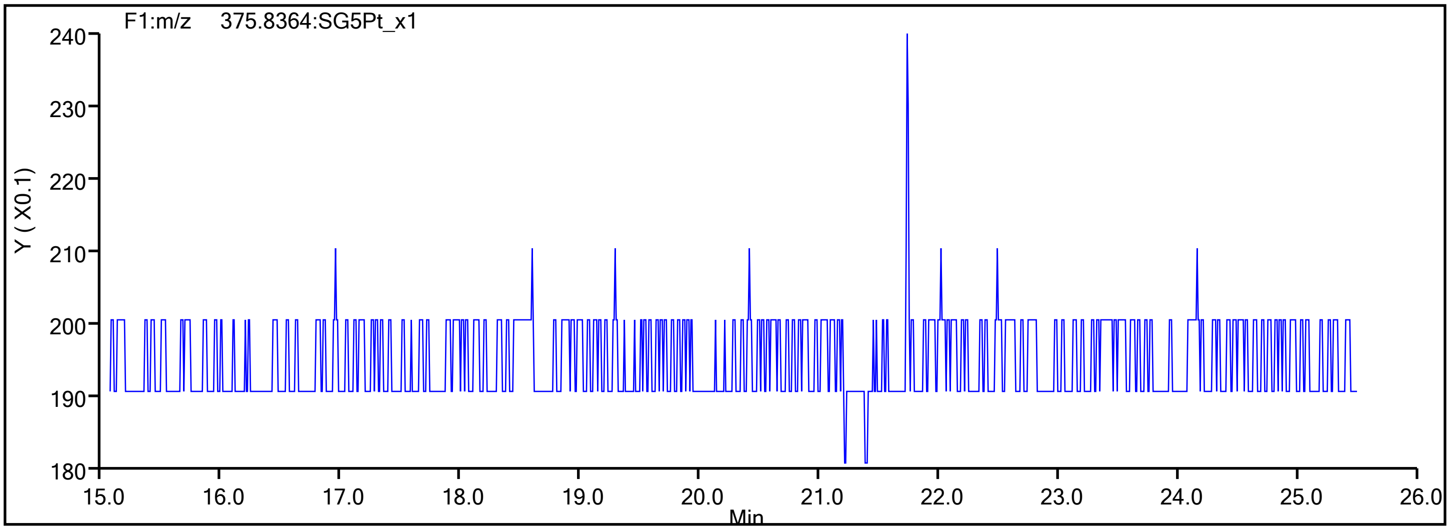

Report Date: 29-Jul-2020 10:35:14 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d
Injection Date: 28-Jul-2020 03:36:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

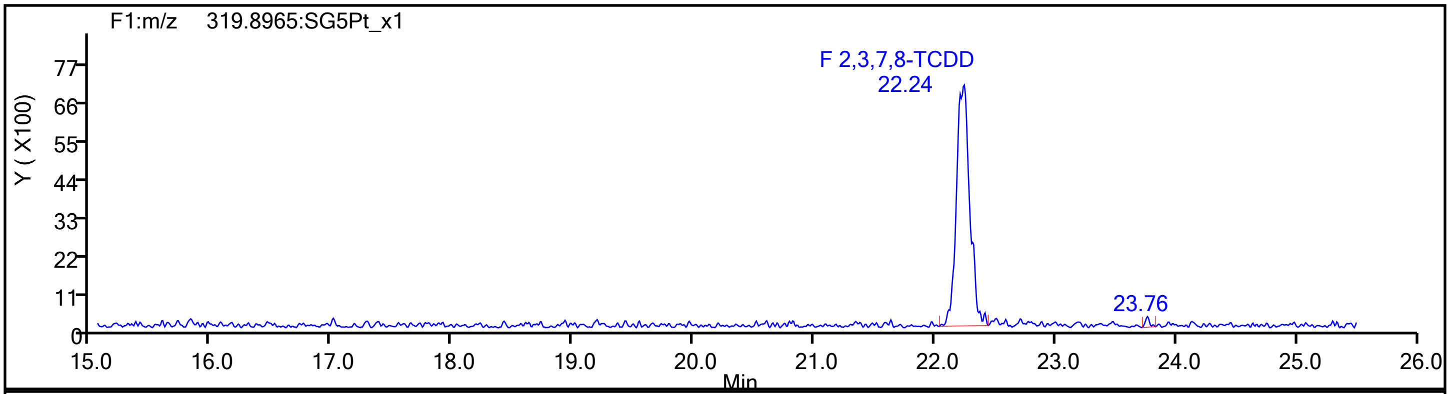

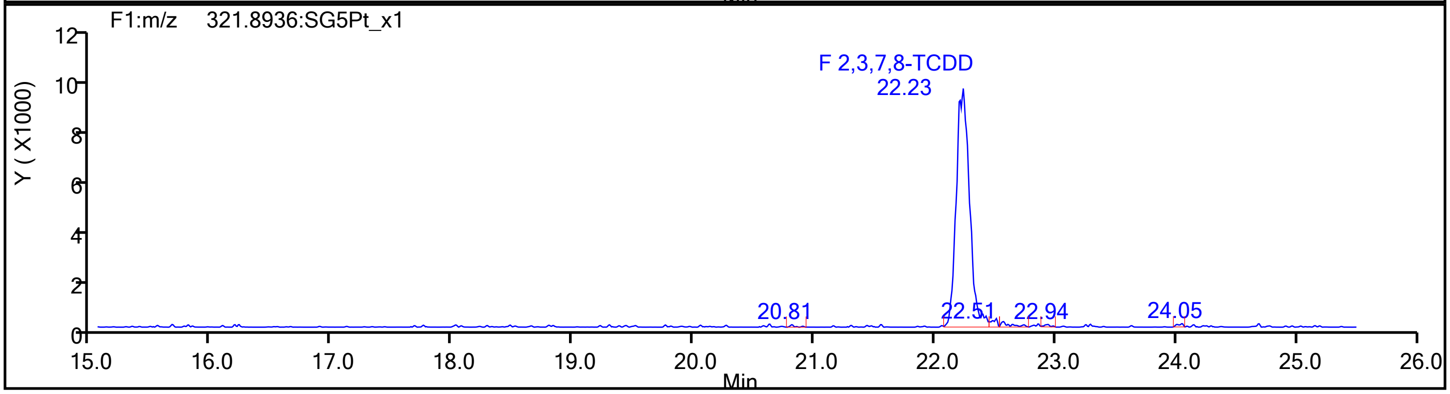

TCDD Standards

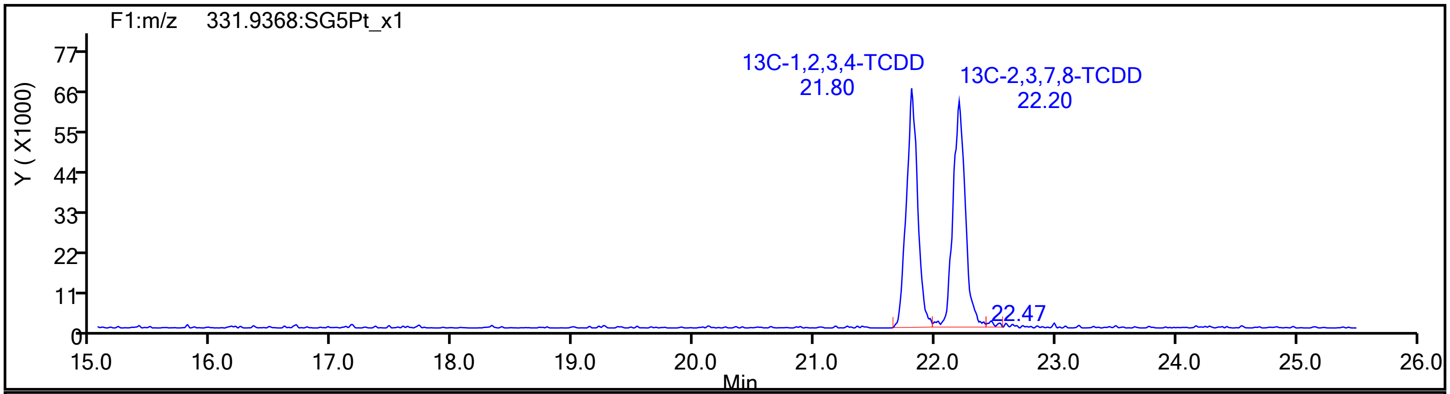

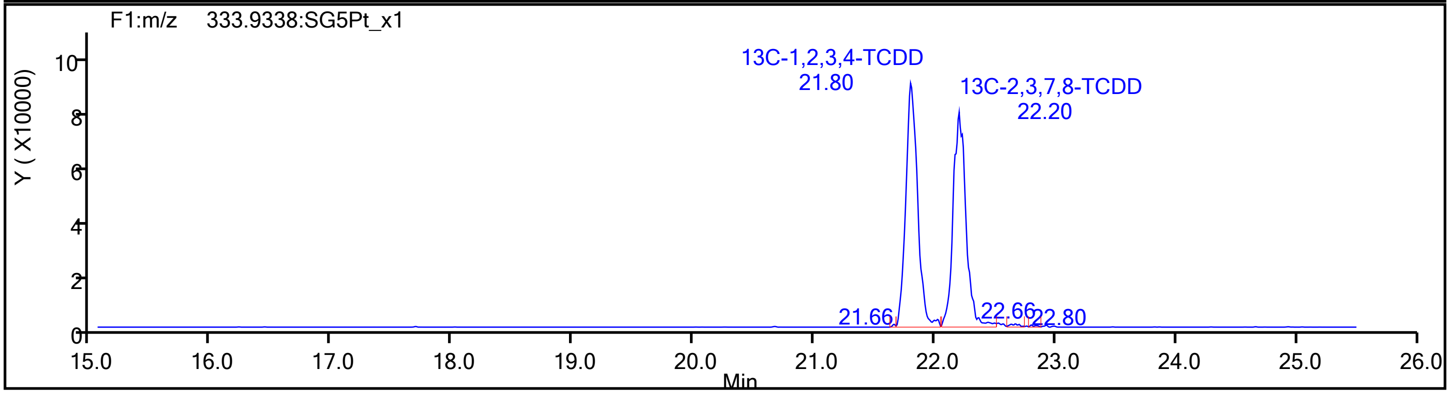

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date:	28-Jul-2020 03:36:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

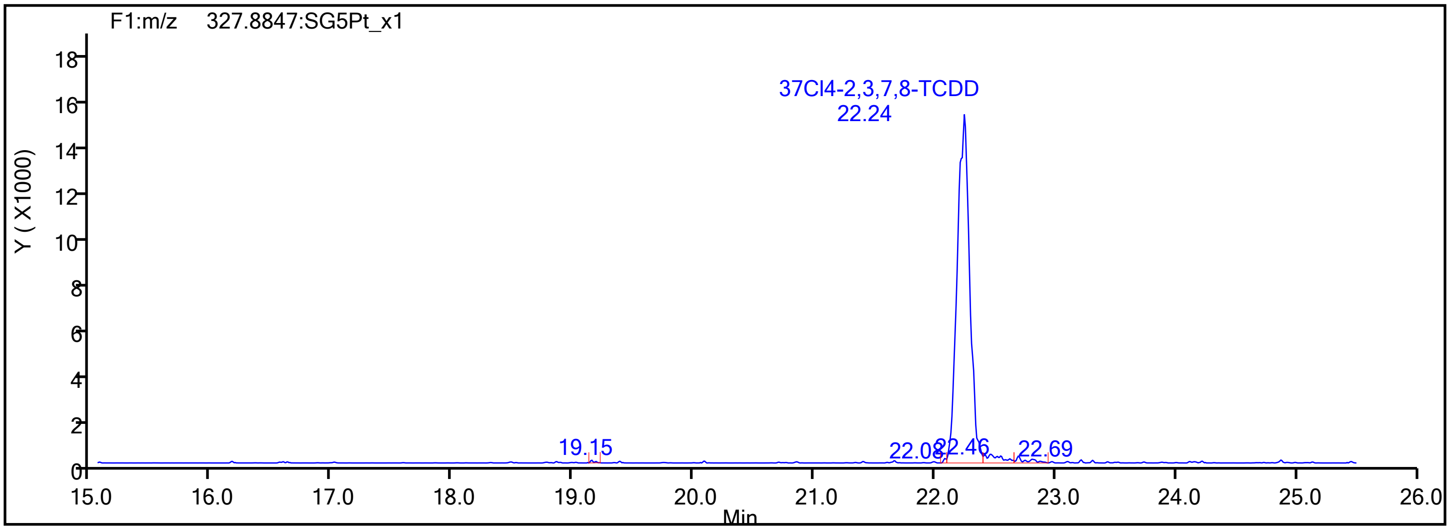

37Cl4-TCDD Standards

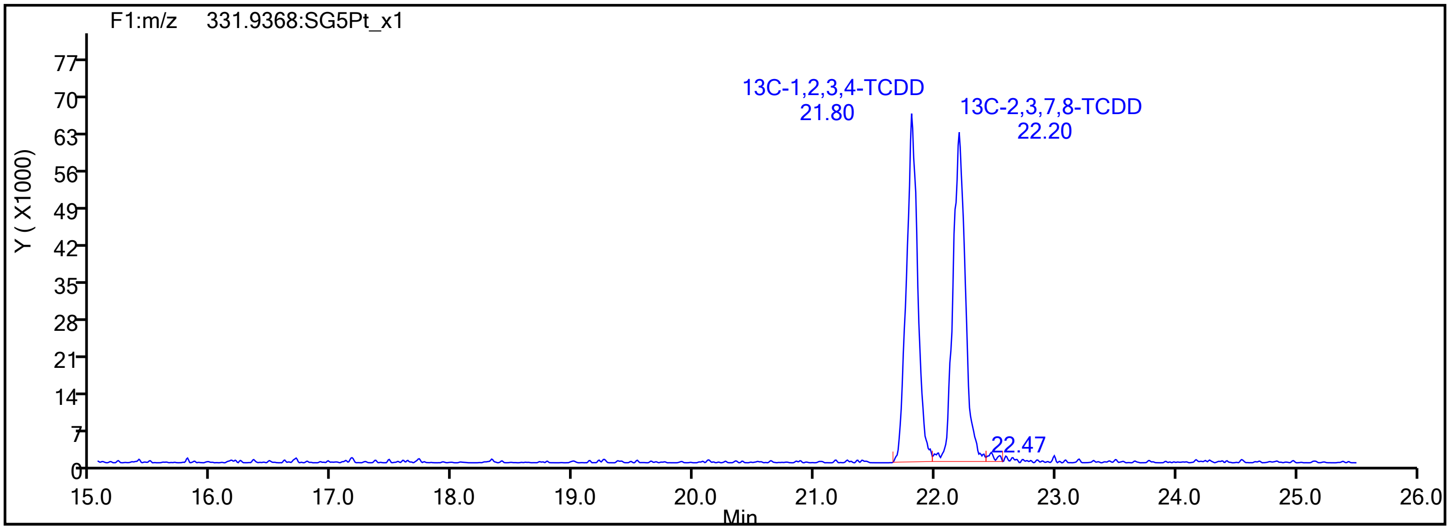

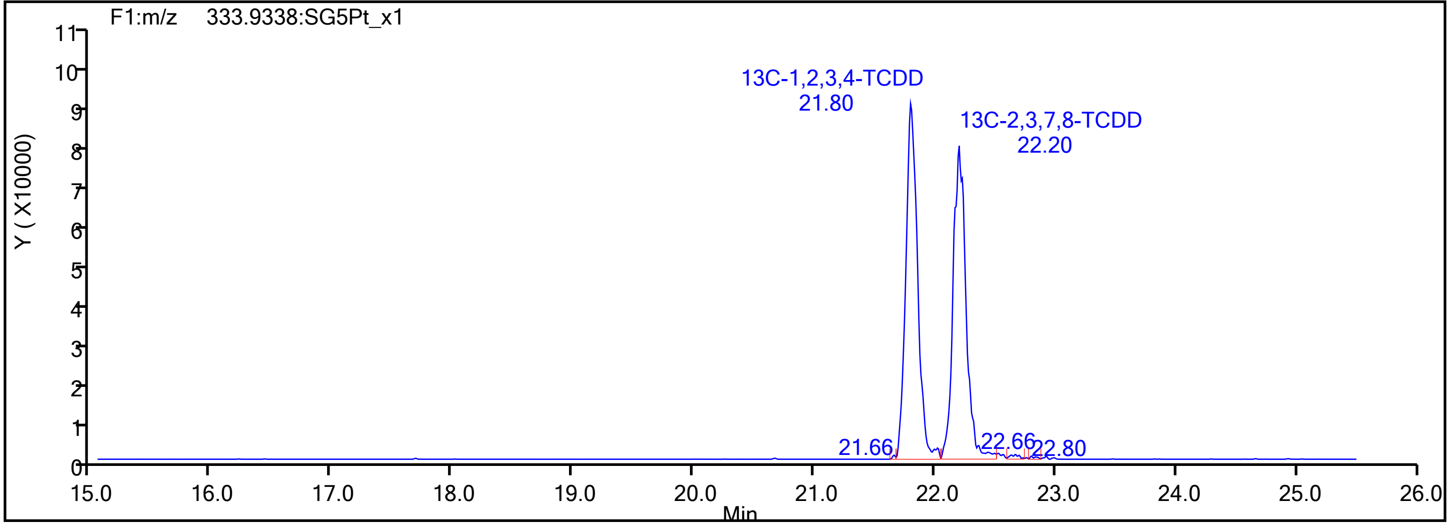

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

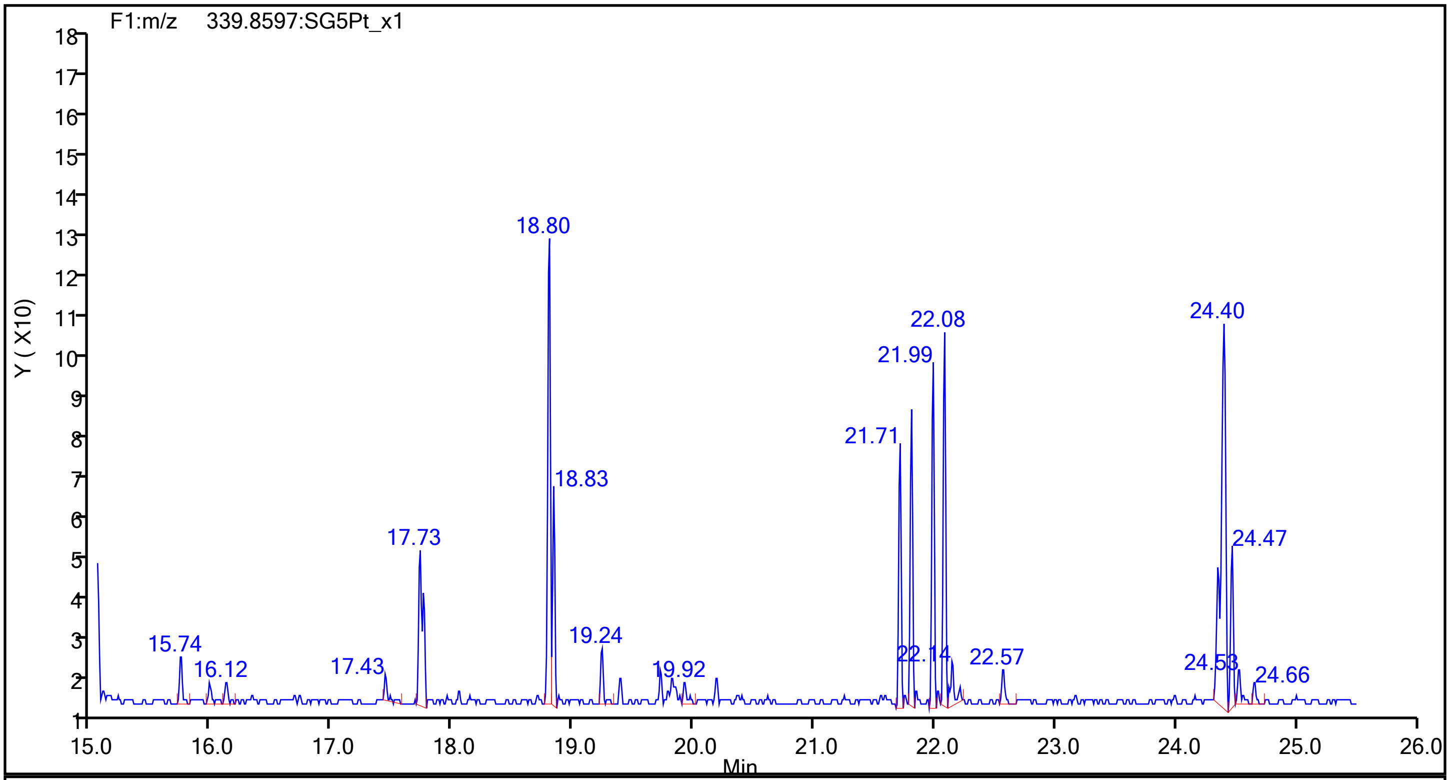

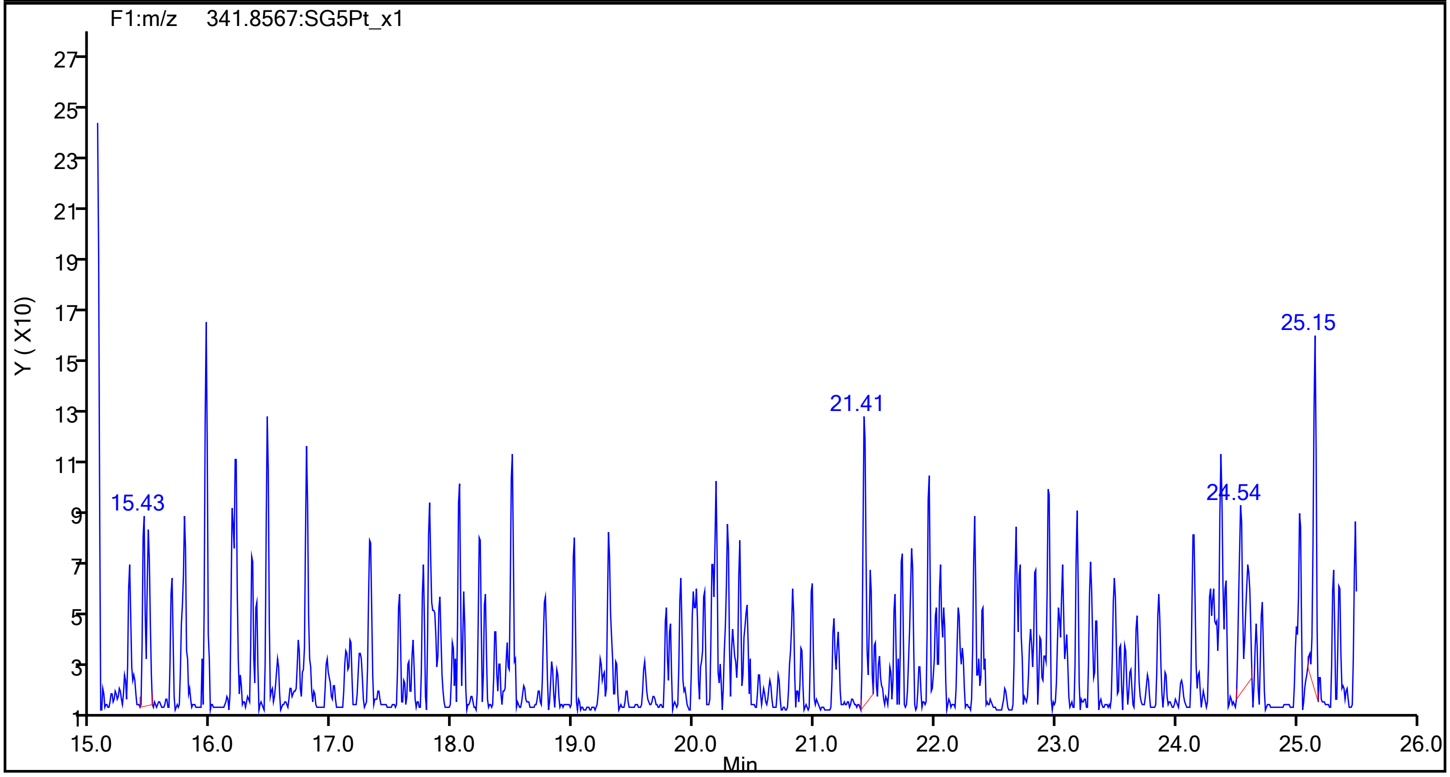

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

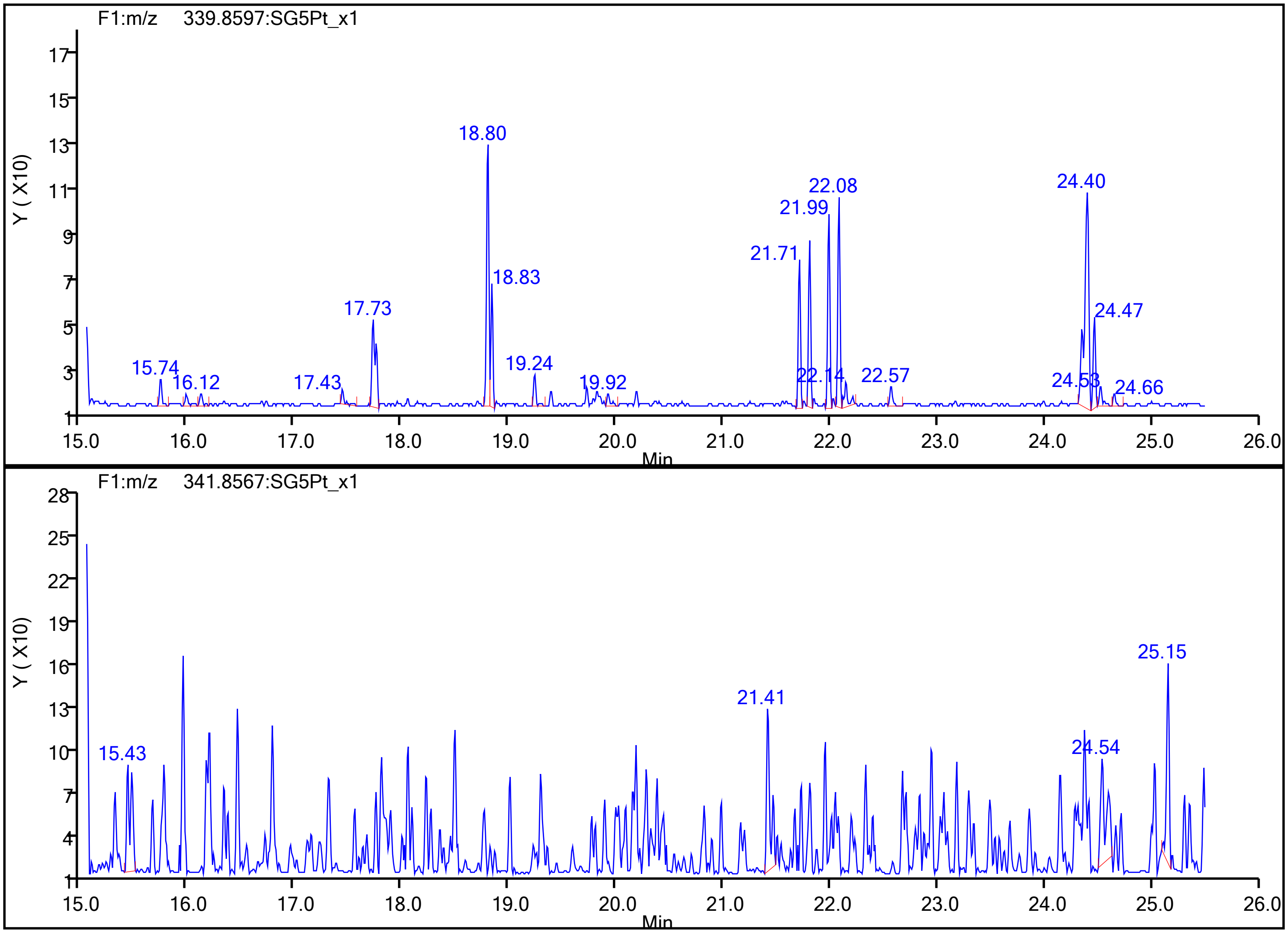

F1 PeCDFs Interference Mass

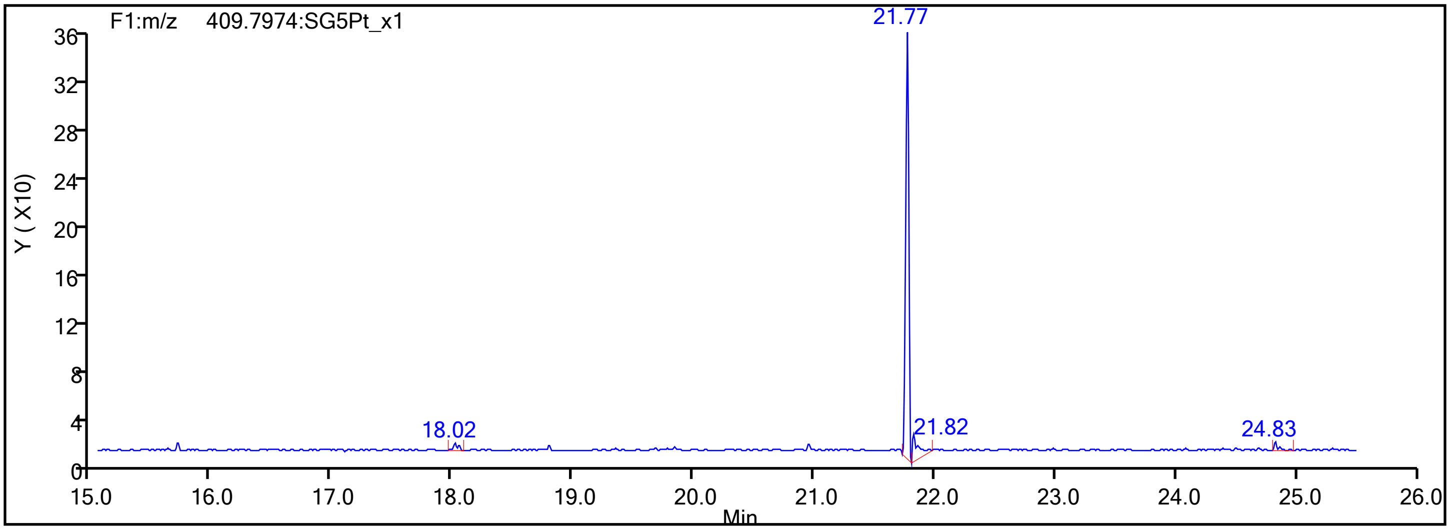

Report Date: 29-Jul-2020 10:35:15
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date: 28-Jul-2020 03:36:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

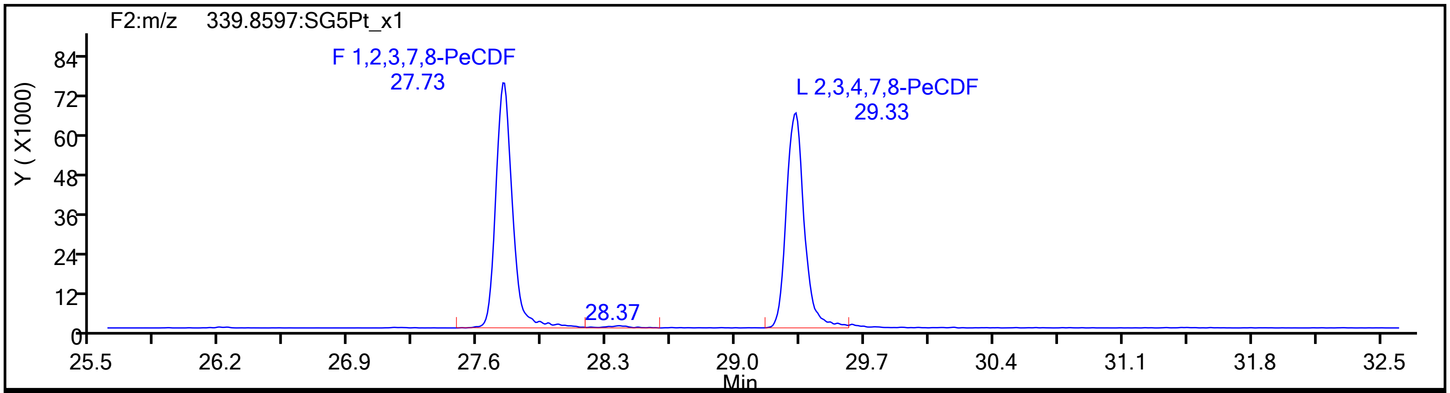

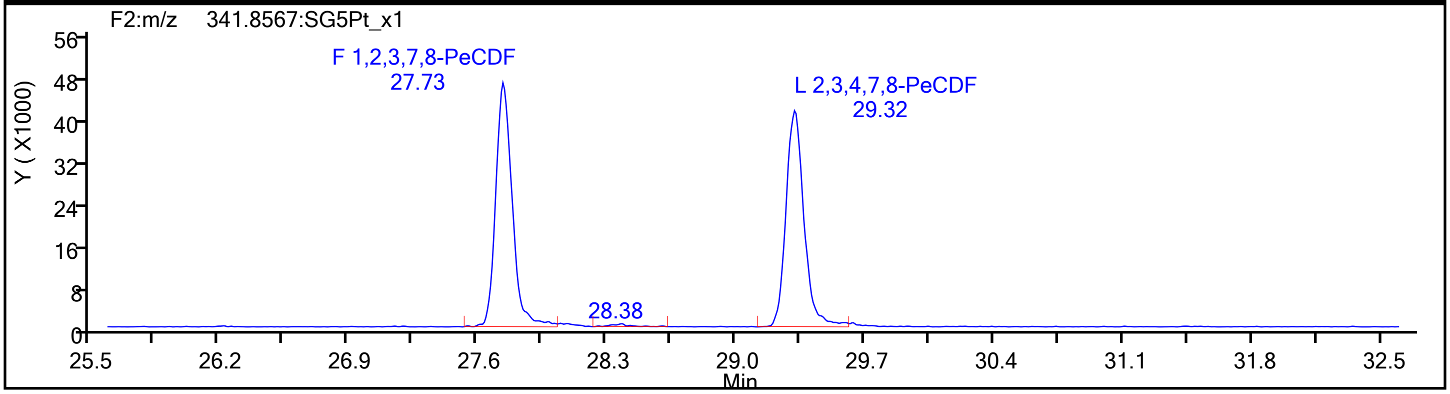

PeCDF Standards

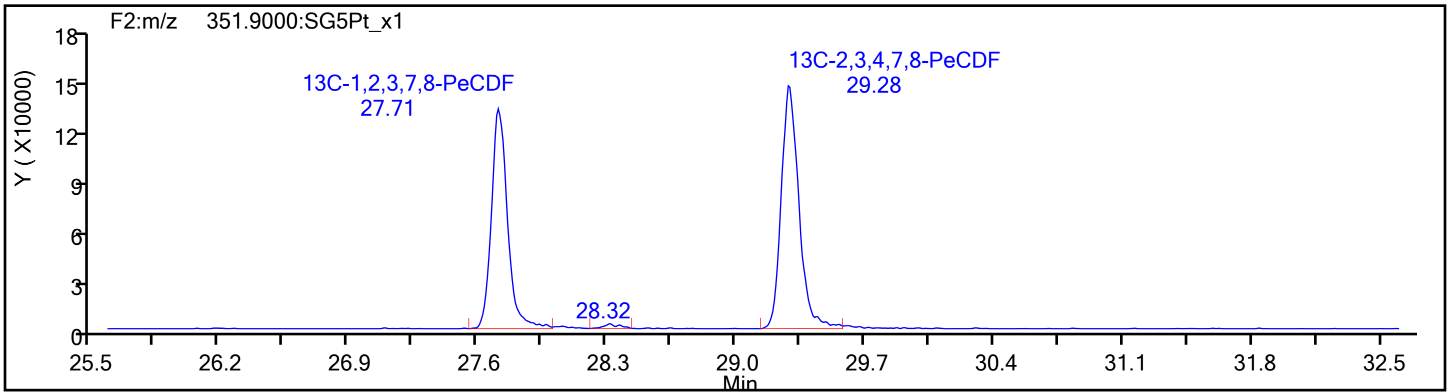

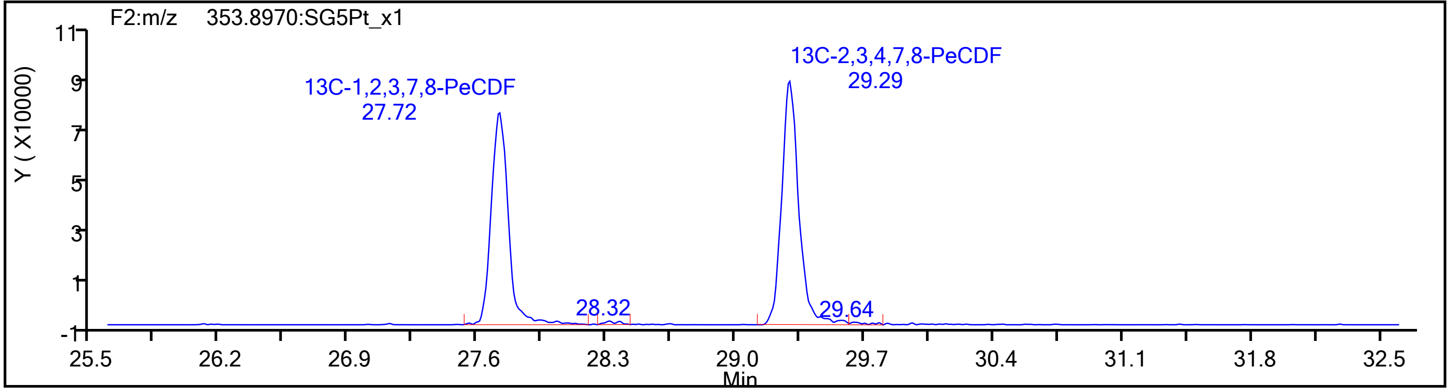

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

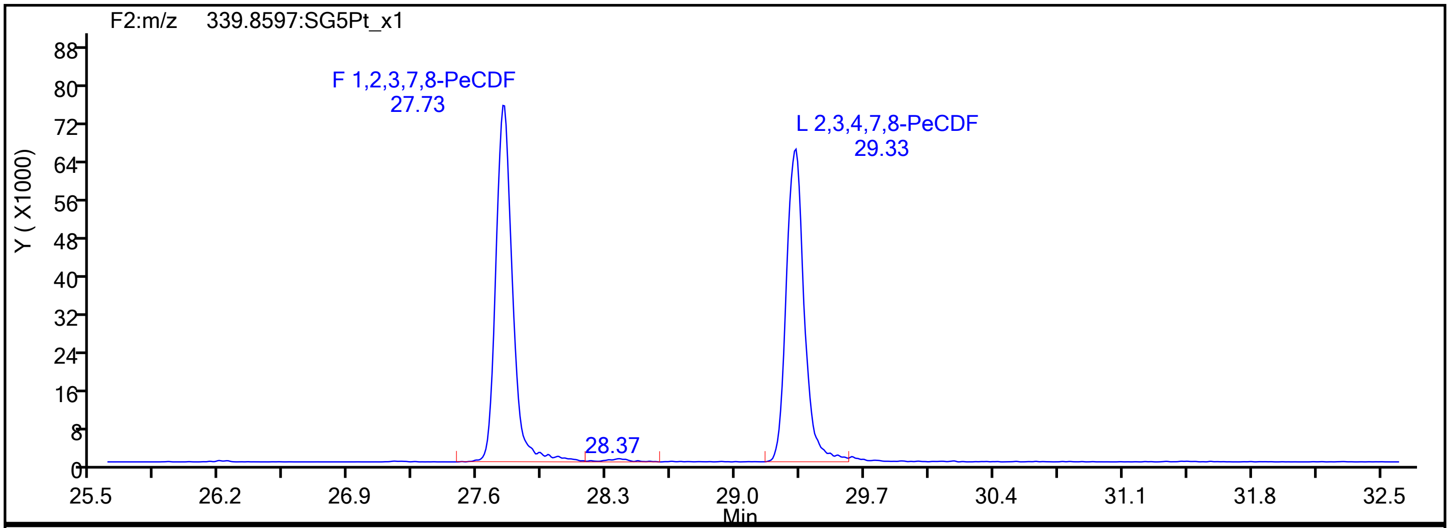

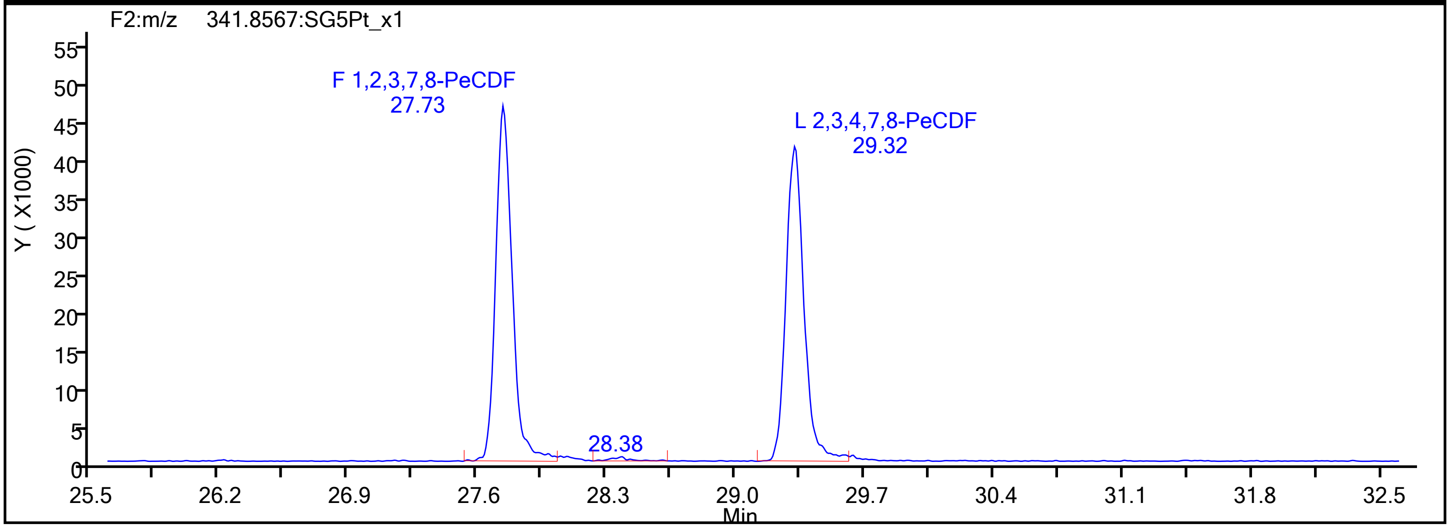

PeCDF Interference Mass

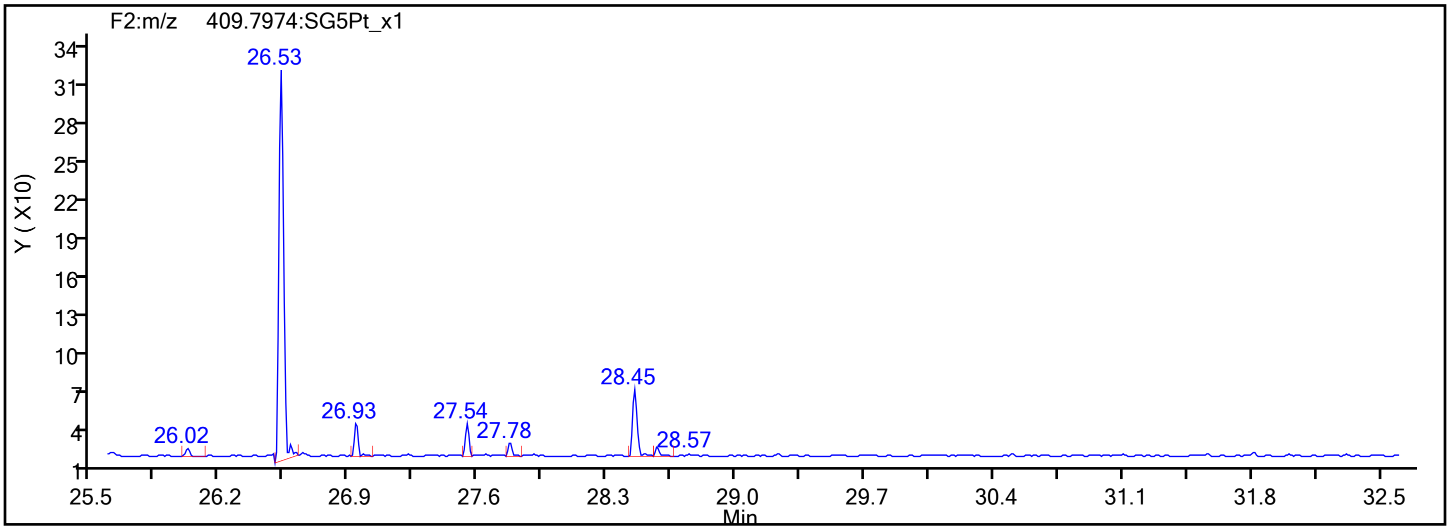

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_16.d
Injection Date: 28-Jul-2020 03:36:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798 Sample Line#: 14
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

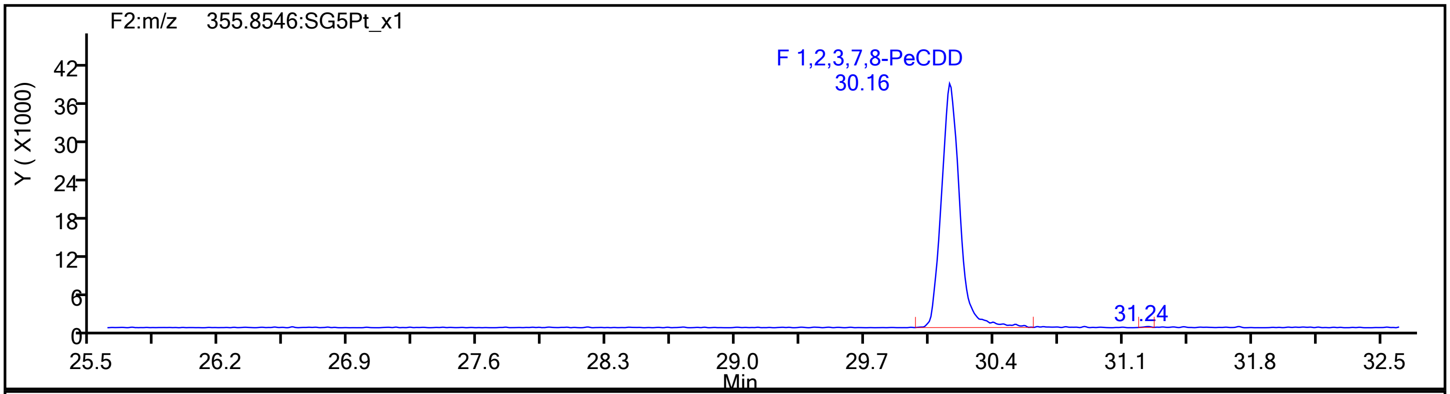

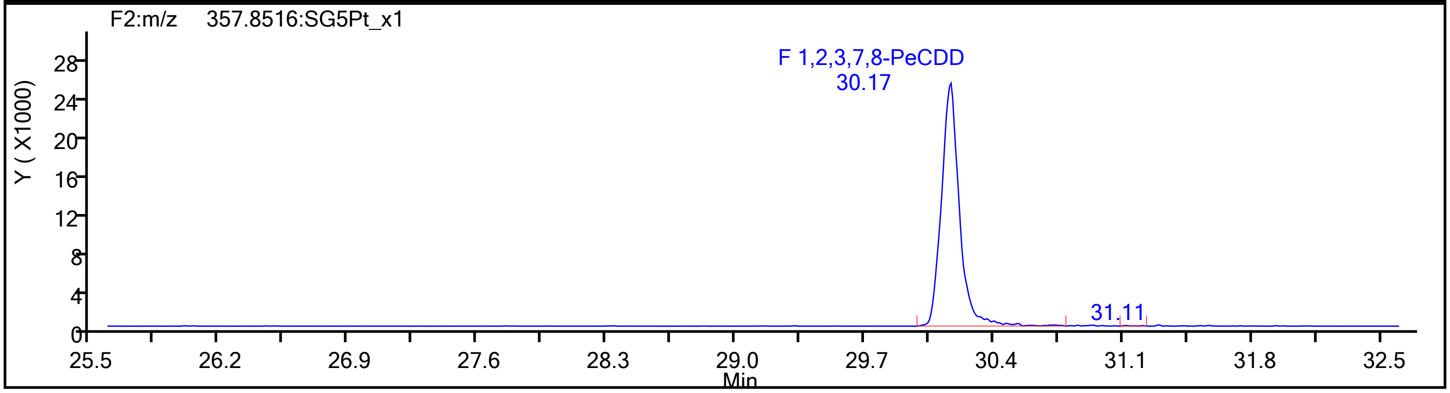

PeCDD Standards

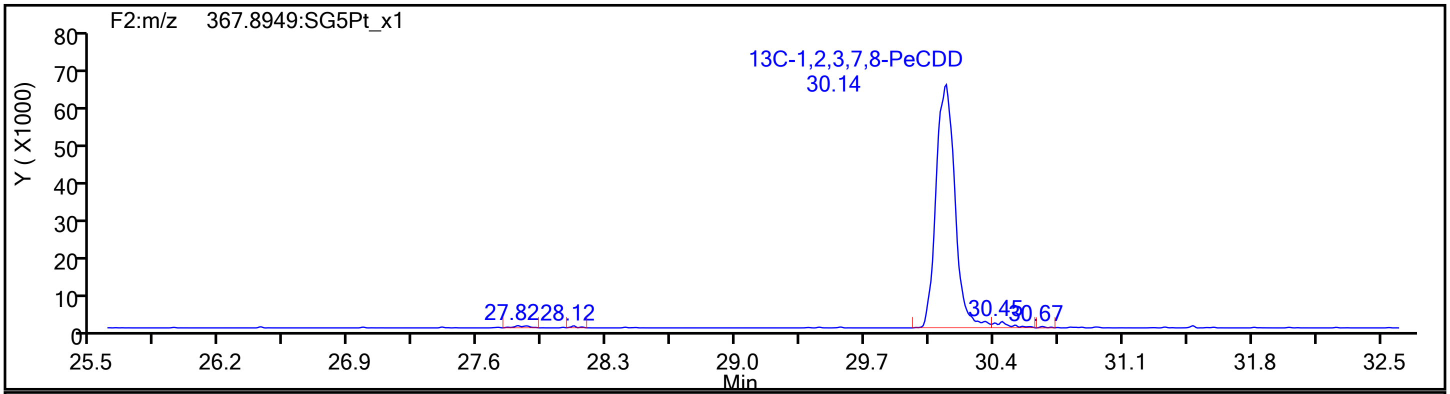

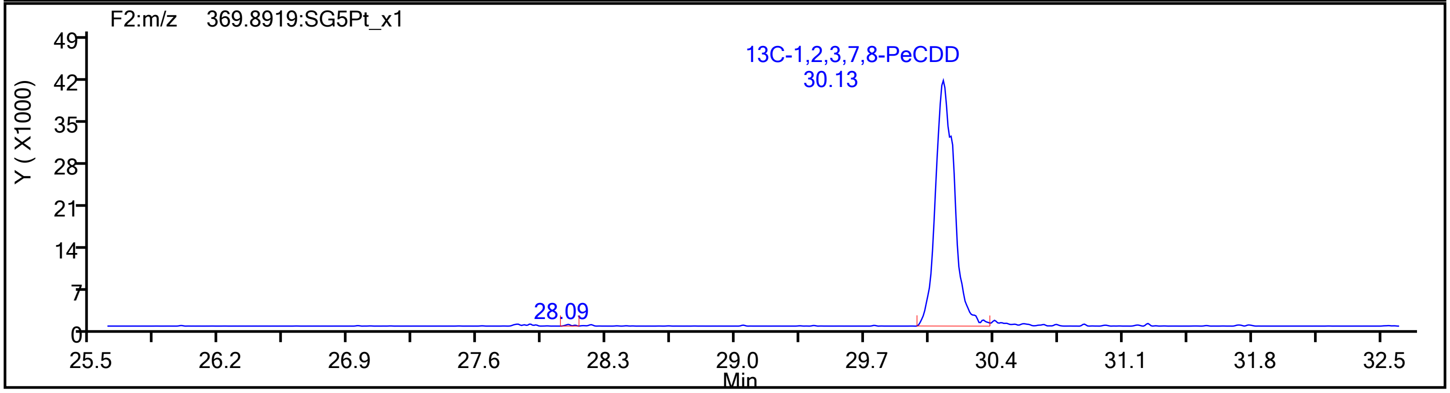

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

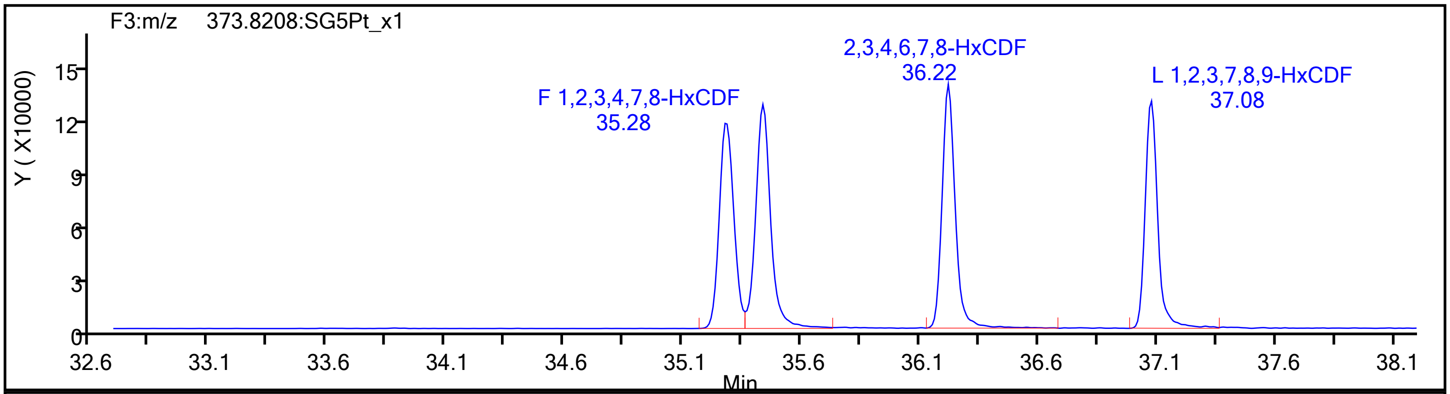

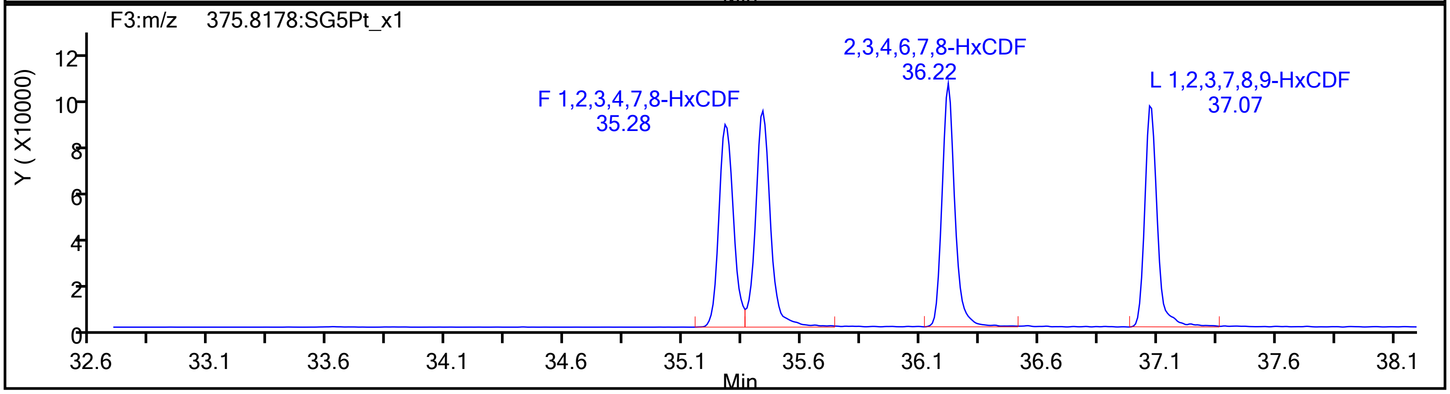

HxCDF Standards

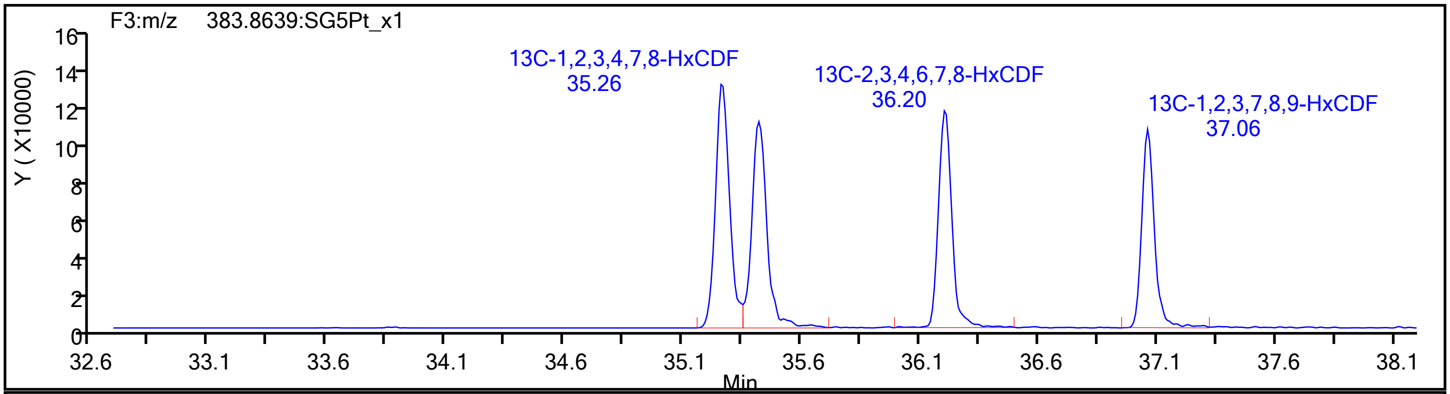

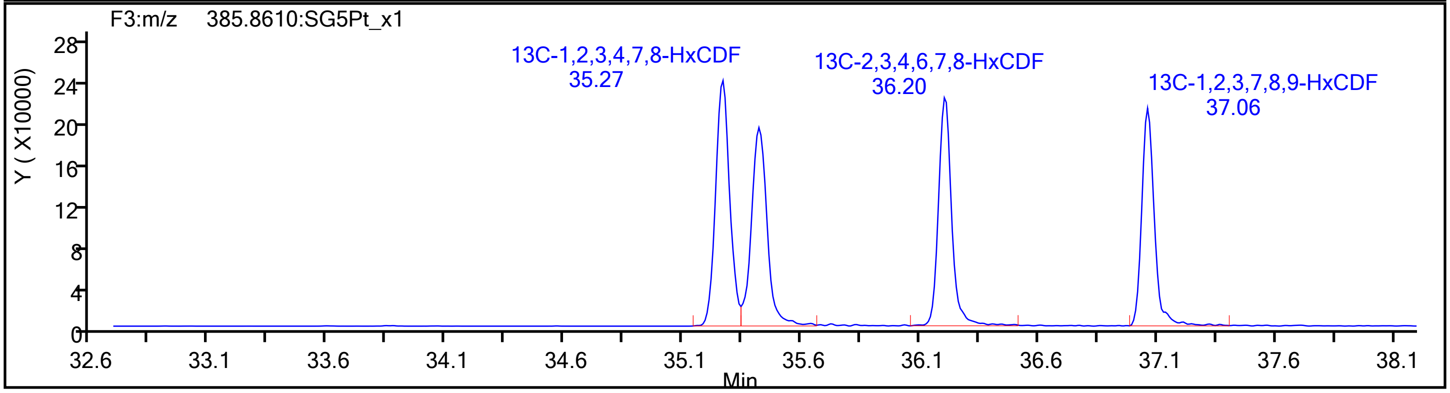

Report Date: 29-Jul-2020 10:35:15
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

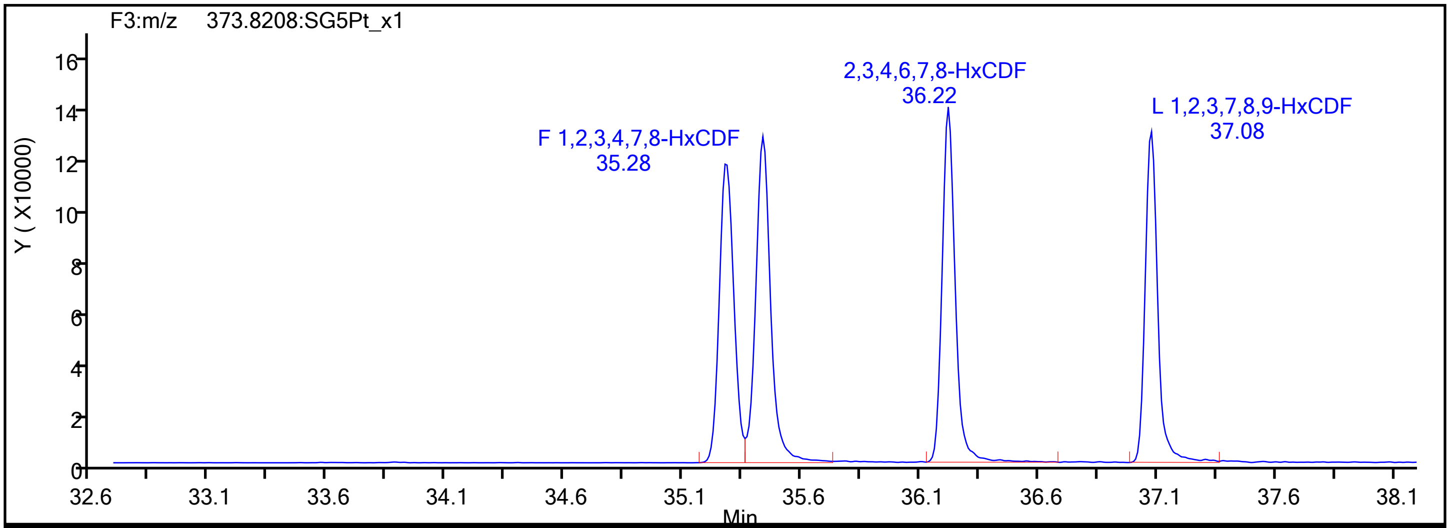

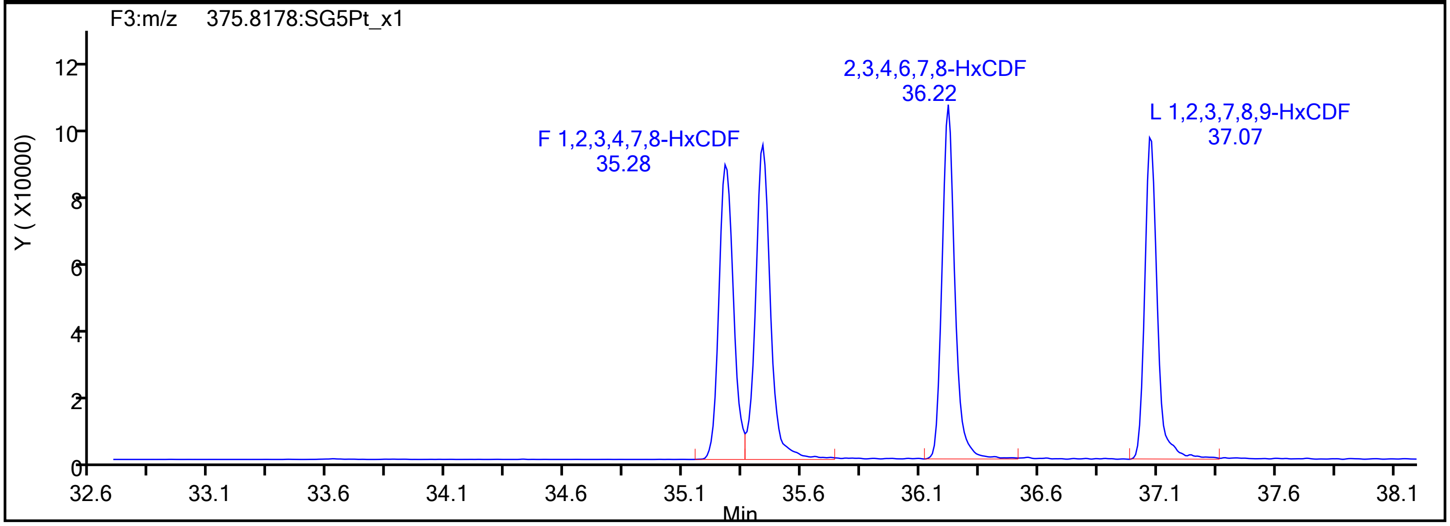

HxCDF Interference Mass

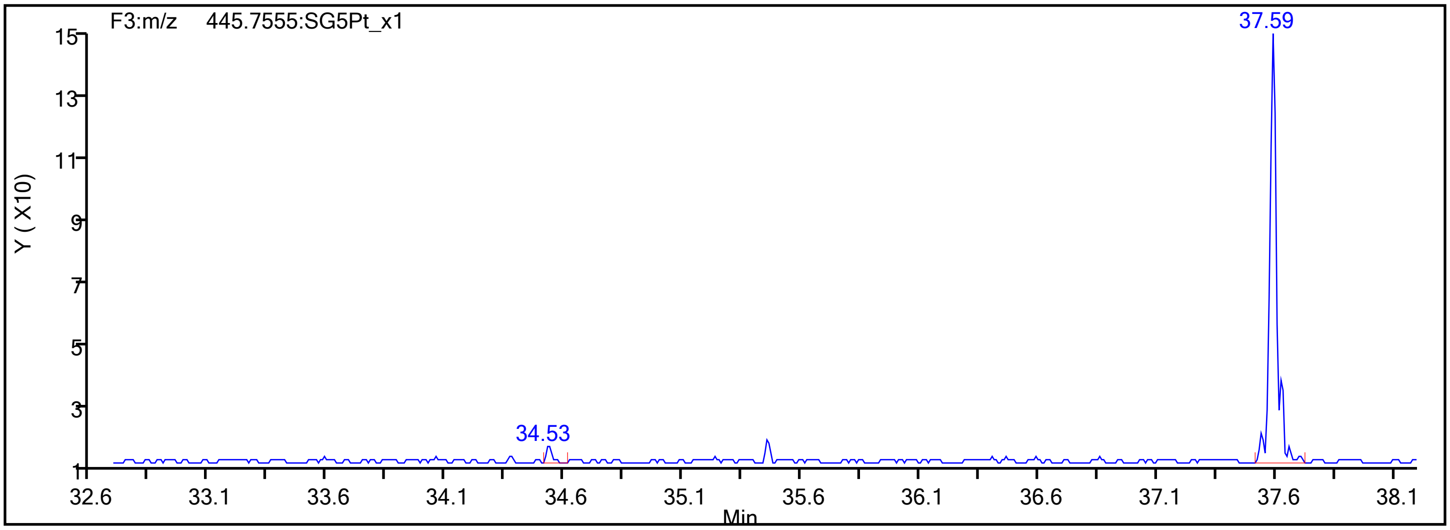

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Eurofins TestAmerica, Sacramento

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Sample Line#: 14
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Column Dia: 0.32 mm

HxCDD

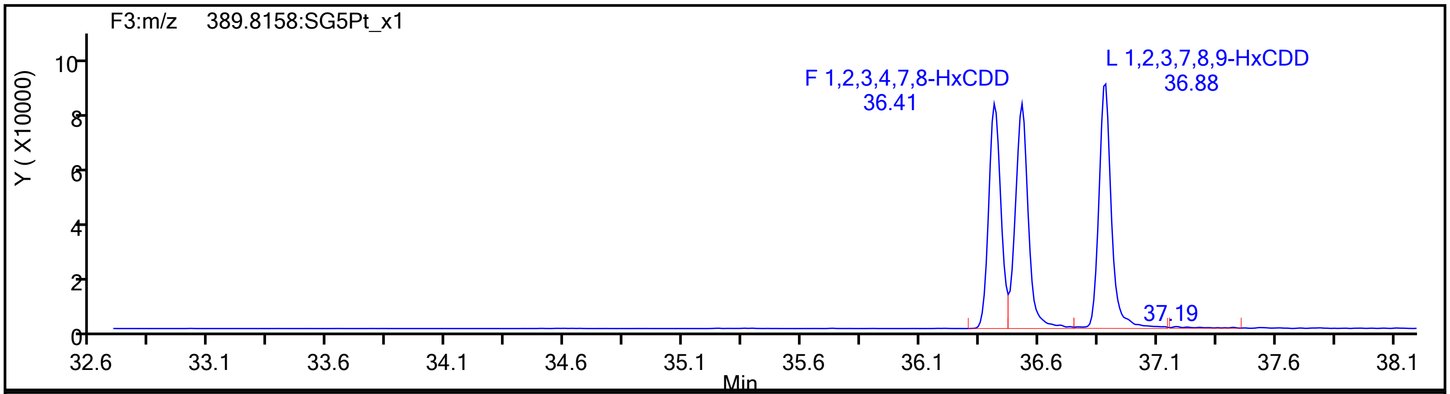

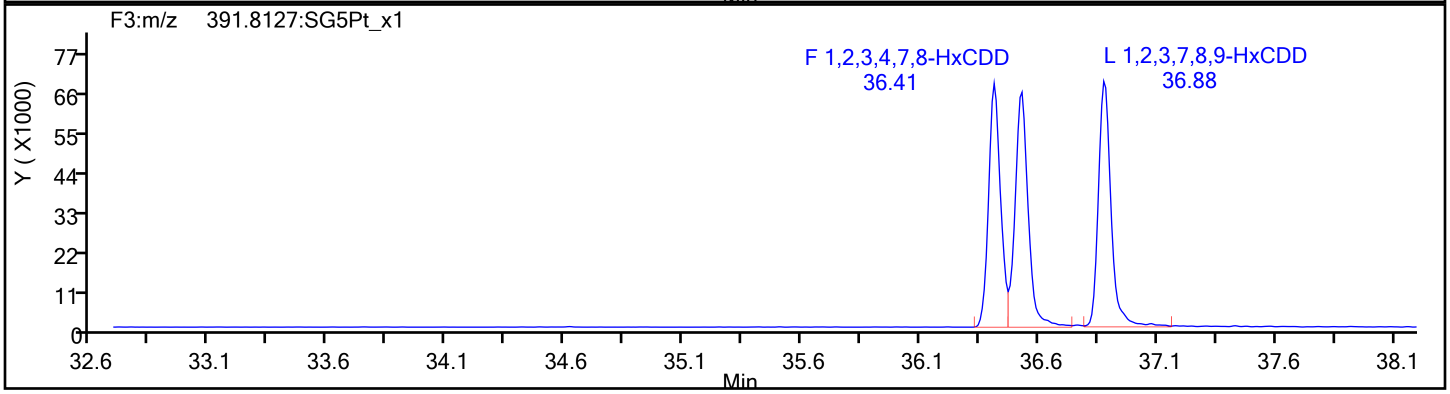

HxCDD Standards

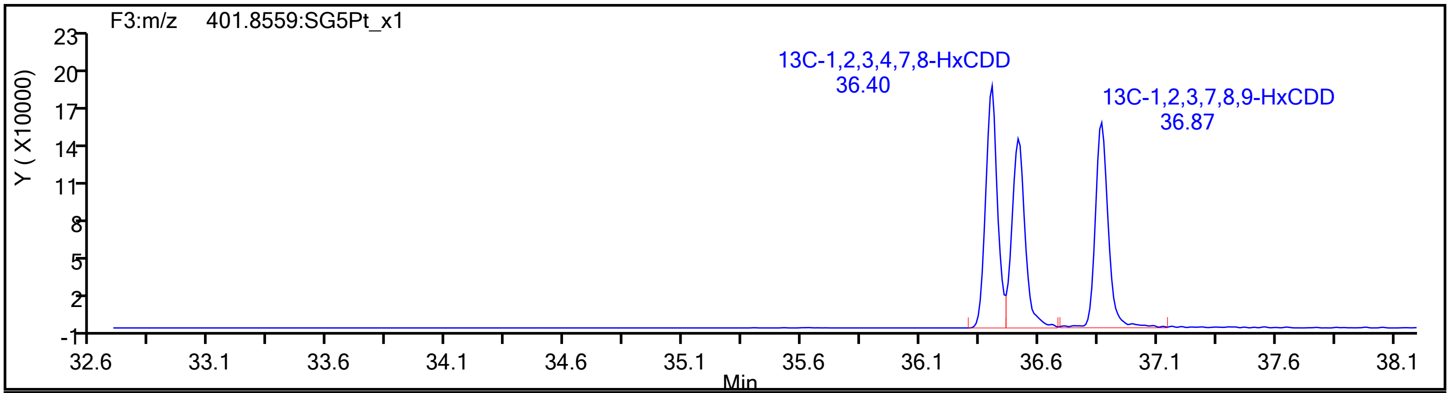

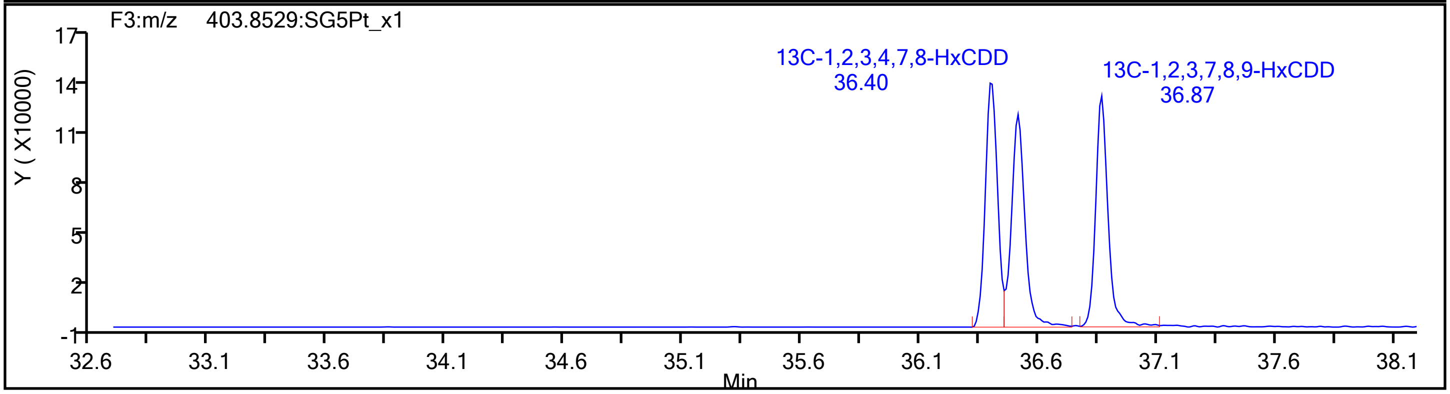

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Client ID:
Worklist#: 398798
Sample Line#: 14
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Column Dia: 0.32 mm

HpCDF

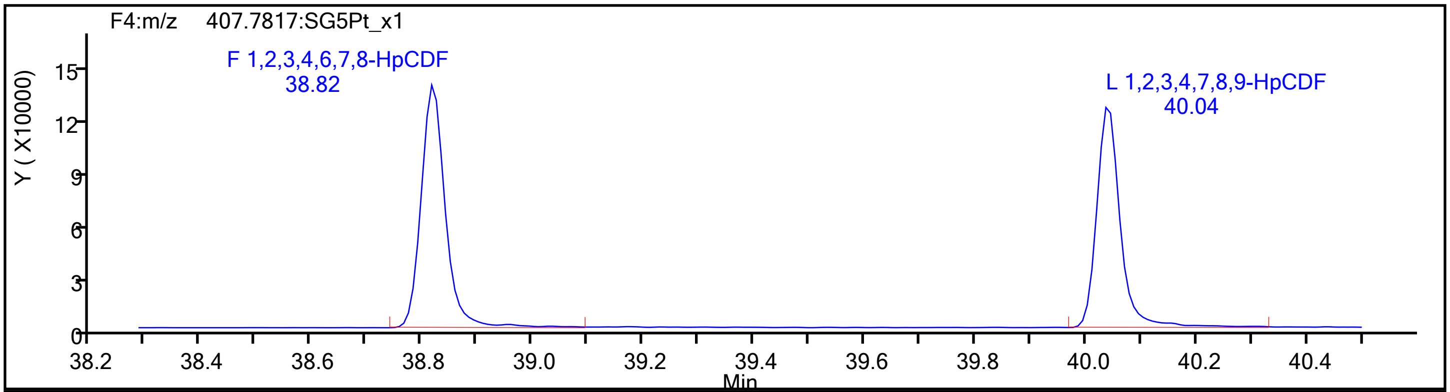

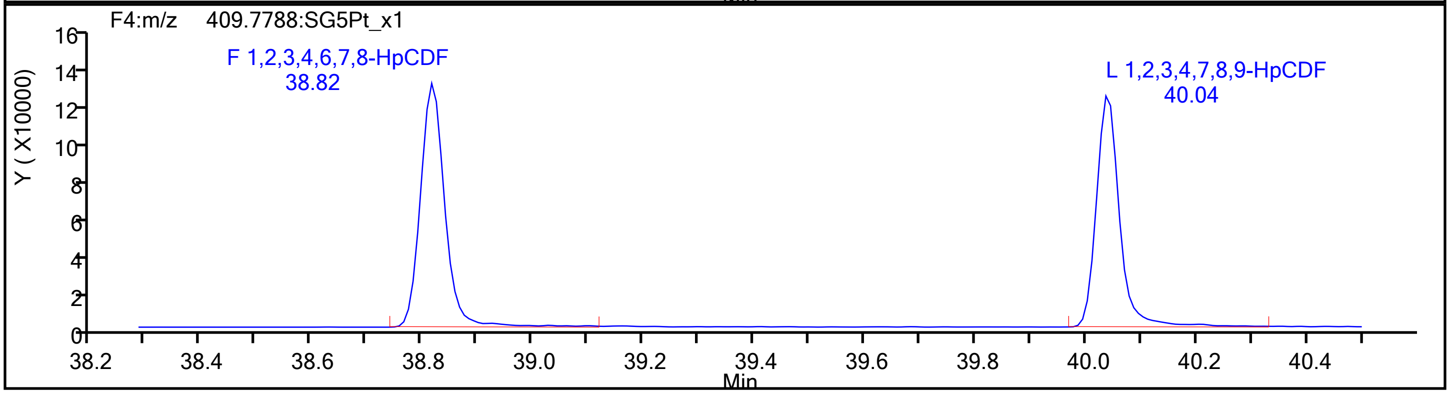

HpCDF Standards

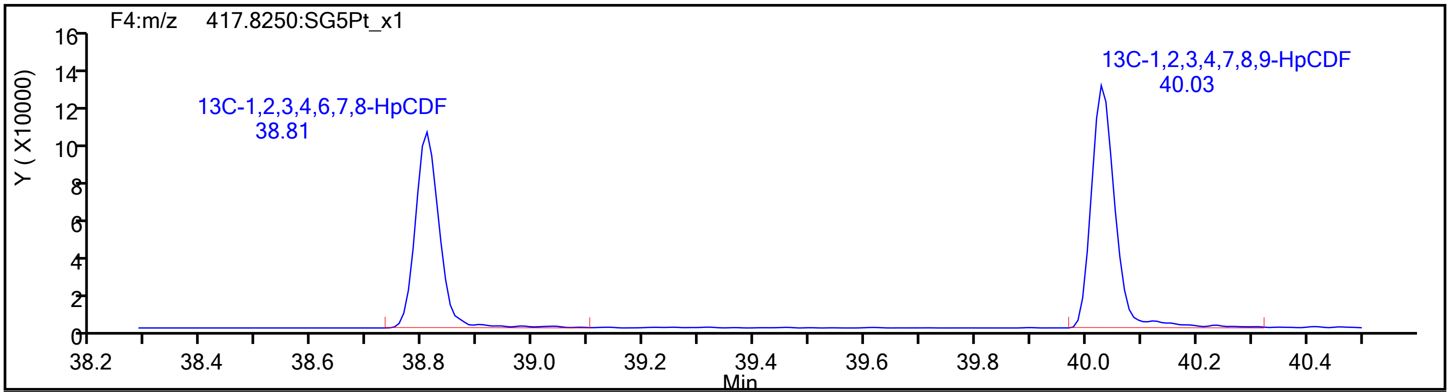

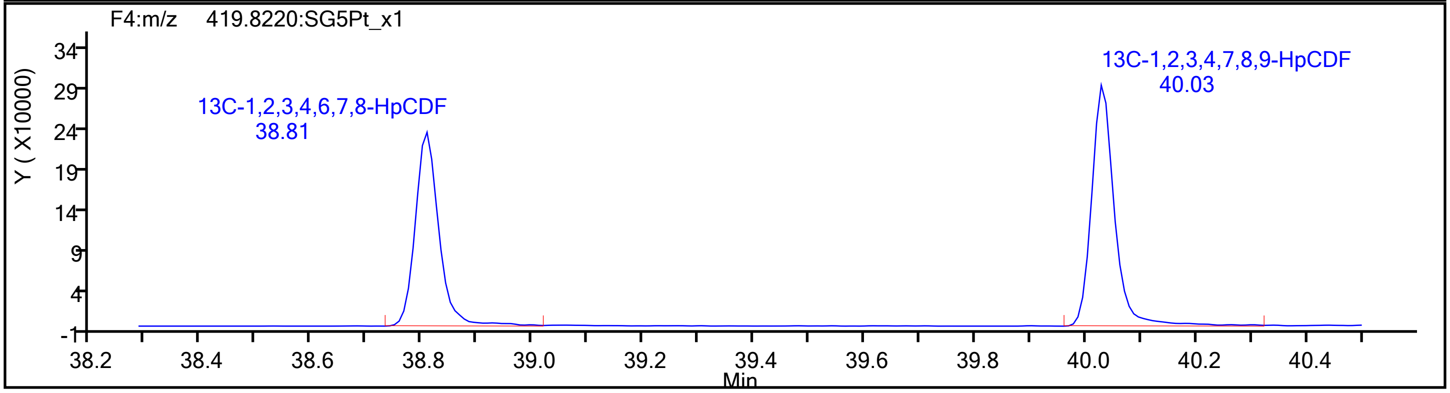

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

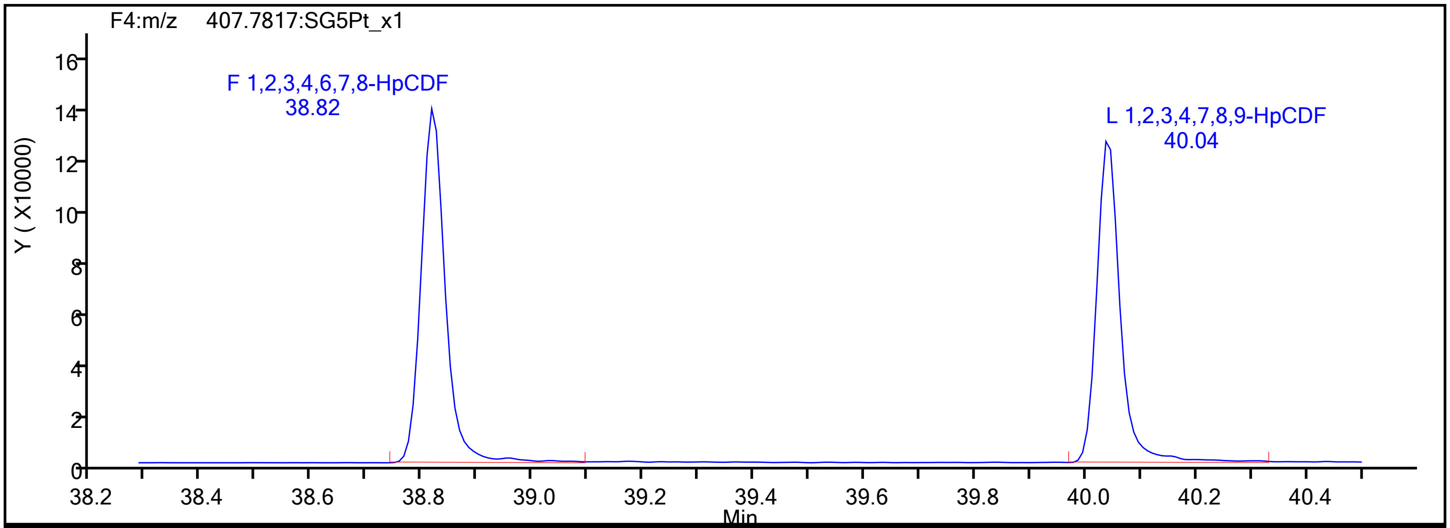

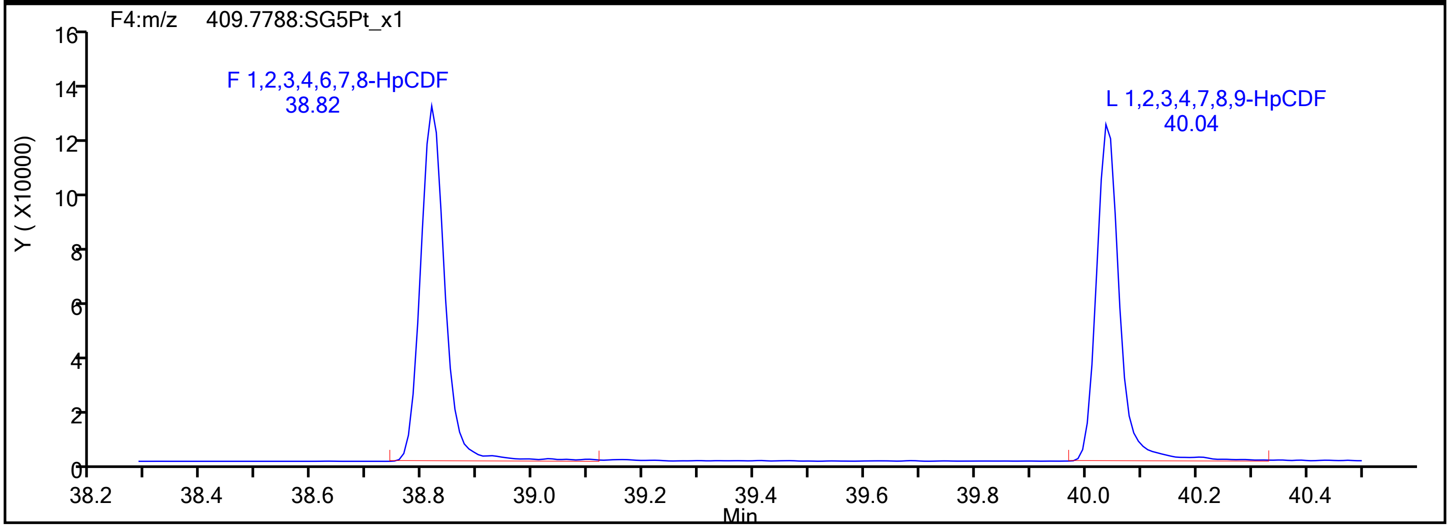

HpCDF Interference Mass

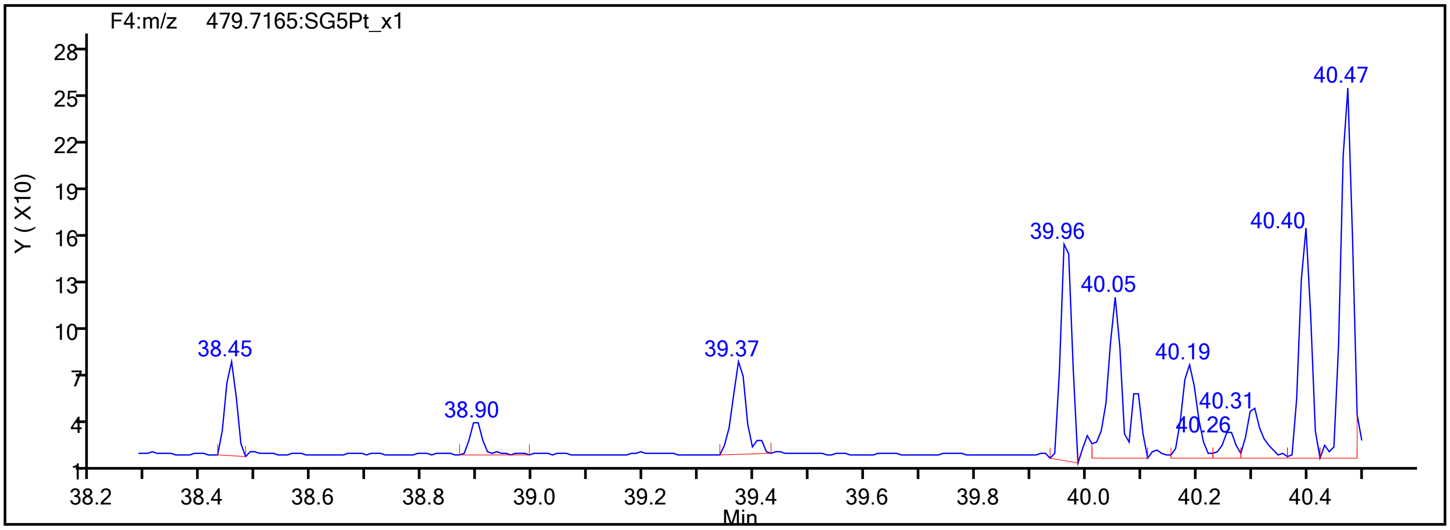

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

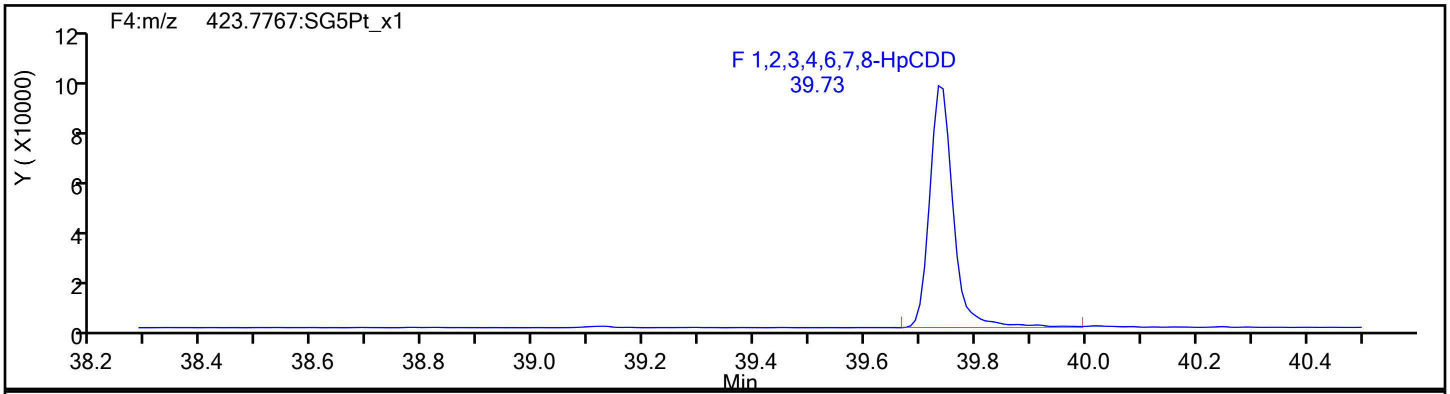

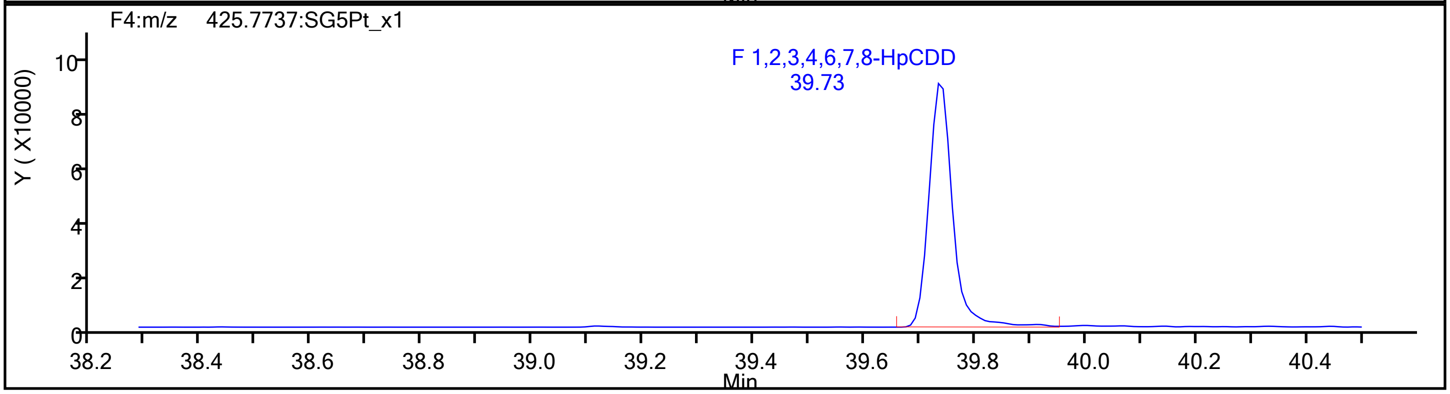

HpCDD Standards

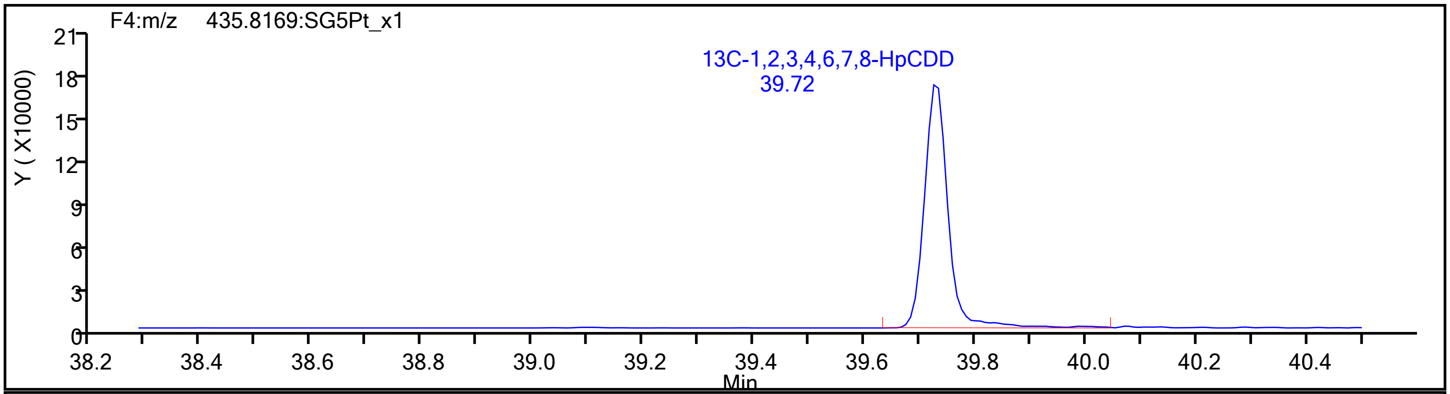

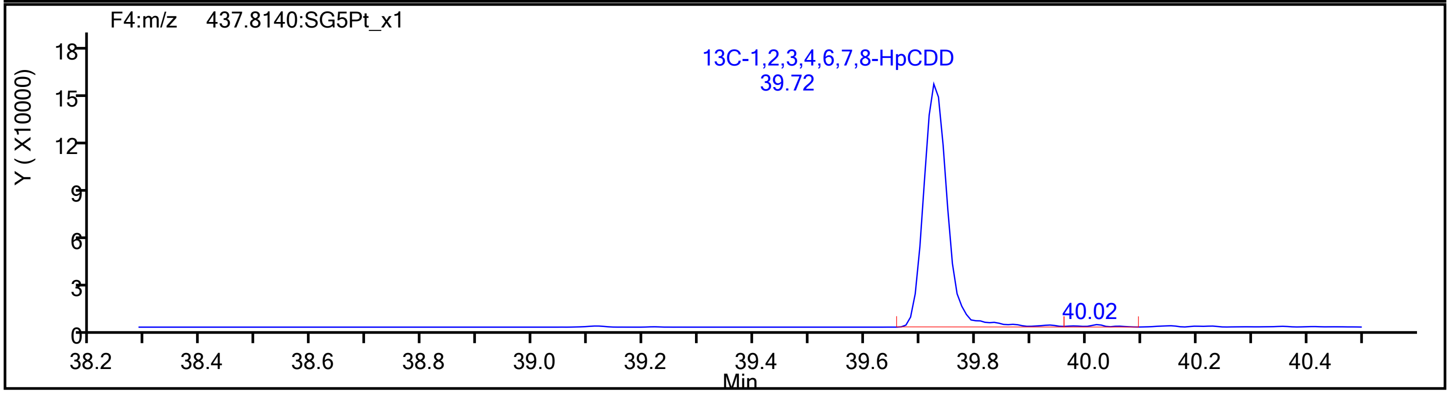

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

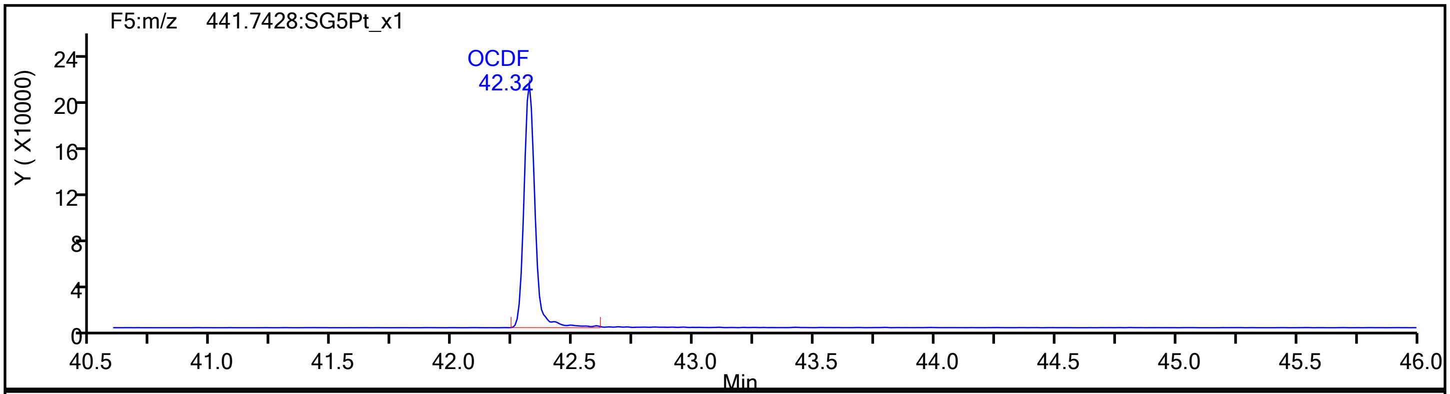

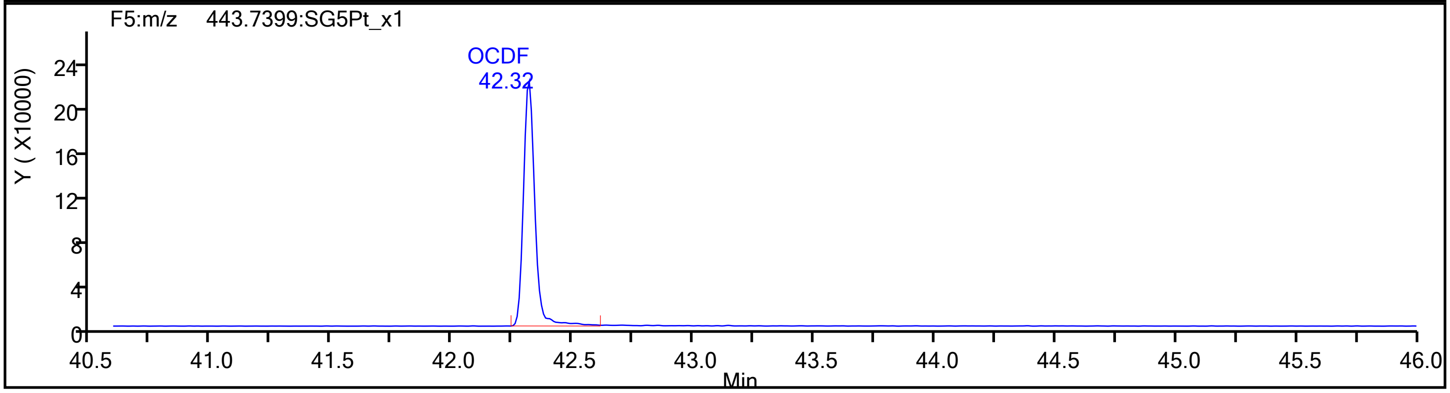

OCDF Standards

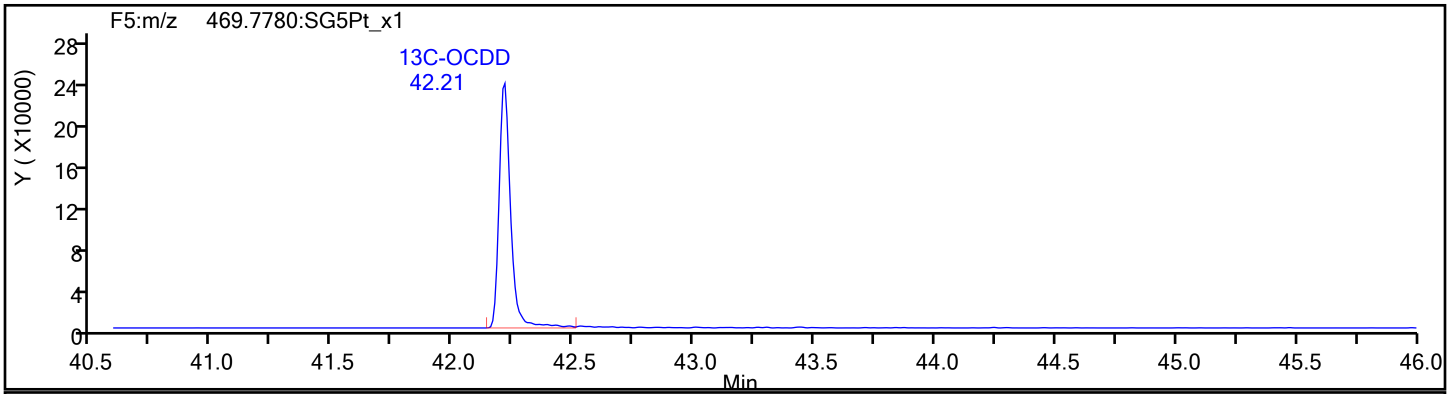

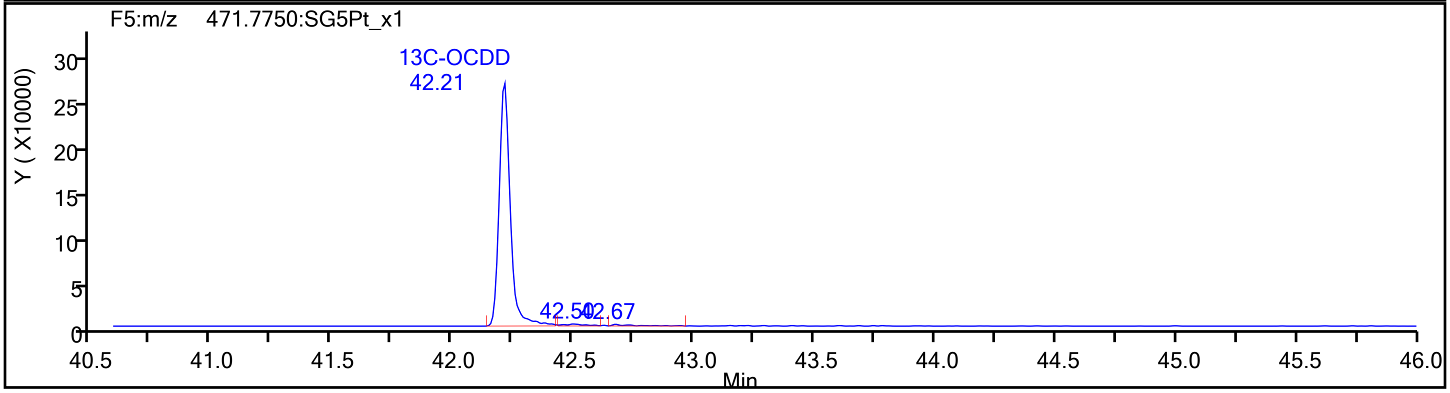

Report Date: 29-Jul-2020 10:35:15 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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OCDF

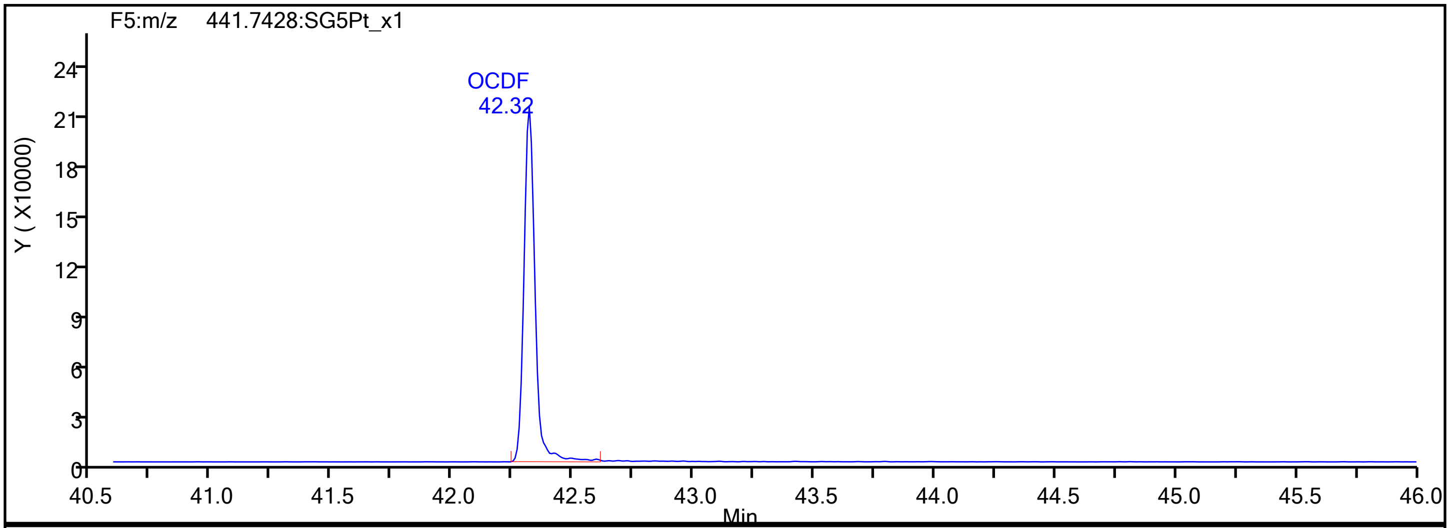

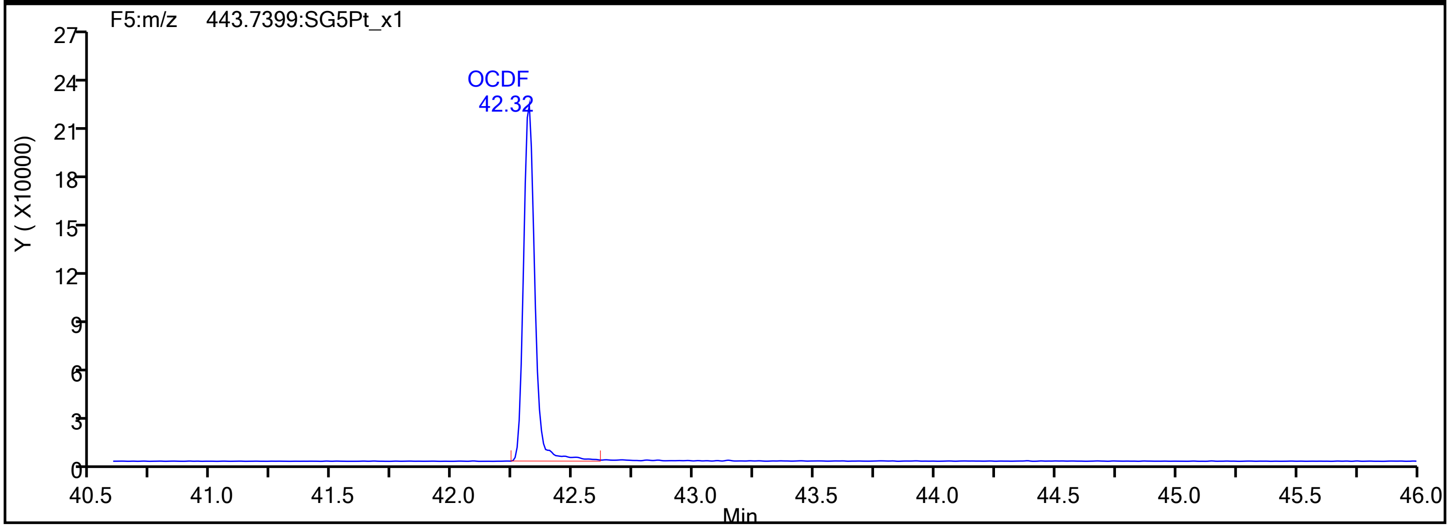

OCDF Interference Mass

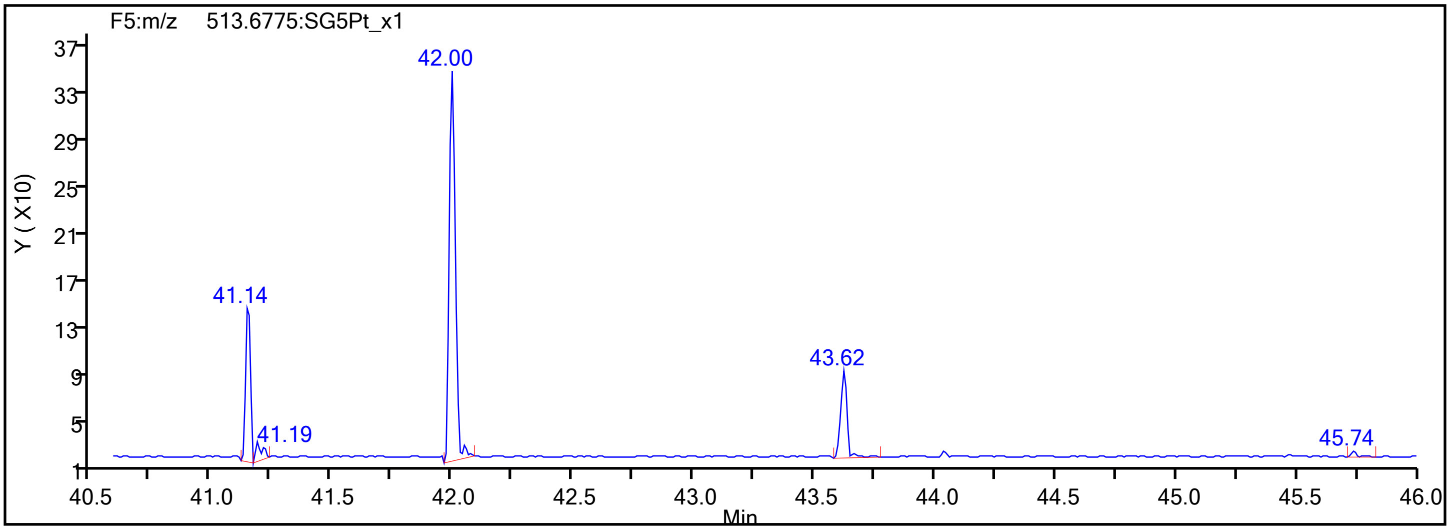

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Eurofins TestAmerica, Sacramento

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Injection Date: 28-Jul-2020 03:36:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398798 Sample Line#: 14

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

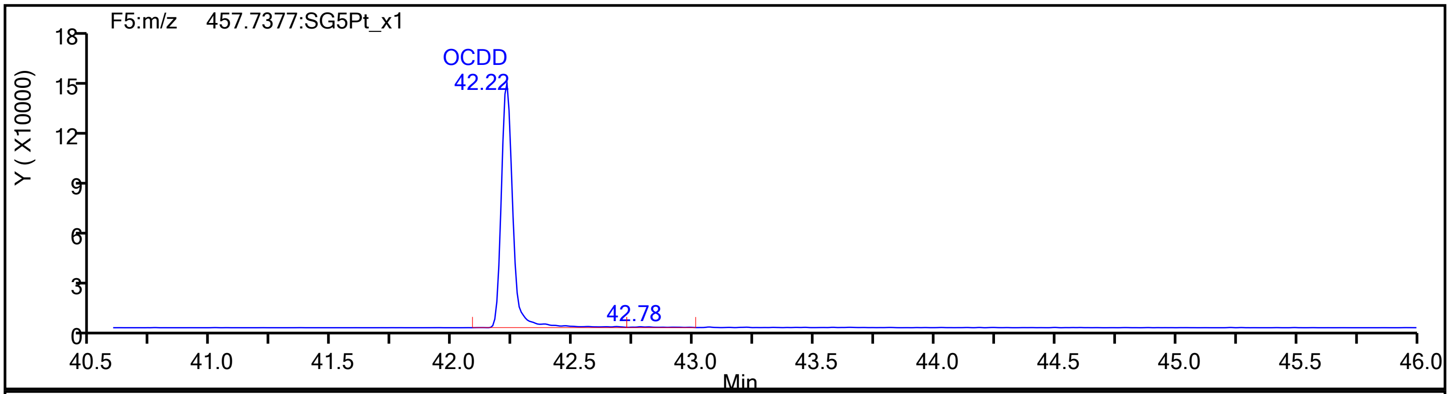

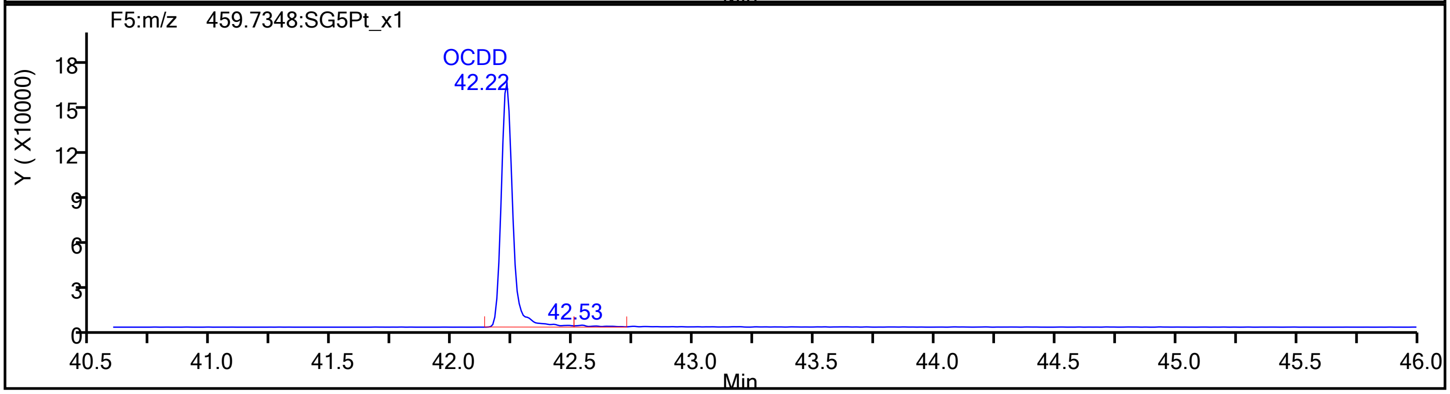

OCDD Standards

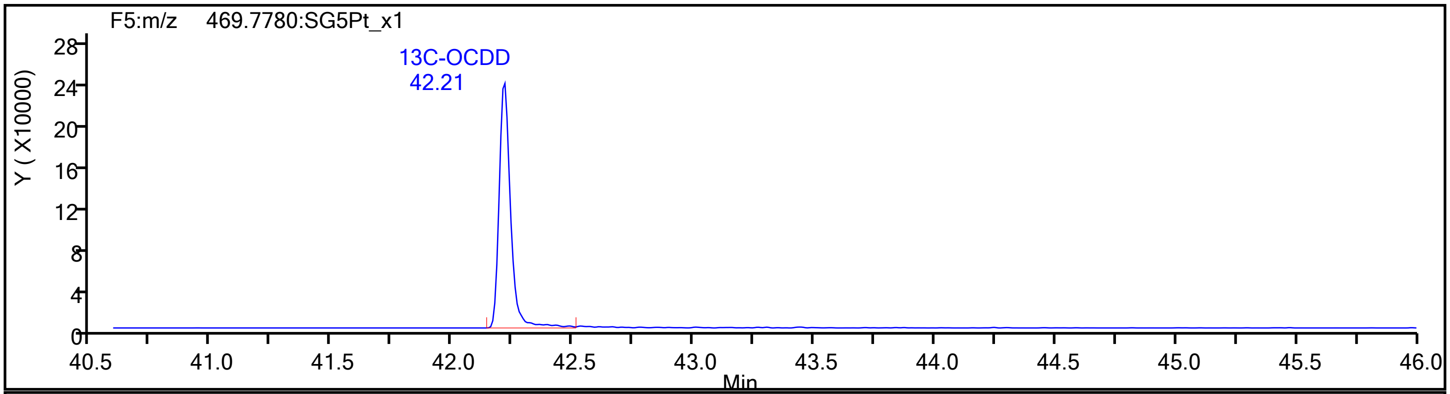

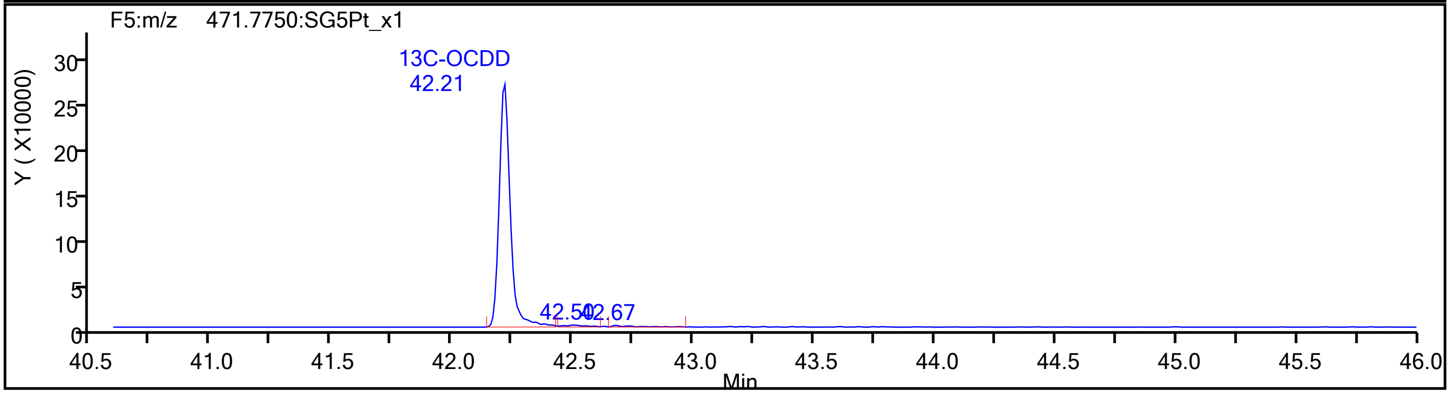

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Eurofins TestAmerica, Sacramento

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Injection Date: 28-Jul-2020 03:36:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398798

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

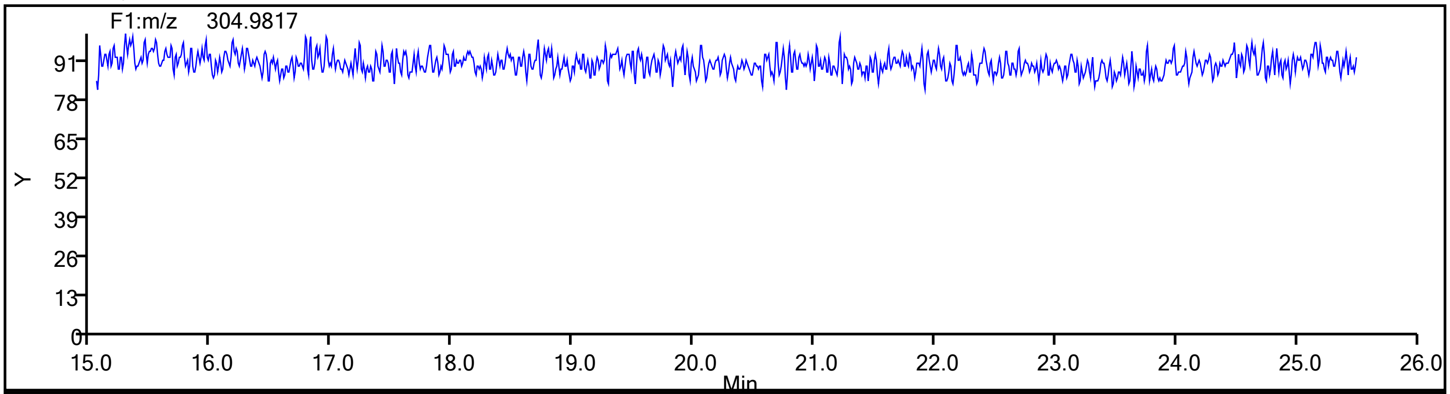

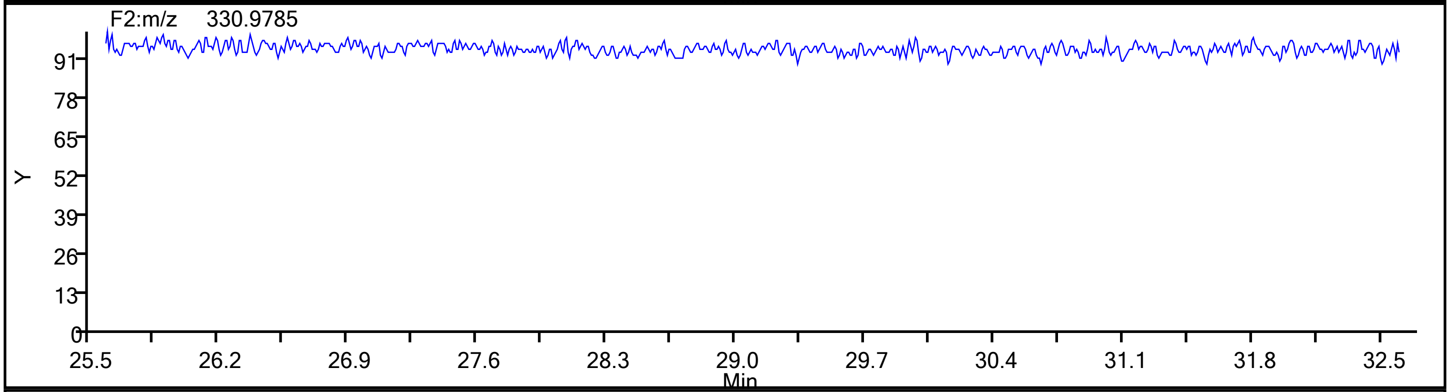

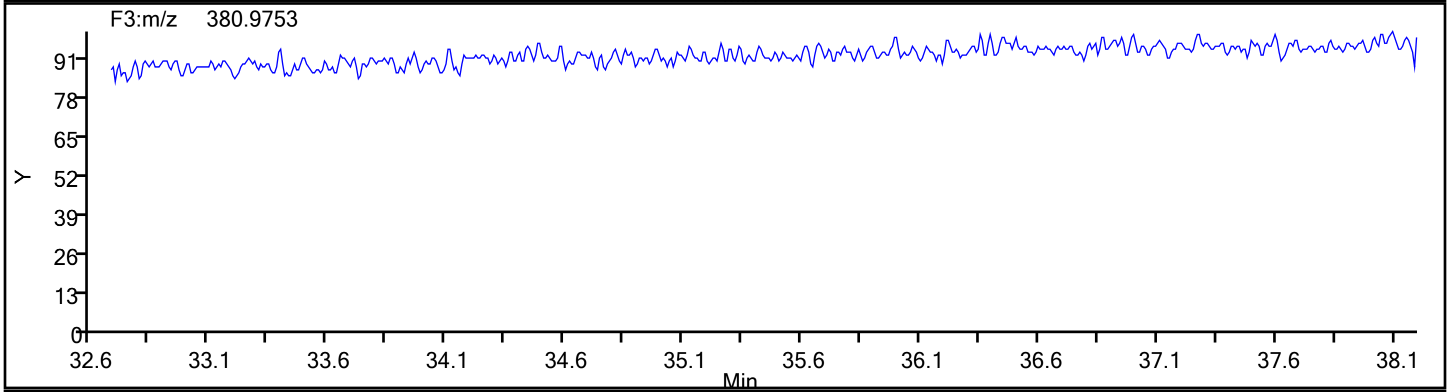

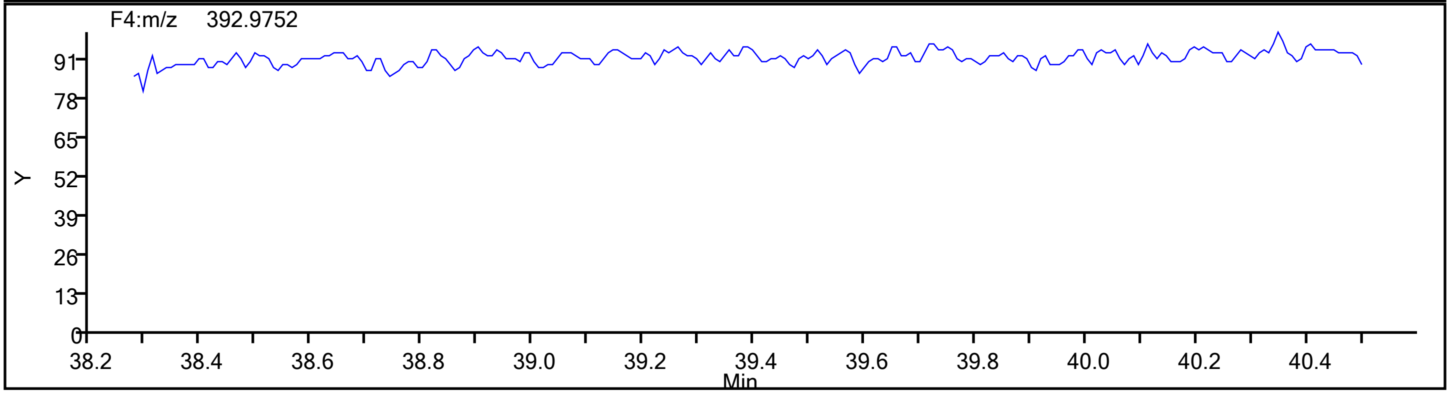

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

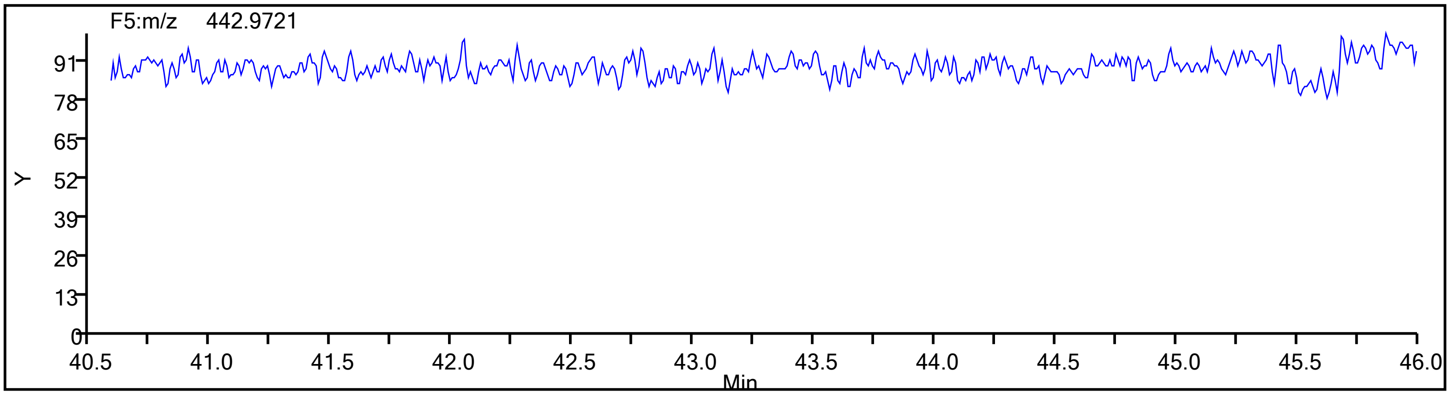

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Lab Sample ID: CCV 320-399843/2   Calibration Date: 07/30/2020 12:50

Instrument ID: DFS 1   Calib Start Date: 06/03/2020 14:05

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 06/03/2020 18:06

Lab File ID: 30jl20dfs1_3.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.131	1.082		9.57	10.0	96	84-120
2,3,7,8-TCDD	AveID	1.185	1.089		9.19	10.0	92	78-129
1,2,3,7,8-PeCDF	AveID	1.106	1.054		47.7	50.0	95	82-120
2,3,4,7,8-PeCDF	AveID	0.9067	0.8454		46.6	50.0	93	82-122
1,2,3,7,8-PeCDD	AveID	1.106	1.050		47.5	50.0	95	78-130
1,2,3,4,7,8-HxCDF	AveID	1.009	0.9770		48.4	50.0	97	90-112
1,2,3,6,7,8-HxCDF	AveID	1.243	1.198		48.2	50.0	96	88-114
2,3,4,6,7,8-HxCDF	AveID	1.274	1.223		48.0	50.0	96	88-114
1,2,3,4,7,8-HxCDD	AveID	0.9336	0.8495		45.5	50.0	91	78-128
1,2,3,6,7,8-HxCDD	AveID	1.080	0.9750		45.1	50.0	90	78-128
1,2,3,7,8,9-HxCDD	AveID	1.057	1.011		47.8	50.0	96	82-122
1,2,3,7,8,9-HxCDF	AveID	1.288	1.216		47.2	50.0	94	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.596	1.441		45.2	50.0	90	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.009		45.3	50.0	91	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.169	1.063		45.5	50.0	91	86-116
OCDD	AveID	1.195	1.085		90.8	100	91	79-126
OCDF	AveID	1.481	1.461		98.7	100	99	63-159
13C-2,3,7,8-TCDF	Ave	1.498	1.508		101	100	101	71-140
13C-2,3,7,8-TCDD	Ave	1.037	1.012		97.6	100	98	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.306	1.278		97.9	100	98	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.542	1.544		100	100	100	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8294	0.7914		95.4	100	95	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.462	1.409		96.4	100	96	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.287	1.248		97.0	100	97	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.199	1.169		97.5	100	97	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	1.105	1.036		93.7	100	94	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9871	0.9430		95.5	100	96	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.069	1.135		106	100	106	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9035	0.9016		99.8	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8875	0.8706		98.1	100	98	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	1.048	1.106		106	100	106	77-129
13C-OCDD	Ave	0.6297	0.6527		207	200	104	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.121	1.058		9.44	10.0	94	79-127

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	30JL20DFS1_1	Resolution Check	RC 073020	46			AJS	1.000	
2	30JL20DFS1_2	WDM HRDXNCP_00040	WDM 073020	1	8290/1613B		AJS	1.000	
3	30JL20DFS1_3	CCV CS-4 HRDXNL4_00094	CCV 073020	2	8290/1613B		AJS	1.000	
4	30JL20DFS1_4	SB Solvent Blank C-14	SB 073020	3			AJS	1.000	
5	30JL20DFS1_5	MB 320-398447/1-A RI	MB 320-398447/1-A RI	4	1613B(T)/Solid	D170	AJS	10.000	g
6	30JL20DFS1_6	MB 320-398950/1-A	MB 320-398950/1-A	5	8290(D5)/Water	D170	AJS	1.000	L
7	30JL20DFS1_7	LCS 320-398950/2-A	LCS 320-398950/2-A	6	8290(D5)/Water		AJS	1.000	L
8	30JL20DFS1_8	LCSD 320-398950/3-A	LCSD 320-398950/3-A	7	8290(D5)/Water		AJS	1.000	L
9	30JL20DFS1_9	LB4 320-397616/1-B	LB4 320-397616/1-B	8	8290(D5)/Water		AJS	1.000	L
10	30JL20DFS1_10	320-62936-A-1-J	320-62936-A-1-J	9	8290/Water		AJS	1.000	L
11	30JL20DFS1_11	320-62936-B-2-H	320-62936-B-2-H	10	8290/Water		AJS	1.000	L
12	30JL20DFS1_12	320-62886-A-1-A (5X)	320-62886-A-1-A (5X)	11	1613B/Water	D169	AJS	1.000	L
13	30JL20DFS1_13	320-62886-A-2-A (20X)	320-62886-A-1-A (20X)	12	1613B/Water		AJS	1.000	L
14	30JL20DFS1_14	SB Solvent Blank C-14	SB 073020A	3			AJS	1.000	
15	30JL20DFS1_15	CCV CS-4 HRDXNL4_00094	CCV 073020A	2	8290/1613B		AJS	1.000	
16	30JL20DFS1_16	Resolution Check	RC 073020A	46			AJS	1.000	
17	30JL20DFS1_17	WDM HRDXNCP_00040	WDM 073020A	1	8290/1613B		AJS	1.000	
18	30JL20DFS1_18	CCV CS-4 HRDXNL4_00094	CCV 073020B	2	8290/1613B		AJS	1.000	
19	30JL20DFS1_19	SB Solvent Blank C-14	SB 073020B	3			AJS	1.000	
20	30JL20DFS1_20	MB 320-398446/1-A	MB 320-398446/1-A	13	8290A_D5/Solid	D170	AJS	10.000	g
21	30JL20DFS1_21	LCS 320-398446/2-A	LCS 320-398446/2-A	14	8290A_D5/Solid		AJS	10.000	g
22	30JL20DFS1_22	320-62968-J-5-A	320-62968-J-5-A	15	8290A_D5/Water	D170	AJS	1.000	L
23	30JL20DFS1_23	320-62968-L-8-A	320-62968-L-8-A	16	8290A_D5/Water		AJS	1.000	L
24	30JL20DFS1_24	320-63018-J-8-A	320-63018-J-8-A	17	8290A_D5/Water		AJS	1.000	L
25	30JL20DFS1_25	160-38812-E-11-A	160-38812-E-11-A	18	8290A_D5/Water		AJS	1.000	L
26	30JL20DFS1_26	160-38812-D-1-A	160-38812-D-1-A	19	8290A_D5/Solid	D170	AJS	10.000	g
27	30JL20DFS1_27	160-38812-D-1-B MS	160-38812-D-1-B MS	20	8290A_D5/Solid		AJS	10.000	g
28	30JL20DFS1_28	160-38812-D-1-C MSD	160-38812-D-1-C MSD	21	8290A_D5/Solid		AJS	10.000	g
29	30JL20DFS1_29	SB Solvent Blank C-14	SB 073020C	3			AJS	1.000	
30	30JL20DFS1_30	CCV CS-4 HRDXNL4_00094	CCV 073020C	2	8290/1613B		AJS	1.000	
31	30JL20DFS1_31	Resolution Check	RC 073020B	46			AJS	1.000	
32	30JL20DFS1_32	WDM HRDXNCP_00040	WDM 073020B	1	8290/1613B		AJS	1.000	
33	30JL20DFS1_33	CCV CS-4 HRDXNL4_00094	CCV 073020D	2	8290/1613B		AJS	1.000	
34	30JL20DFS1_34	SB Solvent Blank C-14	SB 073020D	3			AJS	1.000	
35	30JL20DFS1_35	160-38812-C-2-A	160-38812-C-2-A	22	8290A_D5/Solid	D170	AJS	10.000	g
36	30JL20DFS1_36	160-38812-C-3-A	160-38812-C-3-A	23	8290A_D5/Solid		AJS	10.000	g
37	30JL20DFS1_37	160-38812-D-4-A	160-38812-D-4-A	24	8290A_D5/Solid		AJS	10.000	g
38	30JL20DFS1_38	160-38812-D-5-A	160-38812-D-5-A	25	8290A_D5/Solid		AJS	10.000	g
39	30JL20DFS1_39	160-38812-D-6-A	160-38812-D-6-A	26	8290A_D5/Solid		AJS	10.000	g
40	30JL20DFS1_40	160-38812-C-7-A	160-38812-C-7-A	27	8290A_D5/Solid		AJS	10.000	g
41	30JL20DFS1_41	160-38812-C-8-A	160-38812-C-8-A	28	8290A_D5/Solid		AJS	10.000	g
42	30JL20DFS1_42	160-38812-C-9-A	160-38812-C-9-A	29	8290A_D5/Solid		AJS	10.000	g
43	30JL20DFS1_43	160-38812-D-10-A	160-38812-D-10-A	30	8290A_D5/Solid		AJS	10.000	g
44	30JL20DFS1_44	SB Solvent Blank C-14	SB 073020E	3			AJS	1.000	
45	30JL20DFS1_45	CCV CS-4 HRDXNL4_00094	CCV 073020E	2	8290/1613B		AJS	1.000	
46	30JL20DFS1_46	Resolution Check	RC 073020C	46			AJS	1.000	
*								0.000	

logfile checked
7-30-20 ALM

Resolution Check Report (DFS SN: 3441)

eurofins Environment Testing TestAmerica

Date: 30 Jul 2020 11:43
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12112 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11711 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11729 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11696 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11879 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12044 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11479 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11762 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11948 [5%height]

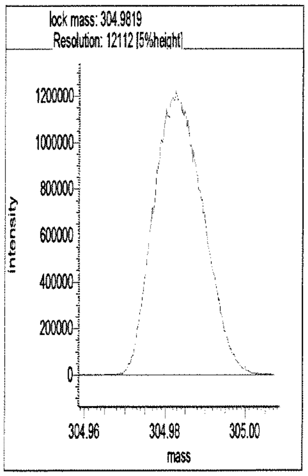

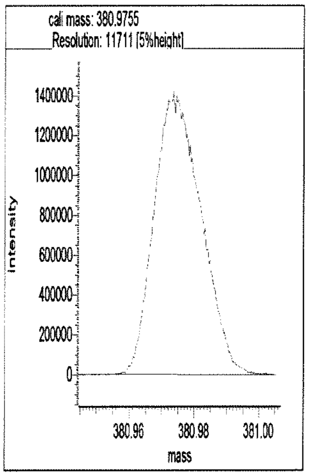

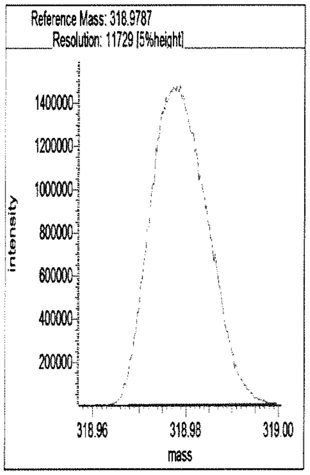

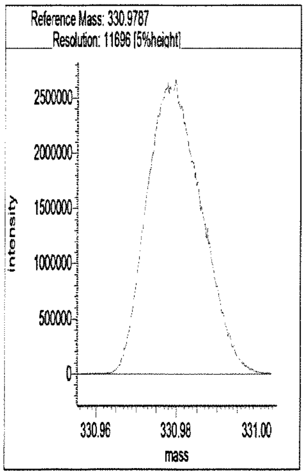

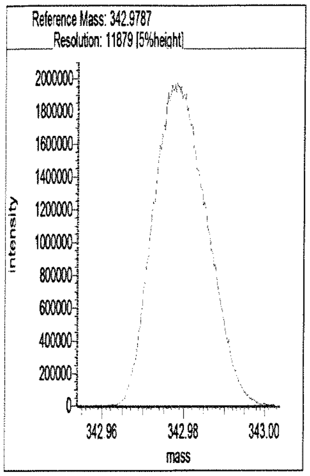

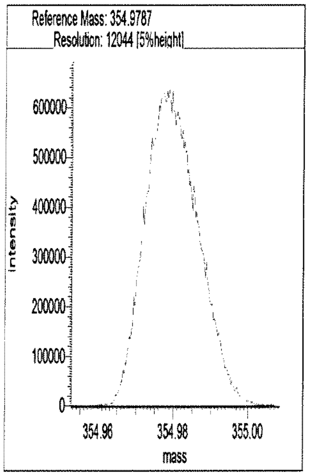

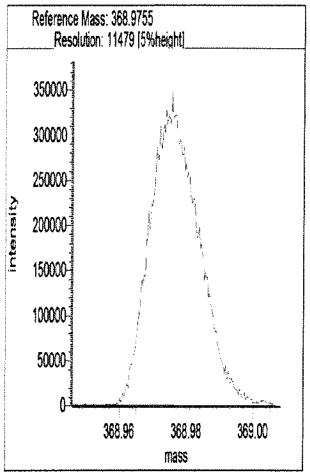

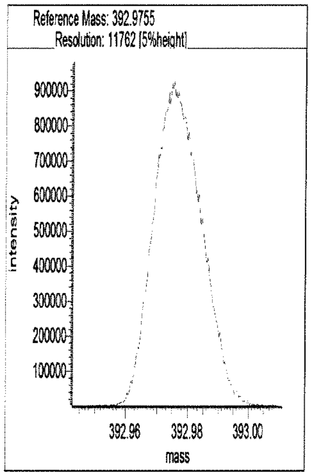

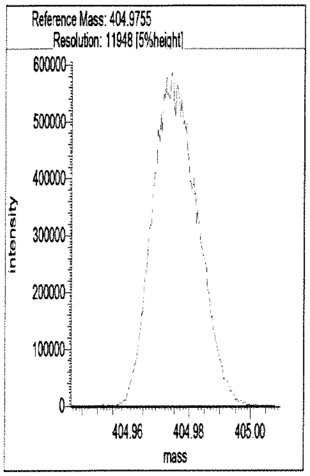

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11883 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11861 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11938 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11906 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11235 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11844 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11613 [5%height]

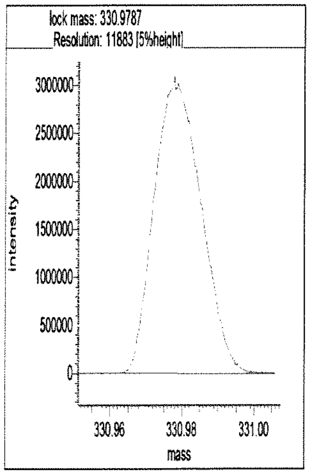

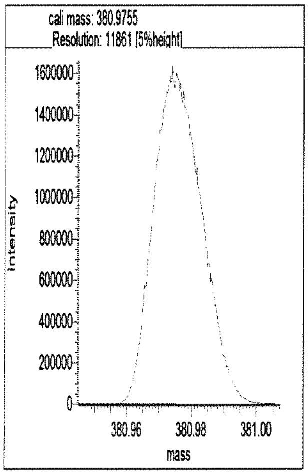

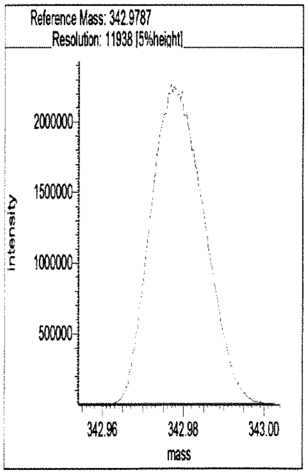

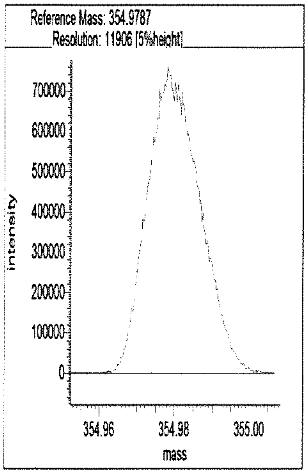

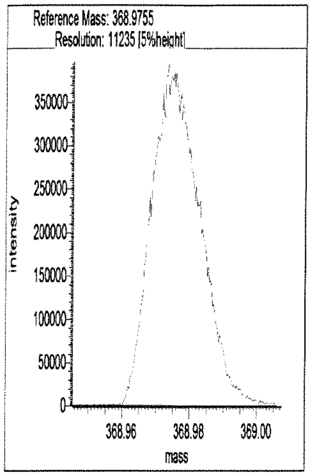

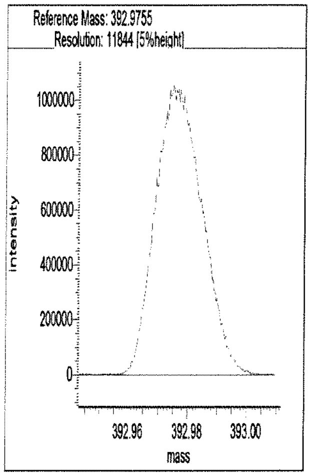

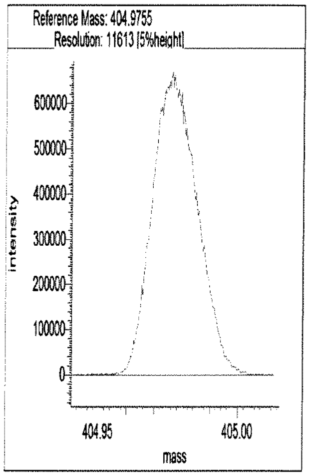

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11922 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11785 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11914 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11836 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11954 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11730 [5%height]

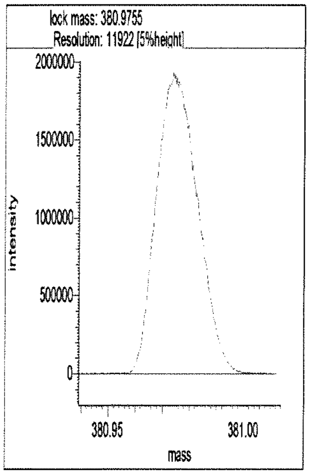

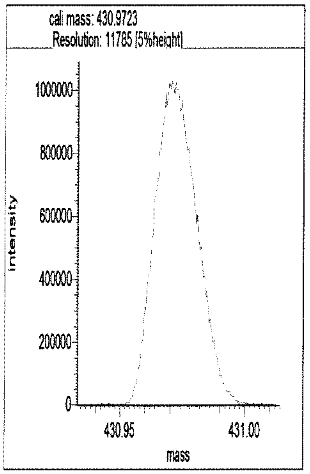

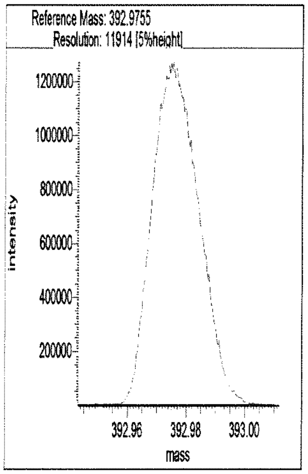

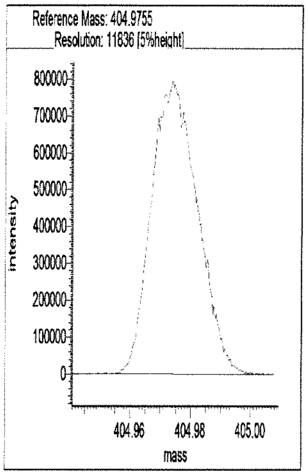

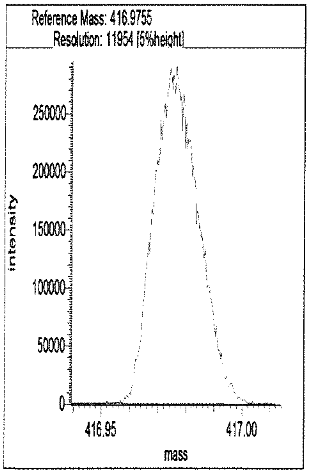

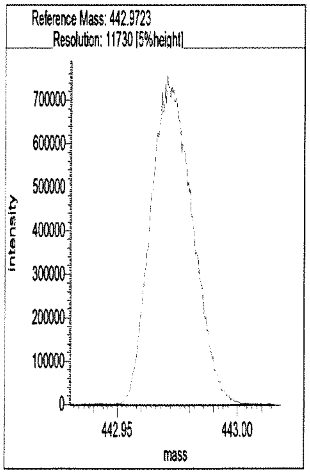

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11935 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11693 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11771 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12081 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11602 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11572 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11798 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11263 [5%height]

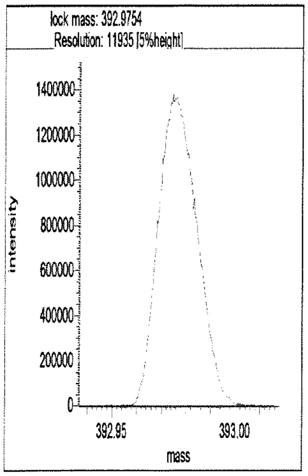

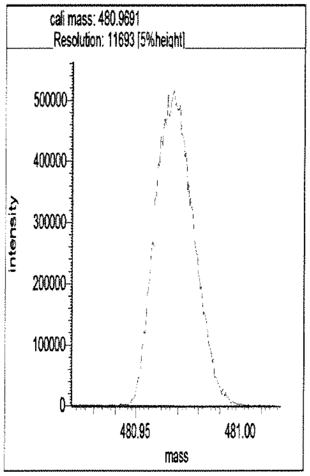

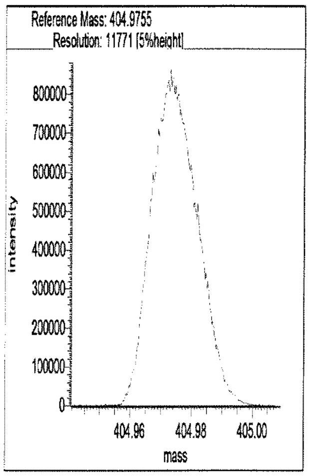

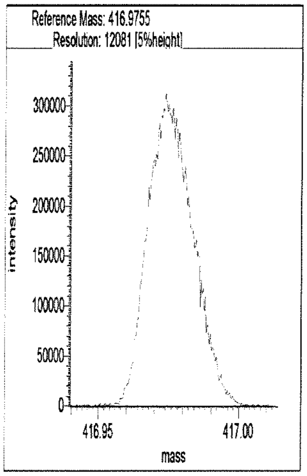

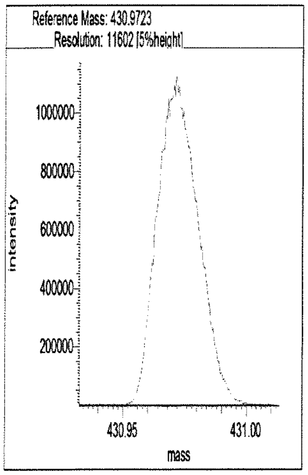

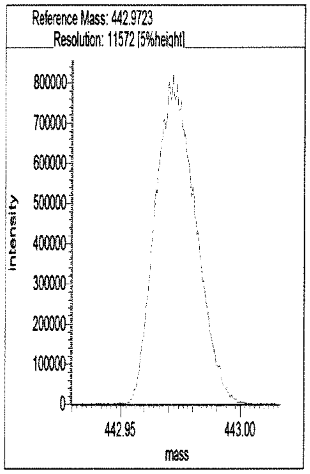

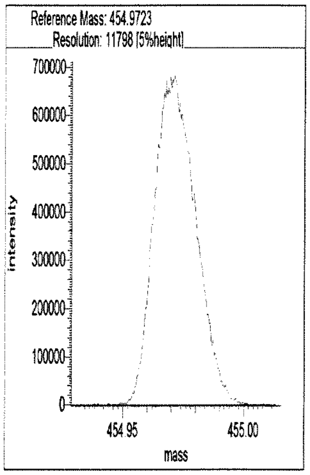

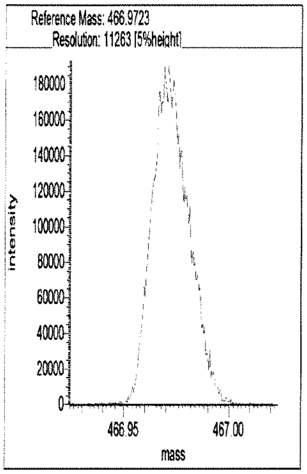

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11804 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11586 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11722 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11727 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11527 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11643 [5%height]

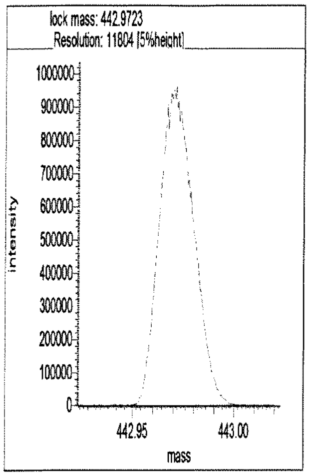
lock mass: 442.9723
Resolution: 11804 [5%height]

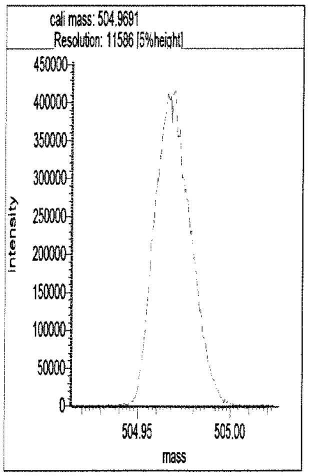
cali mass: 504.9691
Resolution: 11586 [5%height]

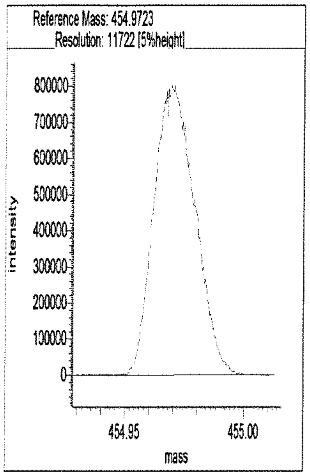
Reference Mass: 454.9723
Resolution: 11722 [5%height]

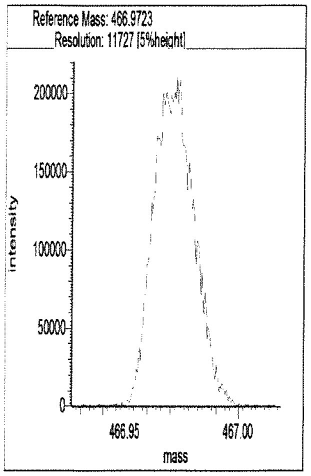
Reference Mass: 466.9723
Resolution: 11727 [5%height]

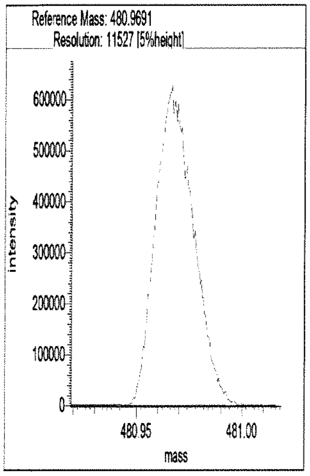
Reference Mass: 480.9691
Resolution: 11527 [5%height]

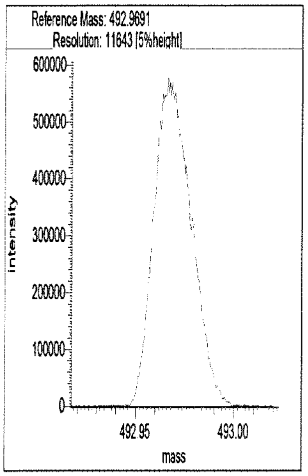
Reference Mass: 492.9691
Resolution: 11643 [5%height]

Resolution Check Report (DFS SN: 3441)

eurofins | Environment Testing TestAmerica

Date:	30 Jul 2020 23:17
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11921 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11738 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11613 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11748 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11767 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11674 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10839 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11604 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12105 [5%height]

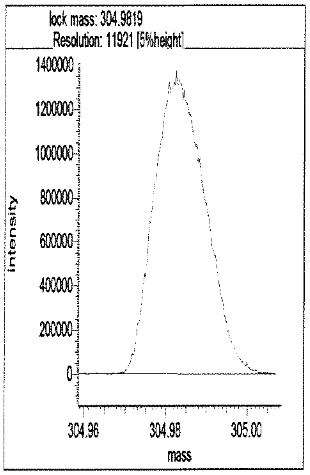

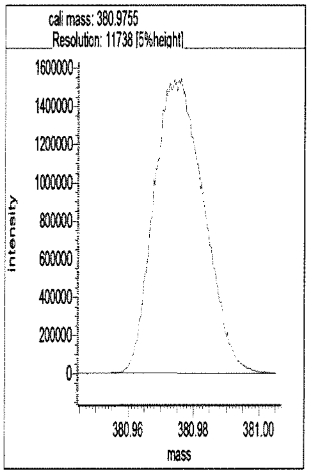

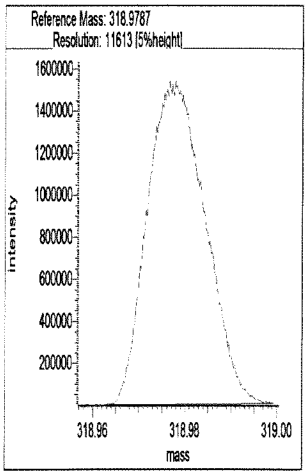

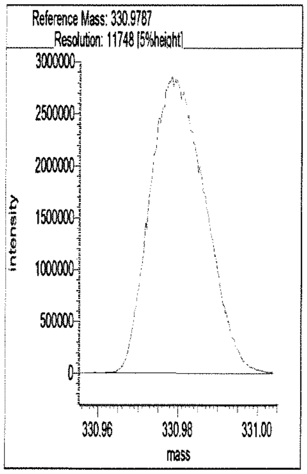

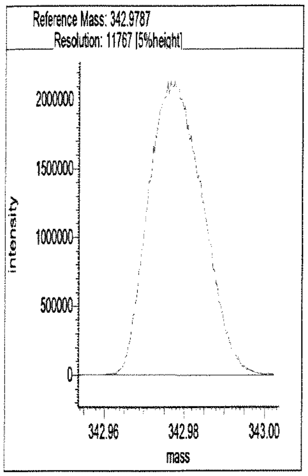

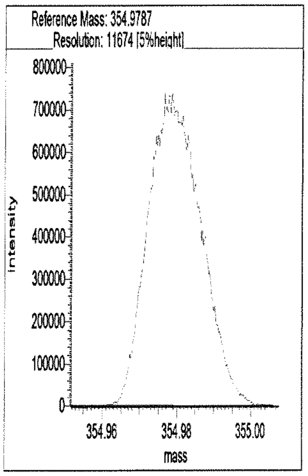

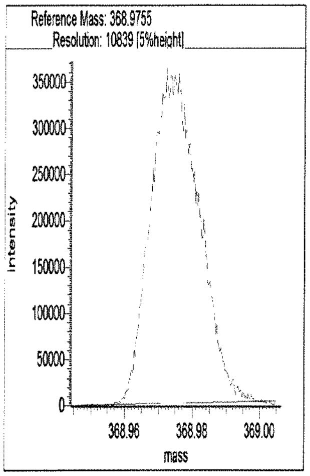

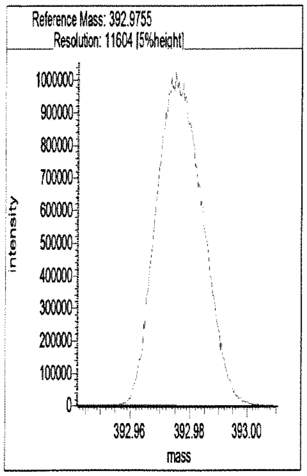

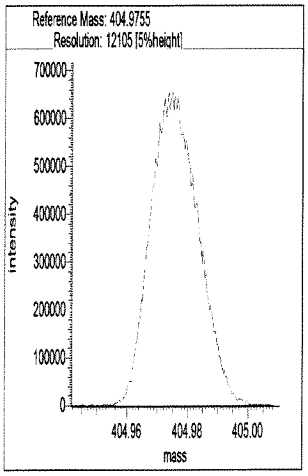

<u>Segment 2</u>

Lock mass 330.9787 [m/z] Resolution: 11934 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11745 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11822 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11631 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11199 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11743 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11784 [5%height]

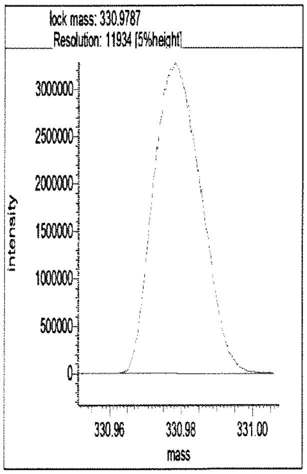

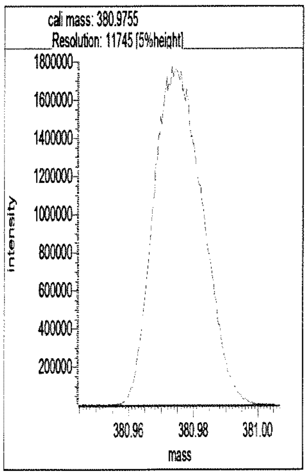

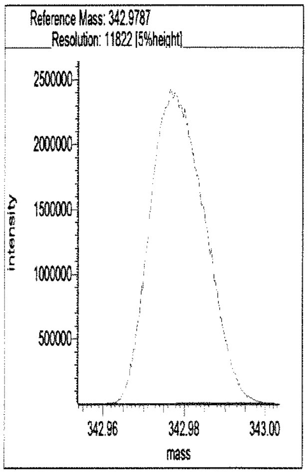

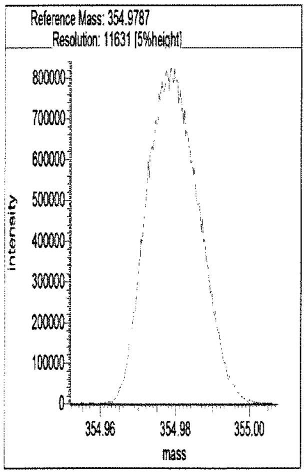

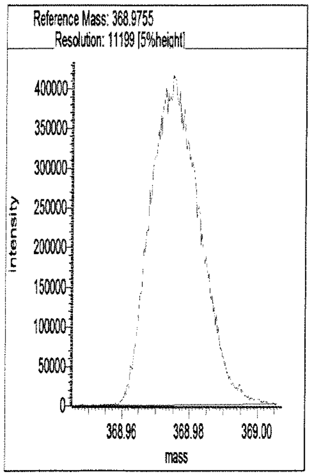

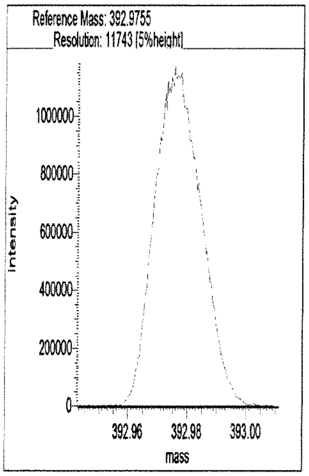

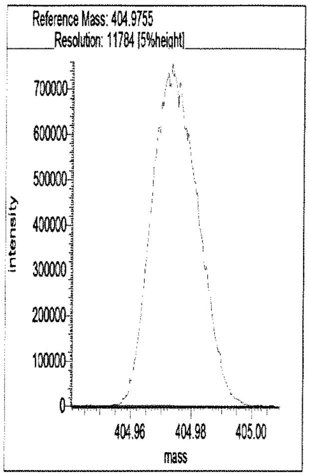

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11898 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11755 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11703 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11673 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11780 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11717 [5%height]

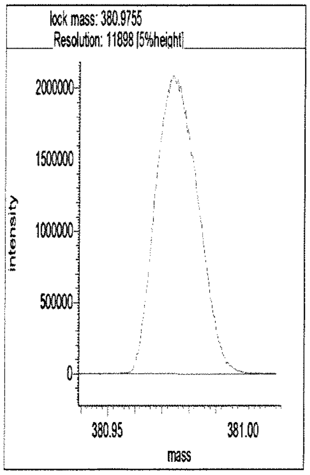

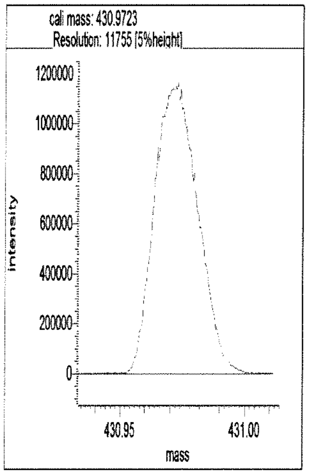

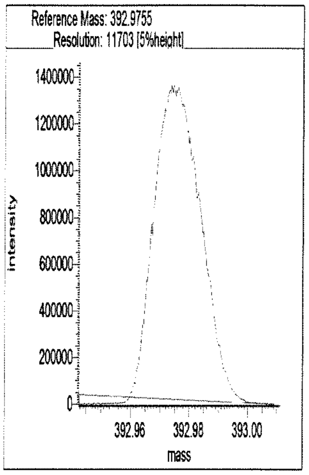

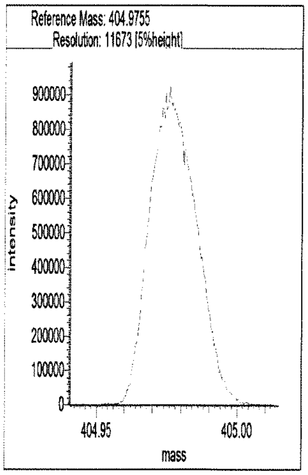

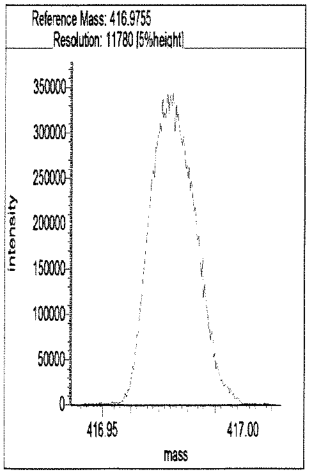

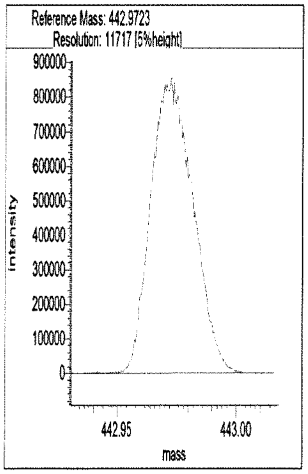

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11857 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11389 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11829 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11950 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11743 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11696 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11895 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11562 [5%height]

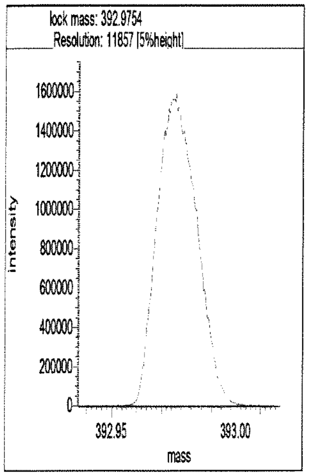

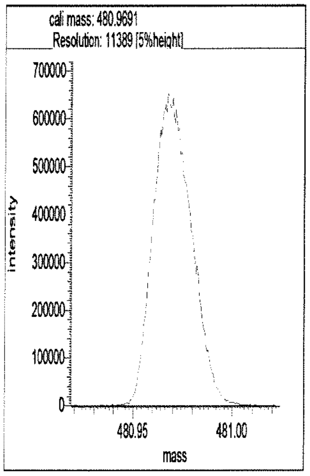

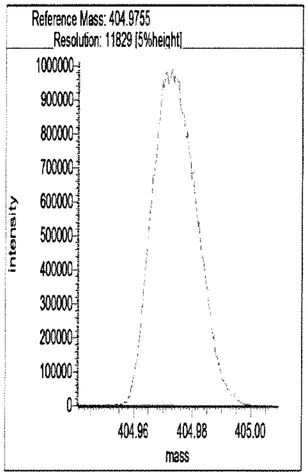

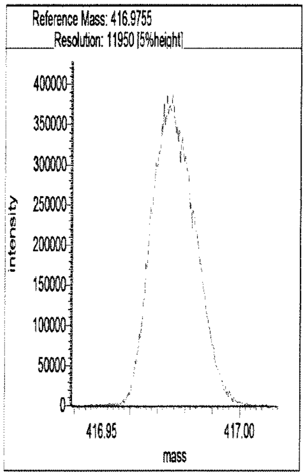

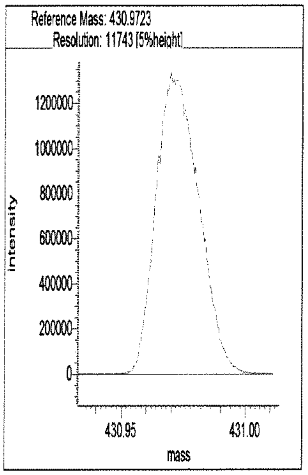

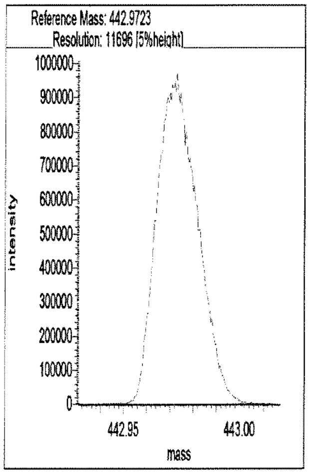

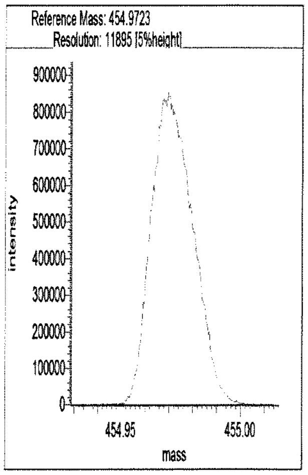

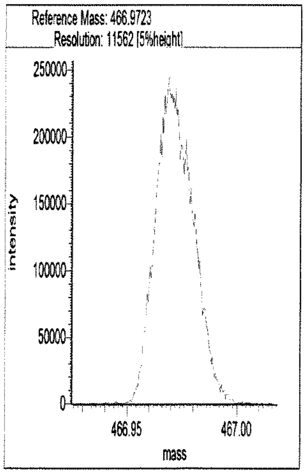

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12024 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11841 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11875 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11616 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11551 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11393 [5%height]

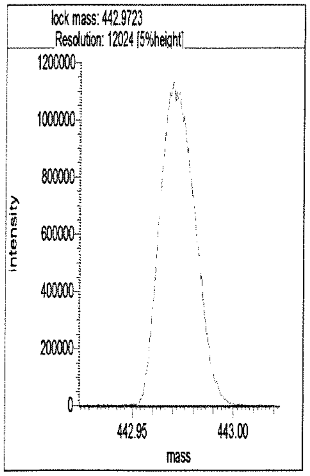
lock mass: 442.9723
Resolution: 12024 [5%height]
1200000
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

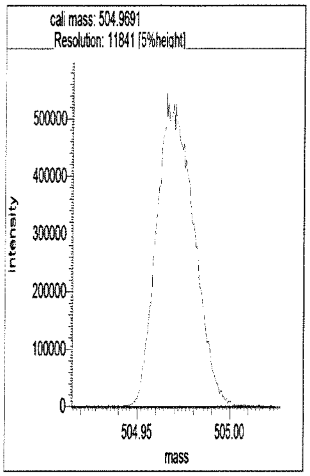
cali mass: 504.9691
Resolution: 11841 [5%height]
500000
400000
300000
200000
100000
0
intensity
504.95
505.00
mass

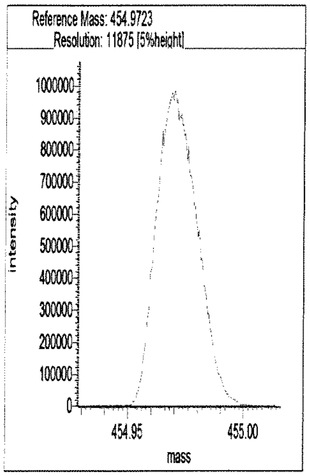
Reference Mass: 454.9723
Resolution: 11875 [5%height]
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

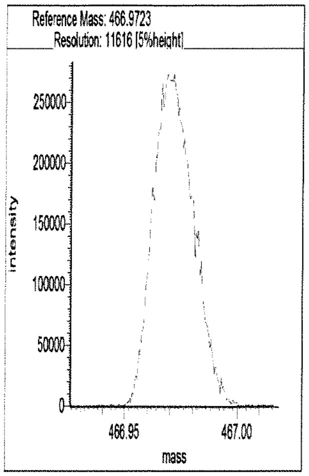
Reference Mass: 466.9723
Resolution: 11616 [5%height]
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

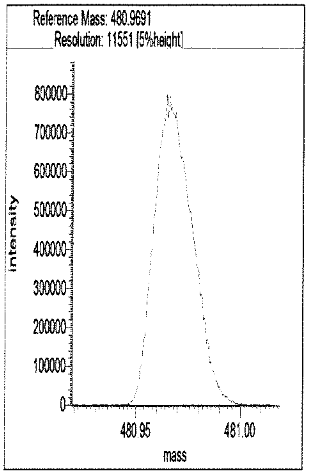
Reference Mass: 480.9691
Resolution: 11551 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

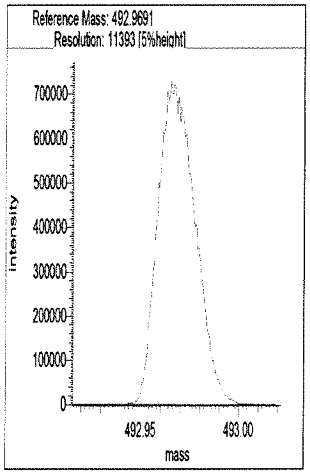
Reference Mass: 492.9691
Resolution: 11393 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Report Date: 31-Jul-2020 01:01:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 30-Jul-2020 12:50:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 31-Jul-2020 01:01:36 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1069

First Level Reviewer: shardaa Date: 30-Jul-2020 16:10:04

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.787	2957435	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.758	4459931	0.80	1.4977	100.7	100.7	0.3080	0.3080	101	
2,3,7,8-TCDF	20.784	482780	0.76	1.1312	9.569	9.569	0.0367	0.0367	95.69	
A Non-2,3,7,8-sub-TCDF	20.155	5524	0.77	1.1312	0.1732	0.1095	0.0367	0.1095	0.00	RQ
S Total TCDF					9.742	9.678	0.0367	0.0367		RQ
D 13C-2,3,7,8-TCDD	22.165	2993769	0.82	1.0367	97.6	97.6	0.2200	0.2200	97.64	
2,3,7,8-TCDD	22.208	325919	0.84	1.1849	9.188	9.188	0.0559	0.0559	91.88	
$ 37Cl4-2,3,7,8-TCDD	22.208	312876		1.1208	9.439	9.439	0.0176	0.0176	94.39	
A Non-2,3,7,8-sub-TCDD	21.023						0.0559	0.0559		
S Total TCDD					9.188	9.188	0.0559	0.0559		
D 13C-1,2,3,7,8-PeCDF	27.685	3780907	1.58	1.3057	97.9	97.9	0.3728	0.3728	97.91	
1,2,3,7,8-PeCDF	27.710	1993331	1.57	1.1060	47.7	47.7	0.1453	0.1453	95.33	
D 13C-2,3,4,7,8-PeCDF	29.260	4566668	1.60	1.5420	100.1	100.1	0.3157	0.3157	100	
2,3,4,7,8-PeCDF	29.285	1930210	1.58	0.9067	46.6	46.6	0.1604	0.1604	93.24	
A F1 PeCDFs	24.919	578	1.55	1.0063	0.0301	0.0138	0.004076	0.0130	0.00	RQ
A Non-2,3,7,8-sub-PeCDF	28.525						0.1517	0.1517		n
S Total PeCDF					94.3	94.3	0.1528	0.1528		RQ
D 13C-1,2,3,7,8-PeCDD	30.102	2340429	1.60	0.8294	95.4	95.4	0.2351	0.2351	95.41	
1,2,3,7,8-PeCDD	30.127	1228979	1.58	1.1062	47.5	47.5	0.0652	0.0652	94.94	
A Non-2,3,7,8-sub-PeCDD	28.864						0.0652	0.0652		
S Total PeCDD					47.5	47.5	0.0652	0.0652		
D 13C-1,2,3,4,7,8-HxCDF	35.243	4300056	0.54	1.4619	96.4	96.4	0.4062	0.4062	96.38	
1,2,3,4,7,8-HxCDF	35.260	2100474	1.25	1.0087	48.4	48.4	0.2514	0.2514	96.86	
D 13C-1,2,3,6,7,8-HxCDF	35.395	3810113	0.52	1.2866	97.0	97.0	0.4616	0.4616	97.03	
1,2,3,6,7,8-HxCDF	35.412	2283174	1.24	1.2432	48.2	48.2	0.2491	0.2491	96.40	
D 13C-2,3,4,6,7,8-HxCDF	36.187	3566923	0.55	1.1988	97.5	97.5	0.4954	0.4954	97.49	
2,3,4,6,7,8-HxCDF	36.195	2180899	1.26	1.2736	48.0	48.0	0.2237	0.2237	96.02	
D 13C-1,2,3,7,8,9-HxCDF	37.046	3464590	0.53	1.0687	106.2	106.2	0.5557	0.5557	106	
1,2,3,7,8,9-HxCDF	37.055	2106566	1.28	1.2882	47.2	47.2	0.2139	0.2139	94.40	
A Non-2,3,7,8-sub-HxCDF	35.370						0.2322	0.2322		
S Total HxCDF					191.8	191.8	0.2345	0.2345		

Report Date: 31-Jul-2020 01:01:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.844	3052034	1.29	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.381	3160384	1.28	1.1046	93.7	93.7	0.2566	0.2566	93.74	
1,2,3,4,7,8-HxCDD	36.398	1342343	1.25	0.9336	45.5	45.5	0.1293	0.1293	90.99	
D 13C-1,2,3,6,7,8-HxCDD	36.499	2877962	1.29	0.9871	95.5	95.5	0.2872	0.2872	95.53	
1,2,3,6,7,8-HxCDD	36.507	1402980	1.26	1.0802	45.1	45.1	0.1334	0.1334	90.26	
1,2,3,7,8,9-HxCDD	36.861	1525777	1.24	1.0574	47.8	47.8	0.1242	0.1242	95.58	
A Non-2,3,7,8-sub-HxCDD	35.702						0.1283	0.1283		
S Total HxCDD					138.4	138.4	0.1290	0.1290		
D 13C-1,2,3,4,6,7,8-HpCDF	38.792	2751552	0.46	0.9035	99.8	99.8	0.8912	0.8912	99.78	
1,2,3,4,6,7,8-HpCDF	38.800	1983082	1.05	1.5957	45.2	45.2	0.2787	0.2787	90.33	
D 13C-1,2,3,4,7,8,9-HpCDF	40.013	3375668	0.45	1.0480	105.5	105.5	0.7683	0.7683	106	
1,2,3,4,7,8,9-HpCDF	40.030	1794875	1.05	1.1693	45.5	45.5	0.3002	0.3002	90.94	
A Non-2,3,7,8-sub-HpCDF	39.411						0.2838	0.2838		
S Total HpCDF					90.6	90.6	0.2895	0.2895		
D 13C-1,2,3,4,6,7,8-HpCDD	39.710	2657187	1.05	0.8875	98.1	98.1	0.4211	0.4211	98.10	
1,2,3,4,6,7,8-HpCDD	39.727	1340994	1.04	1.1150	45.3	45.3	0.1667	0.1667	90.52	
A Non-2,3,7,8-sub-HpCDD	39.555						0.1667	0.1667		
S Total HpCDD					45.3	45.3	0.1667	0.1667		
D 13C-OCDD	42.197	3984033	0.90	0.6297	207.3	207.3	0.2769	0.2769	104	
OCDF	42.298	2910742	0.92	1.4809	98.7	98.7	0.1342	0.1342	98.67	
OCDD	42.206	2161272	0.91	1.1948	90.8	90.8	0.1257	0.1257	90.81	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00094 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 30-Jul-2020 12:50:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 31-Jul-2020 01:01:36 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1069

First Level Reviewer: shardaa Date: 30-Jul-2020 16:10:04

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.787	21.787	0		1303941	193522	293	732	660		
333.9338	21.779	21.787	-1		1653494	238246	101	252	2359	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.758	20.758	0	0.953	1980908	297145	554	1385	536		
317.9389	20.766	20.758	1	0.953	2479023	369202	243	607	1519	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.784	20.784	0	1.001	208991	31286	37	92	846		
305.8987	20.784	20.784	0	1.001	273789	39030	74	185	527	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	21.084	20.155	56	1.016	5617	753	37	92	20		
	Empc Correction				2403	360	37	92	10		
305.8987	21.152	20.155	60	1.019	3121	468	74	185	6	1.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.165	22.165	0	1.017	1353002	187686	293	732	641		
333.9338	22.174	22.165	1	1.018	1640767	242643	101	252	2402	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.208	22.208	0	1.002	148794	20377	82	205	249		
321.8936	22.200	22.208	-1	1.002	177125	26003	32	80	813	0.84(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.208	22.208	0	1.019	312876	43978	34	85	1293		
A Non-2,3,7,8-sub-TCDD											
319.8965	21.023						82	205			
321.8936	21.023						32	80			

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Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.685	27.685	0	1.271	2312686	383602	552	1380	695		
353.8970	27.685	27.685	0	1.271	1468221	241789	289	722	837	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.710	27.710	0	1.001	1218501	195979	230	575	852		
341.8567	27.710	27.710	0	1.001	774830	125917	172	430	732	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.260	29.260	0	1.343	2806889	427554	552	1380	775		
353.8970	29.268	29.260	1	1.343	1759779	263545	289	722	912	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.285	29.285	0	1.001	1182966	178766	230	575	777		
341.8567	29.285	29.285	0	1.001	747244	115070	172	430	669	1.58(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	24.381	24.919	-32	0.881	333	172	1	2	172		
341.8567	24.381	24.919	-32	0.881	625	220	10	25	22	0.53(1.32-1.78)	
	Empc Correction				214	110	10	25	11		
339.8597	24.690	24.919	-14	0.892	19	13	1	2	13		
341.8567	24.673	24.919	-15	0.891	286	161	10	25	16	0.07(1.32-1.78)	
	Empc Correction				12	8	10	25	1		
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.333	28.525	-12	1.023	10888	1739	230	575	8		
341.8567	28.324	28.525	-12	1.023	7827	1139	172	430	7	1.39(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.102	30.102	0	1.382	1439145	218268	192	480	1137		
369.8919	30.094	30.102	-1	1.381	901284	135564	145	362	935	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.127	30.127	0	1.001	753022	110949	70	175	1585		
357.8516	30.127	30.127	0	1.001	475957	70857	32	80	2214	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.864						70	175			
357.8516	28.864						32	80			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.243	35.243	0	0.957	1500783	368022	647	1617	569		
385.8610	35.243	35.243	0	0.957	2799273	671871	1215	3037	553	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.260	35.260	0	1.000	1167749	281620	601	1502	469		
375.8178	35.260	35.260	0	1.000	932725	220578	454	1135	486	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.395	35.395	0	0.961	1308602	293884	647	1617	454		
385.8610	35.395	35.395	0	0.961	2501511	557497	1215	3037	459	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.412	35.412	0	1.000	1265405	287171	601	1502	478		
375.8178	35.412	35.412	0	1.000	1017769	227604	454	1135	501	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.187	36.187	0	0.982	1262187	333261	647	1617	515		
385.8610	36.187	36.187	0	0.982	2304736	592518	1215	3037	488	0.55(0.43-0.59)	

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Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	36.195	36.195	0	1.000	1215433	321468	601	1502	535		
375.8178	36.195	36.195	0	1.000	965466	258342	454	1135	569	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.046	37.046	0	1.005	1195562	324392	647	1617	501		
385.8610	37.046	37.046	0	1.005	2269028	632817	1215	3037	521	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.055	37.055	0	1.000	1182872	332854	601	1502	554		
375.8178	37.055	37.055	0	1.000	923694	253297	454	1135	558	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.370						601	1502			
375.8178	35.370						454	1135			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.844	36.844	0		1716796	441015	513	1282	860		
403.8529	36.844	36.844	0		1335238	342870	376	940	912	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.381	36.381	0	0.987	1772836	497690	513	1282	970		
403.8529	36.381	36.381	0	0.987	1387548	388567	376	940	1033	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.398	36.398	0	1.000	746937	205388	224	560	917		
391.8127	36.398	36.398	0	1.000	595406	160392	204	510	786	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.499	36.499	0	0.991	1619704	417797	513	1282	814		
403.8529	36.499	36.499	0	0.991	1258258	324854	376	940	864	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.507	36.507	0	1.000	781786	206841	224	560	923		
391.8127	36.507	36.507	0	1.000	621194	165877	204	510	813	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.861	36.861	0	1.013	845251	228961	224	560	1022		
391.8127	36.861	36.861	0	1.013	680526	182591	204	510	895	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.702						224	560			
391.8127	35.702						204	510			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.792	38.792	0	1.053	872939	282090	870	2175	324		
419.8220	38.792	38.792	0	1.053	1878613	617209	1655	4137	373	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.800	38.800	0	1.000	1017308	322739	804	2010	401		
409.7788	38.800	38.800	0	1.000	965774	309284	796	1990	389	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.013	40.013	0	1.086	1052040	356361	870	2175	410		
419.8220	40.013	40.013	0	1.086	2323628	783313	1655	4137	473	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.030	40.030	0	1.000	919721	314908	804	2010	392		
409.7788	40.022	40.030	-1	1.000	875154	295324	796	1990	371	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.411						804	2010			
409.7788	39.411						796	1990			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.710	39.710	0	1.078	1361241	454421	567	1417	801		
437.8140	39.710	39.710	0	1.078	1295946	444855	605	1512	735	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.727	39.727	0	1.000	683501	226733	345	862	657		
425.7737	39.719	39.727	-1	1.000	657493	217365	324	810	671	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						345	862			
425.7737	39.555						324	810			
13C-OCDD											
469.7780	42.197	42.197	0	1.145	1886920	570436	303	757	1883		
471.7750	42.197	42.197	0	1.145	2097113	637253	244	610	2612	0.90(0.76-1.02)	
OCDF											
441.7428	42.298	42.298	0	1.002	1394044	418763	237	592	1767		
443.7399	42.298	42.298	0	1.002	1516698	465683	243	607	1916	0.92(0.76-1.02)	
OCDD											
457.7377	42.206	42.206	0	1.000	1027142	316484	181	452	1749		
459.7348	42.206	42.206	0	1.000	1134130	353097	182	455	1940	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00094 Amount Added: 1.00 Units: uL

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d
Lims ID: CCV
Client ID:
Inject. Date: 30-Jul-2020 12:50:00 Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 399843 Lims Sample ID: 2
Sublist: chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDF, RT: 20.155

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	4459931	666347

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	4459931	666347

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
21.084	5617	753	3121	468	0.1732	1.80	RnQ
21.084	2403	360	3121	468	0.1095		Empc Correction
Signal Totals:							
	2403	360	3121	468			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8738	1221				1.80	RQ
	5524	828					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1732 = (8738 * 100.000) / (4459931 * 1.131)
Empc Amount: 0.1095 = (5524 * 100.000) / (4459931 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d		
Lims ID:	CCV		
Client ID:			
Inject. Date:	30-Jul-2020 12:50:00	Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	2
Sublist:	chrom-Dioxin_DFS1*sub1		

F1 PeCDFs, RT: 24.919

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	3780907	625391
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	4566668	691099

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	4173787	658245

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.381	333	172	625	220	0.0228	0.53	RQ
24.381	333	172	214	110	0.0130		Empc Correction
24.690	19	13	286	161	0.007261	0.07	RQ
24.690	19	13	12	8	0.000738		Empc Correction
Signal Totals:							
	352	185	226	118			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1263	566				0.39	RQ
	578	303					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0301 = (1263 * 100.000) / (4173787 * 1.006)
Empc Amount: 0.0138 = (578 * 100.000) / (4173787 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d		
Injection Date:	30-Jul-2020 12:50:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

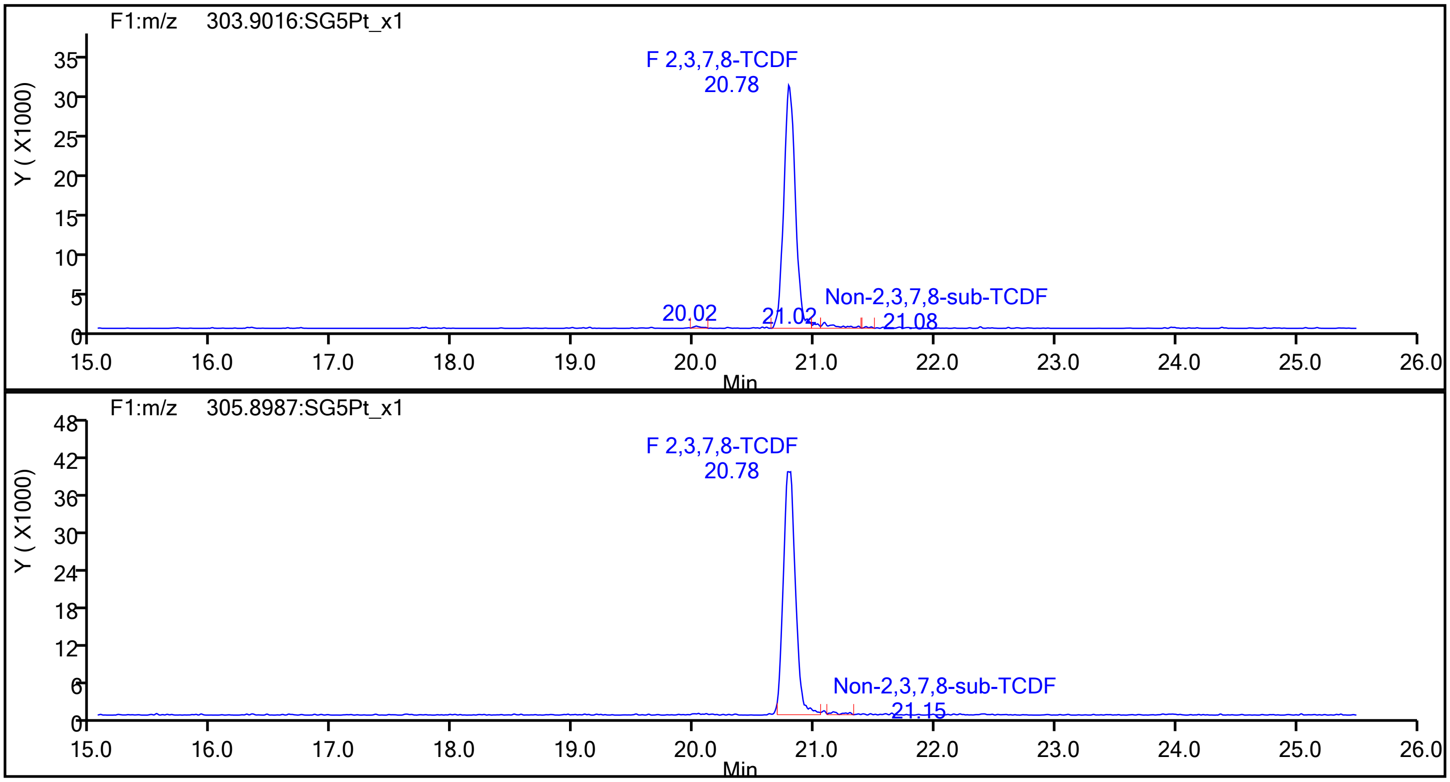

TCDF Standards

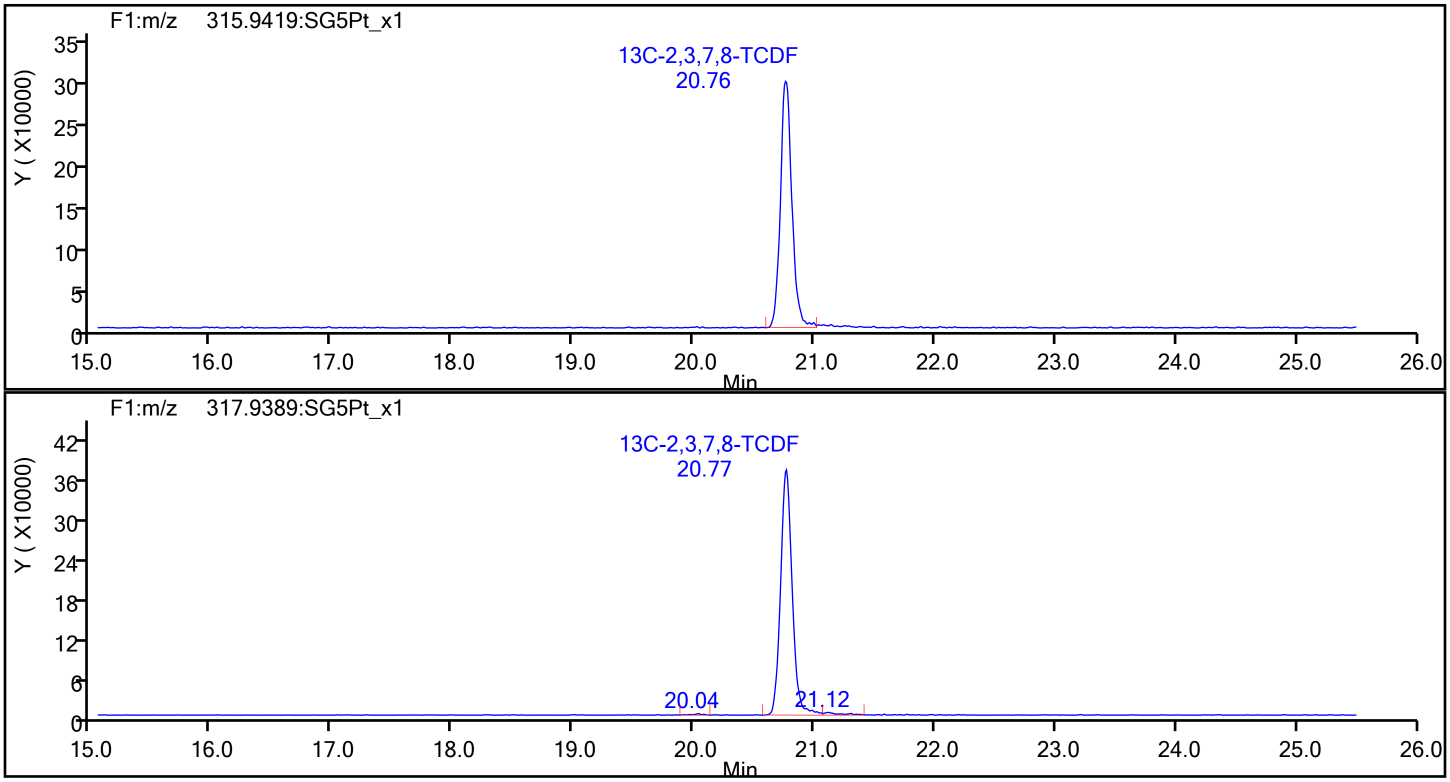

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d		
Injection Date:	30-Jul-2020 12:50:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

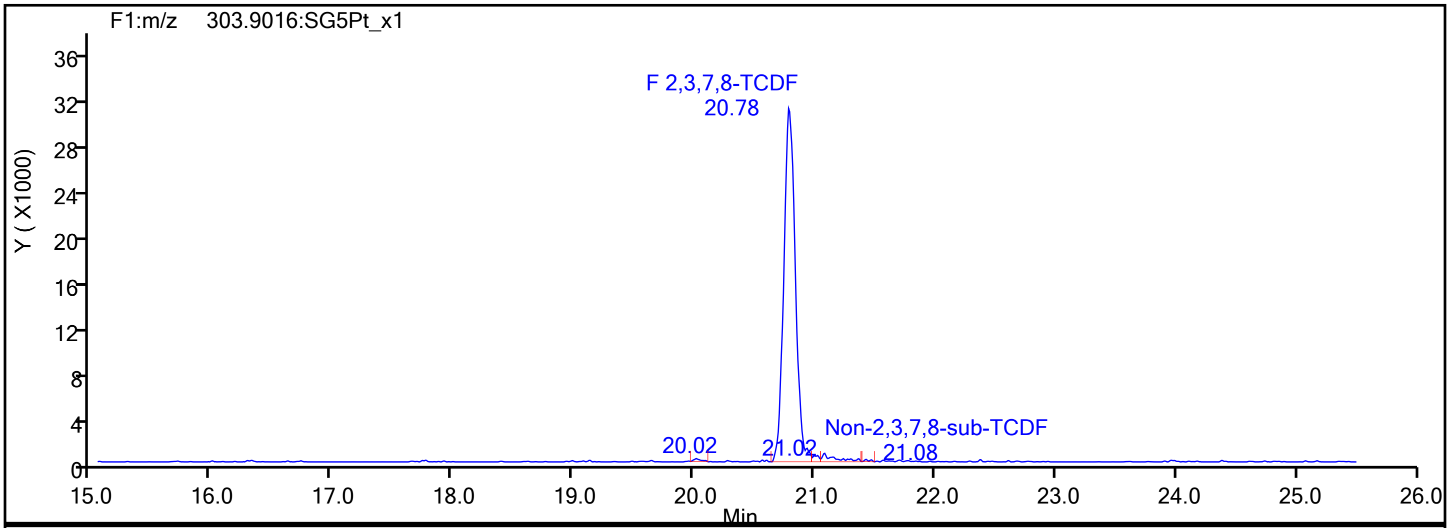

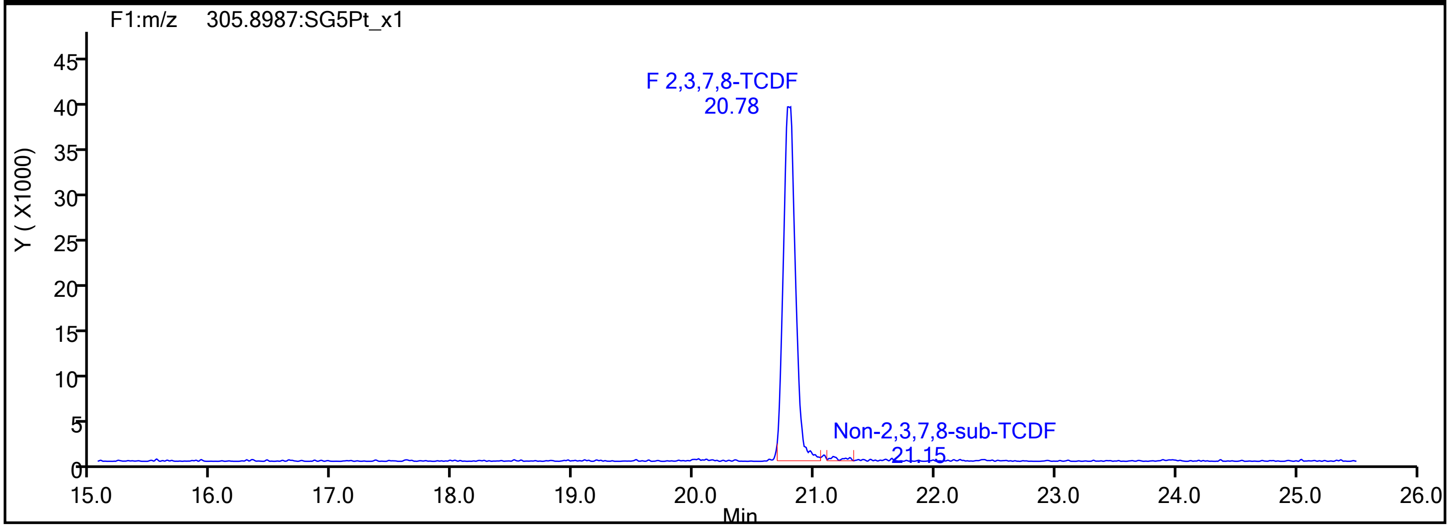

TCDF Interference Mass

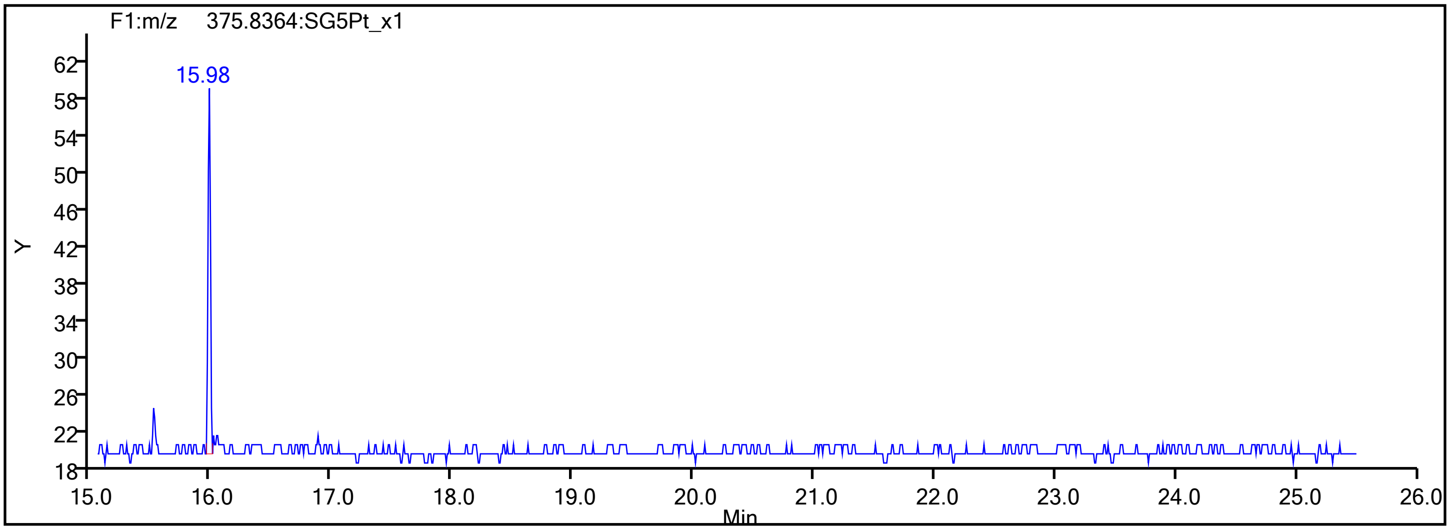

Report Date: 31-Jul-2020 01:01:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d

Injection Date: 30-Jul-2020 12:50:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 399843
Sample Line#: 2

Column Type: DB-5
Column Dia: 0.32 mm

TCDD

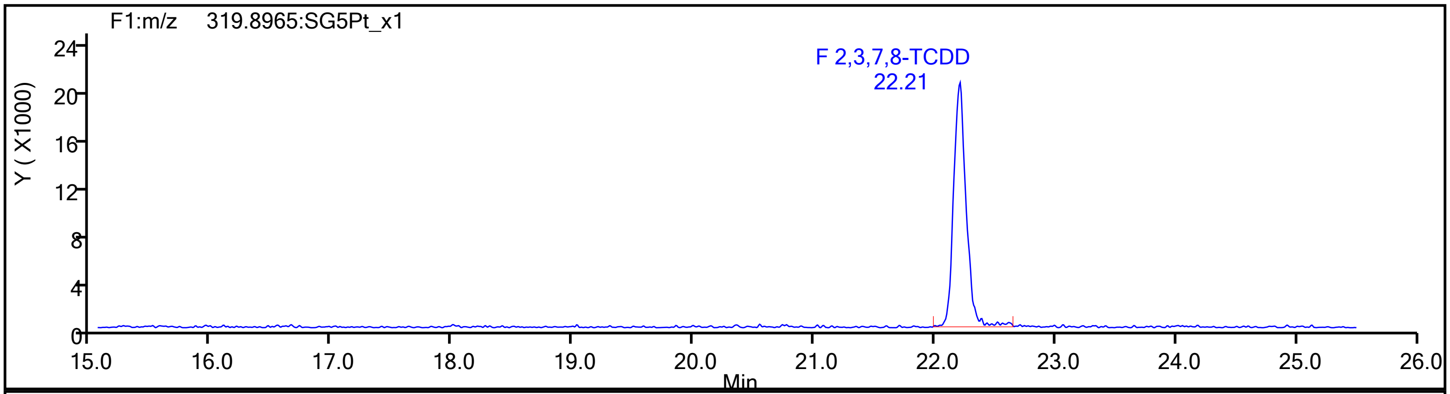

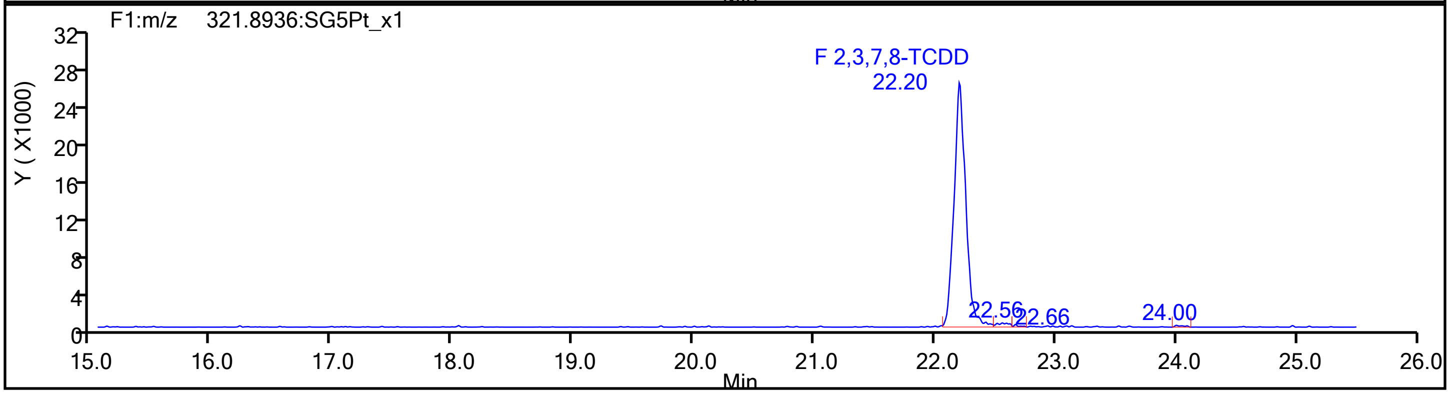

TCDD Standards

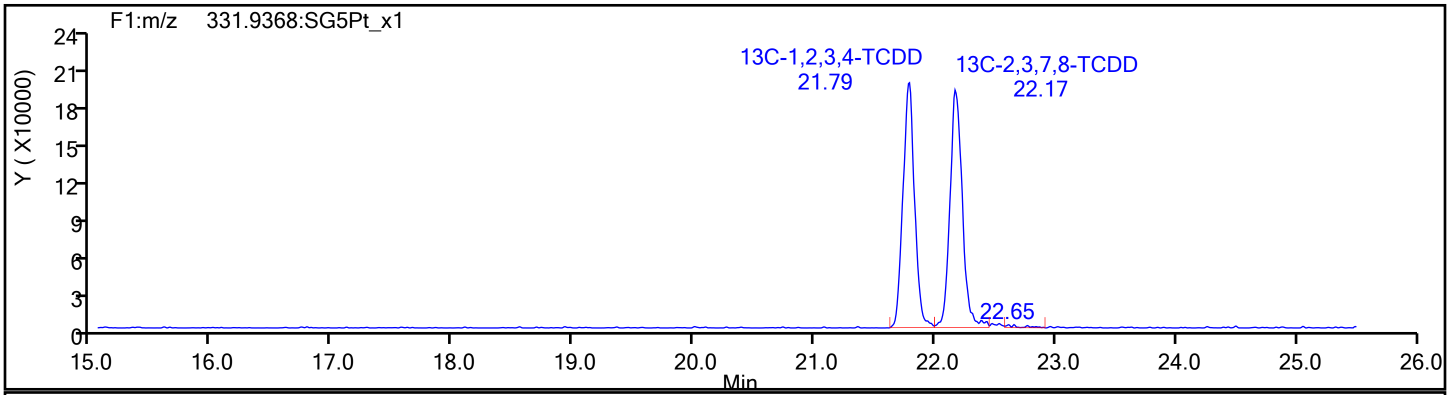

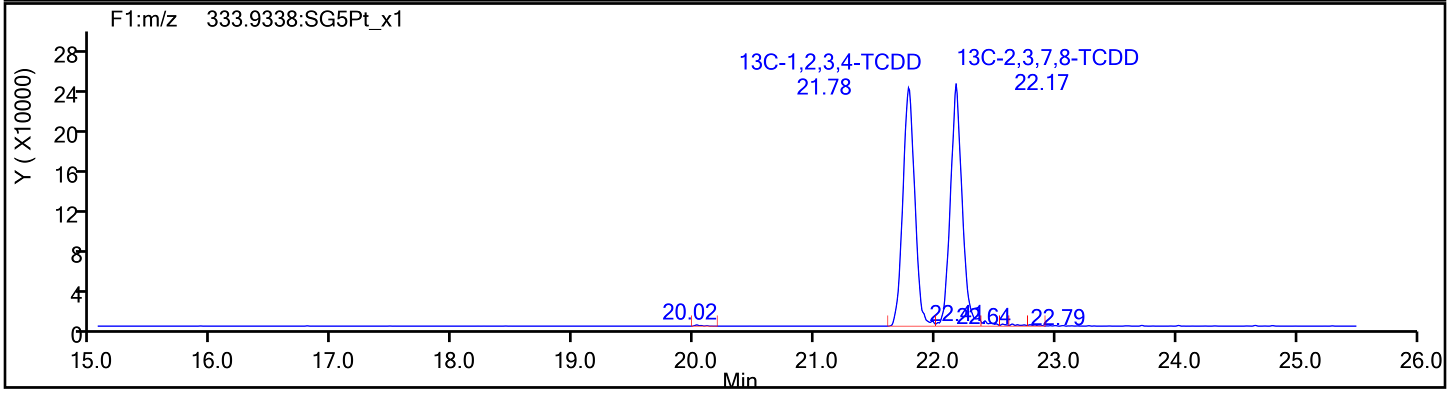

Report Date: 31-Jul-2020 01:01:36 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d

Injection Date: 30-Jul-2020 12:50:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399843
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

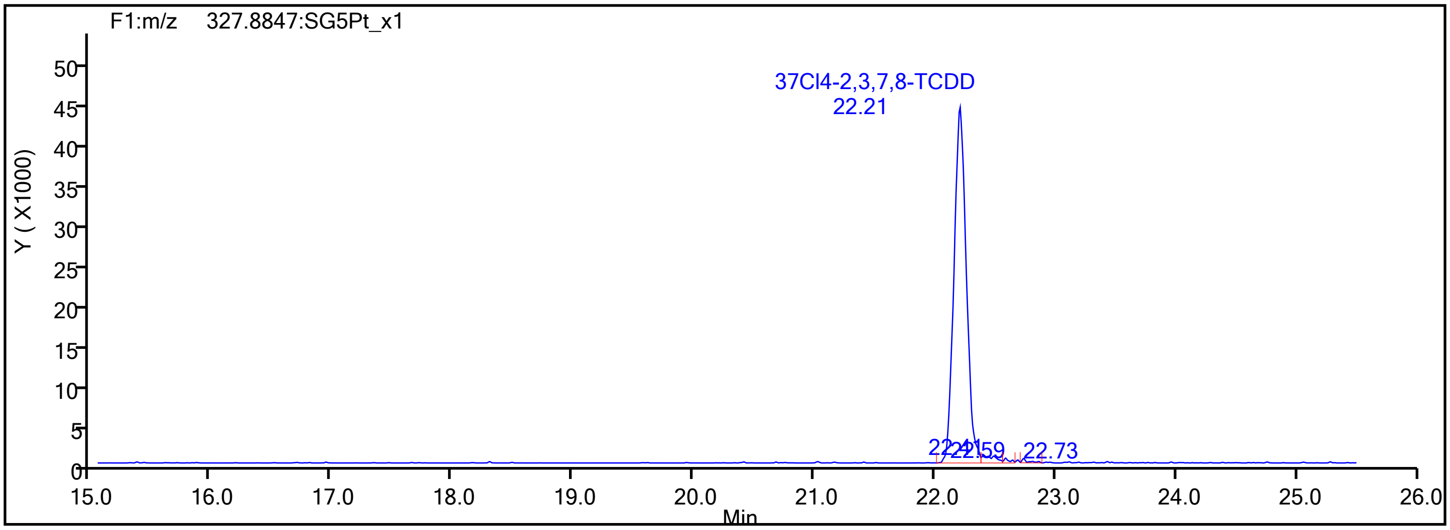

37Cl4-TCDD Standards

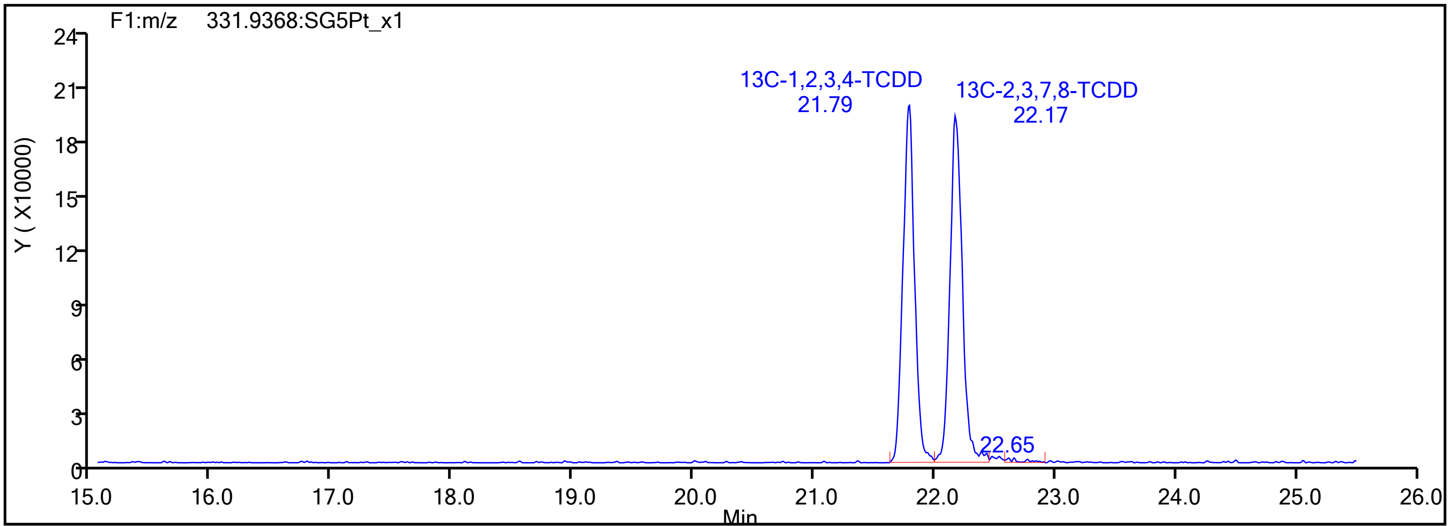

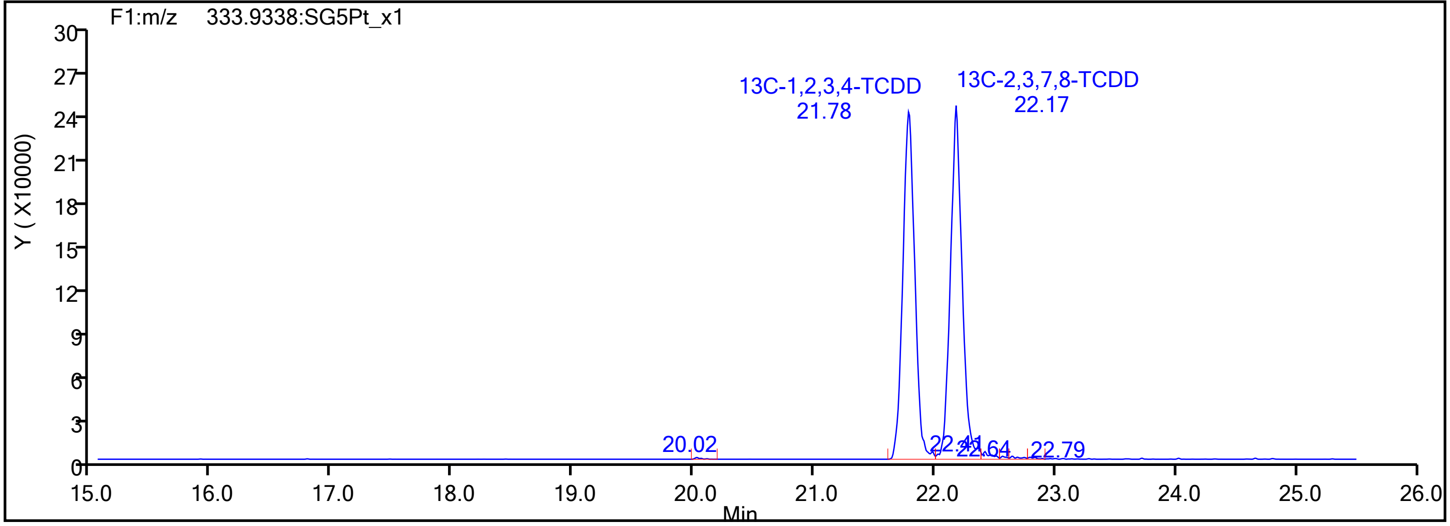

Report Date: 31-Jul-2020 01:01:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
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Client ID:
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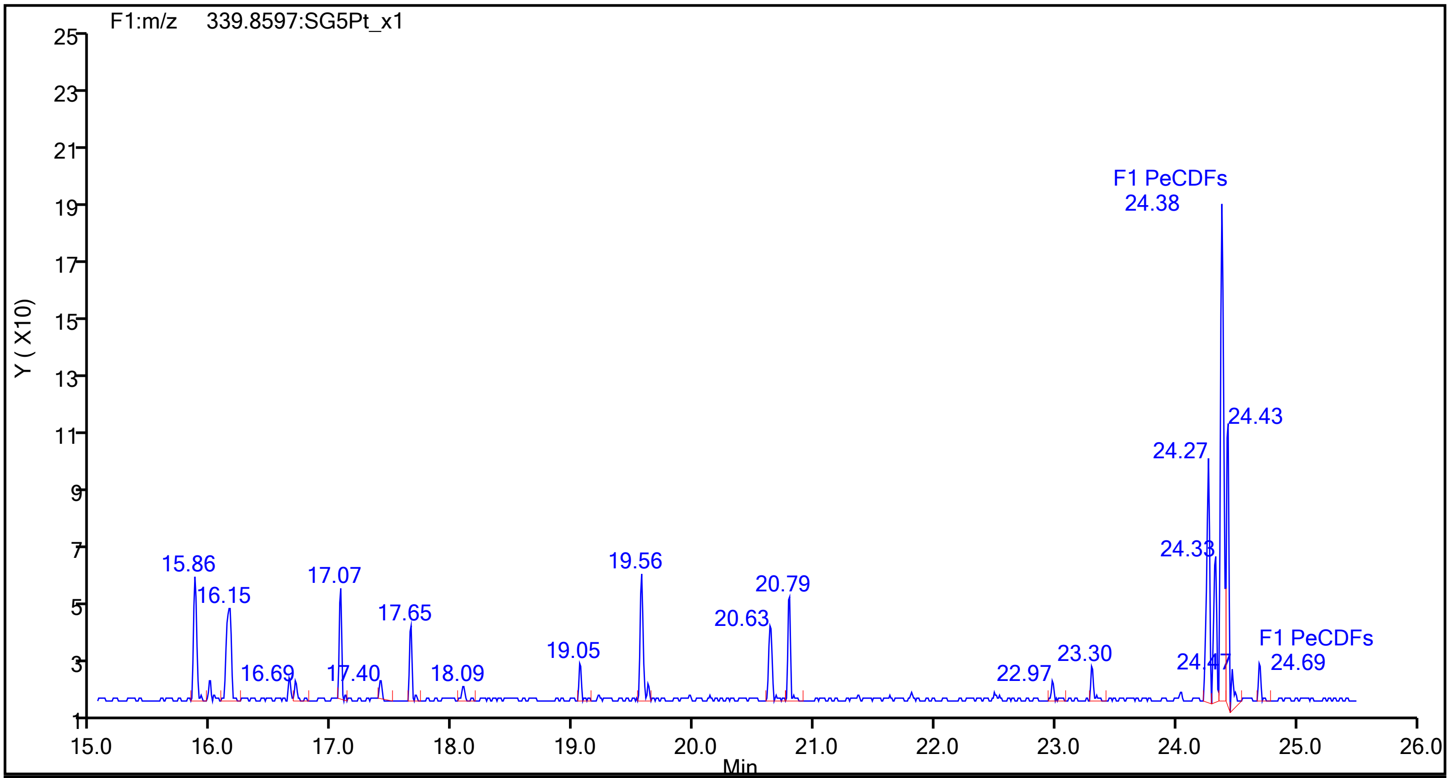

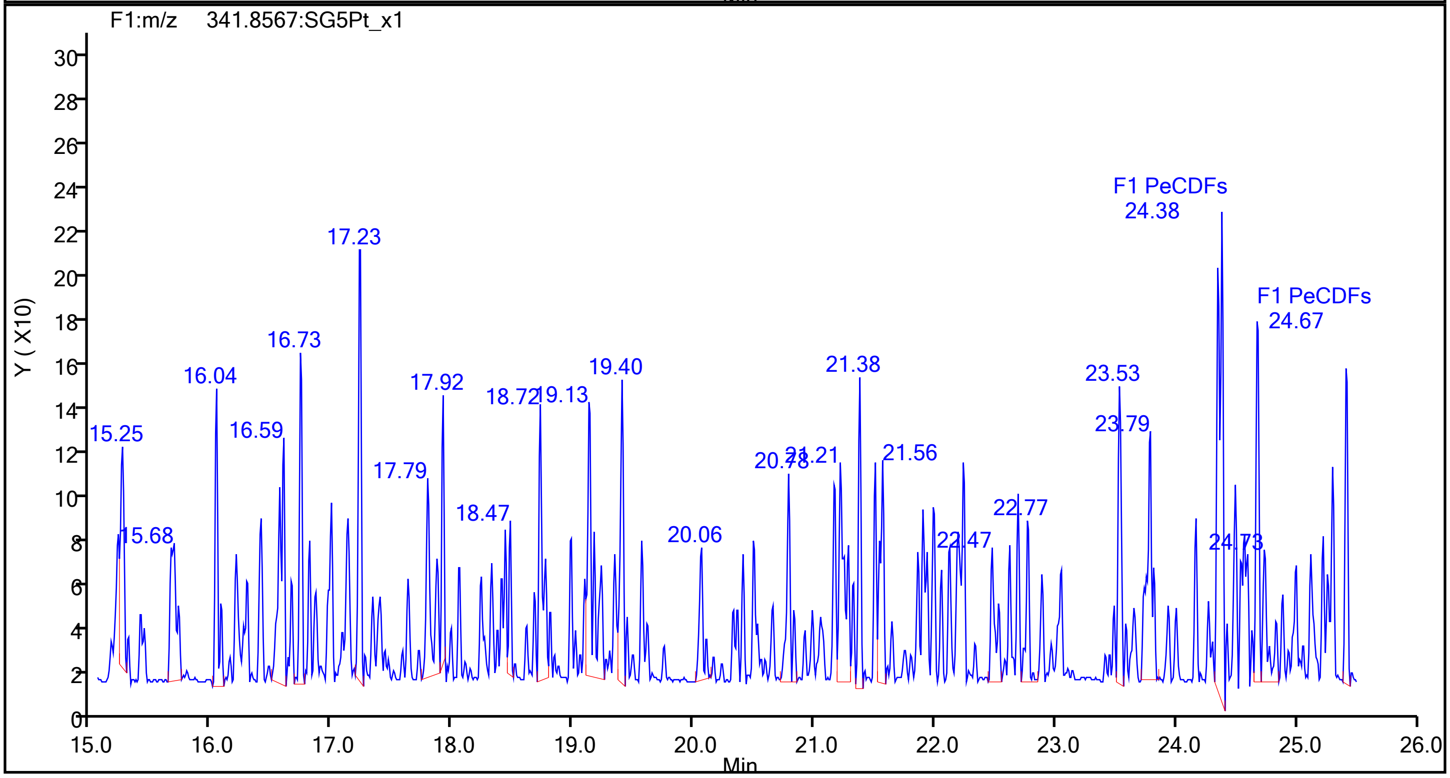

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Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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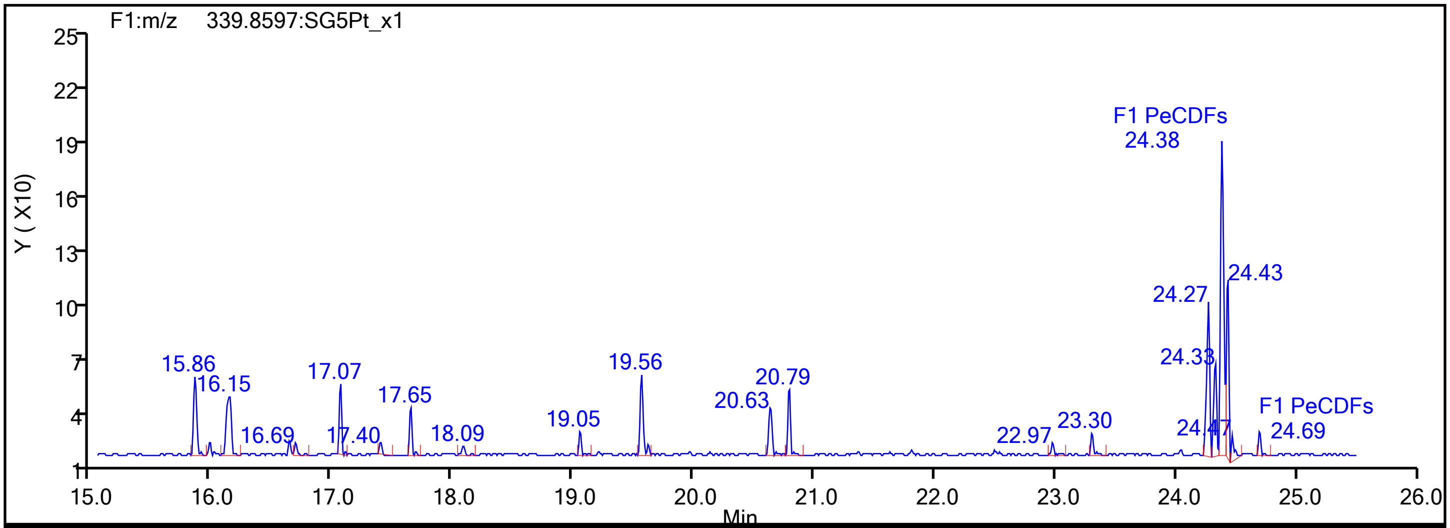

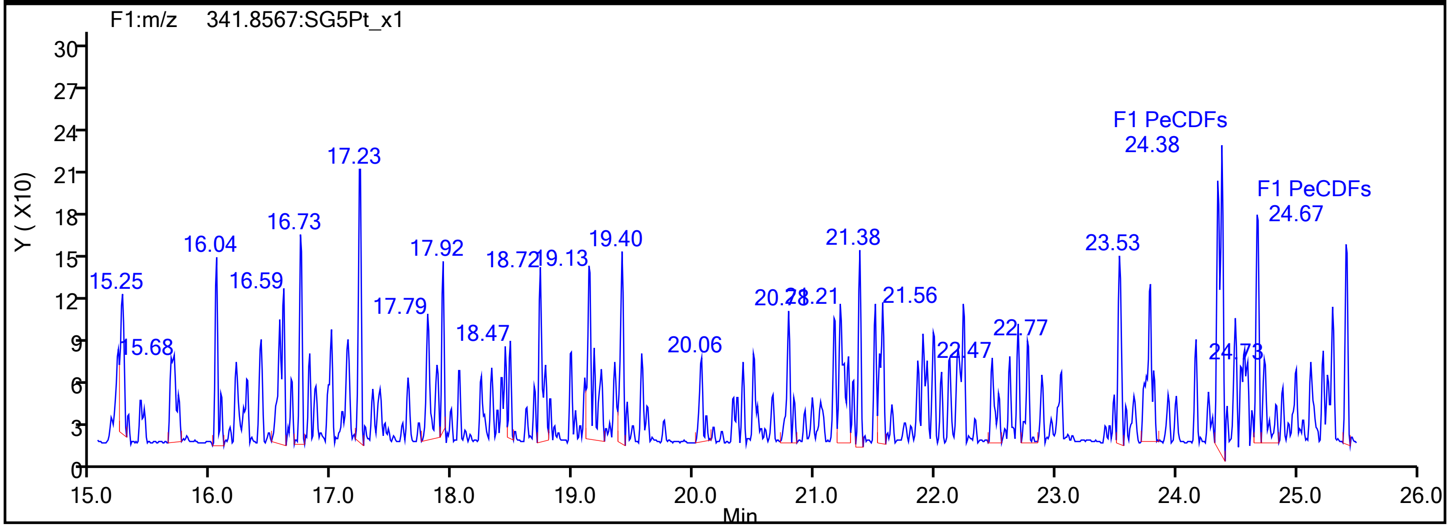

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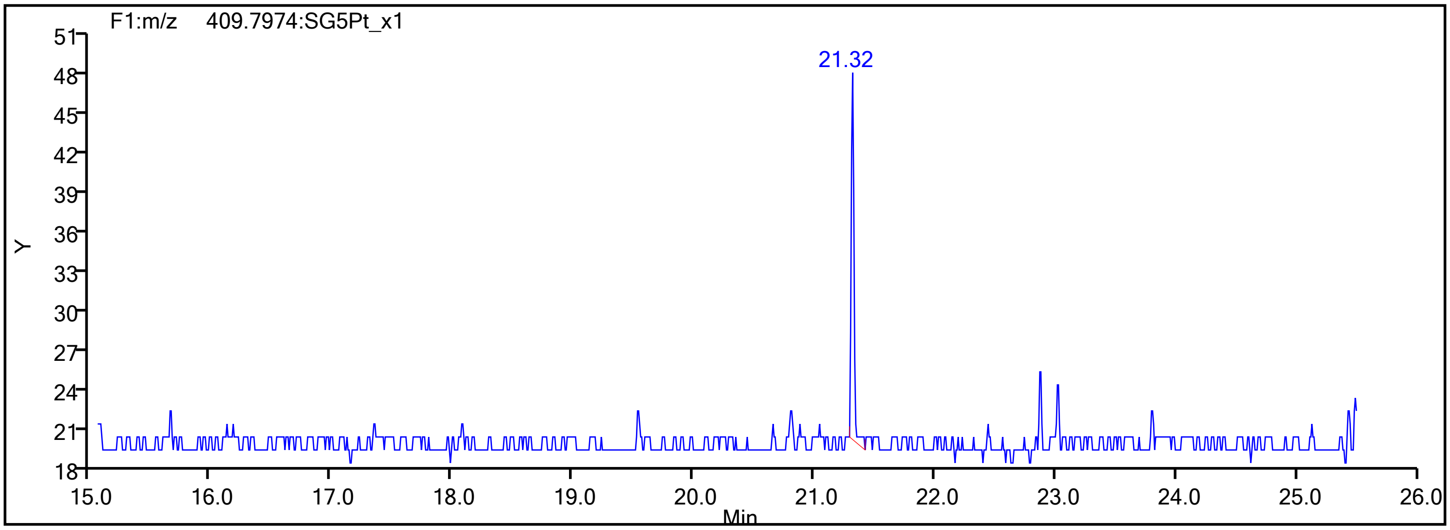

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Eurofins TestAmerica, Sacramento

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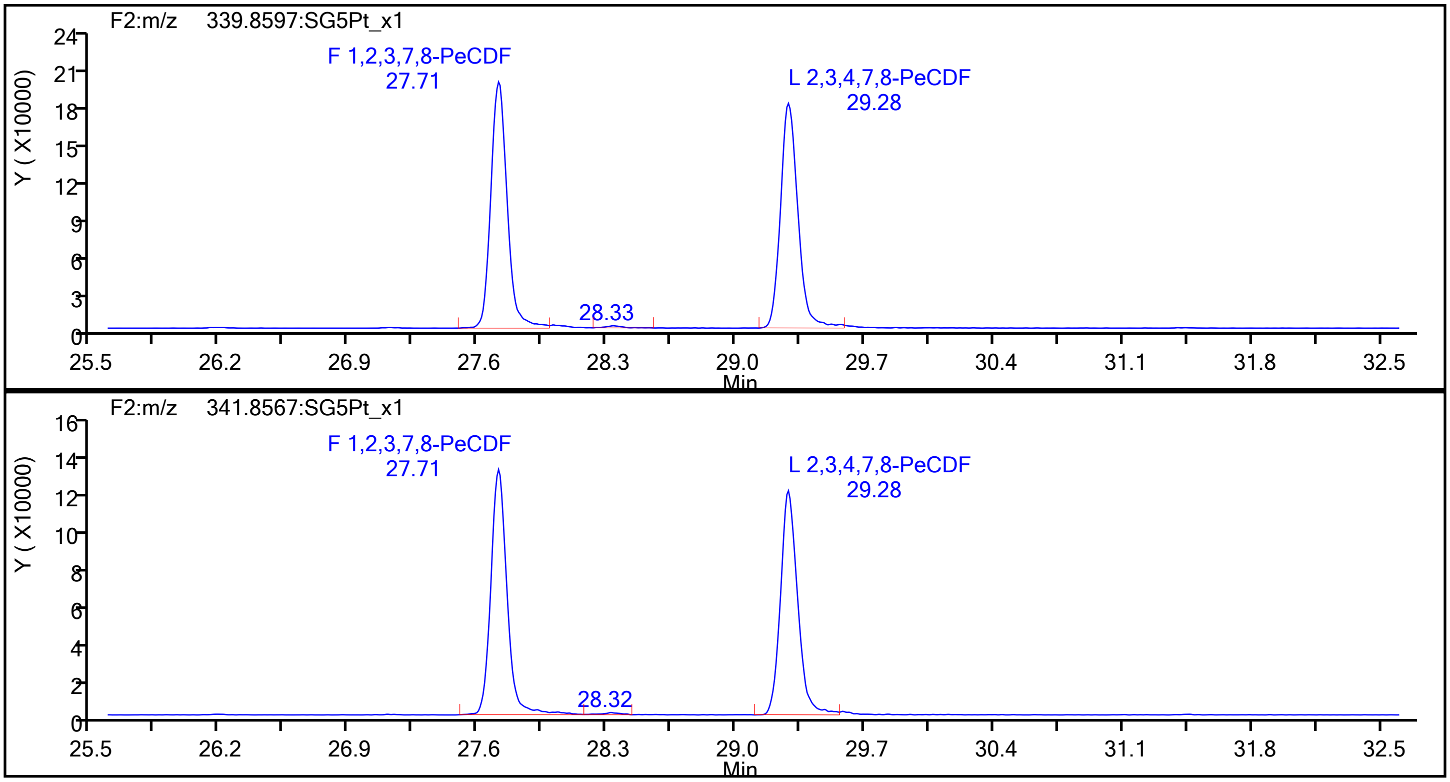

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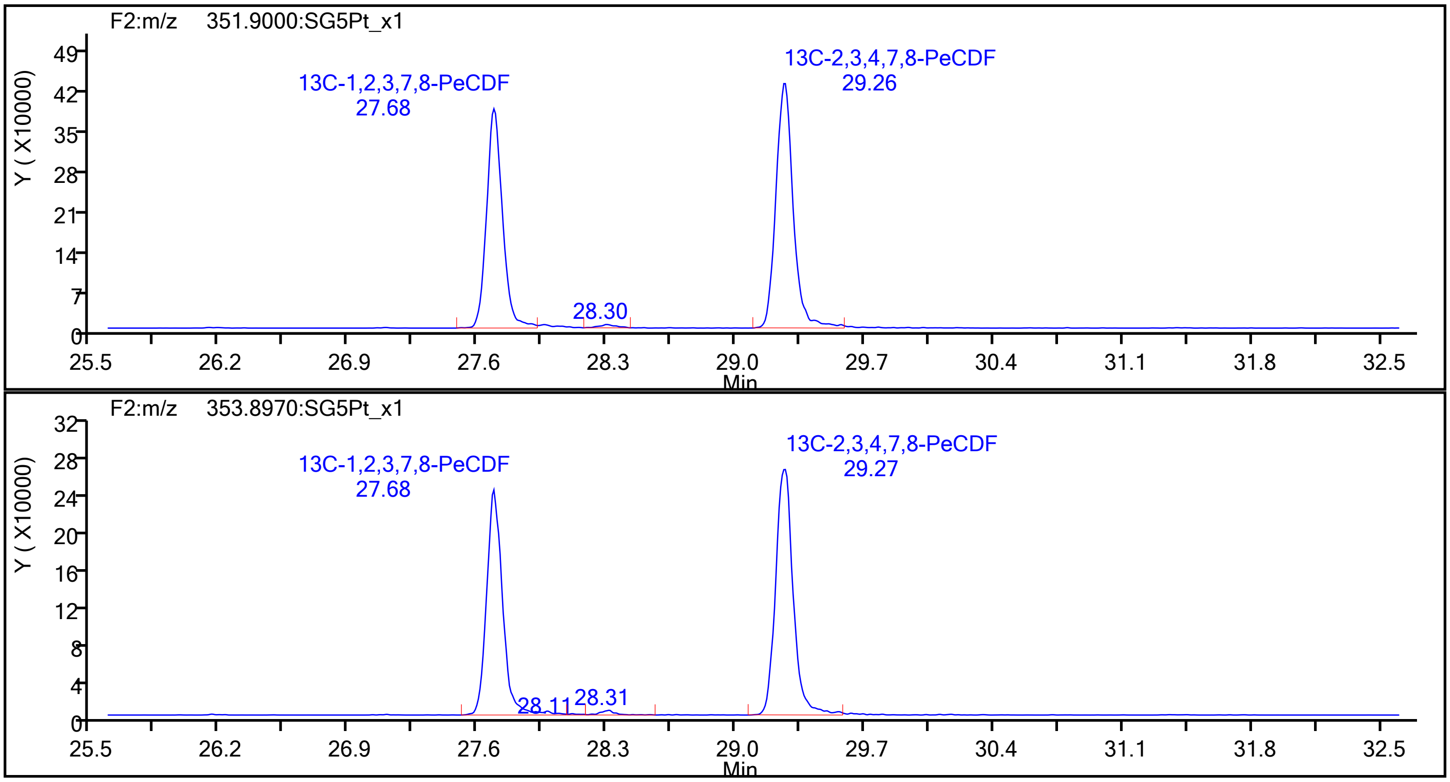

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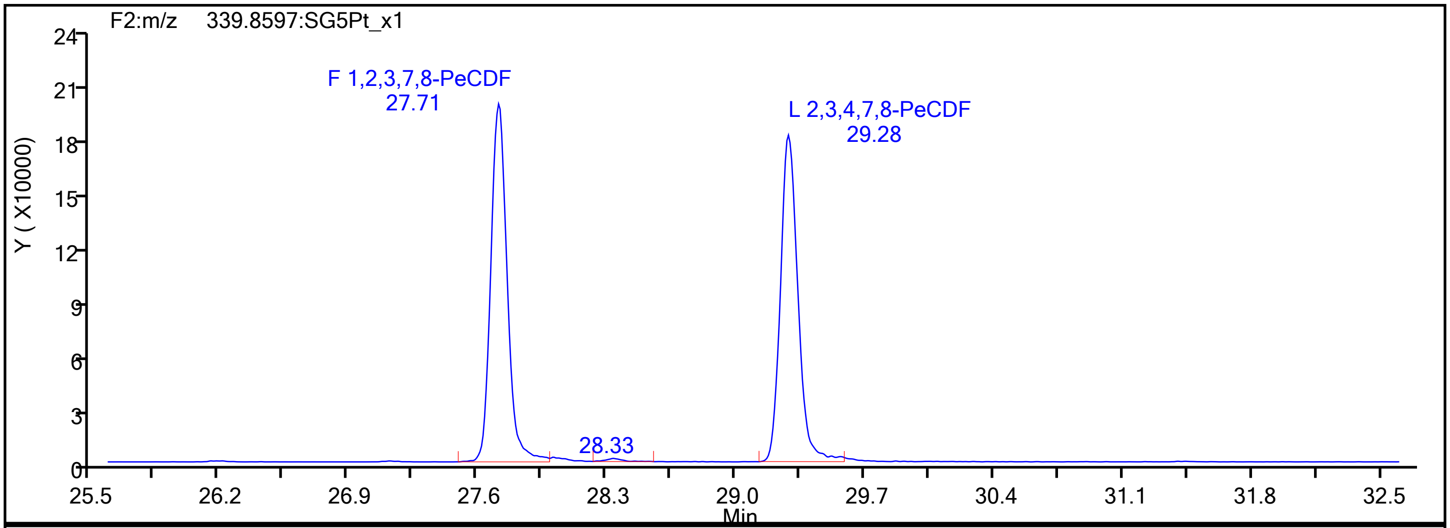

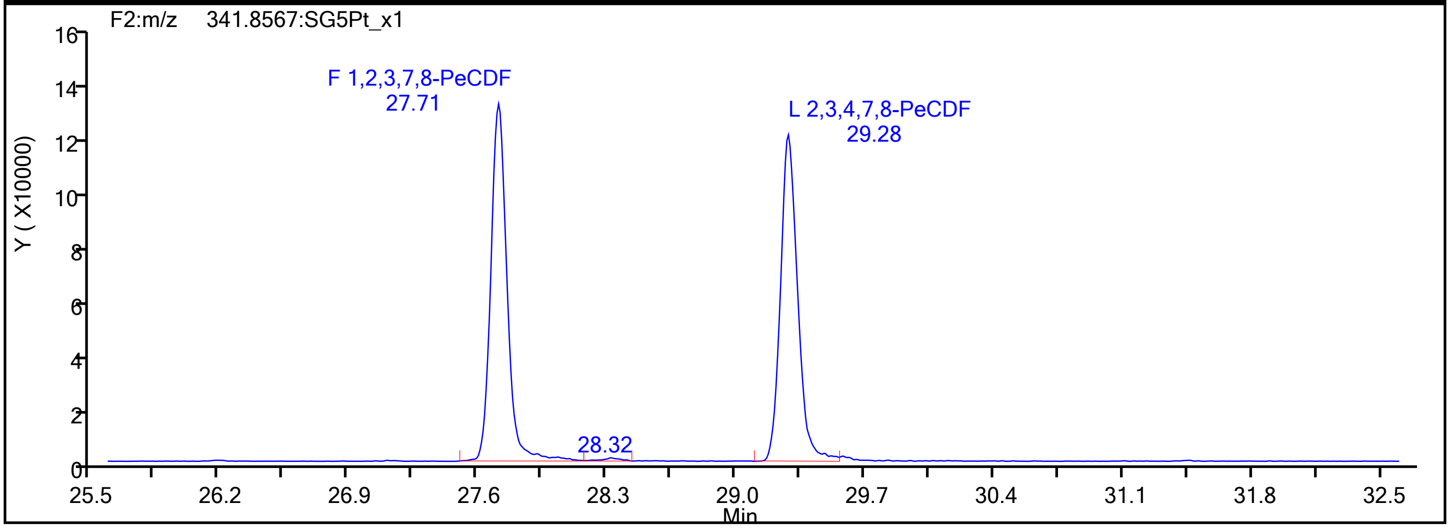

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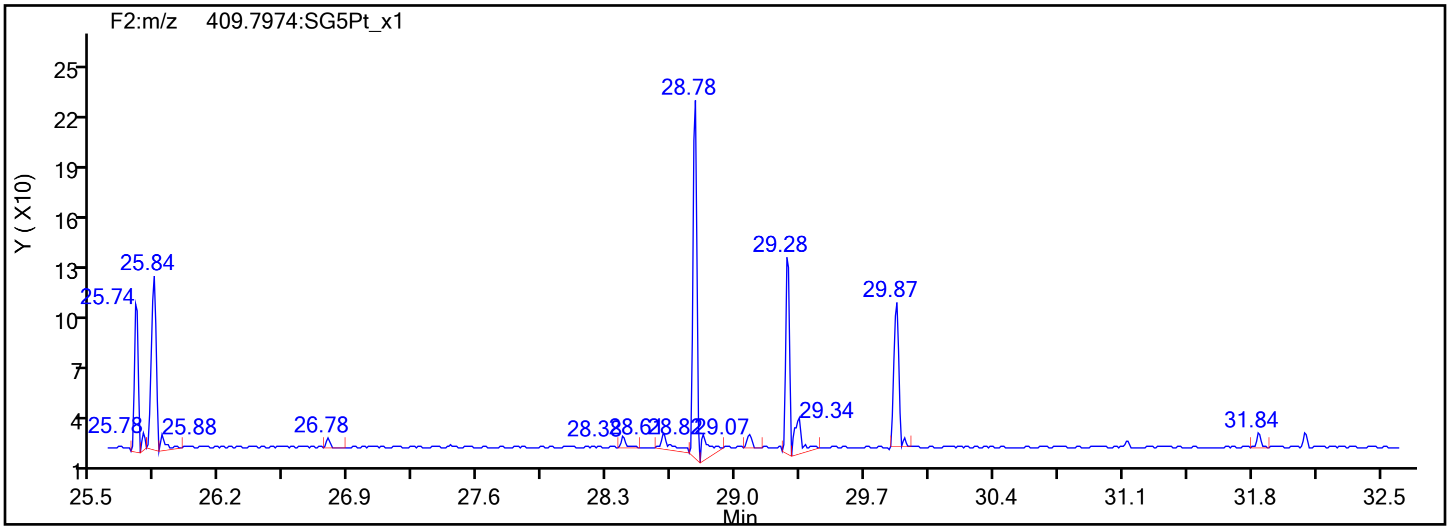

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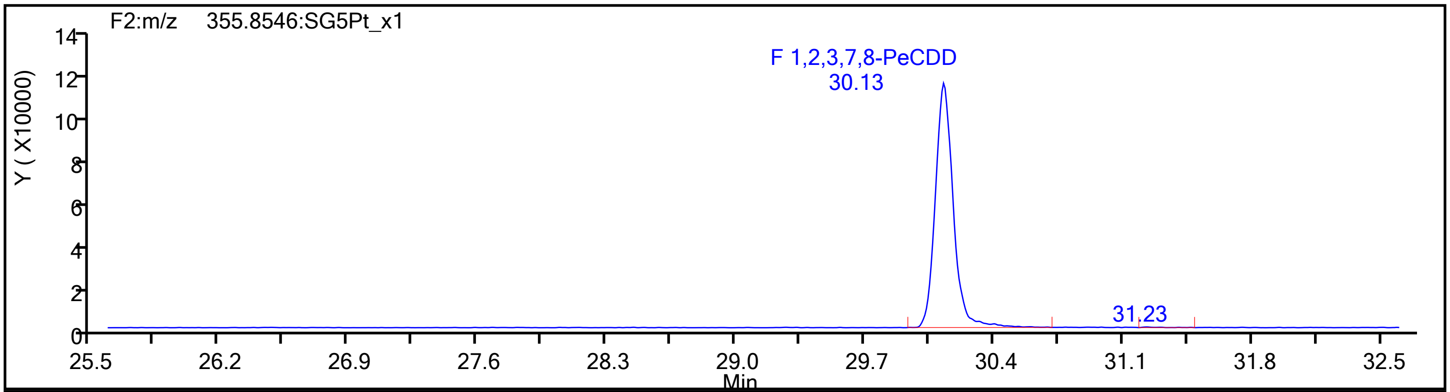

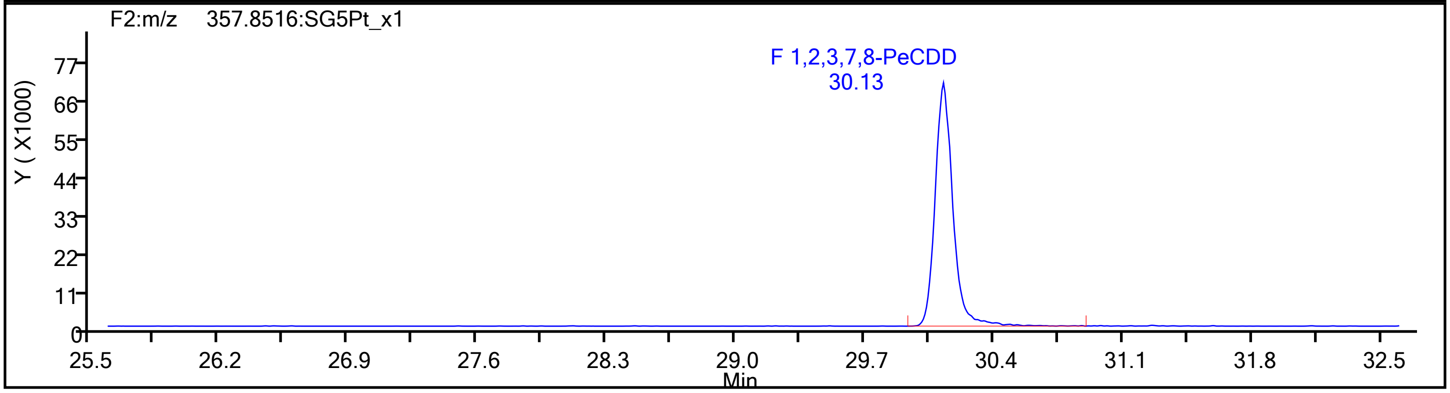

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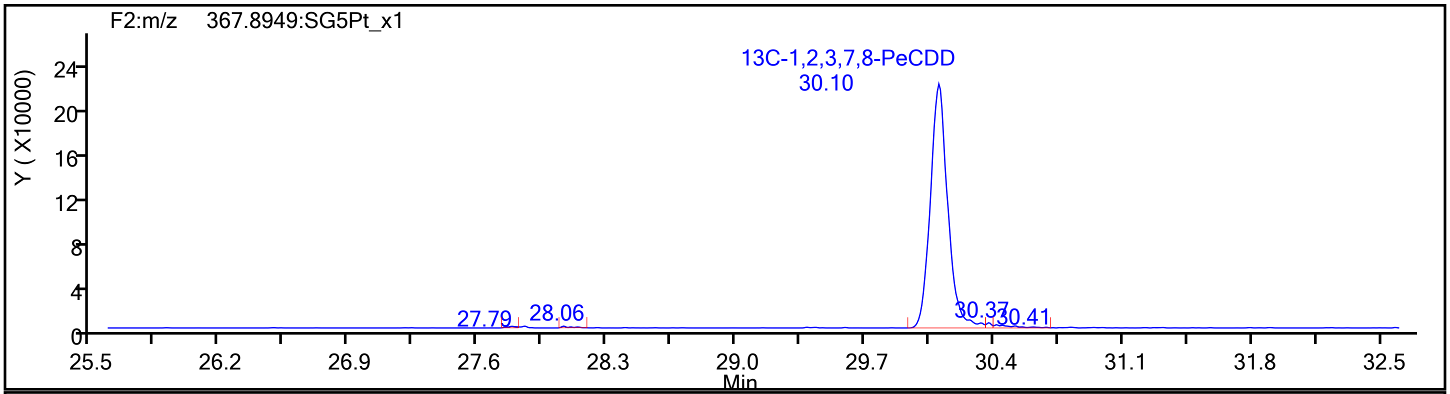

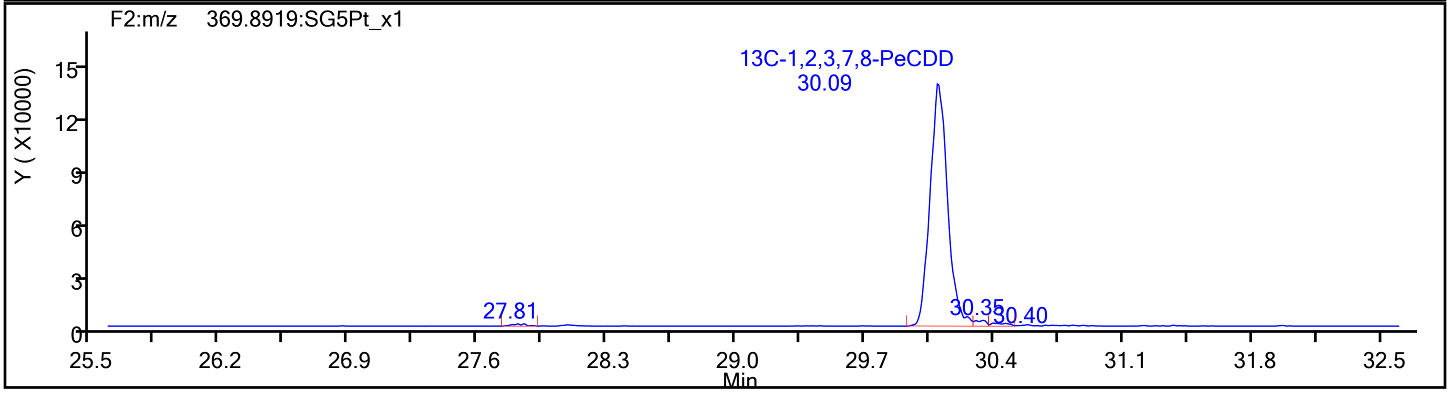

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Eurofins TestAmerica, Sacramento

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HxCDF

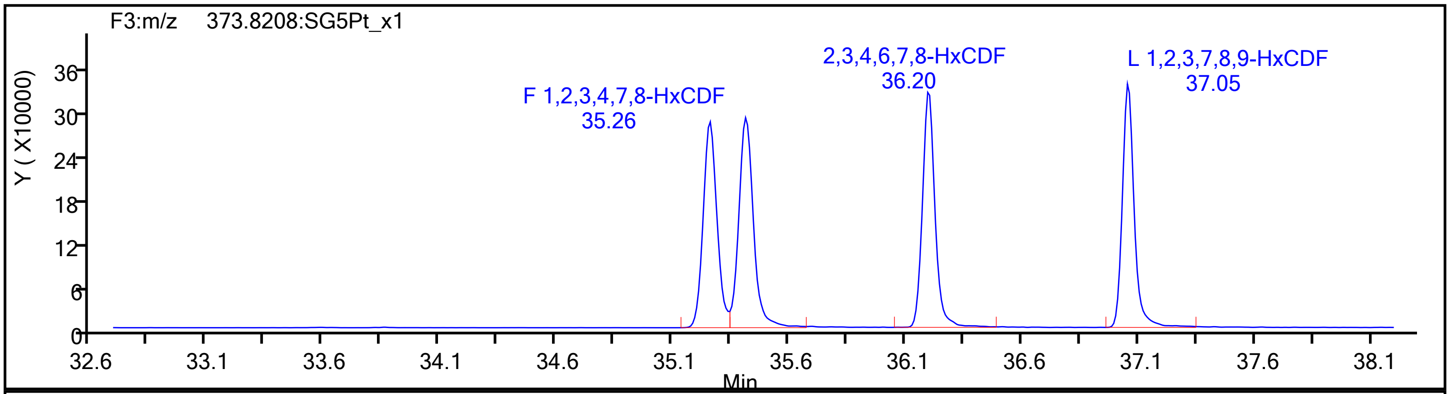

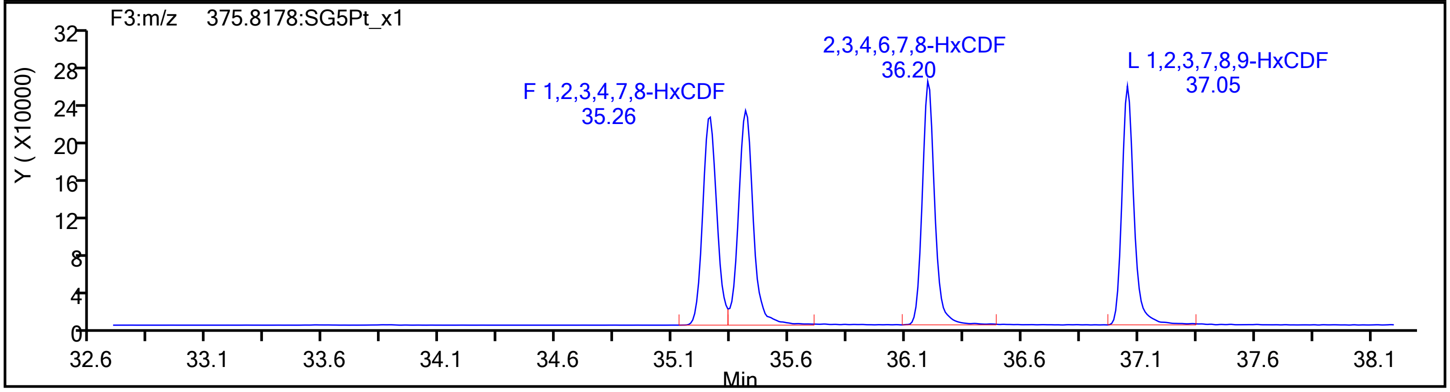

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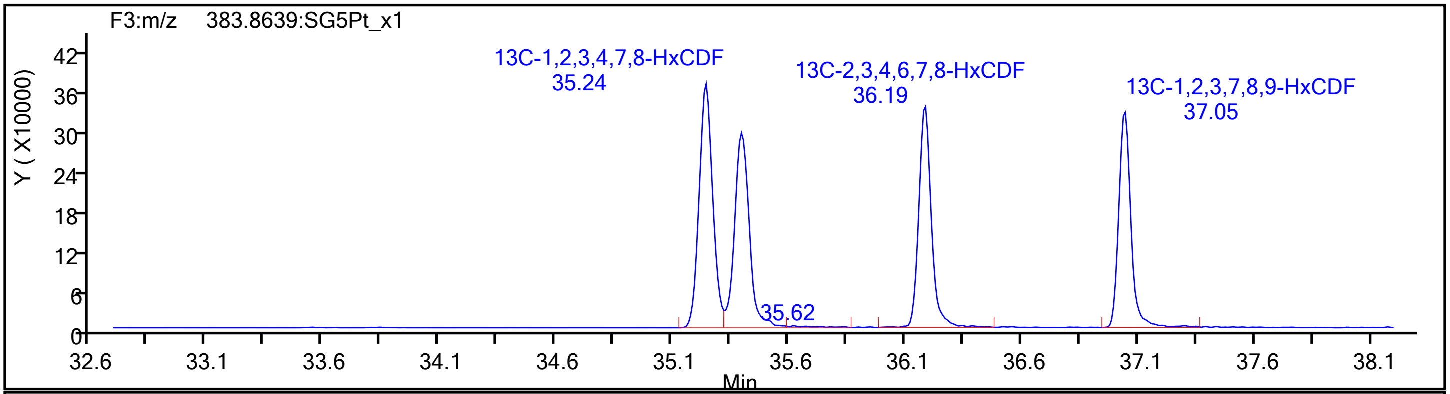

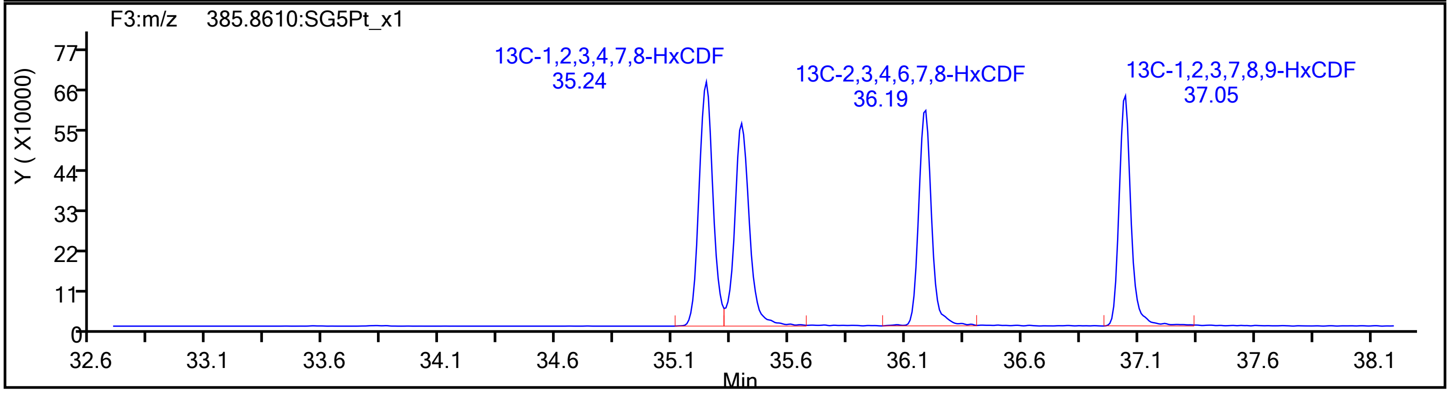

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Eurofins TestAmerica, Sacramento

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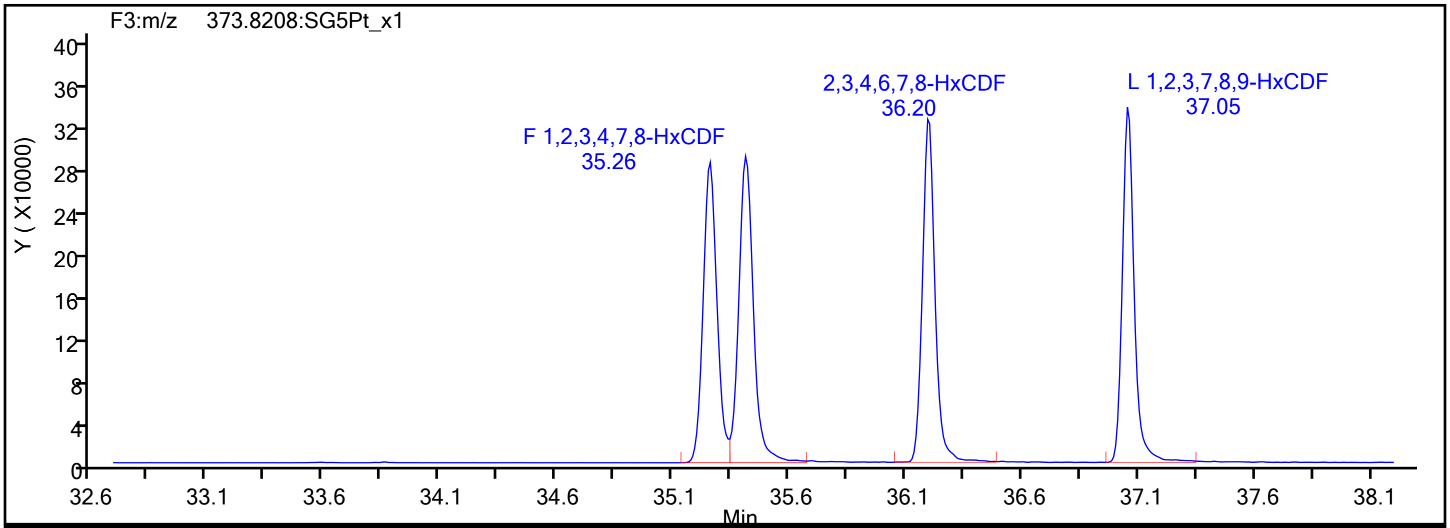

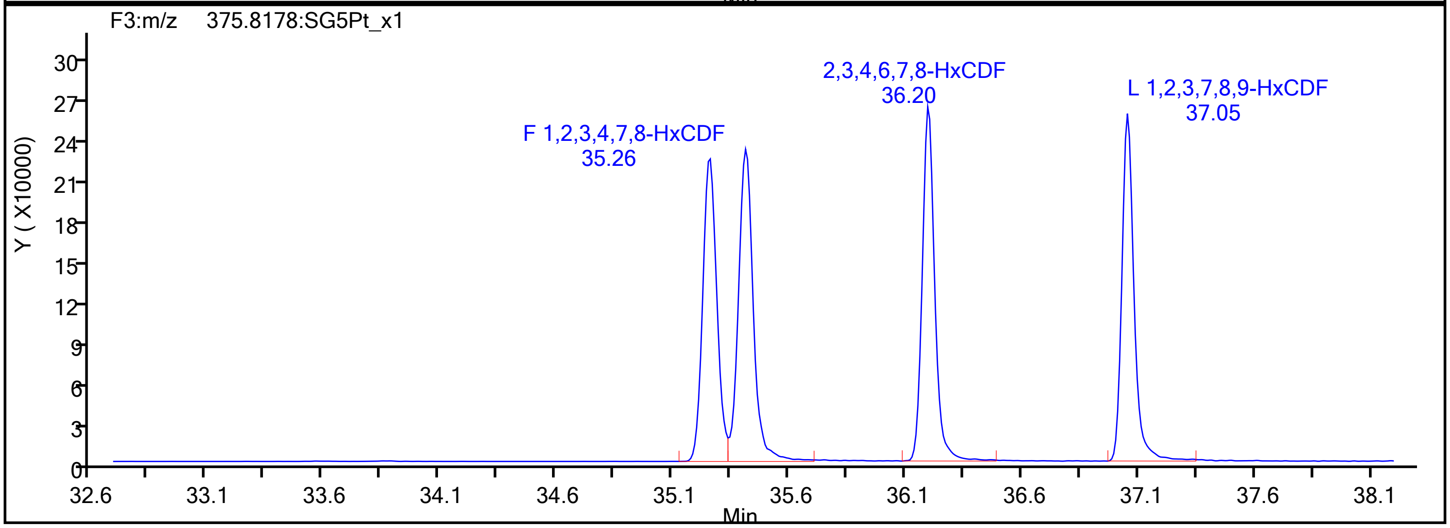

HxCDF Interference Mass

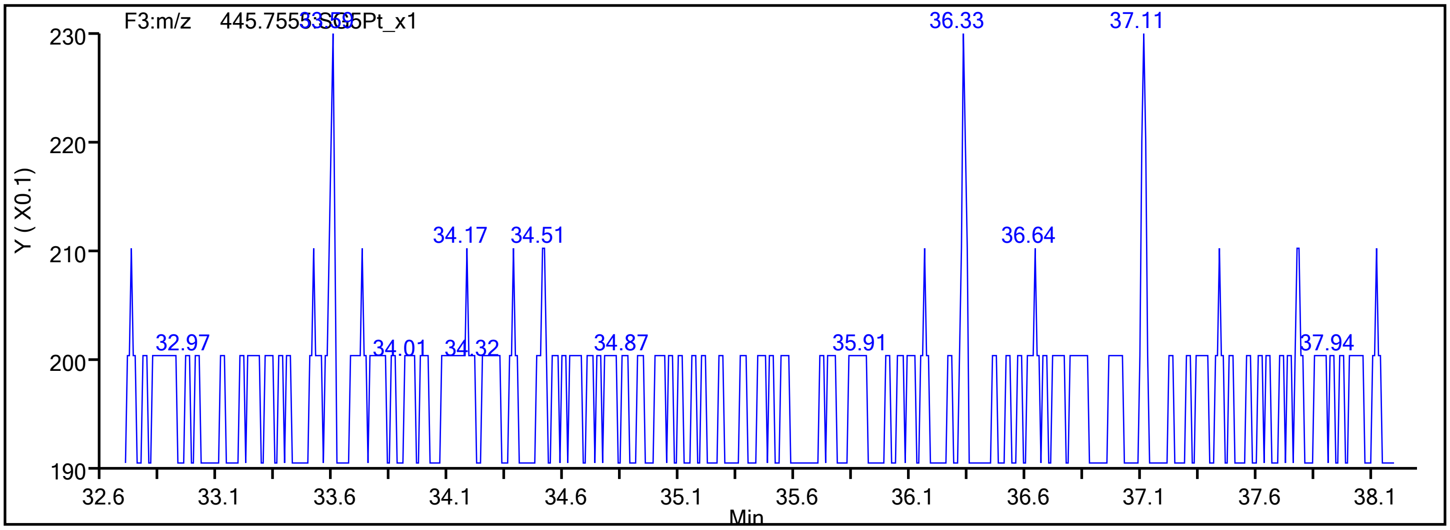

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Eurofins TestAmerica, Sacramento

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HxCDD

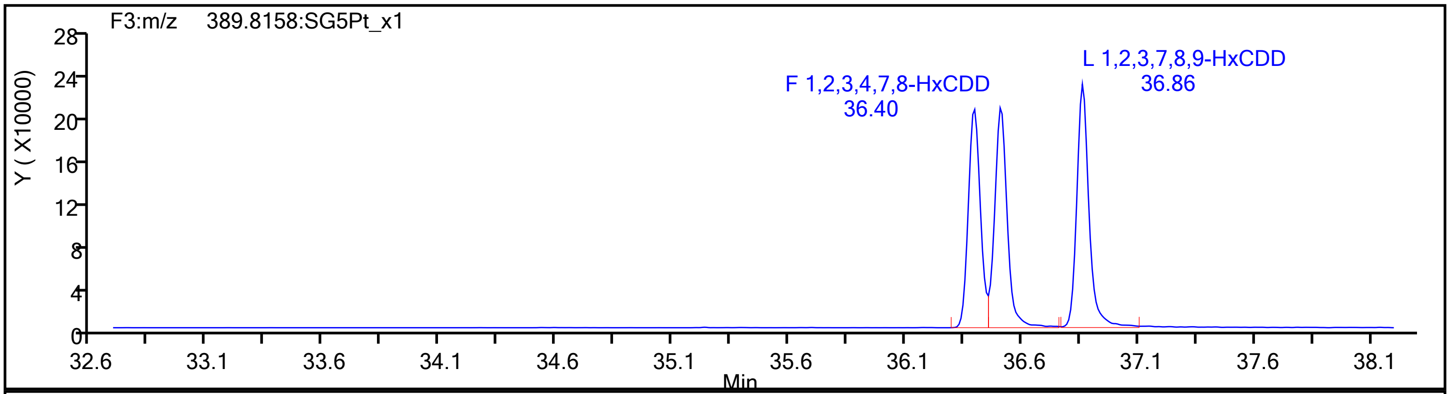

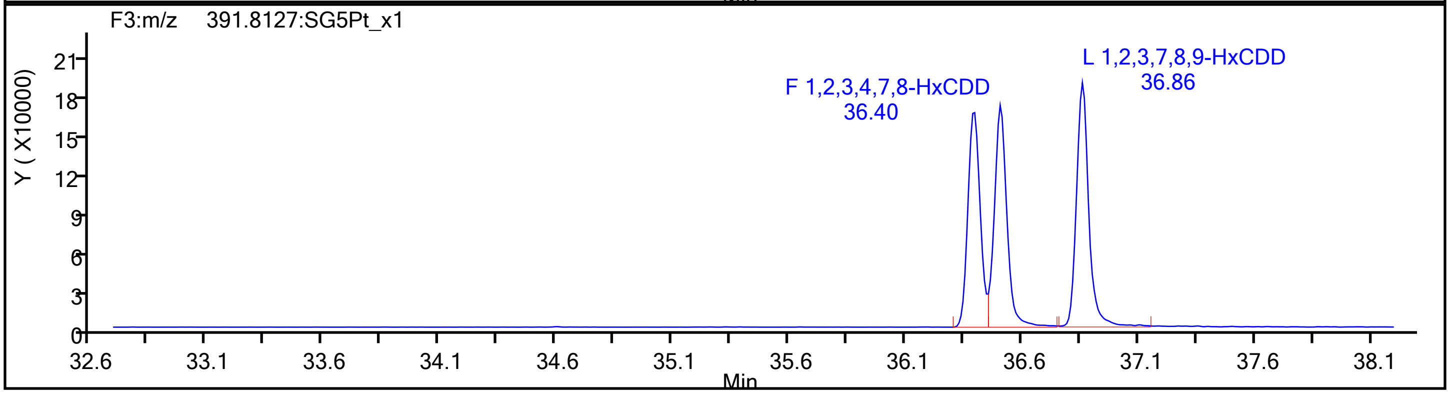

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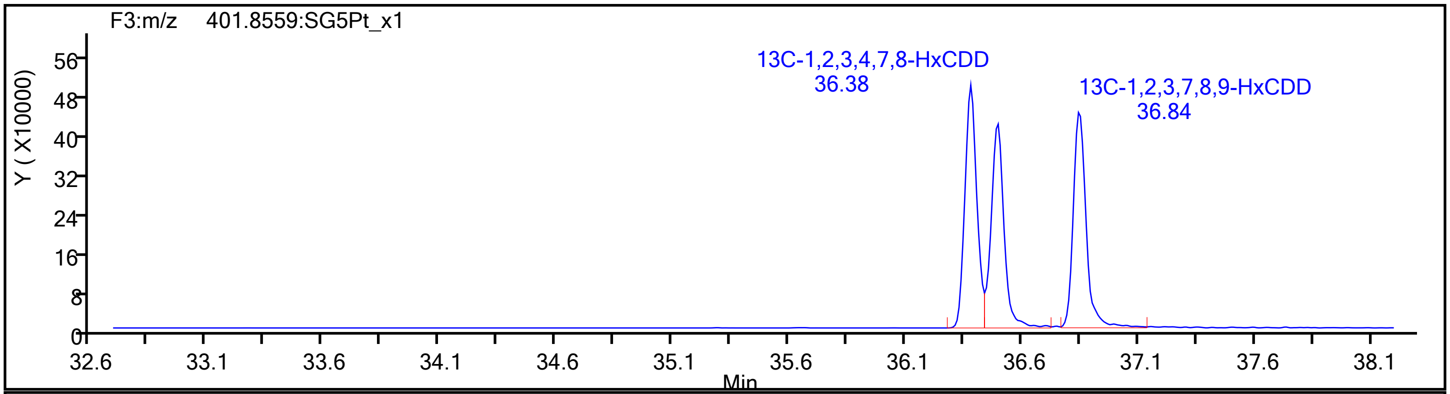

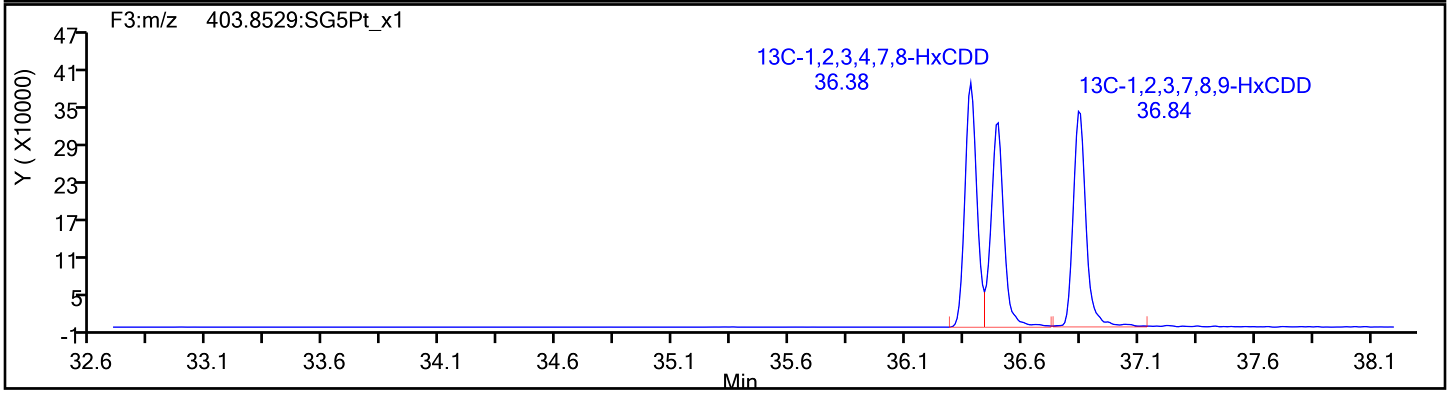

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Eurofins TestAmerica, Sacramento

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HpCDF

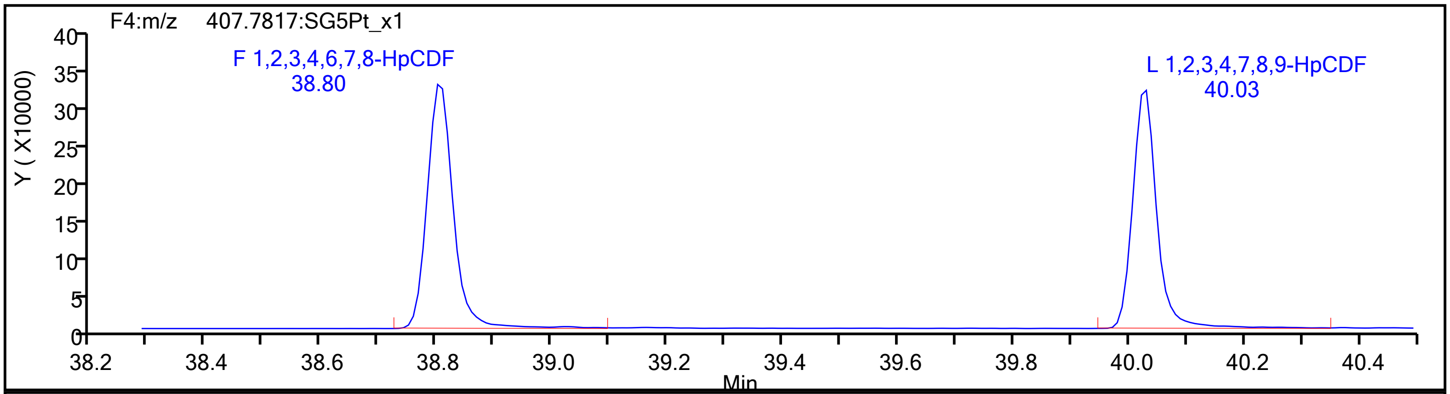

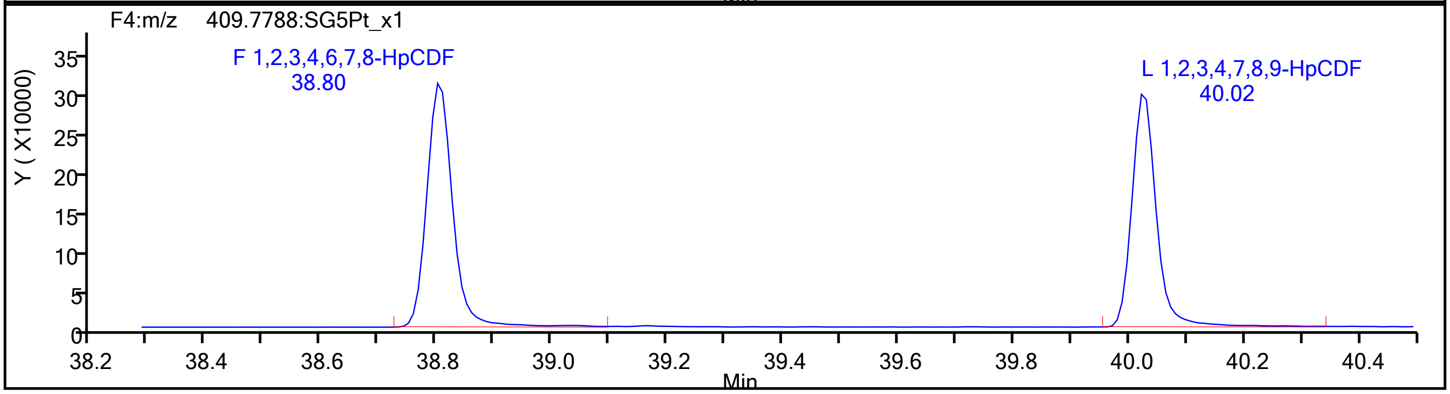

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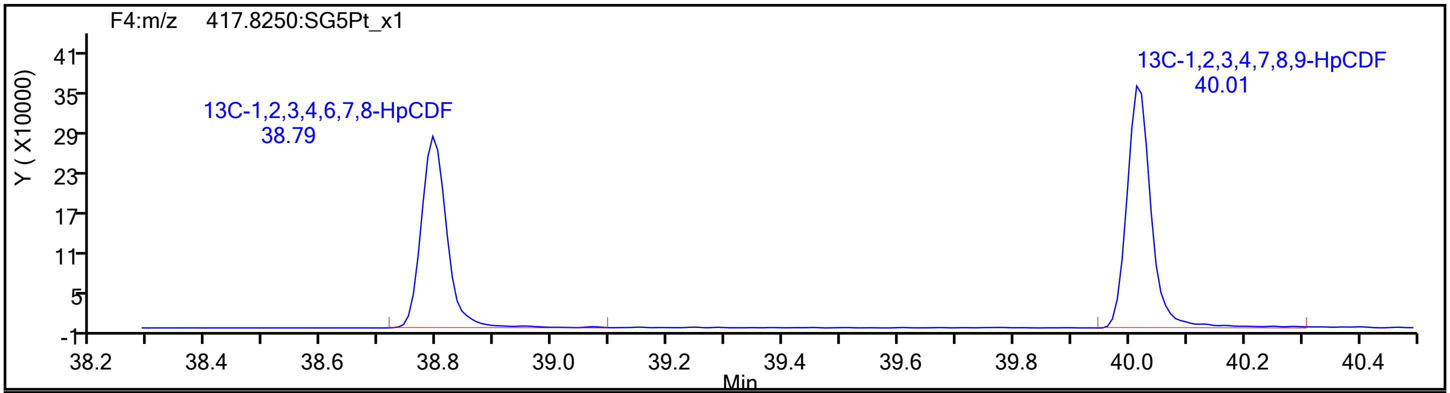

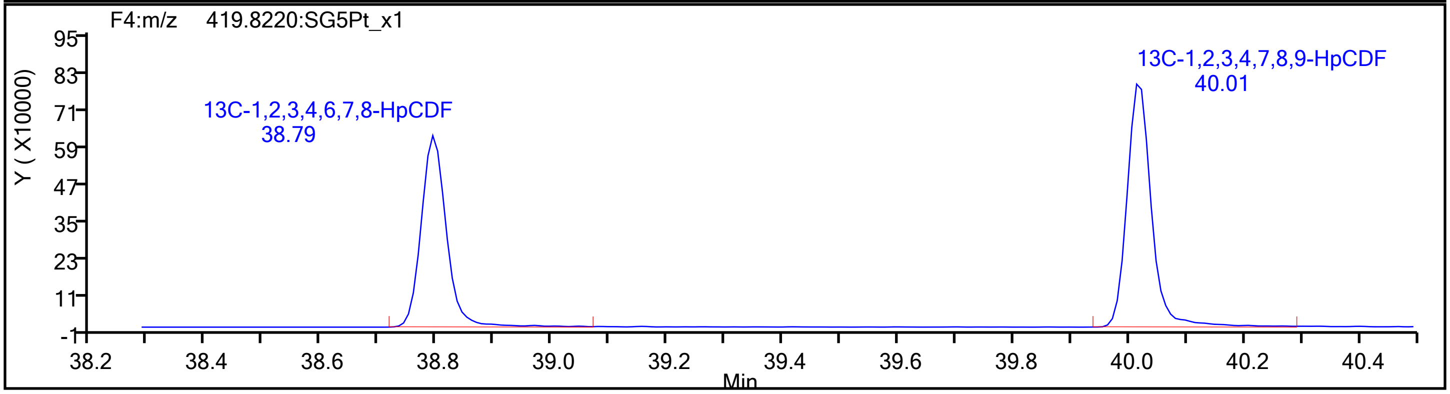

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Eurofins TestAmerica, Sacramento

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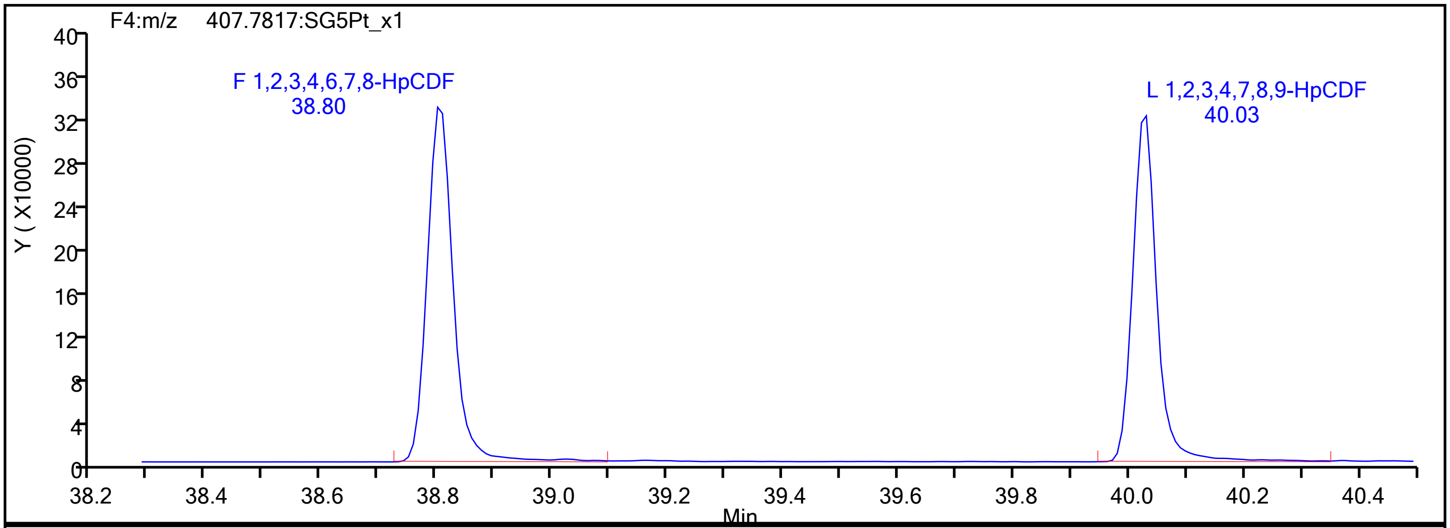

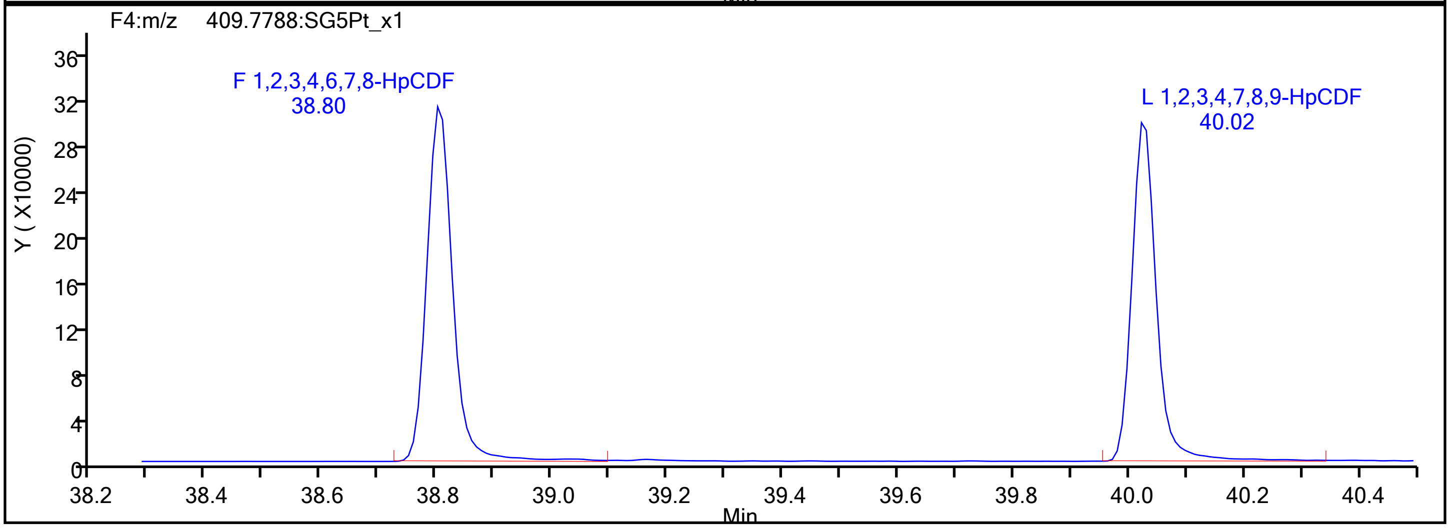

HpCDF Interference Mass

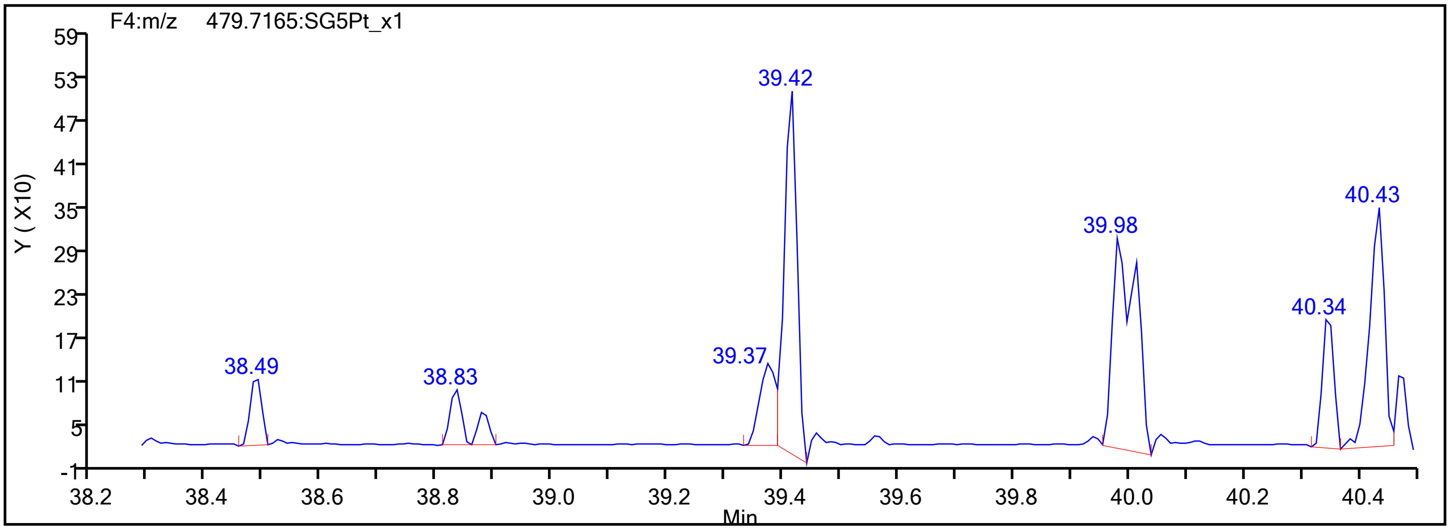

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Eurofins TestAmerica, Sacramento

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Sample Line#: 2

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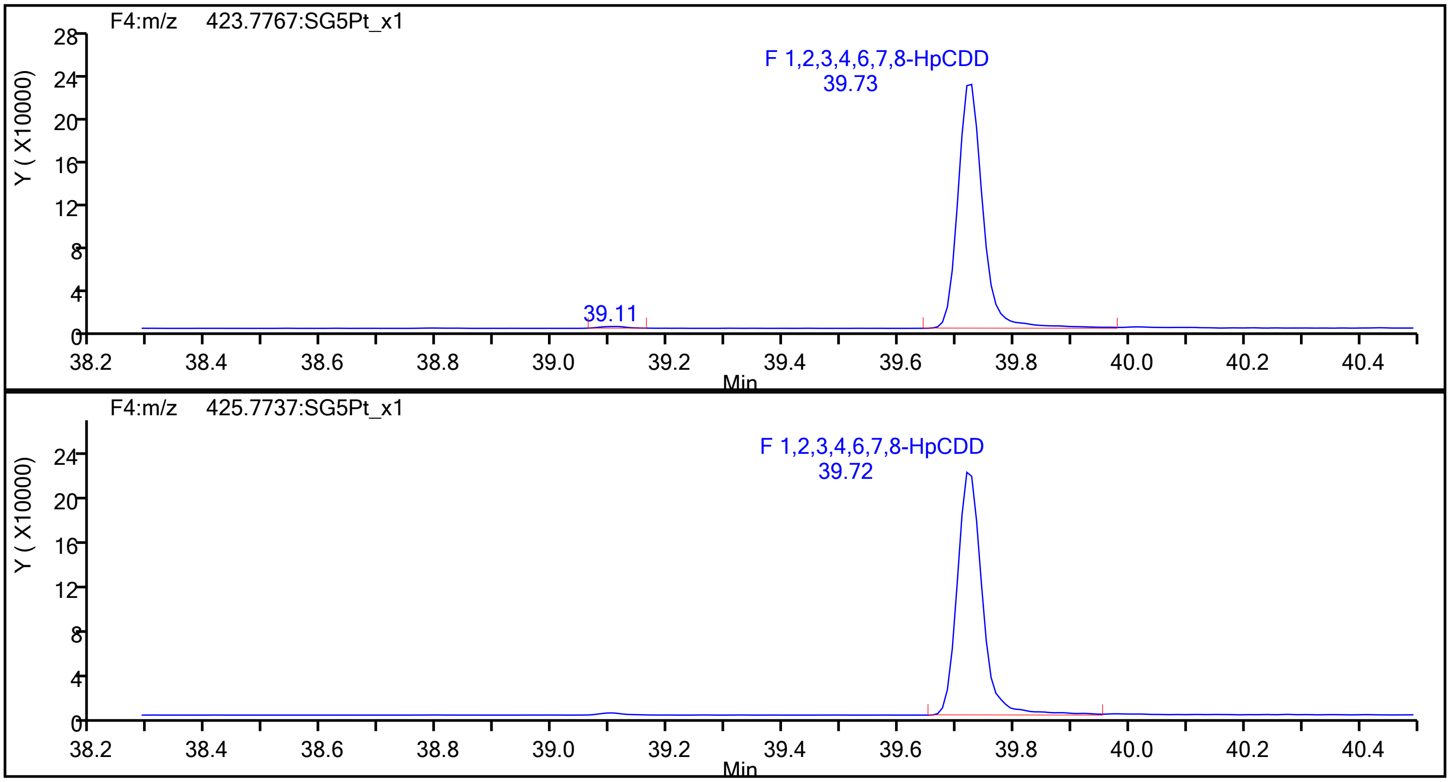

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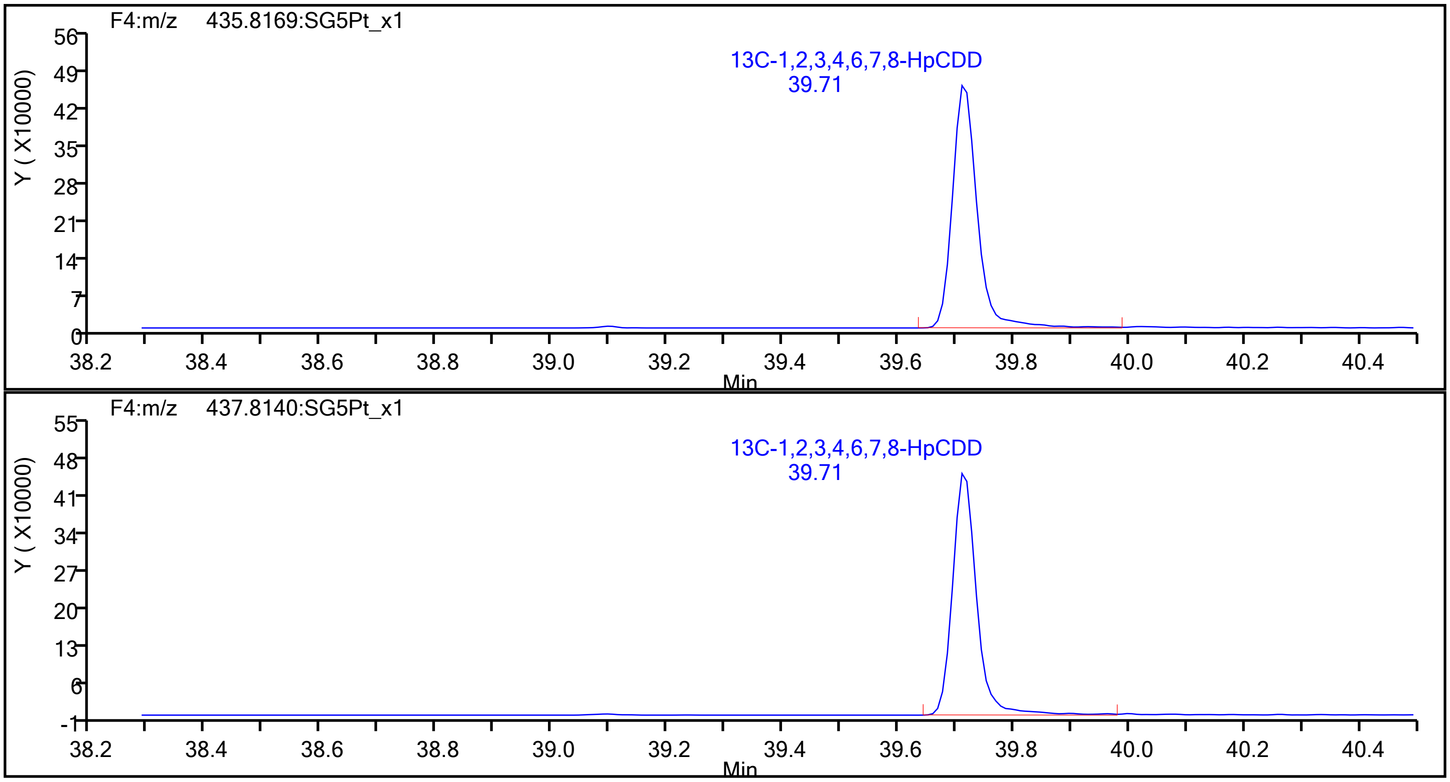

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OCDF

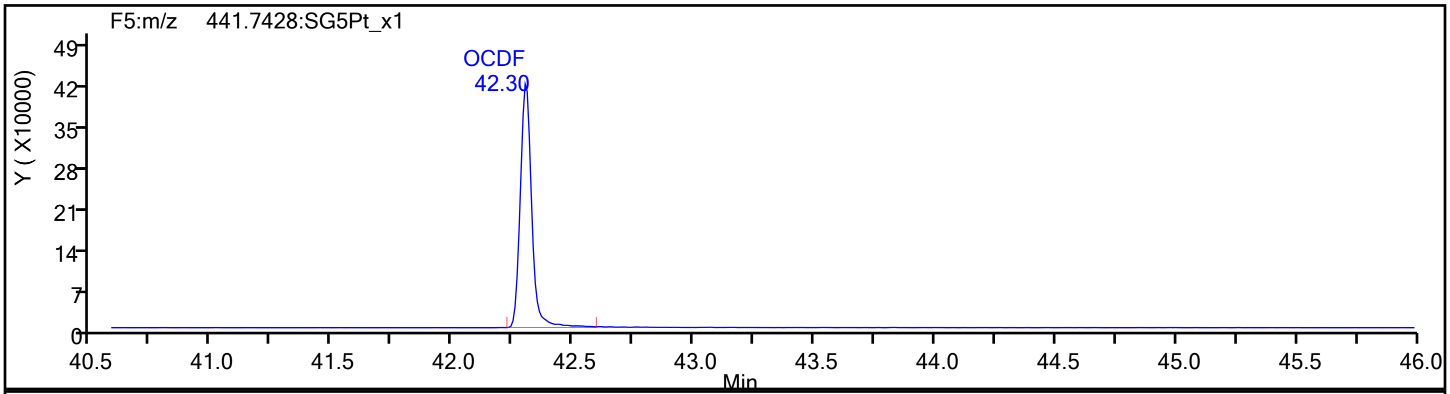

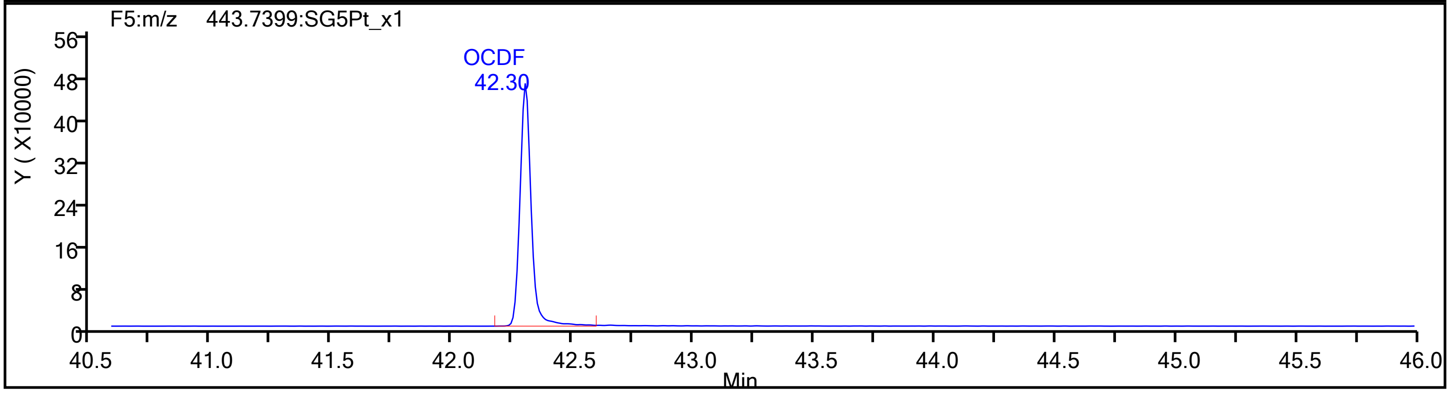

OCDF Standards

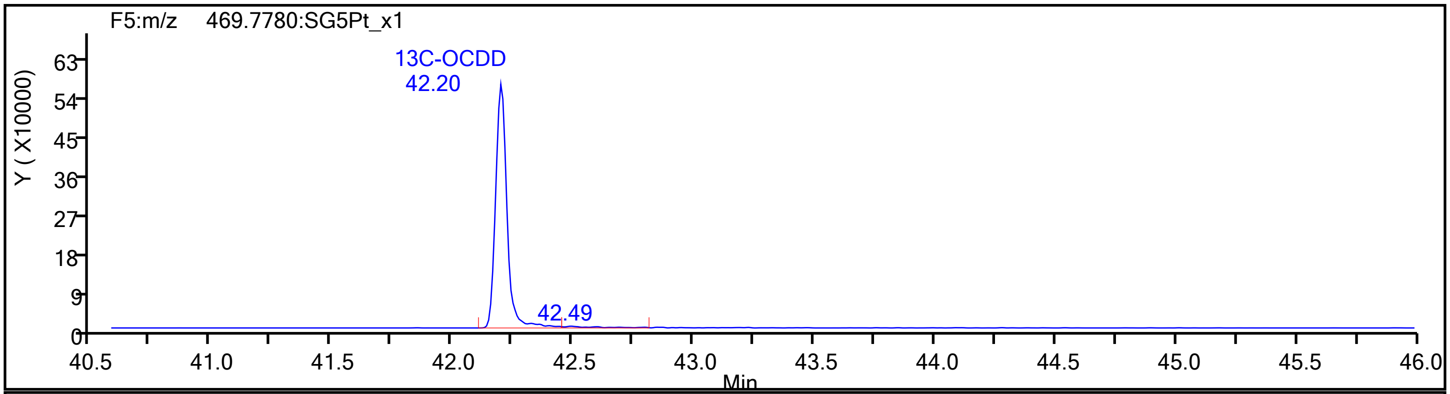

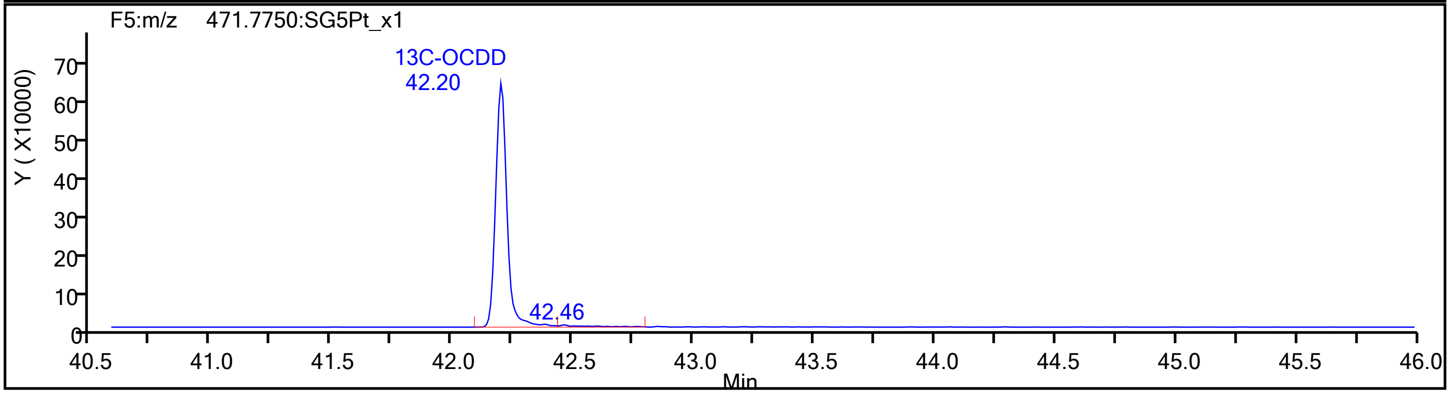

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Eurofins TestAmerica, Sacramento

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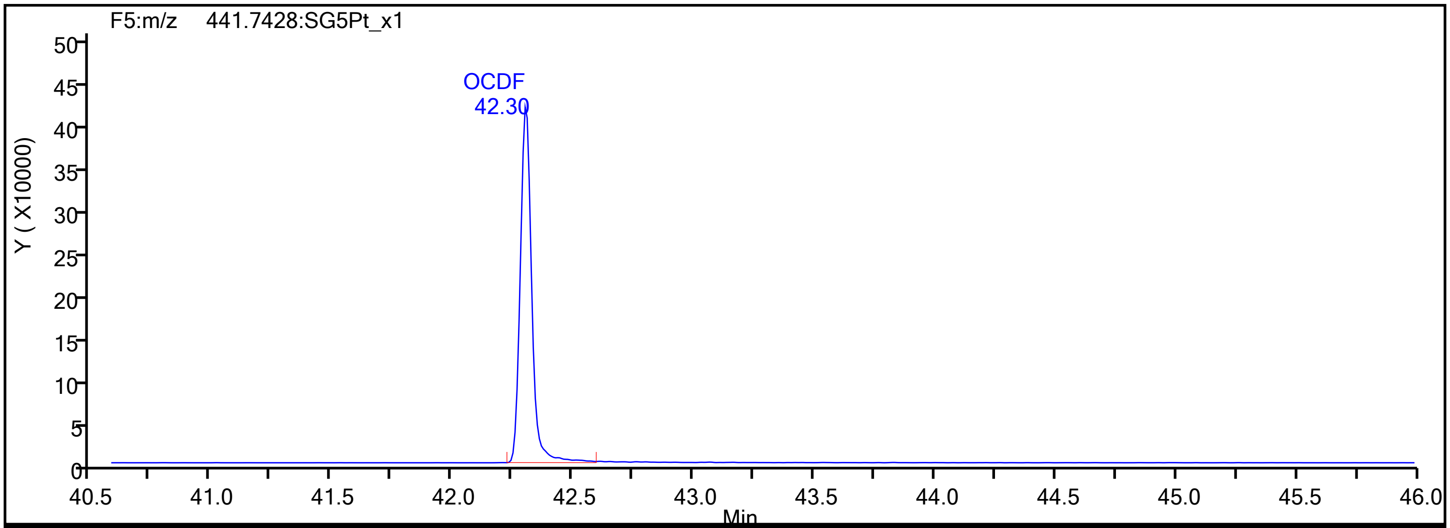

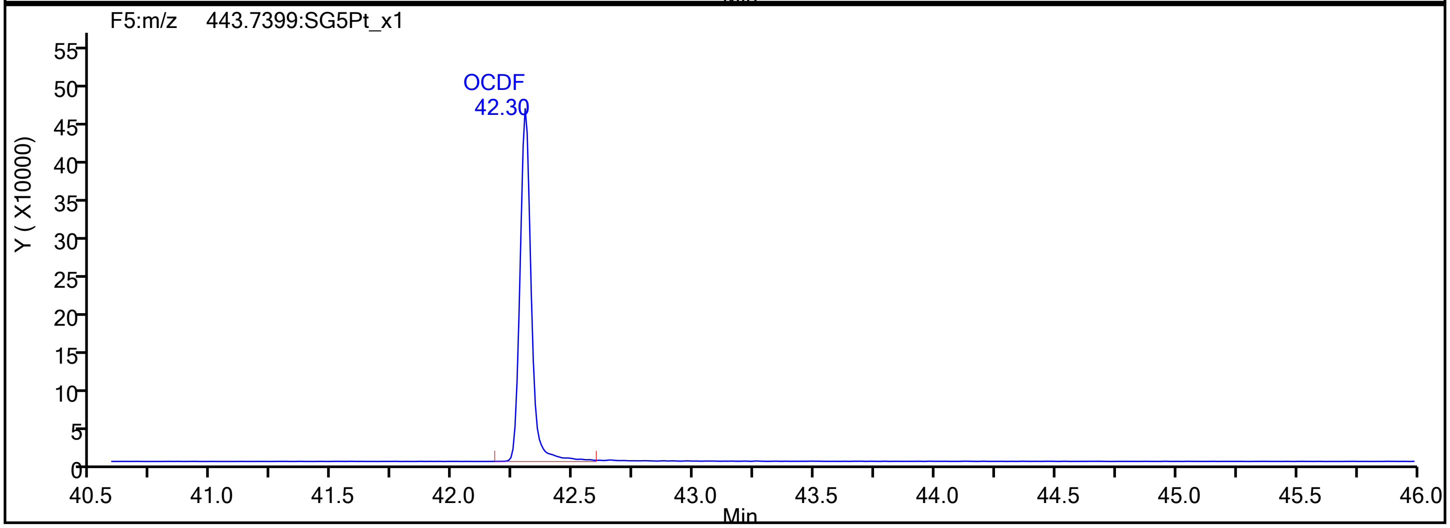

OCDF Interference Mass

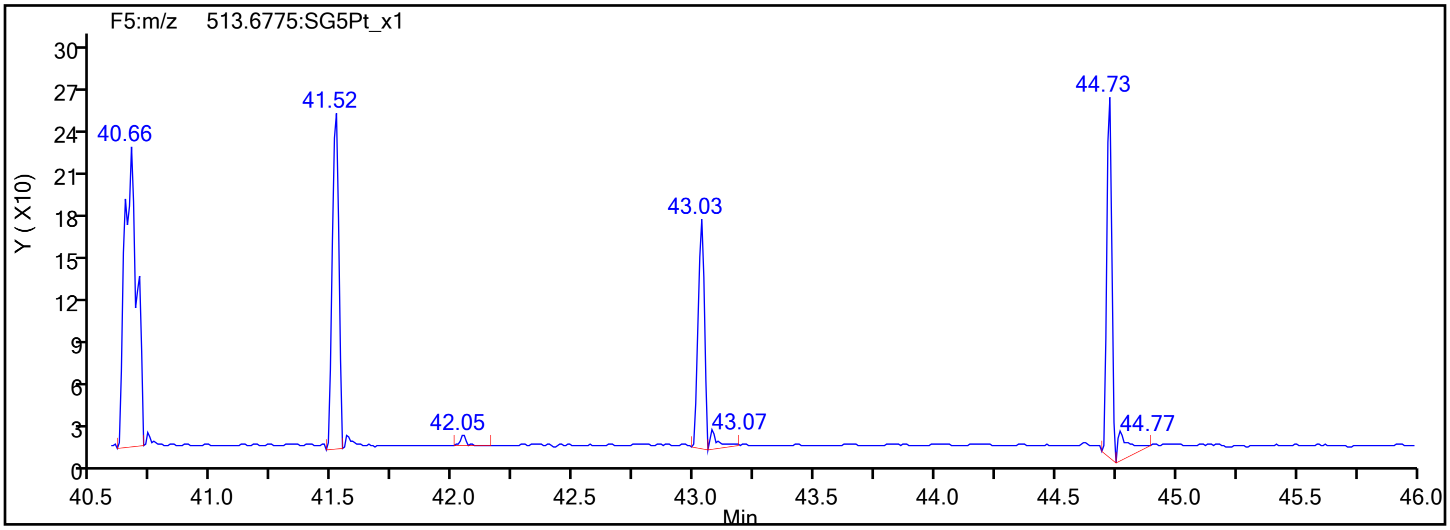

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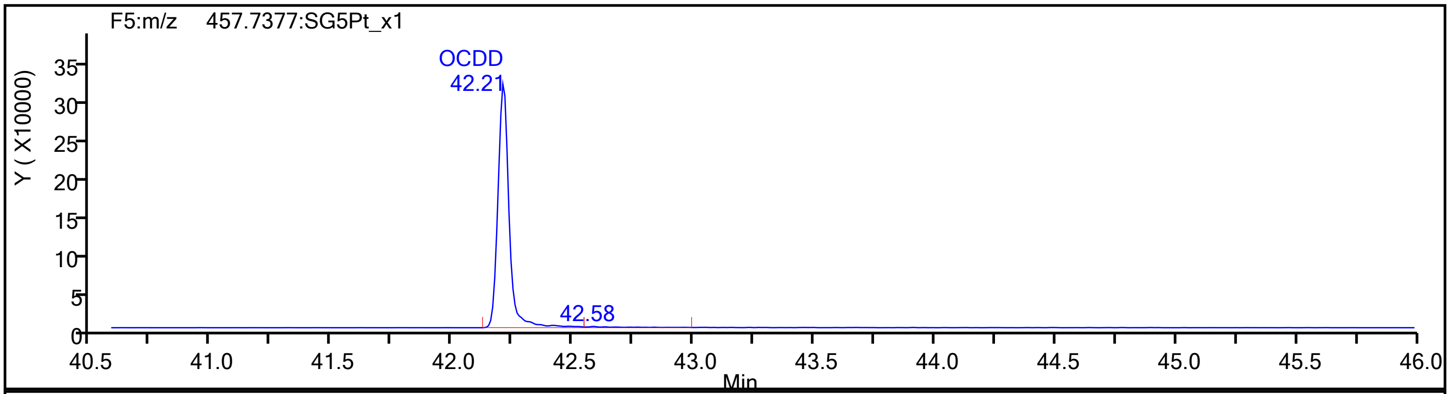

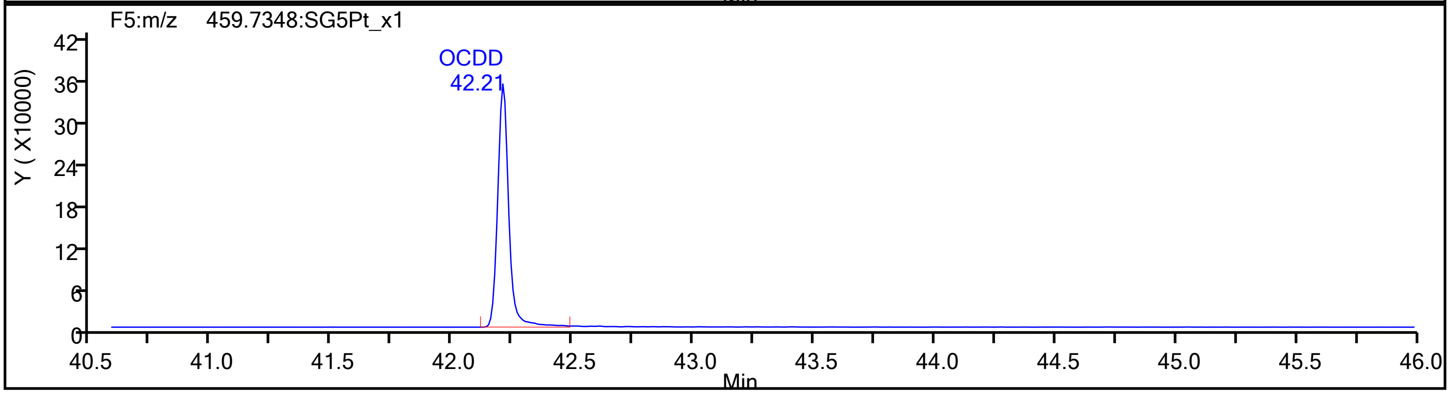

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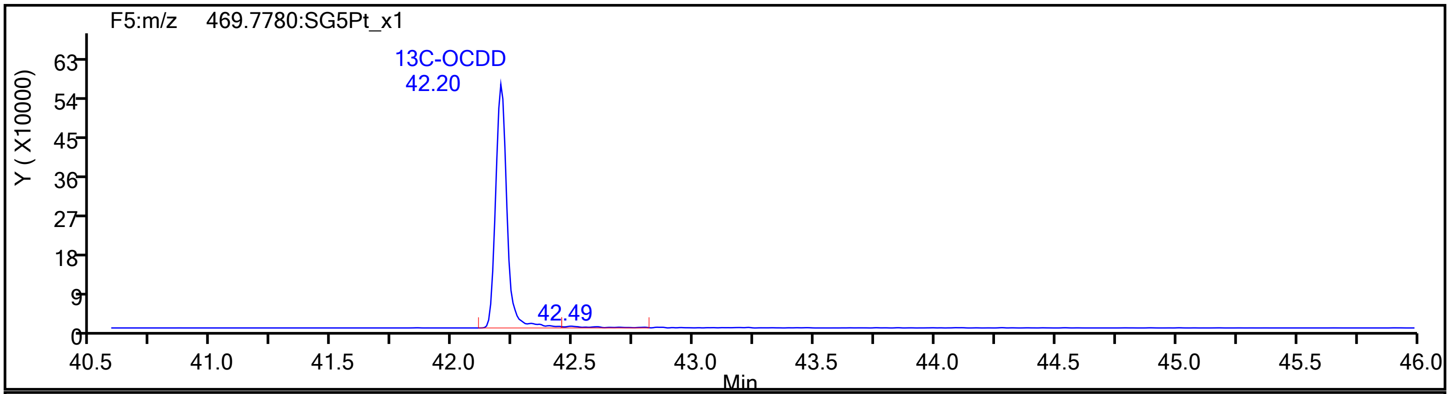

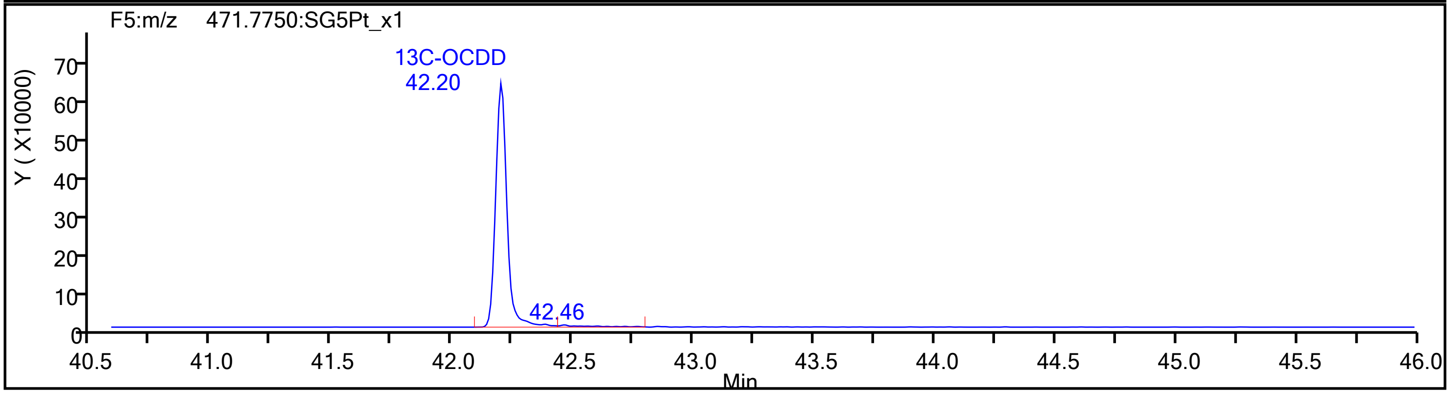

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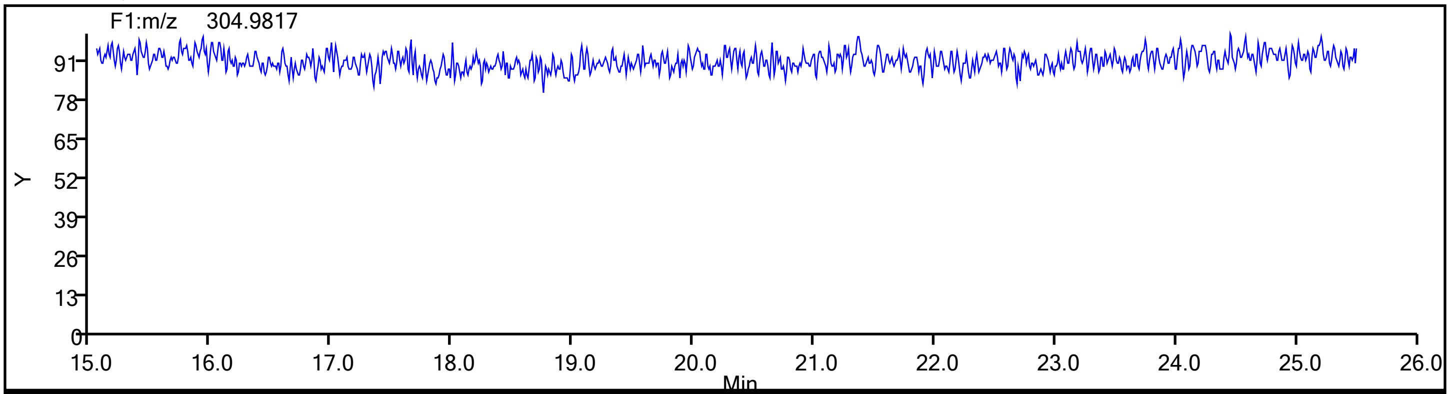

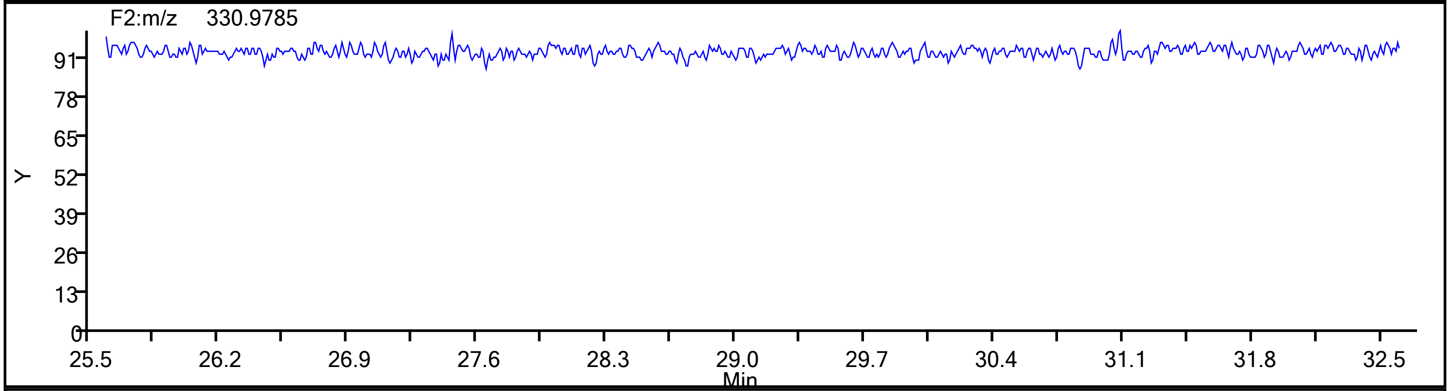

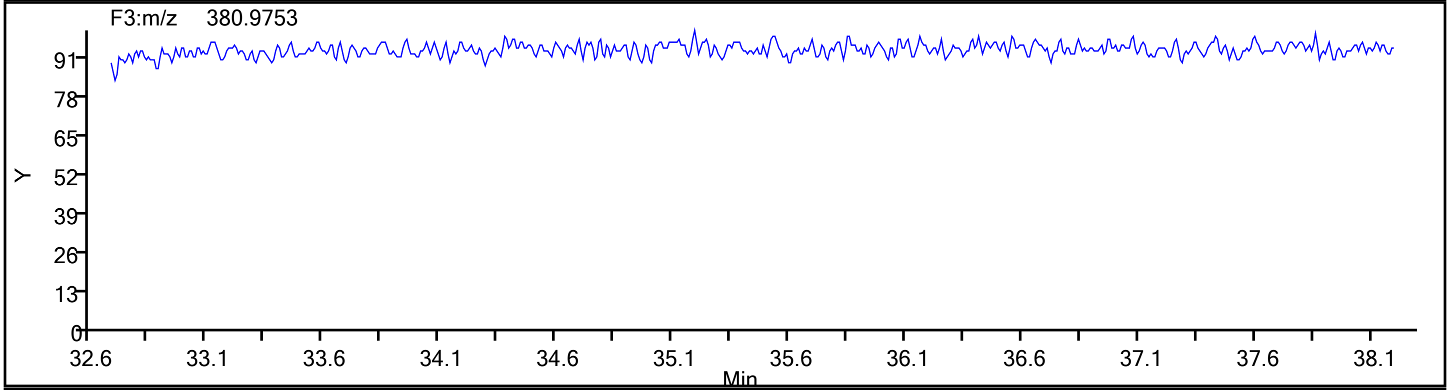

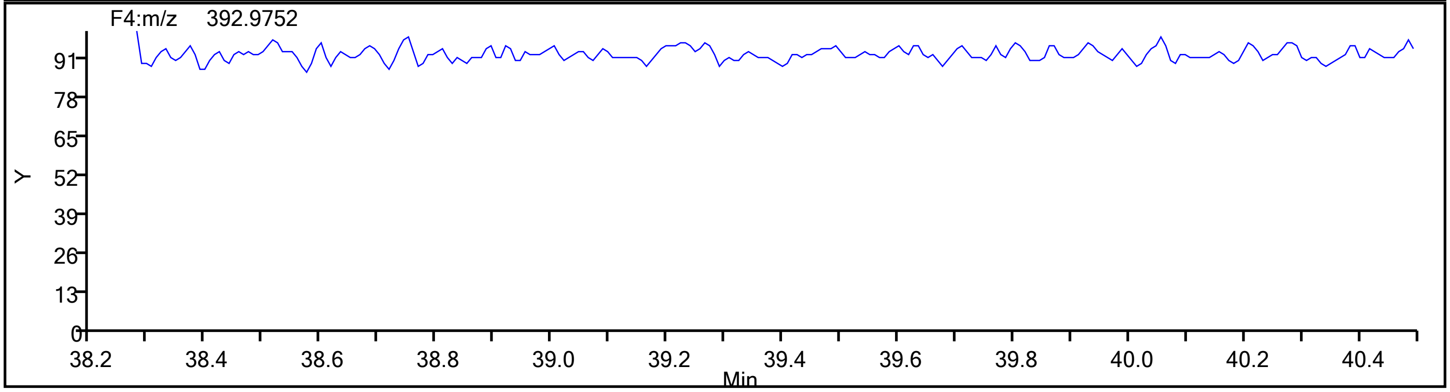

Report Date: 31-Jul-2020 01:01:37 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_3.d		
Injection Date:	30-Jul-2020 12:50:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

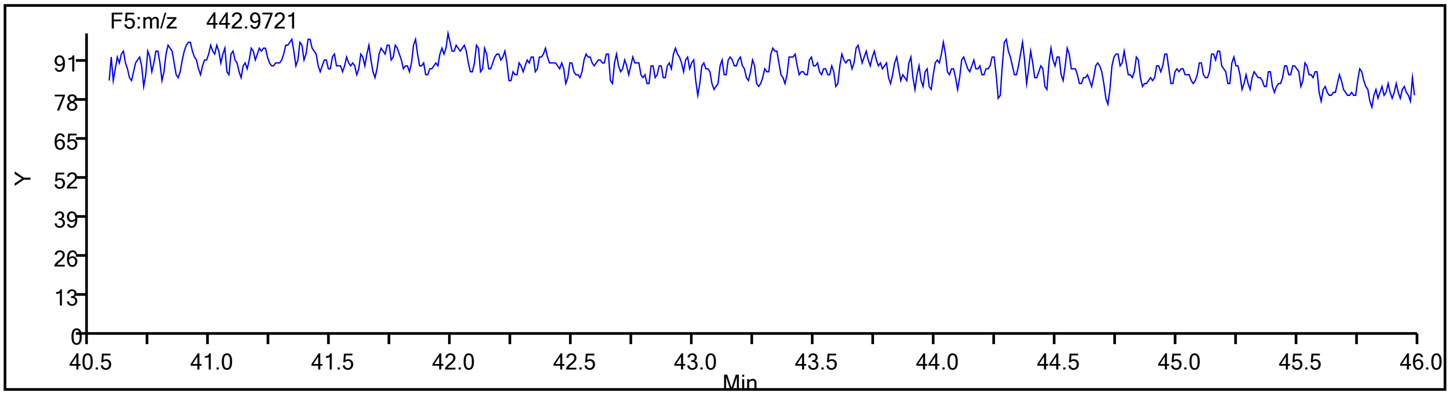

Report Date: 27-Jul-2020 12:42:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 24-Jul-2020 22:33:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 24-Jul-2020 22:33:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

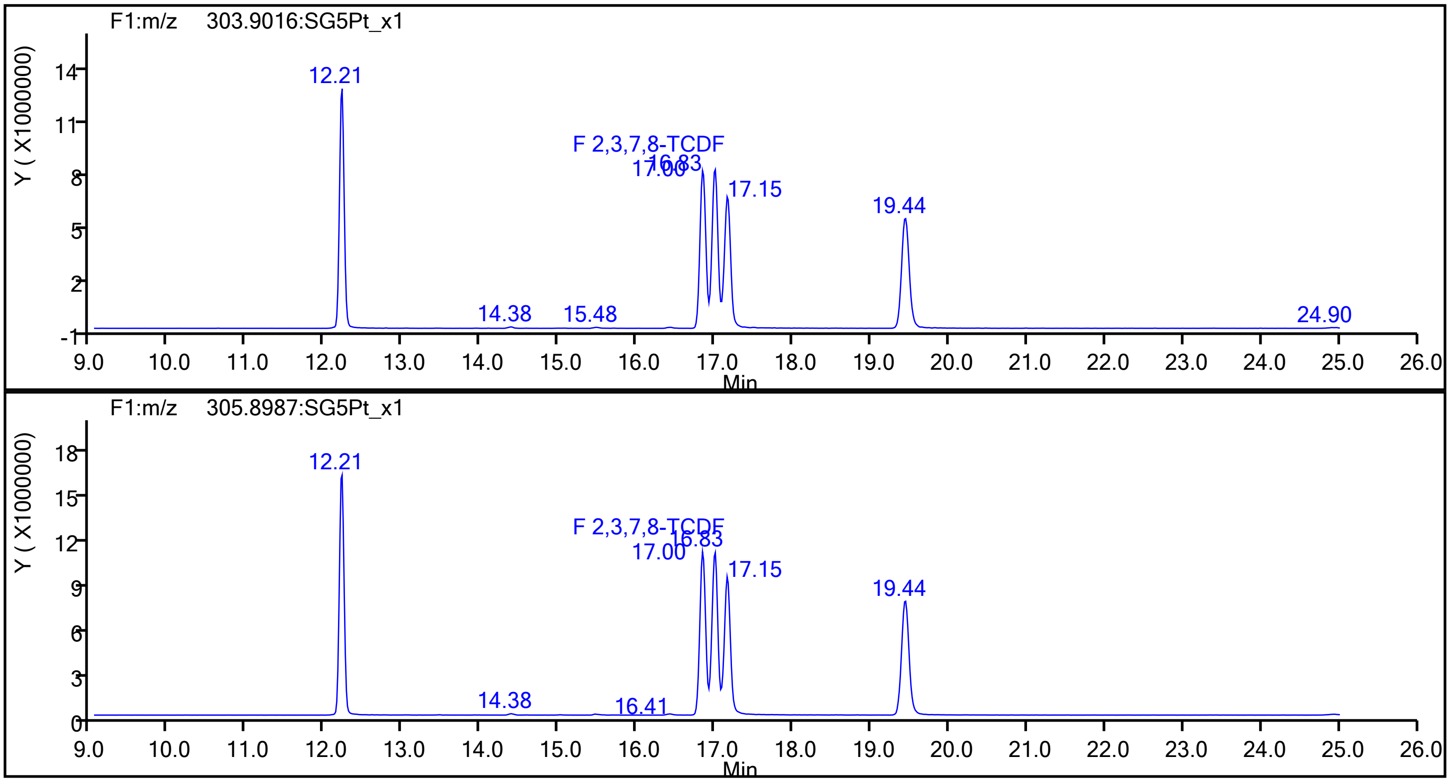

TCDF Standards

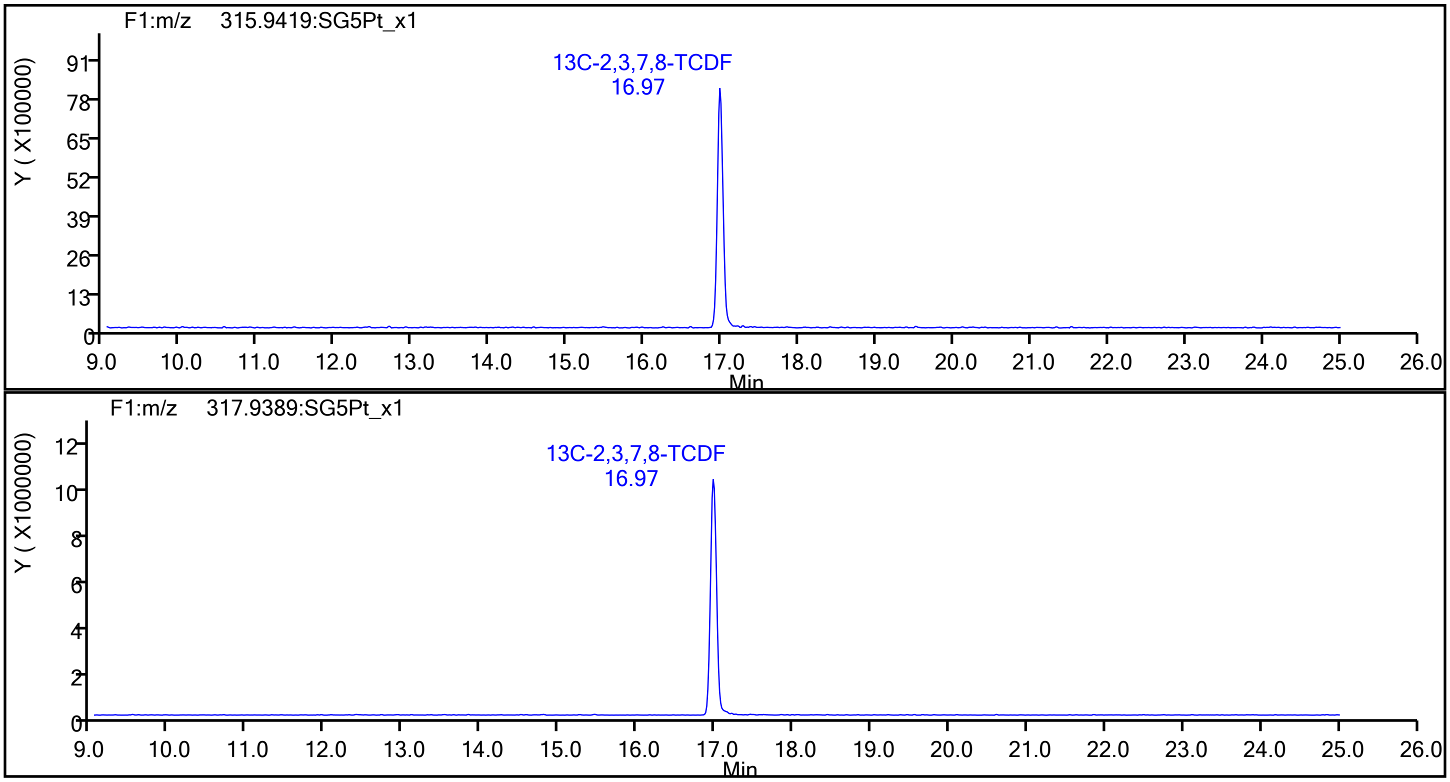

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

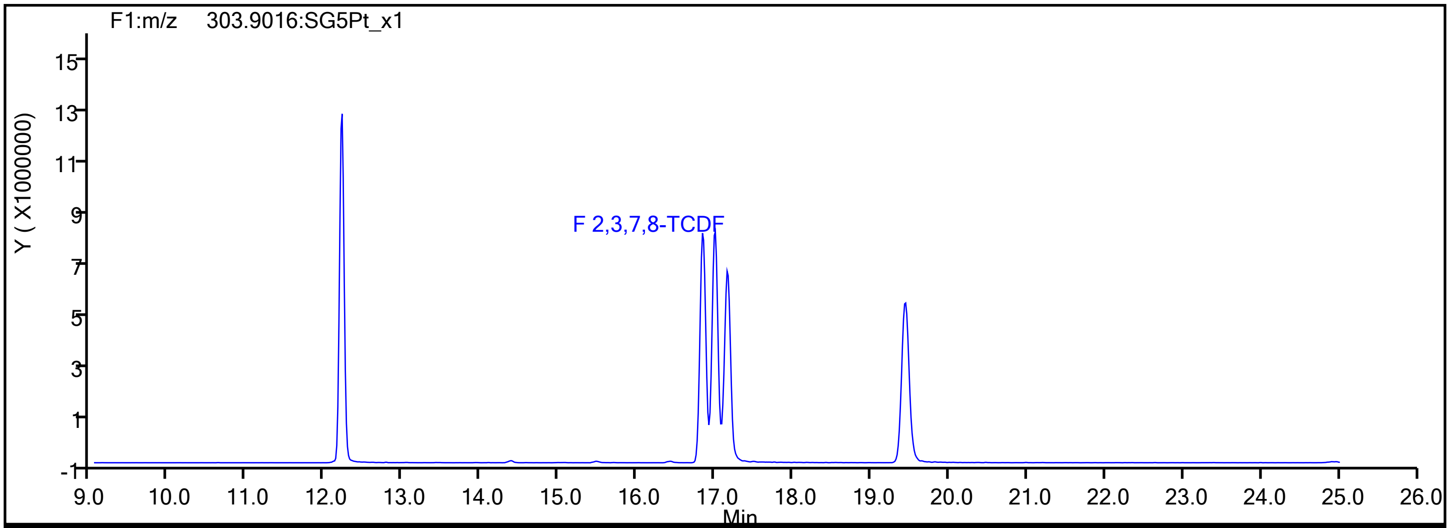

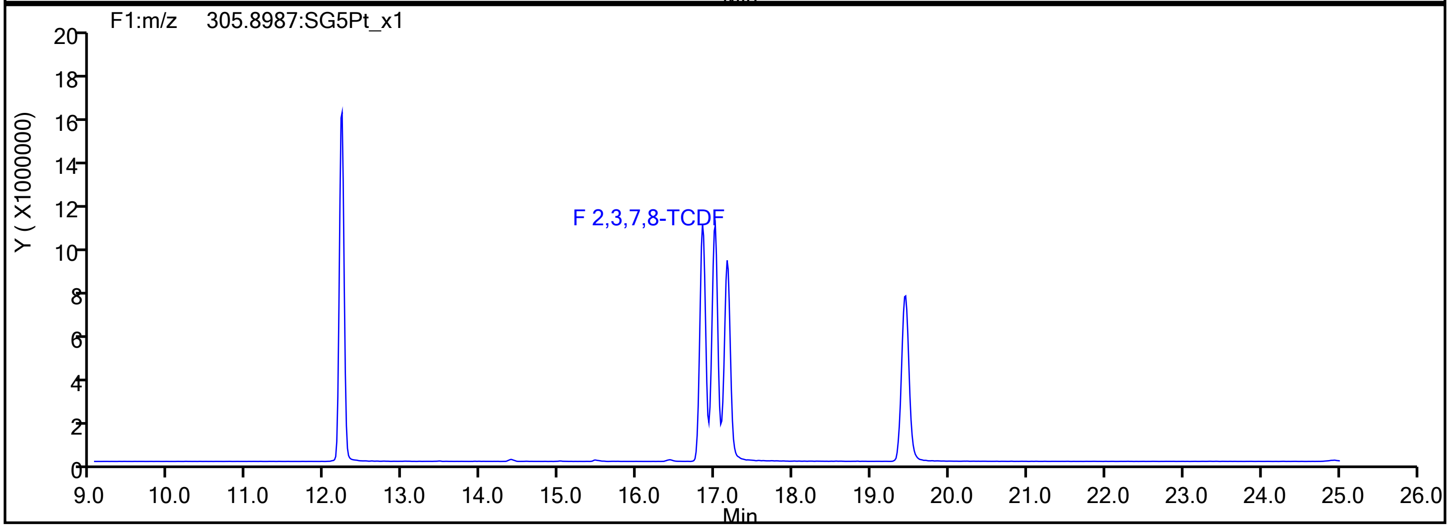

TCDF Interference Mass

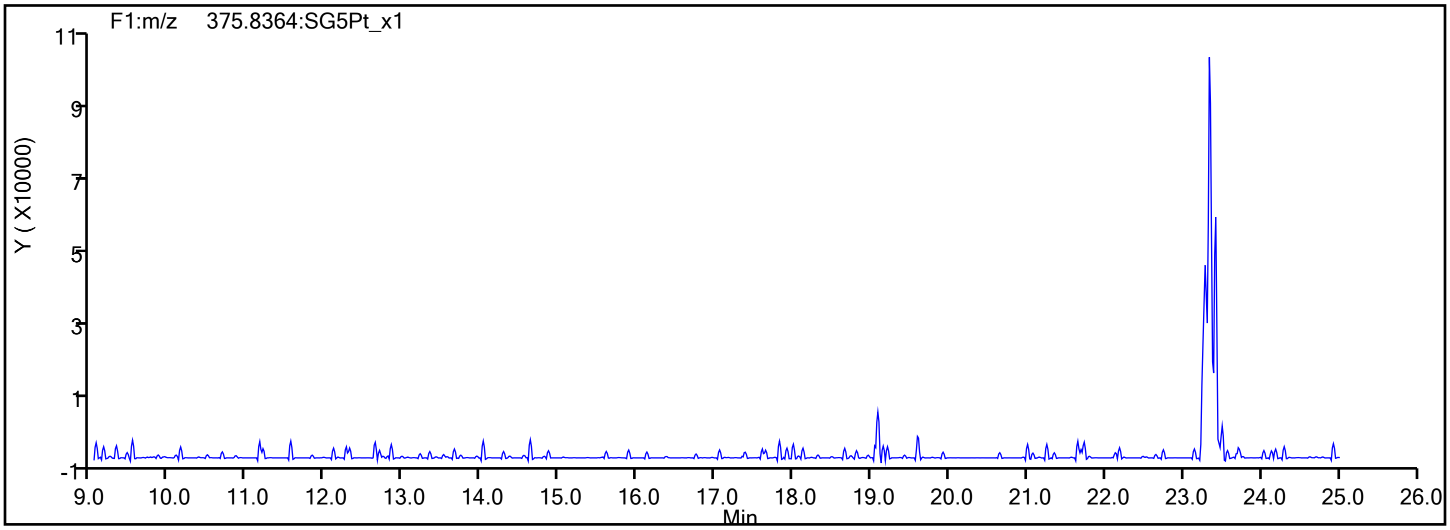

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

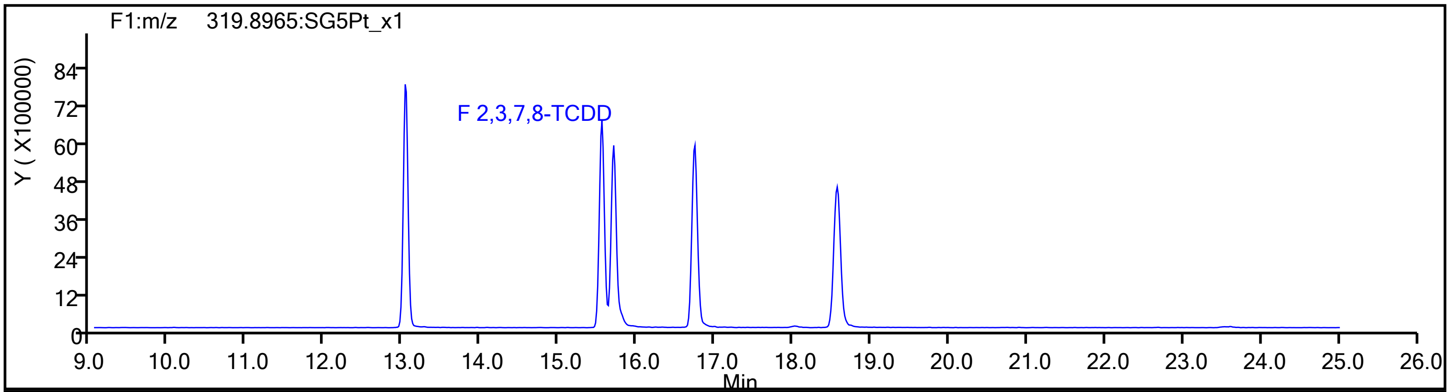

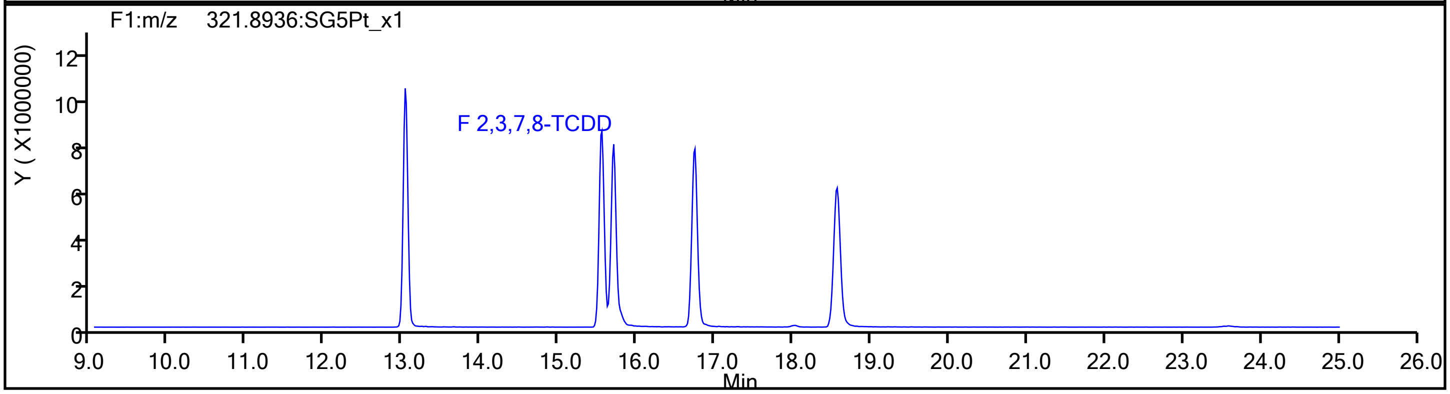

TCDD Standards

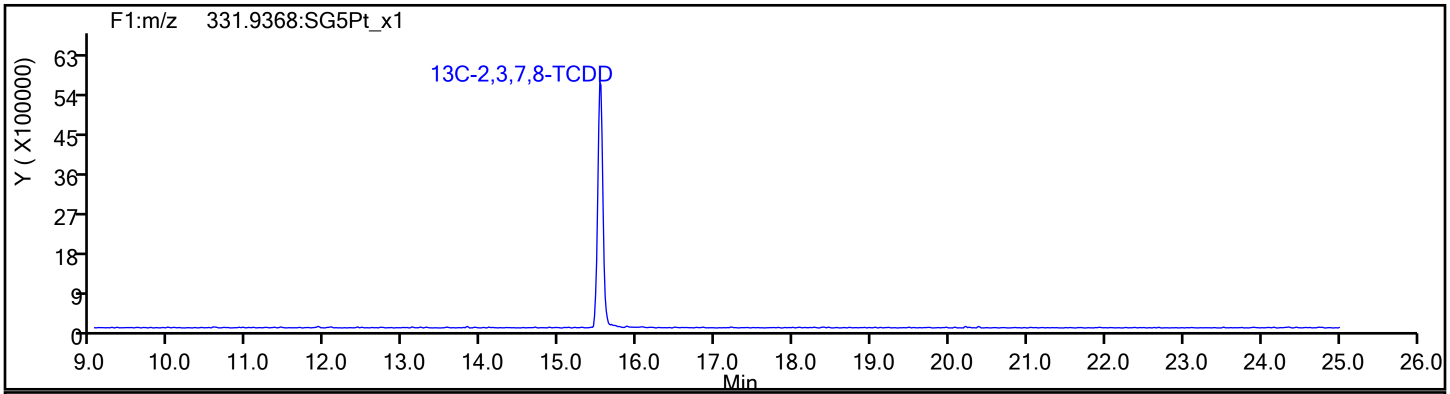

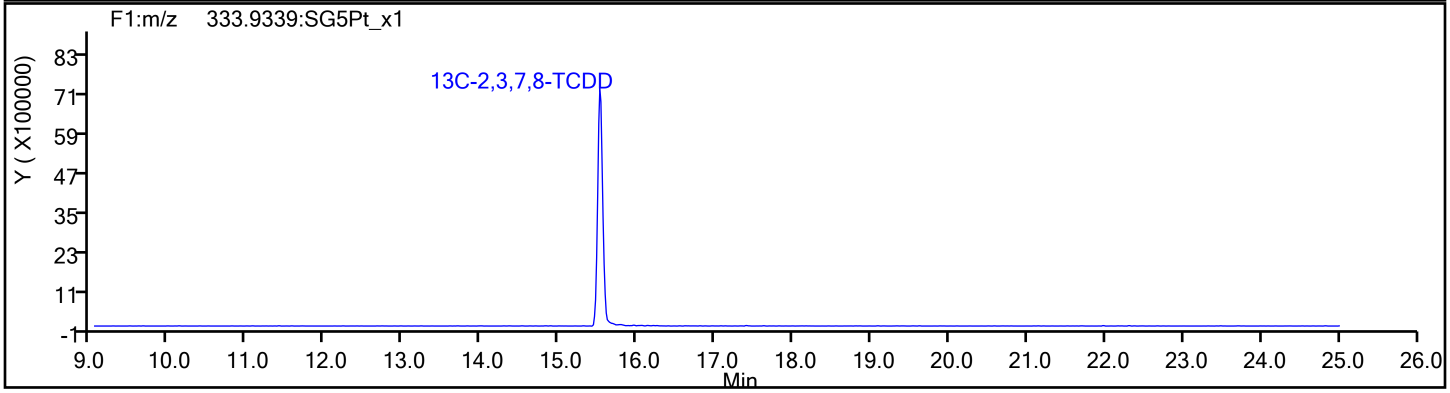

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

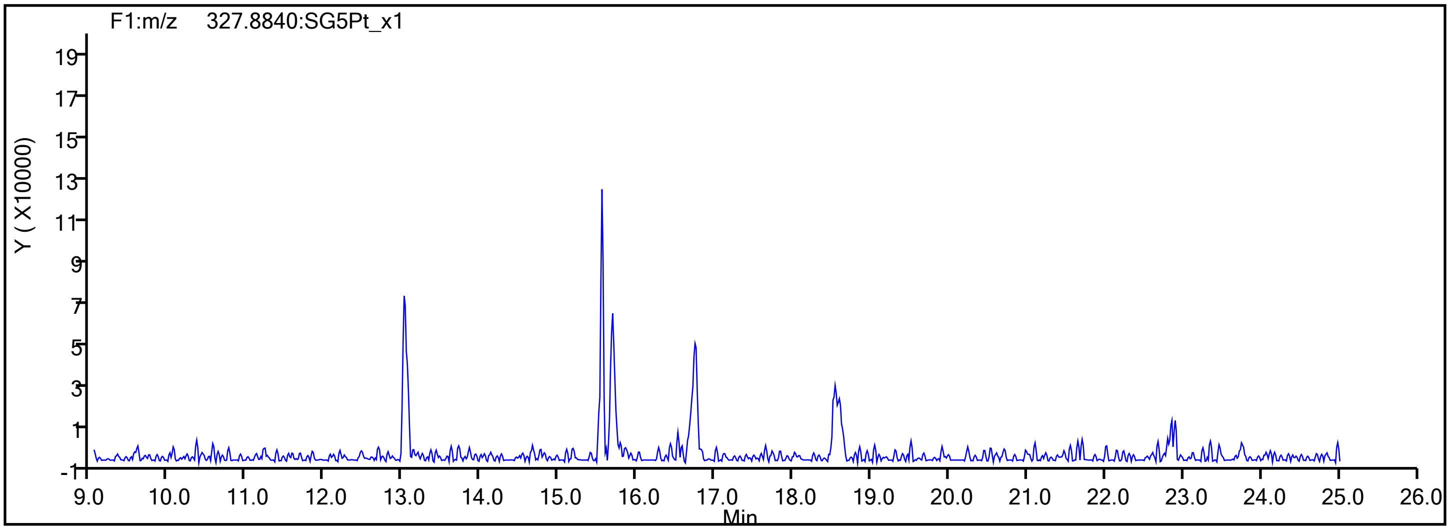

37Cl4-TCDD Standards

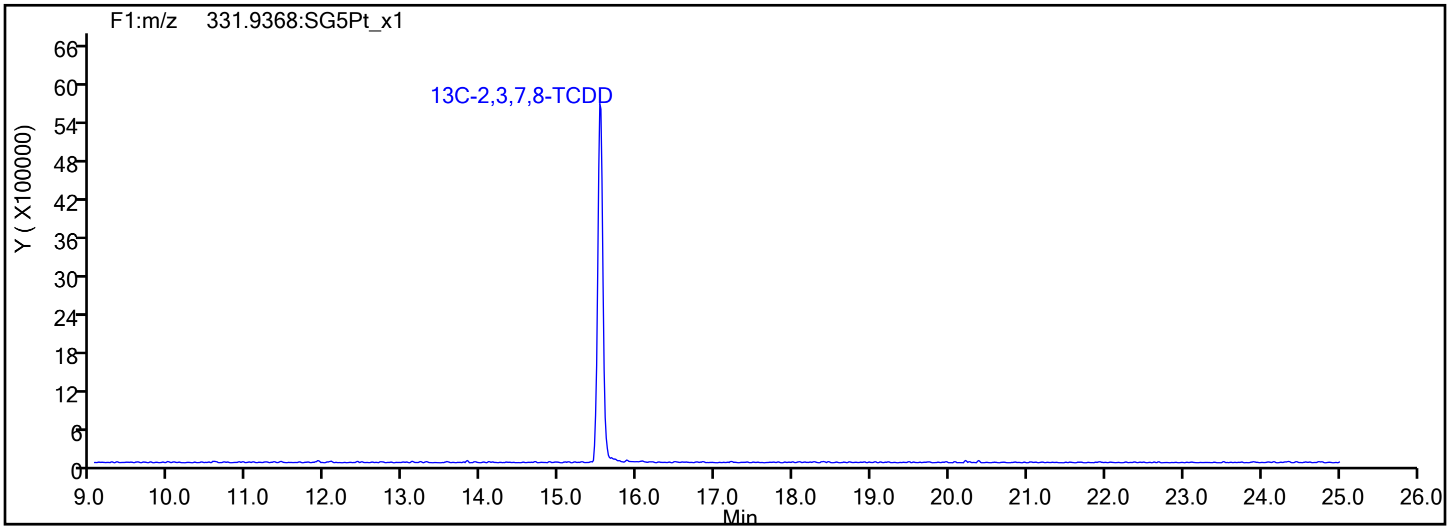

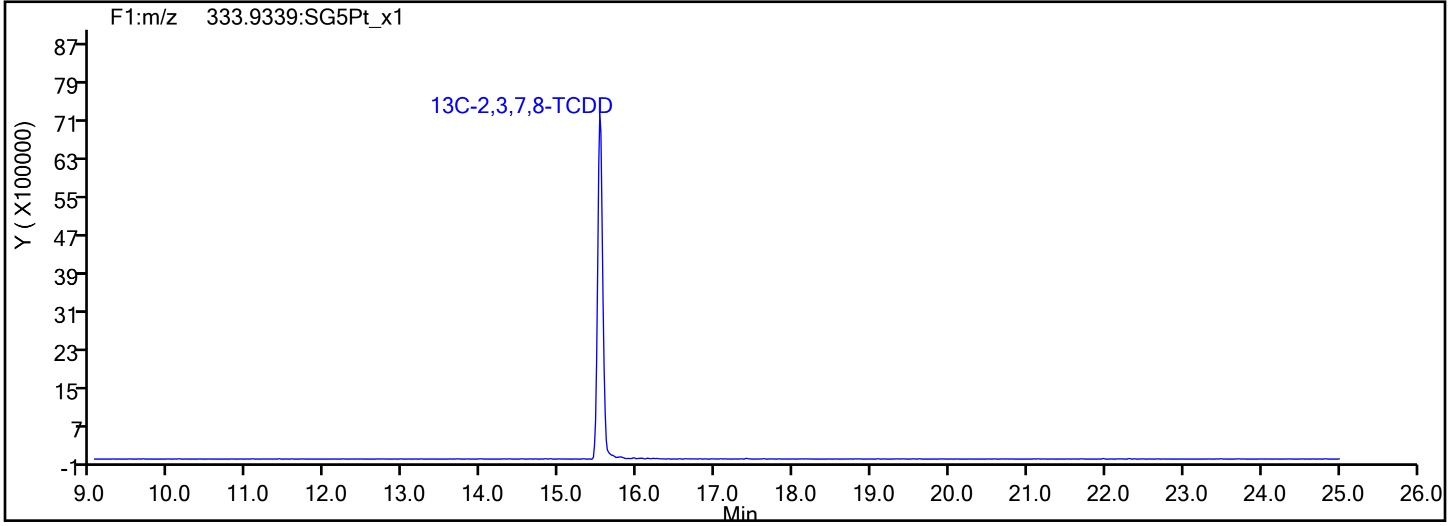

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d

Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

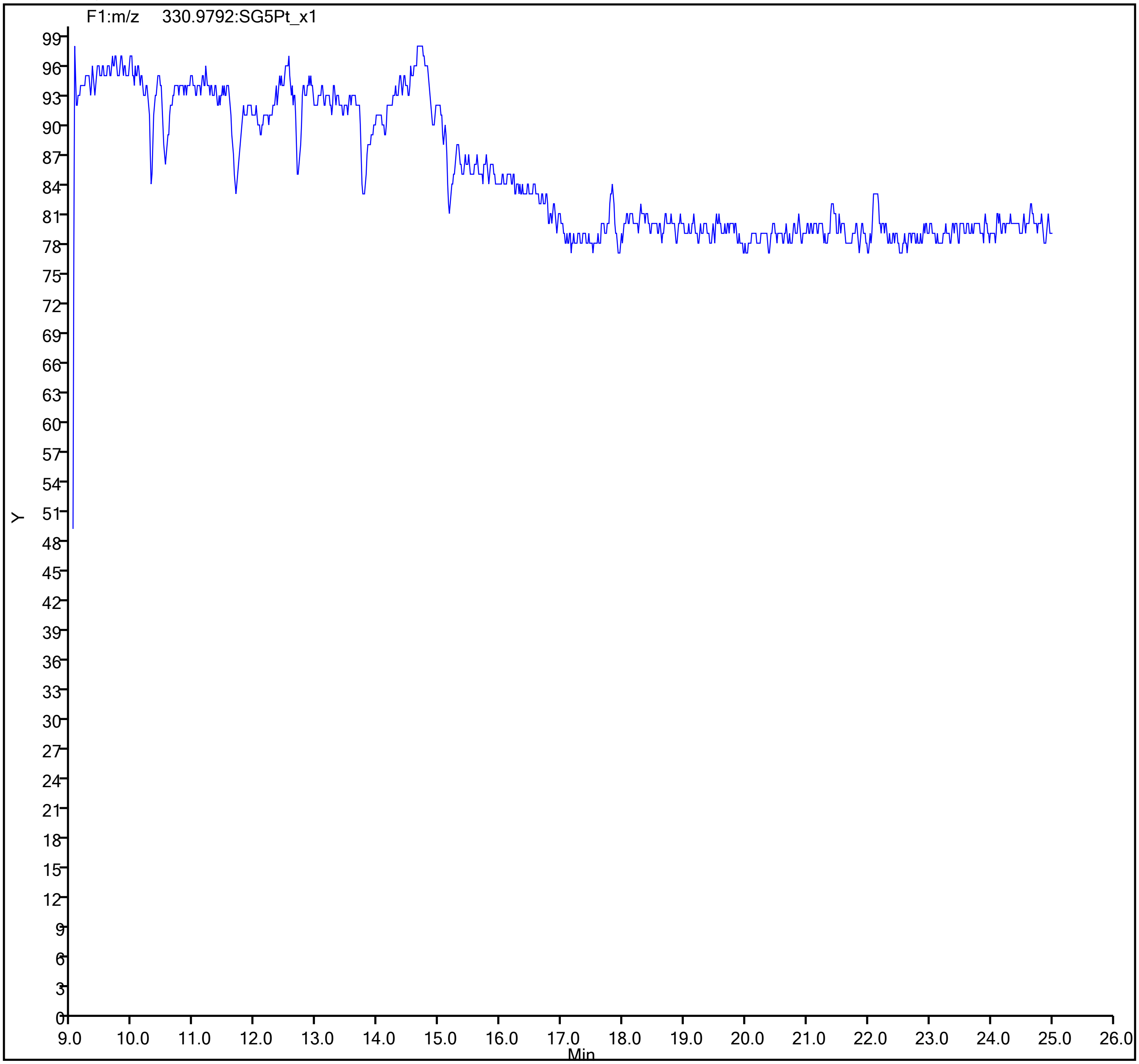

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	29-Jul-2020 10:53:06	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	29-Jul-2020 22:10:52	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1065	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.978	111710522	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.992	110601500	0.74	0.9943	39.8	39.8	0.0656	0.0656		
D 13C-2,3,7,8-TCDD	15.524	65307741	0.84	0.9834					0.00	
2,3,7,8-TCDD	15.537	79497243	0.78	1.2822	38.0	38.0	0.0663	0.0663		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 29-Jul-2020 22:10:52 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	29-Jul-2020 10:53:06	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	29-Jul-2020 22:10:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1065				

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.978	16.978	0	1.000	49317604	9091388	17756	44390	512		
317.9389	16.978	16.978	0	1.000	62392918	11287815	10027	25067	1126	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.992	16.992	0	1.001	47119917	9052118	5566	13915	1626		
305.8987	16.992	16.992	0	1.001	63481583	11780257	7735	19337	1523	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.524	15.524	0	1.000	29735632	6404715	15054	37635	425		
333.9339	15.524	15.524	0	1.000	35572109	7603614	4284	10710	1775	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.537	15.537	0	1.001	34735913	7314171	6451	16127	1134		
321.8936	15.537	15.537	0	1.001	44761330	9348670	5457	13642	1713	0.78(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d		
Injection Date:	29-Jul-2020 10:53:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399540	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

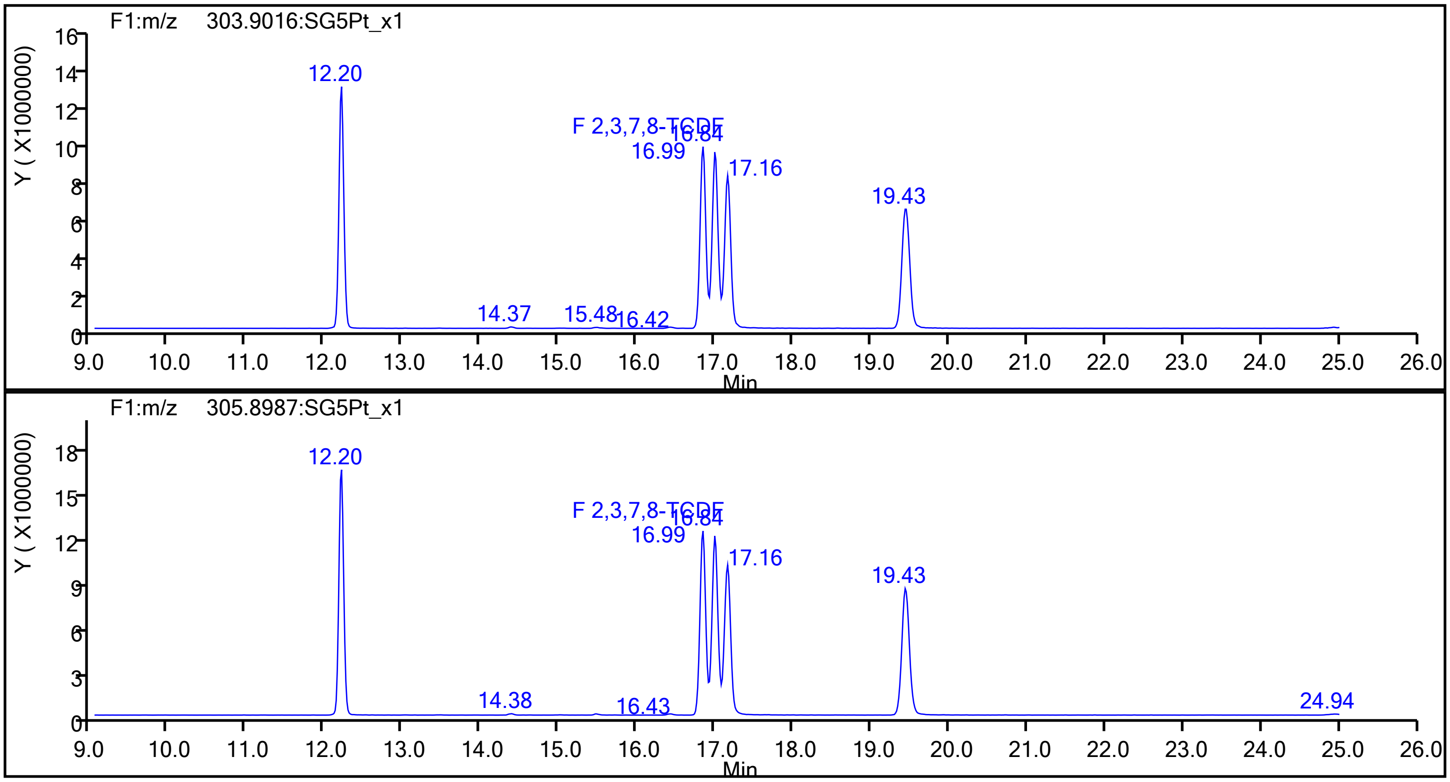

TCDF Standards

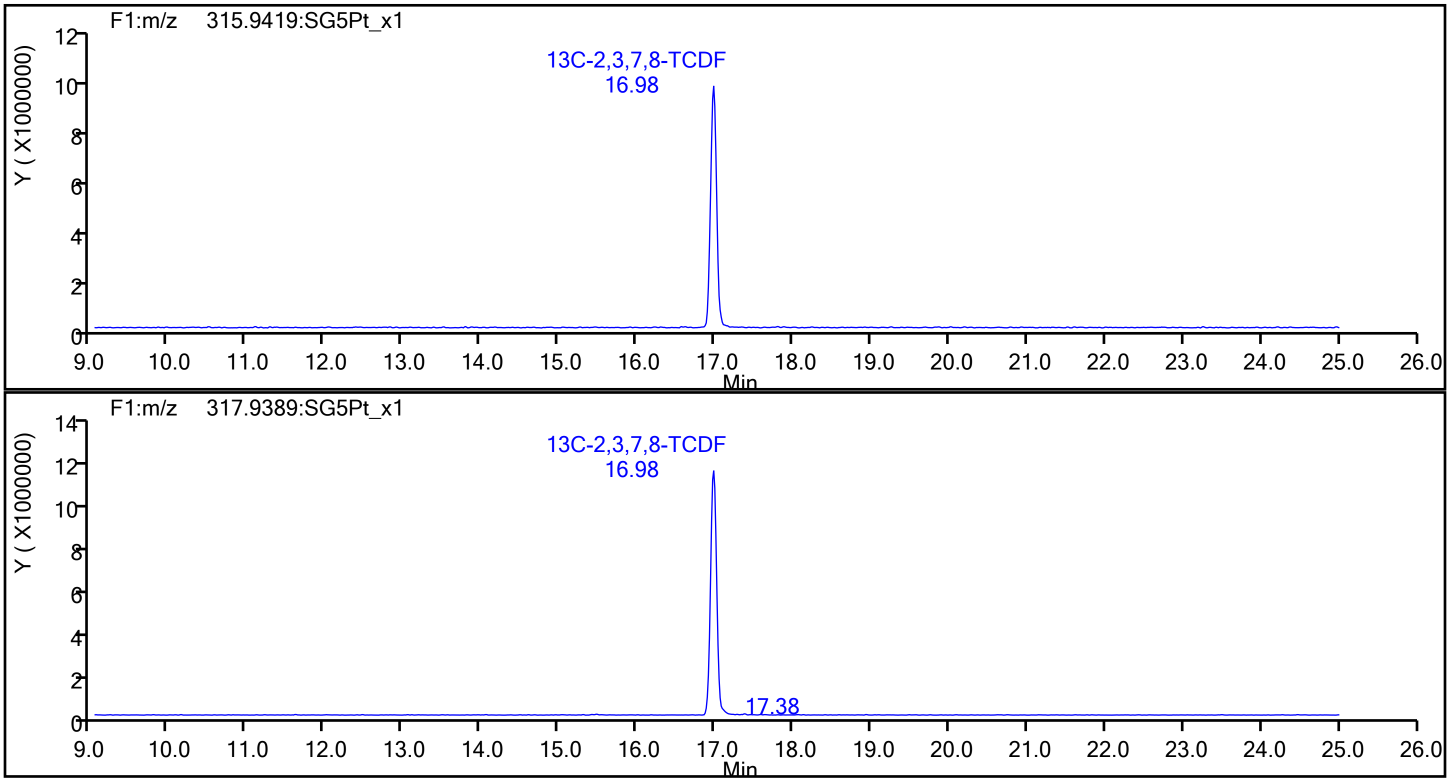

Report Date: 29-Jul-2020 22:10:52 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d		
Injection Date:	29-Jul-2020 10:53:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399540	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

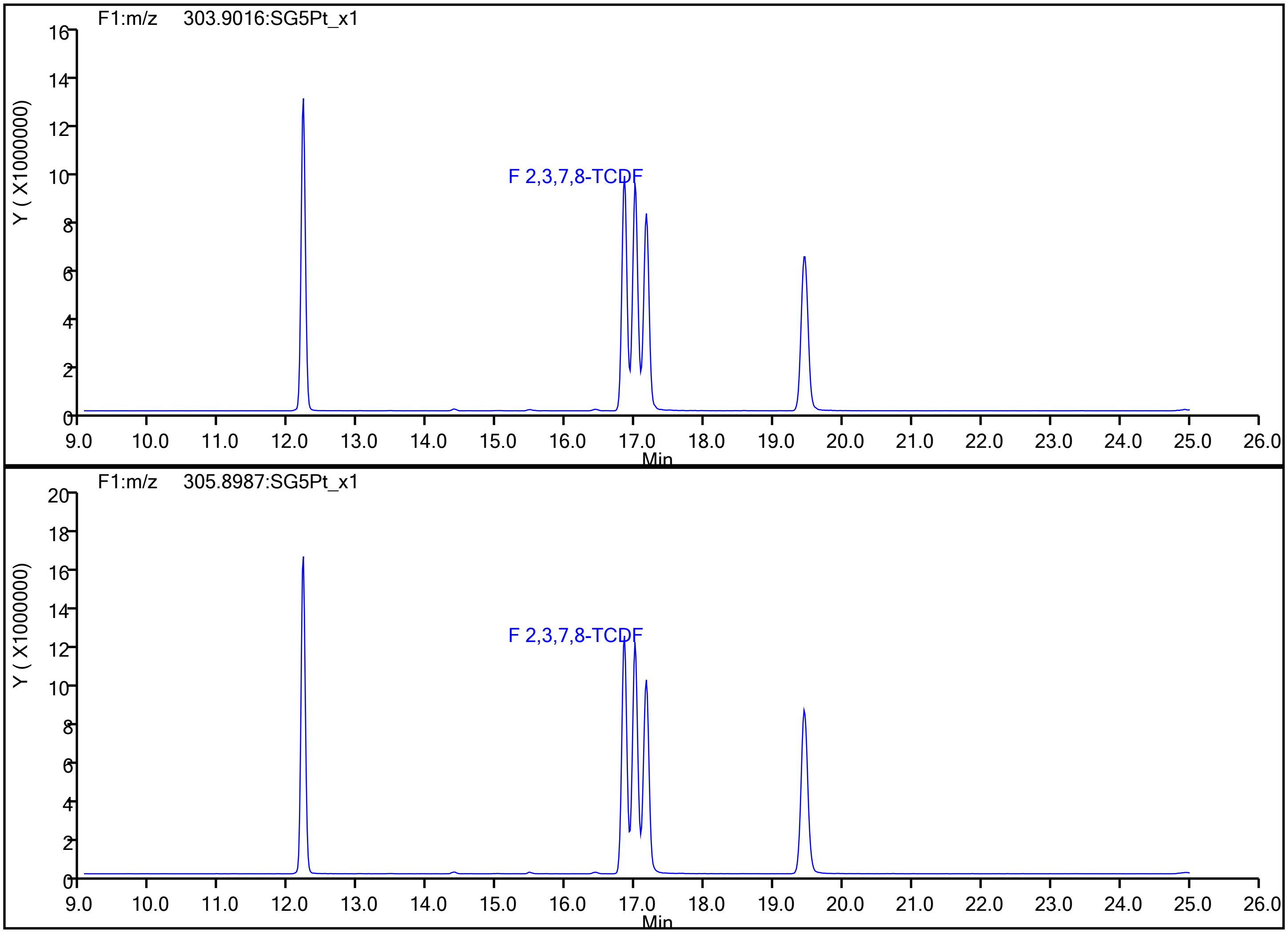

TCDF Interference Mass

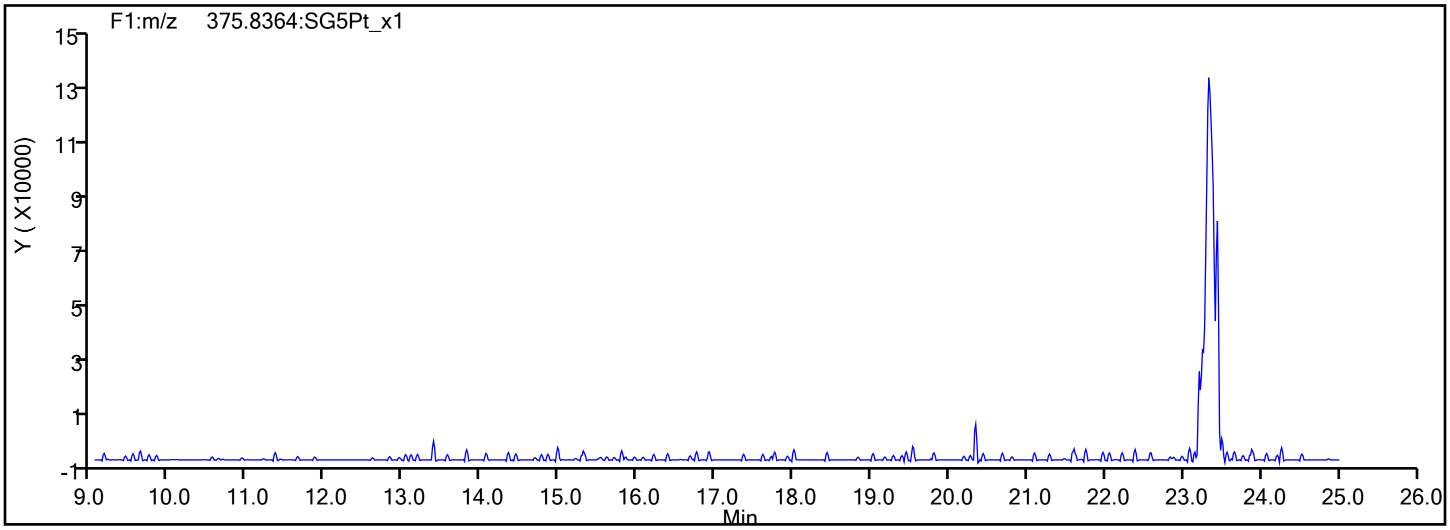

Report Date: 29-Jul-2020 22:10:52 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d
Injection Date: 29-Jul-2020 10:53:06 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399540 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

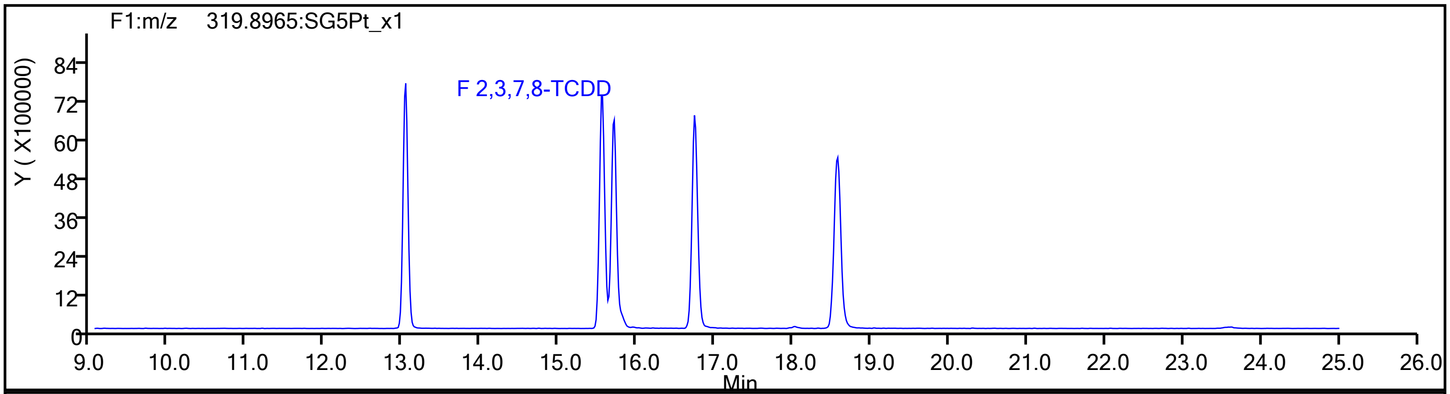

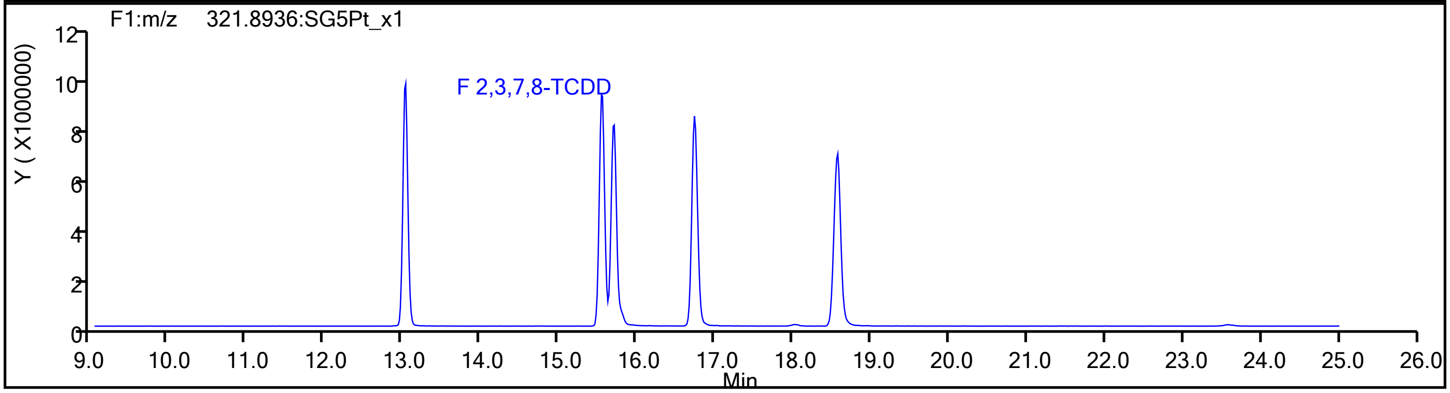

TCDD Standards

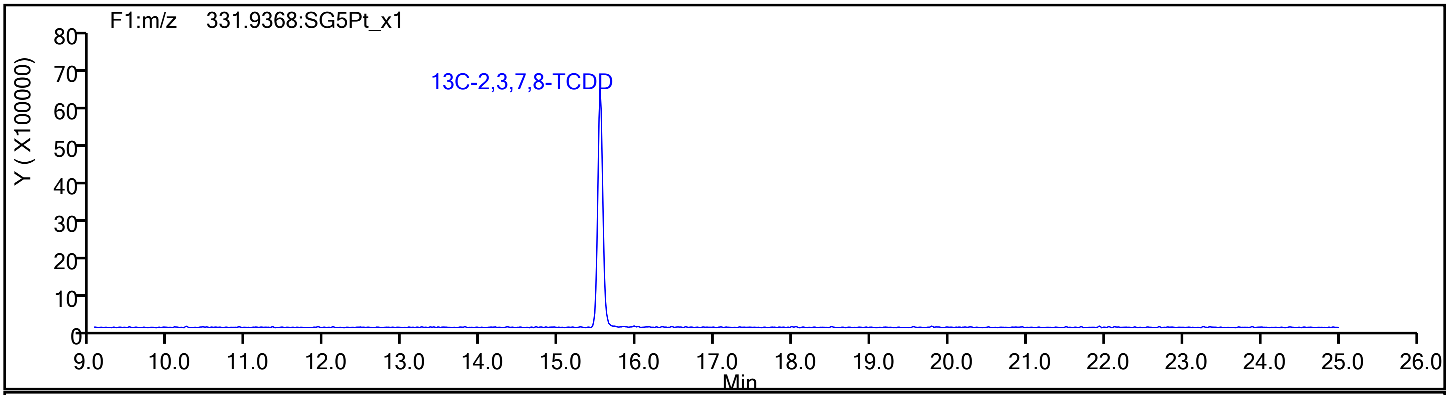

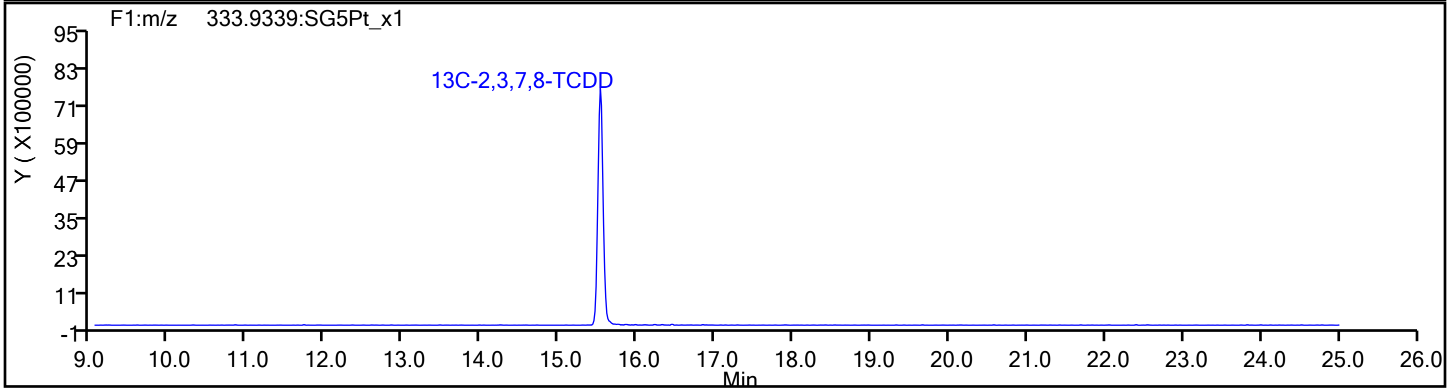

Report Date: 29-Jul-2020 22:10:52 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d		
Injection Date:	29-Jul-2020 10:53:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399540	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

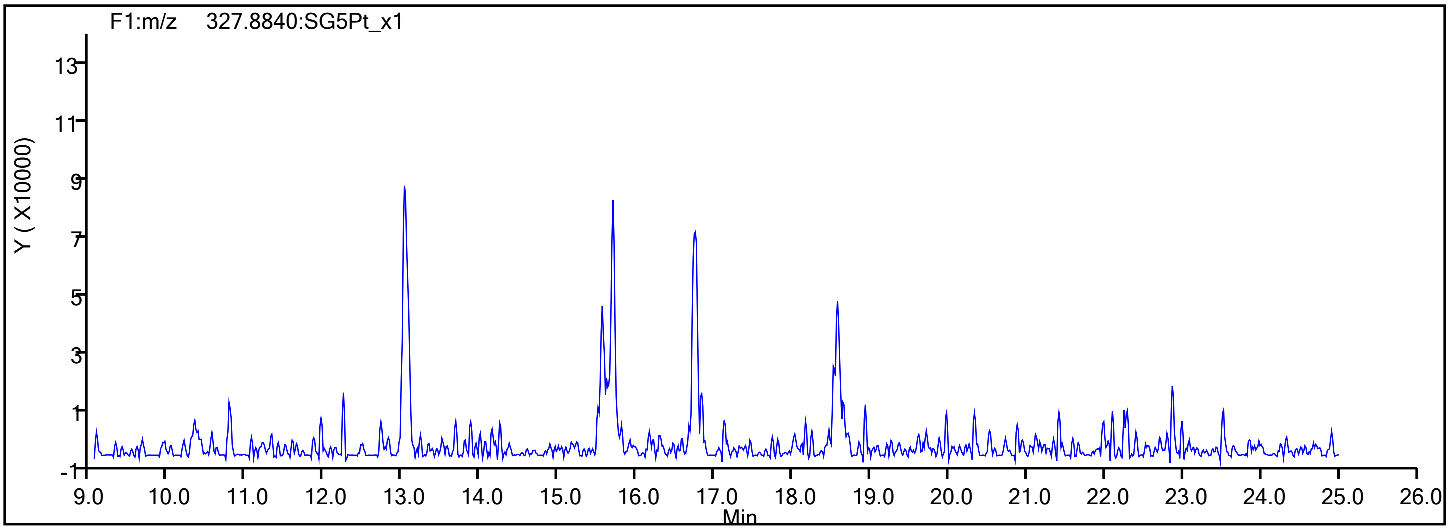

37Cl4-TCDD Standards

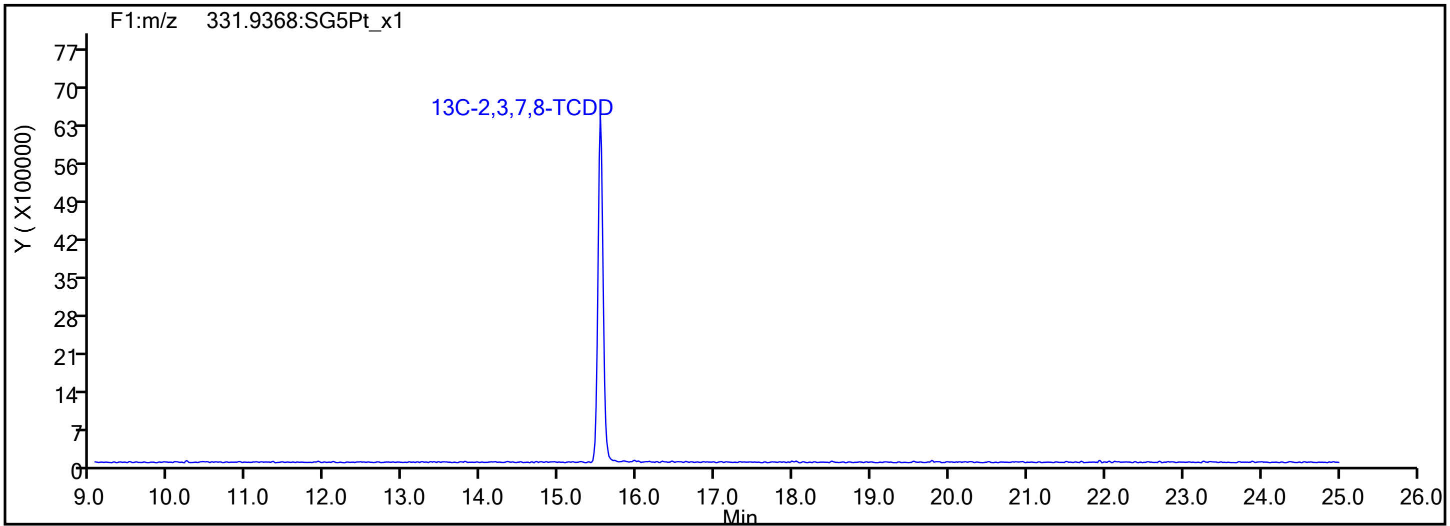

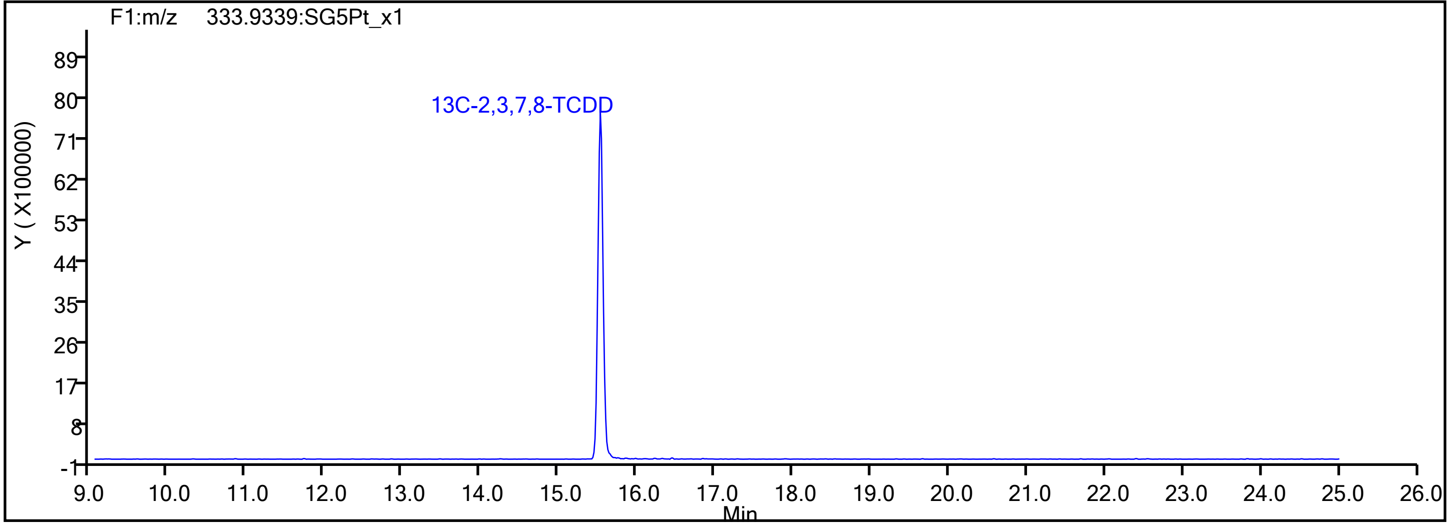

Report Date: 29-Jul-2020 22:10:52
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200729-100509.b\29JL2011D2_001.d

Injection Date: 29-Jul-2020 10:53:06
Injection Vol: 2.0 ul

Instrument ID: 11D2
Operator ID:

Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 399540
Sample Line#: 1

Column Type: DB-225
Column Dia: 0.32 mm

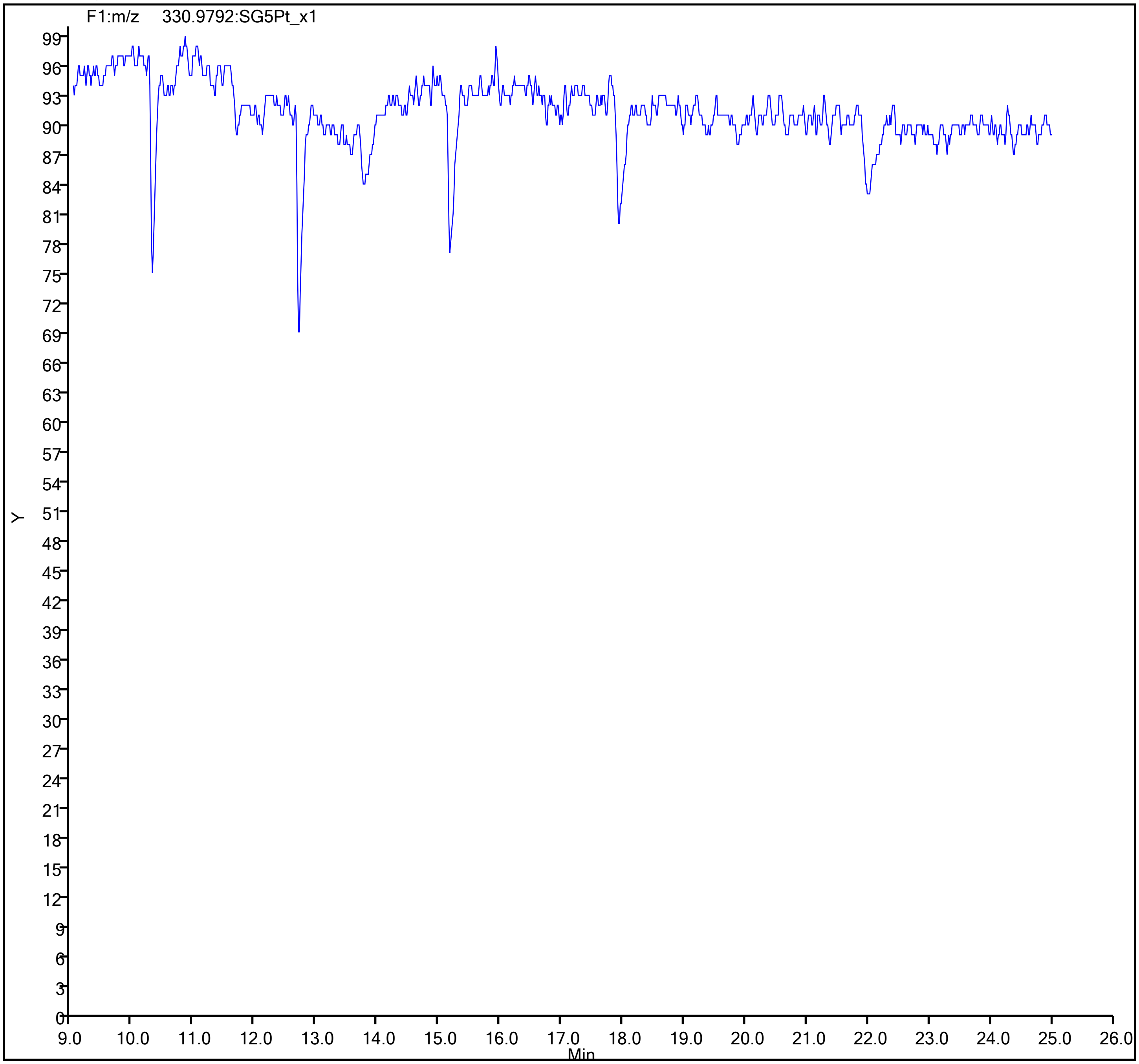

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 30-Jul-2020 13:09:50 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 22:56:26 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1069

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.976	67508931	0.77	1.5708					0.00	
2,3,7,8-TCDF	17.003	67882982	0.78	0.9943	40.5	40.5	0.1082	0.1082		
D 13C-2,3,7,8-TCDD	15.521	39742139	0.79	0.9834					0.00	
2,3,7,8-TCDD	15.549	44541272	0.76	1.2822	35.0	35.0	0.1267	0.1267		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 30-Jul-2020 22:56:27 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 30-Jul-2020 13:09:50 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Jul-2020 22:56:26 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1069

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.976	16.976	0	1.000	29454283	5152184	30309	75772	170		
317.9389	16.976	16.976	0	1.000	38054648	6733560	18548	46370	363	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.003	17.003	0	1.002	29845758	5348733	5363	13407	997		
305.8987	17.003	17.003	0	1.002	38037224	6683974	7423	18557	900	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.521	15.521	0	1.000	17592731	3630078	19602	49005	185		
333.9339	15.521	15.521	0	1.000	22149408	4522834	6815	17037	664	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.549	15.549	0	1.002	19246861	3874913	8231	20577	471		
321.8936	15.549	15.549	0	1.002	25294411	5158407	5016	12540	1028	0.76(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 30-Jul-2020 22:56:27 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d		
Injection Date:	30-Jul-2020 13:09:50	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

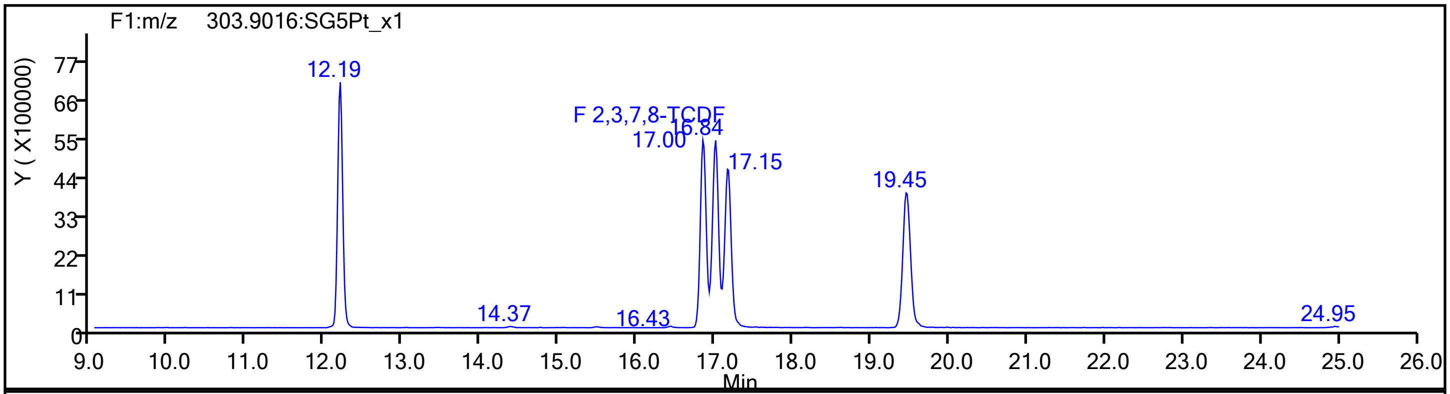

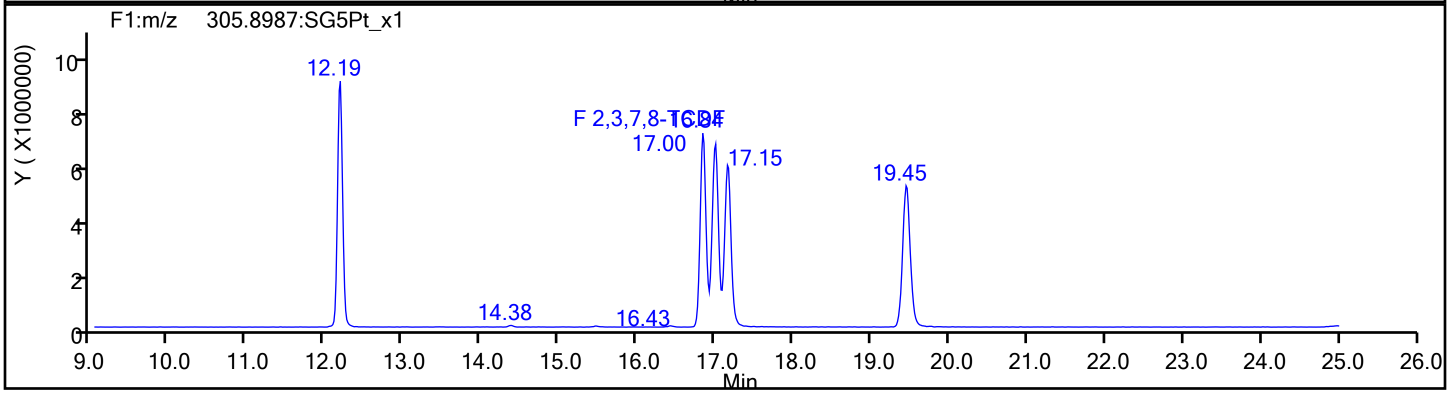

TCDF Standards

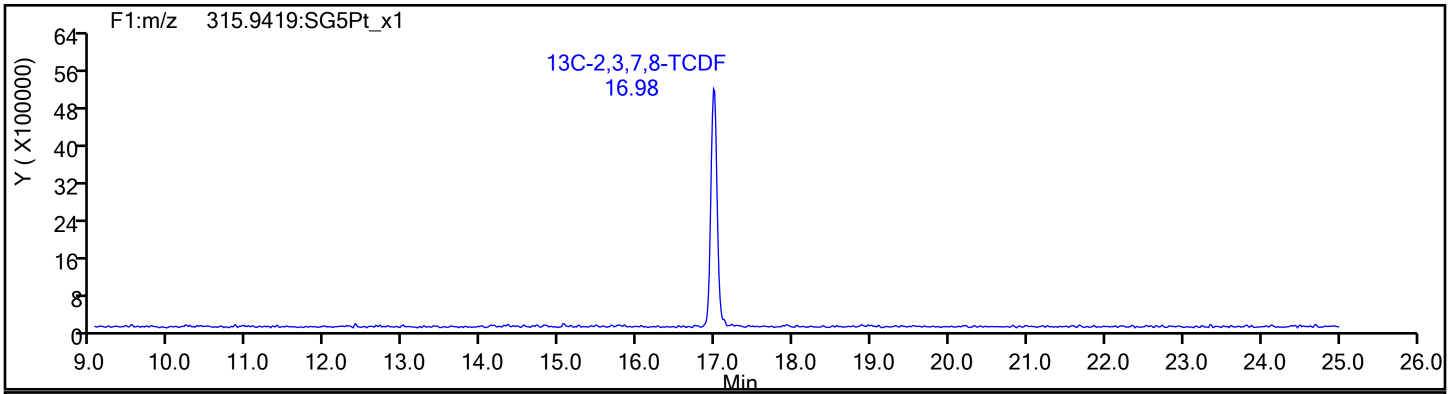

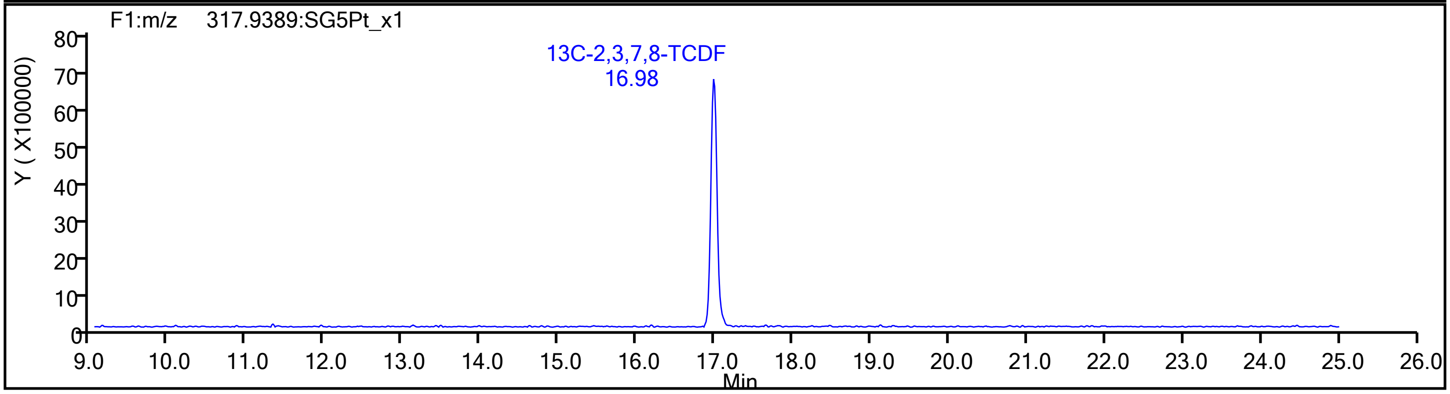

Report Date: 30-Jul-2020 22:56:27 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d		
Injection Date:	30-Jul-2020 13:09:50	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

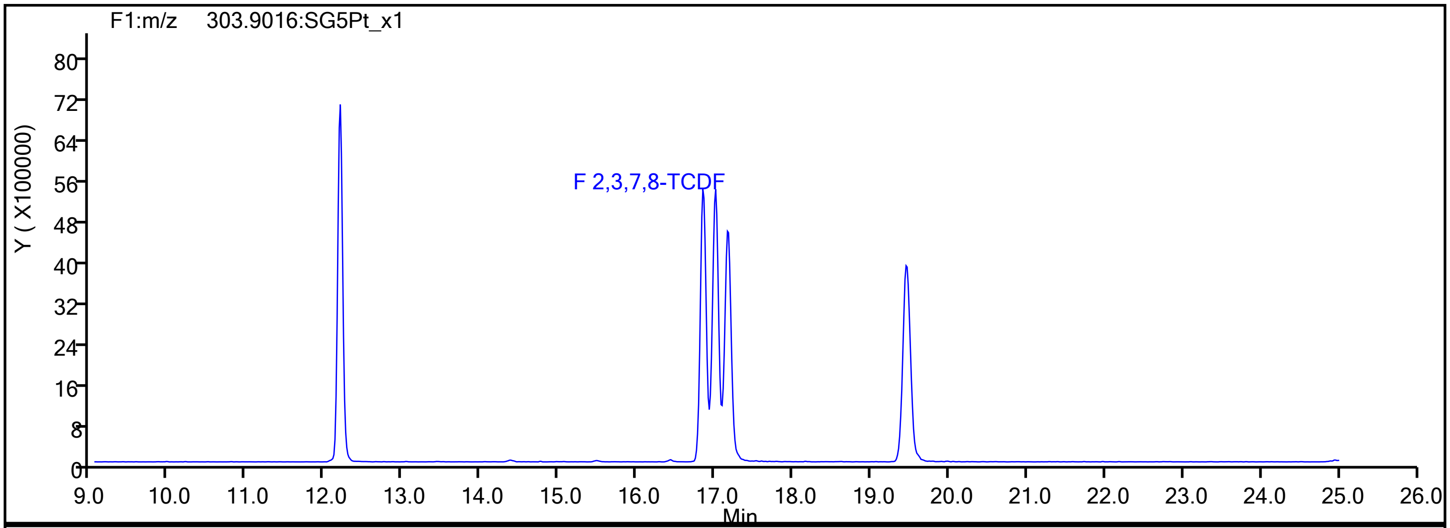

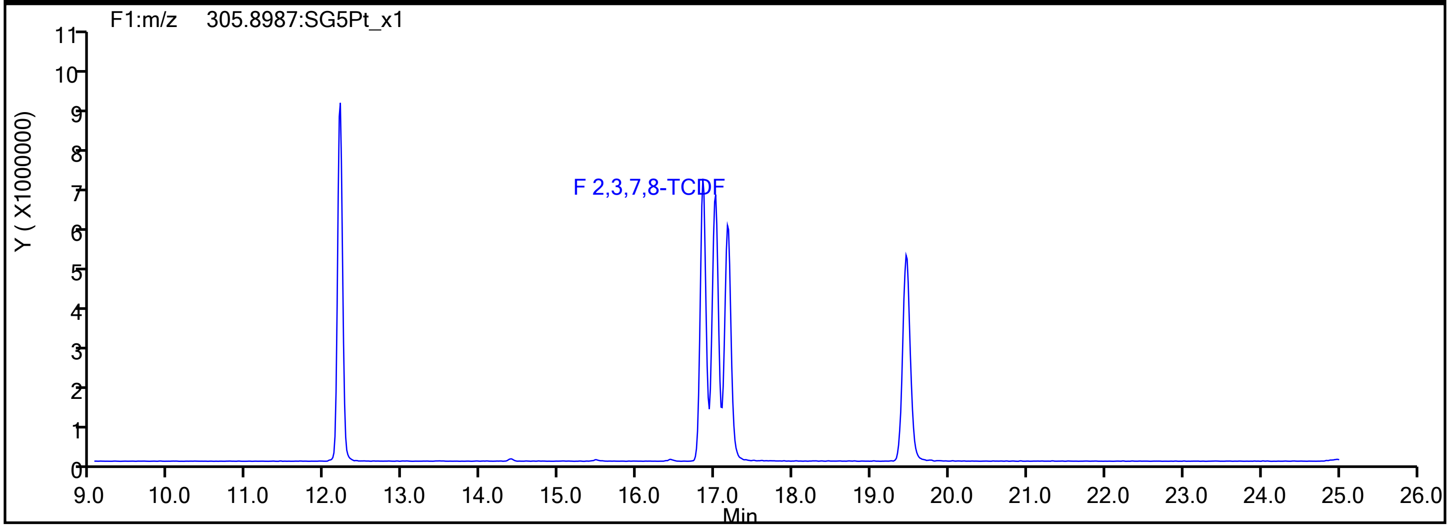

TCDF Interference Mass

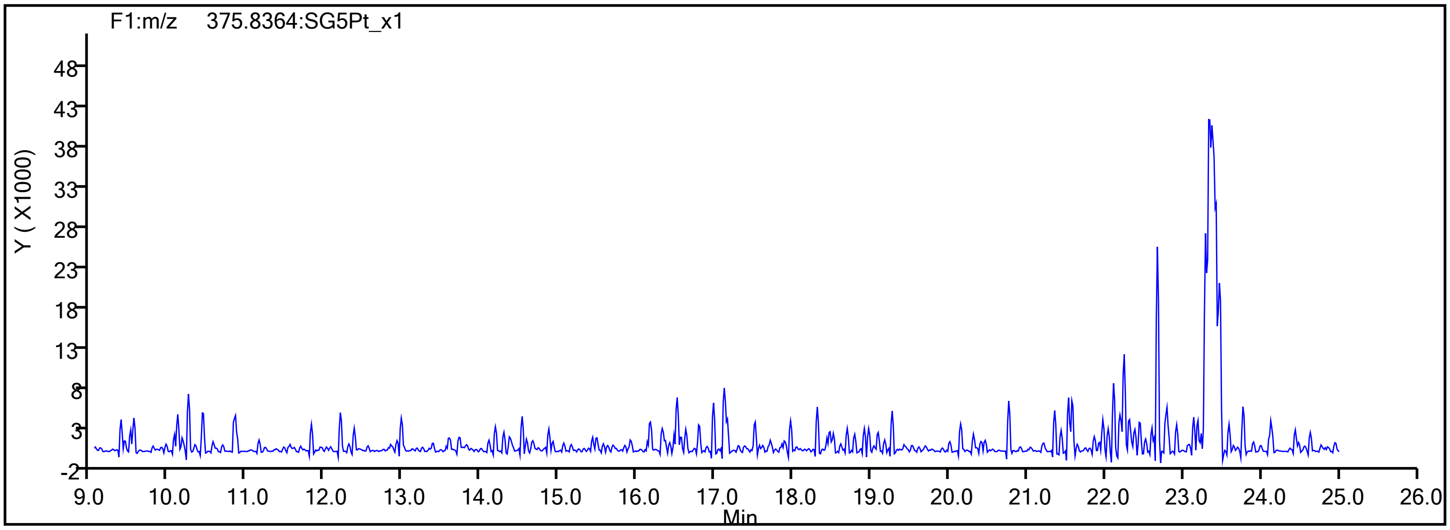

Report Date: 30-Jul-2020 22:56:27 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d

Injection Date:	30-Jul-2020 13:09:50	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

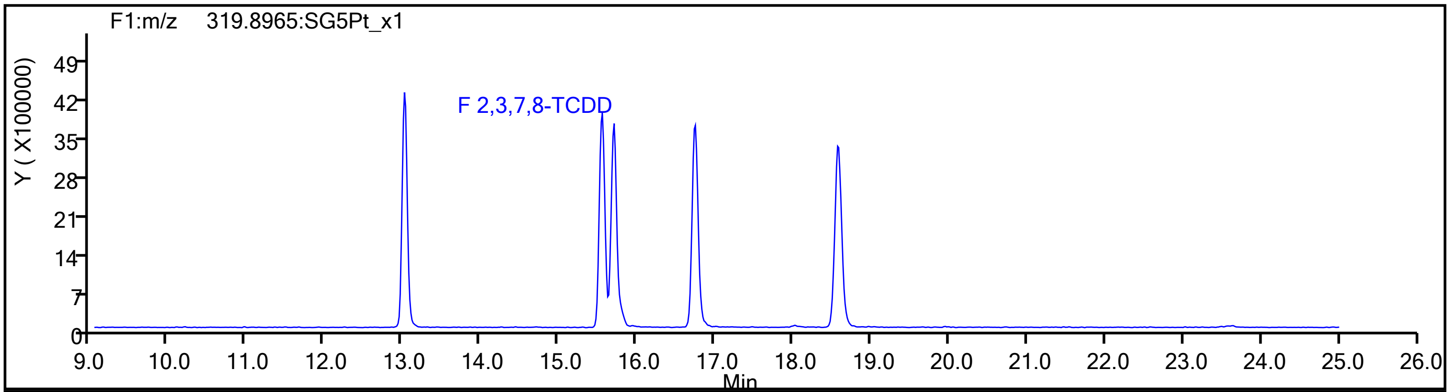

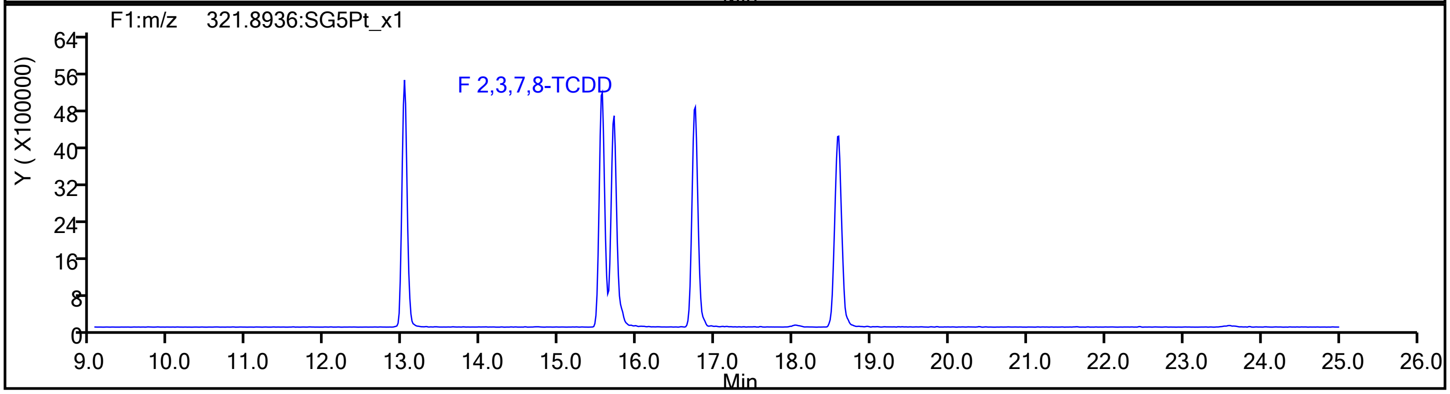

TCDD Standards

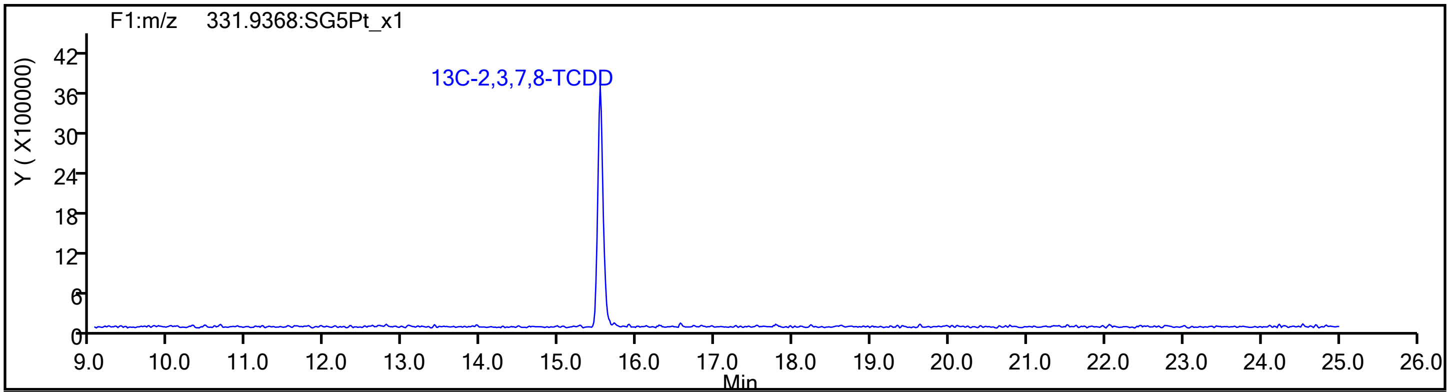

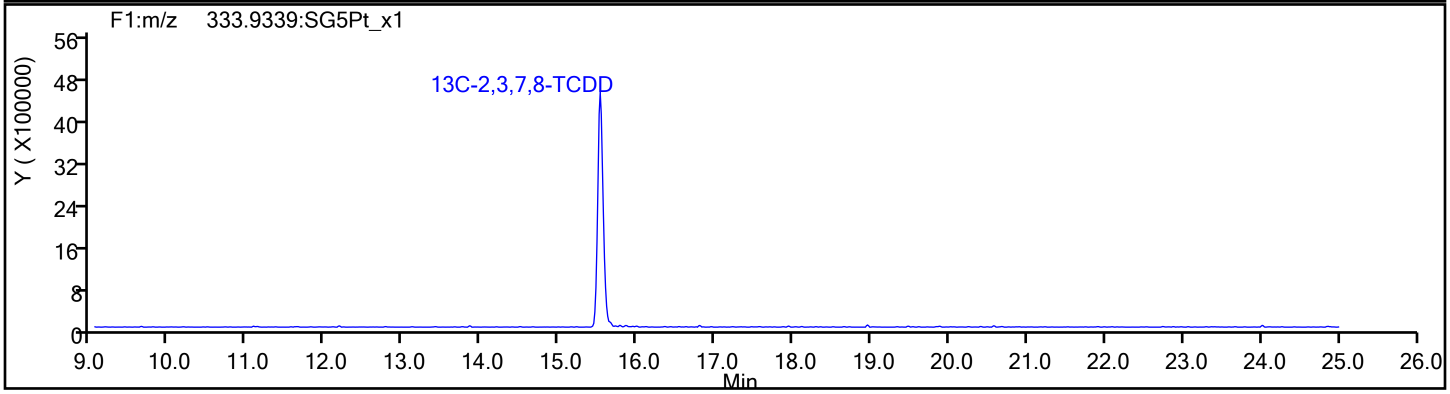

Report Date: 30-Jul-2020 22:56:27 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d		
Injection Date:	30-Jul-2020 13:09:50	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

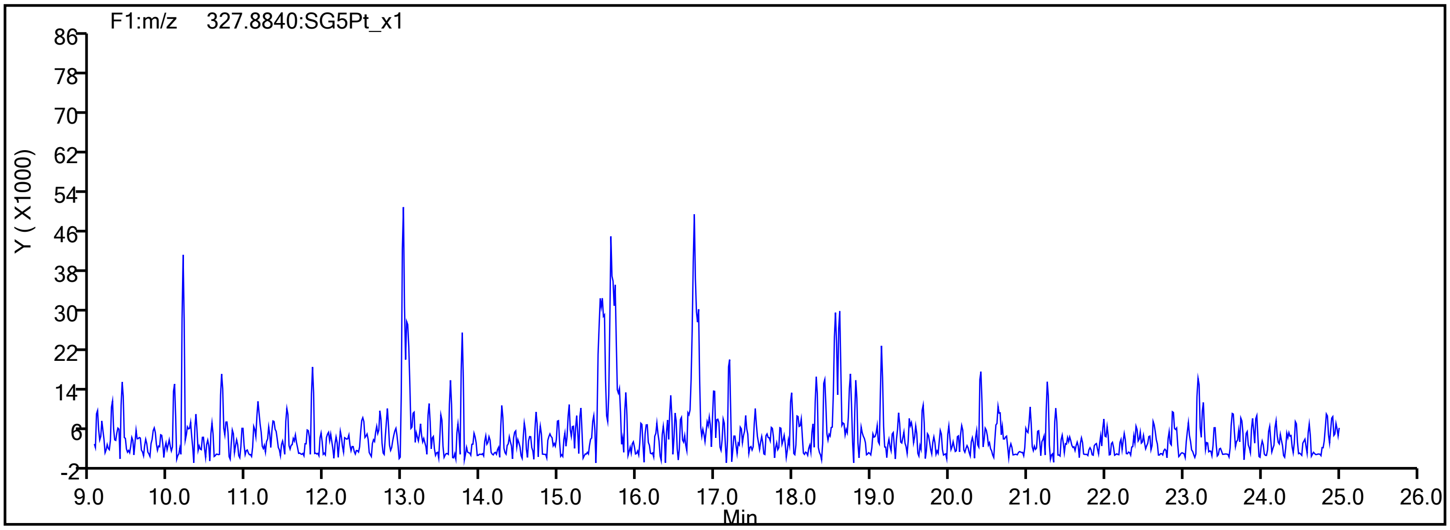

37Cl4-TCDD Standards

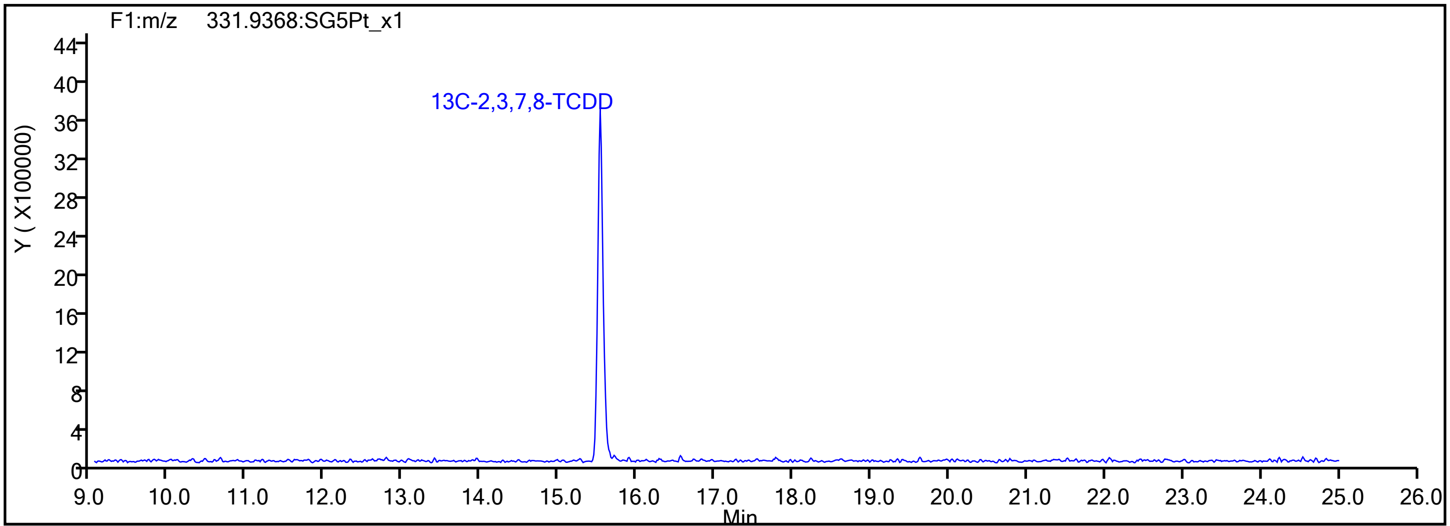

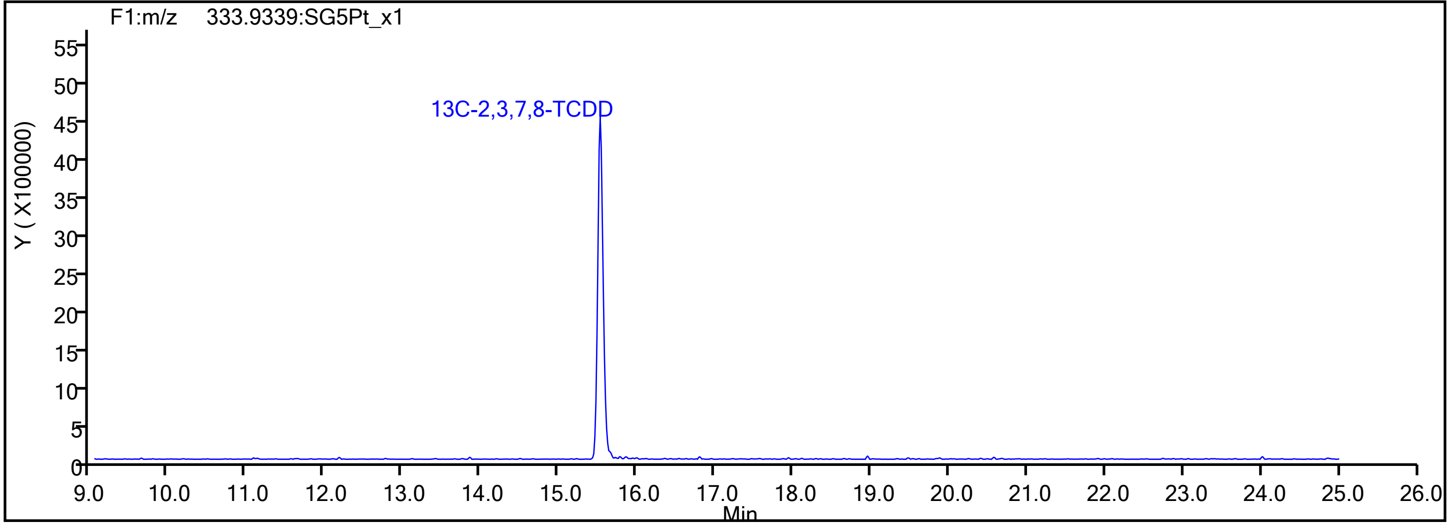

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200730-100583.b\30JL2011D2_001.d		
Injection Date:	30-Jul-2020 13:09:50	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399853	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

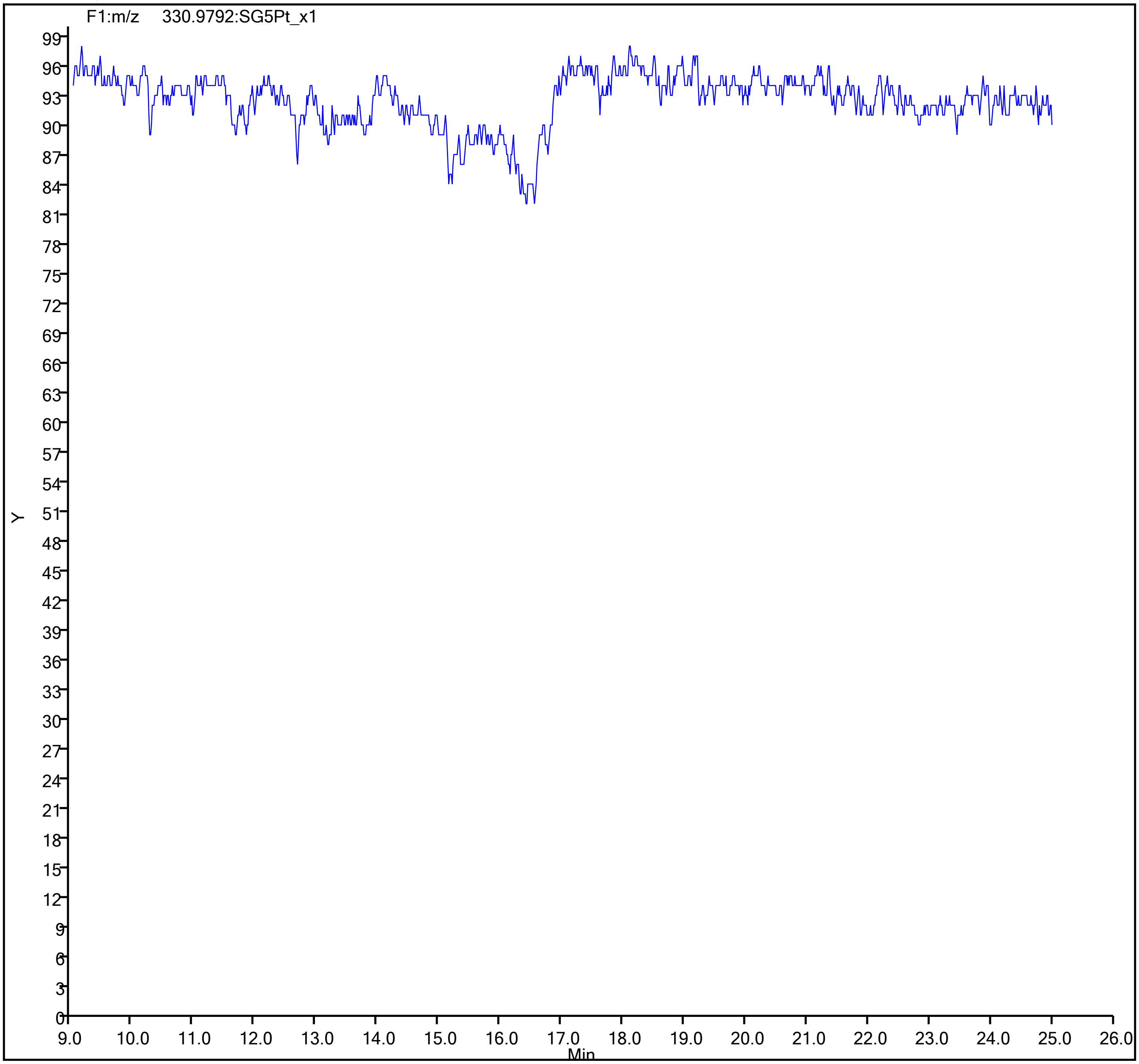

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	03-Jun-2020 12:28:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00040				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	05-Jun-2020 10:33:08	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1030				

First Level Reviewer: stephensk Date: 03-Jun-2020 16:25:34

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	20.429	6838404	0.78	1.1312	74.3	74.3	0.2575	0.2575		
D 13C-2,3,7,8-TCDF	20.395	3254697	0.79	1.4977					0.00	
A Non-2,3,7,8-sub-TCDF	19.865	94457	0.72	1.1312	1.026	1.026	0.2575	1.026		
S Total TCDF					75.3	75.3	0.2575	0.2575		
2,3,7,8-TCDD	21.790	2377143	0.78	1.1849	38.8	38.8	0.1516	0.1516		
D 13C-2,3,7,8-TCDD	21.764	2070574	0.81	1.0367					0.00	
A Non-2,3,7,8-sub-TCDD	20.722						0.1516	0.1516		
S Total TCDD					38.8	38.8	0.1516	0.1516		
A F1 PeCDFs	24.878						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.397	45482	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.482	1831163	1.57	0.0000						
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.118	14127	1.24	0.0000						RQ
S Total HxCDF										RQ
A Non-2,3,7,8-sub-HxCDD	35.480	24878	1.30	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.664	2573713	1.04	1.5957						
1,2,3,4,7,8,9-HpCDF	39.902	2056052	1.04	1.1693						
A Non-2,3,7,8-sub-HpCDF	39.283						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.599	1647702	1.05	1.1150						
A Non-2,3,7,8-sub-HpCDD	39.515						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.074	4238872	0.79							
1,3,6,8-TCDD	17.718	2483247	0.79							
2,3,4,7-TCDF	20.429	6838404	0.78							
1,2,3,7-TCDD	21.583	1999242	0.80							
1,2,3,9-TCDF	21.979	2957752	0.78							
1,2,3,9-TCDD	22.099	2503749	0.78							
1,2,8,9-TCDF	23.657	3039101	0.78							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	23.726	992595								
1,3,4,6,8-PeCDF	24.079	3027860	1.57							
1,2,4,7,9-PeCDD	26.164	2014316	1.56							
1,2,3,8,9-PeCDD	30.801	1831163	1.57							a
1,2,3,8,9-PeCDF	30.978	2382579	1.57							
1,2,3,4,6,8-HxCDF	33.254	2827686	1.25							
1,2,4,6,7,9-HxCDD	34.323	2091227	1.25							
1,2,3,4,6,7-HxCDD	36.637	2005318	1.26							
1,2,3,4,8,9-HxCDF	36.983	2462563	1.24							
1,2,3,4,6,7,9-HpCDD	38.967	1861432	1.05							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 03-Jun-2020 12:28:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:33:08 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 03-Jun-2020 16:25:34

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	20.429	20.347	5	1.002	3003320	404777	611	1527	662		
305.8987	20.438	20.347	5	1.002	3835084	512310	766	1915	669	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.395	20.395	0	1.000	1438722	214702	491	1227	437		
317.9389	20.395	20.395	0	1.000	1815975	257902	216	540	1194	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	24.088	19.865	253	1.181	39413	6971	611	1527	11		
305.8987	24.079	19.865	252	1.181	55044	9207	766	1915	12	0.72(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.790	21.722	4	1.001	1043811	141782	266	665	533		
321.8936	21.790	21.722	4	1.001	1333332	180464	250	625	722	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.764	21.764	0	1.000	924282	126291	304	760	415		
333.9338	21.755	21.764	-1	1.000	1146292	161002	107	267	1505	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.722						266	665			
321.8936	20.722						250	625			
A F1 PeCDFs											
339.8597	24.878						14	35			
341.8567	24.878						53	132			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.795	28.397	-96	1.000	6599	1188	152	380	8		
341.8567	26.787	28.397	-96	1.000	5612	891	157	392	6	1.18(1.32-1.78)	
339.8597	27.376	28.397	-61	1.000	11478	1713	152	380	11		
341.8567	27.359	28.397	-62	1.000	7467	930	157	392	6	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	28.007	28.397	-23	1.000	9532	1531	152	380	10		
341.8567	28.015	28.397	-23	1.000	7286	809	157	392	5	1.31(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	30.801	28.482	139	1.000	1118917	152731	217	542	704		
357.8516	30.801	28.482	139	1.000	712246	95492	105	262	909	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	35.198	35.118	5	1.000	9229	1785	409	1022	4		
375.8178	35.207	35.118	5	1.000	6307	1340	330	825	4	1.46(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.434	35.480	-3	1.000	14072	2908	299	747	10		
391.8127	35.434	35.480	-3	1.000	10806	2639	235	587	11	1.30(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.664	38.655	1	1.000	1311143	415543	748	1870	556		
409.7788	38.664	38.655	1	1.000	1262570	404382	675	1687	599	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.902	39.893	1	1.000	1049036	359799	748	1870	481		
409.7788	39.902	39.893	1	1.000	1007016	348850	675	1687	517	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.283						748	1870			
409.7788	39.283						675	1687			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.599	39.590	1	1.000	844517	294453	528	1320	558		
425.7737	39.599	39.590	1	1.000	803185	277743	517	1292	537	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.515						528	1320			
425.7737	39.515						517	1292			
1,3,6,8-TCDF											
303.9016	16.074	16.074	0		1867974	364893	611	1527	597		
305.8987	16.074	16.074	0		2370898	464580	766	1915	607	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.718	17.718	0		1095764	191390	266	665	720		
321.8936	17.718	17.718	0		1387483	244285	250	625	977	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.429	20.429	0		3003320	404777	611	1527	662		
305.8987	20.438	20.429	1		3835084	512310	766	1915	669	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.583	21.583	0		888573	128289	266	665	482		
321.8936	21.583	21.583	0		1110669	155719	250	625	623	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	21.979	21.979	0		1291827	176198	611	1527	288		
305.8987	21.987	21.979	1		1665925	222342	766	1915	290	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.099	22.099	0		1101015	142666	266	665	536		
321.8936	22.091	22.099	-1		1402734	179929	250	625	720	0.78(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	23.657	23.657	0		1334921	232984	611	1527	381		
305.8987	23.657	23.657	0		1704180	297747	766	1915	389	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.726	23.726	0		992595	174175	266	665	655		
1,3,4,6,8-PeCDF											
339.8597	24.079	24.079	0		1848842	365648	14	35	26118		
341.8567	24.079	24.079	0		1179018	230312	53	132	4346	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.164	26.164	0		1227870	195567	217	542	901		
357.8516	26.164	26.164	0		786446	124594	105	262	1187	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											a
355.8546	30.801	30.801	0		1118917	152731	217	542	704		a
357.8516	30.801	30.801	0		712246	95492	105	262	909	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	30.978	30.978	0		1455021	191241	152	380	1258		
341.8567	30.969	30.978	-1		927558	121979	157	392	777	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.254	33.254	0		1569256	265134	409	1022	648		
375.8178	33.254	33.254	0		1258430	213521	330	825	647	1.25(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.323	34.323	0		1161800	232678	299	747	778		
391.8127	34.323	34.323	0		929427	184566	235	587	785	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.637	36.637	0		1116958	294590	299	747	985		
391.8127	36.637	36.637	0		888360	232687	235	587	990	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.983	36.983	0		1364341	371113	409	1022	907		
375.8178	36.983	36.983	0		1098222	296978	330	825	900	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.967	38.967	0		953230	317169	528	1320	601		
425.7737	38.967	38.967	0		908202	299538	517	1292	579	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

a - User Assigned ID

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 03-Jun-2020 12:28:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 383168 Lims Sample ID: 1

Non-2,3,7,8-sub-TCDF, RT: 19.865

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	40.000	3254697	472604

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		40.000	3254697	472604

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.088	39413	6971	55044	9207	1.03	0.72	
Signal Totals:							
	39413	6971	55044	9207			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	94457	16178				0.72	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.026 = (94457 * 40.000) / (3254697 * 1.131)

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 03-Jun-2020 12:28:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 383168
Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 28.397

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.795	6599	1188	5612	891		1.18	R
27.376	11478	1713	7467	930		1.54	
28.007	9532	1531	7286	809		1.31	R
Signal Totals:							
	27609	4432	20365	2630			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	47974	7062				1.36	RQ
	45482	7115					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (47974 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (45482 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	03-Jun-2020 12:28:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDD, RT: 28.482

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.801	1118917	152731	712246	95492		1.57	
Signal Totals:							
	1118917	152731	712246	95492			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1831163	248223				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (1831163 * 0.0) / (0 * 0.000)

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 03-Jun-2020 12:28:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 383168 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDF, RT: 35.118

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009				
1,2,3,6,7,8-HxCDF	1.243				
2,3,4,6,7,8-HxCDF	1.274				
1,2,3,7,8,9-HxCDF	1.288				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.198	9229	1785	6307	1340		1.46	R
Signal Totals:							
	9229	1785	6307	1340			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15536	3125				1.46	RQ
	14127	3001					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15536 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (14127 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	03-Jun-2020 12:28:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 35.480

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934				
1,2,3,6,7,8-HxCDD	1.080				
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.434	14072	2908	10806	2639		1.30	
Signal Totals:							
	14072	2908	10806	2639			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24878	5547				1.30	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (24878 * 0.0) / (0 * 0.000)

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

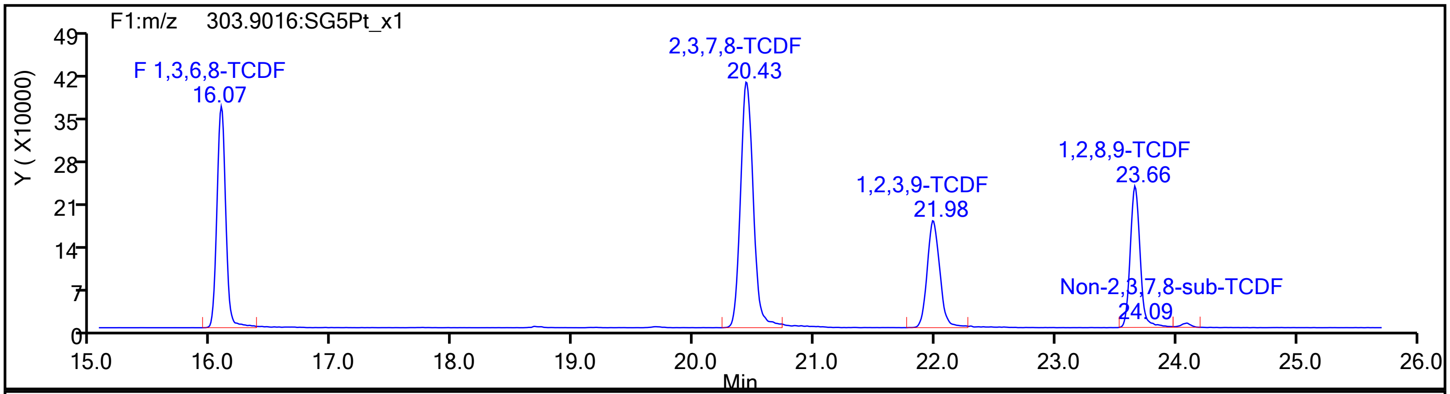

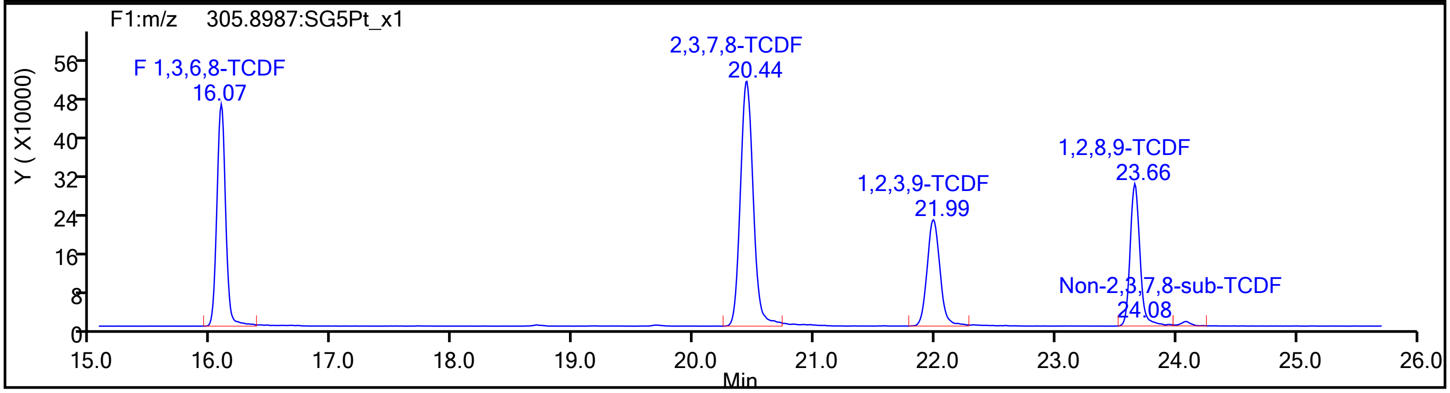

TCDF Standards

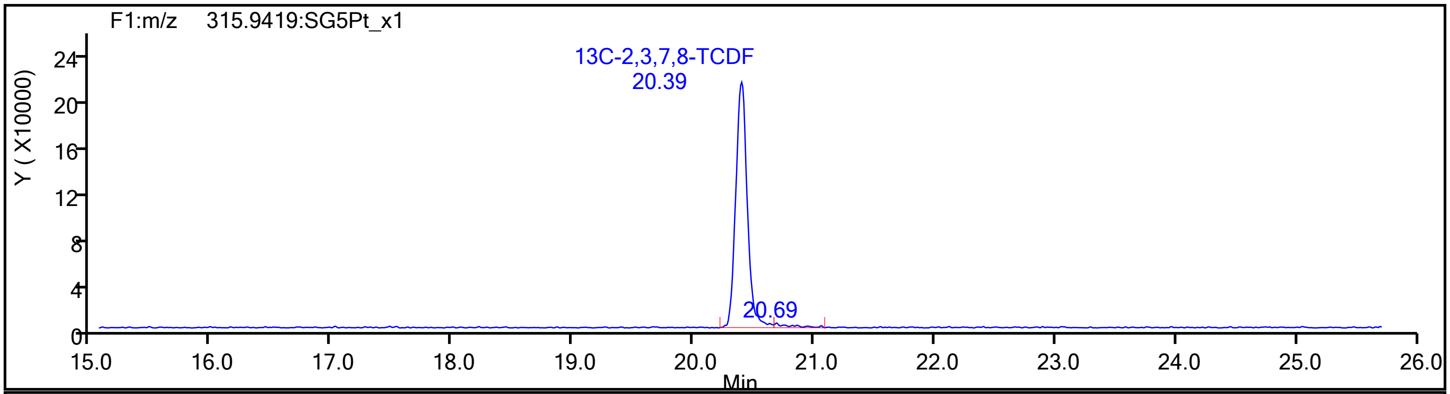

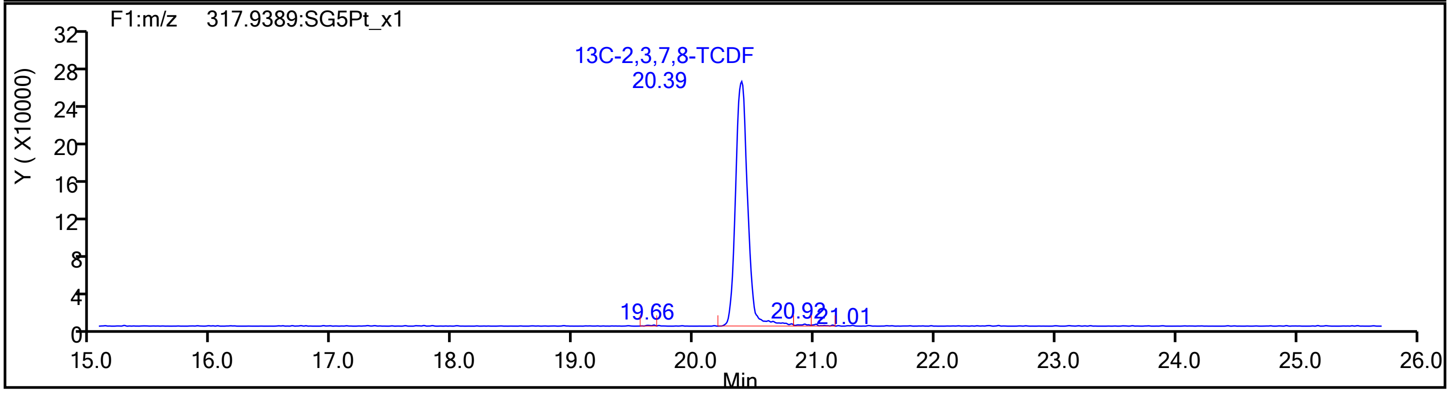

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

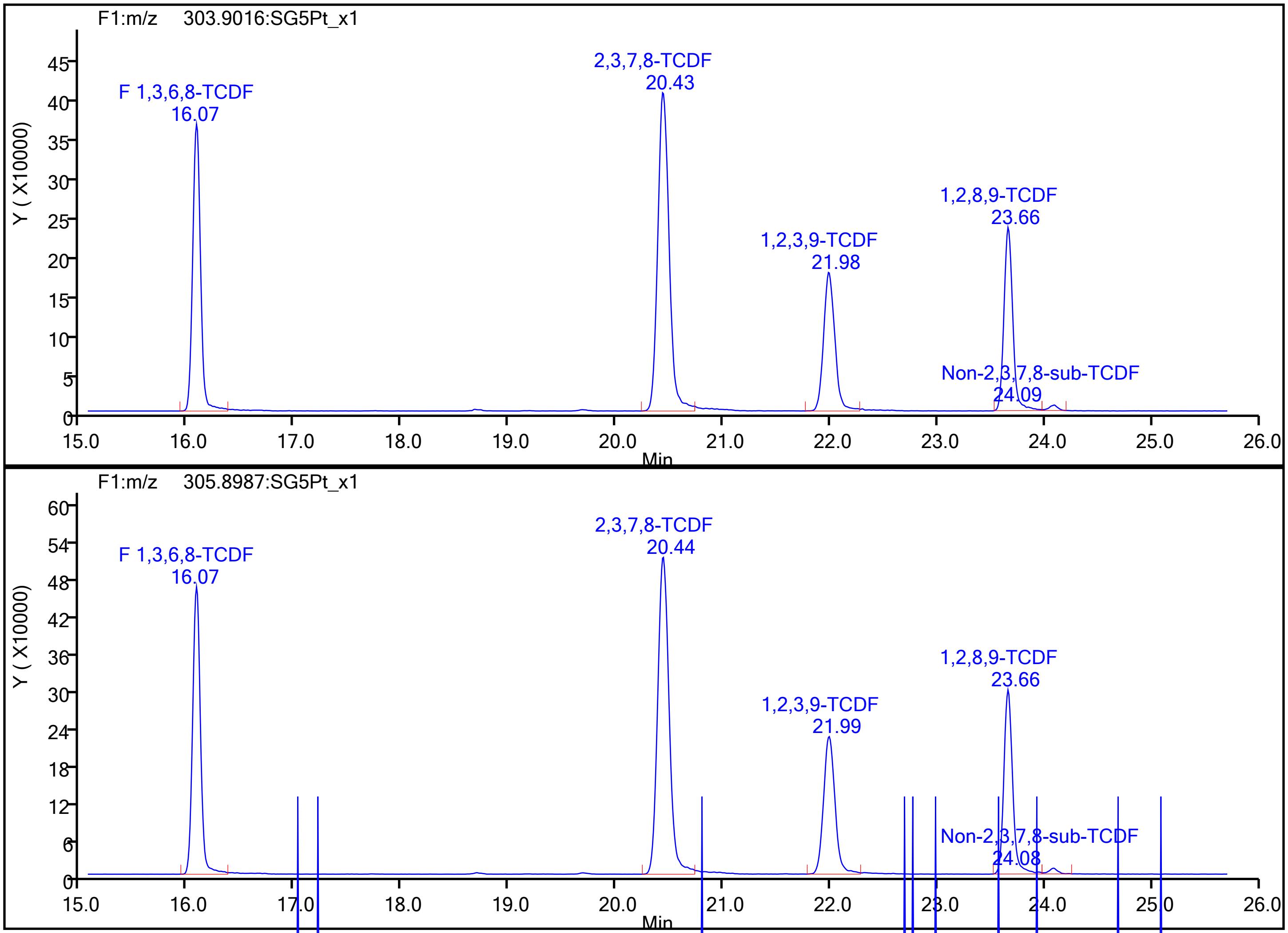

TCDF Interference Mass

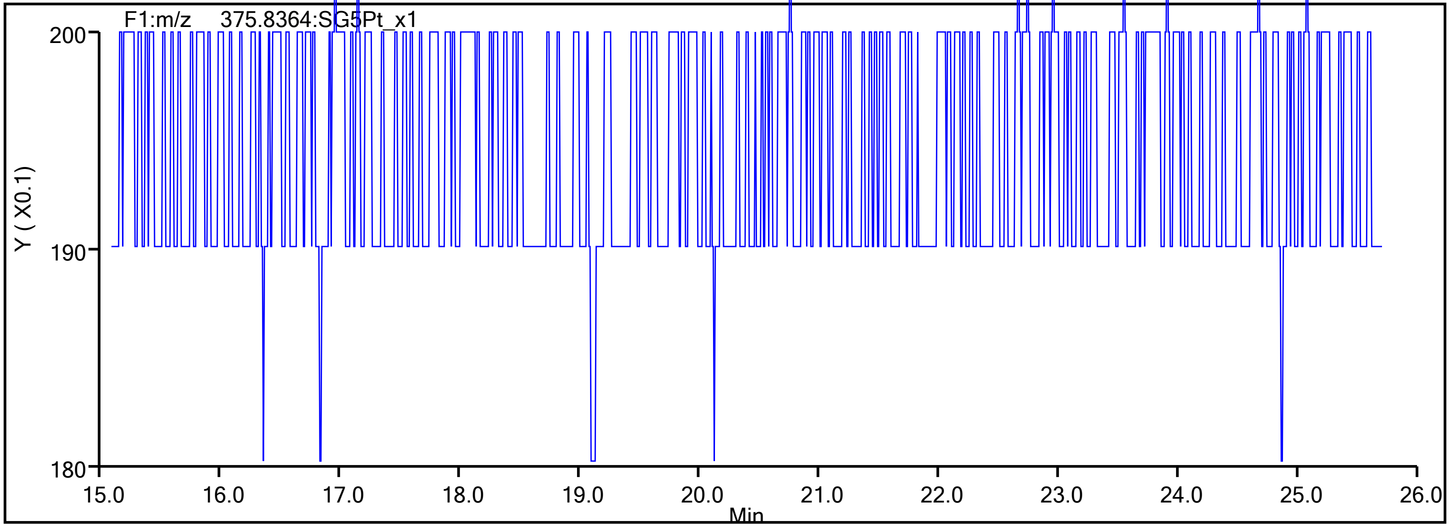

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

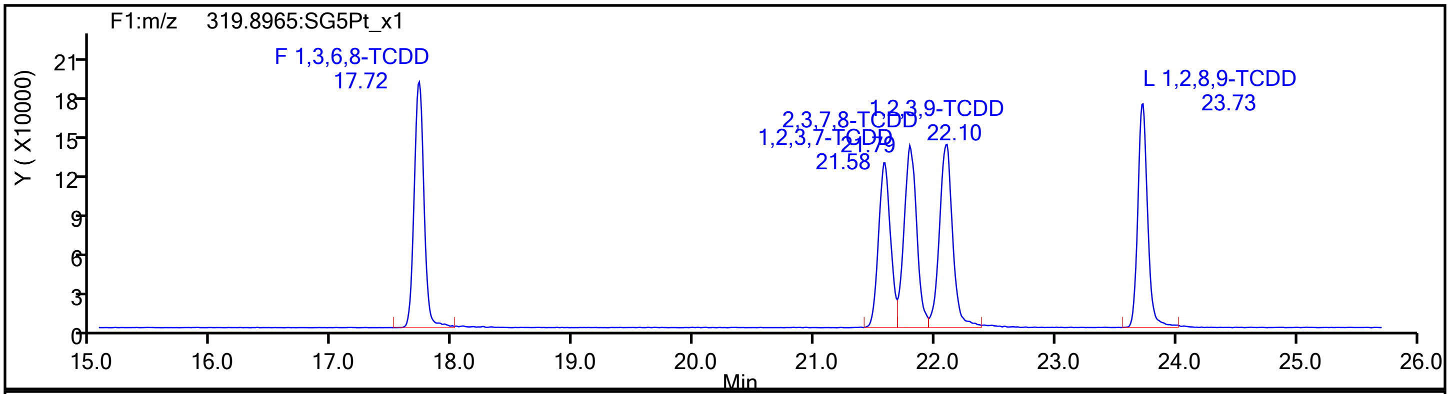

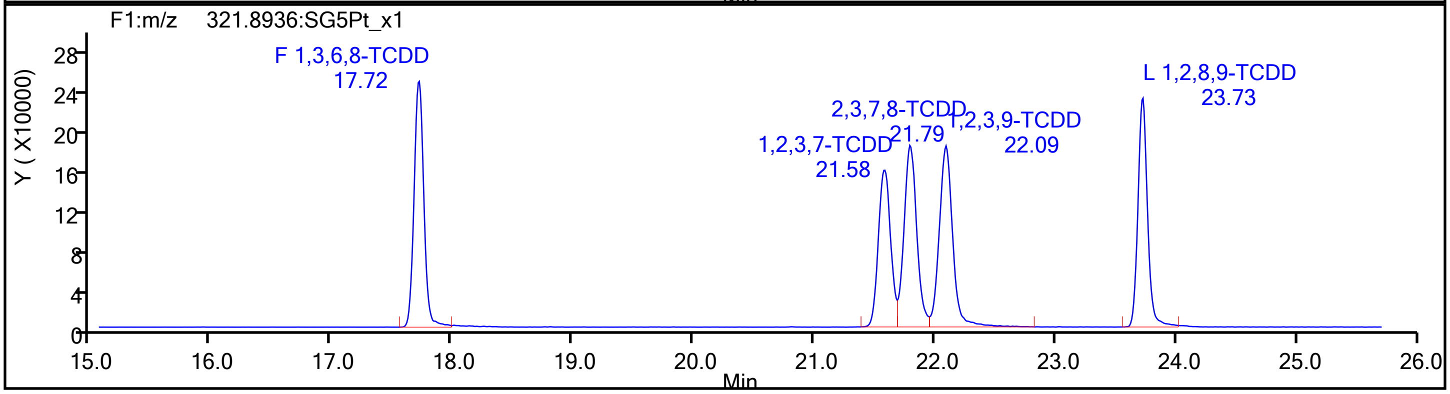

TCDD Standards

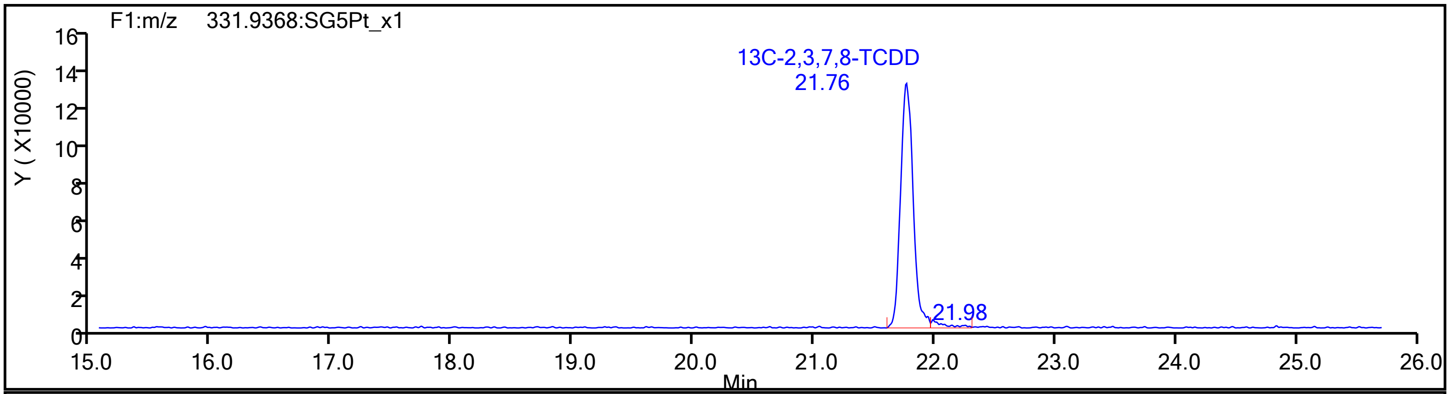

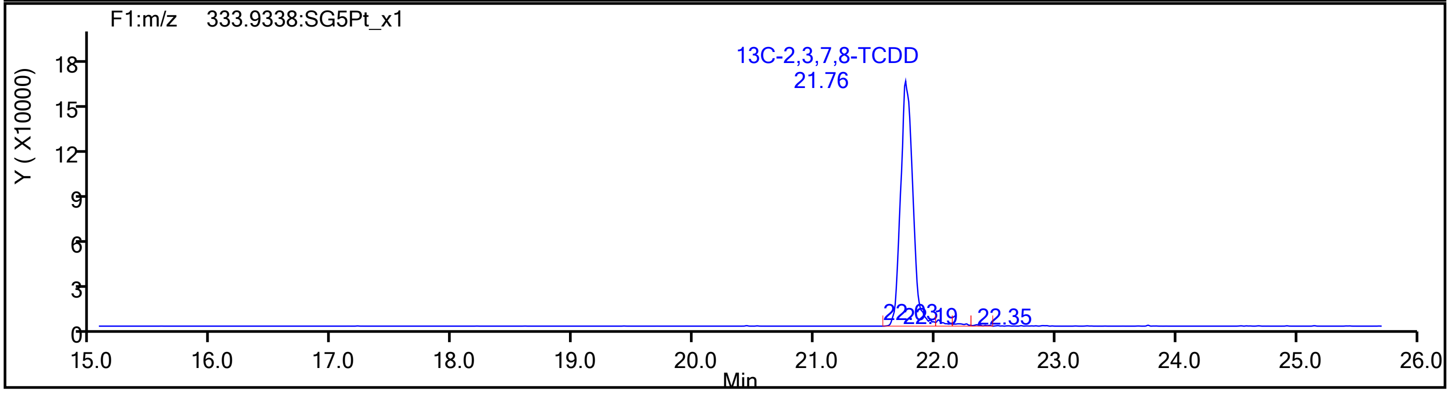

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

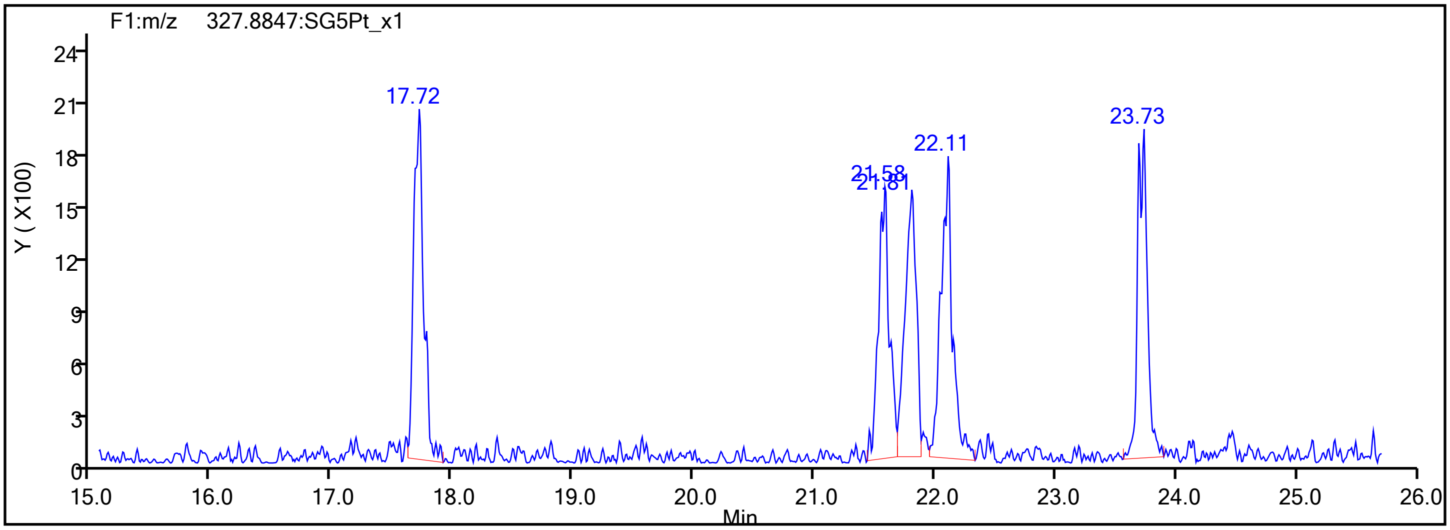

37Cl4-TCDD Standards

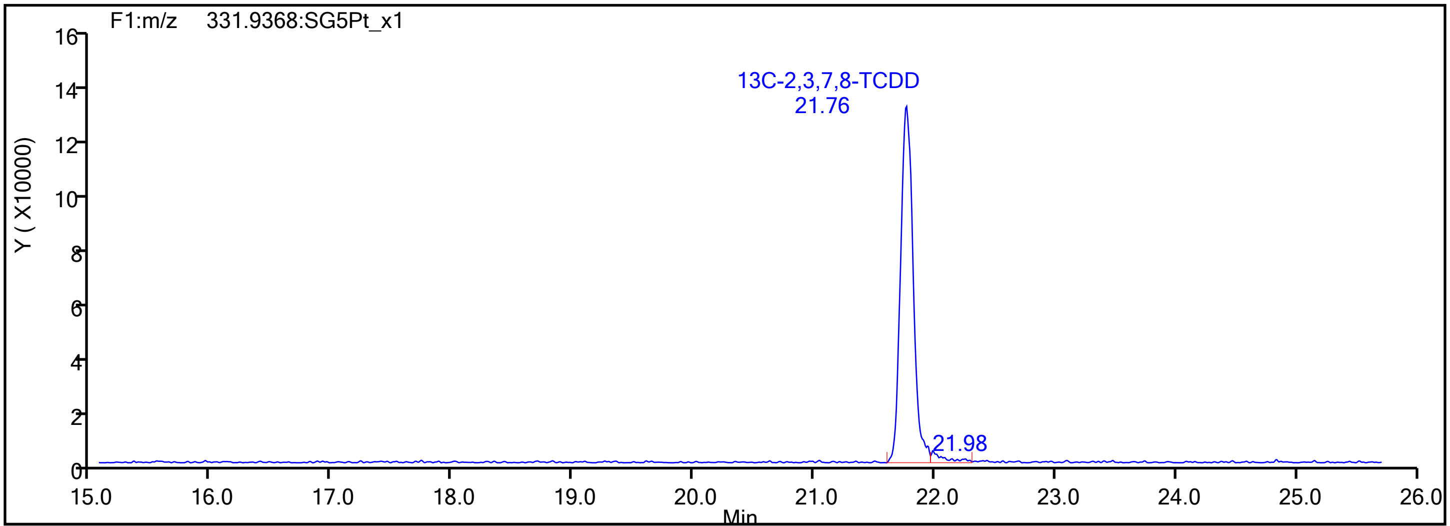

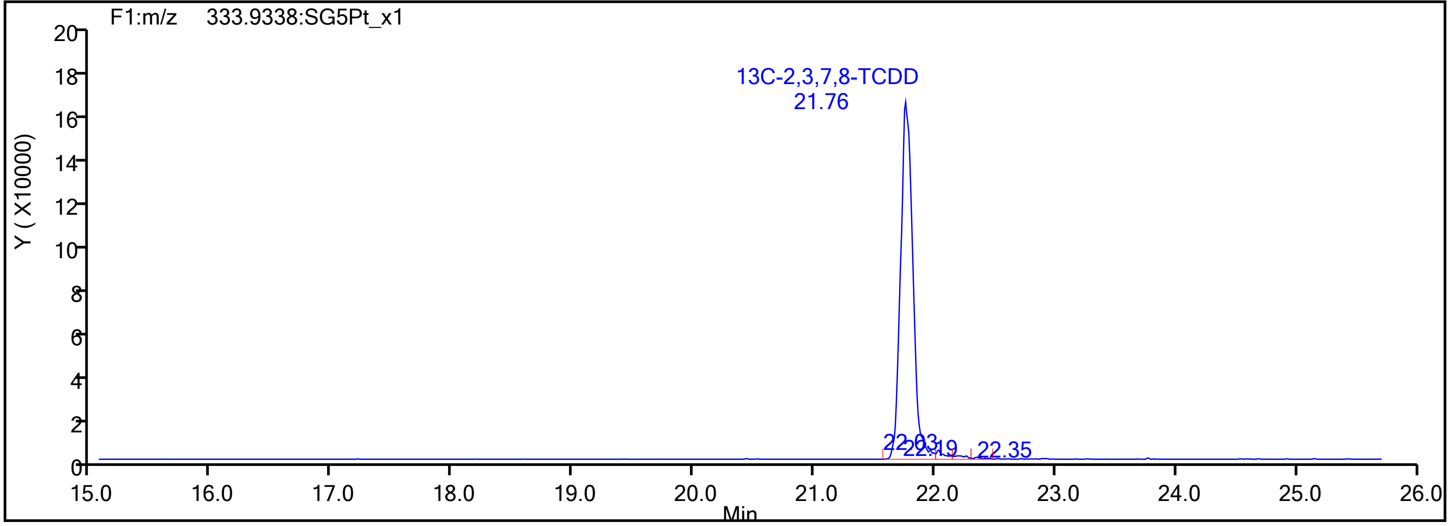

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

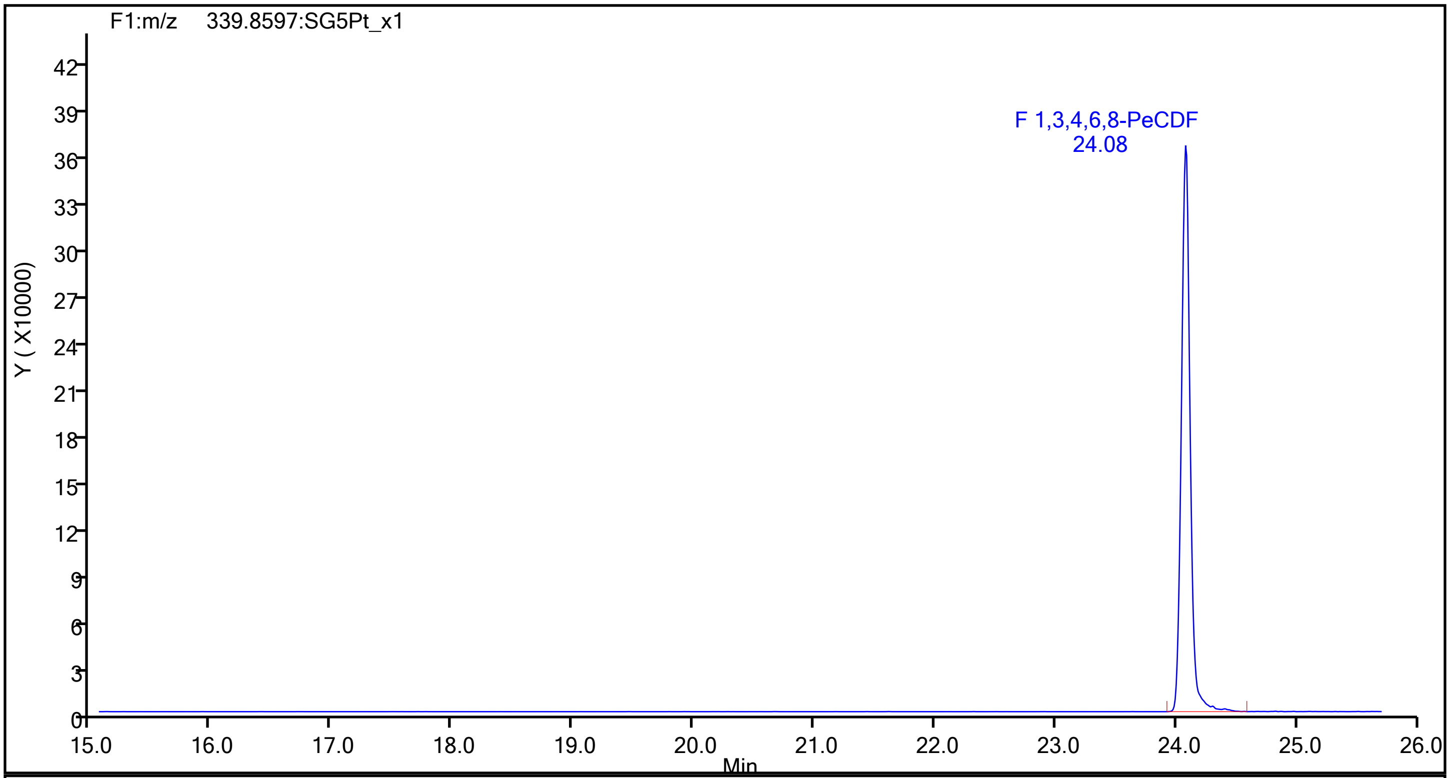

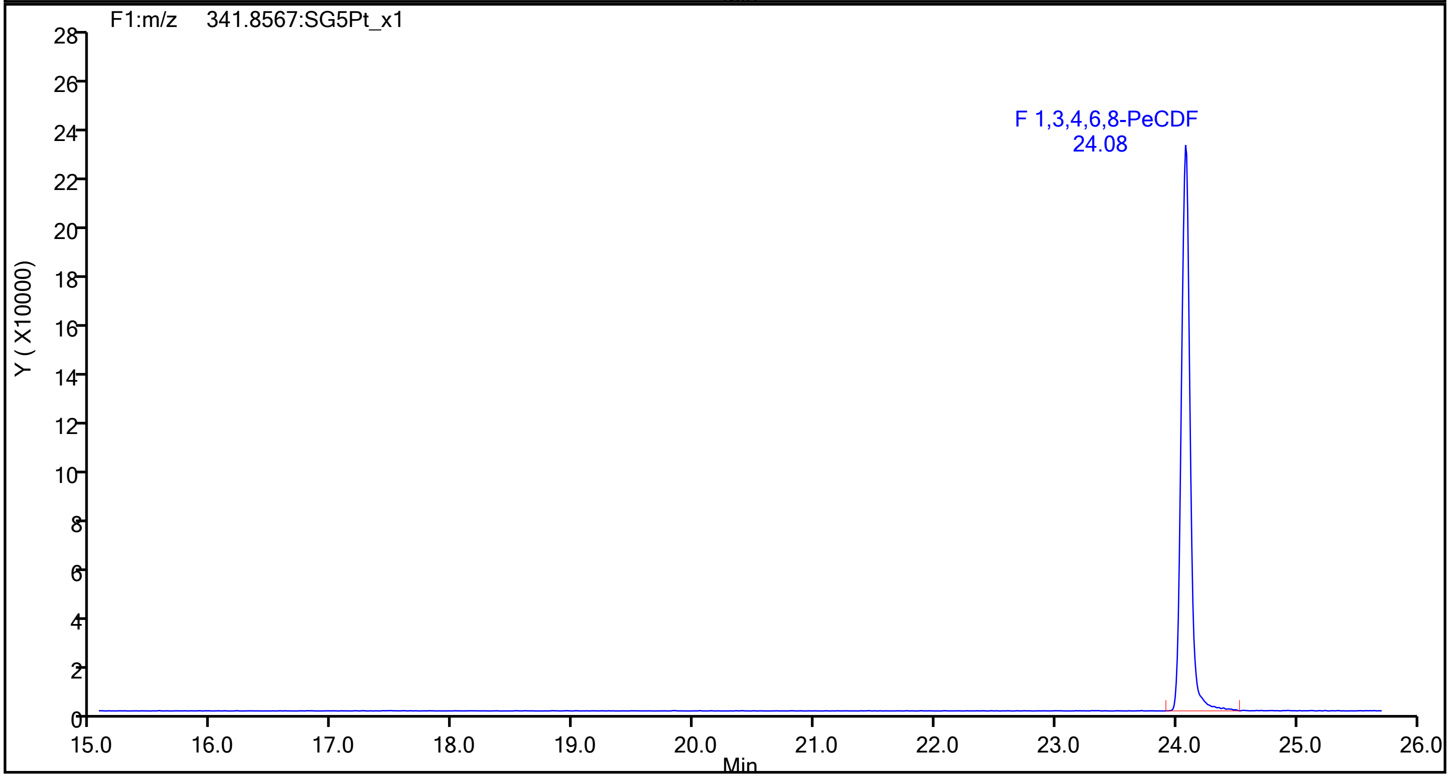

Report Date: 05-Jun-2020 10:33:19　　Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

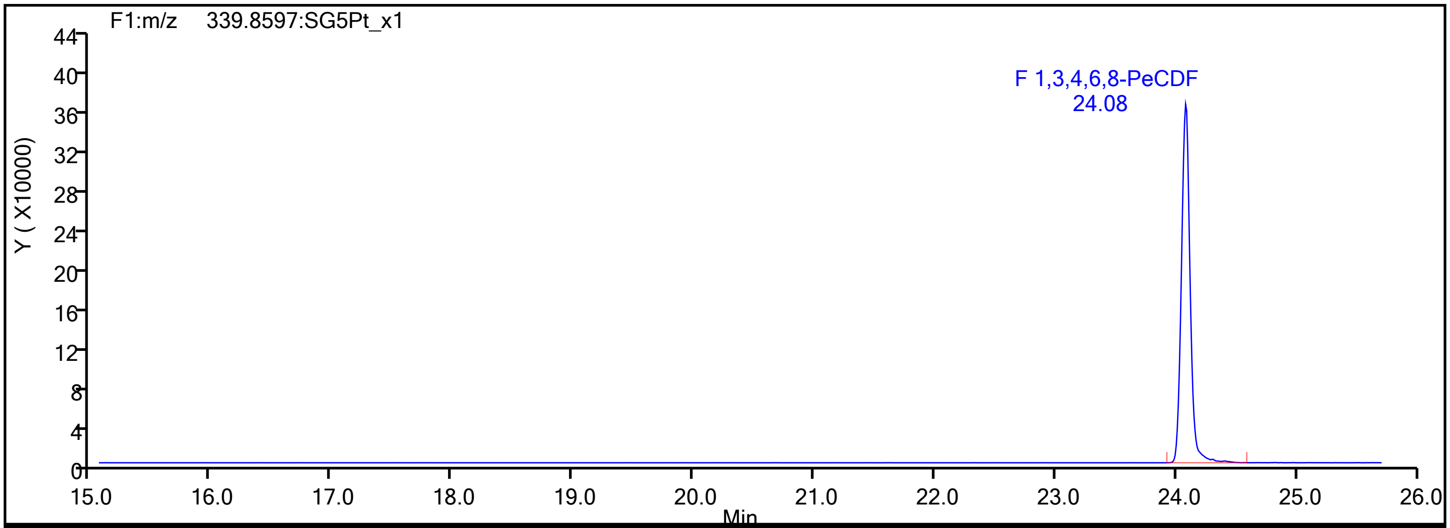

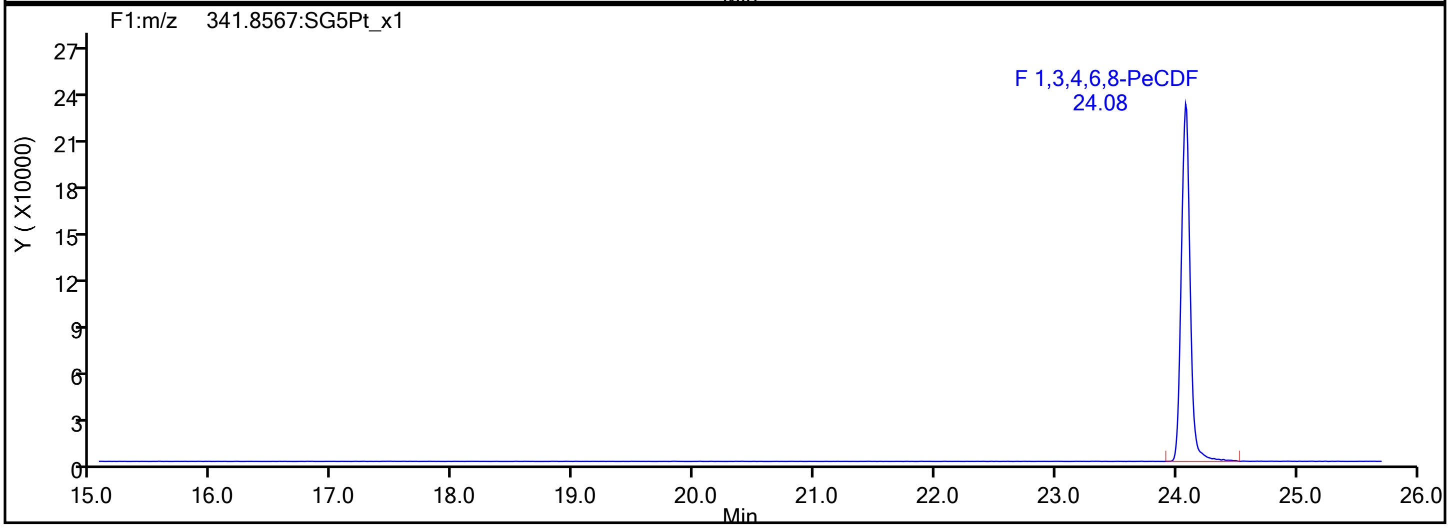

F1 PeCDFs Interference Mass

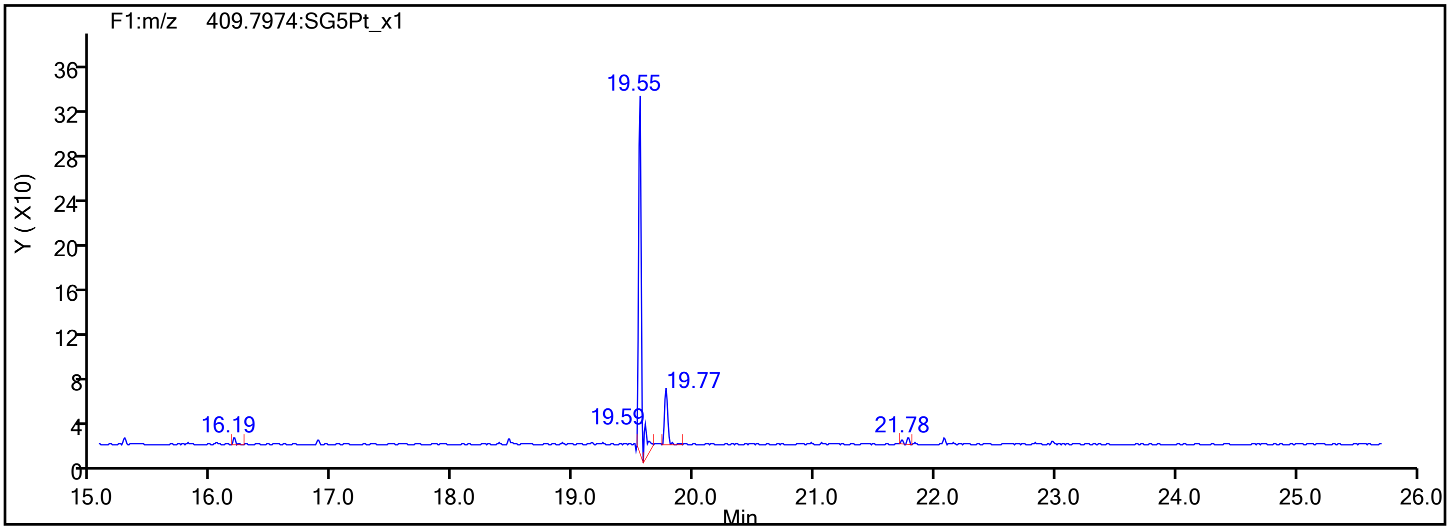

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

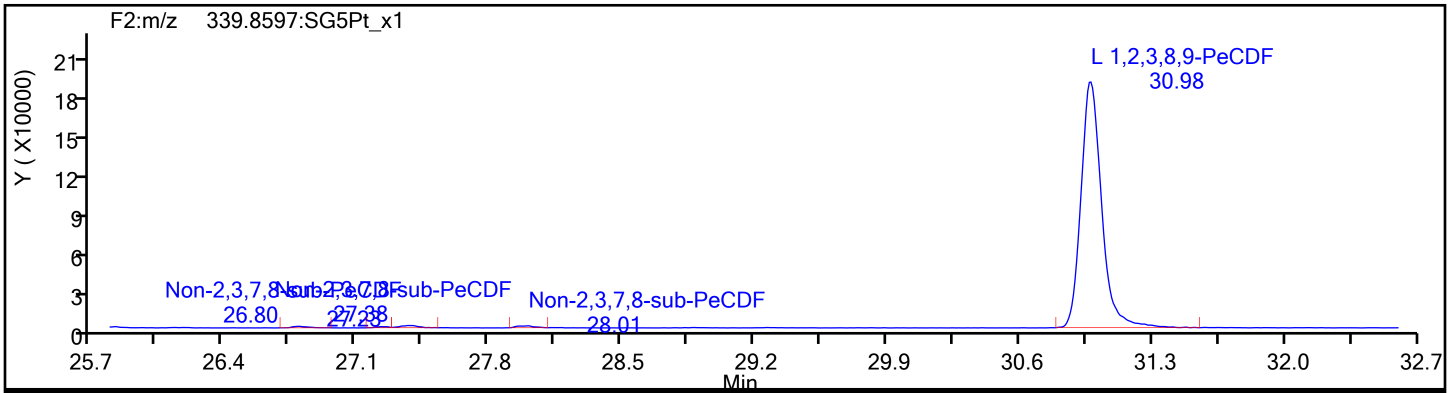

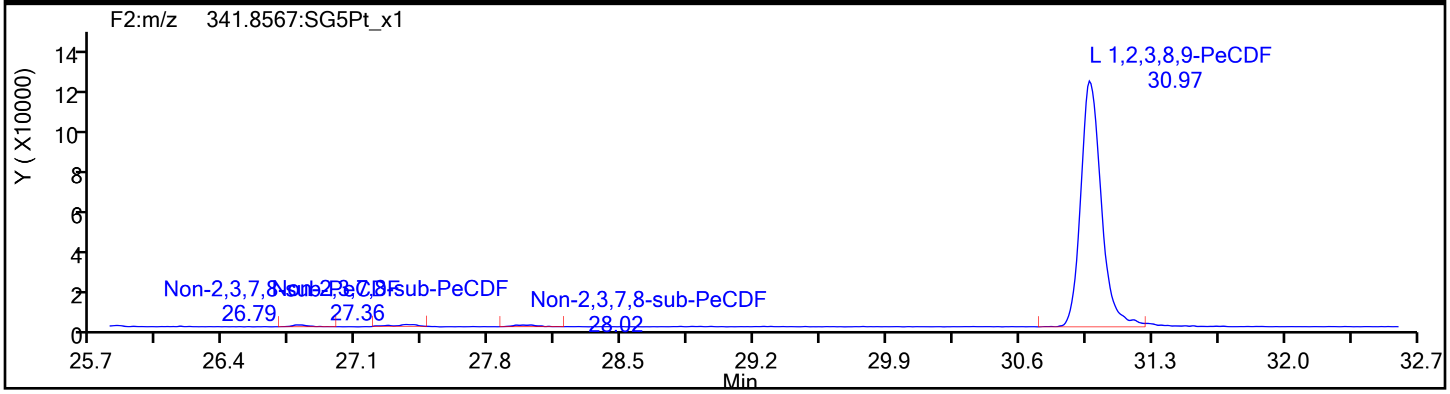

PeCDF Standards

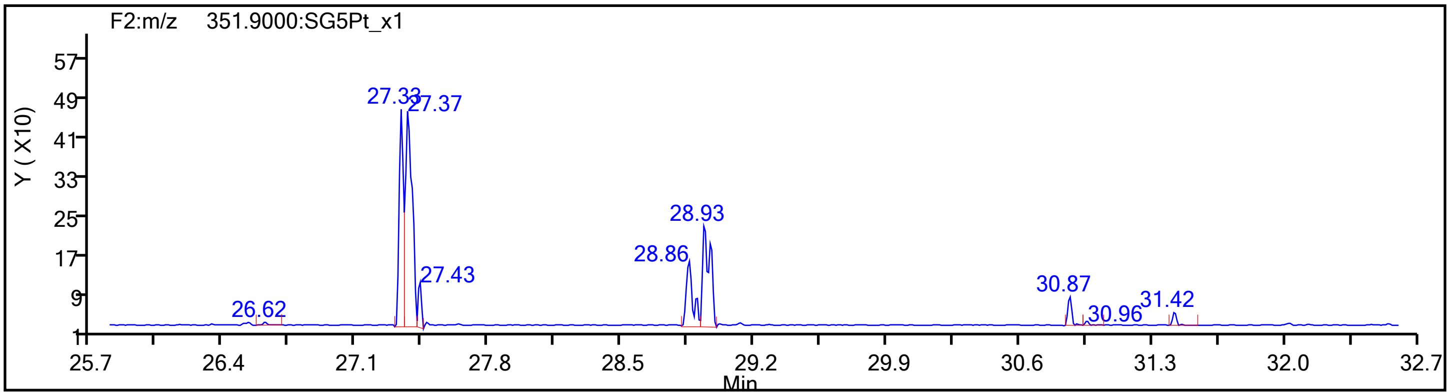

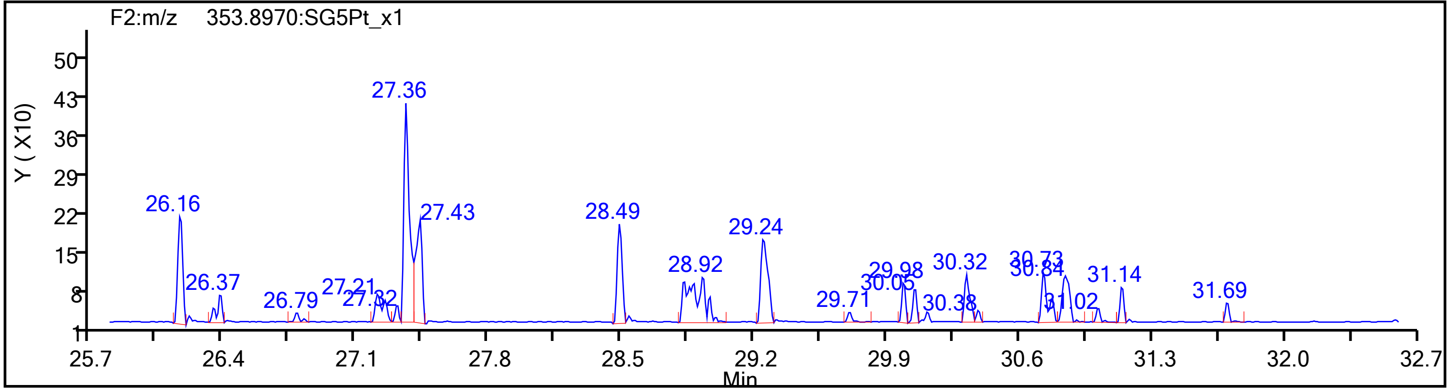

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

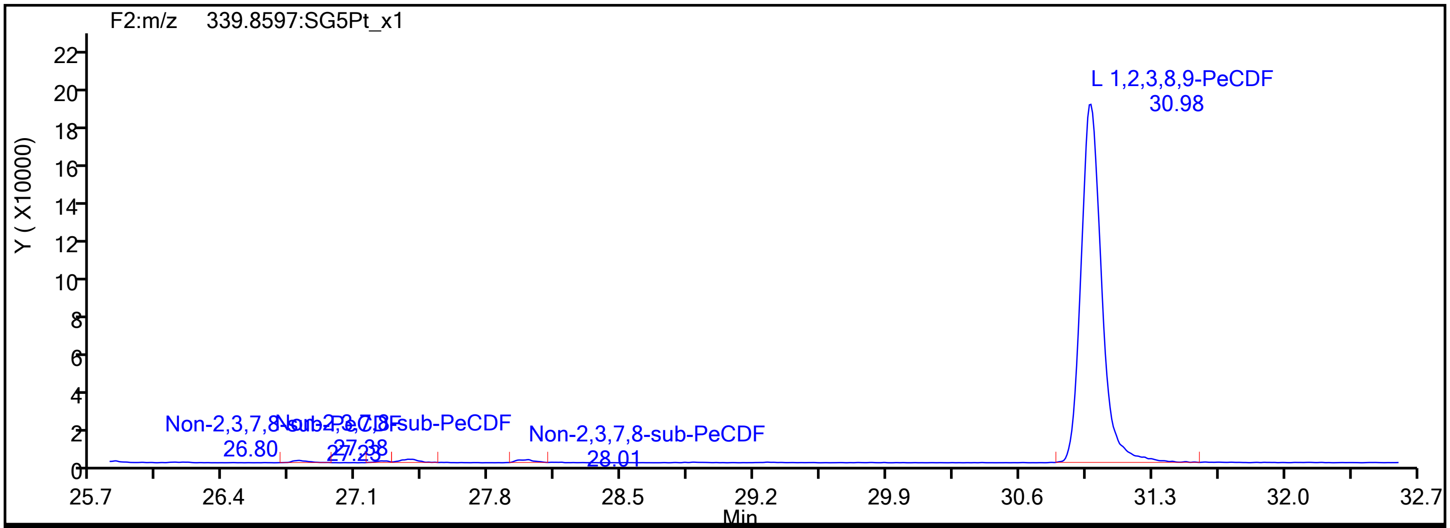

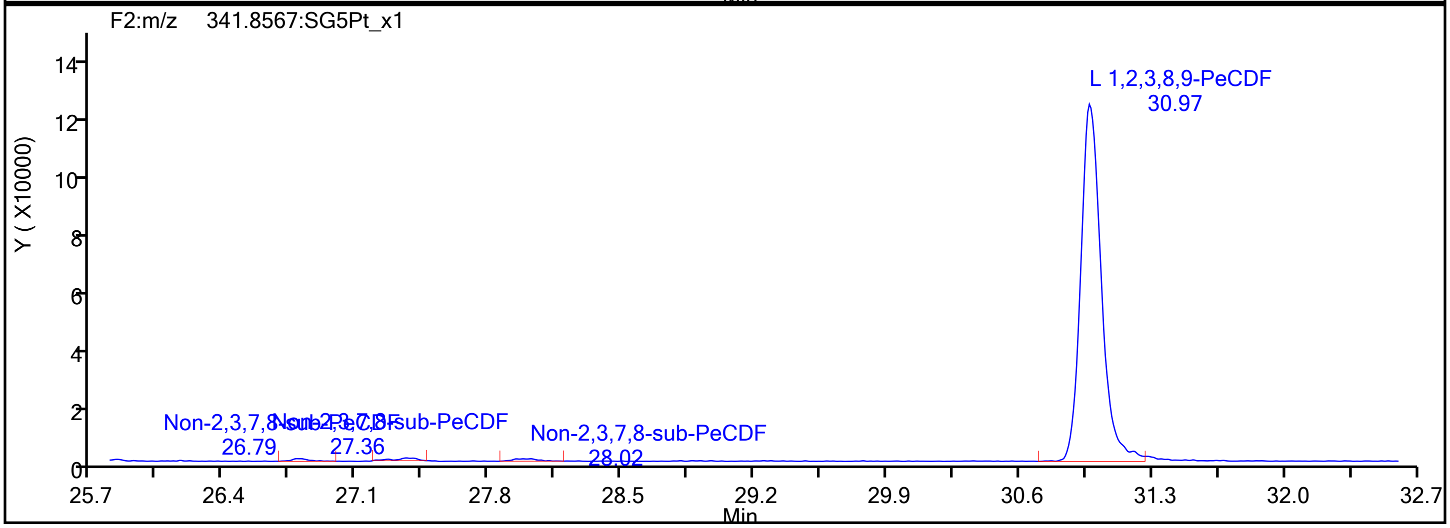

PeCDF Interference Mass

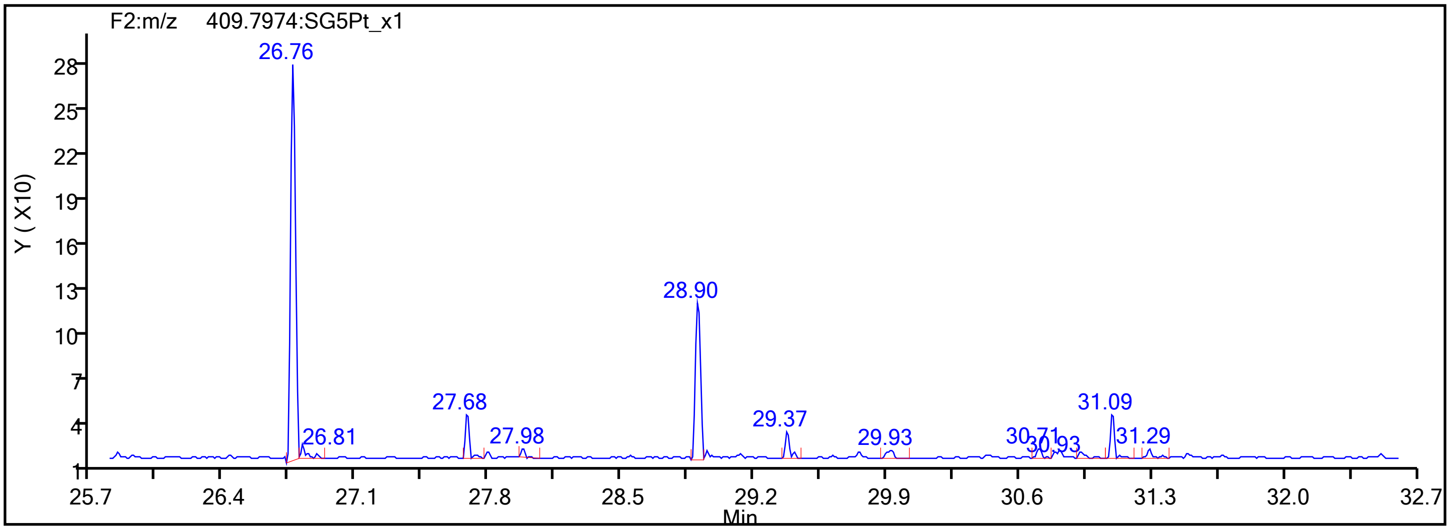

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

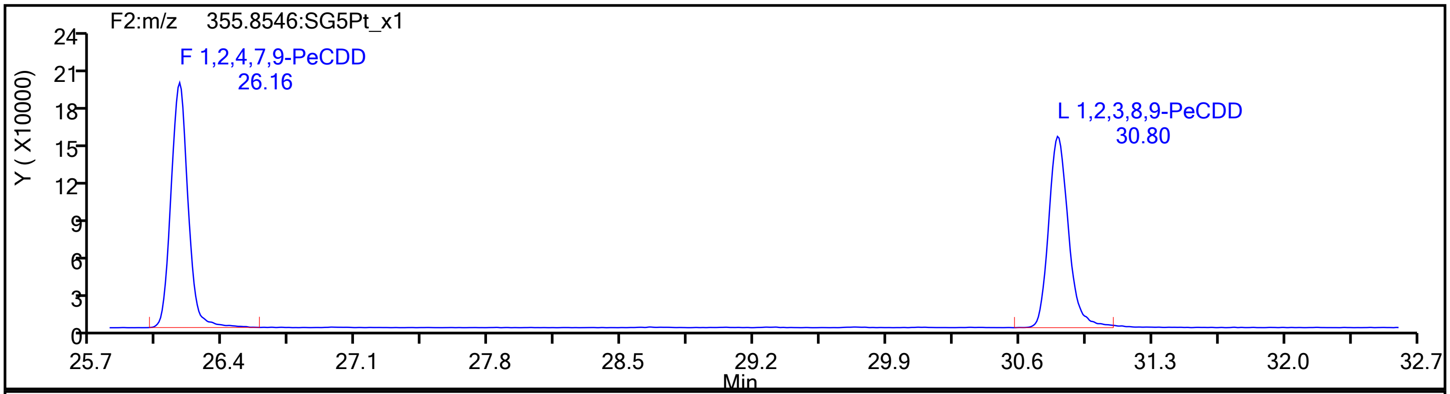

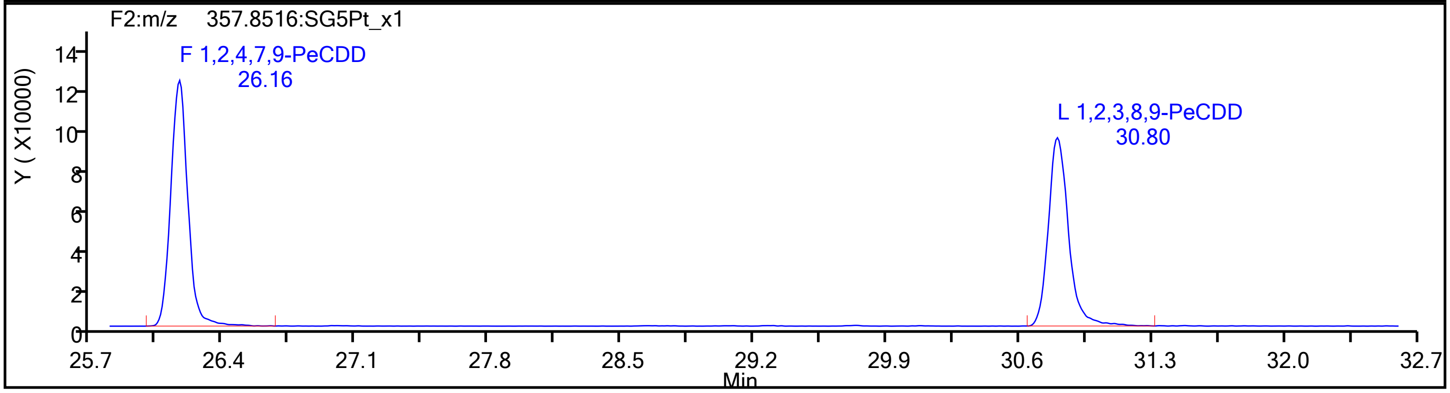

PeCDD Standards

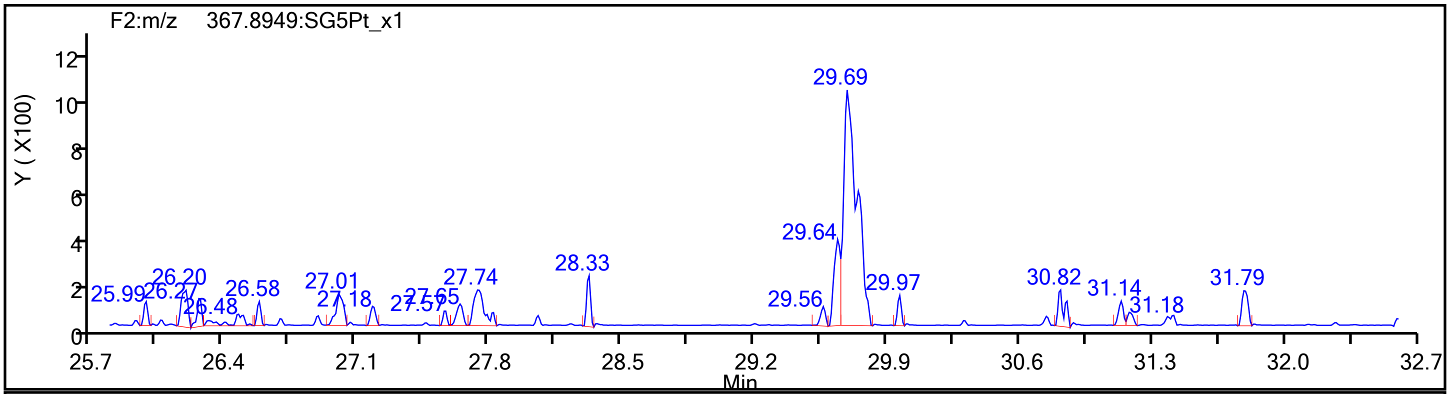

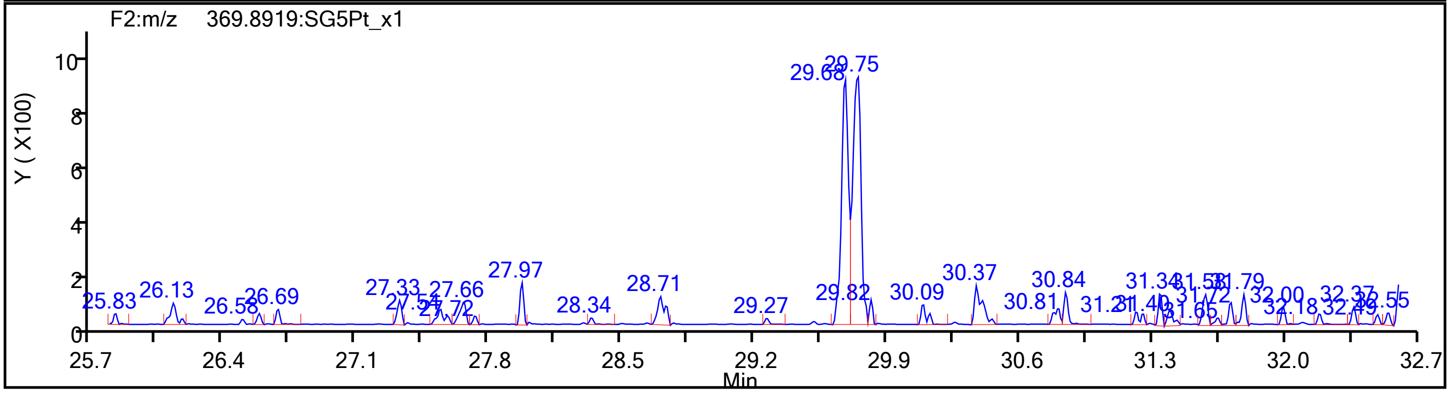

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168
Sample Line#: 1

Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

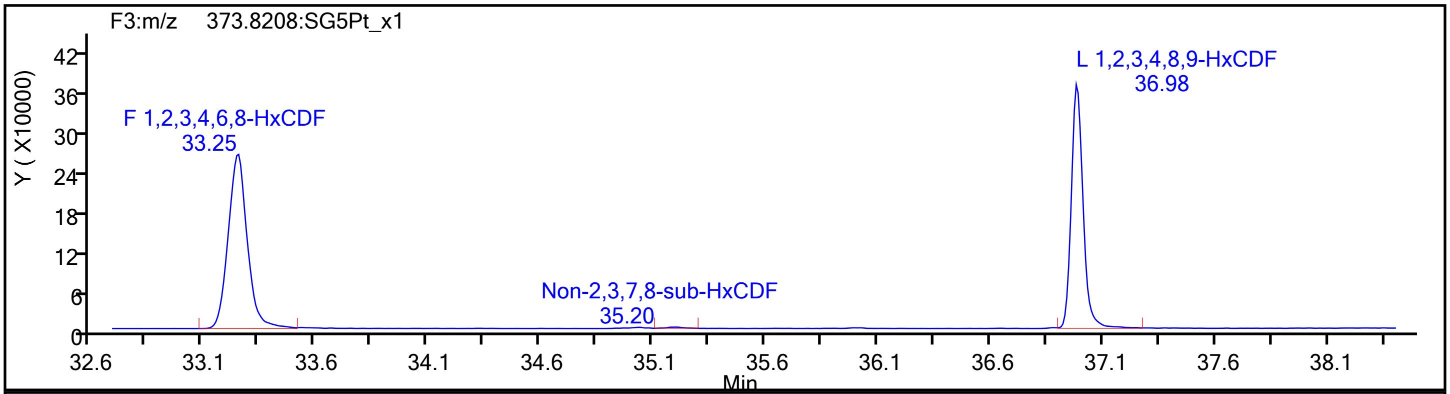

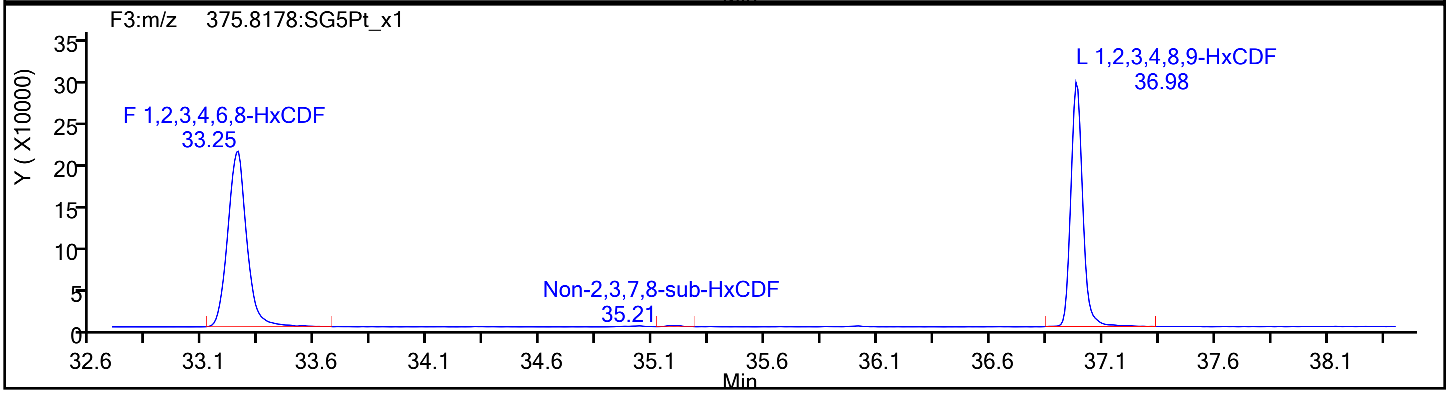

HxCDF Standards

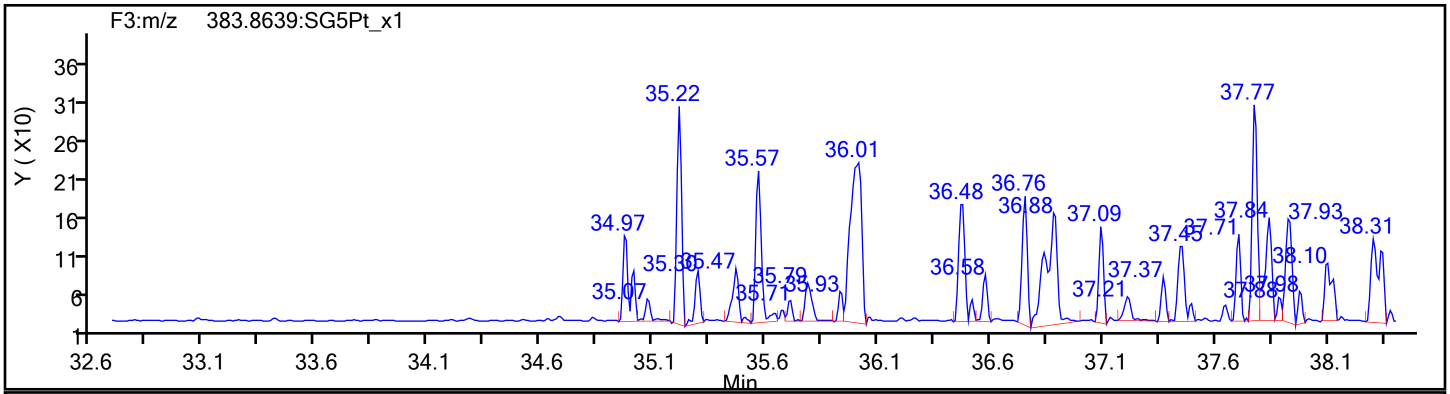

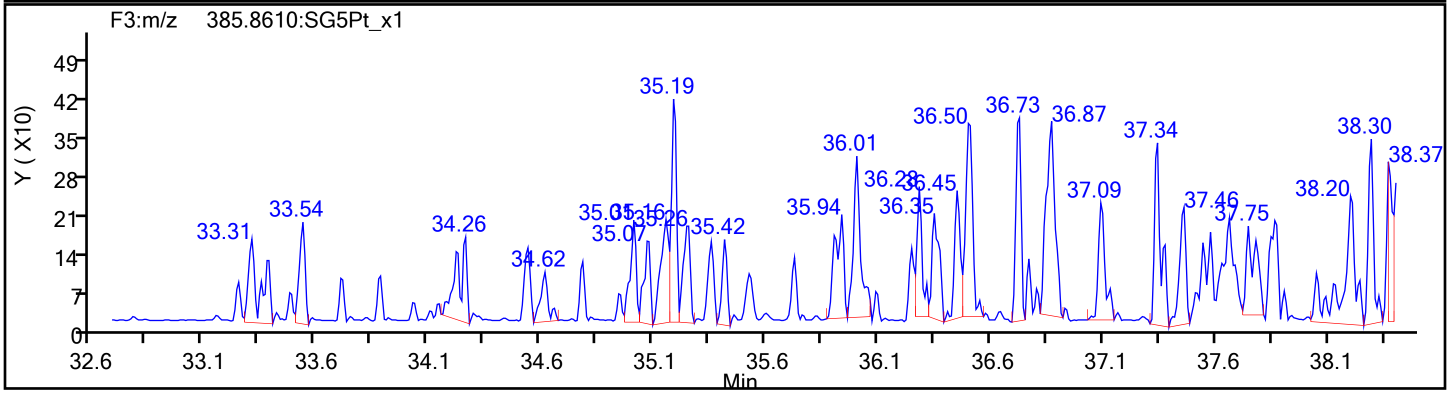

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

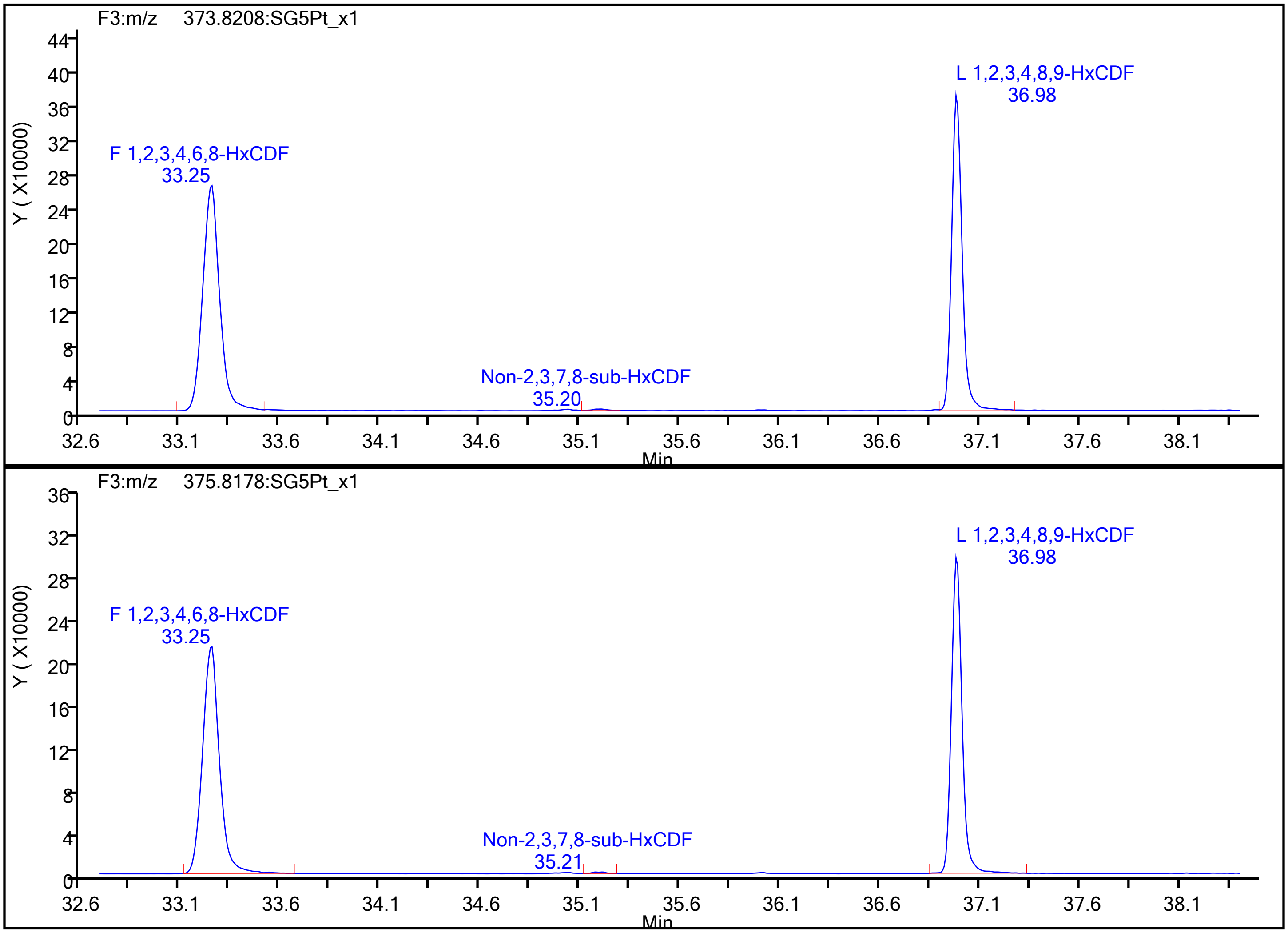

HxCDF Interference Mass

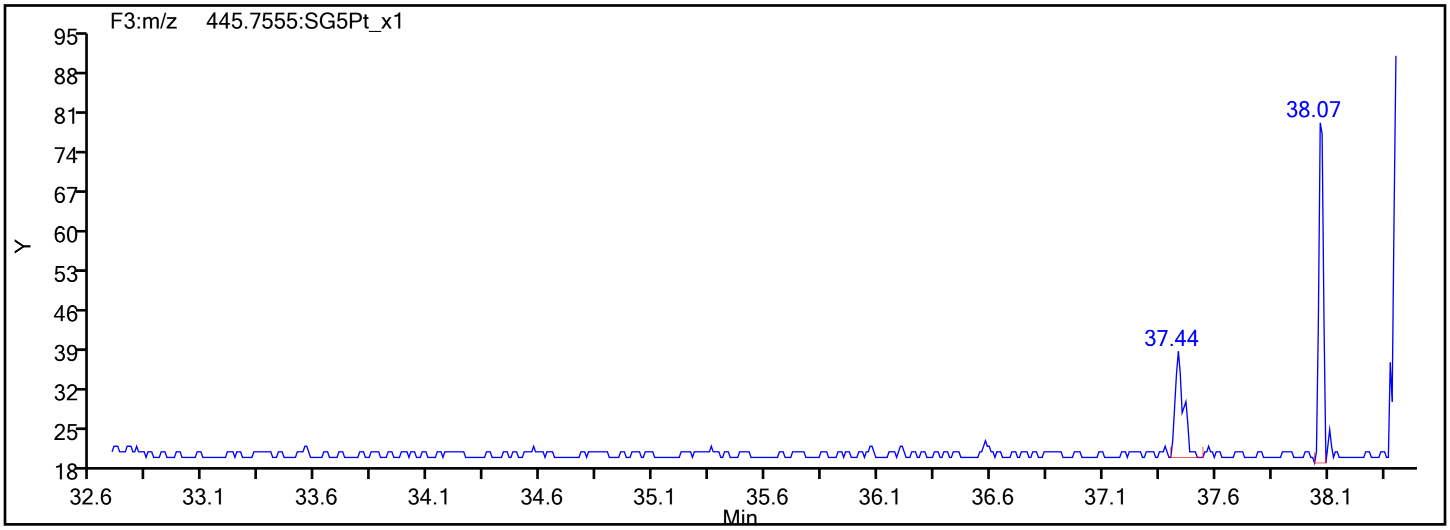

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

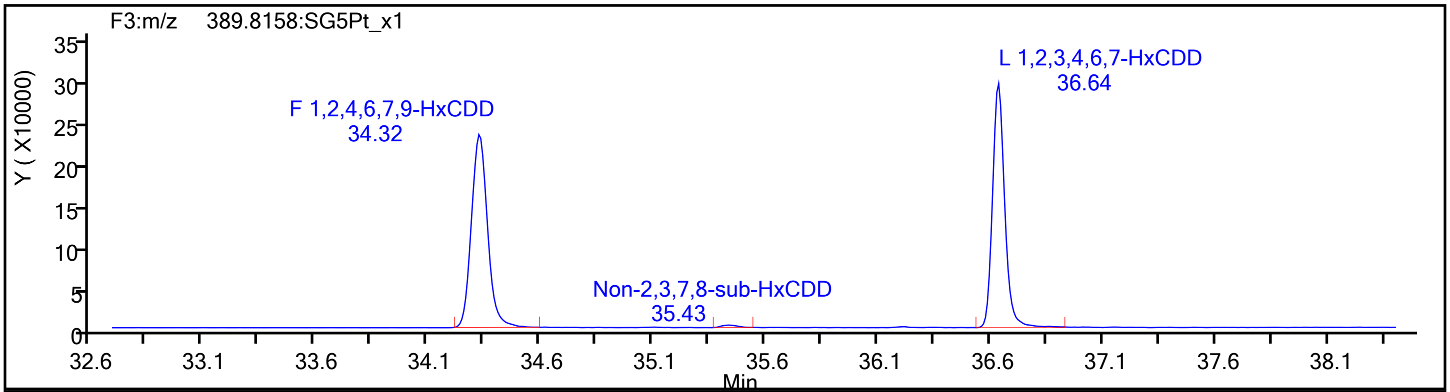

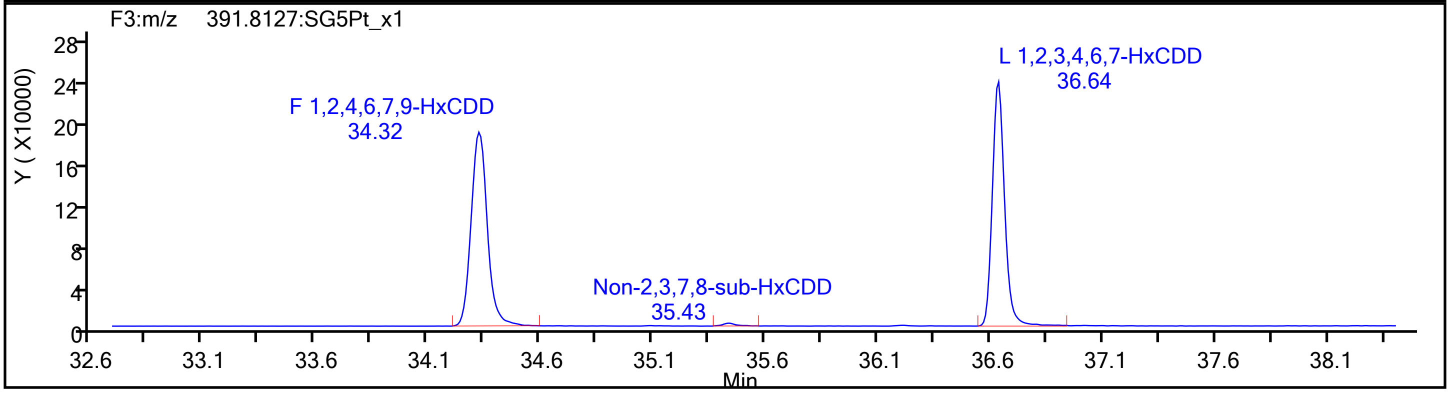

HxCDD Standards

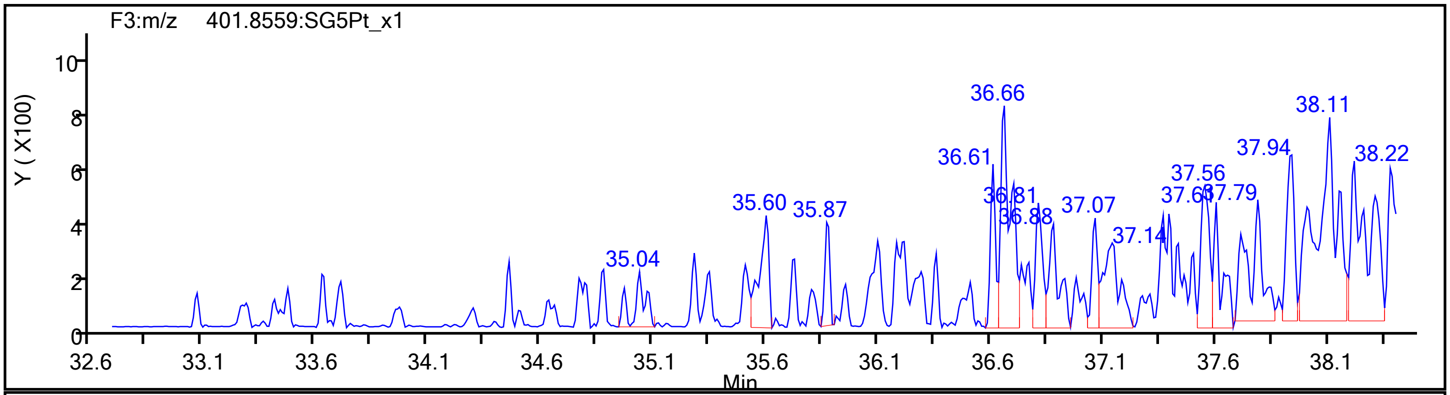

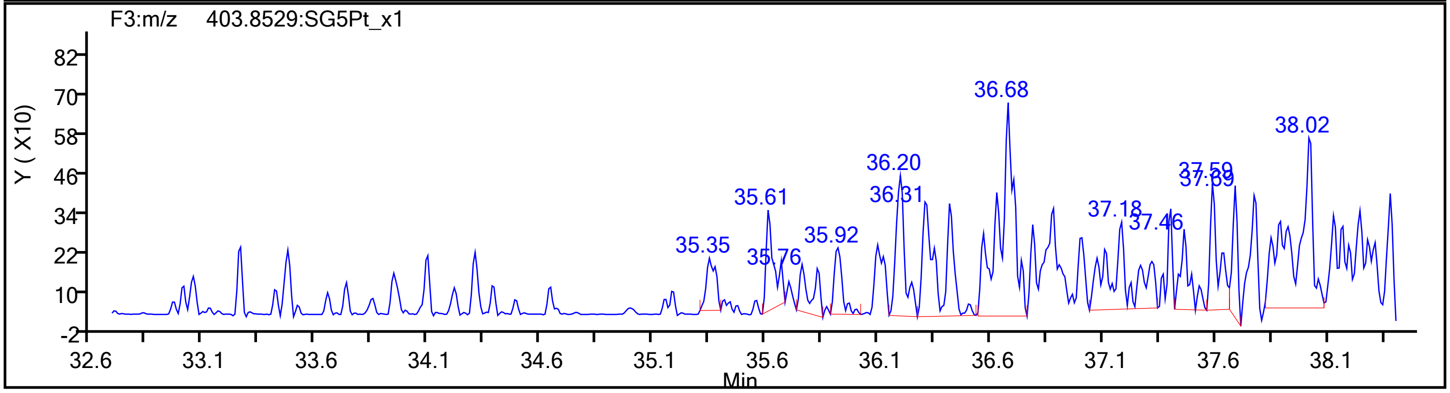

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

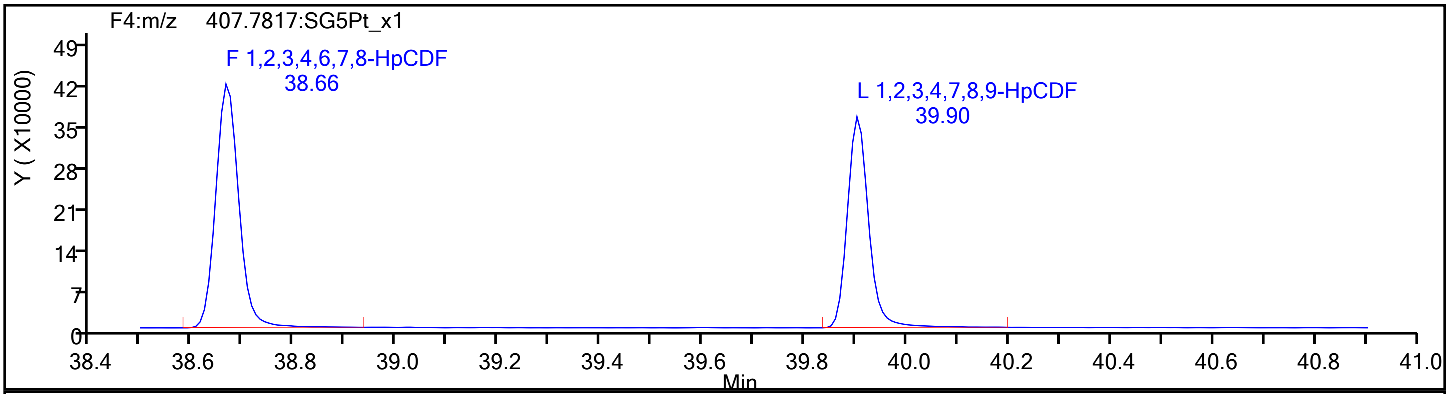

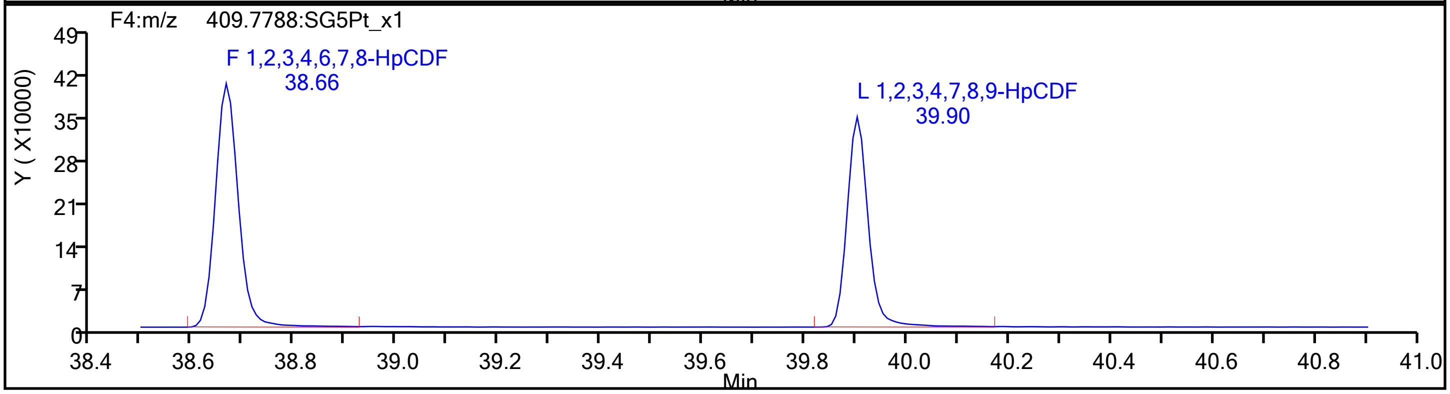

HpCDF Standards

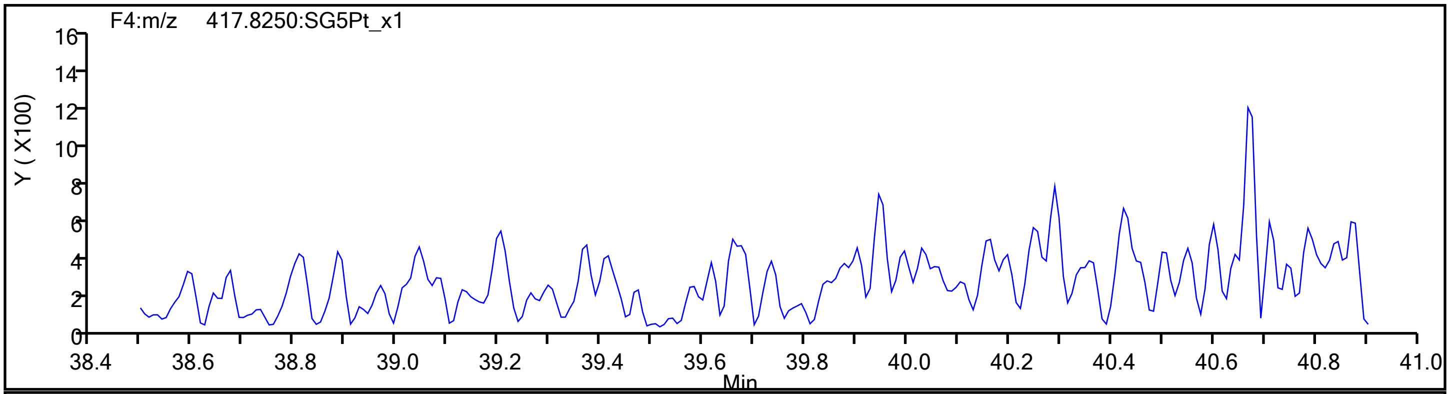

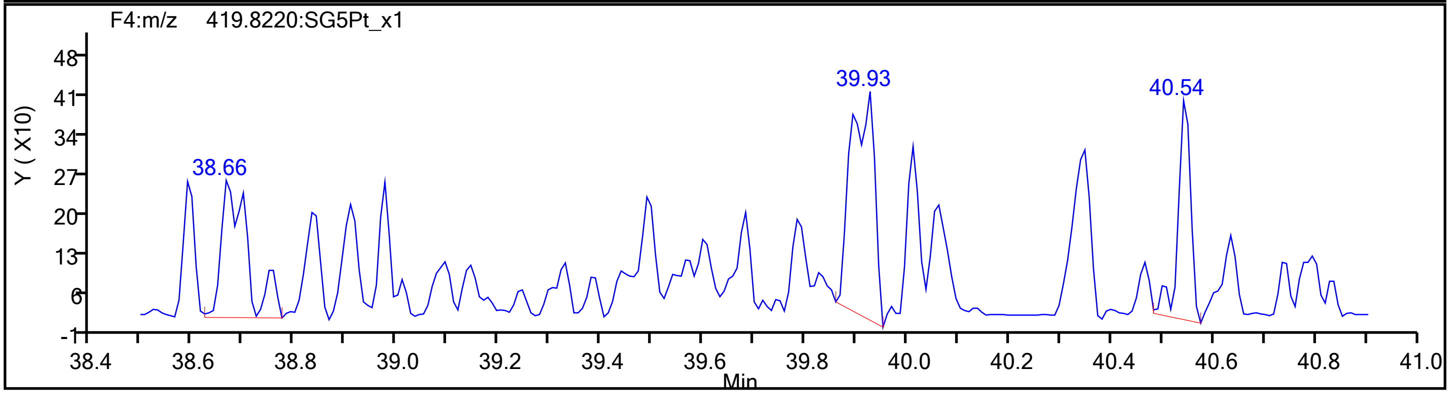

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

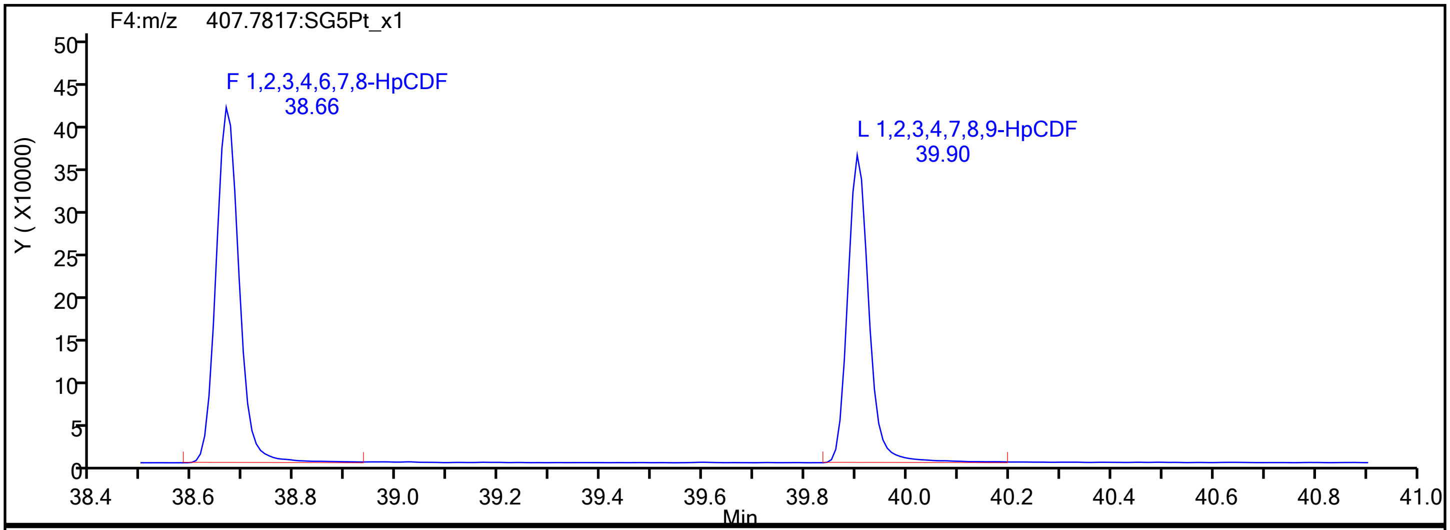

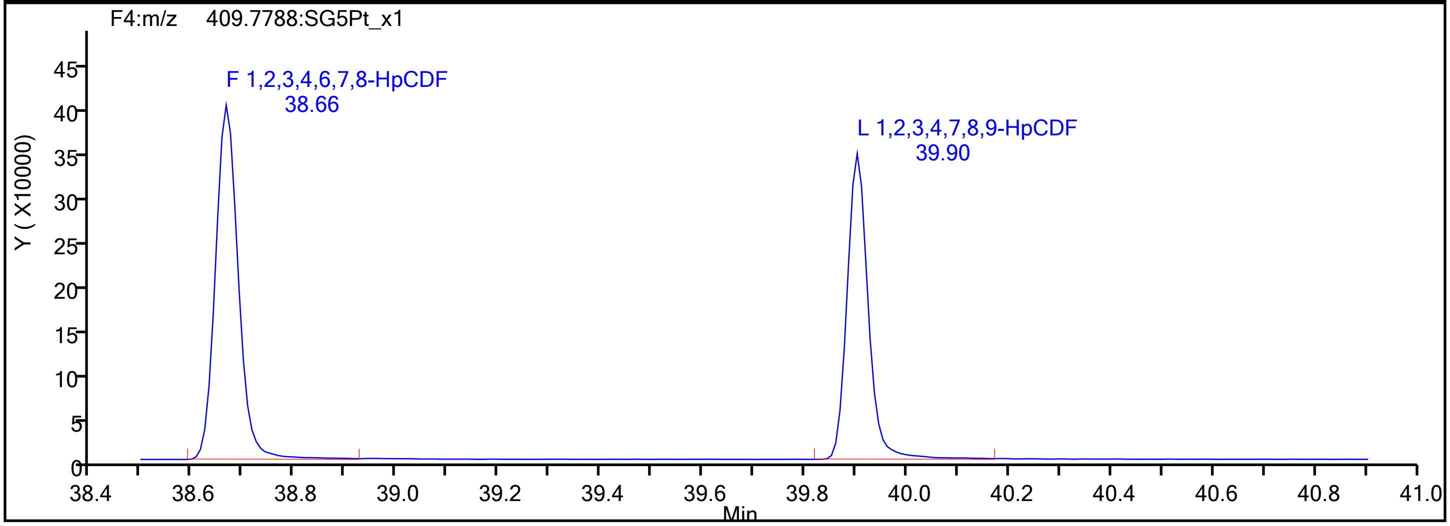

HpCDF Interference Mass

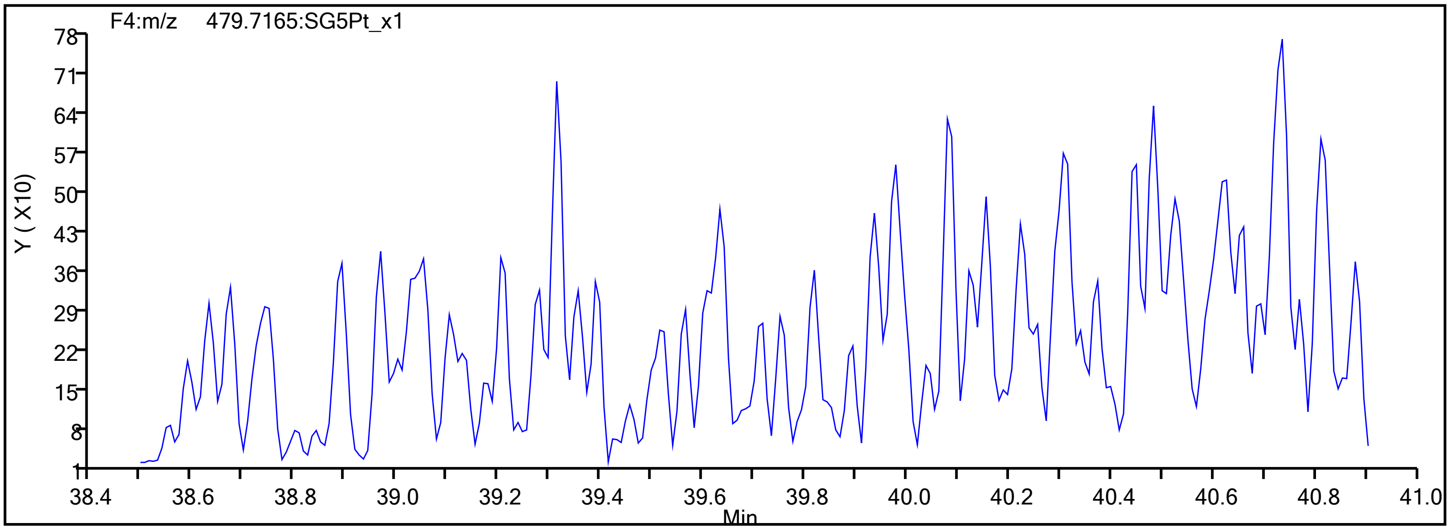

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

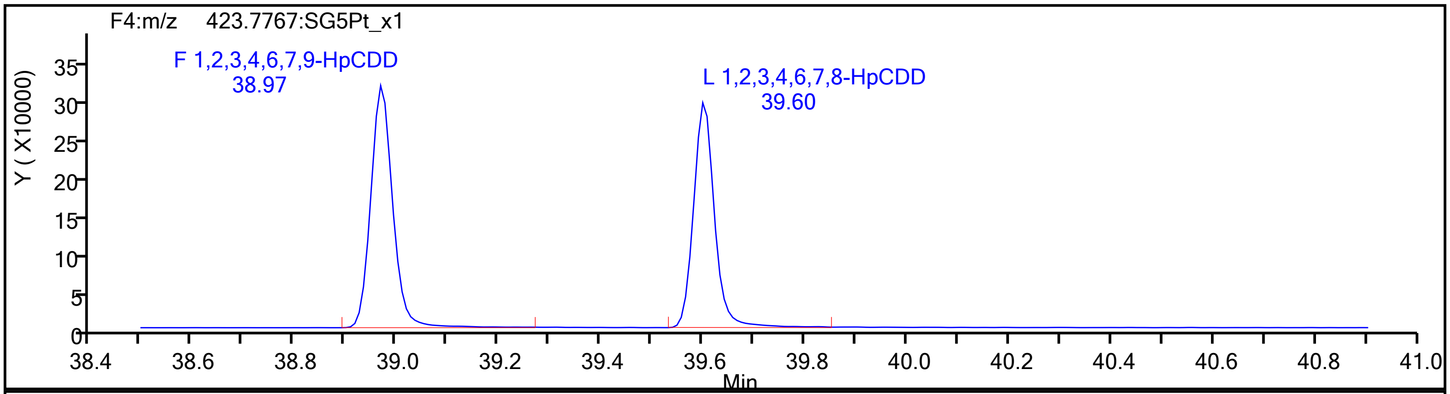

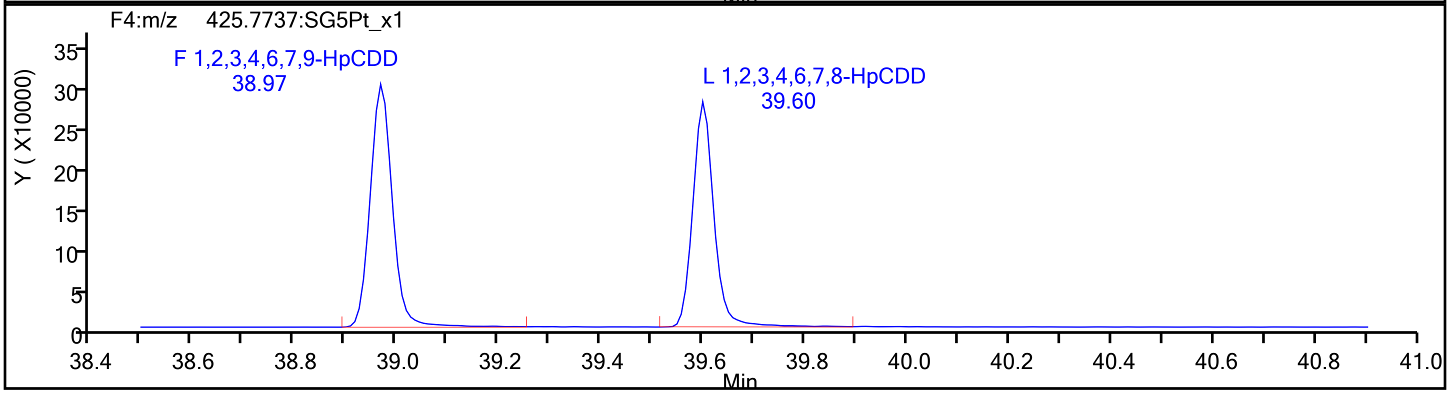

HpCDD Standards

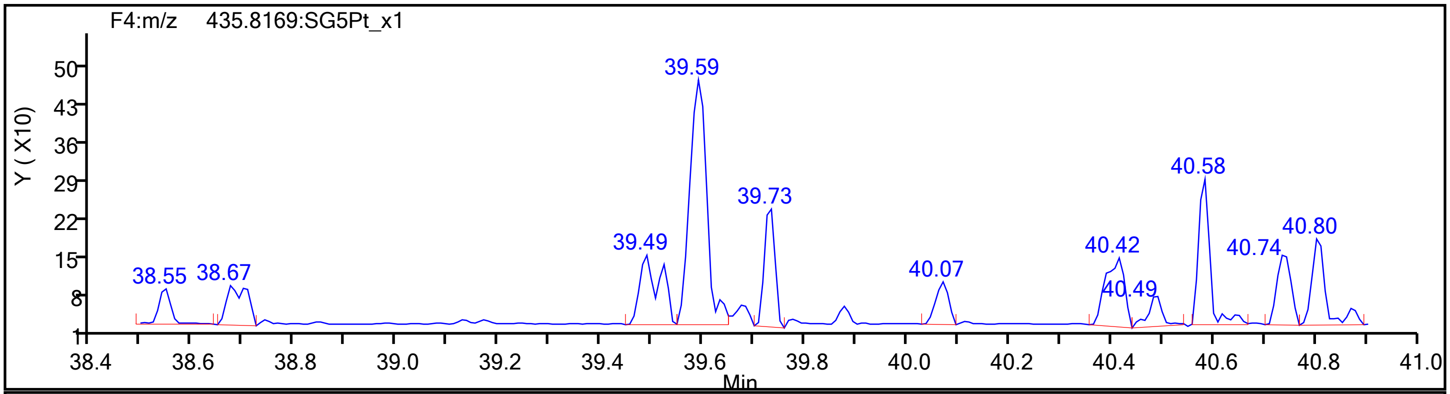

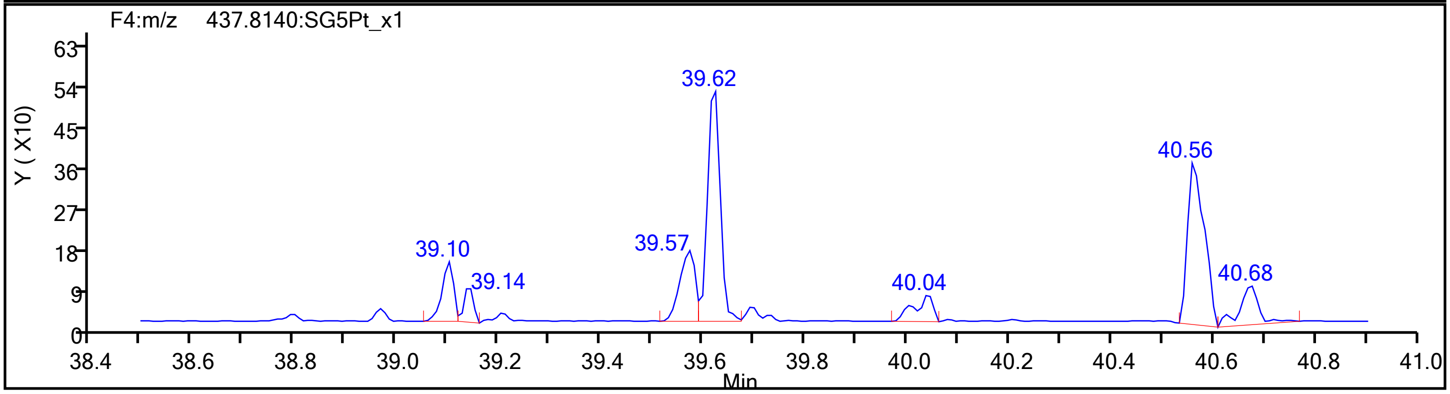

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

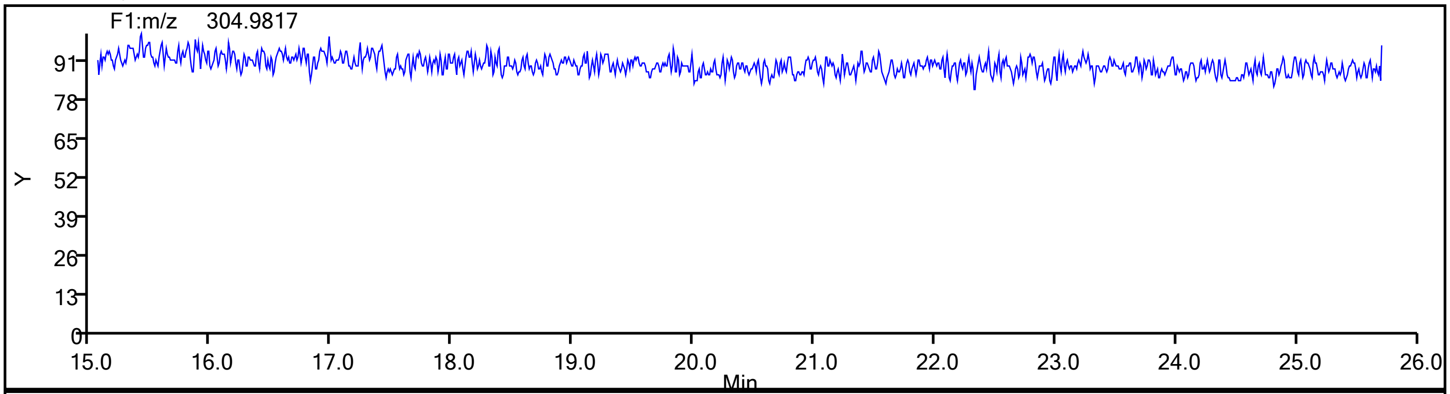

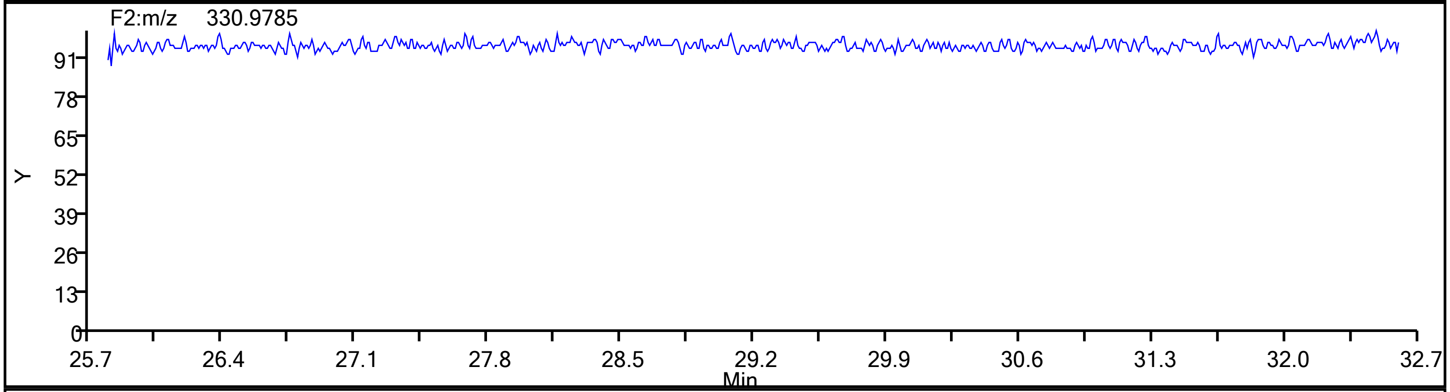

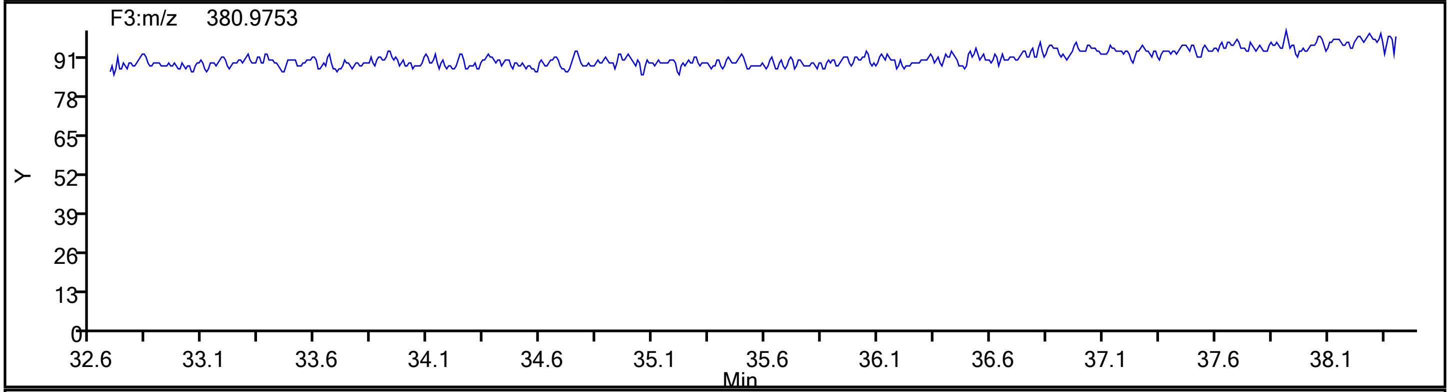

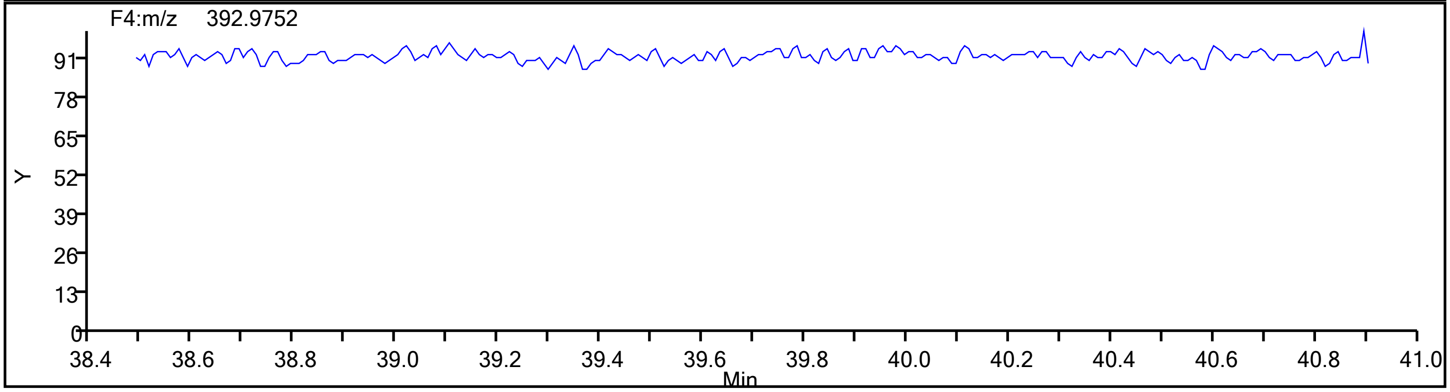

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

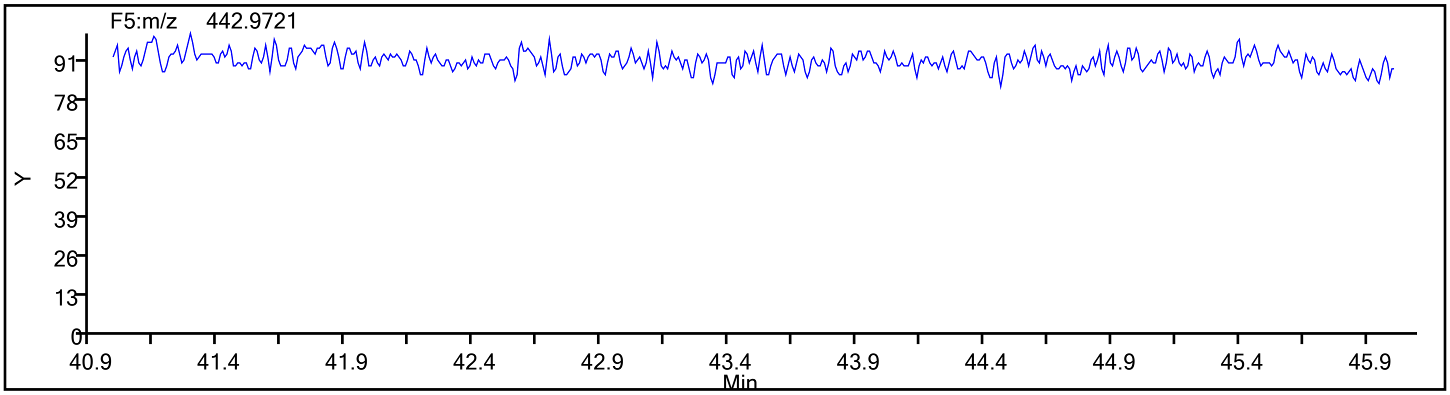

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jul-2020 17:40:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jul-2020 08:46:33 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1006

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:27:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.826	1590937	0.80	1.4977					0.00	
2,3,7,8-TCDF	20.869	3793463	0.80	1.1312	84.3	84.3	0.2507	0.2507		
A Non-2,3,7,8-sub-TCDF	20.186	45244	0.77	1.1312	1.048	1.006	0.2507	0.8001		RQ
S Total TCDF					85.4	85.3	0.2507	0.2507		RQ
D 13C-2,3,7,8-TCDD	22.268	894923	0.76	1.0367					0.00	
2,3,7,8-TCDD	22.285	1133494	0.81	1.1849	42.8	42.8	0.2180	0.2180		
A Non-2,3,7,8-sub-TCDD	21.062						0.2180	0.2180		
S Total TCDD					42.8	42.8	0.2180	0.2180		
A F1 PeCDFs	24.937	11930	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	28.559	18659	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.927						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.424						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.752	13793	1.17	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.841	1453703	1.06	1.5957						
1,2,3,4,7,8,9-HpCDF	40.063	1285549	1.05	1.1693						
A Non-2,3,7,8-sub-HpCDF	39.452						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.760	951310	1.04	1.1150						
A Non-2,3,7,8-sub-HpCDD	39.555						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.359	2218045	0.81							
1,3,6,8-TCDD	18.060	1157909	0.81							
2,3,4,7-TCDF	20.869	3793463	0.80							
1,2,3,7-TCDD	22.062	943686	0.79							
1,2,3,9-TCDF	22.483	1604713	0.80							
1,2,3,9-TCDD	22.586	1163688	0.77							
1,2,8,9-TCDF	24.012	1733863	0.80							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	24.063	494526								
1,3,4,6,8-PeCDF	24.407	1303889	1.60							
1,2,4,7,9-PeCDD	26.531	921755	1.59							
1,2,3,8,9-PeCDD	31.324	864574	1.56							
1,2,3,8,9-PeCDF	31.509	1258145	1.62							
1,2,3,4,6,8-HxCDF	33.642	1616306	1.26							
1,2,4,6,7,9-HxCDD	34.644	1090297	1.25							
1,2,3,4,6,7-HxCDD	36.860	1086520	1.27							
1,2,3,4,8,9-HxCDF	37.205	1539362	1.27							
1,2,3,4,6,7,9-HpCDD	39.136	1009372	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jul-2020 17:40:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jul-2020 08:46:33 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1006

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:27:23

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.826	20.826	0	1.000	707476	109443	359	897	305		
317.9389	20.826	20.826	0	1.000	883461	130564	128	320	1020	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.869	20.869	0	1.002	1691726	219131	289	722	758		
305.8987	20.877	20.869	1	1.002	2101737	276553	392	980	705	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	19.065	20.186	-67	0.915	4022	1155	289	722	4		
305.8987	19.074	20.186	-67	0.916	7123	1704	392	980	4	0.56(0.65-0.89)	
	Empc Correction				5223	1500	392	980	4		
303.9016	24.424	20.186	254	1.173	15802	2740	289	722	9		
305.8987	24.433	20.186	254	1.173	20197	3247	392	980	8	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.268	22.268	0	1.000	385657	52937	180	450	294		
333.9338	22.251	22.268	-1	1.000	509266	70489	29	72	2431	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.285	22.285	0	1.001	506104	66315	171	427	388		
321.8936	22.285	22.285	0	1.001	627390	85682	148	370	579	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.062						171	427			
321.8936	21.062						148	370			
A F1 PeCDFs											RQ
339.8597	24.699	24.937	-14	1.000	6333	1452	8	20	182		
341.8567	24.716	24.937	-13	1.000	4892	745	32	80	23	1.29(1.32-1.78)	
339.8597	24.862	24.937	-5	1.000	1195	235	8	20	29		
341.8567	24.939	24.937	0	1.000	593	155	32	80	5	2.02(1.32-1.78)	

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	27.205	28.559	-81	1.000	3708	692	73	182	9		
341.8567	27.171	28.559	-83	1.000	2232	434	102	255	4	1.66(1.32-1.78)	
339.8597	27.778	28.559	-47	1.000	8101	1399	73	182	19		
341.8567	27.778	28.559	-47	1.000	3433	639	102	255	6	2.36(1.32-1.78)	
339.8597	28.418	28.559	-8	1.000	5789	968	73	182	13		
341.8567	28.435	28.559	-7	1.000	1555	363	102	255	4	3.72(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.927						123	307			
357.8516	28.927						63	157			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.424						275	687			
375.8178	35.424						217	542			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.715	35.752	-2	1.000	7441	1588	174	435	9		
391.8127	35.723	35.752	-2	1.000	6352	1230	151	377	8	1.17(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.841	38.841	0	1.000	746939	238902	746	1865	320		
409.7788	38.841	38.841	0	1.000	706764	222068	699	1747	318	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.063	40.063	0	1.000	658967	221722	746	1865	297		
409.7788	40.063	40.063	0	1.000	626582	214819	699	1747	307	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.452						746	1865			
409.7788	39.452						699	1747			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.760	39.760	0	1.000	484819	160931	563	1407	286		
425.7737	39.760	39.760	0	1.000	466491	154786	512	1280	302	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						563	1407			
425.7737	39.555						512	1280			
1,3,6,8-TCDF											
303.9016	16.359	16.359	0		994235	192346	289	722	666		
305.8987	16.359	16.359	0		1223810	238858	392	980	609	0.81(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.060	18.060	0		518461	88494	171	427	518		
321.8936	18.060	18.060	0		639448	111012	148	370	750	0.81(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.869	20.869	0		1691726	219131	289	722	758		
305.8987	20.877	20.869	1		2101737	276553	392	980	705	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	22.062	22.062	0		417838	61097	171	427	357		
321.8936	22.071	22.062	1		525848	75292	148	370	509	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.483	22.483	0		713514	95766	289	722	331		
305.8987	22.492	22.483	1		891199	120515	392	980	307	0.80(0.65-0.89)	

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Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,9-TCDD											
319.8965	22.586	22.586	0		505669	68333	171	427	400		
321.8936	22.603	22.586	1		658019	85234	148	370	576	0.77(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	24.012	24.012	0		772647	154431	289	722	534		
305.8987	24.012	24.012	0		961216	200708	392	980	512	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	24.063	24.063	0		494526	100985	171	427	591		
1,3,4,6,8-PeCDF											
339.8597	24.407	24.407	0		802728	165896	8	20	20737		
341.8567	24.407	24.407	0		501161	103059	32	80	3221	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.531	26.531	0		566495	88971	123	307	723		
357.8516	26.531	26.531	0		355260	56228	63	157	893	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.324	31.324	0		527391	71099	123	307	578		
357.8516	31.324	31.324	0		337183	44734	63	157	710	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.509	31.509	0		777968	101755	73	182	1394		
341.8567	31.509	31.509	0		480177	64305	102	255	630	1.62(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.642	33.642	0		901892	158891	275	687	578		
375.8178	33.642	33.642	0		714414	127723	217	542	589	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.644	34.644	0		606234	129046	174	435	742		
391.8127	34.644	34.644	0		484063	104809	151	377	694	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.860	36.860	0		606896	166713	174	435	958		
391.8127	36.860	36.860	0		479624	133076	151	377	881	1.27(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.205	37.205	0		860874	243111	275	687	884		
375.8178	37.205	37.205	0		678488	190066	217	542	876	1.27(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.136	39.136	0		513442	170956	563	1407	304		
425.7737	39.136	39.136	0		495930	167043	512	1280	326	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	27-Jul-2020 17:40:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	2

Non-2,3,7,8-sub-TCDF, RT: 20.186

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	40.000	1590937	240007

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		40.000	1590937	240007

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.065	4022	1155	7123	1704	0.2477	0.56	RQ
19.065	4022	1155	5223	1500	0.2055		Empc Correction
24.424	15802	2740	20197	3247	0.8001	0.78	
Signal Totals:							
	19824	3895	25420	4747			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	47144	8846				0.73	RQ
	45244	8642					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.048 = (47144 * 40.000) / (1590937 * 1.131)
Empc Amount: 1.006 = (45244 * 40.000) / (1590937 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d
Lims ID: WDM
Client ID:
Inject. Date: 27-Jul-2020 17:40:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398796
Lims Sample ID: 2

F1 PeCDFs, RT: 24.937

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.699	6333	1452	4892	745		1.29	R
24.862	1195	235	593	155		2.02	R
Signal Totals:							
	7528	1687	5485	900			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13013	2587				1.37	RQ
	11930	2783					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13013 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (11930 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	27-Jul-2020 17:40:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	2

Non-2,3,7,8-sub-PeCDF, RT: 28.559

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.205	3708	692	2232	434		1.66	
27.778	8101	1399	3433	639		2.36	R
28.418	5789	968	1555	363		3.72	R
Signal Totals:							
	17598	3059	7220	1436			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24818	4495				2.44	RQ
	18659	3680					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (24818 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (18659 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d
Lims ID: WDM
Client ID:
Inject. Date: 27-Jul-2020 17:40:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398796 Lims Sample ID: 2

Non-2,3,7,8-sub-HxCDD, RT: 35.752

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934				
1,2,3,6,7,8-HxCDD	1.080				
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.715	7441	1588	6352	1230		1.17	
Signal Totals:							
	7441	1588	6352	1230			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13793	2818				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13793 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d

Injection Date: 27-Jul-2020 17:40:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

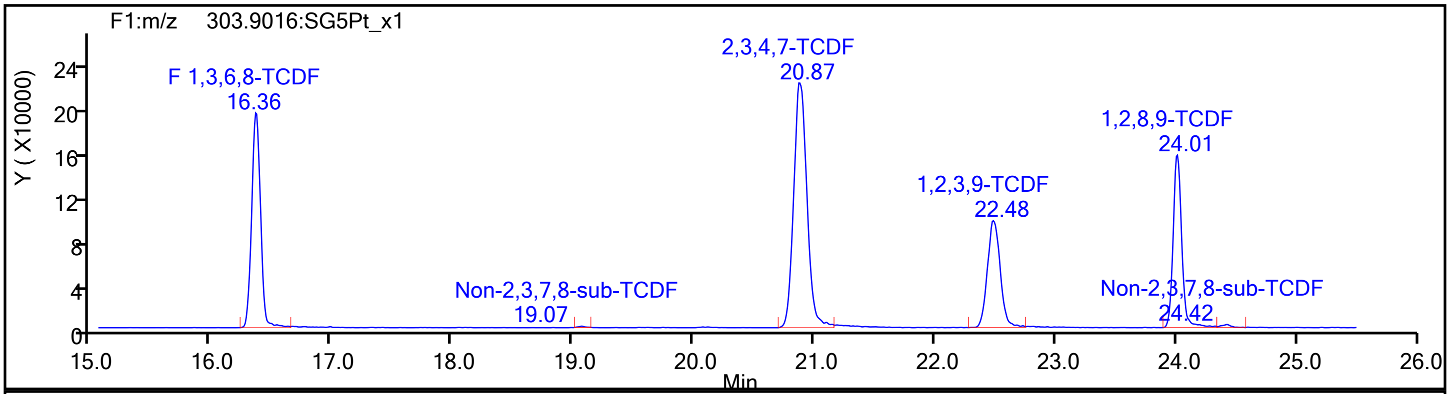

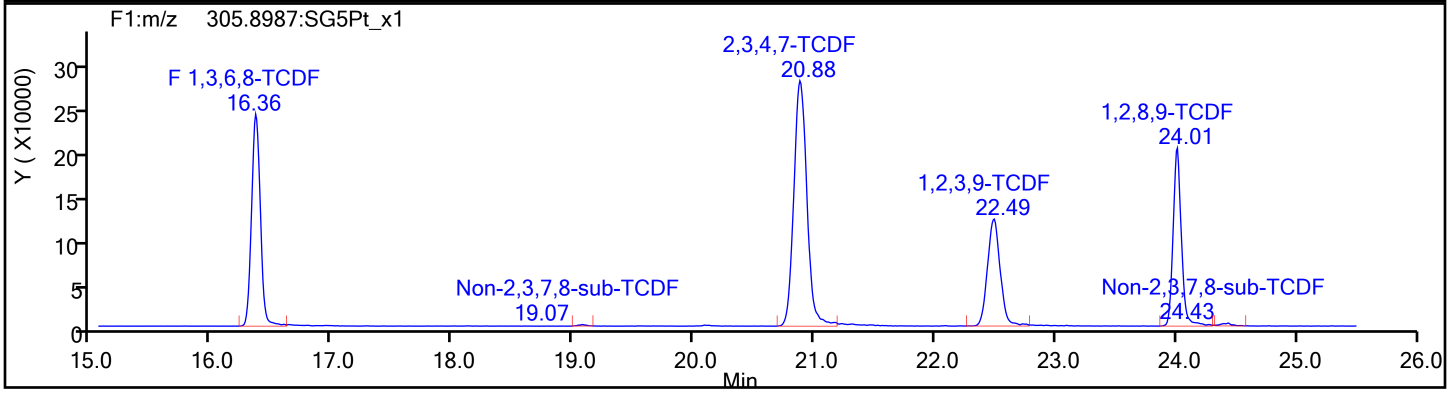

TCDF Standards

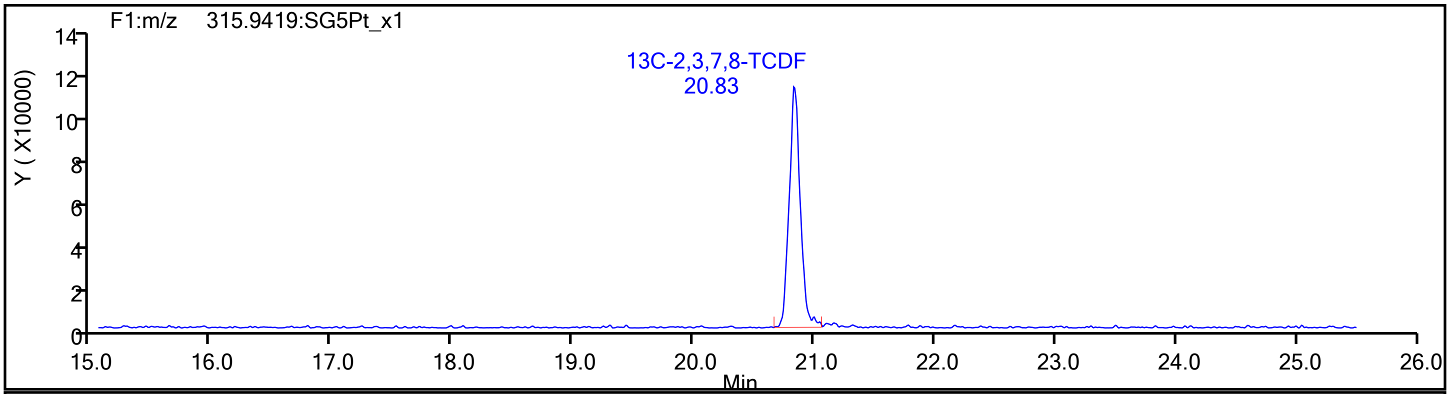

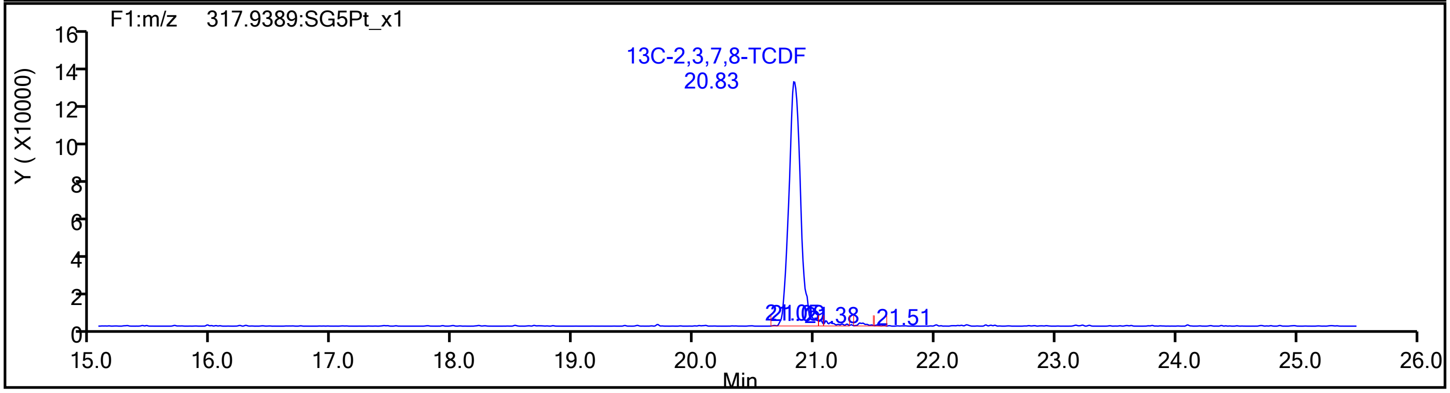

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

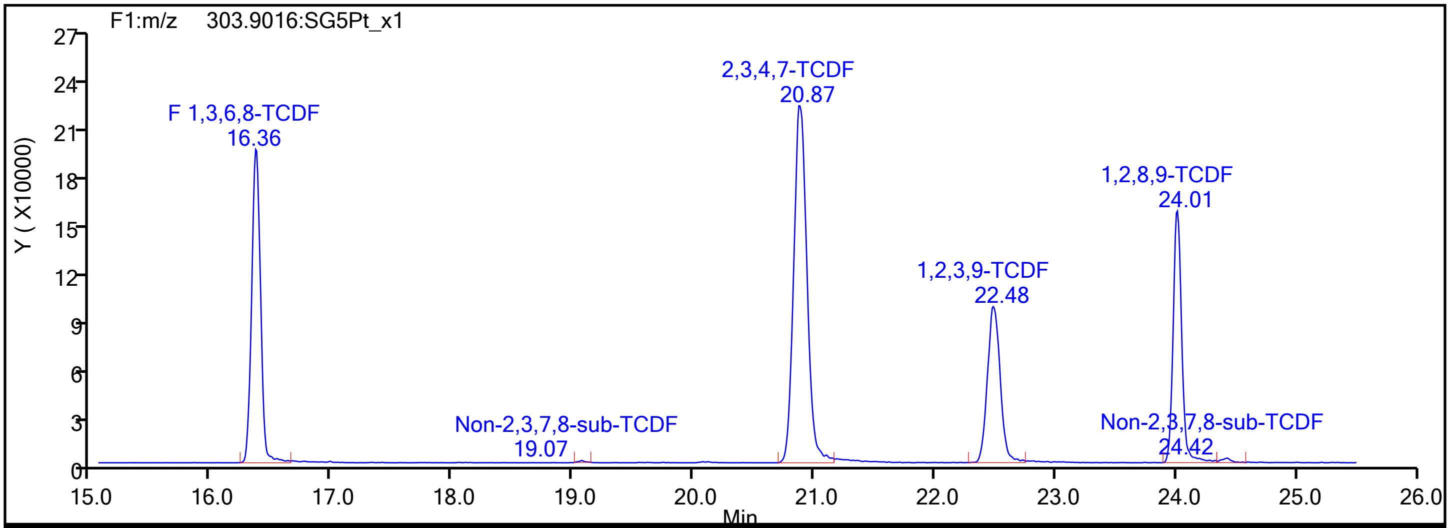

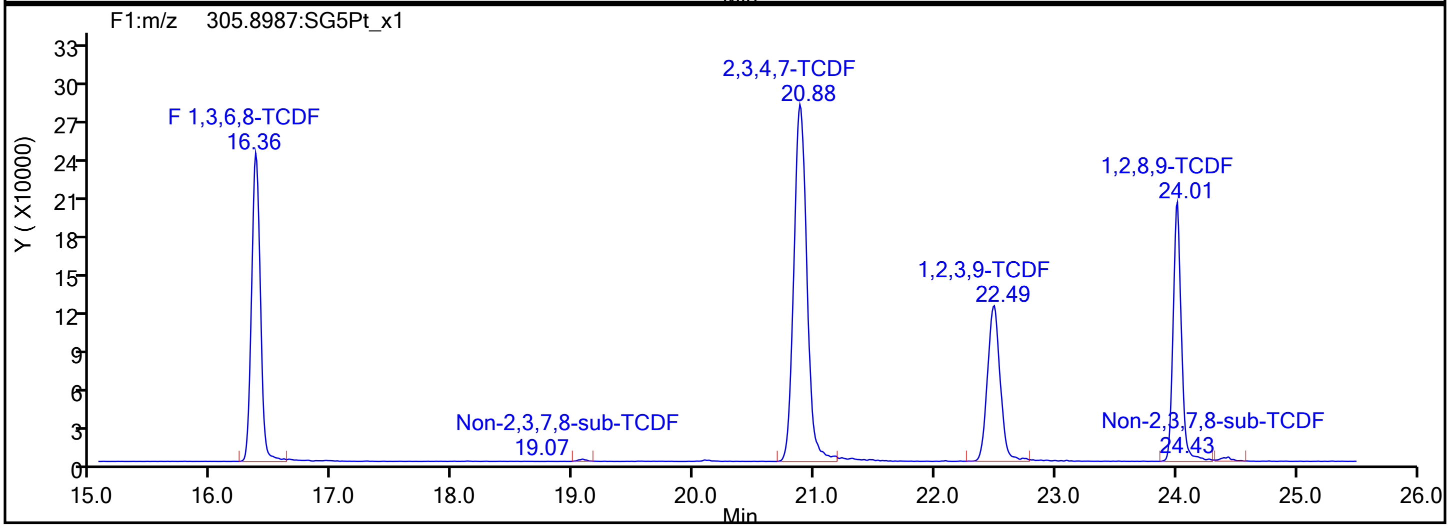

TCDF Interference Mass

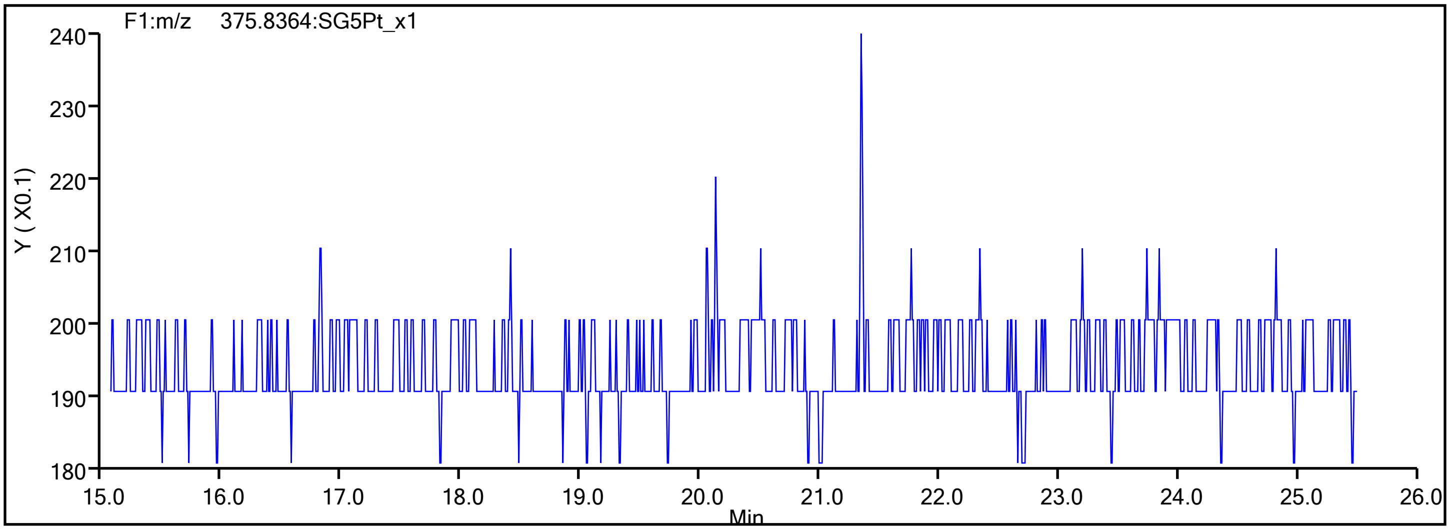

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

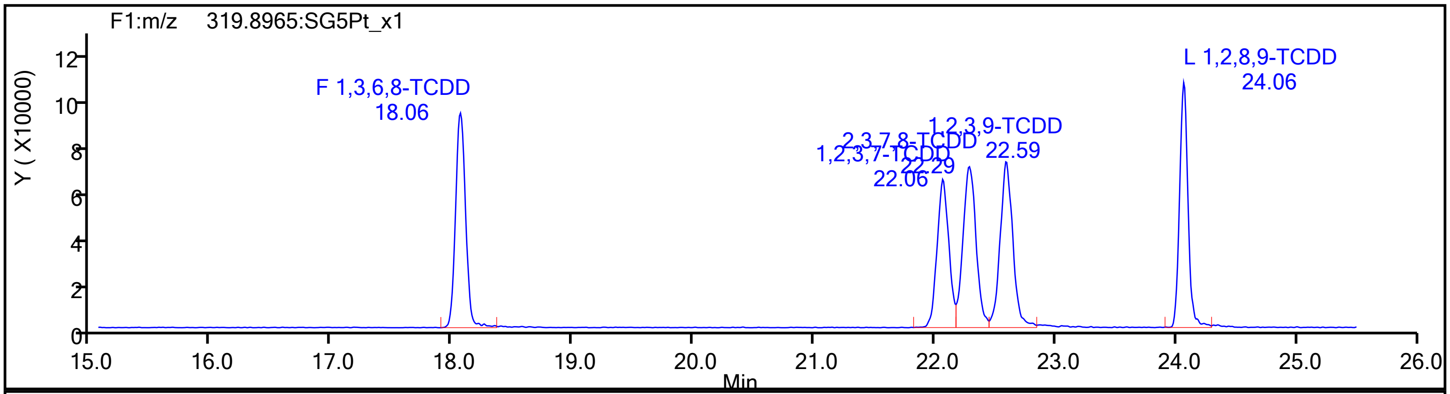

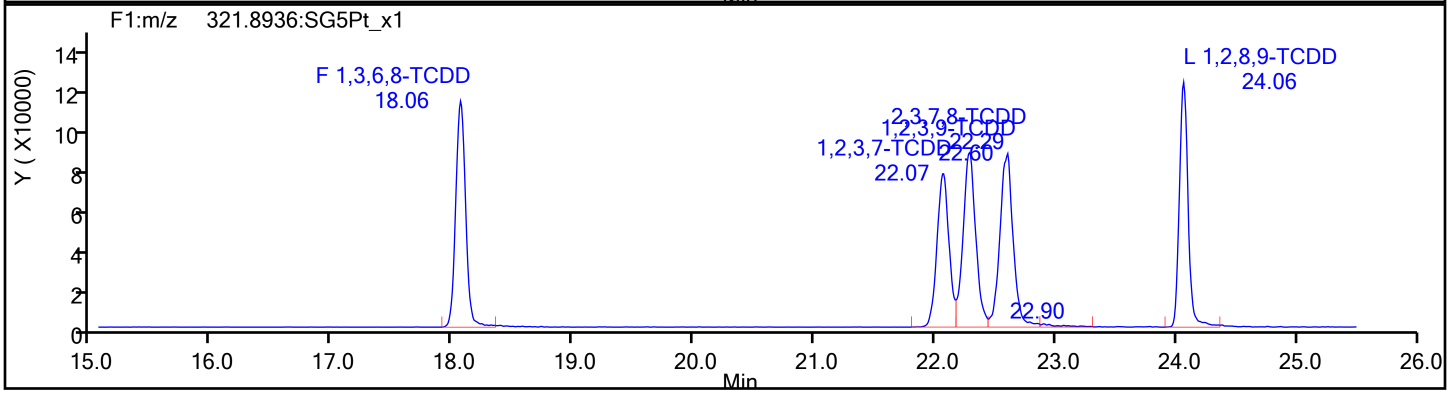

TCDD Standards

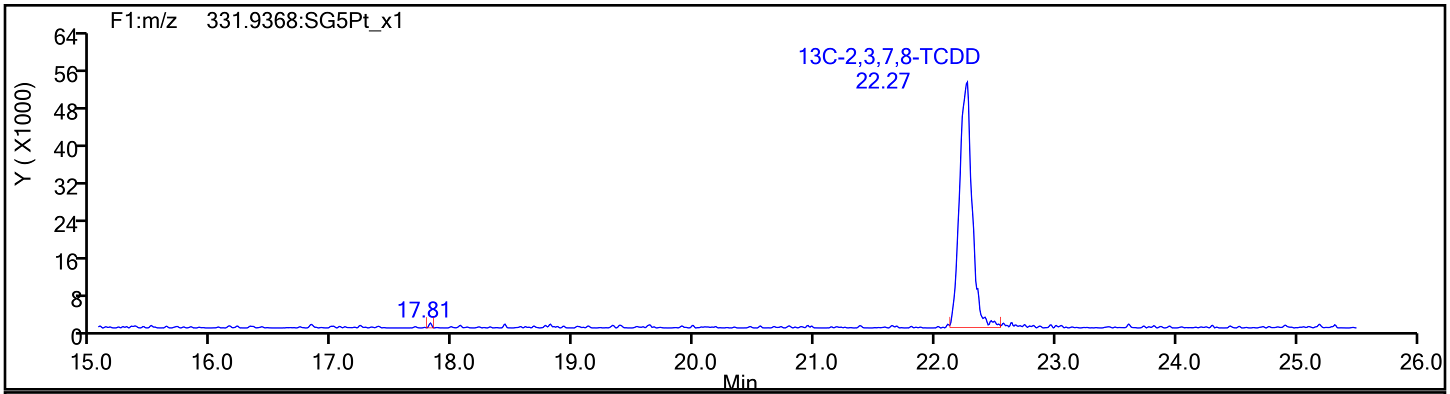

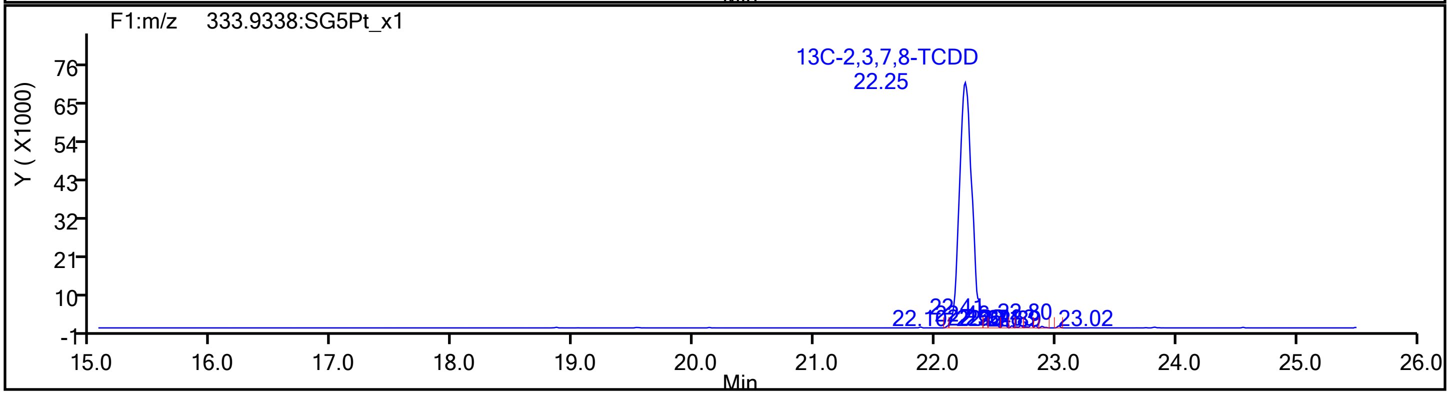

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

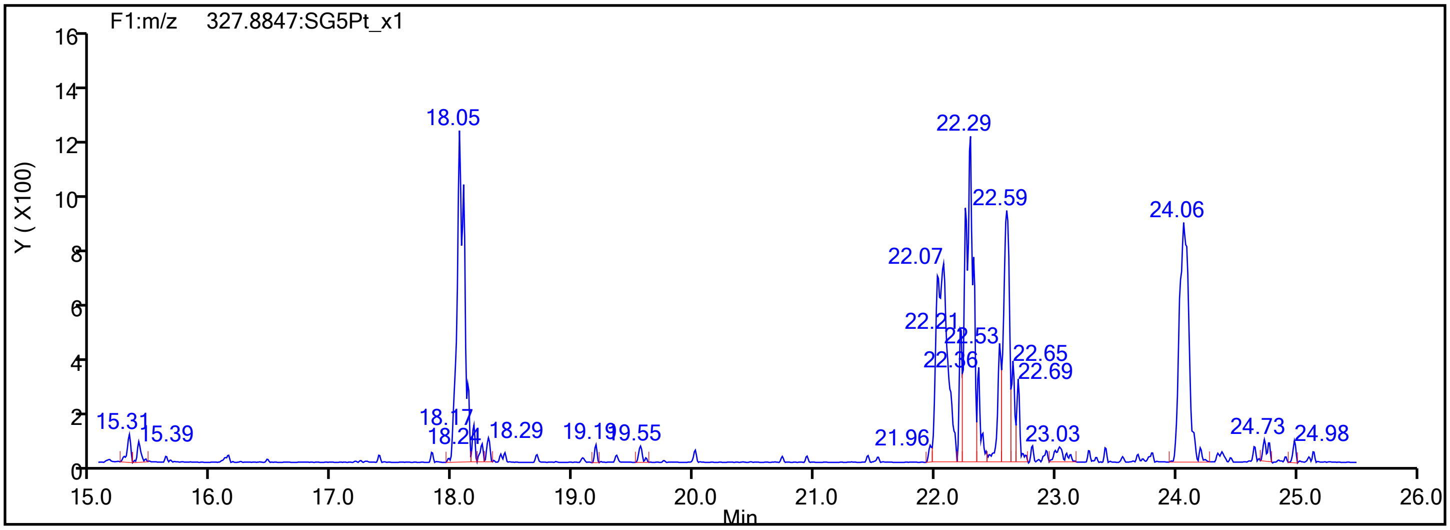

37Cl4-TCDD Standards

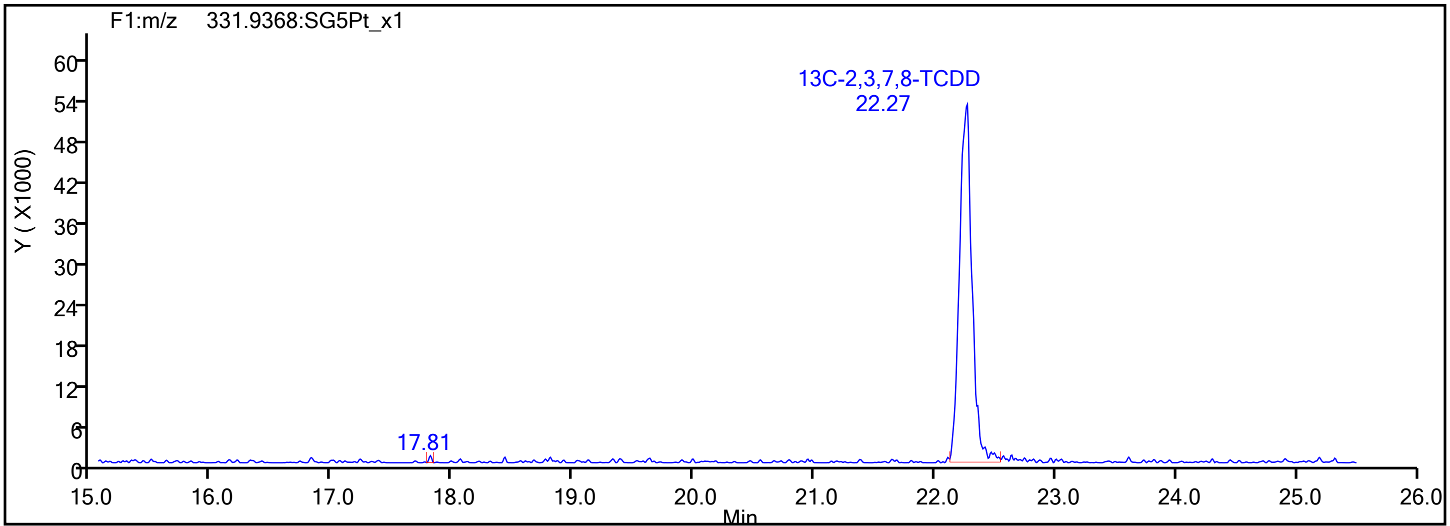

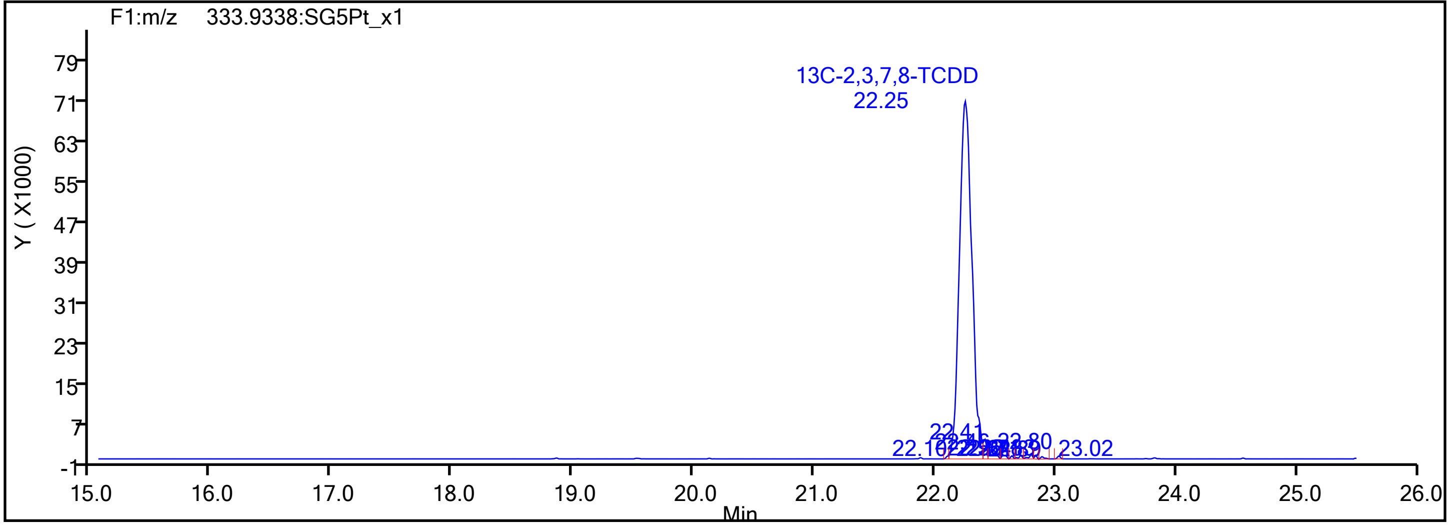

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

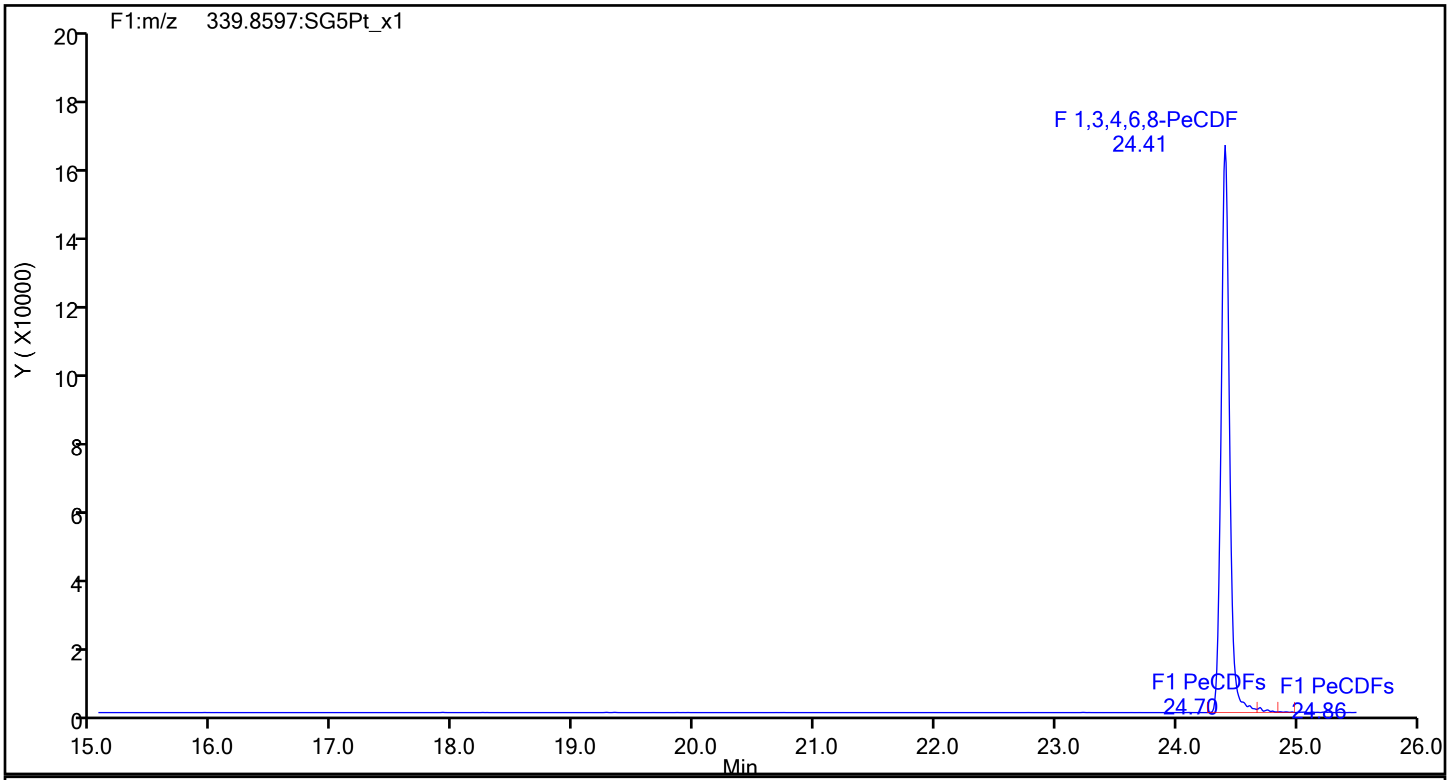

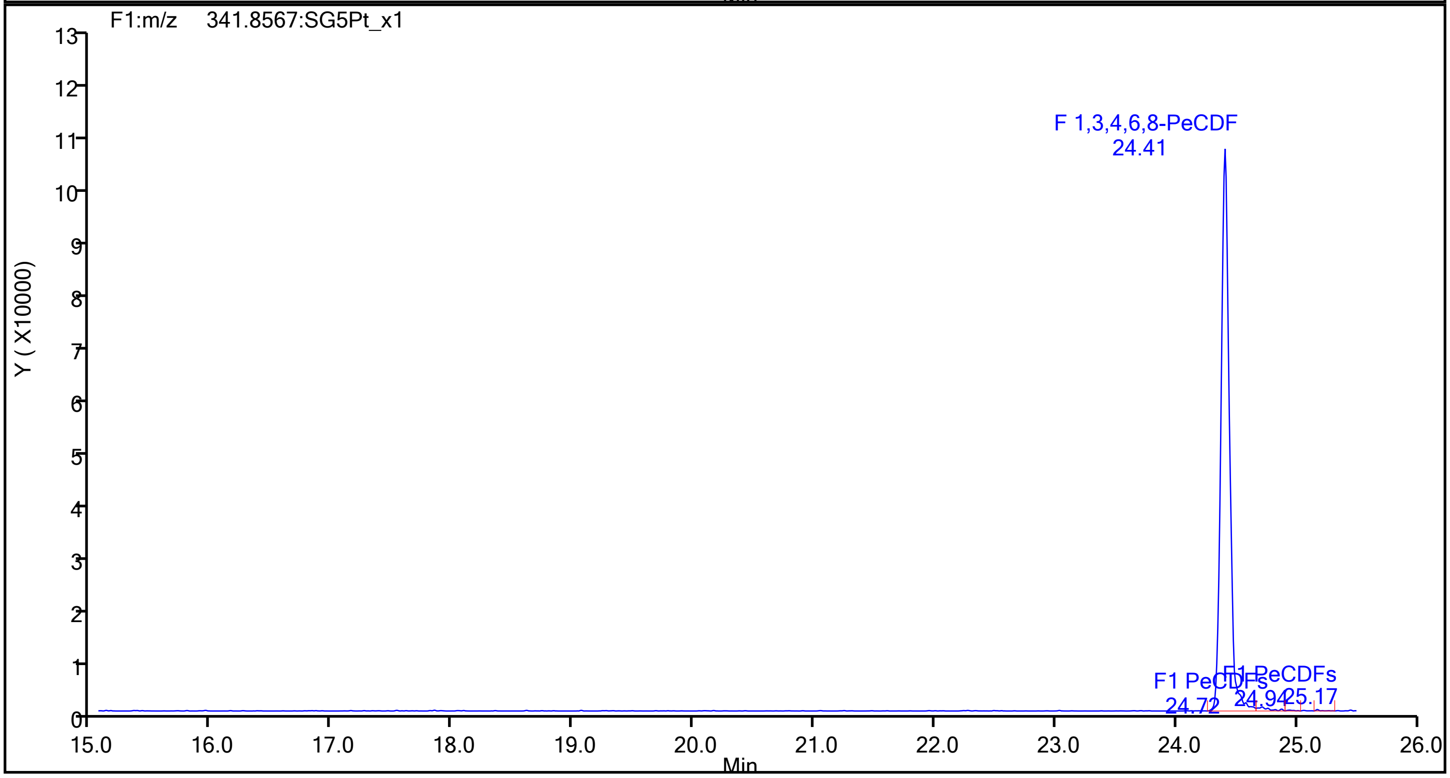

Report Date: 28-Jul-2020 08:46:33　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

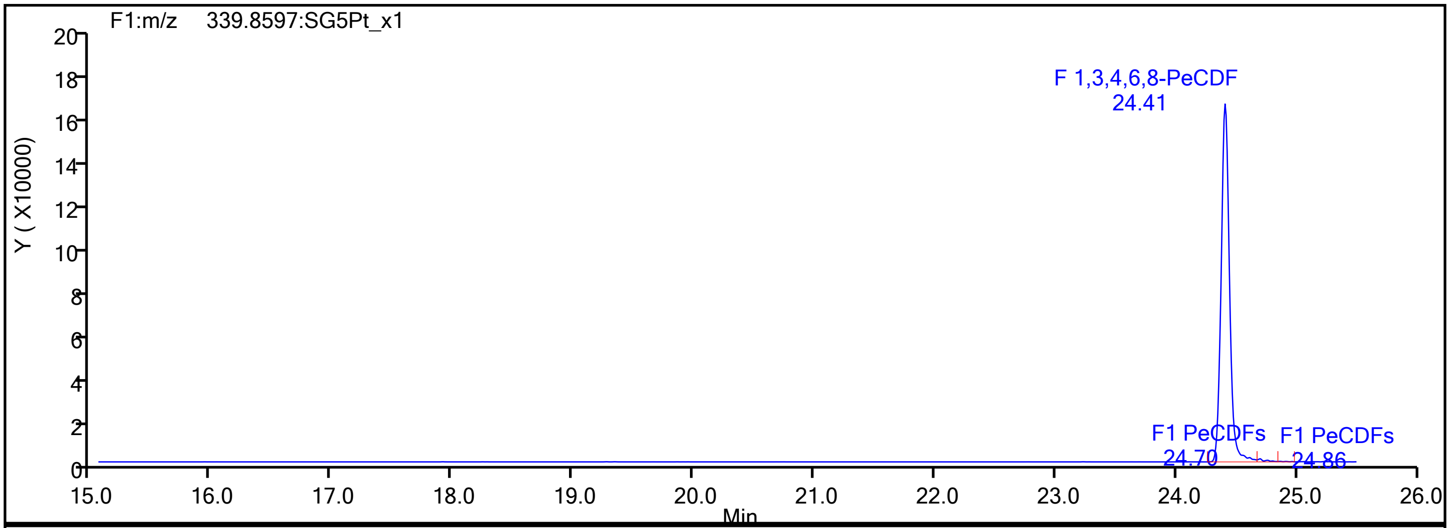

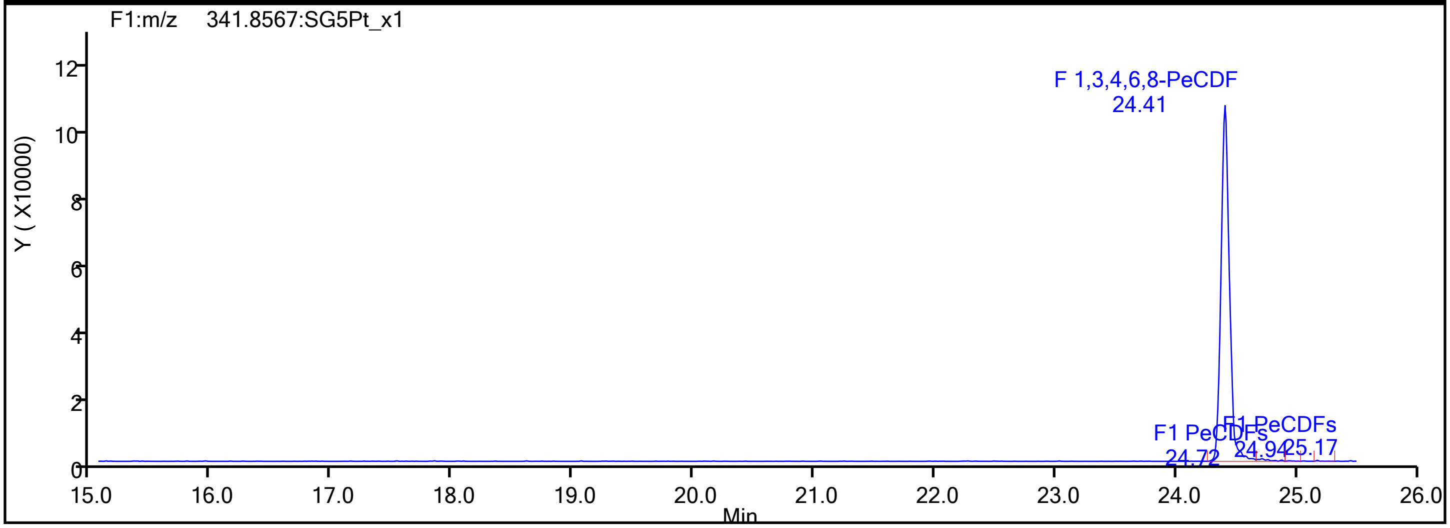

F1 PeCDFs Interference Mass

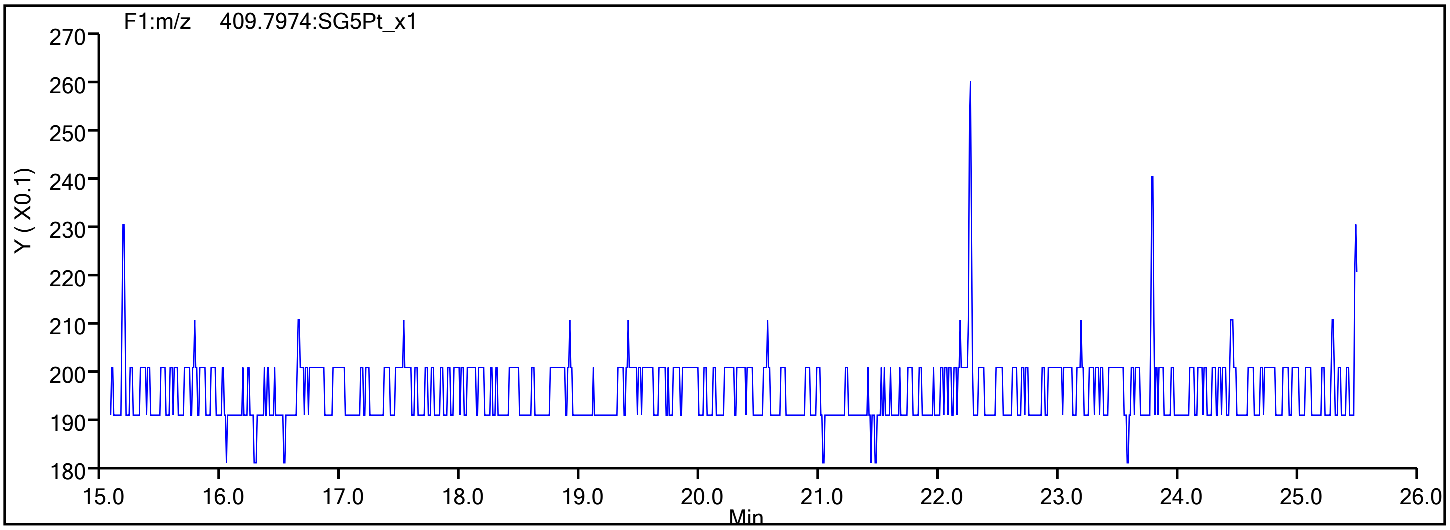

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d

Injection Date: 27-Jul-2020 17:40:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

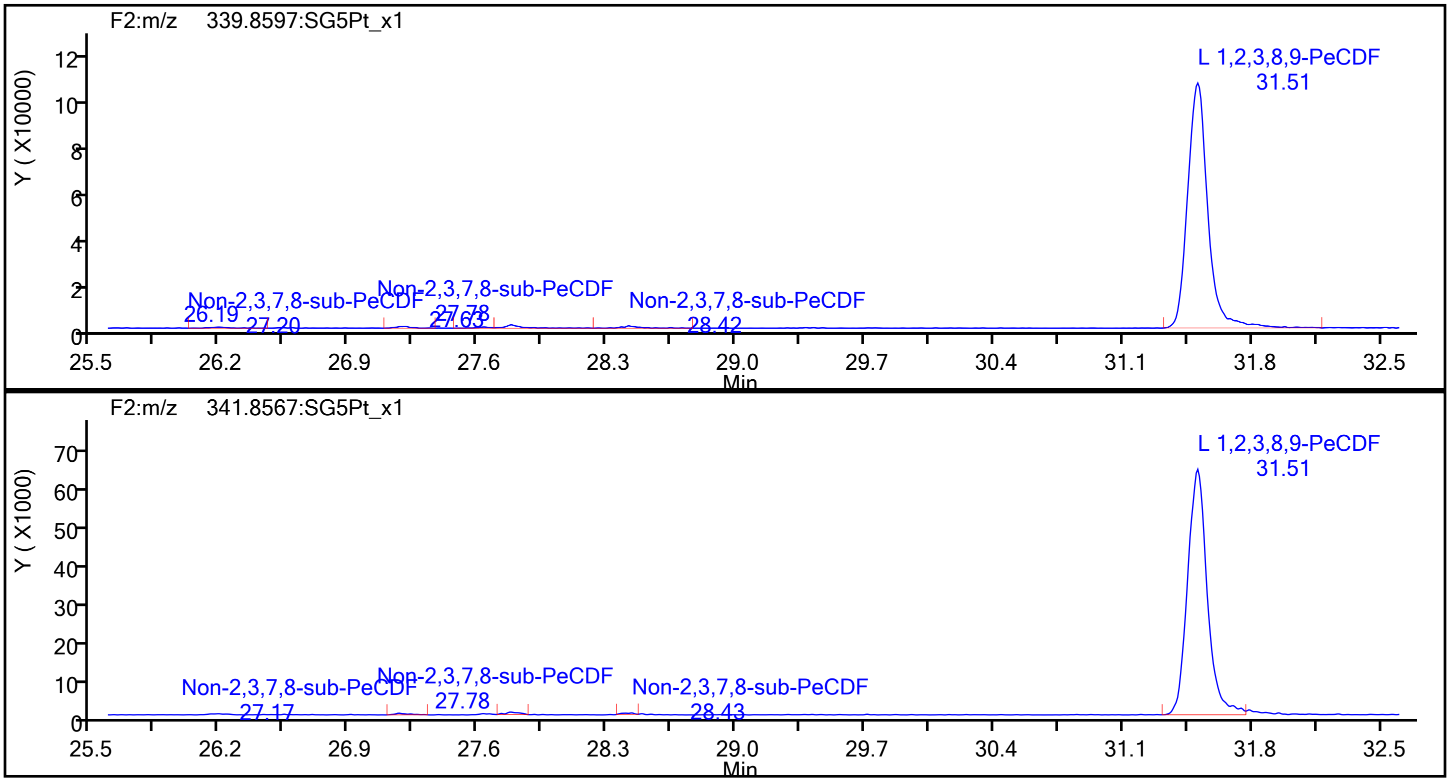

PeCDF Standards

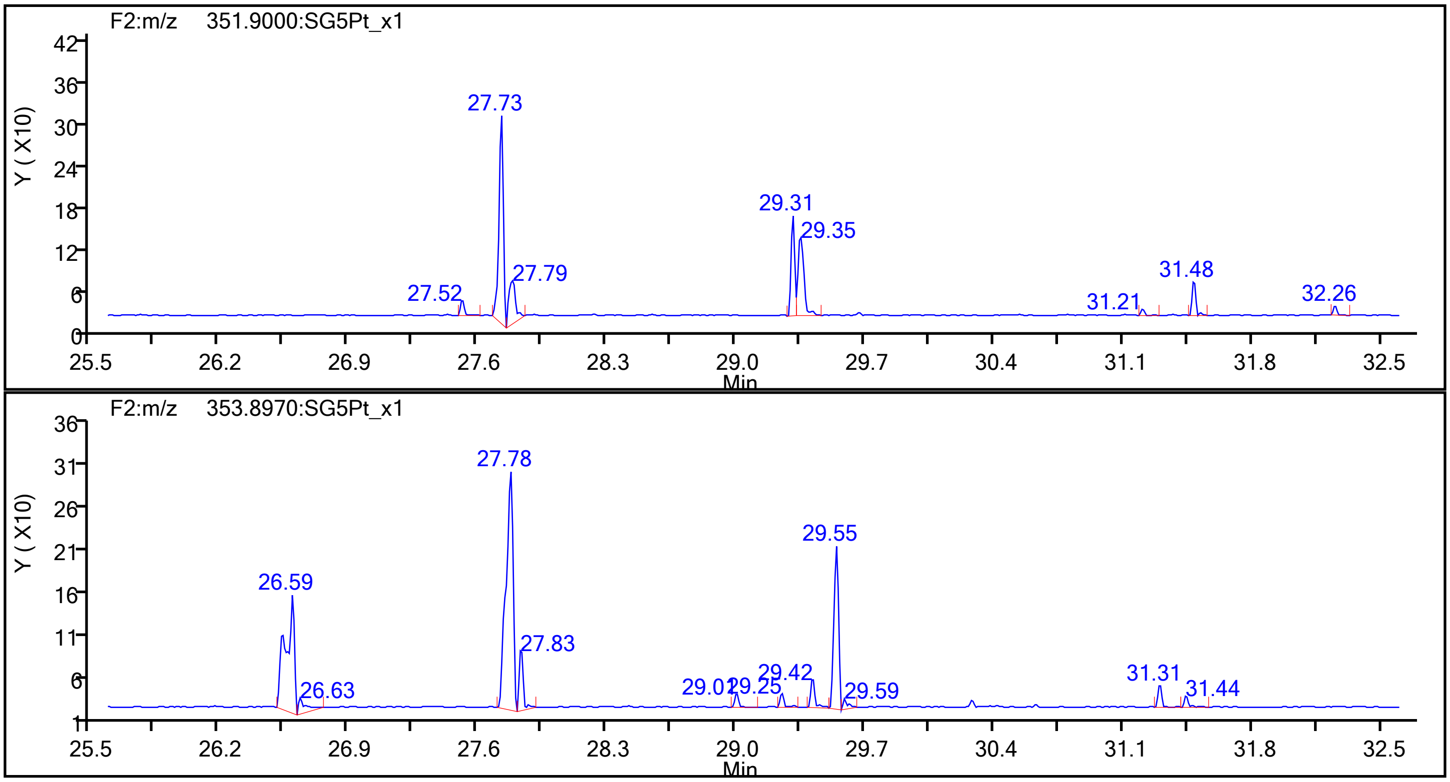

Report Date: 28-Jul-2020 08:46:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

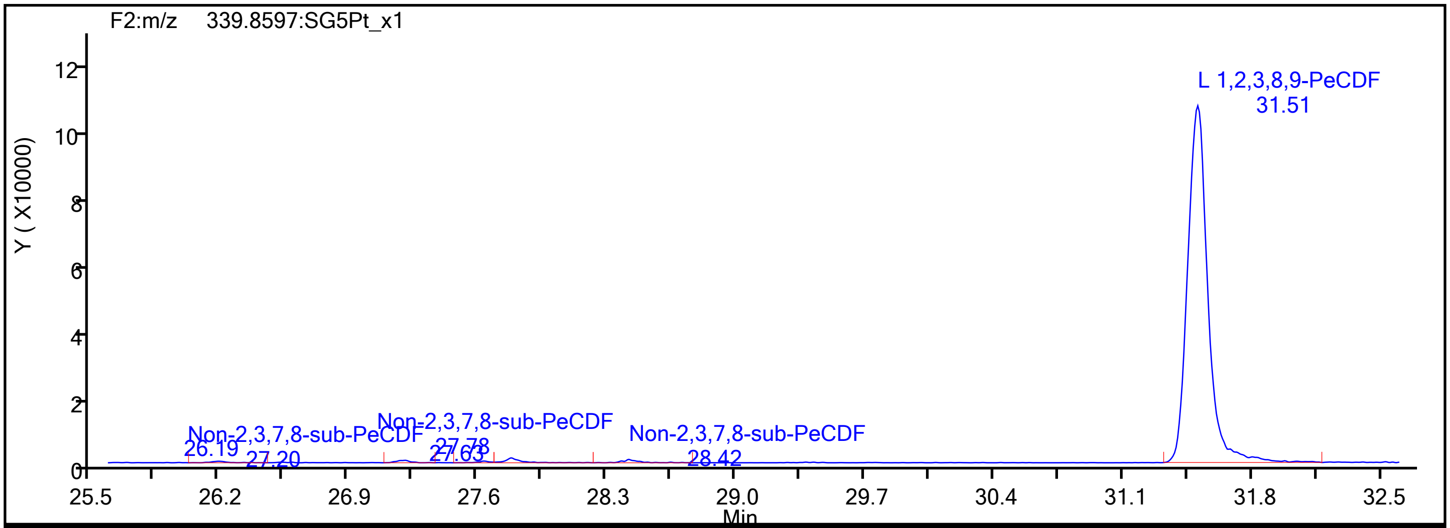

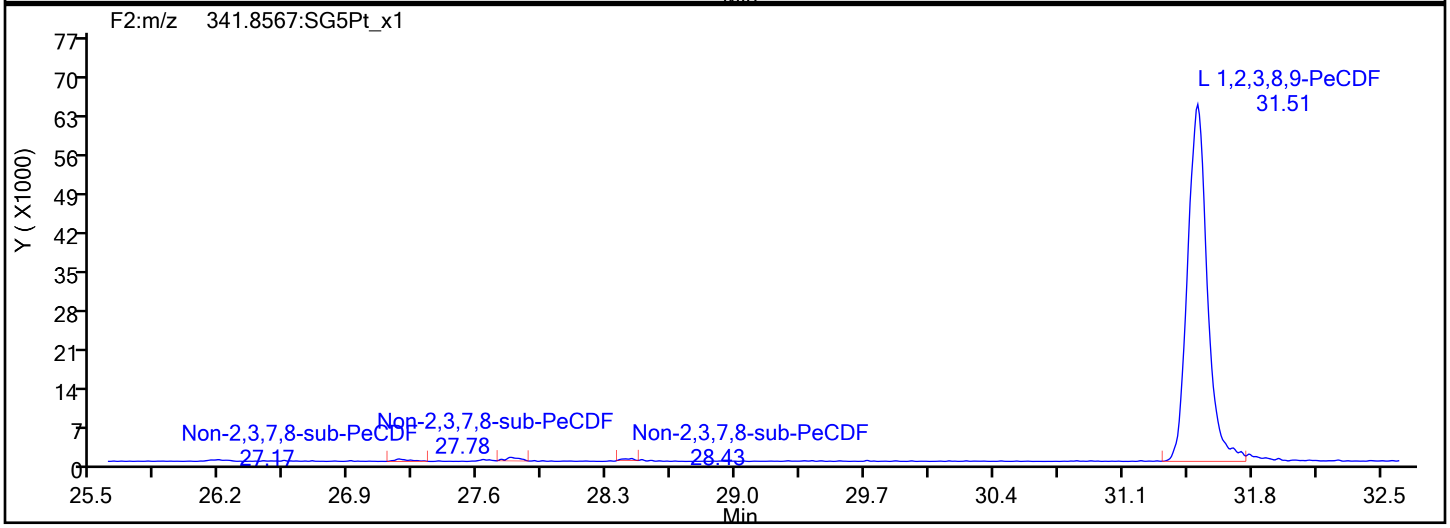

PeCDF Interference Mass

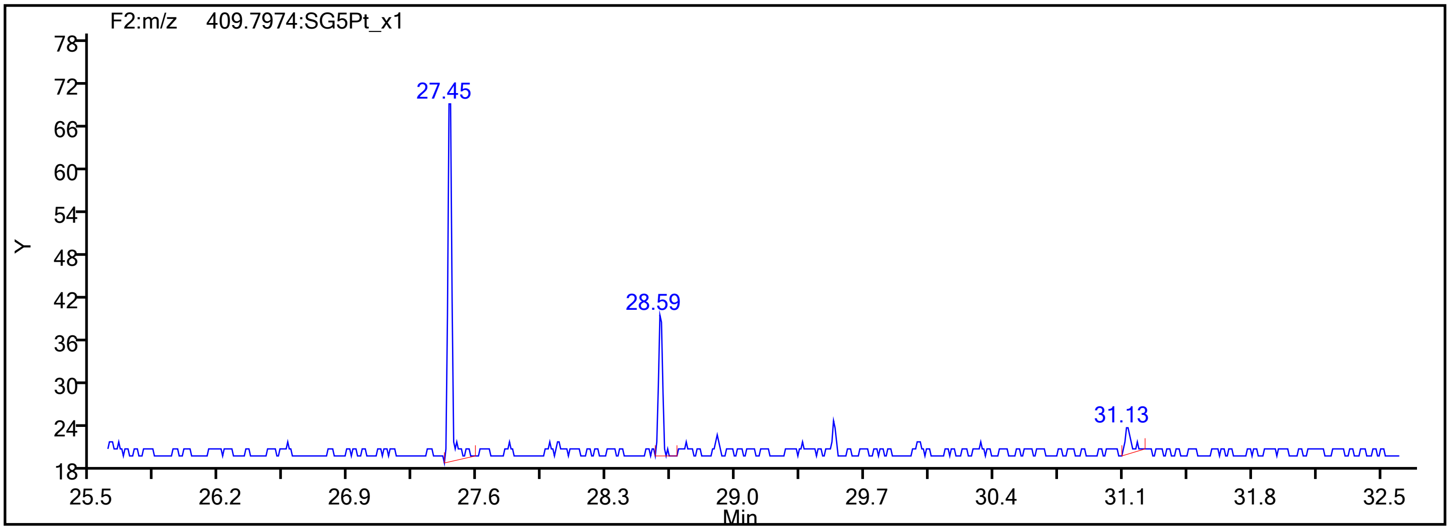

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d

Injection Date: 27-Jul-2020 17:40:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

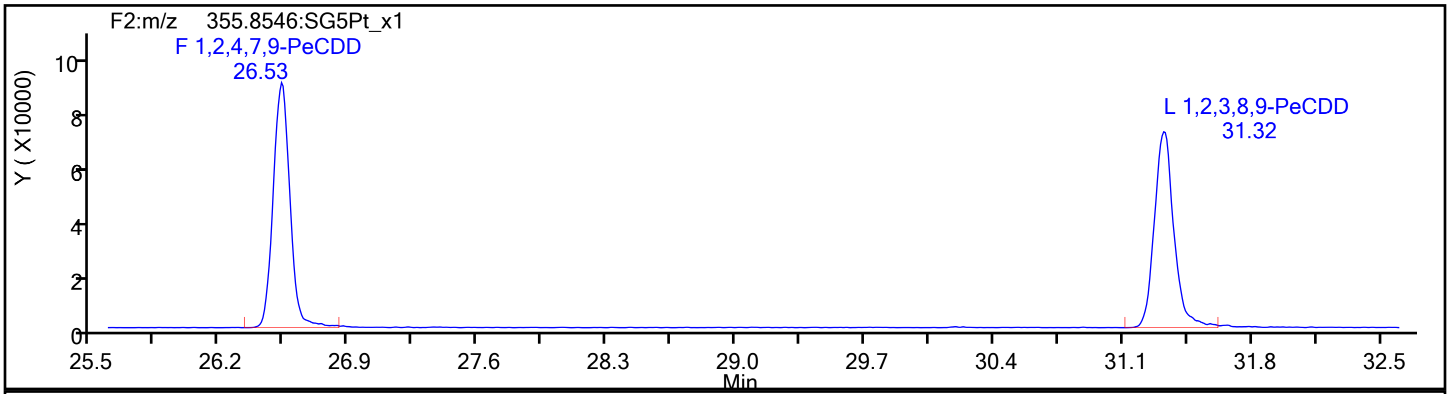

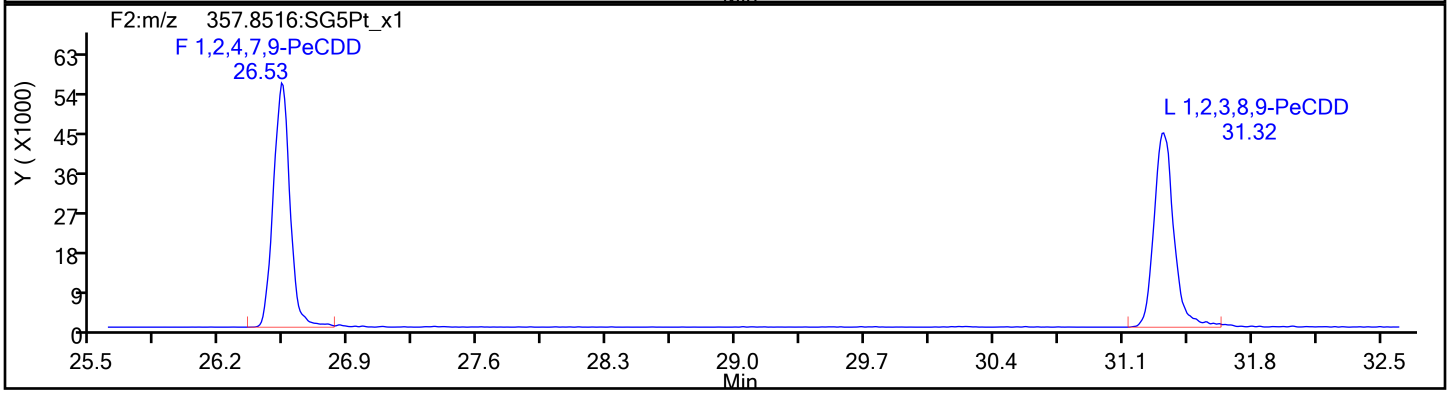

PeCDD Standards

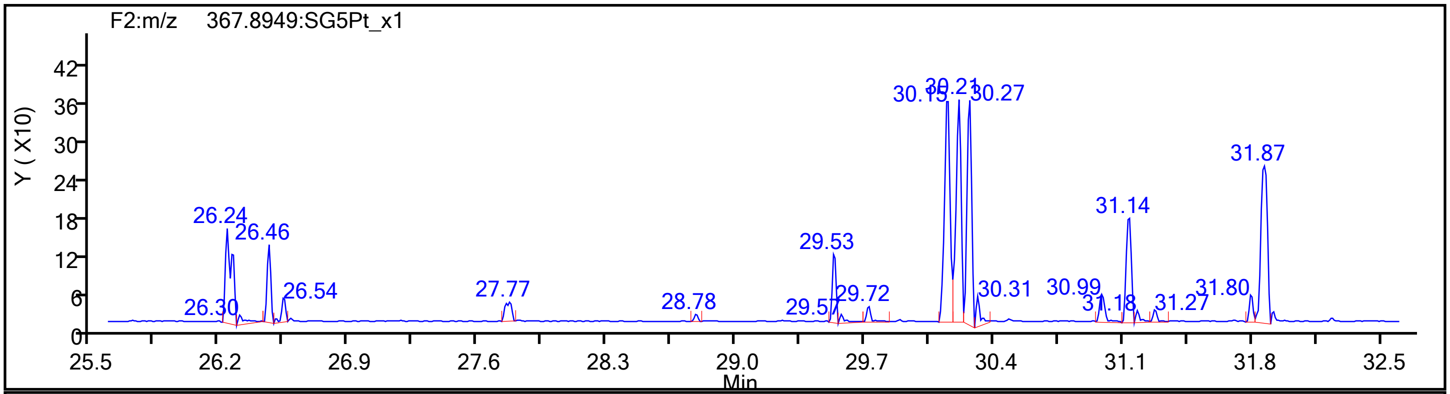

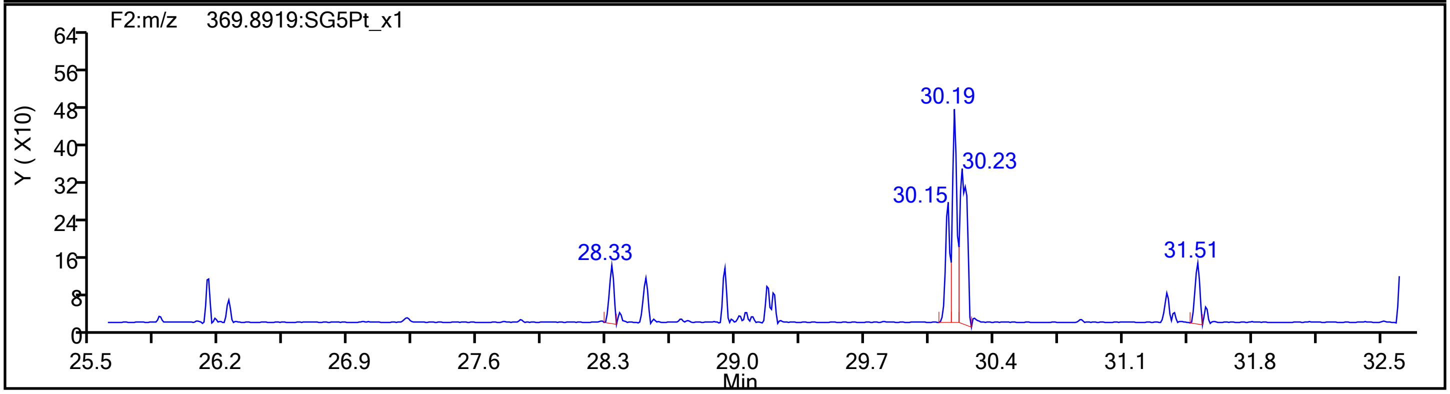

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

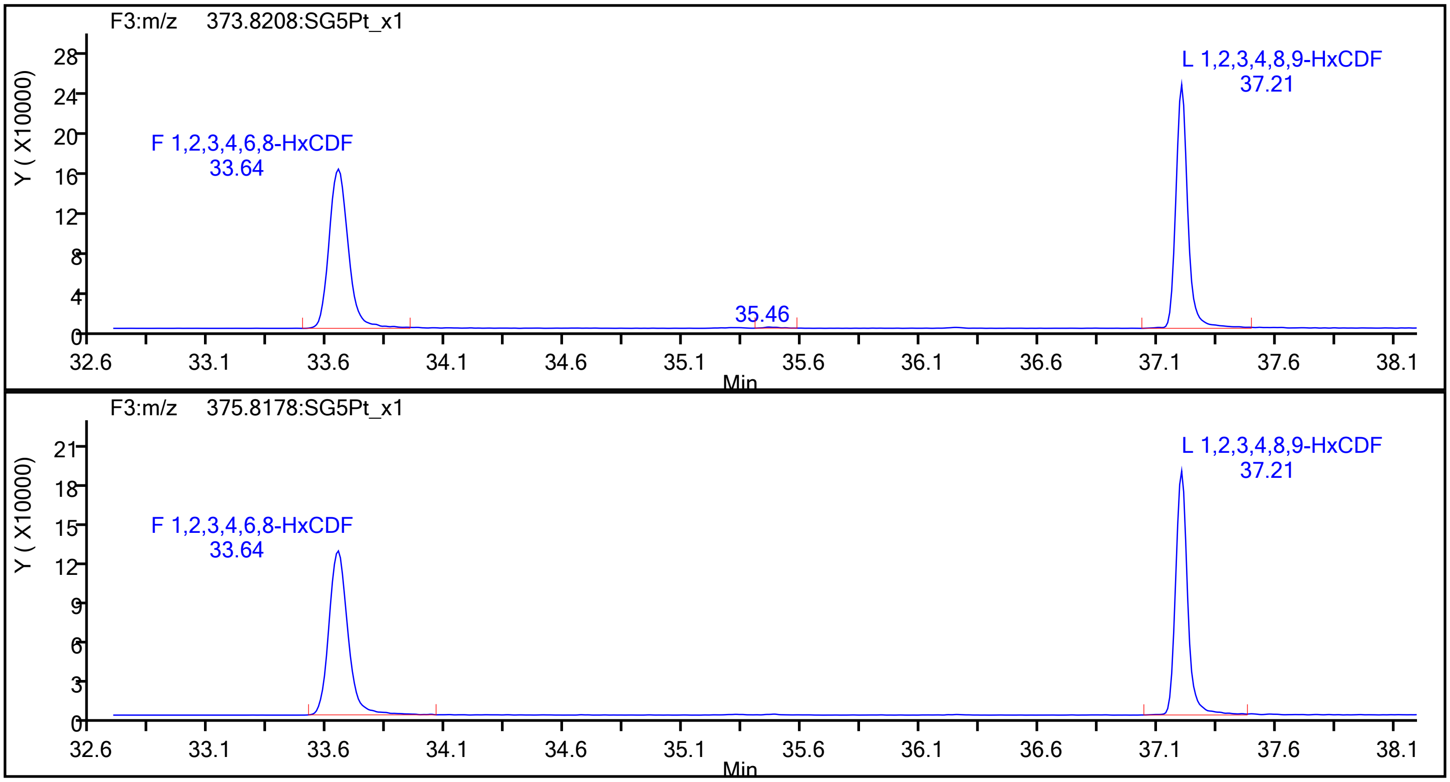

HxCDF Standards

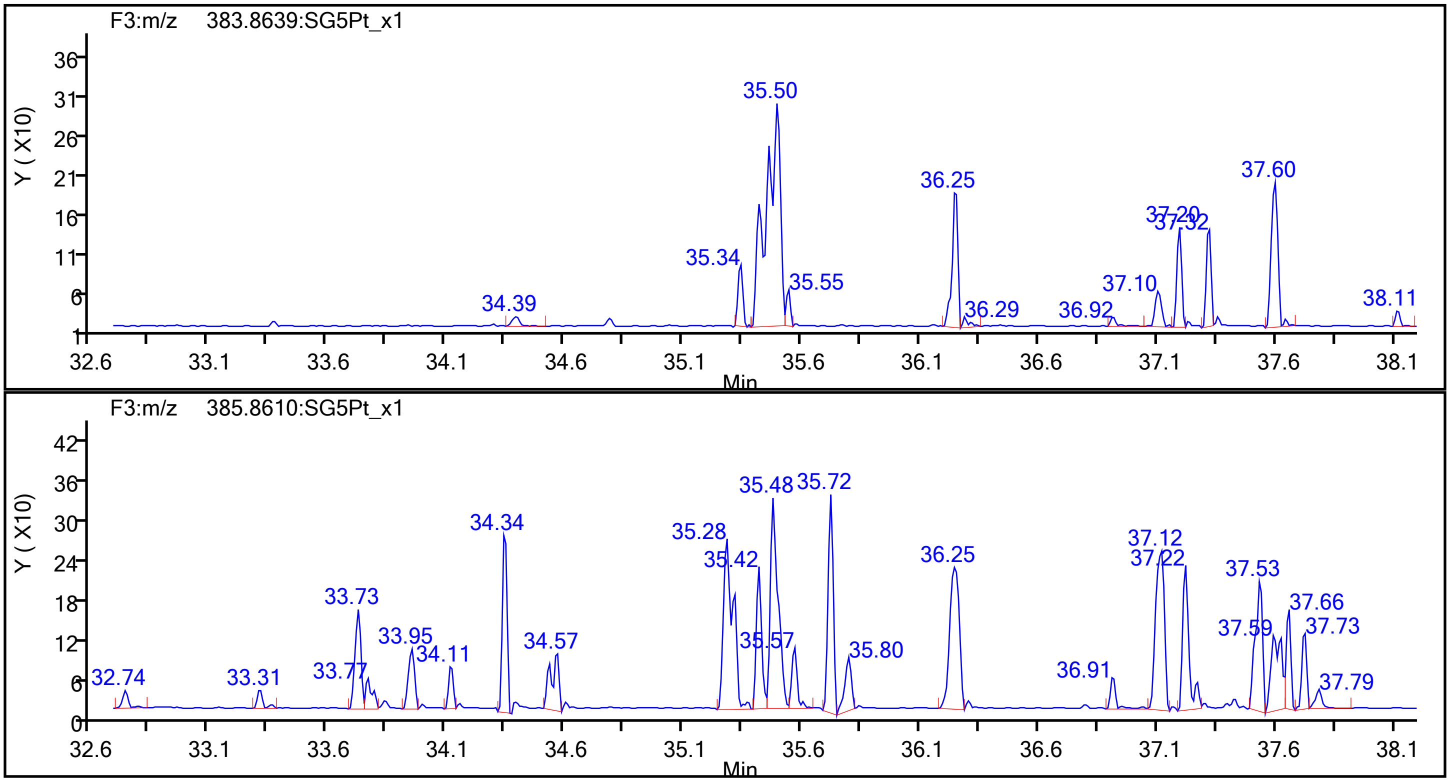

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

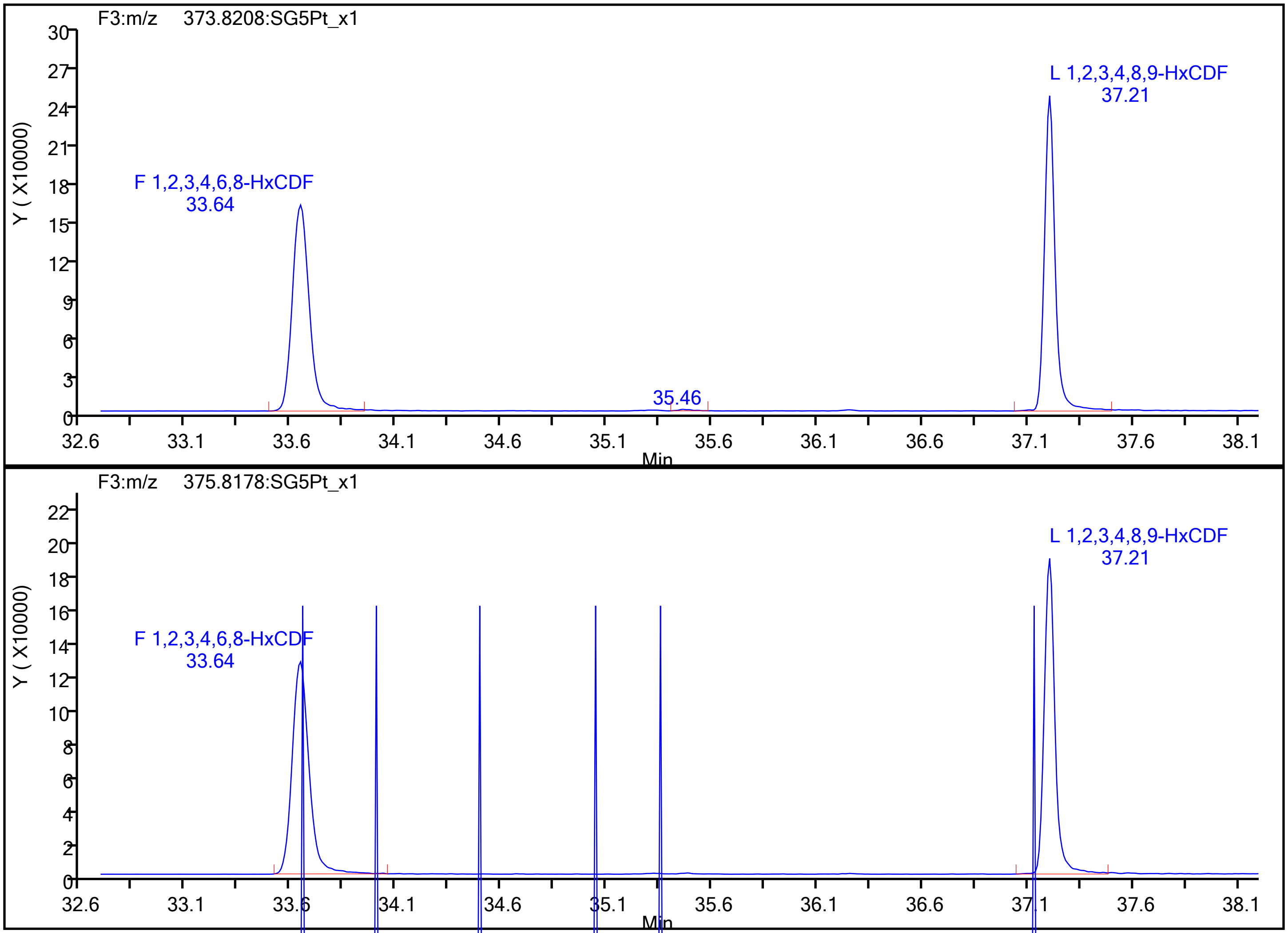

HxCDF Interference Mass

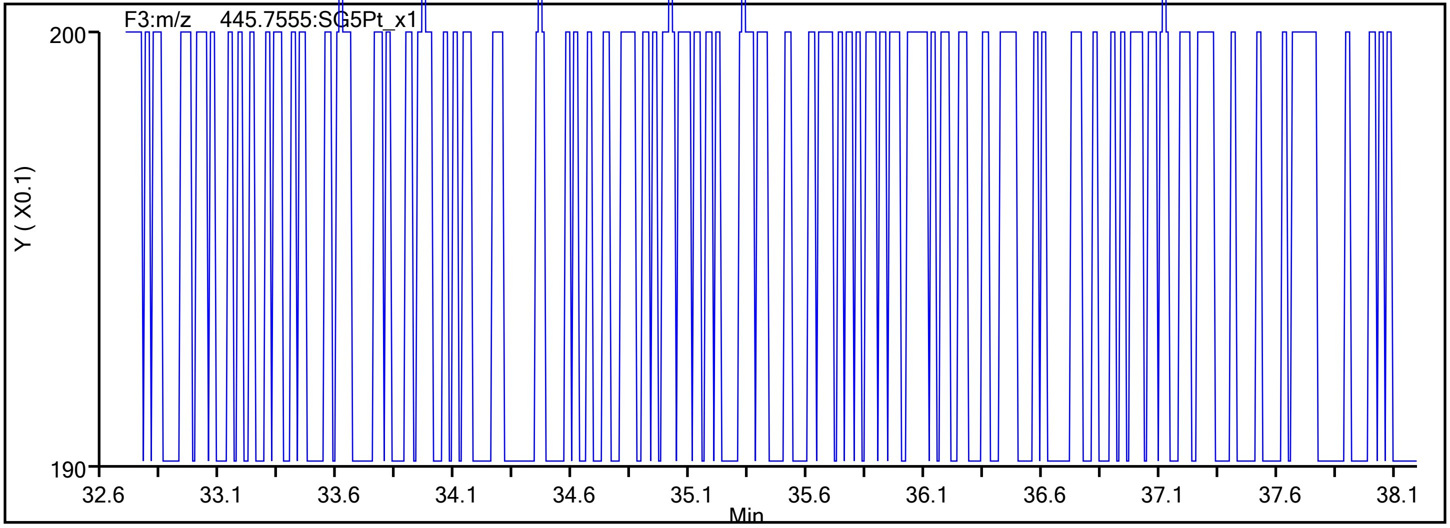

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d

Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

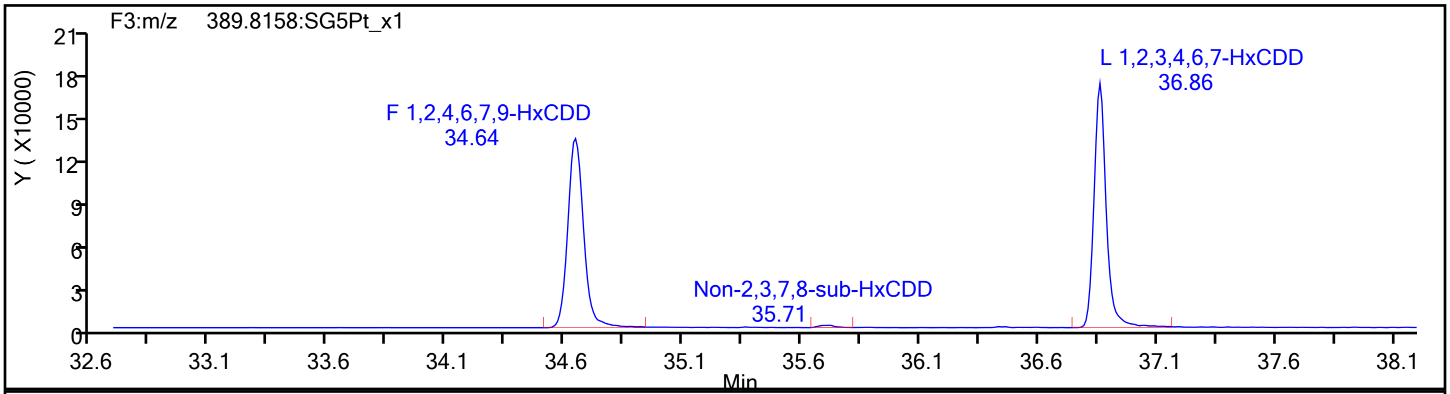

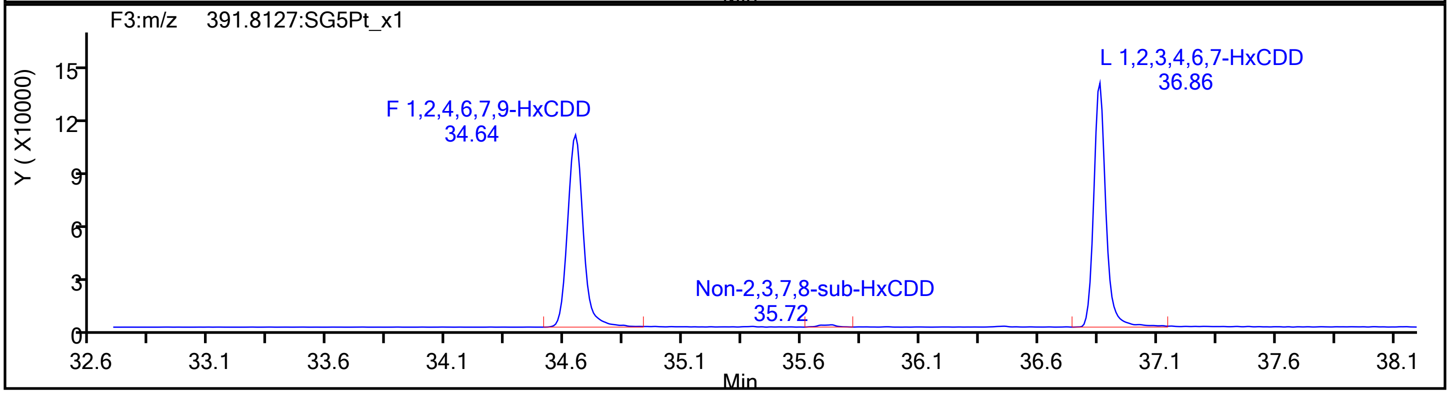

HxCDD Standards

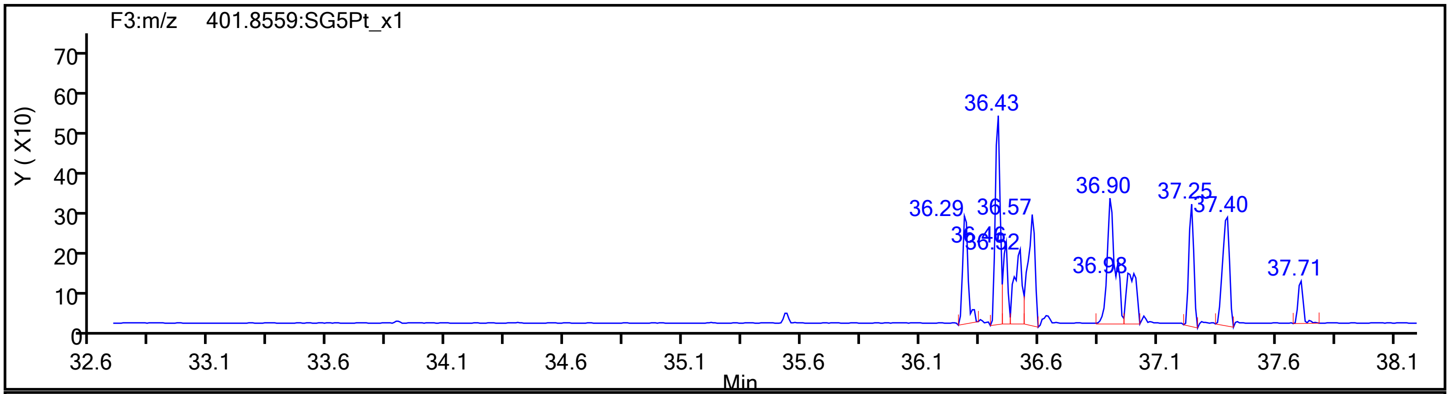

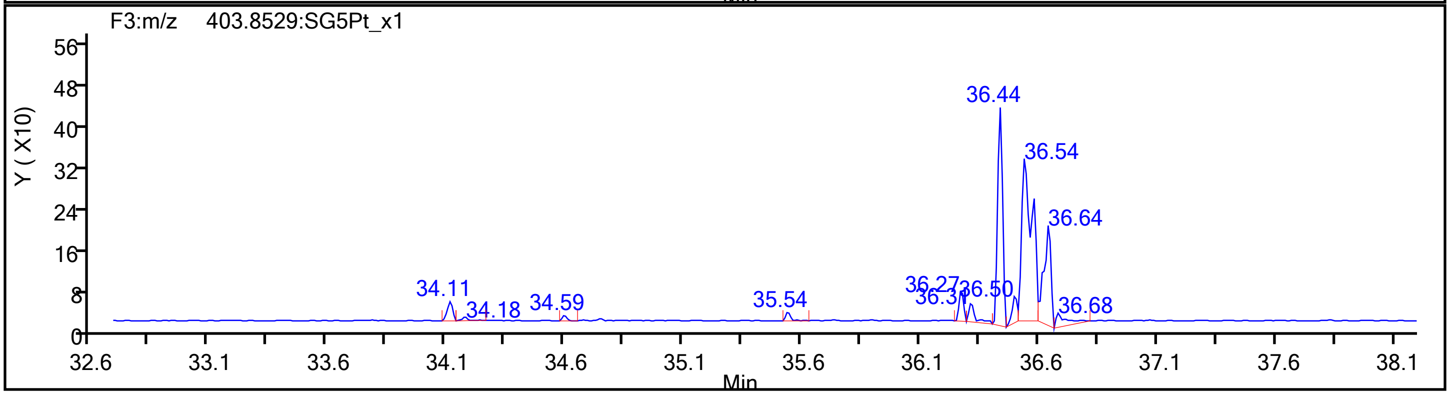

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d
Injection Date: 27-Jul-2020 17:40:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796 Sample Line#: 2
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

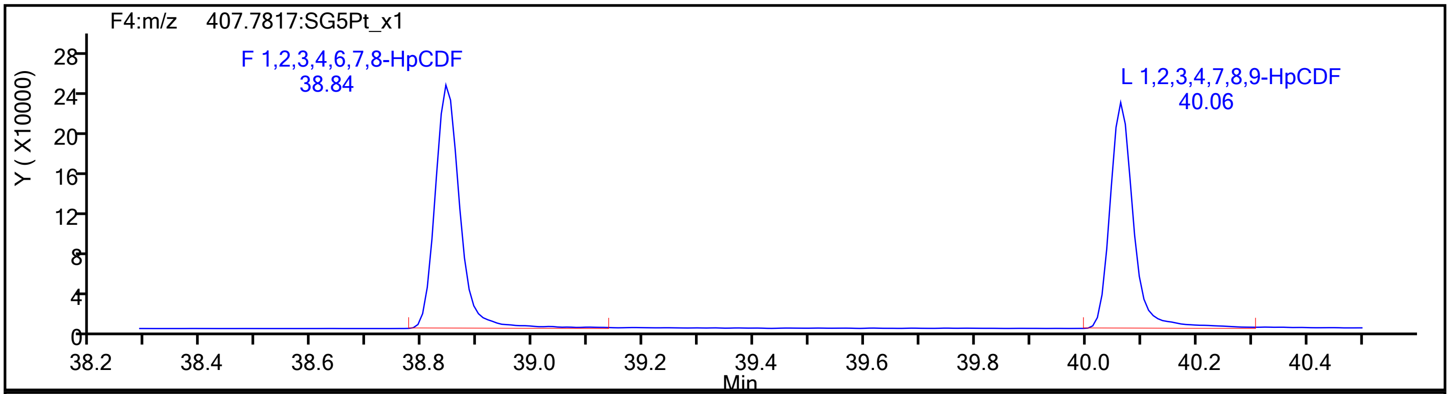

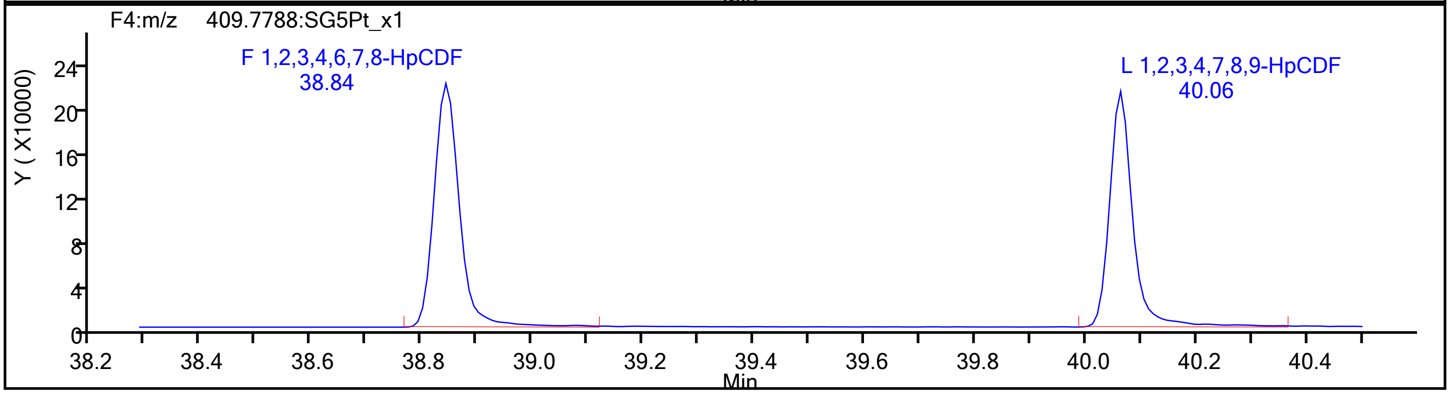

HpCDF Standards

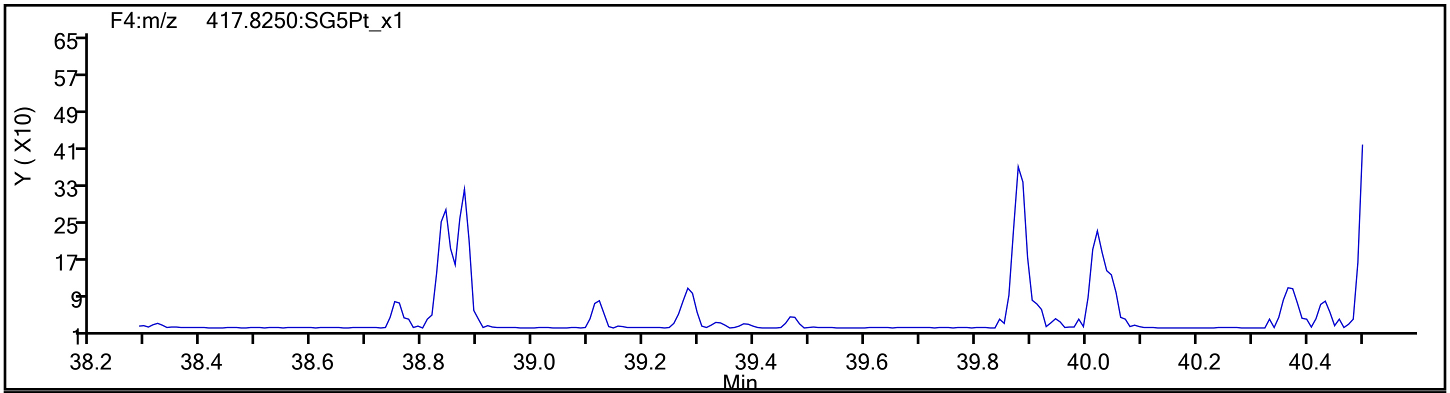

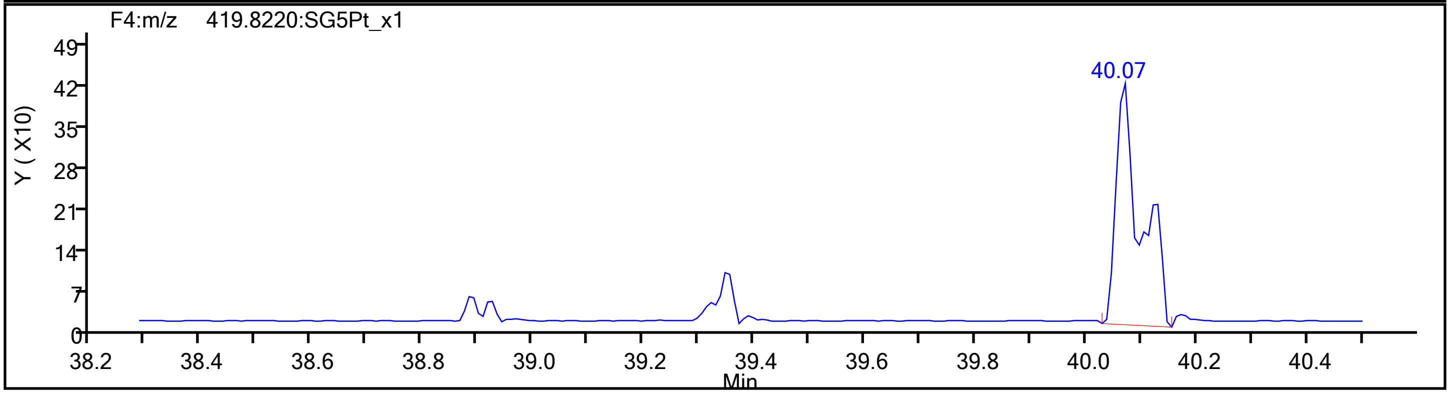

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

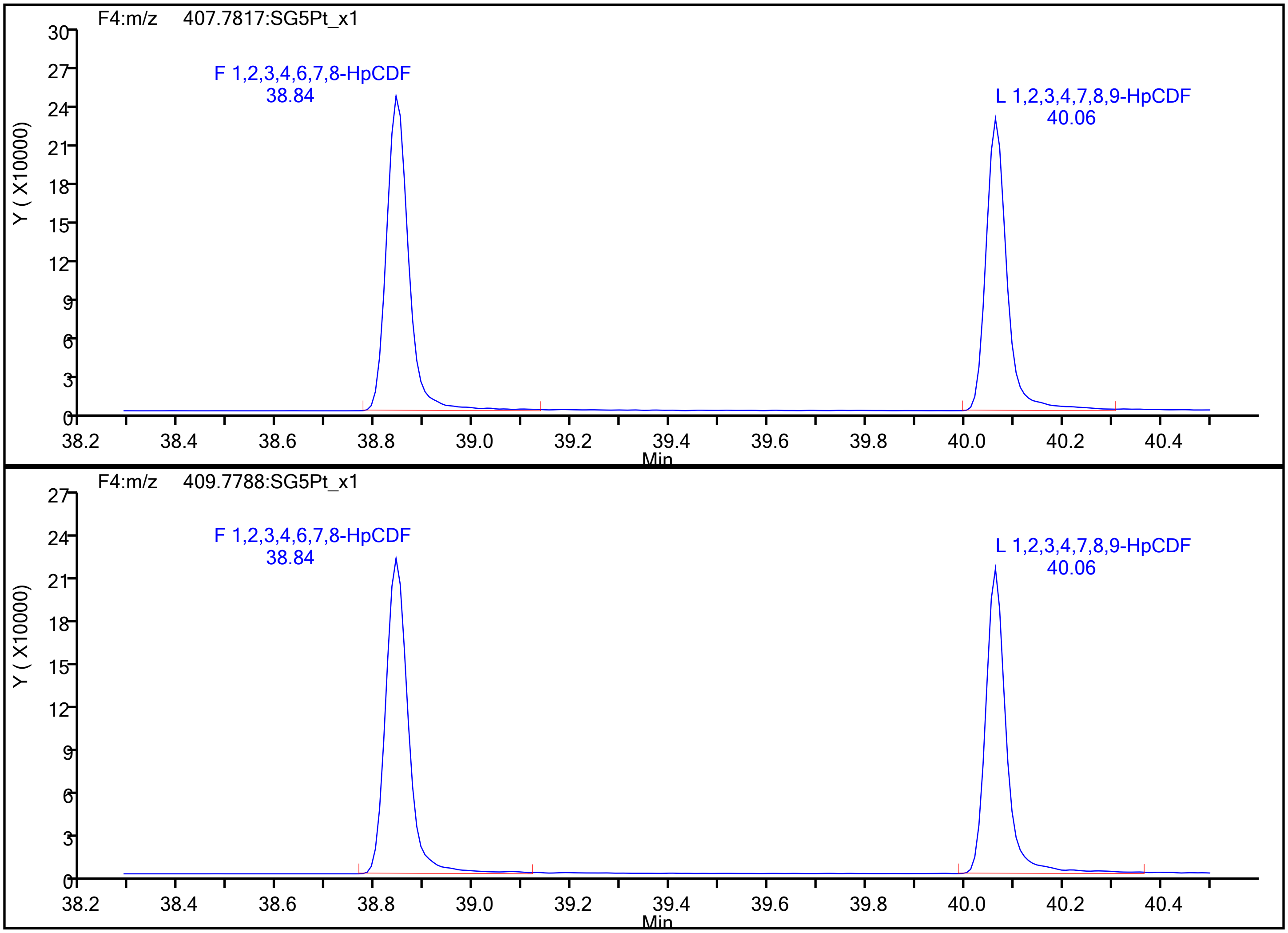

HpCDF Interference Mass

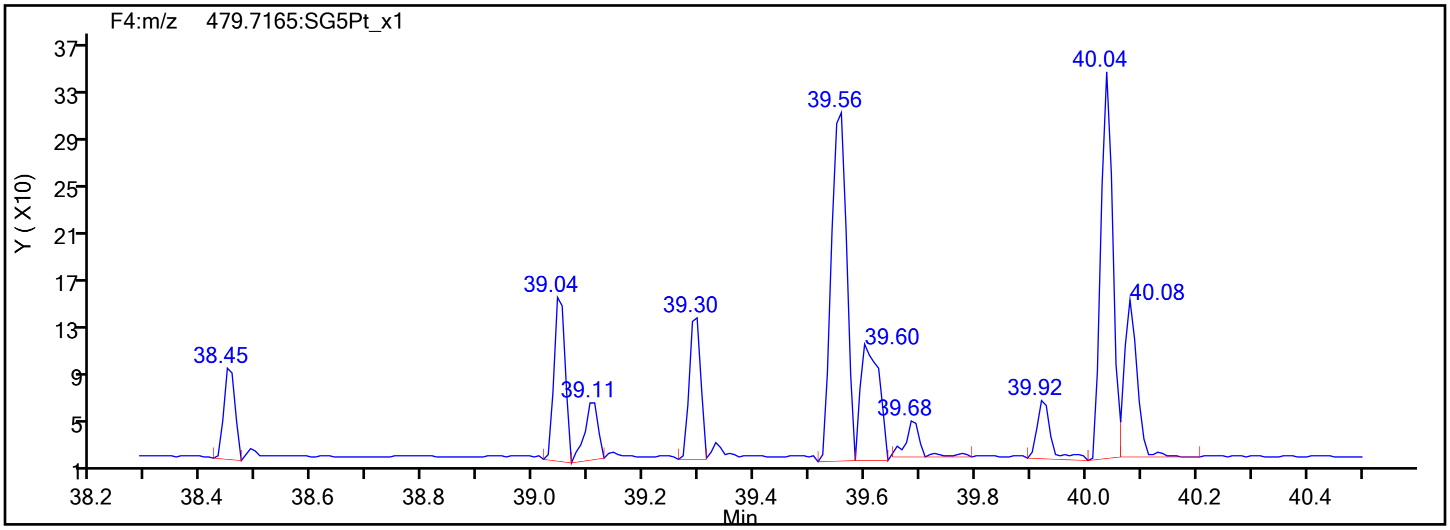

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d
Injection Date: 27-Jul-2020 17:40:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

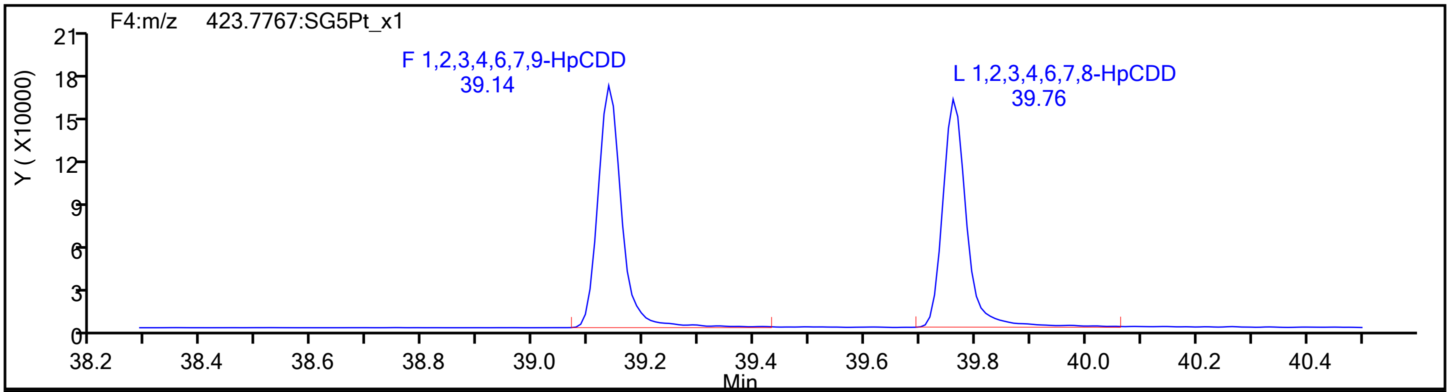

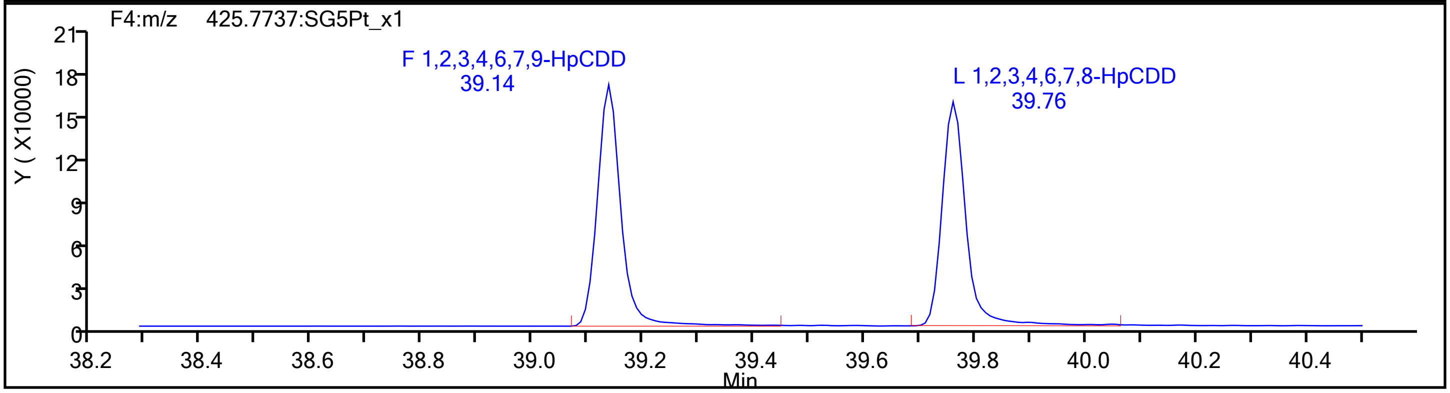

HpCDD Standards

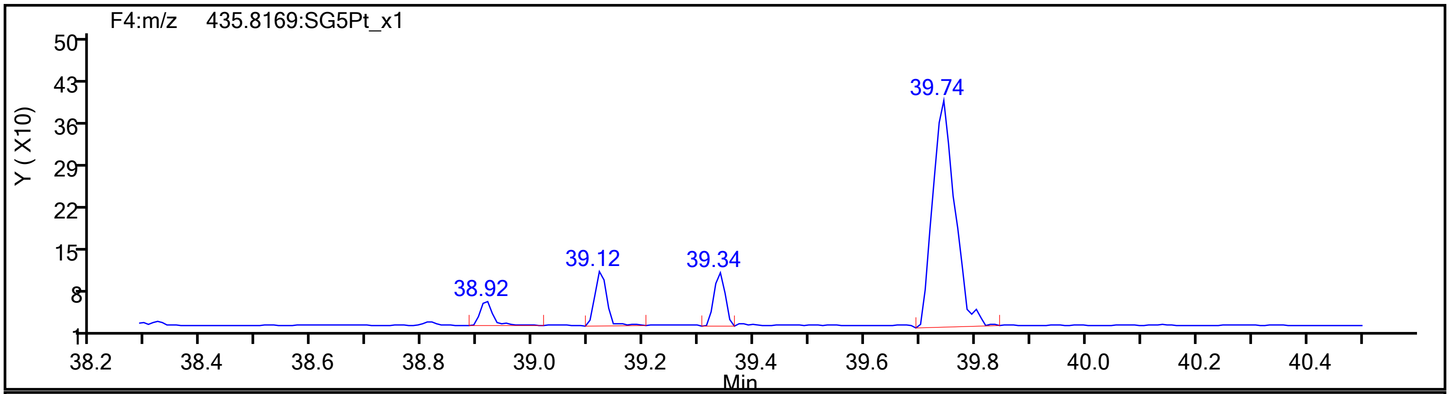

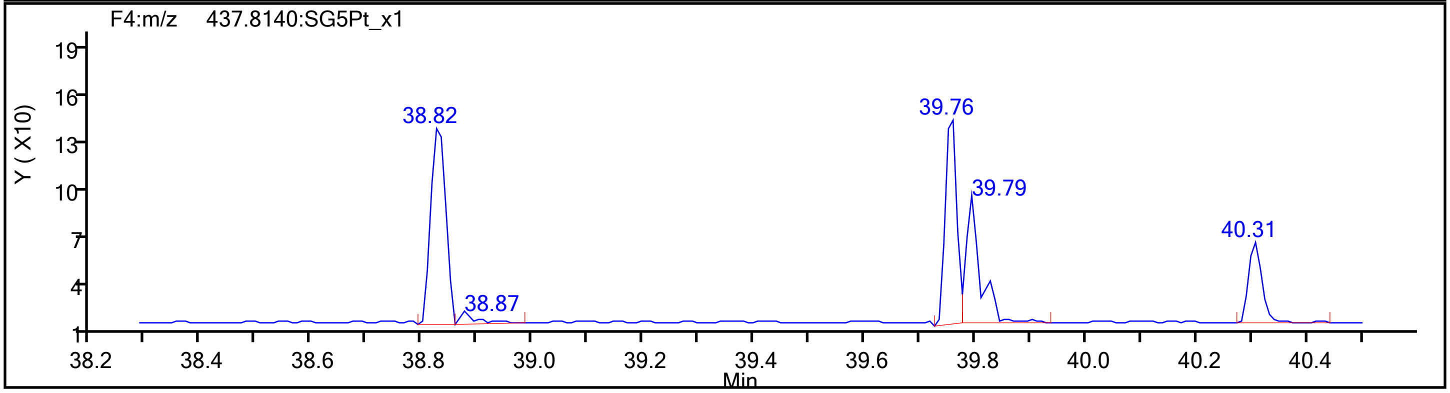

Report Date: 28-Jul-2020 08:46:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

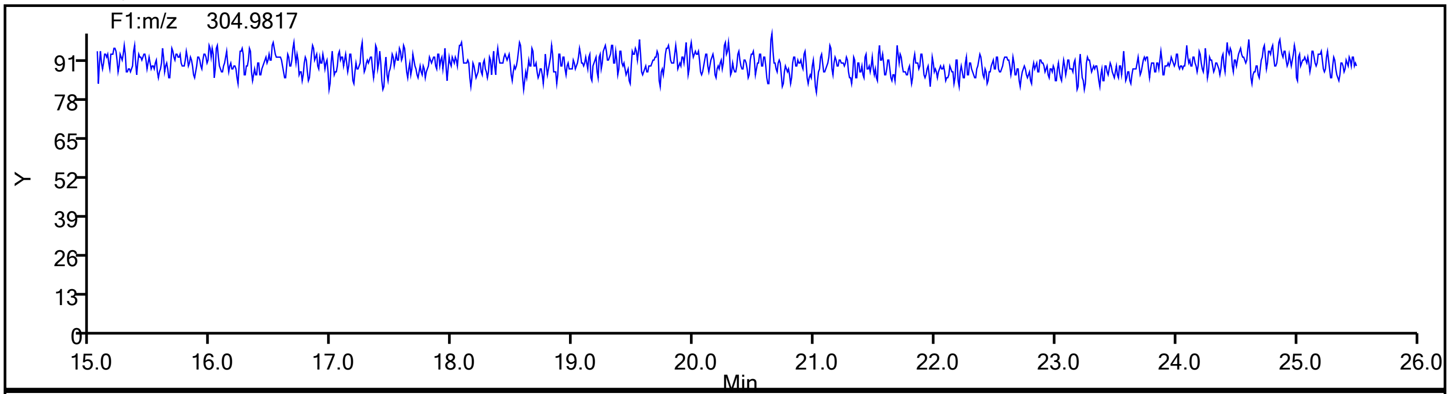

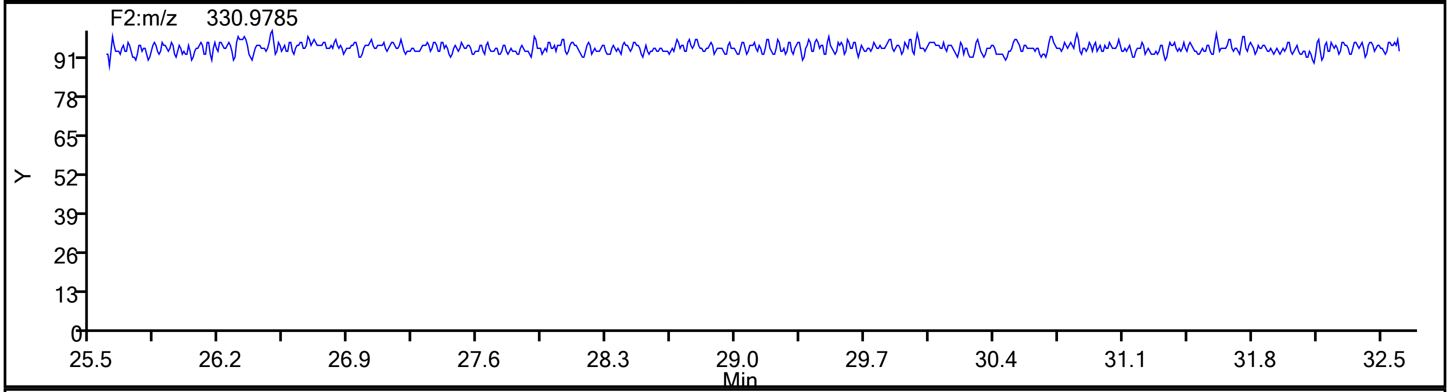

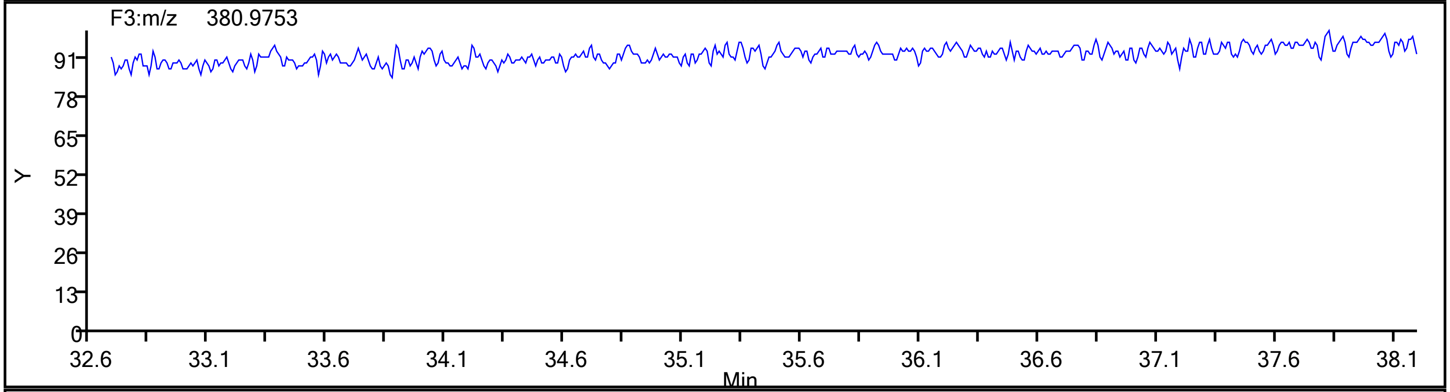

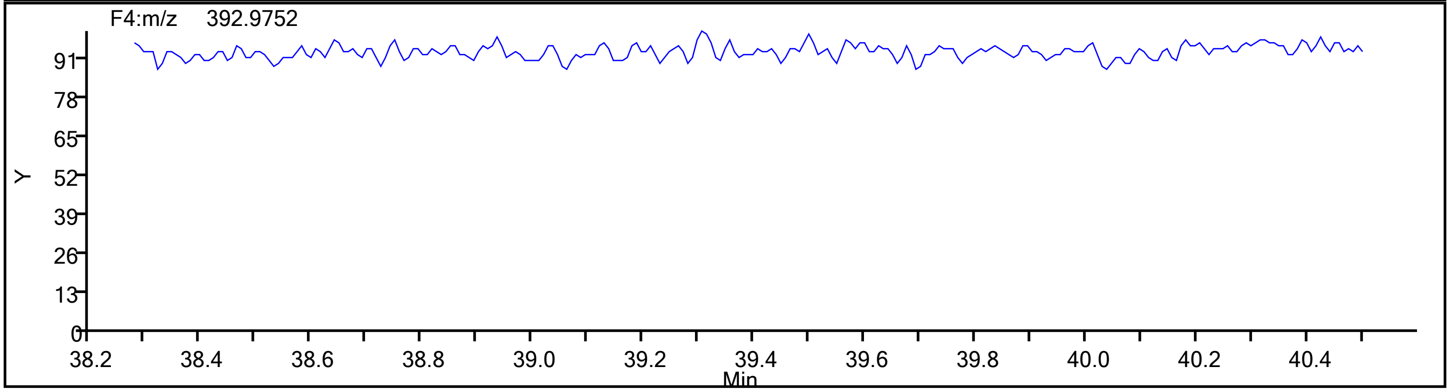

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_3.d		
Injection Date:	27-Jul-2020 17:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

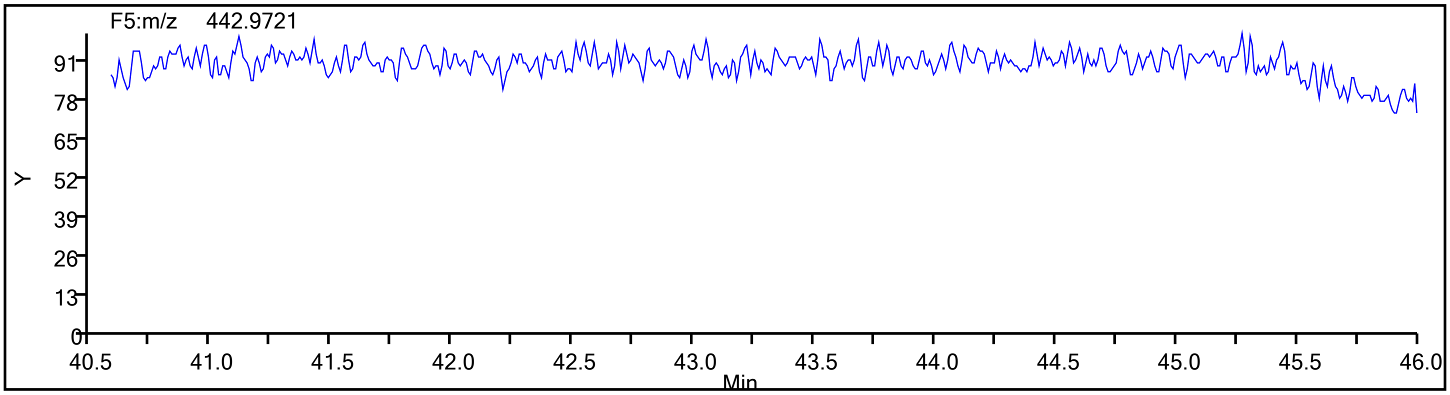

Report Date: 29-Jul-2020 10:35:11 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 28-Jul-2020 02:48:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 10:35:11 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:26:25

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.813	1547287	0.82	1.4977					0.00	
2,3,7,8-TCDF	20.864	3747196	0.80	1.1312	85.6	85.6	0.2570	0.2570		
A Non-2,3,7,8-sub-TCDF	20.169	37195	0.80	1.1312	0.8500	0.8500	0.2570	0.8500		
S Total TCDF					86.5	86.5	0.2570	0.2570		
D 13C-2,3,7,8-TCDD	22.238	890503	0.82	1.0367					0.00	
2,3,7,8-TCDD	22.264	1107354	0.78	1.1849	42.0	42.0	0.2089	0.2089		
A Non-2,3,7,8-sub-TCDD	21.044						0.2089	0.2089		
S Total TCDD					42.0	42.0	0.2089	0.2089		
A F1 PeCDFs	24.932						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.540	19411	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.887						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.385						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.717	9807	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	38.802	1524996	1.05	1.5957						
1,2,3,4,7,8,9-HpCDF	40.024	1363408	1.07	1.1693						
A Non-2,3,7,8-sub-HpCDF	39.413						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.729	1012779	1.04	1.1150						
A Non-2,3,7,8-sub-HpCDD	39.555						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.356	2222041	0.80							
1,3,6,8-TCDD	18.056	1132367	0.79							
2,3,4,7-TCDF	20.864	3747196	0.80							
1,2,3,7-TCDD	22.049	929234	0.82							
1,2,3,9-TCDF	22.470	1581629	0.82							
1,2,3,9-TCDD	22.573	1131320	0.81							
1,2,8,9-TCDF	23.981	1697441	0.82							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	24.032	479059								
1,3,4,6,8-PeCDF	24.384	1307622	1.57							
1,2,4,7,9-PeCDD	26.499	921992	1.57							
1,2,3,8,9-PeCDD	31.275	855530	1.57							
1,2,3,8,9-PeCDF	31.460	1259827	1.63							
1,2,3,4,6,8-HxCDF	33.603	1645367	1.29							
1,2,4,6,7,9-HxCDD	34.606	1096930	1.26							
1,2,3,4,6,7-HxCDD	36.829	1110005	1.24							
1,2,3,4,8,9-HxCDF	37.166	1619107	1.25							
1,2,3,4,6,7,9-HpCDD	39.097	1055399	1.05							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 28-Jul-2020 02:48:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 10:35:11 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:26:25

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.813	20.813	0	1.000	698777	103556	405	1012	256		
317.9389	20.813	20.813	0	1.000	848510	124130	155	387	801	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.864	20.864	0	1.002	1662538	217853	314	785	694		
305.8987	20.864	20.864	0	1.002	2084658	275660	348	870	792	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	24.393	20.169	253	1.172	16553	2953	314	785	9		
305.8987	24.376	20.169	252	1.171	20642	3241	348	870	9	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.238	22.238	0	1.000	401830	55356	167	417	331		
333.9338	22.255	22.238	1	1.000	488673	64525	39	97	1654	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.264	22.264	0	1.001	485416	67053	165	412	406		
321.8936	22.264	22.264	0	1.001	621938	85853	132	330	650	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.044						165	412			
321.8936	21.044						132	330			
A F1 PeCDFs											
339.8597	24.932						18	45			
341.8567	24.932						35	87			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.145	28.540	-143	1.000	2402	454	87	217	5		
341.8567	26.153	28.540	-143	1.000	2070	480	65	162	7	1.16(1.32-1.78)	
339.8597	27.164	28.540	-82	1.000	3378	673	87	217	8		
341.8567	27.156	28.540	-83	1.000	3279	530	65	162	8	1.03(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	27.737	28.540	-48	1.000	6020	938	87	217	11		
341.8567	27.737	28.540	-48	1.000	5212	750	65	162	12	1.16(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.887						119	297			
357.8516	28.887						63	157			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.385						285	712			
375.8178	35.385						171	427			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	35.667	35.717	-3	1.000	5429	1541	193	482	8		
391.8127	35.675	35.717	-3	1.000	7107	1395	137	342	10	0.76(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.802	38.802	0	1.000	779366	252419	678	1695	372		
409.7788	38.802	38.802	0	1.000	745630	240323	625	1562	385	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.024	40.024	0	1.000	705128	235352	678	1695	347		
409.7788	40.024	40.024	0	1.000	658280	223968	625	1562	358	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.413						678	1695			
409.7788	39.413						625	1562			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.729	39.729	0	1.000	517290	171774	544	1360	316		
425.7737	39.721	39.729	-1	1.000	495489	167237	535	1337	313	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						544	1360			
425.7737	39.555						535	1337			
1,3,6,8-TCDF											
303.9016	16.356	16.356	0		986697	196130	314	785	625		
305.8987	16.356	16.356	0		1235344	242256	348	870	696	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.056	18.056	0		501275	89315	165	412	541		
321.8936	18.056	18.056	0		631092	111987	132	330	848	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.864	20.864	0		1662538	217853	314	785	694		
305.8987	20.864	20.864	0		2084658	275660	348	870	792	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	22.049	22.049	0		419155	58463	165	412	354		
321.8936	22.049	22.049	0		510079	73195	132	330	555	0.82(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.470	22.470	0		713380	96178	314	785	306		
305.8987	22.470	22.470	0		868249	118465	348	870	340	0.82(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.573	22.573	0		504649	65300	165	412	396		
321.8936	22.581	22.573	1		626671	82253	132	330	623	0.81(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.981	23.981	0		763510	152861	314	785	487		
305.8987	23.981	23.981	0		933931	186880	348	870	537	0.82(0.65-0.89)	

Report Date: 29-Jul-2020 10:35:11 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	24.032	24.032	0		479059	95107	165	412	576		
1,3,4,6,8-PeCDF											
339.8597	24.384	24.384	0		799461	160173	18	45	8899		
341.8567	24.376	24.384	-1		508161	103579	35	87	2959	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.499	26.499	0		562974	89074	119	297	749		
357.8516	26.499	26.499	0		359018	58667	63	157	931	1.57(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.275	31.275	0		522809	68340	119	297	574		
357.8516	31.275	31.275	0		332721	44406	63	157	705	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.460	31.460	0		780694	103190	87	217	1186		
341.8567	31.460	31.460	0		479133	65634	65	162	1010	1.63(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.603	33.603	0		928046	166948	285	712	586		
375.8178	33.603	33.603	0		717321	129854	171	427	759	1.29(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.606	34.606	0		612205	133151	193	482	690		
391.8127	34.606	34.606	0		484725	104922	137	342	766	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.829	36.829	0		613815	166436	193	482	862		
391.8127	36.821	36.829	-1		496190	135726	137	342	991	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.166	37.166	0		900238	261719	285	712	918		
375.8178	37.166	37.166	0		718869	207805	171	427	1215	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.097	39.097	0		541426	176893	544	1360	325		
425.7737	39.097	39.097	0		513973	169880	535	1337	318	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	28-Jul-2020 02:48:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	13

Non-2,3,7,8-sub-TCDF, RT: 20.169

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	40.000	1547287	227686

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		40.000	1547287	227686

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.393	16553	2953	20642	3241	0.8500	0.80	
Signal Totals:							
	16553	2953	20642	3241			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	37195	6194				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.8500 = (37195 * 40.000) / (1547287 * 1.131)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Lims ID: WDM
Client ID:
Inject. Date: 28-Jul-2020 02:48:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 398798
Lims Sample ID: 13

Non-2,3,7,8-sub-PeCDF, RT: 28.540

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.145	2402	454	2070	480		1.16	R
27.164	3378	673	3279	530		1.03	R
27.737	6020	938	5212	750		1.16	R
Signal Totals:							
	11800	2065	10561	1760			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22361	3825				1.12	RQ
	19411	3396					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (22361 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (19411 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	28-Jul-2020 02:48:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398798	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDD, RT: 35.717

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934				
1,2,3,6,7,8-HxCDD	1.080				
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.667	5429	1541	7107	1395		0.76	R
Signal Totals:							
	5429	1541	7107	1395			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12536	2936				0.76	RQ
	9807	2783					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (12536 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (9807 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 29-Jul-2020 10:35:11
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

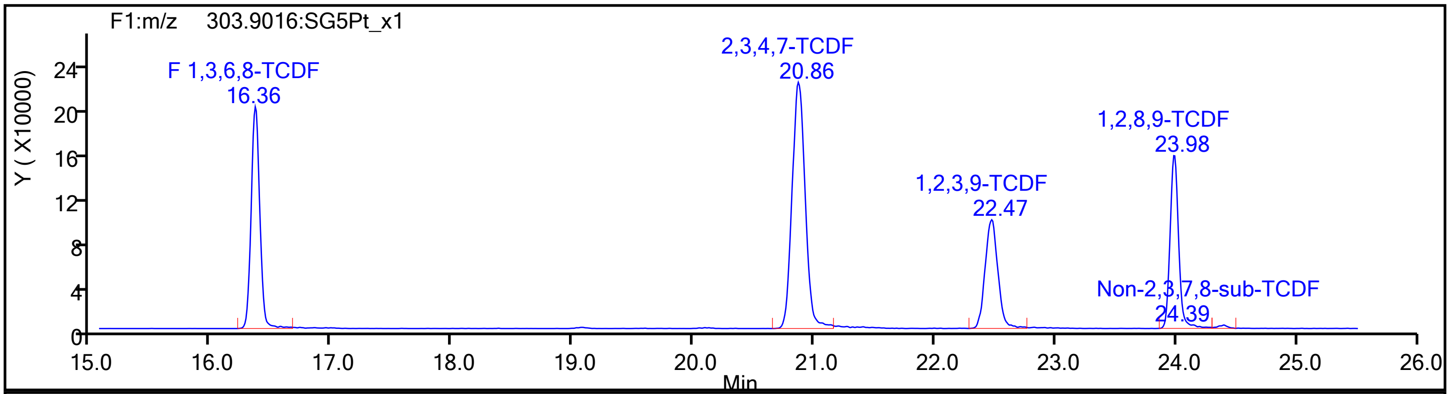

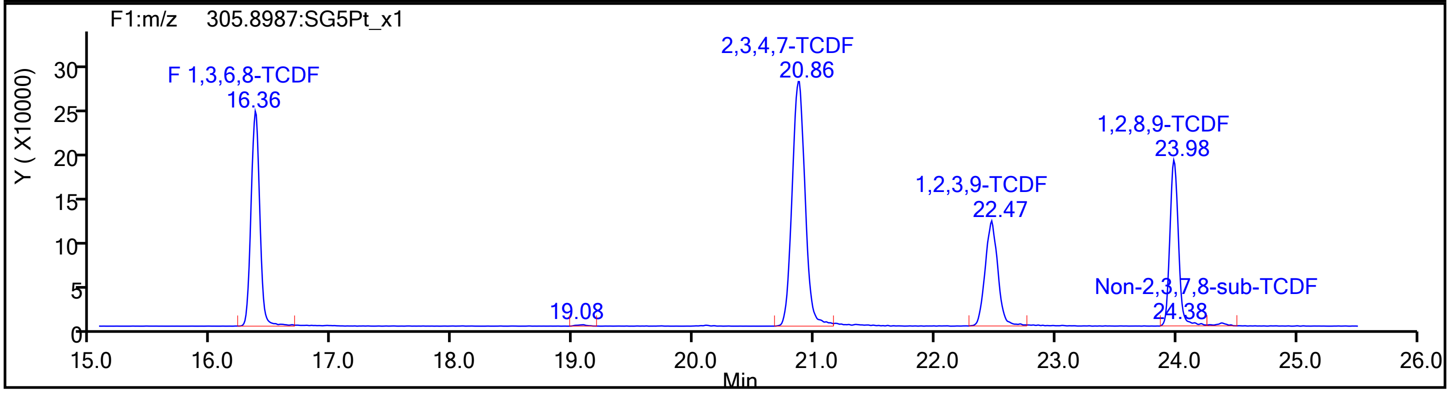

TCDF Standards

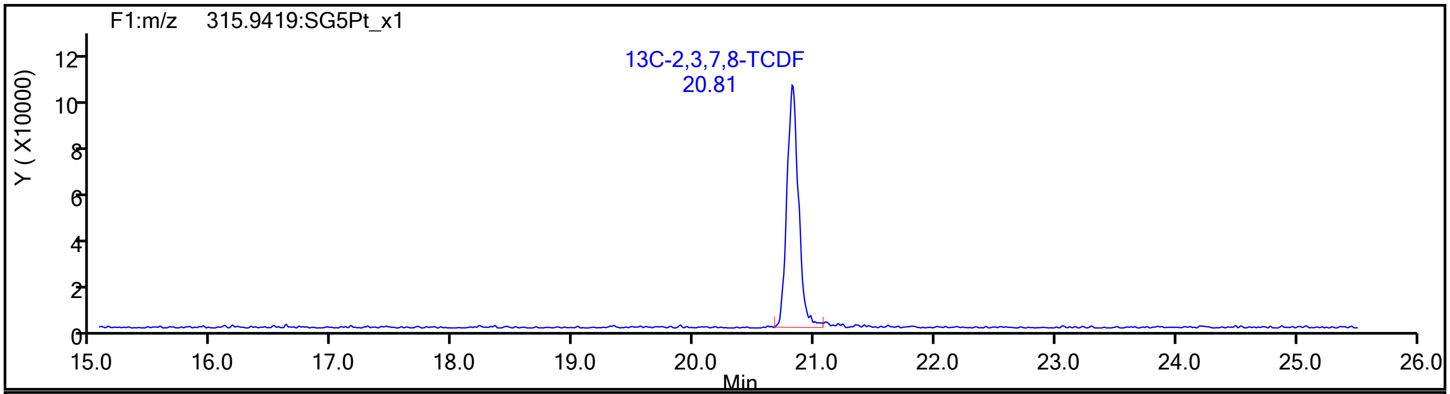

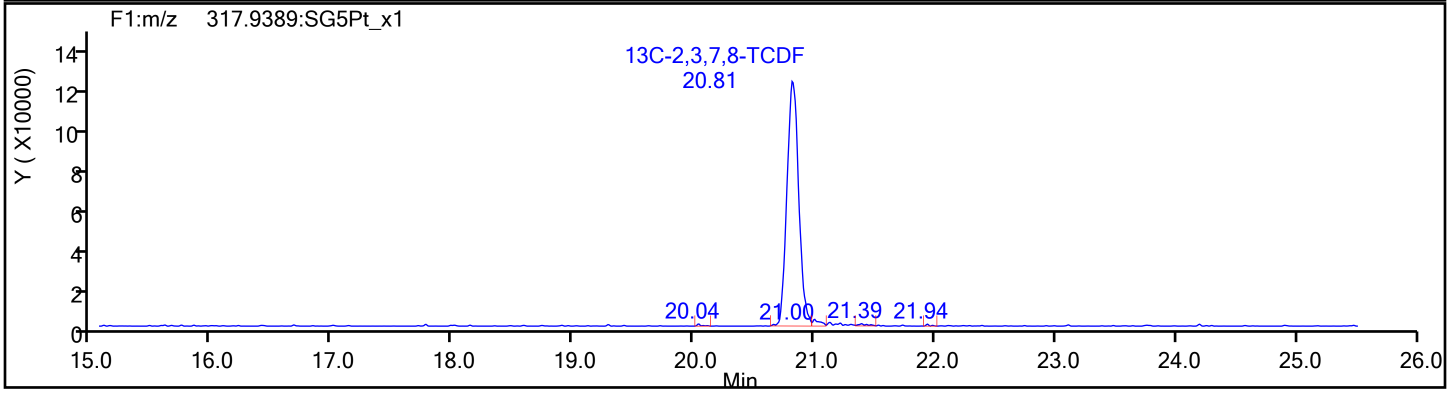

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d

Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

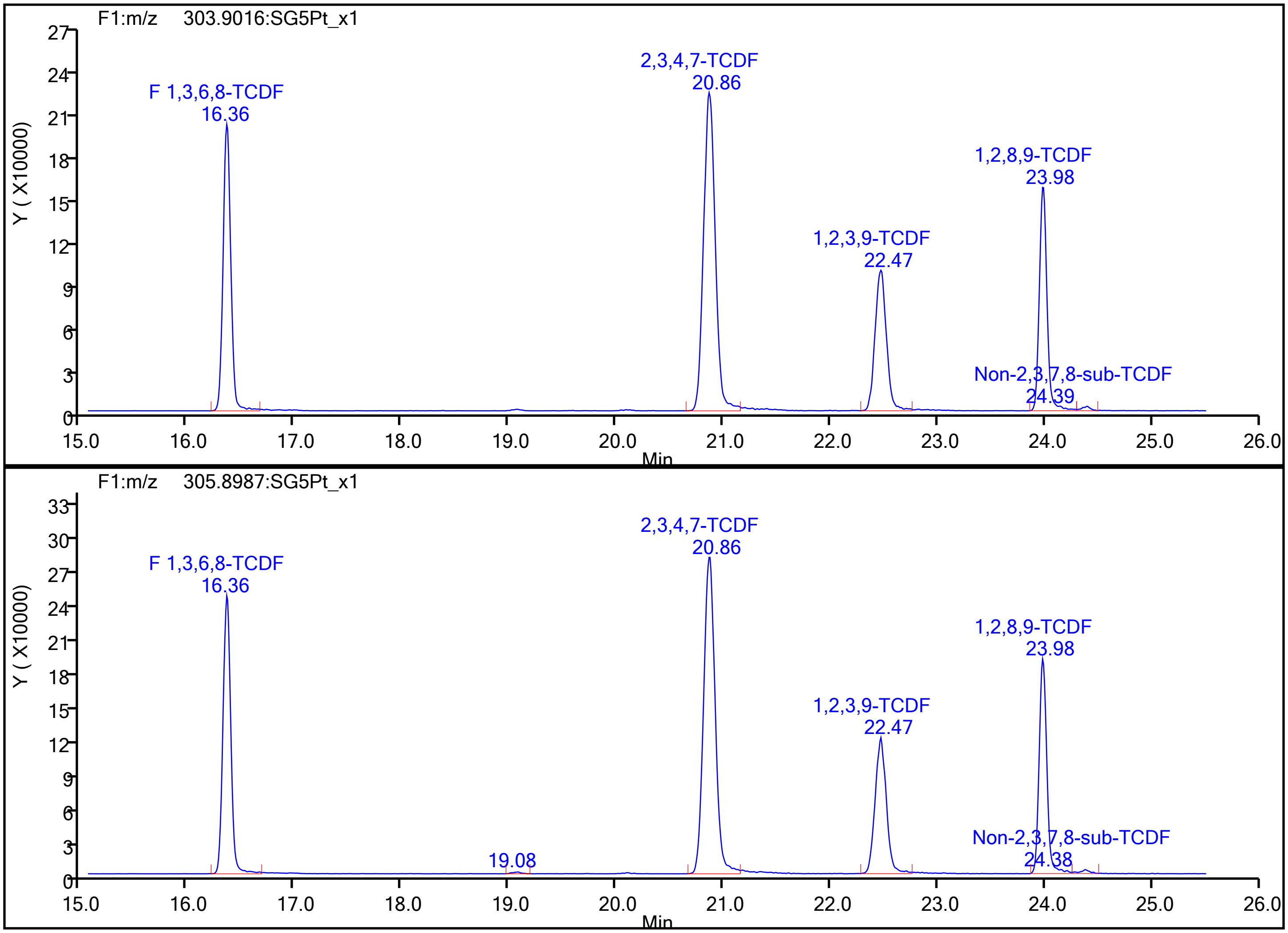

TCDF Interference Mass

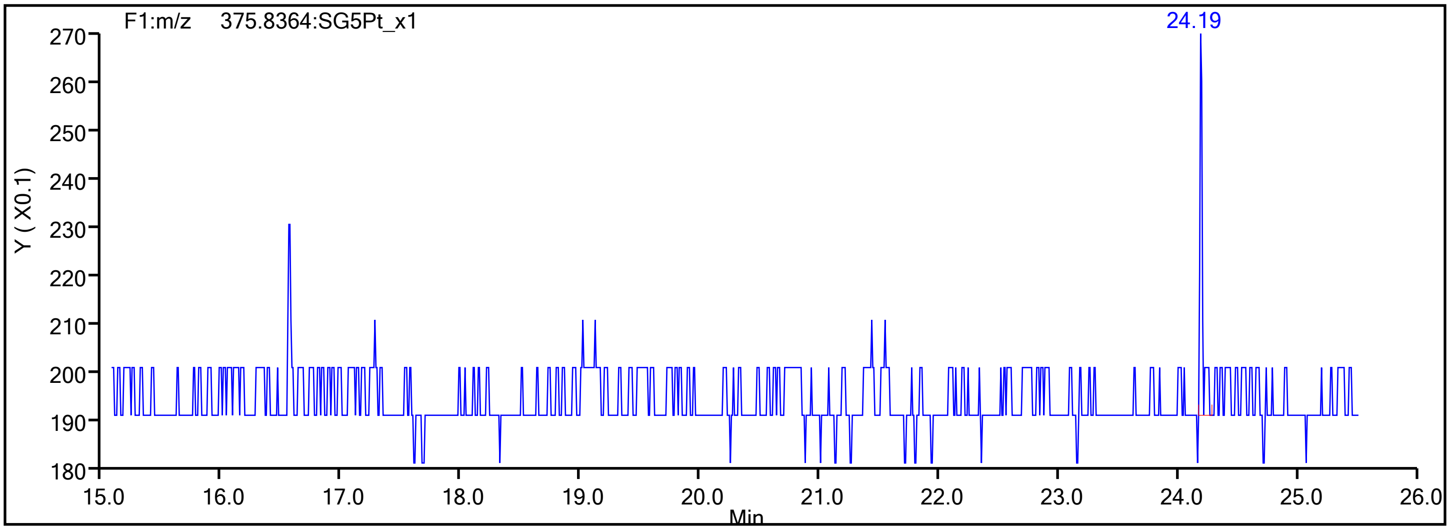

Report Date: 29-Jul-2020 10:35:11 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

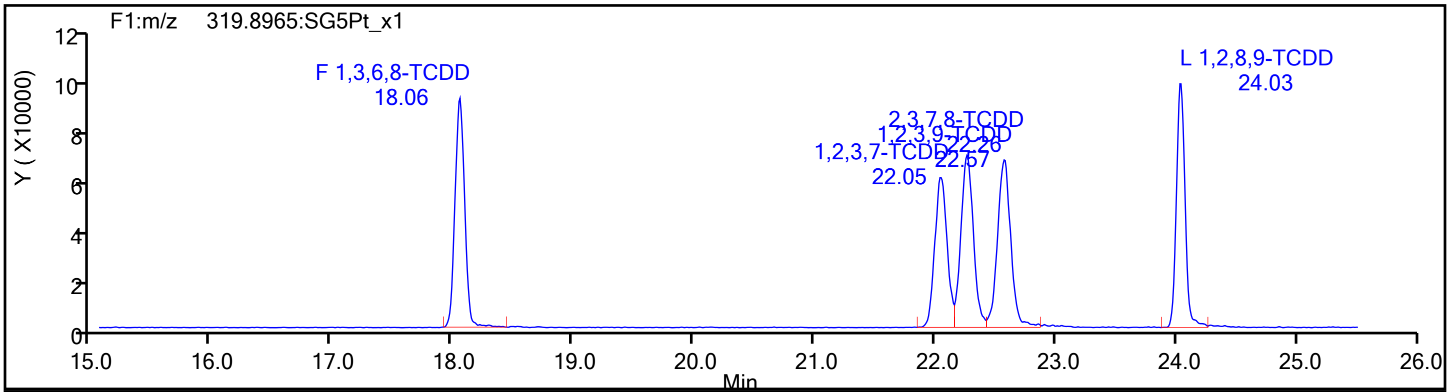

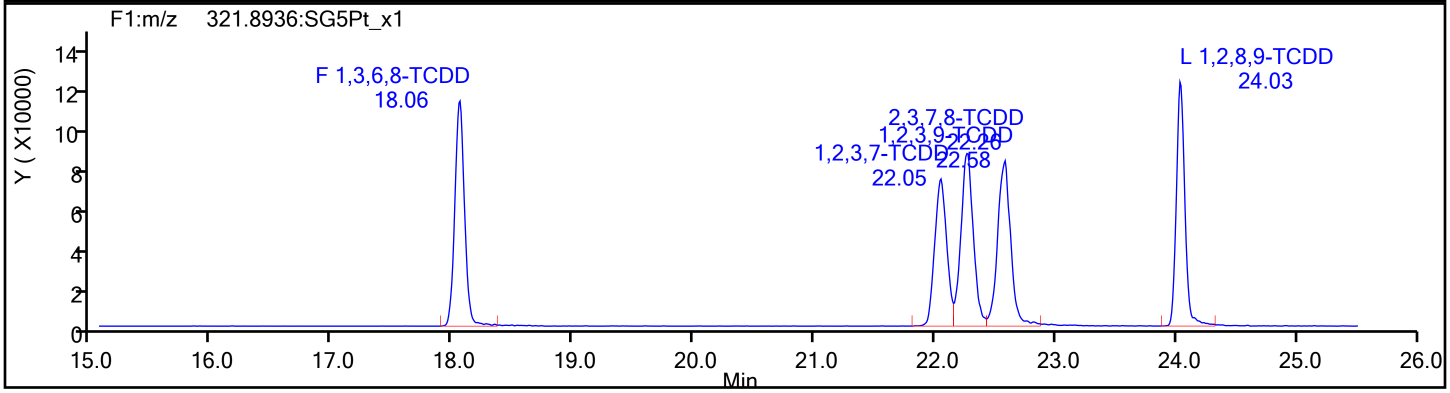

TCDD Standards

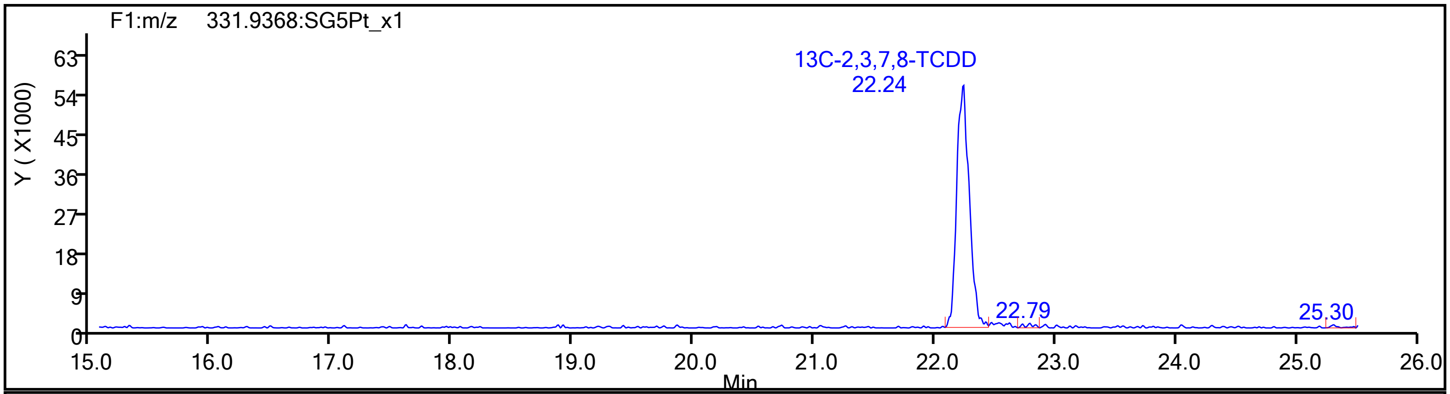

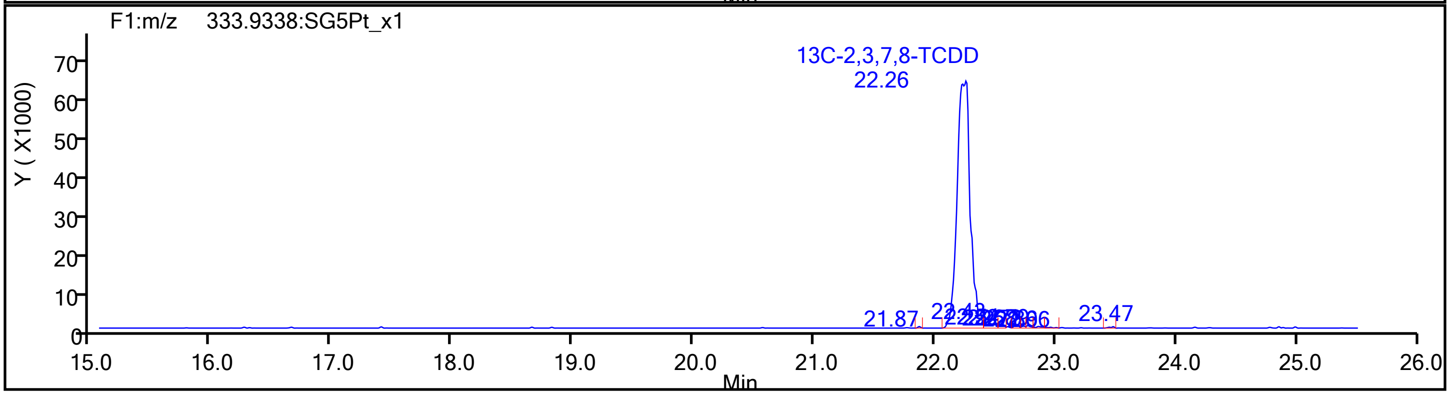

Report Date: 29-Jul-2020 10:35:11 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

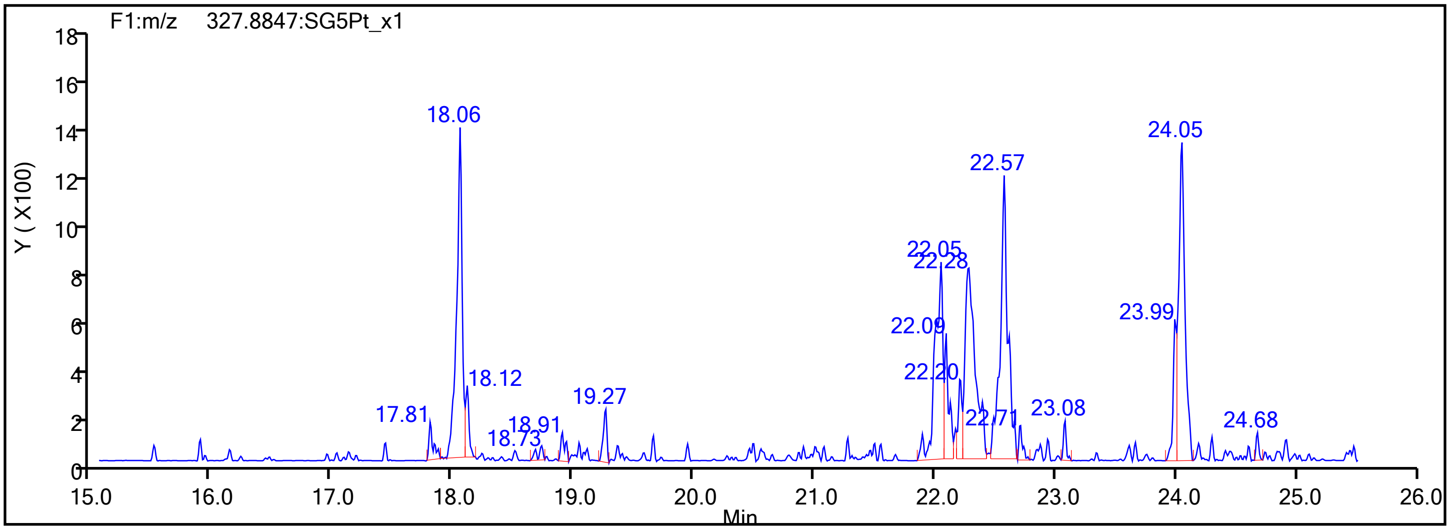

37Cl4-TCDD Standards

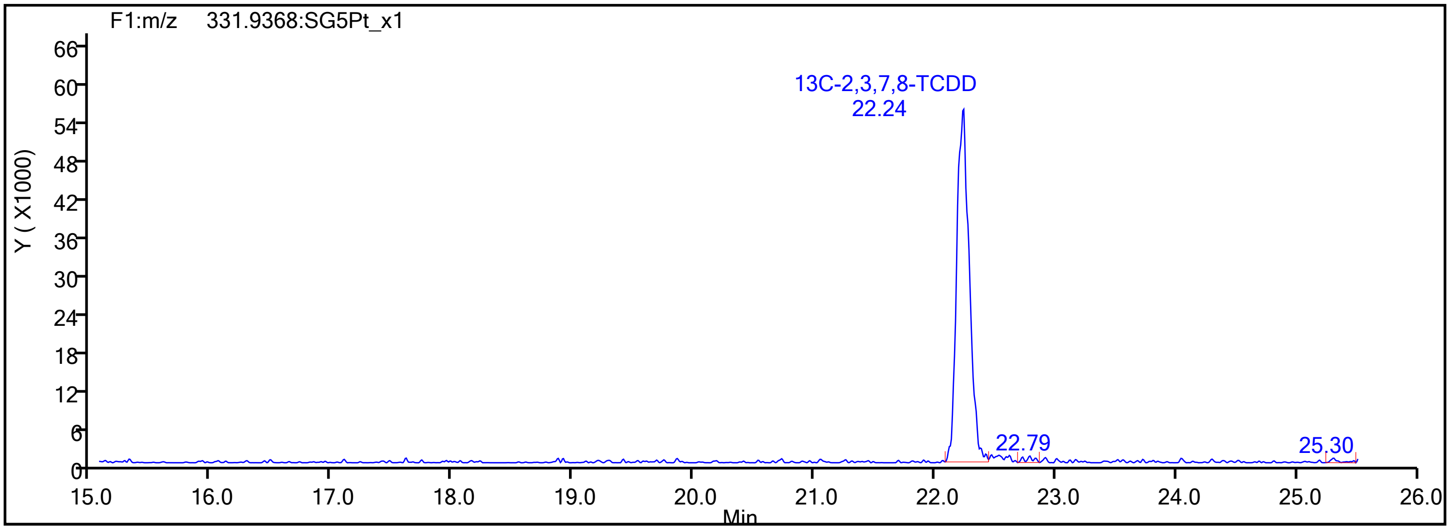

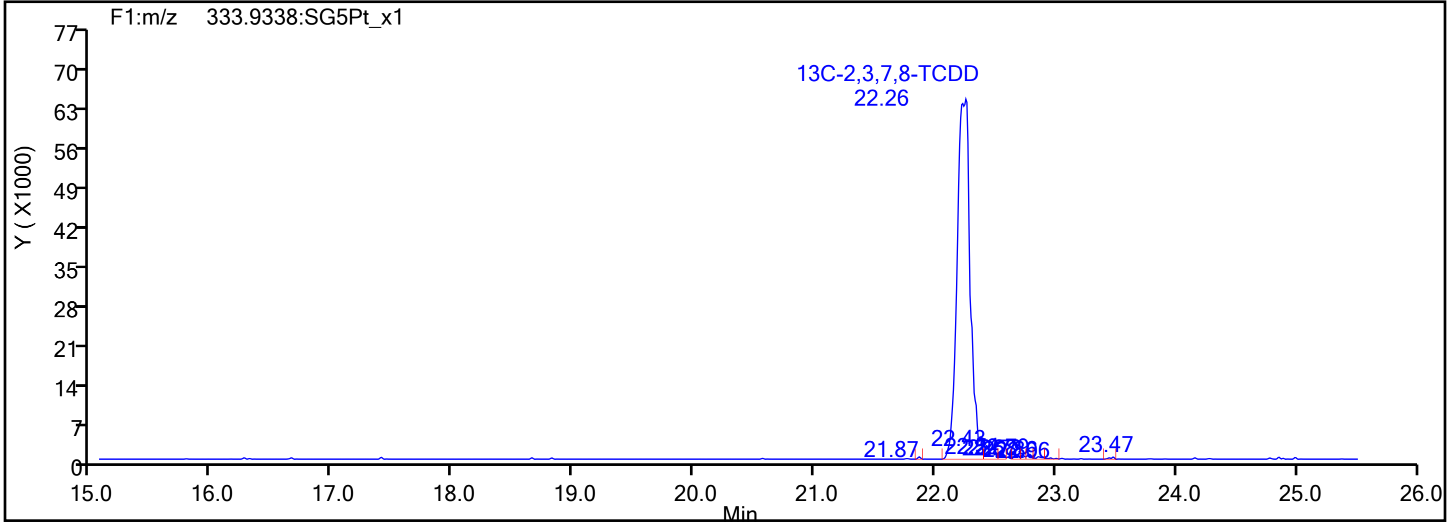

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d

Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

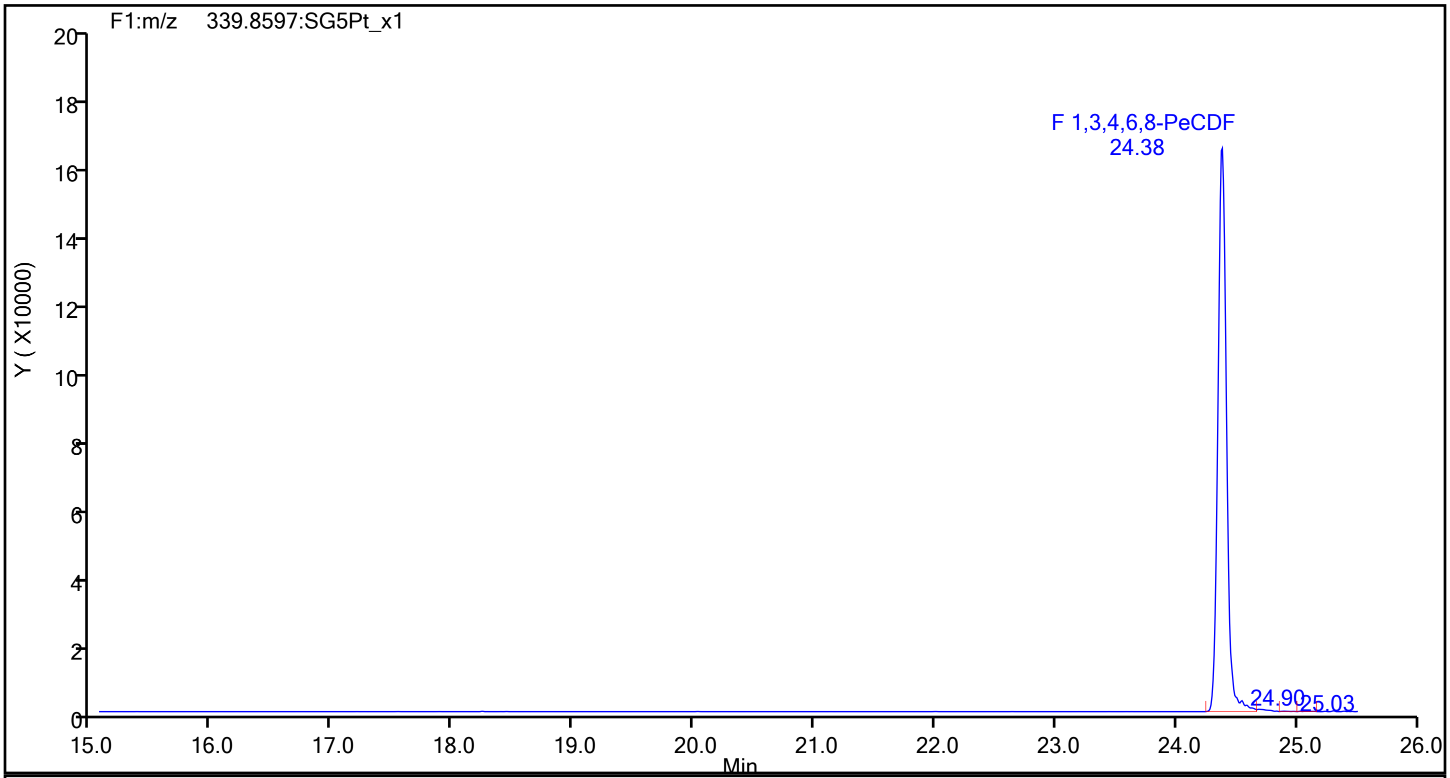

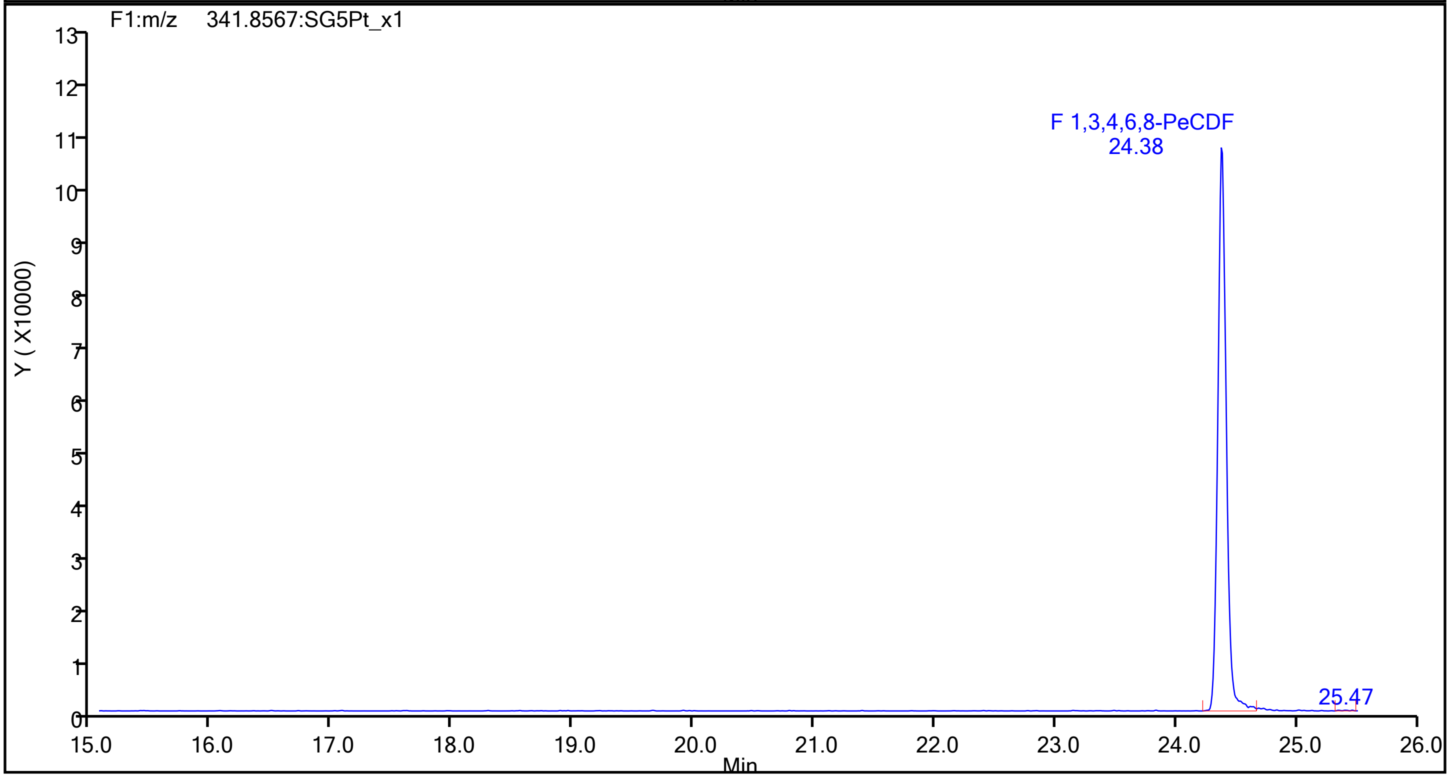

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

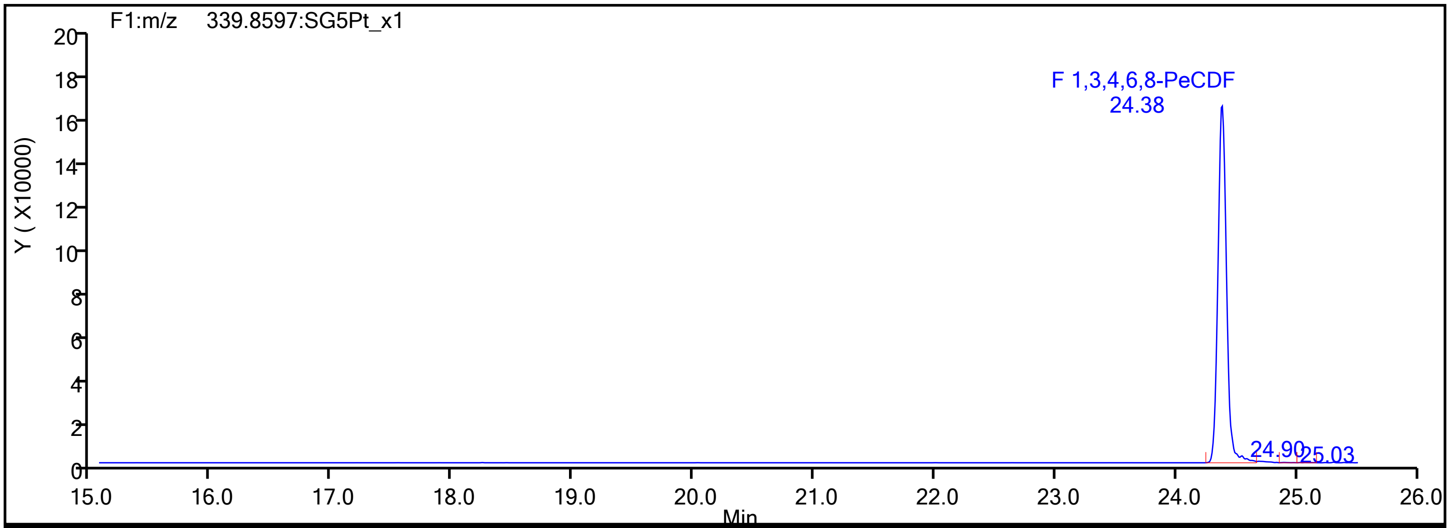

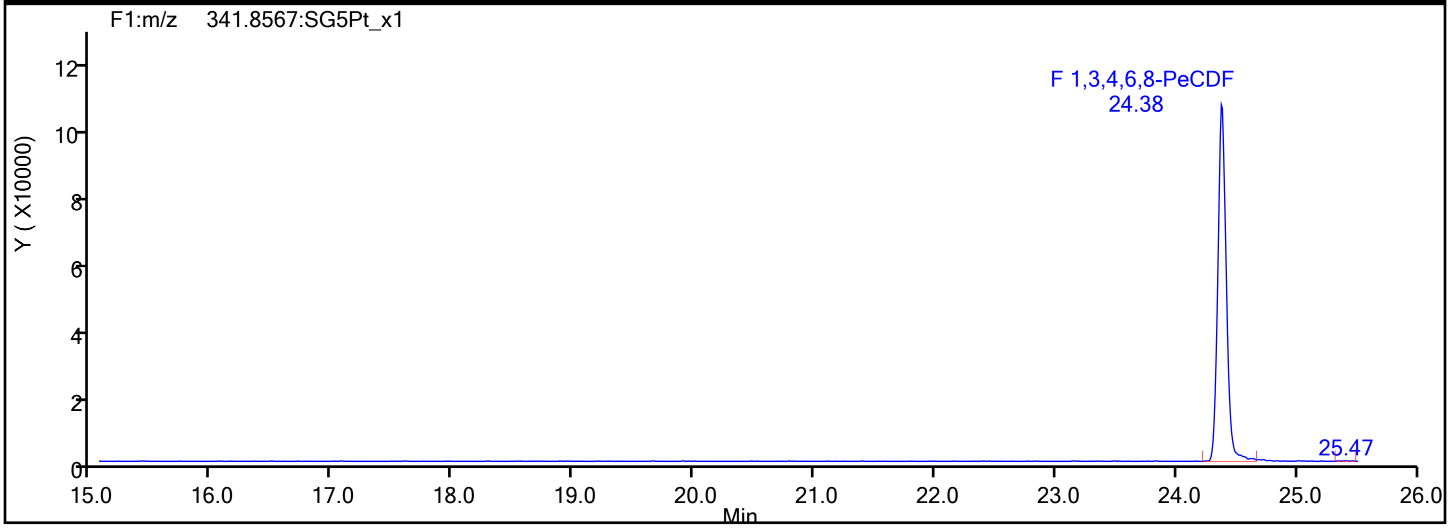

F1 PeCDFs Interference Mass

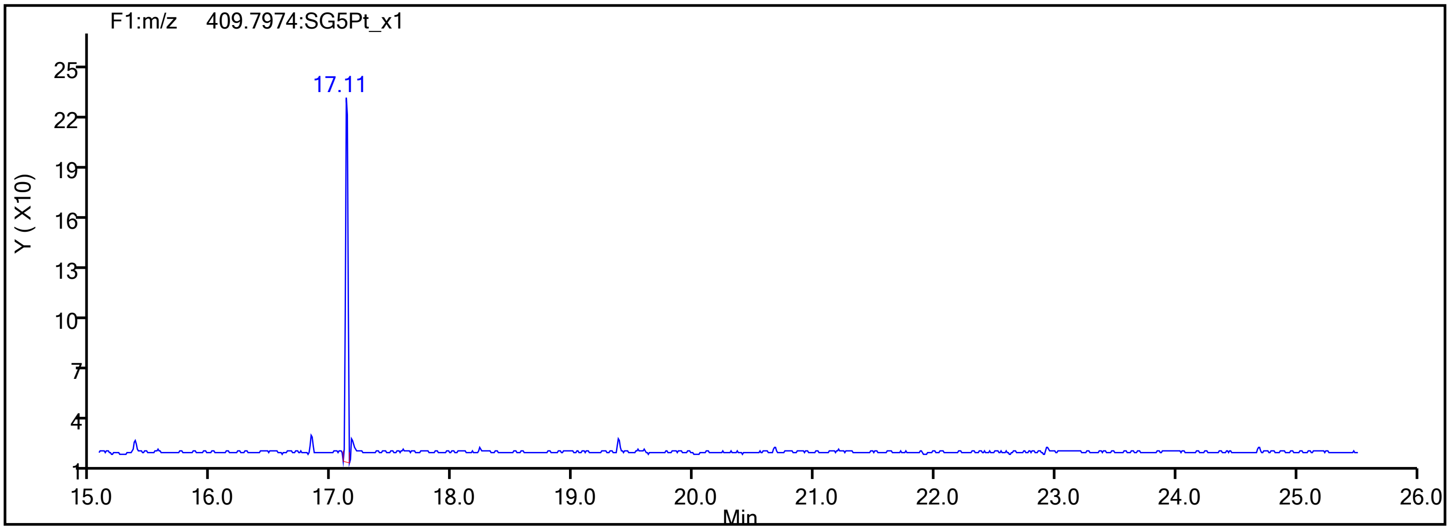

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798 Sample Line#: 13
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

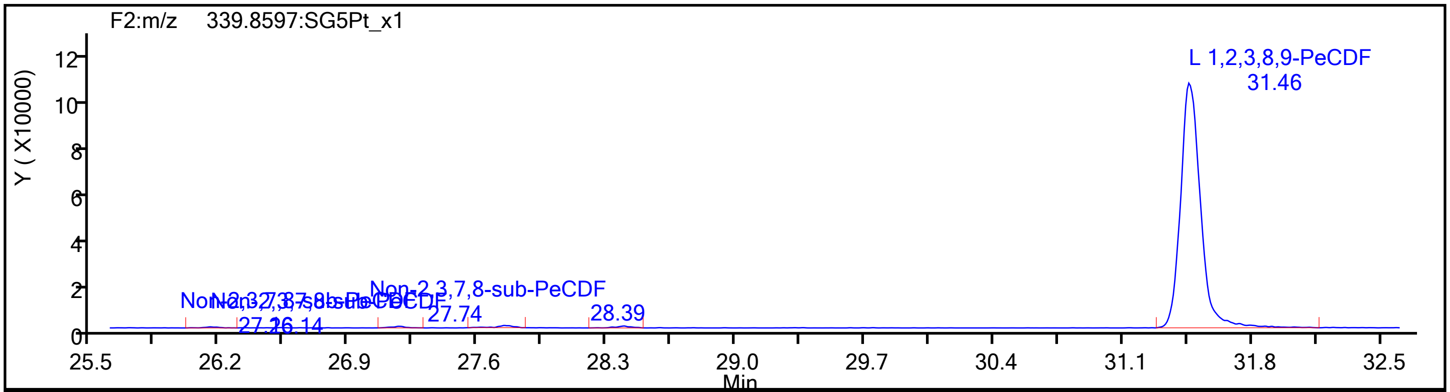

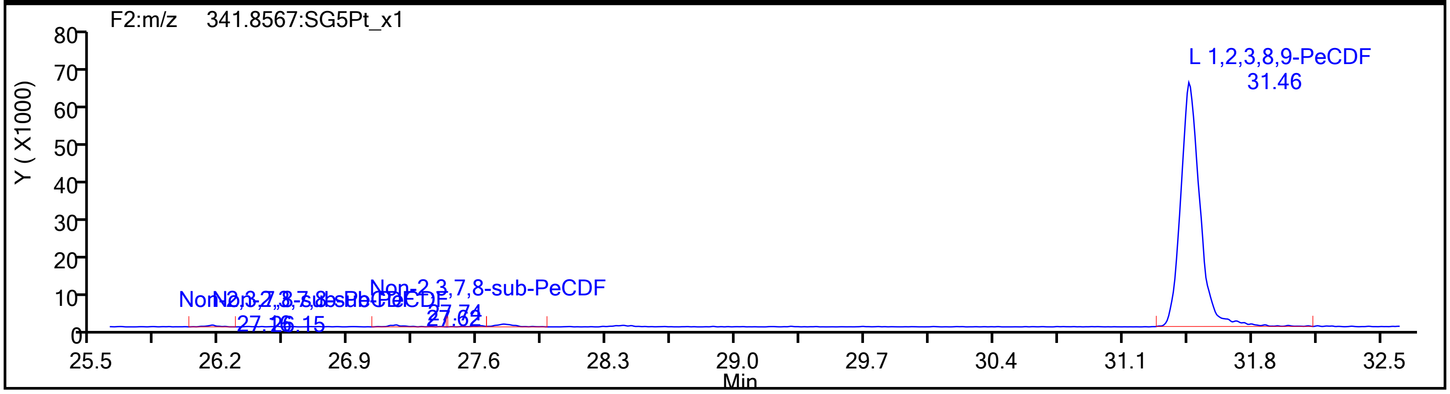

PeCDF Standards

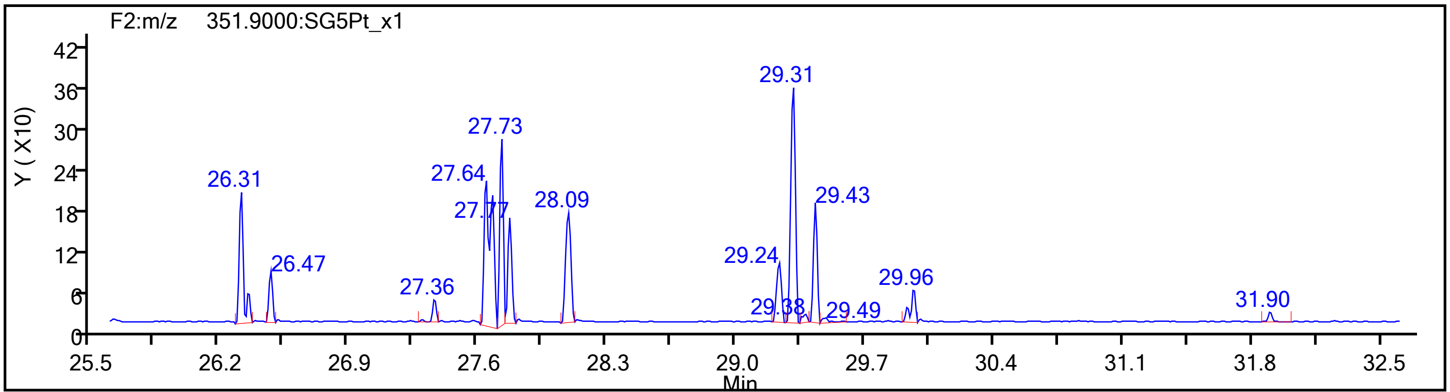

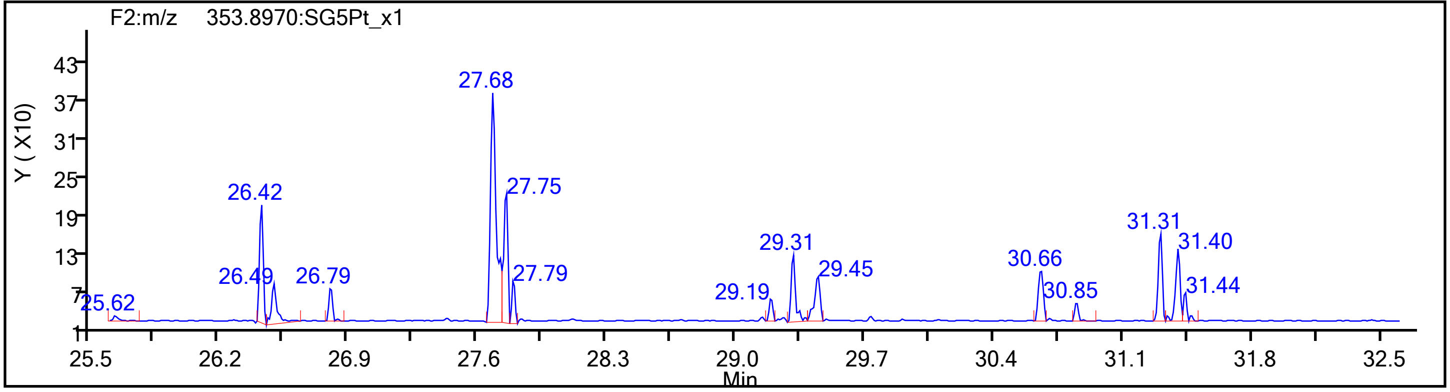

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

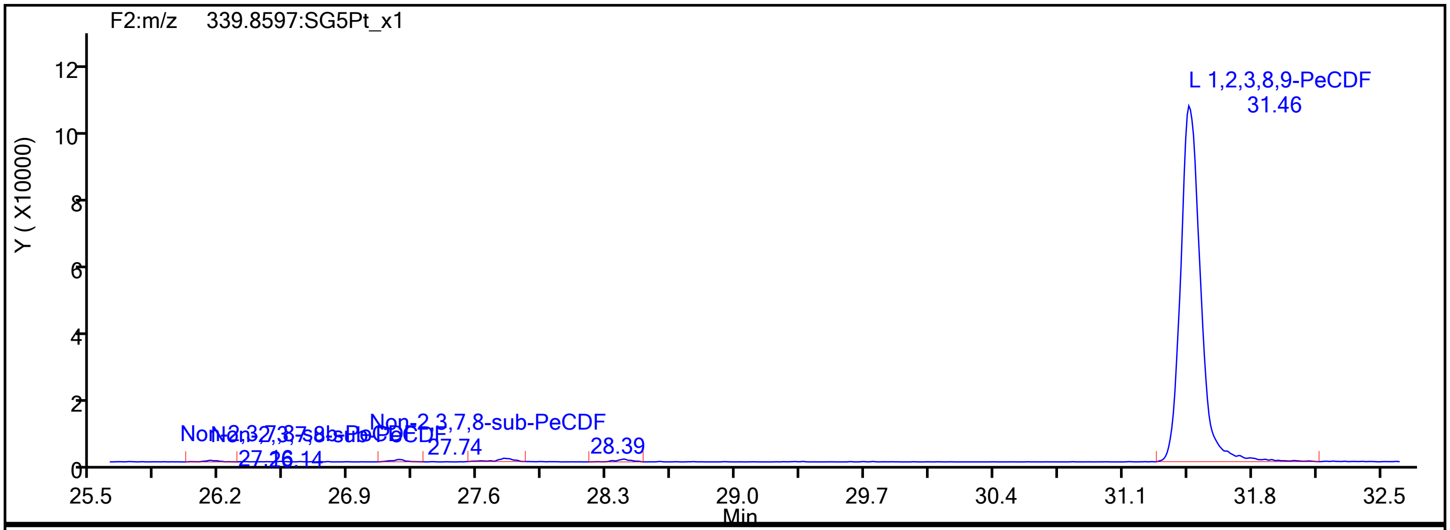

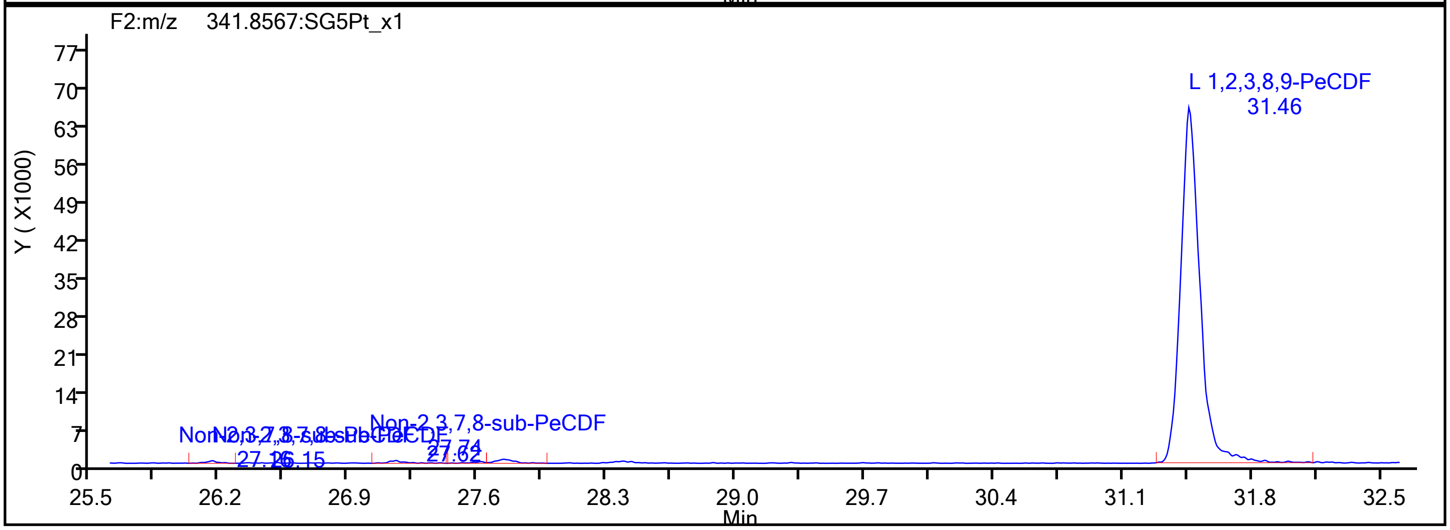

PeCDF Interference Mass

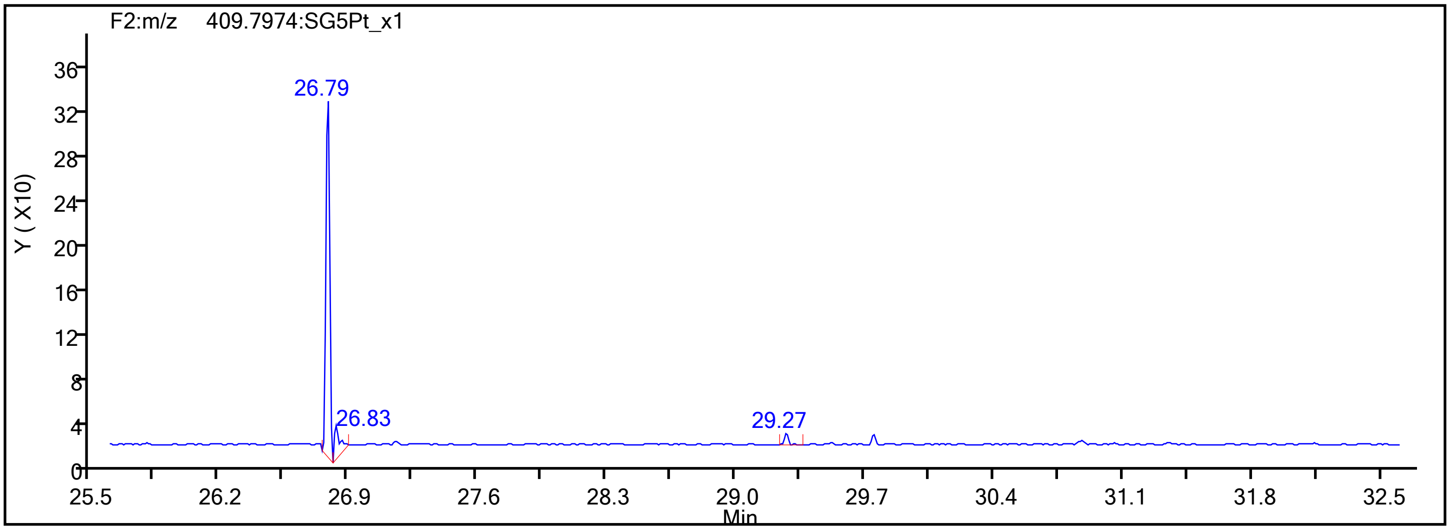

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

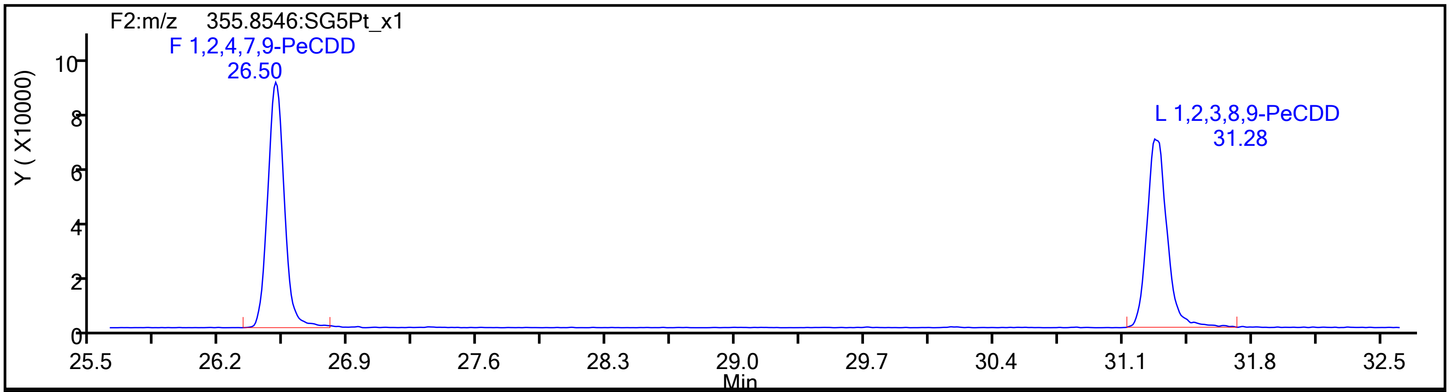

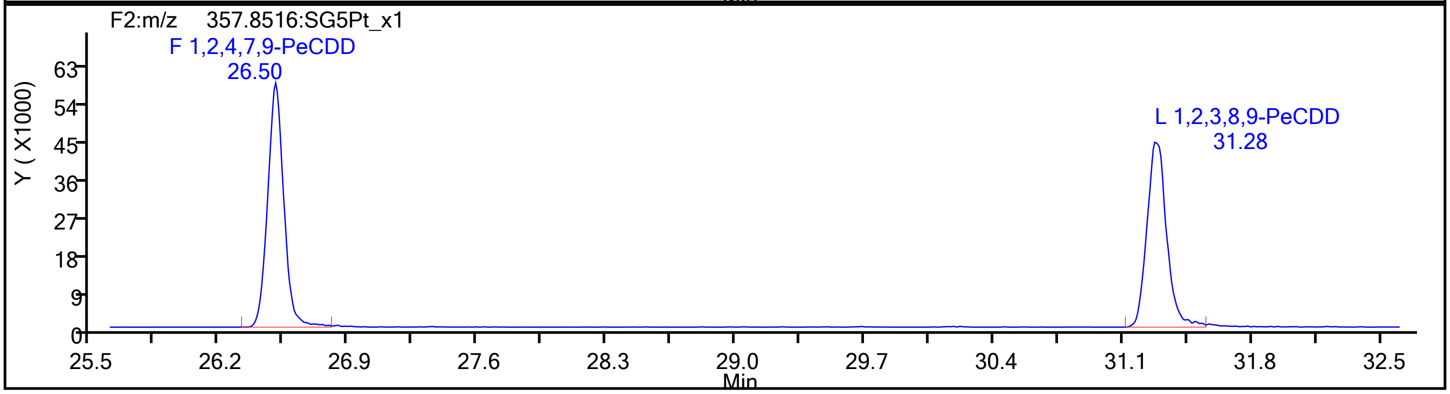

PeCDD Standards

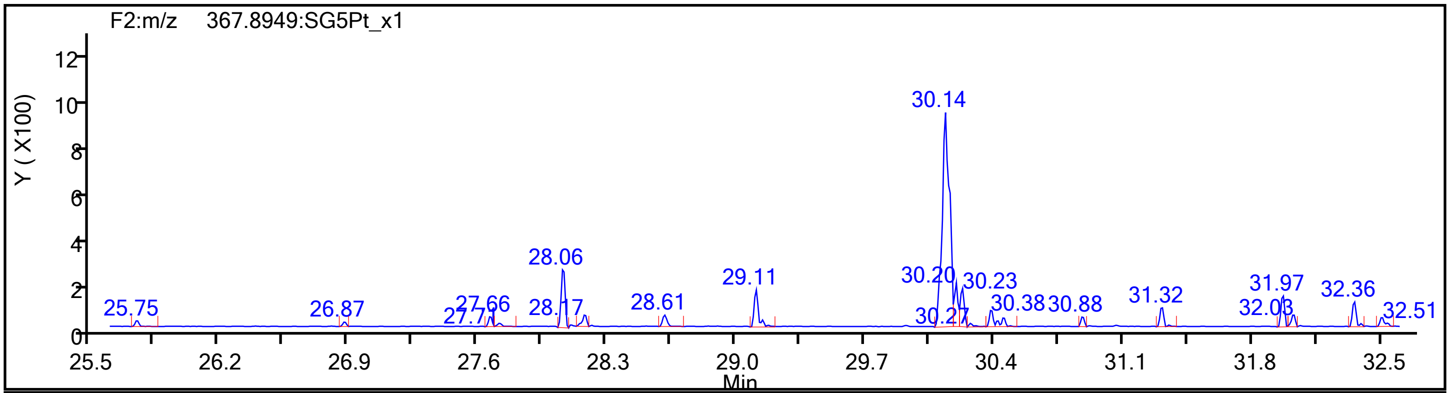

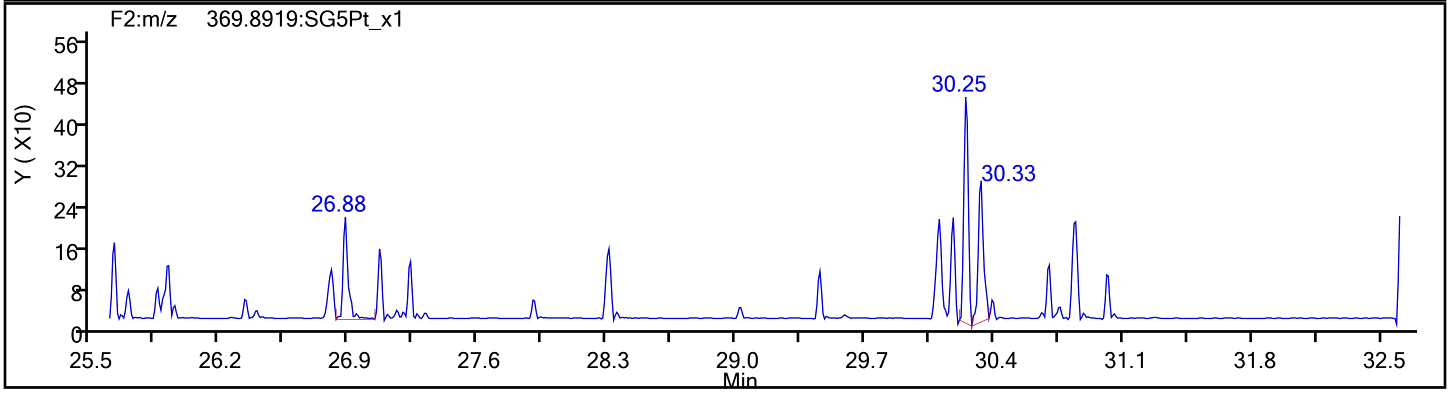

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d

Injection Date: 28-Jul-2020 02:48:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398798

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

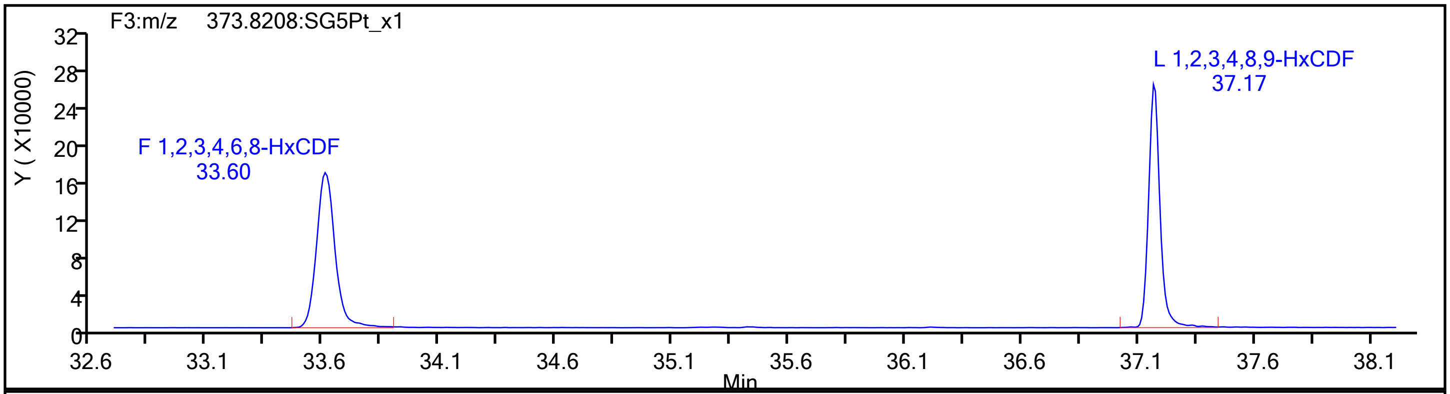

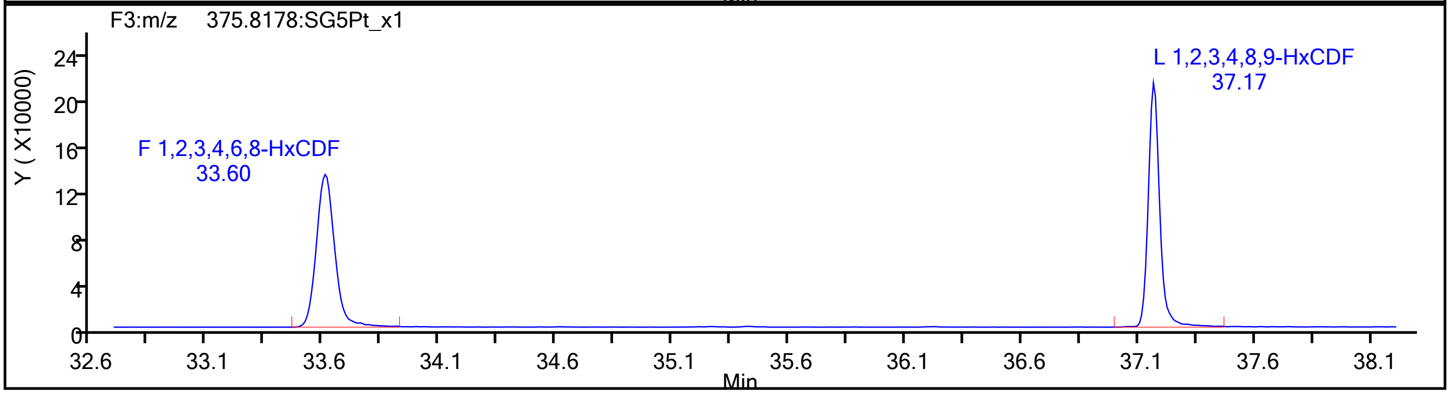

HxCDF Standards

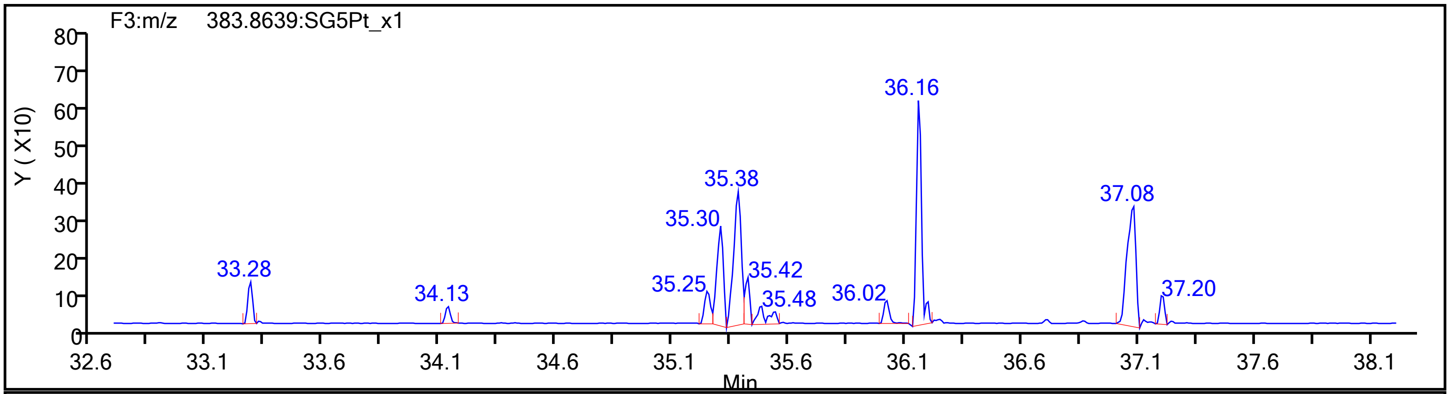

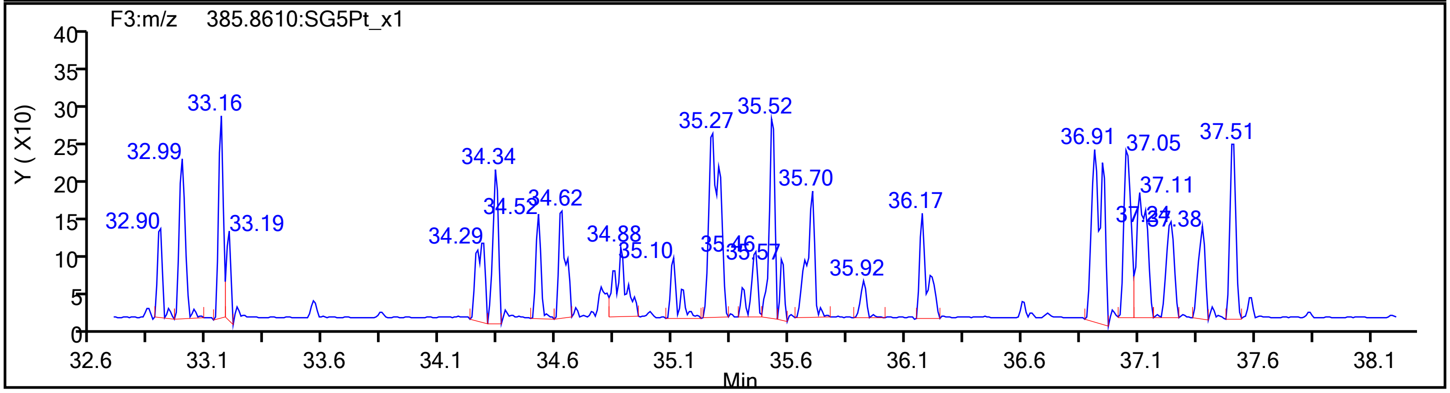

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

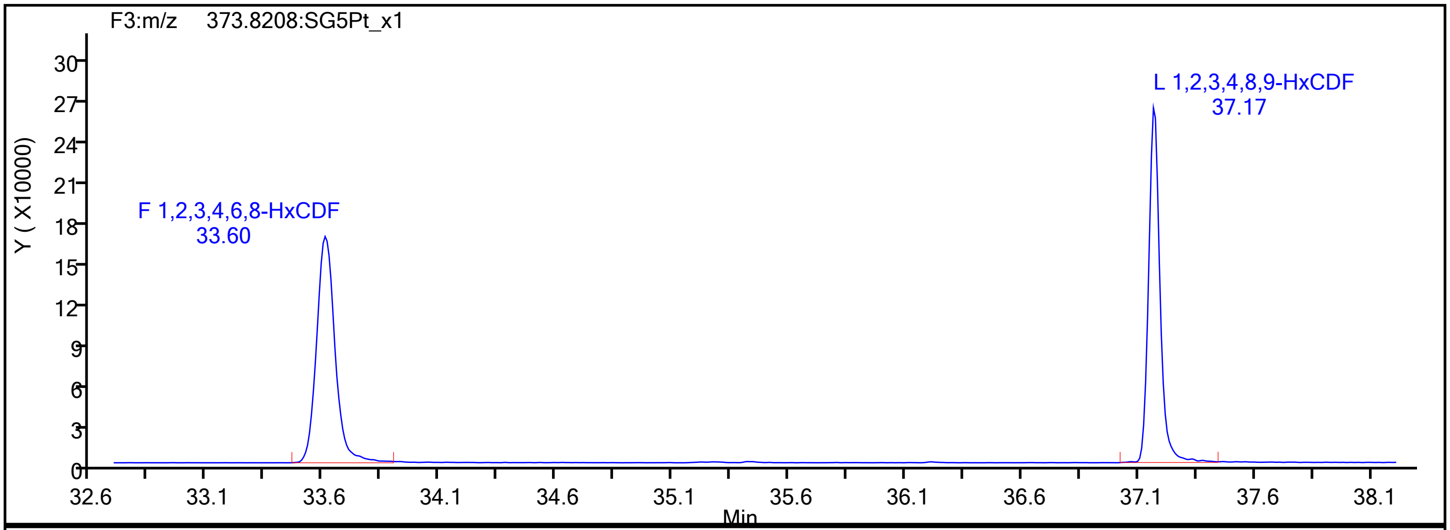

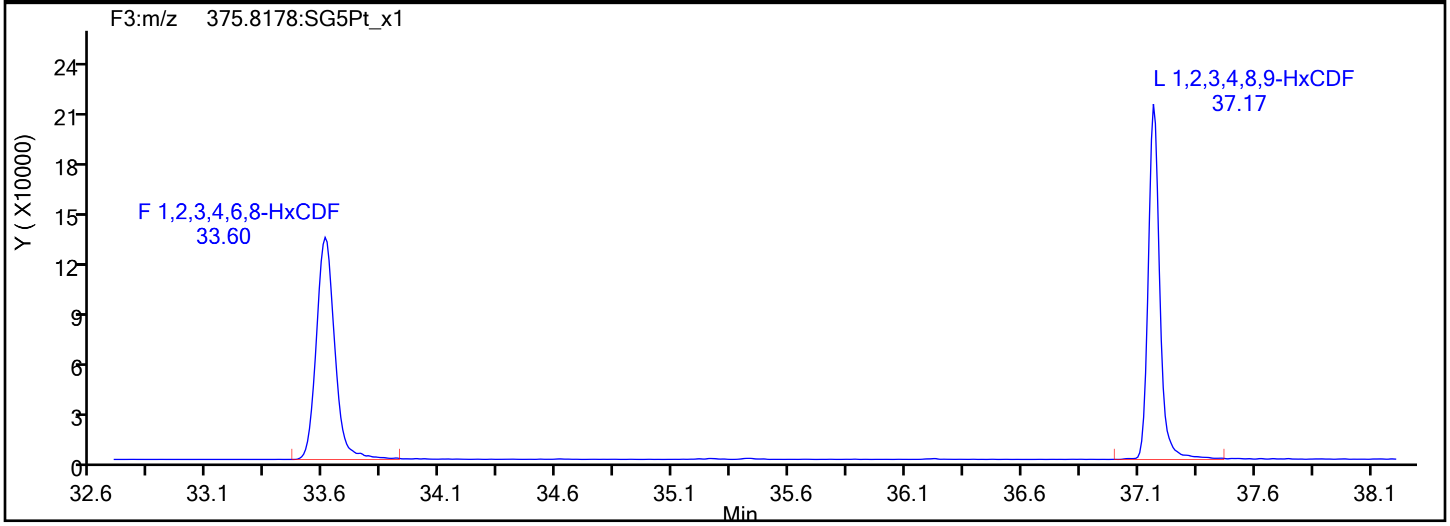

HxCDF Interference Mass

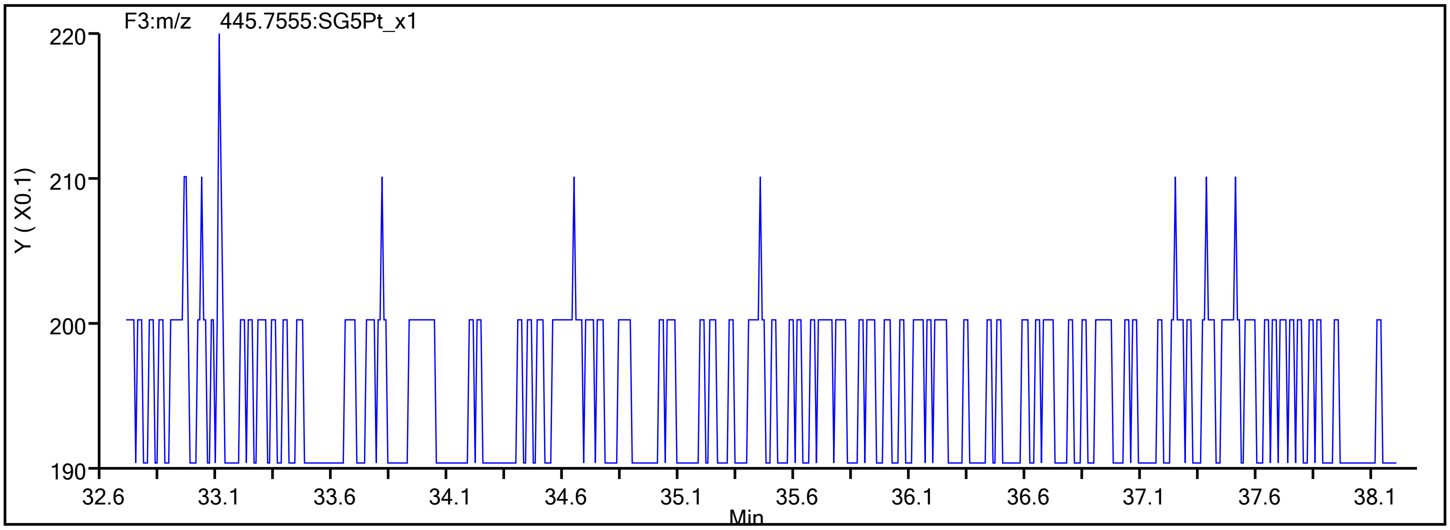

Report Date: 29-Jul-2020 10:35:12
Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

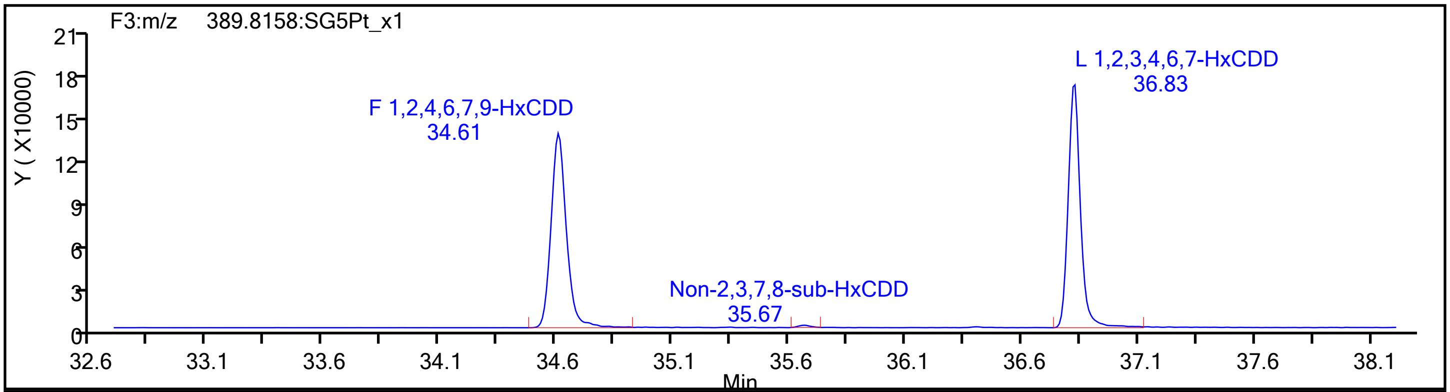

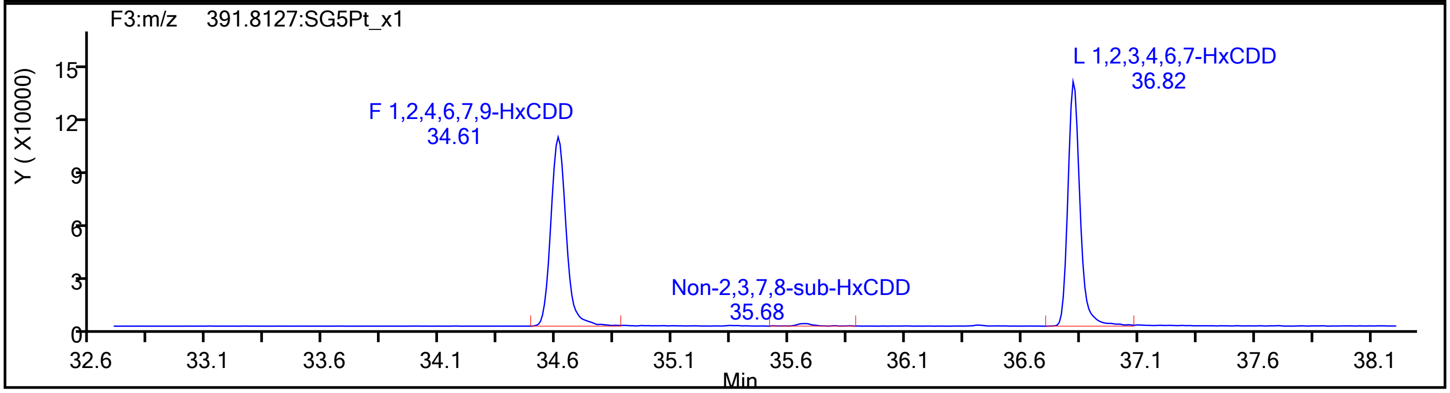

HxCDD Standards

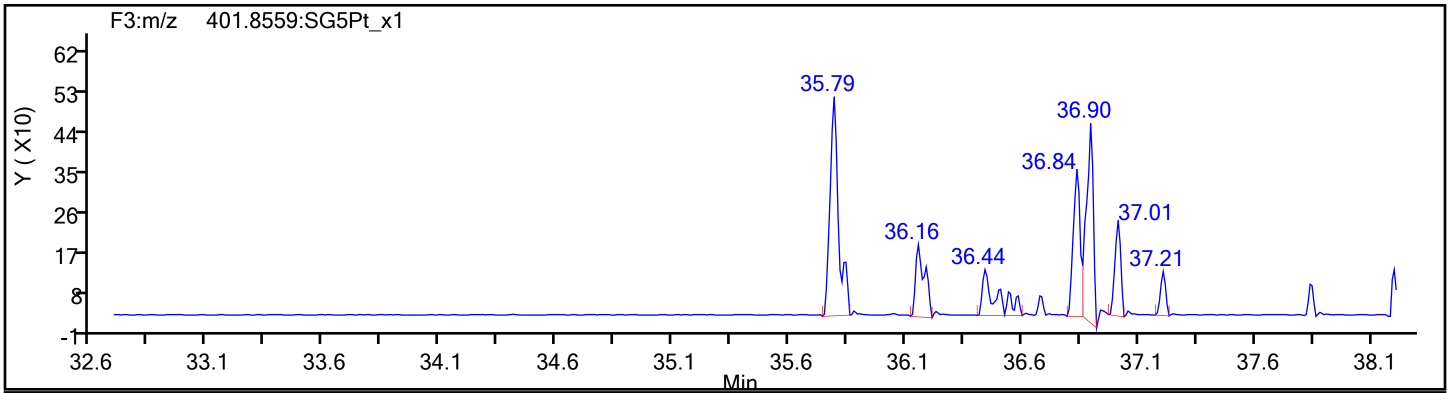

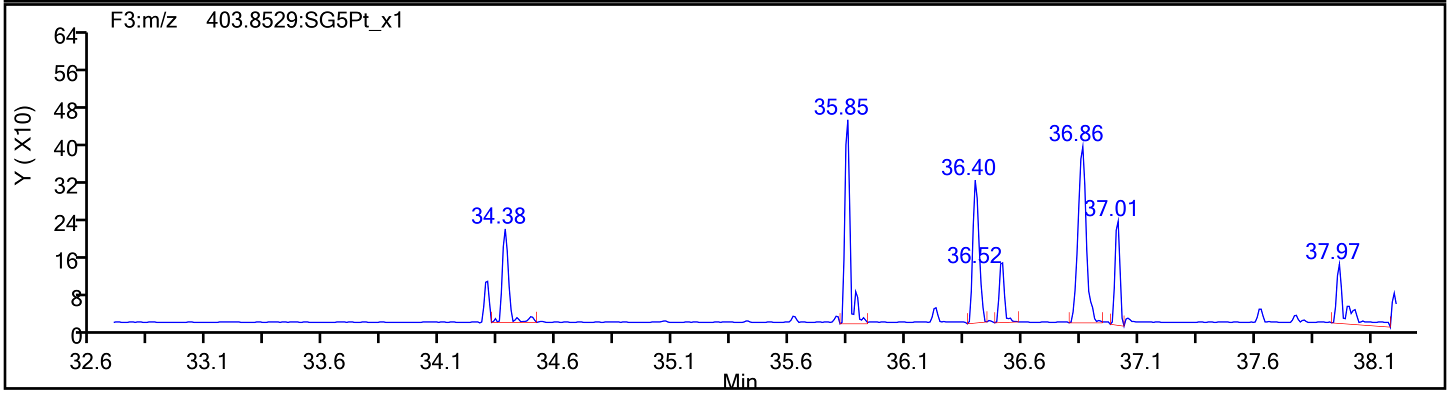

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

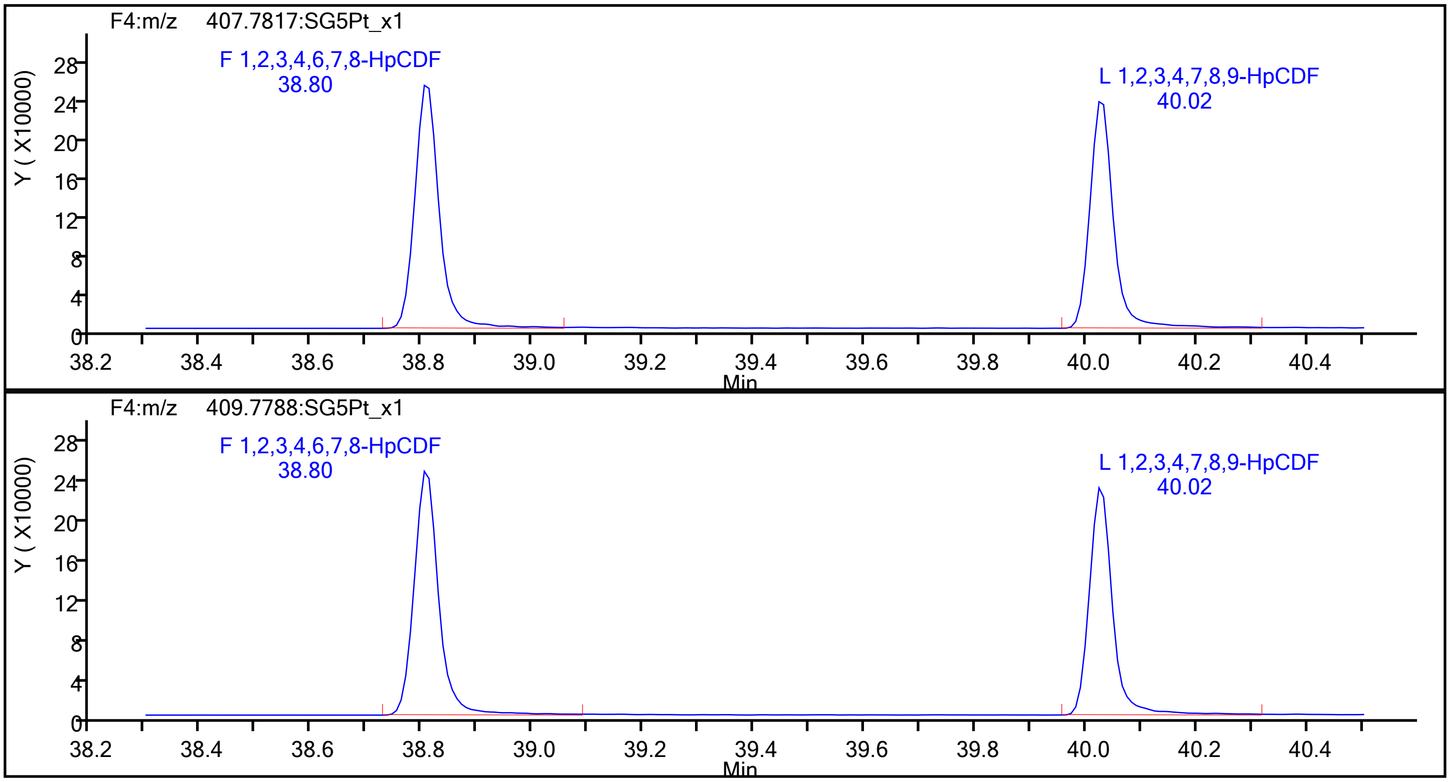

HpCDF Standards

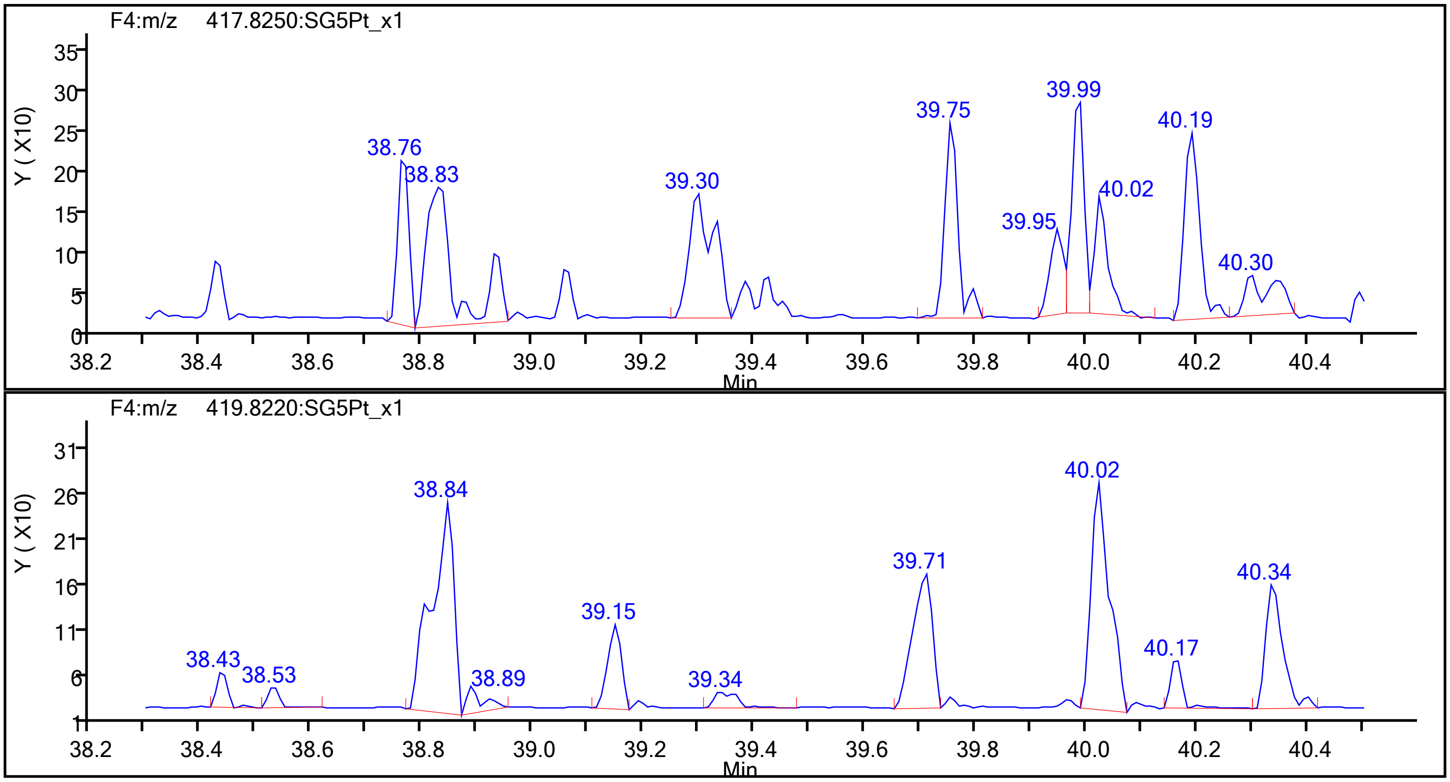

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
Injection Date:	28-Jul-2020 02:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

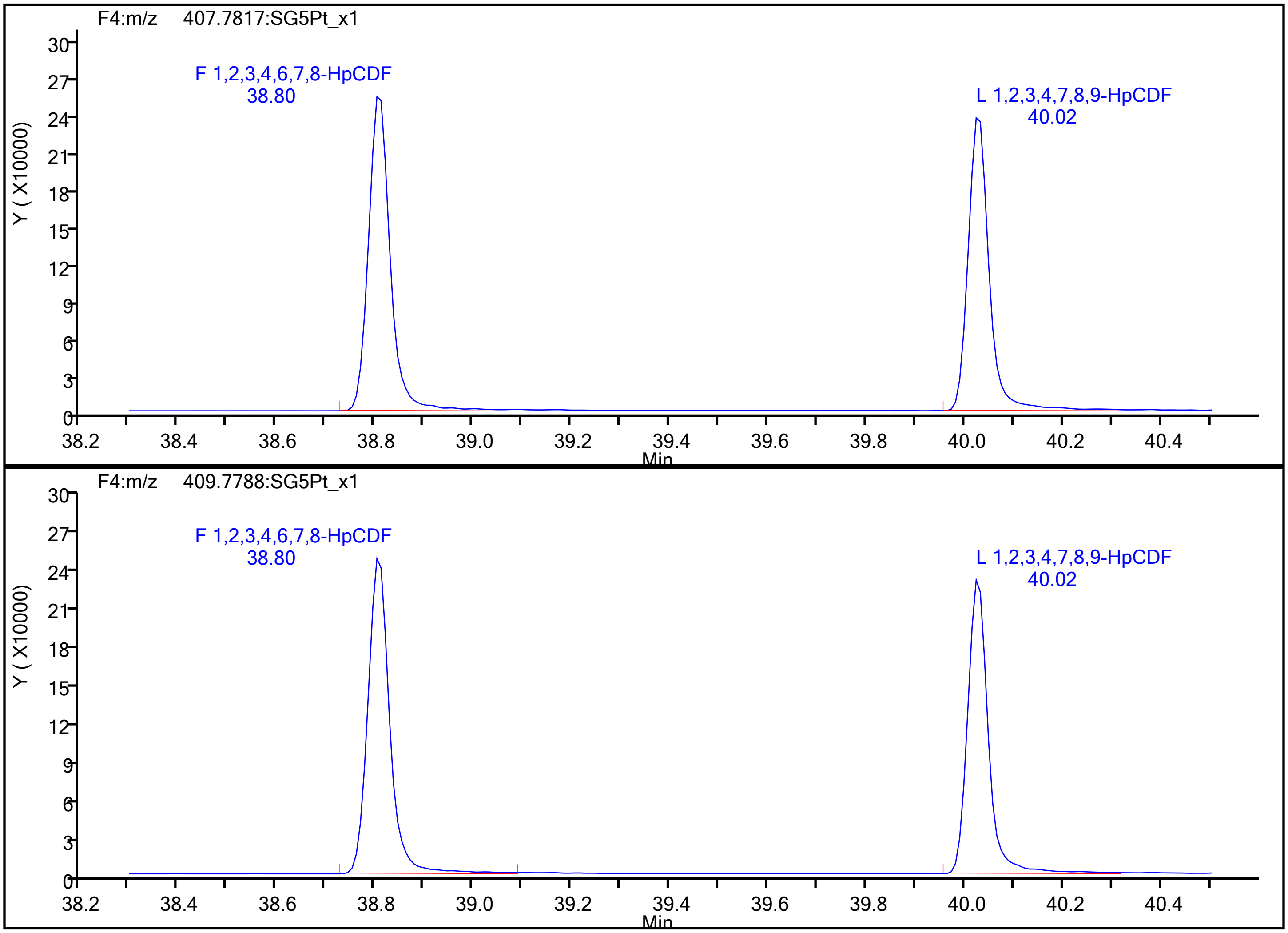

HpCDF Interference Mass

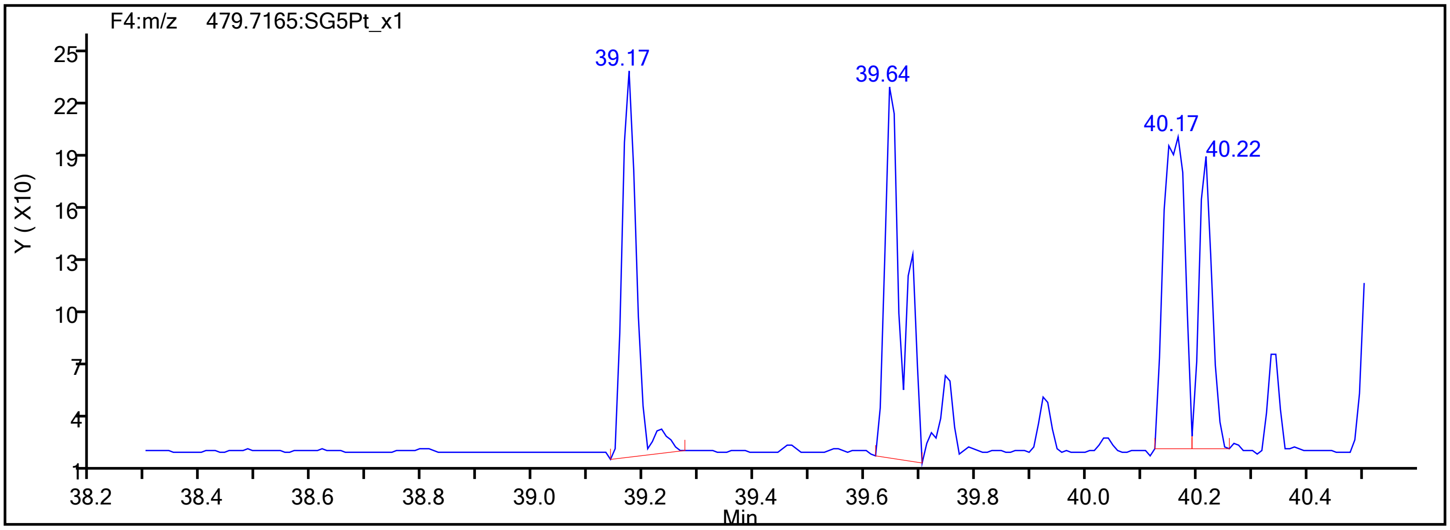

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798 Sample Line#: 13
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

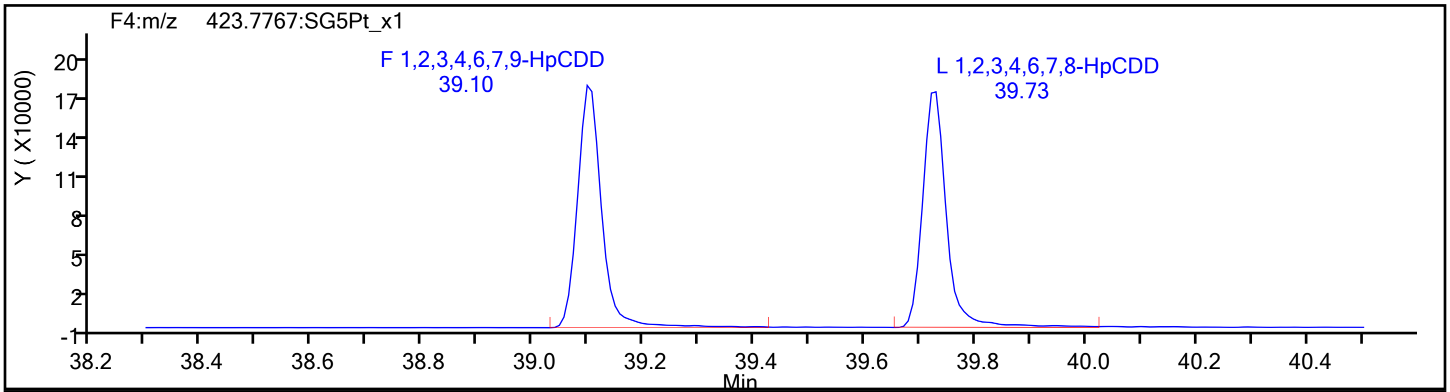

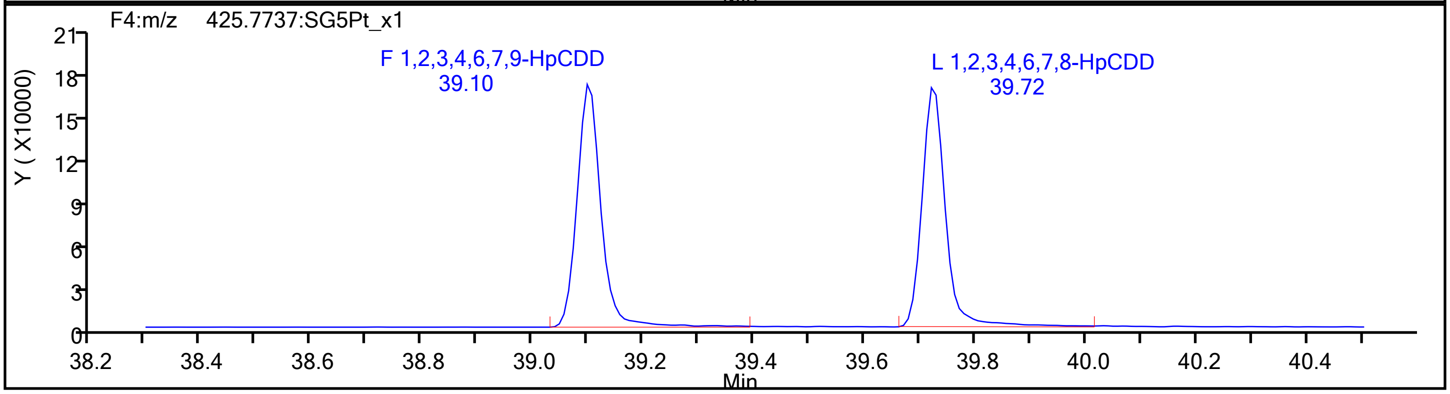

HpCDD Standards

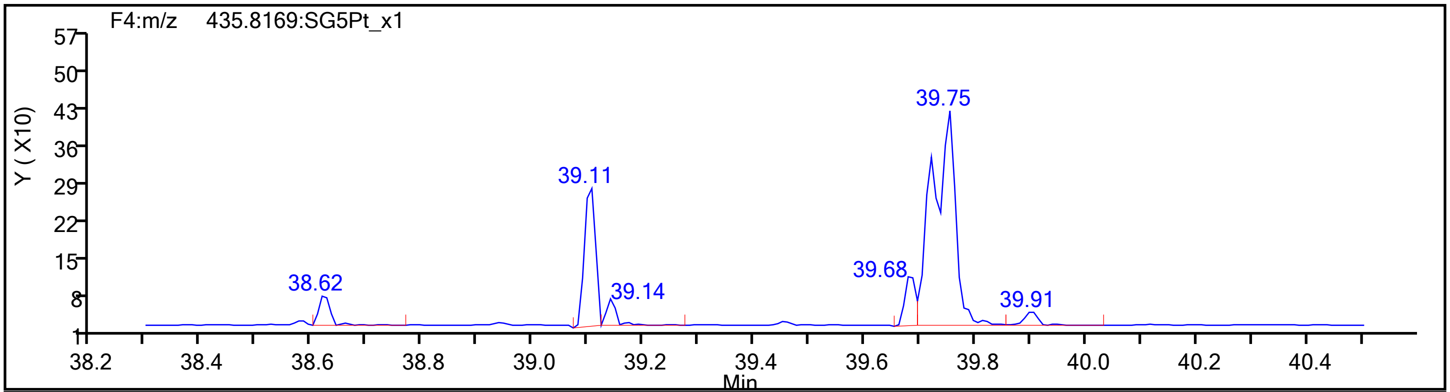

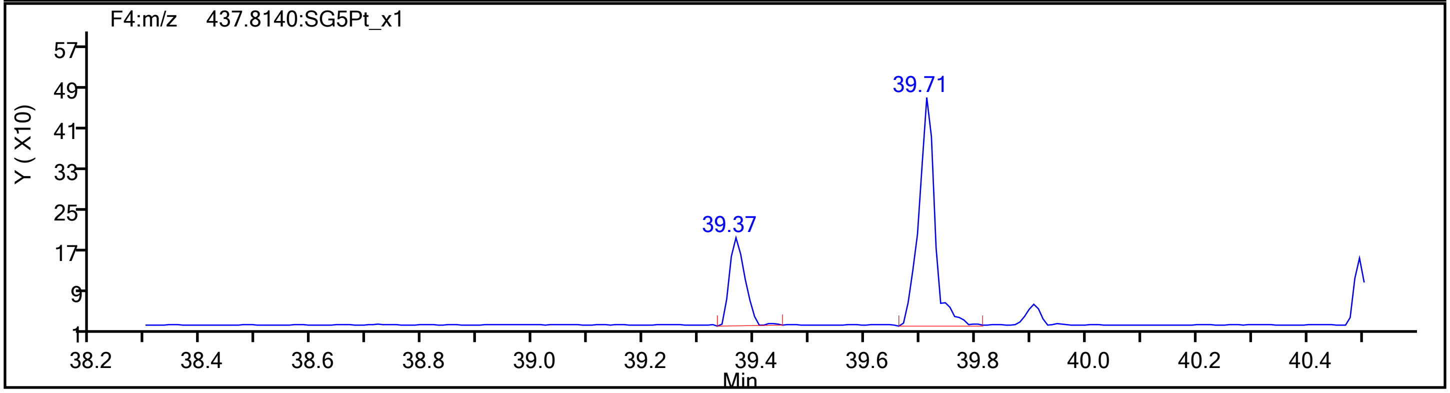

Report Date: 29-Jul-2020 10:35:12 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398798	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

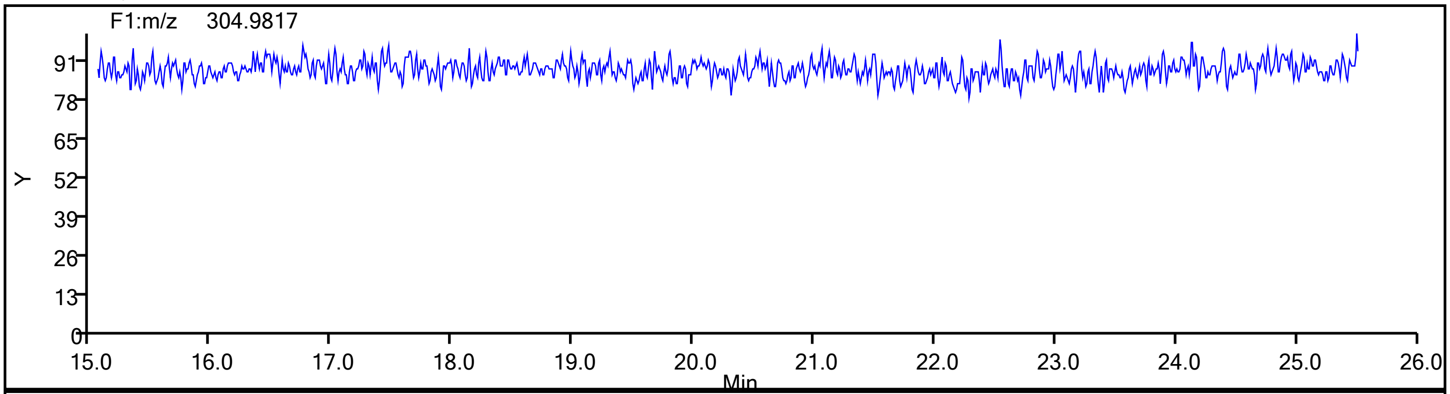

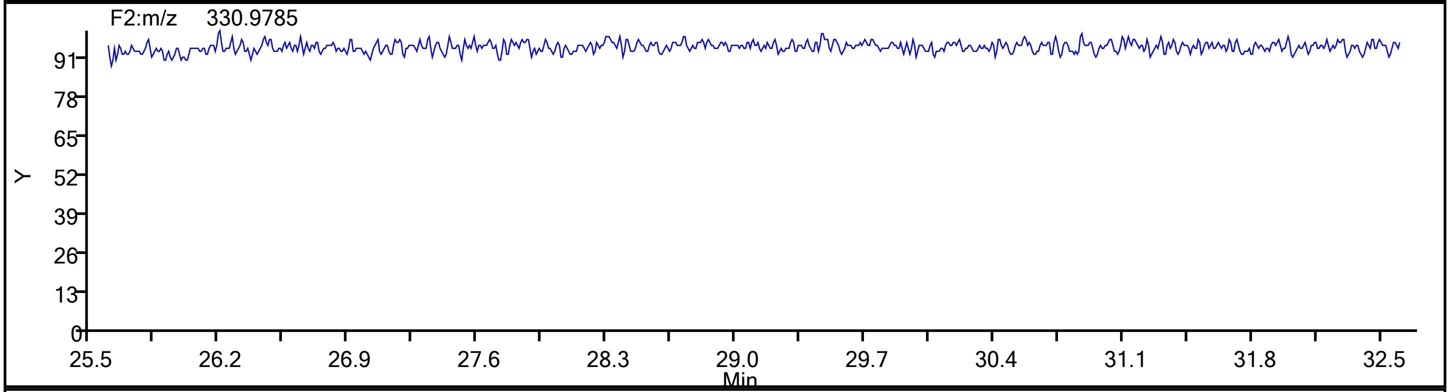

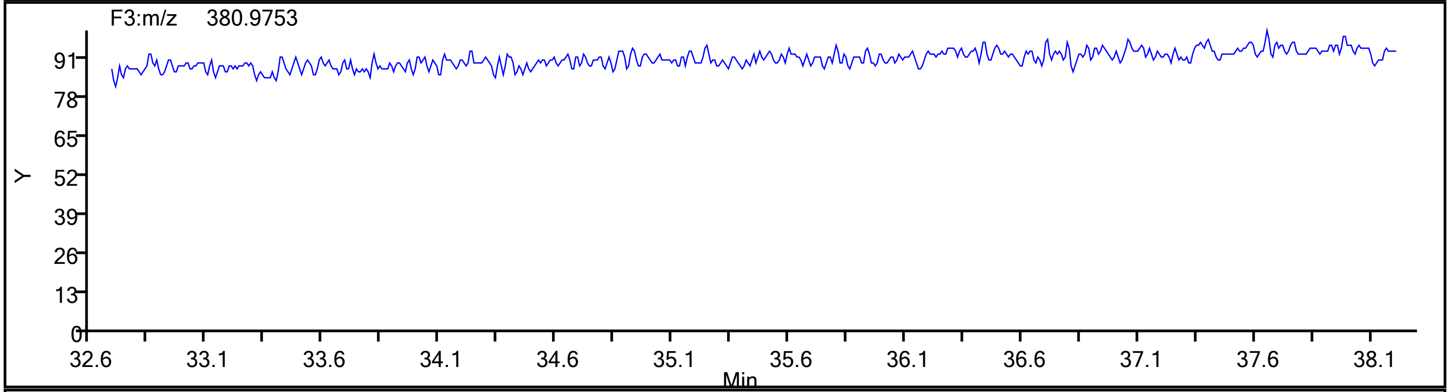

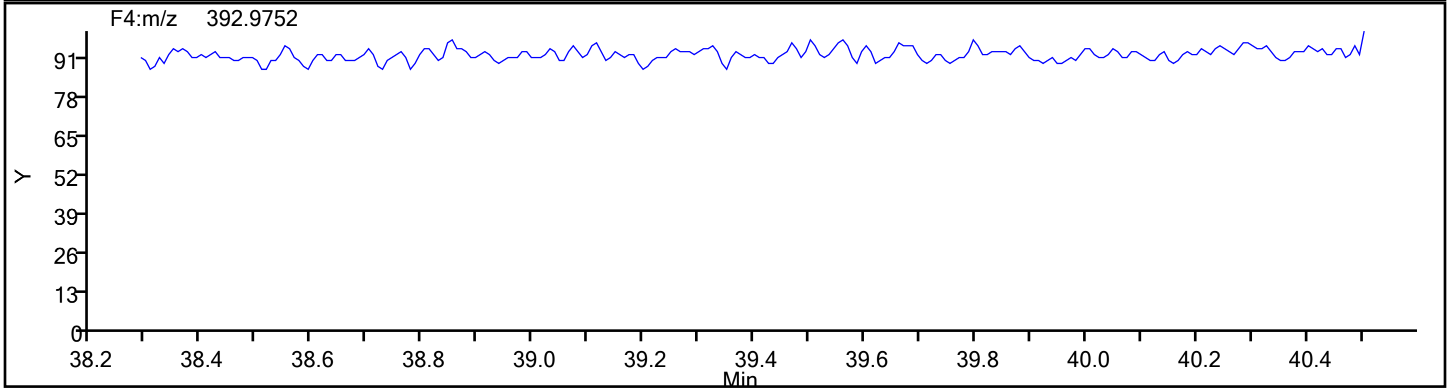

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_15.d
Injection Date: 28-Jul-2020 02:48:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398798
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

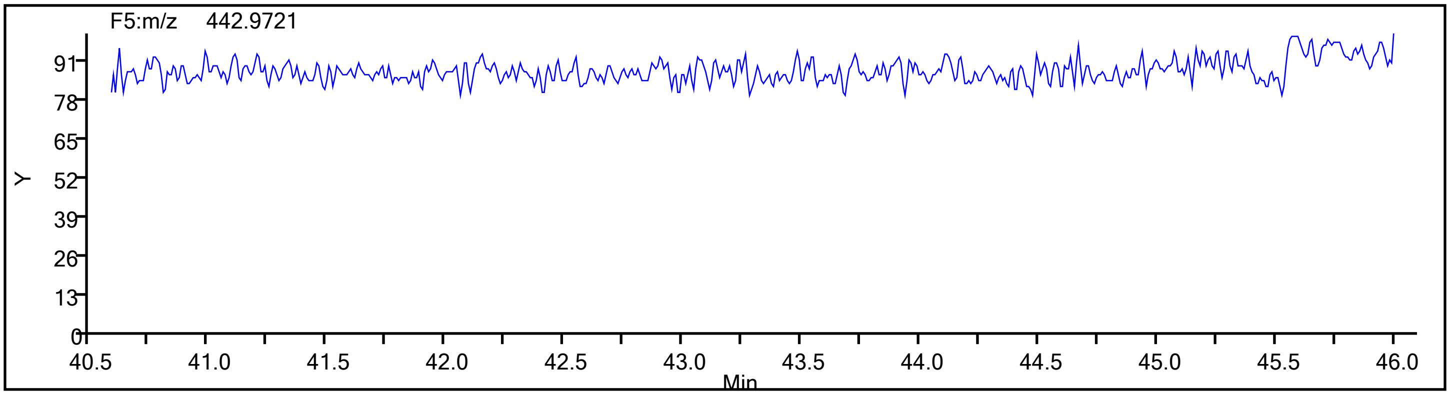

Report Date: 31-Jul-2020 01:01:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 30-Jul-2020 12:02:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 31-Jul-2020 01:01:31 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1069

First Level Reviewer: shardaa Date: 30-Jul-2020 16:09:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.799	1840074	0.80	1.4977					0.00	
2,3,7,8-TCDF	20.842	4082933	0.80	1.1312	78.5	78.5	0.2329	0.2329		
A Non-2,3,7,8-sub-TCDF	20.155	56605	0.72	1.1312	1.088	1.088	0.2329	0.8148		
S Total TCDF					79.5	79.5	0.2329	0.2329		
D 13C-2,3,7,8-TCDD	22.207	1193530	0.86	1.0367					0.00	
2,3,7,8-TCDD	22.241	1337643	0.79	1.1849	37.8	37.8	0.1702	0.1702		
A Non-2,3,7,8-sub-TCDD	21.023						0.1702	0.1702		
S Total TCDD					37.8	37.8	0.1702	0.1702		
A F1 PeCDFs	24.919	11869	1.44	0.0000						
A Non-2,3,7,8-sub-PeCDF	28.525	35895	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.864						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.370						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.702	11315	1.19	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.796	1580597	1.07	1.5957						
1,2,3,4,7,8,9-HpCDF	40.026	1341286	1.05	1.1693						
A Non-2,3,7,8-sub-HpCDF	39.411						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.714	1042434	1.04	1.1150						
A Non-2,3,7,8-sub-HpCDD	39.555						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.343	2547996	0.79							
1,3,6,8-TCDD	18.026	1392216	0.79							
2,3,4,7-TCDF	20.842	4082933	0.80							
1,2,3,7-TCDD	22.018	1115189	0.78							
1,2,3,9-TCDF	22.439	1762777	0.80							
1,2,3,9-TCDD	22.542	1382220	0.78							
1,2,8,9-TCDF	23.968	1896464	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	24.019	583423								
1,3,4,6,8-PeCDF	24.363	1687393	1.58							
1,2,4,7,9-PeCDD	26.476	1112723	1.56							
1,2,3,8,9-PeCDD	31.253	1004369	1.57							
1,2,3,8,9-PeCDF	31.438	1386926	1.64							
1,2,3,4,6,8-HxCDF	33.580	1723785	1.24							
1,2,4,6,7,9-HxCDD	34.590	1217527	1.27							
1,2,3,4,6,7-HxCDD	36.814	1244928	1.24							
1,2,3,4,8,9-HxCDF	37.160	1668315	1.26							
1,2,3,4,6,7,9-HpCDD	39.091	1139733	1.03							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 30-Jul-2020 12:02:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 31-Jul-2020 01:01:31 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1069

First Level Reviewer: shardaa Date: 30-Jul-2020 16:09:19

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.799	20.799	0	1.000	820471	120268	430	1075	280		
317.9389	20.790	20.799	-1	1.000	1019603	160929	189	472	851	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.842	20.842	0	1.002	1812244	238318	317	792	752		
305.8987	20.842	20.842	0	1.002	2270689	294437	424	1060	694	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.039	20.155	-67	0.915	6491	1333	317	792	4		
305.8987	19.056	20.155	-66	0.916	7714	1503	424	1060	4	0.84(0.65-0.89)	
303.9016	24.389	20.155	253	1.173	17172	2803	317	792	9		
305.8987	24.371	20.155	252	1.172	25228	4226	424	1060	10	0.68(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.207	22.207	0	1.000	552417	74550	225	562	331		
333.9338	22.207	22.207	0	1.000	641113	94992	68	170	1397	0.86(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.241	22.241	0	1.002	592215	78852	176	440	448		
321.8936	22.233	22.241	-1	1.001	745428	102335	166	415	616	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.023						176	440			
321.8936	21.023						166	415			
A F1 PeCDFs											
339.8597	24.681	24.919	-14	1.000	7007	1189	19	47	63		
341.8567	24.698	24.919	-13	1.000	4862	909	43	107	21	1.44(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.156	28.525	-142	1.000	3041	591	87	217	7		
341.8567	26.122	28.525	-144	1.000	2144	538	76	190	7	1.42(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	27.141	28.525	-83	1.000	3857	709	87	217	8		
341.8567	27.133	28.525	-83	1.000	3620	502	76	190	7	1.07(1.32-1.78)	
339.8597	27.605	28.525	-55	1.000	1868	406	87	217	5		
341.8567	27.588	28.525	-56	1.000	1424	387	76	190	5	1.31(1.32-1.78)	
339.8597	27.731	28.525	-48	1.000	7189	1119	87	217	13		
341.8567	27.731	28.525	-48	1.000	5701	913	76	190	12	1.26(1.32-1.78)	
339.8597	28.346	28.525	-11	1.000	5555	928	87	217	11		
341.8567	28.371	28.525	-9	1.000	3910	684	76	190	9	1.42(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.864						144	360			
357.8516	28.864						81	202			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.370						259	647			
375.8178	35.370						189	472			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.652	35.702	-3	1.000	6142	1907	163	407	12		
391.8127	35.660	35.702	-3	1.000	5173	1337	141	352	9	1.19(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.796	38.796	0	1.000	817086	253297	651	1627	389		
409.7788	38.796	38.796	0	1.000	763511	235228	638	1595	369	1.07(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.026	40.026	0	1.000	688057	223960	651	1627	344		
409.7788	40.017	40.026	-1	1.000	653229	213797	638	1595	335	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.411						651	1627			
409.7788	39.411						638	1595			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.714	39.714	0	1.000	531760	169736	570	1425	298		
425.7737	39.714	39.714	0	1.000	510674	162246	531	1327	306	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						570	1425			
425.7737	39.555						531	1327			
1,3,6,8-TCDF											
303.9016	16.343	16.343	0		1120810	222921	317	792	703		
305.8987	16.335	16.343	-1		1427186	280195	424	1060	661	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.026	18.026	0		612835	104775	176	440	595		
321.8936	18.034	18.026	1		779381	134983	166	415	813	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.842	20.842	0		1812244	238318	317	792	752		
305.8987	20.842	20.842	0		2270689	294437	424	1060	694	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	22.018	22.018	0		489874	68276	176	440	388		
321.8936	22.027	22.018	1		625315	83090	166	415	501	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.439	22.439	0		785517	110755	317	792	349		
305.8987	22.439	22.439	0		977260	132806	424	1060	313	0.80(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,9-TCDD											
319.8965	22.542	22.542	0		606079	78290	176	440	445		
321.8936	22.534	22.542	-1		776141	103089	166	415	621	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.968	23.968	0		837388	173392	317	792	547		
305.8987	23.968	23.968	0		1059076	213964	424	1060	505	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	24.019	24.019	0		583423	118951	176	440	676		
1,3,4,6,8-PeCDF											
339.8597	24.363	24.363	0		1034413	209594	19	47	11031		
341.8567	24.363	24.363	0		652980	130520	43	107	3035	1.58(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.476	26.476	0		677490	104521	144	360	726		
357.8516	26.476	26.476	0		435233	68488	81	202	846	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.253	31.253	0		612842	79141	144	360	550		
357.8516	31.261	31.253	1		391527	49844	81	202	615	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.438	31.438	0		862490	112210	87	217	1290		
341.8567	31.430	31.438	-1		524436	69994	76	190	921	1.64(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.580	33.580	0		955715	170062	259	647	657		
375.8178	33.580	33.580	0		768070	136066	189	472	720	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.590	34.590	0		682027	139808	163	407	858		
391.8127	34.590	34.590	0		535500	112136	141	352	795	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.814	36.814	0		689310	183175	163	407	1124		
391.8127	36.814	36.814	0		555618	147356	141	352	1045	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.160	37.160	0		931260	258160	259	647	997		
375.8178	37.160	37.160	0		737055	203775	189	472	1078	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.091	39.091	0		579307	185756	570	1425	326		
425.7737	39.091	39.091	0		560426	179377	531	1327	338	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Report Date: 31-Jul-2020 01:01:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 30-Jul-2020 12:02:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 399843 Lims Sample ID: 1

Non-2,3,7,8-sub-TCDF, RT: 20.155

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	40.000	1840074	281197

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		40.000	1840074	281197

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.039	6491	1333	7714	1503	0.2730	0.84	
24.389	17172	2803	25228	4226	0.8148	0.68	
Signal Totals:							
	23663	4136	32942	5729			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	56605	9865				0.72	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.088 = (56605 * 40.000) / (1840074 * 1.131)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	30-Jul-2020 12:02:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	1

F1 PeCDFs, RT: 24.919

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.681	7007	1189	4862	909		1.44	
Signal Totals:							
	7007	1189	4862	909			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11869	2098				1.44	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11869 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	30-Jul-2020 12:02:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 28.525

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.156	3041	591	2144	538		1.42	
27.141	3857	709	3620	502		1.07	R
27.605	1868	406	1424	387		1.31	R
27.731	7189	1119	5701	913		1.26	R
28.346	5555	928	3910	684		1.42	
Signal Totals:							
	21510	3753	16799	3024			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	38309	6777				1.28	RQ
	35895	6414					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (38309 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (35895 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	30-Jul-2020 12:02:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	399843	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 35.702

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934				
1,2,3,6,7,8-HxCDD	1.080				
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.652	6142	1907	5173	1337		1.19	
Signal Totals:							
	6142	1907	5173	1337			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11315	3244				1.19	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11315 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

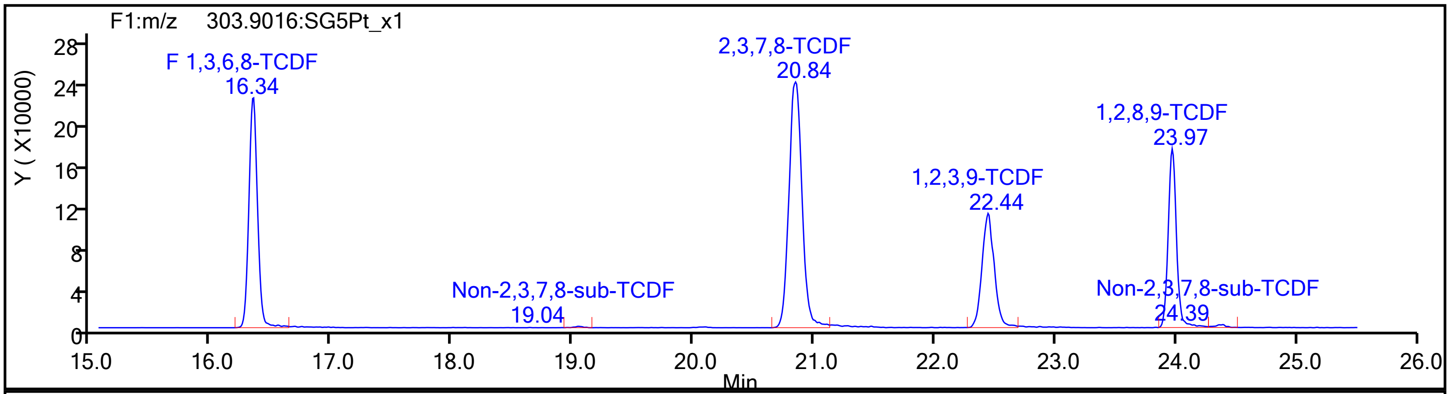

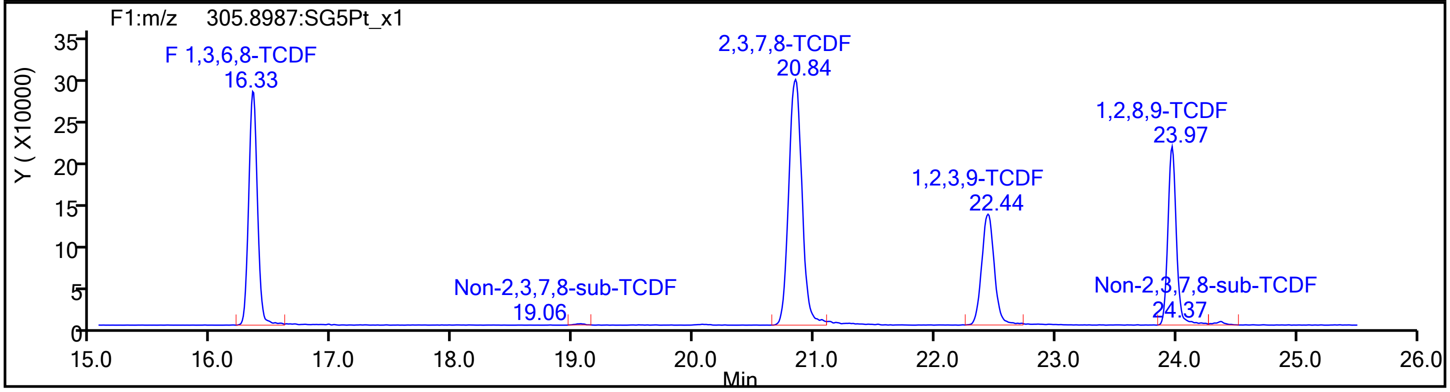

TCDF Standards

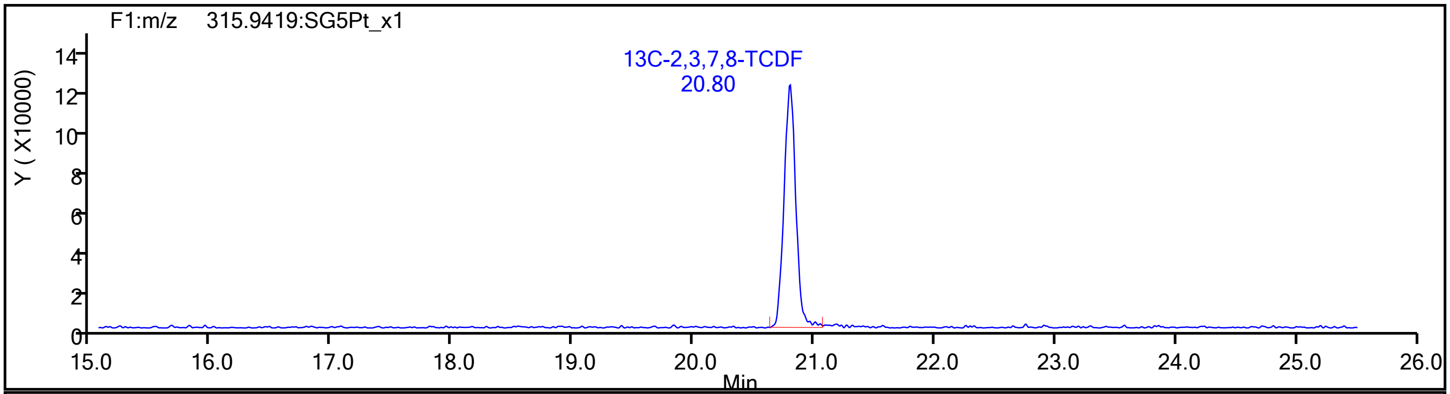

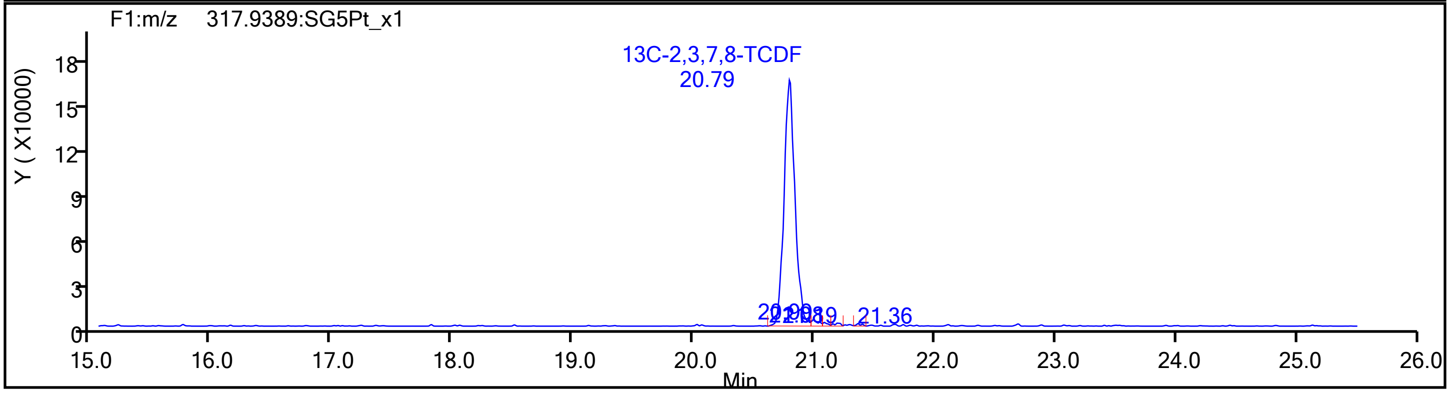

Report Date: 31-Jul-2020 01:01:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

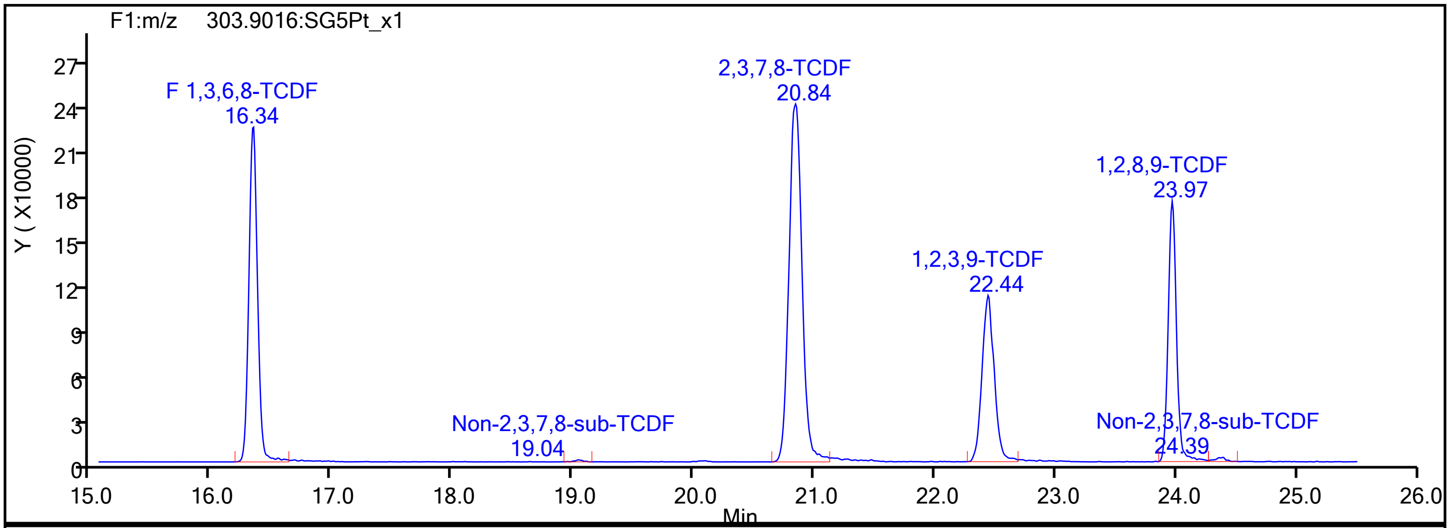

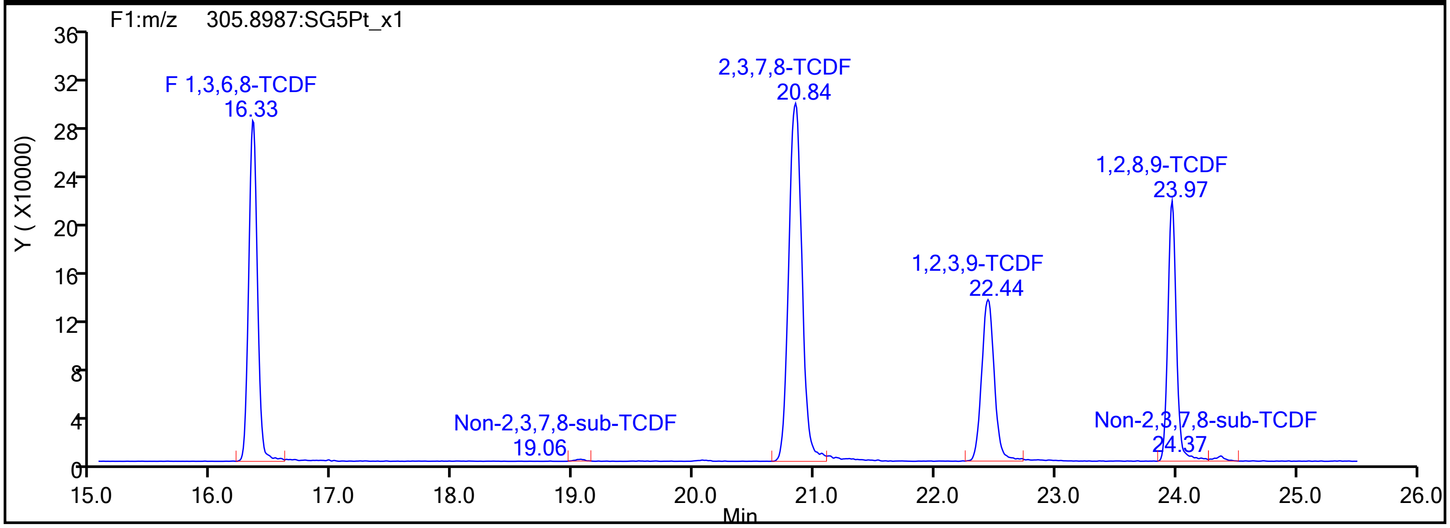

TCDF Interference Mass

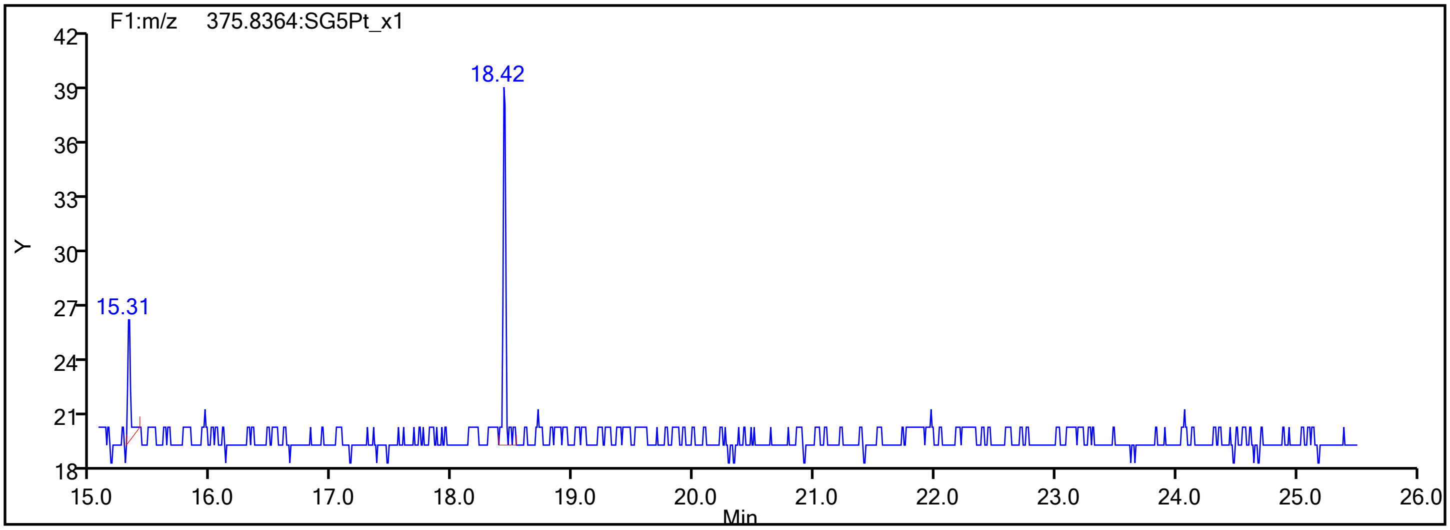

Report Date: 31-Jul-2020 01:01:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

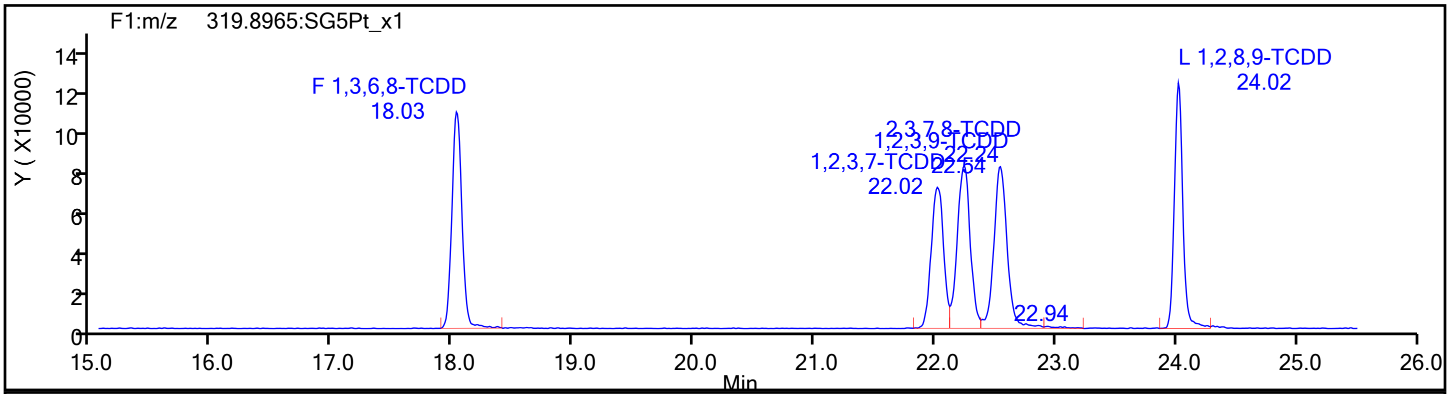

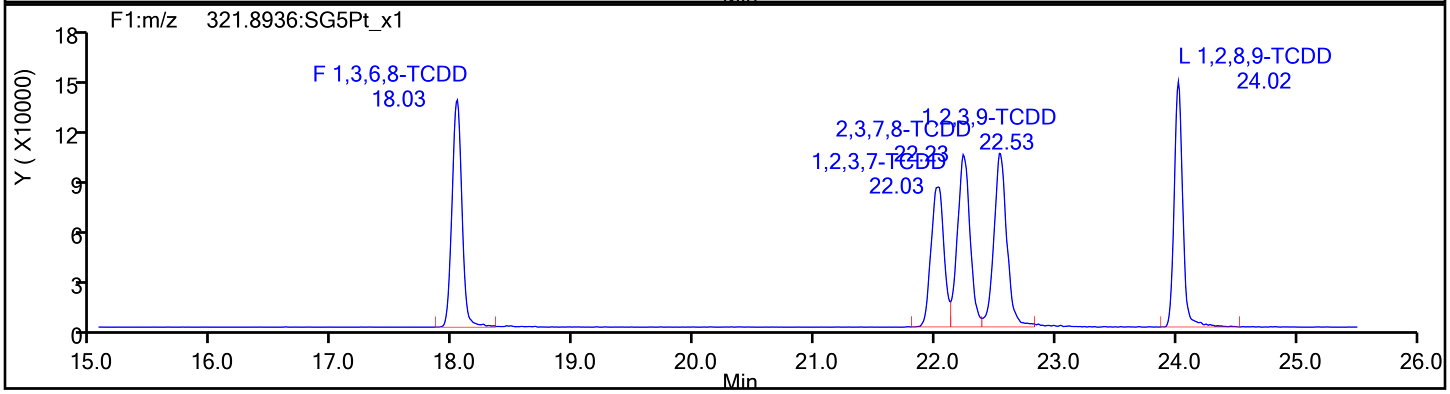

TCDD Standards

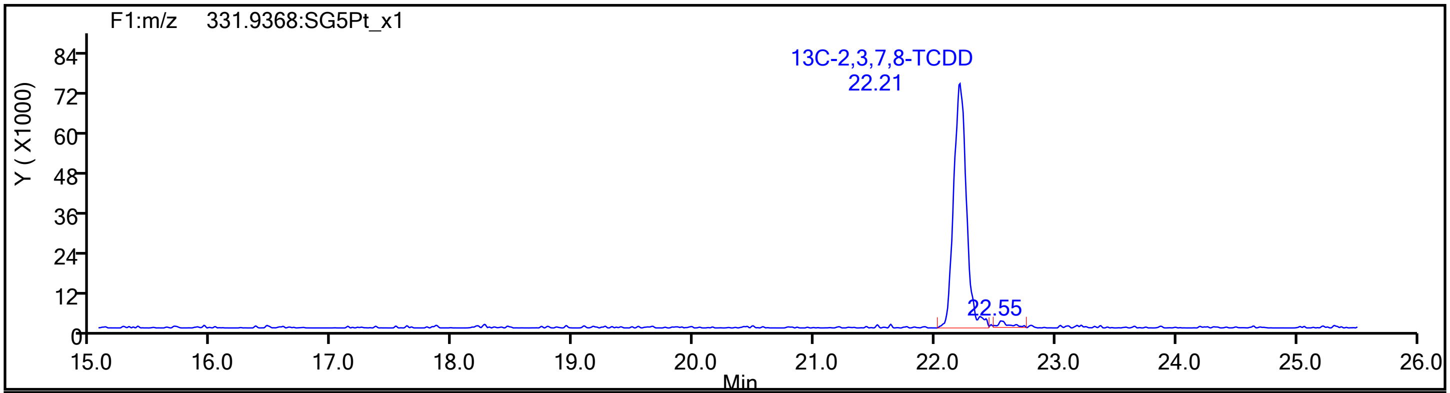

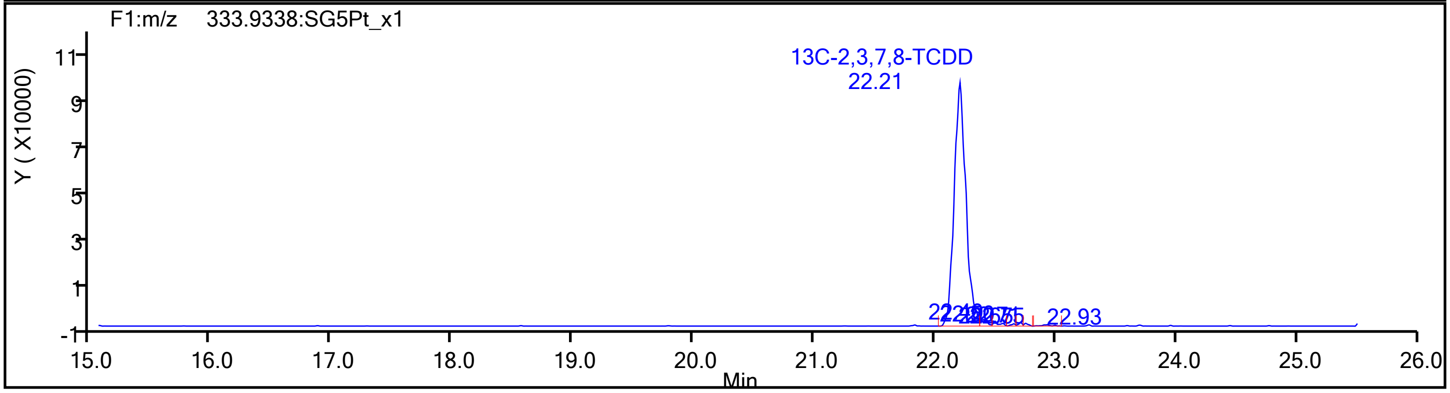

Report Date: 31-Jul-2020 01:01:31
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d
Injection Date: 30-Jul-2020 12:02:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399843
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

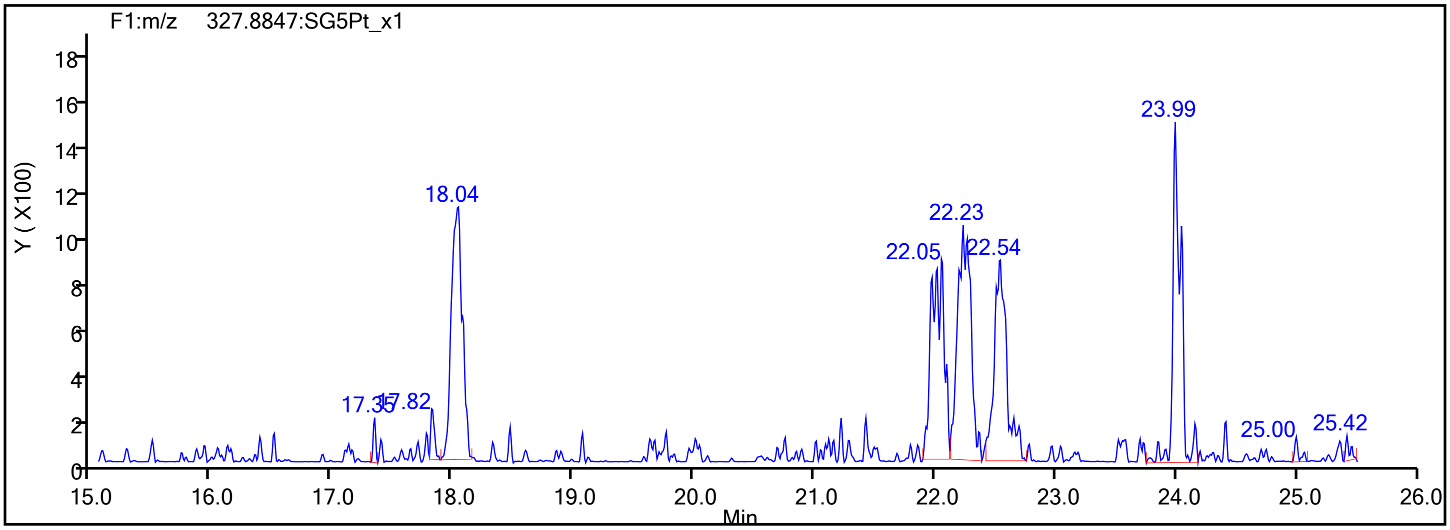

37Cl4-TCDD Standards

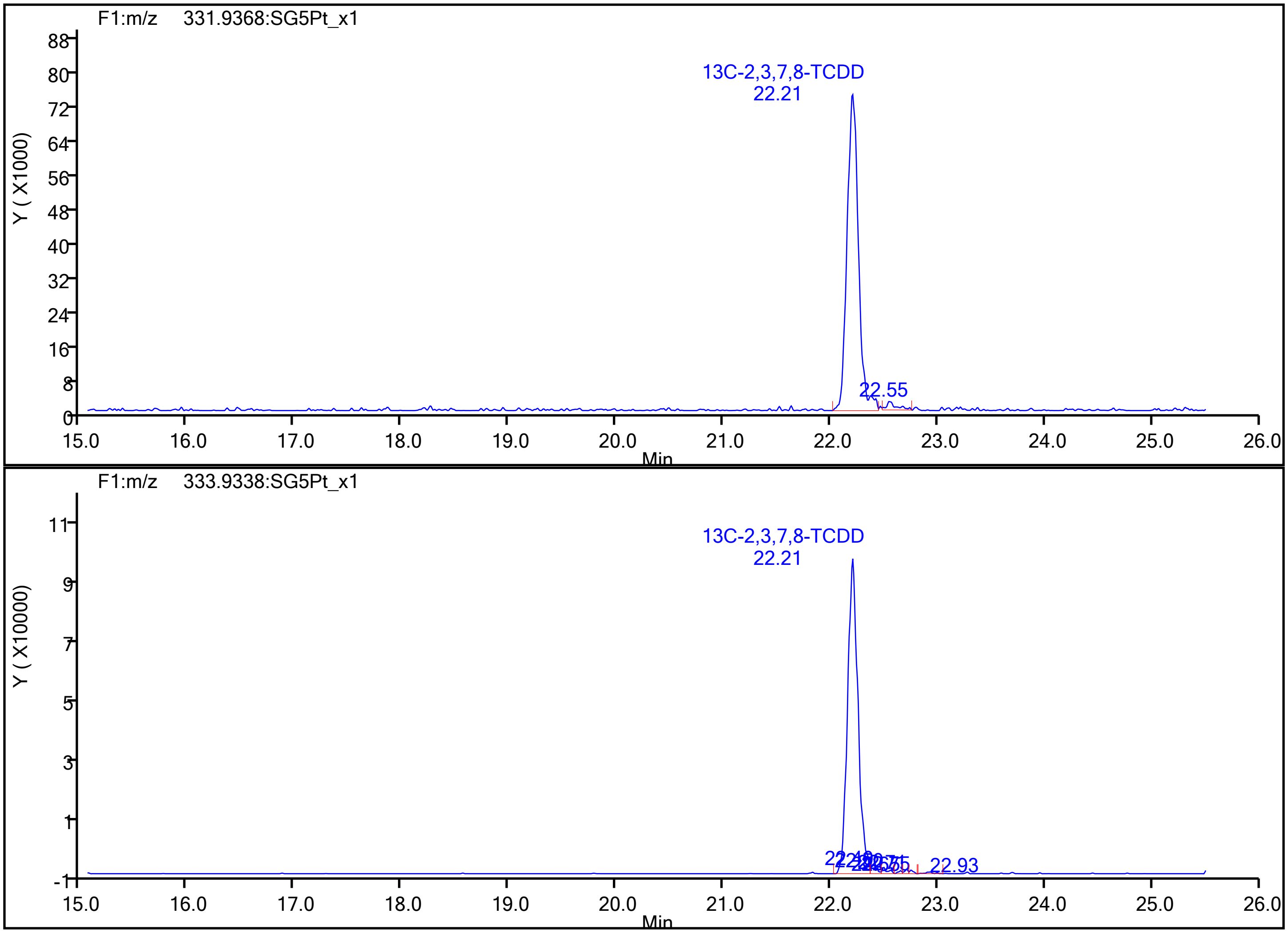

Report Date: 31-Jul-2020 01:01:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d

Injection Date: 30-Jul-2020 12:02:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 399843 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

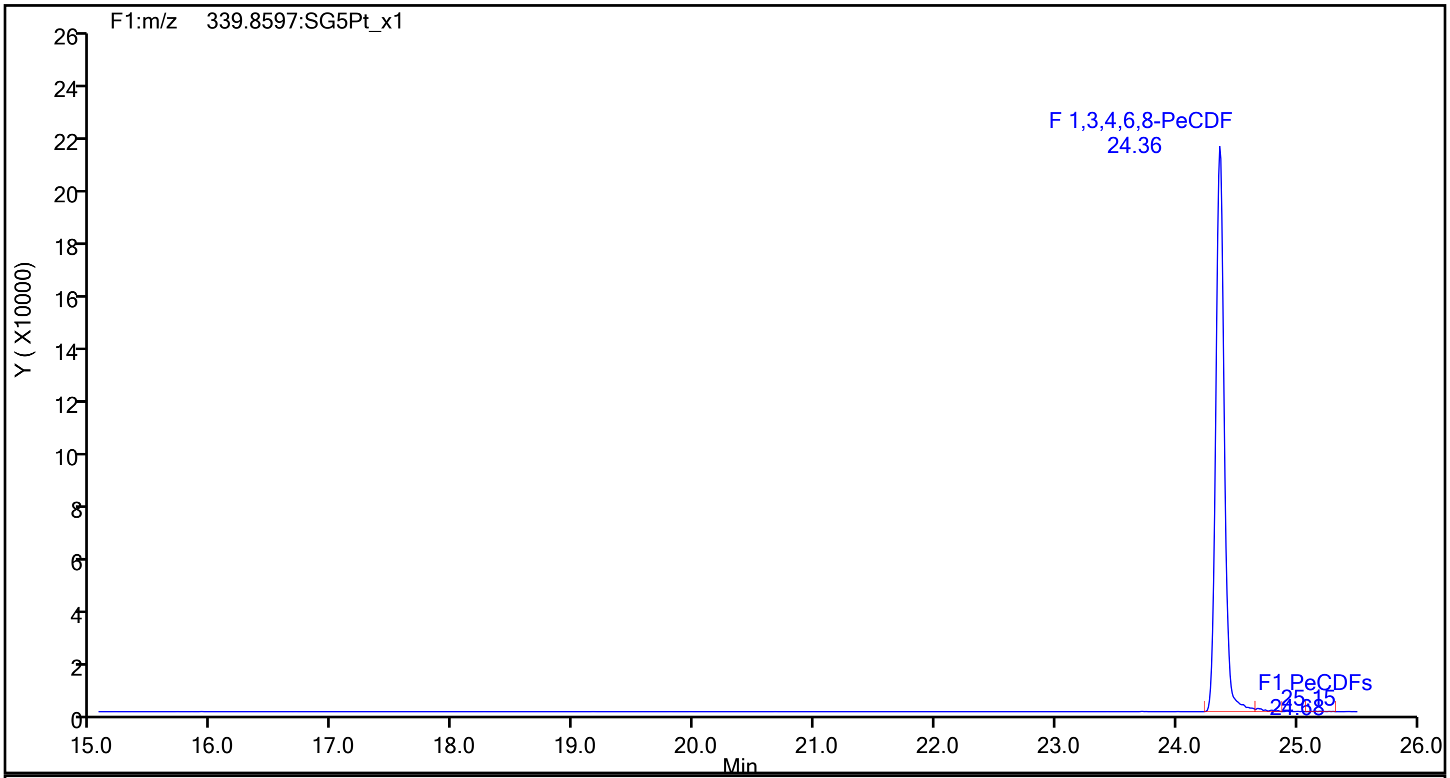

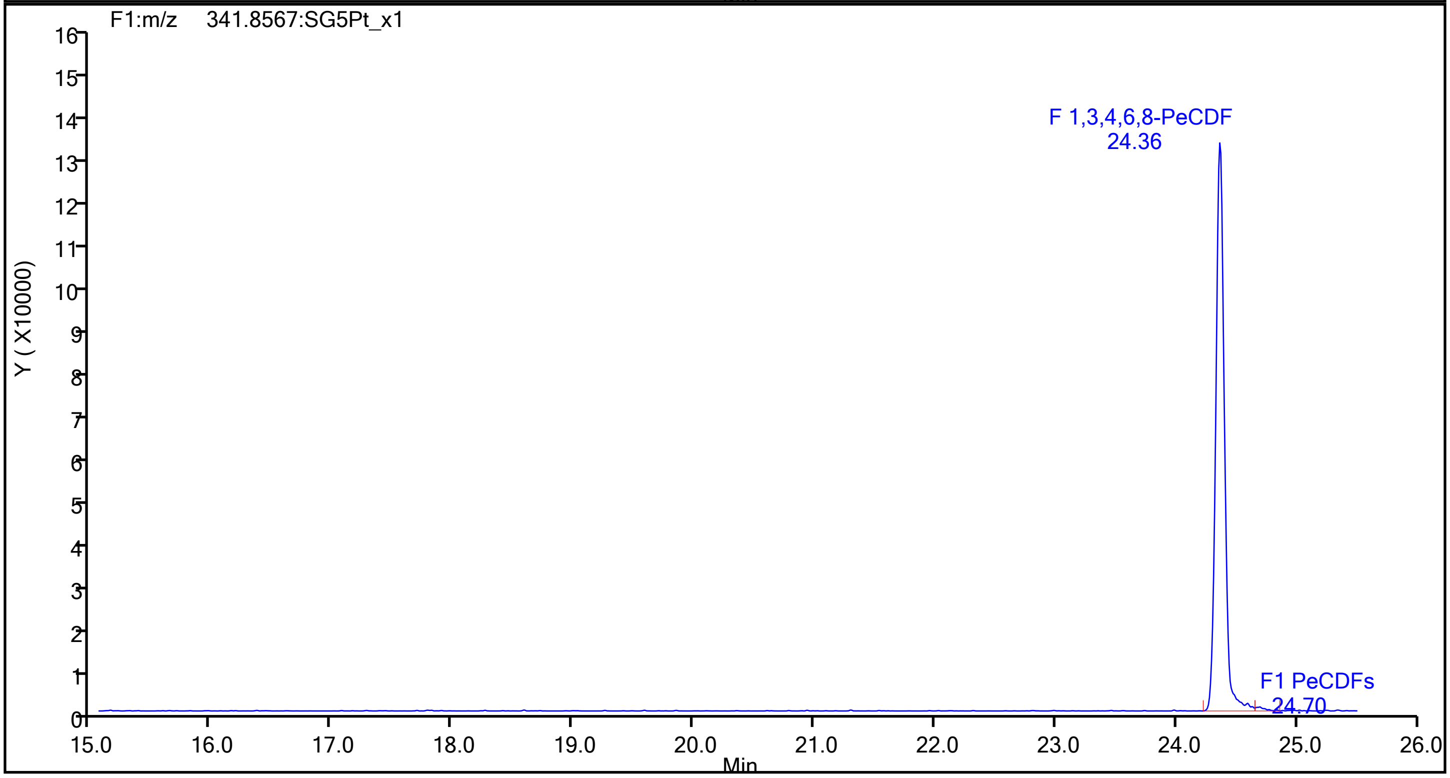

Report Date: 31-Jul-2020 01:01:31 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

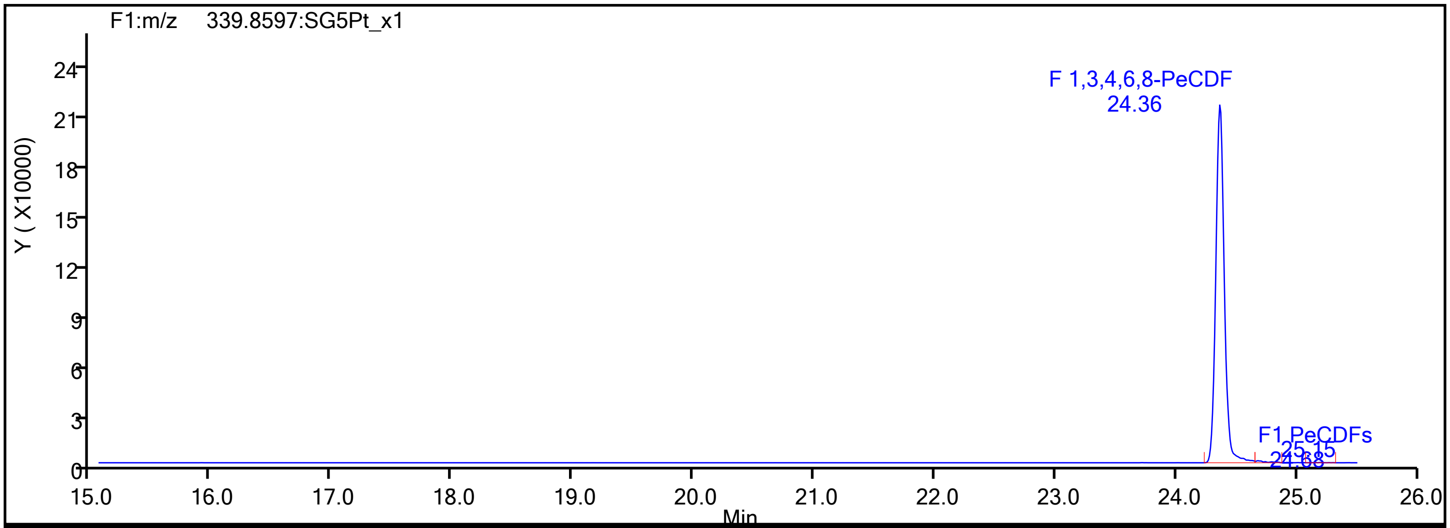

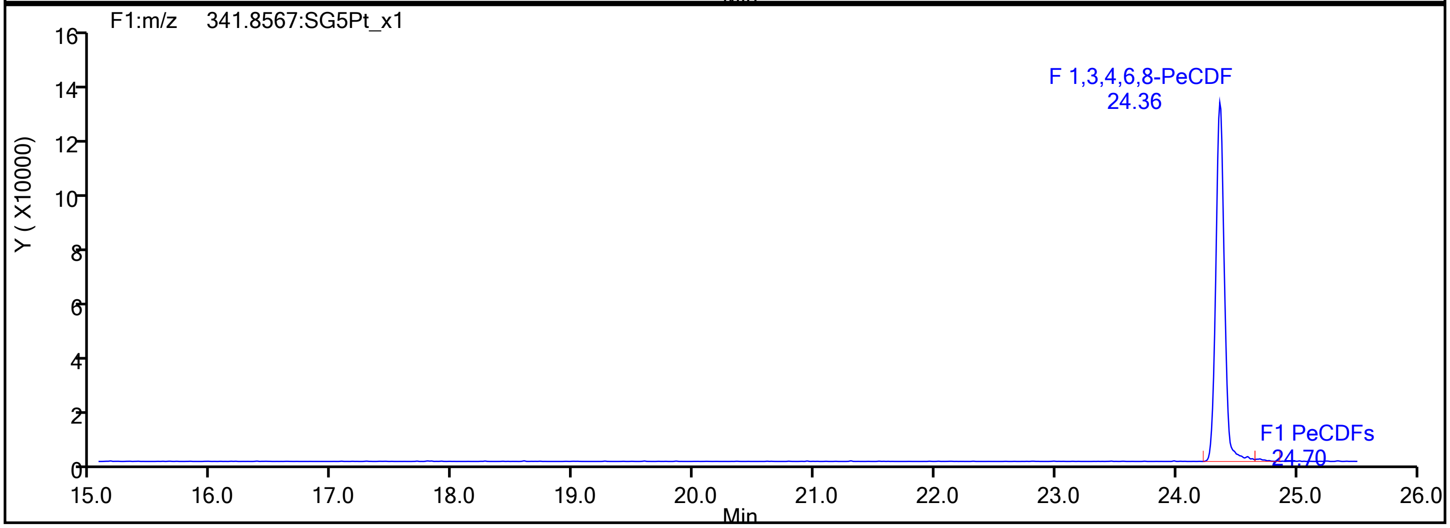

F1 PeCDFs Interference Mass

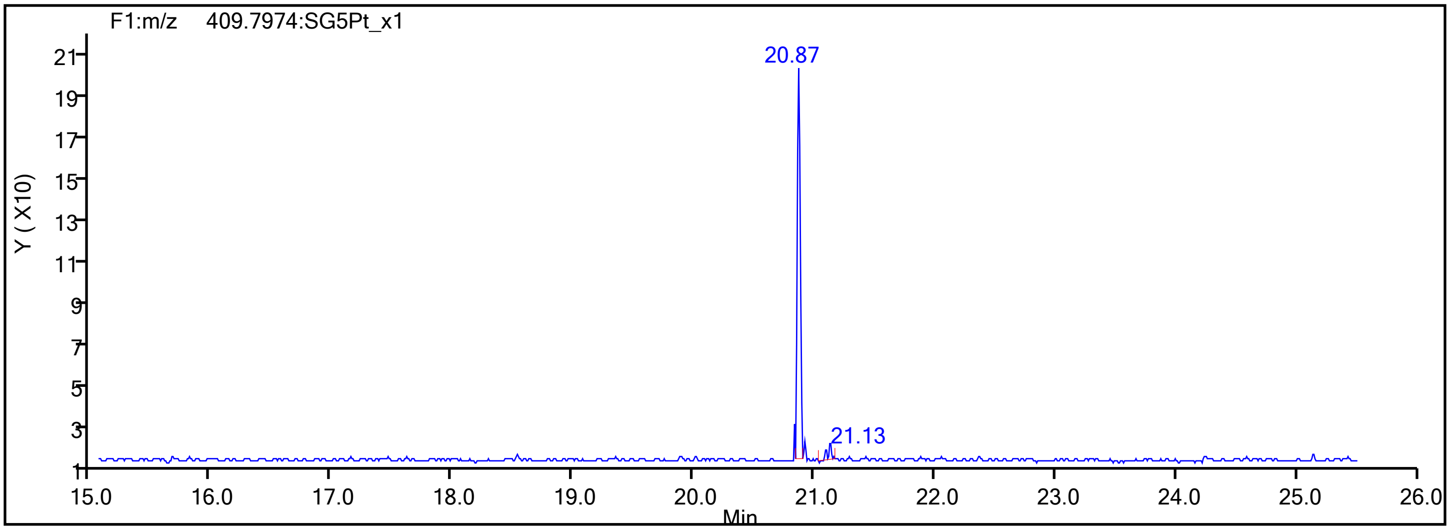

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

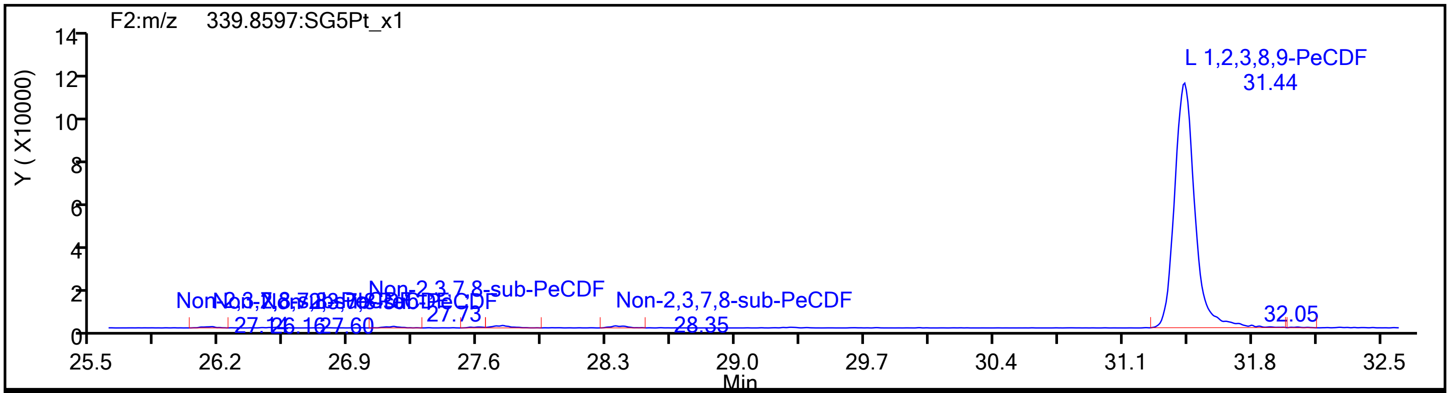

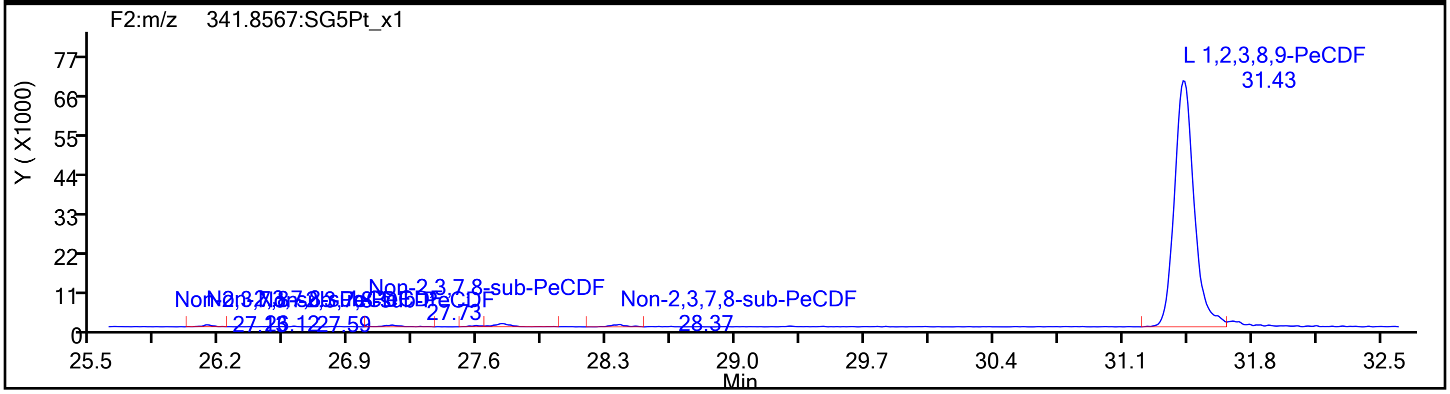

PeCDF Standards

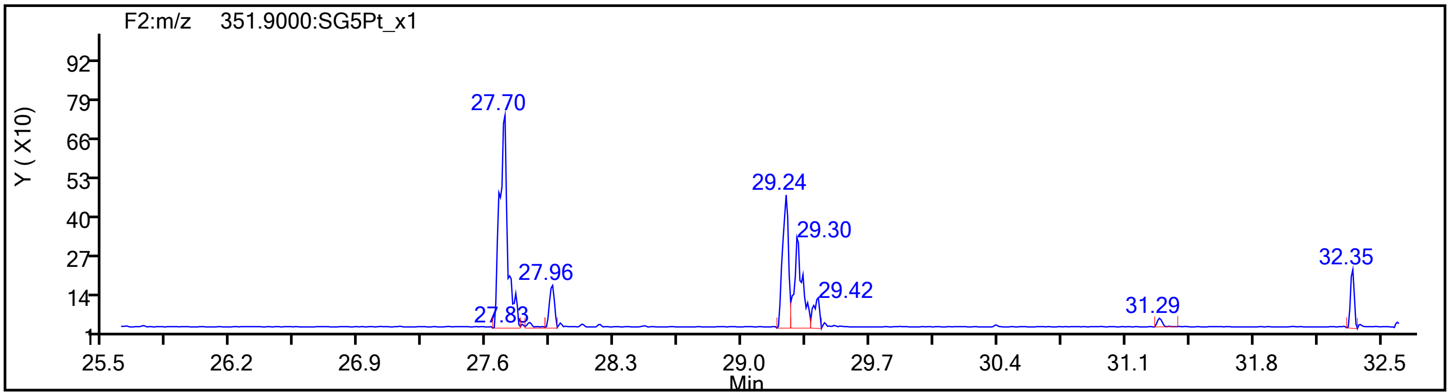

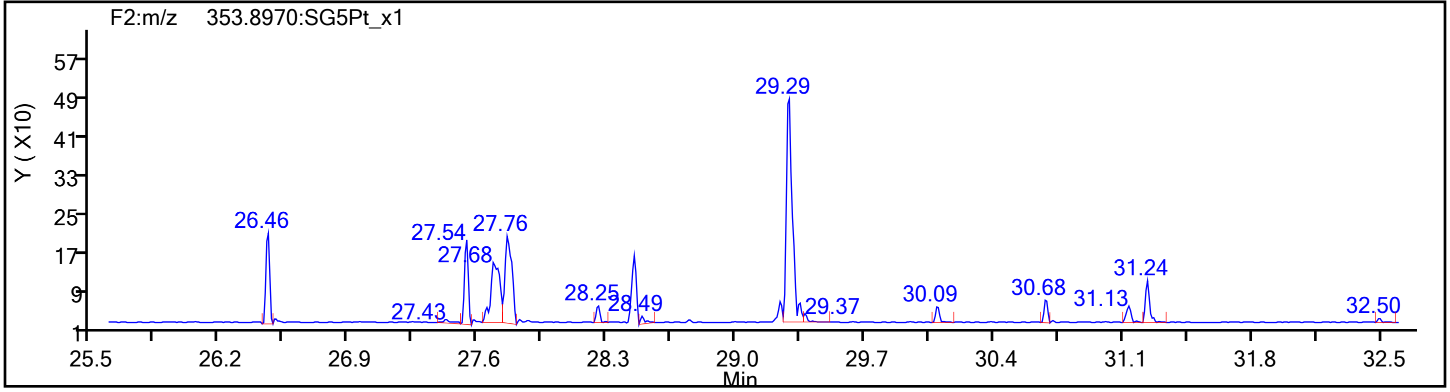

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

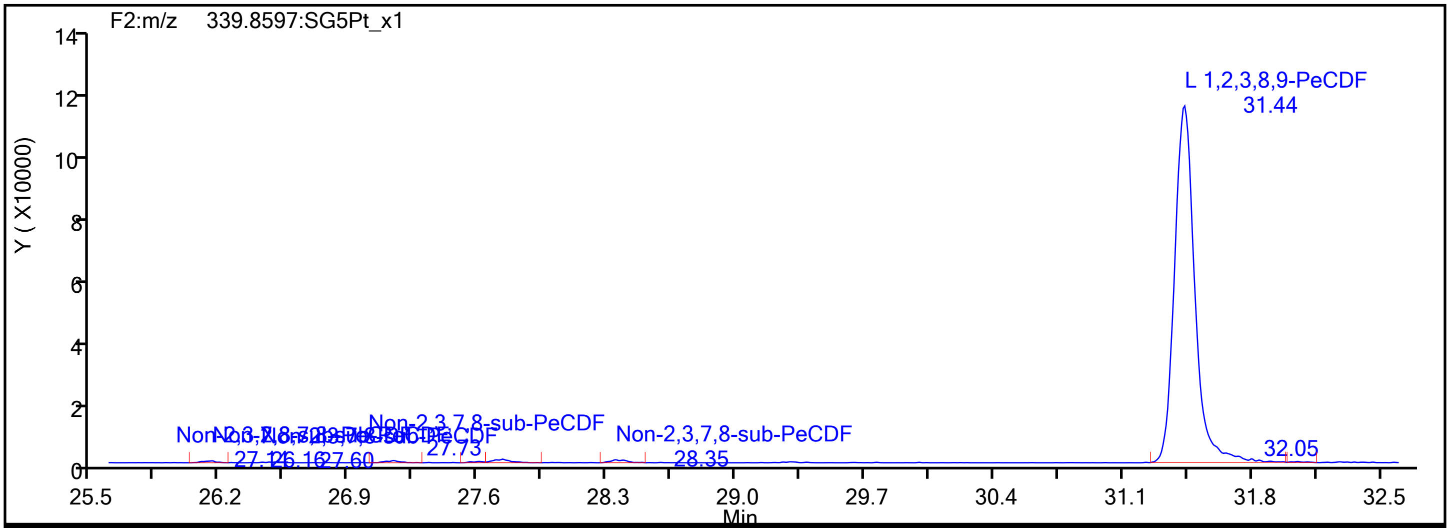

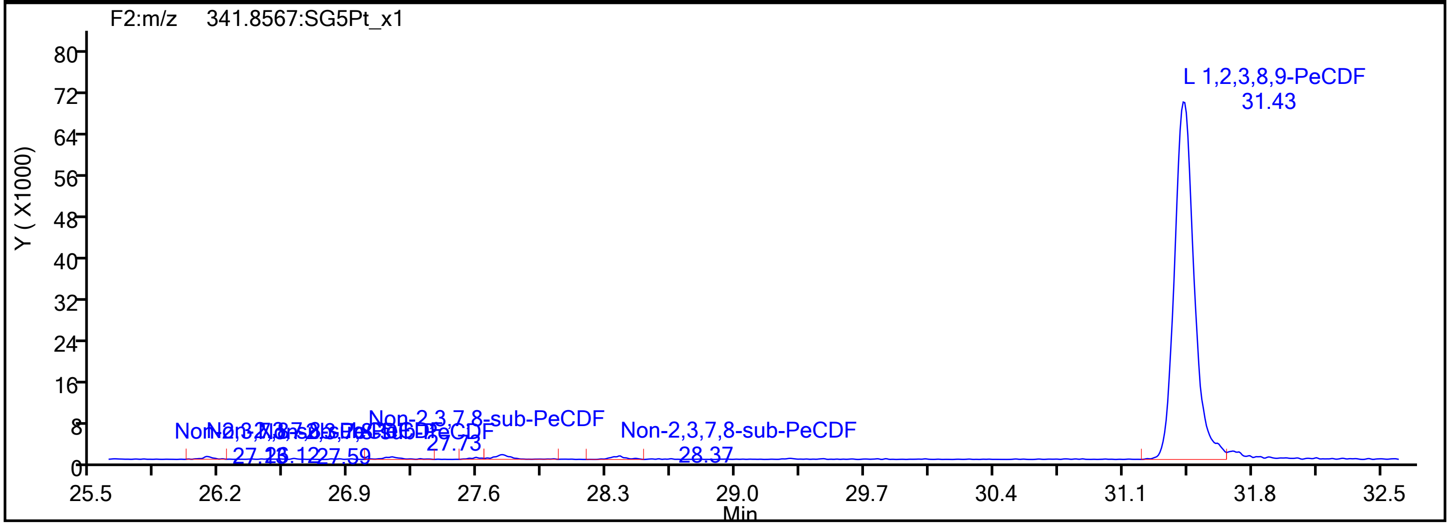

PeCDF Interference Mass

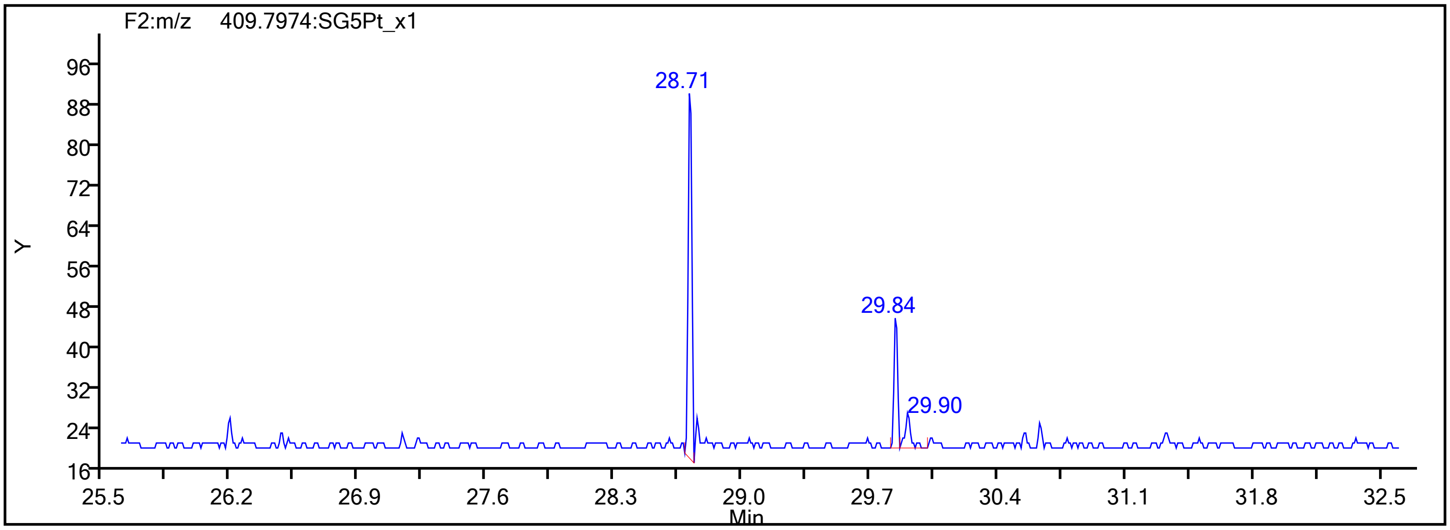

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

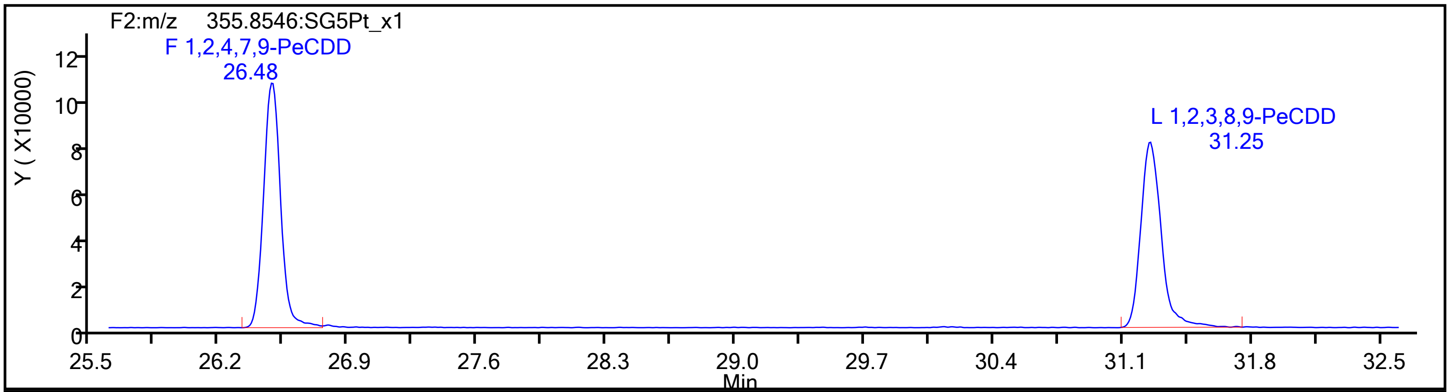

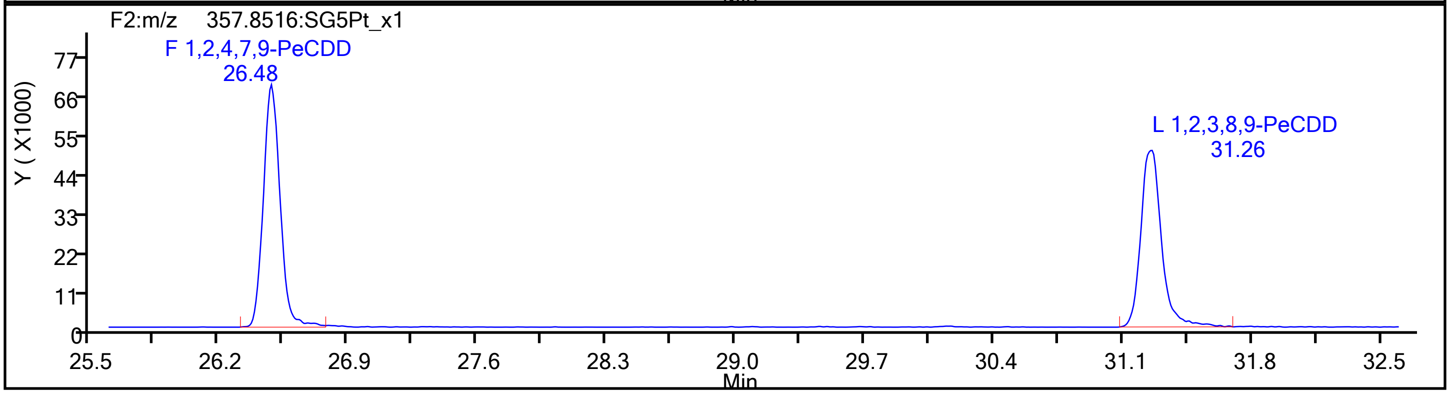

PeCDD Standards

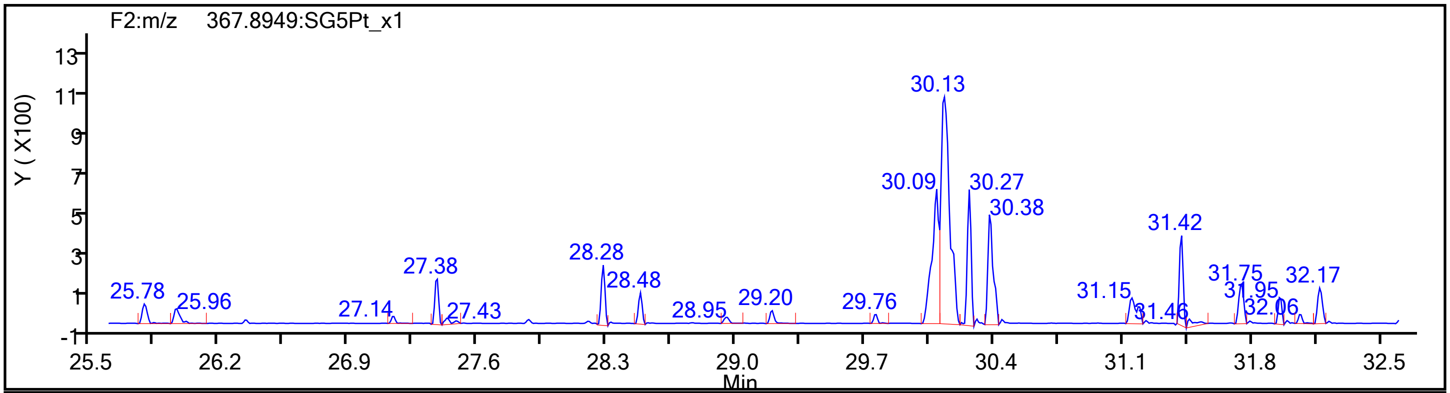

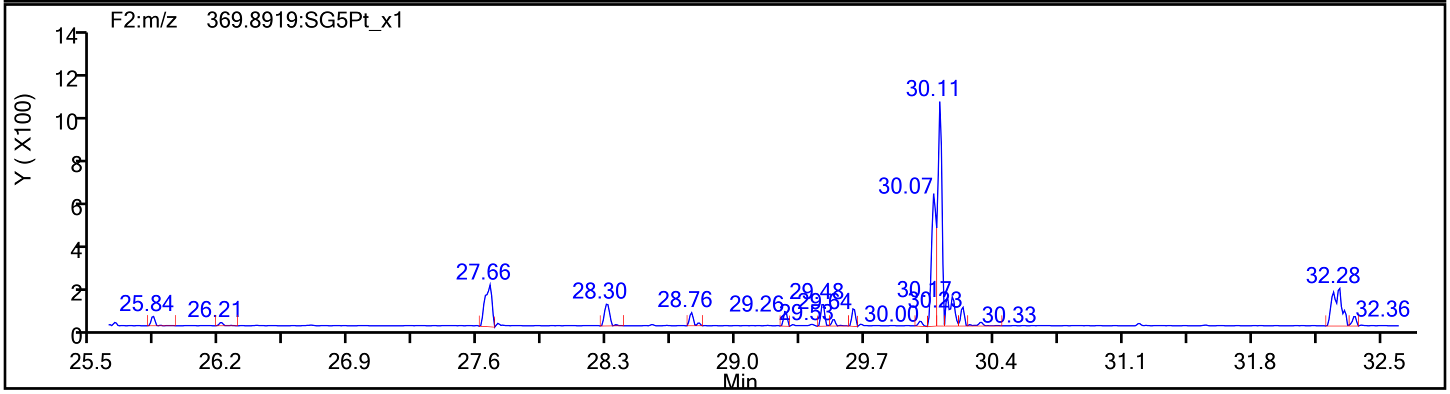

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d

Injection Date: 30-Jul-2020 12:02:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399843
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

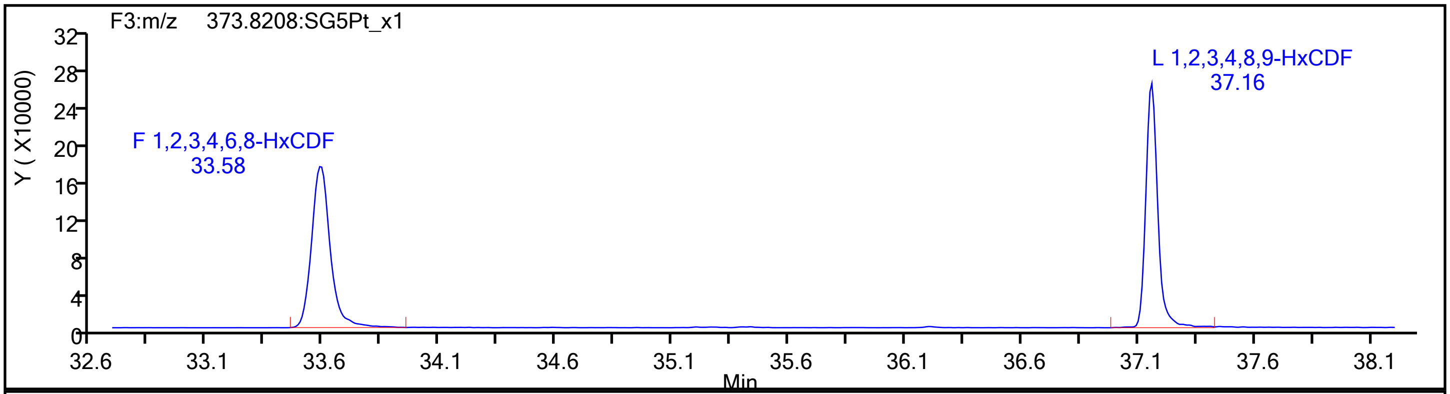

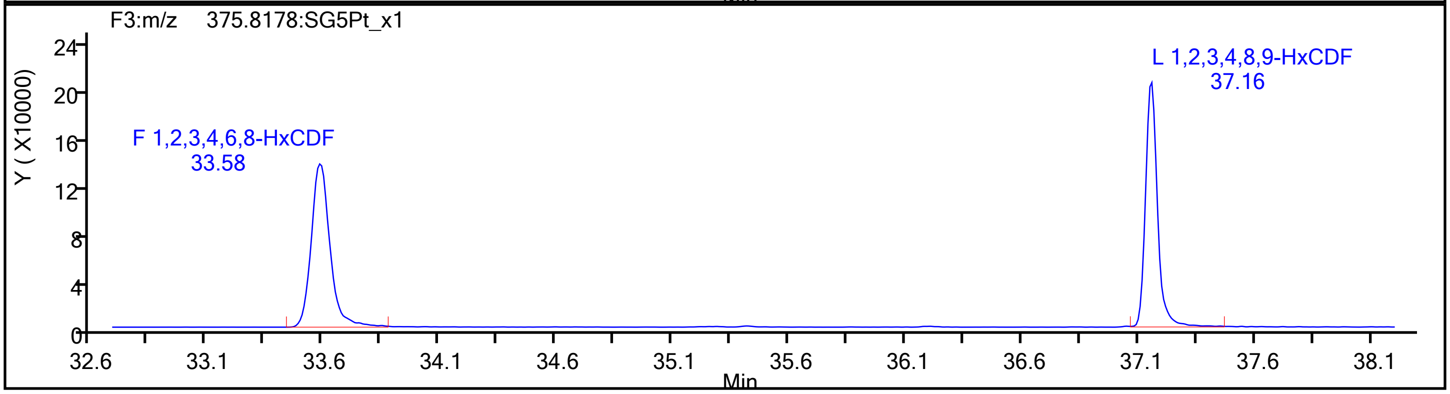

HxCDF Standards

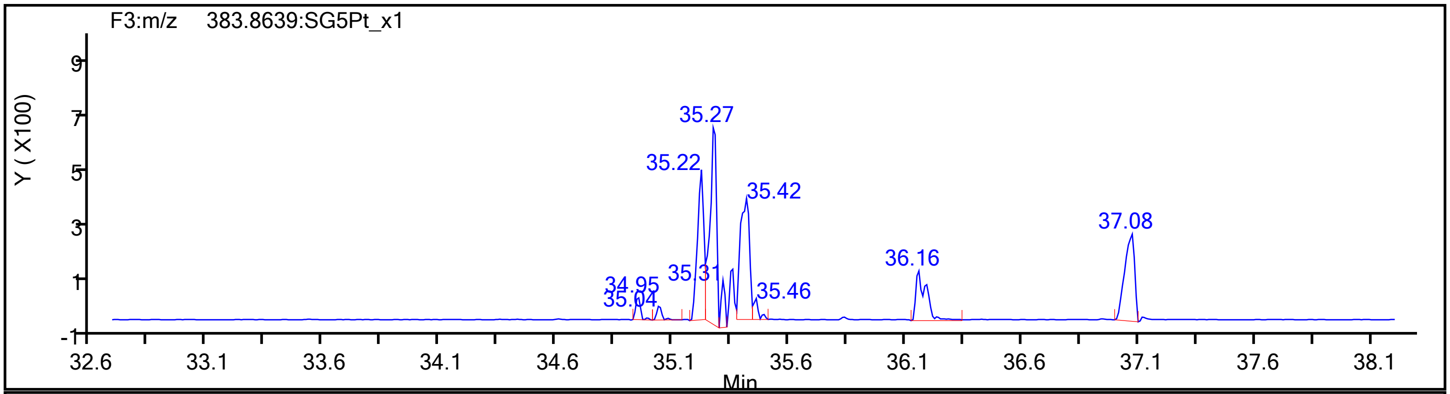

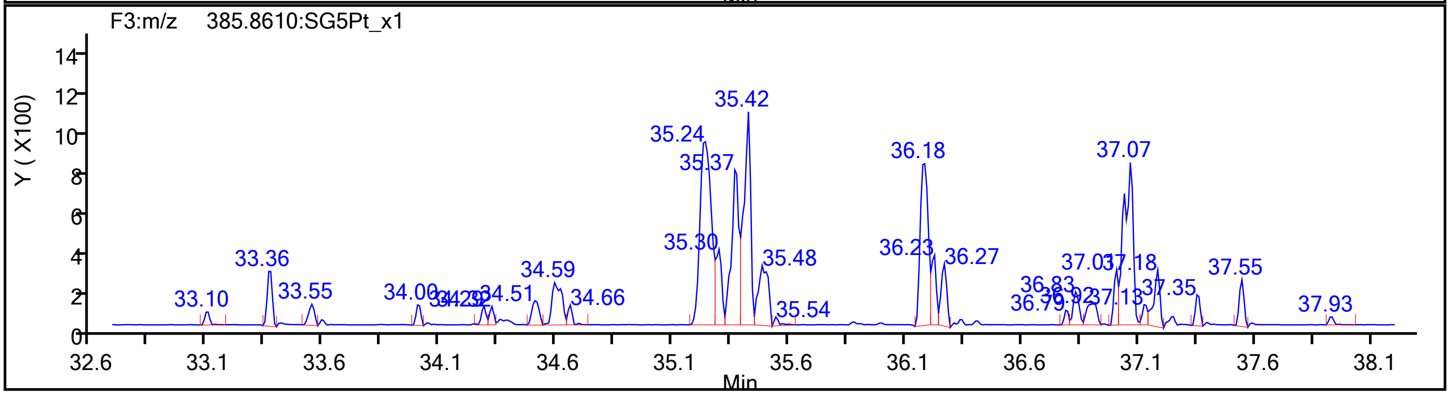

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d
Injection Date: 30-Jul-2020 12:02:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 399843 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

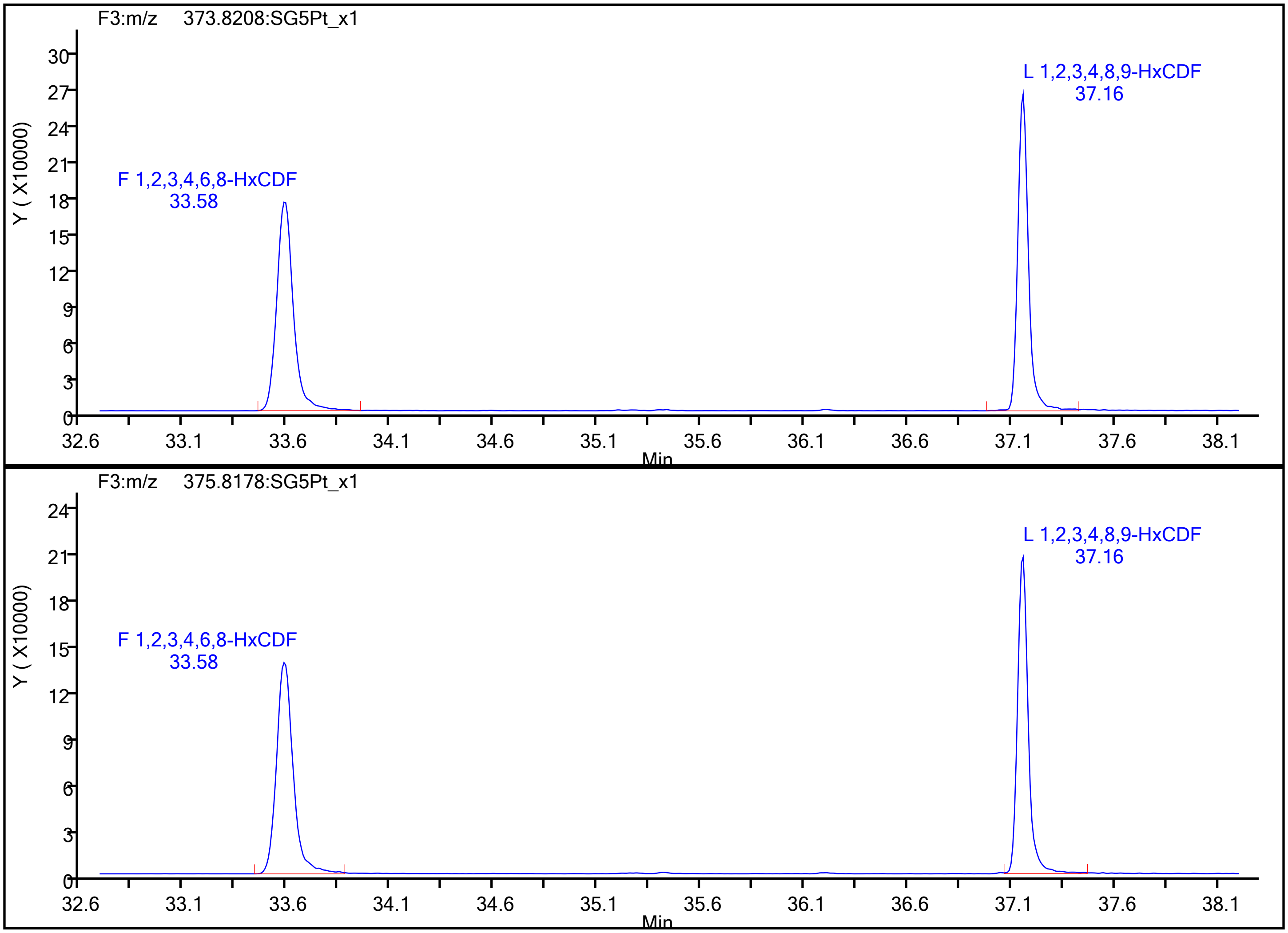

HxCDF Interference Mass

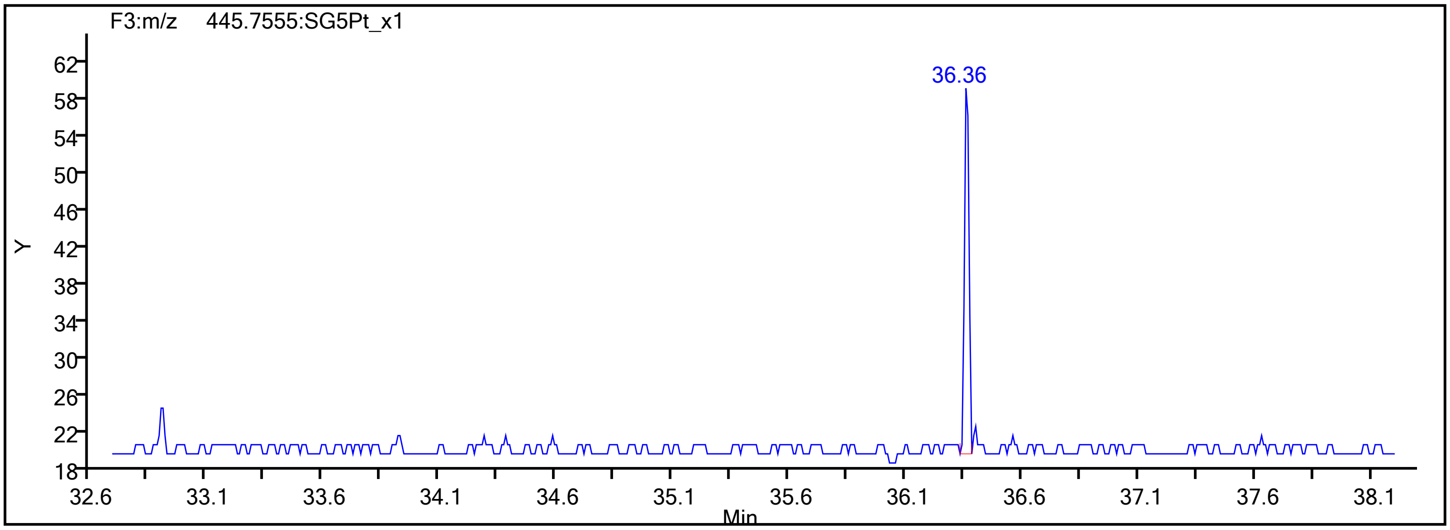

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d

Injection Date: 30-Jul-2020 12:02:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 399843 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

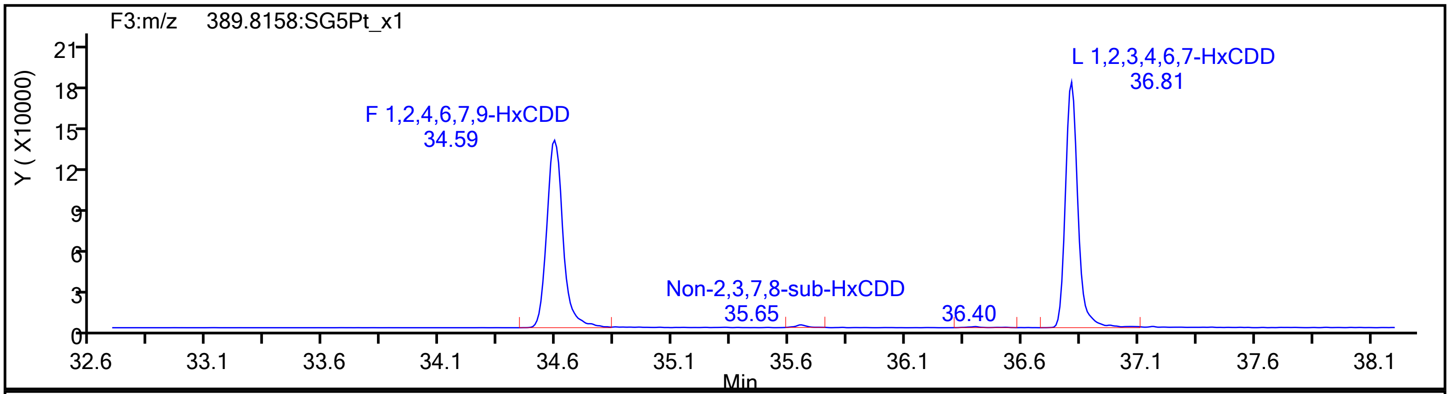

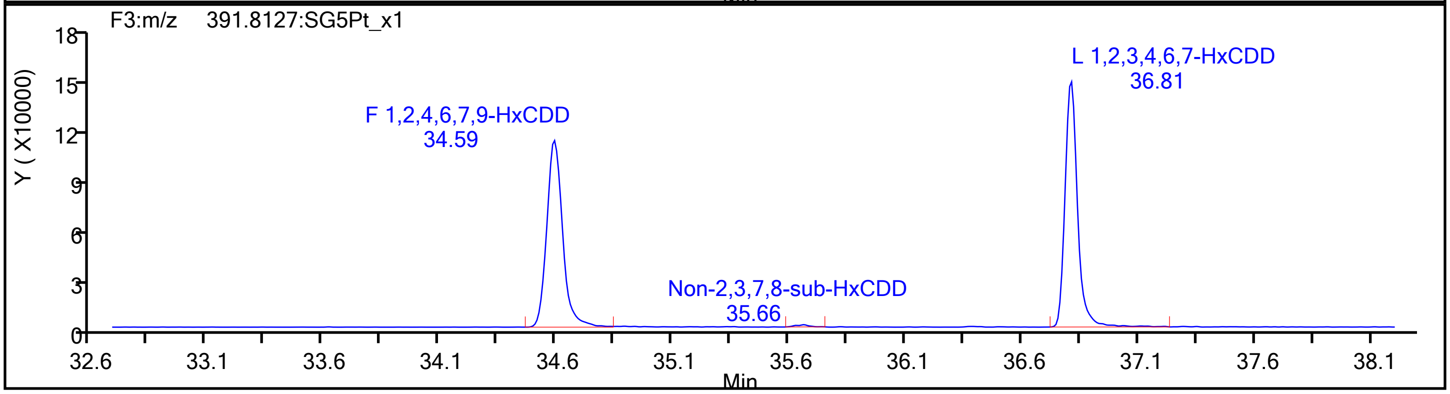

HxCDD Standards

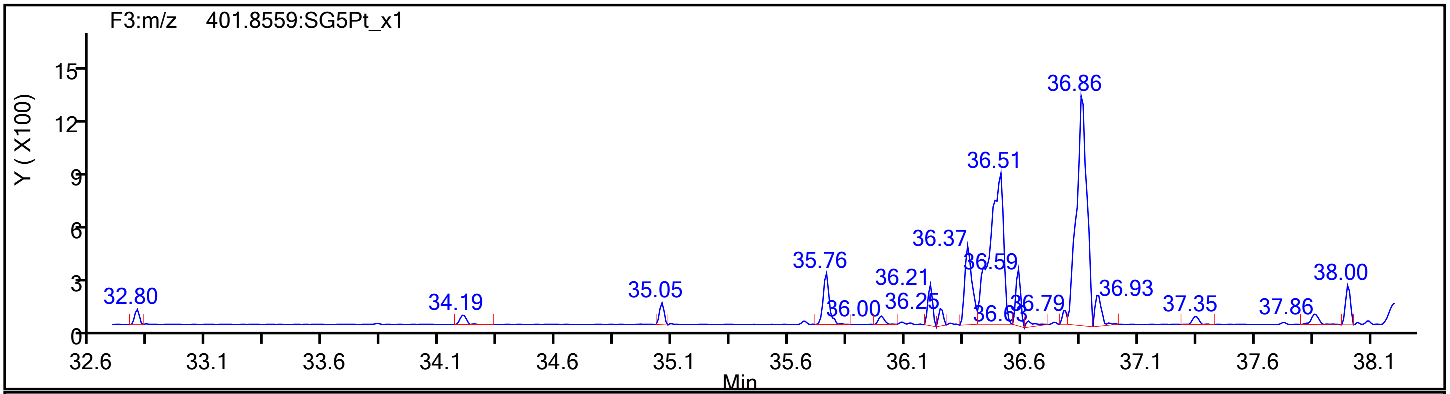

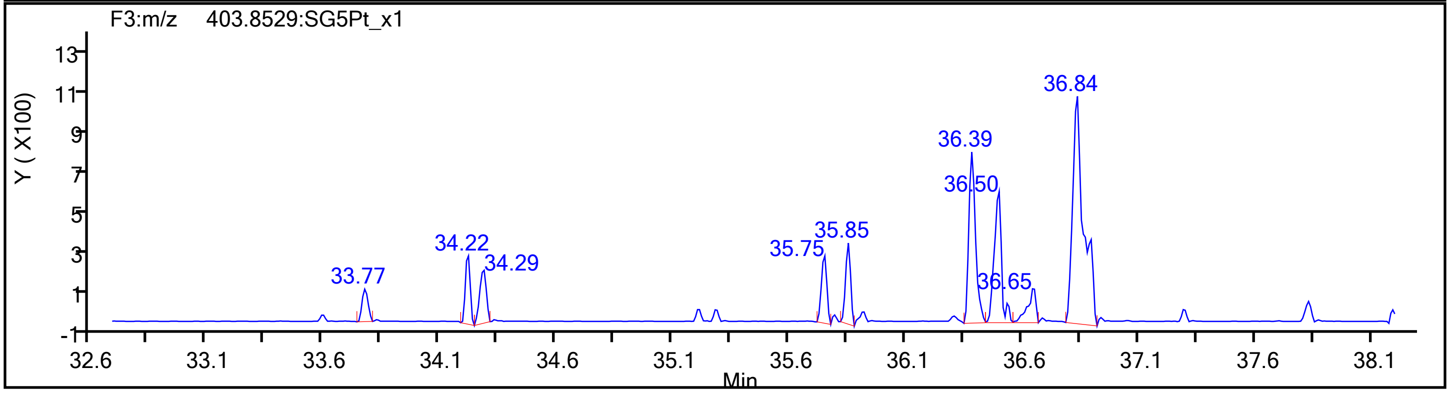

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

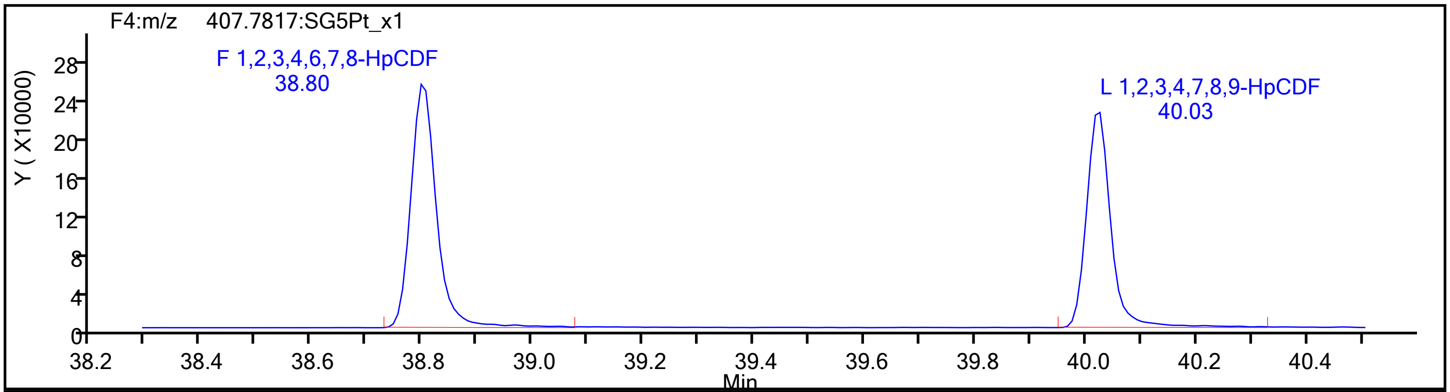

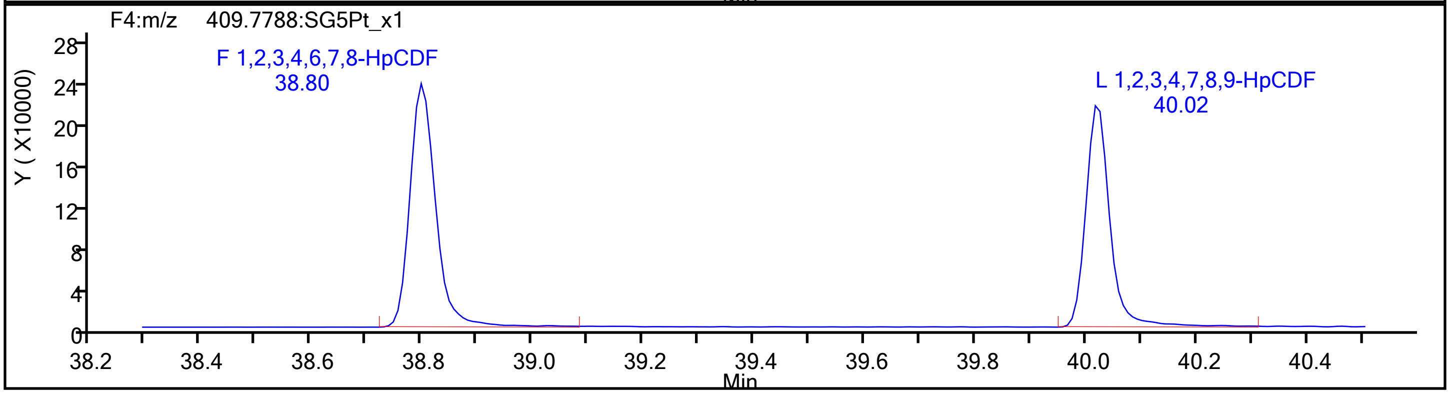

HpCDF Standards

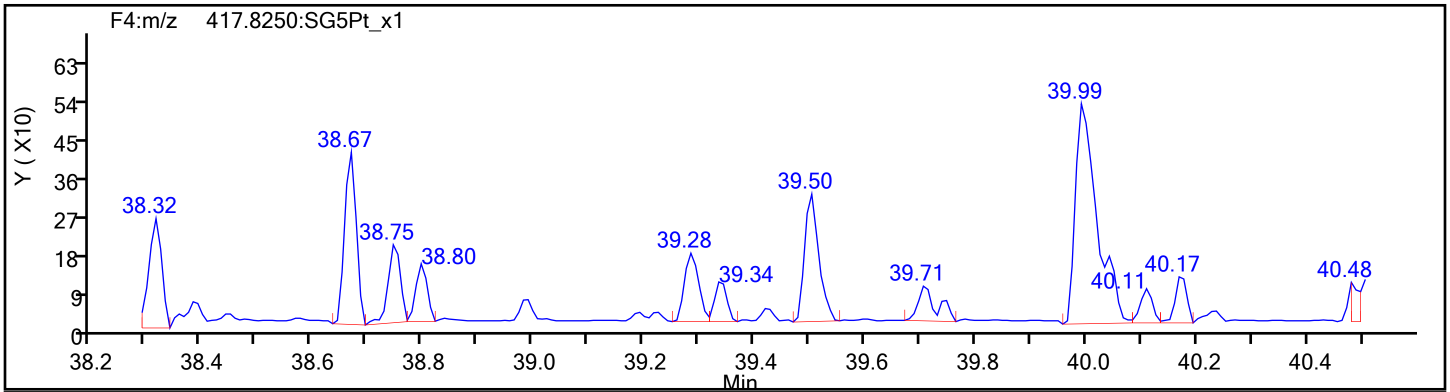

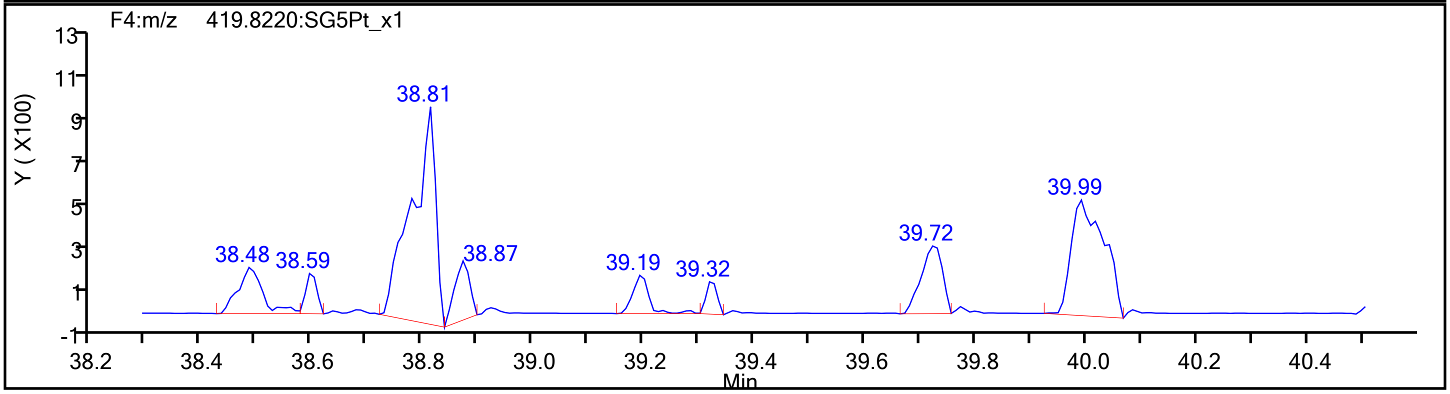

Report Date: 31-Jul-2020 01:01:32   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

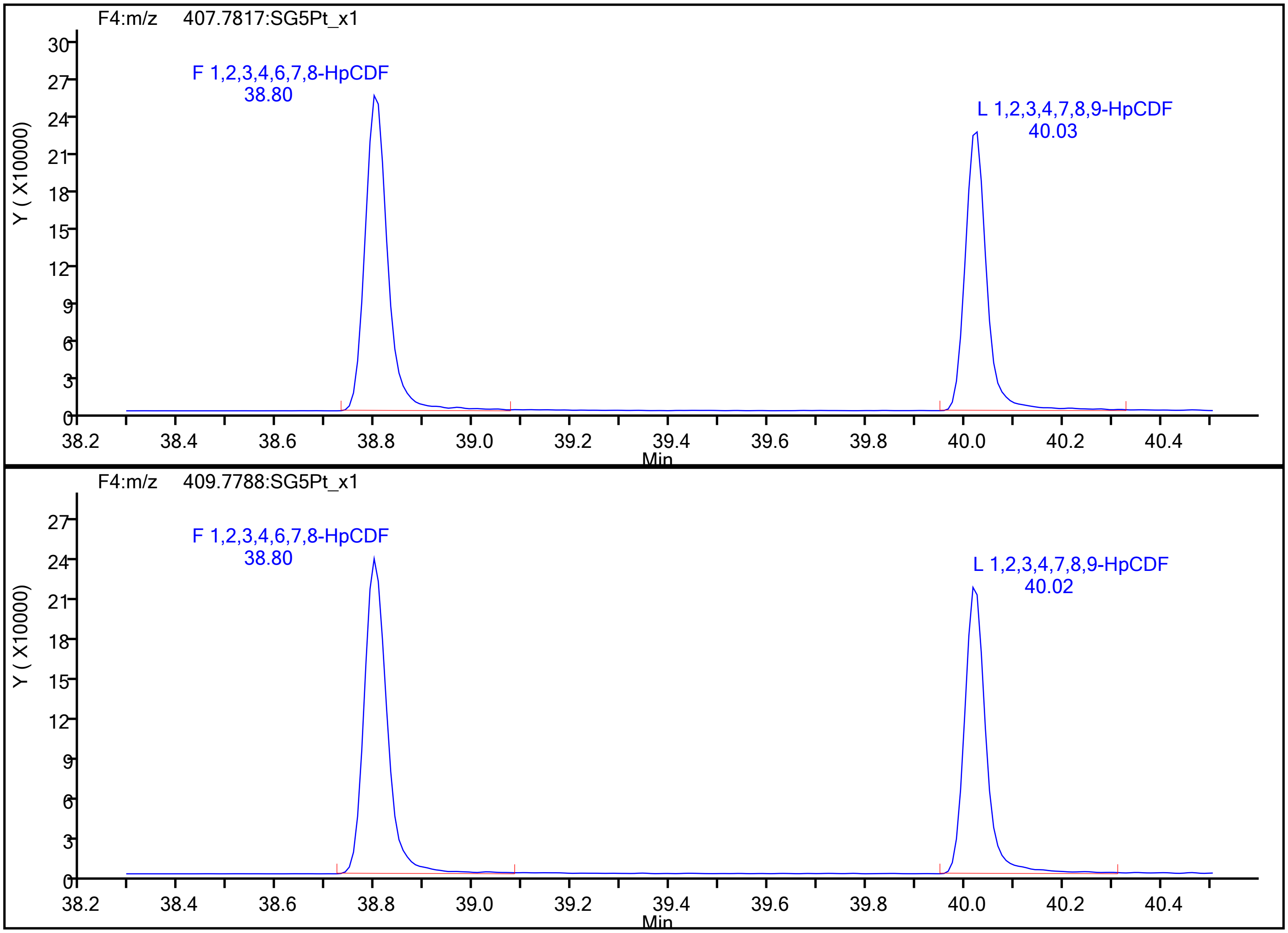

HpCDF Interference Mass

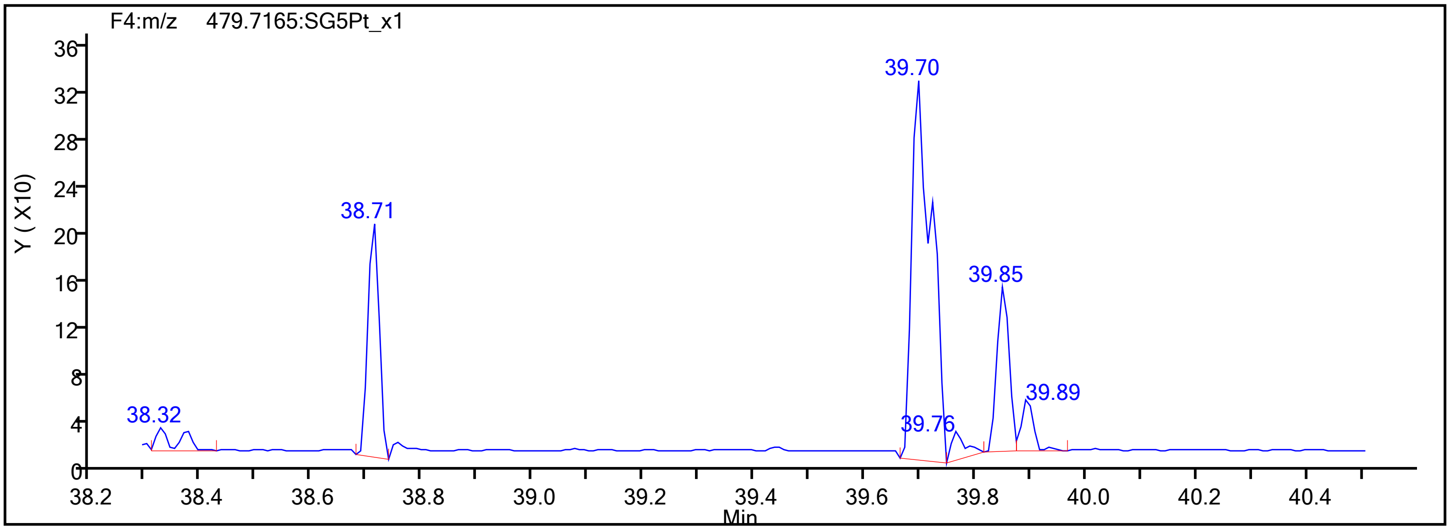

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

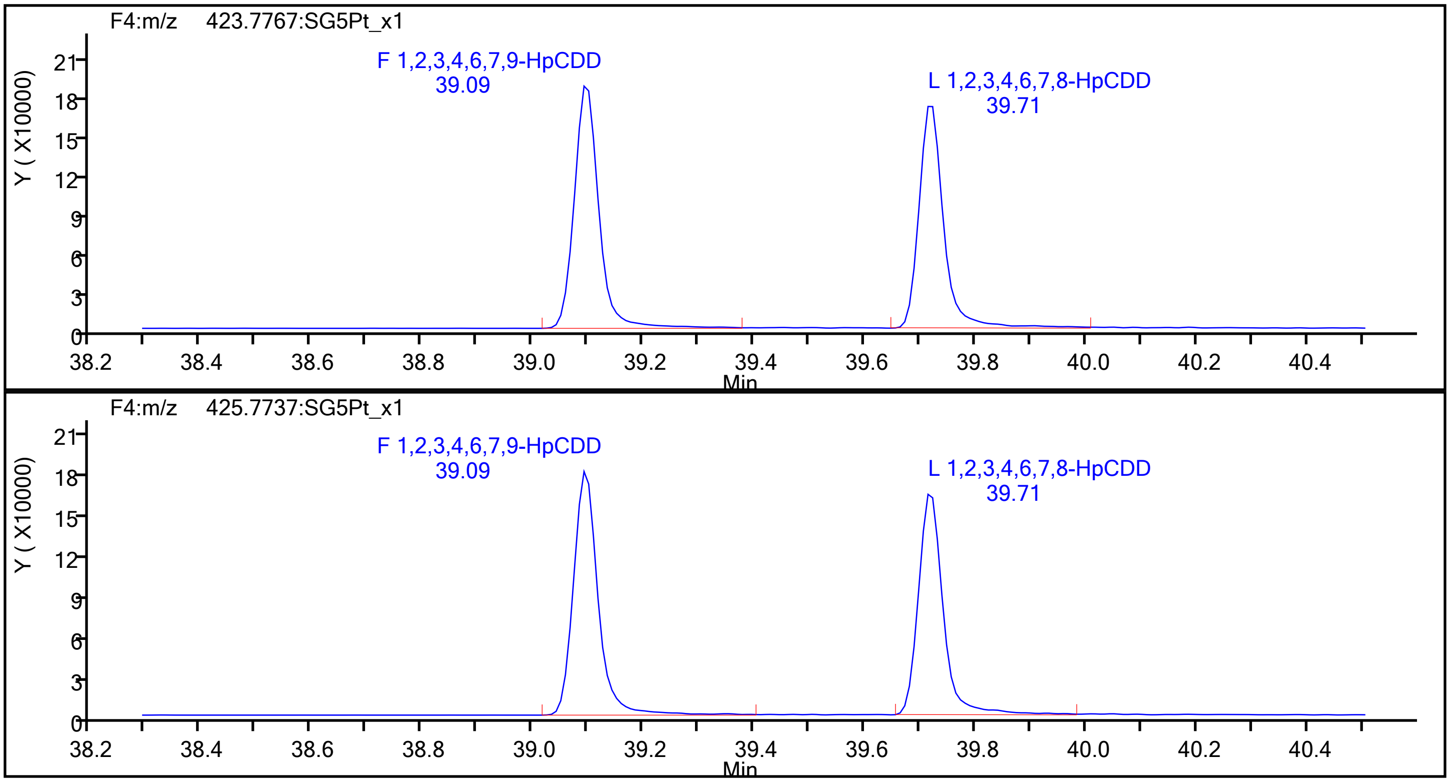

HpCDD Standards

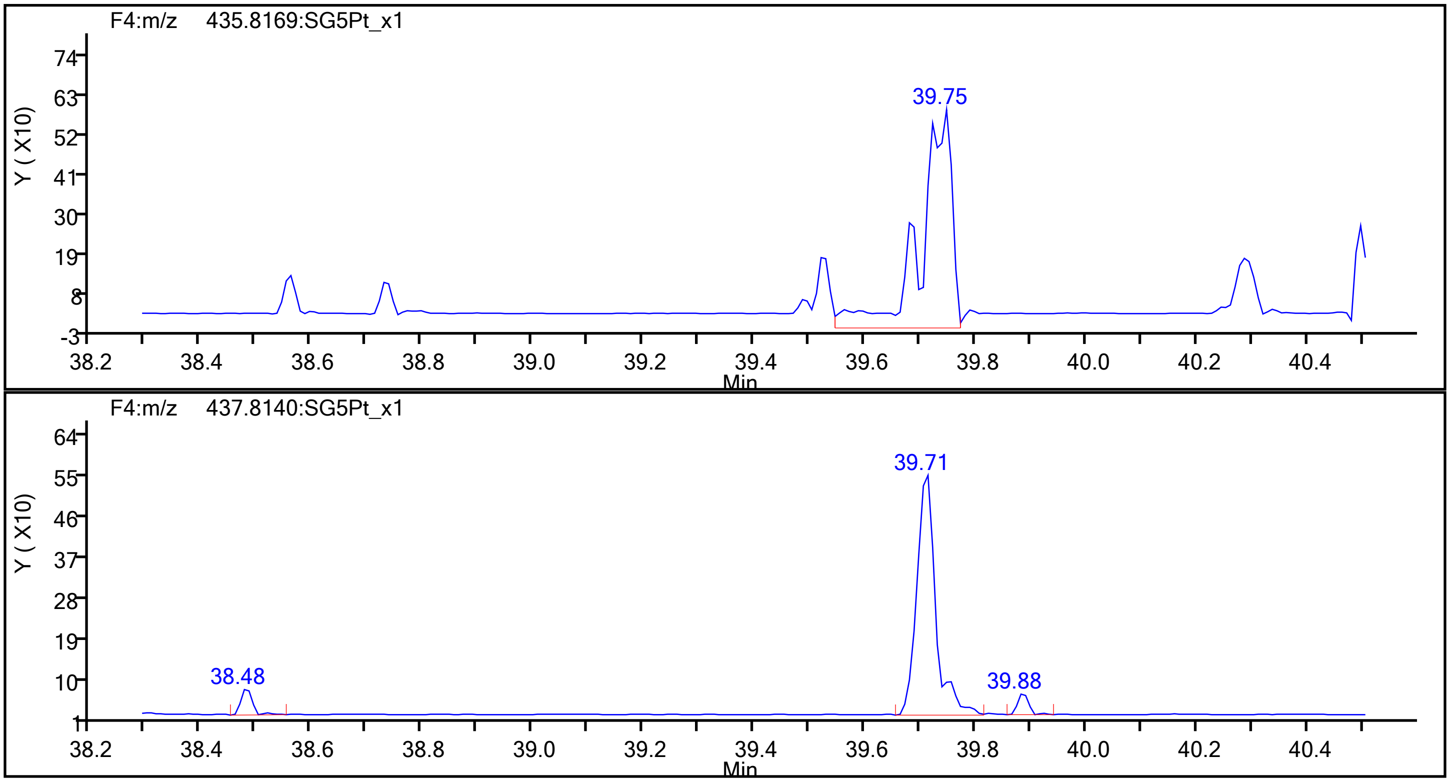

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
Injection Date:	30-Jul-2020 12:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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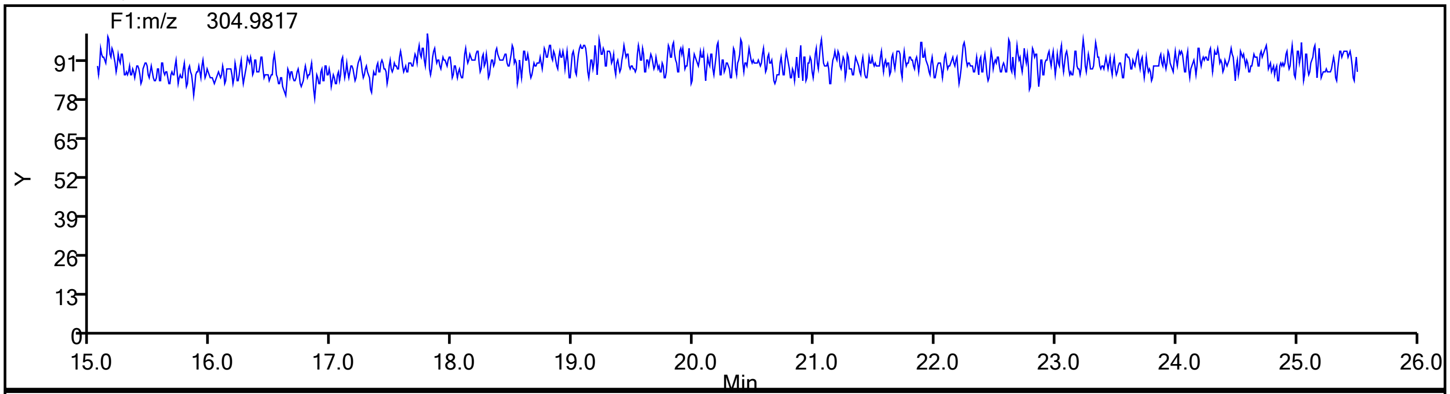

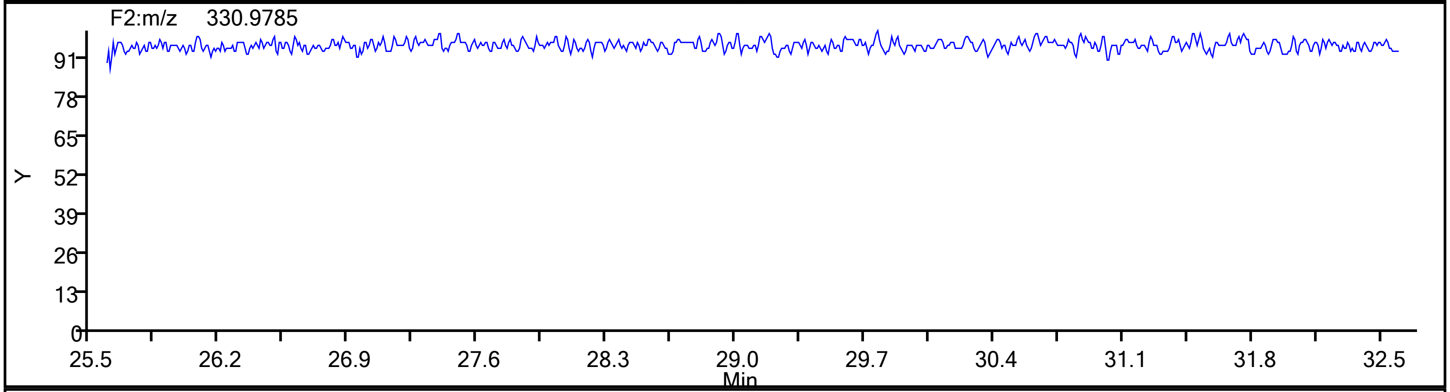

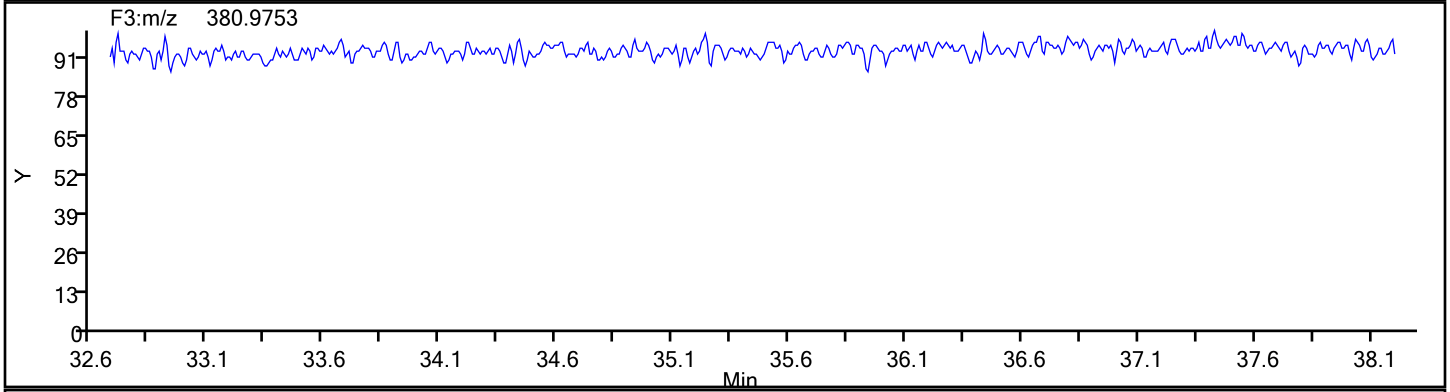

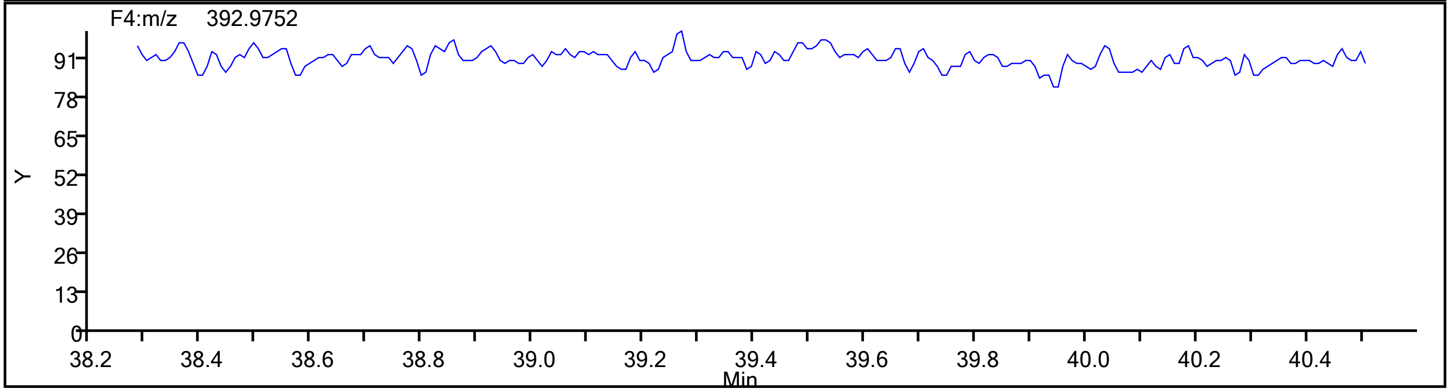

Report Date: 31-Jul-2020 01:01:32 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200730-100579.b\30jl20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	399843	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

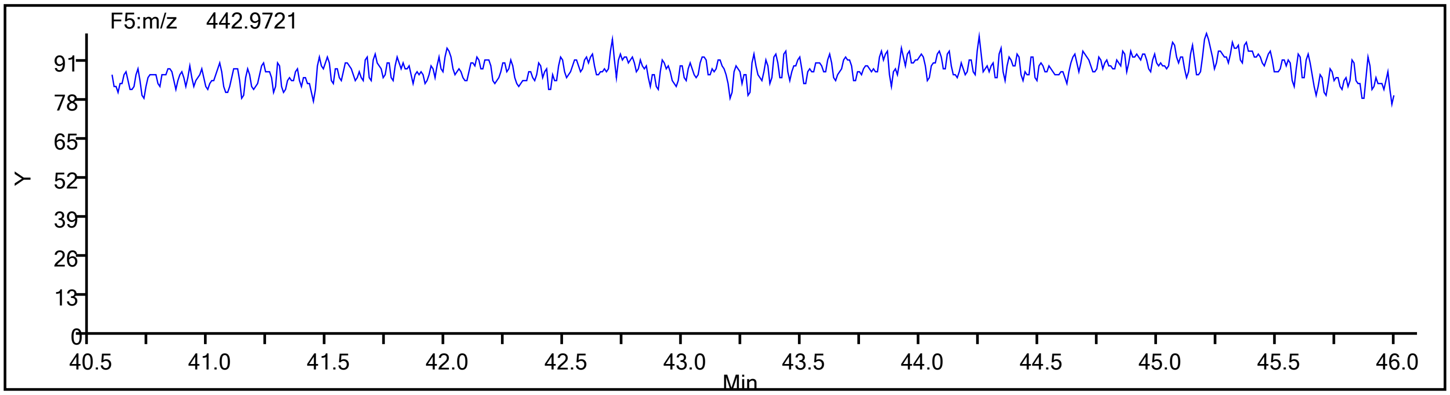

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-397938/1-A
Matrix: Water	Lab File ID: 27jl20bdfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1000(mL)	Date Analyzed: 07/27/2020 19:16
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398796	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	1.8
51207-31-9	2,3,7,8-TCDF	ND		10	0.38
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.80
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.45
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.45
39227-28-6	1,2,3,4,7,8-HxCDD	1.92	J	50	0.22
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.24
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.22
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.21
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.22
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.20
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.19
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.888	J	50	0.35
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.14	J	50	0.16
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.15
3268-87-9	OCDD	3.56	J	100	0.13
39001-02-0	OCDF	ND		100	0.95
41903-57-5	Total TCDD	ND		10	1.8
30402-14-3	Total TCDF	ND		10	0.38
36088-22-9	Total PeCDD	ND		50	0.80
30402-15-4	Total PeCDF	ND		50	0.45
34465-46-8	Total HxCDD	1.92	J	50	0.23
55684-94-1	Total HxCDF	ND		50	0.27
37871-00-4	Total HpCDD	0.888	J	50	0.35
38998-75-3	Total HpCDF	1.14	J	50	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-62886-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-397938/1-A
Matrix: Water	Lab File ID: 27jl20bdfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 07/24/2020 12:28
Sample wt/vol: 1000(mL)	Date Analyzed: 07/27/2020 19:16
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 398796	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		25-164
89059-46-1	13C-2,3,7,8-TCDF	76		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	67		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	70		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	79		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	69		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	70		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	74		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	74		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	75		26-138
114423-97-1	13C-OCDD	77		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	88		35-197

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d
Lims ID: MB 320-397938/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Jul-2020 19:16:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-397938/1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 09:23:57 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1031

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:30:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.818	1942635	0.81	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.804	2218628	0.82	1.4977	76.3	76.3	0.3226	0.3226	76.26	
2,3,7,8-TCDF	20.869						0.0188	0.0188		
A Non-2,3,7,8-sub-TCDF	20.186						0.0188	0.0188		RQU
S Total TCDF							0.0188	0.0188		
D 13C-2,3,7,8-TCDD	22.204	1428327	0.80	1.0367	70.9	70.9	0.3021	0.3021	70.92	
2,3,7,8-TCDD	22.285						0.0901	0.0901		
$ 37Cl4-2,3,7,8-TCDD	22.238	762313		1.1208	35.0	35.0	0.0535	0.0535	87.53	
A Non-2,3,7,8-sub-TCDD	21.062						0.0901	0.0901		
S Total TCDD							0.0901	0.0901		
D 13C-1,2,3,7,8-PeCDF	27.720	1771694	1.57	1.3057	69.8	69.8	0.3414	0.3414	69.85	
1,2,3,7,8-PeCDF	27.805						0.0227	0.0227		
D 13C-2,3,4,7,8-PeCDF	29.295	2372709	1.59	1.5420	79.2	79.2	0.2891	0.2891	79.21	
2,3,4,7,8-PeCDF	29.389						0.0224	0.0224		
A F1 PeCDFs	24.937						0.006369	0.0145		RQU
A Non-2,3,7,8-sub-PeCDF	28.559						0.0223	0.0223		RQU
S Total PeCDF							0.0227	0.0227		
D 13C-1,2,3,7,8-PeCDD	30.146	1084638	1.63	0.8294	67.3	67.3	0.5243	0.5243	67.32	
1,2,3,7,8-PeCDD	30.240						0.0401	0.0401		
A Non-2,3,7,8-sub-PeCDD	28.927						0.0401	0.0401		RQU
S Total PeCDD							0.0401	0.0401		
D 13C-1,2,3,4,7,8-HxCDF	35.270	2258710	0.56	1.4619	76.0	76.0	0.3426	0.3426	75.98	
1,2,3,4,7,8-HxCDF	35.438						0.0107	0.0107		U
D 13C-1,2,3,6,7,8-HxCDF	35.421	1832578	0.52	1.2866	70.0	70.0	0.3892	0.3892	70.04	
1,2,3,6,7,8-HxCDF	35.438						0.0109	0.0109		U
D 13C-2,3,4,6,7,8-HxCDF	36.205	1796450	0.53	1.1988	73.7	73.7	0.4178	0.4178	73.69	
2,3,4,6,7,8-HxCDF	36.260						0.009563	0.009563		
D 13C-1,2,3,7,8,9-HxCDF	37.064	1601557	0.52	1.0687	73.7	73.7	0.4686	0.4686	73.69	
1,2,3,7,8,9-HxCDF	37.111						0.0102	0.0102		
A Non-2,3,7,8-sub-HxCDF	35.424						0.0102	0.0134		RQU
S Total HxCDF							0.0134	0.0134		
* 13C-1,2,3,7,8,9-HxCDD	36.870	2033637	1.31	5E+04	100.0	100.0				a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.407	1542317	1.29	1.1046	68.7	68.7	0.2493	0.2493	68.66	
1,2,3,4,7,8-HxCDD	36.424	1380	1.24	0.9336	0.1058	0.0958	0.0112	0.0112		RQM
D 13C-1,2,3,6,7,8-HxCDD	36.517	1361909	1.28	0.9871	67.8	67.8	0.2790	0.2790	67.84	
1,2,3,6,7,8-HxCDD	36.424						0.0119	0.0119		RQMU
1,2,3,7,8,9-HxCDD	36.909						0.0109	0.0109		
A Non-2,3,7,8-sub-HxCDD	35.752						0.0113	0.0262		U
S Total HxCDD					0.1058	0.0958	0.0114	0.0114		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.803	1247844	0.48	0.9035	67.9	67.9	0.7216	0.7216	67.91	
1,2,3,4,6,7,8-HpCDF	38.828	1139	0.96	1.5957	0.0572	0.0572	0.007847	0.007847		M
D 13C-1,2,3,4,7,8,9-HpCDF	40.032	1595030	0.47	1.0480	74.8	74.8	0.6221	0.6221	74.84	
1,2,3,4,7,8,9-HpCDF	40.063						0.007725	0.007725		
A Non-2,3,7,8-sub-HpCDF	39.452						0.007591	0.007591		U
S Total HpCDF					0.0572	0.0572	0.007786	0.007786		
D 13C-1,2,3,4,6,7,8-HpCDD	39.729	1214215	1.09	0.8875	67.3	67.3	0.3866	0.3866	67.27	
1,2,3,4,6,7,8-HpCDD	39.737	601	1.04	1.1150	0.0674	0.0444	0.0177	0.0177		RQM
A Non-2,3,7,8-sub-HpCDD	39.555						0.0177	0.0177		
S Total HpCDD					0.0674	0.0444	0.0177	0.0177		RQ
D 13C-OCDD	42.217	1969956	0.92	0.6297	153.8	153.8	0.3349	0.3349	76.91	
OCDF	42.341						0.0476	0.0476		
OCDD	42.217	2094	0.89	1.1948	0.1779	0.1779	0.006273	0.006273		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d
Lims ID: MB 320-397938/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Jul-2020 19:16:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-397938/1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 09:23:57 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1031

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:30:36

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.818	21.914	-6		867959	122097	242	605	505		a
333.9338	21.818	21.914	-6		1074676	153145	103	257	1487	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.804	20.826	-1	0.954	998210	144950	374	935	388		
317.9389	20.804	20.826	-1	0.954	1220418	183462	158	395	1161	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.869						1	2			
305.8987	20.869						27	67			
A Non-2,3,7,8-sub-TCDF											U
303.9016	20.186	20.186	0	0.970	144	84	1	2			
305.8987	20.186	20.186	0	0.970	537	127	27	67		0.27(0.65-0.89)	
	Empc Correction				187	109	27	67	0		
13C-2,3,7,8-TCDD											
331.9368	22.204	22.268	-4	1.018	633268	83014	242	605	343		
333.9338	22.213	22.268	-3	1.018	795059	106151	103	257	1031	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.285						75	187			
321.8936	22.285						6	15			
37Cl4-2,3,7,8-TCDD											
327.8847	22.238	22.335	-6	1.019	762313	103869	66	165	1574		
A Non-2,3,7,8-sub-TCDD											
319.8965	21.062						75	187			
321.8936	21.062						6	15			
13C-1,2,3,7,8-PeCDF											
351.9000	27.720	27.788	-4	1.271	1081156	168152	275	687	611		
353.8970	27.711	27.788	-5	1.270	690538	110573	216	540	512	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.805						2	5			
341.8567	27.805						26	65			
13C-2,3,4,7,8-PeCDF											
351.9000	29.295	29.364	-4	1.343	1456537	209872	275	687	763		
353.8970	29.303	29.364	-4	1.343	916172	135477	216	540	627	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.389						2	5			
341.8567	29.389						26	65			
A F1 PeCDFs											U
339.8597	24.359	24.937	-35	0.879	184	57	1	2	57		
341.8567	24.367	24.937	-34	0.879	347	147	7	17	21	0.53(1.32-1.78)	
	Empc Correction				118	36	7	17	5		
A Non-2,3,7,8-sub-PeCDF											U
339.8597	28.107	28.559	-27	1.014	93	30	2	5	15		
341.8567	28.073	28.559	-29	1.013	192	116	26	65	4	0.48(1.32-1.78)	
	Empc Correction				60	19	26	65	1		
13C-1,2,3,7,8-PeCDD											
367.8949	30.146	30.215	-4	1.382	672528	90120	396	990	228		
369.8919	30.146	30.215	-4	1.382	412110	60865	83	207	733	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.240						24	60			
357.8516	30.240						3	7			
A Non-2,3,7,8-sub-PeCDD											U
355.8546	28.927	28.927	0	0.960	305	120	24	60			
	Empc Correction				106	46	24	60	0		
357.8516	28.927	28.927	0	0.960	69	30	3	7		4.42(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.270	35.308	-2	0.957	807862	185618	355	887	523		
385.8610	35.262	35.308	-3	0.956	1450848	341752	725	1812	471	0.56(0.43-0.59)	
1,2,3,4,7,8-HxCDF											U
373.8208	35.325						18	45			
375.8178	35.325						5	12			
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.421	35.460	-2	0.961	627192	144868	355	887	408		
385.8610	35.421	35.460	-2	0.961	1205386	277647	725	1812	383	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											U
373.8208	35.476						18	45			
375.8178	35.476						5	12			
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.205	36.243	-2	0.982	625256	161642	355	887	455		
385.8610	36.205	36.243	-2	0.982	1171194	306376	725	1812	423	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.260						18	45			
375.8178	36.260						5	12			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.064	37.094	-2	1.005	547230	142693	355	887	402		
385.8610	37.064	37.094	-2	1.005	1054327	290029	725	1812	400	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.111						18	45			
375.8178	37.111						5	12			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	35.424	35.424	0	1.004	444	126	18	45			
	Empc Correction				167	0	18	45	0		
375.8178	35.424	35.424	0	1.004	135		5	12		3.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	36.870	36.901	-2		1155161	308455	337	842	915		a
403.8529	36.862	36.901	-2		878476	230694	257	642	898	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.407	36.437	-2	0.987	867564	239474	337	842	711		
403.8529	36.399	36.437	-2	0.987	674753	190030	257	642	739	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	36.424	36.445	-1	1.000	764	296	4	10	74		
391.8127	36.415	36.445	-2	1.000	760	283	14	35	20	1.01(1.05-1.43)	M
	Empc Correction				616	238	14	35	17		
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.517	36.547	-2	0.990	764213	197423	337	842	586		
403.8529	36.517	36.547	-2	0.990	597696	151235	257	642	588	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMU
389.8158	36.563						4	10			
391.8127	36.563						14	35			
1,2,3,7,8,9-HxCDD											
389.8158	36.909						4	10			
391.8127	36.909						14	35			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	34.613	35.752	-68	0.948	169	55	4	10	14		
391.8127	34.613	35.752	-68	0.948	126	56	14	35	4	1.34(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.803	38.834	-2	1.052	405380	130950	478	1195	274		
419.8220	38.803	38.834	-2	1.052	842464	268353	928	2320	289	0.48(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.828	38.841	-1	1.001	557	225	16	40	14		M
409.7788	38.803	38.841	-2	1.000	582	206	4	10	52	0.96(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.032	40.055	-1	1.086	508017	170908	478	1195	358		
419.8220	40.032	40.055	-1	1.086	1087013	382645	928	2320	412	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.063						16	40			
409.7788	40.063						4	10			
A Non-2,3,7,8-sub-HpCDF											U
407.7817	39.452						16	40			
409.7788	39.452						4	10			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.729	39.752	-1	1.078	632236	212215	417	1042	509		
437.8140	39.729	39.752	-1	1.078	581979	193653	323	807	600	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											RQM
423.7767	39.737	39.760	-1	1.000	618	269	20	50	13		
	Empc Correction				306	125	20	50	6		
425.7737	39.763	39.760	0	1.001	295	121	12	30	10	2.09(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						20	50			
425.7737	39.555						12	30			
13C-OCDD											
469.7780	42.217	42.240	-1	1.145	944638	281900	203	507	1389		
471.7750	42.208	42.240	-2	1.145	1025318	305166	252	630	1211	0.92(0.76-1.02)	
OCDF											
441.7428	42.341						15	37			
443.7399	42.341						68	170			
OCDD											M
457.7377	42.217	42.249	-2	1.000	988	282	5	12	56		M
459.7348	42.225	42.249	-1	1.000	1106	385	4	10	96	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

Non-2,3,7,8-sub-TCDF, RT: 20.186

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	2218628	328412

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	2218628	328412

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
23.062	144	84	537	127	0.0271	0.27	RQ
23.062	144	84	187	109	0.0132		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

F1 PeCDFs, RT: 24.937

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1771694	278725
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2372709	345349

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2072201	312037

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.359	184	57	347	147	0.0255	0.53	RQ
24.359	184	57	118	36	0.0145		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDF, RT: 28.559

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1771694	278725
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2372709	345349

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2072201	312037

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
28.107	93	30	192	116	0.0137	0.48	RQ
28.107	93	30	60	19	0.007337		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDD, RT: 28.927

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	1084638	150985

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	1084638	150985

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
29.270	305	120	69	30	0.0312	4.42	RQ
29.270	106	46	69	30	0.0146		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDF, RT: 35.424

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009	D 13C-1,2,3,4,7,8-HxCDF	100.000	2258710	527370
1,2,3,6,7,8-HxCDF	1.243	D 13C-1,2,3,6,7,8-HxCDF	100.000	1832578	422515
2,3,4,6,7,8-HxCDF	1.274	D 13C-2,3,4,6,7,8-HxCDF	100.000	1796450	468018
1,2,3,7,8,9-HxCDF	1.288	D 13C-1,2,3,7,8,9-HxCDF	100.000	1601557	432722

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.203		100.000	1872323	462656

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
36.222	444	126	135	0	0.0257	3.29	RnQ
36.222	167	0	135	0	0.0134		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDD, RT: 35.752

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934	D 13C-1,2,3,4,7,8-HxCDD	100.000	1542317	429504
1,2,3,6,7,8-HxCDD	1.080	D 13C-1,2,3,6,7,8-HxCDD	100.000	1361909	348658
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.024		100.000	1452113	389081

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.613	169	55	126	56	0.0198	1.34	
35.430	223	52	167	67	0.0262	1.34	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Lims ID:	MB 320-397938/1-A		
Client ID:			
Inject. Date:	27-Jul-2020 19:16:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDF, RT: 39.452

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.596	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1247844	399303
1,2,3,4,7,8,9-HpCDF	1.169	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1595030	553553

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.383		100.000	1421437	476428

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d				
Injection Date:	27-Jul-2020 19:16:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-397938/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	36.42
Area:	1001
Amount:	0.122573
Amount Units:	pg/ul

Processing Integration Results

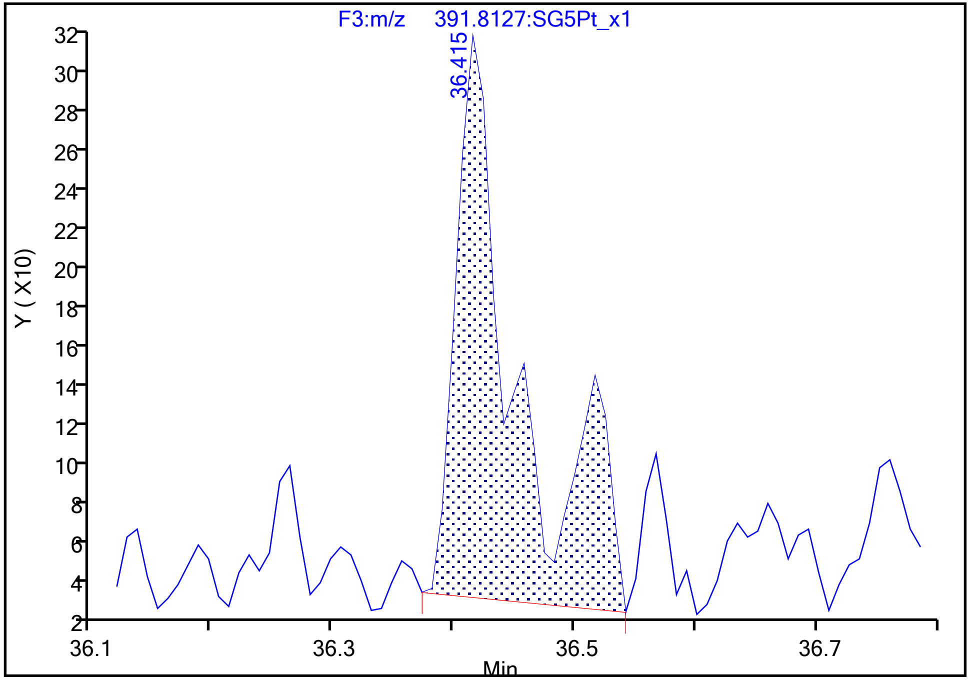

RT:	36.42
Area:	760
Amount:	0.105836
Amount Units:	pg/ul

Manual Integration Results

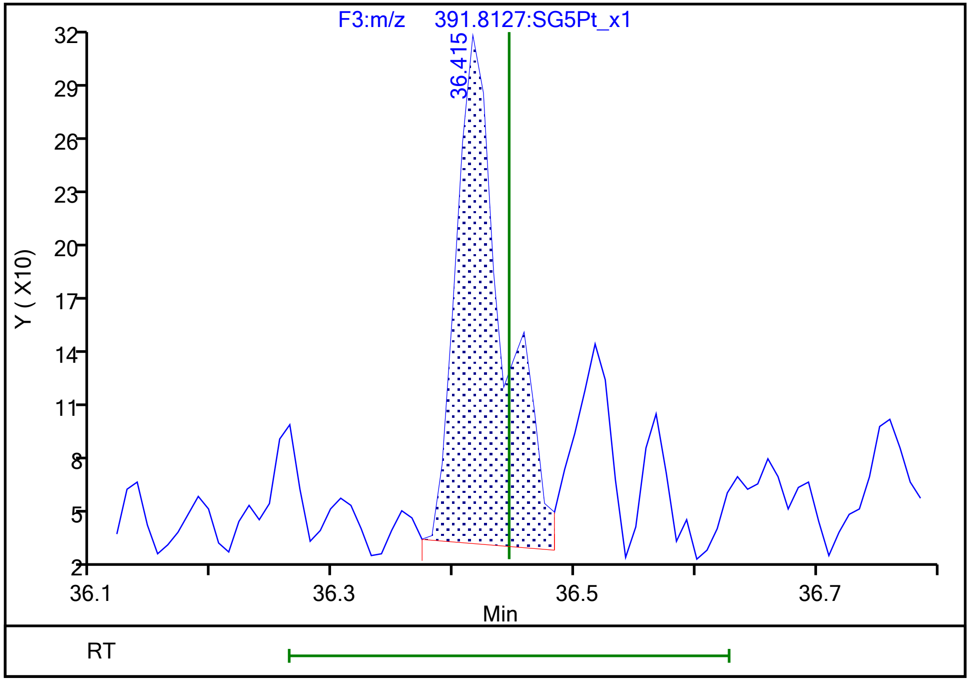

Reviewer: dadunj, 29-Jul-2020 09:22:39

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:23:58

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d				
Injection Date:	27-Jul-2020 19:16:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-397938/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT:	38.80
Area:	693
Amount:	0.088290
Amount Units:	pg/ul

Processing Integration Results

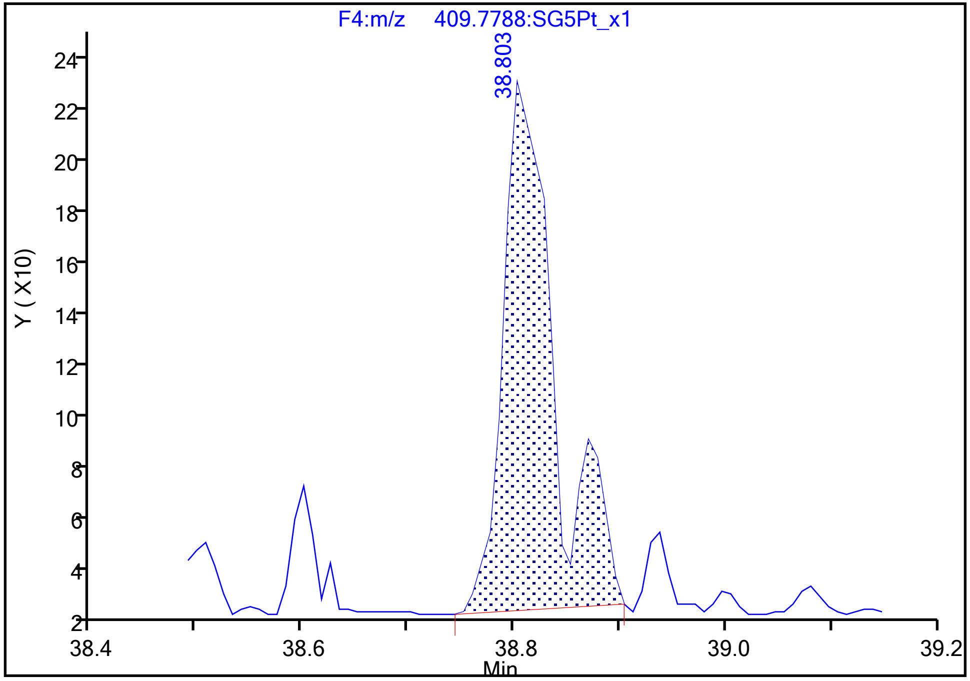

RT:	38.80
Area:	582
Amount:	0.057202
Amount Units:	pg/ul

Manual Integration Results

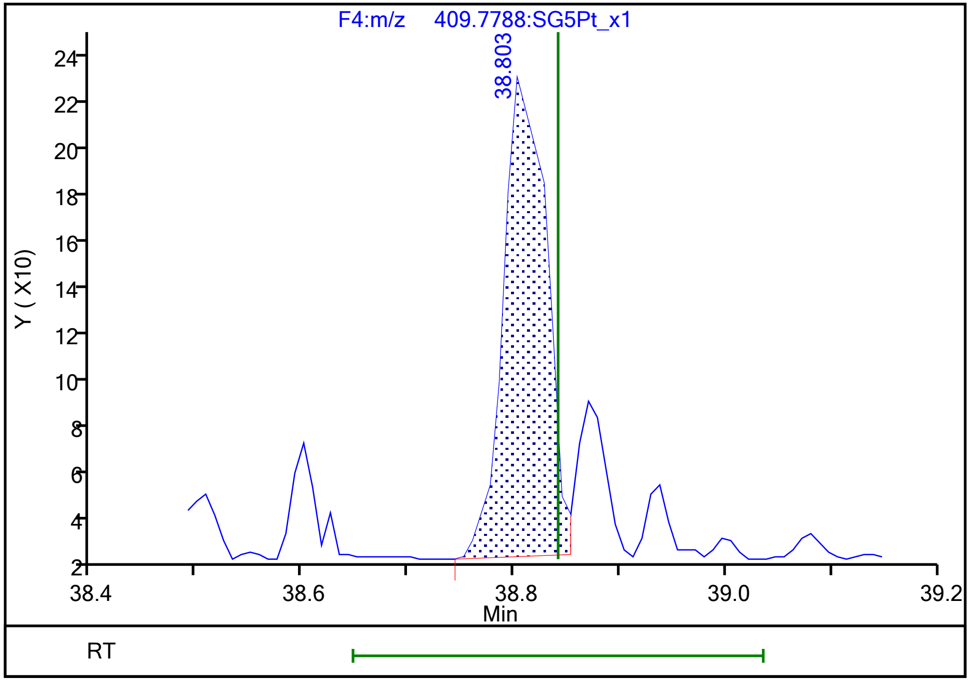

Reviewer: dadunj, 29-Jul-2020 09:22:53

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:23:58

Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d				
Injection Date:	27-Jul-2020 19:16:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-397938/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT: 38.83
Area: 1065
Amount: 0.088290
Amount Units: pg/ul

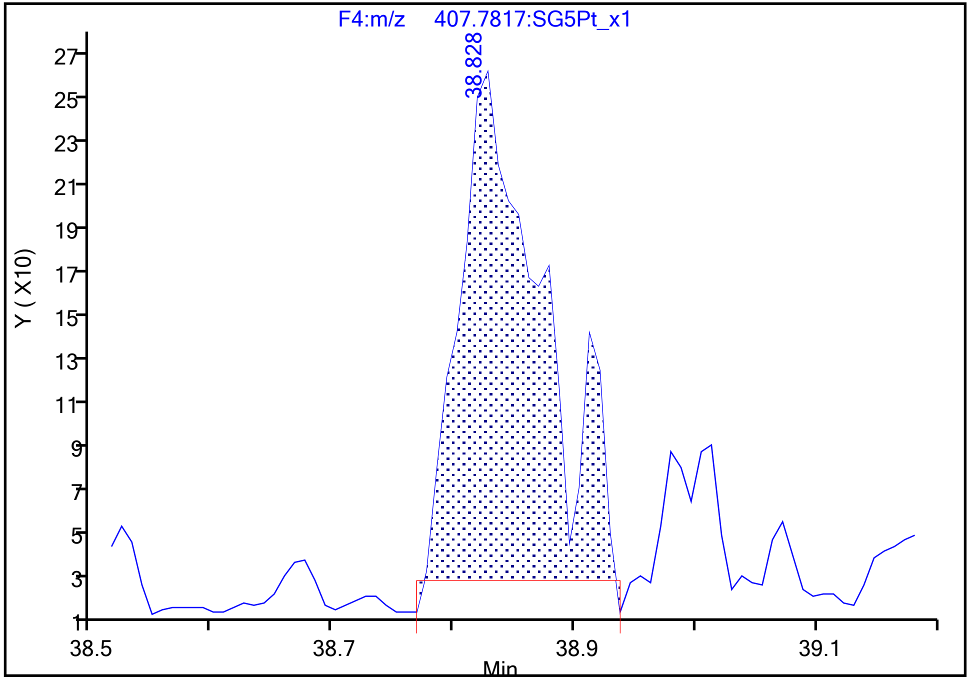

Manual Integration Results

RT: 38.83
Area: 557
Amount: 0.057202
Amount Units: pg/ul

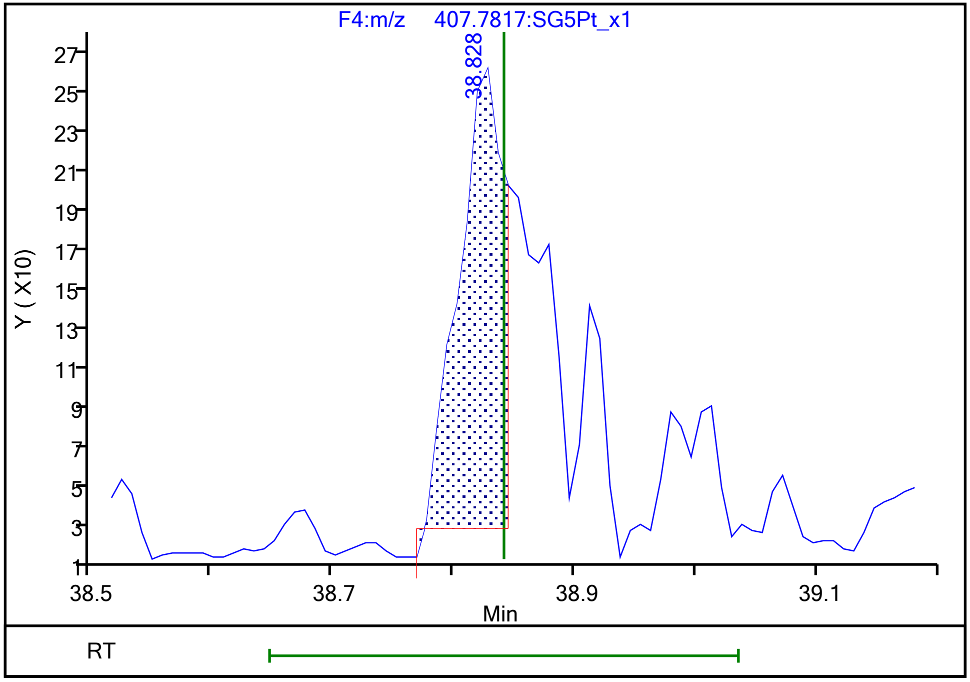

Reviewer: dadunj, 29-Jul-2020 09:22:56

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d				
Injection Date:	27-Jul-2020 19:16:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-397938/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT:	39.76
Area:	334
Amount:	0.070317
Amount Units:	pg/ul

Processing Integration Results

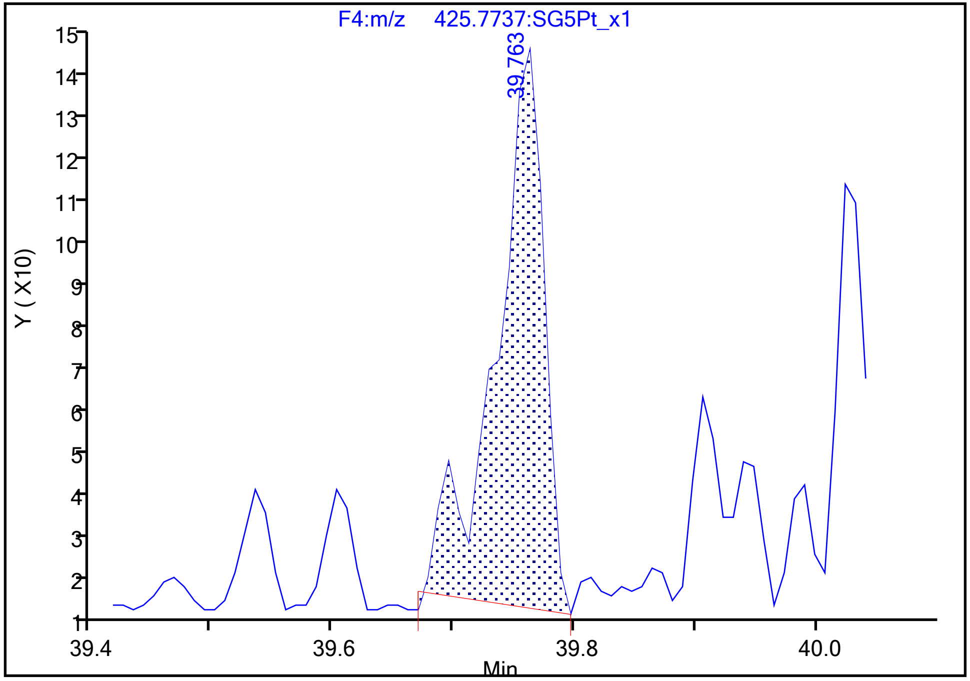

RT:	39.76
Area:	295
Amount:	0.067437
Amount Units:	pg/ul

Manual Integration Results

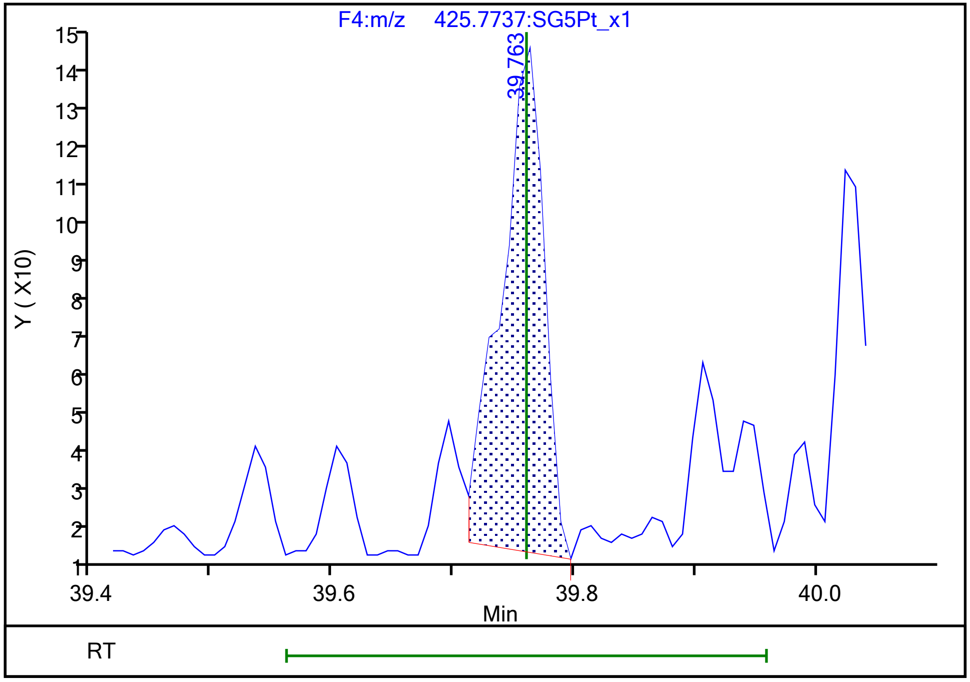

Reviewer: dadunj, 29-Jul-2020 09:23:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:23:58

Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d
Injection Date: 27-Jul-2020 19:16:00
Instrument ID: DFS 1
Lims ID: MB 320-397938/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT: 42.22
Area: 1204
Amount: 0.196292
Amount Units: pg/ul

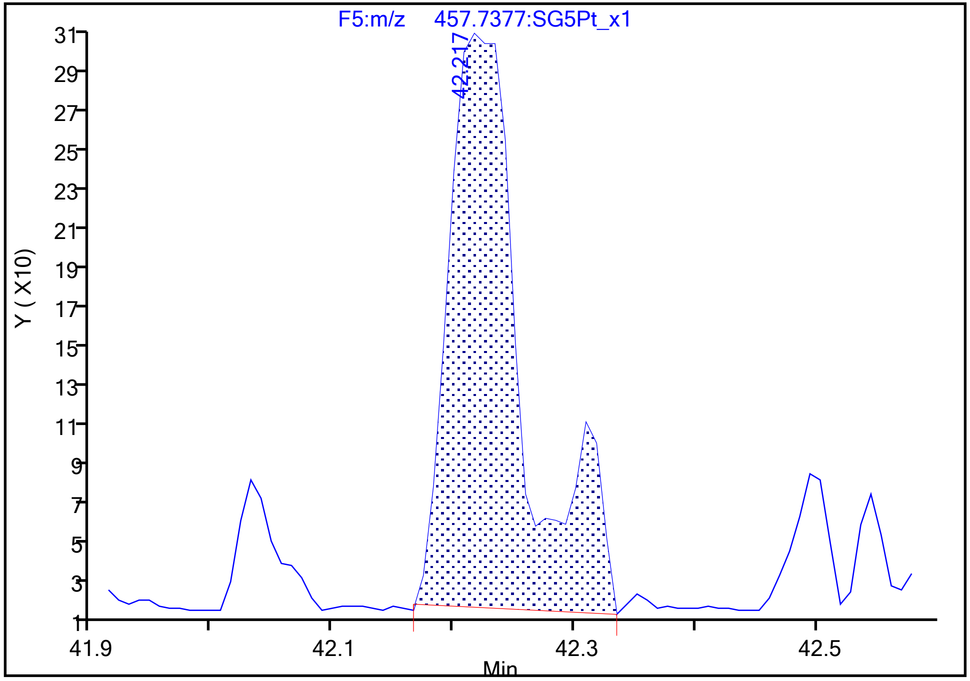

Manual Integration Results

RT: 42.22
Area: 988
Amount: 0.177937
Amount Units: pg/ul

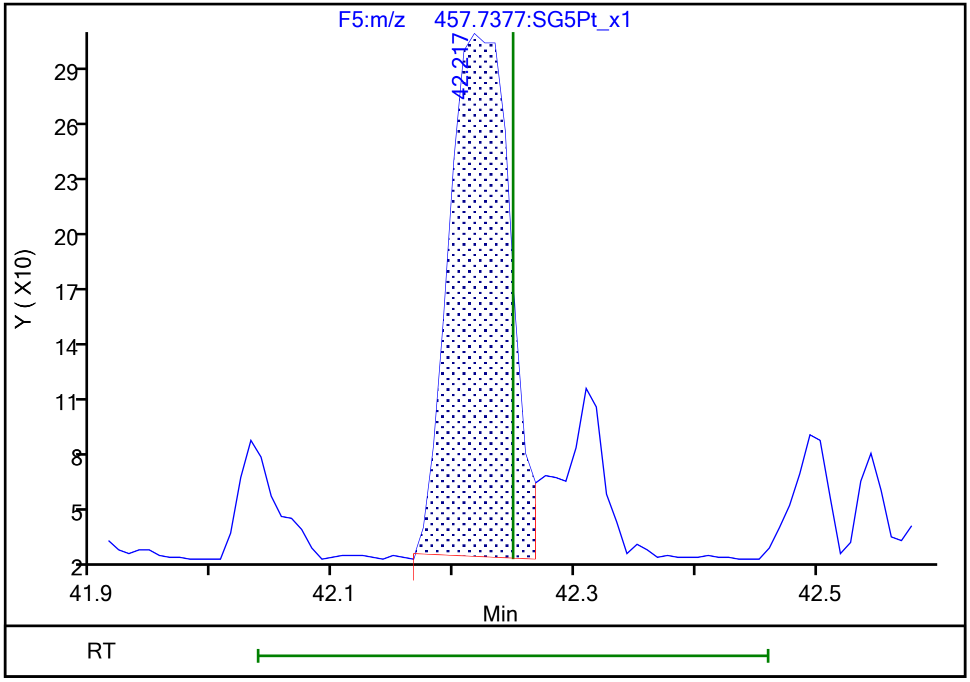

Reviewer: dadunj, 29-Jul-2020 09:23:16
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:23:58		Chrom Revision: 2.3 30-Jun-2020 12:05:54	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Injection Date:	27-Jul-2020 19:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

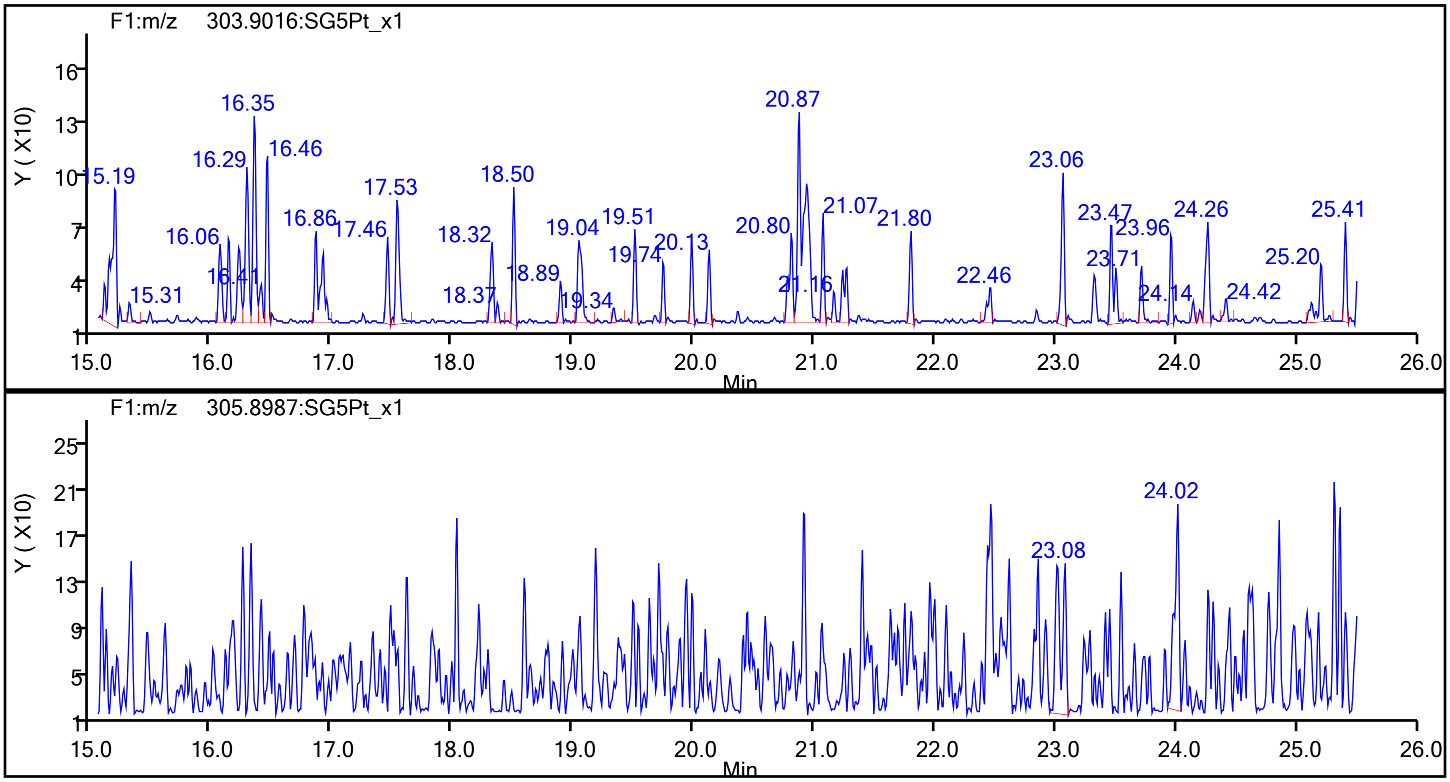

TCDF Standards

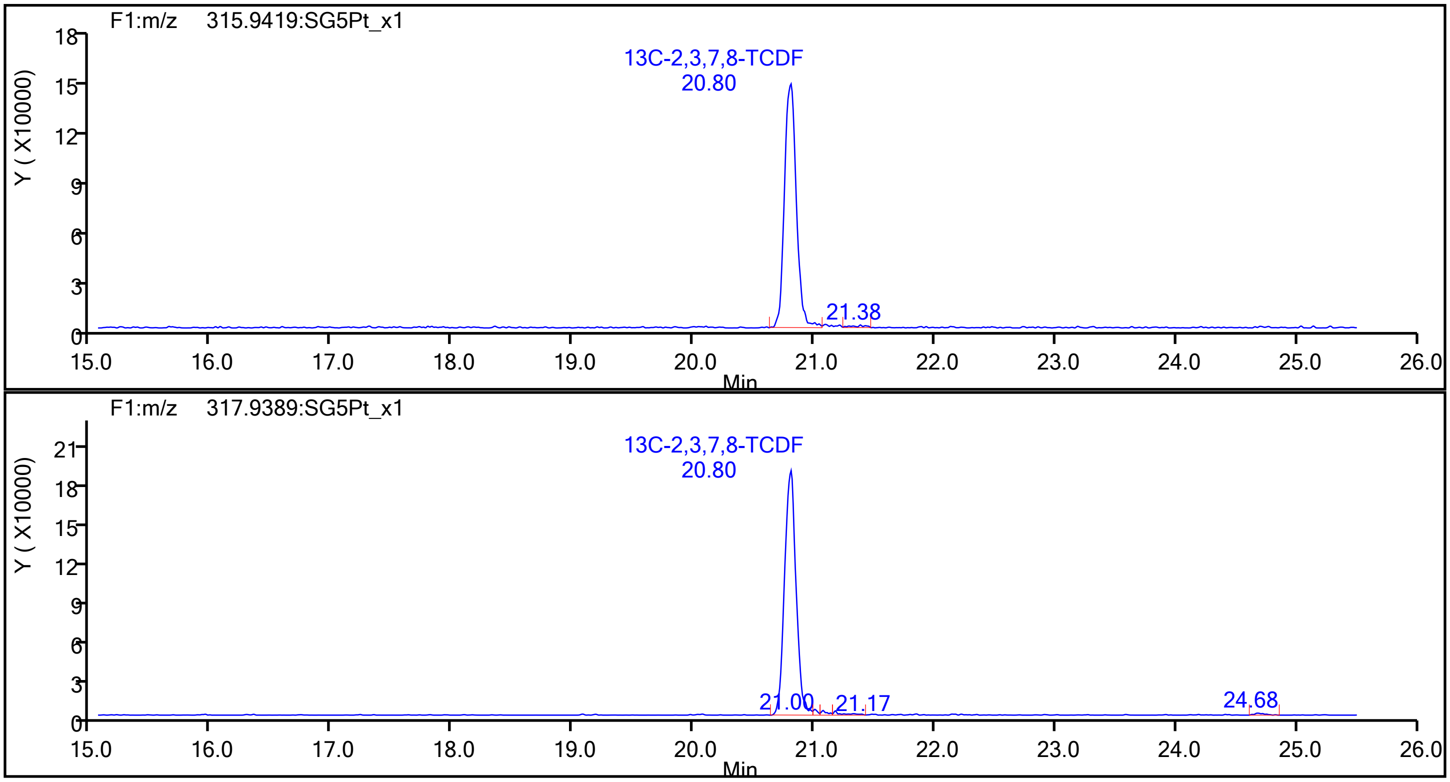

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Injection Date:	27-Jul-2020 19:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

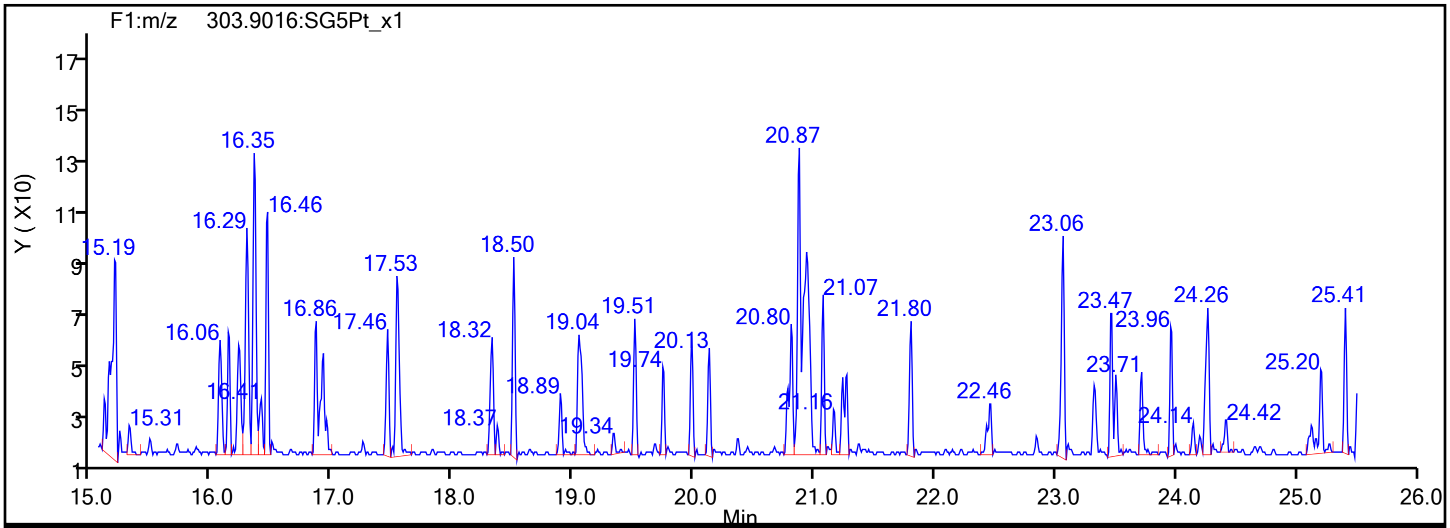

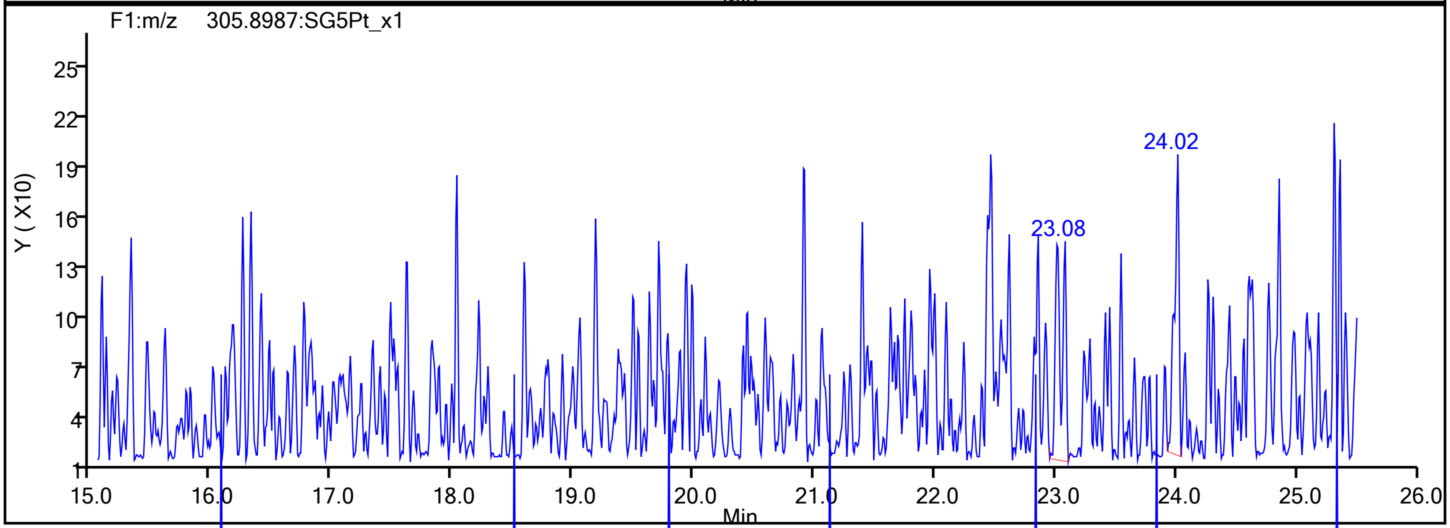

TCDF Interference Mass

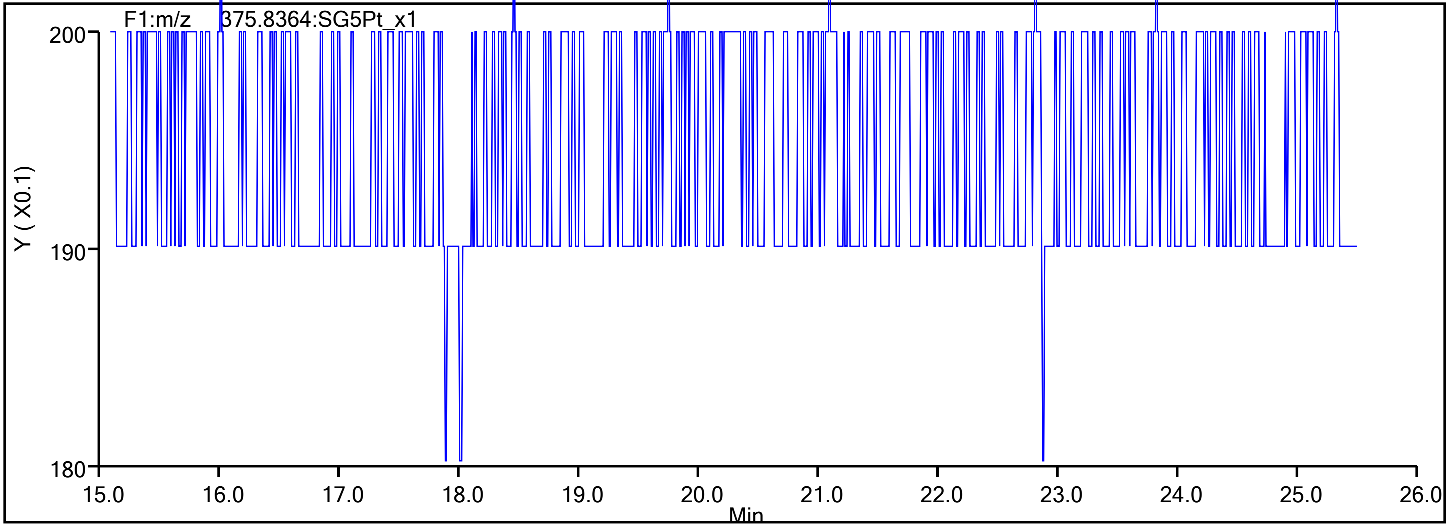

Report Date: 29-Jul-2020 09:23:58　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Injection Date:	27-Jul-2020 19:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

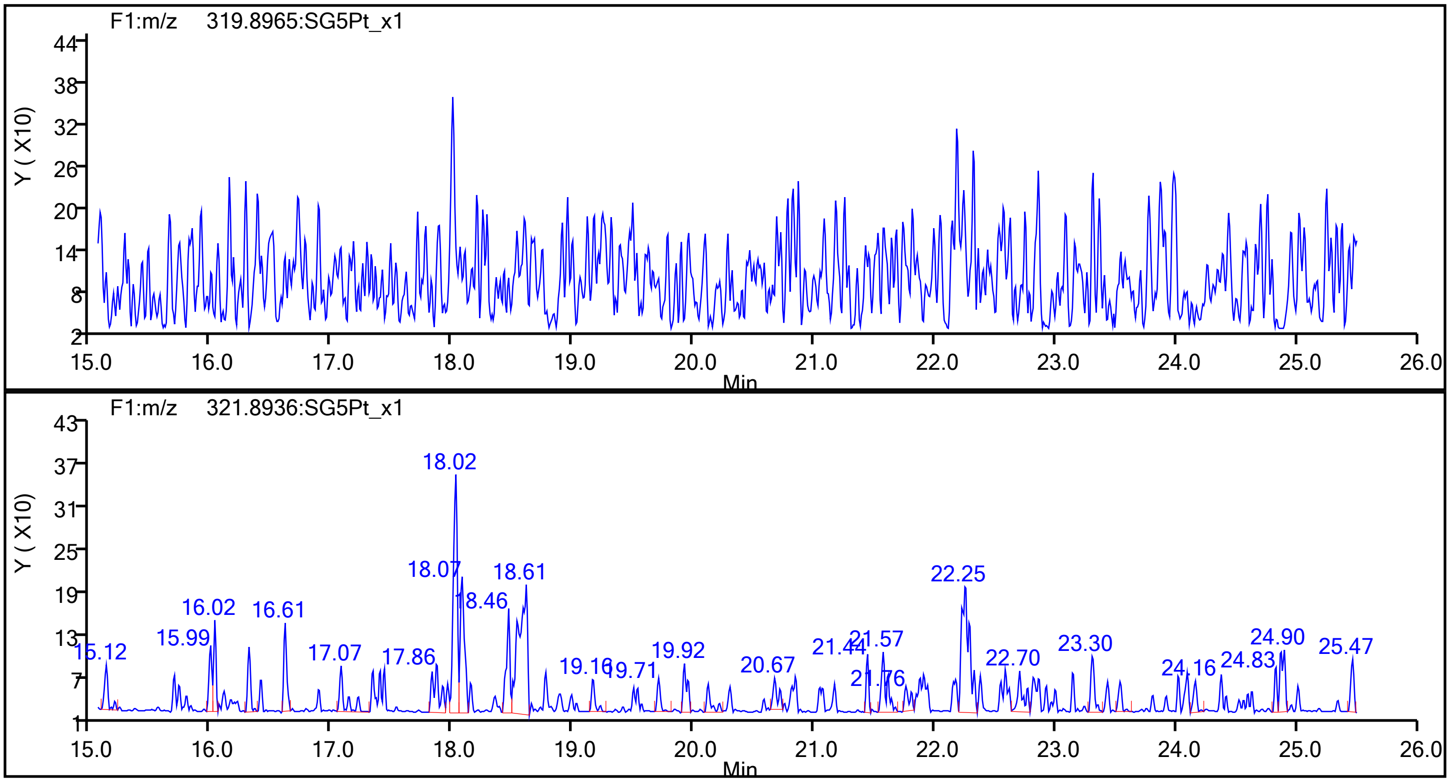

TCDD Standards

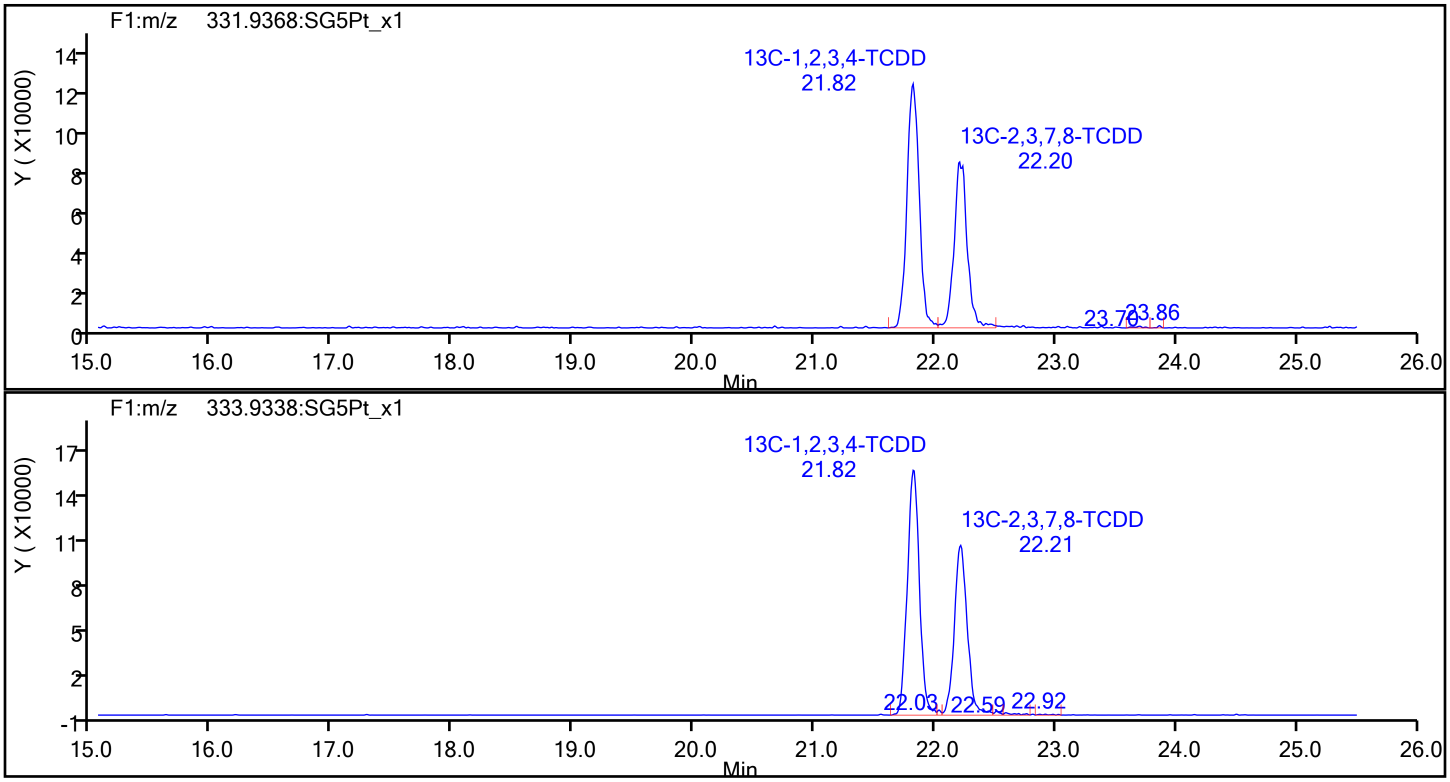

Report Date: 29-Jul-2020 09:23:58   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d
Injection Date: 27-Jul-2020 19:16:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796   Sample Line#: 4
Column Type: DB-5   Column Dia: 0.32 mm

37Cl4-TCDD

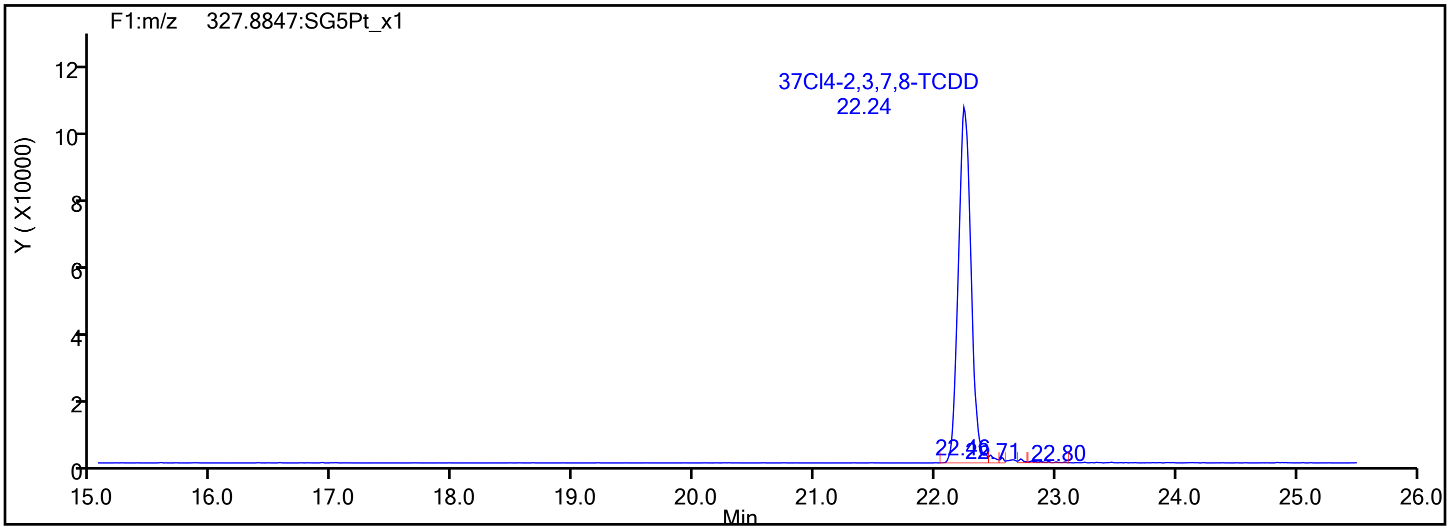

37Cl4-TCDD Standards

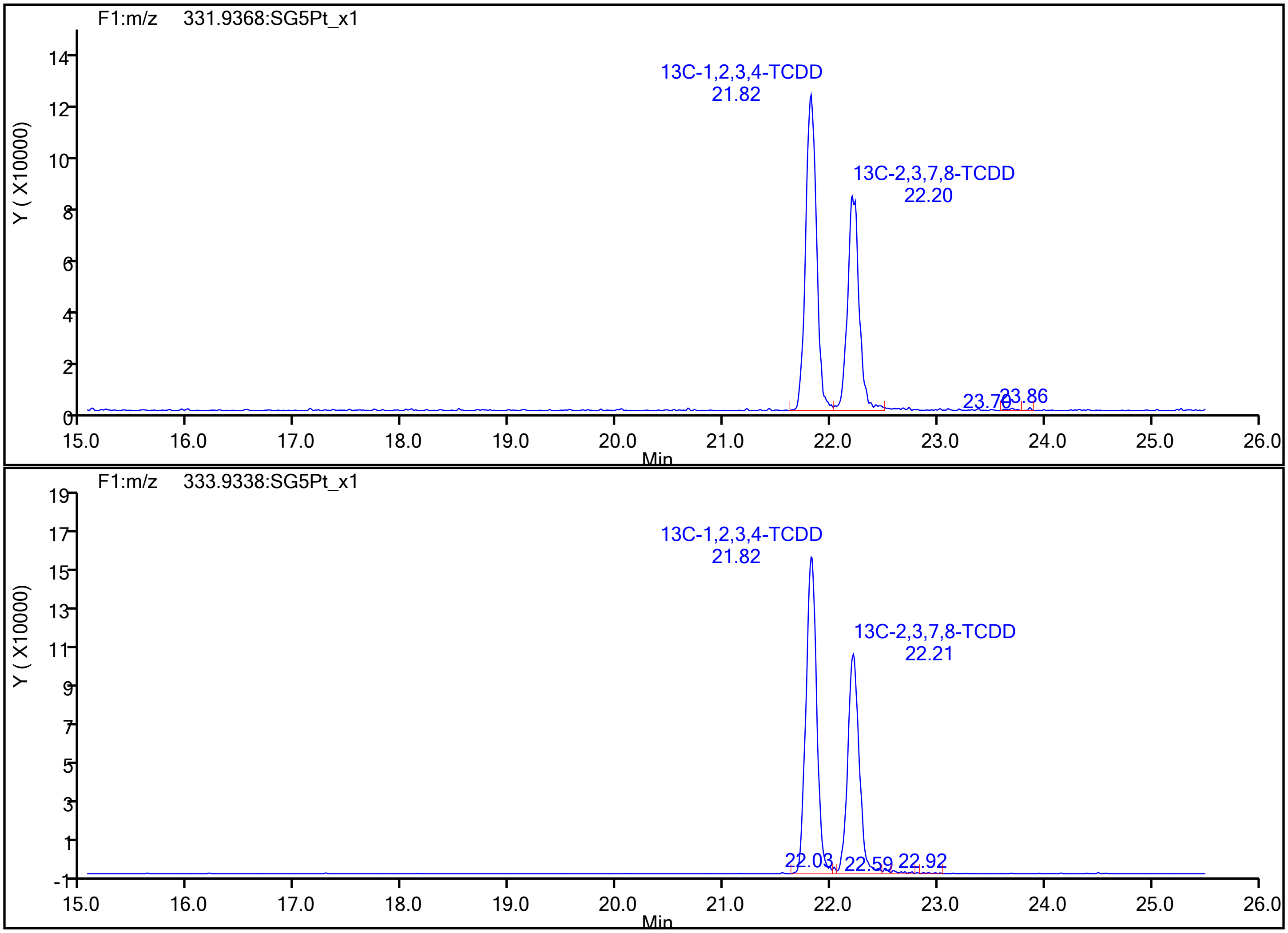

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

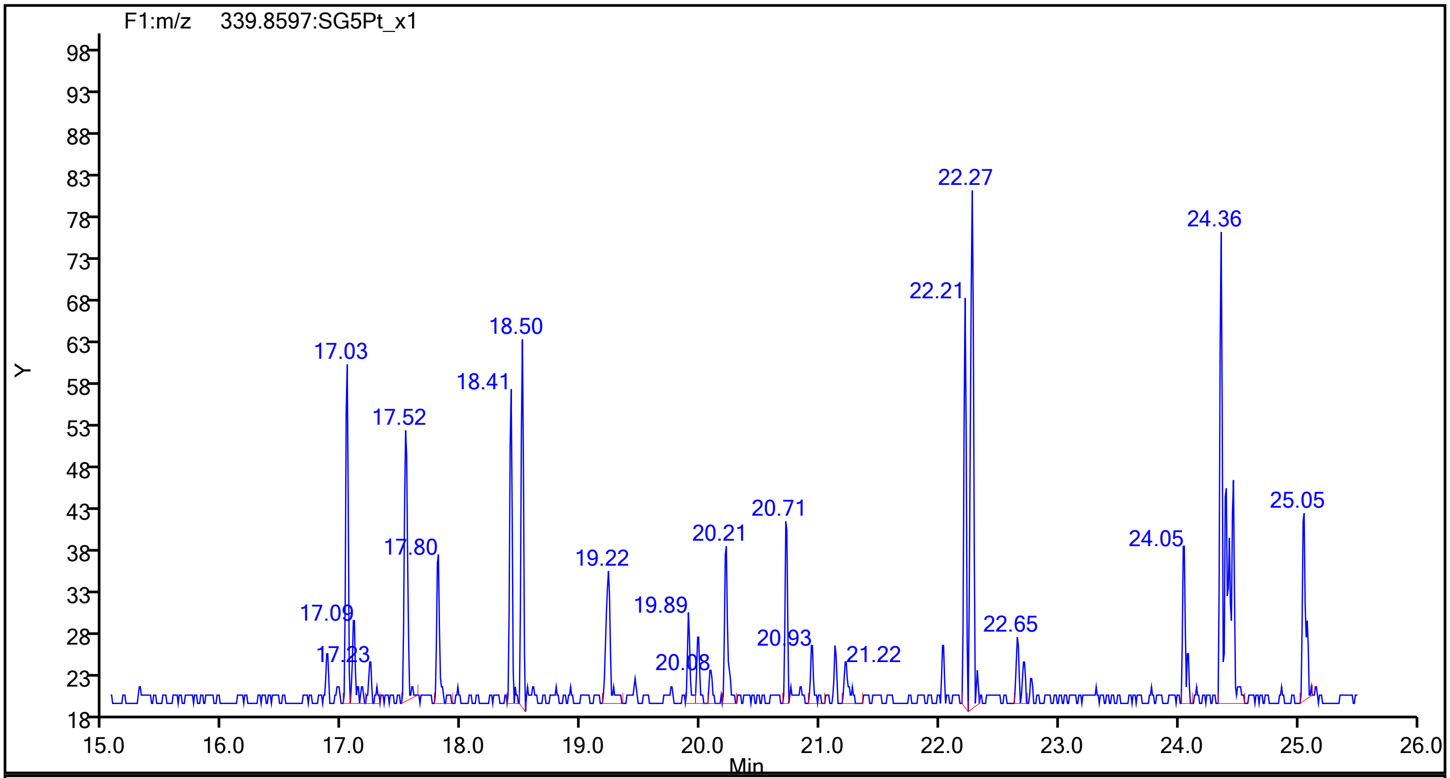

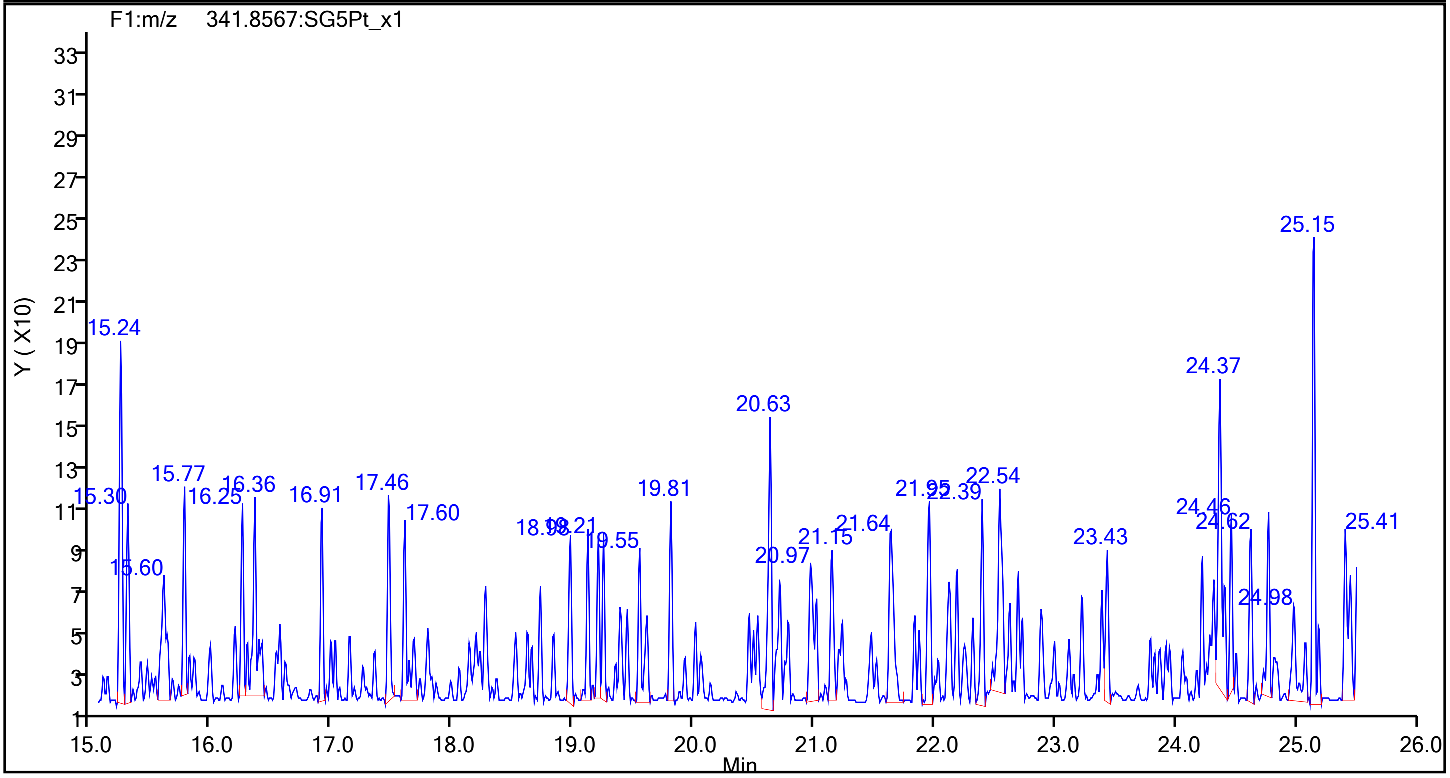

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d		
Injection Date:	27-Jul-2020 19:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

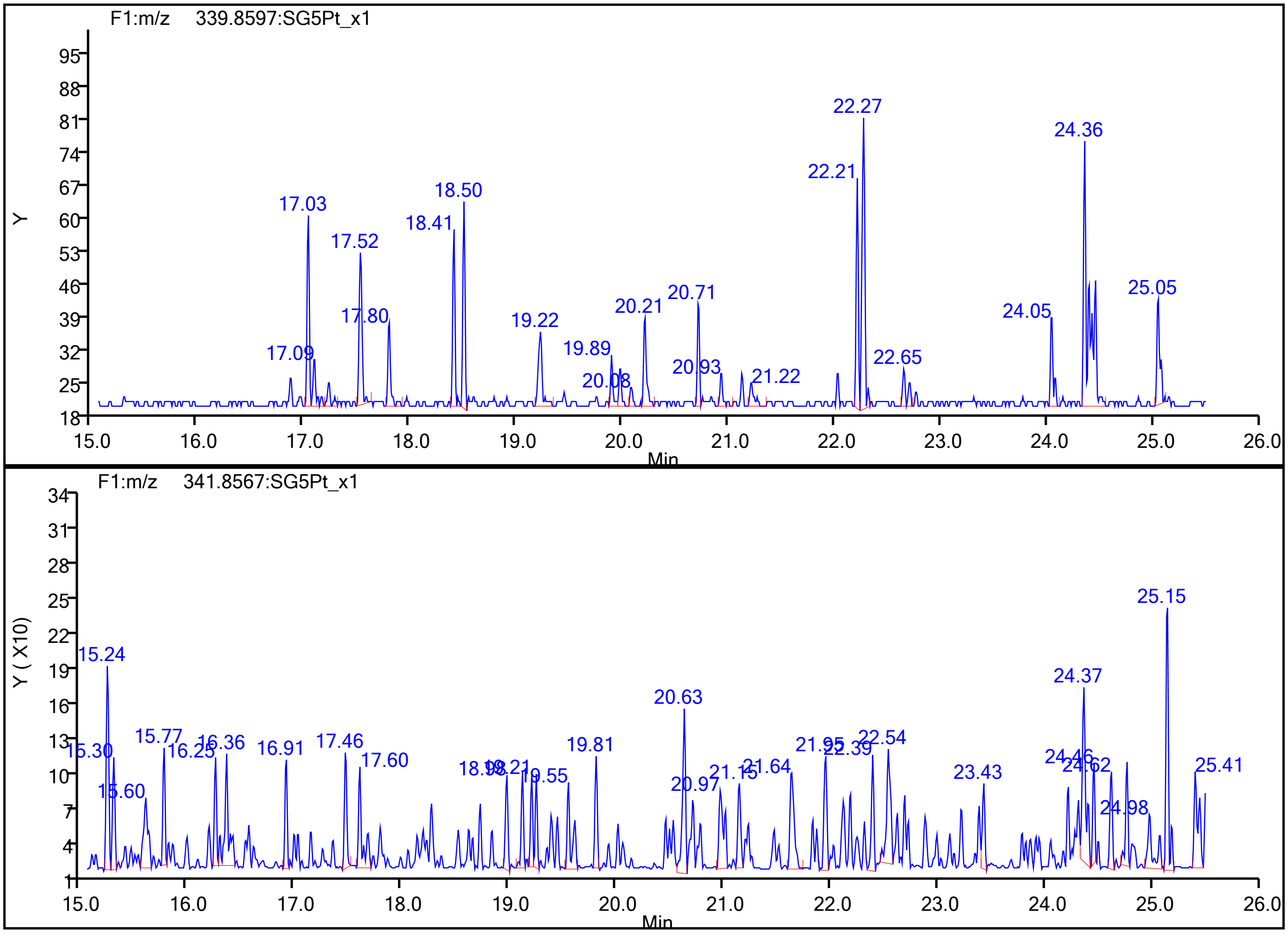

F1 PeCDFs Interference Mass

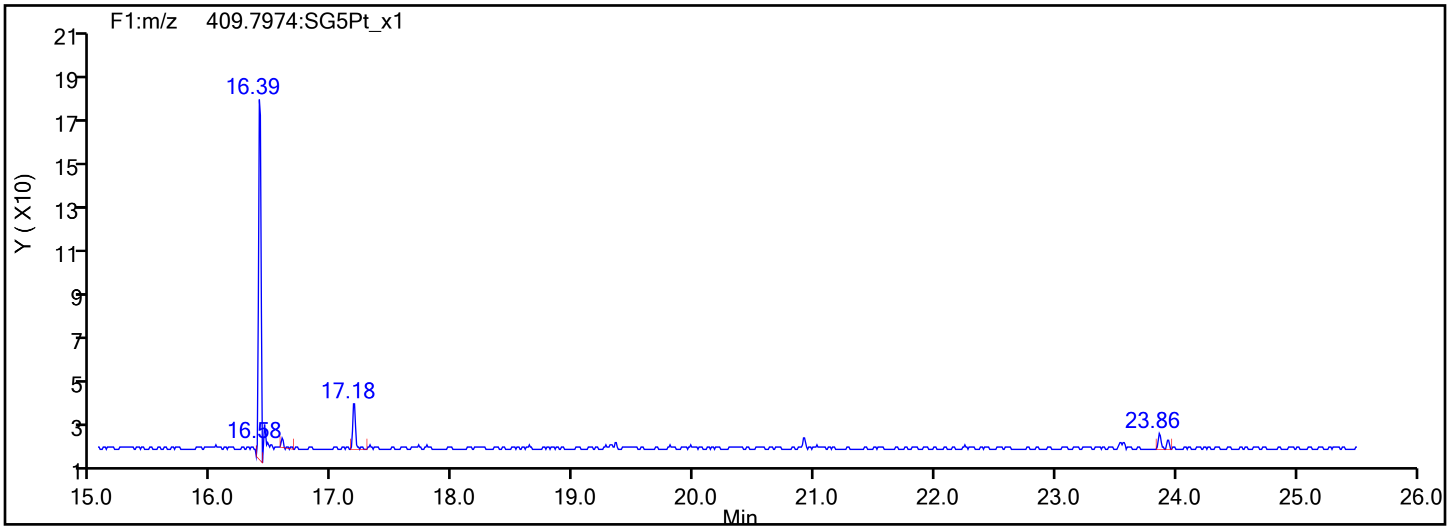

Report Date: 29-Jul-2020 09:23:58 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_5.d

Injection Date: 27-Jul-2020 19:16:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

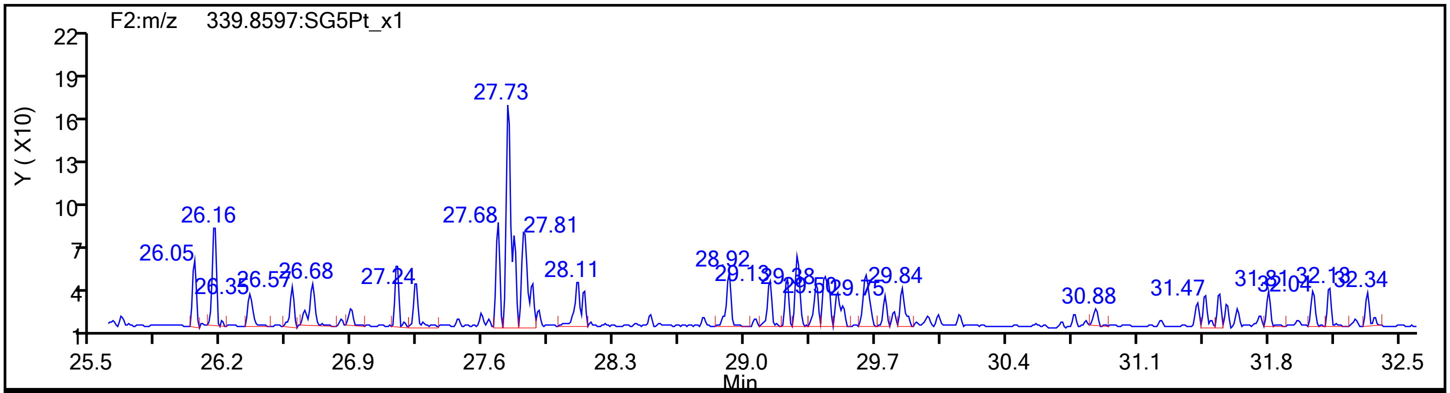

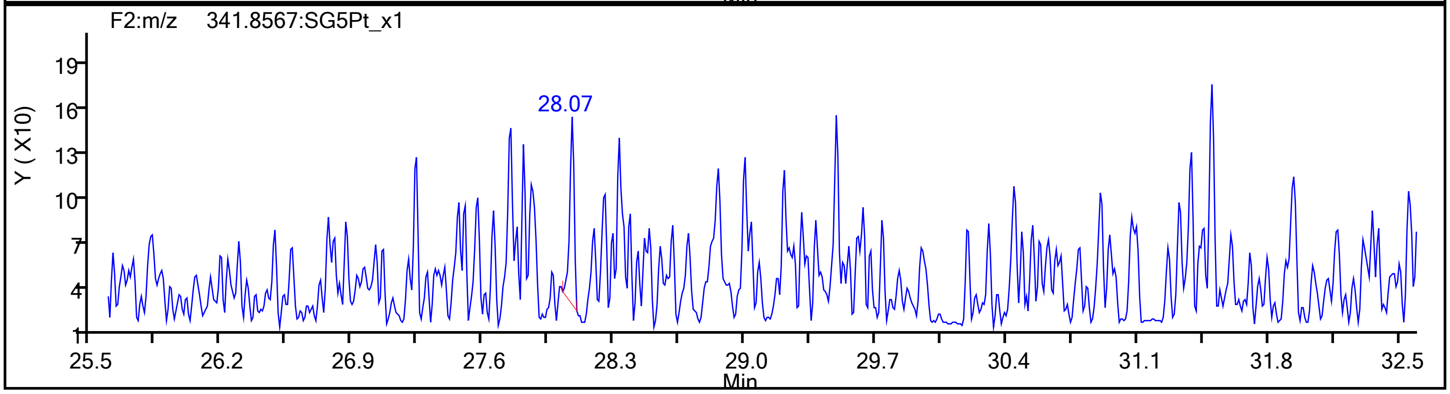

PeCDF Standards

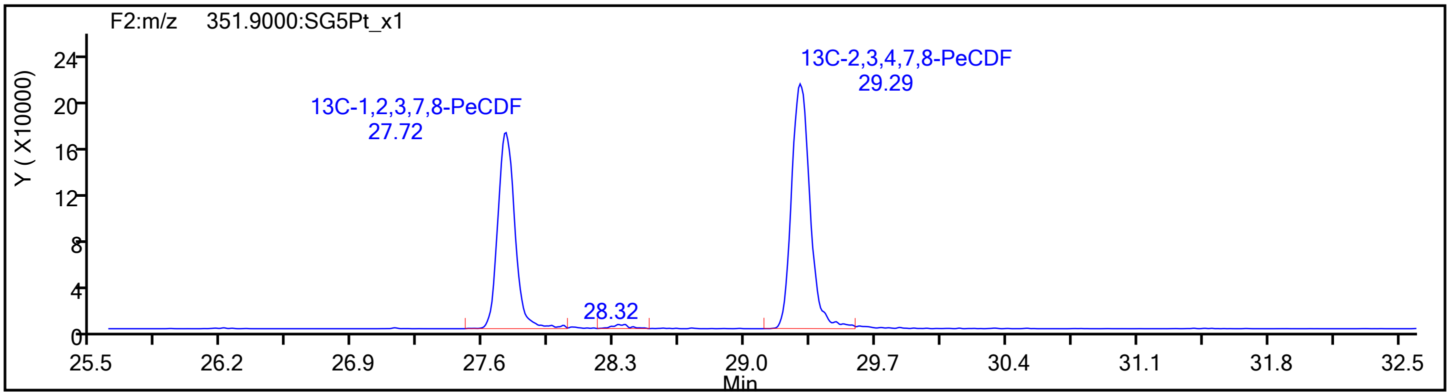

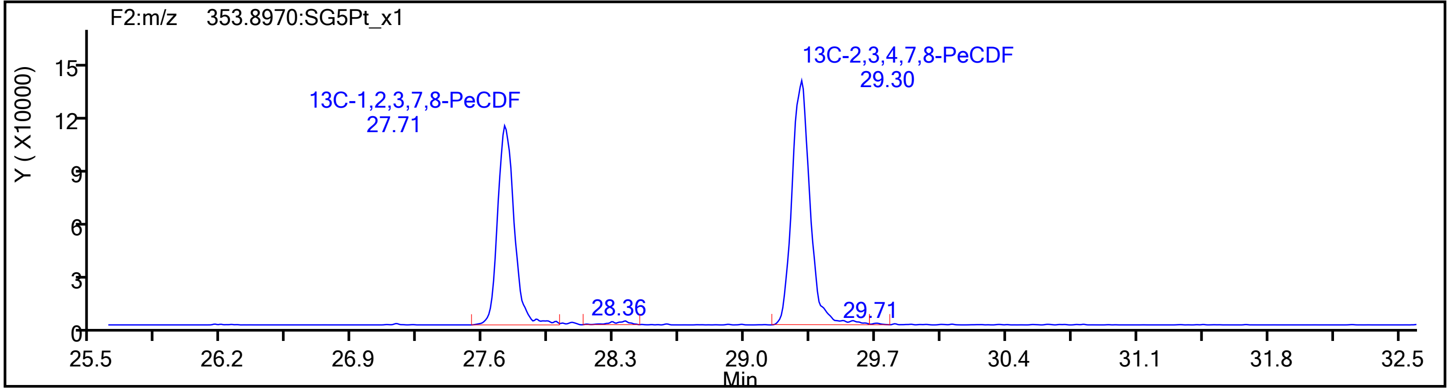

Report Date: 29-Jul-2020 09:23:59 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

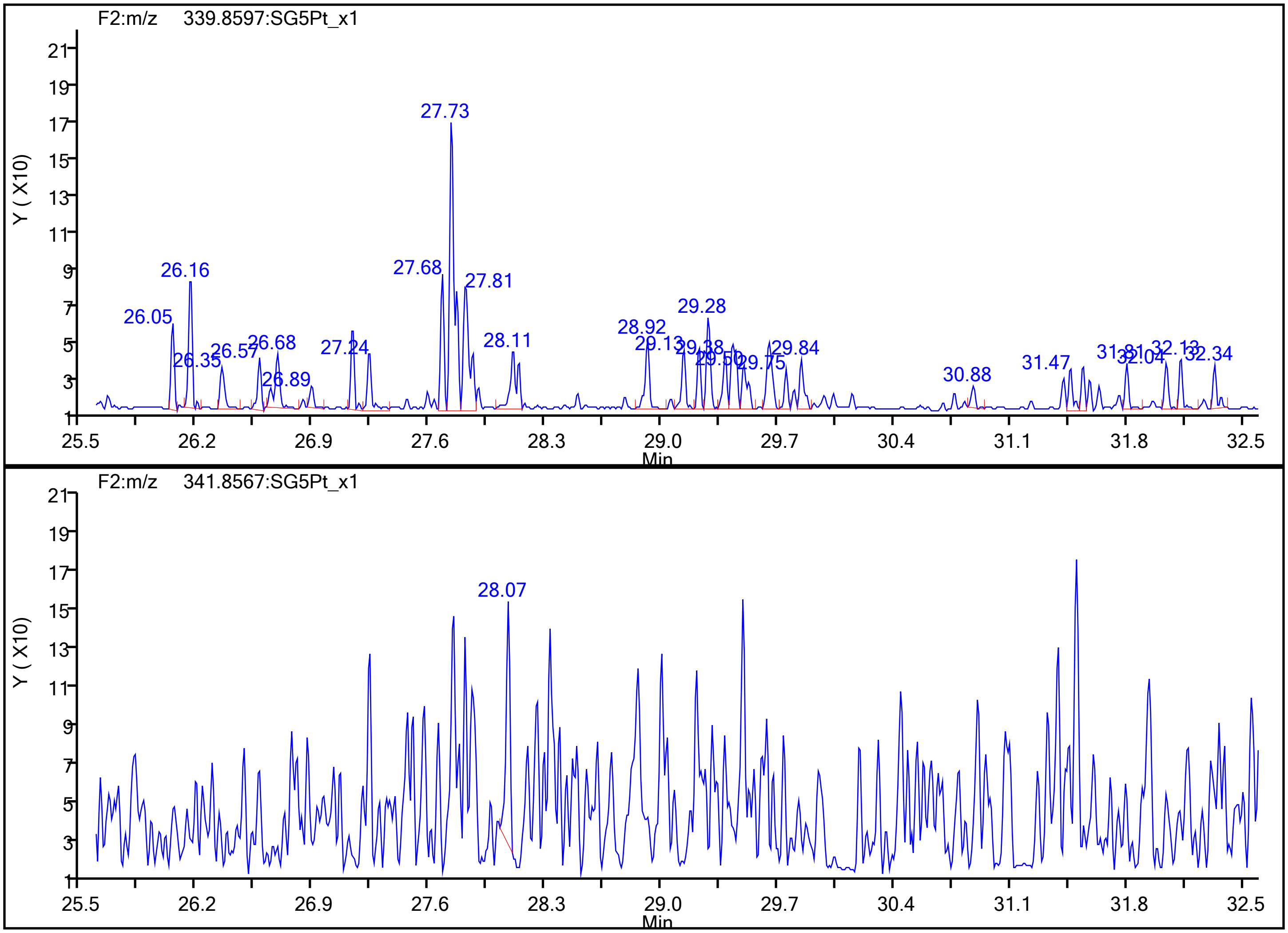

PeCDF Interference Mass

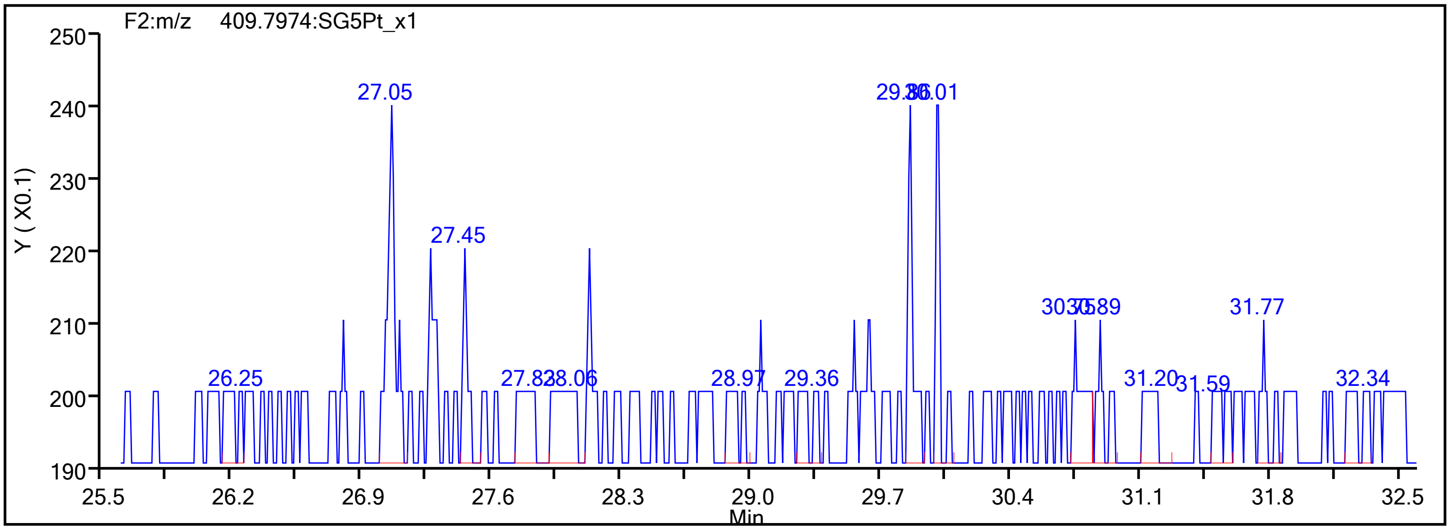

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Eurofins TestAmerica, Sacramento

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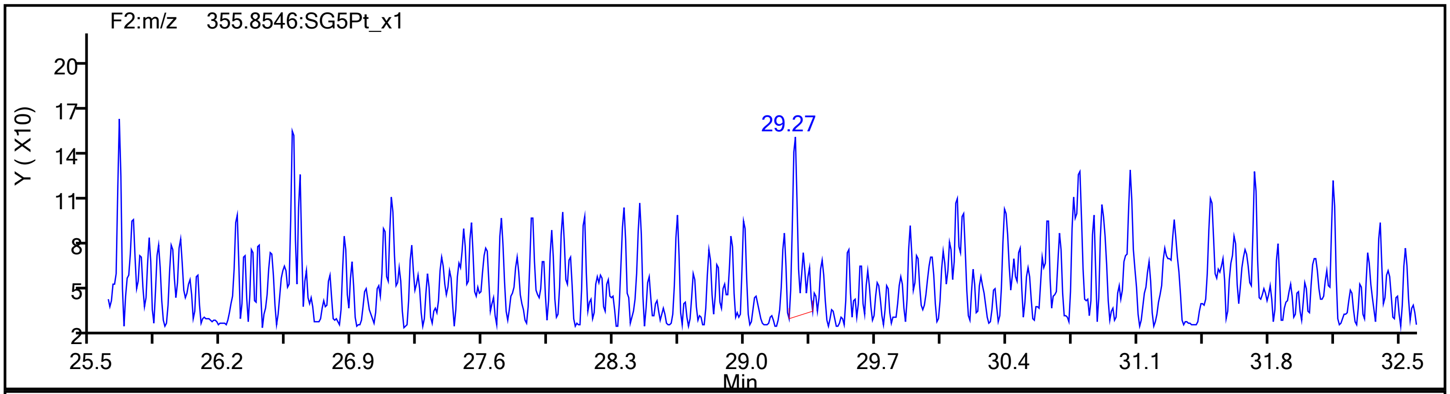

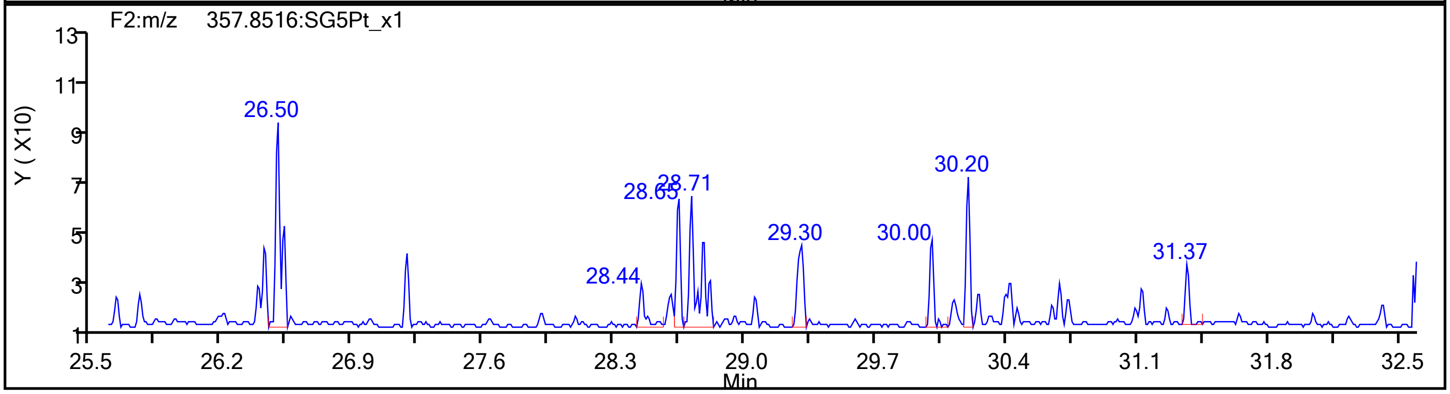

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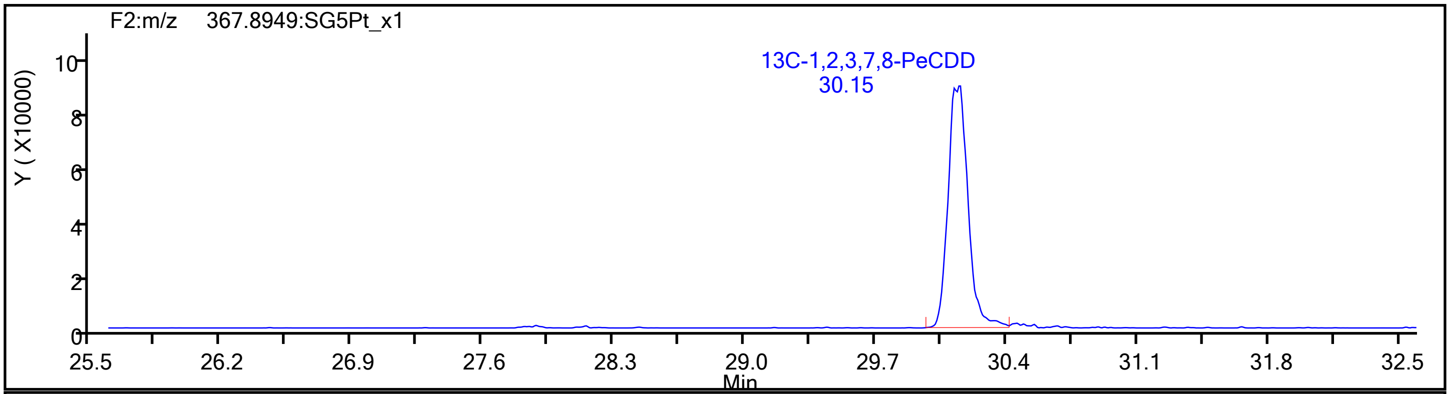

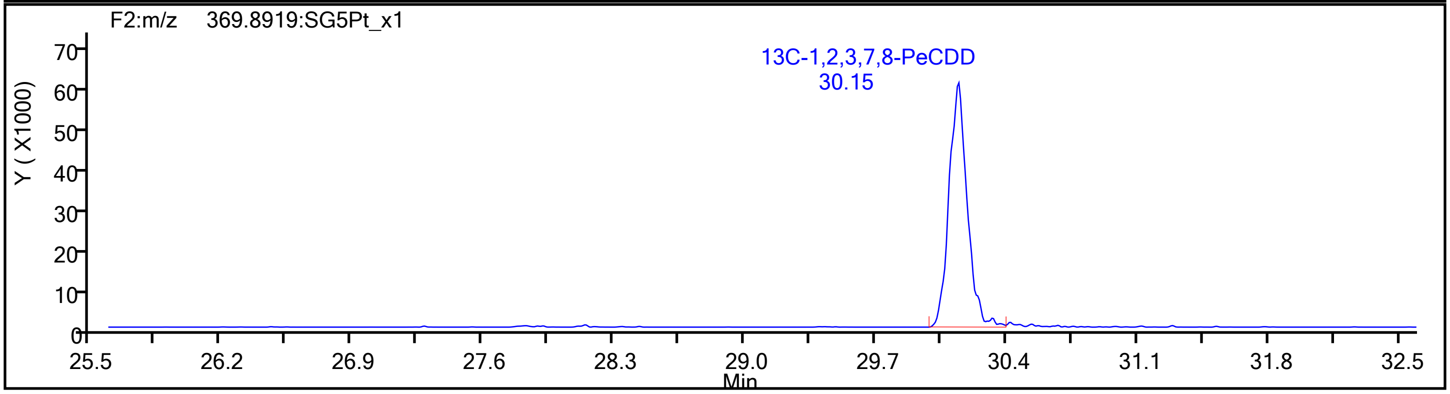

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Eurofins TestAmerica, Sacramento

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HxCDF

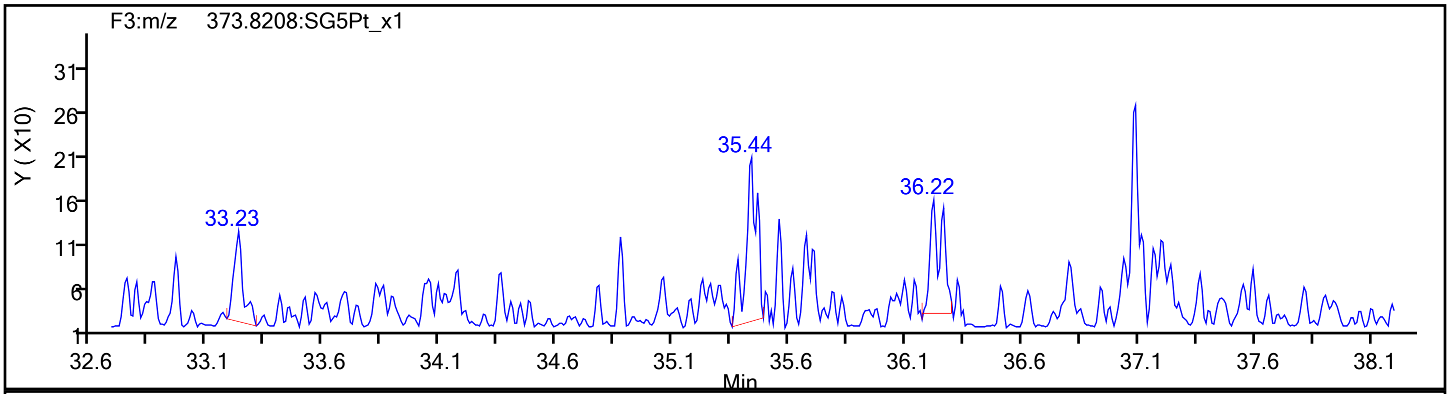

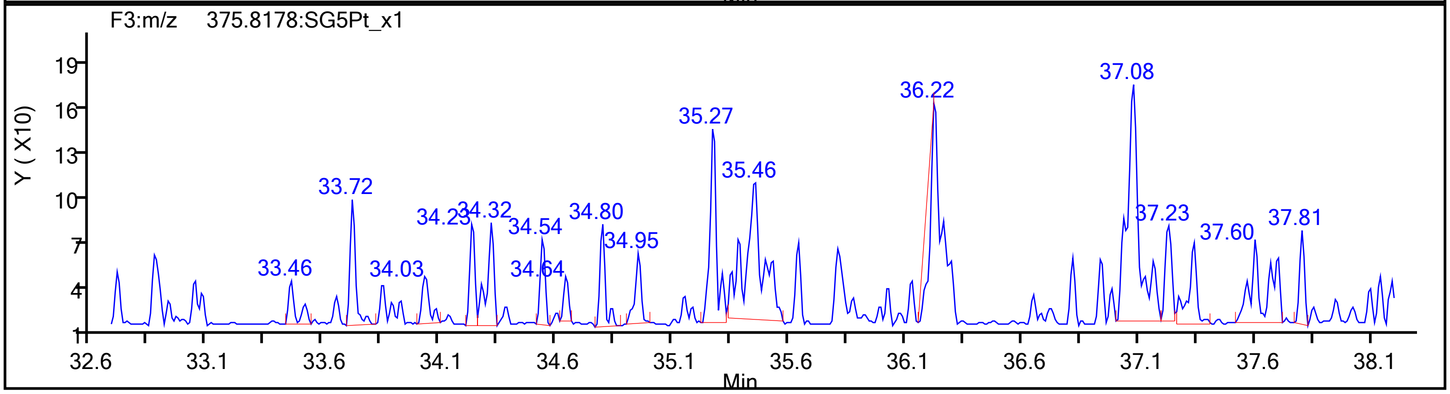

HxCDF Standards

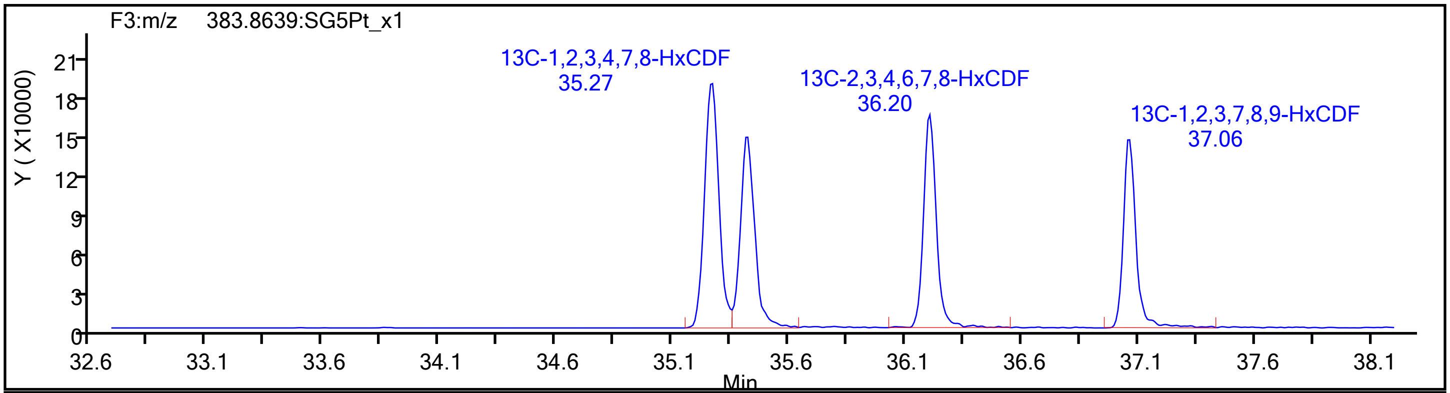

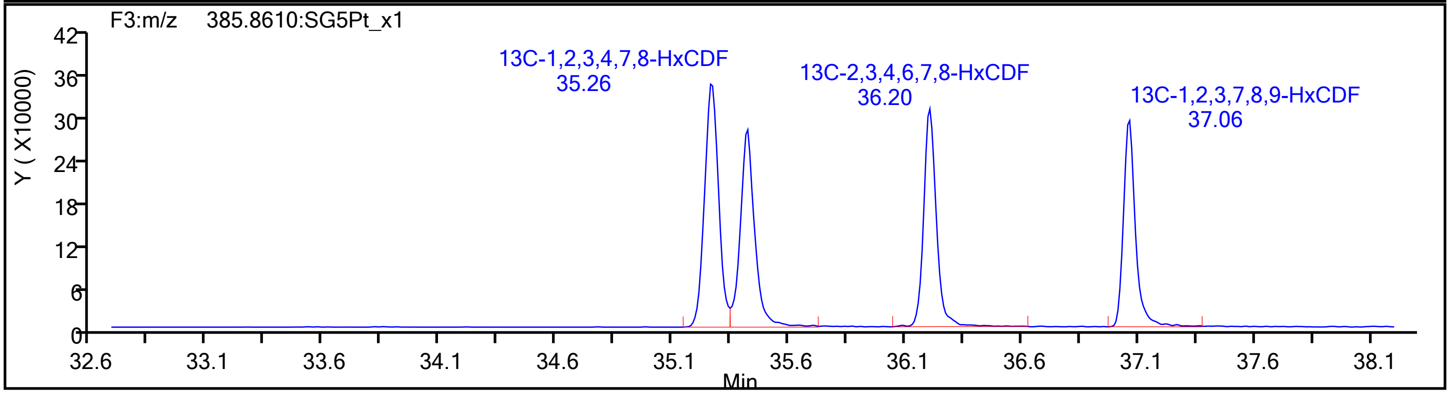

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Eurofins TestAmerica, Sacramento

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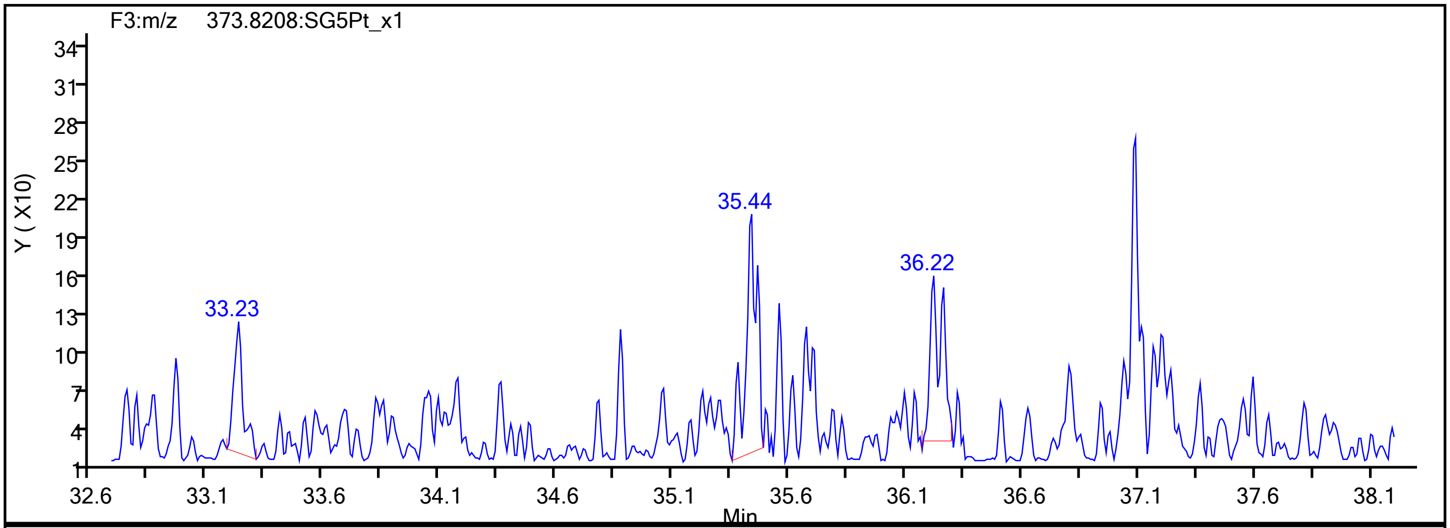

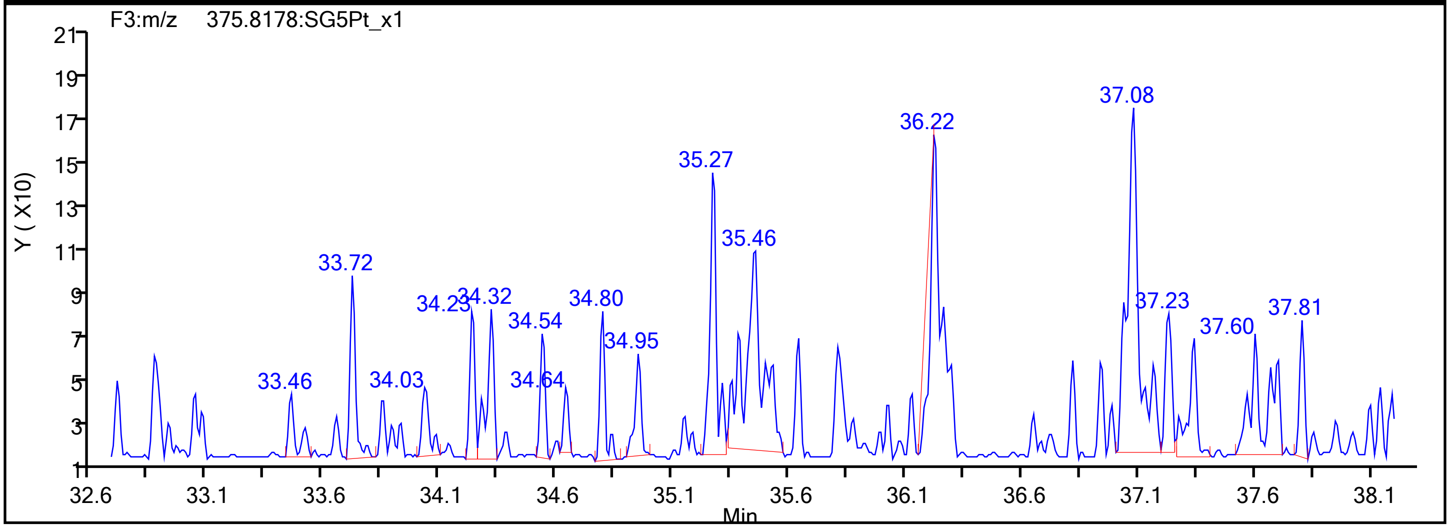

HxCDF Interference Mass

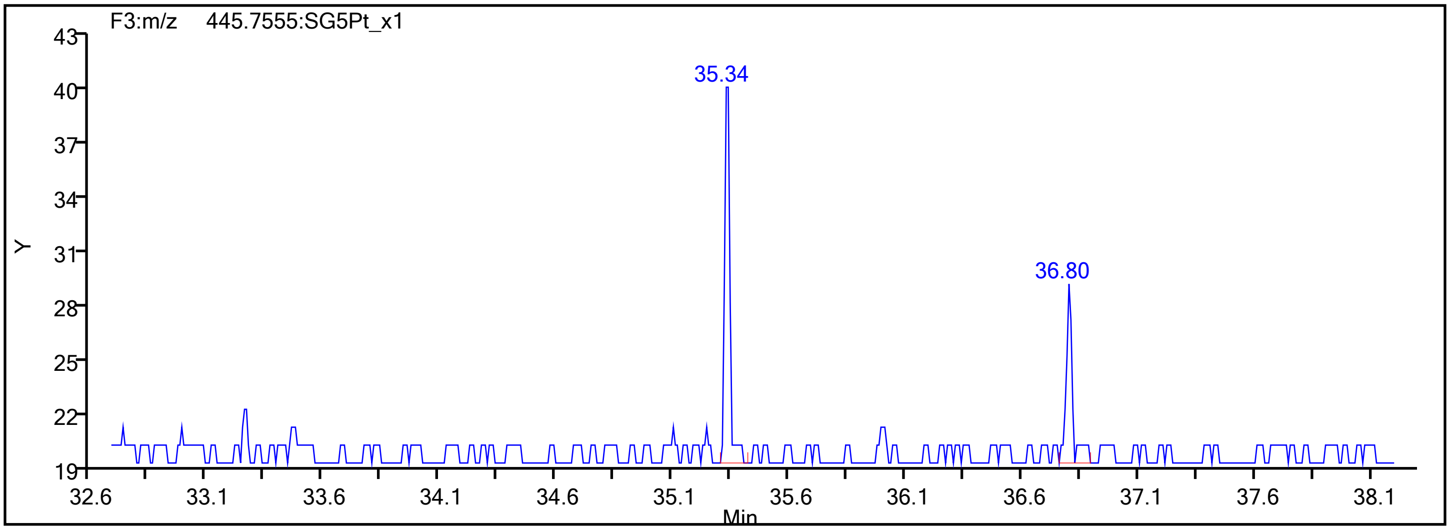

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Eurofins TestAmerica, Sacramento

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HxCDD

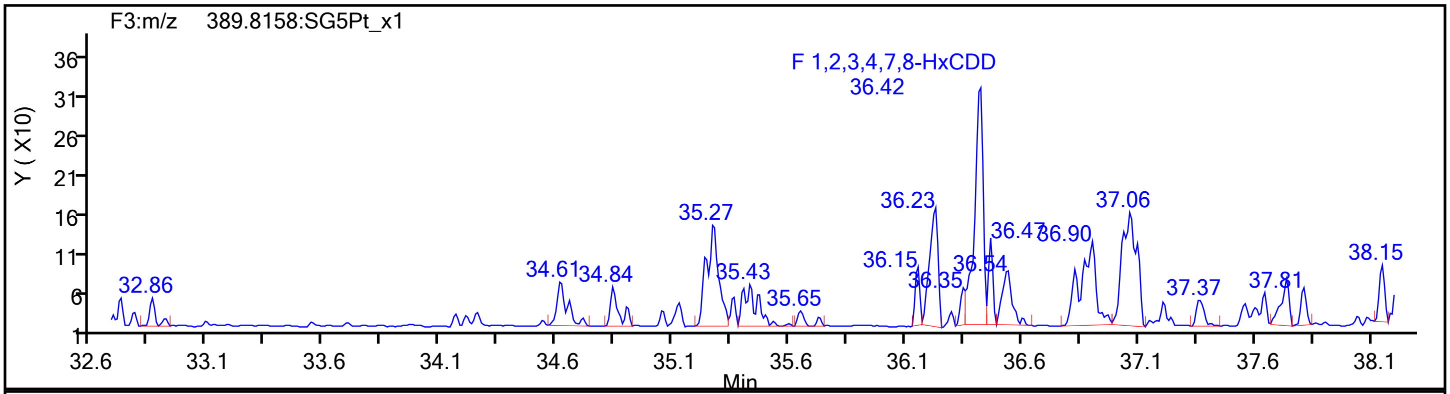

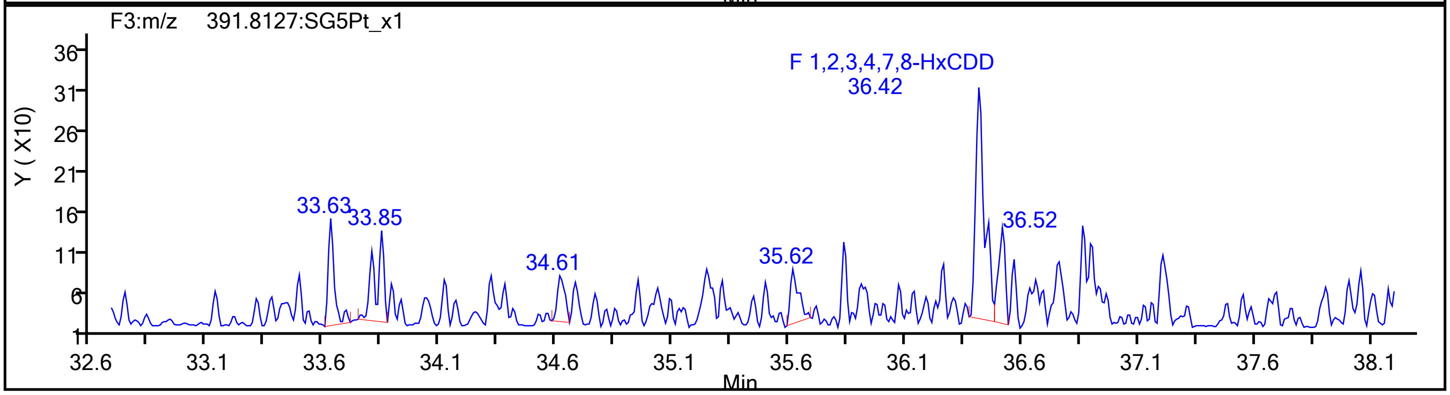

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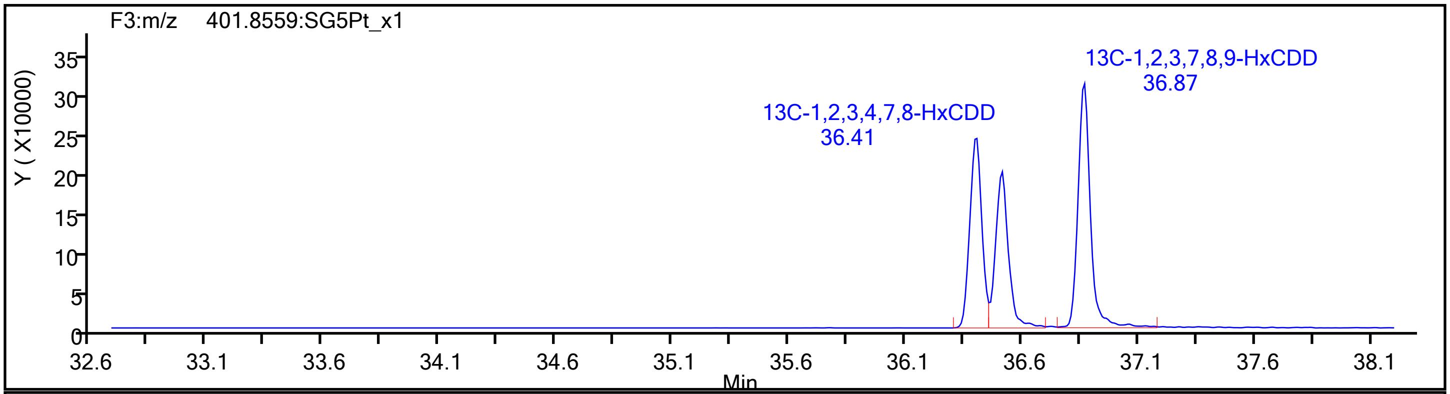

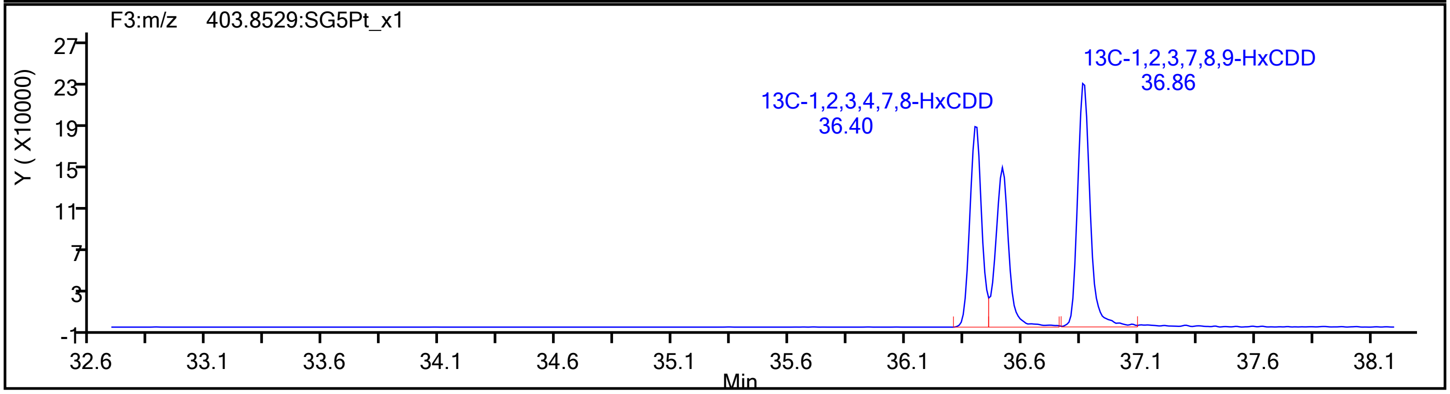

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Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System

Method: Dioxin_DFS1

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Worklist#: 398796

Sample Line#: 4

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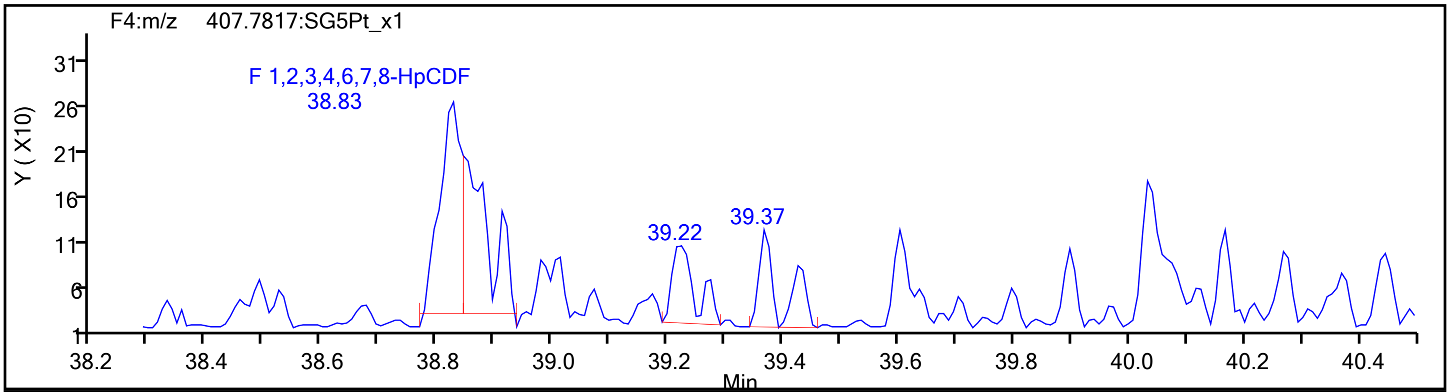

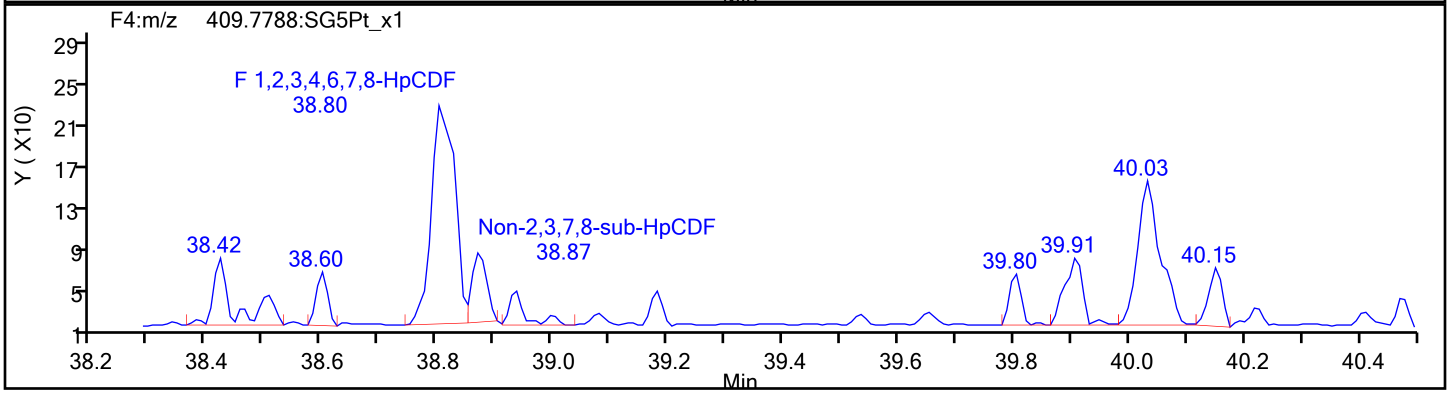

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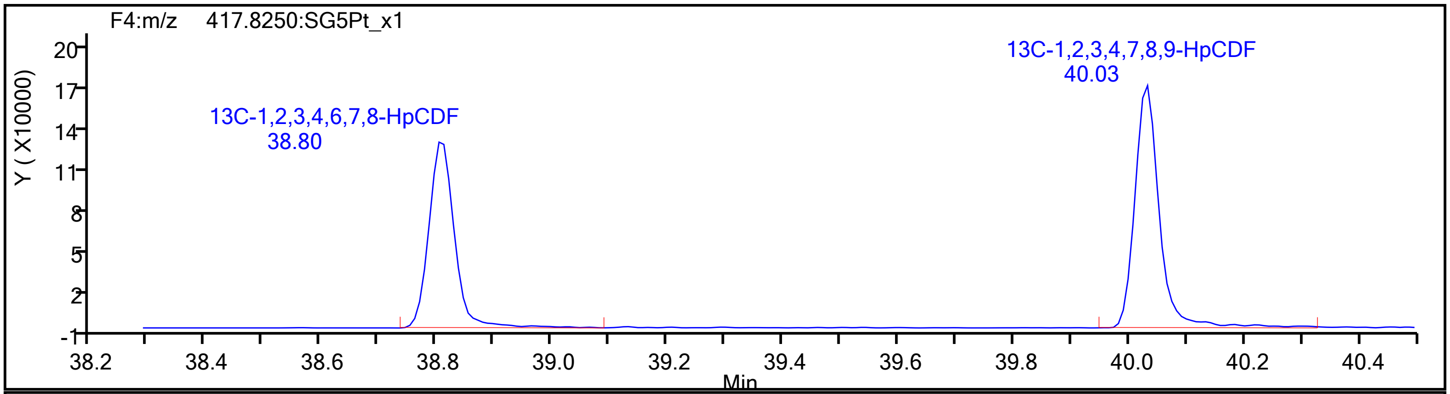

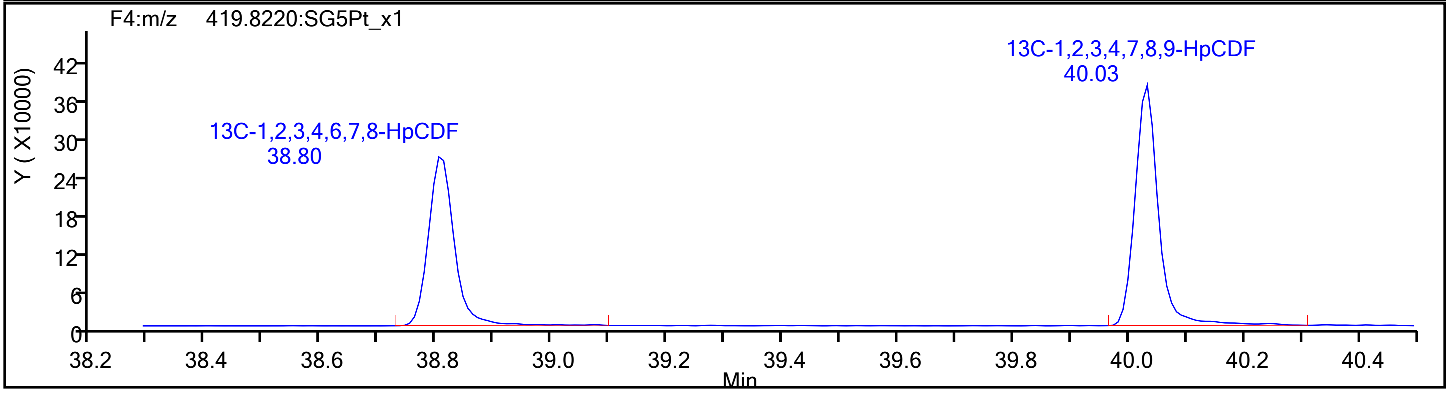

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Eurofins TestAmerica, Sacramento

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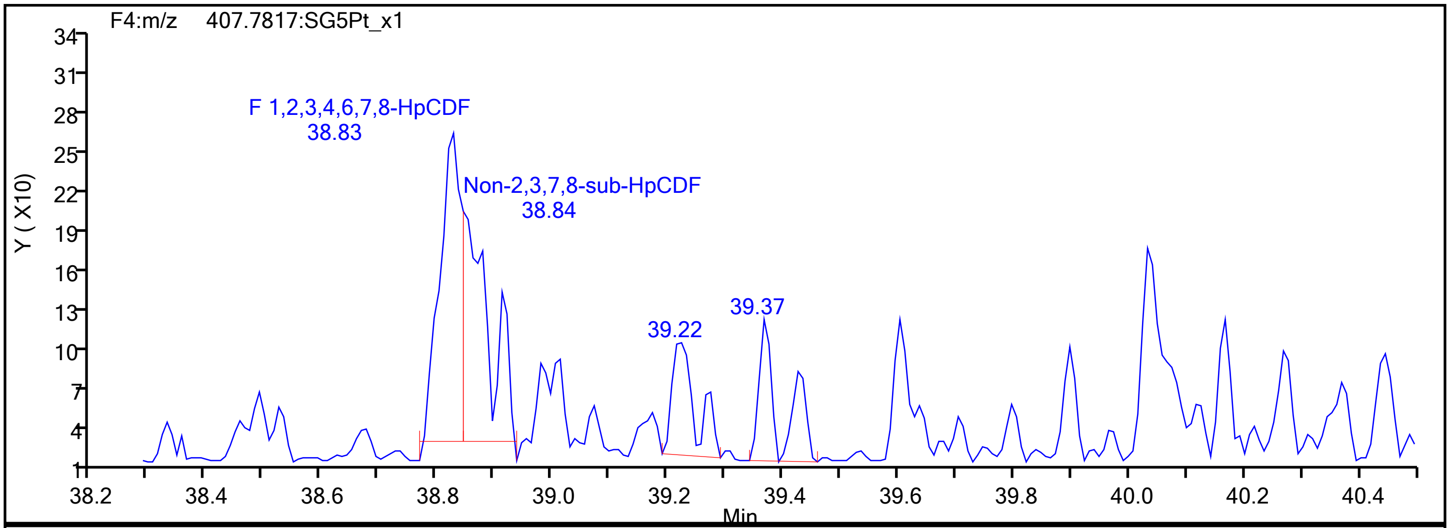

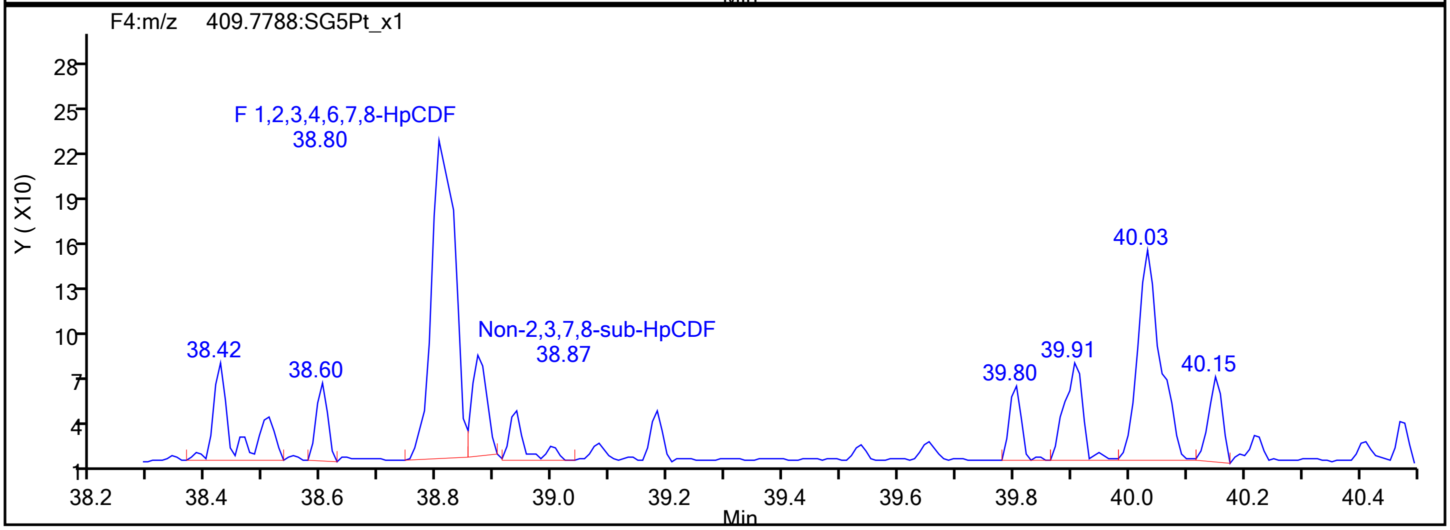

HpCDF Interference Mass

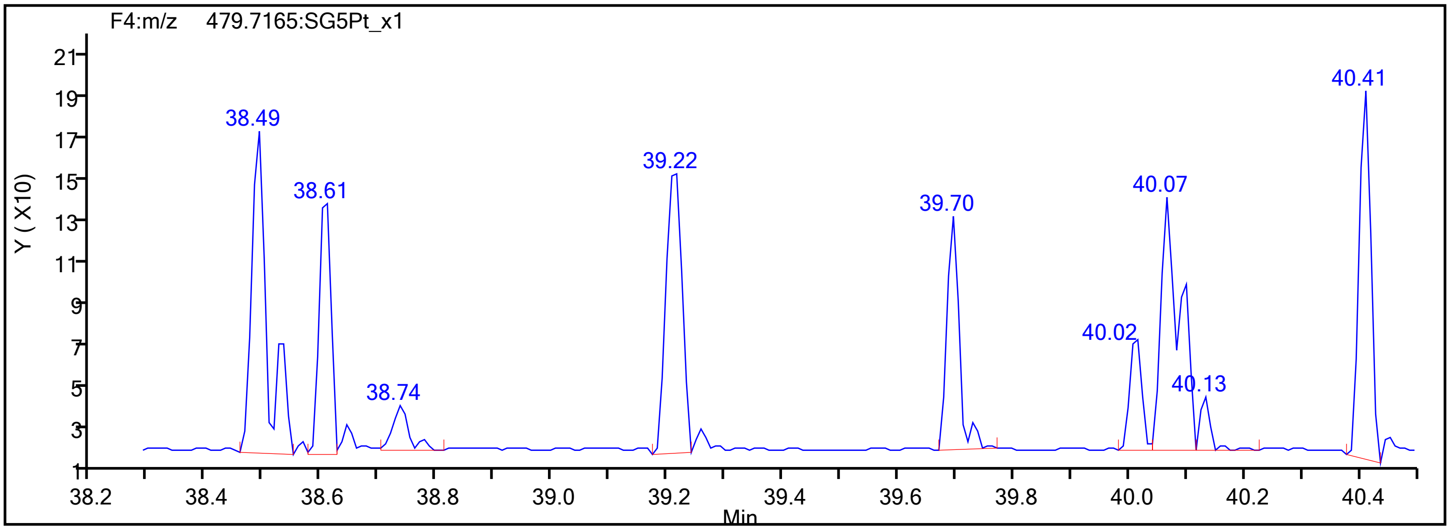

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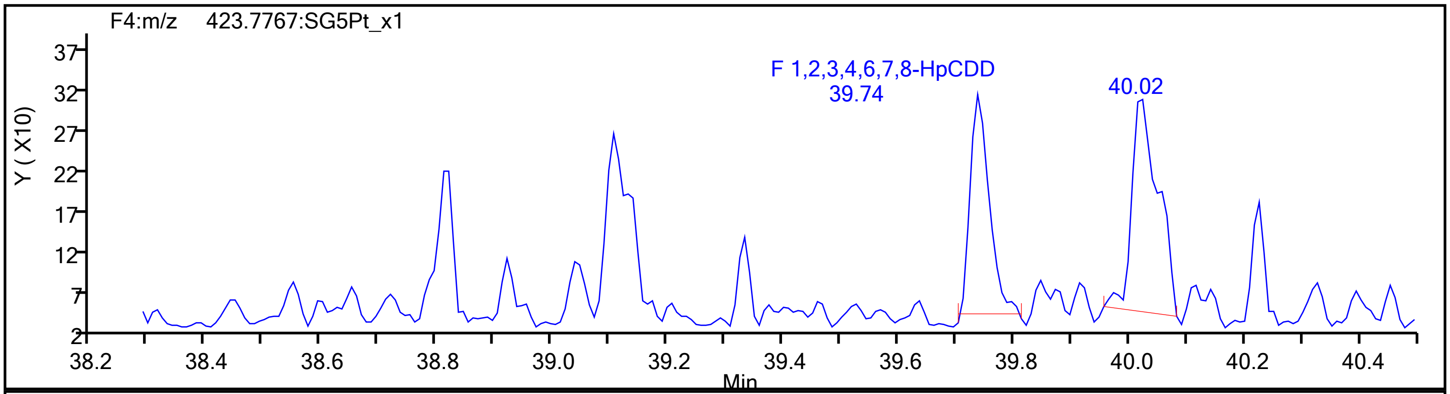

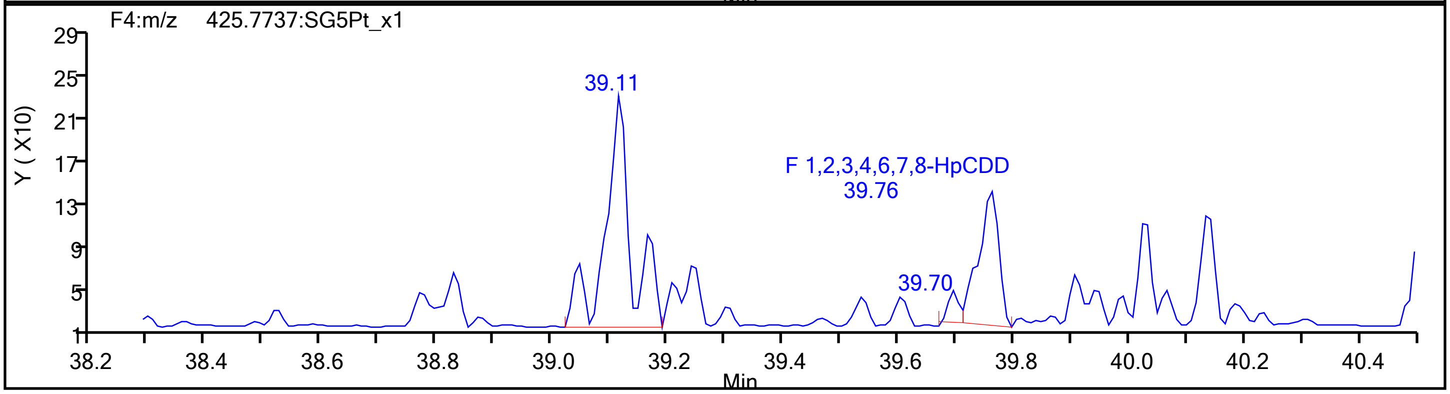

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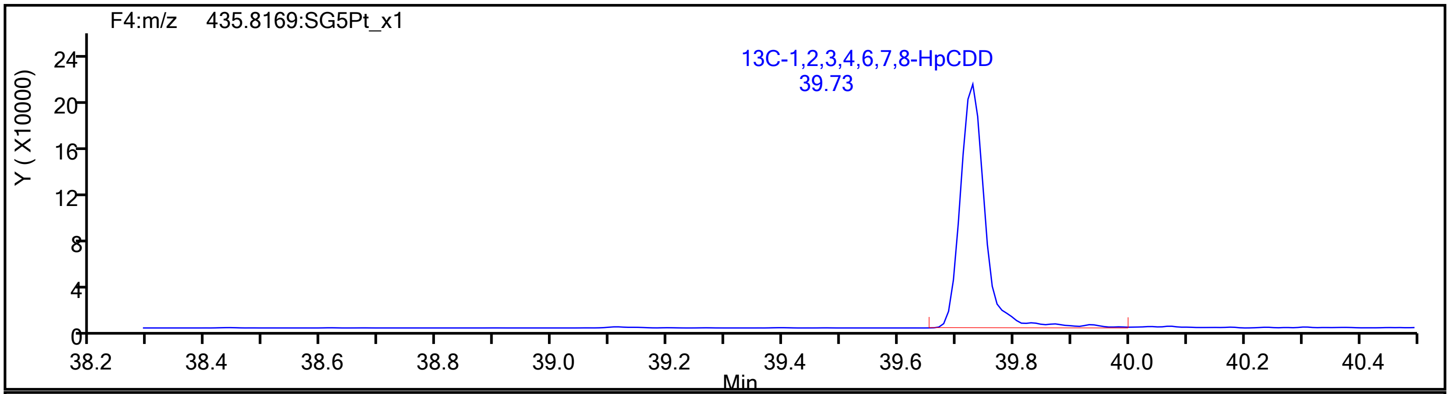

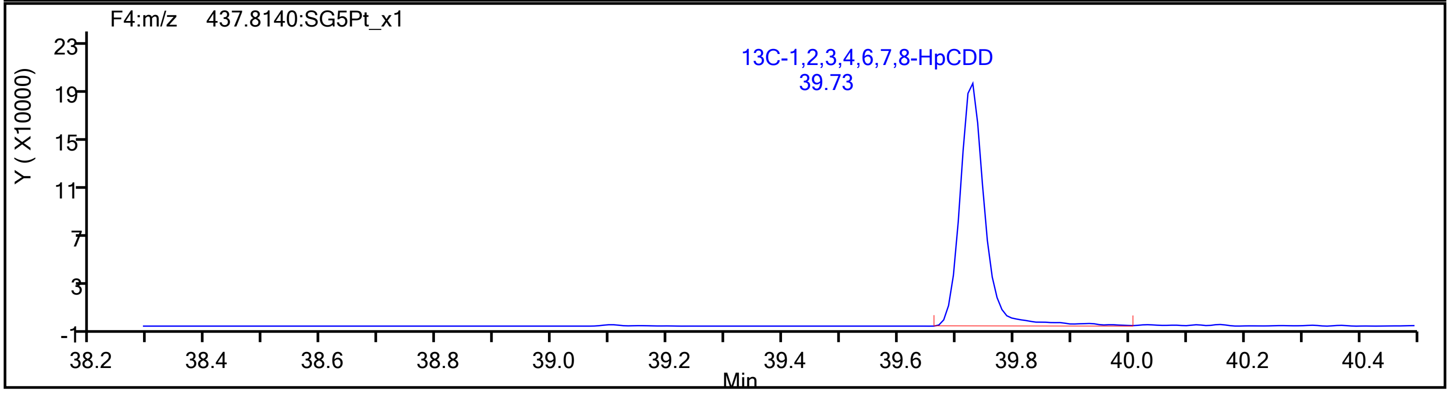

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Eurofins TestAmerica, Sacramento

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OCDF

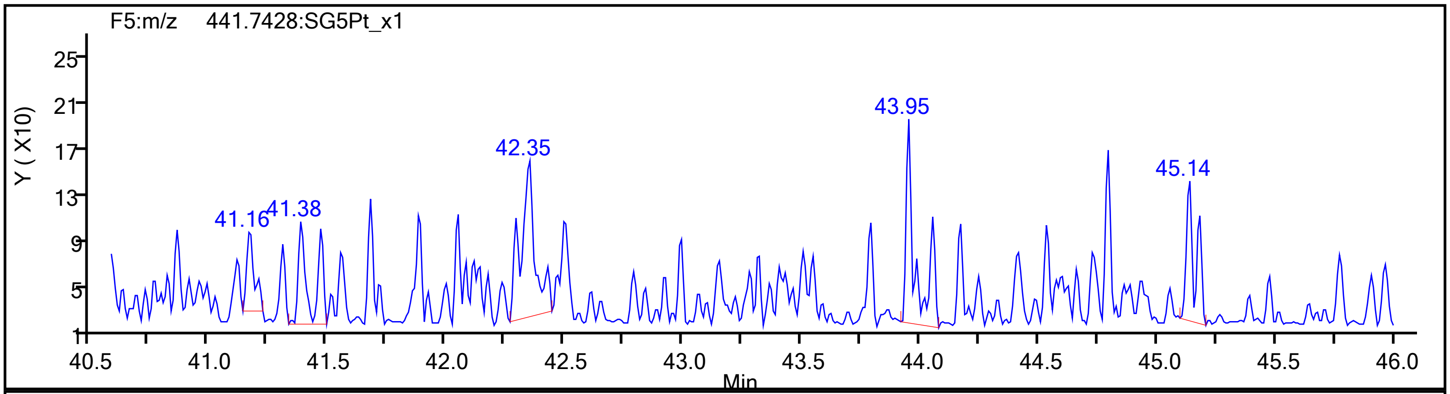

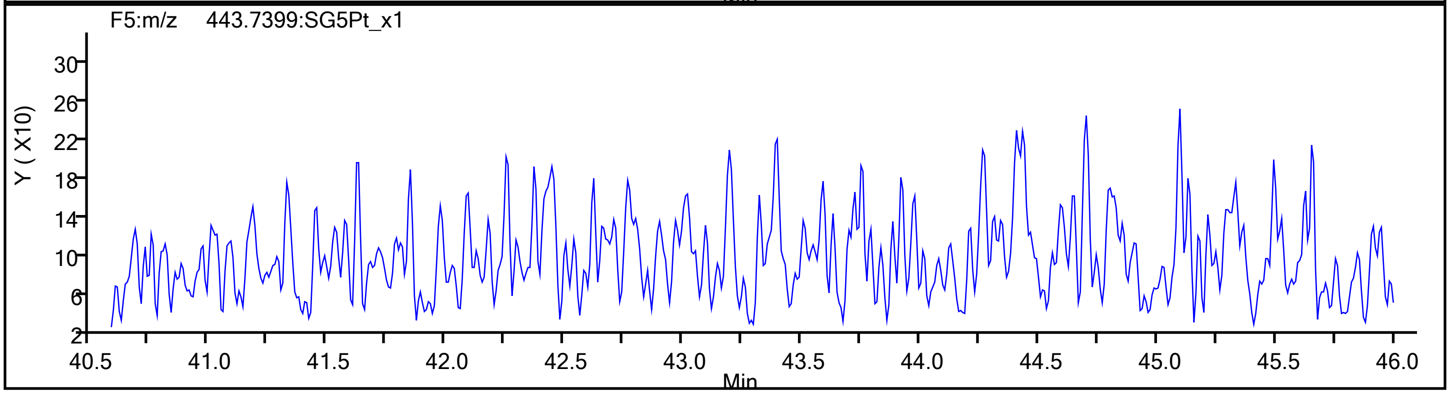

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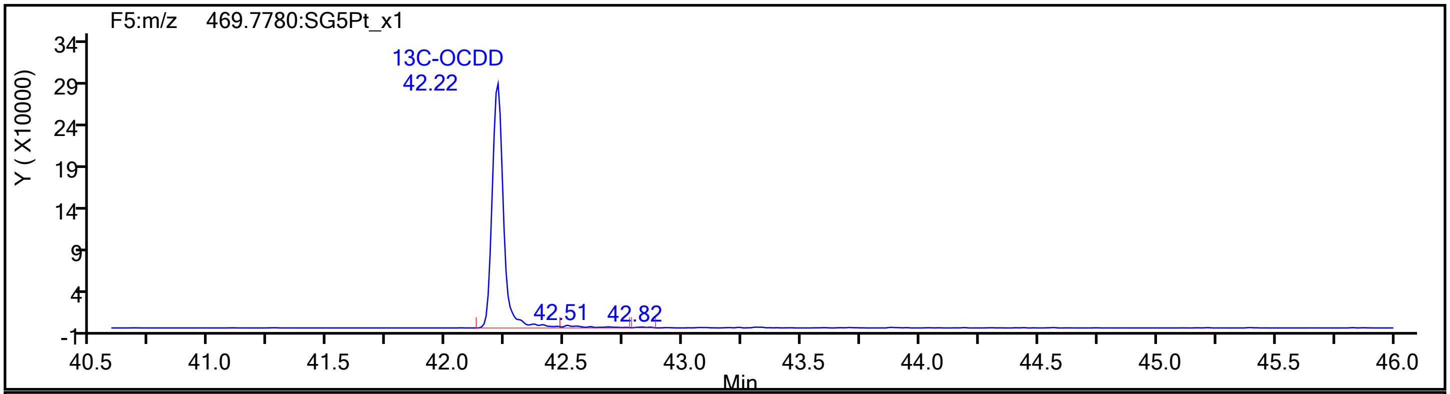

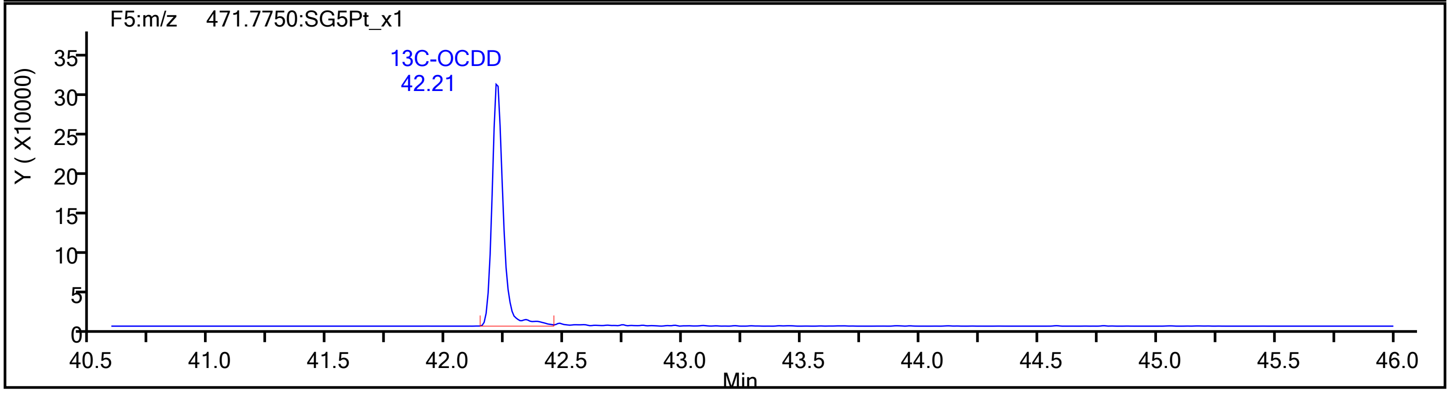

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Client ID:			
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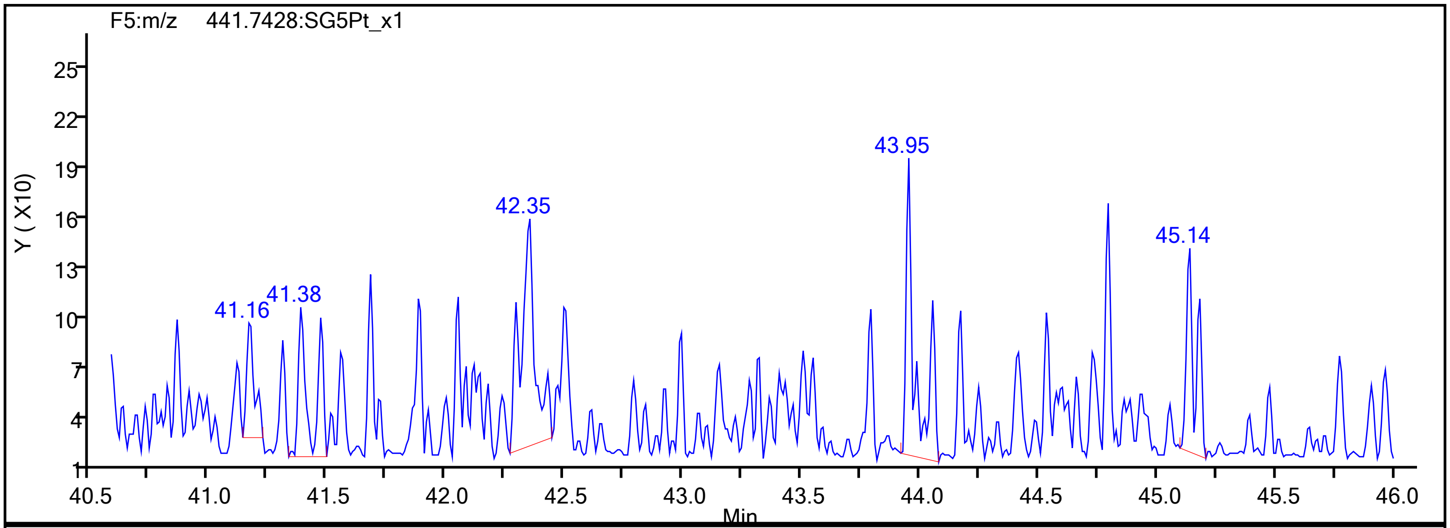

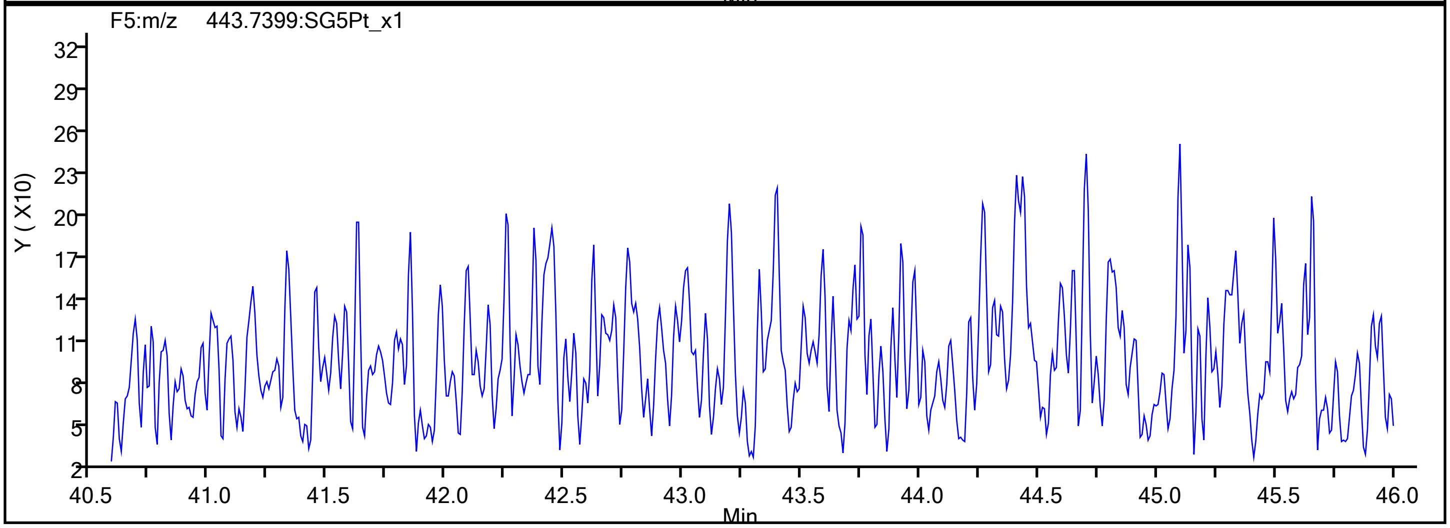

OCDF Interference Mass

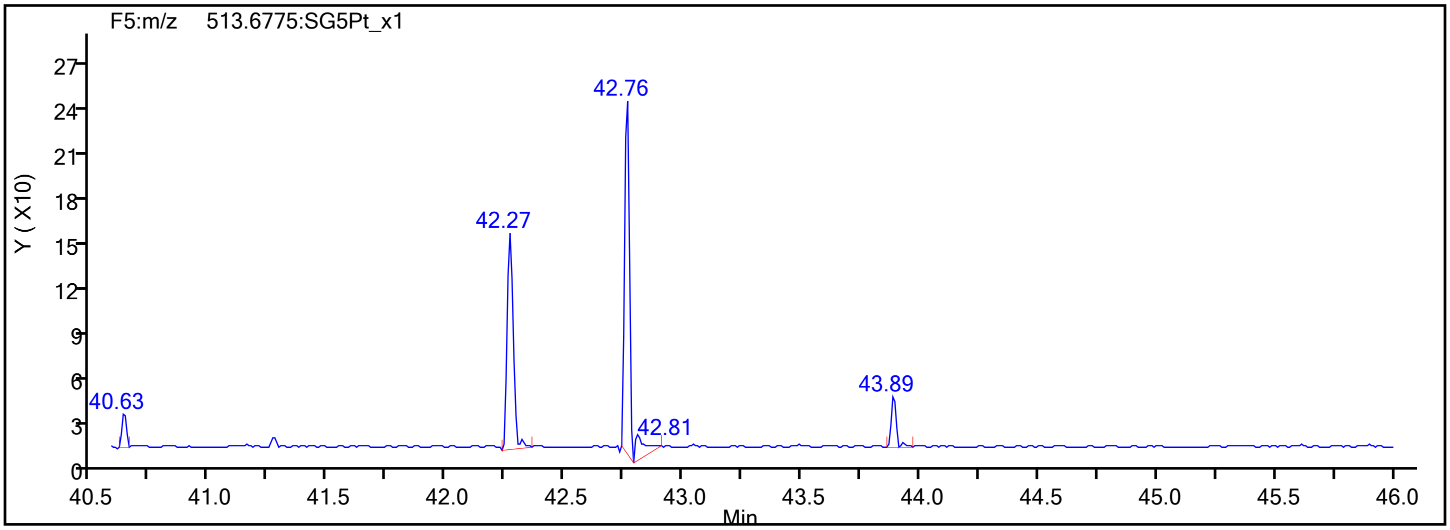

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jul-2020 19:16:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

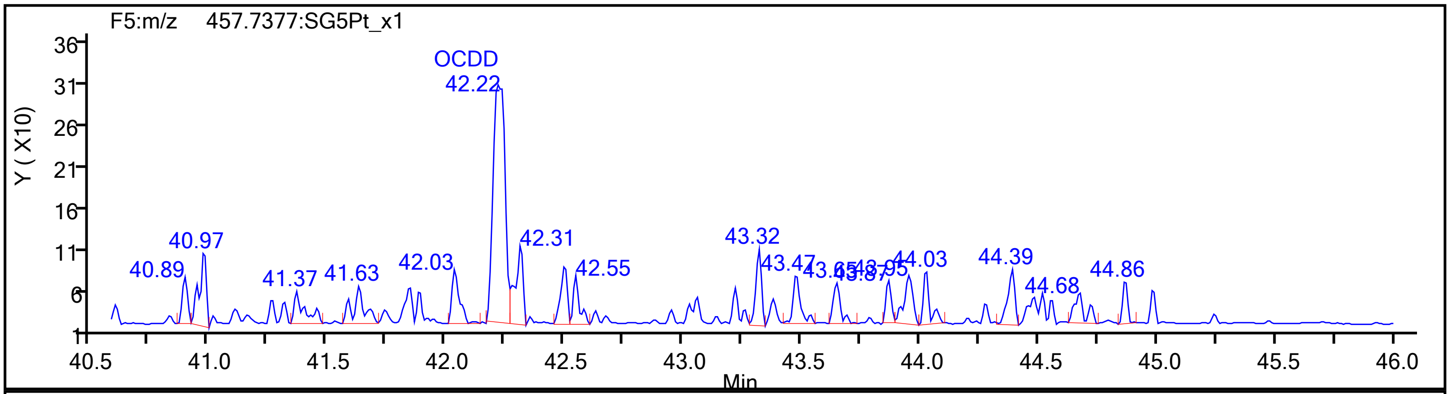

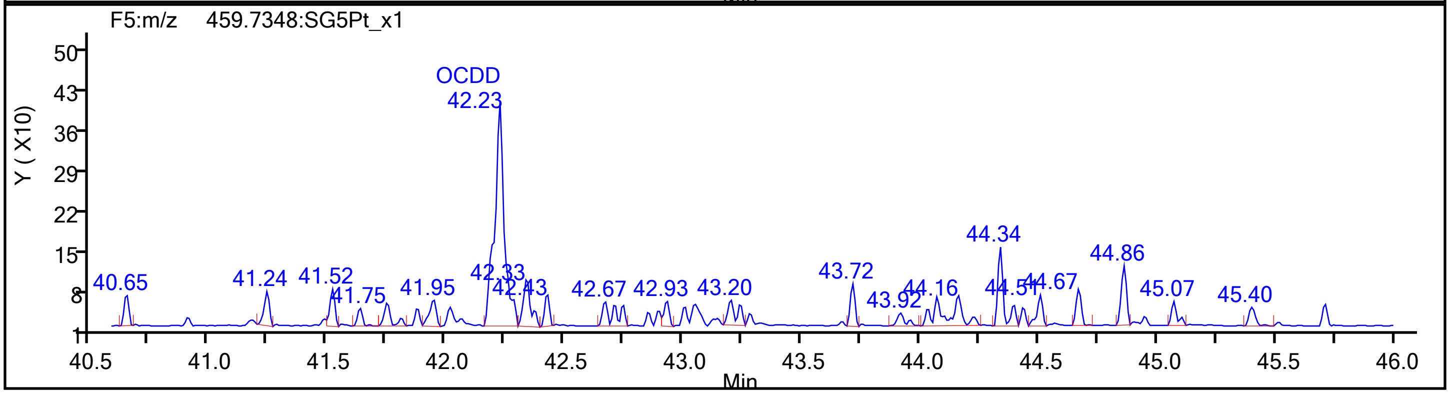

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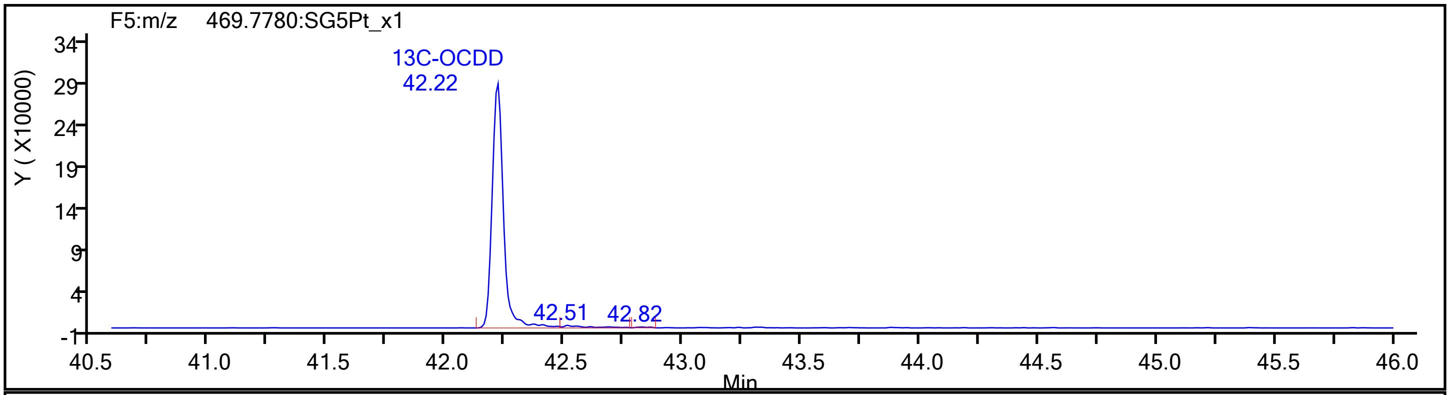

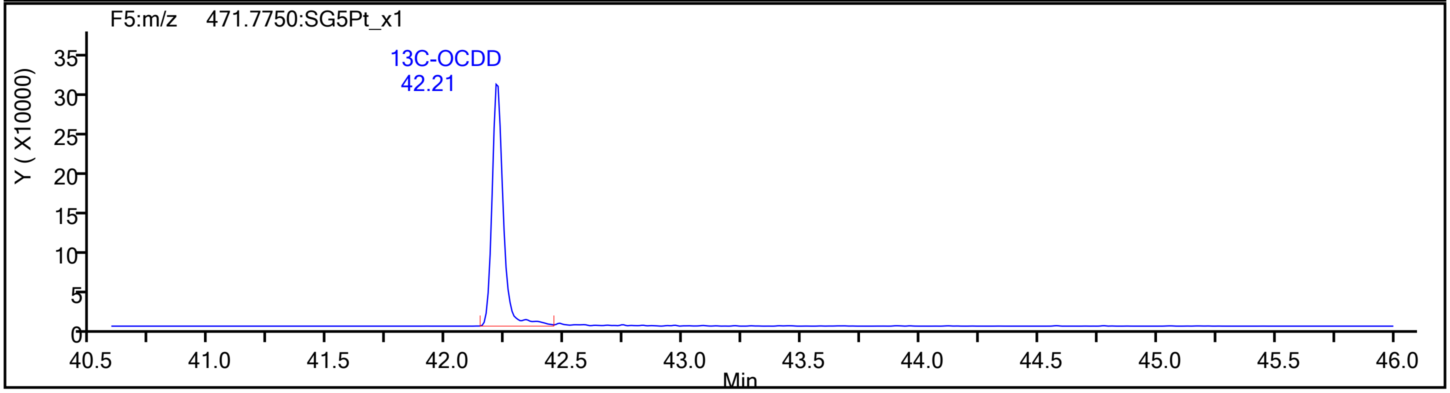

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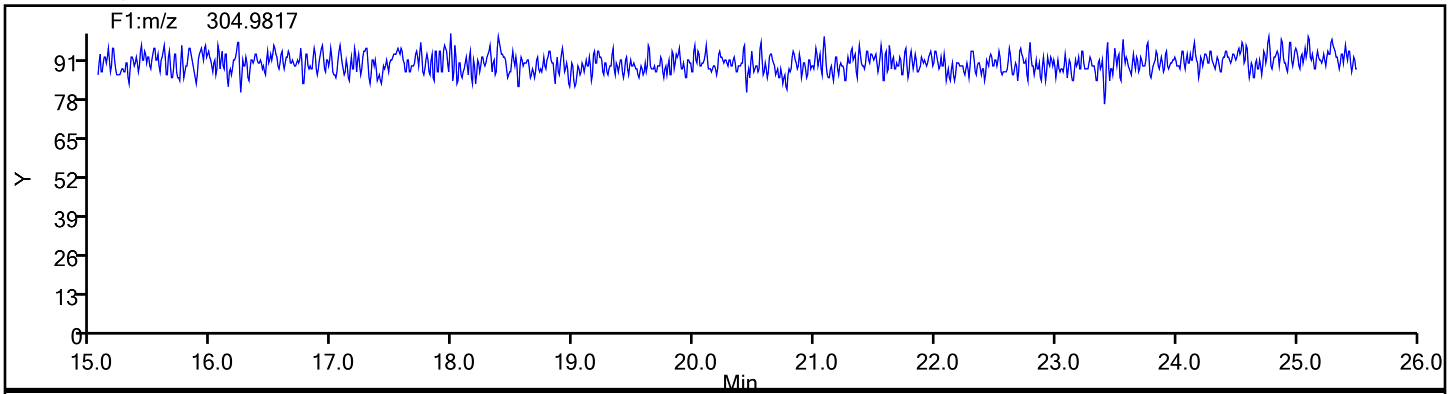

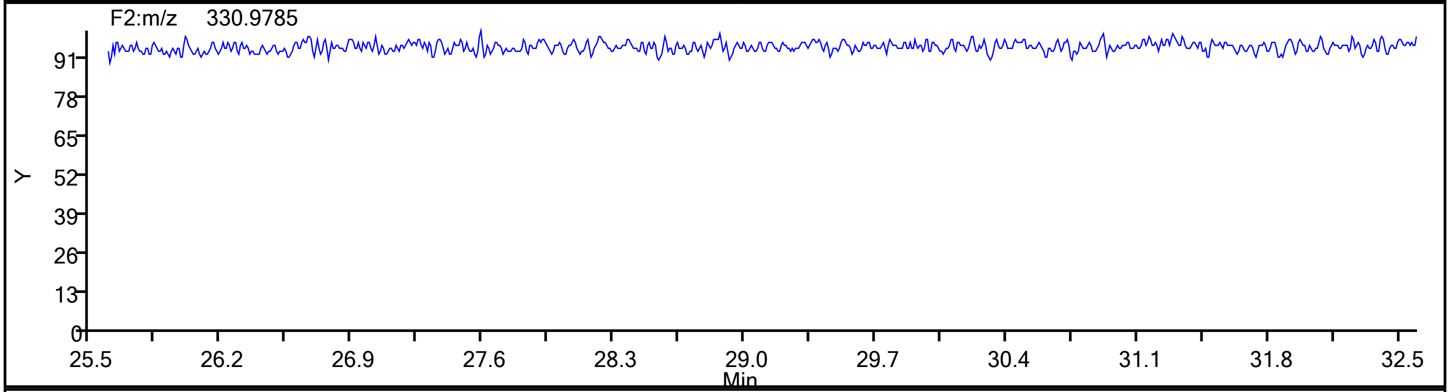

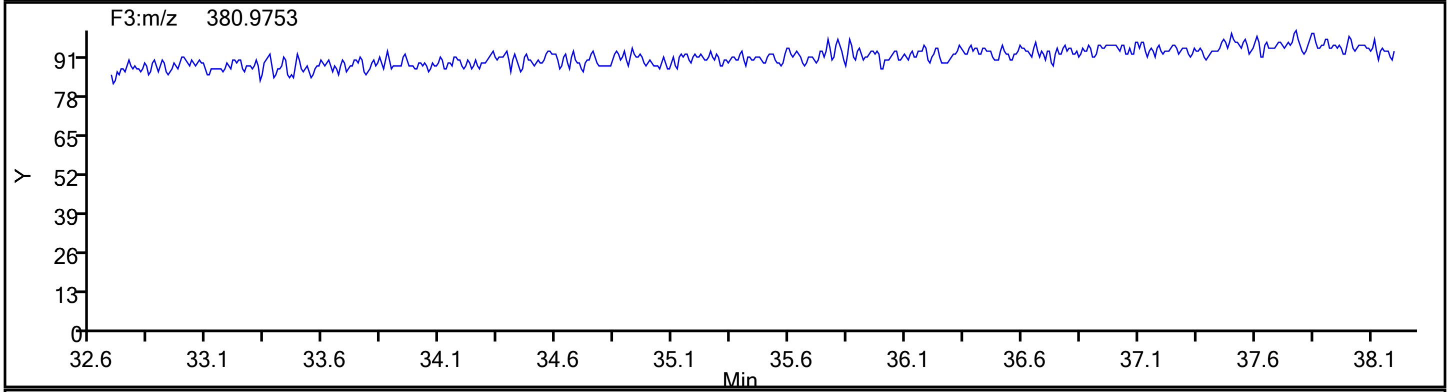

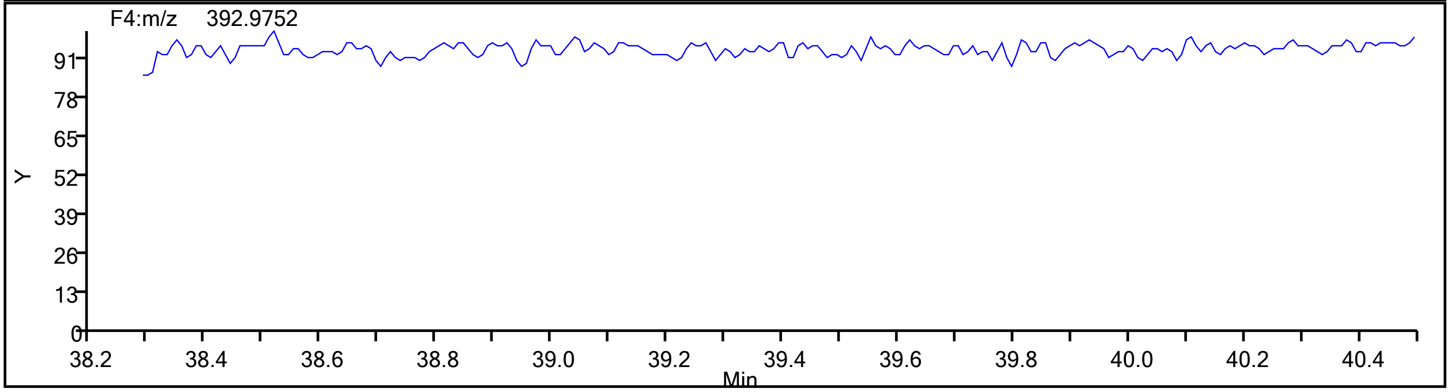

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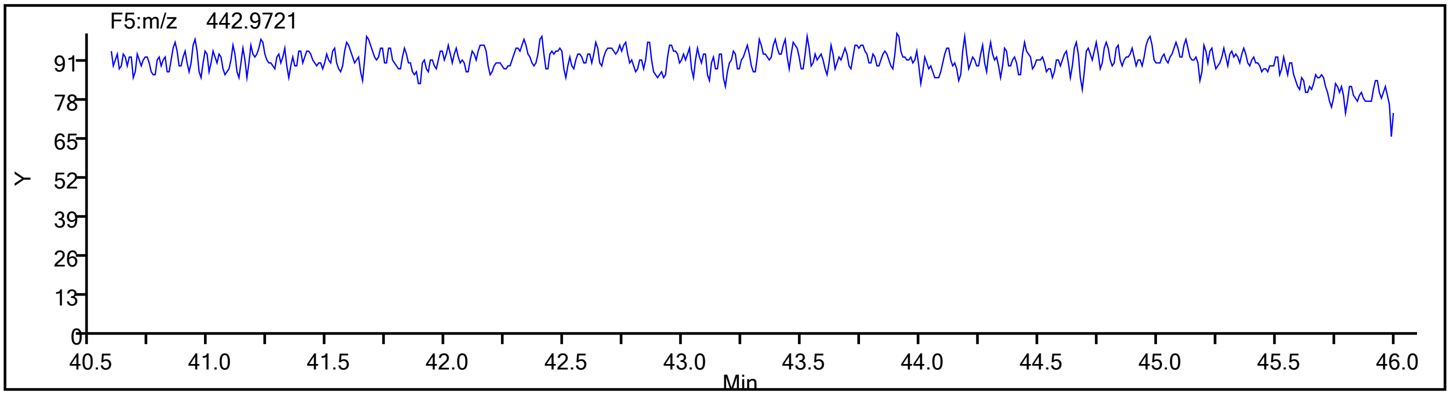

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-397938/2-A

Matrix: Water Lab File ID: 27jl20bdfs1_6.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1000(mL) Date Analyzed: 07/27/2020 20:04

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 398796 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	210		10	2.3
51207-31-9	2,3,7,8-TCDF	218		10	0.81
40321-76-4	1,2,3,7,8-PeCDD	1010		50	1.8
57117-41-6	1,2,3,7,8-PeCDF	1010		50	3.8
57117-31-4	2,3,4,7,8-PeCDF	954		50	3.7
39227-28-6	1,2,3,4,7,8-HxCDD	885		50	2.8
57653-85-7	1,2,3,6,7,8-HxCDD	923		50	3.0
19408-74-3	1,2,3,7,8,9-HxCDD	923		50	2.8
70648-26-9	1,2,3,4,7,8-HxCDF	903		50	5.6
57117-44-9	1,2,3,6,7,8-HxCDF	973		50	5.9
72918-21-9	1,2,3,7,8,9-HxCDF	988		50	5.6
60851-34-5	2,3,4,6,7,8-HxCDF	989		50	5.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	926		50	3.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	942		50	7.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	846		50	6.7
3268-87-9	OCDD	1790		100	3.5
39001-02-0	OCDF	2000		100	3.7
41903-57-5	Total TCDD	210		10	2.3
30402-14-3	Total TCDF	218		10	0.81
36088-22-9	Total PeCDD	1010		50	1.8
30402-15-4	Total PeCDF	1960		50	3.8
34465-46-8	Total HxCDD	2730		50	2.9
55684-94-1	Total HxCDF	3850		50	5.6
37871-00-4	Total HpCDD	926		50	3.7
38998-75-3	Total HpCDF	1790		50	6.9

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-397938/2-A

Matrix: Water Lab File ID: 27jl20bdfs1_6.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1000(mL) Date Analyzed: 07/27/2020 20:04

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 398796 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		20-175
89059-46-1	13C-2,3,7,8-TCDF	70		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	61		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	64		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	72		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	65		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	67		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	66		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	71		20-186
114423-97-1	13C-OCDD	73		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	90		31-191

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d
Lims ID: LCS 320-397938/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Jul-2020 20:04:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-397938/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 09:27:54 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1031

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:31:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.813	2086965	0.82	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.790	2188535	0.83	1.4977	70.0	70.0	0.3619	0.3619	70.02	
2,3,7,8-TCDF	20.825	269951	0.76	1.1312	10.9	10.9	0.0403	0.0403	109	
A Non-2,3,7,8-sub-TCDF	20.186						0.0403	0.0403		
S Total TCDF					10.9	10.9	0.0403	0.0403		
D 13C-2,3,7,8-TCDD	22.216	1306240	0.85	1.0367	60.4	60.4	0.2537	0.2537	60.37	
2,3,7,8-TCDD	22.234	162718	0.84	1.1849	10.5	10.5	0.1129	0.1129	105	M
$ 37Cl4-2,3,7,8-TCDD	22.242	841541		1.1208	36.0	36.0	0.0237	0.0237	89.95	
A Non-2,3,7,8-sub-TCDD	21.062						0.1129	0.1129		U
S Total TCDD					10.5	10.5	0.1129	0.1129		
D 13C-1,2,3,7,8-PeCDF	27.709	1730663	1.59	1.3057	63.5	63.5	0.2887	0.2887	63.51	
1,2,3,7,8-PeCDF	27.734	964442	1.59	1.1060	50.4	50.4	0.1892	0.1892	101	
D 13C-2,3,4,7,8-PeCDF	29.293	2329527	1.55	1.5420	72.4	72.4	0.2445	0.2445	72.39	
2,3,4,7,8-PeCDF	29.310	1007184	1.57	0.9067	47.7	47.7	0.1863	0.1863	95.37	
A F1 PeCDFs	24.937	115	1.55	1.0063	0.0184	0.005629	0.009875	0.009875	0.00	RQM
A Non-2,3,7,8-sub-PeCDF	28.559						0.1858	0.4687		RQU
S Total PeCDF					98.1	98.1	0.1878	0.1878		RQ
D 13C-1,2,3,7,8-PeCDD	30.135	1059021	1.56	0.8294	61.2	61.2	0.1028	0.1028	61.18	
1,2,3,7,8-PeCDD	30.160	590118	1.60	1.1062	50.4	50.4	0.0897	0.0897	101	
A Non-2,3,7,8-sub-PeCDD	28.927						0.0897	0.1775		RQU
S Total PeCDD					50.4	50.4	0.0897	0.0897		
D 13C-1,2,3,4,7,8-HxCDF	35.258	2282409	0.55	1.4619	68.9	68.9	0.2820	0.2820	68.88	
1,2,3,4,7,8-HxCDF	35.275	1039974	1.28	1.0087	45.2	45.2	0.2780	0.2780	90.35	
D 13C-1,2,3,6,7,8-HxCDF	35.418	1892130	0.54	1.2866	64.9	64.9	0.3204	0.3204	64.88	
1,2,3,6,7,8-HxCDF	35.435	1144237	1.26	1.2432	48.6	48.6	0.2933	0.2933	97.29	
D 13C-2,3,4,6,7,8-HxCDF	36.201	1787217	0.52	1.1988	65.8	65.8	0.3439	0.3439	65.77	
2,3,4,6,7,8-HxCDF	36.218	1125044	1.25	1.2736	49.4	49.4	0.2636	0.2636	98.86	
D 13C-1,2,3,7,8,9-HxCDF	37.052	1622715	0.55	1.0687	67.0	67.0	0.3858	0.3858	66.99	
1,2,3,7,8,9-HxCDF	37.069	1032702	1.27	1.2882	49.4	49.4	0.2786	0.2786	98.80	
A Non-2,3,7,8-sub-HxCDF	35.424						0.2753	0.2753		
S Total HxCDF					192.6	192.6	0.2784	0.2784		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.867	2266682	1.25	5E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	36.395	1590518	1.28	1.1046	63.5	63.5	0.2310	0.2310	63.52	
1,2,3,4,7,8-HxCDD	36.412	656861	1.29	0.9336	44.2	44.2	0.1417	0.1417	88.47	
D 13C-1,2,3,6,7,8-HxCDD	36.513	1391681	1.25	0.9871	62.2	62.2	0.2585	0.2585	62.20	
1,2,3,6,7,8-HxCDD	36.522	693583	1.27	1.0802	46.1	46.1	0.1506	0.1506	92.28	
1,2,3,7,8,9-HxCDD	36.875	727964	1.29	1.0574	46.2	46.2	0.1380	0.1380	92.34	
A Non-2,3,7,8-sub-HxCDD	35.752						0.1426	0.1426		
S Total HxCDD					136.5	136.5	0.1434	0.1434		
D 13C-1,2,3,4,6,7,8-HpCDF	38.807	1248025	0.43	0.9035	60.9	60.9	0.6691	0.6691	60.94	
1,2,3,4,6,7,8-HpCDF	38.815	937600	1.07	1.5957	47.1	47.1	0.3538	0.3538	94.16	
D 13C-1,2,3,4,7,8,9-HpCDF	40.029	1688953	0.46	1.0480	71.1	71.1	0.5769	0.5769	71.10	
1,2,3,4,7,8,9-HpCDF	40.037	835593	1.07	1.1693	42.3	42.3	0.3325	0.3325	84.62	
A Non-2,3,7,8-sub-HpCDF	39.452						0.3331	0.3331		
S Total HpCDF					89.4	89.4	0.3431	0.3431		
D 13C-1,2,3,4,6,7,8-HpCDD	39.725	1202275	1.11	0.8875	59.8	59.8	0.2514	0.2514	59.76	
1,2,3,4,6,7,8-HpCDD	39.734	620917	1.06	1.1150	46.3	46.3	0.1867	0.1867	92.64	
A Non-2,3,7,8-sub-HpCDD	39.555						0.1867	0.1867		
S Total HpCDD					46.3	46.3	0.1867	0.1867		
D 13C-OCDD	42.213	2076277	0.92	0.6297	145.5	145.5	0.3067	0.3067	72.73	
OCDF	42.314	1538308	0.92	1.4809	100.1	100.1	0.1875	0.1875	100	
OCDD	42.222	1108499	0.90	1.1948	89.4	89.4	0.1758	0.1758	89.37	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d
Lims ID: LCS 320-397938/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Jul-2020 20:04:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-397938/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 09:27:54 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1031

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:31:40

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.813	21.914	-6		939368	134525	222	555	606		a
333.9338	21.821	21.914	-6		1147597	155149	83	207	1869	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.790	20.826	-2	0.953	991284	147023	412	1030	357		
317.9389	20.790	20.826	-2	0.953	1197251	182201	216	540	844	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.825	20.869	-3	1.002	116147	17080	14	35	1220		
305.8987	20.833	20.869	-2	1.002	153804	23446	46	115	510	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	20.186						14	35			
305.8987	20.186						46	115			
13C-2,3,7,8-TCDD											
331.9368	22.216	22.268	-3	1.019	600118	84168	222	555	379		
333.9338	22.225	22.268	-3	1.019	706122	95297	83	207	1148	0.85(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	22.234	22.285	-3	1.001	74461	11024	83	207	133		M
321.8936	22.234	22.285	-3	1.001	88257	12420	13	32	955	0.84(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.242	22.335	-6	1.020	841541	110656	31	77	3570		
A Non-2,3,7,8-sub-TCDD											U
319.8965	21.062						83	207			
321.8936	21.062						13	32			
13C-1,2,3,7,8-PeCDF											
351.9000	27.709	27.788	-5	1.270	1061190	179041	283	707	633		
353.8970	27.709	27.788	-5	1.270	669473	108610	154	385	705	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.734	27.805	-4	1.001	591416	95454	140	350	682		
341.8567	27.726	27.805	-5	1.001	373026	58673	101	252	581	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.293	29.364	-4	1.343	1414760	217354	283	707	768		
353.8970	29.285	29.364	-5	1.343	914767	139013	154	385	903	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.310	29.389	-5	1.001	615124	90889	140	350	649		
341.8567	29.310	29.389	-5	1.001	392060	61072	101	252	605	1.57(1.32-1.78)	
A F1 PeCDFs											RQM
339.8597	24.973	24.937	2	0.901	70	49	1	2	49		
341.8567	24.982	24.937	3	0.902	306	190	12	30	16	0.23(1.32-1.78)	M
	Empc Correction				45	31	12	30	3		
A Non-2,3,7,8-sub-PeCDF											U
339.8597	28.349	28.559	-13	1.023	7063	888	140	350	6		
	Empc Correction				5820	920	140	350	7		
341.8567	28.366	28.559	-12	1.024	3755	594	101	252	6	1.88(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.135	30.215	-5	1.382	645141	94662	58	145	1632		
369.8919	30.135	30.215	-5	1.382	413880	58532	41	102	1428	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.160	30.240	-5	1.001	363551	52603	44	110	1196		
357.8516	30.160	30.240	-5	1.001	226567	32723	17	42	1925	1.60(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	28.927	28.927	0	0.960	1264	231	44	110			
357.8516	28.927	28.927	0	0.960	1569	154	17	42		0.81(1.32-1.78)	
	Empc Correction				815	149	17	42	0		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.258	35.308	-3	0.956	813808	198356	353	882	562		
385.8610	35.258	35.308	-3	0.956	1468601	353259	663	1657	533	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.275	35.325	-3	1.000	583921	139053	344	860	404		
375.8178	35.275	35.325	-3	1.000	456053	110881	275	687	403	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.418	35.460	-2	0.961	665987	152189	353	882	431		
385.8610	35.418	35.460	-2	0.961	1226143	272012	663	1657	410	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.435	35.476	-2	1.000	637421	144155	344	860	419		
375.8178	35.427	35.476	-3	1.000	506816	113109	275	687	411	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.201	36.243	-2	0.982	612777	155493	353	882	440		
385.8610	36.201	36.243	-2	0.982	1174440	305348	663	1657	461	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.218	36.260	-2	1.000	625314	163425	344	860	475		
375.8178	36.210	36.260	-3	1.000	499730	130756	275	687	475	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.052	37.094	-3	1.005	577387	151551	353	882	429		
385.8610	37.061	37.094	-2	1.005	1045328	279469	663	1657	422	0.55(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.069	37.111	-3	1.000	577826	154037	344	860	448		
375.8178	37.069	37.111	-3	1.000	454876	120768	275	687	439	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.424						344	860			
375.8178	35.424						275	687			
13C-1,2,3,7,8,9-HxCDD											a
401.8559	36.867	36.901	-2		1258936	340160	356	890	956		a
403.8529	36.867	36.901	-2		1007746	275977	273	682	1011	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.395	36.437	-3	0.987	892088	245901	356	890	691		
403.8529	36.395	36.437	-3	0.987	698430	201444	273	682	738	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.412	36.445	-2	1.000	370223	102300	138	345	741		
391.8127	36.412	36.445	-2	1.000	286638	77749	99	247	785	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.513	36.547	-2	0.990	774131	201679	356	890	567		
403.8529	36.513	36.547	-2	0.990	617550	162274	273	682	594	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.522	36.563	-3	1.000	387623	102575	138	345	743		
391.8127	36.522	36.563	-3	1.000	305960	80376	99	247	812	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.875	36.909	-2	1.013	409975	114039	138	345	826		
391.8127	36.875	36.909	-2	1.013	317989	89070	99	247	900	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.752						138	345			
391.8127	35.752						99	247			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.807	38.834	-2	1.053	378042	124903	479	1197	261		
419.8220	38.807	38.834	-2	1.053	869983	271908	1011	2527	269	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.815	38.841	-2	1.000	485217	158194	450	1125	352		
409.7788	38.815	38.841	-2	1.000	452383	142525	446	1115	320	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.029	40.055	-2	1.086	531288	183870	479	1197	384		
419.8220	40.029	40.055	-2	1.086	1157665	392208	1011	2527	388	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.037	40.063	-2	1.000	430994	147821	450	1125	328		
409.7788	40.037	40.063	-2	1.000	404599	139652	446	1115	313	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.452						450	1125			
409.7788	39.452						446	1115			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.725	39.752	-2	1.078	633249	211935	306	765	693		
437.8140	39.725	39.752	-2	1.078	569026	192480	244	610	789	1.11(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.734	39.760	-2	1.000	319628	108915	189	472	576		
425.7737	39.734	39.760	-2	1.000	301289	99551	148	370	673	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						189	472			
425.7737	39.555						148	370			
13C-OCDD											
469.7780	42.213	42.240	-2	1.145	996493	302201	213	532	1419		
471.7750	42.213	42.240	-2	1.145	1079784	328101	263	657	1248	0.92(0.76-1.02)	
OCDF											
441.7428	42.314	42.341	-2	1.002	737763	223031	127	317	1756		
443.7399	42.314	42.341	-2	1.002	800545	240391	223	557	1078	0.92(0.76-1.02)	
OCDD											
457.7377	42.222	42.249	-2	1.000	524708	160397	126	315	1273		
459.7348	42.222	42.249	-2	1.000	583791	180207	139	347	1296	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 29-Jul-2020 09:27:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d
Lims ID: LCS 320-397938/2-A
Client ID:
Inject. Date: 27-Jul-2020 20:04:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398796 Lims Sample ID: 5

Non-2,3,7,8-sub-TCDD, RT: 21.062

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	1306240	179465

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	1306240	179465

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 29-Jul-2020 09:27:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Lims ID:	LCS 320-397938/2-A		
Client ID:			
Inject. Date:	27-Jul-2020 20:04:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	5

F1 PeCDFs, RT: 24.937

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1730663	287651
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2329527	356367

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2030095	322009

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.973	70	49	306	190	0.0184	0.23	RQM
24.973	70	49	45	31	0.005629		Empc Correction
Signal Totals:							
	70	49	45	31			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	376	239				0.23	RQM
	115	80					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0184 = (376 * 100.000) / (2030095 * 1.006)
Empc Amount: 0.005629 = (115 * 100.000) / (2030095 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Lims ID:	LCS 320-397938/2-A		
Client ID:			
Inject. Date:	27-Jul-2020 20:04:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	5

Non-2,3,7,8-sub-PeCDF, RT: 28.559

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1730663	287651
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2329527	356367

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	2030095	322009

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
28.349	7063	888	3755	594	0.5295	1.88	RQ
28.349	5820	920	3755	594	0.4687		Empc Correction

Compound is Marked ND

Report Date: 29-Jul-2020 09:27:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Lims ID:	LCS 320-397938/2-A		
Client ID:			
Inject. Date:	27-Jul-2020 20:04:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	5

Non-2,3,7,8-sub-PeCDD, RT: 28.927

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	1059021	153194

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	1059021	153194

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.641	1264	231	1569	154	0.2418	0.81	RQ
30.641	1264	231	815	149	0.1775		Empc Correction

Compound is Marked ND

Report Date: 29-Jul-2020 09:27:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d				
Injection Date:	27-Jul-2020 20:04:00	Instrument ID:	DFS 1		
Lims ID:	LCS 320-397938/2-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	22.23
Area:	77226
Amount:	10.691634
Amount Units:	pg/ul

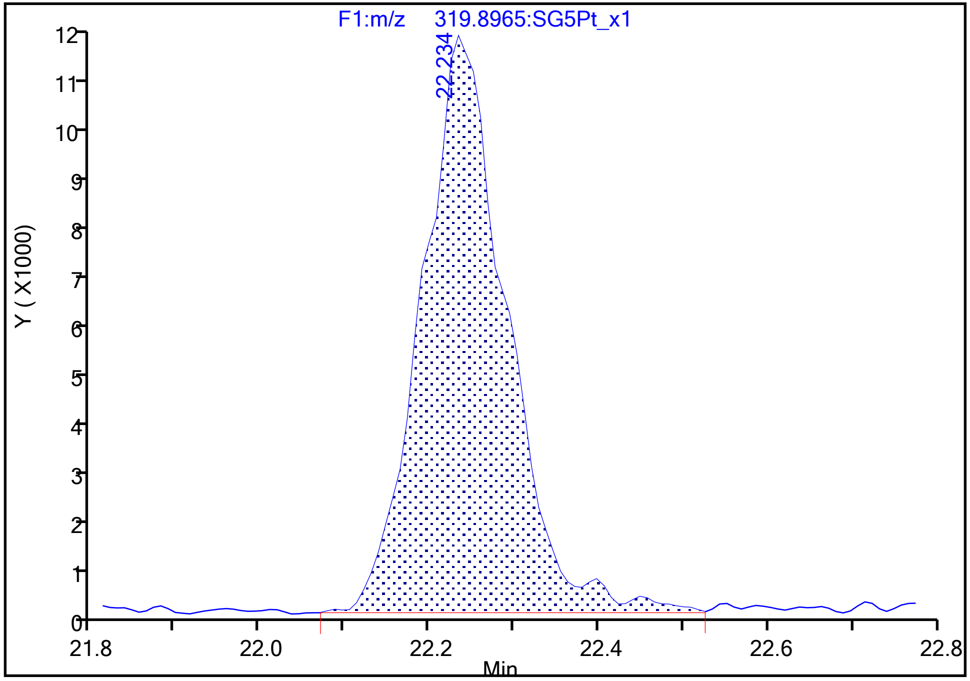

Manual Integration Results

RT:	22.23
Area:	74461
Amount:	10.512991
Amount Units:	pg/ul

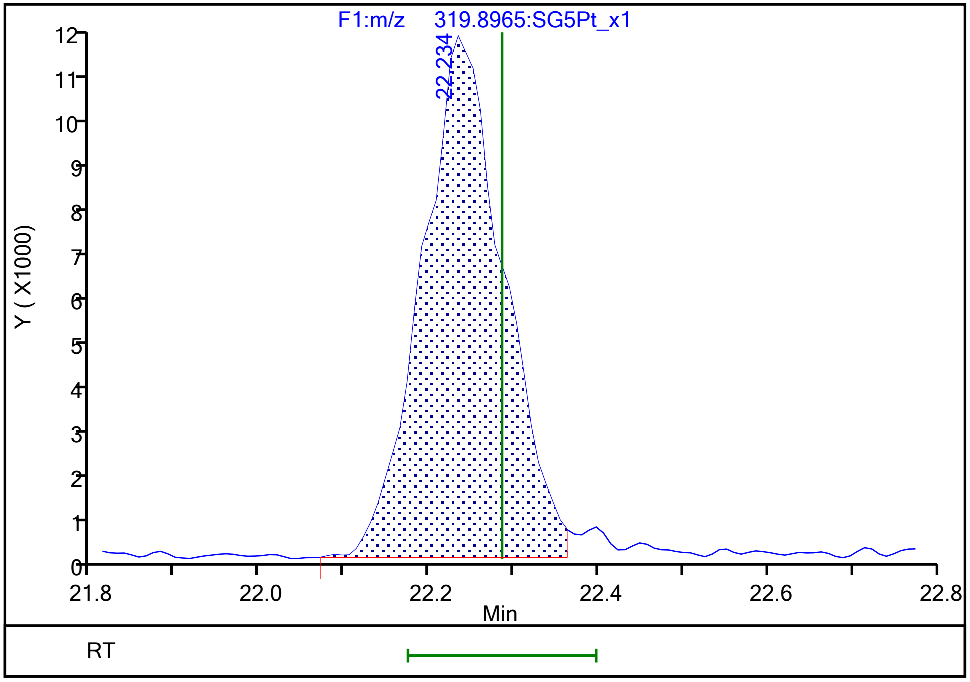

Reviewer: dadunj, 29-Jul-2020 09:24:23

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:27:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d				
Injection Date:	27-Jul-2020 20:04:00	Instrument ID:	DFS 1		
Lims ID:	LCS 320-397938/2-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 2, m/z: 341.8567, RT: (24.38- 25.50)

Signal: 2

Processing Integration Results

RT = 24.982 Area = 378

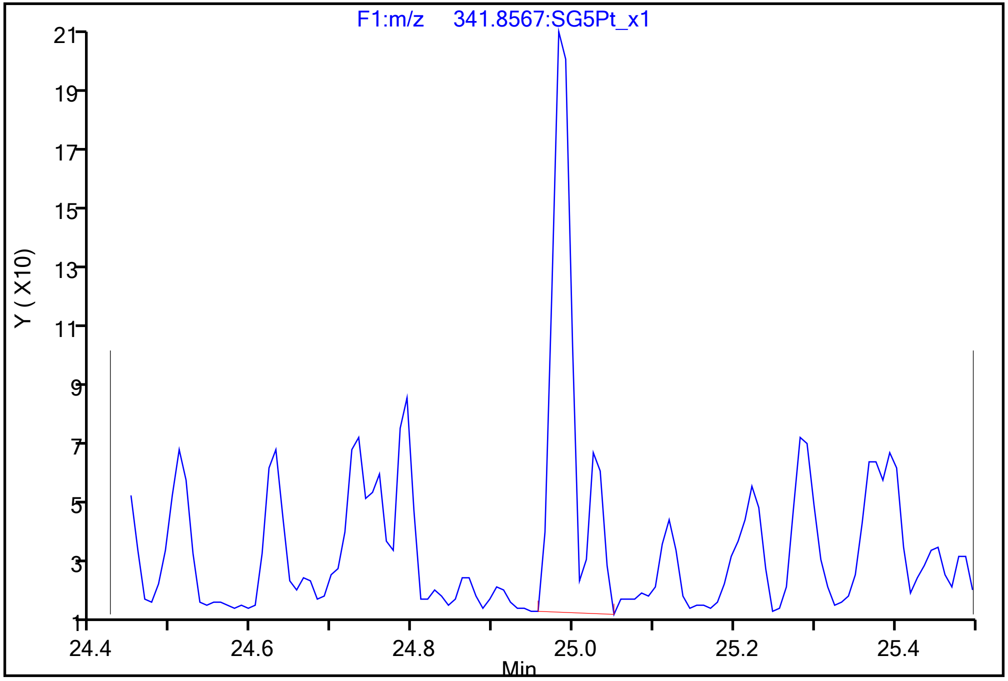

Manual Integration Results

RT = 24.982 Area = 306 M

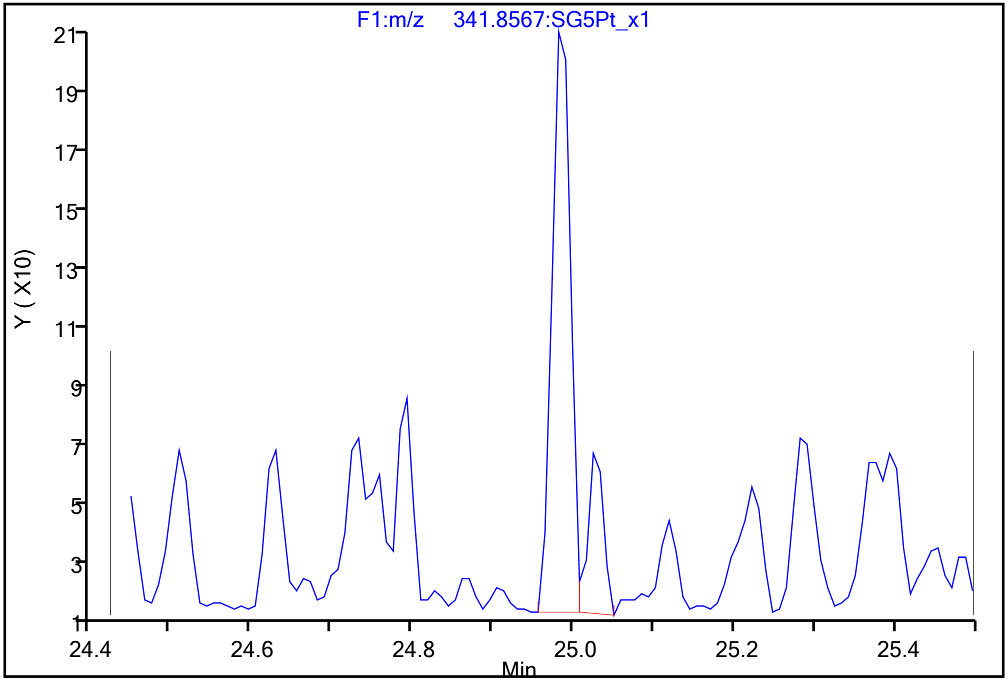

Reviewer: dadunj, 29-Jul-2020 09:24:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:27:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

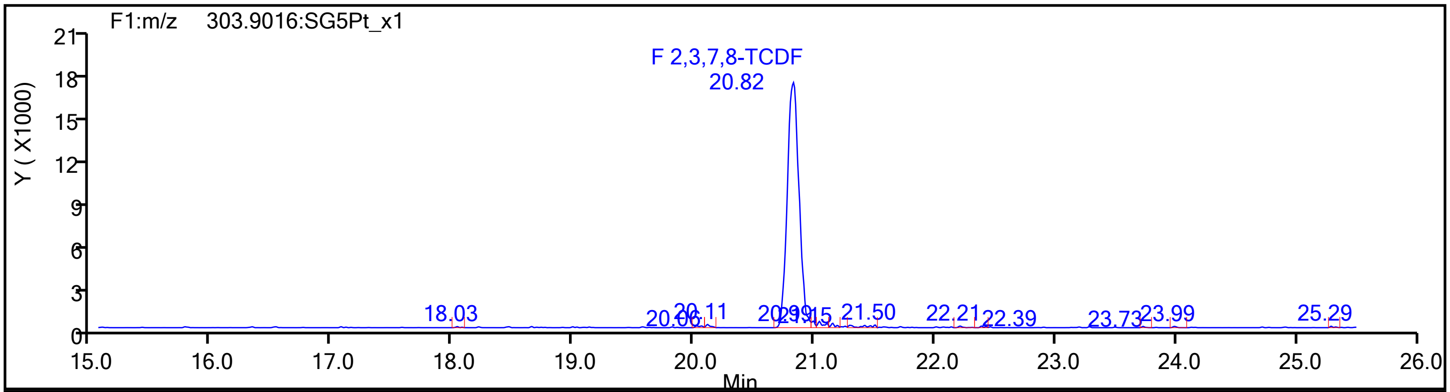

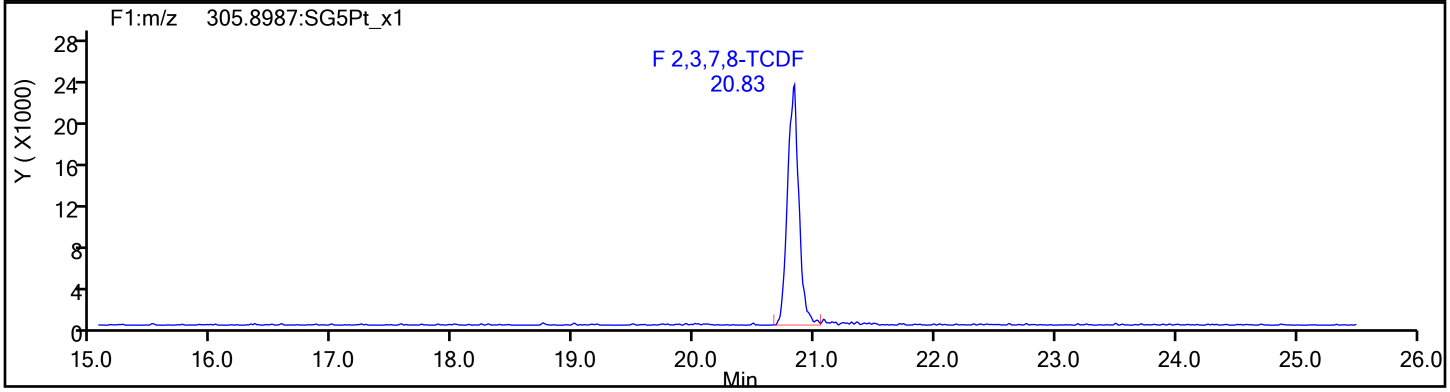

TCDF Standards

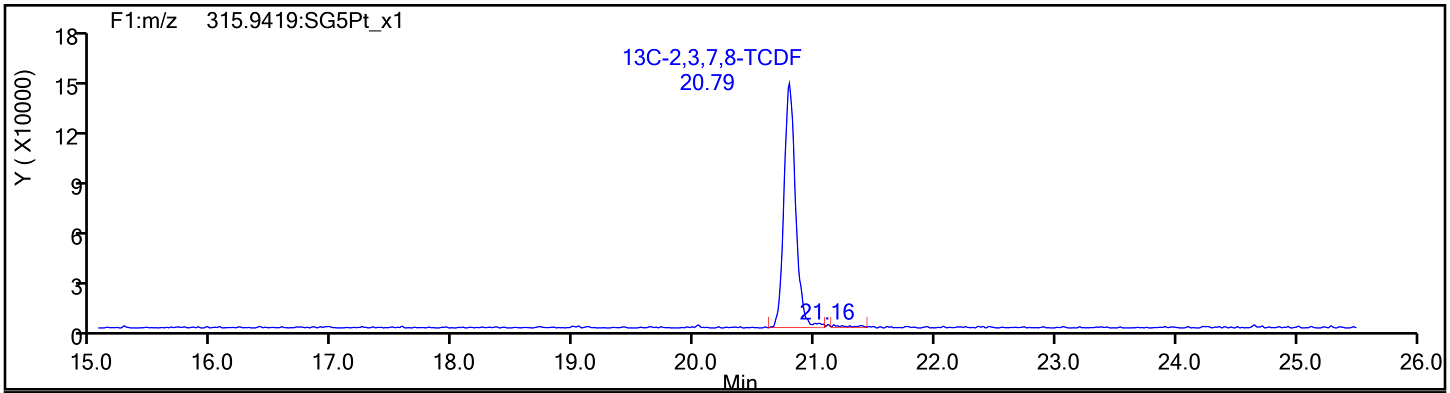

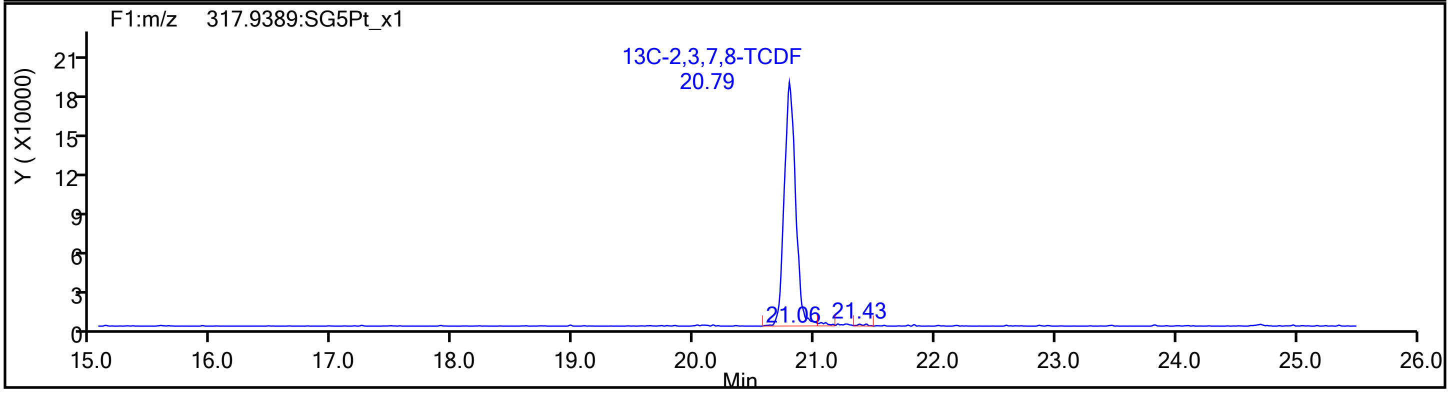

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d
Injection Date: 27-Jul-2020 20:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

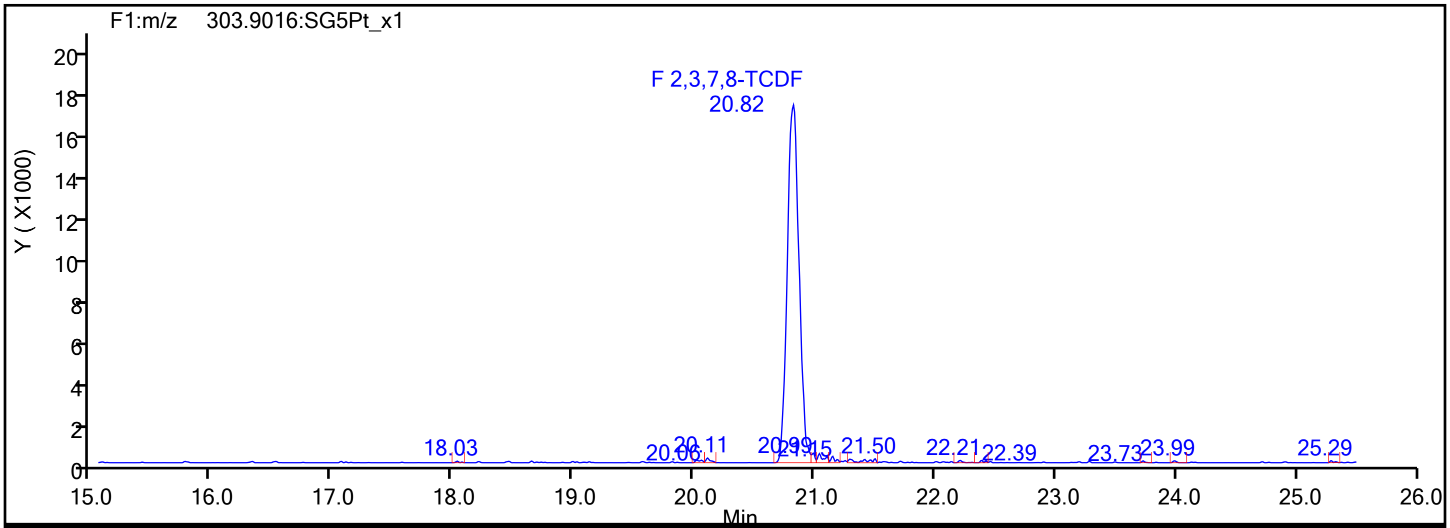

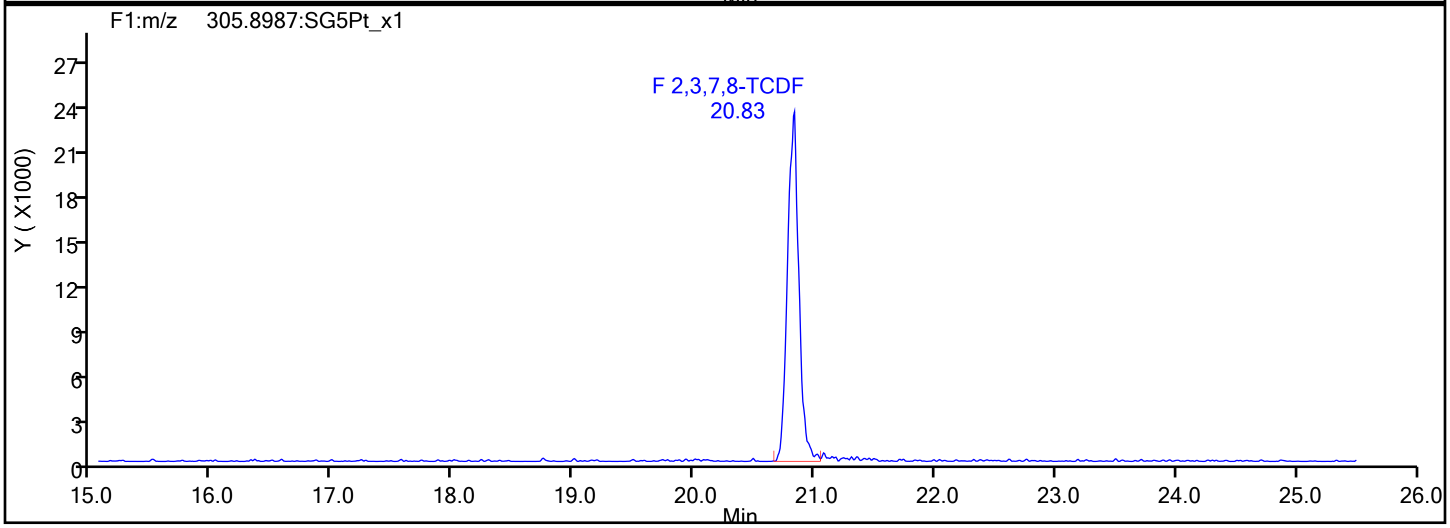

TCDF Interference Mass

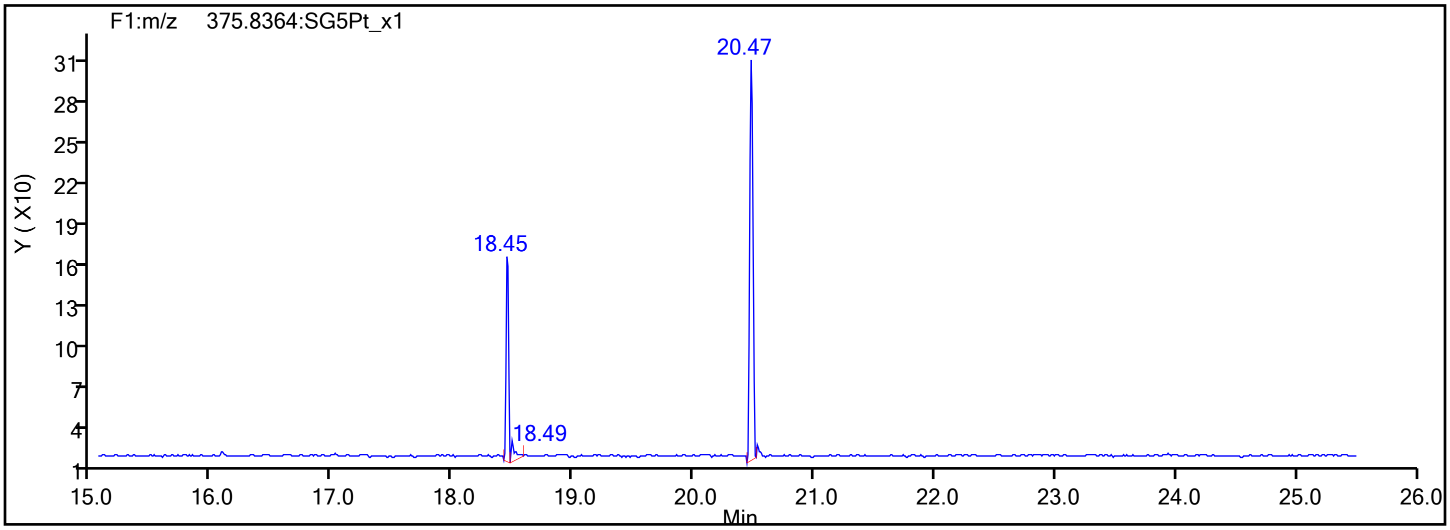

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
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Injection Date: 27-Jul-2020 20:04:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

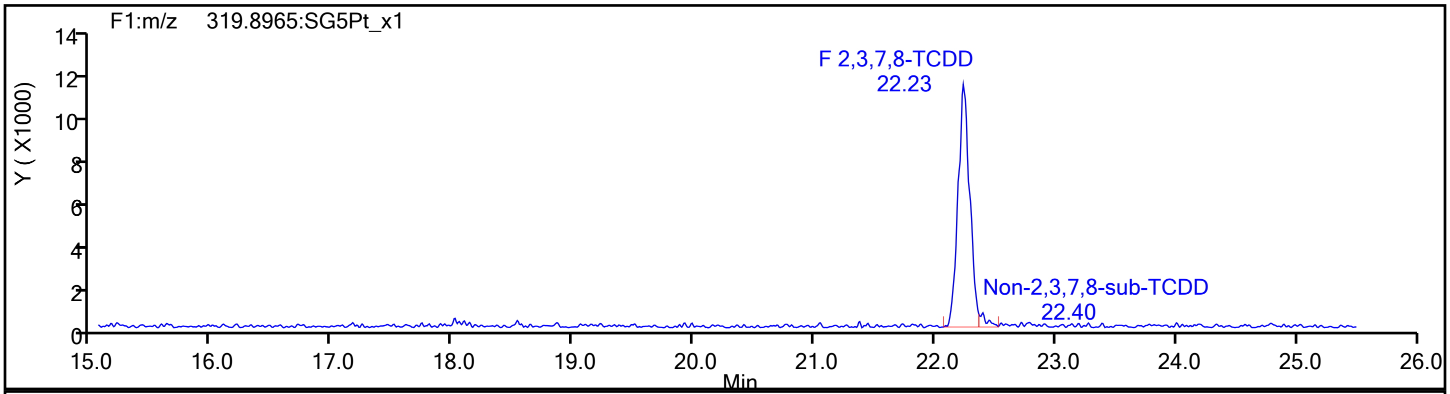

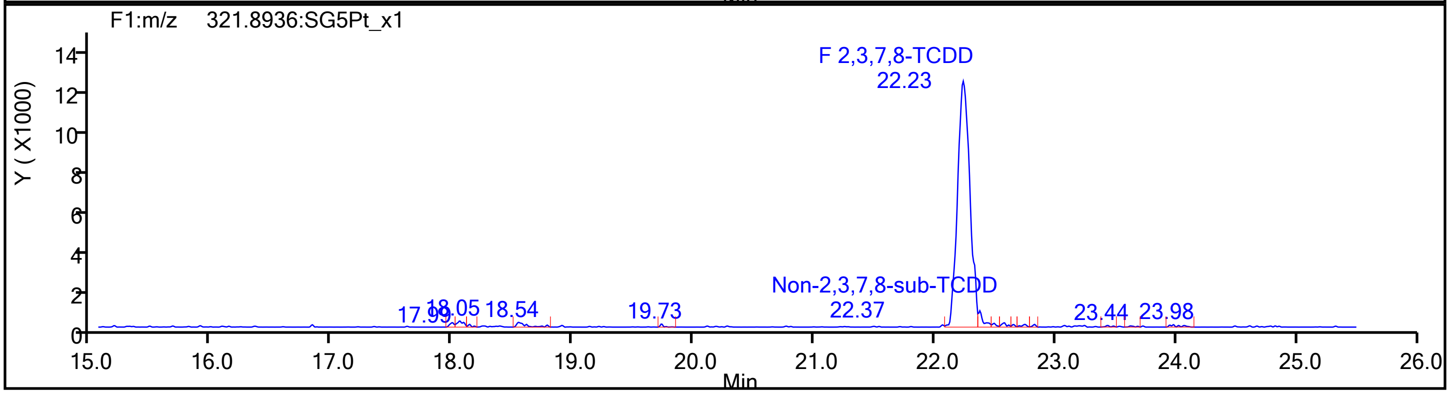

TCDD Standards

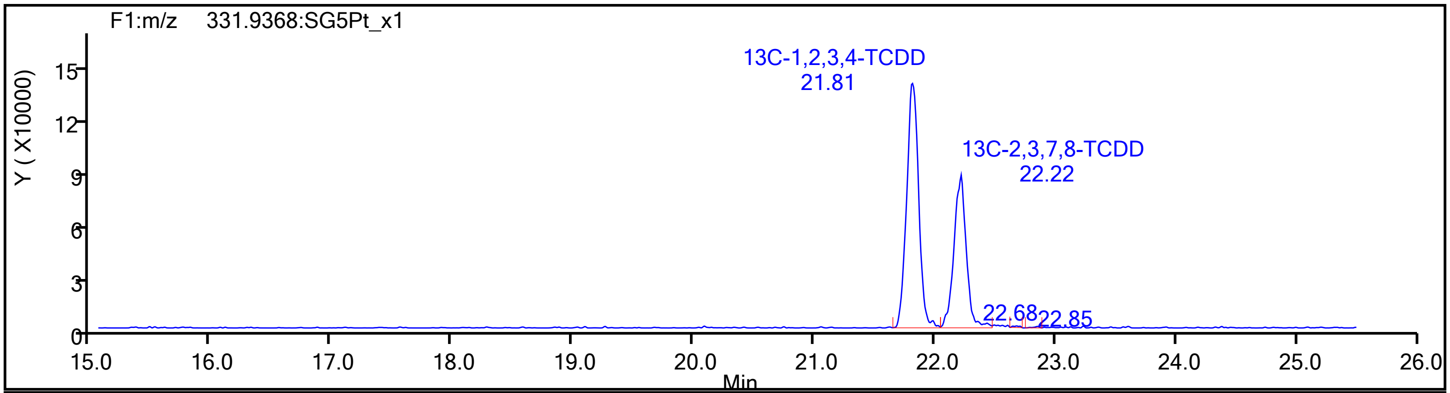

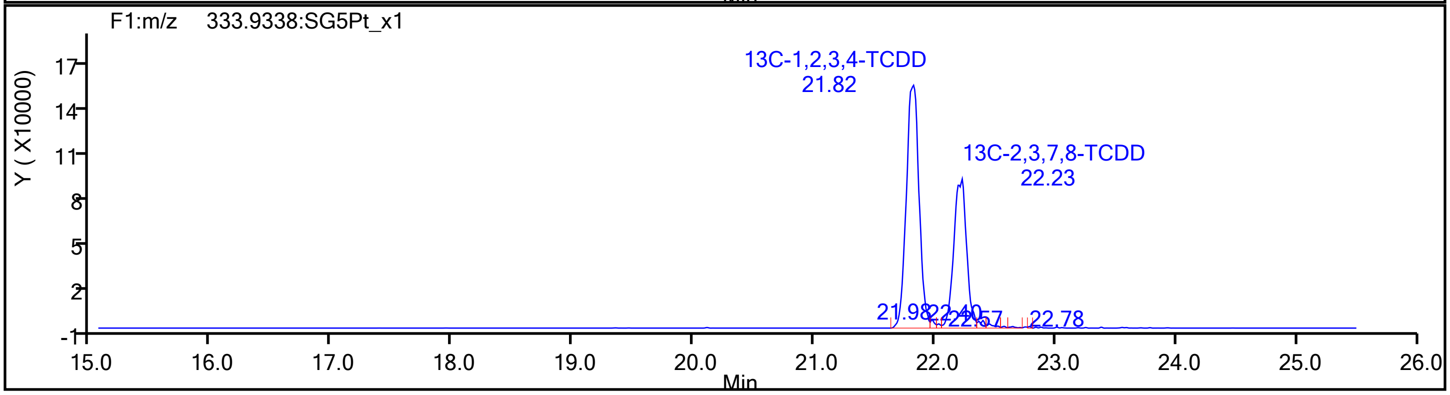

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d
Injection Date: 27-Jul-2020 20:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

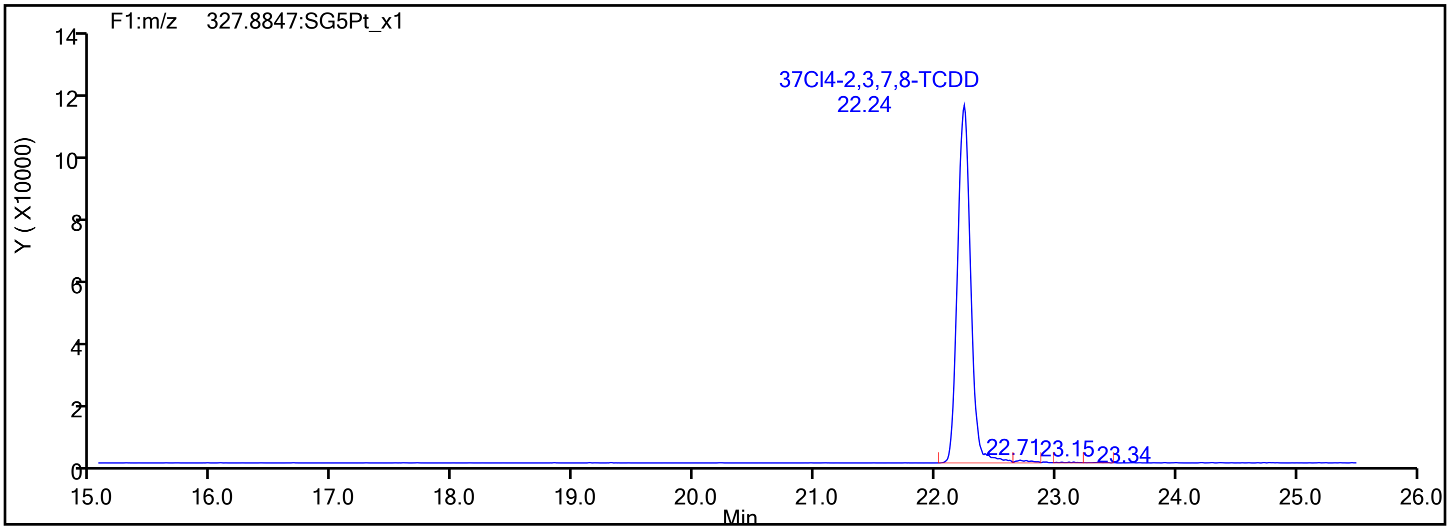

37Cl4-TCDD Standards

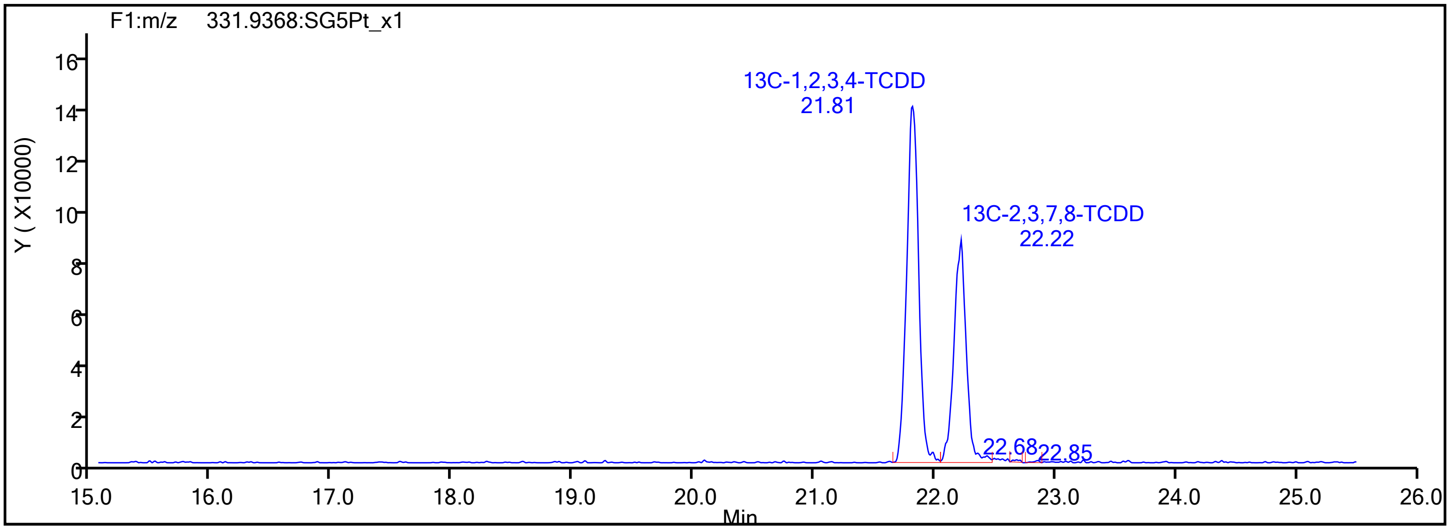

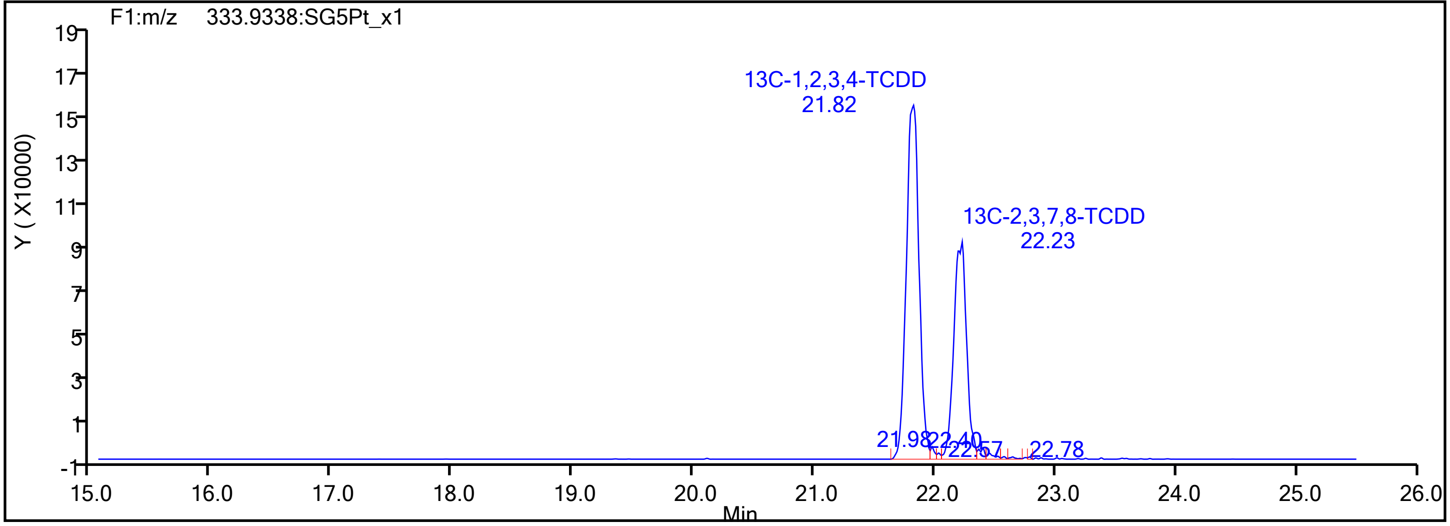

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

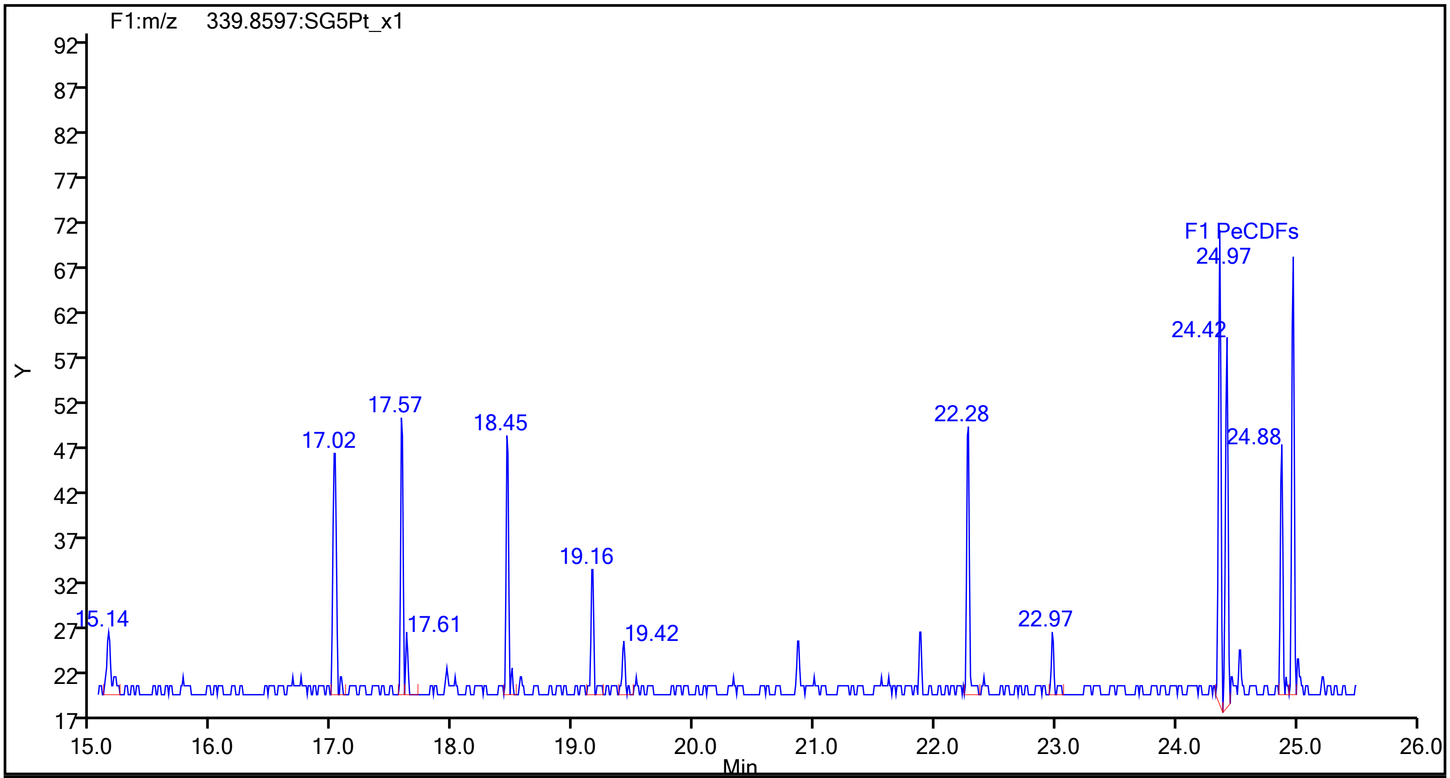

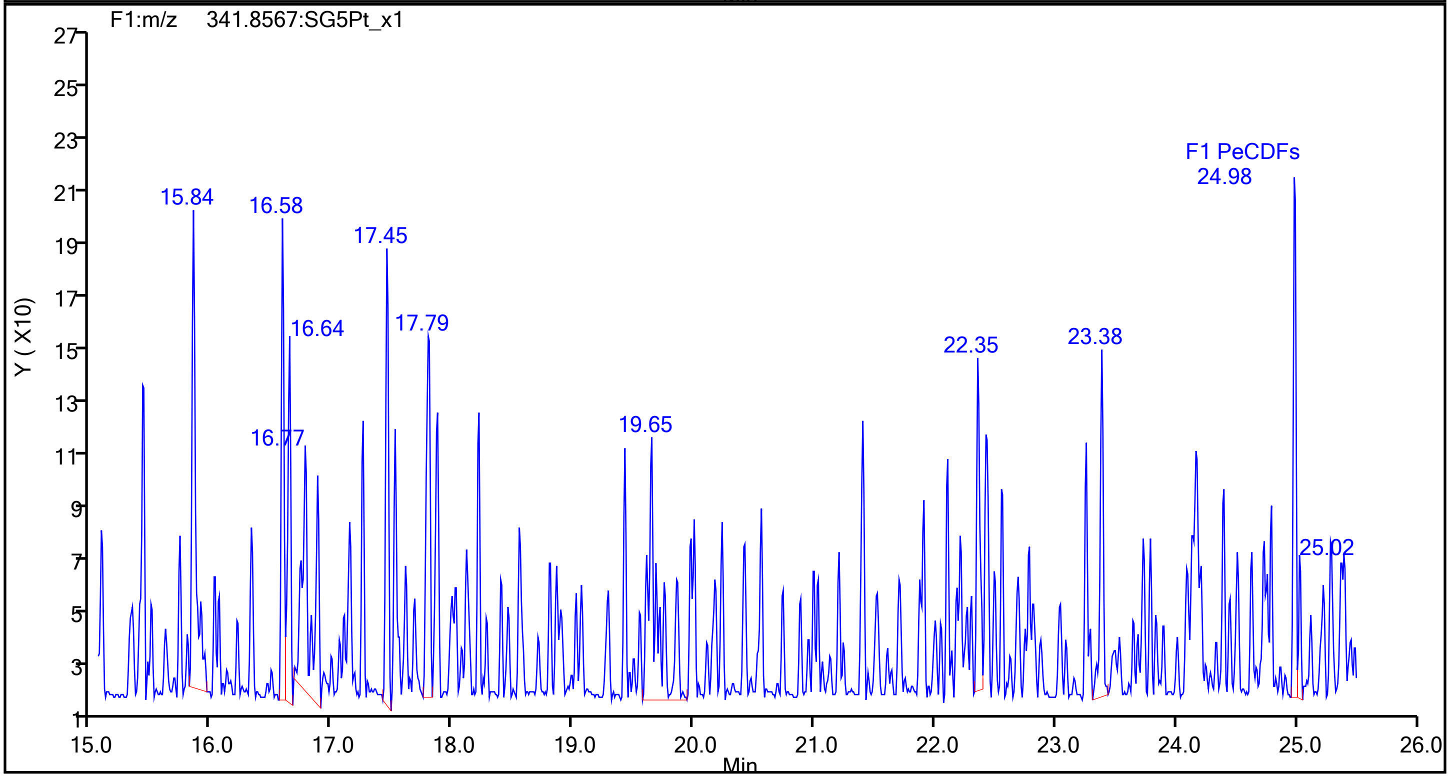

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

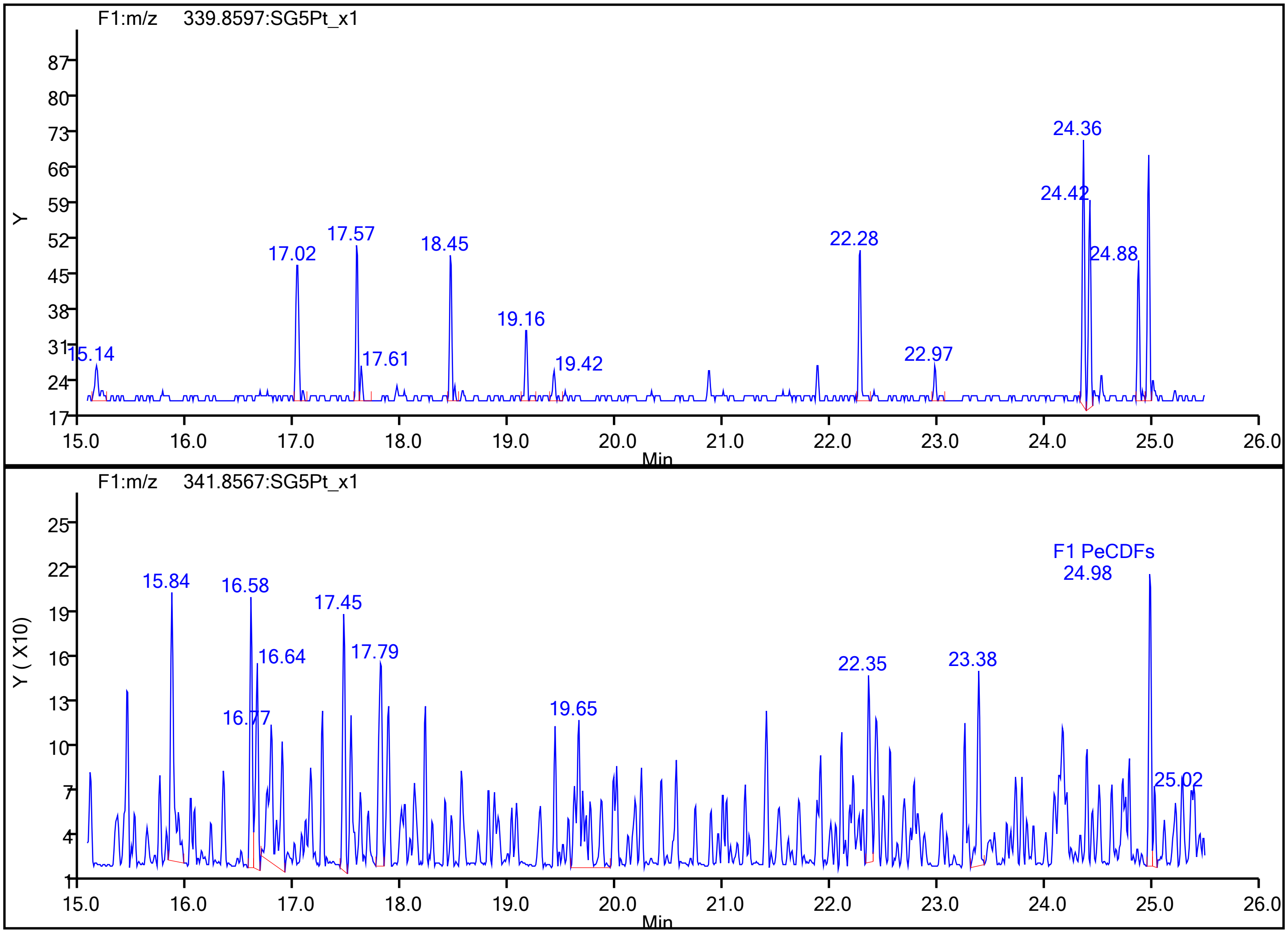

F1 PeCDFs Interference Mass

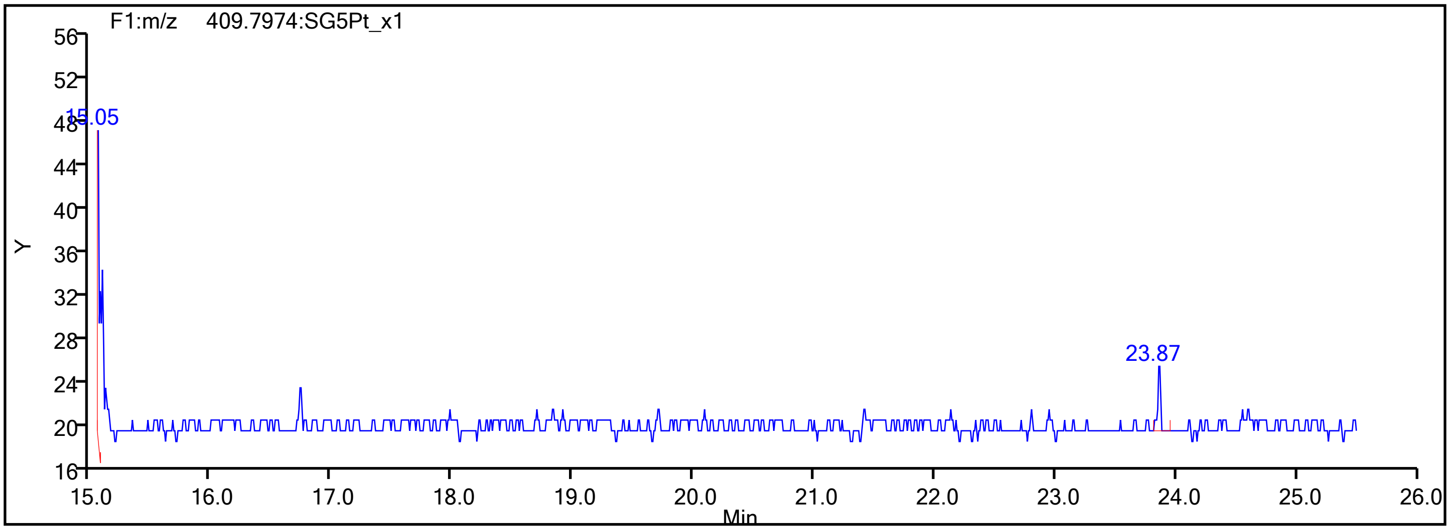

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

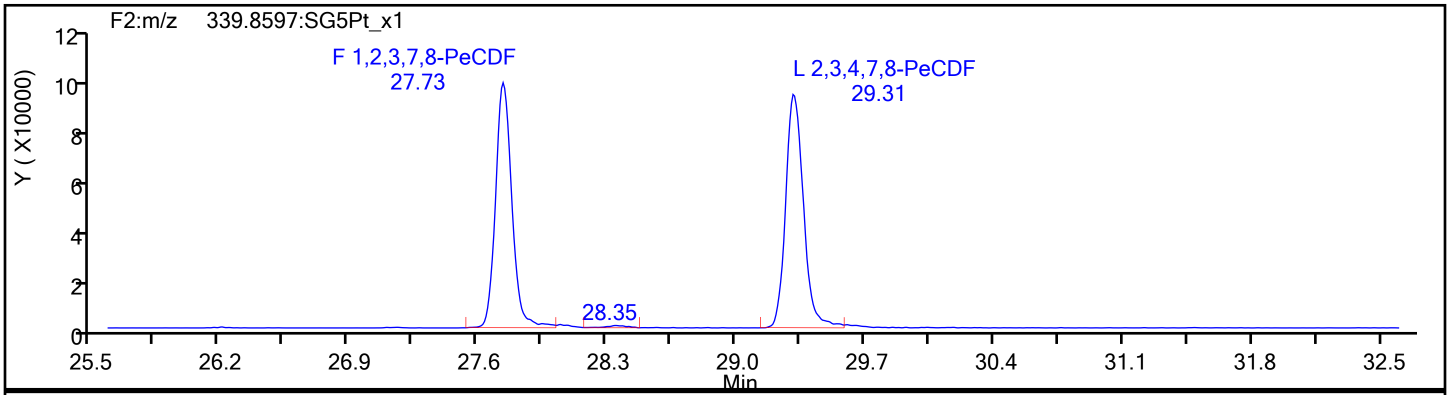

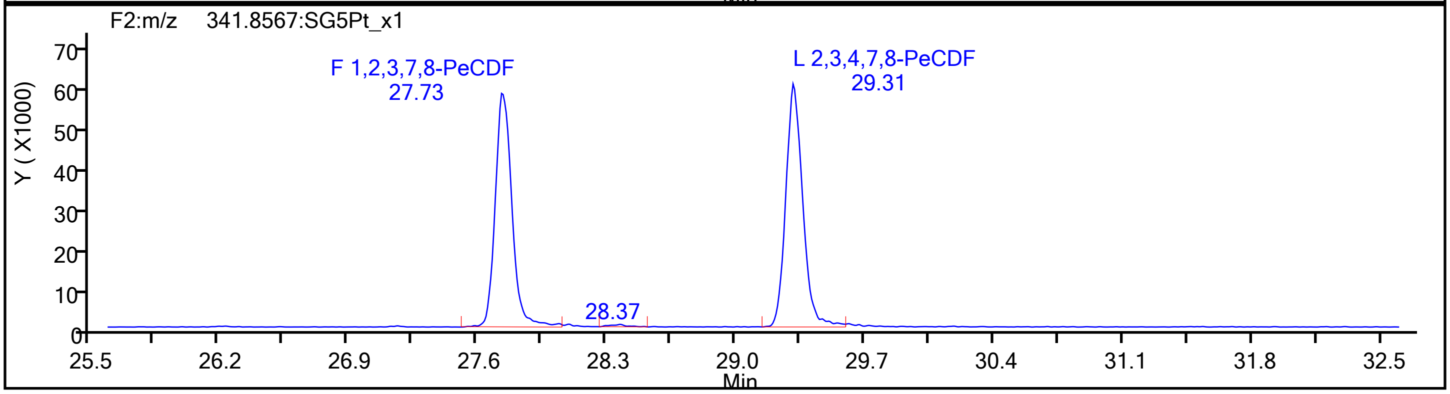

PeCDF Standards

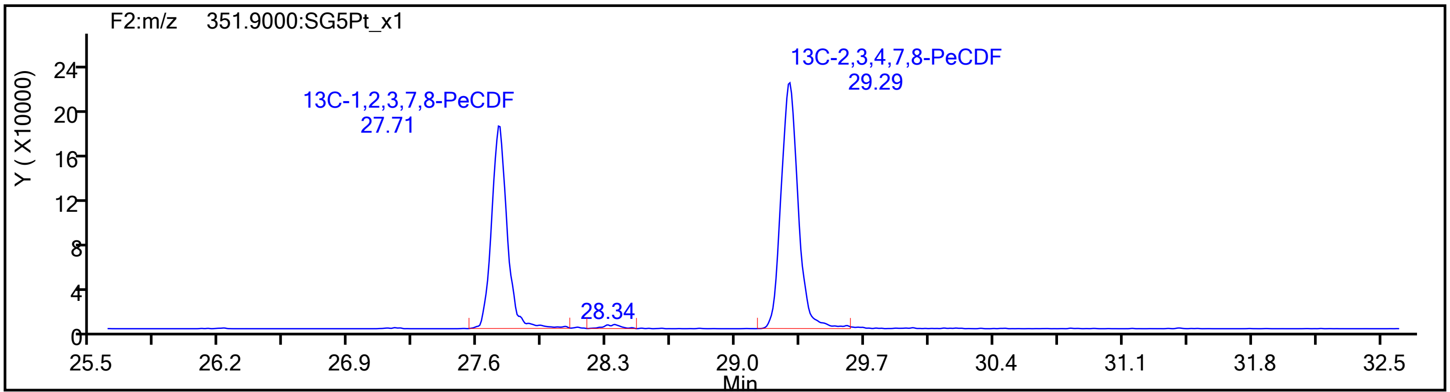

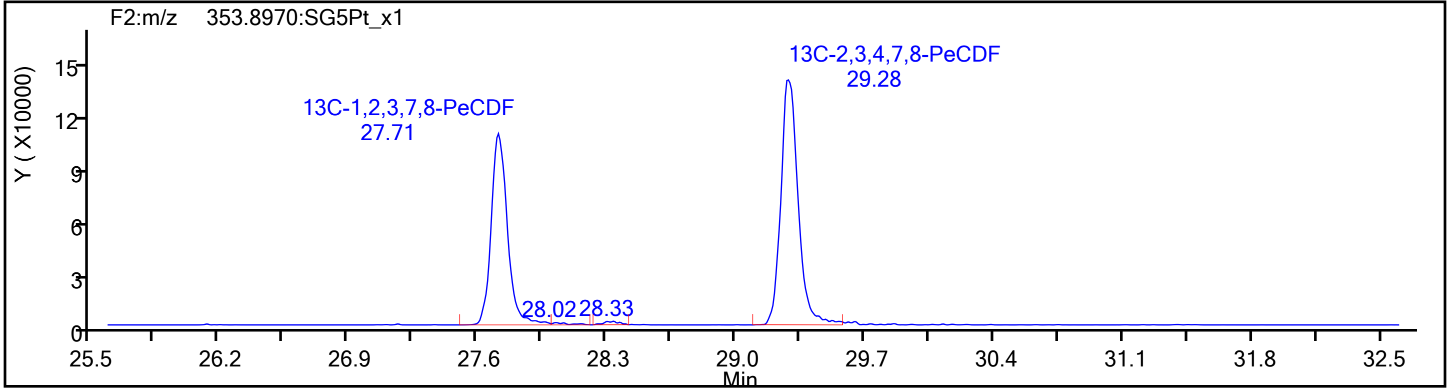

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

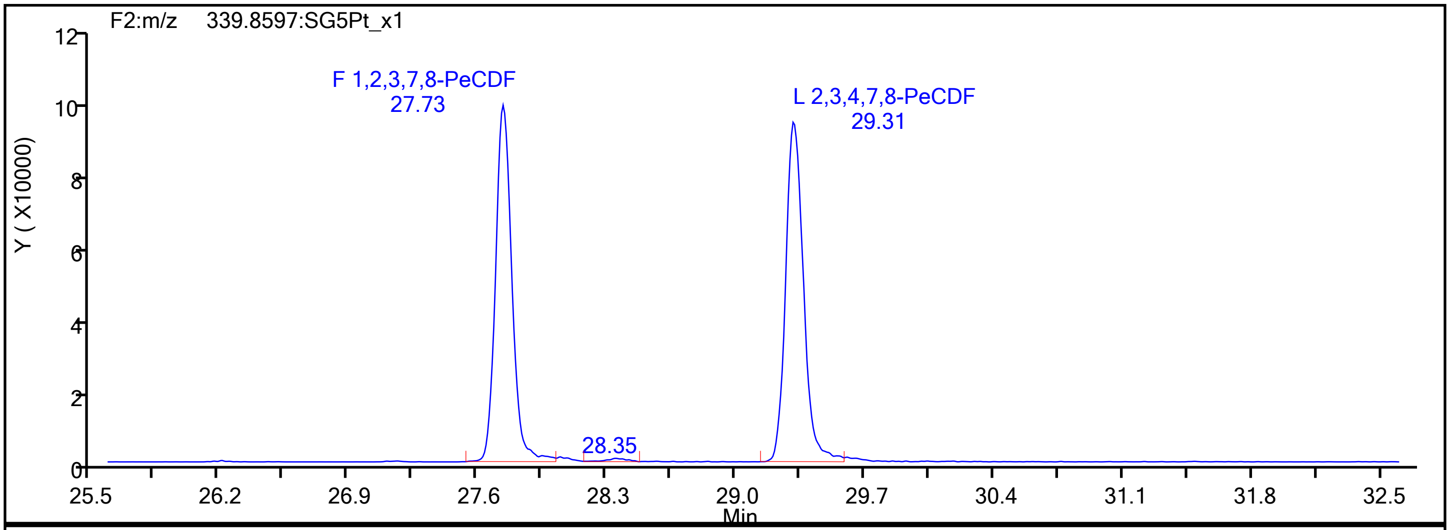

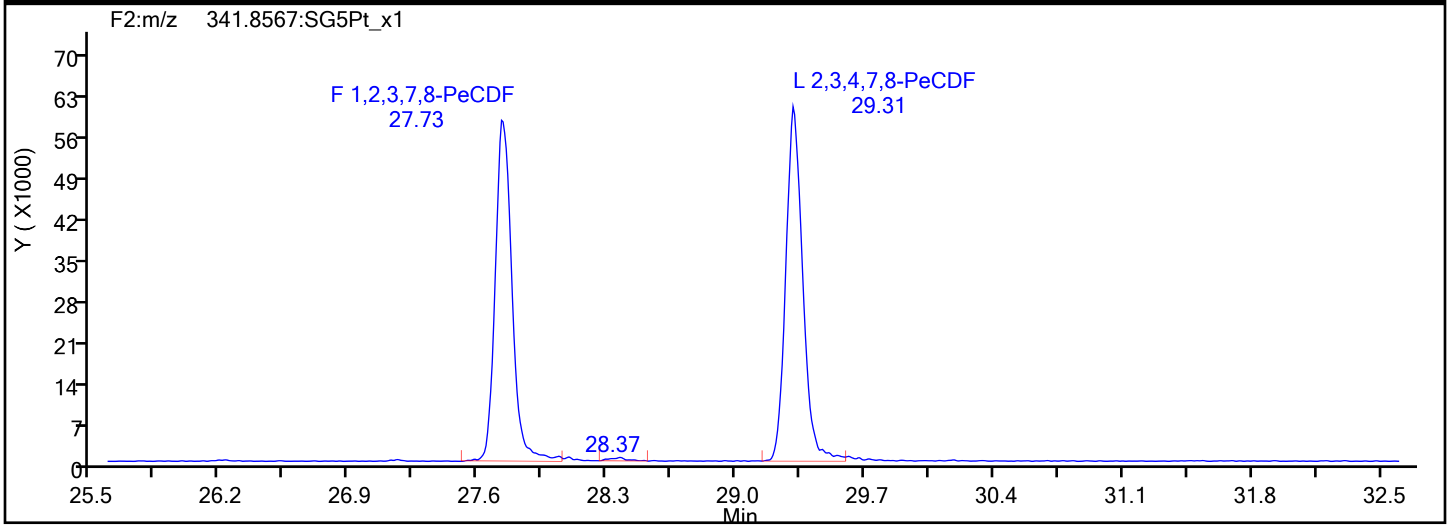

PeCDF Interference Mass

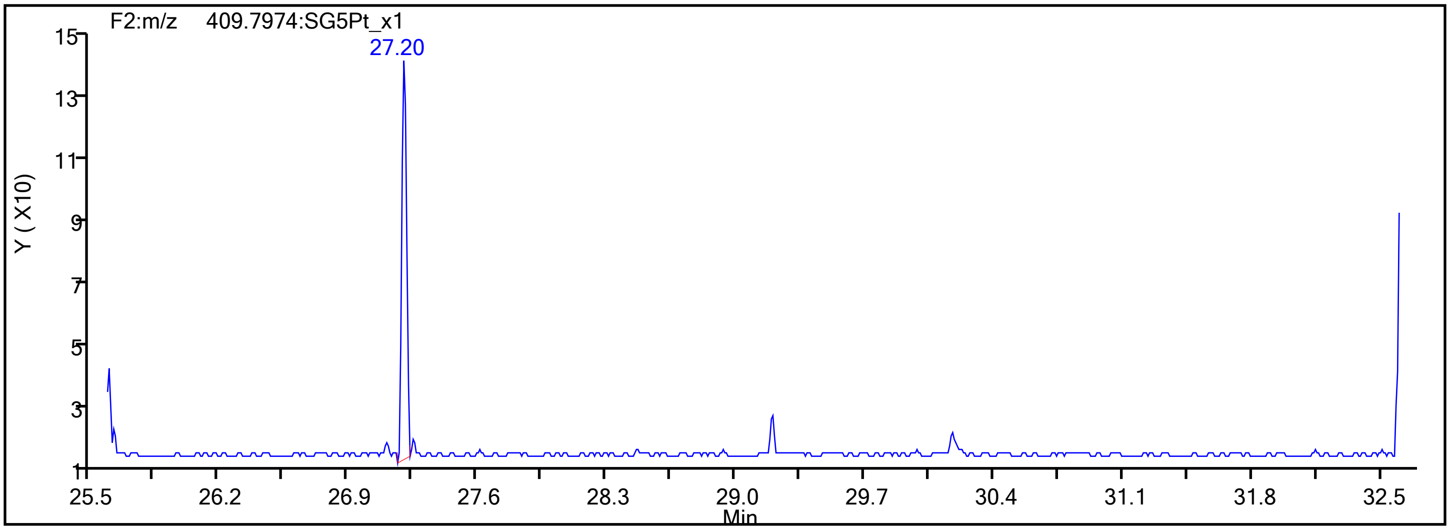

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

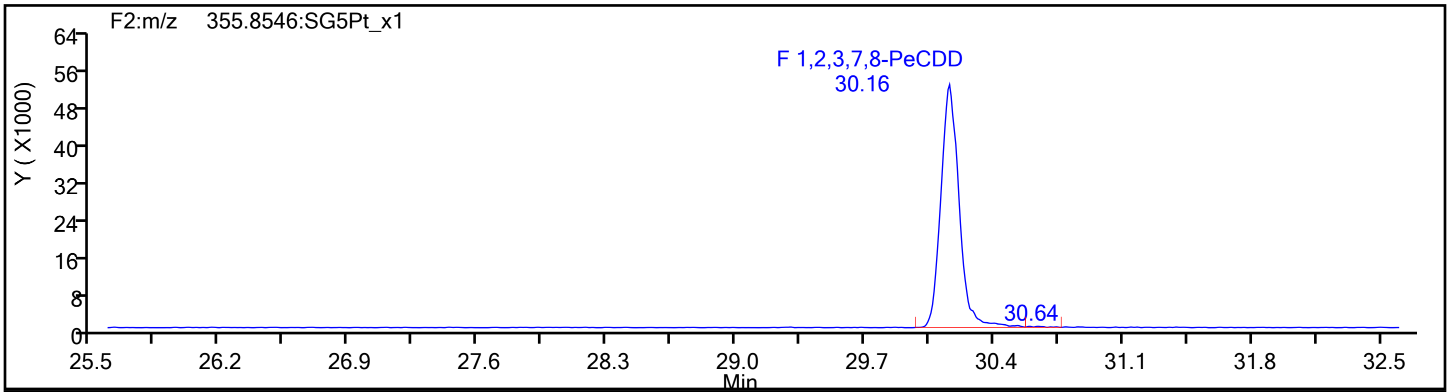

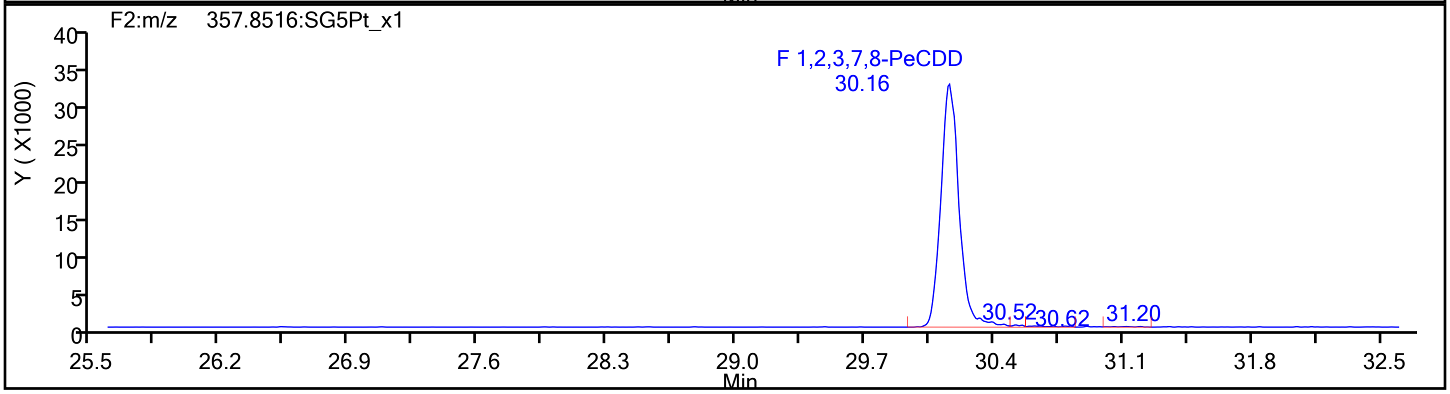

PeCDD Standards

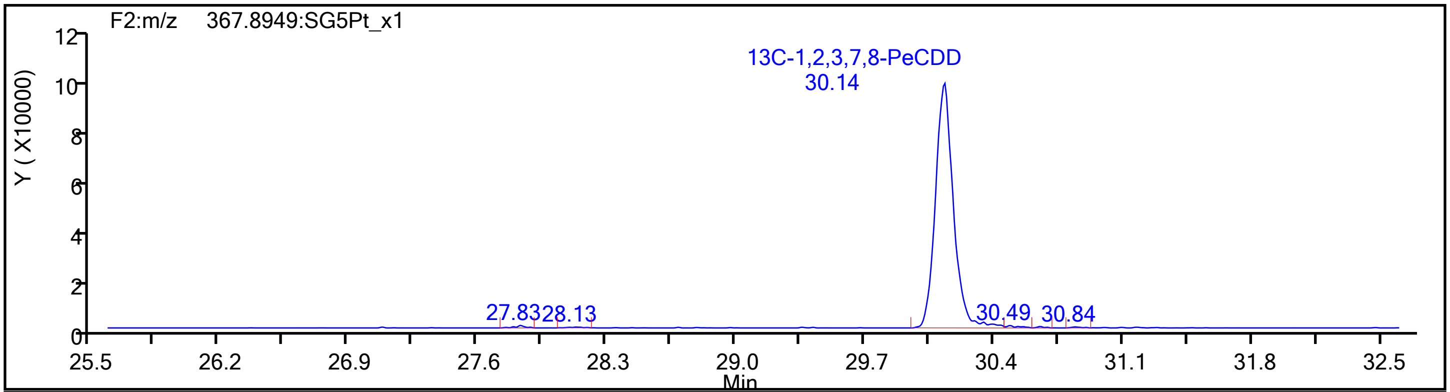

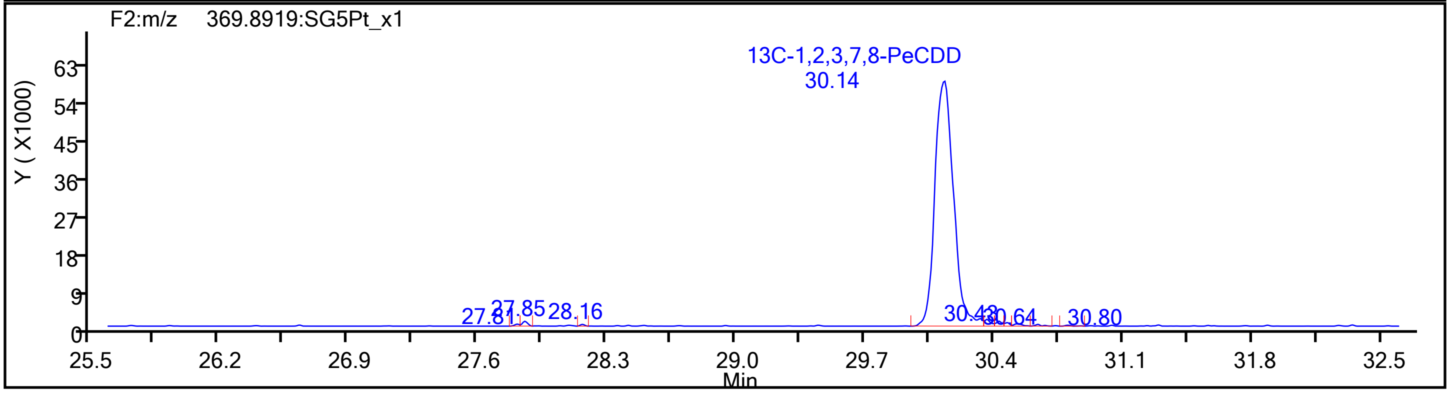

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date: 27-Jul-2020 20:04:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

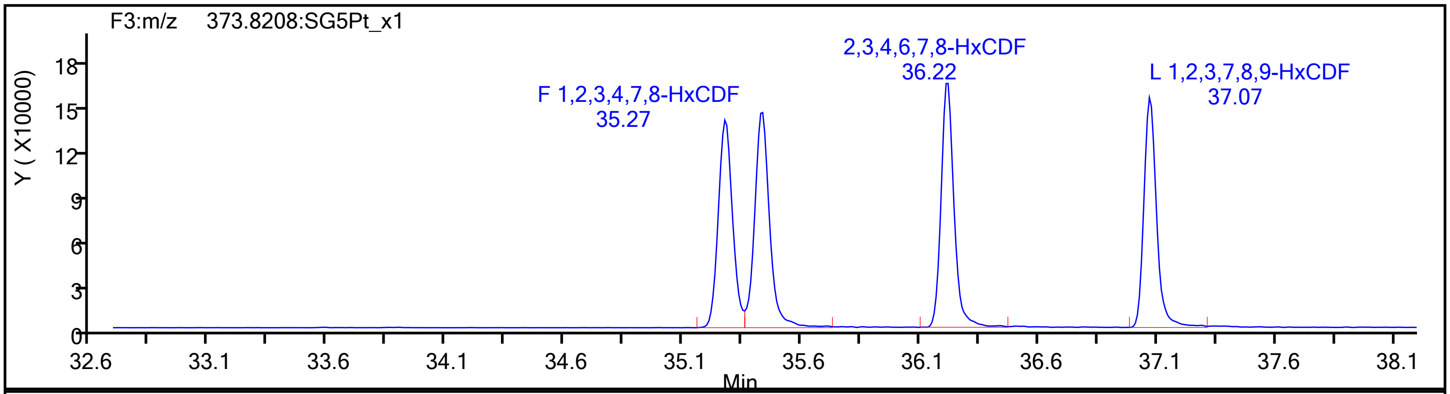

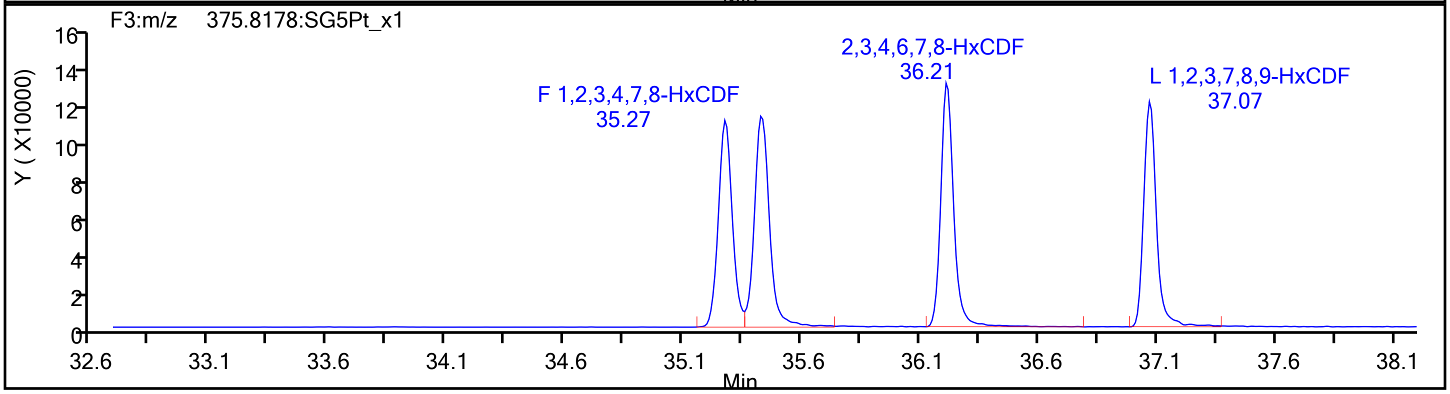

HxCDF Standards

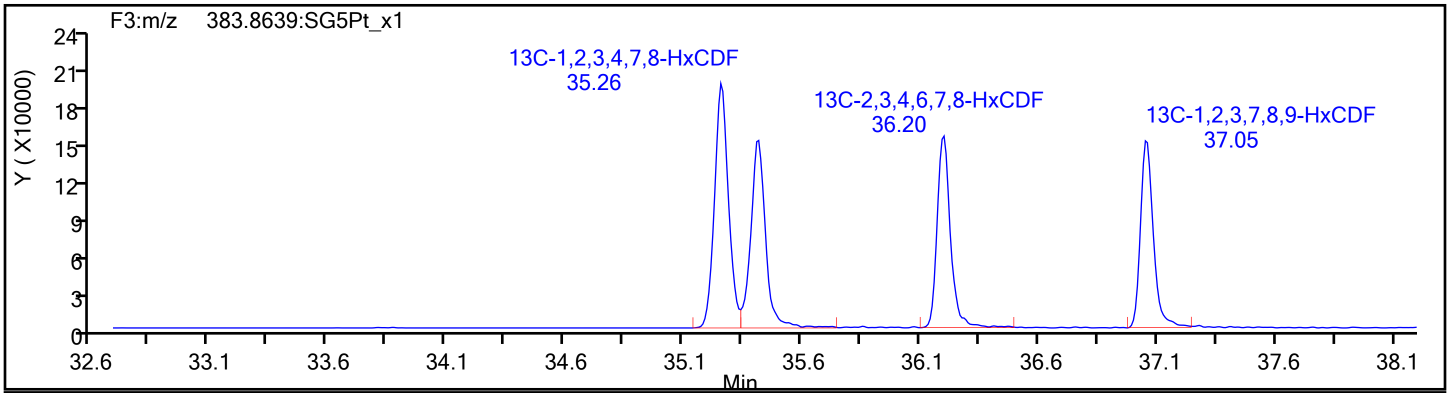

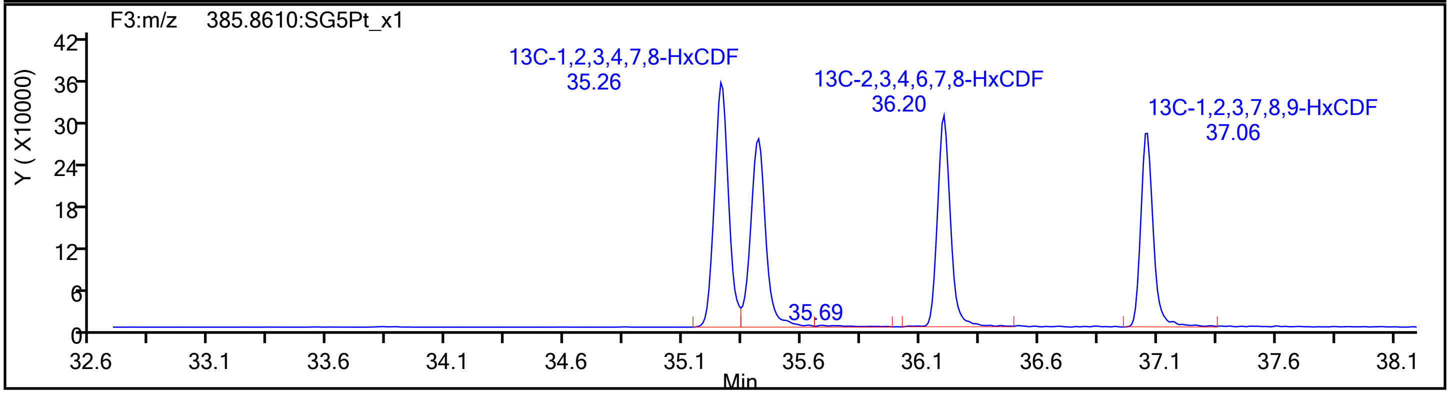

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d
Injection Date: 27-Jul-2020 20:04:00
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Sample Line#: 5
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Column Dia: 0.32 mm

HxCDF

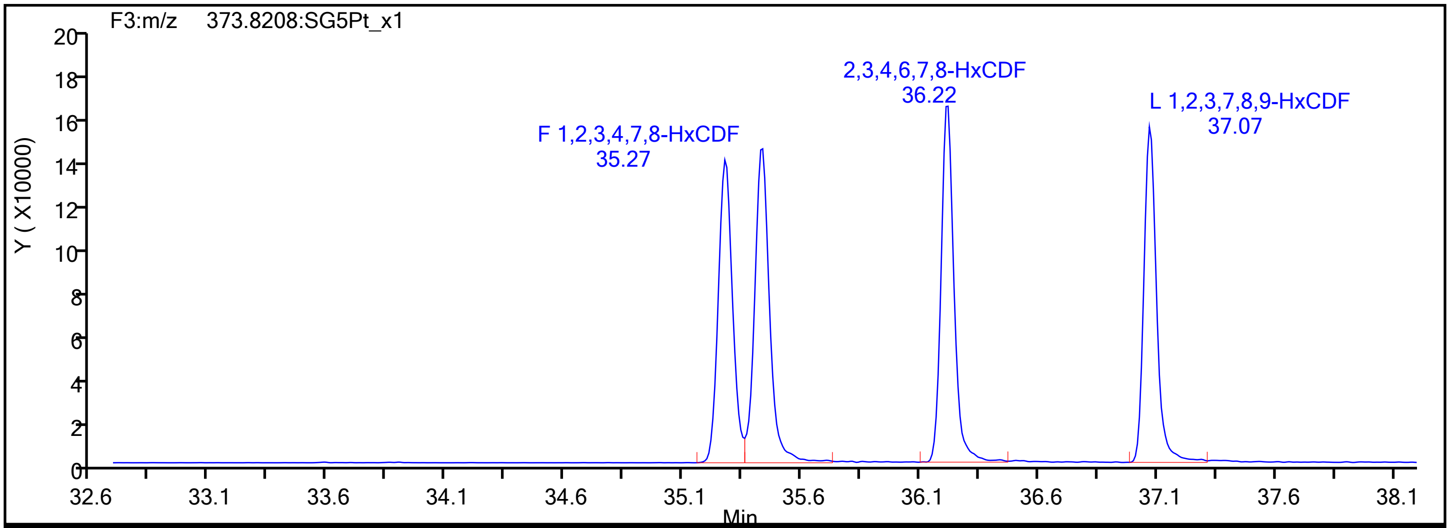

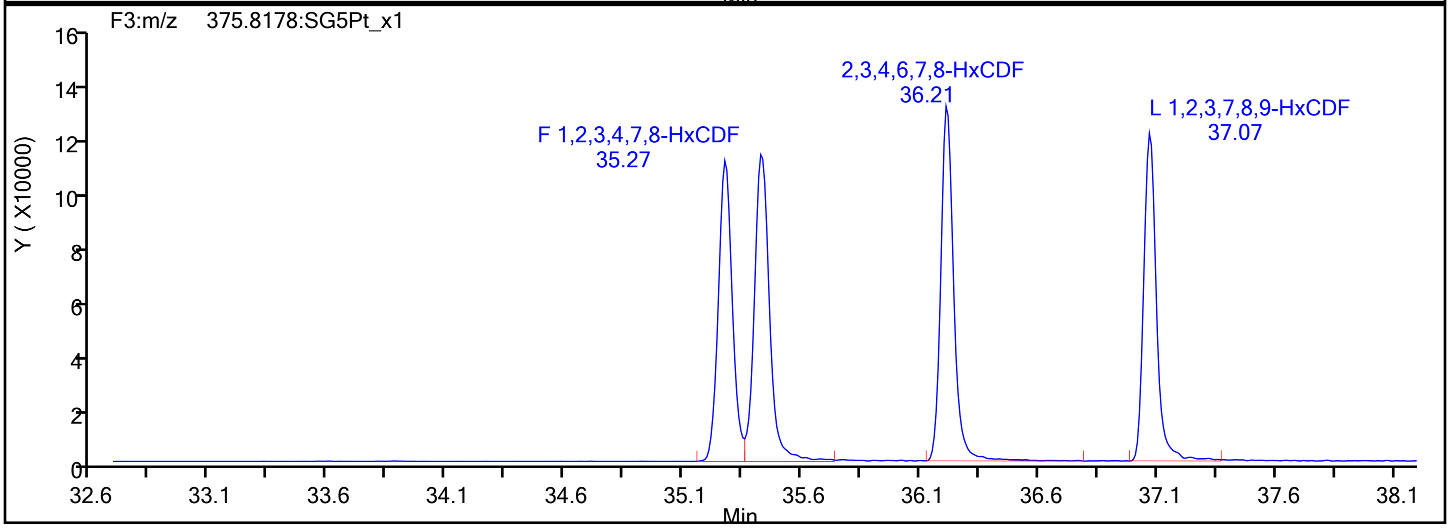

HxCDF Interference Mass

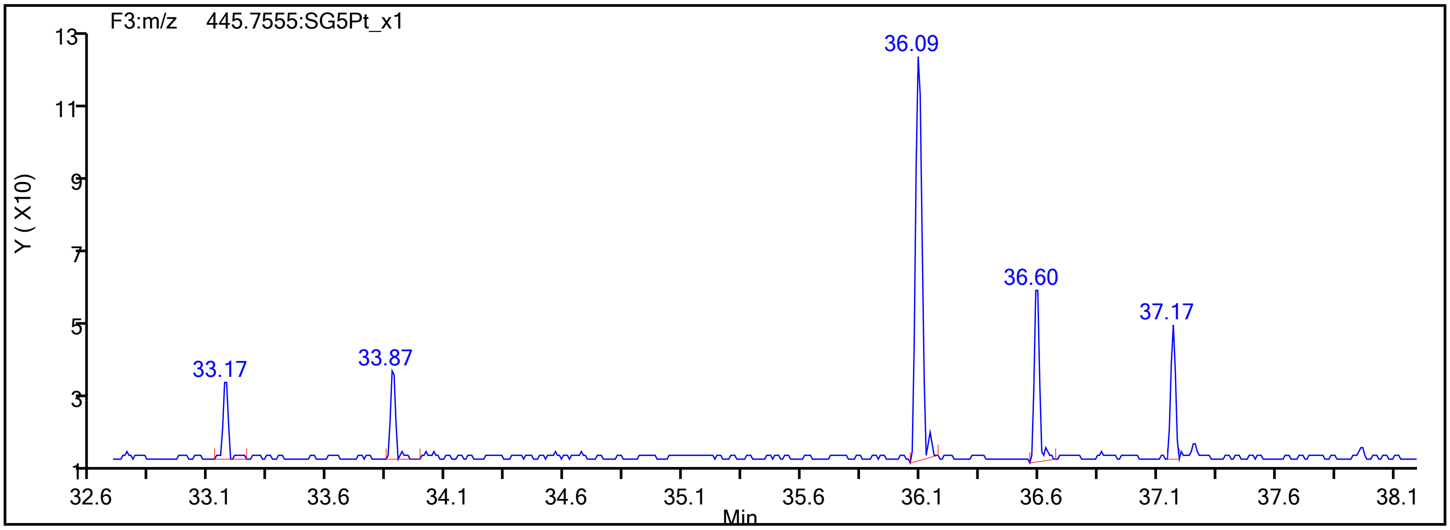

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

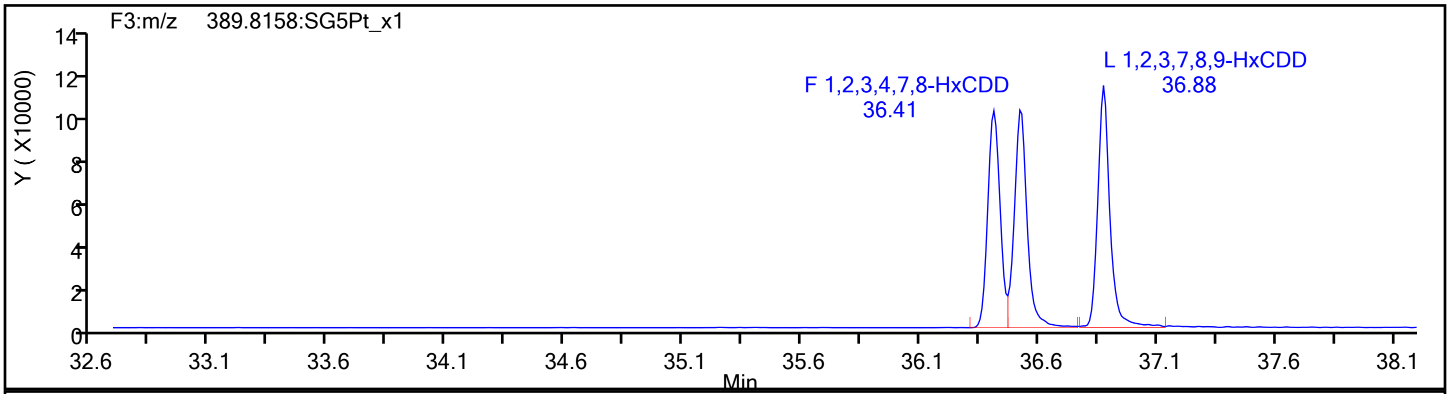

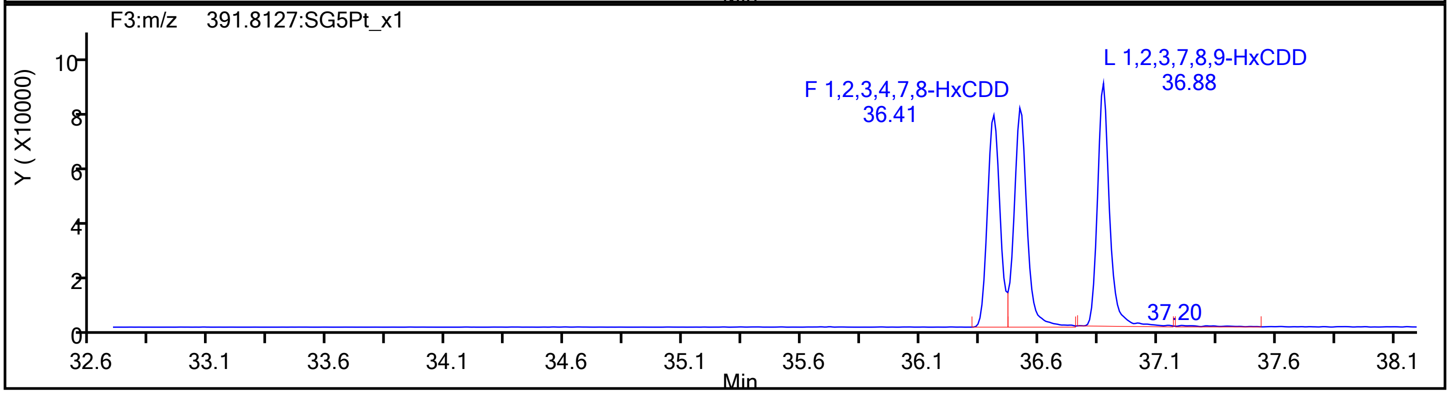

HxCDD Standards

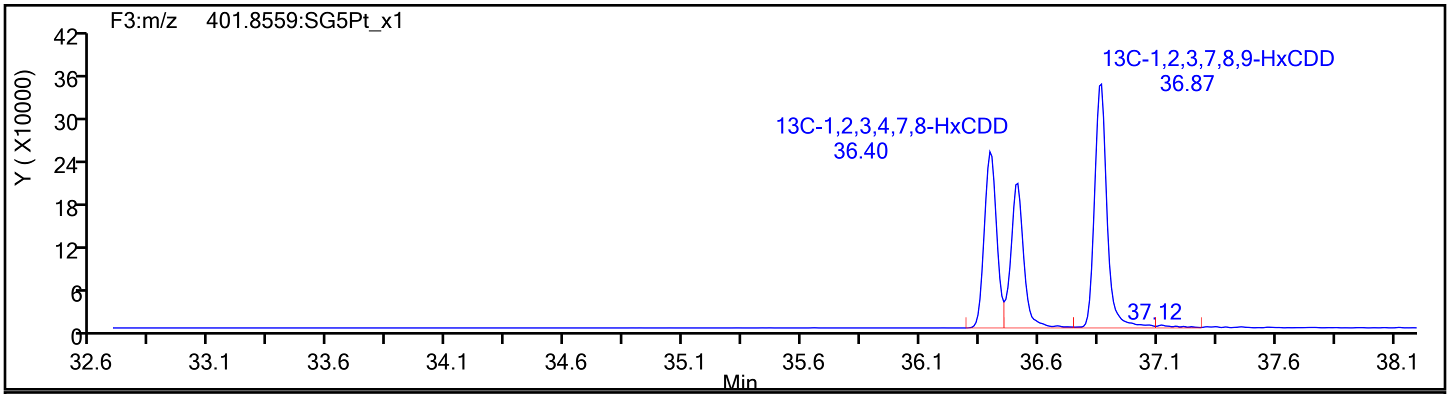

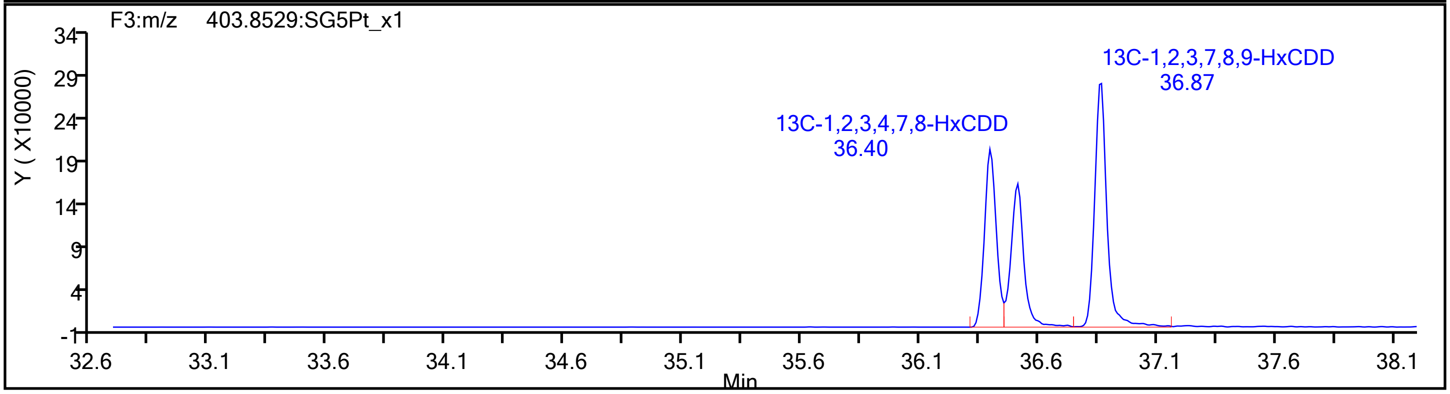

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date: 27-Jul-2020 20:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

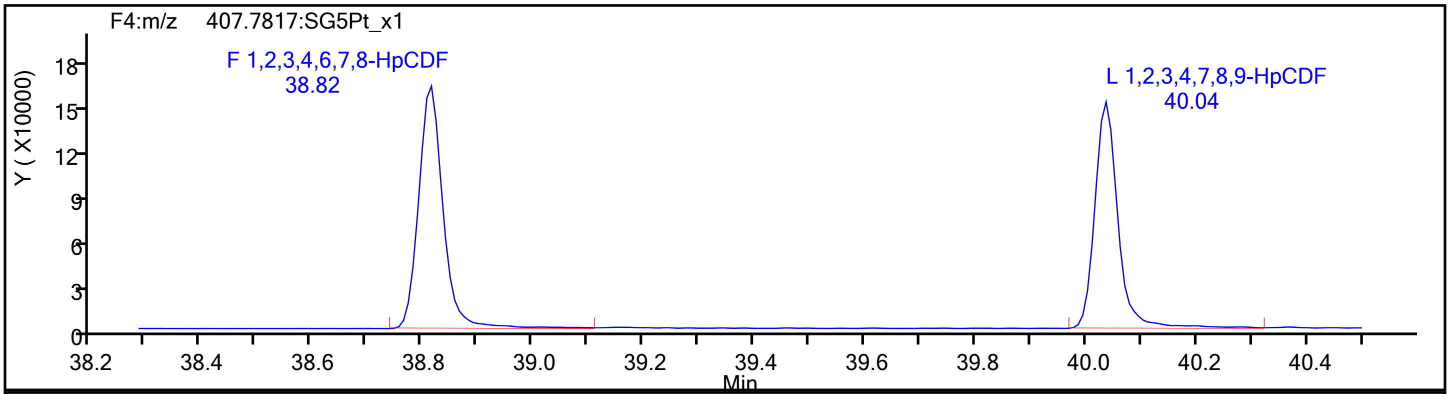

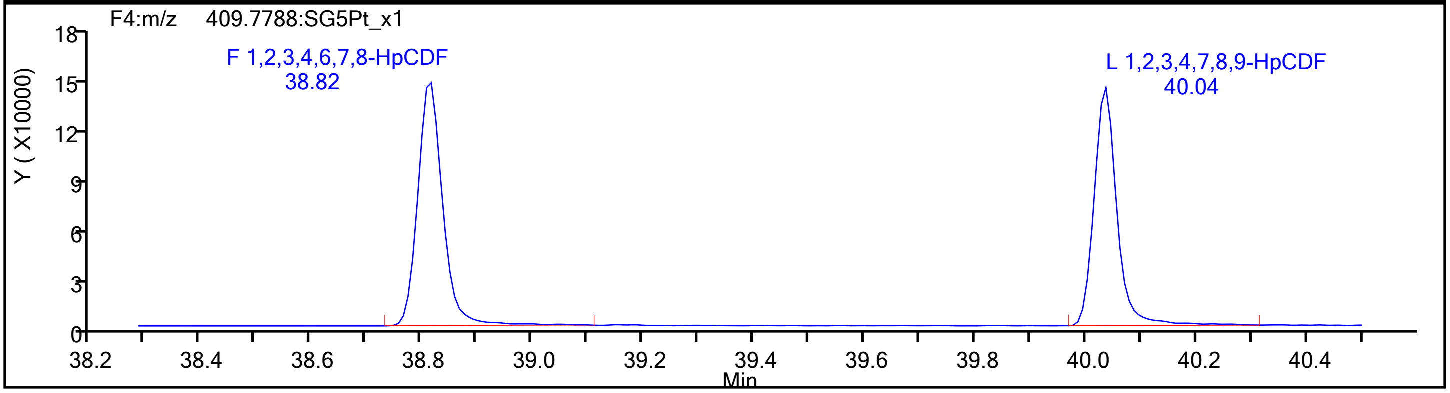

HpCDF Standards

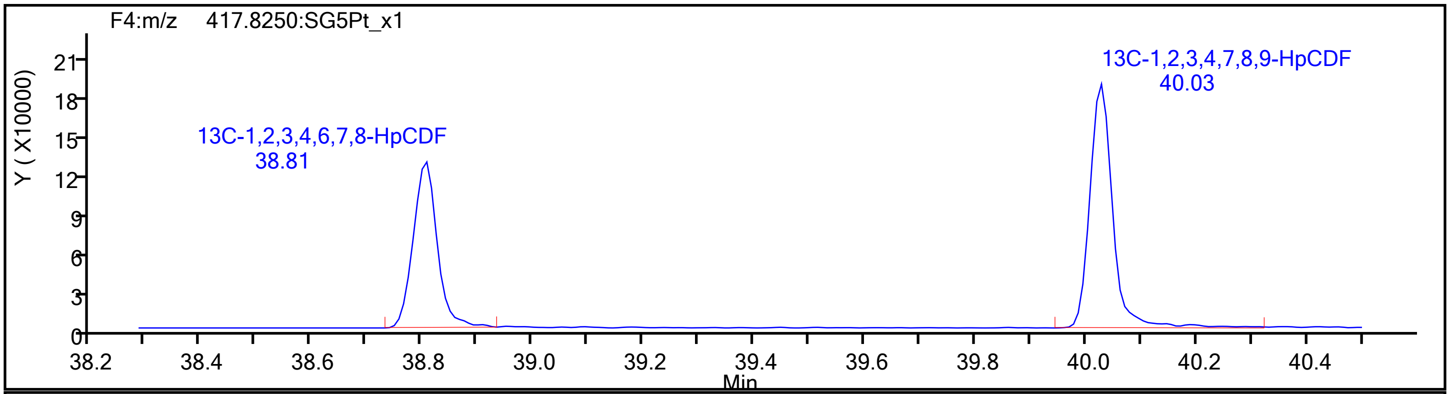

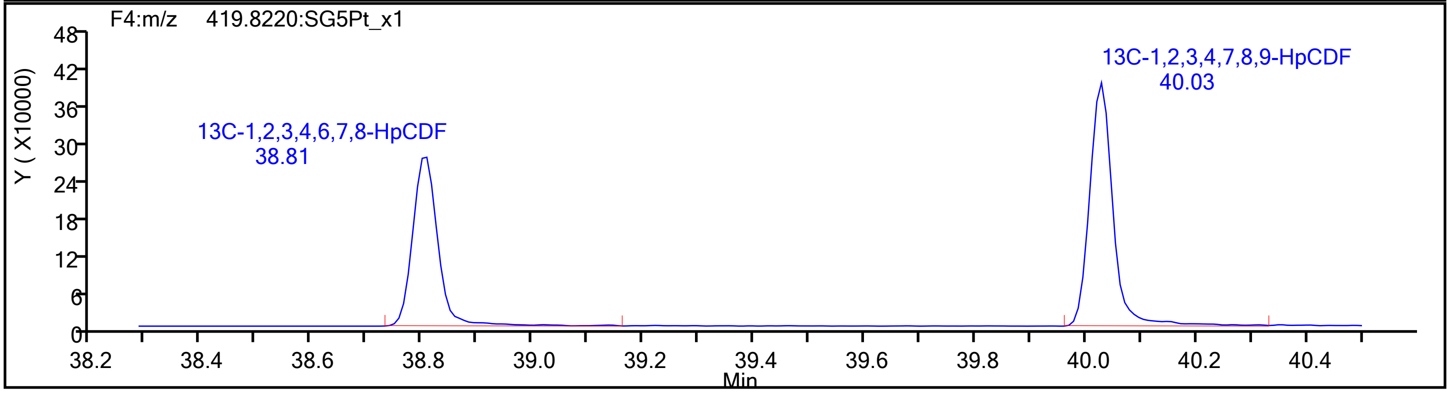

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

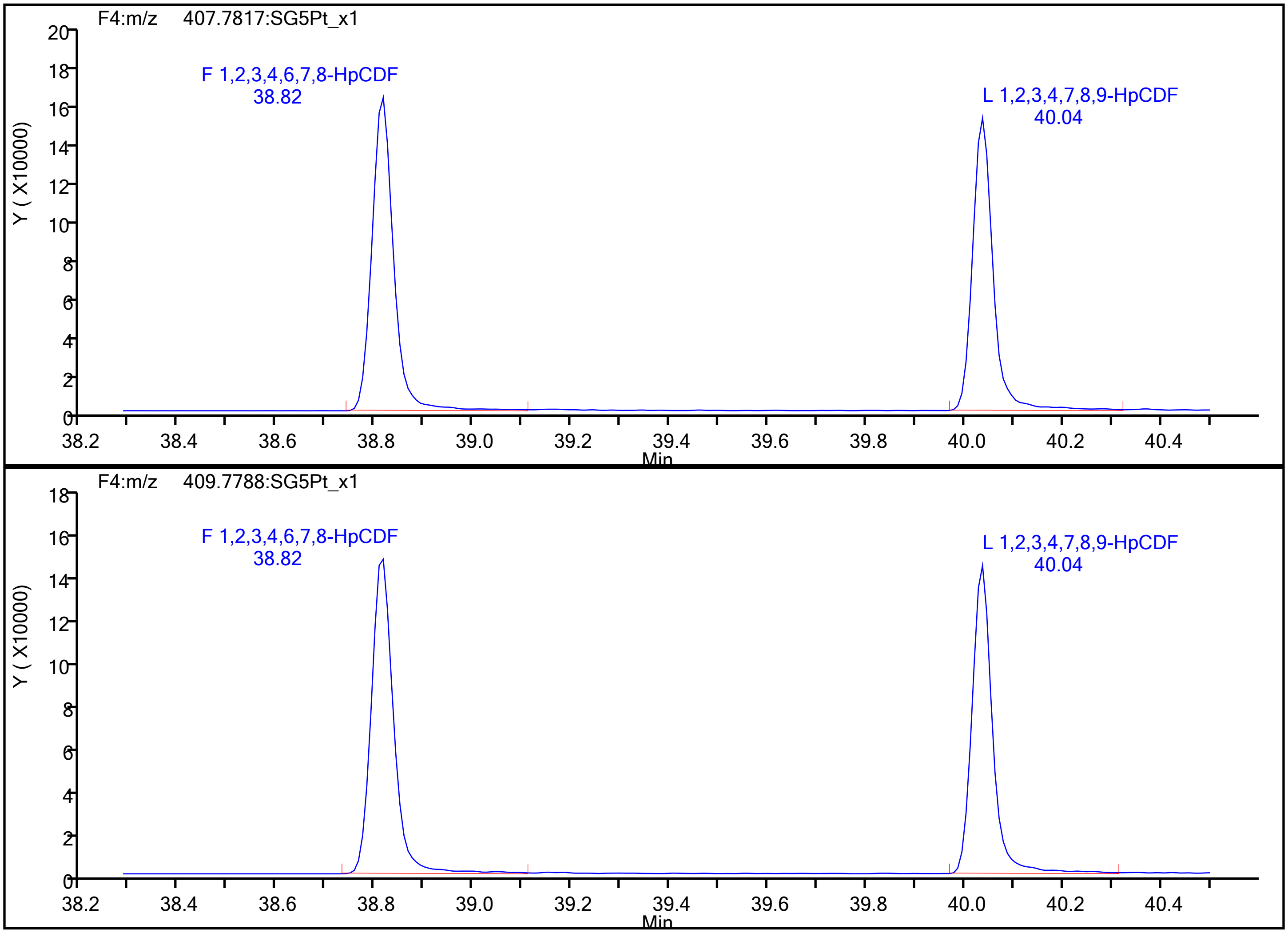

HpCDF Interference Mass

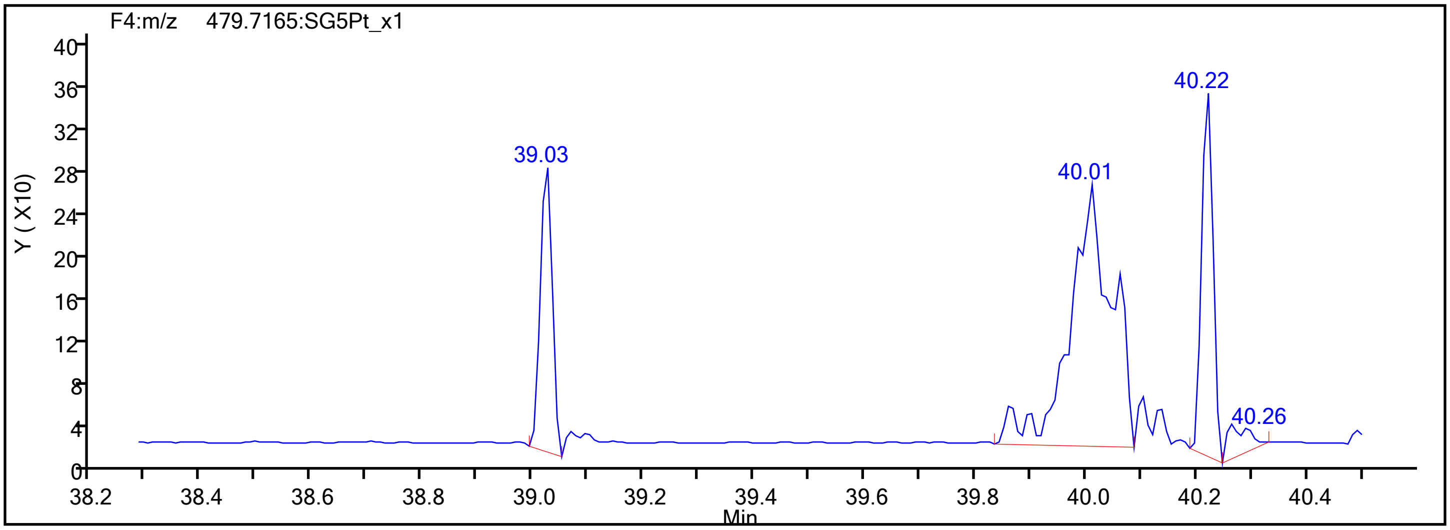

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

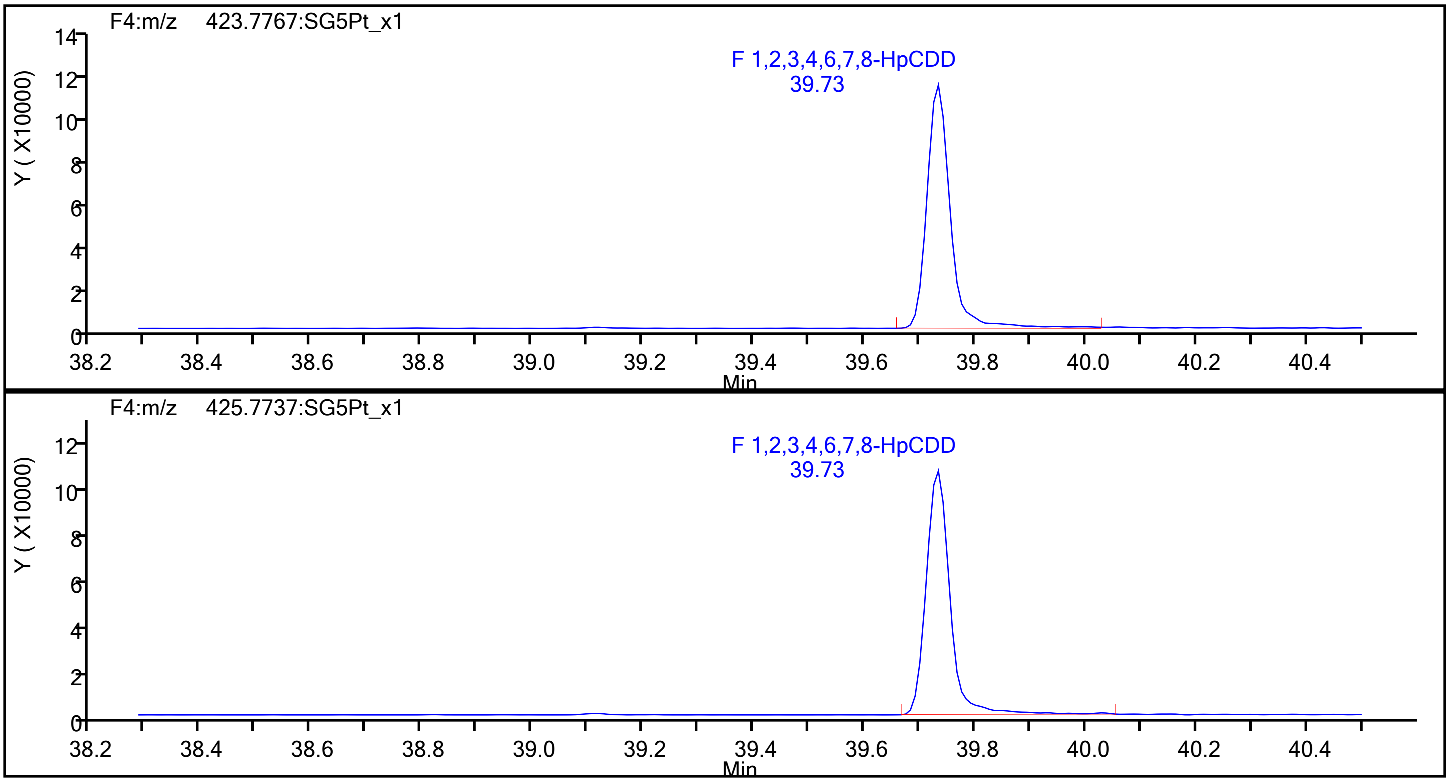

HpCDD Standards

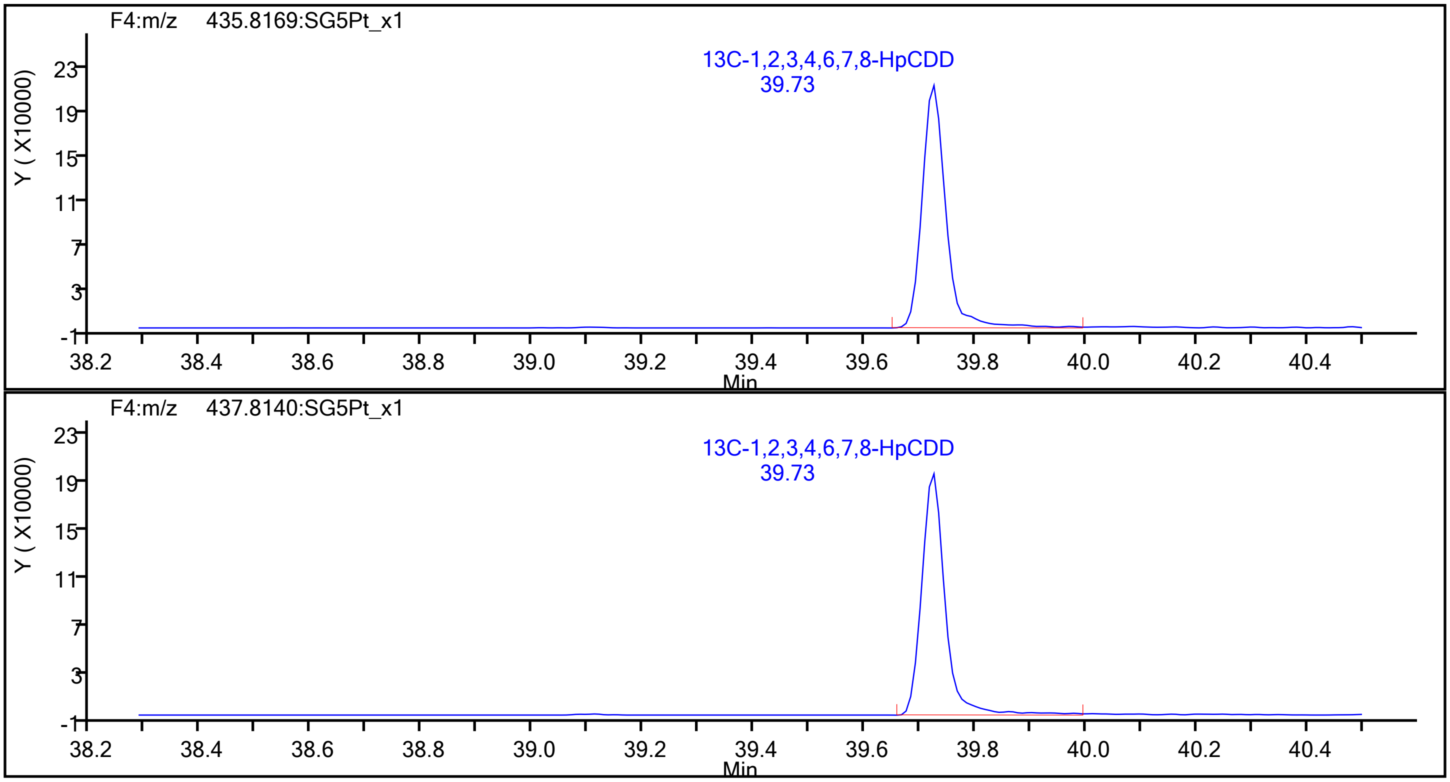

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

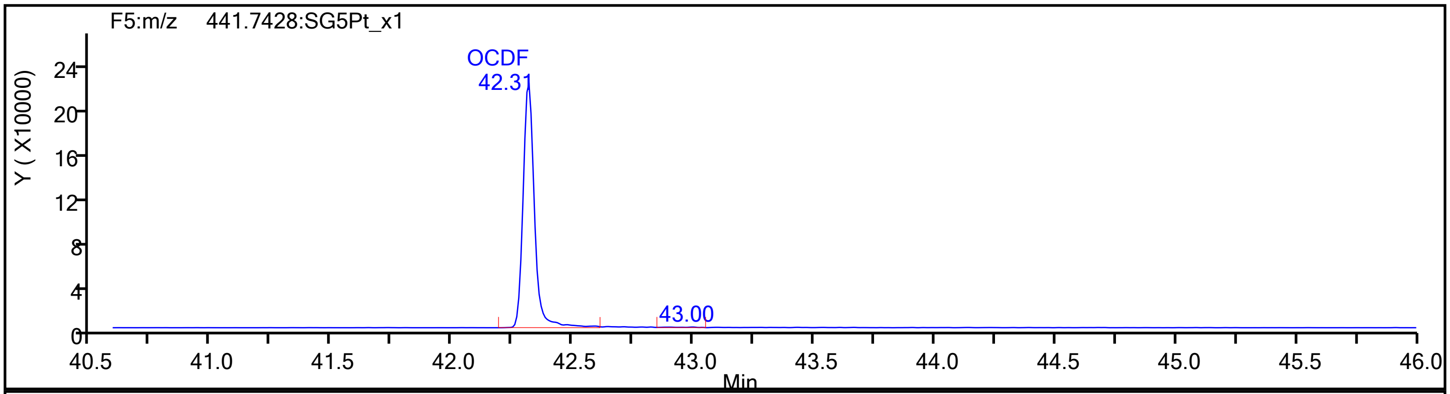

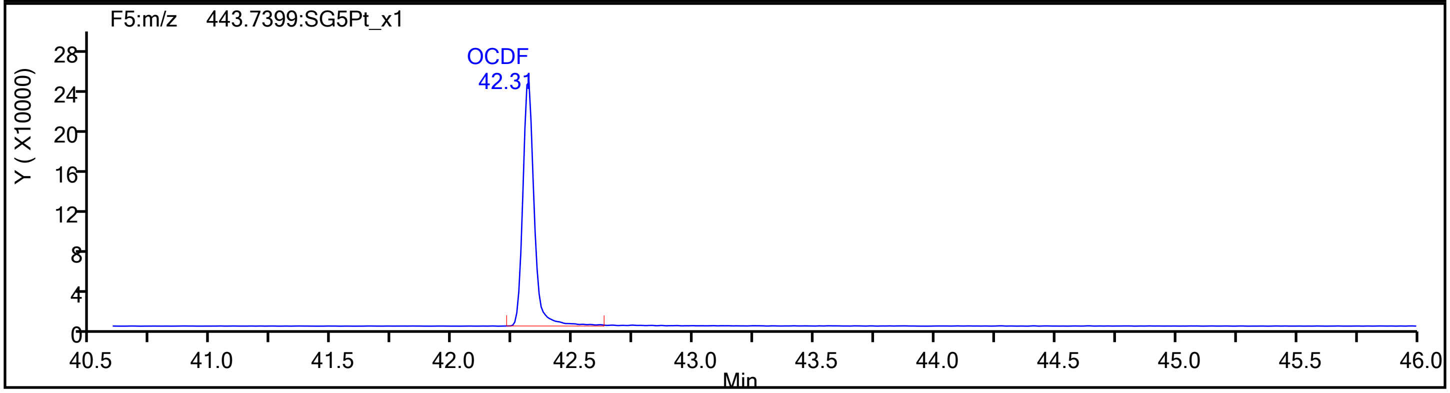

OCDF Standards

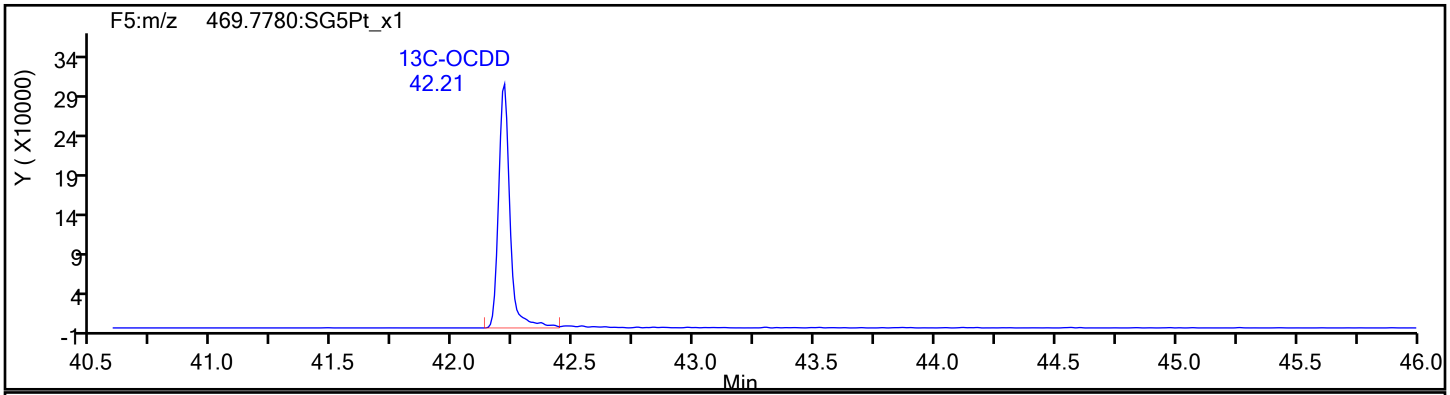

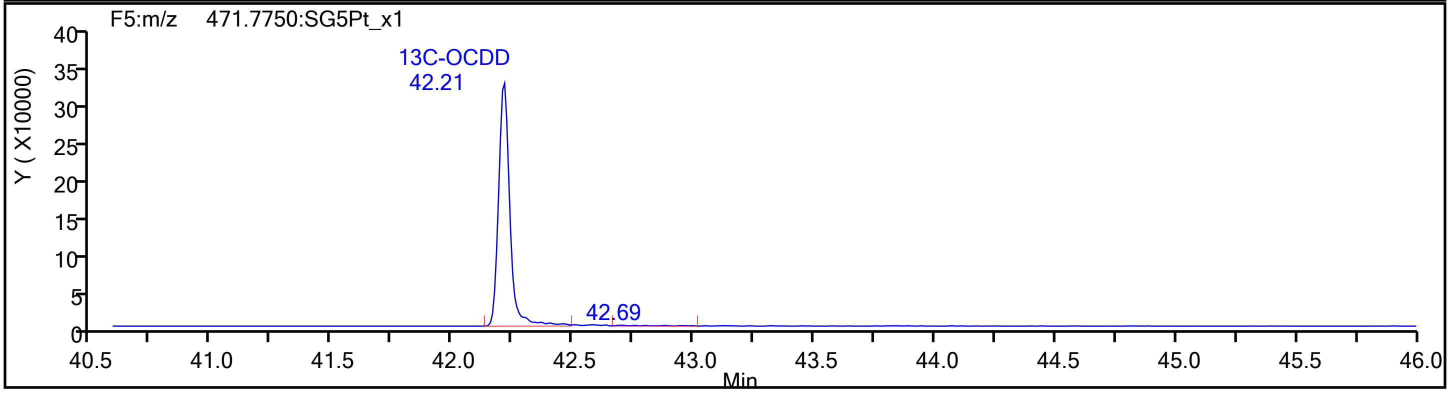

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

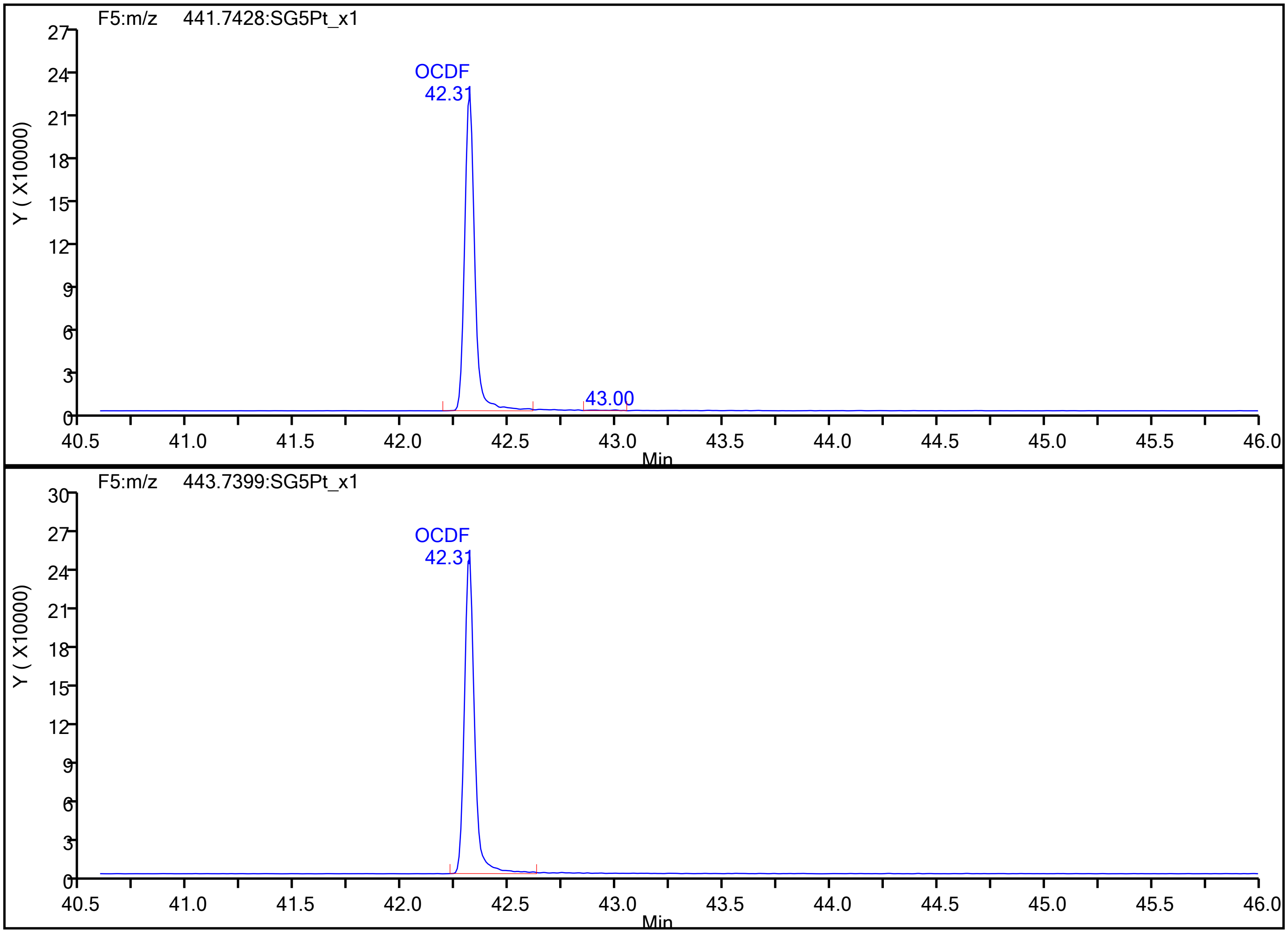

OCDF Interference Mass

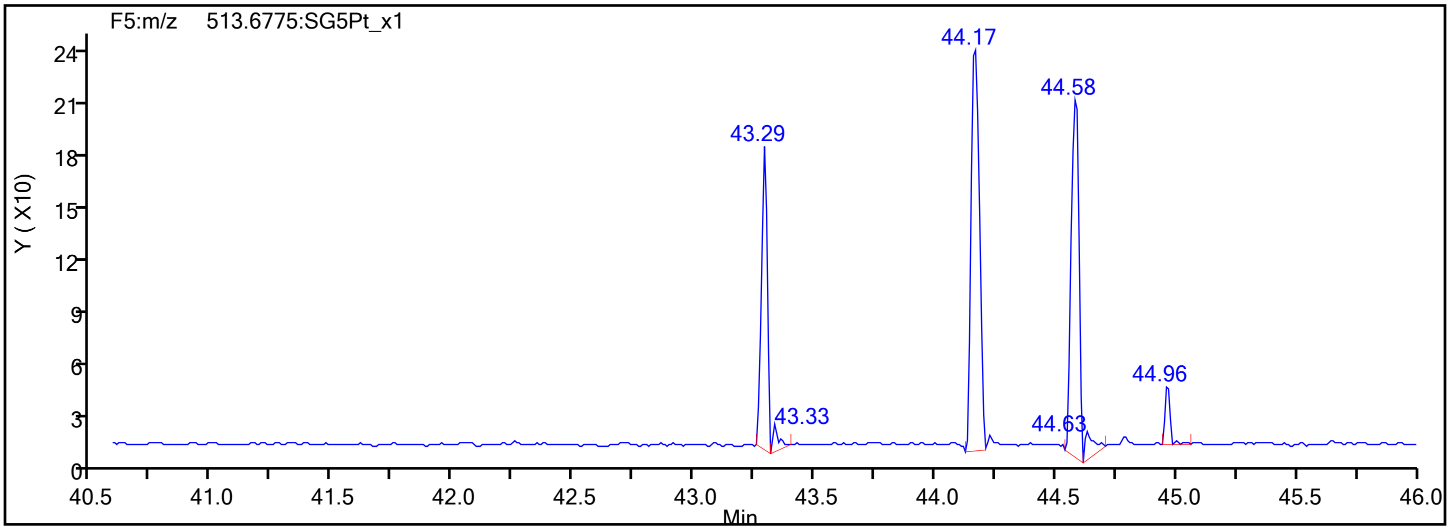

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date: 27-Jul-2020 20:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

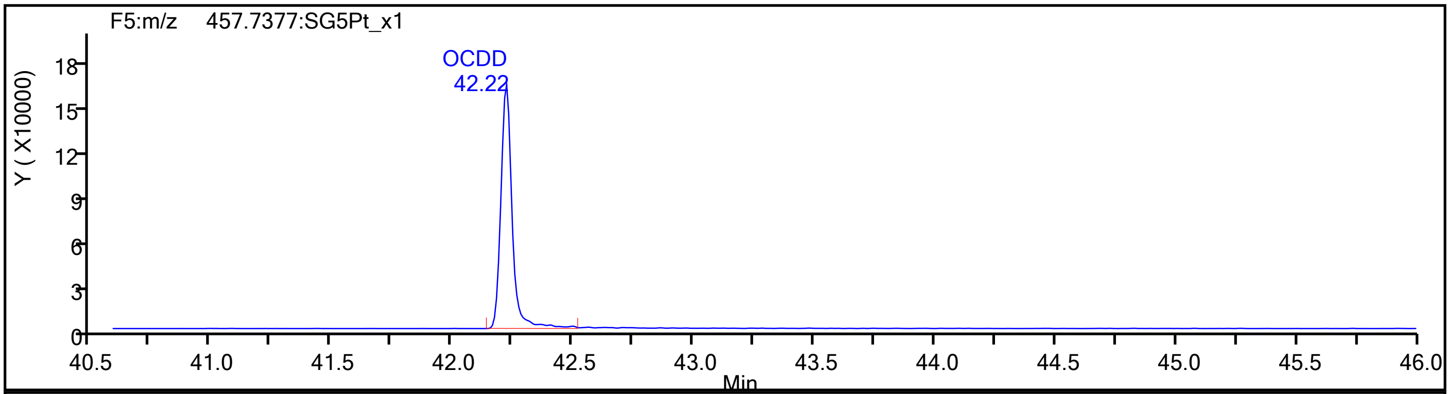

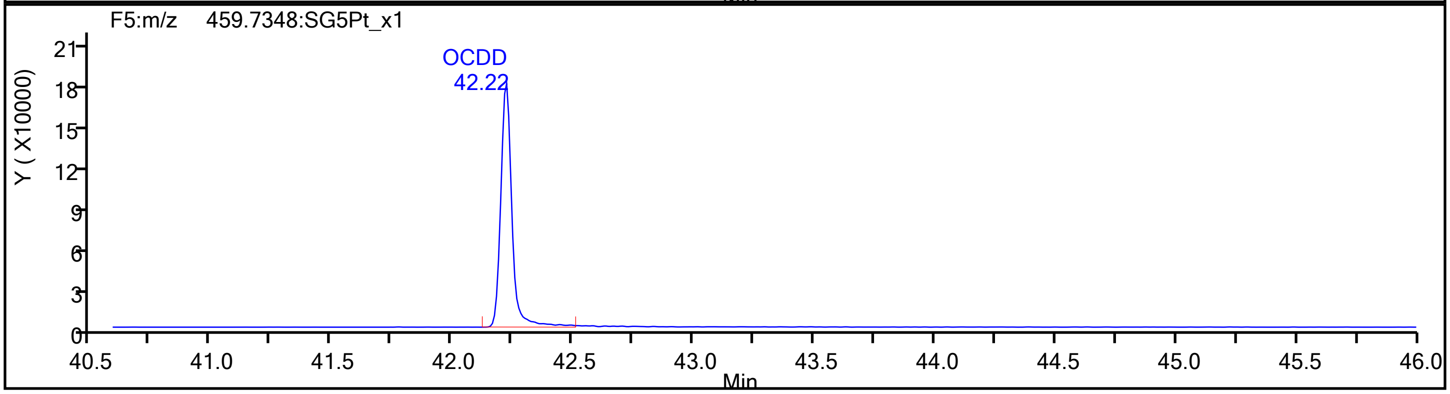

OCDD Standards

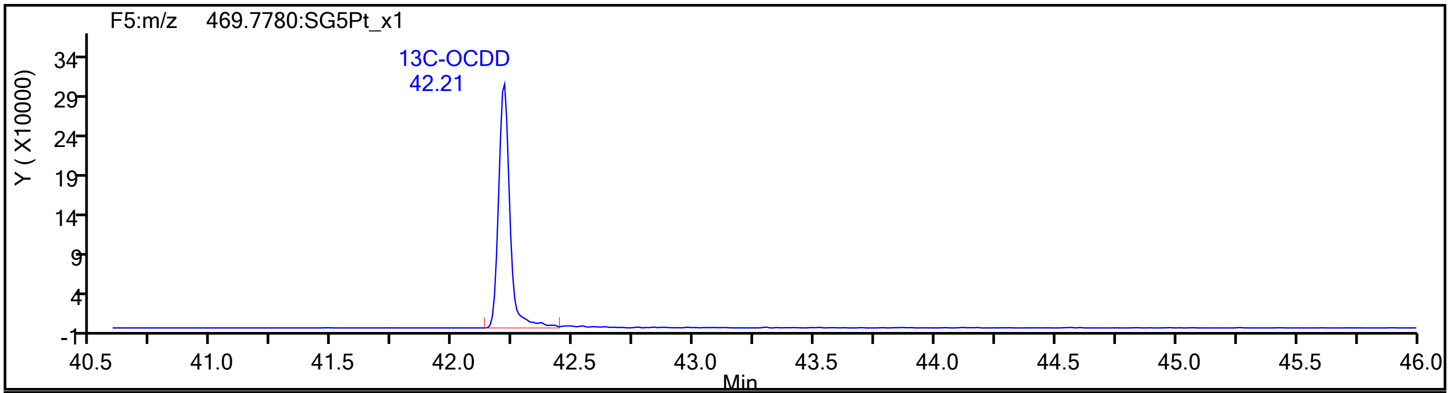

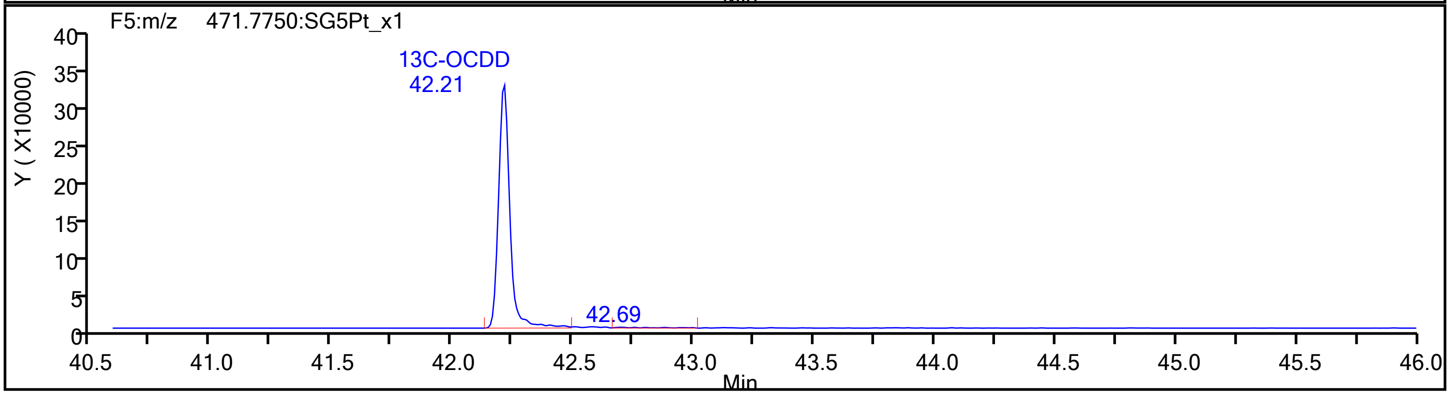

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date: 27-Jul-2020 20:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

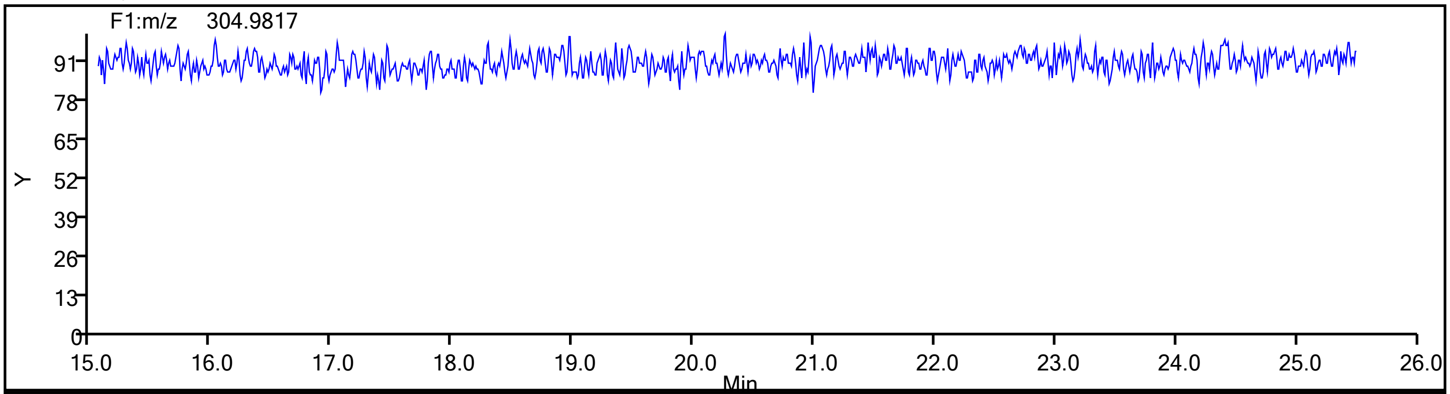

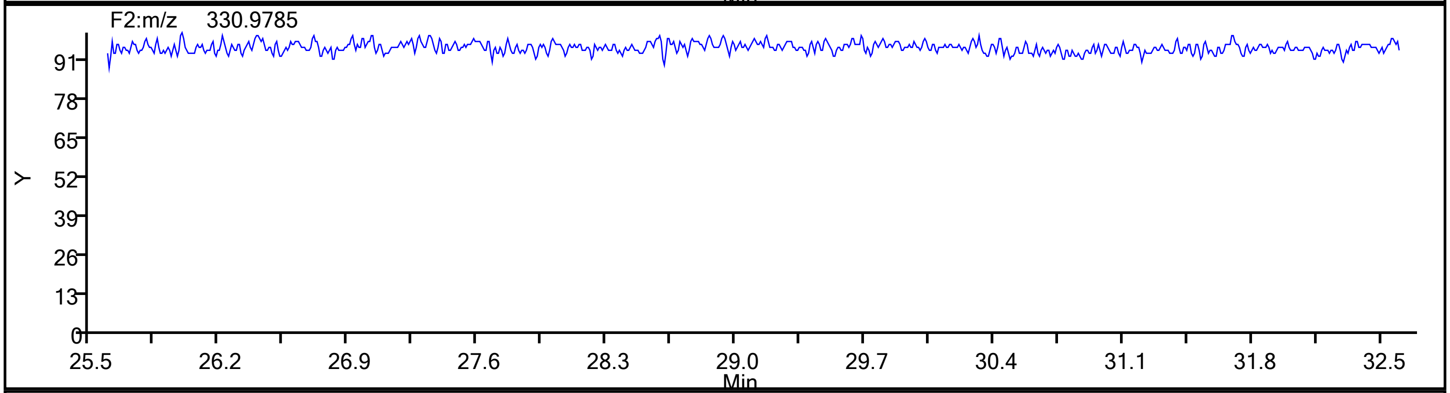

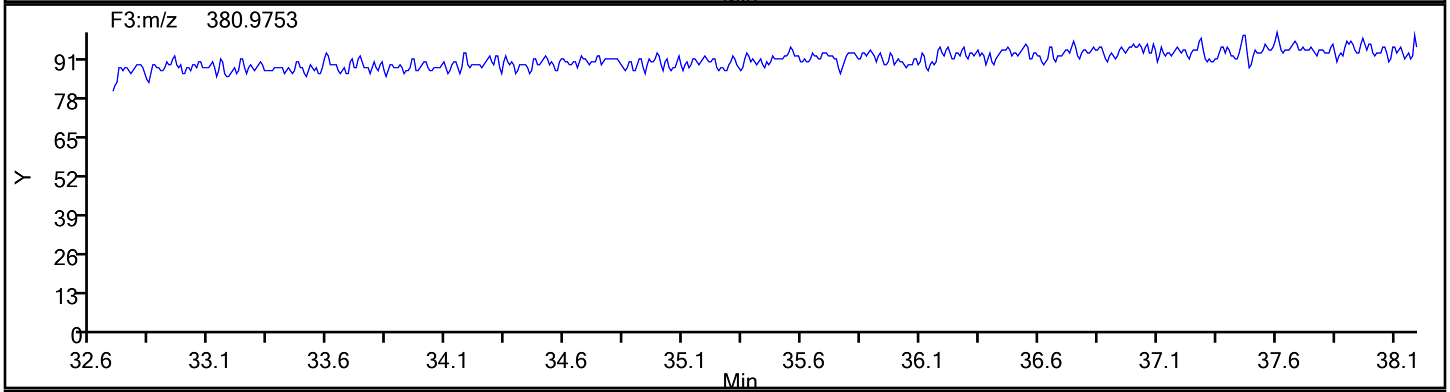

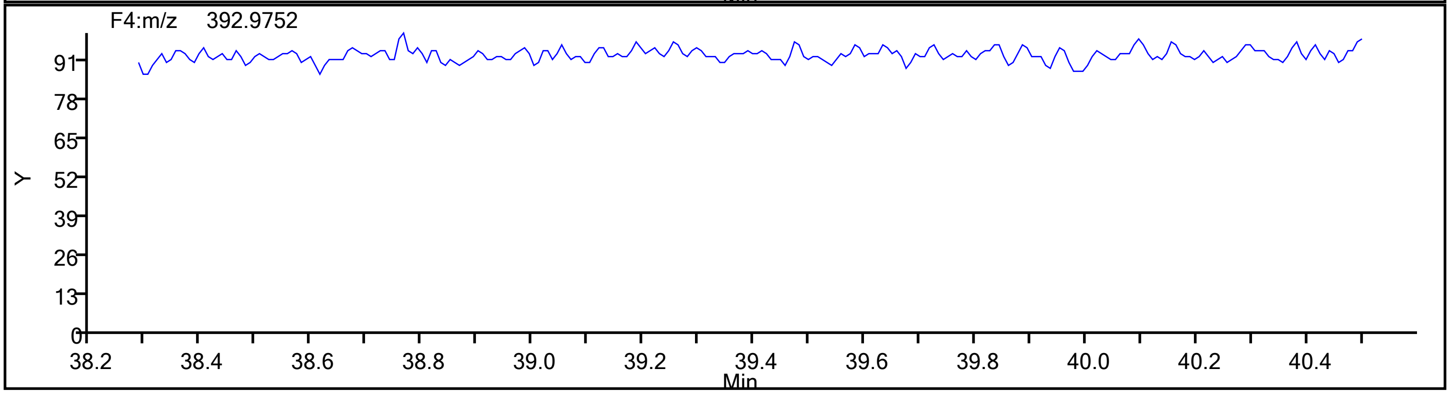

Report Date: 29-Jul-2020 09:27:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_6.d

Injection Date:	27-Jul-2020 20:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

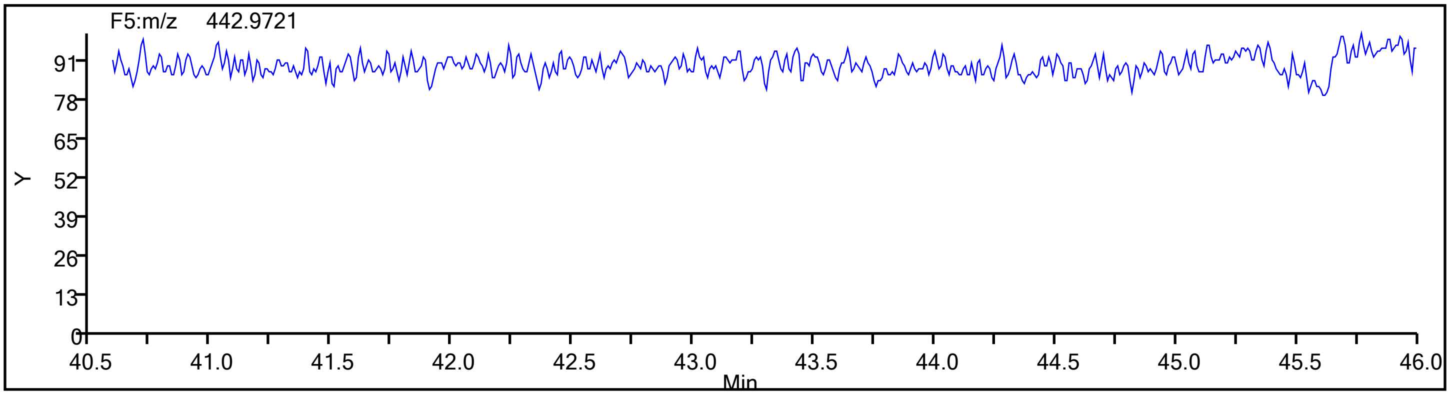

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-397938/3-A

Matrix: Water Lab File ID: 27jl20bdfs1_7.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1000(mL) Date Analyzed: 07/27/2020 20:52

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 398796 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	233		10	2.5
51207-31-9	2,3,7,8-TCDF	243		10	0.91
40321-76-4	1,2,3,7,8-PeCDD	1090		50	1.9
57117-41-6	1,2,3,7,8-PeCDF	1150		50	4.1
57117-31-4	2,3,4,7,8-PeCDF	1030		50	3.9
39227-28-6	1,2,3,4,7,8-HxCDD	1000		50	3.5
57653-85-7	1,2,3,6,7,8-HxCDD	1110		50	3.8
19408-74-3	1,2,3,7,8,9-HxCDD	1090		50	3.4
70648-26-9	1,2,3,4,7,8-HxCDF	1050		50	6.6
57117-44-9	1,2,3,6,7,8-HxCDF	1100		50	6.7
72918-21-9	1,2,3,7,8,9-HxCDF	1090		50	6.0
60851-34-5	2,3,4,6,7,8-HxCDF	1100		50	5.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	1040		50	4.2
67562-39-4	1,2,3,4,6,7,8-HpCDF	1090		50	7.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	1000		50	7.6
3268-87-9	OCDD	2070		100	4.1
39001-02-0	OCDF	2300		100	5.0
41903-57-5	Total TCDD	233		10	2.5
30402-14-3	Total TCDF	243		10	0.91
36088-22-9	Total PeCDD	1090		50	1.9
30402-15-4	Total PeCDF	2170		50	4.0
34465-46-8	Total HxCDD	3190		50	3.5
55684-94-1	Total HxCDF	4350		50	6.3
37871-00-4	Total HpCDD	1040		50	4.2
38998-75-3	Total HpCDF	2090		50	7.7

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-397938/3-A

Matrix: Water Lab File ID: 27jl20bdfs1_7.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 07/24/2020 12:28

Sample wt/vol: 1000(mL) Date Analyzed: 07/27/2020 20:52

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 398796 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		20-175
89059-46-1	13C-2,3,7,8-TCDF	69		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	66		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	66		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	78		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	62		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	57		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	67		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	63		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	67		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	65		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	68		20-186
114423-97-1	13C-OCDD	70		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		31-191

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Lims ID: LCSD 320-397938/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 27-Jul-2020 20:52:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-397938/3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 09:28:54 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1031

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.802	1921575	0.79	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.797	1998547	0.78	1.4977	69.4	69.4	0.3749	0.3749	69.44	
2,3,7,8-TCDF	20.822	275180	0.84	1.1312	12.2	12.2	0.0455	0.0455	122	
A Non-2,3,7,8-sub-TCDF	20.186						0.0455	0.1692		U
S Total TCDF					12.2	12.2	0.0455	0.0455		
D 13C-2,3,7,8-TCDD	22.205	1220457	0.84	1.0367	61.3	61.3	0.2626	0.2626	61.26	
2,3,7,8-TCDD	22.240	168582	0.81	1.1849	11.7	11.7	0.1234	0.1234	117	M
$ 37Cl4-2,3,7,8-TCDD	22.240	809758		1.1208	37.6	37.6	0.0285	0.0285	94.00	
A Non-2,3,7,8-sub-TCDD	21.062						0.1234	0.2047		U
S Total TCDD					11.7	11.7	0.1234	0.1234		
D 13C-1,2,3,7,8-PeCDF	27.722	1661892	1.60	1.3057	66.2	66.2	0.2873	0.2873	66.23	
1,2,3,7,8-PeCDF	27.739	1053123	1.62	1.1060	57.3	57.3	0.2069	0.2069	115	
D 13C-2,3,4,7,8-PeCDF	29.289	2316464	1.61	1.5420	78.2	78.2	0.2433	0.2433	78.18	
2,3,4,7,8-PeCDF	29.314	1079179	1.56	0.9067	51.4	51.4	0.1967	0.1967	103	
A F1 PeCDFs	24.937						0.007103	0.0131		RQU
A Non-2,3,7,8-sub-PeCDF	28.559						0.1992	0.4495		RQU
S Total PeCDF					108.7	108.7	0.2018	0.2018		
D 13C-1,2,3,7,8-PeCDD	30.140	1048097	1.51	0.8294	65.8	65.8	0.1656	0.1656	65.76	
1,2,3,7,8-PeCDD	30.157	632547	1.59	1.1062	54.6	54.6	0.0949	0.0949	109	
A Non-2,3,7,8-sub-PeCDD	28.927						0.0949	0.0958		RQU
S Total PeCDD					54.6	54.6	0.0949	0.0949		
D 13C-1,2,3,4,7,8-HxCDF	35.267	2186935	0.54	1.4619	66.5	66.5	0.3220	0.3220	66.54	
1,2,3,4,7,8-HxCDF	35.284	1156521	1.25	1.0087	52.4	52.4	0.3310	0.3310	105	
D 13C-1,2,3,6,7,8-HxCDF	35.419	1822255	0.55	1.2866	63.0	63.0	0.3659	0.3659	63.00	
1,2,3,6,7,8-HxCDF	35.436	1250568	1.28	1.2432	55.2	55.2	0.3333	0.3333	110	
D 13C-2,3,4,6,7,8-HxCDF	36.202	1743795	0.54	1.1988	64.7	64.7	0.3927	0.3927	64.71	
2,3,4,6,7,8-HxCDF	36.219	1225206	1.24	1.2736	55.2	55.2	0.2954	0.2954	110	
D 13C-1,2,3,7,8,9-HxCDF	37.061	1618358	0.55	1.0687	67.4	67.4	0.4405	0.4405	67.36	
1,2,3,7,8,9-HxCDF	37.078	1137324	1.27	1.2882	54.6	54.6	0.3017	0.3017	109	
A Non-2,3,7,8-sub-HxCDF	35.424						0.3124	0.3124		
S Total HxCDF					217.4	217.4	0.3153	0.3153		
* 13C-1,2,3,7,8,9-HxCDD	36.867	2248114	1.27	5E+04	100.0	100.0				a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.404	1529920	1.29	1.1046	61.6	61.6	0.2075	0.2075	61.61	
1,2,3,4,7,8-HxCDD	36.413	714221	1.27	0.9336	50.0	50.0	0.1728	0.1728	100	
D 13C-1,2,3,6,7,8-HxCDD	36.514	1266862	1.26	0.9871	57.1	57.1	0.2322	0.2322	57.09	
1,2,3,6,7,8-HxCDD	36.531	758871	1.26	1.0802	55.5	55.5	0.1888	0.1888	111	
1,2,3,7,8,9-HxCDD	36.884	802797	1.28	1.0574	54.3	54.3	0.1704	0.1704	109	
A Non-2,3,7,8-sub-HxCDD	35.752						0.1760	0.1760		
S Total HxCDD					159.7	159.7	0.1773	0.1773		
D 13C-1,2,3,4,6,7,8-HpCDF	38.809	1212968	0.46	0.9035	59.7	59.7	0.6144	0.6144	59.72	
1,2,3,4,6,7,8-HpCDF	38.818	1051049	1.06	1.5957	54.3	54.3	0.3913	0.3913	109	
D 13C-1,2,3,4,7,8,9-HpCDF	40.031	1610891	0.46	1.0480	68.4	68.4	0.5297	0.5297	68.37	
1,2,3,4,7,8,9-HpCDF	40.039	943381	1.06	1.1693	50.1	50.1	0.3784	0.3784	100	
A Non-2,3,7,8-sub-HpCDF	39.452						0.3746	0.3746		
S Total HpCDF					104.4	104.4	0.3848	0.3848		
D 13C-1,2,3,4,6,7,8-HpCDD	39.727	1179831	1.11	0.8875	59.1	59.1	0.3211	0.3211	59.13	
1,2,3,4,6,7,8-HpCDD	39.736	685919	1.04	1.1150	52.1	52.1	0.2112	0.2112	104	
A Non-2,3,7,8-sub-HpCDD	39.555						0.2112	0.2112		
S Total HpCDD					52.1	52.1	0.2112	0.2112		
D 13C-OCDD	42.217	1976744	0.91	0.6297	139.6	139.6	0.2449	0.2449	69.81	
OCDF	42.318	1682572	0.90	1.4809	115.0	115.0	0.2503	0.2503	115	
OCDD	42.226	1219702	0.89	1.1948	103.3	103.3	0.2064	0.2064	103	

QC Flag Legend

Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Lims ID: LCSD 320-397938/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 27-Jul-2020 20:52:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-397938/3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jul-2020 09:28:54 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1031

First Level Reviewer: arghestanis Date: 28-Jul-2020 08:33:57

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.802	21.914	-7		847480	119108	234	585	509		a
333.9338	21.802	21.914	-7		1074095	162644	73	182	2228	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.797	20.826	-2	0.954	878185	138250	425	1062	325		
317.9389	20.797	20.826	-2	0.954	1120362	166759	208	520	802	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.822	20.869	-3	1.001	125916	19204	17	42	1130		
305.8987	20.822	20.869	-3	1.001	149264	21891	46	115	476	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	20.067	20.186	-7	0.965	997	199	17	42	12		
305.8987	20.084	20.186	-6	0.966	1486	472	46	115	10	0.67(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.205	22.268	-4	1.019	557919	82105	234	585	351		
333.9338	22.222	22.268	-3	1.019	662538	86763	73	182	1189	0.84(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	22.240	22.285	-3	1.002	75401	10317	81	202	127		M
321.8936	22.231	22.285	-3	1.001	93181	13857	18	45	770	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.240	22.335	-6	1.020	809758	111315	36	90	3092		
A Non-2,3,7,8-sub-TCDD											U
319.8965	18.005	21.062	-183	0.811	1201	301	81	202	4		
321.8936	18.031	21.062	-181	0.812	1759	309	18	45	17	0.68(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.722	27.788	-4	1.272	1023578	166076	264	660	629		
353.8970	27.714	27.788	-4	1.271	638314	103549	159	397	651	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.739	27.805	-4	1.001	650769	107222	137	342	783		
341.8567	27.739	27.805	-4	1.001	402354	64629	110	275	588	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.289	29.364	-4	1.343	1429792	218009	264	660	826		
353.8970	29.289	29.364	-4	1.343	886672	127910	159	397	804	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.314	29.389	-4	1.001	657819	96476	137	342	704		
341.8567	29.314	29.389	-4	1.001	421360	61577	110	275	560	1.56(1.32-1.78)	
A F1 PeCDFs											U
339.8597	24.266	24.937	-40	0.875	120	32	1	2	32		
341.8567	24.377	24.937	-34	0.879	143	83	8	20	10	0.84(1.32-1.78)	
	Empc Correction				77	20	8	20	0		
A Non-2,3,7,8-sub-PeCDF											U
339.8597	28.354	28.559	-12	1.023	5032	971	137	342	7		
341.8567	28.388	28.559	-10	1.024	3966	660	110	275	6	1.27(1.32-1.78)	
	Empc Correction				3246	626	110	275	0		
13C-1,2,3,7,8-PeCDD											
367.8949	30.140	30.215	-4	1.382	631016	93960	92	230	1021		
369.8919	30.132	30.215	-5	1.382	417081	63274	63	157	1004	1.51(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.157	30.240	-5	1.001	387963	55923	45	112	1243		
357.8516	30.157	30.240	-5	1.001	244584	35440	21	52	1688	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	28.927	28.927	0	0.960	1596	164	45	112			
	Empc Correction				675	184	45	112	0		
357.8516	28.927	28.927	0	0.960	436	119	21	52		3.66(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.267	35.308	-2	0.957	767456	180259	403	1007	447		
385.8610	35.267	35.308	-2	0.957	1419479	334082	702	1755	476	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.284	35.325	-2	1.000	642249	154743	377	942	410		
375.8178	35.276	35.325	-3	1.000	514272	124603	310	775	402	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.419	35.460	-2	0.961	646478	148480	403	1007	368		
385.8610	35.419	35.460	-2	0.961	1175777	265906	702	1755	379	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.436	35.476	-2	1.000	701369	162808	377	942	432		
375.8178	35.436	35.476	-2	1.000	549199	126311	310	775	407	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.202	36.243	-2	0.982	612876	156737	403	1007	389		
385.8610	36.202	36.243	-2	0.982	1130919	299593	702	1755	427	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.219	36.260	-2	1.000	678890	172385	377	942	457		
375.8178	36.219	36.260	-2	1.000	546316	140417	310	775	453	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.061	37.094	-2	1.005	572511	157396	403	1007	391		
385.8610	37.061	37.094	-2	1.005	1045847	284408	702	1755	405	0.55(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.078	37.111	-2	1.000	635755	174921	377	942	464		
375.8178	37.078	37.111	-2	1.000	501569	140235	310	775	452	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.424						377	942			
375.8178	35.424						310	775			
13C-1,2,3,7,8,9-HxCDD											a
401.8559	36.867	36.901	-2		1257593	328400	285	712	1152		a
403.8529	36.867	36.901	-2		990521	258331	253	632	1021	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.404	36.437	-2	0.987	860396	238446	285	712	837		
403.8529	36.404	36.437	-2	0.987	669524	181092	253	632	716	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.413	36.445	-2	1.000	399571	112674	146	365	772		
391.8127	36.413	36.445	-2	1.000	314650	89445	125	312	716	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.514	36.547	-2	0.990	707477	183602	285	712	644		
403.8529	36.514	36.547	-2	0.990	559385	148453	253	632	587	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.531	36.563	-2	1.000	422667	109196	146	365	748		
391.8127	36.531	36.563	-2	1.000	336204	86997	125	312	696	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.884	36.909	-1	1.013	449944	117083	146	365	802		
391.8127	36.876	36.909	-2	1.013	352853	92815	125	312	743	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.752						146	365			
391.8127	35.752						125	312			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.809	38.834	-1	1.053	383692	119814	450	1125	266		
419.8220	38.809	38.834	-1	1.053	829276	272096	853	2132	319	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.818	38.841	-1	1.000	540538	178512	504	1260	354		
409.7788	38.818	38.841	-1	1.000	510511	163676	475	1187	345	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	40.031	40.055	-1	1.086	509194	174163	450	1125	387		
419.8220	40.031	40.055	-1	1.086	1101697	378930	853	2132	444	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.039	40.063	-1	1.000	485354	165144	504	1260	328		
409.7788	40.039	40.063	-1	1.000	458027	156026	475	1187	328	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.452						504	1260			
409.7788	39.452						475	1187			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.727	39.752	-1	1.078	621088	208841	374	935	558		
437.8140	39.727	39.752	-1	1.078	558743	194662	295	737	660	1.11(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.736	39.760	-1	1.000	350180	118982	201	502	592		
425.7737	39.736	39.760	-1	1.000	335739	116653	179	447	652	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						201	502			
425.7737	39.555						179	447			
13C-OCDD											
469.7780	42.217	42.240	-1	1.145	941245	282916	185	462	1529		
471.7750	42.217	42.240	-1	1.145	1035499	313297	177	442	1770	0.91(0.76-1.02)	
OCDF											
441.7428	42.318	42.341	-1	1.002	797528	248921	197	492	1264		
443.7399	42.318	42.341	-1	1.002	885044	268662	245	612	1097	0.90(0.76-1.02)	
OCDD											
457.7377	42.226	42.249	-1	1.000	575927	170562	128	320	1333		
459.7348	42.226	42.249	-1	1.000	643775	192971	166	415	1162	0.89(0.76-1.02)	

QC Flag Legend

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Lims ID:	LCSD 320-397938/3-A		
Client ID:			
Inject. Date:	27-Jul-2020 20:52:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDF, RT: 20.186

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	1998547	305009

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	1998547	305009

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
20.067	997	199	1486	472	0.1098	0.67	
21.132	1681	354	2144	329	0.1692	0.78	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Lims ID: LCSD 320-397938/3-A
Client ID:
Inject. Date: 27-Jul-2020 20:52:00 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 398796 Lims Sample ID: 6

Non-2,3,7,8-sub-TCDD, RT: 21.062

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	1220457	168868

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	1220457	168868

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.005	1201	301	1759	309	0.2047	0.68	

Compound is Marked ND

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Lims ID:	LCSD 320-397938/3-A		
Client ID:			
Inject. Date:	27-Jul-2020 20:52:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	6

F1 PeCDFs, RT: 24.937

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1661892	269625
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2316464	345919

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	1989178	307772

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.266	120	32	143	83	0.0131	0.84	RQ
24.266	120	32	77	20			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Lims ID:	LCSD 320-397938/3-A		
Client ID:			
Inject. Date:	27-Jul-2020 20:52:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	398796	Lims Sample ID:	6

Non-2,3,7,8-sub-PeCDF, RT: 28.559

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	1661892	269625
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	2316464	345919

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	1989178	307772

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
28.354	5032	971	3966	660	0.4495	1.27	RQ
28.354	5032	971	3246	626			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Lims ID:	LCSD 320-397938/3-A
Client ID:	
Inject. Date:	27-Jul-2020 20:52:00
Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate
Instrument ID:	DFS 1
Operator:	Xcalibur_System
Lims Batch ID:	398796
Lims Sample ID:	6

Non-2,3,7,8-sub-PeCDD, RT: 28.927

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	1048097	157234

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	1048097	157234

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.966	1596	164	436	119	0.1753	3.66	RQ
30.966	675	184	436	119	0.0958		Empc Correction

Compound is Marked ND

Report Date: 29-Jul-2020 09:28:54

Chrom Revision: 2.3 30-Jun-2020 12:05:54
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d				
Injection Date:	27-Jul-2020 20:52:00	Instrument ID:	DFS 1		
Lims ID:	LCSD 320-397938/3-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	22.24
Area:	77344
Amount:	11.791777
Amount Units:	pg/ul

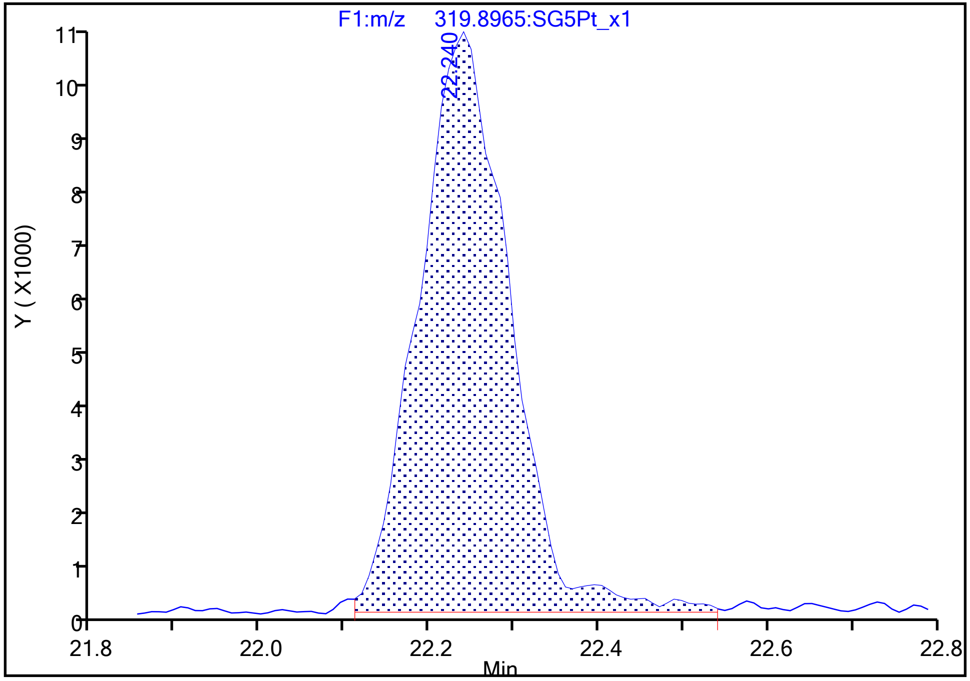

Manual Integration Results

RT:	22.24
Area:	75401
Amount:	11.657419
Amount Units:	pg/ul

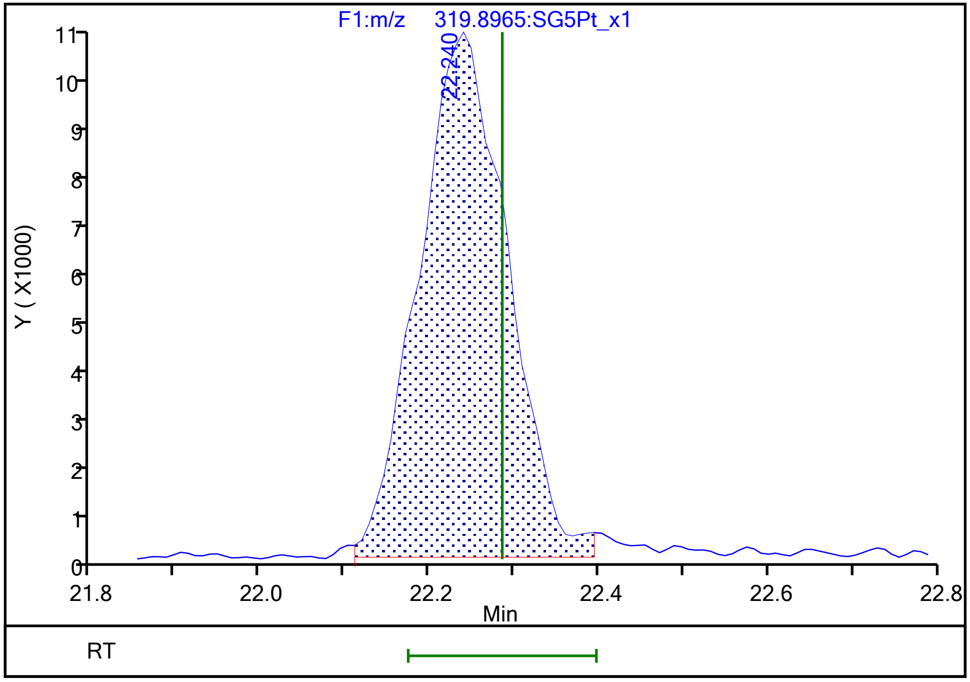

Reviewer: dadunj, 29-Jul-2020 09:26:34

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 29-Jul-2020 09:28:54
Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Injection Date: 27-Jul-2020 20:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

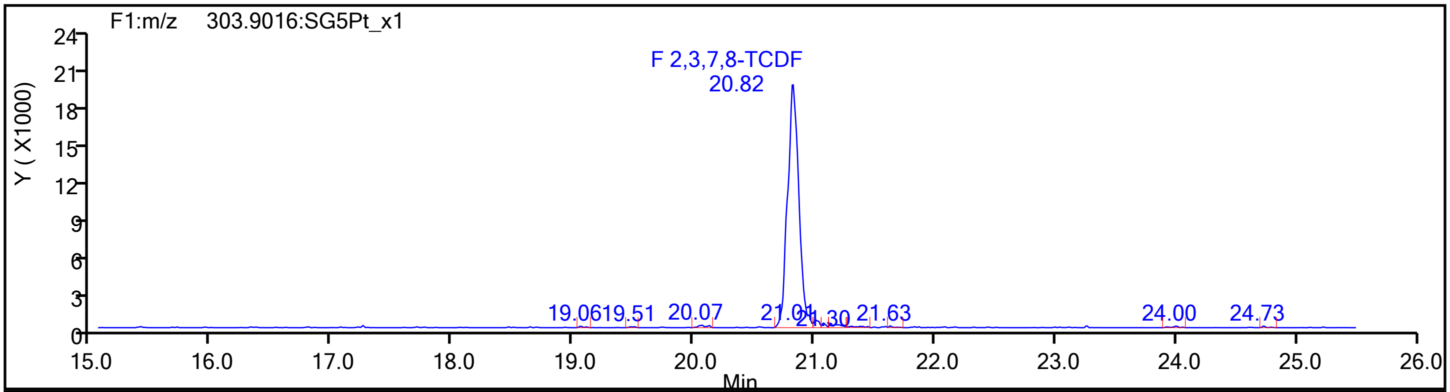

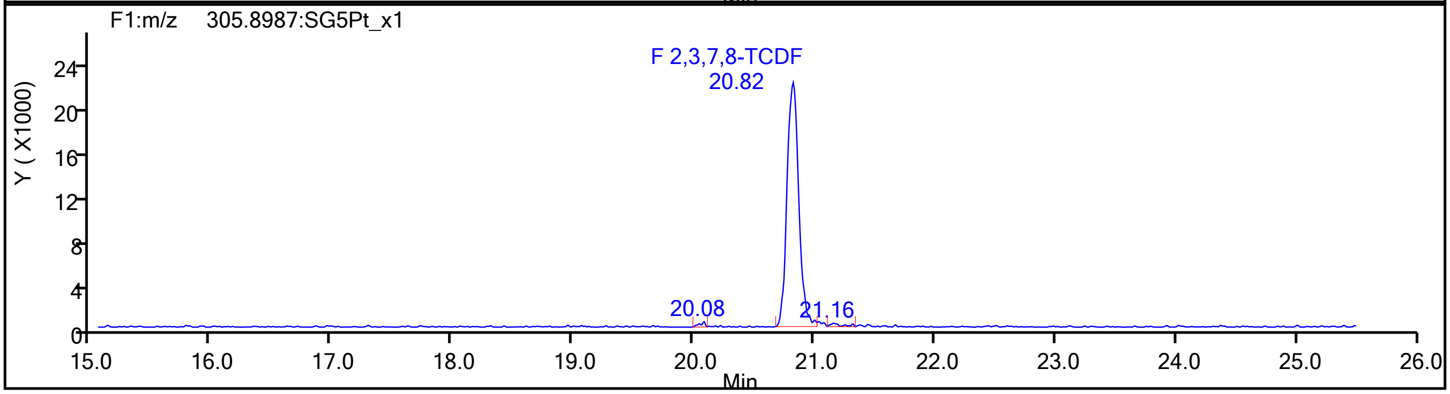

TCDF Standards

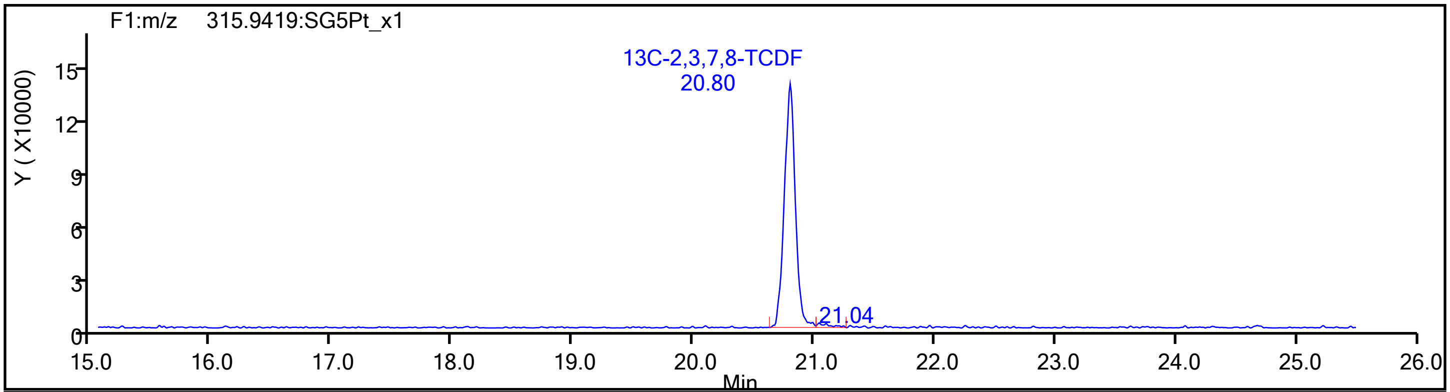

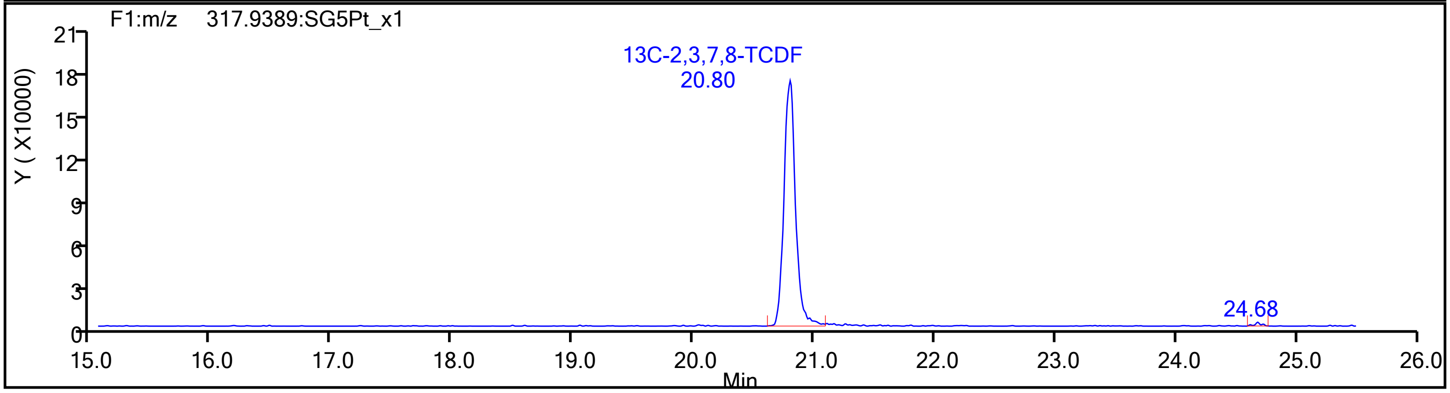

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

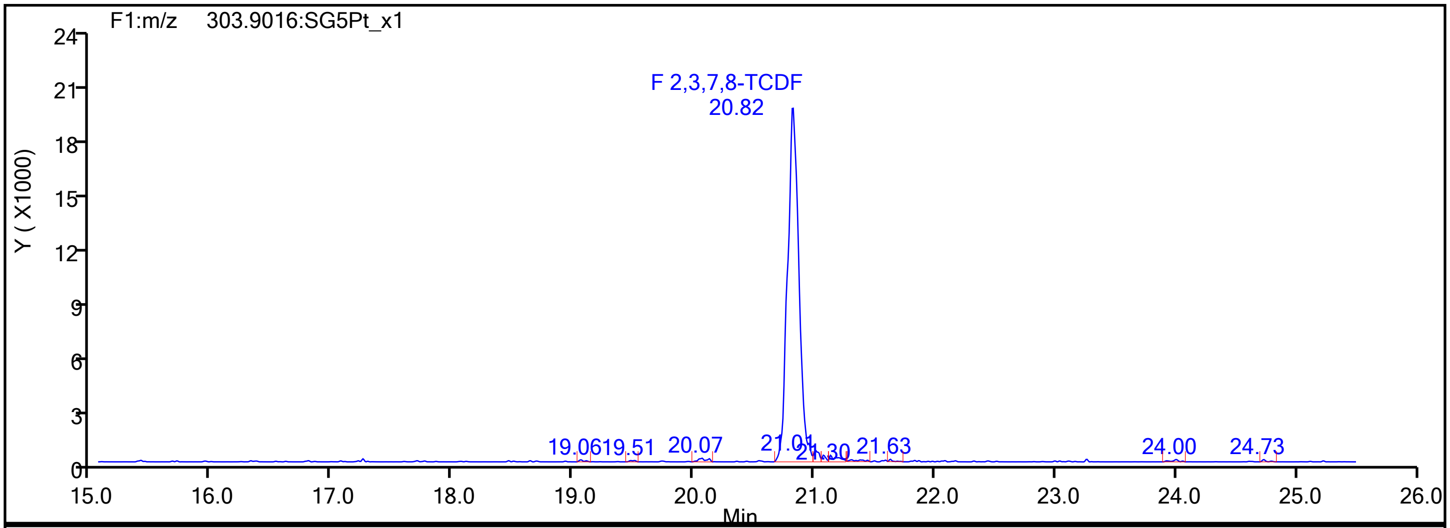

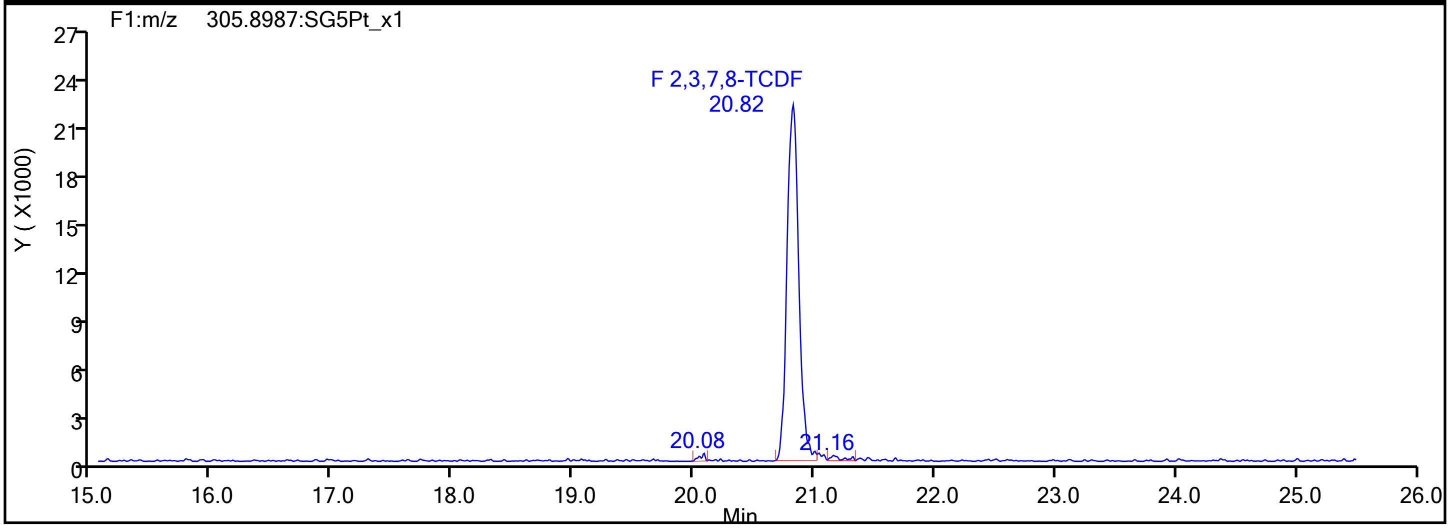

TCDF Interference Mass

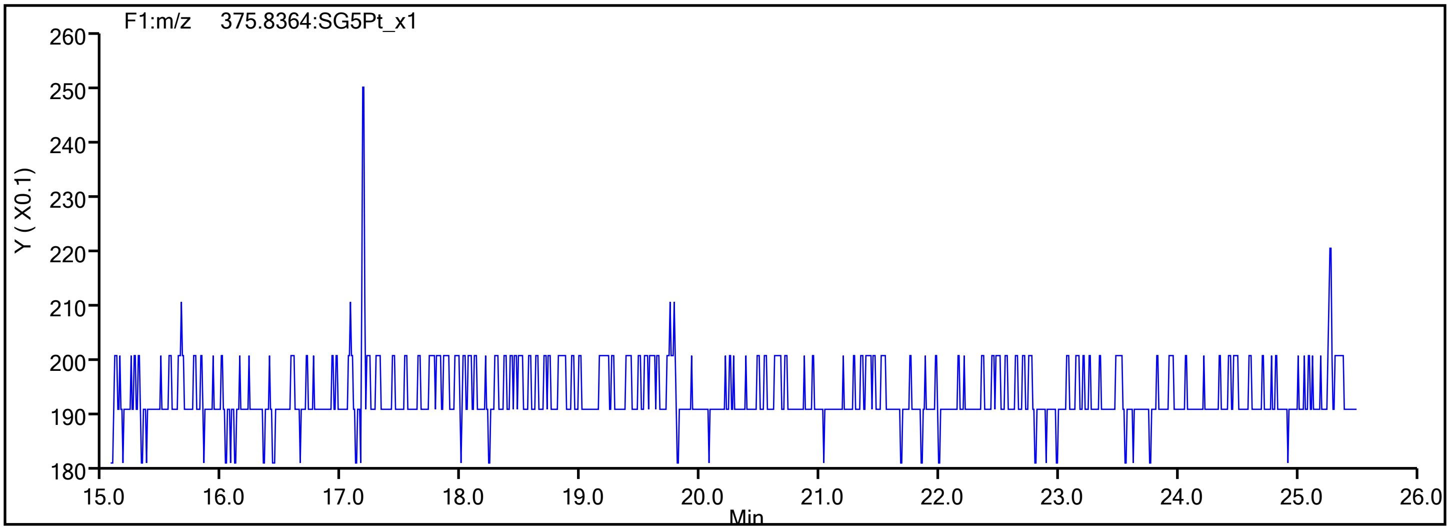

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d

Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

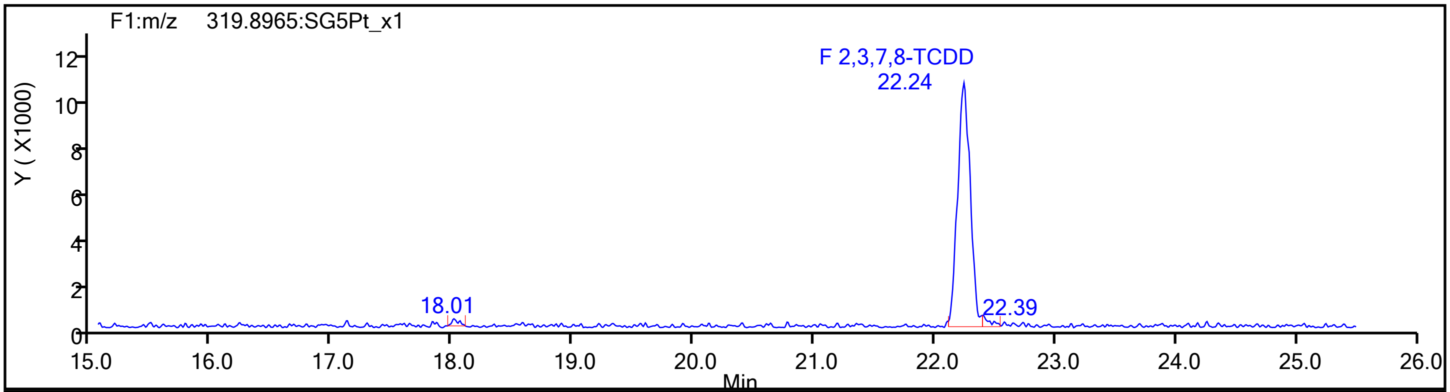

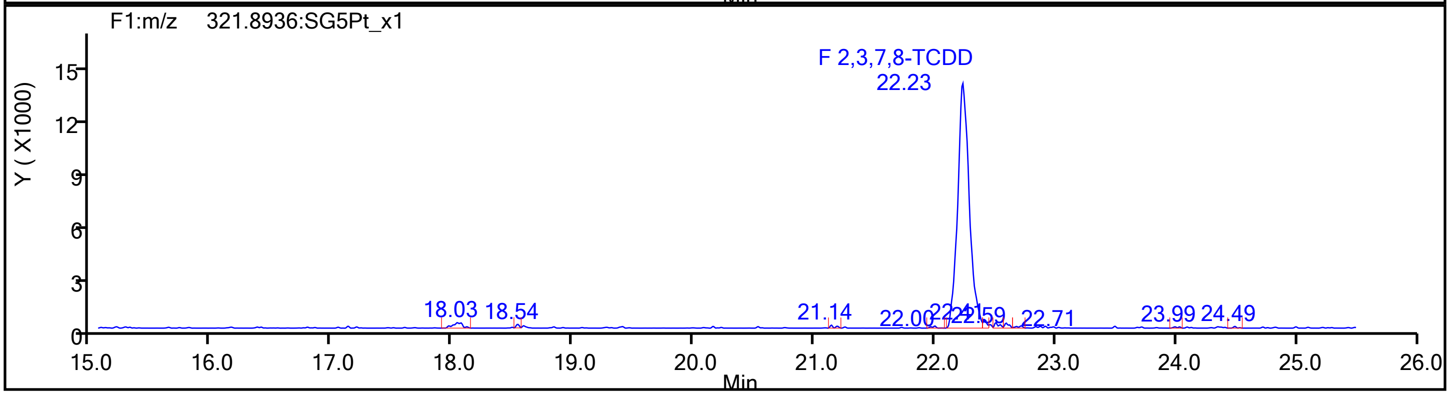

TCDD Standards

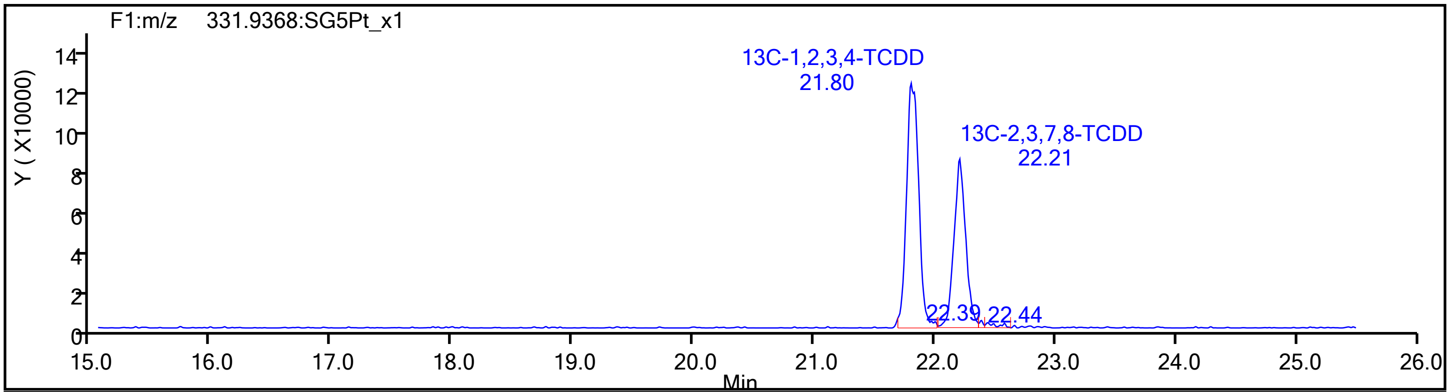

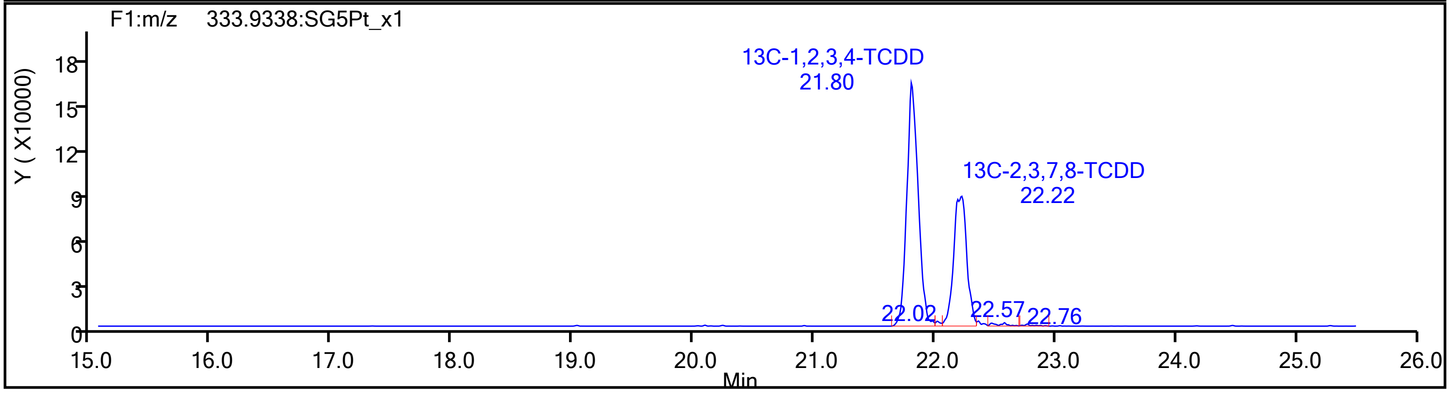

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Injection Date: 27-Jul-2020 20:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

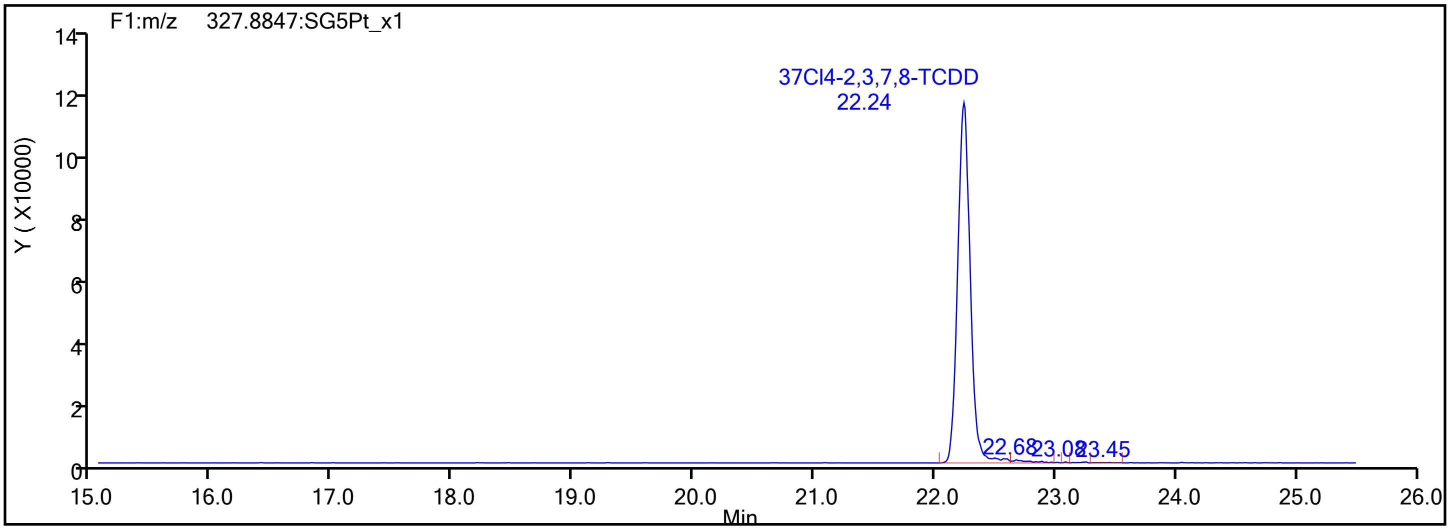

37Cl4-TCDD Standards

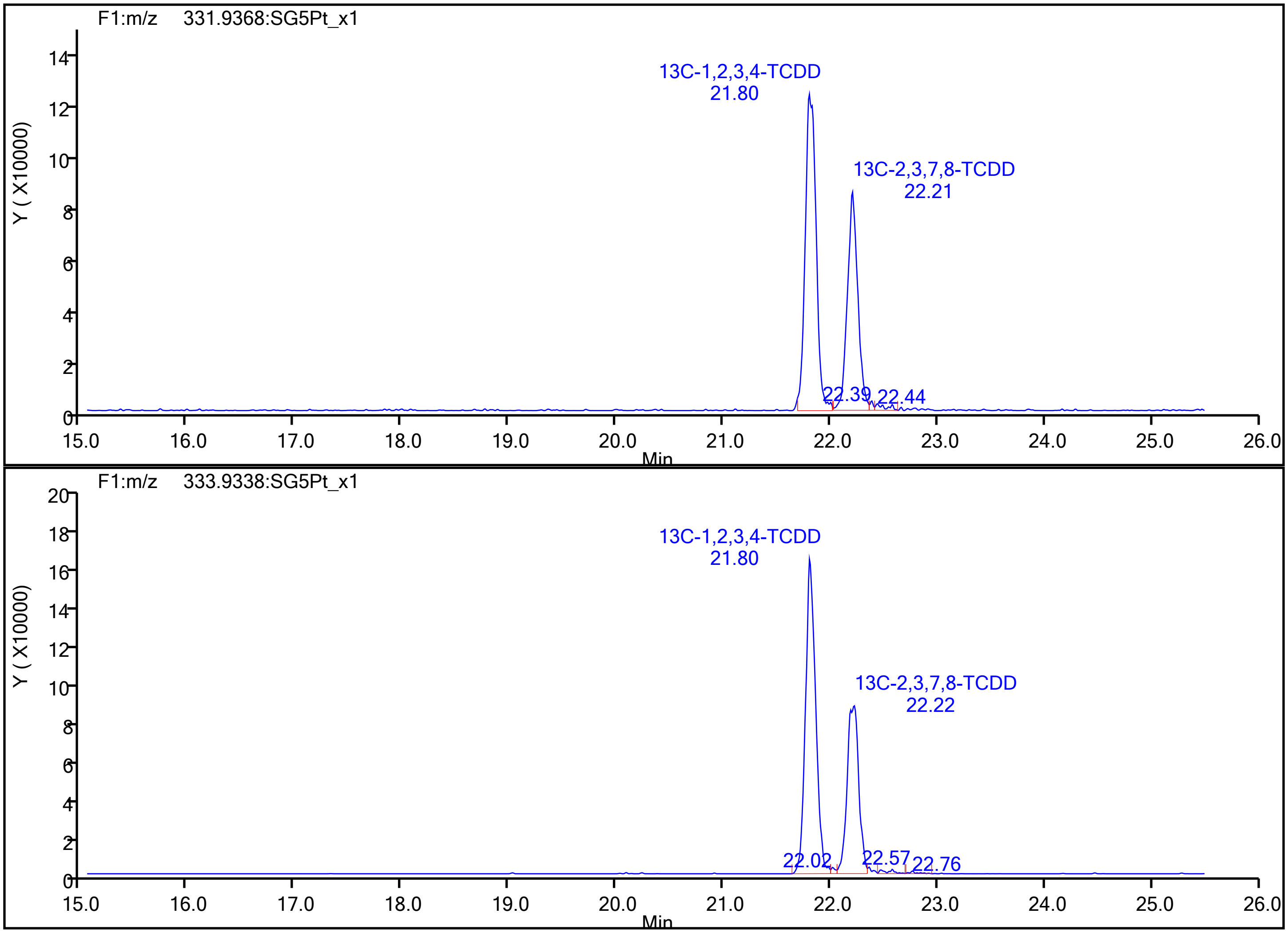

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Injection Date: 27-Jul-2020 20:52:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

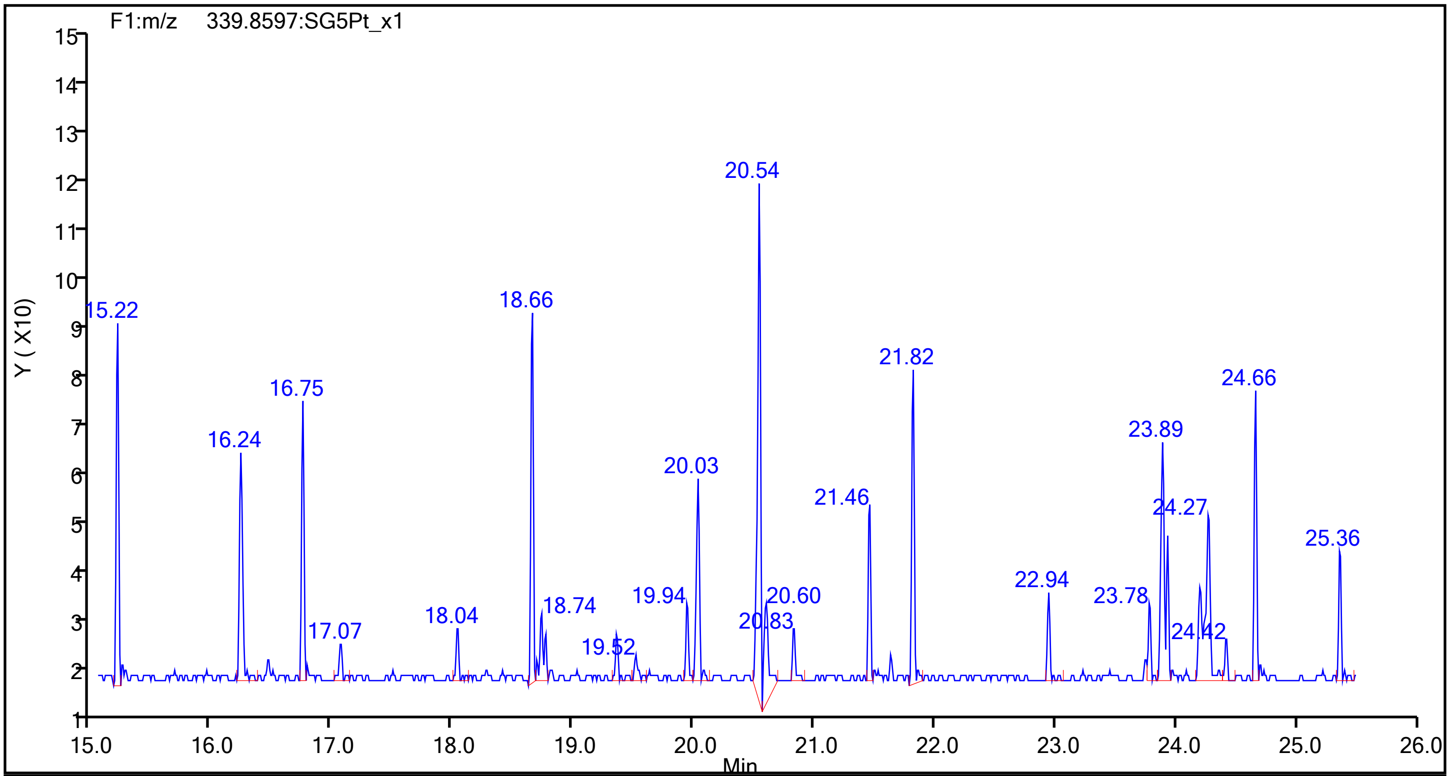

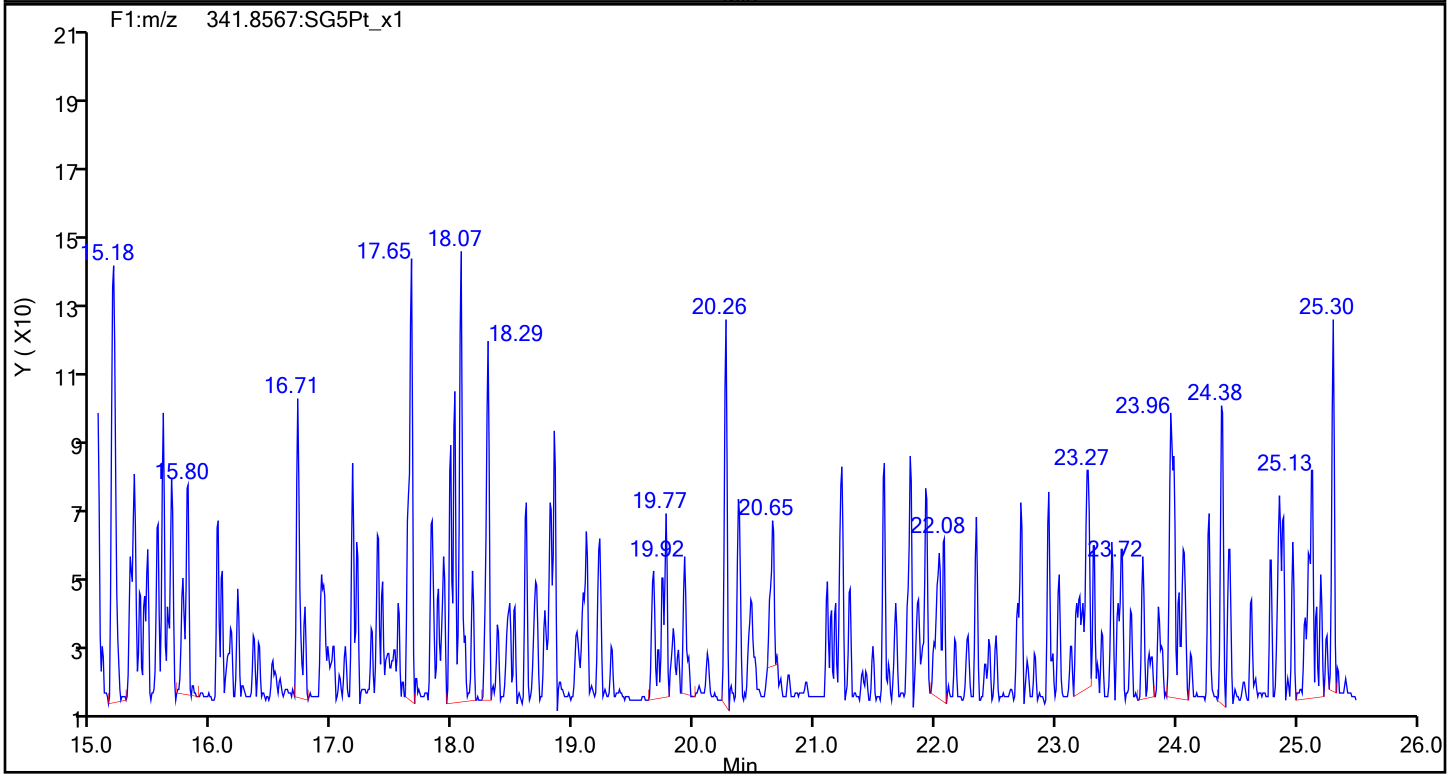

Report Date: 29-Jul-2020 09:28:54 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jul-2020 20:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

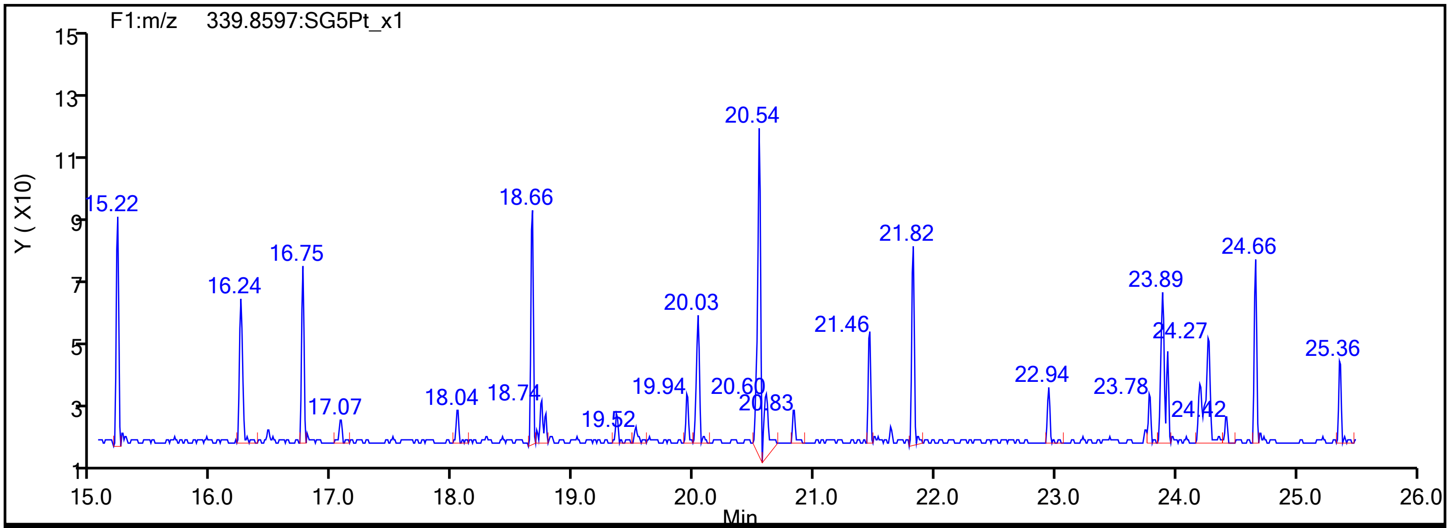

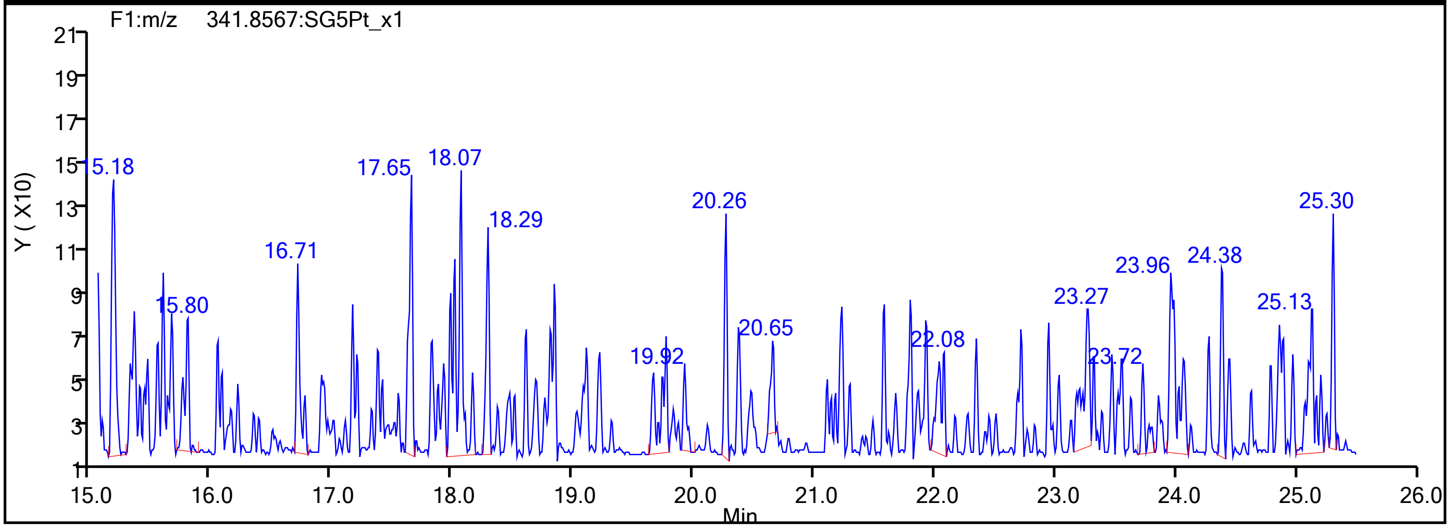

F1 PeCDFs Interference Mass

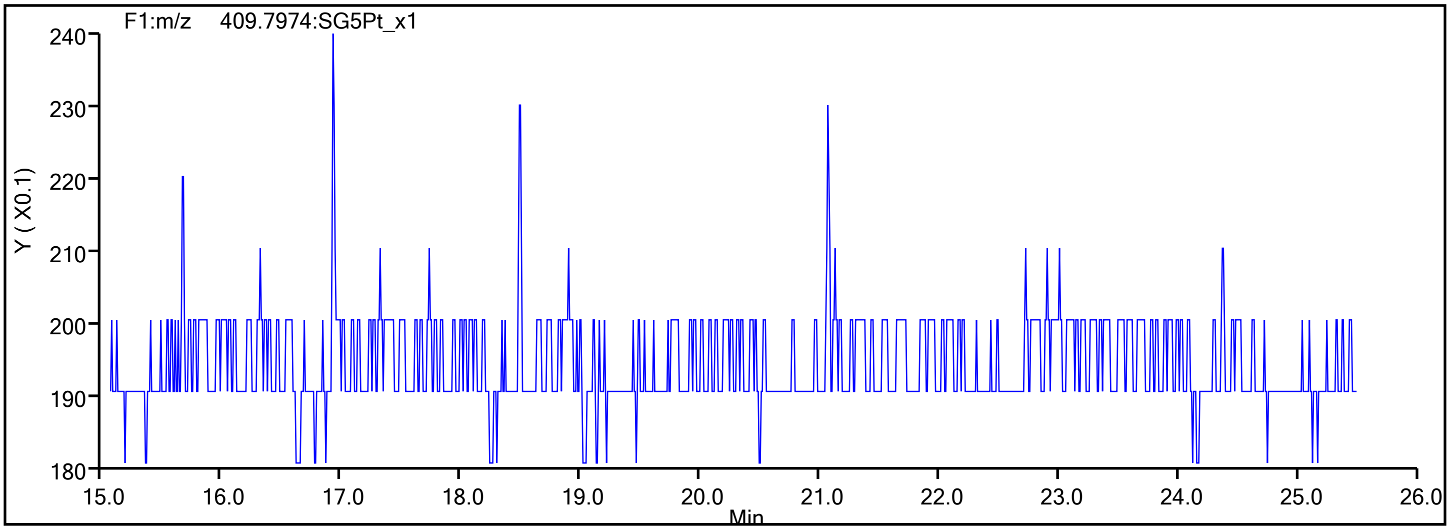

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

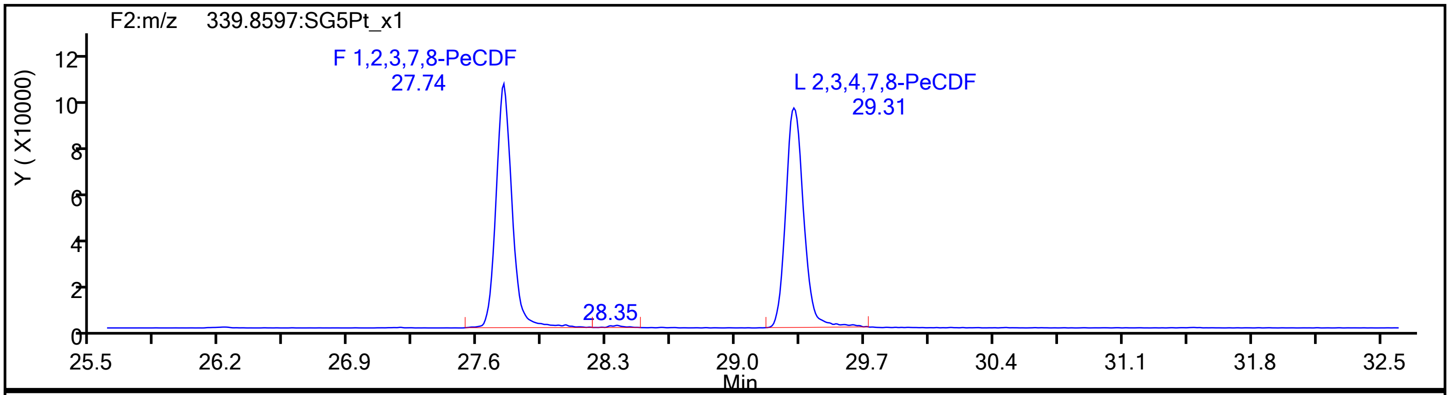

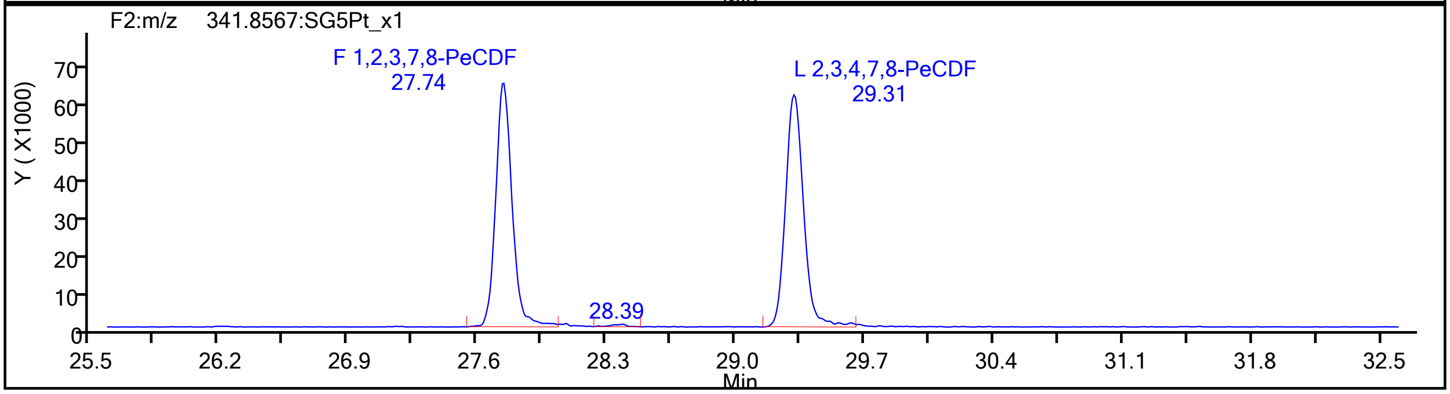

PeCDF Standards

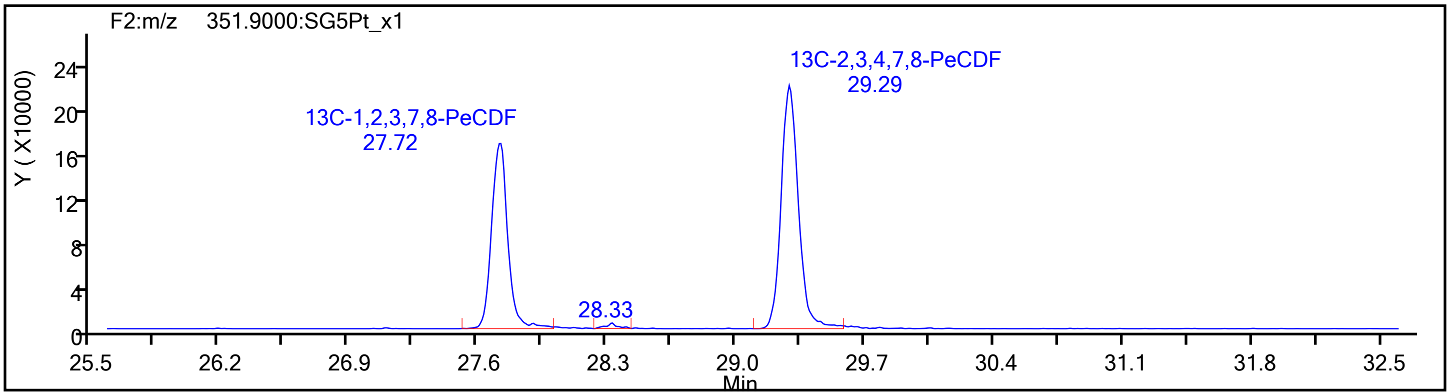

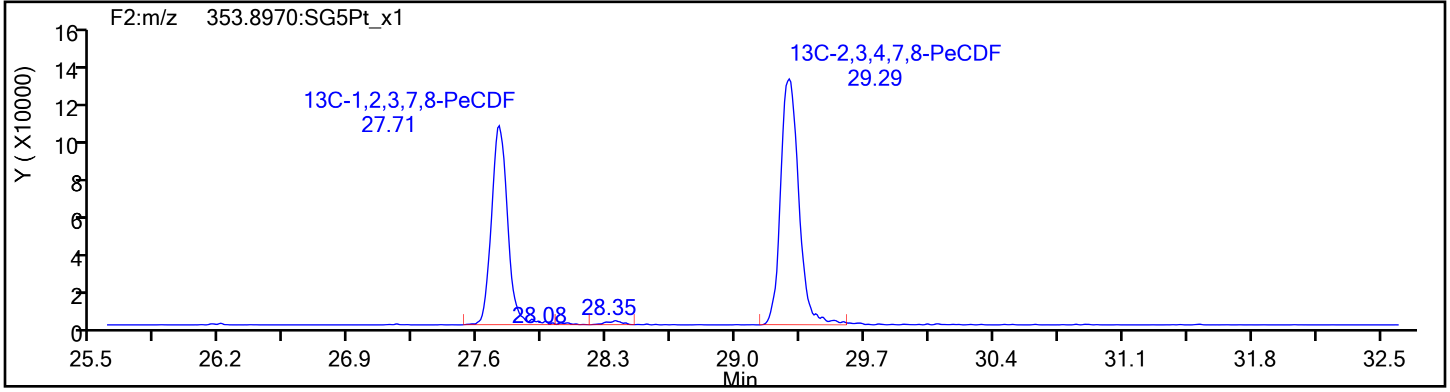

Report Date: 29-Jul-2020 09:28:55
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

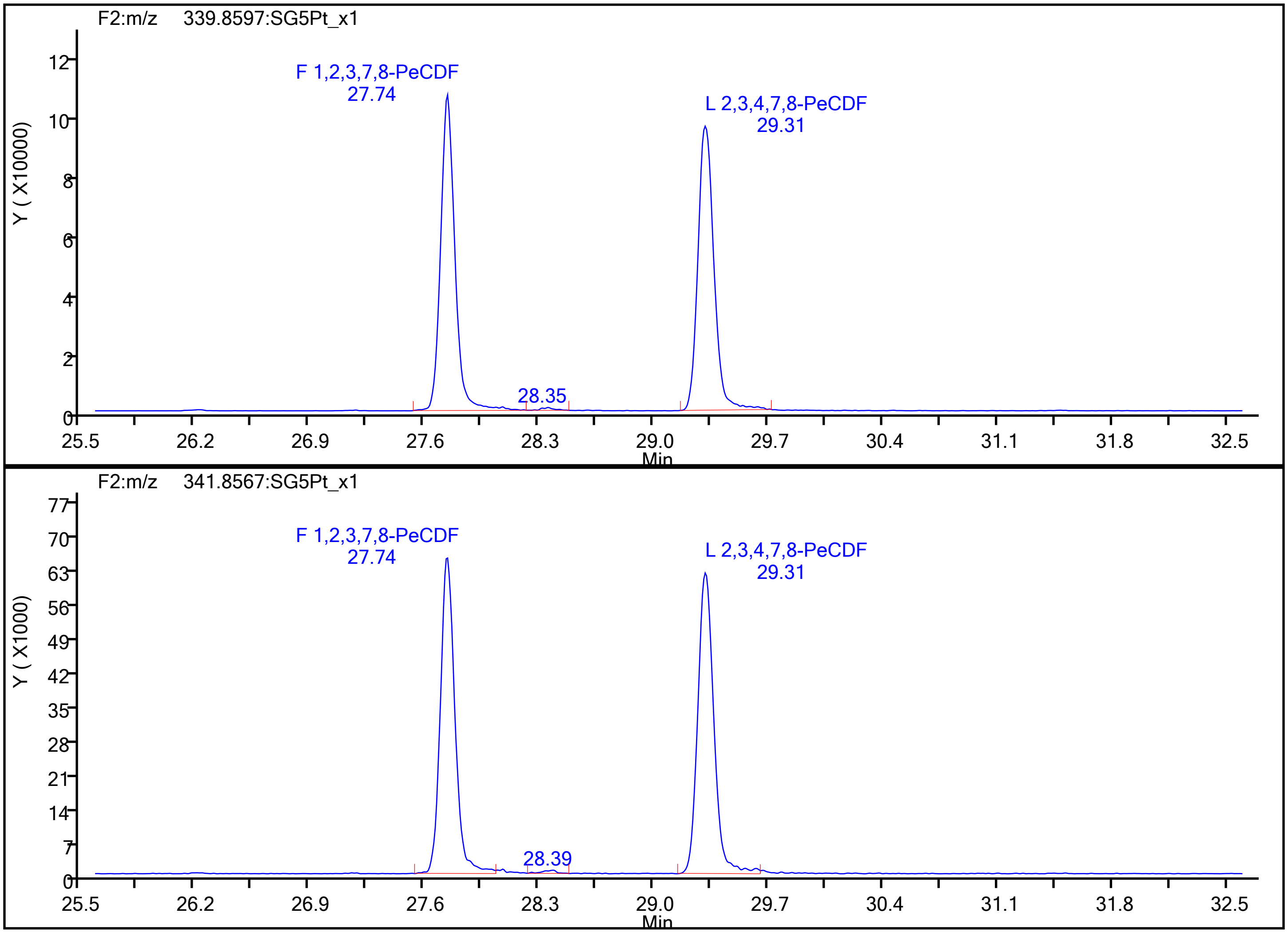

PeCDF Interference Mass

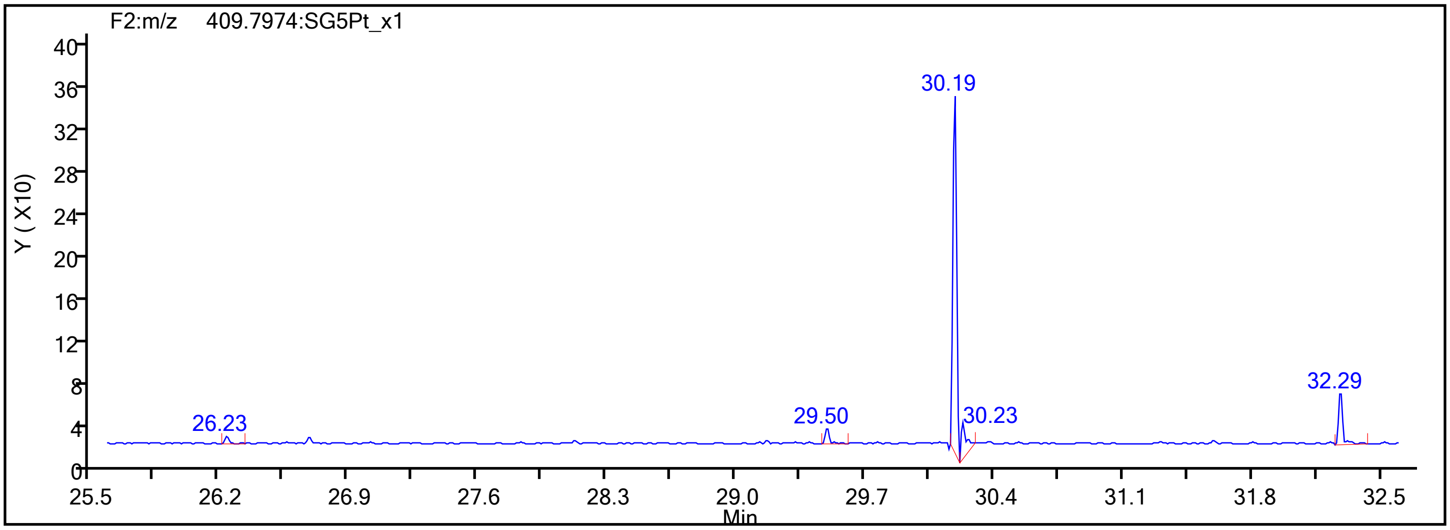

Report Date: 29-Jul-2020 09:28:55   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d
Injection Date: 27-Jul-2020 20:52:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398796   Sample Line#: 6
Column Type: DB-5   Column Dia: 0.32 mm

PeCDD

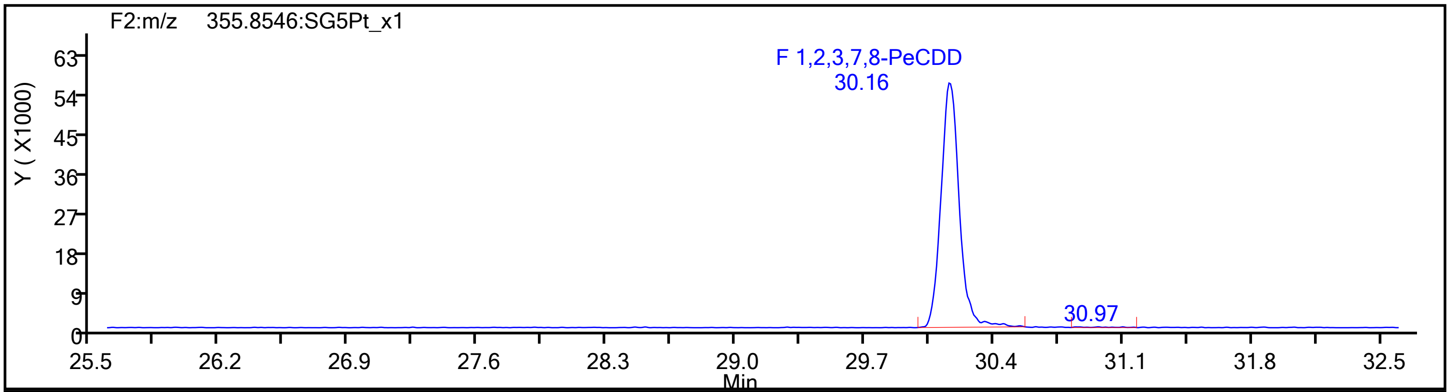

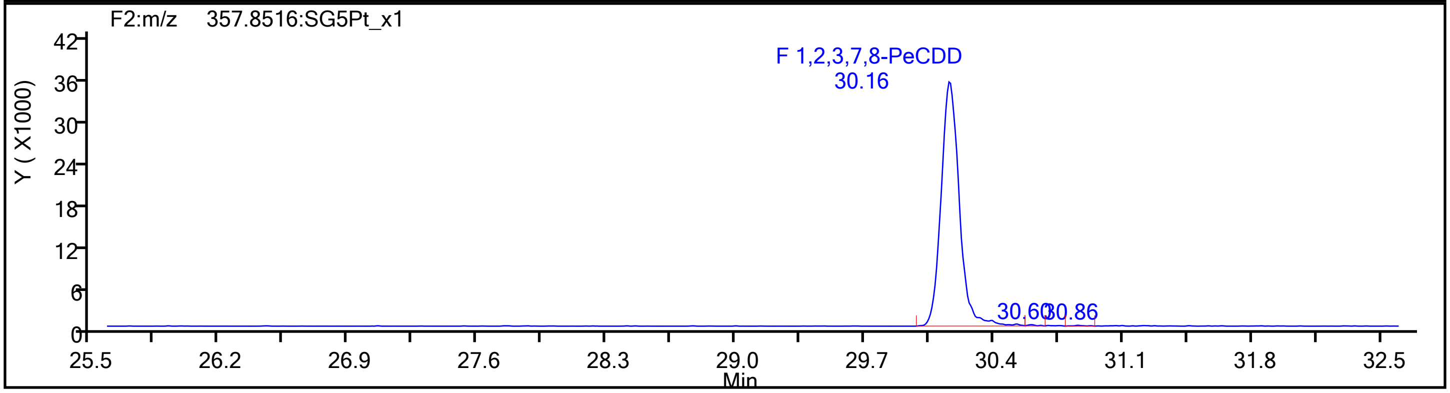

PeCDD Standards

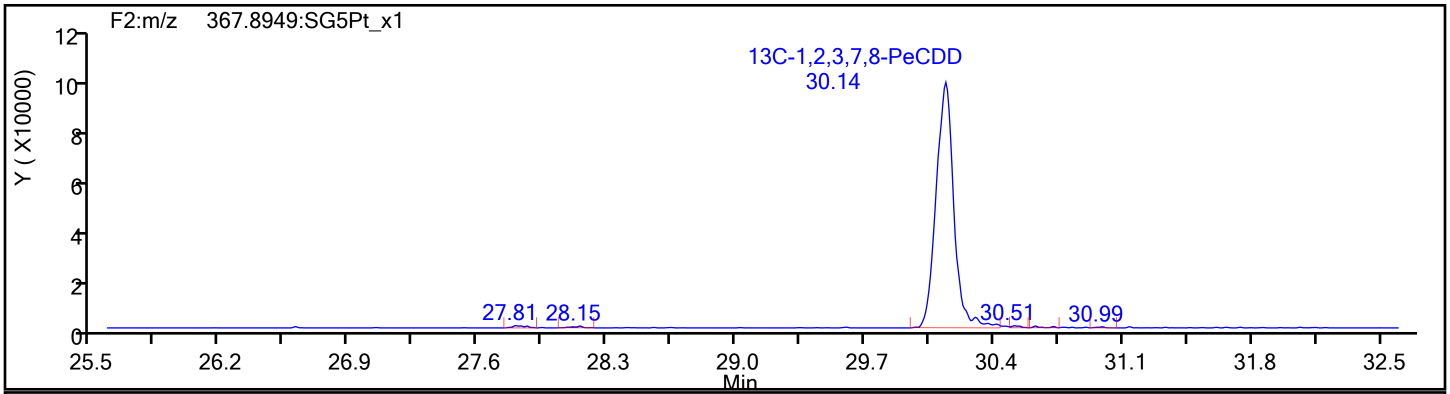

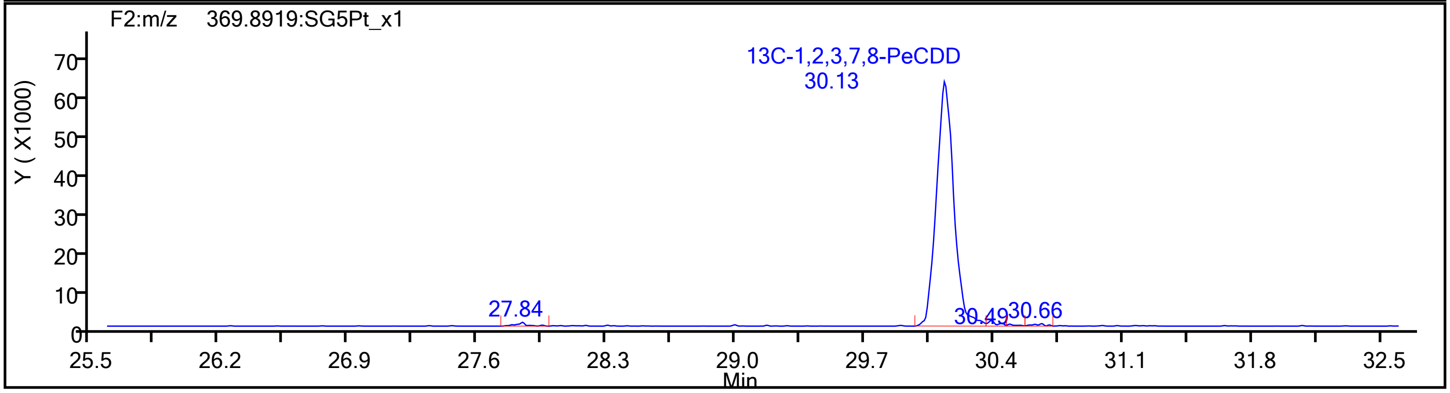

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

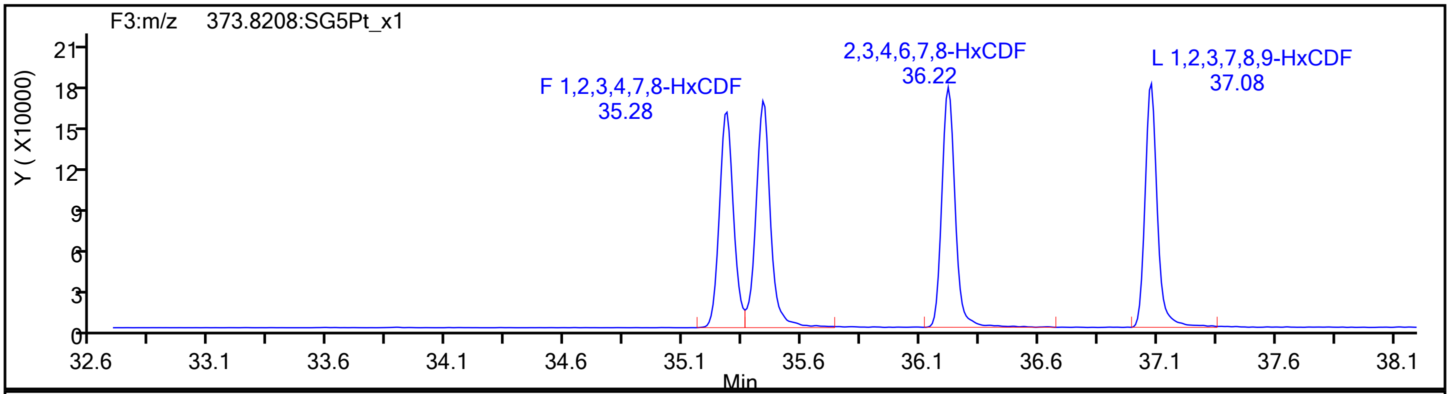

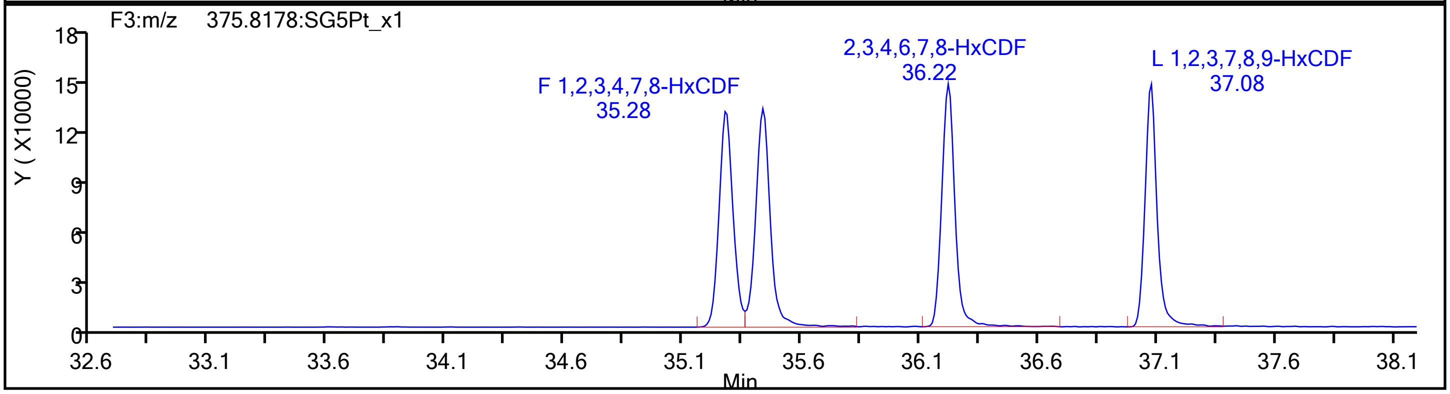

HxCDF Standards

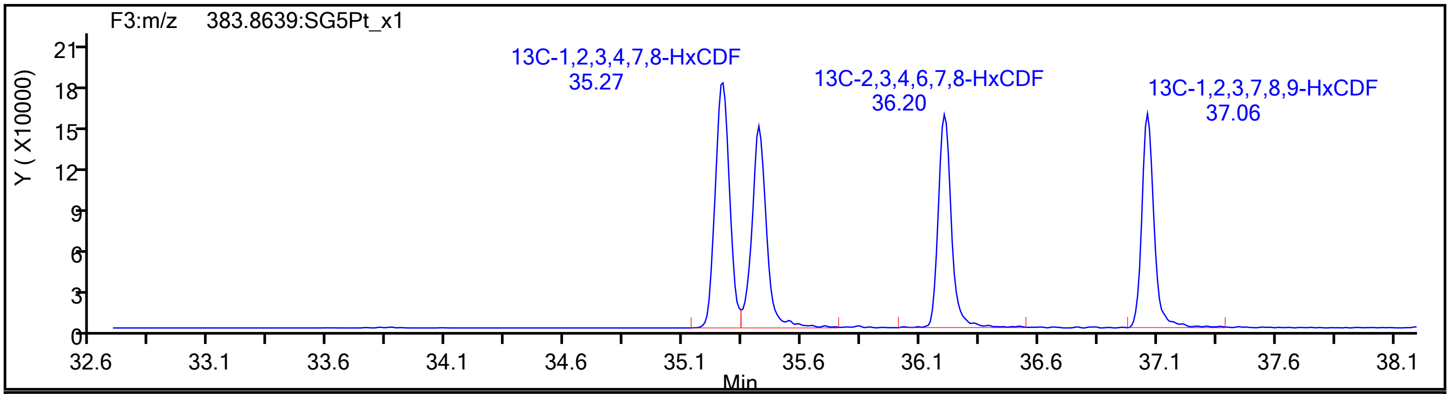

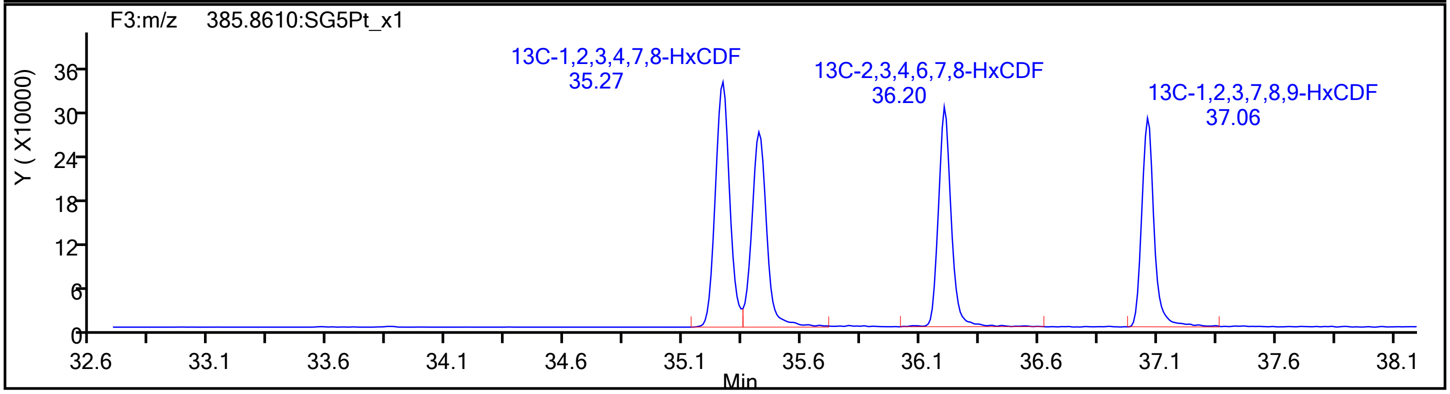

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

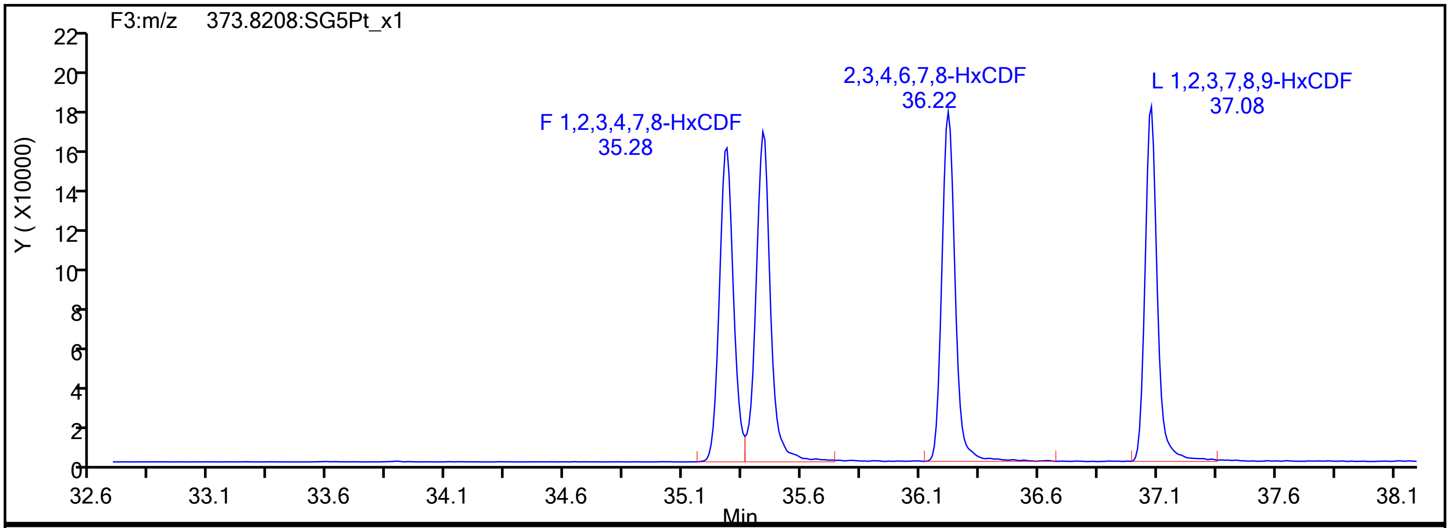

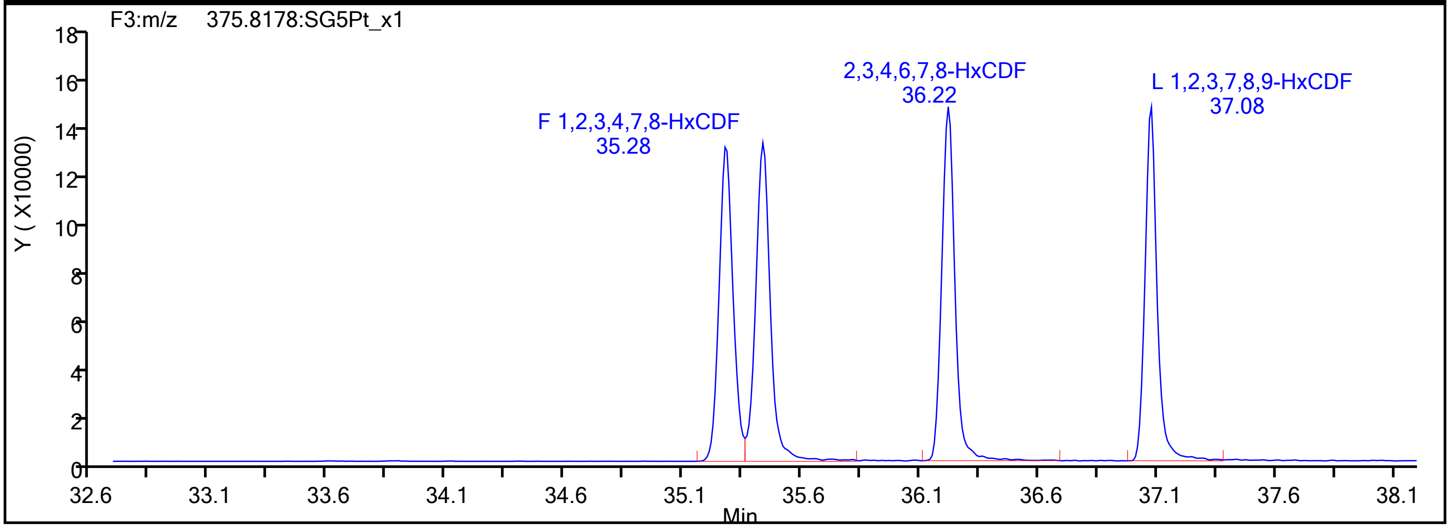

HxCDF Interference Mass

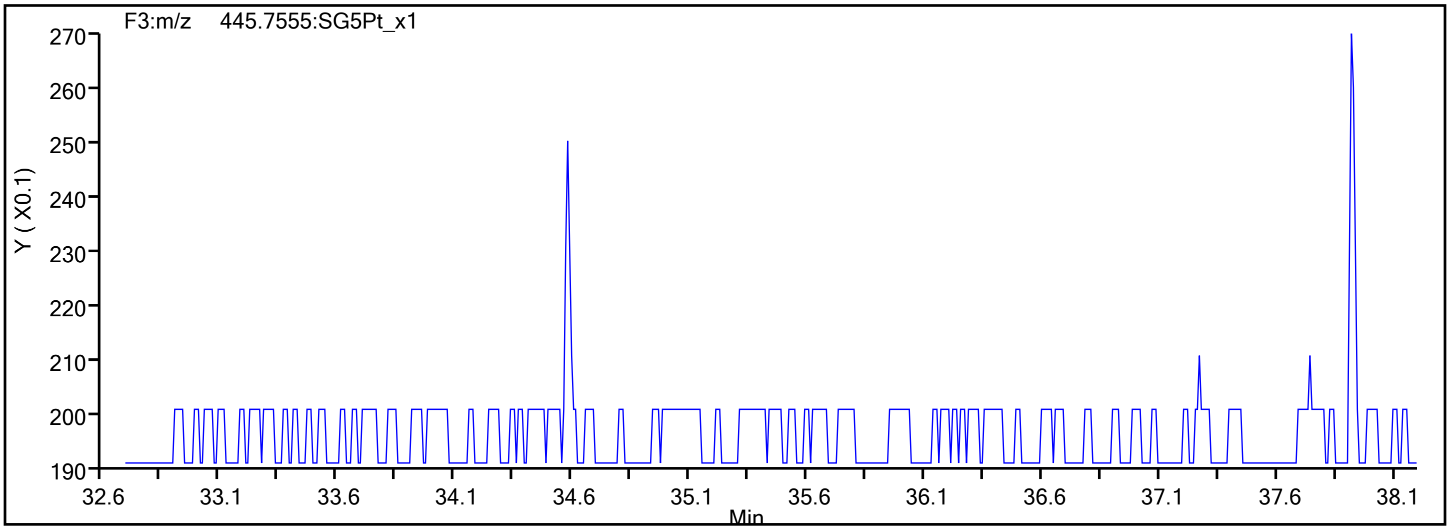

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jul-2020 20:52:00
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Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

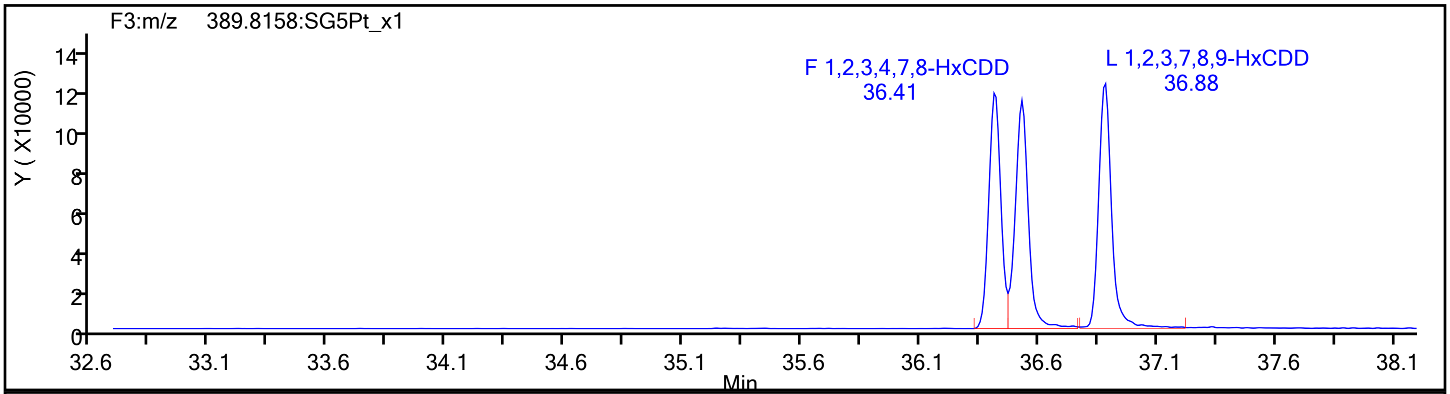

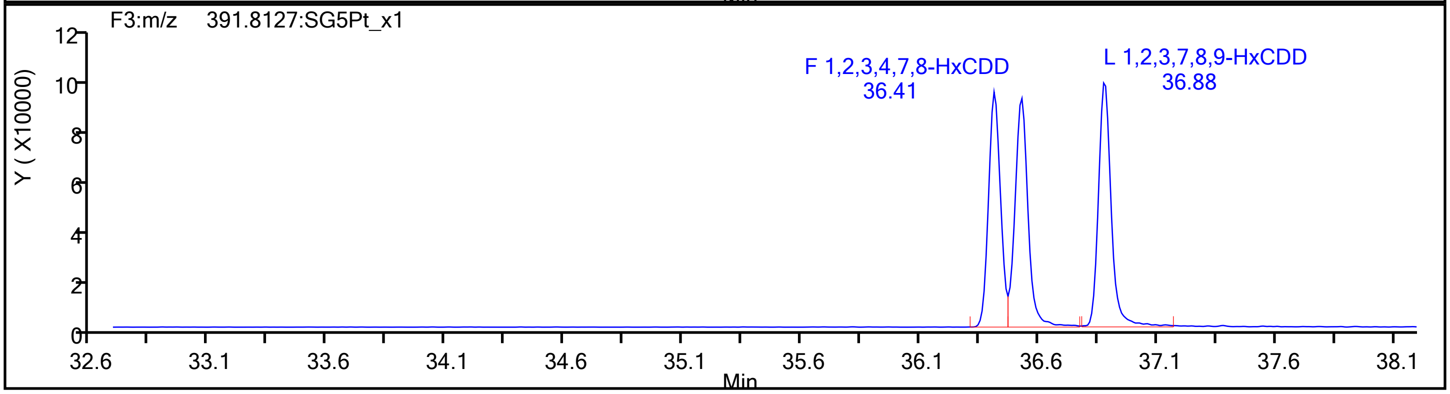

HxCDD Standards

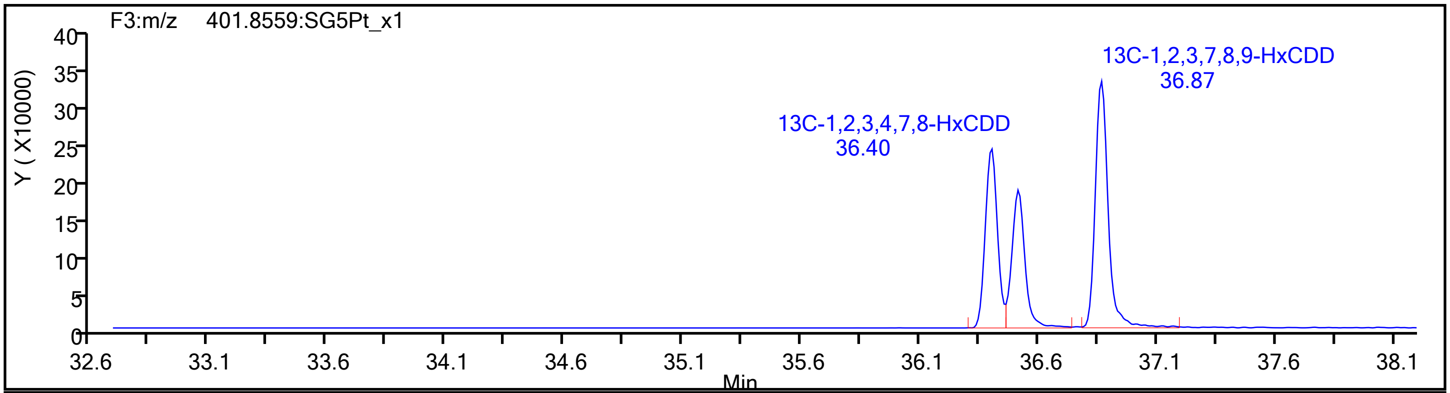

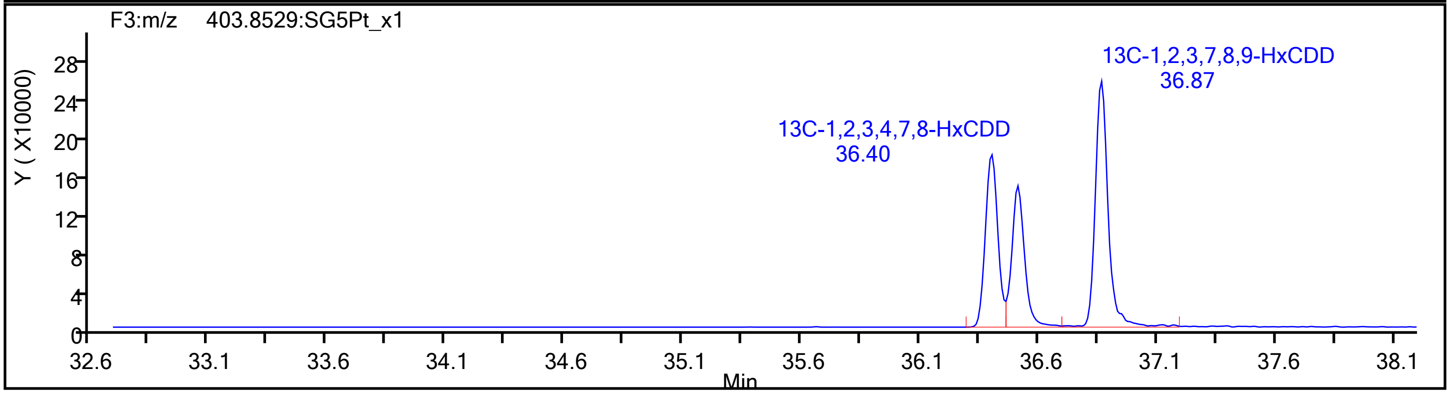

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

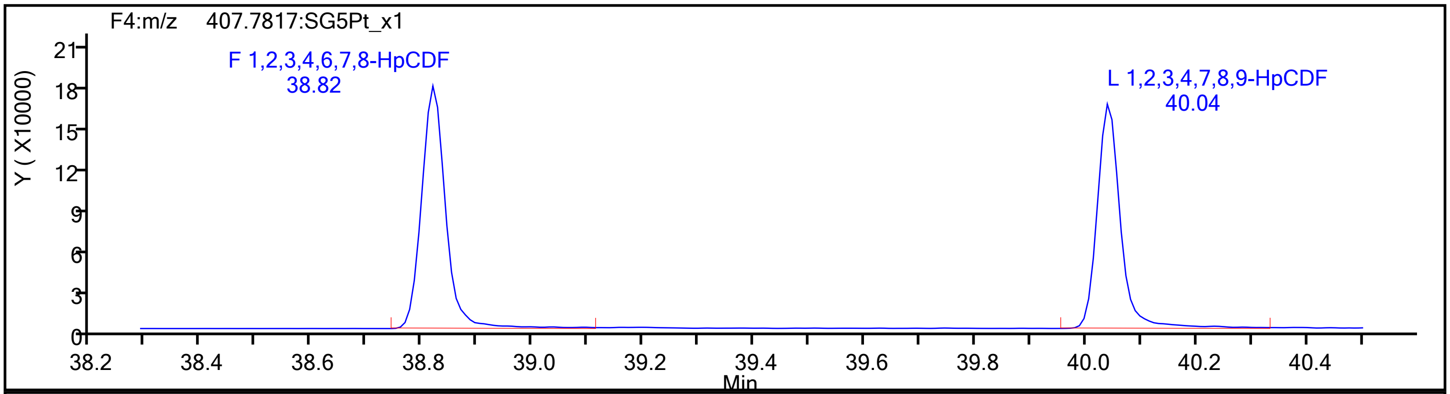

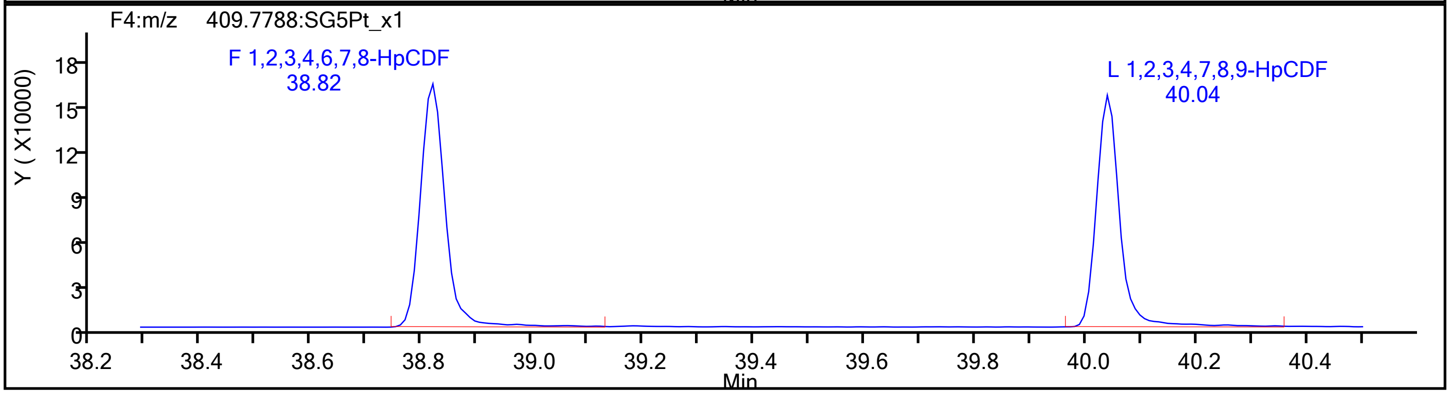

HpCDF Standards

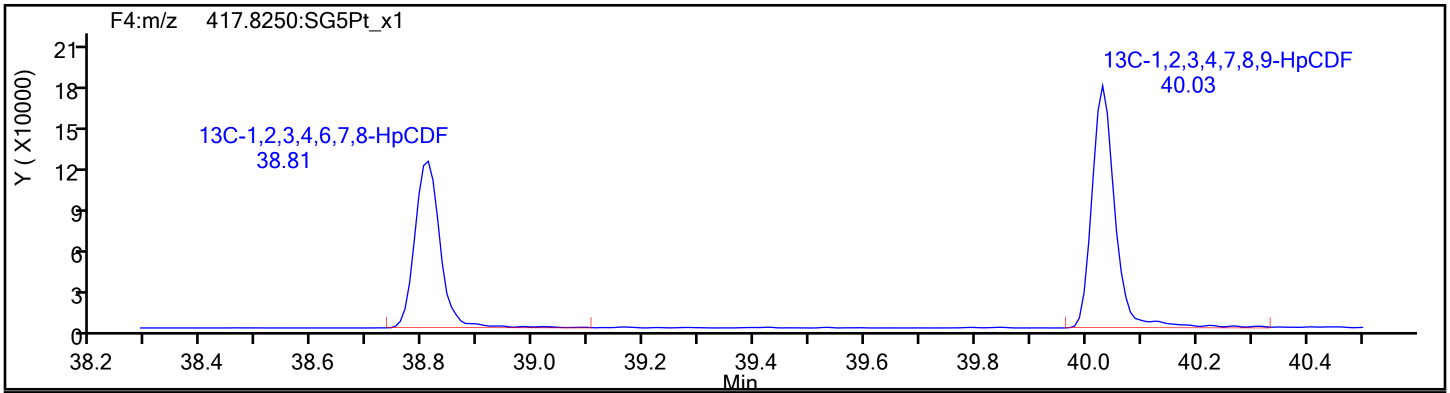

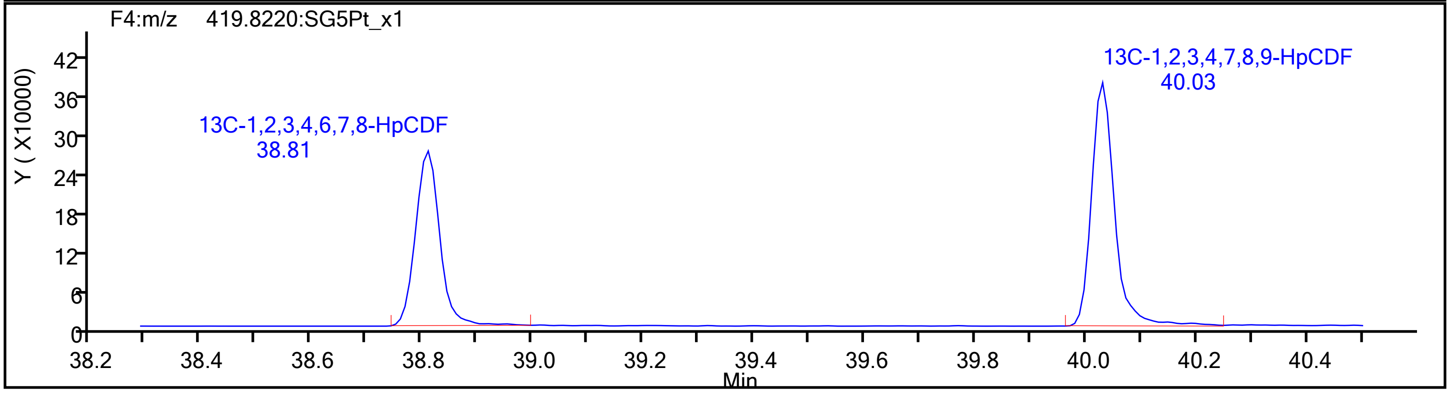

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

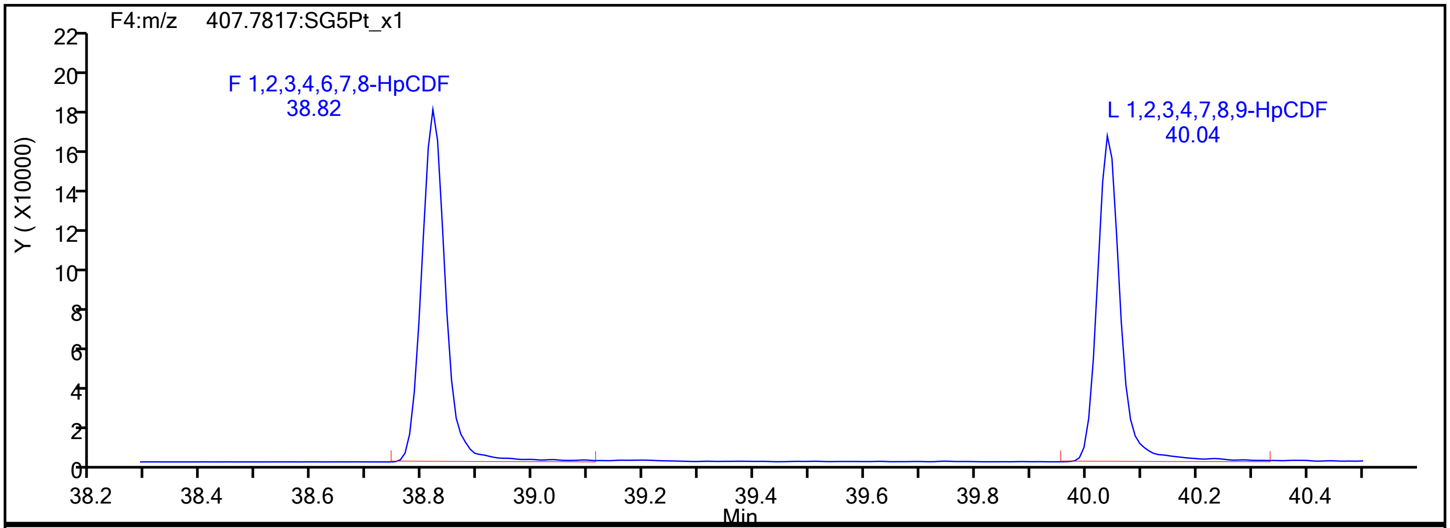

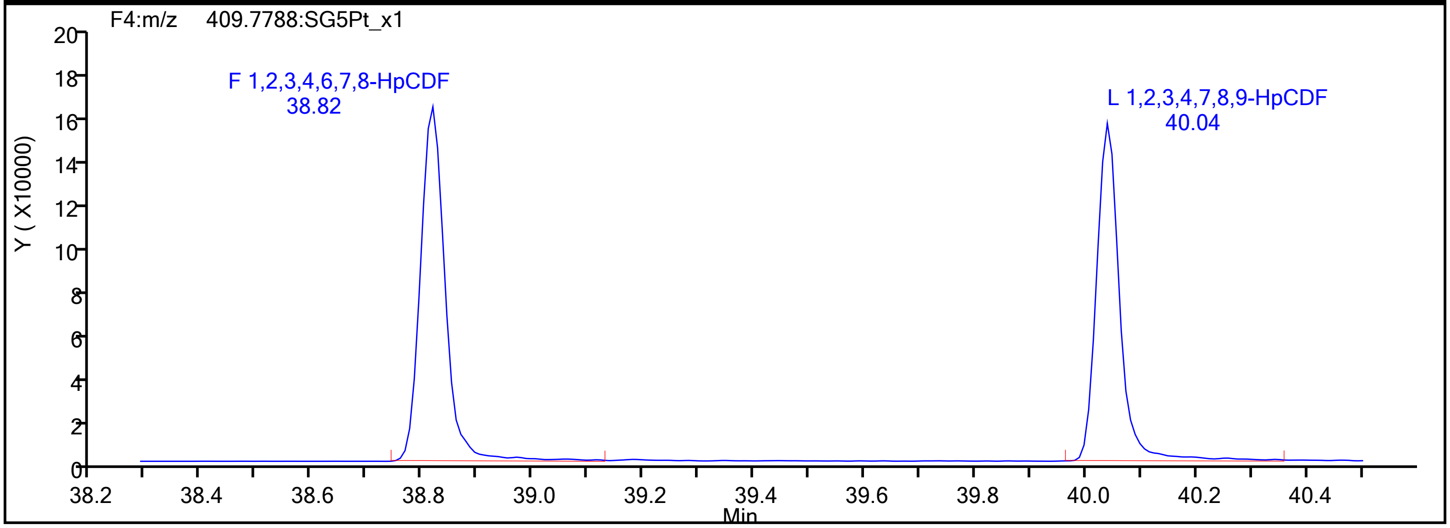

HpCDF Interference Mass

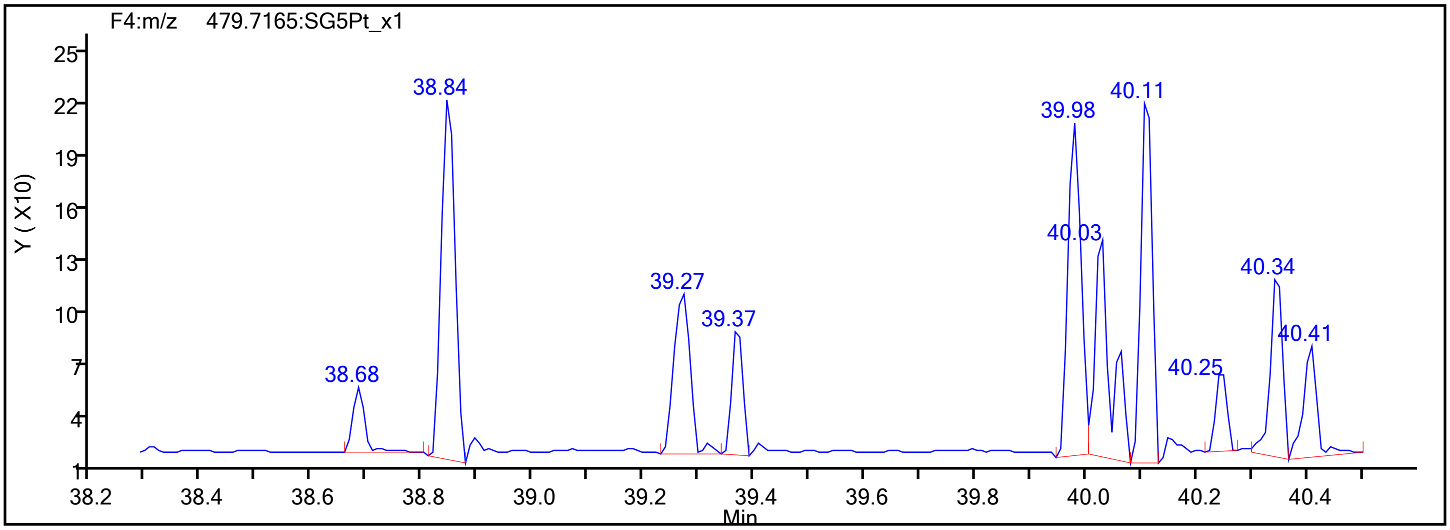

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

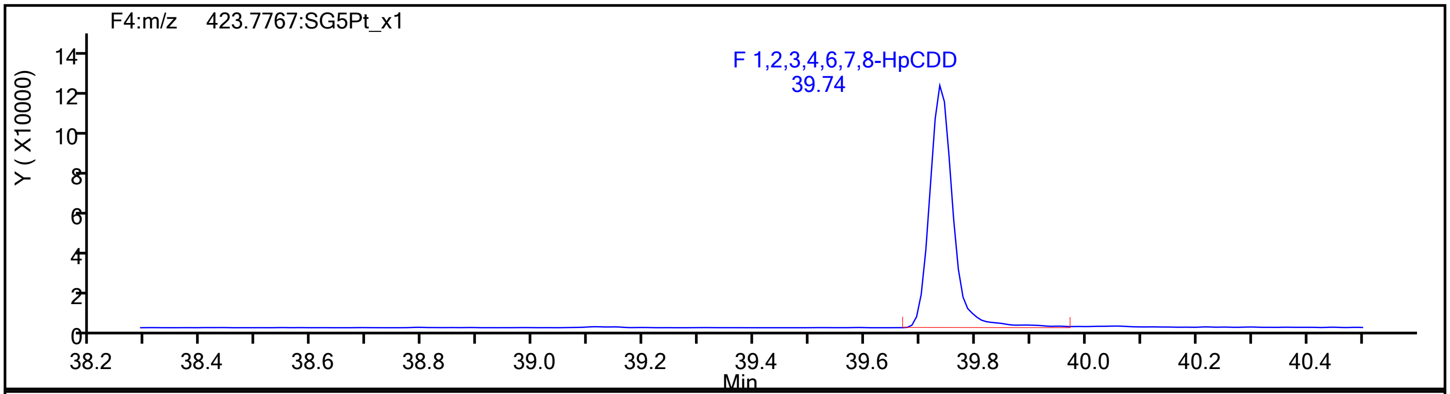

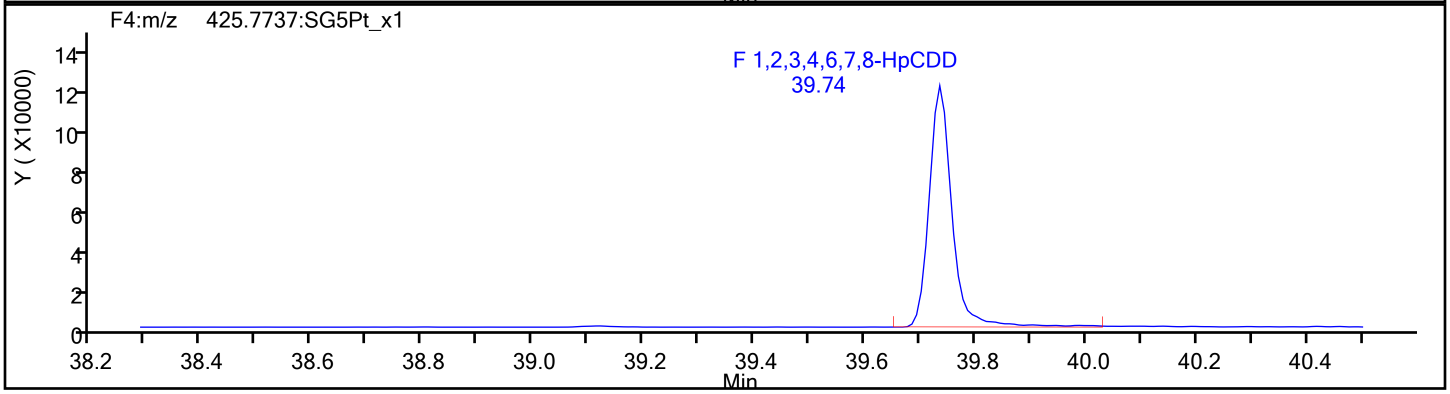

HpCDD Standards

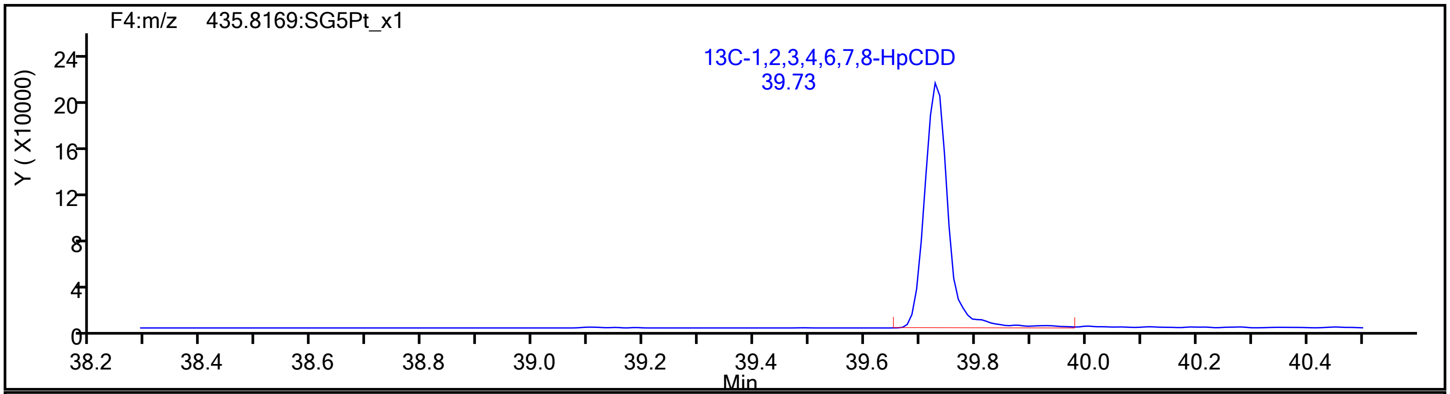

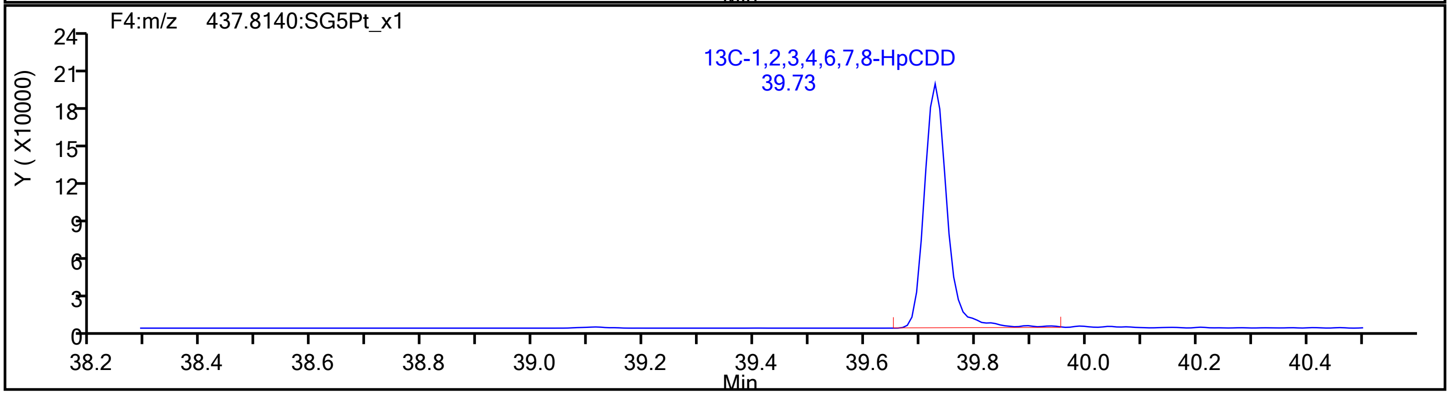

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d

Injection Date: 27-Jul-2020 20:52:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398796

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

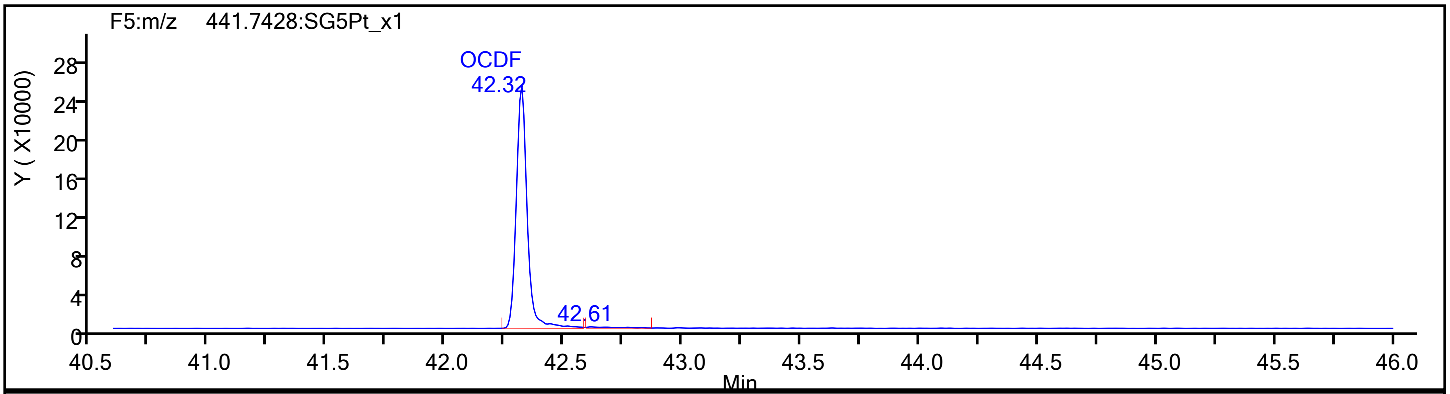

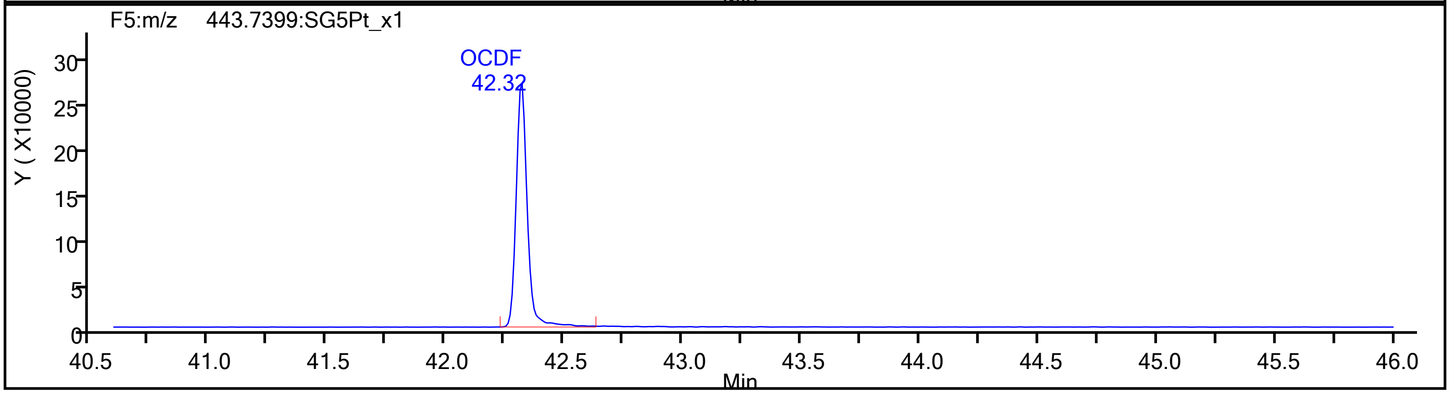

OCDF Standards

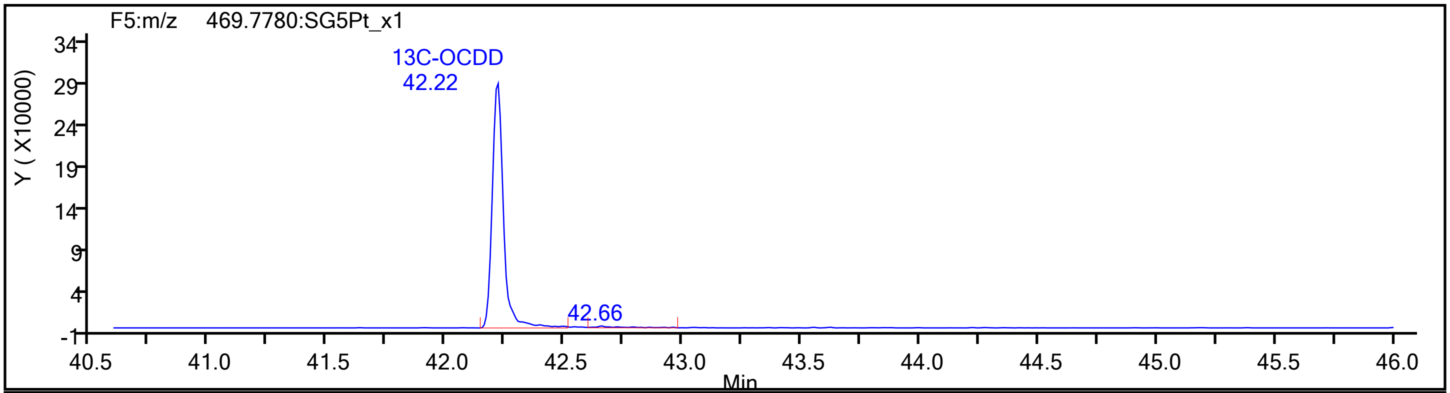

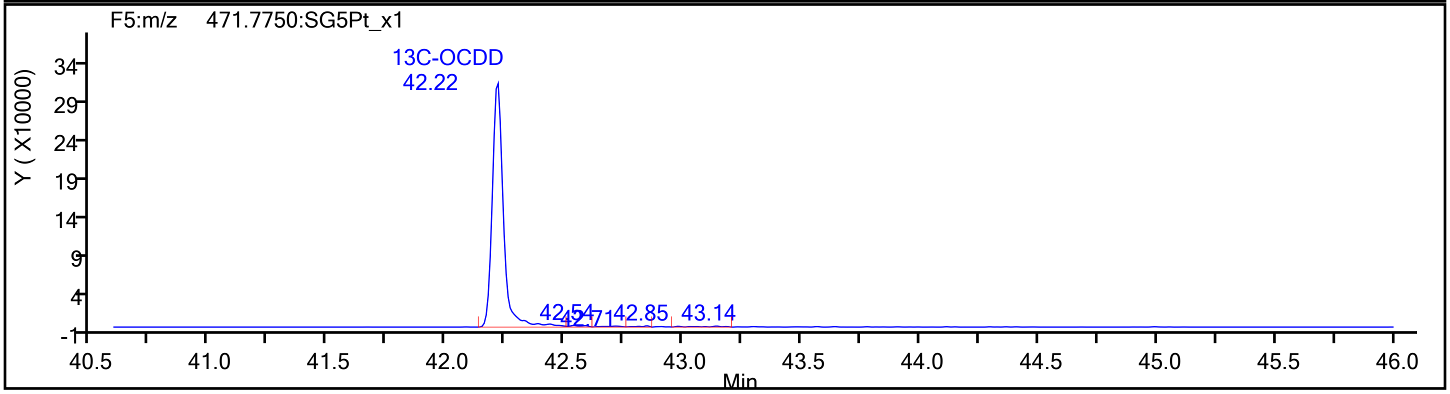

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
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OCDF

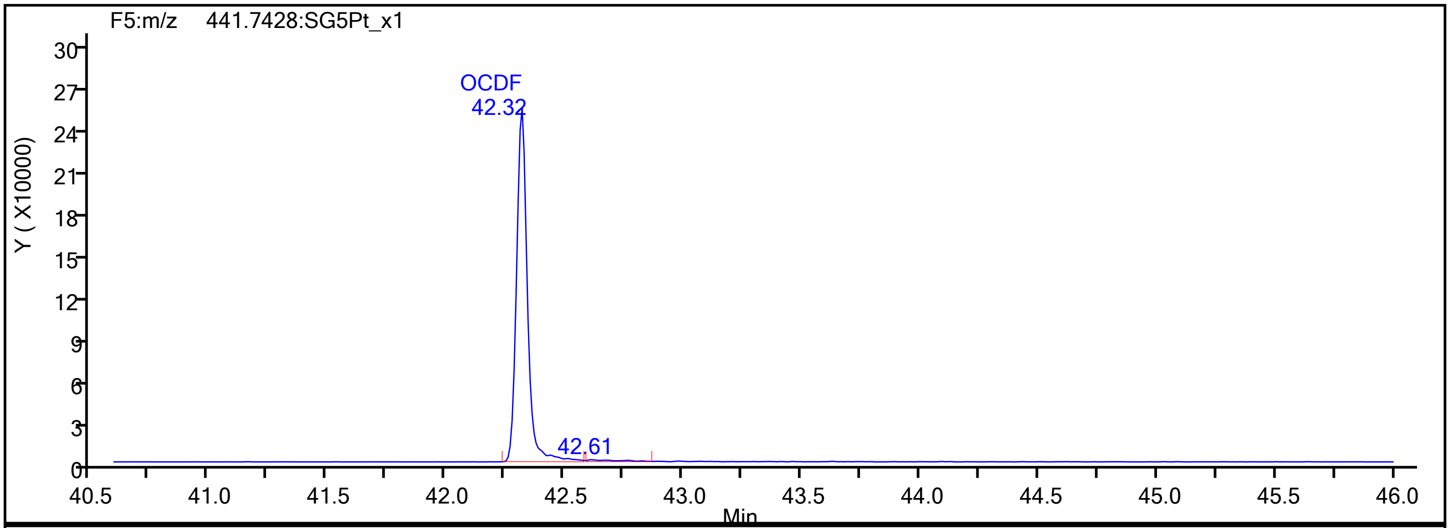

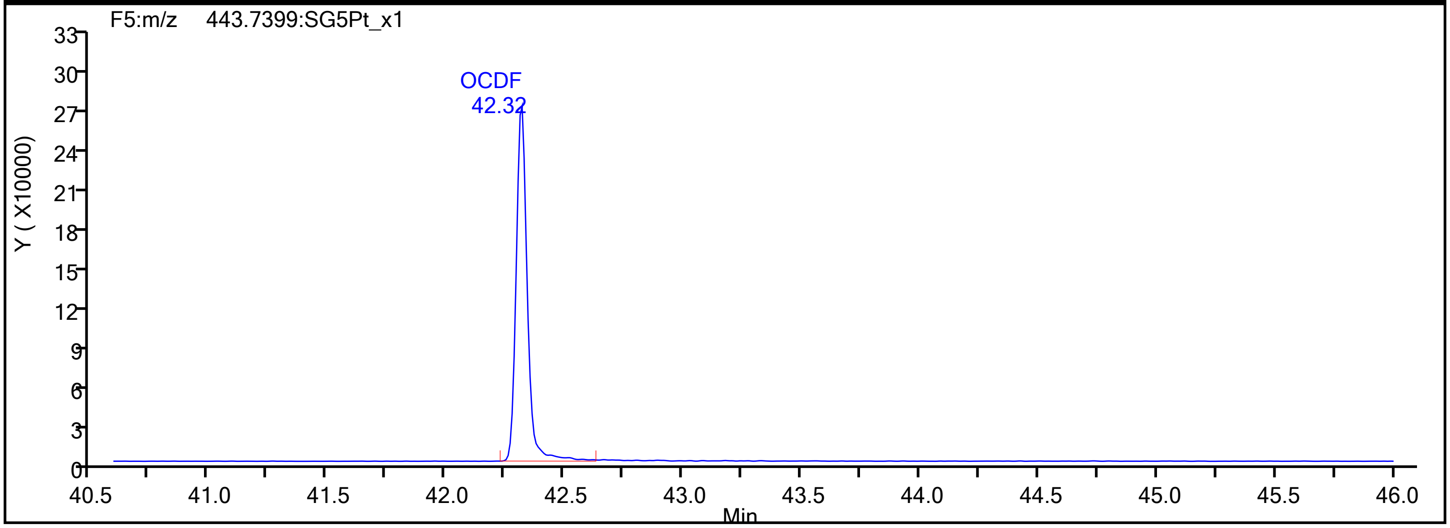

OCDF Interference Mass

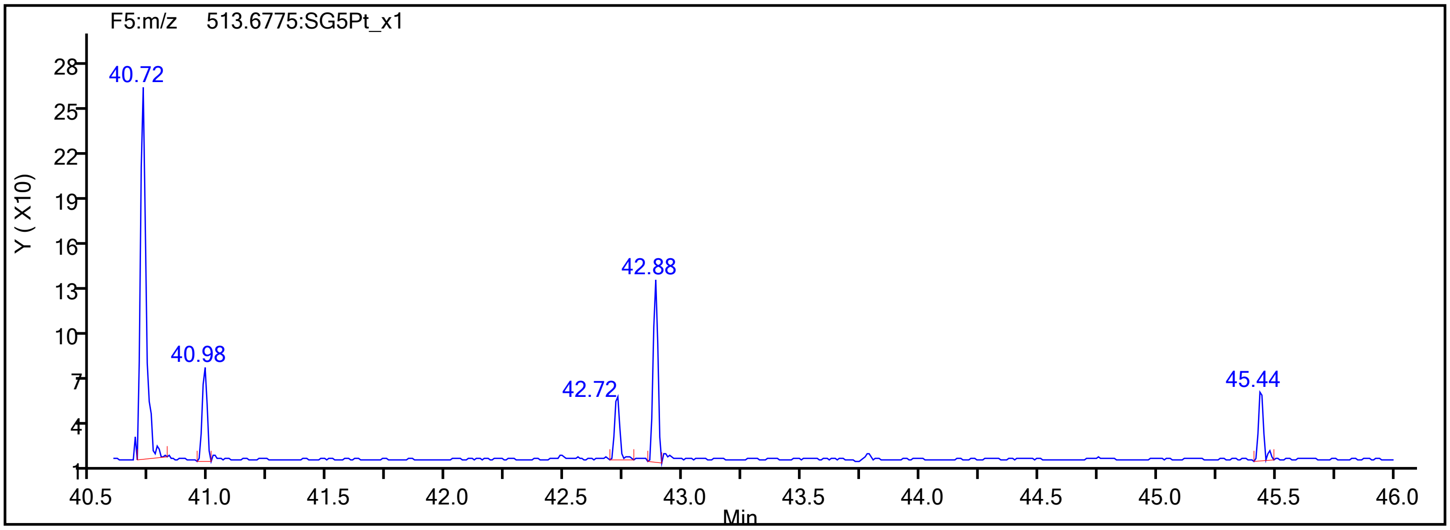

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d		
Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398796	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

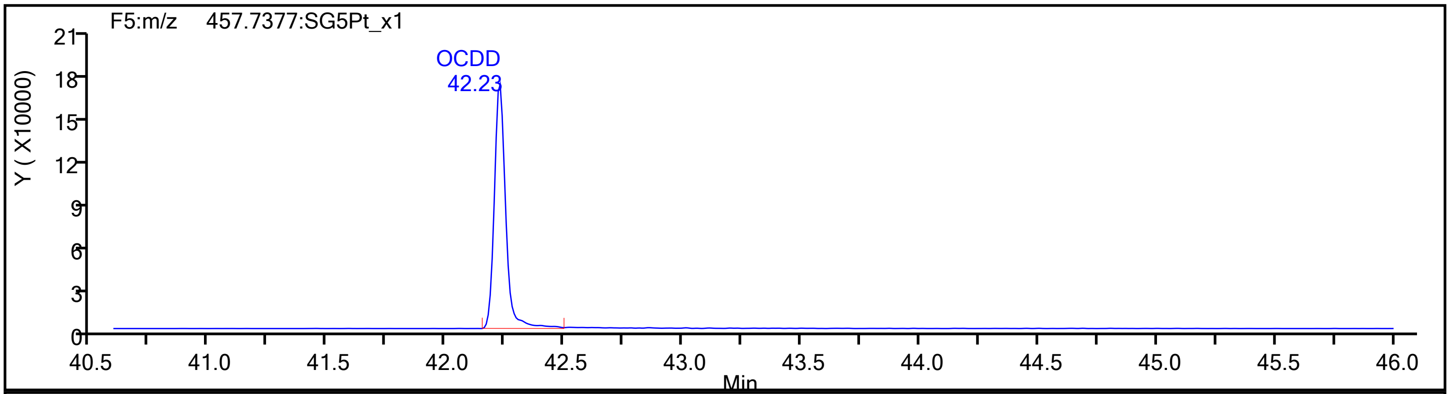

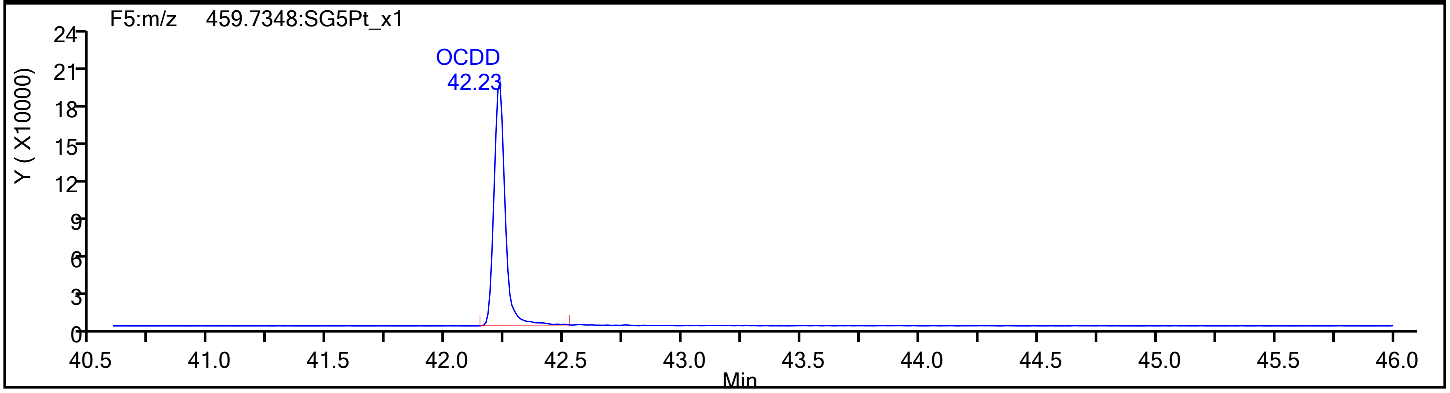

OCDD Standards

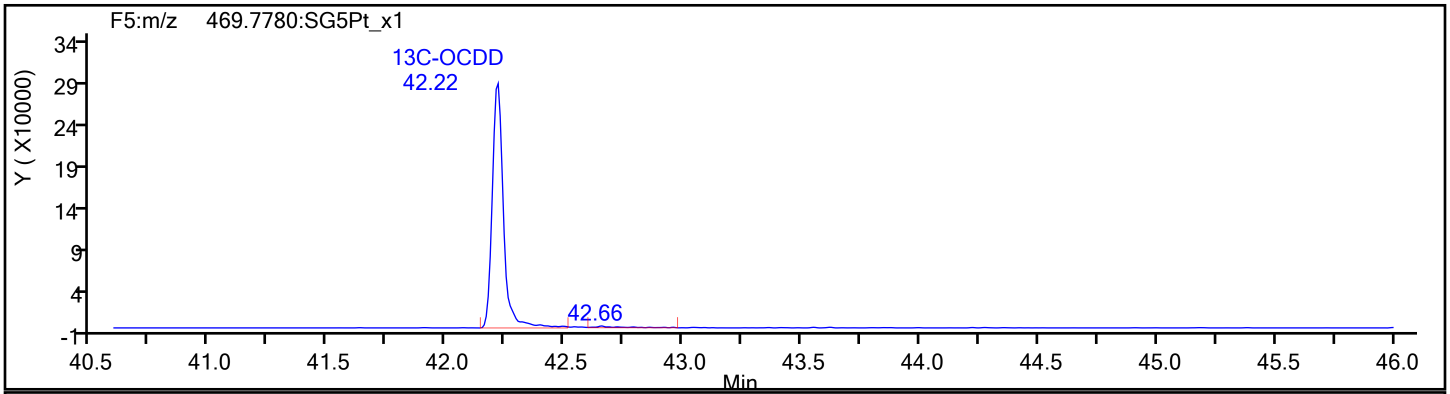

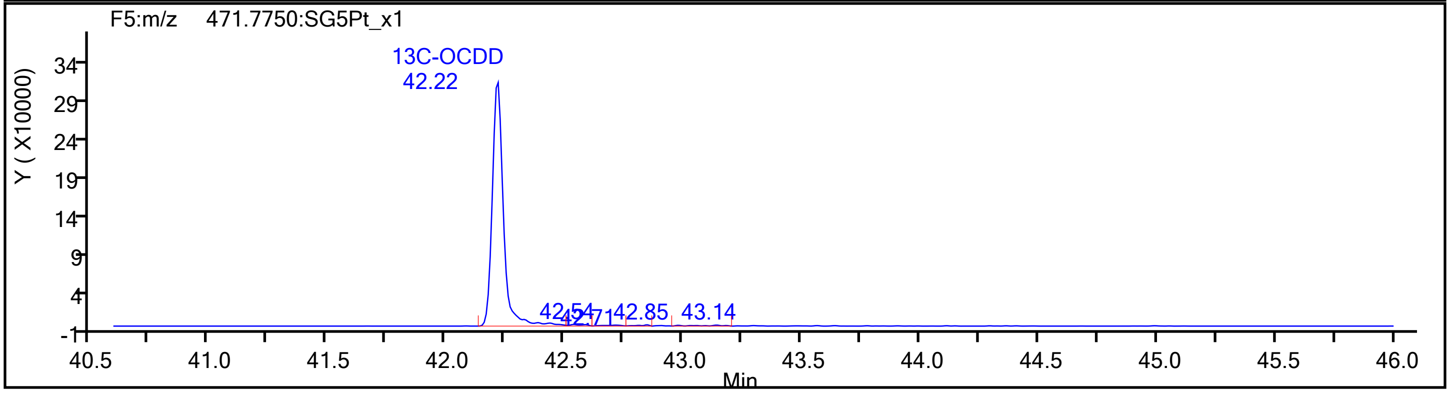

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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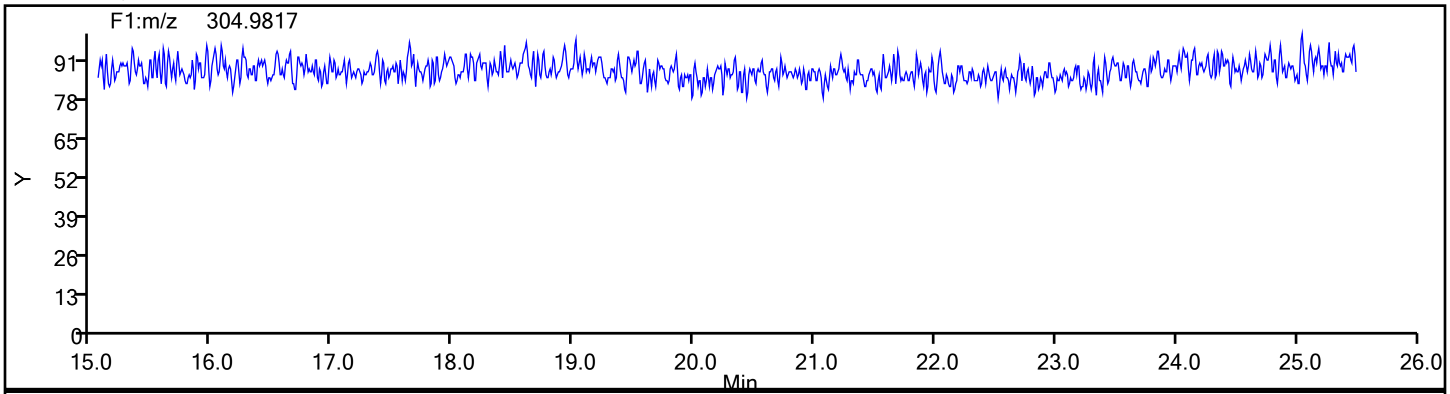

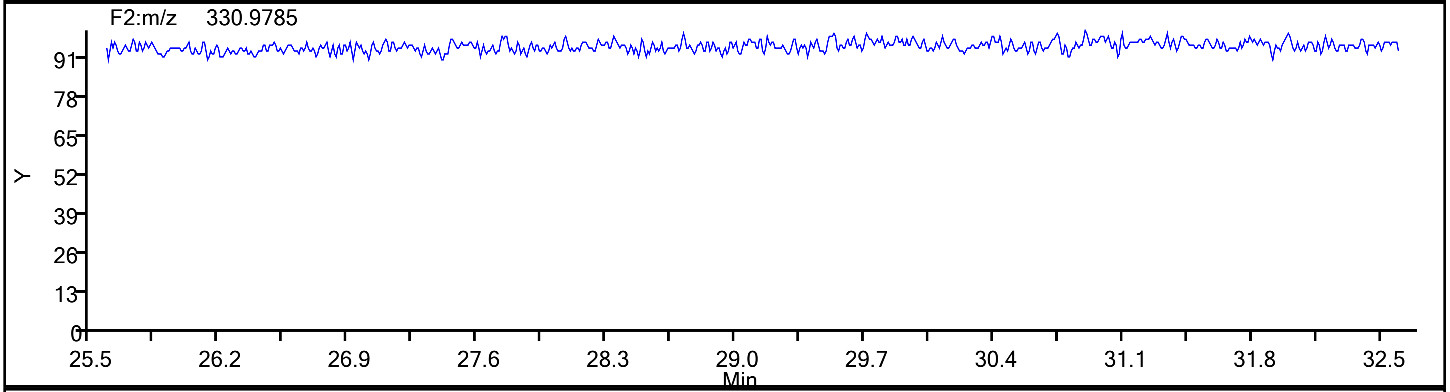

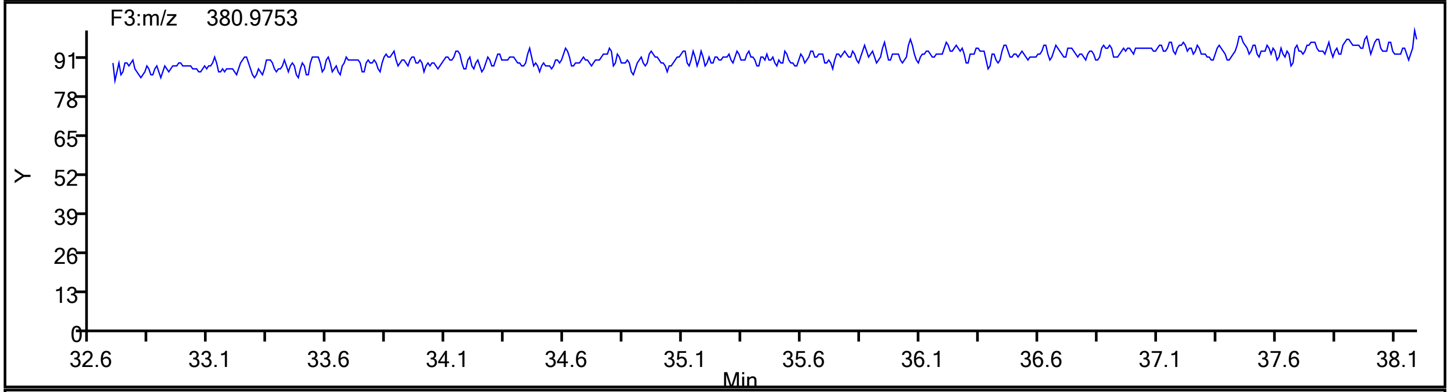

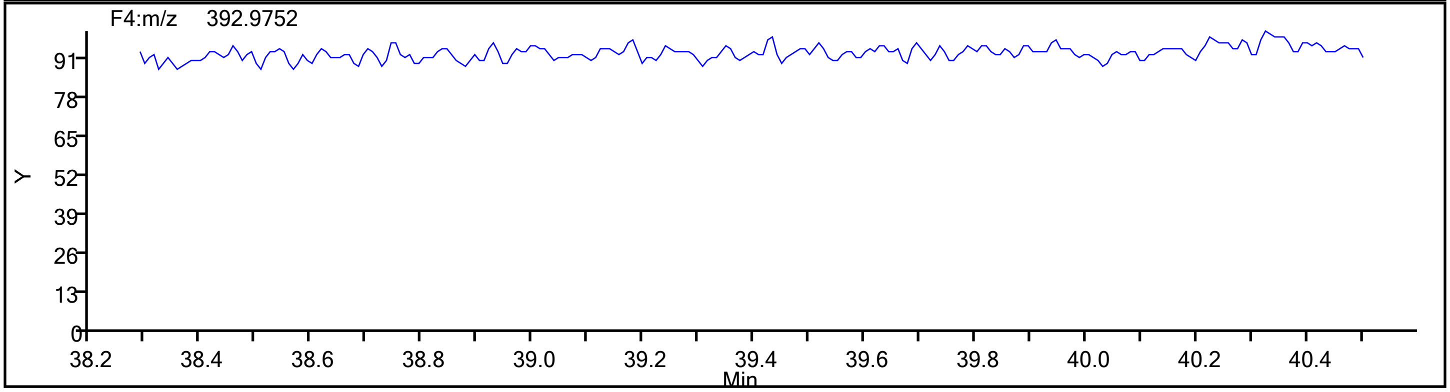

Report Date: 29-Jul-2020 09:28:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200727-100349.b\27jl20bdfs1_7.d

Injection Date:	27-Jul-2020 20:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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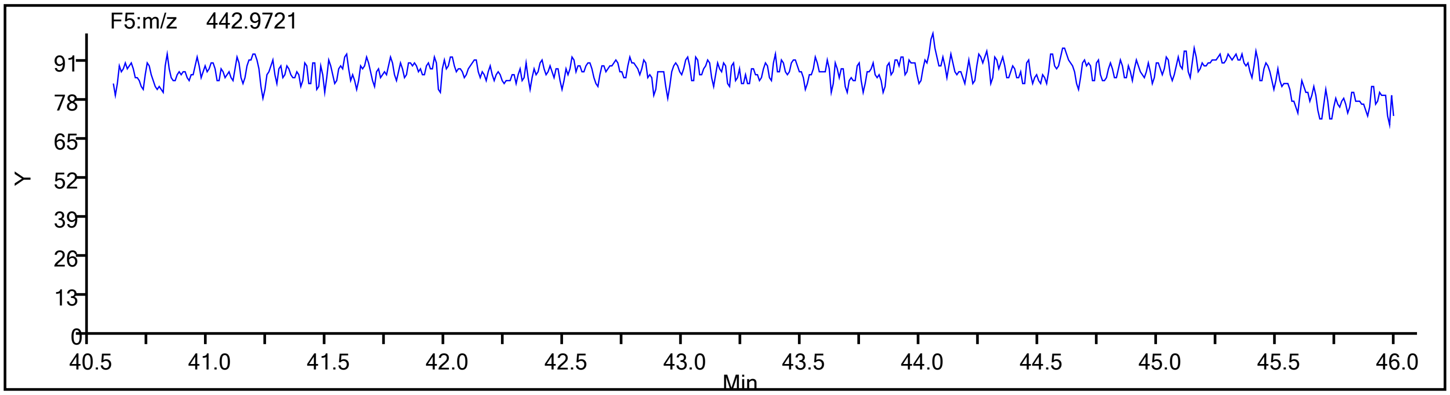

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Start Date: 06/03/2020 12:28

Analysis Batch Number: 383168 End Date: 06/03/2020 20:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-383168/1		06/03/2020 12:28	1	03jn20dfs1_2.d	DB-5 0.32(mm)
IC 320-383168/3		06/03/2020 14:05	1	03jn20dfs1_4.d	DB-5 0.32(mm)
IC 320-383168/4		06/03/2020 14:53	1	03jn20dfs1_5.d	DB-5 0.32(mm)
IC 320-383168/5		06/03/2020 15:42	1	03jn20dfs1_6.d	DB-5 0.32(mm)
IC 320-383168/6		06/03/2020 16:30	1	03jn20dfs1_7.d	DB-5 0.32(mm)
IC 320-383168/7		06/03/2020 17:18	1	03jn20dfs1_8.d	DB-5 0.32(mm)
IC 320-383168/8		06/03/2020 18:06	1	03jn20dfs1_9.d	DB-5 0.32(mm)
ICV 320-383168/10		06/03/2020 20:01	1	03jn20dfs1_12.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Start Date: 07/27/2020 16:52

Analysis Batch Number: 398796 End Date: 07/28/2020 00:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-398796/1		07/27/2020 16:52	1	27jl20bdfs1_2.d	DB-5 0.32(mm)
WDM 320-398796/2		07/27/2020 17:40	1	27jl20bdfs1_3.d	DB-5 0.32(mm)
ZZZZZ		07/27/2020 18:28	1		DB-5 0.32(mm)
MB 320-397938/1-A		07/27/2020 19:16	1	27jl20bdfs1_5.d	DB-5 0.32(mm)
LCS 320-397938/2-A		07/27/2020 20:04	1	27jl20bdfs1_6.d	DB-5 0.32(mm)
LCSD 320-397938/3-A		07/27/2020 20:52	1	27jl20bdfs1_7.d	DB-5 0.32(mm)
ZZZZZ		07/27/2020 22:28	1		DB-5 0.32(mm)
ZZZZZ		07/28/2020 00:04	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Start Date: 07/28/2020 02:48

Analysis Batch Number: 398798 End Date: 07/28/2020 10:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-398798/13		07/28/2020 02:48	1	27jl20bdfs1_15.d	DB-5 0.32(mm)
CCV 320-398798/14		07/28/2020 03:36	1	27jl20bdfs1_16.d	DB-5 0.32(mm)
ZZZZZ		07/28/2020 05:13	1		DB-5 0.32(mm)
ZZZZZ		07/28/2020 06:01	1		DB-5 0.32(mm)
320-62886-1		07/28/2020 07:37	1	27jl20bdfs1_21.d	DB-5 0.32(mm)
320-62886-2		07/28/2020 08:25	1	27jl20bdfs1_22.d	DB-5 0.32(mm)
320-62886-3		07/28/2020 09:13	1	27jl20bdfs1_23.d	DB-5 0.32(mm)
320-62886-4		07/28/2020 10:01	1	27jl20bdfs1_24.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/29/2020 10:53

Analysis Batch Number: 399540 End Date: 07/29/2020 17:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-399540/1		07/29/2020 10:53	1	29JL2011D2_001.d	DB-225 0.32(mm)
CCV 320-399540/2		07/29/2020 11:31	1	29JL2011D2_002.d	DB-225 0.32(mm)
320-62886-3 RA		07/29/2020 15:21	1	29JL2011D2_008.d	DB-225 0.32(mm)
320-62886-4 RA		07/29/2020 15:59	1	29JL2011D2_009.d	DB-225 0.32(mm)
ZZZZZ		07/29/2020 16:38	1		DB-225 0.32(mm)
ZZZZZ		07/29/2020 17:16	1		DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: DFS 1 Start Date: 07/30/2020 12:02

Analysis Batch Number: 399843 End Date: 07/30/2020 20:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-399843/1		07/30/2020 12:02	1	30jl20dfs1_2.d	DB-5 0.32(mm)
CCV 320-399843/2		07/30/2020 12:50	1	30jl20dfs1_3.d	DB-5 0.32(mm)
ZZZZZ		07/30/2020 14:28	1		DB-5 0.32(mm)
320-62886-1 DL		07/30/2020 20:05	5	30jl20dfs1_12.d	DB-5 0.32(mm)
320-62886-2 DL		07/30/2020 20:53	20	30jl20dfs1_13.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/30/2020 13:09

Analysis Batch Number: 399853 End Date: 07/30/2020 16:21

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-399853/1		07/30/2020 13:09	1	30JL2011D2_001.d	DB-225 0.32(mm)
CCV 320-399853/2		07/30/2020 13:48	1	30JL2011D2_002.d	DB-225 0.32(mm)
320-62886-1 RADL		07/30/2020 15:43	5	30JL2011D2_005.d	DB-225 0.32(mm)
320-62886-2 RADL		07/30/2020 16:21	20	30JL2011D2_006.d	DB-225 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-62886-1

SDG No.:

Batch Number: 397938 Batch Start Date: 07/24/20 12:26 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 07/27/20 13:07

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RoundBottomID
MB 320-397938/1		1613B, 1613B				1000 mL	20.0 uL	SS1-1	N/A
LCS 320-397938/2		1613B, 1613B				1000 mL	20.0 uL	SS1-2	N/A
LCSD 320-397938/3		1613B, 1613B				1000 mL	20.0 uL	SS1-3	N/A
320-62886-A-1	11215702-Initial	1613B, 1613B	T	1565.6 g	511.16 g	1054.4 mL	20.0 uL	D-1	N/A
320-62886-A-2	11215702-Control	1613B, 1613B	T	1566.1 g	506.79 g	1059.3 mL	20.0 uL	D-2	N/A
320-62886-A-3	11215702-Treatment-1	1613B, 1613B	T	1566.6 g	504.13 g	1062.5 mL	20.0 uL	D-3	N/A
320-62886-A-4	11215702-Treatment-2	1613B, 1613B	T	1563.6 g	504.44 g	1059.2 mL	20.0 uL	D-4	N/A

Lab Sample ID	Client Sample ID	Method Chain	Basis	RotoVapID	HRDXNIDA 00431	HRDXNIS 00129	HRDXNSU 00239	HRDXNTA 00121	
MB 320-397938/1		1613B, 1613B		4	1 mL	20 uL	1 mL		
LCS 320-397938/2		1613B, 1613B		6	1 mL	20 uL	1 mL	50 uL	
LCSD 320-397938/3		1613B, 1613B		4	1 mL	20 uL	1 mL	50 uL	
320-62886-A-1	11215702-Initial	1613B, 1613B	T	4	1 mL	20 uL	1 mL		
320-62886-A-2	11215702-Control	1613B, 1613B	T	6	1 mL	20 uL	1 mL		
320-62886-A-3	11215702-Treatment-1	1613B, 1613B	T	4	1 mL	20 uL	1 mL		
320-62886-A-4	11215702-Treatment-2	1613B, 1613B	T	6	1 mL	20 uL	1 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-62886-1

SDG No.:

Batch Number: 397938 Batch Start Date: 07/24/20 12:26 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 07/27/20 13:07

Batch Notes	
20% DCM:Hexane ID	2029428 mL
65% DCM:Hexane ID	2029456 mL
Acid Silica Gel ID	2082372
Acid Alumina ID	2074855
Balance ID	QA - 070
C14 ID	tetradecane_00008
Hexane ID	2081643 mL
IFB Clean Up	JH 7/27/20
MeCL2 ID	DCM_00314 mL
Na2SO4 ID	Na2SO4_00117
Analyst ID - IDA Reagent Drop	NR 07/24/20 HRDXNIDA_00431 B-3/4 HD05018 1.00 mL
Analyst ID - IDA Reagent Drop Witness	RDR 07/24/20
Analyst ID - IS Reagent Drop	JH 7/27/20 HRDXNIS_00129 B-1/4 CN15436 (20.0 uL)
Analyst ID - IS Reagent Drop Witness	RDR 07/27/20
Analyst ID - SU Reagent Drop	JH 7/27/20 HRDXNSU_00239 (1.0 mL) B-4/4 HD05018
Analyst ID - SU Reagent Drop Witness	RDR 07/27/20
Analyst ID - TA Reagent Drop	NR 07/24/20 HRDXNTA_00121 B-5/10 CN15436 50.0 uL
Analyst ID - TA Reagent Drop Witness	RDR 07/24/20
Silica Gel ID	2083623
Soxhlet/Soxtherm End	NR 07/24/20 17:00
Soxhlet/Soxtherm Start	NR 07/24/20 14:00
Storage Box ID	DXN-169
Toluene ID	Toluene_00066 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job Number: 320-62886-1

SDG No.:

Project: San Jacinto River Waste Pits Superfund

Client Sample ID	Lab Sample ID
11215702-Initial	320-62886-1
11215702-Control	320-62886-2
11215702-Treatment-1	320-62886-3
11215702-Treatment-2	320-62886-4

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: 11215702-Initial

Lab Sample ID: 320-62886-1

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG ID.:

Matrix: Water

Date Sampled: 07/20/2020 10:00

Reporting Basis: WET

Date Received: 07/21/2020 09:35

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.52	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	0.0013	0.0020	0.00030	mg/L	J		1	6010C
7440-42-8	Boron	0.12	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	280	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	0.0029	0.0020	0.00050	mg/L			1	6010C
7440-48-4	Cobalt	0.013	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	0.048	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.16	0.010	0.0021	mg/L			1	6010C
7439-89-6	Iron	26	0.10	0.020	mg/L		B	1	6010C
7440-09-7	Potassium	100	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	200	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	1.6	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0048	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	2500	10	2.5	mg/L		B	10	6010C
7440-02-0	Nickel	0.044	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	2.6	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	0.10	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	0.058	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.49	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L		F1	1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	0.0072	0.020	0.0050	mg/L	J		1	6010C
7440-32-6	Titanium	0.23	0.010	0.0021	mg/L		F1	1	6010C
7440-24-6	Strontium	0.71	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: 11215702-Control

Lab Sample ID: 320-62886-2

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG ID.:

Matrix: Water

Date Sampled: 07/20/2020 11:00

Reporting Basis: WET

Date Received: 07/21/2020 09:35

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.36	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	0.00097	0.0020	0.00030	mg/L	J		1	6010C
7440-42-8	Boron	0.12	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	200	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	0.0020	0.0020	0.00050	mg/L			1	6010C
7440-48-4	Cobalt	0.0085	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	0.035	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.11	0.010	0.0021	mg/L			1	6010C
7439-89-6	Iron	19	0.10	0.020	mg/L		B	1	6010C
7440-09-7	Potassium	100	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	210	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.95	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0043	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	2500	10	2.5	mg/L		B ^	10	6010C
7440-02-0	Nickel	0.034	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	1.7	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	0.066	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	0.046	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.34	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	0.0055	0.020	0.0050	mg/L	J		1	6010C
7440-32-6	Titanium	0.19	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.48	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: 11215702-Treatment-1

Lab Sample ID: 320-62886-3

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG ID.:

Matrix: Water

Date Sampled: 07/20/2020 13:00

Reporting Basis: WET

Date Received: 07/21/2020 09:35

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.10	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.075	0.10	0.021	mg/L	J		1	6010C
7440-70-2	Calcium	99	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	0.00071	0.0020	0.00050	mg/L	J		1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	0.0012	0.0080	0.0012	mg/L	J		1	6010C
7440-50-8	Copper	0.0067	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	0.16	0.10	0.020	mg/L		B	1	6010C
7440-09-7	Potassium	79	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	160	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.20	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	ND	0.020	0.0027	mg/L			1	6010C
7440-23-5	Sodium	2500	10	2.5	mg/L		B ^	10	6010C
7440-02-0	Nickel	0.0068	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.047	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.19	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: 11215702-Treatment-2

Lab Sample ID: 320-62886-4

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG ID.:

Matrix: Water

Date Sampled: 07/20/2020 14:30

Reporting Basis: WET

Date Received: 07/21/2020 09:35

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	0.00084	0.0050	0.00084	mg/L	J		1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.099	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.13	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	97	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	0.00060	0.0020	0.00050	mg/L	J		1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.0029	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	0.055	0.10	0.020	mg/L	J	B	1	6010C
7440-09-7	Potassium	80	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	160	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.18	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	ND	0.020	0.0027	mg/L			1	6010C
7440-23-5	Sodium	2200	10	2.5	mg/L		B ^	10	6010C
7440-02-0	Nickel	0.0068	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.049	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.18	0.050	0.0050	mg/L			1	6010C

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

ICV Source: MT6010ICV_00052   Concentration Units: mg/L

CCV Source: MT6010CCV_00098

	ICV 320-397772/9 07/23/2020 12:46				CCV 320-397772/45 07/23/2020 15:10				CCV 320-397772/57 07/23/2020 15:58			
Analyte	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	1.01		1.00	101	0.515		0.498	103	0.519		0.498	104
Arsenic	0.966		1.00	96	0.514		0.500	103	0.518		0.500	104
Barium	1.03		1.00	103	2.57		2.50	103	2.59		2.50	104
Beryllium	1.02		1.00	102	0.519		0.498	104	0.522		0.498	105
Boron	0.512		0.501	102	1.03		1.00	103	1.05		1.00	104
Cadmium	1.04		1.00	104	0.526		0.500	105	0.528		0.500	106
Calcium	10.4		10.0	104	26.4		25.0	105	26.6		25.0	106
Chromium	1.02		1.00	102	2.56		2.51	102	2.58		2.51	103
Cobalt	1.05		1.00	105	2.61		2.49	105	2.62		2.49	105
Copper	1.03		1.00	103	2.55		2.48	103	2.56		2.48	103
Magnesium	10.1		10.0	101	25.7		25.0	103	25.9		25.0	104
Manganese	1.05		1.00	105	2.59		2.50	103	2.61		2.50	104
Molybdenum	1.04		1.00	104	1.04		0.999	104	1.04		0.999	104
Nickel	1.06		1.00	106	2.65		2.51	106	2.65		2.51	106
Phosphorus	1.98		2.00	99	2.60		2.51	104	2.62		2.51	105
Potassium	9.91		10.0	99	25.6		25.0	103	25.8		25.0	103
Selenium	1.02		1.00	102	0.525		0.502	105	0.529		0.502	105
Sodium	9.86		10.0	99	25.7		25.0	103	25.6		25.0	102
Strontium	1.03		1.00	103	2.57		2.49	103	2.58		2.49	104
Thallium	1.05		1.00	105	0.524		0.501	105	0.522		0.501	104
Tin	1.04		1.00	104	2.61		2.50	104	2.62		2.50	105
Titanium	1.03		1.00	103	1.03		0.998	103	1.04		0.998	104
Vanadium	1.02		1.00	102	2.57		2.51	103	2.59		2.51	103
Zinc	1.01		1.00	101	2.62		2.51	104	2.64		2.51	105
Aluminum	10.1		10.0	101	25.7		25.0	103	25.8		25.0	103
Iron	10.3		10.0	103	26.0		25.0	104	26.3		25.0	105
Lead	1.04		1.00	104	0.524		0.505	104	0.526		0.505	104
Silver	0.242		0.251	97	0.510		0.498	102	0.511		0.498	103

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICV Source: MT6010ICV_00052 Concentration Units: mg/L

CCV Source: MT6010CCV_00098

Analyte	CCV 320-397772/81 07/23/2020 17:33				CCV 320-397772/93 07/23/2020 18:21							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.517		0.498	104	0.524		0.498	105				
Arsenic	0.519		0.500	104	0.513		0.500	103				
Barium	2.60		2.50	104	2.59		2.50	104				
Beryllium	0.523		0.498	105	0.521		0.498	105				
Boron	1.03		1.00	103	1.03		1.00	103				
Cadmium	0.530		0.500	106	0.531		0.500	106				
Calcium	26.8		25.0	107	26.7		25.0	107				
Chromium	2.60		2.51	104	2.60		2.51	104				
Cobalt	2.63		2.49	105	2.63		2.49	106				
Copper	2.54		2.48	102	2.52		2.48	102				
Magnesium	26.1		25.0	104	26.2		25.0	105				
Manganese	2.62		2.50	105	2.62		2.50	105				
Molybdenum	1.05		0.999	105	1.04		0.999	104				
Nickel	2.65		2.51	106	2.65		2.51	106				
Phosphorus	2.63		2.51	105	2.64		2.51	105				
Potassium	25.8		25.0	103	26.0		25.0	104				
Selenium	0.524		0.502	104	0.527		0.502	105				
Sodium	25.9		25.0	104	27.1		25.0	108				
Strontium	2.59		2.49	104	2.58		2.49	104				
Thallium	0.522		0.501	104	0.525		0.501	105				
Tin	2.63		2.50	105	2.63		2.50	105				
Titanium	1.04		0.998	104	1.04		0.998	104				
Vanadium	2.60		2.51	104	2.60		2.51	104				
Zinc	2.67		2.51	106	2.67		2.51	106				
Aluminum	26.0		25.0	104	25.9		25.0	104				
Iron	26.5		25.0	106	26.4		25.0	105				
Lead	0.527		0.505	104	0.527		0.505	105				
Silver	0.510		0.498	102	0.509		0.498	102				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICV Source: MT6010ICV_00052 Concentration Units: mg/L

CCV Source: MT6010CRI_QSM_00064

	ICV 320-397772/9 07/23/2020 12:46				CCVL 320-397772/130 07/23/2020 20:44							
Analyte	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	1.01		1.00	101	0.0314		0.0300	105				
Arsenic	0.966		1.00	96	0.0377		0.0400	94				
Barium	1.03		1.00	103	0.0214		0.0200	107				
Beryllium	1.02		1.00	102	0.00299		0.00300	100				
Boron	0.512		0.501	102	0.209		0.200	104				
Cadmium	1.04		1.00	104	0.00319		0.00300	106				
Calcium	10.4		10.0	104	0.554		0.500	111				
Chromium	1.02		1.00	102	0.0103		0.0100	103				
Cobalt	1.05		1.00	105	0.0105		0.0100	105				
Copper	1.03		1.00	103	0.0164		0.0150	109				
Magnesium	10.1		10.0	101	0.518		0.500	104				
Manganese	1.05		1.00	105	0.0109		0.0100	109				
Molybdenum	1.04		1.00	104	0.0225		0.0200	113				
Nickel	1.06		1.00	106	0.0130		0.0100	130				
Phosphorus	1.98		2.00	99	0.552		0.500	111				
Potassium	9.91		10.0	99	1.03		1.00	103				
Selenium	1.02		1.00	102	0.0448		0.0400	112				
Sodium	9.86		10.0	99	0.537	J	0.500	107				
Strontium	1.03		1.00	103	0.0546		0.0500	109				
Thallium	1.05		1.00	105	0.0301		0.0300	100				
Tin	1.04		1.00	104	0.0253		0.0200	126				
Titanium	1.03		1.00	103	0.0116		0.0100	116				
Vanadium	1.02		1.00	102	0.0204		0.0200	102				
Zinc	1.01		1.00	101	0.0223		0.0200	112				
Aluminum	10.1		10.0	101	0.235		0.200	118				
Iron	10.3		10.0	103	0.0903	J	0.100	90				
Lead	1.04		1.00	104	0.0114		0.0100	114				
Silver	0.242		0.251	97	0.00454	J	0.00500	91				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICV Source: MT6010ICV_00052 Concentration Units: mg/L

CCV Source: MT6010CCV_00098

Analyte	ICV 320-398458/9 07/24/2020 09:03				CCV 320-398458/69 07/24/2020 12:58				CCV 320-398458/81 07/24/2020 13:45			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Iron	10.4		10.0	104	25.1		25.0	100	25.1		25.0	100
Lead	1.04		1.00	104	0.515		0.505	102	0.516		0.505	102
Silver	0.243		0.251	97	0.502		0.498	101	0.501		0.498	101
Sodium	9.87		10.0	99	25.1		25.0	101	25.4		25.0	102
Aluminum	10.1		10.0	101	25.3		25.0	101	25.2		25.0	101
Antimony	1.01		1.00	101	0.523		0.498	105	0.516		0.498	104
Arsenic	0.968		1.00	97	0.508		0.500	102	0.508		0.500	102
Barium	1.04		1.00	104	2.54		2.50	101	2.54		2.50	101
Beryllium	1.03		1.00	103	0.510		0.498	102	0.509		0.498	102
Boron	0.511		0.501	102	1.02		1.00	102	1.02		1.00	102
Cadmium	1.04		1.00	104	0.519		0.500	104	0.520		0.500	104
Calcium	10.3		10.0	103	25.6		25.0	103	25.4		25.0	102
Chromium	1.02		1.00	102	2.47		2.51	99	2.47		2.51	99
Cobalt	1.05		1.00	105	2.57		2.49	103	2.58		2.49	103
Copper	1.03		1.00	103	2.47		2.48	100	2.47		2.48	100
Magnesium	10.1		10.0	101	25.1		25.0	101	25.1		25.0	100
Manganese	1.05		1.00	105	2.53		2.50	101	2.53		2.50	101
Molybdenum	1.04		1.00	103	1.02		0.999	102	1.02		0.999	103
Nickel	1.05		1.00	105	2.62		2.51	104	2.62		2.51	105
Phosphorus	1.99		2.00	99	2.60		2.51	104	2.61		2.51	104
Potassium	9.94		10.0	99	25.1		25.0	100	25.2		25.0	101
Selenium	1.02		1.00	102	0.519		0.502	103	0.520		0.502	104
Strontium	1.03		1.00	103	2.53		2.49	102	2.53		2.49	102
Thallium	1.06		1.00	106	0.512		0.501	102	0.514		0.501	103
Tin	1.03		1.00	103	2.55		2.50	102	2.55		2.50	102
Titanium	1.03		1.00	103	1.02		0.998	102	1.02		0.998	102
Vanadium	1.03		1.00	103	2.55		2.51	102	2.55		2.51	101
Zinc	1.01		1.00	101	2.57		2.51	102	2.57		2.51	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICV Source: MT6010ICV_00052 Concentration Units: mg/L

CCV Source: MT6010CCV_00098

Analyte	CCV 320-398458/93 07/24/2020 14:33				CCV 320-398458/105 07/24/2020 15:20							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Iron	25.5		25.0	102	25.6		25.0	102				
Lead	0.515		0.505	102	0.515		0.505	102				
Silver	0.501		0.498	101	0.503		0.498	101				
Sodium	26.6		25.0	106	25.4		25.0	102				
Aluminum	25.3		25.0	101	25.1		25.0	100				
Antimony	0.518		0.498	104	0.516		0.498	104				
Arsenic	0.510		0.500	102	0.509		0.500	102				
Barium	2.54		2.50	102	2.56		2.50	102				
Beryllium	0.508		0.498	102	0.509		0.498	102				
Boron	1.02		1.00	102	1.03		1.00	102				
Cadmium	0.519		0.500	104	0.514		0.500	103				
Calcium	25.7		25.0	103	25.4		25.0	102				
Chromium	2.51		2.51	100	2.51		2.51	100				
Cobalt	2.57		2.49	103	2.57		2.49	103				
Copper	2.47		2.48	100	2.53		2.48	102				
Magnesium	25.4		25.0	101	25.1		25.0	100				
Manganese	2.55		2.50	102	2.54		2.50	101				
Molybdenum	1.02		0.999	102	1.02		0.999	102				
Nickel	2.60		2.51	104	2.59		2.51	103				
Phosphorus	2.60		2.51	104	2.60		2.51	104				
Potassium	25.4		25.0	102	25.2		25.0	101				
Selenium	0.519		0.502	103	0.521		0.502	104				
Strontium	2.53		2.49	102	2.54		2.49	102				
Thallium	0.513		0.501	102	0.516		0.501	103				
Tin	2.55		2.50	102	2.56		2.50	102				
Titanium	1.02		0.998	102	1.02		0.998	102				
Vanadium	2.55		2.51	102	2.54		2.51	101				
Zinc	2.58		2.51	103	2.54		2.51	101				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICV Source: MT6010ICV_00052 Concentration Units: mg/L

CCV Source: MT6010CRI_QSM_00064

	ICV 320-398458/9 07/24/2020 09:03				CCVL 320-398458/159 07/24/2020 18:53							
Analyte	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Iron	10.4		10.0	104	0.118		0.100	118				
Lead	1.04		1.00	104	0.0100		0.0100	100				
Silver	0.243		0.251	97	0.00624		0.00500	125				
Sodium	9.87		10.0	99	0.557	J	0.500	111				
Aluminum	10.1		10.0	101	0.199	J	0.200	99				
Antimony	1.01		1.00	101	0.0329		0.0300	110				
Arsenic	0.968		1.00	97	0.0372		0.0400	93				
Barium	1.04		1.00	104	0.0216		0.0200	108				
Beryllium	1.03		1.00	103	0.00346		0.00300	115				
Boron	0.511		0.501	102	0.219		0.200	109				
Cadmium	1.04		1.00	104	0.00345		0.00300	115				
Calcium	10.3		10.0	103	0.556		0.500	111				
Chromium	1.02		1.00	102	0.0115		0.0100	115				
Cobalt	1.05		1.00	105	0.0109		0.0100	109				
Magnesium	10.1		10.0	101	0.544		0.500	109				
Manganese	1.05		1.00	105	0.0117		0.0100	117				
Molybdenum	1.04		1.00	103	0.0228		0.0200	114				
Nickel	1.05		1.00	105	0.0127		0.0100	127				
Phosphorus	1.99		2.00	99	0.550		0.500	110				
Potassium	9.94		10.0	99	1.10		1.00	110				
Selenium	1.02		1.00	102	0.0429		0.0400	107				
Strontium	1.03		1.00	103	0.0561		0.0500	112				
Thallium	1.06		1.00	106	0.0345		0.0300	115				
Tin	1.03		1.00	103	0.0260		0.0200	130				
Titanium	1.03		1.00	103	0.0126		0.0100	126				
Vanadium	1.03		1.00	103	0.0227		0.0200	113				
Zinc	1.01		1.00	101	0.0254		0.0200	127				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Method: 6010C Instrument ID: T01

Lab Sample ID: CRI 320-397772/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00041

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Arsenic	0.0200	0.0157	J	78	70-130
Barium	0.00500	0.00524		105	70-130
Beryllium	0.00200	0.00175	J	88	70-130
Boron	0.100	0.0992	J	99	70-130
Calcium	0.500	0.520		104	70-130
Cadmium	0.00200	0.00206		103	70-130
Cobalt	0.00499	0.00496	J	99	70-130
Chromium	0.00501	0.00479	J	96	70-130
Copper	0.0100	0.00977	J	98	70-130
Iron	0.100	0.0844	J	84	70-130
Potassium	0.999	0.949	J	95	70-130
Magnesium	0.500	0.498	J	100	70-130
Manganese	0.00500	0.00522		104	70-130
Molybdenum	0.0200	0.0244		122	70-130
Sodium	0.500	0.480	J	96	70-130
Nickel	0.00500	0.00648		130	70-130
Phosphorus	0.500	0.493	J	99	70-130
Selenium	0.0200	0.0182	J	91	70-130
Vanadium	0.00500	0.00487	J	97	70-130
Zinc	0.0100	0.0106		106	70-130
Antimony	0.0200	0.0232		116	70-130
Thallium	0.0200	0.0206		103	70-130
Tin	0.0200	0.0226		113	70-130
Titanium	0.0100	0.0129		129	70-130
Strontium	0.0500	0.0509		102	70-130

Lab Sample ID: CRI 320-398458/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00041

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Silver	0.00500	0.00540		108	70-130
Arsenic	0.0200	0.0173	J	86	70-130
Barium	0.00500	0.00592		119	70-130
Beryllium	0.00200	0.00202		101	70-130
Boron	0.100	0.0997	J	100	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Method: 6010C Instrument ID: T01

Lab Sample ID: CRI 320-398458/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00041

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Calcium	0.500	0.525		105	70-130
Cadmium	0.00200	0.00209		105	70-130
Cobalt	0.00499	0.00496	J	99	70-130
Chromium	0.00501	0.00487	J	97	70-130
Copper	0.0100	0.00854	J	85	70-130
Iron	0.100	0.0937	J	94	70-130
Potassium	0.999	0.923	J	92	70-130
Magnesium	0.500	0.495	J	99	70-130
Manganese	0.00500	0.00522		104	70-130
Molybdenum	0.0200	0.0240		120	70-130
Sodium	0.500	0.468	J	93	70-130
Nickel	0.00500	0.00580		116	70-130
Phosphorus	0.500	0.497	J	99	70-130
Lead	0.00500	0.00447	J	89	70-130
Selenium	0.0200	0.0151	J	75	70-130
Vanadium	0.00500	0.00595		119	70-130
Zinc	0.0100	0.0103		103	70-130
Antimony	0.0200	0.0193	J	96	70-130
Thallium	0.0200	0.0221		110	70-130
Tin	0.0200	0.0226		113	70-130
Strontium	0.0500	0.0503		101	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICBIS 320-397772/10 07/23/2020 12:50		CCB 320-397772/46 07/23/2020 15:14		CCB 320-397772/58 07/23/2020 16:02		CCB 320-397772/82 07/23/2020 17:37	
		Found	C	Found	C	Found	C	Found	C
Antimony	0.020	ND		ND		ND		ND	
Arsenic	0.020	ND		ND		ND		ND	
Barium	0.0050	ND		ND		ND		ND	
Beryllium	0.0020	ND		ND		ND		ND	
Boron	0.10	ND		ND		ND		ND	
Cadmium	0.0020	0.000660	J	ND		ND		ND	
Calcium	0.50	ND		ND		ND		ND	
Chromium	0.0080	ND		ND		ND		ND	
Cobalt	0.0050	ND		ND		ND		ND	
Copper	0.010	ND		ND		ND		ND	
Magnesium	0.50	ND		ND		ND		ND	
Manganese	0.0050	ND		ND		ND		ND	
Molybdenum	0.020	0.00748	J	0.00568	J	0.00573	J	0.00645	J
Nickel	0.0050	0.00324	J	ND		ND		ND	
Phosphorus	0.50	ND		ND		ND		ND	
Potassium	1.0	ND		ND		ND		ND	
Selenium	0.020	ND		ND		ND		ND	
Sodium	1.0	ND		ND		ND		0.469	J
Strontium	0.050	ND		ND		ND		ND	
Thallium	0.020	ND		ND		ND		ND	
Tin	0.020	ND		ND		ND		ND	
Titanium	0.010	0.00452	J	0.00415	J	0.00543	J	0.00443	J
Vanadium	0.0050	ND		ND		ND		ND	
Zinc	0.010	ND		ND		ND		ND	
Aluminum	0.20	ND		0.0562	J	ND		ND	
Iron	0.10	ND		0.0266	J	0.0334	J	0.0431	J
Lead	0.0050	ND		ND		ND		ND	
Silver	0.0050	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	CCB 320-397772/94 07/23/2020 18:25							
		Found	C	Found	C	Found	C	Found	C
Antimony	0.020	ND							
Arsenic	0.020	ND							
Barium	0.0050	ND							
Beryllium	0.0020	ND							
Boron	0.10	ND							
Cadmium	0.0020	ND							
Calcium	0.50	ND							
Chromium	0.0080	ND							
Cobalt	0.0050	ND							
Copper	0.010	ND							
Magnesium	0.50	0.0544	J						
Manganese	0.0050	ND							
Molybdenum	0.020	0.00681	J						
Nickel	0.0050	ND							
Phosphorus	0.50	ND							
Potassium	1.0	0.133	J						
Selenium	0.020	ND							
Sodium	1.0								
Strontium	0.050	ND							
Thallium	0.020	ND							
Tin	0.020	ND							
Titanium	0.010	0.00384	J						
Vanadium	0.0050	ND							
Zinc	0.010	ND							
Aluminum	0.20	ND							
Iron	0.10	0.0277	J						
Lead	0.0050	ND							
Silver	0.0050	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICBIS 320-398458/10 07/24/2020 09:07		CCB 320-398458/70 07/24/2020 13:02		CCB 320-398458/82 07/24/2020 13:49		CCB 320-398458/94 07/24/2020 14:36	
		Found	C	Found	C	Found	C	Found	C
Iron	0.10	0.0481	J	0.0400	J	0.0537	J	0.0459	J
Lead	0.0050	ND		ND		ND		ND	
Silver	0.0050	ND		ND		ND		ND	
Sodium	1.0	ND		ND		0.404	J	1.17	
Aluminum	0.20	ND		ND		ND		ND	
Antimony	0.020	ND		ND		ND		ND	
Arsenic	0.020	ND		ND		ND		ND	
Barium	0.0050	ND		ND		ND		ND	
Beryllium	0.0020	0.000630	J	0.000330	J	0.000300	J	0.000340	J
Boron	0.10	ND		ND		ND		ND	
Cadmium	0.0020	ND		ND		ND		ND	
Calcium	0.50	ND		0.121	J	ND		0.103	J
Chromium	0.0080	ND		0.00128	J	0.00169	J	ND	
Cobalt	0.0050	ND		ND		ND		ND	
Copper	0.010	ND		0.00410	J	0.00322	J	ND	
Magnesium	0.50	ND		ND		ND		0.0610	J
Manganese	0.0050	ND		ND		ND		ND	
Molybdenum	0.020	0.00718	J	0.00703	J	0.00679	J	0.00702	J
Nickel	0.0050	ND		ND		ND		ND	
Phosphorus	0.50	ND		ND		ND		ND	
Potassium	1.0	ND		ND		ND		0.126	J
Selenium	0.020	ND		ND		ND		ND	
Strontium	0.050	ND		ND		ND		ND	
Thallium	0.020	ND		ND		ND		ND	
Tin	0.020	ND		ND		ND		ND	
Titanium	0.010	0.00487	J	0.00457	J	0.00522	J	0.00471	J
Vanadium	0.0050	ND		ND		ND		0.00205	J
Zinc	0.010	ND		ND		0.00345	J	ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	CCB 320-398458/106 07/24/2020 15:24							
		Found	C	Found	C	Found	C	Found	C
Iron	0.10	0.0341	J						
Lead	0.0050	ND							
Silver	0.0050	0.000840	J						
Sodium	1.0	0.607	J						
Aluminum	0.20	ND							
Antimony	0.020	ND							
Arsenic	0.020	ND							
Barium	0.0050	ND							
Beryllium	0.0020	0.000530	J						
Boron	0.10	ND							
Cadmium	0.0020	ND							
Calcium	0.50	ND							
Chromium	0.0080	ND							
Cobalt	0.0050	ND							
Copper	0.010	ND							
Magnesium	0.50	ND							
Manganese	0.0050	ND							
Molybdenum	0.020	0.00716	J						
Nickel	0.0050	ND							
Phosphorus	0.50	ND							
Potassium	1.0	ND							
Selenium	0.020	ND							
Strontium	0.050	ND							
Thallium	0.020	ND							
Tin	0.020	ND							
Titanium	0.010	0.00458	J						
Vanadium	0.0050	ND							
Zinc	0.010	ND							

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-397139/1-A

Instrument Code: T01 Batch No.: 397772

CAS No.	Analyte	Concentration	C	Q	Method
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-70-2	Calcium	0.130	J		6010C
7440-43-9	Cadmium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-50-8	Copper	ND			6010C
7440-09-7	Potassium	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-23-5	Sodium	0.893	J		6010C
7440-02-0	Nickel	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7782-49-2	Selenium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-66-6	Zinc	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-24-6	Strontium	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-397139/1-A

Instrument Code: T01 Batch No.: 398458

CAS No.	Analyte	Concentration	C	Q	Method
7440-22-4	Silver	ND			6010C
7439-89-6	Iron	0.0265	J		6010C
7439-92-1	Lead	ND			6010C

FORM III-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job No.: 320-62886-1

SDG No.:

Lab Sample ID: ICSA 320-397772/13   Instrument ID: T01

Lab File ID: 07232020.asc   ICS Source: MT6010ICSA_00057

Concentration Units: mg/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Antimony		**0.0050**	
Arsenic		**-0.0042**	
Barium		**0.0006**	
Beryllium		**-0.0009**	
Boron		**0.0069**	
Cadmium		**0.0003**	
Calcium	**500**	**483**	**97**
Chromium		**-0.0037**	
Cobalt		**-0.0005**	
Copper		**-0.0028**	
Magnesium	**500**	**493**	**99**
Manganese		**0.0031**	
Molybdenum		**0.0005**	
Nickel		**-0.0028**	
Phosphorus		**0.0087**	
Potassium		**-0.111**	
Selenium		**0.0008**	
Sodium		**0.0848**	
Strontium		**0.0051**	
Thallium		**-0.0065**	
Tin		**-0.0047**	
Titanium		**0.0006**	
Vanadium		**-0.0007**	
Zinc		**-0.0049**	
Aluminum	*500*	*499*	*100*
Iron	*200*	*186*	*93*
Lead		*0.0034*	
Silicon		*-0.0234*	
Silver		*-0.0011*	
Sulfur		*-0.335*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job No.: 320-62886-1

SDG No.:

Lab Sample ID: ICSAB 320-397772/14   Instrument ID: T01

Lab File ID: 07232020.asc   ICS Source: MT6010ICSAB_00041

Concentration Units: mg/L

	True	Found	
Analyte	Solution AB	Solution AB	Percent Recovery
Antimony		**0.0034**	
Arsenic	**1.00**	**0.959**	**96**
Barium	**1.00**	**1.02**	**102**
Beryllium	**0.500**	**0.496**	**99**
Boron	**10.0**	**9.70**	**97**
Cadmium	**1.00**	**0.946**	**95**
Calcium	**500**	**490**	**98**
Chromium	**1.00**	**0.978**	**98**
Cobalt	**1.00**	**0.942**	**94**
Copper	**1.00**	**1.03**	**103**
Magnesium	**500**	**495**	**99**
Manganese	**1.00**	**1.01**	**101**
Molybdenum		**0.0000**	
Nickel	**1.00**	**0.919**	**92**
Phosphorus	**10.0**	**10.2**	**102**
Potassium	**10.0**	**10.2**	**102**
Selenium	**1.00**	**0.962**	**96**
Sodium	**10.0**	**10.4**	**104**
Strontium	**1.00**	**1.02**	**102**
Thallium	**1.00**	**0.913**	**91**
Tin		**0.0026**	
Titanium		**-0.0002**	
Vanadium	**1.00**	**1.02**	**102**
Zinc	**1.00**	**0.934**	**93**
Aluminum	*500*	*506*	*101*
Iron	*200*	*189*	*95*
Lead	*1.00*	*0.955*	*96*
Silicon		*-0.0269*	
Silver	*1.00*	*1.10*	*110*
Sulfur		*-0.334*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job No.: 320-62886-1

SDG No.:

Lab Sample ID: ICSA 320-398458/13 Instrument ID: T01

Lab File ID: 07242020.asc ICS Source: MT6010ICSA_00057

Concentration Units: mg/L

Analyte	True	Found	
	Solution A	Solution A	Percent Recovery
Iron	**200**	**186**	**93**
Lead		**0.0028**	
Silver		**-0.0017**	
Sodium		**0.0821**	
Aluminum	*500*	*494*	*99*
Antimony		*0.0003*	
Arsenic		*-0.0035*	
Barium		*0.0020*	
Beryllium		*-0.0001*	
Boron		*0.0055*	
Cadmium		*0.0009*	
Calcium	*500*	*475*	*95*
Chromium		*-0.0018*	
Cobalt		*0.0001*	
Copper		*-0.0018*	
Magnesium	*500*	*492*	*98*
Manganese		*0.0035*	
Molybdenum		*0.0011*	
Nickel		*-0.0025*	
Phosphorus		*0.0137*	
Potassium		*-0.0544*	
Selenium		*-0.0047*	
Silicon		*0.0139*	
Strontium		*0.0061*	
Sulfur		*-0.313*	
Thallium		*-0.0030*	
Tin		*-0.0031*	
Titanium		*0.0009*	
Vanadium		*0.0012*	
Zinc		*-0.0021*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job No.: 320-62886-1

SDG No.:

Lab Sample ID: ICSAB 320-398458/14 Instrument ID: T01

Lab File ID: 07242020.asc ICS Source: MT6010ICSAB_00041

Concentration Units: mg/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Iron	**200**	**188**	**94**
Lead	**1.00**	**0.945**	**94**
Silver	**1.00**	**1.07**	**107**
Sodium	**10.0**	**10.3**	**103**
Aluminum	*500*	*498*	*100*
Antimony		*-0.0019*	
Arsenic	*1.00*	*0.956*	*96*
Barium	*1.00*	*1.01*	*101*
Beryllium	*0.500*	*0.493*	*99*
Boron	*10.0*	*9.61*	*96*
Cadmium	*1.00*	*0.934*	*93*
Calcium	*500*	*479*	*96*
Chromium	*1.00*	*0.958*	*96*
Cobalt	*1.00*	*0.932*	*93*
Copper	*1.00*	*1.02*	*102*
Magnesium	*500*	*488*	*98*
Manganese	*1.00*	*0.996*	*100*
Molybdenum		*0.0010*	
Nickel	*1.00*	*0.907*	*91*
Phosphorus	*10.0*	*10.1*	*101*
Potassium	*10.0*	*10.2*	*102*
Selenium	*1.00*	*0.957*	*96*
Silicon		*0.0475*	
Strontium	*1.00*	*1.01*	*101*
Sulfur		*-0.305*	
Thallium	*1.00*	*0.906*	*91*
Tin		*0.0024*	
Titanium		*0.0011*	
Vanadium	*1.00*	*1.01*	*101*
Zinc	*1.00*	*0.922*	*92*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: 11215702-Initial MS

Lab ID: 320-62886-1 MS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.0498		ND		0.0498	100	75-125		6010C
Arsenic	0.472		ND		0.500	94	75-125		6010C
Barium	1.05		0.52		0.500	104	75-125		6010C
Beryllium	0.232		0.0013	J	0.250	92	75-125		6010C
Boron	4.21		0.12		4.98	82	75-125		6010C
Calcium	309		280		25.0	125	75-125	4	6010C
Cadmium	0.223		0.0029		0.250	88	75-125		6010C
Cobalt	0.237		0.013		0.250	90	75-125		6010C
Chromium	0.290		0.048		0.250	97	75-125		6010C
Copper	0.407		0.16		0.250	97	75-125		6010C
Iron	34.0		26		5.00	167	75-125	4	6010C
Potassium	130		100		25.0	117	75-125	4	6010C
Magnesium	235		200		25.0	120	75-125	4	6010C
Manganese	1.86		1.6		0.250	113	75-125	4	6010C
Molybdenum	0.232		0.0048	J	0.250	91	75-125		6010C
Sodium	2550		2500		25.0	333	75-125	4	6010C
Nickel	0.267		0.044		0.250	89	75-125		6010C
Phosphorus	7.76		2.6		4.98	103	75-125		6010C
Lead	0.311		0.10		0.250	84	75-125		6010C
Selenium	0.437		ND		0.500	87	75-125		6010C
Vanadium	0.316		0.058		0.250	103	75-125		6010C
Zinc	0.994		0.49		0.500	100	75-125		6010C
Antimony	0.365		ND		0.498	73	75-125	F1	6010C
Thallium	0.386		ND		0.500	77	75-125		6010C
Tin	0.456		0.0072	J	0.500	90	75-125		6010C
Titanium	0.588		0.23		0.250	143	75-125	F1	6010C
Strontium	0.978		0.71		0.250	106	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: 11215702-Initial MSD

Lab ID: 320-62886-1 MSD

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Silver	0.0487		0.0498	98	75-125	2	20		6010C
Arsenic	0.459		0.500	92	75-125	3	20		6010C
Barium	1.02		0.500	98	75-125	3	20		6010C
Beryllium	0.227		0.250	90	75-125	2	20		6010C
Boron	4.15		4.98	81	75-125	1	20		6010C
Calcium	304		25.0	106	75-125	2	20	4	6010C
Cadmium	0.218		0.250	86	75-125	2	20		6010C
Cobalt	0.232		0.250	87	75-125	2	20		6010C
Chromium	0.283		0.250	94	75-125	3	20		6010C
Copper	0.396		0.250	93	75-125	3	20		6010C
Iron	33.3		5.00	152	75-125	2	20	4	6010C
Potassium	127		25.0	108	75-125	2	20	4	6010C
Magnesium	230		25.0	103	75-125	2	20	4	6010C
Manganese	1.83		0.250	99	75-125	2	20	4	6010C
Molybdenum	0.228		0.250	89	75-125	2	20		6010C
Sodium	2530		25.0	226	75-125	1	20	4	6010C
Nickel	0.260		0.250	86	75-125	3	20		6010C
Phosphorus	7.61		4.98	100	75-125	2	20		6010C
Lead	0.308		0.250	82	75-125	1	20		6010C
Selenium	0.425		0.500	85	75-125	3	20		6010C
Vanadium	0.306		0.250	99	75-125	3	20		6010C
Zinc	0.978		0.500	97	75-125	2	20		6010C
Antimony	0.360		0.498	72	75-125	1	20	F1	6010C
Thallium	0.378		0.500	76	75-125	2	20		6010C
Tin	0.444		0.500	87	75-125	3	20		6010C
Titanium	0.565		0.250	134	75-125	4	20	F1	6010C
Strontium	0.959		0.250	99	75-125	2	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: 11215702-Initial PDS
Lab ID: 320-62886-1 PDS
Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-62886-1
SDG No.:
Matrix: Water
Concentration Units: mg/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.105		ND		0.100	105	75-125		6010C
Arsenic	0.109		ND		0.100	109	75-125		6010C
Barium	0.619		0.52		0.100	94	75-125		6010C
Beryllium	0.0510		0.0013	J	0.0500	99	75-125		6010C
Boron	1.01		0.12		1.00	89	75-125		6010C
Calcium	283		280		10.0	NC	75-125		6010C
Cadmium	0.0983		0.0029		0.100	95	75-125		6010C
Cobalt	0.109		0.013		0.100	96	75-125		6010C
Chromium	0.145		0.048		0.100	97	75-125		6010C
Copper	0.266		0.16		0.100	101	75-125		6010C
Iron	28.9		26		4.00	80	75-125		6010C
Potassium	109		100		9.97	NC	75-125		6010C
Magnesium	210		200		10.0	NC	75-125		6010C
Manganese	1.65		1.6		0.100	NC	75-125		6010C
Molybdenum	0.103		0.0048	J	0.100	98	75-125		6010C
Sodium	2610		2500		101	NC	75-125		6010C
Nickel	0.135		0.044		0.100	91	75-125		6010C
Phosphorus	3.64		2.6		1.00	102	75-125		6010C
Lead	0.187		0.10		0.100	85	75-125		6010C
Selenium	0.0984		ND		0.100	98	75-125		6010C
Vanadium	0.160		0.058		0.100	101	75-125		6010C
Zinc	0.582		0.49		0.100	89	75-125		6010C
Antimony	0.0921		ND		0.100	92	75-125		6010C
Thallium	0.0890		ND		0.100	89	75-125		6010C
Tin	0.106		0.0072	J	0.100	99	75-125		6010C
Titanium	0.331		0.23		0.100	101	75-125		6010C
Strontium	0.802		0.71		0.100	89	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-397139/2-A

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

Sample Matrix: Water   LCS Source: MT6010LCS1_00017

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Arsenic	0.500	0.442		88	80	120		6010C
Barium	0.500	0.480		96	80	120		6010C
Beryllium	0.250	0.239		96	80	120		6010C
Boron	4.98	4.46		90	80	120		6010C
Calcium	25.0	24.8		99	80	120		6010C
Cadmium	0.250	0.235		94	80	120		6010C
Cobalt	0.250	0.236		95	80	120		6010C
Chromium	0.250	0.232		93	80	120		6010C
Copper	0.250	0.230		92	80	120		6010C
Potassium	25.0	23.5		94	80	120		6010C
Magnesium	25.0	22.9		92	80	120		6010C
Manganese	0.250	0.235		94	80	120		6010C
Molybdenum	0.250	0.241		97	80	120		6010C
Sodium	25.0	24.1		96	80	120		6010C
Nickel	0.250	0.234		93	80	120		6010C
Phosphorus	4.98	4.83		97	80	120		6010C
Selenium	0.500	0.439		88	80	120		6010C
Vanadium	0.250	0.233		93	80	120		6010C
Zinc	0.500	0.475		95	80	120		6010C
Antimony	0.498	0.440		88	80	120		6010C
Thallium	0.500	0.459		92	80	120		6010C
Tin	0.500	0.487		97	80	120		6010C
Titanium	0.250	0.232		93	80	120		6010C
Strontium	0.250	0.239		96	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-397139/2-A

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

Sample Matrix: Water LCS Source: MT6010LCS3_00038

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Silver	0.0498	0.0455		91	80	120		6010C
Iron	5.00	4.77		95	80	120		6010C
Lead	0.250	0.230		92	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 320-62886-1

SDG No:

Lab Name: Eurofins TestAmerica, Sacramento Job No: 320-62886-1

Matrix: Water Concentration Units: mg/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Silver	ND		ND		NC		6010C
Arsenic	ND		ND		NC		6010C
Barium	0.52		0.535		2.0		6010C
Beryllium	0.0013	J	ND		NC		6010C
Boron	0.12		0.128	J	NC		6010C
Calcium	280		290		4.4		6010C
Cadmium	0.0029		0.00300	J	NC		6010C
Cobalt	0.013		ND		NC		6010C
Chromium	0.048		0.0482		NC		6010C
Copper	0.16		0.167		1.5		6010C
Iron	26		26.7		4.0		6010C
Potassium	100		98.6		1.9		6010C
Magnesium	200		210		2.6		6010C
Manganese	1.6		1.63		3.6		6010C
Molybdenum	0.0048	J	ND		NC		6010C
Sodium	2100		2600		21	V	6010C
Nickel	0.044		0.0551		NC		6010C
Phosphorus	2.6		2.58		1.2		6010C
Lead	0.10		0.111		NC		6010C
Selenium	ND		ND		NC		6010C
Vanadium	0.058		0.0592		NC		6010C
Zinc	0.49		0.515		4.4		6010C
Antimony	ND		ND		NC		6010C
Thallium	ND		ND		NC		6010C
Tin	0.0072	J	ND		NC		6010C
Titanium	0.23		0.236		2.3		6010C
Strontium	0.71		0.726		1.9		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-62886-1

SDG Number:

Matrix: Water Instrument ID: T01

Method: 6010C MDL Date: 01/01/2013 18:18

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 320-62886-1

SDG Number:

Matrix: Water   Instrument ID: T01

Method: 6010C   XMDL Date: 01/01/2013 18:04

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-62886-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 09/19/2019

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	-0.000009		0.000005		0.017200		0.000061	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.000043			0.000800				
Barium	455.403														
Beryllium	313.042			-0.000000											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000000	0.000001	-0.000006				0.000028	0.000002						
Calcium	317.938														
Chromium	267.716	0.000008		-0.000000				0.000005	0.000001					0.000021	
Cobalt	228.616		0.000020					0.000024			-0.000484		0.000090		
Copper	324.754	0.000004						-0.000089			0.000680				
Iron	259.940														
Lead	220.353	-0.000108		-0.000002	-0.000200		0.000280	0.000031	0.000002		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610			0.000001				-0.000008	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	-0.000003			0.000200			0.000023			-0.000150				-0.000100
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000006		0.000005				-0.000155	0.000004	0.000468	0.000140				
Silicon	288.158	0.000013				-0.003000					-0.001890				
Silver	328.068	-0.000001		-0.000000				-0.000060	-0.000002		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		-0.00100				0.002061	0.000100	0.005840	-0.003350				
Thallium	190.856	0.000000		0.000005	0.002300	0.000241		-0.000014	-0.000003	0.000500	-0.000136				
Tin	189.989	0.000014													
Titanium	334.904					0.000169			-0.000003		0.000449				
Vanadium	292.402					-0.005500		-0.000037		-0.000570	-0.000200				
Zinc	206.200	0.000002		0.000001		0.000420		-0.0000043	-0.000002		-0.000200				

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-62886-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 09/19/2019

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000087		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-62886-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 12/17/2019

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum											0.040000				
Antimony		-0.000004		0.000002		0.009800		-0.000039	-0.000004		-0.004000		-0.000160		
Arsenic		-0.000002				-0.005350		-0.000026			-0.000300				
Barium															
Beryllium															
Boron								-0.000016			0.054500				
Cadmium		-0.000002						0.000024							
Calcium															
Chromium		0.000001		0.000001				-0.000007	0.000001					0.000021	
Cobalt			-0.000070					0.000001			-0.001084		0.000090		
Copper		0.000004						0.000008			0.000700				
Iron															
Lead		-0.000131		-0.000004			-0.000280	0.000035	0.000003		-0.001900		0.000180		
Magnesium								-0.000300			-0.012500				
Manganese								0.000009	0.000001						
Molybdenum								-0.000006							
Nickel					-0.000130			0.000011			-0.000150				-0.000100
Phosphorus															
Potassium		-0.000031		-0.000099				-0.000379	-0.000058						
Selenium		-0.000024		0.000003				-0.000001	0.000001	0.000468	0.000140				
Silicon						-0.004000					-0.001890				
Silver								-0.000001			-0.000008				
Sodium															
Strontium				0.000008											
Sulfur										0.005840	-0.003350				
Thallium		0.000029		0.000007	0.005300	0.000241		-0.000014	-0.000000	0.000500	-0.000136				
Tin															
Titanium						0.000169			0.000010		0.000449				
Vanadium						-0.006370		0.000010		-0.000470	-0.000200				
Zinc				0.000004		-0.000920		0.000010	0.000002		-0.000200				

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 320-62886-1

SDG No.:

ICP-AES Instrument ID: T01   Date: 12/17/2019

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum															
Antimony					0.000170										
Arsenic			-0.000036				0.000000								
Barium															
Beryllium					-0.000313		0.000300								
Boron			0.000016												
Cadmium															
Calcium															
Chromium															
Cobalt			-0.000012		0.002450										
Copper					-0.000250		-0.000270								
Iron															
Lead		0.000013	0.000047		-0.000725		-0.000100								
Magnesium															
Manganese															
Molybdenum															
Nickel						0.000270									
Phosphorus															
Potassium															
Selenium			0.000020												
Silicon				0.002050	0.010000		0.007750								
Silver															
Sodium															
Strontium															
Sulfur															
Thallium					-0.000408		0.003000								
Tin					-0.003150										
Titanium			0.000007												
Vanadium					0.000750										
Zinc															

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-62886-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 07/23/2020

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	-0.000008		0.000005		0.017200		0.000077	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		0.0000086			0.000800				
Barium	455.403														
Beryllium	313.042	0.000009		-0.000003											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000001	0.000001	0.000000				0.000020	0.000000						
Calcium	317.938														
Chromium	267.716	0.000014		-0.000002				0.000002	0.000001					0.000021	
Cobalt	228.616		0.000020					0.000003			-0.000484		0.000090		
Copper	324.754	0.000004		0.000000				-0.000219	-0.0000085		0.000680				
Iron	259.940														
Lead	220.353	-0.000099		-0.000003	-0.000200		0.000280	0.0000030	0.0000004		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610	0.000007		0.000004				-0.000087	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	0.000001		0.000004	0.000200			0.000037	-0.000000		-0.000150				-0.000100
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000001		0.000001				-0.000276	0.000004	0.000468	0.000140				
Silicon	288.158	0.000062		0.000093		-0.003000		0.000049			-0.001890				
Silver	328.068	-0.000001		0.000000				-0.0000007	-0.000000		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		0.00014				0.002001	0.000100	0.005840	-0.003350				
Thallium	190.856	0.000013		0.000005	0.002300	0.000241		-0.000006	-0.000003	0.000500	-0.000136				
Tin	189.989	0.000014													
Titanium	334.904	-0.000004				0.000169			-0.000003		0.000449				
Vanadium	292.402	0.000008				-0.005500		0.000021		-0.000570	-0.000200				
Zinc	206.200	0.000005		0.000001		0.000420		-0.000003	-0.000012		-0.000200				

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-62886-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 07/23/2020

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000087		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Sacramen Job No: 320-62886-1

SDG No.:

Instrument ID: T01 Date: 09/06/2018 17:40

Analyte	Integ. Time (Sec.)	Concentration (ug/mL)	Method
Silver		2.0	6010C
Arsenic		75	6010C
Barium		100	6010C
Beryllium		25	6010C
Boron		100	6010C
Calcium		2500	6010C
Cadmium		40	6010C
Cobalt		100	6010C
Chromium		100	6010C
Copper		75	6010C
Iron		1000	6010C
Potassium		1000	6010C
Magnesium		2500	6010C
Manganese		30	6010C
Molybdenum		40	6010C
Sodium		500	6010C
Nickel		100	6010C
Phosphorus		100	6010C
Lead		50	6010C
Selenium		100	6010C
Vanadium		100	6010C
Zinc		60	6010C
Antimony		100	6010C
Thallium		5.0	6010C
Tin		100	6010C
Titanium		100	6010C
Strontium		25	6010C

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 320-397139/1-A	07/22/2020 12:38	397139		50	50
LCS 320-397139/2-A	07/22/2020 12:38	397139		50	50
320-62886-1	07/22/2020 12:38	397139		50	50
320-62886-1 MS	07/22/2020 12:38	397139		50	50
320-62886-1 MSD	07/22/2020 12:38	397139		50	50
320-62886-2	07/22/2020 12:38	397139		50	50
320-62886-3	07/22/2020 12:38	397139		50	50
320-62886-4	07/22/2020 12:38	397139		50	50

FORM XII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 07/23/2020 12:15 End Date: 07/23/2020 21:00

Lab Sample Id	D/F	Type	Time	Analytes																									
				As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	K	Mg	Mn	Mo	Na	Ni	P	Sb	Se	Sn	Sr	Ti	Tl	V	Zn		
RINSE 320-397772/1			12:15																										
RINSE 320-397772/2			12:19																										
RINSE 320-397772/3			12:23																										
CALSTD0 320-397772/4 IC			12:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CALSTD1 320-397772/5 IC			12:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CALSTD2 320-397772/6 IC			12:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
LRA 320-397772/7			12:39																										
RINSE 320-397772/8			12:42																										
ICV 320-397772/9	1		12:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ICBIS 320-397772/10	1		12:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CRI 320-397772/11			12:54																										
CRI 320-397772/12	1		12:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ICSA 320-397772/13	1		13:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ICSAB 320-397772/14	1		13:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ZZZZZZ			13:10																										
ZZZZZZ			13:14																										
ZZZZZZ			13:18																										
ZZZZZZ			13:22																										
ZZZZZZ			13:26																										
ZZZZZZ			13:30																										
CCV 320-397772/21			13:34																										
CCB 320-397772/22			13:38																										
ZZZZZZ			13:42																										
ZZZZZZ			13:46																										
ZZZZZZ			13:50																										
ZZZZZZ			13:54																										
ZZZZZZ			13:58																										
ZZZZZZ			14:02																										
ZZZZZZ			14:06																										
ZZZZZZ			14:10																										
ZZZZZZ			14:14																										
ZZZZZZ			14:18																										
CCV 320-397772/33			14:22																										
CCB 320-397772/34			14:26																										
ZZZZZZ			14:30																										
ZZZZZZ			14:34																										
ZZZZZZ			14:38																										
ZZZZZZ			14:42																										
ZZZZZZ			14:46																										
ZZZZZZ			14:50																										
ZZZZZZ			14:54																										
ZZZZZZ			14:58																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 07/23/2020 12:15 End Date: 07/23/2020 21:00

Lab Sample Id	D/F	Type	Time	Analytes																									
				As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	K	Mg	Mn	Mo	Na	Ni	P	Sb	Se	Sn	Sr	Ti	Tl	V	Zn		
ZZZZZZ			15:02																										
ZZZZZZ			15:06																										
CCV 320-397772/45	1		15:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CCB 320-397772/46	1		15:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ZZZZZZ			15:18																										
ZZZZZZ			15:22																										
ZZZZZZ			15:26																										
ZZZZZZ			15:30																										
ZZZZZZ			15:34																										
ZZZZZZ			15:38																										
MB 320-397139/1-A	1	T	15:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
LCS 320-397139/2-A	1	T	15:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ZZZZZZ			15:50																										
ZZZZZZ			15:54																										
CCV 320-397772/57	1		15:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CCB 320-397772/58	1		16:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ZZZZZZ			16:06																										
ZZZZZZ			16:10																										
ZZZZZZ			16:14																										
ZZZZZZ			16:18																										
ZZZZZZ			16:22																										
ZZZZZZ			16:26																										
ZZZZZZ			16:30																										
ZZZZZZ			16:34																										
ZZZZZZ			16:38																										
ZZZZZZ			16:42																										
CCV 320-397772/69			16:45																										
CCB 320-397772/70			16:49																										
ZZZZZZ			16:53																										
ZZZZZZ			16:57																										
ZZZZZZ			17:01																										
ZZZZZZ			17:05																										
ZZZZZZ			17:09																										
ZZZZZZ			17:13																										
ZZZZZZ			17:17																										
ZZZZZZ			17:21																										
ZZZZZZ			17:25																										
ZZZZZZ			17:29																										
CCV 320-397772/81	1		17:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CCB 320-397772/82	1		17:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
ZZZZZZ			17:41																										
ZZZZZZ			17:45																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Instrument ID: T01   Analysis Method: 6010C

Start Date: 07/23/2020 12:15   End Date: 07/23/2020 21:00

Lab Sample Id	D/F	Type	Time	Analytes																									
				As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	K	Mg	Mn	Mo	Na	Ni	P	Sb	Se	Sn	Sr	Ti	Tl	V	Zn		
320-62886-1	1	T	17:49	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-1 SD	5	T	17:53	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-1 PDS	1	T	17:57	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-1 MS	1	T	18:01	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-1 MSD	1	T	18:05	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-2	1	T	18:09	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-3	1	T	18:13	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
320-62886-4	1	T	18:17	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
CCV 320-397772/93	1		18:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
CCB 320-397772/94	1		18:25	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		
ZZZZZZ			18:29																										
ZZZZZZ			18:33																										
ZZZZZZ			18:37																										
ZZZZZZ			18:40																										
ZZZZZZ			18:44																										
ZZZZZZ			18:48																										
ZZZZZZ			18:52																										
ZZZZZZ			18:55																										
ZZZZZZ			18:59																										
ZZZZZZ			19:03																										
CCV 320-397772/105			19:07																										
CCB 320-397772/106			19:11																										
ZZZZZZ			19:15																										
ZZZZZZ			19:19																										
ZZZZZZ			19:22																										
ZZZZZZ			19:26																										
ZZZZZZ			19:30																										
ZZZZZZ			19:34																										
ZZZZZZ			19:38																										
ZZZZZZ			19:42																										
ZZZZZZ			19:46																										
ZZZZZZ			19:49																										
CCV 320-397772/117			19:53																										
CCB 320-397772/118			19:57																										
ZZZZZZ			20:01																										
ZZZZZZ			20:05																										
ZZZZZZ			20:09																										
ZZZZZZ			20:13																										
ZZZZZZ			20:17																										
ZZZZZZ			20:21																										
ZZZZZZ			20:25																										
ZZZZZZ			20:29																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 07/23/2020 12:15 End Date: 07/23/2020 21:00

				Analytes																									
Lab Sample Id	D/F	Type	Time	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	K	Mg	Mn	Mo	Na	Ni	P	Sb	Se	Sn	Sr	Ti	Tl	V	Zn		
ZZZZZZ			20:33																										
CCV 320-397772/128			20:37																										
CCB 320-397772/129			20:40																										
CCVL 320-397772/130	1		20:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
RINSE 320-397772/131			20:48																										
RINSE 320-397772/132			20:52																										
RINSE 320-397772/133			20:56																										
RINSE 320-397772/134			21:00																										

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-62886-1

SDG No.:

Instrument ID: T01   Analysis Method: 6010C

Start Date: 07/24/2020 08:32   End Date: 07/24/2020 19:09

Lab Sample Id	D/F	Type	Time	Analytes			
				Ag	Fe	Na	Pb
RINSE 320-398458/1			08:32				
RINSE 320-398458/2			08:36				
RINSE 320-398458/3			08:40				
CALSTD0 320-398458/4 IC			08:44	X	X	X	X
CALSTD1 320-398458/5 IC			08:48	X	X	X	X
CALSTD2 320-398458/6 IC			08:52	X	X	X	X
LRA 320-398458/7			08:56				
RINSE 320-398458/8			08:59				
ICV 320-398458/9	1		09:03	X	X	X	X
ICBIS 320-398458/10	1		09:07	X	X	X	X
CRI 320-398458/11			09:11				
CRI 320-398458/12	1		09:15	X	X	X	X
ICSA 320-398458/13	1		09:19	X	X	X	X
ICSAB 320-398458/14	1		09:23	X	X	X	X
ZZZZZZ			09:27				
ZZZZZZ			09:31				
ZZZZZZ			09:35				
ZZZZZZ			09:39				
ZZZZZZ			09:43				
ZZZZZZ			09:47				
CCV 320-398458/21			09:51				
CCB 320-398458/22			09:55				
ZZZZZZ			09:59				
ZZZZZZ			10:03				
ZZZZZZ			10:06				
ZZZZZZ			10:10				
ZZZZZZ			10:14				
ZZZZZZ			10:18				
ZZZZZZ			10:22				
ZZZZZZ			10:26				
ZZZZZZ			10:30				
ZZZZZZ			10:34				
CCV 320-398458/33			10:38				
CCB 320-398458/34			10:42				
ZZZZZZ			10:46				
ZZZZZZ			10:50				
ZZZZZZ			10:53				
ZZZZZZ			10:57				
ZZZZZZ			11:01				
ZZZZZZ			11:05				
ZZZZZZ			11:09				
ZZZZZZ			11:13				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG No.:

Instrument ID: T01

Analysis Method: 6010C

Start Date: 07/24/2020 08:32

End Date: 07/24/2020 19:09

Lab Sample Id	D/F	Type	Time	Analytes			
				Ag	Fe	Na	Pb
ZZZZZZ			11:17				
ZZZZZZ			11:21				
CCV 320-398458/45			11:24				
CCB 320-398458/46			11:28				
ZZZZZZ			11:32				
ZZZZZZ			11:36				
ZZZZZZ			11:40				
ZZZZZZ			11:44				
ZZZZZZ			11:48				
ZZZZZZ			11:52				
ZZZZZZ			11:56				
ZZZZZZ			12:00				
ZZZZZZ			12:03				
ZZZZZZ			12:07				
CCV 320-398458/57			12:11				
CCB 320-398458/58			12:15				
ZZZZZZ			12:19				
ZZZZZZ			12:23				
ZZZZZZ			12:27				
ZZZZZZ			12:31				
ZZZZZZ			12:35				
ZZZZZZ			12:39				
ZZZZZZ			12:43				
ZZZZZZ			12:47				
ZZZZZZ			12:50				
ZZZZZZ			12:54				
CCV 320-398458/69	1		12:58	X	X	X	X
CCB 320-398458/70	1		13:02	X	X	X	X
ZZZZZZ			13:06				
ZZZZZZ			13:10				
ZZZZZZ			13:14				
ZZZZZZ			13:18				
ZZZZZZ			13:22				
320-62886-1	10	T	13:26			X	
320-62886-1 SD	50	T	13:30			X	
320-62886-1 PDS	10	T	13:34			X	
320-62886-1 MS	10	T	13:38			X	
320-62886-1 MSD	10	T	13:41			X	
CCV 320-398458/81	1		13:45	X	X	X	X
CCB 320-398458/82	1		13:49	X	X	X	X
320-62886-2	10	T	13:53			X	
320-62886-3	10	T	13:57			X	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 07/24/2020 08:32 End Date: 07/24/2020 19:09

Lab Sample Id	D/F	Type	Time	Analytes			
				Ag	Fe	Na	Pb
320-62886-4	10	T	14:01			X	
ZZZZZZ			14:05				
ZZZZZZ			14:09				
MB 320-397139/1-A	1	T	14:13	X	X		X
LCS 320-397139/2-A	1	T	14:17	X	X		X
320-62886-1	1	T	14:21	X	X		X
320-62886-1 SD	5	T	14:25	X	X		X
320-62886-1 PDS	1	T	14:29	X	X		X
CCV 320-398458/93	1		14:33	X	X	X	X
CCB 320-398458/94	1		14:36	X	X	X	X
320-62886-1 MS	1	T	14:40	X	X		X
320-62886-1 MSD	1	T	14:44	X	X		X
320-62886-2	1	T	14:48	X	X		X
320-62886-3	1	T	14:52	X	X		X
320-62886-4	1	T	14:56	X	X		X
ZZZZZZ			15:00				
ZZZZZZ			15:04				
ZZZZZZ			15:08				
ZZZZZZ			15:12				
ZZZZZZ			15:16				
CCV 320-398458/105	1		15:20	X	X	X	X
CCB 320-398458/106	1		15:24	X	X	X	X
ZZZZZZ			15:28				
ZZZZZZ			15:32				
ZZZZZZ			15:36				
ZZZZZZ			15:40				
ZZZZZZ			15:44				
ZZZZZZ			15:48				
ZZZZZZ			15:52				
ZZZZZZ			15:56				
ZZZZZZ			16:00				
ZZZZZZ			16:04				
CCV 320-398458/117			16:08				
CCB 320-398458/118			16:12				
ZZZZZZ			16:16				
ZZZZZZ			16:20				
ZZZZZZ			16:24				
ZZZZZZ			16:28				
ZZZZZZ			16:32				
ZZZZZZ			16:36				
ZZZZZZ			16:40				
ZZZZZZ			16:44				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-62886-1

SDG No.:

Instrument ID: T01

Analysis Method: 6010C

Start Date: 07/24/2020 08:32

End Date: 07/24/2020 19:09

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	Fe	Na	Pb																						
ZZZZZZ			16:48																										
ZZZZZZ			16:52																										
CCV 320-398458/129			16:56																										
CCB 320-398458/130			17:00																										
ZZZZZZ			17:04																										
ZZZZZZ			17:08																										
ZZZZZZ			17:12																										
ZZZZZZ			17:16																										
ZZZZZZ			17:20																										
ZZZZZZ			17:24																										
ZZZZZZ			17:28																										
ZZZZZZ			17:32																										
ZZZZZZ			17:36																										
ZZZZZZ			17:40																										
CCV 320-398458/141			17:44																										
CCB 320-398458/142			17:48																										
ZZZZZZ			17:52																										
ZZZZZZ			17:55																										
ZZZZZZ			17:59																										
ZZZZZZ			18:03																										
ZZZZZZ			18:07																										
ZZZZZZ			18:11																										
ZZZZZZ			18:14																										
ZZZZZZ			18:18																										
ZZZZZZ			18:22																										
ZZZZZZ			18:26																										
CCV 320-398458/153			18:30																										
CCB 320-398458/154			18:34																										
ZZZZZZ			18:38																										
ZZZZZZ			18:42																										
CCV 320-398458/157			18:45																										
CCB 320-398458/158			18:49																										
CCVL 320-398458/159	1		18:53	X	X	X	X																						
RINSE 320-398458/160			18:57																										
RINSE 320-398458/161			19:01																										
RINSE 320-398458/162			19:05																										
RINSE 320-398458/163			19:09																										

Prep Types:

T = Total/NA

FORM XIII-IN

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICP Instrument ID: T01 Start Date: 07/23/2020 End Date: 07/23/2020

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICV 320-397772/9	12:46										
ICBIS 320-397772/10	12:50										
CRI 320-397772/12	12:58	100		100		101					
ICSA 320-397772/13	13:02	90		89		97					
ICSAB 320-397772/14	13:06	89		88		98					
CCV 320-397772/45	15:10	94		94		96					
CCB 320-397772/46	15:14	95		96		96					
MB 320-397139/1-A	15:42	95		95		94					
LCS 320-397139/2-A	15:46	95		96		94					
CCV 320-397772/57	15:58	94		94		95					
CCB 320-397772/58	16:02	95		95		96					
CCV 320-397772/81	17:33	94		93		94					
CCB 320-397772/82	17:37	94		94		94					
320-62886-1	17:49	84		83		91					
320-62886-1 SD	17:53	91		90		94					
320-62886-1 PDS	17:57	84		83		91					
320-62886-1 MS	18:01	83		81		91					
320-62886-1 MSD	18:05	84		82		91					
320-62886-2	18:09	84		82		90					
320-62886-3	18:13	84		82		89					
320-62886-4	18:17	84		82		89					
CCV 320-397772/93	18:21	92		92		92					
CCB 320-397772/94	18:25	93		92		92					
CCVL 320-397772/130	20:44	98		98		97					

FORM XV - IN

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-62886-1

SDG No.:

ICP Instrument ID: T01 Start Date: 07/24/2020 End Date: 07/24/2020

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICV 320-398458/9	09:03										
ICBIS 320-398458/10	09:07										
CRI 320-398458/12	09:15	99		100		100					
ICSA 320-398458/13	09:19	90		89		99					
ICSAB 320-398458/14	09:23	90		89		99					
CCV 320-398458/69	12:58	96		96		99					
CCB 320-398458/70	13:02	97		96		99					
320-62886-1	13:26	95		94		98					
320-62886-1 SD	13:30	96		96		98					
320-62886-1 PDS	13:34	95		93		99					
320-62886-1 MS	13:38	94		93		98					
320-62886-1 MSD	13:41	94		93		98					
CCV 320-398458/81	13:45	96		95		99					
CCB 320-398458/82	13:49	96		96		98					
320-62886-2	13:53	94		93		98					
320-62886-3	13:57	93		92		97					
320-62886-4	14:01	94		93		97					
MB 320-397139/1-A	14:13	95		95		97					
LCS 320-397139/2-A	14:17	95		94		97					
320-62886-1	14:21	85		82		94					
320-62886-1 SD	14:25	92		90		96					
320-62886-1 PDS	14:29	85		82		94					
CCV 320-398458/93	14:33	95		95		97					
CCB 320-398458/94	14:36	95		94		95					
320-62886-1 MS	14:40	84		81		93					
CCV 320-398458/105	15:20	99		99		101					
CCB 320-398458/106	15:24	100		101		102					
CCVL 320-398458/159	18:53	98		97		100					

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-62886-1

SDG No.:

Batch Number: 397139 Batch Start Date: 07/22/20 12:38 Batch Analyst: Panec, Jacob T

Batch Method: 3010A Batch End Date: 07/22/20 16:39

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MT6010LCS1 00017	MT6010LCS2 00017	MT6010LCS3 00038
MB 320-397139/1		3010A, 6010C		<2 SU	50 mL	50 mL			
LCS 320-397139/2		3010A, 6010C		<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
320-62886-B-1	11215702-Initial	3010A, 6010C	T	<2 SU	50 mL	50 mL			
320-62886-B-1 MS	11215702-Initial	3010A, 6010C	T	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
320-62886-B-1 MSD	11215702-Initial	3010A, 6010C	T	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
320-62886-B-2	11215702-Control	3010A, 6010C	T	<2 SU	50 mL	50 mL			
320-62886-B-3	11215702-Treatment-1	3010A, 6010C	T	<2 SU	50 mL	50 mL			
320-62886-B-4	11215702-Treatment-2	3010A, 6010C	T	<2 SU	50 mL	50 mL			

Batch Notes	
Batch Comment	HB cell 9F
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	07/22/2020 16:39
Digestion Start Time	07/22/2020 12:38
Digestion Unit ID	5
Hydrochloric Acid ID	2085123
Nitric Acid ID	2085124
pH Indicator ID	1119
Pipette/Syringe/Dispenser ID	M39512G
Analyst ID - Spike Analyst	JP
Analyst ID - Spike Witness Analyst	IM
Thermometer ID	BT-12
Digestion Tube/Cup ID	2001329

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Test America-West Sacramento methods 6010b and 200.7

Author: GH
Published: 7/24/2020 7:57:20AM
Notes:

RINSE BLANK

Acquire Date: 7/23/2020 12:15:14PM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0010700	ppm	0.00058000	54.201	.00000	Abs	Pass	
Al3961		-0.00019100	ppm	0.023792	12,438	.00000	Abs	Pass	
As1890		0.0017430	ppm	0.00089800	51.547	.00000	Abs	Pass	
B_2089		0.0010720	ppm	0.00067900	63.310	.00000	Abs	Pass	
Ba4554		.0000080000	ppm	0.00033900	4,085.5	.00000	Abs	Pass	
Be3130		0.000019000	ppm	0.000040000	213.47	.00000	Abs	Pass	
Ca3179		0.0087420	ppm	0.0040570	46.416	.00000	Abs	Pass	
Cd2144		0.00025000	ppm	0.000091000	36.357	.00000	Abs	Pass	
Co2286		-0.00012400	ppm	0.000078000	62.620	.00000	Abs	Pass	
Cr2677		0.0015740	ppm	0.00015500	9.8562	.00000	Abs	Pass	
Cu3247		-0.0058960	ppm	0.00023500	3.9780	.00000	Abs	Pass	
Fe2599		0.030777	ppm	0.0058820	19.111	.00000	Abs	Pass	
K_7664		0.13925	ppm	0.0040440	2.9044	.00000	Abs	Pass	
Mg2790		0.0018360	ppm	0.0031990	174.21	.00000	Abs	Pass	
Mn2576		0.00047000	ppm	0.000037000	7.8571	.00000	Abs	Pass	
Mo2020		0.000037000	ppm	0.00044200	1,204.2	.00000	Abs	Pass	
Na5895		-0.014345	ppm	0.0077450	53.988	.00000	Abs	Pass	
Ni2316		-0.00084500	ppm	0.00013600	16.048	.00000	Abs	Pass	
P_1782		0.019725	ppm	0.0010290	5.2184	.00000	Abs	Pass	
Pb2203		-0.00084800	ppm	0.00039500	46.572	.00000	Abs	Pass	
S_1820		-0.0011500	ppm	0.0034360	298.81	.00000	Abs	Pass	
Sb2068		0.00019800	ppm	0.0036510	1,848.7	.00000	Abs	Pass	
Se1960		0.0018310	ppm	0.00036500	19.928	.00000	Abs	Pass	
Si2881		-0.0056940	ppm	0.021326	374.53	.00000	Abs	Pass	
Sn1899		0.00075500	ppm	0.00013800	18.343	.00000	Abs	Pass	
Sr4077		0.000097000	ppm	0.000096000	99.134	.00000	Abs	Pass	
Ti3349		0.0012840	ppm	0.00012600	9.7818	.00000	Abs	Pass	
Tl1908		0.0010100	ppm	0.00033000	32.648	.00000	Abs	Pass	
V_2924		.0000060000	ppm	0.000057000	878.29	.00000	Abs	Pass	
Zn2062		0.0010580	ppm	0.00025300	23.860	.00000	Abs	Pass	
Y_2243		5,961.0	Cts/S	27.681	0.46437				
Y_3600		55,675	Cts/S	309.20	0.55537				
Y_3774		3,481.6	Cts/S	8.9308	0.25651				

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Acquire Date: 7/23/2020 12:19:15PM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0012170	ppm	0.00087500	71.886	.00000	Abs	Pass	
Al3961		-0.018015	ppm	0.013040	72.385	.00000	Abs	Pass	
As1890		0.0026860	ppm	0.0044470	165.58	.00000	Abs	Pass	
B_2089		-0.00020900	ppm	0.00074800	358.68	.00000	Abs	Pass	
Ba4554		-0.00013700	ppm	0.000088000	63.902	.00000	Abs	Pass	

Color Legend   Pass/Unchecked   Internal Standard   Check Fail   Check Warn

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Acquire Date: 7/23/2020 12:19:15PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Be3130		.0000080000	ppm	0.00014000	1,827.3	.00000	Abs	Pass	
Ca3179		-0.00028400	ppm	0.0050600	1,782.5	.00000	Abs	Pass	
Cd2144		0.00011500	ppm	0.00016600	144.81	.00000	Abs	Pass	
Co2286		0.000057000	ppm	0.00025900	456.30	.00000	Abs	Pass	
Cr2677		0.00019700	ppm	0.00018700	95.222	.00000	Abs	Pass	
Cu3247		-0.0062940	ppm	0.0011290	17.938	.00000	Abs	Pass	
Fe2599		0.012935	ppm	0.0016300	12.605	.00000	Abs	Pass	
K_7664		0.039508	ppm	0.036611	92.667	.00000	Abs	Pass	
Mg2790		0.00042400	ppm	0.00098200	231.78	.00000	Abs	Pass	
Mn2576		0.00022700	ppm	0.00015200	67.065	.00000	Abs	Pass	
Mo2020		0.000057000	ppm	0.000023000	40.452	.00000	Abs	Pass	
Na5895		-0.023170	ppm	0.0069720	30.092	.00000	Abs	Pass	
Ni2316		-0.0011560	ppm	0.00068400	59.133	.00000	Abs	Pass	
P_1782		0.016707	ppm	0.0010440	6.2458	.00000	Abs	Pass	
Pb2203		-0.0017250	ppm	0.0016990	98.506	.00000	Abs	Pass	
S_1820		-0.0022040	ppm	0.0047020	213.37	.00000	Abs	Pass	
Sb2068		-0.0013930	ppm	0.0048180	345.76	.00000	Abs	Pass	
Se1960		-0.0027480	ppm	0.0025650	93.329	.00000	Abs	Pass	
Si2881		-0.027928	ppm	0.025414	90.997	.00000	Abs	Pass	
Sn1899		-0.00014700	ppm	0.00011000	74.672	.00000	Abs	Pass	
Sr4077		0.000043000	ppm	0.00055400	1,290.0	.00000	Abs	Pass	
Ti3349		-0.00033800	ppm	0.00023300	68.752	.00000	Abs	Pass	
Tl1908		0.000069000	ppm	0.00040300	586.34	.00000	Abs	Pass	
V_2924		-0.00029300	ppm	0.00036000	122.81	.00000	Abs	Pass	
Zn2062		0.00036800	ppm	0.00051100	138.70	.00000	Abs	Pass	
Y_2243		5,915.1	Cts/S	7.8604	0.13289				
Y_3600		55,649	Cts/S	347.15	0.62383				
Y_3774		3,497.4	Cts/S	40.115	1.1470				

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Acquire Date: 7/23/2020 12:23:17PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0014650	ppm	0.00063600	43.418	.00000	Abs	Pass	
Al3961		-0.012978	ppm	0.0041180	31.729	.00000	Abs	Pass	
As1890		0.000083000	ppm	0.00044300	531.81	.00000	Abs	Pass	
B_2089		-0.00059200	ppm	0.00072000	121.58	.00000	Abs	Pass	
Ba4554		0.000042000	ppm	0.00018400	438.49	.00000	Abs	Pass	
Be3130		0.000091000	ppm	0.00027600	302.33	.00000	Abs	Pass	
Ca3179		-0.012898	ppm	0.0055540	43.061	.00000	Abs	Pass	
Cd2144		0.00020000	ppm	0.0000030000	1.6742	.00000	Abs	Pass	
Co2286		0.000085000	ppm	0.00026600	312.52	.00000	Abs	Pass	
Cr2677		0.00076100	ppm	0.00016500	21.738	.00000	Abs	Pass	
Cu3247		-0.0060420	ppm	0.000037000	0.61717	.00000	Abs	Pass	
Fe2599		0.0051950	ppm	0.00023400	4.5139	.00000	Abs	Pass	
K_7664		0.069945	ppm	0.0045320	6.4787	.00000	Abs	Pass	
Mg2790		0.0014240	ppm	0.0058570	411.31	.00000	Abs	Pass	
Mn2576		0.00022600	ppm	0.000065000	28.654	.00000	Abs	Pass	

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Acquire Date: 7/23/2020 12:23:17PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Mo2020		0.00028900	ppm	0.000022000	7.4736	.00000	Abs	Pass	
Na5895		-0.021203	ppm	0.012872	60.705	.00000	Abs	Pass	
Ni2316		0.00071900	ppm	0.00035000	48.729	.00000	Abs	Pass	
P_1782		0.015561	ppm	0.0020740	13.328	.00000	Abs	Pass	
Pb2203		-0.00079000	ppm	0.0014940	189.08	.00000	Abs	Pass	
S_1820		0.00013700	ppm	0.00044100	322.31	.00000	Abs	Pass	
Sb2068		0.0047990	ppm	0.00077400	16.128	.00000	Abs	Pass	
Se1960		-0.00051200	ppm	0.0024800	484.47	.00000	Abs	Pass	
Si2881		-0.024324	ppm	0.017968	73.870	.00000	Abs	Pass	
Sn1899		0.00030400	ppm	0.00073500	241.84	.00000	Abs	Pass	
Sr4077		0.000039000	ppm	0.00028700	730.64	.00000	Abs	Pass	
Ti3349		-0.00045800	ppm	0.00056700	123.80	.00000	Abs	Pass	
Tl1908		0.00051000	ppm	0.0018320	359.12	.00000	Abs	Pass	
V_2924		-0.00045900	ppm	0.00043800	95.409	.00000	Abs	Pass	
Zn2062		0.00020400	ppm	0.00024600	120.31	.00000	Abs	Pass	
Y_2243		5,950.6	Cts/S	11.513	0.19348				
Y_3600		55,668	Cts/S	170.15	0.30566				
Y_3774		3,467.7	Cts/S	23.102	0.66619				

CALSTD0 2065749

Acquire Date: 7/23/2020 12:27:19PM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000096000	Cts/S	0.000038000	39.650
Al3961		-0.00046200	Cts/S	0.0014650	316.82
As1890		0.000037000	Cts/S	0.000046000	124.54
B_2089		0.00097900	Cts/S	0.00025000	25.512
Ba4554		0.013219	Cts/S	0.00069900	5.2879
Be3130		0.000073000	Cts/S	0.00017000	233.96
Ca3179		0.0043280	Cts/S	0.000098000	2.2529
Cd2144		0.000052000	Cts/S	0.00015800	304.88
Co2286		.0000030000	Cts/S	0.000041000	1,198.1
Cr2677		0.000059000	Cts/S	0.000034000	57.074
Cu3247		0.0047030	Cts/S	0.00012400	2.6464
Fe2599		0.00063200	Cts/S	0.000071000	11.298
K_7664		0.0025550	Cts/S	0.00096700	37.836
Mg2790		0.000022000	Cts/S	0.000015000	70.543
Mn2576		0.000062000	Cts/S	0.000057000	91.671
Mo2020		0.000085000	Cts/S	0.000095000	111.89
Na5895		0.0085880	Cts/S	0.0025130	29.261
Ni2316		0.0010840	Cts/S	0.000018000	1.6492
P_1782		0.00041400	Cts/S	0.000010000	2.3682
Pb2203		0.00020300	Cts/S	0.00012500	61.370
S_1820		0.00014000	Cts/S	0.000043000	30.332
Sb2068		0.000019000	Cts/S	0.0000050000	25.767
Se1960		0.00011100	Cts/S	0.000071000	63.944
Si2881		-0.00011800	Cts/S	0.000047000	39.758
Sn1899		0.000033000	Cts/S	0.00018700	559.49

CALSTD0 2065749

Acquire Date: 7/23/2020 12:27:19PM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Sr4077		-0.0025930	Cts/S	0.0014160	54.618
Ti3349		0.000020000	Cts/S	0.0000070000	35.839
Tl1908		.0000010000	Cts/S	0.000051000	4,445.7
V_2924		0.000074000	Cts/S	0.000054000	73.021
Zn2062		0.000040000	Cts/S	0.000029000	70.819
Y_2243		5,911.6	Cts/S	4.1531	0.070253
Y_3600		55,776	Cts/S	414.32	0.74283
Y_3774		3,496.7	Cts/S	2.1361	0.061088

CALSTD1 2038574

Acquire Date: 7/23/2020 12:31:20PM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.096991	Cts/S	0.00059500	0.61343
Al3961		2.1012	Cts/S	0.0080970	0.38538
As1890		0.040733	Cts/S	0.0000010000	0.0029780
B_2089		0.35910	Cts/S	0.00070600	0.19670
Ba4554		17.014	Cts/S	0.10693	0.62846
Be3130		1.3921	Cts/S	0.010117	0.72678
Ca3179		2.4507	Cts/S	0.0088570	0.36142
Cd2144		1.5672	Cts/S	0.0035580	0.22703
Co2286		2.2209	Cts/S	0.0069070	0.31100
Cr2677		0.38544	Cts/S	0.00022300	0.057929
Cu3247		0.43765	Cts/S	0.0017670	0.40366
Fe2599		1.2235	Cts/S	0.0095900	0.78381
K_7664		3.1371	Cts/S	0.022114	0.70492
Mg2790		0.32387	Cts/S	0.00052700	0.16274
Mn2576		2.9505	Cts/S	0.0036840	0.12487
Mo2020		0.58462	Cts/S	0.0025810	0.44147
Na5895		10.509	Cts/S	0.071746	0.68272
Ni2316		0.63083	Cts/S	0.00086800	0.13761
P_1782		0.10686	Cts/S	0.00063800	0.59695
Pb2203		0.10160	Cts/S	0.0000060000	0.0055940
S_1820		0.093411	Cts/S	0.00014500	0.15480
Sb2068		0.043557	Cts/S	0.000085000	0.19473
Se1960		0.026088	Cts/S	0.000033000	0.12549
Si2881		0.035189	Cts/S	0.000033000	0.094189
Sn1899		0.82954	Cts/S	0.0013820	0.16658
Sr4077		18.323	Cts/S	0.092733	0.50609
Ti3349		0.25422	Cts/S	0.00070800	0.27833
Tl1908		0.033919	Cts/S	0.00026100	0.76947
V_2924		0.55930	Cts/S	0.00087900	0.15724
Zn2062		0.30214	Cts/S	0.00026900	0.088905
Y_2243		5,748.0	Cts/S	3.4016	0.059179
Y_3600		53,882	Cts/S	298.52	0.55404
Y_3774		3,471.6	Cts/S	15.885	0.45757

CALSTD2 2072059

Acquire Date: 7/23/2020 12:35:06PM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Al3961		10.557	Cts/S	0.079980	0.75757
Ca3179		11.966	Cts/S	0.10675	0.89212
Fe2599		5.8903	Cts/S	0.056356	0.95676
K_7664		15.869	Cts/S	0.17947	1.1309
Mg2790		1.6079	Cts/S	0.0061650	0.38344
Na5895		53.022	Cts/S	0.45757	0.86299
P_1782		1.0574	Cts/S	0.0025080	0.23716
S_1820		4.7615	Cts/S	0.0046680	0.098046
Y_2243		5,447.3	Cts/S	12.629	0.23184
Y_3600		50,905	Cts/S	205.69	0.40407
Y_3774		3,475.3	Cts/S	9.4875	0.27300

LRA 2072618

Acquire Date: 7/23/2020 12:39:04PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.9879	ppm	0.0043460	0.21863	2.0000	Rel(%)	Pass	
Al3961		98.955	ppm	0.53856	0.54424	100.00	Rel(%)	Pass	
As1890		1.9883	ppm	0.0064630	0.32505	2.0000	Rel(%)	Pass	
B_2089		3.9418	ppm	0.0013160	0.033398	4.0000	Rel(%)	Pass	
Ba4554		10.053	ppm	0.060819	0.60499	10.000	Rel(%)	Pass	
Be3130		1.9659	ppm	0.014290	0.72690	2.0000	Rel(%)	Pass	
Ca3179		100.43	ppm	0.66289	0.66008	100.00	Rel(%)	Pass	
Cd2144		1.9498	ppm	0.0052040	0.26690	2.0000	Rel(%)	Pass	
Co2286		9.8648	ppm	0.029362	0.29765	10.000	Rel(%)	Pass	
Cr2677		9.7882	ppm	0.014833	0.15154	10.000	Rel(%)	Pass	
Cu3247		9.9719	ppm	0.033624	0.33718	10.000	Rel(%)	Pass	
Fe2599		99.337	ppm	0.54237	0.54598	100.00	Rel(%)	Pass	
K_7664		99.587	ppm	0.91778	0.92158	100.00	Rel(%)	Pass	
Mg2790		98.933	ppm	0.26412	0.26697	100.00	Rel(%)	Pass	
Mn2576		9.7250	ppm	0.014734	0.15151	10.000	Rel(%)	Pass	
Mo2020		3.9581	ppm	0.019805	0.50036	4.0000	Rel(%)	Pass	
Na5895		98.897	ppm	0.67906	0.68663	100.00	Rel(%)	Pass	
Ni2316		9.8116	ppm	0.031837	0.32448	10.000	Rel(%)	Pass	
P_1782		10.090	ppm	0.025555	0.25326	10.000	Rel(%)	Pass	
Pb2203		1.9773	ppm	0.0025390	0.12840	2.0000	Rel(%)	Pass	
S_1820		9.8055	ppm	0.013756	0.14029	10.000	Rel(%)	Pass	
Sb2068		1.9742	ppm	0.0080480	0.40768	2.0000	Rel(%)	Pass	
Se1960		1.9436	ppm	0.0072540	0.37323	2.0000	Rel(%)	Pass	
Si2881		9.9260	ppm	0.025042	0.25229	10.000	Rel(%)	Pass	
Sn1899		9.7958	ppm	0.030878	0.31522	10.000	Rel(%)	Pass	
Sr4077		9.8882	ppm	0.059130	0.59799	10.000	Rel(%)	Pass	
Ti3349		3.9624	ppm	0.0094850	0.23937	4.0000	Rel(%)	Pass	
Tl1908		1.9506	ppm	0.011944	0.61230	2.0000	Rel(%)	Pass	
V_2924		9.8694	ppm	0.017778	0.18013	10.000	Rel(%)	Pass	
Zn2062		9.7226	ppm	0.011854	0.12192	10.000	Rel(%)	Pass	

LRA 2072618

Acquire Date: 7/23/2020 12:39:04PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,619.9	Cts/S	15.973	0.28423				
Y_3600		52,917	Cts/S	149.44	0.28241				
Y_3774		3,500.3	Cts/S	4.7024	0.13434				

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Acquire Date: 7/23/2020 12:42:45PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00016600	ppm	0.0011840	713.06	.00000	Abs	Pass	
Al3961		0.014867	ppm	0.050357	338.72	.00000	Abs	Pass	
As1890		0.000082000	ppm	0.0012580	1,525.7	.00000	Abs	Pass	
B_2089		0.010151	ppm	0.0013210	13.011	.00000	Abs	Pass	
Ba4554		0.00063800	ppm	0.00021500	33.628	.00000	Abs	Pass	
Be3130		0.00020500	ppm	0.00024600	120.17	.00000	Abs	Pass	
Ca3179		0.0051920	ppm	0.0053140	102.36	.00000	Abs	Pass	
Cd2144		0.00020800	ppm	0.000074000	35.684	.00000	Abs	Pass	
Co2286		0.00073700	ppm	0.00036400	49.430	.00000	Abs	Pass	
Cr2677		0.00093900	ppm	0.00021100	22.477	.00000	Abs	Pass	
Cu3247		0.0069160	ppm	0.00071000	10.261	.00000	Abs	Pass	
Fe2599	**F**	**0.10647**	**ppm**	**0.016172**	**15.190**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.13613	ppm	0.0065310	4.7977	.00000	Abs	Pass	
Mg2790		0.0089590	ppm	0.0019550	21.828	.00000	Abs	Pass	
Mn2576		0.0013240	ppm	0.00019800	14.925	.00000	Abs	Pass	
Mo2020	**F**	**0.023217**	**ppm**	**0.0028850**	**12.427**	**.00000**	**Abs**	**Fail High**	**.02000**
Na5895		0.12802	ppm	0.0048210	3.7658	.00000	Abs	Pass	
Ni2316		0.0026740	ppm	0.0017390	65.018	.00000	Abs	Pass	
P_1782		-0.00028400	ppm	0.000044000	15.447	.00000	Abs	Pass	
Pb2203		0.0021730	ppm	0.0031130	143.24	.00000	Abs	Pass	
S_1820		0.0022010	ppm	0.0021040	95.615	.00000	Abs	Pass	
Sb2068		0.0020810	ppm	0.0024290	116.74	.00000	Abs	Pass	
Se1960		0.0046880	ppm	0.0032290	68.890	.00000	Abs	Pass	
Si2881		0.0089710	ppm	0.030777	343.06	.00000	Abs	Pass	
Sn1899		0.0080870	ppm	0.0011380	14.077	.00000	Abs	Pass	
Sr4077		0.0010950	ppm	0.000096000	8.7794	.00000	Abs	Pass	
Ti3349	**W**	**0.010137**	**ppm**	**0.00098200**	**9.6909**	**.00000**	**Abs**	**Warn High**	**0.01000**
Tl1908		0.0050400	ppm	0.00059000	11.713	.00000	Abs	Pass	
V_2924		0.0012850	ppm	0.0000010000	0.097255	.00000	Abs	Pass	
Zn2062	**W**	**0.0067800**	**ppm**	**0.00057300**	**8.4524**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		5,908.0	Cts/S	37.320	0.63168				
Y_3600		55,711	Cts/S	132.28	0.23743				
Y_3774		3,491.9	Cts/S	15.078	0.43179				

ICV 2056510

Acquire Date: 7/23/2020 12:46:47PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.24180	ppm	0.0022320	0.92298	.25000	Rel(%)	Pass	
Al3961		10.076	ppm	0.049018	0.48649	10.000	Rel(%)	Pass	
As1890		0.96570	ppm	0.0017510	0.18134	1.0000	Rel(%)	Pass	
B_2089		0.51188	ppm	0.0018700	0.36536	.50000	Rel(%)	Pass	
Ba4554		1.0308	ppm	0.0076460	0.74179	1.0000	Rel(%)	Pass	
Be3130		1.0230	ppm	0.010673	1.0433	1.0000	Rel(%)	Pass	
Ca3179		10.360	ppm	0.055749	0.53815	10.000	Rel(%)	Pass	
Cd2144		1.0429	ppm	0.0025570	0.24517	1.0000	Rel(%)	Pass	
Co2286	**W**	**1.0507**	**ppm**	**0.0030900**	**0.29407**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Cr2677		1.0158	ppm	0.0060570	0.59630	1.0000	Rel(%)	Pass	
Cu3247		1.0282	ppm	0.0040220	0.39117	1.0000	Rel(%)	Pass	
Fe2599		10.251	ppm	0.060405	0.58928	10.000	Rel(%)	Pass	
K_7664		9.9124	ppm	0.085242	0.85995	10.000	Rel(%)	Pass	
Mg2790		10.070	ppm	0.035641	0.35394	10.000	Rel(%)	Pass	
Mn2576		1.0450	ppm	0.0045250	0.43301	1.0000	Rel(%)	Pass	
Mo2020		1.0381	ppm	0.0049110	0.47307	1.0000	Rel(%)	Pass	
Na5895		9.8576	ppm	0.10609	1.0763	10.000	Rel(%)	Pass	
Ni2316	**W**	**1.0614**	**ppm**	**0.0030830**	**0.29045**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
P_1782		1.9803	ppm	0.0011050	0.055774	2.0000	Rel(%)	Pass	
Pb2203		1.0402	ppm	0.0020770	0.19967	1.0000	Rel(%)	Pass	
S_1820		1.9584	ppm	0.0052730	0.26923	2.0000	Rel(%)	Pass	
Sb2068		1.0078	ppm	0.0057490	0.57050	1.0000	Rel(%)	Pass	
Se1960		1.0172	ppm	0.0025550	0.25117	1.0000	Rel(%)	Pass	
Si2881		10.367	ppm	0.11590	1.1179	10.000	Rel(%)	Pass	
Sn1899		1.0359	ppm	0.0017630	0.17023	1.0000	Rel(%)	Pass	
Sr4077		1.0284	ppm	0.0070310	0.68368	1.0000	Rel(%)	Pass	
Ti3349		1.0306	ppm	0.0039590	0.38414	1.0000	Rel(%)	Pass	
Tl1908	**W**	**1.0506**	**ppm**	**0.0015710**	**0.14952**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
V_2924		1.0239	ppm	0.0033460	0.32685	1.0000	Rel(%)	Pass	
Zn2062		1.0055	ppm	0.0054740	0.54439	1.0000	Rel(%)	Pass	
Y_2243		5,931.0	Cts/S	13.177	0.22217				
Y_3600		55,963	Cts/S	209.30	0.37399				
Y_3774		3,563.0	Cts/S	5.9520	0.16705				

ICBIS 2065750

Acquire Date: 7/23/2020 12:50:35PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0013720	ppm	0.00016400	11.964	.00000	Abs	Pass	
Al3961		0.030931	ppm	0.019975	64.579	.00000	Abs	Pass	
As1890		0.0021250	ppm	0.0024970	117.49	.00000	Abs	Pass	
B_2089		0.0037760	ppm	0.00072100	19.097	.00000	Abs	Pass	
Ba4554		0.00043700	ppm	0.00035600	81.317	.00000	Abs	Pass	
Be3130		0.00023400	ppm	0.00034500	147.34	.00000	Abs	Pass	
Ca3179		-0.0011130	ppm	0.014096	1,267.0	.00000	Abs	Pass	
Cd2144		0.00065800	ppm	0.00013900	21.060	.00000	Abs	Pass	
Co2286		0.0015840	ppm	0.000091000	5.7259	.00000	Abs	Pass	
Cr2677		-0.00041200	ppm	0.00013900	33.591	.00000	Abs	Pass	

ICBIS 2065750

Acquire Date: 7/23/2020 12:50:35PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00083200	ppm	0.00024300	29.169	.00000	Abs	Pass	
Fe2599		0.010817	ppm	0.0083090	76.815	.00000	Abs	Pass	
K_7664		0.0072180	ppm	0.010200	141.32	.00000	Abs	Pass	
Mg2790		0.00017100	ppm	0.0014110	826.98	.00000	Abs	Pass	
Mn2576		0.00019500	ppm	0.000093000	47.538	.00000	Abs	Pass	
Mo2020		0.0074810	ppm	0.0010050	13.435	.00000	Abs	Pass	
Na5895		0.0096310	ppm	0.0038260	39.722	.00000	Abs	Pass	
Ni2316		0.0032380	ppm	0.00060700	18.742	.00000	Abs	Pass	
P_1782		0.0053380	ppm	0.0012660	23.721	.00000	Abs	Pass	
Pb2203		-0.0012650	ppm	0.0010780	85.238	.00000	Abs	Pass	
S_1820		0.048253	ppm	0.0084060	17.420	.00000	Abs	Pass	
Sb2068		0.0045870	ppm	0.0021630	47.154	.00000	Abs	Pass	
Se1960		-0.0015690	ppm	0.0023440	149.39	.00000	Abs	Pass	
Si2881		0.070627	ppm	0.0082570	11.692	.00000	Abs	Pass	
Sn1899		0.0044240	ppm	0.00029700	6.7103	.00000	Abs	Pass	
Sr4077		0.00069500	ppm	0.00020800	29.882	.00000	Abs	Pass	
Ti3349		0.0045230	ppm	0.00076500	16.923	.00000	Abs	Pass	
Tl1908		0.0022290	ppm	0.00039000	17.514	.00000	Abs	Pass	
V_2924		0.000021000	ppm	0.00039900	1,902.0	.00000	Abs	Pass	
Zn2062		0.0013040	ppm	0.00026700	20.448	.00000	Abs	Pass	
Y_2243		5,939.0	Cts/S	3.3303	0.056075				
Y_3600		55,848	Cts/S	3.1552	0.0056500				
Y_3774		3,504.7	Cts/S	20.795	0.59336				

CRI 2077614

Acquire Date: 7/23/2020 12:54:37PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0041070	ppm	0.00025400	6.1731	.00500	Rel(%)	Pass	
Al3961	**W**	**0.26709**	**ppm**	**0.0049190**	**1.8418**	**.20000**	**Rel(%)**	**Warn High**	**20.000**
As1890		0.035348	ppm	0.00019400	0.54755	.04000	Rel(%)	Pass	
B_2089		0.19884	ppm	0.00083300	0.41890	.20000	Rel(%)	Pass	
Ba4554		0.020999	ppm	0.00021200	1.0106	.02000	Rel(%)	Pass	
Be3130		0.0030210	ppm	0.00042500	14.079	.00300	Rel(%)	Pass	
Ca3179		0.55754	ppm	0.00013300	0.023905	.50000	Rel(%)	Pass	
Cd2144		0.0031510	ppm	0.00010300	3.2786	.00300	Rel(%)	Pass	
Co2286		0.010157	ppm	0.00018500	1.8237	.01000	Rel(%)	Pass	
Cr2677		0.010748	ppm	0.00082900	7.7129	.01000	Rel(%)	Pass	
Cu3247		0.015195	ppm	0.00091100	5.9929	.01500	Rel(%)	Pass	
Fe2599		0.11676	ppm	0.0033290	2.8512	.10000	Rel(%)	Pass	
K_7664		1.0028	ppm	0.0029930	0.29850	1.0000	Rel(%)	Pass	
Mg2790		0.50606	ppm	0.0021110	0.41708	.50000	Rel(%)	Pass	
Mn2576		0.010648	ppm	0.00018200	1.7114	.01000	Rel(%)	Pass	
Mo2020		0.021704	ppm	0.00027100	1.2488	.02000	Rel(%)	Pass	
Na5895		0.50765	ppm	0.0026530	0.52265	.50000	Rel(%)	Pass	
Ni2316		0.011352	ppm	0.00016200	1.4246	.01000	Rel(%)	Pass	
P_1782		0.50094	ppm	0.0039470	0.78782	.50000	Rel(%)	Pass	
Pb2203	**W**	**0.012285**	**ppm**	**0.0022060**	**17.958**	**.01000**	**Rel(%)**	**Warn High**	**20.000**

CRI 2077614

Acquire Date: 7/23/2020 12:54:37PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.48931	ppm	0.00051300	0.10484	.50000	Rel(%)	Pass	
Sb2068		0.029755	ppm	0.0022240	7.4758	.03000	Rel(%)	Pass	
Se1960		0.042462	ppm	0.0039460	9.2923	.04000	Rel(%)	Pass	
Si2881		0.53625	ppm	0.044333	8.2672	.50000	Rel(%)	Pass	
Sn1899	**W**	**0.024399**	**ppm**	**0.00054100**	**2.2174**	**.02000**	**Rel(%)**	**Warn High**	**20.000**
Sr4077		0.051994	ppm	0.000094000	0.18157	.05000	Rel(%)	Pass	
Ti3349		0.011201	ppm	0.00061300	5.4723	.01000	Rel(%)	Pass	
Tl1908		0.030237	ppm	0.0026880	8.8904	.03000	Rel(%)	Pass	
V_2924		0.019862	ppm	0.000049000	0.24857	.02000	Rel(%)	Pass	
Zn2062		0.021443	ppm	0.00047500	2.2142	.02000	Rel(%)	Pass	
Y_2243		5,932.1	Cts/S	1.3322	0.022457				
Y_3600		56,072	Cts/S	96.633	0.17234				
Y_3774		3,493.0	Cts/S	15.393	0.44070				

CRI 2077613

Acquire Date: 7/23/2020 12:58:37PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280	**W**	**0.0034390**	**ppm**	**0.00087400**	**25.403**	**.00500**	**Rel(%)**	**Warn Low**	**-20.000**
Al3961		0.24981	ppm	0.016152	6.4655	.20000	Rel(%)	Pass	
As1890	**W**	**0.015666**	**ppm**	**0.00060300**	**3.8512**	**.02000**	**Rel(%)**	**Warn Low**	**-20.000**
B_2089		0.099228	ppm	0.00014700	0.14822	.10000	Rel(%)	Pass	
Ba4554		0.0052400	ppm	0.00019000	3.6204	.00500	Rel(%)	Pass	
Be3130		0.0017530	ppm	0.000022000	1.2472	.00200	Rel(%)	Pass	
Ca3179		0.51959	ppm	0.0055680	1.0717	.50000	Rel(%)	Pass	
Cd2144		0.0020630	ppm	0.000082000	3.9538	.00200	Rel(%)	Pass	
Co2286		0.0049610	ppm	0.00031900	6.4290	.00500	Rel(%)	Pass	
Cr2677		0.0047950	ppm	0.00079800	16.652	.00500	Rel(%)	Pass	
Cu3247		0.0097680	ppm	0.0012130	12.415	.01000	Rel(%)	Pass	
Fe2599		0.084441	ppm	0.012534	14.844	.10000	Rel(%)	Pass	
K_7664		0.94906	ppm	0.055830	5.8826	1.0000	Rel(%)	Pass	
Mg2790		0.49796	ppm	0.0047470	0.95335	.50000	Rel(%)	Pass	
Mn2576		0.0052160	ppm	0.000011000	0.20743	.00500	Rel(%)	Pass	
Mo2020	**W**	**0.024351**	**ppm**	**0.00014600**	**0.59756**	**.02000**	**Rel(%)**	**Warn High**	**20.000**
Na5895		0.47987	ppm	0.0060700	1.2648	.50000	Rel(%)	Pass	
Ni2316	**W**	**0.0064750**	**ppm**	**0.0010970**	**16.934**	**.00500**	**Rel(%)**	**Warn High**	**20.000**
P_1782		0.49290	ppm	0.0049650	1.0073	.50000	Rel(%)	Pass	
Pb2203	**W**	**0.0028640**	**ppm**	**0.0016730**	**58.430**	**.00500**	**Rel(%)**	**Warn Low**	**-20.000**
S_1820		0.48738	ppm	0.0058610	1.2025	.50000	Rel(%)	Pass	
Sb2068		0.023209	ppm	0.00017500	0.75340	.02000	Rel(%)	Pass	
Se1960		0.018215	ppm	0.0069560	38.189	.02000	Rel(%)	Pass	
Si2881		0.49110	ppm	0.0028890	0.58833	.50000	Rel(%)	Pass	
Sn1899		0.022603	ppm	0.00033000	1.4585	.02000	Rel(%)	Pass	
Sr4077		0.050903	ppm	0.00027800	0.54529	.05000	Rel(%)	Pass	
Ti3349	**W**	**0.012889**	**ppm**	**0.0010700**	**8.3031**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
Tl1908		0.020592	ppm	0.0034710	16.854	.02000	Rel(%)	Pass	
V_2924		0.0048710	ppm	0.00016900	3.4722	.00500	Rel(%)	Pass	
Zn2062		0.010638	ppm	0.00048500	4.5596	.01000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CRI 2077613

Acquire Date: 7/23/2020 12:58:37PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,921.7	Cts/S	7.6300	0.12885				
Y_3600		55,959	Cts/S	285.79	0.51072				
Y_3774		3,545.9	Cts/S	16.896	0.47649				

ICSA 2056509

Acquire Date: 7/23/2020 1:02:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0010920	ppm	0.00063200	57.863	.00000	Abs	Pass	
Al3961		499.32	ppm	3.6963	0.74025	500.00	Abs	Pass	
As1890		-0.0041830	ppm	0.0025100	60.002	.00000	Abs	Pass	
B_2089		0.0069070	ppm	0.00025400	3.6711	.00000	Abs	Pass	
Ba4554		0.00055000	ppm	0.00037800	68.759	.00000	Abs	Pass	
Be3130		-0.00084600	ppm	0.00028400	33.529	.00000	Abs	Pass	
Ca3179		483.46	ppm	3.8553	0.79744	500.00	Abs	Pass	
Cd2144		0.00025900	ppm	0.000092000	35.612	.00000	Abs	Pass	
Co2286		-0.00046900	ppm	0.00072400	154.33	.00000	Abs	Pass	
Cr2677		-0.0036620	ppm	0.00076200	20.802	.00000	Abs	Pass	
Cu3247		-0.0028440	ppm	0.00076600	26.938	.00000	Abs	Pass	
Fe2599		185.96	ppm	1.3083	0.70355	200.00	Abs	Pass	
K_7664		-0.11119	ppm	0.043287	38.930	.00000	Abs	Pass	
Mg2790		492.78	ppm	4.3773	0.88827	500.00	Abs	Pass	
Mn2576		0.0031330	ppm	0.000086000	2.7588	.00000	Abs	Pass	
Mo2020		0.00052900	ppm	0.00015200	28.780	.00000	Abs	Pass	
Na5895		0.084833	ppm	0.016904	19.926	.00000	Abs	Pass	
Ni2316		-0.0028260	ppm	0.00024900	8.8035	.00000	Abs	Pass	
P_1782		0.0086720	ppm	0.00071000	8.1921	.00000	Abs	Pass	
Pb2203		0.0034280	ppm	0.00099200	28.950	.00000	Abs	Pass	
S_1820		-0.33525	ppm	0.012041	3.5916	.00000	Abs	Pass	
Sb2068		0.0049480	ppm	0.00043000	8.6924	.00000	Abs	Pass	
Se1960		0.00084400	ppm	0.0063240	749.09	.00000	Abs	Pass	
Si2881		-0.023427	ppm	0.025691	109.66	.00000	Abs	Pass	
Sn1899		-0.0046830	ppm	0.0014640	31.254	.00000	Abs	Pass	
Sr4077		0.0050510	ppm	0.00040600	8.0366	.00000	Abs	Pass	
Ti3349		0.00063000	ppm	0.00055700	88.336	.00000	Abs	Pass	
Tl1908		-0.0064890	ppm	0.00031800	4.8943	.00000	Abs	Pass	
V_2924		-0.00066800	ppm	0.00022300	33.324	.00000	Abs	Pass	
Zn2062		-0.0049230	ppm	0.00065500	13.315	.00000	Abs	Pass	
Y_2243		5,323.3	Cts/S	16.733	0.31434				
Y_3600		49,463	Cts/S	34.715	0.070185				
Y_3774		3,406.2	Cts/S	13.266	0.38947				

ICSAB 2070985

Acquire Date: 7/23/2020 1:06:40PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.1035	ppm	0.0043270	0.39215	1.0000	Rel(%)	Pass	
Al3961		505.80	ppm	1.4347	0.28365	500.00	Rel(%)	Pass	
As1890		0.95912	ppm	0.0051630	0.53832				
B_2089		9.7005	ppm	0.021477	0.22140				
Ba4554		1.0175	ppm	0.0039380	0.38701	1.0000	Rel(%)	Pass	
Be3130		0.49603	ppm	0.0011710	0.23601	.50000	Rel(%)	Pass	
Ca3179		490.01	ppm	2.4973	0.50964	500.00	Rel(%)	Pass	
Cd2144		0.94637	ppm	0.0022830	0.24121	1.0000	Rel(%)	Pass	
Co2286		0.94206	ppm	0.0016090	0.17080	1.0000	Rel(%)	Pass	
Cr2677		0.97762	ppm	0.0043510	0.44505	1.0000	Rel(%)	Pass	
Cu3247		1.0349	ppm	0.0060500	0.58459	1.0000	Rel(%)	Pass	
Fe2599		189.28	ppm	0.37970	0.20060	200.00	Rel(%)	Pass	
K_7664		10.238	ppm	0.16107	1.5733				
Mg2790		494.96	ppm	5.2373	1.0581	500.00	Rel(%)	Pass	
Mn2576		1.0103	ppm	0.0040860	0.40447	1.0000	Rel(%)	Pass	
Mo2020		0.000042000	ppm	0.00025700	614.45				
Na5895		10.376	ppm	0.051861	0.49982				
Ni2316		0.91911	ppm	0.00042000	0.045727	1.0000	Rel(%)	Pass	
P_1782		10.213	ppm	0.031684	0.31024				
Pb2203		0.95512	ppm	0.0029190	0.30558	1.0000	Rel(%)	Pass	
S_1820		-0.33405	ppm	0.0027190	0.81407				
Sb2068		0.0033670	ppm	0.0019620	58.262				
Se1960		0.96150	ppm	0.0056240	0.58489				
Si2881		-0.026898	ppm	0.073395	272.87				
Sn1899		0.0025580	ppm	0.00016400	6.4089				
Sr4077		1.0156	ppm	0.0042250	0.41598				
Ti3349		-0.00017500	ppm	0.00075700	432.21				
Tl1908		0.91299	ppm	0.0053320	0.58400				
V_2924		1.0178	ppm	0.0038990	0.38312	1.0000	Rel(%)	Pass	
Zn2062		0.93426	ppm	0.0055480	0.59388	1.0000	Rel(%)	Pass	
Y_2243		5,285.0	Cts/S	6.2541	0.11834				
Y_3600		49,213	Cts/S	210.31	0.42735				
Y_3774		3,429.5	Cts/S	0.25813	0.0075270				

Al 2074479

Acquire Date: 7/23/2020 1:10:32PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000063000	ppm	0.00079600	1,269.1	.00000	Abs	Pass	
Al3961		971.58	ppm	6.8202	0.70197				
As1890		-0.0031740	ppm	0.0018850	59.400	.00000	Abs	Pass	
B_2089		0.025311	ppm	0.0027580	10.895	.00000	Abs	Pass	
Ba4554		0.00059200	ppm	0.00011300	19.139	.00000	Abs	Pass	
Be3130		0.000035000	ppm	0.00023300	655.41	.00000	Abs	Pass	
Ca3179		0.17429	ppm	0.022274	12.780				
Cd2144		0.00062000	ppm	0.000077000	12.432	.00000	Abs	Pass	
Co2286		-0.00020700	ppm	0.00029300	141.53	.00000	Abs	Pass	
Cr2677		0.0010510	ppm	0.00040400	38.418	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Al 2074479

Acquire Date: 7/23/2020 1:10:32PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00052300	ppm	0.000073000	13.905	.00000	Abs	Pass	
Fe2599		0.26636	ppm	0.022350	8.3908				
K_7664		-0.11358	ppm	0.012594	11.088	.00000	Abs	Pass	
Mg2790		0.10368	ppm	0.023075	22.257				
Mn2576		0.00019900	ppm	0.00021000	105.41	.00000	Abs	Pass	
Mo2020		-0.00019200	ppm	0.00086200	449.19	.00000	Abs	Pass	
Na5895		0.34048	ppm	0.015697	4.6102	.00000	Abs	Pass	
Ni2316		-0.00053200	ppm	0.00065500	123.20	.00000	Abs	Pass	
P_1782		0.0041170	ppm	0.0030390	73.815	.00000	Abs	Pass	
Pb2203		0.00042800	ppm	0.00080700	188.68	.00000	Abs	Pass	
S_1820		0.010176	ppm	0.0040520	39.816	.00000	Abs	Pass	
Sb2068		0.0089900	ppm	0.00075100	8.3500	.00000	Abs	Pass	
Se1960		0.0086480	ppm	0.0038750	44.813	.00000	Abs	Pass	
Si2881		-0.0097370	ppm	0.036666	376.55	.00000	Abs	Pass	
Sn1899		-0.010181	ppm	0.00030600	3.0043	.00000	Abs	Pass	
Sr4077		0.00065800	ppm	0.000063000	9.5908	.00000	Abs	Pass	
Ti3349		0.0026570	ppm	0.00065700	24.719	.00000	Abs	Pass	
Tl1908		-0.0043150	ppm	0.0019670	45.582	.00000	Abs	Pass	
V_2924		-0.00011800	ppm	0.00036000	305.04	.00000	Abs	Pass	
Zn2062		-0.00050900	ppm	0.00035700	70.140	.00000	Abs	Pass	
Y_2243		5,722.0	Cts/S	0.19705	0.0034440				
Y_3600		50,875	Cts/S	213.50	0.41966				
Y_3774		3,567.2	Cts/S	5.3903	0.15111				

Ca 2049317

Acquire Date: 7/23/2020 1:14:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012600	ppm	0.00053300	42.328	.00000	Abs	Pass	
Al3961		0.41971	ppm	0.052178	12.432				
As1890		0.00013800	ppm	0.0015060	1,091.9	.00000	Abs	Pass	
B_2089		0.015100	ppm	0.00082600	5.4699	.00000	Abs	Pass	
Ba4554		0.00085400	ppm	0.00092000	107.76	.00000	Abs	Pass	
Be3130		-0.0013050	ppm	0.00014600	11.188	.00000	Abs	Pass	
Ca3179		999.50	ppm	6.0831	0.60861				
Cd2144		0.000094000	ppm	0.000028000	29.526	.00000	Abs	Pass	
Co2286		0.000014000	ppm	0.00027900	1,948.9	.00000	Abs	Pass	
Cr2677		0.0020120	ppm	0.0000050000	0.27205	.00000	Abs	Pass	
Cu3247		0.0022500	ppm	0.00064600	28.697	.00000	Abs	Pass	
Fe2599		0.012053	ppm	0.0051500	42.729				
K_7664		0.035265	ppm	0.059702	169.30	.00000	Abs	Pass	
Mg2790		0.036624	ppm	0.0017160	4.6843				
Mn2576		0.0038430	ppm	0.000065000	1.6906	.00000	Abs	Pass	
Mo2020		0.00074900	ppm	0.00013400	17.938	.00000	Abs	Pass	
Na5895		0.028687	ppm	0.0047840	16.677	.00000	Abs	Pass	
Ni2316		0.000084000	ppm	0.0028030	3,336.4	.00000	Abs	Pass	
P_1782		0.0053560	ppm	0.00099500	18.570	.00000	Abs	Pass	
Pb2203		0.00019900	ppm	0.0027040	1,360.8	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Ca 2049317

Acquire Date: 7/23/2020 1:14:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.041021	ppm	0.0011540	2.8142	.00000	Abs	Pass	
Sb2068		-0.0077540	ppm	0.00096800	12.487	.00000	Abs	Pass	
Se1960		0.00060600	ppm	0.0051490	849.22	.00000	Abs	Pass	
Si2881		0.039578	ppm	0.010322	26.081	.00000	Abs	Pass	
Sn1899		0.0012020	ppm	0.00085300	70.925	.00000	Abs	Pass	
Sr4077		-0.00070000	ppm	0.000020000	2.8474	.00000	Abs	Pass	
Ti3349		-0.00072600	ppm	0.00096300	132.68	.00000	Abs	Pass	
Tl1908		-0.0014440	ppm	0.0053130	367.86	.00000	Abs	Pass	
V_2924		0.000082000	ppm	0.00037700	458.37	.00000	Abs	Pass	
Zn2062		0.00097400	ppm	0.00032100	33.006	.00000	Abs	Pass	
Y_2243		5,381.6	Cts/S	22.687	0.42156				
Y_3600		51,191	Cts/S	99.606	0.19458				
Y_3774		3,404.6	Cts/S	11.909	0.34980				

Fe 2058795

Acquire Date: 7/23/2020 1:18:28PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0013270	ppm	0.00042600	32.116	.00000	Abs	Pass	
Al3961		0.059439	ppm	0.015021	25.271				
As1890		-0.0024200	ppm	0.0024840	102.64	.00000	Abs	Pass	
B_2089		0.017902	ppm	0.00025400	1.4216	.00000	Abs	Pass	
Ba4554		0.00013200	ppm	0.000065000	49.183	.00000	Abs	Pass	
Be3130		-0.00013800	ppm	0.00065200	473.94	.00000	Abs	Pass	
Ca3179		-0.020911	ppm	0.022442	107.32				
Cd2144		0.000070000	ppm	0.000042000	59.746	.00000	Abs	Pass	
Co2286		0.000015000	ppm	0.00037500	2,463.0	.00000	Abs	Pass	
Cr2677		-0.0017310	ppm	0.00053900	31.135	.00000	Abs	Pass	
Cu3247		0.0018990	ppm	0.0012330	64.954	.00000	Abs	Pass	
Fe2599		913.40	ppm	5.4657	0.59839				
K_7664		-0.10608	ppm	0.068020	64.124	.00000	Abs	Pass	
Mg2790		0.16428	ppm	0.0019340	1.1773				
Mn2576		0.0020320	ppm	0.000033000	1.6402	.00000	Abs	Pass	
Mo2020		0.0023890	ppm	0.00047900	20.048	.00000	Abs	Pass	
Na5895		0.094404	ppm	0.0099670	10.558	.00000	Abs	Pass	
Ni2316		-0.0020050	ppm	0.00058600	29.244	.00000	Abs	Pass	
P_1782		0.015158	ppm	0.0030550	20.153	.00000	Abs	Pass	
Pb2203		0.0034870	ppm	0.000021000	0.61304	.00000	Abs	Pass	
S_1820		-0.0010080	ppm	0.015391	1,527.3	.00000	Abs	Pass	
Sb2068		-0.012910	ppm	0.00057600	4.4580	.00000	Abs	Pass	
Se1960		0.0050690	ppm	0.0010030	19.797	.00000	Abs	Pass	
Si2881		-0.025902	ppm	0.046658	180.13	.00000	Abs	Pass	
Sn1899		0.0068240	ppm	0.00062300	9.1294	.00000	Abs	Pass	
Sr4077		0.00083000	ppm	0.00022300	26.827	.00000	Abs	Pass	
Ti3349		-0.00028400	ppm	0.00012100	42.651	.00000	Abs	Pass	
Tl1908		-0.0026430	ppm	0.0022990	87.012	.00000	Abs	Pass	
V_2924		-0.0021220	ppm	0.00014400	6.7870	.00000	Abs	Pass	
Zn2062		-0.0030640	ppm	0.00013000	4.2298	.00000	Abs	Pass	

Fe 2058795

Acquire Date: 7/23/2020 1:18:28PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,678.5	Cts/S	4.8870	0.086061				
Y_3600		53,909	Cts/S	4.1039	0.0076130				
Y_3774		3,477.4	Cts/S	3.4880	0.10031				

Mg 2079441

Acquire Date: 7/23/2020 1:22:26PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012050	ppm	0.00060600	50.281	.00000	Abs	Pass	
Al3961		0.052820	ppm	0.039187	74.189				
As1890		-0.00070500	ppm	0.0019770	280.67	.00000	Abs	Pass	
B_2089		0.0083630	ppm	0.00072100	8.6176	.00000	Abs	Pass	
Ba4554		0.000043000	ppm	0.000080000	187.30	.00000	Abs	Pass	
Be3130		-0.00037000	ppm	0.00022200	60.166	.00000	Abs	Pass	
Ca3179		0.084749	ppm	0.0015450	1.8227				
Cd2144		0.00026900	ppm	0.000065000	24.017	.00000	Abs	Pass	
Co2286		-0.00027300	ppm	0.00061500	225.16	.00000	Abs	Pass	
Cr2677		-0.0011140	ppm	0.00081700	73.382	.00000	Abs	Pass	
Cu3247		-0.0018950	ppm	0.00037200	19.648	.00000	Abs	Pass	
Fe2599		0.46798	ppm	0.087506	18.699				
K_7664		-0.10837	ppm	0.024139	22.276	.00000	Abs	Pass	
Mg2790		1,002.7	ppm	0.91156	0.090907				
Mn2576		0.0030290	ppm	0.000098000	3.2340	.00000	Abs	Pass	
Mo2020		0.00049100	ppm	0.00011000	22.435	.00000	Abs	Pass	
Na5895		0.018888	ppm	0.0089490	47.378	.00000	Abs	Pass	
Ni2316		0.0024010	ppm	0.00036300	15.128	.00000	Abs	Pass	
P_1782		-0.0050190	ppm	0.00044700	8.9019	.00000	Abs	Pass	
Pb2203		0.0021730	ppm	0.0037950	174.62	.00000	Abs	Pass	
S_1820		0.079794	ppm	0.0048250	6.0463	.00000	Abs	Pass	
Sb2068		0.0061610	ppm	0.0032460	52.695	.00000	Abs	Pass	
Se1960		-0.0040380	ppm	0.0016550	40.993	.00000	Abs	Pass	
Si2881		0.0013930	ppm	0.027480	1,972.9	.00000	Abs	Pass	
Sn1899		0.0011260	ppm	0.00016800	14.947	.00000	Abs	Pass	
Sr4077		0.0015510	ppm	0.000062000	3.9740	.00000	Abs	Pass	
Ti3349		0.0031480	ppm	0.00027100	8.6134	.00000	Abs	Pass	
Tl1908		0.0044340	ppm	0.00055900	12.603	.00000	Abs	Pass	
V_2924		-0.00011400	ppm	0.00054200	476.66	.00000	Abs	Pass	
Zn2062		0.0020100	ppm	0.000019000	0.95743	.00000	Abs	Pass	
Y_2243		5,451.9	Cts/S	16.085	0.29503				
Y_3600		51,313	Cts/S	33.809	0.065887				
Y_3774		3,438.0	Cts/S	13.476	0.39197				

rinse1

Acquire Date: 7/23/2020 1:26:30PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00098800	ppm	0.00072300	73.212
Al3961		0.029699	ppm	0.029829	100.44
As1890		-0.0015870	ppm	0.0018330	115.50
B_2089		0.0038420	ppm	0.00014900	3.8663
Ba4554		.0000020000	ppm	0.00017700	9,281.3
Be3130		-0.00014600	ppm	0.000019000	12.895
Ca3179		-0.0014820	ppm	0.0048640	328.25
Cd2144		0.000028000	ppm	0.00012100	437.48
Co2286		-0.00039300	ppm	0.00010000	25.392
Cr2677		0.000013000	ppm	0.00026100	1,987.4
Cu3247		-0.00087600	ppm	0.000088000	10.083
Fe2599		0.021653	ppm	0.0069030	31.881
K_7664		-0.048933	ppm	0.049780	101.73
Mg2790		0.13718	ppm	0.026065	19.001
Mn2576		0.000014000	ppm	0.000067000	471.29
Mo2020		0.00051000	ppm	0.000050000	9.7594
Na5895		-0.022138	ppm	0.010235	46.233
Ni2316		0.0015030	ppm	0.0012450	82.851
P_1782		-0.011199	ppm	0.0016630	14.853
Pb2203		0.0011960	ppm	0.0028970	242.30
S_1820		0.010339	ppm	0.0018800	18.179
Sb2068		0.0051510	ppm	0.00076600	14.873
Se1960		0.0016060	ppm	0.0017160	106.85
Si2881		0.026536	ppm	0.069585	262.22
Sn1899		0.0011260	ppm	0.00012500	11.096
Sr4077		0.00019900	ppm	0.00022700	114.02
Ti3349		0.00027100	ppm	0.00070400	259.60
Tl1908		-0.00015900	ppm	0.000013000	8.4518
V_2924		-0.00036300	ppm	0.000066000	18.129
Zn2062		0.00041700	ppm	0.00020200	48.408
Y_2243		5,798.2	Cts/S	15.123	0.26082
Y_3600		54,489	Cts/S	218.13	0.40031
Y_3774		3,445.3	Cts/S	15.276	0.44340

rinse2

Acquire Date: 7/23/2020 1:30:29PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00091600	ppm	0.00021700	23.742
Al3961		0.16907	ppm	0.0074020	4.3782
As1890		-0.0026470	ppm	0.00032900	12.419
B_2089		0.0041010	ppm	0.000072000	1.7534
Ba4554		0.00016500	ppm	0.00012000	72.756
Be3130		-0.00025200	ppm	0.00028100	111.66
Ca3179		0.18485	ppm	0.0090130	4.8758
Cd2144		0.000027000	ppm	0.000053000	198.34
Co2286		-0.00047900	ppm	0.000015000	3.1124

rinse2

Acquire Date: 7/23/2020 1:30:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00041400	ppm	0.0012770	308.23
Cu3247		0.000029000	ppm	0.00051900	1,767.9
Fe2599		0.16247	ppm	0.0034190	2.1046
K_7664		-0.032423	ppm	0.0078200	24.119
Mg2790		0.16140	ppm	0.0026270	1.6275
Mn2576		0.000077000	ppm	0.000034000	44.163
Mo2020		0.000041000	ppm	0.00037200	911.62
Na5895		-0.028598	ppm	0.0029540	10.331
Ni2316		0.00065800	ppm	0.00064800	98.521
P_1782		-0.0071820	ppm	0.0037350	52.001
Pb2203		-0.0010800	ppm	0.0014580	135.06
S_1820		0.0039360	ppm	0.0038490	97.781
Sb2068		0.0038270	ppm	0.0052870	138.15
Se1960		0.00017800	ppm	0.0060300	3,394.9
Si2881		-0.0081590	ppm	0.0078830	96.616
Sn1899		0.0010350	ppm	0.00058300	56.324
Sr4077		.0000010000	ppm	0.00011700	10,033
Ti3349		-0.00029200	ppm	0.00021700	74.142
Tl1908		-0.0015590	ppm	0.0010850	69.592
V_2924		-0.00034200	ppm	0.00037400	109.38
Zn2062		0.00070900	ppm	0.000087000	12.217
Y_2243		5,803.8	Cts/S	4.6048	0.079341
Y_3600		54,495	Cts/S	111.59	0.20477
Y_3774		3,417.2	Cts/S	7.8126	0.22863

CCV 2078482

Acquire Date: 7/23/2020 1:34:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50641	ppm	0.0033390	0.65940	.50000	Rel(%)	Pass	
Al3961		25.603	ppm	0.22957	0.89665	25.000	Rel(%)	Pass	
As1890		0.50523	ppm	0.00061700	0.12209	.50000	Rel(%)	Pass	
B_2089		1.0249	ppm	0.0048510	0.47330	1.0000	Rel(%)	Pass	
Ba4554		2.5466	ppm	0.017318	0.68003	2.5000	Rel(%)	Pass	
Be3130		0.51345	ppm	0.0026960	0.52513	.50000	Rel(%)	Pass	
Ca3179		26.333	ppm	0.17425	0.66171	25.000	Rel(%)	Pass	
Cd2144		0.52026	ppm	0.0014300	0.27477	.50000	Rel(%)	Pass	
Co2286		2.5857	ppm	0.0077500	0.29971	2.5000	Rel(%)	Pass	
Cr2677		2.5141	ppm	0.0040300	0.16028	2.5000	Rel(%)	Pass	
Cu3247		2.5239	ppm	0.0082590	0.32724	2.5000	Rel(%)	Pass	
Fe2599		25.873	ppm	0.20680	0.79926	25.000	Rel(%)	Pass	
K_7664		25.281	ppm	0.18848	0.74554	25.000	Rel(%)	Pass	
Mg2790		25.541	ppm	0.087486	0.34253	25.000	Rel(%)	Pass	
Mn2576		2.5521	ppm	0.0070700	0.27704	2.5000	Rel(%)	Pass	
Mo2020		1.0294	ppm	0.0058210	0.56550	1.0000	Rel(%)	Pass	
Na5895		25.102	ppm	0.20951	0.83463	25.000	Rel(%)	Pass	
Ni2316		2.6247	ppm	0.0049410	0.18823	2.5000	Rel(%)	Pass	
P_1782		2.5804	ppm	0.00095500	0.036992	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/23/2020 1:34:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.52284	ppm	0.00011100	0.021169	.50000	Rel(%)	Pass	
S_1820		2.4351	ppm	0.0030610	0.12570	2.5000	Rel(%)	Pass	
Sb2068		0.51257	ppm	0.0055320	1.0792	.50000	Rel(%)	Pass	
Se1960		0.51933	ppm	0.0025790	0.49667	.50000	Rel(%)	Pass	
Si2881		2.5896	ppm	0.10990	4.2441	2.5000	Rel(%)	Pass	
Sn1899		2.5704	ppm	0.0087680	0.34112	2.5000	Rel(%)	Pass	
Sr4077		2.5434	ppm	0.015771	0.62007	2.5000	Rel(%)	Pass	
Ti3349		1.0205	ppm	0.0048460	0.47484	1.0000	Rel(%)	Pass	
Tl1908		0.51741	ppm	0.0030640	0.59224	.50000	Rel(%)	Pass	
V_2924		2.5416	ppm	0.0060020	0.23614	2.5000	Rel(%)	Pass	
Zn2062		2.5751	ppm	0.012800	0.49707	2.5000	Rel(%)	Pass	
Y_2243		5,717.5	Cts/S	10.614	0.18565				
Y_3600		53,534	Cts/S	64.918	0.12127				
Y_3774		3,420.7	Cts/S	28.502	0.83322				

CCB 2065750

Acquire Date: 7/23/2020 1:38:17PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00091400	ppm	0.00025700	28.118	.00000	Abs	Pass	
Al3961	**F**	**0.13349**	**ppm**	**0.040729**	**30.511**	**.00000**	**Abs**	**Fail High**	**.10000**
As1890		-0.0016140	ppm	0.00027600	17.077	.00000	Abs	Pass	
B_2089		0.0050470	ppm	0.00017400	3.4487	.00000	Abs	Pass	
Ba4554		0.0010840	ppm	0.00063700	58.786	.00000	Abs	Pass	
Be3130		0.00038800	ppm	0.00034700	89.528	.00000	Abs	Pass	
Ca3179		0.11403	ppm	0.0028800	2.5259	.00000	Abs	Pass	
Cd2144		0.00016800	ppm	0.000013000	7.7325	.00000	Abs	Pass	
Co2286		0.000048000	ppm	0.00030700	642.36	.00000	Abs	Pass	
Cr2677		0.00012300	ppm	0.00025900	210.63	.00000	Abs	Pass	
Cu3247		0.00049300	ppm	0.000040000	8.0783	.00000	Abs	Pass	
Fe2599	**F**	**0.14518**	**ppm**	**0.0025190**	**1.7351**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		-0.0042180	ppm	0.041956	994.66	.00000	Abs	Pass	
Mg2790		0.11658	ppm	0.0068870	5.9070	.00000	Abs	Pass	
Mn2576		0.00063900	ppm	0.000012000	1.9443	.00000	Abs	Pass	
Mo2020		0.0059630	ppm	0.00035600	5.9751	.00000	Abs	Pass	
Na5895		0.0043900	ppm	0.0087750	199.88	.00000	Abs	Pass	
Ni2316		0.0023960	ppm	0.00037200	15.523	.00000	Abs	Pass	
P_1782		-0.0070650	ppm	0.00091600	12.959	.00000	Abs	Pass	
Pb2203		-0.0016720	ppm	0.0013510	80.818	.00000	Abs	Pass	
S_1820		-0.00091200	ppm	0.00097200	106.48	.00000	Abs	Pass	
Sb2068		0.0052230	ppm	0.00033700	6.4447	.00000	Abs	Pass	
Se1960		0.0023290	ppm	0.0016360	70.243	.00000	Abs	Pass	
Si2881		0.024540	ppm	0.0094910	38.675	.00000	Abs	Pass	
Sn1899		0.0032150	ppm	0.00042300	13.146	.00000	Abs	Pass	
Sr4077		0.0010390	ppm	0.000064000	6.1998	.00000	Abs	Pass	
Ti3349		0.0039670	ppm	0.00044300	11.175	.00000	Abs	Pass	
Tl1908		0.0028370	ppm	0.0023860	84.085	.00000	Abs	Pass	
V_2924		0.0014220	ppm	0.000027000	1.9185	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/23/2020 1:38:17PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0021450	ppm	0.00033000	15.377	.00000	Abs	Pass	
Y_2243		5,802.6	Cts/S	16.439	0.28330				
Y_3600		55,177	Cts/S	333.57	0.60454				
Y_3774		3,466.5	Cts/S	21.870	0.63090				

CD 40

Acquire Date: 7/23/2020 1:42:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00059000	ppm	0.000074000	12.457
Al3961		0.10880	ppm	0.032278	29.667
As1890		-0.00089600	ppm	0.00069800	77.845
B_2089		0.0031020	ppm	0.0014130	45.554
Ba4554		0.00029800	ppm	0.000014000	4.6453
Be3130		.0000080000	ppm	0.000083000	984.29
Ca3179		0.10463	ppm	0.0091210	8.7174
Cd2144	**W**	**36.070**	**ppm**	**0.41068**	**1.1386**
Co2286		-0.00070900	ppm	0.000056000	7.8651
Cr2677		0.000025000	ppm	0.00019600	800.53
Cu3247		0.00053100	ppm	0.00010600	19.963
Fe2599		0.096588	ppm	0.016761	17.353
K_7664		0.040183	ppm	0.013111	32.627
Mg2790		0.10198	ppm	0.011448	11.226
Mn2576		0.00057200	ppm	0.000063000	11.023
Mo2020		0.00081900	ppm	0.00044000	53.760
Na5895		-0.0080370	ppm	0.012935	160.95
Ni2316		0.0015060	ppm	0.0013720	91.083
P_1782		-0.0094690	ppm	0.0046700	49.316
Pb2203		0.0029530	ppm	0.0021150	71.619
S_1820		0.0049970	ppm	0.0022730	45.482
Sb2068		0.0051060	ppm	0.0013480	26.398
Se1960		0.0024510	ppm	0.0060170	245.48
Si2881		0.00030900	ppm	0.014090	4,561.5
Sn1899		0.0017340	ppm	0.00032900	18.992
Sr4077		0.00088200	ppm	0.000020000	2.2970
Ti3349		0.00039300	ppm	0.000089000	22.517
Tl1908		0.00034900	ppm	0.0033310	953.74
V_2924		0.00015300	ppm	0.00062900	410.43
Zn2062		0.0019410	ppm	0.000044000	2.2610
Y_2243		5,826.5	Cts/S	22.612	0.38809
Y_3600		55,052	Cts/S	154.17	0.28005
Y_3774		3,453.9	Cts/S	10.280	0.29762

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Acquire Date: 7/23/2020 1:46:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010380	ppm	0.00097700	94.075
Al3961		0.076137	ppm	0.026977	35.432
As1890		-0.0016650	ppm	0.0018730	112.46
B_2089		0.0026690	ppm	0.00083600	31.340
Ba4554		0.00066600	ppm	0.00048600	72.928
Be3130		-0.00014100	ppm	0.00014800	105.02
Ca3179		0.071965	ppm	0.0057170	7.9436
Cd2144		0.0083560	ppm	0.00080100	9.5902
Co2286		0.000011000	ppm	0.0000070000	58.451
Cr2677		0.00013500	ppm	0.00013100	96.364
Cu3247		0.00069100	ppm	0.00034500	49.910
Fe2599		0.063754	ppm	0.011313	17.744
K_7664		-0.034175	ppm	0.024031	70.317
Mg2790		0.086322	ppm	0.0034130	3.9538
Mn2576		0.00034400	ppm	0.00018700	54.193
Mo2020		0.00059100	ppm	0.00037800	63.996
Na5895		-0.0098520	ppm	0.0081510	82.736
Ni2316		0.00077300	ppm	0.000089000	11.562
P_1782		-0.0081410	ppm	0.00067500	8.2882
Pb2203		-0.0039880	ppm	0.00010400	2.6118
S_1820		0.0064910	ppm	0.0014690	22.632
Sb2068		0.00046600	ppm	0.0025090	538.45
Se1960		-0.0022740	ppm	0.0016620	73.080
Si2881		0.050673	ppm	0.017225	33.993
Sn1899		0.00071400	ppm	0.00026800	37.515
Sr4077		0.00065300	ppm	0.00019500	29.835
Ti3349		-0.00028600	ppm	0.0000080000	2.7636
Tl1908		0.0020680	ppm	0.0017140	82.912
V_2924		0.00041400	ppm	0.00089100	215.52
Zn2062		0.00053400	ppm	0.00041300	77.428
Y_2243		5,807.5	Cts/S	8.7782	0.15115
Y_3600		55,146	Cts/S	264.69	0.47999
Y_3774		3,465.4	Cts/S	9.0197	0.26028

P 100

Acquire Date: 7/23/2020 1:50:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013290	ppm	0.00029200	21.951
Al3961		0.084709	ppm	0.015905	18.776
As1890		0.0013690	ppm	0.0013750	100.47
B_2089		0.0016490	ppm	0.00044800	27.150
Ba4554		0.00042500	ppm	0.00023000	54.045
Be3130		-0.00017200	ppm	0.000068000	39.438
Ca3179		0.084101	ppm	0.010318	12.269
Cd2144		0.0066950	ppm	0.00034000	5.0739
Co2286		0.000053000	ppm	0.00026700	500.30

P 100

Acquire Date: 7/23/2020 1:50:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.0010250	ppm	0.00085600	83.526
Cu3247		-0.00085600	ppm	0.0012960	151.34
Fe2599		0.045078	ppm	0.0021130	4.6883
K_7664		-0.026336	ppm	0.035164	133.52
Mg2790		0.077535	ppm	0.0037630	4.8535
Mn2576		0.00031900	ppm	0.00014100	44.183
Mo2020		0.00071300	ppm	0.0000030000	0.42139
Na5895		-0.013265	ppm	0.0018660	14.068
Ni2316		0.00064800	ppm	0.00085000	131.07
P_1782		85.560	ppm	0.15375	0.17970
Pb2203		0.00010200	ppm	0.0035730	3,496.7
S_1820		0.0029610	ppm	0.0053240	179.79
Sb2068		0.0034520	ppm	0.0024060	69.691
Se1960		-0.00036100	ppm	0.0019130	529.89
Si2881		0.0023640	ppm	0.016023	677.72
Sn1899		0.0015790	ppm	0.00054200	34.325
Sr4077		0.00044000	ppm	0.000026000	5.8750
Ti3349		0.00019900	ppm	0.000029000	14.751
Tl1908		-0.0012120	ppm	0.00040500	33.431
V_2924		0.00070900	ppm	0.000082000	11.580
Zn2062		0.00055300	ppm	0.00037500	67.757
Y_2243		5,937.3	Cts/S	7.4530	0.12553
Y_3600		55,738	Cts/S	13.153	0.023598
Y_3774		3,464.6	Cts/S	4.8549	0.14013

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Acquire Date: 7/23/2020 1:54:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00052100	ppm	0.00041600	79.933
Al3961		0.056022	ppm	0.027747	49.529
As1890		-0.00070000	ppm	0.0053200	759.59
B_2089		0.00044700	ppm	0.00036600	81.889
Ba4554		0.00017900	ppm	0.00028900	161.64
Be3130		.0000060000	ppm	0.00012500	1,954.6
Ca3179		0.063668	ppm	0.0098160	15.418
Cd2144		0.0047690	ppm	0.000030000	0.63934
Co2286		-0.00011000	ppm	0.00047500	434.08
Cr2677		0.00051000	ppm	0.00053400	104.58
Cu3247		-0.0012990	ppm	0.0010560	81.261
Fe2599		0.050013	ppm	0.017558	35.106
K_7664		-0.017964	ppm	0.019328	107.59
Mg2790		0.059103	ppm	0.00059400	1.0042
Mn2576		0.00015900	ppm	0.000027000	17.099
Mo2020		0.00034600	ppm	0.00066000	190.66
Na5895		-0.011355	ppm	0.0031610	27.837
Ni2316		0.0011810	ppm	0.0011330	95.909

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Acquire Date: 7/23/2020 1:54:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.14228	ppm	0.014101	9.9109
Pb2203		.0000060000	ppm	0.00022100	3,783.5
S_1820		0.00079600	ppm	0.0032790	411.93
Sb2068		0.00099300	ppm	0.0061600	620.18
Se1960		0.00067800	ppm	0.0012150	179.23
Si2881		0.036848	ppm	0.079155	214.81
Sn1899		0.0014870	ppm	0.00025800	17.358
Sr4077		0.00049100	ppm	0.00022200	45.125
Ti3349		-0.00028400	ppm	0.00029700	104.85
Tl1908		-0.00029000	ppm	0.00035200	121.23
V_2924		-0.00022900	ppm	0.000024000	10.325
Zn2062		0.00017100	ppm	0.00022900	134.13
Y_2243		5,865.8	Cts/S	7.3387	0.12511
Y_3600		55,495	Cts/S	124.15	0.22371
Y_3774		3,497.3	Cts/S	1.7468	0.049949

SB 100

Acquire Date: 7/23/2020 1:58:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013190	ppm	0.00090300	68.476
Al3961		0.079001	ppm	0.047241	59.799
As1890		0.00030700	ppm	0.0031500	1,027.2
B_2089		0.086226	ppm	0.00089000	1.0319
Ba4554		0.00014200	ppm	0.000079000	55.987
Be3130		0.000075000	ppm	0.00015500	206.38
Ca3179		0.034023	ppm	0.013373	39.306
Cd2144		0.0029560	ppm	0.00010200	3.4499
Co2286		-0.00033800	ppm	0.00030300	89.559
Cr2677		0.000066000	ppm	0.00070000	1,053.3
Cu3247		0.000097000	ppm	0.00029300	303.25
Fe2599		0.021053	ppm	0.010113	48.036
K_7664		-0.048799	ppm	0.047471	97.279
Mg2790		0.035429	ppm	0.0016590	4.6837
Mn2576		0.00014400	ppm	0.00012200	84.644
Mo2020		0.00028300	ppm	0.00018900	66.674
Na5895		0.038310	ppm	0.0038430	10.032
Ni2316		0.0096470	ppm	0.000083000	0.86285
P_1782		0.097154	ppm	0.0034470	3.5476
Pb2203	**W**	**-0.0072060**	**ppm**	**0.0021580**	**29.951**
S_1820		0.0017050	ppm	0.000062000	3.6110
Sb2068	**W**	**90.284**	**ppm**	**0.23483**	**0.26010**
Se1960		-0.0011310	ppm	0.0027670	244.61
Si2881		1.0180	ppm	0.013531	1.3292
Sn1899		0.00071600	ppm	0.00027800	38.790
Sr4077		0.00063200	ppm	0.00010500	16.553
Ti3349		0.00088100	ppm	0.00043800	49.663

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

SB 100

Acquire Date: 7/23/2020 1:58:30PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0011340	ppm	0.00015700	13.816
V_2924		0.00024100	ppm	0.000063000	26.121
Zn2062		0.00076900	ppm	0.000010000	1.3107
Y_2243		5,854.9	Cts/S	5.7902	0.098894
Y_3600		55,393	Cts/S	36.487	0.065868
Y_3774		3,470.5	Cts/S	5.0355	0.14509

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Acquire Date: 7/23/2020 2:02:31PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0012060	ppm	0.00047100	39.049
Al3961		0.063550	ppm	0.017794	28.000
As1890		-0.0020070	ppm	0.0014360	71.544
B_2089		0.00098400	ppm	0.0016920	171.91
Ba4554		-0.00022800	ppm	0.00091300	400.10
Be3130		-0.00043600	ppm	0.00012200	27.902
Ca3179		0.016600	ppm	0.010952	65.974
Cd2144		0.0018910	ppm	0.00033400	17.678
Co2286		-0.00040300	ppm	0.00027300	67.841
Cr2677		-0.00034900	ppm	0.00072300	207.06
Cu3247		0.00077700	ppm	0.00046300	59.634
Fe2599		-0.0072760	ppm	0.0012540	17.232
K_7664		-0.079785	ppm	0.046570	58.369
Mg2790		0.011831	ppm	0.013304	112.46
Mn2576		0.000010000	ppm	0.000046000	466.98
Mo2020		-0.00016700	ppm	0.00045100	270.80
Na5895		-0.021428	ppm	0.00065000	3.0316
Ni2316		0.00098000	ppm	0.00012500	12.712
P_1782		0.057503	ppm	0.0035900	6.2429
Pb2203		-0.00057700	ppm	0.0014040	243.19
S_1820		0.0043370	ppm	0.0025290	58.311
Sb2068		0.037215	ppm	0.023353	62.751
Se1960		0.0056840	ppm	0.0026210	46.113
Si2881		0.077881	ppm	0.0046700	5.9957
Sn1899		0.0012240	ppm	0.00023500	19.239
Sr4077		0.00033200	ppm	0.00020700	62.165
Ti3349		0.000037000	ppm	0.00036400	972.65
Tl1908		0.00022400	ppm	0.0010960	488.90
V_2924		0.00036100	ppm	0.00069100	191.34
Zn2062		0.00022100	ppm	0.000058000	26.445
Y_2243		5,803.9	Cts/S	16.907	0.29131
Y_3600		55,042	Cts/S	291.07	0.52881
Y_3774		3,477.7	Cts/S	13.563	0.39001

SI 500

Acquire Date: 7/23/2020 2:06:32PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00075400	ppm	0.00027400	36.410
Al3961		0.041688	ppm	0.011272	27.039
As1890		0.016572	ppm	0.0012290	7.4173
B_2089		-0.010638	ppm	0.00023000	2.1603
Ba4554		0.00045600	ppm	0.00035400	77.640
Be3130		-0.00021700	ppm	0.00031000	143.28
Ca3179		0.0049490	ppm	0.00073100	14.761
Cd2144		0.0021740	ppm	0.0000090000	0.40940
Co2286		0.0051470	ppm	0.00015900	3.0841
Cr2677		-0.00010600	ppm	0.00040400	382.05
Cu3247		-0.00083800	ppm	0.00079300	94.620
Fe2599		0.0040220	ppm	0.010431	259.35
K_7664		0.0021940	ppm	0.042778	1,949.6
Mg2790		0.012242	ppm	0.0051380	41.969
Mn2576		0.000012000	ppm	0.000097000	813.79
Mo2020		-0.00011900	ppm	0.00010800	91.503
Na5895		-0.0077310	ppm	0.020805	269.10
Ni2316		0.0011030	ppm	0.0013740	124.61
P_1782		0.045674	ppm	0.0038540	8.4382
Pb2203	**F**	**-0.019676**	**ppm**	**0.0010890**	**5.5328**
S_1820		0.0059510	ppm	0.0037040	62.234
Sb2068		0.022569	ppm	0.0029580	13.106
Se1960		-0.00071900	ppm	0.0033370	463.78
Si2881	**W**	**449.53**	**ppm**	**4.1038**	**0.91292**
Sn1899		0.00061400	ppm	0.00032300	52.596
Sr4077		0.00034900	ppm	0.00016300	46.790
Ti3349		0.00097900	ppm	0.00013300	13.563
Tl1908		-0.0049260	ppm	0.00018800	3.8161
V_2924		0.00029700	ppm	0.00045500	153.16
Zn2062		-0.00035900	ppm	0.00039600	110.52
Y_2243		5,850.4	Cts/S	8.5719	0.14652
Y_3600		55,552	Cts/S	155.30	0.27956
Y_3774		3,495.1	Cts/S	28.095	0.80383

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Acquire Date: 7/23/2020 2:10:33PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00054100	ppm	0.00085800	158.61
Al3961		0.047819	ppm	0.023939	50.063
As1890		-0.0044480	ppm	0.0022960	51.626
B_2089		0.0016380	ppm	0.00039600	24.178
Ba4554		0.00046300	ppm	0.00022600	48.826
Be3130		-0.00010800	ppm	0.00040900	377.99
Ca3179		0.0081100	ppm	0.012609	155.47
Cd2144		0.00096300	ppm	0.000021000	2.1726
Co2286		-0.00038400	ppm	0.0000070000	1.7725

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Acquire Date: 7/23/2020 2:10:33PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.0011020	ppm	0.00012700	11.479
Cu3247		-0.00075300	ppm	0.00023900	31.719
Fe2599		-0.0091650	ppm	0.0071650	78.180
K_7664		-0.065235	ppm	0.044697	68.517
Mg2790		0.011450	ppm	0.0040710	35.555
Mn2576		0.000026000	ppm	0.000050000	193.31
Mo2020		-0.00012900	ppm	0.00032100	248.31
Na5895		-0.020113	ppm	0.0082310	40.923
Ni2316		0.00072900	ppm	0.0000030000	0.41189
P_1782		0.022877	ppm	0.0010030	4.3849
Pb2203		-0.00093300	ppm	0.0041280	442.41
S_1820		0.00053100	ppm	0.0024910	469.43
Sb2068		0.0098600	ppm	0.0054420	55.189
Se1960		0.0021680	ppm	0.0030500	140.64
Si2881		2.3948	ppm	0.19282	8.0513
Sn1899		0.00053500	ppm	0.00077600	144.92
Sr4077		0.00027200	ppm	0.00016100	59.384
Ti3349		0.00022500	ppm	0.0011620	516.99
Tl1908		-0.00015100	ppm	0.000091000	60.385
V_2924		0.00029800	ppm	0.00029600	99.223
Zn2062		0.000096000	ppm	0.00020200	210.57
Y_2243		5,761.7	Cts/S	2.6422	0.045858
Y_3600		54,359	Cts/S	27.443	0.050485
Y_3774		3,436.9	Cts/S	5.0228	0.14614

TH 50

Acquire Date: 7/23/2020 2:14:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.019595**	**ppm**	**0.00012300**	**0.62648**
Al3961		0.032225	ppm	0.0049540	15.372
As1890		0.0025940	ppm	0.0022050	85.025
B_2089	**F**	**-0.79505**	**ppm**	**0.0027350**	**0.34403**
Ba4554		-0.0023380	ppm	0.00027200	11.654
Be3130	**W**	**-0.0021650**	**ppm**	**0.00013600**	**6.2851**
Ca3179		0.0093400	ppm	0.0034700	37.151
Cd2144		0.00086500	ppm	0.000028000	3.2161
Co2286		0.0011780	ppm	0.00022600	19.148
Cr2677		0.093341	ppm	0.00046500	0.49790
Cu3247		0.74218	ppm	0.0030420	0.40986
Fe2599		-0.0044770	ppm	0.0031650	70.701
K_7664		-0.020852	ppm	0.061966	297.17
Mg2790		0.30317	ppm	0.0022900	0.75547
Mn2576		0.0013210	ppm	0.000015000	1.1294
Mo2020		0.017369	ppm	0.00032200	1.8544
Na5895		-0.035284	ppm	0.0053920	15.281
Ni2316	**F**	**-0.11623**	**ppm**	**0.00044800**	**0.38582**

TH 50

Acquire Date: 7/23/2020 2:14:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.041259	ppm	0.0021580	5.2310
Pb2203	**F**	**-0.18897**	**ppm**	**0.0016920**	**0.89552**
S_1820		0.24907	ppm	0.0032130	1.2901
Sb2068		0.0032120	ppm	0.0033610	104.64
Se1960		-0.0019090	ppm	0.000042000	2.1865
Si2881		0.34694	ppm	0.042569	12.270
Sn1899		-0.00058100	ppm	0.00032500	55.963
Sr4077		.0000060000	ppm	0.00034100	5,434.5
Ti3349		-0.0010030	ppm	0.000090000	9.0202
Tl1908		-0.0015660	ppm	0.0038580	246.32
V_2924		0.043345	ppm	0.00085800	1.9797
Zn2062		-0.00064400	ppm	0.00042100	65.344
Y_2243		5,746.8	Cts/S	6.7395	0.11728
Y_3600		54,943	Cts/S	198.12	0.36059
Y_3774		3,420.2	Cts/S	19.434	0.56822

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Acquire Date: 7/23/2020 2:18:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0019280	ppm	0.00014700	7.6475
Al3961		0.038660	ppm	0.023171	59.936
As1890		-0.0023680	ppm	0.0023210	98.023
B_2089		0.0010580	ppm	0.00027700	26.191
Ba4554		-0.00035400	ppm	0.0000050000	1.4040
Be3130		0.000012000	ppm	0.00019000	1,567.4
Ca3179		0.0014810	ppm	0.0020490	138.35
Cd2144		0.00048200	ppm	0.00013500	27.943
Co2286		-0.00031800	ppm	0.00015500	48.699
Cr2677		-0.00077800	ppm	0.00045200	58.104
Cu3247		0.00051900	ppm	0.000036000	6.9197
Fe2599		-0.015620	ppm	0.0038050	24.362
K_7664		-0.046460	ppm	0.018988	40.870
Mg2790		0.0019250	ppm	0.0015210	78.999
Mn2576		0.000015000	ppm	0.0000060000	41.410
Mo2020		0.000053000	ppm	0.00015600	292.18
Na5895		-0.017261	ppm	0.022853	132.40
Ni2316		0.0011750	ppm	0.0000030000	0.24261
P_1782		0.010342	ppm	0.000058000	0.56468
Pb2203		0.0016520	ppm	0.00080500	48.739
S_1820		0.0026050	ppm	0.0035000	134.33
Sb2068		0.011052	ppm	0.0068980	62.416
Se1960		0.0017780	ppm	0.0069000	388.17
Si2881		0.14353	ppm	0.078929	54.993
Sn1899		0.00030100	ppm	0.00070800	235.27
Sr4077		0.00044600	ppm	0.00022400	50.330
Ti3349		-0.00031400	ppm	0.00032600	103.82

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 7/23/2020 2:18:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0013640	ppm	0.00086700	63.548
V_2924		0.000093000	ppm	0.00025100	268.73
Zn2062		-0.00012900	ppm	0.00038900	301.67
Y_2243		5,805.3	Cts/S	7.1860	0.12378
Y_3600		54,055	Cts/S	24.163	0.044700
Y_3774		3,421.7	Cts/S	9.1105	0.26625

CCV 2078482

Acquire Date: 7/23/2020 2:22:35PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50694	ppm	0.000076000	0.014959	.50000	Rel(%)	Pass	
Al3961		25.612	ppm	0.027394	0.10696	25.000	Rel(%)	Pass	
As1890		0.50910	ppm	0.000045000	0.0088800	.50000	Rel(%)	Pass	
B_2089		1.0234	ppm	0.0047640	0.46557	1.0000	Rel(%)	Pass	
Ba4554		2.5696	ppm	0.0023810	0.092651	2.5000	Rel(%)	Pass	
Be3130		0.51745	ppm	0.0014520	0.28056	.50000	Rel(%)	Pass	
Ca3179		26.360	ppm	0.0013890	0.0052690	25.000	Rel(%)	Pass	
Cd2144		0.52135	ppm	0.0013460	0.25818	.50000	Rel(%)	Pass	
Co2286		2.5949	ppm	0.0056760	0.21875	2.5000	Rel(%)	Pass	
Cr2677		2.5489	ppm	0.0076890	0.30167	2.5000	Rel(%)	Pass	
Cu3247		2.5487	ppm	0.0033080	0.12981	2.5000	Rel(%)	Pass	
Fe2599		26.123	ppm	0.064050	0.24519	25.000	Rel(%)	Pass	
K_7664		25.376	ppm	0.066859	0.26347	25.000	Rel(%)	Pass	
Mg2790		25.557	ppm	0.11081	0.43359	25.000	Rel(%)	Pass	
Mn2576		2.5742	ppm	0.012621	0.49030	2.5000	Rel(%)	Pass	
Mo2020		1.0325	ppm	0.0059870	0.57983	1.0000	Rel(%)	Pass	
Na5895		25.335	ppm	0.055053	0.21730	25.000	Rel(%)	Pass	
Ni2316		2.6231	ppm	0.0078730	0.30014	2.5000	Rel(%)	Pass	
P_1782		2.5987	ppm	0.0042950	0.16528	2.5000	Rel(%)	Pass	
Pb2203		0.52015	ppm	0.0036020	0.69240	.50000	Rel(%)	Pass	
S_1820		2.4509	ppm	0.013473	0.54970	2.5000	Rel(%)	Pass	
Sb2068		0.52151	ppm	0.0023580	0.45218	.50000	Rel(%)	Pass	
Se1960		0.51910	ppm	0.00019600	0.037757	.50000	Rel(%)	Pass	
Si2881		2.7429	ppm	0.056418	2.0569	2.5000	Rel(%)	Pass	
Sn1899		2.5925	ppm	0.0063930	0.24662	2.5000	Rel(%)	Pass	
Sr4077		2.5670	ppm	0.00028000	0.010925	2.5000	Rel(%)	Pass	
Ti3349		1.0206	ppm	0.0061300	0.60065	1.0000	Rel(%)	Pass	
Tl1908		0.51477	ppm	0.0052850	1.0266	.50000	Rel(%)	Pass	
V_2924		2.5545	ppm	0.011018	0.43132	2.5000	Rel(%)	Pass	
Zn2062		2.5963	ppm	0.012816	0.49361	2.5000	Rel(%)	Pass	
Y_2243		5,683.8	Cts/S	13.322	0.23438				
Y_3600		53,378	Cts/S	306.60	0.57440				
Y_3774		3,423.9	Cts/S	35.166	1.0270				

CCB 2065750

Acquire Date: 7/23/2020 2:26:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000027000	ppm	0.00086100	3,162.3	.00000	Abs	Pass	
Al3961		0.035281	ppm	0.0063000	17.858	.00000	Abs	Pass	
As1890		-0.00077000	ppm	0.0020350	264.23	.00000	Abs	Pass	
B_2089		0.0021300	ppm	0.00044300	20.814	.00000	Abs	Pass	
Ba4554		0.0013230	ppm	0.00057700	43.600	.00000	Abs	Pass	
Be3130		0.00027100	ppm	0.00029500	108.70	.00000	Abs	Pass	
Ca3179		-0.011132	ppm	0.018186	163.36	.00000	Abs	Pass	
Cd2144		0.00051400	ppm	0.0000050000	1.0038	.00000	Abs	Pass	
Co2286		0.00016300	ppm	0.00033800	207.76	.00000	Abs	Pass	
Cr2677		0.00041100	ppm	0.00054600	132.70	.00000	Abs	Pass	
Cu3247		0.0029700	ppm	0.00020700	6.9848	.00000	Abs	Pass	
Fe2599		0.045750	ppm	0.0025330	5.5368	.00000	Abs	Pass	
K_7664		-0.0039350	ppm	0.030043	763.47	.00000	Abs	Pass	
Mg2790		0.0085990	ppm	0.0068480	79.641	.00000	Abs	Pass	
Mn2576		0.00057200	ppm	0.000074000	12.847	.00000	Abs	Pass	
Mo2020		0.0060920	ppm	0.00062300	10.230	.00000	Abs	Pass	
Na5895		-0.00082200	ppm	0.011175	1,360.3	.00000	Abs	Pass	
Ni2316		0.0021760	ppm	0.00022500	10.340	.00000	Abs	Pass	
P_1782		0.0052300	ppm	0.0044930	85.912	.00000	Abs	Pass	
Pb2203		-0.00049300	ppm	0.00078900	159.94	.00000	Abs	Pass	
S_1820		0.0016890	ppm	0.0028700	169.96	.00000	Abs	Pass	
Sb2068		0.0052540	ppm	0.0015050	28.636	.00000	Abs	Pass	
Se1960		0.0027920	ppm	0.00064100	22.961	.00000	Abs	Pass	
Si2881	**W**	**0.10638**	**ppm**	**0.0014970**	**1.4068**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0040210	ppm	0.00054800	13.636	.00000	Abs	Pass	
Sr4077		0.00083600	ppm	0.00010600	12.641	.00000	Abs	Pass	
Ti3349		0.0054360	ppm	0.00049300	9.0640	.00000	Abs	Pass	
Tl1908		0.0016140	ppm	0.0012030	74.548	.00000	Abs	Pass	
V_2924		0.00035000	ppm	0.00015700	44.921	.00000	Abs	Pass	
Zn2062		0.0015260	ppm	0.00027300	17.875	.00000	Abs	Pass	
Y_2243		5,752.2	Cts/S	4.9757	0.086501				
Y_3600		54,319	Cts/S	247.27	0.45521				
Y_3774		3,422.9	Cts/S	2.3585	0.068904				

TH 25

Acquire Date: 7/23/2020 2:30:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.0093870**	**ppm**	**0.00053500**	**5.7044**
Al3961		0.019901	ppm	0.0080640	40.518
As1890		0.0014200	ppm	0.0031140	219.29
B_2089	**F**	**-0.40154**	**ppm**	**0.00098100**	**0.24440**
Ba4554		-0.0014610	ppm	0.00069000	47.216
Be3130		-0.00092800	ppm	0.000047000	5.0744
Ca3179		0.00044900	ppm	0.0087310	1,946.8
Cd2144		0.00044300	ppm	0.000056000	12.591
Co2286		0.00078900	ppm	0.00040000	50.682
Cr2677		0.047839	ppm	0.00010400	0.21731

TH 25

Acquire Date: 7/23/2020 2:30:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.37888	ppm	0.0014230	0.37561
Fe2599		-0.014840	ppm	0.0017960	12.104
K_7664		-0.0096110	ppm	0.029787	309.93
Mg2790		0.15929	ppm	0.0030370	1.9065
Mn2576		0.00097700	ppm	0.00011000	11.303
Mo2020		0.0096010	ppm	0.00010300	1.0749
Na5895		-0.026637	ppm	0.025652	96.303
Ni2316	**F**	**-0.056907**	**ppm**	**0.00013600**	**0.23859**
P_1782		0.018297	ppm	0.0014600	7.9791
Pb2203	**F**	**-0.096460**	**ppm**	**0.000029000**	**0.030235**
S_1820		0.12810	ppm	0.00017600	0.13772
Sb2068		-0.0013480	ppm	0.0021470	159.29
Se1960		0.0016780	ppm	0.0018200	108.49
Si2881		0.0092960	ppm	0.064332	692.01
Sn1899		0.0018320	ppm	0.00050900	27.784
Sr4077		0.00044700	ppm	0.000033000	7.4783
Ti3349		0.00039100	ppm	0.00036600	93.494
Tl1908		-0.0025180	ppm	0.0031130	123.64
V_2924		0.022200	ppm	0.000013000	0.056767
Zn2062		-0.00010900	ppm	0.00041500	381.92
Y_2243		5,725.4	Cts/S	1.9959	0.034861
Y_3600		53,910	Cts/S	23.295	0.043212
Y_3774		3,412.7	Cts/S	3.4492	0.10107

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Acquire Date: 7/23/2020 2:34:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00096600	ppm	0.00027100	28.020
Al3961		0.047268	ppm	0.0024650	5.2147
As1890		-0.0012320	ppm	0.00011700	9.5105
B_2089		0.00092400	ppm	0.00081200	87.920
Ba4554		0.0010200	ppm	0.00037500	36.786
Be3130		-0.00026200	ppm	0.00029400	112.30
Ca3179		0.00058800	ppm	0.011811	2,010.4
Cd2144		0.00028900	ppm	0.000025000	8.5256
Co2286		0.000030000	ppm	0.00040100	1,325.3
Cr2677		0.00064100	ppm	0.00049500	77.259
Cu3247		0.00085900	ppm	0.00091900	106.99
Fe2599		-0.016263	ppm	0.0046670	28.698
K_7664		-0.039878	ppm	0.017850	44.761
Mg2790		0.0033560	ppm	0.0040770	121.49
Mn2576		0.00029000	ppm	0.000026000	9.1322
Mo2020		0.00055600	ppm	0.00024500	44.003
Na5895		-0.014439	ppm	0.016257	112.59
Ni2316		0.00052300	ppm	0.00047500	90.853
P_1782		-0.0029990	ppm	0.00099600	33.204

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 7/23/2020 2:34:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.00048700	ppm	0.0010540	216.63
S_1820		0.0061320	ppm	0.0033570	54.739
Sb2068		0.0022820	ppm	0.0043640	191.28
Se1960		0.0015980	ppm	0.00032600	20.428
Si2881		0.041546	ppm	0.065202	156.94
Sn1899		0.0010030	ppm	0.00052200	52.015
Sr4077		0.00067700	ppm	0.00043700	64.464
Ti3349		0.00069800	ppm	0.0014730	210.96
Tl1908		-0.00025300	ppm	0.0010190	402.77
V_2924		-0.00030000	ppm	0.00061300	204.16
Zn2062		0.00042500	ppm	0.00040500	95.394
Y_2243		5,698.2	Cts/S	10.166	0.17841
Y_3600		53,504	Cts/S	192.33	0.35947
Y_3774		3,381.8	Cts/S	8.2643	0.24437

U 50

Acquire Date: 7/23/2020 2:38:25PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0012900	ppm	0.00019600	15.198
Al3961		0.040316	ppm	0.0012560	3.1145
As1890		-0.0053370	ppm	0.00087800	16.461
B_2089		0.0099300	ppm	0.0010380	10.453
Ba4554		0.0019920	ppm	0.00018300	9.1769
Be3130		0.00073400	ppm	0.000013000	1.7717
Ca3179		-0.014997	ppm	0.0067170	44.791
Cd2144		0.00051000	ppm	0.000099000	19.379
Co2286		0.0062700	ppm	0.000056000	0.88814
Cr2677		-0.00011200	ppm	0.0010140	908.10
Cu3247		0.034624	ppm	0.00067400	1.9465
Fe2599		-0.00093800	ppm	0.0048390	515.81
K_7664		-0.11182	ppm	0.026579	23.770
Mg2790	**F**	**-1.1247**	**ppm**	**0.0083430**	**0.74174**
Mn2576		0.0051390	ppm	0.000017000	0.33340
Mo2020		-0.0012260	ppm	0.00051500	42.007
Na5895		-0.033246	ppm	0.016639	50.048
Ni2316		-0.00062500	ppm	0.00098800	157.90
P_1782		-0.0011990	ppm	0.0033090	276.04
Pb2203		0.024425	ppm	0.0011300	4.6244
S_1820		0.012987	ppm	0.00093300	7.1860
Sb2068		0.000023000	ppm	0.0015980	6,910.5
Se1960	**W**	**-0.035982**	**ppm**	**0.000067000**	**0.18583**
Si2881		-0.050616	ppm	0.039821	78.672
Sn1899		0.0088890	ppm	0.00056900	6.3999
Sr4077		0.0027980	ppm	0.00021600	7.7168
Ti3349		-0.0035140	ppm	0.00030300	8.6312
Tl1908		-0.011112	ppm	0.0031400	28.263

U 50

Acquire Date: 7/23/2020 2:38:25PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924	F	-0.023201	ppm	0.000024000	0.10295
Zn2062		0.00042800	ppm	0.00044100	103.12
Y_2243		5,831.5	Cts/S	5.3227	0.091275
Y_3600		55,644	Cts/S	73.386	0.13188
Y_3774		3,491.5	Cts/S	2.7601	0.079051

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Acquire Date: 7/23/2020 2:42:25PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010930	ppm	0.00022100	20.189
Al3961		0.042084	ppm	0.0042530	10.105
As1890		-0.00018000	ppm	0.00029700	164.61
B_2089		.0000010000	ppm	0.00040900	65,349
Ba4554		0.000084000	ppm	0.00023200	277.07
Be3130		-0.00026800	ppm	0.000026000	9.5974
Ca3179		0.000035000	ppm	0.0011860	3,398.3
Cd2144		0.00011300	ppm	0.0000040000	3.1945
Co2286		-0.00056100	ppm	0.00015400	27.519
Cr2677		-0.00051500	ppm	0.0011160	216.64
Cu3247		-0.00071700	ppm	0.00069300	96.676
Fe2599		-0.016190	ppm	0.010823	66.848
K_7664		-0.021914	ppm	0.053498	244.13
Mg2790		-0.0061160	ppm	0.0059280	96.916
Mn2576		0.000010000	ppm	0.0000040000	39.038
Mo2020		0.000046000	ppm	0.00026500	570.84
Na5895		-0.031605	ppm	0.0047930	15.164
Ni2316		-0.00083500	ppm	0.00040800	48.815
P_1782		-0.0012400	ppm	0.00070600	56.944
Pb2203		-0.0021550	ppm	0.0011010	51.087
S_1820		0.0025610	ppm	0.0036190	141.31
Sb2068		0.0024040	ppm	0.0013850	57.604
Se1960		0.000061000	ppm	0.0030680	5,068.6
Si2881		0.049629	ppm	0.0094810	19.104
Sn1899		0.00061500	ppm	0.0000020000	0.36495
Sr4077		0.00035200	ppm	0.00011800	33.660
Ti3349		0.00032000	ppm	0.00064200	200.31
Tl1908		-0.0018880	ppm	0.0014250	75.451
V_2924		0.00026500	ppm	0.00075000	283.23
Zn2062		-0.00010300	ppm	0.00032300	312.64
Y_2243		5,759.1	Cts/S	26.348	0.45750
Y_3600		54,448	Cts/S	127.91	0.23493
Y_3774		3,472.8	Cts/S	22.575	0.65005

U 25

Acquire Date: 7/23/2020 2:46:25PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00040600	ppm	0.00063300	156.05
Al3961		0.027879	ppm	0.046248	165.89
As1890		-0.0041850	ppm	0.00010600	2.5258
B_2089		0.0051410	ppm	0.00072700	14.134
Ba4554		0.00093300	ppm	0.00053400	57.266
Be3130		0.000029000	ppm	0.00019200	653.21
Ca3179		-0.016336	ppm	0.0010320	6.3191
Cd2144		0.00031300	ppm	0.000012000	3.9171
Co2286		0.0028790	ppm	0.00026600	9.2424
Cr2677		-0.00051400	ppm	0.0017190	334.57
Cu3247		0.017544	ppm	0.0014110	8.0456
Fe2599		-0.023440	ppm	0.0020300	8.6598
K_7664		-0.0076820	ppm	0.0060180	78.344
Mg2790	**F**	**-0.56996**	**ppm**	**0.0036560**	**0.64152**
Mn2576		0.0022890	ppm	0.000040000	1.7536
Mo2020		-0.00021200	ppm	0.00076800	362.57
Na5895		-0.031040	ppm	0.0029000	9.3423
Ni2316		-0.0021440	ppm	0.00029700	13.868
P_1782		-0.00098600	ppm	0.0022960	232.80
Pb2203		0.011205	ppm	0.0034210	30.531
S_1820		0.0073010	ppm	0.0020150	27.599
Sb2068		-0.0034510	ppm	0.00033600	9.7482
Se1960		-0.017901	ppm	0.0078520	43.865
Si2881		-0.011385	ppm	0.011704	102.80
Sn1899		0.0044670	ppm	0.00081900	18.333
Sr4077		0.0010130	ppm	0.00014900	14.730
Ti3349		-0.0012210	ppm	0.0012300	100.74
Tl1908		-0.0069150	ppm	0.0029110	42.102
V_2924	**W**	**-0.012733**	**ppm**	**0.000084000**	**0.66189**
Zn2062		-0.00029700	ppm	0.00012400	41.929
Y_2243		5,698.4	Cts/S	14.371	0.25219
Y_3600		54,035	Cts/S	229.61	0.42492
Y_3774		3,425.3	Cts/S	9.4699	0.27647

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Acquire Date: 7/23/2020 2:50:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00040100	ppm	0.00050100	125.16
Al3961		0.014320	ppm	0.012186	85.096
As1890		0.00040200	ppm	0.0022590	561.48
B_2089		-0.00057600	ppm	0.00082200	142.65
Ba4554		-0.00055600	ppm	0.000073000	13.205
Be3130		0.000075000	ppm	0.00034800	465.94
Ca3179		-0.0050560	ppm	0.016781	331.88
Cd2144		0.000063000	ppm	0.000042000	66.602
Co2286		-0.00038200	ppm	0.00038100	99.794

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 7/23/2020 2:50:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00023900	ppm	0.00024900	104.49
Cu3247		-0.0010470	ppm	0.00083200	79.436
Fe2599		-0.028173	ppm	0.017094	60.673
K_7664		-0.034262	ppm	0.016201	47.284
Mg2790		-0.0024130	ppm	0.0087990	364.69
Mn2576		0.000052000	ppm	0.0000020000	3.8907
Mo2020		0.000073000	ppm	0.00033500	456.64
Na5895		-0.028188	ppm	0.0077820	27.608
Ni2316		0.00016900	ppm	0.0017380	1,029.7
P_1782		-0.0026890	ppm	0.0024480	91.041
Pb2203		0.0029270	ppm	0.0015130	51.704
S_1820		0.0017790	ppm	0.00055600	31.269
Sb2068		-0.00035800	ppm	0.00093200	260.48
Se1960		-0.0041940	ppm	0.0027550	65.670
Si2881		0.064682	ppm	0.052448	81.085
Sn1899		0.0012240	ppm	0.00041500	33.913
Sr4077		0.00021600	ppm	0.00036700	169.76
Ti3349		0.00029200	ppm	0.00054900	187.79
Tl1908		0.00074600	ppm	0.00022700	30.479
V_2924		-0.00025100	ppm	0.00024000	95.630
Zn2062		0.00016600	ppm	0.00017000	102.34
Y_2243		5,798.0	Cts/S	6.8666	0.11843
Y_3600		54,978	Cts/S	241.14	0.43861
Y_3774		3,449.4	Cts/S	17.219	0.49920

MB 320-395862/1-C

Acquire Date: 7/23/2020 2:54:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010730	ppm	0.00027200	25.353
Al3961		0.014785	ppm	0.00032900	2.2241
As1890		-0.0022330	ppm	0.00030400	13.603
B_2089		0.00056200	ppm	0.000097000	17.221
Ba4554		0.00046500	ppm	0.00027800	59.841
Be3130		0.000013000	ppm	0.000049000	367.03
Ca3179		0.024575	ppm	0.0070510	28.693
Cd2144		.0000030000	ppm	0.00010200	3,815.1
Co2286		-0.00047100	ppm	0.00041700	88.501
Cr2677		0.00028900	ppm	0.00016900	58.358
Cu3247		-0.00099300	ppm	0.00022400	22.549
Fe2599		-0.016728	ppm	0.0060180	35.978
K_7664		-0.053450	ppm	0.017316	32.397
Mg2790		0.000046000	ppm	0.0059300	12,993
Mn2576		0.00037500	ppm	0.000052000	13.936
Mo2020		0.000026000	ppm	0.00051400	2,001.3
Na5895		0.0027180	ppm	0.020067	738.32
Ni2316		0.0018030	ppm	0.00062700	34.784

MB 320-395862/1-C

Acquire Date: 7/23/2020 2:54:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0029400	ppm	0.00020100	6.8492
Pb2203		-0.00018100	ppm	0.0014400	796.08
S_1820		0.0046600	ppm	0.0011900	25.542
Sb2068		0.0050670	ppm	0.0011960	23.601
Se1960		0.0052760	ppm	0.0065070	123.33
Si2881		0.056035	ppm	0.016838	30.049
Sn1899		0.0042150	ppm	0.00016900	4.0014
Sr4077		0.00023200	ppm	0.00043100	186.15
Ti3349		0.00054400	ppm	0.000095000	17.469
Tl1908		-0.0022150	ppm	0.00051500	23.238
V_2924		-0.00058800	ppm	0.000033000	5.6017
Zn2062		0.00054600	ppm	0.000064000	11.672
Y_2243		5,747.2	Cts/S	19.661	0.34211
Y_3600		54,435	Cts/S	125.63	0.23079
Y_3774		3,424.6	Cts/S	1.8762	0.054786

MB 320-397318/1-A

Acquire Date: 7/23/2020 2:58:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00019100	ppm	0.00028800	150.84
Al3961		0.031921	ppm	0.033627	105.34
As1890		-0.0017240	ppm	0.0014530	84.235
B_2089		-0.00054700	ppm	0.000058000	10.654
Ba4554		0.00019400	ppm	0.00048900	252.42
Be3130		0.00016700	ppm	0.00017300	103.23
Ca3179		-0.012166	ppm	0.0012540	10.305
Cd2144		0.000064000	ppm	0.000058000	90.252
Co2286		-0.00060300	ppm	0.00016200	26.874
Cr2677		-0.00016900	ppm	0.00030700	182.38
Cu3247		0.00027800	ppm	0.0010530	378.86
Fe2599		-0.014634	ppm	0.00097800	6.6854
K_7664		-0.020242	ppm	0.014203	70.166
Mg2790		-0.0020070	ppm	0.0036830	183.55
Mn2576		0.000024000	ppm	0.000072000	298.85
Mo2020		0.00027700	ppm	0.00079800	288.70
Na5895		-0.012908	ppm	0.0010620	8.2236
Ni2316		0.00041800	ppm	0.00025200	60.367
P_1782		-0.0056730	ppm	0.00082900	14.621
Pb2203		-0.00052800	ppm	0.0019630	371.83
S_1820		0.0030850	ppm	0.0056220	182.23
Sb2068		0.0027140	ppm	0.0026040	95.959
Se1960		0.0046690	ppm	0.0011410	24.435
Si2881		0.044445	ppm	0.0083370	18.758
Sn1899		0.0023310	ppm	0.00027600	11.850
Sr4077		0.00033900	ppm	0.00035300	104.27
Ti3349		0.00053000	ppm	0.00070000	132.00

MB 320-397318/1-A

Acquire Date: 7/23/2020 2:58:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.00051500	ppm	0.0024770	480.45
V_2924		0.00049700	ppm	0.000025000	4.9428
Zn2062		0.00021700	ppm	0.00035000	161.41
Y_2243		5,776.2	Cts/S	4.2477	0.073537
Y_3600		54,499	Cts/S	124.34	0.22814
Y_3774		3,423.6	Cts/S	16.730	0.48868

LCS 320-397318/2-A

Acquire Date: 7/23/2020 3:02:33PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049292	ppm	0.00045400	0.92083
Al3961		4.9979	ppm	0.058086	1.1622
As1890	**W**	**0.47579**	**ppm**	**0.0014000**	**0.29432**
B_2089		4.8406	ppm	0.00040000	0.0082550
Ba4554	**W**	**0.50219**	**ppm**	**0.0024610**	**0.49002**
Be3130		0.25139	ppm	0.0022370	0.89001
Ca3179		25.679	ppm	0.15329	0.59692
Cd2144	**W**	**0.25018**	**ppm**	**0.00034100**	**0.13613**
Co2286		0.24887	ppm	0.00089600	0.35983
Cr2677	**W**	**0.25089**	**ppm**	**0.00085600**	**0.34134**
Cu3247		0.24779	ppm	0.00014500	0.058453
Fe2599		5.0097	ppm	0.053392	1.0658
K_7664		24.610	ppm	0.22102	0.89807
Mg2790		24.935	ppm	0.11054	0.44330
Mn2576		0.25277	ppm	0.00093400	0.36955
Mo2020		0.25099	ppm	0.0014380	0.57310
Na5895		24.676	ppm	0.14058	0.56970
Ni2316		0.24605	ppm	0.00065800	0.26743
P_1782		5.2250	ppm	0.011876	0.22729
Pb2203	**W**	**0.24960**	**ppm**	**0.000052000**	**0.020642**
S_1820		5.0002	ppm	0.0046890	0.093770
Sb2068		0.47755	ppm	0.0035390	0.74109
Se1960	**W**	**0.49332**	**ppm**	**0.0068300**	**1.3845**
Si2881	**W**	**5.2068**	**ppm**	**0.050766**	**0.97500**
Sn1899		0.50585	ppm	0.00030700	0.060782
Sr4077		0.25095	ppm	0.0017940	0.71501
Ti3349	**W**	**0.24811**	**ppm**	**0.0023250**	**0.93715**
Tl1908		0.49562	ppm	0.0011210	0.22610
V_2924		0.24985	ppm	0.0014150	0.56647
Zn2062		0.52178	ppm	0.0011930	0.22857
Y_2243		5,669.6	Cts/S	3.8490	0.067889
Y_3600		52,996	Cts/S	114.08	0.21525
Y_3774		3,414.3	Cts/S	3.7104	0.10867

LB 320-396603/1-C

Acquire Date: 7/23/2020 3:06:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013930	ppm	0.000047000	3.4031
Al3961		0.0023160	ppm	0.022358	965.47
As1890		-0.0012470	ppm	0.0018690	149.94
B_2089		0.049091	ppm	0.000046000	0.092735
Ba4554		0.072379	ppm	0.00047600	0.65821
Be3130		0.000079000	ppm	0.000093000	117.14
Ca3179		0.031897	ppm	0.0040150	12.587
Cd2144		0.000062000	ppm	0.000071000	114.62
Co2286		-0.00048700	ppm	0.00023900	49.219
Cr2677		0.00052600	ppm	0.0013900	264.12
Cu3247		0.0026900	ppm	0.00012700	4.7376
Fe2599		0.0097770	ppm	0.011009	112.60
K_7664		0.22278	ppm	0.021356	9.5863
Mg2790		-0.00076800	ppm	0.0017140	223.17
Mn2576		0.00017600	ppm	0.00014100	79.944
Mo2020		0.0010620	ppm	0.00065900	62.104
Na5895	**F**	**994.14**	**ppm**	**22.962**	**2.3098**
Ni2316		0.010158	ppm	0.00094200	9.2741
P_1782		-0.0052560	ppm	0.00025000	4.7512
Pb2203		0.000024000	ppm	0.00056600	2,357.2
S_1820		0.017913	ppm	0.0025000	13.956
Sb2068		-0.0027560	ppm	0.0023360	84.735
Se1960		0.00033400	ppm	0.0027110	810.80
Si2881		0.072561	ppm	0.048099	66.287
Sn1899		0.0026780	ppm	0.00047300	17.657
Sr4077		0.0012680	ppm	0.00015800	12.495
Ti3349		0.0017380	ppm	0.00095600	55.003
Tl1908		0.0021230	ppm	0.0015050	70.883
V_2924		-0.0011210	ppm	0.0018650	166.38
Zn2062		0.051642	ppm	0.00041900	0.81186
Y_2243		5,402.6	Cts/S	27.506	0.50912
Y_3600		49,985	Cts/S	9.6383	0.019282
Y_3774		3,368.9	Cts/S	28.316	0.84049

CCV 2078482

Acquire Date: 7/23/2020 3:10:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50987	ppm	0.00094200	0.18474	.50000	Rel(%)	Pass	
Al3961		25.655	ppm	0.099931	0.38951	25.000	Rel(%)	Pass	
As1890		0.51431	ppm	0.0042270	0.82183	.50000	Rel(%)	Pass	
B_2089		1.0349	ppm	0.0015430	0.14906	1.0000	Rel(%)	Pass	
Ba4554		2.5702	ppm	0.011457	0.44577	2.5000	Rel(%)	Pass	
Be3130		0.51901	ppm	0.0025360	0.48865	.50000	Rel(%)	Pass	
Ca3179		26.350	ppm	0.19739	0.74911	25.000	Rel(%)	Pass	
Cd2144		0.52577	ppm	0.0019430	0.36959	.50000	Rel(%)	Pass	
Co2286		2.6112	ppm	0.0068380	0.26186	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/23/2020 3:10:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.5552	ppm	0.0067130	0.26270	2.5000	Rel(%)	Pass	
Cu3247		2.5451	ppm	0.0090340	0.35496	2.5000	Rel(%)	Pass	
Fe2599		25.996	ppm	0.077266	0.29722	25.000	Rel(%)	Pass	
K_7664		25.629	ppm	0.16464	0.64238	25.000	Rel(%)	Pass	
Mg2790		25.674	ppm	0.058903	0.22943	25.000	Rel(%)	Pass	
Mn2576		2.5878	ppm	0.0063520	0.24548	2.5000	Rel(%)	Pass	
Mo2020		1.0408	ppm	0.0042700	0.41021	1.0000	Rel(%)	Pass	
Na5895		25.671	ppm	0.13863	0.54003	25.000	Rel(%)	Pass	
Ni2316		2.6480	ppm	0.013449	0.50790	2.5000	Rel(%)	Pass	
P_1782		2.6025	ppm	0.0031130	0.11963	2.5000	Rel(%)	Pass	
Pb2203		0.52401	ppm	0.0011020	0.21025	.50000	Rel(%)	Pass	
S_1820		2.4588	ppm	0.015853	0.64475	2.5000	Rel(%)	Pass	
Sb2068		0.51468	ppm	0.0027190	0.52820	.50000	Rel(%)	Pass	
Se1960		0.52542	ppm	0.000092000	0.017521	.50000	Rel(%)	Pass	
Si2881		2.6295	ppm	0.042542	1.6179	2.5000	Rel(%)	Pass	
Sn1899		2.6079	ppm	0.0070660	0.27092	2.5000	Rel(%)	Pass	
Sr4077		2.5694	ppm	0.011341	0.44137	2.5000	Rel(%)	Pass	
Ti3349		1.0311	ppm	0.0034320	0.33283	1.0000	Rel(%)	Pass	
Tl1908		0.52425	ppm	0.0059370	1.1324	.50000	Rel(%)	Pass	
V_2924		2.5706	ppm	0.0081400	0.31665	2.5000	Rel(%)	Pass	
Zn2062		2.6190	ppm	0.0015980	0.060999	2.5000	Rel(%)	Pass	
Y_2243		5,580.2	Cts/S	22.967	0.41159				
Y_3600		52,587	Cts/S	18.035	0.034295				
Y_3774		3,366.1	Cts/S	3.7734	0.11210				

CCB 2065750

Acquire Date: 7/23/2020 3:14:17PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00083300	ppm	0.00065200	78.301	.00000	Abs	Pass	
Al3961	**W**	**0.056213**	**ppm**	**0.036933**	**65.701**	**.00000**	**Abs**	**Warn High**	**0.05000**
As1890		-0.00096000	ppm	0.0014830	154.43	.00000	Abs	Pass	
B_2089		0.0041230	ppm	0.000088000	2.1386	.00000	Abs	Pass	
Ba4554		0.000071000	ppm	0.00029000	408.99	.00000	Abs	Pass	
Be3130		-0.00018800	ppm	0.000091000	48.391	.00000	Abs	Pass	
Ca3179		-0.013584	ppm	0.0027210	20.028	.00000	Abs	Pass	
Cd2144		0.000024000	ppm	0.000056000	231.56	.00000	Abs	Pass	
Co2286		0.000076000	ppm	0.00025800	339.40	.00000	Abs	Pass	
Cr2677		0.00054700	ppm	0.00051200	93.686	.00000	Abs	Pass	
Cu3247		0.0016340	ppm	0.00024500	15.011	.00000	Abs	Pass	
Fe2599		0.026608	ppm	0.0056980	21.414	.00000	Abs	Pass	
K_7664		0.038746	ppm	0.022673	58.518	.00000	Abs	Pass	
Mg2790		-0.00048300	ppm	0.0036800	761.15	.00000	Abs	Pass	
Mn2576		0.00019200	ppm	0.000030000	15.702	.00000	Abs	Pass	
Mo2020		0.0056760	ppm	0.00054400	9.5889	.00000	Abs	Pass	
Na5895		0.15130	ppm	0.00050000	0.33054	.00000	Abs	Pass	
Ni2316		0.0023150	ppm	0.0011290	48.780	.00000	Abs	Pass	
P_1782		-0.0012090	ppm	0.0042620	352.56	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/23/2020 3:14:17PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		-0.0011340	ppm	0.0015300	134.89	.00000	Abs	Pass	
S_1820		0.00093700	ppm	0.0046740	499.09	.00000	Abs	Pass	
Sb2068		0.0018350	ppm	0.0010250	55.836	.00000	Abs	Pass	
Se1960		0.00035400	ppm	0.00061700	174.38	.00000	Abs	Pass	
Si2881		0.059763	ppm	0.043568	72.901	.00000	Abs	Pass	
Sn1899		0.0038520	ppm	0.000061000	1.5841	.00000	Abs	Pass	
Sr4077		0.00042800	ppm	0.00012900	30.025	.00000	Abs	Pass	
Ti3349		0.0041510	ppm	0.00034700	8.3490	.00000	Abs	Pass	
Tl1908		0.0042240	ppm	0.0023780	56.313	.00000	Abs	Pass	
V_2924		0.00015700	ppm	0.00045300	289.41	.00000	Abs	Pass	
Zn2062		0.00083800	ppm	0.00049500	59.085	.00000	Abs	Pass	
Y_2243		5,667.1	Cts/S	20.126	0.35514				
Y_3600		53,422	Cts/S	83.015	0.15540				
Y_3774		3,362.1	Cts/S	2.2395	0.066609				

MB 320-397315/1-A

Acquire Date: 7/23/2020 3:18:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013170	ppm	0.00019400	14.751
Al3961		0.016786	ppm	0.016371	97.524
As1890		-0.0033800	ppm	0.00043900	12.980
B_2089		0.0041690	ppm	0.00021100	5.0624
Ba4554		0.00030000	ppm	0.00036900	123.04
Be3130		0.000088000	ppm	0.00020000	226.75
Ca3179		0.021750	ppm	0.0047290	21.742
Cd2144		0.000016000	ppm	0.000057000	357.89
Co2286		-0.00030700	ppm	0.00041100	133.54
Cr2677		0.000091000	ppm	0.00036000	397.09
Cu3247		0.00069200	ppm	0.0000070000	1.0396
Fe2599		-0.0026080	ppm	0.0049010	187.87
K_7664		0.0010470	ppm	0.018138	1,733.0
Mg2790		0.0038900	ppm	0.0072480	186.34
Mn2576		0.00030800	ppm	0.000049000	15.786
Mo2020		0.0013420	ppm	0.000099000	7.3555
Na5895		0.15327	ppm	0.023358	15.240
Ni2316		-0.00052800	ppm	0.0010230	193.61
P_1782		-0.0082270	ppm	0.0011820	14.371
Pb2203		0.00029000	ppm	0.0012030	414.98
S_1820		0.0049060	ppm	0.0050800	103.54
Sb2068		0.0031960	ppm	0.00030000	9.3744
Se1960		0.0025830	ppm	0.0020680	80.076
Si2881		0.055447	ppm	0.025862	46.643
Sn1899		0.0027790	ppm	0.000047000	1.6789
Sr4077		0.00052400	ppm	0.00016400	31.258
Ti3349		0.0011380	ppm	0.00011600	10.164
Tl1908		-0.0026760	ppm	0.0019980	74.649

MB 320-397315/1-A

Acquire Date: 7/23/2020 3:18:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.00025900	ppm	0.00032500	125.57
Zn2062		0.0016450	ppm	0.000073000	4.4553
Y_2243		5,612.0	Cts/S	0.38099	0.0067890
Y_3600		53,058	Cts/S	17.380	0.032757
Y_3774		3,325.3	Cts/S	8.5410	0.25685

LCS 320-397315/2-A

Acquire Date: 7/23/2020 3:22:20PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048051	ppm	0.00078900	1.6417
Al3961		4.9812	ppm	0.054340	1.0909
As1890	**W**	**0.46150**	**ppm**	**0.0022030**	**0.47739**
B_2089		4.6869	ppm	0.014312	0.30536
Ba4554	**W**	**0.50231**	**ppm**	**0.0026320**	**0.52404**
Be3130		0.25033	ppm	0.0017550	0.70119
Ca3179		25.788	ppm	0.19086	0.74011
Cd2144	**W**	**0.24610**	**ppm**	**0.00054800**	**0.22283**
Co2286		0.24744	ppm	0.0018350	0.74166
Cr2677	**W**	**0.25101**	**ppm**	**0.0012860**	**0.51221**
Cu3247		0.24523	ppm	0.00059300	0.24188
Fe2599		5.0888	ppm	0.082079	1.6129
K_7664		24.544	ppm	0.23452	0.95554
Mg2790		24.793	ppm	0.11490	0.46344
Mn2576		0.25268	ppm	0.0013500	0.53411
Mo2020		0.25422	ppm	0.00075900	0.29854
Na5895		24.812	ppm	0.18126	0.73053
Ni2316		0.24606	ppm	0.00078100	0.31734
P_1782		5.0786	ppm	0.00079400	0.015630
Pb2203	**W**	**0.24733**	**ppm**	**0.00027200**	**0.11015**
S_1820		4.8157	ppm	0.0042040	0.087287
Sb2068		0.46645	ppm	0.0039450	0.84583
Se1960	**W**	**0.45490**	**ppm**	**0.0060530**	**1.3306**
Si2881	**W**	**5.1893**	**ppm**	**0.0010420**	**0.020087**
Sn1899		0.50807	ppm	0.0033490	0.65908
Sr4077		0.25041	ppm	0.00030300	0.12086
Ti3349	**W**	**0.25036**	**ppm**	**0.0018220**	**0.72789**
Tl1908		0.48407	ppm	0.00090800	0.18755
V_2924		0.25109	ppm	0.000048000	0.019175
Zn2062		0.51277	ppm	0.0010850	0.21153
Y_2243		5,541.5	Cts/S	2.8211	0.050909
Y_3600		52,035	Cts/S	54.769	0.10525
Y_3774		3,299.5	Cts/S	10.618	0.32179

LB 320-396603/1-B

Acquire Date: 7/23/2020 3:26:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00042600	ppm	0.00028100	65.916
Al3961		0.046662	ppm	0.020543	44.025
As1890		0.000063000	ppm	0.00042200	671.38
B_2089		0.054614	ppm	0.0010480	1.9191
Ba4554		0.077091	ppm	0.00041300	0.53535
Be3130		0.000077000	ppm	0.00015900	206.35
Ca3179		0.026336	ppm	0.0085430	32.438
Cd2144		0.00014400	ppm	0.000071000	49.565
Co2286		-0.00017800	ppm	0.000026000	14.746
Cr2677		0.0012010	ppm	0.00043500	36.179
Cu3247		0.0036260	ppm	0.00030400	8.3981
Fe2599		-0.0023600	ppm	0.011716	496.39
K_7664		0.23949	ppm	0.039798	16.618
Mg2790		0.029730	ppm	0.011836	39.810
Mn2576		0.00057200	ppm	0.00010600	18.480
Mo2020		0.0016420	ppm	0.00017700	10.755
Na5895	**F**	**1,044.7**	**ppm**	**9.0664**	**0.86784**
Ni2316		0.012093	ppm	0.000070000	0.58297
P_1782		-0.0065280	ppm	0.00015000	2.2910
Pb2203		0.00067900	ppm	0.00035500	52.309
S_1820		0.020567	ppm	0.0069440	33.761
Sb2068		0.0010840	ppm	0.000034000	3.1620
Se1960		0.0088060	ppm	0.00055800	6.3374
Si2881		0.021847	ppm	0.042391	194.03
Sn1899		0.0024680	ppm	0.00039100	15.840
Sr4077		0.0018800	ppm	0.00037000	19.665
Ti3349		0.0019460	ppm	0.00076900	39.527
Tl1908		0.0035230	ppm	0.0017290	49.078
V_2924		0.000055000	ppm	0.000023000	42.540
Zn2062		0.055519	ppm	0.00010300	0.18540
Y_2243		5,475.0	Cts/S	18.386	0.33581
Y_3600		50,687	Cts/S	71.195	0.14046
Y_3774		3,383.3	Cts/S	42.336	1.2513

MB 320-397316/1-A

Acquire Date: 7/23/2020 3:30:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013700	ppm	0.000072000	5.2718
Al3961		0.050464	ppm	0.019044	37.738
As1890		-0.0011800	ppm	0.00042500	36.052
B_2089		0.0062860	ppm	0.00038300	6.0880
Ba4554		0.00014400	ppm	0.00051100	355.04
Be3130		-0.00041000	ppm	0.00027000	66.035
Ca3179		0.0029560	ppm	0.00090600	30.640
Cd2144		0.000030000	ppm	0.000026000	87.483
Co2286		-0.00073100	ppm	0.00021700	29.723

MB 320-397316/1-A

Acquire Date: 7/23/2020 3:30:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00020100	ppm	0.00015900	79.246
Cu3247		-0.00030500	ppm	0.0010120	331.77
Fe2599		-0.020925	ppm	0.00075900	3.6288
K_7664		0.045025	ppm	0.032140	71.383
Mg2790		0.0015340	ppm	0.0033180	216.30
Mn2576		0.000057000	ppm	0.000042000	74.020
Mo2020		0.00017500	ppm	0.00041600	237.51
Na5895	**W**	**0.64461**	**ppm**	**0.093449**	**14.497**
Ni2316		0.00028600	ppm	0.00040500	141.67
P_1782		-0.0022270	ppm	0.0019130	85.878
Pb2203		0.00015400	ppm	0.0032580	2,109.0
S_1820		0.0045530	ppm	0.0044660	98.103
Sb2068		0.0020040	ppm	0.0017430	87.005
Se1960		0.00043600	ppm	0.00032100	73.711
Si2881		0.022110	ppm	0.0016580	7.4976
Sn1899		0.0026400	ppm	0.000081000	3.0655
Sr4077		0.00042500	ppm	0.00030900	72.740
Ti3349		0.00059600	ppm	0.00039300	65.920
Tl1908		0.000086000	ppm	0.0021960	2,544.9
V_2924		-0.00023700	ppm	0.00045200	190.75
Zn2062		0.0011470	ppm	0.00049500	43.109
Y_2243		5,658.4	Cts/S	18.578	0.32833
Y_3600		53,520	Cts/S	232.98	0.43532
Y_3774		3,348.3	Cts/S	12.517	0.37383

LCS 320-397316/2-A

Acquire Date: 7/23/2020 3:34:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048972	ppm	0.00093700	1.9140
Al3961		5.0247	ppm	0.022484	0.44747
As1890	**W**	**0.46501**	**ppm**	**0.0013870**	**0.29837**
B_2089		4.7102	ppm	0.016891	0.35861
Ba4554	**W**	**0.50361**	**ppm**	**0.0027560**	**0.54729**
Be3130		0.25116	ppm	0.0010210	0.40650
Ca3179		25.817	ppm	0.15014	0.58154
Cd2144	**W**	**0.24704**	**ppm**	**0.00060900**	**0.24635**
Co2286		0.24783	ppm	0.00052400	0.21159
Cr2677	**W**	**0.25018**	**ppm**	**0.0018050**	**0.72147**
Cu3247		0.24708	ppm	0.0012820	0.51899
Fe2599		5.1382	ppm	0.014087	0.27417
K_7664		24.765	ppm	0.12739	0.51440
Mg2790		24.813	ppm	0.14315	0.57692
Mn2576		0.25383	ppm	0.00085500	0.33682
Mo2020		0.25471	ppm	0.00087900	0.34509
Na5895		24.868	ppm	0.15504	0.62345
Ni2316		0.24642	ppm	0.00044900	0.18220

LCS 320-397316/2-A

Acquire Date: 7/23/2020 3:34:18PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.0905	ppm	0.014200	0.27895
Pb2203	**W**	**0.24746**	**ppm**	**0.0018790**	**0.75937**
S_1820		4.8294	ppm	0.0054180	0.11219
Sb2068		0.46498	ppm	0.0029700	0.63882
Se1960	**W**	**0.45179**	**ppm**	**0.0012600**	**0.27900**
Si2881	**W**	**5.2908**	**ppm**	**0.049731**	**0.93996**
Sn1899		0.51002	ppm	0.0012600	0.24701
Sr4077		0.25144	ppm	0.0011120	0.44216
Ti3349	**W**	**0.25177**	**ppm**	**0.0022610**	**0.89822**
Tl1908		0.48904	ppm	0.0033130	0.67748
V_2924		0.25116	ppm	0.00035700	0.14233
Zn2062		0.51335	ppm	0.0029040	0.56572
Y_2243		5,586.9	Cts/S	5.7502	0.10292
Y_3600		52,601	Cts/S	195.48	0.37163
Y_3774		3,324.1	Cts/S	16.708	0.50263

LB 320-397316/3-A

Acquire Date: 7/23/2020 3:38:33PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00028700	ppm	0.0011780	410.84
Al3961		0.044669	ppm	0.017518	39.217
As1890		-0.0015180	ppm	0.00078300	51.551
B_2089		0.051317	ppm	0.00064000	1.2480
Ba4554		0.072390	ppm	0.0010470	1.4460
Be3130		-0.00012600	ppm	0.000037000	29.331
Ca3179		0.020472	ppm	0.0010830	5.2906
Cd2144		-0.00013100	ppm	0.000059000	44.550
Co2286		-0.00053300	ppm	0.00028200	52.928
Cr2677		0.0012250	ppm	0.00022200	18.120
Cu3247		0.0030260	ppm	0.00086800	28.693
Fe2599		-0.0034000	ppm	0.00083900	24.678
K_7664		0.15115	ppm	0.098434	65.124
Mg2790		-0.0012710	ppm	0.0018600	146.35
Mn2576		0.00021900	ppm	0.00019300	88.047
Mo2020		0.00083500	ppm	0.00064000	76.579
Na5895	**F**	**980.49**	**ppm**	**11.165**	**1.1388**
Ni2316		0.010960	ppm	0.00068900	6.2869
P_1782		-0.012003	ppm	0.0016870	14.051
Pb2203		0.0010770	ppm	0.0014140	131.21
S_1820		0.013652	ppm	0.0042410	31.062
Sb2068		0.00078200	ppm	0.00023800	30.481
Se1960		0.0053630	ppm	0.0048910	91.198
Si2881		0.092464	ppm	0.015461	16.722
Sn1899		0.0024780	ppm	0.00052000	20.966
Sr4077		0.00091200	ppm	0.00015000	16.473
Ti3349		0.0017060	ppm	0.00033700	19.730

Color Legend   Pass/Unchecked   Internal Standard   Check Fail   Check Warn

LB 320-397316/3-A

Acquire Date: 7/23/2020 3:38:33PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.00016800	ppm	0.0027730	1,652.2
V_2924		-0.00052100	ppm	0.000059000	11.261
Zn2062		0.051657	ppm	0.00031100	0.60127
Y_2243		5,355.1	Cts/S	11.997	0.22403
Y_3600		49,475	Cts/S	1.4998	0.0030310
Y_3774		3,305.3	Cts/S	5.0007	0.15130

MB 320-397139/1-A

Acquire Date: 7/23/2020 3:42:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013970	ppm	0.00034800	24.899
Al3961		0.050631	ppm	0.0060280	11.905
As1890		-0.0022040	ppm	0.00077500	35.169
B_2089		0.0078550	ppm	0.00013900	1.7724
Ba4554		0.00017700	ppm	0.00000	0.049925
Be3130		-0.00062400	ppm	0.00029900	47.999
Ca3179		0.12995	ppm	0.0029270	2.2523
Cd2144		.0000040000	ppm	0.000032000	864.60
Co2286		-0.00056800	ppm	0.00021500	37.835
Cr2677		0.00051900	ppm	0.00019100	36.795
Cu3247		0.000015000	ppm	0.000097000	645.36
Fe2599		0.0013980	ppm	0.012282	878.51
K_7664		0.074841	ppm	0.016473	22.011
Mg2790		0.038844	ppm	0.0069790	17.965
Mn2576		0.00041500	ppm	0.0000080000	1.8882
Mo2020		0.00037000	ppm	0.00032300	87.284
Na5895	**W**	**0.89330**	**ppm**	**0.051987**	**5.8197**
Ni2316		0.000023000	ppm	0.00011200	498.33
P_1782		-0.0025240	ppm	0.00067300	26.671
Pb2203		-0.00084900	ppm	0.0016610	195.56
S_1820		0.015533	ppm	0.0052540	33.829
Sb2068		0.0017650	ppm	0.0037830	214.30
Se1960		-0.0016460	ppm	0.00078200	47.498
Si2881		0.035018	ppm	0.037533	107.18
Sn1899		0.0031670	ppm	0.00025500	8.0528
Sr4077		0.00059700	ppm	0.0000040000	0.73628
Ti3349		-0.00010400	ppm	0.00069800	672.45
Tl1908		-0.0016300	ppm	0.00073100	44.854
V_2924		-0.00071900	ppm	0.00052800	73.507
Zn2062		0.0011660	ppm	0.00049100	42.093
Y_2243		5,642.1	Cts/S	6.3531	0.11260
Y_3600		53,021	Cts/S	20.428	0.038529
Y_3774		3,309.1	Cts/S	7.5764	0.22896

LCS 320-397139/2-A

Acquire Date: 7/23/2020 3:46:41PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.043966	ppm	0.00033500	0.76254
Al3961		4.7737	ppm	0.043351	0.90812
As1890	**W**	**0.44203**	**ppm**	**0.0033260**	**0.75247**
B_2089		4.4596	ppm	0.0091970	0.20623
Ba4554	**W**	**0.48041**	**ppm**	**0.0021450**	**0.44642**
Be3130		0.23908	ppm	0.0012780	0.53465
Ca3179		24.782	ppm	0.24992	1.0085
Cd2144	**W**	**0.23514**	**ppm**	**0.00039000**	**0.16575**
Co2286		0.23631	ppm	0.00044400	0.18797
Cr2677	**W**	**0.23177**	**ppm**	**0.0076500**	**3.3007**
Cu3247		0.22973	ppm	0.0031480	1.3705
Fe2599		4.8957	ppm	0.025884	0.52872
K_7664		23.527	ppm	0.15892	0.67549
Mg2790		22.937	ppm	0.81618	3.5584
Mn2576		0.23484	ppm	0.0074970	3.1922
Mo2020		0.24126	ppm	0.00058400	0.24194
Na5895		24.065	ppm	0.16829	0.69930
Ni2316		0.23371	ppm	0.00087400	0.37390
P_1782		4.8278	ppm	0.015849	0.32828
Pb2203	**W**	**0.23472**	**ppm**	**0.0018620**	**0.79317**
S_1820		4.5968	ppm	0.0023220	0.050510
Sb2068		0.43976	ppm	0.0031850	0.72437
Se1960	**W**	**0.43851**	**ppm**	**0.0010480**	**0.23907**
Si2881	**W**	**4.9708**	**ppm**	**0.047018**	**0.94588**
Sn1899		0.48744	ppm	0.0012670	0.26002
Sr4077		0.23942	ppm	0.0017150	0.71618
Ti3349	**W**	**0.23170**	**ppm**	**0.0079110**	**3.4144**
Tl1908		0.45890	ppm	0.000066000	0.014330
V_2924		0.23267	ppm	0.0067290	2.8921
Zn2062		0.47492	ppm	0.015741	3.3144
Y_2243		5,618.0	Cts/S	4.3420	0.077288
Y_3600		53,764	Cts/S	857.19	1.5943
Y_3774		3,303.3	Cts/S	33.587	1.0168

MB 320-397152/1-A

Acquire Date: 7/23/2020 3:50:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010590	ppm	0.0010840	102.34
Al3961		0.039038	ppm	0.026881	68.857
As1890		-0.00027400	ppm	0.0015430	562.45
B_2089		0.014283	ppm	0.000038000	0.26501
Ba4554		0.00072900	ppm	0.000059000	8.0949
Be3130		-0.00021100	ppm	0.00014400	68.271
Ca3179		0.12703	ppm	0.0045360	3.5707
Cd2144		0.000050000	ppm	0.00014300	284.41
Co2286		-0.00050700	ppm	0.00036300	71.527

MB 320-397152/1-A

Acquire Date: 7/23/2020 3:50:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00066100	ppm	0.0010000	151.31
Cu3247		-0.00039800	ppm	0.00021300	53.531
Fe2599		0.018813	ppm	0.010856	57.702
K_7664		0.026540	ppm	0.061486	231.67
Mg2790		0.051101	ppm	0.0055720	10.903
Mn2576		0.00051300	ppm	0.000082000	16.053
Mo2020		0.0012250	ppm	0.000053000	4.3156
Na5895		0.20157	ppm	0.0055530	2.7547
Ni2316		0.0023120	ppm	0.00043100	18.654
P_1782		0.012395	ppm	0.0016800	13.556
Pb2203		0.00021200	ppm	0.00077700	366.97
S_1820		0.0021850	ppm	0.00017200	7.8588
Sb2068		0.0063800	ppm	0.0017320	27.141
Se1960		0.0017580	ppm	0.00051400	29.224
Si2881		0.036933	ppm	0.029213	79.095
Sn1899	**W**	**0.019662**	**ppm**	**0.000042000**	**0.21260**
Sr4077		0.00088100	ppm	0.00031500	35.779
Ti3349		0.0017180	ppm	0.00027900	16.260
Tl1908		-0.00055900	ppm	0.0023960	428.46
V_2924		-0.00024500	ppm	0.00036200	148.09
Zn2062		0.00060200	ppm	0.00017300	28.798
Y_2243		5,728.6	Cts/S	9.3978	0.16405
Y_3600		53,965	Cts/S	113.82	0.21092
Y_3774		3,384.7	Cts/S	4.5181	0.13349

LCS 320-397152/2-A

Acquire Date: 7/23/2020 3:54:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.044739	ppm	0.00032500	0.72596
Al3961		4.7090	ppm	0.023937	0.50833
As1890	**W**	**0.43242**	**ppm**	**0.0015810**	**0.36569**
B_2089		4.2367	ppm	0.015544	0.36688
Ba4554	**W**	**0.46913**	**ppm**	**0.0051460**	**1.0970**
Be3130		0.23401	ppm	0.0018550	0.79259
Ca3179		24.266	ppm	0.34127	1.4064
Cd2144	**W**	**0.23089**	**ppm**	**0.00059900**	**0.25960**
Co2286		0.23522	ppm	0.00090500	0.38458
Cr2677	**W**	**0.23319**	**ppm**	**0.0010400**	**0.44596**
Cu3247		0.22822	ppm	0.0019600	0.85899
Fe2599		4.8311	ppm	0.073877	1.5292
K_7664		23.102	ppm	0.29578	1.2803
Mg2790		23.093	ppm	0.12811	0.55476
Mn2576		0.23687	ppm	0.0013460	0.56814
Mo2020		0.23436	ppm	0.0014910	0.63614
Na5895		23.170	ppm	0.29592	1.2772
Ni2316		0.23269	ppm	0.0022040	0.94728

LCS 320-397152/2-A

Acquire Date: 7/23/2020 3:54:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.7608	ppm	0.021201	0.44532
Pb2203	**W**	**0.23305**	**ppm**	**0.0010580**	**0.45415**
S_1820		4.4972	ppm	0.0030380	0.067556
Sb2068		0.42863	ppm	0.000056000	0.013048
Se1960	**W**	**0.42240**	**ppm**	**0.00088900**	**0.21037**
Si2881	**F**	**3.5203**	**ppm**	**0.0073000**	**0.20736**
Sn1899		0.50217	ppm	0.0035440	0.70576
Sr4077		0.23389	ppm	0.0023460	1.0029
Ti3349	**W**	**0.23392**	**ppm**	**0.00067000**	**0.28663**
Tl1908		0.45626	ppm	0.0030620	0.67102
V_2924		0.23359	ppm	0.00065000	0.27823
Zn2062		0.47941	ppm	0.0047950	1.0002
Y_2243		5,649.8	Cts/S	3.9077	0.069166
Y_3600		53,353	Cts/S	51.123	0.095820
Y_3774		3,349.3	Cts/S	18.541	0.55359

CCV 2078482

Acquire Date: 7/23/2020 3:58:18PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51095	ppm	0.0034930	0.68372	.50000	Rel(%)	Pass	
Al3961		25.841	ppm	0.099106	0.38352	25.000	Rel(%)	Pass	
As1890		0.51824	ppm	0.00035200	0.067847	.50000	Rel(%)	Pass	
B_2089		1.0452	ppm	0.0020640	0.19748	1.0000	Rel(%)	Pass	
Ba4554		2.5918	ppm	0.011291	0.43563	2.5000	Rel(%)	Pass	
Be3130		0.52214	ppm	0.0015480	0.29645	.50000	Rel(%)	Pass	
Ca3179		26.566	ppm	0.077131	0.29033	25.000	Rel(%)	Pass	
Cd2144		0.52790	ppm	0.0015570	0.29502	.50000	Rel(%)	Pass	
Co2286		2.6244	ppm	0.0064180	0.24454	2.5000	Rel(%)	Pass	
Cr2677		2.5843	ppm	0.012099	0.46818	2.5000	Rel(%)	Pass	
Cu3247		2.5552	ppm	0.013805	0.54028	2.5000	Rel(%)	Pass	
Fe2599		26.268	ppm	0.081056	0.30858	25.000	Rel(%)	Pass	
K_7664		25.755	ppm	0.15088	0.58582	25.000	Rel(%)	Pass	
Mg2790		25.933	ppm	0.13121	0.50598	25.000	Rel(%)	Pass	
Mn2576		2.6084	ppm	0.010879	0.41707	2.5000	Rel(%)	Pass	
Mo2020		1.0438	ppm	0.0036850	0.35302	1.0000	Rel(%)	Pass	
Na5895		25.569	ppm	0.14459	0.56549	25.000	Rel(%)	Pass	
Ni2316		2.6546	ppm	0.00053000	0.019980	2.5000	Rel(%)	Pass	
P_1782		2.6216	ppm	0.0060240	0.22977	2.5000	Rel(%)	Pass	
Pb2203		0.52611	ppm	0.0021530	0.40917	.50000	Rel(%)	Pass	
S_1820		2.4641	ppm	0.0032640	0.13245	2.5000	Rel(%)	Pass	
Sb2068		0.51917	ppm	0.00013800	0.026608	.50000	Rel(%)	Pass	
Se1960		0.52935	ppm	0.00072500	0.13705	.50000	Rel(%)	Pass	
Si2881		2.6156	ppm	0.10958	4.1894	2.5000	Rel(%)	Pass	
Sn1899		2.6166	ppm	0.0069960	0.26737	2.5000	Rel(%)	Pass	
Sr4077		2.5840	ppm	0.012644	0.48931	2.5000	Rel(%)	Pass	
Ti3349		1.0414	ppm	0.0048370	0.46449	1.0000	Rel(%)	Pass	
Tl1908		0.52167	ppm	0.000073000	0.014061	.50000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/23/2020 3:58:18PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5858	ppm	0.010989	0.42496	2.5000	Rel(%)	Pass	
Zn2062		2.6428	ppm	0.011839	0.44797	2.5000	Rel(%)	Pass	
Y_2243		5,561.6	Cts/S	20.134	0.36202				
Y_3600		52,421	Cts/S	163.44	0.31178				
Y_3774		3,338.8	Cts/S	1.2742	0.038163				

CCB 2065750

Acquire Date: 7/23/2020 4:02:06PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00065600	ppm	0.00035200	53.613	.00000	Abs	Pass	
Al3961		0.024155	ppm	0.021407	88.625	.00000	Abs	Pass	
As1890		0.000014000	ppm	0.00018700	1,386.0	.00000	Abs	Pass	
B_2089		0.011149	ppm	0.0011230	10.070	.00000	Abs	Pass	
Ba4554		0.00049300	ppm	0.00033200	67.307	.00000	Abs	Pass	
Be3130		-0.00031300	ppm	0.000087000	27.930	.00000	Abs	Pass	
Ca3179		-0.0039460	ppm	0.0062210	157.64	.00000	Abs	Pass	
Cd2144		0.00012800	ppm	0.000067000	52.657	.00000	Abs	Pass	
Co2286		-0.00010000	ppm	0.000022000	22.097	.00000	Abs	Pass	
Cr2677		0.00017000	ppm	0.00064200	377.54	.00000	Abs	Pass	
Cu3247		0.0013100	ppm	0.0022460	171.47	.00000	Abs	Pass	
Fe2599		0.033432	ppm	0.0071500	21.388	.00000	Abs	Pass	
K_7664		0.020716	ppm	0.037812	182.53	.00000	Abs	Pass	
Mg2790		0.0028200	ppm	0.0062660	222.21	.00000	Abs	Pass	
Mn2576		0.00018100	ppm	0.000044000	24.433	.00000	Abs	Pass	
Mo2020		0.0057260	ppm	0.00044400	7.7538	.00000	Abs	Pass	
Na5895		0.064284	ppm	0.019669	30.597	.00000	Abs	Pass	
Ni2316		0.0016660	ppm	0.0020320	121.99	.00000	Abs	Pass	
P_1782		-0.0029750	ppm	0.0023980	80.631	.00000	Abs	Pass	
Pb2203		-0.00098300	ppm	0.00072300	73.615	.00000	Abs	Pass	
S_1820		0.0050250	ppm	0.0028230	56.173	.00000	Abs	Pass	
Sb2068		0.0025400	ppm	0.0031450	123.78	.00000	Abs	Pass	
Se1960		0.0030340	ppm	0.0044560	146.86	.00000	Abs	Pass	
Si2881		0.034861	ppm	0.0013900	3.9864	.00000	Abs	Pass	
Sn1899		0.0042210	ppm	0.00034900	8.2644	.00000	Abs	Pass	
Sr4077		0.00031600	ppm	0.00023200	73.485	.00000	Abs	Pass	
Ti3349		0.0054290	ppm	0.00035500	6.5385	.00000	Abs	Pass	
Tl1908		0.0022650	ppm	0.0034540	152.50	.00000	Abs	Pass	
V_2924		0.00055800	ppm	0.00039700	71.181	.00000	Abs	Pass	
Zn2062		0.0011630	ppm	0.000093000	7.9869	.00000	Abs	Pass	
Y_2243		5,651.6	Cts/S	2.4038	0.042533				
Y_3600		53,190	Cts/S	165.23	0.31063				
Y_3774		3,353.0	Cts/S	12.917	0.38523				

720-99264-A-1-K

Acquire Date: 7/23/2020 4:06:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00045900	ppm	0.0016020	348.83
Al3961		0.043126	ppm	0.025193	58.417
As1890		-0.0011970	ppm	0.0015670	130.91
B_2089		0.88060	ppm	0.00043600	0.049462
Ba4554		0.10148	ppm	0.00027200	0.26845
Be3130		-0.00031200	ppm	0.00013600	43.683
Ca3179		7.1297	ppm	0.069954	0.98117
Cd2144		0.000059000	ppm	0.00012700	216.11
Co2286		0.000061000	ppm	0.00031800	517.75
Cr2677		0.00054800	ppm	0.00018100	32.973
Cu3247		0.0034640	ppm	0.00013000	3.7446
Fe2599		-0.013747	ppm	0.0083620	60.827
K_7664		0.34612	ppm	0.00089100	0.25738
Mg2790		4.6439	ppm	0.014899	0.32084
Mn2576		0.017209	ppm	0.00014100	0.82171
Mo2020		0.0014820	ppm	0.00023500	15.848
Na5895	**F**	**1,018.8**	**ppm**	**1.4741**	**0.14470**
Ni2316		0.0072220	ppm	0.0010750	14.881
P_1782		0.075639	ppm	0.00085300	1.1275
Pb2203		0.00073800	ppm	0.00026100	35.358
S_1820		0.26406	ppm	0.0052050	1.9712
Sb2068		0.0022860	ppm	0.0014410	63.026
Se1960		0.0044400	ppm	0.0058690	132.17
Si2881		0.22792	ppm	0.057527	25.240
Sn1899		0.0027460	ppm	0.00042300	15.407
Sr4077		0.099738	ppm	0.00042200	0.42282
Ti3349		0.00047700	ppm	0.00061300	128.47
Tl1908		0.00089400	ppm	0.00030200	33.770
V_2924		0.0010440	ppm	0.00066300	63.436
Zn2062		0.056530	ppm	0.00063700	1.1263
Y_2243		5,410.1	Cts/S	19.448	0.35947
Y_3600		49,779	Cts/S	117.37	0.23578
Y_3774		3,323.4	Cts/S	9.5203	0.28646

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sd 720-99264-A-1-K@5

Acquire Date: 7/23/2020 4:10:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00034100	ppm	0.000045000	13.056
Al3961		0.025803	ppm	0.024514	95.005
As1890		-0.00083300	ppm	0.0016810	201.83
B_2089		0.18968	ppm	0.0010470	0.55182
Ba4554		0.020995	ppm	0.00029900	1.4228
Be3130		-0.00040100	ppm	0.00010500	26.220
Ca3179		1.4417	ppm	0.00023400	0.016251
Cd2144		0.000058000	ppm	0.000063000	108.15
Co2286		-0.00013100	ppm	0.00011900	90.631

sd 720-99264-A-1-K@5

Acquire Date: 7/23/2020 4:10:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.0011030	ppm	0.00071100	64.428
Cu3247		0.00063900	ppm	0.0012670	198.08
Fe2599		-0.024498	ppm	0.0040240	16.424
K_7664		0.073866	ppm	0.049165	66.560
Mg2790		0.96743	ppm	0.0018530	0.19151
Mn2576		0.0035060	ppm	0.000022000	0.61627
Mo2020		0.00076000	ppm	0.00058700	77.201
Na5895		218.95	ppm	1.9646	0.89728
Ni2316		0.0022220	ppm	0.00055600	25.032
P_1782		0.012003	ppm	0.0041600	34.662
Pb2203		-0.0026590	ppm	0.0020260	76.191
S_1820		0.056962	ppm	0.0019030	3.3414
Sb2068		0.0049520	ppm	0.0031840	64.299
Se1960		-0.00059400	ppm	0.00056200	94.568
Si2881		0.11130	ppm	0.066730	59.954
Sn1899		0.0011260	ppm	0.000030000	2.7086
Sr4077		0.020084	ppm	0.000059000	0.29241
Ti3349		0.00058500	ppm	0.00069100	118.18
Tl1908		0.0010740	ppm	0.00014500	13.508
V_2924		0.00051900	ppm	0.00021600	41.667
Zn2062		0.012494	ppm	0.000083000	0.66119
Y_2243		5,632.8	Cts/S	2.6643	0.047300
Y_3600		51,510	Cts/S	165.97	0.32221
Y_3774		3,311.9	Cts/S	14.462	0.43667

pds 720-99264-A-1-K

Acquire Date: 7/23/2020 4:14:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10150	ppm	0.0019120	1.8835
Al3961		10.052	ppm	0.039007	0.38804
As1890		0.096239	ppm	0.0020280	2.1077
B_2089		1.7741	ppm	0.00051100	0.028775
Ba4554		0.20012	ppm	0.00032700	0.16330
Be3130		0.049825	ppm	0.00012100	0.24209
Ca3179		17.212	ppm	0.13767	0.79986
Cd2144		0.10129	ppm	0.00021400	0.21095
Co2286		0.099483	ppm	0.00065500	0.65797
Cr2677		0.10113	ppm	0.00015400	0.15226
Cu3247		0.10664	ppm	0.0028340	2.6575
Fe2599		4.0019	ppm	0.022720	0.56772
K_7664		11.369	ppm	0.032313	0.28422
Mg2790		14.192	ppm	0.056620	0.39896
Mn2576		0.11902	ppm	0.00061100	0.51355
Mo2020		0.10060	ppm	0.00010900	0.10843
Na5895	**F**	**974.31**	**ppm**	**10.390**	**1.0664**
Ni2316		0.10281	ppm	0.00082500	0.80227

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 720-99264-A-1-K

Acquire Date: 7/23/2020 4:14:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		1.1299	ppm	0.0061440	0.54375
Pb2203		0.098909	ppm	0.0018250	1.8451
S_1820		2.2728	ppm	0.0026490	0.11654
Sb2068		0.088001	ppm	0.0024240	2.7543
Se1960		0.10064	ppm	0.0016870	1.6764
Si2881		1.1937	ppm	0.014839	1.2431
Sn1899		0.10261	ppm	0.00026900	0.26201
Sr4077		0.19834	ppm	0.00088600	0.44669
Ti3349		0.10107	ppm	0.00050200	0.49635
Tl1908		0.089370	ppm	0.00096900	1.0841
V_2924		0.10251	ppm	0.0011800	1.1514
Zn2062		0.16317	ppm	0.00027800	0.17039
Y_2243		5,393.2	Cts/S	9.1323	0.16933
Y_3600		49,765	Cts/S	115.25	0.23159
Y_3774		3,336.3	Cts/S	1.8908	0.056674

720-99264-A-1-L MS

Acquire Date: 7/23/2020 4:18:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049678	ppm	0.00053300	1.0721
Al3961		5.0375	ppm	0.041852	0.83082
As1890		0.48541	ppm	0.0030640	0.63125
B_2089	**W**	**5.3381**	**ppm**	**0.0050510**	**0.094612**
Ba4554		0.60217	ppm	0.0034150	0.56713
Be3130		0.25060	ppm	0.0011970	0.47777
Ca3179		32.742	ppm	0.37097	1.1330
Cd2144		0.24771	ppm	0.00059600	0.24044
Co2286		0.24707	ppm	0.000091000	0.036997
Cr2677		0.24981	ppm	0.0013360	0.53478
Cu3247		0.25972	ppm	0.00071500	0.27513
Fe2599		5.0357	ppm	0.076326	1.5157
K_7664		27.193	ppm	0.31094	1.1435
Mg2790		28.929	ppm	0.11726	0.40532
Mn2576		0.26821	ppm	0.00050100	0.18669
Mo2020		0.25353	ppm	0.00057900	0.22820
Na5895	**F**	**1,003.3**	**ppm**	**4.3209**	**0.43067**
Ni2316		0.24962	ppm	0.00073700	0.29532
P_1782		5.4567	ppm	0.018240	0.33427
Pb2203		0.23750	ppm	0.00026500	0.11169
S_1820		5.3828	ppm	0.0034860	0.064769
Sb2068		0.46758	ppm	0.0014970	0.32017
Se1960		0.48404	ppm	0.0059260	1.2242
Si2881		5.3801	ppm	0.070053	1.3021
Sn1899		0.50819	ppm	0.00059300	0.11662
Sr4077		0.34994	ppm	0.0029200	0.83435
Ti3349		0.25282	ppm	0.00083000	0.32845

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99264-A-1-L MS

Acquire Date: 7/23/2020 4:18:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.44568	ppm	0.0021490	0.48216
V_2924		0.25498	ppm	0.00048100	0.18876
Zn2062		0.59498	ppm	0.0023730	0.39890
Y_2243		5,347.7	Cts/S	11.365	0.21252
Y_3600		49,526	Cts/S	201.64	0.40714
Y_3774		3,341.4	Cts/S	4.5732	0.13687

720-99264-A-1-M MSD

Acquire Date: 7/23/2020 4:22:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049414	ppm	0.00028800	0.58317
Al3961		5.0651	ppm	0.0083040	0.16395
As1890		0.48423	ppm	0.00056400	0.11657
B_2089	**W**	**5.3523**	**ppm**	**0.012232**	**0.22854**
Ba4554		0.60827	ppm	0.0044450	0.73069
Be3130		0.25104	ppm	0.0012590	0.50140
Ca3179		32.997	ppm	0.19091	0.57856
Cd2144		0.24820	ppm	0.00080000	0.32244
Co2286		0.24860	ppm	0.00033500	0.13456
Cr2677		0.25003	ppm	0.00012400	0.049771
Cu3247		0.26071	ppm	0.0014490	0.55562
Fe2599		5.0814	ppm	0.058963	1.1604
K_7664		27.367	ppm	0.19259	0.70372
Mg2790		28.985	ppm	0.028441	0.098123
Mn2576		0.26909	ppm	0.00013600	0.050685
Mo2020		0.25554	ppm	0.0016140	0.63169
Na5895	**F**	**1,016.1**	**ppm**	**17.254**	**1.6981**
Ni2316		0.25001	ppm	0.0011140	0.44541
P_1782		5.4533	ppm	0.024531	0.44984
Pb2203		0.23979	ppm	0.00021300	0.088906
S_1820		5.3934	ppm	0.0010880	0.020171
Sb2068		0.45992	ppm	0.0073490	1.5979
Se1960		0.48543	ppm	0.0027690	0.57044
Si2881		5.3560	ppm	0.025240	0.47125
Sn1899		0.51085	ppm	0.0020240	0.39623
Sr4077		0.35228	ppm	0.0017600	0.49968
Ti3349		0.25580	ppm	0.00027000	0.10570
Tl1908		0.45105	ppm	0.0024540	0.54397
V_2924		0.25356	ppm	0.00050400	0.19872
Zn2062		0.59341	ppm	0.00036300	0.061165
Y_2243		5,375.5	Cts/S	2.5290	0.047047
Y_3600		49,872	Cts/S	17.281	0.034650
Y_3774		3,356.5	Cts/S	11.650	0.34708

720-99249-A-1-D

Acquire Date: 7/23/2020 4:26:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00079800	ppm	0.00024100	30.274
Al3961		0.19561	ppm	0.018982	9.7042
As1890		-0.00045500	ppm	0.00028300	62.324
B_2089		0.044720	ppm	0.0019890	4.4474
Ba4554		0.28046	ppm	0.0017030	0.60727
Be3130		-0.00042200	ppm	0.00013500	31.952
Ca3179		186.72	ppm	0.33298	0.17833
Cd2144		0.00022700	ppm	0.000028000	12.308
Co2286		0.0032960	ppm	0.00022500	6.8245
Cr2677		0.079073	ppm	0.00055600	0.70311
Cu3247		0.016477	ppm	0.0016240	9.8563
Fe2599		0.38134	ppm	0.019506	5.1153
K_7664		1.1893	ppm	0.012227	1.0281
Mg2790		1.9022	ppm	0.0035170	0.18491
Mn2576		0.34099	ppm	0.0020790	0.60983
Mo2020		0.0018540	ppm	0.00074400	40.139
Na5895	**F**	**991.85**	**ppm**	**4.7339**	**0.47728**
Ni2316		0.017072	ppm	0.00018000	1.0566
P_1782		0.0082320	ppm	0.00037700	4.5762
Pb2203		0.34057	ppm	0.0025370	0.74485
S_1820		0.20206	ppm	0.00089500	0.44278
Sb2068		-0.0021630	ppm	0.0022310	103.16
Se1960		0.0021880	ppm	0.0036460	166.61
Si2881		0.33302	ppm	0.030984	9.3041
Sn1899		0.0015100	ppm	0.00046600	30.848
Sr4077		0.080328	ppm	0.00017800	0.22140
Ti3349		0.00073800	ppm	0.00021900	29.713
Tl1908		0.00082000	ppm	0.0014240	173.60
V_2924		0.0011530	ppm	0.0010630	92.196
Zn2062		0.11103	ppm	0.00080300	0.72369
Y_2243		5,242.1	Cts/S	16.503	0.31482
Y_3600		48,755	Cts/S	246.44	0.50547
Y_3774		3,267.9	Cts/S	9.1683	0.28056

sd 720-99249-A-1-D@5

Acquire Date: 7/23/2020 4:30:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00069300	ppm	0.00011000	15.895
Al3961		0.055950	ppm	0.025612	45.776
As1890		-0.0020910	ppm	0.00027400	13.092
B_2089		0.018866	ppm	0.0036230	19.204
Ba4554		0.057160	ppm	0.00029000	0.50690
Be3130		-0.00033800	ppm	0.00014500	42.932
Ca3179		38.436	ppm	0.11803	0.30709
Cd2144		0.00019900	ppm	0.00035600	178.86
Co2286		0.00071400	ppm	0.00061900	86.630

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

sd 720-99249-A-1-D@5

Acquire Date: 7/23/2020 4:30:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.016958	ppm	0.0021580	12.727
Cu3247		0.0051840	ppm	0.00052500	10.137
Fe2599		0.058938	ppm	0.0062390	10.585
K_7664		0.30966	ppm	0.043063	13.907
Mg2790		0.48431	ppm	0.11980	24.736
Mn2576		0.071578	ppm	0.0015950	2.2289
Mo2020		0.00031100	ppm	0.00031000	99.652
Na5895		221.17	ppm	1.4251	0.64435
Ni2316		0.0026110	ppm	0.0010120	38.773
P_1782		0.0029460	ppm	0.0029100	98.752
Pb2203		0.072005	ppm	0.0012650	1.7564
S_1820		0.043878	ppm	0.0031920	7.2757
Sb2068		0.0042210	ppm	0.0033640	79.699
Se1960		0.0057830	ppm	0.0049180	85.045
Si2881		0.080897	ppm	0.010909	13.485
Sn1899		0.0011120	ppm	0.000034000	3.0339
Sr4077		0.016283	ppm	0.00067000	4.1150
Ti3349		0.00017900	ppm	0.0012010	669.63
Tl1908		0.00014800	ppm	0.00018900	127.85
V_2924		0.00093400	ppm	0.00085300	91.406
Zn2062		0.024391	ppm	0.0031490	12.909
Y_2243		5,500.1	Cts/S	16.822	0.30585
Y_3600		51,763	Cts/S	128.41	0.24807
Y_3774		3,350.4	Cts/S	5.9199	0.17669

pds 720-99249-A-1-D

Acquire Date: 7/23/2020 4:34:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10188	ppm	0.00047600	0.46680
Al3961		10.238	ppm	0.085653	0.83666
As1890		0.097947	ppm	0.0018020	1.8398
B_2089		0.92326	ppm	0.0022750	0.24644
Ba4554		0.37445	ppm	0.0044860	1.1980
Be3130		0.049603	ppm	0.00047800	0.96300
Ca3179		191.97	ppm	2.0177	1.0511
Cd2144		0.099318	ppm	0.00027400	0.27607
Co2286		0.10108	ppm	0.000061000	0.059867
Cr2677		0.17905	ppm	0.00089700	0.50082
Cu3247		0.11991	ppm	0.0017290	1.4421
Fe2599		4.3438	ppm	0.0088300	0.20329
K_7664		11.934	ppm	0.060449	0.50651
Mg2790		11.297	ppm	0.081336	0.72000
Mn2576		0.43480	ppm	0.0025220	0.57995
Mo2020		0.10149	ppm	0.0000090000	0.0085930
Na5895	**F**	**1,011.4**	**ppm**	**12.051**	**1.1915**
Ni2316		0.11342	ppm	0.0018080	1.5939

pds 720-99249-A-1-D

Acquire Date: 7/23/2020 4:34:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		1.0726	ppm	0.0019800	0.18456
Pb2203		0.42541	ppm	0.0040890	0.96117
S_1820		2.1766	ppm	0.021673	0.99572
Sb2068		0.089676	ppm	0.00015100	0.16796
Se1960		0.098048	ppm	0.0012240	1.2481
Si2881		1.4649	ppm	0.0022770	0.15546
Sn1899		0.10139	ppm	0.000089000	0.088185
Sr4077		0.17928	ppm	0.0012570	0.70102
Ti3349		0.10196	ppm	0.00063000	0.61791
Tl1908		0.089968	ppm	0.00071500	0.79492
V_2924		0.10392	ppm	0.00030800	0.29623
Zn2062		0.21411	ppm	0.00086600	0.40438
Y_2243		5,191.4	Cts/S	6.1411	0.11829
Y_3600		48,117	Cts/S	63.576	0.13213
Y_3774		3,240.2	Cts/S	15.386	0.47484

720-99249-A-1-E MS

Acquire Date: 7/23/2020 4:38:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.050208	ppm	0.00071500	1.4241
Al3961		5.2018	ppm	0.058159	1.1181
As1890		0.47796	ppm	0.00037900	0.079212
B_2089		4.4075	ppm	0.0010200	0.023136
Ba4554		0.78926	ppm	0.0055290	0.70054
Be3130		0.24985	ppm	0.0029140	1.1662
Ca3179		218.08	ppm	1.4799	0.67859
Cd2144		0.24338	ppm	0.00044800	0.18416
Co2286		0.24678	ppm	0.00032000	0.12959
Cr2677		0.33258	ppm	0.0012650	0.38044
Cu3247		0.27239	ppm	0.0024990	0.91745
Fe2599		5.4262	ppm	0.053562	0.98711
K_7664		28.030	ppm	0.22427	0.80011
Mg2790		25.751	ppm	0.064647	0.25105
Mn2576		0.60436	ppm	0.0018180	0.30089
Mo2020		0.25600	ppm	0.000031000	0.012117
Na5895	**F**	**1,061.6**	**ppm**	**11.130**	**1.0484**
Ni2316		0.25713	ppm	0.00046300	0.17994
P_1782		5.4076	ppm	0.026686	0.49350
Pb2203		0.57823	ppm	0.0017530	0.30311
S_1820		5.2198	ppm	0.0083350	0.15967
Sb2068		0.45634	ppm	0.0012900	0.28273
Se1960		0.47022	ppm	0.0014910	0.31706
Si2881		5.5299	ppm	0.10911	1.9730
Sn1899		0.50008	ppm	0.0012730	0.25448
Sr4077		0.33174	ppm	0.0022760	0.68594
Ti3349		0.25482	ppm	0.00098300	0.38586

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99249-A-1-E MS

Acquire Date: 7/23/2020 4:38:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.43718	ppm	0.0059420	1.3592
V_2924		0.25795	ppm	0.0018980	0.73585
Zn2062		0.64198	ppm	0.0017360	0.27044
Y_2243		5,132.4	Cts/S	5.9878	0.11667
Y_3600		47,484	Cts/S	258.71	0.54485
Y_3774		3,191.1	Cts/S	12.232	0.38333

720-99249-A-1-F MSD

Acquire Date: 7/23/2020 4:42:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049481	ppm	0.00098400	1.9890
Al3961		5.1983	ppm	0.0026760	0.051478
As1890		0.47515	ppm	0.0062840	1.3225
B_2089		4.3890	ppm	0.0080530	0.18348
Ba4554		0.78283	ppm	0.0062600	0.79968
Be3130		0.24944	ppm	0.00053700	0.21519
Ca3179		213.49	ppm	1.3534	0.63392
Cd2144		0.24233	ppm	0.00050700	0.20940
Co2286		0.24615	ppm	0.0010730	0.43577
Cr2677		0.32627	ppm	0.0018980	0.58177
Cu3247		0.26994	ppm	0.0022460	0.83220
Fe2599		5.4214	ppm	0.072979	1.3461
K_7664		27.925	ppm	0.19003	0.68051
Mg2790		25.347	ppm	0.078980	0.31159
Mn2576		0.59055	ppm	0.0021580	0.36543
Mo2020		0.25483	ppm	0.0016590	0.65096
Na5895	**F**	**1,023.1**	**ppm**	**24.351**	**2.3802**
Ni2316		0.25607	ppm	0.00072300	0.28219
P_1782		5.3632	ppm	0.0090020	0.16784
Pb2203		0.56951	ppm	0.0020940	0.36760
S_1820		5.1965	ppm	0.0080220	0.15437
Sb2068		0.45931	ppm	0.0077250	1.6820
Se1960		0.46843	ppm	0.0077700	1.6586
Si2881		5.5535	ppm	0.021522	0.38755
Sn1899		0.49933	ppm	0.00091700	0.18371
Sr4077		0.32963	ppm	0.0020870	0.63326
Ti3349		0.25289	ppm	0.00086800	0.34338
Tl1908		0.43818	ppm	0.0027430	0.62608
V_2924		0.25446	ppm	0.00093300	0.36665
Zn2062		0.63049	ppm	0.0010390	0.16471
Y_2243		5,259.6	Cts/S	11.807	0.22448
Y_3600		49,200	Cts/S	79.040	0.16065
Y_3774		3,287.5	Cts/S	51.872	1.5778

CCV 2078482

Acquire Date: 7/23/2020 4:45:56PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50790	ppm	0.00075900	0.14951	.50000	Rel(%)	Pass	
Al3961		25.925	ppm	0.10978	0.42344	25.000	Rel(%)	Pass	
As1890		0.51779	ppm	0.0032490	0.62752	.50000	Rel(%)	Pass	
B_2089		1.0461	ppm	0.0018210	0.17412	1.0000	Rel(%)	Pass	
Ba4554		2.5960	ppm	0.014749	0.56815	2.5000	Rel(%)	Pass	
Be3130		0.52136	ppm	0.0032200	0.61760	.50000	Rel(%)	Pass	
Ca3179		26.711	ppm	0.23514	0.88031	25.000	Rel(%)	Pass	
Cd2144		0.52820	ppm	0.00091600	0.17339	.50000	Rel(%)	Pass	
Co2286		2.6229	ppm	0.0017710	0.067522	2.5000	Rel(%)	Pass	
Cr2677		2.5845	ppm	0.00073700	0.028532	2.5000	Rel(%)	Pass	
Cu3247		2.5443	ppm	0.0081670	0.32100	2.5000	Rel(%)	Pass	
Fe2599		26.390	ppm	0.081099	0.30731	25.000	Rel(%)	Pass	
K_7664		25.903	ppm	0.19404	0.74910	25.000	Rel(%)	Pass	
Mg2790		25.890	ppm	0.032248	0.12456	25.000	Rel(%)	Pass	
Mn2576		2.6113	ppm	0.0067850	0.25983	2.5000	Rel(%)	Pass	
Mo2020		1.0443	ppm	0.0065480	0.62704	1.0000	Rel(%)	Pass	
Na5895		25.903	ppm	0.17652	0.68146	25.000	Rel(%)	Pass	
Ni2316		2.6526	ppm	0.00087600	0.033022	2.5000	Rel(%)	Pass	
P_1782		2.6243	ppm	0.00020600	0.0078570	2.5000	Rel(%)	Pass	
Pb2203		0.52643	ppm	0.00053200	0.10112	.50000	Rel(%)	Pass	
S_1820		2.4747	ppm	0.0058010	0.23440	2.5000	Rel(%)	Pass	
Sb2068		0.51785	ppm	0.00036800	0.071071	.50000	Rel(%)	Pass	
Se1960		0.53046	ppm	0.0021630	0.40772	.50000	Rel(%)	Pass	
Si2881		2.6412	ppm	0.081869	3.0997	2.5000	Rel(%)	Pass	
Sn1899		2.6163	ppm	0.0062570	0.23915	2.5000	Rel(%)	Pass	
Sr4077		2.5846	ppm	0.015437	0.59727	2.5000	Rel(%)	Pass	
Ti3349		1.0396	ppm	0.0013670	0.13146	1.0000	Rel(%)	Pass	
Tl1908		0.52155	ppm	0.0095790	1.8367	.50000	Rel(%)	Pass	
V_2924		2.5853	ppm	0.0046250	0.17892	2.5000	Rel(%)	Pass	
Zn2062		2.6522	ppm	0.0083610	0.31525	2.5000	Rel(%)	Pass	
Y_2243		5,627.9	Cts/S	5.1209	0.090991				
Y_3600		52,743	Cts/S	173.77	0.32947				
Y_3774		3,329.3	Cts/S	7.6867	0.23088				

CCB 2065750

Acquire Date: 7/23/2020 4:49:44PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00097100	ppm	0.00012900	13.264	.00000	Abs	Pass	
Al3961		0.034034	ppm	0.029898	87.847	.00000	Abs	Pass	
As1890		-0.0015630	ppm	0.0011660	74.612	.00000	Abs	Pass	
B_2089		0.013125	ppm	0.00050600	3.8578	.00000	Abs	Pass	
Ba4554		0.00071700	ppm	0.000095000	13.274	.00000	Abs	Pass	
Be3130		0.00014000	ppm	0.000012000	8.2607	.00000	Abs	Pass	
Ca3179		-0.0064760	ppm	0.0024120	37.250	.00000	Abs	Pass	
Cd2144		0.000018000	ppm	0.000062000	342.06	.00000	Abs	Pass	
Co2286		.0000040000	ppm	0.000073000	1,850.2	.00000	Abs	Pass	
Cr2677		-0.00062100	ppm	0.000034000	5.5402	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/23/2020 4:49:44PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00058400	ppm	0.00070100	119.94	.00000	Abs	Pass	
Fe2599		0.028491	ppm	0.000019000	0.067948	.00000	Abs	Pass	
K_7664		0.038757	ppm	0.052619	135.76	.00000	Abs	Pass	
Mg2790		-0.0019090	ppm	0.00088200	46.209	.00000	Abs	Pass	
Mn2576		0.00018600	ppm	0.00013100	70.132	.00000	Abs	Pass	
Mo2020		0.0061650	ppm	0.00022000	3.5668	.00000	Abs	Pass	
Na5895		0.39124	ppm	0.016575	4.2366	.00000	Abs	Pass	
Ni2316		0.0018390	ppm	0.00027500	14.950	.00000	Abs	Pass	
P_1782		-0.0059740	ppm	0.00015300	2.5656	.00000	Abs	Pass	
Pb2203		0.00085300	ppm	0.0020400	239.09	.00000	Abs	Pass	
S_1820		-0.00033000	ppm	0.0034160	1,034.5	.00000	Abs	Pass	
Sb2068		0.000080000	ppm	0.0018770	2,337.0	.00000	Abs	Pass	
Se1960		0.0015900	ppm	0.0034410	216.41	.00000	Abs	Pass	
Si2881		-0.0033680	ppm	0.014807	439.61	.00000	Abs	Pass	
Sn1899		0.0034960	ppm	0.0013160	37.652	.00000	Abs	Pass	
Sr4077		0.00075600	ppm	0.00010400	13.773	.00000	Abs	Pass	
Ti3349		0.0045190	ppm	0.000072000	1.5829	.00000	Abs	Pass	
Tl1908		0.0051220	ppm	0.0028310	55.273	.00000	Abs	Pass	
V_2924		0.00035000	ppm	0.00053100	151.81	.00000	Abs	Pass	
Zn2062		0.0013810	ppm	0.00020300	14.682	.00000	Abs	Pass	
Y_2243		5,656.5	Cts/S	7.2129	0.12751				
Y_3600		53,348	Cts/S	27.960	0.052412				
Y_3774		3,317.4	Cts/S	2.6060	0.078554				

720-99267-A-1-H

Acquire Date: 7/23/2020 4:53:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0015760	ppm	0.000085000	5.4155
Al3961		0.12195	ppm	0.010877	8.9193
As1890		-0.00037000	ppm	0.0017240	466.34
B_2089		0.044443	ppm	0.00099700	2.2443
Ba4554		0.15347	ppm	0.00036900	0.24026
Be3130		-0.00042900	ppm	0.00028600	66.622
Ca3179		355.44	ppm	2.8353	0.79768
Cd2144		0.00036300	ppm	0.00018200	50.237
Co2286		-0.00013700	ppm	0.00012300	90.194
Cr2677		0.0022630	ppm	0.0017030	75.273
Cu3247		0.0035070	ppm	0.0016640	47.441
Fe2599		0.56753	ppm	0.0029380	0.51760
K_7664		2.1463	ppm	0.026278	1.2243
Mg2790		2.1550	ppm	0.012853	0.59645
Mn2576		0.13092	ppm	0.00093200	0.71221
Mo2020		0.0021870	ppm	0.00022200	10.144
Na5895	**F**	**1,030.8**	**ppm**	**4.1154**	**0.39923**
Ni2316		0.010593	ppm	0.00098200	9.2709
P_1782		0.010217	ppm	0.0037690	36.885
Pb2203		0.0077440	ppm	0.00037100	4.7932

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99267-A-1-H

Acquire Date: 7/23/2020 4:53:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		0.47313	ppm	0.00070200	0.14828
Sb2068		0.000046000	ppm	0.00068400	1,491.3
Se1960		0.0074380	ppm	0.0055700	74.891
Si2881		0.32302	ppm	0.040367	12.497
Sn1899		0.0022080	ppm	0.00079500	35.995
Sr4077		0.18776	ppm	0.0015240	0.81172
Ti3349		0.0016800	ppm	0.00062700	37.323
Tl1908		-0.0049950	ppm	0.00012600	2.5200
V_2924		0.00087200	ppm	0.00034200	39.250
Zn2062		0.13471	ppm	0.00019900	0.14746
Y_2243		5,160.8	Cts/S	2.4078	0.046656
Y_3600		48,740	Cts/S	124.80	0.25605
Y_3774		3,269.2	Cts/S	27.794	0.85020

sd 720-99267-A-1-H@5

Acquire Date: 7/23/2020 4:57:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00051300	ppm	0.00028500	55.485
Al3961		0.034124	ppm	0.0073360	21.497
As1890		0.00017500	ppm	0.0023220	1,325.9
B_2089		0.014456	ppm	0.00049600	3.4280
Ba4554		0.031188	ppm	0.000016000	0.051339
Be3130		-0.00013800	ppm	0.00031000	225.27
Ca3179		72.740	ppm	0.35044	0.48178
Cd2144		0.000042000	ppm	0.000064000	152.30
Co2286		0.000069000	ppm	0.00023600	343.12
Cr2677		0.00069800	ppm	0.00064600	92.539
Cu3247		0.0010340	ppm	0.00045000	43.502
Fe2599		0.078507	ppm	0.0094010	11.975
K_7664		0.39941	ppm	0.050661	12.684
Mg2790		0.45244	ppm	0.0044590	0.98549
Mn2576		0.026654	ppm	0.00012600	0.47120
Mo2020		0.00075800	ppm	0.00017800	23.474
Na5895		221.69	ppm	1.4844	0.66959
Ni2316		0.0040830	ppm	0.00084600	20.728
P_1782		-0.0038010	ppm	0.0011080	29.152
Pb2203		-0.0012710	ppm	0.0019850	156.19
S_1820		0.10231	ppm	0.00068500	0.66975
Sb2068		-0.0028990	ppm	0.0033780	116.52
Se1960		0.0047620	ppm	0.0039920	83.822
Si2881		0.060511	ppm	0.014788	24.438
Sn1899		0.00093900	ppm	0.000066000	7.0174
Sr4077		0.037936	ppm	0.00045900	1.2103
Ti3349		-0.00078700	ppm	0.00022700	28.897
Tl1908		0.00029800	ppm	0.00094000	315.78
V_2924		0.00018400	ppm	0.00018500	100.51

sd 720-99267-A-1-H@5

Acquire Date: 7/23/2020 4:57:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		0.028481	ppm	0.00013700	0.48009
Y_2243		5,437.7	Cts/S	16.925	0.31126
Y_3600		51,009	Cts/S	186.38	0.36539
Y_3774		3,271.7	Cts/S	13.560	0.41446

pds 720-99267-A-1-H

Acquire Date: 7/23/2020 5:01:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10331	ppm	0.0011780	1.1400
Al3961		10.244	ppm	0.10884	1.0624
As1890		0.092863	ppm	0.00099000	1.0658
B_2089		0.92906	ppm	0.0028610	0.30794
Ba4554		0.24895	ppm	0.0023460	0.94241
Be3130		0.049328	ppm	0.00047700	0.96744
Ca3179		351.09	ppm	2.9848	0.85013
Cd2144		0.098582	ppm	0.00031700	0.32121
Co2286		0.098222	ppm	0.00012900	0.13094
Cr2677		0.10137	ppm	0.00047300	0.46641
Cu3247		0.10685	ppm	0.00028200	0.26433
Fe2599		4.5190	ppm	0.0027730	0.061368
K_7664		13.003	ppm	0.14428	1.1096
Mg2790		11.454	ppm	0.045082	0.39358
Mn2576		0.22638	ppm	0.00018000	0.079383
Mo2020		0.10100	ppm	0.000058000	0.057897
Na5895	**F**	**1,013.7**	**ppm**	**9.0819**	**0.89591**
Ni2316		0.10789	ppm	0.00096300	0.89235
P_1782		1.0662	ppm	0.0039360	0.36916
Pb2203		0.10108	ppm	0.00026300	0.26020
S_1820		2.4431	ppm	0.0089010	0.36432
Sb2068		0.088537	ppm	0.0016540	1.8683
Se1960		0.10234	ppm	0.0033100	3.2345
Si2881		1.3492	ppm	0.0029090	0.21558
Sn1899		0.099679	ppm	0.00085100	0.85356
Sr4077		0.28104	ppm	0.0027830	0.99037
Ti3349		0.10176	ppm	0.00051400	0.50542
Tl1908		0.085928	ppm	0.00040900	0.47570
V_2924		0.10389	ppm	0.000051000	0.049002
Zn2062		0.23321	ppm	0.000091000	0.038923
Y_2243		5,105.1	Cts/S	9.4183	0.18449
Y_3600		47,521	Cts/S	36.252	0.076285
Y_3774		3,202.8	Cts/S	9.5324	0.29763

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99267-A-1-I MS

Acquire Date: 7/23/2020 5:05:47PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049272	ppm	0.00064500	1.3085
Al3961		5.1923	ppm	0.015000	0.28889
As1890		0.48113	ppm	0.0028490	0.59226
B_2089		4.4295	ppm	0.013475	0.30422
Ba4554		0.64988	ppm	0.0030130	0.46367
Be3130		0.24761	ppm	0.0014750	0.59554
Ca3179		371.53	ppm	1.3562	0.36503
Cd2144		0.24158	ppm	0.00080100	0.33170
Co2286		0.24329	ppm	0.0010570	0.43463
Cr2677		0.24860	ppm	0.0011160	0.44895
Cu3247		0.25876	ppm	0.0018690	0.72217
Fe2599		5.5711	ppm	0.039022	0.70044
K_7664		29.088	ppm	0.13892	0.47759
Mg2790		25.559	ppm	0.10818	0.42326
Mn2576		0.37544	ppm	0.00088000	0.23433
Mo2020		0.25503	ppm	0.00078900	0.30920
Na5895	**F**	**1,004.4**	**ppm**	**13.483**	**1.3424**
Ni2316		0.25106	ppm	0.00066700	0.26581
P_1782		5.4089	ppm	0.039693	0.73386
Pb2203		0.23970	ppm	0.0011950	0.49854
S_1820		5.5293	ppm	0.022259	0.40257
Sb2068		0.45881	ppm	0.0043200	0.94163
Se1960		0.47191	ppm	0.0031010	0.65717
Si2881		5.5458	ppm	0.17075	3.0789
Sn1899		0.49928	ppm	0.0012450	0.24943
Sr4077		0.43258	ppm	0.0018880	0.43638
Ti3349		0.25386	ppm	0.00058600	0.23097
Tl1908		0.43336	ppm	0.0075290	1.7374
V_2924		0.25656	ppm	0.000090000	0.034934
Zn2062		0.64842	ppm	0.0021610	0.33326
Y_2243		5,155.3	Cts/S	17.342	0.33639
Y_3600		48,297	Cts/S	55.362	0.11463
Y_3774		3,263.6	Cts/S	5.4682	0.16755

720-99267-A-1-J MSD

Acquire Date: 7/23/2020 5:09:41PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048927	ppm	0.00039000	0.79778
Al3961		5.1584	ppm	0.029239	0.56683
As1890		0.47768	ppm	0.0010820	0.22650
B_2089		4.3963	ppm	0.0021440	0.048769
Ba4554		0.65071	ppm	0.0052720	0.81021
Be3130		0.24684	ppm	0.0020890	0.84646
Ca3179		382.11	ppm	3.7610	0.98428
Cd2144		0.23999	ppm	0.00054700	0.22806
Co2286		0.24163	ppm	0.00066700	0.27605

720-99267-A-1-J MSD

Acquire Date: 7/23/2020 5:09:41PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.24953	ppm	0.0011300	0.45288
Cu3247		0.25561	ppm	0.0010010	0.39161
Fe2599		5.5340	ppm	0.0014510	0.026225
K_7664		29.011	ppm	0.36220	1.2485
Mg2790		25.519	ppm	0.079735	0.31246
Mn2576		0.37910	ppm	0.0015090	0.39813
Mo2020		0.25375	ppm	0.00036800	0.14487
Na5895	**F**	**1,026.5**	**ppm**	**9.7442**	**0.94930**
Ni2316		0.24802	ppm	0.00086000	0.34663
P_1782		5.3689	ppm	0.015426	0.28732
Pb2203		0.24197	ppm	0.0017260	0.71327
S_1820		5.4757	ppm	0.010714	0.19566
Sb2068		0.45451	ppm	0.00030500	0.067182
Se1960		0.46259	ppm	0.0016290	0.35210
Si2881		5.5414	ppm	0.0065610	0.11840
Sn1899		0.49698	ppm	0.00018100	0.036324
Sr4077		0.43835	ppm	0.0030190	0.68865
Ti3349		0.25445	ppm	0.000046000	0.018219
Tl1908		0.42996	ppm	0.0018630	0.43320
V_2924		0.25518	ppm	0.00083000	0.32540
Zn2062		0.65175	ppm	0.0010290	0.15782
Y_2243		5,107.0	Cts/S	13.887	0.27192
Y_3600		47,425	Cts/S	93.246	0.19662
Y_3774		3,218.7	Cts/S	12.041	0.37409

720-99267-A-2-D

Acquire Date: 7/23/2020 5:13:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011600	ppm	0.00065400	56.335
Al3961		0.12343	ppm	0.016532	13.395
As1890		0.00021400	ppm	0.00035900	167.97
B_2089		0.062023	ppm	0.00054200	0.87412
Ba4554		0.17006	ppm	0.0016830	0.98964
Be3130		-0.00093800	ppm	0.00023400	24.987
Ca3179		385.44	ppm	2.4926	0.64669
Cd2144		0.00035000	ppm	0.0000090000	2.5289
Co2286		0.000098000	ppm	0.00048600	494.80
Cr2677		0.0021740	ppm	0.0011070	50.923
Cu3247		0.0017930	ppm	0.00063400	35.388
Fe2599		0.59657	ppm	0.012715	2.1313
K_7664		2.1883	ppm	0.065463	2.9916
Mg2790		2.2889	ppm	0.0066310	0.28973
Mn2576		0.13341	ppm	0.00047100	0.35341
Mo2020		0.0016710	ppm	0.000057000	3.3868
Na5895	**F**	**999.40**	**ppm**	**2.5836**	**0.25851**
Ni2316		0.011328	ppm	0.00046300	4.0853

720-99267-A-2-D

Acquire Date: 7/23/2020 5:13:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.013082	ppm	0.0023430	17.909
Pb2203		0.0079870	ppm	0.0026470	33.140
S_1820		0.52528	ppm	0.0068590	1.3057
Sb2068		0.00093600	ppm	0.00061000	65.202
Se1960		0.0086190	ppm	0.0020480	23.760
Si2881		0.26181	ppm	0.00035800	0.13683
Sn1899		0.0021080	ppm	0.00049200	23.355
Sr4077		0.19643	ppm	0.00094500	0.48121
Ti3349		0.00096100	ppm	0.00016900	17.606
Tl1908		-0.00025000	ppm	0.00059300	237.00
V_2924		0.0011690	ppm	0.000096000	8.1915
Zn2062		0.12582	ppm	0.00015400	0.12236
Y_2243		5,157.7	Cts/S	34.899	0.67664
Y_3600		48,314	Cts/S	88.731	0.18365
Y_3774		3,245.3	Cts/S	6.9515	0.21420

720-99267-A-3-D

Acquire Date: 7/23/2020 5:17:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0019370	ppm	0.0013490	69.627
Al3961		0.11680	ppm	0.0029420	2.5188
As1890		-0.0026770	ppm	0.0041090	153.50
B_2089		0.045000	ppm	0.0014440	3.2085
Ba4554		0.12740	ppm	0.00066800	0.52417
Be3130		-0.00069500	ppm	0.0000030000	0.46338
Ca3179		392.47	ppm	2.9003	0.73899
Cd2144		0.00043600	ppm	0.000010000	2.3689
Co2286		-0.00037400	ppm	0.00054600	146.06
Cr2677		0.0031140	ppm	0.00025400	8.1472
Cu3247		0.0022200	ppm	0.00038200	17.189
Fe2599		0.53230	ppm	0.012844	2.4129
K_7664		2.0605	ppm	0.0014070	0.068308
Mg2790		2.2831	ppm	0.0057430	0.25155
Mn2576		0.13224	ppm	0.00028500	0.21551
Mo2020		0.00075800	ppm	0.00027800	36.645
Na5895	**F**	**1,007.0**	**ppm**	**6.5479**	**0.65025**
Ni2316		0.011362	ppm	0.00031400	2.7628
P_1782		0.013072	ppm	0.0044140	33.767
Pb2203		0.0058250	ppm	0.00077000	13.226
S_1820		0.57182	ppm	0.0057640	1.0080
Sb2068		0.000035000	ppm	0.0013900	3,962.3
Se1960		0.0068050	ppm	0.0054480	80.064
Si2881		0.27795	ppm	0.091390	32.880
Sn1899		0.0029570	ppm	0.000058000	1.9480
Sr4077		0.18878	ppm	0.0017590	0.93199
Ti3349		-0.00059900	ppm	0.00077900	129.91

720-99267-A-3-D

Acquire Date: 7/23/2020 5:17:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0020200	ppm	0.0037380	185.00
V_2924		0.00040700	ppm	0.000011000	2.5867
Zn2062		0.10059	ppm	0.00045300	0.45061
Y_2243		5,128.4	Cts/S	18.296	0.35675
Y_3600		47,732	Cts/S	151.59	0.31758
Y_3774		3,214.9	Cts/S	0.096325	0.0029960

720-99267-A-4-D

Acquire Date: 7/23/2020 5:21:47PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00099000	ppm	0.00061200	61.811
Al3961		0.31273	ppm	0.0019920	0.63682
As1890		0.00097800	ppm	0.0012480	127.69
B_2089		0.055447	ppm	0.00091700	1.6546
Ba4554		0.30412	ppm	0.0010110	0.33233
Be3130		-0.00081600	ppm	0.00016500	20.206
Ca3179		426.38	ppm	2.8297	0.66365
Cd2144		0.0010650	ppm	0.000048000	4.5483
Co2286		0.022693	ppm	0.00048200	2.1231
Cr2677		0.0057890	ppm	0.00017000	2.9335
Cu3247		0.028898	ppm	0.0010590	3.6629
Fe2599		0.77552	ppm	0.012076	1.5571
K_7664		5.9339	ppm	0.029337	0.49440
Mg2790		3.9110	ppm	0.00020600	0.0052660
Mn2576		0.18782	ppm	0.00024100	0.12841
Mo2020		0.0030670	ppm	0.00023800	7.7587
Na5895	**F**	**1,031.5**	**ppm**	**7.9116**	**0.76698**
Ni2316		0.016882	ppm	0.00021900	1.2963
P_1782		0.011385	ppm	0.0016340	14.354
Pb2203		0.010546	ppm	0.00085300	8.0909
S_1820		6.1018	ppm	0.015855	0.25984
Sb2068		-0.0033060	ppm	0.0035230	106.57
Se1960		0.0062780	ppm	0.00058400	9.3097
Si2881		5.4334	ppm	0.17272	3.1788
Sn1899		0.0014370	ppm	0.00038500	26.819
Sr4077	**W**	**8.3629**	**ppm**	**0.050744**	**0.60677**
Ti3349		0.0025540	ppm	0.0011180	43.776
Tl1908		-0.0017040	ppm	0.0048150	282.55
V_2924		0.0034270	ppm	0.0010150	29.607
Zn2062		0.45056	ppm	0.00030500	0.067789
Y_2243		5,076.2	Cts/S	12.085	0.23807
Y_3600		47,190	Cts/S	55.943	0.11855
Y_3774		3,171.6	Cts/S	12.879	0.40607

720-99269-A-1-D

Acquire Date: 7/23/2020 5:25:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00091800	ppm	0.00041100	44.805
Al3961		0.32395	ppm	0.042617	13.155
As1890		0.00020600	ppm	0.0010610	516.01
B_2089		0.061771	ppm	0.00067900	1.0993
Ba4554		0.36919	ppm	0.0014520	0.39341
Be3130		-0.00081200	ppm	0.00014500	17.815
Ca3179		443.99	ppm	2.2981	0.51760
Cd2144		0.0016680	ppm	0.000062000	3.7117
Co2286		0.032147	ppm	0.00033600	1.0457
Cr2677		0.0068960	ppm	0.000077000	1.1221
Cu3247		0.027310	ppm	0.0000090000	0.034204
Fe2599		0.62087	ppm	0.0016610	0.26747
K_7664		5.8692	ppm	0.065298	1.1125
Mg2790		3.8041	ppm	0.0011900	0.031289
Mn2576		0.19372	ppm	0.00050300	0.25944
Mo2020		0.0027840	ppm	0.000031000	1.1262
Na5895	**F**	**1,030.9**	**ppm**	**14.427**	**1.3994**
Ni2316		0.016403	ppm	0.00081200	4.9529
P_1782		0.010112	ppm	0.0022780	22.530
Pb2203		0.0093000	ppm	0.00042000	4.5161
S_1820		7.3291	ppm	0.0015380	0.020979
Sb2068		-0.00011900	ppm	0.0015740	1,320.3
Se1960		0.0065390	ppm	0.0064010	97.892
Si2881		6.0738	ppm	0.048983	0.80647
Sn1899		0.0018120	ppm	0.000035000	1.9516
Sr4077	**W**	**8.9489**	**ppm**	**0.030301**	**0.33860**
Ti3349		0.0015010	ppm	0.00034600	23.061
Tl1908		-0.0011870	ppm	0.00095100	80.127
V_2924		0.0026910	ppm	0.00013100	4.8510
Zn2062		0.50962	ppm	0.00021700	0.042629
Y_2243		5,036.9	Cts/S	4.9885	0.099040
Y_3600		46,976	Cts/S	25.765	0.054848
Y_3774		3,143.9	Cts/S	7.2233	0.22976

720-99269-A-2-D

Acquire Date: 7/23/2020 5:29:53PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0016990	ppm	0.00071400	42.062
Al3961		0.37906	ppm	0.024547	6.4759
As1890		-0.00087300	ppm	0.00056500	64.770
B_2089		0.050090	ppm	0.00054300	1.0846
Ba4554		0.28961	ppm	0.0022920	0.79124
Be3130		-0.00043400	ppm	0.000087000	20.145
Ca3179		392.36	ppm	2.5746	0.65619
Cd2144		0.00089600	ppm	0.000024000	2.6427
Co2286		0.023921	ppm	0.00070600	2.9506

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99269-A-2-D

Acquire Date: 7/23/2020 5:29:53PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0078130	ppm	0.00013600	1.7433
Cu3247		0.028534	ppm	0.0015700	5.5011
Fe2599		1.0285	ppm	0.012353	1.2011
K_7664		4.7556	ppm	0.038797	0.81581
Mg2790		3.3361	ppm	0.013572	0.40682
Mn2576		0.16909	ppm	0.00064500	0.38119
Mo2020		0.0023470	ppm	0.00017500	7.4341
Na5895	**F**	**966.35**	**ppm**	**14.777**	**1.5292**
Ni2316		0.015034	ppm	0.00049000	3.2589
P_1782		0.013087	ppm	0.00070700	5.4024
Pb2203		0.012562	ppm	0.00073900	5.8824
S_1820		5.2845	ppm	0.0039220	0.074226
Sb2068		0.0013880	ppm	0.0030080	216.75
Se1960		0.0058830	ppm	0.0054200	92.129
Si2881		4.9270	ppm	0.030159	0.61211
Sn1899		0.0012240	ppm	0.000054000	4.4394
Sr4077	**W**	**6.2459**	**ppm**	**0.045485**	**0.72824**
Ti3349		0.0031330	ppm	0.00010900	3.4917
Tl1908		-0.0045930	ppm	0.00060600	13.198
V_2924		0.0019160	ppm	0.00033500	17.474
Zn2062		0.41129	ppm	0.0029350	0.71351
Y_2243		5,172.7	Cts/S	4.9053	0.094830
Y_3600		48,193	Cts/S	54.952	0.11402
Y_3774		3,271.4	Cts/S	6.2355	0.19061

CCV 2078482

Acquire Date: 7/23/2020 5:33:57PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50961	ppm	0.0011320	0.22212	.50000	Rel(%)	Pass	
Al3961		25.990	ppm	0.089982	0.34622	25.000	Rel(%)	Pass	
As1890		0.51850	ppm	0.0027600	0.53225	.50000	Rel(%)	Pass	
B_2089		1.0319	ppm	0.00043200	0.041839	1.0000	Rel(%)	Pass	
Ba4554		2.5962	ppm	0.0065350	0.25171	2.5000	Rel(%)	Pass	
Be3130		0.52313	ppm	0.00039600	0.075694	.50000	Rel(%)	Pass	
Ca3179		26.778	ppm	0.077677	0.29008	25.000	Rel(%)	Pass	
Cd2144		0.52965	ppm	0.00084300	0.15913	.50000	Rel(%)	Pass	
Co2286		2.6287	ppm	0.0048750	0.18546	2.5000	Rel(%)	Pass	
Cr2677		2.6044	ppm	0.011612	0.44585	2.5000	Rel(%)	Pass	
Cu3247		2.5380	ppm	0.014064	0.55416	2.5000	Rel(%)	Pass	
Fe2599		26.460	ppm	0.045587	0.17229	25.000	Rel(%)	Pass	
K_7664		25.839	ppm	0.12592	0.48733	25.000	Rel(%)	Pass	
Mg2790		26.057	ppm	0.13703	0.52590	25.000	Rel(%)	Pass	
Mn2576		2.6238	ppm	0.010170	0.38761	2.5000	Rel(%)	Pass	
Mo2020		1.0450	ppm	0.0050070	0.47912	1.0000	Rel(%)	Pass	
Na5895		25.912	ppm	0.0093050	0.035910	25.000	Rel(%)	Pass	
Ni2316		2.6527	ppm	0.0057070	0.21515	2.5000	Rel(%)	Pass	
P_1782		2.6282	ppm	0.0076830	0.29232	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/23/2020 5:33:57PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.52657	ppm	0.0049820	0.94614	.50000	Rel(%)	Pass	
S_1820		2.4584	ppm	0.0069320	0.28196	2.5000	Rel(%)	Pass	
Sb2068		0.51683	ppm	0.00057200	0.11073	.50000	Rel(%)	Pass	
Se1960		0.52398	ppm	0.0030100	0.57442	.50000	Rel(%)	Pass	
Si2881		2.6729	ppm	0.029623	1.1083	2.5000	Rel(%)	Pass	
Sn1899		2.6282	ppm	0.0054050	0.20564	2.5000	Rel(%)	Pass	
Sr4077		2.5870	ppm	0.0073660	0.28473	2.5000	Rel(%)	Pass	
Ti3349		1.0389	ppm	0.0049600	0.47741	1.0000	Rel(%)	Pass	
Tl1908		0.52154	ppm	0.0050340	0.96526	.50000	Rel(%)	Pass	
V_2924		2.5974	ppm	0.011316	0.43567	2.5000	Rel(%)	Pass	
Zn2062		2.6692	ppm	0.0077460	0.29019	2.5000	Rel(%)	Pass	
Y_2243		5,581.2	Cts/S	6.6902	0.11987				
Y_3600		52,130	Cts/S	146.42	0.28088				
Y_3774		3,300.3	Cts/S	22.260	0.67448				

CCB 2065750

Acquire Date: 7/23/2020 5:37:44PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00093600	ppm	0.00015000	16.067	.00000	Abs	Pass	
Al3961		0.027919	ppm	0.0029350	10.512	.00000	Abs	Pass	
As1890		-0.0020100	ppm	0.0013430	66.817	.00000	Abs	Pass	
B_2089		0.0059360	ppm	0.0010960	18.467	.00000	Abs	Pass	
Ba4554		0.00036900	ppm	0.00066600	180.56	.00000	Abs	Pass	
Be3130		-0.00038500	ppm	0.000096000	24.967	.00000	Abs	Pass	
Ca3179		-0.0085060	ppm	0.0045510	53.508	.00000	Abs	Pass	
Cd2144		0.000063000	ppm	0.000039000	62.055	.00000	Abs	Pass	
Co2286		-0.00034600	ppm	0.000078000	22.502	.00000	Abs	Pass	
Cr2677		-0.00036300	ppm	0.0010190	280.78	.00000	Abs	Pass	
Cu3247		0.00083700	ppm	0.0012480	149.15	.00000	Abs	Pass	
Fe2599		0.043139	ppm	0.0044380	10.289	.00000	Abs	Pass	
K_7664		-0.0062540	ppm	0.012498	199.86	.00000	Abs	Pass	
Mg2790		-0.0018770	ppm	0.0055820	297.39	.00000	Abs	Pass	
Mn2576		0.00017700	ppm	0.0000030000	1.4900	.00000	Abs	Pass	
Mo2020		0.0064550	ppm	0.00060700	9.4027	.00000	Abs	Pass	
Na5895		0.46941	ppm	0.0052910	1.1271	.00000	Abs	Pass	
Ni2316		0.00022000	ppm	0.00048200	219.40	.00000	Abs	Pass	
P_1782		-0.0064330	ppm	0.0019820	30.814	.00000	Abs	Pass	
Pb2203		-0.0015020	ppm	0.0042230	281.11	.00000	Abs	Pass	
S_1820		0.000094000	ppm	0.0013930	1,474.6	.00000	Abs	Pass	
Sb2068		0.0025140	ppm	0.0027570	109.67	.00000	Abs	Pass	
Se1960		0.0043210	ppm	0.0059410	137.49	.00000	Abs	Pass	
Si2881		0.048841	ppm	0.061184	125.27	.00000	Abs	Pass	
Sn1899		0.0045560	ppm	0.00014300	3.1391	.00000	Abs	Pass	
Sr4077		0.00079100	ppm	0.00013200	16.641	.00000	Abs	Pass	
Ti3349		0.0044280	ppm	0.00023400	5.2867	.00000	Abs	Pass	
Tl1908		0.0026250	ppm	0.0020840	79.416	.00000	Abs	Pass	
V_2924		0.00045700	ppm	0.00051700	113.06	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/23/2020 5:37:44PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0012470	ppm	0.00081600	65.470	.00000	Abs	Pass	
Y_2243		5,573.9	Cts/S	8.7722	0.15738				
Y_3600		52,605	Cts/S	190.83	0.36275				
Y_3774		3,303.3	Cts/S	17.089	0.51734				

720-99269-A-3-D

Acquire Date: 7/23/2020 5:41:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0014600	ppm	0.00084100	57.606
Al3961		0.36604	ppm	0.0048100	1.3141
As1890		-0.00079300	ppm	0.00018400	23.186
B_2089		0.057127	ppm	0.000079000	0.13776
Ba4554		0.36147	ppm	0.0018170	0.50271
Be3130		-0.00044300	ppm	0.00023500	53.099
Ca3179		442.49	ppm	3.0827	0.69666
Cd2144		0.0014080	ppm	0.00018000	12.816
Co2286		0.031827	ppm	0.000065000	0.20544
Cr2677		0.0074530	ppm	0.00040000	5.3683
Cu3247		0.028477	ppm	0.00077800	2.7307
Fe2599		0.96702	ppm	0.0065520	0.67755
K_7664		6.0662	ppm	0.059271	0.97707
Mg2790		3.7992	ppm	0.0049130	0.12932
Mn2576		0.20481	ppm	0.00053600	0.26185
Mo2020		0.0055350	ppm	0.00015900	2.8717
Na5895	**F**	**1,071.9**	**ppm**	**7.9062**	**0.73761**
Ni2316		0.014777	ppm	0.00050700	3.4311
P_1782		0.0080110	ppm	0.0019520	24.364
Pb2203		0.010099	ppm	0.0010250	10.146
S_1820		7.6714	ppm	0.017036	0.22207
Sb2068		-0.0014630	ppm	0.0014750	100.80
Se1960		0.0090230	ppm	0.0028380	31.455
Si2881		6.5141	ppm	0.096930	1.4880
Sn1899		0.0023620	ppm	0.00049500	20.980
Sr4077	**W**	**9.4039**	**ppm**	**0.053604**	**0.57003**
Ti3349		0.0035800	ppm	0.00030100	8.4145
Tl1908		-0.0012500	ppm	0.0032710	261.69
V_2924		0.0026650	ppm	0.0011110	41.681
Zn2062		0.51844	ppm	0.0029330	0.56567
Y_2243		5,131.7	Cts/S	8.4568	0.16480
Y_3600		47,947	Cts/S	116.34	0.24264
Y_3774		3,253.0	Cts/S	5.3323	0.16392

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99269-A-4-D

Acquire Date: 7/23/2020 5:45:48PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00059400	ppm	0.0011890	200.07
Al3961		0.13481	ppm	0.0089170	6.6146
As1890		-0.0012620	ppm	0.00033300	26.435
B_2089		0.040242	ppm	0.0011970	2.9739
Ba4554		0.14748	ppm	0.0020720	1.4050
Be3130		-0.00036400	ppm	0.00029100	79.787
Ca3179		343.23	ppm	2.9230	0.85163
Cd2144		0.00037900	ppm	0.000046000	12.005
Co2286		0.00050500	ppm	0.00065000	128.84
Cr2677		0.0024430	ppm	0.0016250	66.515
Cu3247		0.0021690	ppm	0.0011810	54.429
Fe2599		0.49069	ppm	0.019671	4.0088
K_7664		1.8205	ppm	0.026768	1.4704
Mg2790		1.9779	ppm	0.00089800	0.045418
Mn2576		0.11949	ppm	0.00030900	0.25872
Mo2020		0.00078300	ppm	0.000023000	2.9837
Na5895	**F**	**909.26**	**ppm**	**7.2481**	**0.79715**
Ni2316		0.010148	ppm	0.0014660	14.451
P_1782		0.0089150	ppm	0.0028020	31.435
Pb2203		0.0055820	ppm	0.000053000	0.95044
S_1820		0.50811	ppm	0.0051240	1.0084
Sb2068		-0.00034300	ppm	0.00064700	188.87
Se1960		0.0081440	ppm	0.00052000	6.3856
Si2881		0.27869	ppm	0.065108	23.362
Sn1899		0.0016950	ppm	0.00057000	33.626
Sr4077		0.16799	ppm	0.0011250	0.66957
Ti3349		-0.00070300	ppm	0.00059100	84.047
Tl1908		-0.0012790	ppm	0.0038320	299.59
V_2924		0.0011990	ppm	0.000098000	8.1806
Zn2062		0.10127	ppm	0.00049100	0.48531
Y_2243		5,163.0	Cts/S	5.6752	0.10992
Y_3600		47,972	Cts/S	117.99	0.24596
Y_3774		3,225.8	Cts/S	12.695	0.39354

320-62886-B-1-A

Acquire Date: 7/23/2020 5:49:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00022500	ppm	0.0013590	603.02
Al3961		36.370	ppm	0.24011	0.66020
As1890		0.0064870	ppm	0.0022960	35.401
B_2089		0.11528	ppm	0.00050000	0.43360
Ba4554		0.52481	ppm	0.0044860	0.85484
Be3130		0.0012830	ppm	0.00035300	27.491
Ca3179		277.74	ppm	1.9728	0.71030
Cd2144		0.0029390	ppm	0.000052000	1.7830
Co2286		0.013361	ppm	0.000041000	0.30406

320-62886-B-1-A

Acquire Date: 7/23/2020 5:49:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.048381	ppm	0.00079800	1.6491
Cu3247		0.16461	ppm	0.0018370	1.1162
Fe2599		25.405	ppm	0.10112	0.39804
K_7664		100.48	ppm	0.80320	0.79934
Mg2790		204.53	ppm	0.71324	0.34872
Mn2576		1.5783	ppm	0.0061630	0.39050
Mo2020		0.0047530	ppm	0.000082000	1.7223
Na5895	**F**	**1,992.4**	**ppm**	**33.384**	**1.6756**
Ni2316		0.044352	ppm	0.00040800	0.91918
P_1782		2.6144	ppm	0.012078	0.46197
Pb2203		0.099986	ppm	0.00026000	0.26008
S_1820		198.71	ppm	0.095268	0.047943
Sb2068		0.0021810	ppm	0.00054700	25.086
Se1960		0.0049690	ppm	0.00038600	7.7764
Si2881	**W**	**45.098**	**ppm**	**0.51645**	**1.1452**
Sn1899		0.0071580	ppm	0.00022200	3.1026
Sr4077		0.71275	ppm	0.0056580	0.79381
Ti3349		0.23028	ppm	0.00026600	0.11558
Tl1908		0.0010380	ppm	0.0029370	282.97
V_2924		0.058417	ppm	0.00089800	1.5375
Zn2062		0.49302	ppm	0.0018760	0.38047
Y_2243		5,003.6	Cts/S	17.618	0.35211
Y_3600		46,080	Cts/S	7.5083	0.016294
Y_3774		3,195.6	Cts/S	15.923	0.49827

sd 320-62886-B-1-A@5

Acquire Date: 7/23/2020 5:53:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000080000	ppm	0.00041900	521.90
Al3961		7.3646	ppm	0.0023110	0.031376
As1890		0.0036040	ppm	0.0015590	43.265
B_2089		0.025647	ppm	0.00028000	1.0935
Ba4554		0.10704	ppm	0.00074000	0.69087
Be3130		0.000096000	ppm	0.000062000	64.428
Ca3179		58.002	ppm	0.41637	0.71786
Cd2144		0.00060400	ppm	0.000015000	2.4798
Co2286		0.0025480	ppm	0.000091000	3.5682
Cr2677		0.0096280	ppm	0.00074200	7.7020
Cu3247		0.033399	ppm	0.0010200	3.0549
Fe2599		5.3143	ppm	0.044625	0.83972
K_7664		19.713	ppm	0.17641	0.89487
Mg2790		41.956	ppm	0.18614	0.44364
Mn2576		0.32697	ppm	0.0014220	0.43500
Mo2020		0.00081600	ppm	0.00010800	13.198
Na5895	**W**	**466.54**	**ppm**	**0.93985**	**0.20145**
Ni2316		0.011011	ppm	0.00090900	8.2513

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

sd 320-62886-B-1-A@5

Acquire Date: 7/23/2020 5:53:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.51646	ppm	0.00084300	0.16323
Pb2203		0.022170	ppm	0.00024100	1.0855
S_1820		39.737	ppm	0.033355	0.083939
Sb2068		-0.0028380	ppm	0.0043800	154.35
Se1960		0.0010890	ppm	0.00049000	45.012
Si2881		9.9416	ppm	0.019082	0.19194
Sn1899		0.0020120	ppm	0.00017800	8.8294
Sr4077		0.14527	ppm	0.00079400	0.54632
Ti3349		0.047131	ppm	0.00047300	1.0042
Tl1908		0.0020110	ppm	0.0026030	129.41
V_2924		0.011836	ppm	0.0011010	9.3046
Zn2062		0.10297	ppm	0.00030200	0.29370
Y_2243		5,416.4	Cts/S	1.3468	0.024866
Y_3600		50,193	Cts/S	165.51	0.32976
Y_3774		3,290.9	Cts/S	8.5105	0.25861

pds 320-62886-B-1-A

Acquire Date: 7/23/2020 5:57:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10669	ppm	0.00031100	0.29150
Al3961		45.981	ppm	0.32053	0.69711
As1890		0.10894	ppm	0.00013300	0.12220
B_2089		1.0051	ppm	0.0015530	0.15455
Ba4554		0.61896	ppm	0.0028230	0.45613
Be3130		0.050969	ppm	0.00025500	0.49993
Ca3179		283.43	ppm	1.9990	0.70529
Cd2144		0.098248	ppm	0.000046000	0.047000
Co2286		0.10944	ppm	0.00070400	0.64340
Cr2677		0.14513	ppm	0.000099000	0.068068
Cu3247		0.26568	ppm	0.0017780	0.66920
Fe2599		29.083	ppm	0.17349	0.59652
K_7664		109.49	ppm	0.85759	0.78325
Mg2790		210.22	ppm	1.1258	0.53551
Mn2576		1.6458	ppm	0.0081160	0.49313
Mo2020		0.10322	ppm	0.00046500	0.45068
Na5895	**F**	**1,974.7**	**ppm**	**6.9683**	**0.35287**
Ni2316		0.13540	ppm	0.00031000	0.22884
P_1782		3.6386	ppm	0.0032190	0.088463
Pb2203		0.19102	ppm	0.0024710	1.2936
S_1820		195.82	ppm	0.084667	0.043236
Sb2068		0.092092	ppm	0.00044600	0.48481
Se1960		0.098415	ppm	0.0050230	5.1040
Si2881	**W**	**48.623**	**ppm**	**0.43326**	**0.89106**
Sn1899		0.10614	ppm	0.00074100	0.69788
Sr4077		0.80209	ppm	0.0045310	0.56495
Ti3349		0.33084	ppm	0.0031990	0.96700

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 320-62886-B-1-A

Acquire Date: 7/23/2020 5:57:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.089000	ppm	0.0020590	2.3137
V_2924		0.15967	ppm	0.00042000	0.26275
Zn2062		0.58200	ppm	0.0028220	0.48480
Y_2243		4,983.4	Cts/S	5.5369	0.11111
Y_3600		46,092	Cts/S	23.809	0.051655
Y_3774		3,190.7	Cts/S	6.6644	0.20887

320-62886-B-1-B MS

Acquire Date: 7/23/2020 6:01:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048315	ppm	0.0013650	2.8249
Al3961		63.980	ppm	0.28929	0.45216
As1890		0.47166	ppm	0.0011740	0.24885
B_2089		4.2117	ppm	0.011374	0.27005
Ba4554		1.0456	ppm	0.0057130	0.54638
Be3130		0.23233	ppm	0.0011640	0.50115
Ca3179		308.91	ppm	1.8590	0.60179
Cd2144		0.22293	ppm	0.00055000	0.24689
Co2286		0.23718	ppm	0.00089300	0.37636
Cr2677		0.29049	ppm	0.00063800	0.21957
Cu3247		0.40737	ppm	0.0034160	0.83848
Fe2599		35.126	ppm	0.12801	0.36442
K_7664		129.83	ppm	0.93926	0.72343
Mg2790		234.64	ppm	0.56738	0.24181
Mn2576		1.8610	ppm	0.0042130	0.22635
Mo2020		0.23160	ppm	0.00014200	0.061413
Na5895	**F**	**1,911.5**	**ppm**	**29.538**	**1.5453**
Ni2316		0.26725	ppm	0.0010750	0.40210
P_1782		7.7571	ppm	0.027135	0.34981
Pb2203		0.31776	ppm	0.00097500	0.30698
S_1820		206.69	ppm	0.32035	0.15499
Sb2068		0.36475	ppm	0.0028220	0.77359
Se1960		0.43741	ppm	0.0073220	1.6740
Si2881	**W**	**68.219**	**ppm**	**0.10810**	**0.15846**
Sn1899		0.45605	ppm	0.00039200	0.085987
Sr4077		0.97787	ppm	0.0050230	0.51365
Ti3349		0.58757	ppm	0.0019740	0.33588
Tl1908		0.38617	ppm	0.0077960	2.0188
V_2924		0.31628	ppm	0.0026880	0.84979
Zn2062		0.99377	ppm	0.0035580	0.35799
Y_2243		4,937.7	Cts/S	6.6147	0.13396
Y_3600		45,284	Cts/S	100.01	0.22086
Y_3774		3,186.8	Cts/S	13.026	0.40876

320-62886-B-1-C MSD

Acquire Date: 7/23/2020 6:05:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047671	ppm	0.00063500	1.3325
Al3961		61.499	ppm	0.35697	0.58045
As1890		0.45915	ppm	0.0037200	0.81020
B_2089		4.1545	ppm	0.0051270	0.12341
Ba4554		1.0168	ppm	0.0050820	0.49978
Be3130		0.22671	ppm	0.00085100	0.37531
Ca3179		304.13	ppm	1.4716	0.48387
Cd2144		0.21842	ppm	0.00091300	0.41821
Co2286		0.23203	ppm	0.00013000	0.055991
Cr2677		0.28284	ppm	0.00041300	0.14602
Cu3247		0.39649	ppm	0.0029580	0.74594
Fe2599		34.073	ppm	0.090516	0.26566
K_7664		127.49	ppm	1.0274	0.80587
Mg2790		230.26	ppm	0.66042	0.28682
Mn2576		1.8255	ppm	0.0031080	0.17027
Mo2020		0.22768	ppm	0.0022430	0.98512
Na5895	**F**	**1,878.6**	**ppm**	**9.0613**	**0.48234**
Ni2316		0.25957	ppm	0.0012480	0.48085
P_1782		7.6062	ppm	0.0083320	0.10954
Pb2203		0.30651	ppm	0.0070310	2.2938
S_1820		204.17	ppm	0.031833	0.015591
Sb2068		0.36047	ppm	0.00095000	0.26342
Se1960		0.42491	ppm	0.0078690	1.8519
Si2881	**W**	**71.952**	**ppm**	**0.021036**	**0.029236**
Sn1899		0.44384	ppm	0.0019870	0.44773
Sr4077		0.95903	ppm	0.0057240	0.59682
Ti3349		0.56527	ppm	0.00057400	0.10163
Tl1908		0.37763	ppm	0.0038440	1.0178
V_2924		0.30618	ppm	0.00065700	0.21450
Zn2062		0.97784	ppm	0.0023230	0.23754
Y_2243		4,962.7	Cts/S	3.3565	0.067635
Y_3600		45,619	Cts/S	6.1733	0.013532
Y_3774		3,183.2	Cts/S	18.293	0.57466

320-62886-B-2-A

Acquire Date: 7/23/2020 6:09:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013760	ppm	0.00011400	8.2763
Al3961		29.210	ppm	0.074185	0.25397
As1890		0.0060310	ppm	0.0015370	25.479
B_2089		0.11867	ppm	0.00014900	0.12531
Ba4554		0.35614	ppm	0.0017470	0.49042
Be3130		0.00096800	ppm	0.00019600	20.278
Ca3179		196.68	ppm	0.95578	0.48594
Cd2144		0.0019800	ppm	0.000098000	4.9680
Co2286		0.0084580	ppm	0.00025800	3.0452

320-62886-B-2-A

Acquire Date: 7/23/2020 6:09:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.035385	ppm	0.0020450	5.7794
Cu3247		0.11231	ppm	0.0013870	1.2354
Fe2599		19.520	ppm	0.013607	0.069708
K_7664		100.63	ppm	0.54635	0.54295
Mg2790		206.21	ppm	1.0609	0.51447
Mn2576		0.95434	ppm	0.0040820	0.42773
Mo2020		0.0043070	ppm	0.00030600	7.1149
Na5895	**F**	**1,913.0**	**ppm**	**35.888**	**1.8760**
Ni2316		0.033995	ppm	0.00021200	0.62301
P_1782		1.7227	ppm	0.0043310	0.25141
Pb2203		0.068755	ppm	0.000044000	0.064396
S_1820		196.38	ppm	0.17805	0.090662
Sb2068		0.0020660	ppm	0.00079100	38.297
Se1960		0.0043720	ppm	0.0017470	39.958
Si2881	**W**	**42.753**	**ppm**	**0.14136**	**0.33064**
Sn1899		0.0055390	ppm	0.00017200	3.1051
Sr4077		0.47896	ppm	0.0027960	0.58377
Ti3349		0.18984	ppm	0.00032900	0.17339
Tl1908		0.0018360	ppm	0.00016800	9.1280
V_2924		0.045670	ppm	0.00049100	1.0762
Zn2062		0.34188	ppm	0.0022610	0.66127
Y_2243		4,961.2	Cts/S	15.635	0.31515
Y_3600		45,688	Cts/S	158.24	0.34636
Y_3774		3,154.6	Cts/S	3.3143	0.10506

320-62886-B-3-A

Acquire Date: 7/23/2020 6:13:25PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0014090	ppm	0.00080500	57.124
Al3961		1.2690	ppm	0.0044410	0.34995
As1890		0.0010780	ppm	0.0018380	170.54
B_2089		0.075383	ppm	0.00014100	0.18754
Ba4554		0.10013	ppm	0.00030400	0.30395
Be3130		-0.00020600	ppm	0.00016800	81.646
Ca3179		99.495	ppm	0.54050	0.54324
Cd2144		0.00071200	ppm	0.000054000	7.5164
Co2286		-0.00031700	ppm	0.00045200	142.63
Cr2677		0.0011940	ppm	0.0010430	87.405
Cu3247		0.0067440	ppm	0.00028500	4.2300
Fe2599		0.14309	ppm	0.0019370	1.3538
K_7664		79.005	ppm	0.67954	0.86012
Mg2790		162.97	ppm	0.70750	0.43412
Mn2576		0.20258	ppm	0.00029300	0.14476
Mo2020		0.0013560	ppm	0.00049500	36.521
Na5895	**F**	**1,615.0**	**ppm**	**2.2966**	**0.14220**
Ni2316		0.0067770	ppm	0.0011930	17.598

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62886-B-3-A

Acquire Date: 7/23/2020 6:13:25PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.021400	ppm	0.000051000	0.23699
Pb2203		0.00016300	ppm	0.0036970	2,264.4
S_1820		161.63	ppm	0.036799	0.022767
Sb2068		-0.00064800	ppm	0.00048800	75.258
Se1960		0.0025090	ppm	0.0023350	93.054
Si2881		1.5881	ppm	0.014587	0.91854
Sn1899		0.0016230	ppm	0.00067300	41.454
Sr4077		0.19457	ppm	0.0012260	0.63012
Ti3349		0.0010840	ppm	0.00065200	60.154
Tl1908		0.00071800	ppm	0.00032800	45.718
V_2924		0.0018170	ppm	0.00022100	12.167
Zn2062		0.047185	ppm	0.00068700	1.4550
Y_2243		4,971.0	Cts/S	2.1507	0.043264
Y_3600		45,552	Cts/S	111.41	0.24458
Y_3774		3,134.6	Cts/S	9.6340	0.30735

320-62886-B-4-A

Acquire Date: 7/23/2020 6:17:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00085000	ppm	0.00067900	79.905
Al3961		1.2381	ppm	0.028167	2.2749
As1890		-0.0021100	ppm	0.0036990	175.29
B_2089		0.13149	ppm	0.00030700	0.23360
Ba4554		0.098782	ppm	0.00013700	0.13835
Be3130		-0.00035200	ppm	0.000010000	2.7244
Ca3179		97.445	ppm	0.62916	0.64566
Cd2144		0.00059800	ppm	0.000015000	2.5506
Co2286		-0.00026800	ppm	0.00013800	51.420
Cr2677		0.000026000	ppm	0.0019210	7,491.2
Cu3247		0.0028450	ppm	0.00047400	16.666
Fe2599		0.069414	ppm	0.011024	15.882
K_7664		80.398	ppm	0.77081	0.95873
Mg2790		163.80	ppm	0.49693	0.30338
Mn2576		0.17757	ppm	0.00042500	0.23960
Mo2020		0.0013660	ppm	0.00047200	34.553
Na5895	**F**	**1,613.9**	**ppm**	**27.919**	**1.7299**
Ni2316		0.0068050	ppm	0.00029500	4.3306
P_1782		0.010988	ppm	0.0052070	47.385
Pb2203		0.00085800	ppm	0.00030700	35.758
S_1820		158.85	ppm	0.033213	0.020909
Sb2068		0.0033710	ppm	0.0041540	123.21
Se1960		0.0027450	ppm	0.0016950	61.745
Si2881		2.3763	ppm	0.094465	3.9754
Sn1899		0.00014500	ppm	0.00036100	249.28
Sr4077		0.17808	ppm	0.0018620	1.0457
Ti3349		0.00096100	ppm	0.00041100	42.832

320-62886-B-4-A

Acquire Date: 7/23/2020 6:17:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0030760	ppm	0.0013380	43.507
V_2924		0.0016490	ppm	0.00070500	42.774
Zn2062		0.049367	ppm	0.00025700	0.52004
Y_2243		4,997.6	Cts/S	14.214	0.28441
Y_3600		45,874	Cts/S	115.21	0.25115
Y_3774		3,118.6	Cts/S	6.2377	0.20002

CCV 2078482

Acquire Date: 7/23/2020 6:21:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50861	ppm	0.00043700	0.085944	.50000	Rel(%)	Pass	
Al3961		25.895	ppm	0.21546	0.83203	25.000	Rel(%)	Pass	
As1890		0.51314	ppm	0.00075500	0.14710	.50000	Rel(%)	Pass	
B_2089		1.0340	ppm	0.0036040	0.34854	1.0000	Rel(%)	Pass	
Ba4554		2.5900	ppm	0.020860	0.80541	2.5000	Rel(%)	Pass	
Be3130		0.52063	ppm	0.0040180	0.77171	.50000	Rel(%)	Pass	
Ca3179		26.696	ppm	0.12858	0.48163	25.000	Rel(%)	Pass	
Cd2144		0.53073	ppm	0.0019890	0.37468	.50000	Rel(%)	Pass	
Co2286		2.6308	ppm	0.0098400	0.37402	2.5000	Rel(%)	Pass	
Cr2677		2.6031	ppm	0.0062210	0.23899	2.5000	Rel(%)	Pass	
Cu3247		2.5239	ppm	0.0051610	0.20448	2.5000	Rel(%)	Pass	
Fe2599		26.350	ppm	0.16283	0.61794	25.000	Rel(%)	Pass	
K_7664		25.955	ppm	0.24474	0.94295	25.000	Rel(%)	Pass	
Mg2790		26.204	ppm	0.057426	0.21915	25.000	Rel(%)	Pass	
Mn2576		2.6243	ppm	0.010409	0.39664	2.5000	Rel(%)	Pass	
Mo2020		1.0433	ppm	0.0058320	0.55897	1.0000	Rel(%)	Pass	
Na5895		27.085	ppm	0.11504	0.42475	25.000	Rel(%)	Pass	
Ni2316		2.6545	ppm	0.0045970	0.17317	2.5000	Rel(%)	Pass	
P_1782		2.6376	ppm	0.010759	0.40792	2.5000	Rel(%)	Pass	
Pb2203		0.52732	ppm	0.00058300	0.11057	.50000	Rel(%)	Pass	
S_1820		2.5080	ppm	0.0053430	0.21304	2.5000	Rel(%)	Pass	
Sb2068		0.52406	ppm	0.00047800	0.091296	.50000	Rel(%)	Pass	
Se1960		0.52710	ppm	0.0029450	0.55868	.50000	Rel(%)	Pass	
Si2881		2.6599	ppm	0.084645	3.1823	2.5000	Rel(%)	Pass	
Sn1899		2.6325	ppm	0.019473	0.73973	2.5000	Rel(%)	Pass	
Sr4077		2.5787	ppm	0.020105	0.77967	2.5000	Rel(%)	Pass	
Ti3349		1.0415	ppm	0.0019610	0.18828	1.0000	Rel(%)	Pass	
Tl1908		0.52467	ppm	0.0037460	0.71406	.50000	Rel(%)	Pass	
V_2924		2.5976	ppm	0.010558	0.40646	2.5000	Rel(%)	Pass	
Zn2062		2.6681	ppm	0.0084470	0.31658	2.5000	Rel(%)	Pass	
Y_2243		5,476.8	Cts/S	9.0216	0.16472				
Y_3600		51,253	Cts/S	126.80	0.24739				
Y_3774		3,221.9	Cts/S	18.495	0.57404				

CCB 2065750

Acquire Date: 7/23/2020 6:25:14PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00097300	ppm	0.00010100	10.428	.00000	Abs	Pass	
Al3961		0.033713	ppm	0.0063220	18.752	.00000	Abs	Pass	
As1890		-0.0016990	ppm	0.00035200	20.729	.00000	Abs	Pass	
B_2089		0.0062160	ppm	0.00028500	4.5798	.00000	Abs	Pass	
Ba4554		0.0013740	ppm	0.00026400	19.205	.00000	Abs	Pass	
Be3130		.0000070000	ppm	0.00030700	4,478.6	.00000	Abs	Pass	
Ca3179		0.044024	ppm	0.0059880	13.602	.00000	Abs	Pass	
Cd2144		0.00012800	ppm	0.000077000	60.400	.00000	Abs	Pass	
Co2286		0.00042800	ppm	0.000052000	12.081	.00000	Abs	Pass	
Cr2677		0.00022100	ppm	0.00071000	321.12	.00000	Abs	Pass	
Cu3247		0.0018700	ppm	0.00043600	23.315	.00000	Abs	Pass	
Fe2599		0.027683	ppm	0.0072080	26.039	.00000	Abs	Pass	
K_7664		0.13264	ppm	0.025469	19.202	.00000	Abs	Pass	
Mg2790		0.054362	ppm	0.0037220	6.8473	.00000	Abs	Pass	
Mn2576		0.00066500	ppm	0.00014900	22.482	.00000	Abs	Pass	
Mo2020		0.0068050	ppm	0.00039000	5.7343	.00000	Abs	Pass	
Na5895	F	1.4741	ppm	0.096682	6.5589	.00000	Abs	Fail High	1.0000
Ni2316		0.0021690	ppm	0.0012080	55.681	.00000	Abs	Pass	
P_1782		-0.0089120	ppm	0.0010560	11.849	.00000	Abs	Pass	
Pb2203		-0.0015410	ppm	0.0016450	106.72	.00000	Abs	Pass	
S_1820		0.032156	ppm	0.0084300	26.214	.00000	Abs	Pass	
Sb2068		0.0040080	ppm	0.0020090	50.122	.00000	Abs	Pass	
Se1960		-0.0036130	ppm	0.0019540	54.078	.00000	Abs	Pass	
Si2881		0.021491	ppm	0.078121	363.52	.00000	Abs	Pass	
Sn1899		0.0042590	ppm	0.00039500	9.2779	.00000	Abs	Pass	
Sr4077		0.0012520	ppm	0.00030400	24.293	.00000	Abs	Pass	
Ti3349		0.0038420	ppm	0.00012500	3.2510	.00000	Abs	Pass	
Tl1908		0.0032160	ppm	0.000049000	1.5334	.00000	Abs	Pass	
V_2924		0.00061100	ppm	0.00026100	42.743	.00000	Abs	Pass	
Zn2062		0.0012160	ppm	0.00015000	12.303	.00000	Abs	Pass	
Y_2243		5,519.7	Cts/S	8.0066	0.14505				
Y_3600		51,623	Cts/S	40.639	0.078723				
Y_3774		3,214.0	Cts/S	13.983	0.43506				

320-62914-A-1-D

Acquire Date: 7/23/2020 6:29:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0029430	ppm	0.000059000	2.0210
Al3961		126.99	ppm	0.33138	0.26095
As1890		0.038716	ppm	0.00047000	1.2138
B_2089		0.059675	ppm	0.00014900	0.24962
Ba4554		1.6395	ppm	0.0055420	0.33802
Be3130		0.0041690	ppm	0.000089000	2.1346
Ca3179		44.150	ppm	0.14641	0.33162
Cd2144		0.00098500	ppm	0.000045000	4.5977
Co2286		0.086216	ppm	0.00016600	0.19309
Cr2677		0.34547	ppm	0.00030400	0.087879

320-62914-A-1-D

Acquire Date: 7/23/2020 6:29:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.14245	ppm	0.00034900	0.24502
Fe2599		144.75	ppm	0.25446	0.17579
K_7664		12.397	ppm	0.15466	1.2476
Mg2790		55.122	ppm	0.11919	0.21622
Mn2576		3.2296	ppm	0.0082950	0.25684
Mo2020		0.0027170	ppm	0.00042900	15.784
Na5895		4.4067	ppm	0.015056	0.34167
Ni2316		0.39737	ppm	0.000069000	0.017302
P_1782		2.9763	ppm	0.0048960	0.16450
Pb2203		0.070342	ppm	0.0038120	5.4186
S_1820		0.54911	ppm	0.0027300	0.49718
Sb2068		-0.0011380	ppm	0.0027690	243.29
Se1960		0.0054450	ppm	0.0067800	124.50
Si2881		1.9911	ppm	0.063294	3.1789
Sn1899		0.021498	ppm	0.00036400	1.6944
Sr4077		0.60814	ppm	0.0024970	0.41064
Ti3349		1.5576	ppm	0.0057070	0.36639
Tl1908		0.0016790	ppm	0.00015700	9.3267
V_2924		0.27032	ppm	0.00092000	0.34023
Zn2062		0.31535	ppm	0.00048000	0.15235
Y_2243		5,548.2	Cts/S	3.0707	0.055345
Y_3600		51,483	Cts/S	52.496	0.10197
Y_3774		3,304.8	Cts/S	3.0641	0.092716

sd 320-62914-A-1-D@5

Acquire Date: 7/23/2020 6:33:06PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011480	ppm	0.00014800	12.910
Al3961		26.100	ppm	0.23115	0.88563
As1890		0.0048460	ppm	0.0013360	27.572
B_2089		0.015093	ppm	0.00034800	2.3055
Ba4554		0.33874	ppm	0.0013400	0.39570
Be3130		0.00072200	ppm	0.00012000	16.673
Ca3179		9.1558	ppm	0.011160	0.12189
Cd2144		0.00016200	ppm	0.000058000	35.714
Co2286		0.017352	ppm	0.00074100	4.2700
Cr2677		0.069859	ppm	0.0011050	1.5817
Cu3247		0.028652	ppm	0.00035400	1.2342
Fe2599		30.277	ppm	0.092695	0.30615
K_7664		2.5383	ppm	0.014716	0.57977
Mg2790		11.339	ppm	0.031864	0.28101
Mn2576		0.67225	ppm	0.0013430	0.19980
Mo2020		0.00076000	ppm	0.00035700	46.973
Na5895		1.2712	ppm	0.034029	2.6770
Ni2316		0.085324	ppm	0.000036000	0.041974
P_1782		0.61436	ppm	0.0064910	1.0566

sd 320-62914-A-1-D@5

Acquire Date: 7/23/2020 6:33:06PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.014971	ppm	0.0032230	21.530
S_1820		0.11586	ppm	0.0059570	5.1412
Sb2068		-0.0029340	ppm	0.0058320	198.81
Se1960		0.0014570	ppm	0.0022220	152.47
Si2881		0.42116	ppm	0.024409	5.7958
Sn1899		0.0054910	ppm	0.00030800	5.6177
Sr4077		0.12568	ppm	0.00029800	0.23722
Ti3349		0.32121	ppm	0.00088100	0.27441
Tl1908		-0.00046600	ppm	0.0014320	307.44
V_2924		0.055125	ppm	0.00081300	1.4757
Zn2062		0.066965	ppm	0.00013400	0.19938
Y_2243		5,512.9	Cts/S	11.833	0.21464
Y_3600		51,288	Cts/S	65.544	0.12780
Y_3774		3,221.0	Cts/S	0.18826	0.0058450

pds 320-62914-A-1-D

Acquire Date: 7/23/2020 6:37:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099332	ppm	0.0014470	1.4562
Al3961		132.09	ppm	0.94552	0.71582
As1890		0.12827	ppm	0.0010470	0.81659
B_2089		0.97209	ppm	0.0010020	0.10309
Ba4554		1.6786	ppm	0.0095810	0.57074
Be3130		0.053120	ppm	0.00065700	1.2371
Ca3179		52.533	ppm	0.38472	0.73234
Cd2144		0.097924	ppm	0.00020900	0.21339
Co2286		0.18111	ppm	0.00086900	0.47978
Cr2677		0.43008	ppm	0.0024060	0.55947
Cu3247		0.23544	ppm	0.0030080	1.2777
Fe2599		143.54	ppm	0.98402	0.68553
K_7664		21.974	ppm	0.16674	0.75878
Mg2790		62.871	ppm	0.21957	0.34924
Mn2576		3.1968	ppm	0.010219	0.31966
Mo2020		0.098070	ppm	0.00060200	0.61383
Na5895		13.826	ppm	0.14652	1.0598
Ni2316		0.48052	ppm	0.0013630	0.28369
P_1782		3.8382	ppm	0.0054740	0.14261
Pb2203		0.16441	ppm	0.0041200	2.5059
S_1820		2.3883	ppm	0.0044630	0.18686
Sb2068		0.086149	ppm	0.0036500	4.2373
Se1960		0.092390	ppm	0.0037600	4.0694
Si2881		2.8615	ppm	0.12593	4.4008
Sn1899		0.12100	ppm	0.00074300	0.61391
Sr4077		0.68463	ppm	0.0047330	0.69139
Ti3349		1.6005	ppm	0.0050170	0.31349
Tl1908		0.092157	ppm	0.0046770	5.0754

pds 320-62914-A-1-D

Acquire Date: 7/23/2020 6:37:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.35967	ppm	0.0039250	1.0913
Zn2062		0.39985	ppm	0.0029990	0.75000
Y_2243		5,575.0	Cts/S	3.8265	0.068637
Y_3600		51,750	Cts/S	81.440	0.15737
Y_3774		3,280.3	Cts/S	17.631	0.53747

320-62914-A-1-E MS

Acquire Date: 7/23/2020 6:40:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.043398	ppm	0.00040200	0.92553
Al3961		188.60	ppm	0.29074	0.15415
As1890		0.46615	ppm	0.0030920	0.66329
B_2089		4.1543	ppm	0.0071170	0.17132
Ba4554		2.2247	ppm	0.0040490	0.18199
Be3130		0.23747	ppm	0.0012250	0.51596
Ca3179		76.316	ppm	0.16986	0.22257
Cd2144		0.22773	ppm	0.00046700	0.20520
Co2286		0.31434	ppm	0.00065500	0.20835
Cr2677		0.67041	ppm	0.00010600	0.015832
Cu3247		0.38844	ppm	0.00016500	0.042425
Fe2599		173.57	ppm	0.29191	0.16818
K_7664		39.347	ppm	0.25964	0.65986
Mg2790		87.983	ppm	0.27611	0.31382
Mn2576		3.2585	ppm	0.0089340	0.27419
Mo2020		0.21697	ppm	0.0012190	0.56186
Na5895		27.842	ppm	0.10751	0.38615
Ni2316		0.63841	ppm	0.0042120	0.65978
P_1782		7.7631	ppm	0.016518	0.21278
Pb2203		0.30116	ppm	0.0077120	2.5609
S_1820		5.0183	ppm	0.011056	0.22032
Sb2068		0.17378	ppm	0.0021990	1.2653
Se1960		0.42235	ppm	0.0057130	1.3528
Si2881		3.8146	ppm	0.020696	0.54254
Sn1899		0.47271	ppm	0.00094300	0.19943
Sr4077		0.93600	ppm	0.0026760	0.28585
Ti3349		4.4483	ppm	0.0050270	0.11301
Tl1908		0.43908	ppm	0.0057760	1.3154
V_2924		0.61556	ppm	0.00085000	0.13802
Zn2062		0.82678	ppm	0.0019350	0.23400
Y_2243		5,469.4	Cts/S	0.23470	0.0042910
Y_3600		50,879	Cts/S	92.455	0.18172
Y_3774		3,312.0	Cts/S	10.761	0.32490

320-62914-A-1-F MSD

Acquire Date: 7/23/2020 6:44:33PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.044204	ppm	0.00094800	2.1441
Al3961		174.18	ppm	0.62520	0.35895
As1890		0.45938	ppm	0.00094400	0.20557
B_2089		4.1081	ppm	0.00052000	0.012663
Ba4554		2.1855	ppm	0.010171	0.46537
Be3130		0.23508	ppm	0.00082400	0.35041
Ca3179		75.481	ppm	0.40348	0.53455
Cd2144		0.22575	ppm	0.00046100	0.20414
Co2286		0.31701	ppm	0.00023300	0.073464
Cr2677		0.64363	ppm	0.0021010	0.32646
Cu3247		0.37644	ppm	0.00072300	0.19210
Fe2599		163.68	ppm	0.56070	0.34255
K_7664		37.923	ppm	0.19350	0.51025
Mg2790		83.537	ppm	0.46144	0.55238
Mn2576		3.5190	ppm	0.015547	0.44180
Mo2020		0.21880	ppm	0.00096700	0.44180
Na5895		27.464	ppm	0.18660	0.67942
Ni2316		0.62554	ppm	0.0011900	0.19028
P_1782		7.7775	ppm	0.017818	0.22909
Pb2203		0.29396	ppm	0.0028510	0.96978
S_1820		4.9408	ppm	0.014290	0.28922
Sb2068		0.18422	ppm	0.0027730	1.5051
Se1960		0.42176	ppm	0.0043580	1.0333
Si2881		3.6414	ppm	0.042745	1.1738
Sn1899		0.46964	ppm	0.000014000	0.0029930
Sr4077		0.90672	ppm	0.0038780	0.42772
Ti3349		3.8655	ppm	0.017160	0.44393
Tl1908		0.43692	ppm	0.00043500	0.099630
V_2924		0.58646	ppm	0.0035210	0.60031
Zn2062		0.80042	ppm	0.0052080	0.65064
Y_2243		5,477.3	Cts/S	4.8958	0.089384
Y_3600		50,627	Cts/S	118.99	0.23503
Y_3774		3,272.3	Cts/S	14.139	0.43210

320-62914-A-2-D

Acquire Date: 7/23/2020 6:48:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0023420	ppm	0.000019000	0.79333
Al3961		128.10	ppm	0.32696	0.25523
As1890		0.045266	ppm	0.0031410	6.9398
B_2089		0.10443	ppm	0.00065500	0.62718
Ba4554		1.6570	ppm	0.0068510	0.41347
Be3130		0.0040530	ppm	0.000094000	2.3101
Ca3179		84.232	ppm	0.43748	0.51938
Cd2144		0.0013440	ppm	0.00011100	8.2431
Co2286		0.097742	ppm	0.0000050000	0.0053950

320-62914-A-2-D

Acquire Date: 7/23/2020 6:48:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.33816	ppm	0.00083700	0.24754
Cu3247		0.13481	ppm	0.00092700	0.68758
Fe2599		146.28	ppm	0.90524	0.61884
K_7664		10.896	ppm	0.20364	1.8690
Mg2790		72.921	ppm	0.17112	0.23466
Mn2576		4.3188	ppm	0.012957	0.30002
Mo2020		0.0053000	ppm	0.00077800	14.675
Na5895		11.704	ppm	0.061917	0.52902
Ni2316		0.40734	ppm	0.0022050	0.54130
P_1782		3.0963	ppm	0.017030	0.55003
Pb2203		0.067627	ppm	0.0019490	2.8821
S_1820		0.47419	ppm	0.0079300	1.6723
Sb2068		-0.00010900	ppm	0.0017870	1,632.2
Se1960		0.0066750	ppm	0.0012840	19.231
Si2881		1.8379	ppm	0.094631	5.1488
Sn1899		0.021985	ppm	0.0021690	9.8664
Sr4077		1.2053	ppm	0.0060300	0.50025
Ti3349		2.8320	ppm	0.012520	0.44208
Tl1908		0.00082600	ppm	0.0019340	234.15
V_2924		0.33563	ppm	0.0021790	0.64917
Zn2062		0.30641	ppm	0.0010960	0.35784
Y_2243		5,470.8	Cts/S	7.8380	0.14327
Y_3600		50,545	Cts/S	42.998	0.085069
Y_3774		3,230.6	Cts/S	2.6018	0.080537

320-62914-A-3-D

Acquire Date: 7/23/2020 6:52:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0029410	ppm	0.00025700	8.7368
Al3961		156.87	ppm	1.0788	0.68770
As1890		0.046513	ppm	0.00099100	2.1309
B_2089		0.086166	ppm	0.0011450	1.3283
Ba4554		2.0125	ppm	0.013812	0.68630
Be3130		0.0044720	ppm	0.00021600	4.8399
Ca3179		161.06	ppm	1.3148	0.81633
Cd2144		0.0018050	ppm	0.000026000	1.4392
Co2286		0.078665	ppm	0.00031300	0.39814
Cr2677		0.42004	ppm	0.00062000	0.14765
Cu3247		0.15794	ppm	0.0012970	0.82135
Fe2599		186.93	ppm	1.4572	0.77955
K_7664		12.973	ppm	0.10808	0.83316
Mg2790		97.238	ppm	0.34307	0.35282
Mn2576		2.9411	ppm	0.011091	0.37712
Mo2020		0.0026750	ppm	0.000080000	2.9783
Na5895		21.808	ppm	0.17961	0.82359
Ni2316		0.43939	ppm	0.0012290	0.27963

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62914-A-3-D

Acquire Date: 7/23/2020 6:52:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.6341	ppm	0.021589	0.46588
Pb2203		0.051879	ppm	0.0044720	8.6191
S_1820		0.17534	ppm	0.00077700	0.44308
Sb2068		-0.0051470	ppm	0.0020360	39.558
Se1960		0.0020800	ppm	0.0046990	225.93
Si2881		1.8692	ppm	0.018519	0.99076
Sn1899		0.021421	ppm	0.00064600	3.0179
Sr4077		1.3807	ppm	0.0092590	0.67061
Ti3349		2.6996	ppm	0.012453	0.46127
Tl1908		0.0025070	ppm	0.00074800	29.851
V_2924		0.36158	ppm	0.0034270	0.94767
Zn2062		0.42051	ppm	0.0030070	0.71514
Y_2243		5,359.4	Cts/S	4.0732	0.076002
Y_3600		50,005	Cts/S	24.476	0.048948
Y_3774		3,229.1	Cts/S	0.25865	0.0080100

320-62914-A-4-D

Acquire Date: 7/23/2020 6:55:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0029530	ppm	0.00034300	11.606
Al3961		129.54	ppm	0.83479	0.64440
As1890		0.052895	ppm	0.0011790	2.2292
B_2089		0.075502	ppm	0.0013580	1.7986
Ba4554		1.5969	ppm	0.010256	0.64221
Be3130		0.0041920	ppm	0.00025100	5.9796
Ca3179		70.112	ppm	0.45477	0.64864
Cd2144		0.0011590	ppm	0.00010200	8.7576
Co2286		0.10830	ppm	0.00014500	0.13343
Cr2677		0.34863	ppm	0.0017680	0.50704
Cu3247		0.14079	ppm	0.0015440	1.0965
Fe2599		152.42	ppm	1.1896	0.78048
K_7664		12.102	ppm	0.12134	1.0027
Mg2790		58.801	ppm	0.23875	0.40604
Mn2576		3.1294	ppm	0.011990	0.38314
Mo2020		0.0024710	ppm	0.00062400	25.238
Na5895		5.3872	ppm	0.017072	0.31690
Ni2316		0.40089	ppm	0.0012090	0.30164
P_1782		3.0687	ppm	0.0044260	0.14424
Pb2203		0.077844	ppm	0.0011830	1.5196
S_1820		0.43870	ppm	0.0040030	0.91237
Sb2068		0.0025690	ppm	0.0017270	67.232
Se1960		0.0040240	ppm	0.0046400	115.30
Si2881		2.0395	ppm	0.020604	1.0103
Sn1899		0.020966	ppm	0.0012590	6.0048
Sr4077		0.74683	ppm	0.0042480	0.56879
Ti3349		1.7316	ppm	0.0062690	0.36201

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62914-A-4-D

Acquire Date: 7/23/2020 6:55:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0017620	ppm	0.00019200	10.875
V_2924		0.32267	ppm	0.00049200	0.15248
Zn2062		0.31563	ppm	0.0012860	0.40750
Y_2243		5,516.3	Cts/S	16.662	0.30205
Y_3600		51,194	Cts/S	50.506	0.098656
Y_3774		3,308.8	Cts/S	18.028	0.54486

320-62914-A-5-D

Acquire Date: 7/23/2020 6:59:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0027270	ppm	0.0017350	63.648
Al3961		143.55	ppm	1.1344	0.79024
As1890		0.049505	ppm	0.00033400	0.67451
B_2089		0.069415	ppm	0.0012280	1.7685
Ba4554		2.2250	ppm	0.016889	0.75909
Be3130		0.0045800	ppm	0.000059000	1.2975
Ca3179		65.903	ppm	0.42121	0.63913
Cd2144		0.00094200	ppm	0.000060000	6.3816
Co2286		0.11089	ppm	0.00036900	0.33251
Cr2677		0.38128	ppm	0.0027430	0.71940
Cu3247		0.15679	ppm	0.00035200	0.22427
Fe2599		164.32	ppm	1.0664	0.64894
K_7664		12.094	ppm	0.15885	1.3135
Mg2790		63.530	ppm	0.34146	0.53748
Mn2576		4.2653	ppm	0.021924	0.51401
Mo2020		0.0024040	ppm	0.00047600	19.805
Na5895		5.8444	ppm	0.055113	0.94300
Ni2316		0.42964	ppm	0.00035700	0.083023
P_1782		2.7160	ppm	0.0046750	0.17214
Pb2203		0.071554	ppm	0.0033100	4.6253
S_1820		0.59185	ppm	0.010611	1.7928
Sb2068		0.0052440	ppm	0.00068100	12.980
Se1960		0.0030710	ppm	0.0067550	219.99
Si2881		2.1025	ppm	0.079181	3.7661
Sn1899		0.020513	ppm	0.00059800	2.9167
Sr4077		0.78218	ppm	0.0065530	0.83785
Ti3349		1.7503	ppm	0.0095050	0.54306
Tl1908		0.0012390	ppm	0.0034870	281.53
V_2924		0.34501	ppm	0.0015090	0.43747
Zn2062		0.33558	ppm	0.0018330	0.54622
Y_2243		5,489.4	Cts/S	5.3655	0.097744
Y_3600		50,939	Cts/S	304.69	0.59814
Y_3774		3,240.4	Cts/S	5.8212	0.17965

320-62914-A-6-D

Acquire Date: 7/23/2020 7:03:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0025870	ppm	0.0018590	71.859
Al3961		156.10	ppm	0.73462	0.47059
As1890		0.041446	ppm	0.00027700	0.66814
B_2089		0.13043	ppm	0.0013570	1.0408
Ba4554		1.5296	ppm	0.0094480	0.61769
Be3130		0.0046340	ppm	0.00024100	5.1953
Ca3179		73.881	ppm	0.37638	0.50944
Cd2144		0.00091100	ppm	0.00020900	22.909
Co2286		0.082612	ppm	0.00047600	0.57561
Cr2677		0.39249	ppm	0.0016110	0.41057
Cu3247		0.15826	ppm	0.00062900	0.39765
Fe2599		169.17	ppm	0.75135	0.44413
K_7664		11.264	ppm	0.022820	0.20259
Mg2790		77.418	ppm	0.033138	0.042804
Mn2576		3.4986	ppm	0.0048140	0.13760
Mo2020		0.0060760	ppm	0.00084500	13.906
Na5895		19.745	ppm	0.17800	0.90147
Ni2316		0.40573	ppm	0.00057800	0.14240
P_1782		2.5214	ppm	0.015019	0.59567
Pb2203		0.065077	ppm	0.00054600	0.83888
S_1820		0.61148	ppm	0.0040530	0.66277
Sb2068		-0.00095400	ppm	0.00097600	102.35
Se1960		0.00091400	ppm	0.0024980	273.23
Si2881		1.9192	ppm	0.12653	6.5929
Sn1899		0.020531	ppm	0.00010400	0.50606
Sr4077		1.2271	ppm	0.0053200	0.43354
Ti3349		1.7367	ppm	0.0035620	0.20511
Tl1908		-0.00071300	ppm	0.0052730	739.82
V_2924		0.33399	ppm	0.00023100	0.069269
Zn2062		0.49523	ppm	0.00032700	0.066113
Y_2243		5,807.5	Cts/S	0.98432	0.016949
Y_3600		54,426	Cts/S	349.29	0.64178
Y_3774		3,234.4	Cts/S	24.190	0.74789

CCV 2078482

Acquire Date: 7/23/2020 7:07:31PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51428	ppm	0.00054000	0.10497	.50000	Rel(%)	Pass	
Al3961		25.897	ppm	0.16768	0.64749	25.000	Rel(%)	Pass	
As1890		0.51945	ppm	0.0022240	0.42807	.50000	Rel(%)	Pass	
B_2089		1.0434	ppm	0.0015350	0.14706	1.0000	Rel(%)	Pass	
Ba4554		2.6082	ppm	0.015818	0.60647	2.5000	Rel(%)	Pass	
Be3130		0.52218	ppm	0.0021540	0.41245	.50000	Rel(%)	Pass	
Ca3179		26.591	ppm	0.10636	0.39999	25.000	Rel(%)	Pass	
Cd2144		0.52513	ppm	0.0011490	0.21873	.50000	Rel(%)	Pass	
Co2286		2.6302	ppm	0.0049570	0.18848	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/23/2020 7:07:31PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.6106	ppm	0.0018300	0.070109	2.5000	Rel(%)	Pass	
Cu3247		2.6032	ppm	0.010792	0.41458	2.5000	Rel(%)	Pass	
Fe2599		26.822	ppm	0.11805	0.44012	25.000	Rel(%)	Pass	
K_7664		25.851	ppm	0.24625	0.95256	25.000	Rel(%)	Pass	
Mg2790		26.057	ppm	0.034900	0.13394	25.000	Rel(%)	Pass	
Mn2576		2.6208	ppm	0.0028500	0.10874	2.5000	Rel(%)	Pass	
Mo2020		1.0435	ppm	0.0047770	0.45774	1.0000	Rel(%)	Pass	
Na5895		25.700	ppm	0.19333	0.75225	25.000	Rel(%)	Pass	
Ni2316		2.6368	ppm	0.0056430	0.21401	2.5000	Rel(%)	Pass	
P_1782		2.6426	ppm	0.0041440	0.15681	2.5000	Rel(%)	Pass	
Pb2203		0.52240	ppm	0.00031600	0.060437	.50000	Rel(%)	Pass	
S_1820		2.4994	ppm	0.0023130	0.092547	2.5000	Rel(%)	Pass	
Sb2068		0.51668	ppm	0.0064700	1.2522	.50000	Rel(%)	Pass	
Se1960		0.52942	ppm	0.0023050	0.43539	.50000	Rel(%)	Pass	
Si2881		2.6468	ppm	0.036683	1.3859	2.5000	Rel(%)	Pass	
Sn1899		2.6408	ppm	0.0069440	0.26293	2.5000	Rel(%)	Pass	
Sr4077		2.5945	ppm	0.017571	0.67725	2.5000	Rel(%)	Pass	
Ti3349		1.0515	ppm	0.00027500	0.026168	1.0000	Rel(%)	Pass	
Tl1908		0.53100	ppm	0.00082900	0.15621	.50000	Rel(%)	Pass	
V_2924		2.5854	ppm	0.00077100	0.029827	2.5000	Rel(%)	Pass	
Zn2062		2.6405	ppm	0.00013000	0.0049150	2.5000	Rel(%)	Pass	
Y_2243		5,739.4	Cts/S	12.079	0.21046				
Y_3600		53,891	Cts/S	540.56	1.0031				
Y_3774		3,408.3	Cts/S	3.2594	0.095630				

CCB 2065750

Acquire Date: 7/23/2020 7:11:18PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00039600	ppm	0.00031000	78.229	.00000	Abs	Pass	
Al3961		0.019623	ppm	0.030321	154.52	.00000	Abs	Pass	
As1890		0.00011200	ppm	0.0012470	1,116.1	.00000	Abs	Pass	
B_2089		0.0049260	ppm	0.00022300	4.5330	.00000	Abs	Pass	
Ba4554		0.00015700	ppm	0.00057300	364.63	.00000	Abs	Pass	
Be3130		0.000013000	ppm	0.00019800	1,582.0	.00000	Abs	Pass	
Ca3179		-0.013603	ppm	0.0015610	11.477	.00000	Abs	Pass	
Cd2144		.0000050000	ppm	0.000065000	1,216.6	.00000	Abs	Pass	
Co2286		0.000076000	ppm	0.00030900	403.78	.00000	Abs	Pass	
Cr2677		-0.00014200	ppm	0.00050400	355.23	.00000	Abs	Pass	
Cu3247		0.0014890	ppm	0.0015640	105.04	.00000	Abs	Pass	
Fe2599	**W**	**0.050057**	**ppm**	**0.0031640**	**6.3207**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.012953	ppm	0.073415	566.78	.00000	Abs	Pass	
Mg2790		-0.0015290	ppm	0.0067210	439.73	.00000	Abs	Pass	
Mn2576		0.00050300	ppm	0.000090000	17.792	.00000	Abs	Pass	
Mo2020		0.0066010	ppm	0.00017900	2.7172	.00000	Abs	Pass	
Na5895		0.17512	ppm	0.0019450	1.1105	.00000	Abs	Pass	
Ni2316		0.0010030	ppm	0.00096700	96.398	.00000	Abs	Pass	
P_1782		-0.0058670	ppm	0.00063100	10.756	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/23/2020 7:11:18PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.00061200	ppm	0.00027600	45.144	.00000	Abs	Pass	
S_1820		0.0048060	ppm	0.0043230	89.949	.00000	Abs	Pass	
Sb2068		0.0037340	ppm	0.0029820	79.848	.00000	Abs	Pass	
Se1960		0.0010440	ppm	0.00032900	31.494	.00000	Abs	Pass	
Si2881		0.040221	ppm	0.032884	81.758	.00000	Abs	Pass	
Sn1899		0.0037300	ppm	0.00041000	10.980	.00000	Abs	Pass	
Sr4077		0.00035200	ppm	0.00013900	39.441	.00000	Abs	Pass	
Ti3349		0.0043020	ppm	0.000099000	2.2955	.00000	Abs	Pass	
Tl1908		0.0015700	ppm	0.00078100	49.783	.00000	Abs	Pass	
V_2924		0.00085900	ppm	0.00065400	76.169	.00000	Abs	Pass	
Zn2062		0.0022840	ppm	0.00062500	27.366	.00000	Abs	Pass	
Y_2243		5,794.5	Cts/S	9.2480	0.15960				
Y_3600		54,790	Cts/S	236.79	0.43217				
Y_3774		3,402.8	Cts/S	15.220	0.44727				

320-62914-A-7-D

Acquire Date: 7/23/2020 7:15:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0020290	ppm	0.00062800	30.974
Al3961		107.54	ppm	0.55723	0.51814
As1890		0.023750	ppm	0.0019620	8.2630
B_2089		0.047462	ppm	0.00063300	1.3346
Ba4554		1.4486	ppm	0.0072420	0.49994
Be3130		0.0034280	ppm	0.000062000	1.8077
Ca3179		38.752	ppm	0.22976	0.59289
Cd2144		0.00088300	ppm	0.000059000	6.7198
Co2286		0.078149	ppm	0.00068400	0.87553
Cr2677		0.28753	ppm	0.0010030	0.34885
Cu3247		0.12667	ppm	0.0013490	1.0647
Fe2599		124.47	ppm	0.97666	0.78463
K_7664		10.929	ppm	0.072933	0.66732
Mg2790		44.626	ppm	0.19764	0.44288
Mn2576		3.2845	ppm	0.011151	0.33949
Mo2020		0.0036030	ppm	0.00026400	7.3333
Na5895		2.0555	ppm	0.018414	0.89586
Ni2316		0.33750	ppm	0.00043400	0.12868
P_1782		2.5638	ppm	0.0034960	0.13634
Pb2203		0.060660	ppm	0.0041600	6.8572
S_1820		0.11393	ppm	0.00015600	0.13711
Sb2068		-0.00061200	ppm	0.0026880	439.48
Se1960		0.0052590	ppm	0.00074600	14.183
Si2881		1.7160	ppm	0.058697	3.4206
Sn1899		0.020953	ppm	0.00050200	2.3978
Sr4077		0.47591	ppm	0.0025720	0.54050
Ti3349		1.7726	ppm	0.0055810	0.31484
Tl1908		0.0026050	ppm	0.0033740	129.49

320-62914-A-7-D

Acquire Date: 7/23/2020 7:15:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.21842	ppm	0.00014000	0.064253
Zn2062		0.28103	ppm	0.0016470	0.58602
Y_2243		5,833.8	Cts/S	0.73747	0.012641
Y_3600		54,874	Cts/S	156.20	0.28466
Y_3774		3,486.0	Cts/S	15.222	0.43668

320-62914-A-8-D

Acquire Date: 7/23/2020 7:19:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0025770	ppm	0.00082800	32.132
Al3961		127.74	ppm	0.34289	0.26844
As1890		0.030307	ppm	0.00072700	2.3992
B_2089		0.047906	ppm	0.00073500	1.5350
Ba4554		1.4468	ppm	0.0052440	0.36243
Be3130		0.0037210	ppm	0.00018000	4.8425
Ca3179		45.626	ppm	0.14244	0.31220
Cd2144		0.0011090	ppm	0.00010500	9.4444
Co2286		0.072497	ppm	0.00036400	0.50234
Cr2677		0.33339	ppm	0.0013600	0.40806
Cu3247		0.15335	ppm	0.0034350	2.2397
Fe2599		156.82	ppm	0.50479	0.32188
K_7664		10.886	ppm	0.034703	0.31878
Mg2790		63.229	ppm	0.21019	0.33243
Mn2576		2.4210	ppm	0.0091520	0.37804
Mo2020		0.0022350	ppm	0.000095000	4.2683
Na5895		3.1279	ppm	0.018975	0.60664
Ni2316		0.38418	ppm	0.0011380	0.29628
P_1782		3.5949	ppm	0.0060610	0.16861
Pb2203		0.059174	ppm	0.0018960	3.2041
S_1820		-0.10471	ppm	0.0065280	6.2343
Sb2068		0.00021500	ppm	0.0030570	1,424.8
Se1960		0.0010270	ppm	0.0032150	313.01
Si2881		1.6063	ppm	0.020284	1.2628
Sn1899		0.020448	ppm	0.00060400	2.9557
Sr4077		0.62932	ppm	0.0018450	0.29323
Ti3349		1.2160	ppm	0.0045920	0.37763
Tl1908		0.00059300	ppm	0.00058600	98.909
V_2924		0.25370	ppm	0.00056100	0.22124
Zn2062		0.34866	ppm	0.0012910	0.37014
Y_2243		5,866.6	Cts/S	1.8553	0.031625
Y_3600		54,963	Cts/S	109.49	0.19921
Y_3774		3,490.5	Cts/S	1.5006	0.042992

320-62914-A-9-D

Acquire Date: 7/23/2020 7:22:58PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0027210	ppm	0.00081300	29.859
Al3961		140.26	ppm	0.46382	0.33068
As1890		0.046326	ppm	0.0019450	4.1976
B_2089		0.060106	ppm	0.00039900	0.66390
Ba4554		1.5977	ppm	0.0077520	0.48521
Be3130		0.0044910	ppm	0.00012100	2.6925
Ca3179		62.142	ppm	0.31503	0.50695
Cd2144		0.0018190	ppm	0.000018000	0.97603
Co2286		0.10068	ppm	0.00015200	0.15141
Cr2677		0.36744	ppm	0.0029970	0.81552
Cu3247		0.14827	ppm	0.0012880	0.86852
Fe2599		177.96	ppm	0.66354	0.37286
K_7664		11.566	ppm	0.17583	1.5203
Mg2790		77.944	ppm	0.27638	0.35459
Mn2576		3.6652	ppm	0.010349	0.28237
Mo2020		0.0045870	ppm	0.00031700	6.9069
Na5895		4.0608	ppm	0.021431	0.52774
Ni2316		0.45866	ppm	0.00026300	0.057356
P_1782		4.5264	ppm	0.022665	0.50073
Pb2203		0.061289	ppm	0.0026580	4.3369
S_1820		-0.19354	ppm	0.0045170	2.3341
Sb2068		-0.0016570	ppm	0.00099900	60.312
Se1960		0.0059160	ppm	0.0035810	60.527
Si2881		1.6906	ppm	0.023561	1.3936
Sn1899		0.021072	ppm	0.00096000	4.5536
Sr4077		0.83677	ppm	0.0042170	0.50400
Ti3349		1.6616	ppm	0.0033570	0.20201
Tl1908		0.0011290	ppm	0.0012160	107.75
V_2924		0.33669	ppm	0.00042500	0.12628
Zn2062		0.38811	ppm	0.0012740	0.32827
Y_2243		5,842.2	Cts/S	2.6311	0.045037
Y_3600		55,618	Cts/S	36.699	0.065984
Y_3774		3,530.9	Cts/S	11.099	0.31435

320-62914-A-10-D

Acquire Date: 7/23/2020 7:26:48PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0030700	ppm	0.0014370	46.795
Al3961		148.13	ppm	1.1097	0.74916
As1890		0.041508	ppm	0.0024420	5.8836
B_2089		0.061876	ppm	0.0010980	1.7745
Ba4554		1.3771	ppm	0.011455	0.83181
Be3130		0.0048220	ppm	0.00038600	8.0050
Ca3179		109.12	ppm	0.77334	0.70872
Cd2144		0.0018720	ppm	0.000026000	1.3890
Co2286		0.091306	ppm	0.000089000	0.097623

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62914-A-10-D

Acquire Date: 7/23/2020 7:26:48PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.38573	ppm	0.00029900	0.077477
Cu3247		0.16871	ppm	0.00060600	0.35914
Fe2599		182.33	ppm	1.4564	0.79875
K_7664		12.553	ppm	0.11402	0.90836
Mg2790		85.974	ppm	0.25005	0.29085
Mn2576		2.6055	ppm	0.0050470	0.19369
Mo2020		0.0028250	ppm	0.00063500	22.483
Na5895		4.4200	ppm	0.038289	0.86627
Ni2316		0.45474	ppm	0.00085200	0.18729
P_1782		5.1359	ppm	0.0075100	0.14623
Pb2203		0.063953	ppm	0.00049800	0.77859
S_1820		-0.13901	ppm	0.0012080	0.86880
Sb2068		0.00056200	ppm	0.0057950	1,030.6
Se1960		0.0036620	ppm	0.00038200	10.434
Si2881		1.6679	ppm	0.011037	0.66176
Sn1899		0.020562	ppm	0.00097800	4.7581
Sr4077		0.99592	ppm	0.0083470	0.83813
Ti3349		1.4954	ppm	0.0030050	0.20097
Tl1908		-0.0027800	ppm	0.0014570	52.395
V_2924		0.31739	ppm	0.00068000	0.21429
Zn2062		0.41641	ppm	0.00024900	0.059718
Y_2243		5,787.3	Cts/S	3.3778	0.058366
Y_3600		54,646	Cts/S	105.23	0.19256
Y_3774		3,516.2	Cts/S	19.060	0.54206

320-62914-A-11-D

Acquire Date: 7/23/2020 7:30:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0031270	ppm	0.0016630	53.177
Al3961		151.90	ppm	0.57849	0.38082
As1890		0.038255	ppm	0.0032860	8.5907
B_2089		0.070300	ppm	0.000054000	0.076108
Ba4554		1.7559	ppm	0.010472	0.59637
Be3130		0.0041340	ppm	0.00027700	6.7008
Ca3179		144.19	ppm	0.82973	0.57543
Cd2144		0.0019260	ppm	0.00012100	6.2990
Co2286		0.090136	ppm	0.00049800	0.55252
Cr2677		0.39333	ppm	0.0011230	0.28546
Cu3247		0.17959	ppm	0.00043000	0.23953
Fe2599		178.32	ppm	0.80507	0.45149
K_7664		13.703	ppm	0.19650	1.4340
Mg2790		87.223	ppm	0.28542	0.32724
Mn2576		4.1939	ppm	0.015052	0.35890
Mo2020		0.0047310	ppm	0.00030800	6.5118
Na5895		5.8332	ppm	0.058154	0.99695
Ni2316		0.44675	ppm	0.00062600	0.14002

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62914-A-11-D

Acquire Date: 7/23/2020 7:30:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.4916	ppm	0.024654	0.54889
Pb2203		0.059756	ppm	0.0027830	4.6578
S_1820		-0.057839	ppm	0.0056790	9.8193
Sb2068		-0.00035500	ppm	0.0025050	706.11
Se1960		0.00093600	ppm	0.0014570	155.65
Si2881		1.6647	ppm	0.047888	2.8767
Sn1899		0.020502	ppm	0.00057900	2.8224
Sr4077		1.1132	ppm	0.0051590	0.46346
Ti3349		1.9860	ppm	0.0056740	0.28571
Tl1908		-0.0033120	ppm	0.00047400	14.318
V_2924		0.31958	ppm	0.00047100	0.14754
Zn2062		0.44725	ppm	0.0025650	0.57345
Y_2243		5,733.3	Cts/S	7.6319	0.13311
Y_3600		54,220	Cts/S	119.96	0.22125
Y_3774		3,488.0	Cts/S	13.742	0.39398

320-62914-A-12-D

Acquire Date: 7/23/2020 7:34:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0022770	ppm	0.000018000	0.77279
Al3961		173.91	ppm	0.60731	0.34920
As1890		0.041446	ppm	0.00089100	2.1507
B_2089		0.054334	ppm	0.000068000	0.12592
Ba4554		1.3213	ppm	0.0066530	0.50351
Be3130		0.0052710	ppm	0.00013600	2.5865
Ca3179		145.01	ppm	0.76915	0.53039
Cd2144		0.0024320	ppm	0.000043000	1.7856
Co2286		0.091432	ppm	0.00010200	0.11159
Cr2677		0.51280	ppm	0.00055600	0.10850
Cu3247		0.23691	ppm	0.0033600	1.4184
Fe2599		213.17	ppm	0.73882	0.34659
K_7664		15.833	ppm	0.057213	0.36135
Mg2790		103.03	ppm	0.31660	0.30728
Mn2576		3.5600	ppm	0.014282	0.40118
Mo2020		0.0021720	ppm	0.00058600	26.992
Na5895		3.4631	ppm	0.015647	0.45181
Ni2316		0.59520	ppm	0.00047100	0.079190
P_1782		5.3050	ppm	0.020027	0.37752
Pb2203		0.070158	ppm	0.0031070	4.4289
S_1820		0.36570	ppm	0.0056180	1.5361
Sb2068		-0.0035830	ppm	0.0070150	195.82
Se1960		0.0040640	ppm	0.0039370	96.871
Si2881		1.7801	ppm	0.020007	1.1239
Sn1899		0.021152	ppm	0.000014000	0.068196
Sr4077		1.1501	ppm	0.0058390	0.50768
Ti3349		1.6461	ppm	0.0042630	0.25896

320-62914-A-12-D

Acquire Date: 7/23/2020 7:34:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0010400	ppm	0.000078000	7.5197
V_2924		0.32462	ppm	0.00050500	0.15566
Zn2062		0.51387	ppm	0.00038800	0.075591
Y_2243		5,730.4	Cts/S	11.547	0.20150
Y_3600		53,714	Cts/S	34.421	0.064081
Y_3774		3,499.0	Cts/S	7.3399	0.20977

320-62914-A-13-D

Acquire Date: 7/23/2020 7:38:20PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0033190	ppm	0.00027600	8.3180
Al3961		187.01	ppm	1.2567	0.67203
As1890		0.049956	ppm	0.00097000	1.9426
B_2089		0.061580	ppm	0.00039400	0.63905
Ba4554		1.7946	ppm	0.014580	0.81245
Be3130		0.0054960	ppm	0.00020500	3.7353
Ca3179		62.118	ppm	0.44210	0.71171
Cd2144		0.0013660	ppm	0.000095000	6.9583
Co2286		0.085611	ppm	0.00029500	0.34484
Cr2677		0.54083	ppm	0.0023150	0.42799
Cu3247		0.23549	ppm	0.00026300	0.11165
Fe2599		228.99	ppm	1.3671	0.59701
K_7664		18.427	ppm	0.21273	1.1544
Mg2790		106.12	ppm	0.42010	0.39589
Mn2576		3.1780	ppm	0.012944	0.40730
Mo2020		0.0021380	ppm	0.00031000	14.524
Na5895		2.7871	ppm	0.0079540	0.28537
Ni2316		0.60019	ppm	0.0027520	0.45858
P_1782		5.1349	ppm	0.010522	0.20492
Pb2203		0.069400	ppm	0.0024690	3.5583
S_1820		-0.20044	ppm	0.0016890	0.84280
Sb2068		-0.0028460	ppm	0.0021980	77.245
Se1960		0.0040480	ppm	0.0017260	42.654
Si2881		1.8765	ppm	0.019373	1.0324
Sn1899		0.021466	ppm	0.00034300	1.5976
Sr4077		0.93503	ppm	0.0085390	0.91325
Ti3349		2.1400	ppm	0.0081290	0.37988
Tl1908		-0.00028300	ppm	0.0011620	411.14
V_2924		0.38417	ppm	0.0015650	0.40742
Zn2062		0.54133	ppm	0.00047800	0.088287
Y_2243		5,743.8	Cts/S	4.6535	0.081017
Y_3600		54,014	Cts/S	130.23	0.24110
Y_3774		3,487.4	Cts/S	11.592	0.33239

320-62914-A-14-D

Acquire Date: 7/23/2020 7:42:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0030350	ppm	0.00058400	19.231
Al3961		184.40	ppm	0.43039	0.23339
As1890		0.061070	ppm	0.0014480	2.3717
B_2089		0.057623	ppm	0.00019300	0.33463
Ba4554		1.7443	ppm	0.0079440	0.45544
Be3130		0.0051690	ppm	0.000061000	1.1766
Ca3179		93.760	ppm	0.26251	0.27998
Cd2144		0.0021000	ppm	0.00013800	6.5871
Co2286		0.10901	ppm	0.00021100	0.19340
Cr2677		0.54822	ppm	0.00064200	0.11704
Cu3247		0.20929	ppm	0.0010750	0.51343
Fe2599		229.26	ppm	0.51003	0.22247
K_7664		17.220	ppm	0.11084	0.64367
Mg2790		111.61	ppm	0.11850	0.10618
Mn2576		5.3428	ppm	0.0082790	0.15496
Mo2020		0.0037900	ppm	0.00013500	3.5736
Na5895		3.1263	ppm	0.011958	0.38249
Ni2316		0.65207	ppm	0.0012940	0.19841
P_1782		4.7852	ppm	0.0092130	0.19253
Pb2203		0.075777	ppm	0.0072980	9.6307
S_1820		0.055661	ppm	0.0048480	8.7102
Sb2068		0.0015880	ppm	0.0061180	385.31
Se1960		0.0036180	ppm	0.0022540	62.298
Si2881		1.8346	ppm	0.050220	2.7374
Sn1899		0.021032	ppm	0.00072300	3.4363
Sr4077		0.99410	ppm	0.0038430	0.38660
Ti3349		2.2219	ppm	0.0054330	0.24452
Tl1908		0.00068600	ppm	0.0027260	397.07
V_2924		0.37994	ppm	0.00094800	0.24955
Zn2062		0.53311	ppm	0.0018670	0.35024
Y_2243		5,724.7	Cts/S	10.129	0.17693
Y_3600		53,798	Cts/S	118.41	0.22011
Y_3774		3,484.4	Cts/S	11.760	0.33751

320-62914-A-15-D

Acquire Date: 7/23/2020 7:46:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0018630	ppm	0.00053300	28.623
Al3961		181.33	ppm	1.0475	0.57768
As1890		0.054173	ppm	0.0021050	3.8856
B_2089		0.058506	ppm	0.000036000	0.062085
Ba4554		1.6721	ppm	0.013450	0.80439
Be3130		0.0055490	ppm	0.00013400	2.4152
Ca3179		88.746	ppm	0.68624	0.77327
Cd2144		0.0024090	ppm	0.000056000	2.3071
Co2286		0.094515	ppm	0.00051500	0.54522

320-62914-A-15-D

Acquire Date: 7/23/2020 7:46:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.51270	ppm	0.0028560	0.55710
Cu3247		0.21086	ppm	0.0015830	0.75091
Fe2599		222.02	ppm	1.8784	0.84605
K_7664		16.621	ppm	0.19935	1.1994
Mg2790		100.94	ppm	0.48393	0.47941
Mn2576		4.3927	ppm	0.018939	0.43115
Mo2020		0.0030020	ppm	0.00016700	5.5598
Na5895		2.2122	ppm	0.0037480	0.16941
Ni2316		0.58314	ppm	0.0020270	0.34758
P_1782		4.5701	ppm	0.0097360	0.21304
Pb2203		0.075596	ppm	0.0061880	8.1852
S_1820		0.20076	ppm	0.00037200	0.18505
Sb2068		-0.0027180	ppm	0.00016000	5.8899
Se1960		0.0022780	ppm	0.0061970	272.03
Si2881		1.8987	ppm	0.0065620	0.34560
Sn1899		0.021019	ppm	0.000069000	0.32928
Sr4077		0.98796	ppm	0.0082220	0.83225
Ti3349		1.9774	ppm	0.011403	0.57668
Tl1908		0.00050000	ppm	0.0025030	500.28
V_2924		0.36505	ppm	0.0016260	0.44536
Zn2062		0.50873	ppm	0.0026390	0.51877
Y_2243		5,744.6	Cts/S	13.895	0.24188
Y_3600		54,138	Cts/S	198.53	0.36672
Y_3774		3,482.9	Cts/S	22.264	0.63924

320-62914-A-16-D

Acquire Date: 7/23/2020 7:49:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0021560	ppm	0.00000	0.015328
Al3961		182.78	ppm	0.73560	0.40244
As1890		0.048770	ppm	0.00057300	1.1757
B_2089		0.056236	ppm	0.00013300	0.23644
Ba4554		1.5834	ppm	0.0044510	0.28107
Be3130		0.0054800	ppm	0.00000	0.0042430
Ca3179		63.640	ppm	0.24870	0.39079
Cd2144		0.0018860	ppm	0.000029000	1.5555
Co2286		0.094278	ppm	0.00040700	0.43189
Cr2677		0.52269	ppm	0.0017820	0.34085
Cu3247		0.26227	ppm	0.0010660	0.40638
Fe2599		226.70	ppm	1.1673	0.51490
K_7664		17.157	ppm	0.12796	0.74581
Mg2790		106.38	ppm	0.39699	0.37319
Mn2576		3.2211	ppm	0.014124	0.43850
Mo2020		0.0027150	ppm	0.00045700	16.815
Na5895		2.3969	ppm	0.022765	0.94977
Ni2316		0.62649	ppm	0.00049200	0.078540

320-62914-A-16-D

Acquire Date: 7/23/2020 7:49:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.5827	ppm	0.0093390	0.16729
Pb2203		0.070102	ppm	0.0054650	7.7952
S_1820		-0.19315	ppm	0.0083570	4.3266
Sb2068		0.0021490	ppm	0.0040860	190.17
Se1960		0.0028950	ppm	0.00029000	10.007
Si2881		1.7504	ppm	0.077162	4.4082
Sn1899		0.021108	ppm	0.00057200	2.7106
Sr4077		1.0572	ppm	0.0026390	0.24960
Ti3349		1.3687	ppm	0.0070850	0.51763
Tl1908		-0.0025300	ppm	0.0024410	96.492
V_2924		0.34941	ppm	0.0031160	0.89190
Zn2062		0.54937	ppm	0.0020740	0.37749
Y_2243		5,758.1	Cts/S	31.161	0.54118
Y_3600		53,766	Cts/S	337.90	0.62847
Y_3774		3,463.8	Cts/S	28.318	0.81755

CCV 2078482

Acquire Date: 7/23/2020 7:53:42PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50962	ppm	0.00082600	0.16212	.50000	Rel(%)	Pass	
Al3961		25.915	ppm	0.075966	0.29313	25.000	Rel(%)	Pass	
As1890		0.52087	ppm	0.0015070	0.28931	.50000	Rel(%)	Pass	
B_2089		1.0405	ppm	0.0028380	0.27278	1.0000	Rel(%)	Pass	
Ba4554		2.6180	ppm	0.014510	0.55423	2.5000	Rel(%)	Pass	
Be3130		0.52326	ppm	0.0013000	0.24837	.50000	Rel(%)	Pass	
Ca3179		26.824	ppm	0.11225	0.41848	25.000	Rel(%)	Pass	
Cd2144		0.52947	ppm	0.0012810	0.24200	.50000	Rel(%)	Pass	
Co2286		2.6413	ppm	0.0051050	0.19327	2.5000	Rel(%)	Pass	
Cr2677		2.5291	ppm	0.00099000	0.039125	2.5000	Rel(%)	Pass	
Cu3247		2.5771	ppm	0.0068130	0.26438	2.5000	Rel(%)	Pass	
Fe2599		26.570	ppm	0.010987	0.041353	25.000	Rel(%)	Pass	
K_7664		26.162	ppm	0.26675	1.0196	25.000	Rel(%)	Pass	
Mg2790		25.695	ppm	0.0013990	0.0054450	25.000	Rel(%)	Pass	
Mn2576		2.5834	ppm	0.0054300	0.21017	2.5000	Rel(%)	Pass	
Mo2020		1.0531	ppm	0.0032340	0.30705	1.0000	Rel(%)	Pass	
Na5895		25.786	ppm	0.14443	0.56009	25.000	Rel(%)	Pass	
Ni2316		2.6787	ppm	0.0024000	0.089608	2.5000	Rel(%)	Pass	
P_1782		2.6719	ppm	0.00039700	0.014847	2.5000	Rel(%)	Pass	
Pb2203		0.52824	ppm	0.0042910	0.81223	.50000	Rel(%)	Pass	
S_1820		2.5082	ppm	0.0041320	0.16476	2.5000	Rel(%)	Pass	
Sb2068		0.52285	ppm	0.0010380	0.19854	.50000	Rel(%)	Pass	
Se1960		0.52913	ppm	0.0022710	0.42912	.50000	Rel(%)	Pass	
Si2881		2.6989	ppm	0.031480	1.1664	2.5000	Rel(%)	Pass	
Sn1899		2.6390	ppm	0.0037510	0.14216	2.5000	Rel(%)	Pass	
Sr4077		2.6037	ppm	0.014385	0.55248	2.5000	Rel(%)	Pass	
Ti3349		1.0488	ppm	0.0014720	0.14037	1.0000	Rel(%)	Pass	
Tl1908		0.52798	ppm	0.0027390	0.51871	.50000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/23/2020 7:53:42PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5656	ppm	0.0056620	0.22070	2.5000	Rel(%)	Pass	
Zn2062		2.6117	ppm	0.0011840	0.045334	2.5000	Rel(%)	Pass	
Y_2243		5,714.9	Cts/S	0.53107	0.0092930				
Y_3600		54,019	Cts/S	269.14	0.49823				
Y_3774		3,397.0	Cts/S	14.673	0.43195				

CCB 2065750

Acquire Date: 7/23/2020 7:57:28PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012360	ppm	0.00011700	9.4407	.00000	Abs	Pass	
Al3961	**W**	**0.051453**	**ppm**	**0.027829**	**54.085**	**.00000**	**Abs**	**Warn High**	**0.05000**
As1890		0.000029000	ppm	0.00048700	1,685.3	.00000	Abs	Pass	
B_2089		0.0025940	ppm	0.00036800	14.182	.00000	Abs	Pass	
Ba4554		0.00089700	ppm	0.00053500	59.657	.00000	Abs	Pass	
Be3130		0.000011000	ppm	0.00012600	1,150.0	.00000	Abs	Pass	
Ca3179		0.010123	ppm	0.012482	123.30	.00000	Abs	Pass	
Cd2144		0.00014900	ppm	0.00019300	130.16	.00000	Abs	Pass	
Co2286		0.00012100	ppm	0.000064000	52.968	.00000	Abs	Pass	
Cr2677		0.00070000	ppm	0.00025400	36.242	.00000	Abs	Pass	
Cu3247		0.0016780	ppm	0.00035400	21.086	.00000	Abs	Pass	
Fe2599	**W**	**0.087877**	**ppm**	**0.0097130**	**11.053**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.0085450	ppm	0.013051	152.74	.00000	Abs	Pass	
Mg2790		0.011785	ppm	0.0027390	23.238	.00000	Abs	Pass	
Mn2576		0.00098500	ppm	0.0000070000	0.68326	.00000	Abs	Pass	
Mo2020		0.0063520	ppm	0.00073200	11.531	.00000	Abs	Pass	
Na5895		0.096814	ppm	0.0010950	1.1309	.00000	Abs	Pass	
Ni2316		0.0019100	ppm	0.00066500	34.832	.00000	Abs	Pass	
P_1782		-0.0077300	ppm	0.00092400	11.957	.00000	Abs	Pass	
Pb2203		0.00058300	ppm	0.0012390	212.30	.00000	Abs	Pass	
S_1820		0.0030380	ppm	0.0000070000	0.21591	.00000	Abs	Pass	
Sb2068		0.0041910	ppm	0.000015000	0.34900	.00000	Abs	Pass	
Se1960		0.00040400	ppm	0.00045000	111.25	.00000	Abs	Pass	
Si2881		0.055673	ppm	0.011863	21.308	.00000	Abs	Pass	
Sn1899		0.0035100	ppm	0.00079400	22.612	.00000	Abs	Pass	
Sr4077		0.00055600	ppm	0.0000030000	0.45322	.00000	Abs	Pass	
Ti3349		0.0041630	ppm	0.000061000	1.4768	.00000	Abs	Pass	
Tl1908		0.0047670	ppm	0.0038030	79.781	.00000	Abs	Pass	
V_2924		0.00091200	ppm	0.00027800	30.453	.00000	Abs	Pass	
Zn2062		0.0041880	ppm	0.00028100	6.7061	.00000	Abs	Pass	
Y_2243		5,799.1	Cts/S	13.100	0.22591				
Y_3600		55,188	Cts/S	135.98	0.24640				
Y_3774		3,395.6	Cts/S	12.505	0.36826				

320-62914-A-17-D

Acquire Date: 7/23/2020 8:01:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0022320	ppm	0.0011160	50.017
Al3961		179.55	ppm	0.38378	0.21375
As1890		0.050277	ppm	0.0033230	6.6104
B_2089		0.055941	ppm	0.00095400	1.7059
Ba4554		1.9604	ppm	0.0057550	0.29358
Be3130		0.0052000	ppm	0.000044000	0.84515
Ca3179		110.64	ppm	0.30524	0.27588
Cd2144		0.0029620	ppm	0.0000070000	0.23060
Co2286		0.096115	ppm	0.00014000	0.14525
Cr2677		0.50696	ppm	0.00079000	0.15590
Cu3247		0.21426	ppm	0.00058400	0.27255
Fe2599		220.18	ppm	0.20733	0.094163
K_7664		16.773	ppm	0.092313	0.55037
Mg2790		100.08	ppm	0.29360	0.29338
Mn2576		5.5631	ppm	0.017793	0.31983
Mo2020		0.0046000	ppm	0.00022800	4.9628
Na5895		1.9722	ppm	0.028713	1.4559
Ni2316		0.59620	ppm	0.0036120	0.60576
P_1782		4.6855	ppm	0.0088800	0.18953
Pb2203		0.067812	ppm	0.0018030	2.6586
S_1820		0.21083	ppm	0.0089280	4.2347
Sb2068		-0.00041100	ppm	0.0050490	1,228.0
Se1960		0.0037830	ppm	0.0011180	29.551
Si2881		1.7918	ppm	0.023761	1.3261
Sn1899		0.021491	ppm	0.00082600	3.8446
Sr4077		1.0156	ppm	0.0034060	0.33540
Ti3349		1.6477	ppm	0.0042100	0.25552
Tl1908		-0.00061100	ppm	0.0043230	707.39
V_2924		0.35745	ppm	0.0015320	0.42853
Zn2062		0.50932	ppm	0.00061400	0.12057
Y_2243		5,809.9	Cts/S	11.778	0.20273
Y_3600		54,649	Cts/S	224.96	0.41164
Y_3774		3,544.8	Cts/S	19.522	0.55072

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Acquire Date: 7/23/2020 8:05:17PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00076700	ppm	0.00013100	17.118
Al3961		0.054800	ppm	0.0023810	4.3457
As1890		-0.0016050	ppm	0.0015120	94.174
B_2089		0.00067600	ppm	0.00088000	130.31
Ba4554		0.00038500	ppm	0.00090000	233.77
Be3130		-0.00039400	ppm	0.00029500	74.996
Ca3179		0.0034080	ppm	0.0052640	154.47
Cd2144		0.00012400	ppm	0.0000030000	2.3296
Co2286		-0.00042400	ppm	0.00010500	24.764

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Acquire Date: 7/23/2020 8:05:17PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00010400	ppm	0.00070000	674.37
Cu3247		0.00090200	ppm	0.00095700	106.00
Fe2599		0.14759	ppm	0.025034	16.962
K_7664		0.0099470	ppm	0.060199	605.20
Mg2790		0.0091950	ppm	0.0087900	95.599
Mn2576		0.0010660	ppm	0.000049000	4.5860
Mo2020		0.00039400	ppm	0.000092000	23.273
Na5895		0.061802	ppm	0.0023900	3.8677
Ni2316		0.0015170	ppm	0.00030900	20.353
P_1782		-0.0050040	ppm	0.0014950	29.883
Pb2203		0.0011470	ppm	0.00038200	33.309
S_1820		0.0020400	ppm	0.00047500	23.270
Sb2068		0.00023100	ppm	0.0014220	616.20
Se1960		-0.00046500	ppm	0.00045700	98.269
Si2881		0.023789	ppm	0.069470	292.03
Sn1899		0.00093800	ppm	0.000095000	10.112
Sr4077		0.00059800	ppm	0.00019400	32.479
Ti3349		0.0040570	ppm	0.00088500	21.805
Tl1908		-0.0023690	ppm	0.0013980	58.989
V_2924		0.00041000	ppm	0.00039600	96.522
Zn2062		0.0039260	ppm	0.00026100	6.6475
Y_2243		5,760.7	Cts/S	13.938	0.24195
Y_3600		54,699	Cts/S	119.05	0.21765
Y_3774		3,370.5	Cts/S	4.4881	0.13316

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Acquire Date: 7/23/2020 8:09:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00089900	ppm	0.00077100	85.770
Al3961		0.048673	ppm	0.0094390	19.393
As1890		-0.0018980	ppm	0.00077400	40.770
B_2089		0.00078700	ppm	0.00074300	94.459
Ba4554		0.000077000	ppm	0.00010400	135.14
Be3130		-0.00019600	ppm	0.00036200	184.90
Ca3179		-0.0067410	ppm	0.015822	234.72
Cd2144		0.000031000	ppm	0.000071000	227.89
Co2286		0.000088000	ppm	0.00014300	162.35
Cr2677		0.00015100	ppm	0.00012000	79.696
Cu3247		0.000044000	ppm	0.00077300	1,738.8
Fe2599		0.0049880	ppm	0.0033590	67.351
K_7664		-0.032809	ppm	0.0099980	30.473
Mg2790		0.0078570	ppm	0.0062680	79.777
Mn2576		0.00052400	ppm	0.000096000	18.347
Mo2020		0.00023000	ppm	0.00019500	84.871
Na5895		0.062435	ppm	0.021786	34.894
Ni2316		0.000024000	ppm	0.00039600	1,635.4

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Acquire Date: 7/23/2020 8:09:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0068100	ppm	0.0042840	62.905
Pb2203		-0.00047000	ppm	0.00075000	159.70
S_1820		-0.0011580	ppm	0.0077540	669.88
Sb2068		0.00051100	ppm	0.00031500	61.542
Se1960		-0.00025600	ppm	0.0032640	1,275.0
Si2881		0.075525	ppm	0.069116	91.515
Sn1899		0.00080800	ppm	0.000080000	9.8798
Sr4077		0.00049400	ppm	0.00020500	41.516
Ti3349		0.0011900	ppm	0.00050400	42.313
Tl1908		0.000047000	ppm	0.0020440	4,357.5
V_2924		0.00033000	ppm	0.00056800	172.10
Zn2062		0.0020710	ppm	0.00050700	24.494
Y_2243		5,779.3	Cts/S	9.9044	0.17138
Y_3600		54,827	Cts/S	324.32	0.59153
Y_3774		3,351.2	Cts/S	4.3761	0.13058

CD 25

Acquire Date: 7/23/2020 8:13:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00043600	ppm	0.00011500	26.362
Al3961		0.039959	ppm	0.011547	28.896
As1890		-0.0020910	ppm	0.00050500	24.137
B_2089		0.00048600	ppm	0.0014620	300.85
Ba4554		0.00027700	ppm	0.00010700	38.529
Be3130		-0.00019300	ppm	0.00033500	173.86
Ca3179		0.0048300	ppm	0.011674	241.68
Cd2144	**W**	**24.729**	**ppm**	**0.00097600**	**0.0039450**
Co2286		-0.00093600	ppm	0.000017000	1.7622
Cr2677		-0.0014540	ppm	0.00074300	51.086
Cu3247		0.00017600	ppm	0.00069600	396.17
Fe2599		0.0066980	ppm	0.0011670	17.423
K_7664		-0.0080870	ppm	0.089405	1,105.6
Mg2790		0.00078400	ppm	0.00045300	57.724
Mn2576		0.00028800	ppm	0.000049000	16.994
Mo2020		0.00056000	ppm	0.000085000	15.108
Na5895		0.049899	ppm	0.017282	34.634
Ni2316		-0.0013870	ppm	0.00051100	36.837
P_1782		-0.0073050	ppm	0.00082400	11.278
Pb2203		-0.0015450	ppm	0.0013190	85.369
S_1820		0.0019690	ppm	0.00063100	32.046
Sb2068		0.0018520	ppm	0.0028150	152.05
Se1960		0.0020510	ppm	0.0022440	109.42
Si2881		0.0011010	ppm	0.011684	1,061.0
Sn1899		0.00068800	ppm	0.00047000	68.274
Sr4077		0.00031900	ppm	0.00025300	79.194
Ti3349		-0.00027200	ppm	0.00043300	159.29

CD 25

Acquire Date: 7/23/2020 8:13:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0016540	ppm	0.00027900	16.874
V_2924		-0.00042100	ppm	0.00015300	36.315
Zn2062		0.0015170	ppm	0.000013000	0.83625
Y_2243		5,767.0	Cts/S	50.005	0.86709
Y_3600		54,408	Cts/S	259.07	0.47616
Y_3774		3,365.2	Cts/S	18.076	0.53715

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Acquire Date: 7/23/2020 8:17:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011970	ppm	0.00074000	61.867
Al3961		0.027404	ppm	0.010082	36.790
As1890		0.00052000	ppm	0.00075300	144.77
B_2089		0.00020700	ppm	0.000023000	11.088
Ba4554		-0.00038600	ppm	0.000087000	22.636
Be3130		0.000010000	ppm	0.00036600	3,800.5
Ca3179		0.0014670	ppm	0.012659	863.18
Cd2144		0.0011370	ppm	0.000039000	3.3919
Co2286		-0.00023900	ppm	0.00014400	60.142
Cr2677		-0.00012100	ppm	0.00043900	362.95
Cu3247		0.00055700	ppm	0.0013480	242.00
Fe2599		-0.013994	ppm	0.0038680	27.641
K_7664		-0.038421	ppm	0.015168	39.480
Mg2790		0.0042410	ppm	0.0085190	200.85
Mn2576		0.000038000	ppm	0.000044000	116.98
Mo2020		0.00094000	ppm	0.00057700	61.441
Na5895		0.045450	ppm	0.021722	47.792
Ni2316		0.0024230	ppm	0.0011640	48.025
P_1782		-0.010586	ppm	0.0045970	43.428
Pb2203		-0.0014790	ppm	0.00049300	33.302
S_1820		0.0029330	ppm	0.0020380	69.477
Sb2068		0.00052000	ppm	0.0014010	269.29
Se1960		0.000035000	ppm	0.00024900	720.63
Si2881		-0.032433	ppm	0.026984	83.198
Sn1899		0.00083900	ppm	0.00078700	93.727
Sr4077		0.00028600	ppm	0.00021600	75.575
Ti3349		0.00040600	ppm	0.00074000	182.19
Tl1908		-0.0013450	ppm	0.0016810	125.00
V_2924		0.00025200	ppm	0.00011400	45.231
Zn2062		0.00075200	ppm	0.00032100	42.718
Y_2243		5,747.2	Cts/S	3.2808	0.057085
Y_3600		54,454	Cts/S	274.82	0.50469
Y_3774		3,351.8	Cts/S	7.8504	0.23422

P 75

Acquire Date: 7/23/2020 8:21:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00039300	ppm	0.00030400	77.401
Al3961		0.024963	ppm	0.012035	48.211
As1890		-0.00091000	ppm	0.0020540	225.78
B_2089		0.00058300	ppm	0.00021100	36.105
Ba4554		0.000013000	ppm	0.00041300	3,100.3
Be3130		-0.00022600	ppm	0.000032000	13.985
Ca3179		-0.012564	ppm	0.0035150	27.973
Cd2144		0.00023000	ppm	0.000017000	7.3794
Co2286		-0.00047900	ppm	0.00024400	50.828
Cr2677		-0.0012240	ppm	0.0000080000	0.64455
Cu3247		-0.00045300	ppm	0.00035400	78.044
Fe2599		-0.0053400	ppm	0.00087400	16.362
K_7664		-0.015622	ppm	0.019955	127.74
Mg2790		0.0037460	ppm	0.0049790	132.90
Mn2576		.0000060000	ppm	0.000057000	959.50
Mo2020		0.00054400	ppm	0.00015300	28.064
Na5895		0.049666	ppm	0.0059700	12.021
Ni2316		0.00029200	ppm	0.00083100	284.48
P_1782		67.520	ppm	0.0053700	0.0079530
Pb2203		0.00056300	ppm	0.0025980	461.20
S_1820		-0.0019180	ppm	0.0021470	111.94
Sb2068		-0.0016940	ppm	0.0025350	149.67
Se1960		0.000018000	ppm	0.0020430	11,064
Si2881		0.014888	ppm	0.015721	105.60
Sn1899		0.00027700	ppm	0.00039200	141.65
Sr4077		-0.00016800	ppm	0.000058000	34.692
Ti3349		0.00034800	ppm	0.00092900	267.15
Tl1908		0.00068300	ppm	0.0023260	340.77
V_2924		0.00028500	ppm	0.00039500	138.73
Zn2062		0.0018480	ppm	0.00023200	12.575
Y_2243		5,786.5	Cts/S	50.053	0.86500
Y_3600		54,910	Cts/S	79.693	0.14513
Y_3774		3,401.7	Cts/S	18.783	0.55215

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Acquire Date: 7/23/2020 8:25:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00069700	ppm	0.00036600	52.447
Al3961		-0.00068300	ppm	0.0043350	634.39
As1890		-0.0031080	ppm	0.0018510	59.575
B_2089		0.000065000	ppm	0.0015740	2,423.6
Ba4554		0.000027000	ppm	0.00012200	448.52
Be3130		-0.00011400	ppm	0.00012900	113.03
Ca3179		-0.010558	ppm	0.016797	159.10
Cd2144		0.0016410	ppm	0.00082600	50.309
Co2286		-0.00037200	ppm	0.00017800	47.843

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Acquire Date: 7/23/2020 8:25:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		.0000030000	ppm	0.00033100	9,709.5
Cu3247		-0.0011670	ppm	0.0011320	97.013
Fe2599		-0.0054990	ppm	0.00044900	8.1634
K_7664		-0.050898	ppm	0.0030710	6.0334
Mg2790		-0.0096530	ppm	0.0013890	14.388
Mn2576		0.000021000	ppm	0.000024000	114.64
Mo2020		0.00042600	ppm	0.00024400	57.202
Na5895		0.033960	ppm	0.00047600	1.4003
Ni2316		0.00079100	ppm	0.00053000	67.012
P_1782		0.12842	ppm	0.0095600	7.4443
Pb2203		-0.0022290	ppm	0.0020640	92.582
S_1820		0.0013810	ppm	0.0052050	376.81
Sb2068		0.0022740	ppm	0.00067300	29.585
Se1960		0.0037990	ppm	0.0047090	123.97
Si2881		0.041317	ppm	0.0056720	13.727
Sn1899		0.00067100	ppm	0.00024600	36.705
Sr4077		-0.00014500	ppm	0.00028900	199.20
Ti3349		-0.00037700	ppm	0.00032600	86.618
Tl1908		-0.0011210	ppm	0.00035200	31.444
V_2924		0.00024300	ppm	0.000087000	35.640
Zn2062		-0.00028200	ppm	0.00011200	39.913
Y_2243		5,772.5	Cts/S	19.084	0.33060
Y_3600		54,742	Cts/S	186.27	0.34028
Y_3774		3,388.1	Cts/S	12.046	0.35553

SI 250

Acquire Date: 7/23/2020 8:29:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011360	ppm	0.00069700	61.355
Al3961		-0.0066600	ppm	0.022511	337.98
As1890		0.0088170	ppm	0.0012290	13.940
B_2089		-0.0049030	ppm	0.00065000	13.257
Ba4554		0.000048000	ppm	0.00072200	1,507.8
Be3130		-0.00036800	ppm	0.000029000	7.9814
Ca3179		-0.0025370	ppm	0.00085100	33.552
Cd2144		0.0015000	ppm	0.0000060000	0.39283
Co2286		0.0023250	ppm	0.00032800	14.109
Cr2677		-0.00066700	ppm	0.00029100	43.683
Cu3247		-0.00071200	ppm	0.00091500	128.55
Fe2599		-0.013623	ppm	0.010615	77.915
K_7664		-0.057979	ppm	0.042356	73.054
Mg2790		-0.0024420	ppm	0.0013520	55.354
Mn2576		0.00017200	ppm	0.000035000	20.614
Mo2020		0.00033000	ppm	0.0000020000	0.58878
Na5895		0.032744	ppm	0.0064430	19.677
Ni2316		0.0018510	ppm	0.00093700	50.602

SI 250

Acquire Date: 7/23/2020 8:29:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.057236	ppm	0.0062540	10.926
Pb2203	**F**	**-0.012309**	**ppm**	**0.00060400**	**4.9106**
S_1820		0.0047030	ppm	0.0034290	72.905
Sb2068		0.010642	ppm	0.00065000	6.1075
Se1960		-0.00093300	ppm	0.0056290	603.31
Si2881	**W**	**228.88**	**ppm**	**1.7143**	**0.74900**
Sn1899		0.000019000	ppm	0.00036600	1,901.5
Sr4077		0.000016000	ppm	0.00024100	1,488.8
Ti3349		0.0029940	ppm	0.00014300	4.7604
Tl1908		-0.0039280	ppm	0.00047700	12.137
V_2924		0.00071700	ppm	0.00019300	26.953
Zn2062		0.00065100	ppm	0.00022200	34.160
Y_2243		5,880.7	Cts/S	9.0519	0.15393
Y_3600		55,516	Cts/S	62.671	0.11289
Y_3774		3,443.6	Cts/S	6.1022	0.17721

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Acquire Date: 7/23/2020 8:33:05PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00074000	ppm	0.00056700	76.608
Al3961		0.029047	ppm	0.0023730	8.1694
As1890		0.00041700	ppm	0.0052180	1,250.5
B_2089		-0.00019300	ppm	0.00078800	408.78
Ba4554		-0.00047300	ppm	0.00034500	73.037
Be3130		.0000050000	ppm	0.00010800	2,087.4
Ca3179		-0.0085680	ppm	0.0062340	72.765
Cd2144		0.00064600	ppm	0.000093000	14.455
Co2286		0.000060000	ppm	0.00016100	269.24
Cr2677		-0.00010500	ppm	0.00016200	154.50
Cu3247		-0.00040700	ppm	0.00059000	144.97
Fe2599		-0.011154	ppm	0.0096740	86.732
K_7664		-0.039799	ppm	0.0016230	4.0776
Mg2790		0.0014110	ppm	0.0028960	205.25
Mn2576		0.00014100	ppm	0.0000080000	5.5295
Mo2020		0.00032300	ppm	0.00033900	104.98
Na5895		0.047558	ppm	0.0097050	20.407
Ni2316		0.00071900	ppm	0.00011500	15.990
P_1782		0.018454	ppm	0.0026850	14.548
Pb2203		-0.0025560	ppm	0.00073200	28.640
S_1820		-0.00039400	ppm	0.0067110	1,703.6
Sb2068		-0.00021400	ppm	0.00042000	196.53
Se1960		0.0028530	ppm	0.0039690	139.11
Si2881		1.2626	ppm	0.21516	17.042
Sn1899		0.00094800	ppm	0.00062200	65.565
Sr4077		0.00015400	ppm	0.000085000	55.189
Ti3349		0.000036000	ppm	0.00028000	783.55

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Acquire Date: 7/23/2020 8:33:05PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.00062400	ppm	0.0011520	184.54
V_2924		.0000030000	ppm	0.00069400	26,871
Zn2062		0.00021000	ppm	0.00028500	135.56
Y_2243		5,795.5	Cts/S	1.5265	0.026340
Y_3600		55,062	Cts/S	130.64	0.23726
Y_3774		3,403.3	Cts/S	26.082	0.76636

CCV 2078482

Acquire Date: 7/23/2020 8:37:05PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50976	ppm	0.00059300	0.11631	.50000	Rel(%)	Pass	
Al3961		25.951	ppm	0.063993	0.24659	25.000	Rel(%)	Pass	
As1890		0.51962	ppm	0.0045470	0.87513	.50000	Rel(%)	Pass	
B_2089		1.0449	ppm	0.0022130	0.21180	1.0000	Rel(%)	Pass	
Ba4554		2.6148	ppm	0.0094230	0.36037	2.5000	Rel(%)	Pass	
Be3130		0.52460	ppm	0.0014870	0.28340	.50000	Rel(%)	Pass	
Ca3179		26.701	ppm	0.12414	0.46494	25.000	Rel(%)	Pass	
Cd2144		0.53353	ppm	0.0011890	0.22293	.50000	Rel(%)	Pass	
Co2286		2.6504	ppm	0.0060730	0.22913	2.5000	Rel(%)	Pass	
Cr2677		2.4980	ppm	0.010465	0.41894	2.5000	Rel(%)	Pass	
Cu3247		2.5660	ppm	0.0042180	0.16439	2.5000	Rel(%)	Pass	
Fe2599		25.812	ppm	0.023969	0.092860	25.000	Rel(%)	Pass	
K_7664		26.072	ppm	0.20456	0.78461	25.000	Rel(%)	Pass	
Mg2790		25.496	ppm	0.14855	0.58266	25.000	Rel(%)	Pass	
Mn2576		2.5716	ppm	0.011258	0.43779	2.5000	Rel(%)	Pass	
Mo2020		1.0565	ppm	0.0058940	0.55784	1.0000	Rel(%)	Pass	
Na5895		25.858	ppm	0.15246	0.58962	25.000	Rel(%)	Pass	
Ni2316		2.6971	ppm	0.0091680	0.33993	2.5000	Rel(%)	Pass	
P_1782		2.7001	ppm	0.0025580	0.094745	2.5000	Rel(%)	Pass	
Pb2203		0.53519	ppm	0.0042080	0.78628	.50000	Rel(%)	Pass	
S_1820		2.5037	ppm	0.0012220	0.048822	2.5000	Rel(%)	Pass	
Sb2068		0.52770	ppm	0.0070140	1.3292	.50000	Rel(%)	Pass	
Se1960		0.52877	ppm	0.0085480	1.6165	.50000	Rel(%)	Pass	
Si2881	**F**	**2.8482**	**ppm**	**0.016948**	**0.59504**	**2.5000**	**Rel(%)**	**Fail High**	**10.450**
Sn1899		2.6466	ppm	0.0091970	0.34749	2.5000	Rel(%)	Pass	
Sr4077		2.6009	ppm	0.0096530	0.37114	2.5000	Rel(%)	Pass	
Ti3349		1.0383	ppm	0.0040310	0.38821	1.0000	Rel(%)	Pass	
Tl1908		0.53248	ppm	0.0063720	1.1967	.50000	Rel(%)	Pass	
V_2924		2.5715	ppm	0.010229	0.39778	2.5000	Rel(%)	Pass	
Zn2062		2.6007	ppm	0.013078	0.50284	2.5000	Rel(%)	Pass	
Y_2243		5,695.6	Cts/S	20.286	0.35616				
Y_3600		54,257	Cts/S	299.19	0.55143				
Y_3774		3,425.3	Cts/S	24.552	0.71679				

CCB 2065750

Acquire Date: 7/23/2020 8:40:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00086000	ppm	0.00021500	24.960	.00000	Abs	Pass	
Al3961		0.0043890	ppm	0.0050500	115.06	.00000	Abs	Pass	
As1890		0.00053400	ppm	0.0019570	366.22	.00000	Abs	Pass	
B_2089		0.0024670	ppm	0.0011870	48.106	.00000	Abs	Pass	
Ba4554		0.00057100	ppm	0.00082900	145.07	.00000	Abs	Pass	
Be3130		0.000035000	ppm	0.00014300	404.28	.00000	Abs	Pass	
Ca3179		0.0080280	ppm	0.0016870	21.012	.00000	Abs	Pass	
Cd2144		0.00042700	ppm	0.000050000	11.767	.00000	Abs	Pass	
Co2286		0.00010700	ppm	0.00024500	228.53	.00000	Abs	Pass	
Cr2677		0.00093200	ppm	0.00045400	48.758	.00000	Abs	Pass	
Cu3247		0.0021390	ppm	0.00091200	42.651	.00000	Abs	Pass	
Fe2599		0.043877	ppm	0.013765	31.371	.00000	Abs	Pass	
K_7664		-0.015615	ppm	0.020364	130.42	.00000	Abs	Pass	
Mg2790		0.0059840	ppm	0.0058850	98.358	.00000	Abs	Pass	
Mn2576		0.00065000	ppm	0.000085000	13.095	.00000	Abs	Pass	
Mo2020		0.0069870	ppm	0.00073200	10.475	.00000	Abs	Pass	
Na5895		0.059446	ppm	0.022656	38.113	.00000	Abs	Pass	
Ni2316		0.0025690	ppm	0.000032000	1.2607	.00000	Abs	Pass	
P_1782		0.011143	ppm	0.00089400	8.0235	.00000	Abs	Pass	
Pb2203		0.0039730	ppm	0.00044100	11.110	.00000	Abs	Pass	
S_1820		0.0020780	ppm	0.00065000	31.264	.00000	Abs	Pass	
Sb2068		0.0044210	ppm	0.0015930	36.031	.00000	Abs	Pass	
Se1960		0.0026420	ppm	0.00068300	25.839	.00000	Abs	Pass	
Si2881	**W**	**0.13013**	**ppm**	**0.011485**	**8.8253**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0041760	ppm	0.00042500	10.172	.00000	Abs	Pass	
Sr4077		0.0012430	ppm	0.000087000	7.0181	.00000	Abs	Pass	
Ti3349		0.0052560	ppm	0.0000080000	0.14668	.00000	Abs	Pass	
Tl1908		-0.00065800	ppm	0.00058200	88.472	.00000	Abs	Pass	
V_2924		0.00046200	ppm	0.00034400	74.578	.00000	Abs	Pass	
Zn2062		0.0017760	ppm	0.000083000	4.6730	.00000	Abs	Pass	
Y_2243		5,767.1	Cts/S	7.7060	0.13362				
Y_3600		54,783	Cts/S	150.94	0.27552				
Y_3774		3,391.5	Cts/S	9.8544	0.29056				

CCVL 2062513

Acquire Date: 7/23/2020 8:44:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0045360	ppm	0.00085800	18.921	.00500	Rel(%)	Pass	
Al3961		0.23533	ppm	0.0074360	3.1598	.20000	Rel(%)	Pass	
As1890		0.037685	ppm	0.0010140	2.6904	.04000	Rel(%)	Pass	
B_2089		0.20890	ppm	0.00078800	0.37703	.20000	Rel(%)	Pass	
Ba4554		0.021426	ppm	0.00012700	0.59186	.02000	Rel(%)	Pass	
Be3130		0.0029860	ppm	0.00056500	18.907	.00300	Rel(%)	Pass	
Ca3179		0.55398	ppm	0.0066910	1.2077	.50000	Rel(%)	Pass	
Cd2144		0.0031930	ppm	0.000045000	1.4043	.00300	Rel(%)	Pass	
Co2286		0.010533	ppm	0.000080000	0.76125	.01000	Rel(%)	Pass	
Cr2677		0.010278	ppm	0.00027500	2.6721	.01000	Rel(%)	Pass	

CCVL 2062513

Acquire Date: 7/23/2020 8:44:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.016386	ppm	0.000033000	0.20231	.01500	Rel(%)	Pass	
Fe2599		0.090309	ppm	0.010224	11.321	.10000	Rel(%)	Pass	
K_7664		1.0274	ppm	0.040514	3.9435	1.0000	Rel(%)	Pass	
Mg2790		0.51779	ppm	0.00032400	0.062494	.50000	Rel(%)	Pass	
Mn2576		0.010919	ppm	0.00013700	1.2520	.01000	Rel(%)	Pass	
Mo2020		0.022529	ppm	0.00012200	0.53939	.02000	Rel(%)	Pass	
Na5895		0.53678	ppm	0.027001	5.0302	.50000	Rel(%)	Pass	
Ni2316		0.012968	ppm	0.00024800	1.9145	.01000	Rel(%)	Pass	
P_1782		0.55237	ppm	0.00050200	0.090819	.50000	Rel(%)	Pass	
Pb2203		0.011404	ppm	0.0052970	46.447	.01000	Rel(%)	Pass	
S_1820		0.51487	ppm	0.0057260	1.1121	.50000	Rel(%)	Pass	
Sb2068		0.031367	ppm	0.0036630	11.678	.03000	Rel(%)	Pass	
Se1960		0.044844	ppm	0.0022310	4.9758	.04000	Rel(%)	Pass	
Si2881		0.56933	ppm	0.051893	9.1147	.50000	Rel(%)	Pass	
Sn1899		0.025260	ppm	0.00073400	2.9053	.02000	Rel(%)	Pass	
Sr4077		0.054610	ppm	0.00039100	0.71660	.05000	Rel(%)	Pass	
Ti3349		0.011603	ppm	0.00025900	2.2297	.01000	Rel(%)	Pass	
Tl1908		0.030048	ppm	0.0018690	6.2204	.03000	Rel(%)	Pass	
V_2924		0.020369	ppm	0.00035500	1.7406	.02000	Rel(%)	Pass	
Zn2062		0.022334	ppm	0.00012600	0.56243	.02000	Rel(%)	Pass	
Y_2243		5,794.2	Cts/S	9.2857	0.16026				
Y_3600		54,632	Cts/S	43.952	0.080451				
Y_3774		3,388.3	Cts/S	4.4403	0.13105				

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Acquire Date: 7/23/2020 8:48:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012910	ppm	0.00029100	22.559	.00000	Abs	Pass	
Al3961		0.0074690	ppm	0.037348	500.05	.00000	Abs	Pass	
As1890		-0.0016140	ppm	0.00015400	9.5188	.00000	Abs	Pass	
B_2089		0.00069100	ppm	0.00045500	65.801	.00000	Abs	Pass	
Ba4554		-0.00036800	ppm	0.00044000	119.72	.00000	Abs	Pass	
Be3130		-0.00038100	ppm	0.00026200	68.833	.00000	Abs	Pass	
Ca3179		-0.0045250	ppm	0.0093090	205.72	.00000	Abs	Pass	
Cd2144		0.000049000	ppm	0.000060000	124.37	.00000	Abs	Pass	
Co2286		-0.00047300	ppm	0.00014100	29.873	.00000	Abs	Pass	
Cr2677		0.0010520	ppm	0.00034600	32.891	.00000	Abs	Pass	
Cu3247		0.00056600	ppm	0.00035600	62.883	.00000	Abs	Pass	
Fe2599		-0.017211	ppm	0.0029140	16.929	.00000	Abs	Pass	
K_7664		-0.010359	ppm	0.046657	450.42	.00000	Abs	Pass	
Mg2790		0.0023040	ppm	0.016569	719.10	.00000	Abs	Pass	
Mn2576		0.000054000	ppm	0.000053000	99.291	.00000	Abs	Pass	
Mo2020		0.00083700	ppm	0.00011200	13.345	.00000	Abs	Pass	
Na5895		0.041284	ppm	0.0073060	17.698	.00000	Abs	Pass	
Ni2316		0.0013030	ppm	0.00052500	40.304	.00000	Abs	Pass	
P_1782		0.0061690	ppm	0.0057390	93.030	.00000	Abs	Pass	
Pb2203		-0.0016830	ppm	0.00030500	18.101	.00000	Abs	Pass	

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Acquire Date: 7/23/2020 8:48:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.0048610	ppm	0.0042500	87.429	.00000	Abs	Pass	
Sb2068		0.0014620	ppm	0.0011980	81.930	.00000	Abs	Pass	
Se1960		0.00075200	ppm	0.00057500	76.503	.00000	Abs	Pass	
Si2881		0.078443	ppm	0.019591	24.974	.00000	Abs	Pass	
Sn1899		0.0011230	ppm	0.000082000	7.2802	.00000	Abs	Pass	
Sr4077		0.00016400	ppm	0.000075000	45.611	.00000	Abs	Pass	
Ti3349		0.00090900	ppm	0.00023300	25.614	.00000	Abs	Pass	
Tl1908		-0.0010720	ppm	0.0011020	102.81	.00000	Abs	Pass	
V_2924		0.00091400	ppm	0.000081000	8.8804	.00000	Abs	Pass	
Zn2062		0.00099000	ppm	0.00023100	23.344	.00000	Abs	Pass	
Y_2243		5,725.8	Cts/S	3.7256	0.065066				
Y_3600		54,745	Cts/S	538.95	0.98446				
Y_3774		3,427.2	Cts/S	13.431	0.39190				

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Acquire Date: 7/23/2020 8:52:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00045300	ppm	0.00012700	27.943	.00000	Abs	Pass	
Al3961		0.026040	ppm	0.0049150	18.876	.00000	Abs	Pass	
As1890		-0.0016710	ppm	0.0016950	101.45	.00000	Abs	Pass	
B_2089		0.00035700	ppm	0.0010130	283.63	.00000	Abs	Pass	
Ba4554		.0000070000	ppm	0.00039400	5,292.7	.00000	Abs	Pass	
Be3130		-0.00010100	ppm	0.000080000	79.631	.00000	Abs	Pass	
Ca3179		-0.0094680	ppm	0.0088000	92.948	.00000	Abs	Pass	
Cd2144		0.000075000	ppm	0.000019000	24.842	.00000	Abs	Pass	
Co2286		-0.00028400	ppm	0.00039300	138.30	.00000	Abs	Pass	
Cr2677		0.00060700	ppm	0.00018600	30.637	.00000	Abs	Pass	
Cu3247		.0000010000	ppm	0.00021100	22,982	.00000	Abs	Pass	
Fe2599		-0.017375	ppm	0.0069880	40.215	.00000	Abs	Pass	
K_7664		-0.054600	ppm	0.039700	72.711	.00000	Abs	Pass	
Mg2790		0.0021410	ppm	0.00024400	11.390	.00000	Abs	Pass	
Mn2576		0.000047000	ppm	0.00012500	264.71	.00000	Abs	Pass	
Mo2020		0.00049200	ppm	0.000030000	6.1475	.00000	Abs	Pass	
Na5895		0.031930	ppm	0.0075760	23.726	.00000	Abs	Pass	
Ni2316		0.0014790	ppm	0.00055700	37.655	.00000	Abs	Pass	
P_1782		0.0026900	ppm	0.0028980	107.75	.00000	Abs	Pass	
Pb2203		0.00027000	ppm	0.0017600	653.00	.00000	Abs	Pass	
S_1820		0.0083490	ppm	0.0020550	24.617	.00000	Abs	Pass	
Sb2068		0.0053740	ppm	0.0023600	43.911	.00000	Abs	Pass	
Se1960		-0.0027120	ppm	0.0038050	140.27	.00000	Abs	Pass	
Si2881		0.087854	ppm	0.014326	16.307	.00000	Abs	Pass	
Sn1899		0.00083600	ppm	0.00050600	60.498	.00000	Abs	Pass	
Sr4077		0.00024700	ppm	0.000045000	18.237	.00000	Abs	Pass	
Ti3349		0.00026400	ppm	0.0010700	405.74	.00000	Abs	Pass	
Tl1908		0.0019120	ppm	0.00035600	18.612	.00000	Abs	Pass	
V_2924		-0.00098200	ppm	0.00046500	47.336	.00000	Abs	Pass	
Zn2062		0.00055000	ppm	0.00048600	88.469	.00000	Abs	Pass	

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Acquire Date: 7/23/2020 8:52:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,757.5	Cts/S	8.5585	0.14865				
Y_3600		54,603	Cts/S	163.04	0.29859				
Y_3774		3,373.5	Cts/S	21.893	0.64898				

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Acquire Date: 7/23/2020 8:56:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000075000	ppm	0.00090500	1,214.3	.00000	Abs	Pass	
Al3961		0.042552	ppm	0.012243	28.773	.00000	Abs	Pass	
As1890		-0.0025450	ppm	0.0024890	97.785	.00000	Abs	Pass	
B_2089		-0.00010700	ppm	0.0011740	1,097.9	.00000	Abs	Pass	
Ba4554		0.000035000	ppm	0.000026000	73.757	.00000	Abs	Pass	
Be3130		-0.00028400	ppm	0.000012000	4.1127	.00000	Abs	Pass	
Ca3179		-0.011171	ppm	0.0092910	83.174	.00000	Abs	Pass	
Cd2144		0.000031000	ppm	0.000074000	239.09	.00000	Abs	Pass	
Co2286		-0.00029000	ppm	0.00030500	104.98	.00000	Abs	Pass	
Cr2677		0.00089600	ppm	0.000089000	9.8907	.00000	Abs	Pass	
Cu3247		-0.00015700	ppm	0.00055500	353.81	.00000	Abs	Pass	
Fe2599		-0.011017	ppm	0.014494	131.56	.00000	Abs	Pass	
K_7664		-0.0011110	ppm	0.033522	3,017.9	.00000	Abs	Pass	
Mg2790		-0.0015950	ppm	0.0010150	63.678	.00000	Abs	Pass	
Mn2576		0.000018000	ppm	0.00016800	942.93	.00000	Abs	Pass	
Mo2020		0.00021000	ppm	0.00030400	144.59	.00000	Abs	Pass	
Na5895		0.031174	ppm	0.018274	58.618	.00000	Abs	Pass	
Ni2316		0.00067300	ppm	0.00091900	136.53	.00000	Abs	Pass	
P_1782		0.00015600	ppm	0.0039190	2,509.5	.00000	Abs	Pass	
Pb2203		-0.00055900	ppm	0.0052720	943.41	.00000	Abs	Pass	
S_1820		0.0038030	ppm	0.0017180	45.175	.00000	Abs	Pass	
Sb2068		0.000082000	ppm	0.0043740	5,346.0	.00000	Abs	Pass	
Se1960		-0.0015660	ppm	0.00023100	14.753	.00000	Abs	Pass	
Si2881		-0.00094600	ppm	0.019916	2,106.0	.00000	Abs	Pass	
Sn1899		0.00039300	ppm	0.00021100	53.865	.00000	Abs	Pass	
Sr4077		0.000073000	ppm	0.00037400	509.76	.00000	Abs	Pass	
Ti3349		0.00085800	ppm	0.00042900	49.962	.00000	Abs	Pass	
Tl1908		0.00062300	ppm	0.0021500	345.19	.00000	Abs	Pass	
V_2924		-0.00017900	ppm	0.00015800	88.574	.00000	Abs	Pass	
Zn2062		0.00039300	ppm	0.000010000	2.5599	.00000	Abs	Pass	
Y_2243		5,733.9	Cts/S	22.828	0.39812				
Y_3600		54,814	Cts/S	266.34	0.48589				
Y_3774		3,354.7	Cts/S	2.1358	0.063665				

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Acquire Date: 7/23/2020 9:00:52PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 862

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00031100	ppm	0.0015250	490.11	.00000	Abs	Pass	
Al3961		0.029895	ppm	0.0041240	13.796	.00000	Abs	Pass	
As1890		-0.0014010	ppm	0.0023530	167.89	.00000	Abs	Pass	
B_2089		-0.00048400	ppm	0.00052800	108.94	.00000	Abs	Pass	
Ba4554		0.000050000	ppm	0.00087600	1,764.4	.00000	Abs	Pass	
Be3130		-0.00027500	ppm	0.00015700	57.200	.00000	Abs	Pass	
Ca3179		-0.0028440	ppm	0.0057870	203.50	.00000	Abs	Pass	
Cd2144		0.000014000	ppm	0.000023000	169.97	.00000	Abs	Pass	
Co2286		-0.00027000	ppm	0.000058000	21.670	.00000	Abs	Pass	
Cr2677		0.00019100	ppm	0.00056300	295.22	.00000	Abs	Pass	
Cu3247		-0.00083000	ppm	0.00017900	21.588	.00000	Abs	Pass	
Fe2599		-0.015053	ppm	0.0072460	48.138	.00000	Abs	Pass	
K_7664		-0.034867	ppm	0.026417	75.765	.00000	Abs	Pass	
Mg2790		0.0012740	ppm	0.0015590	122.35	.00000	Abs	Pass	
Mn2576		.0000060000	ppm	0.00018500	3,198.2	.00000	Abs	Pass	
Mo2020		.0000090000	ppm	0.000031000	329.31	.00000	Abs	Pass	
Na5895		0.0074290	ppm	0.0058620	78.912	.00000	Abs	Pass	
Ni2316		0.0010660	ppm	0.00043500	40.782	.00000	Abs	Pass	
P_1782		0.0020070	ppm	0.00011400	5.6669	.00000	Abs	Pass	
Pb2203		0.00013900	ppm	0.00066500	478.48	.00000	Abs	Pass	
S_1820		0.0020000	ppm	0.0029200	145.97	.00000	Abs	Pass	
Sb2068		0.0032390	ppm	0.0034080	105.21	.00000	Abs	Pass	
Se1960		0.0034000	ppm	0.0056810	167.12	.00000	Abs	Pass	
Si2881		0.029095	ppm	0.044490	152.91	.00000	Abs	Pass	
Sn1899		0.00039800	ppm	0.00019700	49.623	.00000	Abs	Pass	
Sr4077		0.000053000	ppm	0.00018600	351.98	.00000	Abs	Pass	
Ti3349		-0.00045800	ppm	0.00025600	55.895	.00000	Abs	Pass	
Tl1908		0.0022500	ppm	0.00039700	17.635	.00000	Abs	Pass	
V_2924		-0.00046900	ppm	0.00028200	60.136	.00000	Abs	Pass	
Zn2062		0.00028000	ppm	0.000057000	20.196	.00000	Abs	Pass	
Y_2243		5,734.4	Cts/S	0.48547	0.0084660				
Y_3600		54,408	Cts/S	24.951	0.045859				
Y_3774		3,365.6	Cts/S	5.7573	0.17106				

Test America-West Sacramento methods 6010b and 200.7

Author: GH
Published: 7/27/2020 7:27:14AM
Notes:

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Acquire Date: 7/24/2020 8:32:21AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0018040	ppm	0.000073000	4.0382	.00000	Abs	Pass	
Al3961		0.017126	ppm	0.00081300	4.7458	.00000	Abs	Pass	
As1890		-0.0010060	ppm	0.00081300	80.840	.00000	Abs	Pass	
B_2089		0.0029990	ppm	0.00079500	26.524	.00000	Abs	Pass	
Ba4554		0.000077000	ppm	0.000069000	89.829	.00000	Abs	Pass	
Be3130		-0.00014900	ppm	0.00011400	76.964	.00000	Abs	Pass	
Ca3179		-0.00060900	ppm	0.0074590	1,224.2	.00000	Abs	Pass	
Cd2144		0.000059000	ppm	0.000082000	138.52	.00000	Abs	Pass	
Co2286		-0.00044300	ppm	0.00050100	112.98	.00000	Abs	Pass	
Cr2677		0.00040700	ppm	0.00028300	69.494	.00000	Abs	Pass	
Cu3247		-0.0059940	ppm	0.00092900	15.505	.00000	Abs	Pass	
Fe2599		0.0062830	ppm	0.0090350	143.79	.00000	Abs	Pass	
K_7664		-0.011330	ppm	0.035568	313.91	.00000	Abs	Pass	
Mg2790		0.0049890	ppm	0.0021420	42.929	.00000	Abs	Pass	
Mn2576		0.00020600	ppm	0.000021000	10.004	.00000	Abs	Pass	
Mo2020		0.00040100	ppm	0.00022800	56.687	.00000	Abs	Pass	
Na5895		0.046089	ppm	0.0052640	11.422	.00000	Abs	Pass	
Ni2316		0.0017570	ppm	0.000043000	2.4481	.00000	Abs	Pass	
P_1782		0.0092100	ppm	0.0024090	26.158	.00000	Abs	Pass	
Pb2203		-0.0013360	ppm	0.00094900	71.053	.00000	Abs	Pass	
S_1820		0.0018010	ppm	0.0072610	403.21	.00000	Abs	Pass	
Sb2068		0.0012540	ppm	0.0016080	128.22	.00000	Abs	Pass	
Se1960		0.0022620	ppm	0.0012220	54.024	.00000	Abs	Pass	
Si2881	**W**	**0.10773**	**ppm**	**0.10013**	**92.941**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.00083700	ppm	0.00046800	55.925	.00000	Abs	Pass	
Sr4077		0.000041000	ppm	0.00017300	424.34	.00000	Abs	Pass	
Ti3349		0.00033000	ppm	0.000056000	16.899	.00000	Abs	Pass	
Tl1908		0.000020000	ppm	0.00076700	3,766.5	.00000	Abs	Pass	
V_2924		0.00019200	ppm	0.000081000	42.060	.00000	Abs	Pass	
Zn2062		0.0010970	ppm	0.00081000	73.848	.00000	Abs	Pass	
Y_2243		5,820.3	Cts/S	1.2288	0.021112				
Y_3600		55,638	Cts/S	70.750	0.12716				
Y_3774		3,291.0	Cts/S	0.49851	0.015148				

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Acquire Date: 7/24/2020 8:36:22AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0022700	ppm	0.0012370	54.497	.00000	Abs	Pass	
Al3961		0.0056150	ppm	0.017805	317.10	.00000	Abs	Pass	
As1890		-0.0021440	ppm	0.0011610	54.140	.00000	Abs	Pass	
B_2089		0.0022030	ppm	0.000057000	2.5678	.00000	Abs	Pass	
Ba4554		-0.00012900	ppm	0.000062000	47.926	.00000	Abs	Pass	

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Acquire Date: 7/24/2020 8:36:22AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Be3130		0.000040000	ppm	0.000050000	123.89	.00000	Abs	Pass	
Ca3179		-0.010349	ppm	0.011623	112.31	.00000	Abs	Pass	
Cd2144		0.000055000	ppm	0.00016200	292.59	.00000	Abs	Pass	
Co2286		-0.00049300	ppm	0.000094000	19.088	.00000	Abs	Pass	
Cr2677		0.00030100	ppm	0.0011370	377.70	.00000	Abs	Pass	
Cu3247		-0.0038750	ppm	0.00021700	5.6062	.00000	Abs	Pass	
Fe2599		0.0012850	ppm	0.012020	935.37	.00000	Abs	Pass	
K_7664		-0.0091660	ppm	0.0028980	31.616	.00000	Abs	Pass	
Mg2790		-0.00095400	ppm	0.0033800	354.41	.00000	Abs	Pass	
Mn2576		0.000030000	ppm	0.000077000	253.96	.00000	Abs	Pass	
Mo2020		0.00017000	ppm	0.000041000	23.797	.00000	Abs	Pass	
Na5895		0.049416	ppm	0.0069220	14.009	.00000	Abs	Pass	
Ni2316		0.0012230	ppm	0.00022000	17.974	.00000	Abs	Pass	
P_1782		0.0058400	ppm	0.0046700	79.969	.00000	Abs	Pass	
Pb2203		-0.0018030	ppm	0.0014980	83.060	.00000	Abs	Pass	
S_1820		0.0068950	ppm	0.0010930	15.854	.00000	Abs	Pass	
Sb2068		0.0015800	ppm	0.0016700	105.66	.00000	Abs	Pass	
Se1960		0.00057400	ppm	0.0057520	1,002.3	.00000	Abs	Pass	
Si2881		0.032995	ppm	0.022002	66.682	.00000	Abs	Pass	
Sn1899		-0.00018100	ppm	0.00080300	443.40	.00000	Abs	Pass	
Sr4077		0.000029000	ppm	0.00016400	570.61	.00000	Abs	Pass	
Ti3349		-0.00017400	ppm	0.00010100	57.821	.00000	Abs	Pass	
Tl1908		0.00028800	ppm	0.00094100	326.88	.00000	Abs	Pass	
V_2924		-0.00018600	ppm	0.00019300	104.10	.00000	Abs	Pass	
Zn2062		0.00027500	ppm	0.00030400	110.62	.00000	Abs	Pass	
Y_2243		5,853.2	Cts/S	2.4646	0.042107				
Y_3600		54,898	Cts/S	55.322	0.10077				
Y_3774		3,348.4	Cts/S	10.806	0.32271				

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Acquire Date: 7/24/2020 8:40:23AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0018480	ppm	0.000097000	5.2472	.00000	Abs	Pass	
Al3961		0.0079000	ppm	0.017307	219.08	.00000	Abs	Pass	
As1890		-0.0018710	ppm	0.0011360	60.710	.00000	Abs	Pass	
B_2089		0.0011090	ppm	0.00085600	77.179	.00000	Abs	Pass	
Ba4554		0.00021800	ppm	0.00043900	201.38	.00000	Abs	Pass	
Be3130		0.00013900	ppm	0.00020200	145.79	.00000	Abs	Pass	
Ca3179		-0.011466	ppm	0.0039370	34.336	.00000	Abs	Pass	
Cd2144		0.000063000	ppm	0.00011000	176.06	.00000	Abs	Pass	
Co2286		-0.00022600	ppm	0.00018200	80.366	.00000	Abs	Pass	
Cr2677		0.00016100	ppm	0.00096500	599.72	.00000	Abs	Pass	
Cu3247		-0.0012020	ppm	0.00013100	10.931	.00000	Abs	Pass	
Fe2599		-0.0033530	ppm	0.0073520	219.28	.00000	Abs	Pass	
K_7664		-0.031693	ppm	0.024366	76.881	.00000	Abs	Pass	
Mg2790		-0.0023630	ppm	0.0038440	162.67	.00000	Abs	Pass	
Mn2576		0.000044000	ppm	0.00014400	323.90	.00000	Abs	Pass	

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Acquire Date: 7/24/2020 8:40:23AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Mo2020		0.00054200	ppm	0.00019300	35.661	.00000	Abs	Pass	
Na5895		0.036676	ppm	0.0020470	5.5806	.00000	Abs	Pass	
Ni2316		0.0013350	ppm	0.00015700	11.722	.00000	Abs	Pass	
P_1782		0.00065900	ppm	0.0024410	370.46	.00000	Abs	Pass	
Pb2203		-0.00043000	ppm	0.0016500	383.50	.00000	Abs	Pass	
S_1820		0.0035100	ppm	0.0078080	222.45	.00000	Abs	Pass	
Sb2068		0.0011520	ppm	0.0046410	402.94	.00000	Abs	Pass	
Se1960		0.00043000	ppm	0.00075200	174.72	.00000	Abs	Pass	
Si2881		0.040987	ppm	0.023601	57.582	.00000	Abs	Pass	
Sn1899		0.000081000	ppm	0.00025800	317.44	.00000	Abs	Pass	
Sr4077		0.00026400	ppm	0.000020000	7.6557	.00000	Abs	Pass	
Ti3349		0.00013200	ppm	0.00030900	233.93	.00000	Abs	Pass	
Tl1908		-0.00083400	ppm	0.0040400	484.25	.00000	Abs	Pass	
V_2924		0.000079000	ppm	0.00099400	1,255.9	.00000	Abs	Pass	
Zn2062		0.00016600	ppm	0.00026300	158.42	.00000	Abs	Pass	
Y_2243		5,887.2	Cts/S	12.047	0.20464				
Y_3600		55,180	Cts/S	139.33	0.25251				
Y_3774		3,406.5	Cts/S	17.912	0.52582				

CALSTD0 2065749

Acquire Date: 7/24/2020 8:44:24AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00014900	Cts/S	0.000032000	21.608
Al3961		0.00015300	Cts/S	0.0014210	929.72
As1890		-0.00014300	Cts/S	0.0000080000	5.5328
B_2089		0.0010300	Cts/S	0.000079000	7.6280
Ba4554		0.011439	Cts/S	0.0013020	11.379
Be3130		-0.00038700	Cts/S	0.0000040000	0.96253
Ca3179		0.0040760	Cts/S	0.00032000	7.8584
Cd2144		0.000027000	Cts/S	0.0000080000	29.841
Co2286		-0.00014000	Cts/S	0.000040000	28.576
Cr2677		0.000042000	Cts/S	0.000060000	141.80
Cu3247		0.0045320	Cts/S	0.000058000	1.2760
Fe2599		0.00047200	Cts/S	0.00047500	100.48
K_7664		-0.00067000	Cts/S	0.0015800	236.03
Mg2790		0.000024000	Cts/S	0.000032000	131.64
Mn2576		0.000021000	Cts/S	0.0000070000	31.630
Mo2020		0.000053000	Cts/S	0.00011800	221.13
Na5895		0.014430	Cts/S	0.0057090	39.562
Ni2316		0.0011840	Cts/S	0.000022000	1.8546
P_1782		0.00037300	Cts/S	0.000027000	7.2783
Pb2203		0.00023600	Cts/S	0.00020600	86.930
S_1820		0.00014400	Cts/S	0.000075000	52.321
Sb2068		0.000070000	Cts/S	0.00012700	181.32
Se1960		0.00020000	Cts/S	0.000027000	13.687
Si2881		-0.00012700	Cts/S	0.00064500	507.86
Sn1899		0.00013400	Cts/S	0.000044000	32.992

CALSTD0 2065749

Acquire Date: 7/24/2020 8:44:24AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Sr4077		-0.0025570	Cts/S	0.00032200	12.574
Ti3349		0.000052000	Cts/S	0.000027000	51.005
Tl1908		0.000013000	Cts/S	0.000048000	367.24
V_2924		0.000033000	Cts/S	0.000062000	185.30
Zn2062		0.000041000	Cts/S	0.0000010000	2.1480
Y_2243		5,844.9	Cts/S	19.977	0.34179
Y_3600		55,138	Cts/S	122.90	0.22289
Y_3774		3,442.7	Cts/S	9.5182	0.27648

CALSTD1 2038574

Acquire Date: 7/24/2020 8:48:24AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10066	Cts/S	0.00035300	0.35058
Al3961		2.1588	Cts/S	0.019837	0.91889
As1890		0.041922	Cts/S	0.00025000	0.59728
B_2089		0.36812	Cts/S	0.0010460	0.28423
Ba4554		17.319	Cts/S	0.15193	0.87725
Be3130		1.4234	Cts/S	0.011477	0.80629
Ca3179		2.5054	Cts/S	0.026236	1.0472
Cd2144		1.6399	Cts/S	0.0038890	0.23717
Co2286		2.3000	Cts/S	0.0059710	0.25961
Cr2677		0.37936	Cts/S	0.00049300	0.13004
Cu3247		0.43981	Cts/S	0.0015600	0.35466
Fe2599		1.2061	Cts/S	0.0091510	0.75876
K_7664		3.2582	Cts/S	0.037290	1.1445
Mg2790		0.32864	Cts/S	0.0011370	0.34602
Mn2576		2.9784	Cts/S	0.011270	0.37838
Mo2020		0.60875	Cts/S	0.0027830	0.45724
Na5895		10.795	Cts/S	0.10180	0.94296
Ni2316		0.66799	Cts/S	0.0017830	0.26697
P_1782		0.11198	Cts/S	0.00016200	0.14509
Pb2203		0.10751	Cts/S	0.00038400	0.35745
S_1820		0.095547	Cts/S	0.00029200	0.30518
Sb2068		0.045469	Cts/S	0.00017800	0.39154
Se1960		0.026486	Cts/S	0.00011500	0.43371
Si2881		0.033527	Cts/S	0.00070400	2.0990
Sn1899		0.85568	Cts/S	0.0014130	0.16511
Sr4077		18.736	Cts/S	0.14054	0.75008
Ti3349		0.26203	Cts/S	0.0011500	0.43876
Tl1908		0.035119	Cts/S	0.00020300	0.57743
V_2924		0.57370	Cts/S	0.0020520	0.35764
Zn2062		0.30965	Cts/S	0.00071500	0.23076
Y_2243		5,661.3	Cts/S	9.9021	0.17491
Y_3600		52,935	Cts/S	111.92	0.21143
Y_3774		3,421.1	Cts/S	24.461	0.71500

CALSTD2 2072059

Acquire Date: 7/24/2020 8:52:09AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Al3961		10.904	Cts/S	0.084000	0.77034
Ca3179		12.481	Cts/S	0.12694	1.0171
Fe2599		5.9092	Cts/S	0.054828	0.92784
K_7664		16.644	Cts/S	0.19270	1.1577
Mg2790		1.6234	Cts/S	0.0070800	0.43615
Na5895		54.637	Cts/S	0.55184	1.0100
P_1782		1.1062	Cts/S	0.0028680	0.25926
S_1820		4.8660	Cts/S	0.0033720	0.069303
Y_2243		5,342.1	Cts/S	18.527	0.34681
Y_3600		50,108	Cts/S	153.70	0.30674
Y_3774		3,341.2	Cts/S	0.092875	0.0027800

LRA 2072618

Acquire Date: 7/24/2020 8:56:08AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.9651	ppm	0.0074630	0.37978	2.0000	Rel(%)	Pass	
Al3961		98.170	ppm	0.75406	0.76812	100.00	Rel(%)	Pass	
As1890		1.9800	ppm	0.0010190	0.051479	2.0000	Rel(%)	Pass	
B_2089		3.9322	ppm	0.0061860	0.15732	4.0000	Rel(%)	Pass	
Ba4554		10.051	ppm	0.076778	0.76390	10.000	Rel(%)	Pass	
Be3130		1.9702	ppm	0.016535	0.83926	2.0000	Rel(%)	Pass	
Ca3179		99.514	ppm	0.65150	0.65468	100.00	Rel(%)	Pass	
Cd2144		1.9431	ppm	0.0020020	0.10301	2.0000	Rel(%)	Pass	
Co2286		9.8524	ppm	0.012455	0.12642	10.000	Rel(%)	Pass	
Cr2677		9.7231	ppm	0.046799	0.48132	10.000	Rel(%)	Pass	
Cu3247		9.9343	ppm	0.063464	0.63884	10.000	Rel(%)	Pass	
Fe2599		100.70	ppm	0.74038	0.73526	100.00	Rel(%)	Pass	
K_7664		98.538	ppm	0.98222	0.99680	100.00	Rel(%)	Pass	
Mg2790		98.923	ppm	0.47337	0.47852	100.00	Rel(%)	Pass	
Mn2576		9.6791	ppm	0.035805	0.36992	10.000	Rel(%)	Pass	
Mo2020		3.9461	ppm	0.017995	0.45603	4.0000	Rel(%)	Pass	
Na5895		98.039	ppm	0.75838	0.77355	100.00	Rel(%)	Pass	
Ni2316		9.7433	ppm	0.013391	0.13744	10.000	Rel(%)	Pass	
P_1782		10.057	ppm	0.017478	0.17379	10.000	Rel(%)	Pass	
Pb2203		1.9592	ppm	0.00032200	0.016411	2.0000	Rel(%)	Pass	
S_1820		9.7775	ppm	0.011700	0.11967	10.000	Rel(%)	Pass	
Sb2068		1.9750	ppm	0.0022170	0.11225	2.0000	Rel(%)	Pass	
Se1960		1.9505	ppm	0.0034010	0.17439	2.0000	Rel(%)	Pass	
Si2881		9.8855	ppm	0.13177	1.3330	10.000	Rel(%)	Pass	
Sn1899		9.7594	ppm	0.014690	0.15052	10.000	Rel(%)	Pass	
Sr4077		9.8660	ppm	0.070581	0.71539	10.000	Rel(%)	Pass	
Ti3349		3.9426	ppm	0.016635	0.42193	4.0000	Rel(%)	Pass	
Tl1908		1.9439	ppm	0.0025130	0.12929	2.0000	Rel(%)	Pass	
V_2924		9.7979	ppm	0.043265	0.44157	10.000	Rel(%)	Pass	
Zn2062		9.6794	ppm	0.053218	0.54981	10.000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 7/27/2020 7:27:14AM

LRA 2072618

Acquire Date: 7/24/2020 8:56:08AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,473.5	Cts/S	2.2243	0.040637				
Y_3600		51,833	Cts/S	211.99	0.40898				
Y_3774		3,381.3	Cts/S	13.606	0.40240				

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Acquire Date: 7/24/2020 8:59:49AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0017500	ppm	0.00022300	12.757	.00000	Abs	Pass	
Al3961		0.015052	ppm	0.034373	228.37	.00000	Abs	Pass	
As1890		0.0034970	ppm	0.0012060	34.500	.00000	Abs	Pass	
B_2089		0.0097450	ppm	0.00059300	6.0870	.00000	Abs	Pass	
Ba4554		0.0017560	ppm	0.00051600	29.358	.00000	Abs	Pass	
Be3130		0.00056400	ppm	0.00015500	27.466	.00000	Abs	Pass	
Ca3179		0.018727	ppm	0.0016000	8.5452	.00000	Abs	Pass	
Cd2144		0.00011100	ppm	0.00010900	98.216	.00000	Abs	Pass	
Co2286		0.00098500	ppm	0.00012500	12.713	.00000	Abs	Pass	
Cr2677		0.0015130	ppm	0.00025400	16.784	.00000	Abs	Pass	
Cu3247		0.0076710	ppm	0.0014260	18.594	.00000	Abs	Pass	
Fe2599	**F**	**0.11757**	**ppm**	**0.018760**	**15.956**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.16357	ppm	0.056611	34.611	.00000	Abs	Pass	
Mg2790		0.0029630	ppm	0.0014330	48.356	.00000	Abs	Pass	
Mn2576		0.0021580	ppm	0.00034100	15.782	.00000	Abs	Pass	
Mo2020	**F**	**0.027228**	**ppm**	**0.0024670**	**9.0597**	**.00000**	**Abs**	**Fail High**	**.02000**
Na5895		0.11201	ppm	0.019137	17.085	.00000	Abs	Pass	
Ni2316		0.0022780	ppm	0.00077200	33.894	.00000	Abs	Pass	
P_1782		0.0025710	ppm	0.0045470	176.86	.00000	Abs	Pass	
Pb2203		0.0010410	ppm	0.00042900	41.239	.00000	Abs	Pass	
S_1820		0.0049770	ppm	0.00075900	15.259	.00000	Abs	Pass	
Sb2068		0.00096400	ppm	0.0020460	212.09	.00000	Abs	Pass	
Se1960		0.0020280	ppm	0.0027460	135.42	.00000	Abs	Pass	
Si2881		0.042487	ppm	0.11779	277.25	.00000	Abs	Pass	
Sn1899		0.0084540	ppm	0.00080900	9.5709	.00000	Abs	Pass	
Sr4077		0.0016000	ppm	0.00010900	6.8004	.00000	Abs	Pass	
Ti3349	**W**	**0.011175**	**ppm**	**0.00088800**	**7.9426**	**.00000**	**Abs**	**Warn High**	**0.01000**
Tl1908		0.0087870	ppm	0.00067300	7.6604	.00000	Abs	Pass	
V_2924		0.0021850	ppm	0.00030600	13.998	.00000	Abs	Pass	
Zn2062	**W**	**0.0072940**	**ppm**	**0.0010860**	**14.893**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		5,782.6	Cts/S	11.781	0.20374				
Y_3600		54,981	Cts/S	121.22	0.22047				
Y_3774		3,382.1	Cts/S	26.354	0.77921				

ICV 2056510

Acquire Date: 7/24/2020 9:03:49AM Sample Type: QC
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.24340	ppm	0.00010000	0.041177	.25000	Rel(%)	Pass	
Al3961		10.077	ppm	0.033842	0.33585	10.000	Rel(%)	Pass	
As1890		0.96792	ppm	0.0021960	0.22688	1.0000	Rel(%)	Pass	
B_2089		0.51116	ppm	0.00076300	0.14928	.50000	Rel(%)	Pass	
Ba4554		1.0372	ppm	0.0083170	0.80187	1.0000	Rel(%)	Pass	
Be3130		1.0347	ppm	0.0081900	0.79156	1.0000	Rel(%)	Pass	
Ca3179		10.342	ppm	0.081949	0.79239	10.000	Rel(%)	Pass	
Cd2144		1.0388	ppm	0.00090900	0.087551	1.0000	Rel(%)	Pass	
Co2286	**W**	**1.0501**	**ppm**	**0.0021900**	**0.20853**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Cr2677		1.0194	ppm	0.0075190	0.73761	1.0000	Rel(%)	Pass	
Cu3247		1.0341	ppm	0.0039220	0.37922	1.0000	Rel(%)	Pass	
Fe2599		10.445	ppm	0.086977	0.83271	10.000	Rel(%)	Pass	
K_7664		9.9373	ppm	0.059247	0.59621	10.000	Rel(%)	Pass	
Mg2790		10.136	ppm	0.050215	0.49540	10.000	Rel(%)	Pass	
Mn2576		1.0458	ppm	0.0061580	0.58881	1.0000	Rel(%)	Pass	
Mo2020		1.0350	ppm	0.0042700	0.41251	1.0000	Rel(%)	Pass	
Na5895		9.8707	ppm	0.092946	0.94164	10.000	Rel(%)	Pass	
Ni2316	**W**	**1.0530**	**ppm**	**0.0021030**	**0.19973**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
P_1782		1.9868	ppm	0.0044400	0.22346	2.0000	Rel(%)	Pass	
Pb2203		1.0370	ppm	0.00097000	0.093582	1.0000	Rel(%)	Pass	
S_1820		1.9697	ppm	0.0061940	0.31444	2.0000	Rel(%)	Pass	
Sb2068		1.0122	ppm	0.0057970	0.57275	1.0000	Rel(%)	Pass	
Se1960		1.0219	ppm	0.0034950	0.34204	1.0000	Rel(%)	Pass	
Si2881		10.340	ppm	0.11746	1.1360	10.000	Rel(%)	Pass	
Sn1899		1.0337	ppm	0.0012630	0.12221	1.0000	Rel(%)	Pass	
Sr4077		1.0335	ppm	0.0091210	0.88251	1.0000	Rel(%)	Pass	
Ti3349		1.0327	ppm	0.0044710	0.43296	1.0000	Rel(%)	Pass	
Tl1908	**W**	**1.0550**	**ppm**	**0.0046530**	**0.44110**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
V_2924		1.0263	ppm	0.0068020	0.66281	1.0000	Rel(%)	Pass	
Zn2062		1.0109	ppm	0.0035750	0.35367	1.0000	Rel(%)	Pass	
Y_2243		5,736.9	Cts/S	2.1815	0.038025				
Y_3600		54,023	Cts/S	424.00	0.78486				
Y_3774		3,380.8	Cts/S	10.824	0.32016				

ICBIS 2065750

Acquire Date: 7/24/2020 9:07:36AM Sample Type: QC
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00015900	ppm	0.0012100	762.20	.00000	Abs	Pass	
Al3961		0.013983	ppm	0.0042770	30.585	.00000	Abs	Pass	
As1890		0.0028930	ppm	0.0011430	39.511	.00000	Abs	Pass	
B_2089		0.0037140	ppm	0.000067000	1.7948	.00000	Abs	Pass	
Ba4554		0.00093900	ppm	0.00054600	58.144	.00000	Abs	Pass	
Be3130		0.00062700	ppm	0.00030400	48.499	.00000	Abs	Pass	
Ca3179		0.0024450	ppm	0.0086050	351.95	.00000	Abs	Pass	
Cd2144		0.00019700	ppm	0.000043000	21.577	.00000	Abs	Pass	
Co2286		0.00038400	ppm	0.00033600	87.513	.00000	Abs	Pass	
Cr2677		0.00081200	ppm	0.00046500	57.227	.00000	Abs	Pass	

ICBIS 2065750

Acquire Date: 7/24/2020 9:07:36AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00064400	ppm	0.00013300	20.595	.00000	Abs	Pass	
Fe2599		0.048085	ppm	0.011044	22.969	.00000	Abs	Pass	
K_7664		0.032337	ppm	0.019325	59.761	.00000	Abs	Pass	
Mg2790		-0.0025760	ppm	0.0030130	116.97	.00000	Abs	Pass	
Mn2576		0.00037600	ppm	0.000040000	10.647	.00000	Abs	Pass	
Mo2020		0.0071760	ppm	0.00075000	10.457	.00000	Abs	Pass	
Na5895		0.011809	ppm	0.0016580	14.036	.00000	Abs	Pass	
Ni2316		0.00029900	ppm	0.00066700	222.93	.00000	Abs	Pass	
P_1782		-0.0017390	ppm	0.0042050	241.80	.00000	Abs	Pass	
Pb2203		-0.0033400	ppm	0.0034140	102.23	.00000	Abs	Pass	
S_1820		0.0058190	ppm	0.0011290	19.394	.00000	Abs	Pass	
Sb2068		0.0036210	ppm	0.00071900	19.856	.00000	Abs	Pass	
Se1960		-0.0054210	ppm	0.0027390	50.521	.00000	Abs	Pass	
Si2881		0.026164	ppm	0.0015070	5.7579	.00000	Abs	Pass	
Sn1899		0.0023170	ppm	0.00087600	37.782	.00000	Abs	Pass	
Sr4077		0.00040900	ppm	0.00012600	30.671	.00000	Abs	Pass	
Ti3349		0.0048740	ppm	0.000069000	1.4114	.00000	Abs	Pass	
Tl1908		0.0011420	ppm	0.00022900	20.028	.00000	Abs	Pass	
V_2924		0.00087400	ppm	0.00099900	114.25	.00000	Abs	Pass	
Zn2062		0.0018480	ppm	0.000075000	4.0587	.00000	Abs	Pass	
Y_2243		5,716.0	Cts/S	16.299	0.28515				
Y_3600		54,180	Cts/S	52.151	0.096255				
Y_3774		3,359.8	Cts/S	14.971	0.44560				

CRI 2077614

Acquire Date: 7/24/2020 9:11:36AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0057690	ppm	0.00062000	10.739	.00500	Rel(%)	Pass	
Al3961		0.19058	ppm	0.0068700	3.6049	.20000	Rel(%)	Pass	
As1890		0.035022	ppm	0.0038840	11.092	.04000	Rel(%)	Pass	
B_2089		0.19586	ppm	0.0014540	0.74255	.20000	Rel(%)	Pass	
Ba4554		0.020838	ppm	0.00044800	2.1482	.02000	Rel(%)	Pass	
Be3130		0.0033670	ppm	0.00017800	5.2826	.00300	Rel(%)	Pass	
Ca3179		0.54251	ppm	0.00036800	0.067812	.50000	Rel(%)	Pass	
Cd2144		0.0030240	ppm	0.000010000	0.32344	.00300	Rel(%)	Pass	
Co2286		0.010471	ppm	0.00038600	3.6910	.01000	Rel(%)	Pass	
Cr2677		0.010196	ppm	0.00043700	4.2815	.01000	Rel(%)	Pass	
Cu3247		0.012893	ppm	0.00039600	3.0711	.01500	Rel(%)	Pass	
Fe2599		0.10206	ppm	0.012934	12.673	.10000	Rel(%)	Pass	
K_7664		0.98667	ppm	0.0069730	0.70673	1.0000	Rel(%)	Pass	
Mg2790		0.48412	ppm	0.0079860	1.6496	.50000	Rel(%)	Pass	
Mn2576		0.010520	ppm	0.0000020000	0.018549	.01000	Rel(%)	Pass	
Mo2020		0.021592	ppm	0.00032800	1.5195	.02000	Rel(%)	Pass	
Na5895		0.47138	ppm	0.0072560	1.5393	.50000	Rel(%)	Pass	
Ni2316		0.0095170	ppm	0.0010960	11.514	.01000	Rel(%)	Pass	
P_1782		0.49188	ppm	0.0022060	0.44846	.50000	Rel(%)	Pass	
Pb2203	**W**	**0.0079610**	**ppm**	**0.0013440**	**16.878**	**.01000**	**Rel(%)**	**Warn Low**	**-20.000**

CRI 2077614

Acquire Date: 7/24/2020 9:11:36AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.47629	ppm	0.00025300	0.053059	.50000	Rel(%)	Pass	
Sb2068		0.030298	ppm	0.0011940	3.9397	.03000	Rel(%)	Pass	
Se1960		0.035370	ppm	0.0032380	9.1553	.04000	Rel(%)	Pass	
Si2881		0.58522	ppm	0.020631	3.5253	.50000	Rel(%)	Pass	
Sn1899	**W**	**0.024391**	**ppm**	**0.000024000**	**0.097460**	**.02000**	**Rel(%)**	**Warn High**	**20.000**
Sr4077		0.051161	ppm	0.000076000	0.14864	.05000	Rel(%)	Pass	
Ti3349		0.011564	ppm	0.00018600	1.6111	.01000	Rel(%)	Pass	
Tl1908		0.031027	ppm	0.00024900	0.80161	.03000	Rel(%)	Pass	
V_2924		0.020010	ppm	0.00019800	0.98957	.02000	Rel(%)	Pass	
Zn2062		0.021071	ppm	0.00013000	0.61802	.02000	Rel(%)	Pass	
Y_2243		5,734.1	Cts/S	1.4045	0.024493				
Y_3600		54,254	Cts/S	20.390	0.037583				
Y_3774		3,346.3	Cts/S	19.691	0.58845				

CRI 2077613

Acquire Date: 7/24/2020 9:15:35AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0053980	ppm	0.00018200	3.3734	.00500	Rel(%)	Pass	
Al3961		0.17033	ppm	0.013322	7.8214	.20000	Rel(%)	Pass	
As1890		0.017246	ppm	0.0013530	7.8476	.02000	Rel(%)	Pass	
B_2089		0.099713	ppm	0.00053500	0.53655	.10000	Rel(%)	Pass	
Ba4554		0.0059250	ppm	0.00018400	3.1002	.00500	Rel(%)	Pass	
Be3130		0.0020170	ppm	0.000048000	2.4037	.00200	Rel(%)	Pass	
Ca3179		0.52463	ppm	0.0037970	0.72369	.50000	Rel(%)	Pass	
Cd2144		0.0020930	ppm	0.000062000	2.9634	.00200	Rel(%)	Pass	
Co2286		0.0049620	ppm	0.00011500	2.3095	.00500	Rel(%)	Pass	
Cr2677		0.0048740	ppm	0.0014050	28.820	.00500	Rel(%)	Pass	
Cu3247		0.0085360	ppm	0.0010020	11.741	.01000	Rel(%)	Pass	
Fe2599		0.093698	ppm	0.0066900	7.1398	.10000	Rel(%)	Pass	
K_7664		0.92338	ppm	0.020962	2.2701	1.0000	Rel(%)	Pass	
Mg2790		0.49450	ppm	0.0012820	0.25919	.50000	Rel(%)	Pass	
Mn2576		0.0052210	ppm	0.000038000	0.73276	.00500	Rel(%)	Pass	
Mo2020		0.023993	ppm	0.00055000	2.2913	.02000	Rel(%)	Pass	
Na5895		0.46753	ppm	0.0057880	1.2380	.50000	Rel(%)	Pass	
Ni2316		0.0058020	ppm	0.00051900	8.9530	.00500	Rel(%)	Pass	
P_1782		0.49673	ppm	0.0021840	0.43965	.50000	Rel(%)	Pass	
Pb2203		0.0044730	ppm	0.0032640	72.968	.00500	Rel(%)	Pass	
S_1820		0.47693	ppm	0.0031670	0.66397	.50000	Rel(%)	Pass	
Sb2068		0.019294	ppm	0.00057300	2.9692	.02000	Rel(%)	Pass	
Se1960	**W**	**0.015062**	**ppm**	**0.0018010**	**11.957**	**.02000**	**Rel(%)**	**Warn Low**	**-20.000**
Si2881		0.47212	ppm	0.033811	7.1615	.50000	Rel(%)	Pass	
Sn1899		0.022600	ppm	0.0010890	4.8204	.02000	Rel(%)	Pass	
Sr4077		0.050314	ppm	0.00040400	0.80267	.05000	Rel(%)	Pass	
Ti3349	**W**	**0.013553**	**ppm**	**0.00018100**	**1.3335**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
Tl1908		0.022093	ppm	0.0019060	8.6259	.02000	Rel(%)	Pass	
V_2924		0.0059550	ppm	0.00095100	15.971	.00500	Rel(%)	Pass	
Zn2062		0.010297	ppm	0.00011900	1.1551	.01000	Rel(%)	Pass	

CRI 2077613

Acquire Date: 7/24/2020 9:15:35AM   Sample Type: QC
Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,682.2	Cts/S	0.70612	0.012427				
Y_3600		53,929	Cts/S	127.45	0.23632				
Y_3774		3,348.9	Cts/S	6.2261	0.18591				

ICSA 2056509

Acquire Date: 7/24/2020 9:19:34AM   Sample Type: QC
Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0016510	ppm	0.00073300	44.366	.00000	Abs	Pass	
Al3961		494.17	ppm	2.5699	0.52005	500.00	Abs	Pass	
As1890		-0.0034900	ppm	0.0035270	101.04	.00000	Abs	Pass	
B_2089		0.0054460	ppm	0.0012000	22.032	.00000	Abs	Pass	
Ba4554		0.0020110	ppm	0.00018700	9.2768	.00000	Abs	Pass	
Be3130		0.000078000	ppm	0.0000070000	9.2101	.00000	Abs	Pass	
Ca3179		474.76	ppm	3.3044	0.69602	500.00	Abs	Pass	
Cd2144		0.00092300	ppm	0.000085000	9.1845	.00000	Abs	Pass	
Co2286		0.00013800	ppm	0.00062700	454.80	.00000	Abs	Pass	
Cr2677		-0.0017450	ppm	0.00017500	10.041	.00000	Abs	Pass	
Cu3247		-0.0018200	ppm	0.0016680	91.652	.00000	Abs	Pass	
Fe2599		186.19	ppm	1.0083	0.54154	200.00	Abs	Pass	
K_7664		-0.054437	ppm	0.00087500	1.6080	.00000	Abs	Pass	
Mg2790		492.09	ppm	0.41286	0.083900	500.00	Abs	Pass	
Mn2576		0.0035140	ppm	0.000030000	0.84914	.00000	Abs	Pass	
Mo2020		0.0010490	ppm	0.00059800	56.966	.00000	Abs	Pass	
Na5895		0.082129	ppm	0.026244	31.954	.00000	Abs	Pass	
Ni2316		-0.0024790	ppm	0.00025200	10.180	.00000	Abs	Pass	
P_1782		0.013650	ppm	0.0019210	14.075	.00000	Abs	Pass	
Pb2203		0.0028210	ppm	0.0013180	46.702	.00000	Abs	Pass	
S_1820		-0.31278	ppm	0.0066200	2.1164	.00000	Abs	Pass	
Sb2068		0.00033800	ppm	0.0059370	1,754.7	.00000	Abs	Pass	
Se1960		-0.0047440	ppm	0.011134	234.71	.00000	Abs	Pass	
Si2881		0.013920	ppm	0.023987	172.32	.00000	Abs	Pass	
Sn1899		-0.0031270	ppm	0.00020500	6.5537	.00000	Abs	Pass	
Sr4077		0.0061210	ppm	0.00012100	1.9689	.00000	Abs	Pass	
Ti3349		0.00094100	ppm	0.00086000	91.395	.00000	Abs	Pass	
Tl1908		-0.0029470	ppm	0.0011670	39.586	.00000	Abs	Pass	
V_2924		0.0011620	ppm	0.00015300	13.134	.00000	Abs	Pass	
Zn2062		-0.0020950	ppm	0.00042200	20.136	.00000	Abs	Pass	
Y_2243		5,168.8	Cts/S	17.071	0.33028				
Y_3600		48,054	Cts/S	68.408	0.14236				
Y_3774		3,330.9	Cts/S	15.254	0.45794				

ICSAB 2070985

Acquire Date: 7/24/2020 9:23:36AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.0662	ppm	0.0033620	0.31537	1.0000	Rel(%)	Pass	
Al3961		498.08	ppm	3.2015	0.64276	500.00	Rel(%)	Pass	
As1890		0.95614	ppm	0.0023560	0.24643				
B_2089		9.6130	ppm	0.0099540	0.10355				
Ba4554		1.0111	ppm	0.0077120	0.76275	1.0000	Rel(%)	Pass	
Be3130		0.49318	ppm	0.0020830	0.42230	.50000	Rel(%)	Pass	
Ca3179		479.00	ppm	2.4041	0.50190	500.00	Rel(%)	Pass	
Cd2144		0.93447	ppm	0.0015830	0.16940	1.0000	Rel(%)	Pass	
Co2286		0.93227	ppm	0.00070400	0.075508	1.0000	Rel(%)	Pass	
Cr2677		0.95834	ppm	0.0050100	0.52277	1.0000	Rel(%)	Pass	
Cu3247		1.0214	ppm	0.0045110	0.44170	1.0000	Rel(%)	Pass	
Fe2599		188.19	ppm	0.97613	0.51869	200.00	Rel(%)	Pass	
K_7664		10.204	ppm	0.094180	0.92294				
Mg2790		487.52	ppm	0.71785	0.14725	500.00	Rel(%)	Pass	
Mn2576		0.99564	ppm	0.0037460	0.37627	1.0000	Rel(%)	Pass	
Mo2020		0.0010020	ppm	0.00036300	36.167				
Na5895		10.254	ppm	0.11506	1.1220				
Ni2316		0.90689	ppm	0.00094800	0.10449	1.0000	Rel(%)	Pass	
P_1782		10.111	ppm	0.0025960	0.025672				
Pb2203		0.94461	ppm	0.00099500	0.10529	1.0000	Rel(%)	Pass	
S_1820		-0.30478	ppm	0.00076000	0.24925				
Sb2068		-0.0019000	ppm	0.0019650	103.42				
Se1960		0.95702	ppm	0.0043880	0.45850				
Si2881		0.047445	ppm	0.091795	193.47				
Sn1899		0.0023820	ppm	0.000071000	2.9727				
Sr4077		1.0068	ppm	0.0068830	0.68365				
Ti3349		0.0011420	ppm	0.00000	0.0030440				
Tl1908		0.90581	ppm	0.00096900	0.10693				
V_2924		1.0084	ppm	0.0017880	0.17730	1.0000	Rel(%)	Pass	
Zn2062		0.92171	ppm	0.0021350	0.23159	1.0000	Rel(%)	Pass	
Y_2243		5,171.0	Cts/S	11.667	0.22563				
Y_3600		48,364	Cts/S	146.52	0.30295				
Y_3774		3,325.7	Cts/S	13.428	0.40376				

AI 2074479

Acquire Date: 7/24/2020 9:27:27AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0013600	ppm	0.00034500	25.367	.00000	Abs	Pass	
Al3961		961.45	ppm	3.2470	0.33772				
As1890		-0.0011920	ppm	0.0043630	365.89	.00000	Abs	Pass	
B_2089		0.027886	ppm	0.0046930	16.828	.00000	Abs	Pass	
Ba4554		0.0019340	ppm	0.00041600	21.507	.00000	Abs	Pass	
Be3130		0.00062000	ppm	0.000077000	12.432	.00000	Abs	Pass	
Ca3179		0.53836	ppm	0.037329	6.9338				
Cd2144		0.00071600	ppm	0.00039900	55.718	.00000	Abs	Pass	
Co2286		0.00029700	ppm	0.00067300	226.75	.00000	Abs	Pass	
Cr2677		0.0015960	ppm	0.0012350	77.394	.00000	Abs	Pass	

Al 2074479

Acquire Date: 7/24/2020 9:27:27AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0022600	ppm	0.00042600	18.860	.00000	Abs	Pass	
Fe2599		0.43460	ppm	0.032787	7.5443				
K_7664		-0.060289	ppm	0.013735	22.782	.00000	Abs	Pass	
Mg2790		0.46625	ppm	0.018721	4.0153				
Mn2576		0.00094400	ppm	0.000089000	9.4309	.00000	Abs	Pass	
Mo2020		0.00061600	ppm	0.00045600	74.076	.00000	Abs	Pass	
Na5895		0.33367	ppm	0.0083660	2.5071	.00000	Abs	Pass	
Ni2316		-0.00080000	ppm	0.00029000	36.234	.00000	Abs	Pass	
P_1782		0.016249	ppm	0.0038270	23.553	.00000	Abs	Pass	
Pb2203		-0.0037850	ppm	0.00030500	8.0689	.00000	Abs	Pass	
S_1820		0.014006	ppm	0.0087720	62.631	.00000	Abs	Pass	
Sb2068		0.0013710	ppm	0.0017190	125.36	.00000	Abs	Pass	
Se1960		0.0036370	ppm	0.0030880	84.920	.00000	Abs	Pass	
Si2881		0.074943	ppm	0.024038	32.075	.00000	Abs	Pass	
Sn1899		-0.010867	ppm	0.00089700	8.2526	.00000	Abs	Pass	
Sr4077		0.00095000	ppm	0.0000040000	0.39127	.00000	Abs	Pass	
Ti3349		0.0034720	ppm	0.00016900	4.8641	.00000	Abs	Pass	
Tl1908		-0.0059220	ppm	0.00021400	3.6124	.00000	Abs	Pass	
V_2924		0.0016210	ppm	0.0011630	71.720	.00000	Abs	Pass	
Zn2062		0.00037100	ppm	0.00017400	46.902	.00000	Abs	Pass	
Y_2243		5,614.5	Cts/S	9.7601	0.17384				
Y_3600		49,912	Cts/S	94.516	0.18937				
Y_3774		3,493.4	Cts/S	10.081	0.28858				

Ca 2049317

Acquire Date: 7/24/2020 9:31:22AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0010320	ppm	0.00045400	43.998	.00000	Abs	Pass	
Al3961		0.28895	ppm	0.036548	12.649				
As1890		0.00051700	ppm	0.00059600	115.25	.00000	Abs	Pass	
B_2089		0.014903	ppm	0.00038400	2.5748	.00000	Abs	Pass	
Ba4554		0.00091000	ppm	0.00010000	11.020	.00000	Abs	Pass	
Be3130		-0.00068500	ppm	0.00022400	32.764	.00000	Abs	Pass	
Ca3179		965.16	ppm	7.3164	0.75806				
Cd2144		0.00049000	ppm	0.00017900	36.442	.00000	Abs	Pass	
Co2286		0.00055100	ppm	0.00017600	32.006	.00000	Abs	Pass	
Cr2677		0.0024340	ppm	0.00065200	26.787	.00000	Abs	Pass	
Cu3247		0.0010230	ppm	0.00019000	18.525	.00000	Abs	Pass	
Fe2599		-0.0034500	ppm	0.0052850	153.18				
K_7664		0.069488	ppm	0.016939	24.376	.00000	Abs	Pass	
Mg2790		0.0076760	ppm	0.0077450	100.90				
Mn2576		0.0038190	ppm	0.000028000	0.74291	.00000	Abs	Pass	
Mo2020		0.00016000	ppm	0.00016900	105.88	.00000	Abs	Pass	
Na5895		-0.0014060	ppm	0.0088920	632.43	.00000	Abs	Pass	
Ni2316		-0.0017570	ppm	0.00010100	5.7550	.00000	Abs	Pass	
P_1782		0.018561	ppm	0.0011930	6.4272	.00000	Abs	Pass	
Pb2203		-0.00096300	ppm	0.0025430	264.08	.00000	Abs	Pass	

Ca 2049317

Acquire Date: 7/24/2020 9:31:22AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.040039	ppm	0.0086230	21.536	.00000	Abs	Pass	
Sb2068		-0.0086240	ppm	0.00079400	9.2108	.00000	Abs	Pass	
Se1960		-0.0063490	ppm	0.0032660	51.442	.00000	Abs	Pass	
Si2881		0.032959	ppm	0.0013700	4.1555	.00000	Abs	Pass	
Sn1899		0.0037690	ppm	0.00097800	25.943	.00000	Abs	Pass	
Sr4077		-0.0018700	ppm	0.00050700	27.104	.00000	Abs	Pass	
Ti3349		-0.0011890	ppm	0.00035400	29.790	.00000	Abs	Pass	
Tl1908		-0.0019770	ppm	0.00041000	20.749	.00000	Abs	Pass	
V_2924		0.0012000	ppm	0.00058400	48.658	.00000	Abs	Pass	
Zn2062		0.00043300	ppm	0.00045300	104.68	.00000	Abs	Pass	
Y_2243		5,301.4	Cts/S	9.8952	0.18665				
Y_3600		50,823	Cts/S	123.76	0.24351				
Y_3774		3,358.6	Cts/S	9.1671	0.27294				

Fe 2058795

Acquire Date: 7/24/2020 9:35:20AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0010170	ppm	0.00038100	37.521	.00000	Abs	Pass	
Al3961		-0.0080670	ppm	0.0092070	114.13				
As1890		-0.0065100	ppm	0.0056480	86.749	.00000	Abs	Pass	
B_2089		0.017278	ppm	0.0018170	10.518	.00000	Abs	Pass	
Ba4554		0.00045400	ppm	0.000035000	7.7112	.00000	Abs	Pass	
Be3130		0.00040200	ppm	0.00020800	51.814	.00000	Abs	Pass	
Ca3179		-0.077953	ppm	0.038008	48.758				
Cd2144		0.0016060	ppm	0.00025200	15.680	.00000	Abs	Pass	
Co2286		0.00055300	ppm	0.00042800	77.373	.00000	Abs	Pass	
Cr2677		-0.00088200	ppm	0.00050000	56.737	.00000	Abs	Pass	
Cu3247		0.0019770	ppm	0.00025400	12.867	.00000	Abs	Pass	
Fe2599		914.26	ppm	3.2541	0.35593				
K_7664		-0.063834	ppm	0.0016690	2.6149	.00000	Abs	Pass	
Mg2790		0.16171	ppm	0.0022360	1.3828				
Mn2576		0.000016000	ppm	0.000060000	366.03	.00000	Abs	Pass	
Mo2020		0.000027000	ppm	0.00024000	888.48	.00000	Abs	Pass	
Na5895		0.069690	ppm	0.0087740	12.590	.00000	Abs	Pass	
Ni2316		0.000067000	ppm	0.00078900	1,180.1	.00000	Abs	Pass	
P_1782		0.0095840	ppm	0.00057100	5.9541	.00000	Abs	Pass	
Pb2203		-0.0035670	ppm	0.0013670	38.326	.00000	Abs	Pass	
S_1820		0.025344	ppm	0.00026100	1.0307	.00000	Abs	Pass	
Sb2068		-0.014210	ppm	0.0010580	7.4472	.00000	Abs	Pass	
Se1960		0.0040400	ppm	0.0023160	57.338	.00000	Abs	Pass	
Si2881		0.089463	ppm	0.060875	68.044	.00000	Abs	Pass	
Sn1899		0.0062980	ppm	0.00094900	15.067	.00000	Abs	Pass	
Sr4077		0.00043800	ppm	0.000010000	2.2537	.00000	Abs	Pass	
Ti3349		0.00063400	ppm	0.000059000	9.2961	.00000	Abs	Pass	
Tl1908		0.0029880	ppm	0.0038380	128.43	.00000	Abs	Pass	
V_2924		-0.0015970	ppm	0.00053900	33.718	.00000	Abs	Pass	
Zn2062		-0.00097300	ppm	0.00016500	16.920	.00000	Abs	Pass	

Fe 2058795

Acquire Date: 7/24/2020 9:35:20AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,551.8	Cts/S	12.338	0.22224				
Y_3600		52,811	Cts/S	107.05	0.20271				
Y_3774		3,418.7	Cts/S	15.873	0.46432				

Mg 2079441

Acquire Date: 7/24/2020 9:39:17AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012100	ppm	0.00075400	62.335	.00000	Abs	Pass	
Al3961		0.0063540	ppm	0.0066100	104.02				
As1890		-0.00042800	ppm	0.0018620	434.58	.00000	Abs	Pass	
B_2089		0.011263	ppm	0.0028050	24.903	.00000	Abs	Pass	
Ba4554		0.00088100	ppm	0.00050700	57.559	.00000	Abs	Pass	
Be3130		0.00016500	ppm	0.000062000	37.316	.00000	Abs	Pass	
Ca3179		0.062121	ppm	0.0070680	11.378				
Cd2144		0.00077900	ppm	0.00020500	26.242	.00000	Abs	Pass	
Co2286		0.00024500	ppm	0.00019300	78.575	.00000	Abs	Pass	
Cr2677		0.00016100	ppm	0.00069900	434.51	.00000	Abs	Pass	
Cu3247		0.00073100	ppm	0.0011340	155.10	.00000	Abs	Pass	
Fe2599		0.42927	ppm	0.082240	19.158				
K_7664		-0.050068	ppm	0.036508	72.917	.00000	Abs	Pass	
Mg2790		979.28	ppm	16.791	1.7146				
Mn2576		0.0028710	ppm	0.000040000	1.3809	.00000	Abs	Pass	
Mo2020		0.0010300	ppm	0.00036500	35.483	.00000	Abs	Pass	
Na5895		0.0099730	ppm	0.0055470	55.623	.00000	Abs	Pass	
Ni2316		0.0015610	ppm	0.0010310	66.066	.00000	Abs	Pass	
P_1782		-0.00094800	ppm	0.00071500	75.410	.00000	Abs	Pass	
Pb2203		0.0017990	ppm	0.00090100	50.056	.00000	Abs	Pass	
S_1820		0.080888	ppm	0.0063580	7.8608	.00000	Abs	Pass	
Sb2068		0.0072920	ppm	0.0037990	52.098	.00000	Abs	Pass	
Se1960		-0.0051940	ppm	0.0029460	56.716	.00000	Abs	Pass	
Si2881		0.038352	ppm	0.082123	214.13	.00000	Abs	Pass	
Sn1899		0.0021380	ppm	0.00096600	45.170	.00000	Abs	Pass	
Sr4077		0.00040400	ppm	0.00045000	111.35	.00000	Abs	Pass	
Ti3349		0.0031210	ppm	0.00012300	3.9360	.00000	Abs	Pass	
Tl1908		0.0038960	ppm	0.0025520	65.510	.00000	Abs	Pass	
V_2924		0.0011970	ppm	0.00045000	37.551	.00000	Abs	Pass	
Zn2062		0.0019820	ppm	0.00014500	7.3027	.00000	Abs	Pass	
Y_2243		5,332.1	Cts/S	16.054	0.30107				
Y_3600		50,302	Cts/S	132.92	0.26426				
Y_3774		3,339.2	Cts/S	1.6702	0.050020				

rinse1

Acquire Date: 7/24/2020 9:43:20AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00024500	ppm	0.00026900	109.72
Al3961		0.011279	ppm	0.0035410	31.398
As1890		0.00076800	ppm	0.00024700	32.205
B_2089		0.0041920	ppm	0.0012980	30.958
Ba4554		0.00000	ppm	0.0000050000	3,048.3
Be3130		0.00039700	ppm	0.00013400	33.720
Ca3179		-0.0018180	ppm	0.00048900	26.871
Cd2144		0.000062000	ppm	0.00016900	272.63
Co2286		-0.00030900	ppm	0.00018900	60.936
Cr2677		-0.00020800	ppm	0.00019400	93.099
Cu3247		-0.00013200	ppm	0.00027400	208.01
Fe2599		0.034001	ppm	0.00026700	0.78582
K_7664		0.021909	ppm	0.082368	375.95
Mg2790		0.060950	ppm	0.024008	39.390
Mn2576		0.000035000	ppm	0.00013200	377.42
Mo2020		0.00059000	ppm	0.00000	0.049177
Na5895		-0.0046130	ppm	0.012915	279.94
Ni2316		0.00037900	ppm	0.00035300	92.972
P_1782		-0.0094670	ppm	0.0050210	53.035
Pb2203		-0.00024000	ppm	0.00033800	140.59
S_1820		0.0014040	ppm	0.0087870	625.68
Sb2068		-0.0011810	ppm	0.0022630	191.62
Se1960		0.00060600	ppm	0.0017810	293.73
Si2881		-0.0086410	ppm	0.0018990	21.982
Sn1899		-0.00053700	ppm	0.000037000	6.9268
Sr4077		0.000068000	ppm	0.000019000	28.550
Ti3349		0.00063500	ppm	0.000066000	10.390
Tl1908		0.00085200	ppm	0.0024720	290.06
V_2924		0.00059200	ppm	0.00023900	40.321
Zn2062		0.00071900	ppm	0.00045800	63.724
Y_2243		5,685.0	Cts/S	26.782	0.47110
Y_3600		53,993	Cts/S	255.61	0.47340
Y_3774		3,436.2	Cts/S	0.93338	0.027163

rinse2

Acquire Date: 7/24/2020 9:47:18AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00073000	ppm	0.00030700	42.017
Al3961		-0.012963	ppm	0.0013150	10.144
As1890		-0.00047500	ppm	0.00069500	146.24
B_2089		0.0034720	ppm	0.00052600	15.135
Ba4554		0.00037900	ppm	0.00047700	126.00
Be3130		0.00014100	ppm	0.00010900	77.485
Ca3179		0.0035400	ppm	0.0019880	56.137
Cd2144		0.00013000	ppm	0.000082000	63.006
Co2286		.0000090000	ppm	0.00022100	2,587.2

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

rinse2

Acquire Date: 7/24/2020 9:47:18AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00035000	ppm	0.00044900	128.26
Cu3247		-0.00085000	ppm	0.00081300	95.627
Fe2599		0.022142	ppm	0.0029760	13.443
K_7664		0.036228	ppm	0.081290	224.38
Mg2790		-0.0027210	ppm	0.0098990	363.83
Mn2576		0.000042000	ppm	0.000058000	139.25
Mo2020		0.00023500	ppm	0.00050400	214.06
Na5895		-0.029298	ppm	0.013338	45.524
Ni2316		0.00028900	ppm	0.00034300	118.68
P_1782		-0.0091030	ppm	0.0017010	18.684
Pb2203		-0.0024400	ppm	0.00023600	9.6579
S_1820		0.0042860	ppm	0.00078100	18.233
Sb2068		-0.00092900	ppm	0.0031300	336.87
Se1960		-0.0027850	ppm	0.00039100	14.045
Si2881		0.058991	ppm	0.026204	44.421
Sn1899		0.00025300	ppm	0.0010040	397.22
Sr4077		0.000041000	ppm	0.000019000	46.997
Ti3349		0.0010730	ppm	0.00043800	40.813
Tl1908		-0.00075000	ppm	0.00014400	19.142
V_2924		0.00065900	ppm	0.00034000	51.650
Zn2062		0.00025400	ppm	0.00034700	136.68
Y_2243		5,680.7	Cts/S	2.0654	0.036359
Y_3600		53,900	Cts/S	21.205	0.039341
Y_3774		3,417.0	Cts/S	11.230	0.32866

CCV 2078482

Acquire Date: 7/24/2020 9:51:17AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.49649	ppm	0.00023100	0.046527	.50000	Rel(%)	Pass	
Al3961		24.994	ppm	0.12451	0.49814	25.000	Rel(%)	Pass	
As1890		0.50393	ppm	0.00067500	0.13388	.50000	Rel(%)	Pass	
B_2089		1.0123	ppm	0.0017430	0.17218	1.0000	Rel(%)	Pass	
Ba4554		2.5238	ppm	0.016118	0.63863	2.5000	Rel(%)	Pass	
Be3130		0.50841	ppm	0.0013750	0.27046	.50000	Rel(%)	Pass	
Ca3179		25.481	ppm	0.15403	0.60449	25.000	Rel(%)	Pass	
Cd2144		0.51331	ppm	0.0010710	0.20868	.50000	Rel(%)	Pass	
Co2286		2.5538	ppm	0.0073150	0.28641	2.5000	Rel(%)	Pass	
Cr2677		2.4375	ppm	0.0054020	0.22163	2.5000	Rel(%)	Pass	
Cu3247		2.4843	ppm	0.0048550	0.19543	2.5000	Rel(%)	Pass	
Fe2599		25.174	ppm	0.18618	0.73958	25.000	Rel(%)	Pass	
K_7664		24.861	ppm	0.17934	0.72137	25.000	Rel(%)	Pass	
Mg2790		24.815	ppm	0.10121	0.40787	25.000	Rel(%)	Pass	
Mn2576		2.5059	ppm	0.0050970	0.20341	2.5000	Rel(%)	Pass	
Mo2020		1.0154	ppm	0.0050810	0.50037	1.0000	Rel(%)	Pass	
Na5895		24.753	ppm	0.18333	0.74062	25.000	Rel(%)	Pass	
Ni2316		2.5978	ppm	0.0033410	0.12861	2.5000	Rel(%)	Pass	
P_1782		2.5582	ppm	0.0013460	0.052600	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 9:51:17AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.51158	ppm	0.0021810	0.42637	.50000	Rel(%)	Pass	
S_1820		2.4126	ppm	0.0051170	0.21208	2.5000	Rel(%)	Pass	
Sb2068		0.51293	ppm	0.0064890	1.2651	.50000	Rel(%)	Pass	
Se1960		0.51121	ppm	0.0017480	0.34194	.50000	Rel(%)	Pass	
Si2881		2.5130	ppm	0.055040	2.1902	2.5000	Rel(%)	Pass	
Sn1899		2.5220	ppm	0.0057110	0.22646	2.5000	Rel(%)	Pass	
Sr4077		2.5181	ppm	0.017080	0.67831	2.5000	Rel(%)	Pass	
Ti3349		1.0086	ppm	0.0018820	0.18658	1.0000	Rel(%)	Pass	
Tl1908		0.51059	ppm	0.00093600	0.18340	.50000	Rel(%)	Pass	
V_2924		2.5141	ppm	0.00087600	0.034855	2.5000	Rel(%)	Pass	
Zn2062		2.5132	ppm	0.0055160	0.21949	2.5000	Rel(%)	Pass	
Y_2243		5,626.2	Cts/S	6.9249	0.12308				
Y_3600		53,289	Cts/S	15.647	0.029362				
Y_3774		3,429.2	Cts/S	10.589	0.30878				

CCB 2065750

Acquire Date: 7/24/2020 9:55:02AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00030400	ppm	0.00018700	61.510	.00000	Abs	Pass	
Al3961		-0.0083230	ppm	0.0076370	91.760	.00000	Abs	Pass	
As1890		0.0031970	ppm	0.0013850	43.320	.00000	Abs	Pass	
B_2089		0.0040970	ppm	0.000076000	1.8442	.00000	Abs	Pass	
Ba4554		0.00080500	ppm	0.00070400	87.397	.00000	Abs	Pass	
Be3130		0.00033800	ppm	0.00042000	124.27	.00000	Abs	Pass	
Ca3179		0.0029130	ppm	0.00080400	27.590	.00000	Abs	Pass	
Cd2144		0.00012900	ppm	0.000064000	49.286	.00000	Abs	Pass	
Co2286		-0.00011600	ppm	0.000085000	72.854	.00000	Abs	Pass	
Cr2677		0.0011850	ppm	0.0014590	123.09	.00000	Abs	Pass	
Cu3247		0.0013970	ppm	0.00065300	46.769	.00000	Abs	Pass	
Fe2599	**W**	**0.058294**	**ppm**	**0.0068210**	**11.701**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		-0.0083080	ppm	0.019178	230.83	.00000	Abs	Pass	
Mg2790		0.000017000	ppm	0.0051340	29,651	.00000	Abs	Pass	
Mn2576		0.00033700	ppm	0.000030000	8.8318	.00000	Abs	Pass	
Mo2020		0.0061130	ppm	0.00074100	12.116	.00000	Abs	Pass	
Na5895		-0.018820	ppm	0.00075100	3.9929	.00000	Abs	Pass	
Ni2316		-0.0010920	ppm	0.00030800	28.217	.00000	Abs	Pass	
P_1782		-0.0041100	ppm	0.00085800	20.875	.00000	Abs	Pass	
Pb2203		-0.0013490	ppm	0.00078700	58.338	.00000	Abs	Pass	
S_1820		0.0024390	ppm	0.00027800	11.380	.00000	Abs	Pass	
Sb2068		0.00016200	ppm	0.00032000	197.00	.00000	Abs	Pass	
Se1960		-0.0056090	ppm	0.0031490	56.142	.00000	Abs	Pass	
Si2881	**W**	**0.10691**	**ppm**	**0.028319**	**26.488**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0019530	ppm	0.00054600	27.942	.00000	Abs	Pass	
Sr4077		0.00052700	ppm	0.00016200	30.715	.00000	Abs	Pass	
Ti3349		0.0049510	ppm	0.00029400	5.9418	.00000	Abs	Pass	
Tl1908		0.0024210	ppm	0.00093100	38.462	.00000	Abs	Pass	
V_2924		0.0017750	ppm	0.000049000	2.7357	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/24/2020 9:55:02AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0015950	ppm	0.00036300	22.745	.00000	Abs	Pass	
Y_2243		5,678.8	Cts/S	1.7893	0.031510				
Y_3600		54,000	Cts/S	169.08	0.31312				
Y_3774		3,423.2	Cts/S	28.122	0.82151				

MB 320-397535/1-A

Acquire Date: 7/24/2020 9:59:03AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00000	ppm	0.000011000	2,353.9
Al3961		-0.0015160	ppm	0.0026510	174.83
As1890		0.0012700	ppm	0.0021650	170.51
B_2089		0.0024980	ppm	0.00025700	10.284
Ba4554		0.00026400	ppm	0.00035700	135.17
Be3130		.0000020000	ppm	0.00035400	18,634
Ca3179		0.11275	ppm	0.0073920	6.5556
Cd2144		0.000058000	ppm	0.000047000	81.197
Co2286		-0.00034000	ppm	0.000062000	18.067
Cr2677		0.00066300	ppm	0.00016500	24.855
Cu3247		0.00042000	ppm	0.000052000	12.324
Fe2599		-0.0063190	ppm	0.0056500	89.420
K_7664		0.014016	ppm	0.0029670	21.171
Mg2790		0.043536	ppm	0.0052010	11.947
Mn2576		0.00039600	ppm	0.000056000	14.137
Mo2020		0.0011810	ppm	0.000015000	1.2406
Na5895		0.080353	ppm	0.0053890	6.7063
Ni2316		0.000059000	ppm	0.000084000	143.52
P_1782		0.011963	ppm	0.000082000	0.68486
Pb2203		-0.00074500	ppm	0.00015300	20.602
S_1820		0.0039320	ppm	0.000067000	1.7000
Sb2068		-0.00065900	ppm	0.0013580	206.28
Se1960		-0.0022130	ppm	0.00041900	18.919
Si2881		0.077516	ppm	0.046671	60.208
Sn1899	**F**	**0.020730**	**ppm**	**0.0011510**	**5.5523**
Sr4077		0.00033400	ppm	0.00020900	62.558
Ti3349		0.0012250	ppm	0.000064000	5.2129
Tl1908		0.00038200	ppm	0.0021020	550.17
V_2924		0.00068600	ppm	0.00071300	103.89
Zn2062		0.00013900	ppm	0.000082000	59.175
Y_2243		5,690.3	Cts/S	24.752	0.43499
Y_3600		54,095	Cts/S	40.617	0.075084
Y_3774		3,427.3	Cts/S	16.780	0.48959

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 7/27/2020 7:27:14AM

LCS 320-397535/2-A

Acquire Date: 7/24/2020 10:03:05AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046145	ppm	0.0010040	2.1763
Al3961		4.7066	ppm	0.039721	0.84395
As1890	**W**	**0.43800**	**ppm**	**0.00027000**	**0.061593**
B_2089		4.3069	ppm	0.0071690	0.16644
Ba4554	**W**	**0.47465**	**ppm**	**0.0031420**	**0.66194**
Be3130		0.23784	ppm	0.0011110	0.46710
Ca3179		24.143	ppm	0.10022	0.41511
Cd2144	**W**	**0.23232**	**ppm**	**0.00057300**	**0.24674**
Co2286		0.23565	ppm	0.00096200	0.40840
Cr2677	**W**	**0.23060**	**ppm**	**0.00068300**	**0.29618**
Cu3247		0.22797	ppm	0.0019250	0.84423
Fe2599		4.7695	ppm	0.021253	0.44561
K_7664		23.077	ppm	0.20283	0.87892
Mg2790		23.111	ppm	0.022318	0.096570
Mn2576		0.23753	ppm	0.00043400	0.18260
Mo2020		0.23946	ppm	0.00099200	0.41435
Na5895		23.375	ppm	0.19534	0.83569
Ni2316		0.23388	ppm	0.00072900	0.31167
P_1782		4.8441	ppm	0.0054840	0.11320
Pb2203	**W**	**0.23198**	**ppm**	**0.0027770**	**1.1969**
S_1820		4.5366	ppm	0.010256	0.22607
Sb2068		0.43996	ppm	0.0037820	0.85952
Se1960	**W**	**0.42272**	**ppm**	**0.0011340**	**0.26836**
Si2881	**W**	**3.6198**	**ppm**	**0.011962**	**0.33047**
Sn1899		0.50507	ppm	0.000092000	0.018230
Sr4077		0.23705	ppm	0.00081700	0.34463
Ti3349	**W**	**0.23652**	**ppm**	**0.00054200**	**0.22901**
Tl1908		0.46155	ppm	0.0011390	0.24683
V_2924		0.23655	ppm	0.00046700	0.19745
Zn2062		0.47276	ppm	0.00087800	0.18566
Y_2243		5,565.4	Cts/S	5.7891	0.10402
Y_3600		52,893	Cts/S	202.30	0.38246
Y_3774		3,350.8	Cts/S	9.6003	0.28651

MB 320-397704/1-A

Acquire Date: 7/24/2020 10:06:53AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00097200	ppm	0.000019000	1.9566
Al3961		-0.0050570	ppm	0.00068400	13.524
As1890		0.00064900	ppm	0.0014540	223.94
B_2089		0.012395	ppm	0.0016970	13.694
Ba4554		0.000066000	ppm	0.00037500	570.97
Be3130		0.00042000	ppm	0.00018500	44.127
Ca3179		0.023071	ppm	0.0042410	18.384
Cd2144		0.00011600	ppm	0.0000030000	2.5075
Co2286		0.000080000	ppm	0.00021000	263.54

MB 320-397704/1-A

Acquire Date: 7/24/2020 10:06:53AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00023900	ppm	0.00020600	86.172
Cu3247		0.0010050	ppm	0.00064800	64.506
Fe2599		0.023732	ppm	0.0062760	26.444
K_7664		0.0045180	ppm	0.040825	903.66
Mg2790		0.019487	ppm	0.013647	70.031
Mn2576		0.00011600	ppm	0.00013800	118.99
Mo2020		0.0018240	ppm	0.00039000	21.387
Na5895		-0.037433	ppm	0.011769	31.441
Ni2316		-0.00020300	ppm	0.00050700	250.06
P_1782		-0.0057690	ppm	0.00038700	6.7150
Pb2203		-0.0044320	ppm	0.000089000	2.0041
S_1820		0.0042120	ppm	0.0079600	189.01
Sb2068		0.0036450	ppm	0.00049000	13.430
Se1960		-0.0021910	ppm	0.0028110	128.33
Si2881		0.054406	ppm	0.011376	20.909
Sn1899		0.0021890	ppm	0.00013900	6.3535
Sr4077		0.00010200	ppm	0.00012300	120.05
Ti3349		0.0020240	ppm	0.00024300	12.024
Tl1908		0.0032230	ppm	0.0019260	59.747
V_2924		0.00096500	ppm	0.00024500	25.329
Zn2062		0.0011870	ppm	0.00026700	22.542
Y_2243		5,650.5	Cts/S	21.786	0.38556
Y_3600		53,638	Cts/S	3.9688	0.0073990
Y_3774		3,377.9	Cts/S	7.7741	0.23015

LCS 320-397704/2-A

Acquire Date: 7/24/2020 10:10:54AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048891	ppm	0.00013100	0.26764
Al3961		4.9386	ppm	0.060372	1.2225
As1890	**W**	**0.46192**	**ppm**	**0.0014730**	**0.31886**
B_2089		4.6638	ppm	0.0080200	0.17197
Ba4554	**W**	**0.50660**	**ppm**	**0.0032150**	**0.63466**
Be3130		0.24732	ppm	0.0024060	0.97295
Ca3179		24.877	ppm	0.077357	0.31095
Cd2144	**W**	**0.24254**	**ppm**	**0.00068500**	**0.28260**
Co2286		0.24479	ppm	0.000046000	0.018729
Cr2677	**W**	**0.24281**	**ppm**	**0.0010450**	**0.43019**
Cu3247		0.24246	ppm	0.00058000	0.23913
Fe2599		5.0075	ppm	0.027751	0.55419
K_7664		23.942	ppm	0.26108	1.0904
Mg2790		24.242	ppm	0.056863	0.23457
Mn2576		0.24804	ppm	0.0011140	0.44915
Mo2020		0.25188	ppm	0.00088000	0.34932
Na5895		24.204	ppm	0.17840	0.73707
Ni2316		0.24299	ppm	0.00013000	0.053407

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-397704/2-A

Acquire Date: 7/24/2020 10:10:54AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.0684	ppm	0.0099120	0.19557
Pb2203	**W**	**0.24036**	**ppm**	**0.0039630**	**1.6488**
S_1820		4.7760	ppm	0.0082850	0.17347
Sb2068		0.46963	ppm	0.0034900	0.74312
Se1960	**W**	**0.44716**	**ppm**	**0.0036270**	**0.81109**
Si2881	**W**	**5.0098**	**ppm**	**0.018004**	**0.35937**
Sn1899		0.49909	ppm	0.0011120	0.22273
Sr4077		0.24814	ppm	0.0013430	0.54122
Ti3349	**W**	**0.24877**	**ppm**	**0.0015020**	**0.60368**
Tl1908		0.48516	ppm	0.0017490	0.36059
V_2924		0.24970	ppm	0.00030700	0.12290
Zn2062		0.49733	ppm	0.00060100	0.12083
Y_2243		5,624.8	Cts/S	0.72116	0.012821
Y_3600		52,739	Cts/S	131.01	0.24840
Y_3774		3,408.7	Cts/S	9.2189	0.27045

MB 320-397705/1-A

Acquire Date: 7/24/2020 10:14:42AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00039900	ppm	0.00044700	112.03
Al3961		0.0039300	ppm	0.025240	642.16
As1890		-0.00043600	ppm	0.00016800	38.543
B_2089		0.015435	ppm	0.0013810	8.9470
Ba4554		0.00056700	ppm	0.00031200	55.045
Be3130		0.00043000	ppm	0.00022400	52.005
Ca3179		0.038538	ppm	0.011946	30.997
Cd2144		0.00030800	ppm	0.000014000	4.3997
Co2286		0.00011600	ppm	0.00032200	277.44
Cr2677		0.00076900	ppm	0.00061200	79.530
Cu3247		0.0016910	ppm	0.00059600	35.276
Fe2599		0.028783	ppm	0.0058480	20.318
K_7664		0.036169	ppm	0.0069120	19.111
Mg2790		0.049392	ppm	0.0040380	8.1745
Mn2576		0.00036600	ppm	0.00013200	36.195
Mo2020		0.0015350	ppm	0.000010000	0.65088
Na5895		-0.0092320	ppm	0.018080	195.84
Ni2316		0.00094000	ppm	0.00042000	44.693
P_1782		-0.0048590	ppm	0.00031500	6.4914
Pb2203		0.0013890	ppm	0.0010950	78.774
S_1820		0.0062880	ppm	0.0022050	35.062
Sb2068		0.00048400	ppm	0.0014330	295.90
Se1960		0.00042200	ppm	0.0059740	1,415.3
Si2881		0.12353	ppm	0.0057840	4.6826
Sn1899		0.0026940	ppm	0.00020800	7.7310
Sr4077		0.00054500	ppm	0.00021300	39.016
Ti3349		0.0017490	ppm	0.00062600	35.797

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-397705/1-A

Acquire Date:	7/24/2020 10:14:42AM		Sample Type:	Unknown		
Correction Factor: 1.0000	SW: 1.0000	NW: 1.0000	IV: 1.0000	FV: 1.0000	AF: 1.0000	
Analyst Name:	admin					
Method Name:	Thermo6010_EK1			Method Revision:	864	

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0021650	ppm	0.0021660	100.05
V_2924		0.00088900	ppm	0.00073800	83.031
Zn2062		0.0014350	ppm	0.00027600	19.261
Y_2243		5,683.6	Cts/S	8.4893	0.14937
Y_3600		53,803	Cts/S	123.59	0.22972
Y_3774		3,382.6	Cts/S	11.140	0.32935

LCS 320-397705/2-A

Acquire Date:	7/24/2020 10:18:42AM		Sample Type:	Unknown		
Correction Factor: 1.0000	SW: 1.0000	NW: 1.0000	IV: 1.0000	FV: 1.0000	AF: 1.0000	
Analyst Name:	admin					
Method Name:	Thermo6010_EK1			Method Revision:	864	

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049468	ppm	0.0000020000	0.0044950
Al3961		4.8899	ppm	0.015981	0.32683
As1890	**W**	**0.46247**	**ppm**	**0.00012500**	**0.026937**
B_2089		4.6678	ppm	0.0075430	0.16159
Ba4554	**W**	**0.50562**	**ppm**	**0.0040640**	**0.80369**
Be3130		0.24675	ppm	0.00067800	0.27487
Ca3179		24.914	ppm	0.10552	0.42355
Cd2144	**W**	**0.24310**	**ppm**	**0.00072100**	**0.29647**
Co2286		0.24474	ppm	0.00022900	0.093462
Cr2677	**W**	**0.24097**	**ppm**	**0.00031900**	**0.13239**
Cu3247		0.24329	ppm	0.0032770	1.3471
Fe2599		4.9553	ppm	0.0083530	0.16857
K_7664		24.086	ppm	0.14958	0.62103
Mg2790		24.103	ppm	0.0030940	0.012836
Mn2576		0.24715	ppm	0.00035300	0.14270
Mo2020		0.25112	ppm	0.0010530	0.41942
Na5895		24.251	ppm	0.14617	0.60274
Ni2316		0.24238	ppm	0.000047000	0.019333
P_1782		5.0822	ppm	0.0061240	0.12050
Pb2203	**W**	**0.24388**	**ppm**	**0.000055000**	**0.022482**
S_1820		4.7774	ppm	0.0026040	0.054501
Sb2068		0.46973	ppm	0.0032050	0.68222
Se1960	**W**	**0.44725**	**ppm**	**0.0024130**	**0.53962**
Si2881	**W**	**5.0240**	**ppm**	**0.059001**	**1.1744**
Sn1899		0.49889	ppm	0.0028000	0.56116
Sr4077		0.24778	ppm	0.0016240	0.65557
Ti3349	**W**	**0.24777**	**ppm**	**0.0020930**	**0.84485**
Tl1908		0.48563	ppm	0.000082000	0.016890
V_2924		0.24848	ppm	0.0025460	1.0248
Zn2062		0.49552	ppm	0.0012560	0.25345
Y_2243		5,631.1	Cts/S	3.2040	0.056899
Y_3600		53,250	Cts/S	218.23	0.40983
Y_3774		3,407.3	Cts/S	0.71037	0.020848

MB 320-397703/1-A

Acquire Date: 7/24/2020 10:22:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00010900	ppm	0.000011000	10.174
Al3961		-0.010451	ppm	0.0077680	74.329
As1890		-0.00058500	ppm	0.00069500	118.93
B_2089		0.017943	ppm	0.0014940	8.3261
Ba4554		0.00062700	ppm	0.00018600	29.680
Be3130		0.00046000	ppm	0.00027100	58.795
Ca3179		0.031892	ppm	0.011225	35.196
Cd2144		0.00013700	ppm	0.000044000	32.084
Co2286		-0.00014900	ppm	0.000068000	45.307
Cr2677		-0.00064600	ppm	0.000052000	8.0403
Cu3247		0.0013950	ppm	0.000096000	6.9103
Fe2599		0.0045800	ppm	0.0023240	50.743
K_7664		0.068024	ppm	0.017217	25.310
Mg2790		0.0045700	ppm	0.0011960	26.183
Mn2576		0.00034800	ppm	0.000023000	6.7336
Mo2020		0.0014260	ppm	0.000041000	2.8432
Na5895		0.0033370	ppm	0.0049330	147.83
Ni2316		0.00051900	ppm	0.0018520	356.96
P_1782		-0.0036990	ppm	0.00062500	16.906
Pb2203		-0.00024100	ppm	0.00068200	283.70
S_1820		0.015950	ppm	0.0018830	11.804
Sb2068		-0.0012760	ppm	0.00086800	68.019
Se1960		-0.00022900	ppm	0.0031240	1,364.5
Si2881		0.051727	ppm	0.023785	45.983
Sn1899		0.0018210	ppm	0.00043500	23.901
Sr4077		0.00029100	ppm	0.00020400	70.036
Ti3349		0.0023570	ppm	0.00043300	18.366
Tl1908		0.0046120	ppm	0.0021930	47.544
V_2924		0.0010840	ppm	0.00052300	48.312
Zn2062		0.0011760	ppm	0.000042000	3.5401
Y_2243		5,701.3	Cts/S	6.5792	0.11540
Y_3600		54,036	Cts/S	55.768	0.10321
Y_3774		3,430.0	Cts/S	2.7565	0.080365

LCS 320-397703/2-A

Acquire Date: 7/24/2020 10:26:36AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049364	ppm	0.00088400	1.7917
Al3961		4.9324	ppm	0.060791	1.2325
As1890	**W**	**0.46403**	**ppm**	**0.00012200**	**0.026233**
B_2089		4.7005	ppm	0.0097700	0.20786
Ba4554	**W**	**0.49911**	**ppm**	**0.0016320**	**0.32702**
Be3130		0.24886	ppm	0.0017780	0.71456
Ca3179		25.005	ppm	0.060440	0.24171
Cd2144	**W**	**0.24443**	**ppm**	**0.000035000**	**0.014157**
Co2286		0.24609	ppm	0.00073500	0.29858

LCS 320-397703/2-A

Acquire Date: 7/24/2020 10:26:36AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677	**W**	**0.24360**	**ppm**	**0.0016050**	**0.65897**
Cu3247		0.24303	ppm	0.00062500	0.25736
Fe2599		4.9629	ppm	0.0047430	0.095573
K_7664		24.283	ppm	0.096409	0.39702
Mg2790		24.338	ppm	0.10770	0.44254
Mn2576		0.24913	ppm	0.00089000	0.35709
Mo2020		0.25275	ppm	0.000076000	0.029922
Na5895		24.498	ppm	0.13480	0.55025
Ni2316		0.24432	ppm	0.0011780	0.48217
P_1782		5.1169	ppm	0.0020540	0.040145
Pb2203	**W**	**0.24350**	**ppm**	**0.0018480**	**0.75875**
S_1820		4.7975	ppm	0.0036850	0.076812
Sb2068		0.47119	ppm	0.0018640	0.39550
Se1960	**W**	**0.45512**	**ppm**	**0.0092470**	**2.0318**
Si2881	**W**	**4.9337**	**ppm**	**0.070067**	**1.4202**
Sn1899		0.50167	ppm	0.00077700	0.15491
Sr4077		0.24940	ppm	0.00096600	0.38744
Ti3349	**W**	**0.24970**	**ppm**	**0.0022260**	**0.89156**
Tl1908		0.48664	ppm	0.0044930	0.92327
V_2924		0.25128	ppm	0.0015500	0.61698
Zn2062		0.49908	ppm	0.0032820	0.65758
Y_2243		5,627.5	Cts/S	10.218	0.18157
Y_3600		52,889	Cts/S	103.96	0.19657
Y_3774		3,412.0	Cts/S	7.3161	0.21442

LB 320-397088/1-B

Acquire Date: 7/24/2020 10:30:23AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0014940	ppm	0.0014790	99.052
Al3961		-0.0045590	ppm	0.013763	301.89
As1890		-0.0017100	ppm	0.00039000	22.813
B_2089		0.048914	ppm	0.00098200	2.0067
Ba4554		0.078742	ppm	0.00014300	0.18120
Be3130		0.00021700	ppm	0.00025800	118.43
Ca3179		0.044074	ppm	0.0083180	18.873
Cd2144		0.000020000	ppm	0.000044000	213.42
Co2286		-0.00029300	ppm	0.00022000	75.170
Cr2677		0.00071200	ppm	0.00068100	95.574
Cu3247		0.0074500	ppm	0.00092100	12.368
Fe2599		0.0074300	ppm	0.0042140	56.712
K_7664		0.32686	ppm	0.049850	15.251
Mg2790		0.0077740	ppm	0.0079840	102.70
Mn2576		0.00025500	ppm	0.00033300	130.45
Mo2020		0.0011350	ppm	0.00067400	59.356
Na5895	**F**	**1,380.7**	**ppm**	**5.1328**	**0.37176**
Ni2316		0.014665	ppm	0.00037000	2.5197

LB 320-397088/1-B

Acquire Date: 7/24/2020 10:30:23AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0080900	ppm	0.0041640	51.470
Pb2203		0.000010000	ppm	0.00053700	5,127.7
S_1820		0.025904	ppm	0.0022950	8.8600
Sb2068		0.0021170	ppm	0.0017170	81.102
Se1960		0.0034980	ppm	0.0048640	139.03
Si2881		0.022670	ppm	0.018664	82.328
Sn1899		0.0010510	ppm	0.00045200	43.047
Sr4077		0.00081700	ppm	0.000031000	3.7546
Ti3349		0.0018160	ppm	0.00011300	6.2244
Tl1908		-0.0015640	ppm	0.0026270	167.98
V_2924		0.00091300	ppm	0.0014090	154.24
Zn2062		0.057566	ppm	0.00035200	0.61227
Y_2243		5,269.2	Cts/S	6.2568	0.11874
Y_3600		48,479	Cts/S	268.14	0.55311
Y_3774		3,410.6	Cts/S	4.7441	0.13910

320-62944-A-1-G

Acquire Date: 7/24/2020 10:34:29AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0020710	ppm	0.00079300	38.311
Al3961		45.870	ppm	0.25257	0.55062
As1890		0.012478	ppm	0.0018490	14.821
B_2089		0.42395	ppm	0.00091600	0.21608
Ba4554		0.30517	ppm	0.0026500	0.86844
Be3130		0.00098900	ppm	0.00034700	35.070
Ca3179		96.454	ppm	0.56163	0.58228
Cd2144		0.0016400	ppm	0.000046000	2.7870
Co2286		0.025631	ppm	0.00035700	1.3943
Cr2677		0.25515	ppm	0.0014930	0.58520
Cu3247		0.37034	ppm	0.0019410	0.52412
Fe2599		46.225	ppm	0.29611	0.64058
K_7664		18.124	ppm	0.12214	0.67392
Mg2790		436.17	ppm	1.4168	0.32483
Mn2576		5.6769	ppm	0.015802	0.27836
Mo2020		0.011526	ppm	0.00031700	2.7485
Na5895		45.343	ppm	0.31143	0.68683
Ni2316		0.099543	ppm	0.00065600	0.65874
P_1782		16.899	ppm	0.045921	0.27174
Pb2203		0.037643	ppm	0.0035410	9.4070
S_1820		33.744	ppm	0.069795	0.20684
Sb2068		0.0060720	ppm	0.0027390	45.118
Se1960		-0.0022000	ppm	0.00018400	8.3769
Si2881		1.2600	ppm	0.030622	2.4304
Sn1899		0.025934	ppm	0.00000	0.00080900
Sr4077		0.74576	ppm	0.0063880	0.85655
Ti3349		1.8539	ppm	0.0068270	0.36828

320-62944-A-1-G

Acquire Date: 7/24/2020 10:34:29AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0034690	ppm	0.00022600	6.5170
V_2924		0.65059	ppm	0.00081400	0.12515
Zn2062		3.2232	ppm	0.017257	0.53539
Y_2243		5,398.3	Cts/S	6.8046	0.12605
Y_3600		50,347	Cts/S	53.946	0.10715
Y_3774		3,396.9	Cts/S	0.50576	0.014889

CCV 2078482

Acquire Date: 7/24/2020 10:38:23AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50349	ppm	0.0038020	0.75513	.50000	Rel(%)	Pass	
Al3961		25.106	ppm	0.10537	0.41972	25.000	Rel(%)	Pass	
As1890		0.50804	ppm	0.000043000	0.0083800	.50000	Rel(%)	Pass	
B_2089		1.0213	ppm	0.0011350	0.11111	1.0000	Rel(%)	Pass	
Ba4554		2.5220	ppm	0.0058000	0.22997	2.5000	Rel(%)	Pass	
Be3130		0.50658	ppm	0.00081700	0.16129	.50000	Rel(%)	Pass	
Ca3179		25.224	ppm	0.14556	0.57706	25.000	Rel(%)	Pass	
Cd2144		0.51304	ppm	0.00043400	0.084516	.50000	Rel(%)	Pass	
Co2286		2.5544	ppm	0.0044100	0.17263	2.5000	Rel(%)	Pass	
Cr2677		2.4939	ppm	0.020410	0.81840	2.5000	Rel(%)	Pass	
Cu3247		2.4815	ppm	0.015045	0.60629	2.5000	Rel(%)	Pass	
Fe2599		25.273	ppm	0.053302	0.21090	25.000	Rel(%)	Pass	
K_7664		24.807	ppm	0.16711	0.67362	25.000	Rel(%)	Pass	
Mg2790		25.646	ppm	0.21990	0.85746	25.000	Rel(%)	Pass	
Mn2576		2.5276	ppm	0.012402	0.49065	2.5000	Rel(%)	Pass	
Mo2020		1.0157	ppm	0.0056630	0.55755	1.0000	Rel(%)	Pass	
Na5895		25.520	ppm	0.96199	3.7695	25.000	Rel(%)	Pass	
Ni2316		2.5874	ppm	0.0084100	0.32503	2.5000	Rel(%)	Pass	
P_1782		2.5656	ppm	0.00030700	0.011977	2.5000	Rel(%)	Pass	
Pb2203		0.51271	ppm	0.0022850	0.44558	.50000	Rel(%)	Pass	
S_1820		2.4239	ppm	0.015467	0.63809	2.5000	Rel(%)	Pass	
Sb2068		0.51132	ppm	0.0018600	0.36372	.50000	Rel(%)	Pass	
Se1960		0.51874	ppm	0.0033950	0.65438	.50000	Rel(%)	Pass	
Si2881		2.5491	ppm	0.036794	1.4434	2.5000	Rel(%)	Pass	
Sn1899		2.5380	ppm	0.011068	0.43610	2.5000	Rel(%)	Pass	
Sr4077		2.5214	ppm	0.0061030	0.24207	2.5000	Rel(%)	Pass	
Ti3349		1.0200	ppm	0.0051030	0.50029	1.0000	Rel(%)	Pass	
Tl1908		0.51249	ppm	0.0011040	0.21536	.50000	Rel(%)	Pass	
V_2924		2.5253	ppm	0.013391	0.53027	2.5000	Rel(%)	Pass	
Zn2062		2.5486	ppm	0.0083700	0.32843	2.5000	Rel(%)	Pass	
Y_2243		5,618.3	Cts/S	19.035	0.33880				
Y_3600		53,193	Cts/S	242.46	0.45581				
Y_3774		3,421.4	Cts/S	35.663	1.0423				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 2065750

Acquire Date: 7/24/2020 10:42:09AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00058000	ppm	0.0013150	226.86	.00000	Abs	Pass	
Al3961		0.019614	ppm	0.049409	251.91	.00000	Abs	Pass	
As1890		0.0025360	ppm	0.00099900	39.380	.00000	Abs	Pass	
B_2089		0.0073030	ppm	0.00079400	10.871	.00000	Abs	Pass	
Ba4554		0.0017520	ppm	0.0021700	123.82	.00000	Abs	Pass	
Be3130		0.00042700	ppm	0.00011800	27.526	.00000	Abs	Pass	
Ca3179		0.020786	ppm	0.026088	125.50	.00000	Abs	Pass	
Cd2144		0.000097000	ppm	0.0000090000	9.7859	.00000	Abs	Pass	
Co2286		0.000030000	ppm	0.00029500	990.34	.00000	Abs	Pass	
Cr2677		0.00047600	ppm	0.00020800	43.804	.00000	Abs	Pass	
Cu3247		0.0025860	ppm	0.00076900	29.722	.00000	Abs	Pass	
Fe2599	**W**	**0.053226**	**ppm**	**0.021079**	**39.603**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.070856	ppm	0.023730	33.490	.00000	Abs	Pass	
Mg2790		-0.0047070	ppm	0.00054600	11.600	.00000	Abs	Pass	
Mn2576		0.00029600	ppm	0.000080000	27.216	.00000	Abs	Pass	
Mo2020		0.0066960	ppm	0.00057400	8.5706	.00000	Abs	Pass	
Na5895		0.13654	ppm	0.048628	35.615	.00000	Abs	Pass	
Ni2316		-0.00048800	ppm	0.00051500	105.67	.00000	Abs	Pass	
P_1782		-0.0062040	ppm	0.0032130	51.792	.00000	Abs	Pass	
Pb2203		0.00039500	ppm	0.0013330	337.68	.00000	Abs	Pass	
S_1820		0.0054330	ppm	0.00037000	6.8175	.00000	Abs	Pass	
Sb2068		0.0010010	ppm	0.0011490	114.72	.00000	Abs	Pass	
Se1960		-0.0018590	ppm	0.0045290	243.61	.00000	Abs	Pass	
Si2881		0.017740	ppm	0.060803	342.74	.00000	Abs	Pass	
Sn1899		0.0026980	ppm	0.00087300	32.343	.00000	Abs	Pass	
Sr4077		0.0015520	ppm	0.0012270	79.038	.00000	Abs	Pass	
Ti3349		0.0049580	ppm	0.00041500	8.3652	.00000	Abs	Pass	
Tl1908		0.0043930	ppm	0.0010450	23.776	.00000	Abs	Pass	
V_2924		0.00098500	ppm	0.000038000	3.9025	.00000	Abs	Pass	
Zn2062	**W**	**0.0066220**	**ppm**	**0.00048800**	**7.3729**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		5,641.6	Cts/S	3.0921	0.054808				
Y_3600		53,754	Cts/S	89.900	0.16724				
Y_3774		3,433.6	Cts/S	7.1524	0.20831				

sd 320-62944-A-1-G@5

Acquire Date: 7/24/2020 10:46:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00078000	ppm	0.00073600	94.321
Al3961		9.2640	ppm	0.021383	0.23082
As1890		0.0041580	ppm	0.00058400	14.045
B_2089		0.090829	ppm	0.00042600	0.46926
Ba4554		0.061972	ppm	0.00018000	0.29073
Be3130		0.00022100	ppm	0.000084000	38.037
Ca3179		20.187	ppm	0.16616	0.82312
Cd2144		0.00040900	ppm	0.000015000	3.5680
Co2286		0.0055910	ppm	0.00013900	2.4912
Cr2677		0.050434	ppm	0.00034100	0.67582

sd 320-62944-A-1-G@5

Acquire Date: 7/24/2020 10:46:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.074338	ppm	0.0016310	2.1943
Fe2599		9.4369	ppm	0.070711	0.74930
K_7664		3.6103	ppm	0.037606	1.0417
Mg2790		86.709	ppm	0.45026	0.51927
Mn2576		1.1639	ppm	0.0055040	0.47294
Mo2020		0.0030570	ppm	0.00046000	15.038
Na5895		9.0242	ppm	0.078515	0.87005
Ni2316		0.021831	ppm	0.0019780	9.0610
P_1782		3.4652	ppm	0.0069910	0.20176
Pb2203		0.0071790	ppm	0.00035100	4.8821
S_1820		6.9342	ppm	0.029191	0.42097
Sb2068		0.0010230	ppm	0.0015430	150.87
Se1960		-0.0038190	ppm	0.0013490	35.326
Si2881		0.30121	ppm	0.097817	32.474
Sn1899		0.0055880	ppm	0.00027100	4.8433
Sr4077		0.15166	ppm	0.0015080	0.99460
Ti3349		0.37346	ppm	0.0017720	0.47456
Tl1908		0.00072300	ppm	0.0014310	197.93
V_2924		0.13053	ppm	0.00083200	0.63744
Zn2062		0.68813	ppm	0.0020250	0.29433
Y_2243		5,585.1	Cts/S	2.5638	0.045905
Y_3600		52,637	Cts/S	371.32	0.70543
Y_3774		3,403.9	Cts/S	22.434	0.65907

pds 320-62944-A-1-G

Acquire Date: 7/24/2020 10:50:02AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099773	ppm	0.0012210	1.2242
Al3961		53.943	ppm	0.24856	0.46078
As1890		0.10623	ppm	0.0016990	1.5993
B_2089		1.3324	ppm	0.00077500	0.058133
Ba4554		0.39450	ppm	0.0014600	0.37012
Be3130		0.050039	ppm	0.000023000	0.046863
Ca3179		103.14	ppm	0.43930	0.42593
Cd2144		0.096129	ppm	0.00020500	0.21297
Co2286		0.11921	ppm	0.00062500	0.52402
Cr2677		0.33111	ppm	0.0032140	0.97071
Cu3247		0.44552	ppm	0.00027700	0.062220
Fe2599		47.735	ppm	0.031383	0.065744
K_7664		27.733	ppm	0.25584	0.92252
Mg2790		420.92	ppm	6.6421	1.5780
Mn2576		5.4755	ppm	0.024055	0.43932
Mo2020		0.11059	ppm	0.00095800	0.86600
Na5895		53.599	ppm	0.35417	0.66078
Ni2316		0.18819	ppm	0.000035000	0.018849
P_1782		17.330	ppm	0.035690	0.20595

pds 320-62944-A-1-G

Acquire Date: 7/24/2020 10:50:02AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.12880	ppm	0.00037300	0.28981
S_1820		34.513	ppm	0.0045600	0.013214
Sb2068		0.096722	ppm	0.00034400	0.35600
Se1960		0.098126	ppm	0.0019200	1.9565
Si2881		2.2454	ppm	0.090120	4.0136
Sn1899		0.12184	ppm	0.00065100	0.53416
Sr4077		0.81529	ppm	0.0041410	0.50791
Ti3349		1.8837	ppm	0.0079050	0.41963
Tl1908		0.095452	ppm	0.0019430	2.0351
V_2924		0.72201	ppm	0.0030080	0.41661
Zn2062		3.1576	ppm	0.014362	0.45486
Y_2243		5,436.0	Cts/S	26.081	0.47978
Y_3600		51,194	Cts/S	147.30	0.28772
Y_3774		3,425.0	Cts/S	15.177	0.44311

320-62944-A-1-H MS

Acquire Date: 7/24/2020 10:53:55AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.045261	ppm	0.0013360	2.9511
Al3961		58.468	ppm	0.34835	0.59580
As1890		0.44316	ppm	0.00066400	0.14986
B_2089		4.4795	ppm	0.0048350	0.10793
Ba4554		0.75139	ppm	0.0047760	0.63561
Be3130		0.23129	ppm	0.00089500	0.38695
Ca3179		113.01	ppm	0.53901	0.47696
Cd2144		0.22061	ppm	0.00049000	0.22201
Co2286		0.24525	ppm	0.00013200	0.053860
Cr2677		0.45009	ppm	0.0026150	0.58110
Cu3247		0.57123	ppm	0.0010480	0.18353
Fe2599		50.327	ppm	0.26381	0.52419
K_7664		41.018	ppm	0.34487	0.84076
Mg2790		380.23	ppm	1.3790	0.36267
Mn2576		5.2994	ppm	0.018451	0.34816
Mo2020		0.24053	ppm	0.00058300	0.24232
Na5895		70.293	ppm	0.53058	0.75481
Ni2316		0.31399	ppm	0.00062700	0.19970
P_1782		19.750	ppm	0.079602	0.40305
Pb2203		0.24964	ppm	0.0043690	1.7503
S_1820		36.471	ppm	0.066144	0.18136
Sb2068		0.12886	ppm	0.0013930	1.0808
Se1960		0.38910	ppm	0.0063040	1.6202
Si2881		3.8390	ppm	0.054627	1.4229
Sn1899		0.46373	ppm	0.00039400	0.085018
Sr4077		0.90532	ppm	0.0059170	0.65361
Ti3349		2.3949	ppm	0.0067250	0.28079
Tl1908		0.42722	ppm	0.0020080	0.46991

320-62944-A-1-H MS

Acquire Date: 7/24/2020 10:53:55AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.84650	ppm	0.00029100	0.034421
Zn2062		3.5487	ppm	0.021600	0.60867
Y_2243		5,432.0	Cts/S	11.462	0.21102
Y_3600		50,998	Cts/S	93.694	0.18372
Y_3774		3,398.6	Cts/S	13.670	0.40222

320-62944-A-1-I MSD

Acquire Date: 7/24/2020 10:57:40AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.044831	ppm	0.00049000	1.0937
Al3961		60.915	ppm	0.10535	0.17294
As1890		0.44081	ppm	0.0021970	0.49832
B_2089		4.4683	ppm	0.010788	0.24144
Ba4554		0.74924	ppm	0.0035150	0.46914
Be3130		0.23025	ppm	0.0012280	0.53314
Ca3179		109.26	ppm	0.35163	0.32183
Cd2144		0.22050	ppm	0.00081900	0.37155
Co2286		0.24505	ppm	0.00014100	0.057402
Cr2677		0.45675	ppm	0.0035780	0.78343
Cu3247		0.55090	ppm	0.0013140	0.23860
Fe2599		52.049	ppm	0.089934	0.17279
K_7664		40.724	ppm	0.31385	0.77067
Mg2790		375.20	ppm	2.3423	0.62426
Mn2576		5.6206	ppm	0.026868	0.47803
Mo2020		0.23984	ppm	0.0014960	0.62360
Na5895		69.231	ppm	0.35533	0.51325
Ni2316		0.32156	ppm	0.00044400	0.13803
P_1782		19.885	ppm	0.060451	0.30401
Pb2203		0.25337	ppm	0.0036050	1.4227
S_1820		36.359	ppm	0.034671	0.095358
Sb2068		0.13263	ppm	0.0061750	4.6557
Se1960		0.39238	ppm	0.00030400	0.077393
Si2881		3.4988	ppm	0.083153	2.3766
Sn1899		0.46328	ppm	0.0019090	0.41213
Sr4077		0.87448	ppm	0.0034470	0.39422
Ti3349		2.4773	ppm	0.0093650	0.37804
Tl1908		0.42683	ppm	0.00067000	0.15690
V_2924		0.85309	ppm	0.0031000	0.36336
Zn2062		3.6355	ppm	0.023122	0.63601
Y_2243		5,374.9	Cts/S	1.3453	0.025029
Y_3600		50,738	Cts/S	424.64	0.83693
Y_3774		3,404.0	Cts/S	2.8414	0.083472

320-62945-A-1-I

Acquire Date: 7/24/2020 11:01:25AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0013370	ppm	0.000019000	1.4075
Al3961		124.68	ppm	0.57892	0.46431
As1890		0.0079020	ppm	0.0042190	53.389
B_2089		0.12402	ppm	0.0015700	1.2660
Ba4554		1.1658	ppm	0.0059430	0.50982
Be3130		0.0020950	ppm	0.00016300	7.7993
Ca3179		98.441	ppm	0.64482	0.65502
Cd2144		0.0022260	ppm	0.000023000	1.0255
Co2286		0.070403	ppm	0.00060700	0.86238
Cr2677		0.16910	ppm	0.00033000	0.19489
Cu3247		0.41352	ppm	0.0020840	0.50406
Fe2599		118.29	ppm	0.61687	0.52149
K_7664		8.4306	ppm	0.0084180	0.099847
Mg2790		41.612	ppm	0.081152	0.19502
Mn2576		3.4126	ppm	0.013509	0.39587
Mo2020		0.020890	ppm	0.00011700	0.55929
Na5895		8.7760	ppm	0.056179	0.64015
Ni2316		0.19516	ppm	0.0000040000	0.0019270
P_1782		6.8863	ppm	0.013413	0.19478
Pb2203		0.051636	ppm	0.00034000	0.65879
S_1820		27.408	ppm	0.043102	0.15726
Sb2068		0.000040000	ppm	0.0019130	4,795.8
Se1960		0.0047260	ppm	0.0066120	139.89
Si2881		1.9207	ppm	0.068253	3.5536
Sn1899		0.025905	ppm	0.00023000	0.88777
Sr4077		0.75927	ppm	0.0039850	0.52489
Ti3349	**W**	**5.8646**	**ppm**	**0.014610**	**0.24912**
Tl1908		0.0025880	ppm	0.0018420	71.173
V_2924		0.27251	ppm	0.0016950	0.62212
Zn2062		1.7192	ppm	0.0044070	0.25636
Y_2243		5,659.1	Cts/S	3.7230	0.065788
Y_3600		53,899	Cts/S	136.02	0.25236
Y_3774		3,523.9	Cts/S	4.0369	0.11456

320-62936-A-1-C

Acquire Date: 7/24/2020 11:05:16AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0027460	ppm	0.00091500	33.330
Al3961		36.204	ppm	0.18423	0.50887
As1890		0.011340	ppm	0.000044000	0.38602
B_2089		0.59613	ppm	0.00046200	0.077563
Ba4554		4.6127	ppm	0.029489	0.63930
Be3130		0.00055200	ppm	0.000020000	3.6219
Ca3179		476.20	ppm	2.8655	0.60174
Cd2144		0.0034980	ppm	0.000013000	0.36818
Co2286		0.016419	ppm	0.00023200	1.4131

320-62936-A-1-C

Acquire Date: 7/24/2020 11:05:16AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.048624	ppm	0.00050600	1.0414
Cu3247		0.25774	ppm	0.0012260	0.47584
Fe2599		20.725	ppm	0.14370	0.69339
K_7664		206.56	ppm	1.7633	0.85365
Mg2790		58.236	ppm	0.23713	0.40719
Mn2576		16.340	ppm	0.14740	0.90207
Mo2020		0.0087260	ppm	0.00057800	6.6201
Na5895		11.436	ppm	0.10171	0.88941
Ni2316		0.049560	ppm	0.000040000	0.080590
P_1782		36.477	ppm	0.070901	0.19437
Pb2203		0.049022	ppm	0.0042440	8.6579
S_1820		17.016	ppm	0.027230	0.16002
Sb2068		-0.0039150	ppm	0.0029610	75.629
Se1960		0.00095200	ppm	0.0029430	309.24
Si2881		2.3019	ppm	0.021609	0.93873
Sn1899		0.027583	ppm	0.00040800	1.4794
Sr4077		4.8708	ppm	0.028551	0.58618
Ti3349		1.8788	ppm	0.013369	0.71159
Tl1908		0.00011200	ppm	0.0038810	3,456.4
V_2924		0.087099	ppm	0.00089000	1.0214
Zn2062		1.3181	ppm	0.0052210	0.39606
Y_2243		5,303.5	Cts/S	3.8742	0.073049
Y_3600		49,879	Cts/S	129.11	0.25885
Y_3774		3,341.5	Cts/S	9.4448	0.28265

320-62936-A-2-B

Acquire Date: 7/24/2020 11:09:15AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00070300	ppm	0.00014400	20.543
Al3961		33.318	ppm	0.091156	0.27360
As1890		0.0011470	ppm	0.0028130	245.24
B_2089		0.18992	ppm	0.000059000	0.031237
Ba4554		1.5068	ppm	0.0089440	0.59359
Be3130		0.00063100	ppm	0.0000020000	0.26142
Ca3179		175.31	ppm	0.91413	0.52142
Cd2144		0.00031000	ppm	0.00016400	52.915
Co2286		0.013636	ppm	0.000043000	0.31225
Cr2677		0.027066	ppm	0.00012900	0.47846
Cu3247		0.13179	ppm	0.0012410	0.94145
Fe2599		25.835	ppm	0.15779	0.61077
K_7664		70.049	ppm	0.66488	0.94917
Mg2790		23.362	ppm	0.097240	0.41623
Mn2576		5.6662	ppm	0.023387	0.41274
Mo2020		0.0037350	ppm	0.00033000	8.8471
Na5895		8.2907	ppm	0.062463	0.75341
Ni2316		0.027409	ppm	0.0014880	5.4302

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62936-A-2-B

Acquire Date: 7/24/2020 11:09:15AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		12.562	ppm	0.0024860	0.019790
Pb2203		0.014665	ppm	0.0059980	40.901
S_1820		3.3829	ppm	0.00078700	0.023267
Sb2068		-0.0033540	ppm	0.0051560	153.71
Se1960		-0.0050860	ppm	0.0017860	35.108
Si2881		5.4116	ppm	0.012176	0.22499
Sn1899		0.022452	ppm	0.00024900	1.1088
Sr4077		1.5859	ppm	0.010198	0.64305
Ti3349		1.6900	ppm	0.0080660	0.47728
Tl1908		0.0024980	ppm	0.0023640	94.640
V_2924		0.098368	ppm	0.00065200	0.66288
Zn2062		0.20147	ppm	0.00044400	0.22057
Y_2243		5,477.3	Cts/S	3.4331	0.062680
Y_3600		51,401	Cts/S	50.860	0.098946
Y_3774		3,372.0	Cts/S	3.4264	0.10161

720-99293-A-1-A

Acquire Date: 7/24/2020 11:13:08AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00011600	ppm	0.00075100	646.25
Al3961		0.070142	ppm	0.0033400	4.7612
As1890		0.0014200	ppm	0.0010070	70.953
B_2089		0.011975	ppm	0.00072600	6.0591
Ba4554		0.0091360	ppm	0.00060500	6.6203
Be3130		0.00012900	ppm	0.00044200	342.64
Ca3179		3.5748	ppm	0.013769	0.38517
Cd2144		0.00018200	ppm	0.000024000	13.343
Co2286		-0.00034200	ppm	0.00014300	41.704
Cr2677		0.00029300	ppm	0.00014000	47.701
Cu3247		0.0053230	ppm	0.00059500	11.181
Fe2599		0.23832	ppm	0.021938	9.2055
K_7664		0.50347	ppm	0.029346	5.8288
Mg2790		1.2303	ppm	0.0067940	0.55222
Mn2576		0.017340	ppm	0.00018300	1.0555
Mo2020		0.0010680	ppm	0.00026800	25.044
Na5895		3.3408	ppm	0.028305	0.84725
Ni2316		0.00075100	ppm	0.0013310	177.13
P_1782		0.0080530	ppm	0.0033990	42.207
Pb2203		0.00079300	ppm	0.0046160	581.96
S_1820		0.65185	ppm	0.0027660	0.42426
Sb2068		-0.00013700	ppm	0.0015210	1,113.5
Se1960		-0.0025630	ppm	0.00084500	32.986
Si2881		3.6030	ppm	0.031226	0.86668
Sn1899		0.00028900	ppm	0.00012300	42.515
Sr4077		0.028821	ppm	0.000069000	0.23800
Ti3349		0.010753	ppm	0.000074000	0.68594

720-99293-A-1-A

Acquire Date: 7/24/2020 11:13:08AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0029570	ppm	0.00073600	24.873
V_2924		0.0020710	ppm	0.00027900	13.483
Zn2062		0.015382	ppm	0.00026500	1.7209
Y_2243		5,627.5	Cts/S	26.365	0.46849
Y_3600		53,033	Cts/S	15.429	0.029094
Y_3774		3,355.2	Cts/S	0.70123	0.020900

sd 720-99293-A-1-A@5

Acquire Date: 7/24/2020 11:17:07AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000084000	ppm	0.00011300	134.60
Al3961		0.0073750	ppm	0.0035690	48.398
As1890		0.0017750	ppm	0.0014480	81.574
B_2089		0.0068190	ppm	0.00095700	14.026
Ba4554		0.0021890	ppm	0.00028900	13.192
Be3130		0.00036000	ppm	0.00029400	81.532
Ca3179		0.72263	ppm	0.0022970	0.31792
Cd2144		0.00017300	ppm	0.000060000	34.634
Co2286		-0.00012900	ppm	0.000020000	15.890
Cr2677		-0.00016600	ppm	0.00023900	144.20
Cu3247		0.00092100	ppm	0.000052000	5.6378
Fe2599		0.037507	ppm	0.0044210	11.786
K_7664		0.12545	ppm	0.063773	50.833
Mg2790		0.24786	ppm	0.0026490	1.0687
Mn2576		0.0038970	ppm	0.000085000	2.1820
Mo2020		0.00021800	ppm	0.00037800	173.03
Na5895		0.67591	ppm	0.0011680	0.17274
Ni2316		-0.0015150	ppm	0.00052500	34.643
P_1782		-0.0019490	ppm	0.0031080	159.45
Pb2203		-0.0011520	ppm	0.0017320	150.28
S_1820		0.13481	ppm	0.0025760	1.9107
Sb2068		0.0015870	ppm	0.0014600	91.978
Se1960		-0.00062300	ppm	0.0026870	431.31
Si2881		0.83457	ppm	0.040946	4.9063
Sn1899		-0.00022500	ppm	0.00062900	279.28
Sr4077		0.0058020	ppm	0.00035000	6.0409
Ti3349		0.0020860	ppm	0.00034700	16.616
Tl1908		0.0026900	ppm	0.0013390	49.784
V_2924		0.0017490	ppm	0.00046000	26.284
Zn2062		0.0085210	ppm	0.00019900	2.3373
Y_2243		5,631.2	Cts/S	2.1830	0.038767
Y_3600		53,347	Cts/S	67.069	0.12572
Y_3774		3,369.8	Cts/S	7.4868	0.22217

pds 720-99293-A-1-A

Acquire Date: 7/24/2020 11:21:07AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099109	ppm	0.00063100	0.63700
Al3961		9.9120	ppm	0.045933	0.46341
As1890		0.092316	ppm	0.00058400	0.63277
B_2089		0.95708	ppm	0.00061300	0.064007
Ba4554		0.10886	ppm	0.00066800	0.61333
Be3130		0.049864	ppm	0.00029200	0.58559
Ca3179		13.379	ppm	0.051294	0.38340
Cd2144		0.099506	ppm	0.000076000	0.076095
Co2286		0.10154	ppm	0.00010600	0.10463
Cr2677		0.097282	ppm	0.000069000	0.070721
Cu3247		0.10261	ppm	0.0011970	1.1661
Fe2599		4.0653	ppm	0.055147	1.3565
K_7664		10.107	ppm	0.033283	0.32930
Mg2790		10.880	ppm	0.017515	0.16098
Mn2576		0.11631	ppm	0.00049000	0.42101
Mo2020		0.10028	ppm	0.00021400	0.21303
Na5895		12.934	ppm	0.047498	0.36723
Ni2316		0.10286	ppm	0.00018300	0.17796
P_1782		1.0045	ppm	0.0032850	0.32701
Pb2203		0.099885	ppm	0.0017060	1.7078
S_1820		2.5195	ppm	0.00015000	0.0059540
Sb2068		0.094032	ppm	0.0018130	1.9275
Se1960		0.091708	ppm	0.0016660	1.8169
Si2881		4.6259	ppm	0.051289	1.1087
Sn1899		0.10136	ppm	0.0012000	1.1836
Sr4077		0.12809	ppm	0.00078900	0.61626
Ti3349		0.10350	ppm	0.00023000	0.22216
Tl1908		0.096814	ppm	0.0023740	2.4518
V_2924		0.10320	ppm	0.0014120	1.3681
Zn2062		0.10454	ppm	0.0010140	0.96976
Y_2243		5,589.0	Cts/S	10.508	0.18802
Y_3600		52,842	Cts/S	203.15	0.38444
Y_3774		3,397.5	Cts/S	13.028	0.38345

CCV 2078482

Acquire Date: 7/24/2020 11:24:59AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50465	ppm	0.0037580	0.74471	.50000	Rel(%)	Pass	
Al3961		25.183	ppm	0.18158	0.72103	25.000	Rel(%)	Pass	
As1890		0.50574	ppm	0.0023740	0.46945	.50000	Rel(%)	Pass	
B_2089		1.0207	ppm	0.0025430	0.24915	1.0000	Rel(%)	Pass	
Ba4554		2.5216	ppm	0.017654	0.70012	2.5000	Rel(%)	Pass	
Be3130		0.50710	ppm	0.0029200	0.57591	.50000	Rel(%)	Pass	
Ca3179		25.257	ppm	0.16182	0.64071	25.000	Rel(%)	Pass	
Cd2144		0.51612	ppm	0.00081300	0.15748	.50000	Rel(%)	Pass	
Co2286		2.5612	ppm	0.0029330	0.11453	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 11:24:59AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.4749	ppm	0.0027070	0.10936	2.5000	Rel(%)	Pass	
Cu3247		2.4779	ppm	0.012619	0.50928	2.5000	Rel(%)	Pass	
Fe2599		24.909	ppm	0.15379	0.61738	25.000	Rel(%)	Pass	
K_7664		24.939	ppm	0.26187	1.0501	25.000	Rel(%)	Pass	
Mg2790		25.074	ppm	0.027422	0.10936	25.000	Rel(%)	Pass	
Mn2576		2.5264	ppm	0.0048400	0.19158	2.5000	Rel(%)	Pass	
Mo2020		1.0199	ppm	0.0045660	0.44771	1.0000	Rel(%)	Pass	
Na5895		24.995	ppm	0.14562	0.58260	25.000	Rel(%)	Pass	
Ni2316		2.6080	ppm	0.0028380	0.10882	2.5000	Rel(%)	Pass	
P_1782		2.5923	ppm	0.0094970	0.36637	2.5000	Rel(%)	Pass	
Pb2203		0.51072	ppm	0.0056810	1.1124	.50000	Rel(%)	Pass	
S_1820		2.4156	ppm	0.0013720	0.056794	2.5000	Rel(%)	Pass	
Sb2068		0.51935	ppm	0.0010990	0.21164	.50000	Rel(%)	Pass	
Se1960		0.52188	ppm	0.0062120	1.1903	.50000	Rel(%)	Pass	
Si2881		2.5130	ppm	0.0054170	0.21556	2.5000	Rel(%)	Pass	
Sn1899		2.5346	ppm	0.010588	0.41775	2.5000	Rel(%)	Pass	
Sr4077		2.5192	ppm	0.017271	0.68557	2.5000	Rel(%)	Pass	
Ti3349		1.0167	ppm	0.0021000	0.20652	1.0000	Rel(%)	Pass	
Tl1908		0.51346	ppm	0.0037030	0.72115	.50000	Rel(%)	Pass	
V_2924		2.5448	ppm	0.0067380	0.26478	2.5000	Rel(%)	Pass	
Zn2062		2.5554	ppm	0.00057700	0.022574	2.5000	Rel(%)	Pass	
Y_2243		5,535.0	Cts/S	4.9513	0.089455				
Y_3600		52,296	Cts/S	70.697	0.13519				
Y_3774		3,365.5	Cts/S	7.8916	0.23448				

CCB 2065750

Acquire Date: 7/24/2020 11:28:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000016000	ppm	0.0015080	9,160.5	.00000	Abs	Pass	
Al3961		0.0099480	ppm	0.028060	282.05	.00000	Abs	Pass	
As1890		0.0012860	ppm	0.0014720	114.42	.00000	Abs	Pass	
B_2089		0.0079580	ppm	0.00021100	2.6480	.00000	Abs	Pass	
Ba4554		0.0022690	ppm	0.00030500	13.419	.00000	Abs	Pass	
Be3130		0.00050100	ppm	0.000023000	4.5438	.00000	Abs	Pass	
Ca3179		0.16345	ppm	0.013560	8.2965	.00000	Abs	Pass	
Cd2144		0.00029300	ppm	0.000058000	19.862	.00000	Abs	Pass	
Co2286		0.00078600	ppm	0.00031100	39.629	.00000	Abs	Pass	
Cr2677		0.0012130	ppm	0.0011420	94.077	.00000	Abs	Pass	
Cu3247		0.0019130	ppm	0.0010070	52.660	.00000	Abs	Pass	
Fe2599	**W**	**0.084972**	**ppm**	**0.012750**	**15.005**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.081896	ppm	0.032680	39.904	.00000	Abs	Pass	
Mg2790		0.079361	ppm	0.0010760	1.3555	.00000	Abs	Pass	
Mn2576	**W**	**0.0059430**	**ppm**	**0.00024200**	**4.0646**	**.00000**	**Abs**	**Warn High**	**0.00500**
Mo2020		0.0064720	ppm	0.0010150	15.679	.00000	Abs	Pass	
Na5895		0.022415	ppm	0.0062920	28.069	.00000	Abs	Pass	
Ni2316		0.00083900	ppm	0.00062000	73.955	.00000	Abs	Pass	
P_1782		0.014243	ppm	0.0026350	18.498	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/24/2020 11:28:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		-0.0028380	ppm	0.0012270	43.234	.00000	Abs	Pass	
S_1820		0.019508	ppm	0.0013610	6.9755	.00000	Abs	Pass	
Sb2068		0.0014360	ppm	0.0017030	118.60	.00000	Abs	Pass	
Se1960		0.00088200	ppm	0.0028690	325.24	.00000	Abs	Pass	
Si2881		0.067622	ppm	0.074771	110.57	.00000	Abs	Pass	
Sn1899		0.0035950	ppm	0.00038600	10.743	.00000	Abs	Pass	
Sr4077		0.0018900	ppm	0.000038000	1.9994	.00000	Abs	Pass	
Ti3349		0.0068600	ppm	0.00057700	8.4178	.00000	Abs	Pass	
Tl1908		0.0043190	ppm	0.0016950	39.253	.00000	Abs	Pass	
V_2924		0.0016790	ppm	0.00037200	22.158	.00000	Abs	Pass	
Zn2062	**W**	**0.0067060**	**ppm**	**0.00030500**	**4.5453**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		5,601.4	Cts/S	4.6413	0.082860				
Y_3600		52,786	Cts/S	4.6736	0.0088540				
Y_3774		3,323.6	Cts/S	10.936	0.32905				

720-99293-A-1-B MS

Acquire Date: 7/24/2020 11:32:45AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.050075	ppm	0.00080700	1.6125
Al3961		5.0524	ppm	0.018085	0.35794
As1890		0.45558	ppm	0.0030090	0.66051
B_2089		4.7018	ppm	0.0098420	0.20932
Ba4554		0.50537	ppm	0.0029090	0.57567
Be3130		0.24536	ppm	0.0011140	0.45392
Ca3179		28.439	ppm	0.25047	0.88072
Cd2144		0.24247	ppm	0.0011290	0.46580
Co2286		0.24450	ppm	0.00026200	0.10698
Cr2677		0.24102	ppm	0.00059100	0.24525
Cu3247		0.24617	ppm	0.00091800	0.37307
Fe2599		5.1265	ppm	0.034655	0.67599
K_7664		24.654	ppm	0.26734	1.0844
Mg2790		25.343	ppm	0.14172	0.55922
Mn2576		0.26748	ppm	0.0010330	0.38622
Mo2020		0.25204	ppm	0.00073600	0.29198
Na5895		27.710	ppm	0.24506	0.88436
Ni2316		0.24334	ppm	0.00077200	0.31723
P_1782		5.1198	ppm	0.0025740	0.050279
Pb2203		0.24459	ppm	0.0026760	1.0941
S_1820		5.4059	ppm	0.010441	0.19315
Sb2068		0.46661	ppm	0.00034100	0.073137
Se1960		0.44778	ppm	0.0046490	1.0383
Si2881		8.6108	ppm	0.014953	0.17366
Sn1899		0.49890	ppm	0.00073200	0.14666
Sr4077		0.27685	ppm	0.0016910	0.61082
Ti3349		0.25212	ppm	0.0010530	0.41766
Tl1908		0.48193	ppm	0.0030080	0.62424

720-99293-A-1-B MS

Acquire Date: 7/24/2020 11:32:45AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.24991	ppm	0.00077900	0.31168
Zn2062		0.49960	ppm	0.0039790	0.79639
Y_2243		5,569.3	Cts/S	9.5622	0.17169
Y_3600		52,443	Cts/S	216.06	0.41199
Y_3774		3,387.3	Cts/S	38.149	1.1262

720-99293-A-1-C MSD

Acquire Date: 7/24/2020 11:36:32AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049207	ppm	0.00035100	0.71337
Al3961		5.0259	ppm	0.033388	0.66430
As1890		0.46571	ppm	0.00021300	0.045703
B_2089		4.7184	ppm	0.0059680	0.12649
Ba4554		0.50566	ppm	0.0037410	0.73989
Be3130		0.24659	ppm	0.0013380	0.54247
Ca3179		28.451	ppm	0.17586	0.61811
Cd2144		0.24398	ppm	0.00051600	0.21145
Co2286		0.24561	ppm	0.00020400	0.082959
Cr2677		0.24243	ppm	0.0015120	0.62387
Cu3247		0.24651	ppm	0.0011400	0.46257
Fe2599		5.1181	ppm	0.049174	0.96079
K_7664		24.679	ppm	0.23228	0.94119
Mg2790		25.484	ppm	0.14404	0.56521
Mn2576		0.26430	ppm	0.0012010	0.45428
Mo2020		0.25298	ppm	0.0010180	0.40252
Na5895		27.865	ppm	0.21721	0.77950
Ni2316		0.24376	ppm	0.0013700	0.56218
P_1782		5.1247	ppm	0.0014980	0.029237
Pb2203		0.24580	ppm	0.0031660	1.2881
S_1820		5.4245	ppm	0.0071470	0.13176
Sb2068		0.47185	ppm	0.0017300	0.36659
Se1960		0.44910	ppm	0.0030140	0.67105
Si2881		8.6769	ppm	0.17606	2.0291
Sn1899		0.50368	ppm	0.00079400	0.15774
Sr4077		0.27645	ppm	0.0013520	0.48899
Ti3349		0.25416	ppm	0.00063200	0.24882
Tl1908		0.48696	ppm	0.00077900	0.16004
V_2924		0.25127	ppm	0.0026260	1.0449
Zn2062		0.50209	ppm	0.0035900	0.71496
Y_2243		5,563.5	Cts/S	1.9802	0.035592
Y_3600		52,421	Cts/S	103.50	0.19743
Y_3774		3,401.8	Cts/S	11.280	0.33160

720-99293-A-2-A

Acquire Date: 7/24/2020 11:40:19AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00032300	ppm	0.00022800	70.627
Al3961		0.015146	ppm	0.0051660	34.108
As1890		0.0032640	ppm	0.0012560	38.467
B_2089		0.027377	ppm	0.0010170	3.7134
Ba4554		0.0054770	ppm	0.00081200	14.825
Be3130		0.00015200	ppm	0.000042000	27.783
Ca3179		58.367	ppm	0.28210	0.48333
Cd2144		0.00026400	ppm	0.00018700	70.622
Co2286		0.00020300	ppm	0.00059500	293.39
Cr2677		0.0011960	ppm	0.00035800	29.920
Cu3247		0.015807	ppm	0.000015000	0.096485
Fe2599		0.13147	ppm	0.00011000	0.083515
K_7664		0.42444	ppm	0.016315	3.8438
Mg2790		21.999	ppm	0.12000	0.54547
Mn2576		0.0027050	ppm	0.000020000	0.74823
Mo2020		0.0026870	ppm	0.00016500	6.1504
Na5895		13.142	ppm	0.073576	0.55986
Ni2316		0.00093400	ppm	0.00034500	36.963
P_1782		0.022370	ppm	0.00061100	2.7297
Pb2203		0.0039840	ppm	0.0011540	28.971
S_1820		20.643	ppm	0.055910	0.27084
Sb2068		0.00064600	ppm	0.00093100	144.01
Se1960		-0.0047400	ppm	0.0074720	157.65
Si2881		13.114	ppm	0.096560	0.73633
Sn1899		0.0013500	ppm	0.00039800	29.482
Sr4077		0.15209	ppm	0.000054000	0.035799
Ti3349		0.0022220	ppm	0.00070000	31.489
Tl1908		0.00018800	ppm	0.00023600	125.14
V_2924		0.0039740	ppm	0.00025200	6.3302
Zn2062		0.013834	ppm	0.00023400	1.6933
Y_2243		5,540.8	Cts/S	4.9747	0.089784
Y_3600		52,804	Cts/S	65.417	0.12389
Y_3774		3,391.8	Cts/S	9.3708	0.27628

720-99293-A-3-A

Acquire Date: 7/24/2020 11:44:16AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00075900	ppm	0.00047600	62.723
Al3961		0.14083	ppm	0.0044320	3.1472
As1890		0.0053130	ppm	0.00064900	12.224
B_2089		0.019471	ppm	0.00015600	0.80082
Ba4554		0.023132	ppm	0.00019100	0.82746
Be3130		0.00061400	ppm	0.000017000	2.7343
Ca3179		8.9967	ppm	0.089257	0.99211
Cd2144		0.00014200	ppm	0.000048000	34.082
Co2286		0.00070700	ppm	0.000096000	13.533

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99293-A-3-A

Acquire Date: 7/24/2020 11:44:16AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0013480	ppm	0.00049300	36.530
Cu3247		0.0039380	ppm	0.00096000	24.390
Fe2599		3.0923	ppm	0.0058930	0.19057
K_7664		0.82748	ppm	0.0086570	1.0462
Mg2790		3.2723	ppm	0.0046520	0.14217
Mn2576		0.24804	ppm	0.00040600	0.16380
Mo2020		0.00092000	ppm	0.00076000	82.572
Na5895		4.4674	ppm	0.034513	0.77256
Ni2316		0.0024080	ppm	0.00044600	18.523
P_1782		0.10827	ppm	0.0034050	3.1450
Pb2203		0.013031	ppm	0.00025000	1.9194
S_1820		0.67137	ppm	0.00018200	0.027182
Sb2068		0.00000	ppm	0.00074400	437,260
Se1960		-0.0036260	ppm	0.00055900	15.414
Si2881		4.5322	ppm	0.039657	0.87499
Sn1899		0.00017000	ppm	0.00022900	134.79
Sr4077		0.055679	ppm	0.00013900	0.24896
Ti3349		0.0048480	ppm	0.0000080000	0.15510
Tl1908		0.00094200	ppm	0.0011380	120.79
V_2924		0.0043300	ppm	0.00024400	5.6378
Zn2062		0.082003	ppm	0.00011700	0.14253
Y_2243		5,615.0	Cts/S	20.338	0.36220
Y_3600		53,268	Cts/S	317.87	0.59673
Y_3774		3,339.9	Cts/S	5.5923	0.16744

720-99293-A-4-A

Acquire Date: 7/24/2020 11:48:14AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0012230	ppm	0.00016400	13.368
Al3961		0.11393	ppm	0.0059530	5.2255
As1890		0.0010060	ppm	0.0017720	176.24
B_2089		0.012851	ppm	0.00056700	4.4113
Ba4554		0.010308	ppm	0.00047600	4.6135
Be3130		0.00040200	ppm	0.000079000	19.619
Ca3179		3.6777	ppm	0.023140	0.62919
Cd2144		0.000078000	ppm	0.00012400	158.61
Co2286		0.00024800	ppm	0.000017000	6.9199
Cr2677		0.0010660	ppm	0.00072800	68.219
Cu3247		0.0046100	ppm	0.0011730	25.435
Fe2599		0.30113	ppm	0.011079	3.6791
K_7664		0.42376	ppm	0.079634	18.792
Mg2790		1.2858	ppm	0.0082620	0.64257
Mn2576		0.021855	ppm	0.000065000	0.29688
Mo2020		0.0011720	ppm	0.00047200	40.273
Na5895		3.2515	ppm	0.019147	0.58887
Ni2316		0.0023550	ppm	0.00085800	36.449

720-99293-A-4-A

Acquire Date: 7/24/2020 11:48:14AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.012525	ppm	0.0032970	26.322
Pb2203		-0.00022200	ppm	0.00084400	380.80
S_1820		0.62654	ppm	0.0066790	1.0660
Sb2068		0.0025450	ppm	0.0043120	169.46
Se1960		0.0012330	ppm	0.0034740	281.74
Si2881		3.7141	ppm	0.035487	0.95547
Sn1899		0.00085900	ppm	0.00085400	99.451
Sr4077		0.029455	ppm	0.000068000	0.23234
Ti3349		0.0042850	ppm	0.00034500	8.0481
Tl1908		0.0018880	ppm	0.0013220	70.011
V_2924		0.0019520	ppm	0.00051200	26.240
Zn2062		0.0055510	ppm	0.00013200	2.3808
Y_2243		5,617.9	Cts/S	5.8750	0.10458
Y_3600		53,215	Cts/S	173.73	0.32648
Y_3774		3,370.5	Cts/S	1.7698	0.052508

720-99287-D-1-A

Acquire Date: 7/24/2020 11:52:11AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00033100	ppm	0.00011700	35.438
Al3961		0.0095190	ppm	0.025023	262.87
As1890		0.000048000	ppm	0.0036460	7,638.1
B_2089		0.14974	ppm	0.0011810	0.78848
Ba4554		0.062344	ppm	0.00048500	0.77871
Be3130		0.000077000	ppm	0.000042000	54.716
Ca3179		29.950	ppm	0.19265	0.64322
Cd2144		0.000098000	ppm	0.0000020000	2.3477
Co2286		0.00015100	ppm	0.00011300	75.109
Cr2677		0.00079600	ppm	0.00042000	52.738
Cu3247		0.0018050	ppm	0.00047000	26.047
Fe2599		0.056479	ppm	0.025248	44.704
K_7664		1.1019	ppm	0.065704	5.9627
Mg2790		16.398	ppm	0.024269	0.14800
Mn2576		0.035023	ppm	0.000057000	0.16134
Mo2020		0.0017060	ppm	0.000051000	2.9650
Na5895		39.983	ppm	0.25820	0.64578
Ni2316		0.0065050	ppm	0.00012800	1.9614
P_1782		0.10523	ppm	0.0023430	2.2269
Pb2203		0.00088500	ppm	0.00050200	56.702
S_1820		0.84657	ppm	0.0045840	0.54151
Sb2068		0.0024600	ppm	0.00091100	37.040
Se1960		-0.0011760	ppm	0.00084000	71.404
Si2881		6.6151	ppm	0.032954	0.49816
Sn1899		0.00052500	ppm	0.00037000	70.530
Sr4077		0.22109	ppm	0.0018530	0.83806
Ti3349		0.0011220	ppm	0.00086700	77.268

720-99287-D-1-A

Acquire Date: 7/24/2020 11:52:11AM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0011220	ppm	0.00095200	84.874
V_2924		0.0010310	ppm	0.00028600	27.727
Zn2062		0.0031650	ppm	0.000092000	2.8985
Y_2243		5,551.8	Cts/S	2.2951	0.041339
Y_3600		52,540	Cts/S	188.28	0.35835
Y_3774		3,364.1	Cts/S	7.5381	0.22408

sd 720-99287-D-1-A@5

Acquire Date: 7/24/2020 11:56:10AM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00062500	ppm	0.000011000	1.8241
Al3961		-0.0058200	ppm	0.0018520	31.815
As1890		0.00014800	ppm	0.00095900	648.17
B_2089		0.034793	ppm	0.00077100	2.2168
Ba4554		0.013049	ppm	0.000096000	0.73528
Be3130		0.00029900	ppm	0.000021000	6.9048
Ca3179		6.0724	ppm	0.020228	0.33312
Cd2144		0.000038000	ppm	0.000057000	151.85
Co2286		-0.00025200	ppm	0.00015500	61.654
Cr2677		-0.00011100	ppm	0.000032000	28.550
Cu3247		0.0010600	ppm	0.0010520	99.292
Fe2599		0.0048670	ppm	0.0020280	41.674
K_7664		0.29184	ppm	0.053422	18.305
Mg2790		3.3438	ppm	0.0088560	0.26484
Mn2576		0.0077410	ppm	0.000085000	1.0916
Mo2020		0.00066100	ppm	0.000069000	10.497
Na5895		7.9124	ppm	0.038479	0.48631
Ni2316		0.0013580	ppm	0.0014290	105.21
P_1782		0.017869	ppm	0.0010750	6.0156
Pb2203		0.0013010	ppm	0.0026800	206.02
S_1820		0.17664	ppm	0.0016480	0.93306
Sb2068		0.0045970	ppm	0.0015410	33.519
Se1960		-0.0013260	ppm	0.0038620	291.16
Si2881		1.3768	ppm	0.0078680	0.57147
Sn1899		0.00021000	ppm	0.000078000	36.926
Sr4077		0.044626	ppm	0.00033400	0.74824
Ti3349		0.00049300	ppm	0.00042100	85.231
Tl1908		-0.00036500	ppm	0.0011820	323.75
V_2924		0.0017010	ppm	0.00030500	17.948
Zn2062		0.0019360	ppm	0.000071000	3.6781
Y_2243		5,627.8	Cts/S	5.7814	0.10273
Y_3600		53,242	Cts/S	194.77	0.36582
Y_3774		3,374.6	Cts/S	11.939	0.35378

pds 720-99287-D-1-A

Acquire Date: 7/24/2020 12:00:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099246	ppm	0.0015880	1.6003
Al3961		9.8999	ppm	0.029141	0.29435
As1890		0.096008	ppm	0.00060000	0.62481
B_2089		1.1003	ppm	0.0027380	0.24884
Ba4554		0.16263	ppm	0.0012980	0.79817
Be3130		0.050344	ppm	0.00010500	0.20941
Ca3179		38.811	ppm	0.14203	0.36596
Cd2144		0.099729	ppm	0.00043700	0.43833
Co2286		0.10055	ppm	0.00075300	0.74884
Cr2677		0.098971	ppm	0.00012500	0.12627
Cu3247		0.10077	ppm	0.00037200	0.36913
Fe2599		3.9873	ppm	0.0082840	0.20775
K_7664		10.967	ppm	0.10385	0.94697
Mg2790		25.509	ppm	0.075923	0.29763
Mn2576		0.13498	ppm	0.00081700	0.60520
Mo2020		0.10297	ppm	0.00042900	0.41642
Na5895		48.467	ppm	0.34495	0.71172
Ni2316		0.10653	ppm	0.00016200	0.15187
P_1782		1.1172	ppm	0.0058900	0.52723
Pb2203		0.099895	ppm	0.00029300	0.29314
S_1820		2.7697	ppm	0.0031600	0.11410
Sb2068		0.10057	ppm	0.0045120	4.4863
Se1960		0.093216	ppm	0.0047500	5.0958
Si2881		7.3922	ppm	0.051548	0.69733
Sn1899		0.10193	ppm	0.00046000	0.45101
Sr4077		0.31328	ppm	0.0017040	0.54392
Ti3349		0.10077	ppm	0.00088300	0.87642
Tl1908		0.099398	ppm	0.0025330	2.5488
V_2924		0.10279	ppm	0.000033000	0.032410
Zn2062		0.10294	ppm	0.00027300	0.26569
Y_2243		5,515.7	Cts/S	1.0927	0.019812
Y_3600		52,184	Cts/S	129.52	0.24820
Y_3774		3,357.1	Cts/S	10.952	0.32625

720-99287-D-1-B MS

Acquire Date: 7/24/2020 12:03:58PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048803	ppm	0.00035100	0.71829
Al3961		4.8737	ppm	0.036883	0.75678
As1890		0.46274	ppm	0.0035030	0.75704
B_2089		4.8330	ppm	0.015390	0.31843
Ba4554		0.55585	ppm	0.0045350	0.81581
Be3130		0.24602	ppm	0.00099300	0.40374
Ca3179		54.419	ppm	0.31704	0.58259
Cd2144		0.24153	ppm	0.00081200	0.33607
Co2286		0.24111	ppm	0.00032400	0.13422

720-99287-D-1-B MS

Acquire Date: 7/24/2020 12:03:58PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.24068	ppm	0.0013150	0.54629
Cu3247		0.24009	ppm	0.0017250	0.71833
Fe2599		4.9617	ppm	0.036837	0.74243
K_7664		25.468	ppm	0.16075	0.63118
Mg2790		40.246	ppm	0.18240	0.45322
Mn2576		0.27790	ppm	0.0014030	0.50469
Mo2020		0.25229	ppm	0.0018650	0.73923
Na5895		64.598	ppm	0.47165	0.73013
Ni2316		0.24449	ppm	0.0027200	1.1125
P_1782		5.2440	ppm	0.027616	0.52663
Pb2203		0.24499	ppm	0.00034800	0.14185
S_1820		5.6459	ppm	0.034121	0.60434
Sb2068		0.46699	ppm	0.00073000	0.15634
Se1960		0.29282	ppm	0.0021340	0.72861
Si2881		11.362	ppm	0.18773	1.6523
Sn1899		0.50100	ppm	0.0027690	0.55261
Sr4077		0.46470	ppm	0.0036640	0.78847
Ti3349		0.24853	ppm	0.0025830	1.0393
Tl1908		0.47531	ppm	0.0013320	0.28030
V_2924		0.24795	ppm	0.00014800	0.059547
Zn2062		0.49480	ppm	0.0047420	0.95837
Y_2243		5,490.0	Cts/S	6.8310	0.12443
Y_3600		51,836	Cts/S	55.957	0.10795
Y_3774		3,350.0	Cts/S	5.5206	0.16480

720-99287-D-1-C MSD

Acquire Date: 7/24/2020 12:07:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048672	ppm	0.00021300	0.43862
Al3961		4.8774	ppm	0.015651	0.32090
As1890		0.46639	ppm	0.0014230	0.30505
B_2089		4.8594	ppm	0.014417	0.29667
Ba4554		0.55441	ppm	0.0027960	0.50433
Be3130		0.24609	ppm	0.0016410	0.66675
Ca3179		54.184	ppm	0.40086	0.73981
Cd2144		0.24196	ppm	0.00052100	0.21544
Co2286		0.24186	ppm	0.00084900	0.35113
Cr2677		0.23985	ppm	0.00055100	0.22962
Cu3247		0.23940	ppm	0.00060200	0.25130
Fe2599		4.9677	ppm	0.00039400	0.0079220
K_7664		25.433	ppm	0.19441	0.76438
Mg2790		40.315	ppm	0.17699	0.43902
Mn2576		0.27878	ppm	0.00096800	0.34724
Mo2020		0.25271	ppm	0.00097800	0.38707
Na5895		64.391	ppm	0.47676	0.74042
Ni2316		0.24522	ppm	0.000096000	0.039032

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99287-D-1-C MSD

Acquire Date: 7/24/2020 12:07:45PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.2716	ppm	0.010394	0.19716
Pb2203		0.24134	ppm	0.00096500	0.40003
S_1820		5.6479	ppm	0.017500	0.30985
Sb2068		0.47129	ppm	0.0038390	0.81454
Se1960		0.30276	ppm	0.000093000	0.030712
Si2881		11.420	ppm	0.0034670	0.030356
Sn1899		0.50189	ppm	0.00099000	0.19725
Sr4077		0.46354	ppm	0.0027000	0.58249
Ti3349		0.24878	ppm	0.00077900	0.31328
Tl1908		0.47703	ppm	0.0036500	0.76511
V_2924		0.24854	ppm	0.00052300	0.21061
Zn2062		0.49672	ppm	0.0030470	0.61341
Y_2243		5,505.0	Cts/S	10.215	0.18555
Y_3600		51,845	Cts/S	45.949	0.088628
Y_3774		3,386.3	Cts/S	2.2953	0.067781

CCV 2078482

Acquire Date: 7/24/2020 12:11:32PM Sample Type: QC
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50016	ppm	0.0021880	0.43755	.50000	Rel(%)	Pass	
Al3961		25.204	ppm	0.089023	0.35321	25.000	Rel(%)	Pass	
As1890		0.50731	ppm	0.0027220	0.53646	.50000	Rel(%)	Pass	
B_2089		1.0354	ppm	0.0012450	0.12022	1.0000	Rel(%)	Pass	
Ba4554		2.5341	ppm	0.016461	0.64957	2.5000	Rel(%)	Pass	
Be3130		0.50835	ppm	0.00094800	0.18643	.50000	Rel(%)	Pass	
Ca3179		25.496	ppm	0.10961	0.42991	25.000	Rel(%)	Pass	
Cd2144		0.51740	ppm	0.0013960	0.26987	.50000	Rel(%)	Pass	
Co2286		2.5697	ppm	0.0024640	0.095877	2.5000	Rel(%)	Pass	
Cr2677		2.4854	ppm	0.015248	0.61352	2.5000	Rel(%)	Pass	
Cu3247		2.4847	ppm	0.010464	0.42115	2.5000	Rel(%)	Pass	
Fe2599		25.274	ppm	0.12274	0.48565	25.000	Rel(%)	Pass	
K_7664		24.987	ppm	0.27735	1.1100	25.000	Rel(%)	Pass	
Mg2790		25.108	ppm	0.18992	0.75642	25.000	Rel(%)	Pass	
Mn2576		2.5325	ppm	0.013283	0.52451	2.5000	Rel(%)	Pass	
Mo2020		1.0221	ppm	0.0033450	0.32733	1.0000	Rel(%)	Pass	
Na5895		25.109	ppm	0.19712	0.78507	25.000	Rel(%)	Pass	
Ni2316		2.6068	ppm	0.0030290	0.11620	2.5000	Rel(%)	Pass	
P_1782		2.5920	ppm	0.010958	0.42274	2.5000	Rel(%)	Pass	
Pb2203		0.51560	ppm	0.0012490	0.24221	.50000	Rel(%)	Pass	
S_1820		2.4353	ppm	0.0062540	0.25680	2.5000	Rel(%)	Pass	
Sb2068		0.51734	ppm	0.0031710	0.61292	.50000	Rel(%)	Pass	
Se1960		0.52272	ppm	0.0039030	0.74667	.50000	Rel(%)	Pass	
Si2881		2.6400	ppm	0.017322	0.65613	2.5000	Rel(%)	Pass	
Sn1899		2.5466	ppm	0.0041100	0.16140	2.5000	Rel(%)	Pass	
Sr4077		2.5283	ppm	0.019529	0.77244	2.5000	Rel(%)	Pass	
Ti3349		1.0176	ppm	0.0059390	0.58365	1.0000	Rel(%)	Pass	
Tl1908		0.51580	ppm	0.0022670	0.43944	.50000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCV 2078482

Acquire Date: 7/24/2020 12:11:32PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5354	ppm	0.011851	0.46744	2.5000	Rel(%)	Pass	
Zn2062		2.5537	ppm	0.017576	0.68825	2.5000	Rel(%)	Pass	
Y_2243		5,530.2	Cts/S	4.3233	0.078177				
Y_3600		52,306	Cts/S	319.53	0.61088				
Y_3774		3,375.6	Cts/S	4.4953	0.13317				

CCB 2065750

Acquire Date: 7/24/2020 12:15:19PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00076700	ppm	0.00049000	63.928	.00000	Abs	Pass	
Al3961		0.0024470	ppm	0.0079380	324.38	.00000	Abs	Pass	
As1890		0.0023760	ppm	0.00096200	40.511	.00000	Abs	Pass	
B_2089		0.014297	ppm	0.0010250	7.1700	.00000	Abs	Pass	
Ba4554		0.00052300	ppm	0.00018800	35.992	.00000	Abs	Pass	
Be3130		0.00055900	ppm	0.000012000	2.1135	.00000	Abs	Pass	
Ca3179		0.027938	ppm	0.0021930	7.8512	.00000	Abs	Pass	
Cd2144		0.00022000	ppm	0.00010000	45.479	.00000	Abs	Pass	
Co2286		0.00018800	ppm	0.00014500	77.295	.00000	Abs	Pass	
Cr2677		0.00056700	ppm	0.000023000	4.1243	.00000	Abs	Pass	
Cu3247		0.0019570	ppm	0.0022840	116.71	.00000	Abs	Pass	
Fe2599		0.037686	ppm	0.00054200	1.4391	.00000	Abs	Pass	
K_7664		0.019232	ppm	0.0018030	9.3746	.00000	Abs	Pass	
Mg2790		0.0065240	ppm	0.0026880	41.203	.00000	Abs	Pass	
Mn2576		0.00052400	ppm	0.000069000	13.149	.00000	Abs	Pass	
Mo2020		0.0069580	ppm	0.00072300	10.393	.00000	Abs	Pass	
Na5895		0.032977	ppm	0.025095	76.098	.00000	Abs	Pass	
Ni2316		0.0015480	ppm	0.00048600	31.385	.00000	Abs	Pass	
P_1782		-0.0056320	ppm	0.0036250	64.369	.00000	Abs	Pass	
Pb2203		-0.0012630	ppm	0.000040000	3.1414	.00000	Abs	Pass	
S_1820		0.00075400	ppm	0.0044070	584.82	.00000	Abs	Pass	
Sb2068		0.0019340	ppm	0.00018400	9.5367	.00000	Abs	Pass	
Se1960		-0.0036270	ppm	0.00078600	21.659	.00000	Abs	Pass	
Si2881		-0.00067200	ppm	0.020057	2,984.4	.00000	Abs	Pass	
Sn1899		0.0036770	ppm	0.00044700	12.159	.00000	Abs	Pass	
Sr4077		0.00058600	ppm	0.00034000	57.964	.00000	Abs	Pass	
Ti3349		0.0051200	ppm	0.00016200	3.1577	.00000	Abs	Pass	
Tl1908		0.00074000	ppm	0.00020900	28.288	.00000	Abs	Pass	
V_2924		0.0018850	ppm	0.000049000	2.5850	.00000	Abs	Pass	
Zn2062		0.0026210	ppm	0.000016000	0.60087	.00000	Abs	Pass	
Y_2243		5,601.9	Cts/S	6.5113	0.11624				
Y_3600		52,878	Cts/S	38.517	0.072842				
Y_3774		3,370.0	Cts/S	5.7788	0.17148				

720-99287-D-2-A

Acquire Date: 7/24/2020 12:19:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00096900	ppm	0.0000080000	0.82490
Al3961		0.14550	ppm	0.033081	22.737
As1890		0.0040260	ppm	0.00034200	8.4879
B_2089		0.19150	ppm	0.00023500	0.12287
Ba4554		0.56820	ppm	0.0041170	0.72463
Be3130		0.00019500	ppm	0.000020000	10.410
Ca3179		137.10	ppm	0.74662	0.54456
Cd2144		0.00013700	ppm	0.000026000	19.035
Co2286		0.00081200	ppm	0.00025900	31.860
Cr2677		0.0018630	ppm	0.000039000	2.0897
Cu3247		0.0030760	ppm	0.0011280	36.667
Fe2599		1.1432	ppm	0.012207	1.0678
K_7664		1.0823	ppm	0.025289	2.3367
Mg2790		37.646	ppm	0.11453	0.30422
Mn2576		0.26973	ppm	0.0014280	0.52928
Mo2020		0.0016130	ppm	0.00011200	6.9131
Na5895		38.238	ppm	0.32796	0.85768
Ni2316		0.0017700	ppm	0.00011600	6.5291
P_1782		0.30109	ppm	0.00021800	0.072514
Pb2203		-0.0019230	ppm	0.0015730	81.820
S_1820		1.2915	ppm	0.0068010	0.52658
Sb2068		0.0022030	ppm	0.0017300	78.541
Se1960		-0.00044600	ppm	0.0032920	738.72
Si2881	**W**	**23.250**	**ppm**	**0.28257**	**1.2153**
Sn1899		0.0016520	ppm	0.00029800	18.013
Sr4077		0.71140	ppm	0.0030530	0.42910
Ti3349		0.0082950	ppm	0.00015100	1.8162
Tl1908		0.0026290	ppm	0.00037300	14.201
V_2924		0.0033670	ppm	0.00038800	11.519
Zn2062		0.010975	ppm	0.000010000	0.094865
Y_2243		5,416.1	Cts/S	2.7849	0.051419
Y_3600		51,358	Cts/S	83.976	0.16351
Y_3774		3,321.7	Cts/S	2.1516	0.064774

720-99287-D-4-A

Acquire Date: 7/24/2020 12:23:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0014550	ppm	0.00073300	50.382
Al3961		0.093618	ppm	0.028532	30.477
As1890		0.0014510	ppm	0.00018500	12.778
B_2089		0.22923	ppm	0.00033400	0.14592
Ba4554		0.056113	ppm	0.00078500	1.3990
Be3130		0.000034000	ppm	0.00013200	382.69
Ca3179		144.88	ppm	1.0622	0.73316
Cd2144		0.00016900	ppm	0.00013000	77.062
Co2286		0.00039300	ppm	0.000047000	11.954

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99287-D-4-A

Acquire Date: 7/24/2020 12:23:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0017000	ppm	0.00041000	24.137
Cu3247		0.00079200	ppm	0.00019400	24.424
Fe2599		0.11614	ppm	0.0041620	3.5840
K_7664		1.4361	ppm	0.012943	0.90122
Mg2790		51.853	ppm	0.15582	0.30051
Mn2576		0.45761	ppm	0.0012930	0.28257
Mo2020		0.0040900	ppm	0.00031200	7.6378
Na5895		44.157	ppm	0.38934	0.88172
Ni2316		0.0018130	ppm	0.000096000	5.2873
P_1782		0.028132	ppm	0.0014520	5.1621
Pb2203		0.00018600	ppm	0.00038200	205.29
S_1820		44.932	ppm	0.044430	0.098884
Sb2068		-0.0015370	ppm	0.0034540	224.82
Se1960		-0.0081000	ppm	0.0012260	15.139
Si2881		11.467	ppm	0.11546	1.0069
Sn1899		0.0014930	ppm	0.00019300	12.904
Sr4077		0.52561	ppm	0.0040060	0.76223
Ti3349		0.0036930	ppm	0.00033700	9.1194
Tl1908		-0.00015200	ppm	0.00016900	111.45
V_2924		0.0044270	ppm	0.00037900	8.5556
Zn2062		0.0056420	ppm	0.00025100	4.4406
Y_2243		5,382.1	Cts/S	5.6771	0.10548
Y_3600		51,163	Cts/S	208.09	0.40672
Y_3774		3,324.6	Cts/S	12.912	0.38839

720-99287-D-5-A

Acquire Date: 7/24/2020 12:27:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00044200	ppm	0.00034200	77.330
Al3961		0.052826	ppm	0.012924	24.465
As1890		0.0055950	ppm	0.0028480	50.898
B_2089		0.15686	ppm	0.00046300	0.29523
Ba4554		0.45691	ppm	0.0019500	0.42679
Be3130		0.00037100	ppm	0.00012000	32.308
Ca3179		104.92	ppm	0.30652	0.29214
Cd2144		0.00014500	ppm	0.000024000	16.863
Co2286		0.00057500	ppm	0.00065700	114.33
Cr2677		0.0047500	ppm	0.00012000	2.5309
Cu3247		0.0015510	ppm	0.00084500	54.518
Fe2599		0.40659	ppm	0.0030910	0.76022
K_7664		12.668	ppm	0.077423	0.61116
Mg2790		27.430	ppm	0.11691	0.42622
Mn2576		5.1564	ppm	0.020933	0.40596
Mo2020		0.0090700	ppm	0.00037500	4.1340
Na5895		37.824	ppm	0.22700	0.60013
Ni2316		0.0019190	ppm	0.00069200	36.063

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99287-D-5-A

Acquire Date: 7/24/2020 12:27:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.24909	ppm	0.00055300	0.22204
Pb2203		-0.0018990	ppm	0.0015220	80.136
S_1820		40.202	ppm	0.062780	0.15616
Sb2068		0.00030200	ppm	0.0037220	1,233.4
Se1960		0.0014370	ppm	0.0030070	209.35
Si2881		19.033	ppm	0.063323	0.33270
Sn1899		0.00030400	ppm	0.00028600	94.213
Sr4077		0.52376	ppm	0.0033120	0.63241
Ti3349		0.0024350	ppm	0.00081900	33.633
Tl1908		0.0022510	ppm	0.0023180	102.98
V_2924		0.011381	ppm	0.00063600	5.5855
Zn2062		0.020210	ppm	0.00041300	2.0413
Y_2243		5,428.3	Cts/S	7.6378	0.14070
Y_3600		51,284	Cts/S	72.418	0.14121
Y_3774		3,319.9	Cts/S	2.7258	0.082104

720-99287-D-6-A

Acquire Date: 7/24/2020 12:31:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0011360	ppm	0.00083700	73.663
Al3961		0.050960	ppm	0.023698	46.504
As1890		-0.0019100	ppm	0.00013300	6.9520
B_2089		0.18041	ppm	0.00050000	0.27736
Ba4554		0.058856	ppm	0.00041900	0.71169
Be3130		0.00013900	ppm	0.000060000	43.384
Ca3179		132.08	ppm	0.71648	0.54248
Cd2144		0.000095000	ppm	0.000018000	19.001
Co2286		0.00021600	ppm	0.000063000	28.935
Cr2677		0.0029180	ppm	0.000064000	2.2079
Cu3247		0.0014680	ppm	0.00013800	9.4140
Fe2599		-0.0015490	ppm	0.0070930	458.01
K_7664		1.0696	ppm	0.027762	2.5956
Mg2790		43.016	ppm	0.22127	0.51439
Mn2576		0.0083360	ppm	0.000096000	1.1514
Mo2020		0.0011480	ppm	0.00018700	16.266
Na5895		29.902	ppm	0.18553	0.62046
Ni2316		0.00089000	ppm	0.000096000	10.804
P_1782		0.018447	ppm	0.00095400	5.1692
Pb2203		-0.00071500	ppm	0.00045100	63.072
S_1820		33.249	ppm	0.037562	0.11297
Sb2068		-0.0012620	ppm	0.0038540	305.44
Se1960		-0.00084100	ppm	0.00091400	108.66
Si2881		10.879	ppm	0.13910	1.2786
Sn1899		0.00036100	ppm	0.00050000	138.59
Sr4077		0.50927	ppm	0.0031360	0.61580
Ti3349		0.000081000	ppm	0.00087200	1,071.2

720-99287-D-6-A

Acquire Date: 7/24/2020 12:31:12PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0019590	ppm	0.0031680	161.72
V_2924		0.0022550	ppm	0.00026400	11.717
Zn2062		0.0035450	ppm	0.00013800	3.8946
Y_2243		5,392.5	Cts/S	27.288	0.50603
Y_3600		50,821	Cts/S	84.202	0.16569
Y_3774		3,323.1	Cts/S	3.6848	0.11088

720-99287-D-8-A

Acquire Date: 7/24/2020 12:35:11PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0012120	ppm	0.000076000	6.2353
Al3961		-0.011198	ppm	0.032432	289.62
As1890		0.018306	ppm	0.00021400	1.1696
B_2089		0.25269	ppm	0.00010200	0.040426
Ba4554		0.28702	ppm	0.00037600	0.13111
Be3130		0.000077000	ppm	0.00026800	349.25
Ca3179		209.40	ppm	0.49677	0.23724
Cd2144		0.00014100	ppm	0.000089000	62.979
Co2286		0.00014100	ppm	0.00064400	456.90
Cr2677		0.0041080	ppm	0.00039300	9.5726
Cu3247		0.00027100	ppm	0.0018110	669.39
Fe2599		5.7492	ppm	0.059052	1.0271
K_7664		1.5603	ppm	0.034818	2.2315
Mg2790		62.397	ppm	0.22652	0.36303
Mn2576		6.0462	ppm	0.020720	0.34269
Mo2020		0.0013200	ppm	0.00048100	36.482
Na5895		50.241	ppm	0.26165	0.52079
Ni2316		0.010104	ppm	0.0010360	10.257
P_1782		0.36223	ppm	0.0021430	0.59164
Pb2203		-0.0027000	ppm	0.0042740	158.32
S_1820		9.0710	ppm	0.045001	0.49610
Sb2068		-0.0035370	ppm	0.0011000	31.108
Se1960		-0.0042070	ppm	0.0059270	140.86
Si2881		19.683	ppm	0.13115	0.66634
Sn1899		0.0014480	ppm	0.000079000	5.4789
Sr4077		0.92269	ppm	0.0034110	0.36973
Ti3349		0.00033400	ppm	0.00012000	35.994
Tl1908		0.00053100	ppm	0.0022690	426.86
V_2924		0.013579	ppm	0.00066300	4.8839
Zn2062		0.0034490	ppm	0.00016500	4.7743
Y_2243		5,339.0	Cts/S	28.615	0.53597
Y_3600		50,546	Cts/S	85.885	0.16992
Y_3774		3,291.1	Cts/S	11.835	0.35962

720-99287-D-10-A

Acquire Date: 7/24/2020 12:39:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010010	ppm	0.00049100	49.039
Al3961		0.069931	ppm	0.036860	52.709
As1890		0.00087300	ppm	0.00085600	98.050
B_2089		0.19930	ppm	0.0017540	0.88011
Ba4554		0.095110	ppm	0.00043300	0.45504
Be3130		0.00015900	ppm	0.000077000	48.719
Ca3179		126.55	ppm	0.59829	0.47278
Cd2144		0.000053000	ppm	0.00022400	422.15
Co2286		0.000055000	ppm	0.00046500	850.11
Cr2677		0.0021260	ppm	0.00049000	23.054
Cu3247		0.0014450	ppm	0.00079400	54.963
Fe2599		0.052816	ppm	0.0039570	7.4920
K_7664		1.0584	ppm	0.075258	7.1108
Mg2790		42.508	ppm	0.17455	0.41063
Mn2576		0.015366	ppm	0.00038300	2.4943
Mo2020		0.0014510	ppm	0.00011800	8.1252
Na5895		32.585	ppm	0.14769	0.45326
Ni2316		0.000062000	ppm	0.00098400	1,587.6
P_1782		0.033517	ppm	0.00018800	0.55957
Pb2203		-0.00078100	ppm	0.0013550	173.55
S_1820		27.514	ppm	0.017809	0.064726
Sb2068		-0.00031100	ppm	0.0011130	357.40
Se1960		-0.0057700	ppm	0.0013870	24.034
Si2881		10.159	ppm	0.13283	1.3075
Sn1899		0.00019300	ppm	0.00077800	402.21
Sr4077		0.53270	ppm	0.00022400	0.042037
Ti3349		0.0015270	ppm	0.00049000	32.105
Tl1908		-0.00060800	ppm	0.00011500	19.003
V_2924		0.0025790	ppm	0.00052000	20.169
Zn2062		0.0026450	ppm	0.000082000	3.1097
Y_2243		5,392.7	Cts/S	1.4856	0.027547
Y_3600		51,107	Cts/S	17.135	0.033528
Y_3774		3,302.6	Cts/S	5.0283	0.15225

720-99287-D-11-A

Acquire Date: 7/24/2020 12:43:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00075800	ppm	0.00064700	85.441
Al3961		1.1452	ppm	0.013067	1.1410
As1890		0.00029900	ppm	0.00068900	230.33
B_2089		0.19432	ppm	0.00040800	0.20986
Ba4554		0.19211	ppm	0.0017070	0.88870
Be3130		0.000017000	ppm	0.00023400	1,340.5
Ca3179		128.25	ppm	0.72859	0.56808
Cd2144		0.00021100	ppm	0.000027000	12.773
Co2286		0.0016620	ppm	0.00056600	34.046

720-99287-D-11-A

Acquire Date: 7/24/2020 12:43:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0053800	ppm	0.00065900	12.246
Cu3247		0.0046660	ppm	0.00025500	5.4687
Fe2599		1.1722	ppm	0.0045770	0.39049
K_7664		0.97406	ppm	0.015182	1.5586
Mg2790		45.238	ppm	0.33986	0.75129
Mn2576		2.1210	ppm	0.012874	0.60696
Mo2020		0.0074970	ppm	0.00049400	6.5917
Na5895		35.494	ppm	0.22016	0.62029
Ni2316		0.0033780	ppm	0.00044300	13.120
P_1782		0.046626	ppm	0.0017030	3.6526
Pb2203		-0.0030350	ppm	0.00028900	9.5089
S_1820		25.599	ppm	0.014411	0.056298
Sb2068		-0.00039200	ppm	0.000057000	14.657
Se1960		-0.00060500	ppm	0.0014340	237.15
Si2881		13.040	ppm	0.17708	1.3580
Sn1899		0.00066300	ppm	0.00044100	66.463
Sr4077		0.53238	ppm	0.0027200	0.51084
Ti3349		0.058290	ppm	0.00022700	0.38995
Tl1908		0.0013470	ppm	0.0010200	75.716
V_2924		0.0097430	ppm	0.0012470	12.799
Zn2062		0.0052370	ppm	0.00032400	6.1916
Y_2243		5,371.4	Cts/S	17.955	0.33426
Y_3600		50,737	Cts/S	16.090	0.031713
Y_3774		3,307.0	Cts/S	6.5834	0.19907

720-99287-D-13-A

Acquire Date: 7/24/2020 12:47:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00084200	ppm	0.0014680	174.42
Al3961		0.055783	ppm	0.017518	31.404
As1890		0.00010600	ppm	0.00050400	476.98
B_2089		0.12341	ppm	0.00017800	0.14441
Ba4554		0.019261	ppm	0.00039900	2.0728
Be3130		0.00021300	ppm	0.000015000	7.0833
Ca3179		7.8850	ppm	0.024684	0.31305
Cd2144		0.000077000	ppm	0.000076000	97.738
Co2286		-0.00012900	ppm	0.00016600	129.04
Cr2677		0.00065800	ppm	0.00035600	54.040
Cu3247		0.0014250	ppm	0.00048400	33.954
Fe2599		3.2226	ppm	0.017946	0.55689
K_7664		1.1798	ppm	0.010705	0.90741
Mg2790		7.0100	ppm	0.041469	0.59157
Mn2576		0.017542	ppm	0.000044000	0.25281
Mo2020		0.0078480	ppm	0.00041900	5.3444
Na5895		123.37	ppm	0.61312	0.49697
Ni2316		0.0061150	ppm	0.00035000	5.7191

720-99287-D-13-A

Acquire Date: 7/24/2020 12:47:00PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.083457	ppm	0.000059000	0.070649
Pb2203		-0.00010300	ppm	0.00098200	956.26
S_1820		0.61703	ppm	0.0028620	0.46376
Sb2068		0.0019250	ppm	0.0018180	94.416
Se1960		0.0011650	ppm	0.00093100	79.912
Si2881		0.95719	ppm	0.095609	9.9885
Sn1899		0.00018400	ppm	0.00011400	61.898
Sr4077		0.093182	ppm	0.00023700	0.25395
Ti3349		0.0051710	ppm	0.0011930	23.071
Tl1908		0.00039800	ppm	0.00025900	65.115
V_2924		0.0012610	ppm	0.0013200	104.68
Zn2062		0.0031290	ppm	0.00063700	20.358
Y_2243		5,483.4	Cts/S	0.81571	0.014876
Y_3600		51,903	Cts/S	238.56	0.45962
Y_3774		3,313.3	Cts/S	15.741	0.47509

720-99287-D-14-A

Acquire Date: 7/24/2020 12:50:58PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00049600	ppm	0.00089600	180.65
Al3961		1.2019	ppm	0.012709	1.0574
As1890		0.00026800	ppm	0.00029800	111.15
B_2089		0.18873	ppm	0.00073900	0.39163
Ba4554		0.15402	ppm	0.0011560	0.75038
Be3130		0.00019900	ppm	0.0000040000	1.8607
Ca3179		126.68	ppm	0.87672	0.69210
Cd2144		0.000089000	ppm	0.0000030000	2.8305
Co2286		0.0040740	ppm	0.00032800	8.0486
Cr2677		0.0068210	ppm	0.00036900	5.4058
Cu3247		0.0038120	ppm	0.0017280	45.332
Fe2599		1.6654	ppm	0.015303	0.91885
K_7664		1.0942	ppm	0.036553	3.3405
Mg2790		44.210	ppm	0.15530	0.35127
Mn2576		3.8381	ppm	0.016329	0.42546
Mo2020		0.0028580	ppm	0.000047000	1.6603
Na5895		31.863	ppm	0.28671	0.89983
Ni2316		0.0075800	ppm	0.00064800	8.5488
P_1782		0.050076	ppm	0.0018520	3.6989
Pb2203		0.0018300	ppm	0.00031900	17.428
S_1820		26.777	ppm	0.055379	0.20682
Sb2068		-0.00041500	ppm	0.00069200	166.84
Se1960		-0.0018440	ppm	0.0015850	85.945
Si2881		12.858	ppm	0.087873	0.68342
Sn1899		-0.00015600	ppm	0.0010130	647.66
Sr4077		0.53968	ppm	0.0033290	0.61680
Ti3349		0.078997	ppm	0.0010760	1.3617

720-99287-D-14-A

Acquire Date: 7/24/2020 12:50:58PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0010260	ppm	0.00036600	35.660
V_2924		0.014497	ppm	0.0011420	7.8776
Zn2062		0.0096990	ppm	0.00016500	1.6993
Y_2243		5,413.8	Cts/S	4.2029	0.077632
Y_3600		51,202	Cts/S	126.47	0.24701
Y_3774		3,331.9	Cts/S	20.701	0.62129

720-99287-D-15-A

Acquire Date: 7/24/2020 12:54:53PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00012200	ppm	0.00053700	440.83
Al3961		0.16296	ppm	0.0074930	4.5979
As1890		0.0031200	ppm	0.000021000	0.68060
B_2089		0.15274	ppm	0.00051500	0.33704
Ba4554		0.064078	ppm	0.00010800	0.16813
Be3130		0.00010800	ppm	0.00012200	113.37
Ca3179		99.865	ppm	0.43052	0.43110
Cd2144		0.000034000	ppm	0.000031000	89.143
Co2286		0.00018000	ppm	0.00043800	243.84
Cr2677		0.0014390	ppm	0.000077000	5.3371
Cu3247		0.0013660	ppm	0.00041900	30.672
Fe2599		0.29297	ppm	0.0041110	1.4034
K_7664		0.95372	ppm	0.011165	1.1707
Mg2790		31.584	ppm	0.16922	0.53578
Mn2576		0.014209	ppm	0.000025000	0.17441
Mo2020		0.00097800	ppm	0.000044000	4.5305
Na5895		25.030	ppm	0.13941	0.55697
Ni2316		0.00027900	ppm	0.00036800	131.51
P_1782		0.041003	ppm	0.00094400	2.3033
Pb2203		-0.0035420	ppm	0.00047300	13.348
S_1820		27.220	ppm	0.050093	0.18403
Sb2068		-0.00063700	ppm	0.0018880	296.41
Se1960		0.0053800	ppm	0.0020040	37.257
Si2881		11.309	ppm	0.22027	1.9477
Sn1899		-0.00014000	ppm	0.00019600	140.39
Sr4077		0.38131	ppm	0.0015080	0.39559
Ti3349		0.012539	ppm	0.00016600	1.3224
Tl1908		0.00088700	ppm	0.000075000	8.4986
V_2924		0.0040230	ppm	0.0000090000	0.22071
Zn2062		0.0019880	ppm	0.00036400	18.331
Y_2243		5,396.9	Cts/S	8.5620	0.15865
Y_3600		50,989	Cts/S	29.883	0.058607
Y_3774		3,311.4	Cts/S	0.68206	0.020597

Color Legend   Pass/Unchecked   Internal Standard   Check Fail   Check Warn

CCV 2078482

Acquire Date: 7/24/2020 12:58:50PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50169	ppm	0.0019440	0.38751	.50000	Rel(%)	Pass	
Al3961		25.297	ppm	0.051499	0.20358	25.000	Rel(%)	Pass	
As1890		0.50766	ppm	0.0012460	0.24552	.50000	Rel(%)	Pass	
B_2089		1.0185	ppm	0.0024230	0.23790	1.0000	Rel(%)	Pass	
Ba4554		2.5364	ppm	0.010140	0.39977	2.5000	Rel(%)	Pass	
Be3130		0.51006	ppm	0.0021720	0.42582	.50000	Rel(%)	Pass	
Ca3179		25.644	ppm	0.063973	0.24947	25.000	Rel(%)	Pass	
Cd2144		0.51874	ppm	0.0012770	0.24627	.50000	Rel(%)	Pass	
Co2286		2.5707	ppm	0.0065690	0.25552	2.5000	Rel(%)	Pass	
Cr2677		2.4722	ppm	0.010736	0.43426	2.5000	Rel(%)	Pass	
Cu3247		2.4668	ppm	0.0039820	0.16143	2.5000	Rel(%)	Pass	
Fe2599		25.060	ppm	0.081259	0.32426	25.000	Rel(%)	Pass	
K_7664		25.100	ppm	0.15543	0.61923	25.000	Rel(%)	Pass	
Mg2790		25.146	ppm	0.10865	0.43208	25.000	Rel(%)	Pass	
Mn2576		2.5309	ppm	0.011286	0.44592	2.5000	Rel(%)	Pass	
Mo2020		1.0223	ppm	0.0058810	0.57525	1.0000	Rel(%)	Pass	
Na5895		25.135	ppm	0.099246	0.39485	25.000	Rel(%)	Pass	
Ni2316		2.6177	ppm	0.0040720	0.15555	2.5000	Rel(%)	Pass	
P_1782		2.5990	ppm	0.0059080	0.22731	2.5000	Rel(%)	Pass	
Pb2203		0.51480	ppm	0.0019420	0.37727	.50000	Rel(%)	Pass	
S_1820		2.4399	ppm	0.0026360	0.10804	2.5000	Rel(%)	Pass	
Sb2068		0.52266	ppm	0.0072000	1.3777	.50000	Rel(%)	Pass	
Se1960		0.51945	ppm	0.0057240	1.1020	.50000	Rel(%)	Pass	
Si2881		2.5773	ppm	0.00034300	0.013307	2.5000	Rel(%)	Pass	
Sn1899		2.5454	ppm	0.0043990	0.17283	2.5000	Rel(%)	Pass	
Sr4077		2.5308	ppm	0.012204	0.48221	2.5000	Rel(%)	Pass	
Ti3349		1.0177	ppm	0.0051050	0.50166	1.0000	Rel(%)	Pass	
Tl1908		0.51247	ppm	0.0046160	0.90079	.50000	Rel(%)	Pass	
V_2924		2.5481	ppm	0.014678	0.57602	2.5000	Rel(%)	Pass	
Zn2062		2.5663	ppm	0.017603	0.68595	2.5000	Rel(%)	Pass	
Y_2243		5,509.9	Cts/S	31.648	0.57438				
Y_3600		51,867	Cts/S	313.94	0.60527				
Y_3774		3,332.0	Cts/S	11.330	0.34003				

CCB 2065750

Acquire Date: 7/24/2020 1:02:36PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00082500	ppm	0.000018000	2.2260	.00000	Abs	Pass	
Al3961		0.0042850	ppm	0.035524	828.96	.00000	Abs	Pass	
As1890		0.0043170	ppm	0.0010050	23.275	.00000	Abs	Pass	
B_2089		0.0046940	ppm	0.00015400	3.2906	.00000	Abs	Pass	
Ba4554		0.00069900	ppm	0.00065300	93.360	.00000	Abs	Pass	
Be3130		0.00032800	ppm	0.000014000	4.3424	.00000	Abs	Pass	
Ca3179		0.12062	ppm	0.013389	11.100	.00000	Abs	Pass	
Cd2144		0.00010300	ppm	0.0000030000	2.9675	.00000	Abs	Pass	
Co2286		0.00019600	ppm	0.00021200	108.63	.00000	Abs	Pass	
Cr2677		0.0012790	ppm	0.00071300	55.763	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/24/2020 1:02:36PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0040960	ppm	0.00015100	3.6843	.00000	Abs	Pass	
Fe2599		0.039984	ppm	0.017795	44.506	.00000	Abs	Pass	
K_7664		0.029834	ppm	0.086514	289.98	.00000	Abs	Pass	
Mg2790		0.027932	ppm	0.0059040	21.137	.00000	Abs	Pass	
Mn2576		0.0021640	ppm	0.00014700	6.7869	.00000	Abs	Pass	
Mo2020		0.0070300	ppm	0.00050500	7.1878	.00000	Abs	Pass	
Na5895		0.057996	ppm	0.0093340	16.094	.00000	Abs	Pass	
Ni2316		0.0011030	ppm	0.0014210	128.82	.00000	Abs	Pass	
P_1782		-0.0058830	ppm	0.0018780	31.916	.00000	Abs	Pass	
Pb2203		-0.0011190	ppm	0.0020480	183.00	.00000	Abs	Pass	
S_1820		0.013584	ppm	0.00053600	3.9430	.00000	Abs	Pass	
Sb2068		0.0033560	ppm	0.00051800	15.428	.00000	Abs	Pass	
Se1960		0.00016700	ppm	0.000072000	42.998	.00000	Abs	Pass	
Si2881		0.069907	ppm	0.010329	14.775	.00000	Abs	Pass	
Sn1899		0.0035150	ppm	0.00013900	3.9414	.00000	Abs	Pass	
Sr4077		0.0013710	ppm	0.00014100	10.321	.00000	Abs	Pass	
Ti3349		0.0045660	ppm	0.0010570	23.151	.00000	Abs	Pass	
Tl1908		0.0024330	ppm	0.00057700	23.721	.00000	Abs	Pass	
V_2924		0.0018300	ppm	0.00057600	31.469	.00000	Abs	Pass	
Zn2062		0.0019550	ppm	0.00018900	9.6721	.00000	Abs	Pass	
Y_2243		5,529.0	Cts/S	2.5307	0.045772				
Y_3600		52,183	Cts/S	184.34	0.35326				
Y_3774		3,335.4	Cts/S	4.6209	0.13854				

320-62707-A-1-D

Acquire Date: 7/24/2020 1:06:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00015700	ppm	0.00044200	281.17
Al3961		1.0331	ppm	0.022215	2.1504
As1890		-0.00080800	ppm	0.00092800	114.83
B_2089		0.023364	ppm	0.00069400	2.9724
Ba4554		0.093784	ppm	0.00046800	0.49902
Be3130		0.00025300	ppm	0.00017700	69.967
Ca3179		12.099	ppm	0.056761	0.46915
Cd2144		0.000087000	ppm	0.000015000	17.702
Co2286		0.0046240	ppm	0.00022300	4.8203
Cr2677		0.0067930	ppm	0.00046500	6.8462
Cu3247		2.0026	ppm	0.0055720	0.27823
Fe2599		5.5909	ppm	0.0084670	0.15144
K_7664		0.53903	ppm	0.073574	13.649
Mg2790		0.89639	ppm	0.0066690	0.74397
Mn2576		0.17965	ppm	0.00061300	0.34107
Mo2020		0.0015040	ppm	0.000039000	2.5882
Na5895	**F**	**1,437.6**	**ppm**	**1.3312**	**0.092603**
Ni2316		0.035277	ppm	0.000078000	0.21997
P_1782		0.083255	ppm	0.00087700	1.0530
Pb2203		0.0012170	ppm	0.0027550	226.32

320-62707-A-1-D

Acquire Date: 7/24/2020 1:06:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		0.17586	ppm	0.0012660	0.72015
Sb2068		-0.00028700	ppm	0.00074200	258.30
Se1960		-0.0020110	ppm	0.0042730	212.49
Si2881		1.3338	ppm	0.0028170	0.21119
Sn1899		0.0014650	ppm	0.0000040000	0.23938
Sr4077		0.082012	ppm	0.0010210	1.2449
Ti3349		0.0023400	ppm	0.00032800	14.022
Tl1908		-0.0021100	ppm	0.0038750	183.68
V_2924		0.0012490	ppm	0.00012900	10.324
Zn2062	**W**	**14.538**	**ppm**	**0.046536**	**0.32009**
Y_2243		5,160.6	Cts/S	6.2401	0.12092
Y_3600		47,422	Cts/S	56.065	0.11822
Y_3774		3,270.4	Cts/S	1.1485	0.035116

sd 320-62707-A-1-D@5

Acquire Date: 7/24/2020 1:10:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00054700	ppm	0.00013500	24.788
Al3961		0.19805	ppm	0.0040750	2.0578
As1890		0.000080000	ppm	0.00055500	694.46
B_2089		0.0063390	ppm	0.00015700	2.4836
Ba4554		0.019640	ppm	0.00041100	2.0929
Be3130		0.00028700	ppm	0.00013700	47.851
Ca3179		2.4726	ppm	0.027416	1.1088
Cd2144		0.00010000	ppm	0.0000090000	9.0698
Co2286		0.0010820	ppm	0.00021700	20.084
Cr2677		0.0023450	ppm	0.0010430	44.478
Cu3247		0.40891	ppm	0.00016000	0.039048
Fe2599		1.1224	ppm	0.0074160	0.66079
K_7664		0.20241	ppm	0.018361	9.0712
Mg2790		0.19724	ppm	0.0043940	2.2279
Mn2576		0.037251	ppm	0.00021000	0.56277
Mo2020		0.00061000	ppm	0.0000010000	0.22041
Na5895	**W**	**308.75**	**ppm**	**2.8452**	**0.92150**
Ni2316		0.0087020	ppm	0.00010700	1.2342
P_1782		0.010665	ppm	0.00095300	8.9400
Pb2203		0.000054000	ppm	0.0013040	2,436.0
S_1820		0.047180	ppm	0.0021030	4.4564
Sb2068		-0.00026900	ppm	0.0011930	443.11
Se1960		-0.0042700	ppm	0.0016100	37.702
Si2881		0.32188	ppm	0.020209	6.2785
Sn1899		0.00062800	ppm	0.0000020000	0.29483
Sr4077		0.016890	ppm	0.00012100	0.71352
Ti3349		0.00063200	ppm	0.00073600	116.33
Tl1908		0.0020320	ppm	0.0010110	49.756
V_2924		0.0018680	ppm	0.000087000	4.6836

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

sd 320-62707-A-1-D@5

Acquire Date: 7/24/2020 1:10:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		2.9696	ppm	0.014683	0.49443
Y_2243		5,451.9	Cts/S	13.075	0.23983
Y_3600		50,711	Cts/S	16.385	0.032310
Y_3774		3,310.5	Cts/S	19.838	0.59925

pds 320-62707-A-1-D

Acquire Date: 7/24/2020 1:14:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099820	ppm	0.0010610	1.0627
Al3961		10.905	ppm	0.027330	0.25062
As1890		0.094730	ppm	0.0023430	2.4736
B_2089		0.89832	ppm	0.0020790	0.23143
Ba4554		0.19160	ppm	0.00028900	0.15061
Be3130		0.049104	ppm	0.00047500	0.96644
Ca3179		21.594	ppm	0.12647	0.58567
Cd2144		0.10014	ppm	0.00024100	0.24076
Co2286		0.10187	ppm	0.00019300	0.18937
Cr2677		0.10343	ppm	0.00045500	0.44001
Cu3247		2.0215	ppm	0.0043230	0.21387
Fe2599		9.1725	ppm	0.072191	0.78703
K_7664		11.395	ppm	0.082422	0.72329
Mg2790		10.184	ppm	0.016657	0.16357
Mn2576		0.27153	ppm	0.00023100	0.085202
Mo2020		0.098742	ppm	0.00051100	0.51765
Na5895	**F**	**1,348.9**	**ppm**	**3.5738**	**0.26494**
Ni2316		0.13048	ppm	0.000066000	0.050857
P_1782		1.1221	ppm	0.011595	1.0333
Pb2203		0.099439	ppm	0.0029300	2.9469
S_1820		2.1564	ppm	0.0021330	0.098925
Sb2068		0.090100	ppm	0.0046080	5.1141
Se1960		0.10012	ppm	0.0030890	3.0851
Si2881		2.3004	ppm	0.067725	2.9440
Sn1899		0.099093	ppm	0.0014820	1.4956
Sr4077		0.17984	ppm	0.00051600	0.28702
Ti3349		0.10189	ppm	0.0011510	1.1300
Tl1908		0.088108	ppm	0.0022520	2.5561
V_2924		0.10330	ppm	0.00023500	0.22751
Zn2062	**W**	**14.030**	**ppm**	**0.031486**	**0.22442**
Y_2243		5,208.9	Cts/S	33.882	0.65047
Y_3600		48,189	Cts/S	2.1546	0.0044710
Y_3774		3,290.8	Cts/S	13.018	0.39560

320-62707-A-1-E MS

Acquire Date: 7/24/2020 1:18:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046383	ppm	0.00011500	0.24883
Al3961		5.4305	ppm	0.019567	0.36032
As1890		0.43791	ppm	0.0029710	0.67843
B_2089		3.9802	ppm	0.0091360	0.22953
Ba4554		0.53997	ppm	0.0036730	0.68030
Be3130		0.22418	ppm	0.00081000	0.36111
Ca3179		33.697	ppm	0.26300	0.78048
Cd2144		0.22507	ppm	0.00024200	0.10737
Co2286		0.22715	ppm	0.00081800	0.36016
Cr2677		0.22524	ppm	0.0018150	0.80594
Cu3247		2.0221	ppm	0.0068940	0.34092
Fe2599		9.5287	ppm	0.056254	0.59036
K_7664		24.993	ppm	0.056305	0.22528
Mg2790		22.282	ppm	0.12588	0.56491
Mn2576		0.38665	ppm	0.0010760	0.27821
Mo2020		0.22902	ppm	0.00012400	0.054255
Na5895	**F**	**1,243.7**	**ppm**	**7.5325**	**0.60565**
Ni2316		0.25233	ppm	0.00047800	0.18933
P_1782		4.9898	ppm	0.013077	0.26207
Pb2203		0.21866	ppm	0.0014900	0.68140
S_1820		4.7862	ppm	0.0062470	0.13052
Sb2068		0.42117	ppm	0.00087600	0.20800
Se1960		0.43022	ppm	0.0011330	0.26333
Si2881		5.8174	ppm	0.084543	1.4533
Sn1899		0.45325	ppm	0.0015110	0.33331
Sr4077		0.30073	ppm	0.00055100	0.18333
Ti3349		0.23174	ppm	0.00034600	0.14931
Tl1908		0.40002	ppm	0.0039860	0.99644
V_2924		0.23313	ppm	0.0014720	0.63127
Zn2062	**W**	**13.396**	**ppm**	**0.053555**	**0.39980**
Y_2243		5,201.1	Cts/S	22.051	0.42396
Y_3600		47,922	Cts/S	79.471	0.16584
Y_3774		3,284.5	Cts/S	11.301	0.34408

320-62707-A-1-F MSD

Acquire Date: 7/24/2020 1:22:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049400	ppm	0.00022000	0.44504
Al3961		6.0018	ppm	0.042920	0.71512
As1890		0.48018	ppm	0.0018640	0.38813
B_2089		4.3361	ppm	0.0033200	0.076560
Ba4554		0.59654	ppm	0.00074400	0.12469
Be3130		0.24589	ppm	0.0012360	0.50263
Ca3179		37.334	ppm	0.11640	0.31178
Cd2144		0.24590	ppm	0.00046800	0.19037
Co2286		0.24865	ppm	0.00088900	0.35761

320-62707-A-1-F MSD

Acquire Date: 7/24/2020 1:22:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.24897	ppm	0.00045900	0.18446
Cu3247		2.3043	ppm	0.0056970	0.24723
Fe2599		10.668	ppm	0.042294	0.39646
K_7664		27.592	ppm	0.077452	0.28071
Mg2790		24.475	ppm	0.044097	0.18017
Mn2576		0.43217	ppm	0.00030500	0.070519
Mo2020		0.25156	ppm	0.00026300	0.10451
Na5895	**F**	**1,400.5**	**ppm**	**25.305**	**1.8069**
Ni2316		0.27843	ppm	0.00011200	0.040209
P_1782		5.4719	ppm	0.0034920	0.063819
Pb2203		0.23876	ppm	0.0015270	0.63941
S_1820		5.2158	ppm	0.0031740	0.060855
Sb2068		0.46378	ppm	0.0021030	0.45348
Se1960		0.48106	ppm	0.0026930	0.55990
Si2881		6.3744	ppm	0.12969	2.0346
Sn1899		0.49657	ppm	0.00051500	0.10379
Sr4077		0.33433	ppm	0.00080000	0.23927
Ti3349		0.25460	ppm	0.0019090	0.74987
Tl1908		0.43761	ppm	0.0061890	1.4142
V_2924		0.25701	ppm	0.00084600	0.32933
Zn2062	**W**	**15.301**	**ppm**	**0.014328**	**0.093643**
Y_2243		5,134.1	Cts/S	11.298	0.22006
Y_3600		47,344	Cts/S	420.46	0.88809
Y_3774		3,274.1	Cts/S	5.4779	0.16731

320-62886-B-1-A@10

Acquire Date: 7/24/2020 1:26:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00040300	ppm	0.00019600	48.571
Al3961		3.6350	ppm	0.016600	0.45668
As1890		-0.00085100	ppm	0.0013880	163.23
B_2089		0.029153	ppm	0.0015670	5.3751
Ba4554		0.053465	ppm	0.00032500	0.60748
Be3130		0.00061500	ppm	0.00013800	22.415
Ca3179		28.469	ppm	0.11318	0.39755
Cd2144		0.00042000	ppm	0.00016000	38.120
Co2286		0.0013270	ppm	0.00014400	10.838
Cr2677		0.0050930	ppm	0.00075500	14.813
Cu3247		0.019371	ppm	0.00034600	1.7836
Fe2599		2.5473	ppm	0.020851	0.81856
K_7664		9.6127	ppm	0.026579	0.27650
Mg2790		20.772	ppm	0.037805	0.18200
Mn2576		0.16326	ppm	0.00034200	0.20930
Mo2020		0.0011580	ppm	0.00064400	55.598
Na5895		247.05	ppm	2.1241	0.85980
Ni2316		0.0057460	ppm	0.00038100	6.6273

320-62886-B-1-A@10

Acquire Date: 7/24/2020 1:26:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.25410	ppm	0.0020630	0.81182
Pb2203		0.0085250	ppm	0.00068100	7.9866
S_1820		19.845	ppm	0.022562	0.11369
Sb2068		0.0027780	ppm	0.0040800	146.87
Se1960		-0.0010270	ppm	0.0018820	183.20
Si2881		4.3452	ppm	0.050115	1.1533
Sn1899		0.0017160	ppm	0.00067200	39.148
Sr4077		0.072874	ppm	0.000076000	0.10413
Ti3349		0.024615	ppm	0.00068000	2.7640
Tl1908		0.0055280	ppm	0.00083400	15.090
V_2924		0.0072740	ppm	0.00083200	11.443
Zn2062		0.062040	ppm	0.00031300	0.50462
Y_2243		5,431.6	Cts/S	8.9856	0.16543
Y_3600		50,717	Cts/S	67.842	0.13377
Y_3774		3,282.4	Cts/S	2.1347	0.065034

sd 320-62886-B1A@50

Acquire Date: 7/24/2020 1:30:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00022100	ppm	0.00072300	327.81
Al3961		0.71207	ppm	0.021975	3.0860
As1890		0.00015500	ppm	0.0026150	1,689.8
B_2089		0.012025	ppm	0.00032300	2.6874
Ba4554		0.011411	ppm	0.000016000	0.14407
Be3130		0.00021600	ppm	0.00050800	235.33
Ca3179		5.7730	ppm	0.020437	0.35400
Cd2144		0.00023600	ppm	0.000043000	18.246
Co2286		0.00041300	ppm	0.00027000	65.291
Cr2677		0.00051200	ppm	0.0010110	197.52
Cu3247		0.0049260	ppm	0.00013900	2.8307
Fe2599		0.52790	ppm	0.020994	3.9768
K_7664		1.9038	ppm	0.020384	1.0707
Mg2790		4.1800	ppm	0.030251	0.72369
Mn2576		0.033256	ppm	0.000079000	0.23887
Mo2020		0.00053100	ppm	0.00015100	28.503
Na5895		51.931	ppm	0.27071	0.52129
Ni2316		0.00049300	ppm	0.00023900	48.466
P_1782		0.044111	ppm	0.0028040	6.3563
Pb2203		0.0027790	ppm	0.00054400	19.567
S_1820		3.8966	ppm	0.0096410	0.24743
Sb2068		0.0025360	ppm	0.00076200	30.044
Se1960		-0.00064200	ppm	0.00018000	27.956
Si2881		1.0270	ppm	0.0016600	0.16166
Sn1899		0.00081300	ppm	0.00024100	29.688
Sr4077		0.014870	ppm	0.0000080000	0.051337
Ti3349		0.0055100	ppm	0.000054000	0.98319

sd 320-62886-B1A@50

Acquire Date: 7/24/2020 1:30:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00072300	ppm	0.0017960	248.27
V_2924		0.0022380	ppm	0.0013040	58.274
Zn2062		0.021941	ppm	0.00043300	1.9715
Y_2243		5,514.6	Cts/S	8.3310	0.15107
Y_3600		52,121	Cts/S	236.07	0.45293
Y_3774		3,280.9	Cts/S	2.2710	0.069220

pds 320-62886-B1A@10

Acquire Date: 7/24/2020 1:34:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099591	ppm	0.0016250	1.6316
Al3961		13.524	ppm	0.058951	0.43591
As1890		0.099440	ppm	0.0016630	1.6727
B_2089		0.96900	ppm	0.0011990	0.12379
Ba4554		0.15451	ppm	0.00074800	0.48399
Be3130		0.050351	ppm	0.000038000	0.075609
Ca3179		38.125	ppm	0.25925	0.68001
Cd2144		0.10043	ppm	0.000063000	0.062652
Co2286		0.10296	ppm	0.00022800	0.22159
Cr2677		0.10236	ppm	0.0013490	1.3181
Cu3247		0.11992	ppm	0.00051300	0.42820
Fe2599		6.4563	ppm	0.022610	0.35020
K_7664		19.695	ppm	0.17604	0.89382
Mg2790		30.348	ppm	0.18864	0.62157
Mn2576		0.26198	ppm	0.0021720	0.82890
Mo2020		0.10050	ppm	0.00011400	0.11324
Na5895	**W**	**261.39**	**ppm**	**1.6431**	**0.62860**
Ni2316		0.10466	ppm	0.0014120	1.3490
P_1782		1.3224	ppm	0.0033310	0.25189
Pb2203		0.10758	ppm	0.0020610	1.9157
S_1820		21.742	ppm	0.010160	0.046731
Sb2068		0.091933	ppm	0.0017110	1.8607
Se1960		0.096330	ppm	0.0010670	1.1073
Si2881		5.5822	ppm	0.0024370	0.043665
Sn1899		0.10088	ppm	0.0011470	1.1368
Sr4077		0.17273	ppm	0.0010320	0.59760
Ti3349		0.12391	ppm	0.00017200	0.13911
Tl1908		0.098167	ppm	0.000075000	0.076237
V_2924		0.10904	ppm	0.00080000	0.73385
Zn2062		0.15728	ppm	0.0010830	0.68863
Y_2243		5,406.2	Cts/S	5.8142	0.10755
Y_3600		50,429	Cts/S	284.34	0.56383
Y_3774		3,311.8	Cts/S	1.7852	0.053905

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62886-B-1-BMS@10

Acquire Date: 7/24/2020 1:38:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0050290	ppm	0.00013300	2.6536
Al3961		6.1731	ppm	0.010521	0.17044
As1890		0.047158	ppm	0.0032300	6.8494
B_2089		0.45036	ppm	0.0014910	0.33102
Ba4554		0.10372	ppm	0.00076200	0.73448
Be3130		0.023490	ppm	0.000064000	0.27414
Ca3179		30.609	ppm	0.14255	0.46571
Cd2144		0.023485	ppm	0.00012900	0.54941
Co2286		0.024620	ppm	0.00041700	1.6955
Cr2677		0.030242	ppm	0.00092700	3.0659
Cu3247		0.043012	ppm	0.00042700	0.99219
Fe2599		3.4118	ppm	0.0081550	0.23902
K_7664		11.991	ppm	0.12814	1.0686
Mg2790		23.150	ppm	0.11053	0.47743
Mn2576		0.18767	ppm	0.00075600	0.40293
Mo2020		0.023444	ppm	0.000060000	0.25527
Na5895	**W**	**255.37**	**ppm**	**1.6563**	**0.64859**
Ni2316		0.028680	ppm	0.00028500	0.99235
P_1782		0.75528	ppm	0.0039520	0.52324
Pb2203		0.033494	ppm	0.0028590	8.5371
S_1820		20.270	ppm	0.0067720	0.033409
Sb2068		0.039676	ppm	0.0022410	5.6475
Se1960		0.042773	ppm	0.00070300	1.6432
Si2881		5.9196	ppm	0.099644	1.6833
Sn1899		0.046945	ppm	0.00059500	1.2679
Sr4077		0.096861	ppm	0.00049500	0.51134
Ti3349		0.058296	ppm	0.00035300	0.60618
Tl1908		0.045226	ppm	0.00041800	0.92380
V_2924		0.032352	ppm	0.00060500	1.8705
Zn2062		0.10415	ppm	0.000052000	0.049551
Y_2243		5,392.2	Cts/S	7.6906	0.14262
Y_3600		50,349	Cts/S	39.957	0.079360
Y_3774		3,285.8	Cts/S	7.5167	0.22877

320-62886-B-1CMSD@10

Acquire Date: 7/24/2020 1:41:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0047560	ppm	0.0011520	24.214
Al3961		5.9920	ppm	0.058596	0.97790
As1890		0.044558	ppm	0.0021210	4.7611
B_2089		0.44387	ppm	0.0018170	0.40944
Ba4554		0.10093	ppm	0.00075800	0.75072
Be3130		0.023115	ppm	0.00018300	0.79097
Ca3179		30.420	ppm	0.18439	0.60615
Cd2144		0.023118	ppm	0.000019000	0.083195
Co2286		0.024128	ppm	0.00018700	0.77431

320-62886-B-1CMSD@10

Acquire Date: 7/24/2020 1:41:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.027458	ppm	0.00011000	0.39997
Cu3247		0.041371	ppm	0.00053600	1.2953
Fe2599		3.3396	ppm	0.0056780	0.17001
K_7664		11.900	ppm	0.13803	1.1600
Mg2790		22.767	ppm	0.045992	0.20201
Mn2576		0.18408	ppm	0.00024700	0.13431
Mo2020		0.023788	ppm	0.00039300	1.6528
Na5895	**W**	**252.71**	**ppm**	**1.7714**	**0.70099**
Ni2316		0.028704	ppm	0.00046500	1.6197
P_1782		0.74594	ppm	0.0025840	0.34635
Pb2203		0.031942	ppm	0.0031480	9.8568
S_1820		20.143	ppm	0.0022050	0.010946
Sb2068		0.035256	ppm	0.0046890	13.299
Se1960		0.041356	ppm	0.0053500	12.936
Si2881		6.4049	ppm	0.15463	2.4143
Sn1899		0.045660	ppm	0.00012700	0.27713
Sr4077		0.095149	ppm	0.00025400	0.26659
Ti3349		0.055429	ppm	0.00044300	0.79974
Tl1908		0.046055	ppm	0.00010000	0.21756
V_2924		0.031352	ppm	0.00035100	1.1201
Zn2062		0.10258	ppm	0.00036000	0.35118
Y_2243		5,391.9	Cts/S	1.9822	0.036762
Y_3600		50,426	Cts/S	142.25	0.28210
Y_3774		3,284.3	Cts/S	7.2366	0.22034

CCV 2078482

Acquire Date: 7/24/2020 1:45:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50066	ppm	0.0016440	0.32841	.50000	Rel(%)	Pass	
Al3961		25.188	ppm	0.14441	0.57332	25.000	Rel(%)	Pass	
As1890		0.50773	ppm	0.0019280	0.37980	.50000	Rel(%)	Pass	
B_2089		1.0221	ppm	0.00049000	0.047958	1.0000	Rel(%)	Pass	
Ba4554		2.5374	ppm	0.015224	0.59999	2.5000	Rel(%)	Pass	
Be3130		0.50870	ppm	0.0024350	0.47866	.50000	Rel(%)	Pass	
Ca3179		25.413	ppm	0.13457	0.52953	25.000	Rel(%)	Pass	
Cd2144		0.51956	ppm	0.0013470	0.25927	.50000	Rel(%)	Pass	
Co2286		2.5771	ppm	0.0056220	0.21814	2.5000	Rel(%)	Pass	
Cr2677		2.4702	ppm	0.0064030	0.25921	2.5000	Rel(%)	Pass	
Cu3247		2.4683	ppm	0.016266	0.65899	2.5000	Rel(%)	Pass	
Fe2599		25.059	ppm	0.17550	0.70033	25.000	Rel(%)	Pass	
K_7664		25.160	ppm	0.19272	0.76599	25.000	Rel(%)	Pass	
Mg2790		25.052	ppm	0.11391	0.45467	25.000	Rel(%)	Pass	
Mn2576		2.5289	ppm	0.013213	0.52247	2.5000	Rel(%)	Pass	
Mo2020		1.0244	ppm	0.0053470	0.52191	1.0000	Rel(%)	Pass	
Na5895		25.427	ppm	0.12942	0.50897	25.000	Rel(%)	Pass	
Ni2316		2.6218	ppm	0.0058440	0.22290	2.5000	Rel(%)	Pass	
P_1782		2.6114	ppm	0.0023980	0.091821	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 1:45:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.51576	ppm	0.0038850	0.75318	.50000	Rel(%)	Pass	
S_1820		2.4447	ppm	0.0030980	0.12671	2.5000	Rel(%)	Pass	
Sb2068		0.51612	ppm	0.0055320	1.0719	.50000	Rel(%)	Pass	
Se1960		0.51991	ppm	0.0017670	0.33992	.50000	Rel(%)	Pass	
Si2881		2.5965	ppm	0.067925	2.6160	2.5000	Rel(%)	Pass	
Sn1899		2.5466	ppm	0.0084030	0.32996	2.5000	Rel(%)	Pass	
Sr4077		2.5286	ppm	0.014786	0.58473	2.5000	Rel(%)	Pass	
Ti3349		1.0204	ppm	0.0016630	0.16299	1.0000	Rel(%)	Pass	
Tl1908		0.51394	ppm	0.0027040	0.52621	.50000	Rel(%)	Pass	
V_2924		2.5450	ppm	0.0094690	0.37207	2.5000	Rel(%)	Pass	
Zn2062		2.5651	ppm	0.0092380	0.36017	2.5000	Rel(%)	Pass	
Y_2243		5,470.3	Cts/S	3.9684	0.072545				
Y_3600		51,593	Cts/S	66.735	0.12935				
Y_3774		3,317.8	Cts/S	13.210	0.39816				

CCB 2065750

Acquire Date: 7/24/2020 1:49:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00021300	ppm	0.00053200	249.82	.00000	Abs	Pass	
Al3961		0.0034340	ppm	0.015622	454.92	.00000	Abs	Pass	
As1890		0.0023800	ppm	0.00034200	14.382	.00000	Abs	Pass	
B_2089		0.0075170	ppm	0.00069300	9.2181	.00000	Abs	Pass	
Ba4554		0.0015130	ppm	0.00030800	20.346	.00000	Abs	Pass	
Be3130		0.00030000	ppm	0.00012500	41.836	.00000	Abs	Pass	
Ca3179		0.030996	ppm	0.0040030	12.916	.00000	Abs	Pass	
Cd2144		0.00017000	ppm	0.000053000	30.860	.00000	Abs	Pass	
Co2286		0.00019400	ppm	0.00050800	262.15	.00000	Abs	Pass	
Cr2677		0.0016860	ppm	0.00067000	39.730	.00000	Abs	Pass	
Cu3247		0.0032170	ppm	0.00057000	17.717	.00000	Abs	Pass	
Fe2599	**W**	**0.053684**	**ppm**	**0.010660**	**19.857**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.073259	ppm	0.0058210	7.9459	.00000	Abs	Pass	
Mg2790		0.017220	ppm	0.0011780	6.8419	.00000	Abs	Pass	
Mn2576		0.00071800	ppm	0.000033000	4.5736	.00000	Abs	Pass	
Mo2020		0.0067900	ppm	0.00038500	5.6758	.00000	Abs	Pass	
Na5895		0.40419	ppm	0.0045160	1.1173	.00000	Abs	Pass	
Ni2316		0.00066300	ppm	0.00053300	80.399	.00000	Abs	Pass	
P_1782		-0.0096150	ppm	0.0062720	65.225	.00000	Abs	Pass	
Pb2203		0.00011900	ppm	0.0019030	1,593.1	.00000	Abs	Pass	
S_1820		0.014811	ppm	0.0022270	15.036	.00000	Abs	Pass	
Sb2068		0.0028310	ppm	0.00026400	9.3171	.00000	Abs	Pass	
Se1960		-0.0019270	ppm	0.0021110	109.58	.00000	Abs	Pass	
Si2881		0.068961	ppm	0.0077960	11.305	.00000	Abs	Pass	
Sn1899		0.0041040	ppm	0.000016000	0.38288	.00000	Abs	Pass	
Sr4077		0.0013150	ppm	0.00030900	23.521	.00000	Abs	Pass	
Ti3349		0.0052170	ppm	0.00059400	11.393	.00000	Abs	Pass	
Tl1908		0.0015040	ppm	0.0013480	89.573	.00000	Abs	Pass	
V_2924		0.0018340	ppm	0.00027100	14.784	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/24/2020 1:49:38PM   Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0034470	ppm	0.000028000	0.80859	.00000	Abs	Pass	
Y_2243		5,504.5	Cts/S	18.799	0.34151				
Y_3600		51,769	Cts/S	327.19	0.63202				
Y_3774		3,277.3	Cts/S	2.6699	0.081466				

320-62886-B-2-A@10

Acquire Date: 7/24/2020 1:53:38PM   Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00033300	ppm	0.00056300	169.17
Al3961		2.8225	ppm	0.016852	0.59705
As1890		0.0028390	ppm	0.00073500	25.893
B_2089		0.015089	ppm	0.00000	0.0019050
Ba4554		0.036462	ppm	0.000031000	0.085500
Be3130		0.00019900	ppm	0.00020100	100.96
Ca3179		19.766	ppm	0.18370	0.92939
Cd2144		0.00022700	ppm	0.000082000	36.266
Co2286		0.0010900	ppm	0.00011100	10.214
Cr2677		0.0031520	ppm	0.00019000	6.0263
Cu3247		0.014433	ppm	0.00043500	3.0142
Fe2599		1.9212	ppm	0.0029320	0.15261
K_7664		9.3448	ppm	0.076234	0.81579
Mg2790		20.631	ppm	0.040080	0.19427
Mn2576		0.097402	ppm	0.00016200	0.16672
Mo2020		0.0016450	ppm	0.00022100	13.420
Na5895	**W**	**254.18**	**ppm**	**1.8623**	**0.73267**
Ni2316		0.0024510	ppm	0.00051900	21.191
P_1782		0.16212	ppm	0.0023070	1.4233
Pb2203		0.0059120	ppm	0.0048780	82.514
S_1820		19.529	ppm	0.069906	0.35796
Sb2068		-0.00053500	ppm	0.0039050	729.75
Se1960		-0.0023020	ppm	0.0034210	148.60
Si2881		3.8652	ppm	0.020424	0.52839
Sn1899		0.0015380	ppm	0.000019000	1.2316
Sr4077		0.047922	ppm	0.00025700	0.53531
Ti3349		0.019258	ppm	0.0013270	6.8933
Tl1908		0.0030580	ppm	0.0023330	76.303
V_2924		0.0055960	ppm	0.0012270	21.931
Zn2062		0.036443	ppm	0.00079500	2.1807
Y_2243		5,390.3	Cts/S	14.345	0.26614
Y_3600		50,194	Cts/S	189.24	0.37703
Y_3774		3,303.0	Cts/S	4.2469	0.12858

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62886-B-3-A@10

Acquire Date: 7/24/2020 1:57:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000078000	ppm	0.000076000	96.769
Al3961		0.12102	ppm	0.028884	23.866
As1890		0.0014000	ppm	0.0050860	363.21
B_2089		0.011596	ppm	0.0010780	9.2970
Ba4554		0.013603	ppm	0.00081000	5.9558
Be3130		0.00019000	ppm	0.00043000	225.74
Ca3179		12.351	ppm	0.032271	0.26128
Cd2144		0.00012400	ppm	0.000016000	13.049
Co2286		-0.00015900	ppm	0.000013000	8.1216
Cr2677		0.00022100	ppm	0.00018700	84.475
Cu3247		0.0022030	ppm	0.00022000	9.9907
Fe2599		0.0050670	ppm	0.0099600	196.57
K_7664		9.0326	ppm	0.031599	0.34983
Mg2790		20.111	ppm	0.0094560	0.047021
Mn2576		0.025237	ppm	0.00015400	0.61108
Mo2020		0.00021600	ppm	0.00016200	75.231
Na5895	**W**	**251.64**	**ppm**	**1.1071**	**0.43996**
Ni2316		0.00048600	ppm	0.00044600	91.806
P_1782		-0.0077420	ppm	0.0051490	66.510
Pb2203		.0000040000	ppm	0.0018990	50,908
S_1820		18.847	ppm	0.028604	0.15177
Sb2068		-0.0017330	ppm	0.00047500	27.411
Se1960		-0.0042590	ppm	0.0000060000	0.13096
Si2881		0.29271	ppm	0.036252	12.385
Sn1899		0.00010500	ppm	0.00062700	599.22
Sr4077		0.024427	ppm	0.000020000	0.083785
Ti3349		0.00062900	ppm	0.000044000	7.0173
Tl1908		0.0013190	ppm	0.000083000	6.3099
V_2924		0.0016660	ppm	0.00036900	22.122
Zn2062		0.0070330	ppm	0.00050300	7.1503
Y_2243		5,337.2	Cts/S	4.8661	0.091173
Y_3600		49,869	Cts/S	14.211	0.028496
Y_3774		3,246.3	Cts/S	17.618	0.54272

320-62886-B-4-A@10

Acquire Date: 7/24/2020 2:01:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00047900	ppm	0.00027500	57.284
Al3961		0.098496	ppm	0.013264	13.467
As1890		-0.00010300	ppm	0.0014780	1,441.2
B_2089		0.016531	ppm	0.00038500	2.3278
Ba4554		0.010560	ppm	0.00072400	6.8522
Be3130		0.00012000	ppm	0.000016000	13.105
Ca3179		10.258	ppm	0.054246	0.52879
Cd2144		0.00016700	ppm	0.000016000	9.7292
Co2286		0.000069000	ppm	0.00031000	447.39

320-62886-B-4-A@10

Acquire Date: 7/24/2020 2:01:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00037900	ppm	0.00021900	57.833
Cu3247		0.0024000	ppm	0.00071600	29.837
Fe2599		-0.0047610	ppm	0.0050230	105.49
K_7664		7.8603	ppm	0.15359	1.9540
Mg2790		17.062	ppm	0.061776	0.36207
Mn2576		0.019118	ppm	0.000028000	0.14417
Mo2020		0.00077800	ppm	0.00048100	61.854
Na5895		218.05	ppm	2.1752	0.99756
Ni2316		0.00086500	ppm	0.00053800	62.144
P_1782		-0.00087200	ppm	0.0026800	307.33
Pb2203		0.00060600	ppm	0.00051100	84.446
S_1820		16.645	ppm	0.0097840	0.058777
Sb2068		0.0035640	ppm	0.0025250	70.867
Se1960		-0.0048150	ppm	0.0080760	167.72
Si2881		0.31342	ppm	0.0065370	2.0857
Sn1899		0.0013640	ppm	0.00012200	8.9255
Sr4077		0.018838	ppm	0.00067500	3.5813
Ti3349		0.00088200	ppm	0.00088100	99.886
Tl1908		0.00094300	ppm	0.0012250	129.95
V_2924		0.00083900	ppm	0.00035700	42.515
Zn2062		0.0065010	ppm	0.000015000	0.22408
Y_2243		5,349.1	Cts/S	4.3886	0.082043
Y_3600		50,274	Cts/S	18.178	0.036157
Y_3774		3,242.4	Cts/S	3.1631	0.097553

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Acquire Date: 7/24/2020 2:05:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00072500	ppm	0.00046700	64.441
Al3961		0.032694	ppm	0.020220	61.844
As1890		0.0028530	ppm	0.0022350	78.352
B_2089		0.0023050	ppm	0.00031100	13.479
Ba4554		0.00098600	ppm	0.00029300	29.764
Be3130		0.00029000	ppm	0.00035400	122.05
Ca3179		0.015881	ppm	0.013099	82.479
Cd2144		0.00010100	ppm	0.000011000	10.728
Co2286		-0.00058400	ppm	0.00016800	28.846
Cr2677		0.0015180	ppm	0.0011810	77.800
Cu3247		0.00063900	ppm	0.00072900	113.97
Fe2599		-0.0082050	ppm	0.0098390	119.92
K_7664		0.053937	ppm	0.010476	19.423
Mg2790		0.0091810	ppm	0.0074780	81.451
Mn2576		0.00025600	ppm	0.000069000	27.023
Mo2020		0.00056500	ppm	0.00036100	63.858
Na5895		0.37329	ppm	0.0023190	0.62124
Ni2316		-0.0013290	ppm	0.00066500	50.039

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Acquire Date: 7/24/2020 2:05:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.010987	ppm	0.0047330	43.081
Pb2203		-0.0018950	ppm	0.000024000	1.2431
S_1820		0.013843	ppm	0.0023940	17.297
Sb2068		0.000029000	ppm	0.0094750	32,240
Se1960		-0.0055410	ppm	0.0036260	65.441
Si2881		0.051783	ppm	0.0044000	8.4978
Sn1899		0.00051300	ppm	0.000070000	13.679
Sr4077		0.000060000	ppm	0.00014100	236.61
Ti3349		0.0010350	ppm	0.00027900	26.935
Tl1908		-0.00023100	ppm	0.0013580	588.60
V_2924		0.0010670	ppm	0.00017500	16.415
Zn2062		0.0016330	ppm	0.000090000	5.4919
Y_2243		5,448.3	Cts/S	3.8970	0.071526
Y_3600		51,428	Cts/S	339.08	0.65933
Y_3774		3,247.5	Cts/S	8.1037	0.24954

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Acquire Date: 7/24/2020 2:09:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00040700	ppm	0.00094400	231.79
Al3961		-0.021572	ppm	0.013414	62.181
As1890		0.0016910	ppm	0.0015210	89.927
B_2089		0.0011170	ppm	0.00037400	33.453
Ba4554		0.000041000	ppm	0.00031700	767.71
Be3130		-0.00014400	ppm	0.00025100	174.98
Ca3179		0.0010210	ppm	0.0010080	98.706
Cd2144		0.000030000	ppm	0.00017900	598.35
Co2286		-0.00048000	ppm	0.00014700	30.615
Cr2677		-0.00027100	ppm	0.00024300	89.814
Cu3247		0.00021300	ppm	0.00064700	303.36
Fe2599		-0.019320	ppm	0.0068100	35.248
K_7664		0.0057520	ppm	0.020115	349.68
Mg2790		0.0060610	ppm	0.0029300	48.347
Mn2576		0.000091000	ppm	0.00011300	123.82
Mo2020		0.00024500	ppm	0.00047200	192.48
Na5895		0.21060	ppm	0.020990	9.9671
Ni2316		-0.00010000	ppm	0.0010340	1,031.3
P_1782		-0.0069710	ppm	0.00014600	2.0872
Pb2203		-0.0017780	ppm	0.0012590	70.770
S_1820		0.013662	ppm	0.00069500	5.0851
Sb2068		0.00045700	ppm	0.0019860	434.39
Se1960		-0.0024230	ppm	0.0051340	211.86
Si2881		0.11457	ppm	0.047093	41.105
Sn1899		0.00096900	ppm	0.00011700	12.076
Sr4077		0.00033700	ppm	0.000053000	15.659
Ti3349		0.00035500	ppm	0.00028200	79.382

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 7/24/2020 2:09:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0017800	ppm	0.00035500	19.956
V_2924		0.00087900	ppm	0.000036000	4.1509
Zn2062		0.00055300	ppm	0.00027000	48.835
Y_2243		5,472.3	Cts/S	10.316	0.18851
Y_3600		51,393	Cts/S	108.97	0.21204
Y_3774		3,249.7	Cts/S	7.6933	0.23674

MB 320-397139/1-A

Acquire Date: 7/24/2020 2:13:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00014500	ppm	0.00074600	513.05
Al3961		-0.0020580	ppm	0.026784	1,301.4
As1890		-0.00075300	ppm	0.00029300	38.958
B_2089		0.0030350	ppm	0.0012610	41.548
Ba4554		0.0010370	ppm	0.00022900	22.094
Be3130		0.00017800	ppm	0.00025600	143.64
Ca3179		0.13811	ppm	0.0034320	2.4853
Cd2144		0.000098000	ppm	0.000027000	28.023
Co2286		0.000067000	ppm	0.00013000	193.30
Cr2677		0.0010810	ppm	0.00040000	37.046
Cu3247		0.00031700	ppm	0.00087300	275.15
Fe2599		0.026488	ppm	0.017173	64.830
K_7664		0.023436	ppm	0.059384	253.39
Mg2790		0.034229	ppm	0.0082910	24.223
Mn2576		0.00040500	ppm	0.00011300	27.779
Mo2020		0.00018500	ppm	0.00035800	194.00
Na5895		0.27129	ppm	0.0028290	1.0428
Ni2316		0.0022280	ppm	0.000032000	1.4572
P_1782		-0.0043940	ppm	0.00033300	7.5761
Pb2203		-0.0011000	ppm	0.0024600	223.60
S_1820		0.027096	ppm	0.010184	37.584
Sb2068		-0.0033230	ppm	0.00063700	19.181
Se1960		-0.0034000	ppm	0.0051530	151.56
Si2881		0.036355	ppm	0.029892	82.220
Sn1899		0.0034160	ppm	0.000014000	0.42021
Sr4077		0.00029400	ppm	0.00027400	93.356
Ti3349		0.00014500	ppm	0.000017000	11.500
Tl1908		-0.00044900	ppm	0.0013430	299.16
V_2924		0.0013020	ppm	0.00018800	14.469
Zn2062		0.0015330	ppm	0.00029800	19.414
Y_2243		5,449.7	Cts/S	6.9910	0.12828
Y_3600		51,689	Cts/S	277.68	0.53722
Y_3774		3,256.2	Cts/S	9.2893	0.28528

LCS 320-397139/2-A

Acquire Date: 7/24/2020 2:17:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.045506	ppm	0.00023200	0.50967
Al3961		4.6577	ppm	0.021828	0.46864
As1890	**W**	**0.44262**	**ppm**	**0.00060500**	**0.13658**
B_2089		4.4405	ppm	0.0069270	0.15601
Ba4554	**W**	**0.47436**	**ppm**	**0.0020260**	**0.42701**
Be3130		0.23609	ppm	0.0014560	0.61686
Ca3179		23.893	ppm	0.11893	0.49775
Cd2144	**W**	**0.23356**	**ppm**	**0.00027000**	**0.11579**
Co2286		0.23413	ppm	0.0010840	0.46286
Cr2677	**W**	**0.23487**	**ppm**	**0.00055500**	**0.23640**
Cu3247		0.22929	ppm	0.0019160	0.83577
Fe2599		4.7700	ppm	0.028346	0.59427
K_7664		23.077	ppm	0.17502	0.75840
Mg2790		23.324	ppm	0.081174	0.34803
Mn2576		0.23853	ppm	0.00091500	0.38361
Mo2020		0.23939	ppm	0.0011560	0.48308
Na5895		23.631	ppm	0.073696	0.31187
Ni2316		0.23350	ppm	0.000086000	0.036905
P_1782		4.8563	ppm	0.013872	0.28565
Pb2203	**W**	**0.22993**	**ppm**	**0.00079600**	**0.34633**
S_1820		4.5585	ppm	0.0076280	0.16733
Sb2068		0.44279	ppm	0.00079100	0.17871
Se1960	**W**	**0.43050**	**ppm**	**0.00072500**	**0.16839**
Si2881	**W**	**4.9126**	**ppm**	**0.00071700**	**0.014593**
Sn1899		0.48038	ppm	0.0011230	0.23367
Sr4077		0.23646	ppm	0.0011210	0.47397
Ti3349	**W**	**0.23626**	**ppm**	**0.0012380**	**0.52394**
Tl1908		0.46021	ppm	0.0036280	0.78837
V_2924		0.23856	ppm	0.00056100	0.23531
Zn2062		0.48582	ppm	0.0012800	0.26344
Y_2243		5,409.0	Cts/S	18.102	0.33467
Y_3600		50,749	Cts/S	323.53	0.63750
Y_3774		3,256.9	Cts/S	18.140	0.55698

320-62886-B-1-A

Acquire Date: 7/24/2020 2:21:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00049600	ppm	0.0018300	368.81
Al3961		37.192	ppm	0.36333	0.97691
As1890		0.013761	ppm	0.0053620	38.965
B_2089		0.12910	ppm	0.0019680	1.5248
Ba4554		0.53919	ppm	0.0058770	1.0899
Be3130		0.0013680	ppm	0.00019700	14.417
Ca3179		278.84	ppm	2.2872	0.82025
Cd2144		0.0032970	ppm	0.00011600	3.5164
Co2286		0.013307	ppm	0.000045000	0.34047

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62886-B-1-A

Acquire Date:	7/24/2020 2:21:13PM	Sample Type:	Unknown		
Correction Factor: 1.0000	SW: 1.0000	NW: 1.0000	IV: 1.0000	FV: 1.0000	AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.050305	ppm	0.0011010	2.1884
Cu3247		0.16728	ppm	0.0012280	0.73392
Fe2599		25.674	ppm	0.38426	1.4967
K_7664		102.29	ppm	1.0354	1.0122
Mg2790		207.33	ppm	0.77920	0.37583
Mn2576		1.6005	ppm	0.0051140	0.31954
Mo2020		0.0068240	ppm	0.00047000	6.8843
Na5895	**F**	**2,143.7**	**ppm**	**15.250**	**0.71139**
Ni2316		0.045784	ppm	0.00023400	0.51208
P_1782		2.6806	ppm	0.017281	0.64467
Pb2203		0.10140	ppm	0.0026470	2.6109
S_1820		201.63	ppm	0.025151	0.012474
Sb2068		0.0017420	ppm	0.00010200	5.8480
Se1960		-0.0048730	ppm	0.00038700	7.9448
Si2881	**W**	**47.276**	**ppm**	**0.58987**	**1.2477**
Sn1899		0.0076040	ppm	0.00031400	4.1336
Sr4077		0.73029	ppm	0.0056720	0.77664
Ti3349		0.23581	ppm	0.000095000	0.040472
Tl1908		0.0035670	ppm	0.00093300	26.166
V_2924		0.061844	ppm	0.000059000	0.095090
Zn2062		0.49798	ppm	0.0033520	0.67319
Y_2243		4,835.2	Cts/S	2.7697	0.057281
Y_3600		44,582	Cts/S	165.34	0.37087
Y_3774		3,163.7	Cts/S	19.260	0.60877

sd 320-62886-B-1-A@5

Acquire Date:	7/24/2020 2:25:12PM	Sample Type:	Unknown		
Correction Factor: 1.0000	SW: 1.0000	NW: 1.0000	IV: 1.0000	FV: 1.0000	AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00044900	ppm	0.00011400	25.470
Al3961		7.4986	ppm	0.053703	0.71618
As1890		0.0037880	ppm	0.00083300	21.998
B_2089		0.030258	ppm	0.000053000	0.17665
Ba4554		0.11045	ppm	0.0011480	1.0397
Be3130		0.00031000	ppm	0.000037000	12.062
Ca3179		57.806	ppm	0.41671	0.72089
Cd2144		0.00070700	ppm	0.000030000	4.1794
Co2286		0.0027820	ppm	0.00063100	22.692
Cr2677		0.0097730	ppm	0.00072600	7.4261
Cu3247		0.035858	ppm	0.00068400	1.9080
Fe2599		5.3386	ppm	0.052276	0.97920
K_7664		19.992	ppm	0.14854	0.74303
Mg2790		42.507	ppm	0.15223	0.35812
Mn2576		0.33203	ppm	0.00056400	0.16999
Mo2020		0.00076000	ppm	0.00012600	16.625
Na5895	**W**	**486.88**	**ppm**	**14.267**	**2.9303**
Ni2316		0.011104	ppm	0.00023200	2.0875

sd 320-62886-B-1-A@5

Acquire Date: 7/24/2020 2:25:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.52842	ppm	0.0031010	0.58686
Pb2203		0.022191	ppm	0.0039040	17.591
S_1820		40.364	ppm	0.030565	0.075723
Sb2068		-0.00033700	ppm	0.0017380	515.28
Se1960		-0.0019270	ppm	0.0025040	129.94
Si2881		9.9582	ppm	0.021937	0.22029
Sn1899		0.0015190	ppm	0.00026900	17.716
Sr4077		0.14819	ppm	0.0012050	0.81299
Ti3349		0.049928	ppm	0.00015600	0.31280
Tl1908		0.0020820	ppm	0.0026600	127.81
V_2924		0.013463	ppm	0.0011880	8.8275
Zn2062		0.10561	ppm	0.000033000	0.031543
Y_2243		5,246.5	Cts/S	9.2875	0.17702
Y_3600		48,743	Cts/S	144.21	0.29587
Y_3774		3,215.7	Cts/S	10.703	0.33284

pds 320-62886-B-1-A

Acquire Date: 7/24/2020 2:29:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10518	ppm	0.00063900	0.60790
Al3961		46.258	ppm	0.21699	0.46908
As1890		0.10745	ppm	0.00046300	0.43079
B_2089		1.0127	ppm	0.0033460	0.33042
Ba4554		0.62577	ppm	0.0027570	0.44058
Be3130		0.050844	ppm	0.00017300	0.33946
Ca3179		280.26	ppm	1.5809	0.56407
Cd2144		0.097443	ppm	0.000089000	0.090868
Co2286		0.10939	ppm	0.00066900	0.61159
Cr2677		0.14440	ppm	0.00080200	0.55533
Cu3247		0.26612	ppm	0.0021790	0.81872
Fe2599		28.886	ppm	0.090843	0.31448
K_7664		109.72	ppm	0.72991	0.66525
Mg2790		211.44	ppm	0.54686	0.25863
Mn2576		1.6567	ppm	0.0046460	0.28044
Mo2020		0.10290	ppm	0.00056200	0.54617
Na5895	**F**	**2,029.0**	**ppm**	**12.018**	**0.59229**
Ni2316		0.13903	ppm	0.0014240	1.0246
P_1782		3.6717	ppm	0.0061100	0.16640
Pb2203		0.18661	ppm	0.0010440	0.55967
S_1820		197.79	ppm	0.28220	0.14268
Sb2068		0.093955	ppm	0.0054740	5.8257
Se1960		0.094574	ppm	0.0065380	6.9128
Si2881	**W**	**48.242**	**ppm**	**0.14639**	**0.30344**
Sn1899		0.10217	ppm	0.00035200	0.34444
Sr4077		0.81169	ppm	0.0048220	0.59411
Ti3349		0.33451	ppm	0.00052000	0.15548

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 320-62886-B-1-A

Acquire Date: 7/24/2020 2:29:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.086234	ppm	0.0022000	2.5509
V_2924		0.16144	ppm	0.00051100	0.31682
Zn2062		0.58404	ppm	0.0021600	0.36981
Y_2243		4,853.8	Cts/S	7.5363	0.15527
Y_3600		44,607	Cts/S	125.14	0.28053
Y_3774		3,148.7	Cts/S	2.9912	0.095000

CCV 2078482

Acquire Date: 7/24/2020 2:33:09PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50114	ppm	0.0020970	0.41851	.50000	Rel(%)	Pass	
Al3961		25.251	ppm	0.16758	0.66367	25.000	Rel(%)	Pass	
As1890		0.50975	ppm	0.0033220	0.65179	.50000	Rel(%)	Pass	
B_2089		1.0172	ppm	0.0021050	0.20692	1.0000	Rel(%)	Pass	
Ba4554		2.5422	ppm	0.021048	0.82796	2.5000	Rel(%)	Pass	
Be3130		0.50775	ppm	0.0035880	0.70669	.50000	Rel(%)	Pass	
Ca3179		25.733	ppm	0.19600	0.76168	25.000	Rel(%)	Pass	
Cd2144		0.51887	ppm	0.0019090	0.36795	.50000	Rel(%)	Pass	
Co2286		2.5724	ppm	0.012765	0.49623	2.5000	Rel(%)	Pass	
Cr2677		2.5126	ppm	0.015536	0.61833	2.5000	Rel(%)	Pass	
Cu3247		2.4690	ppm	0.015216	0.61628	2.5000	Rel(%)	Pass	
Fe2599		25.493	ppm	0.10199	0.40006	25.000	Rel(%)	Pass	
K_7664		25.384	ppm	0.24245	0.95514	25.000	Rel(%)	Pass	
Mg2790		25.372	ppm	0.13423	0.52906	25.000	Rel(%)	Pass	
Mn2576		2.5514	ppm	0.013933	0.54611	2.5000	Rel(%)	Pass	
Mo2020		1.0224	ppm	0.0054150	0.52960	1.0000	Rel(%)	Pass	
Na5895		26.613	ppm	0.064608	0.24277	25.000	Rel(%)	Pass	
Ni2316		2.6042	ppm	0.011099	0.42619	2.5000	Rel(%)	Pass	
P_1782		2.5977	ppm	0.013143	0.50595	2.5000	Rel(%)	Pass	
Pb2203		0.51504	ppm	0.0019380	0.37623	.50000	Rel(%)	Pass	
S_1820		2.5208	ppm	0.0079110	0.31382	2.5000	Rel(%)	Pass	
Sb2068		0.51830	ppm	0.0062540	1.2067	.50000	Rel(%)	Pass	
Se1960		0.51852	ppm	0.0079210	1.5276	.50000	Rel(%)	Pass	
Si2881	F	2.9273	ppm	0.053372	1.8233	2.5000	Rel(%)	Fail High	10.450
Sn1899		2.5545	ppm	0.013627	0.53346	2.5000	Rel(%)	Pass	
Sr4077		2.5293	ppm	0.017493	0.69159	2.5000	Rel(%)	Pass	
Ti3349		1.0221	ppm	0.0056370	0.55151	1.0000	Rel(%)	Pass	
Tl1908		0.51305	ppm	0.0030250	0.58962	.50000	Rel(%)	Pass	
V_2924		2.5459	ppm	0.013863	0.54452	2.5000	Rel(%)	Pass	
Zn2062		2.5773	ppm	0.010499	0.40736	2.5000	Rel(%)	Pass	
Y_2243		5,415.2	Cts/S	4.7953	0.088552				
Y_3600		51,294	Cts/S	93.442	0.18217				
Y_3774		3,248.8	Cts/S	15.649	0.48170				

CCB 2065750

Acquire Date: 7/24/2020 2:36:54PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00066700	ppm	0.00058200	87.317	.00000	Abs	Pass	
Al3961		0.0028420	ppm	0.038633	1,359.5	.00000	Abs	Pass	
As1890		0.0010560	ppm	0.0020110	190.49	.00000	Abs	Pass	
B_2089		0.0052510	ppm	0.00027100	5.1674	.00000	Abs	Pass	
Ba4554		0.0011680	ppm	0.00038400	32.886	.00000	Abs	Pass	
Be3130		0.00034400	ppm	0.000049000	14.308	.00000	Abs	Pass	
Ca3179		0.10264	ppm	0.00090200	0.87834	.00000	Abs	Pass	
Cd2144		0.00014900	ppm	0.000045000	30.348	.00000	Abs	Pass	
Co2286		0.00045900	ppm	0.00023400	51.049	.00000	Abs	Pass	
Cr2677		0.00040500	ppm	0.00027600	68.187	.00000	Abs	Pass	
Cu3247		0.0012040	ppm	0.00072900	60.599	.00000	Abs	Pass	
Fe2599		0.045854	ppm	0.010219	22.286	.00000	Abs	Pass	
K_7664		0.12562	ppm	0.026269	20.911	.00000	Abs	Pass	
Mg2790		0.060967	ppm	0.010151	16.649	.00000	Abs	Pass	
Mn2576		0.0012070	ppm	0.000048000	3.9928	.00000	Abs	Pass	
Mo2020		0.0070220	ppm	0.000043000	0.61438	.00000	Abs	Pass	
Na5895	**F**	**1.1711**	**ppm**	**0.030191**	**2.5781**	**.00000**	**Abs**	**Fail High**	**1.0000**
Ni2316		0.0013250	ppm	0.0014030	105.89	.00000	Abs	Pass	
P_1782		-0.0073830	ppm	0.0023460	31.772	.00000	Abs	Pass	
Pb2203		-0.00062100	ppm	0.0017980	289.74	.00000	Abs	Pass	
S_1820		0.056200	ppm	0.0012920	2.2984	.00000	Abs	Pass	
Sb2068		0.0042200	ppm	0.00014400	3.4088	.00000	Abs	Pass	
Se1960		-0.0010960	ppm	0.0011610	105.92	.00000	Abs	Pass	
Si2881	**W**	**0.11415**	**ppm**	**0.070413**	**61.684**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0036070	ppm	0.00030600	8.4712	.00000	Abs	Pass	
Sr4077		0.00075700	ppm	0.000087000	11.516	.00000	Abs	Pass	
Ti3349		0.0047120	ppm	0.00016900	3.5975	.00000	Abs	Pass	
Tl1908		0.0044830	ppm	0.0011830	26.392	.00000	Abs	Pass	
V_2924		0.0020520	ppm	0.00017500	8.5249	.00000	Abs	Pass	
Zn2062		0.0019580	ppm	0.00037400	19.112	.00000	Abs	Pass	
Y_2243		5,444.6	Cts/S	24.977	0.45874				
Y_3600		50,980	Cts/S	80.500	0.15791				
Y_3774		3,201.5	Cts/S	18.948	0.59185				

320-62886-B-1-B MS

Acquire Date: 7/24/2020 2:40:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049795	ppm	0.00036000	0.72232
Al3961		63.089	ppm	0.34814	0.55182
As1890		0.46591	ppm	0.00096200	0.20652
B_2089		4.2040	ppm	0.012018	0.28587
Ba4554		1.0356	ppm	0.0055530	0.53619
Be3130		0.22997	ppm	0.0010520	0.45742
Ca3179		299.17	ppm	1.9762	0.66056
Cd2144		0.22053	ppm	0.00043200	0.19608
Co2286		0.23457	ppm	0.00050400	0.21496
Cr2677		0.28335	ppm	0.00010300	0.036282

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62886-B-1-B MS

Acquire Date: 7/24/2020 2:40:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.40185	ppm	0.00030700	0.076434
Fe2599		34.026	ppm	0.23493	0.69046
K_7664		127.52	ppm	0.94130	0.73813
Mg2790		229.40	ppm	0.83013	0.36186
Mn2576		1.8270	ppm	0.0053720	0.29406
Mo2020		0.22974	ppm	0.00088200	0.38392
Na5895	**F**	**2,140.1**	**ppm**	**7.2868**	**0.34049**
Ni2316		0.26274	ppm	0.00028100	0.10682
P_1782		7.7360	ppm	0.013585	0.17561
Pb2203		0.31126	ppm	0.0025080	0.80587
S_1820		205.22	ppm	0.054896	0.026749
Sb2068		0.35923	ppm	0.0045550	1.2681
Se1960		0.43543	ppm	0.0039320	0.90305
Si2881	**W**	**63.957**	**ppm**	**0.22474**	**0.35140**
Sn1899		0.44786	ppm	0.00085100	0.19011
Sr4077		0.96765	ppm	0.0057400	0.59322
Ti3349		0.57427	ppm	0.0023750	0.41348
Tl1908		0.38452	ppm	0.0012040	0.31311
V_2924		0.31422	ppm	0.00096900	0.30850
Zn2062		0.97500	ppm	0.0020190	0.20705
Y_2243		4,798.1	Cts/S	8.3060	0.17311
Y_3600		44,146	Cts/S	231.64	0.52473
Y_3774		3,125.1	Cts/S	8.0693	0.25821

320-62886-B-1-C MSD

Acquire Date: 7/24/2020 2:44:48PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048670	ppm	0.00015500	0.31867
Al3961		60.810	ppm	0.29722	0.48877
As1890		0.45704	ppm	0.0020850	0.45629
B_2089		4.1686	ppm	0.0043260	0.10379
Ba4554		1.0114	ppm	0.0085060	0.84099
Be3130		0.22435	ppm	0.0022620	1.0084
Ca3179		295.10	ppm	1.9489	0.66042
Cd2144		0.21648	ppm	0.00050800	0.23446
Co2286		0.22941	ppm	0.00077600	0.33820
Cr2677		0.27752	ppm	0.00085200	0.30698
Cu3247		0.39348	ppm	0.000062000	0.015836
Fe2599		33.250	ppm	0.21853	0.65723
K_7664		125.63	ppm	0.96553	0.76853
Mg2790		225.92	ppm	0.91208	0.40372
Mn2576		1.7967	ppm	0.0065720	0.36580
Mo2020		0.22568	ppm	0.00054900	0.24348
Na5895	**F**	**1,906.1**	**ppm**	**34.851**	**1.8284**
Ni2316		0.25646	ppm	0.00075400	0.29410
P_1782		7.5852	ppm	0.0019560	0.025788

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62886-B-1-C MSD

Acquire Date: 7/24/2020 2:44:48PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.30761	ppm	0.0027520	0.89472
S_1820		203.27	ppm	0.0035760	0.0017590
Sb2068		0.36298	ppm	0.0027310	0.75230
Se1960		0.43144	ppm	0.0038110	0.88321
Si2881	**W**	**70.101**	**ppm**	**0.28162**	**0.40174**
Sn1899		0.43810	ppm	0.00083400	0.19034
Sr4077		0.95397	ppm	0.0064090	0.67185
Ti3349		0.55101	ppm	0.00077300	0.14027
Tl1908		0.38133	ppm	0.0014080	0.36914
V_2924		0.30599	ppm	0.0016810	0.54927
Zn2062		0.95745	ppm	0.0071410	0.74581
Y_2243		4,852.2	Cts/S	14.463	0.29807
Y_3600		44,769	Cts/S	137.62	0.30740
Y_3774		3,136.6	Cts/S	13.845	0.44141

320-62886-B-2-A

Acquire Date: 7/24/2020 2:48:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000030000	ppm	0.00087700	2,946.5
Al3961		28.778	ppm	0.18906	0.65694
As1890		0.0090310	ppm	0.00094500	10.459
B_2089		0.11934	ppm	0.00069300	0.58067
Ba4554		0.35372	ppm	0.00025500	0.072077
Be3130		0.0012040	ppm	0.000083000	6.8904
Ca3179		190.59	ppm	1.6678	0.87507
Cd2144		0.0021200	ppm	0.000026000	1.2321
Co2286		0.0087550	ppm	0.00015600	1.7871
Cr2677		0.035982	ppm	0.00031500	0.87669
Cu3247		0.11312	ppm	0.00062600	0.55351
Fe2599		19.115	ppm	0.19799	1.0358
K_7664		98.855	ppm	1.1019	1.1147
Mg2790		203.62	ppm	1.0660	0.52353
Mn2576		0.94408	ppm	0.0047350	0.50152
Mo2020		0.0042070	ppm	0.00075300	17.888
Na5895	**F**	**1,902.3**	**ppm**	**7.1027**	**0.37337**
Ni2316		0.033424	ppm	0.0010240	3.0650
P_1782		1.7122	ppm	0.00022600	0.013228
Pb2203		0.066378	ppm	0.00099100	1.4931
S_1820		195.70	ppm	0.075928	0.038798
Sb2068		0.0021080	ppm	0.0014940	70.901
Se1960		-0.0023740	ppm	0.0062970	265.21
Si2881	**W**	**41.655**	**ppm**	**0.34332**	**0.82420**
Sn1899		0.0052060	ppm	0.00062600	12.026
Sr4077		0.47513	ppm	0.0045260	0.95257
Ti3349		0.18751	ppm	0.00086200	0.45950
Tl1908		-0.0014420	ppm	0.0029280	203.06

320-62886-B-2-A

Acquire Date: 7/24/2020 2:48:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.046822	ppm	0.00076400	1.6324
Zn2062		0.33699	ppm	0.0019890	0.59029
Y_2243		4,895.2	Cts/S	15.740	0.32155
Y_3600		45,051	Cts/S	8.7486	0.019420
Y_3774		3,157.4	Cts/S	7.8808	0.24960

320-62886-B-3-A

Acquire Date: 7/24/2020 2:52:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00024000	ppm	0.00031900	133.06
Al3961		1.4901	ppm	0.026751	1.7953
As1890		0.000095000	ppm	0.0022420	2,369.9
B_2089		0.090977	ppm	0.0000010000	0.00056000
Ba4554		0.12540	ppm	0.00073400	0.58502
Be3130		0.00019900	ppm	0.00038000	191.29
Ca3179		121.10	ppm	0.24516	0.20244
Cd2144		0.00097700	ppm	0.0000010000	0.10399
Co2286		0.00018500	ppm	0.00022000	119.20
Cr2677		0.0012280	ppm	0.00066400	54.028
Cu3247		0.0074090	ppm	0.00018400	2.4809
Fe2599		0.16452	ppm	0.0072540	4.4088
K_7664		96.260	ppm	0.044620	0.046354
Mg2790		202.47	ppm	0.52976	0.26165
Mn2576		0.25083	ppm	0.0014370	0.57291
Mo2020		0.0025050	ppm	0.000070000	2.7878
Na5895	**F**	**1,885.9**	**ppm**	**24.917**	**1.3213**
Ni2316		0.0068200	ppm	0.0012820	18.801
P_1782		0.021217	ppm	0.0034970	16.483
Pb2203		0.00092500	ppm	0.00029500	31.877
S_1820		191.77	ppm	0.074941	0.039079
Sb2068		-0.0030360	ppm	0.0022860	75.271
Se1960		-0.0020960	ppm	0.0034170	163.05
Si2881		1.7079	ppm	0.093459	5.4722
Sn1899		0.0010600	ppm	0.00044100	41.602
Sr4077		0.24281	ppm	0.000040000	0.016540
Ti3349		0.0023410	ppm	0.00046000	19.633
Tl1908		0.0041030	ppm	0.0020430	49.785
V_2924		0.0033810	ppm	0.00037200	11.013
Zn2062		0.056996	ppm	0.00030000	0.52721
Y_2243		4,791.2	Cts/S	1.3778	0.028758
Y_3600		44,172	Cts/S	164.90	0.37330
Y_3774		3,079.9	Cts/S	17.150	0.55686

320-62886-B-4-A

Acquire Date: 7/24/2020 2:56:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00084300	ppm	0.00035900	42.631
Al3961		1.2438	ppm	0.017433	1.4016
As1890		0.0018940	ppm	0.0020730	109.44
B_2089		0.14229	ppm	0.00019600	0.13774
Ba4554		0.10662	ppm	0.00073500	0.68977
Be3130		-0.00031500	ppm	0.000089000	28.163
Ca3179		102.30	ppm	0.84046	0.82158
Cd2144		0.00068600	ppm	0.000012000	1.8102
Co2286		0.000087000	ppm	0.00073800	851.38
Cr2677		0.000044000	ppm	0.0010580	2,422.5
Cu3247		0.0051440	ppm	0.00041400	8.0446
Fe2599		0.054980	ppm	0.0028430	5.1716
K_7664		85.115	ppm	0.87432	1.0272
Mg2790		175.98	ppm	0.43688	0.24826
Mn2576		0.19053	ppm	0.000090000	0.047467
Mo2020		0.0018300	ppm	0.00031200	17.037
Na5895	**F**	**1,727.9**	**ppm**	**23.928**	**1.3848**
Ni2316		0.0064710	ppm	0.0016960	26.206
P_1782		0.016521	ppm	0.0017050	10.322
Pb2203		-0.00026800	ppm	0.0051450	1,917.1
S_1820		171.89	ppm	0.35294	0.20533
Sb2068		-0.00096900	ppm	0.0017290	178.35
Se1960		0.00011500	ppm	0.0017980	1,563.3
Si2881		2.4452	ppm	0.0050910	0.20819
Sn1899		0.000082000	ppm	0.00088400	1,076.8
Sr4077		0.19177	ppm	0.0012490	0.65155
Ti3349		0.00078300	ppm	0.000080000	10.160
Tl1908		-0.00064600	ppm	0.0031000	480.17
V_2924		0.0036880	ppm	0.00050000	13.565
Zn2062		0.052758	ppm	0.00058700	1.1130
Y_2243		4,820.8	Cts/S	10.246	0.21254
Y_3600	**W**	**44,046**	**Cts/S**	**100.94**	**0.22918**
Y_3774		3,059.3	Cts/S	12.910	0.42201

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Acquire Date: 7/24/2020 3:00:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00053400	ppm	0.00016700	31.264
Al3961		0.043284	ppm	0.016856	38.942
As1890		-0.0010740	ppm	0.0022480	209.41
B_2089		0.0060600	ppm	0.00087800	14.489
Ba4554		0.00077800	ppm	0.00060400	77.545
Be3130		0.00020600	ppm	0.000023000	11.207
Ca3179		0.11993	ppm	0.0013950	1.1628
Cd2144		0.000031000	ppm	0.000081000	263.81
Co2286		0.000085000	ppm	0.000012000	13.971

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Acquire Date: 7/24/2020 3:00:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0011150	ppm	0.00090200	80.899
Cu3247		-0.00060800	ppm	0.000071000	11.719
Fe2599		0.0099820	ppm	0.00088900	8.9082
K_7664		0.31718	ppm	0.026049	8.2127
Mg2790		0.12469	ppm	0.012612	10.115
Mn2576		0.00049800	ppm	0.00016400	32.990
Mo2020		0.00027800	ppm	0.00012400	44.521
Na5895		3.0891	ppm	0.20919	6.7718
Ni2316		0.00034600	ppm	0.000034000	9.8151
P_1782		-0.0082380	ppm	0.0028100	34.113
Pb2203		-0.0019360	ppm	0.0040790	210.70
S_1820		0.098054	ppm	0.011065	11.285
Sb2068		0.00045500	ppm	0.0022890	503.17
Se1960		-0.00074300	ppm	0.0024390	328.22
Si2881		0.018057	ppm	0.024132	133.65
Sn1899		0.000063000	ppm	0.00021400	341.87
Sr4077		0.00054500	ppm	0.00026000	47.740
Ti3349		0.0010260	ppm	0.00060400	58.902
Tl1908		0.0016270	ppm	0.0013680	84.085
V_2924		0.0010970	ppm	0.000010000	0.87455
Zn2062		0.00038000	ppm	0.00033600	88.495
Y_2243		5,406.0	Cts/S	10.604	0.19615
Y_3600		51,008	Cts/S	32.382	0.063484
Y_3774		3,181.0	Cts/S	15.065	0.47358

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Acquire Date: 7/24/2020 3:04:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00047500	ppm	0.00099000	208.59
Al3961		-0.013041	ppm	0.0031390	24.071
As1890		0.00031800	ppm	0.00046400	145.96
B_2089		0.0040390	ppm	0.00044700	11.055
Ba4554		0.00015400	ppm	0.00055000	356.38
Be3130		-0.00012200	ppm	0.00013400	110.43
Ca3179		-0.00063200	ppm	0.0027830	440.41
Cd2144		0.000015000	ppm	0.000040000	261.19
Co2286		-0.00038200	ppm	0.00026000	67.960
Cr2677		0.000023000	ppm	0.00038000	1,660.3
Cu3247		-0.0014030	ppm	0.00017200	12.227
Fe2599		-0.010768	ppm	0.0042570	39.538
K_7664		0.083150	ppm	0.0063300	7.6123
Mg2790		0.0017950	ppm	0.0019940	111.09
Mn2576		0.000026000	ppm	0.000047000	179.56
Mo2020		0.00031300	ppm	0.000026000	8.2613
Na5895		0.65779	ppm	0.039699	6.0352
Ni2316		0.00040700	ppm	0.00073600	181.09

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Acquire Date: 7/24/2020 3:04:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0090610	ppm	0.0023400	25.829
Pb2203		-0.0027500	ppm	0.0013420	48.813
S_1820		0.0096190	ppm	0.0013380	13.908
Sb2068		-0.0010850	ppm	0.0026880	247.60
Se1960		-0.0035550	ppm	0.0058570	164.77
Si2881		0.042700	ppm	0.032448	75.991
Sn1899		0.00030300	ppm	0.00042800	141.28
Sr4077		0.000011000	ppm	0.00016700	1,556.8
Ti3349		0.0015200	ppm	0.0012440	81.820
Tl1908		0.00089600	ppm	0.000071000	7.9593
V_2924		0.00047100	ppm	0.00082200	174.51
Zn2062		.0000040000	ppm	0.000010000	249.31
Y_2243		5,368.7	Cts/S	4.9049	0.091362
Y_3600		50,208	Cts/S	314.93	0.62725
Y_3774		3,138.9	Cts/S	2.0415	0.065038

LB4 320-396895/1A@10

Acquire Date: 7/24/2020 3:08:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00045000	ppm	0.0015390	342.21
Al3961		0.029828	ppm	0.0093590	31.376
As1890		0.00093400	ppm	0.0032520	348.21
B_2089		0.0039010	ppm	0.00017500	4.4734
Ba4554		0.00069700	ppm	0.00049900	71.529
Be3130		0.00015600	ppm	0.00040400	258.17
Ca3179		0.010118	ppm	0.014092	139.28
Cd2144		0.000085000	ppm	0.000012000	14.646
Co2286		-0.00015900	ppm	0.000077000	48.252
Cr2677		0.00071700	ppm	0.00015100	21.065
Cu3247		0.0011810	ppm	0.0015210	128.72
Fe2599		-0.013711	ppm	0.0032530	23.727
K_7664		0.20920	ppm	0.037182	17.773
Mg2790		-0.00077000	ppm	0.0059590	773.93
Mn2576		.0000080000	ppm	0.000034000	425.71
Mo2020		-0.00014400	ppm	0.000027000	18.506
Na5895	**F**	**815.50**	**ppm**	**4.4773**	**0.54903**
Ni2316		0.0014830	ppm	0.00058800	39.635
P_1782		-0.015670	ppm	0.0024370	15.554
Pb2203		0.00068300	ppm	0.0031610	463.12
S_1820		0.025823	ppm	0.0014530	5.6253
Sb2068		0.00087400	ppm	0.0010980	125.53
Se1960		-0.00072900	ppm	0.0013720	188.15
Si2881		0.084813	ppm	0.041079	48.435
Sn1899		0.0013660	ppm	0.00065400	47.903
Sr4077		0.00070100	ppm	0.00014300	20.352
Ti3349		0.00042700	ppm	0.00063300	148.28

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LB4 320-396895/1A@10

Acquire Date: 7/24/2020 3:08:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0013450	ppm	0.00047800	35.544
V_2924		0.00086100	ppm	0.00054300	63.125
Zn2062		0.00041000	ppm	0.000080000	19.538
Y_2243		5,050.4	Cts/S	0.97110	0.019228
Y_3600		46,433	Cts/S	73.870	0.15909
Y_3774		3,079.9	Cts/S	4.3826	0.14230

LCS 320-396895/2A@10

Acquire Date: 7/24/2020 3:12:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.096996	ppm	0.00056300	0.58094
Al3961		9.9681	ppm	0.10119	1.0152
As1890		0.092909	ppm	0.00093800	1.0100
B_2089		0.97401	ppm	0.0019140	0.19651
Ba4554		0.10211	ppm	0.0013720	1.3440
Be3130		0.049874	ppm	0.00034100	0.68282
Ca3179		10.065	ppm	0.067474	0.67037
Cd2144		0.098499	ppm	0.00013800	0.14017
Co2286		0.10080	ppm	0.000010000	0.0096910
Cr2677		0.10004	ppm	0.0010690	1.0683
Cu3247		0.10417	ppm	0.00091800	0.88146
Fe2599		3.9678	ppm	0.026785	0.67507
K_7664		10.873	ppm	0.15213	1.3992
Mg2790		9.6660	ppm	0.029129	0.30135
Mn2576		0.10145	ppm	0.000043000	0.042765
Mo2020		0.10061	ppm	0.00049000	0.48690
Na5895	**F**	**767.48**	**ppm**	**22.328**	**2.9092**
Ni2316		0.096708	ppm	0.00029400	0.30396
P_1782		1.0375	ppm	0.0093200	0.89831
Pb2203		0.095387	ppm	0.0018860	1.9775
S_1820		2.0407	ppm	0.0050700	0.24844
Sb2068		0.088901	ppm	0.0010260	1.1541
Se1960		0.10048	ppm	0.0028550	2.8408
Si2881		1.0391	ppm	0.074849	7.2033
Sn1899		0.10121	ppm	0.00048100	0.47524
Sr4077		0.10184	ppm	0.0011860	1.1647
Ti3349		0.10023	ppm	0.0010930	1.0907
Tl1908		0.092143	ppm	0.0038490	4.1774
V_2924		0.10413	ppm	0.00060900	0.58494
Zn2062		0.10328	ppm	0.00053500	0.51755
Y_2243		5,397.7	Cts/S	8.5305	0.15804
Y_3600		50,284	Cts/S	122.83	0.24427
Y_3774		3,385.5	Cts/S	16.772	0.49542

LB4 320-396605/1A@10

Acquire Date: 7/24/2020 3:16:47PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00021000	ppm	0.00056300	268.07
Al3961		0.0099060	ppm	0.0023230	23.449
As1890		0.00099000	ppm	0.00093300	94.248
B_2089		0.0033890	ppm	0.00021000	6.2038
Ba4554		0.00029500	ppm	0.00048000	162.73
Be3130		0.00010400	ppm	0.00013600	130.45
Ca3179		0.0055930	ppm	0.0080810	144.49
Cd2144		0.000038000	ppm	0.00017100	452.73
Co2286		-0.00017600	ppm	0.000080000	45.644
Cr2677		0.00018700	ppm	0.00071100	380.53
Cu3247		0.0028050	ppm	0.00052200	18.609
Fe2599		0.0069230	ppm	0.0096490	139.39
K_7664		0.24727	ppm	0.028612	11.571
Mg2790		-0.0010310	ppm	0.0017290	167.78
Mn2576		0.000021000	ppm	0.00011600	564.90
Mo2020		0.00032600	ppm	0.00020500	62.888
Na5895	**F**	**771.52**	**ppm**	**8.1784**	**1.0600**
Ni2316		0.00055100	ppm	0.00042000	76.118
P_1782		-0.017328	ppm	0.0062200	35.894
Pb2203		-0.00062400	ppm	0.0034920	559.23
S_1820		0.024963	ppm	0.0032380	12.971
Sb2068		0.00012400	ppm	0.0032660	2,627.9
Se1960		0.0032850	ppm	0.0014460	44.026
Si2881		0.089277	ppm	0.0065100	7.2925
Sn1899		0.0029630	ppm	0.00082800	27.944
Sr4077		0.00059200	ppm	0.00026000	43.957
Ti3349		0.0012560	ppm	0.00059600	47.486
Tl1908		-0.0046780	ppm	0.0020450	43.722
V_2924		0.00074400	ppm	0.00060500	81.295
Zn2062		0.00031800	ppm	0.00016000	50.440
Y_2243		5,372.2	Cts/S	12.793	0.23814
Y_3600		50,012	Cts/S	124.48	0.24890
Y_3774		3,349.8	Cts/S	3.7612	0.11228

CCV 2078482

Acquire Date: 7/24/2020 3:20:53PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50330	ppm	0.00056900	0.11310	.50000	Rel(%)	Pass	
Al3961		25.097	ppm	0.16854	0.67157	25.000	Rel(%)	Pass	
As1890		0.50916	ppm	0.0062770	1.2328	.50000	Rel(%)	Pass	
B_2089		1.0256	ppm	0.0031720	0.30926	1.0000	Rel(%)	Pass	
Ba4554		2.5553	ppm	0.020611	0.80659	2.5000	Rel(%)	Pass	
Be3130		0.50895	ppm	0.0010450	0.20537	.50000	Rel(%)	Pass	
Ca3179		25.407	ppm	0.18358	0.72256	25.000	Rel(%)	Pass	
Cd2144		0.51378	ppm	0.00096700	0.18814	.50000	Rel(%)	Pass	
Co2286		2.5699	ppm	0.0089970	0.35009	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 3:20:53PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.5075	ppm	0.0015320	0.061114	2.5000	Rel(%)	Pass	
Cu3247		2.5266	ppm	0.0085190	0.33717	2.5000	Rel(%)	Pass	
Fe2599		25.560	ppm	0.13024	0.50953	25.000	Rel(%)	Pass	
K_7664		25.218	ppm	0.17819	0.70660	25.000	Rel(%)	Pass	
Mg2790		25.123	ppm	0.013490	0.053697	25.000	Rel(%)	Pass	
Mn2576		2.5381	ppm	0.0023060	0.090840	2.5000	Rel(%)	Pass	
Mo2020		1.0226	ppm	0.0065180	0.63741	1.0000	Rel(%)	Pass	
Na5895		25.441	ppm	0.25769	1.0129	25.000	Rel(%)	Pass	
Ni2316		2.5903	ppm	0.0048400	0.18685	2.5000	Rel(%)	Pass	
P_1782		2.6035	ppm	0.0069920	0.26857	2.5000	Rel(%)	Pass	
Pb2203		0.51496	ppm	0.00032700	0.063462	.50000	Rel(%)	Pass	
S_1820		2.4618	ppm	0.0068500	0.27823	2.5000	Rel(%)	Pass	
Sb2068		0.51615	ppm	0.0023510	0.45542	.50000	Rel(%)	Pass	
Se1960		0.52076	ppm	0.0049420	0.94892	.50000	Rel(%)	Pass	
Si2881		2.5758	ppm	0.035613	1.3826	2.5000	Rel(%)	Pass	
Sn1899		2.5587	ppm	0.011384	0.44490	2.5000	Rel(%)	Pass	
Sr4077		2.5394	ppm	0.018126	0.71379	2.5000	Rel(%)	Pass	
Ti3349		1.0164	ppm	0.0017790	0.17504	1.0000	Rel(%)	Pass	
Tl1908		0.51645	ppm	0.0033210	0.64302	.50000	Rel(%)	Pass	
V_2924		2.5357	ppm	0.0077180	0.30438	2.5000	Rel(%)	Pass	
Zn2062		2.5405	ppm	0.0070610	0.27796	2.5000	Rel(%)	Pass	
Y_2243		5,643.9	Cts/S	3.7374	0.066221				
Y_3600		53,453	Cts/S	176.70	0.33058				
Y_3774		3,406.0	Cts/S	2.1715	0.063755				

CCB 2065750

Acquire Date: 7/24/2020 3:24:39PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00083600	ppm	0.00042900	51.314	.00000	Abs	Pass	
Al3961		0.020989	ppm	0.012690	60.459	.00000	Abs	Pass	
As1890		0.0015610	ppm	0.00020000	12.784	.00000	Abs	Pass	
B_2089		0.0048020	ppm	0.000050000	1.0444	.00000	Abs	Pass	
Ba4554		0.00055400	ppm	0.00024800	44.716	.00000	Abs	Pass	
Be3130		0.00053500	ppm	0.000083000	15.498	.00000	Abs	Pass	
Ca3179		0.013461	ppm	0.0050090	37.207	.00000	Abs	Pass	
Cd2144		0.00011000	ppm	0.000049000	44.738	.00000	Abs	Pass	
Co2286		0.00019400	ppm	0.00040100	206.81	.00000	Abs	Pass	
Cr2677		0.00054200	ppm	0.00095900	176.81	.00000	Abs	Pass	
Cu3247		0.0012430	ppm	0.00027400	22.012	.00000	Abs	Pass	
Fe2599		0.034112	ppm	0.0043730	12.819	.00000	Abs	Pass	
K_7664		0.075424	ppm	0.0028490	3.7779	.00000	Abs	Pass	
Mg2790		0.0066670	ppm	0.0012600	18.893	.00000	Abs	Pass	
Mn2576		0.00035000	ppm	0.000062000	17.723	.00000	Abs	Pass	
Mo2020		0.0071570	ppm	0.00032200	4.4950	.00000	Abs	Pass	
Na5895	**W**	**0.60727**	**ppm**	**0.022073**	**3.6348**	**.00000**	**Abs**	**Warn High**	**0.50000**
Ni2316		0.00055400	ppm	0.00031700	57.257	.00000	Abs	Pass	
P_1782		-0.0073270	ppm	0.0020950	28.589	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/24/2020 3:24:39PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		-0.0020350	ppm	0.00082300	40.434	.00000	Abs	Pass	
S_1820		0.0055420	ppm	0.0029070	52.449	.00000	Abs	Pass	
Sb2068		0.00046800	ppm	0.0019930	425.48	.00000	Abs	Pass	
Se1960		-0.0034330	ppm	0.0050120	146.00	.00000	Abs	Pass	
Si2881		0.041914	ppm	0.049547	118.21	.00000	Abs	Pass	
Sn1899		0.0028930	ppm	0.0010480	36.218	.00000	Abs	Pass	
Sr4077		0.00066000	ppm	0.00037500	56.736	.00000	Abs	Pass	
Ti3349		0.0045780	ppm	0.00013700	2.9915	.00000	Abs	Pass	
Tl1908		0.0049150	ppm	0.00053900	10.969	.00000	Abs	Pass	
V_2924		0.00084700	ppm	0.00045300	53.449	.00000	Abs	Pass	
Zn2062		0.0014070	ppm	0.000091000	6.4633	.00000	Abs	Pass	
Y_2243		5,723.4	Cts/S	10.956	0.19143				
Y_3600		54,525	Cts/S	23.857	0.043754				
Y_3774		3,421.9	Cts/S	10.541	0.30803				

LCS 320-396605/2A@10

Acquire Date: 7/24/2020 3:28:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095434	ppm	0.0020500	2.1484
Al3961		9.8909	ppm	0.054146	0.54743
As1890		0.092307	ppm	0.000023000	0.024710
B_2089		0.96900	ppm	0.0032540	0.33578
Ba4554		0.10123	ppm	0.0000040000	0.0036960
Be3130		0.049809	ppm	0.00050300	1.0096
Ca3179		10.004	ppm	0.099169	0.99128
Cd2144		0.098032	ppm	0.00029500	0.30130
Co2286		0.10037	ppm	0.000013000	0.012598
Cr2677		0.099980	ppm	0.00083000	0.82970
Cu3247		0.10529	ppm	0.00055100	0.52358
Fe2599		3.9678	ppm	0.0028020	0.070607
K_7664		10.658	ppm	0.082990	0.77863
Mg2790		9.5349	ppm	0.041946	0.43992
Mn2576		0.10057	ppm	0.00042500	0.42308
Mo2020		0.10124	ppm	0.000013000	0.012406
Na5895	**F**	**794.22**	**ppm**	**4.6364**	**0.58377**
Ni2316		0.096246	ppm	0.000063000	0.065505
P_1782		1.0331	ppm	0.0094150	0.91130
Pb2203		0.098642	ppm	0.0018410	1.8664
S_1820		2.0207	ppm	0.0050070	0.24779
Sb2068		0.089337	ppm	0.0029710	3.3257
Se1960		0.099950	ppm	0.0047290	4.7313
Si2881		1.0612	ppm	0.046224	4.3560
Sn1899		0.10035	ppm	0.00032300	0.32191
Sr4077		0.10112	ppm	0.00030400	0.30040
Ti3349		0.10167	ppm	0.00094900	0.93384
Tl1908		0.093409	ppm	0.0011650	1.2467

LCS 320-396605/2A@10

Acquire Date: 7/24/2020 3:28:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.10354	ppm	0.000090000	0.087259
Zn2062		0.10271	ppm	0.00054000	0.52601
Y_2243		5,379.1	Cts/S	0.77207	0.014353
Y_3600		50,189	Cts/S	143.78	0.28648
Y_3774		3,357.8	Cts/S	9.9906	0.29753

320-62900-B-1-B@10

Acquire Date: 7/24/2020 3:32:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000026000	ppm	0.00065700	2,507.7
Al3961		1.4245	ppm	0.0032030	0.22487
As1890		0.0048950	ppm	0.0016620	33.950
B_2089		0.0081950	ppm	0.0010120	12.349
Ba4554		0.72805	ppm	0.0073030	1.0030
Be3130		0.00062300	ppm	0.0000090000	1.4075
Ca3179		12.944	ppm	0.14984	1.1576
Cd2144		0.00017800	ppm	0.000082000	46.044
Co2286		0.035610	ppm	0.00052600	1.4778
Cr2677		0.012357	ppm	0.0010890	8.8136
Cu3247		0.019344	ppm	0.000066000	0.33863
Fe2599		3.3993	ppm	0.034977	1.0289
K_7664		0.71915	ppm	0.024172	3.3612
Mg2790		3.7437	ppm	0.018145	0.48469
Mn2576		1.6769	ppm	0.0046050	0.27459
Mo2020		0.00080800	ppm	0.00056500	69.991
Na5895	**F**	**750.16**	**ppm**	**13.003**	**1.7334**
Ni2316		0.062672	ppm	0.0010670	1.7023
P_1782		0.39935	ppm	0.0037470	0.93822
Pb2203		0.0062530	ppm	0.00096500	15.438
S_1820		0.13470	ppm	0.0019050	1.4146
Sb2068		.0000030000	ppm	0.0029340	83,903
Se1960		0.0039370	ppm	0.0036720	93.260
Si2881		1.7352	ppm	0.042130	2.4280
Sn1899		0.0019740	ppm	0.00051800	26.263
Sr4077		0.14544	ppm	0.0016040	1.1029
Ti3349		0.037489	ppm	0.00057500	1.5346
Tl1908		-0.0035710	ppm	0.00062200	17.424
V_2924		0.018172	ppm	0.00043100	2.3744
Zn2062		0.011710	ppm	0.00051600	4.4072
Y_2243		5,430.4	Cts/S	8.5574	0.15758
Y_3600		50,532	Cts/S	27.228	0.053881
Y_3774		3,395.6	Cts/S	7.7717	0.22887

sd 320-62900B1B@50

Acquire Date: 7/24/2020 3:36:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010850	ppm	0.00099700	91.969
Al3961		0.28214	ppm	0.024172	8.5676
As1890		0.0021350	ppm	0.000056000	2.6270
B_2089		0.0028860	ppm	0.0012500	43.334
Ba4554		0.14978	ppm	0.0011630	0.77642
Be3130		0.00039400	ppm	0.00022000	55.729
Ca3179		2.6414	ppm	0.030515	1.1552
Cd2144		0.00013600	ppm	0.0000070000	5.4591
Co2286		0.0072010	ppm	0.00019100	2.6463
Cr2677		0.0023340	ppm	0.00064900	27.822
Cu3247		0.0048470	ppm	0.00068000	14.026
Fe2599		0.70848	ppm	0.010611	1.4977
K_7664		0.28480	ppm	0.0022540	0.79147
Mg2790		0.77550	ppm	0.0021720	0.28013
Mn2576		0.34809	ppm	0.0014150	0.40646
Mo2020		0.00062100	ppm	0.00039100	62.992
Na5895		164.72	ppm	1.8871	1.1457
Ni2316		0.012807	ppm	0.00011700	0.91000
P_1782		0.074397	ppm	0.0039310	5.2834
Pb2203		0.00054300	ppm	0.00096200	177.18
S_1820		0.029380	ppm	0.0014580	4.9618
Sb2068		-0.0012930	ppm	0.00057700	44.602
Se1960		-0.0043630	ppm	0.00014100	3.2412
Si2881		0.42800	ppm	0.059026	13.791
Sn1899		0.00022800	ppm	0.00065100	285.04
Sr4077		0.029936	ppm	0.00015200	0.50807
Ti3349		0.0079440	ppm	0.000064000	0.80271
Tl1908		-0.0018730	ppm	0.00060700	32.406
V_2924		0.0039260	ppm	0.00089200	22.732
Zn2062		0.0027000	ppm	0.00027500	10.181
Y_2243		5,619.3	Cts/S	14.457	0.25727
Y_3600		53,257	Cts/S	39.043	0.073312
Y_3774		3,422.9	Cts/S	0.22779	0.0066550

320-62900-B-1-CMS@10

Acquire Date: 7/24/2020 3:40:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.097465	ppm	0.00047400	0.48604
Al3961		11.236	ppm	0.089716	0.79846
As1890		0.096379	ppm	0.0048260	5.0078
B_2089		0.98214	ppm	0.00075700	0.077077
Ba4554		0.82583	ppm	0.0043760	0.52988
Be3130		0.049825	ppm	0.000043000	0.086141
Ca3179		22.836	ppm	0.15173	0.66444
Cd2144		0.097592	ppm	0.00025800	0.26476
Co2286		0.13529	ppm	0.00064000	0.47334

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62900-B-1-CMS@10

Acquire Date: 7/24/2020 3:40:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.11273	ppm	0.00034400	0.30529
Cu3247		0.12183	ppm	0.00025300	0.20777
Fe2599		7.4116	ppm	0.075860	1.0235
K_7664		11.175	ppm	0.027019	0.24178
Mg2790		13.263	ppm	0.079871	0.60219
Mn2576		1.7653	ppm	0.0060850	0.34470
Mo2020		0.10072	ppm	0.00088300	0.87635
Na5895	**F**	**756.56**	**ppm**	**1.5555**	**0.20560**
Ni2316		0.15664	ppm	0.0017510	1.1179
P_1782		1.4515	ppm	0.0068200	0.46987
Pb2203		0.10004	ppm	0.0020570	2.0562
S_1820		2.1451	ppm	0.0023660	0.11032
Sb2068		0.091788	ppm	0.0018910	2.0607
Se1960		0.098506	ppm	0.0015170	1.5396
Si2881		2.7566	ppm	0.062938	2.2832
Sn1899		0.099286	ppm	0.0010700	1.0776
Sr4077		0.24564	ppm	0.0020950	0.85280
Ti3349		0.13703	ppm	0.00033400	0.24384
Tl1908		0.091698	ppm	0.0014740	1.6077
V_2924		0.11955	ppm	0.00029600	0.24775
Zn2062		0.11219	ppm	0.000062000	0.055626
Y_2243		5,427.7	Cts/S	13.753	0.25338
Y_3600		50,797	Cts/S	106.89	0.21043
Y_3774		3,416.1	Cts/S	4.7413	0.13879

320-62900-B-1DMSD@10

Acquire Date: 7/24/2020 3:44:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.097086	ppm	0.00071500	0.73695
Al3961		11.258	ppm	0.061892	0.54974
As1890		0.097322	ppm	0.00074500	0.76504
B_2089		0.98027	ppm	0.00015000	0.015351
Ba4554		0.83761	ppm	0.0060430	0.72146
Be3130		0.049577	ppm	0.00048300	0.97458
Ca3179		23.143	ppm	0.18731	0.80937
Cd2144		0.097576	ppm	0.00025700	0.26328
Co2286		0.13575	ppm	0.00080500	0.59274
Cr2677		0.11107	ppm	0.00026100	0.23498
Cu3247		0.12125	ppm	0.00050100	0.41291
Fe2599		7.4819	ppm	0.029993	0.40088
K_7664		11.236	ppm	0.058413	0.51989
Mg2790		13.292	ppm	0.0020470	0.015399
Mn2576		1.7876	ppm	0.0039280	0.21975
Mo2020		0.10059	ppm	0.00048100	0.47835
Na5895	**F**	**764.25**	**ppm**	**0.13396**	**0.017528**
Ni2316		0.15923	ppm	0.00047900	0.30068

320-62900-B-1DMSD@10

Acquire Date: 7/24/2020 3:44:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		1.4541	ppm	0.0016520	0.11363
Pb2203		0.10079	ppm	0.000051000	0.051053
S_1820		2.1371	ppm	0.0041090	0.19227
Sb2068		0.086416	ppm	0.0019330	2.2373
Se1960		0.096133	ppm	0.0034710	3.6109
Si2881		2.8049	ppm	0.10366	3.6957
Sn1899		0.099207	ppm	0.00039400	0.39687
Sr4077		0.24809	ppm	0.0026490	1.0677
Ti3349		0.13699	ppm	0.00051000	0.37224
Tl1908		0.089290	ppm	0.0031080	3.4807
V_2924		0.11915	ppm	0.0011140	0.93461
Zn2062		0.11246	ppm	0.000085000	0.075566
Y_2243		5,410.5	Cts/S	0.084132	0.0015550
Y_3600		50,734	Cts/S	218.08	0.42984
Y_3774		3,368.9	Cts/S	10.421	0.30934

320-62900-B-2-B@10

Acquire Date: 7/24/2020 3:48:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00047600	ppm	0.00039300	82.597
Al3961		1.3366	ppm	0.0017490	0.13089
As1890		0.0040910	ppm	0.00020300	4.9547
B_2089		0.0087850	ppm	0.00061000	6.9409
Ba4554		0.85160	ppm	0.0072250	0.84845
Be3130		0.00052000	ppm	0.00012100	23.298
Ca3179		13.311	ppm	0.10641	0.79943
Cd2144		0.00015200	ppm	0.000050000	32.918
Co2286		0.035923	ppm	0.00040100	1.1159
Cr2677		0.011063	ppm	0.00049600	4.4874
Cu3247		0.017838	ppm	0.00018300	1.0247
Fe2599		3.3038	ppm	0.015557	0.47089
K_7664		0.79853	ppm	0.066706	8.3536
Mg2790		3.8466	ppm	0.023020	0.59844
Mn2576		1.6166	ppm	0.0051560	0.31897
Mo2020		0.0010240	ppm	0.000058000	5.6760
Na5895	**F**	**775.57**	**ppm**	**9.2649**	**1.1946**
Ni2316		0.061065	ppm	0.00010400	0.17017
P_1782		0.41346	ppm	0.0019170	0.46359
Pb2203		0.0014960	ppm	0.0015830	105.85
S_1820		0.14986	ppm	0.0071800	4.7911
Sb2068		0.00036100	ppm	0.0011440	316.51
Se1960		0.0074230	ppm	0.0022180	29.876
Si2881		1.6641	ppm	0.10022	6.0225
Sn1899		0.0014950	ppm	0.00017900	11.969
Sr4077		0.13246	ppm	0.0010860	0.81955
Ti3349		0.035987	ppm	0.00010700	0.29796

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-62900-B-2-B@10

Acquire Date: 7/24/2020 3:48:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0011440	ppm	0.0010570	92.416
V_2924		0.015044	ppm	0.000073000	0.48271
Zn2062		0.0073280	ppm	0.00016200	2.2107
Y_2243		5,395.1	Cts/S	0.54680	0.010135
Y_3600		50,163	Cts/S	106.30	0.21191
Y_3774		3,365.3	Cts/S	11.114	0.33027

720-99267-A-1-E@10

Acquire Date: 7/24/2020 3:52:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00023700	ppm	0.0015830	666.77
Al3961		0.41342	ppm	0.020048	4.8492
As1890		0.0032730	ppm	0.0014910	45.560
B_2089		0.0048510	ppm	0.00051300	10.577
Ba4554		0.090777	ppm	0.0012600	1.3878
Be3130		0.000036000	ppm	0.00026400	736.13
Ca3179		188.67	ppm	1.6296	0.86375
Cd2144		0.00037700	ppm	0.000064000	17.007
Co2286		0.0012290	ppm	0.000071000	5.7504
Cr2677		0.0014540	ppm	0.00010300	7.0764
Cu3247		0.0075570	ppm	0.0017270	22.851
Fe2599		0.92181	ppm	0.010713	1.1622
K_7664		1.4895	ppm	0.012028	0.80749
Mg2790		2.4037	ppm	0.00062100	0.025834
Mn2576		0.15185	ppm	0.00085600	0.56353
Mo2020		0.0010560	ppm	0.00015500	14.671
Na5895	**F**	**753.13**	**ppm**	**6.1958**	**0.82268**
Ni2316		0.0023950	ppm	0.00025200	10.540
P_1782		0.034007	ppm	0.00079000	2.3245
Pb2203		-0.00081200	ppm	0.00044900	55.329
S_1820		0.62588	ppm	0.0024990	0.39935
Sb2068		-0.00070200	ppm	0.0022820	325.14
Se1960		0.0070640	ppm	0.00011700	1.6515
Si2881		1.3203	ppm	0.046423	3.5162
Sn1899		0.0019990	ppm	0.00052700	26.361
Sr4077		0.043053	ppm	0.00040600	0.94307
Ti3349		0.013549	ppm	0.000096000	0.71185
Tl1908		-0.0013810	ppm	0.0025530	184.91
V_2924		0.0036330	ppm	0.000046000	1.2687
Zn2062		0.13232	ppm	0.00068300	0.51627
Y_2243		5,323.4	Cts/S	0.81098	0.015234
Y_3600		49,747	Cts/S	27.070	0.054416
Y_3774		3,389.5	Cts/S	4.3978	0.12975

sd 720-99267-A1E@50

Acquire Date: 7/24/2020 3:56:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00026300	ppm	0.00076800	291.52
Al3961		0.080426	ppm	0.017954	22.323
As1890		0.0017970	ppm	0.0015000	83.455
B_2089		0.0018750	ppm	0.00081500	43.470
Ba4554		0.018691	ppm	0.00038300	2.0514
Be3130		0.000020000	ppm	0.00043900	2,169.6
Ca3179		37.696	ppm	0.25779	0.68386
Cd2144		0.000087000	ppm	0.000068000	77.307
Co2286		0.00038600	ppm	0.00047400	122.98
Cr2677		.0000080000	ppm	0.0011480	14,084
Cu3247		0.0028130	ppm	0.00012400	4.4158
Fe2599		0.17599	ppm	0.011343	6.4457
K_7664		0.33189	ppm	0.0024990	0.75287
Mg2790		0.50549	ppm	0.012456	2.4641
Mn2576		0.031118	ppm	0.00024300	0.77945
Mo2020		0.000062000	ppm	0.00020900	335.23
Na5895		161.47	ppm	2.0247	1.2539
Ni2316		0.00076900	ppm	0.000014000	1.7806
P_1782		0.00030500	ppm	0.0032930	1,079.0
Pb2203		0.0011890	ppm	0.0024020	201.98
S_1820		0.12957	ppm	0.0010420	0.80408
Sb2068		-0.0019610	ppm	0.0030080	153.34
Se1960		-0.0028500	ppm	0.0010630	37.306
Si2881		0.24916	ppm	0.0035330	1.4178
Sn1899		-0.00012000	ppm	0.00043000	357.25
Sr4077		0.0088790	ppm	0.0000010000	0.0078430
Ti3349		0.0023740	ppm	0.00019400	8.1529
Tl1908		-0.00039000	ppm	0.00086000	220.56
V_2924		0.0017500	ppm	0.00055300	31.608
Zn2062		0.026890	ppm	0.000073000	0.27330
Y_2243		5,599.1	Cts/S	10.259	0.18322
Y_3600		53,020	Cts/S	194.22	0.36632
Y_3774		3,438.9	Cts/S	19.813	0.57613

720-99267-A-1-FMS@10

Acquire Date: 7/24/2020 4:00:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.097499	ppm	0.000068000	0.069875
Al3961		10.382	ppm	0.025162	0.24236
As1890		0.096135	ppm	0.0020840	2.1677
B_2089		0.99106	ppm	0.00077700	0.078358
Ba4554		0.19297	ppm	0.0012650	0.65565
Be3130		0.048529	ppm	0.00048400	0.99816
Ca3179		199.80	ppm	1.2288	0.61501
Cd2144		0.096106	ppm	0.000028000	0.028856
Co2286		0.098180	ppm	0.00015700	0.16016

720-99267-A-1-FMS@10

Acquire Date: 7/24/2020 4:00:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.10099	ppm	0.00022900	0.22642
Cu3247		0.11073	ppm	0.00011800	0.10626
Fe2599		4.8554	ppm	0.057211	1.1783
K_7664		12.066	ppm	0.063481	0.52610
Mg2790		11.736	ppm	0.068968	0.58768
Mn2576		0.25238	ppm	0.0011080	0.43890
Mo2020		0.10057	ppm	0.00050500	0.50249
Na5895	**F**	**788.90**	**ppm**	**11.478**	**1.4550**
Ni2316		0.091771	ppm	0.00034500	0.37581
P_1782		1.1067	ppm	0.0011610	0.10494
Pb2203		0.091732	ppm	0.00047000	0.51193
S_1820		2.6640	ppm	0.0025170	0.094494
Sb2068		0.087085	ppm	0.00094500	1.0850
Se1960		0.095520	ppm	0.0014550	1.5228
Si2881		2.2798	ppm	0.10676	4.6829
Sn1899		0.099637	ppm	0.00015700	0.15742
Sr4077		0.14382	ppm	0.0010050	0.69860
Ti3349		0.11300	ppm	0.00075000	0.66329
Tl1908		0.091047	ppm	0.00046100	0.50606
V_2924		0.10551	ppm	0.0013080	1.2397
Zn2062		0.23377	ppm	0.00018900	0.080992
Y_2243		5,344.8	Cts/S	7.4185	0.13880
Y_3600		50,445	Cts/S	300.73	0.59615
Y_3774		3,429.1	Cts/S	8.1286	0.23705

720-99267-A1GMSD@10

Acquire Date: 7/24/2020 4:04:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.098841	ppm	0.0021560	2.1813
Al3961		10.361	ppm	0.054867	0.52957
As1890		0.097548	ppm	0.0012360	1.2673
B_2089		0.99550	ppm	0.0048910	0.49126
Ba4554		0.19235	ppm	0.0019170	0.99666
Be3130		0.049693	ppm	0.00033800	0.68107
Ca3179		198.28	ppm	1.2837	0.64740
Cd2144		0.096579	ppm	0.00028900	0.29931
Co2286		0.098936	ppm	0.000067000	0.068130
Cr2677		0.10131	ppm	0.00023900	0.23579
Cu3247		0.11256	ppm	0.00062900	0.55858
Fe2599		4.8977	ppm	0.050795	1.0371
K_7664		12.130	ppm	0.032817	0.27053
Mg2790		11.724	ppm	0.070456	0.60095
Mn2576		0.25130	ppm	0.00074900	0.29814
Mo2020		0.10072	ppm	0.00071200	0.70680
Na5895	**F**	**774.79**	**ppm**	**2.4475**	**0.31590**
Ni2316		0.092537	ppm	0.0011030	1.1916

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99267-A1GMSD@10

Acquire Date: 7/24/2020 4:04:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		1.1115	ppm	0.0057120	0.51391
Pb2203		0.093060	ppm	0.0024940	2.6805
S_1820		2.6673	ppm	0.0027690	0.10382
Sb2068		0.088499	ppm	0.00089300	1.0086
Se1960		0.10105	ppm	0.0022020	2.1794
Si2881		2.2814	ppm	0.0016080	0.070484
Sn1899		0.10021	ppm	0.00029600	0.29518
Sr4077		0.14364	ppm	0.00045100	0.31424
Ti3349		0.11433	ppm	0.00078800	0.68915
Tl1908		0.089301	ppm	0.0029430	3.2951
V_2924		0.10609	ppm	0.000056000	0.052612
Zn2062		0.23095	ppm	0.0010120	0.43815
Y_2243		5,363.4	Cts/S	12.724	0.23723
Y_3600		50,602	Cts/S	156.15	0.30859
Y_3774		3,432.4	Cts/S	8.2166	0.23939

CCV 2078482

Acquire Date: 7/24/2020 4:08:27PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50645	ppm	0.00059100	0.11668	.50000	Rel(%)	Pass	
Al3961		25.092	ppm	0.072445	0.28872	25.000	Rel(%)	Pass	
As1890		0.51346	ppm	0.00059000	0.11483	.50000	Rel(%)	Pass	
B_2089		1.0255	ppm	0.0016900	0.16480	1.0000	Rel(%)	Pass	
Ba4554		2.5525	ppm	0.014276	0.55931	2.5000	Rel(%)	Pass	
Be3130		0.50766	ppm	0.0027550	0.54274	.50000	Rel(%)	Pass	
Ca3179		25.528	ppm	0.11116	0.43543	25.000	Rel(%)	Pass	
Cd2144		0.51186	ppm	0.0017450	0.34085	.50000	Rel(%)	Pass	
Co2286		2.5646	ppm	0.0078890	0.30763	2.5000	Rel(%)	Pass	
Cr2677		2.5365	ppm	0.012244	0.48269	2.5000	Rel(%)	Pass	
Cu3247		2.5366	ppm	0.0077490	0.30549	2.5000	Rel(%)	Pass	
Fe2599		25.705	ppm	0.13929	0.54189	25.000	Rel(%)	Pass	
K_7664		25.072	ppm	0.23403	0.93344	25.000	Rel(%)	Pass	
Mg2790		25.250	ppm	0.17742	0.70268	25.000	Rel(%)	Pass	
Mn2576		2.5486	ppm	0.012252	0.48074	2.5000	Rel(%)	Pass	
Mo2020		1.0202	ppm	0.0071190	0.69776	1.0000	Rel(%)	Pass	
Na5895		25.947	ppm	0.17104	0.65918	25.000	Rel(%)	Pass	
Ni2316		2.5752	ppm	0.0035080	0.13621	2.5000	Rel(%)	Pass	
P_1782		2.5941	ppm	0.00074000	0.028536	2.5000	Rel(%)	Pass	
Pb2203		0.51361	ppm	0.0029830	0.58081	.50000	Rel(%)	Pass	
S_1820		2.4602	ppm	0.0063550	0.25830	2.5000	Rel(%)	Pass	
Sb2068		0.51311	ppm	0.0031600	0.61582	.50000	Rel(%)	Pass	
Se1960		0.51921	ppm	0.0028680	0.55247	.50000	Rel(%)	Pass	
Si2881		2.6154	ppm	0.017750	0.67866	2.5000	Rel(%)	Pass	
Sn1899		2.5637	ppm	0.0074800	0.29176	2.5000	Rel(%)	Pass	
Sr4077		2.5382	ppm	0.014019	0.55232	2.5000	Rel(%)	Pass	
Ti3349		1.0170	ppm	0.0051470	0.50614	1.0000	Rel(%)	Pass	
Tl1908		0.51562	ppm	0.0012670	0.24577	.50000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 4:08:27PM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5360	ppm	0.012076	0.47620	2.5000	Rel(%)	Pass	
Zn2062		2.5399	ppm	0.012285	0.48368	2.5000	Rel(%)	Pass	
Y_2243		5,650.1	Cts/S	0.47163	0.0083470				
Y_3600		53,454	Cts/S	58.502	0.10944				
Y_3774		3,432.0	Cts/S	4.6328	0.13499				

CCB 2065750

Acquire Date: 7/24/2020 4:12:12PM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00033200	ppm	0.00064500	194.41	.00000	Abs	Pass	
Al3961		-0.0053310	ppm	0.0062530	117.29	.00000	Abs	Pass	
As1890		0.00097600	ppm	0.0016450	168.57	.00000	Abs	Pass	
B_2089		0.0045120	ppm	0.00012700	2.8090	.00000	Abs	Pass	
Ba4554		-0.00013400	ppm	0.00048600	363.71	.00000	Abs	Pass	
Be3130		0.00049500	ppm	0.00027000	54.520	.00000	Abs	Pass	
Ca3179		0.0059870	ppm	0.0091000	152.01	.00000	Abs	Pass	
Cd2144		0.000026000	ppm	0.000083000	321.20	.00000	Abs	Pass	
Co2286		0.000026000	ppm	0.00019400	752.41	.00000	Abs	Pass	
Cr2677		-0.00038900	ppm	0.00023400	60.274	.00000	Abs	Pass	
Cu3247		-0.00070100	ppm	0.0015240	217.31	.00000	Abs	Pass	
Fe2599		0.024262	ppm	0.020201	83.262	.00000	Abs	Pass	
K_7664		0.045356	ppm	0.0053490	11.794	.00000	Abs	Pass	
Mg2790		-0.0037770	ppm	0.0027690	73.331	.00000	Abs	Pass	
Mn2576		0.00020900	ppm	0.000051000	24.304	.00000	Abs	Pass	
Mo2020		0.0073990	ppm	0.00041800	5.6561	.00000	Abs	Pass	
Na5895		0.37777	ppm	0.016602	4.3948	.00000	Abs	Pass	
Ni2316		0.00070900	ppm	0.00013300	18.726	.00000	Abs	Pass	
P_1782		-0.0057900	ppm	0.0030970	53.498	.00000	Abs	Pass	
Pb2203		0.0014410	ppm	0.00097300	67.531	.00000	Abs	Pass	
S_1820		0.0068650	ppm	0.0043870	63.907	.00000	Abs	Pass	
Sb2068		0.0026840	ppm	0.0016470	61.350	.00000	Abs	Pass	
Se1960		0.00069600	ppm	0.00084300	121.09	.00000	Abs	Pass	
Si2881		0.042629	ppm	0.0094220	22.102	.00000	Abs	Pass	
Sn1899		0.0029540	ppm	0.00018100	6.1250	.00000	Abs	Pass	
Sr4077		0.000074000	ppm	0.000017000	22.371	.00000	Abs	Pass	
Ti3349		0.0046310	ppm	0.00015100	3.2683	.00000	Abs	Pass	
Tl1908		0.0018670	ppm	0.00098300	52.654	.00000	Abs	Pass	
V_2924		0.0013870	ppm	0.00038800	27.982	.00000	Abs	Pass	
Zn2062		0.00091500	ppm	0.00032400	35.416	.00000	Abs	Pass	
Y_2243		5,717.3	Cts/S	3.2942	0.057618				
Y_3600		54,542	Cts/S	109.23	0.20027				
Y_3774		3,399.8	Cts/S	4.4056	0.12958				

720-99267-A-2-C@10

Acquire Date: 7/24/2020 4:16:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00048600	ppm	0.00037000	76.165
Al3961		0.44889	ppm	0.018521	4.1258
As1890		0.0027110	ppm	0.0021520	79.396
B_2089		0.0028390	ppm	0.00095100	33.489
Ba4554		0.067849	ppm	0.000025000	0.036715
Be3130		0.000026000	ppm	0.00032700	1,259.2
Ca3179		186.31	ppm	1.4972	0.80361
Cd2144		0.00022900	ppm	0.000030000	13.178
Co2286		0.00075400	ppm	0.000012000	1.5351
Cr2677		0.0031490	ppm	0.00042700	13.546
Cu3247		0.0055290	ppm	0.00082900	14.998
Fe2599		1.2247	ppm	0.013743	1.1222
K_7664		1.3843	ppm	0.0017070	0.12331
Mg2790		2.3094	ppm	0.0033580	0.14542
Mn2576		0.14438	ppm	0.00045900	0.31792
Mo2020		0.0022860	ppm	0.00035700	15.596
Na5895	**F**	**775.79**	**ppm**	**3.1514**	**0.40622**
Ni2316		0.0028240	ppm	0.00084400	29.893
P_1782		0.034937	ppm	0.00027100	0.77626
Pb2203		0.0017030	ppm	0.0000080000	0.44982
S_1820		0.65945	ppm	0.0079920	1.2119
Sb2068		-0.0027330	ppm	0.00098900	36.191
Se1960		-0.00078200	ppm	0.000092000	11.759
Si2881		1.1405	ppm	0.044369	3.8905
Sn1899		0.0022760	ppm	0.00098200	43.158
Sr4077		0.040304	ppm	0.00015600	0.38583
Ti3349		0.012480	ppm	0.00051400	4.1215
Tl1908		-0.00010500	ppm	0.0026260	2,507.2
V_2924		0.0042270	ppm	0.0011790	27.897
Zn2062		0.095604	ppm	0.00062400	0.65276
Y_2243		5,326.8	Cts/S	4.6750	0.087765
Y_3600		49,974	Cts/S	84.284	0.16866
Y_3774		3,379.3	Cts/S	12.841	0.38000

720-99267-A-3-C@10

Acquire Date: 7/24/2020 4:20:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00027400	ppm	0.000019000	7.0302
Al3961		0.38882	ppm	0.017434	4.4839
As1890		0.0012370	ppm	0.0021210	171.45
B_2089		0.0027860	ppm	0.00038700	13.904
Ba4554		0.068399	ppm	0.00027700	0.40430
Be3130		0.000088000	ppm	0.000010000	11.621
Ca3179		185.76	ppm	1.4015	0.75446
Cd2144		0.00020900	ppm	0.000013000	6.0673
Co2286		0.00069400	ppm	0.00023800	34.369

720-99267-A-3-C@10

Acquire Date: 7/24/2020 4:20:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0035580	ppm	0.00032500	9.1452
Cu3247		0.0037250	ppm	0.0015280	41.019
Fe2599		1.0532	ppm	0.010726	1.0184
K_7664		1.4741	ppm	0.047435	3.2180
Mg2790		2.4877	ppm	0.0055400	0.22270
Mn2576		0.15132	ppm	0.00018900	0.12458
Mo2020		0.0011360	ppm	0.00016400	14.445
Na5895	**F**	**761.18**	**ppm**	**5.1915**	**0.68204**
Ni2316		0.0025840	ppm	0.00050400	19.503
P_1782		0.043812	ppm	0.0013510	3.0830
Pb2203		0.00076100	ppm	0.0025760	338.45
S_1820		0.76323	ppm	0.0060610	0.79406
Sb2068		0.00027000	ppm	0.0013720	508.29
Se1960		0.00026800	ppm	0.0016810	627.37
Si2881		1.1422	ppm	0.030063	2.6320
Sn1899		0.0012770	ppm	0.00027500	21.561
Sr4077		0.045626	ppm	0.00075500	1.6539
Ti3349		0.011892	ppm	0.00085500	7.1911
Tl1908		0.0015990	ppm	0.0011550	72.204
V_2924		0.0045570	ppm	0.0000020000	0.042841
Zn2062		0.071813	ppm	0.00040200	0.55928
Y_2243		5,317.0	Cts/S	13.744	0.25850
Y_3600		50,266	Cts/S	18.528	0.036861
Y_3774		3,378.6	Cts/S	4.9098	0.14532

720-99267-A-4-C@10

Acquire Date: 7/24/2020 4:24:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00069700	ppm	0.00073900	106.05
Al3961		0.48739	ppm	0.041866	8.5898
As1890		0.00095200	ppm	0.0027740	291.26
B_2089		0.0023560	ppm	0.00033700	14.293
Ba4554		0.056027	ppm	0.00051400	0.91656
Be3130		0.00010300	ppm	0.00013300	129.08
Ca3179		186.02	ppm	1.8258	0.98155
Cd2144		0.00031000	ppm	0.000026000	8.4338
Co2286		0.00088200	ppm	0.000044000	5.0365
Cr2677		0.0038940	ppm	0.0011600	29.783
Cu3247		0.0040640	ppm	0.0017910	44.084
Fe2599		0.88827	ppm	0.021586	2.4302
K_7664		1.4289	ppm	0.032230	2.2556
Mg2790		2.2497	ppm	0.011762	0.52281
Mn2576		0.14371	ppm	0.00017500	0.12200
Mo2020		0.00070400	ppm	0.000028000	3.9911
Na5895	**F**	**749.27**	**ppm**	**5.6418**	**0.75297**
Ni2316		0.0011550	ppm	0.00013600	11.790

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99267-A-4-C@10

Acquire Date: 7/24/2020 4:24:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.040711	ppm	0.0010150	2.4926
Pb2203		0.0029300	ppm	0.0018010	61.476
S_1820		0.73420	ppm	0.0017400	0.23694
Sb2068		-0.00044500	ppm	0.00017800	40.084
Se1960		0.0028570	ppm	0.0020670	72.358
Si2881		1.2721	ppm	0.0063010	0.49537
Sn1899		0.0017100	ppm	0.00010700	6.2747
Sr4077		0.036639	ppm	0.00063300	1.7279
Ti3349		0.013440	ppm	0.0010130	7.5374
Tl1908		0.00030200	ppm	0.00060900	201.92
V_2924		0.0044070	ppm	0.0000070000	0.16397
Zn2062		0.079387	ppm	0.00039200	0.49407
Y_2243		5,335.3	Cts/S	1.7683	0.033143
Y_3600		50,530	Cts/S	45.744	0.090530
Y_3774		3,397.2	Cts/S	12.184	0.35865

720-99269-A-1-C@10

Acquire Date: 7/24/2020 4:28:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00027500	ppm	0.0011580	420.58
Al3961		4.3348	ppm	0.051933	1.1980
As1890		0.0082930	ppm	0.00092300	11.124
B_2089		0.013699	ppm	0.00081000	5.9108
Ba4554		0.16171	ppm	0.0023570	1.4578
Be3130		.0000040000	ppm	0.00016200	4,420.8
Ca3179		176.94	ppm	1.7109	0.96690
Cd2144		0.00079000	ppm	0.000013000	1.6324
Co2286		0.058077	ppm	0.00016300	0.27998
Cr2677		0.020375	ppm	0.00030600	1.5006
Cu3247		0.060229	ppm	0.0010700	1.7763
Fe2599		8.2095	ppm	0.11011	1.3412
K_7664		4.2286	ppm	0.0014240	0.033682
Mg2790		4.8650	ppm	0.025659	0.52742
Mn2576		0.20621	ppm	0.0012490	0.60581
Mo2020		0.0044230	ppm	0.000043000	0.97297
Na5895	**F**	**728.63**	**ppm**	**4.6100**	**0.63269**
Ni2316		0.010382	ppm	0.000050000	0.48328
P_1782		0.48992	ppm	0.0013630	0.27822
Pb2203		0.013412	ppm	0.00030700	2.2919
S_1820		5.8427	ppm	0.011143	0.19071
Sb2068		0.00020600	ppm	0.0023530	1,141.7
Se1960		-0.00083300	ppm	0.0011630	139.63
Si2881		6.8288	ppm	0.11143	1.6318
Sn1899		0.0025370	ppm	0.000041000	1.6082
Sr4077		1.4946	ppm	0.014629	0.97884
Ti3349		0.064985	ppm	0.00014100	0.21677

720-99269-A-1-C@10

Acquire Date: 7/24/2020 4:28:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0028250	ppm	0.0050990	180.52
V_2924		0.016248	ppm	0.00066600	4.0998
Zn2062		0.55054	ppm	0.0038450	0.69845
Y_2243		5,329.5	Cts/S	2.5069	0.047037
Y_3600		50,392	Cts/S	263.93	0.52376
Y_3774		3,351.0	Cts/S	0.59959	0.017892

720-99269-A-2-C@10

Acquire Date: 7/24/2020 4:32:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00041600	ppm	0.00049400	118.68
Al3961		4.0750	ppm	0.021479	0.52709
As1890		0.0075460	ppm	0.0020710	27.445
B_2089		0.011896	ppm	0.00032500	2.7303
Ba4554		0.13017	ppm	0.00028300	0.21708
Be3130		0.000086000	ppm	0.00035200	408.42
Ca3179		184.61	ppm	1.2019	0.65106
Cd2144		0.00080400	ppm	0.00012800	15.909
Co2286		0.044377	ppm	0.00017800	0.40058
Cr2677		0.019568	ppm	0.0014640	7.4825
Cu3247		0.058284	ppm	0.00085000	1.4584
Fe2599		9.1275	ppm	0.051453	0.56371
K_7664		4.0101	ppm	0.019212	0.47909
Mg2790		4.9088	ppm	0.0089260	0.18184
Mn2576		0.20298	ppm	0.00017000	0.083783
Mo2020		0.0045150	ppm	0.00051800	11.465
Na5895	**F**	**740.27**	**ppm**	**4.9462**	**0.66817**
Ni2316		0.010045	ppm	0.00033000	3.2857
P_1782		0.39058	ppm	0.0041570	1.0643
Pb2203		0.010507	ppm	0.0032350	30.792
S_1820		4.6354	ppm	0.0073860	0.15933
Sb2068		-0.00075200	ppm	0.0027710	368.36
Se1960		0.0065580	ppm	0.0060650	92.489
Si2881		6.8683	ppm	0.00057100	0.0083160
Sn1899		0.0026620	ppm	0.00018700	7.0425
Sr4077		1.1794	ppm	0.0085070	0.72129
Ti3349		0.070571	ppm	0.00090400	1.2808
Tl1908		-0.0020910	ppm	0.0037450	179.09
V_2924		0.013726	ppm	0.000081000	0.58931
Zn2062		0.43454	ppm	0.00027100	0.062338
Y_2243		5,314.0	Cts/S	4.9208	0.092601
Y_3600		50,145	Cts/S	6.0622	0.012089
Y_3774		3,364.6	Cts/S	5.1297	0.15246

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99269-A-3-C@10

Acquire Date: 7/24/2020 4:36:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00012700	ppm	0.00037100	292.65
Al3961		4.6849	ppm	0.041425	0.88423
As1890		0.010556	ppm	0.0033940	32.151
B_2089		0.016633	ppm	0.00093300	5.6096
Ba4554		0.21091	ppm	0.0016270	0.77126
Be3130		0.00019300	ppm	0.0000070000	3.7383
Ca3179		175.98	ppm	1.5881	0.90242
Cd2144		0.0011150	ppm	0.000054000	4.8702
Co2286		0.063634	ppm	0.00035900	0.56407
Cr2677		0.027520	ppm	0.00062900	2.2847
Cu3247		0.058342	ppm	0.0012600	2.1602
Fe2599		11.005	ppm	0.10314	0.93717
K_7664		4.8684	ppm	0.074571	1.5318
Mg2790		4.9479	ppm	0.031782	0.64233
Mn2576		0.23081	ppm	0.0011370	0.49260
Mo2020		0.0057850	ppm	0.00021200	3.6673
Na5895	**F**	**726.94**	**ppm**	**11.939**	**1.6423**
Ni2316		0.011458	ppm	0.00020000	1.7445
P_1782		0.56988	ppm	0.0056520	0.99182
Pb2203		0.025119	ppm	0.00089800	3.5757
S_1820		7.3114	ppm	0.014468	0.19788
Sb2068		0.0016980	ppm	0.0020960	123.45
Se1960		0.0052100	ppm	0.0014260	27.366
Si2881		6.9990	ppm	0.039373	0.56256
Sn1899		0.0039430	ppm	0.00015100	3.8360
Sr4077		2.3021	ppm	0.019292	0.83802
Ti3349		0.066123	ppm	0.00084900	1.2844
Tl1908		-0.0030440	ppm	0.0017170	56.406
V_2924		0.017476	ppm	0.000043000	0.24468
Zn2062		0.64437	ppm	0.0020300	0.31508
Y_2243		5,334.8	Cts/S	11.474	0.21507
Y_3600		50,253	Cts/S	45.518	0.090578
Y_3774		3,374.6	Cts/S	20.585	0.61001

720-99269-A-4-C@10

Acquire Date: 7/24/2020 4:40:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00043200	ppm	0.00070400	162.91
Al3961		4.0116	ppm	0.018672	0.46546
As1890		0.0069060	ppm	0.0028510	41.288
B_2089		0.015806	ppm	0.00019900	1.2614
Ba4554		0.14326	ppm	0.0011420	0.79691
Be3130		0.000047000	ppm	0.0000060000	11.782
Ca3179		188.47	ppm	1.7115	0.90808
Cd2144		0.00074300	ppm	0.000065000	8.8064
Co2286		0.040481	ppm	0.00048300	1.1920

720-99269-A-4-C@10

Acquire Date: 7/24/2020 4:40:22PM
Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1
Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.021023	ppm	0.0010020	4.7655
Cu3247		0.040773	ppm	0.00093500	2.2932
Fe2599		10.521	ppm	0.024327	0.23122
K_7664		4.3456	ppm	0.023733	0.54615
Mg2790		4.8213	ppm	0.025316	0.52509
Mn2576		0.22280	ppm	0.00046800	0.21001
Mo2020		0.0050110	ppm	0.00018400	3.6703
Na5895	**F**	**733.30**	**ppm**	**4.8518**	**0.66165**
Ni2316		0.010080	ppm	0.0014380	14.267
P_1782		0.44774	ppm	0.0062850	1.4036
Pb2203		0.019184	ppm	0.0014850	7.7423
S_1820		4.9726	ppm	0.014221	0.28599
Sb2068		-0.00079200	ppm	0.0026140	330.07
Se1960		0.00038300	ppm	0.0013540	353.86
Si2881		7.0633	ppm	0.012403	0.17559
Sn1899		0.0024890	ppm	0.00054100	21.737
Sr4077		1.7090	ppm	0.017871	1.0457
Ti3349		0.077704	ppm	0.00093700	1.2053
Tl1908		-0.0013490	ppm	0.0023190	171.84
V_2924		0.014227	ppm	0.00023900	1.6804
Zn2062		0.47542	ppm	0.00026400	0.055446
Y_2243		5,308.8	Cts/S	15.063	0.28374
Y_3600		49,970	Cts/S	112.03	0.22421
Y_3774		3,379.6	Cts/S	0.39667	0.011737

720-99165-A-1-D@10

Acquire Date: 7/24/2020 4:44:22PM
Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1
Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00047000	ppm	0.00022000	46.923
Al3961		0.10729	ppm	0.013463	12.548
As1890		0.0016210	ppm	0.00043900	27.097
B_2089		0.039265	ppm	0.00035000	0.89104
Ba4554		0.047652	ppm	0.00056700	1.1890
Be3130		0.00037500	ppm	0.00017800	47.620
Ca3179		71.558	ppm	0.78058	1.0908
Cd2144		0.0012050	ppm	0.000041000	3.3638
Co2286		0.0071330	ppm	0.00029300	4.1007
Cr2677		0.00097200	ppm	0.0013170	135.48
Cu3247		0.013560	ppm	0.0013180	9.7233
Fe2599		0.49528	ppm	0.0013100	0.26454
K_7664		0.30839	ppm	0.017771	5.7627
Mg2790		0.54263	ppm	0.0018020	0.33207
Mn2576		0.056233	ppm	0.00014300	0.25455
Mo2020		0.000046000	ppm	0.0000030000	6.2152
Na5895	**F**	**748.10**	**ppm**	**2.0894**	**0.27929**
Ni2316		0.00078400	ppm	0.00042900	54.781

720-99165-A-1-D@10

Acquire Date: 7/24/2020 4:44:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.016098	ppm	0.00017200	1.0682
Pb2203		0.33198	ppm	0.00064000	0.19286
S_1820		12.665	ppm	0.0070550	0.055704
Sb2068		-0.0029080	ppm	0.00013800	4.7511
Se1960		0.0023720	ppm	0.0015400	64.937
Si2881		0.11628	ppm	0.042035	36.151
Sn1899		0.0017660	ppm	0.00094300	53.403
Sr4077		0.055229	ppm	0.00032500	0.58887
Ti3349		0.030289	ppm	0.0000040000	0.013182
Tl1908		-0.0032500	ppm	0.0019920	61.293
V_2924		0.0012890	ppm	0.00025400	19.713
Zn2062		0.58240	ppm	0.0025650	0.44040
Y_2243		5,405.2	Cts/S	9.7213	0.17985
Y_3600		50,954	Cts/S	256.18	0.50277
Y_3774		3,414.9	Cts/S	15.574	0.45605

720-99165-A-2-B@10

Acquire Date: 7/24/2020 4:48:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00051300	ppm	0.0011450	222.93
Al3961		0.035501	ppm	0.013468	37.938
As1890		-0.0024580	ppm	0.0013290	54.088
B_2089		0.023935	ppm	0.0010160	4.2465
Ba4554		0.061167	ppm	0.00095300	1.5576
Be3130		0.00024200	ppm	0.000042000	17.162
Ca3179		18.658	ppm	0.10772	0.57735
Cd2144		0.00075300	ppm	0.000085000	11.342
Co2286		0.0050020	ppm	0.00013700	2.7363
Cr2677		0.0016870	ppm	0.00060900	36.128
Cu3247		0.0091930	ppm	0.0000040000	0.048814
Fe2599		0.10675	ppm	0.0021290	1.9944
K_7664		0.26964	ppm	0.020955	7.7715
Mg2790		0.28930	ppm	0.0037480	1.2956
Mn2576		0.075547	ppm	0.000042000	0.055875
Mo2020		0.000079000	ppm	0.000095000	119.52
Na5895	**F**	**736.25**	**ppm**	**1.0449**	**0.14192**
Ni2316		0.0013930	ppm	0.00069000	49.533
P_1782		-0.014149	ppm	0.0034660	24.498
Pb2203		0.15541	ppm	0.0027330	1.7589
S_1820		3.8024	ppm	0.00030600	0.0080380
Sb2068		-0.0036270	ppm	0.0067780	186.88
Se1960		0.0069390	ppm	0.0033890	48.840
Si2881		0.030557	ppm	0.010815	35.394
Sn1899		0.0011740	ppm	0.0014580	124.22
Sr4077		0.018839	ppm	0.00015900	0.84432
Ti3349		0.0043860	ppm	0.0010720	24.448

720-99165-A-2-B@10

Acquire Date: 7/24/2020 4:48:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0023620	ppm	0.0011740	49.716
V_2924		0.00086900	ppm	0.00034900	40.171
Zn2062		0.39816	ppm	0.0019460	0.48874
Y_2243		5,413.3	Cts/S	13.415	0.24782
Y_3600		51,027	Cts/S	178.96	0.35071
Y_3774		3,413.7	Cts/S	10.247	0.30019

720-99165-A-3-B@10

Acquire Date: 7/24/2020 4:52:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00043100	ppm	0.0012590	292.15
Al3961		0.12422	ppm	0.020505	16.507
As1890		-0.00020900	ppm	0.0013740	658.89
B_2089		0.043876	ppm	0.00032500	0.74153
Ba4554		0.13549	ppm	0.00090700	0.66912
Be3130		0.00017100	ppm	0.00042100	246.11
Ca3179		90.317	ppm	0.76313	0.84495
Cd2144		0.00086800	ppm	0.00013800	15.918
Co2286		0.0062420	ppm	0.000056000	0.90144
Cr2677		0.0029190	ppm	0.00054500	18.665
Cu3247		0.0046770	ppm	0.00076300	16.302
Fe2599		1.6672	ppm	0.026605	1.5958
K_7664		0.24465	ppm	0.016177	6.6123
Mg2790		0.64767	ppm	0.0061370	0.94758
Mn2576		0.032716	ppm	0.00011200	0.34086
Mo2020		0.000042000	ppm	0.00038500	921.64
Na5895	**F**	**751.11**	**ppm**	**1.3869**	**0.18464**
Ni2316		0.00052100	ppm	0.00070800	135.93
P_1782		-0.010147	ppm	0.0028020	27.610
Pb2203		0.26160	ppm	0.00093700	0.35823
S_1820		14.825	ppm	0.010771	0.072654
Sb2068		-0.00042500	ppm	0.0019800	466.49
Se1960		0.000046000	ppm	0.00034200	743.52
Si2881		0.049769	ppm	0.036938	74.219
Sn1899		0.0021990	ppm	0.00055500	25.234
Sr4077		0.081142	ppm	0.00099400	1.2255
Ti3349		0.0082440	ppm	0.00067600	8.2004
Tl1908		-0.0057870	ppm	0.0016460	28.439
V_2924		0.0022280	ppm	0.000022000	0.96646
Zn2062		0.90983	ppm	0.00078900	0.086680
Y_2243		5,396.8	Cts/S	14.543	0.26948
Y_3600		50,599	Cts/S	12.917	0.025529
Y_3774		3,406.1	Cts/S	5.1123	0.15009

CCV 2078482

Acquire Date: 7/24/2020 4:56:30PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	**Flags**	**Avg**	**Units**	**Stddev**	**%RSD**	**Check Value**	**Units**	**Outcome**	**Flag Value**
Ag3280		0.50184	ppm	0.0034490	0.68720	.50000	Rel(%)	Pass	
Al3961		25.044	ppm	0.14196	0.56682	25.000	Rel(%)	Pass	
As1890		0.51157	ppm	0.0029310	0.57286	.50000	Rel(%)	Pass	
B_2089		1.0200	ppm	0.00063600	0.062382	1.0000	Rel(%)	Pass	
Ba4554		2.5615	ppm	0.020919	0.81668	2.5000	Rel(%)	Pass	
Be3130		0.51038	ppm	0.0040260	0.78882	.50000	Rel(%)	Pass	
Ca3179		25.575	ppm	0.24563	0.96043	25.000	Rel(%)	Pass	
Cd2144		0.51248	ppm	0.0012040	0.23503	.50000	Rel(%)	Pass	
Co2286		2.5673	ppm	0.0061550	0.23974	2.5000	Rel(%)	Pass	
Cr2677		2.5247	ppm	0.021959	0.86978	2.5000	Rel(%)	Pass	
Cu3247		2.5383	ppm	0.011502	0.45313	2.5000	Rel(%)	Pass	
Fe2599		25.904	ppm	0.24519	0.94654	25.000	Rel(%)	Pass	
K_7664		25.109	ppm	0.29330	1.1681	25.000	Rel(%)	Pass	
Mg2790		25.155	ppm	0.14619	0.58115	25.000	Rel(%)	Pass	
Mn2576		2.5435	ppm	0.011588	0.45559	2.5000	Rel(%)	Pass	
Mo2020		1.0207	ppm	0.0053230	0.52151	1.0000	Rel(%)	Pass	
Na5895		25.721	ppm	0.13326	0.51811	25.000	Rel(%)	Pass	
Ni2316		2.5718	ppm	0.0070300	0.27335	2.5000	Rel(%)	Pass	
P_1782		2.5917	ppm	0.012079	0.46606	2.5000	Rel(%)	Pass	
Pb2203		0.51183	ppm	0.00026700	0.052072	.50000	Rel(%)	Pass	
S_1820		2.4636	ppm	0.0068250	0.27703	2.5000	Rel(%)	Pass	
Sb2068		0.51320	ppm	0.0047660	0.92866	.50000	Rel(%)	Pass	
Se1960		0.52079	ppm	0.0087720	1.6844	.50000	Rel(%)	Pass	
Si2881		2.6551	ppm	0.069277	2.6092	2.5000	Rel(%)	Pass	
Sn1899		2.5656	ppm	0.0092580	0.36086	2.5000	Rel(%)	Pass	
Sr4077		2.5433	ppm	0.020262	0.79666	2.5000	Rel(%)	Pass	
Ti3349		1.0141	ppm	0.0060610	0.59768	1.0000	Rel(%)	Pass	
Tl1908		0.51661	ppm	0.0049280	0.95393	.50000	Rel(%)	Pass	
V_2924		2.5249	ppm	0.013948	0.55240	2.5000	Rel(%)	Pass	
Zn2062		2.5339	ppm	0.014979	0.59114	2.5000	Rel(%)	Pass	
Y_2243		5,643.4	Cts/S	6.4142	0.11366				
Y_3600		53,698	Cts/S	171.35	0.31910				
Y_3774		3,393.7	Cts/S	6.5423	0.19278				

CCB 2065750

Acquire Date: 7/24/2020 5:00:16PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	**Flags**	**Avg**	**Units**	**Stddev**	**%RSD**	**Check Value**	**Units**	**Outcome**	**Flag Value**
Ag3280		-0.00025700	ppm	0.00039300	152.77	.00000	Abs	Pass	
Al3961		0.017378	ppm	0.0016260	9.3573	.00000	Abs	Pass	
As1890		0.0012840	ppm	0.0021600	168.22	.00000	Abs	Pass	
B_2089		0.0013380	ppm	0.00063200	47.269	.00000	Abs	Pass	
Ba4554		0.00093000	ppm	0.00045300	48.681	.00000	Abs	Pass	
Be3130		0.00060900	ppm	0.00012700	20.932	.00000	Abs	Pass	
Ca3179		0.024217	ppm	0.0055780	23.034	.00000	Abs	Pass	
Cd2144		0.000041000	ppm	0.00010200	251.17	.00000	Abs	Pass	
Co2286		0.00022000	ppm	0.00039800	181.22	.00000	Abs	Pass	
Cr2677		0.0012710	ppm	0.000086000	6.7788	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 2065750

Acquire Date: 7/24/2020 5:00:16PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0023850	ppm	0.00037500	15.744	.00000	Abs	Pass	
Fe2599		0.039984	ppm	0.0029970	7.4947	.00000	Abs	Pass	
K_7664		0.10259	ppm	0.015268	14.882	.00000	Abs	Pass	
Mg2790		-0.00081200	ppm	0.0016680	205.37	.00000	Abs	Pass	
Mn2576		0.00051400	ppm	0.000058000	11.217	.00000	Abs	Pass	
Mo2020		0.0074270	ppm	0.00084800	11.414	.00000	Abs	Pass	
Na5895	**W**	**0.53896**	**ppm**	**0.0056850**	**1.0548**	**.00000**	**Abs**	**Warn High**	**0.50000**
Ni2316		0.00050600	ppm	0.00017200	33.942	.00000	Abs	Pass	
P_1782		-0.0092610	ppm	0.0026830	28.969	.00000	Abs	Pass	
Pb2203		-0.0014400	ppm	0.00098600	68.447	.00000	Abs	Pass	
S_1820		0.0082800	ppm	0.0028390	34.287	.00000	Abs	Pass	
Sb2068		-0.00076300	ppm	0.0027070	354.79	.00000	Abs	Pass	
Se1960		0.0020580	ppm	0.0041670	202.50	.00000	Abs	Pass	
Si2881		0.066613	ppm	0.0017660	2.6506	.00000	Abs	Pass	
Sn1899		0.0030450	ppm	0.00039600	13.002	.00000	Abs	Pass	
Sr4077		0.00084600	ppm	0.000075000	8.8720	.00000	Abs	Pass	
Ti3349		0.0045620	ppm	0.000079000	1.7378	.00000	Abs	Pass	
Tl1908		0.0024190	ppm	0.0021790	90.076	.00000	Abs	Pass	
V_2924		0.0014840	ppm	0.00048500	32.676	.00000	Abs	Pass	
Zn2062		0.0019250	ppm	0.00027500	14.262	.00000	Abs	Pass	
Y_2243		5,709.2	Cts/S	12.566	0.22010				
Y_3600		54,172	Cts/S	158.29	0.29220				
Y_3774		3,376.0	Cts/S	5.2706	0.15612				

TM 20

Acquire Date: 7/24/2020 5:04:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00097600	ppm	0.00052100	53.406
Al3961		0.013444	ppm	0.029456	219.10
As1890		0.00080100	ppm	0.00038500	48.110
B_2089	**F**	**-0.30626**	**ppm**	**0.00040400**	**0.13177**
Ba4554		-0.00080700	ppm	0.00060900	75.491
Be3130		-0.00063300	ppm	0.00031200	49.310
Ca3179		0.0031280	ppm	0.0071190	227.57
Cd2144		0.00010500	ppm	0.000038000	35.721
Co2286		0.000051000	ppm	0.000097000	191.37
Cr2677		0.033766	ppm	0.00073000	2.1622
Cu3247		0.23728	ppm	0.00023200	0.097858
Fe2599		-0.015289	ppm	0.0064390	42.117
K_7664		0.016013	ppm	0.049553	309.45
Mg2790		0.10162	ppm	0.0090050	8.8614
Mn2576		0.00059600	ppm	0.000057000	9.5581
Mo2020		0.0083040	ppm	0.000056000	0.67916
Na5895		0.30049	ppm	0.00032700	0.10877
Ni2316	**F**	**-0.045676**	**ppm**	**0.00061400**	**1.3453**
P_1782		0.00075200	ppm	0.0038600	513.02
Pb2203	**F**	**-0.075206**	**ppm**	**0.0016980**	**2.2573**

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

TM 20

Acquire Date: 7/24/2020 5:04:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		0.10732	ppm	0.0028840	2.6868
Sb2068		-0.0041630	ppm	0.00041100	9.8714
Se1960		-0.0054160	ppm	0.0000020000	0.033701
Si2881		0.010464	ppm	0.037569	359.05
Sn1899		0.00034000	ppm	0.000082000	23.982
Sr4077		0.00030300	ppm	0.000062000	20.373
Ti3349		0.00041500	ppm	0.00062700	151.24
Tl1908		-0.00047000	ppm	0.00058400	124.45
V_2924		0.017425	ppm	0.00019700	1.1287
Zn2062		-0.00031200	ppm	0.00023500	75.483
Y_2243		5,690.1	Cts/S	2.2659	0.039822
Y_3600		54,269	Cts/S	113.49	0.20912
Y_3774		3,360.0	Cts/S	17.611	0.52414

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Acquire Date: 7/24/2020 5:08:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00020000	ppm	0.00092300	461.94
Al3961		0.00098600	ppm	0.016477	1,670.8
As1890		0.000025000	ppm	0.00035300	1,429.5
B_2089		-0.00020800	ppm	0.00015800	75.804
Ba4554		-0.00017900	ppm	0.00061000	341.01
Be3130		0.00027500	ppm	0.00037500	136.44
Ca3179		0.00057300	ppm	0.011931	2,082.9
Cd2144		0.000055000	ppm	0.000032000	57.486
Co2286		0.000018000	ppm	0.00018200	1,017.1
Cr2677		0.00027700	ppm	0.000058000	21.124
Cu3247		0.00029000	ppm	0.00060700	209.01
Fe2599		-0.017423	ppm	0.0030940	17.759
K_7664		0.010522	ppm	0.018669	177.43
Mg2790		-0.0025940	ppm	0.0091590	353.07
Mn2576		0.000094000	ppm	0.000042000	44.736
Mo2020		0.00069600	ppm	0.00011100	16.022
Na5895		0.25164	ppm	0.011109	4.4148
Ni2316		-0.00027400	ppm	0.00047900	174.77
P_1782		-0.0061780	ppm	0.0023200	37.555
Pb2203		-0.0016140	ppm	0.0019770	122.52
S_1820		0.0039270	ppm	0.0046190	117.60
Sb2068		0.0017190	ppm	0.0025070	145.80
Se1960		-0.0018530	ppm	0.00063900	34.478
Si2881		0.022863	ppm	0.044974	196.71
Sn1899		0.00046900	ppm	0.00029900	63.788
Sr4077		-0.00014400	ppm	0.000042000	29.528
Ti3349		0.00086300	ppm	0.00067100	77.750
Tl1908		0.00083900	ppm	0.0016180	192.80
V_2924		0.00090100	ppm	0.000055000	6.0884

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Acquire Date: 7/24/2020 5:08:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		0.00042200	ppm	0.00020700	48.914
Y_2243		5,695.6	Cts/S	21.036	0.36933
Y_3600		53,832	Cts/S	4.3673	0.0081130
Y_3774		3,337.3	Cts/S	11.180	0.33500

TM 10

Acquire Date: 7/24/2020 5:12:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00070200	ppm	0.00087300	124.45
Al3961		-0.019646	ppm	0.020634	105.03
As1890		0.0016810	ppm	0.00098100	58.349
B_2089	**F**	**-0.15111**	**ppm**	**0.00060400**	**0.39963**
Ba4554		-0.00048900	ppm	0.00015500	31.639
Be3130		0.000054000	ppm	0.000046000	85.156
Ca3179		0.025073	ppm	0.0080290	32.022
Cd2144		0.00010900	ppm	0.0000020000	1.4905
Co2286		0.00032100	ppm	0.00030300	94.451
Cr2677		0.016283	ppm	0.00061800	3.7964
Cu3247		0.11810	ppm	0.00039000	0.32984
Fe2599		-0.013876	ppm	0.0067370	48.554
K_7664		0.050221	ppm	0.073472	146.30
Mg2790		0.042049	ppm	0.0018840	4.4806
Mn2576		0.00026000	ppm	0.000025000	9.6585
Mo2020		0.0034440	ppm	0.00029600	8.5920
Na5895		0.19882	ppm	0.0080560	4.0518
Ni2316	**F**	**-0.022190**	**ppm**	**0.00014400**	**0.64934**
P_1782		-0.0028150	ppm	0.0033800	120.10
Pb2203	**F**	**-0.033482**	**ppm**	**0.0012870**	**3.8433**
S_1820		0.058320	ppm	0.00091800	1.5747
Sb2068		-0.0025590	ppm	0.0043880	171.48
Se1960		-0.0050900	ppm	0.0013160	25.865
Si2881		0.033314	ppm	0.11536	346.30
Sn1899		0.00036600	ppm	0.00026100	71.363
Sr4077		0.000092000	ppm	0.000092000	100.00
Ti3349		0.00063300	ppm	0.000086000	13.568
Tl1908		0.00042000	ppm	0.00066000	157.28
V_2924		0.0089150	ppm	0.00015100	1.6983
Zn2062		0.00020500	ppm	0.000065000	31.730
Y_2243		5,669.4	Cts/S	16.887	0.29786
Y_3600		54,068	Cts/S	55.131	0.10197
Y_3774		3,349.4	Cts/S	2.9914	0.089310

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Acquire Date: 7/24/2020 5:16:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00051800	ppm	0.00037500	72.352
Al3961		0.0046290	ppm	0.0066200	143.00
As1890		0.00090500	ppm	0.0019160	211.80
B_2089		-0.00016600	ppm	0.00029700	179.15
Ba4554		0.00021100	ppm	0.00044600	210.90
Be3130		0.00018800	ppm	0.00022100	117.75
Ca3179		0.0039230	ppm	0.0067300	171.55
Cd2144		0.000028000	ppm	0.0000030000	11.051
Co2286		0.000057000	ppm	0.00015500	272.43
Cr2677		0.00014100	ppm	0.00034400	243.11
Cu3247		0.00021300	ppm	0.00067600	317.54
Fe2599		-0.010611	ppm	0.0062670	59.066
K_7664		0.027921	ppm	0.043983	157.53
Mg2790		-0.017430	ppm	0.0050420	28.925
Mn2576		0.00011200	ppm	0.000058000	51.565
Mo2020		0.00058500	ppm	0.00021700	37.111
Na5895		0.16885	ppm	0.012625	7.4774
Ni2316		-0.00073100	ppm	0.00069200	94.626
P_1782		-0.014591	ppm	0.0010360	7.1023
Pb2203		-0.0037820	ppm	0.0019420	51.360
S_1820		0.0092490	ppm	0.0033590	36.316
Sb2068		0.0012140	ppm	0.0051970	428.05
Se1960		-0.0056590	ppm	0.0012060	21.303
Si2881		0.058412	ppm	0.023126	39.591
Sn1899		0.00024600	ppm	0.00059900	243.30
Sr4077		0.00045200	ppm	0.00019200	42.399
Ti3349		0.00094400	ppm	0.00035300	37.370
Tl1908		0.00018500	ppm	0.0016090	872.08
V_2924		0.00076500	ppm	0.00030300	39.586
Zn2062		0.000050000	ppm	0.00034400	680.80
Y_2243		5,675.3	Cts/S	12.186	0.21471
Y_3600		53,909	Cts/S	0.092382	0.00017100
Y_3774		3,335.2	Cts/S	10.473	0.31403

U 20

Acquire Date: 7/24/2020 5:20:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.0071690**	**ppm**	**0.00038600**	**5.3906**
Al3961		-0.0073800	ppm	0.0080580	109.20
As1890		0.0011430	ppm	0.0019810	173.40
B_2089		0.0035200	ppm	0.000077000	2.1939
Ba4554		0.0011430	ppm	0.00028900	25.248
Be3130		0.00032900	ppm	0.000066000	19.973
Ca3179		0.0027200	ppm	0.0040910	150.41
Cd2144		0.00015800	ppm	0.000076000	48.459
Co2286		0.0023750	ppm	0.000087000	3.6690

U 20

Acquire Date: 7/24/2020 5:20:13PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00065800	ppm	0.00098700	149.87
Cu3247		0.019720	ppm	0.00037500	1.9012
Fe2599		-0.010297	ppm	0.0027300	26.513
K_7664		-0.0020770	ppm	0.096034	4,622.7
Mg2790		-0.49156	ppm	0.0086880	1.7675
Mn2576		0.0018810	ppm	0.000050000	2.6587
Mo2020		-0.0024890	ppm	0.00042900	17.244
Na5895		0.15053	ppm	0.012798	8.5020
Ni2316		-0.00052500	ppm	0.00027500	52.341
P_1782		-0.0090080	ppm	0.0022570	25.058
Pb2203		0.0083600	ppm	0.0050100	59.931
S_1820		0.0099990	ppm	0.0020060	20.063
Sb2068		-0.0022800	ppm	0.0027530	120.77
Se1960		-0.019447	ppm	0.0013010	6.6909
Si2881		-0.056853	ppm	0.022158	38.974
Sn1899		0.0034170	ppm	0.00051800	15.172
Sr4077		0.00068700	ppm	0.000097000	14.095
Ti3349		-0.00050000	ppm	0.00022000	43.966
Tl1908		-0.0040360	ppm	0.0011730	29.062
V_2924	**W**	**-0.0084020**	**ppm**	**0.00035900**	**4.2712**
Zn2062		0.00020100	ppm	0.0000070000	3.4464
Y_2243		5,671.9	Cts/S	5.5230	0.097376
Y_3600		54,266	Cts/S	154.33	0.28439
Y_3774		3,357.5	Cts/S	7.4697	0.22248

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Acquire Date: 7/24/2020 5:24:13PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00063600	ppm	0.00054800	86.227
Al3961		0.0013620	ppm	0.0043210	317.34
As1890		0.0026460	ppm	0.0016930	63.968
B_2089		-0.00045300	ppm	0.00033100	73.068
Ba4554		0.00034700	ppm	0.000080000	23.061
Be3130		0.000013000	ppm	0.00011800	896.77
Ca3179		-0.00048000	ppm	0.0039660	825.61
Cd2144		0.000073000	ppm	0.00014300	195.84
Co2286		-0.00016200	ppm	0.00025000	153.74
Cr2677		0.00036300	ppm	0.0010060	276.88
Cu3247		-0.0010400	ppm	0.0017200	165.45
Fe2599		-0.022625	ppm	0.0091700	40.531
K_7664		0.030508	ppm	0.017426	57.120
Mg2790		-0.011828	ppm	0.0029900	25.277
Mn2576		0.000013000	ppm	0.00013100	1,029.0
Mo2020		0.00028200	ppm	0.00030000	106.31
Na5895		0.12628	ppm	0.0041800	3.3100
Ni2316		-0.0017470	ppm	0.00065100	37.244

Color Legend   Pass/Unchecked   Internal Standard   Check Fail   Check Warn

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Acquire Date: 7/24/2020 5:24:13PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.011865	ppm	0.0021990	18.533
Pb2203		0.00015500	ppm	0.00071500	462.22
S_1820		0.00074100	ppm	0.0027120	366.08
Sb2068		-0.0025970	ppm	0.0012770	49.157
Se1960		-0.00025000	ppm	0.0024950	998.46
Si2881		-0.0055760	ppm	0.072919	1,307.8
Sn1899		0.00059600	ppm	0.00029900	50.149
Sr4077		0.000017000	ppm	0.00026200	1,567.1
Ti3349		0.00086900	ppm	0.0012910	148.54
Tl1908		-0.0017500	ppm	0.0022930	131.02
V_2924		0.00091500	ppm	0.00037900	41.435
Zn2062		0.000021000	ppm	0.00011000	513.72
Y_2243		5,672.6	Cts/S	4.3948	0.077474
Y_3600		53,976	Cts/S	22.566	0.041807
Y_3774		3,334.3	Cts/S	6.2838	0.18846

U 10

Acquire Date: 7/24/2020 5:28:12PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0035330	ppm	0.00059000	16.704
Al3961		-0.011422	ppm	0.0049030	42.923
As1890		0.00031900	ppm	0.0026010	815.53
B_2089		0.00048900	ppm	0.00088400	180.85
Ba4554		0.00065400	ppm	0.00021600	32.980
Be3130		0.00030100	ppm	0.000048000	15.867
Ca3179		0.0051310	ppm	0.010407	202.82
Cd2144		0.00022600	ppm	0.000048000	21.063
Co2286		0.0013160	ppm	0.00043100	32.737
Cr2677		0.00047000	ppm	0.000040000	8.6093
Cu3247		0.010576	ppm	0.000060000	0.56671
Fe2599		-0.013107	ppm	0.00076300	5.8183
K_7664		0.057727	ppm	0.062128	107.62
Mg2790		-0.24065	ppm	0.00031100	0.12931
Mn2576		0.00087000	ppm	0.000042000	4.8790
Mo2020		-0.0011510	ppm	0.00085700	74.431
Na5895		0.10825	ppm	0.00083900	0.77495
Ni2316		-0.0010470	ppm	0.00093300	89.107
P_1782		-0.0073770	ppm	0.00095700	12.968
Pb2203		0.0054580	ppm	0.0022750	41.676
S_1820		0.0080460	ppm	0.0059760	74.272
Sb2068		-0.0010010	ppm	0.0038730	386.99
Se1960		-0.013350	ppm	0.00026900	2.0132
Si2881		0.045963	ppm	0.0040700	8.8555
Sn1899		0.0014370	ppm	0.00076800	53.419
Sr4077		0.00027500	ppm	0.00019200	69.995
Ti3349		-0.00063900	ppm	0.00017900	27.963

U 10

Acquire Date: 7/24/2020 5:28:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0031420	ppm	0.00077100	24.523
V_2924		-0.0037080	ppm	0.00036200	9.7618
Zn2062		-0.00017100	ppm	0.00046800	273.75
Y_2243		5,682.2	Cts/S	1.7102	0.030097
Y_3600		53,828	Cts/S	215.58	0.40051
Y_3774		3,357.2	Cts/S	26.438	0.78750

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Acquire Date: 7/24/2020 5:32:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00011100	ppm	0.00078000	705.38
Al3961		-0.0076490	ppm	0.034441	450.30
As1890		0.0015470	ppm	0.0021260	137.43
B_2089		-0.00036100	ppm	0.00033800	93.766
Ba4554		0.000080000	ppm	0.00031100	391.59
Be3130		0.00033100	ppm	0.000090000	27.068
Ca3179		-0.0032080	ppm	0.0075230	234.54
Cd2144		0.000021000	ppm	0.000062000	296.26
Co2286		-0.00024700	ppm	0.00026400	106.55
Cr2677		-0.00035500	ppm	0.00013500	38.016
Cu3247		-0.00056500	ppm	0.00043200	76.463
Fe2599		-0.0019100	ppm	0.000017000	0.90850
K_7664		-0.014472	ppm	0.080446	555.89
Mg2790		-0.0055830	ppm	0.0041130	73.671
Mn2576		0.000023000	ppm	0.000050000	215.10
Mo2020		-0.00017000	ppm	0.00034400	202.32
Na5895		0.10124	ppm	0.0014170	1.4000
Ni2316		-0.00084900	ppm	0.0011860	139.78
P_1782		-0.011038	ppm	0.00078900	7.1507
Pb2203		-0.00056400	ppm	0.0015980	283.42
S_1820		0.0017020	ppm	0.0020590	120.99
Sb2068		-0.00055500	ppm	0.0031160	561.35
Se1960		-0.0036830	ppm	0.0030300	82.266
Si2881		0.099431	ppm	0.0010210	1.0271
Sn1899		-0.00012800	ppm	0.00040700	317.95
Sr4077		0.00025400	ppm	0.00037800	148.65
Ti3349		0.00057700	ppm	0.00075600	131.02
Tl1908		0.0012280	ppm	0.00043800	35.637
V_2924		0.00040800	ppm	0.000079000	19.238
Zn2062		-0.00029700	ppm	0.00014900	50.144
Y_2243		5,669.4	Cts/S	10.173	0.17943
Y_3600		53,770	Cts/S	335.75	0.62441
Y_3774		3,326.4	Cts/S	0.90009	0.027059

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Acquire Date: 7/24/2020 5:36:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00058600	ppm	0.00025100	42.811
Al3961		-0.0045660	ppm	0.025331	554.78
As1890		0.0012040	ppm	0.00073400	60.977
B_2089		-0.00025000	ppm	0.000057000	22.820
Ba4554		0.00047600	ppm	0.00058400	122.57
Be3130		0.00010300	ppm	0.00026600	257.34
Ca3179		-0.0013970	ppm	0.0012480	89.347
Cd2144		0.000085000	ppm	0.000018000	21.805
Co2286		-0.00013100	ppm	0.00028000	214.22
Cr2677		0.00047100	ppm	0.0016730	355.02
Cu3247		-0.00038800	ppm	0.0011430	294.33
Fe2599		-0.024888	ppm	0.0084480	33.945
K_7664		0.011068	ppm	0.0060740	54.876
Mg2790		-0.0074180	ppm	0.00058200	7.8430
Mn2576		0.000012000	ppm	0.000094000	767.65
Mo2020		-0.00013900	ppm	0.00060600	435.87
Na5895		0.081323	ppm	0.014050	17.277
Ni2316		-0.00018800	ppm	0.00030100	159.82
P_1782		-0.0074790	ppm	0.0036580	48.913
Pb2203		-0.0022080	ppm	0.00035700	16.191
S_1820		0.0038400	ppm	0.00061600	16.054
Sb2068		-0.00089900	ppm	0.0015450	171.82
Se1960		-0.0059300	ppm	0.00090800	15.319
Si2881		0.053551	ppm	0.021403	39.967
Sn1899		0.00024700	ppm	0.00044300	179.06
Sr4077		0.00013600	ppm	0.00012500	91.992
Ti3349		0.000044000	ppm	0.00021100	480.44
Tl1908		-0.0016820	ppm	0.0039330	233.82
V_2924		0.0012110	ppm	0.00074000	61.061
Zn2062		-0.00036200	ppm	0.00010800	29.781
Y_2243		5,677.6	Cts/S	5.5424	0.097617
Y_3600		53,787	Cts/S	238.11	0.44269
Y_3774		3,332.3	Cts/S	5.7476	0.17248

MB 320-397905/1-A

Acquire Date: 7/24/2020 5:40:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00010200	ppm	0.00034700	340.49
Al3961		-0.00034100	ppm	0.0049220	1,445.1
As1890		-0.00090400	ppm	0.0021280	235.33
B_2089		0.00029700	ppm	0.00036200	121.91
Ba4554		0.00057800	ppm	0.00022900	39.575
Be3130		0.00034500	ppm	0.00029500	85.671
Ca3179		0.12098	ppm	0.0018510	1.5304
Cd2144		0.000035000	ppm	0.000092000	261.06
Co2286		-0.00040400	ppm	0.0000020000	0.46848

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-397905/1-A

Acquire Date: 7/24/2020 5:40:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0017840	ppm	0.000019000	1.0836
Cu3247		-0.0014540	ppm	0.0016210	111.47
Fe2599		0.039974	ppm	0.0039930	9.9896
K_7664		0.043124	ppm	0.0072640	16.844
Mg2790		0.036419	ppm	0.0038160	10.478
Mn2576		0.0019420	ppm	0.000019000	0.96902
Mo2020		0.00033100	ppm	0.00023700	71.551
Na5895		0.17063	ppm	0.0024180	1.4168
Ni2316		0.00079400	ppm	0.000035000	4.4099
P_1782		0.0075730	ppm	0.0018090	23.885
Pb2203		-0.0027630	ppm	0.0027850	100.76
S_1820		0.055964	ppm	0.0011930	2.1311
Sb2068		0.0032760	ppm	0.0014330	43.726
Se1960		-0.0020900	ppm	0.0059100	282.81
Si2881		0.082063	ppm	0.062073	75.640
Sn1899	**F**	**0.023266**	**ppm**	**0.00036900**	**1.5841**
Sr4077		0.00042800	ppm	0.00019800	46.194
Ti3349		0.00059000	ppm	0.00063300	107.39
Tl1908		0.000036000	ppm	0.00034000	937.99
V_2924		0.000044000	ppm	0.00075800	1,730.3
Zn2062		0.0012540	ppm	0.000034000	2.7434
Y_2243		5,723.4	Cts/S	12.094	0.21131
Y_3600		54,272	Cts/S	157.86	0.29087
Y_3774		3,363.1	Cts/S	10.041	0.29856

CCV 2078482

Acquire Date: 7/24/2020 5:44:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50337	ppm	0.0018870	0.37497	.50000	Rel(%)	Pass	
Al3961		25.173	ppm	0.10955	0.43519	25.000	Rel(%)	Pass	
As1890		0.51209	ppm	0.00052100	0.10174	.50000	Rel(%)	Pass	
B_2089		1.0199	ppm	0.0026410	0.25890	1.0000	Rel(%)	Pass	
Ba4554		2.5558	ppm	0.013402	0.52439	2.5000	Rel(%)	Pass	
Be3130		0.50923	ppm	0.0023960	0.47049	.50000	Rel(%)	Pass	
Ca3179		25.461	ppm	0.086577	0.34004	25.000	Rel(%)	Pass	
Cd2144		0.51500	ppm	0.00092800	0.18017	.50000	Rel(%)	Pass	
Co2286		2.5726	ppm	0.0042530	0.16534	2.5000	Rel(%)	Pass	
Cr2677		2.5242	ppm	0.0070270	0.27837	2.5000	Rel(%)	Pass	
Cu3247		2.5162	ppm	0.012331	0.49006	2.5000	Rel(%)	Pass	
Fe2599		25.644	ppm	0.13208	0.51507	25.000	Rel(%)	Pass	
K_7664		25.096	ppm	0.23806	0.94860	25.000	Rel(%)	Pass	
Mg2790		25.242	ppm	0.10280	0.40724	25.000	Rel(%)	Pass	
Mn2576		2.5477	ppm	0.0099730	0.39146	2.5000	Rel(%)	Pass	
Mo2020		1.0216	ppm	0.0049010	0.47976	1.0000	Rel(%)	Pass	
Na5895		25.142	ppm	0.18651	0.74184	25.000	Rel(%)	Pass	
Ni2316		2.5887	ppm	0.0014320	0.055319	2.5000	Rel(%)	Pass	
P_1782		2.5900	ppm	0.014711	0.56800	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 5:44:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.51431	ppm	0.00041900	0.081561	.50000	Rel(%)	Pass	
S_1820		2.4503	ppm	0.0032740	0.13360	2.5000	Rel(%)	Pass	
Sb2068		0.50986	ppm	0.0010820	0.21226	.50000	Rel(%)	Pass	
Se1960		0.52138	ppm	0.0024210	0.46434	.50000	Rel(%)	Pass	
Si2881		2.6250	ppm	0.054182	2.0641	2.5000	Rel(%)	Pass	
Sn1899		2.5735	ppm	0.0080920	0.31442	2.5000	Rel(%)	Pass	
Sr4077		2.5403	ppm	0.014429	0.56798	2.5000	Rel(%)	Pass	
Ti3349		1.0138	ppm	0.0065060	0.64172	1.0000	Rel(%)	Pass	
Tl1908		0.51458	ppm	0.00039600	0.076880	.50000	Rel(%)	Pass	
V_2924		2.5379	ppm	0.0073880	0.29112	2.5000	Rel(%)	Pass	
Zn2062		2.5538	ppm	0.010742	0.42064	2.5000	Rel(%)	Pass	
Y_2243		5,617.4	Cts/S	8.6272	0.15358				
Y_3600		53,159	Cts/S	33.069	0.062207				
Y_3774		3,363.0	Cts/S	3.4704	0.10319				

CCB 2065750

Acquire Date: 7/24/2020 5:48:00PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00028200	ppm	0.00065300	231.27	.00000	Abs	Pass	
Al3961		-0.032035	ppm	0.0071950	22.459	.00000	Abs	Pass	
As1890		0.0028830	ppm	0.0029540	102.45	.00000	Abs	Pass	
B_2089		0.0022200	ppm	0.00089800	40.443	.00000	Abs	Pass	
Ba4554		0.00042500	ppm	0.00028200	66.369	.00000	Abs	Pass	
Be3130		0.00022300	ppm	0.00013100	58.660	.00000	Abs	Pass	
Ca3179		-0.00032700	ppm	0.012836	3,930.3	.00000	Abs	Pass	
Cd2144		0.000012000	ppm	0.000044000	379.60	.00000	Abs	Pass	
Co2286		0.00016500	ppm	0.00013500	81.735	.00000	Abs	Pass	
Cr2677		0.000089000	ppm	0.00074400	835.10	.00000	Abs	Pass	
Cu3247		-0.00017300	ppm	0.0010980	634.03	.00000	Abs	Pass	
Fe2599		0.039503	ppm	0.023794	60.233	.00000	Abs	Pass	
K_7664		0.010367	ppm	0.0099440	95.917	.00000	Abs	Pass	
Mg2790		-0.0022360	ppm	0.0032830	146.86	.00000	Abs	Pass	
Mn2576		0.00037000	ppm	0.0000090000	2.3581	.00000	Abs	Pass	
Mo2020		0.0075750	ppm	0.00070900	9.3591	.00000	Abs	Pass	
Na5895		0.081591	ppm	0.00010300	0.12634	.00000	Abs	Pass	
Ni2316		0.0013650	ppm	0.00035500	25.992	.00000	Abs	Pass	
P_1782		-0.0086950	ppm	0.00056600	6.5063	.00000	Abs	Pass	
Pb2203		-0.0019650	ppm	0.00085900	43.683	.00000	Abs	Pass	
S_1820		0.0023080	ppm	0.0014320	62.048	.00000	Abs	Pass	
Sb2068		0.0013940	ppm	0.0026620	191.00	.00000	Abs	Pass	
Se1960		-0.0024710	ppm	0.0017020	68.884	.00000	Abs	Pass	
Si2881		0.056989	ppm	0.012185	21.382	.00000	Abs	Pass	
Sn1899		0.0034800	ppm	0.00079300	22.799	.00000	Abs	Pass	
Sr4077		0.00094900	ppm	0.00030900	32.501	.00000	Abs	Pass	
Ti3349		0.0047460	ppm	0.00043900	9.2395	.00000	Abs	Pass	
Tl1908		0.00050100	ppm	0.00032000	63.808	.00000	Abs	Pass	
V_2924		0.0016010	ppm	0.00081400	50.816	.00000	Abs	Pass	

CCB 2065750

Acquire Date: 7/24/2020 5:48:00PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0011800	ppm	0.00075800	64.266	.00000	Abs	Pass	
Y_2243		5,675.4	Cts/S	16.388	0.28876				
Y_3600		53,973	Cts/S	151.60	0.28089				
Y_3774		3,336.5	Cts/S	8.6724	0.25992				

LCS 320-397905/2-A

Acquire Date: 7/24/2020 5:52:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.045851	ppm	0.0011330	2.4711
Al3961		4.6590	ppm	0.0058480	0.12552
As1890	**W**	**0.43643**	**ppm**	**0.000032000**	**0.0073860**
B_2089		4.2533	ppm	0.014949	0.35147
Ba4554	**W**	**0.47198**	**ppm**	**0.0036990**	**0.78377**
Be3130		0.23368	ppm	0.0016190	0.69288
Ca3179		23.728	ppm	0.17956	0.75672
Cd2144	**W**	**0.22769**	**ppm**	**0.00064300**	**0.28240**
Co2286		0.23213	ppm	0.00028200	0.12144
Cr2677	**W**	**0.23528**	**ppm**	**0.0020200**	**0.85866**
Cu3247		0.22884	ppm	0.0022140	0.96742
Fe2599		4.8701	ppm	0.037886	0.77794
K_7664		22.898	ppm	0.24802	1.0831
Mg2790		22.902	ppm	0.12876	0.56221
Mn2576		0.23743	ppm	0.0014270	0.60106
Mo2020		0.23566	ppm	0.0018380	0.78011
Na5895		23.303	ppm	0.17272	0.74117
Ni2316		0.22789	ppm	0.00065400	0.28706
P_1782		4.8282	ppm	0.023492	0.48656
Pb2203	**W**	**0.22859**	**ppm**	**0.00037000**	**0.16173**
S_1820		4.5772	ppm	0.013997	0.30580
Sb2068		0.42058	ppm	0.0019950	0.47444
Se1960	**W**	**0.42174**	**ppm**	**0.0023070**	**0.54705**
Si2881	**F**	**3.5745**	**ppm**	**0.049919**	**1.3966**
Sn1899		0.50216	ppm	0.0020550	0.40929
Sr4077		0.23435	ppm	0.0022560	0.96267
Ti3349	**W**	**0.23505**	**ppm**	**0.0010030**	**0.42657**
Tl1908		0.45558	ppm	0.0027660	0.60708
V_2924		0.23324	ppm	0.00094300	0.40441
Zn2062		0.47122	ppm	0.0016370	0.34740
Y_2243		5,619.9	Cts/S	1.7047	0.030333
Y_3600		53,182	Cts/S	102.84	0.19337
Y_3774		3,352.8	Cts/S	1.2245	0.036523

720-99293-A-5-A

Acquire Date: 7/24/2020 5:55:47PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0038080	ppm	0.00083800	21.999
Al3961		128.95	ppm	0.91614	0.71047
As1890		0.040872	ppm	0.000084000	0.20473
B_2089		0.023755	ppm	0.0012160	5.1203
Ba4554		0.79661	ppm	0.0058980	0.74033
Be3130		0.0037840	ppm	0.00012300	3.2405
Ca3179		29.803	ppm	0.23591	0.79154
Cd2144		0.0010710	ppm	0.000086000	8.0469
Co2286		0.14316	ppm	0.00050200	0.35089
Cr2677		0.40534	ppm	0.00014800	0.036517
Cu3247		0.32237	ppm	0.00051200	0.15895
Fe2599		306.79	ppm	2.0502	0.66827
K_7664		11.763	ppm	0.18499	1.5727
Mg2790		49.720	ppm	0.070176	0.14114
Mn2576		2.2272	ppm	0.0056430	0.25338
Mo2020		0.0058610	ppm	0.000093000	1.5921
Na5895		1.0661	ppm	0.013459	1.2625
Ni2316		0.48286	ppm	0.00065300	0.13526
P_1782		4.4529	ppm	0.012884	0.28934
Pb2203		0.92145	ppm	0.00037200	0.040415
S_1820		6.6549	ppm	0.0046750	0.070252
Sb2068		0.010420	ppm	0.0053320	51.173
Se1960		0.0027750	ppm	0.00061800	22.268
Si2881		2.1536	ppm	0.039165	1.8186
Sn1899		0.024698	ppm	0.00048200	1.9503
Sr4077		0.14798	ppm	0.00082100	0.55498
Ti3349		4.3231	ppm	0.015856	0.36678
Tl1908		0.0015500	ppm	0.0036170	233.41
V_2924		0.72896	ppm	0.0031610	0.43362
Zn2062		2.7762	ppm	0.0063920	0.23025
Y_2243		5,772.1	Cts/S	5.3426	0.092559
Y_3600		53,955	Cts/S	168.37	0.31205
Y_3774		3,485.2	Cts/S	3.1218	0.089574

sd 720-99293-A-5A@5

Acquire Date: 7/24/2020 5:59:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00084400	ppm	0.00047300	56.047
Al3961		26.694	ppm	0.21836	0.81801
As1890		0.0087880	ppm	0.00073400	8.3490
B_2089		0.0069820	ppm	0.00088600	12.694
Ba4554		0.16609	ppm	0.0015290	0.92070
Be3130		0.00095400	ppm	0.000055000	5.7224
Ca3179		6.2076	ppm	0.026061	0.41983
Cd2144		0.00028300	ppm	0.000022000	7.7463
Co2286		0.030484	ppm	0.00013600	0.44629

sd 720-99293-A-5A@5

Acquire Date: 7/24/2020 5:59:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.083891	ppm	0.00062300	0.74258
Cu3247		0.066688	ppm	0.00039500	0.59203
Fe2599		65.427	ppm	0.37641	0.57531
K_7664		2.3828	ppm	0.0057750	0.24238
Mg2790		10.340	ppm	0.042012	0.40630
Mn2576		0.46625	ppm	0.0016080	0.34496
Mo2020		0.0012240	ppm	0.00012300	10.047
Na5895		0.26434	ppm	0.021376	8.0866
Ni2316		0.10304	ppm	0.00010200	0.098628
P_1782		0.93643	ppm	0.0026060	0.27834
Pb2203		0.19279	ppm	0.00028100	0.14584
S_1820		1.4159	ppm	0.0072510	0.51208
Sb2068		0.00049700	ppm	0.00093000	186.93
Se1960		-0.0021180	ppm	0.0049310	232.77
Si2881		0.44655	ppm	0.061304	13.728
Sn1899		0.0058780	ppm	0.0010320	17.555
Sr4077		0.030834	ppm	0.00064600	2.0955
Ti3349		0.90177	ppm	0.0046630	0.51711
Tl1908		0.0010150	ppm	0.0017290	170.33
V_2924		0.15062	ppm	0.00063600	0.42246
Zn2062		0.60408	ppm	0.0023970	0.39681
Y_2243		5,756.7	Cts/S	6.8853	0.11961
Y_3600		54,455	Cts/S	82.856	0.15215
Y_3774		3,411.2	Cts/S	6.6546	0.19508

pds 720-99293-A-5-A

Acquire Date: 7/24/2020 6:03:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.093637	ppm	0.00020100	0.21505
Al3961		133.79	ppm	0.61278	0.45800
As1890		0.13143	ppm	0.00039800	0.30252
B_2089		0.91452	ppm	0.0032500	0.35541
Ba4554		0.86821	ppm	0.0053750	0.61909
Be3130		0.051843	ppm	0.00020800	0.40155
Ca3179		38.303	ppm	0.16031	0.41852
Cd2144		0.094505	ppm	0.00067000	0.70922
Co2286		0.23570	ppm	0.0013170	0.55890
Cr2677		0.48871	ppm	0.00019900	0.040655
Cu3247		0.40830	ppm	0.0010290	0.25207
Fe2599		299.86	ppm	1.0947	0.36507
K_7664		21.047	ppm	0.21972	1.0439
Mg2790		57.371	ppm	0.13266	0.23123
Mn2576		2.2380	ppm	0.0065530	0.29282
Mo2020		0.10009	ppm	0.000028000	0.028387
Na5895		10.753	ppm	0.062212	0.57857
Ni2316		0.55865	ppm	0.0022300	0.39919

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 720-99293-A-5-A

Acquire Date: 7/24/2020 6:03:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.2664	ppm	0.031628	0.60056
Pb2203		0.98055	ppm	0.0042120	0.42960
S_1820		8.3031	ppm	0.049367	0.59456
Sb2068		0.092872	ppm	0.0038970	4.1964
Se1960		0.092022	ppm	0.0060660	6.5917
Si2881		3.0473	ppm	0.033637	1.1039
Sn1899		0.12154	ppm	0.0010640	0.87585
Sr4077		0.24173	ppm	0.0013970	0.57789
Ti3349		4.2624	ppm	0.0090760	0.21293
Tl1908		0.093648	ppm	0.00047800	0.51023
V_2924		0.79725	ppm	0.00093900	0.11780
Zn2062		2.7453	ppm	0.0058910	0.21457
Y_2243		5,726.8	Cts/S	19.056	0.33276
Y_3600		53,980	Cts/S	53.935	0.099917
Y_3774		3,503.2	Cts/S	28.270	0.80699

720-99293-A-5-B MS

Acquire Date: 7/24/2020 6:07:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.041549	ppm	0.00044700	1.0755
Al3961		156.70	ppm	0.35484	0.22644
As1890		0.44444	ppm	0.0022280	0.50138
B_2089		3.8031	ppm	0.0085360	0.22444
Ba4554		1.1953	ppm	0.0039870	0.33351
Be3130		0.22716	ppm	0.00086200	0.37932
Ca3179		51.925	ppm	0.33408	0.64339
Cd2144		0.21533	ppm	0.00013900	0.064406
Co2286		0.35115	ppm	0.0011720	0.33391
Cr2677		0.61039	ppm	0.0027970	0.45816
Cu3247		0.53715	ppm	0.0033280	0.61954
Fe2599		272.63	ppm	1.0811	0.39656
K_7664		33.404	ppm	0.079330	0.23748
Mg2790		65.104	ppm	0.17710	0.27203
Mn2576		2.3676	ppm	0.0068390	0.28886
Mo2020		0.21297	ppm	0.0015980	0.75016
Na5895		23.825	ppm	0.10499	0.44065
Ni2316		0.67507	ppm	0.0013490	0.19987
P_1782		8.5709	ppm	0.016195	0.18896
Pb2203		1.1541	ppm	0.0012380	0.10726
S_1820		11.794	ppm	0.024765	0.20998
Sb2068		0.18032	ppm	0.0025270	1.4014
Se1960		0.38893	ppm	0.0049390	1.2699
Si2881		3.7418	ppm	0.027562	0.73659
Sn1899		0.43923	ppm	0.00061200	0.13936
Sr4077		0.39184	ppm	0.0016590	0.42327
Ti3349	**W**	**5.0341**	**ppm**	**0.011725**	**0.23292**

720-99293-A-5-B MS

Acquire Date: 7/24/2020 6:07:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.42714	ppm	0.00053800	0.12595
V_2924		0.92588	ppm	0.0039900	0.43092
Zn2062		3.4235	ppm	0.012316	0.35974
Y_2243		5,709.1	Cts/S	24.764	0.43377
Y_3600		53,133	Cts/S	20.477	0.038539
Y_3774		3,502.2	Cts/S	11.192	0.31956

720-99293-A-5-C MSD

Acquire Date: 7/24/2020 6:11:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.039747	ppm	0.0013820	3.4778
Al3961		176.16	ppm	0.92912	0.52744
As1890		0.43847	ppm	0.0010540	0.24028
B_2089		3.8317	ppm	0.011296	0.29480
Ba4554		1.2354	ppm	0.0079920	0.64693
Be3130		0.22710	ppm	0.00071500	0.31477
Ca3179		51.512	ppm	0.32674	0.63430
Cd2144		0.21568	ppm	0.0010240	0.47468
Co2286		0.36109	ppm	0.0011420	0.31639
Cr2677		0.65481	ppm	0.0013560	0.20708
Cu3247		0.53266	ppm	0.0019830	0.37222
Fe2599		293.50	ppm	1.3413	0.45699
K_7664		33.366	ppm	0.32249	0.96654
Mg2790		71.687	ppm	0.22419	0.31274
Mn2576		2.5150	ppm	0.0094540	0.37592
Mo2020		0.21031	ppm	0.0010470	0.49789
Na5895		23.871	ppm	0.16108	0.67479
Ni2316		0.71404	ppm	0.0044070	0.61712
P_1782		9.0154	ppm	0.027075	0.30032
Pb2203		1.2913	ppm	0.0024910	0.19292
S_1820		10.684	ppm	0.023538	0.22032
Sb2068		0.17503	ppm	0.0016460	0.94026
Se1960		0.38906	ppm	0.0036940	0.94937
Si2881		4.3767	ppm	0.032251	0.73687
Sn1899		0.44464	ppm	0.0025290	0.56882
Sr4077		0.39505	ppm	0.0023150	0.58611
Ti3349	**W**	**6.0192**	**ppm**	**0.027374**	**0.45478**
Tl1908		0.42444	ppm	0.0014710	0.34650
V_2924		0.95421	ppm	0.0036850	0.38617
Zn2062		3.7215	ppm	0.014912	0.40070
Y_2243		5,705.1	Cts/S	9.1527	0.16043
Y_3600		53,536	Cts/S	110.43	0.20627
Y_3774		3,482.3	Cts/S	15.166	0.43551

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99293-A-6-A

Acquire Date: 7/24/2020 6:14:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.0052510**	**ppm**	**0.00087100**	**16.585**
Al3961		188.22	ppm	0.77335	0.41087
As1890		0.24136	ppm	0.0024110	0.99892
B_2089		0.029889	ppm	0.00091400	3.0587
Ba4554		0.91691	ppm	0.0042060	0.45870
Be3130		0.0050170	ppm	0.000020000	0.40790
Ca3179		50.807	ppm	0.29143	0.57361
Cd2144		0.0020600	ppm	0.000090000	4.3888
Co2286		0.23463	ppm	0.00085500	0.36439
Cr2677		1.3030	ppm	0.0023170	0.17781
Cu3247		0.31629	ppm	0.0035920	1.1357
Fe2599		321.40	ppm	1.3986	0.43514
K_7664		8.0224	ppm	0.047885	0.59689
Mg2790		72.372	ppm	0.32280	0.44602
Mn2576		10.002	ppm	0.017264	0.17260
Mo2020		0.0046020	ppm	0.00021300	4.6228
Na5895		0.80050	ppm	0.0073680	0.92045
Ni2316		1.3348	ppm	0.0051790	0.38799
P_1782		6.0917	ppm	0.018309	0.30055
Pb2203	**W**	**26.747**	**ppm**	**0.028992**	**0.10839**
S_1820		4.1336	ppm	0.0089480	0.21647
Sb2068		0.11441	ppm	0.0029680	2.5945
Se1960		-0.0029690	ppm	0.0032340	108.93
Si2881		1.8829	ppm	0.00013200	0.0070200
Sn1899		0.031795	ppm	0.00059600	1.8750
Sr4077		0.18042	ppm	0.00090200	0.49978
Ti3349		3.6944	ppm	0.014679	0.39734
Tl1908		0.000092000	ppm	0.00060100	650.69
V_2924		0.81581	ppm	0.0031400	0.38494
Zn2062		0.61519	ppm	0.0036790	0.59805
Y_2243		5,851.5	Cts/S	9.6220	0.16444
Y_3600		54,305	Cts/S	59.029	0.10870
Y_3774		3,576.1	Cts/S	7.8672	0.21999

720-99293-A-7-A

Acquire Date: 7/24/2020 6:18:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.0050270**	**ppm**	**0.00067800**	**13.490**
Al3961		142.86	ppm	0.14733	0.10313
As1890		0.070742	ppm	0.0013150	1.8582
B_2089		0.021235	ppm	0.00071800	3.3811
Ba4554		0.81489	ppm	0.000011000	0.0013790
Be3130		0.0050310	ppm	0.00030600	6.0876
Ca3179		44.312	ppm	0.068496	0.15458
Cd2144		0.0011900	ppm	0.00010500	8.8317
Co2286		0.23833	ppm	0.0014960	0.62762

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99293-A-7-A

Acquire Date: 7/24/2020 6:18:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.44305	ppm	0.0024520	0.55336
Cu3247		1.0407	ppm	0.0026840	0.25790
Fe2599		347.42	ppm	0.60610	0.17446
K_7664		8.3380	ppm	0.10027	1.2026
Mg2790		54.145	ppm	0.21285	0.39310
Mn2576		10.038	ppm	0.031027	0.30910
Mo2020		0.0048320	ppm	0.00040300	8.3365
Na5895		0.79662	ppm	0.0043710	0.54875
Ni2316		0.58420	ppm	0.000038000	0.0064230
P_1782		3.5710	ppm	0.014955	0.41879
Pb2203		0.24665	ppm	0.0019990	0.81049
S_1820		0.061224	ppm	0.0036520	5.9644
Sb2068		-0.0010740	ppm	0.0041880	389.92
Se1960		0.00057300	ppm	0.0025100	438.35
Si2881		2.0521	ppm	0.044052	2.1467
Sn1899		0.028150	ppm	0.00086700	3.0815
Sr4077		0.23766	ppm	0.0010080	0.42395
Ti3349	**W**	**5.7464**	**ppm**	**0.030722**	**0.53464**
Tl1908		0.0029780	ppm	0.00072500	24.337
V_2924		0.80579	ppm	0.0053540	0.66442
Zn2062		0.62768	ppm	0.0043510	0.69324
Y_2243		5,760.3	Cts/S	6.7756	0.11763
Y_3600		54,090	Cts/S	140.45	0.25966
Y_3774		3,485.3	Cts/S	9.6070	0.27564

720-99293-A-8-A

Acquire Date: 7/24/2020 6:22:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.0084060**	**ppm**	**0.0011200**	**13.322**
Al3961		163.80	ppm	0.83007	0.50675
As1890		0.080308	ppm	0.0031420	3.9122
B_2089		0.021678	ppm	0.00063900	2.9482
Ba4554		0.76758	ppm	0.0047050	0.61291
Be3130		0.0056510	ppm	0.0000090000	0.15957
Ca3179		27.569	ppm	0.17290	0.62717
Cd2144		0.00096000	ppm	0.000031000	3.2662
Co2286		0.20662	ppm	0.0011450	0.55440
Cr2677		1.2835	ppm	0.0035410	0.27591
Cu3247		0.26740	ppm	0.00057000	0.21334
Fe2599		387.24	ppm	1.8418	0.47563
K_7664		7.8993	ppm	0.045150	0.57157
Mg2790		69.737	ppm	0.31541	0.45228
Mn2576		4.2931	ppm	0.020751	0.48336
Mo2020		0.0032360	ppm	0.00031900	9.8635
Na5895		0.89892	ppm	0.0034520	0.38404
Ni2316		1.0153	ppm	0.0031480	0.31005

720-99293-A-8-A

Acquire Date: 7/24/2020 6:22:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.2310	ppm	0.018402	0.43493
Pb2203		1.8032	ppm	0.0042120	0.23357
S_1820		0.40728	ppm	0.0036740	0.90221
Sb2068		0.024310	ppm	0.00066900	2.7517
Se1960		0.0016440	ppm	0.0024050	146.33
Si2881		2.5181	ppm	0.021001	0.83400
Sn1899		0.029301	ppm	0.00077700	2.6533
Sr4077		0.13635	ppm	0.00084100	0.61674
Ti3349		4.8454	ppm	0.020725	0.42772
Tl1908		0.0015690	ppm	0.00017000	10.828
V_2924		1.0172	ppm	0.0028070	0.27598
Zn2062		0.63491	ppm	0.0042170	0.66417
Y_2243		5,708.3	Cts/S	6.3534	0.11130
Y_3600		53,612	Cts/S	171.58	0.32005
Y_3774		3,476.4	Cts/S	14.689	0.42254

720-99293-A-9-A

Acquire Date: 7/24/2020 6:26:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**-0.0063260**	**ppm**	**0.00075800**	**11.985**
Al3961		186.57	ppm	1.4237	0.76307
As1890		0.25933	ppm	0.0027360	1.0550
B_2089		0.019767	ppm	0.00068700	3.4733
Ba4554		0.91716	ppm	0.0075730	0.82570
Be3130		0.0050970	ppm	0.000076000	1.4850
Ca3179		41.822	ppm	0.34128	0.81602
Cd2144		0.0016070	ppm	0.00013800	8.5684
Co2286		0.25044	ppm	0.0013160	0.52537
Cr2677		1.4454	ppm	0.0024190	0.16734
Cu3247		0.33125	ppm	0.00022900	0.069252
Fe2599		379.05	ppm	2.9767	0.78532
K_7664		10.076	ppm	0.048947	0.48580
Mg2790		74.560	ppm	0.27544	0.36942
Mn2576		10.024	ppm	0.087352	0.87147
Mo2020		0.0042790	ppm	0.00015300	3.5653
Na5895		0.77963	ppm	0.016283	2.0886
Ni2316		1.3655	ppm	0.0048830	0.35760
P_1782		6.7087	ppm	0.034492	0.51413
Pb2203	**W**	**25.954**	**ppm**	**0.070753**	**0.27262**
S_1820		3.1897	ppm	0.0036010	0.11290
Sb2068		0.13080	ppm	0.0014740	1.1266
Se1960		-0.0036240	ppm	0.0020550	56.709
Si2881		2.1774	ppm	0.022081	1.0141
Sn1899		0.029277	ppm	0.0010740	3.6682
Sr4077		0.15800	ppm	0.00078700	0.49811
Ti3349		3.9623	ppm	0.019008	0.47973

720-99293-A-9-A

Acquire Date: 7/24/2020 6:26:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0030260	ppm	0.0025570	84.529
V_2924		0.89806	ppm	0.0037390	0.41638
Zn2062		0.63910	ppm	0.0052890	0.82752
Y_2243		5,802.1	Cts/S	6.2709	0.10808
Y_3600		53,973	Cts/S	138.04	0.25576
Y_3774		3,548.5	Cts/S	4.7510	0.13389

CCV 2078482

Acquire Date: 7/24/2020 6:30:24PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.49585	ppm	0.0010720	0.21626	.50000	Rel(%)	Pass	
Al3961		24.678	ppm	0.10936	0.44313	25.000	Rel(%)	Pass	
As1890		0.49734	ppm	0.0027290	0.54864	.50000	Rel(%)	Pass	
B_2089		0.99834	ppm	0.0011350	0.11369	1.0000	Rel(%)	Pass	
Ba4554		2.5042	ppm	0.017088	0.68235	2.5000	Rel(%)	Pass	
Be3130		0.49899	ppm	0.0032360	0.64845	.50000	Rel(%)	Pass	
Ca3179		24.902	ppm	0.20386	0.81863	25.000	Rel(%)	Pass	
Cd2144		0.50197	ppm	0.00083400	0.16614	.50000	Rel(%)	Pass	
Co2286		2.5127	ppm	0.0061640	0.24530	2.5000	Rel(%)	Pass	
Cr2677		2.5209	ppm	0.013493	0.53525	2.5000	Rel(%)	Pass	
Cu3247		2.4681	ppm	0.0098650	0.39970	2.5000	Rel(%)	Pass	
Fe2599		25.715	ppm	0.11666	0.45367	25.000	Rel(%)	Pass	
K_7664		24.499	ppm	0.23576	0.96230	25.000	Rel(%)	Pass	
Mg2790		24.909	ppm	0.12781	0.51310	25.000	Rel(%)	Pass	
Mn2576		2.5191	ppm	0.010824	0.42970	2.5000	Rel(%)	Pass	
Mo2020		0.99644	ppm	0.0075940	0.76206	1.0000	Rel(%)	Pass	
Na5895		24.651	ppm	0.19900	0.80727	25.000	Rel(%)	Pass	
Ni2316		2.5132	ppm	0.0095730	0.38090	2.5000	Rel(%)	Pass	
P_1782		2.5469	ppm	0.011472	0.45041	2.5000	Rel(%)	Pass	
Pb2203		0.50543	ppm	0.0064810	1.2822	.50000	Rel(%)	Pass	
S_1820		2.3976	ppm	0.00081700	0.034090	2.5000	Rel(%)	Pass	
Sb2068		0.49740	ppm	0.000038000	0.0075580	.50000	Rel(%)	Pass	
Se1960		0.50554	ppm	0.0018820	0.37225	.50000	Rel(%)	Pass	
Si2881		2.5721	ppm	0.025708	0.99953	2.5000	Rel(%)	Pass	
Sn1899		2.5185	ppm	0.0078920	0.31335	2.5000	Rel(%)	Pass	
Sr4077		2.4896	ppm	0.016529	0.66390	2.5000	Rel(%)	Pass	
Ti3349		1.0120	ppm	0.0063590	0.62837	1.0000	Rel(%)	Pass	
Tl1908		0.50403	ppm	0.0018880	0.37451	.50000	Rel(%)	Pass	
V_2924		2.4961	ppm	0.010820	0.43348	2.5000	Rel(%)	Pass	
Zn2062		2.5300	ppm	0.010542	0.41667	2.5000	Rel(%)	Pass	
Y_2243		5,594.1	Cts/S	4.3188	0.077202				
Y_3600		52,481	Cts/S	216.18	0.41193				
Y_3774		3,339.9	Cts/S	1.1847	0.035472				

CCB 2065750

Acquire Date: 7/24/2020 6:34:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00062600	ppm	0.000084000	13.368	.00000	Abs	Pass	
Al3961		0.036844	ppm	0.022345	60.647	.00000	Abs	Pass	
As1890		0.0016870	ppm	0.00040000	23.695	.00000	Abs	Pass	
B_2089		0.0046490	ppm	0.00013800	2.9597	.00000	Abs	Pass	
Ba4554		0.00059500	ppm	0.00046600	78.207	.00000	Abs	Pass	
Be3130		0.00025100	ppm	0.00030400	120.87	.00000	Abs	Pass	
Ca3179		0.0048950	ppm	0.0011400	23.292	.00000	Abs	Pass	
Cd2144		0.000029000	ppm	0.000086000	299.07	.00000	Abs	Pass	
Co2286		0.00012100	ppm	0.00023200	191.43	.00000	Abs	Pass	
Cr2677		0.00046500	ppm	0.00047400	101.77	.00000	Abs	Pass	
Cu3247		0.0024430	ppm	0.00042700	17.474	.00000	Abs	Pass	
Fe2599	**F**	**0.17438**	**ppm**	**0.00012800**	**0.073460**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.033651	ppm	0.047184	140.22	.00000	Abs	Pass	
Mg2790		-0.0026610	ppm	0.013282	499.13	.00000	Abs	Pass	
Mn2576		0.0017330	ppm	0.00080400	46.431	.00000	Abs	Pass	
Mo2020		0.0066900	ppm	0.00033200	4.9632	.00000	Abs	Pass	
Na5895		0.056354	ppm	0.019343	34.325	.00000	Abs	Pass	
Ni2316		0.00021900	ppm	0.00078100	356.88	.00000	Abs	Pass	
P_1782		-0.0044130	ppm	0.0028290	64.099	.00000	Abs	Pass	
Pb2203		0.0014480	ppm	0.0021280	146.89	.00000	Abs	Pass	
S_1820		0.0056680	ppm	0.00019200	3.3957	.00000	Abs	Pass	
Sb2068		0.0015560	ppm	0.0020920	134.49	.00000	Abs	Pass	
Se1960		-0.0013960	ppm	0.0015200	108.84	.00000	Abs	Pass	
Si2881		0.053357	ppm	0.015485	29.021	.00000	Abs	Pass	
Sn1899		0.0035060	ppm	0.00049000	13.972	.00000	Abs	Pass	
Sr4077		0.00064300	ppm	0.00015400	23.998	.00000	Abs	Pass	
Ti3349		0.0062350	ppm	0.00031200	5.0056	.00000	Abs	Pass	
Tl1908		0.0012300	ppm	0.0018370	149.34	.00000	Abs	Pass	
V_2924		0.0019450	ppm	0.000021000	1.1024	.00000	Abs	Pass	
Zn2062	**W**	**0.0053780**	**ppm**	**0.00079600**	**14.810**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		5,666.6	Cts/S	4.6195	0.081521				
Y_3600		53,739	Cts/S	60.517	0.11261				
Y_3774		3,347.5	Cts/S	1.6240	0.048514				

720-99307-A-1-A

Acquire Date: 7/24/2020 6:38:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0021640	ppm	0.00023200	10.728
Al3961		132.76	ppm	0.47354	0.35669
As1890		0.035236	ppm	0.0021750	6.1740
B_2089		0.10842	ppm	0.0011360	1.0478
Ba4554		2.5049	ppm	0.010232	0.40848
Be3130		0.0051540	ppm	0.000078000	1.5046
Ca3179		138.16	ppm	0.75086	0.54346
Cd2144		0.0031450	ppm	0.000060000	1.8927
Co2286		0.083155	ppm	0.00042700	0.51290
Cr2677		0.39967	ppm	0.0030060	0.75220

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99307-A-1-A

Acquire Date: 7/24/2020 6:38:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.25777	ppm	0.00028000	0.10873
Fe2599		190.55	ppm	0.81167	0.42597
K_7664		20.471	ppm	0.15845	0.77405
Mg2790		61.733	ppm	0.32562	0.52746
Mn2576		2.6277	ppm	0.011958	0.45508
Mo2020		0.0081470	ppm	0.000079000	0.97071
Na5895		27.549	ppm	0.20723	0.75222
Ni2316		0.40204	ppm	0.00036900	0.091671
P_1782		3.0285	ppm	0.014102	0.46566
Pb2203		0.073339	ppm	0.0031970	4.3586
S_1820		1.5800	ppm	0.0020870	0.13211
Sb2068		0.018264	ppm	0.00026300	1.4375
Se1960		0.0015960	ppm	0.0084280	527.94
Si2881		1.9378	ppm	0.051664	2.6661
Sn1899		0.026793	ppm	0.0010150	3.7885
Sr4077		0.57598	ppm	0.0030110	0.52279
Ti3349		1.7208	ppm	0.0069490	0.40384
Tl1908		-0.00014000	ppm	0.0014580	1,038.6
V_2924		0.37381	ppm	0.0021370	0.57158
Zn2062		0.64719	ppm	0.0028860	0.44590
Y_2243		5,616.4	Cts/S	25.604	0.45588
Y_3600		52,680	Cts/S	393.26	0.74650
Y_3774		3,437.8	Cts/S	13.825	0.40216

720-99307-A-4-A

Acquire Date: 7/24/2020 6:42:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0035450	ppm	0.00013100	3.6933
Al3961		191.11	ppm	1.5044	0.78719
As1890		0.063263	ppm	0.0014240	2.2502
B_2089		0.12546	ppm	0.00058000	0.46242
Ba4554		2.0219	ppm	0.014417	0.71307
Be3130		0.0054460	ppm	0.00045200	8.3008
Ca3179		875.96	ppm	6.1411	0.70107
Cd2144		0.0036810	ppm	0.000050000	1.3653
Co2286		0.099376	ppm	0.000072000	0.072584
Cr2677		0.51343	ppm	0.0016050	0.31252
Cu3247		0.26025	ppm	0.00036900	0.14175
Fe2599		241.15	ppm	1.6378	0.67918
K_7664		12.080	ppm	0.063278	0.52382
Mg2790		87.631	ppm	0.49848	0.56884
Mn2576		4.0413	ppm	0.022069	0.54609
Mo2020		0.0092340	ppm	0.00016900	1.8310
Na5895		20.977	ppm	0.23100	1.1012
Ni2316		0.47303	ppm	0.0015550	0.32877
P_1782		3.4994	ppm	0.0074520	0.21295

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99307-A-4-A

Acquire Date: 7/24/2020 6:42:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.072741	ppm	0.00026000	0.35682
S_1820		4.9264	ppm	0.00056400	0.011457
Sb2068		-0.0074270	ppm	0.0010980	14.779
Se1960		-0.0042600	ppm	0.00069700	16.370
Si2881		1.8404	ppm	0.010118	0.54977
Sn1899		0.025001	ppm	0.00032200	1.2899
Sr4077		1.7330	ppm	0.012880	0.74324
Ti3349		4.1333	ppm	0.016587	0.40132
Tl1908		-0.0023260	ppm	0.000049000	2.0960
V_2924		0.57206	ppm	0.00051600	0.090258
Zn2062		0.60658	ppm	0.00085900	0.14160
Y_2243		5,361.7	Cts/S	3.7290	0.069550
Y_3600		49,955	Cts/S	220.22	0.44083
Y_3774		3,411.1	Cts/S	13.167	0.38600

CCV 2078482

Acquire Date: 7/24/2020 6:45:56PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50049	ppm	0.0016700	0.33361	.50000	Rel(%)	Pass	
Al3961		24.785	ppm	0.11841	0.47776	25.000	Rel(%)	Pass	
As1890		0.50058	ppm	0.0037020	0.73952	.50000	Rel(%)	Pass	
B_2089		1.0019	ppm	0.0020250	0.20212	1.0000	Rel(%)	Pass	
Ba4554		2.5048	ppm	0.018462	0.73706	2.5000	Rel(%)	Pass	
Be3130		0.49809	ppm	0.0027540	0.55285	.50000	Rel(%)	Pass	
Ca3179		25.023	ppm	0.11815	0.47218	25.000	Rel(%)	Pass	
Cd2144		0.50535	ppm	0.0014660	0.29014	.50000	Rel(%)	Pass	
Co2286		2.5193	ppm	0.0063500	0.25206	2.5000	Rel(%)	Pass	
Cr2677		2.5432	ppm	0.0089640	0.35248	2.5000	Rel(%)	Pass	
Cu3247		2.4609	ppm	0.0099020	0.40238	2.5000	Rel(%)	Pass	
Fe2599		25.388	ppm	0.097935	0.38575	25.000	Rel(%)	Pass	
K_7664		24.567	ppm	0.30010	1.2216	25.000	Rel(%)	Pass	
Mg2790		25.083	ppm	0.096390	0.38428	25.000	Rel(%)	Pass	
Mn2576		2.5301	ppm	0.0072950	0.28831	2.5000	Rel(%)	Pass	
Mo2020		0.99909	ppm	0.0051930	0.51977	1.0000	Rel(%)	Pass	
Na5895		24.738	ppm	0.24338	0.98383	25.000	Rel(%)	Pass	
Ni2316		2.5260	ppm	0.0071380	0.28257	2.5000	Rel(%)	Pass	
P_1782		2.5557	ppm	0.0099280	0.38847	2.5000	Rel(%)	Pass	
Pb2203		0.50712	ppm	0.0013220	0.26076	.50000	Rel(%)	Pass	
S_1820		2.4075	ppm	0.0058830	0.24436	2.5000	Rel(%)	Pass	
Sb2068		0.50378	ppm	0.0066040	1.3108	.50000	Rel(%)	Pass	
Se1960		0.51287	ppm	0.00013900	0.027048	.50000	Rel(%)	Pass	
Si2881		2.5091	ppm	0.016137	0.64313	2.5000	Rel(%)	Pass	
Sn1899		2.5275	ppm	0.011034	0.43654	2.5000	Rel(%)	Pass	
Sr4077		2.4949	ppm	0.020010	0.80203	2.5000	Rel(%)	Pass	
Ti3349		1.0139	ppm	0.0045290	0.44673	1.0000	Rel(%)	Pass	
Tl1908		0.50610	ppm	0.0041750	0.82495	.50000	Rel(%)	Pass	
V_2924		2.5199	ppm	0.0086380	0.34280	2.5000	Rel(%)	Pass	

CCV 2078482

Acquire Date: 7/24/2020 6:45:56PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		2.5476	ppm	0.013817	0.54236	2.5000	Rel(%)	Pass	
Y_2243		5,562.7	Cts/S	10.891	0.19578				
Y_3600		52,256	Cts/S	189.57	0.36277				
Y_3774		3,342.6	Cts/S	13.253	0.39649				

CCB 2065750

Acquire Date: 7/24/2020 6:49:43PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000090000	ppm	0.000068000	74.917	.00000	Abs	Pass	
Al3961		0.023592	ppm	0.0090850	38.510	.00000	Abs	Pass	
As1890		0.0043540	ppm	0.0017340	39.831	.00000	Abs	Pass	
B_2089		0.0037900	ppm	0.000084000	2.2044	.00000	Abs	Pass	
Ba4554		0.00052300	ppm	0.00012900	24.698	.00000	Abs	Pass	
Be3130		0.00015700	ppm	0.00014300	91.102	.00000	Abs	Pass	
Ca3179		0.0011640	ppm	0.018317	1,573.9	.00000	Abs	Pass	
Cd2144		0.000059000	ppm	0.000025000	41.320	.00000	Abs	Pass	
Co2286		0.000050000	ppm	0.000096000	192.76	.00000	Abs	Pass	
Cr2677		0.00088500	ppm	0.00018800	21.198	.00000	Abs	Pass	
Cu3247		0.0079810	ppm	0.00015600	1.9579	.00000	Abs	Pass	
Fe2599	**W**	**0.071028**	**ppm**	**0.018100**	**25.482**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.0041970	ppm	0.027026	644.00	.00000	Abs	Pass	
Mg2790		-0.0063410	ppm	0.0085190	134.34	.00000	Abs	Pass	
Mn2576		0.00064400	ppm	0.00016200	25.165	.00000	Abs	Pass	
Mo2020		0.0070490	ppm	0.00021500	3.0559	.00000	Abs	Pass	
Na5895		0.034312	ppm	0.015085	43.963	.00000	Abs	Pass	
Ni2316		0.0013600	ppm	0.00036700	26.971	.00000	Abs	Pass	
P_1782		-0.0053640	ppm	0.0033980	63.354	.00000	Abs	Pass	
Pb2203		0.00091200	ppm	0.0016460	180.45	.00000	Abs	Pass	
S_1820		0.0015670	ppm	0.0043860	279.99	.00000	Abs	Pass	
Sb2068		0.00064300	ppm	0.0015000	233.33	.00000	Abs	Pass	
Se1960		-0.0020860	ppm	0.0018510	88.756	.00000	Abs	Pass	
Si2881		0.055849	ppm	0.11156	199.76	.00000	Abs	Pass	
Sn1899		0.0026270	ppm	0.000023000	0.89379	.00000	Abs	Pass	
Sr4077		0.00050300	ppm	0.000028000	5.6294	.00000	Abs	Pass	
Ti3349		0.0052180	ppm	0.00077200	14.793	.00000	Abs	Pass	
Tl1908		0.0029820	ppm	0.00087400	29.318	.00000	Abs	Pass	
V_2924		0.0010740	ppm	0.00042600	39.711	.00000	Abs	Pass	
Zn2062		0.0043700	ppm	0.000052000	1.1906	.00000	Abs	Pass	
Y_2243		5,593.8	Cts/S	10.520	0.18807				
Y_3600		52,183	Cts/S	163.47	0.31326				
Y_3774		3,369.5	Cts/S	4.9922	0.14816				

CCVL 2062513

Acquire Date: 7/24/2020 6:53:46PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0062380	ppm	0.0014420	23.119	.00500	Rel(%)	Pass	
Al3961		0.19861	ppm	0.018924	9.5281	.20000	Rel(%)	Pass	
As1890		0.037233	ppm	0.0012840	3.4493	.04000	Rel(%)	Pass	
B_2089		0.21855	ppm	0.00055400	0.25327	.20000	Rel(%)	Pass	
Ba4554		0.021554	ppm	0.00028400	1.3179	.02000	Rel(%)	Pass	
Be3130		0.0034640	ppm	0.00023900	6.8863	.00300	Rel(%)	Pass	
Ca3179		0.55609	ppm	0.015898	2.8588	.50000	Rel(%)	Pass	
Cd2144		0.0034460	ppm	0.000011000	0.30769	.00300	Rel(%)	Pass	
Co2286		0.010909	ppm	0.00017300	1.5879	.01000	Rel(%)	Pass	
Cr2677		0.011539	ppm	0.0011290	9.7839	.01000	Rel(%)	Pass	
Cu3247	**F**	**0.022916**	**ppm**	**0.00066000**	**2.8781**	**.01500**	**Rel(%)**	**Fail High**	**30.000**
Fe2599		0.11756	ppm	0.0016050	1.3657	.10000	Rel(%)	Pass	
K_7664		1.0974	ppm	0.013692	1.2476	1.0000	Rel(%)	Pass	
Mg2790		0.54351	ppm	0.0029560	0.54388	.50000	Rel(%)	Pass	
Mn2576		0.011705	ppm	0.0000060000	0.055432	.01000	Rel(%)	Pass	
Mo2020		0.022771	ppm	0.00023100	1.0148	.02000	Rel(%)	Pass	
Na5895		0.55741	ppm	0.00032500	0.058238	.50000	Rel(%)	Pass	
Ni2316		0.012721	ppm	0.00049100	3.8609	.01000	Rel(%)	Pass	
P_1782		0.54981	ppm	0.0091100	1.6570	.50000	Rel(%)	Pass	
Pb2203		0.010003	ppm	0.0031860	31.852	.01000	Rel(%)	Pass	
S_1820		0.52948	ppm	0.0015960	0.30150	.50000	Rel(%)	Pass	
Sb2068		0.032927	ppm	0.0043800	13.302	.03000	Rel(%)	Pass	
Se1960		0.042897	ppm	0.0059770	13.933	.04000	Rel(%)	Pass	
Si2881		0.56677	ppm	0.018864	3.3284	.50000	Rel(%)	Pass	
Sn1899		0.025978	ppm	0.00044500	1.7130	.02000	Rel(%)	Pass	
Sr4077		0.056074	ppm	0.00075900	1.3539	.05000	Rel(%)	Pass	
Ti3349		0.012641	ppm	0.00016000	1.2631	.01000	Rel(%)	Pass	
Tl1908		0.034537	ppm	0.0000030000	0.0097370	.03000	Rel(%)	Pass	
V_2924		0.022658	ppm	0.00063700	2.8108	.02000	Rel(%)	Pass	
Zn2062		0.025385	ppm	0.00029700	1.1716	.02000	Rel(%)	Pass	
Y_2243		5,612.4	Cts/S	3.2674	0.058218				
Y_3600		52,508	Cts/S	27.550	0.052468				
Y_3774		3,369.8	Cts/S	2.9265	0.086845				

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Acquire Date: 7/24/2020 6:57:48PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00032000	ppm	0.00028300	88.374	.00000	Abs	Pass	
Al3961		0.0082630	ppm	0.0048770	59.022	.00000	Abs	Pass	
As1890		0.000050000	ppm	0.00020900	419.76	.00000	Abs	Pass	
B_2089		0.0015380	ppm	0.00036200	23.535	.00000	Abs	Pass	
Ba4554		0.00032800	ppm	0.00059300	180.84	.00000	Abs	Pass	
Be3130		0.00048900	ppm	0.00018400	37.538	.00000	Abs	Pass	
Ca3179		0.0057800	ppm	0.0023510	40.669	.00000	Abs	Pass	
Cd2144		0.000017000	ppm	0.00012700	749.29	.00000	Abs	Pass	
Co2286		0.00012700	ppm	0.00024600	194.41	.00000	Abs	Pass	
Cr2677		0.00057300	ppm	0.00084800	147.88	.00000	Abs	Pass	

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Acquire Date: 7/24/2020 6:57:48PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0062340	ppm	0.0012730	20.422	.00000	Abs	Pass	
Fe2599		0.0079110	ppm	0.0019450	24.588	.00000	Abs	Pass	
K_7664		0.044041	ppm	0.0035500	8.0600	.00000	Abs	Pass	
Mg2790		-0.0042440	ppm	0.0062930	148.29	.00000	Abs	Pass	
Mn2576		0.00027300	ppm	0.000025000	9.2949	.00000	Abs	Pass	
Mo2020		0.00060100	ppm	0.00049500	82.363	.00000	Abs	Pass	
Na5895		-0.0056670	ppm	0.0060890	107.45	.00000	Abs	Pass	
Ni2316		0.0017520	ppm	0.0011220	64.008	.00000	Abs	Pass	
P_1782		-0.0080350	ppm	0.00013700	1.7032	.00000	Abs	Pass	
Pb2203		-0.0031590	ppm	0.0038470	121.77	.00000	Abs	Pass	
S_1820		0.0026210	ppm	0.0083290	317.81	.00000	Abs	Pass	
Sb2068		-0.00075000	ppm	0.00032000	42.715	.00000	Abs	Pass	
Se1960		0.0028480	ppm	0.0011640	40.860	.00000	Abs	Pass	
Si2881		0.085626	ppm	0.045481	53.116	.00000	Abs	Pass	
Sn1899		0.00073000	ppm	0.00036600	50.098	.00000	Abs	Pass	
Sr4077		0.00020500	ppm	0.00010000	48.949	.00000	Abs	Pass	
Ti3349		0.0011300	ppm	0.000046000	4.1088	.00000	Abs	Pass	
Tl1908		0.0028640	ppm	0.0015580	54.409	.00000	Abs	Pass	
V_2924		0.00063000	ppm	0.00078600	124.82	.00000	Abs	Pass	
Zn2062		0.0018660	ppm	0.00031700	17.013	.00000	Abs	Pass	
Y_2243		5,595.7	Cts/S	11.180	0.19979				
Y_3600		52,410	Cts/S	430.45	0.82131				
Y_3774		3,354.5	Cts/S	1.2259	0.036547				

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Acquire Date: 7/24/2020 7:01:50PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000075000	ppm	0.00010100	134.18	.00000	Abs	Pass	
Al3961		0.0081380	ppm	0.022918	281.62	.00000	Abs	Pass	
As1890		0.00010600	ppm	0.0011740	1,110.3	.00000	Abs	Pass	
B_2089		0.0013550	ppm	0.00077100	56.943	.00000	Abs	Pass	
Ba4554		-0.00023200	ppm	0.000018000	7.6876	.00000	Abs	Pass	
Be3130		0.00012700	ppm	0.00020700	162.92	.00000	Abs	Pass	
Ca3179		-0.0068590	ppm	0.0017470	25.469	.00000	Abs	Pass	
Cd2144		0.000041000	ppm	0.000031000	77.718	.00000	Abs	Pass	
Co2286		0.000034000	ppm	0.00015700	453.93	.00000	Abs	Pass	
Cr2677		-0.00058000	ppm	0.00088200	152.14	.00000	Abs	Pass	
Cu3247		0.0032370	ppm	0.0013610	42.036	.00000	Abs	Pass	
Fe2599		-0.0022770	ppm	0.0026110	114.68	.00000	Abs	Pass	
K_7664		-0.011447	ppm	0.015729	137.42	.00000	Abs	Pass	
Mg2790		-0.0057450	ppm	0.0026960	46.939	.00000	Abs	Pass	
Mn2576		0.00014800	ppm	0.000019000	12.523	.00000	Abs	Pass	
Mo2020		0.00052500	ppm	0.000041000	7.8915	.00000	Abs	Pass	
Na5895		0.0024290	ppm	0.0044350	182.59	.00000	Abs	Pass	
Ni2316		0.00046400	ppm	0.0013360	287.76	.00000	Abs	Pass	
P_1782		-0.010513	ppm	0.0029350	27.919	.00000	Abs	Pass	
Pb2203		0.00012900	ppm	0.00028300	218.91	.00000	Abs	Pass	

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Acquire Date: 7/24/2020 7:01:50PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.0067370	ppm	0.0017680	26.241	.00000	Abs	Pass	
Sb2068		0.0023970	ppm	0.0025670	107.11	.00000	Abs	Pass	
Se1960		-0.0020180	ppm	0.0046300	229.47	.00000	Abs	Pass	
Si2881		0.066645	ppm	0.052443	78.690	.00000	Abs	Pass	
Sn1899		0.00095200	ppm	0.00013500	14.174	.00000	Abs	Pass	
Sr4077		0.00040100	ppm	0.000027000	6.6237	.00000	Abs	Pass	
Ti3349		0.00057300	ppm	0.000097000	16.997	.00000	Abs	Pass	
Tl1908		0.0010640	ppm	0.0011640	109.41	.00000	Abs	Pass	
V_2924		0.0014030	ppm	0.00016200	11.583	.00000	Abs	Pass	
Zn2062		0.0014640	ppm	0.00023600	16.090	.00000	Abs	Pass	
Y_2243		5,610.8	Cts/S	9.6384	0.17178				
Y_3600		52,715	Cts/S	174.62	0.33125				
Y_3774		3,337.4	Cts/S	12.561	0.37637				

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Acquire Date: 7/24/2020 7:05:53PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00088300	ppm	0.00057500	65.116	.00000	Abs	Pass	
Al3961		0.0043940	ppm	0.042460	966.36	.00000	Abs	Pass	
As1890		0.00053100	ppm	0.00018600	34.946	.00000	Abs	Pass	
B_2089		0.0011690	ppm	0.00056500	48.384	.00000	Abs	Pass	
Ba4554		-0.00010100	ppm	0.00015900	157.15	.00000	Abs	Pass	
Be3130		0.00014900	ppm	0.00037400	250.96	.00000	Abs	Pass	
Ca3179		0.0092040	ppm	0.0031390	34.106	.00000	Abs	Pass	
Cd2144		0.000087000	ppm	0.000097000	112.02	.00000	Abs	Pass	
Co2286		-0.00014900	ppm	0.000086000	57.469	.00000	Abs	Pass	
Cr2677		0.00030600	ppm	0.00070400	230.50	.00000	Abs	Pass	
Cu3247		0.0019480	ppm	0.00062500	32.086	.00000	Abs	Pass	
Fe2599		0.00039600	ppm	0.0080140	2,023.1	.00000	Abs	Pass	
K_7664		0.024433	ppm	0.070630	289.08	.00000	Abs	Pass	
Mg2790		-0.0015390	ppm	0.0080380	522.23	.00000	Abs	Pass	
Mn2576		0.00012100	ppm	0.000087000	71.723	.00000	Abs	Pass	
Mo2020		0.000063000	ppm	0.00030900	489.86	.00000	Abs	Pass	
Na5895		0.0045630	ppm	0.0018350	40.212	.00000	Abs	Pass	
Ni2316		0.0012780	ppm	0.00072800	56.950	.00000	Abs	Pass	
P_1782		-0.0082490	ppm	0.00084000	10.179	.00000	Abs	Pass	
Pb2203		-0.00057800	ppm	0.0018020	311.66	.00000	Abs	Pass	
S_1820		0.0048370	ppm	0.0014900	30.795	.00000	Abs	Pass	
Sb2068		-0.0014030	ppm	0.0010670	76.062	.00000	Abs	Pass	
Se1960		-0.0016110	ppm	0.00048000	29.817	.00000	Abs	Pass	
Si2881		0.064732	ppm	0.071284	110.12	.00000	Abs	Pass	
Sn1899		0.00041500	ppm	0.00034700	83.732	.00000	Abs	Pass	
Sr4077		0.00030800	ppm	0.000044000	14.293	.00000	Abs	Pass	
Ti3349		0.0012090	ppm	0.000068000	5.6339	.00000	Abs	Pass	
Tl1908		0.00099600	ppm	0.0017670	177.38	.00000	Abs	Pass	
V_2924		0.00082500	ppm	0.000040000	4.9098	.00000	Abs	Pass	
Zn2062		0.00060000	ppm	0.00036900	61.555	.00000	Abs	Pass	

RINSE BLANK

Acquire Date: 7/24/2020 7:05:53PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,621.0	Cts/S	8.9873	0.15989				
Y_3600		53,269	Cts/S	45.115	0.084694				
Y_3774		3,324.6	Cts/S	2.0427	0.061440				

RINSE BLANK

Acquire Date: 7/24/2020 7:09:55PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 864

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00031800	ppm	0.00020300	63.744	.00000	Abs	Pass	
Al3961		-0.0081420	ppm	0.0096800	118.88	.00000	Abs	Pass	
As1890		0.00090400	ppm	0.0040890	452.13	.00000	Abs	Pass	
B_2089		0.00030000	ppm	0.00039300	131.27	.00000	Abs	Pass	
Ba4554		0.0011950	ppm	0.00019200	16.085	.00000	Abs	Pass	
Be3130		.0000060000	ppm	0.00021300	3,722.5	.00000	Abs	Pass	
Ca3179		-0.0010130	ppm	0.0051360	507.16	.00000	Abs	Pass	
Cd2144		0.000025000	ppm	0.000038000	149.61	.00000	Abs	Pass	
Co2286		0.00012300	ppm	0.000052000	42.127	.00000	Abs	Pass	
Cr2677		0.000029000	ppm	0.00084700	2,967.8	.00000	Abs	Pass	
Cu3247		0.0039410	ppm	0.00010200	2.5930	.00000	Abs	Pass	
Fe2599		0.0049830	ppm	0.0010680	21.441	.00000	Abs	Pass	
K_7664		0.050483	ppm	0.026094	51.689	.00000	Abs	Pass	
Mg2790		-0.0025120	ppm	0.0064190	255.58	.00000	Abs	Pass	
Mn2576		0.000049000	ppm	0.000054000	109.82	.00000	Abs	Pass	
Mo2020		0.000088000	ppm	0.000038000	42.882	.00000	Abs	Pass	
Na5895		0.00073600	ppm	0.0053520	727.16	.00000	Abs	Pass	
Ni2316		0.0012050	ppm	0.00033500	27.770	.00000	Abs	Pass	
P_1782		-0.0097000	ppm	0.0030070	30.999	.00000	Abs	Pass	
Pb2203		-0.0018190	ppm	0.00022200	12.203	.00000	Abs	Pass	
S_1820		0.0044770	ppm	0.0046820	104.59	.00000	Abs	Pass	
Sb2068		-0.0041780	ppm	0.0036140	86.505	.00000	Abs	Pass	
Se1960		-0.0028810	ppm	0.0015130	52.518	.00000	Abs	Pass	
Si2881		0.064322	ppm	0.017525	27.245	.00000	Abs	Pass	
Sn1899		0.00031700	ppm	0.00055500	174.87	.00000	Abs	Pass	
Sr4077		0.00013900	ppm	0.000074000	53.415	.00000	Abs	Pass	
Ti3349		0.00048400	ppm	0.0000090000	1.8726	.00000	Abs	Pass	
Tl1908		-0.0024790	ppm	0.0029590	119.37	.00000	Abs	Pass	
V_2924		0.00058600	ppm	0.00015700	26.825	.00000	Abs	Pass	
Zn2062		0.00053500	ppm	0.00015500	28.910	.00000	Abs	Pass	
Y_2243		5,640.0	Cts/S	9.6110	0.17041				
Y_3600		52,949	Cts/S	324.81	0.61344				
Y_3774		3,347.0	Cts/S	0.084558	0.0025260				

Shipping and Receiving Documents

CHAIN OF CUSTODY RECORD

COC NO.: 59842

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702 - NI0402

Laboratory Name: Eurofins / Test America

Lab Location: Sacramento

SSOW ID: 11187072-2019-002

Project Name: San Jacinto

Lab Contact: Carrie Gamber / Beth Hitt

Cooler No:

Project Location: Texas

Carrier:

GHD Chemistry Contact: Debbie Brennan

Airbill No:

Sampler(s): Don Pope

Total # of Containers: 8

ANALYSIS REQUESTED (See Back of COC for Definitions)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	SAMPLE TYPE: Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins/Furans	Total Metals											Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)																				
1	11215702 - Initial	7/20/2020	10:00	WG			x	x											2		Attn to: Carrie Gamber
2	11215702 - Control	7/20/2020	11:00	WG			x	x											2		412-963-2428
3	11215702 - Treatment-1	7/20/2020	13:00	WG			x	x											2		
4	11215702 - Treatment-2	7/20/2020	14:30	WG			x	x											2		* Total Metals samples
5																					are preserved w/ HNO_3
6																					
7																					
8																					
9																					
10																					
11																					
12																					

320-62886 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☐2Week Other

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1.	Don Pope	GHD	7/20/2020	14:35	1.	eta Sac	07/21/20	935 5.4
2.					2.			
3.					3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

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TestAmerica

Sacramento
Sample Receiving Notes

320-62886 Field Sheet

Job: —

Tracking # : 4876 5886 4049

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other____________

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: AK5 Corr. Factor: (+ / -) 0 °C

Ice ✓ Wet ✓ Gel ______ Other ______

Cooler Custody Seal: –

Cooler ID: –

Temp Observed: 5.4 °C Corrected: 5.4 °C
From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐

Initials: MAN Date: 07/21/20

Unpacking/Labeling The Samples	Yes	No	NA
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☑	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: JL Date: 7/21/20

Notes: ____________

Trizma Lot #(s): ____________

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☑	☐
Log Release checked in TALS?	☑	☐	☐

Initials: JL Date: 7/21/20

W13-C

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 20JUL20
ACTWGT: 35.00 LB MAN
CAD: 68417/CAFE3313

BILL SENDER

TO **SAMPLE RECEIVING**
EUROFINS/TEST AMERICA
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215702 - NI0402 GEB (POPE)

565C3/C6A6/05A2

FedEx
Express

E

J191219082001uv

TUE - 21 JUL 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **4576 5886 4049**

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/20

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-62886-1

Login Number: 62886

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Thompson, Sarah W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Job Number: 320-63525-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
8/25/2020 1:45 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
08/25/2020

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager or designee who has signed this report.

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

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Definitions/Glossary

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
W	PS: Post-digestion spike was outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-63525-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/08/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.5 C.

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS

1,2,3,4,6,7,8-HpCDF, OCDD, OCDF, Total HpCDD and Total HpCDF were detected in method blank MB 320-404233/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

METALS

The following samples were diluted to bring the concentration of target analytes within the calibration range: 11215702-Treatment-3 (320-63525-1) and 11215702-Treatment-4 (320-63525-2). Elevated reporting limits (RLs) are provided.

Boron and Silver were detected in method blank MB 320-403145/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Sodium failed the recovery criteria high for the MS of sample 11215702-Treatment-3MS (320-63525-1) in batch 320-405044. Magnesium and Sodium failed the recovery criteria high for the MSD of sample 11215702-Treatment-3MSD (320-63525-1) in batch 320-405044. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Detection Summary

Client: GHD Services Inc. Job ID: 320-63525-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Treatment-3 Lab Sample ID: 320-63525-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	9.8		9.6	1.0	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1.9	J	48	0.93	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.3	J	48	0.66	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	2.7	J	48	0.89	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	1.5	J q	48	0.65	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1.2	J q	48	0.69	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	2.8	J	48	0.54	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	2.8	J B	48	0.49	pg/L	1		1613B	Total/NA
OCDD	30	J B	96	1.1	pg/L	1		1613B	Total/NA
OCDF	2.1	J q B	96	0.87	pg/L	1		1613B	Total/NA
Total TCDD	9.8		9.6	1.0	pg/L	1		1613B	Total/NA
Total TCDF	61	q	9.6	0.85	pg/L	1		1613B	Total/NA
Total PeCDF	1.9	J	48	0.87	pg/L	1		1613B	Total/NA
Total HxCDD	2.3	J	48	0.69	pg/L	1		1613B	Total/NA
Total HxCDF	5.3	J q	48	0.81	pg/L	1		1613B	Total/NA
Total HpCDD	4.6	J q B	48	0.54	pg/L	1		1613B	Total/NA
Total HpCDF	2.8	J B	48	0.50	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	27		9.6	0.74	pg/L	1		1613B	Total/NA
Silver	0.0012	J B	0.0050	0.00084	mg/L	1		6010C	Total/NA
Barium	0.11		0.0050	0.0025	mg/L	1		6010C	Total/NA
Beryllium	0.00042	J	0.0020	0.00030	mg/L	1		6010C	Total/NA
Boron	0.17	B	0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	100		0.50	0.050	mg/L	1		6010C	Total/NA
Cadmium	0.00060	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Copper	0.0089	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	0.26		0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	89		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	180		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.016		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0043	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	2400		10	2.5	mg/L	10		6010C	Total/NA
Nickel	0.0038	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Vanadium	0.0046	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.036		0.010	0.0030	mg/L	1		6010C	Total/NA
Titanium	0.0028	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Strontium	0.19		0.050	0.0050	mg/L	1		6010C	Total/NA

Client Sample ID: 11215702-Treatment-4 Lab Sample ID: 320-63525-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	13		9.5	0.99	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.1	J	48	0.70	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	2.1	J q	48	0.59	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	2.8	J B	48	0.48	pg/L	1		1613B	Total/NA
OCDD	19	J B	95	0.74	pg/L	1		1613B	Total/NA
OCDF	1.9	J q B	95	0.79	pg/L	1		1613B	Total/NA
Total TCDD	13		9.5	0.99	pg/L	1		1613B	Total/NA
Total TCDF	62	q	9.5	0.79	pg/L	1		1613B	Total/NA
Total HxCDD	2.1	J	48	0.75	pg/L	1		1613B	Total/NA
Total HpCDD	4.8	J q B	48	0.59	pg/L	1		1613B	Total/NA
Total HpCDF	2.8	J B	48	0.50	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc. Job ID: 320-63525-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Treatment-4 (Continued) Lab Sample ID: 320-63525-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF - RA	23		9.5	0.73	pg/L	1		1613B	Total/NA
Barium	0.11		0.0050	0.0025	mg/L	1		6010C	Total/NA
Beryllium	0.00033	J	0.0020	0.00030	mg/L	1		6010C	Total/NA
Boron	0.16	B	0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	100		0.50	0.050	mg/L	1		6010C	Total/NA
Cadmium	0.00062	J	0.0020	0.00050	mg/L	1		6010C	Total/NA
Copper	0.0062	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	0.11		0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	86		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	180		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.035		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0037	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	2400		10	2.5	mg/L	10		6010C	Total/NA
Nickel	0.0031	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Lead	0.0027	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Vanadium	0.0032	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.041		0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.20		0.050	0.0050	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client Sample ID: 11215702-Treatment-3

Lab Sample ID: 320-63525-1

Date Collected: 08/07/20 12:30
Matrix: Water
Date Received: 08/08/20 12:19

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**9.8**		9.6	1.0	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,7,8-PeCDD	ND		48	1.2	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,7,8-PeCDF	**1.9**	**J**	48	0.93	pg/L		08/17/20 08:45	08/19/20 15:12	1
2,3,4,7,8-PeCDF	ND		48	0.80	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,4,7,8-HxCDD	**2.3**	**J**	48	0.66	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,6,7,8-HxCDD	ND		48	0.79	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,7,8,9-HxCDD	ND		48	0.63	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,4,7,8-HxCDF	**2.7**	**J**	48	0.89	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,6,7,8-HxCDF	ND		48	1.0	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,7,8,9-HxCDF	**1.5**	**J q**	48	0.65	pg/L		08/17/20 08:45	08/19/20 15:12	1
2,3,4,6,7,8-HxCDF	**1.2**	**J q**	48	0.69	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,4,6,7,8-HpCDD	**2.8**	**J**	48	0.54	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,4,6,7,8-HpCDF	**2.8**	**J B**	48	0.49	pg/L		08/17/20 08:45	08/19/20 15:12	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.51	pg/L		08/17/20 08:45	08/19/20 15:12	1
OCDD	**30**	**J B**	96	1.1	pg/L		08/17/20 08:45	08/19/20 15:12	1
OCDF	**2.1**	**J q B**	96	0.87	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total TCDD	**9.8**		9.6	1.0	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total TCDF	**61**	**q**	9.6	0.85	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total PeCDD	ND		48	1.2	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total PeCDF	**1.9**	**J**	48	0.87	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total HxCDD	**2.3**	**J**	48	0.69	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total HxCDF	**5.3**	**J q**	48	0.81	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total HpCDD	**4.6**	**J q B**	48	0.54	pg/L		08/17/20 08:45	08/19/20 15:12	1
Total HpCDF	**2.8**	**J B**	48	0.50	pg/L		08/17/20 08:45	08/19/20 15:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,4,7,8-HxCDD	*95*		*32 - 141*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,6,7,8-HxCDD	*66*		*28 - 130*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,4,7,8-HxCDF	*93*		*26 - 152*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,6,7,8-HxCDF	*66*		*26 - 123*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,7,8,9-HxCDF	*78*		*29 - 147*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-2,3,4,6,7,8-HxCDF	*75*		*28 - 136*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*94*		*23 - 140*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*28 - 143*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*107*		*26 - 138*	*08/17/20 08:45*	*08/19/20 15:12*	*1*
13C-OCDD	*94*		*17 - 157*	*08/17/20 08:45*	*08/19/20 15:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*08/17/20 08:45*	*08/19/20 15:12*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**27**		9.6	0.74	pg/L		08/17/20 08:45	08/20/20 20:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*08/17/20 08:45*	*08/20/20 20:44*	*1*

Client Sample ID: 11215702-Treatment-3 Lab Sample ID: 320-63525-1

Date Collected: 08/07/20 12:30 **Matrix: Water**

Date Received: 08/08/20 12:19

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*08/17/20 08:45*	*08/20/20 20:44*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.0012**	**J B**	0.0050	0.00084	mg/L		08/12/20 13:33	08/13/20 12:45	1
Arsenic	ND		0.020	0.012	mg/L		08/12/20 13:33	08/13/20 12:45	1
Barium	**0.11**		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 12:45	1
Beryllium	**0.00042**	**J**	0.0020	0.00030	mg/L		08/12/20 13:33	08/13/20 12:45	1
Boron	**0.17**	**B**	0.10	0.021	mg/L		08/12/20 13:33	08/13/20 12:45	1
Calcium	**100**		0.50	0.050	mg/L		08/12/20 13:33	08/13/20 12:45	1
Cadmium	**0.00060**	**J**	0.0020	0.00050	mg/L		08/12/20 13:33	08/13/20 12:45	1
Cobalt	ND		0.0050	0.0030	mg/L		08/12/20 13:33	08/13/20 12:45	1
Chromium	ND		0.0080	0.0012	mg/L		08/12/20 13:33	08/13/20 12:45	1
Copper	**0.0089**	**J**	0.010	0.0021	mg/L		08/12/20 13:33	08/13/20 12:45	1
Iron	**0.26**		0.10	0.020	mg/L		08/12/20 13:33	08/13/20 12:45	1
Potassium	**89**		1.0	0.093	mg/L		08/12/20 13:33	08/13/20 12:45	1
Magnesium	**180**		0.50	0.040	mg/L		08/12/20 13:33	08/13/20 12:45	1
Manganese	**0.016**		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 12:45	1
Molybdenum	**0.0043**	**J**	0.020	0.0027	mg/L		08/12/20 13:33	08/13/20 12:45	1
Sodium	**2400**		10	2.5	mg/L		08/12/20 13:33	08/19/20 12:30	10
Nickel	**0.0038**	**J**	0.0050	0.0024	mg/L		08/12/20 13:33	08/13/20 12:45	1
Phosphorus	ND		0.50	0.050	mg/L		08/12/20 13:33	08/13/20 12:45	1
Lead	ND		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 12:45	1
Selenium	ND		0.020	0.013	mg/L		08/12/20 13:33	08/13/20 12:45	1
Vanadium	**0.0046**	**J**	0.0050	0.0019	mg/L		08/12/20 13:33	08/13/20 12:45	1
Zinc	**0.036**		0.010	0.0030	mg/L		08/12/20 13:33	08/13/20 12:45	1
Antimony	ND		0.020	0.0098	mg/L		08/12/20 13:33	08/13/20 12:45	1
Thallium	ND		0.020	0.0090	mg/L		08/12/20 13:33	08/13/20 12:45	1
Tin	ND		0.020	0.0050	mg/L		08/12/20 13:33	08/13/20 12:45	1
Titanium	**0.0028**	**J**	0.010	0.0021	mg/L		08/12/20 13:33	08/19/20 11:50	1
Strontium	**0.19**		0.050	0.0050	mg/L		08/12/20 13:33	08/13/20 12:45	1

Client Sample ID: 11215702-Treatment-4 Lab Sample ID: 320-63525-2

Date Collected: 08/07/20 13:00 **Matrix: Water**

Date Received: 08/08/20 12:19

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**13**		9.5	0.99	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,7,8-PeCDD	ND		48	1.4	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,7,8-PeCDF	ND		48	0.90	pg/L		08/17/20 08:45	08/19/20 15:57	1
2,3,4,7,8-PeCDF	ND		48	0.78	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,4,7,8-HxCDD	**2.1**	**J**	48	0.70	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,6,7,8-HxCDD	ND		48	0.87	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,7,8,9-HxCDD	ND		48	0.68	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,4,7,8-HxCDF	ND		48	0.98	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,6,7,8-HxCDF	ND		48	1.1	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,7,8,9-HxCDF	ND		48	0.74	pg/L		08/17/20 08:45	08/19/20 15:57	1
2,3,4,6,7,8-HxCDF	ND		48	0.74	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,4,6,7,8-HpCDD	**2.1**	**J q**	48	0.59	pg/L		08/17/20 08:45	08/19/20 15:57	1
1,2,3,4,6,7,8-HpCDF	**2.8**	**J B**	48	0.48	pg/L		08/17/20 08:45	08/19/20 15:57	1

Client Sample ID: 11215702-Treatment-4 Lab Sample ID: 320-63525-2

Date Collected: 08/07/20 13:00 **Matrix: Water**
Date Received: 08/08/20 12:19

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8,9-HpCDF	ND		48	0.52	pg/L		08/17/20 08:45	08/19/20 15:57	1
OCDD	**19**	**J B**	95	0.74	pg/L		08/17/20 08:45	08/19/20 15:57	1
OCDF	**1.9**	**J q B**	95	0.79	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total TCDD	**13**		9.5	0.99	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total TCDF	**62**	**q**	9.5	0.79	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total PeCDD	ND		48	1.4	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total PeCDF	ND		48	0.91	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total HxCDD	**2.1**	**J**	48	0.75	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total HxCDF	ND		48	1.1	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total HpCDD	**4.8**	**J q B**	48	0.59	pg/L		08/17/20 08:45	08/19/20 15:57	1
Total HpCDF	**2.8**	**J B**	48	0.50	pg/L		08/17/20 08:45	08/19/20 15:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-2,3,4,7,8-PeCDF	*77*		*21 - 178*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,4,7,8-HxCDD	*92*		*32 - 141*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,6,7,8-HxCDD	*62*		*28 - 130*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,4,7,8-HxCDF	*90*		*26 - 152*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,6,7,8-HxCDF	*66*		*26 - 123*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-2,3,4,6,7,8-HxCDF	*73*		*28 - 136*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*23 - 140*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*98*		*26 - 138*	*08/17/20 08:45*	*08/19/20 15:57*	*1*
13C-OCDD	*89*		*17 - 157*	*08/17/20 08:45*	*08/19/20 15:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*	*08/17/20 08:45*	*08/19/20 15:57*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**23**		9.5	0.73	pg/L		08/17/20 08:45	08/20/20 21:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*08/17/20 08:45*	*08/20/20 21:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*08/17/20 08:45*	*08/20/20 21:22*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		08/12/20 13:33	08/13/20 13:12	1
Arsenic	ND		0.020	0.012	mg/L		08/12/20 13:33	08/13/20 13:12	1
Barium	**0.11**		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 13:12	1
Beryllium	**0.00033**	**J**	0.0020	0.00030	mg/L		08/12/20 13:33	08/13/20 13:12	1
Boron	**0.16**	**B**	0.10	0.021	mg/L		08/12/20 13:33	08/13/20 13:12	1
Calcium	**100**		0.50	0.050	mg/L		08/12/20 13:33	08/13/20 13:12	1
Cadmium	**0.00062**	**J**	0.0020	0.00050	mg/L		08/12/20 13:33	08/13/20 13:12	1
Cobalt	ND		0.0050	0.0030	mg/L		08/12/20 13:33	08/13/20 13:12	1

Client Sample ID: 11215702-Treatment-4

Lab Sample ID: 320-63525-2

Date Collected: 08/07/20 13:00

Matrix: Water

Date Received: 08/08/20 12:19

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0080	0.0012	mg/L		08/12/20 13:33	08/13/20 13:12	1
Copper	**0.0062**	**J**	0.010	0.0021	mg/L		08/12/20 13:33	08/13/20 13:12	1
Iron	**0.11**		0.10	0.020	mg/L		08/12/20 13:33	08/13/20 13:12	1
Potassium	**86**		1.0	0.093	mg/L		08/12/20 13:33	08/13/20 13:12	1
Magnesium	**180**		0.50	0.040	mg/L		08/12/20 13:33	08/13/20 13:12	1
Manganese	**0.035**		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 13:12	1
Molybdenum	**0.0037**	**J**	0.020	0.0027	mg/L		08/12/20 13:33	08/13/20 13:12	1
Sodium	**2400**		10	2.5	mg/L		08/12/20 13:33	08/19/20 12:50	10
Nickel	**0.0031**	**J**	0.0050	0.0024	mg/L		08/12/20 13:33	08/13/20 13:12	1
Phosphorus	ND		0.50	0.050	mg/L		08/12/20 13:33	08/13/20 13:12	1
Lead	**0.0027**	**J**	0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 13:12	1
Selenium	ND		0.020	0.013	mg/L		08/12/20 13:33	08/13/20 13:12	1
Vanadium	**0.0032**	**J**	0.0050	0.0019	mg/L		08/12/20 13:33	08/13/20 13:12	1
Zinc	**0.041**		0.010	0.0030	mg/L		08/12/20 13:33	08/13/20 13:12	1
Antimony	ND		0.020	0.0098	mg/L		08/12/20 13:33	08/13/20 13:12	1
Thallium	ND		0.020	0.0090	mg/L		08/12/20 13:33	08/13/20 13:12	1
Tin	ND		0.020	0.0050	mg/L		08/12/20 13:33	08/13/20 13:12	1
Titanium	ND		0.010	0.0021	mg/L		08/12/20 13:33	08/19/20 12:22	1
Strontium	**0.20**		0.050	0.0050	mg/L		08/12/20 13:33	08/13/20 13:12	1

Toxicity Summary

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-63525-1

Client Sample ID: 11215702-Treatment-3

Lab Sample ID: 320-63525-1

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**9.8**		9.6	1.0	pg/L	1	**9.8**	1613B
1,2,3,7,8-PeCDD	ND		48	1.2	pg/L	1	0.60	1613B
1,2,3,7,8-PeCDF	**1.9**	**J**	48	0.93	pg/L	0.03	**0.057**	1613B
2,3,4,7,8-PeCDF	ND		48	0.80	pg/L	0.3	0.12	1613B
1,2,3,4,7,8-HxCDD	**2.3**	**J**	48	0.66	pg/L	0.1	**0.23**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.79	pg/L	0.1	0.040	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.63	pg/L	0.1	0.032	1613B
1,2,3,4,7,8-HxCDF	**2.7**	**J**	48	0.89	pg/L	0.1	**0.27**	1613B
1,2,3,6,7,8-HxCDF	ND		48	1.0	pg/L	0.1	0.050	1613B
1,2,3,7,8,9-HxCDF	**1.5**	**J q**	48	0.65	pg/L	0.1	**0.15**	1613B
2,3,4,6,7,8-HxCDF	**1.2**	**J q**	48	0.69	pg/L	0.1	**0.12**	1613B
1,2,3,4,6,7,8-HpCDD	**2.8**	**J**	48	0.54	pg/L	0.01	**0.028**	1613B
1,2,3,4,6,7,8-HpCDF	**2.8**	**J B**	48	0.49	pg/L	0.01	**0.028**	1613B
1,2,3,4,7,8,9-HpCDF	ND		48	0.51	pg/L	0.01	0.0026	1613B
OCDD	**30**	**J B**	96	1.1	pg/L	0.0003	**0.0090**	1613B
OCDF	**2.1**	**J q B**	96	0.87	pg/L	0.0003	**0.00063**	1613B
2,3,7,8-TCDF - RA	**27**		9.6	0.74	pg/L	0.1	**2.7**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		14	TEQ

Client Sample ID: 11215702-Treatment-4

Lab Sample ID: 320-63525-2

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**13**		9.5	0.99	pg/L	1	**13**	1613B
1,2,3,7,8-PeCDD	ND		48	1.4	pg/L	1	0.70	1613B
1,2,3,7,8-PeCDF	ND		48	0.90	pg/L	0.03	0.014	1613B
2,3,4,7,8-PeCDF	ND		48	0.78	pg/L	0.3	0.12	1613B
1,2,3,4,7,8-HxCDD	**2.1**	**J**	48	0.70	pg/L	0.1	**0.21**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.87	pg/L	0.1	0.044	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.68	pg/L	0.1	0.034	1613B
1,2,3,4,7,8-HxCDF	ND		48	0.98	pg/L	0.1	0.049	1613B
1,2,3,6,7,8-HxCDF	ND		48	1.1	pg/L	0.1	0.055	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.74	pg/L	0.1	0.037	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.74	pg/L	0.1	0.037	1613B
1,2,3,4,6,7,8-HpCDD	**2.1**	**J q**	48	0.59	pg/L	0.01	**0.021**	1613B
1,2,3,4,6,7,8-HpCDF	**2.8**	**J B**	48	0.48	pg/L	0.01	**0.028**	1613B
1,2,3,4,7,8,9-HpCDF	ND		48	0.52	pg/L	0.01	0.0026	1613B
OCDD	**19**	**J B**	95	0.74	pg/L	0.0003	**0.0057**	1613B
OCDF	**1.9**	**J q B**	95	0.79	pg/L	0.0003	**0.00057**	1613B
2,3,7,8-TCDF - RA	**23**		9.5	0.73	pg/L	0.1	**2.3**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Treatment-4 (Continued) Lab Sample ID: 320-63525-2

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		2.3	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc.
Job ID: 320-63525-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Method: 6010C - Metals (ICP)

Prep: 3010A

Analyte	RL	MDL	Units
Antimony	0.020	0.0098	mg/L
Arsenic	0.020	0.012	mg/L
Barium	0.0050	0.0025	mg/L
Beryllium	0.0020	0.00030	mg/L
Boron	0.10	0.021	mg/L
Cadmium	0.0020	0.00050	mg/L
Calcium	0.50	0.050	mg/L
Chromium	0.0080	0.0012	mg/L
Cobalt	0.0050	0.0030	mg/L
Copper	0.010	0.0021	mg/L
Iron	0.10	0.020	mg/L
Lead	0.0050	0.0025	mg/L
Magnesium	0.50	0.040	mg/L
Manganese	0.0050	0.0025	mg/L
Molybdenum	0.020	0.0027	mg/L
Nickel	0.0050	0.0024	mg/L
Phosphorus	0.50	0.050	mg/L
Potassium	1.0	0.093	mg/L
Selenium	0.020	0.013	mg/L
Silver	0.0050	0.00084	mg/L
Sodium	1.0	0.25	mg/L
Strontium	0.050	0.0050	mg/L

Method: 6010C - Metals (ICP) (Continued)

Prep: 3010A

Analyte	RL	MDL	Units
Thallium	0.020	0.0090	mg/L
Tin	0.020	0.0050	mg/L
Titanium	0.010	0.0021	mg/L
Vanadium	0.0050	0.0019	mg/L
Zinc	0.010	0.0030	mg/L

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-63525-1	11215702-Treatment-3	98
320-63525-1 - RA	11215702-Treatment-3	93
320-63525-2	11215702-Treatment-4	99
320-63525-2 - RA	11215702-Treatment-4	93
MB 320-404233/1-A	Method Blank	102

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-404233/2-A	Lab Control Sample	103
LCSD 320-404233/3-A	Lab Control Sample Dup	98

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
320-63525-1	11215702-Treatment-3	74	73	70	67	83	95	66	93
320-63525-1 - RA	11215702-Treatment-3		73						
320-63525-2	11215702-Treatment-4	70	68	64	62	77	92	62	90
320-63525-2 - RA	11215702-Treatment-4		70						
MB 320-404233/1-A	Method Blank	88	84	86	78	101	120	85	117

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-63525-1	11215702-Treatment-3	66	78	75	94	84	107	94
320-63525-1 - RA	11215702-Treatment-3							
320-63525-2	11215702-Treatment-4	66	74	73	89	80	98	89
320-63525-2 - RA	11215702-Treatment-4							
MB 320-404233/1-A	Method Blank	84	94	94	110	102	129	112

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-404233/2-A	Lab Control Sample	81	97	83	98	125	95	79	107
LCSD 320-404233/3-A	Lab Control Sample Dup	75	83	72	75	96	103	74	109

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-404233/2-A	Lab Control Sample	86	96	90	71	82	110	99
LCSD 320-404233/3-A	Lab Control Sample Dup	83	93	91	93	92	123	87

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF

PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-404233/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 405028
Prep Batch: 404233

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.74	pg/L		08/17/20 08:45	08/19/20 12:57	1
2,3,7,8-TCDF	ND		10	0.54	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,7,8-PeCDD	ND		50	1.2	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,7,8-PeCDF	ND		50	0.77	pg/L		08/17/20 08:45	08/19/20 12:57	1
2,3,4,7,8-PeCDF	ND		50	0.62	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,4,7,8-HxCDD	ND		50	0.81	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,6,7,8-HxCDD	ND		50	0.95	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,7,8,9-HxCDD	ND		50	0.77	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,4,7,8-HxCDF	ND		50	1.0	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,6,7,8-HxCDF	ND		50	1.2	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,7,8,9-HxCDF	ND		50	0.79	pg/L		08/17/20 08:45	08/19/20 12:57	1
2,3,4,6,7,8-HxCDF	ND		50	0.81	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,4,6,7,8-HpCDD	ND		50	0.50	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,4,6,7,8-HpCDF	0.825	J q	50	0.38	pg/L		08/17/20 08:45	08/19/20 12:57	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.39	pg/L		08/17/20 08:45	08/19/20 12:57	1
OCDD	3.22	J q	100	0.70	pg/L		08/17/20 08:45	08/19/20 12:57	1
OCDF	1.95	J	100	0.91	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total TCDD	ND		10	0.74	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total TCDF	ND		10	0.54	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total PeCDD	ND		50	1.2	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total PeCDF	ND		50	0.77	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total HxCDD	ND		50	0.95	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total HxCDF	ND		50	1.2	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total HpCDD	0.829	J	50	0.50	pg/L		08/17/20 08:45	08/19/20 12:57	1
Total HpCDF	0.825	J q	50	0.38	pg/L		08/17/20 08:45	08/19/20 12:57	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*88*		*25 - 164*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,7,8-PeCDD	*86*		*25 - 181*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*24 - 185*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-2,3,4,7,8-PeCDF	*101*		*21 - 178*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,4,7,8-HxCDD	*120*		*32 - 141*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,6,7,8-HxCDD	*85*		*28 - 130*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,4,7,8-HxCDF	*117*		*26 - 152*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,6,7,8-HxCDF	*84*		*26 - 123*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,7,8,9-HxCDF	*94*		*29 - 147*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-2,3,4,6,7,8-HxCDF	*94*		*28 - 136*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*110*		*23 - 140*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*102*		*28 - 143*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*129*		*26 - 138*	*08/17/20 08:45*	*08/19/20 12:57*	*1*
13C-OCDD	*112*		*17 - 157*	*08/17/20 08:45*	*08/19/20 12:57*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*08/17/20 08:45*	*08/19/20 12:57*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-404233/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 405471
Prep Batch: 404233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	218		pg/L		109	67 - 158
2,3,7,8-TCDF	200	222		pg/L		111	75 - 158
1,2,3,7,8-PeCDD	1000	1120		pg/L		112	70 - 142
1,2,3,7,8-PeCDF	1000	1070		pg/L		107	80 - 134
2,3,4,7,8-PeCDF	1000	877		pg/L		88	68 - 160
1,2,3,4,7,8-HxCDD	1000	809		pg/L		81	70 - 164
1,2,3,6,7,8-HxCDD	1000	1030		pg/L		103	76 - 134
1,2,3,7,8,9-HxCDD	1000	953		pg/L		95	64 - 162
1,2,3,4,7,8-HxCDF	1000	831		pg/L		83	72 - 134
1,2,3,6,7,8-HxCDF	1000	1020		pg/L		102	84 - 130
1,2,3,7,8,9-HxCDF	1000	1010		pg/L		101	78 - 130
2,3,4,6,7,8-HxCDF	1000	997		pg/L		100	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	1050		pg/L		105	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	1020		pg/L		102	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	803		pg/L		80	78 - 138
OCDD	2000	1920		pg/L		96	78 - 144
OCDF	2000	2070		pg/L		104	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*81*		*20 - 175*
13C-2,3,7,8-TCDF	*97*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*83*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*98*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*125*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*95*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*79*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*107*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*86*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*96*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*90*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*71*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*82*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*110*		*20 - 186*
13C-OCDD	*99*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*103*		*31 - 191*

Lab Sample ID: LCSD 320-404233/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 405030
Prep Batch: 404233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	199		pg/L		100	67 - 158	9	50
2,3,7,8-TCDF	200	203		pg/L		102	75 - 158	9	50
1,2,3,7,8-PeCDD	1000	997		pg/L		100	70 - 142	12	50
1,2,3,7,8-PeCDF	1000	1020		pg/L		102	80 - 134	4	50
2,3,4,7,8-PeCDF	1000	808		pg/L		81	68 - 160	8	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-404233/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 405030
Prep Batch: 404233

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	811		pg/L		81	70 - 164	0	50
1,2,3,6,7,8-HxCDD	1000	1020		pg/L		102	76 - 134	1	50
1,2,3,7,8,9-HxCDD	1000	925		pg/L		93	64 - 162	3	50
1,2,3,4,7,8-HxCDF	1000	828		pg/L		83	72 - 134	0	50
1,2,3,6,7,8-HxCDF	1000	1040		pg/L		104	84 - 130	1	50
1,2,3,7,8,9-HxCDF	1000	1010		pg/L		101	78 - 130	0	50
2,3,4,6,7,8-HxCDF	1000	1010		pg/L		101	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD	1000	943		pg/L		94	70 - 140	11	50
1,2,3,4,6,7,8-HpCDF	1000	1010		pg/L		101	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF	1000	785		pg/L		78	78 - 138	2	50
OCDD	2000	1960		pg/L		98	78 - 144	2	50
OCDF	2000	2130		pg/L		106	63 - 170	3	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*75*		*20 - 175*
13C-2,3,7,8-TCDF	*83*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*72*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*75*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*96*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*103*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*74*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*109*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*83*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*93*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*91*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*93*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*92*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*123*		*20 - 186*
13C-OCDD	*87*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*98*		*31 - 191*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 320-403145/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403493
Prep Batch: 403145

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.00101	J	0.0050	0.00084	mg/L		08/12/20 13:33	08/13/20 10:32	1
Arsenic	ND		0.020	0.012	mg/L		08/12/20 13:33	08/13/20 10:32	1
Barium	ND		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 10:32	1
Beryllium	ND		0.0020	0.00030	mg/L		08/12/20 13:33	08/13/20 10:32	1
Boron	0.0261	J	0.10	0.021	mg/L		08/12/20 13:33	08/13/20 10:32	1
Calcium	ND		0.50	0.050	mg/L		08/12/20 13:33	08/13/20 10:32	1
Cadmium	ND		0.0020	0.00050	mg/L		08/12/20 13:33	08/13/20 10:32	1
Cobalt	ND		0.0050	0.0030	mg/L		08/12/20 13:33	08/13/20 10:32	1
Chromium	ND		0.0080	0.0012	mg/L		08/12/20 13:33	08/13/20 10:32	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 320-403145/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403493
Prep Batch: 403145

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.010	0.0021	mg/L		08/12/20 13:33	08/13/20 10:32	1
Iron	ND		0.10	0.020	mg/L		08/12/20 13:33	08/13/20 10:32	1
Potassium	ND		1.0	0.093	mg/L		08/12/20 13:33	08/13/20 10:32	1
Magnesium	ND		0.50	0.040	mg/L		08/12/20 13:33	08/13/20 10:32	1
Manganese	ND		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 10:32	1
Molybdenum	ND		0.020	0.0027	mg/L		08/12/20 13:33	08/13/20 10:32	1
Nickel	ND		0.0050	0.0024	mg/L		08/12/20 13:33	08/13/20 10:32	1
Phosphorus	ND		0.50	0.050	mg/L		08/12/20 13:33	08/13/20 10:32	1
Lead	ND		0.0050	0.0025	mg/L		08/12/20 13:33	08/13/20 10:32	1
Selenium	ND		0.020	0.013	mg/L		08/12/20 13:33	08/13/20 10:32	1
Vanadium	ND		0.0050	0.0019	mg/L		08/12/20 13:33	08/13/20 10:32	1
Zinc	ND		0.010	0.0030	mg/L		08/12/20 13:33	08/13/20 10:32	1
Antimony	ND		0.020	0.0098	mg/L		08/12/20 13:33	08/13/20 10:32	1
Thallium	ND		0.020	0.0090	mg/L		08/12/20 13:33	08/13/20 10:32	1
Tin	ND		0.020	0.0050	mg/L		08/12/20 13:33	08/13/20 10:32	1
Strontium	ND		0.050	0.0050	mg/L		08/12/20 13:33	08/13/20 10:32	1

Lab Sample ID: MB 320-403145/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 405044
Prep Batch: 403145

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		1.0	0.25	mg/L		08/12/20 13:33	08/19/20 11:34	1
Titanium	ND		0.010	0.0021	mg/L		08/12/20 13:33	08/19/20 11:34	1

Lab Sample ID: LCS 320-403145/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 403493
Prep Batch: 403145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.0498	0.0505		mg/L		101	80 - 120
Arsenic	0.500	0.451		mg/L		90	80 - 120
Barium	0.500	0.498		mg/L		100	80 - 120
Beryllium	0.250	0.243		mg/L		97	80 - 120
Boron	4.98	4.68		mg/L		94	80 - 120
Calcium	25.0	24.9		mg/L		99	80 - 120
Cadmium	0.250	0.243		mg/L		97	80 - 120
Cobalt	0.250	0.243		mg/L		97	80 - 120
Chromium	0.250	0.248		mg/L		99	80 - 120
Copper	0.250	0.245		mg/L		98	80 - 120
Iron	5.00	5.10		mg/L		102	80 - 120
Potassium	25.0	24.3		mg/L		97	80 - 120
Magnesium	25.0	24.4		mg/L		98	80 - 120
Manganese	0.250	0.258		mg/L		103	80 - 120
Molybdenum	0.250	0.253		mg/L		101	80 - 120
Nickel	0.250	0.243		mg/L		97	80 - 120
Phosphorus	4.98	5.11		mg/L		103	80 - 120
Lead	0.250	0.252		mg/L		101	80 - 120
Selenium	0.500	0.464		mg/L		93	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 320-403145/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 403493 **Prep Batch: 403145**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium			0.250	0.249		mg/L		100	80 - 120
Zinc			0.500	0.484		mg/L		97	80 - 120
Antimony			0.498	0.443		mg/L		89	80 - 120
Thallium			0.500	0.474		mg/L		95	80 - 120
Tin			0.500	0.507		mg/L		101	80 - 120
Strontium			0.250	0.245		mg/L		98	80 - 120

Lab Sample ID: LCS 320-403145/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 405044 **Prep Batch: 403145**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium			25.0	25.4		mg/L		101	80 - 120
Titanium			0.250	0.251		mg/L		100	80 - 120

Lab Sample ID: 320-63525-1 MS **Client Sample ID: 11215702-Treatment-3**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 403493 **Prep Batch: 403145**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.0012	J B	0.0498	0.0511		mg/L		100	75 - 125
Arsenic	ND		0.500	0.486		mg/L		97	75 - 125
Barium	0.11		0.500	0.603		mg/L		98	75 - 125
Beryllium	0.00042	J	0.250	0.237		mg/L		95	75 - 125
Boron	0.17	B	4.98	4.30		mg/L		83	75 - 125
Calcium	100		25.0	126		mg/L		104	75 - 125
Cadmium	0.00060	J	0.250	0.237		mg/L		95	75 - 125
Cobalt	ND		0.250	0.234		mg/L		94	75 - 125
Chromium	ND		0.250	0.249		mg/L		100	75 - 125
Copper	0.0089	J	0.250	0.251		mg/L		97	75 - 125
Iron	0.26		5.00	5.12		mg/L		97	75 - 125
Potassium	89		25.0	117		mg/L		113	75 - 125
Magnesium	180		25.0	208	4	mg/L		113	75 - 125
Manganese	0.016		0.250	0.271		mg/L		102	75 - 125
Molybdenum	0.0043	J	0.250	0.252		mg/L		99	75 - 125
Nickel	0.0038	J	0.250	0.235		mg/L		93	75 - 125
Phosphorus	ND		4.98	5.58		mg/L		112	75 - 125
Lead	ND		0.250	0.224		mg/L		90	75 - 125
Selenium	ND		0.500	0.482		mg/L		96	75 - 125
Vanadium	0.0046	J	0.250	0.261		mg/L		102	75 - 125
Zinc	0.036		0.500	0.548		mg/L		102	75 - 125
Antimony	ND		0.498	0.441		mg/L		88	75 - 125
Thallium	ND		0.500	0.400		mg/L		80	75 - 125
Tin	ND		0.500	0.477		mg/L		95	75 - 125
Strontium	0.19		0.250	0.439		mg/L		98	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 320-63525-1 MS
Matrix: Water
Analysis Batch: 405044
Client Sample ID: 11215702-Treatment-3
Prep Type: Total/NA
Prep Batch: 403145

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Titanium	0.0028	J	0.250	0.260		mg/L		103	75 - 125

Lab Sample ID: 320-63525-1 MS
Matrix: Water
Analysis Batch: 405044
Client Sample ID: 11215702-Treatment-3
Prep Type: Total/NA
Prep Batch: 403145

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	2400		25.0	2470	4	mg/L		370	75 - 125

Lab Sample ID: 320-63525-1 MSD
Matrix: Water
Analysis Batch: 403493
Client Sample ID: 11215702-Treatment-3
Prep Type: Total/NA
Prep Batch: 403145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	0.0012	J B	0.0498	0.0511		mg/L		100	75 - 125	0	20
Arsenic	ND		0.500	0.499		mg/L		100	75 - 125	3	20
Barium	0.11		0.500	0.613		mg/L		100	75 - 125	2	20
Beryllium	0.00042	J	0.250	0.240		mg/L		96	75 - 125	1	20
Boron	0.17	B	4.98	4.38		mg/L		84	75 - 125	2	20
Calcium	100		25.0	127		mg/L		111	75 - 125	1	20
Cadmium	0.00060	J	0.250	0.241		mg/L		96	75 - 125	2	20
Cobalt	ND		0.250	0.238		mg/L		95	75 - 125	2	20
Chromium	ND		0.250	0.255		mg/L		102	75 - 125	2	20
Copper	0.0089	J	0.250	0.255		mg/L		98	75 - 125	2	20
Iron	0.26		5.00	5.17		mg/L		98	75 - 125	1	20
Potassium	89		25.0	119		mg/L		119	75 - 125	1	20
Magnesium	180		25.0	212	4	mg/L		127	75 - 125	2	20
Manganese	0.016		0.250	0.275		mg/L		104	75 - 125	2	20
Molybdenum	0.0043	J	0.250	0.255		mg/L		100	75 - 125	1	20
Nickel	0.0038	J	0.250	0.240		mg/L		94	75 - 125	2	20
Phosphorus	ND		4.98	5.69		mg/L		114	75 - 125	2	20
Lead	ND		0.250	0.229		mg/L		92	75 - 125	2	20
Selenium	ND		0.500	0.490		mg/L		98	75 - 125	2	20
Vanadium	0.0046	J	0.250	0.267		mg/L		105	75 - 125	2	20
Zinc	0.036		0.500	0.560		mg/L		105	75 - 125	2	20
Antimony	ND		0.498	0.448		mg/L		90	75 - 125	2	20
Thallium	ND		0.500	0.404		mg/L		81	75 - 125	1	20
Tin	ND		0.500	0.486		mg/L		97	75 - 125	2	20
Strontium	0.19		0.250	0.445		mg/L		101	75 - 125	1	20

Lab Sample ID: 320-63525-1 MSD
Matrix: Water
Analysis Batch: 405044
Client Sample ID: 11215702-Treatment-3
Prep Type: Total/NA
Prep Batch: 403145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Titanium	0.0028	J	0.250	0.261		mg/L		103	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 320-63525-1 MSD
Matrix: Water
Analysis Batch: 405044

Client Sample ID: 11215702-Treatment-3
Prep Type: Total/NA
Prep Batch: 403145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	2400		25.0	2440	4	mg/L		254	75 - 125	1	20

Specialty Organics

Prep Batch: 404233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-1	11215702-Treatment-3	Total/NA	Water	1613B	
320-63525-1 - RA	11215702-Treatment-3	Total/NA	Water	1613B	
320-63525-2	11215702-Treatment-4	Total/NA	Water	1613B	
320-63525-2 - RA	11215702-Treatment-4	Total/NA	Water	1613B	
MB 320-404233/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-404233/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-404233/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 405028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-1	11215702-Treatment-3	Total/NA	Water	1613B	404233
320-63525-2	11215702-Treatment-4	Total/NA	Water	1613B	404233
MB 320-404233/1-A	Method Blank	Total/NA	Water	1613B	404233

Analysis Batch: 405030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 320-404233/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	404233

Analysis Batch: 405471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-404233/2-A	Lab Control Sample	Total/NA	Water	1613B	404233

Analysis Batch: 405652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-1 - RA	11215702-Treatment-3	Total/NA	Water	1613B	404233
320-63525-2 - RA	11215702-Treatment-4	Total/NA	Water	1613B	404233

Metals

Prep Batch: 403145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-1	11215702-Treatment-3	Total/NA	Water	3010A	
320-63525-2	11215702-Treatment-4	Total/NA	Water	3010A	
MB 320-403145/1-A	Method Blank	Total/NA	Water	3010A	
LCS 320-403145/2-A	Lab Control Sample	Total/NA	Water	3010A	
320-63525-1 MS	11215702-Treatment-3	Total/NA	Water	3010A	
320-63525-1 MSD	11215702-Treatment-3	Total/NA	Water	3010A	

Analysis Batch: 403493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-1	11215702-Treatment-3	Total/NA	Water	6010C	403145
320-63525-2	11215702-Treatment-4	Total/NA	Water	6010C	403145
MB 320-403145/1-A	Method Blank	Total/NA	Water	6010C	403145
LCS 320-403145/2-A	Lab Control Sample	Total/NA	Water	6010C	403145
320-63525-1 MS	11215702-Treatment-3	Total/NA	Water	6010C	403145
320-63525-1 MSD	11215702-Treatment-3	Total/NA	Water	6010C	403145

Analysis Batch: 405044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-1	11215702-Treatment-3	Total/NA	Water	6010C	403145
320-63525-1	11215702-Treatment-3	Total/NA	Water	6010C	403145

Metals (Continued)

Analysis Batch: 405044 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-63525-2	11215702-Treatment-4	Total/NA	Water	6010C	403145
320-63525-2	11215702-Treatment-4	Total/NA	Water	6010C	403145
MB 320-403145/1-A	Method Blank	Total/NA	Water	6010C	403145
LCS 320-403145/2-A	Lab Control Sample	Total/NA	Water	6010C	403145
320-63525-1 MS	11215702-Treatment-3	Total/NA	Water	6010C	403145
320-63525-1 MS	11215702-Treatment-3	Total/NA	Water	6010C	403145
320-63525-1 MSD	11215702-Treatment-3	Total/NA	Water	6010C	403145
320-63525-1 MSD	11215702-Treatment-3	Total/NA	Water	6010C	403145

Lab Chronicle

Client Sample ID: 11215702-Treatment-3

Lab Sample ID: 320-63525-1

Date Collected: 08/07/20 12:30
Matrix: Water
Date Received: 08/08/20 12:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			404233	08/17/20 08:45	SR1	TAL SAC
Total/NA	Analysis	1613B		1	405028	08/19/20 15:12	AS	TAL SAC
Total/NA	Prep	1613B	RA		404233	08/17/20 08:45	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	405652	08/20/20 20:44	AS	TAL SAC
Total/NA	Prep	3010A			403145	08/12/20 13:33	JP	TAL SAC
Total/NA	Analysis	6010C		1	403493	08/13/20 12:45	SP	TAL SAC
Total/NA	Prep	3010A			403145	08/12/20 13:33	JP	TAL SAC
Total/NA	Analysis	6010C		1	405044	08/19/20 11:50	SP	TAL SAC
Total/NA	Prep	3010A			403145	08/12/20 13:33	JP	TAL SAC
Total/NA	Analysis	6010C		10	405044	08/19/20 12:30	SP	TAL SAC

Client Sample ID: 11215702-Treatment-4

Lab Sample ID: 320-63525-2

Date Collected: 08/07/20 13:00
Matrix: Water
Date Received: 08/08/20 12:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			404233	08/17/20 08:45	SR1	TAL SAC
Total/NA	Analysis	1613B		1	405028	08/19/20 15:57	AS	TAL SAC
Total/NA	Prep	1613B	RA		404233	08/17/20 08:45	SR1	TAL SAC
Total/NA	Analysis	1613B	RA	1	405652	08/20/20 21:22	AS	TAL SAC
Total/NA	Prep	3010A			403145	08/12/20 13:33	JP	TAL SAC
Total/NA	Analysis	6010C		1	403493	08/13/20 13:12	SP	TAL SAC
Total/NA	Prep	3010A			403145	08/12/20 13:33	JP	TAL SAC
Total/NA	Analysis	6010C		1	405044	08/19/20 12:22	SP	TAL SAC
Total/NA	Prep	3010A			403145	08/12/20 13:33	JP	TAL SAC
Total/NA	Analysis	6010C		10	405044	08/19/20 12:50	SP	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 320-63525-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	**Program**	**Identification Number**	**Expiration Date**
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010C	3010A	Water	Antimony
6010C	3010A	Water	Arsenic
6010C	3010A	Water	Barium
6010C	3010A	Water	Beryllium
6010C	3010A	Water	Boron
6010C	3010A	Water	Cadmium
6010C	3010A	Water	Calcium
6010C	3010A	Water	Chromium
6010C	3010A	Water	Cobalt
6010C	3010A	Water	Copper
6010C	3010A	Water	Iron
6010C	3010A	Water	Lead
6010C	3010A	Water	Magnesium
6010C	3010A	Water	Manganese
6010C	3010A	Water	Molybdenum
6010C	3010A	Water	Nickel
6010C	3010A	Water	Phosphorus
6010C	3010A	Water	Potassium
6010C	3010A	Water	Selenium
6010C	3010A	Water	Silver
6010C	3010A	Water	Sodium
6010C	3010A	Water	Strontium
6010C	3010A	Water	Thallium
6010C	3010A	Water	Tin
6010C	3010A	Water	Titanium
6010C	3010A	Water	Vanadium
6010C	3010A	Water	Zinc
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc.
Job ID: 320-63525-1
Project/Site: San Jacinto River Waste Pits Superfund

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
6010C	Metals (ICP)	SW846	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC
3010A	Preparation, Total Metals	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-63525-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-63525-1	11215702-Treatment-3	Water	08/07/20 12:30	08/08/20 12:19	
320-63525-2	11215702-Treatment-4	Water	08/07/20 13:00	08/08/20 12:19	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 390253

Lab Sample ID: IC 320-390253/3 Client Sample ID:

Date Analyzed: 06/27/20 14:42 Lab File ID: 27JN20A10D5_3.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	17.22	Invalid Compound ID	shardaa	06/28/20 13:06

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 405028

Lab Sample ID: MB 320-404233/1-A Client Sample ID:

Date Analyzed: 08/19/20 12:57 Lab File ID: 19AU2010D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,6,7,8-HpCDF	33.55	Split Peak	dadunj	08/21/20 08:32
OCDD	36.65	Split Peak	dadunj	08/21/20 08:33
OCDF	36.75	Split Peak	dadunj	08/21/20 08:33

Lab Sample ID: 320-63525-1 Client Sample ID: 11215702-Treatment-3

Date Analyzed: 08/19/20 15:12 Lab File ID: 19AU2010D5_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	08/21/20 08:43
1,2,3,7,8-PeCDF	21.87	Baseline	dadunj	08/21/20 08:41
1,2,3,4,7,8-HxCDF	29.98	Baseline	dadunj	08/21/20 08:42
2,3,4,6,7,8-HxCDF	31.18	Baseline	dadunj	08/21/20 08:42
1,2,3,4,7,8-HxCDD	31.38	Baseline	dadunj	08/21/20 08:43
1,2,3,7,8,9-HxCDF	32.06	Split Peak	dadunj	08/21/20 08:43
1,2,3,4,6,7,8-HpCDF	33.57	Split Peak	dadunj	08/21/20 08:43
1,2,3,4,6,7,8-HpCDD	34.35	Split Peak	dadunj	08/21/20 08:43
OCDD	36.65	Split Peak	dadunj	08/21/20 08:44
OCDF	36.74	Split Peak	dadunj	08/21/20 08:44

Lab Sample ID: 320-63525-2 Client Sample ID: 11215702-Treatment-4

Date Analyzed: 08/19/20 15:57 Lab File ID: 19AU2010D5_8.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	08/21/20 08:46
1,2,3,4,6,7,8-HpCDD	34.34	Baseline	dadunj	08/21/20 08:47
OCDD	36.65	Split Peak	dadunj	08/21/20 08:47
OCDF	36.73	Split Peak	dadunj	08/21/20 08:47

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: 4D2 Analysis Batch Number: 405198

Lab Sample ID: IC 320-405198/4 Client Sample ID:

Date Analyzed: 08/20/20 03:24 Lab File ID: 20AU204D2_006.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
37Cl4-2,3,7,8-TCDD	13.64	Peak assignment corrected	arghestanis	08/20/20 09:17

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: 4D2 Analysis Batch Number: 405652

Lab Sample ID: 320-63525-1 RA Client Sample ID: 11215702-Treatment-3 RA

Date Analyzed: 08/20/20 20:44 Lab File ID: 20AU20D4D2_008.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	15.00	Poor chromatography	shardaa	08/21/20 11:44

Lab Sample ID: 320-63525-2 RA Client Sample ID: 11215702-Treatment-4 RA

Date Analyzed: 08/20/20 21:22 Lab File ID: 20AU20D4D2_009.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	14.99	Poor chromatography	shardaa	08/21/20 11:45

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 383168

Lab Sample ID: WDM 320-383168/1 Client Sample ID:

Date Analyzed: 06/03/20 12:28 Lab File ID: 03jn20dfs1_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,8,9-PeCDD	30.80	Peak assignment corrected	stephensk	06/04/20 08:20

Lab Sample ID: IC 320-383168/3 Client Sample ID:

Date Analyzed: 06/03/20 14:05 Lab File ID: 03jn20dfs1_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.35	Incomplete Integration	stephensk	06/04/20 08:12
13C-1,2,3,4-TCDD	21.30	Peak assignment corrected	stephensk	06/03/20 16:25
2,3,7,8-TCDD	21.70	Incomplete Integration	stephensk	06/04/20 08:13
13C-1,2,3,4,7,8-HxCDD	36.17	Peak assignment corrected	stephensk	06/03/20 16:26
13C-1,2,3,6,7,8-HxCDD	36.28	Peak assignment corrected	stephensk	06/03/20 16:26
13C-1,2,3,7,8,9-HxCDD	36.65	Peak assignment corrected	stephensk	06/03/20 16:25

Lab Sample ID: IC 320-383168/4 Client Sample ID:

Date Analyzed: 06/03/20 14:53 Lab File ID: 03jn20dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.32	Incomplete Integration	stephensk	06/04/20 08:15

Lab Sample ID: IC 320-383168/6 Client Sample ID:

Date Analyzed: 06/03/20 16:30 Lab File ID: 03jn20dfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,4,7,8-PeCDF	28.84	Peak assignment corrected	stephensk	06/04/20 08:11
13C-1,2,3,4,7,8-HxCDF	34.99	Peak assignment corrected	stephensk	06/04/20 08:11
13C-1,2,3,4,7,8-HxCDD	36.18	Peak assignment corrected	stephensk	06/04/20 08:11
13C-1,2,3,4,7,8,9-HpCDF	39.89	Peak assignment corrected	stephensk	06/04/20 08:11

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 383168

Lab Sample ID: ICV 320-383168/10 Client Sample ID:

Date Analyzed: 06/03/20 20:01 Lab File ID: 03jn20dfs1_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.31	Peak assignment corrected	arghestanis	06/08/20 08:40
13C-1,2,3,4-TCDD	21.28	Peak assignment corrected	stephensk	06/04/20 08:22

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-63525-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 405471

Lab Sample ID: LCS 320-404233/2-A Client Sample ID:

Date Analyzed: 08/21/20 09:01 Lab File ID: 20au20dfs1_30.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,7,8-PeCDD	29.55	Invalid Compound ID	shardaa	08/24/20 10:58

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25	CIL, Lot ER03111502			(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00379	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25	Wellington Labs, Lot 13PAR0418			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00432	01/31/21	07/16/20	Acetone, Lot 0000236139	500 mL	HRDXNIDA_00379	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL1_00031	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	62.5 uL	37Cl4-2,3,7,8-TCDD	0.25 ng/mL
					HRDXNTA_00120	250 uL	1,2,3,4,6,7,8-HpCDD	1.25 ng/mL
							1,2,3,4,6,7,8-HpCDF	1.25 ng/mL
							1,2,3,4,7,8,9-HpCDF	1.25 ng/mL
							1,2,3,4,7,8-HxCDD	1.25 ng/mL
							1,2,3,4,7,8-HxCDF	1.25 ng/mL
							1,2,3,6,7,8-HxCDD	1.25 ng/mL
							1,2,3,6,7,8-HxCDF	1.25 ng/mL
							1,2,3,7,8,9-HxCDD	1.25 ng/mL
							1,2,3,7,8,9-HxCDF	1.25 ng/mL
							1,2,3,7,8-PeCDD	1.25 ng/mL
							1,2,3,7,8-PeCDF	1.25 ng/mL
							2,3,4,6,7,8-HxCDF	1.25 ng/mL
							2,3,4,7,8-PeCDF	1.25 ng/mL
							2,3,7,8-TCDD	0.25 ng/mL
							2,3,7,8-TCDF	0.25 ng/mL
							OCDD	2.5 ng/mL
							OCDF	2.5 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00120	03/04/21	05/05/20	Isooctane, Lot 0000211197	10 mL	HRDXNTA_00119	0.5 mL	1,2,3,4,6,7,8-HpCDD	1 ng/mL
							1,2,3,4,6,7,8-HpCDF	1 ng/mL
							1,2,3,4,7,8,9-HpCDF	1 ng/mL
							1,2,3,4,7,8-HxCDD	1 ng/mL
							1,2,3,4,7,8-HxCDF	1 ng/mL
							1,2,3,6,7,8-HxCDD	1 ng/mL
							1,2,3,6,7,8-HxCDF	1 ng/mL
							1,2,3,7,8,9-HxCDD	1 ng/mL
							1,2,3,7,8,9-HxCDF	1 ng/mL
							1,2,3,7,8-PeCDD	1 ng/mL
							1,2,3,7,8-PeCDF	1 ng/mL
							2,3,4,6,7,8-HxCDF	1 ng/mL
							2,3,4,7,8-PeCDF	1 ng/mL
							2,3,7,8-TCDD	0.2 ng/mL
							2,3,7,8-TCDF	0.2 ng/mL
							OCDD	2 ng/mL
							OCDF	2 ng/mL
..HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
...HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00379	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00092	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00093	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent Reagent ID	Parent Reagent Volume Added	Analyte	Concentration
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00240	07/27/21	07/27/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00121	06/02/21	06/02/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
MT6010CCV_00099	09/01/20	08/03/20	HNO3/HCL, Lot --	500 mL	MT-CALSTD1_00033	250 mL	Al	25 mg/L
							Calcium	25 mg/L
							Iron	25 mg/L
							Magnesium	25 mg/L
							Potassium	25 mg/L
							Sodium	25 mg/L
							Silver	0.498 mg/L
							Arsenic	0.5 mg/L
							Barium	2.5 mg/L
							Beryllium	0.498 mg/L
							Boron	1.001 mg/L
							Cadmium	0.5 mg/L
							Cobalt	2.4925 mg/L
							Chromium	2.5075 mg/L
							Copper	2.4775 mg/L
							Manganese	2.5025 mg/L
							Molybdenum	0.999 mg/L
							Nickel	2.5075 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Lead	0.5045 mg/L
							Phosphorus	2.505 mg/L
							Antimony	0.498 mg/L
							Selenium	0.502 mg/L
							Tin	2.4975 mg/L
							Strontium	2.49 mg/L
							Titanium	0.998 mg/L
							Thallium	0.501 mg/L
							Vanadium	2.5075 mg/L
							Zinc	2.5125 mg/L
.MT-CALSTD1_00033	09/01/20	07/27/20	HNO3/HCL, Lot --	1000 mL	MT_CalMix2_00004	25 mL	Al	50 mg/L
							Calcium	50 mg/L
							Iron	50 mg/L
							Magnesium	50 mg/L
							Potassium	50 mg/L
							Sodium	50 mg/L
					MTAgXXXTA_00012	1 mL	Silver	0.996 mg/L
					MTAsXXXTA_00010	1 mL	Arsenic	1 mg/L
					MTBaXXXTA_00010	5 mL	Barium	5 mg/L
					MTBeXXXTA_00009	1 mL	Beryllium	0.996 mg/L
					MTBXXXXTA_00011	2 mL	Boron	2.002 mg/L
					MTCdXXXTA_00009	1 mL	Cadmium	1 mg/L
					MTCoXXXTA_00009	5 mL	Cobalt	4.985 mg/L
					MTCrXXXTA_00010	5 mL	Chromium	5.015 mg/L
					MTCuXXXTA_00009	5 mL	Copper	4.955 mg/L
					MTMnXXXTA_00009	5 mL	Manganese	5.005 mg/L
					MTMoXXXTA_00009	2 mL	Molybdenum	1.998 mg/L
					MTNiXXXTA_00009	5 mL	Nickel	5.015 mg/L
					MTPbXXXTA_00011	1 mL	Lead	1.009 mg/L
					MTPXXXTA_00004	5 mL	Phosphorus	5.01 mg/L
					MTSbXXXTA_00009	1 mL	Antimony	0.996 mg/L
					MTSeXXXTA_00009	1 mL	Selenium	1.004 mg/L
					MTSnXXXTA_00011	5 mL	Tin	4.995 mg/L
					MTSrXXXTA_00009	5 mL	Strontium	4.98 mg/L
					MTTiXXXTA_00009	2 mL	Titanium	1.996 mg/L
					MTTlXXXTA_00010	1 mL	Thallium	1.002 mg/L
					MTVXXXXTA_00010	5 mL	Vanadium	5.015 mg/L
					MTZnXXXTA_00012	5 mL	Zinc	5.025 mg/L
..MT_CalMix2_00004	09/01/20	CPI International, Lot 982734-1			(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2000 mg/L
..MTAgXXXTA_00012	10/28/20	CPI International, Lot 975475-80			(Purchased Reagent)		Silver	996 ug/mL
..MTAsXXXTA_00010	10/25/20	CPI, Lot 175385-53			(Purchased Reagent)		Arsenic	1000 ug/mL
..MTBaXXXTA_00010	11/25/20	CPI international, Lot 273421-73			(Purchased Reagent)		Barium	1000 ug/mL
..MTBeXXXTA_00009	11/25/20	CPI international, Lot 660981-51			(Purchased Reagent)		Beryllium	996 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MTBXXXXTA_00011	11/21/20		CPI, Lot 982524-63		(Purchased Reagent)		Boron	1001 ug/mL
..MTCdXXXTA_00009	11/25/20		CPI International, Lot 160499-113		(Purchased Reagent)		Cadmium	1000 ug/mL
..MTCoXXXTA_00009	11/25/20		CPI, Lot 979906-18		(Purchased Reagent)		Cobalt	997 ug/mL
..MTCrXXXTA_00010	11/25/20		CPI International, Lot 975466-82		(Purchased Reagent)		Chromium	1003 ug/mL
..MTCuXXXTA_00009	11/25/20		CPI International, Lot 982446-23		(Purchased Reagent)		Copper	991 ug/mL
..MTMnXXXTA_00009	11/25/20		CPI International, Lot 167539-89		(Purchased Reagent)		Manganese	1001 ug/mL
..MTMoXXXTA_00009	11/25/20		CPI International, Lot 169424-57		(Purchased Reagent)		Molybdenum	999 ug/mL
..MTNiXXXTA_00009	11/25/20		CPI, Lot 984273-10		(Purchased Reagent)		Nickel	1003 ug/mL
..MTPbXXXTA_00011	11/25/20		CPI, Lot 981329-43		(Purchased Reagent)		Lead	1009 ug/mL
..MTPXXXTA_00004	11/25/20		CPI, Lot 978200-13		(Purchased Reagent)		Phosphorus	1002 ug/mL
..MTSbXXXTA_00009	10/28/20		CPI, Lot 1013797-6		(Purchased Reagent)		Antimony	996 ug/mL
..MTSeXXXTA_00009	11/25/20		CPI, Lot 982461-24		(Purchased Reagent)		Selenium	1004 ug/mL
..MTSnXXXTA_00011	11/25/20		CPI, Lot 977645-7		(Purchased Reagent)		Tin	999 ug/mL
..MTSrXXXTA_00009	11/25/20		CPI, Lot 998106-28		(Purchased Reagent)		Strontium	996 ug/mL
..MTTiXXXTA_00009	11/25/20		CPI, Lot 987438-5		(Purchased Reagent)		Titanium	998 ug/mL
..MTTlXXXTA_00010	11/25/20		CPI, Lot 148983-103		(Purchased Reagent)		Thallium	1002 ug/mL
..MTVXXXXTA_00010	11/25/20		CPI International, Lot 990117-53		(Purchased Reagent)		Vanadium	1003 ug/mL
..MTZnXXXTA_00012	10/28/20		CPI International, Lot 984272-63		(Purchased Reagent)		Zinc	1005 ug/mL
MT6010CRI_QSM_00064	11/23/20	07/02/20	HNO3/HCL, Lot --	100 mL	MT6010QSMLL_00008	1 mL	Al	0.2 mg/L
							Antimony	0.02998 mg/L
							Arsenic	0.03997 mg/L
							Barium	0.02001 mg/L
							Beryllium	0.002996 mg/L
							Boron	0.2 mg/L
							Cadmium	0.002998 mg/L
							Calcium	0.4996 mg/L
							Chromium	0.01 mg/L
							Cobalt	0.01001 mg/L
							Copper	0.015 mg/L
							Iron	0.1 mg/L
							Lead	0.01 mg/L
							Magnesium	0.4995 mg/L
							Manganese	0.01001 mg/L
							Molybdenum	0.01999 mg/L
							Nickel	0.01001 mg/L
							Phosphorus	0.4996 mg/L
							Potassium	1 mg/L
							Selenium	0.04 mg/L
							Silver	0.005 mg/L
							Strontium	0.05002 mg/L
							Thallium	0.02999 mg/L
							Tin	0.02 mg/L
							Titanium	0.01 mg/L
							Vanadium	0.02 mg/L
							Zinc	0.02001 mg/L
.MT6010QSMLL_00008	11/23/20		Inorganic Ventures, Lot P2-MEB686159		(Purchased Reagent)		Al	20 mg/L
							Antimony	2.998 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent Reagent ID	Parent Reagent Volume Added	Analyte	Concentration
							Arsenic	3.997 mg/L
							Barium	2.001 mg/L
							Beryllium	0.2996 mg/L
							Boron	20 mg/L
							Cadmium	0.2998 mg/L
							Calcium	49.96 mg/L
							Chromium	1 mg/L
							Cobalt	1.001 mg/L
							Copper	1.5 mg/L
							Iron	10 mg/L
							Lead	1 mg/L
							Magnesium	49.95 mg/L
							Manganese	1.001 mg/L
							Molybdenum	1.999 mg/L
							Nickel	1.001 mg/L
							Phosphorus	49.96 mg/L
							Potassium	100 mg/L
							Selenium	4 mg/L
							Silver	0.5 mg/L
							Strontium	5.002 mg/L
							Thallium	2.999 mg/L
							Tin	2 mg/L
							Titanium	1 mg/L
							Vanadium	2 mg/L
							Zinc	2.001 mg/L
MT6010CRI_STD_00041	11/23/20	07/15/20	HNO3/HCL, Lot --	100 mL	MT6010LLSTD_00016	1 mL	Antimony	0.01999 mg/L
							Arsenic	0.02 mg/L
							Barium	0.004995 mg/L
							Beryllium	0.002 mg/L
							Boron	0.1 mg/L
							Cadmium	0.002 mg/L
							Calcium	0.4996 mg/L
							Chromium	0.005006 mg/L
							Cobalt	0.004994 mg/L
							Copper	0.01 mg/L
							Iron	0.1 mg/L
							Lead	0.004998 mg/L
							Magnesium	0.5004 mg/L
							Manganese	0.004998 mg/L
							Molybdenum	0.01999 mg/L
							Nickel	0.005003 mg/L
							Phosphorus	0.5003 mg/L
							Potassium	0.999 mg/L
							Selenium	0.01999 mg/L
							Silver	0.005 mg/L
							Sodium	0.5003 mg/L
							Strontium	0.05004 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Thallium	0.02001 mg/L
							Tin	0.02 mg/L
							Titanium	0.01 mg/L
							Vanadium	0.005 mg/L
							Zinc	0.01 mg/L
.MT6010LLSTD_00016	11/23/20	Inorganic Ventures, Lot P2-MEB686161			(Purchased Reagent)		Antimony	1.999 ug/mL
							Arsenic	2 ug/mL
							Barium	0.4995 ug/mL
							Beryllium	0.2 ug/mL
							Boron	10 ug/mL
							Cadmium	0.2 ug/mL
							Calcium	49.96 ug/mL
							Chromium	0.5006 ug/mL
							Cobalt	0.4994 ug/mL
							Copper	1 ug/mL
							Iron	10 ug/mL
							Lead	0.4998 ug/mL
							Magnesium	50.04 ug/mL
							Manganese	0.4998 ug/mL
							Molybdenum	1.999 ug/mL
							Nickel	0.5003 ug/mL
							Phosphorus	50.03 ug/mL
							Potassium	99.9 ug/mL
							Selenium	1.999 ug/mL
							Silver	0.5 ug/mL
							Sodium	50.03 ug/mL
							Strontium	5.004 ug/mL
							Thallium	2.001 ug/mL
							Tin	2 ug/mL
							Titanium	1 ug/mL
							Vanadium	0.5 ug/mL
							Zinc	1 ug/mL
MT6010ICSA_00058	01/08/21	07/21/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 ug/mL
							Calcium	500 ug/mL
							Iron	200 ug/mL
							Magnesium	500 ug/mL
.MT-ICP-ICSA_00002	01/08/21	CPI, Lot 1025879-1			(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
MT6010ICSA_00059	01/08/21	08/14/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 ug/mL
							Calcium	500 ug/mL
							Iron	200 ug/mL
							Magnesium	500 ug/mL
.MT-ICP-ICSA_00002	01/08/21	CPI, Lot 1025879-1			(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							Magnesium	5000 mg/L
MT6010ICSAB_00042	01/08/21	08/06/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 mg/L
							Calcium	500 mg/L
							Iron	200 mg/L
							Magnesium	500 mg/L
					MT-ICP-ICSB2_00002	1 mL	Arsenic	1 mg/L
							Barium	1.001 mg/L
							Beryllium	0.5 mg/L
							Boron	10 mg/L
							Cadmium	1 mg/L
							Chromium	1.001 mg/L
							Cobalt	1 mg/L
							Copper	1.001 mg/L
							Lead	1 mg/L
							Manganese	1 mg/L
							Nickel	1.001 mg/L
							Phosphorus	10 mg/L
							Potassium	10 mg/L
							Selenium	1 mg/L
							Silver	1 mg/L
							Sodium	10 mg/L
							Strontium	1 mg/L
							Thallium	1 mg/L
							Vanadium	1.001 mg/L
							Zinc	1 mg/L
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
.MT-ICP-ICSB2_00002	01/08/21		CPI, Lot 992185-1		(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100.1 mg/L
							Beryllium	50 mg/L
							Boron	1000 mg/L
							Cadmium	100 mg/L
							Chromium	100.1 mg/L
							Cobalt	100 mg/L
							Copper	100.1 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100.1 mg/L
							Phosphorus	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Strontium	100 mg/L
							Thallium	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vanadium	100.1 mg/L
							Zinc	100 mg/L
MT6010ICV_00053	11/21/20	07/22/20	5% HCl +2%HNO3, Lot NA	100 mL	MT_CalMix1-SS_00002	1 mL	Antimony	1 ppm
							Arsenic	1.001 ppm
							Barium	1 ppm
							Beryllium	1 ppm
							Cadmium	1 ppm
							Chromium	1 ppm
							Cobalt	1 ppm
							Copper	1 ppm
							Lead	1 ppm
							Manganese	1 ppm
							Molybdenum	1.001 ppm
							Nickel	1 ppm
							Selenium	1 ppm
							Strontium	1.001 ppm
							Thallium	1 ppm
							Tin	1 ppm
							Titanium	1 ppm
							Vanadium	1 ppm
					MT_CalMix2-SS_00002	0.5 mL	Al	10 ppm
							Calcium	10 ppm
							Iron	10 ppm
							Magnesium	10 ppm
							Potassium	10 ppm
							Sodium	10.005 ppm
					MT_CalMix3-SS_00002	0.2 mL	Phosphorus	2 ppm
					MTAgXXXTA-SS_00002	0.025 mL	Silver	0.2505 ppm
					MTBXXXXTA_00011	0.05 mL	Boron	0.5005 ppm
					MTZnXXXTA-SS_00002	0.1 mL	Zinc	1 ppm
.MT_CalMix1-SS_00002	11/21/20	CPI International, Lot 992738-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100.1 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Molybdenum	100.1 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Strontium	100.1 mg/L
							Thallium	100 mg/L
							Tin	100 mg/L
							Titanium	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Vanadium	100 mg/L
.MT_CalMix2-SS_00002	11/21/20	CPI International, Lot 992740-2			(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2001 mg/L
.MT_CalMix3-SS_00002	11/21/20	CPI International, Lot 987270-1			(Purchased Reagent)		Phosphorus	1000 mg/L
.MTAgXXXTA-SS_00002	11/21/20	Inorganic Ventures, Lot P2-AG678505			(Purchased Reagent)		Silver	1002 ug/mL
.MTBXXXXTA_00011	11/21/20	CPI, Lot 982524-63			(Purchased Reagent)		Boron	1001 ug/mL
.MTZnXXXTA-SS_00002	11/21/20	Inorganic Ventures, Lot P2-ZN675323			(Purchased Reagent)		Zinc	1000 ug/mL
MT6010ICV_00054	11/21/20	08/12/20	5% HCl +2%HNO3, Lot NA	100 mL	MT_CalMix1-SS_00002	1 mL	Antimony	1 ppm
							Arsenic	1.001 ppm
							Barium	1 ppm
							Beryllium	1 ppm
							Cadmium	1 ppm
							Chromium	1 ppm
							Cobalt	1 ppm
							Copper	1 ppm
							Lead	1 ppm
							Manganese	1 ppm
							Molybdenum	1.001 ppm
							Nickel	1 ppm
							Selenium	1 ppm
							Strontium	1.001 ppm
							Thallium	1 ppm
							Tin	1 ppm
							Titanium	1 ppm
							Vanadium	1 ppm
					MT_CalMix2-SS_00002	0.5 mL	Al	10 ppm
							Calcium	10 ppm
							Iron	10 ppm
							Magnesium	10 ppm
							Potassium	10 ppm
							Sodium	10.005 ppm
					MT_CalMix3-SS_00002	0.2 mL	Phosphorus	2 ppm
					MTAgXXXTA-SS_00002	0.025 mL	Silver	0.2505 ppm
					MTBXXXXTA_00011	0.05 mL	Boron	0.5005 ppm
					MTZnXXXTA-SS_00002	0.1 mL	Zinc	1 ppm
.MT_CalMix1-SS_00002	11/21/20	CPI International, Lot 992738-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100.1 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Lead	100 mg/L
							Manganese	100 mg/L
							Molybdenum	100.1 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Strontium	100.1 mg/L
							Thallium	100 mg/L
							Tin	100 mg/L
							Titanium	100 mg/L
							Vanadium	100 mg/L
.MT_CalMix2-SS_00002	11/21/20		CPI International, Lot 992740-2		(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2001 mg/L
.MT_CalMix3-SS_00002	11/21/20		CPI International, Lot 987270-1		(Purchased Reagent)		Phosphorus	1000 mg/L
.MTAgXXXTA-SS_00002	11/21/20		Inorganic Ventures, Lot P2-AG678505		(Purchased Reagent)		Silver	1002 ug/mL
.MTBXXXXTA_00011	11/21/20		CPI, Lot 982524-63		(Purchased Reagent)		Boron	1001 ug/mL
.MTZnXXXTA-SS_00002	11/21/20		Inorganic Ventures, Lot P2-ZN675323		(Purchased Reagent)		Zinc	1000 ug/mL
MT6010LCS1_00017	01/30/21	06/01/20	5% HNO3, Lot na	1000 mL	MT_spike1_00005	250 mL	Arsenic	50 mg/L
							Barium	50 mg/L
							Beryllium	24.9975 mg/L
							Cadmium	25 mg/L
							Chromium	25 mg/L
							Cobalt	24.995 mg/L
							Copper	25 mg/L
							Lead	25 mg/L
							Li	25 mg/L
							Manganese	25 mg/L
							Molybdenum	25 mg/L
							Nickel	25 mg/L
							Selenium	50 mg/L
							Si	50 mg/L
							Strontium	25 mg/L
							Thallium	50 mg/L
							Tin	50 mg/L
							Titanium	25 mg/L
							Vanadium	25 mg/L
.MT_spike1_00005	01/30/21		CPI, Lot 1021235-1		(Purchased Reagent)		Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	99.99 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	99.98 mg/L
							Copper	100 mg/L
							Lead	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Li	100 mg/L
							Manganese	100 mg/L
							Molybdenum	100 mg/L
							Nickel	100 mg/L
							Selenium	200 mg/L
							Si	200 mg/L
							Strontium	100 mg/L
							Thallium	200 mg/L
							Tin	200 mg/L
							Titanium	100 mg/L
							Vanadium	100 mg/L
MT6010LCS2_00017	10/04/20	06/01/20	5% HNO3, Lot na	1000 mL	MT_spike2_00006	500 mL	Al	500 mg/L
							Calcium	2500 mg/L
							Iron	500 mg/L
							Magnesium	2500 mg/L
							Potassium	2500 mg/L
							Sodium	2500 mg/L
.MT_spike2_00006	10/04/20		CPI, Lot 992745-2		(Purchased Reagent)		Al	1000 mg/L
							Calcium	5000 mg/L
							Iron	1000 mg/L
							Magnesium	5000 mg/L
							Potassium	5000 mg/L
							Sodium	5000 mg/L
MT6010LCS3_00040	10/28/20	08/07/20	5%HNO3, Lot na	100 mL	MTAgXXXTA_00012	0.5 mL	Silver	4.98 mg/L
					MTBXXXXTA_00013	10 mL	Boron	498.1 mg/L
					MTPXXXTA_00006	5 mL	Phosphorus	497.85 mg/L
					MTSbXXXTA_00010	5 mL	Antimony	49.8 mg/L
					MTSiXXXTA_00020	4.5 mL	Si	448.65 mg/L
							SiO2	930.015 mg/L
					MTSXXXXTA_00017	5 mL	Sulfur	498.3 mg/L
					MTZnXXXTA_00013	5 mL	Zinc	50 mg/L
.MTAgXXXTA_00012	10/28/20		CPI International, Lot 975475-80		(Purchased Reagent)		Silver	996 ug/mL
.MTBXXXXTA_00013	05/21/21		CPI, Lot 1009207-4		(Purchased Reagent)		Boron	4981 ug/mL
.MTPXXXTA_00006	06/22/21		CPI, Lot 979480-31		(Purchased Reagent)		Phosphorus	9957 ug/mL
.MTSbXXXTA_00010	10/08/21		CPI, Lot 1013797-6		(Purchased Reagent)		Antimony	996 ug/mL
.MTSiXXXTA_00020	04/14/21		CPI, Lot 977647-58		(Purchased Reagent)		Si	9970 ug/mL
							SiO2	20667 ug/mL
.MTSXXXXTA_00017	05/14/21		CPI, Lot 996813-5		(Purchased Reagent)		Sulfur	9966 ug/mL
.MTZnXXXTA_00013	09/20/21		CPI International, Lot 1007922-57		(Purchased Reagent)		Zinc	1000 ug/mL
MT6010PDS_00011	10/28/20	07/30/20	5% HNO3, Lot n/a	100 mL	MT-ICP-ICSA_00002	5 mL	Calcium	250 mg/L
							Iron	100 mg/L
							Magnesium	250 mg/L
					MT-ICP-ICSB1_00002	2.5 mL	Antimony	2.5 mg/L
							Molybdenum	2.5 mg/L
							Tin	2.5025 mg/L
							Titanium	2.5 mg/L
					MT-ICP-ICSB2_00002	2.5 mL	Arsenic	2.5 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Barium	2.5025 mg/L
							Beryllium	1.25 mg/L
							Boron	25 mg/L
							Cadmium	2.5 mg/L
							Chromium	2.5025 mg/L
							Cobalt	2.5 mg/L
							Copper	2.5025 mg/L
							Lead	2.5 mg/L
							Manganese	2.5 mg/L
							Nickel	2.5025 mg/L
							Phosphorus	25 mg/L
							Potassium	249.213 mg/L
							Selenium	2.5 mg/L
							Silver	2.5 mg/L
							Sodium	251.575 mg/L
							Strontium	2.5 mg/L
							Thallium	2.5 mg/L
							Vanadium	2.5025 mg/L
							Zinc	2.5 mg/L
					MTKXXXXTA_00016	2.25 mL	Potassium	249.213 mg/L
					MTNaXXXXTA_00005	2.25 mL	Sodium	251.575 mg/L
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
.MT-ICP-ICSB1_00002	01/08/21		CPI, Lot 1023499-1		(Purchased Reagent)		Antimony	100 mg/L
							Molybdenum	100 mg/L
							Tin	100.1 mg/L
							Titanium	100 mg/L
.MT-ICP-ICSB2_00002	01/08/21		CPI, Lot 992185-1		(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100.1 mg/L
							Beryllium	50 mg/L
							Boron	1000 mg/L
							Cadmium	100 mg/L
							Chromium	100.1 mg/L
							Cobalt	100 mg/L
							Copper	100.1 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100.1 mg/L
							Phosphorus	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Strontium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100.1 mg/L
							Zinc	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MTKXXXXTA_00016	12/10/20	CPI International, Lot 172053-80			(Purchased Reagent)		Potassium	9965 ug/mL
.MTNaXXXXTA_00005	12/14/20	CPI International, Lot 752887-33			(Purchased Reagent)		Sodium	10070 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 KSS

(pg 1/6)

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

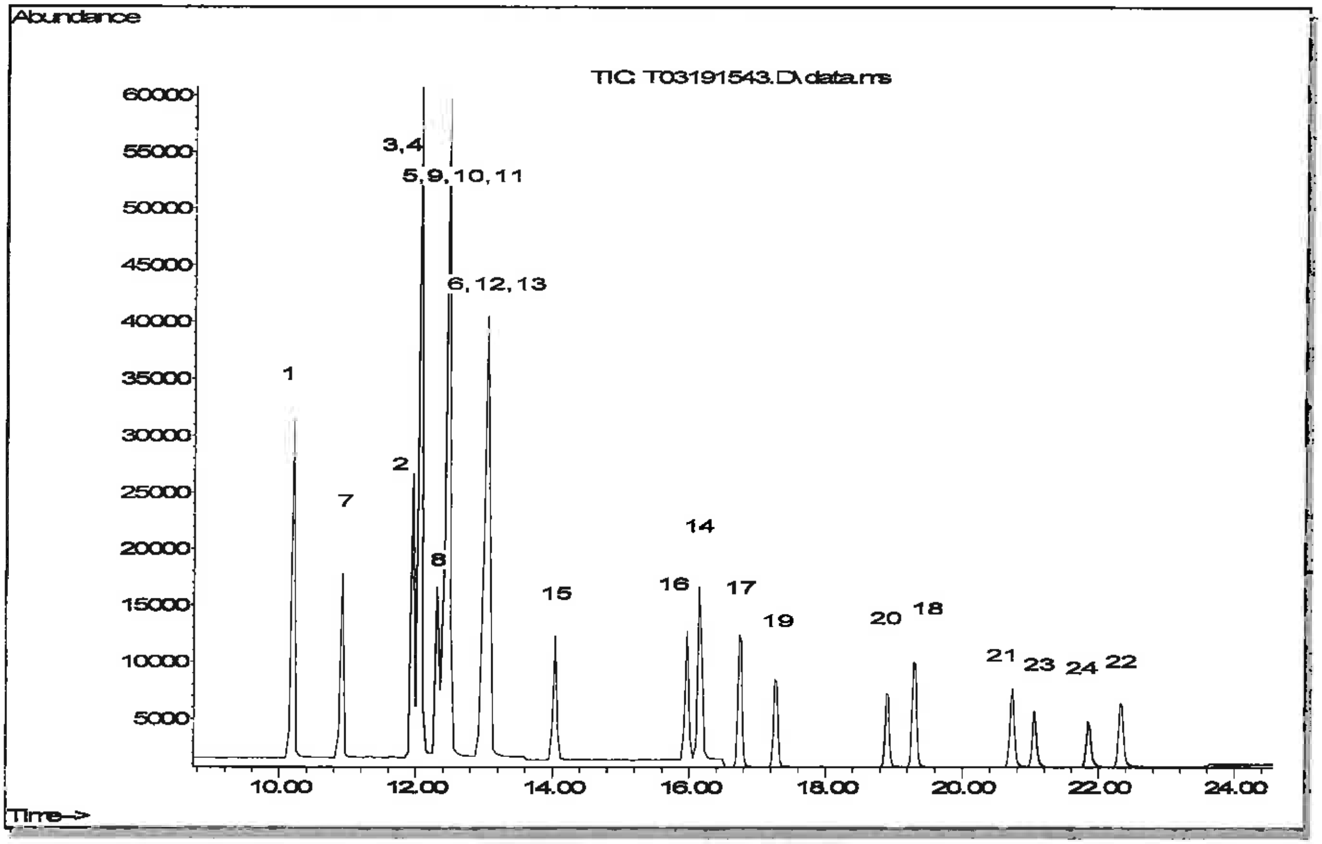

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00375

r: 4/8/19 BKS

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

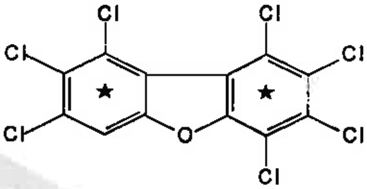

Catalog Number: EF-988
Solution Lot: ER04251601
Expiration Date: May 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER04041602

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-94-0
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		**99.10%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data (cont.)

GC/FID

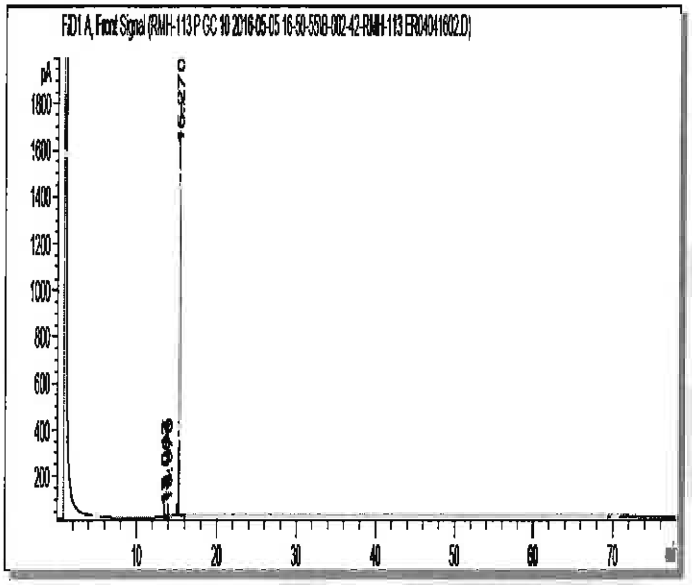

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 μm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

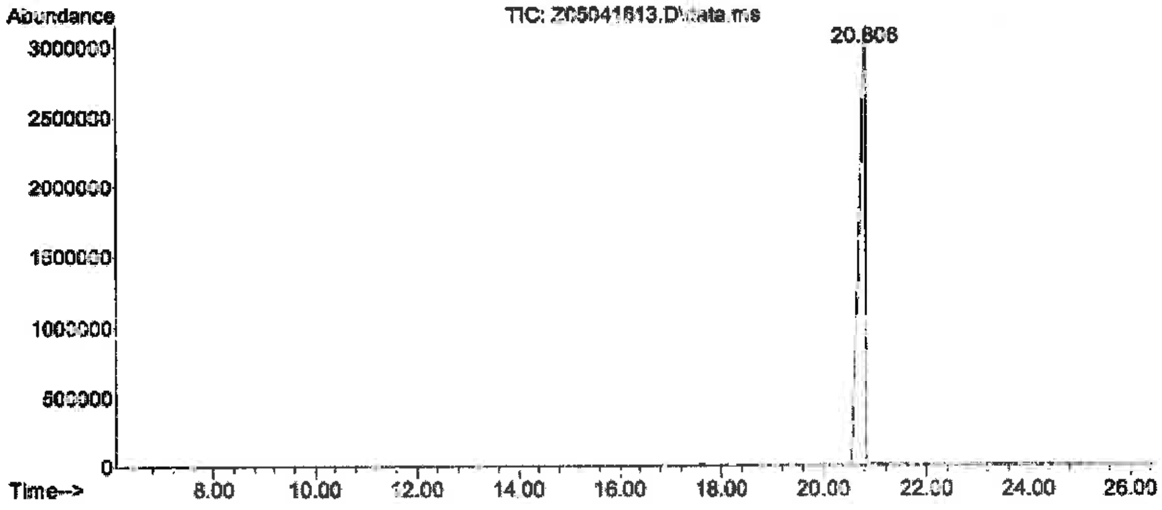

Mass Spectrum

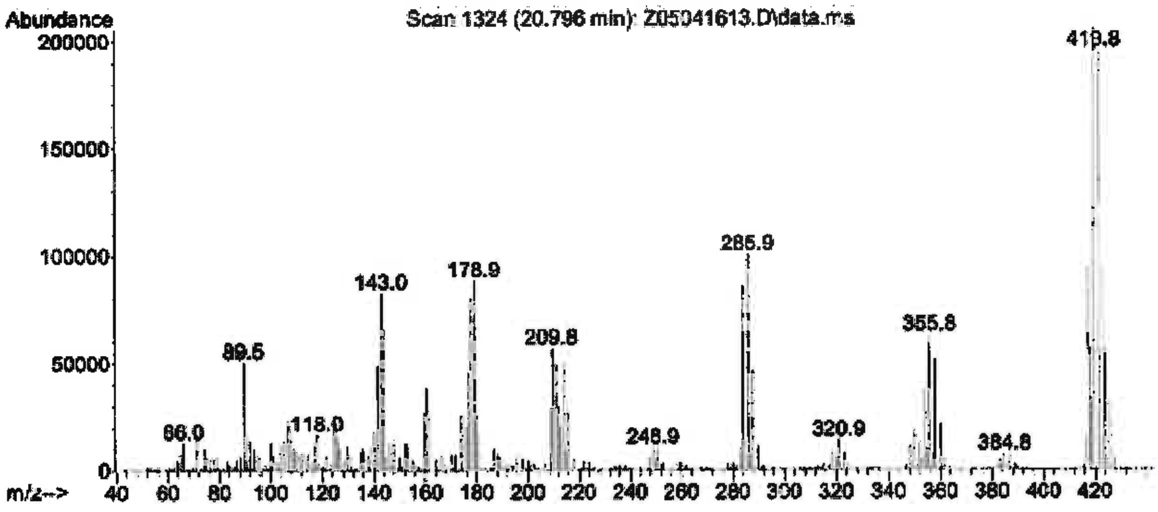

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00376

R: 4/8/19 SW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

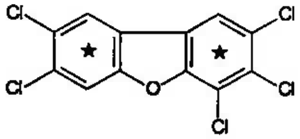

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11101601

Chemical Formula: $^{13}C_{12}H_3Cl_5O$
CAS Number: 116843-02-8
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		**98.33%**

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

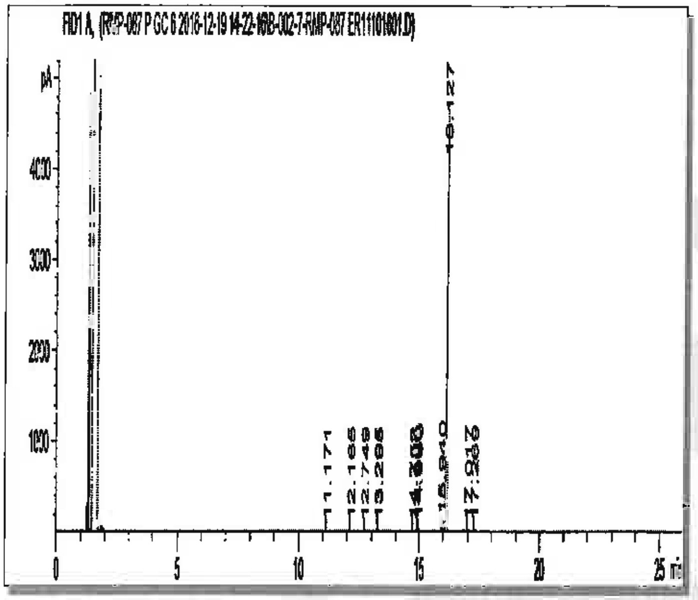

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument:	GC#6
Sample Name:	ER11101601
Acquired:	December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11 17	0.94	0.40	0.01
2	12 17	1 30	0.39	0.01
3	12 75	0 47	0.20	0.00
4	13 30	0 90	0.35	0.01
5	14 75	1 70	0.87	0.02
6	14 91	1 09	0.56	0.01
7	14 97	32.24	17.54	0.29
8	15.94	124 38	64.36	1.13
9	16.13	10866 60	4688.80	98.41
10	17.02	6 31	2.46	0.06
11	17.27	6 76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name           : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number              : ER11101601
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Tue Dec 20 12:19:55 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

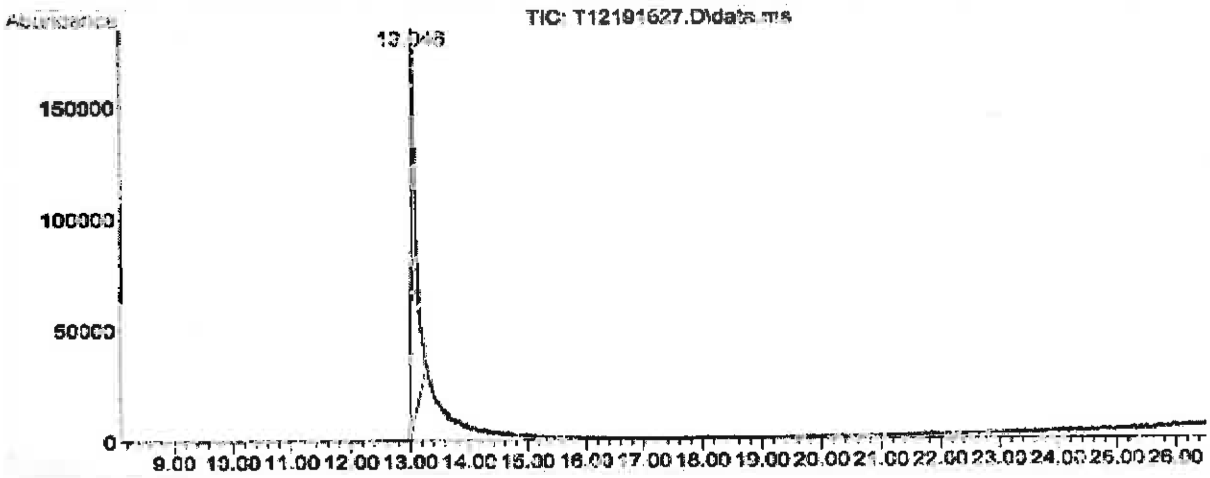

Mass Spectrum

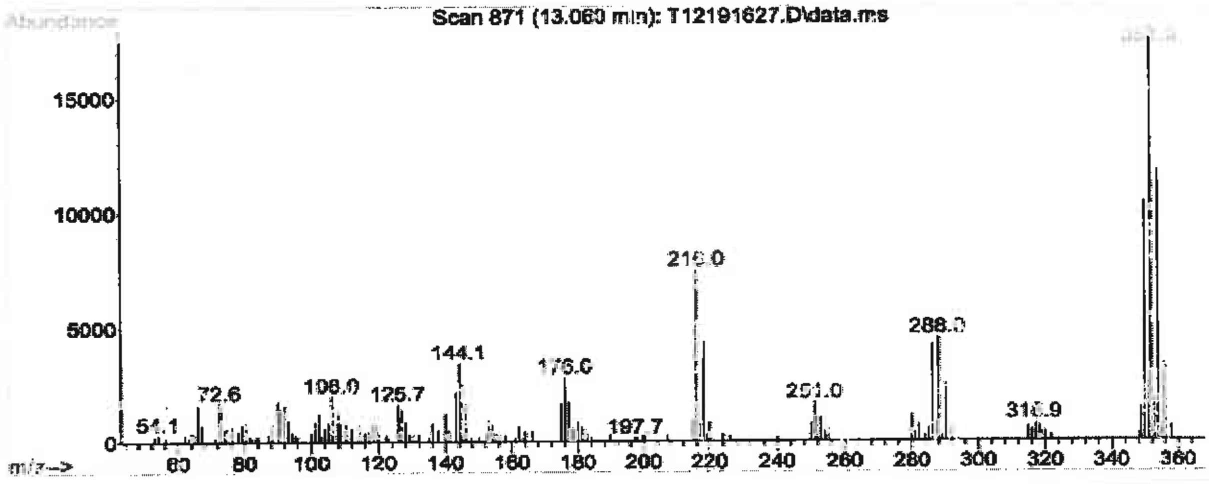

Reagent

HRDXNIDA_00377

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

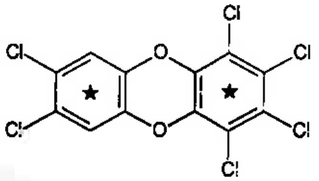

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

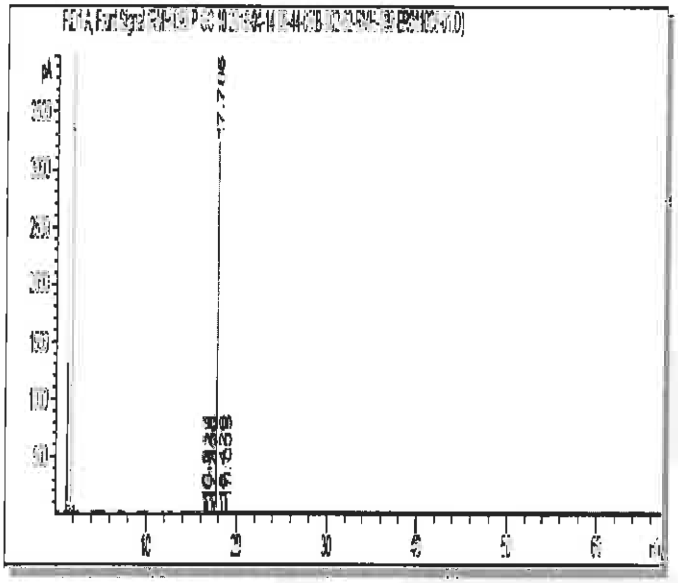

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

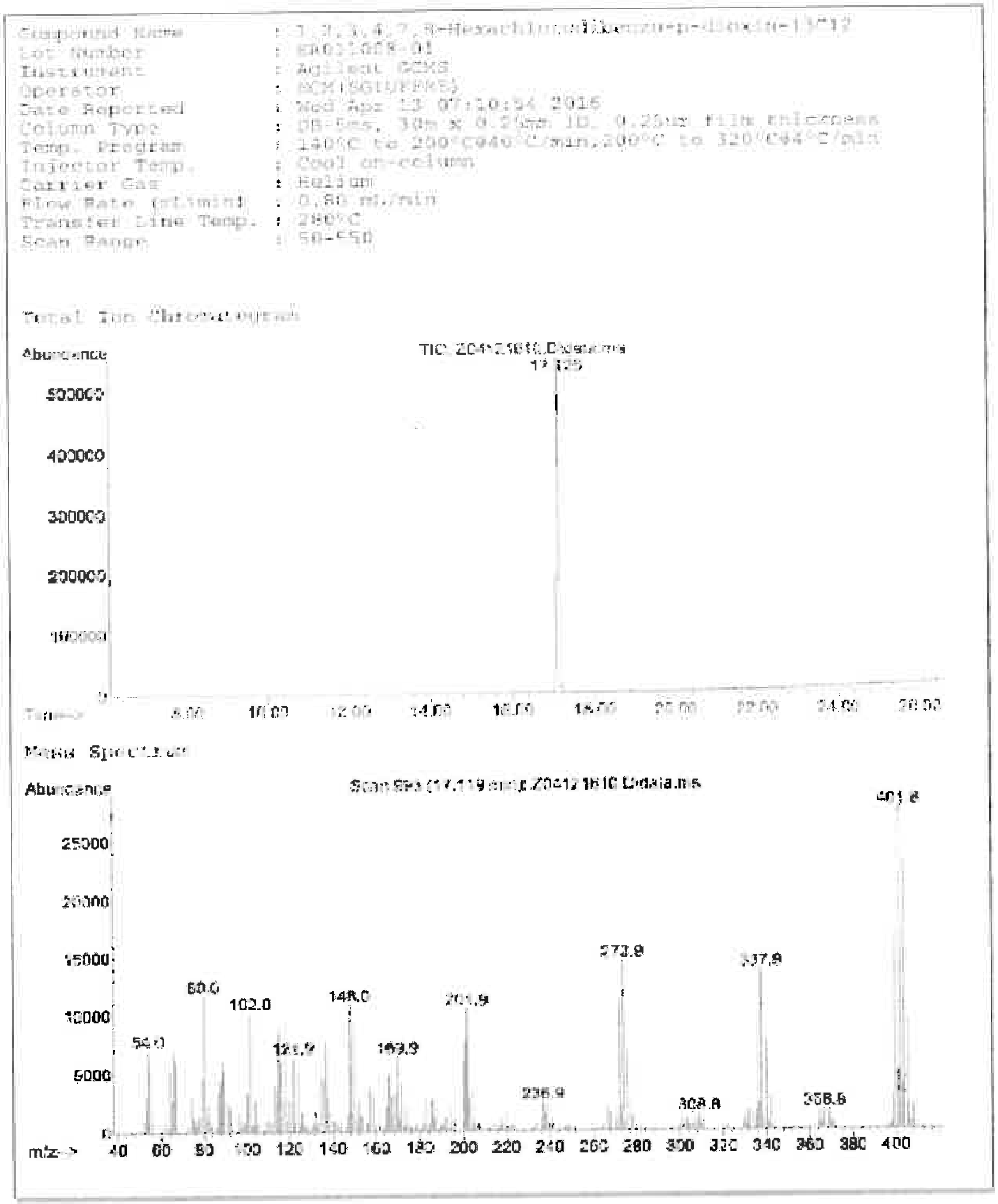

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER021608-01
Instrument : Agilent GCMS
Operator : ACM(SGIUFFRE)
Date Reported : Wed Apr 13 07:10:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (ml/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00378

r: 4/8/19 SKJ

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Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

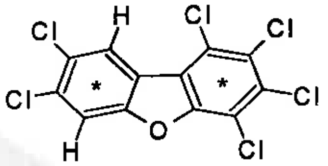

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601

Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

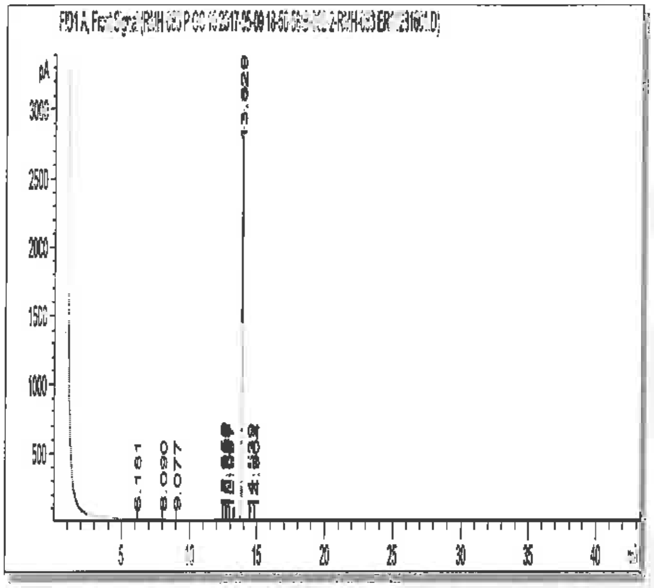

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : FR1128160[illegible]
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Mon May 08 09:30:09 2017
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

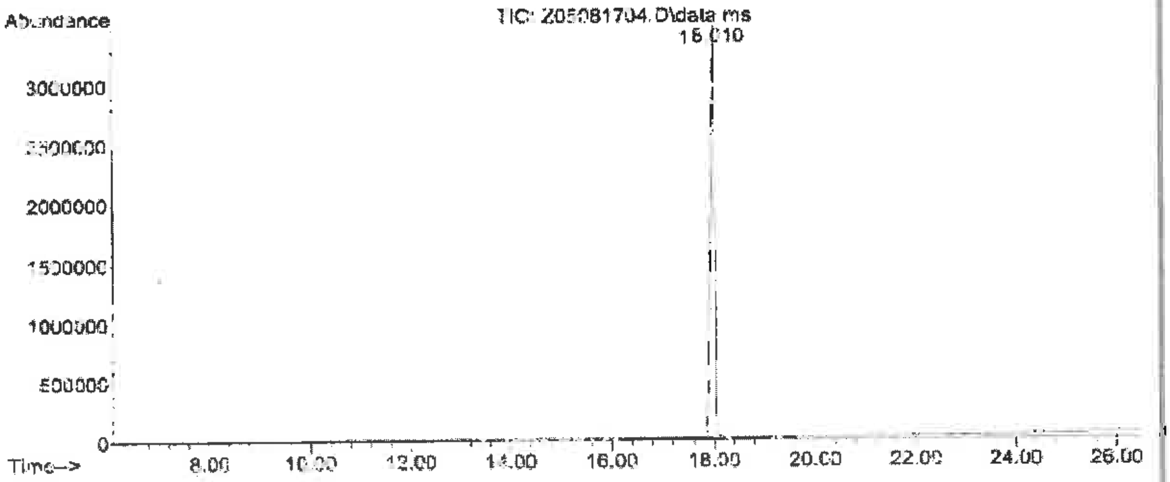

Mass Spectrum

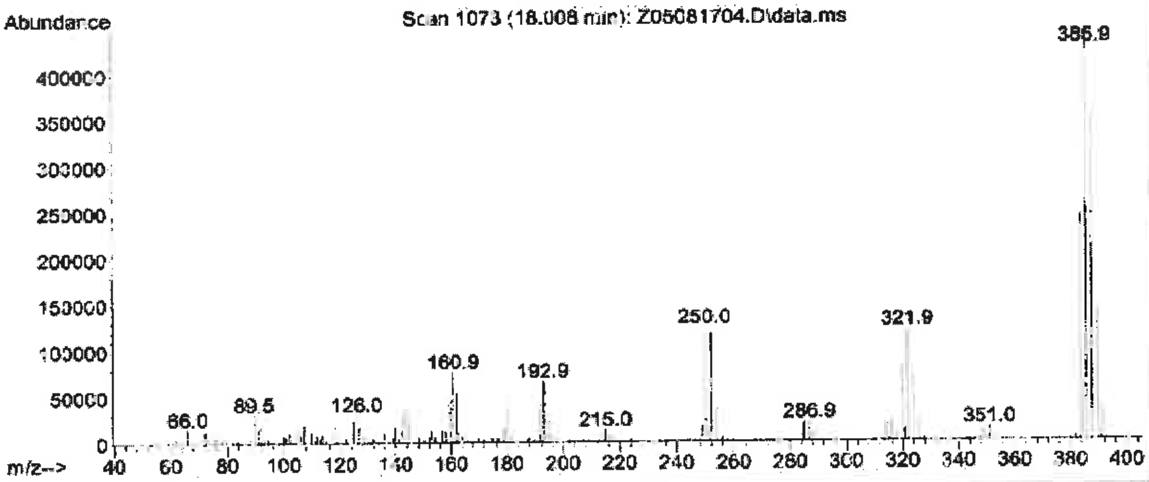

Reagent

HRDXNIDA_00398

8280 I#24
Received 11-14-19
Gwg

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Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

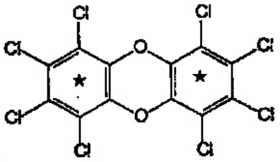

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	**Solution Purity**	**Certified Concentration**
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER04057101	10 22	± 5%	1 1	≤ 5%
Previous Lot	ER06061601	10 17	± 5%	0 8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager	***May 19, 2017*** Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	70°C to 200°C at 40°C/min 200°C to 280°C at 10°C/min hold 15 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	3
Linearity (r):	0.997

Neat Material Data

Compound Name:	Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER04041601
Chemical Formula:	$^{13}C_{12}Cl_8O_2$
CAS Number:	114423-97-1
Molecular Weight:	471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

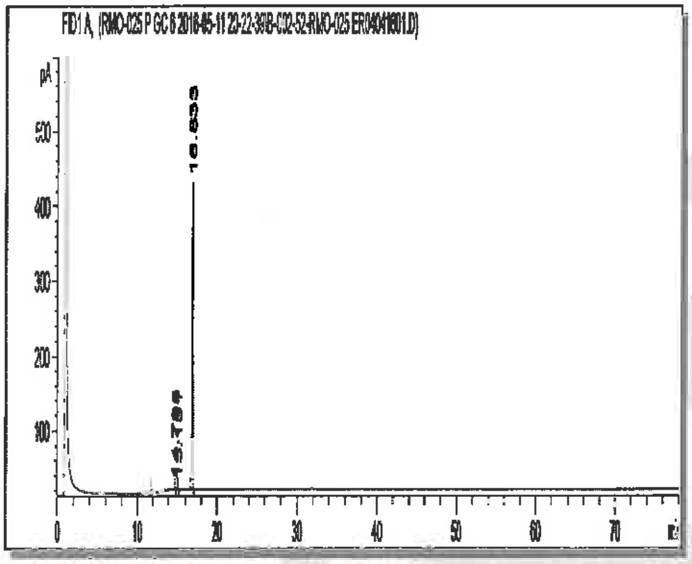

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14 80	12 12	3.62	0.61
2	15 15	4 72	1.32	0.24
3	16 83	1980 56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

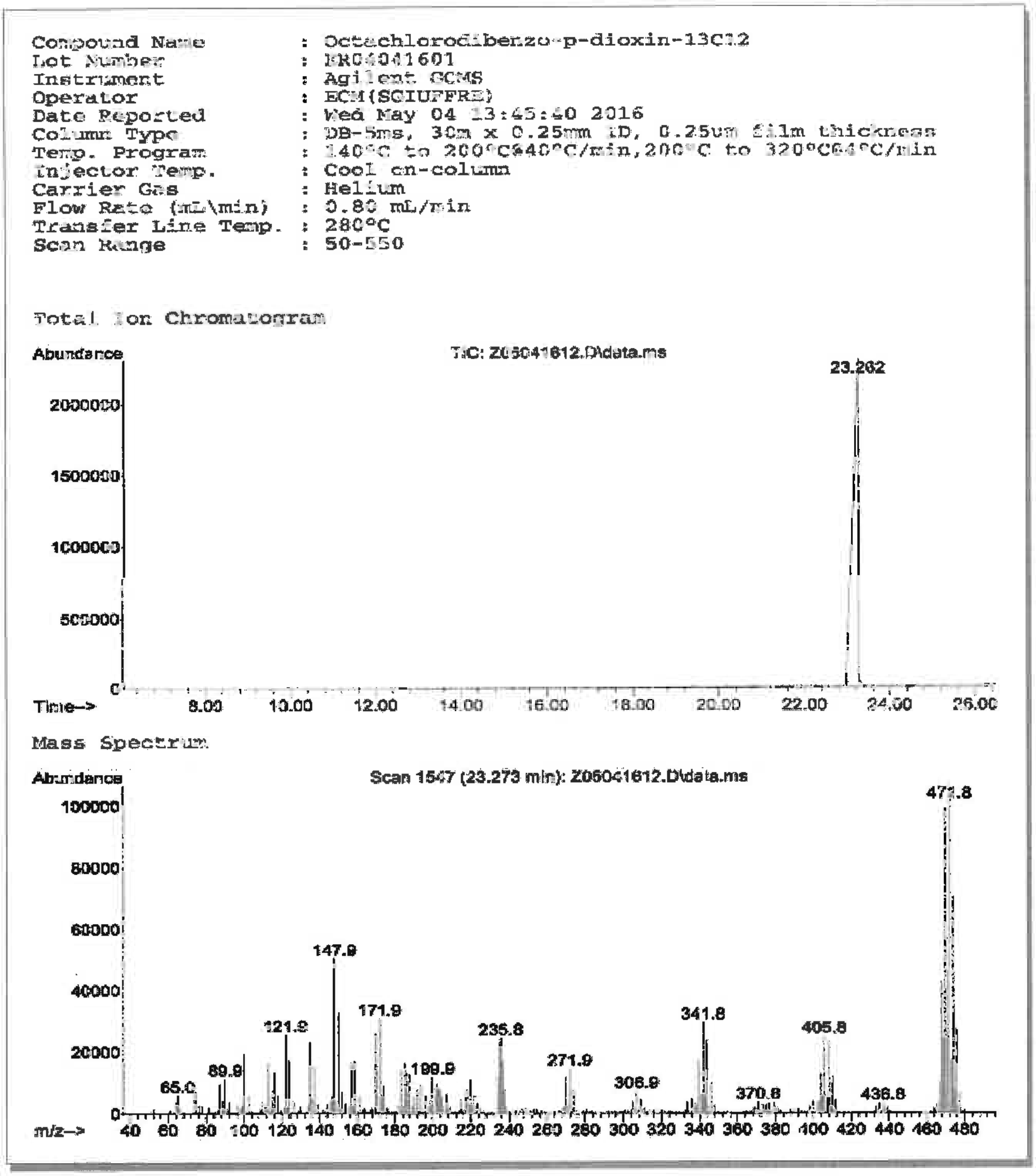

```
Compound Name            : Octachlorodibenzo-p-dioxin-13C12
Lot Number               : ER04041601
Instrument               : Agilent GCMS
Operator                 : ECM(SCIUFFRE)
Date Reported            : Wed May 04 13:45:40 2016
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (mL\min)       : 0.80 mL/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00407

Rec'd 11-26-19

Cerilliant
Analytical Reference Standards
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Revision 00
Page 1 of 5

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

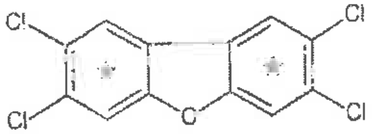

Catalog Number: EF-904
Solution Lot: ER09131601
Expiration Date: September 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

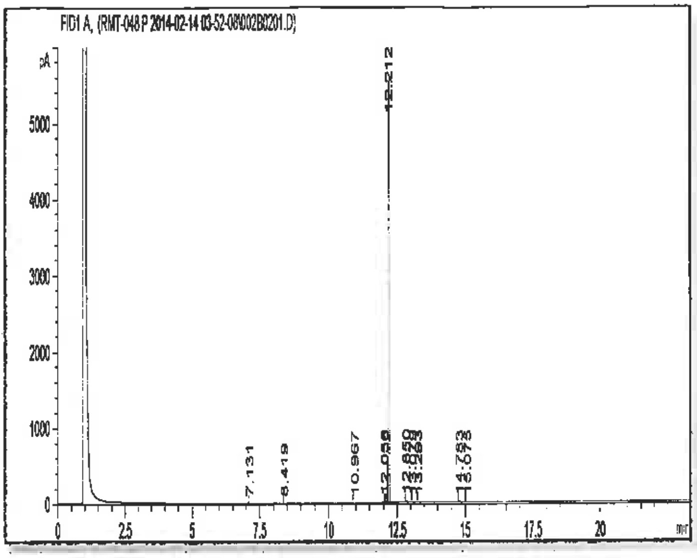

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

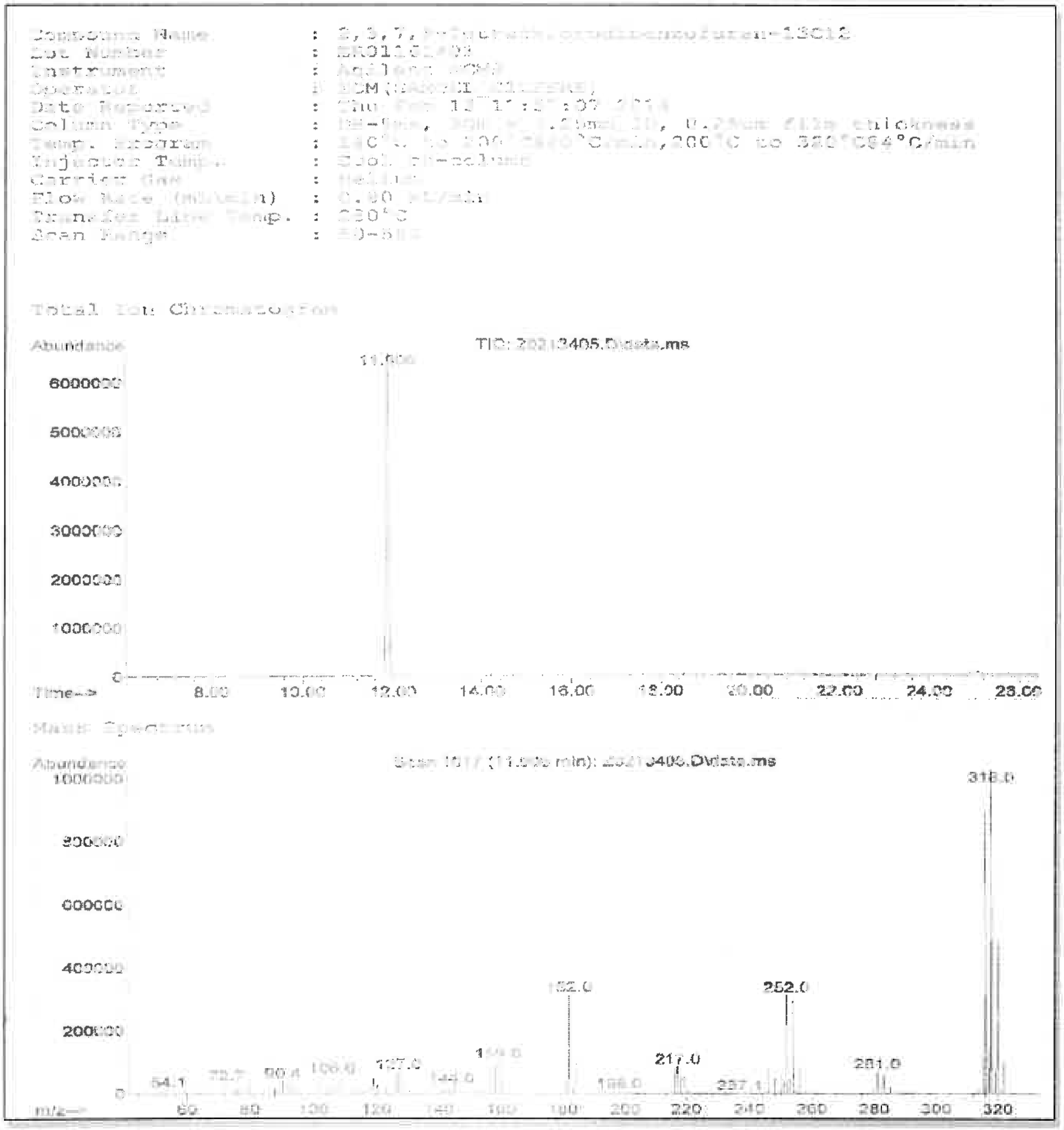

Compound Name : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number : ER011[illegible]
Instrument : Agilent [illegible]
Operator : BCM([illegible])
Date Reported : Thu [illegible] 13 11:5[illegible]:07 [illegible]
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-500

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-19

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Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 5

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

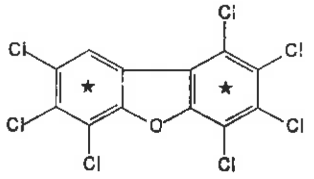

Catalog Number:	EF-974
Solution Lot:	ER08101404
Expiration Date:	November 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02

Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

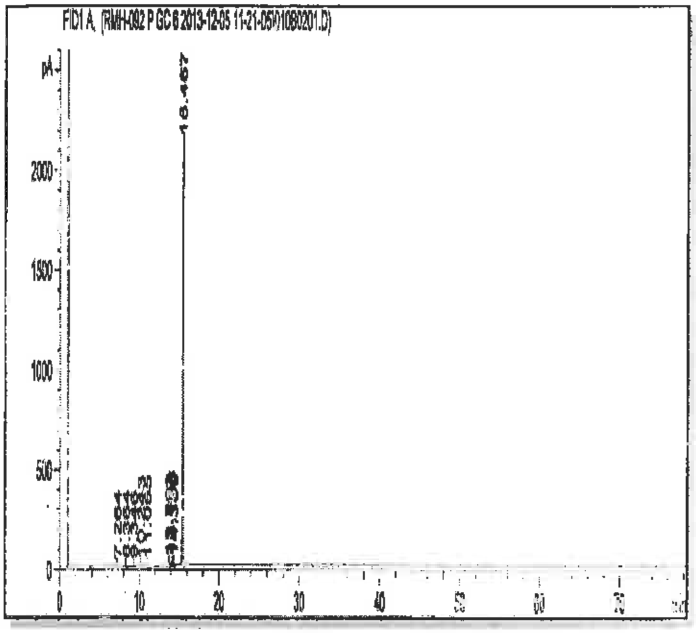

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

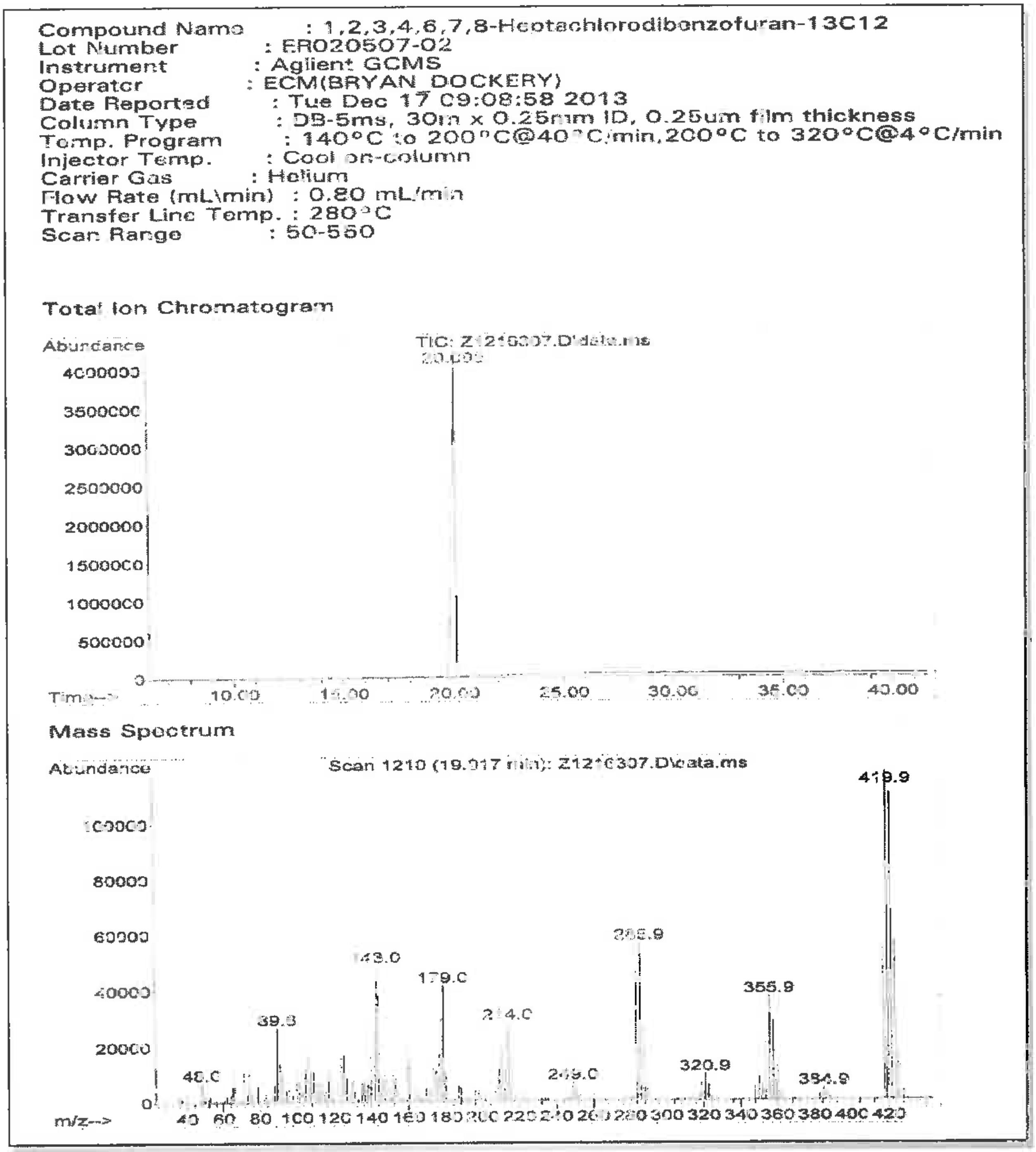

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-21-18

Cerilliant
Analytical Reference Standards
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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

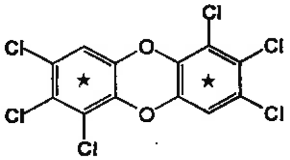

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

April 19, 2018

Darron Ellsworth, Quality Assurance Manager — Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: FN01151802
Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-81-5
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

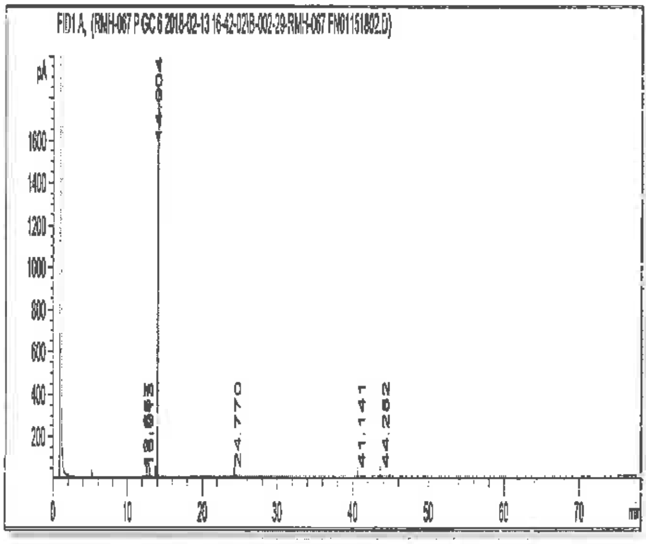

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

GC/MS

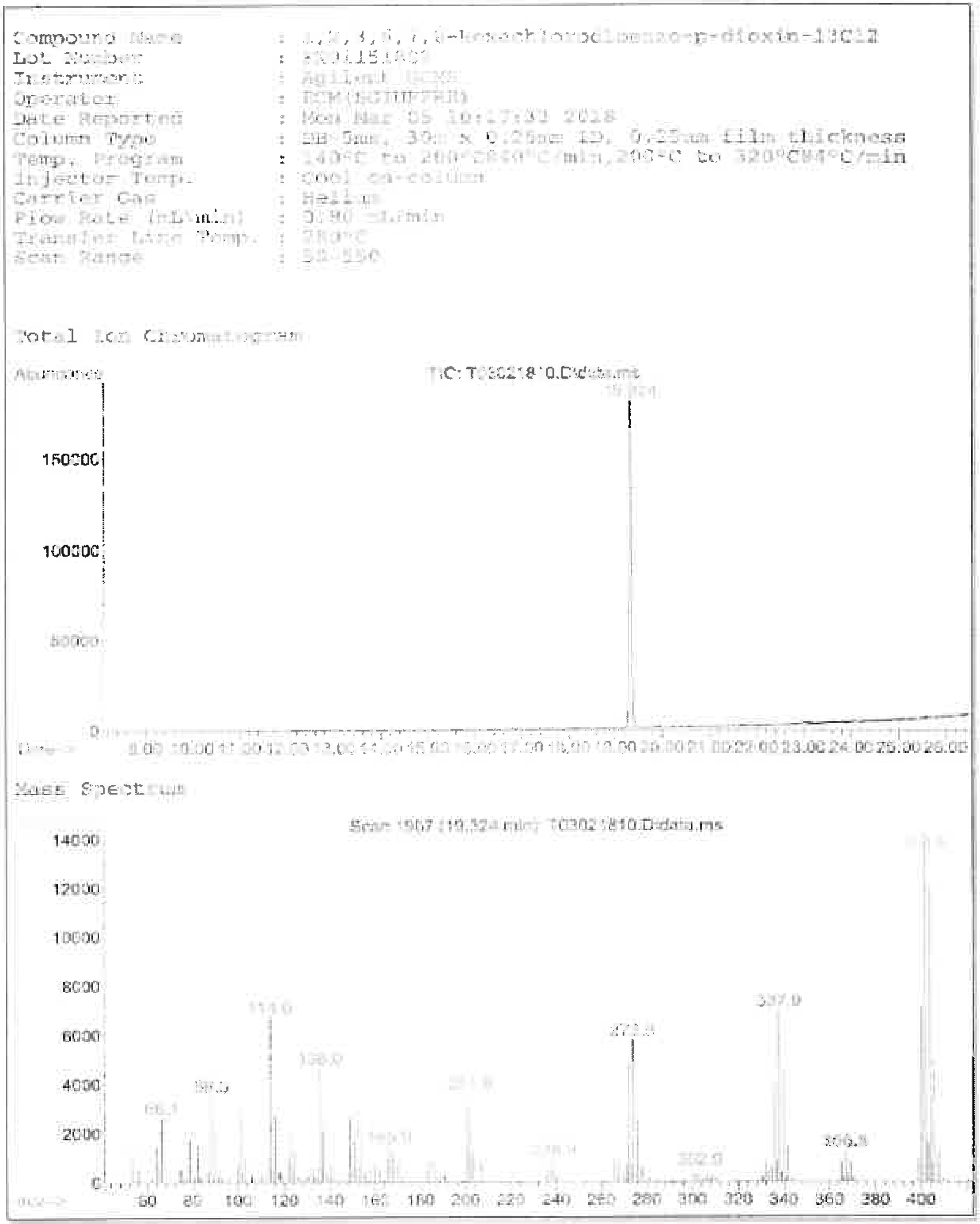

```
Compound Name          : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number             : FR01151807
Instrument             : Agilent GCMS
Operator               : ECM(SCHIFFER)
Date Reported          : Mon Mar 05 10:17:31 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.90 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00410

Rec'ed 11-21-16

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

Revision 0
Page 1 of 4

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

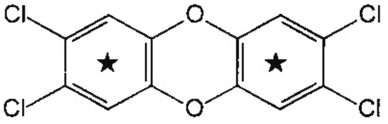

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER01201405
Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 76523-40-5
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

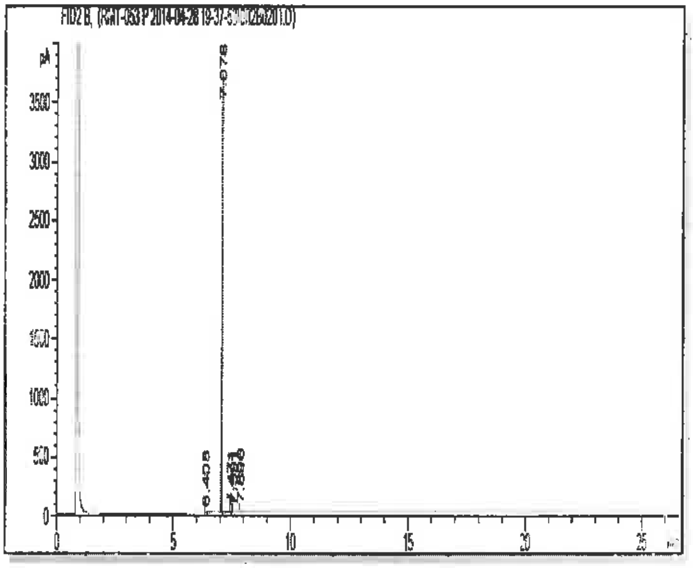

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

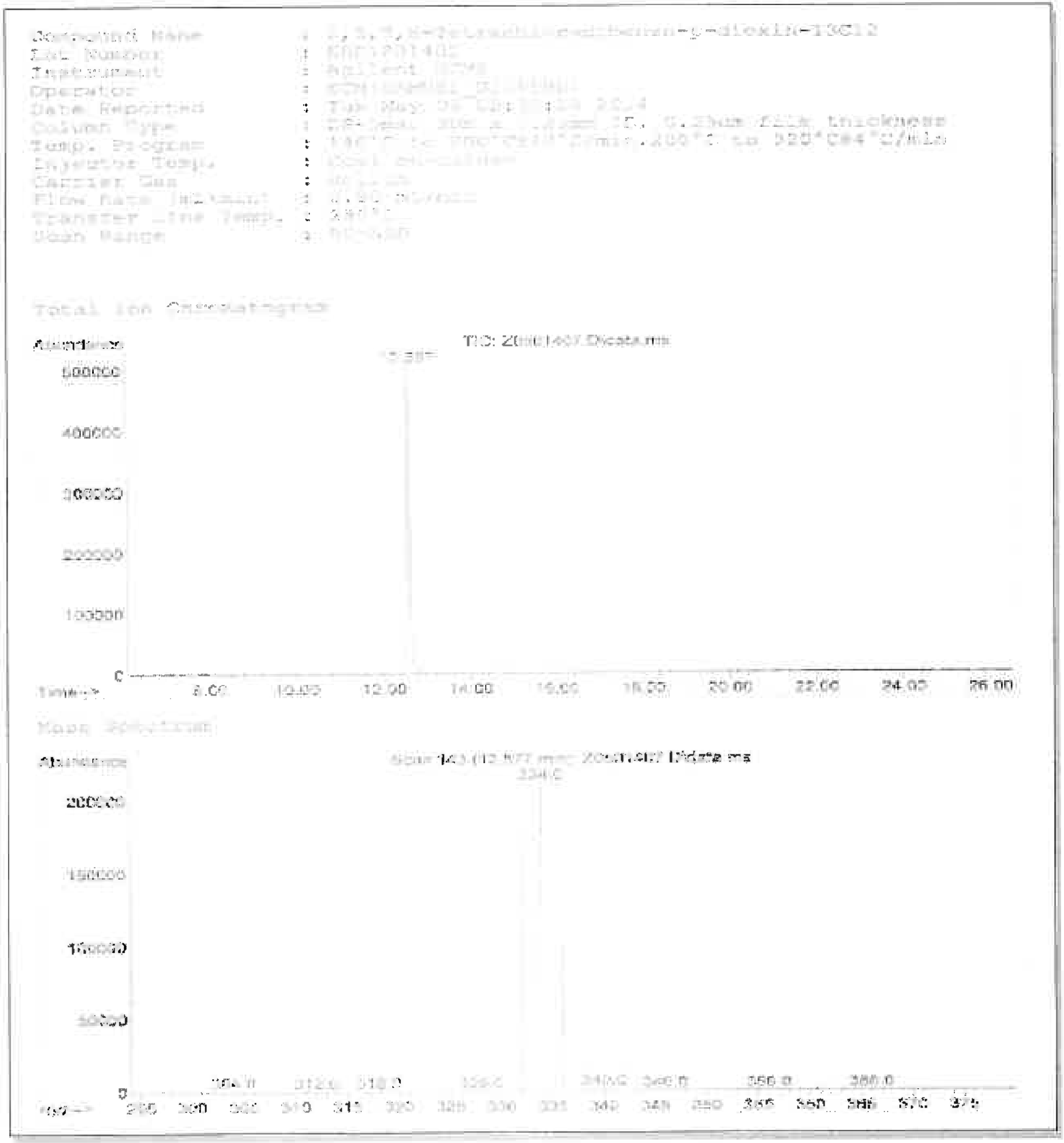

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent [illegible]
Operator : [illegible]
Date Reported : Tue May [illegible] 2014
Column Type : [illegible] 0.25um film thickness
Temp. Program : [illegible] °C/min,200°C to 320°C@4°C/min
Injector Temp. : [illegible]
Carrier Gas : [illegible]
Flow Rate (Helium) : [illegible]
Transfer Line Temp. : [illegible]
Scan Range : [illegible]

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

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CIL

Cerilliant Quality
ISO GUIDE 34 CERTIFICATE AR1353
ISO/IEC 17025 CERTIFICATE AT1352
ISO 9001:2008 CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

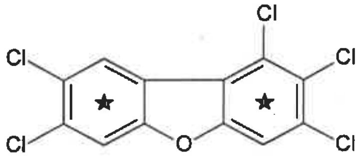

Catalog Number: EF-952
Solution Lot: ER012111-01
Expiration Date: January 2021
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Crtieria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3OCl_5$
CAS Number: 109719-77-9
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

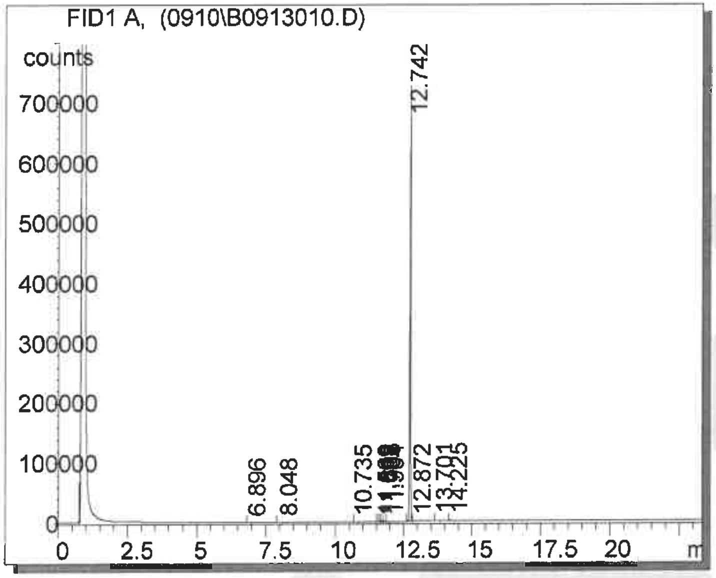

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

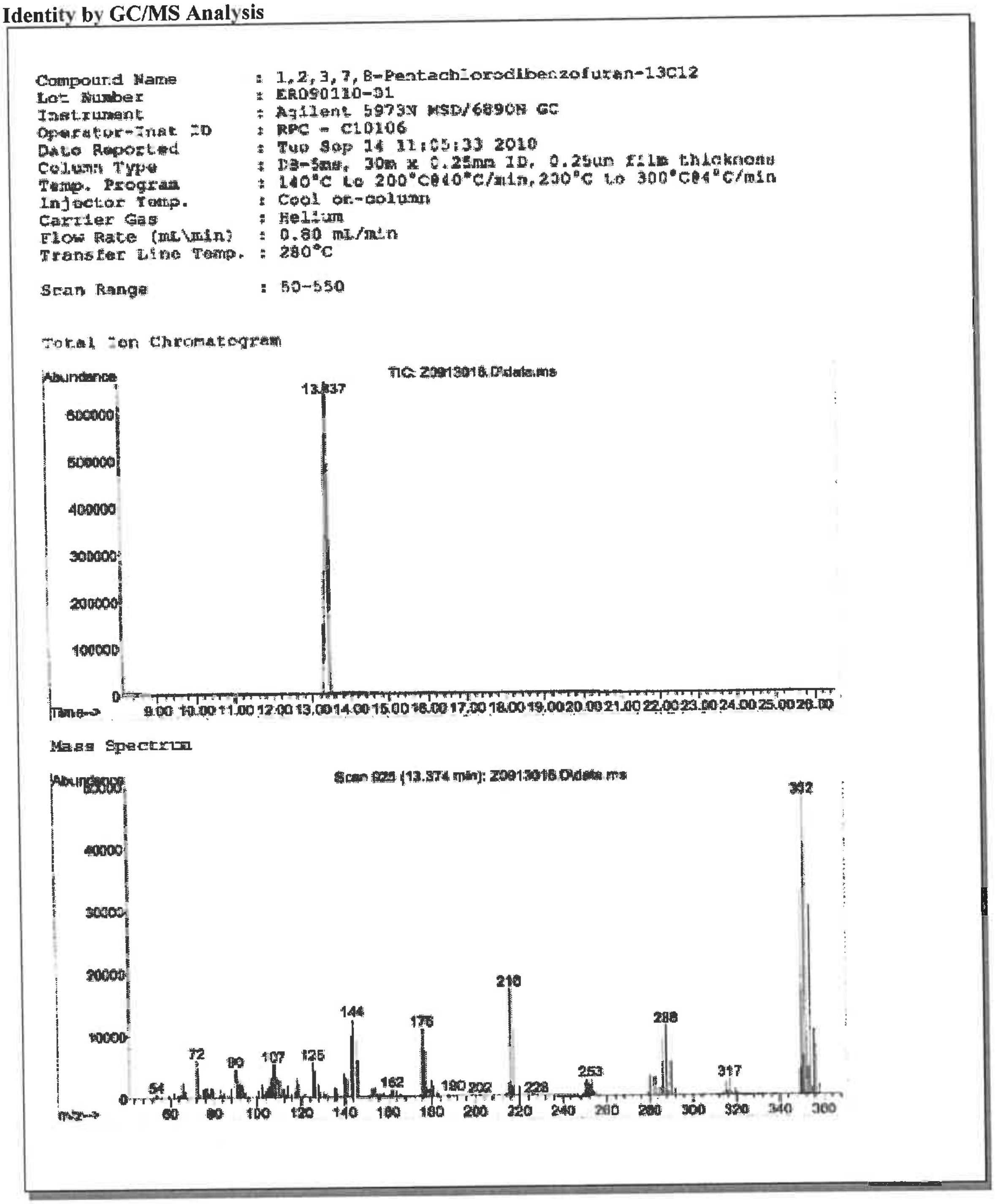

```
Compound Name        : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number           : ER090110-01
Instrument           : Agilent 5973N MSD/6890N GC
Operator-Inst ID     : RPC - C10106
Date Reported        : Tue Sep 14 11:05:33 2010
Column Type          : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program        : 140°C to 200°C@40°C/min,230°C to 300°C@4°C/min
Injector Temp.       : Cool on-column
Carrier Gas          : Helium
Flow Rate (mL\min)   : 0.80 mL/min
Transfer Line Temp.  : 280°C

Scan Range           : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

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Revision 01
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

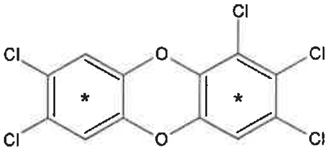

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

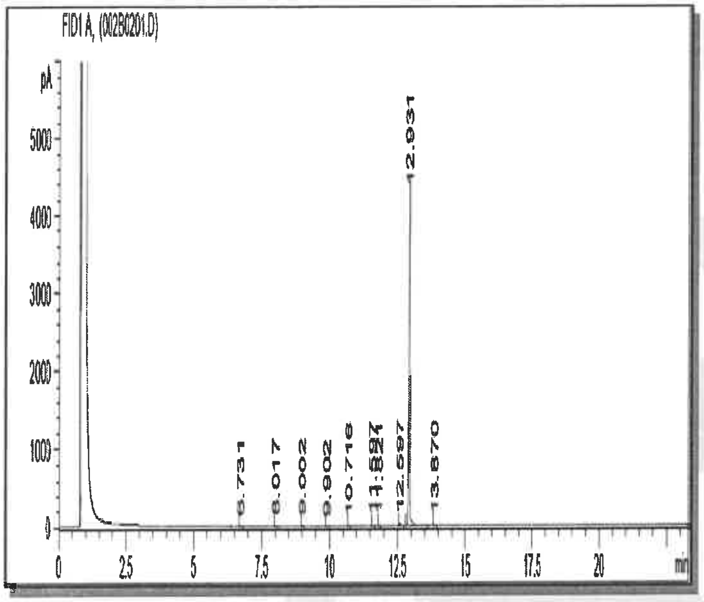

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

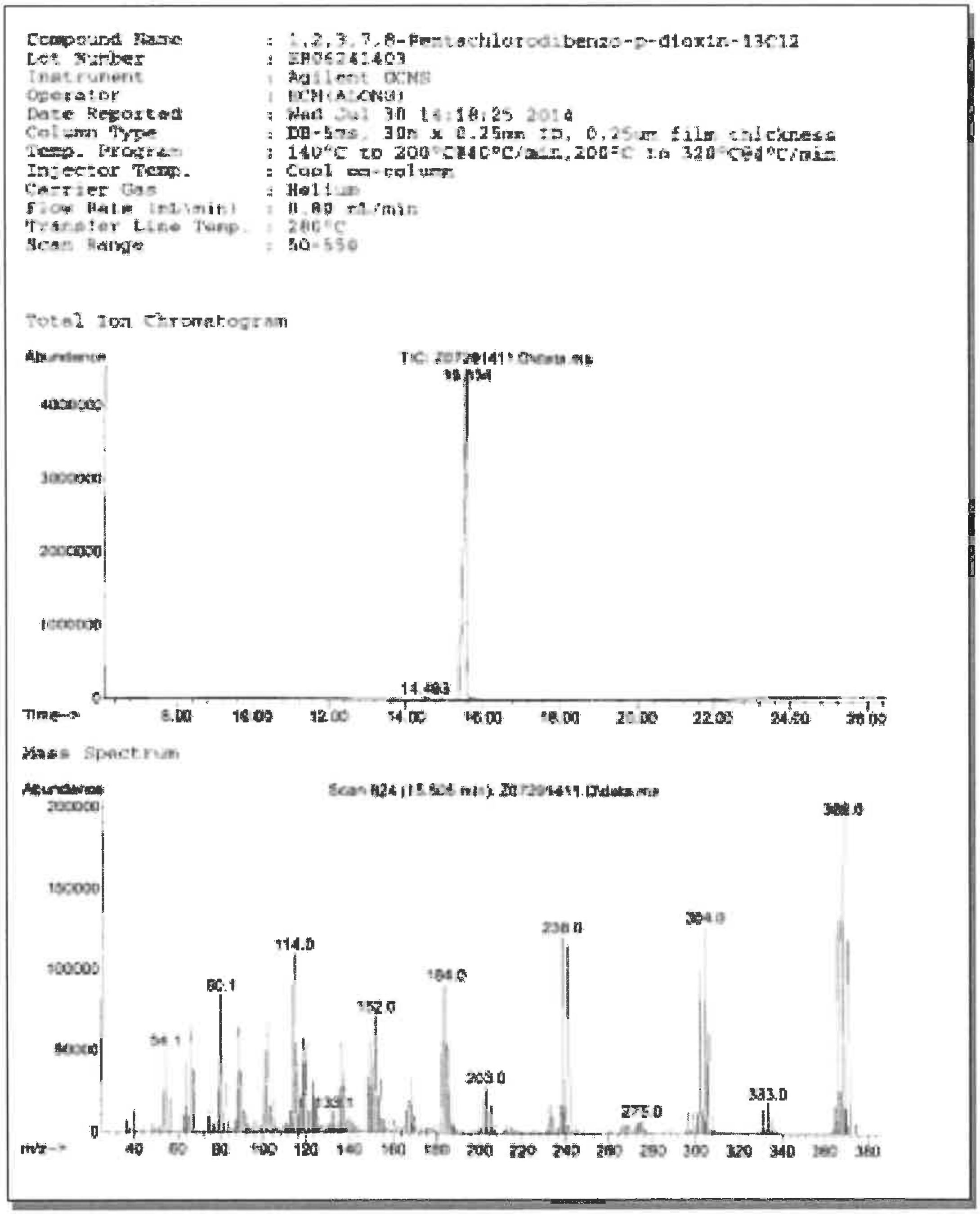

```
Compound Name            : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number               : ER06241403
Instrument               : Agilent GCMS
Operator                 : HCH(ALONG)
Date Reported            : Wed Jul 30 14:18:25 2014
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (ml/min)       : 0.80 ml/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

Cerilliant®
Analytical Reference Standards
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CIL

Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

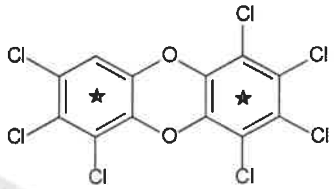

Catalog Number:	ED-972
Solution Lot:	ER09271601
Expiration Date:	October 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 0.999

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER100110-01
Chemical Formula: $^{13}C_{12}HCl_7O_2$
CAS Number: 109719-83-7
Molecular Weight: 437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

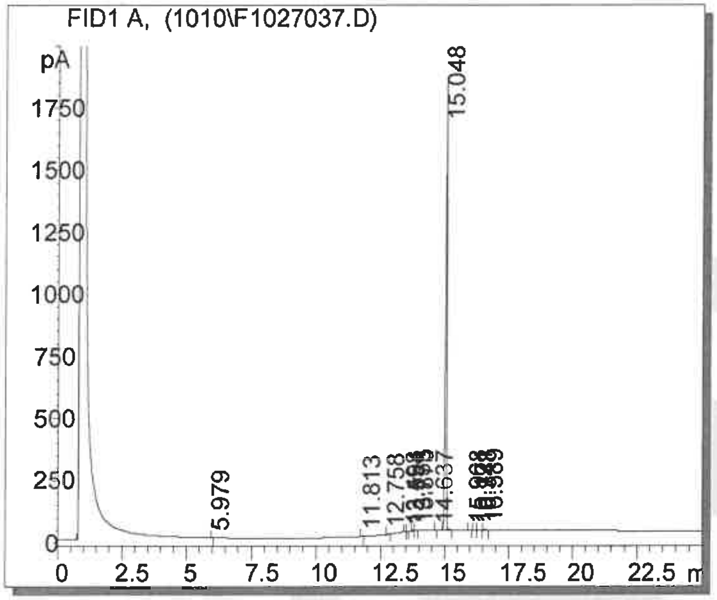

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

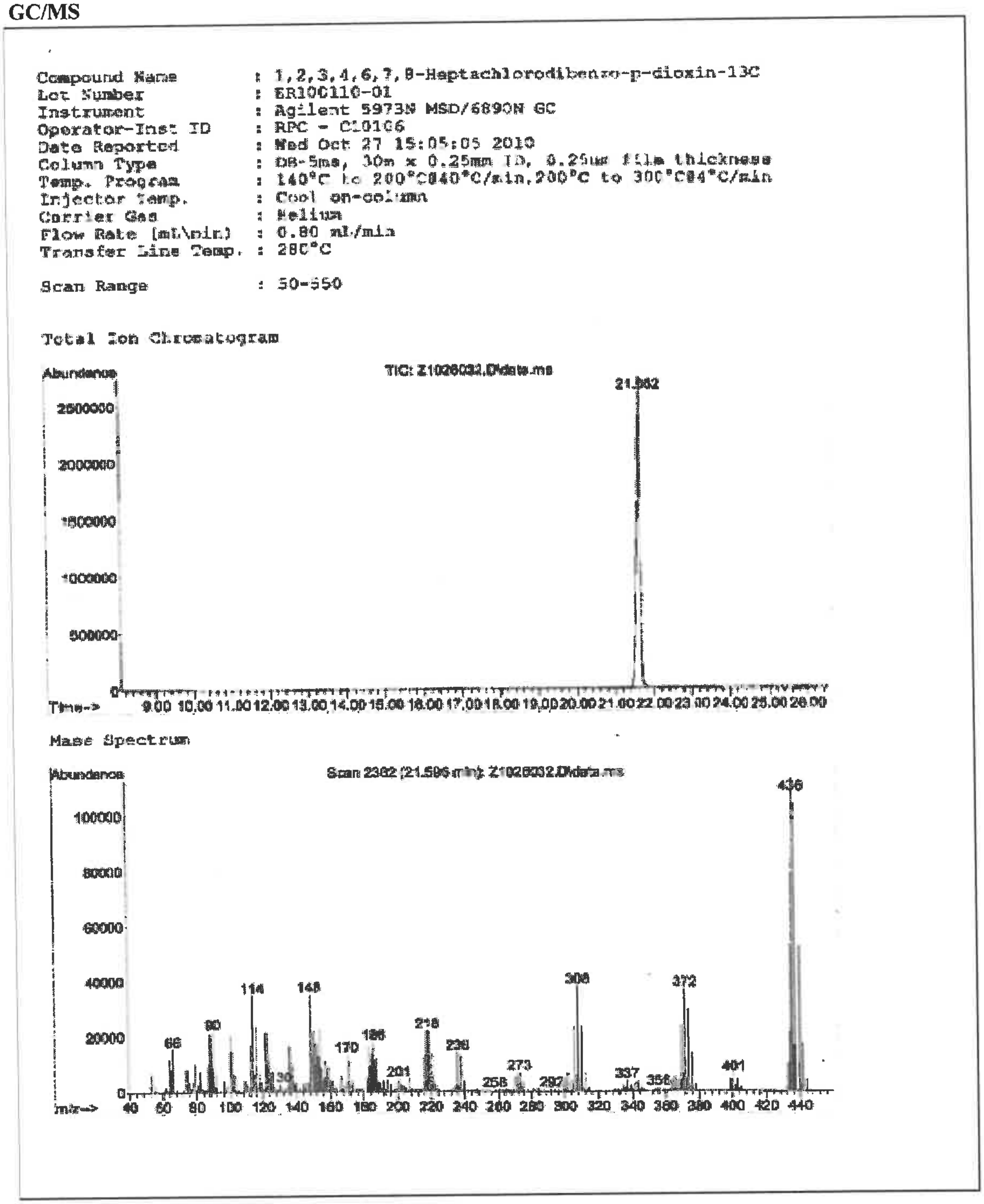

```
Compound Name        : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number           : ER10C110-01
Instrument           : Agilent 5973N MSD/6890N GC
Operator-Inst ID     : RPC - C10106
Date Reported        : Wed Oct 27 15:05:05 2010
Column Type          : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program        : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.       : Cool on-column
Carrier Gas          : Helium
Flow Rate (mL\min)   : 0.80 mL/min
Transfer Line Temp.  : 280°C

Scan Range           : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

r: 4/21/20 SW

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Revision 0
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

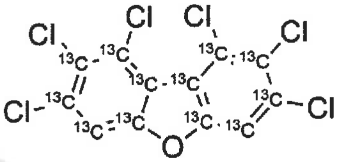

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (μg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

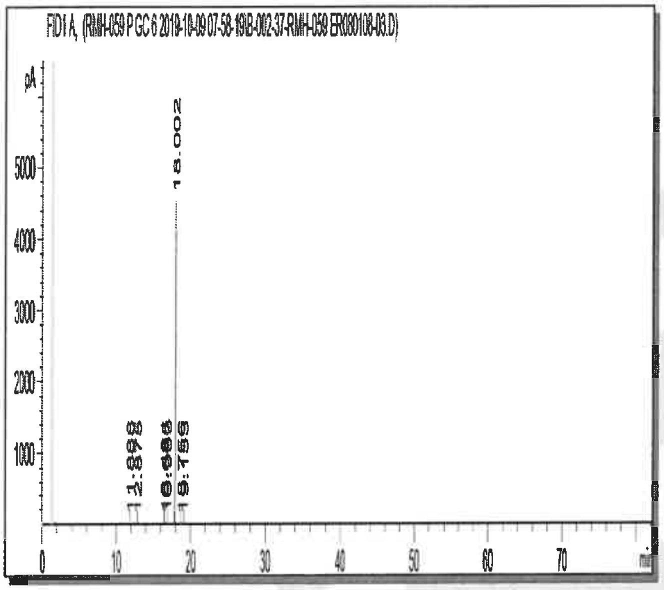

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER080108-03
Acquired:	October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

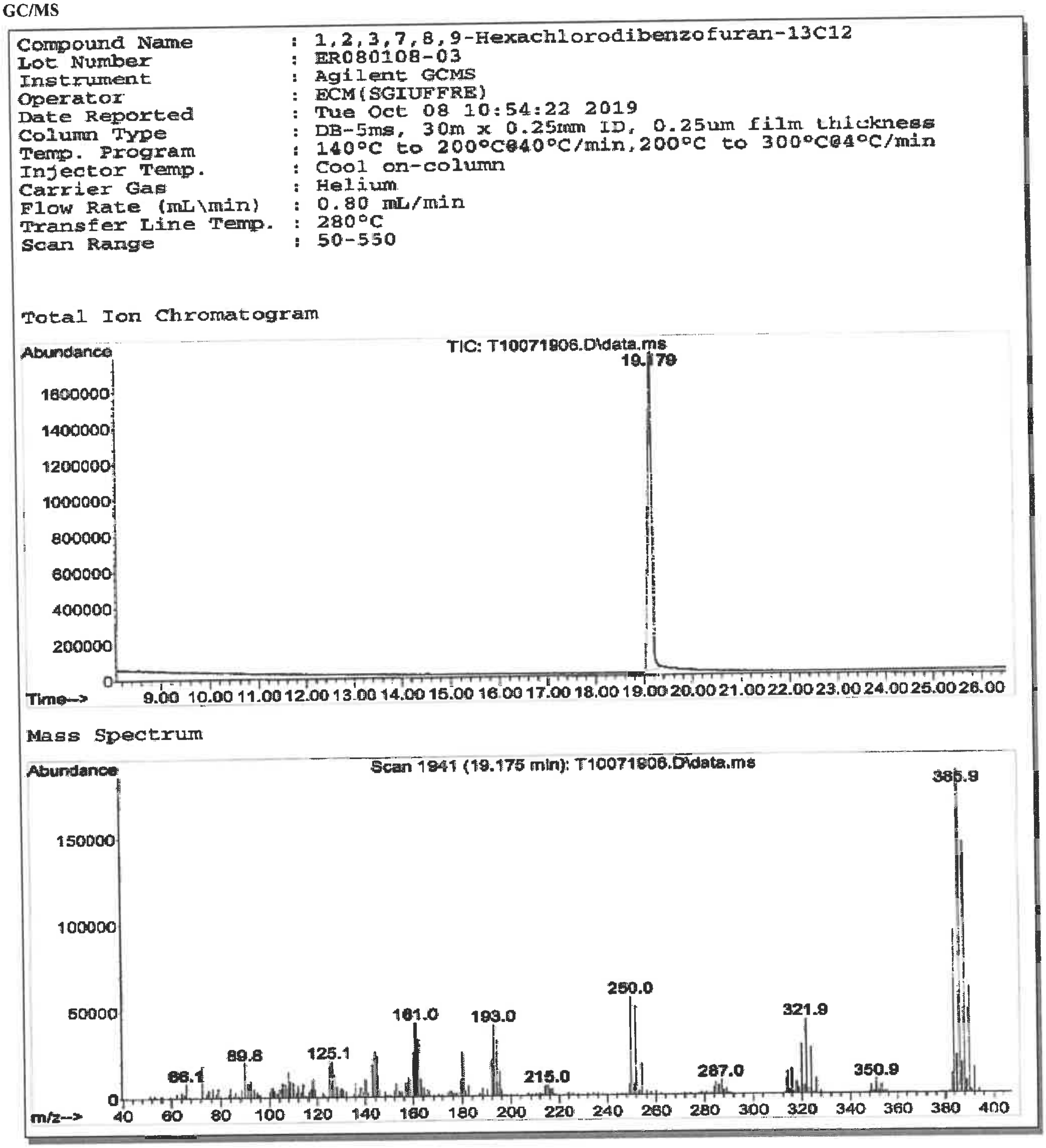

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number : ER080108-03
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Oct 08 10:54:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skd

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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

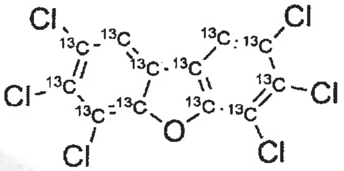

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

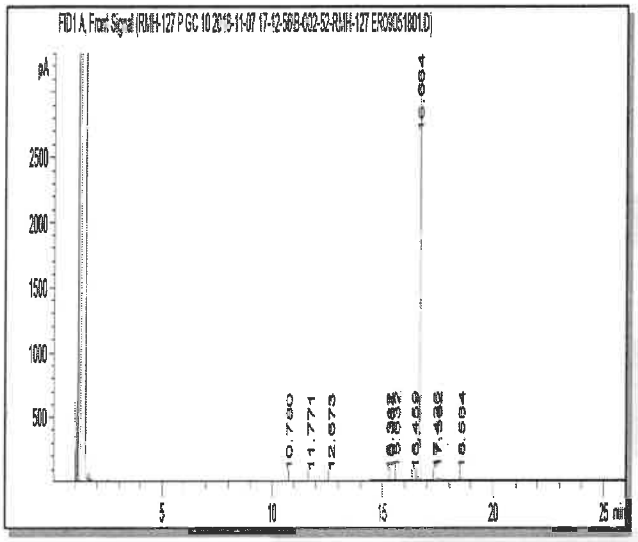

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

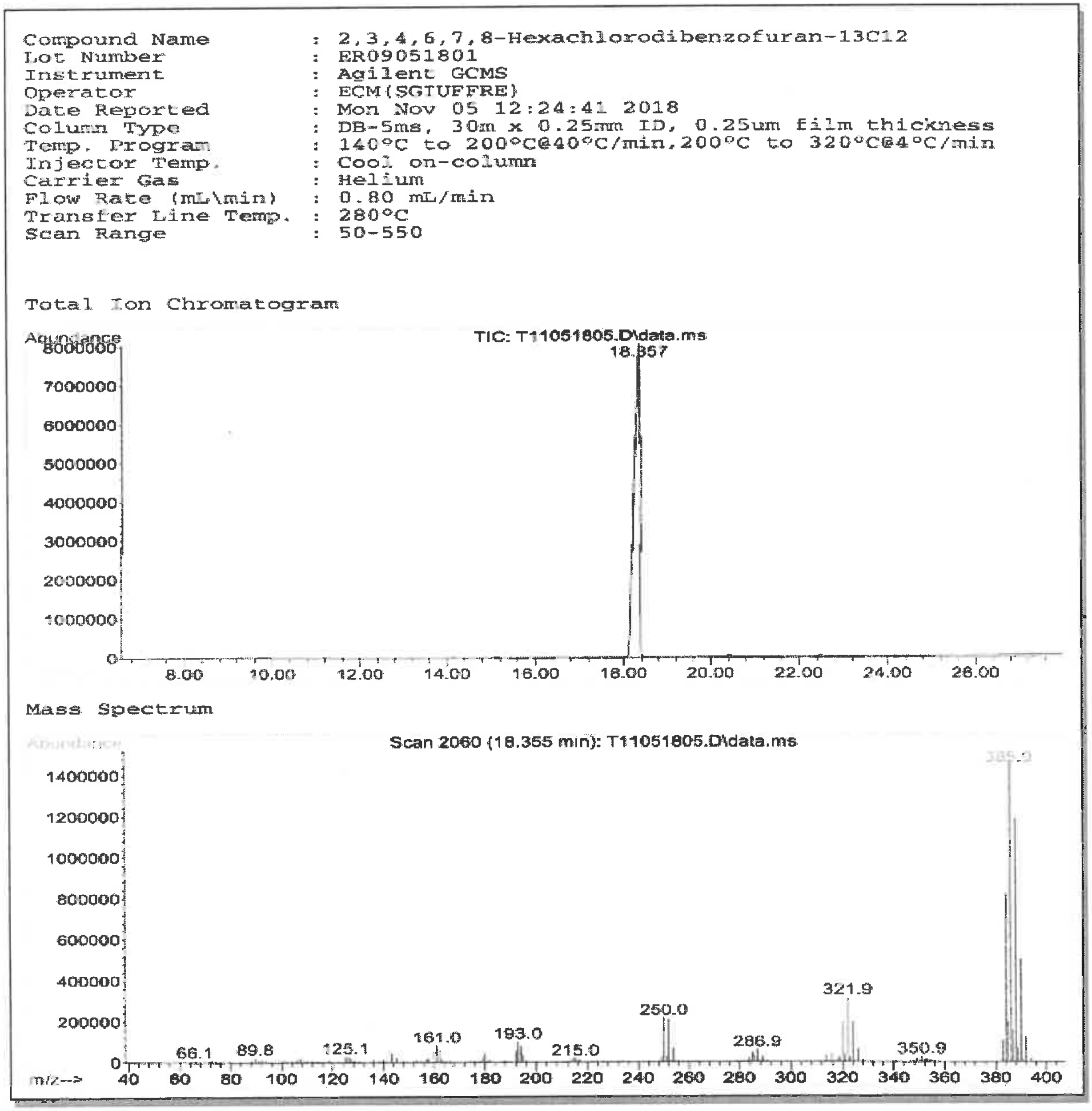

```
Compound Name           : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number              : ER09051801
Instrument              : Agilent GCMS
Operator                : ECM(SGTUFFRE)
Date Reported           : Mon Nov 05 12:24:41 2018
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

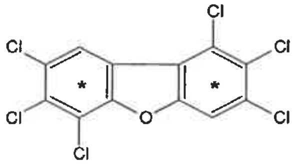

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

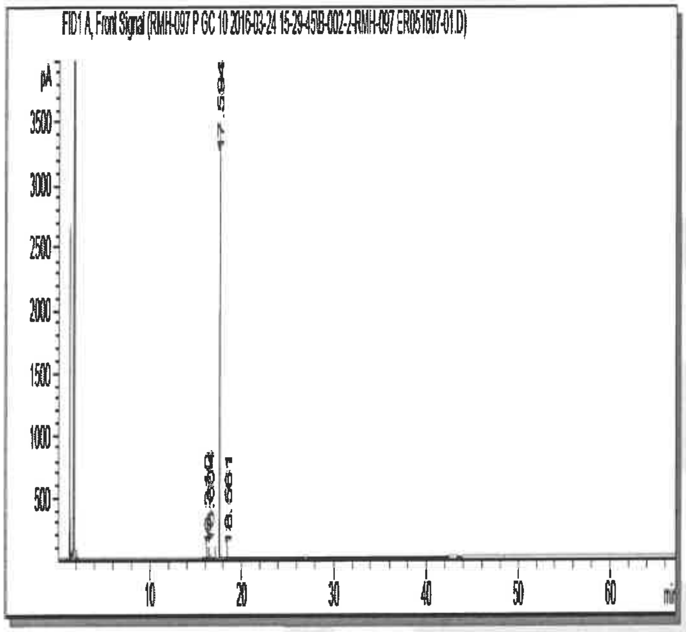

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER051607-01
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Mar 18 07:08:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

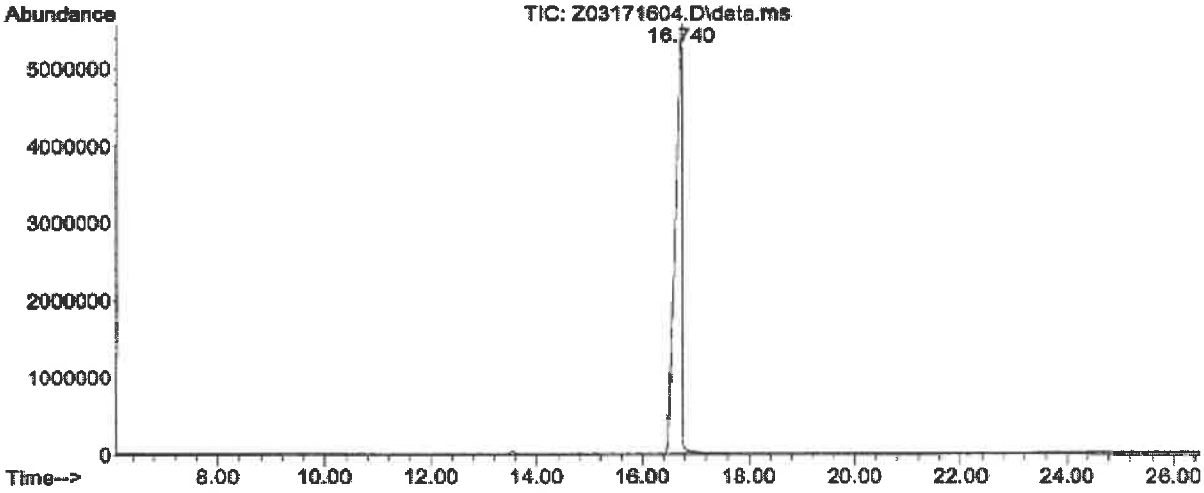

Mass Spectrum

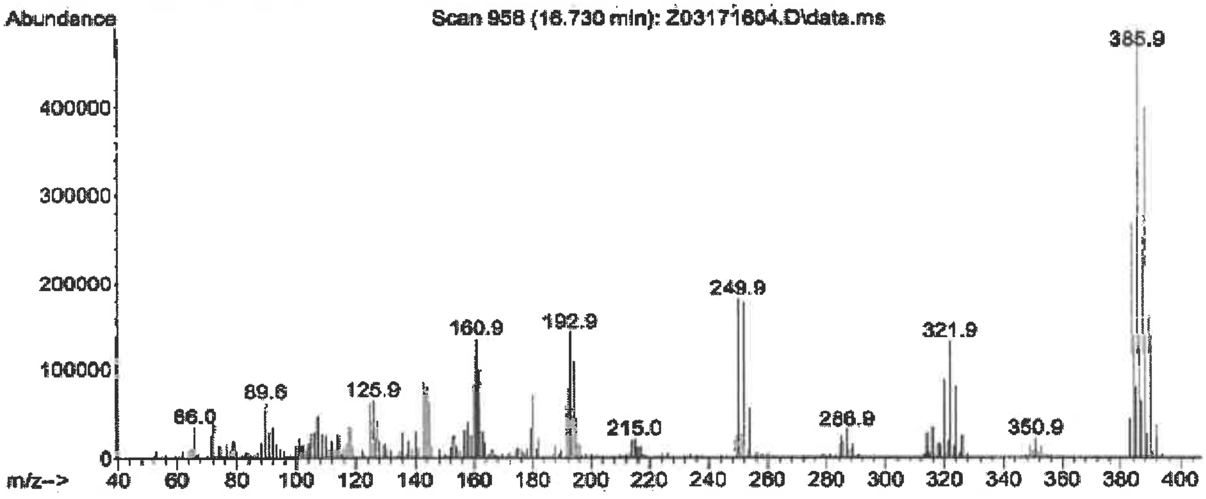

COA Revision History

Revision No.	**Date**	**Reason for Revision**
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

Rec'd. 3/26/20 sw

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Revision 01
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

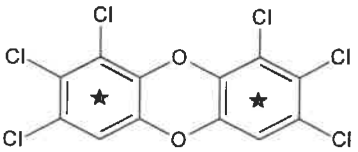

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER110510-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-82-6
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

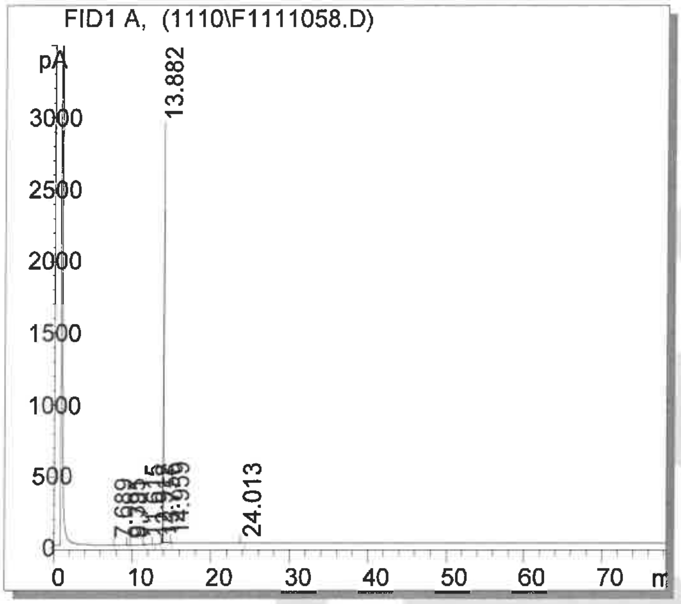

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

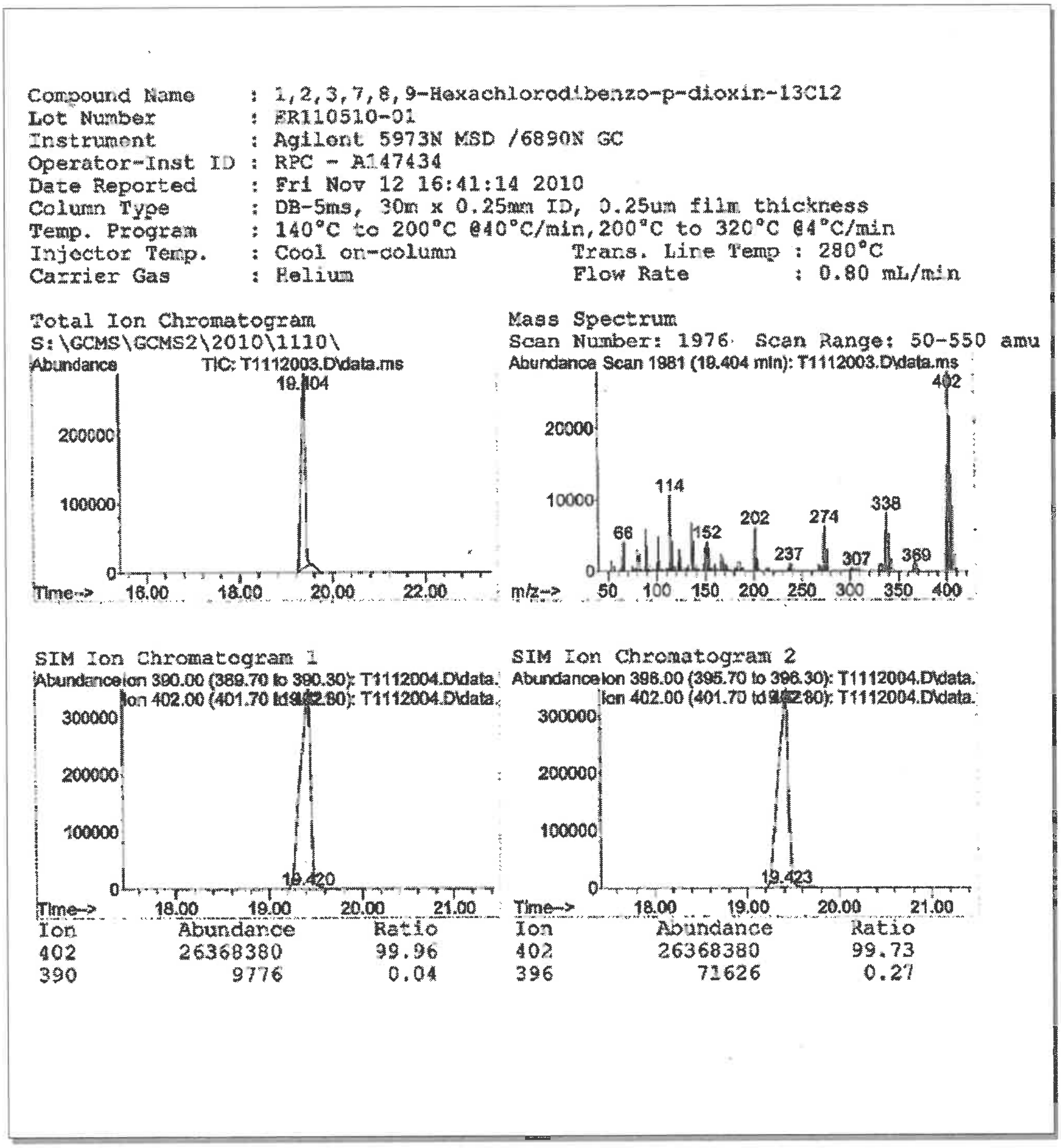

```
Compound Name        : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number           : ER110510-01
Instrument           : Agilent 5973N MSD /6890N GC
Operator-Inst ID     : RPC - A147434
Date Reported        : Fri Nov 12 16:41:14 2010
Column Type          : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program        : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.       : Cool on-column          Trans. Line Temp : 280°C
Carrier Gas          : Helium                  Flow Rate        : 0.80 mL/min
```

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKJ

Cerilliant
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Revision 00
Page 1 of 4

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

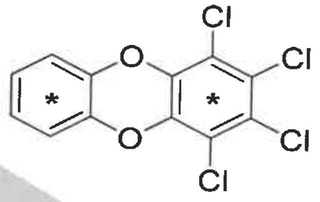

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

January 23, 2017

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

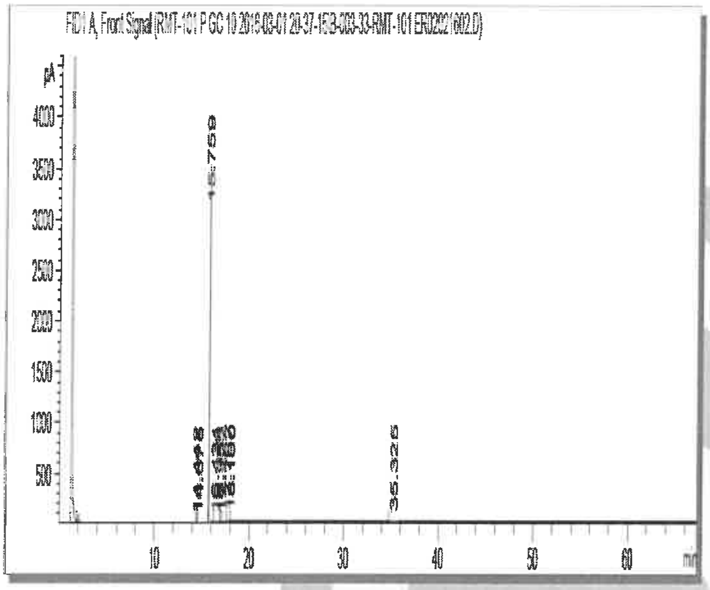

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

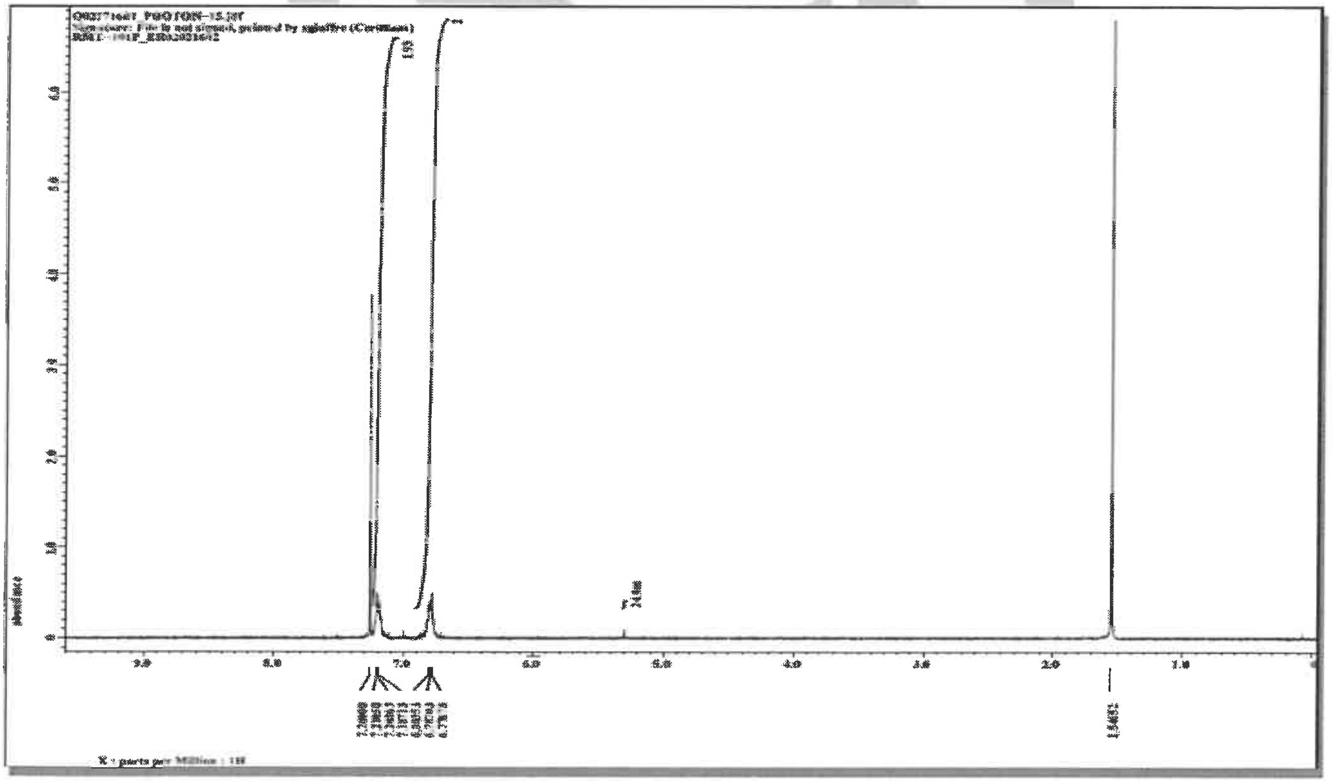

Spectral and Physical Data (cont.)

GC/MS

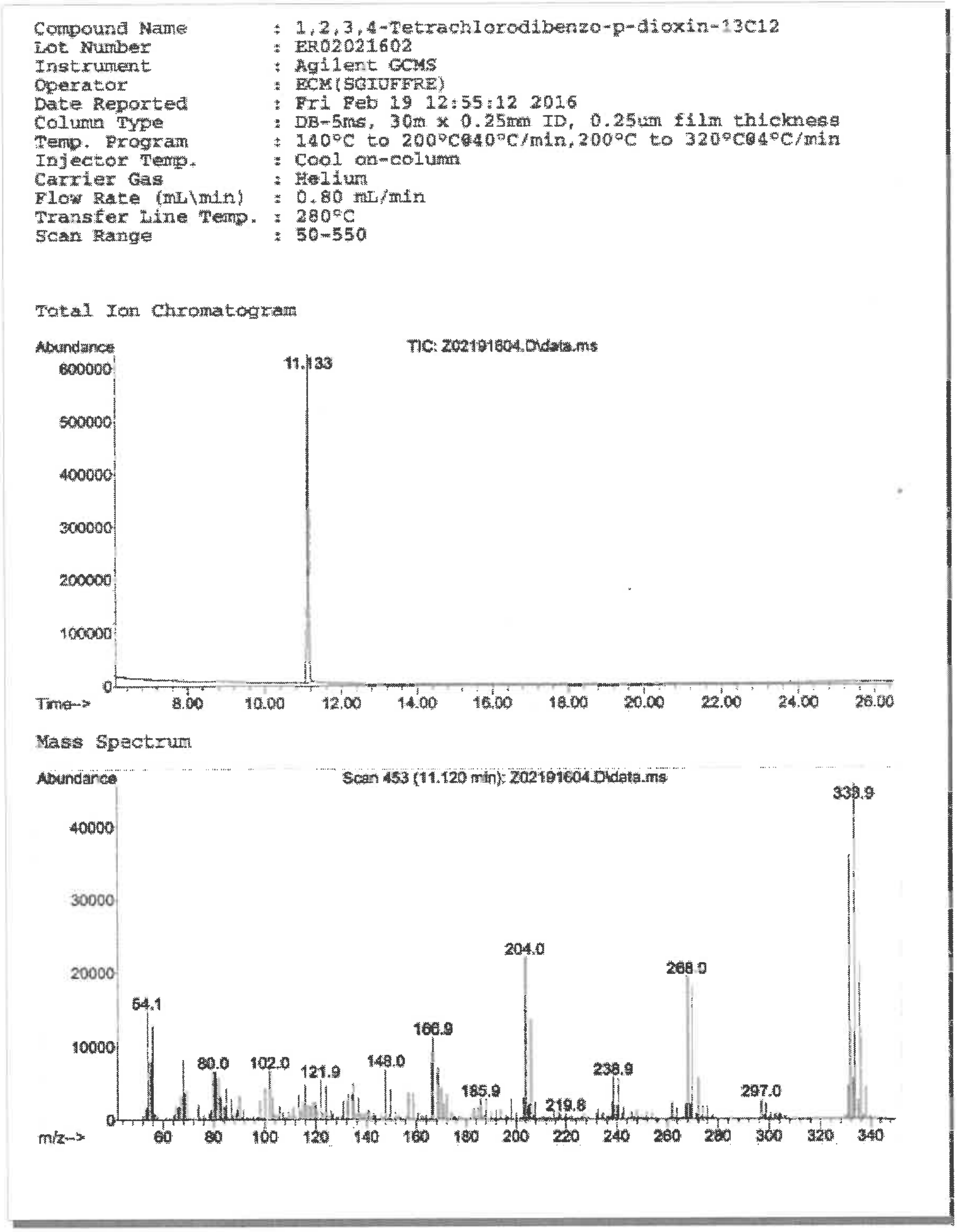

```
Compound Name         : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number            : ER02021602
Instrument            : Agilent GCMS
Operator              : ECM(SGIUFFRE)
Date Reported         : Fri Feb 19 12:55:12 2016
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

②

P: 4/2/19 SKJ

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

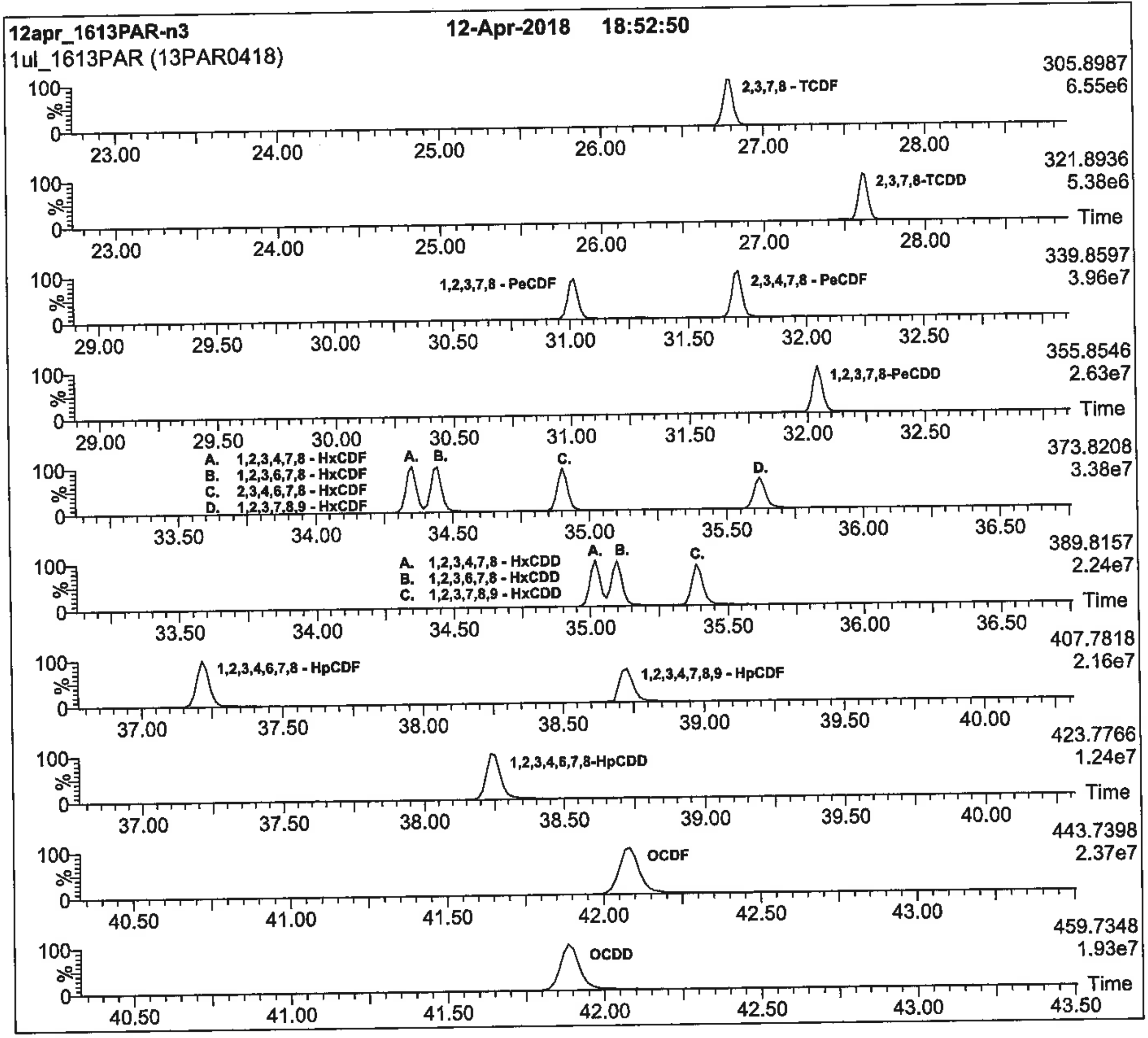

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W		
Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/19 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/ECD
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min, 200°C to 300°C at 4°C/min hold 3 min
Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

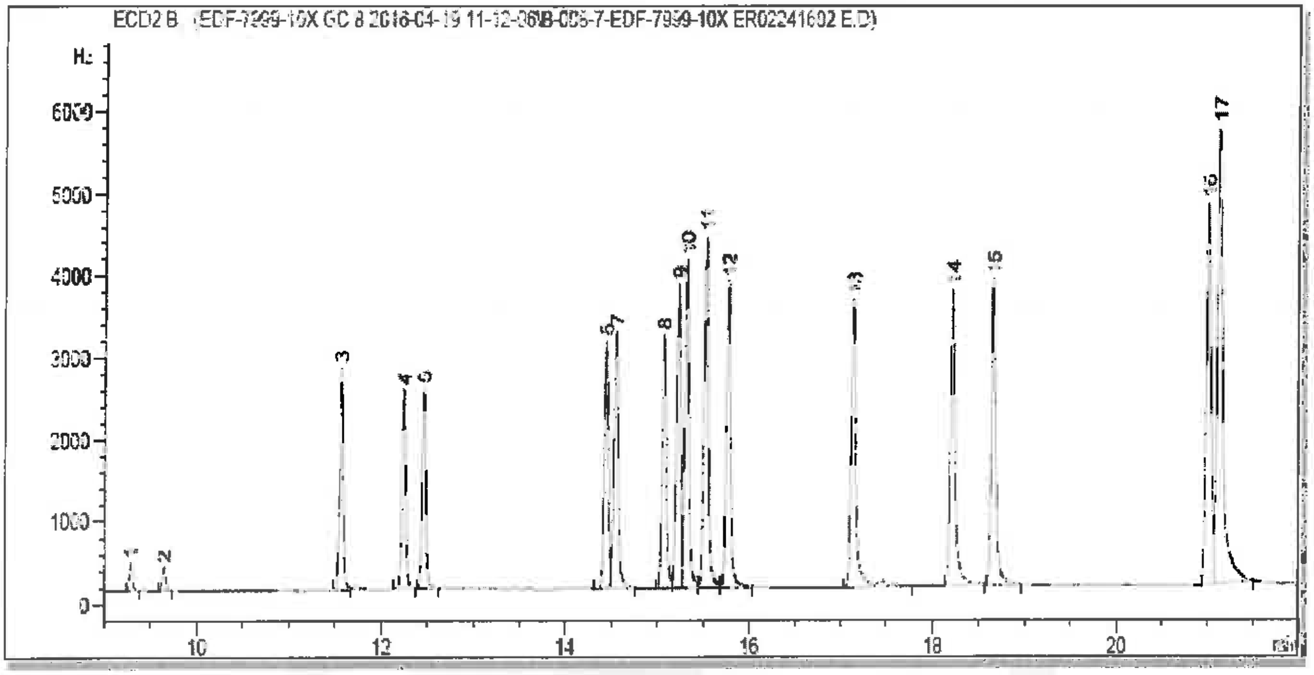

Peak:	**Analyte:**
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

R: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
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1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
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Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
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2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
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1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
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OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

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Product Analysis

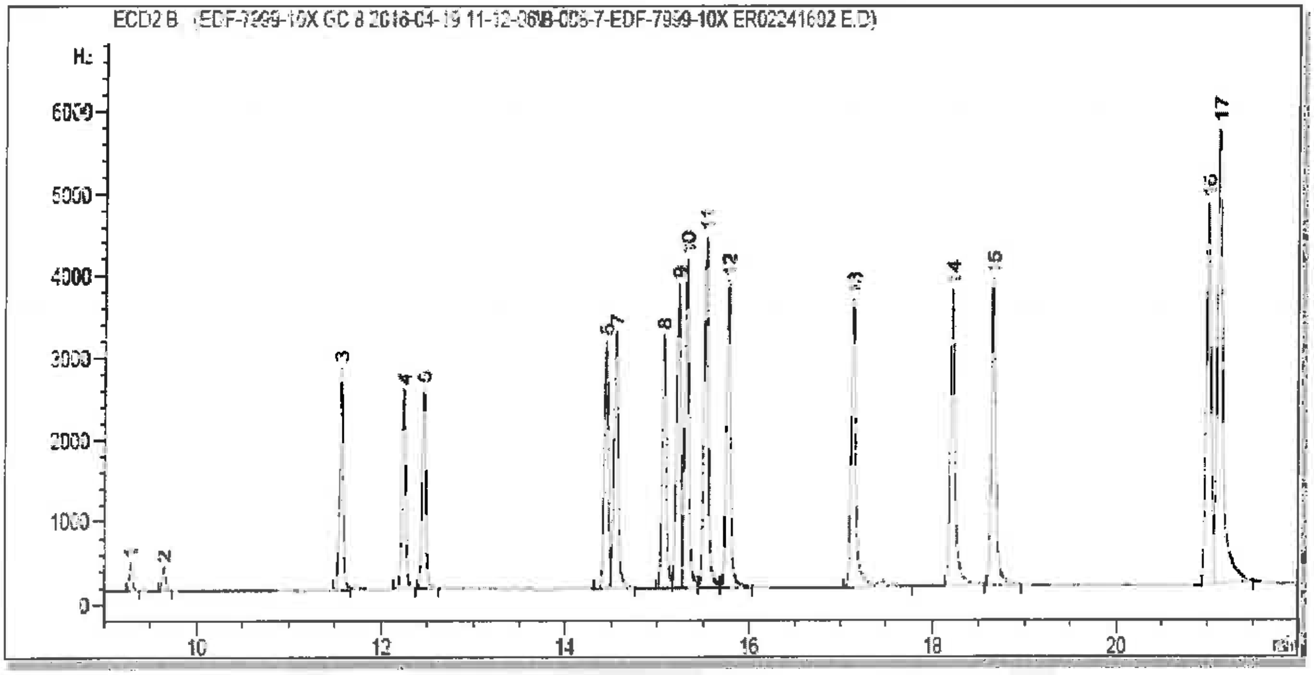

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
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7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
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13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

MT-ICP-ICSA_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM RC: 12/6/19 JMO

Product #: TA-ICP-ICSA

ICP ICSA Mix

Lot #: 1025879-1

1863494
ID: MT-ICP-ICSA_00002
Exp:01/08/21 Prpd:GSH Opn:01/08/20
ICSA mix for ICP

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	5000 ± 25 mg/L	Fe	2000 ± 10 mg/L
Ca	5000 ± 25 mg/L	Mg	5000 ± 25 mg/L

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#
Al	992545	Fe	1004971
Ca	150704	Mg	738337

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT-ICP-ICSB1_00002

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

RC: 10/01/19 dmo Product #: TA-ICP-ICSAB-1

ICP ICSAB Mix Solution 1

Lot #: 1023499-1

Matrix: 5% HNO$_3$/0.5% HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Mo	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L	Ti	100.0 ± 0.5 mg/L
Sb	100.0 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L		

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
Mo	175215	Si	977647	Ti	161694
Sb	987317	Sn	171360		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO$_3$), hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

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This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT-ICP-ICSB2_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICP-ICSAB-2

ICP ICSAB Mix Solution 2

1863495
ID: MT-ICP-ICSB2_00002
Exp:01/08/21 Prpd:GSH Opn:01/08/20
ICSAB Solution2 for ICP

RC: 10/01/19 JMD

Lot #: 992185-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag	100.0 ± 0.5 mg/L	Cr	100.1 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L
As	100.0 ± 0.5 mg/L	Cu	100.1 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L
B	1000 ± 5 mg/L	K	1000 ± 5 mg/L	Sr	100.0 ± 0.5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Be	50.00 ± 0.25 mg/L	Na	1000 ± 5 mg/L	V	100.1 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.1 ± 0.5 mg/L	Zn	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	P	1000 ± 5 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix1-SS_00002

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1-SS

Re: 10/01/19 omo

ICP ICPMS CAL Mix # 1

Lot #: 992738-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	100.1 ± 0.5 mg/L	Li	100.1 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Sn	100.0 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.1 ± 0.5 mg/L	Sr	100.1 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Sb	100.0 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cu	100.0 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 μm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 μL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix2-SS_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Rc: 10/01/19 DMD Product #: TA-CAL2-SS

ICP ICPMS CAL Mix # 2

Lot #: 992740-2

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix3-SS_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Rc: 10/01/19 OMD Product #: TA-CAL3-SS

ICP ICPMS CAL Mix # 3

Lot #: 987270-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
P	1000 ± 5 mg/L	U	100.0 ± 0.5 mg/L
S	1000 ± 5 mg/L	W	100.0 ± 0.5 mg/L

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

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- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_spike1_00005

CPI INTERNATIONAL

rec: 8/14/19
open: 6/1/2020

CERTIFICATE OF ANALYSIS

2016270
ID MT_spike1_00005
Exp:01/30/21 Prod:GSH Opn:06/0 20
spike mix #1 for ICP-AES

Multi-Element Aqueous CRM

Product #: TA-SPIKE1⁺

Spike Mix # 1

Lot #: 1021235-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	**200.0 ± 1.0 mg/L**	**Li**	**100.0 ± 0.5 mg/L**	**Sn**	**200.0 ± 1.0 mg/L**
Ba	**200.0 ± 1.0 mg/L**	**Mn**	**100.0 ± 0.5 mg/L**	**Sr**	**100.0 ± 0.5 mg/L**
Be	**99.99 ± 0.50 mg/L**	**Mo**	**100.0 ± 0.5 mg/L**	**Ti**	**100.0 ± 0.5 mg/L**
Cd	**100.0 ± 0.5 mg/L**	**Ni**	**100.0 ± 0.5 mg/L**	**Tl**	**200.0 ± 1.0 mg/L**
Co	**99.98 ± 0.50 mg/L**	**Pb**	**100.0 ± 0.5 mg/L**	**V**	**100.0 ± 0.5 mg/L**
Cr	**100.0 ± 0.5 mg/L**	**Se**	**200.0 ± 1.0 mg/L**		
Cu	**100.0 ± 0.5 mg/L**	**Si**	**200.0 ± 1.0 mg/L**		

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
As	166531	**Li**	170237	**Sn**	171360
Ba	150283r	**Mn**	985851	**Sr**	976606
Be	989234	**Mo**	118881r	**Ti**	148663
Cd	173171	**Ni**	752769	**Tl**	983036
Co	979870	**Pb**	168223	**V**	983037
Cr	880115	**Se**	929078		
Cu	148793	**Si**	977647		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

July 30, 2019

Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_spike2_00006

rec: 8/14/19

open: 6/1/2020

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE2

2016271
ID MT_spike2_00006
Exp 10/04/20 Prpd.GSH Opn.06/01/20
spike mix2 for ICP/ICPMS

Spike Mix # 2

Lot #: 992745-2

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Mg	5000 ± 25 mg/L
Ca	5000 ± 25 mg/L	K	5000 ± 25 mg/L	Na	5000 ± 25 mg/L

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

April 4, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT6010LLSTD_00016

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

A2LA ACCREDITED Testing Laboratory Certificate 883.01
A2LA ACCREDITED Reference Material Producer Certificate 883.02

Re: 1117-119 OMD

2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: 6010 STD LL
Lot Number: P2-MEB686161
Matrix: 7% (v/v) HNO3
tr. HF

Value / Analyte(s):

100 µg/mL ea:
Potassium,

50 µg/mL ea:
Magnesium, Calcium, Sodium,
Phosphorus, Sulfur, Silicon,

20 µg/mL ea:
Aluminum,

10 µg/mL ea:
Boron, Iron,

5 µg/mL ea:
Strontium,

2 µg/mL ea:
Thallium, Tin, Antimony,
Selenium, Molybdenum, Arsenic,

1 µg/mL ea:
Lithium, Copper, Titanium,
Zinc,

0.5 µg/mL ea:
Vanadium, Lead, Nickel,
Silver, Manganese, Barium,
Cobalt, Chromium,

0.2 µg/mL ea:
Cadmium, Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	19.99 ± 0.10 µg/mL	Antimony, Sb	1.999 ± 0.014 µg/mL
Arsenic, As	2.000 ± 0.017 µg/mL	Barium, Ba	0.4995 ± 0.0028 µg/mL
Beryllium, Be	0.2000 ± 0.0012 µg/mL	Boron, B	10.00 ± 0.07 µg/mL
Cadmium, Cd	0.2000 ± 0.0012 µg/mL	Calcium, Ca	49.96 ± 0.22 µg/mL
Chromium, Cr	0.5006 ± 0.0031 µg/mL	Cobalt, Co	0.4994 ± 0.0028 µg/mL
Copper, Cu	1.000 ± 0.004 µg/mL	Iron, Fe	10.00 ± 0.05 µg/mL
Lead, Pb	0.4998 ± 0.0025 µg/mL	Lithium, Li	1.000 ± 0.006 µg/mL
Magnesium, Mg	50.04 ± 0.20 µg/mL	Manganese, Mn	0.4998 ± 0.0023 µg/mL
Molybdenum, Mo	1.999 ± 0.013 µg/mL	Nickel, Ni	0.5003 ± 0.0025 µg/mL
Phosphorus, P	50.03 ± 0.23 µg/mL	Potassium, K	99.9 ± 0.4 µg/mL
Selenium, Se	1.999 ± 0.015 µg/mL	Silicon, Si	50.02 ± 0.32 µg/mL
Silver, Ag	0.4996 ± 0.0035 µg/mL	Sodium, Na	50.03 ± 0.18 µg/mL
Strontium, Sr	5.004 ± 0.030 µg/mL	Sulfur, S	49.99 ± 0.24 µg/mL
Thallium, Tl	2.001 ± 0.013 µg/mL	Tin, Sn	2.000 ± 0.011 µg/mL
Titanium, Ti	1.000 ± 0.007 µg/mL	Vanadium, V	0.5000 ± 0.0029 µg/mL
Zinc, Zn	1.000 ± 0.006 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	Calculated		See Sec. 4.2
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Ca	Calculated		See Sec. 4.2
Cd	Calculated		See Sec. 4.2
Co	Calculated		See Sec. 4.2
Cr	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
S	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	130912
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Ti	Calculated		See Sec. 4.2
Tl	Calculated		See Sec. 4.2
V	Calculated		See Sec. 4.2
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)\,(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ____________________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MT6010QSMLL_00008

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

11/7/19

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6010 QSM LL
Lot Number:	P2-MEB686159
Matrix:	7% (v/v) HNO3 tr. HF
Value / Analyte(s):	100 µg/mL ea:

Potassium,

50 µg/mL ea:
Magnesium, Calcium, Sodium,
Phosphorus, Sulfur, Silicon,

20 µg/mL ea:
Aluminum, Boron,

10 µg/mL ea:
Iron,

5 µg/mL ea:
Strontium,

4 µg/mL ea:
Selenium, Arsenic,

3 µg/mL ea:
Thallium, Antimony,

2 µg/mL ea:
Tin, Vanadium, Zinc,
Barium, Molybdenum, Lithium,

1.5 µg/mL ea:
Copper,

1 µg/mL ea:
Manganese, Cobalt, Chromium,
Titanium, Lead, Nickel,

0.5 µg/mL ea:
Silver,

0.3 µg/mL ea:
Cadmium, Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	20.00 ± 0.10 µg/mL	Antimony, Sb	2.998 ± 0.021 µg/mL
Arsenic, As	3.997 ± 0.027 µg/mL	Barium, Ba	2.001 ± 0.011 µg/mL
Beryllium, Be	0.2996 ± 0.0016 µg/mL	Boron, B	20.00 ± 0.14 µg/mL
Cadmium, Cd	0.2998 ± 0.0018 µg/mL	Calcium, Ca	49.96 ± 0.22 µg/mL
Chromium, Cr	1.000 ± 0.006 µg/mL	Cobalt, Co	1.001 ± 0.006 µg/mL
Copper, Cu	1.500 ± 0.006 µg/mL	Iron, Fe	10.00 ± 0.05 µg/mL
Lead, Pb	1.000 ± 0.005 µg/mL	Lithium, Li	1.999 ± 0.011 µg/mL
Magnesium, Mg	49.95 ± 0.20 µg/mL	Manganese, Mn	1.001 ± 0.005 µg/mL
Molybdenum, Mo	1.999 ± 0.013 µg/mL	Nickel, Ni	1.001 ± 0.005 µg/mL
Phosphorus, P	49.96 ± 0.23 µg/mL	Potassium, K	100.0 ± 0.4 µg/mL
Selenium, Se	4.000 ± 0.024 µg/mL	Silicon, Si	49.99 ± 0.32 µg/mL
Silver, Ag	0.4998 ± 0.0035 µg/mL	Sodium, Na	50.00 ± 0.18 µg/mL
Strontium, Sr	5.002 ± 0.030 µg/mL	Sulfur, S	50.01 ± 0.24 µg/mL
Thallium, Tl	2.999 ± 0.021 µg/mL	Tin, Sn	2.000 ± 0.011 µg/mL
Titanium, Ti	1.000 ± 0.007 µg/mL	Vanadium, V	2.000 ± 0.011 µg/mL
Zinc, Zn	2.001 ± 0.012 µg/mL		

Density: 1.036 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	Calculated		See Sec. 4.2
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Ca	Calculated		See Sec. 4.2
Cd	Calculated		See Sec. 4.2
Co	Calculated		See Sec. 4.2
Cr	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
S	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	130912
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Ti	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
V	Calculated		See Sec. 4.2
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains “LOW” levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ____________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTAgXXXTA-SS_00002

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CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	P2-AG678505
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2217
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1002 ± 6 µg/mL
Density:	1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**1001 ± 5 µg/mL** ICP Assay NIST SRM 3151 Lot Number: 160729
Assay Method #2	**1003 ± 3 µg/mL** Volhard NIST SRM 999c Lot Number: 999c
Assay Method #3	**1000 ± 3 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000253	O	Na		0.000572	M	Se	<	0.018179	M	Zn		0.000596
O	Al		0.000647	O	Fe		0.000301	M	Nb	<	0.000253	M	Si		0.002313	M	Zr	<	0.005559
M	As	<	0.002403	M	Ga	<	0.000253	M	Nd	<	0.000253	M	Sm	<	0.000253				
M	Au		0.000168	M	Gd	<	0.000253	O	Ni	<	0.005472	M	Sn		0.000198				
O	B	<	0.009978	M	Ge	<	0.000754	M	Os	<	0.000254	O	Sr		0.000008				
M	Ba	<	0.000785	M	Hf	<	0.000253	M	P	<	0.053784	M	Ta	<	0.000253				
M	Be	<	0.002407	M	Hg	<	0.001332	M	Pb		0.000337	M	Tb	<	0.000253				
M	Bi		0.000171	M	Ho	<	0.000253	M	Pd	<	0.001382	M	Te	<	0.003715				
O	Ca		0.000732	M	In	<	0.003483	M	Pr	<	0.000253	M	Th	<	0.000253				
M	Cd	<	0.000253	M	Ir	<	0.000254	M	Pt	<	0.000253	M	Ti	<	0.002706				
M	Ce	<	0.000573	O	K		0.000412	M	Rb	<	0.000253	M	Tl	<	0.000253				
M	Co	<	0.000253	M	La	<	0.000253	M	Re	<	0.000253	M	Tm	<	0.000253				
O	Cr	<	0.005043	O	Li	<	0.000214	M	Rh	<	0.000253	M	U	<	0.000253				
M	Cs	<	0.002769	M	Lu	<	0.000253	M	Ru	<	0.000254	M	V	<	0.000822				
O	Cu		0.000474	O	Mg		0.000106	M	S	<	0.560935	M	W	<	0.002146				
M	Dy	<	0.000253	M	Mn	<	0.000253	M	Sb	<	0.006899	M	Y	<	0.000253				
M	Er	<	0.000253	M	Mo	<	0.000479	M	Sc	<	0.000733	M	Yb	<	0.000253				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 Ag(H2O)6+

Chemical Compatibility -Stable in HNO3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [AgClx1-x] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.

Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO3); Oxides (Soluble in HNO3); Ores (Digestion with conc. HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 06, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 06, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ________________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTAgXXXTA_00012

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM Rc: 10/11/19

Product #: TA-1000511

SE Std Silver (Ag) – 1000 µg/mL

Lot #: 975475-80

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ag	996 ± 3 µg/mL (w/v)
	987 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure silver (Ag) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151, lot #992212**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	MAJOR	Co	<0.5	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<1	Hf	<0.2	Mg	<5	Pb	2	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	3	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	2	Cu	9	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	2	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

USA
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1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTAsXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rc: 10/01/19 OMD

Product #: TA-100031

SE Std Arsenic (As) – 1000 µg/mL

Lot #: 175385-53

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
As	1000 ± 2 µg/mL (w/v)
	983 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure arsenic (As) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3103a, lot #100818**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	MAJOR	Cr	0.7	Hg	<0.5	Mo	0.7	Pt	<0.5	Sn	1	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	2	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	13	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	3	Ru	6	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBaXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 OWMD

Product #: TA-100041

SE Std Barium (Ba) – 1000 µg/mL

Lot #: 273421-73

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ba	1000 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure barium nitrate [$Ba(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3104a, lot #140909**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	3	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	0.9	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	0.7	Pt	<0.5	Sn	<0.5	Y	1
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	2	Sr	3	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	MAJOR	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	14	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	2	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBeXXXTA_00009

CPI

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM RE: 10/01/19 MWD Product #: TA-100051

SE Std Beryllium (Be) – 1000 µg/mL

Lot #: 660981-51

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Be	**996 ± 5 µg/mL (w/v)**
	983 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure beryllium acetate [$Be_4O(C_2H_3O_2)_6$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3105a, lot #090514**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBXXXXTA_00011

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rc: 10/01/19 OWO

Product #: TA-100074

SE Std Boron (B) – 1000 µg/mL

Lot #: 982524-63

Matrix: H_2O

Element	Certified Concentration & Uncertainty
B	1001 ± 2 µg/mL (w/v)
	1003 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9995% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3107, lot #110830**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<5	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	MAJOR	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBXXXXTA_00013

CPI INTERNATIONAL

REPORT OF ANALYSIS

rec: 1/6/2020

Single-Element Aqueous RM

Boron (B) – 5000 µg/mL

Matrix: H_2O

2006159
ID: MTBXXXXTA_00013
Exp:05/21/21 Prpd:GSH Opn:05/21/20
Boron 5,000 ug/mL

Product #: S4400-5M74

Lot #: 1009207-4

Element	Certified Concentration
B	**4981 µg/mL**

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This RM was prepared to a nominal concentration of 5000 µg/mL by gravimetric methods using 99.9995% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to **NIST SRM 3107**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

December 13, 2019
Certification Date

Reagent

MTCdXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19
MWO

Product #: TA-100081

SE Std Cadmium (Cd) – 1000 µg/mL

Lot #: 160499-113

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cd	1000 ± 5 µg/mL (w/v)
	997 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9997% pure cadmium (Cd) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3108, lot #130116**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	<5	Hf	<2	Mn	22	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	10	Cu	<10	Ho	<2	Na	<250	Rb	<5	Sr	<10	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	<10	Er	<2	Ir	<2	Nd	<2	Rh	6	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	6	Sb	<5	Ti	<20		
Cd	MAJOR	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	12		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	17		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCoXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19
OYWO

Product #: TA-1000131

SE Std Cobalt (Co) – 1000 µg/mL

Product Lot #: 979906-18

Matrix: 5% HNO_3

Source Material Lot #: COD12017A1

Element	Certified Concentration & Uncertainty
Co	997 ± 2 µg/mL (w/v)
	994 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.998% pure cobalt (Co) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3113, lot #000630**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	MAJOR	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	~~Te~~	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	6	Pb	<1	Sc	<5	~~Ti~~	<2
As	60	Cr	<0.5	Hg	<0.5	Mn	8	Pd	100	Se	15	~~Tl~~	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	~~Tm~~	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	~~V~~	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	~~W~~	<0.5
Bi	0.4	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	~~Y~~	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	~~Yb~~	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	~~Zn~~	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCrXXXTA_00010

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM Re: 10/01/19 OMP Product #: TA-1000121

SE Std Chromium (Cr) – 1000 µg/mL Lot #: 975466-82

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cr	**1003 ± 3 µg/mL (w/v)**
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure chromium (Cr) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3112a, lot #030730.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	2	Co	<1	Ge	<0.5	Mg	<5	Pd	2	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	MAJOR	Hg	<0.5	Mo	2	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	16	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCuXXXTA_00009

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

re: 10/01/19
GMD

Product #: TA-1000141

SE Std Copper (Cu) – 1000 µg/mL

Lot #: 982446-23

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cu	991 ± 2 µg/mL (w/v)
	988 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure copper (Cu) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3114, lot #121207**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	MAJOR	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTKXXXXTA_00016

Received: 10/1/19
scanned: 3/2/2020

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-10M411

SE Std Potassium (K) – 10,000 µg/mL

Lot #: 172053-80

Matrix: 5% HNO_3

1927240
ID: MTKXXXXTA_00016
Exp:12/10/20 Prpd:DPM Opn:07/30/20
Potassium 10,000 ug/mL

Element	Certified Concentration & Uncertainty
K	**9965 ± 50 µg/mL (w/v)**
	9744 ± 50 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure potassium nitrate (KNO_3) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3141a, lot #140813** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	<5	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	<250	Rb	79	Sr	<10	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	<10	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	MAJOR	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 10, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTMnXXXTA_00009

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 GMO

Product #: TA-1000321

SE Std Manganese (Mn) – 1000 µg/mL

Lot #: 167539-89

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Mn	1001 ± 3 µg/mL (w/v)
	995 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.98% pure manganese (Mn) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3132, lot #050429**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	2	Ge	<0.5	Mg	63	Pd	<0.5	Si	<100	V	3
Al	3	Cs	<0.5	Hf	<0.2	Mn	MAJOR	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	2	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTMoXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rv:10/01/19
MWO

Product #: TA-1000343

SE Std Molybdenum (Mo) – 1000 µg/mL

Lot #: 169424-57

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Mo	**999 ± 3 µg/mL (w/v)**
	980 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure molybdenum (Mo) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3134, lot #891307.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	60
As	<2	Cr	<0.5	Hg	<0.5	Mo	MAJOR	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	1	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	6	Ta	2	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<5		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTNaXXXXTA_00005

CPI INTERNATIONAL

Received: 10/1/19
Scanned: 3/2/2020

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-10M521

SE Std Sodium (Na) – 10,000 µg/mL

Lot #: 752887-33

Matrix: 5% HNO_3

1927239
ID: MTNaXXXXTA_00005
Exp:12/14/20 Prpd:DPM Opn:07/30/20
Sodium 10,000 ug/mL

Element	Certified Concentration & Uncertainty
Na	10,070 ± 20 µg/mL (w/v)
	9771 ± 24 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure sodium carbonate (Na_2CO_3) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3152a, lot #120715**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	11	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	MAJOR	Rb	70	Sr	14	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	26	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

June 14, 2019
Certification Date

USA
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Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

www.cpiinternational.com

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
  - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTNiXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

re: 10/01/19
OMD

Product #: TA-1000361

SE Std Nickel (Ni) – 1000 µg/mL

Lot #: 984273-10

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ni	**1003 ± 4 µg/mL (w/v)**
	996 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure nickel (Ni) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3136, lot #120619**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	33	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	MAJOR	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPbXXXTA_00011

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

re: 10/01/19

Single-Element Aqueous CRM Product #: TA-1000281

SE Std Lead (Pb) – 1000 µg/mL Lot #: 981329-43

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Pb	1009 ± 2 µg/mL (w/v)
	1003 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure lead (Pb) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3128, lot #101026**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	1	Hf	<0.2	Mg	<5	Pb	MAJOR	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	0.9
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPXXXTA_00004

CERTIFICATE OF ANALYSIS

Re'. 10/01/19
OMP

Product #: TA-1000391

Lot #: 978200-13

Single-Element Aqueous CRM

SE Std Phosphorous (P) – 1000 µg/mL

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
P	1002 ± 4 µg/mL (w/v)
	997 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.7% pure phosphoric acid (H_3PO_4) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a, lot #060717**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	MAJOR	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPXXXTA_00006

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Phosphorus (P) – 10,000 µg/mL

Matrix: 0.05% HNO_3

2046236
ID: MTPXXXTA_00006
Exp:06/22/21 Prpd:GSH Opn:06/22/20
Phosphorus 10,000 ug/mL

Product #: S4400-10M391

Lot #: 979480-31

Element	Certified Concentration & Uncertainty
P	9957 ± 39 µg/mL (w/v)
	9851 ± 39 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 17034, ISO/IEC 17025 and ISO 9001**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure phosphoric acid (H_3PO_4). The solution was diluted with filtered (0.22um), 18 M-ohm water and stabilized with the appropriate high-purity acid as indicated in the listed matrix. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a, lot #060717**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	MAJOR	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	<5	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

April 6, 2020
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with internal procedures for assessment of homogeneity and stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev No. 7, July 24, 2019

Further Information: Please contact CPI International for further information about this material.

Quality Certifications: This material was prepared under a quality management system that is registered/accredited to the following:

- ISO 17034 Accredited: Reference Materials Producer, Certificate No. 2848.02 – General Requirements for the Competence of Reference Material Producers
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35
- ISO/IEC 17025 Accredited: Chemical Testing, Certificate No. 2848.01 – General Requirements for the Competence of Testing and Calibration Laboratories
- ISO 9001 Certified: Quality Management Systems, Certificate Registration No. 56 100 19560101 – Requirements
  (Registrar: TUV NORD)

Reagent

MTSbXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 omb Product #: TA-100023

SE Std Antimony (Sb) – 1000 µg/mL

Lot #: 1013797-6

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Sb	996 ± 4 µg/mL (w/v)
	977 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001, ISO 17034**, and **ISO/IEC 17025.** This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure antimony (Sb) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3102a, lot #140911.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	MAJOR	Te	<1
Al	98	Cs	<0.5	Hf	2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	370	Dy	<0.2	In	nd	Na	190	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	1	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	1	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSbXXXTA_00010

Rec: 4/6/2020
Open: 4/8/2020

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Antimony (Sb) – 1000 µg/mL

Matrix: 5% HNO_3/tr. HF

Product #: TA-100023

Lot #: 1013797-6

1967575
D MTSbXXXTA_00010
Exp 10/06/21 Prep DPM
Antimony 1000 ug/mL

Element	Certified Concentration & Uncertainty
Sb	**996 ± 4 µg/mL (w/v)**
	977 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure antimony (Sb) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3102a, lot #140911**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	MAJOR	Te	<1
Al	98	Cs	<0.5	Hf	2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	370	Dy	<0.2	In	nd	Na	190	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	1	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	1	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

January 23, 2020
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSeXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rev: 10/01/19
OMP

Product #: TA-1000491

SE Std Selenium (Se) – 1000 µg/mL

Lot #: 982461-24

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Se	1004 ± 7 µg/mL (w/v)
	996 ± 7 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025.** This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure selenium (Se) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3149, lot #100901.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	MAJOR	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSnXXXTA_00011

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

re'd 10/01/19
OMO

Product #: TA-1000613

SE Std Tin (Sn) – 1000 µg/mL

Lot #: 977645-7

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Sn	999 ± 3 µg/mL (w/v)
	979 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure tin (Sn) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3161a, lot #140917**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	6	Lu	<0.2	P	<100	Sb	3	Te	<1
Al	10	Cs	0.8	Hf	<0.2	Mg	16	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	0.8	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<1000	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	MAJOR	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	0.9	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	20	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSrXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/02/19
MWO

Product #: TA-1000531

SE Std Strontium (Sr) – 1000 μg/mL

Lot #: 998106-28

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Sr	996 ± 5 μg/mL (w/v)
	991 ± 5 μg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 μg/mL by gravimetric methods using 99.9965% pure strontium nitrate [$Sr(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 μm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3153a, lot #990906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (μg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Th	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	370	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	MAJOR	Y	1
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 μL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSXXXXTA_00017

CPI INTERNATIONAL

REPORT OF ANALYSIS

Single-Element Aqueous RM Re: 11/20/19 omo Product #: S4400-10M544

Sulfur (S) – 10,000 µg/mL opened : 5/14/2020 Lot #: 987745-19

Matrix: H_2O

1998822
ID: MTSXXXXTA_00017
Exp:05/14/21 Prpd:GSH Opn:05/14/20
Sulfur 10,000ug/mL

Element	Certified Concentration
S	9966 µg/mL (w/v)
	9790 µg/g (w/w)

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This RM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure ammonium sulfate [$(NH_4)_2SO_4$] dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to **NIST SRM 3154**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	289	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	<2	Nb	<5	Rb	<5	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	6	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 7, 2019
Certification Date

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Reagent

MTTiXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19
DMP

Product #: TA-1000623

SE Std Titanium (Ti) – 1000 µg/mL

Lot #: 987438-5

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Ti	998 ± 2 µg/mL (w/v)
	978 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99+% pure titanium (Ti) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3162a, lot #130925**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	0.7	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	1	Mg	<5	Pb	<1	Sc	<5	Ti	MAJOR
As	<2	Cr	1	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	15	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	0.8	Rb	<0.5	Sn	2	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	23	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTTlXXXTA_00010

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rec: 10/01/19
OMP

Product #: TA-1000581

SE Std Thallium (Tl) – 1000 µg/mL

Lot #: 148983-103

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Tl	1002 ± 3 µg/mL (w/v)
	997 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure thallium (Tl) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3158, lot #993012**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<1	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	13	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	2	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	0.3	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	MAJOR		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	5	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTVXXXXTA_00010

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM rec. 10/01/19 **Product #: TA-1000651**

SE Std Vanadium (V) – 1000 µg/mL GMW **Lot #: 990117-53**

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
V	1003 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure vanadium pentoxide (V_2O_5) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3165, lot #160906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	35	Te	<1
Al	7	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	20
As	<2	Cr	111	Hg	<0.5	Mn	5	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	7	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	MAJOR
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	124	La	0.8	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	0.9	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTZnXXXTA-SS_00002

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CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	P2-ZN675323
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zinc
Starting Material:	Zn Metal
Starting Material Lot#:	580919
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1000 ± 5 µg/mL
Density:	1.011 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**999 ± 4 µg/mL** ICP Assay NIST SRM 3168a Lot Number: 120629
Assay Method #2	**1000 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000726	M	Eu	<	0.000500	O	Na		0.001897	O	Se	<	0.020160	s	Zn	<	
O	Al		0.000545	O	Fe		0.004817	M	Nb	<	0.000500	O	Si		0.001251	M	Zr	<	0.000500
M	As	<	0.005009	M	Ga	<	0.008015	M	Nd	<	0.000500	M	Sm	<	0.000500				
M	Au	<	0.001497	M	Gd	<	0.000500	O	Ni		0.002729	M	Sn	<	0.004007				
O	B	<	0.044800	M	Ge	<	0.004508	M	Os	<	0.011977	O	Sr		0.000022				
M	Ba		0.000078	M	Hf	<	0.000500	O	P	<	0.022400	M	Ta	<	0.000500				
M	Be	<	0.000500	M	Hg	<	0.002994	M	Pb		0.012073	M	Tb	<	0.000500				
M	Bi	<	0.001502	M	Ho	<	0.000500	M	Pd	<	0.001001	M	Te	<	0.000500				
O	Ca		0.002536	M	In	<	0.002003	M	Pr	<	0.000500	M	Th	<	0.000500				
M	Cd		0.000548	M	Ir	<	0.002495	M	Pt	<	0.000500	O	Ti	<	0.001568				
M	Ce	<	0.000500	M	K		0.000727	M	Rb	<	0.004007	M	Tl	<	0.002003				
M	Co	<	0.005009	M	La	<	0.000500	M	Re	<	0.000500	M	Tm	<	0.000500				
M	Cr	<	0.001001	O	Li	<	0.000112	M	Rh	<	0.000500	M	U	<	0.000500				
M	Cs	<	0.000500	M	Lu	<	0.000500	O	Ru	<	0.007840	M	V	<	0.001001				
O	Cu		0.004694	O	Mg		0.000550	O	S	<	0.044800	M	W	<	0.001001				
M	Dy	<	0.000500	O	Mn		0.001433	M	Sb	<	0.009017	M	Y	<	0.000500				
M	Er	<	0.000500	M	Mo	<	0.003506	M	Sc	<	0.002003	M	Yb	<	0.000500				

M - Checked by ICP-MS   O - Checked by ICP-OES   i - Spectral Interference
n - Not Checked For   s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 25, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 25, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ________________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTZnXXXTA_00012

CERTIFICATE OF ANALYSIS

Re. 10/01/19

Single-Element Aqueous CRM — Product #: TA-1000681

SE Std Zinc (Zn) – 1000 µg/mL — Lot #: 984272-63

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Zn	**1005 ± 3 µg/mL (w/v)**
	998 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure zinc (Zn) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3168a, lot #120629**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	6	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	12	W	<0.5
Bi	<0.2	Eu	<0.2	K	296	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	1	Tb	<0.5	Zn	MAJOR
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-404233/2-A	97	81	103	98	125	83	107	86
	LCSD 320-404233/3-A	83	75	98	75	96	72	109	83

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-404233/2-A	90	95	79	96	82	71	110	99
	LCSD 320-404233/3-A	91	103	74	93	92	93	123	87

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Treatment -3 RA	320-63525-1 RA	73	93
11215702-Treatment -4 RA	320-63525-2 RA	70	93

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Treatment -3	320-63525-1	73	74	98	67	83	70	93	66
11215702-Treatment -4	320-63525-2	68	70	99	62	77	64	90	66
	MB 320-404233/1-A	84	88	102	78	101	86	117	84

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Treatment -3	320-63525-1	75	95	66	78	84	94	107	94
11215702-Treatment -4	320-63525-2	73	92	62	74	80	89	98	89
	MB 320-404233/1-A	94	120	85	94	102	110	129	112

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Matrix: Water   Level: Low   Lab File ID: 20au20dfs1_30.d

Lab ID: LCS 320-404233/2-A   Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	218	109	67-158	
2,3,7,8-TCDF	200	222	111	75-158	
1,2,3,7,8-PeCDD	1000	1120	112	70-142	
1,2,3,7,8-PeCDF	1000	1070	107	80-134	
2,3,4,7,8-PeCDF	1000	877	88	68-160	
1,2,3,4,7,8-HxCDD	1000	809	81	70-164	
1,2,3,6,7,8-HxCDD	1000	1030	103	76-134	
1,2,3,7,8,9-HxCDD	1000	953	95	64-162	
1,2,3,4,7,8-HxCDF	1000	831	83	72-134	
1,2,3,6,7,8-HxCDF	1000	1020	102	84-130	
1,2,3,7,8,9-HxCDF	1000	1010	101	78-130	
2,3,4,6,7,8-HxCDF	1000	997	100	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1050	105	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1020	102	82-122	
1,2,3,4,7,8,9-HpCDF	1000	803	80	78-138	
OCDD	2000	1920	96	78-144	
OCDF	2000	2070	104	63-170	
13C-2,3,7,8-TCDD	2000	1610	81	20-175	
13C-2,3,7,8-TCDF	2000	1940	97	22-152	
13C-1,2,3,7,8-PeCDD	2000	1660	83	21-227	
13C-1,2,3,7,8-PeCDF	2000	1960	98	21-192	
13C-2,3,4,7,8-PeCDF	2000	2500	125	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1890	95	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1570	79	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	2150	107	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1730	86	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1920	96	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1800	90	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1420	71	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1640	82	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	2200	110	20-186	
13C-OCDD	4000	3970	99	13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Matrix: Water   Level: Low   Lab File ID: 19AU2010D5_17.d

Lab ID: LCSD 320-404233/3-A   Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	199	100	9	50	67-158	
2,3,7,8-TCDF	200	203	102	9	50	75-158	
1,2,3,7,8-PeCDD	1000	997	100	12	50	70-142	
1,2,3,7,8-PeCDF	1000	1020	102	4	50	80-134	
2,3,4,7,8-PeCDF	1000	808	81	8	50	68-160	
1,2,3,4,7,8-HxCDD	1000	811	81	0	50	70-164	
1,2,3,6,7,8-HxCDD	1000	1020	102	1	50	76-134	
1,2,3,7,8,9-HxCDD	1000	925	93	3	50	64-162	
1,2,3,4,7,8-HxCDF	1000	828	83	0	50	72-134	
1,2,3,6,7,8-HxCDF	1000	1040	104	1	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1010	101	0	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1010	101	1	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	943	94	11	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1010	101	2	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	785	78	2	50	78-138	
OCDD	2000	1960	98	2	50	78-144	
OCDF	2000	2130	106	3	50	63-170	
13C-2,3,7,8-TCDD	2000	1500	75			20-175	
13C-2,3,7,8-TCDF	2000	1650	83			22-152	
13C-1,2,3,7,8-PeCDD	2000	1440	72			21-227	
13C-1,2,3,7,8-PeCDF	2000	1500	75			21-192	
13C-2,3,4,7,8-PeCDF	2000	1920	96			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	2050	103			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1480	74			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	2180	109			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1660	83			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1870	93			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1830	91			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1860	93			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1840	92			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	2470	123			20-186	
13C-OCDD	4000	3500	87			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab File ID: 19AU2010D5_4.d Lab Sample ID: MB 320-404233/1-A

Matrix: Water Date Extracted: 08/17/2020 08:45

Instrument ID: 10D5 Date Analyzed: 08/19/2020 12:57

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Treatment-3	320-63525-1	19AU2010D5_7.d	08/19/2020 15:12
11215702-Treatment-4	320-63525-2	19AU2010D5_8.d	08/19/2020 15:57
	LCSD 320-404233/3-A	19AU2010D5_17.d	08/19/2020 23:48
11215702-Treatment-3 RA	320-63525-1 RA	20AU20D4D2_008.d	08/20/2020 20:44
11215702-Treatment-4 RA	320-63525-2 RA	20AU20D4D2_009.d	08/20/2020 21:22
	LCS 320-404233/2-A	20au20dfs1_30.d	08/21/2020 09:01

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-63525-1
SDG No.:
Client Sample ID: 11215702-Treatment-3
Lab Sample ID: 320-63525-1
Matrix: Water
Lab File ID: 19AU2010D5_7.d
Analysis Method: 1613B
Date Collected: 08/07/2020 12:30
Extract. Method: 1613B
Date Extracted: 08/17/2020 08:45
Sample wt/vol: 1046.6(mL)
Date Analyzed: 08/19/2020 15:12
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 405028
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	9.8		9.6	1.0
40321-76-4	1,2,3,7,8-PeCDD	ND		48	1.2
57117-41-6	1,2,3,7,8-PeCDF	1.9	J	48	0.93
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.80
39227-28-6	1,2,3,4,7,8-HxCDD	2.3	J	48	0.66
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.79
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.63
70648-26-9	1,2,3,4,7,8-HxCDF	2.7	J	48	0.89
57117-44-9	1,2,3,6,7,8-HxCDF	ND		48	1.0
72918-21-9	1,2,3,7,8,9-HxCDF	1.5	J q	48	0.65
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J q	48	0.69
35822-46-9	1,2,3,4,6,7,8-HpCDD	2.8	J	48	0.54
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.8	J B	48	0.49
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.51
3268-87-9	OCDD	30	J B	96	1.1
39001-02-0	OCDF	2.1	J q B	96	0.87
41903-57-5	Total TCDD	9.8		9.6	1.0
30402-14-3	Total TCDF	61	q	9.6	0.85
36088-22-9	Total PeCDD	ND		48	1.2
30402-15-4	Total PeCDF	1.9	J	48	0.87
34465-46-8	Total HxCDD	2.3	J	48	0.69
55684-94-1	Total HxCDF	5.3	J q	48	0.81
37871-00-4	Total HpCDD	4.6	J q B	48	0.54
38998-75-3	Total HpCDF	2.8	J B	48	0.50

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Client Sample ID: 11215702-Treatment-3 Lab Sample ID: 320-63525-1

Matrix: Water Lab File ID: 19AU2010D5_7.d

Analysis Method: 1613B Date Collected: 08/07/2020 12:30

Extract. Method: 1613B Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1046.6(mL) Date Analyzed: 08/19/2020 15:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405028 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		25-164
89059-46-1	13C-2,3,7,8-TCDF	73		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	70		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	67		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	83		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	95		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	93		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	66		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	78		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	75		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	94		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	84		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	107		26-138
114423-97-1	13C-OCDD	94		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		35-197

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Lims ID: 320-63525-A-1-A
Client ID: 11215702-Treatment-3
Sample Type: Client
Inject. Date: 19-Aug-2020 15:12:52 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-63525-A-1-A 320-63525-A-1-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 08:45:32 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1023

First Level Reviewer: shardaa Date: 19-Aug-2020 16:15:11

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.476	21823368	0.80	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.976	21787381	0.76	1.3726	72.7	72.7	0.1651	0.1651	72.74	
2,3,7,8-TCDF	16.992	379418	0.84	0.9104	1.913	1.913	0.0444	0.0444		
A Non-2,3,7,8-sub-TCDF	16.689	256096	0.77	0.9104	1.321	1.291	0.0444	0.8883		RQ
S Total TCDF					3.233	3.204	0.0444	0.0444		RQ
D 13C-2,3,7,8-TCDD	17.657	16484116	0.79	1.0192	74.1	74.1	0.1736	0.1736	74.11	
2,3,7,8-TCDD	17.672	90592	0.65	1.0745	0.5115	0.5115	0.0539	0.0539		
$ 37Cl4-2,3,7,8-TCDD	17.672	8722187		1.0176	39.3	39.3	0.0485	0.0485	98.19	
A Non-2,3,7,8-sub-TCDD	17.135						0.0539	0.0539		
S Total TCDD					0.5115	0.5115	0.0539	0.0539		
D 13C-1,2,3,7,8-PeCDF	21.824	16605282	1.55	1.1429	66.6	66.6	0.1633	0.1633	66.58	
1,2,3,7,8-PeCDF	21.865	16327	1.49	0.9938	0.0989	0.0989	0.0487	0.0487		M
D 13C-2,3,4,7,8-PeCDF	23.120	25482597	1.57	1.3997	83.4	83.4	0.1334	0.1334	83.42	
2,3,4,7,8-PeCDF	23.133						0.0419	0.0419		
A F1 PeCDFs	19.555						0.0471	0.0471		
A Non-2,3,7,8-sub-PeCDF	22.583						0.0443	0.0443		U
S Total PeCDF					0.0989	0.0989	0.0453	0.0453		
D 13C-1,2,3,7,8-PeCDD	23.815	12575570	1.57	0.8232	70.0	70.0	0.1016	0.1016	70.00	
1,2,3,7,8-PeCDD	23.816						0.0615	0.0615		
A Non-2,3,7,8-sub-PeCDD	22.772						0.0615	0.0615		
S Total PeCDD							0.0615	0.0615		
D 13C-1,2,3,4,7,8-HxCDF	29.955	16786086	0.50	1.1388	92.7	92.7	0.2507	0.2507	92.72	
1,2,3,4,7,8-HxCDF	29.982	18985	1.32	0.8061	0.1403	0.1403	0.0465	0.0465		M
D 13C-1,2,3,6,7,8-HxCDF	30.195	11342716	0.48	1.0803	66.0	66.0	0.2643	0.2643	66.05	
1,2,3,6,7,8-HxCDF	30.182						0.0535	0.0535		
D 13C-2,3,4,6,7,8-HxCDF	31.153	11328390	0.50	0.9494	75.1	75.1	0.3007	0.3007	75.06	
2,3,4,6,7,8-HxCDF	31.180	7145	1.24	1.0382	0.0705	0.0607	0.0362	0.0362		RQM
D 13C-1,2,3,7,8,9-HxCDF	32.032	10683646	0.49	0.8670	77.5	77.5	0.3293	0.3293	77.51	
1,2,3,7,8,9-HxCDF	32.059	8419	1.24	1.0321	0.0847	0.0764	0.0342	0.0342		RQM
A Non-2,3,7,8-sub-HxCDF	29.689						0.0412	0.0412		
S Total HxCDF					0.2955	0.2774	0.0426	0.0426		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.846	15896847	1.22	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.367	14104097	1.23	0.9356	94.8	94.8	0.2570	0.2570	94.83	
1,2,3,4,7,8-HxCDD	31.380	13879	1.30	0.8202	0.1200	0.1200	0.0345	0.0345		M
D 13C-1,2,3,6,7,8-HxCDD	31.486	10879840	1.18	1.0416	65.7	65.7	0.2308	0.2308	65.71	
1,2,3,6,7,8-HxCDD	31.380						0.0413	0.0413		MU
1,2,3,7,8,9-HxCDD	31.859						0.0330	0.0330		
A Non-2,3,7,8-sub-HxCDD	30.321						0.0357	0.0357		
S Total HxCDD					0.1200	0.1200	0.0362	0.0362		
D 13C-1,2,3,4,6,7,8-HpCDF	33.542	10505657	0.42	0.7899	83.7	83.7	0.9438	0.9438	83.66	
1,2,3,4,6,7,8-HpCDF	33.567	22554	1.06	1.4527	0.1478	0.1478	0.0255	0.0255		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.624	15472271	0.42	0.9093	107.0	107.0	0.8199	0.8199	107	
1,2,3,4,7,8,9-HpCDF	34.624						0.0268	0.0268		
A Non-2,3,7,8-sub-HpCDF	34.101						0.0256	0.0256		
S Total HpCDF					0.1478	0.1478	0.0261	0.0261		
D 13C-1,2,3,4,6,7,8-HpCDD	34.332	11388430	1.04	0.7637	93.8	93.8	0.4804	0.4804	93.80	
1,2,3,4,6,7,8-HpCDD	34.345	17481	0.99	1.0540	0.1456	0.1456	0.0283	0.0283		M
A Non-2,3,7,8-sub-HpCDD	34.623	11277	1.04	1.0540	0.1080	0.0940	0.0283	0.0940		RQMa
S Total HpCDD					0.2536	0.2396	0.0283	0.0283		RQ
D 13C-OCDD	36.651	18978119	0.87	0.6377	187.2	187.2	0.2554	0.2554	93.60	
OCDF	36.735	13569	0.89	1.2965	0.1228	0.1103	0.0456	0.0456		RQM
OCDD	36.651	169025	0.87	1.1499	1.549	1.549	0.0564	0.0564		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Lims ID: 320-63525-A-1-A
Client ID: 11215702-Treatment-3
Sample Type: Client
Inject. Date: 19-Aug-2020 15:12:52 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-63525-A-1-A 320-63525-A-1-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 08:45:32 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
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Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1023

First Level Reviewer: shardaa Date: 19-Aug-2020 16:15:11

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.476	17.460	1		9714384	2493451	2426	6065	1028		
333.9339	17.476	17.460	1		12108984	3153947	1571	3927	2008	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.976	16.962	1	0.971	9401131	2395759	2548	6370	940		
317.9389	16.976	16.962	1	0.971	12386250	3165635	2570	6425	1232	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.992	16.976	1	1.001	172998	40830	414	1035	99		
305.8987	16.992	16.976	1	1.001	206420	49220	485	1212	101	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.115	16.689	-34	0.949	9791	2722	414	1035	7		
305.8987	16.115	16.689	-34	0.949	12941	3517	485	1212	7	0.76(0.65-0.89)	
303.9016	16.629	16.689	-4	0.980	77205	21860	414	1035	53		
305.8987	16.629	16.689	-4	0.980	99003	25180	485	1212	52	0.78(0.65-0.89)	
303.9016	17.415	16.689	43	1.026	21651	3849	414	1035	9		
	Empc Correction				15783	3497	414	1035	8		
305.8987	17.415	16.689	43	1.026	20498	4542	485	1212	9	1.06(0.65-0.89)	
303.9016	18.730	16.689	122	1.103	8570	2044	414	1035	5		
305.8987	18.761	16.689	124	1.105	12305	3252	485	1212	7	0.70(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.657	17.642	1	1.010	7263909	1773720	2426	6065	731		
333.9339	17.657	17.642	1	1.010	9220207	2264592	1571	3927	1441	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.672	17.657	1	1.001	35748	9086	643	1607	14		
321.8936	17.687	17.657	2	1.002	54844	15635	292	730	54	0.65(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.672	17.657	1	1.011	8722187	2067505	1115	2787	1854		

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						643	1607			
321.8936	17.135						292	730			
13C-1,2,3,7,8-PeCDF											
351.9000	21.824	21.797	2	1.249	10087885	1858352	2581	6452	720		
353.8970	21.824	21.797	2	1.249	6517397	1211518	1636	4090	741	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.865	21.811	3	1.002	9760	2067	212	530	10		M
341.8567	21.852	21.811	2	1.001	6567	1641	383	957	4	1.49(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	23.120	23.093	2	1.323	15584273	2663009	2581	6452	1032		
353.8970	23.120	23.093	2	1.323	9898324	1709390	1636	4090	1045	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.106						212	530			
341.8567	23.106						383	957			
A F1 PeCDFs											
339.8597	19.555						185	462			
341.8567	19.555						448	1120			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	22.583						212	530			
341.8567	22.583						383	957			
13C-1,2,3,7,8-PeCDD											
367.8949	23.815	23.774	2	1.363	7682412	1256775	1080	2700	1164		
369.8919	23.815	23.774	2	1.363	4893158	775416	809	2022	958	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.816						300	750			
357.8516	23.816						209	522			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.772						300	750			
357.8516	22.772						209	522			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.955	29.916	2	0.941	5589951	811229	1624	4060	500		
385.8610	29.955	29.916	2	0.941	11196135	1675019	2784	6960	602	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	29.982	29.942	2	1.001	10805	1362	217	542	6		M
375.8178	30.022	29.942	5	1.002	8180	1006	156	390	6	1.32(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.195	30.155	2	0.948	3704336	583003	1624	4060	359		
385.8610	30.195	30.155	2	0.948	7638380	1191618	2784	6960	428	0.48(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.182						217	542			
375.8178	30.182						156	390			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.153	31.127	2	0.978	3771897	813723	1624	4060	501		
385.8610	31.153	31.127	2	0.978	7556493	1667299	2784	6960	599	0.50(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											RQM
373.8208	31.180	31.153	2	1.001	5107	1092	217	542	5		
	Empc Correction				3955	1269	217	542	6		
375.8178	31.167	31.153	1	1.000	3190	1024	156	390	7	1.60(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.032	32.019	1	1.006	3526616	853746	1624	4060	526		
385.8610	32.032	32.019	1	1.006	7157030	1783726	2784	6960	641	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	32.059	32.032	2	1.001	4661	1353	217	542	6		M
375.8178	32.045	32.032	1	1.000	4676	1348	156	390	9	1.00(1.05-1.43)	M
	Empc Correction				3758	1091	156	390	7		
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.689						217	542			
375.8178	29.689						156	390			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.846	31.832	1		8737612	2136069	2001	5002	1068		
403.8529	31.846	31.832	1		7159235	1724269	1712	4280	1007	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.367	31.353	1	0.985	7791418	1913394	2001	5002	956		
403.8529	31.367	31.353	1	0.985	6312679	1516323	1712	4280	886	1.23(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	31.380	31.366	1	1.000	7852	2256	192	480	12		M
391.8127	31.393	31.366	2	1.001	6027	1664	196	490	8	1.30(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.486	31.473	1	0.989	5888557	1340450	2001	5002	670		
403.8529	31.486	31.473	1	0.989	4991283	1168682	1712	4280	683	1.18(1.05-1.43)	
1,2,3,6,7,8-HxCDD											MU
389.8157	31.486						192	480			
391.8127	31.486						196	490			
1,2,3,7,8,9-HxCDD											
389.8157	31.846						192	480			
391.8127	31.846						196	490			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.321						192	480			
391.8127	30.321						196	490			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.542	33.530	1	1.053	3127393	1002629	3661	9152	274		
419.8220	33.542	33.530	1	1.053	7378264	2359967	7851	19627	301	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.567	33.542	1	1.001	11618	3826	291	727	13		
409.7789	33.567	33.542	1	1.001	10936	3341	207	517	16	1.06(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.624	34.599	1	1.087	4599014	1321809	3661	9152	361		
419.8220	34.624	34.599	1	1.087	10873257	3070997	7851	19627	391	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.611						291	727			
409.7789	34.611						207	517			

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Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.101						291	727			
409.7789	34.101						207	517			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.332	34.320	1	1.078	5803394	1690477	2908	7270	581		
437.8140	34.332	34.320	1	1.078	5585036	1659537	2757	6892	602	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.345	34.332	1	1.000	8697	3076	238	595	13		
425.7737	34.357	34.332	1	1.001	8784	2856	162	405	18	0.99(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											RQMa
423.7766	33.798	34.623	-49	0.984	7430	2388	238	595	10		M
	Empc Correction				5749	1676	238	595	7		
425.7737	33.810	34.623	-49	0.985	5528	1612	162	405	10	1.34(0.88-1.20)	
13C-OCDD											
469.7779	36.651	36.626	1	1.151	8812777	2197015	1381	3452	1591		
471.7750	36.639	36.626	1	1.151	10165342	2577889	1134	2835	2273	0.87(0.76-1.02)	
OCDF											RQM
441.7428	36.735	36.722	1	1.002	6390	1542	216	540	7		M
443.7399	36.723	36.722	0	1.002	8720	2431	348	870	7	0.73(0.76-1.02)	M
	Empc Correction				7179	1732	348	870	5		
OCDD											M
457.7377	36.651	36.638	1	1.000	78487	18422	345	862	53		M
459.7348	36.651	36.638	1	1.000	90538	22857	274	685	83	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Lims ID:	320-63525-A-1-A		
Client ID:	11215702-Treatment-3		
Inject. Date:	19-Aug-2020 15:12:52	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA/AJS
Lims Batch ID:	405028	Lims Sample ID:	7

Non-2,3,7,8-sub-TCDF, RT: 16.689

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.910	D 13C-2,3,7,8-TCDF	100.000	21787381	5561394

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.910		100.000	21787381	5561394

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.115	9791	2722	12941	3517	0.1146	0.76	
16.629	77205	21860	99003	25180	0.8883	0.78	
17.415	21651	3849	20498	4542	0.2125	1.06	RQ
17.415	15783	3497	20498	4542	0.1829		Empc Correction
18.730	8570	2044	12305	3252	0.1052	0.70	
Signal Totals:							
	111349	30123	144747	36491			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	261964	66966				0.81	RQ
	256096	66614					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.321 = (261964 * 100.000) / (21787381 * 0.910)
Empc Amount: 1.291 = (256096 * 100.000) / (21787381 * 0.910)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Lims ID: 320-63525-A-1-A
Client ID: 11215702-Treatment-3
Inject. Date: 19-Aug-2020 15:12:52
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: SMA/AJS
Lims Batch ID: 405028
Lims Sample ID: 7

Non-2,3,7,8-sub-PeCDF, RT: 22.583

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994	D 13C-1,2,3,7,8-PeCDF	100.000	16605282	3069870
2,3,4,7,8-PeCDF	0.812	D 13C-2,3,4,7,8-PeCDF	100.000	25482597	4372399

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.903		100.000	21043939	3721134

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Lims ID:	320-63525-A-1-A		
Client ID:	11215702-Treatment-3		
Inject. Date:	19-Aug-2020 15:12:52	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA/AJS
Lims Batch ID:	405028	Lims Sample ID:	7

Non-2,3,7,8-sub-HpCDD, RT: 34.623

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.054	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	11388430	3350014

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.054		100.000	11388430	3350014

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.798	7430	2388	5528	1612	0.1080	1.34	RQM
33.798	5749	1676	5528	1612	0.0940		Empc Correction
Signal Totals:							
	5749	1676	5528	1612			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12958	4000				1.34	RQM
	11277	3288					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1080 = (12958 * 100.000) / (11388430 * 1.054)
Empc Amount: 0.0940 = (11277 * 100.000) / (11388430 * 1.054)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	21.85
Area:	8605
Amount:	0.130732
Amount Units:	pg/ul

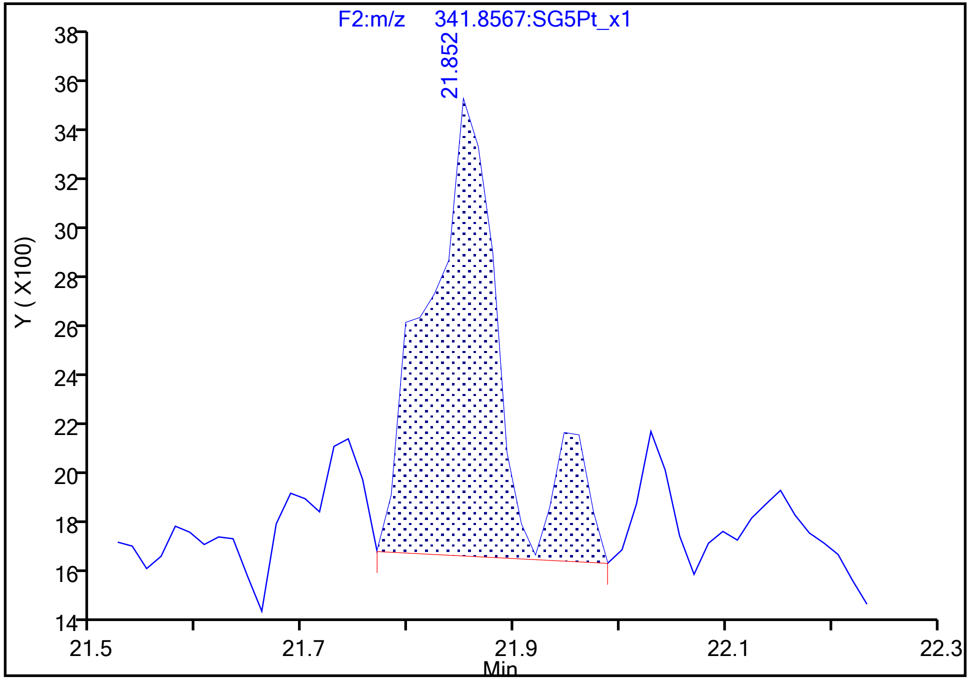

Manual Integration Results

RT:	21.85
Area:	6567
Amount:	0.098937
Amount Units:	pg/ul

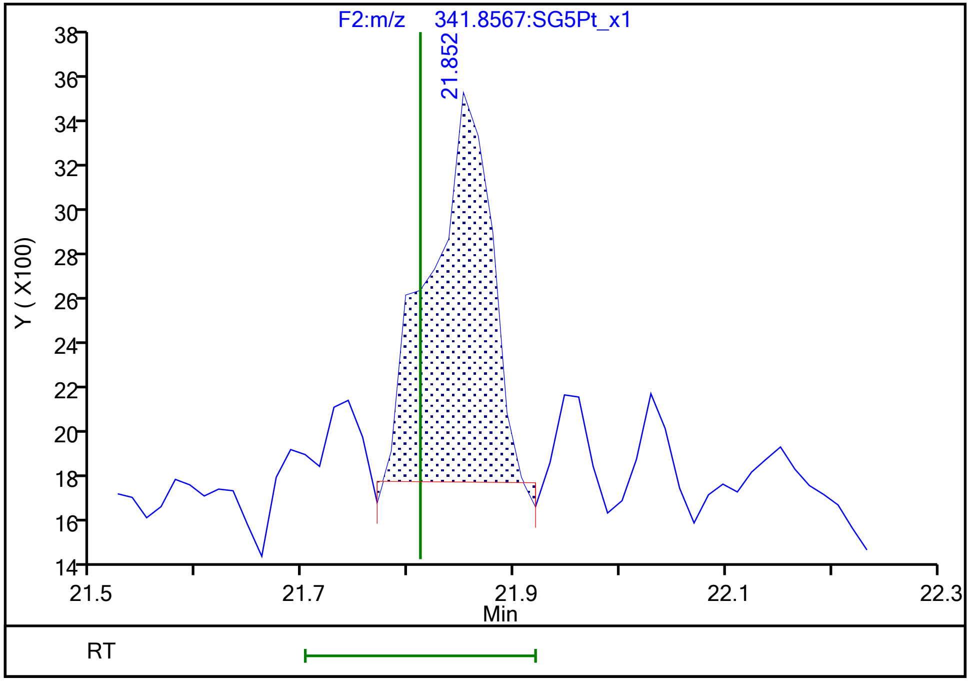

Reviewer: dadunj, 21-Aug-2020 08:41:48

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52
Instrument ID: 10D5
Lims ID: 320-63525-A-1-A
Lab Sample ID: 320-63525-1
Client ID: 11215702-Treatment-3
Operator ID: SMA/AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT: 21.87
Area: 12969
Amount: 0.130732
Amount Units: pg/ul

Processing Integration Results

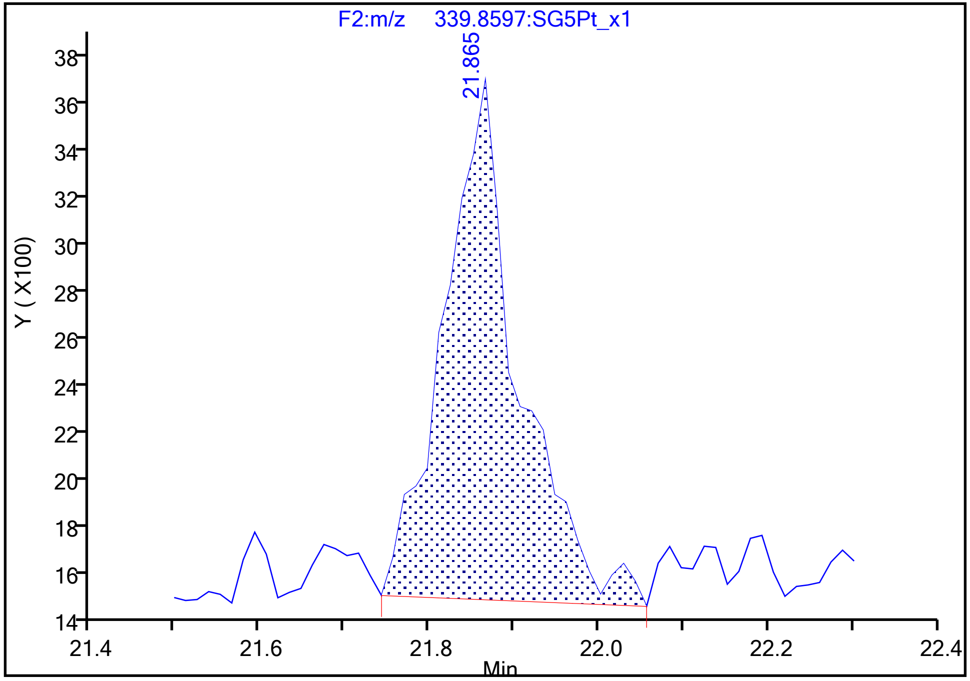

RT: 21.87
Area: 9760
Amount: 0.098937
Amount Units: pg/ul

Manual Integration Results

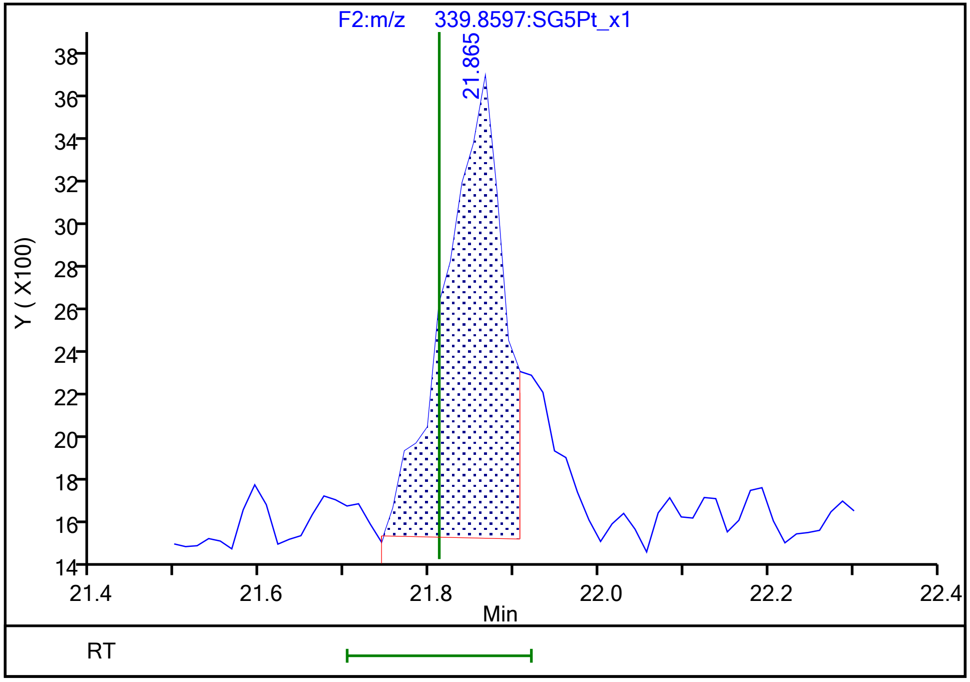

Reviewer: dadunj, 21-Aug-2020 08:41:50
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Processing Integration Results

RT:	29.98
Area:	10788
Amount:	0.149386
Amount Units:	pg/ul

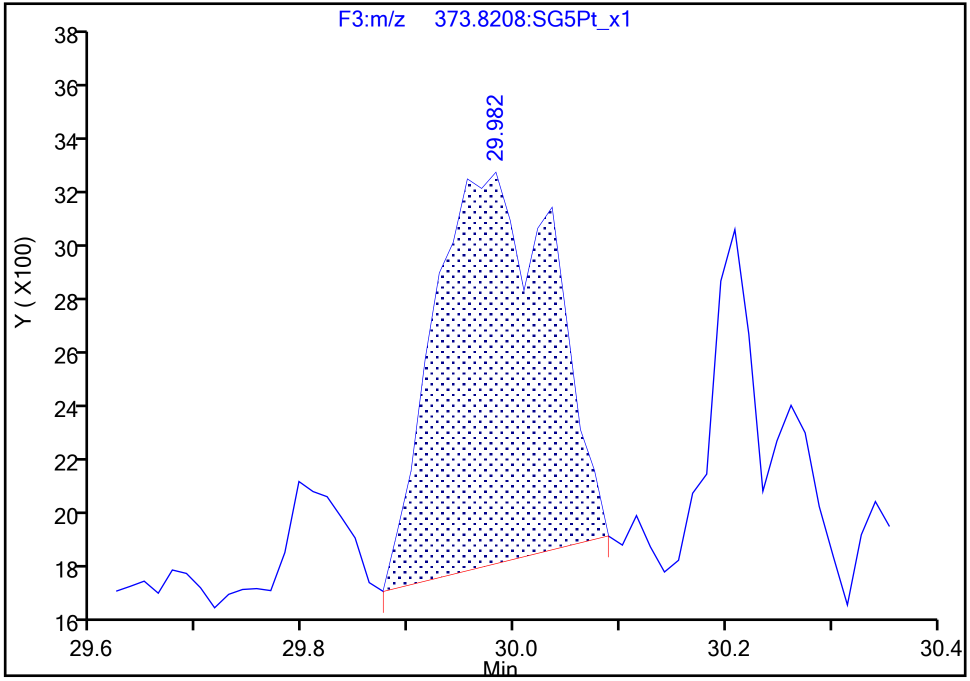

Manual Integration Results

RT:	29.98
Area:	10805
Amount:	0.140297
Amount Units:	pg/ul

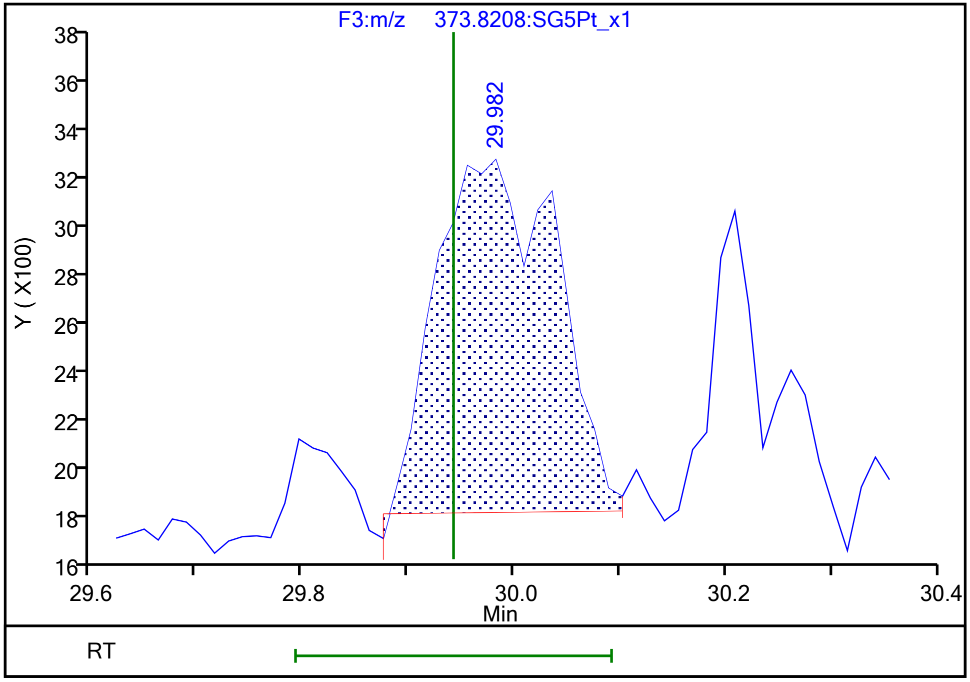

Reviewer: dadunj, 21-Aug-2020 08:42:23

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1
Client ID:	11215702-Treatment-3		
Operator ID:	SMA/AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 2

RT:	30.02
Area:	9427
Amount:	0.149386
Amount Units:	pg/ul

Processing Integration Results

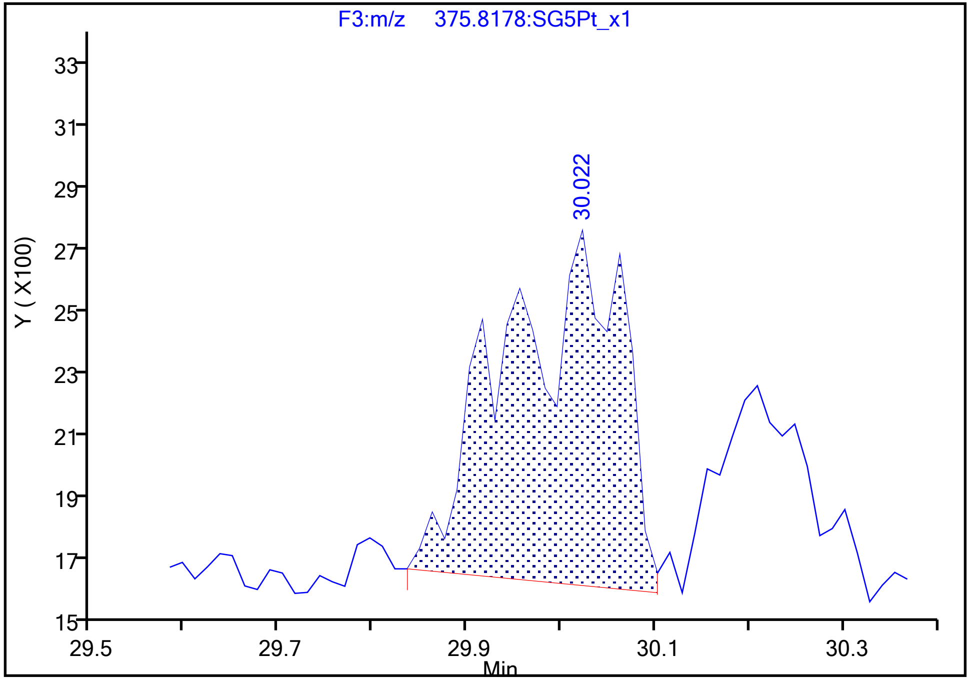

RT:	30.02
Area:	8180
Amount:	0.140297
Amount Units:	pg/ul

Manual Integration Results

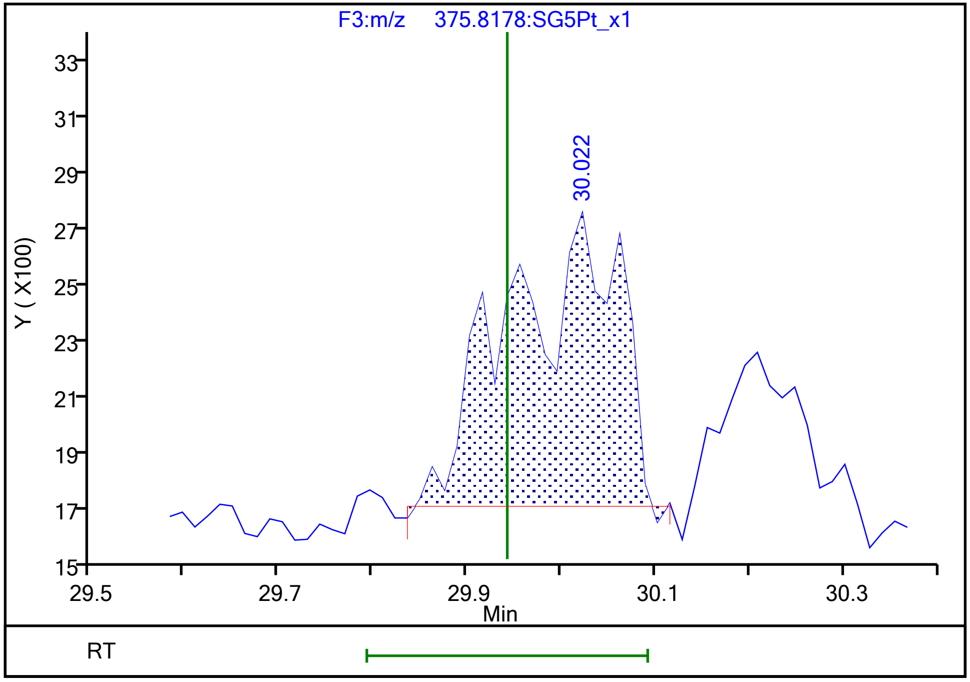

Reviewer: dadunj, 21-Aug-2020 08:42:32

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1
Client ID:	11215702-Treatment-3		
Operator ID:	SMA/AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT:	31.17
Area:	3505
Amount:	0.073223
Amount Units:	pg/ul

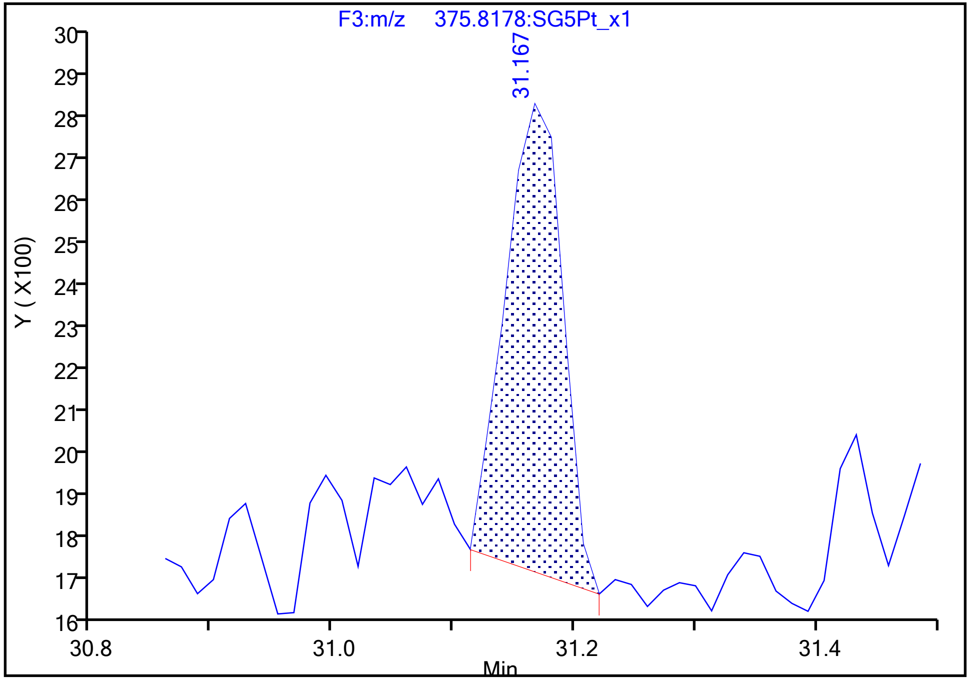

Manual Integration Results

RT:	31.17
Area:	3190
Amount:	0.070545
Amount Units:	pg/ul

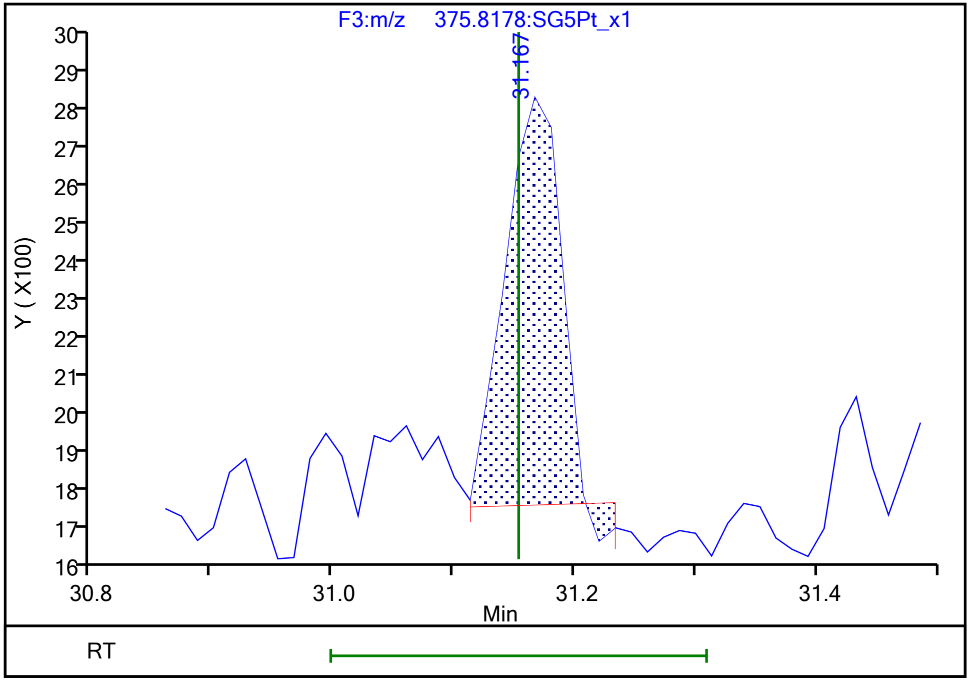

Reviewer: dadunj, 21-Aug-2020 08:42:56

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 21-Aug-2020 08:45:32

Chrom Revision: 2.3 17-Aug-2020 20:42:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d				
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT:	32.05
Area:	5478
Amount:	0.102856
Amount Units:	pg/ul

Processing Integration Results

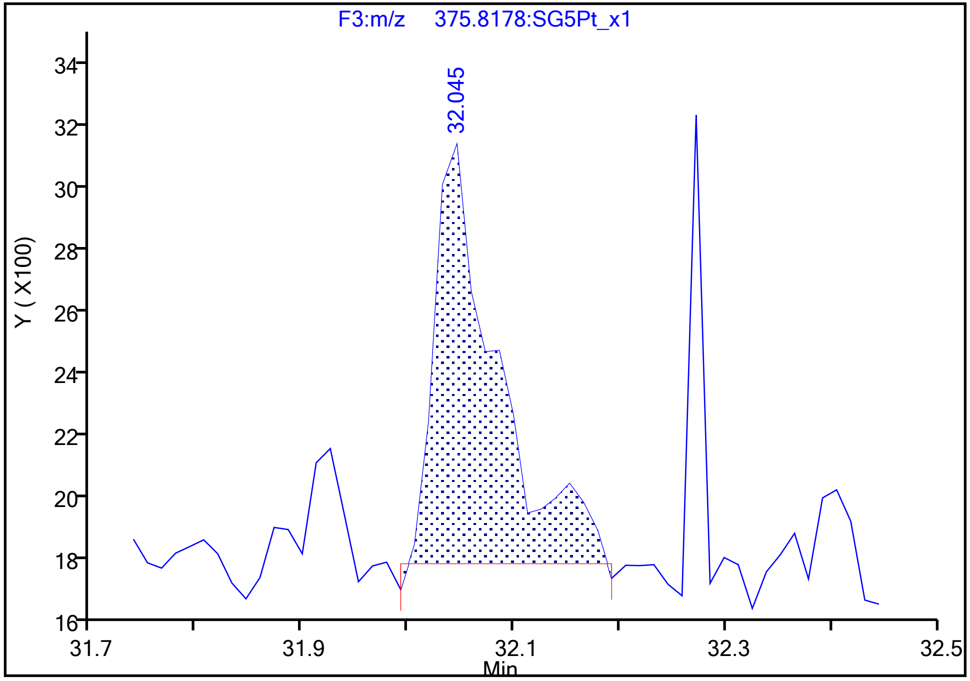

RT:	32.05
Area:	4676
Amount:	0.084681
Amount Units:	pg/ul

Manual Integration Results

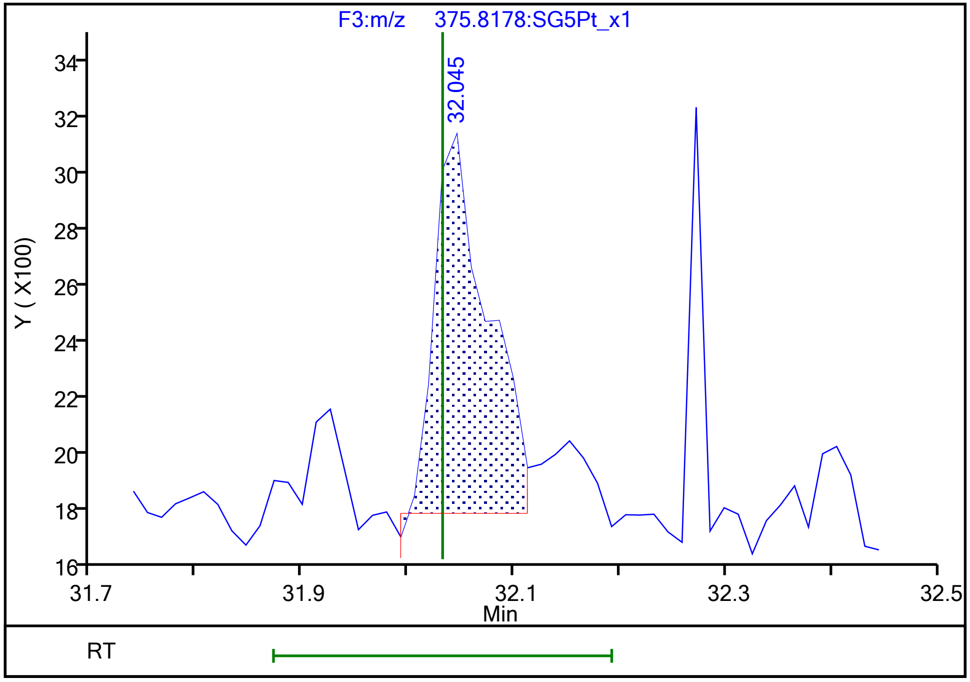

Reviewer: dadunj, 21-Aug-2020 08:43:12

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 21-Aug-2020 08:45:32   Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52   Instrument ID: 10D5
Lims ID: 320-63525-A-1-A   Lab Sample ID: 320-63525-1
Client ID: 11215702-Treatment-3
Operator ID: SMA/AJS   ALS Bottle#: 7   Worklist Smp#: 7
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Method: Dioxin_10D5   Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)   Detector F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT: 32.06
Area: 5863
Amount: 0.102856
Amount Units: pg/ul

Processing Integration Results

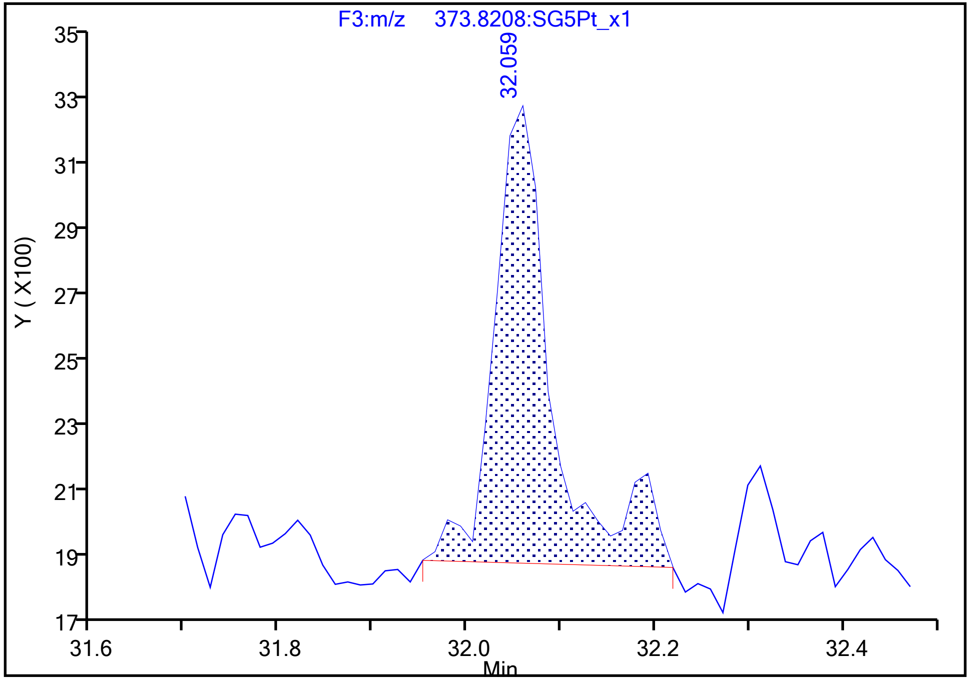

RT: 32.06
Area: 4661
Amount: 0.084681
Amount Units: pg/ul

Manual Integration Results

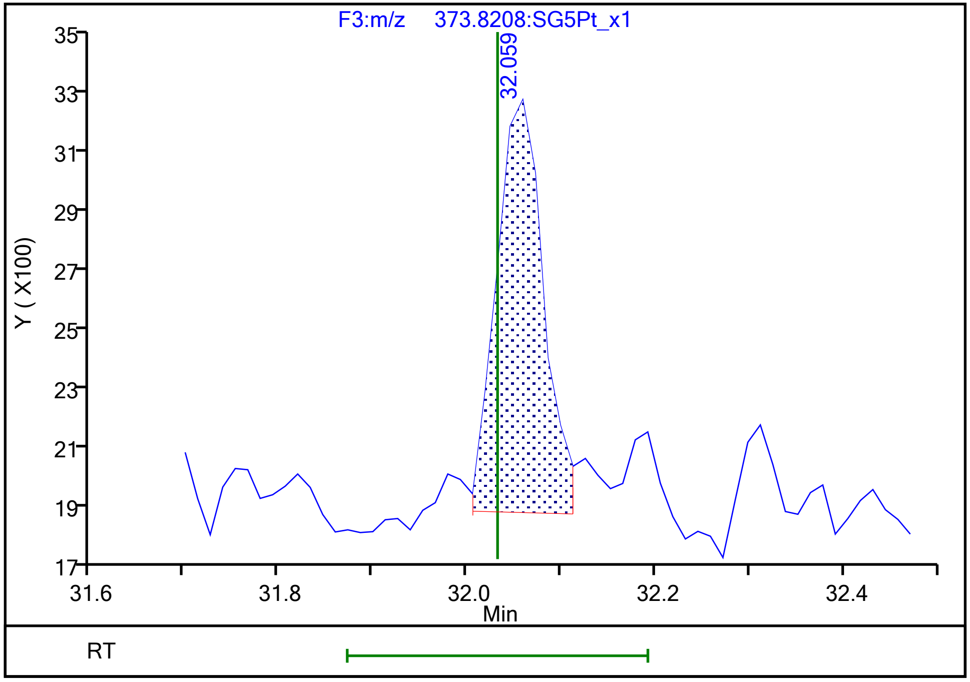

Reviewer: dadunj, 21-Aug-2020 08:43:15

Audit Action: Split an Integrated Peak   Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT:	31.38
Area:	7268
Amount:	0.112572
Amount Units:	pg/ul

Processing Integration Results

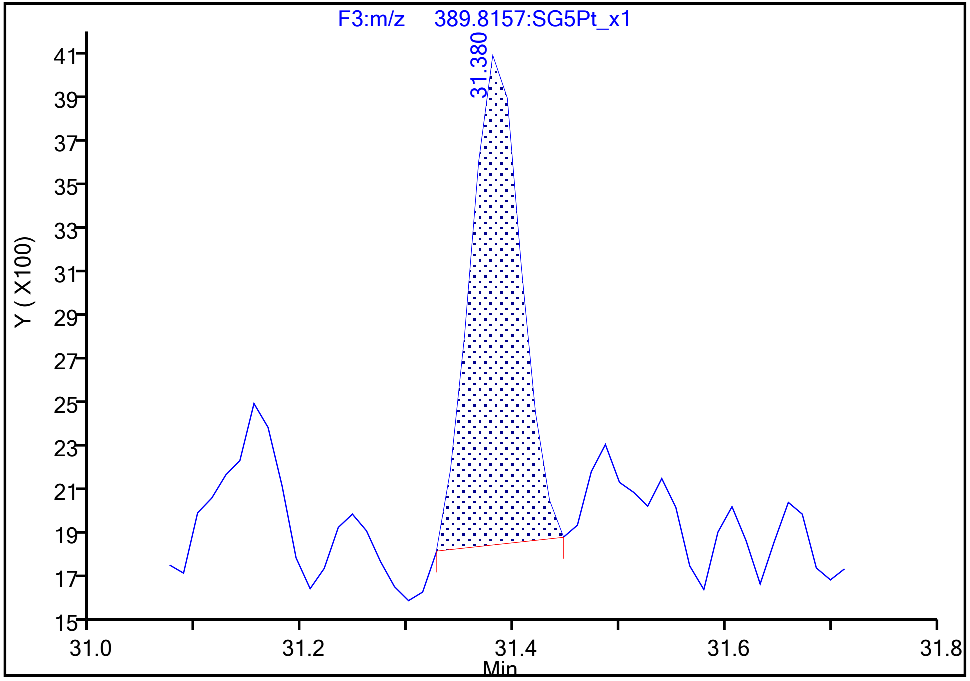

RT:	31.38
Area:	7852
Amount:	0.119971
Amount Units:	pg/ul

Manual Integration Results

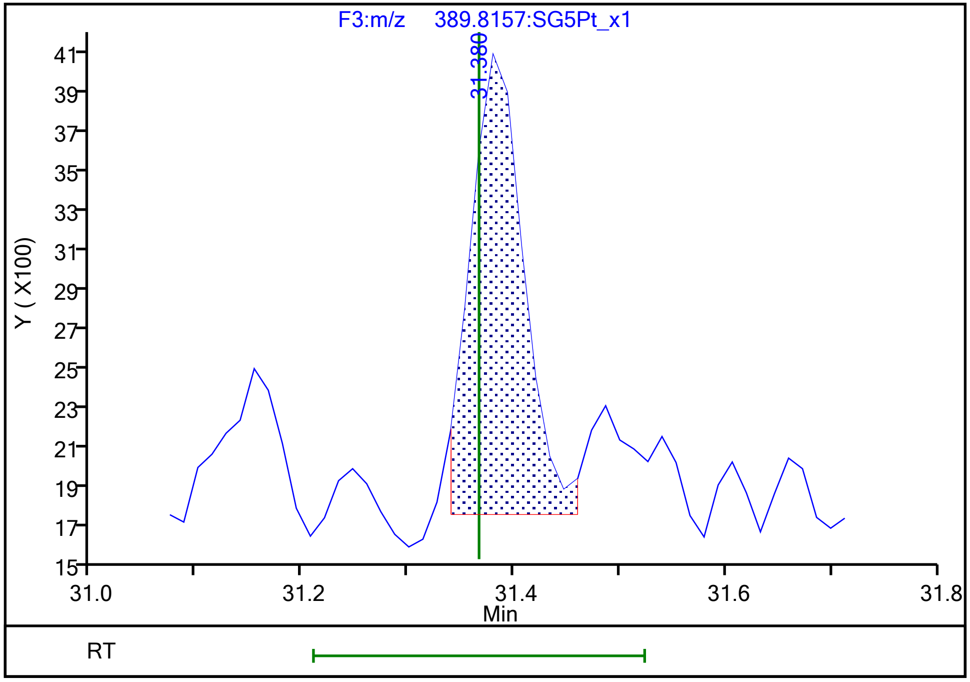

Reviewer: dadunj, 21-Aug-2020 08:43:30

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1
Client ID:	11215702-Treatment-3		
Operator ID:	SMA/AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 31.39
Area: 5755
Amount: 0.112572
Amount Units: pg/ul

Processing Integration Results

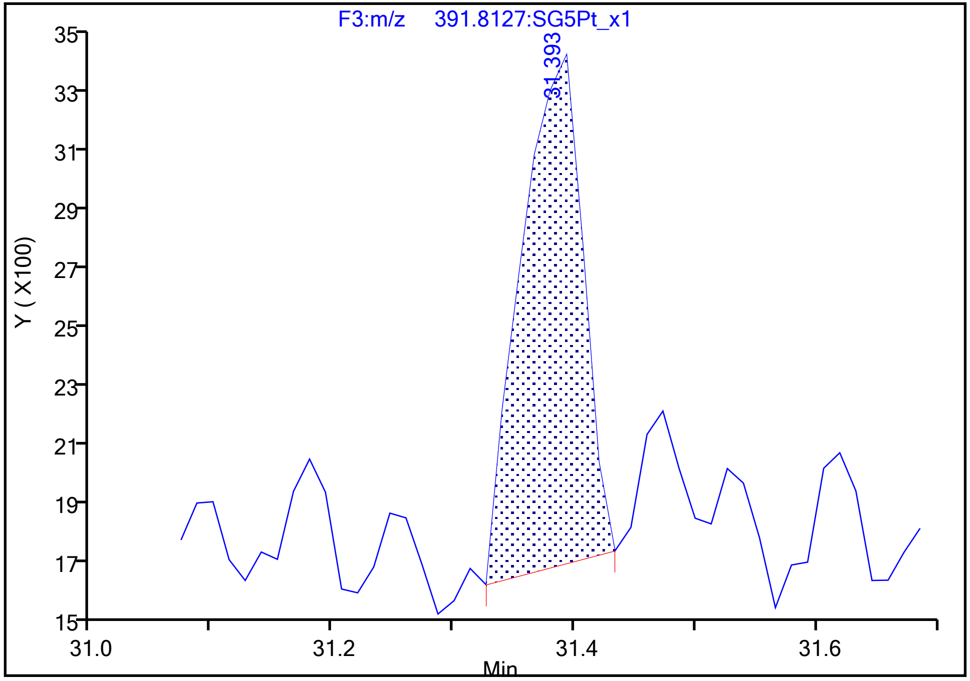

RT: 31.39
Area: 6027
Amount: 0.119971
Amount Units: pg/ul

Manual Integration Results

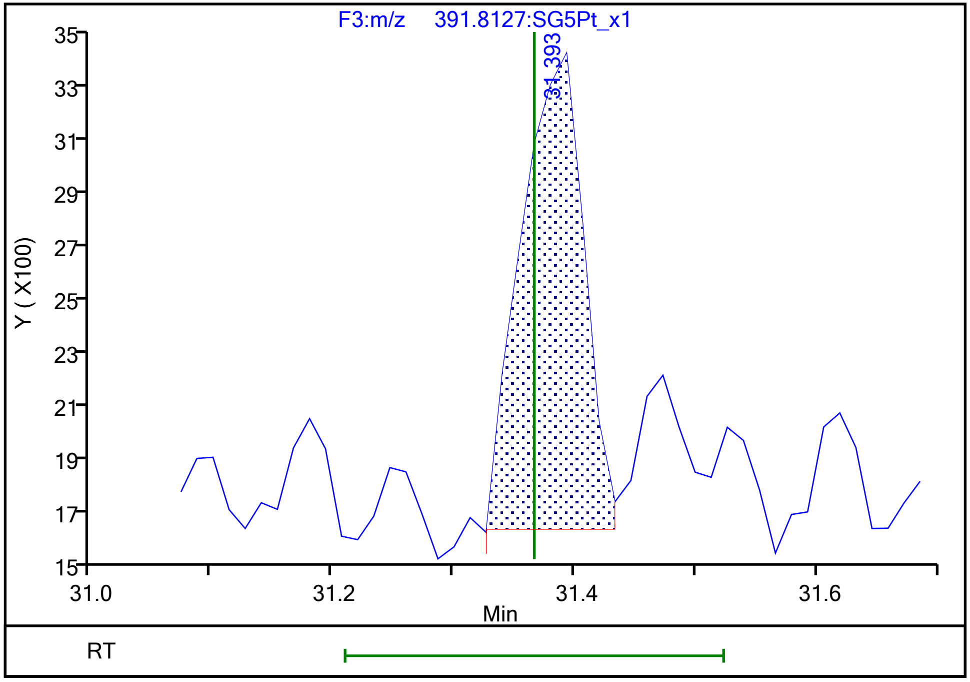

Reviewer: dadunj, 21-Aug-2020 08:43:34

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d				
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT:	33.57
Area:	15686
Amount:	0.178903
Amount Units:	pg/ul

Processing Integration Results

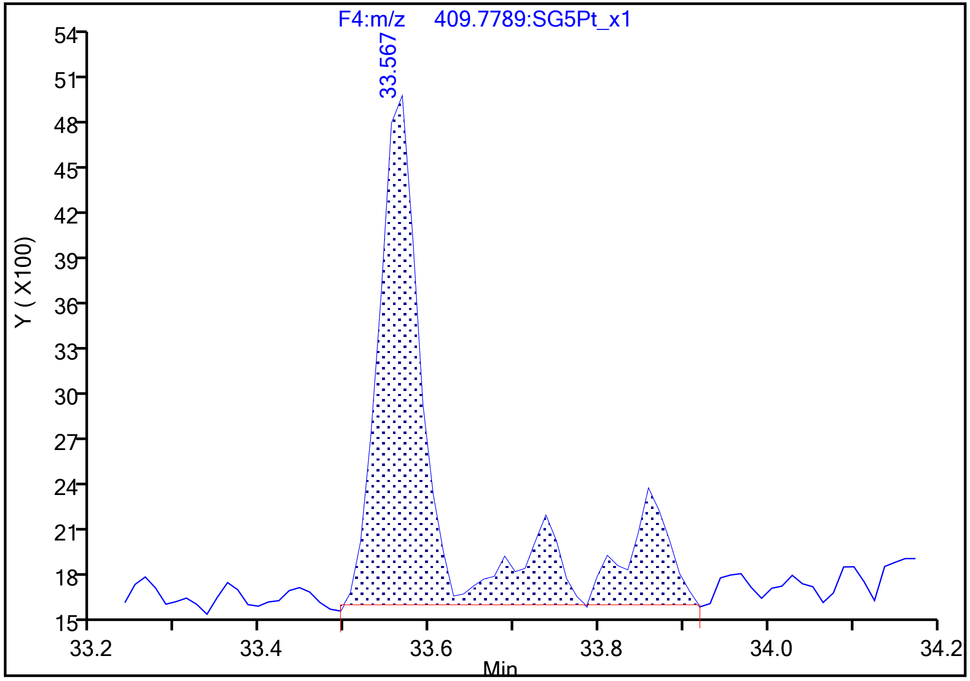

RT:	33.57
Area:	10936
Amount:	0.147780
Amount Units:	pg/ul

Manual Integration Results

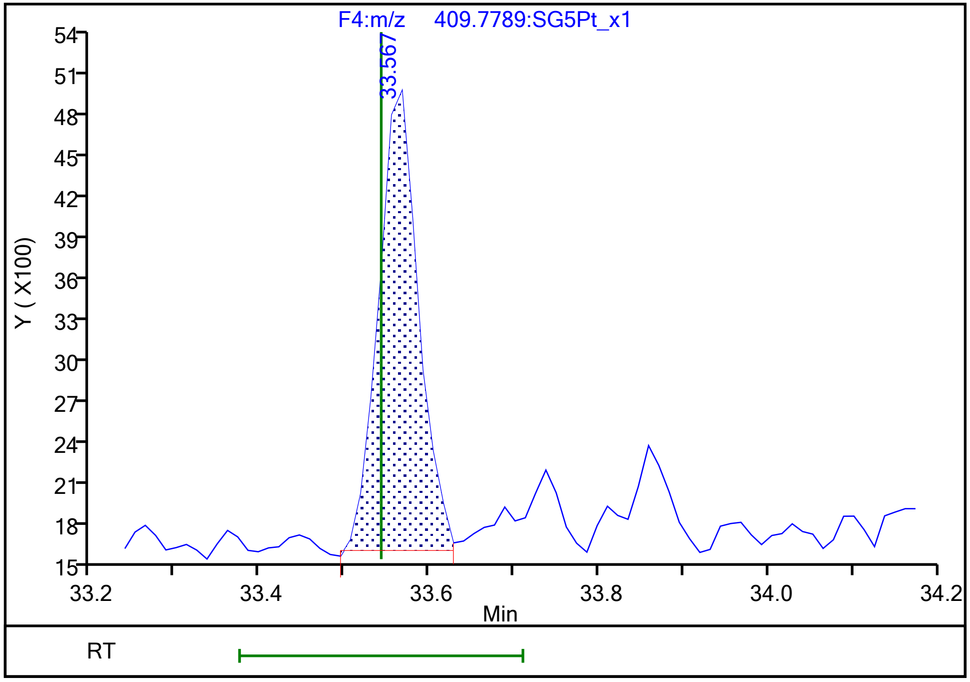

Reviewer: dadunj, 21-Aug-2020 08:43:49

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 21-Aug-2020 08:45:32

Chrom Revision: 2.3 17-Aug-2020 20:42:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52
Instrument ID: 10D5
Lims ID: 320-63525-A-1-A
Lab Sample ID: 320-63525-1
Client ID: 11215702-Treatment-3
Operator ID: SMA/AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 34.36
Area: 10308
Amount: 0.158337
Amount Units: pg/ul

Processing Integration Results

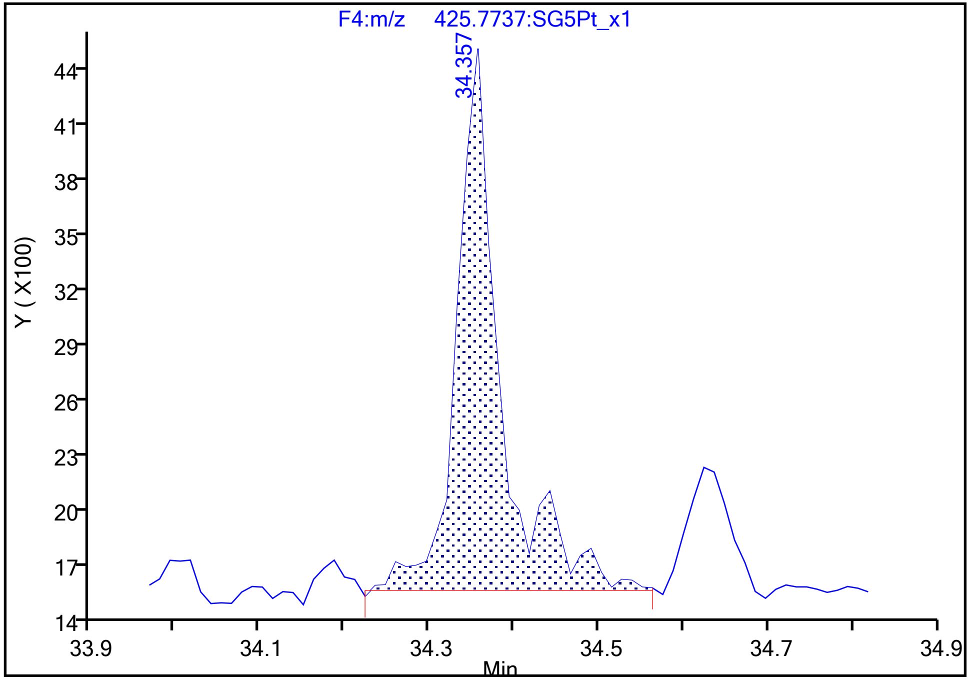

RT: 34.36
Area: 8784
Amount: 0.145640
Amount Units: pg/ul

Manual Integration Results

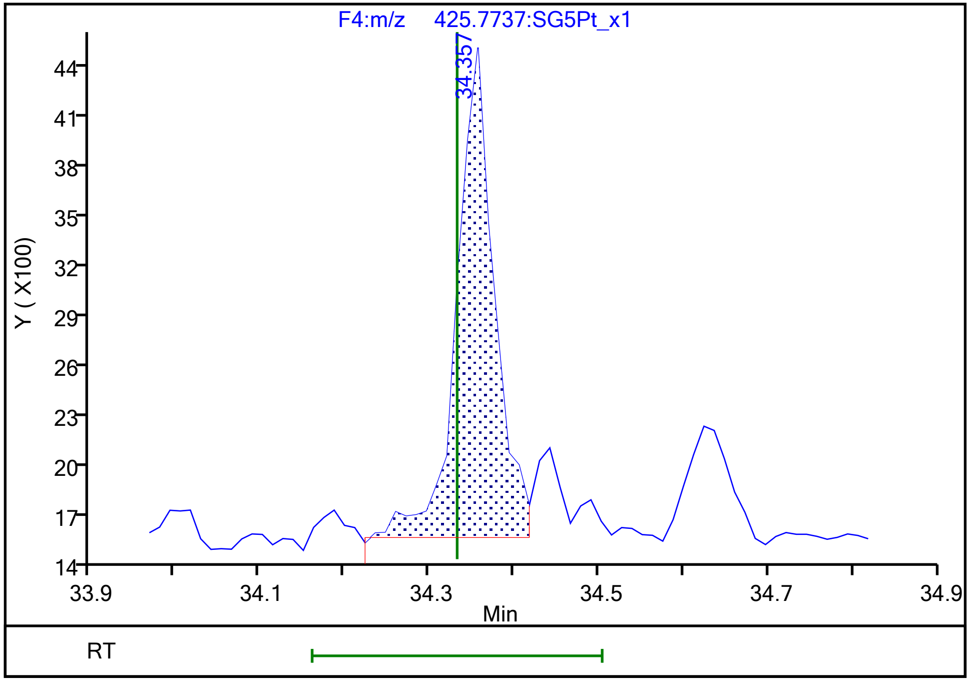

Reviewer: dadunj, 21-Aug-2020 08:43:57
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 21-Aug-2020 08:45:32

Chrom Revision: 2.3 17-Aug-2020 20:42:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d				
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (34.16- 35.08)

Signal: 1

Processing Integration Results

RT = 33.798 Area = 7946

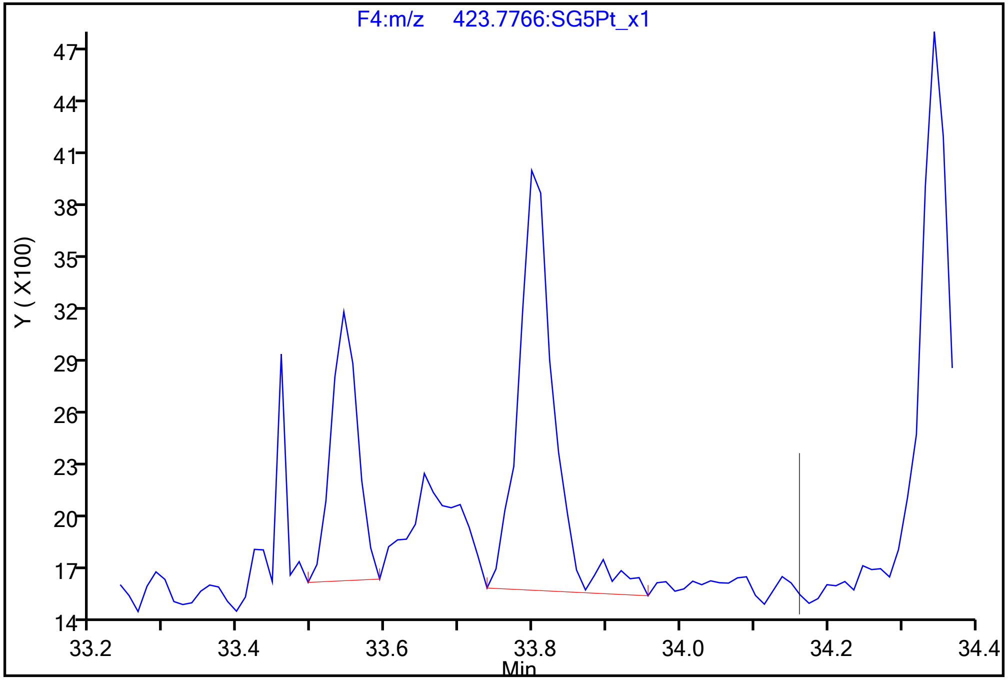

Manual Integration Results

RT = 33.798 Area = 7430 M

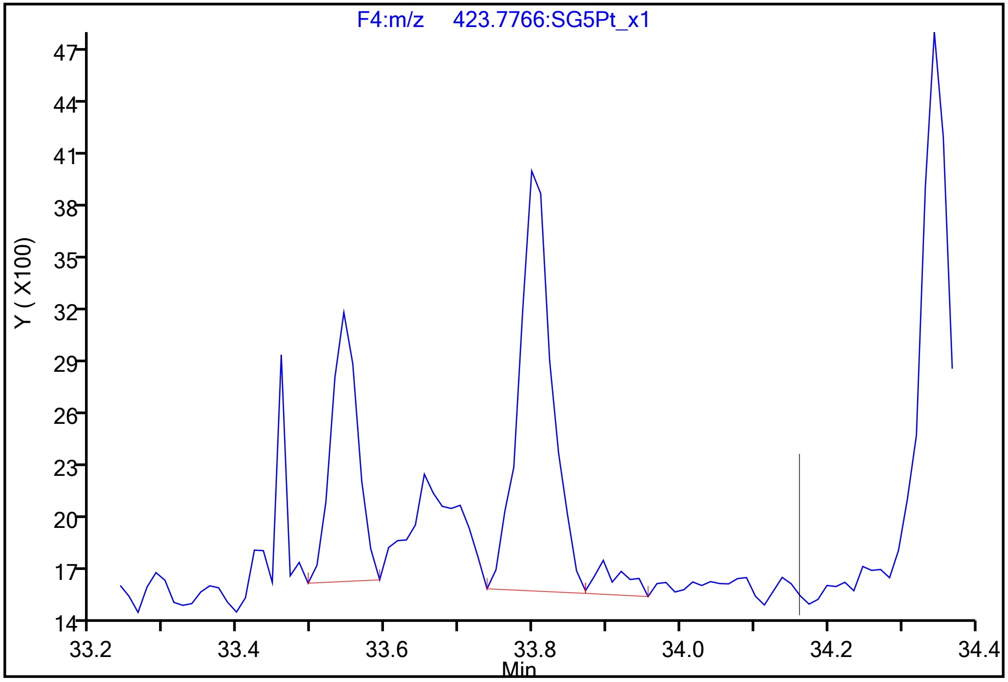

Reviewer: dadunj, 21-Aug-2020 08:44:02

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d				
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:	SMA/AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

RT:	36.72
Area:	8623
Amount:	0.128059
Amount Units:	pg/ul

Processing Integration Results

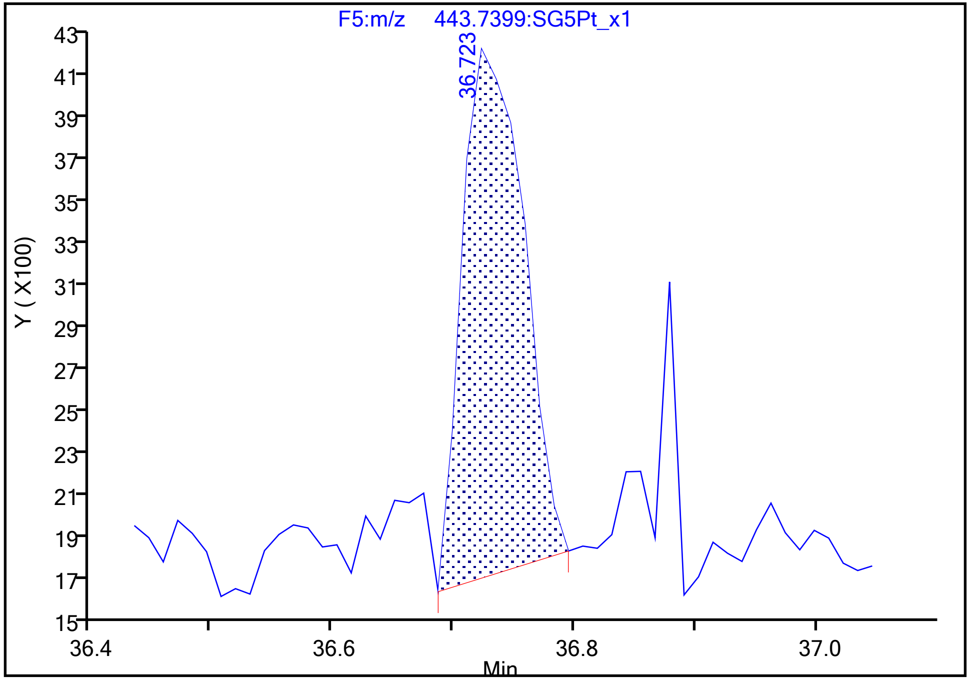

RT:	36.72
Area:	8720
Amount:	0.122824
Amount Units:	pg/ul

Manual Integration Results

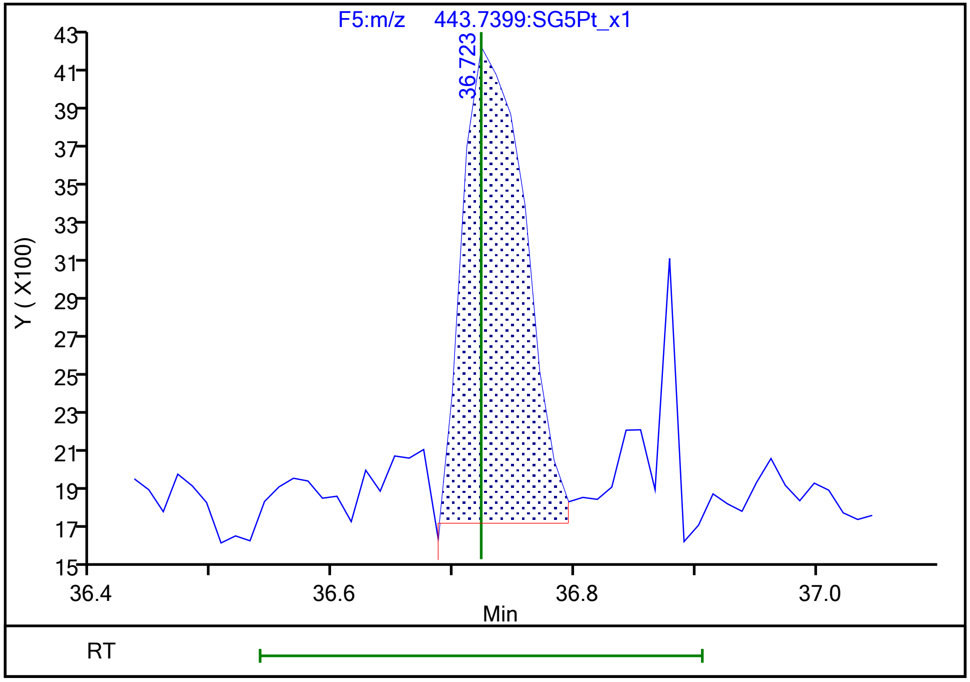

Reviewer: dadunj, 21-Aug-2020 08:44:26

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1
Client ID:	11215702-Treatment-3		
Operator ID:	SMA/AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 1

RT:	36.73
Area:	7131
Amount:	0.128059
Amount Units:	pg/ul

Processing Integration Results

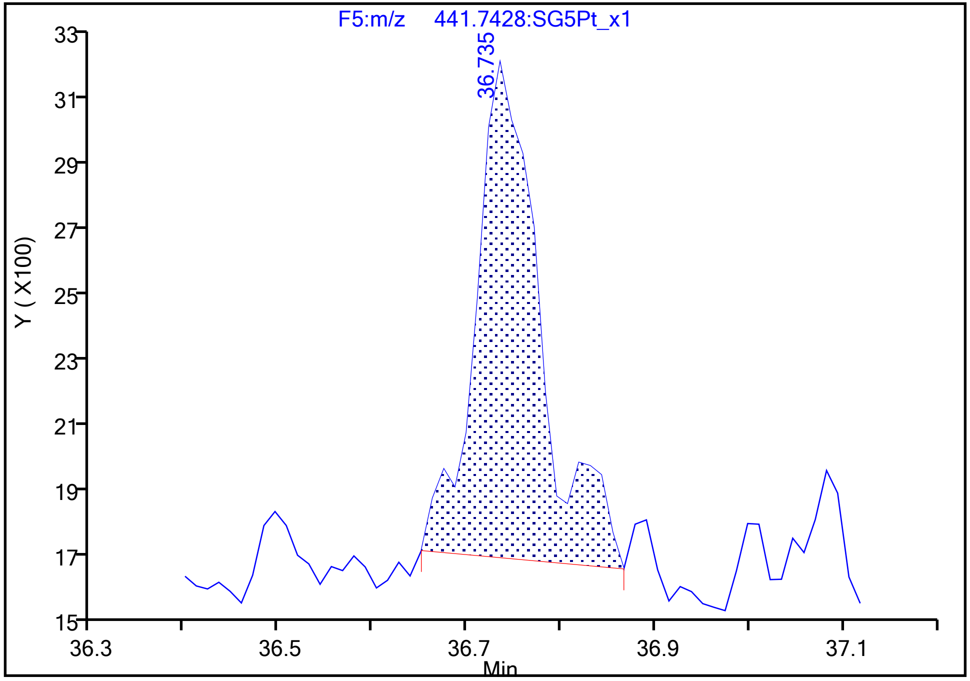

RT:	36.73
Area:	6390
Amount:	0.122824
Amount Units:	pg/ul

Manual Integration Results

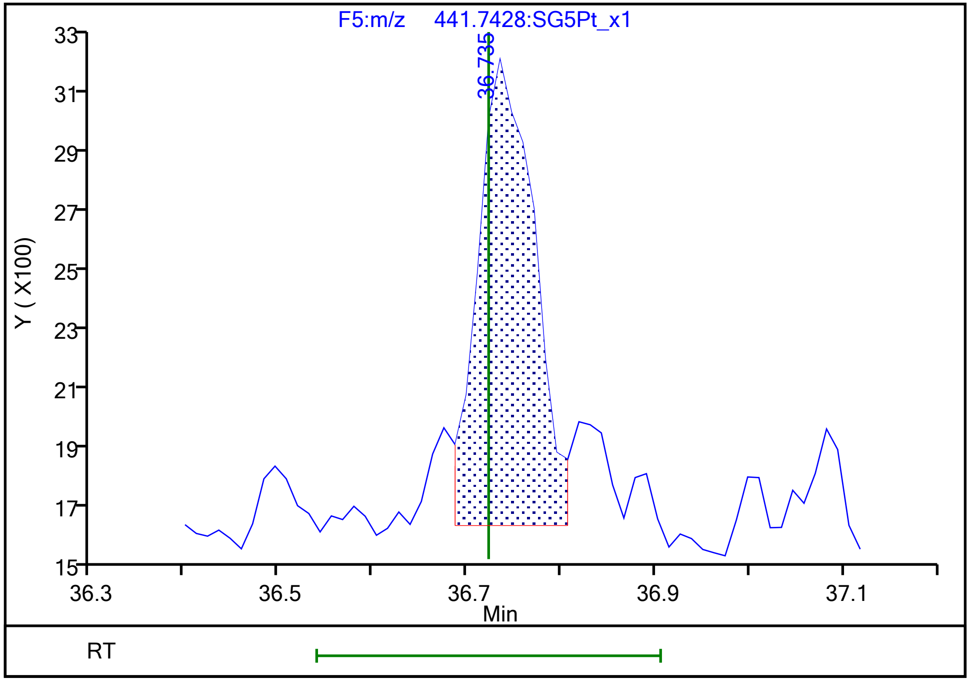

Reviewer: dadunj, 21-Aug-2020 08:44:28

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Instrument ID:	10D5
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1
Client ID:	11215702-Treatment-3		
Operator ID:	SMA/AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR

OCDD, CAS: 3268-87-9

Signal: 1

RT: 36.65
Area: 82641
Amount: 1.587127
Amount Units: pg/ul

Processing Integration Results

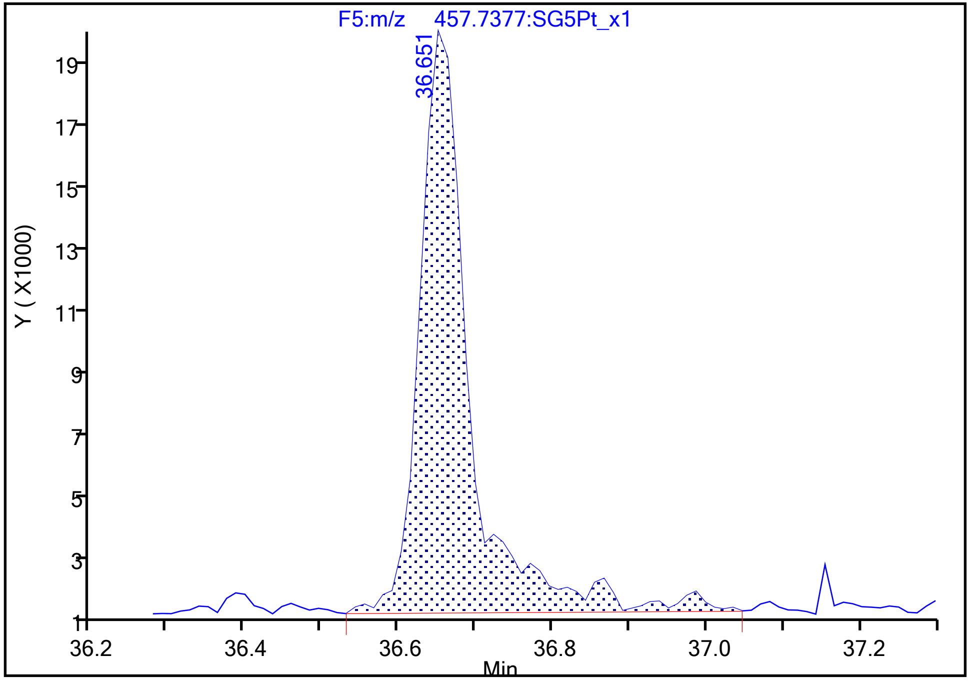

RT: 36.65
Area: 78487
Amount: 1.549057
Amount Units: pg/ul

Manual Integration Results

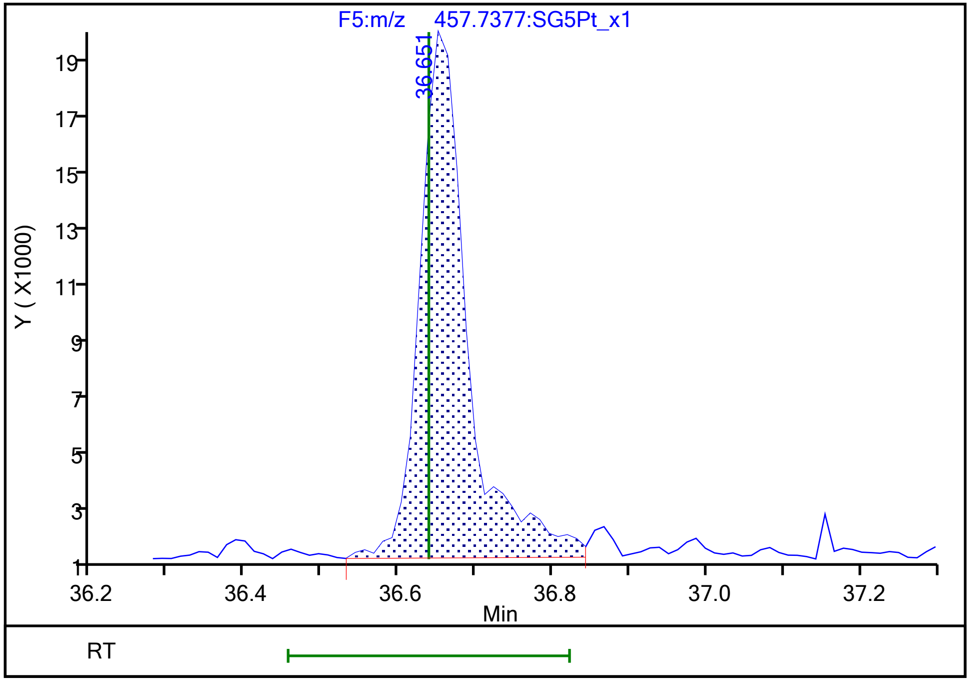

Reviewer: dadunj, 21-Aug-2020 08:44:35

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date: 19-Aug-2020 15:12:52 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-3

Worklist#: 405028 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

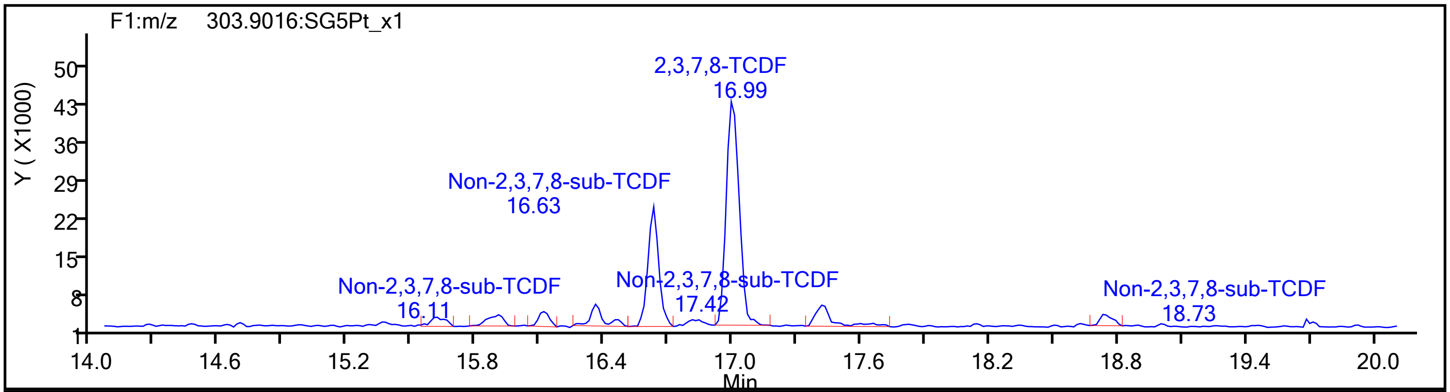

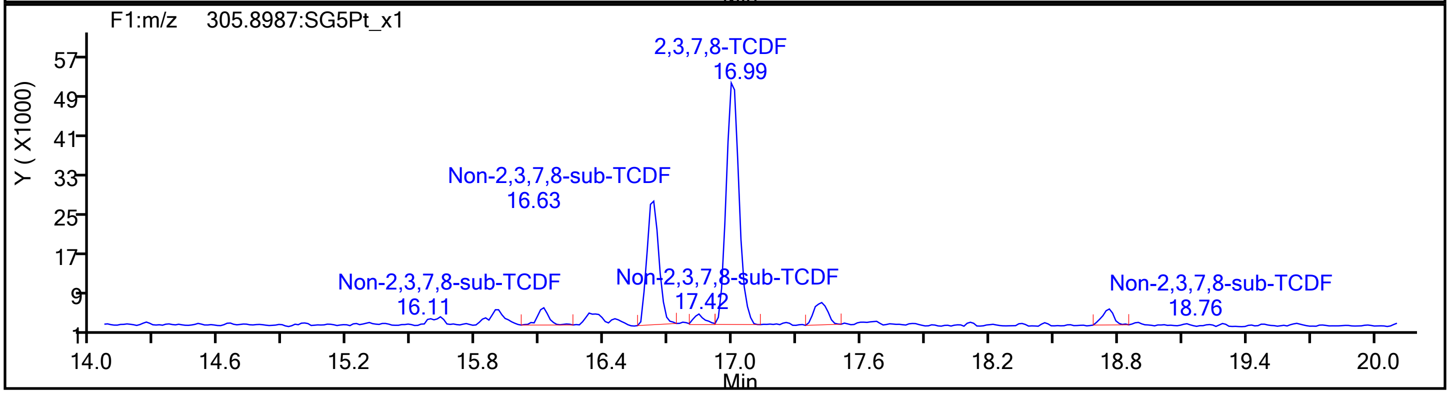

TCDF Standards

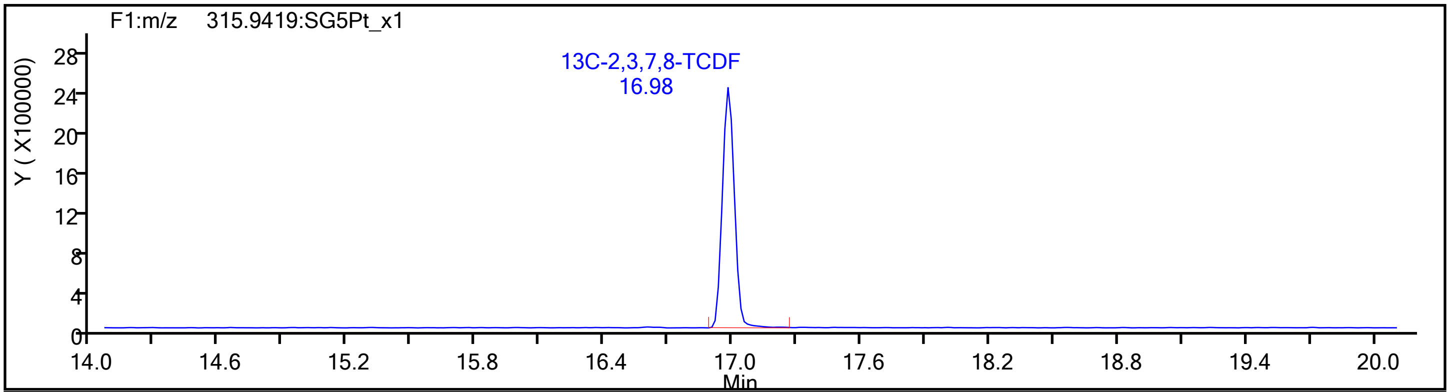

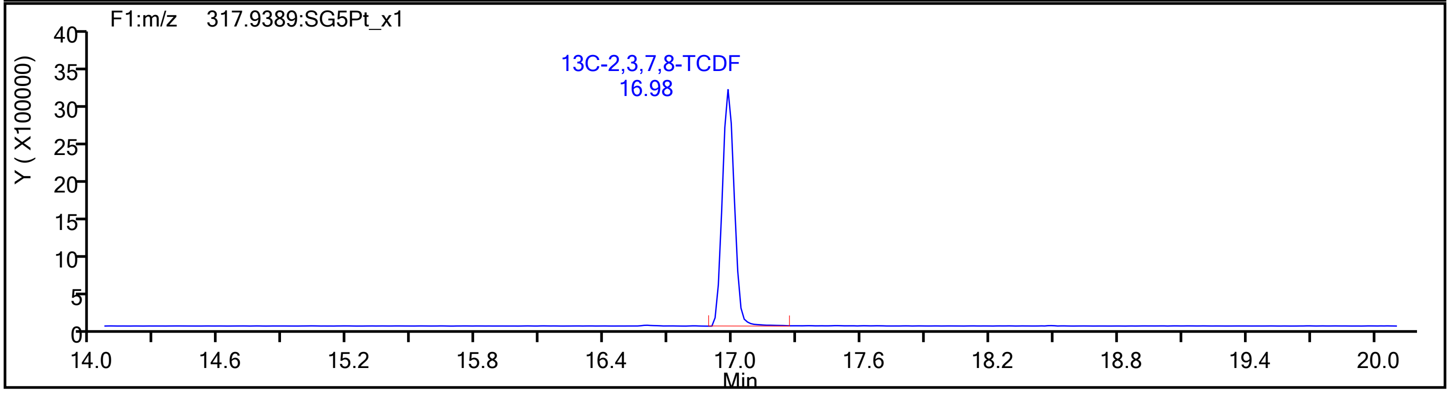

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-3
Worklist#: 405028
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

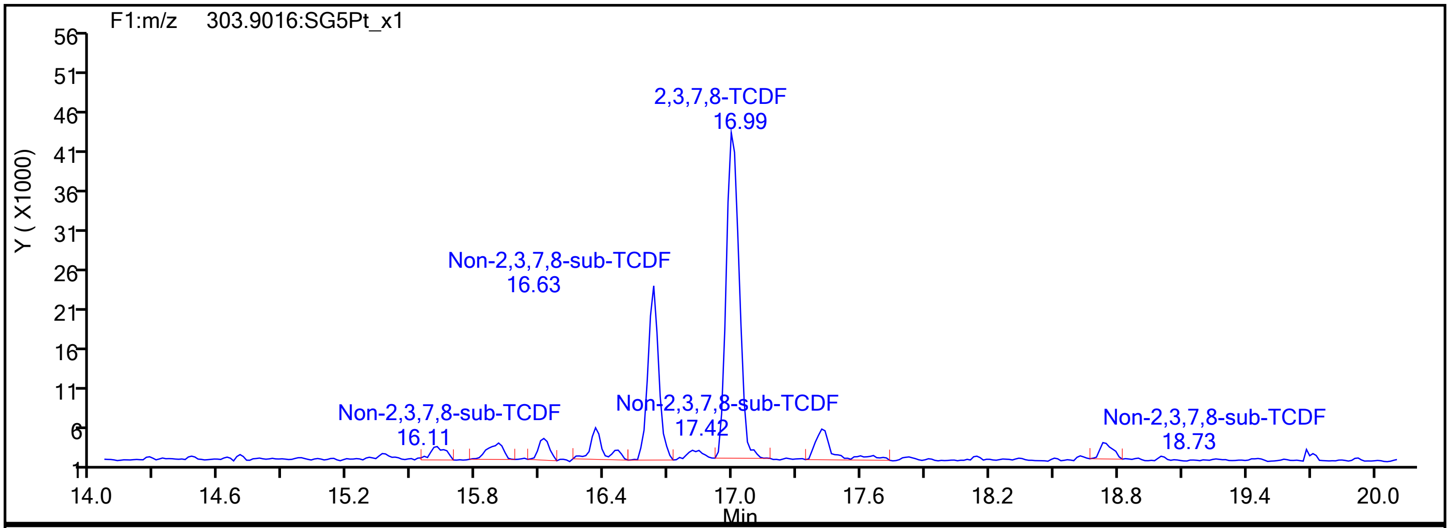

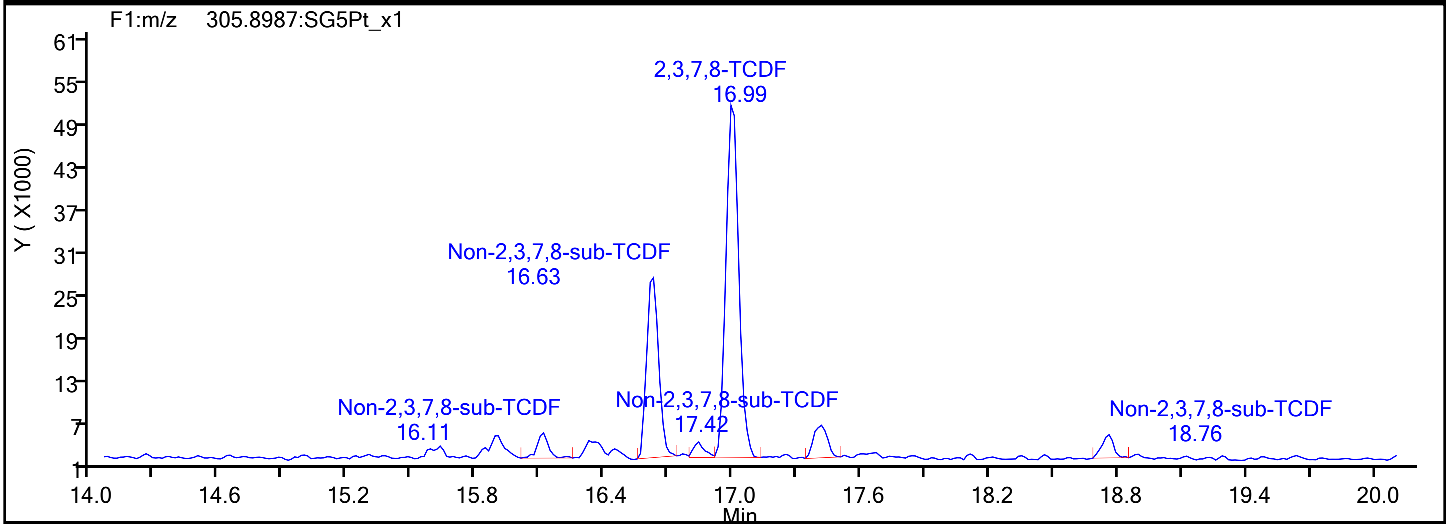

TCDF Interference Mass

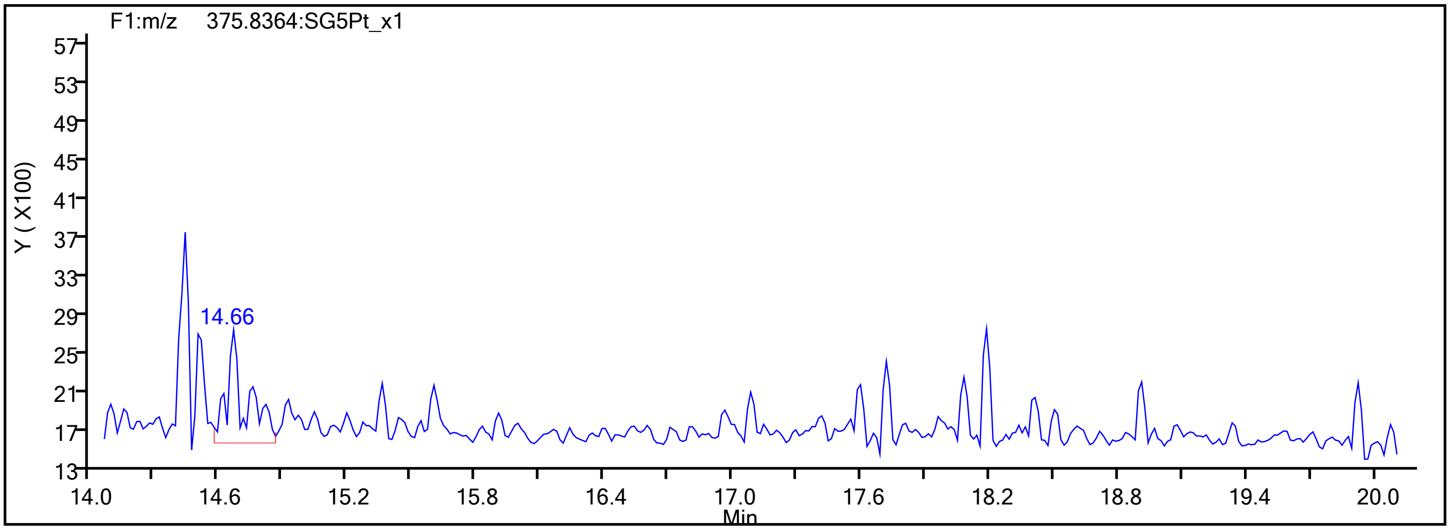

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

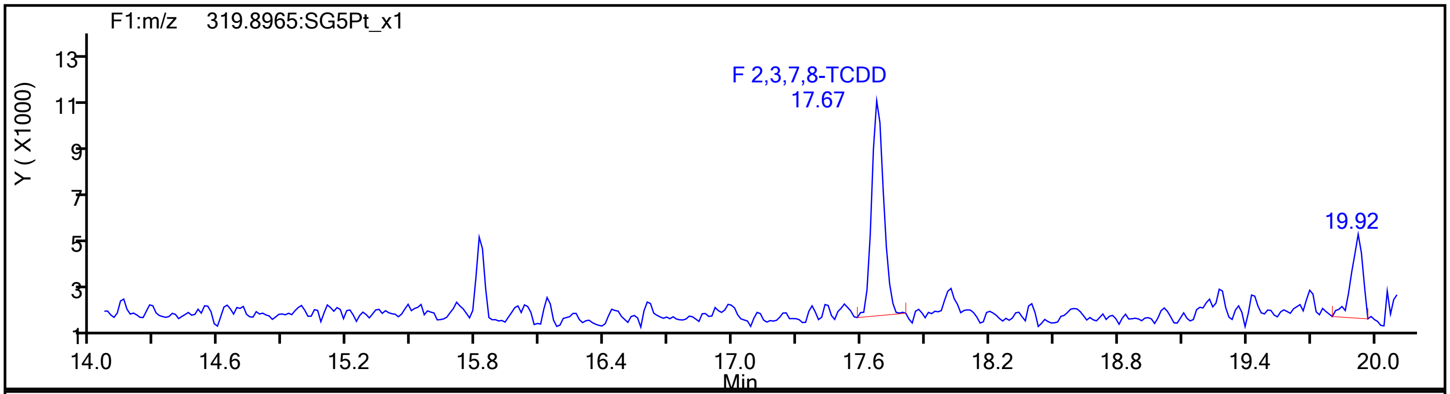

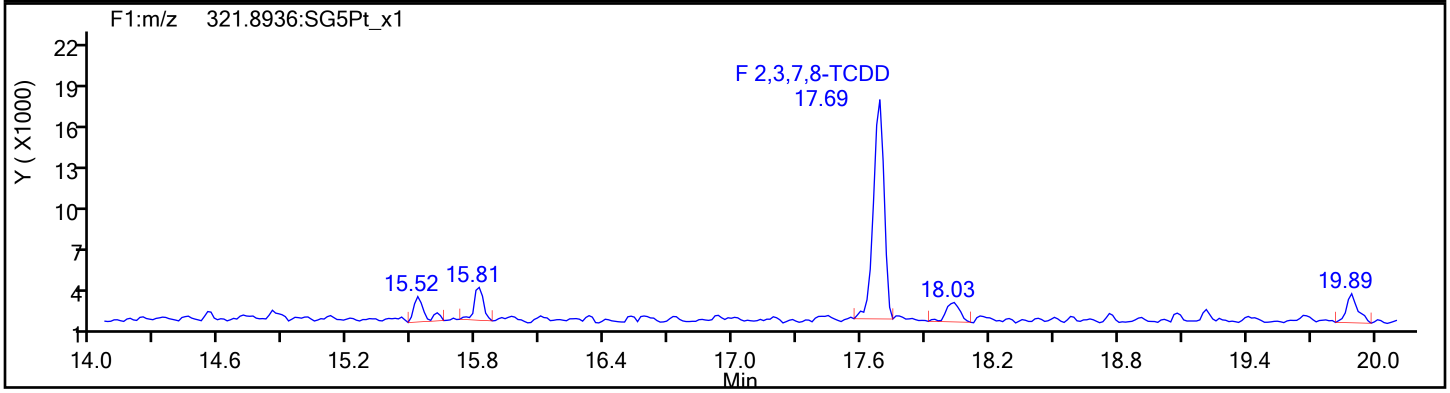

TCDD Standards

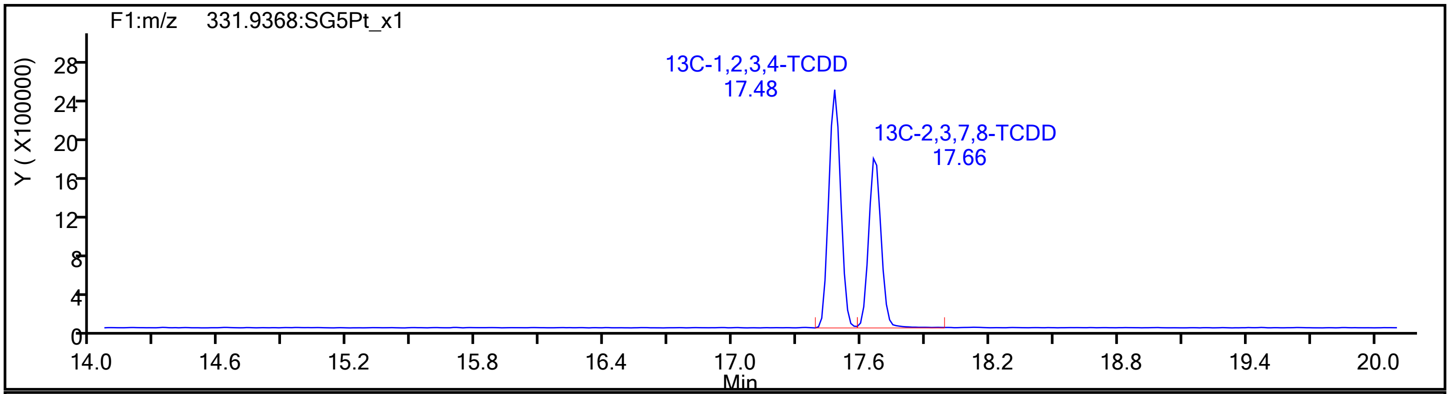

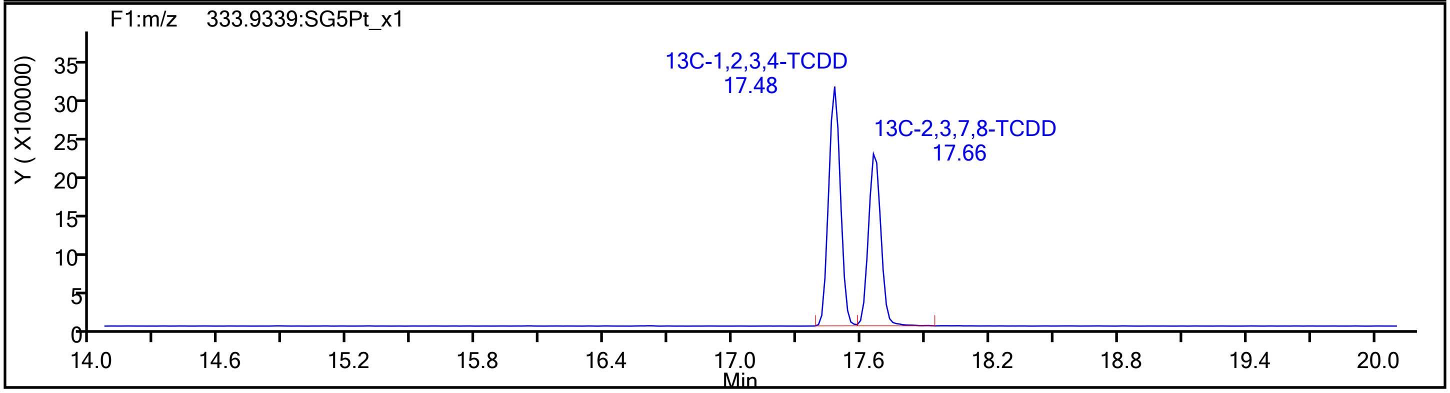

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-3
Worklist#: 405028 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

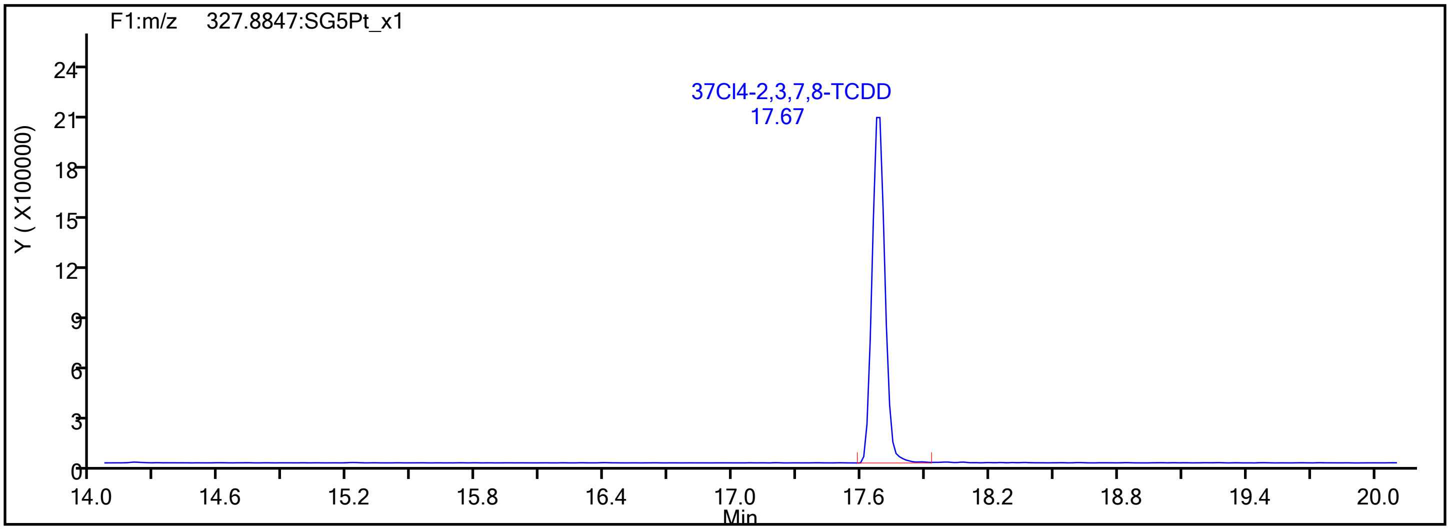

37Cl4-TCDD Standards

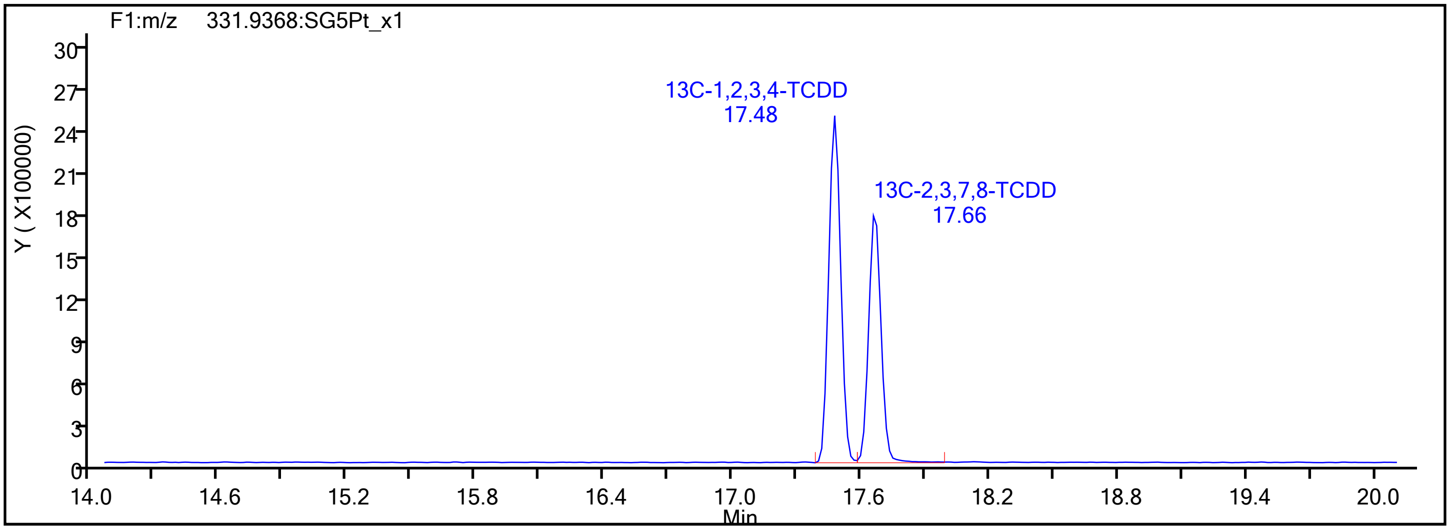

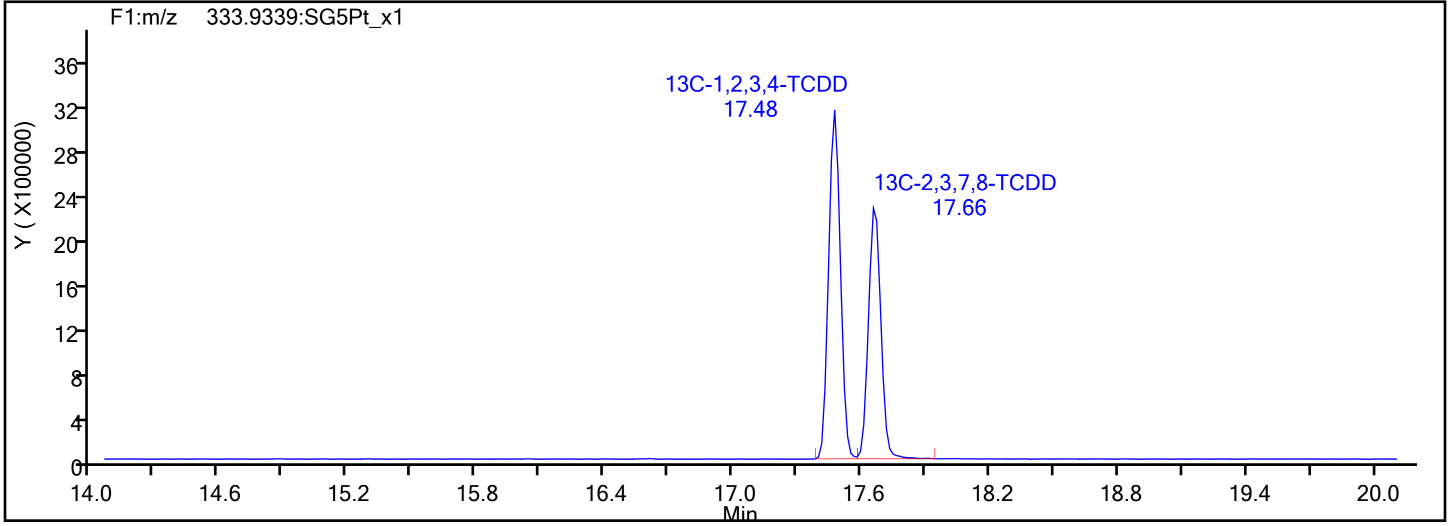

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

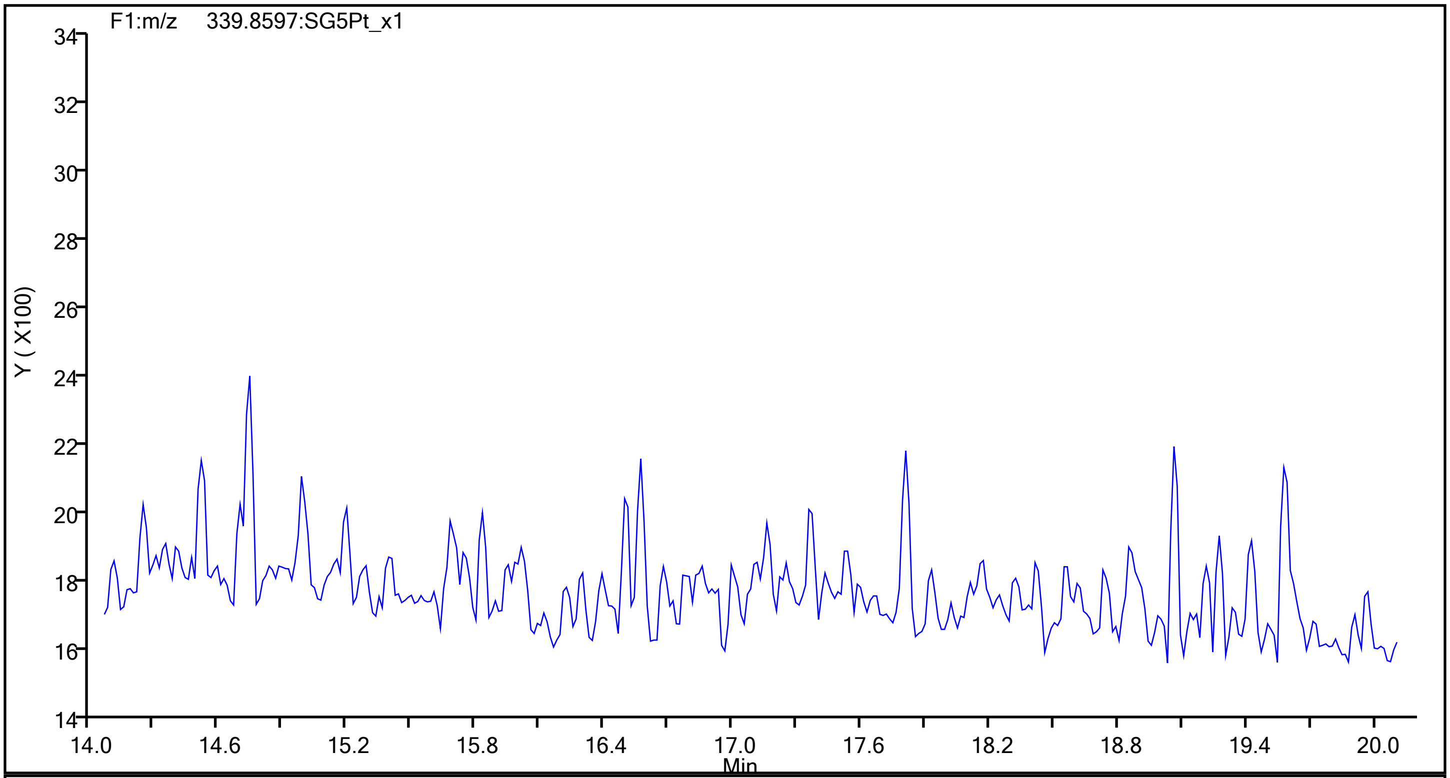

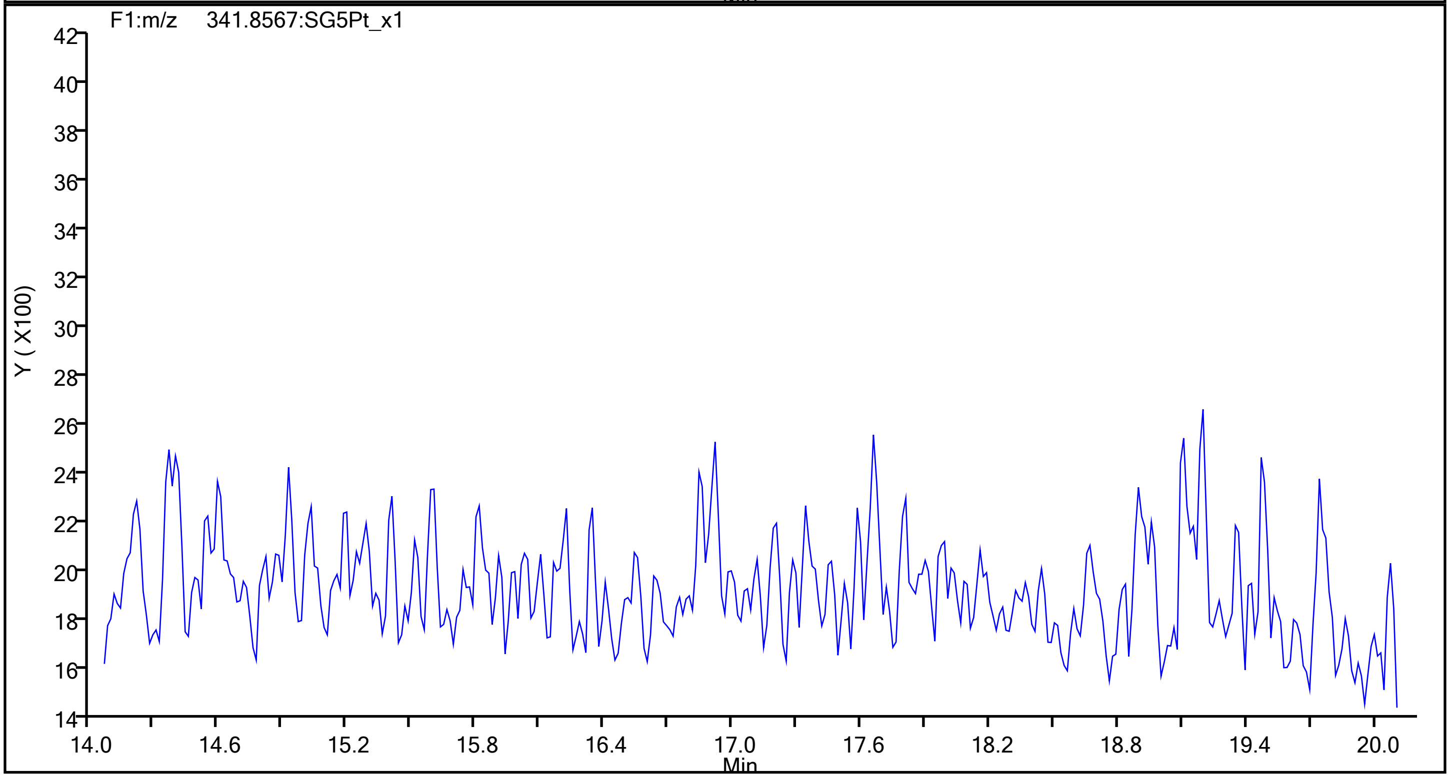

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date: 19-Aug-2020 15:12:52
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA/AJS

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-3

Worklist#: 405028
Sample Line#: 7

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

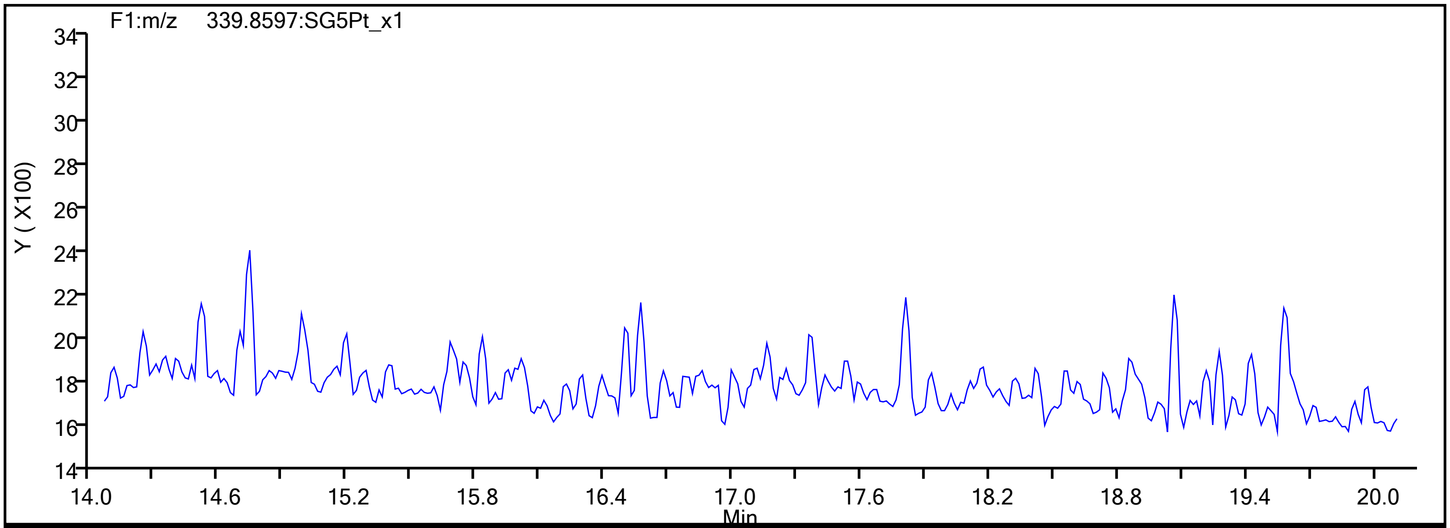

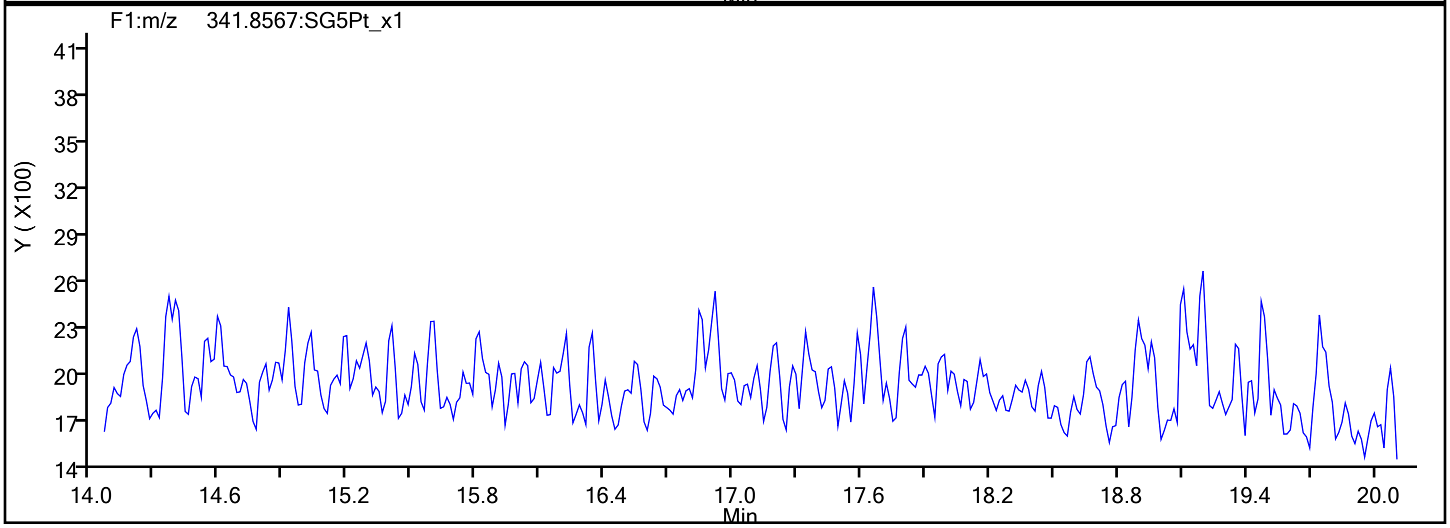

F1 PeCDFs Interference Mass

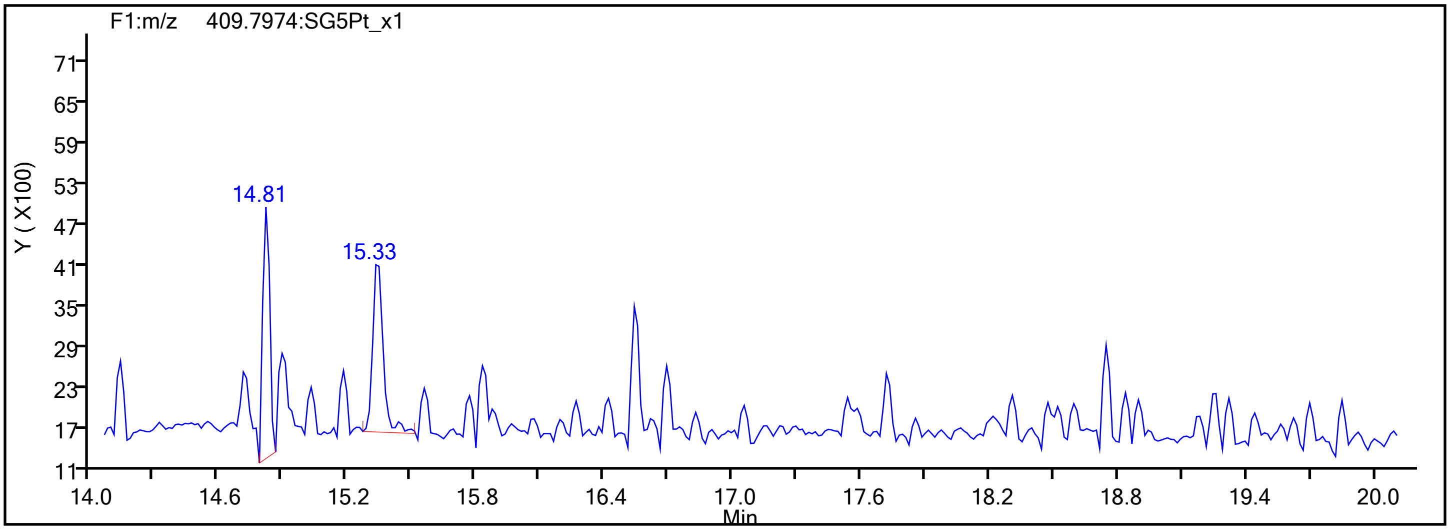

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

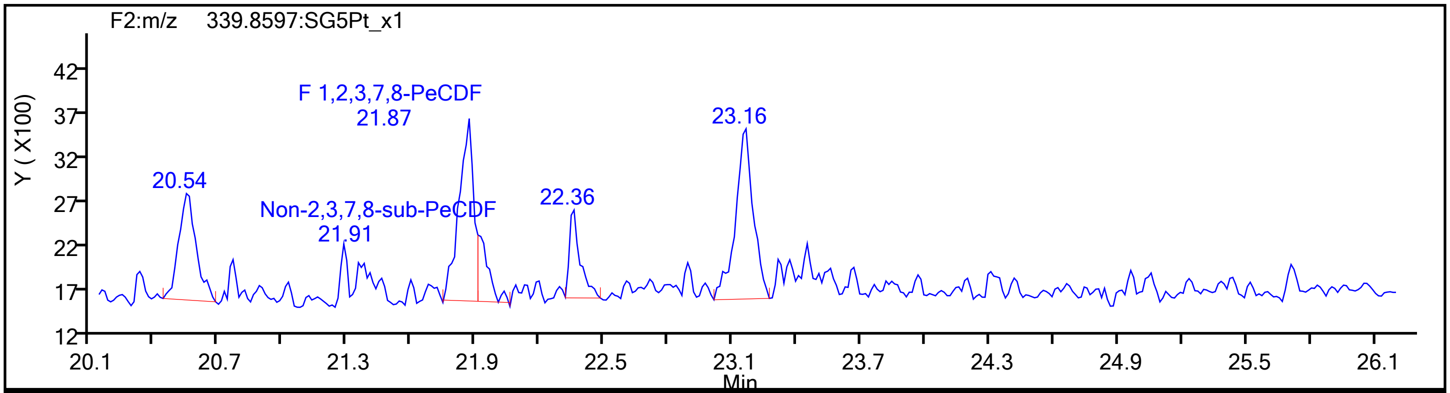

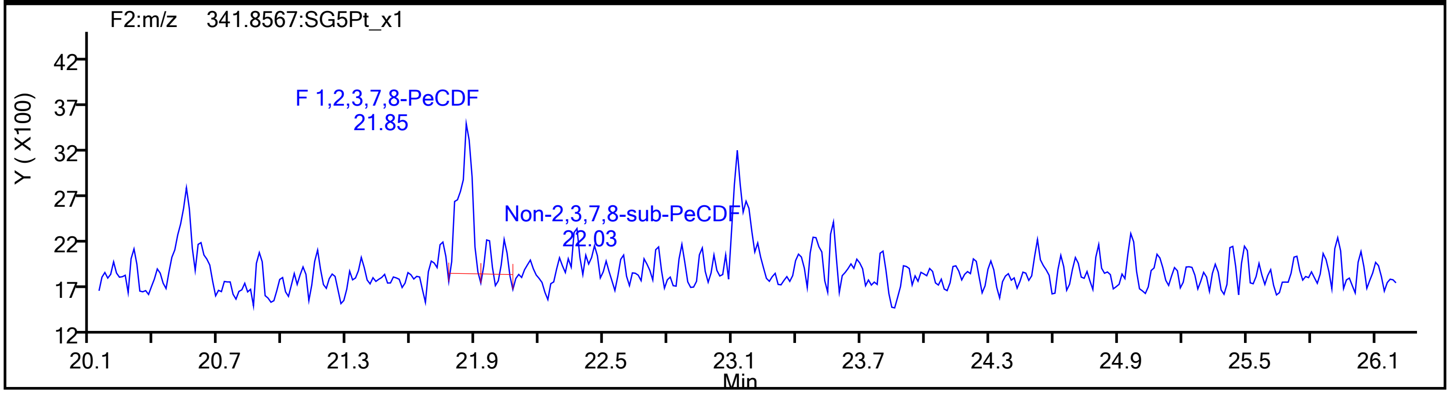

PeCDF Standards

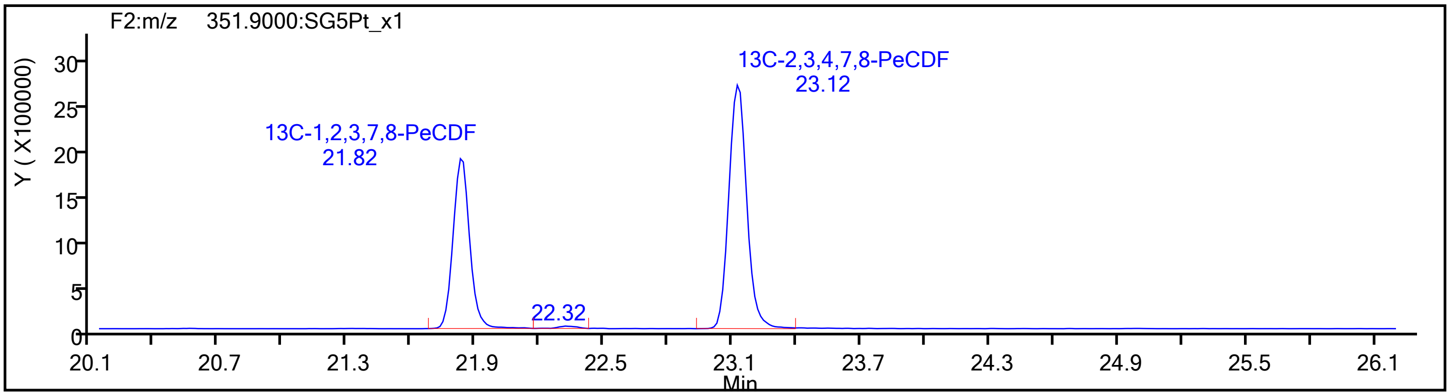

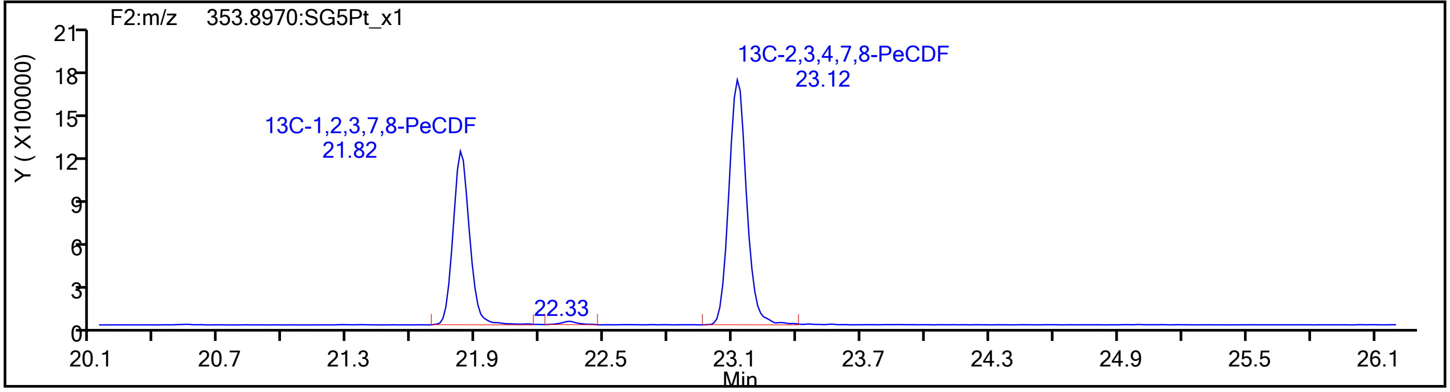

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-3
Worklist#: 405028
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

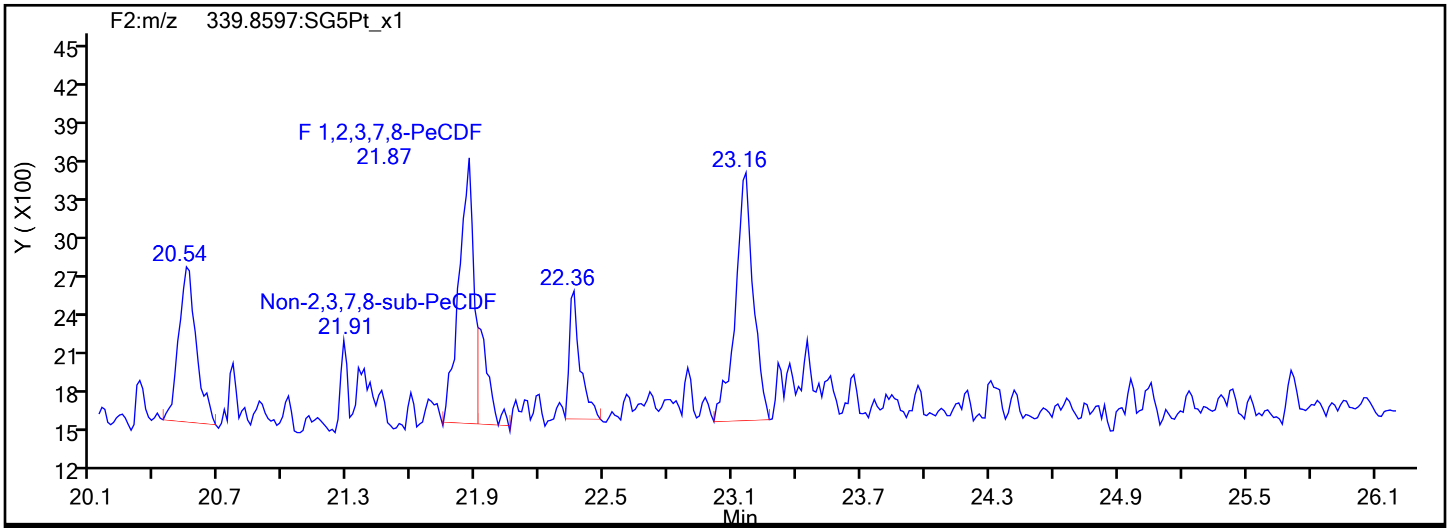

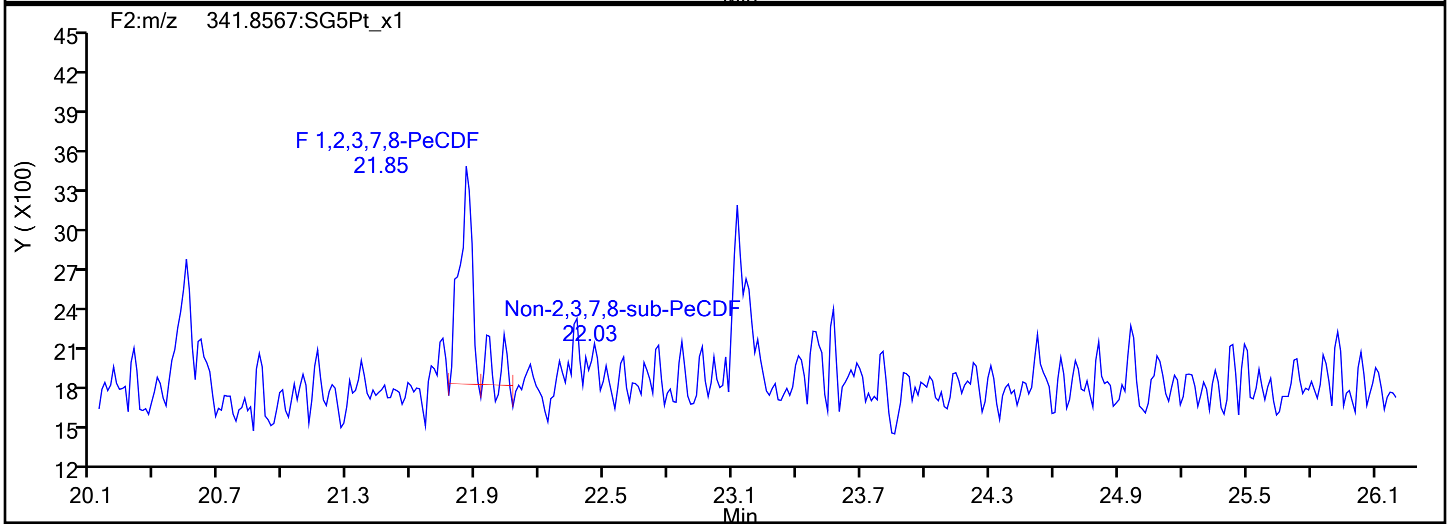

PeCDF Interference Mass

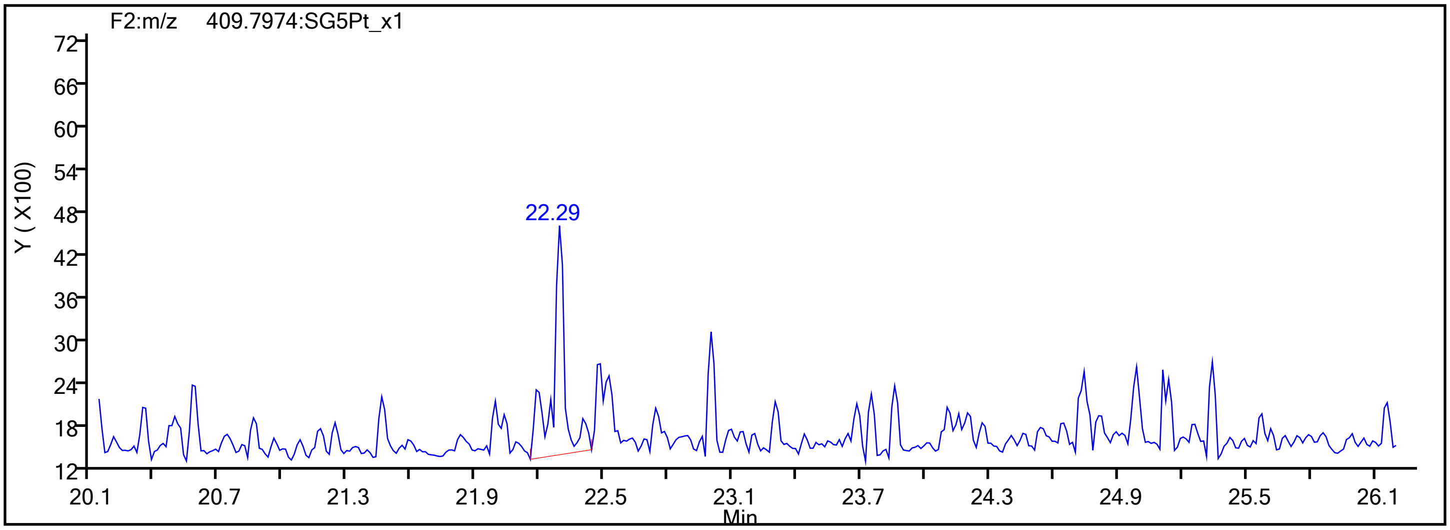

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

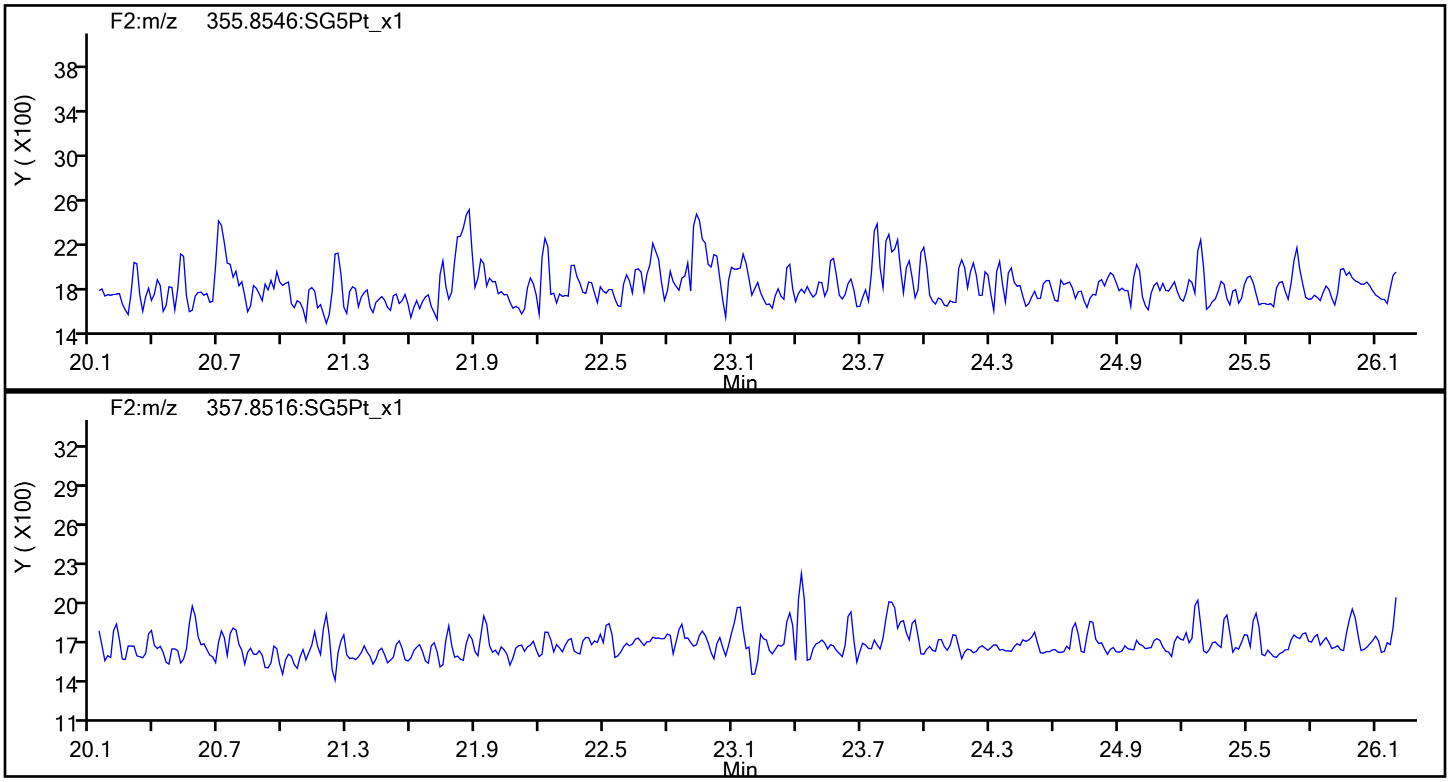

PeCDD Standards

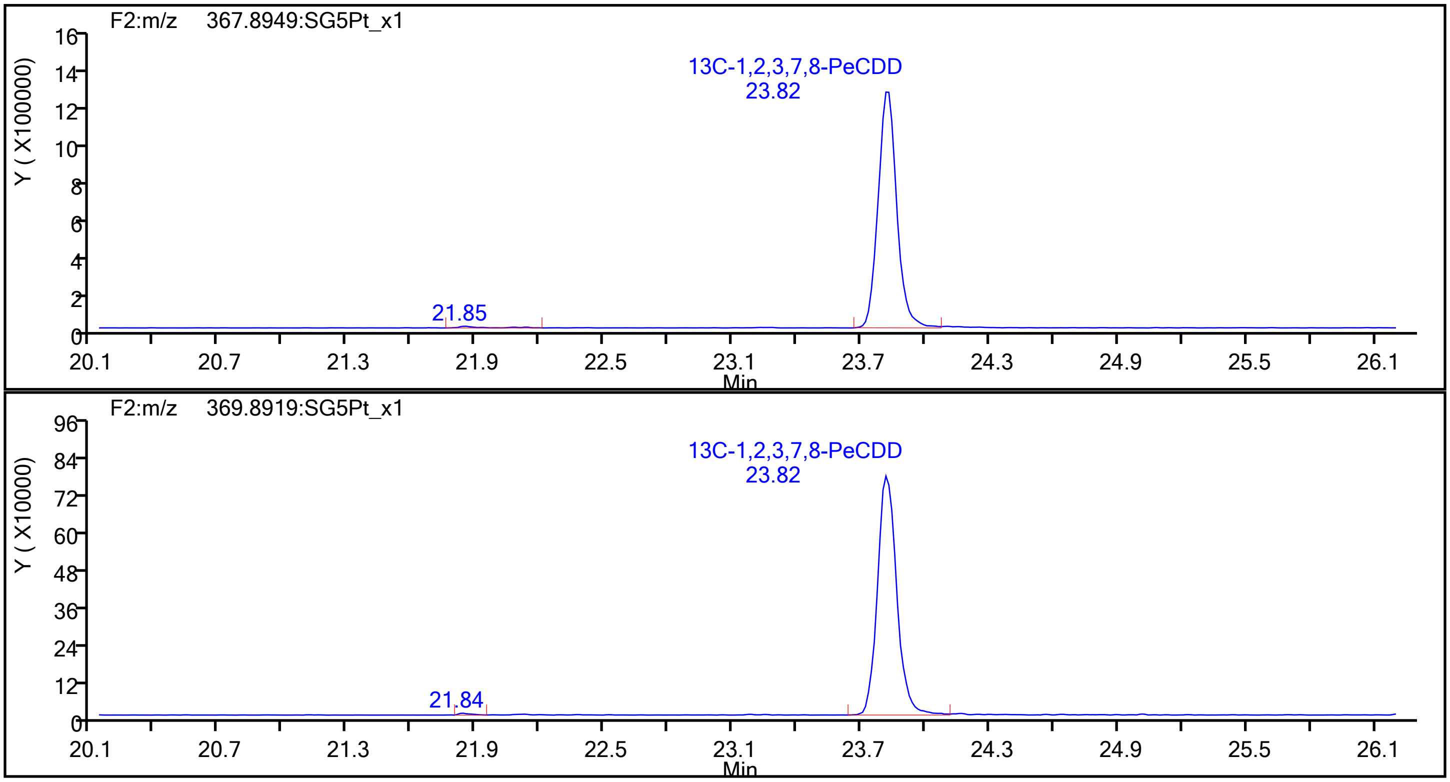

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-3
Worklist#: 405028
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

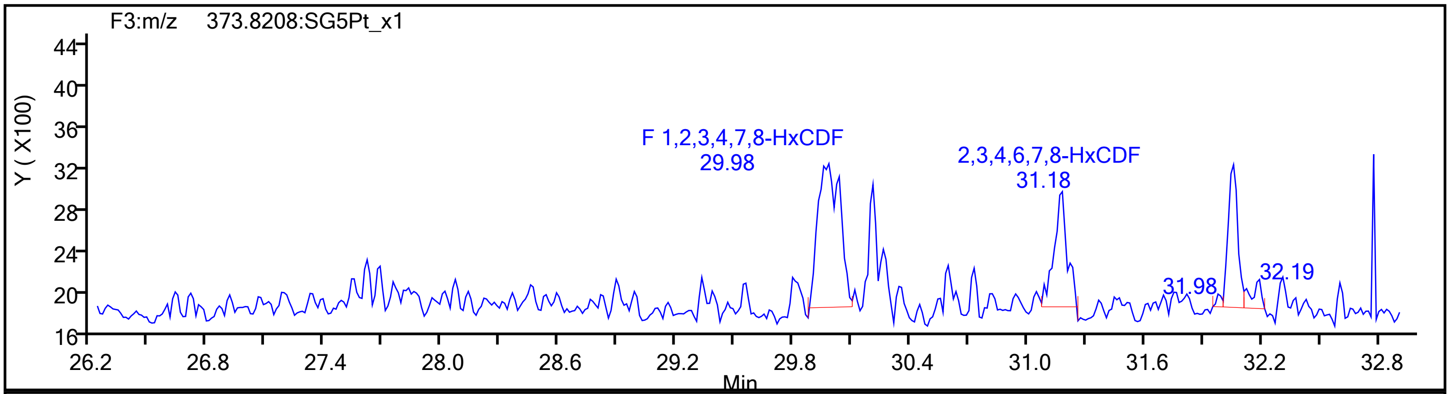

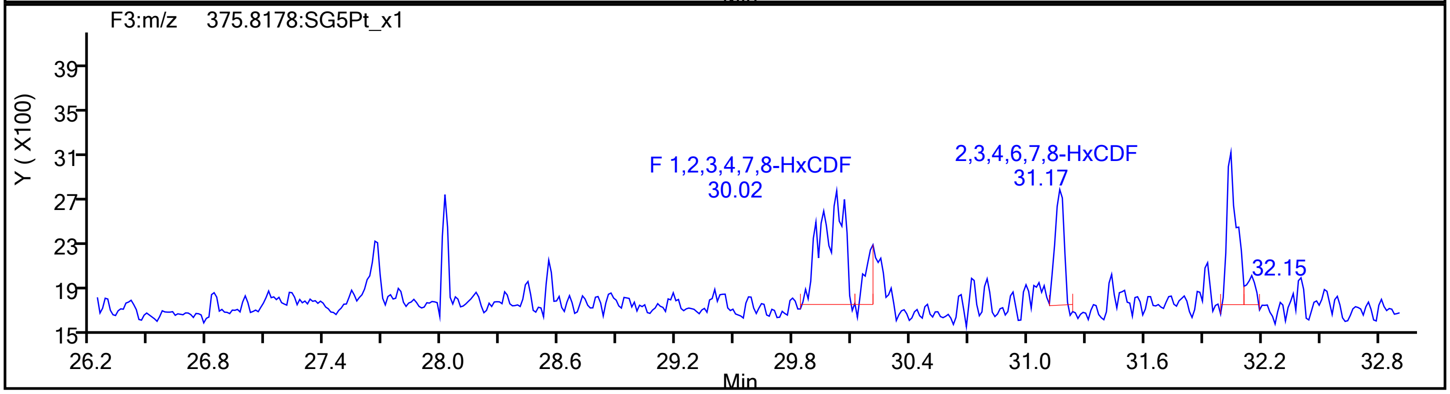

HxCDF Standards

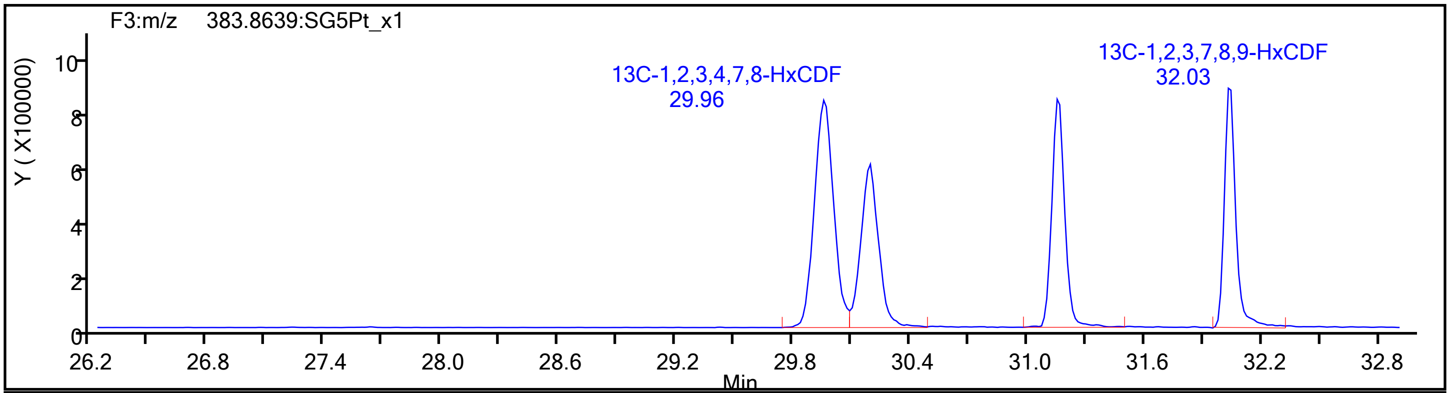

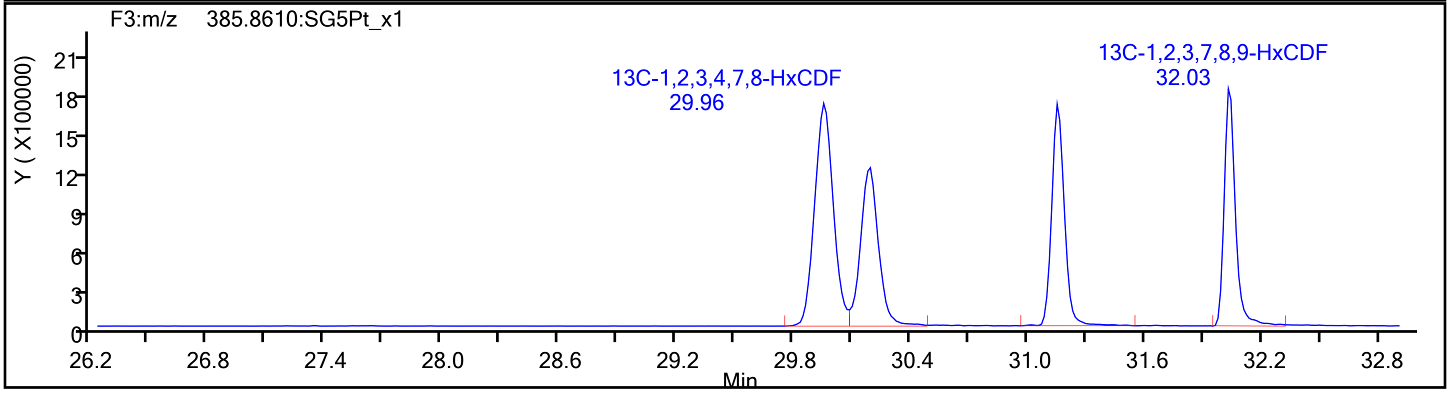

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

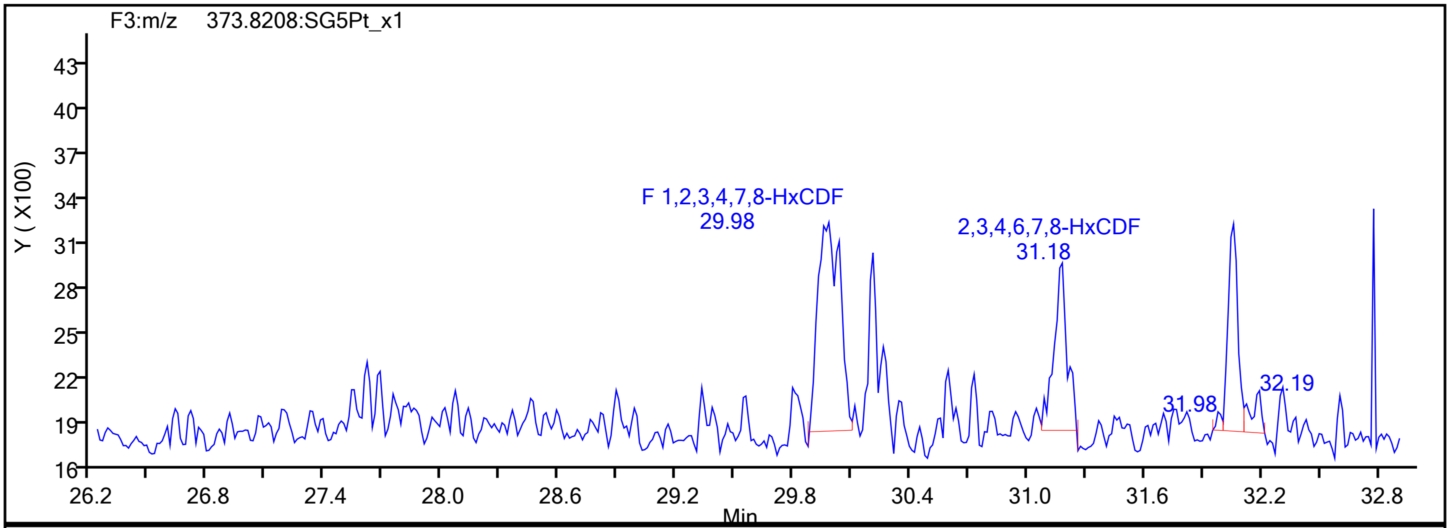

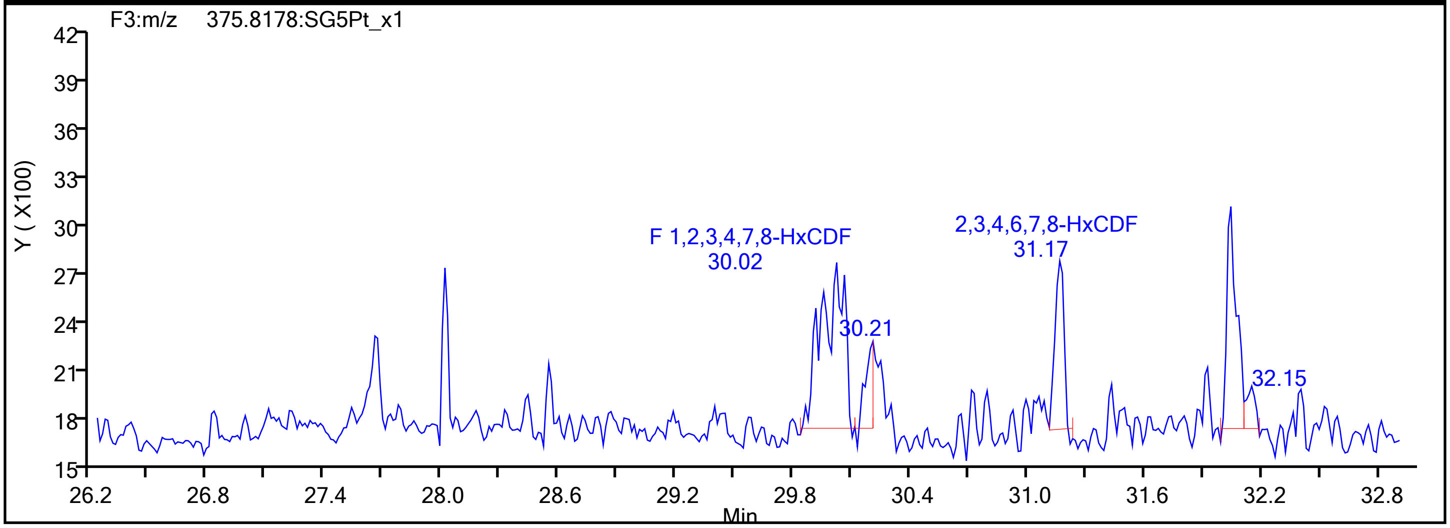

HxCDF Interference Mass

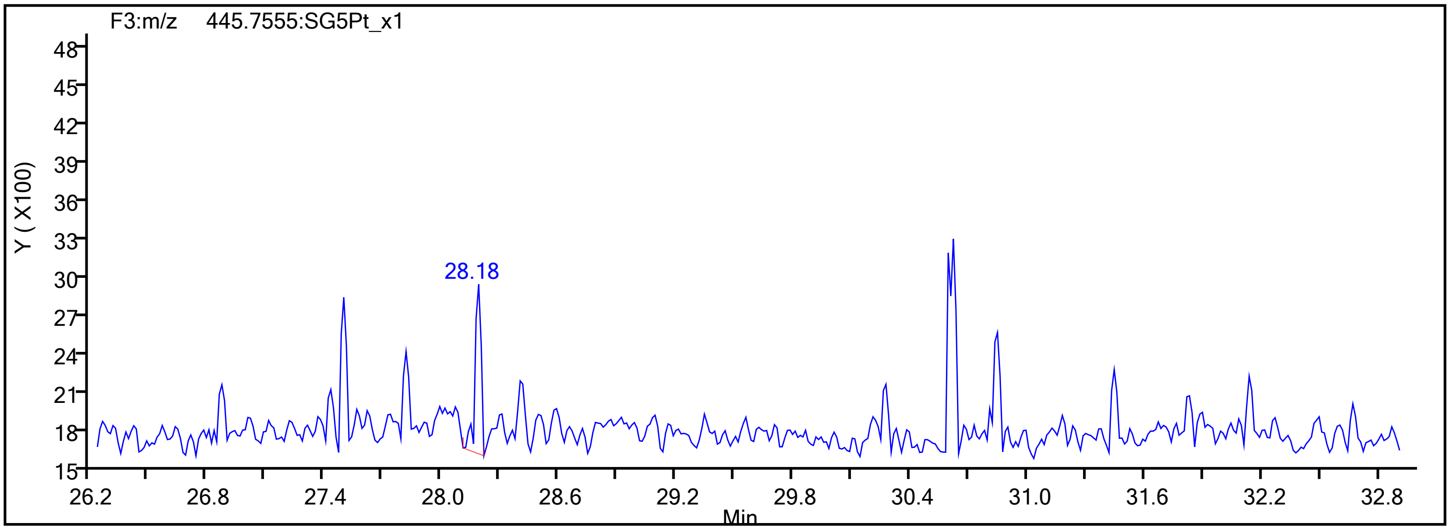

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d
Injection Date: 19-Aug-2020 15:12:52 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-3
Worklist#: 405028 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

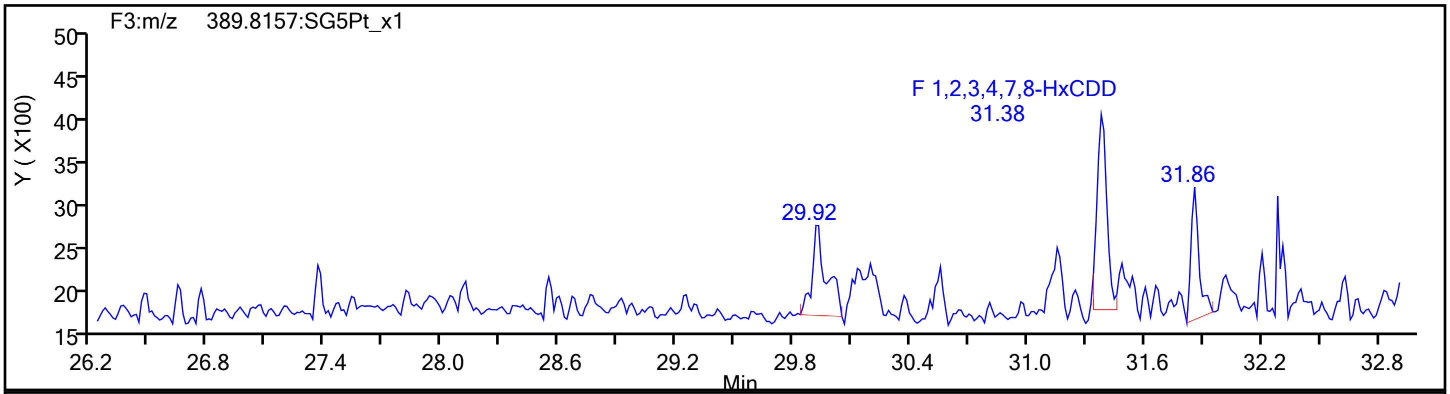

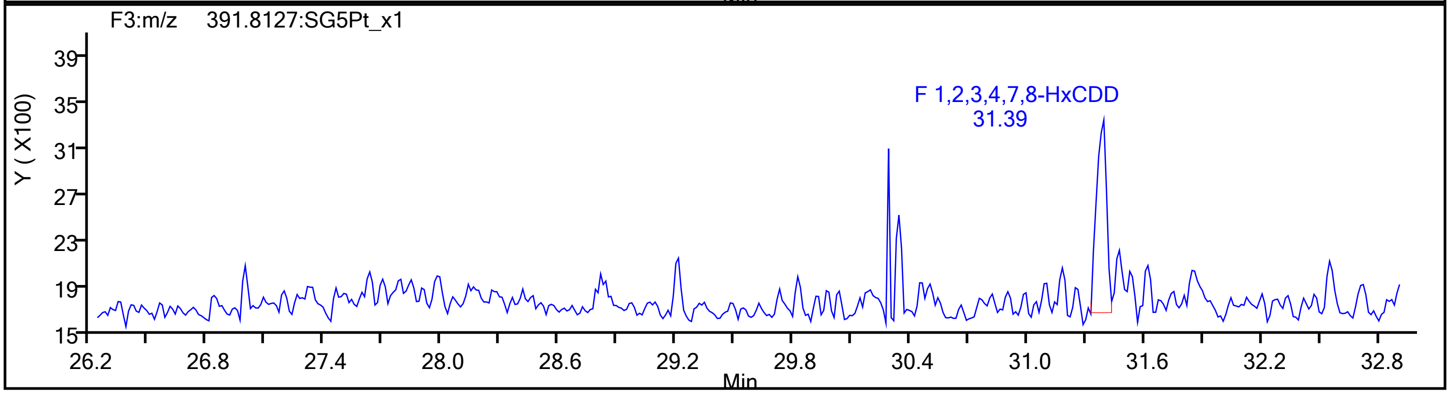

HxCDD Standards

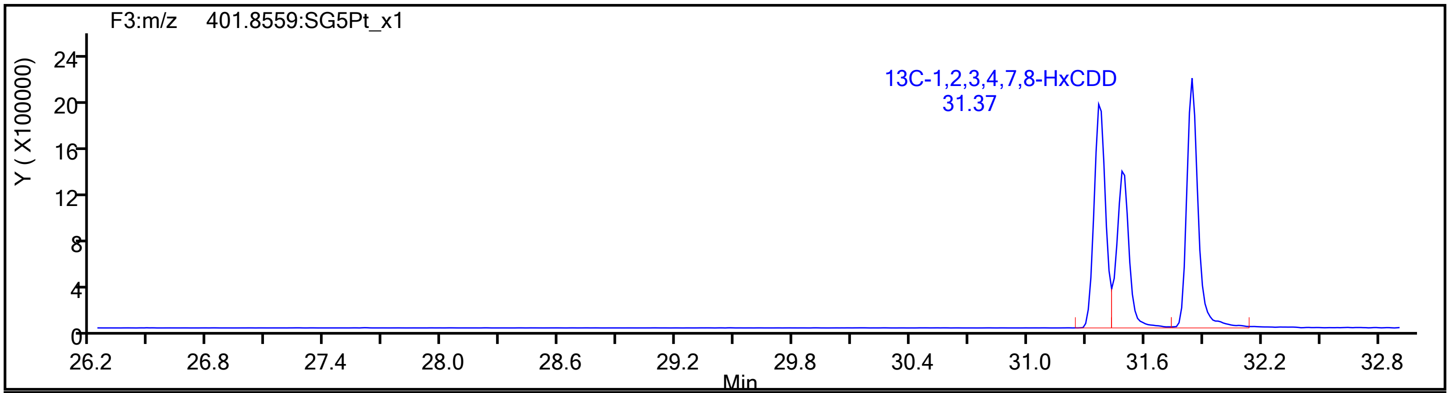

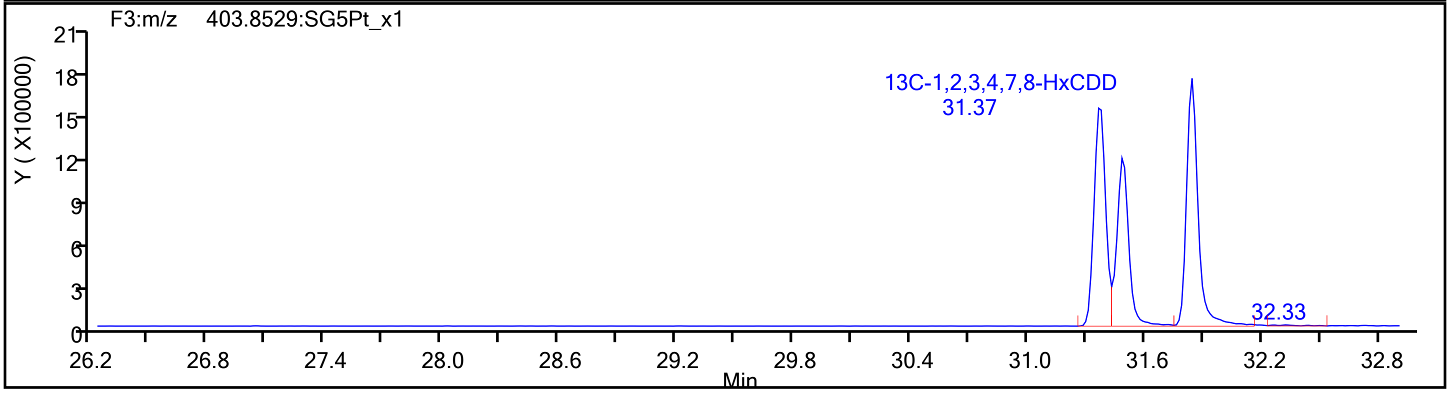

Report Date: 21-Aug-2020 08:45:32   Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

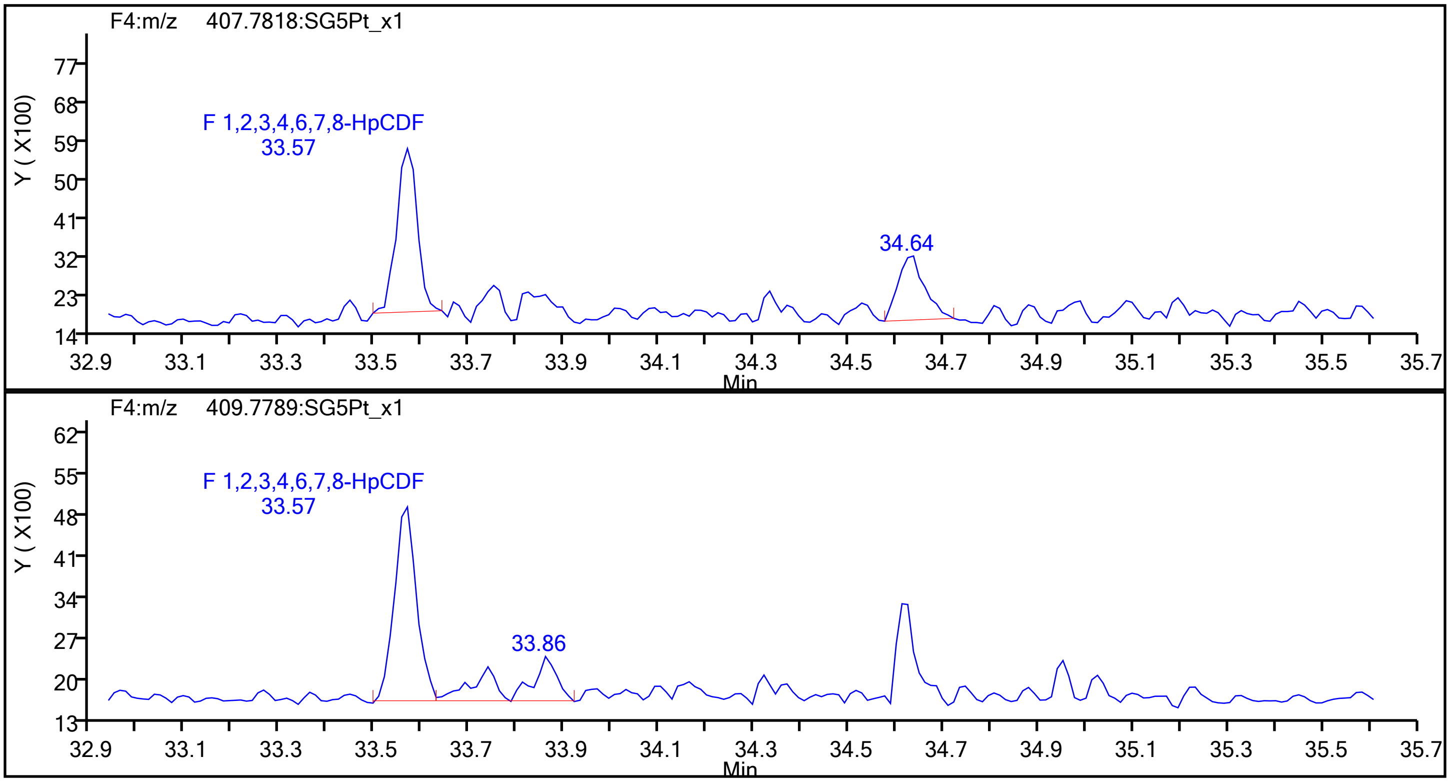

HpCDF Standards

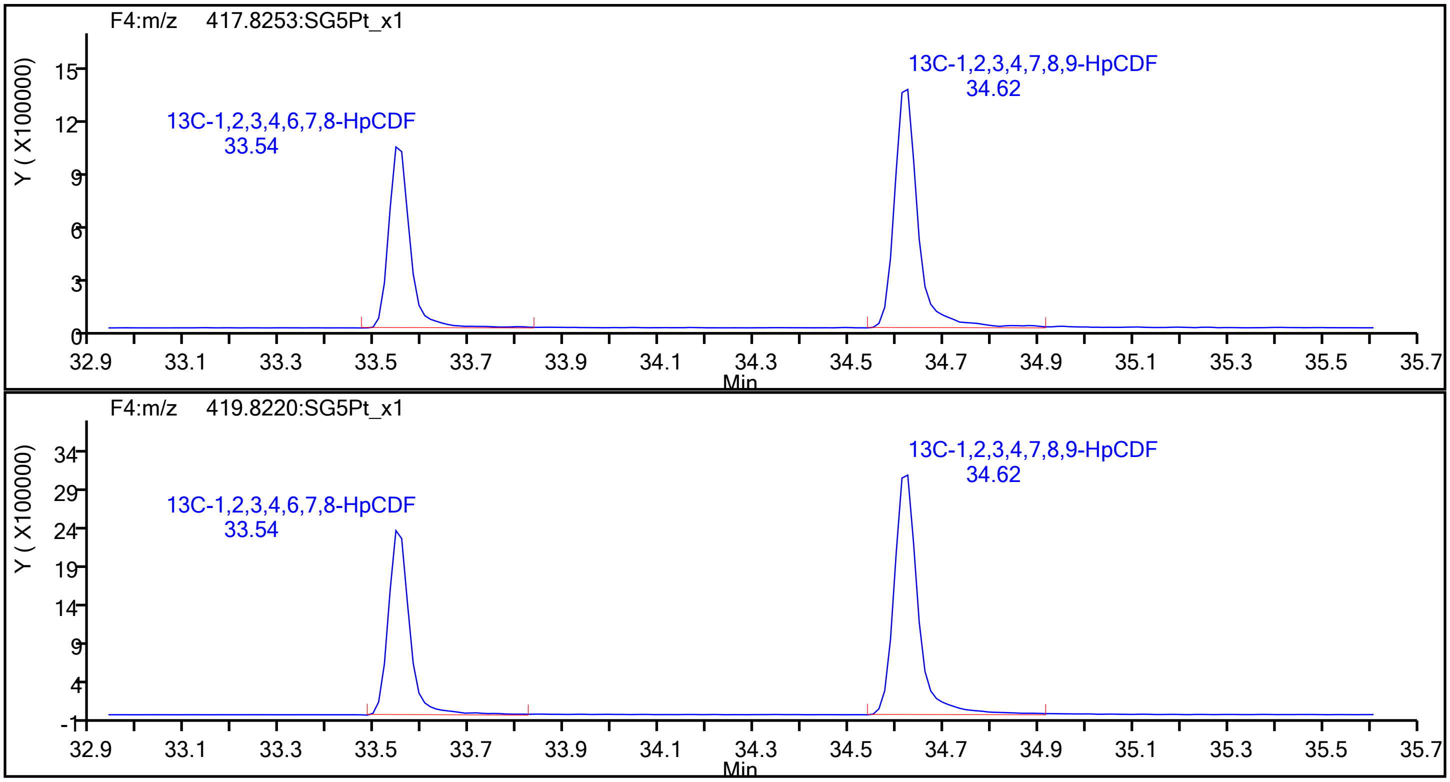

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

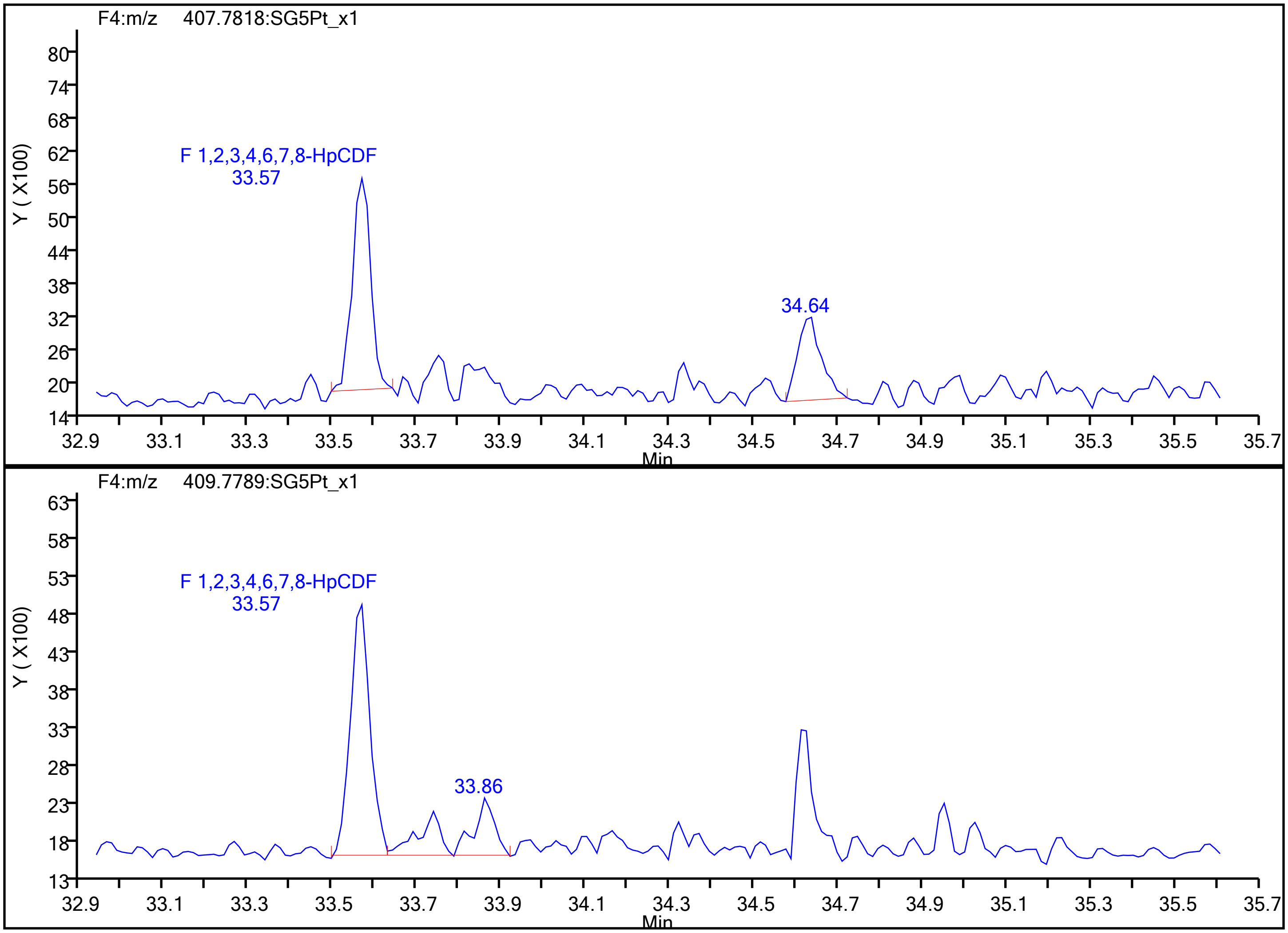

HpCDF Interference Mass

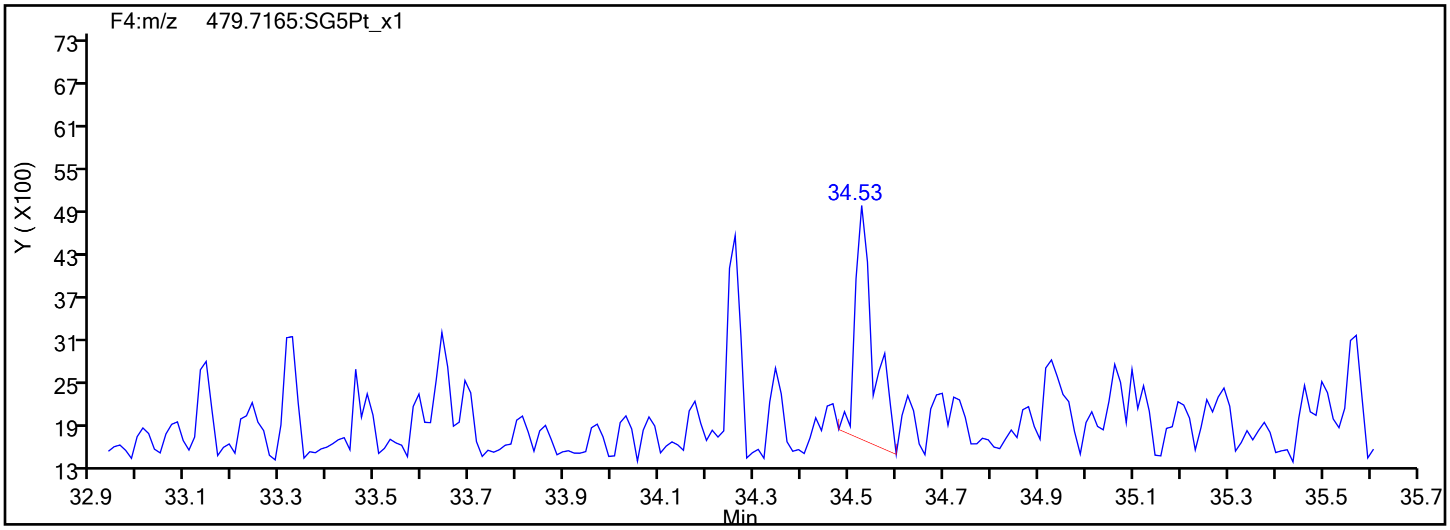

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date: 19-Aug-2020 15:12:52 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-3

Worklist#: 405028 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

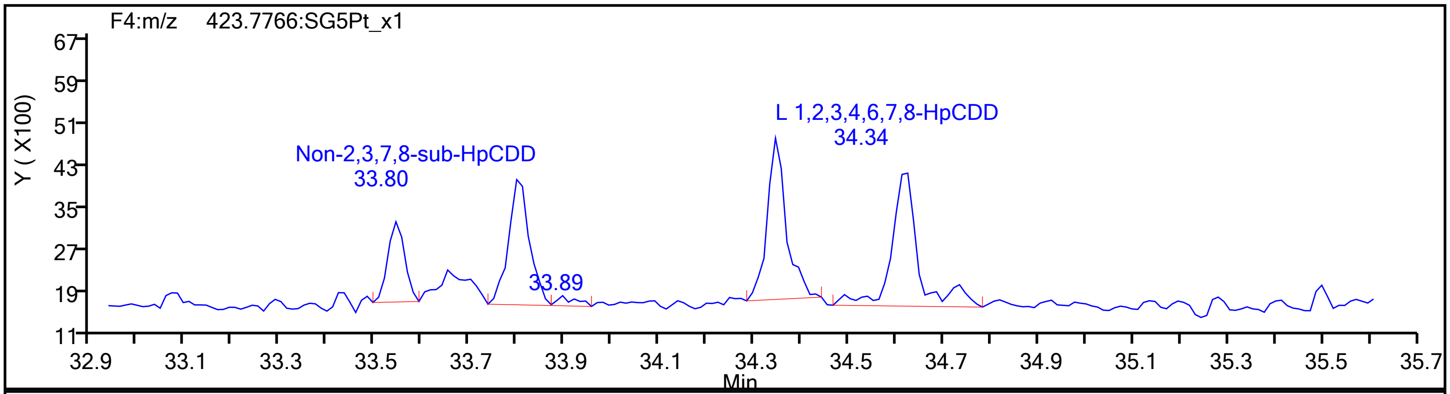

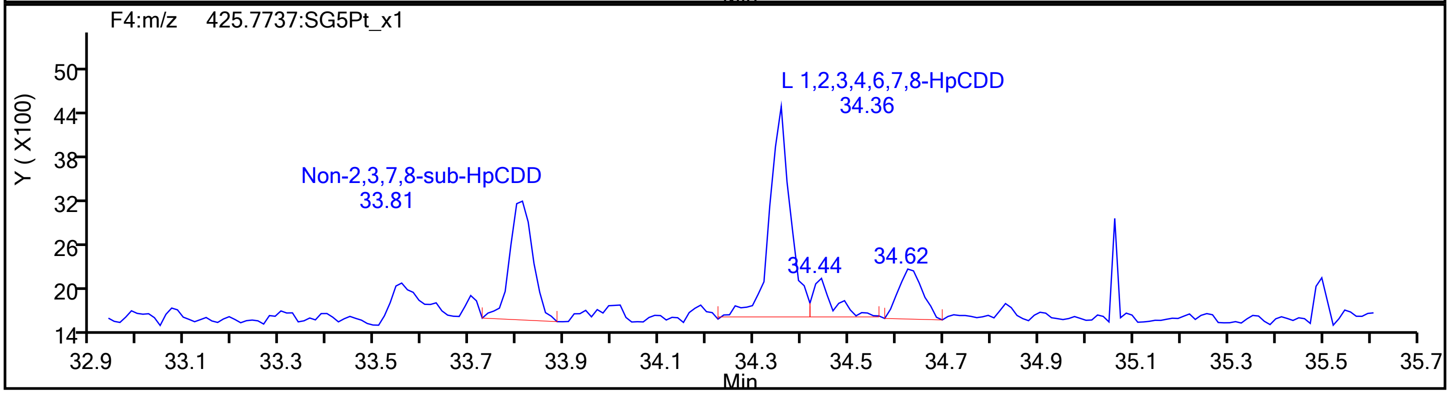

HpCDD Standards

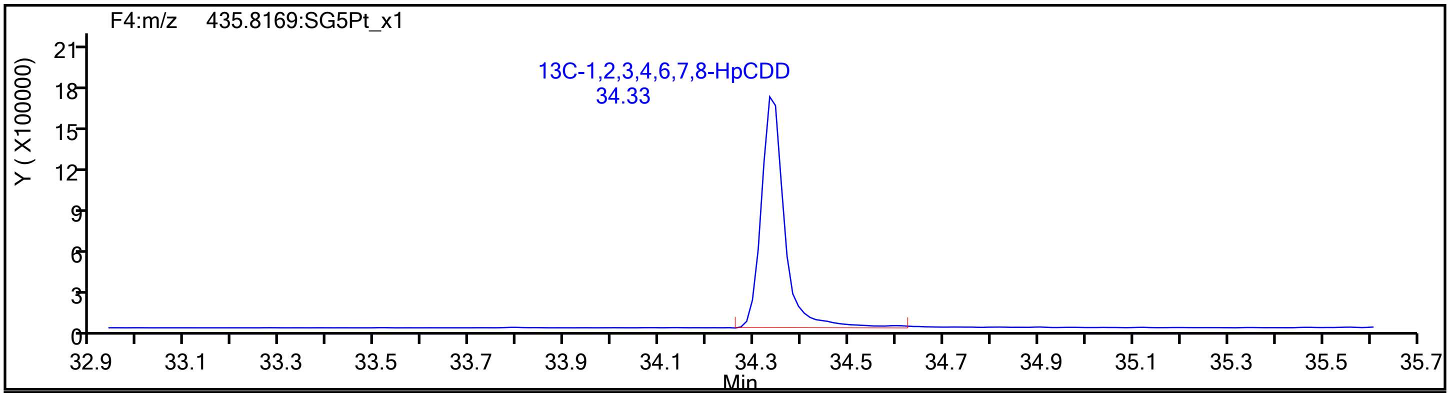

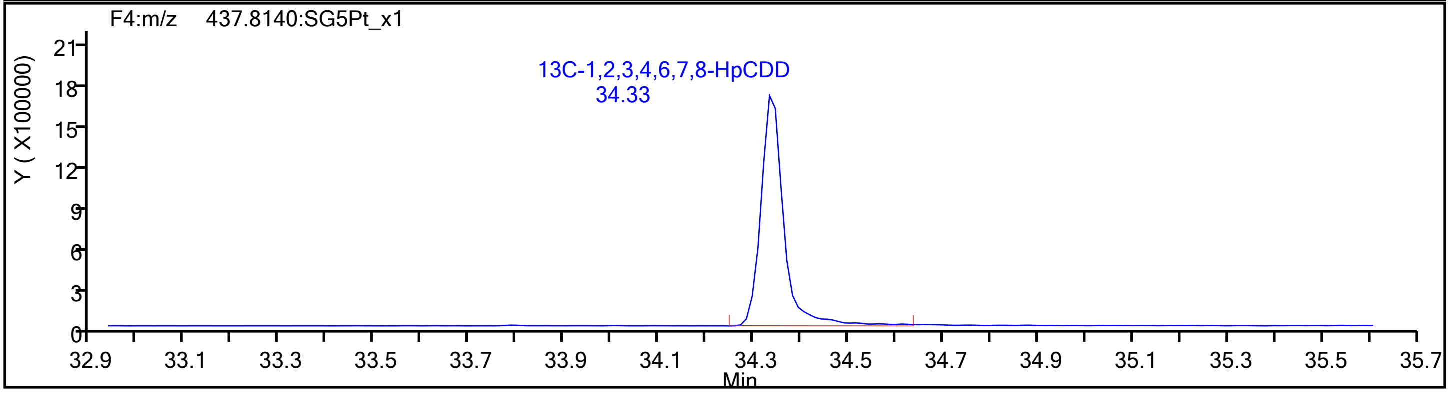

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

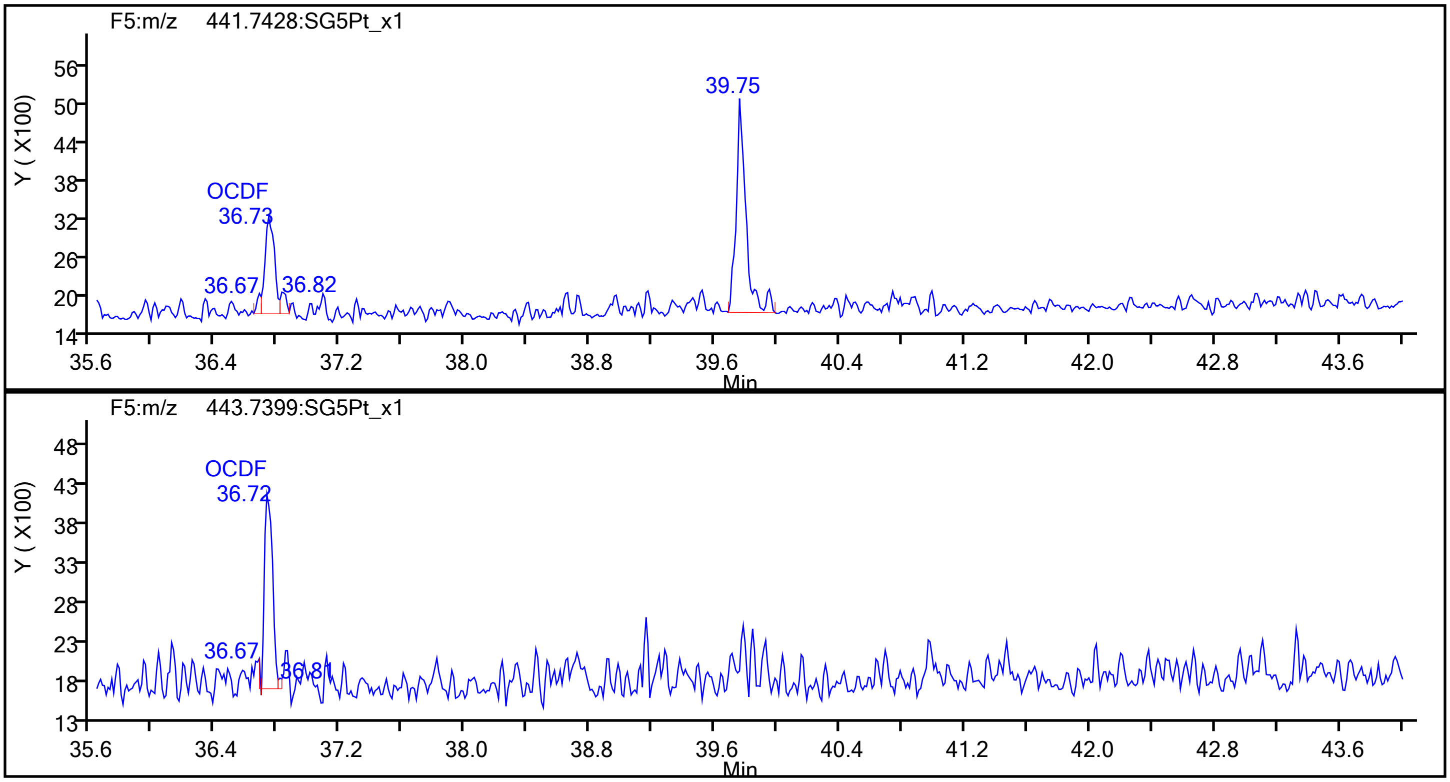

OCDF Standards

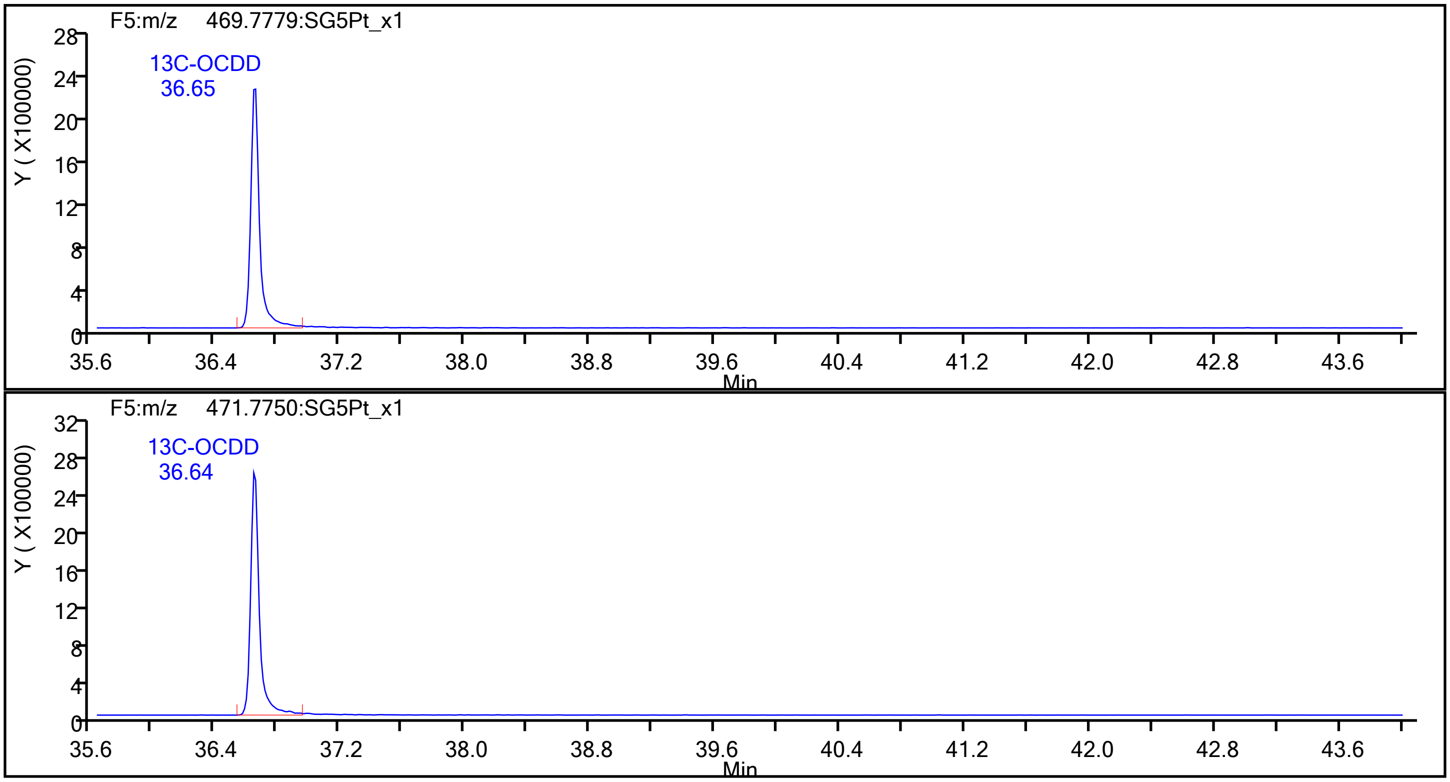

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

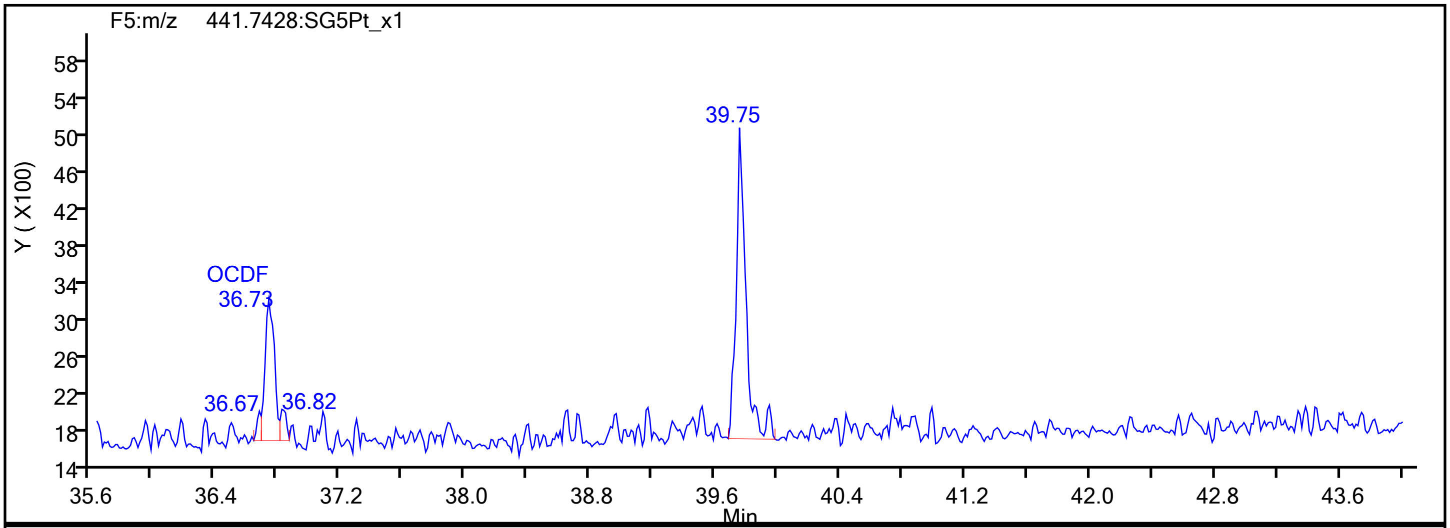

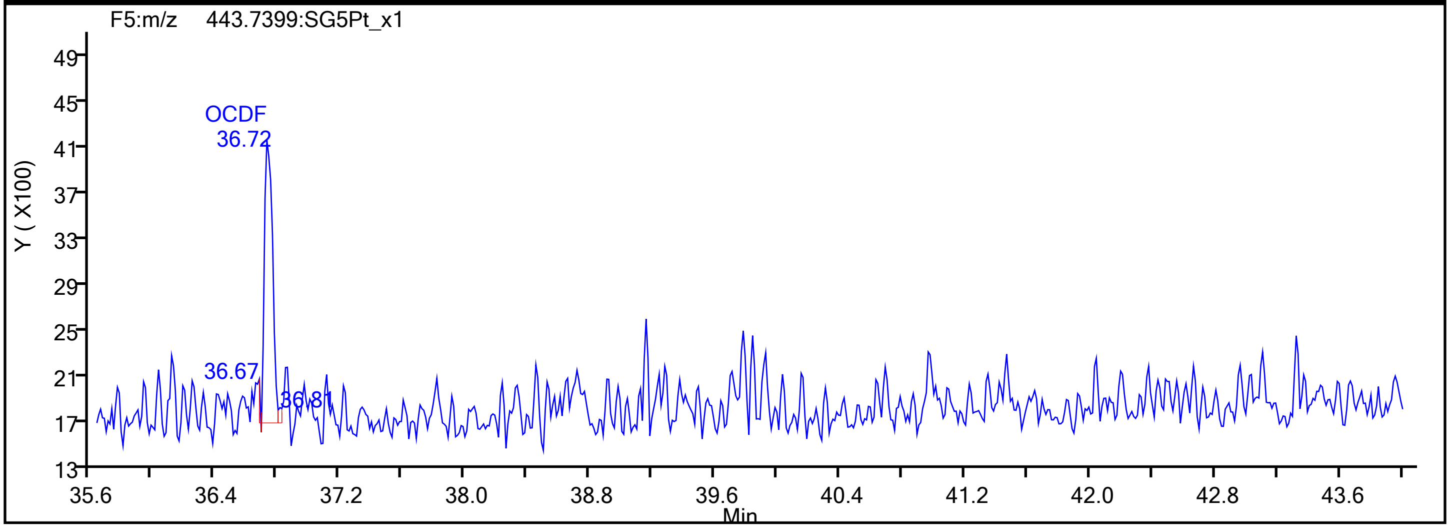

OCDF Interference Mass

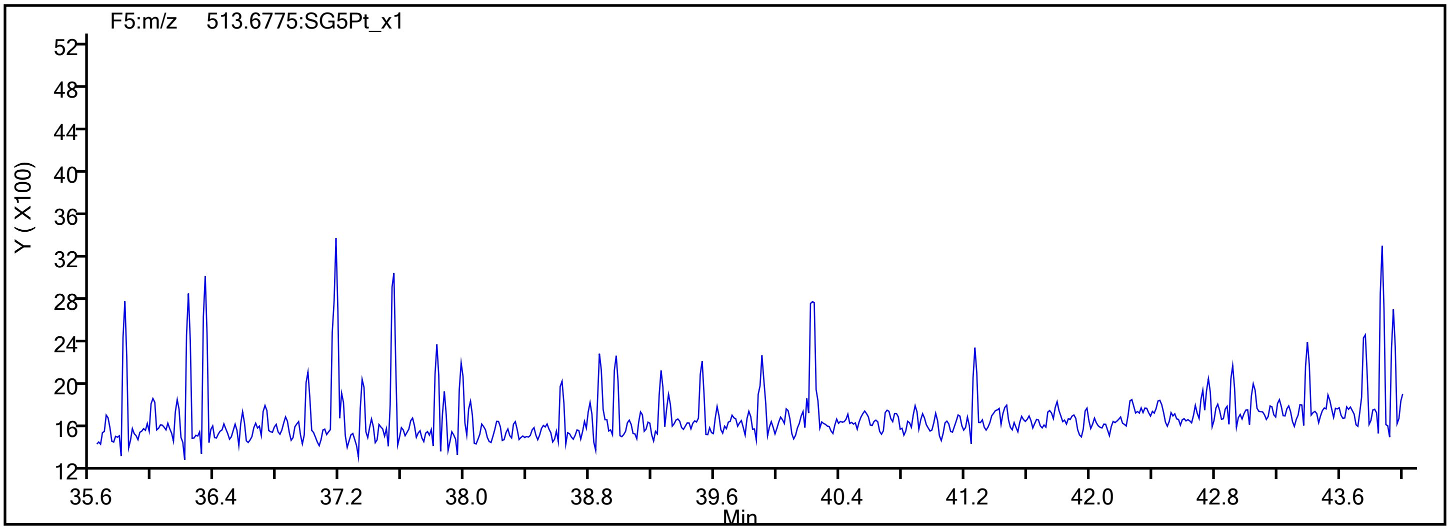

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

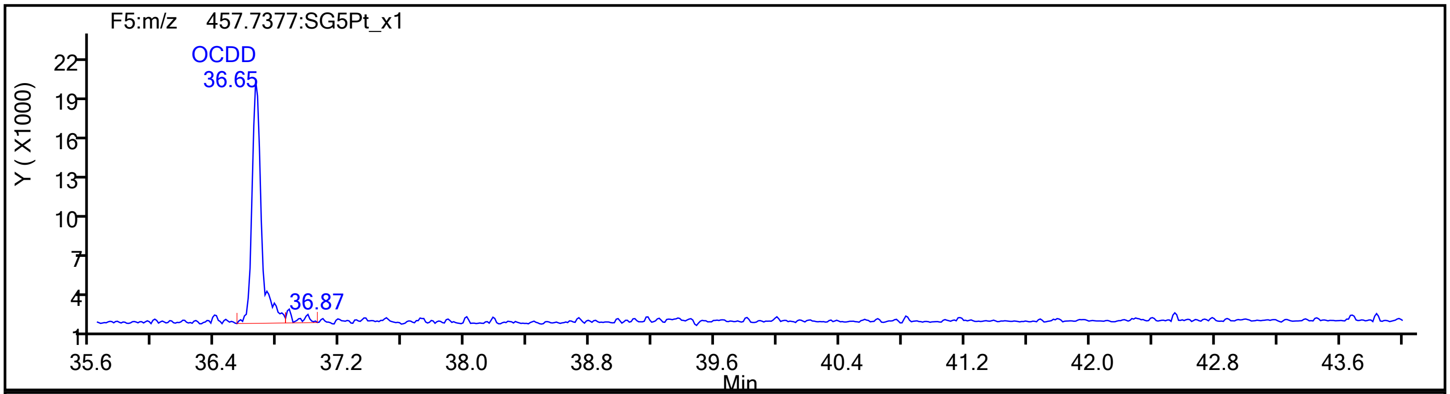

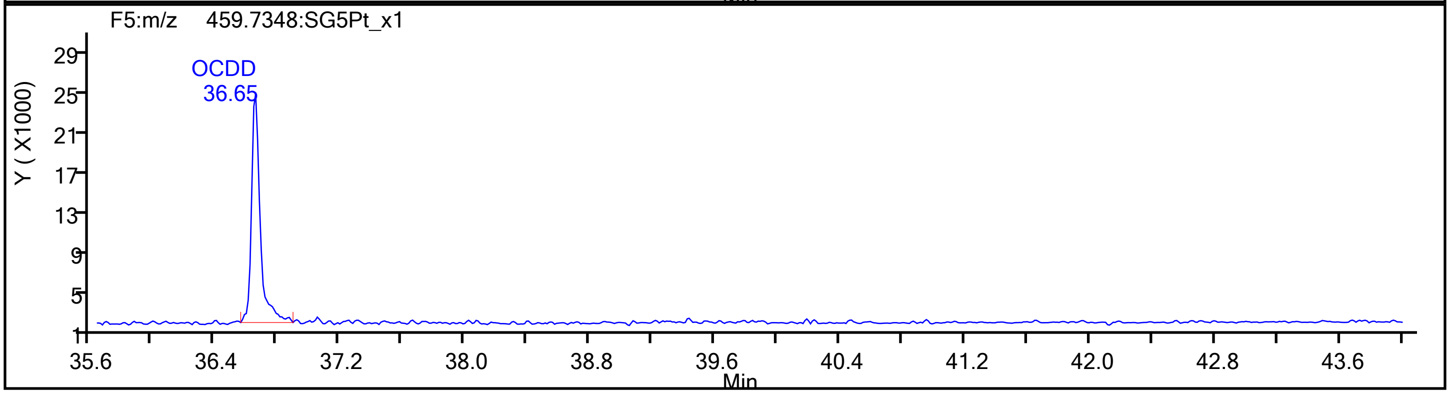

OCDD Standards

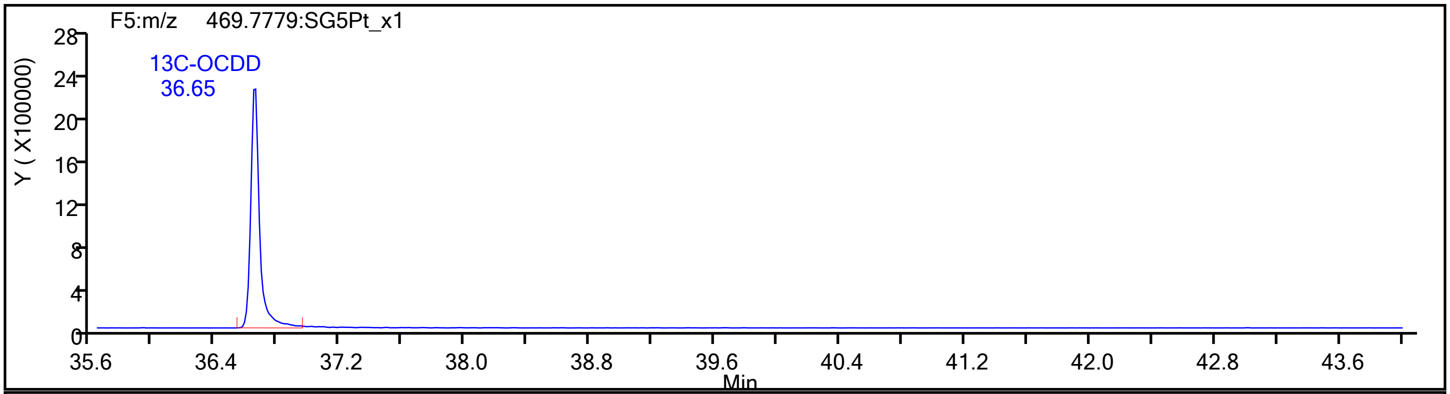

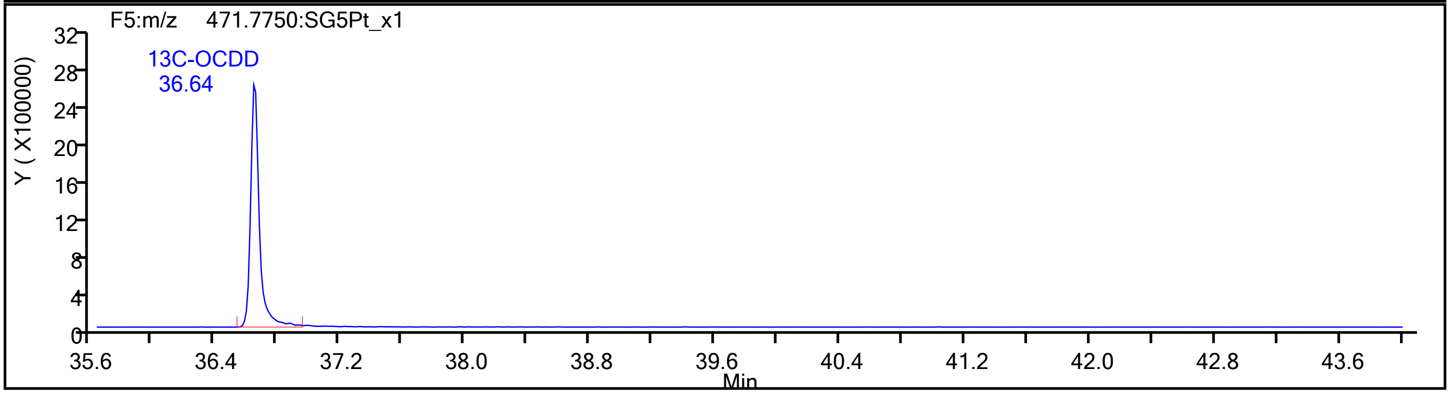

Report Date: 21-Aug-2020 08:45:32　Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d

Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

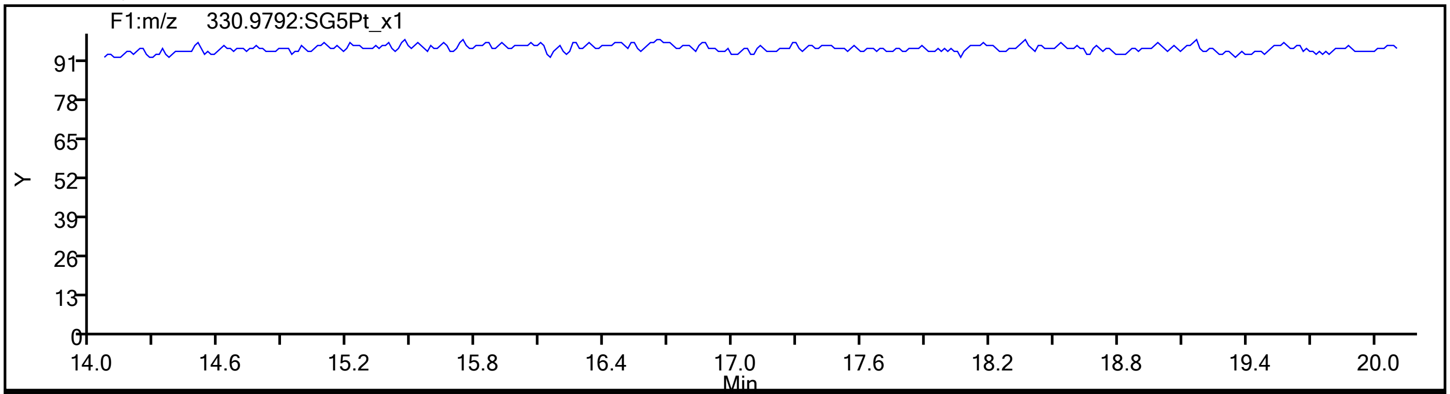

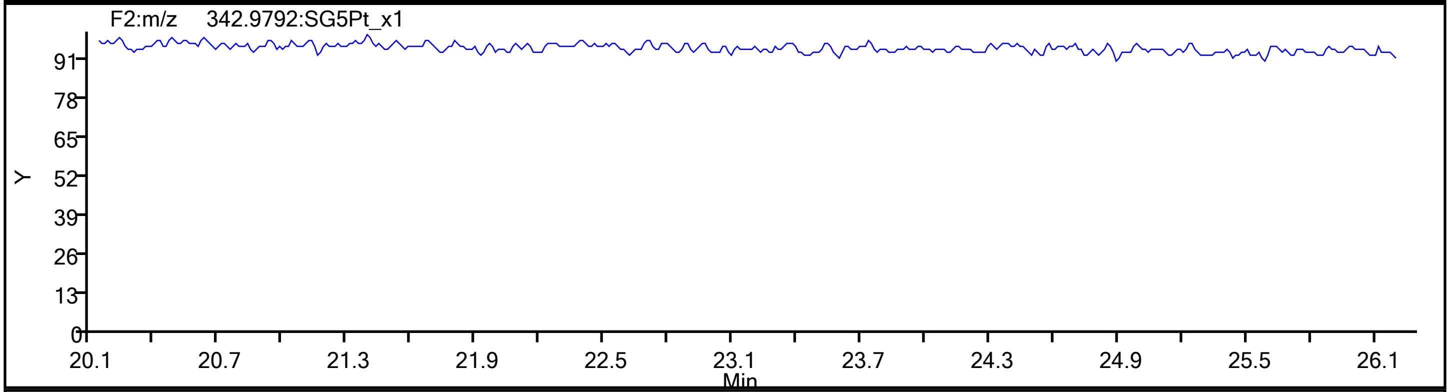

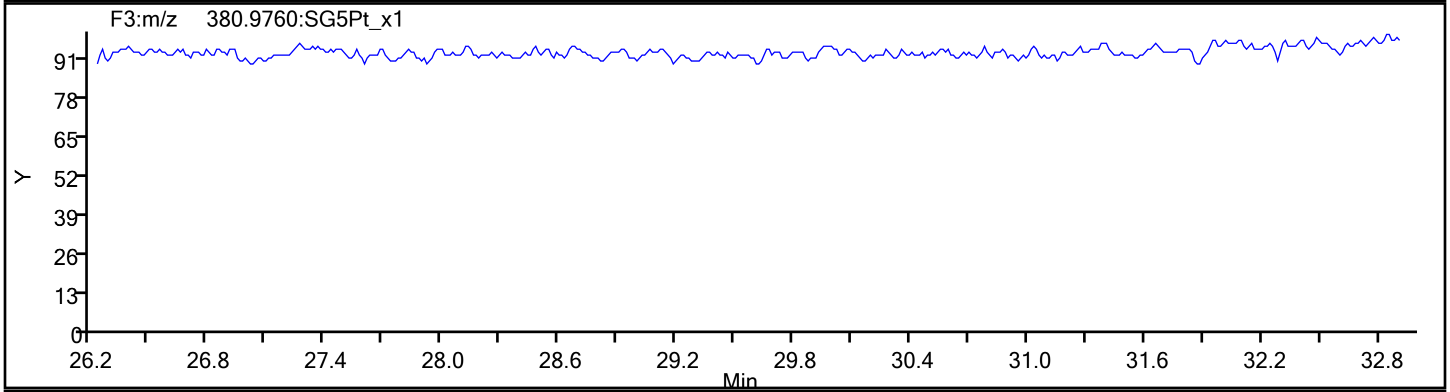

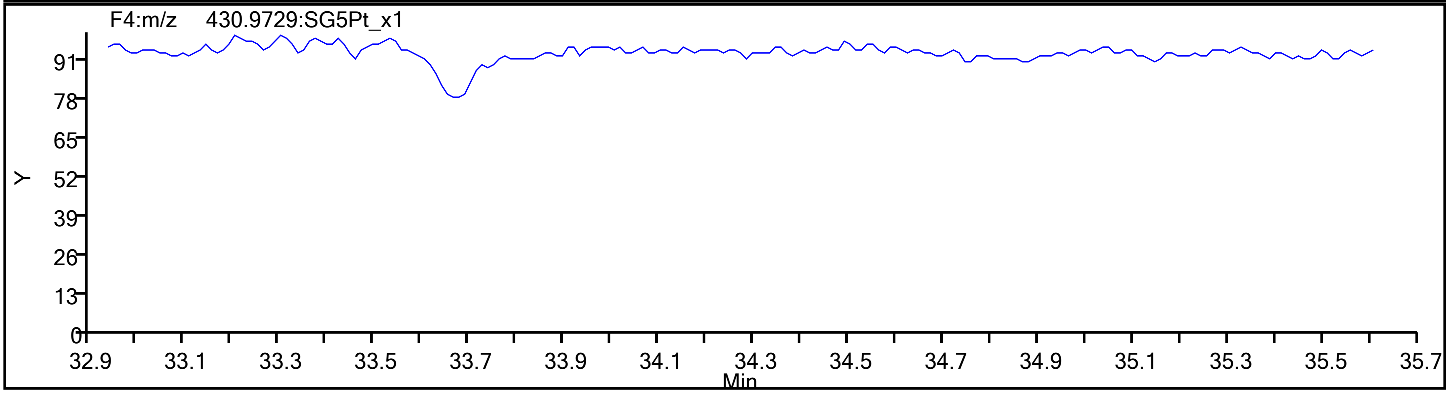

Report Date: 21-Aug-2020 08:45:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_7.d		
Injection Date:	19-Aug-2020 15:12:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405028	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

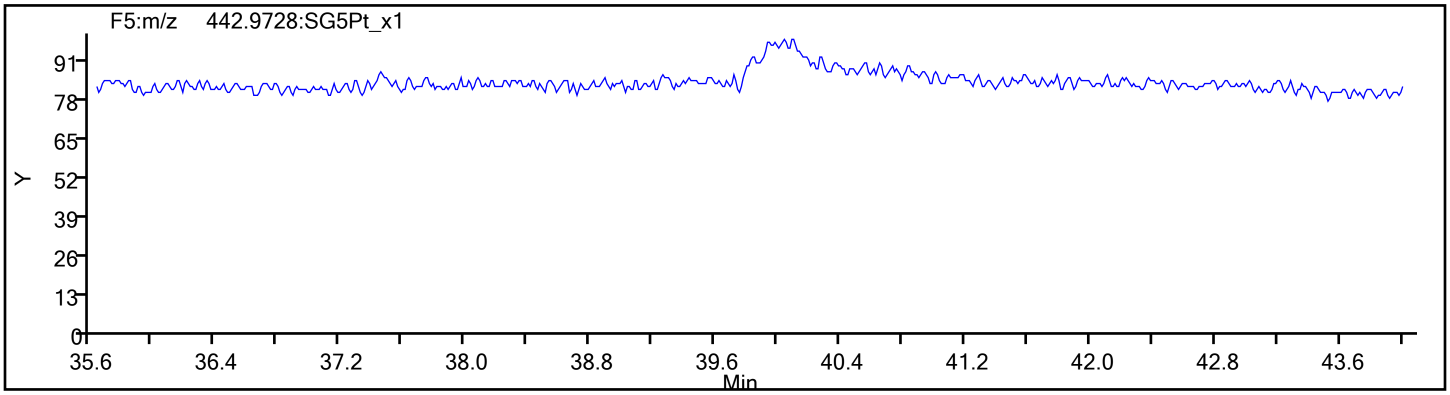

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Client Sample ID: 11215702-Treatment-3 RA Lab Sample ID: 320-63525-1 RA

Matrix: Water Lab File ID: 20AU20D4D2_008.d

Analysis Method: 1613B Date Collected: 08/07/2020 12:30

Extract. Method: 1613B Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1046.6(mL) Date Analyzed: 08/20/2020 20:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405652 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	27		9.6	0.74

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		35-197

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d
Lims ID: 320-63525-A-1-A
Client ID: 11215702-Treatment-3
Sample Type: Client
Inject. Date: 20-Aug-2020 20:44:21 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-63525-A-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2

Method: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 11:46:36 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1052

First Level Reviewer: shardaa Date: 21-Aug-2020 11:45:11

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.884	91297762	0.77	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	14.981	82103777	0.77	1.2239	73.5	73.5	0.1895	0.1895	73.48	
2,3,7,8-TCDF	14.995	1096967	0.80	0.9341	1.430	1.430	0.0386	0.0386		M
D 13C-2,3,7,8-TCDD	13.609	62131937	0.75	0.9126	74.6	74.6	0.2247	0.2247	74.57	
$ 37Cl4-2,3,7,8-TCDD	13.637	32816591		0.9664	37.2	37.2	0.0524	0.0524	92.98	
2,3,7,8-TCDD	13.623	426180	0.75	1.1025	0.6222	0.6222	0.0718	0.0718		

QC Flag Legend
Review Flags
M - Manually Integrated

Report Date: 21-Aug-2020 11:46:40   Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d
Lims ID: 320-63525-A-1-A
Client ID: 11215702-Treatment-3
Sample Type: Client
Inject. Date: 20-Aug-2020 20:44:21   ALS Bottle#: 0   Worklist Smp#: 8
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: 320-63525-A-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2

Method: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 11:46:36   Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1052

First Level Reviewer: shardaa   Date: 21-Aug-2020 11:45:11

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.884	13.886	0		39602263	8909242	8508	21270	1047		
333.9339	13.884	13.886	0		51695499	10998742	7819	19547	1407	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	14.981	14.983	0	1.079	35650284	7187810	10189	25472	705		
317.9389	14.981	14.983	0	1.079	46453493	9413758	8277	20692	1137	0.77(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	14.995	15.011	-1	1.001	489197	139410	1121	2802	124		M
305.8987	14.995	15.011	-1	1.001	607770	151867	1273	3182	119	0.80(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	13.609	13.625	-1	0.980	26608977	5530042	8508	21270	650		
333.9339	13.609	13.625	-1	0.980	35522960	7320534	7819	19547	936	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.637	13.625	1	0.982	32816591	7238004	4031	10077	1796		
2,3,7,8-TCDD											
319.8965	13.623	13.639	-1	1.001	181988	34750	2008	5020	17		
321.8936	13.637	13.639	0	1.002	244192	57183	2062	5155	28	0.75(0.65-0.89)	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 21-Aug-2020 11:46:41

Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d				
Injection Date:	20-Aug-2020 20:44:21	Instrument ID:	4D2		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	14.99
Area:	643298
Amount:	1.852923
Amount Units:	pg/ul

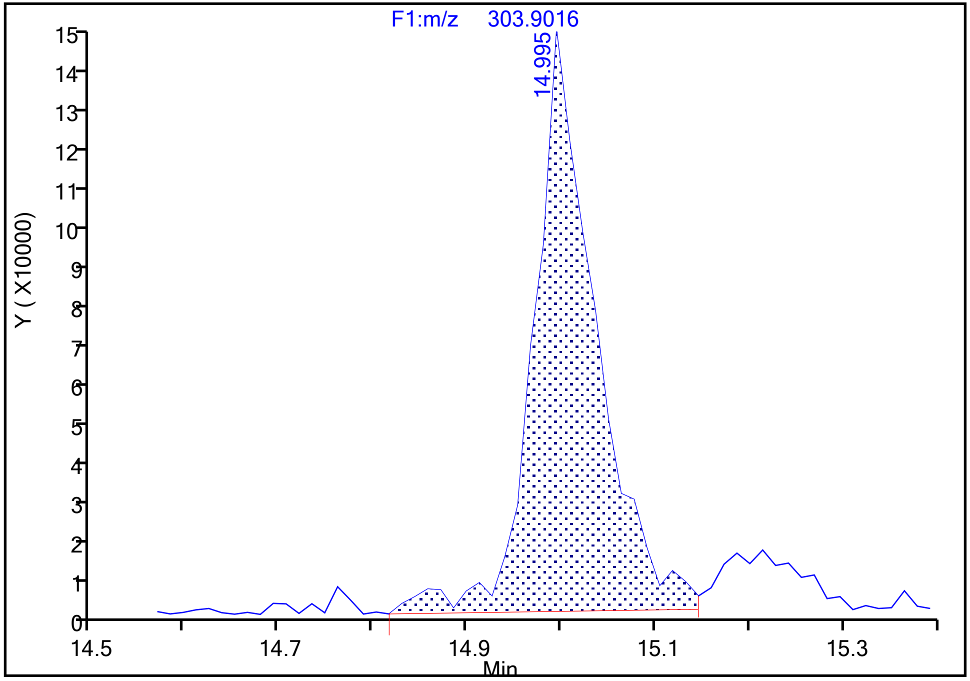

Manual Integration Results

RT:	14.99
Area:	489197
Amount:	1.430281
Amount Units:	pg/ul

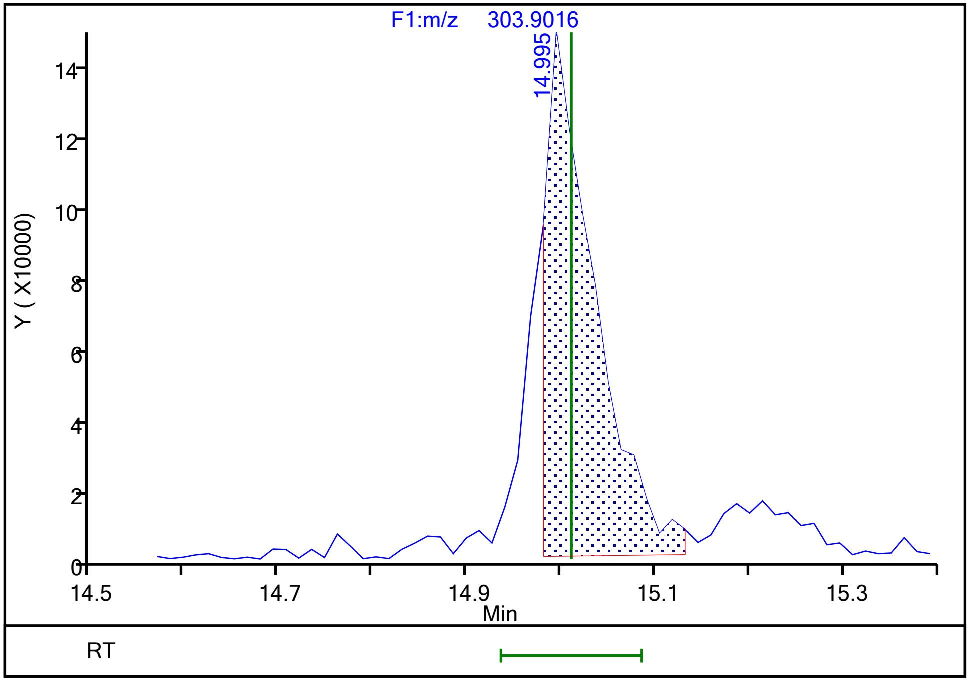

Reviewer: shardaa, 21-Aug-2020 11:44:54

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 21-Aug-2020 11:46:41 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d				
Injection Date:	20-Aug-2020 20:44:21	Instrument ID:	4D2		
Lims ID:	320-63525-A-1-A	Lab Sample ID:	320-63525-1		
Client ID:	11215702-Treatment-3				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 14.99
Area: 777818
Amount: 1.852923
Amount Units: pg/ul

Processing Integration Results

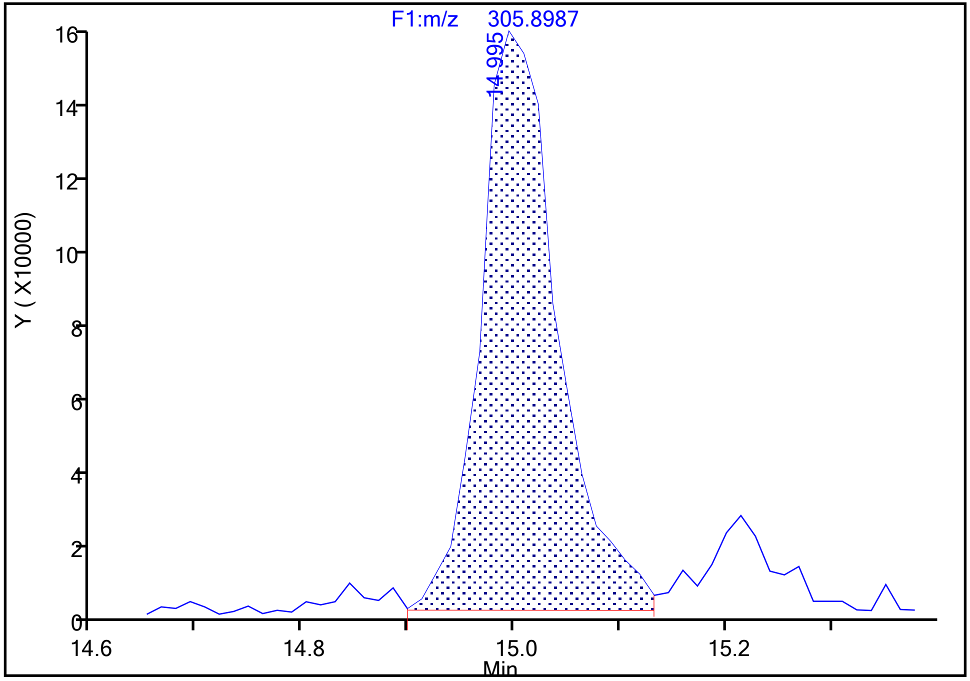

RT: 14.99
Area: 607770
Amount: 1.430281
Amount Units: pg/ul

Manual Integration Results

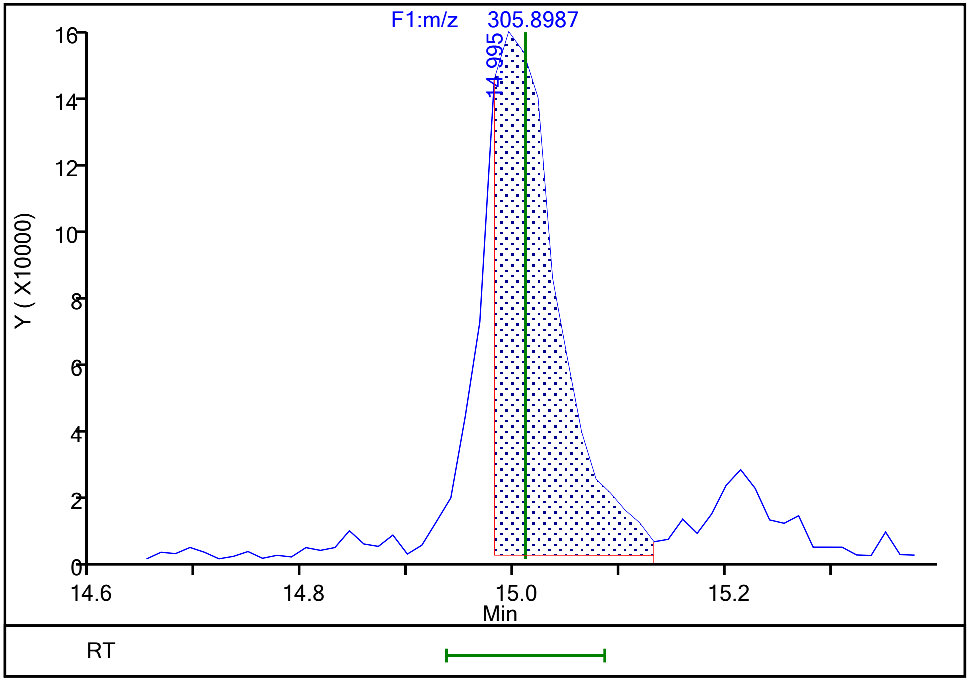

Reviewer: shardaa, 21-Aug-2020 11:45:02

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 21-Aug-2020 11:46:41 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d		
Injection Date:	20-Aug-2020 20:44:21	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405652	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

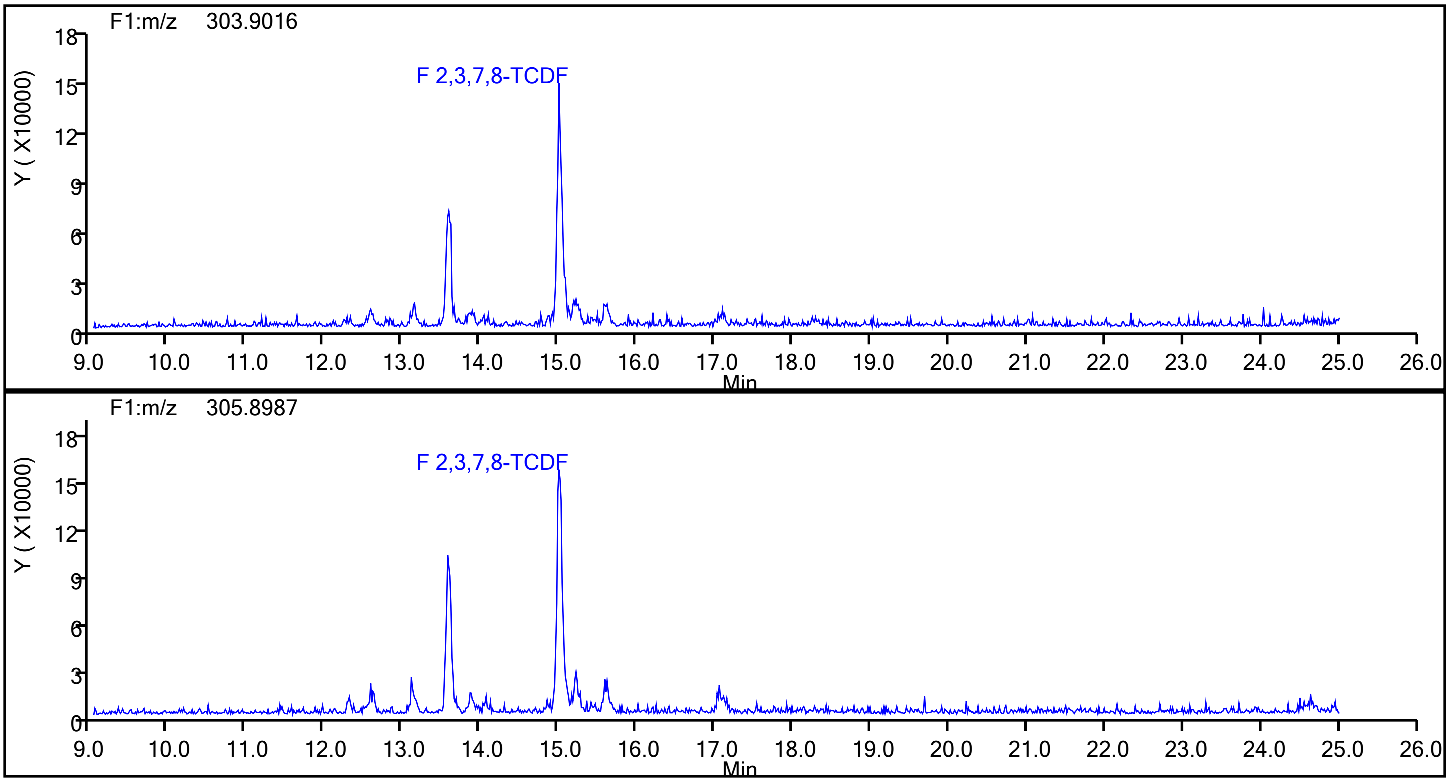

TCDF Standards

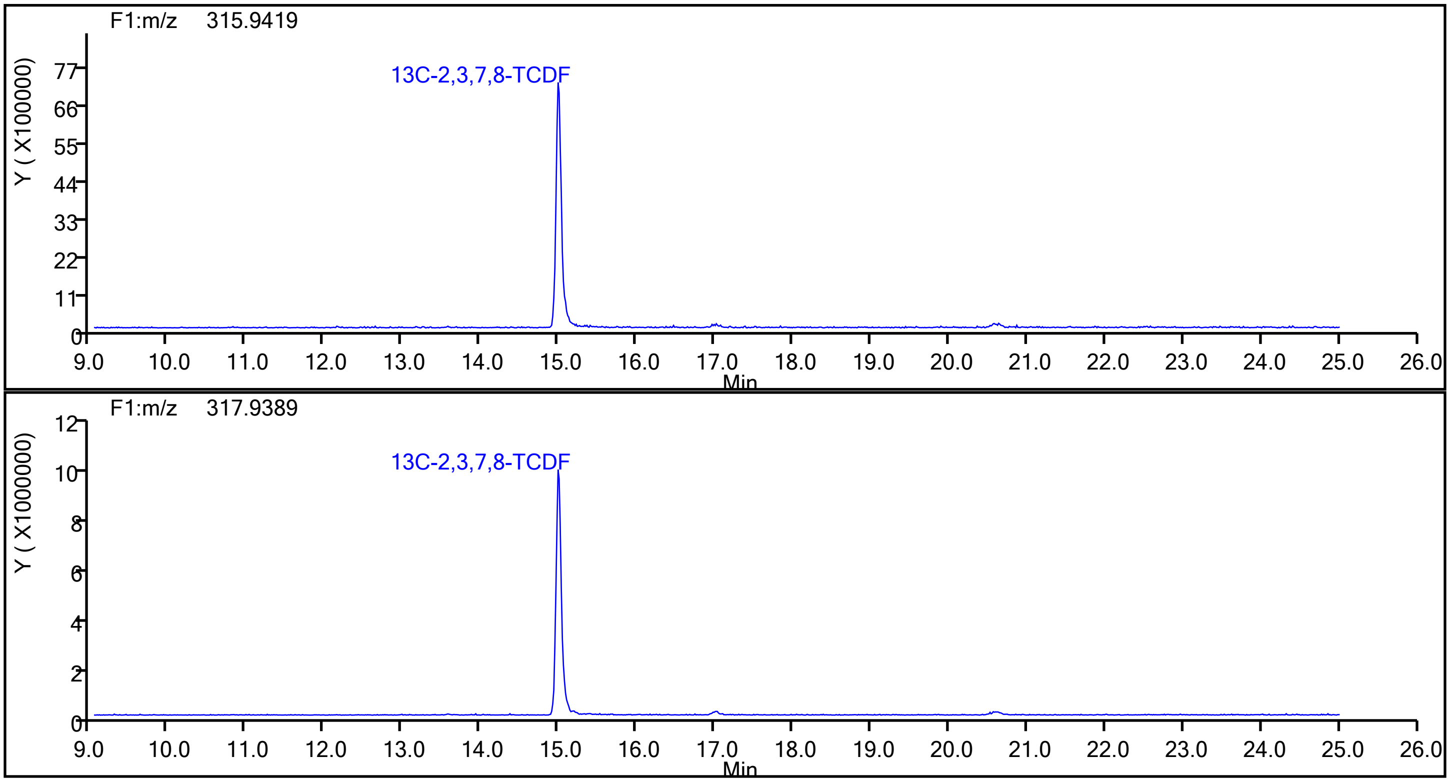

Report Date: 21-Aug-2020 11:46:41 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d		
Injection Date:	20-Aug-2020 20:44:21	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-3		
Worklist#:	405652	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

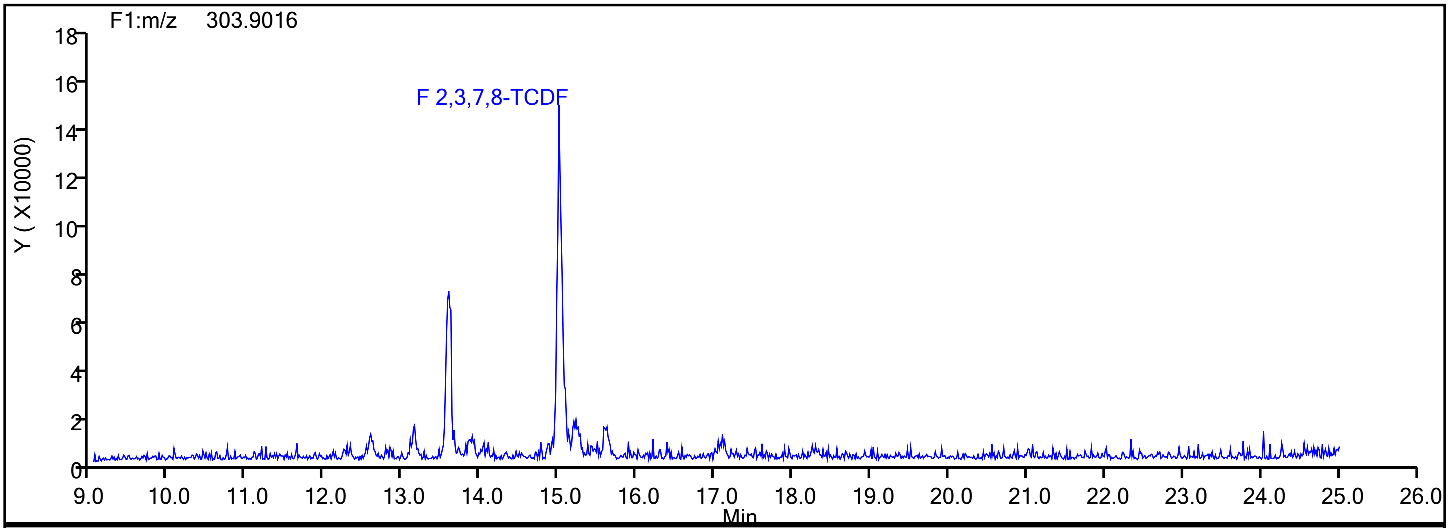

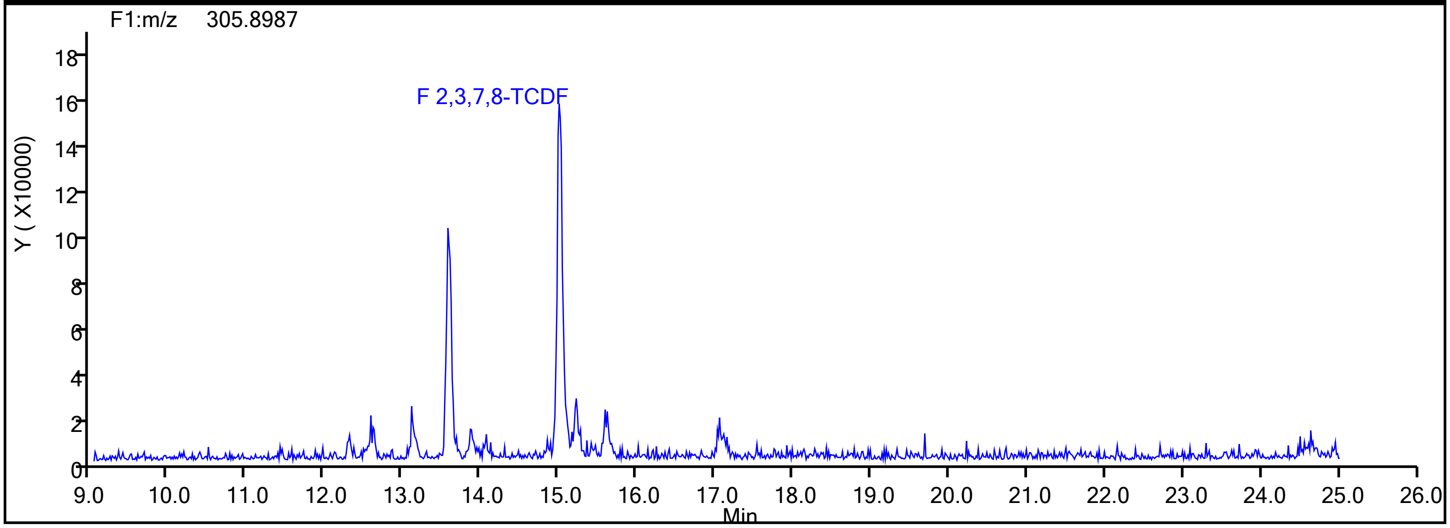

TCDF Interference Mass

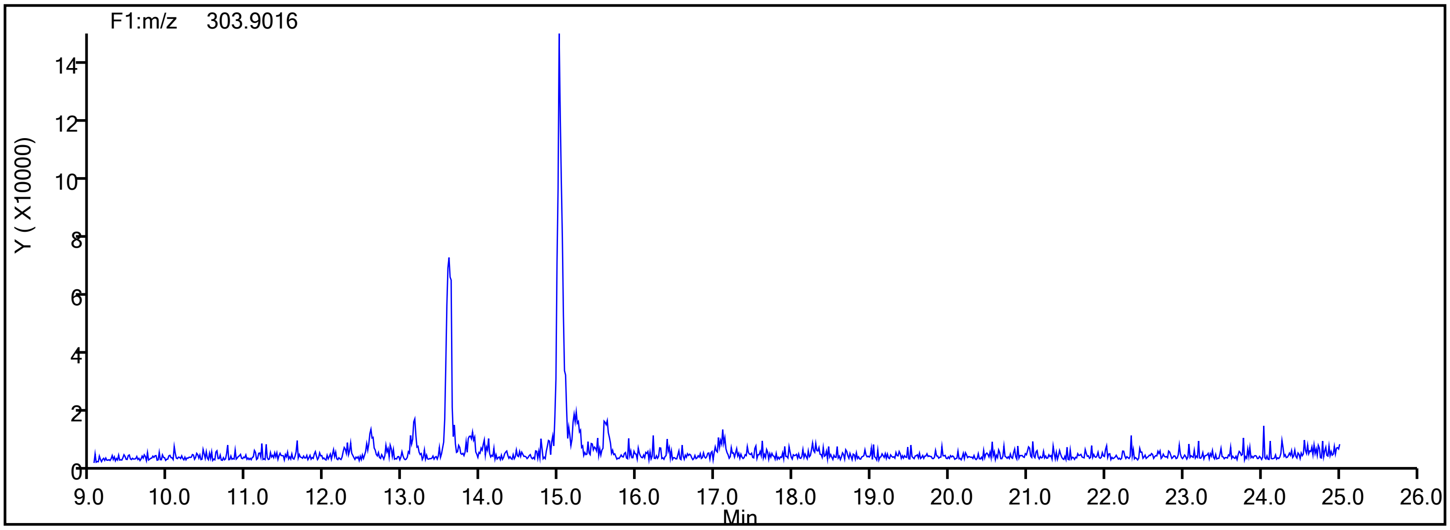

Report Date: 21-Aug-2020 11:46:41 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d

Injection Date: 20-Aug-2020 20:44:21 Injection Vol: 2.0 ul

Instrument ID: 4D2 Operator ID:

Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-3

Worklist#: 405652 Sample Line#: 8

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

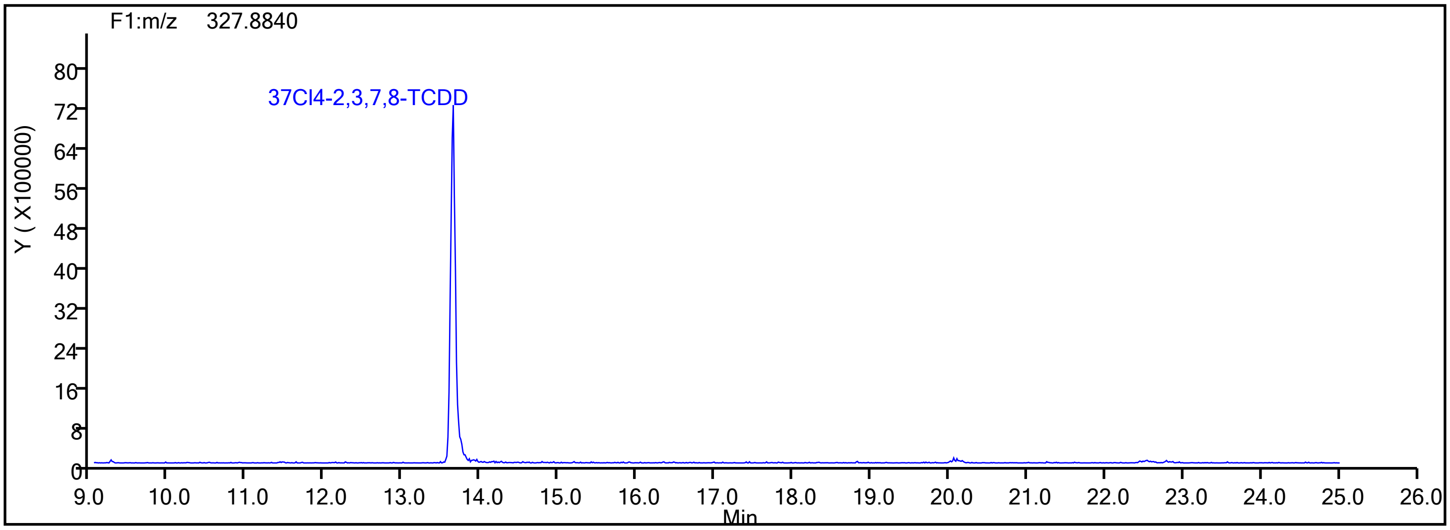

37Cl4-TCDD Standards

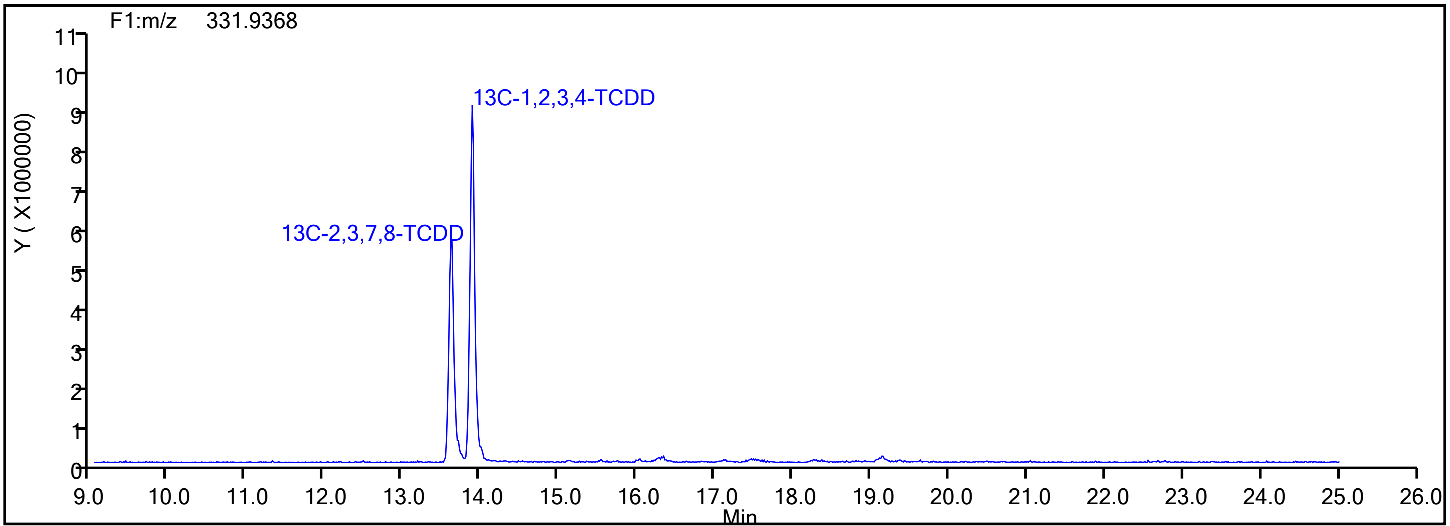

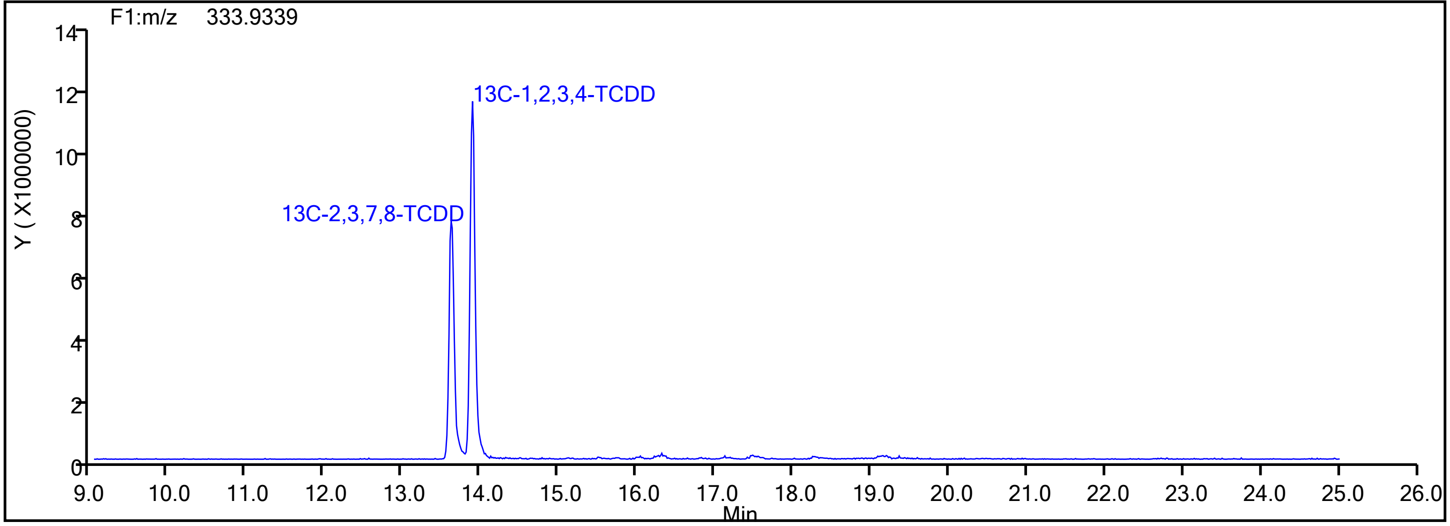

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_008.d

Injection Date: 20-Aug-2020 20:44:21 Injection Vol: 2.0 ul

Instrument ID: 4D2 Operator ID:

Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-3

Worklist#: 405652 Sample Line#: 8

Column Type: DB-225 Column Dia: 0.32 mm

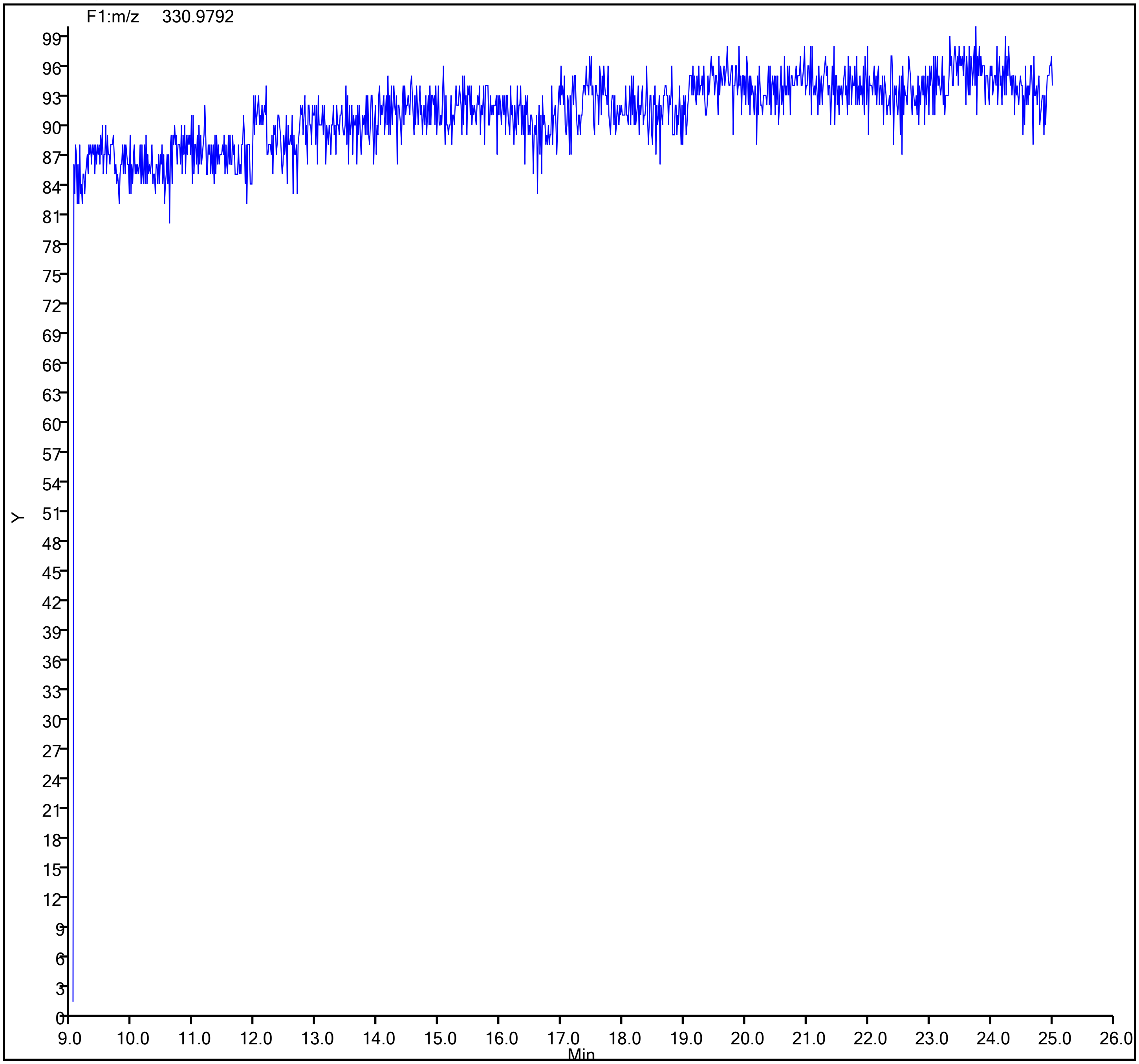

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-63525-1
SDG No.:	
Client Sample ID: 11215702-Treatment-4	Lab Sample ID: 320-63525-2
Matrix: Water	Lab File ID: 19AU2010D5_8.d
Analysis Method: 1613B	Date Collected: 08/07/2020 13:00
Extract. Method: 1613B	Date Extracted: 08/17/2020 08:45
Sample wt/vol: 1051.5(mL)	Date Analyzed: 08/19/2020 15:57
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 405028	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	13		9.5	0.99
40321-76-4	1,2,3,7,8-PeCDD	ND		48	1.4
57117-41-6	1,2,3,7,8-PeCDF	ND		48	0.90
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.78
39227-28-6	1,2,3,4,7,8-HxCDD	2.1	J	48	0.70
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.87
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.68
70648-26-9	1,2,3,4,7,8-HxCDF	ND		48	0.98
57117-44-9	1,2,3,6,7,8-HxCDF	ND		48	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.74
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.74
35822-46-9	1,2,3,4,6,7,8-HpCDD	2.1	J q	48	0.59
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.8	J B	48	0.48
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.52
3268-87-9	OCDD	19	J B	95	0.74
39001-02-0	OCDF	1.9	J q B	95	0.79
41903-57-5	Total TCDD	13		9.5	0.99
30402-14-3	Total TCDF	62	q	9.5	0.79
36088-22-9	Total PeCDD	ND		48	1.4
30402-15-4	Total PeCDF	ND		48	0.91
34465-46-8	Total HxCDD	2.1	J	48	0.75
55684-94-1	Total HxCDF	ND		48	1.1
37871-00-4	Total HpCDD	4.8	J q B	48	0.59
38998-75-3	Total HpCDF	2.8	J B	48	0.50

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Client Sample ID: 11215702-Treatment-4   Lab Sample ID: 320-63525-2

Matrix: Water   Lab File ID: 19AU2010D5_8.d

Analysis Method: 1613B   Date Collected: 08/07/2020 13:00

Extract. Method: 1613B   Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1051.5(mL)   Date Analyzed: 08/19/2020 15:57

Con. Extract Vol.: 20(uL)   Dilution Factor: 1

Injection Volume: 2(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405028   Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		25-164
89059-46-1	13C-2,3,7,8-TCDF	68		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	64		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	62		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	77		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	92		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	90		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	66		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	74		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	73		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	98		26-138
114423-97-1	13C-OCDD	89		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	99		35-197

Report Date: 21-Aug-2020 08:48:18   Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d
Lims ID: 320-63525-A-2-A
Client ID: 11215702-Treatment-4
Sample Type: Client
Inject. Date: 19-Aug-2020 15:57:50   ALS Bottle#: 8   Worklist Smp#: 8
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: 320-63525-A-2-A 320-63525-A-2-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS   Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 08:48:17   Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1023

First Level Reviewer: dadunj   Date: 21-Aug-2020 08:48:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.476	19879254	0.77	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.976	18591385	0.75	1.3726	68.1	68.1	0.1372	0.1372	68.14	
2,3,7,8-TCDF	16.992	305122	0.81	0.9104	1.803	1.803	0.0414	0.0414		
A Non-2,3,7,8-sub-TCDF	16.689	248589	0.77	0.9104	1.628	1.469	0.0414	0.7591		RQ
S Total TCDF					3.430	3.271	0.0414	0.0414		RQ
D 13C-2,3,7,8-TCDD	17.657	14146706	0.81	1.0192	69.8	69.8	0.1936	0.1936	69.82	
2,3,7,8-TCDD	17.672	100690	0.67	1.0745	0.6624	0.6624	0.0522	0.0522		
$ 37Cl4-2,3,7,8-TCDD	17.672	7993538		1.0176	39.5	39.5	0.0337	0.0337	98.79	
A Non-2,3,7,8-sub-TCDD	17.135						0.0522	0.0522		
S Total TCDD					0.6624	0.6624	0.0522	0.0522		
D 13C-1,2,3,7,8-PeCDF	21.824	14031413	1.56	1.1429	61.8	61.8	0.1633	0.1633	61.76	
1,2,3,7,8-PeCDF	21.811						0.0476	0.0476		
D 13C-2,3,4,7,8-PeCDF	23.120	21300268	1.54	1.3997	76.6	76.6	0.1333	0.1333	76.55	
2,3,4,7,8-PeCDF	23.133						0.0412	0.0412		
A F1 PeCDFs	19.555						0.0478	0.0478		
A Non-2,3,7,8-sub-PeCDF	22.583						0.0434	0.0434		
S Total PeCDF							0.0478	0.0478		
D 13C-1,2,3,7,8-PeCDD	23.829	10396610	1.58	0.8232	63.5	63.5	0.0947	0.0947	63.53	
1,2,3,7,8-PeCDD	23.816						0.0754	0.0754		
A Non-2,3,7,8-sub-PeCDD	22.772						0.0754	0.0754		
S Total PeCDD							0.0754	0.0754		
D 13C-1,2,3,4,7,8-HxCDF	29.969	13922809	0.50	1.1388	90.0	90.0	0.2548	0.2548	89.96	
1,2,3,4,7,8-HxCDF	29.942						0.0516	0.0516		
D 13C-1,2,3,6,7,8-HxCDF	30.195	9757808	0.50	1.0803	66.5	66.5	0.2686	0.2686	66.47	
1,2,3,6,7,8-HxCDF	30.209						0.0581	0.0581		
D 13C-2,3,4,6,7,8-HxCDF	31.167	9462755	0.49	0.9494	73.3	73.3	0.3057	0.3057	73.34	
2,3,4,6,7,8-HxCDF	31.153						0.0391	0.0391		
D 13C-1,2,3,7,8,9-HxCDF	32.032	8676188	0.51	0.8670	73.6	73.6	0.3347	0.3347	73.64	
1,2,3,7,8,9-HxCDF	32.032						0.0389	0.0389		
A Non-2,3,7,8-sub-HxCDF	29.689						0.0455	0.0455		
S Total HxCDF							0.0581	0.0581		

Report Date: 21-Aug-2020 08:48:18 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.845	13589709	1.23	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.366	11635212	1.24	0.9356	91.5	91.5	0.2174	0.2174	91.51	
1,2,3,4,7,8-HxCDD	31.379	10693	1.13	0.8202	0.1120	0.1120	0.0369	0.0369		
D 13C-1,2,3,6,7,8-HxCDD	31.486	8746015	1.20	1.0416	61.8	61.8	0.1953	0.1953	61.79	
1,2,3,6,7,8-HxCDD	31.379						0.0460	0.0460		U
1,2,3,7,8,9-HxCDD	31.846						0.0359	0.0359		
A Non-2,3,7,8-sub-HxCDD	30.321						0.0388	0.0388		
S Total HxCDD					0.1120	0.1120	0.0396	0.0396		
D 13C-1,2,3,4,6,7,8-HpCDF	33.542	8583624	0.42	0.7899	80.0	80.0	0.9199	0.9199	79.96	
1,2,3,4,6,7,8-HpCDF	33.554	18136	1.17	1.4527	0.1454	0.1454	0.0250	0.0250		
D 13C-1,2,3,4,7,8,9-HpCDF	34.611	12070382	0.42	0.9093	97.7	97.7	0.7992	0.7992	97.68	
1,2,3,4,7,8,9-HpCDF	34.611						0.0275	0.0275		
A Non-2,3,7,8-sub-HpCDF	34.101						0.0257	0.0257		
S Total HpCDF					0.1454	0.1454	0.0262	0.0262		
D 13C-1,2,3,4,6,7,8-HpCDD	34.332	9208242	1.04	0.7637	88.7	88.7	0.4699	0.4699	88.72	
1,2,3,4,6,7,8-HpCDD	34.344	10489	1.04	1.0540	0.1326	0.1081	0.0313	0.0313		RQM
A Non-2,3,7,8-sub-HpCDD	34.623	13874	1.09	1.0540	0.1430	0.1430	0.0313	0.1430		a
S Total HpCDD					0.2755	0.2510	0.0313	0.0313		RQ
D 13C-OCDD	36.638	15363311	0.87	0.6377	177.3	177.3	0.2823	0.2823	88.64	
OCDF	36.734	9849	0.89	1.2965	0.1101	0.0989	0.0417	0.0417		RQM
OCDD	36.650	90168	0.94	1.1499	1.021	1.021	0.0389	0.0389		M

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 21-Aug-2020 08:48:18 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d
Lims ID: 320-63525-A-2-A
Client ID: 11215702-Treatment-4
Sample Type: Client
Inject. Date: 19-Aug-2020 15:57:50 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-63525-A-2-A 320-63525-A-2-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 08:48:17 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1023

First Level Reviewer: dadunj Date: 21-Aug-2020 08:48:17

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.476	17.460	1		8660271	2212247	2566	6415	862		
333.9339	17.476	17.460	1		11218983	2831959	1415	3537	2001	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.976	16.962	1	0.971	7951542	2046974	2402	6005	852		
317.9389	16.976	16.962	1	0.971	10639843	2732396	1398	3495	1955	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.992	16.976	1	1.001	136524	33991	292	730	116		
305.8987	16.992	16.976	1	1.001	168598	39568	428	1070	92	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	15.631	16.689	-63	0.921	3842	1252	292	730	4		
305.8987	15.631	16.689	-63	0.921	7254	1591	428	1070	4	0.53(0.65-0.89)	
	Empc Correction				4989	1625	428	1070	4		
303.9016	15.888	16.689	-48	0.936	4926	1427	292	730	5		
305.8987	15.888	16.689	-48	0.936	9329	2078	428	1070	5	0.53(0.65-0.89)	
	Empc Correction				6397	1853	428	1070	4		
303.9016	16.115	16.689	-34	0.949	8376	1809	292	730	6		
305.8987	16.100	16.689	-35	0.948	11383	2819	428	1070	7	0.74(0.65-0.89)	
303.9016	16.341	16.689	-21	0.963	11418	1794	292	730	6		
305.8987	16.341	16.689	-21	0.963	16654	2668	428	1070	6	0.69(0.65-0.89)	
303.9016	16.629	16.689	-4	0.980	55895	14467	292	730	50		
305.8987	16.629	16.689	-4	0.980	88079	20479	428	1070	48	0.63(0.65-0.89)	
	Empc Correction				72590	18788	428	1070	44		
303.9016	17.400	16.689	43	1.025	9603	2792	292	730	10		
305.8987	17.415	16.689	43	1.026	18694	3927	428	1070	9	0.51(0.65-0.89)	
	Empc Correction				12471	3625	428	1070	8		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	18.761	16.689	124	1.105	14079	2397	292	730	8		
305.8987	18.761	16.689	124	1.105	15966	3073	428	1070	7	0.88(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.657	17.642	1	1.010	6317082	1518855	2566	6415	592		
333.9339	17.657	17.642	1	1.010	7829624	1922930	1415	3537	1359	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.672	17.657	1	1.001	40505	9731	477	1192	20		
321.8936	17.672	17.657	1	1.001	60185	13781	295	737	47	0.67(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.672	17.657	1	1.011	7993538	1894812	693	1732	2734		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						477	1192			
321.8936	17.135						295	737			
13C-1,2,3,7,8-PeCDF											
351.9000	21.824	21.797	2	1.249	8547450	1560801	2312	5780	675		
353.8970	21.824	21.797	2	1.249	5483963	978038	1454	3635	673	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.811						185	462			
341.8567	21.811						295	737			
13C-2,3,4,7,8-PeCDF											
351.9000	23.120	23.093	2	1.323	12917754	2159342	2312	5780	934		
353.8970	23.120	23.093	2	1.323	8382514	1432806	1454	3635	985	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.106						185	462			
341.8567	23.106						295	737			
A F1 PeCDFs											
339.8597	19.555						184	460			
341.8567	19.555						345	862			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.583						185	462			
341.8567	22.583						295	737			
13C-1,2,3,7,8-PeCDD											
367.8949	23.829	23.774	3	1.364	6370442	998380	903	2257	1106		
369.8919	23.829	23.774	3	1.364	4026168	609363	670	1675	909	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.816						228	570			
357.8516	23.816						266	665			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.772						228	570			
357.8516	22.772						266	665			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.969	29.916	3	0.941	4615580	692379	1545	3862	448		
385.8610	29.969	29.916	3	0.941	9307229	1385267	2314	5785	599	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.942						213	532			
375.8178	29.942						133	332			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.195	30.155	2	0.948	3259912	502554	1545	3862	325		
385.8610	30.195	30.155	2	0.948	6497896	1013984	2314	5785	438	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.182						213	532			
375.8178	30.182						133	332			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.167	31.127	2	0.979	3118767	714242	1545	3862	462		
385.8610	31.167	31.127	2	0.979	6343988	1414538	2314	5785	611	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.153						213	532			
375.8178	31.153						133	332			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.032	32.019	1	1.006	2920092	731426	1545	3862	473		
385.8610	32.032	32.019	1	1.006	5756096	1425517	2314	5785	616	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.032						213	532			
375.8178	32.032						133	332			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.689						213	532			
375.8178	29.689						133	332			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.845	31.832	1		7483532	1830019	1407	3517	1301		
403.8529	31.845	31.832	1		6106177	1494142	1298	3245	1151	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.366	31.353	1	0.985	6439023	1594190	1407	3517	1133		
403.8529	31.366	31.353	1	0.985	5196189	1286224	1298	3245	991	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.379	31.366	1	1.000	5684	1653	181	452	9		
391.8127	31.406	31.366	2	1.001	5009	1005	168	420	6	1.13(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.486	31.473	1	0.989	4774169	1117036	1407	3517	794		
403.8529	31.486	31.473	1	0.989	3971846	906682	1298	3245	699	1.20(1.05-1.43)	
1,2,3,6,7,8-HxCDD											U
389.8157	31.486						181	452			
391.8127	31.486						168	420			
1,2,3,7,8,9-HxCDD											
389.8157	31.846						181	452			
391.8127	31.846						168	420			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.321						181	452			
391.8127	30.321						168	420			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.542	33.530	1	1.053	2540035	867831	3186	7965	272		
419.8220	33.542	33.530	1	1.053	6043589	2068345	6476	16190	319	0.42(0.37-0.51)	

Report Date: 21-Aug-2020 08:48:18 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDF											
407.7818	33.554	33.542	1	1.000	9768	3482	282	705	12		
409.7789	33.566	33.542	1	1.001	8368	3114	145	362	21	1.17(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.611	34.599	1	1.087	3546050	1076075	3186	7965	338		
419.8220	34.611	34.599	1	1.087	8524332	2593809	6476	16190	401	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.611						282	705			
409.7789	34.611						145	362			
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.101						282	705			
409.7789	34.101						145	362			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.332	34.320	1	1.078	4698265	1457933	2641	6602	552		
437.8140	34.332	34.320	1	1.078	4509977	1445526	2131	5327	678	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											RQM
423.7766	34.344	34.332	1	1.000	7725	2281	214	535	11		
	Empc Correction				5347	1730	214	535	8		
425.7737	34.344	34.332	1	1.000	5142	1664	169	422	10	1.50(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											a
423.7766	33.797	34.623	-49	0.984	7223	2262	214	535	11		a
425.7737	33.797	34.623	-49	0.984	6651	1990	169	422	12	1.09(0.88-1.20)	
13C-OCDD											
469.7779	36.638	36.626	1	1.151	7139462	1943337	1278	3195	1521		
471.7750	36.638	36.626	1	1.151	8223849	2222350	1116	2790	1991	0.87(0.76-1.02)	
OCDF											RQM
441.7428	36.734	36.722	1	1.003	4638	1401	172	430	8		M
443.7399	36.734	36.722	1	1.003	6322	1685	279	697	6	0.73(0.76-1.02)	M
	Empc Correction				5211	1574	279	697	6		
OCDD											M
457.7377	36.650	36.638	1	1.000	43721	13394	190	475	70		M
459.7348	36.650	36.638	1	1.000	46447	12496	183	457	68	0.94(0.76-1.02)	M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
Lims ID:	320-63525-A-2-A		
Client ID:	11215702-Treatment-4		
Inject. Date:	19-Aug-2020 15:57:50	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA/AJS
Lims Batch ID:	405028	Lims Sample ID:	8

Non-2,3,7,8-sub-TCDF, RT: 16.689

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.910	D 13C-2,3,7,8-TCDF	100.000	18591385	4779370

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.910		100.000	18591385	4779370

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.631	3842	1252	7254	1591	0.0656	0.53	RQ
15.631	3842	1252	4989	1625	0.0522		Empc Correction
15.888	4926	1427	9329	2078	0.0842	0.53	RQ
15.888	4926	1427	6397	1853	0.0669		Empc Correction
16.115	8376	1809	11383	2819	0.1167	0.74	
16.341	11418	1794	16654	2668	0.1659	0.69	
16.629	55895	14467	88079	20479	0.8506	0.63	RQ
16.629	55895	14467	72590	18788	0.7591		Empc Correction
17.400	9603	2792	18694	3927	0.1672	0.51	RQ
17.400	9603	2792	12471	3625	0.1304		Empc Correction
18.761	14079	2397	15966	3073	0.1775	0.88	
Signal Totals:							
	108139	25938	140450	34451			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	275498	62573				0.65	RQ
	248589	60389					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.628 = (275498 * 100.000) / (18591385 * 0.910)
Empc Amount: 1.469 = (248589 * 100.000) / (18591385 * 0.910)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d
Lims ID: 320-63525-A-2-A
Client ID: 11215702-Treatment-4
Inject. Date: 19-Aug-2020 15:57:50
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: SMA/AJS
Lims Batch ID: 405028
Lims Sample ID: 8

Non-2,3,7,8-sub-HpCDD, RT: 34.623

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.054	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	9208242	2903459

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.054		100.000	9208242	2903459

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.797	7223	2262	6651	1990	0.1430	1.09	a
Signal Totals:							
	7223	2262	6651	1990			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13874	4252				1.09	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1430 = (13874 * 100.000) / (9208242 * 1.054)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 21-Aug-2020 08:48:18 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d

Injection Date:	19-Aug-2020 15:57:50	Instrument ID:	10D5
Lims ID:	320-63525-A-2-A	Lab Sample ID:	320-63525-2
Client ID:	11215702-Treatment-4		
Operator ID:	SMA/AJS	ALS Bottle#:	8 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT:	34.34
Area:	5710
Amount:	0.138433
Amount Units:	pg/ul

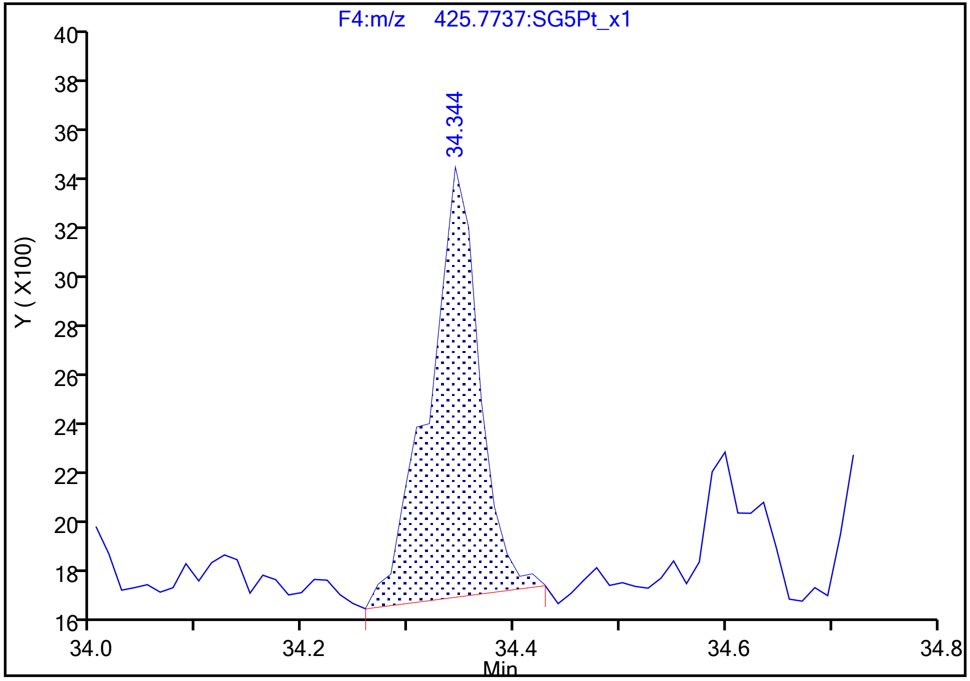

Manual Integration Results

RT:	34.34
Area:	5142
Amount:	0.132581
Amount Units:	pg/ul

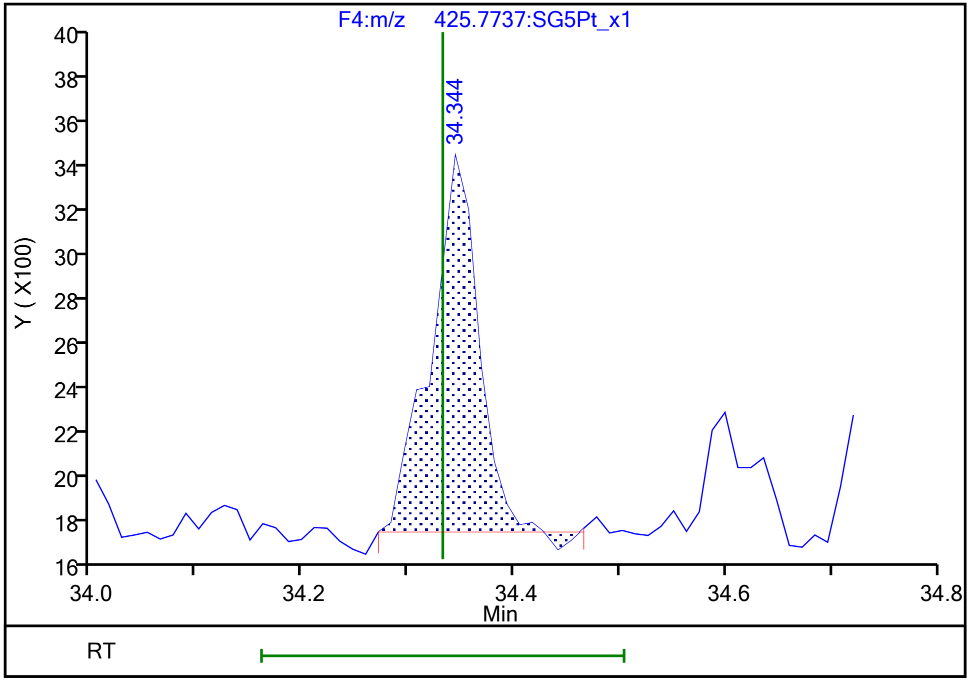

Reviewer: dadunj, 21-Aug-2020 08:47:10

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d

Injection Date:	19-Aug-2020 15:57:50	Instrument ID:	10D5		
Lims ID:	320-63525-A-2-A	Lab Sample ID:	320-63525-2		
Client ID:	11215702-Treatment-4				
Operator ID:	SMA/AJS	ALS Bottle#:	8	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 1

RT:	36.73
Area:	4723
Amount:	0.125365
Amount Units:	pg/ul

Processing Integration Results

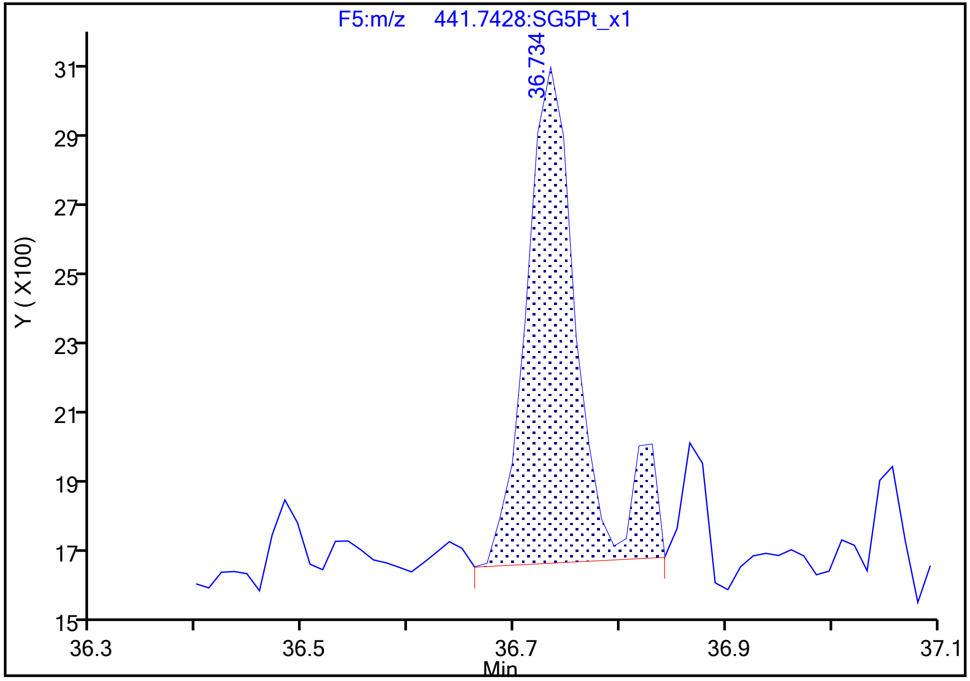

RT:	36.73
Area:	4638
Amount:	0.110052
Amount Units:	pg/ul

Manual Integration Results

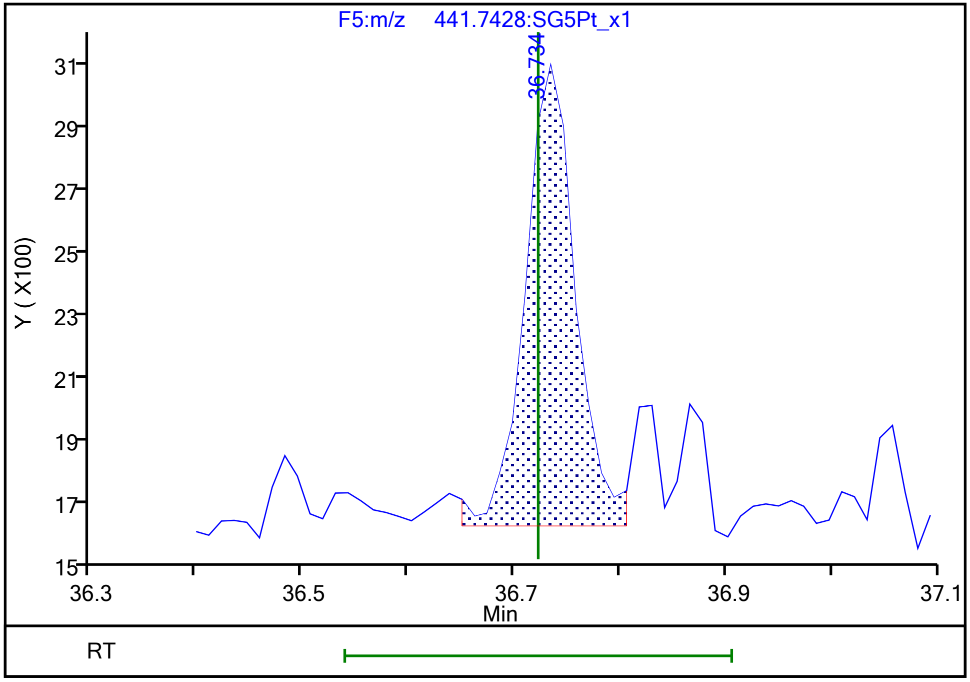

Reviewer: dadunj, 21-Aug-2020 08:47:35

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d
Injection Date: 19-Aug-2020 15:57:50
Instrument ID: 10D5
Lims ID: 320-63525-A-2-A
Lab Sample ID: 320-63525-2
Client ID: 11215702-Treatment-4
Operator ID: SMA/AJS
ALS Bottle#: 8
Worklist Smp#: 8
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 2

RT: 36.73
Area: 7762
Amount: 0.125365
Amount Units: pg/ul

Processing Integration Results

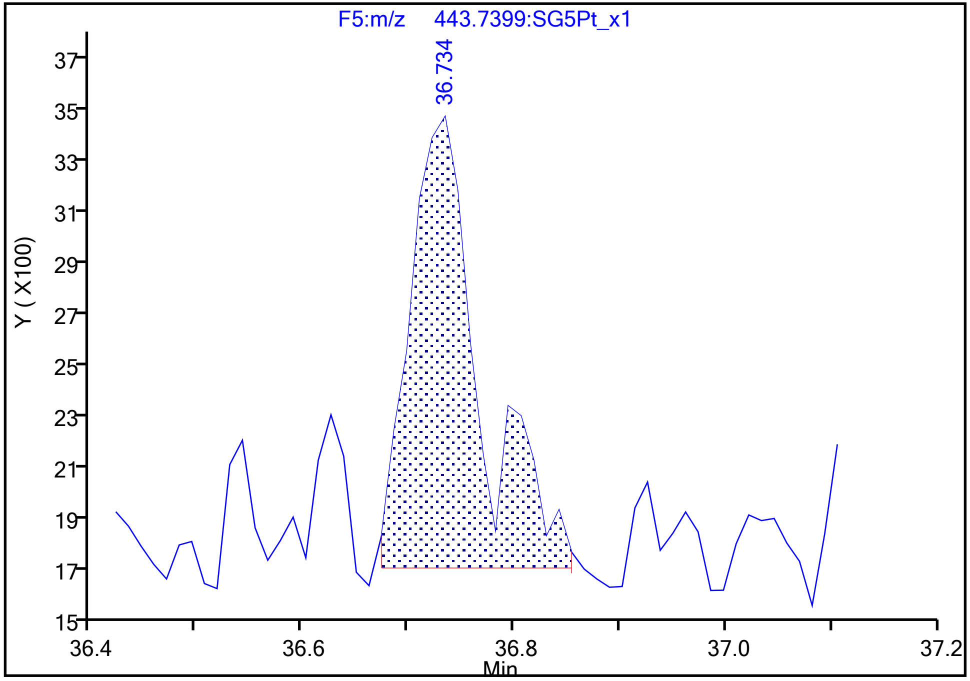

RT: 36.73
Area: 6322
Amount: 0.110052
Amount Units: pg/ul

Manual Integration Results

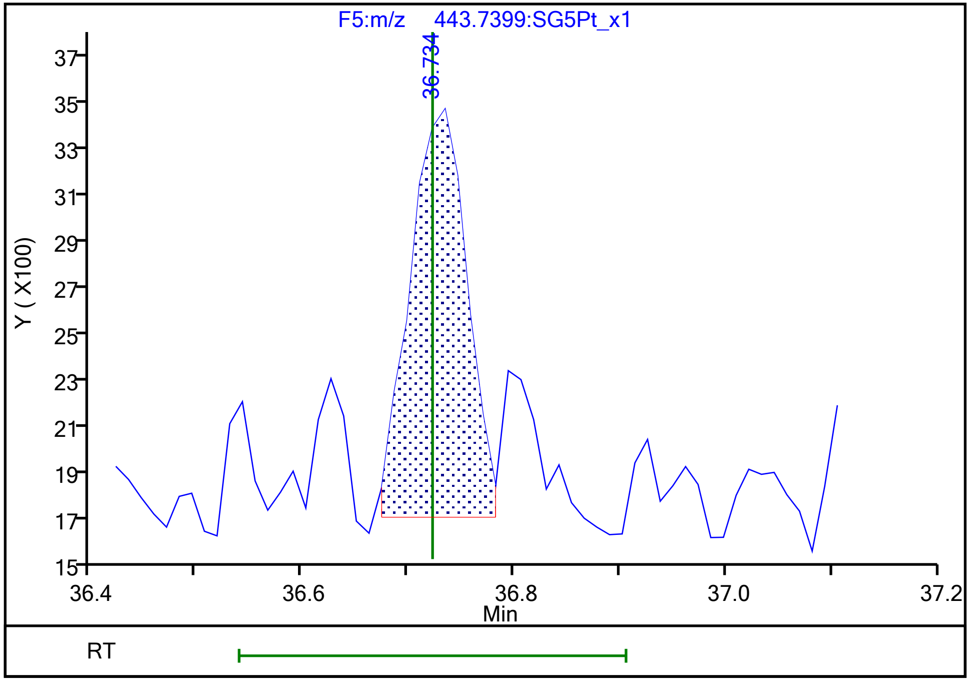

Reviewer: dadunj, 21-Aug-2020 08:47:37
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d				
Injection Date:	19-Aug-2020 15:57:50	Instrument ID:	10D5		
Lims ID:	320-63525-A-2-A	Lab Sample ID:	320-63525-2		
Client ID:	11215702-Treatment-4				
Operator ID:	SMA/AJS	ALS Bottle#:	8	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT: 36.65
Area: 53178
Amount: 1.143138
Amount Units: pg/ul

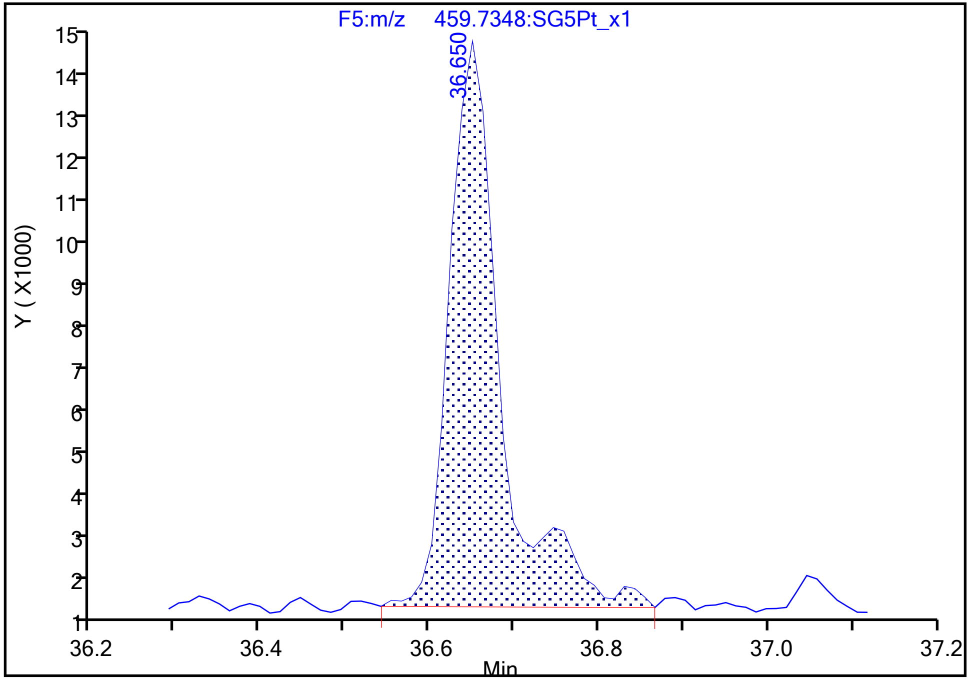

Manual Integration Results

RT: 36.65
Area: 46447
Amount: 1.020792
Amount Units: pg/ul

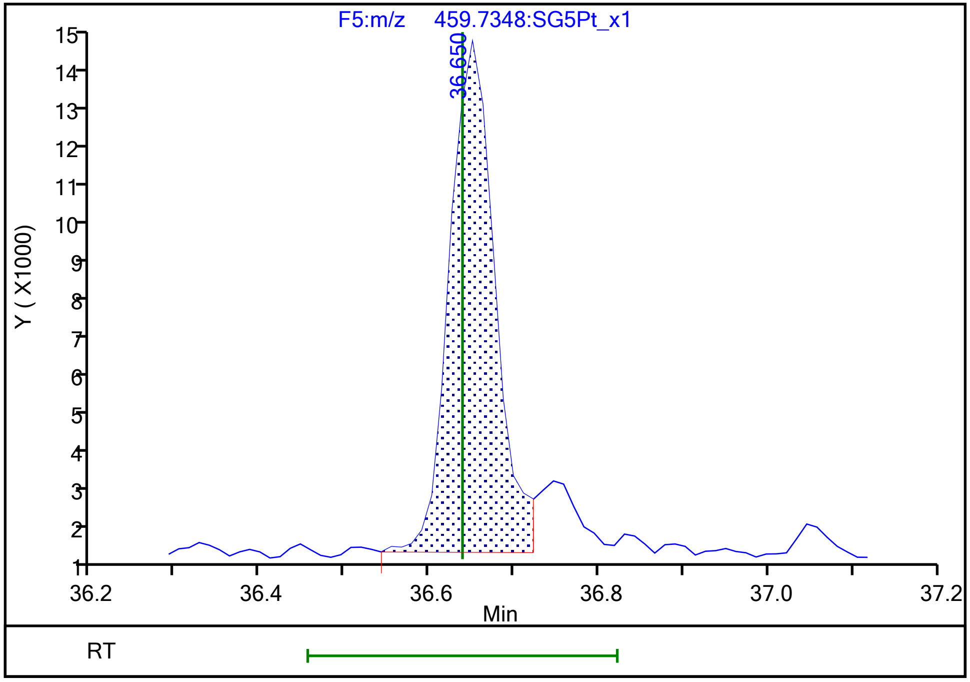

Reviewer: dadunj, 21-Aug-2020 08:47:42

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d
Injection Date: 19-Aug-2020 15:57:50
Instrument ID: 10D5
Lims ID: 320-63525-A-2-A
Lab Sample ID: 320-63525-2
Client ID: 11215702-Treatment-4
Operator ID: SMA/AJS
ALS Bottle#: 8
Worklist Smp#: 8
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5:HRSIR

OCDD, CAS: 3268-87-9

Signal: 1

RT: 36.65
Area: 47797
Amount: 1.143138
Amount Units: pg/ul

Processing Integration Results

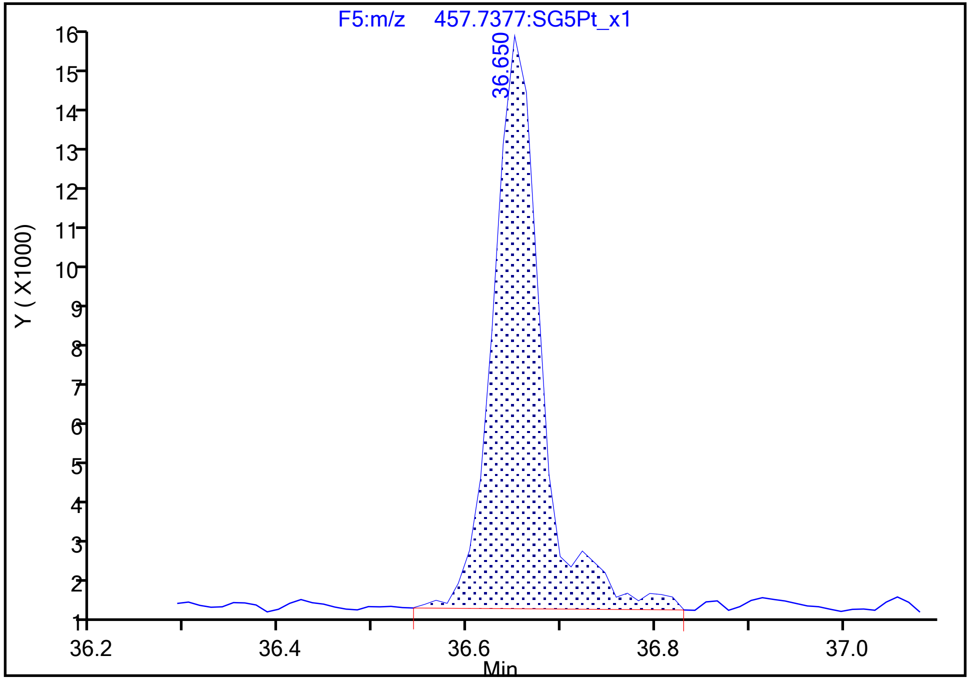

RT: 36.65
Area: 43721
Amount: 1.020792
Amount Units: pg/ul

Manual Integration Results

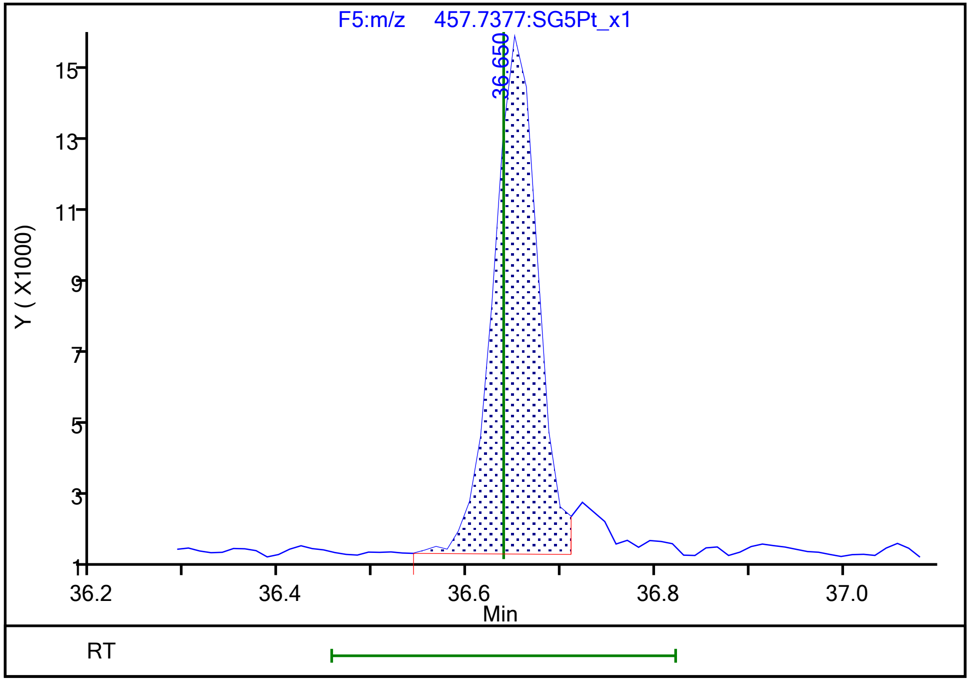

Reviewer: dadunj, 21-Aug-2020 08:47:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
Injection Date:	19-Aug-2020 15:57:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

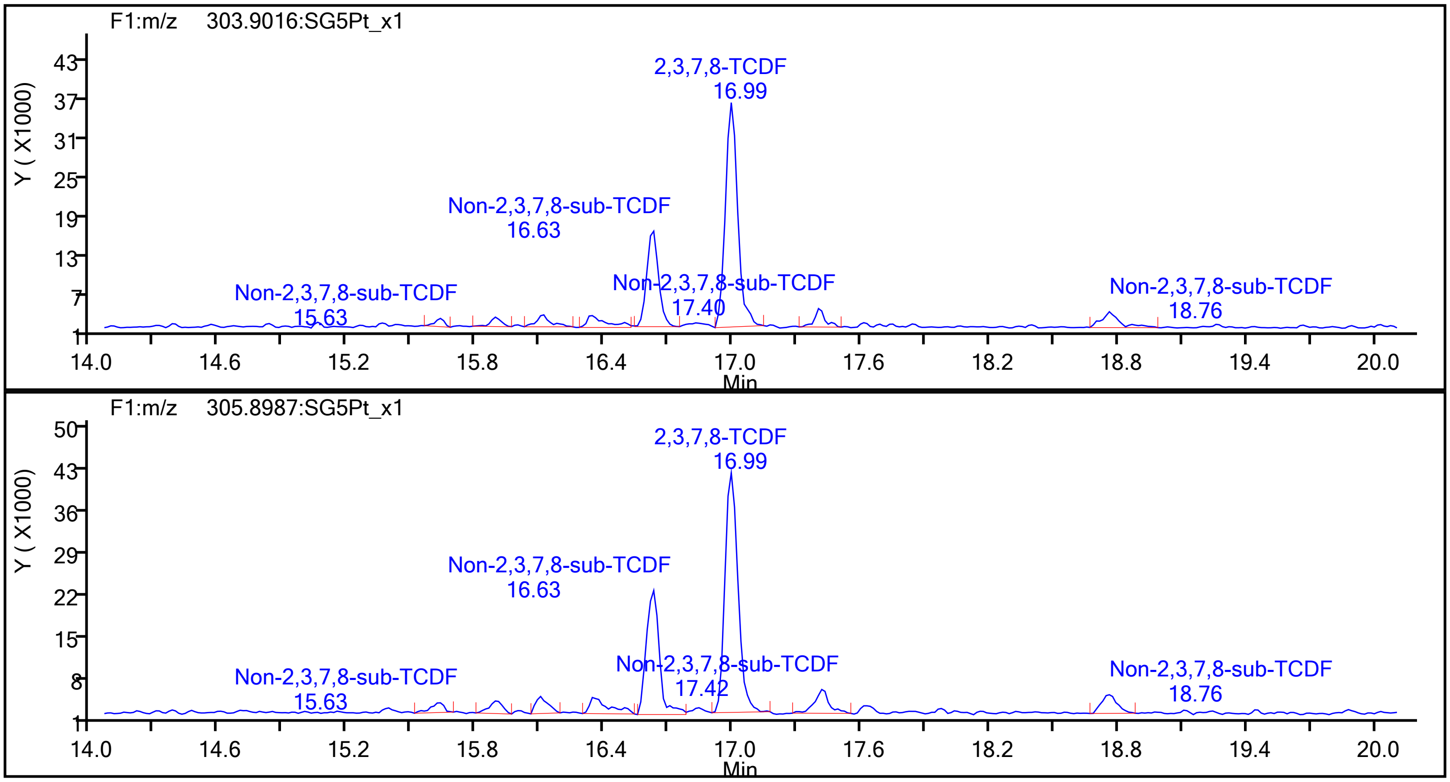

TCDF Standards

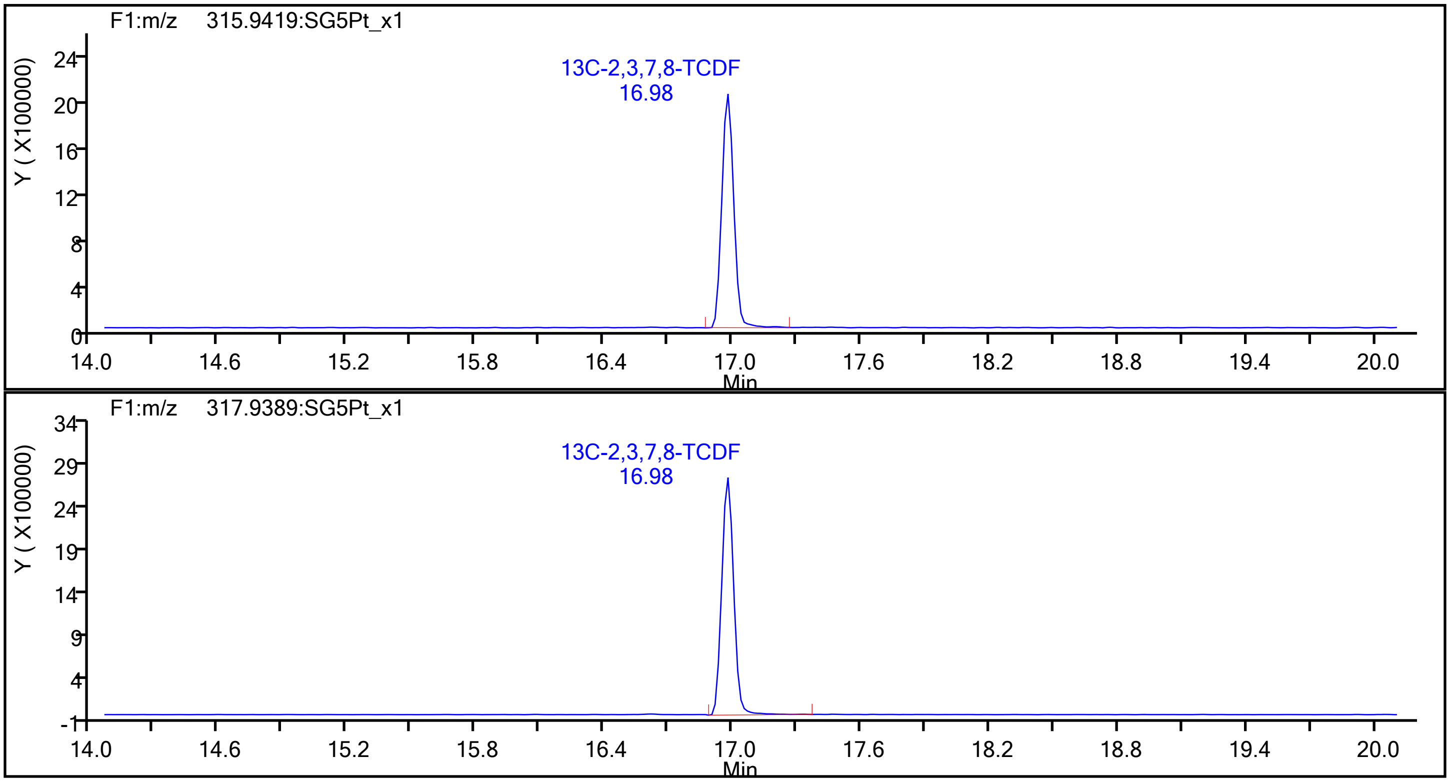

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
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Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

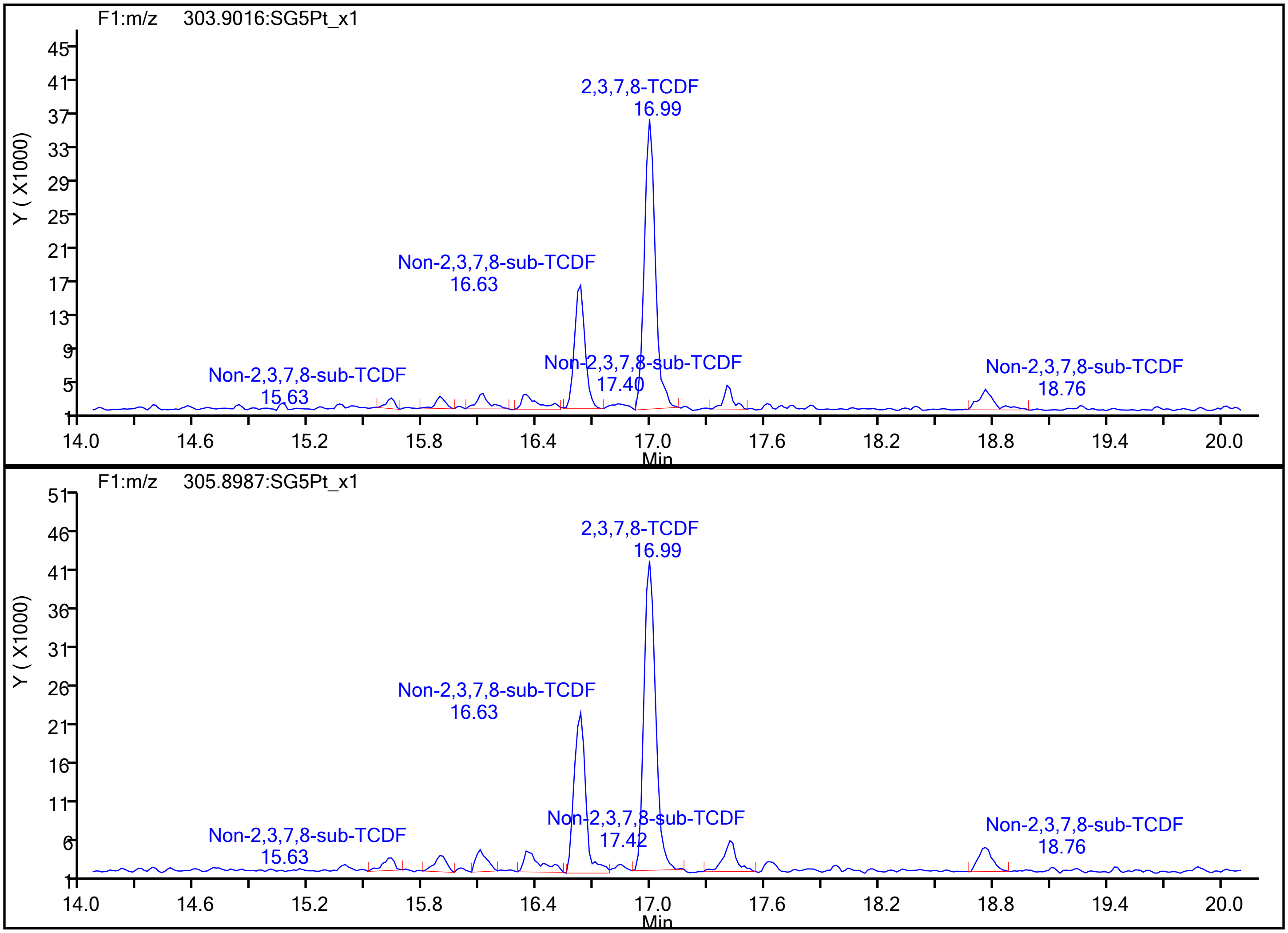

TCDF Interference Mass

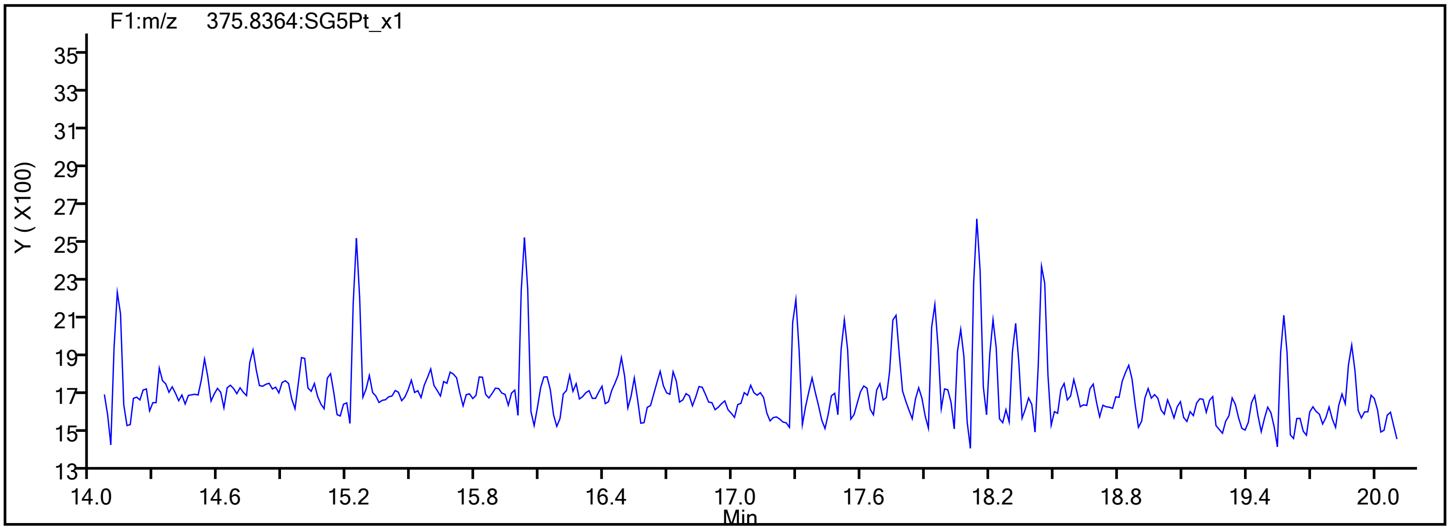

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
Injection Date:	19-Aug-2020 15:57:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

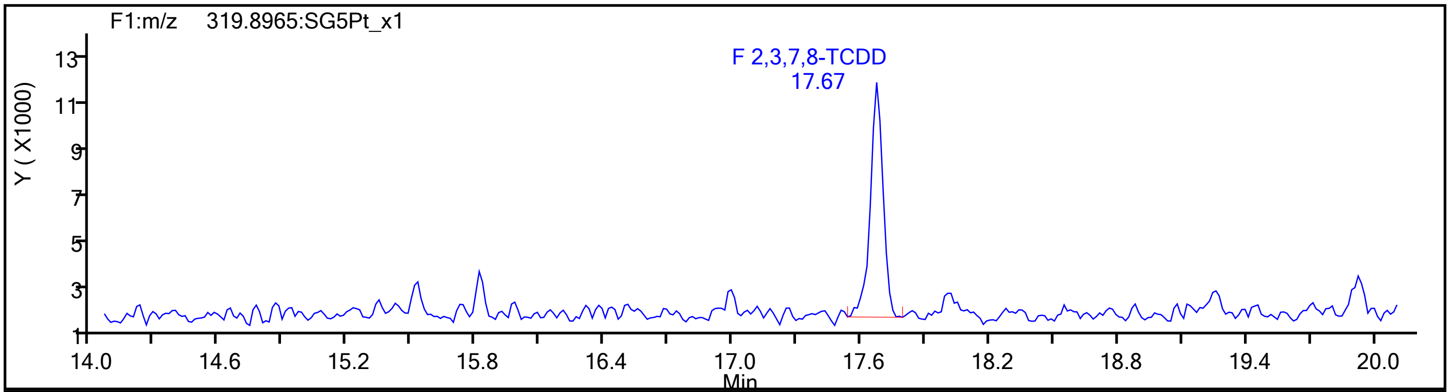

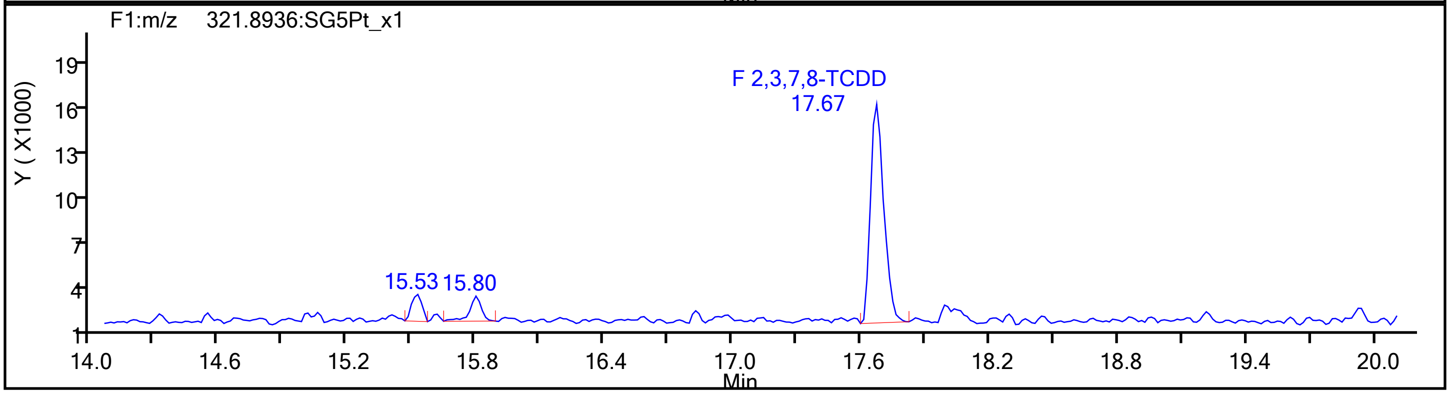

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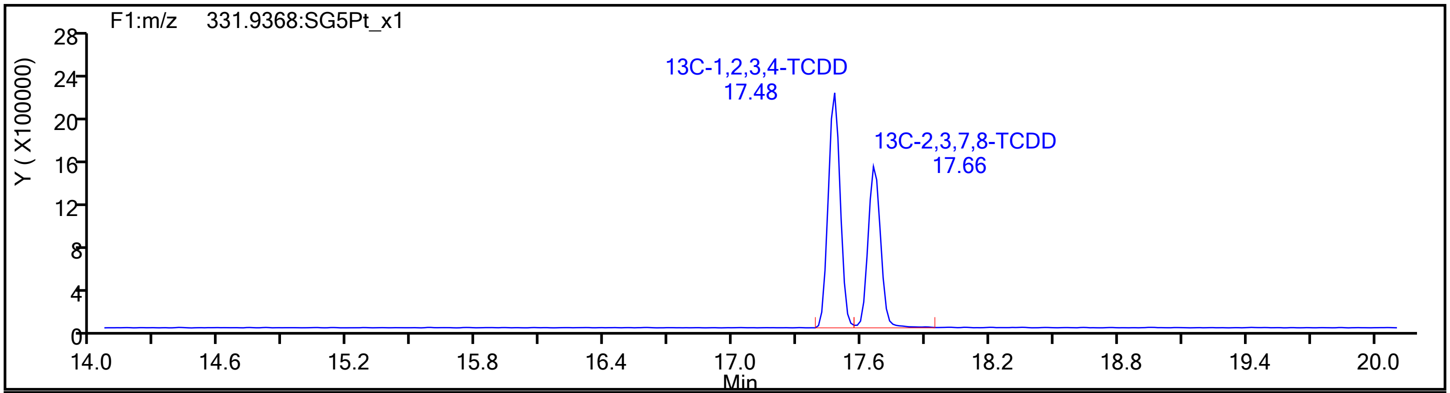

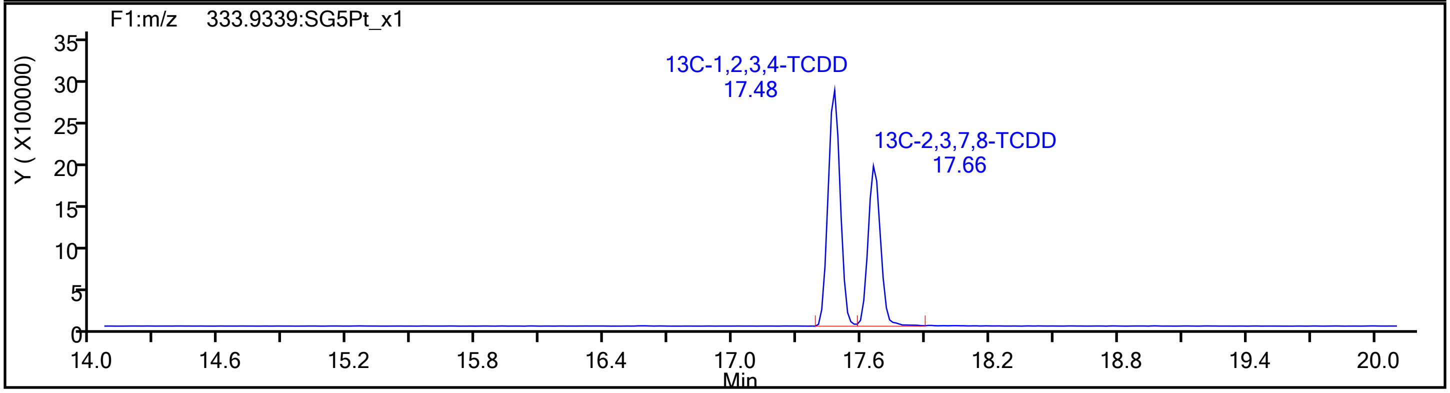

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-4
Worklist#: 405028 Sample Line#: 8
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

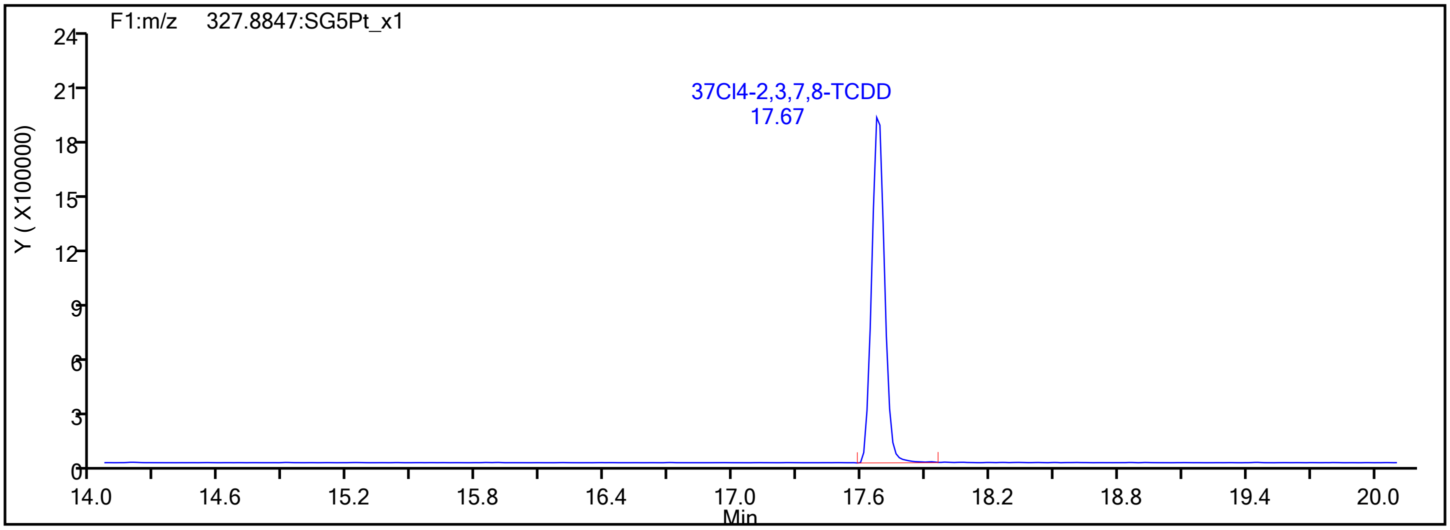

37Cl4-TCDD Standards

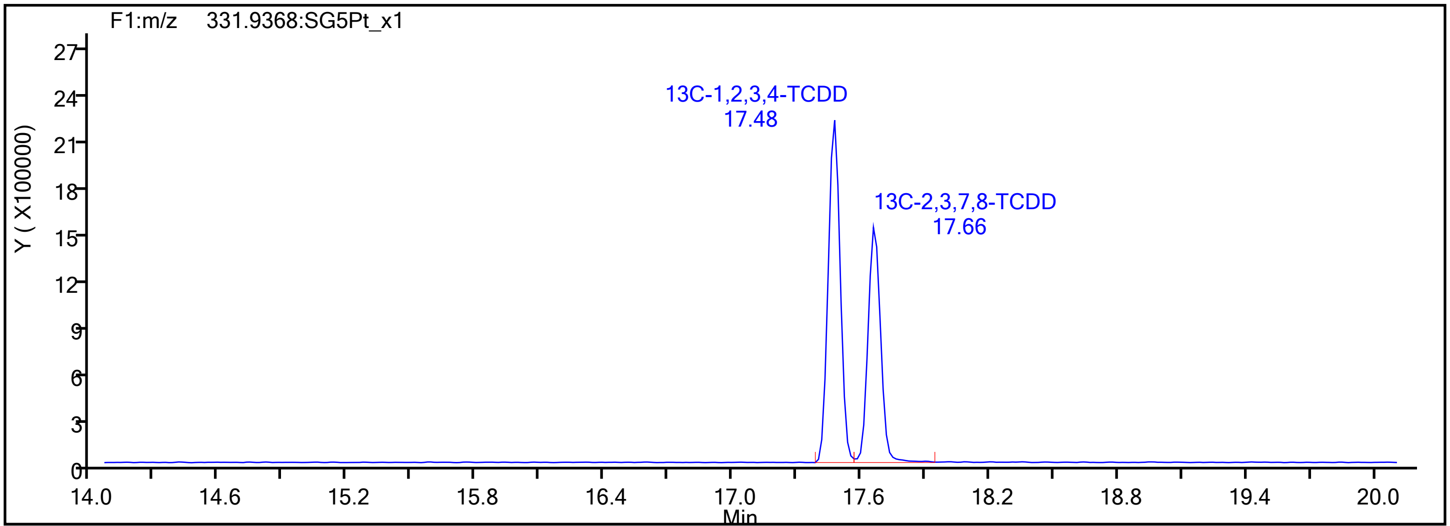

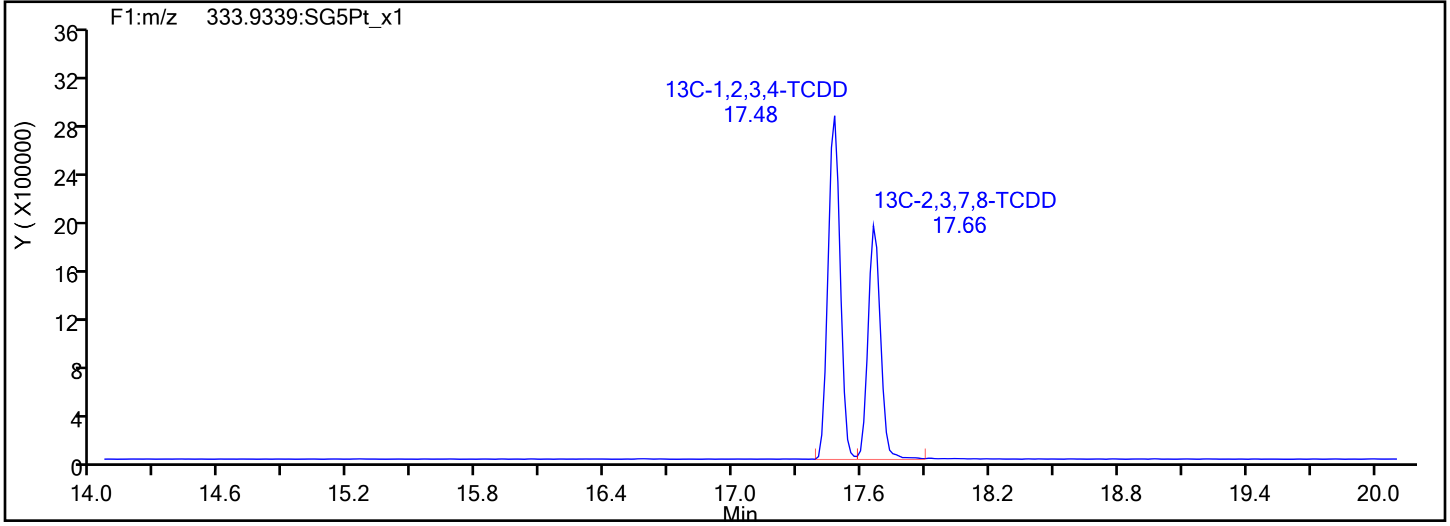

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Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-4

Worklist#: 405028 Sample Line#: 8

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

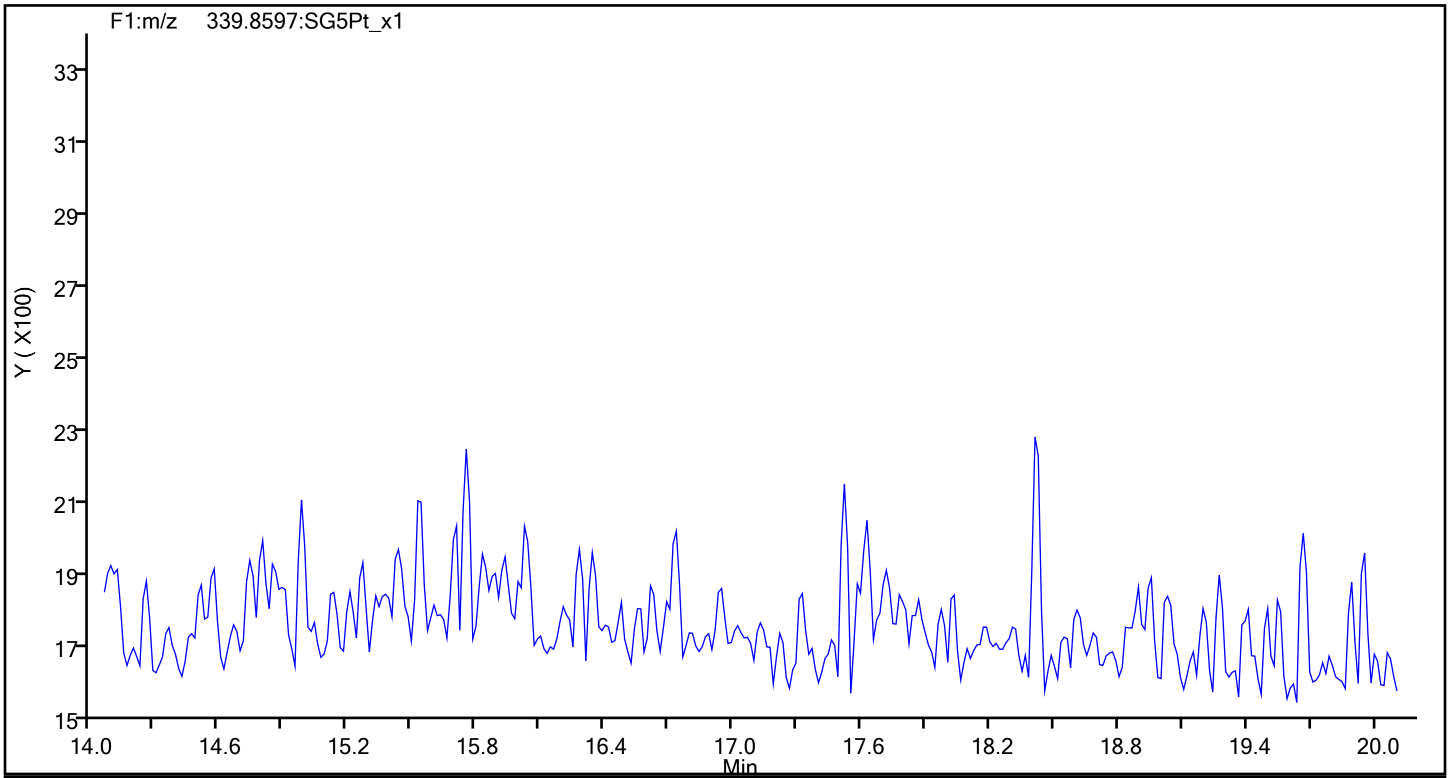

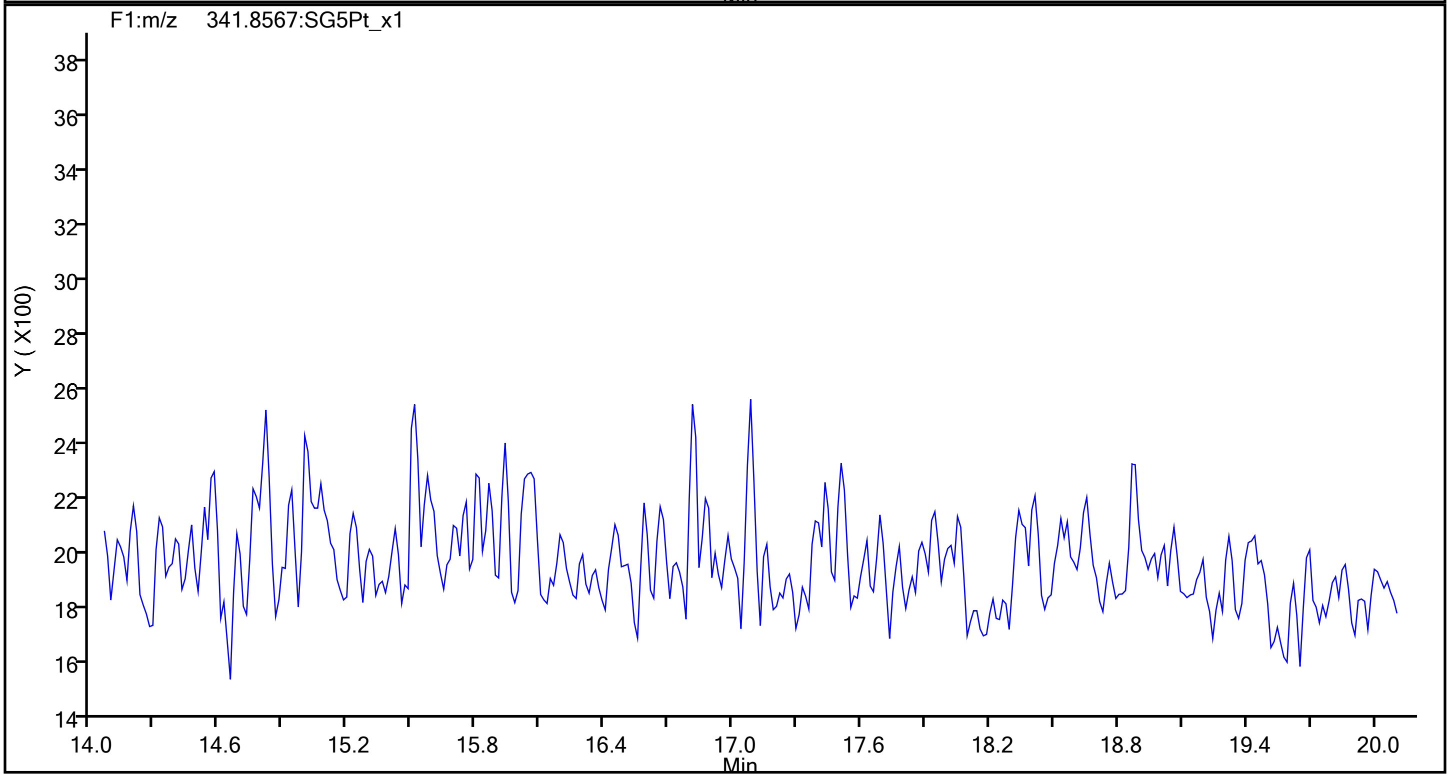

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Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA/AJS

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-4

Worklist#: 405028
Sample Line#: 8

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

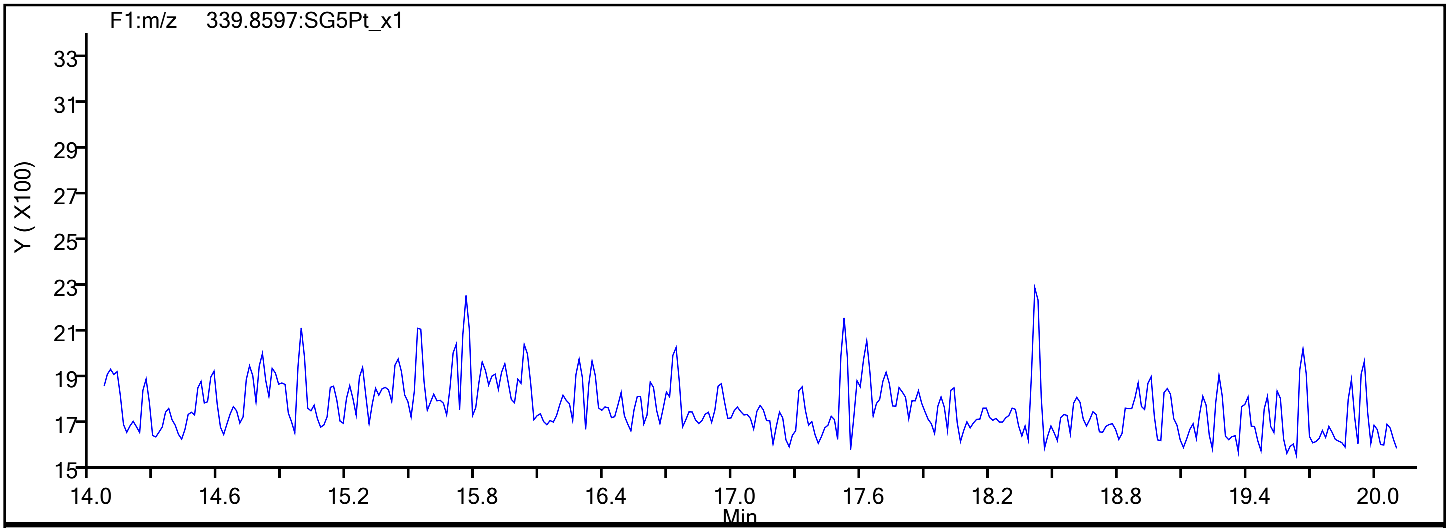

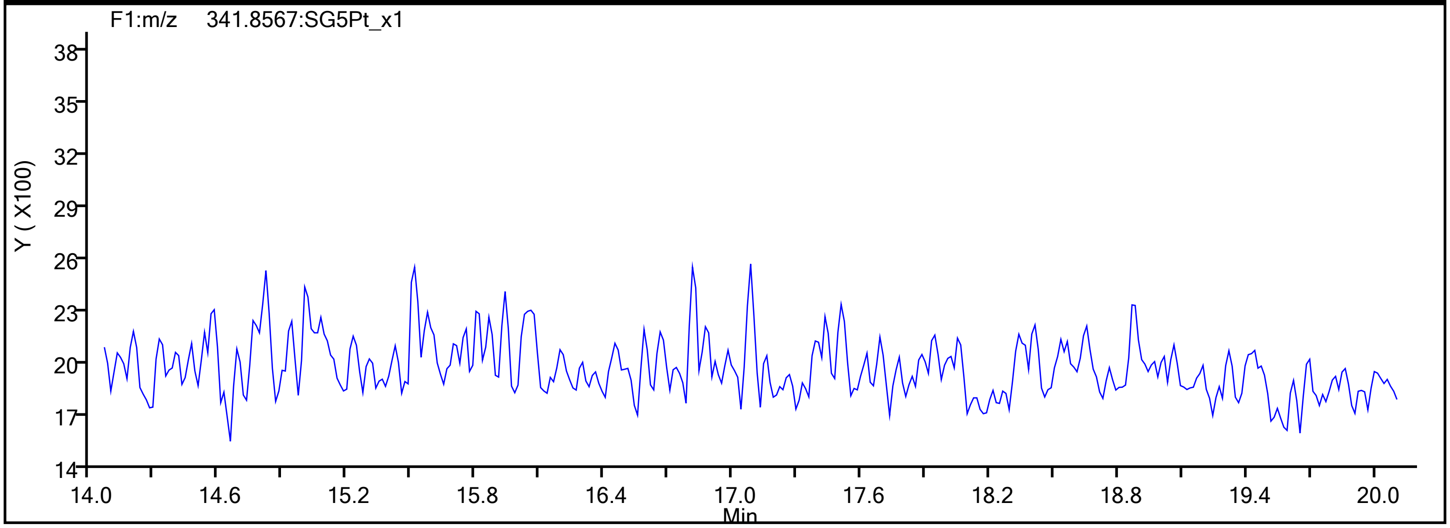

F1 PeCDFs Interference Mass

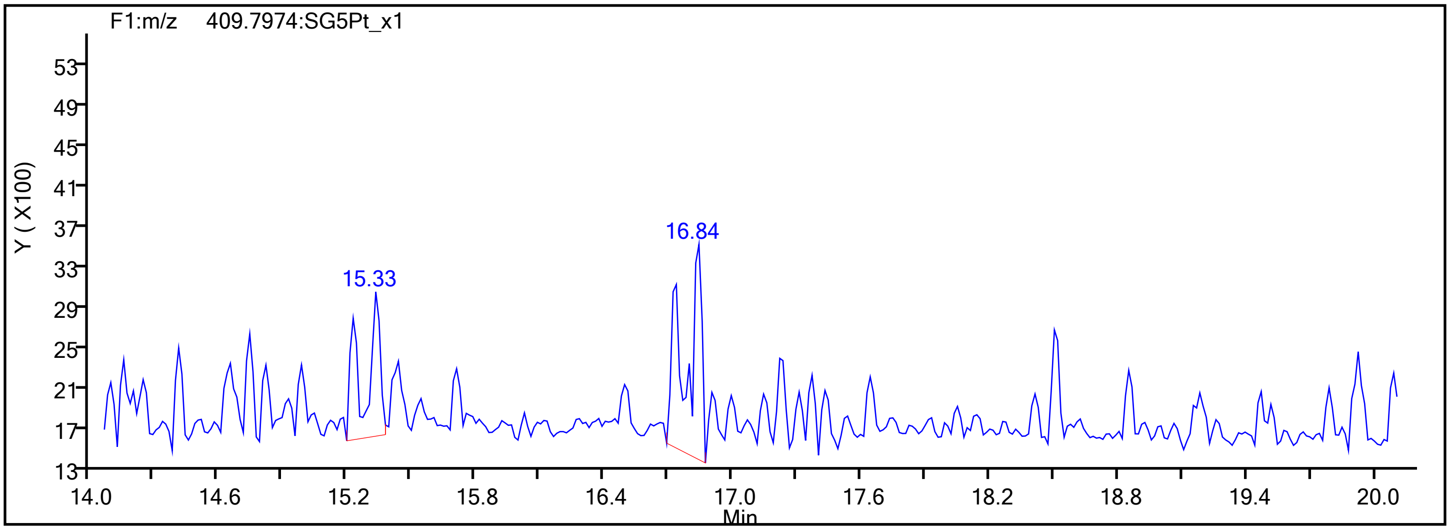

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

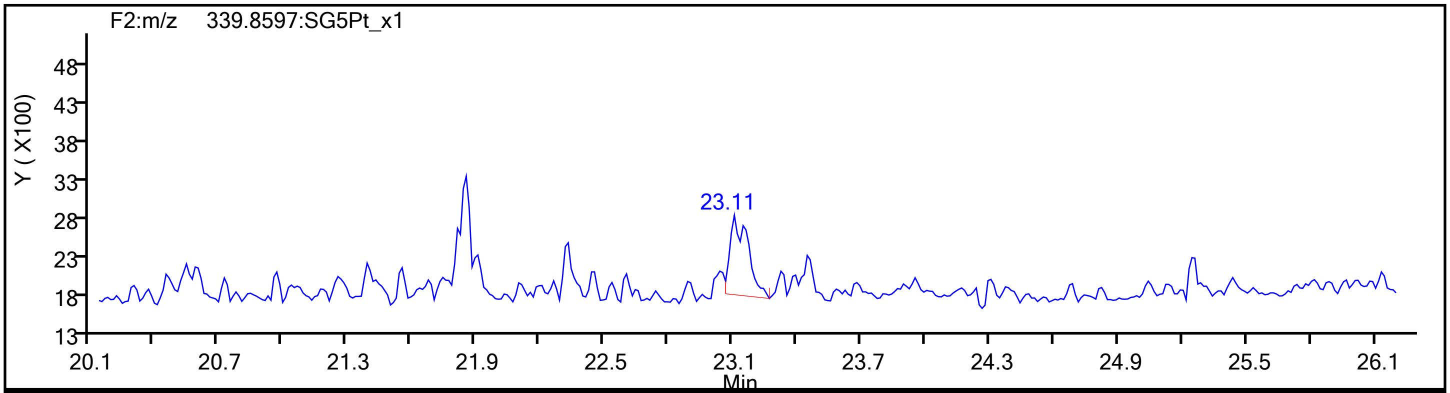

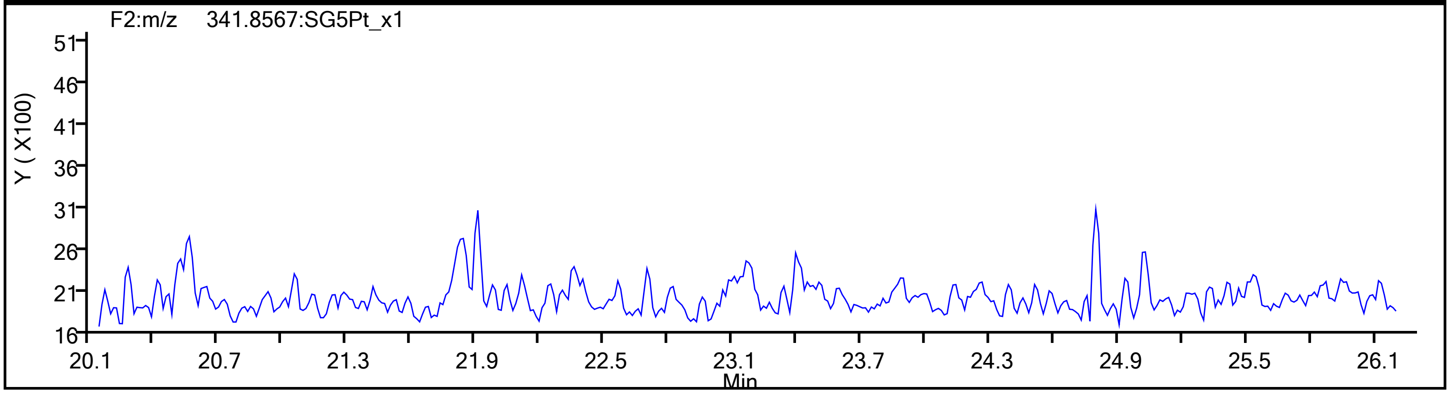

PeCDF Standards

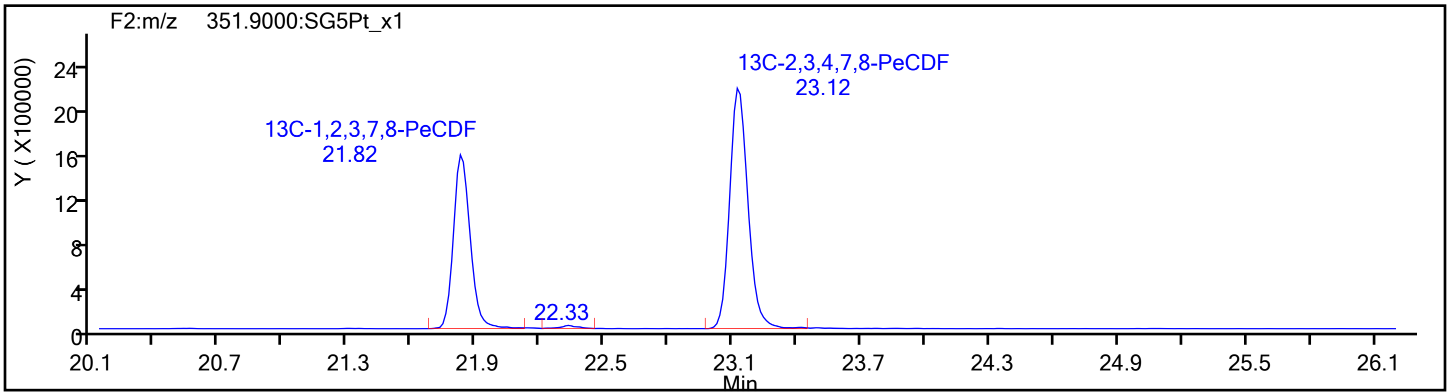

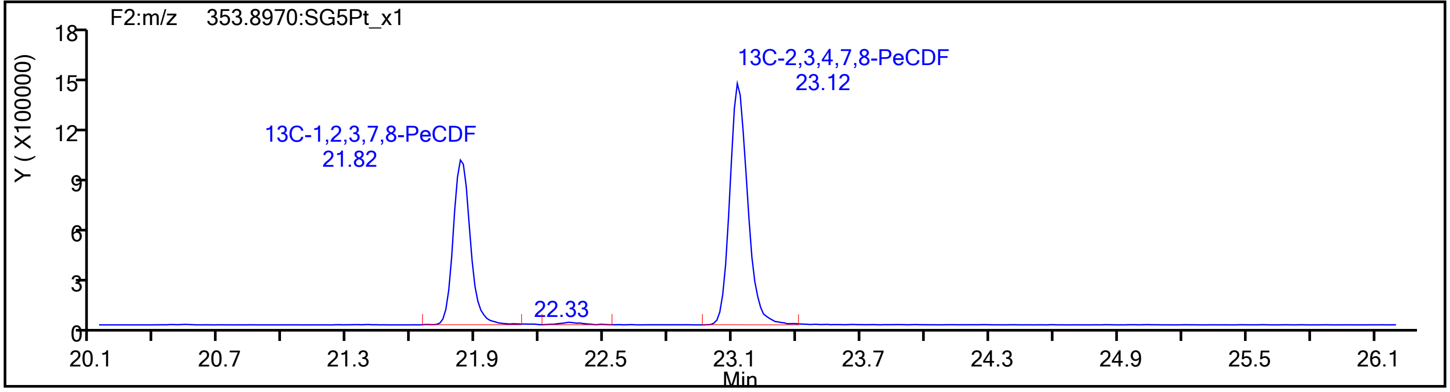

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

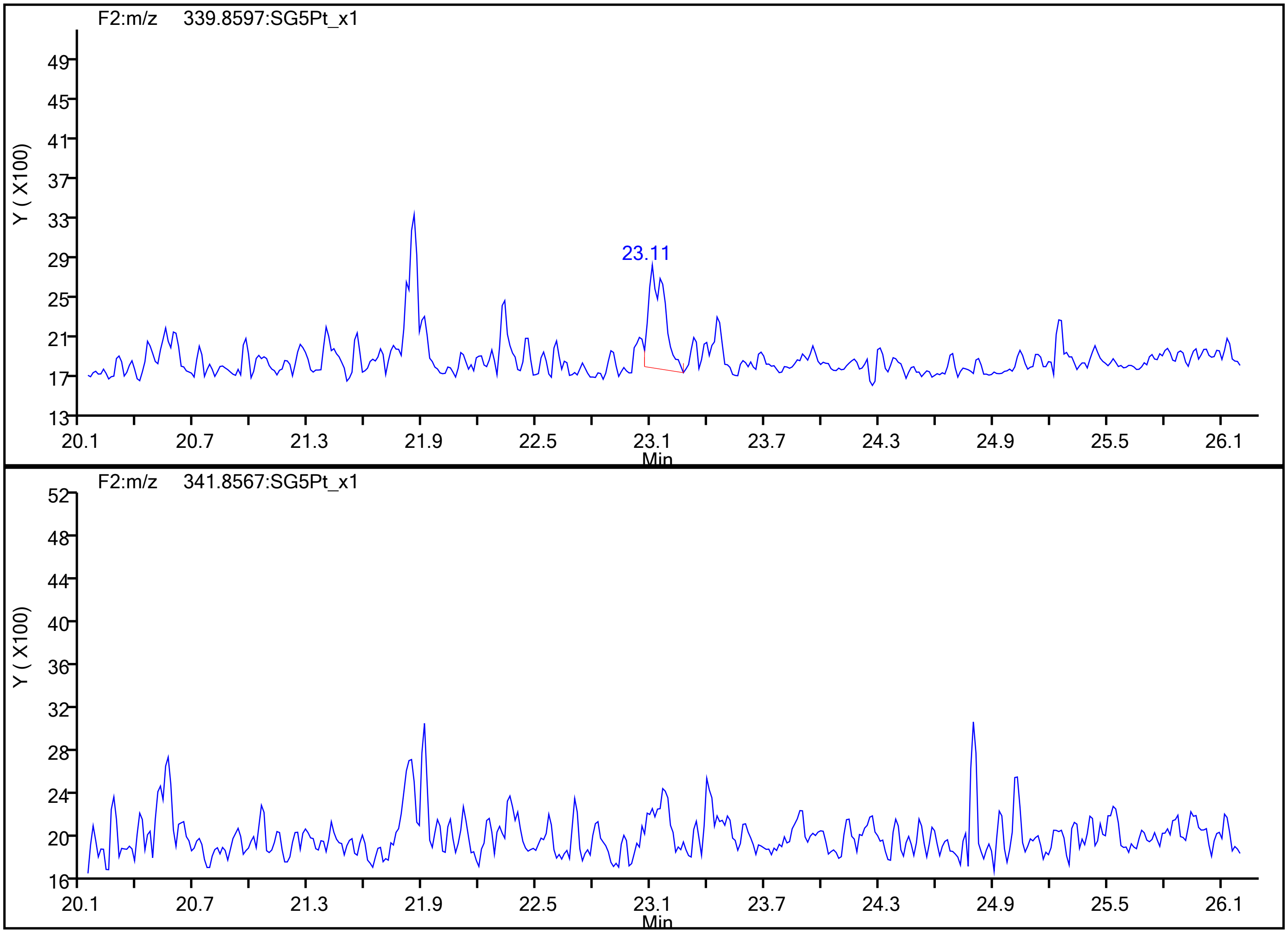

PeCDF Interference Mass

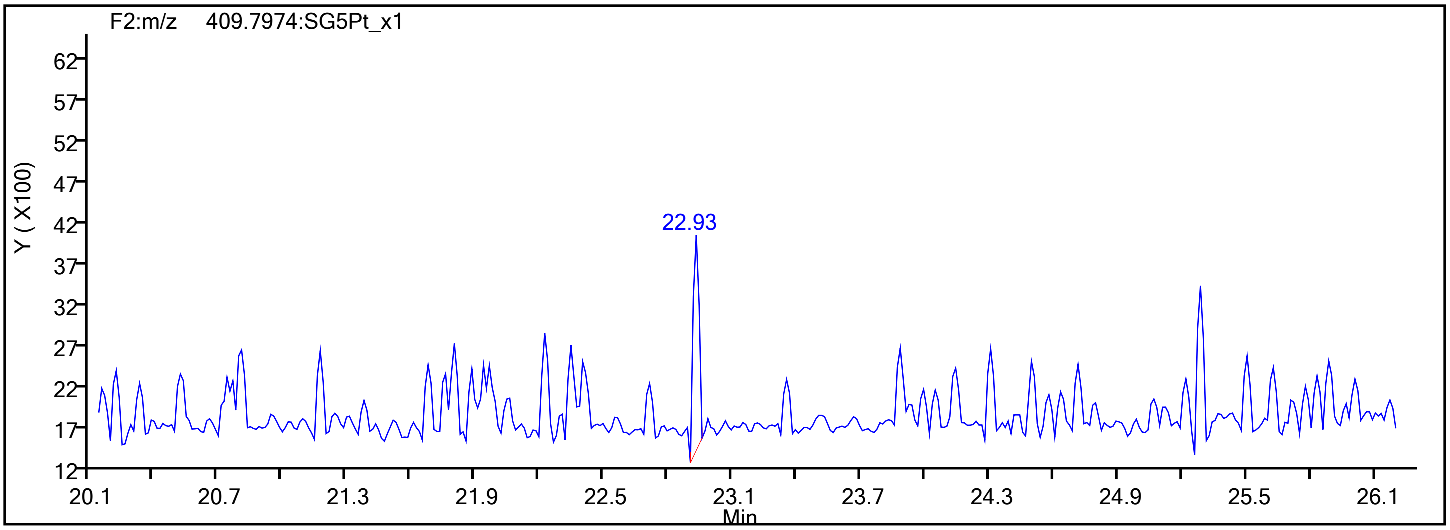

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Treatment-4

Worklist#: 405028 Sample Line#: 8

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

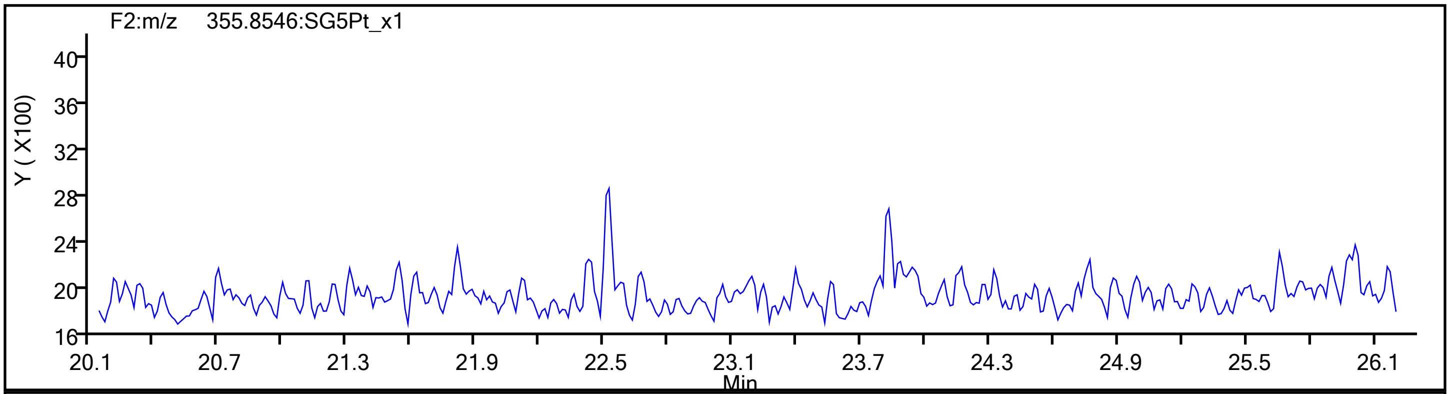

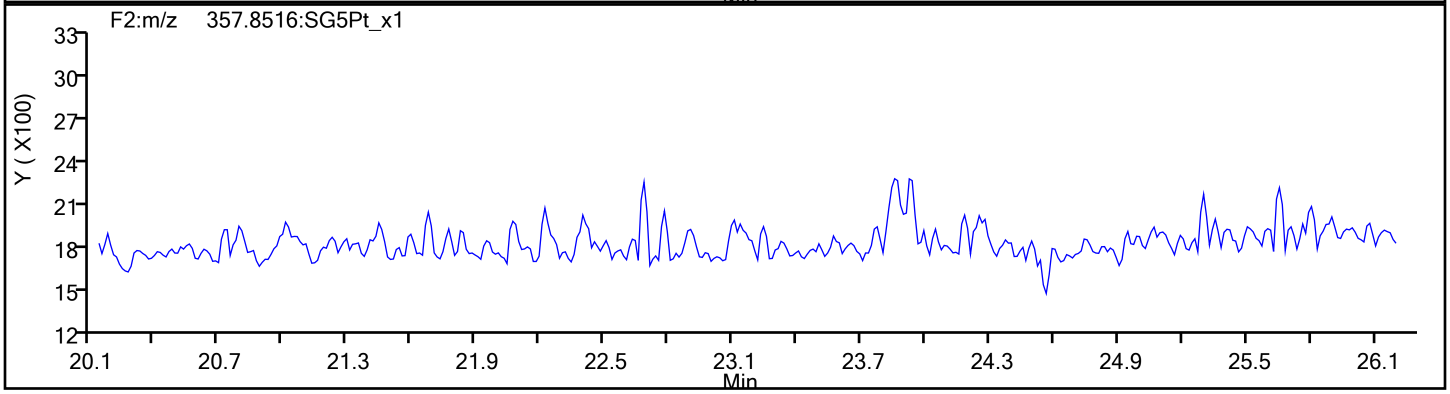

PeCDD Standards

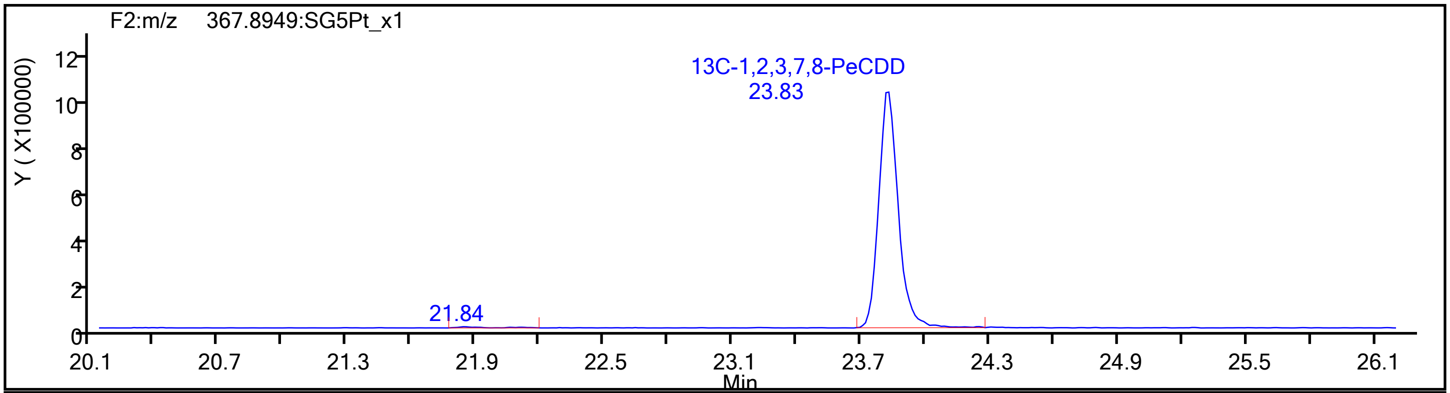

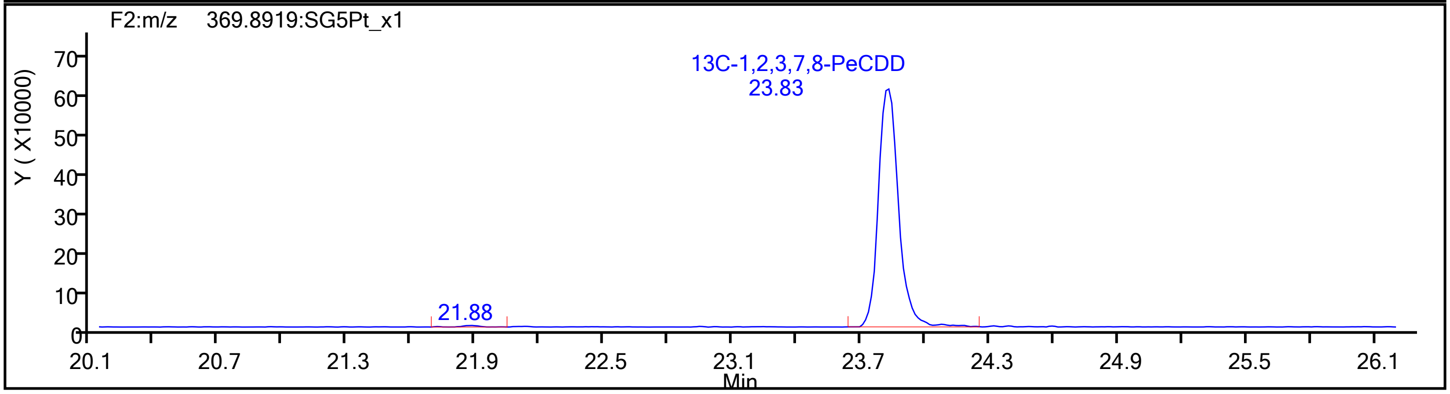

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-4
Worklist#: 405028
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

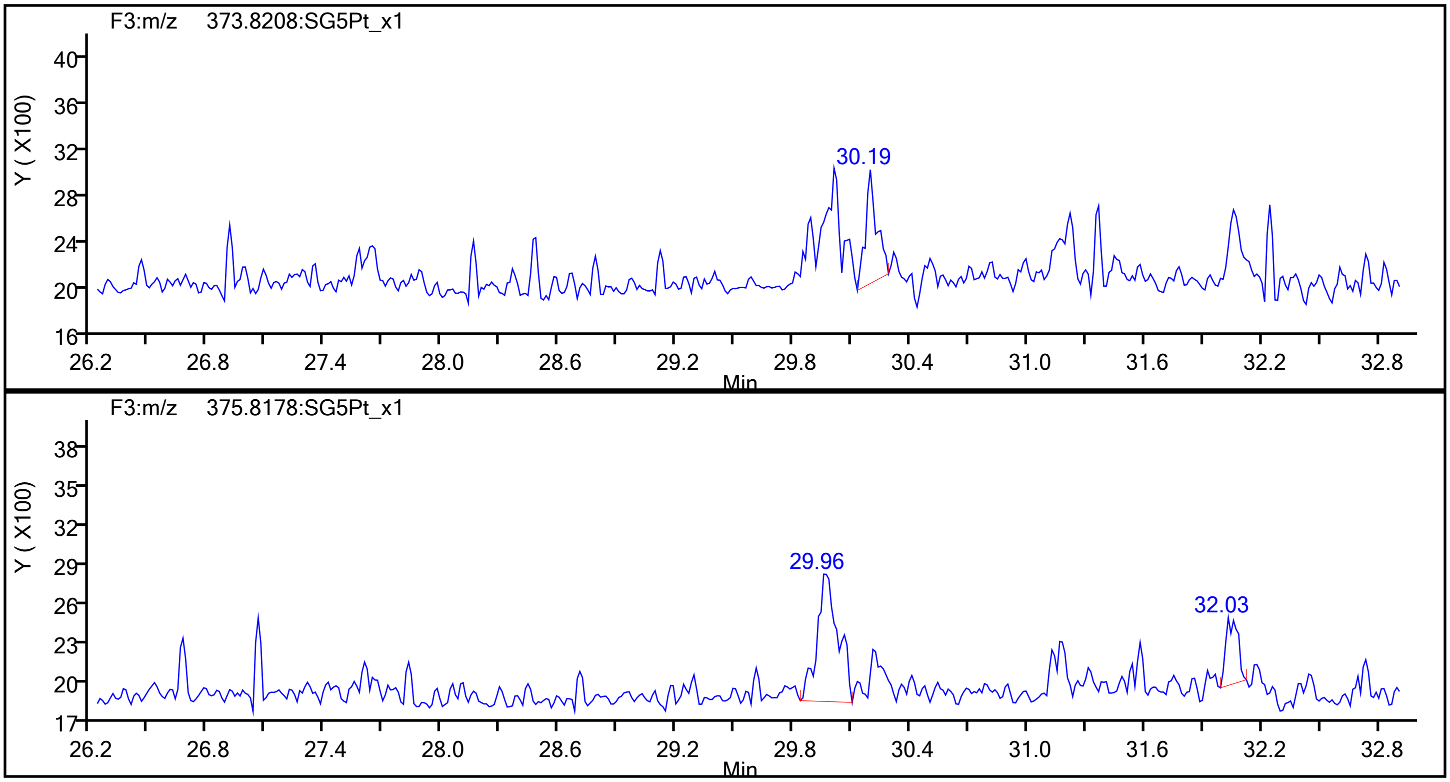

HxCDF Standards

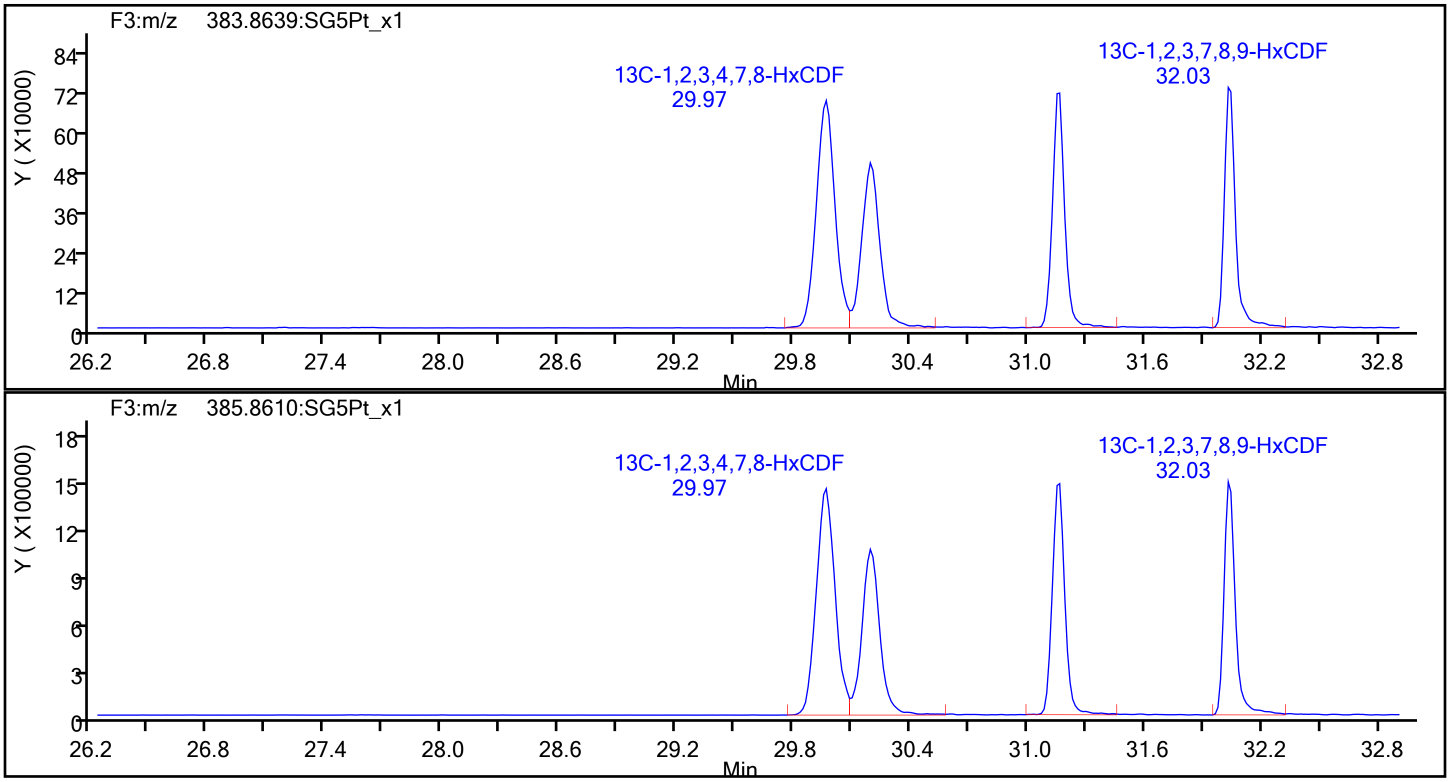

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Eurofins TestAmerica, Sacramento

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HxCDF

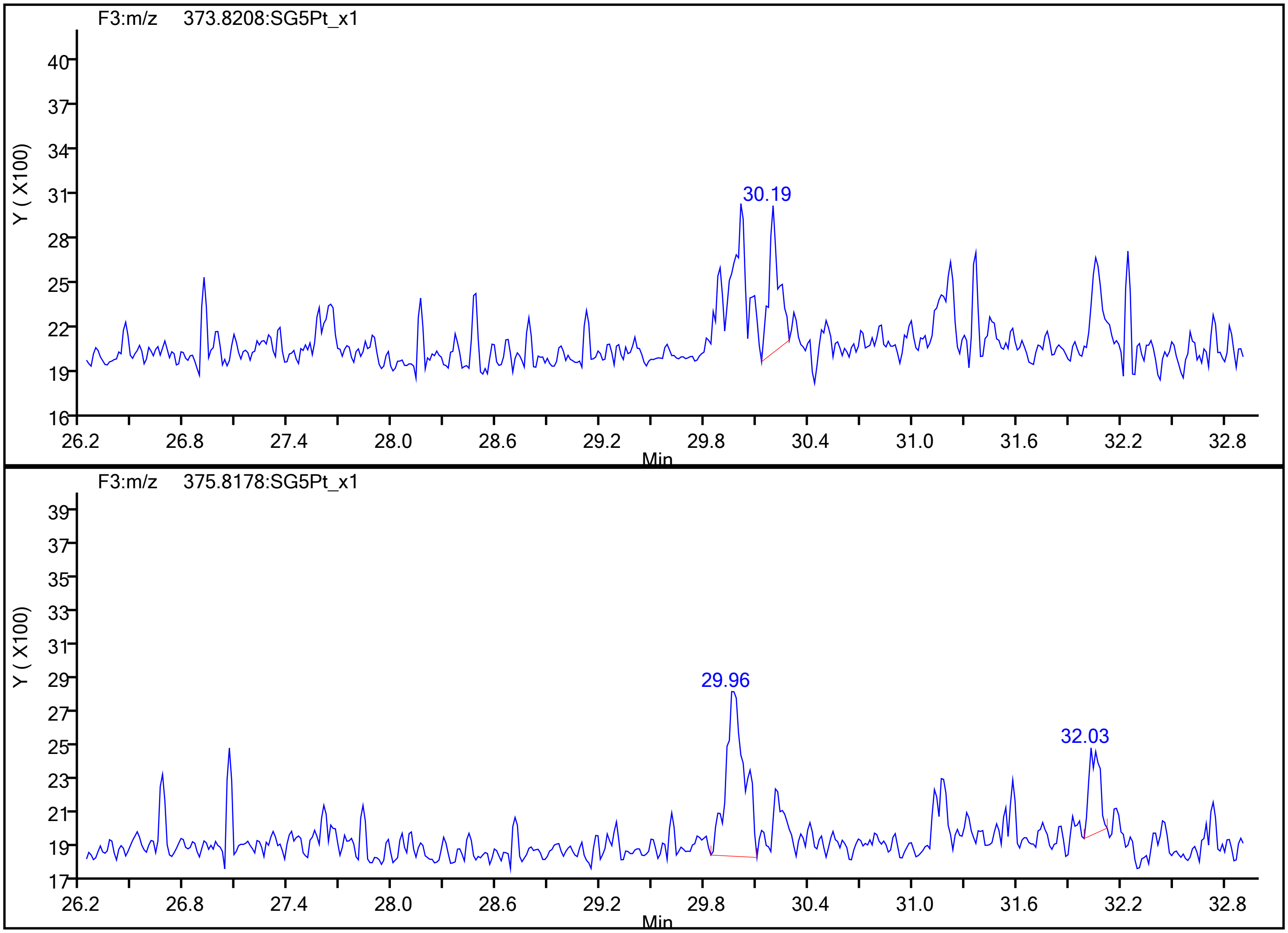

HxCDF Interference Mass

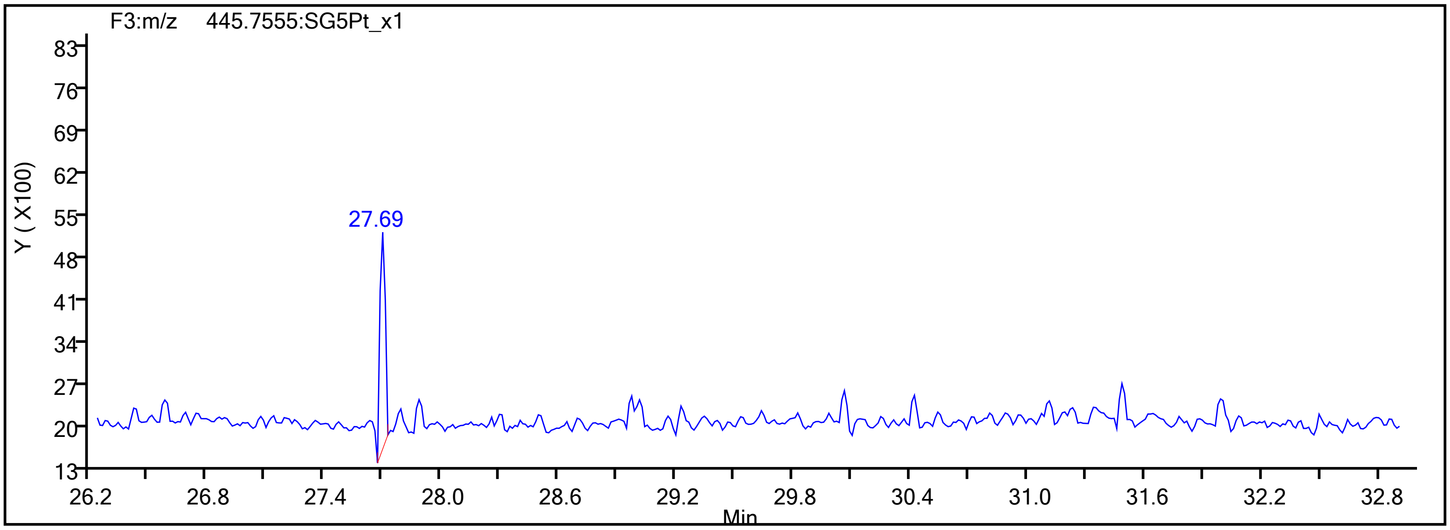

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Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50
Injection Vol: 2.0 ul
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HxCDD

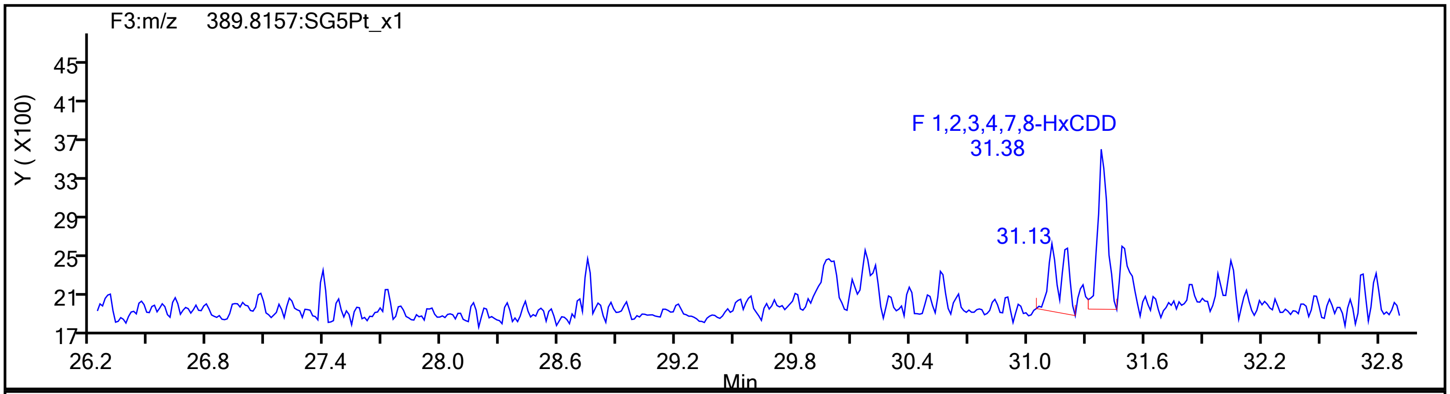

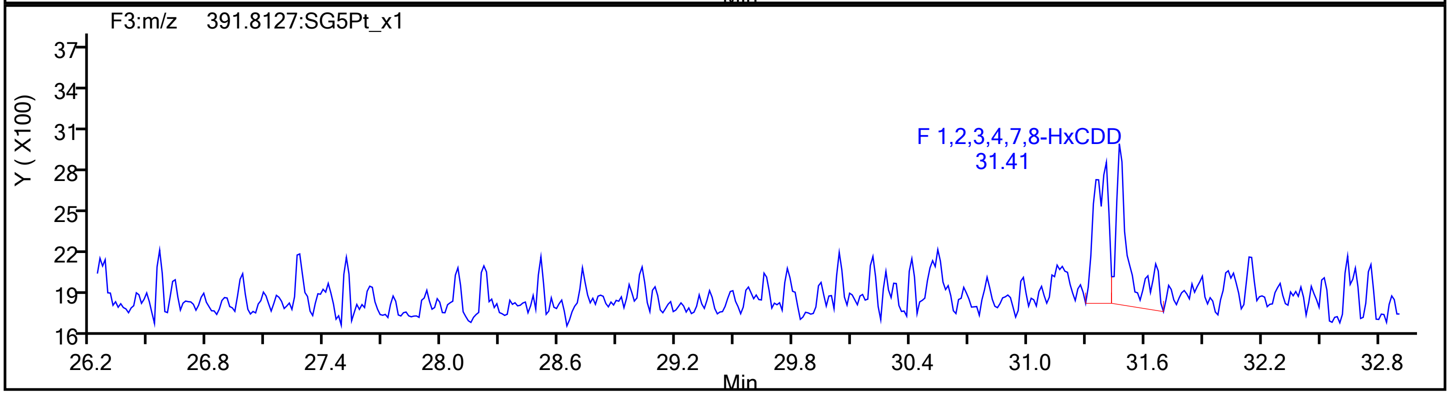

HxCDD Standards

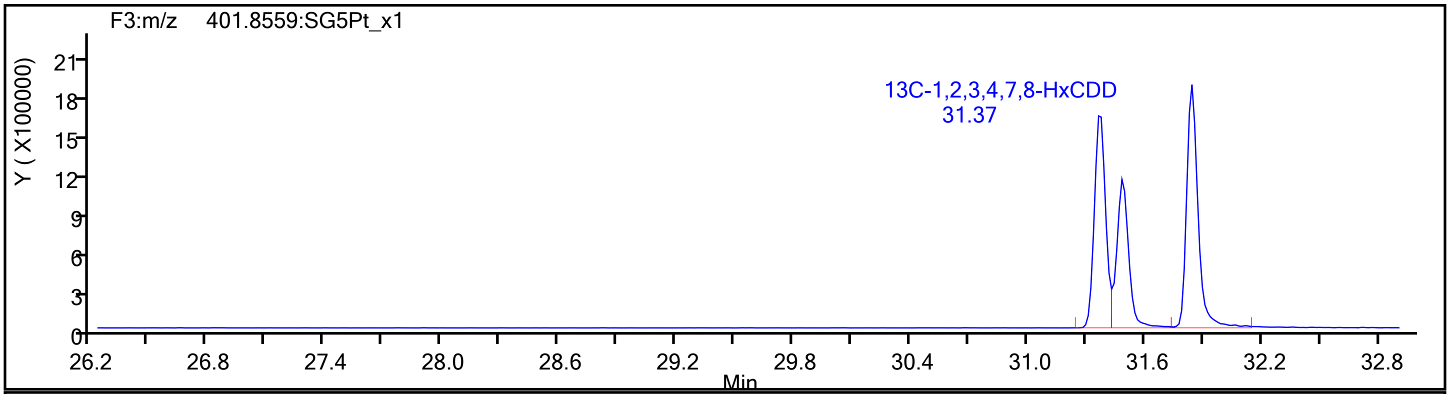

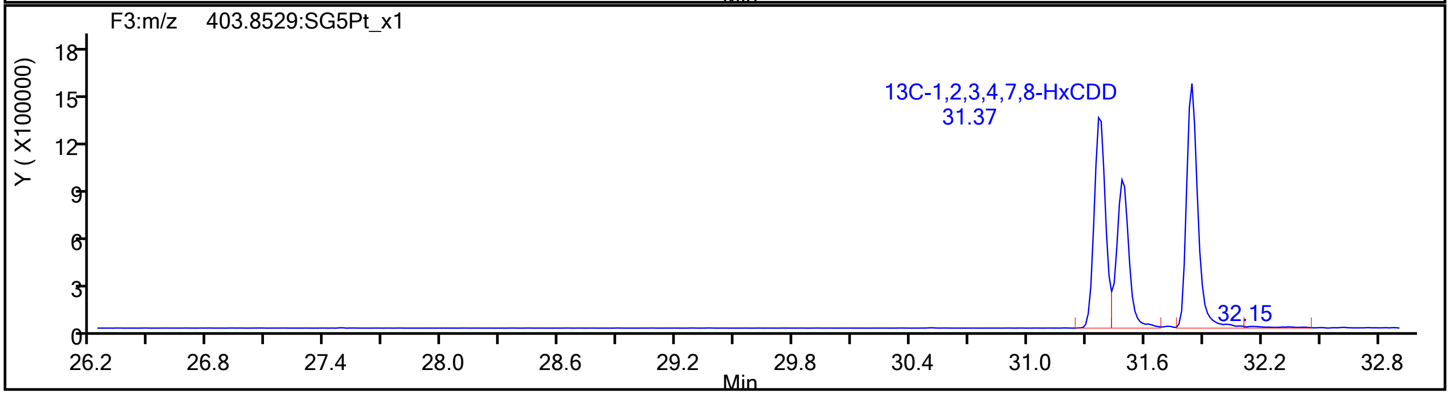

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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HpCDF

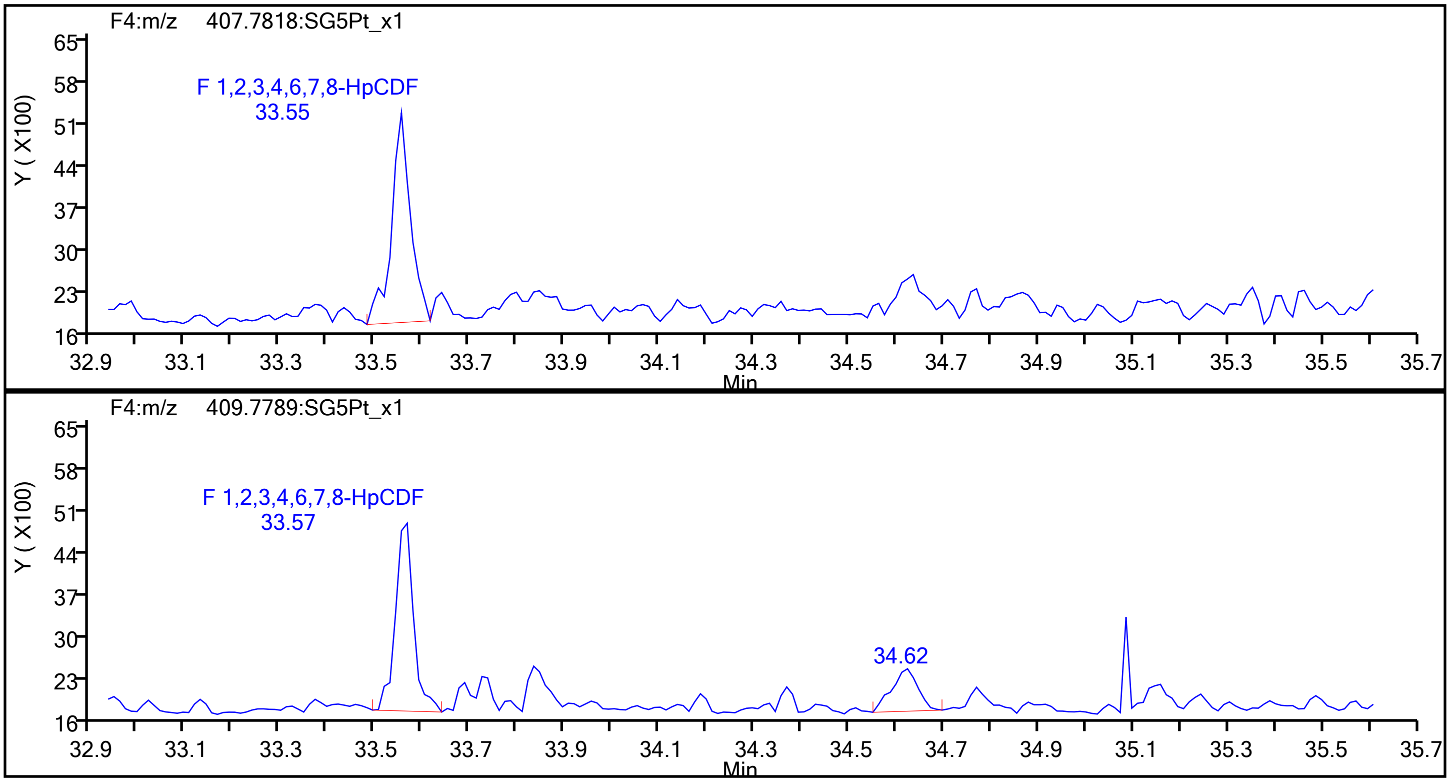

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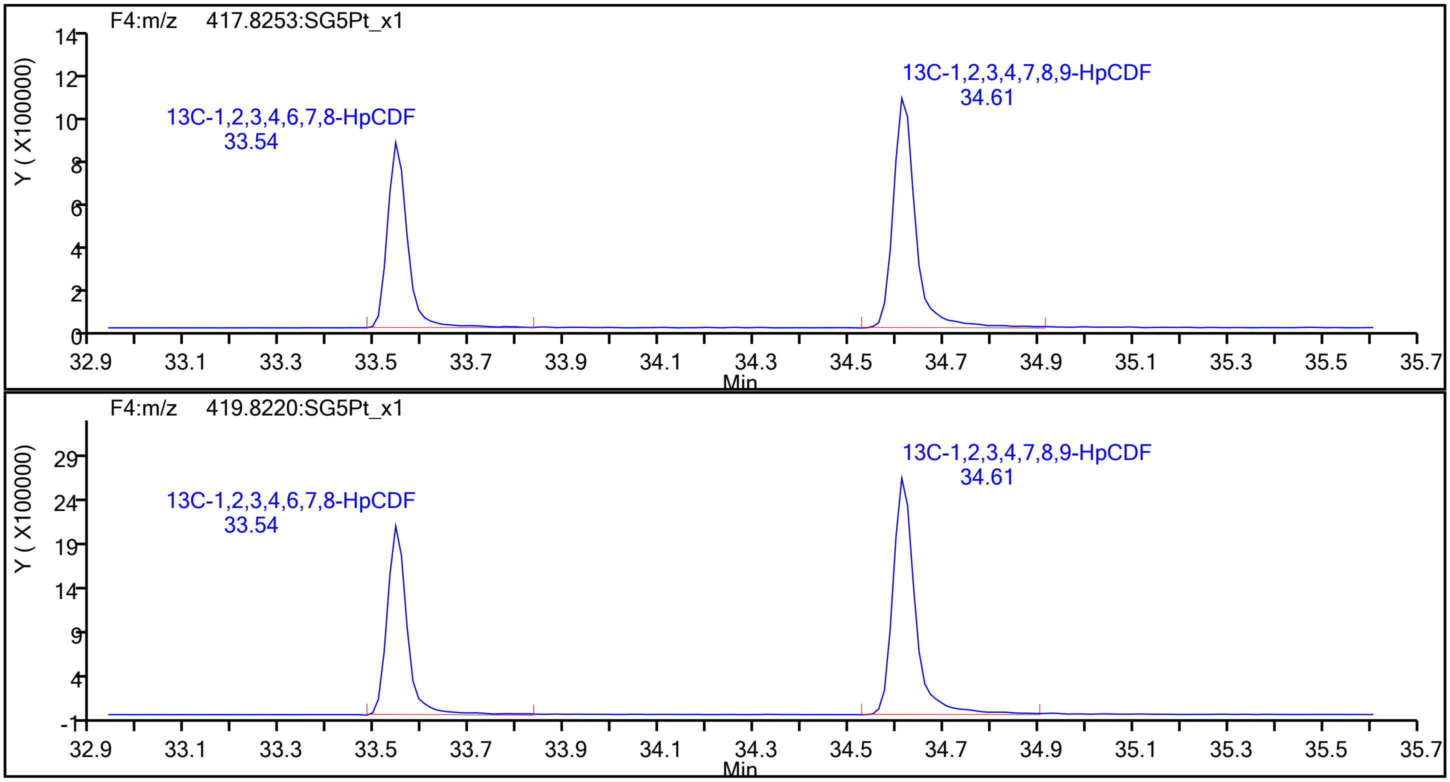

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Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 15:57:50 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-4
Worklist#: 405028 Sample Line#: 8
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

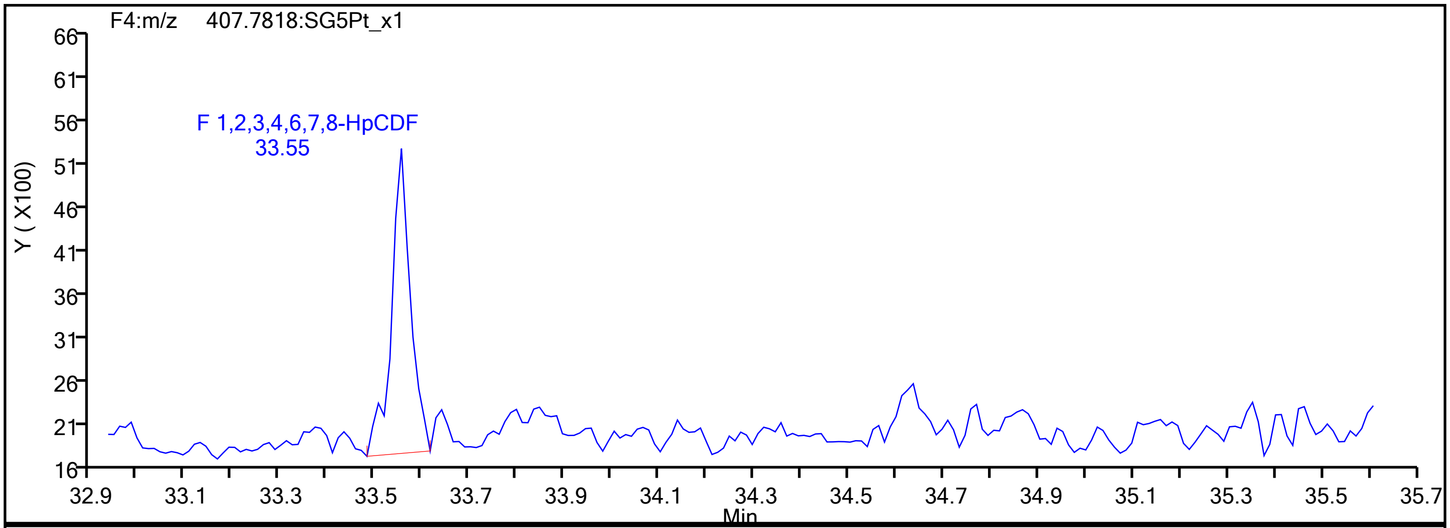

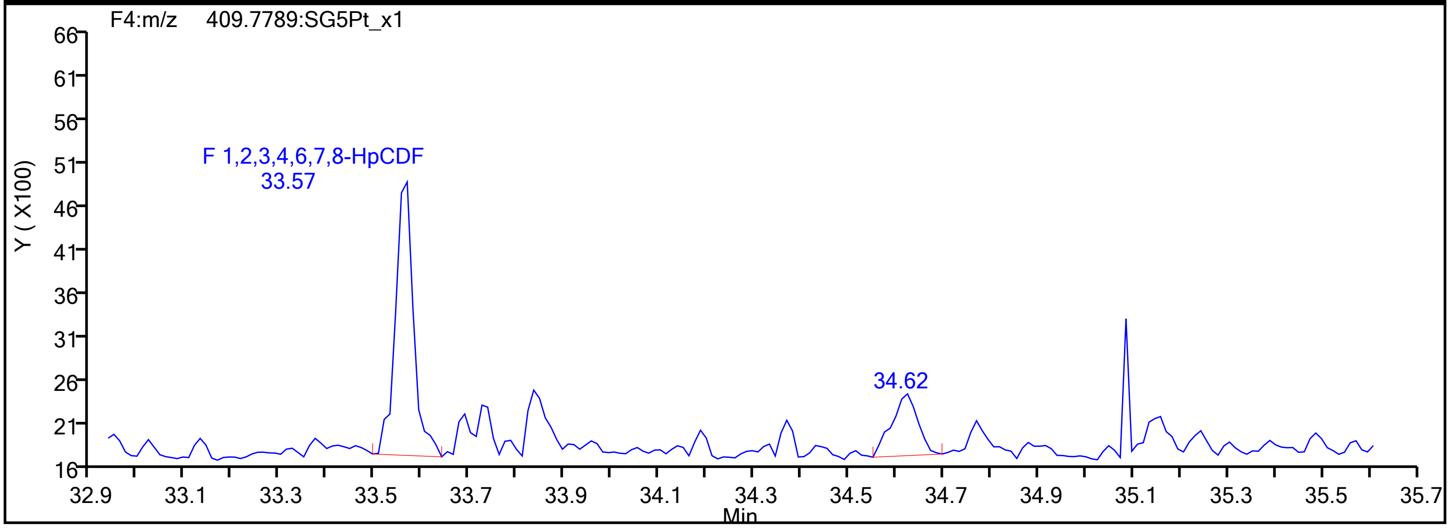

HpCDF Interference Mass

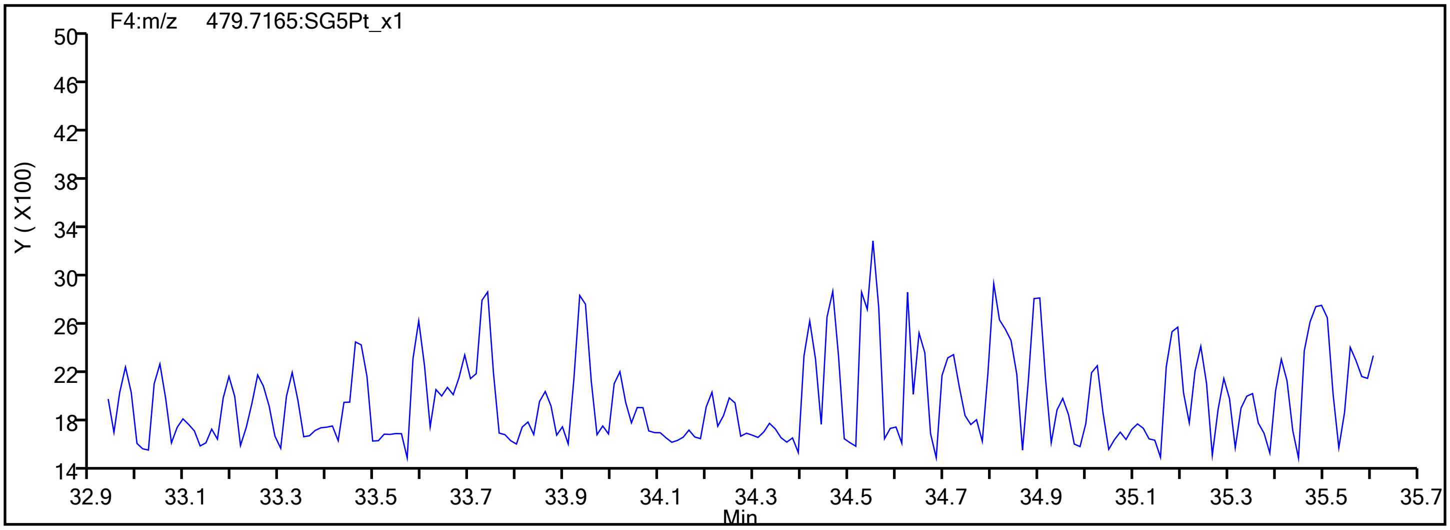

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Eurofins TestAmerica, Sacramento

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Injection Date:	19-Aug-2020 15:57:50	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

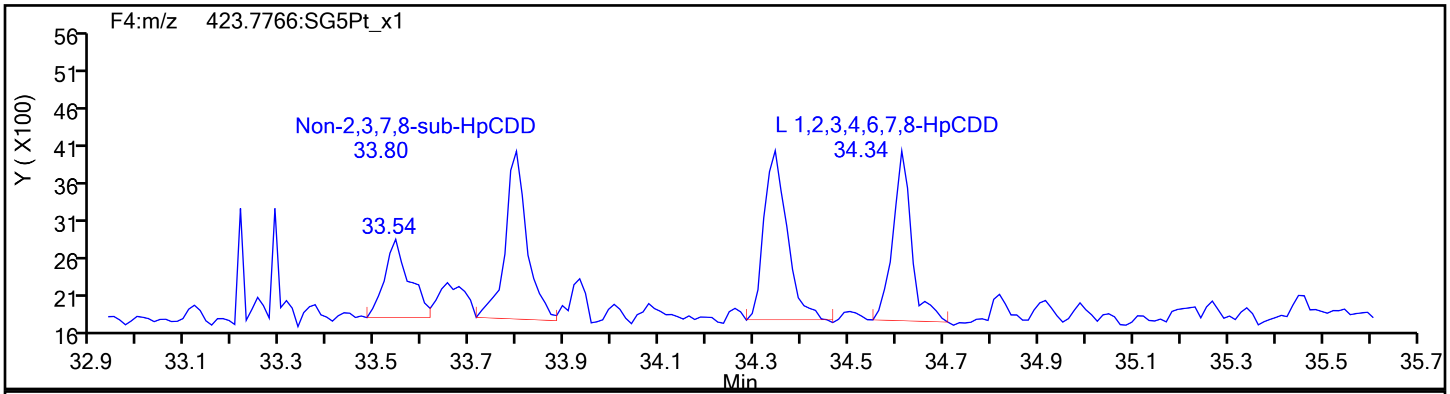

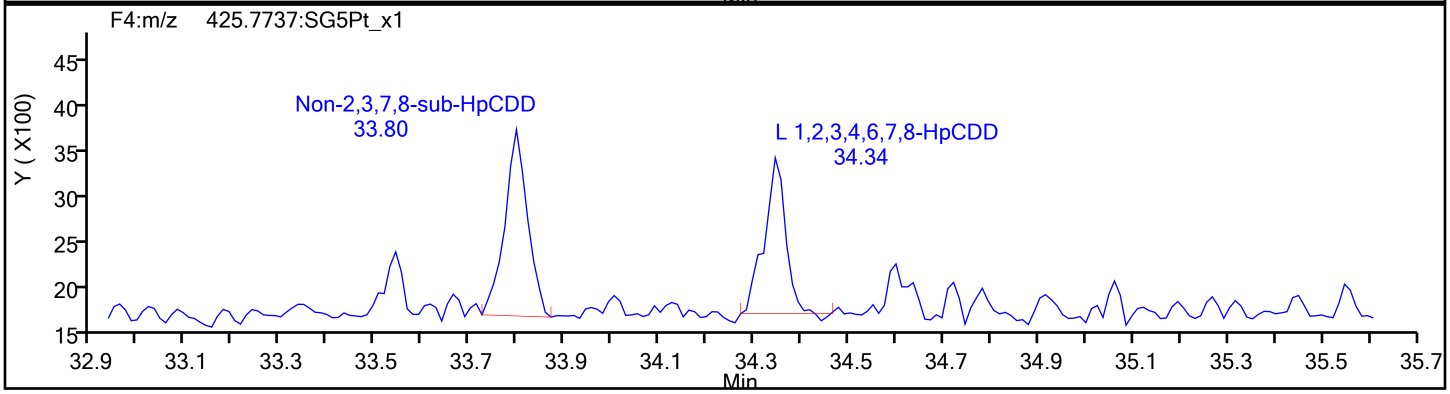

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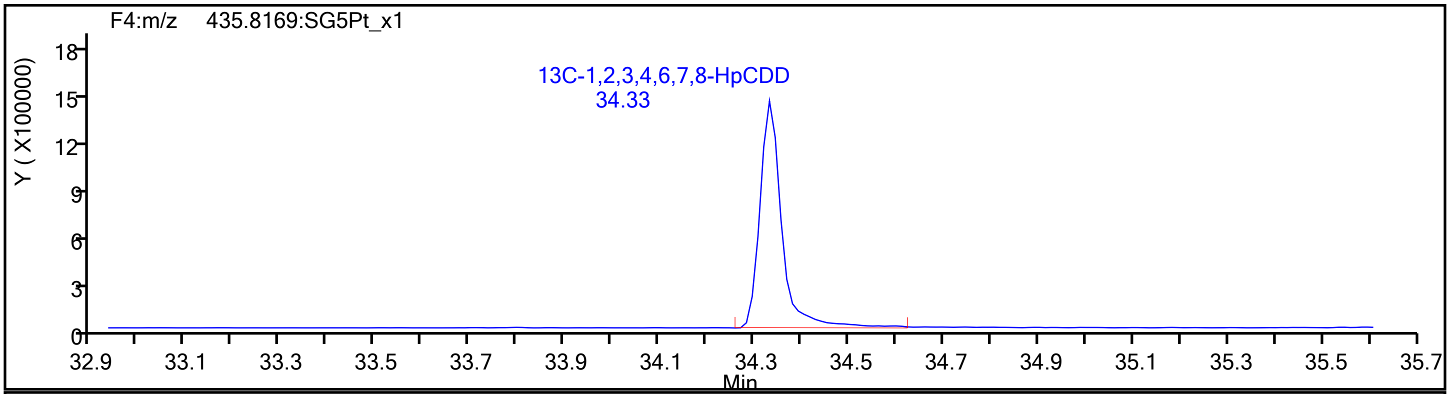

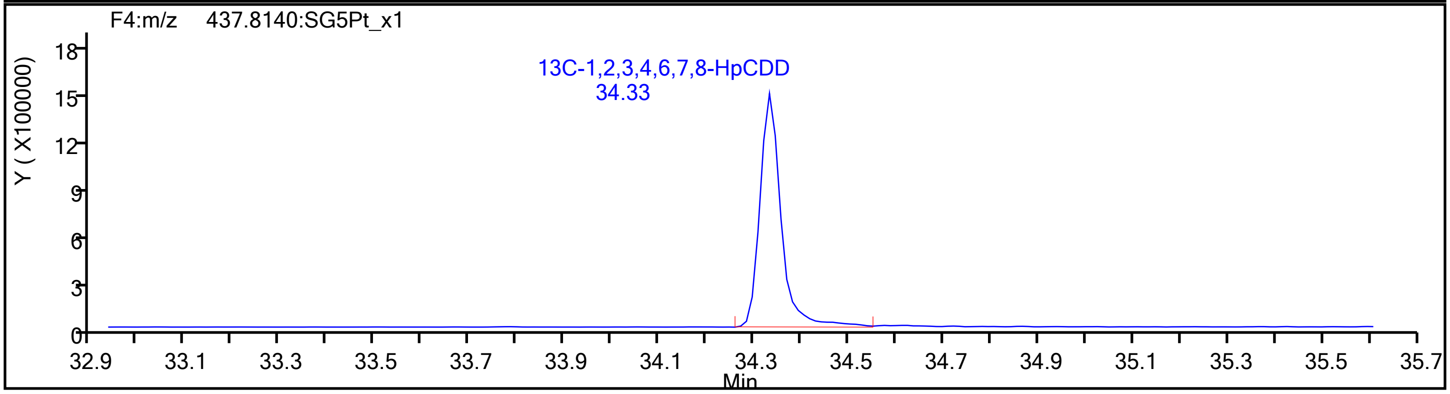

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

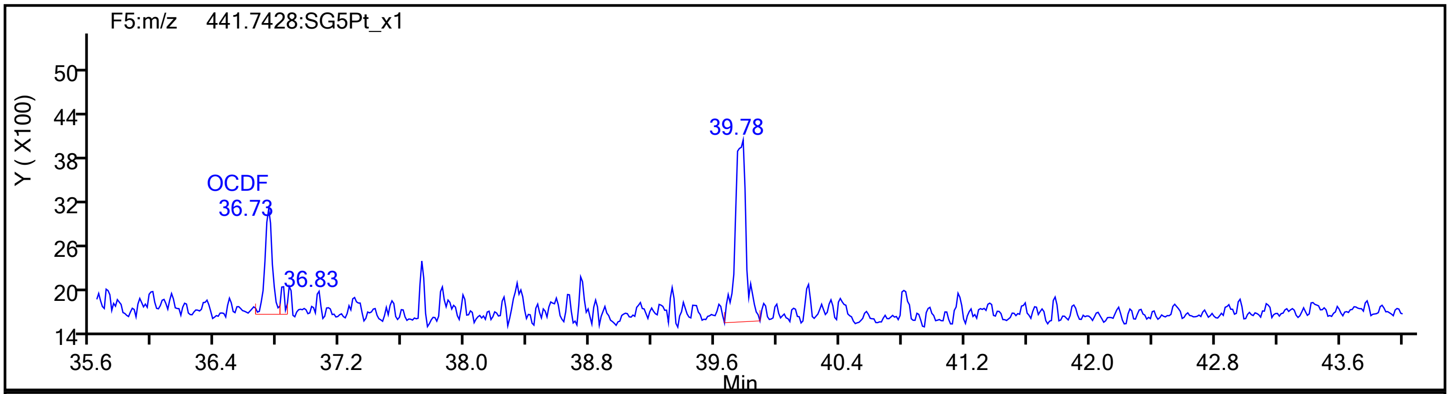

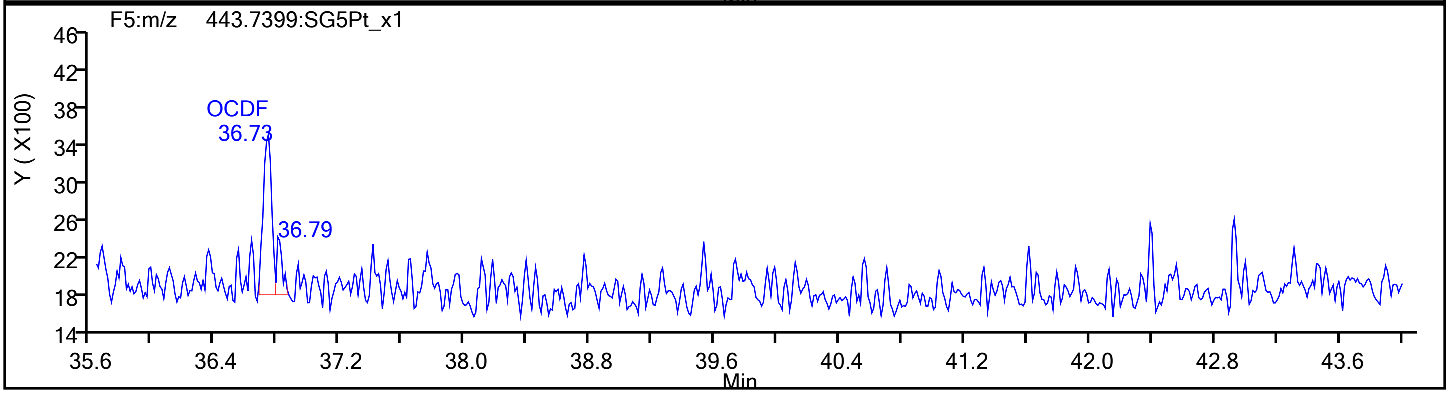

OCDF Standards

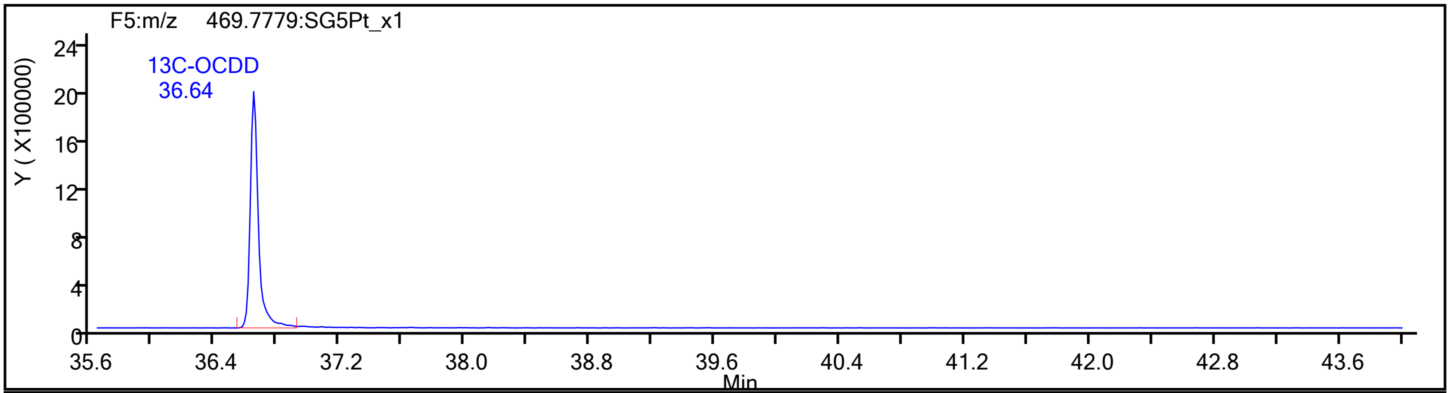

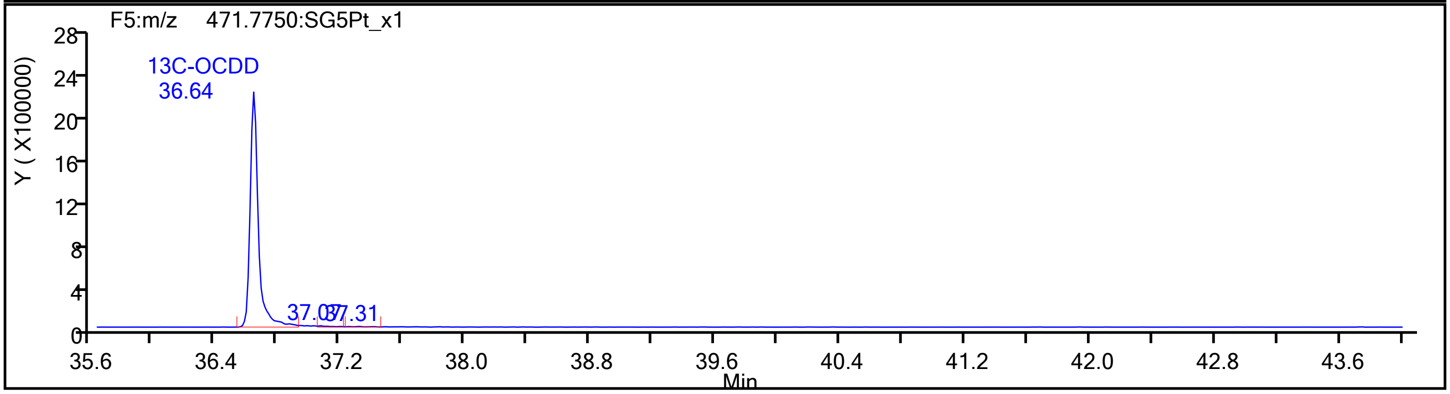

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
Injection Date:	19-Aug-2020 15:57:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

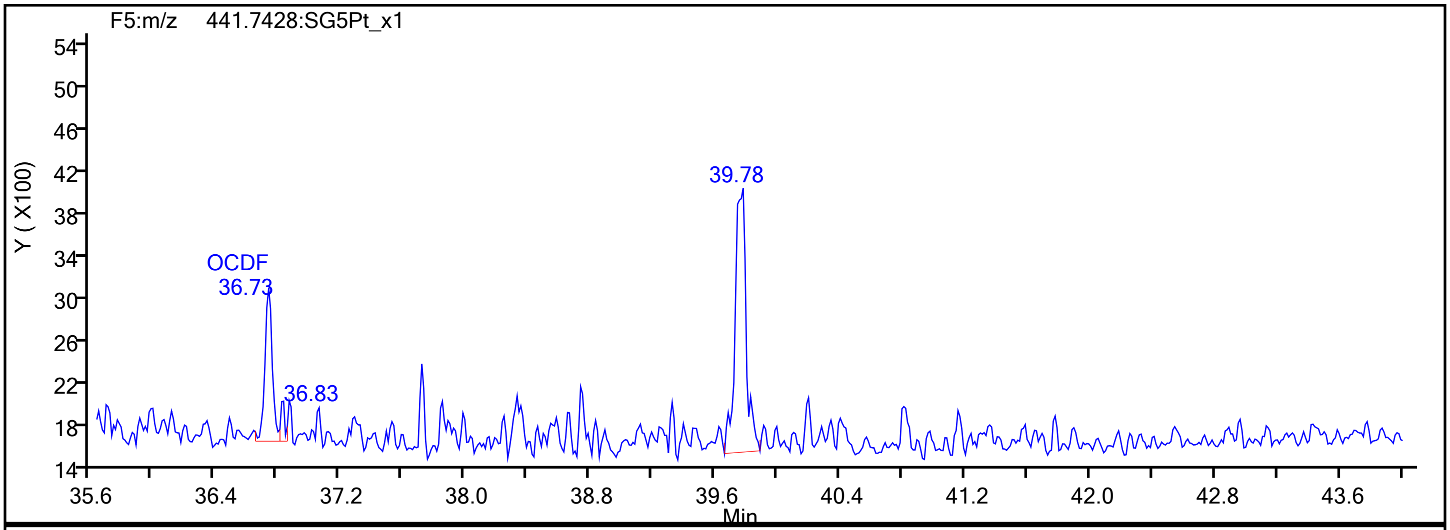

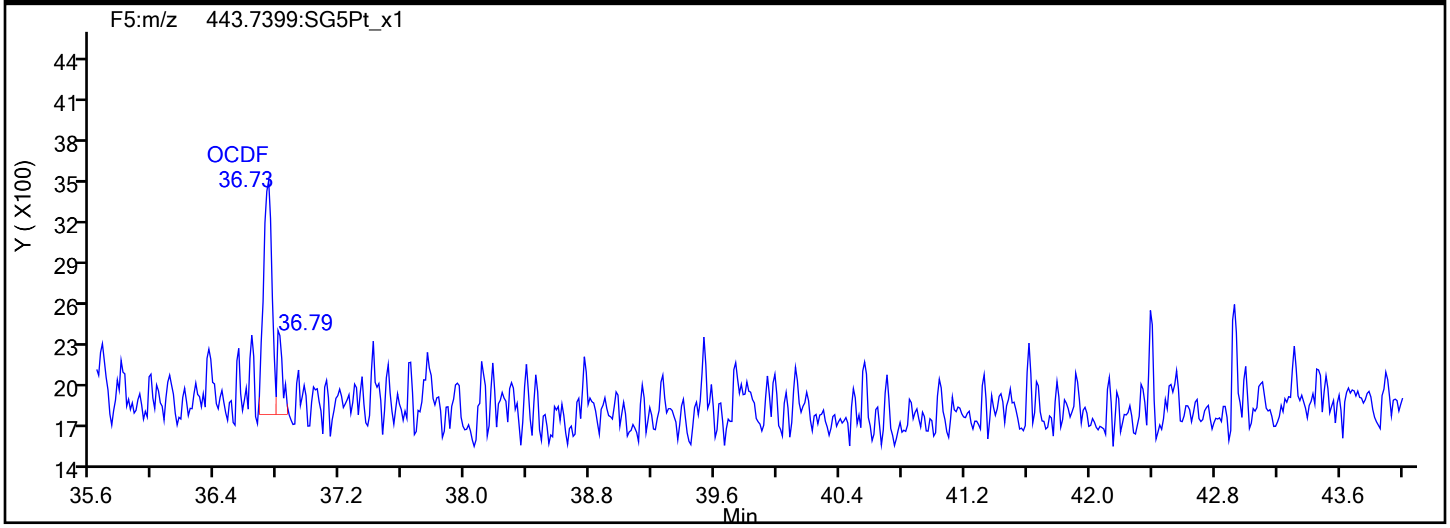

OCDF Interference Mass

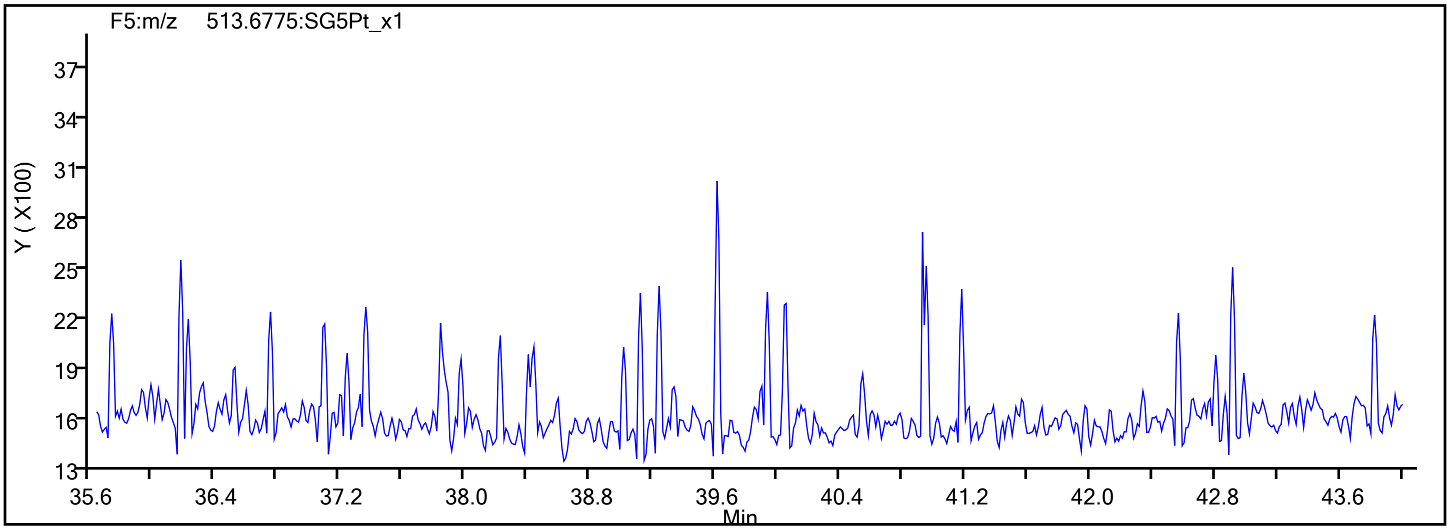

Report Date: 21-Aug-2020 08:48:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d
Injection Date: 19-Aug-2020 15:57:50
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Treatment-4
Worklist#: 405028
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

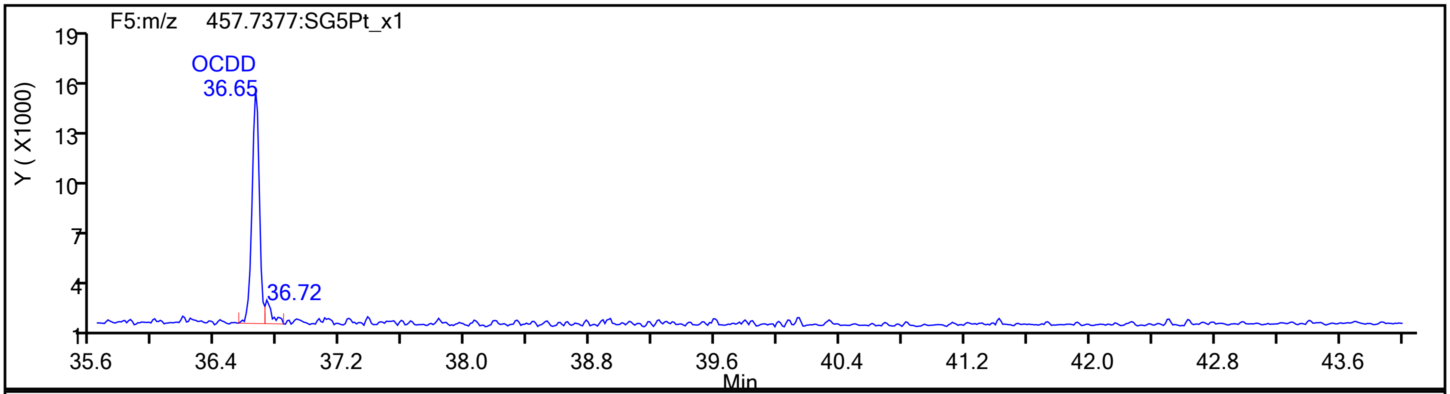

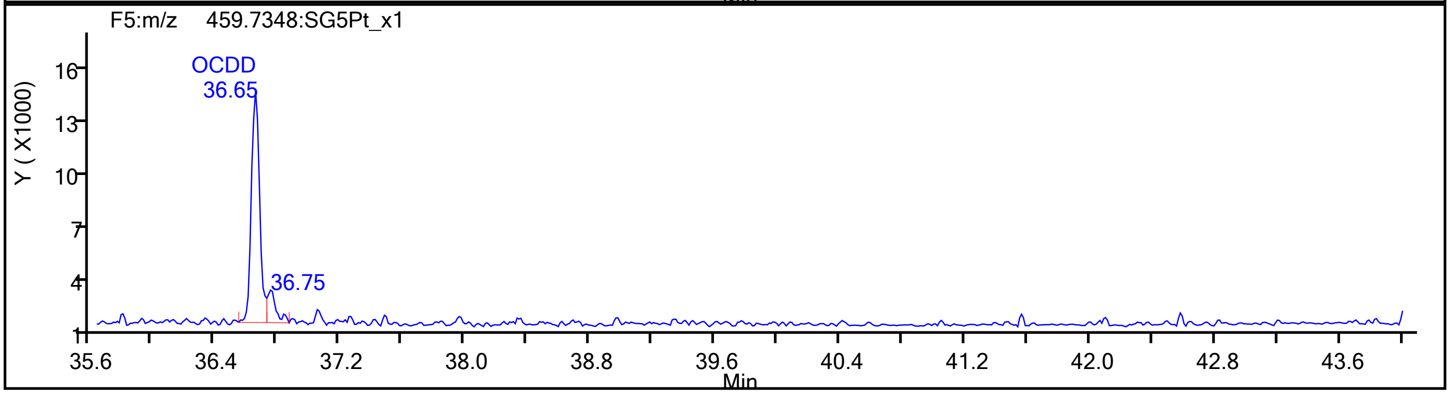

OCDD Standards

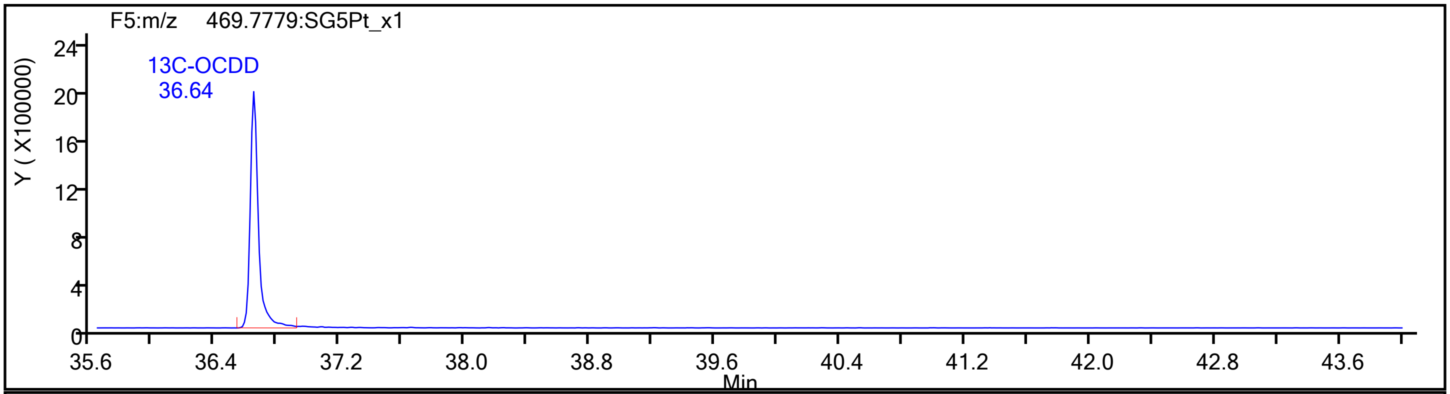

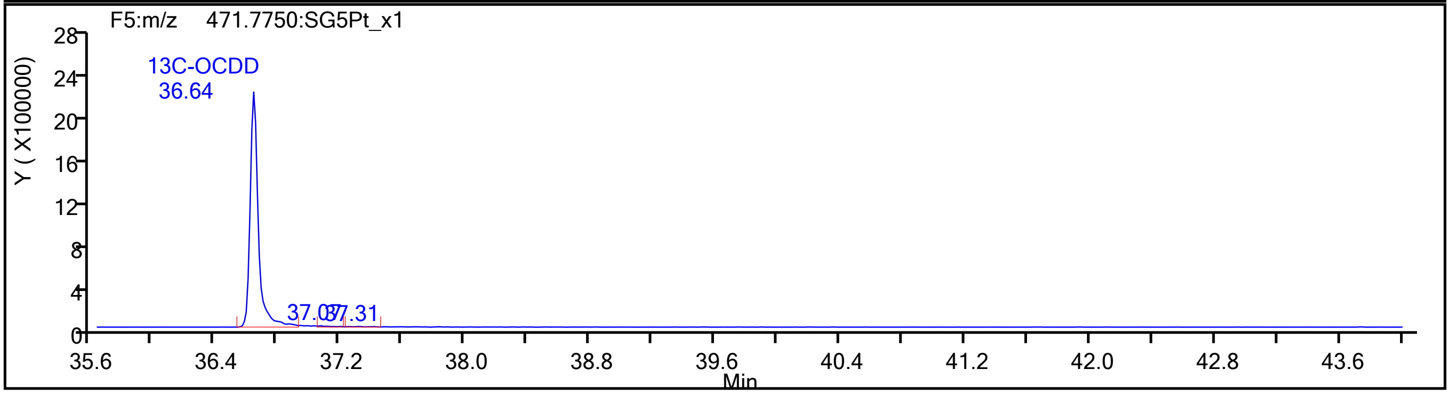

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
Injection Date:	19-Aug-2020 15:57:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

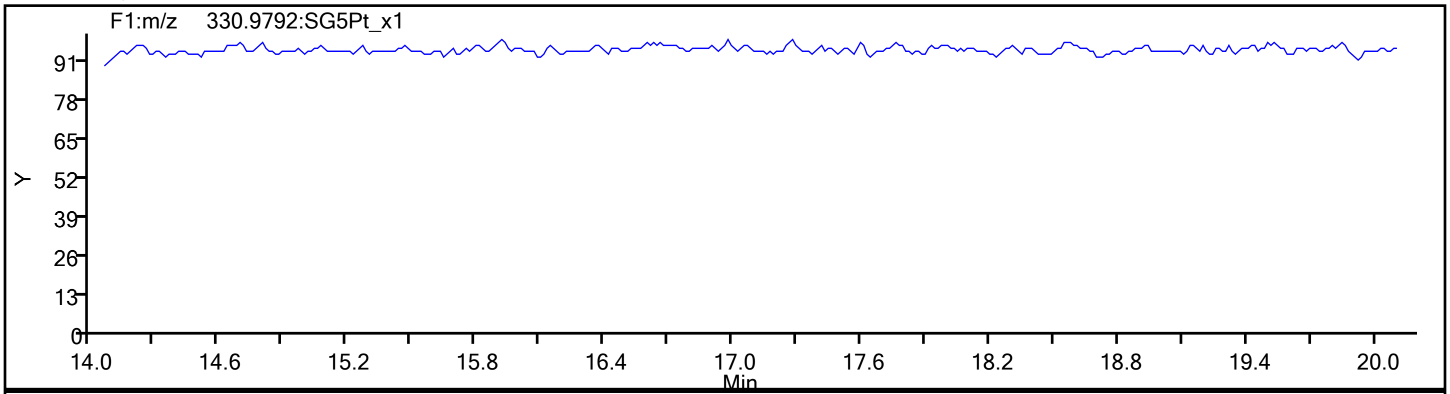

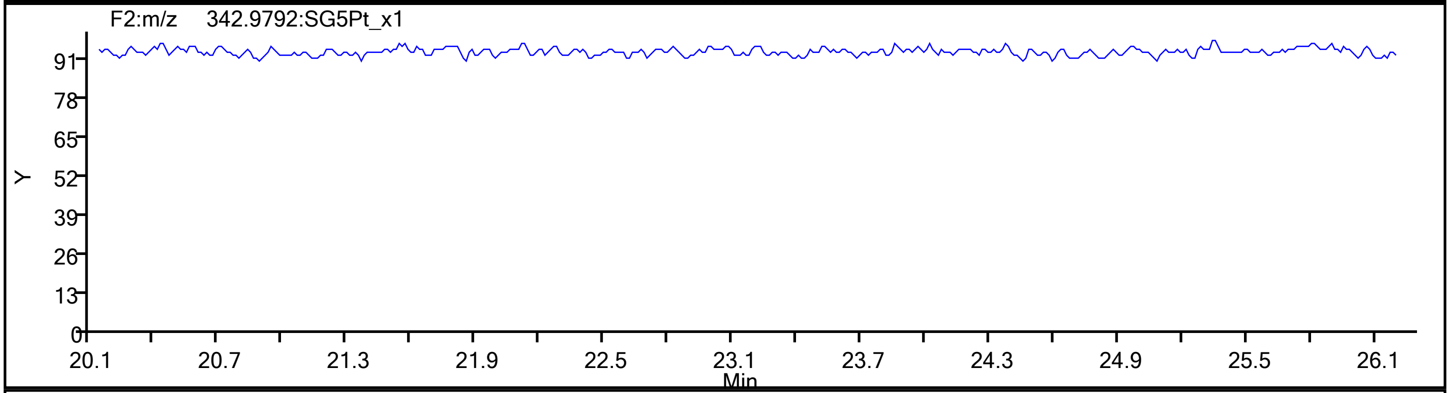

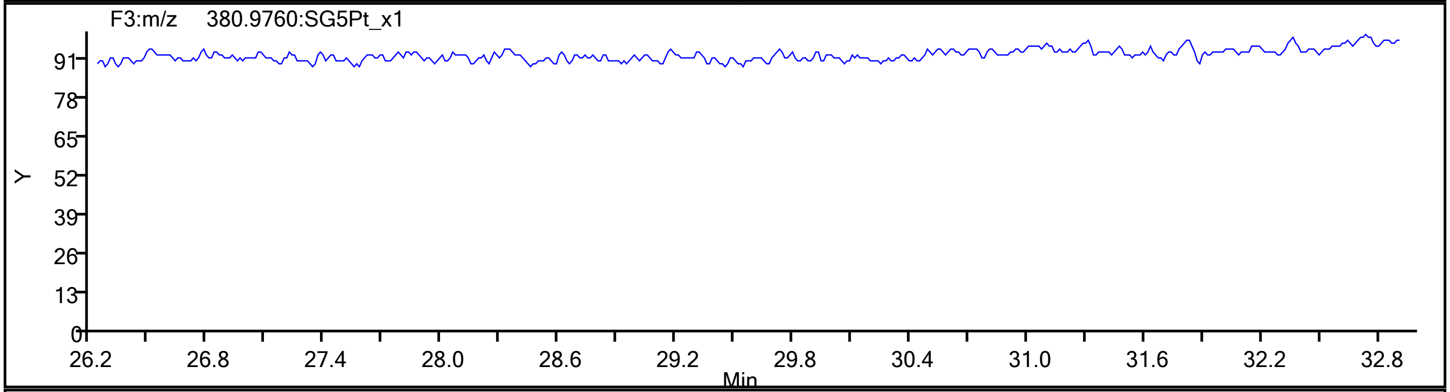

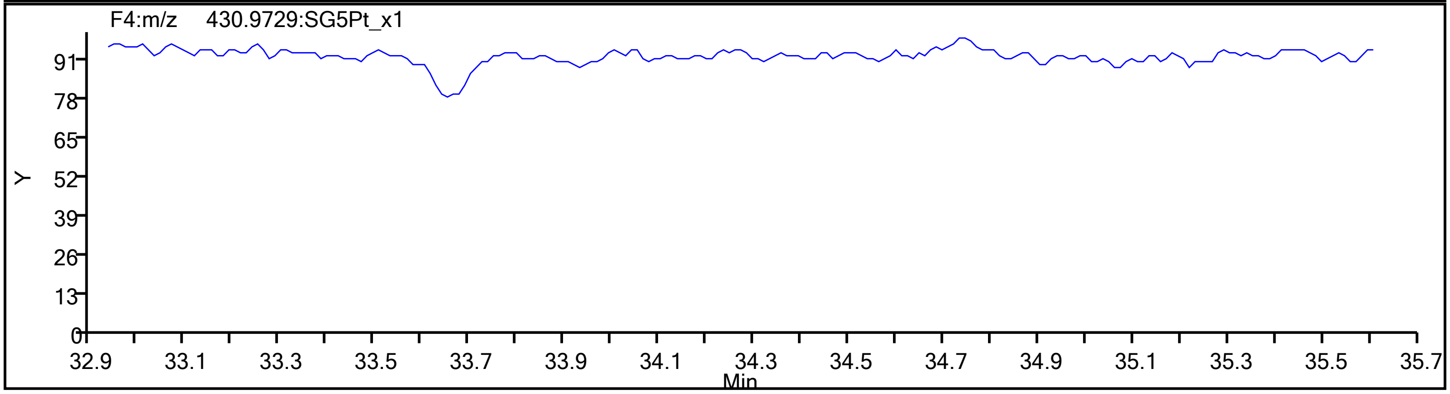

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_8.d		
Injection Date:	19-Aug-2020 15:57:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405028	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

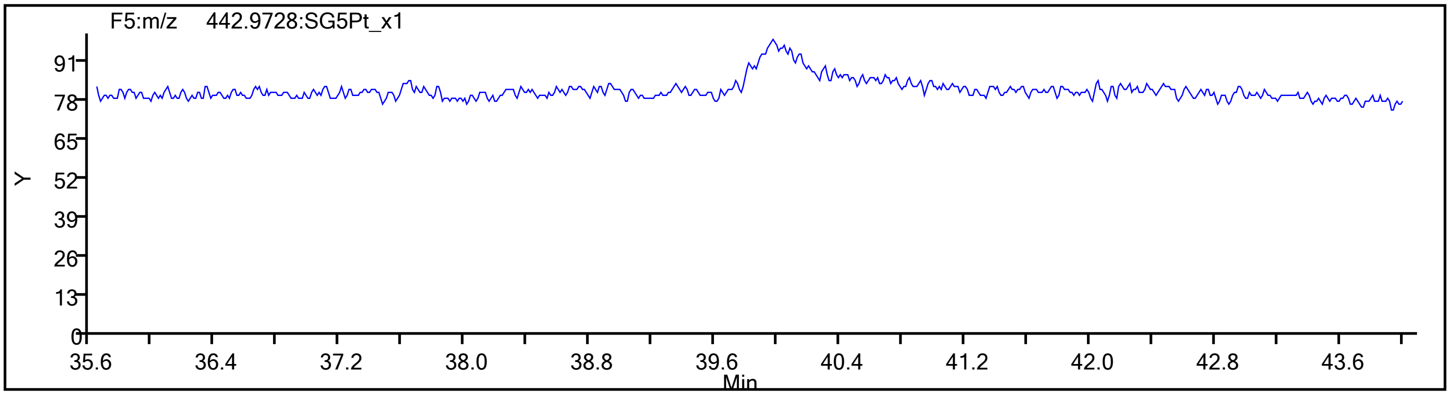

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-63525-1
SDG No.:
Client Sample ID: 11215702-Treatment-4 RA
Lab Sample ID: 320-63525-2 RA
Matrix: Water
Lab File ID: 20AU20D4D2_009.d
Analysis Method: 1613B
Date Collected: 08/07/2020 13:00
Extract. Method: 1613B
Date Extracted: 08/17/2020 08:45
Sample wt/vol: 1051.5(mL)
Date Analyzed: 08/20/2020 21:22
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 405652
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	23		9.5	0.73

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		35-197

FORM I 1613B

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d				
Lims ID:	320-63525-A-2-A				
Client ID:	11215702-Treatment-4				
Sample Type:	Client				
Inject. Date:	20-Aug-2020 21:22:11	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-63525-A-2-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	4D2		

Method:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	21-Aug-2020 11:46:36	Calib Date:	20-Aug-2020 05:17:37
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1052	

First Level Reviewer: shardaa Date: 21-Aug-2020 11:45:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.862	91593986	0.75	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	14.973	78068732	0.78	1.2239	69.6	69.6	0.1869	0.1869	69.64	
2,3,7,8-TCDF	14.986	877105	0.78	0.9341	1.203	1.203	0.0384	0.0384		M
D 13C-2,3,7,8-TCDD	13.587	59550182	0.77	0.9126	71.2	71.2	0.1983	0.1983	71.24	
$ 37Cl4-2,3,7,8-TCDD	13.601	32965872		0.9664	37.2	37.2	0.0559	0.0559	93.10	
2,3,7,8-TCDD	13.615	363463	0.83	1.1025	0.5536	0.5536	0.0731	0.0731		

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d
Lims ID: 320-63525-A-2-A
Client ID: 11215702-Treatment-4
Sample Type: Client
Inject. Date: 20-Aug-2020 21:22:11 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-63525-A-2-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2

Method: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 11:46:36 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1052

First Level Reviewer: shardaa Date: 21-Aug-2020 11:45:55

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.862	13.886	-1		39247251	8576940	8054	20135	1065		
333.9339	13.862	13.886	-1		52346735	11618266	6562	16405	1771	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	14.973	14.983	-1	1.080	34231237	7215076	10174	25435	709		
317.9389	14.973	14.983	-1	1.080	43837495	9053317	8303	20757	1090	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	14.986	15.011	-1	1.001	385002	126694	1127	2817	112		M
305.8987	14.986	15.011	-1	1.001	492103	153495	1208	3020	127	0.78(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	13.587	13.625	-2	0.980	25950193	5625772	8054	20135	699		
333.9339	13.587	13.625	-2	0.980	33599989	7897436	6562	16405	1204	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.601	13.625	-1	0.981	32965872	7217030	4361	10902	1655		
2,3,7,8-TCDD											
319.8965	13.615	13.639	-1	1.002	165255	44955	2163	5407	21		
321.8936	13.628	13.639	-1	1.003	198208	45888	2197	5492	21	0.83(0.65-0.89)	

QC Flag Legend

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d		
Injection Date:	20-Aug-2020 21:22:11	Instrument ID:	4D2
Lims ID:	320-63525-A-2-A	Lab Sample ID:	320-63525-2
Client ID:	11215702-Treatment-4		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT: 14.99
Area: 845594
Amount: 1.959715
Amount Units: pg/ul

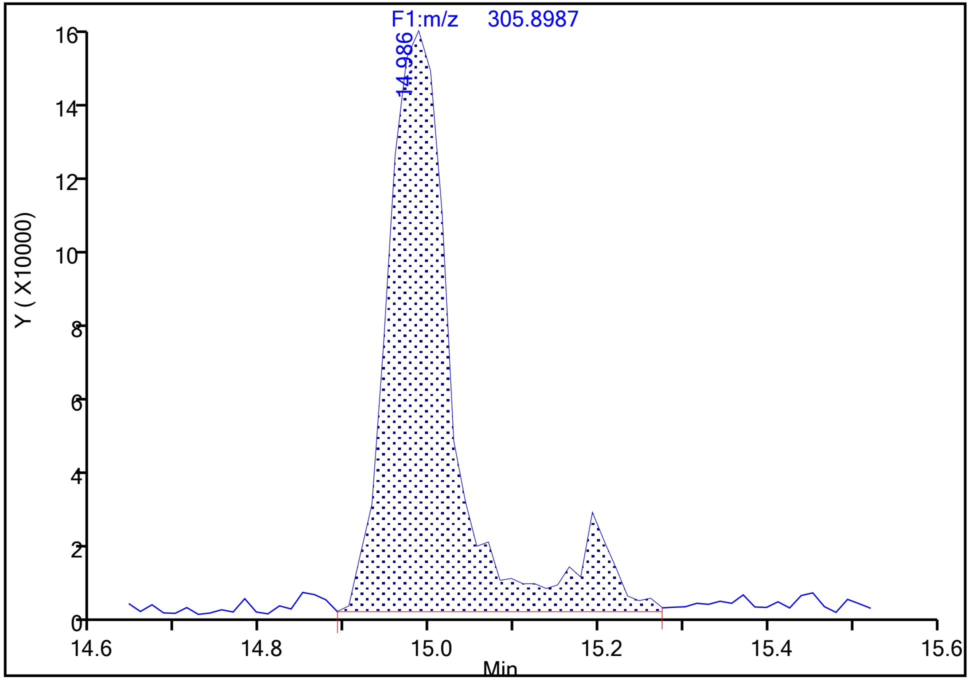

Manual Integration Results

RT: 14.99
Area: 492103
Amount: 1.202723
Amount Units: pg/ul

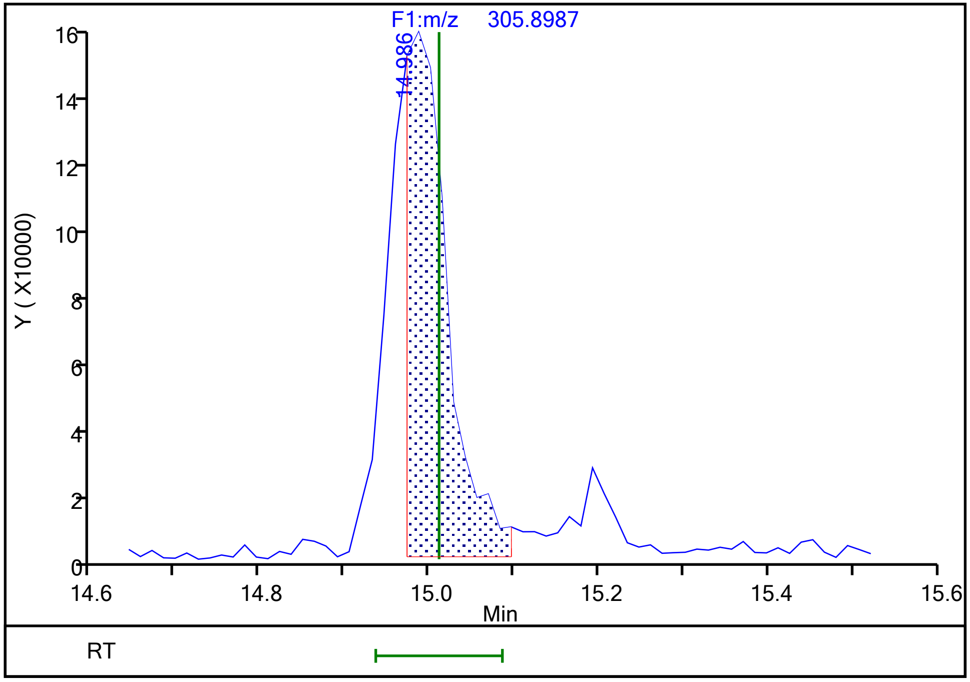

Reviewer: shardaa, 21-Aug-2020 11:45:43

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d		
Injection Date:	20-Aug-2020 21:22:11	Instrument ID:	4D2
Lims ID:	320-63525-A-2-A	Lab Sample ID:	320-63525-2
Client ID:	11215702-Treatment-4		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT:	14.99
Area:	583560
Amount:	1.959715
Amount Units:	pg/ul

Processing Integration Results

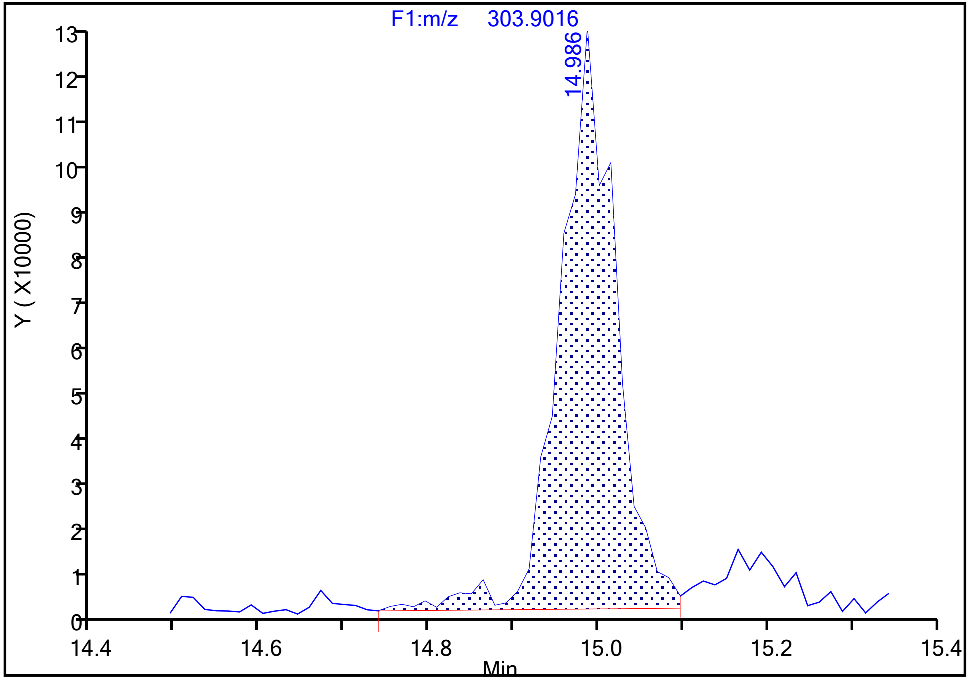

RT:	14.99
Area:	385002
Amount:	1.202723
Amount Units:	pg/ul

Manual Integration Results

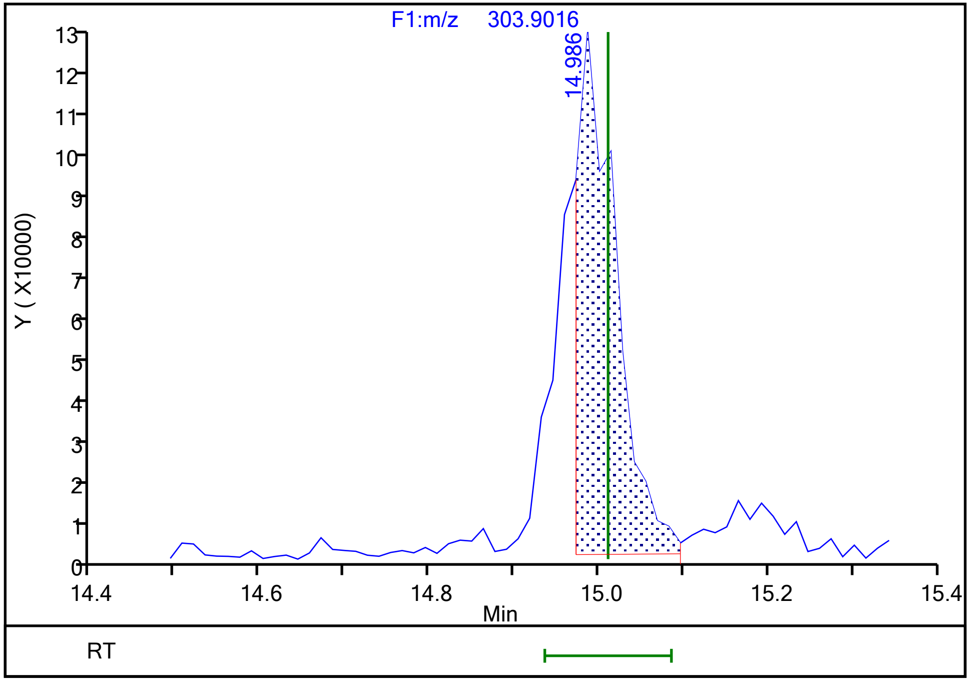

Reviewer: shardaa, 21-Aug-2020 11:45:46

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d		
Injection Date:	20-Aug-2020 21:22:11	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405652	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

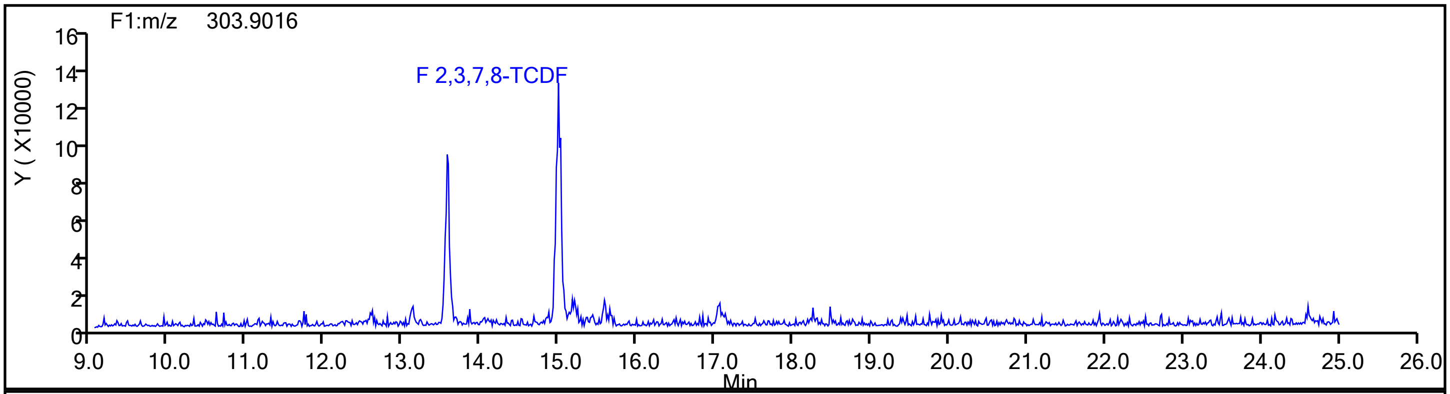

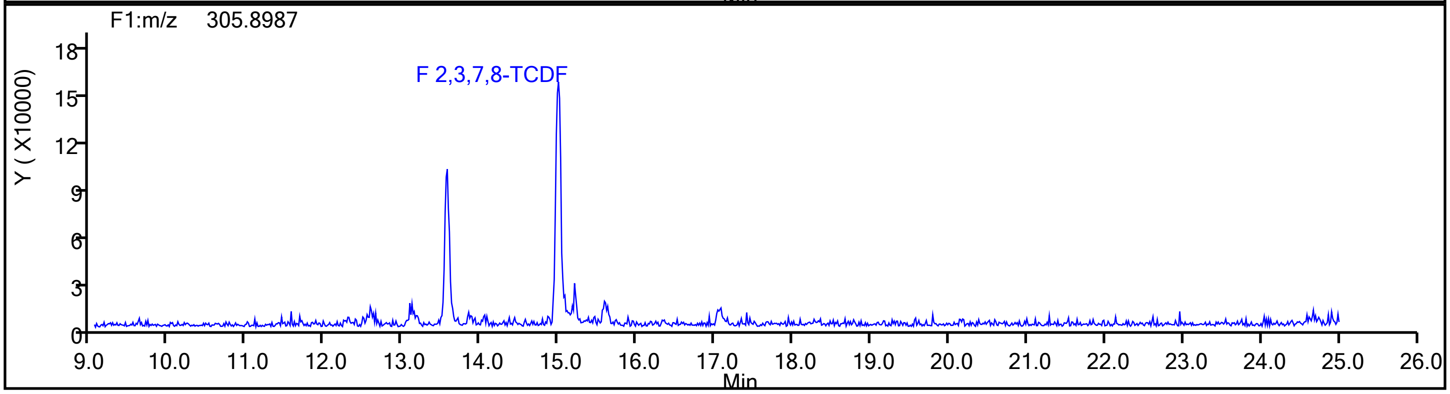

TCDF Standards

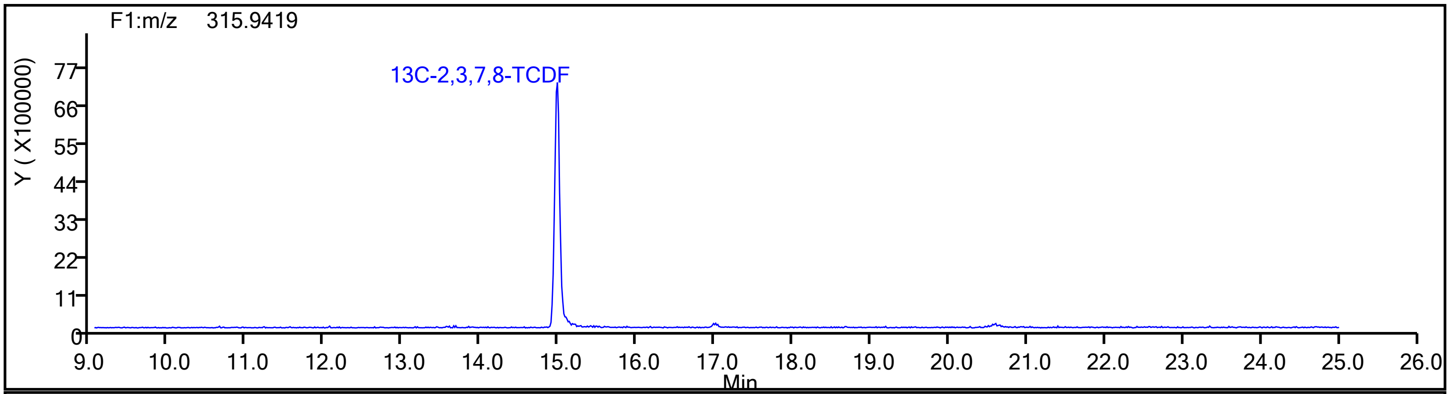

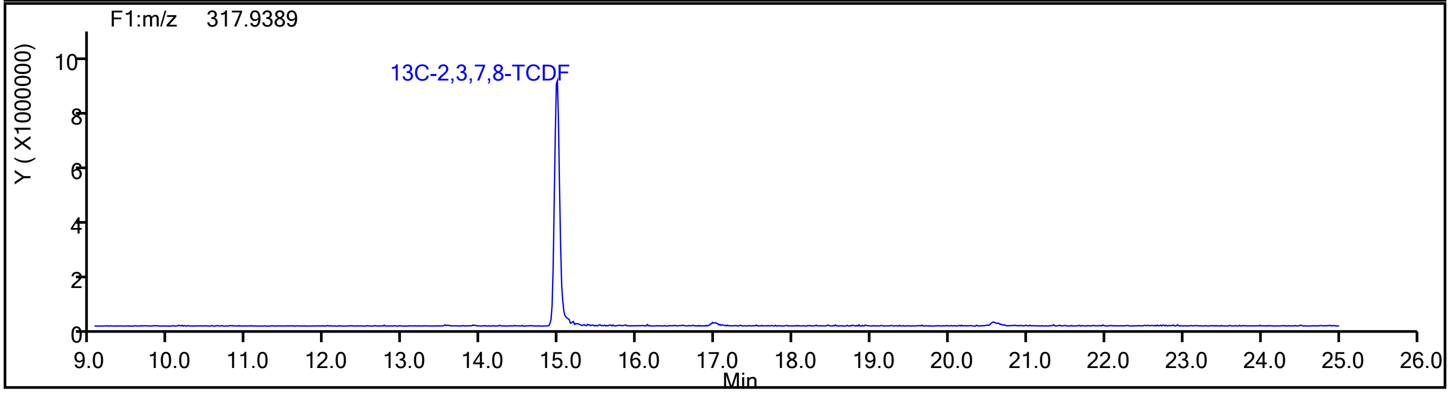

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d		
Injection Date:	20-Aug-2020 21:22:11	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405652	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

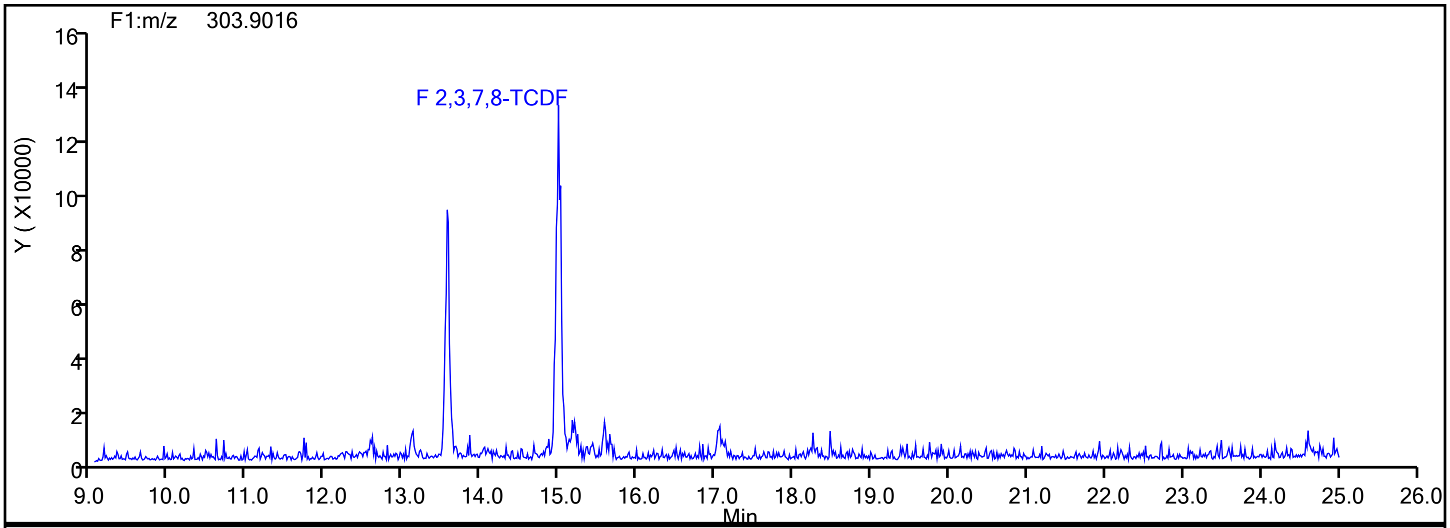

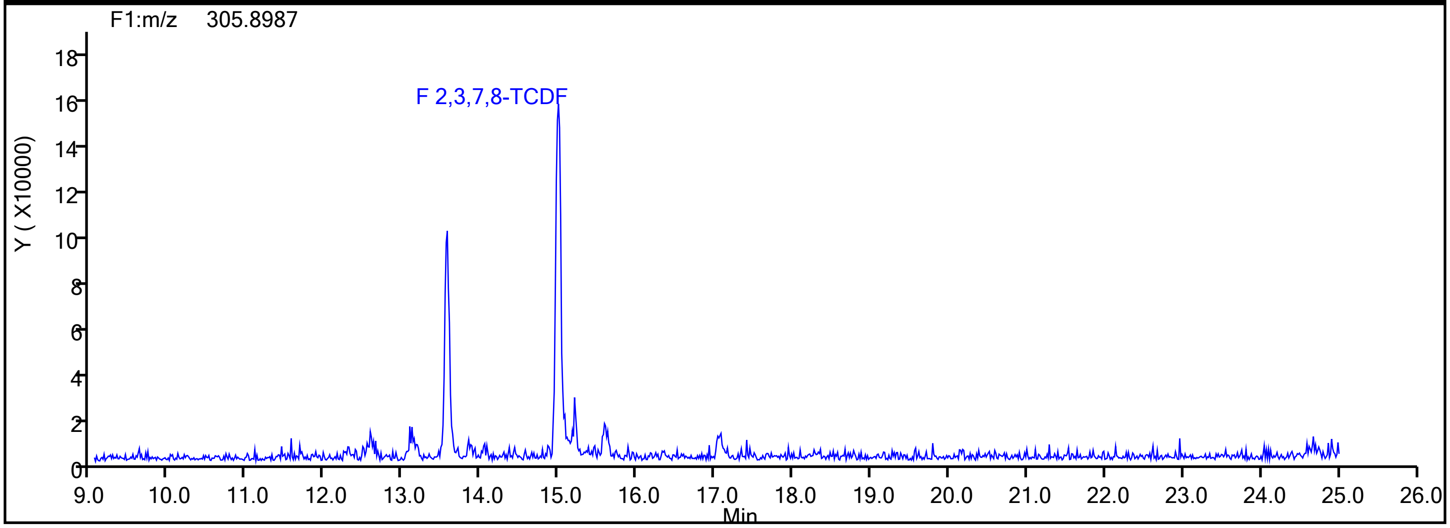

TCDF Interference Mass

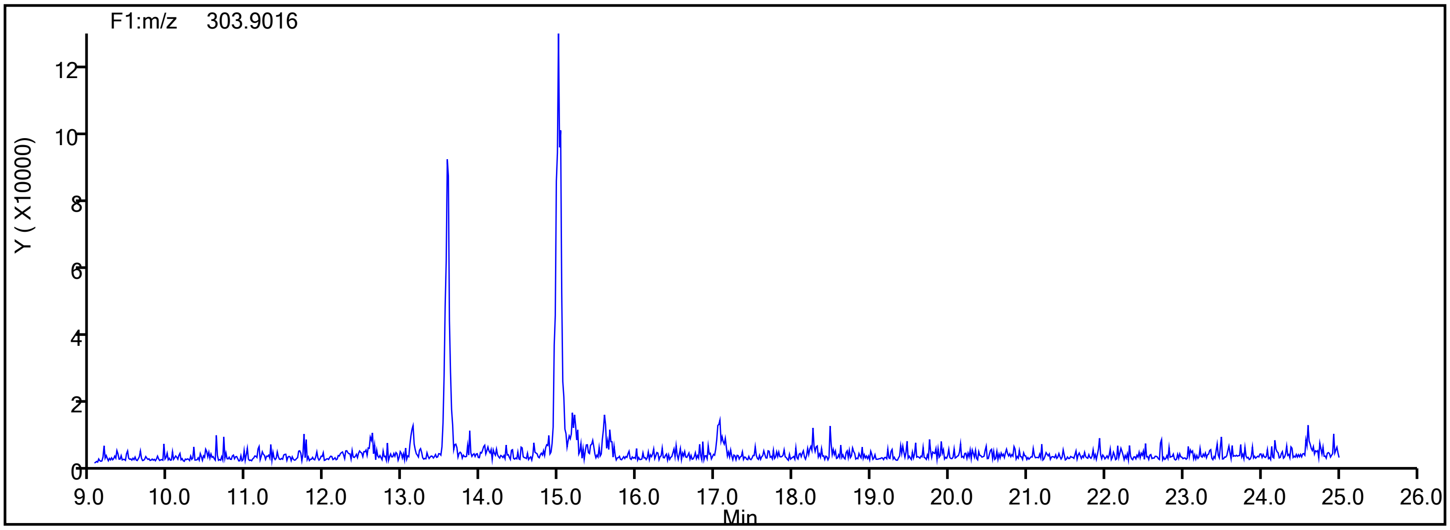

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d		
Injection Date:	20-Aug-2020 21:22:11	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405652	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

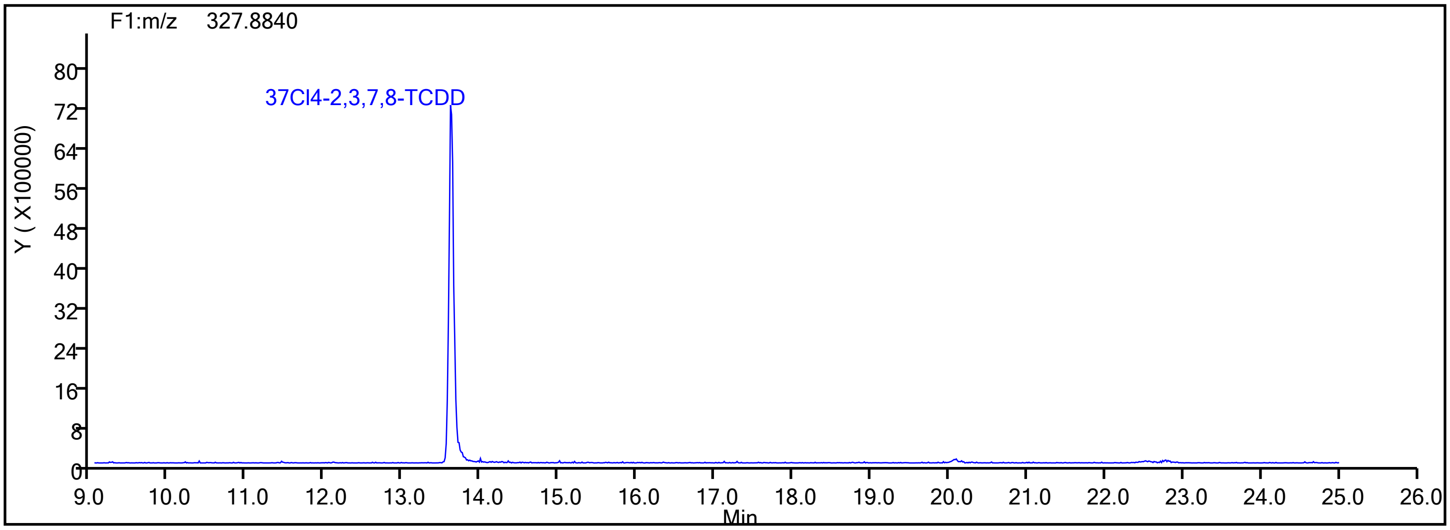

37Cl4-TCDD Standards

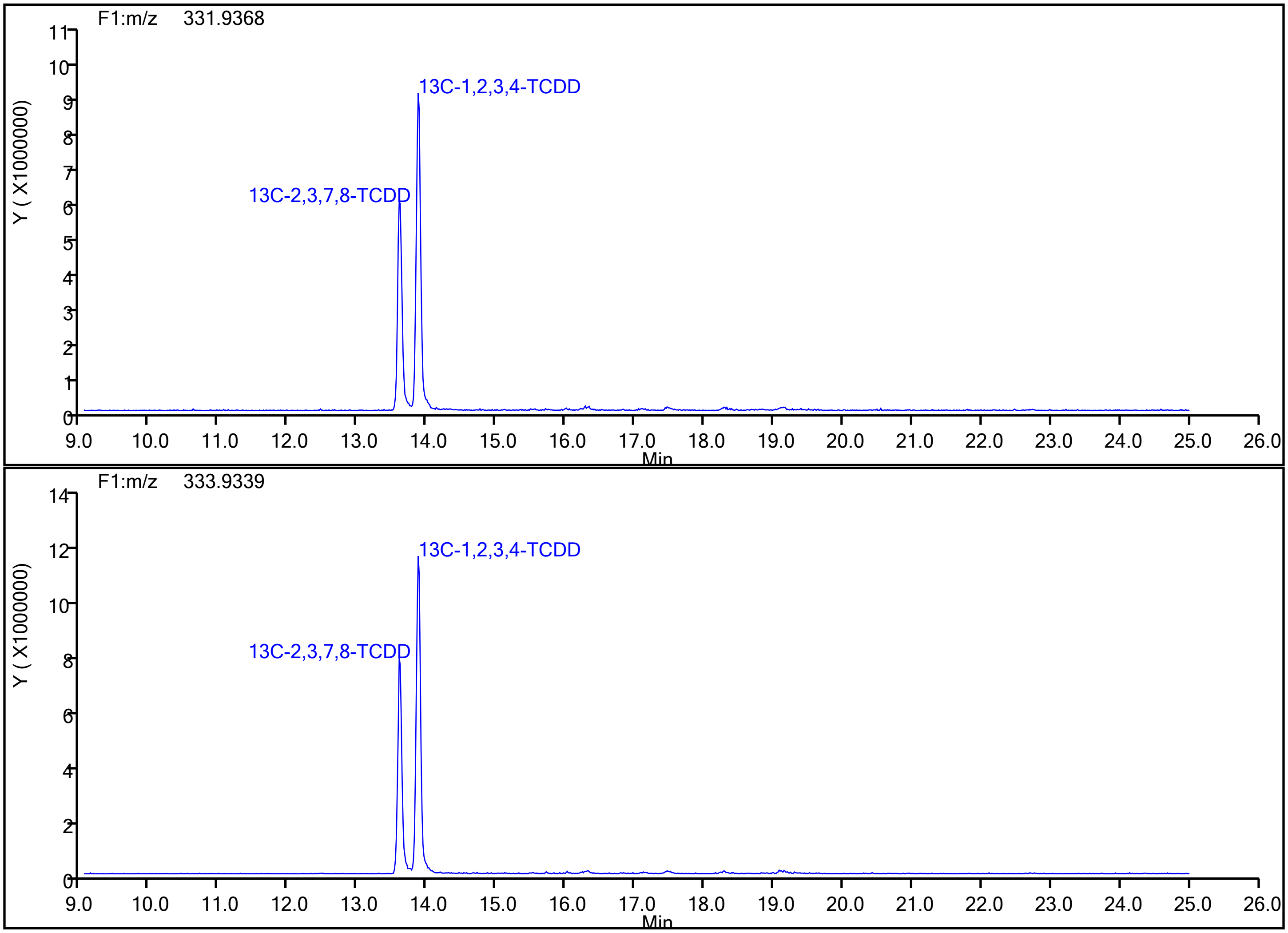

Report Date: 21-Aug-2020 11:46:40 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_009.d		
Injection Date:	20-Aug-2020 21:22:11	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Treatment-4		
Worklist#:	405652	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

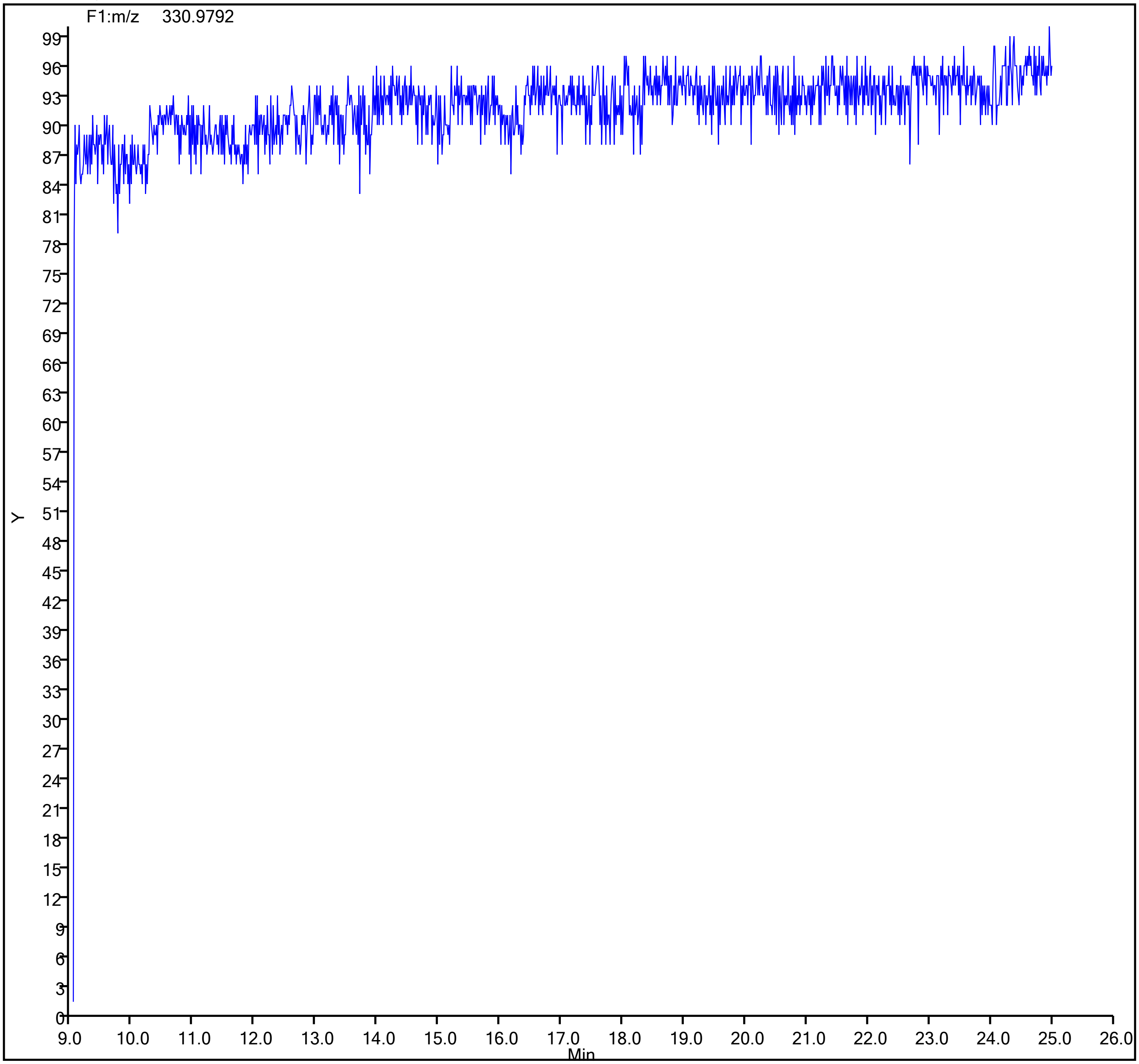

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1   Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42   Calibration End Date: 06/27/2020 17:43   Calibration ID: 50712

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-390253/3	27JN20A10D5_3.d
Level 2	IC 320-390253/4	27JN20A10D5_4.d
Level 3	IC 320-390253/5	27JN20A10D5_5.d
Level 4	IC 320-390253/6	27JN20A10D5_6.d
Level 5	IC 320-390253/7	27JN20A10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9622	0.8723	0.8878	0.9090	0.9208	AveID		0.9104				3.8		20.0			
2,3,7,8-TCDD	1.1459	1.0637	1.0160	1.0668	1.0799	AveID		1.0745				4.3		20.0			
1,2,3,7,8-PeCDF	1.0178	0.9707	0.9806	1.0060	0.9939	AveID		0.9938				1.9		20.0			
2,3,4,7,8-PeCDF	0.8569	0.7653	0.8088	0.8192	0.8083	AveID		0.8117				4.0		20.0			
1,2,3,7,8-PeCDD	1.0295	0.9968	1.0095	1.0333	1.0215	AveID		1.0181				1.5		20.0			
1,2,3,4,7,8-HxCDF	0.8264	0.7466	0.8017	0.8348	0.8212	AveID		0.8061				4.4		20.0			
1,2,3,6,7,8-HxCDF	0.9926	0.9517	0.9681	1.0060	0.9909	AveID		0.9818				2.2		20.0			
2,3,4,6,7,8-HxCDF	1.0605	1.0168	1.0279	1.0442	1.0418	AveID		1.0382				1.6		20.0			
1,2,3,4,7,8-HxCDD	0.8745	0.7772	0.8099	0.8250	0.8146	AveID		0.8202				4.3		20.0			
1,2,3,6,7,8-HxCDD	0.9535	0.9129	0.9268	0.9521	0.9380	AveID		0.9367				1.8		20.0			
1,2,3,7,8,9-HxCDD	1.0476	0.9676	0.9680	0.9938	0.9754	AveID		0.9905				3.4		20.0			
1,2,3,7,8,9-HxCDF	1.0369	1.0255	1.0226	1.0379	1.0374	AveID		1.0321				0.7		20.0			
1,2,3,4,6,7,8-HpCDF	1.4703	1.4287	1.4421	1.4741	1.4484	AveID		1.4527				1.3		20.0			
1,2,3,4,6,7,8-HpCDD	1.0754	1.0391	1.0348	1.0598	1.0606	AveID		1.0540				1.6		20.0			
1,2,3,4,7,8,9-HpCDF	1.0923	1.0016	1.0565	1.0809	1.0614	AveID		1.0585				3.3		20.0			
OCDD	1.2193	1.1131	1.1275	1.1591	1.1305	AveID		1.1499				3.7		20.0			
OCDF	1.3068	1.2472	1.2865	1.3368	1.3050	AveID		1.2965				2.5		20.0			
13C-2,3,7,8-TCDF	1.3537	1.3541	1.3433	1.4035	1.4082	Ave		1.3726				2.2		35.0			
13C-2,3,7,8-TCDD	0.9956	1.0272	0.9998	1.0288	1.0446	Ave		1.0192				2.0		35.0			
13C-1,2,3,7,8-PeCDF	1.0982	1.1235	1.1049	1.1775	1.2102	Ave		1.1429				4.3		35.0			
13C-2,3,4,7,8-PeCDF	1.3337	1.4224	1.3377	1.4295	1.4751	Ave		1.3997				4.4		35.0			
13C-1,2,3,7,8-PeCDD	0.8085	0.8002	0.7989	0.8395	0.8687	Ave		0.8232				3.7		35.0			
13C-1,2,3,4,7,8-HxCDF	1.0976	1.1590	1.1254	1.1433	1.1688	Ave		1.1388				2.5		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0684	1.0788	1.0866	1.0815	1.0863	Ave		1.0803				0.7		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9398	0.9313	0.9462	0.9645	0.9652	Ave		0.9494				1.6		35.0			
13C-1,2,3,4,7,8-HxCDD	0.9124	0.9506	0.8876	0.9587	0.9689	Ave		0.9356				3.7		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0219	1.0303	1.0727	1.0407	1.0423	Ave		1.0416				1.8		35.0			
13C-1,2,3,7,8,9-HxCDF	0.8661	0.8307	0.8523	0.8846	0.9014	Ave		0.8670				3.2		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.7803	0.7622	0.7899	0.8027	0.8145	Ave		0.7899				2.6		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7481	0.7316	0.7607	0.7823	0.7960	Ave		0.7637				3.4		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.8727	0.9053	0.8888	0.9186	0.9610	Ave		0.9093				3.7		35.0			
13C-OCDD	0.6003	0.5928	0.6267	0.6645	0.7042	Ave		0.6377				7.3		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	0.8685	0.9982	0.9928	1.1004	1.1281	Ave		1.0176				10.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-390253/3	27JN20A10D5_3.d
Level 2	IC 320-390253/4	27JN20A10D5_4.d
Level 3	IC 320-390253/5	27JN20A10D5_5.d
Level 4	IC 320-390253/6	27JN20A10D5_6.d
Level 5	IC 320-390253/7	27JN20A10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	280892	1030887	5357609	24031823	122216235	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	246045	953601	4563232	20673669	106321386	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1205247	4759314	24335887	111571715	566831479	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1232457	4750358	24300949	110300391	561858549	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	897541	3480805	18115123	81703665	418171926	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	816526	3185554	16628712	77185884	405180807	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	954593	3779382	19386425	87985501	454382367	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	897222	3485837	17924922	81444661	424474579	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	718246	2719685	13247984	63965429	333187319	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	877174	3462702	18322759	80138616	412697943	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	912086	3527858	17485889	80351223	414077282	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	808411	3136034	16062640	74251577	394753597	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1032759	4008596	20993366	95697028	498016185	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	724174	2798461	14507917	67048589	356377100	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	858123	3338012	17306428	80293602	430556216	2.50	10.0	50.0	200	1000
OCDD		AveID	1317823	4858093	26045472	124592297	672147206	5.00	20.0	100	400	2000
OCDF		AveID	1412405	5443463	29718751	143689837	775885278	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	58386827	59091712	60344940	66092582	66365053	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	42943807	44824010	44913870	48446018	49229599	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	47366892	49027297	49635229	55450977	57033386	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	57527637	62074161	60093455	67318305	69514353	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	34874204	34921306	35888619	39534333	40938052	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	39521628	42664742	41483076	46230589	49341715	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	38469455	39713843	40051804	43730114	45855303	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	33841250	34283463	34877926	38999309	40745996	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	32853663	34994028	32715286	38766257	40903104	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	36797812	37929467	39539332	42083843	43998213	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	31185646	30581048	31414784	35770919	38052377	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	28095822	28057147	29115881	32459322	34382848	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	26936004	26931716	28040054	31631816	33600359	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	31425221	33325163	32761435	37143667	40565902	100	100	100	100	100
13C-OCDD	13CHx	Ave	43232241	43643747	46201838	53743483	59456751	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	187314	871168	4459695	20727504	106325815	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	27-Jun-2020 14:42:53	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 062720 CS-2 HRDXNL2_00029				
Misc. Info.:	27JN2010AD5				
Operator ID:	SMA	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-Jun-2020 13:16:50	Calib Date:	27-Jun-2020 17:43:35		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1062				

First Level Reviewer: messecara Date: 27-Jun-2020 21:34:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	43132879	0.80	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	58386827	0.79	1.3726	98.6	98.6	0.2580	0.2580	98.62	
2,3,7,8-TCDF	17.219	280892	0.66	0.9104	0.5284	0.5284	0.0199	0.0199	106	Ma
S Total TCDF					0.5284	0.5284	0.0199	0.0199		
D 13C-2,3,7,8-TCDD	17.884	42943807	0.79	1.0192	97.7	97.7	0.2939	0.2939	97.69	
2,3,7,8-TCDD	17.914	246045	0.88	1.0745	0.5332	0.5332	0.0280	0.0280	107	
$ 37Cl4-2,3,7,8-TCDD	17.899	187314		1.0176	0.4268	0.4268	0.0126	0.0126	85.35	
S Total TCDD					0.5332	0.5332	0.0280	0.0280		
D 13C-1,2,3,7,8-PeCDF	22.143	47366892	1.58	1.1429	96.1	96.1	0.4209	0.4209	96.09	
1,2,3,7,8-PeCDF	22.156	1205247	1.59	0.9938	2.560	2.560	0.0363	0.0363	102	
D 13C-2,3,4,7,8-PeCDF	23.452	57527637	1.59	1.3997	95.3	95.3	0.3437	0.3437	95.29	
2,3,4,7,8-PeCDF	23.493	1232457	1.56	0.8117	2.639	2.639	0.0386	0.0386	106	
S Total PeCDF					5.200	5.200	0.0375	0.0375		
D 13C-1,2,3,7,8-PeCDD	24.174	34874204	1.61	0.8232	98.2	98.2	0.1591	0.1591	98.22	
1,2,3,7,8-PeCDD	24.202	897541	1.63	1.0181	2.528	2.528	0.0365	0.0365	101	
S Total PeCDD					2.528	2.528	0.0365	0.0365		
D 13C-1,2,3,4,7,8-HxCDF	30.292	39521628	0.51	1.1388	96.4	96.4	0.9094	0.9094	96.38	
1,2,3,4,7,8-HxCDF	30.306	816526	1.20	0.8061	2.563	2.563	0.0626	0.0626	103	
D 13C-1,2,3,6,7,8-HxCDF	30.492	38469455	0.50	1.0803	98.9	98.9	0.9586	0.9586	98.89	
1,2,3,6,7,8-HxCDF	30.519	954593	1.09	0.9818	2.527	2.527	0.0575	0.0575	101	
D 13C-2,3,4,6,7,8-HxCDF	31.371	33841250	0.51	0.9494	99.0	99.0	1.091	1.091	98.99	
2,3,4,6,7,8-HxCDF	31.384	897222	1.23	1.0382	2.554	2.554	0.0457	0.0457	102	
D 13C-1,2,3,7,8,9-HxCDF	32.196	31185646	0.49	0.8670	99.9	99.9	1.194	1.194	99.89	
1,2,3,7,8,9-HxCDF	32.209	808411	1.23	1.0321	2.512	2.512	0.0495	0.0495	100	
S Total HxCDF					10.2	10.2	0.0538	0.0538		
* 13C-1,2,3,7,8,9-HxCDD	32.009	36008208	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	32853663	1.27	0.9356	97.5	97.5	0.6036	0.6036	97.52	
1,2,3,4,7,8-HxCDD	31.583	718246	1.25	0.8202	2.665	2.665	0.0349	0.0349	107	
D 13C-1,2,3,6,7,8-HxCDD	31.677	36797812	1.27	1.0416	98.1	98.1	0.5422	0.5422	98.11	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	877174	1.19	0.9367	2.545	2.545	0.0325	0.0325	102	
1,2,3,7,8,9-HxCDD	32.023	912086	1.22	0.9905	2.644	2.644	0.0298	0.0298	106	
S Total HxCDD					7.854	7.854	0.0324	0.0324		
D 13C-1,2,3,4,6,7,8-HpCDF	33.652	28095822	0.43	0.7899	98.8	98.8	3.070	3.070	98.78	
1,2,3,4,6,7,8-HpCDF	33.664	1032759	1.05	1.4527	2.530	2.530	0.0699	0.0699	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	31425221	0.43	0.9093	96.0	96.0	2.667	2.667	95.98	
1,2,3,4,7,8,9-HpCDF	34.734	858123	1.03	1.0585	2.580	2.580	0.1025	0.1025	103	
S Total HpCDF					5.110	5.110	0.0862	0.0862		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	26936004	1.05	0.7637	97.9	97.9	1.321	1.321	97.95	
1,2,3,4,6,7,8-HpCDD	34.454	724174	1.08	1.0540	2.551	2.551	0.0670	0.0670	102	
S Total HpCDD					2.551	2.551	0.0670	0.0670		
D 13C-OCDD	36.773	43232241	0.91	0.6377	188.3	188.3	0.4253	0.4253	94.13	
OCDF	36.869	1412405	0.86	1.2965	5.040	5.040	0.0689	0.0689	101	
OCDD	36.785	1317823	0.86	1.1499	5.302	5.302	0.0610	0.0610	106	

QC Flag Legend

Review Flags

M - Manually Integrated
a - User Assigned ID

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 27-Jun-2020 14:42:53 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720 CS-2 HRDXNL2_00029
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:34:00

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		19109142	4469045	6338	15845	705		
333.9339	17.702	17.702	0		24023737	5528682	5643	14107	980	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.197	-1	0.971	25721559	5753463	7943	19857	724		
317.9389	17.188	17.197	-1	0.971	32665268	7314987	6219	15547	1176	0.79(0.65-0.89)	
2,3,7,8-TCDF											Ma
303.9016	17.219	17.215	0	1.002	111638	24949	312	780	80		M
305.8987	17.203	17.215	-1	1.001	169254	40894	635	1587	64	0.66(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.893	-1	1.010	18953285	3868385	6338	15845	610		
333.9339	17.884	17.893	-1	1.010	23990522	4968400	5643	14107	880	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.002	115035	23770	693	1732	34		
321.8936	17.914	17.911	0	1.002	131010	26451	369	922	72	0.88(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.899	17.911	-1	1.011	187314	36128	512	1280	71		
13C-1,2,3,7,8-PeCDF											
351.9000	22.143	22.148	0	1.251	29030690	4595683	11459	28647	401		
353.8970	22.143	22.148	0	1.251	18336202	2843288	7778	19445	366	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.156	22.164	0	1.001	739590	107448	456	1140	236		
341.8567	22.170	22.164	0	1.001	465657	67627	618	1545	109	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.452	23.460	0	1.325	35314398	5246885	11459	28647	458		
353.8970	23.452	23.460	0	1.325	22213239	3319576	7778	19445	427	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.493	23.487	0	1.002	750197	111156	456	1140	244		
341.8567	23.493	23.487	0	1.002	482260	68222	618	1545	110	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.174	24.180	0	1.366	21496254	2944189	2898	7245	1016		
369.8919	24.174	24.180	0	1.366	13377950	1888408	2341	5852	807	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	555750	79954	479	1197	167		
357.8516	24.188	24.204	-1	1.001	341791	46685	239	597	195	1.63(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.292	30.298	0	0.946	13355807	2118405	10331	25827	205		
385.8610	30.292	30.298	0	0.946	26165821	4001081	17560	43900	228	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.306	30.319	-1	1.000	445872	66308	645	1612	103		
375.8178	30.306	30.319	-1	1.000	370654	53531	590	1475	91	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.492	30.497	0	0.953	12817635	1836625	10331	25827	178		
385.8610	30.492	30.497	0	0.953	25651820	3631200	17560	43900	207	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.001	498017	70936	645	1612	110		
375.8178	30.519	30.519	0	1.001	456576	65753	590	1475	111	1.09(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	11403764	2212907	10331	25827	214		
385.8610	31.371	31.370	0	0.980	22437486	4297167	17560	43900	245	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	494081	96160	645	1612	149		
375.8178	31.384	31.384	0	1.000	403141	78650	590	1475	133	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.196	32.201	0	1.006	10310507	2030977	10331	25827	197		
385.8610	32.196	32.201	0	1.006	20875139	4014679	17560	43900	229	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.209	32.214	0	1.000	446374	85051	645	1612	132		
375.8178	32.209	32.214	0	1.000	362037	72332	590	1475	123	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.009	32.015	0		20121515	3760723	8471	21177	444		
403.8529	32.009	32.015	0		15886693	2972275	6740	16850	441	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	18386384	4241209	8471	21177	501		
403.8529	31.570	31.570	0	0.986	14467279	3356259	6740	16850	498	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	399412	92216	440	1100	210		
391.8127	31.583	31.583	0	1.000	318834	73262	431	1077	170	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.990	20561443	3949148	8471	21177	466		
403.8529	31.677	31.677	0	0.990	16236369	3207748	6740	16850	476	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	477373	89817	440	1100	204		
391.8127	31.690	31.693	0	1.000	399801	75642	431	1077	176	1.19(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.023	32.028	0	1.014	501620	91684	440	1100	208		
391.8127	32.023	32.028	0	1.014	410466	76084	431	1077	177	1.22(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.652	33.657	0	1.051	8501168	1992372	19221	48052	104		
419.8220	33.652	33.657	0	1.051	19594654	4545528	46094	115235	99	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.664	33.667	0	1.000	528322	119302	1326	3315	90		
409.7789	33.664	33.667	0	1.000	504437	122801	1331	3327	92	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	9461732	1889893	19221	48052	98		
419.8220	34.734	34.731	0	1.085	21963489	4232025	46094	115235	92	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.734	34.739	0	1.000	435598	82488	1326	3315	62		
409.7789	34.734	34.739	0	1.000	422525	79029	1331	3327	59	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	13800062	2832235	12564	31410	225		
437.8140	34.442	34.444	0	1.076	13135942	2704659	14602	36505	185	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	375597	73166	796	1990	92		
425.7737	34.454	34.457	0	1.000	348577	67236	768	1920	88	1.08(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.149	20628988	2892032	3523	8807	821		
471.7750	36.773	36.775	0	1.149	22603253	3086817	3782	9455	816	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	651620	99585	428	1070	233		
443.7399	36.869	36.871	0	1.003	760785	117628	641	1602	184	0.86(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	607409	86388	370	925	233		
459.7348	36.785	36.787	0	1.000	710414	99249	469	1172	212	0.86(0.76-1.02)	

QC Flag Legend

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d				
Injection Date:	27-Jun-2020 14:42:53	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	17.20
Area:	180317
Amount:	0.552071
Amount Units:	pg/ul

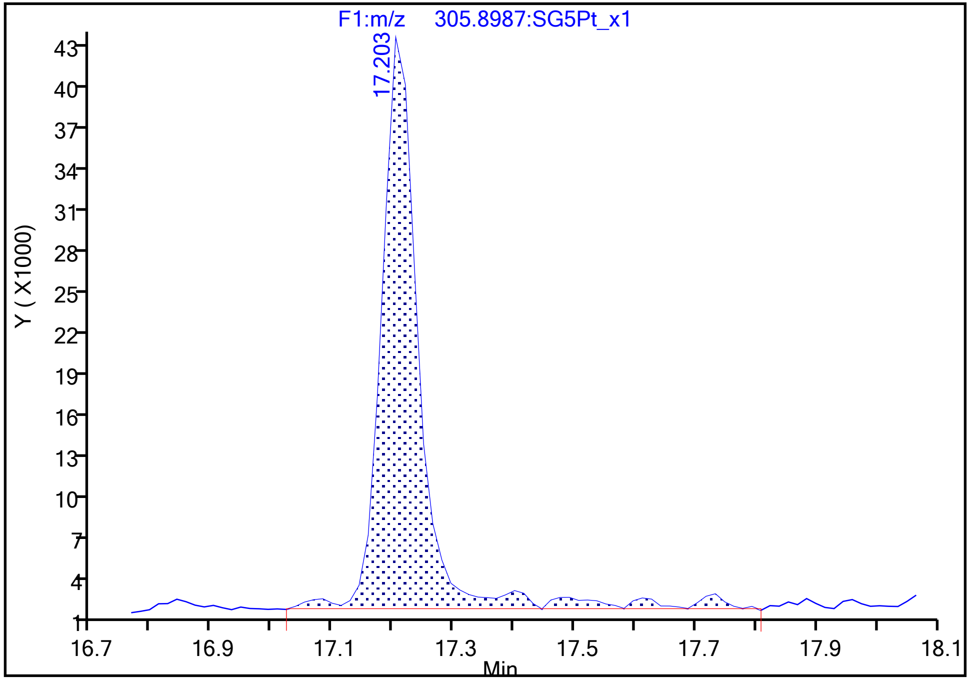

Manual Integration Results

RT:	17.20
Area:	169254
Amount:	0.528425
Amount Units:	pg/ul

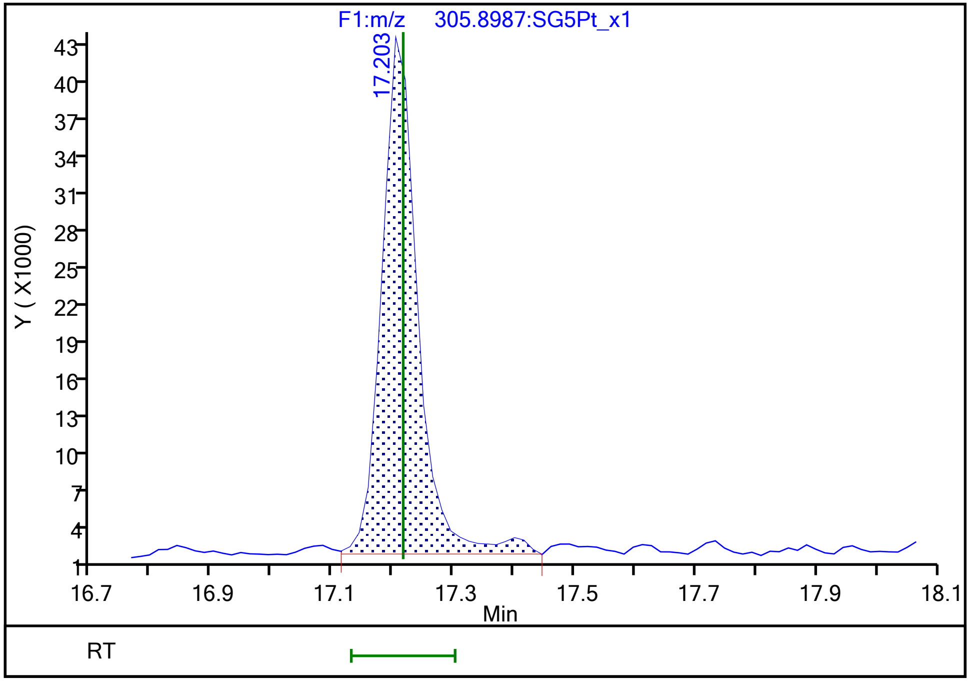

Reviewer: shardaa, 28-Jun-2020 13:06:13

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d				
Injection Date:	27-Jun-2020 14:42:53	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 3

Processing Integration Results

RT:	17.22
Area:	297024
Amount:	0.552071
Amount Units:	pg/ul

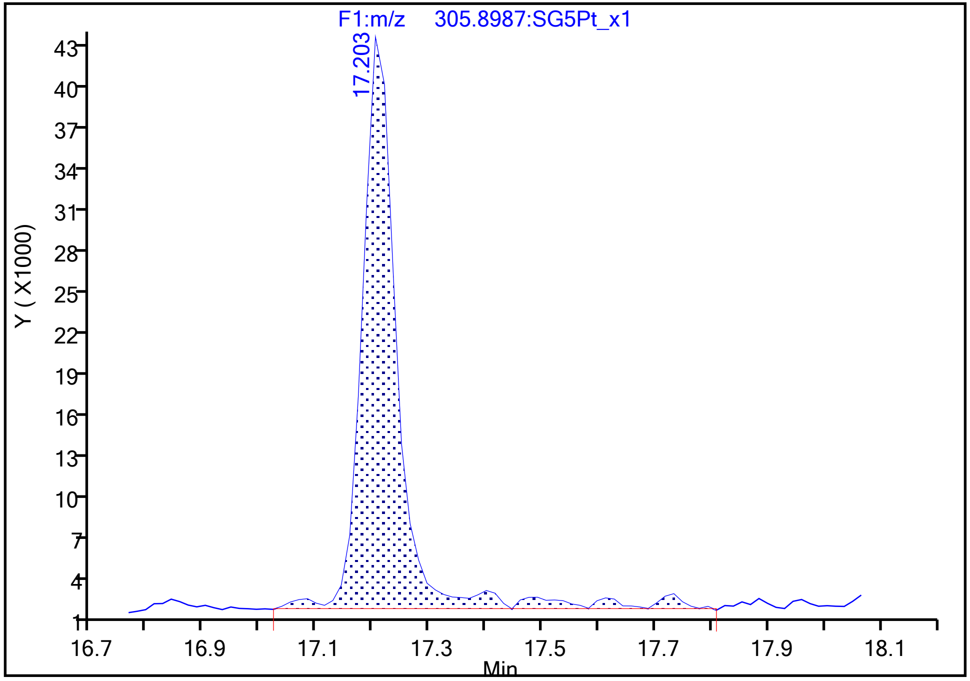

Manual Integration Results

RT:	17.22
Area:	280892
Amount:	0.528425
Amount Units:	pg/ul

Reviewer: shardaa, 28-Jun-2020 13:06:13

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d				
Injection Date:	27-Jun-2020 14:42:53	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT:	17.22
Area:	116707
Amount:	0.552071
Amount Units:	pg/ul

Processing Integration Results

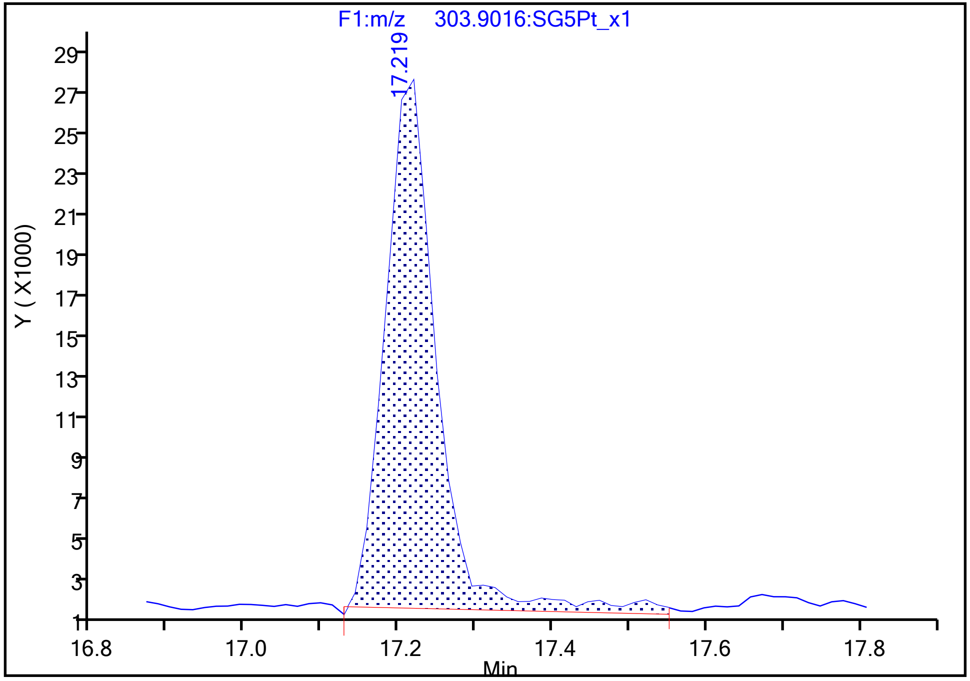

RT:	17.22
Area:	111638
Amount:	0.528425
Amount Units:	pg/ul

Manual Integration Results

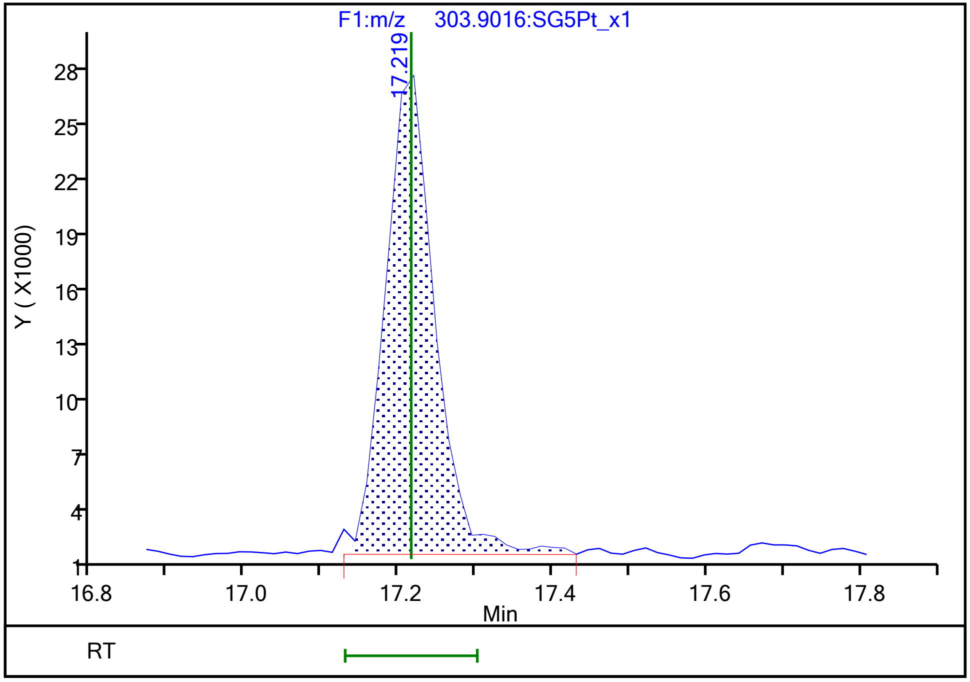

Reviewer: shardaa, 28-Jun-2020 13:06:16

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Poor chromatography

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d

Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

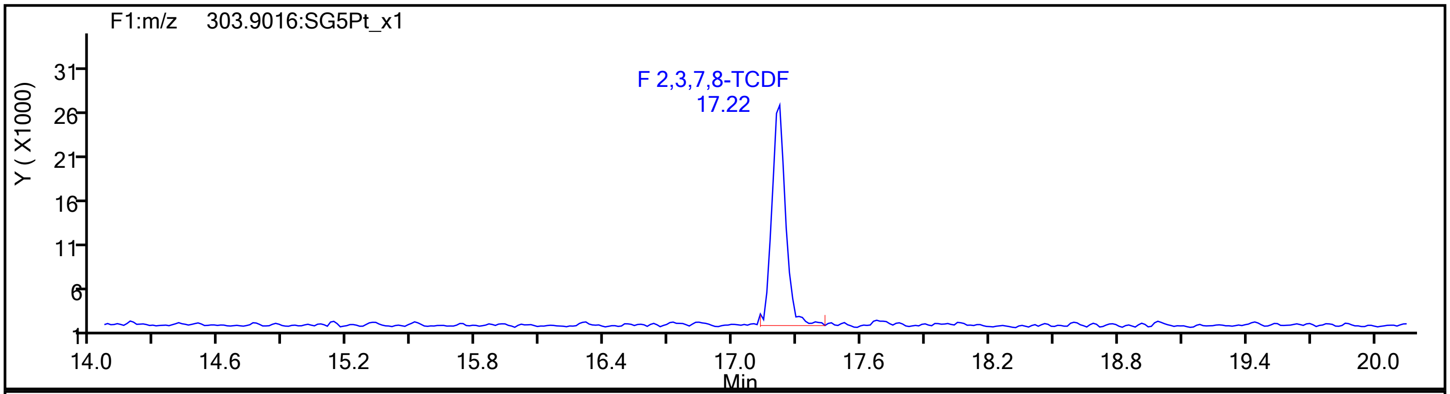

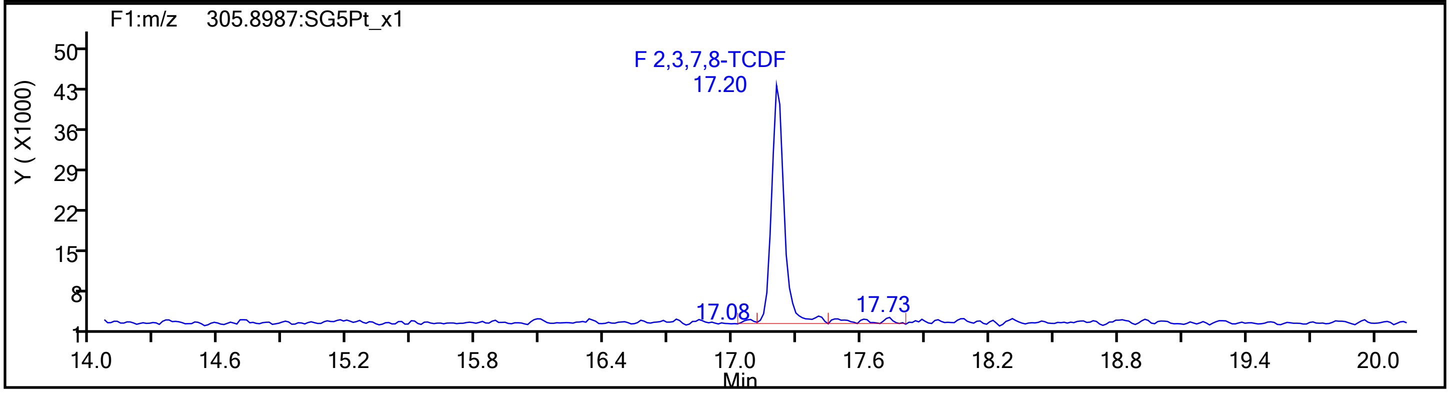

TCDF Standards

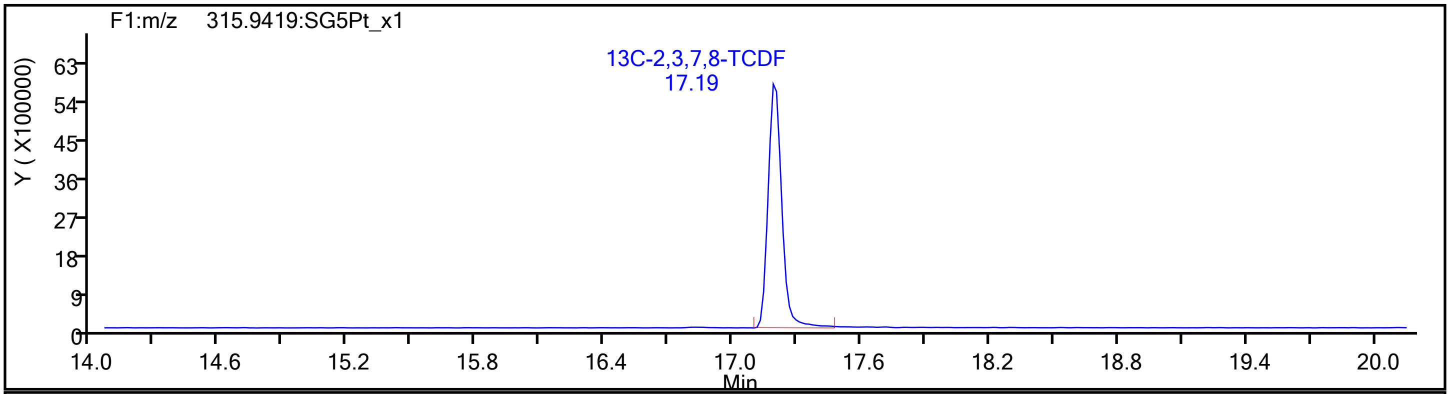

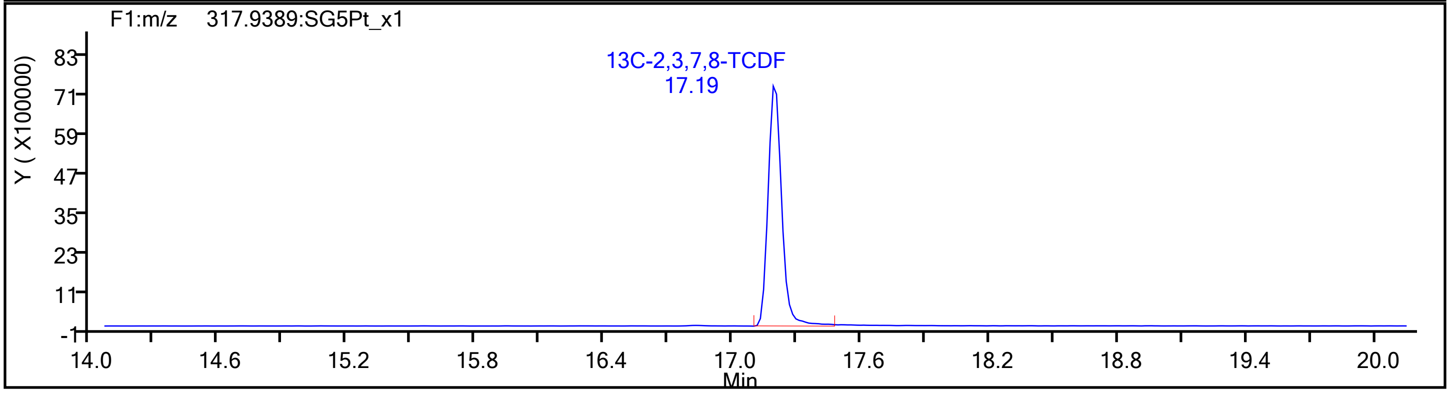

Report Date: 28-Jun-2020 13:16:54	Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

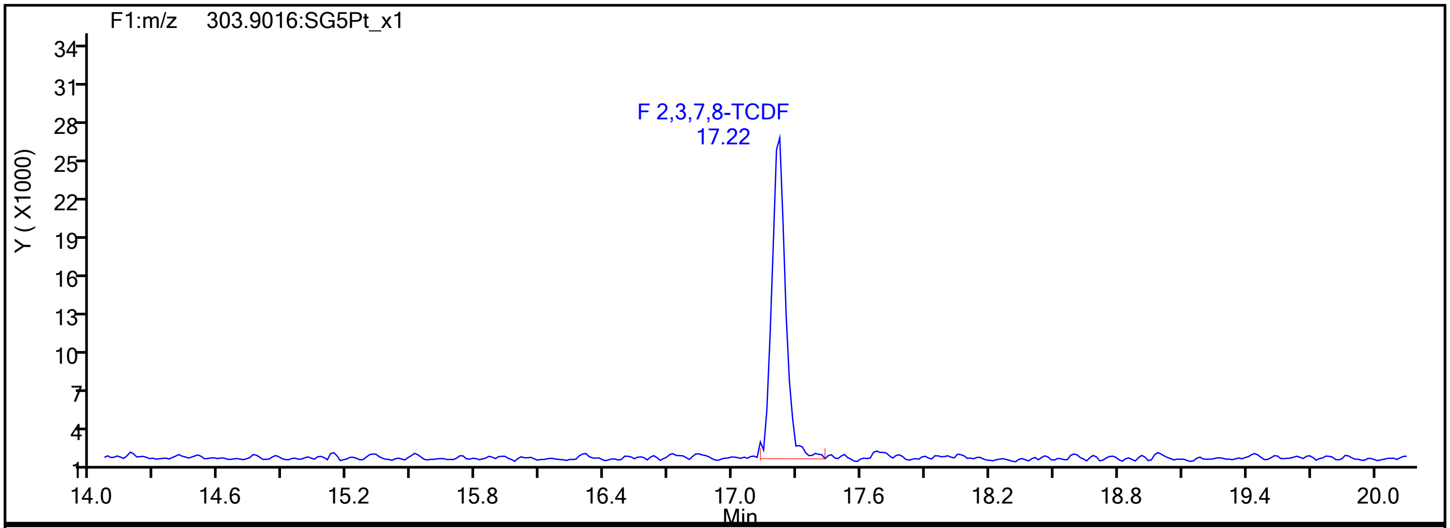

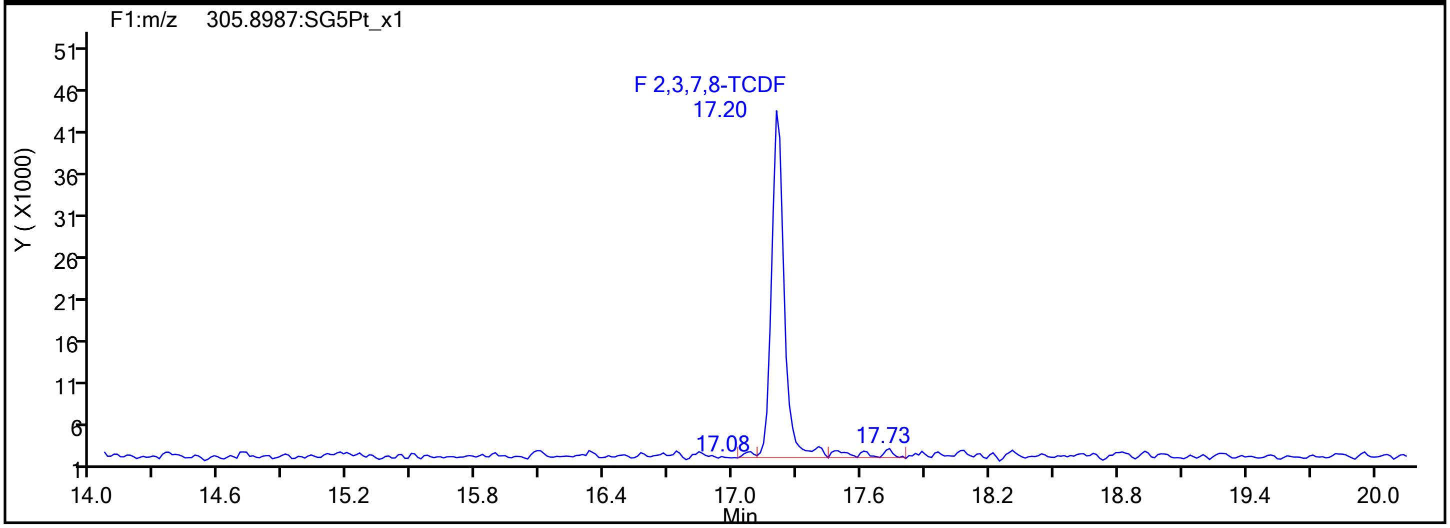

TCDF Interference Mass

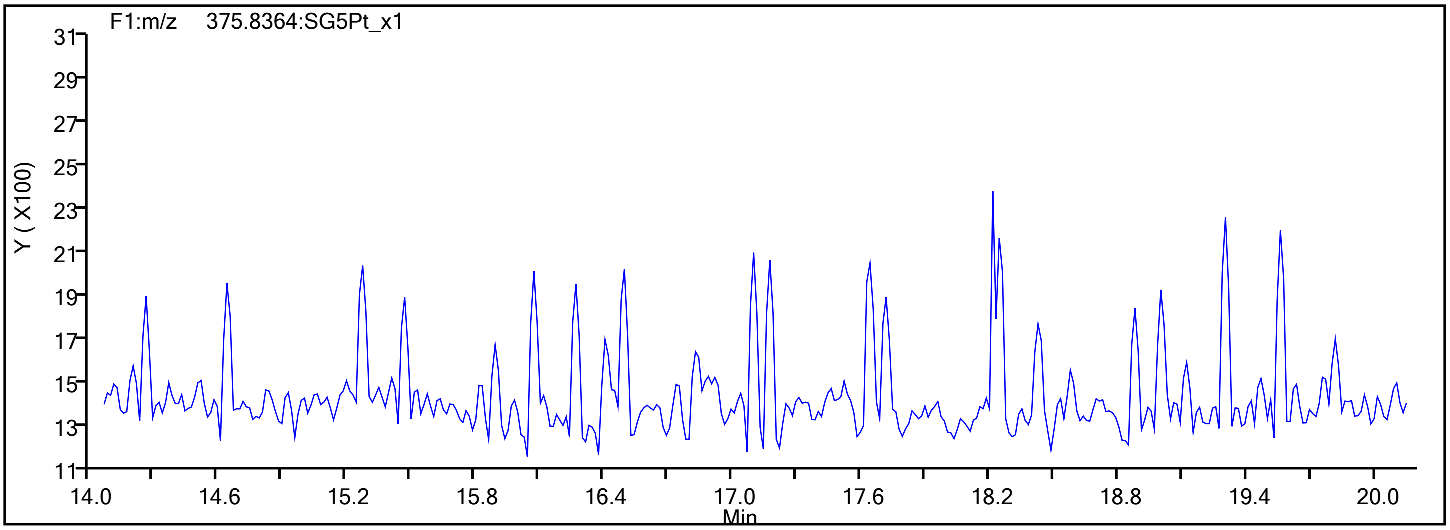

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

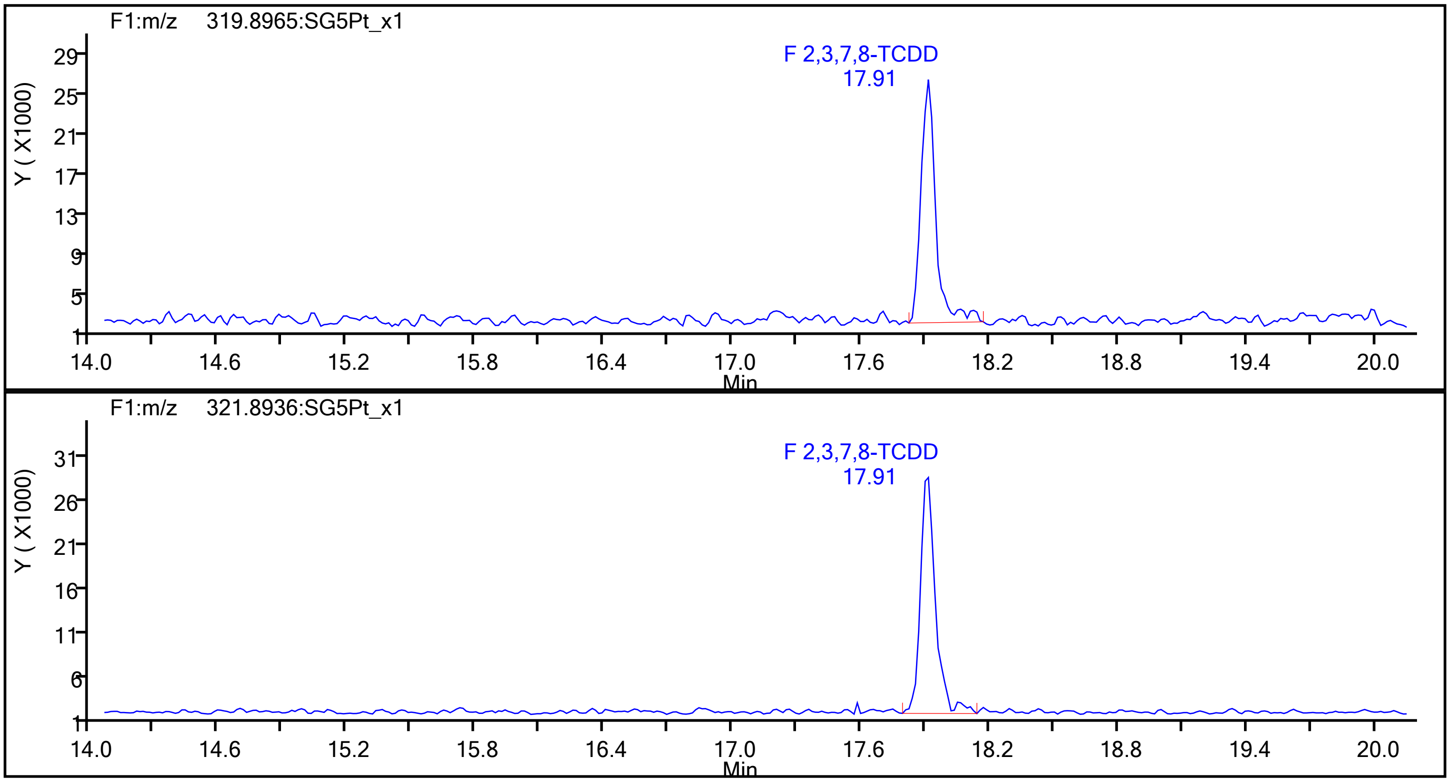

TCDD Standards

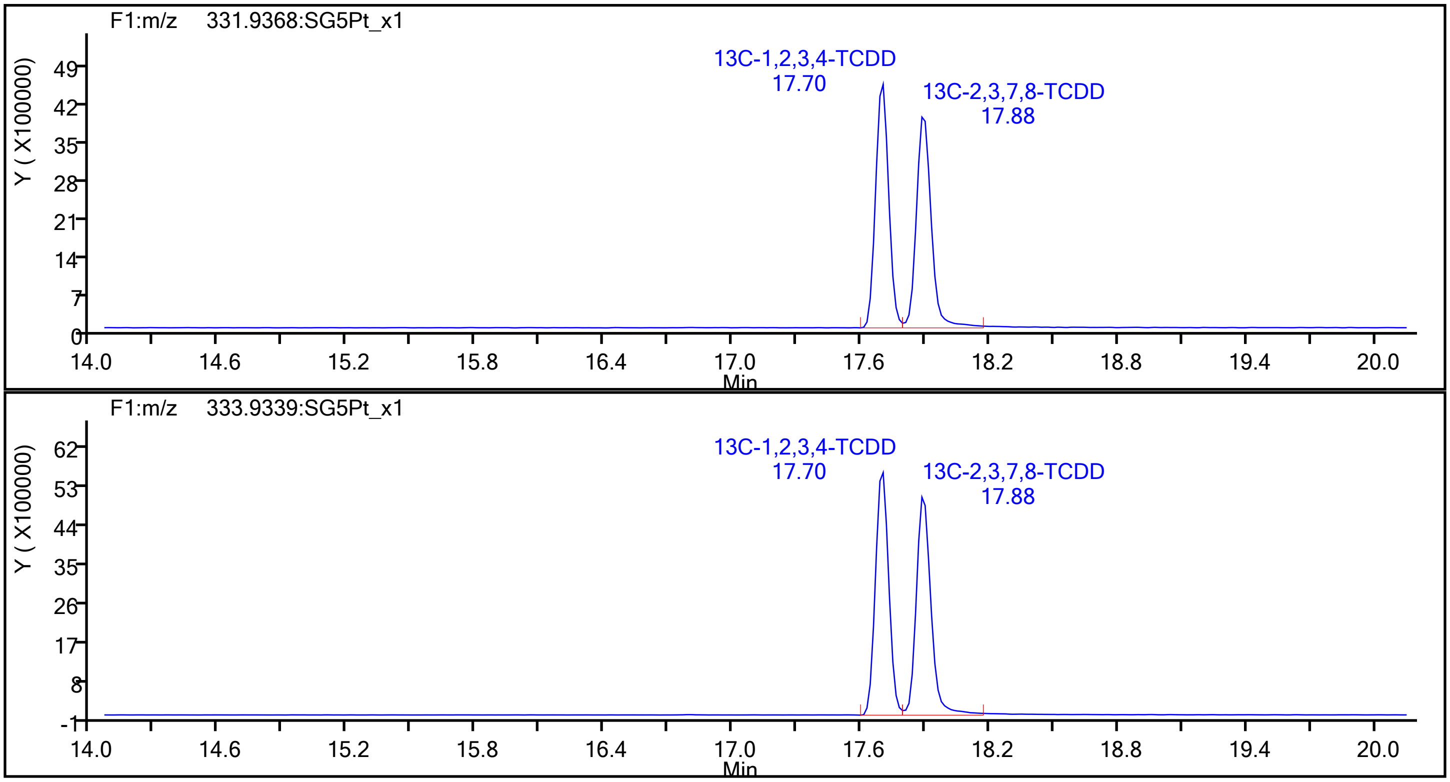

Report Date: 28-Jun-2020 13:16:54
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

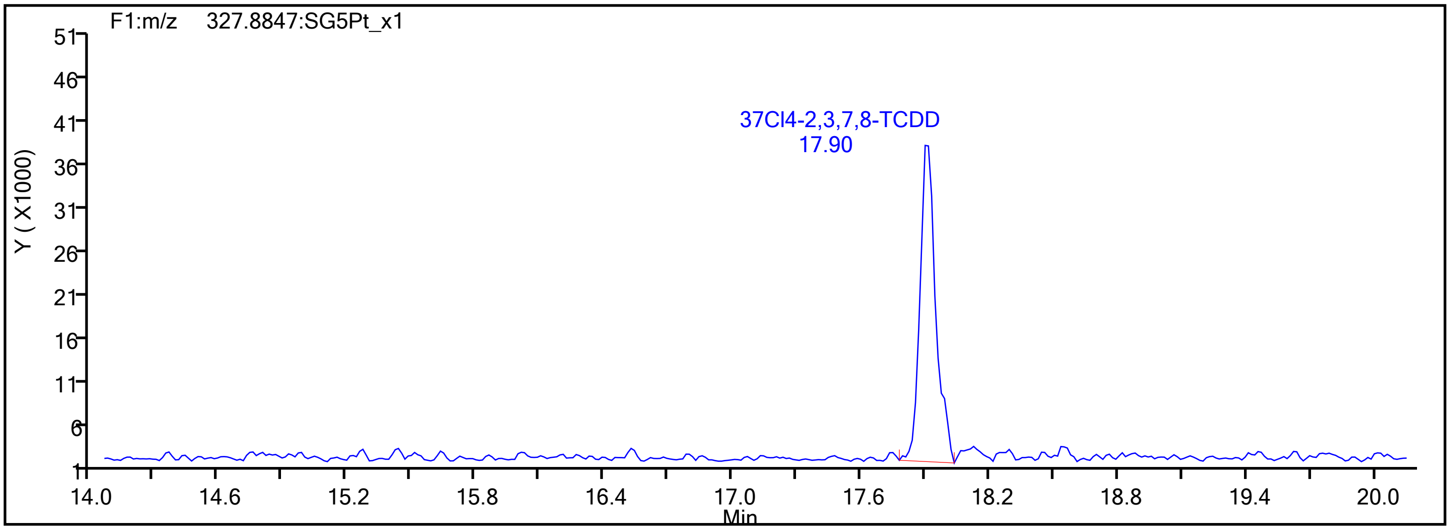

37Cl4-TCDD Standards

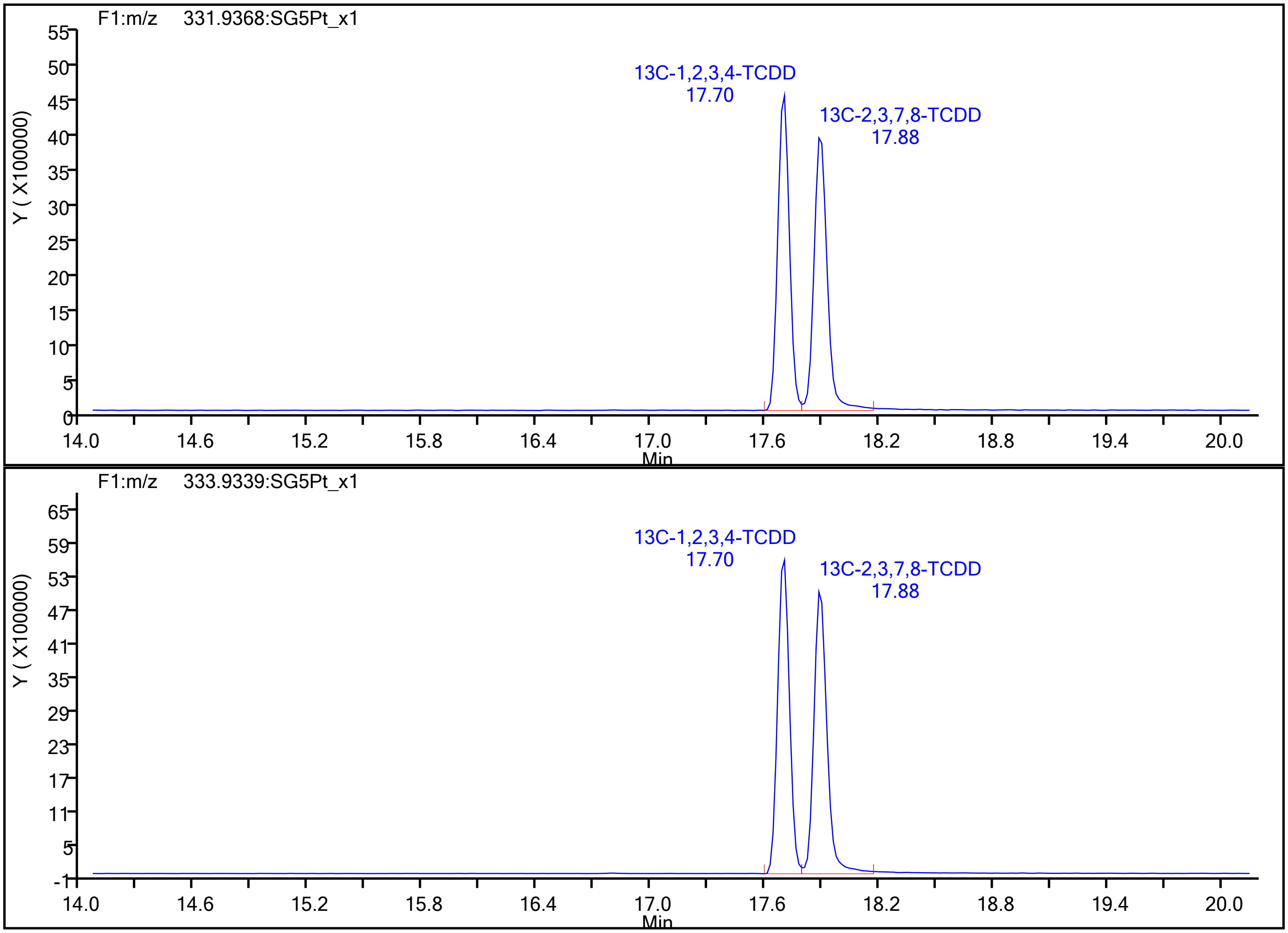

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

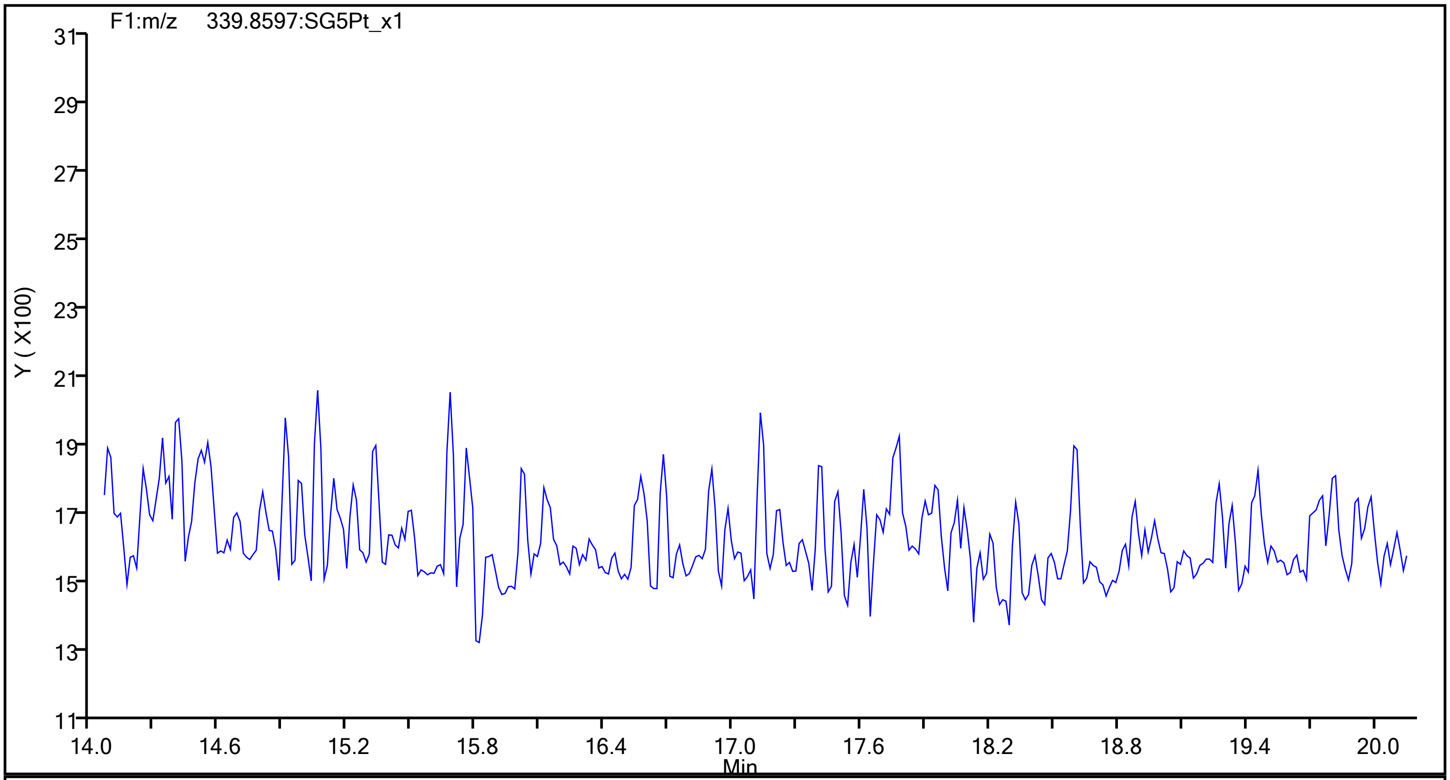

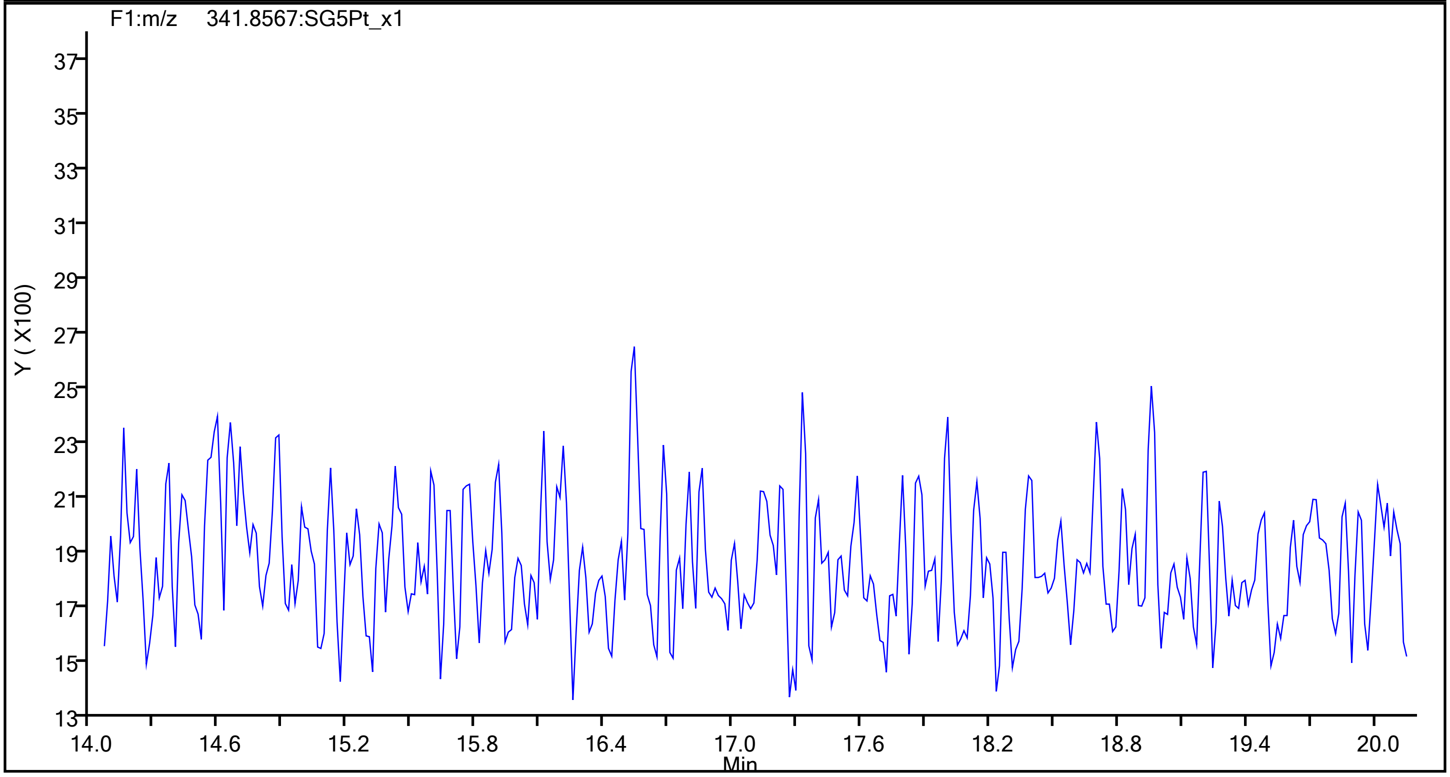

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

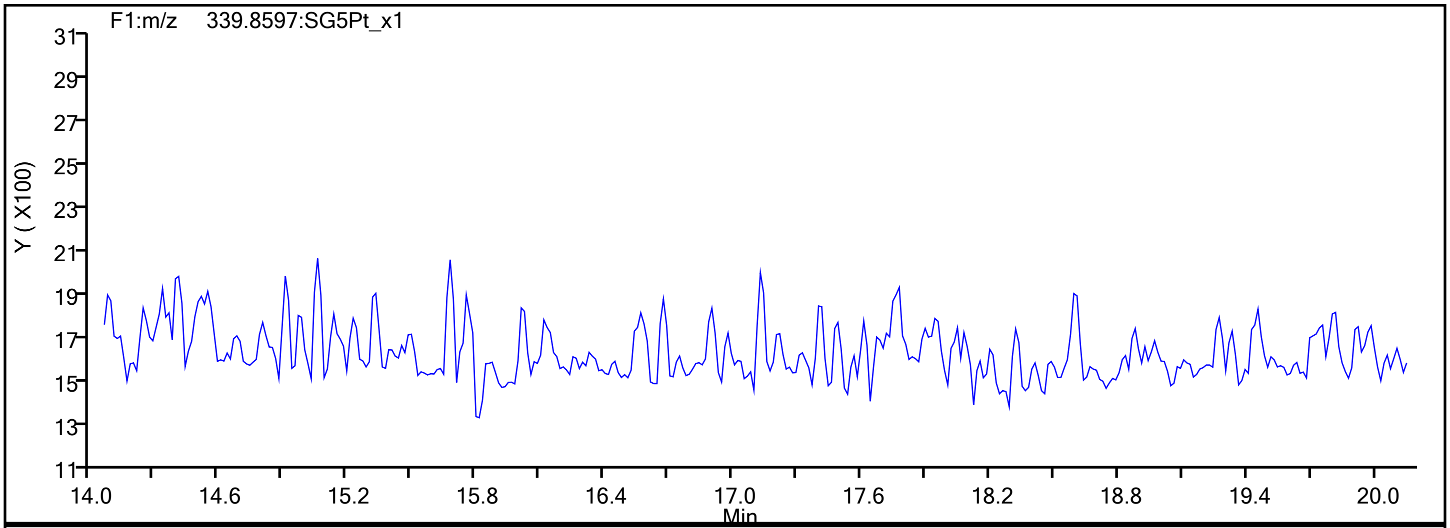

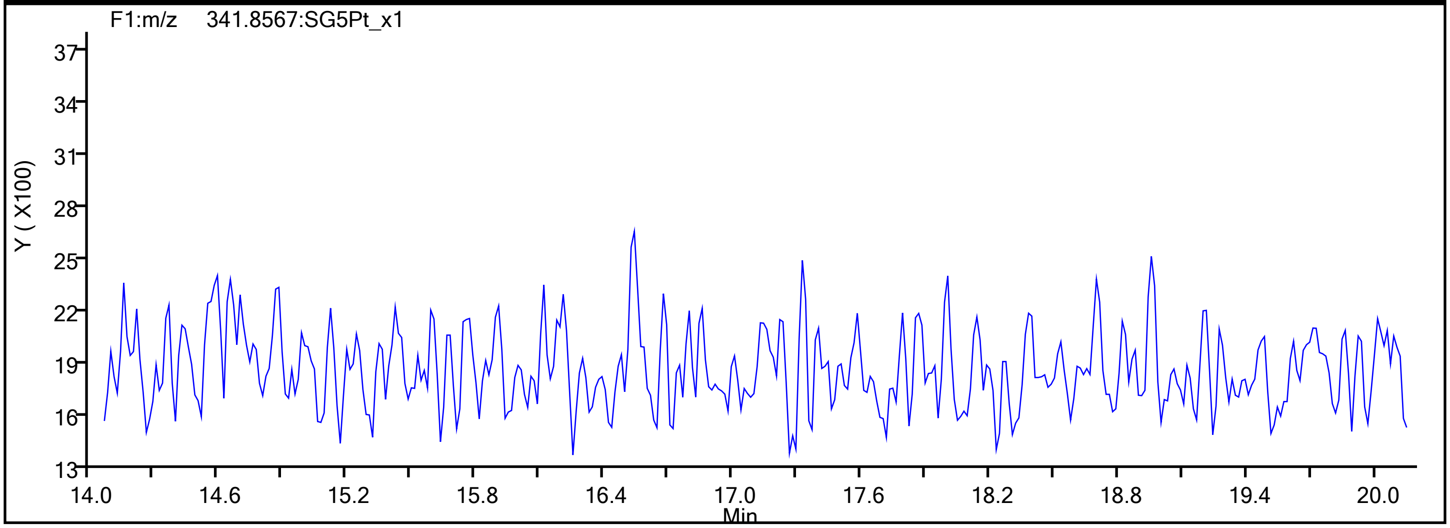

F1 PeCDFs Interference Mass

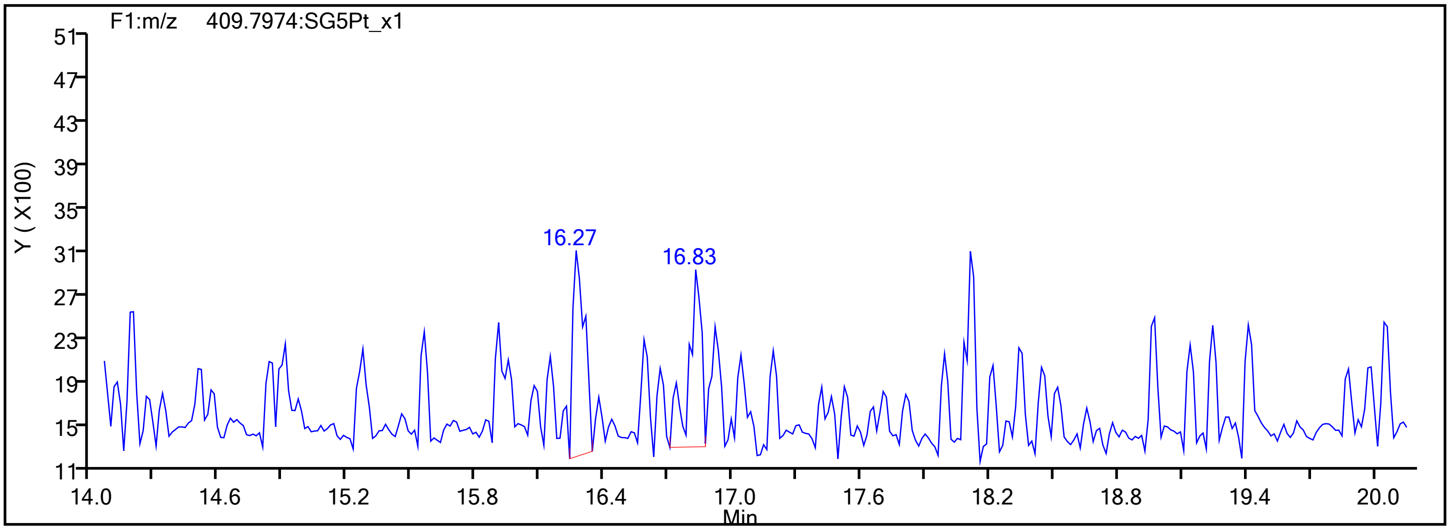

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d
Injection Date: 27-Jun-2020 14:42:53 Injection Vol: 2.0 ul
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Client ID:
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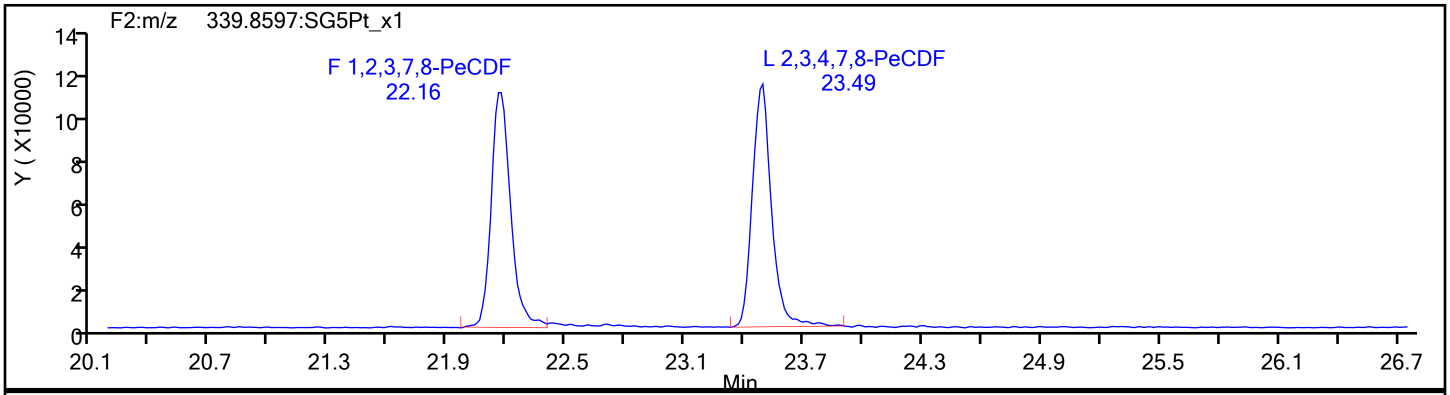

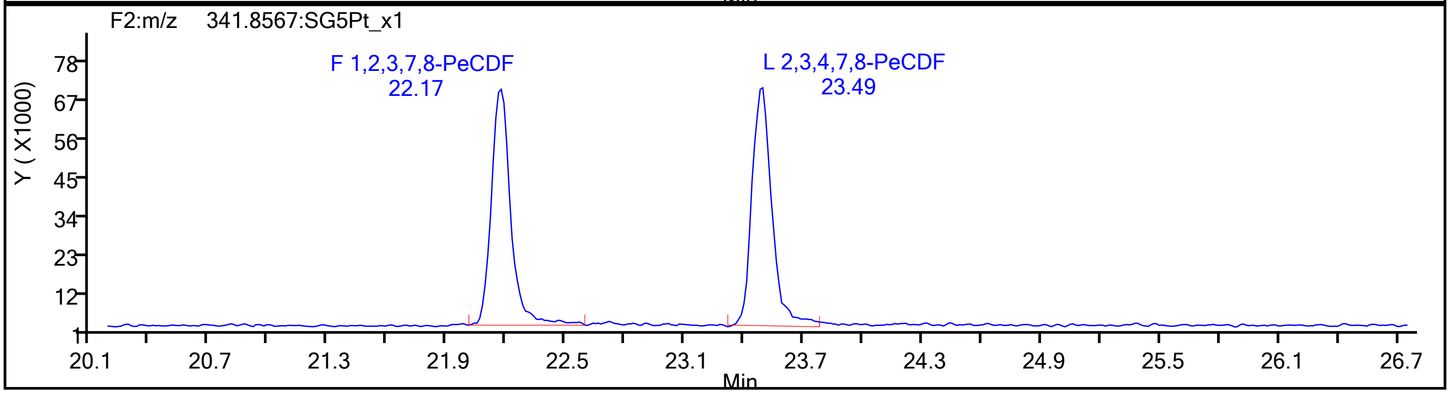

PeCDF Standards

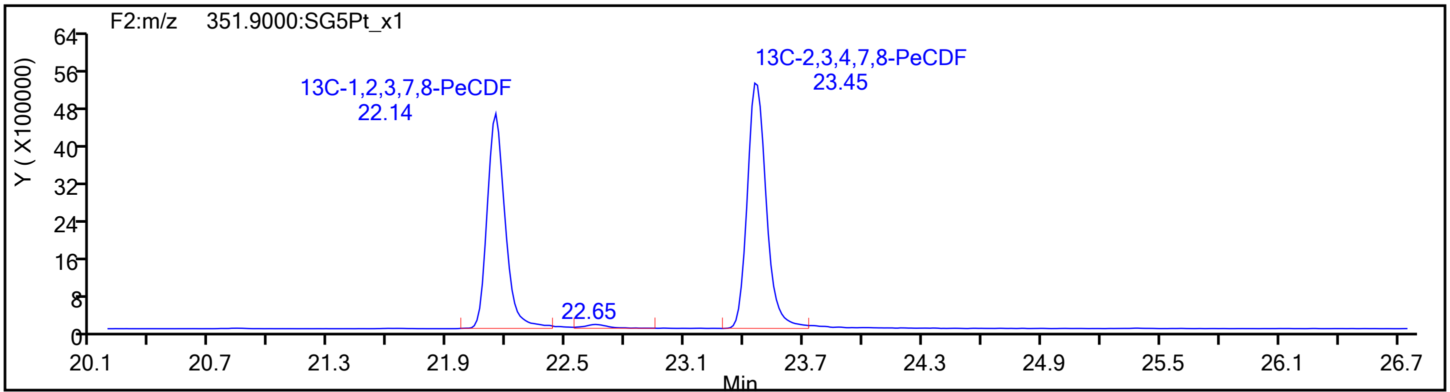

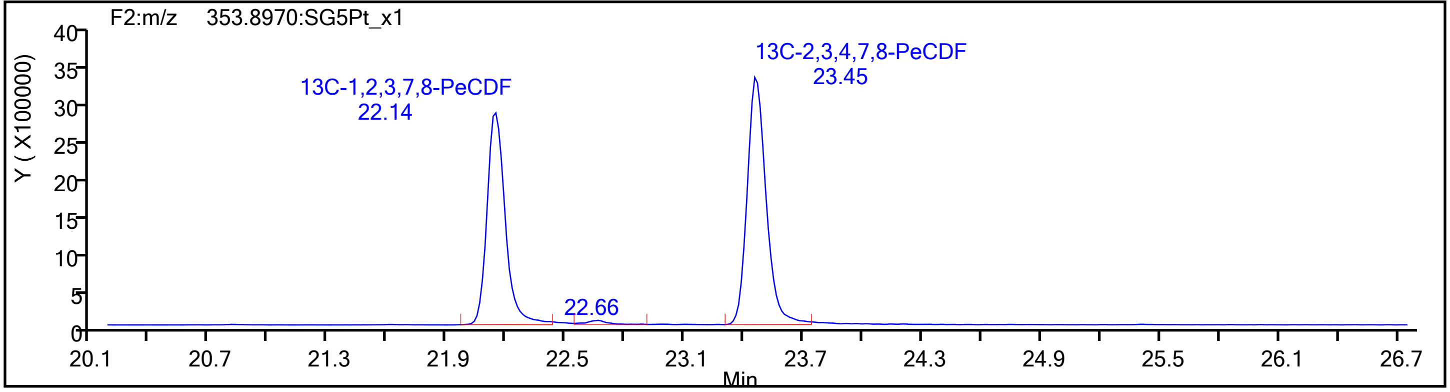

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Eurofins TestAmerica, Sacramento

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Worklist#: 390253 Sample Line#: 3

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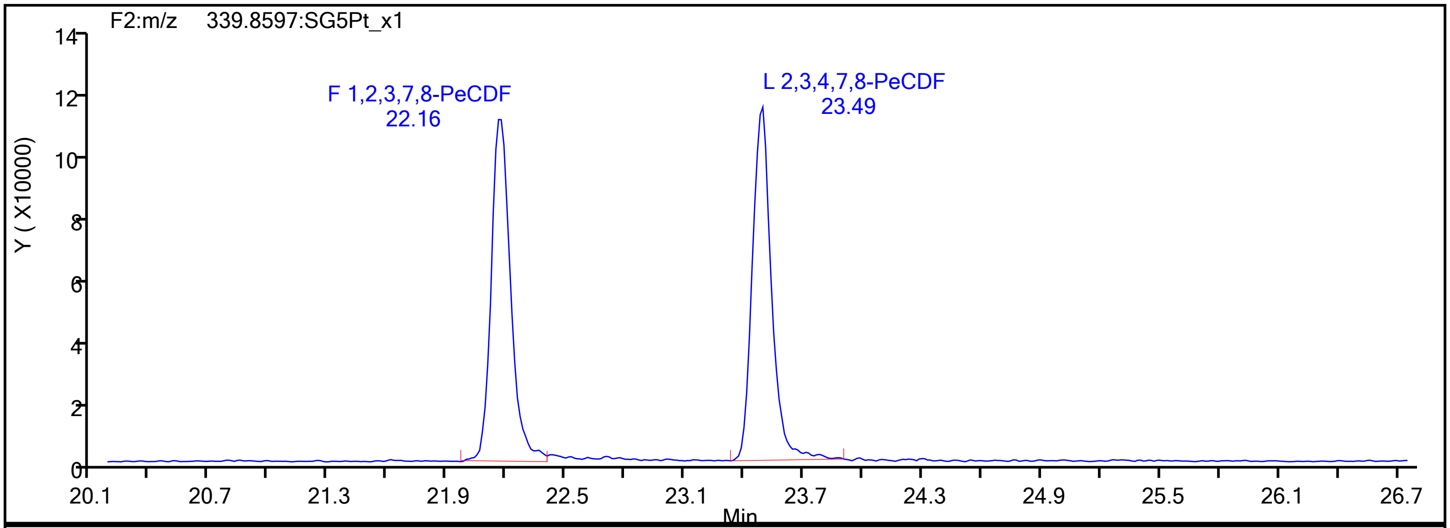

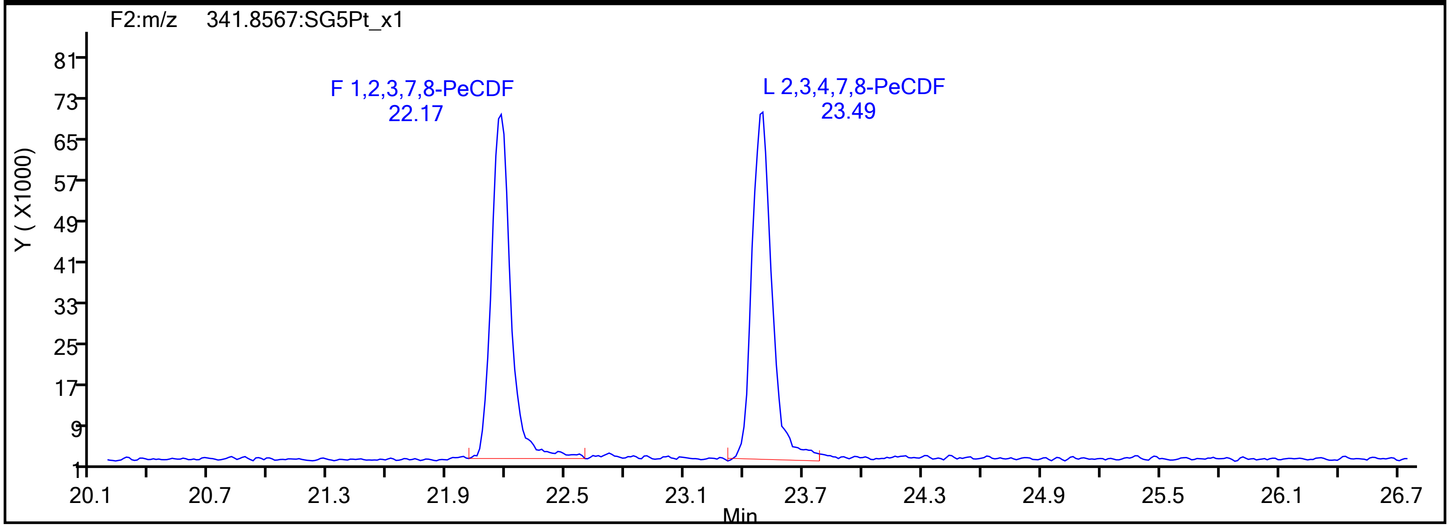

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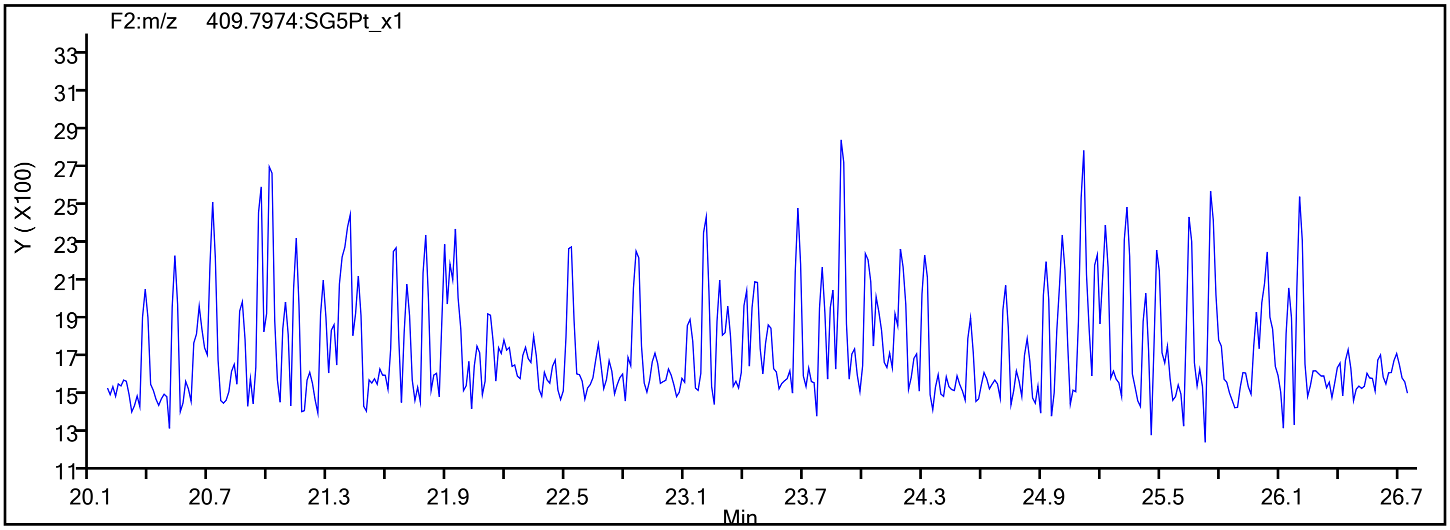

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Eurofins TestAmerica, Sacramento

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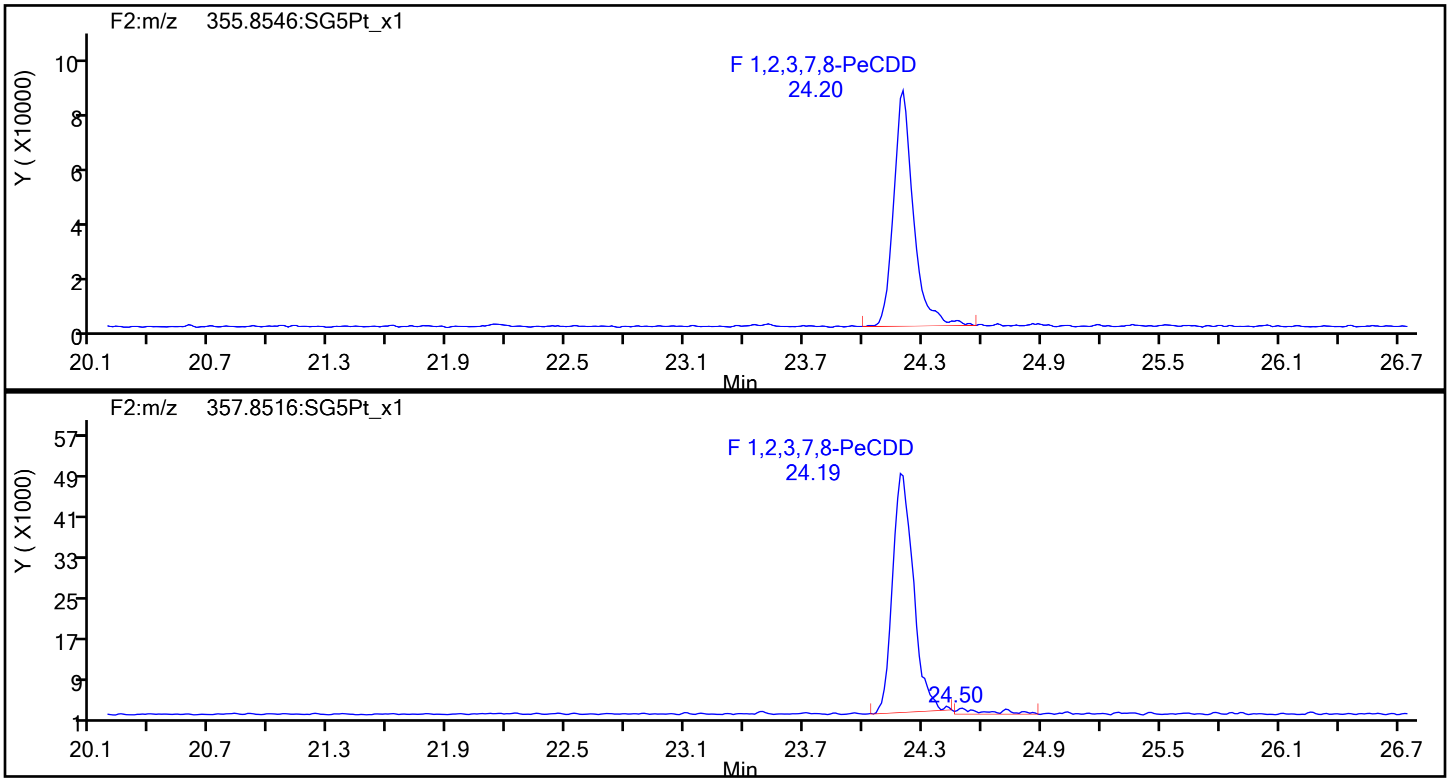

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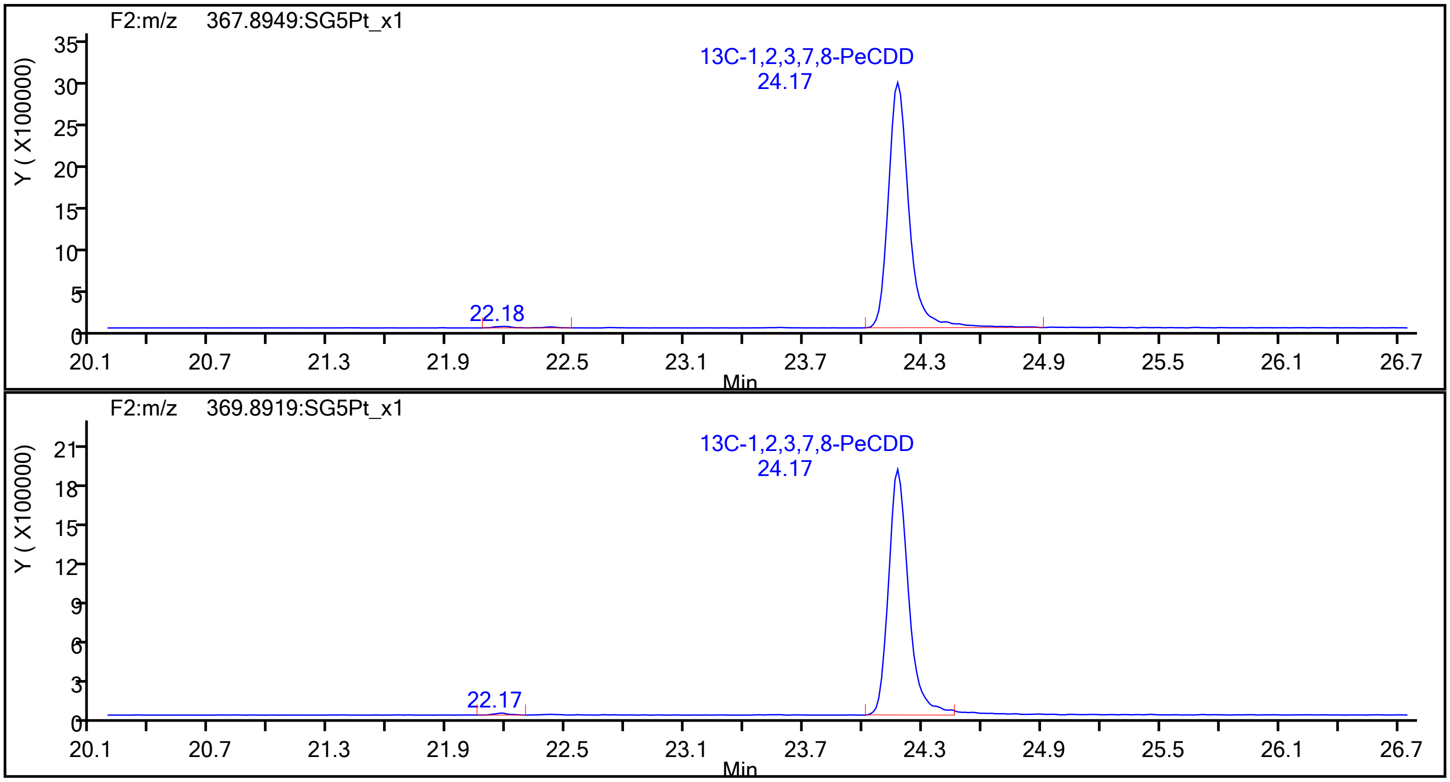

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HxCDF

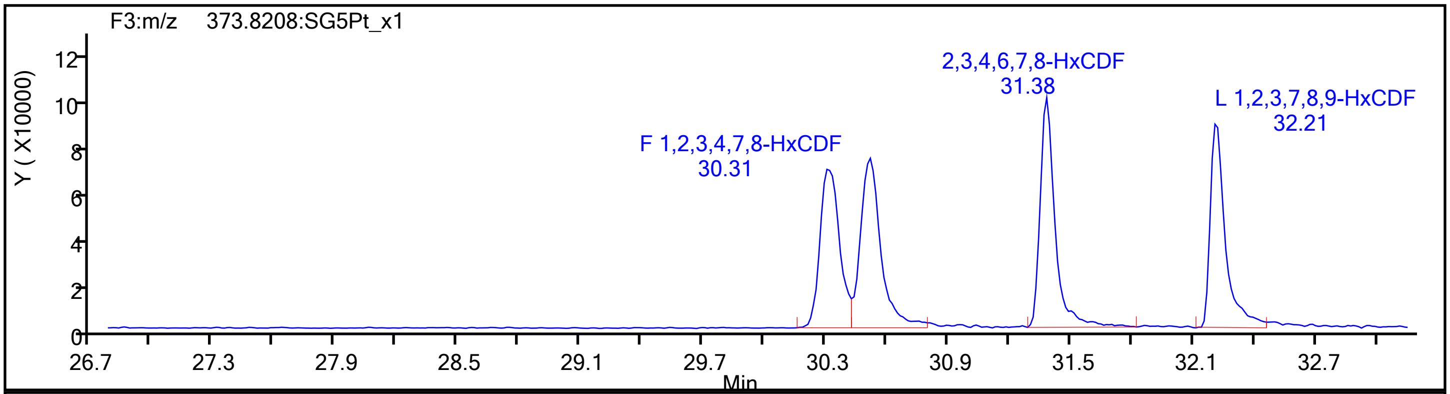

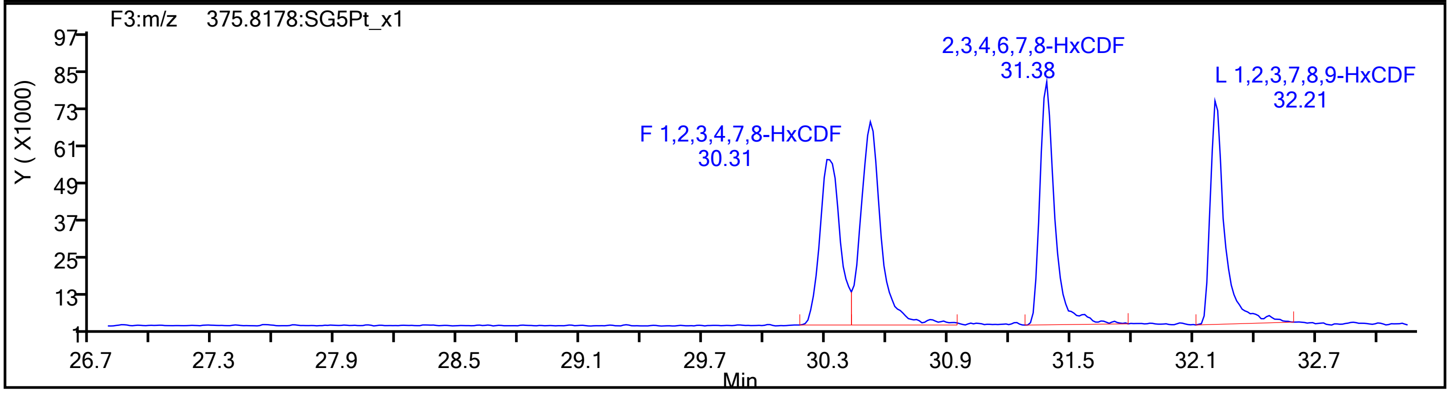

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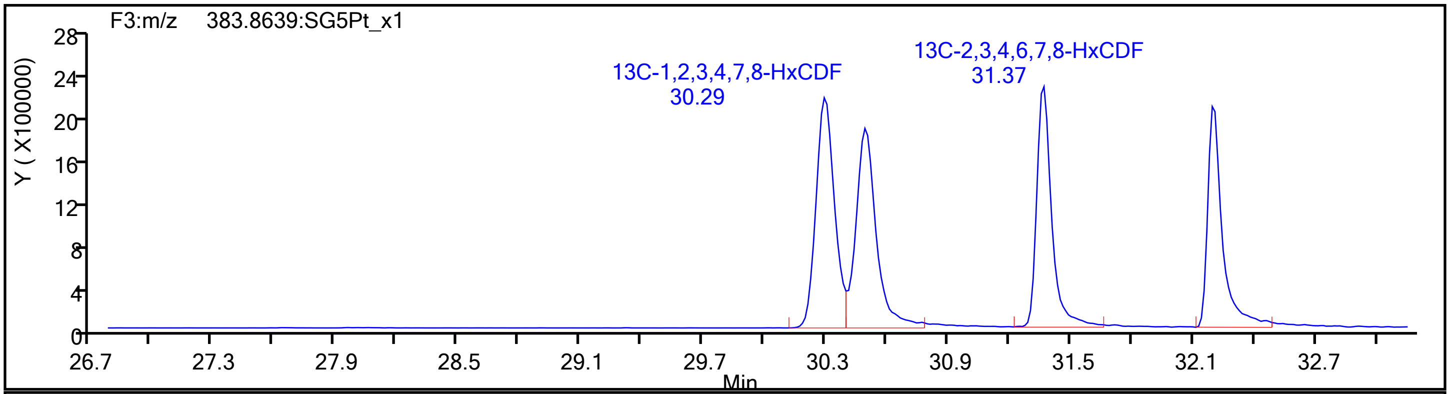

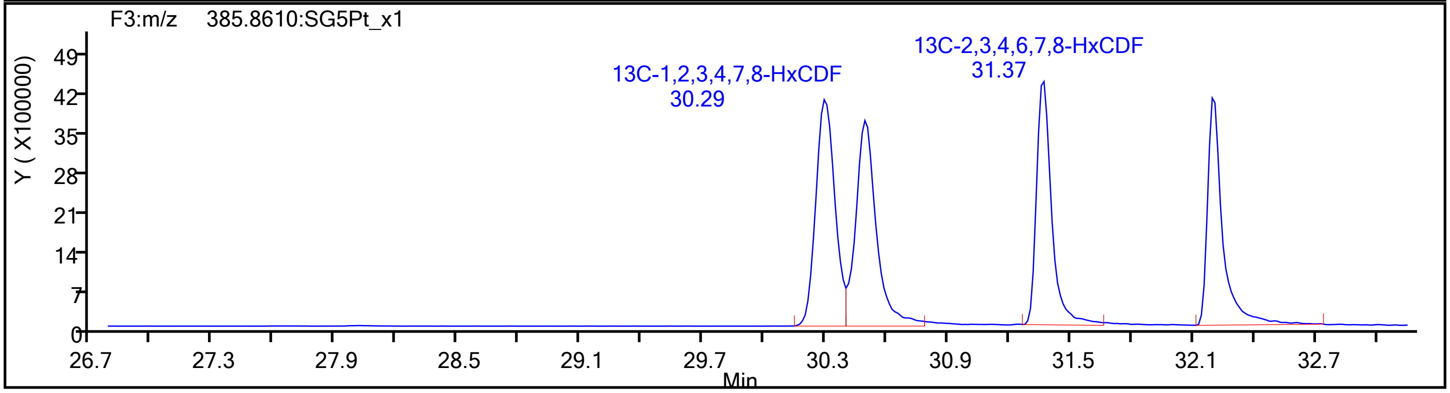

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Eurofins TestAmerica, Sacramento

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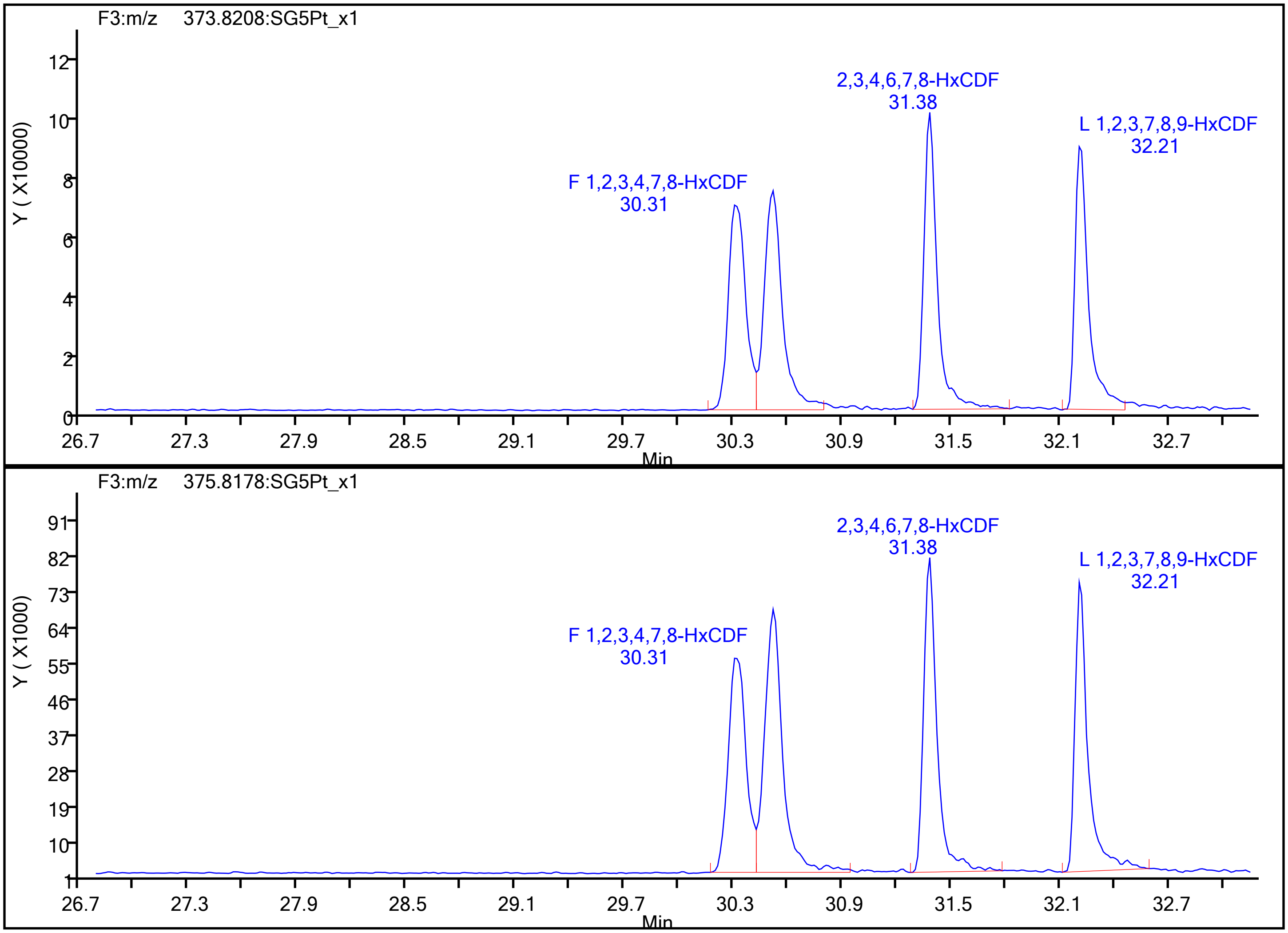

HxCDF Interference Mass

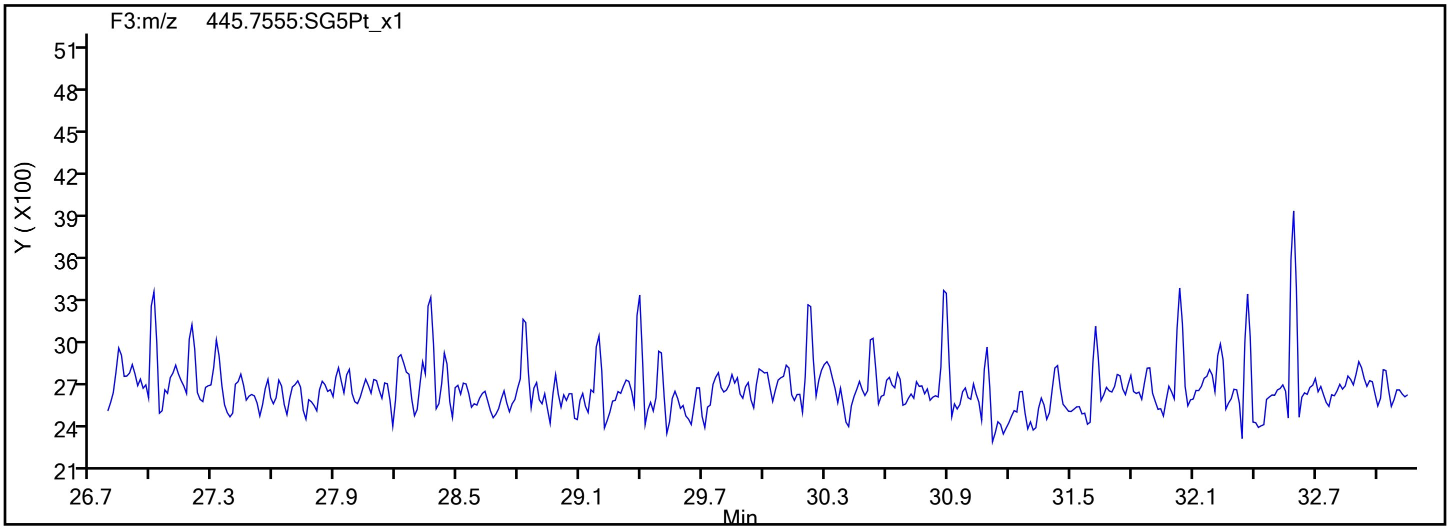

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Eurofins TestAmerica, Sacramento

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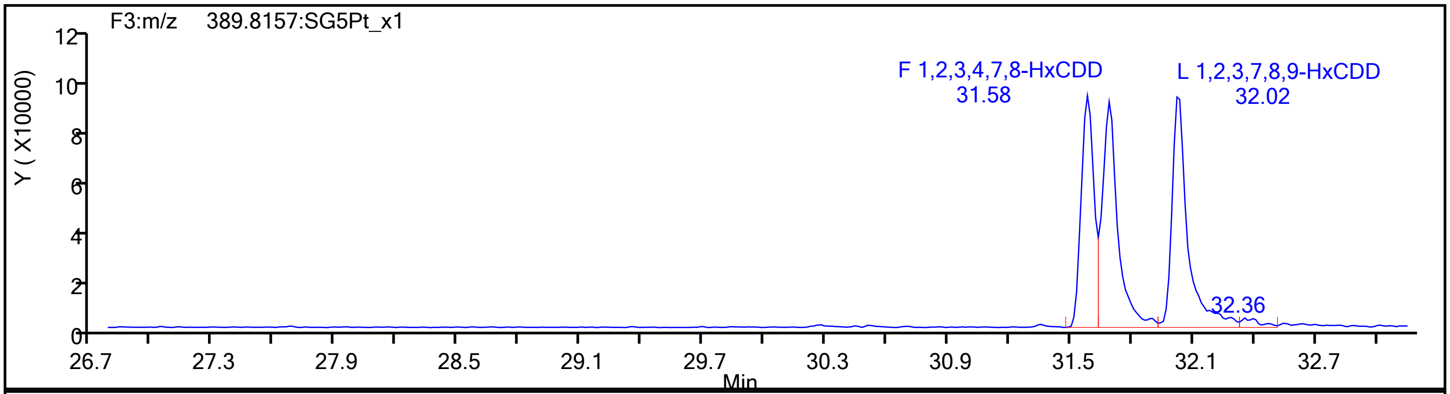

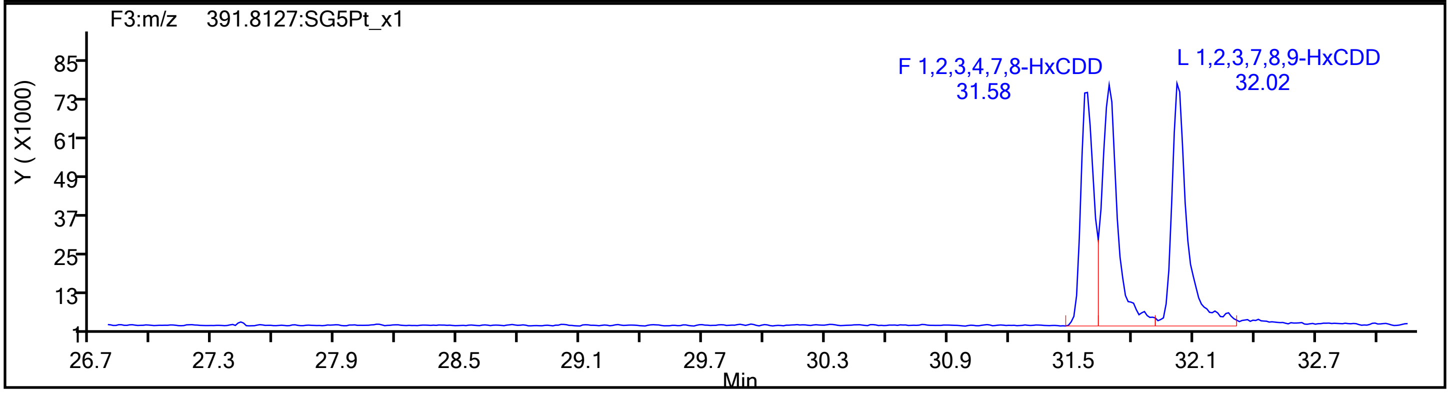

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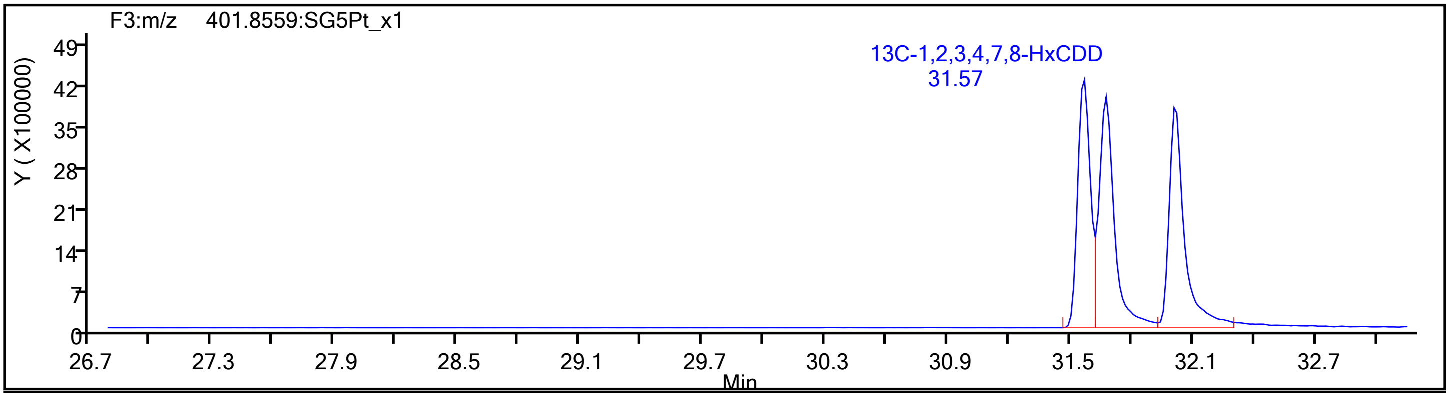

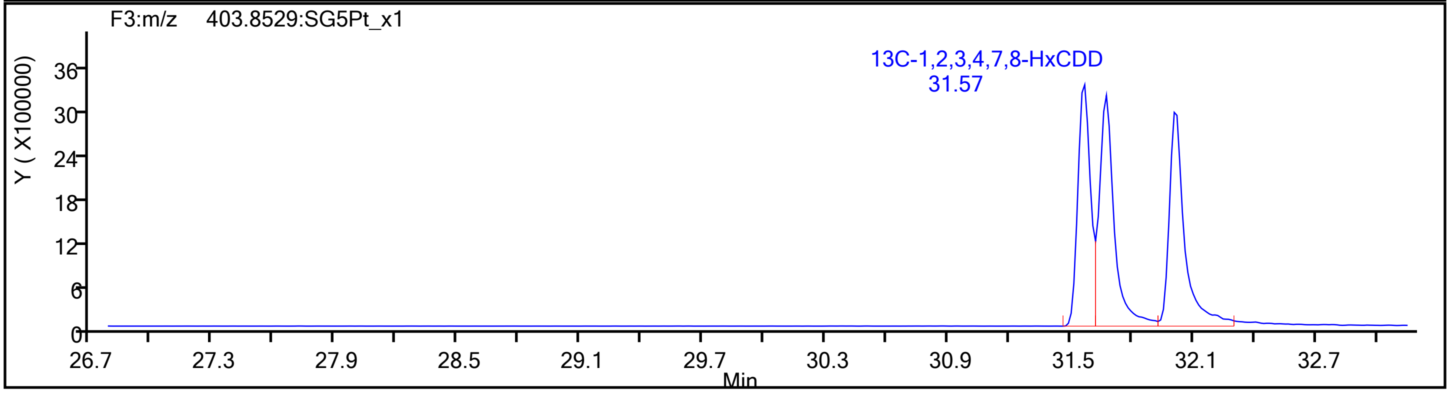

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Eurofins TestAmerica, Sacramento

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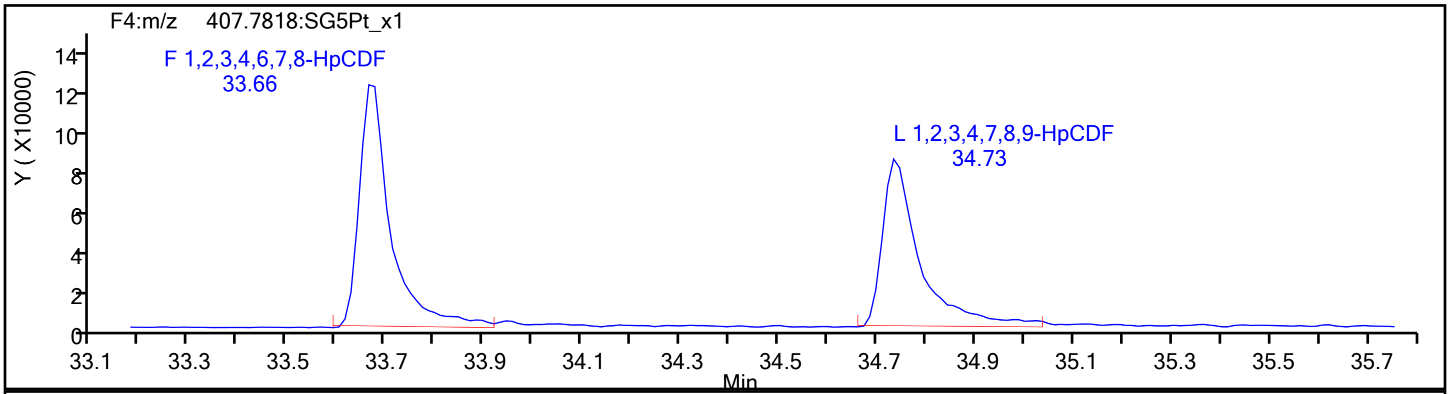

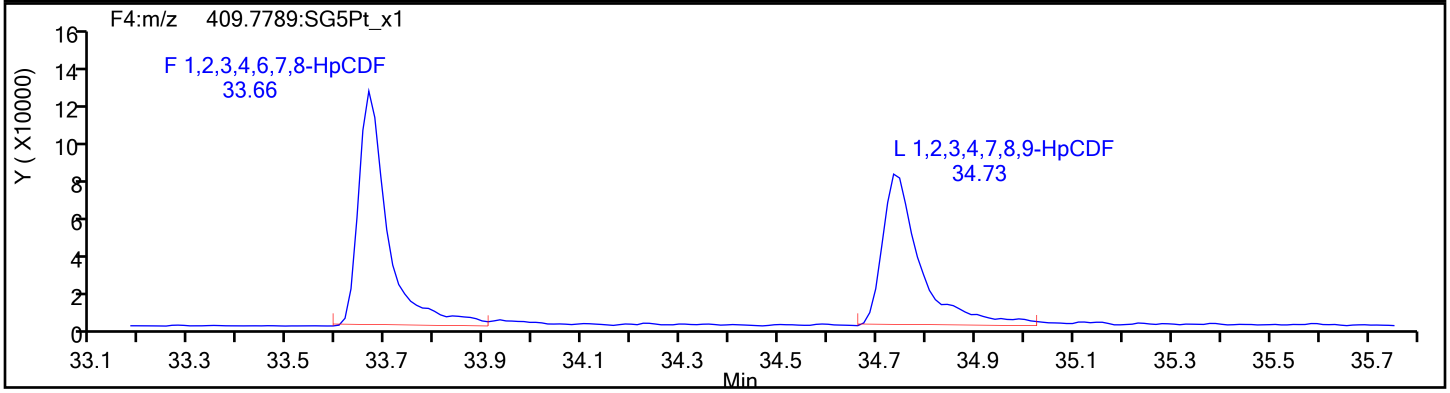

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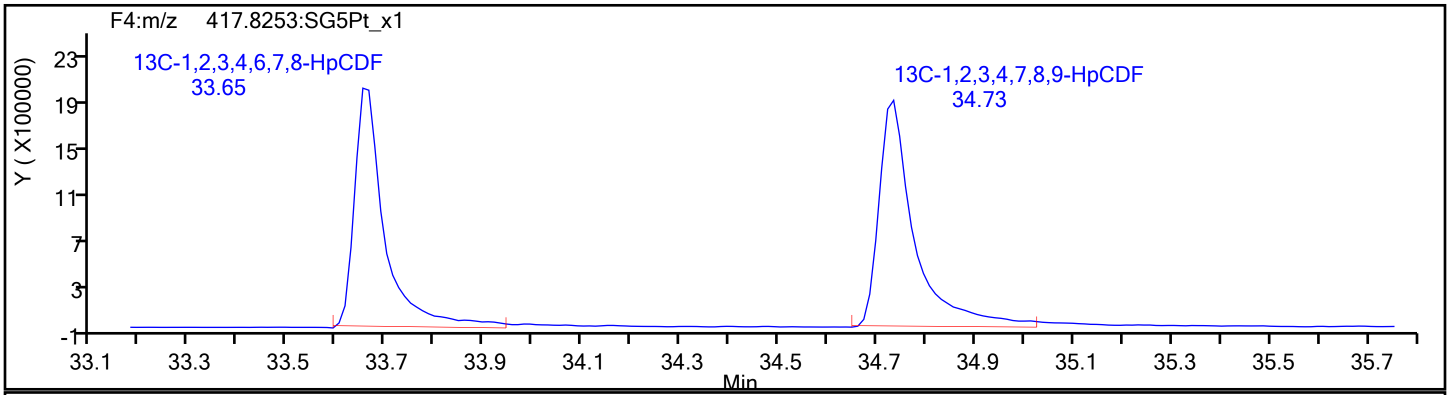

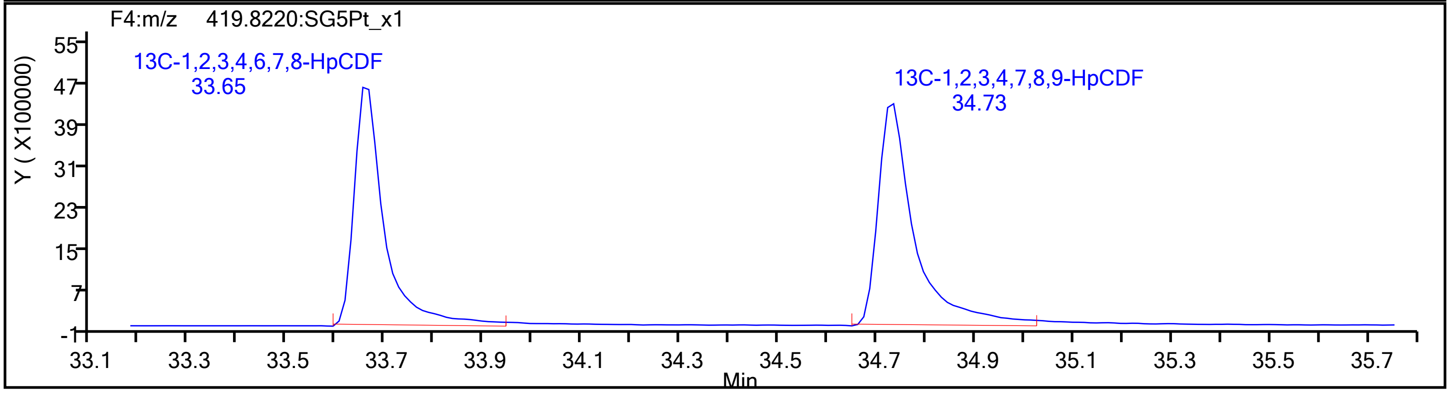

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HpCDF

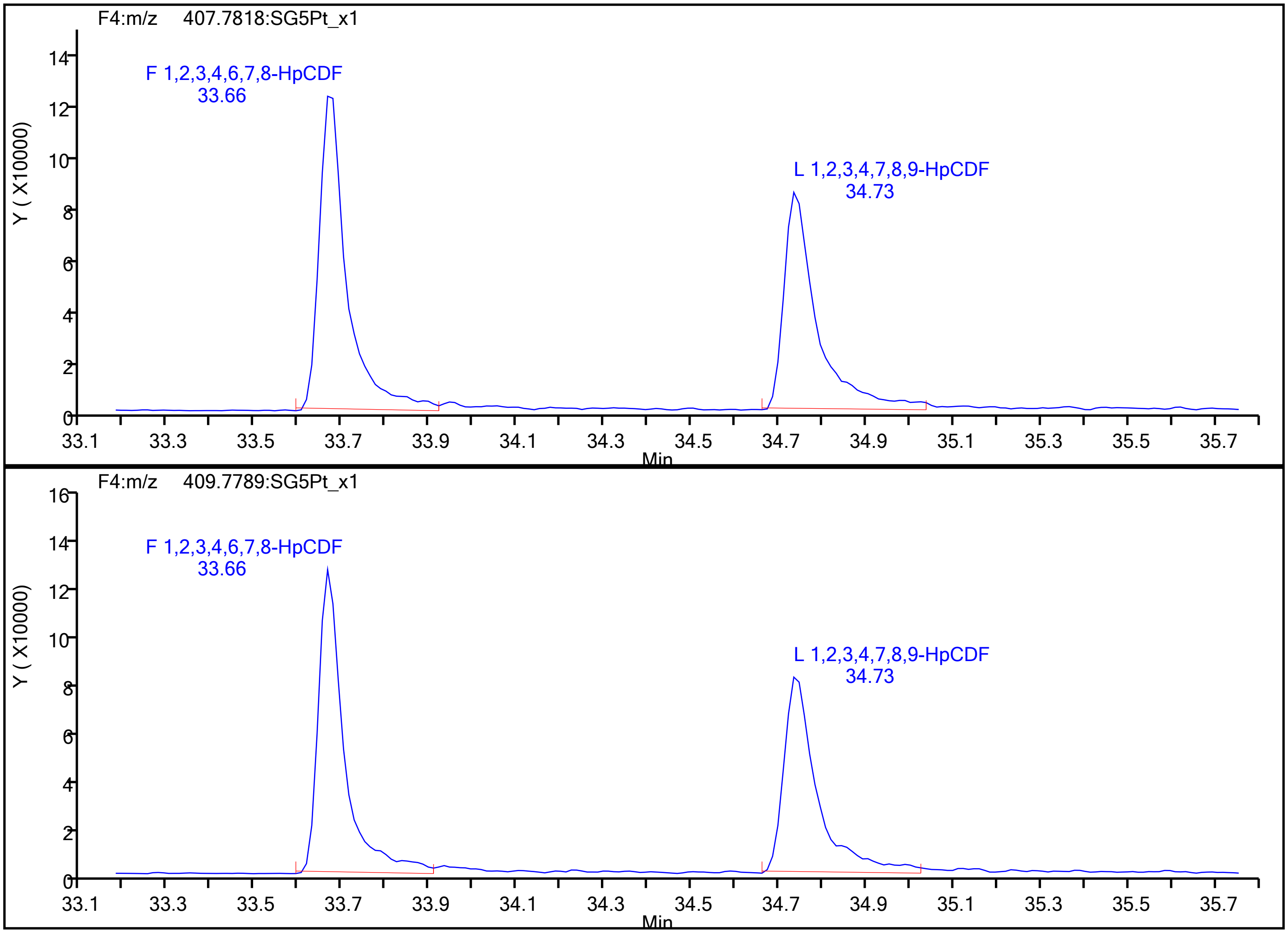

HpCDF Interference Mass

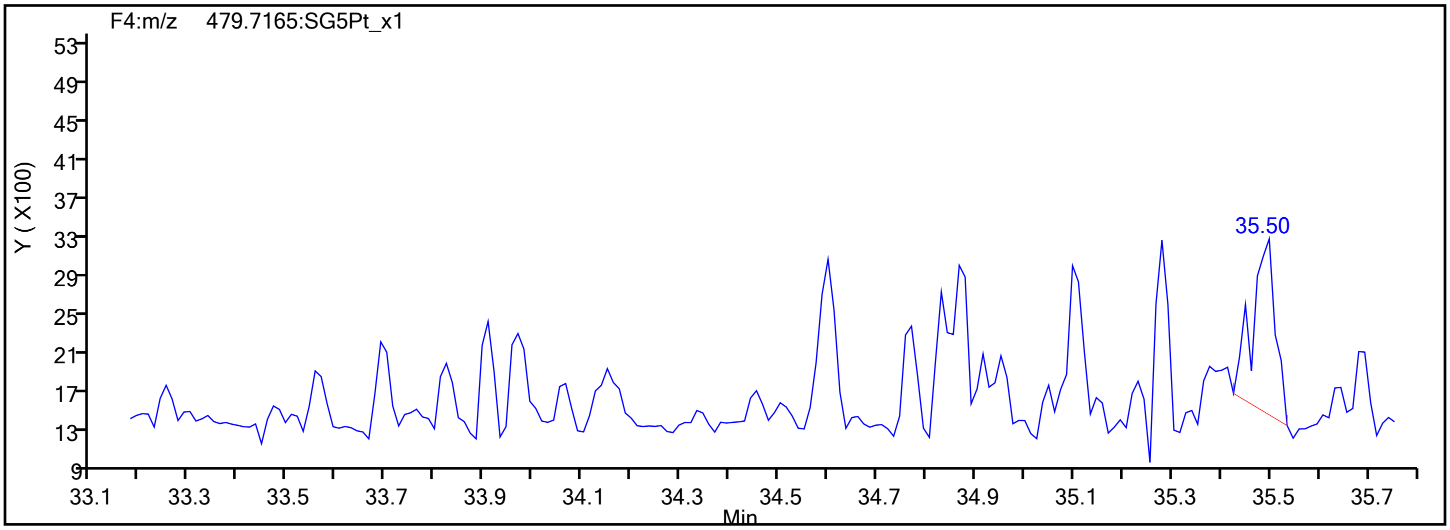

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Eurofins TestAmerica, Sacramento

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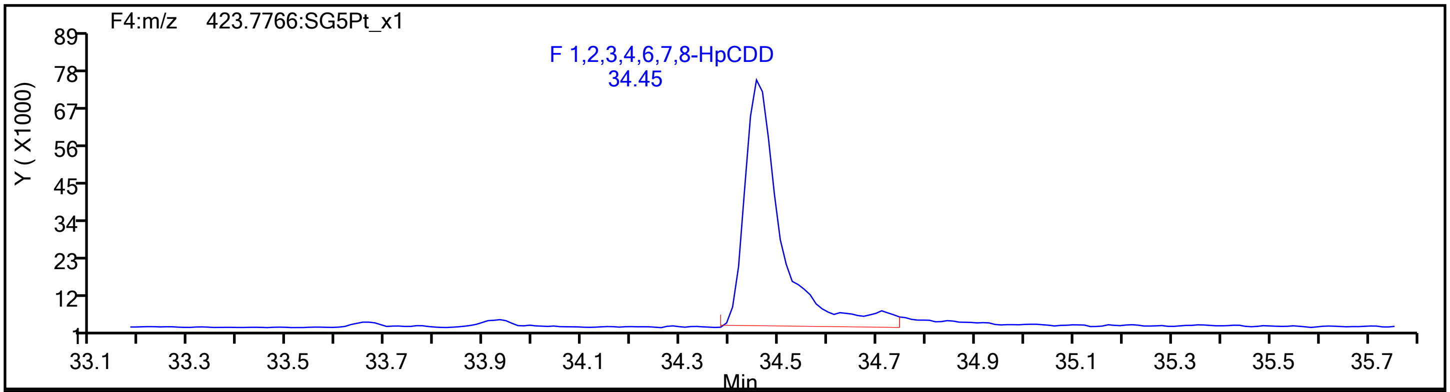

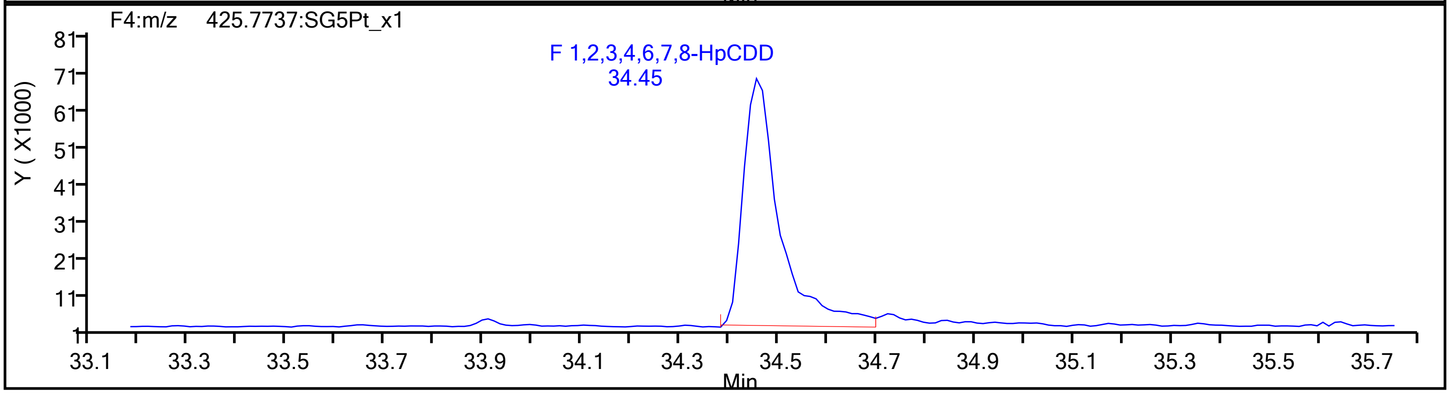

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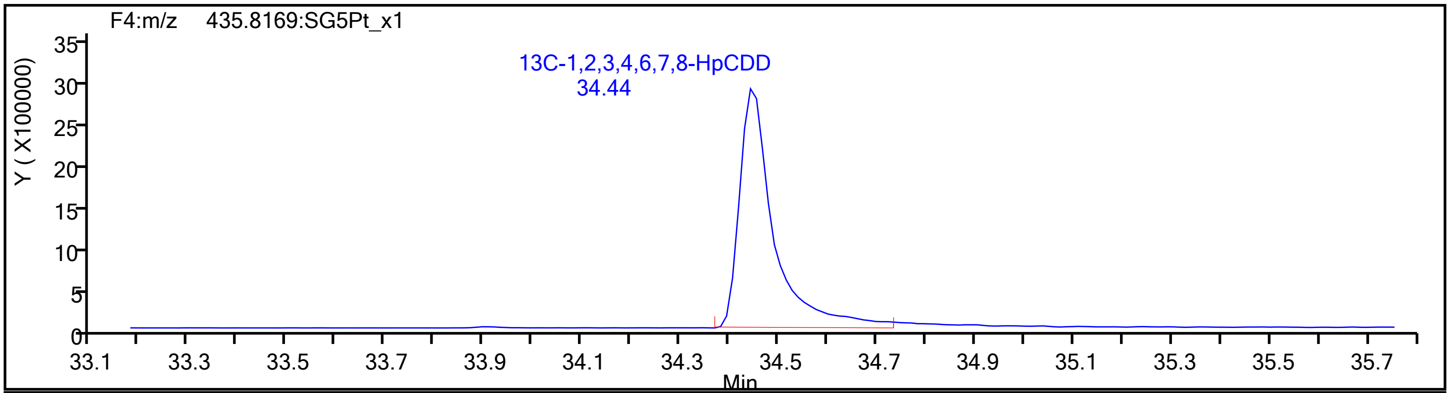

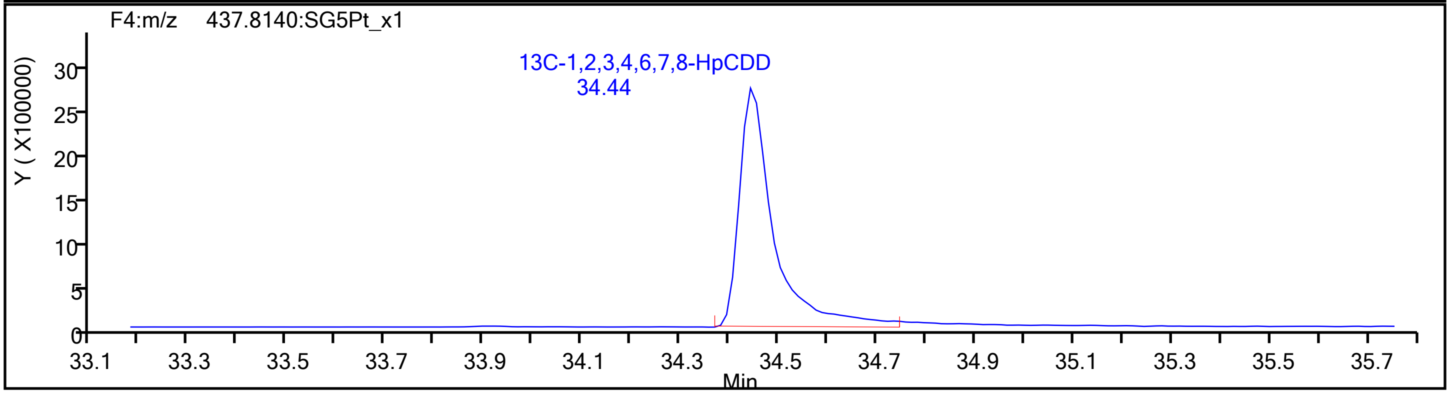

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Eurofins TestAmerica, Sacramento

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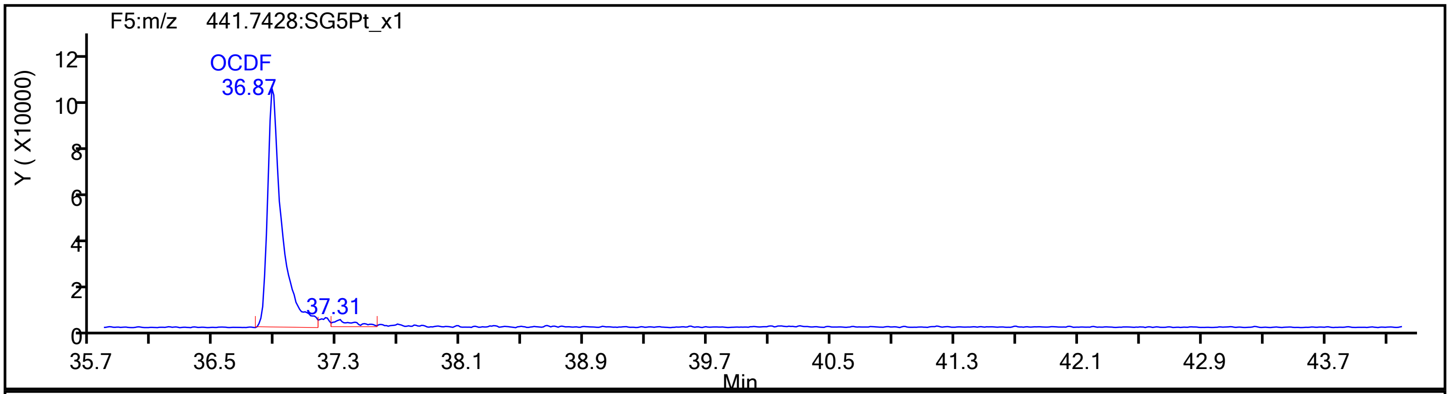

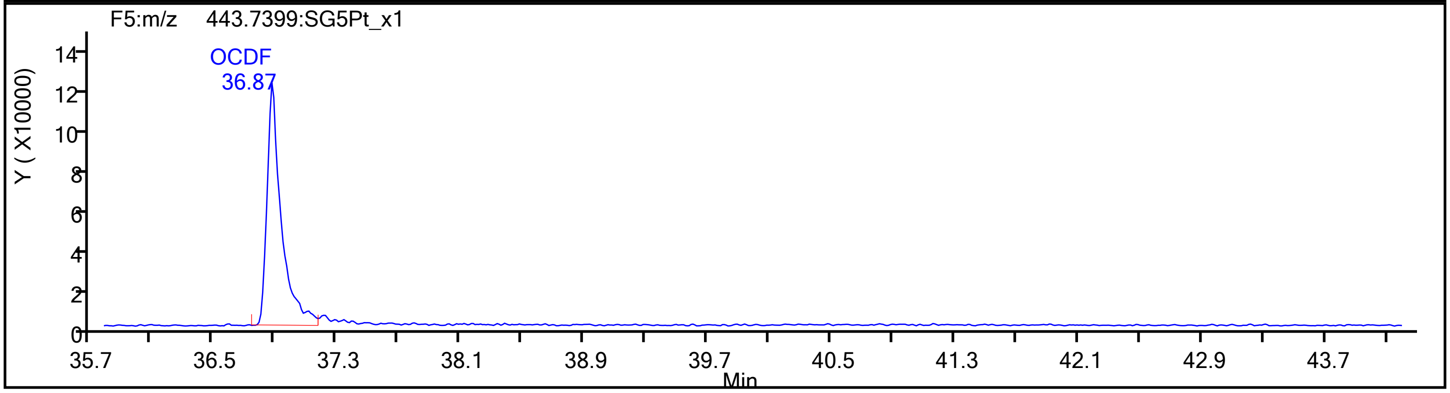

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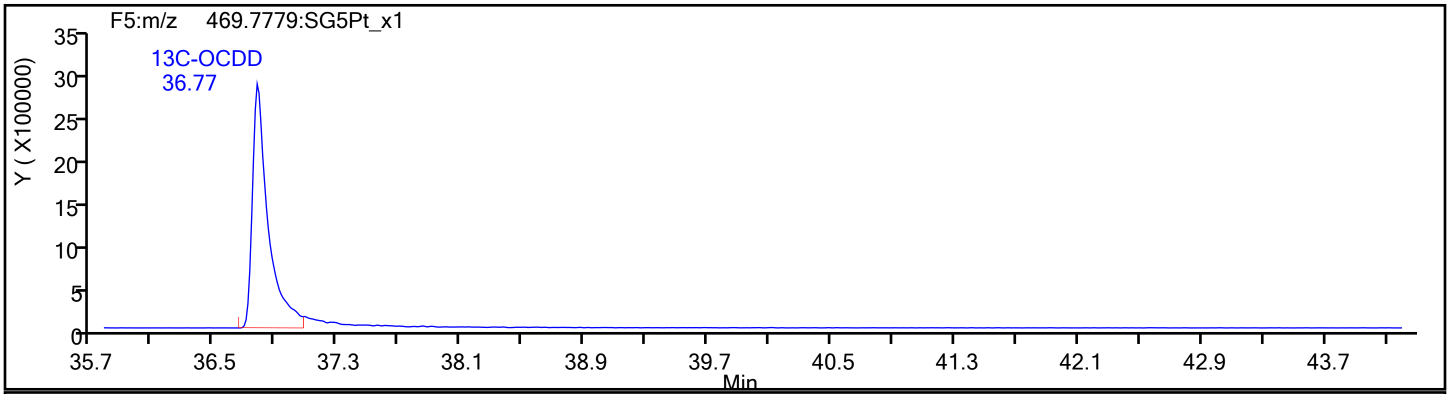

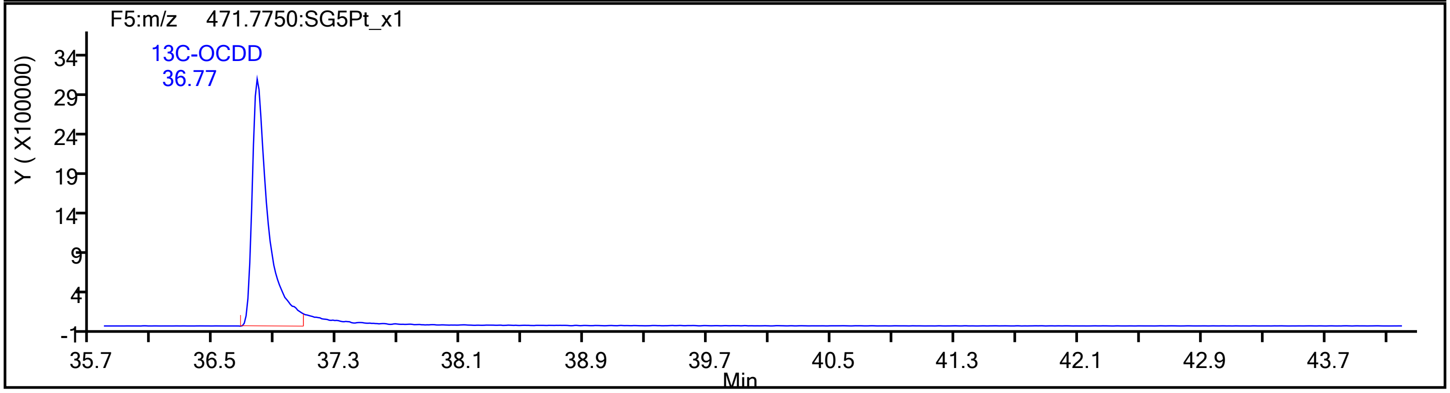

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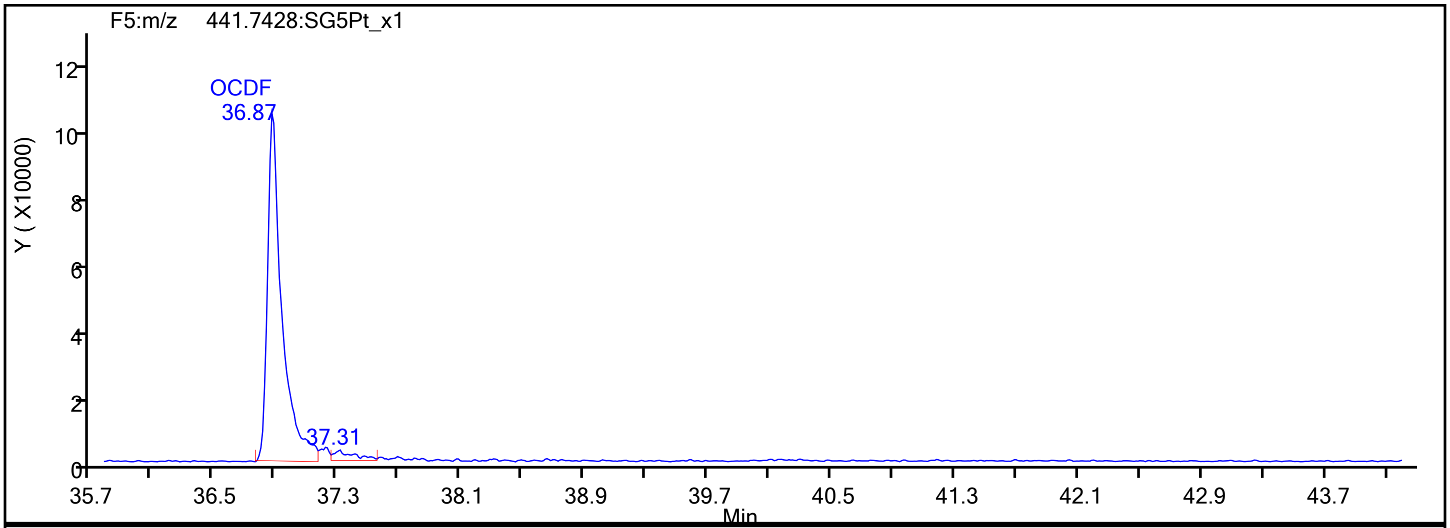

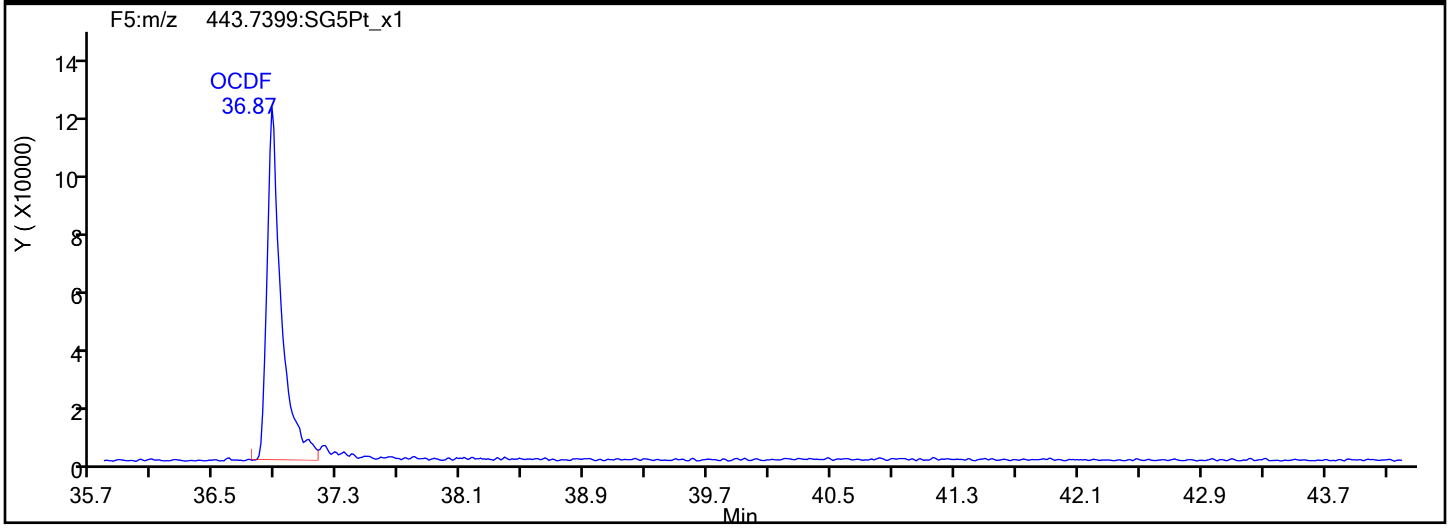

OCDF Interference Mass

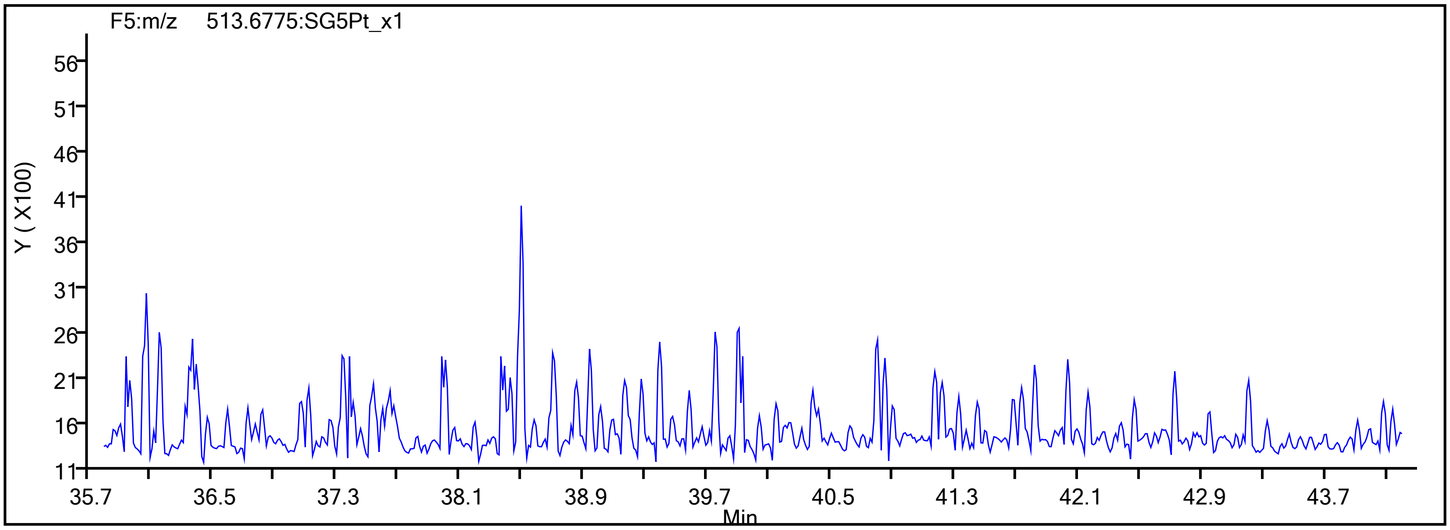

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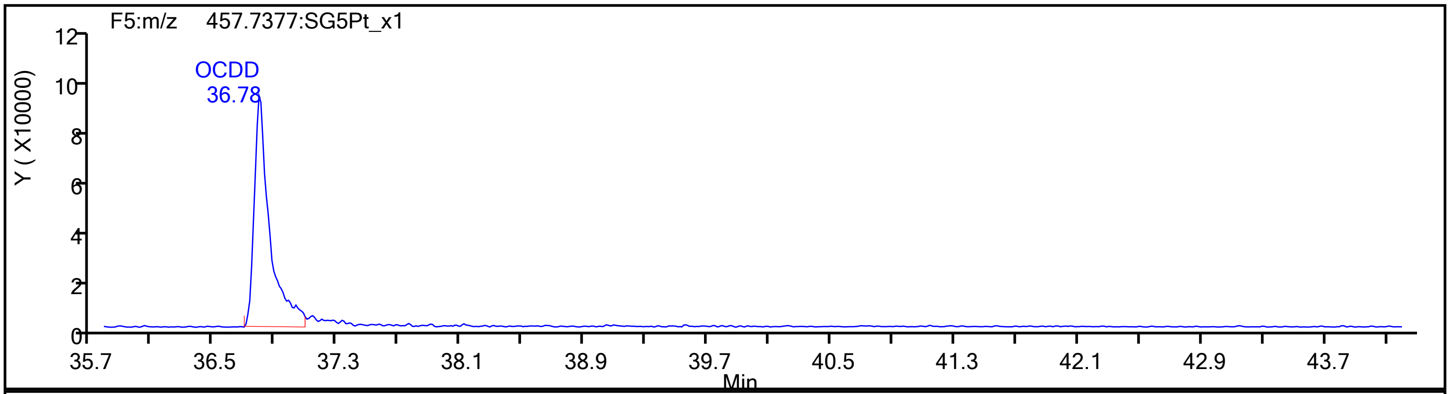

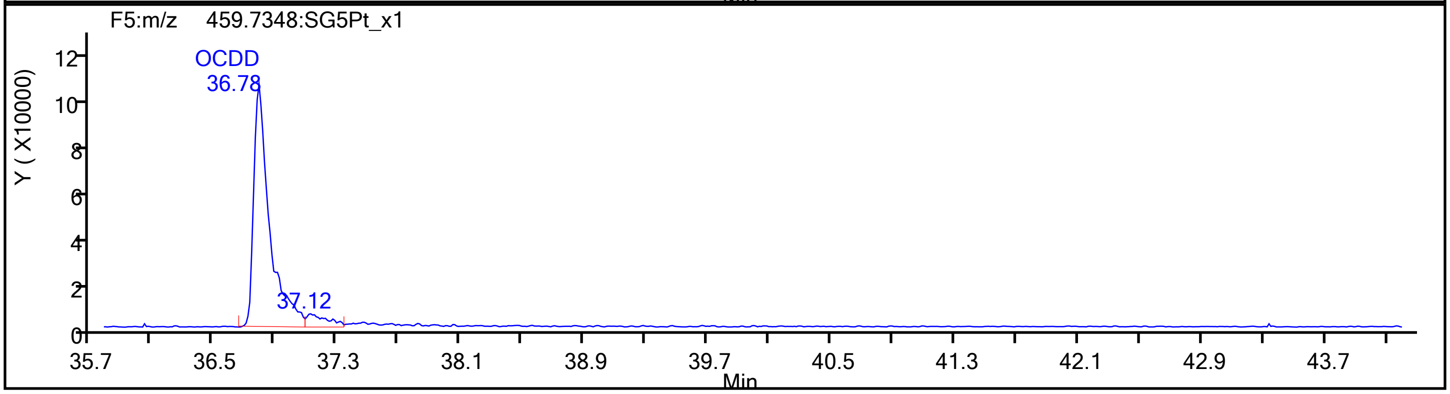

OCDD Standards

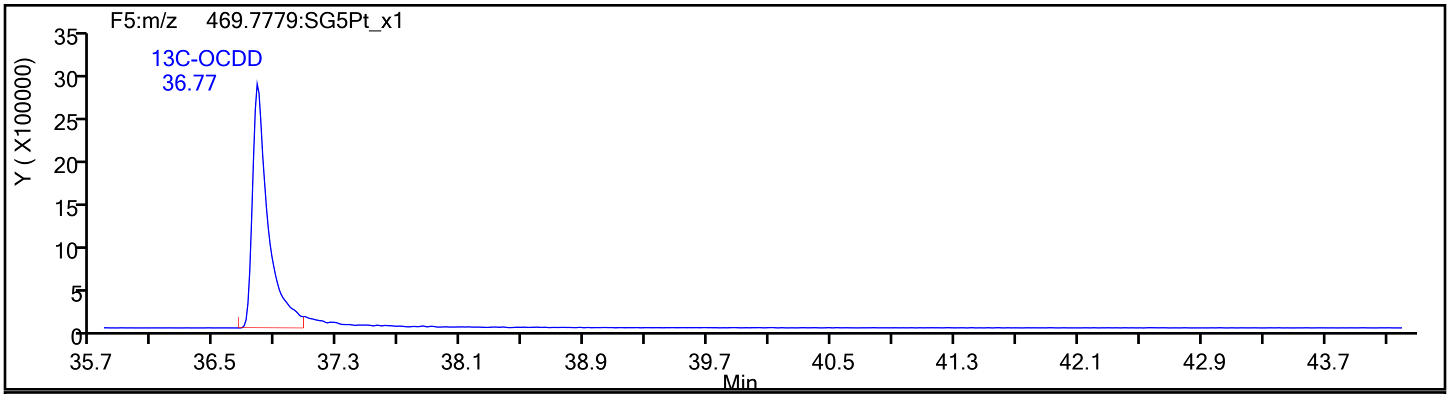

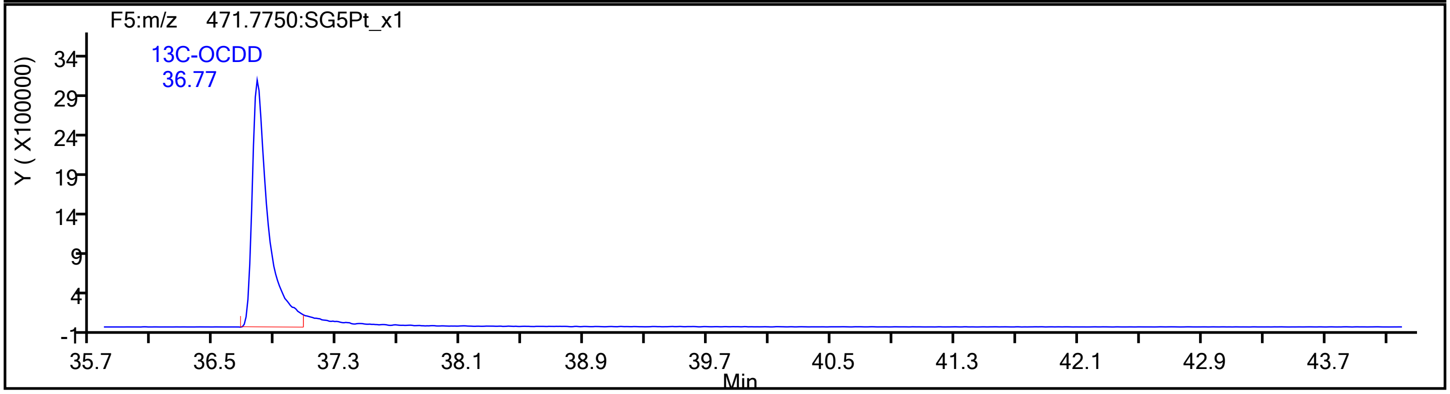

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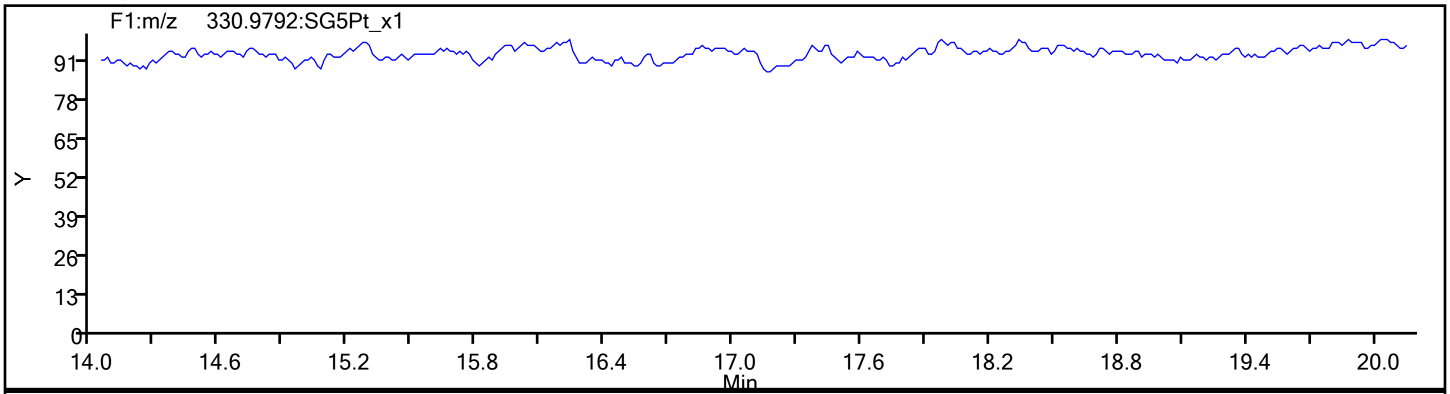

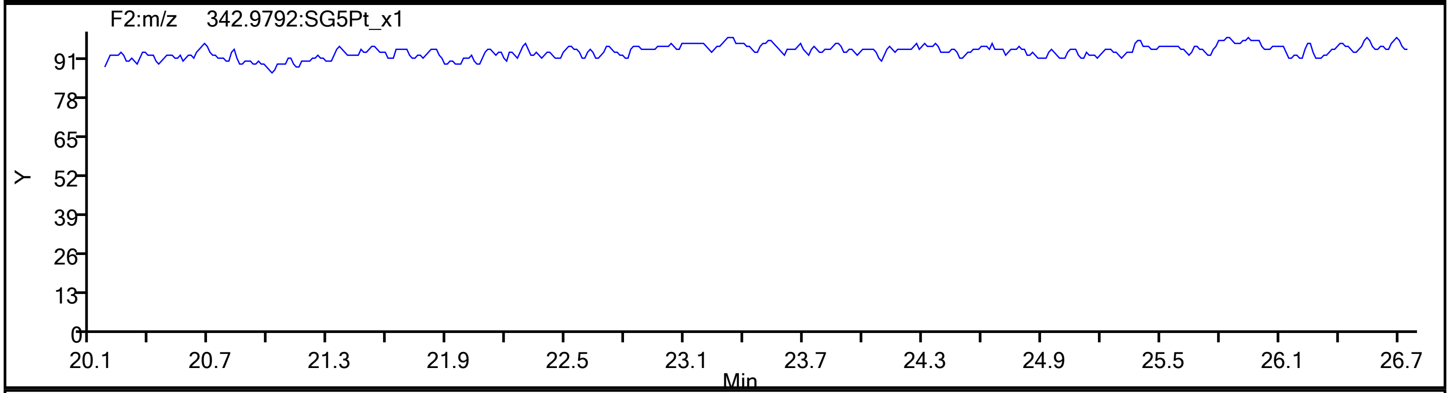

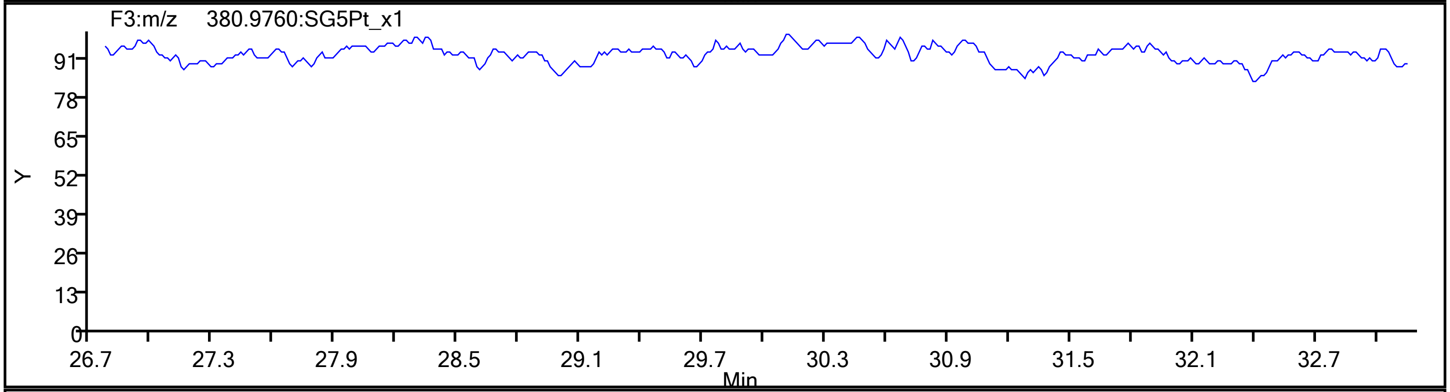

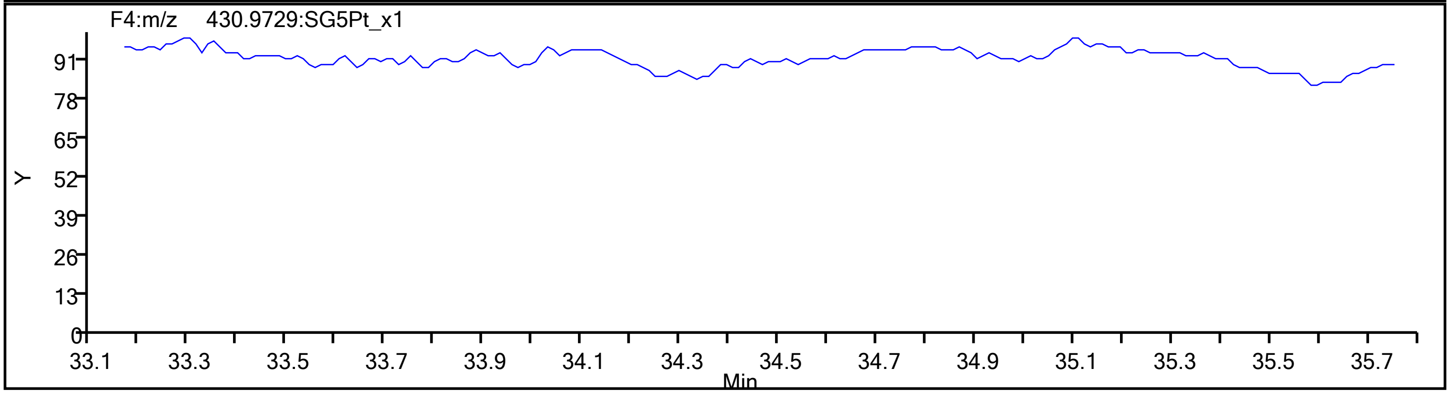

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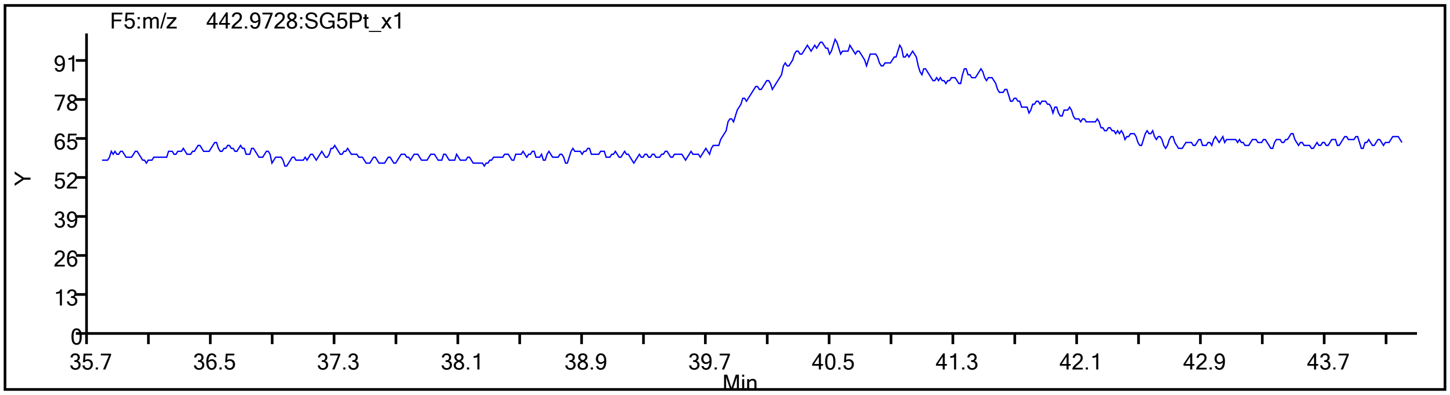

Sample List Report **MassLynx 4.1**

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Last Modified: Saturday, June 27, 2020 13:23:30 Pacific Daylight Time
Printed: Saturday, June 27, 2020 13:23:38 Pacific Daylight Time Page Position (1, 1)

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3	27JN20A10D5_3	CS-2 HRDXNL2_00029	IC 062720	Tray01:4	Dioxin		SMA	1.000000
4	27JN20A10D5_4	CS-3 HRDXNL3_00027	IC 062720A	Tray01:5	Dioxin		SMA	1.000000
5	27JN20A10D5_5	CS-4 HRDXNL4_00093	IC 062720B	Tray01:2	Dioxin		SMA	1.000000
6	27JN20A10D5_6	CS-5 HRDXNL5_00030	IC 062720C	Tray01:6	Dioxin		SMA	1.000000
7	27JN20A10D5_7	CS-6 HRDXNL6_00026	IC 062720D	Tray01:7	Dioxin		SMA	1.000000
8	27JN20A10D5_8	Solvent Blank C-14	SB 062720A	Tray01:3	---		SMA	1.000000
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logfile checked
6-27-20 ALM

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:08:52 Pacific Daylight Time

M 292.9824 R 12023

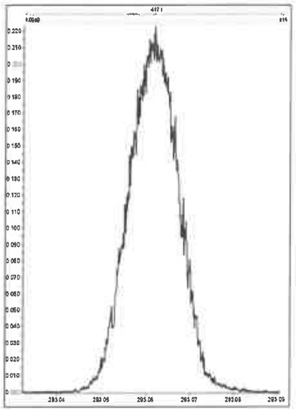

M 304.9824 R 11849

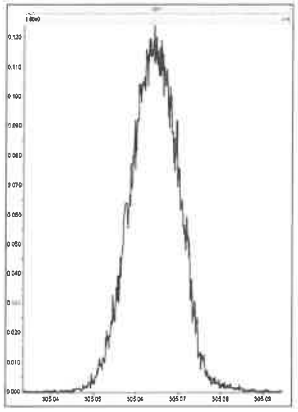

M 318.9792 R 11961

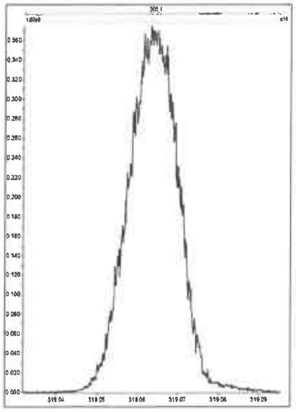

M 330.9792 R 11902

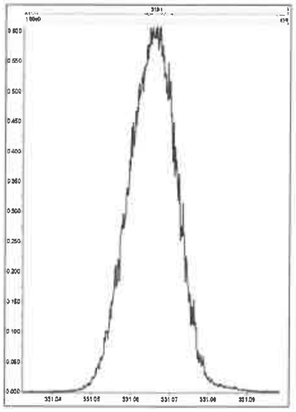

M 342.9792 R 12020

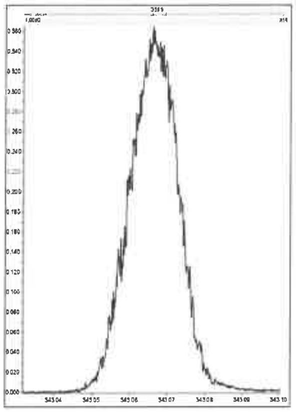

M 354.9792 R 11961

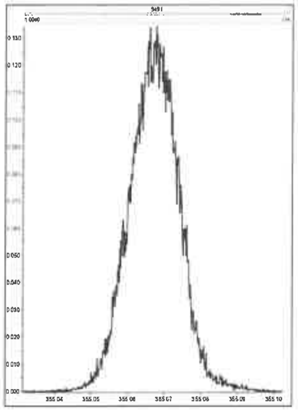

M 366.9792 R 11523

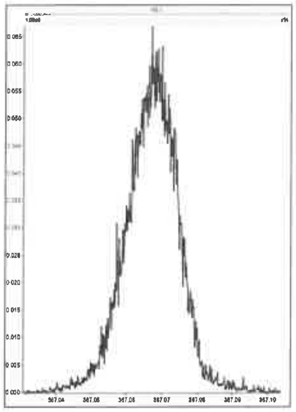

M 380.9760 R 11679

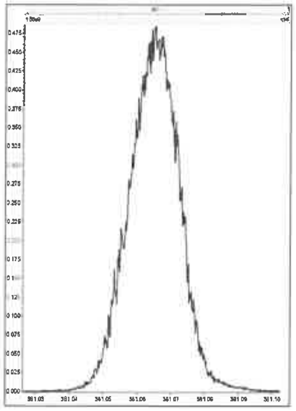

M 392.9760 R 11261

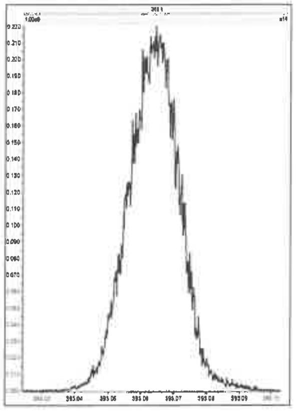

M 404.9760 R 11259

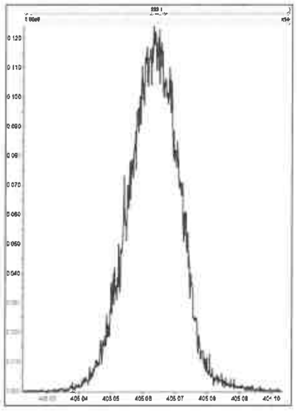

M 416.9760 R 11683

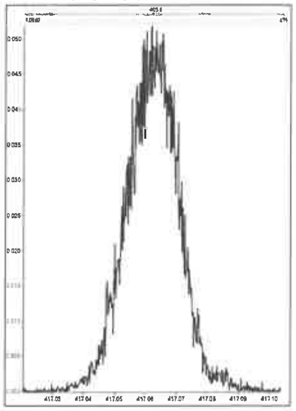

Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:09:38 Pacific Daylight Time

M 318.9792 R 12256

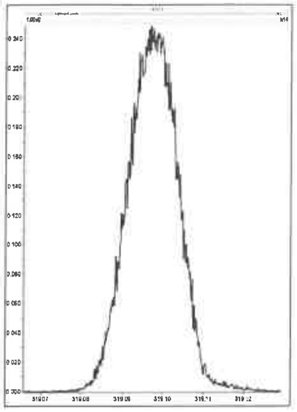

M 330.9792 R 12135

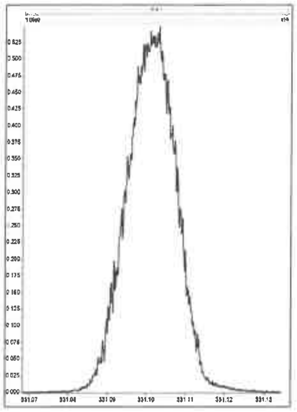

M 342.9792 R 11959

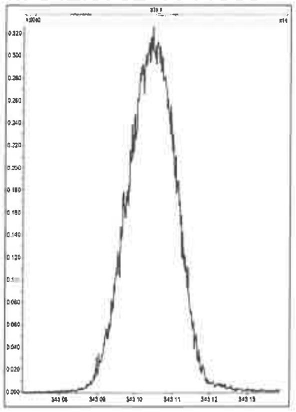

M 354.9792 R 12316

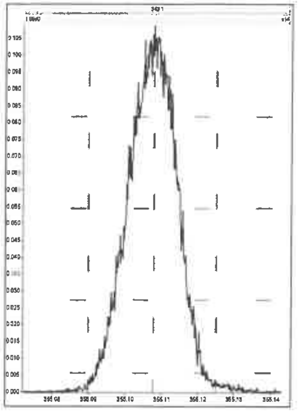

M 366.9792 R 11847

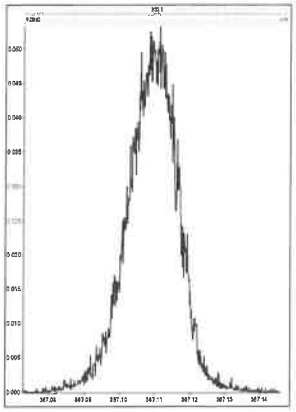

M 380.9760 R 12075

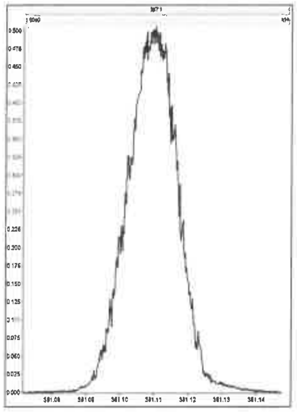

M 392.9760 R 11575

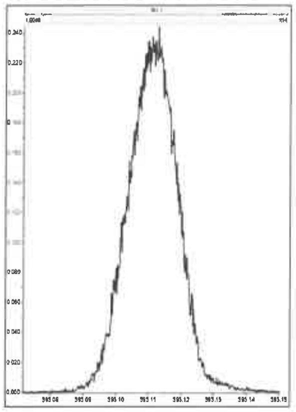

M 404.9760 R 11061

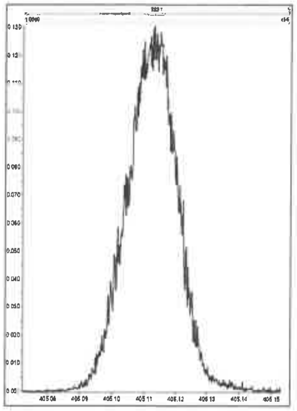

M 416.9760 R 11964

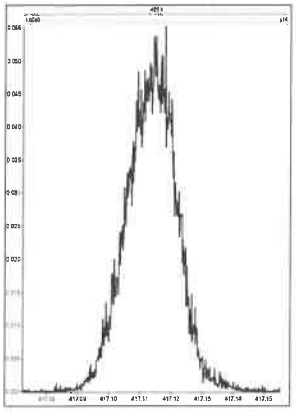

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

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M 366.9792 R 11520

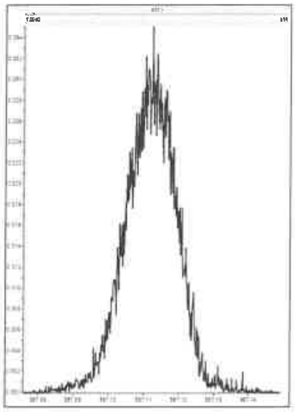

M 380.9760 R 11790

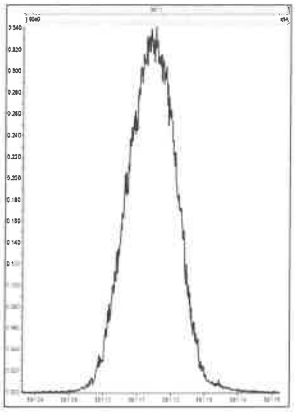

M 392.9760 R 12078

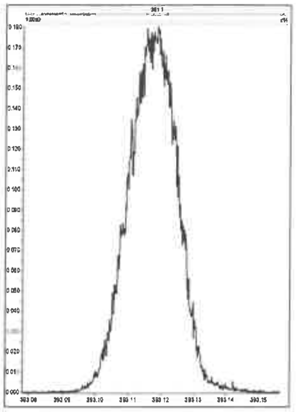

M 404.9760 R 12254

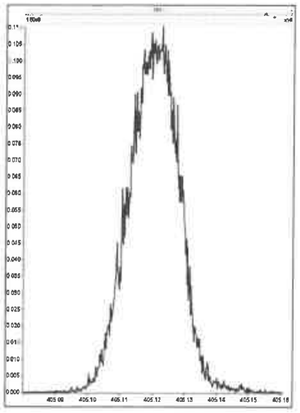

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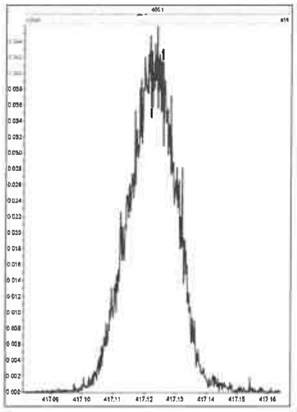

M 430.9728 R 11683

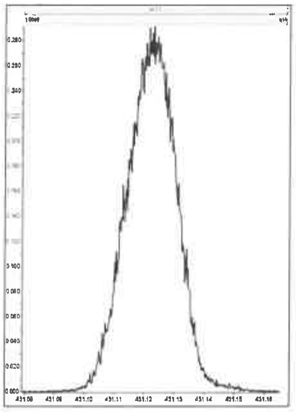

M 442.9728 R 11848

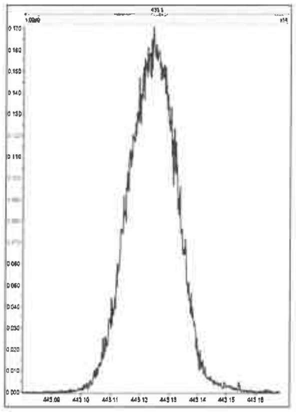

M 454.9728 R 11519

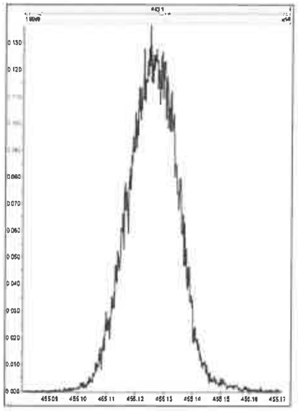

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

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M 380.9760 R 11792

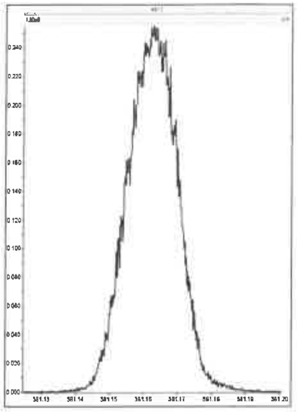

M 392.9760 R 12379

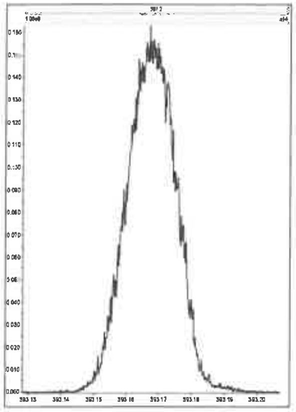

M 404.9760 R 12377

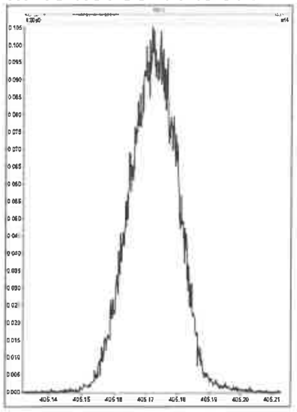

M 416.9760 R 12315

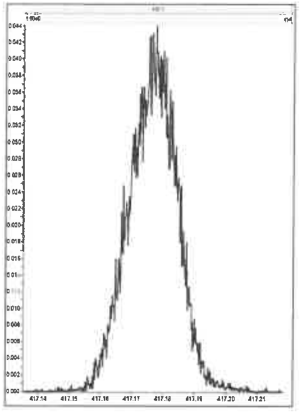

M 430.9728 R 12375

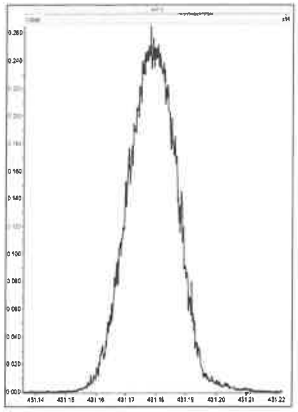

M 442.9728 R 11413

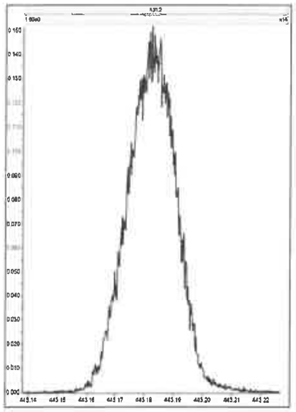

M 454.9728 R 12015

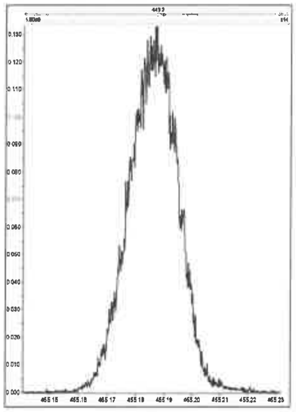

M 466.9728 R 11851

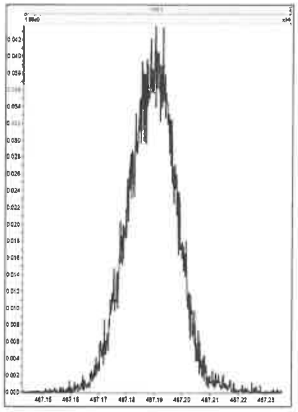

M 480.9696 R 11365

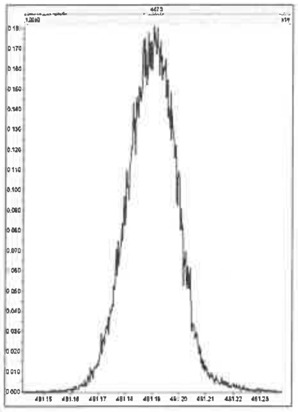

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:11:32 Pacific Daylight Time

M 380.9760 R 11792

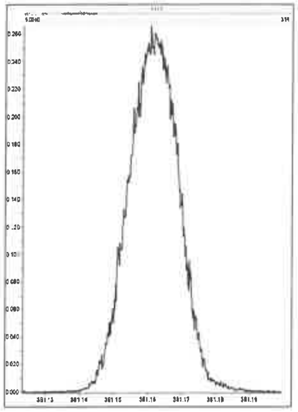

M 392.9760 R 12134

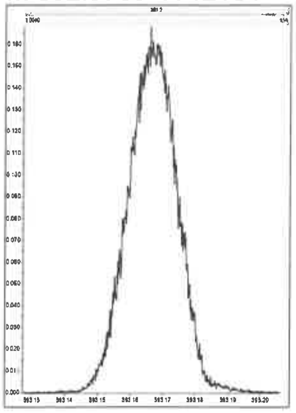

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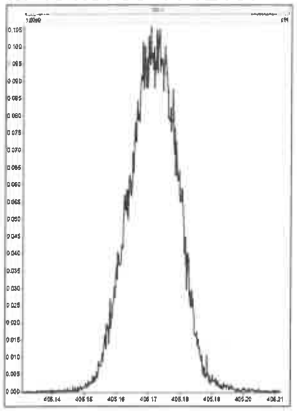

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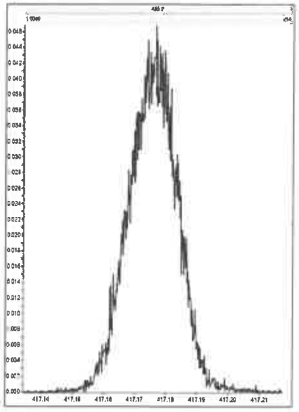

M 430.9728 R 11960

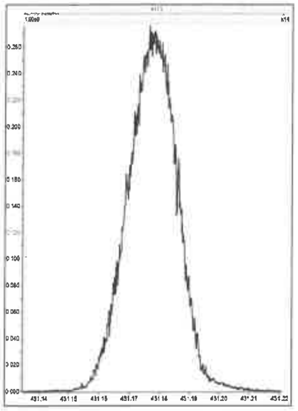

M 442.9728 R 12137

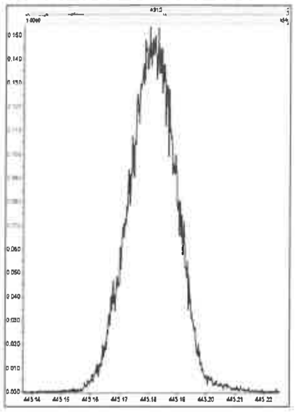

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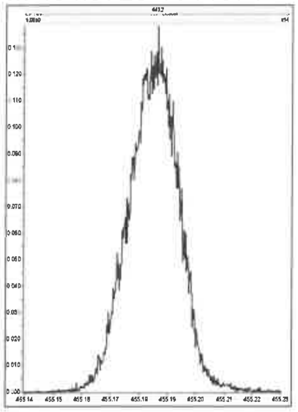

M 466.9728 R 12134

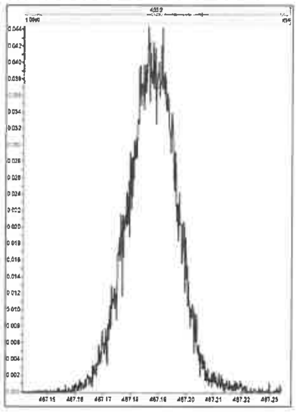

M 480.9696 R 11310

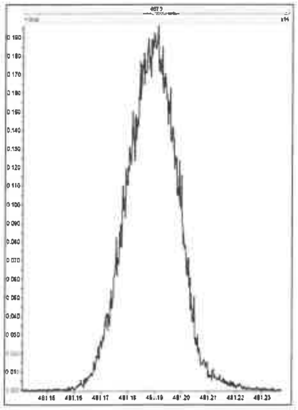

M 492.9696 R 11574

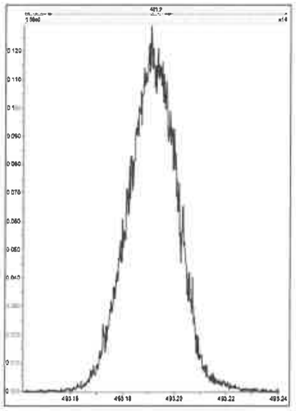

M 504.9696 R 11363

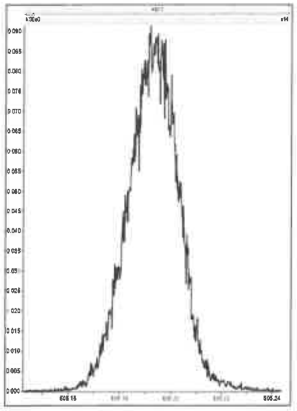

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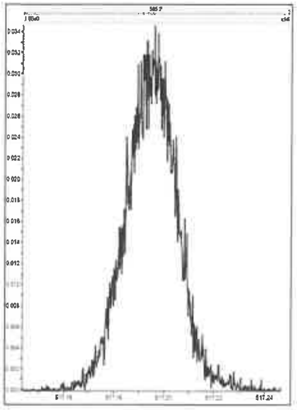

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M 292.9824 R 12077

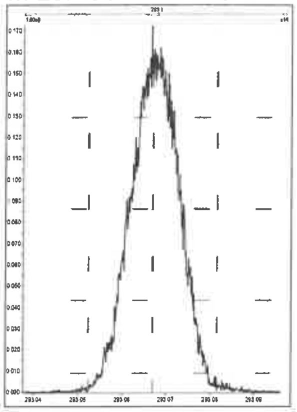

M 304.9824 R 12165

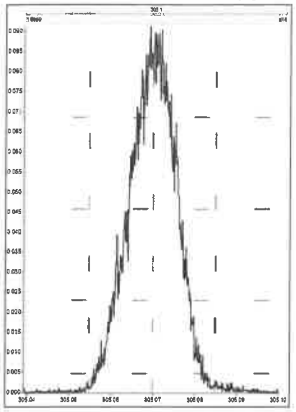

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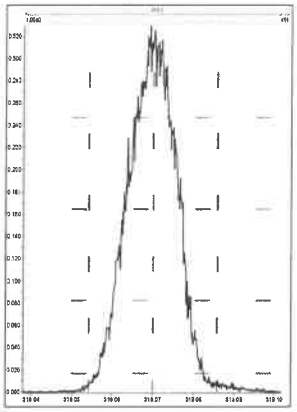

M 330.9792 R 12438

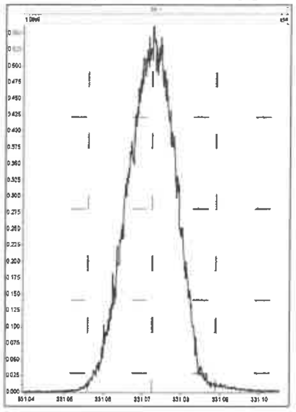

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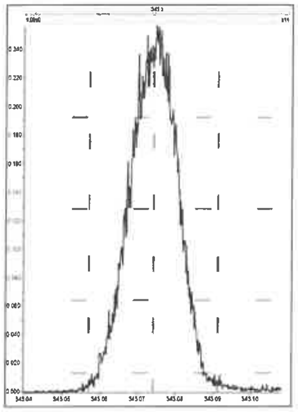

M 354.9792 R 12658

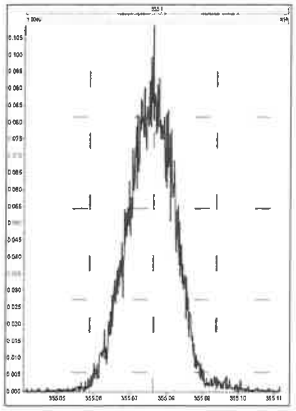

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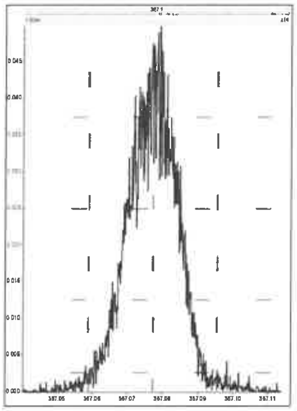

M 380.9760 R 11823

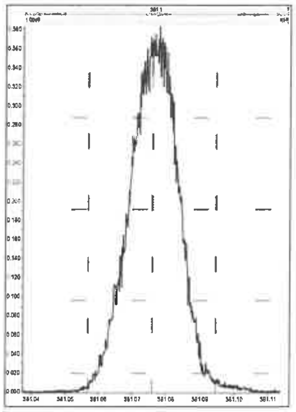

M 392.9760 R 11682

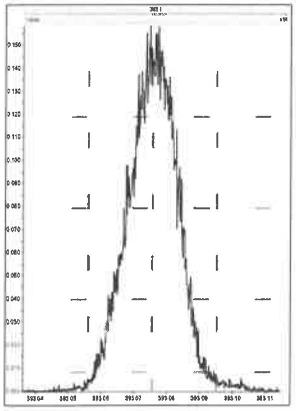

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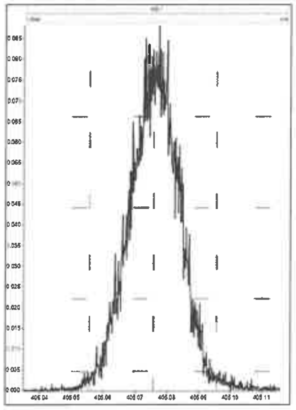

M 416.9760 R 12858

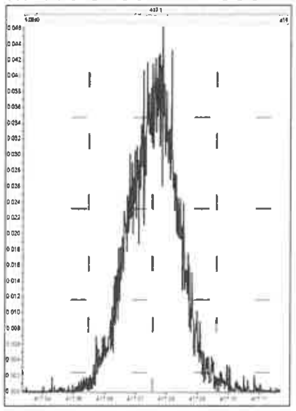

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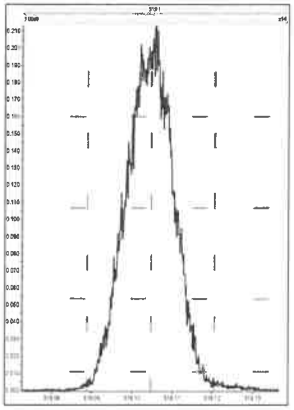

M 330.9792 R 12081

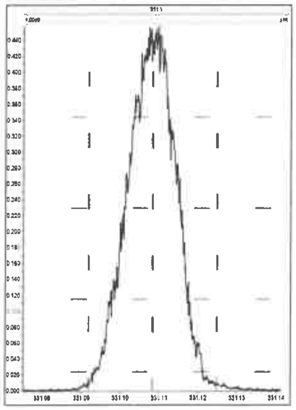

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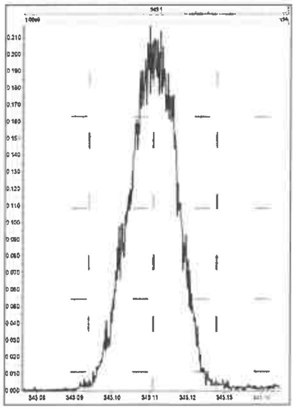

M 354.9792 R 12823

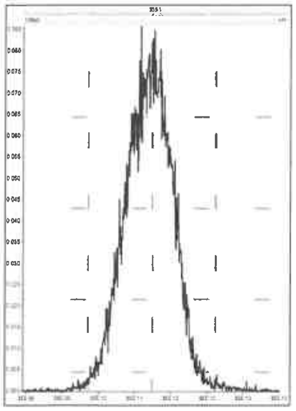

M 366.9792 R 12954

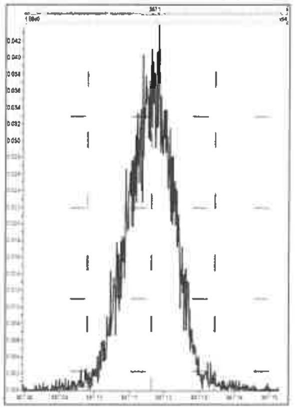

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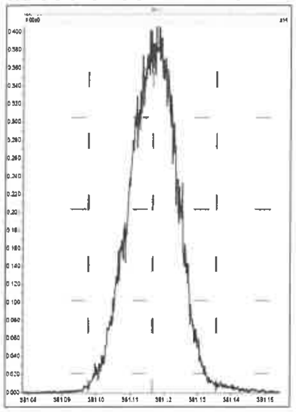

M 392.9760 R 12048

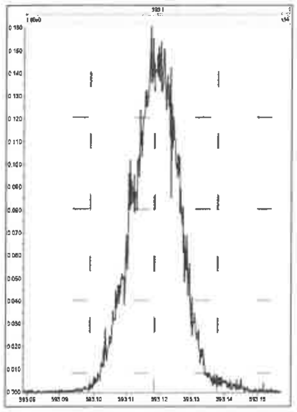

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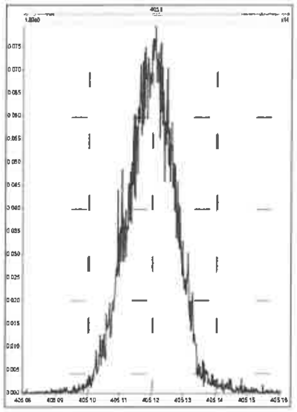

M 416.9760 R 13003

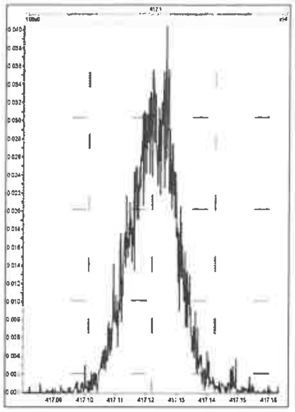

M 366.9792 R 13054

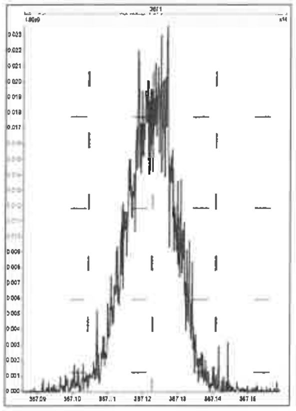

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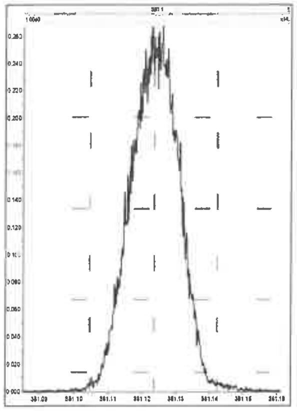

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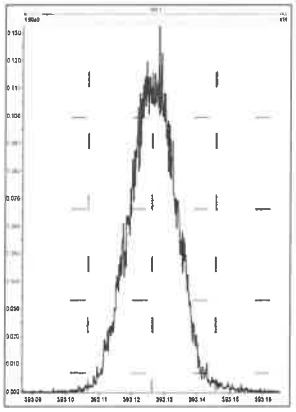

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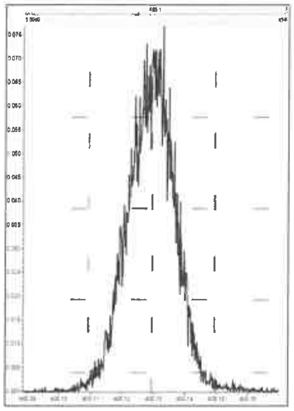

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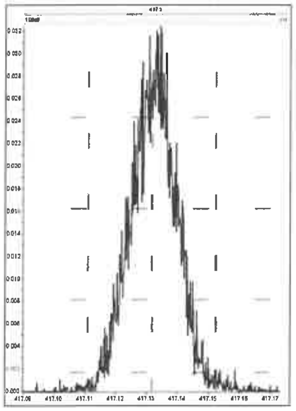

M 430.9728 R 11876

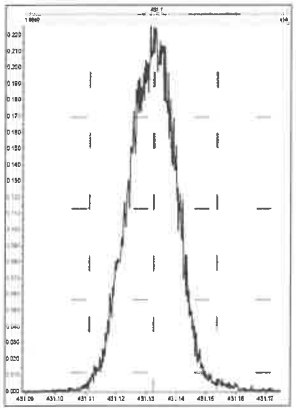

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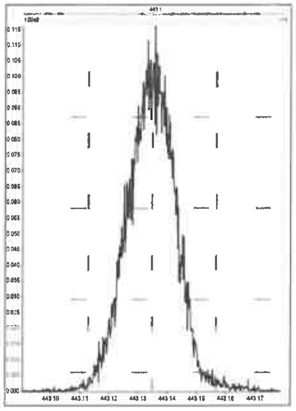

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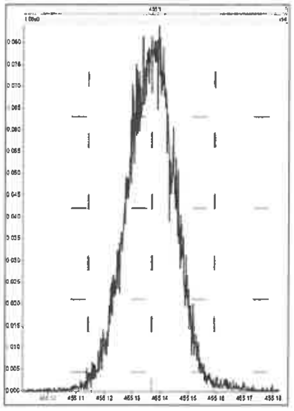

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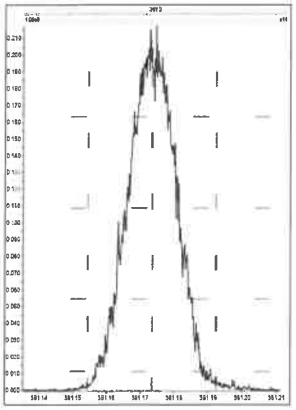

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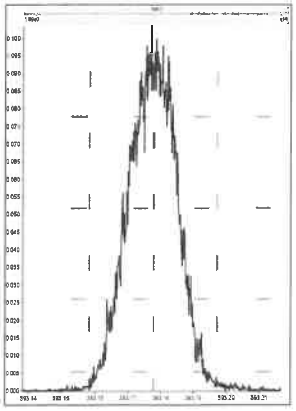

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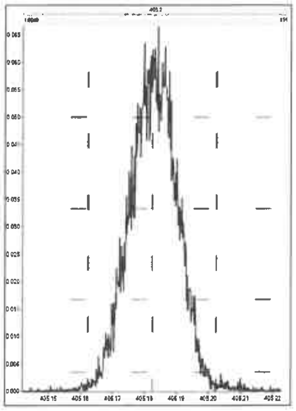

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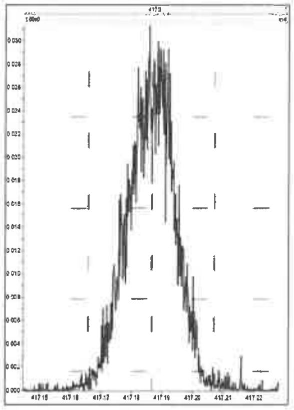

M 430.9728 R 12019

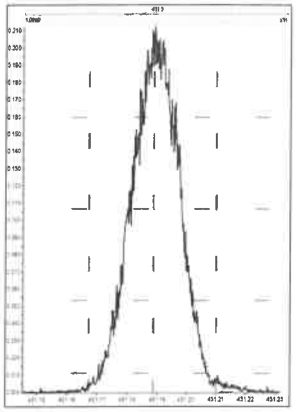

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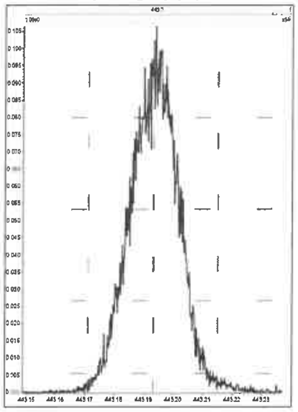

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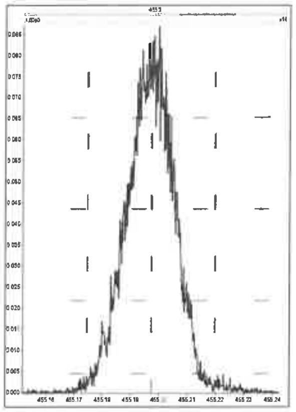

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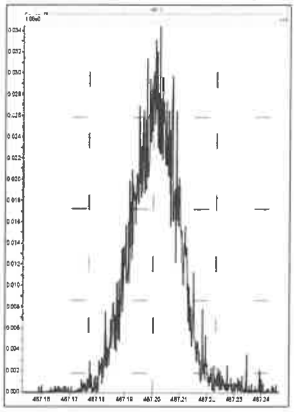

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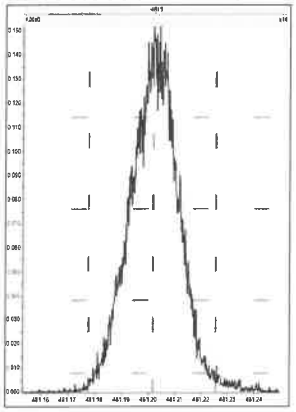

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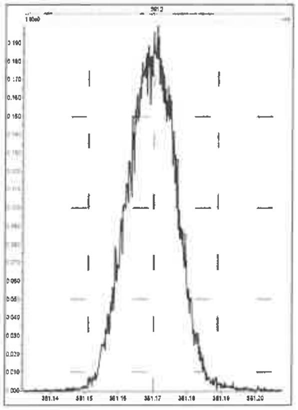

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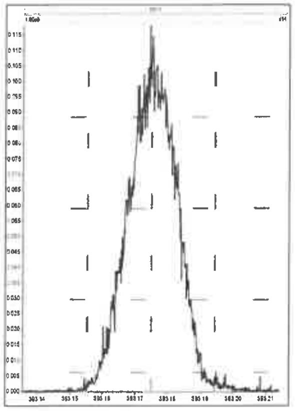

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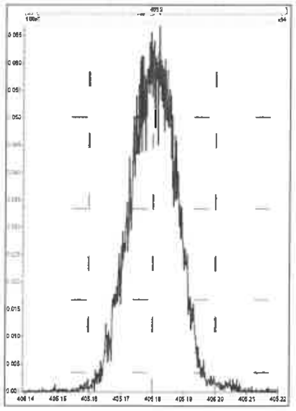

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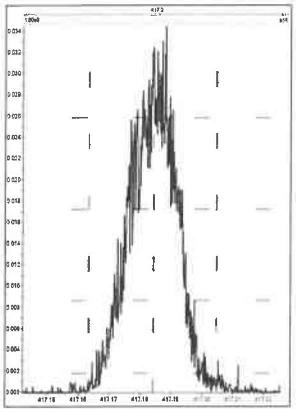

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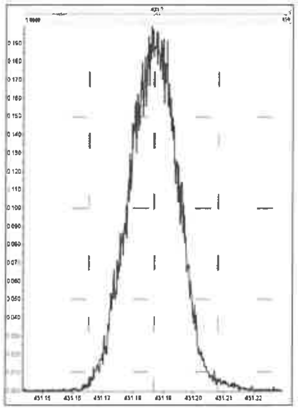

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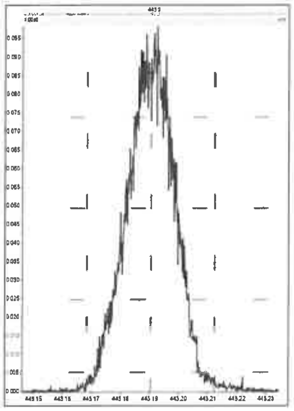

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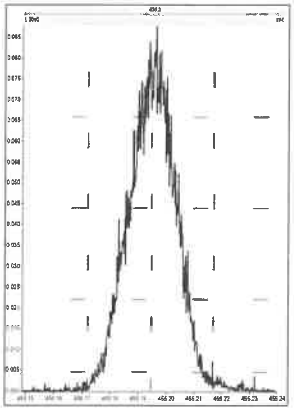

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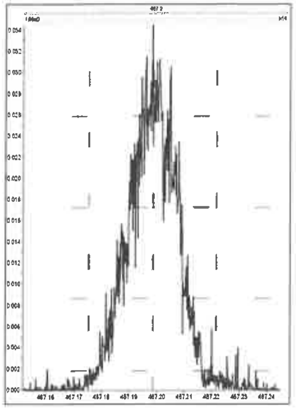

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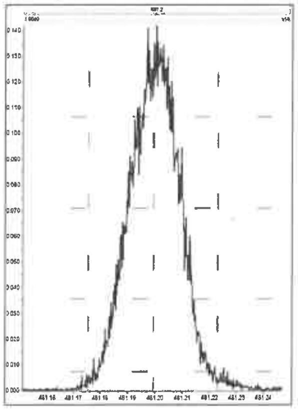

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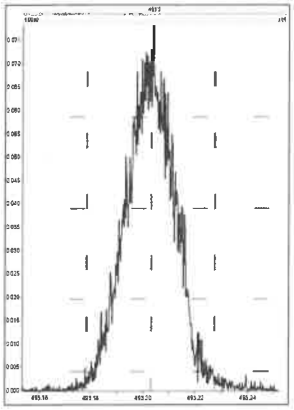

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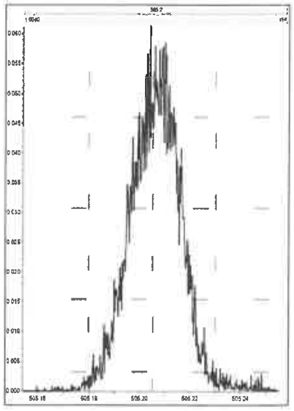

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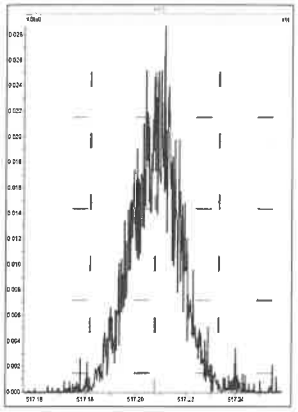

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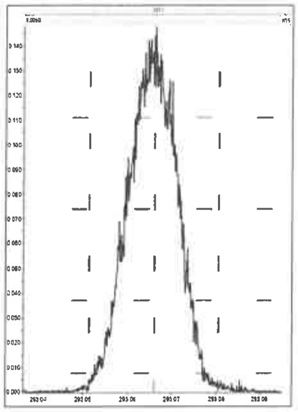

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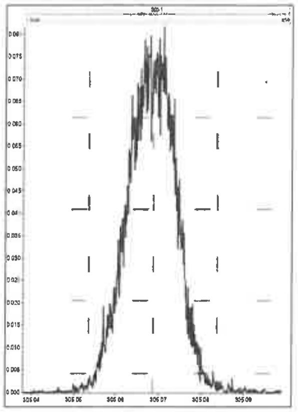

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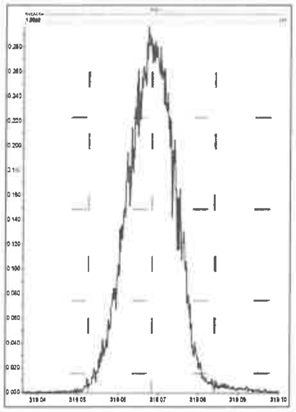

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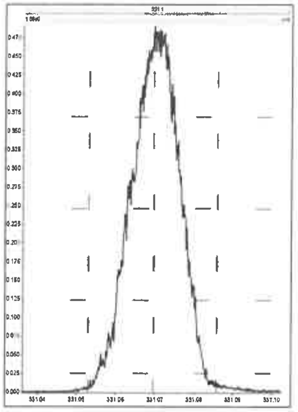

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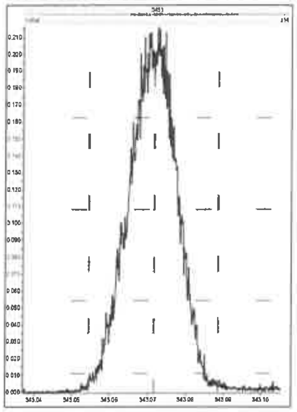

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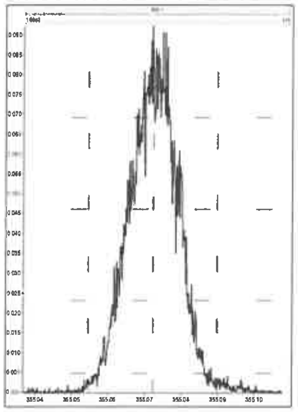

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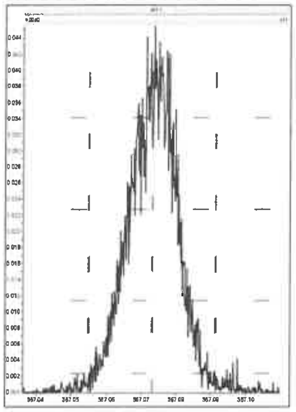

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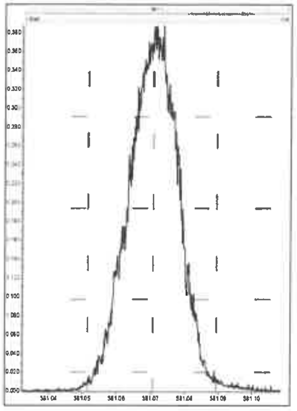

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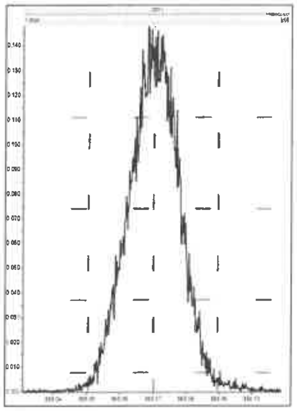

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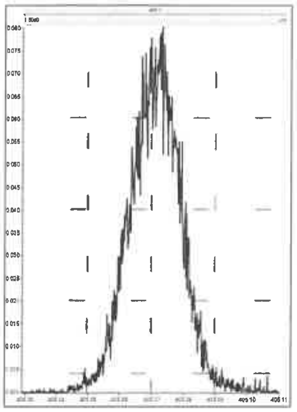

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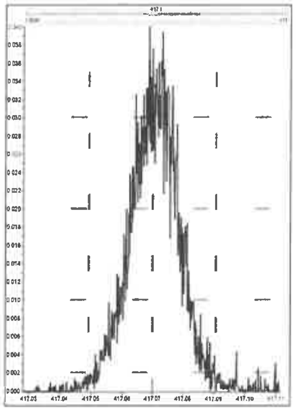

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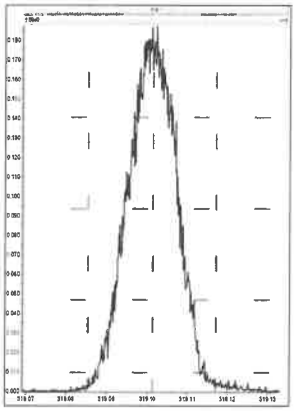

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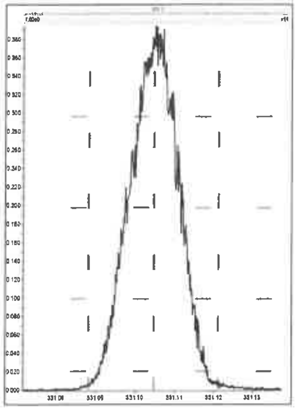

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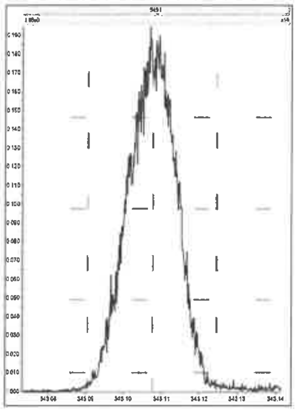

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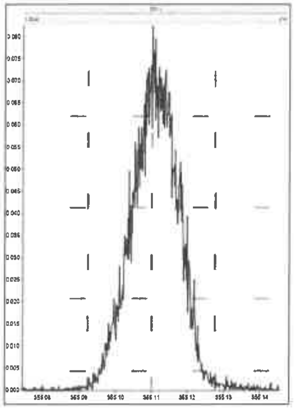

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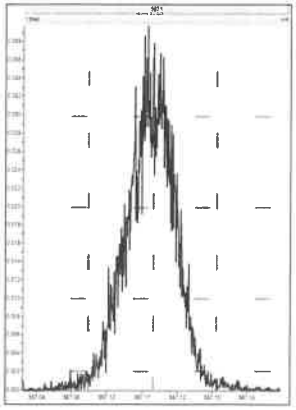

M 380.9760 R 12048

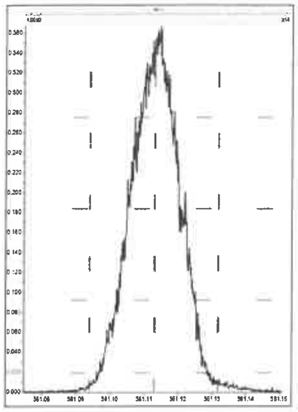

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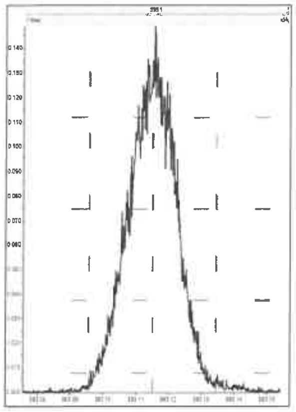

M 404.9760 R 12081

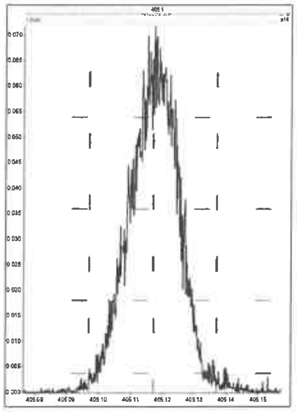

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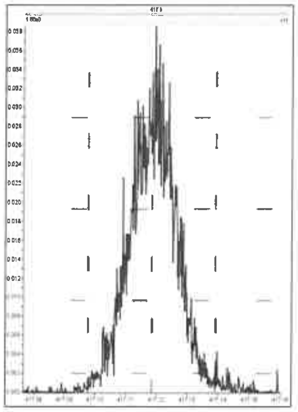

M 366.9792 R 12690

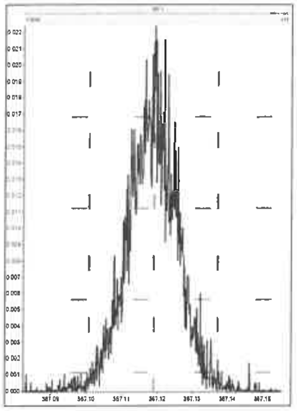

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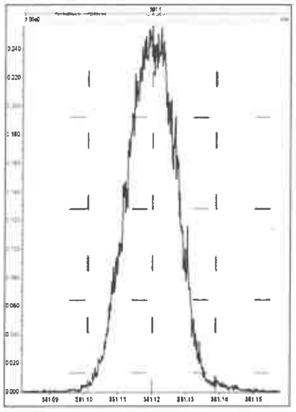

M 392.9760 R 12535

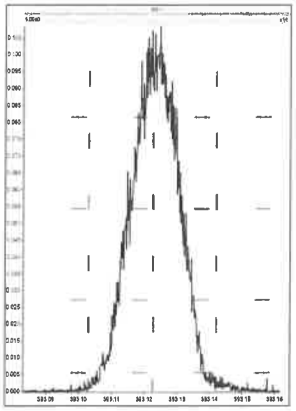

M 404.9760 R 12345

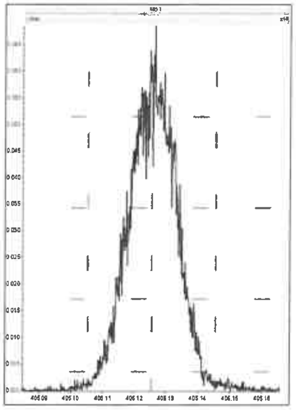

M 416.9760 R 13026

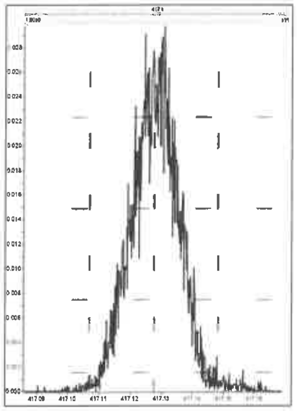

M 430.9728 R 12284

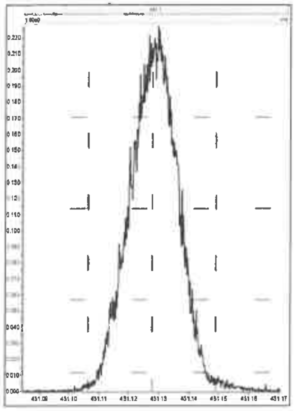

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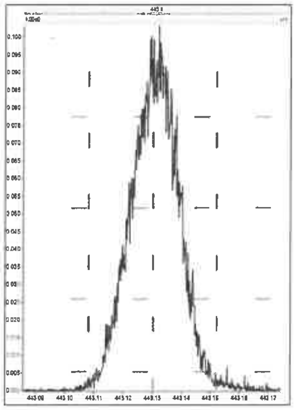

M 454.9728 R 12199

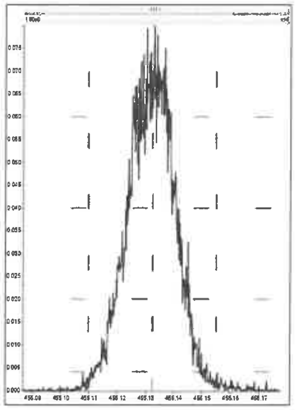

M 380.9760 R 12029

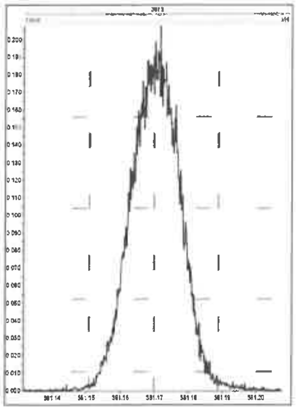

M 392.9760 R 12265

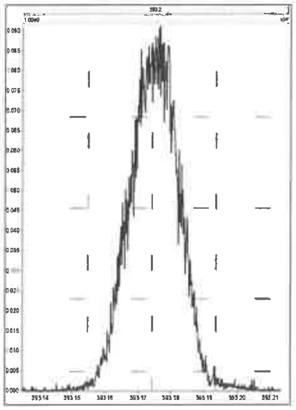

M 404.9760 R 12902

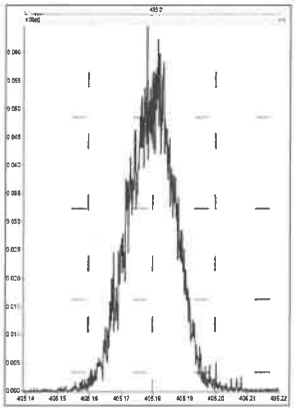

M 416.9760 R 12690

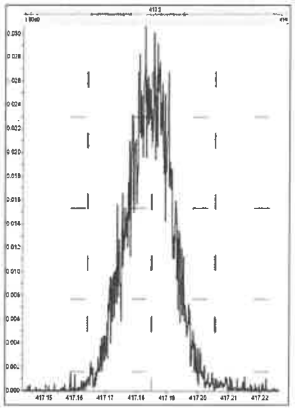

M 430.9728 R 12285

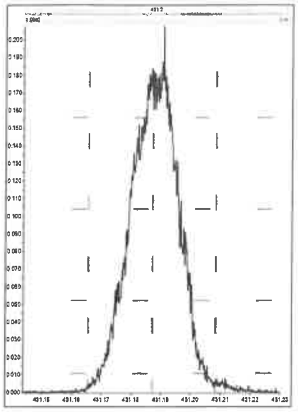

M 442.9728 R 12195

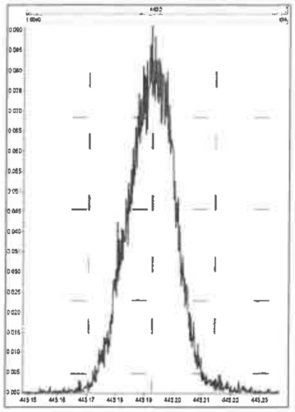

M 454.9728 R 12567

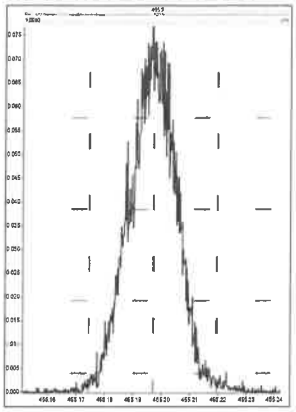

M 466.9728 R 13031

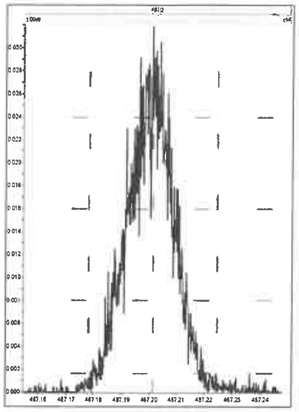

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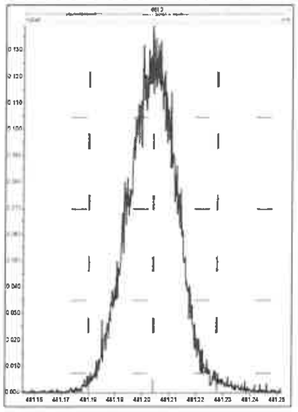

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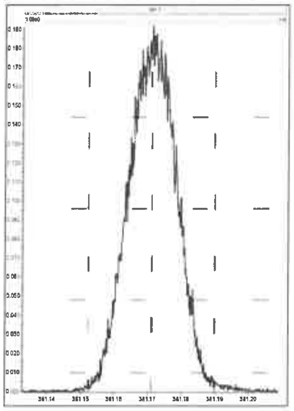

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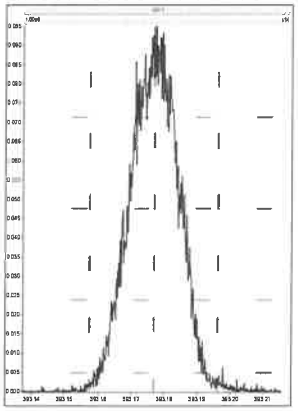

M 404.9760 R 12233

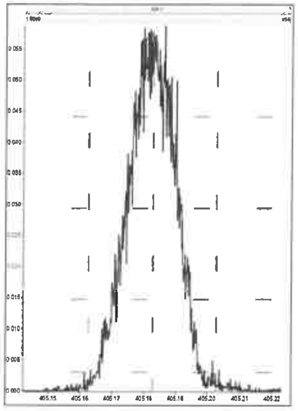

M 416.9760 R 12548

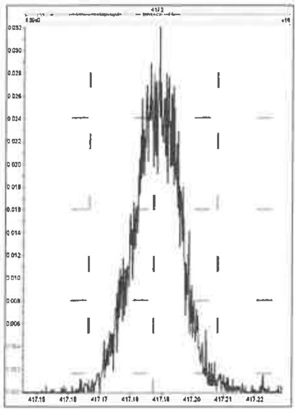

M 430.9728 R 11933

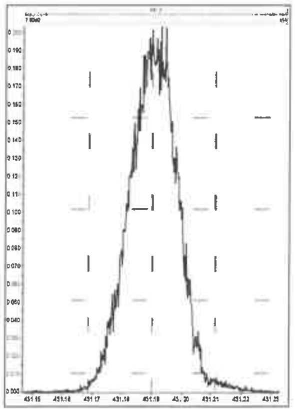

M 442.9728 R 12693

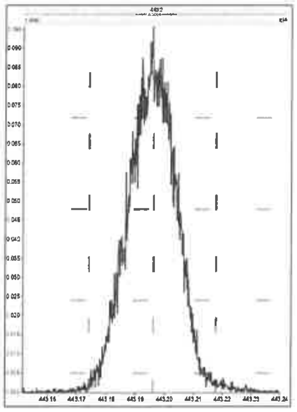

M 454.9728 R 12021

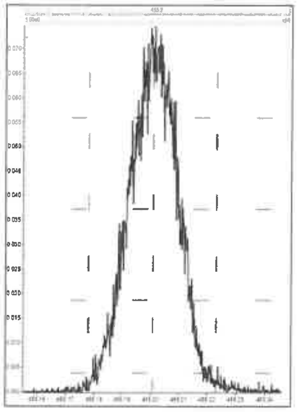

M 466.9728 R 13021

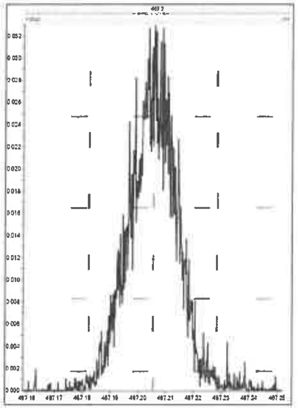

M 480.9696 R 11338

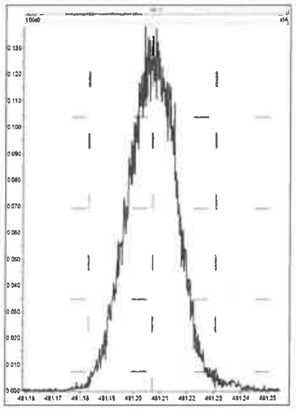

M 492.9696 R 12118

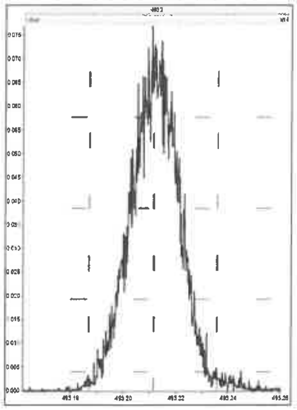

M 504.9696 R 12205

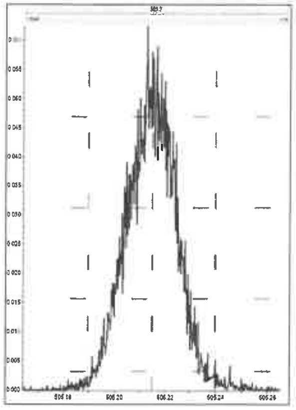

M 516.9697 R 12988

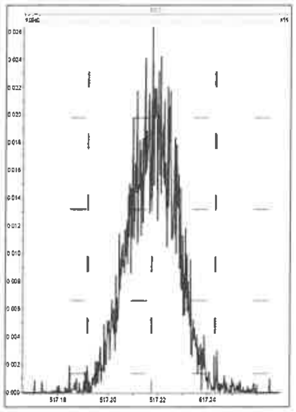

Report Date: 28-Jun-2020 13:17:00 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 27-Jun-2020 15:28:06 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720A CS-3 HRDXNL3_00027
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:57 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:41:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	43639065	0.80	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	59091712	0.79	1.3726	98.7	98.7	0.2460	0.2460	98.65	
2,3,7,8-TCDF	17.203	1030887	0.74	0.9104	1.916	1.916	0.0218	0.0218	95.81	
S Total TCDF					1.916	1.916	0.0218	0.0218		
D 13C-2,3,7,8-TCDD	17.884	44824010	0.78	1.0192	100.8	100.8	0.2603	0.2603	101	
2,3,7,8-TCDD	17.899	953601	0.76	1.0745	1.980	1.980	0.0296	0.0296	99.00	
$ 37Cl4-2,3,7,8-TCDD	17.914	871168		1.0176	1.962	1.962	0.0176	0.0176	98.09	
S Total TCDD					1.980	1.980	0.0296	0.0296		
D 13C-1,2,3,7,8-PeCDF	22.143	49027297	1.59	1.1429	98.3	98.3	0.4200	0.4200	98.30	
1,2,3,7,8-PeCDF	22.156	4759314	1.61	0.9938	9.768	9.768	0.0757	0.0757	97.68	
D 13C-2,3,4,7,8-PeCDF	23.452	62074161	1.60	1.3997	101.6	101.6	0.3429	0.3429	102	
2,3,4,7,8-PeCDF	23.479	4750358	1.56	0.8117	9.428	9.428	0.0783	0.0783	94.28	
S Total PeCDF					19.2	19.2	0.0770	0.0770		
D 13C-1,2,3,7,8-PeCDD	24.174	34921306	1.59	0.8232	97.2	97.2	0.1705	0.1705	97.21	
1,2,3,7,8-PeCDD	24.202	3480805	1.61	1.0181	9.790	9.790	0.0462	0.0462	97.90	
S Total PeCDD					9.790	9.790	0.0462	0.0462		
D 13C-1,2,3,4,7,8-HxCDF	30.292	42664742	0.51	1.1388	101.8	101.8	0.9167	0.9167	102	
1,2,3,4,7,8-HxCDF	30.319	3185554	1.21	0.8061	9.262	9.262	0.1671	0.1671	92.62	
D 13C-1,2,3,6,7,8-HxCDF	30.492	39713843	0.50	1.0803	99.9	99.9	0.9664	0.9664	99.86	
1,2,3,6,7,8-HxCDF	30.519	3779382	1.18	0.9818	9.693	9.693	0.1609	0.1609	96.93	
D 13C-2,3,4,6,7,8-HxCDF	31.371	34283463	0.51	0.9494	98.1	98.1	1.100	1.100	98.09	
2,3,4,6,7,8-HxCDF	31.384	3485837	1.22	1.0382	9.793	9.793	0.1304	0.1304	97.93	
D 13C-1,2,3,7,8,9-HxCDF	32.196	30581048	0.51	0.8670	95.8	95.8	1.204	1.204	95.81	
1,2,3,7,8,9-HxCDF	32.209	3136034	1.16	1.0321	9.936	9.936	0.1463	0.1463	99.36	
S Total HxCDF					38.7	38.7	0.1512	0.1512		
* 13C-1,2,3,7,8,9-HxCDD	32.009	36813113	1.26	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	34994028	1.28	0.9356	101.6	101.6	0.6418	0.6418	102	
1,2,3,4,7,8-HxCDD	31.583	2719685	1.22	0.8202	9.475	9.475	0.0768	0.0768	94.75	
D 13C-1,2,3,6,7,8-HxCDD	31.677	37929467	1.25	1.0416	98.9	98.9	0.5765	0.5765	98.92	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	3462702	1.22	0.9367	9.747	9.747	0.0757	0.0757	97.47	
1,2,3,7,8,9-HxCDD	32.023	3527858	1.21	0.9905	9.768	9.768	0.0673	0.0673	97.68	
S Total HxCDD					29.0	29.0	0.0733	0.0733		
D 13C-1,2,3,4,6,7,8-HpCDF	33.652	28057147	0.43	0.7899	96.5	96.5	3.068	3.068	96.49	
1,2,3,4,6,7,8-HpCDF	33.665	4008596	1.03	1.4527	9.835	9.835	0.2288	0.2288	98.35	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	33325163	0.44	0.9093	99.6	99.6	2.665	2.665	99.56	
1,2,3,4,7,8,9-HpCDF	34.746	3338012	1.02	1.0585	9.463	9.463	0.3001	0.3001	94.63	
S Total HpCDF					19.3	19.3	0.2645	0.2645		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	26931716	1.06	0.7637	95.8	95.8	1.169	1.169	95.79	
1,2,3,4,6,7,8-HpCDD	34.454	2798461	1.03	1.0540	9.859	9.859	0.1238	0.1238	98.59	
S Total HpCDD					9.859	9.859	0.1238	0.1238		
D 13C-OCDD	36.773	43643747	0.91	0.6377	185.9	185.9	0.4565	0.4565	92.95	
OCDF	36.869	5443463	0.89	1.2965	19.2	19.2	0.0902	0.0902	96.20	
OCDD	36.785	4858093	0.91	1.1499	19.4	19.4	0.1098	0.1098	96.80	

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 27-Jun-2020 15:28:06 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720A CS-3 HRDXNL3_00027
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:57 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:41:37

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		19335832	4478790	5881	14702	762		
333.9339	17.687	17.702	-1		24303233	5641669	4860	12150	1161	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.197	-1	0.971	26033749	6005689	7354	18385	817		
317.9389	17.188	17.197	-1	0.971	33057963	7677098	6316	15790	1216	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.215	-1	1.001	438697	101882	341	852	299		
305.8987	17.203	17.215	-1	1.001	592190	135242	747	1867	181	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.893	-1	1.010	19655423	4237387	5881	14702	721		
333.9339	17.884	17.893	-1	1.010	25168587	5391028	4860	12150	1109	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.899	17.911	-1	1.001	410632	85901	787	1967	109		
321.8936	17.899	17.911	-1	1.001	542969	117975	438	1095	269	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	871168	185692	726	1815	256		
13C-1,2,3,7,8-PeCDF											
351.9000	22.143	22.148	0	1.251	30083221	4875061	11777	29442	414		
353.8970	22.143	22.148	0	1.251	18944076	3046537	7653	19132	398	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.156	22.164	0	1.001	2934765	483914	1407	3517	344		
341.8567	22.156	22.164	0	1.001	1824549	285883	977	2442	293	1.61(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.452	23.460	0	1.325	38243343	5794870	11777	29442	492		
353.8970	23.452	23.460	0	1.325	23830818	3580795	7653	19132	468	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.479	23.487	0	1.001	2895083	433498	1407	3517	308		
341.8567	23.479	23.487	0	1.001	1855275	278806	977	2442	285	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.174	24.180	0	1.366	21421868	3006143	3086	7715	974		
369.8919	24.174	24.180	0	1.366	13499438	1923562	2596	6490	741	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	2149507	297695	497	1242	599		
357.8516	24.202	24.204	0	1.001	1331298	184899	430	1075	430	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.292	30.298	0	0.946	14413502	2286959	9710	24275	236		
385.8610	30.292	30.298	0	0.946	28251240	4480135	19392	48480	231	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.319	30.319	0	1.001	1741543	268361	1906	4765	141		
375.8178	30.319	30.319	0	1.001	1444011	238191	1740	4350	137	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.492	30.497	0	0.953	13281181	1924515	9710	24275	198		
385.8610	30.492	30.497	0	0.953	26432662	3846709	19392	48480	198	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.001	2047646	302977	1906	4765	159		
375.8178	30.519	30.519	0	1.001	1731736	253518	1740	4350	146	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	11566575	2245795	9710	24275	231		
385.8610	31.371	31.370	0	0.980	22716888	4484481	19392	48480	231	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	1916204	383233	1906	4765	201		
375.8178	31.384	31.384	0	1.000	1569633	308423	1740	4350	177	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.196	32.201	0	1.006	10273728	2040405	9710	24275	210		
385.8610	32.196	32.201	0	1.006	20307320	3997598	19392	48480	206	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.209	32.214	0	1.000	1685218	334059	1906	4765	175		
375.8178	32.209	32.214	0	1.000	1450816	278262	1740	4350	160	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.009	32.015	0		20556699	3903279	9082	22705	430		
403.8529	32.009	32.015	0		16256414	3065748	7658	19145	400	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	19641879	4632268	9082	22705	510		
403.8529	31.570	31.570	0	0.986	15352149	3683166	7658	19145	481	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	1496345	361956	1182	2955	306		
391.8127	31.583	31.583	0	1.000	1223340	292290	912	2280	320	1.22(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.990	21105495	4090559	9082	22705	450		
403.8529	31.677	31.677	0	0.990	16823972	3295032	7658	19145	430	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	1901964	389203	1182	2955	329		
391.8127	31.690	31.693	0	1.000	1560738	308754	912	2280	339	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.023	32.028	0	1.014	1932228	364111	1182	2955	308		
391.8127	32.023	32.028	0	1.014	1595630	306605	912	2280	336	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.652	33.657	0	1.051	8459182	1968929	20503	51257	96		
419.8220	33.652	33.657	0	1.051	19597965	4565515	47054	117635	97	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.665	33.667	0	1.000	2029913	478836	4793	11982	100		
409.7789	33.665	33.667	0	1.000	1978683	467806	3895	9737	120	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	10134685	2105791	20503	51257	103		
419.8220	34.734	34.731	0	1.085	23190478	4730712	47054	117635	101	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.746	34.739	0	1.000	1689082	334626	4793	11982	70		
409.7789	34.734	34.739	0	1.000	1648930	328889	3895	9737	84	1.02(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	13831182	2872767	11902	29755	241		
437.8140	34.442	34.444	0	1.076	13100534	2720988	12980	32450	210	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	1422658	305100	1771	4427	172		
425.7737	34.454	34.457	0	1.000	1375803	282143	1148	2870	246	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.149	20838125	2990554	3888	9720	769		
471.7750	36.773	36.775	0	1.149	22805622	3323066	4227	10567	786	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	2560225	396289	608	1520	652		
443.7399	36.869	36.871	0	1.003	2883238	452232	868	2170	521	0.89(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	2319784	329171	729	1822	452		
459.7348	36.785	36.787	0	1.000	2538309	387210	866	2165	447	0.91(0.76-1.02)	

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Injection Date: 27-Jun-2020 15:28:06
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

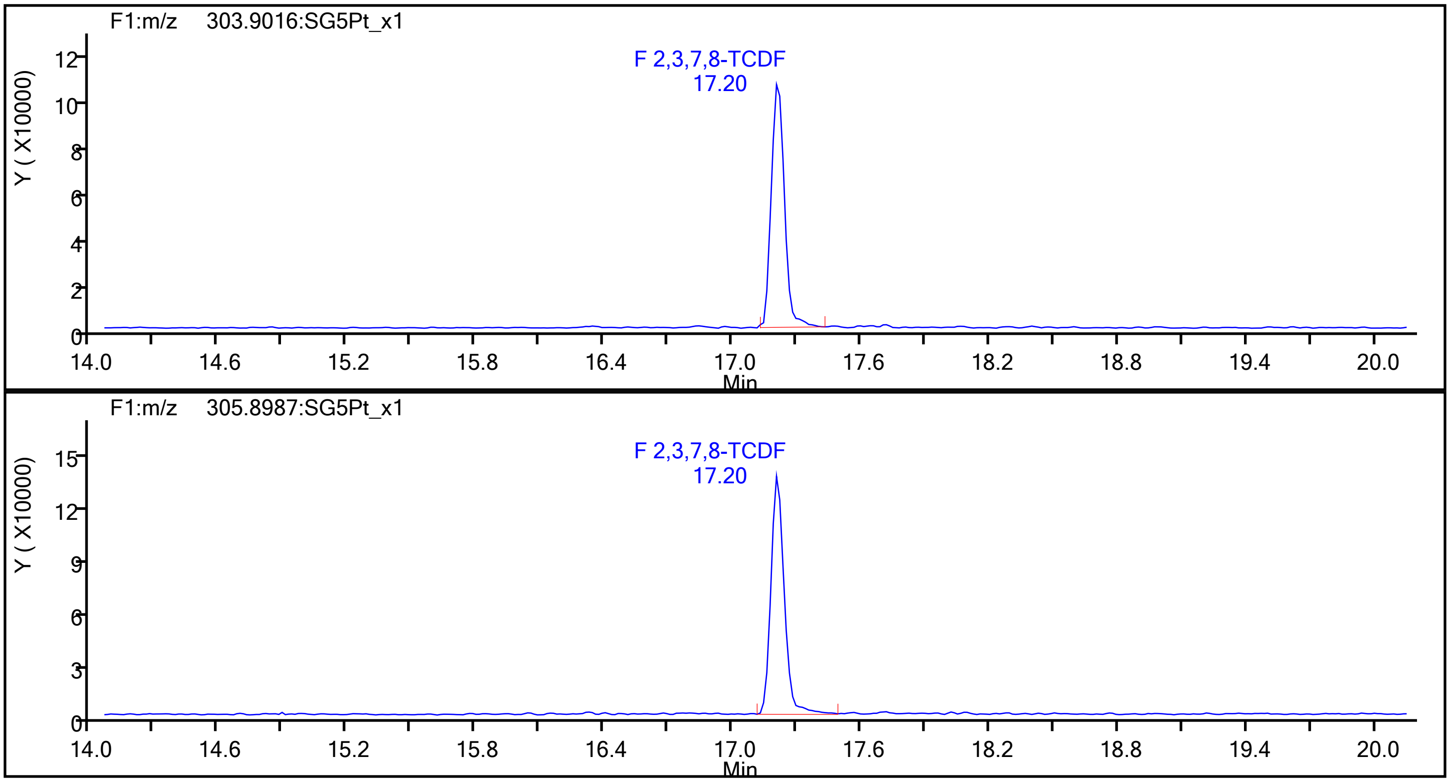

TCDF Standards

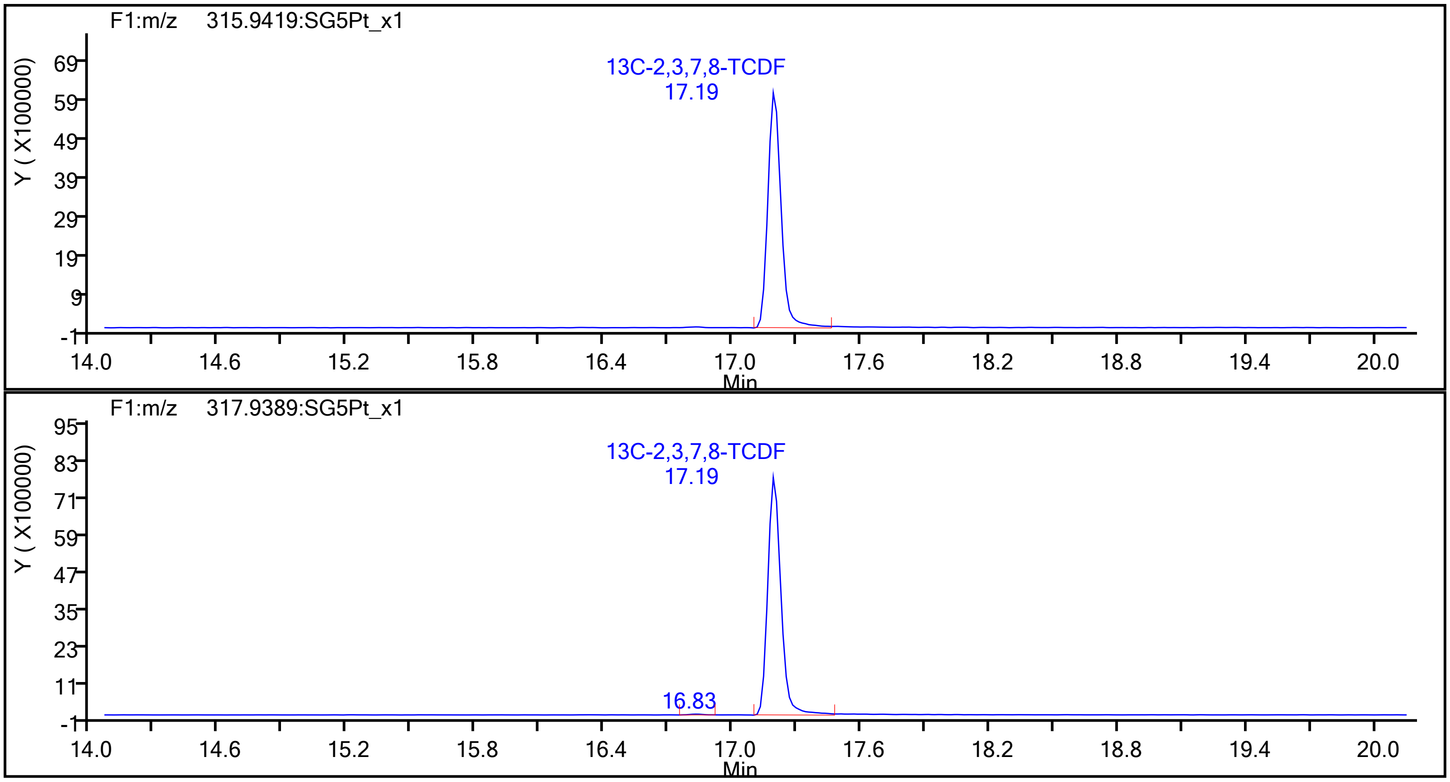

Eurofins TestAmerica, Sacramento

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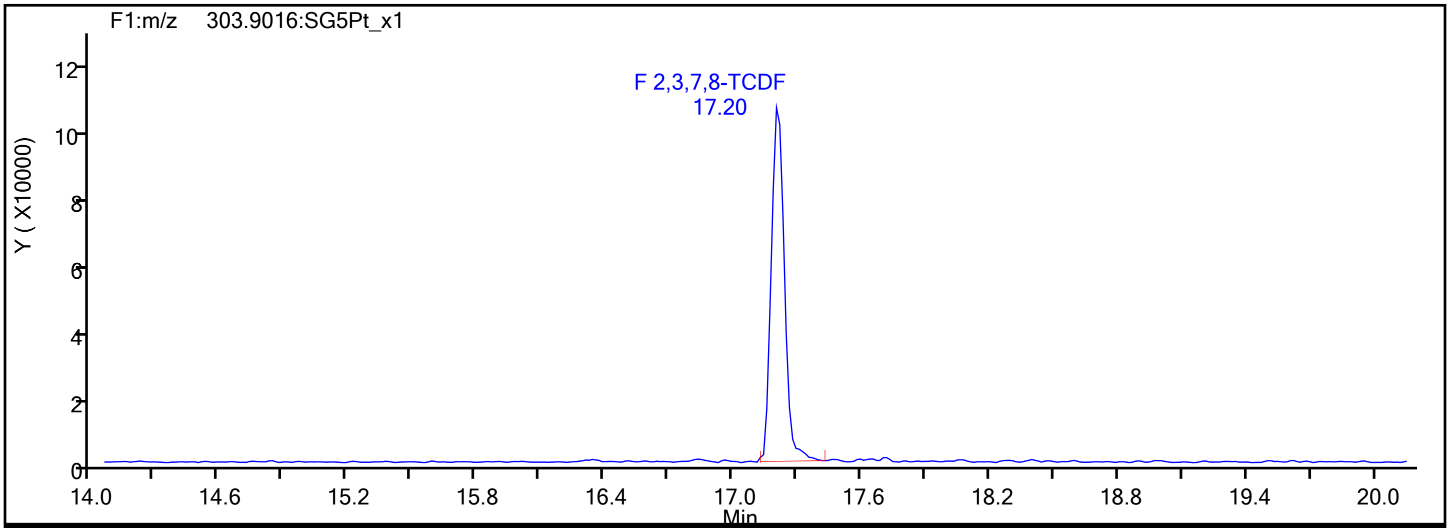

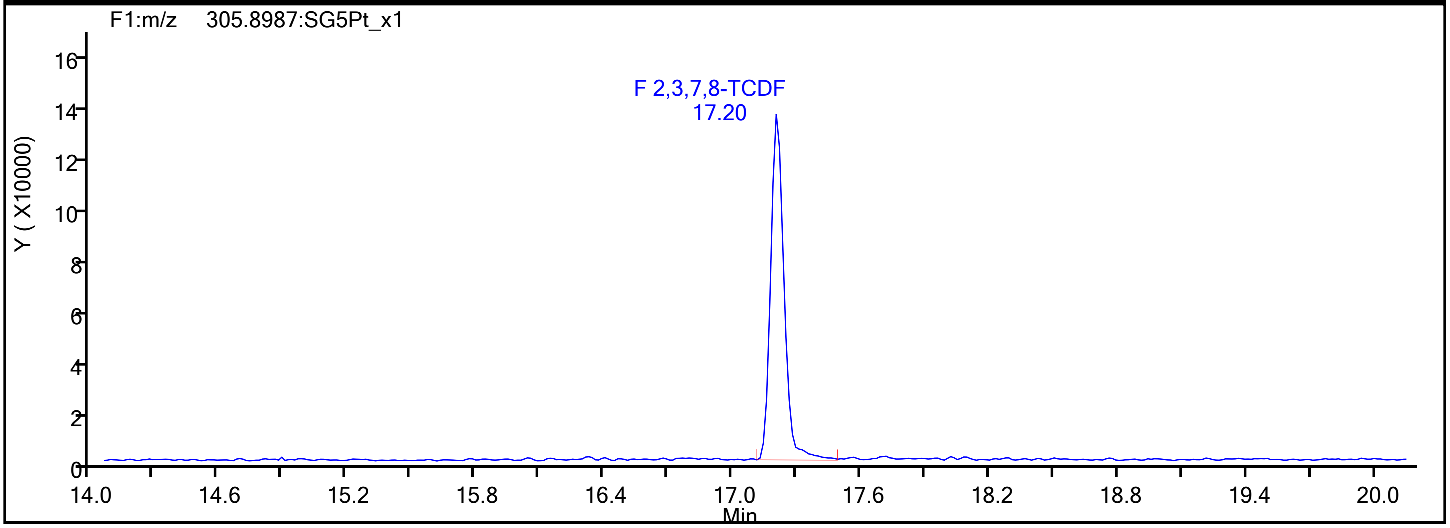

TCDF Interference Mass

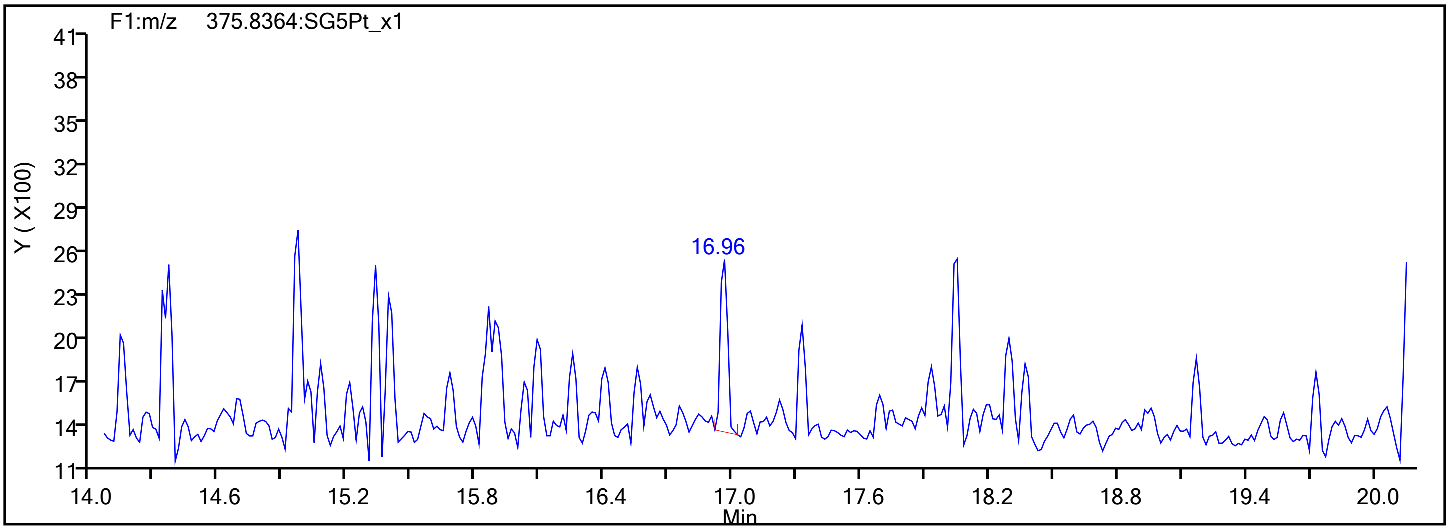

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Eurofins TestAmerica, Sacramento

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TCDD

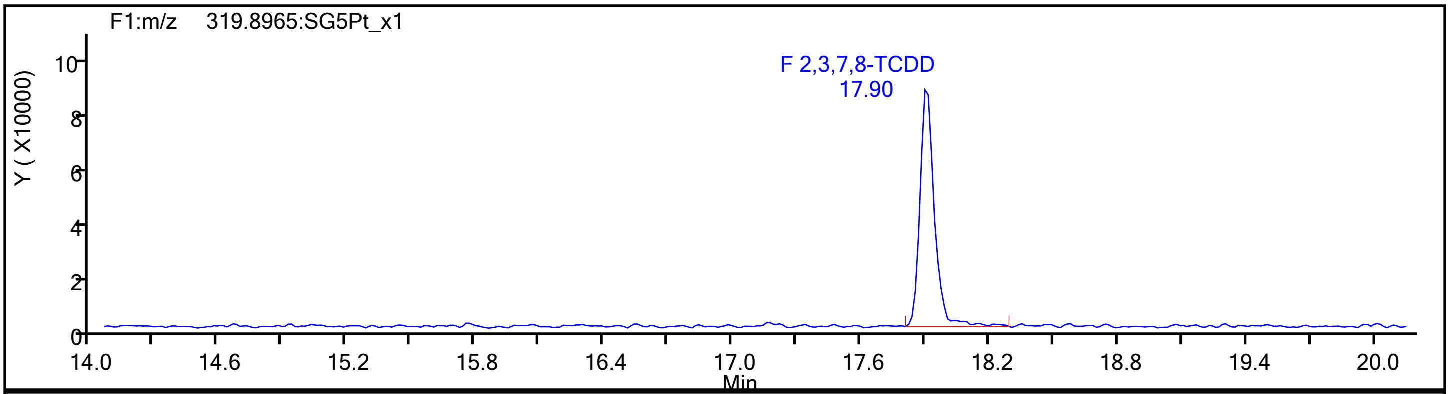

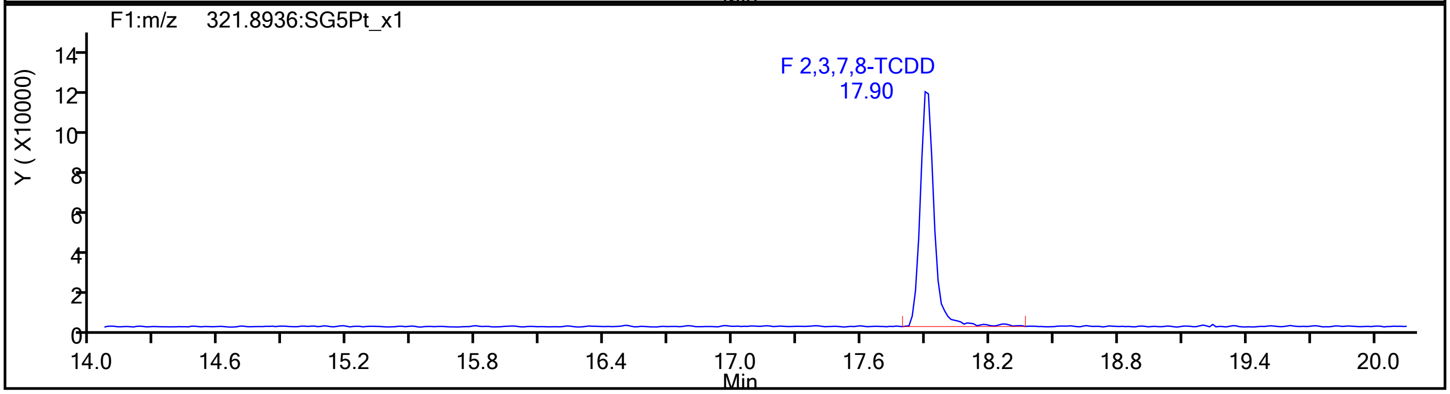

TCDD Standards

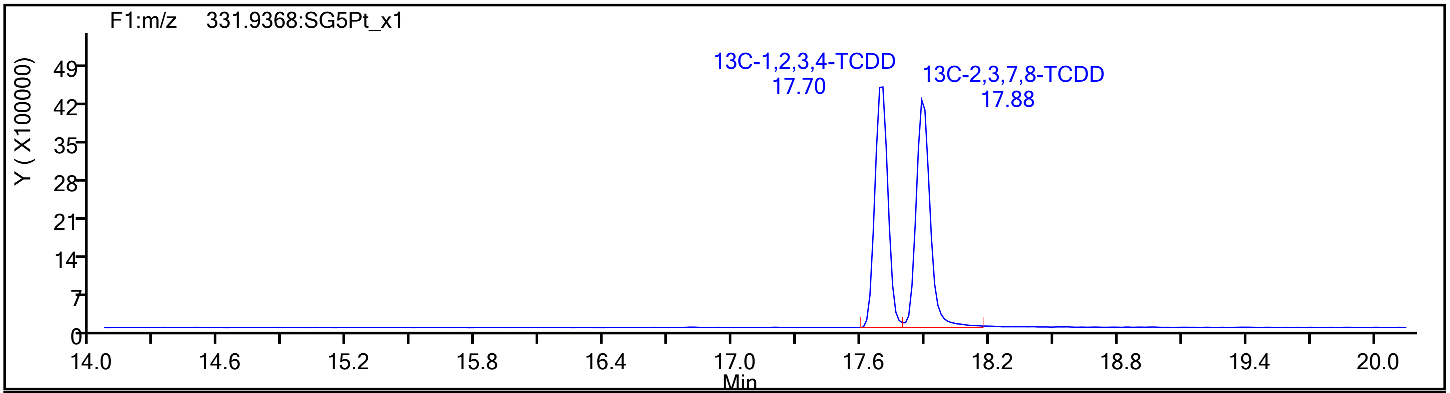

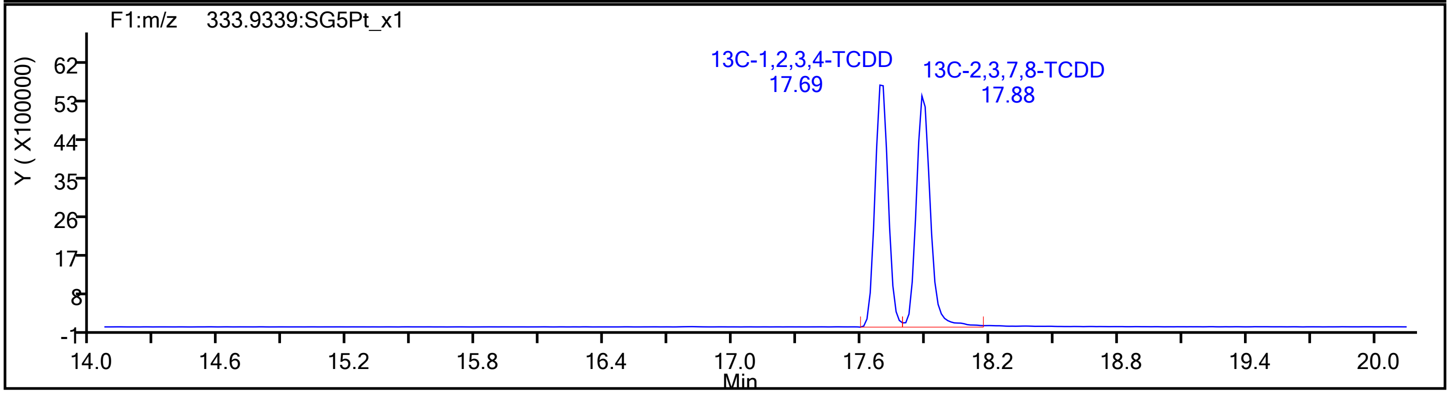

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Method: Dioxin_10D5
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Client ID:
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Column Dia: 0.32 mm

37Cl4-TCDD

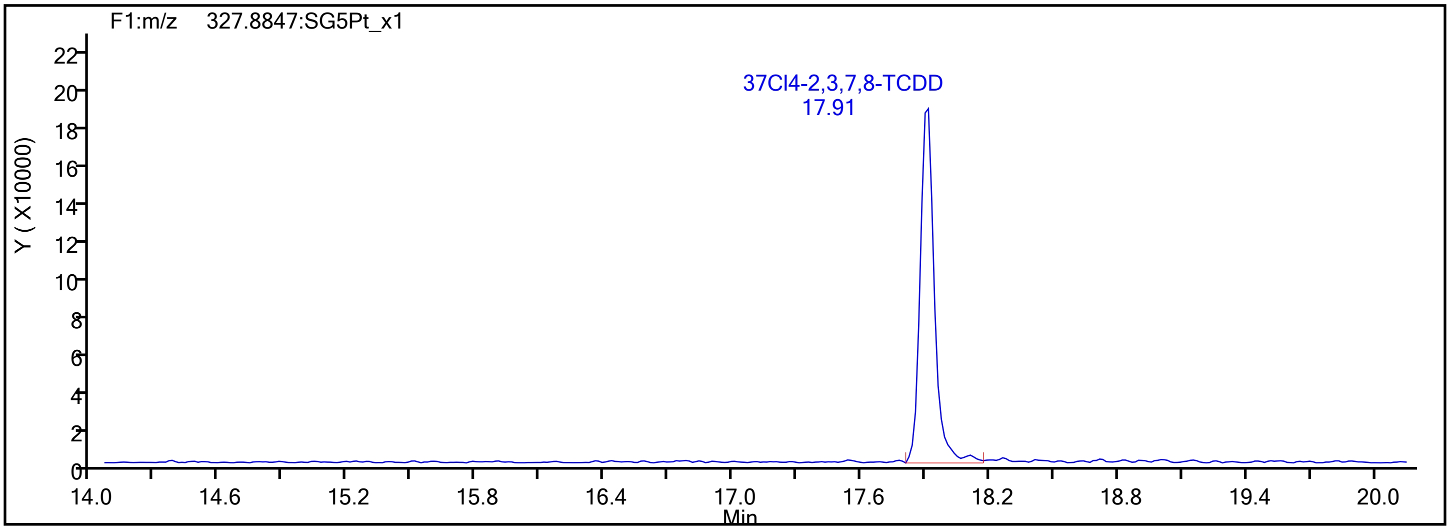

37Cl4-TCDD Standards

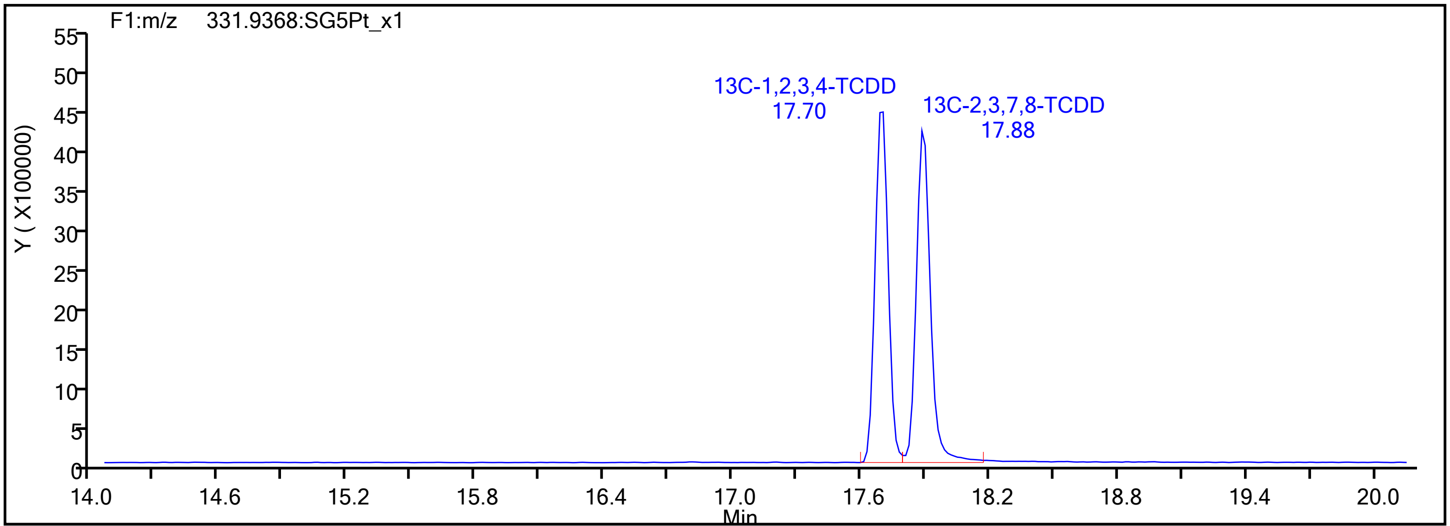

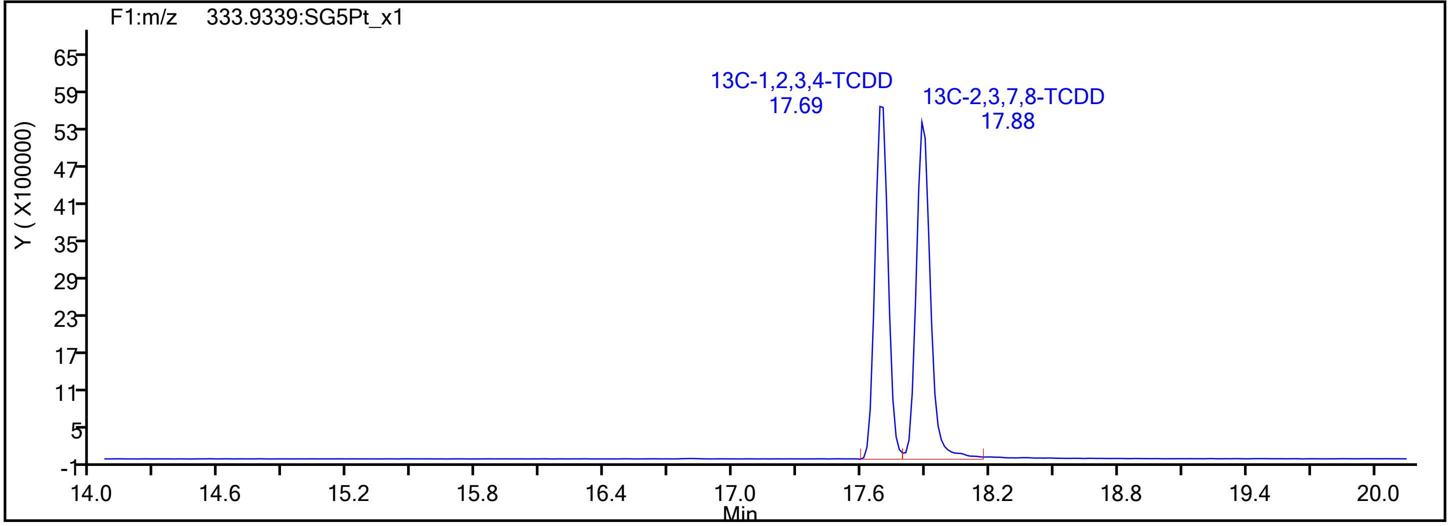

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

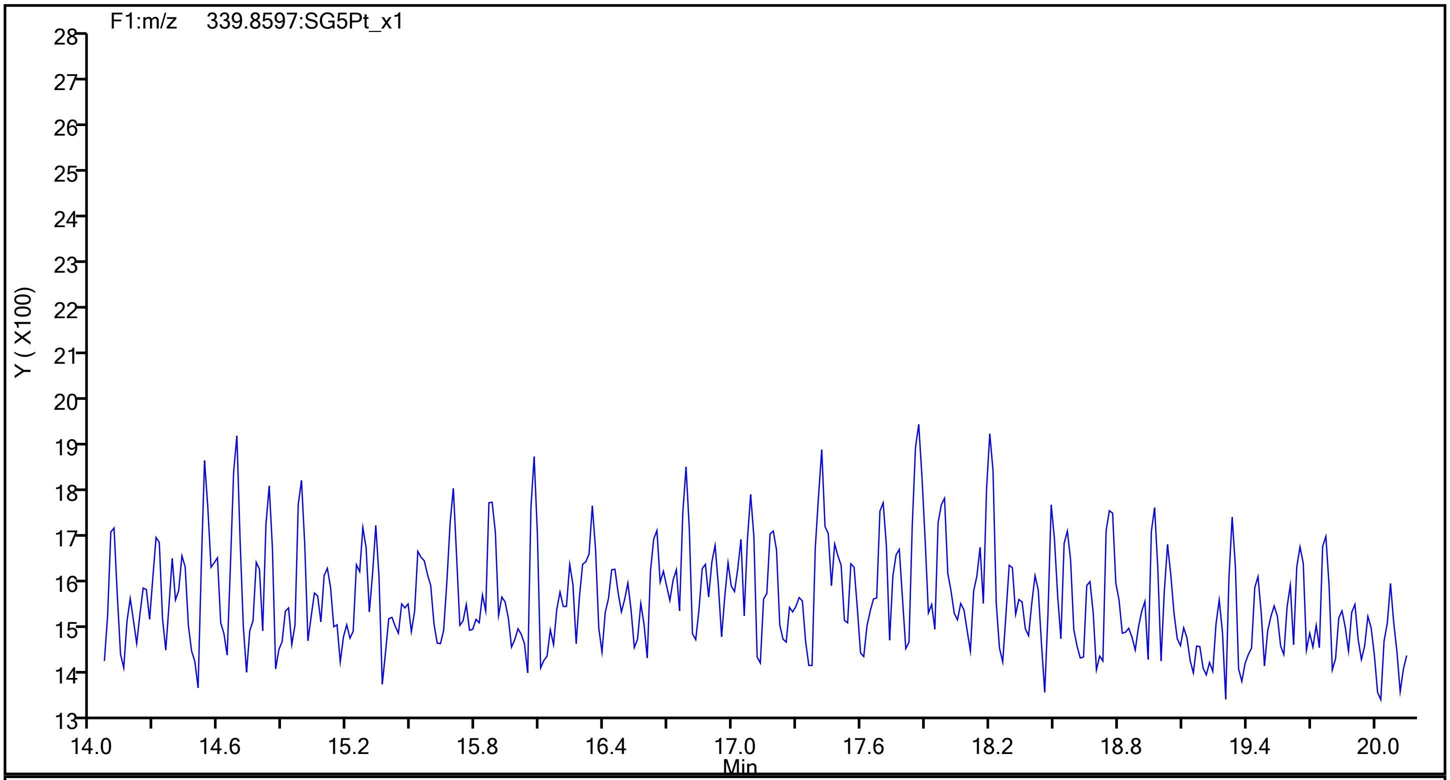

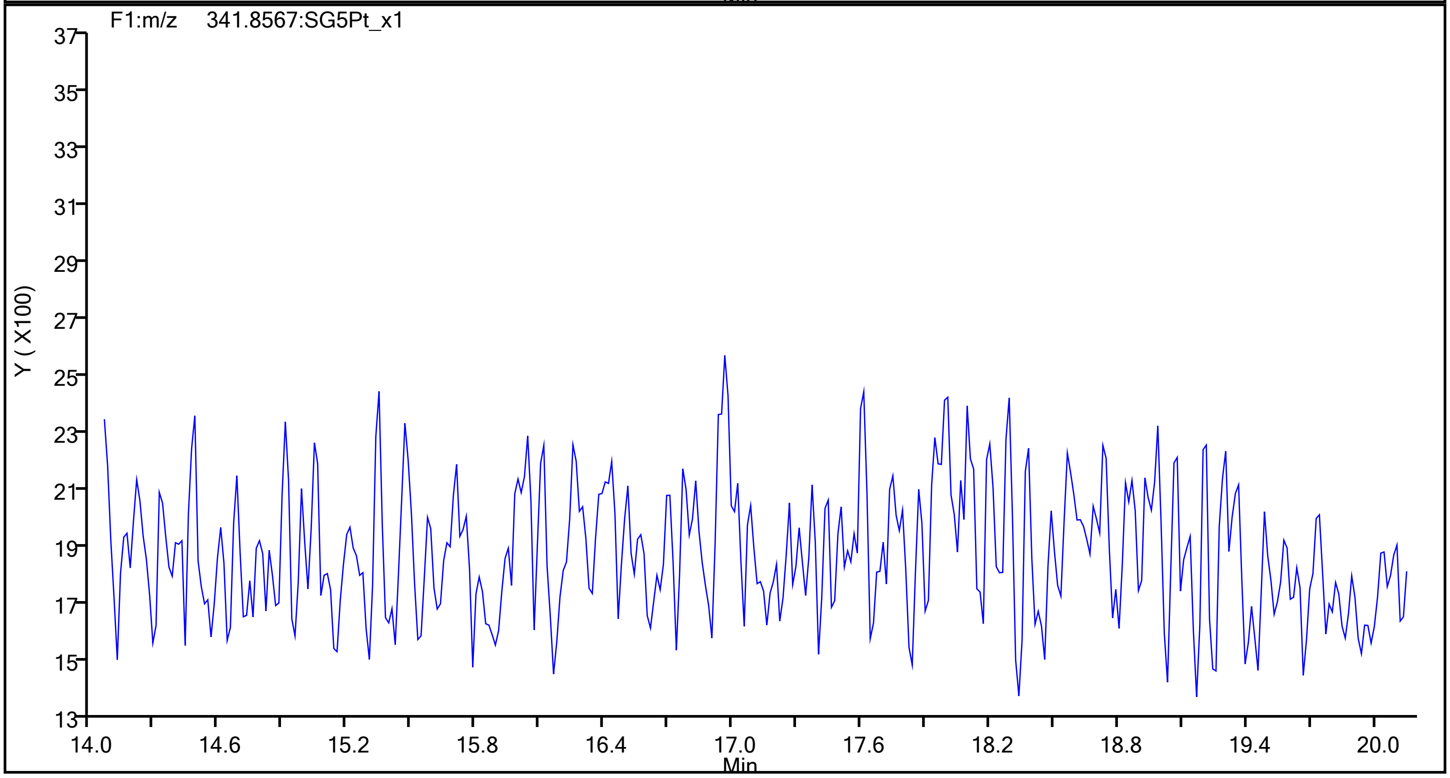

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F1 PeCDFs

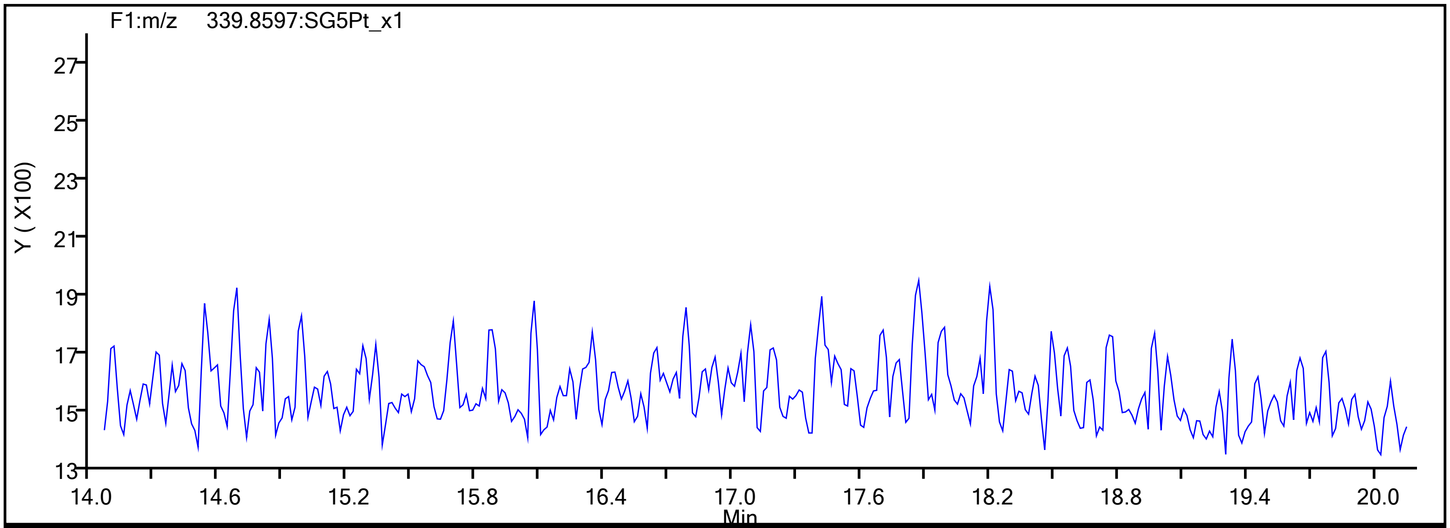

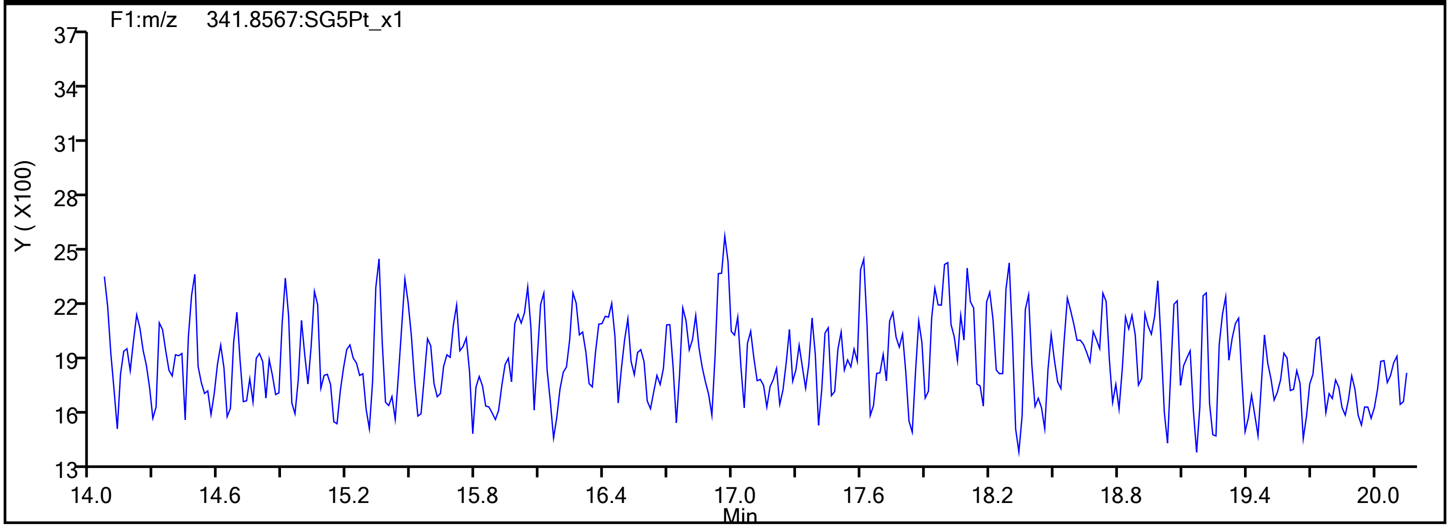

F1 PeCDFs Interference Mass

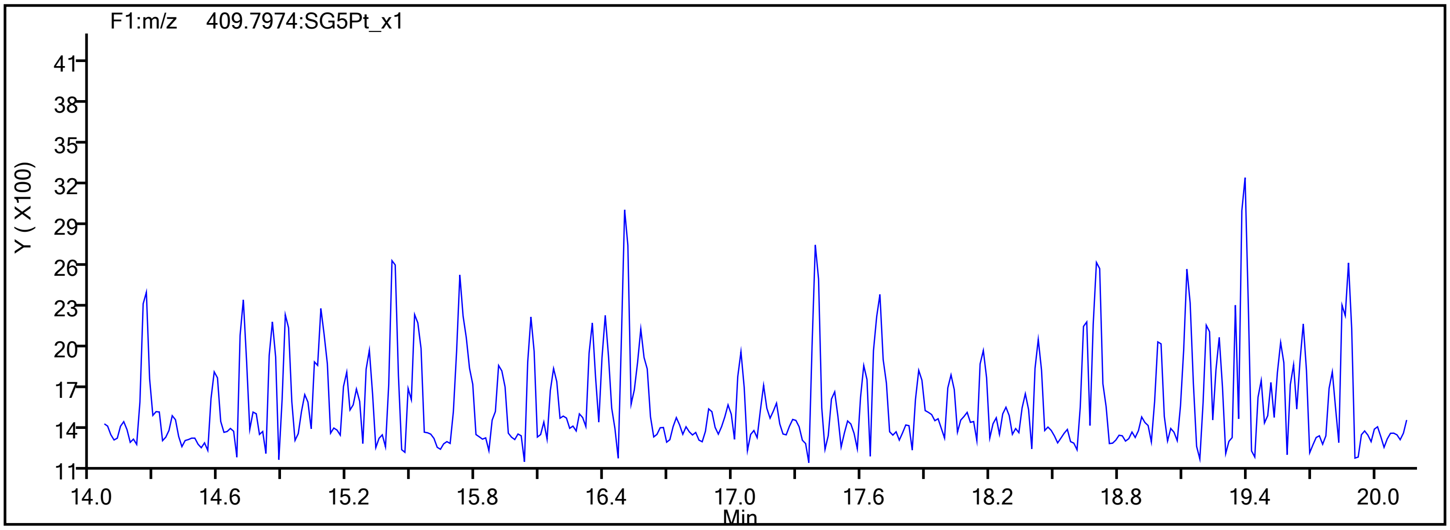

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Eurofins TestAmerica, Sacramento

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PeCDF

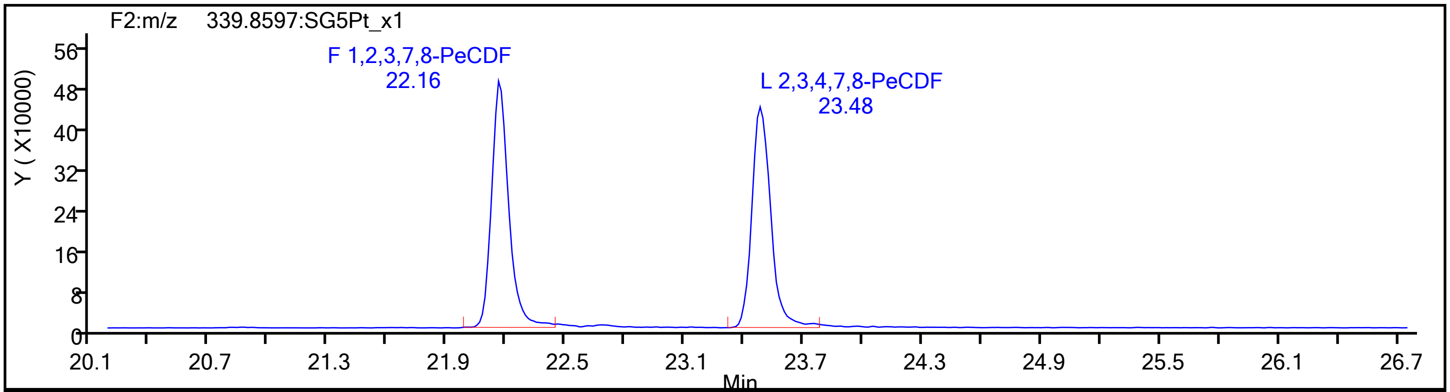

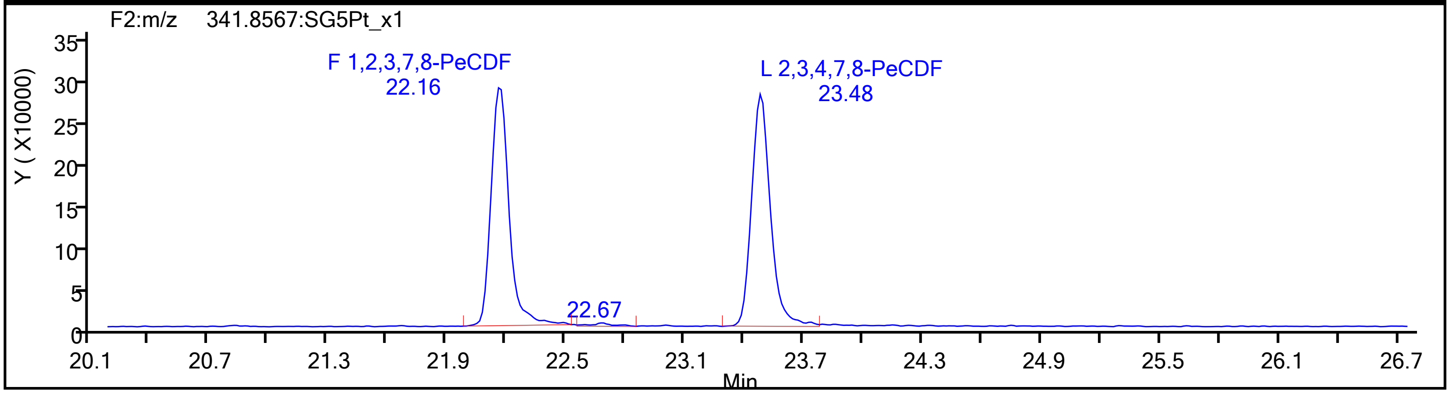

PeCDF Standards

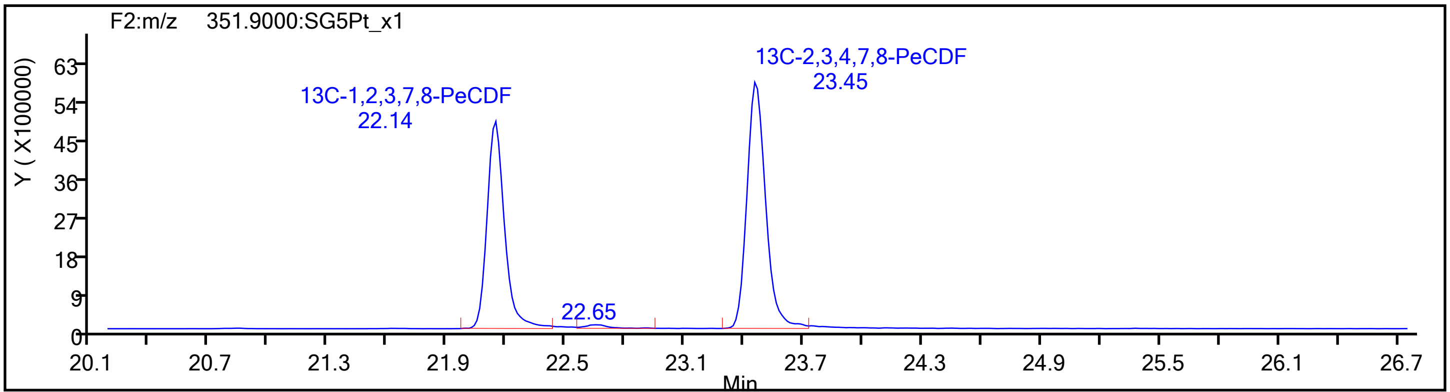

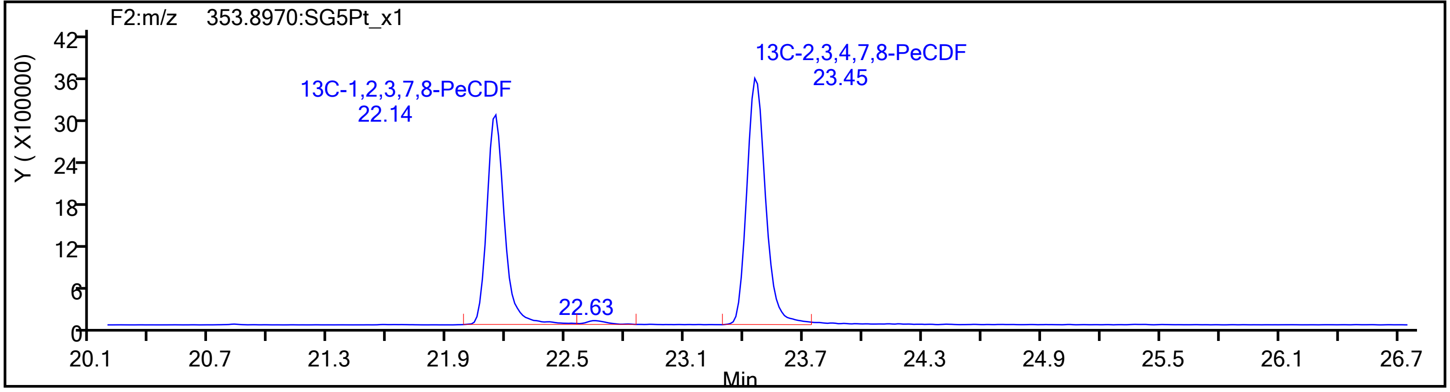

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Eurofins TestAmerica, Sacramento

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PeCDF

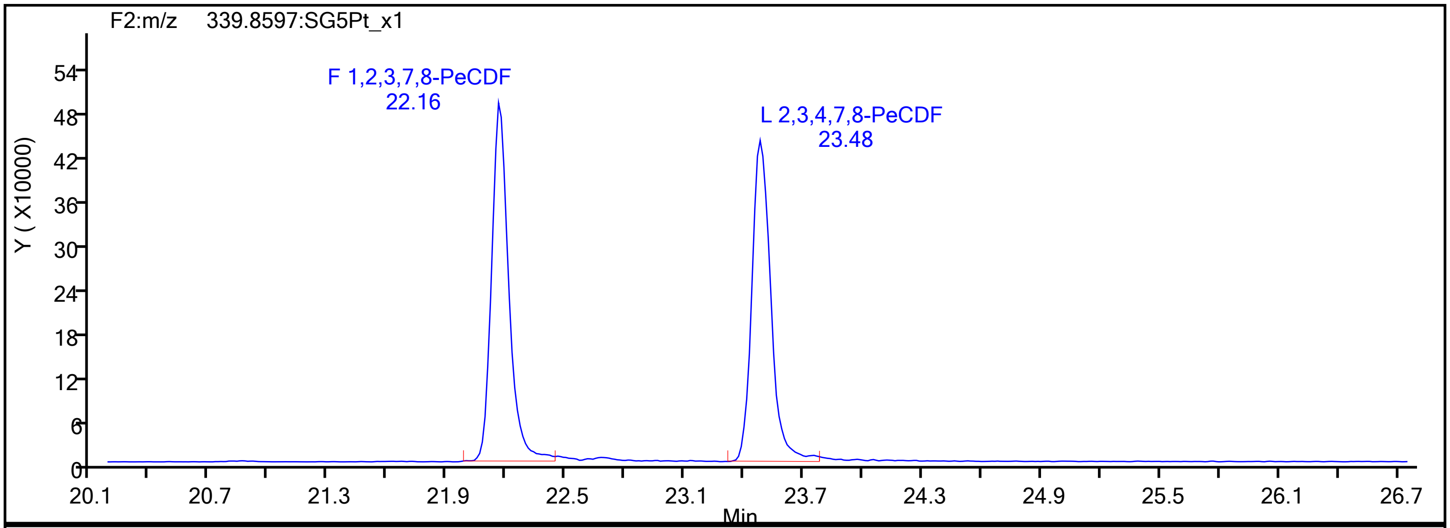

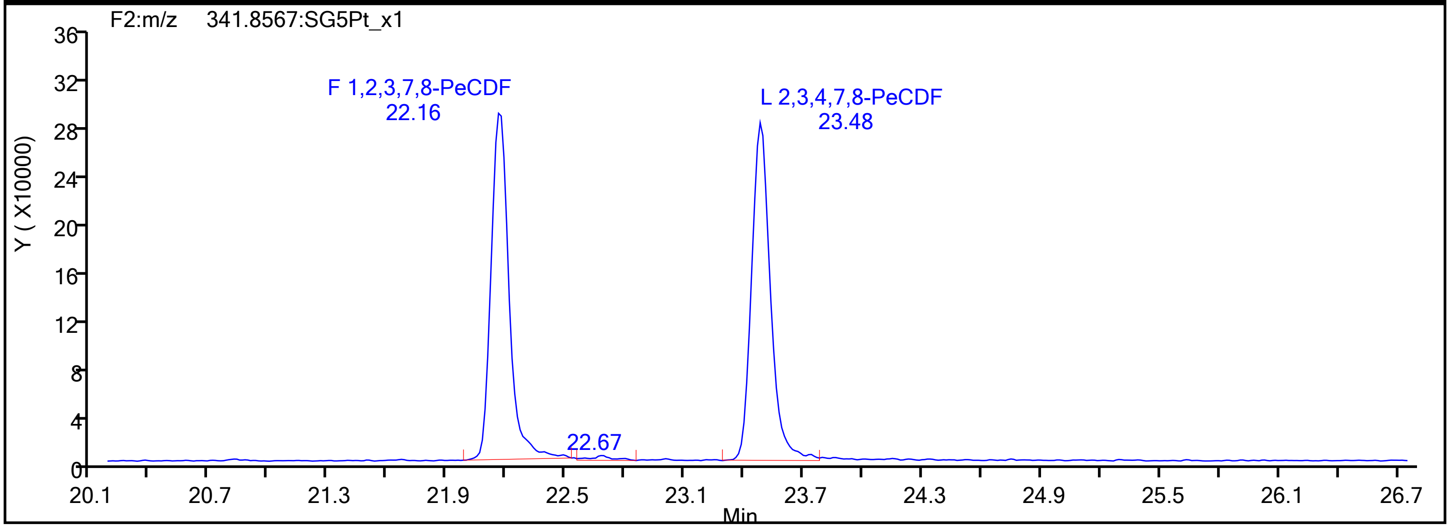

PeCDF Interference Mass

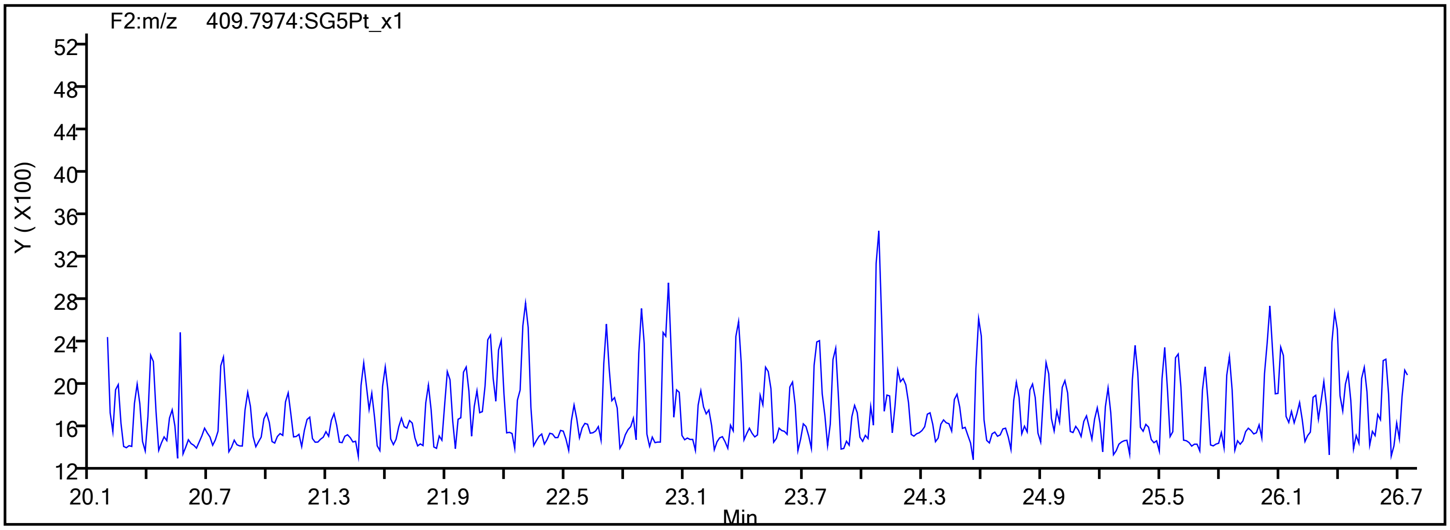

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 15:28:06 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

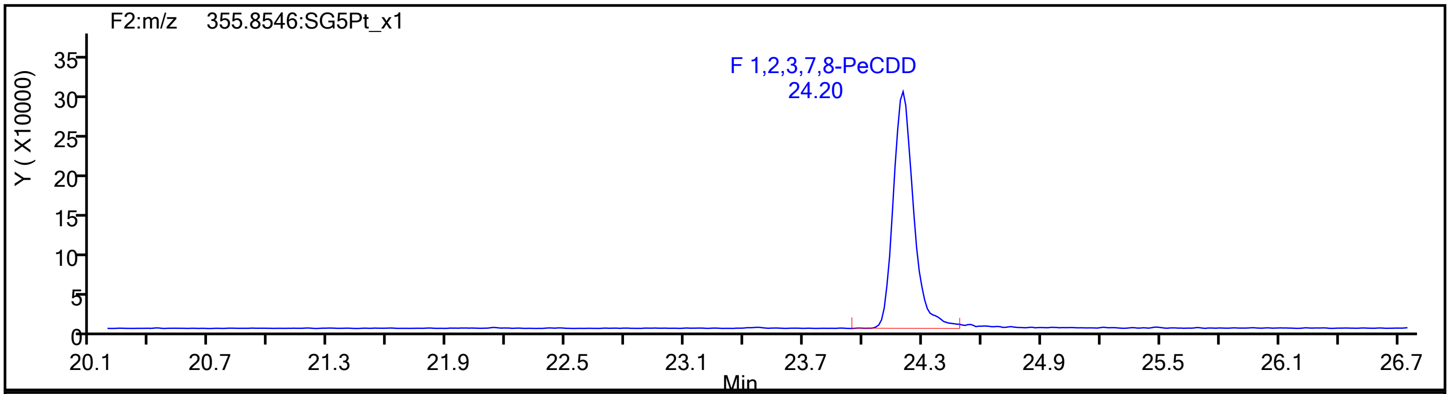

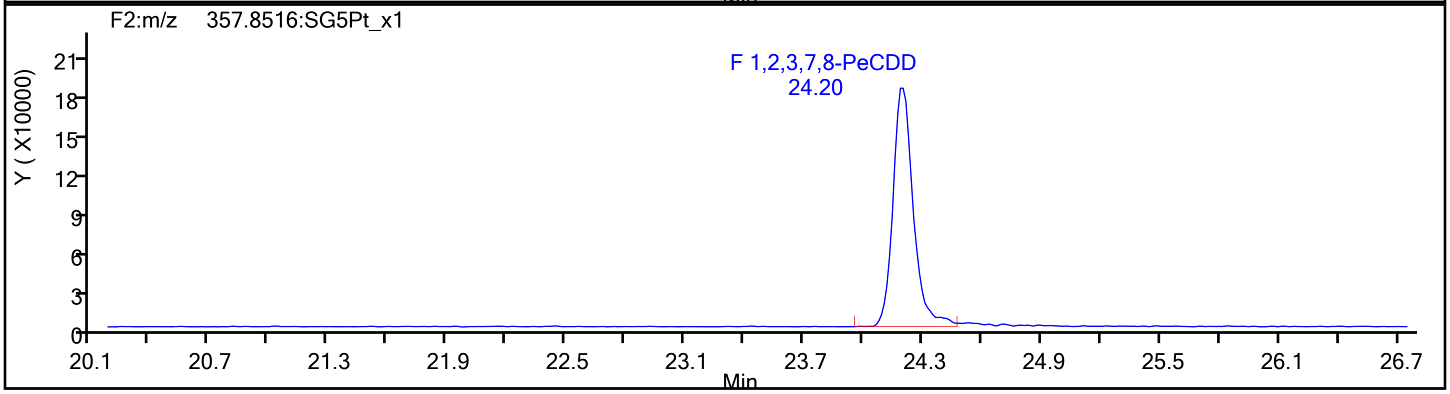

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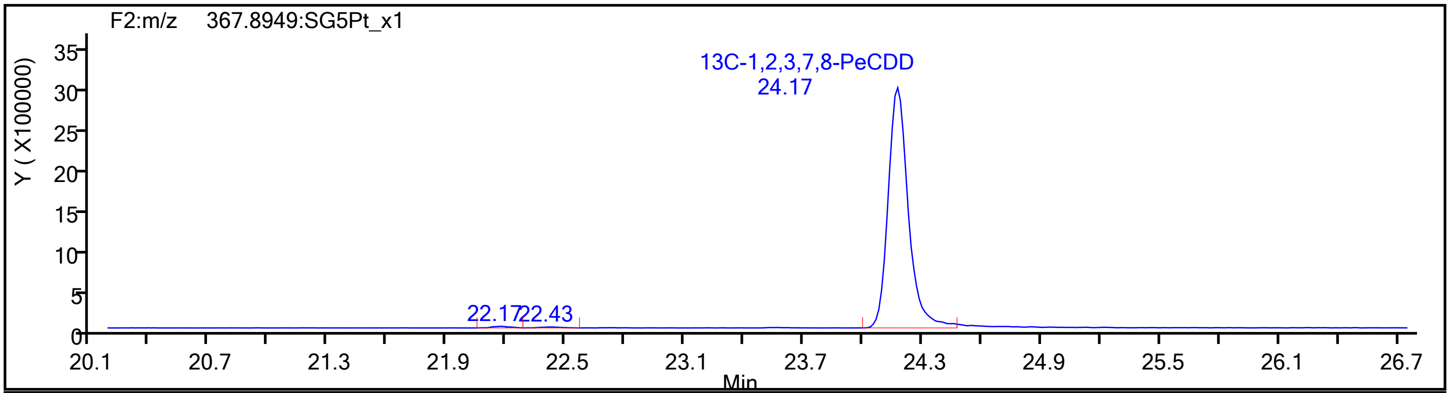

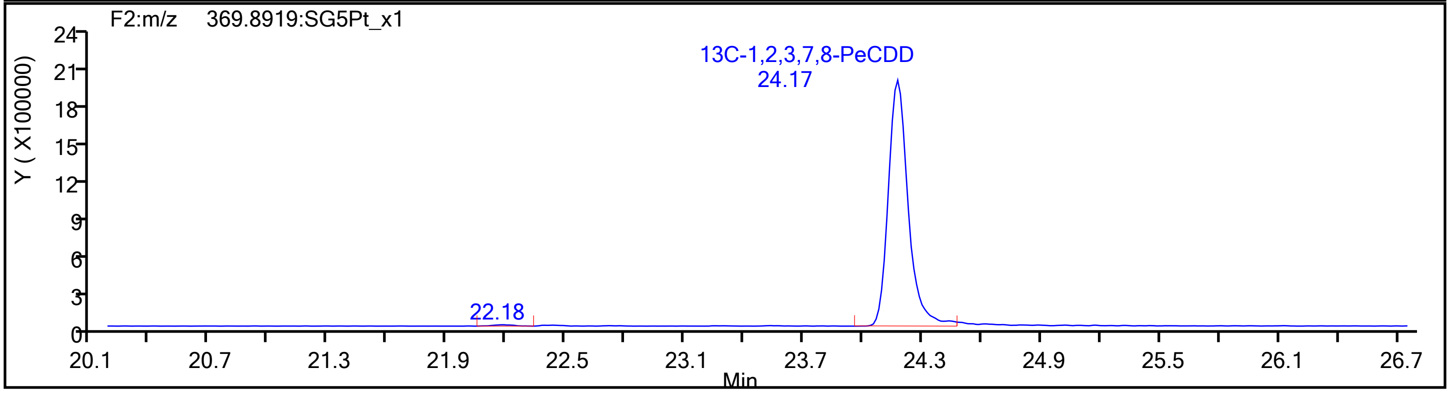

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Eurofins TestAmerica, Sacramento

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HxCDF

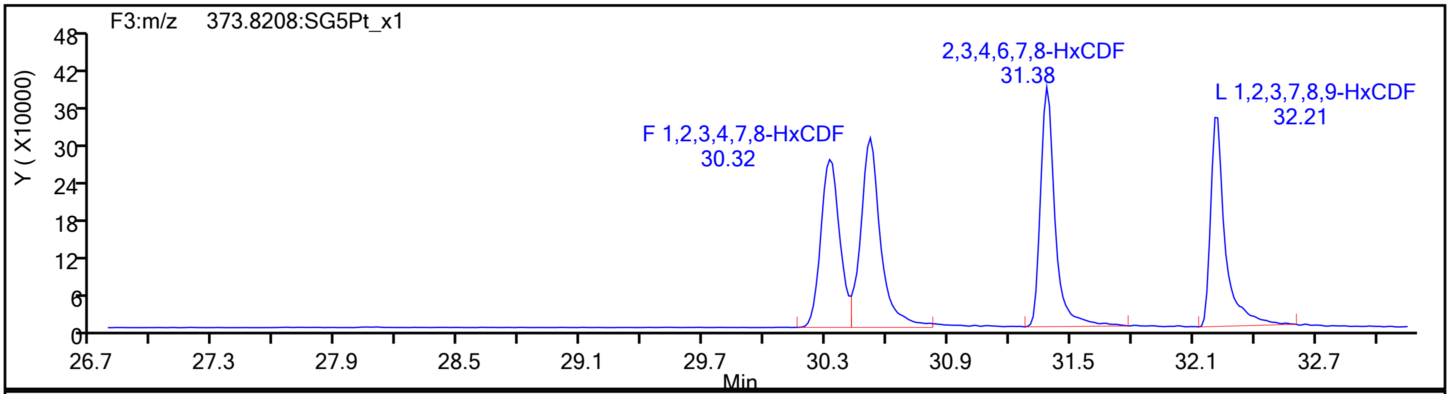

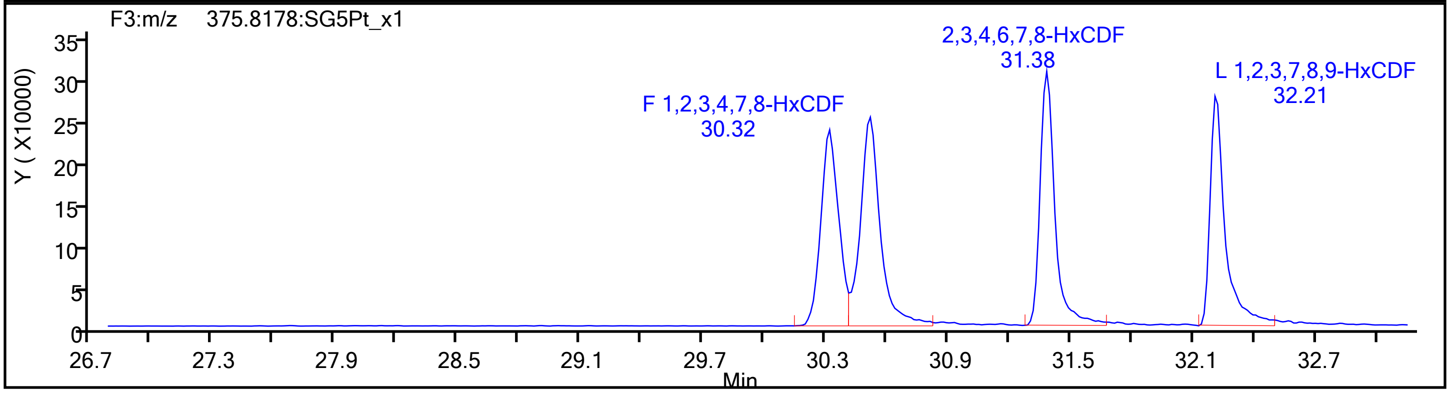

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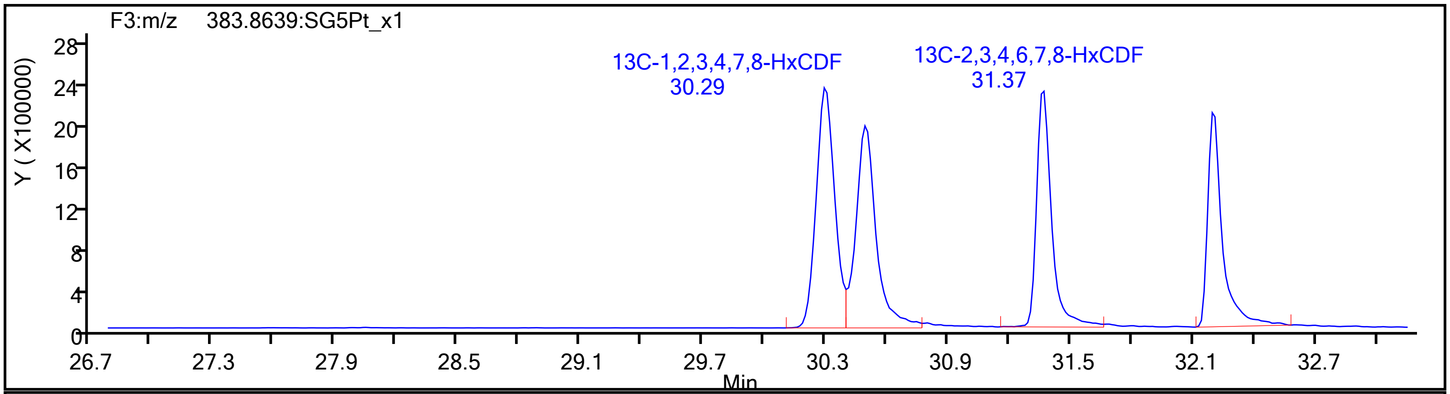

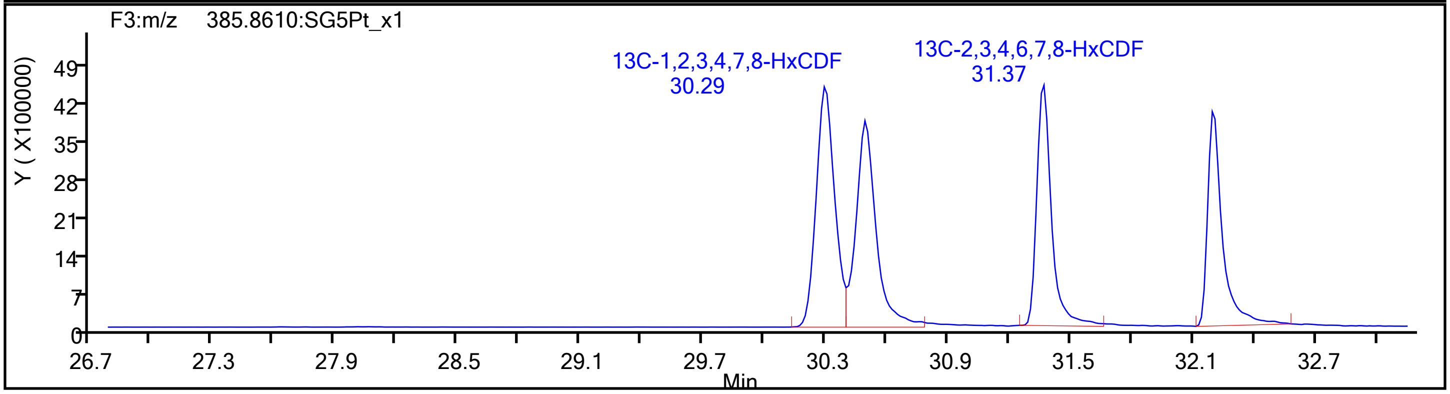

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HxCDF

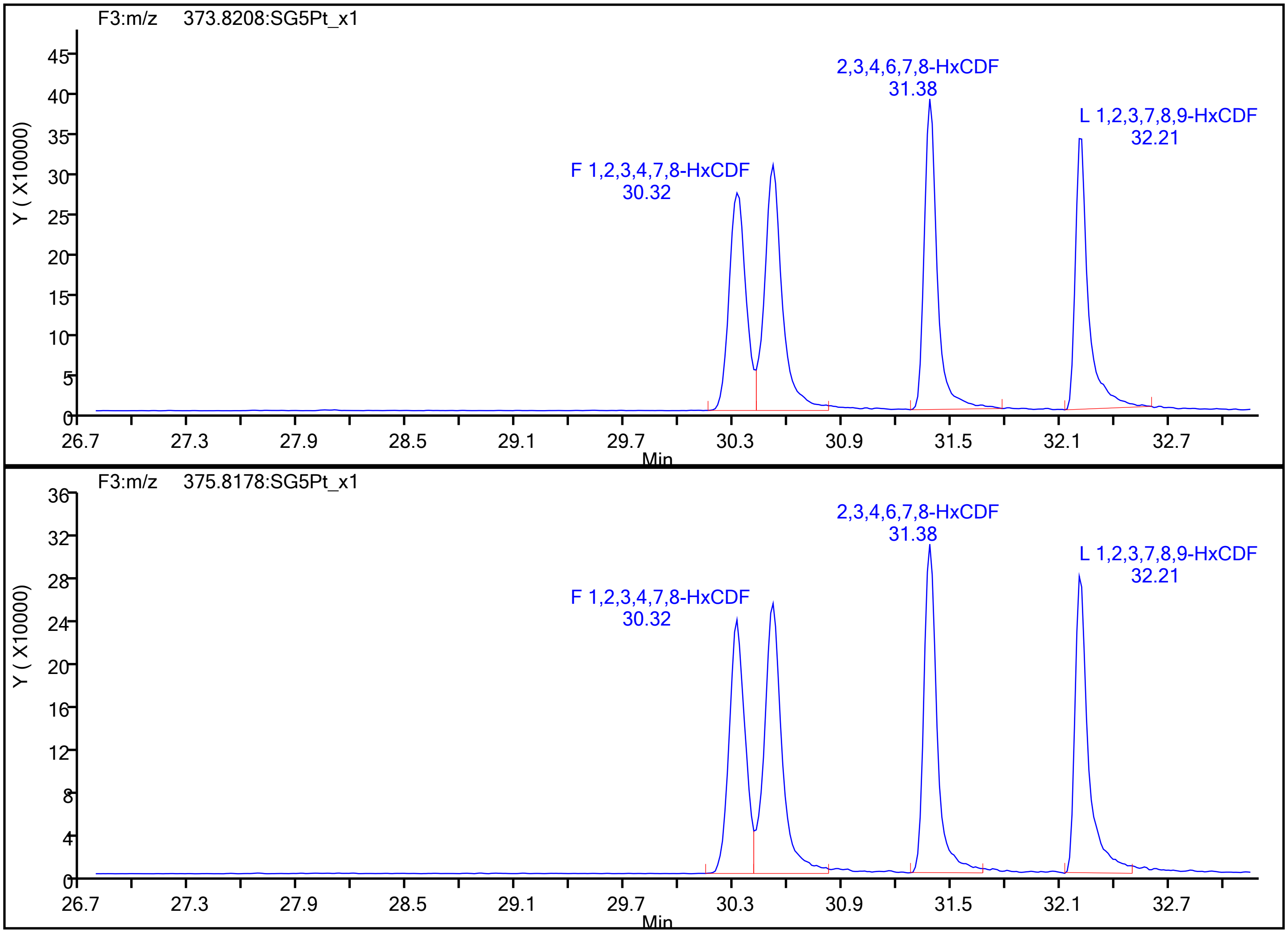

HxCDF Interference Mass

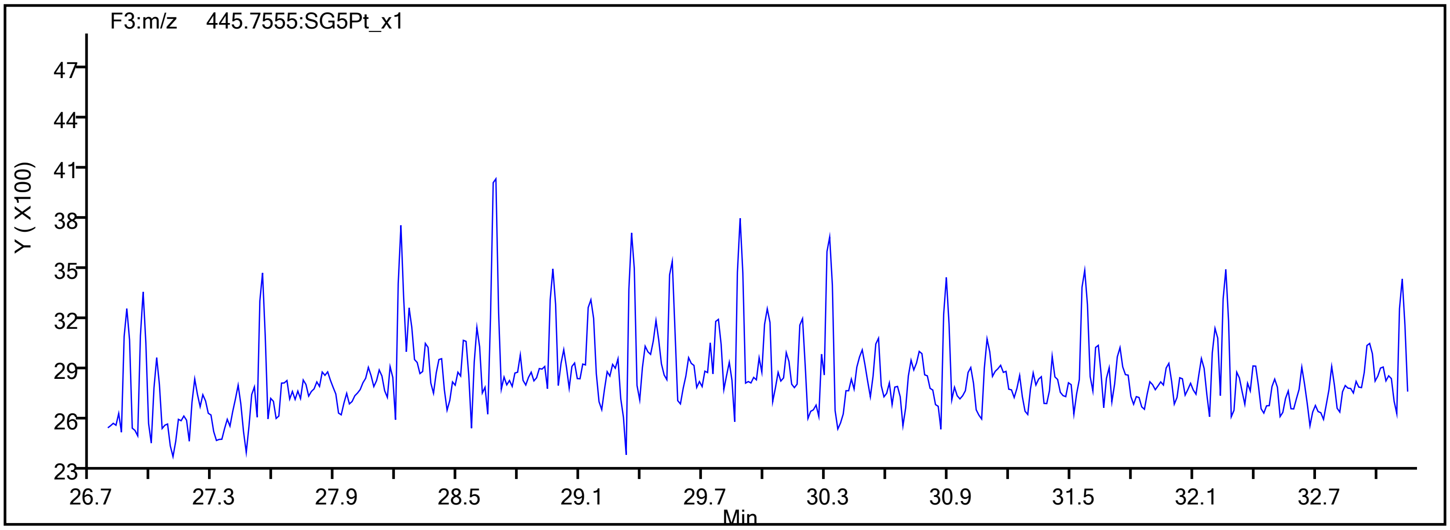

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Eurofins TestAmerica, Sacramento

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HxCDD

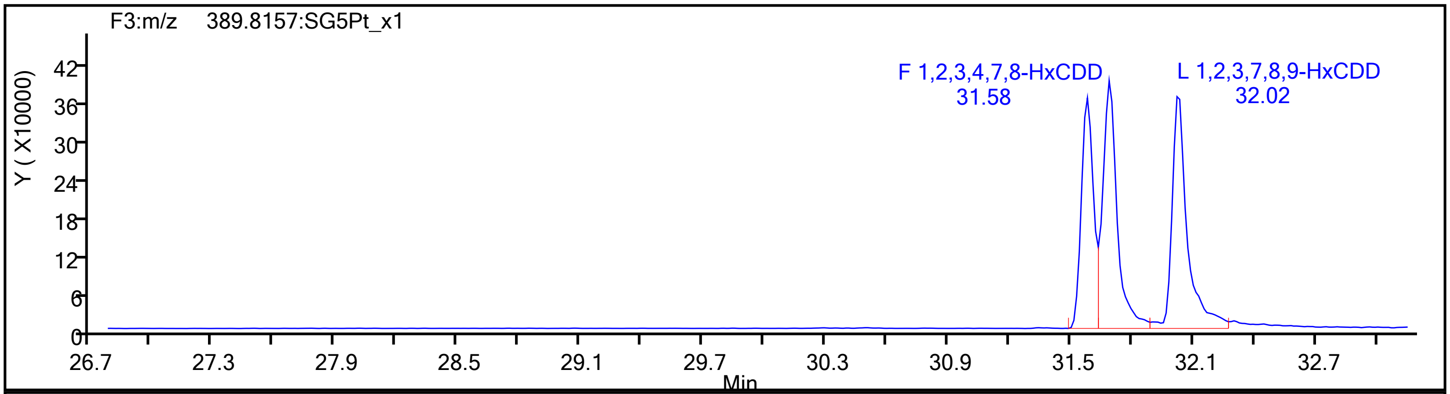

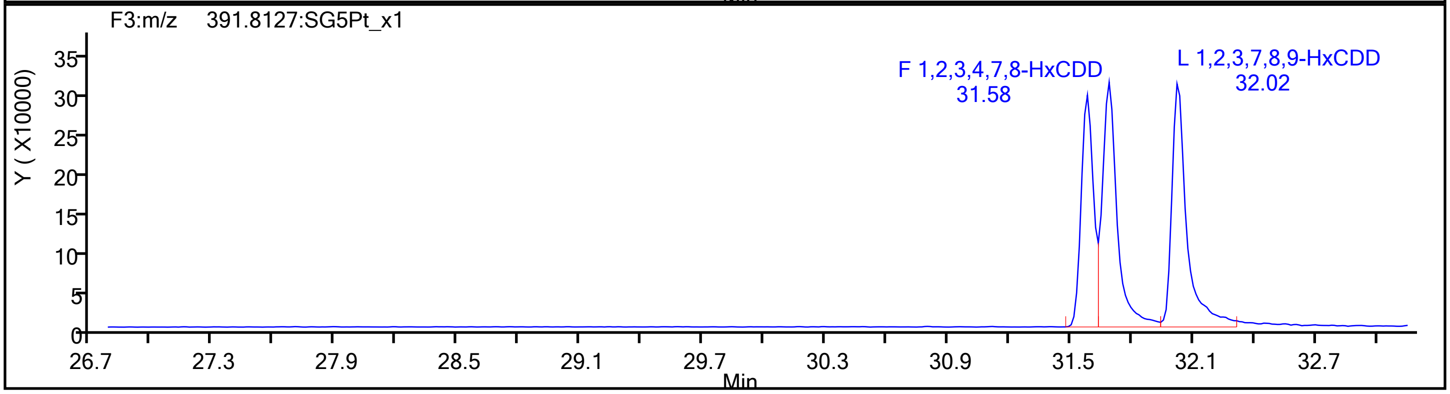

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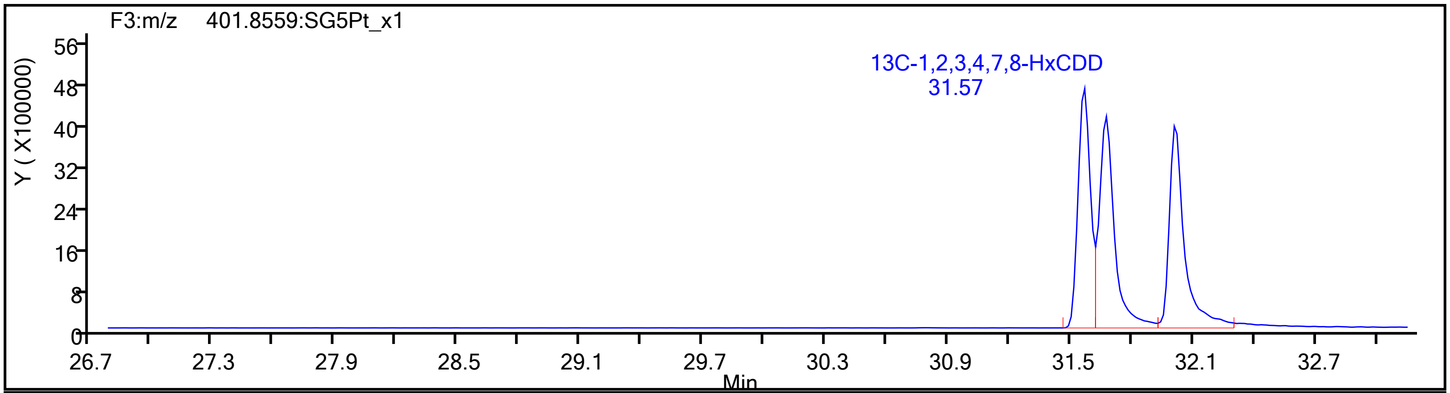

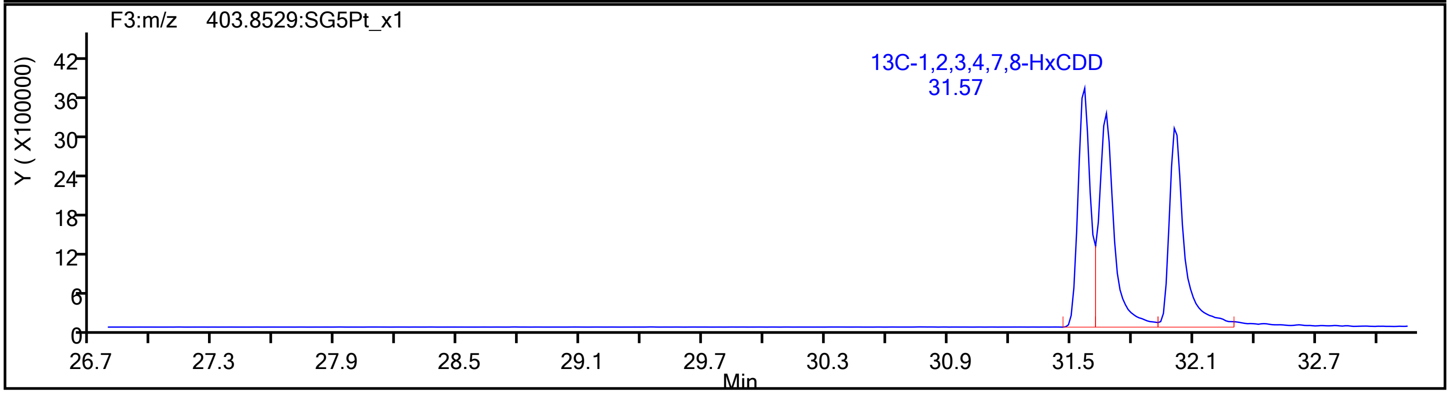

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 15:28:06 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

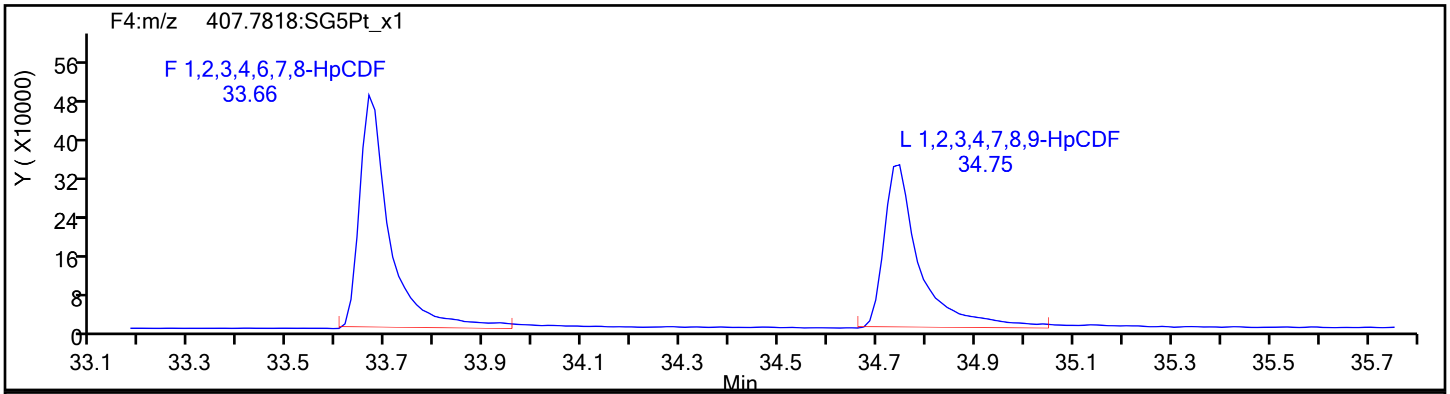

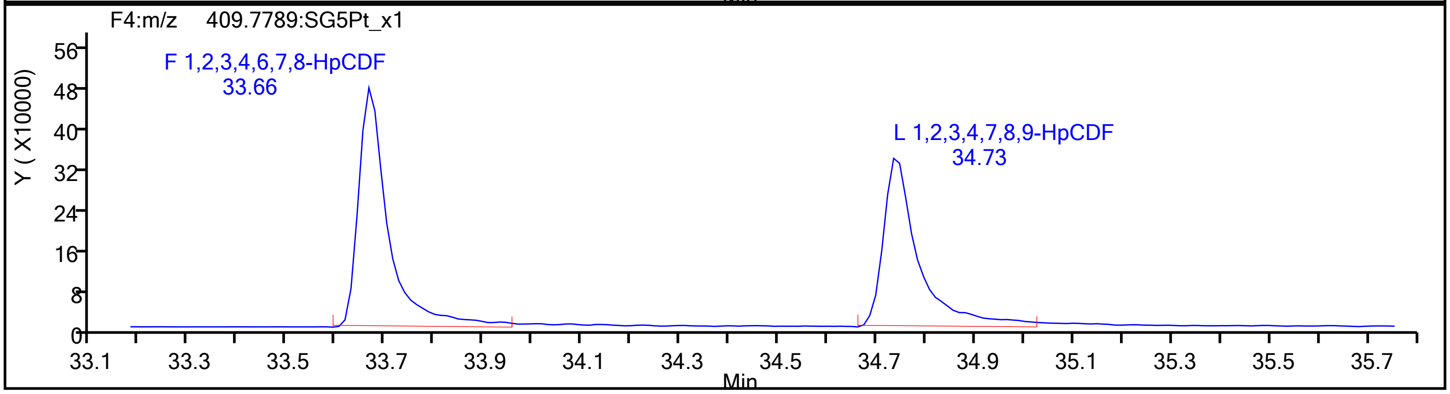

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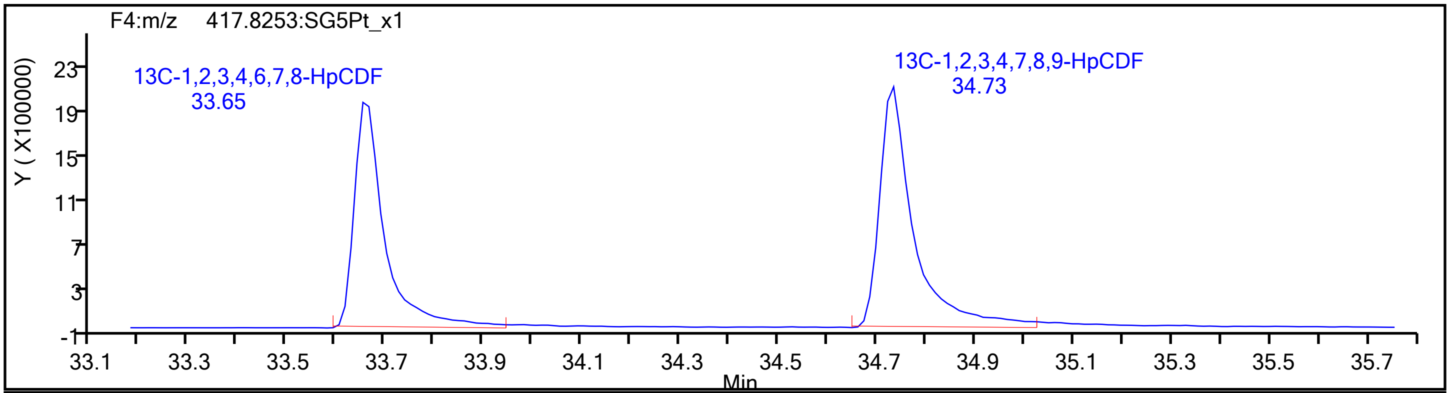

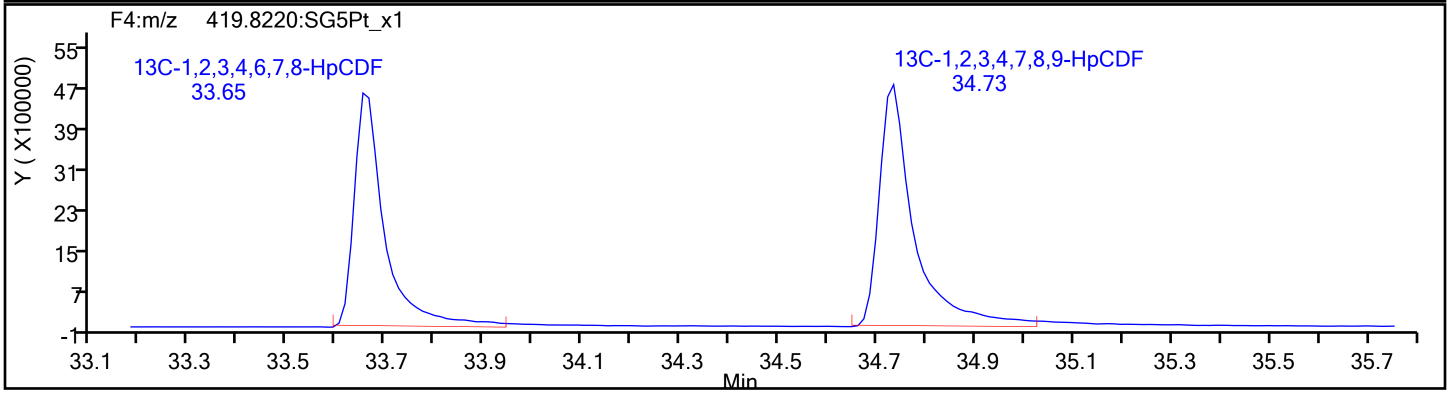

Eurofins TestAmerica, Sacramento

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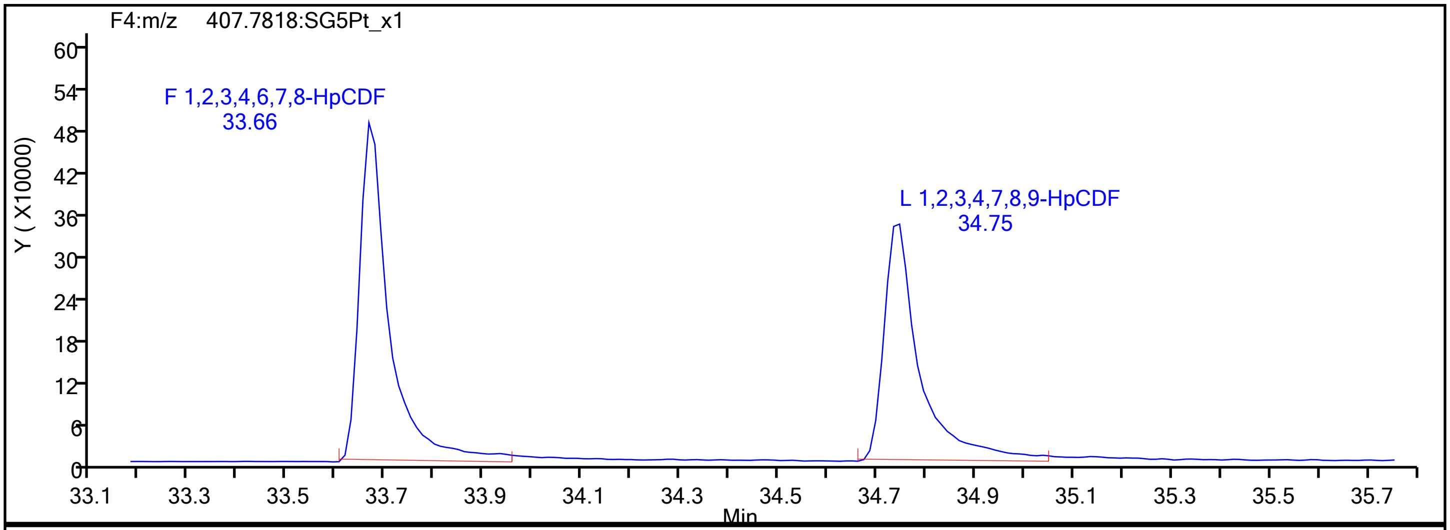

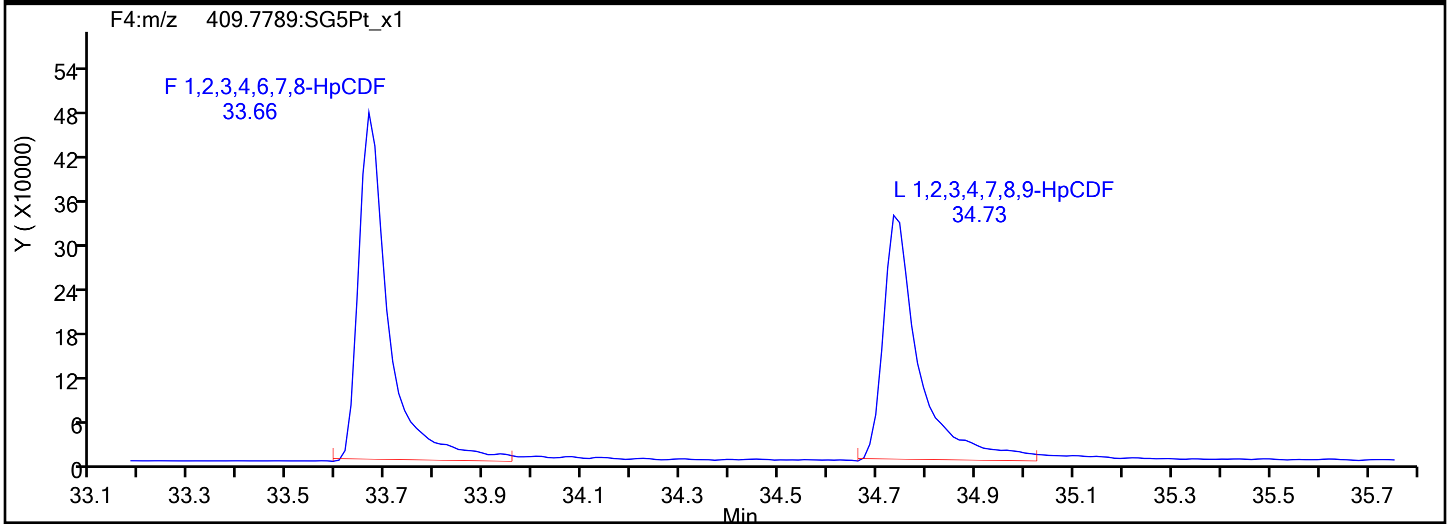

HpCDF Interference Mass

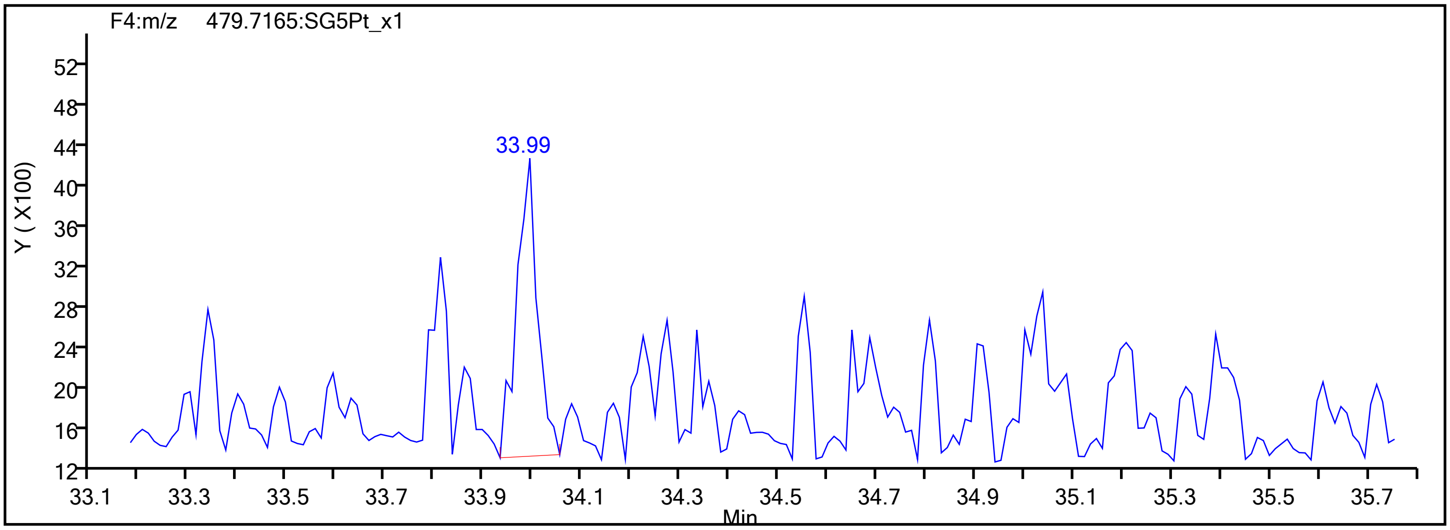

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HpCDD

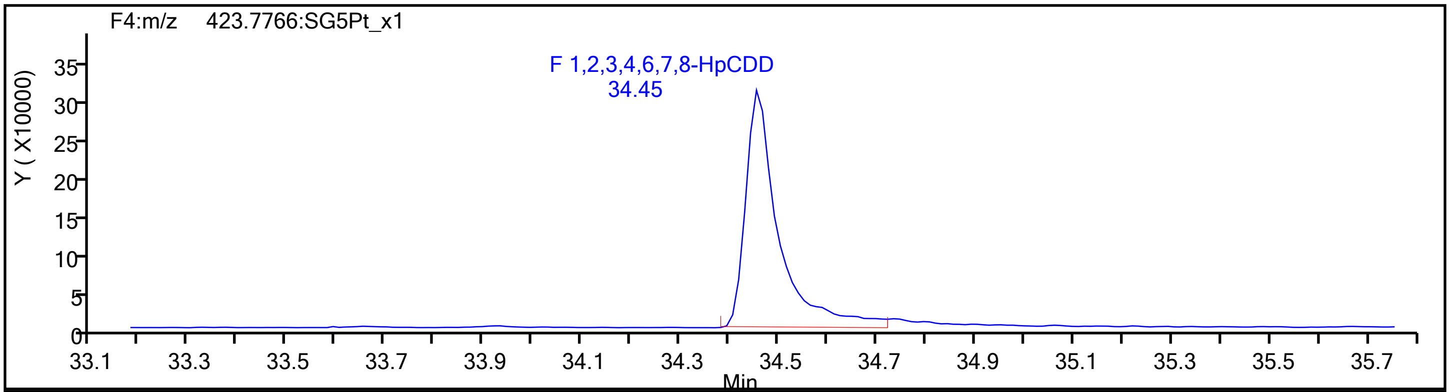

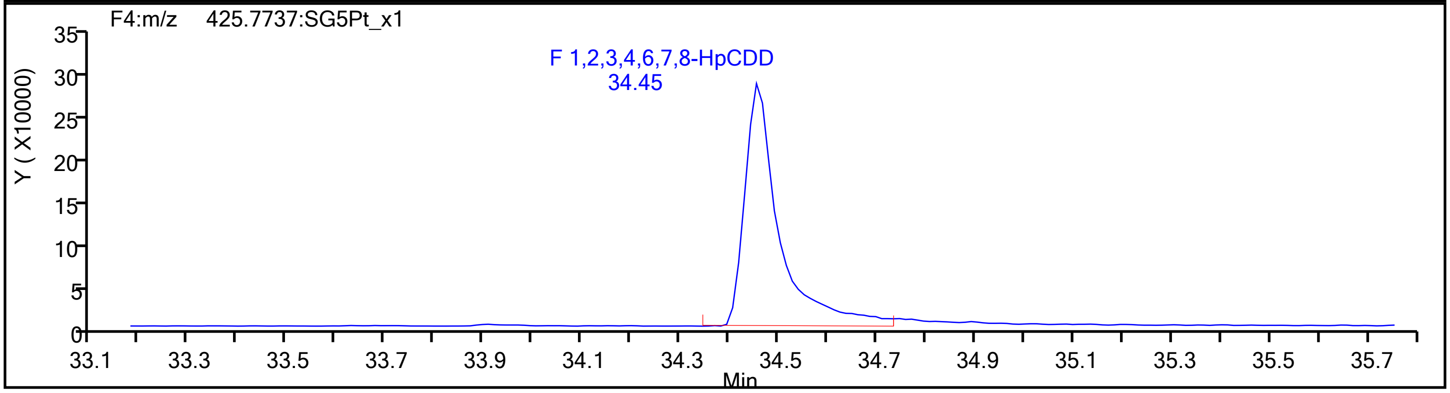

HpCDD Standards

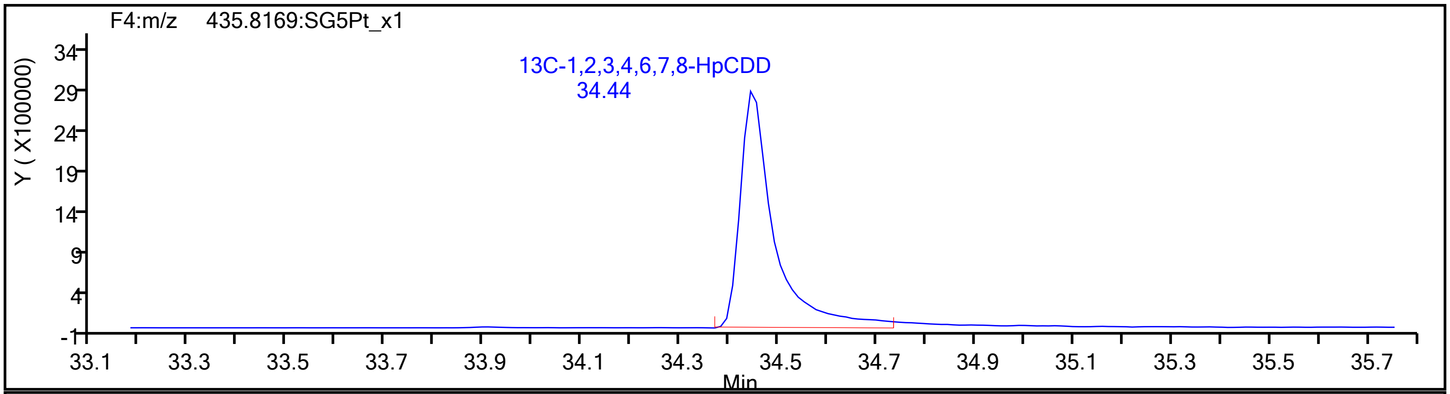

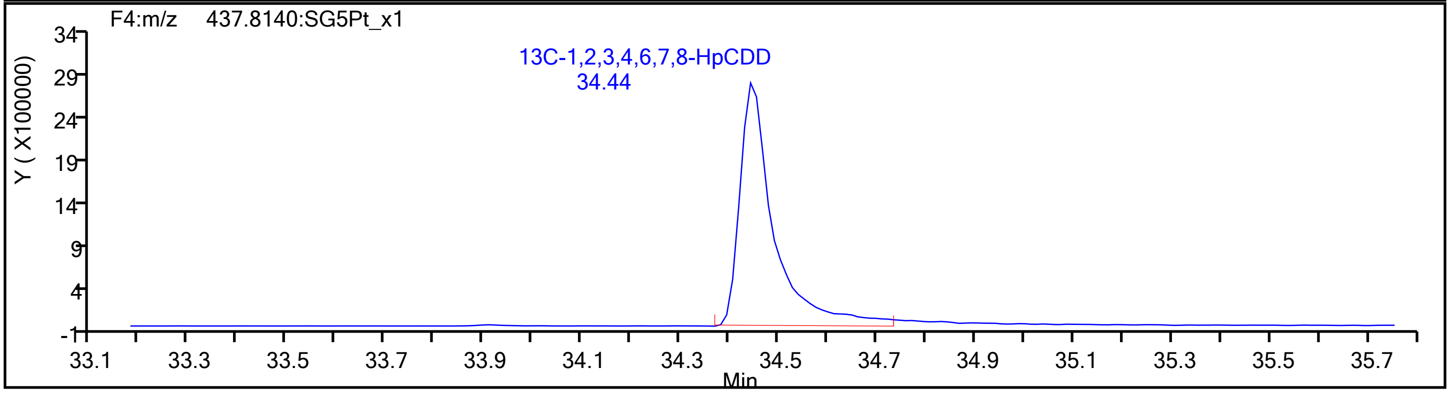

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

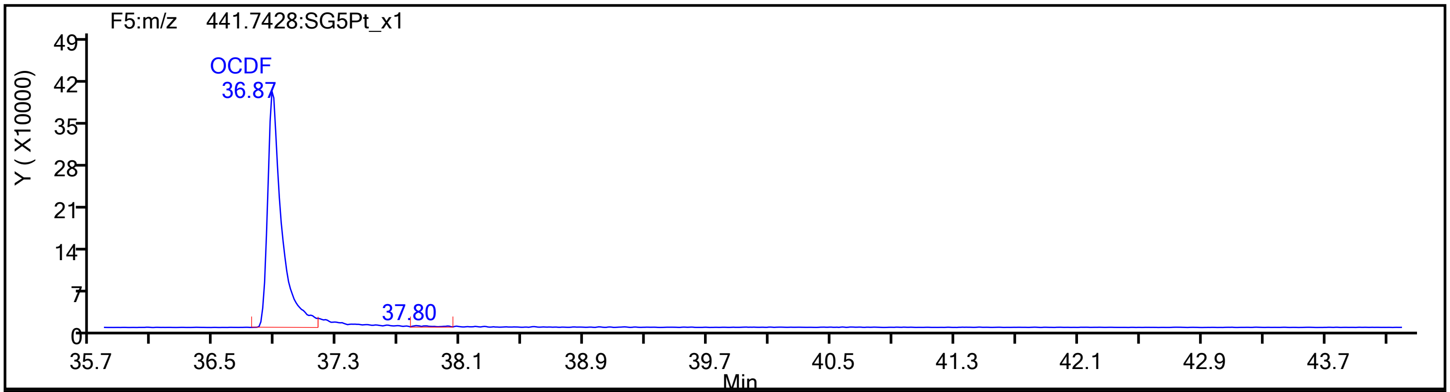

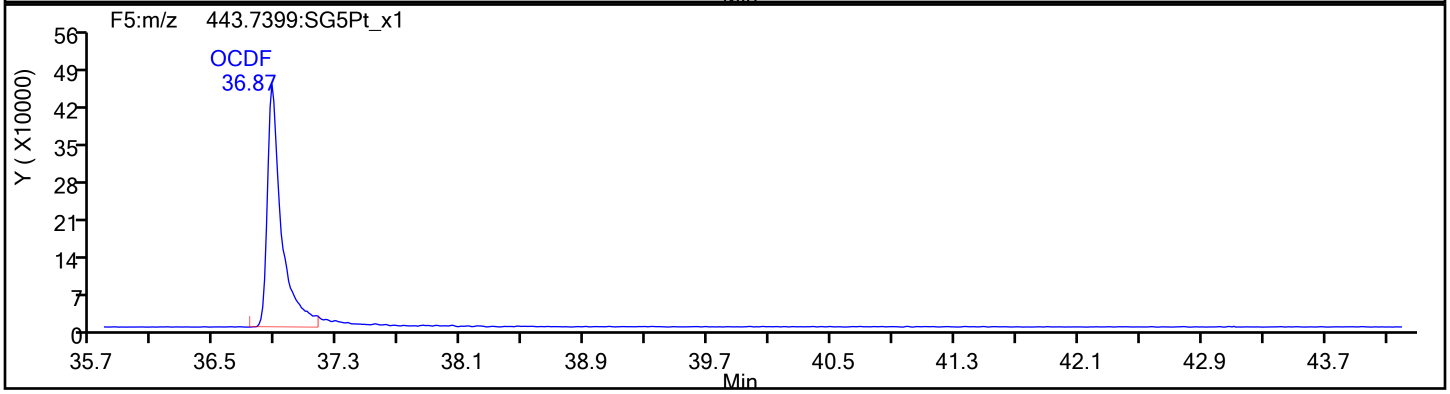

OCDF Standards

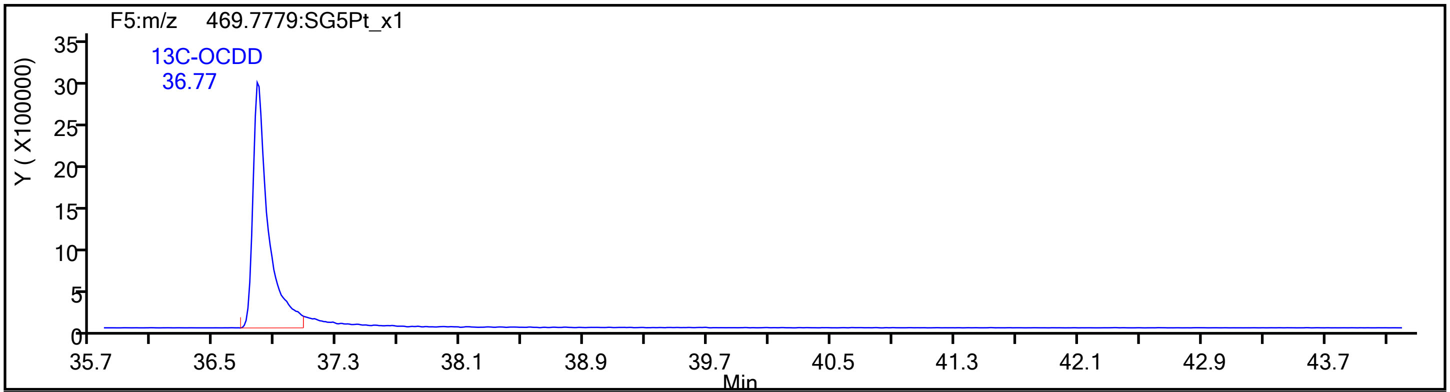

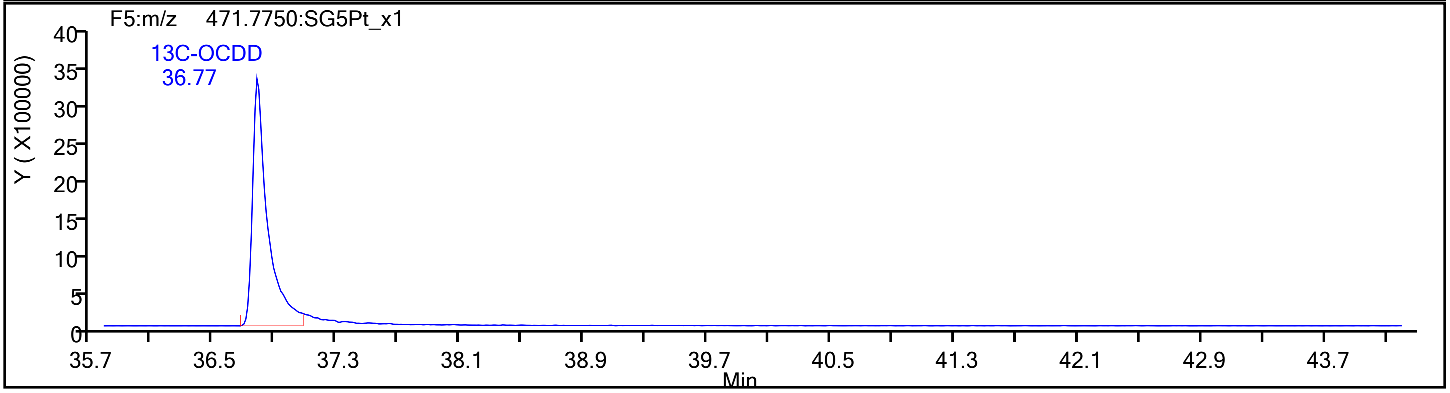

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

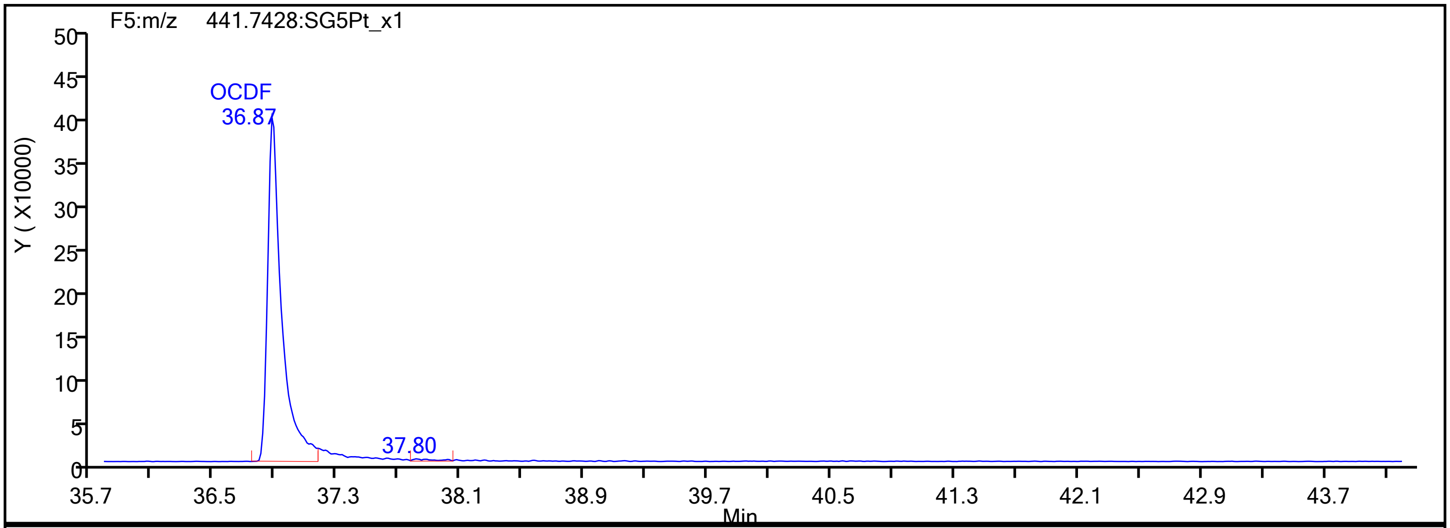

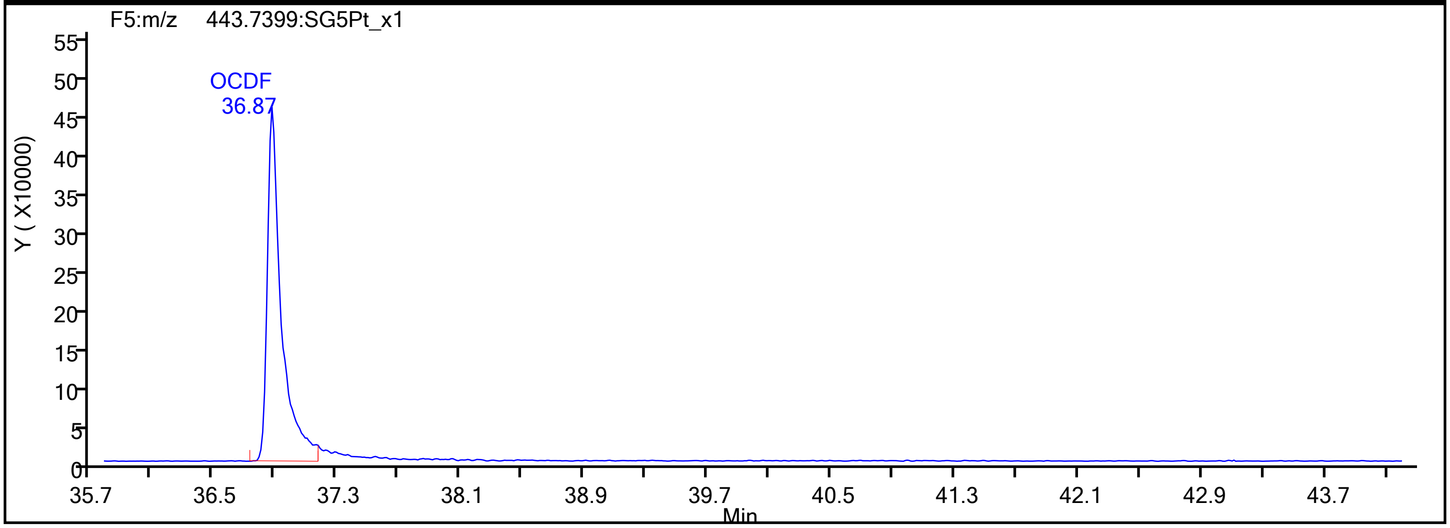

OCDF Interference Mass

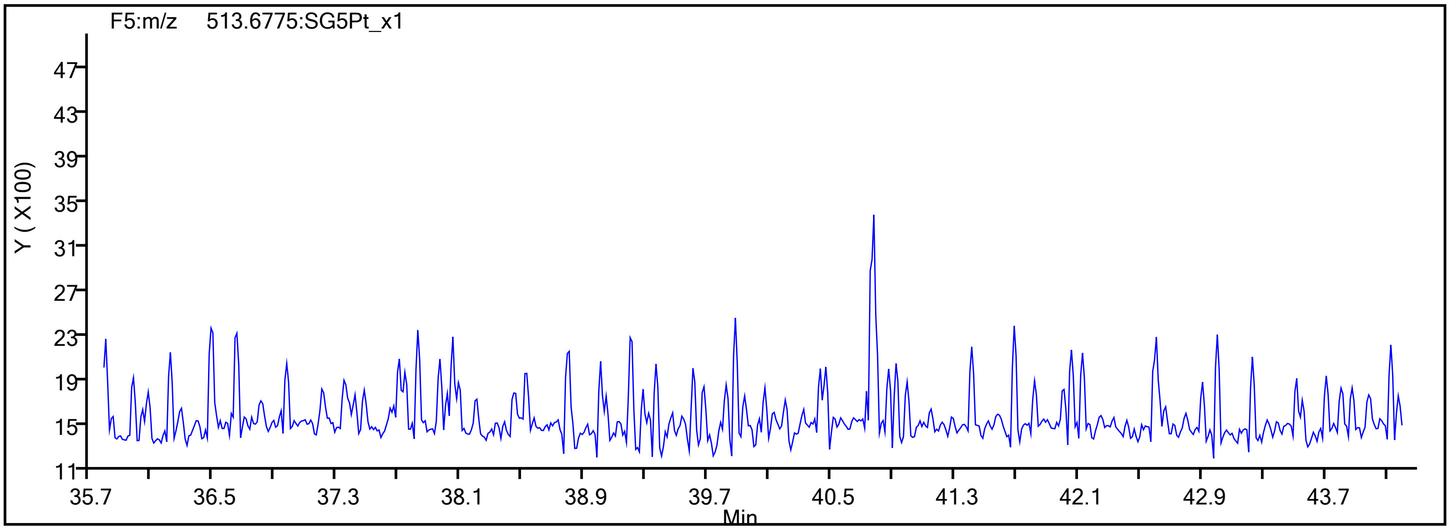

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Injection Date: 27-Jun-2020 15:28:06 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

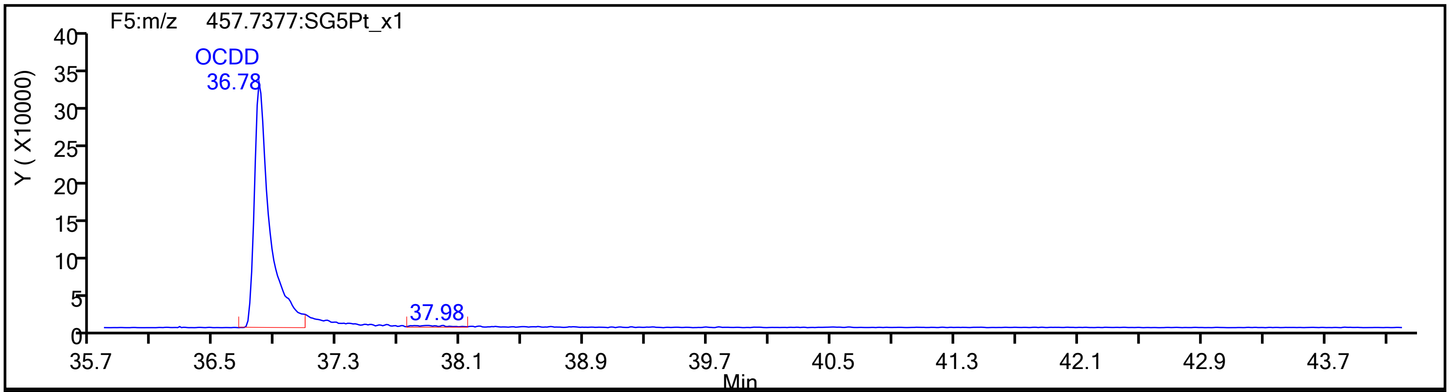

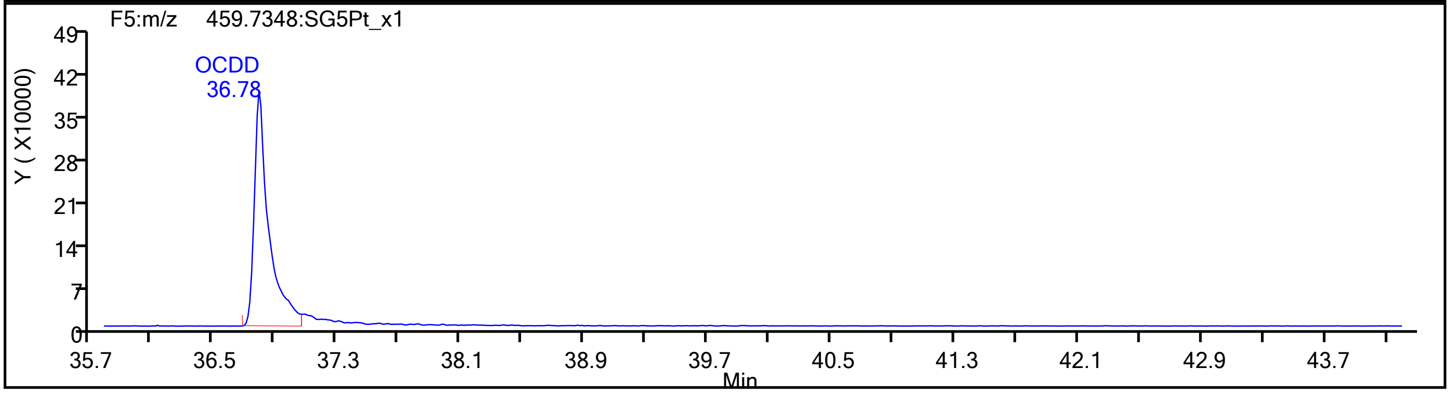

OCDD Standards

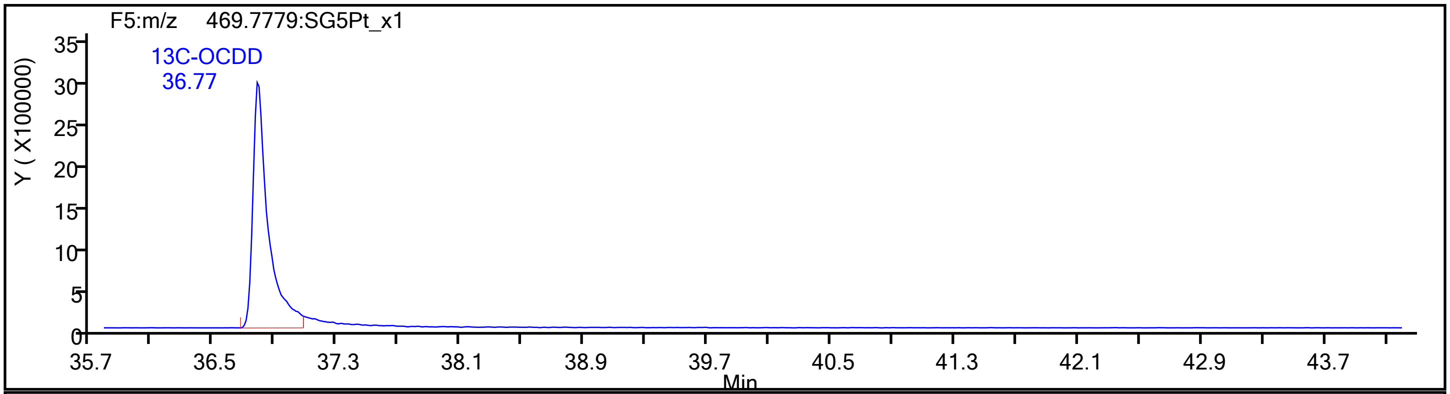

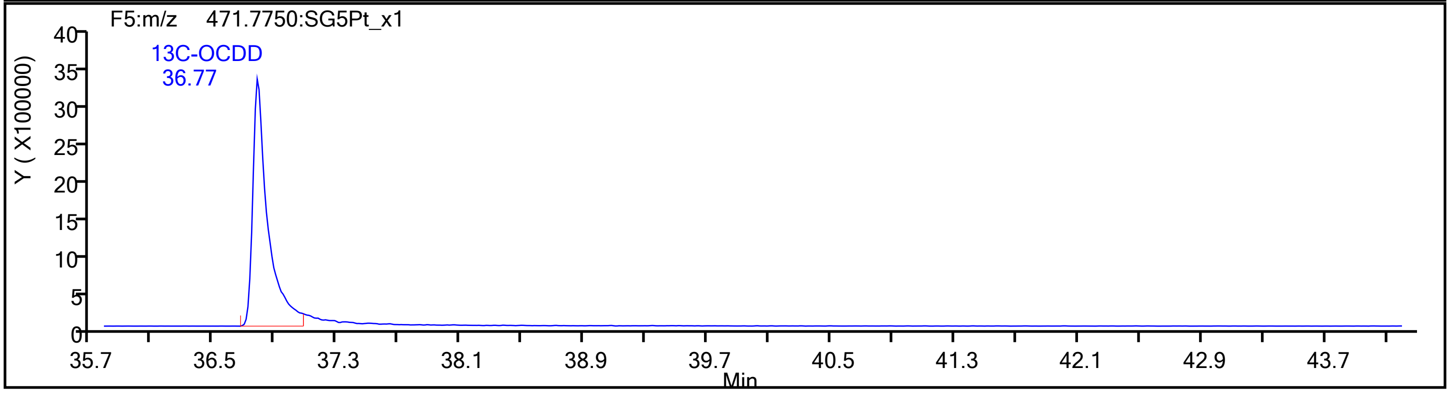

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

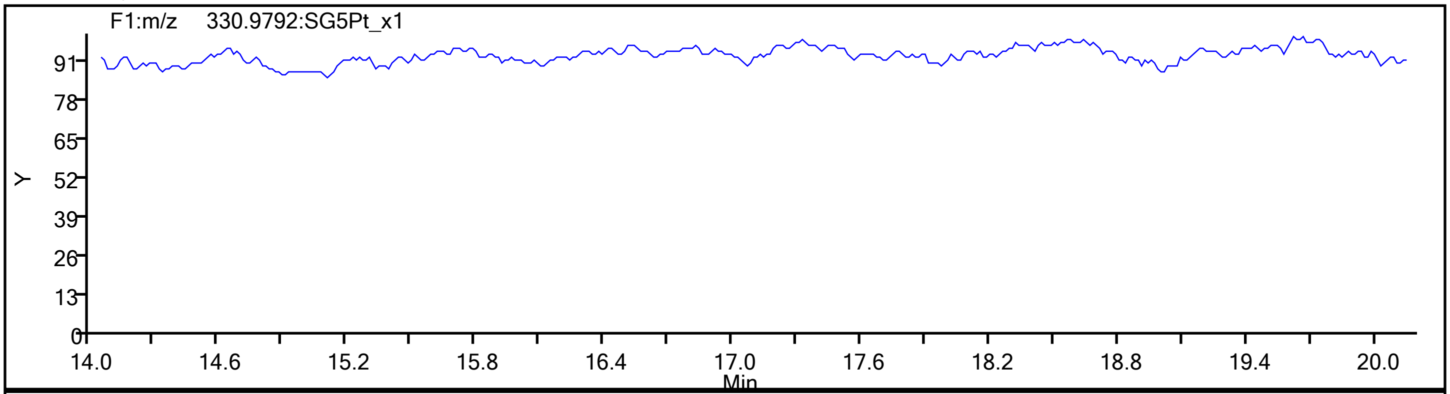

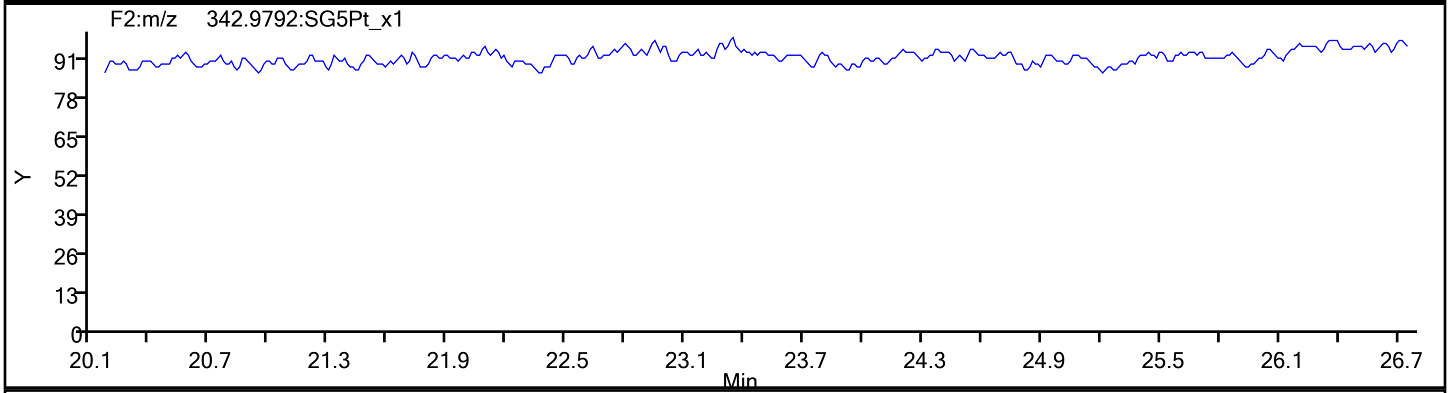

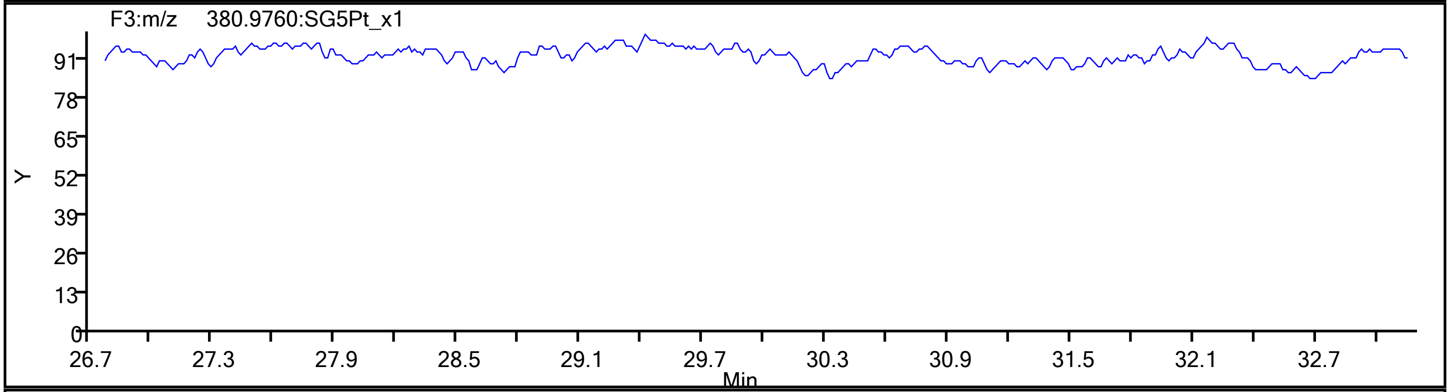

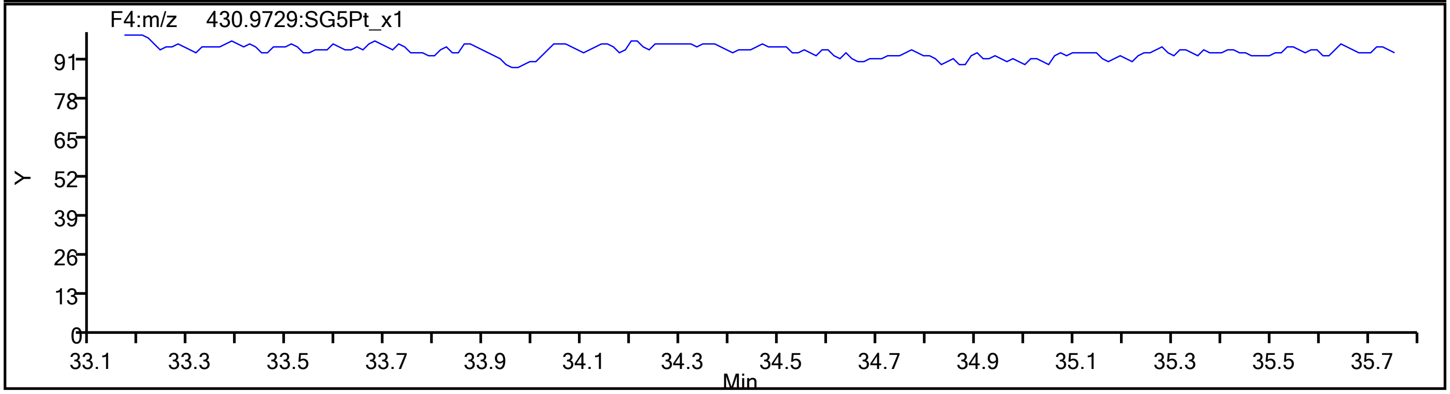

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

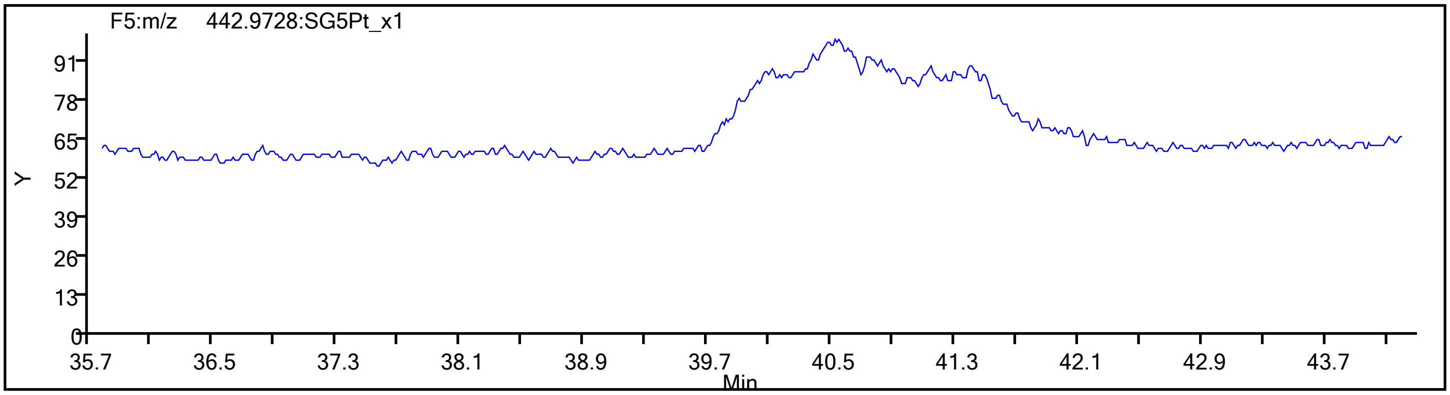

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 27-Jun-2020 16:13:16 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720B CS-4 HRDXNL4_00093
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:04 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:44:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	44921958	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	60344940	0.78	1.3726	97.9	97.9	0.2102	0.2102	97.87	
2,3,7,8-TCDF	17.219	5357609	0.74	0.9104	9.752	9.752	0.0307	0.0307	97.52	
S Total TCDF					9.752	9.752	0.0307	0.0307		
D 13C-2,3,7,8-TCDD	17.899	44913870	0.78	1.0192	98.1	98.1	0.2273	0.2273	98.10	
2,3,7,8-TCDD	17.914	4563232	0.79	1.0745	9.456	9.456	0.0413	0.0413	94.56	
$ 37Cl4-2,3,7,8-TCDD	17.914	4459695		1.0176	9.756	9.756	0.0252	0.0252	97.56	
S Total TCDD					9.456	9.456	0.0413	0.0413		
D 13C-1,2,3,7,8-PeCDF	22.156	49635229	1.59	1.1429	96.7	96.7	0.3817	0.3817	96.68	
1,2,3,7,8-PeCDF	22.170	24335887	1.59	0.9938	49.3	49.3	0.2742	0.2742	98.67	
D 13C-2,3,4,7,8-PeCDF	23.465	60093455	1.59	1.3997	95.6	95.6	0.3116	0.3116	95.57	
2,3,4,7,8-PeCDF	23.493	24300949	1.55	0.8117	49.8	49.8	0.2851	0.2851	99.64	
S Total PeCDF					99.2	99.2	0.2797	0.2797		
D 13C-1,2,3,7,8-PeCDD	24.188	35888619	1.57	0.8232	97.1	97.1	0.1411	0.1411	97.05	
1,2,3,7,8-PeCDD	24.215	18115123	1.60	1.0181	49.6	49.6	0.0983	0.0983	99.16	
S Total PeCDD					49.6	49.6	0.0983	0.0983		
D 13C-1,2,3,4,7,8-HxCDF	30.306	41483076	0.50	1.1388	98.8	98.8	0.9003	0.9003	98.82	
1,2,3,4,7,8-HxCDF	30.332	16628712	1.21	0.8061	49.7	49.7	0.6370	0.6370	99.45	
D 13C-1,2,3,6,7,8-HxCDF	30.505	40051804	0.51	1.0803	100.6	100.6	0.9491	0.9491	101	
1,2,3,6,7,8-HxCDF	30.519	19386425	1.18	0.9818	49.3	49.3	0.5893	0.5893	98.60	
D 13C-2,3,4,6,7,8-HxCDF	31.371	34877926	0.50	0.9494	99.7	99.7	1.080	1.080	99.67	
2,3,4,6,7,8-HxCDF	31.384	17924922	1.19	1.0382	49.5	49.5	0.4739	0.4739	99.00	
D 13C-1,2,3,7,8,9-HxCDF	32.209	31414784	0.50	0.8670	98.3	98.3	1.183	1.183	98.30	
1,2,3,7,8,9-HxCDF	32.222	16062640	1.24	1.0321	49.5	49.5	0.5184	0.5184	99.09	
S Total HxCDF					198.1	198.1	0.5547	0.5547		
* 13C-1,2,3,7,8,9-HxCDD	32.023	36860120	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	32715286	1.27	0.9356	94.9	94.9	0.6229	0.6229	94.86	
1,2,3,4,7,8-HxCDD	31.583	13247984	1.23	0.8202	49.4	49.4	0.2605	0.2605	98.74	
D 13C-1,2,3,6,7,8-HxCDD	31.677	39539332	1.28	1.0416	103.0	103.0	0.5595	0.5595	103	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.703	18322759	1.24	0.9367	49.5	49.5	0.2491	0.2491	98.95	
1,2,3,7,8,9-HxCDD	32.036	17485889	1.24	0.9905	48.9	48.9	0.2252	0.2252	97.73	
S Total HxCDD					147.7	147.7	0.2450	0.2450		
D 13C-1,2,3,4,6,7,8-HpCDF	33.664	29115881	0.44	0.7899	100.0	100.0	3.021	3.021	100	
1,2,3,4,6,7,8-HpCDF	33.676	20993366	1.03	1.4527	49.6	49.6	1.073	1.073	99.26	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	32761435	0.44	0.9093	97.8	97.8	2.625	2.625	97.75	
1,2,3,4,7,8,9-HpCDF	34.746	17306428	1.04	1.0585	49.9	49.9	1.522	1.522	99.81	
S Total HpCDF					99.5	99.5	1.297	1.297		
D 13C-1,2,3,4,6,7,8-HpCDD	34.454	28040054	1.06	0.7637	99.6	99.6	1.261	1.261	99.61	
1,2,3,4,6,7,8-HpCDD	34.466	14507917	1.06	1.0540	49.1	49.1	0.5597	0.5597	98.18	
S Total HpCDD					49.1	49.1	0.5597	0.5597		
D 13C-OCDD	36.785	46201838	0.91	0.6377	196.6	196.6	0.4506	0.4506	98.28	
OCDF	36.881	29718751	0.90	1.2965	99.2	99.2	0.2809	0.2809	99.23	
OCDD	36.797	26045472	0.89	1.1499	98.0	98.0	0.3016	0.3016	98.05	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 27-Jun-2020 16:13:16 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720B CS-4 HRDXNL4_00093
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:04 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:44:56

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		19799058	4729813	5042	12605	938		
333.9339	17.702	17.702	0		25122900	6066011	4961	12402	1223	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.197	0	0.972	26508867	6087096	7048	17620	864		
317.9389	17.203	17.197	0	0.972	33836073	7851171	5410	13525	1451	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.215	0	1.001	2283110	528103	574	1435	920		
305.8987	17.219	17.215	0	1.001	3074499	709330	985	2462	720	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.893	0	1.011	19630135	4265679	5042	12605	846		
333.9339	17.899	17.893	0	1.011	25283735	5472685	4961	12402	1103	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.001	2009373	437511	1095	2737	400		
321.8936	17.914	17.911	0	1.001	2553859	555666	635	1587	875	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	4459695	1001442	1107	2767	905		
13C-1,2,3,7,8-PeCDF											
351.9000	22.156	22.148	0	1.252	30479570	4831380	11352	28380	426		
353.8970	22.156	22.148	0	1.252	19155659	3034071	7484	18710	405	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.164	0	1.001	14936918	2395906	5104	12760	469		
341.8567	22.170	22.164	0	1.001	9398969	1511785	3469	8672	436	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.465	23.460	0	1.326	36859667	5675954	11352	28380	500		
353.8970	23.465	23.460	0	1.326	23233788	3584304	7484	18710	479	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.493	23.487	0	1.001	14757260	2252859	5104	12760	441		
341.8567	23.493	23.487	0	1.001	9543689	1476787	3469	8672	426	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.188	24.180	0	1.366	21926659	3077561	2905	7262	1059		
369.8919	24.188	24.180	0	1.366	13961960	1938595	2111	5277	918	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.215	24.204	1	1.001	11154150	1579420	1263	3157	1251		
357.8516	24.215	24.204	1	1.001	6960973	989204	745	1862	1328	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.306	30.298	0	0.946	13825528	2235063	9600	24000	233		
385.8610	30.306	30.298	0	0.946	27657548	4396388	19927	49817	221	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.332	30.319	1	1.001	9114897	1427981	7425	18562	192		
375.8178	30.319	30.319	0	1.000	7513815	1208894	6197	15492	195	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.505	30.497	0	0.953	13456617	2008173	9600	24000	209		
385.8610	30.505	30.497	0	0.953	26595187	3877489	19927	49817	195	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.000	10502882	1570362	7425	18562	211		
375.8178	30.519	30.519	0	1.000	8883543	1308821	6197	15492	211	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	11632950	2274598	9600	24000	237		
385.8610	31.371	31.370	0	0.980	23244976	4646298	19927	49817	233	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	9739805	1935315	7425	18562	261		
375.8178	31.384	31.384	0	1.000	8185117	1660546	6197	15492	268	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.209	32.201	0	1.006	10536379	2139022	9600	24000	223		
385.8610	32.209	32.201	0	1.006	20878405	4226341	19927	49817	212	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.222	32.214	0	1.000	8885131	1789789	7425	18562	241		
375.8178	32.222	32.214	0	1.000	7177509	1479352	6197	15492	239	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.023	32.015	0		20618797	4041571	9014	22535	448		
403.8529	32.023	32.015	0		16241323	3157959	7769	19422	406	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	18322524	4557890	9014	22535	506		
403.8529	31.570	31.570	0	0.986	14392762	3569825	7769	19422	459	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	7317019	1809435	3583	8957	505		
391.8127	31.583	31.583	0	1.000	5930965	1487451	3364	8410	442	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.989	22199813	4207203	9014	22535	467		
403.8529	31.677	31.677	0	0.989	17339519	3235344	7769	19422	416	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.703	31.693	1	1.001	10153070	1944774	3583	8957	543		
391.8127	31.690	31.693	0	1.000	8169689	1593052	3364	8410	474	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.036	32.028	0	1.015	9663813	1925825	3583	8957	537		
391.8127	32.036	32.028	0	1.015	7822076	1542427	3364	8410	459	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.664	33.657	0	1.051	8827024	2092314	19913	49782	105		
419.8220	33.664	33.657	0	1.051	20288857	4839663	48818	122045	99	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.676	33.667	1	1.000	10627622	2525930	21333	53332	118		
409.7789	33.676	33.667	1	1.000	10365744	2429034	21879	54697	111	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	9951875	2043546	19913	49782	103		
419.8220	34.734	34.731	0	1.085	22809560	4660822	48818	122045	95	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.746	34.739	0	1.000	8821266	1853425	21333	53332	87		
409.7789	34.746	34.739	0	1.000	8485162	1777455	21879	54697	81	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.454	34.444	1	1.076	14418172	3018342	13508	33770	223		
437.8140	34.454	34.444	1	1.076	13621882	2863669	14231	35577	201	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.466	34.457	1	1.000	7478404	1557360	7171	17927	217		
425.7737	34.454	34.457	0	1.000	7029513	1456384	6709	16772	217	1.06(0.88-1.20)	
13C-OCDD											
469.7779	36.785	36.775	1	1.149	21961855	3163093	4020	10050	787		
471.7750	36.785	36.775	1	1.149	24239983	3457058	4256	10640	812	0.91(0.76-1.02)	
OCDF											
441.7428	36.881	36.871	1	1.003	14065058	2231584	2219	5547	1006		
443.7399	36.869	36.871	0	1.002	15653693	2506871	2603	6507	963	0.90(0.76-1.02)	
OCDD											
457.7377	36.797	36.787	1	1.000	12271293	1770445	1790	4475	989		
459.7348	36.785	36.787	0	1.000	13774179	1983148	2802	7005	708	0.89(0.76-1.02)	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d

Injection Date: 27-Jun-2020 16:13:16
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

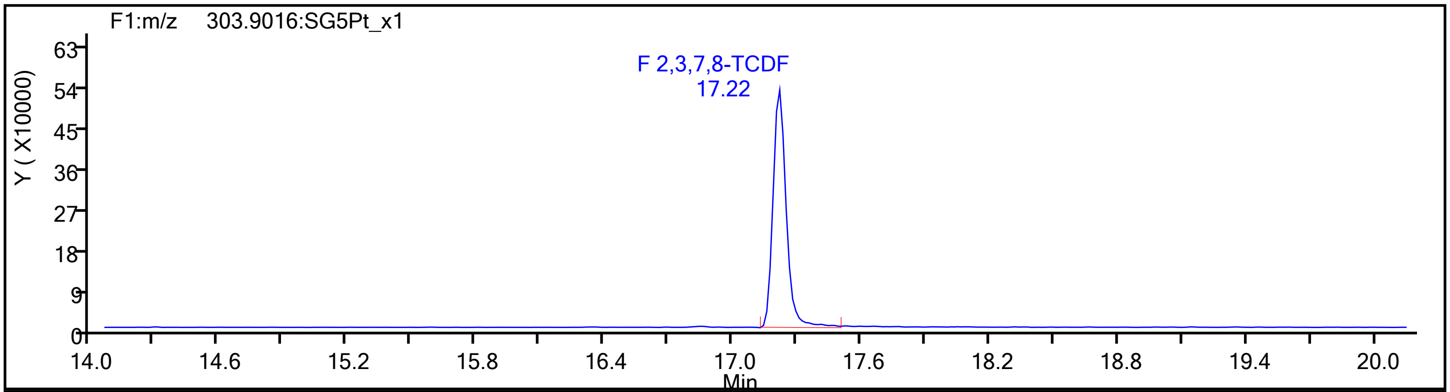

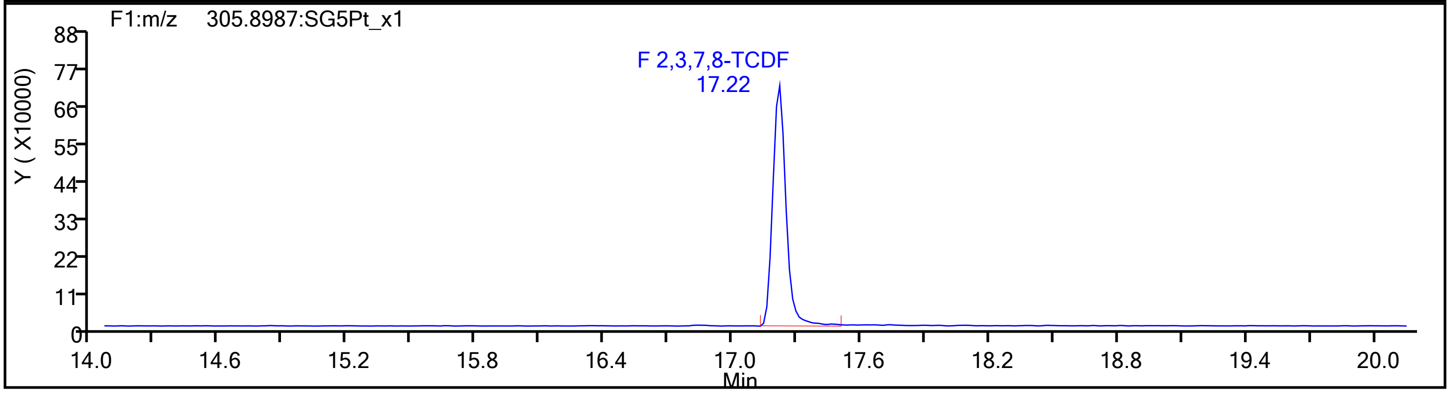

TCDF Standards

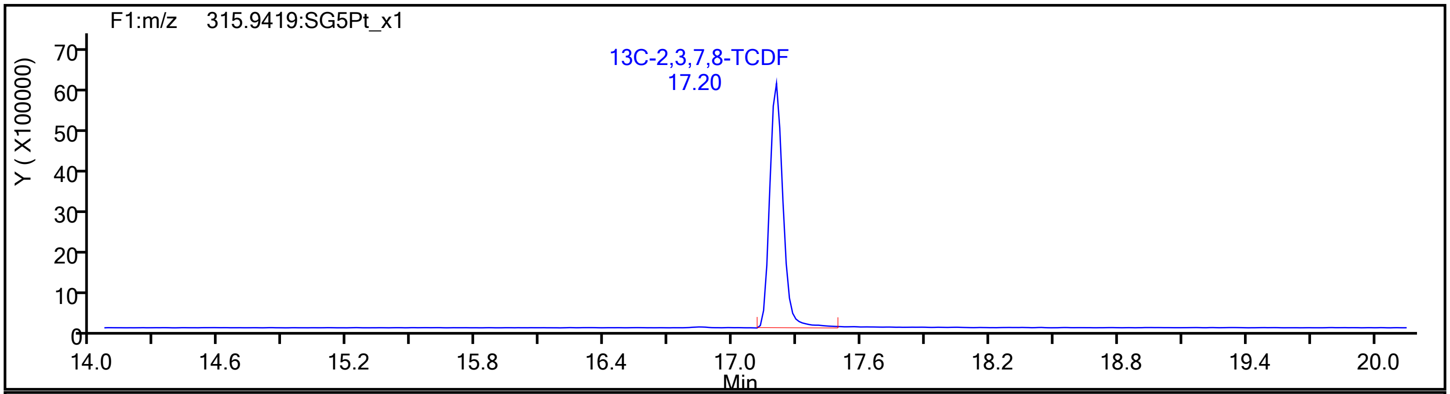

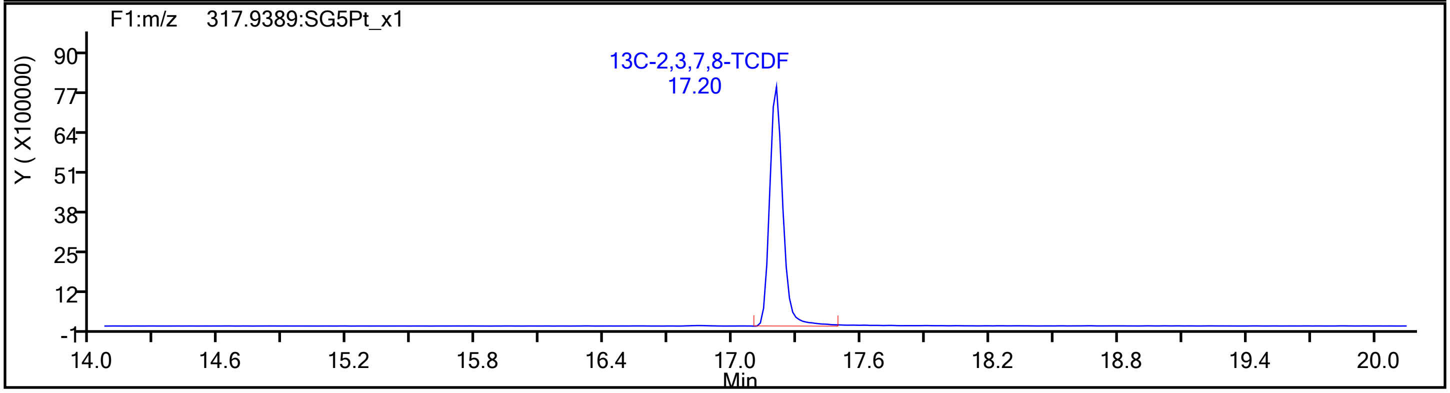

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

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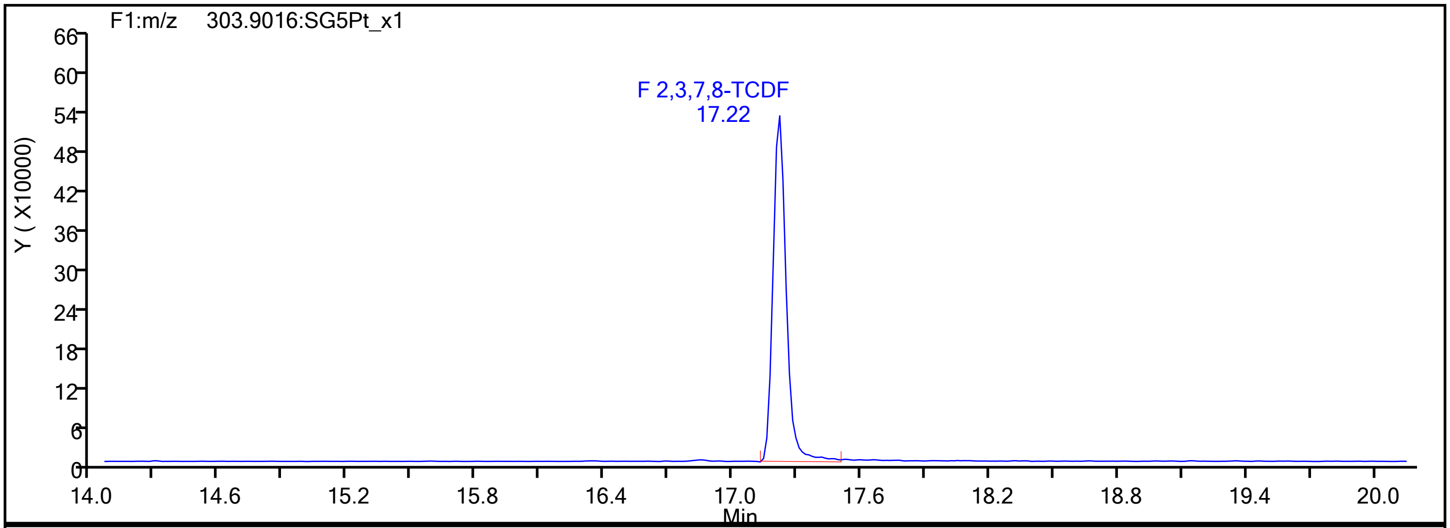

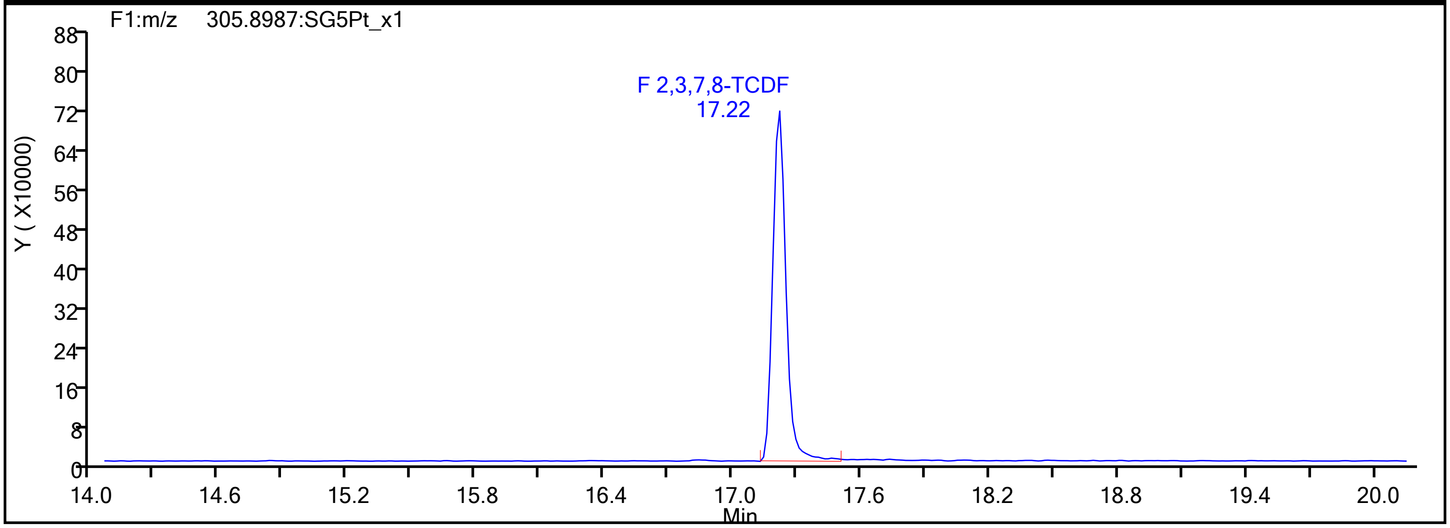

TCDF Interference Mass

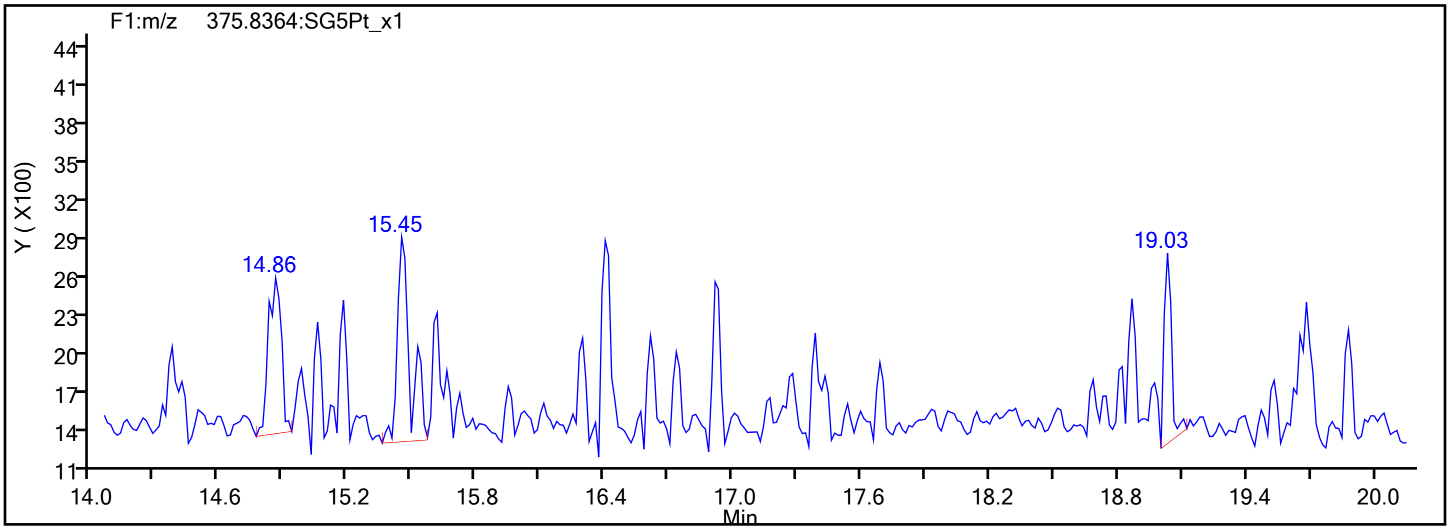

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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TCDD

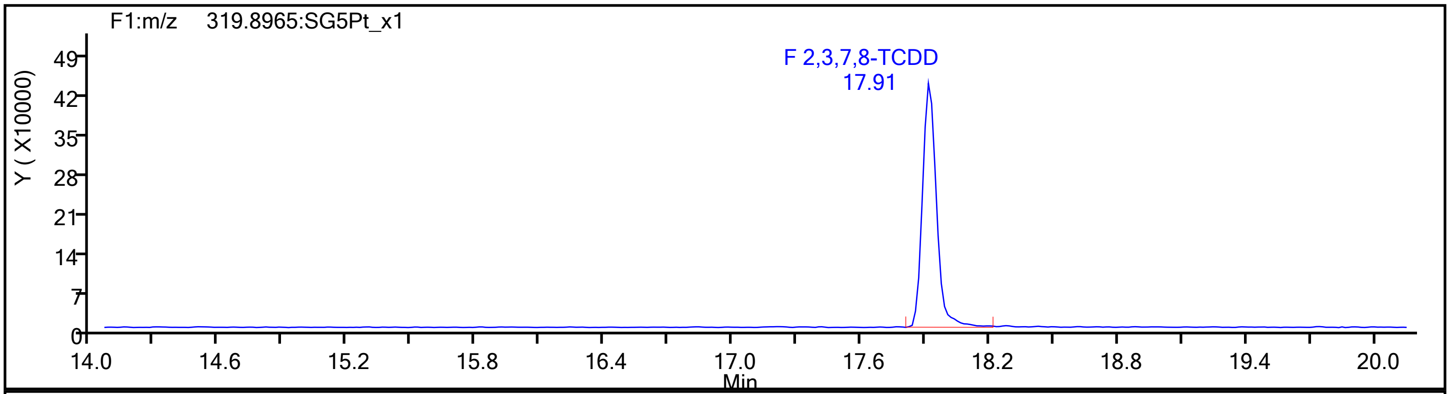

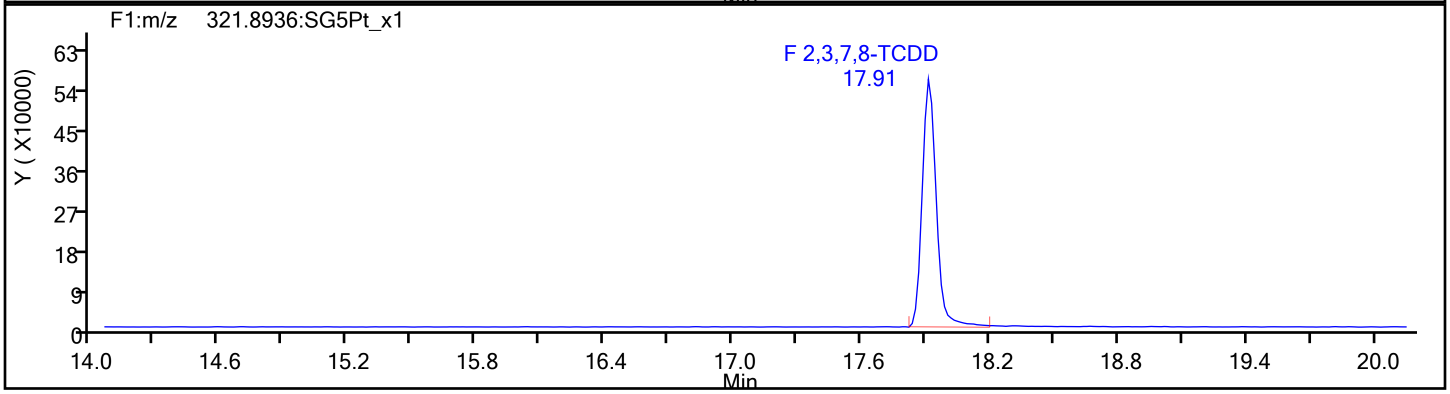

TCDD Standards

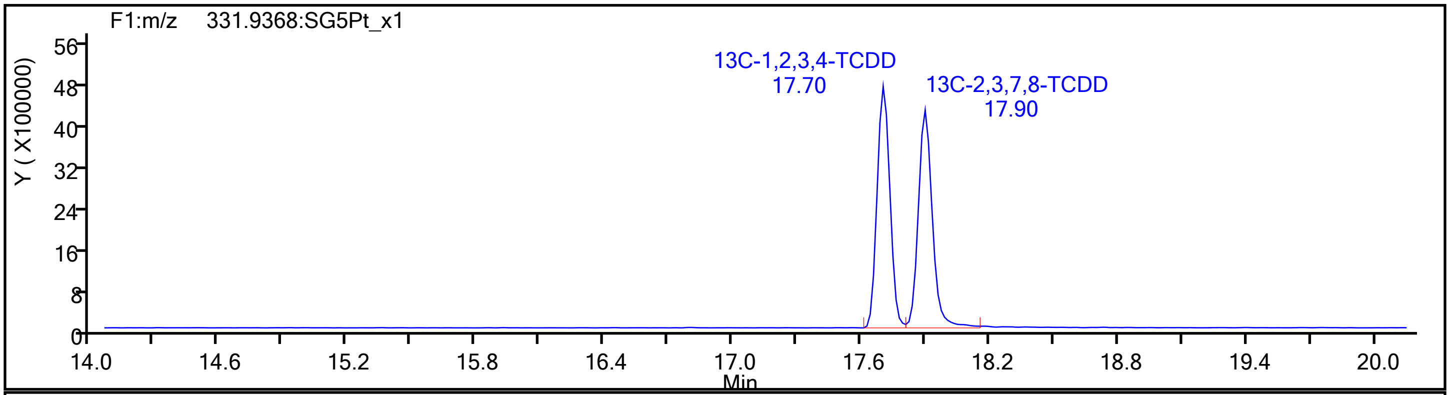

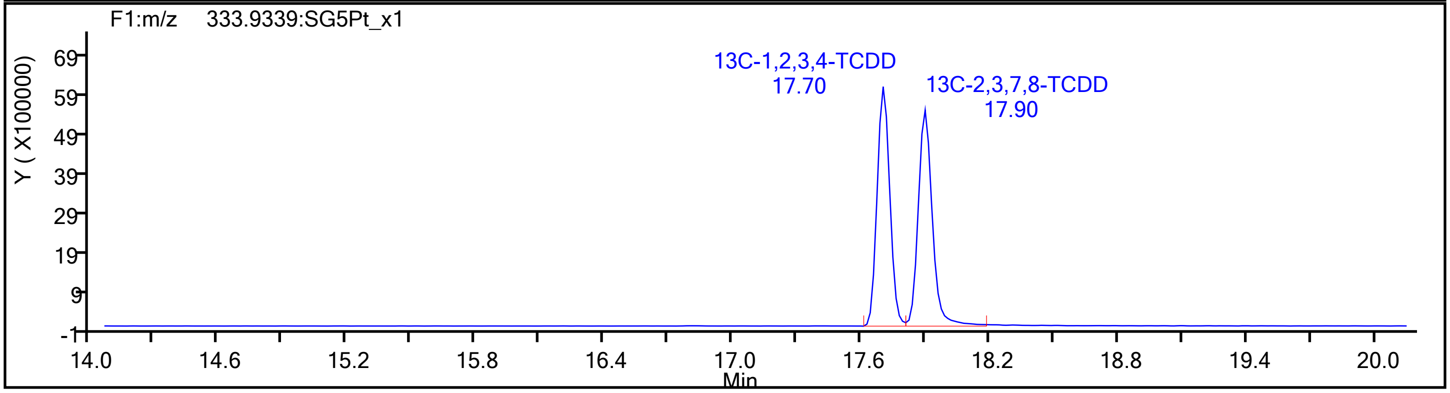

Report Date: 28-Jun-2020 13:17:08   Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5   Operator ID: SMA
Method: Dioxin_10D5   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253   Sample Line#: 5
Column Type: DB-5   Column Dia: 0.32 mm

37Cl4-TCDD

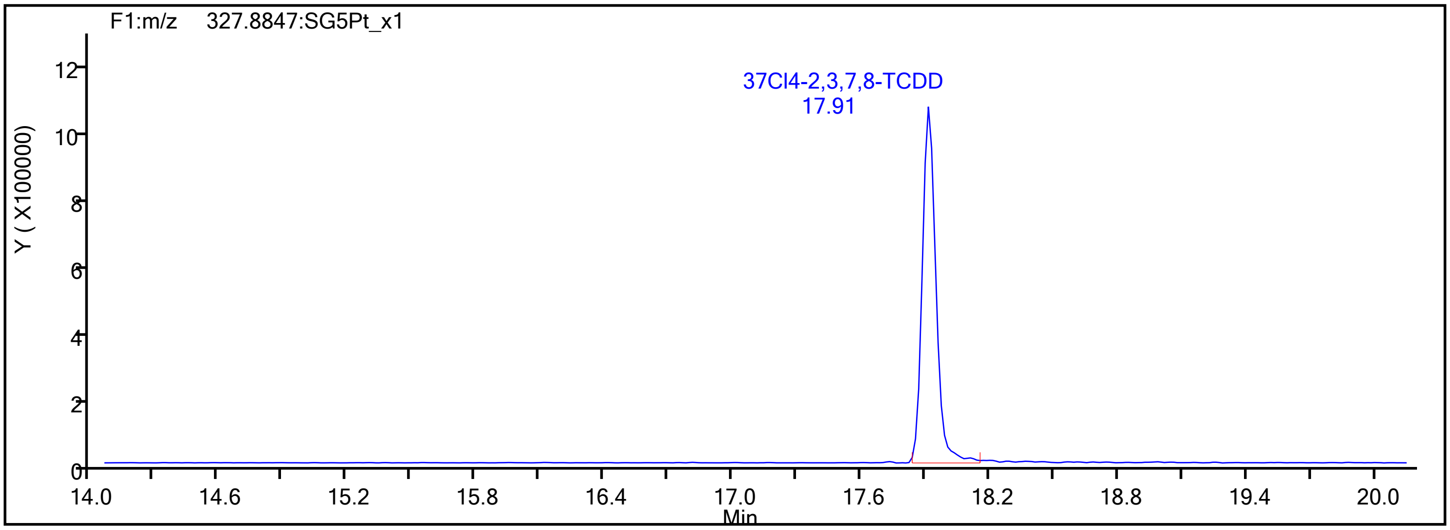

37Cl4-TCDD Standards

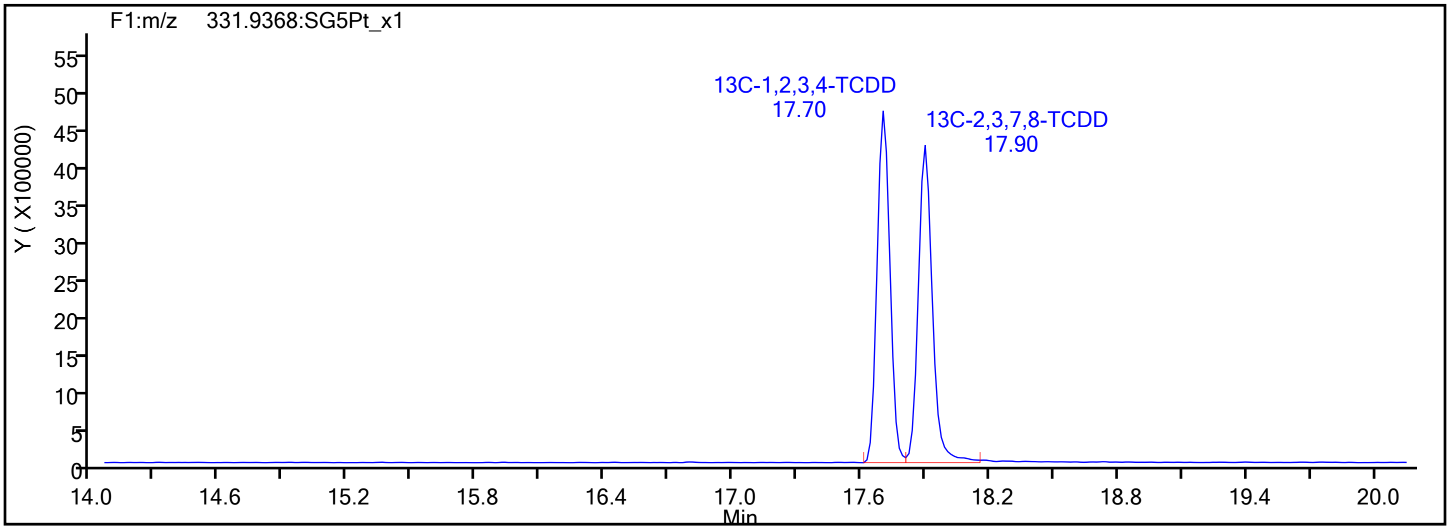

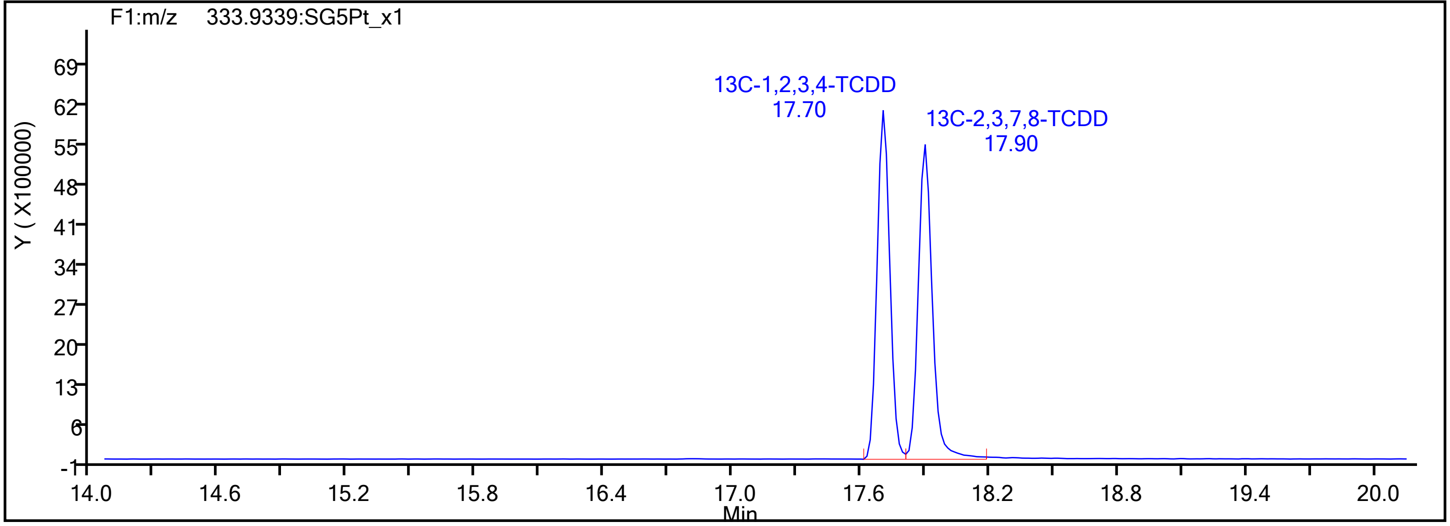

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

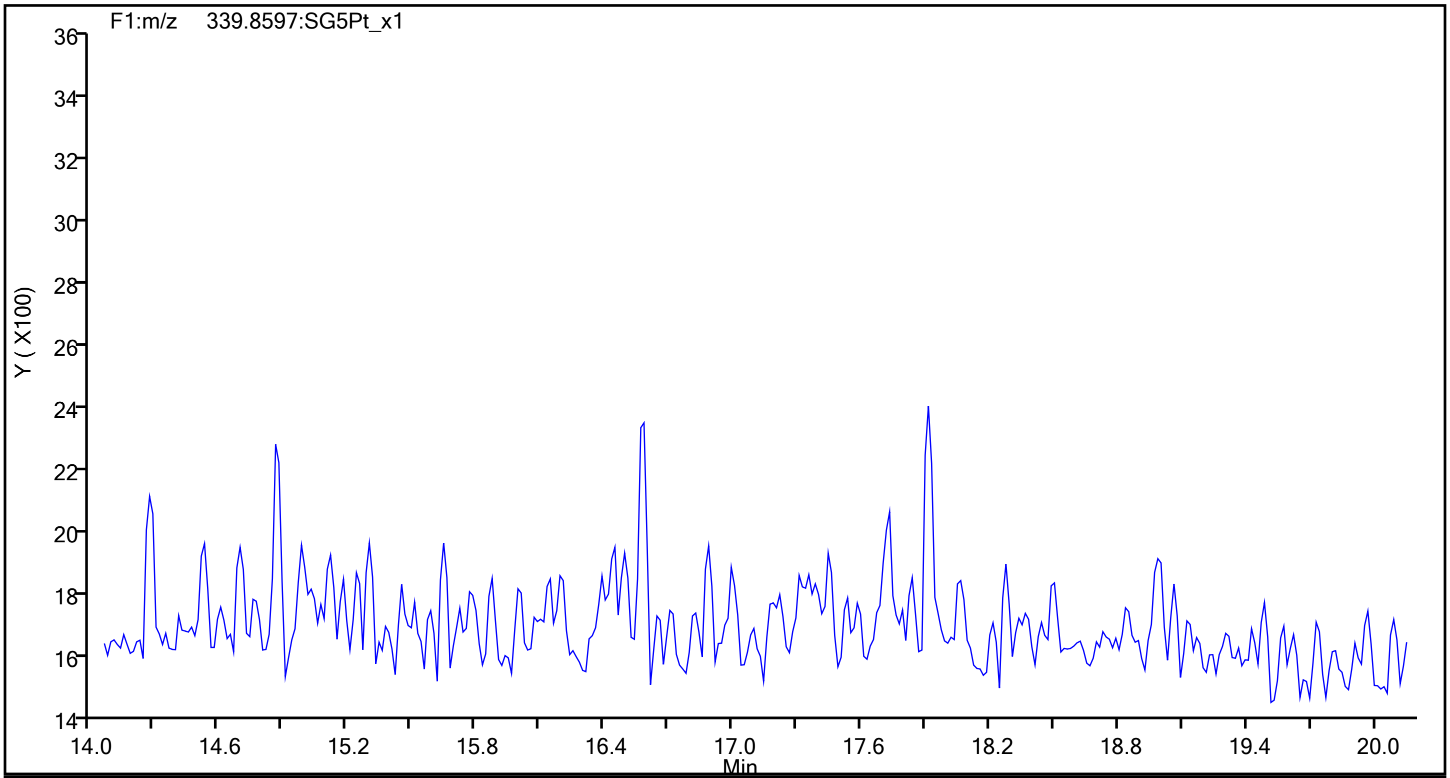

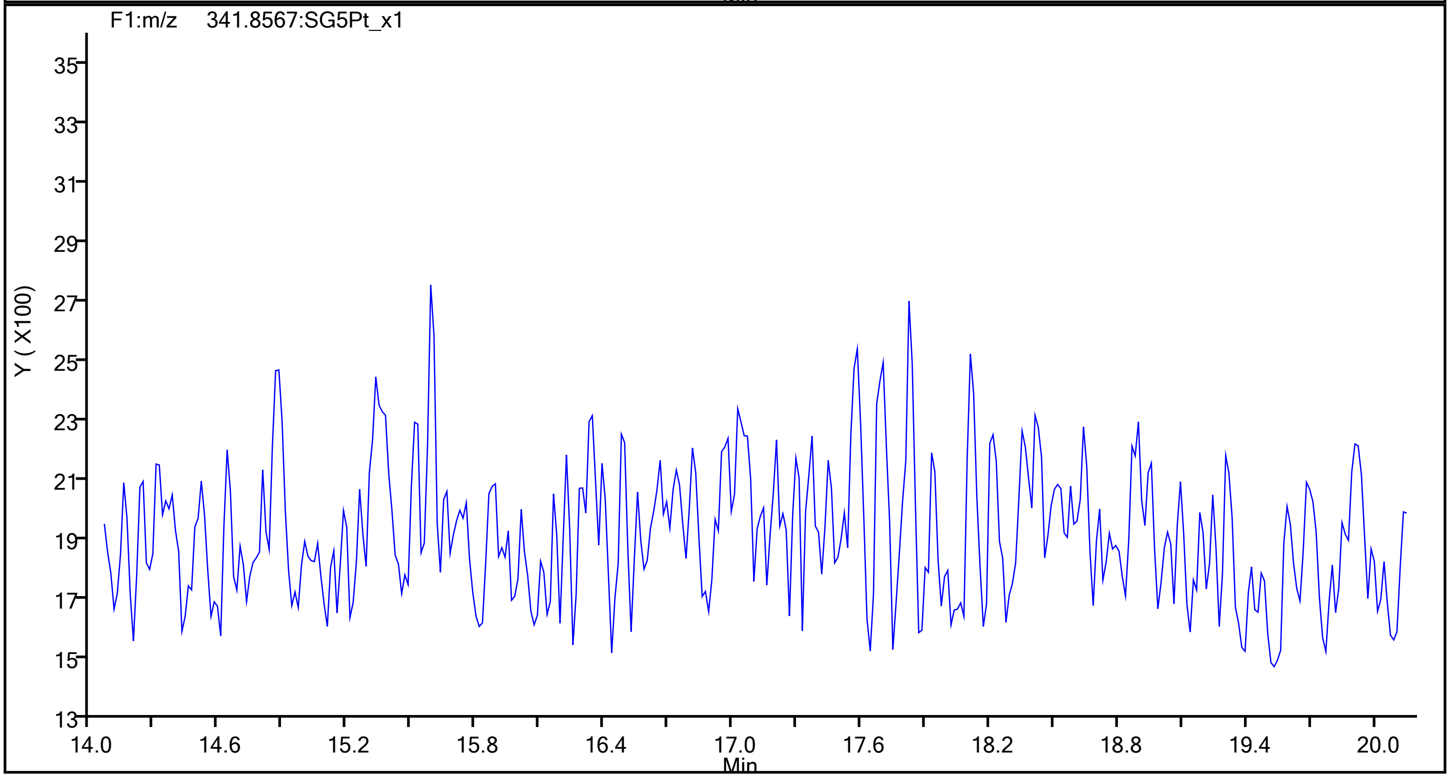

Report Date: 28-Jun-2020 13:17:08
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

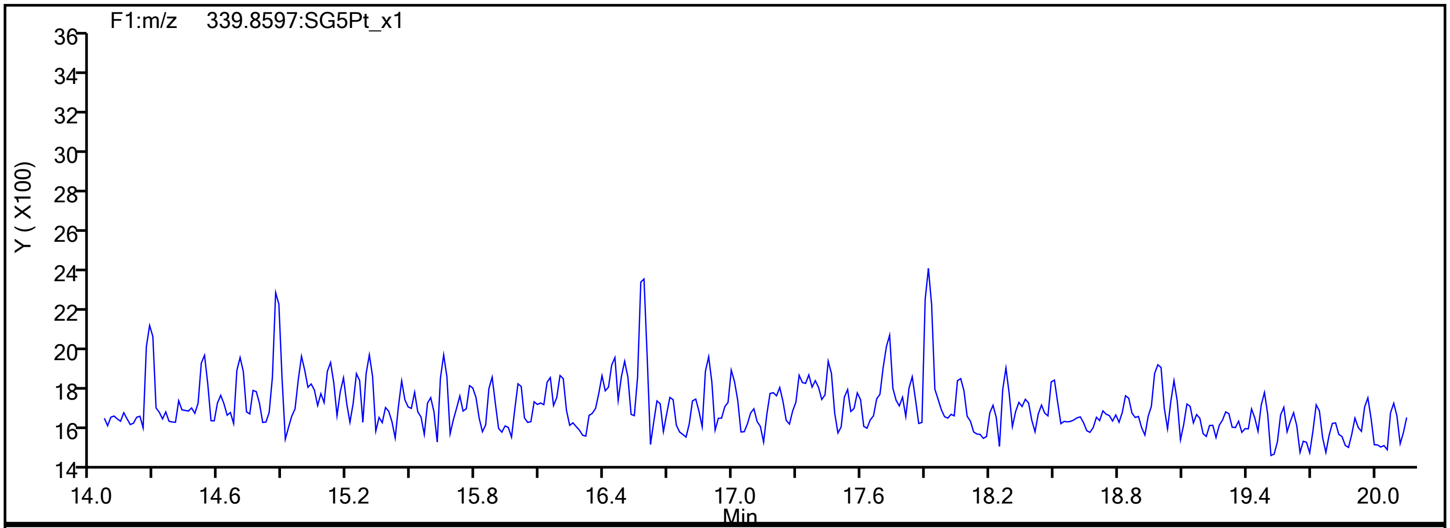

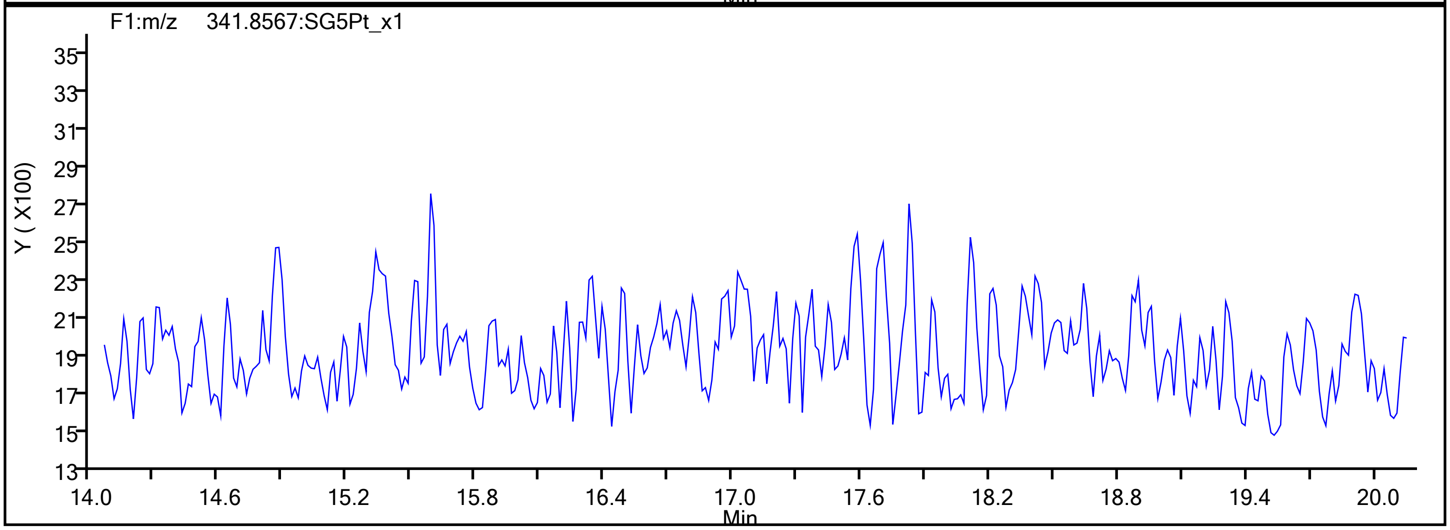

F1 PeCDFs Interference Mass

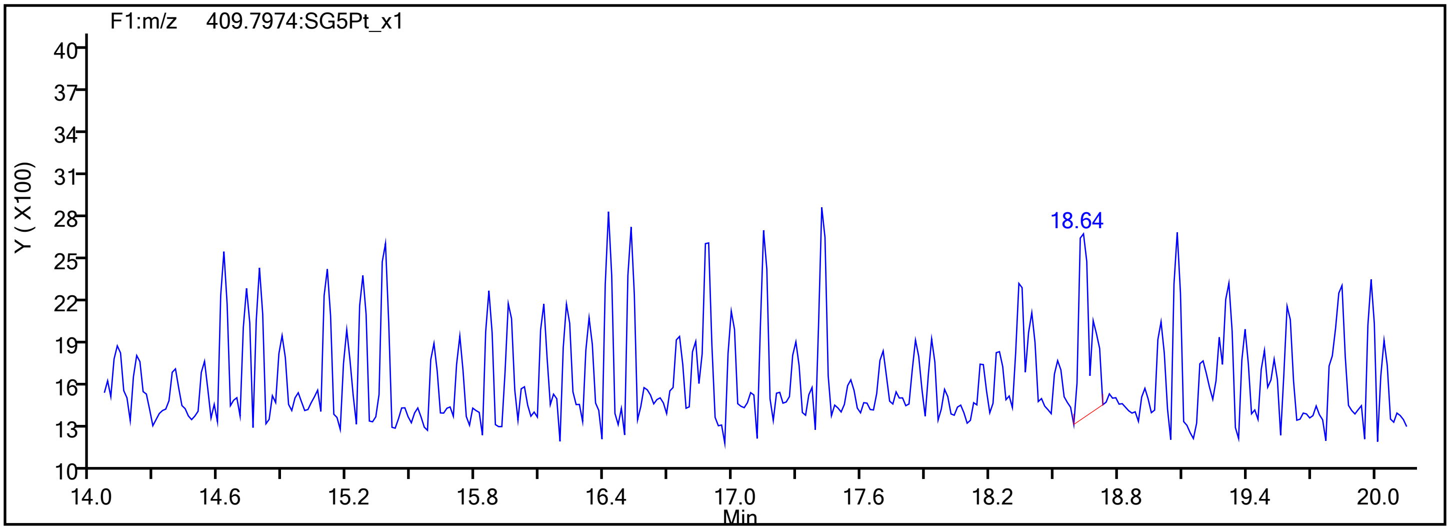

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

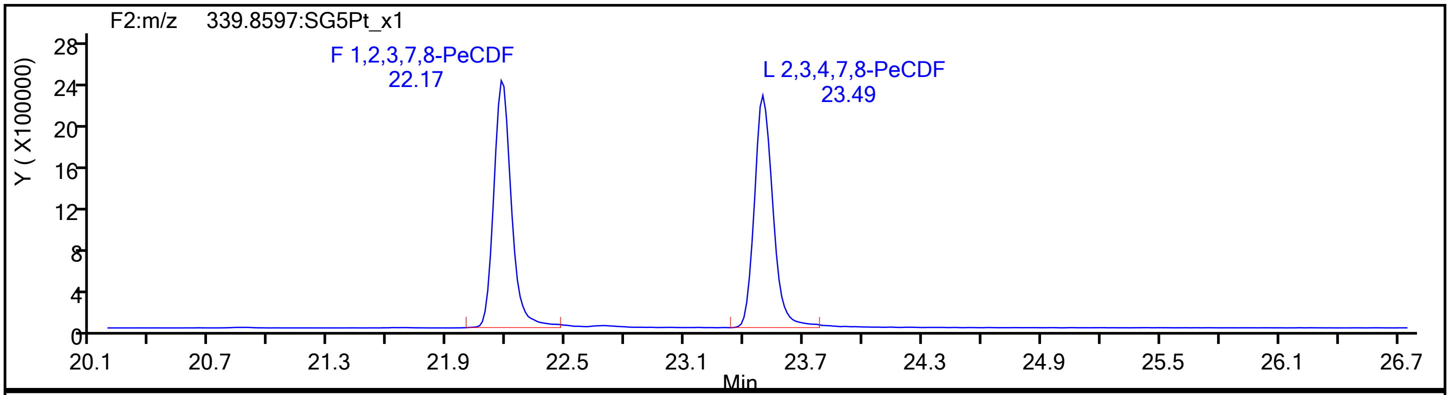

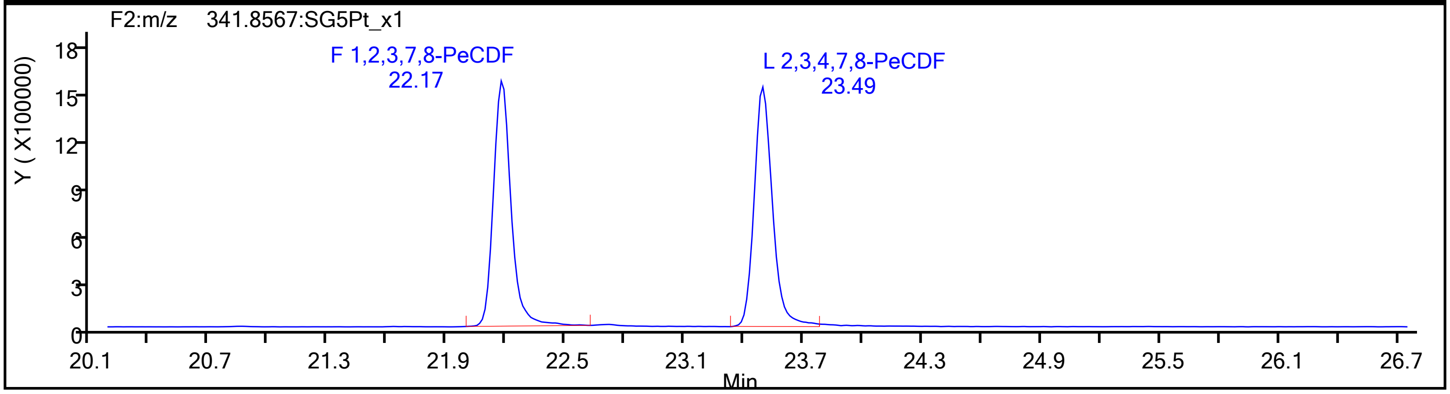

PeCDF Standards

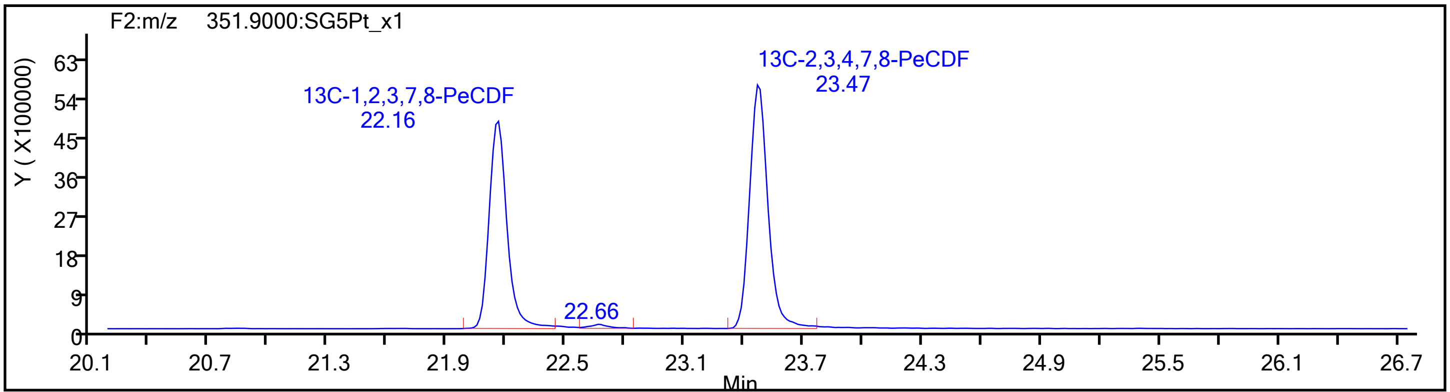

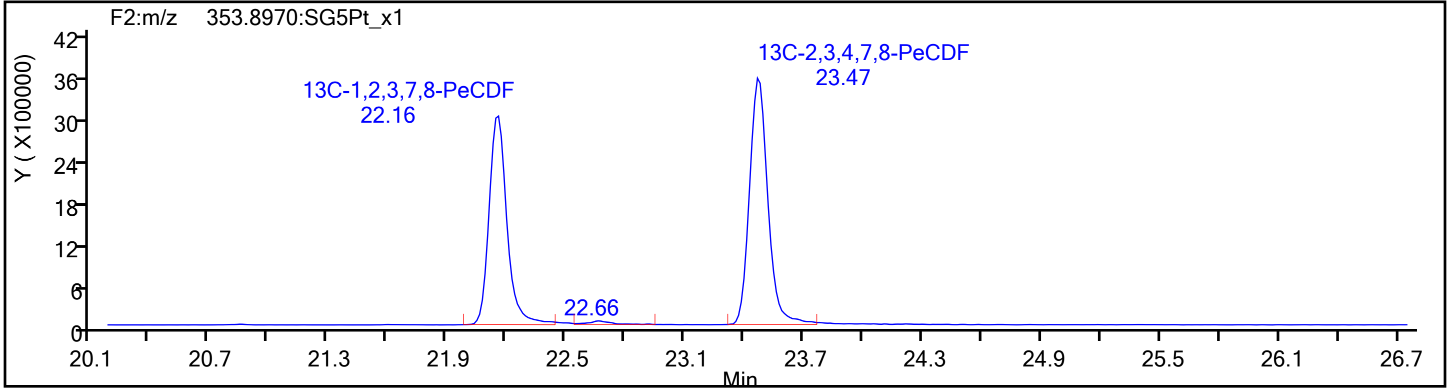

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

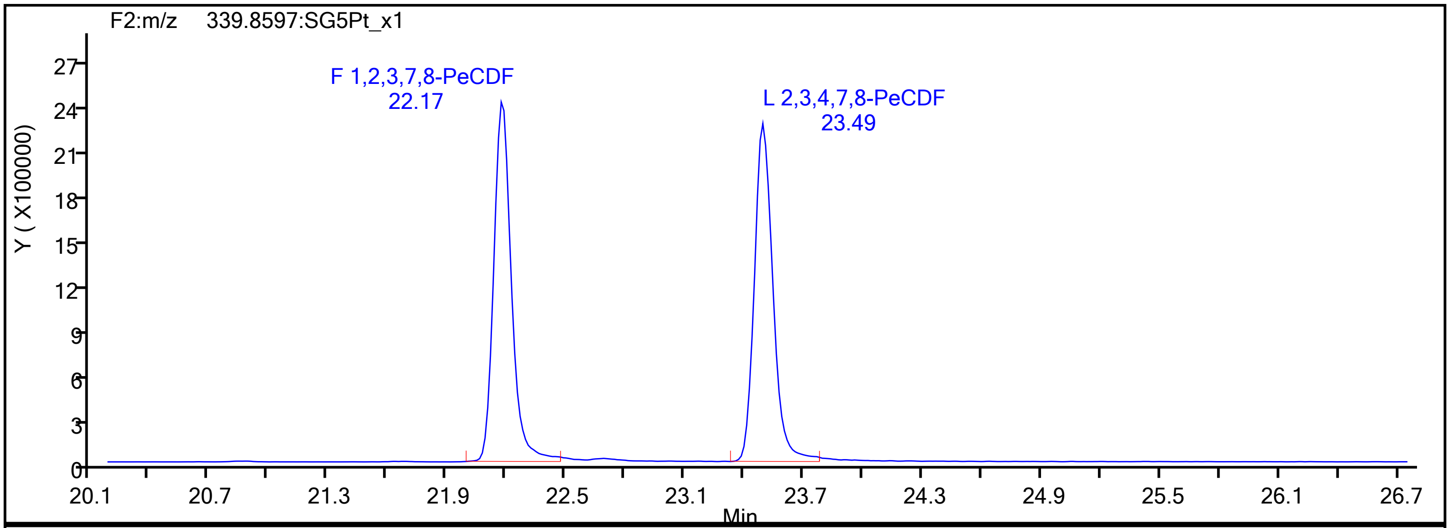

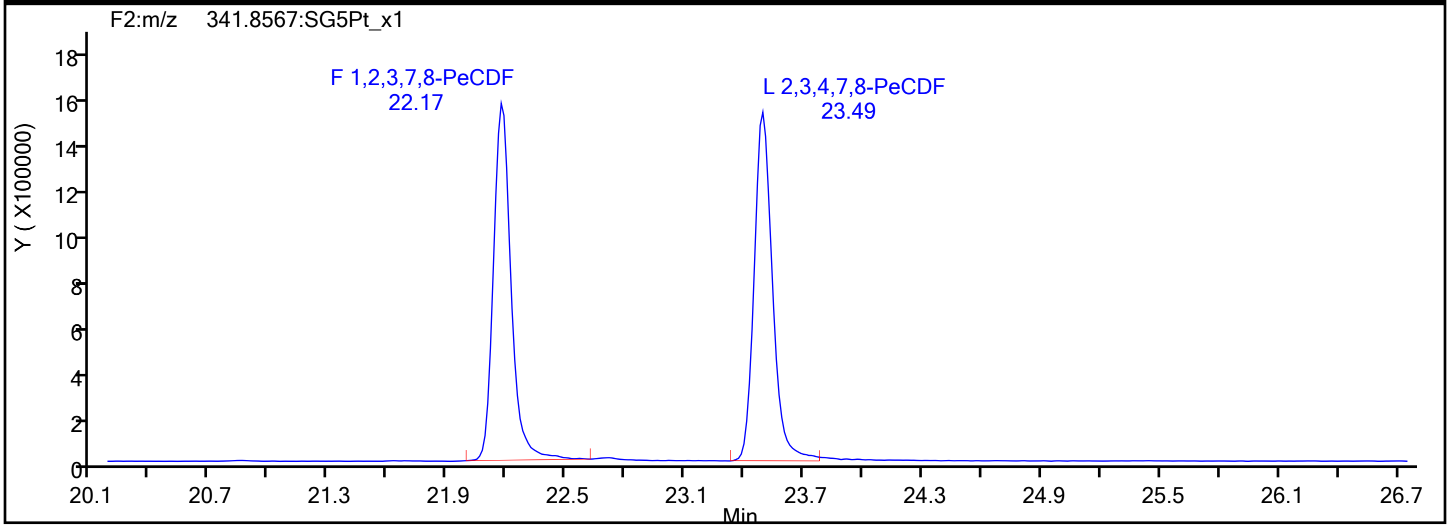

PeCDF Interference Mass

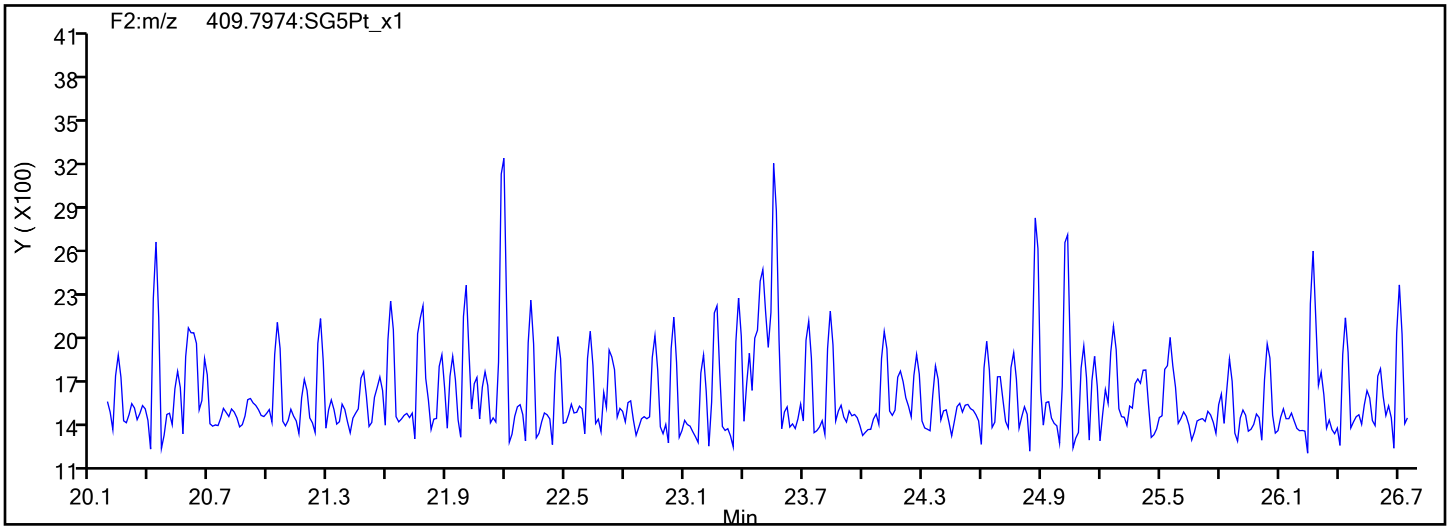

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

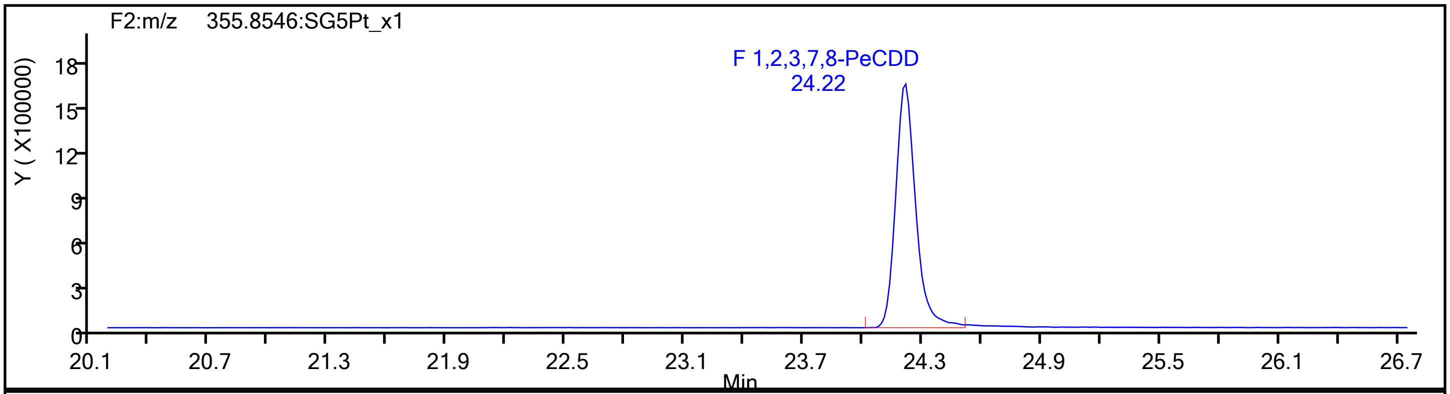

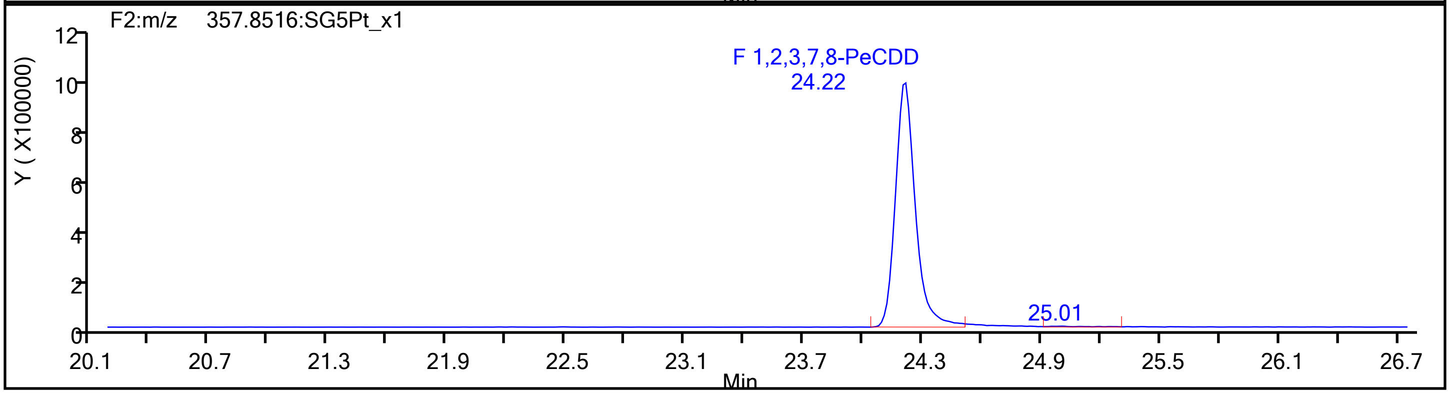

PeCDD Standards

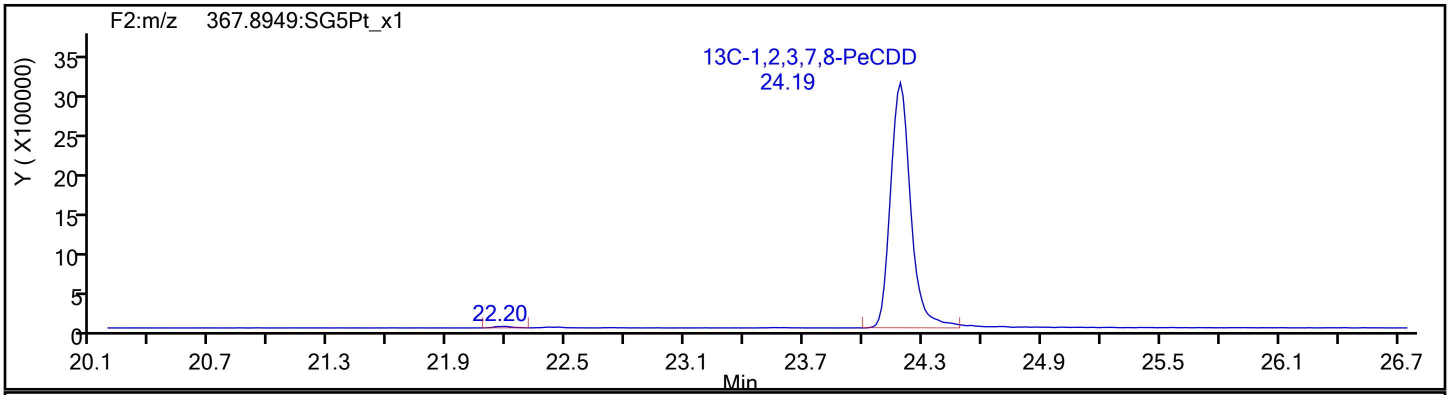

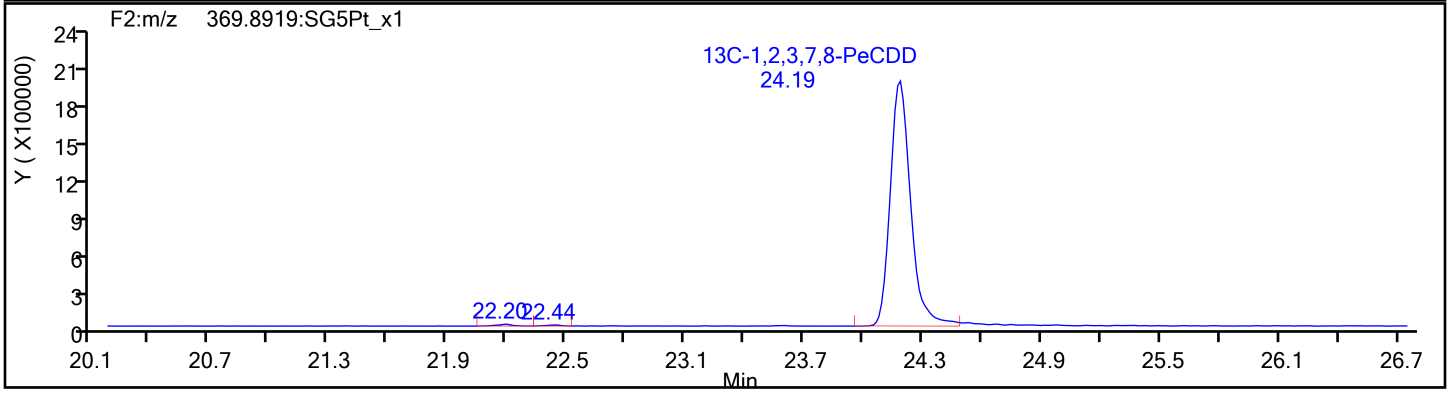

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

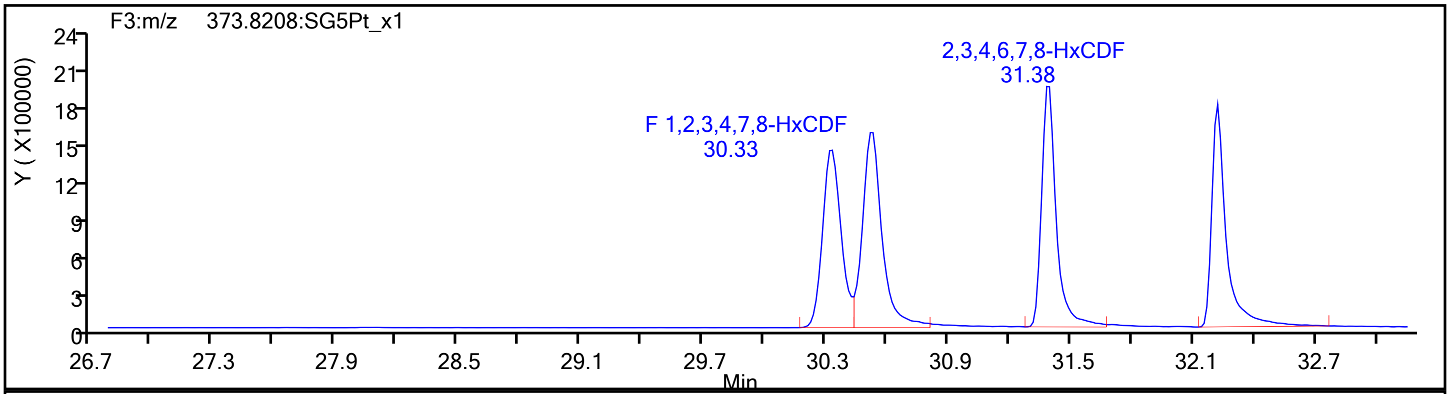

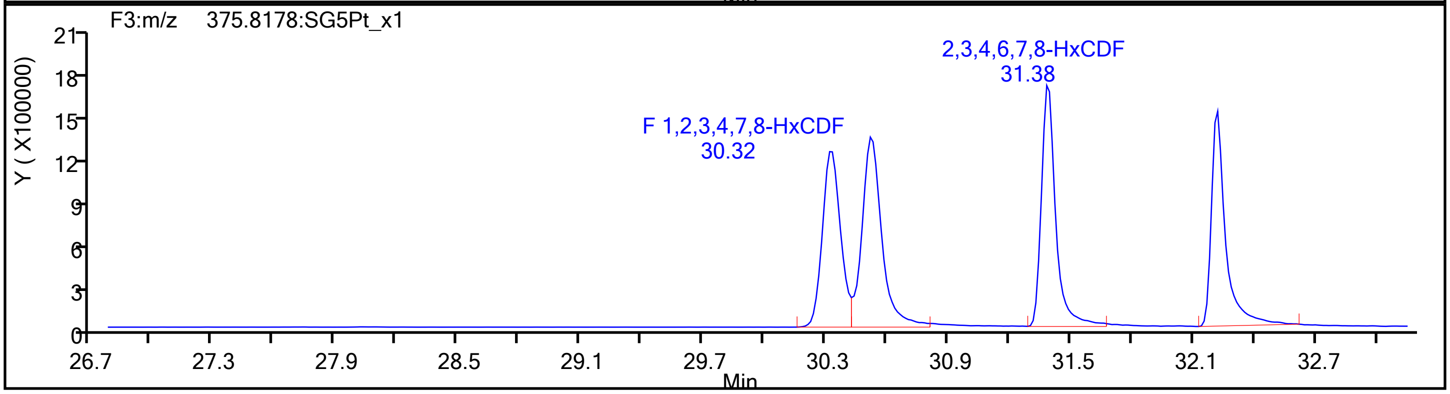

HxCDF Standards

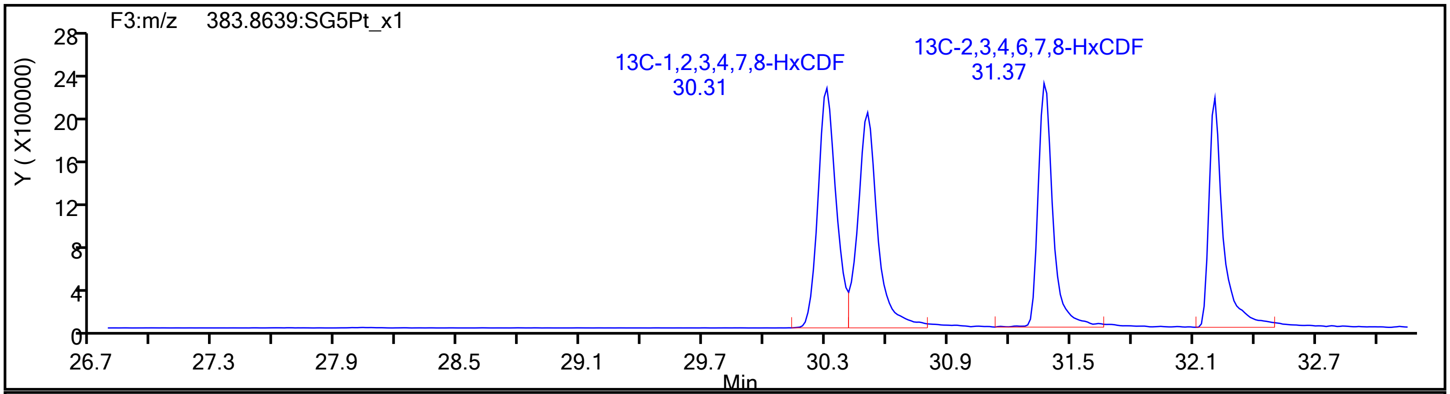

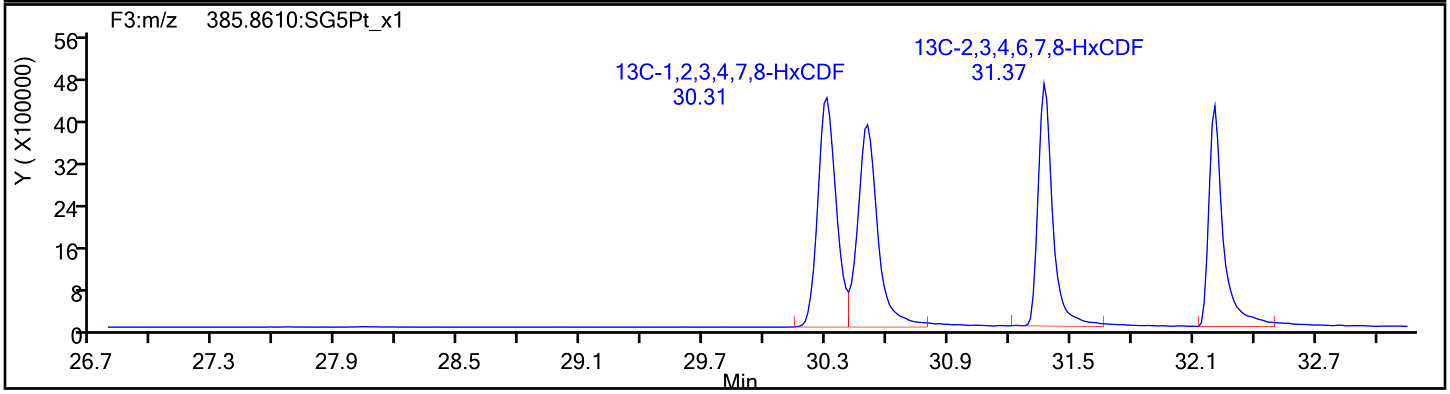

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Eurofins TestAmerica, Sacramento

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HxCDF

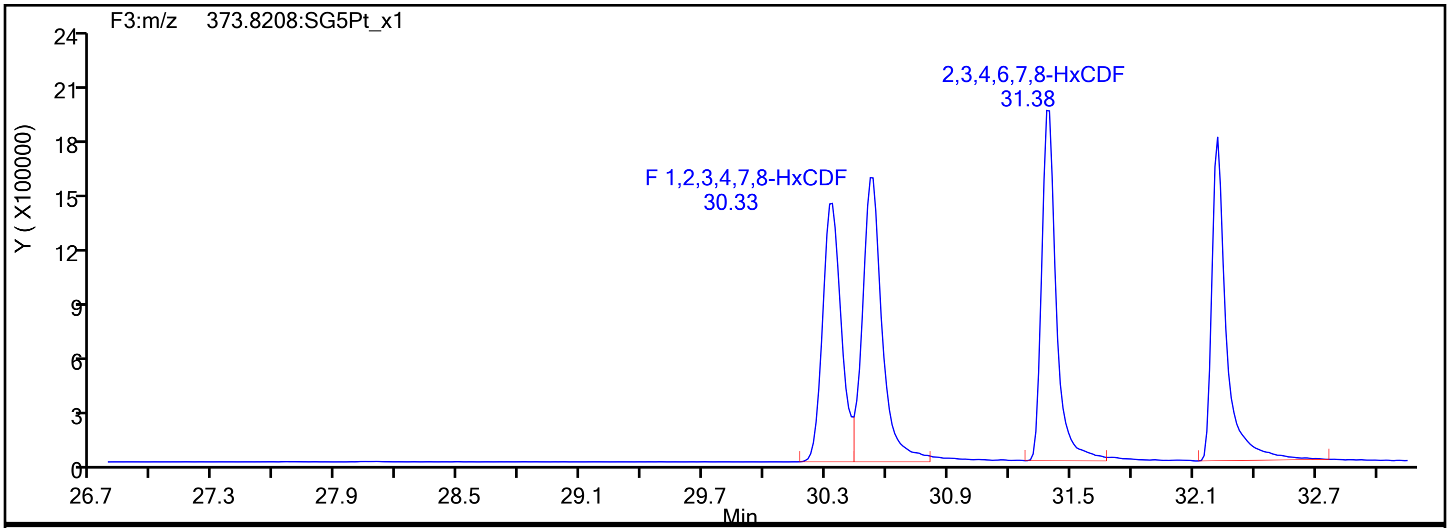

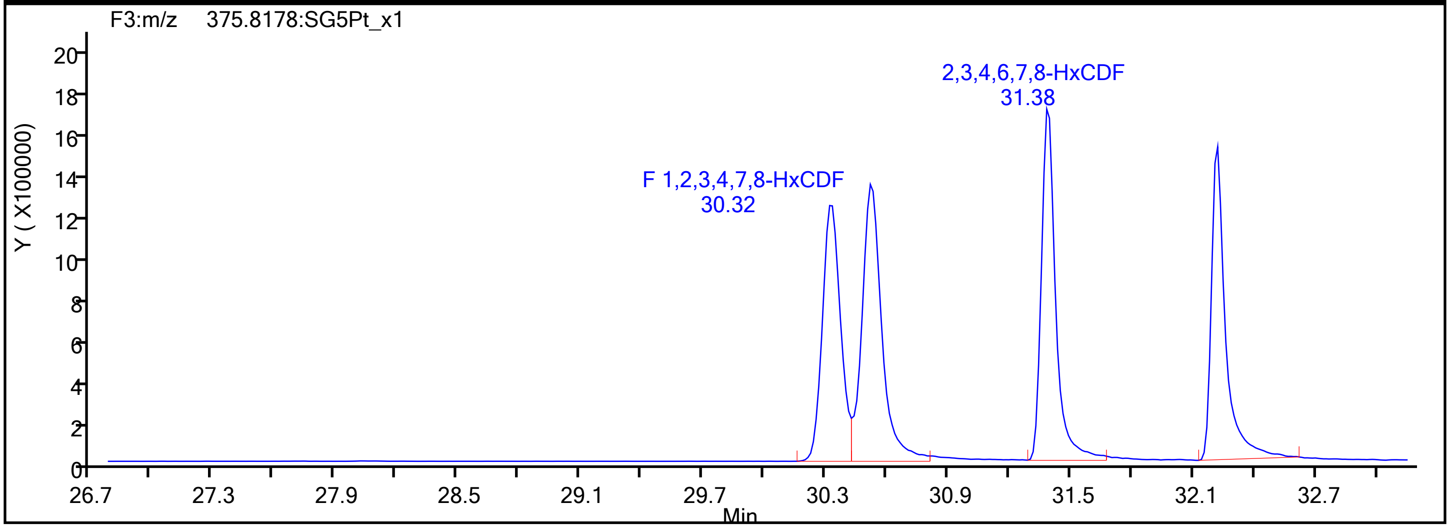

HxCDF Interference Mass

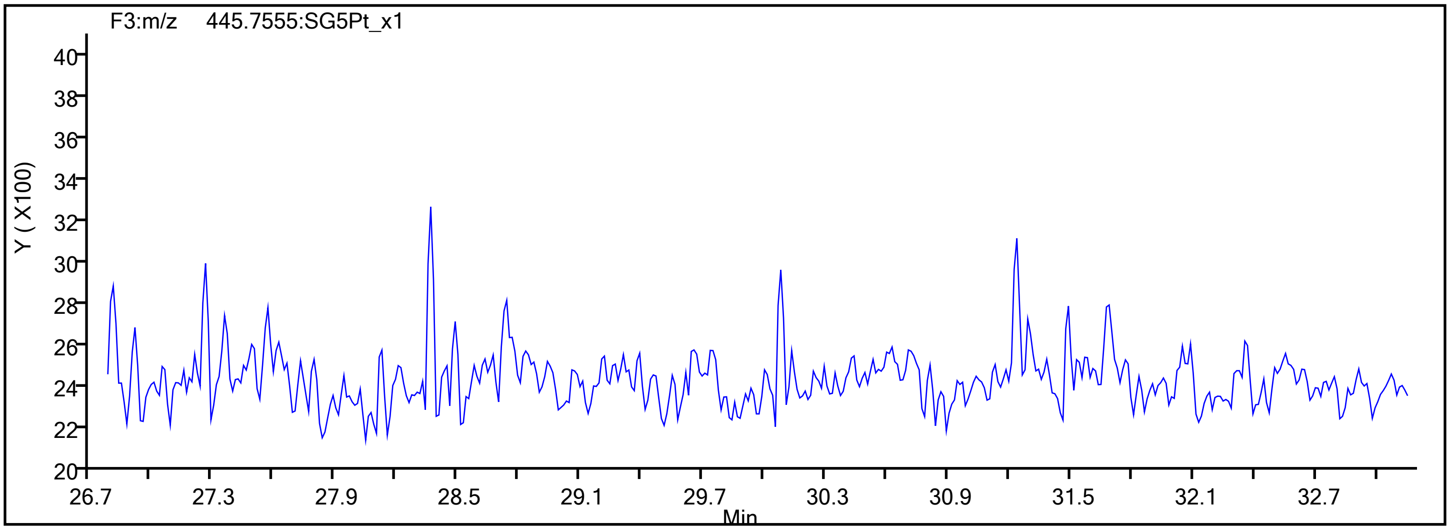

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

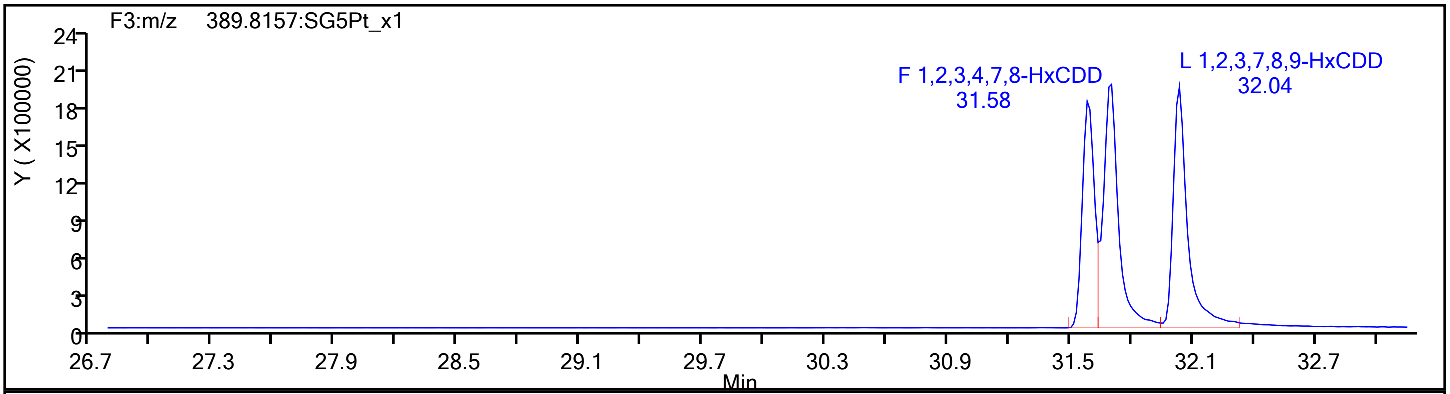

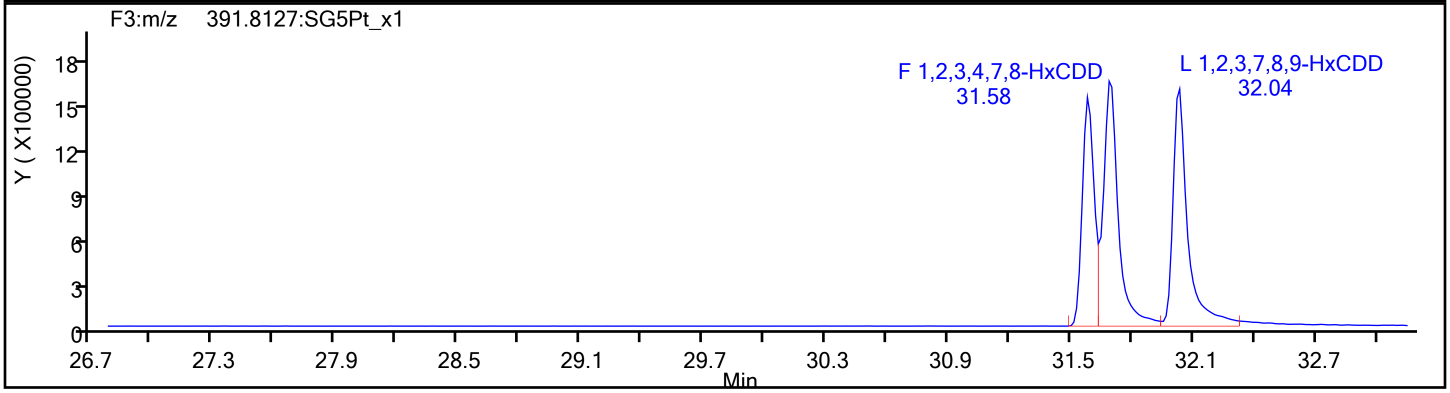

HxCDD Standards

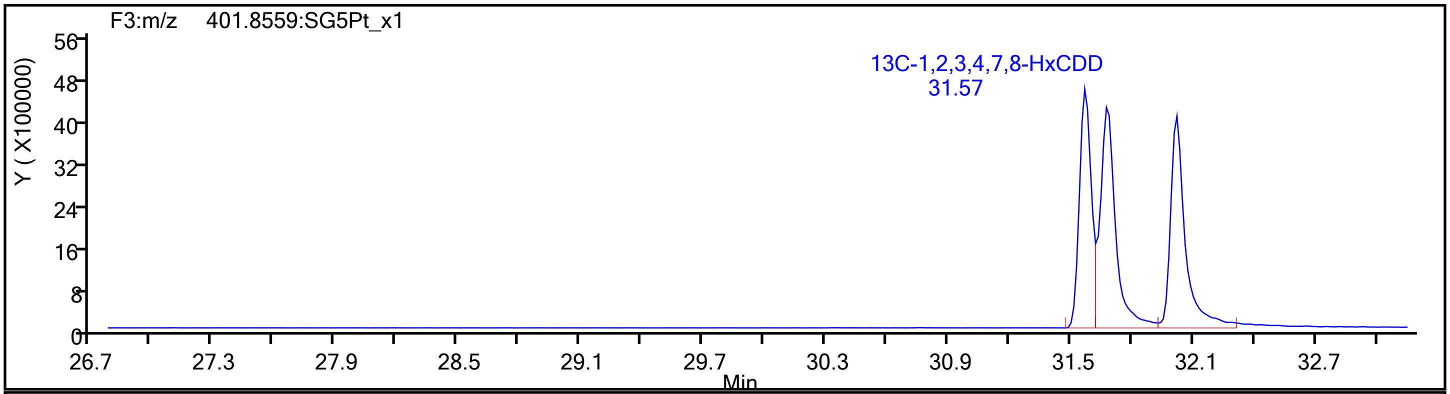

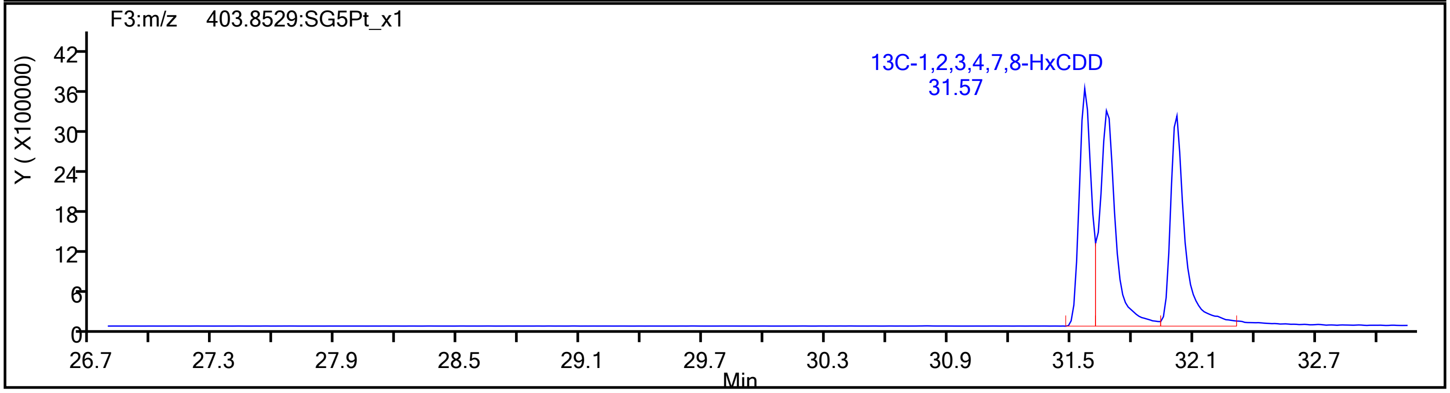

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d

Injection Date: 27-Jun-2020 16:13:16
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

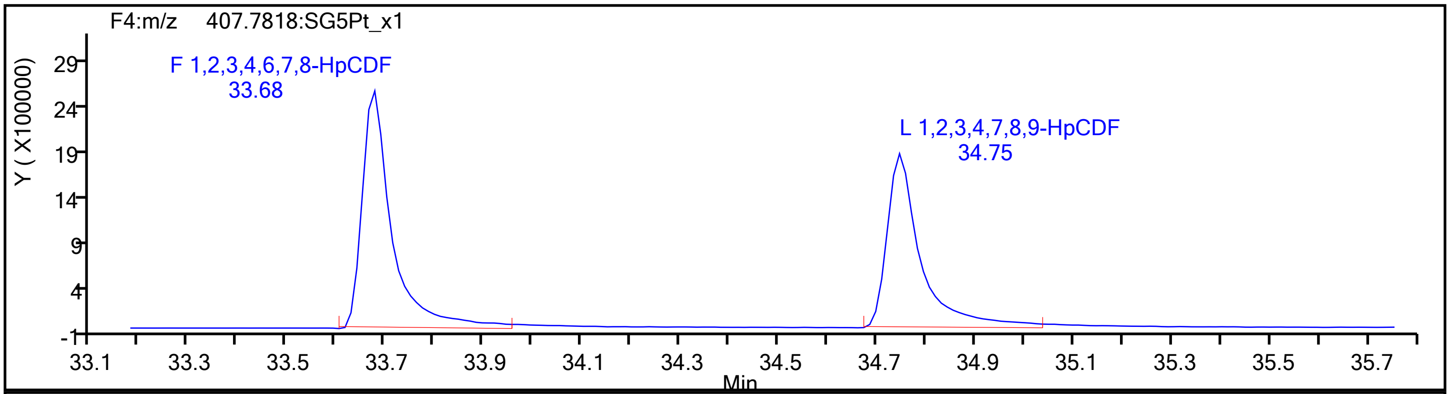

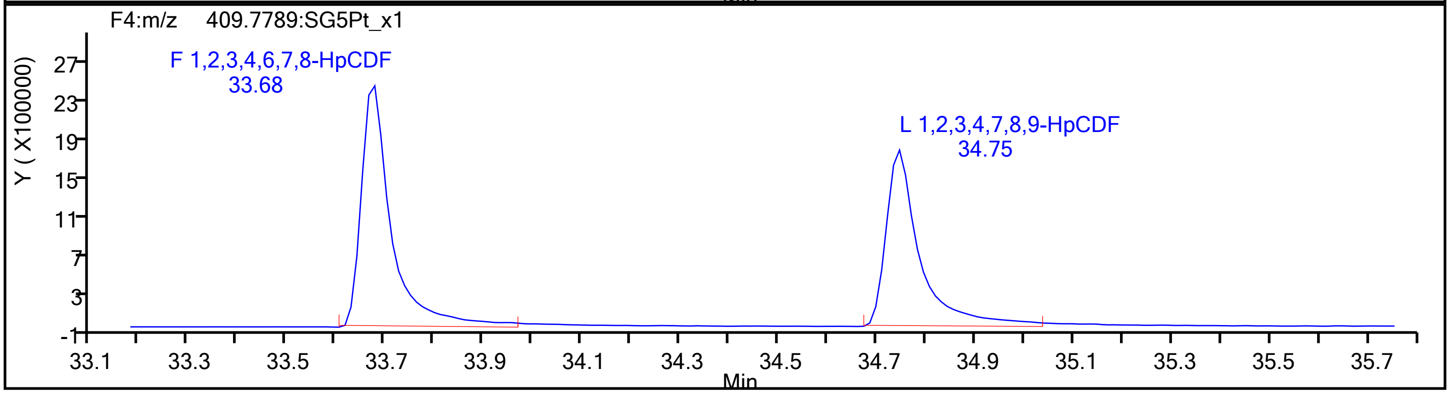

HpCDF Standards

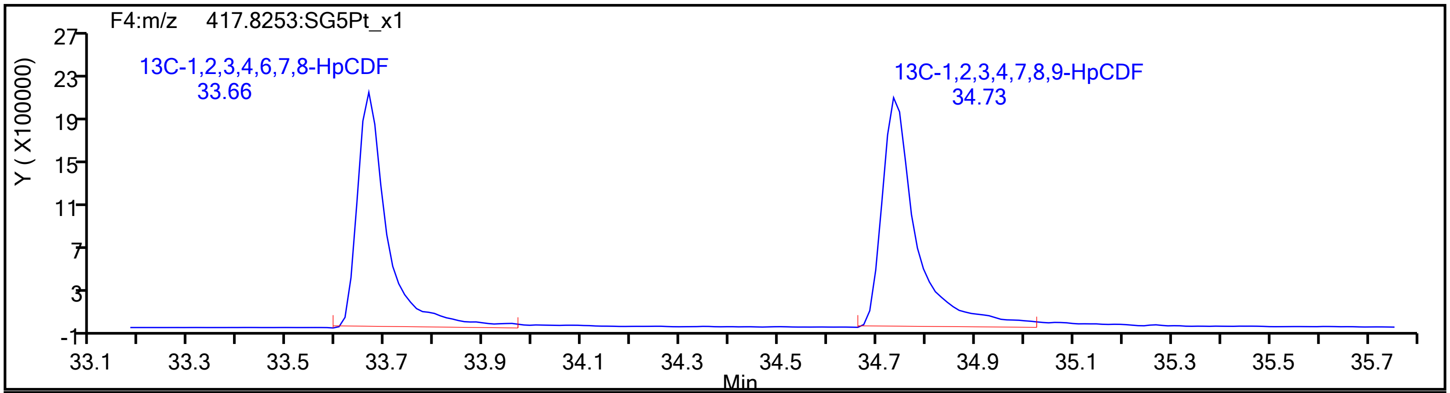

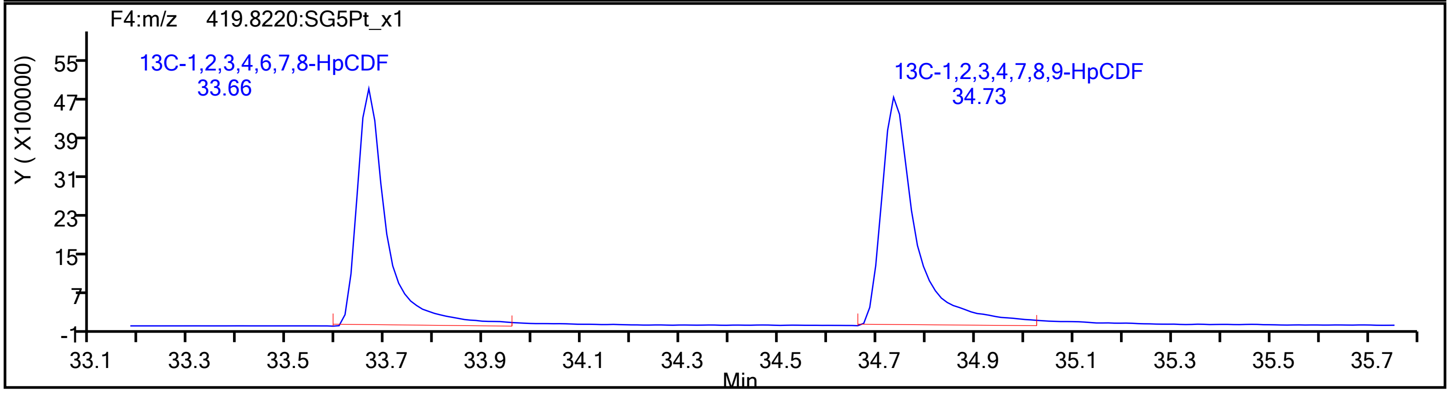

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

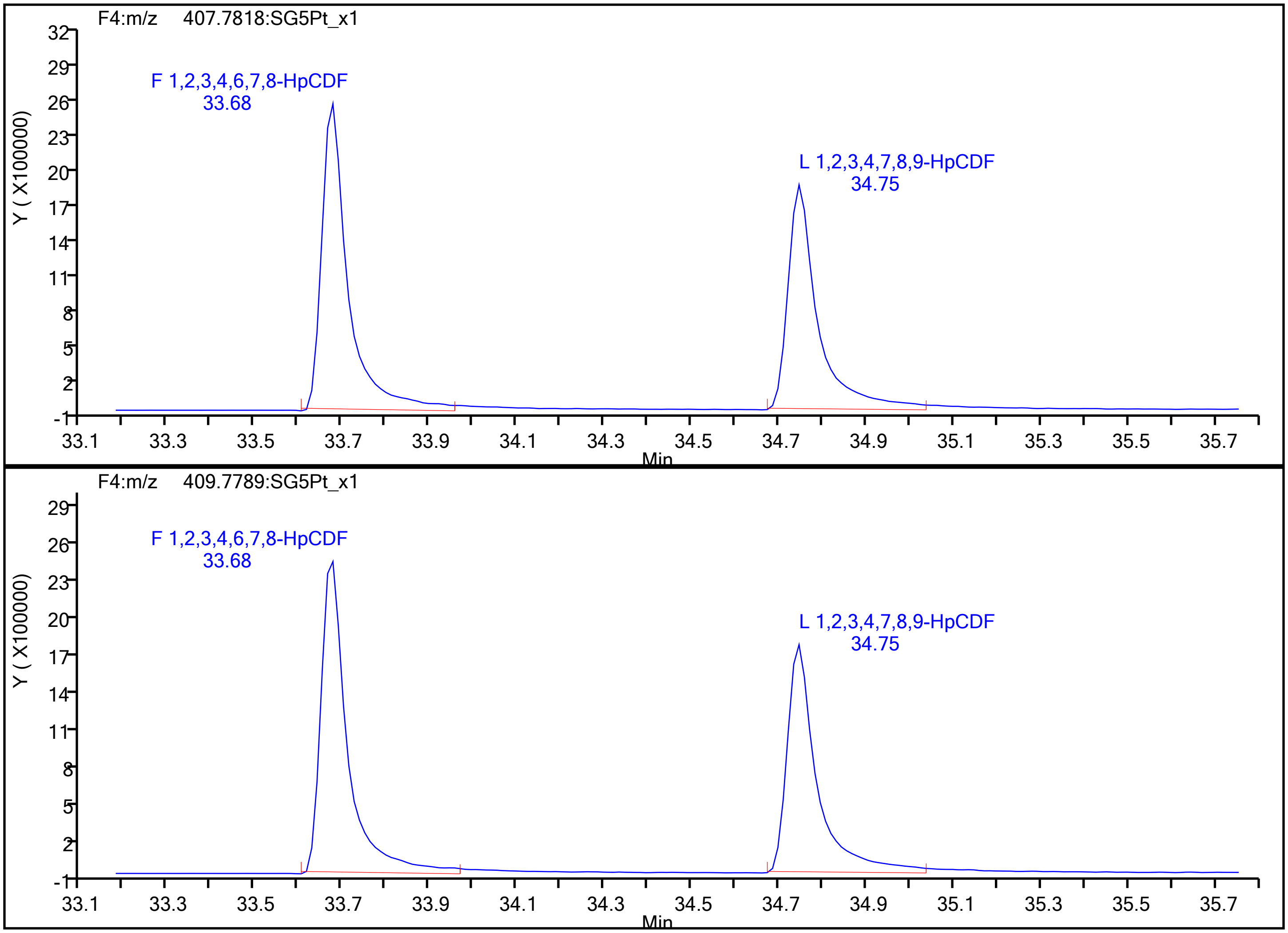

HpCDF Interference Mass

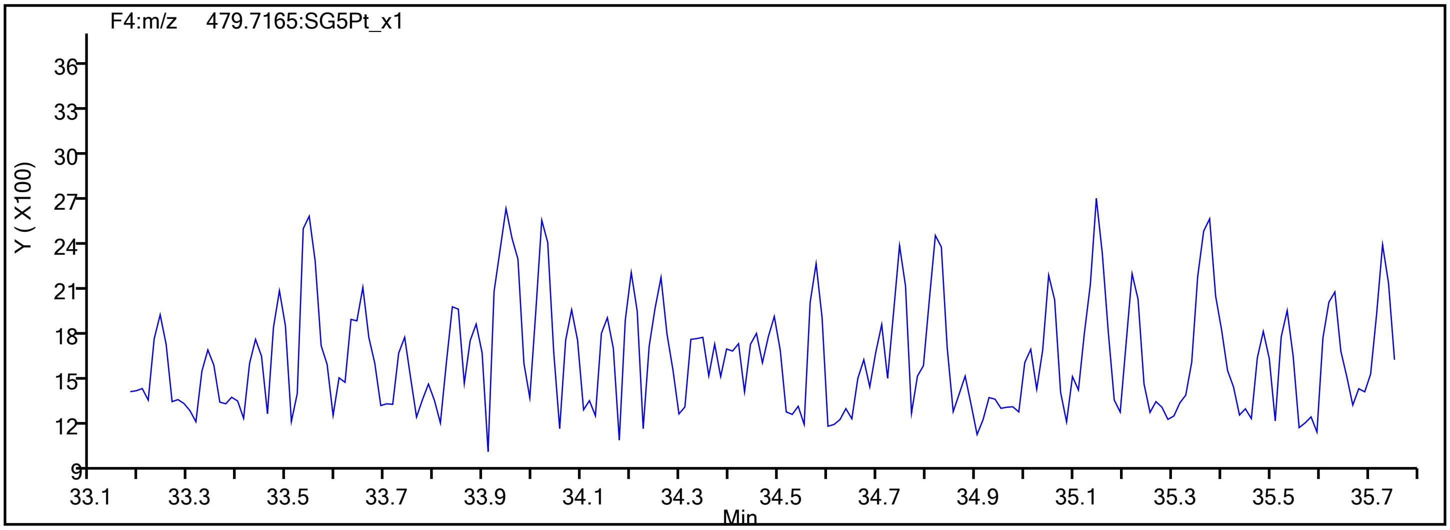

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

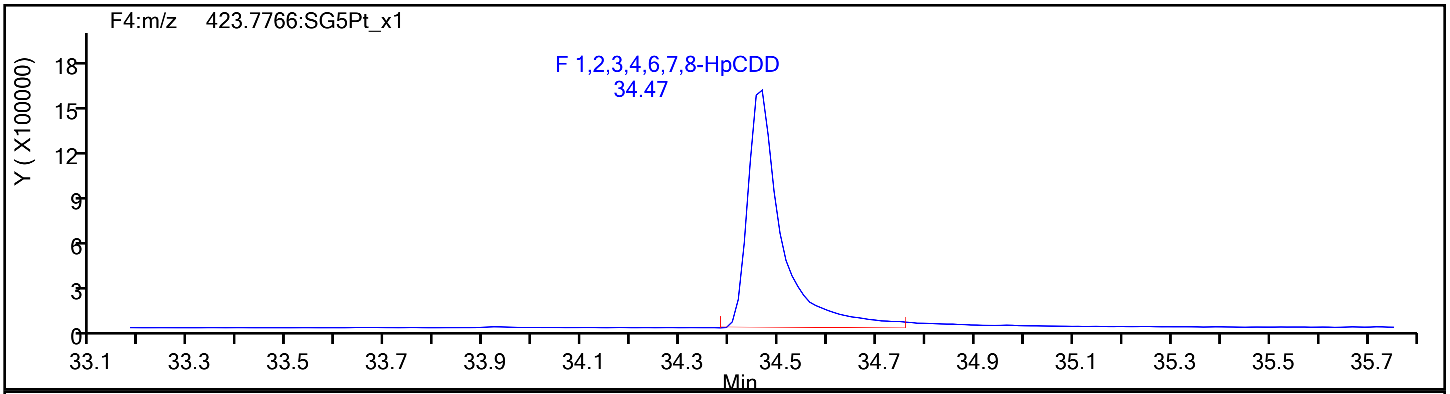

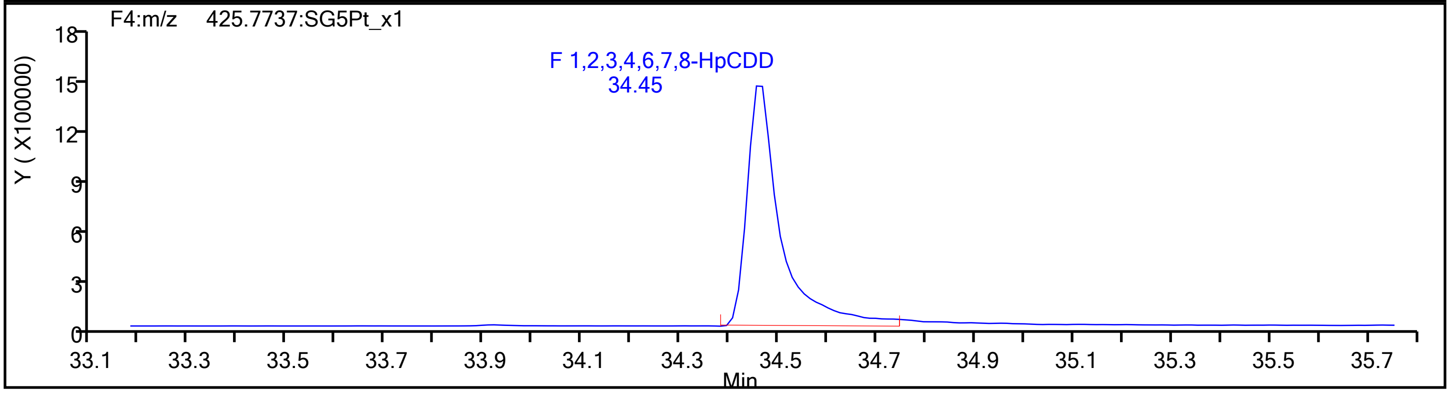

HpCDD Standards

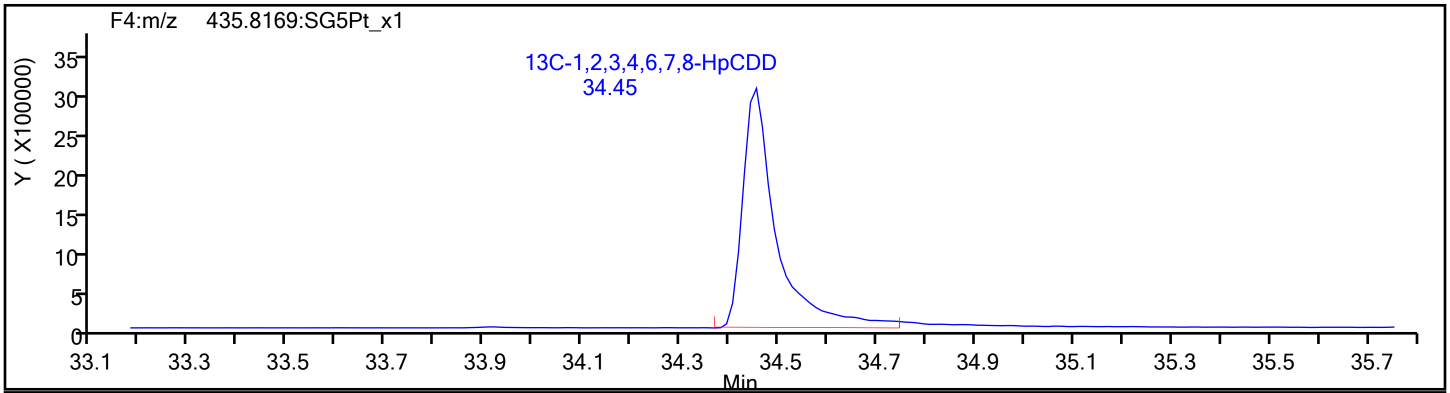

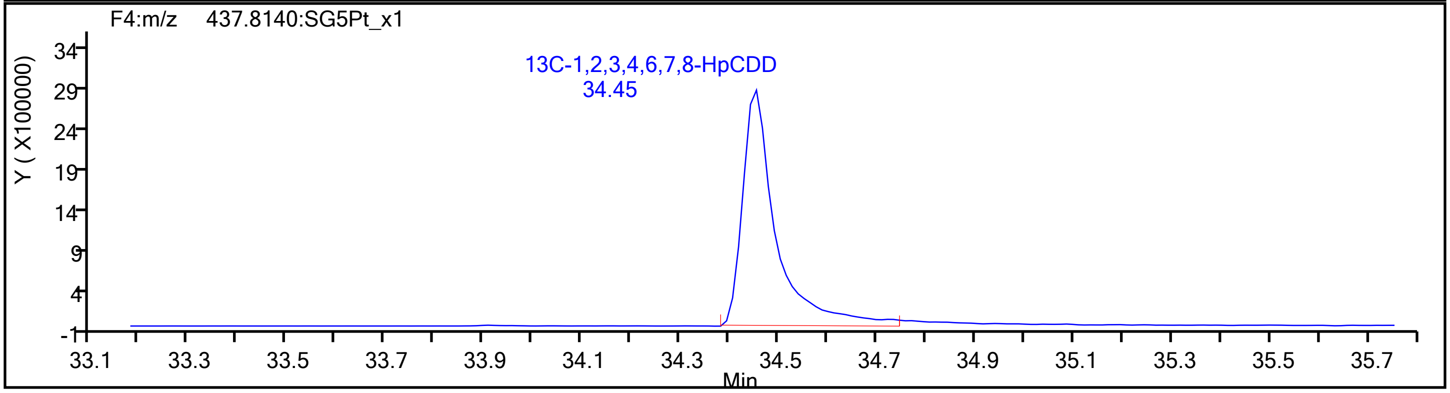

Report Date: 28-Jun-2020 13:17:08　　Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

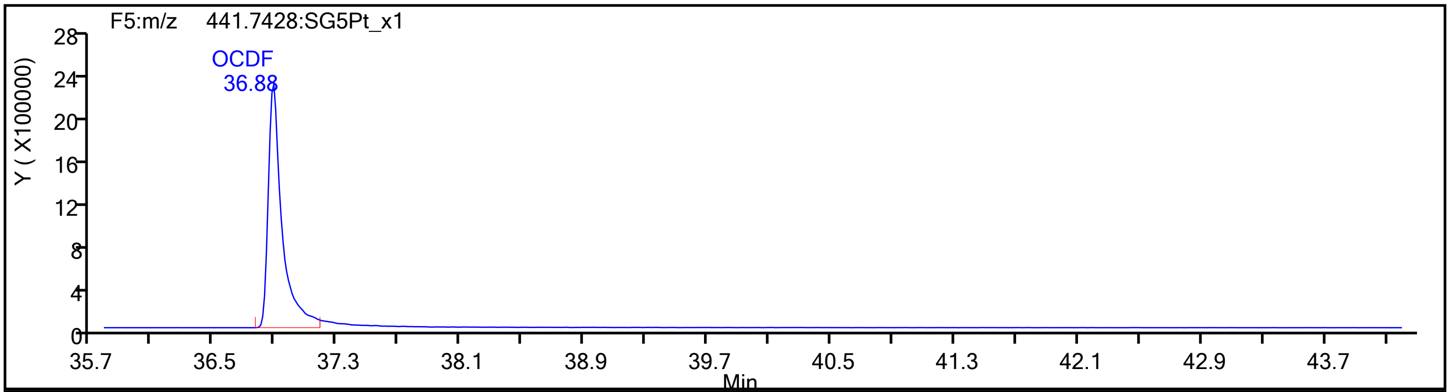

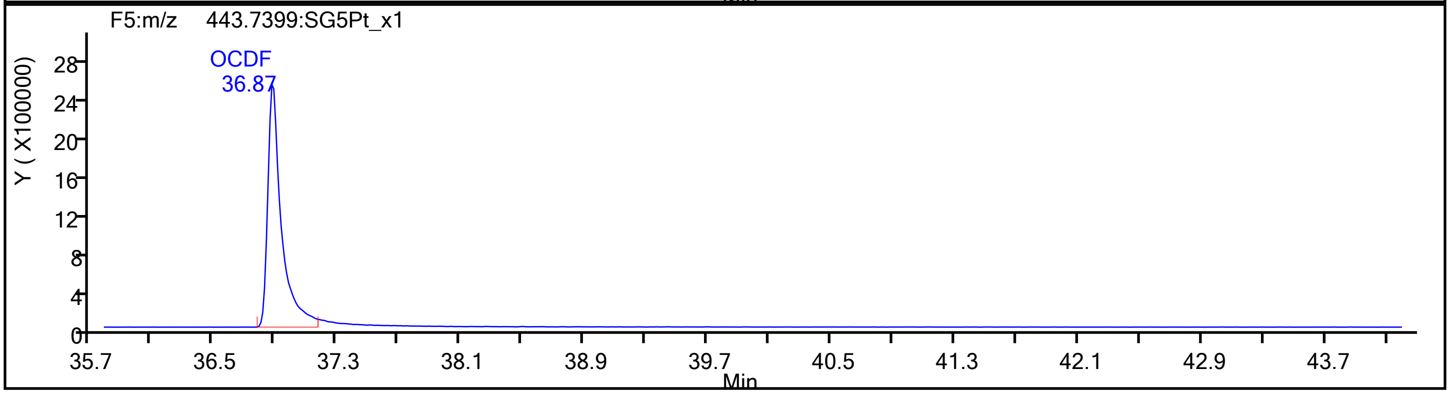

OCDF Standards

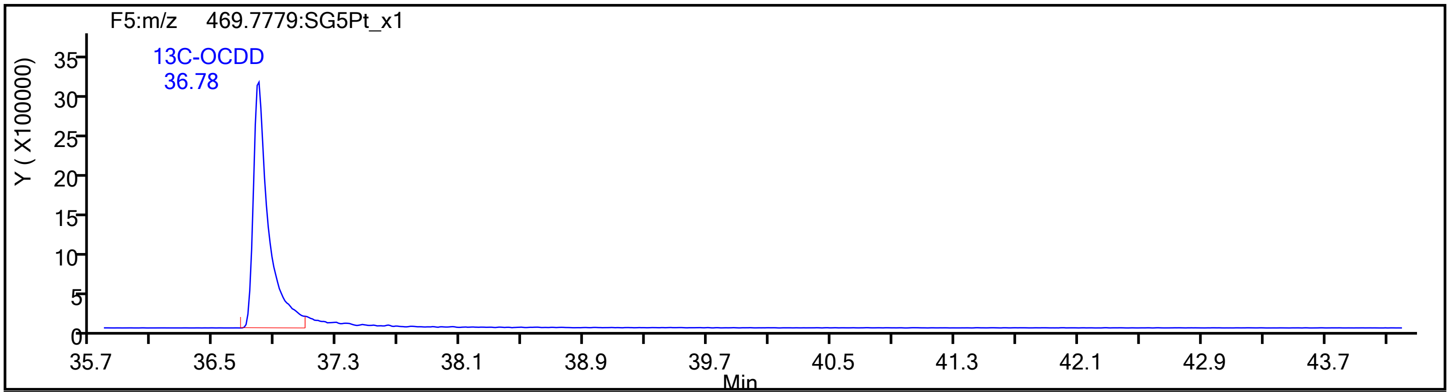

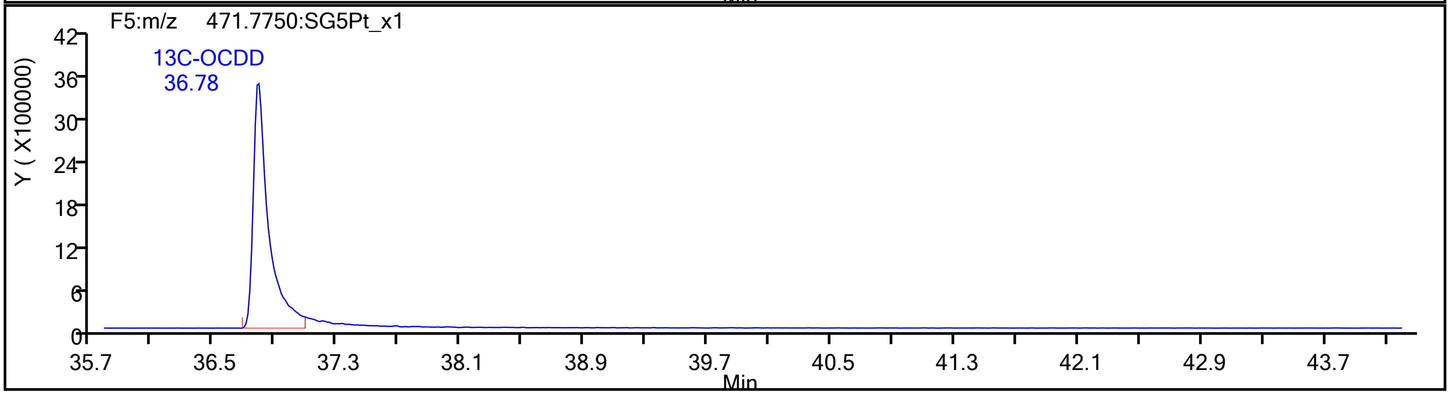

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

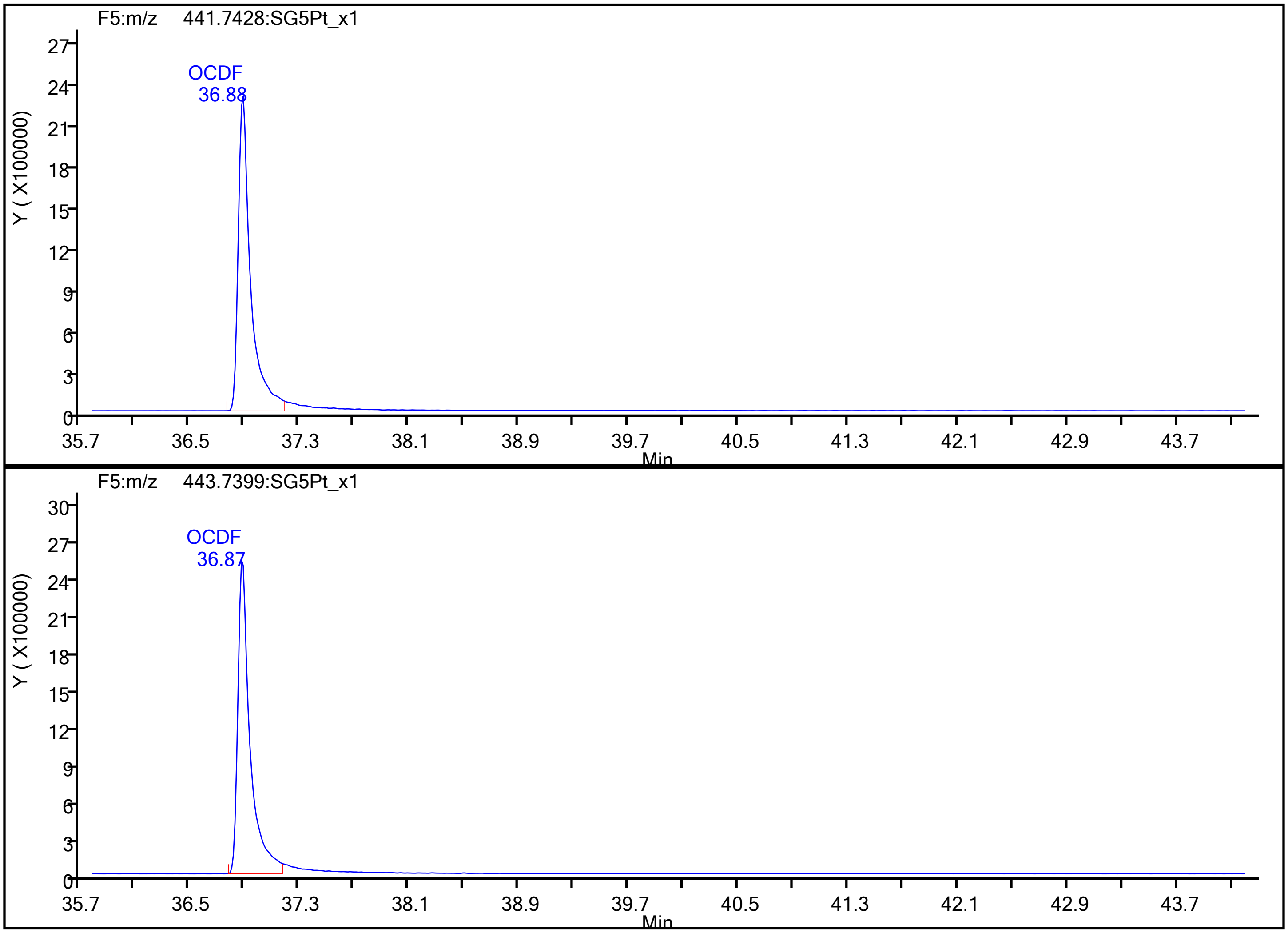

OCDF Interference Mass

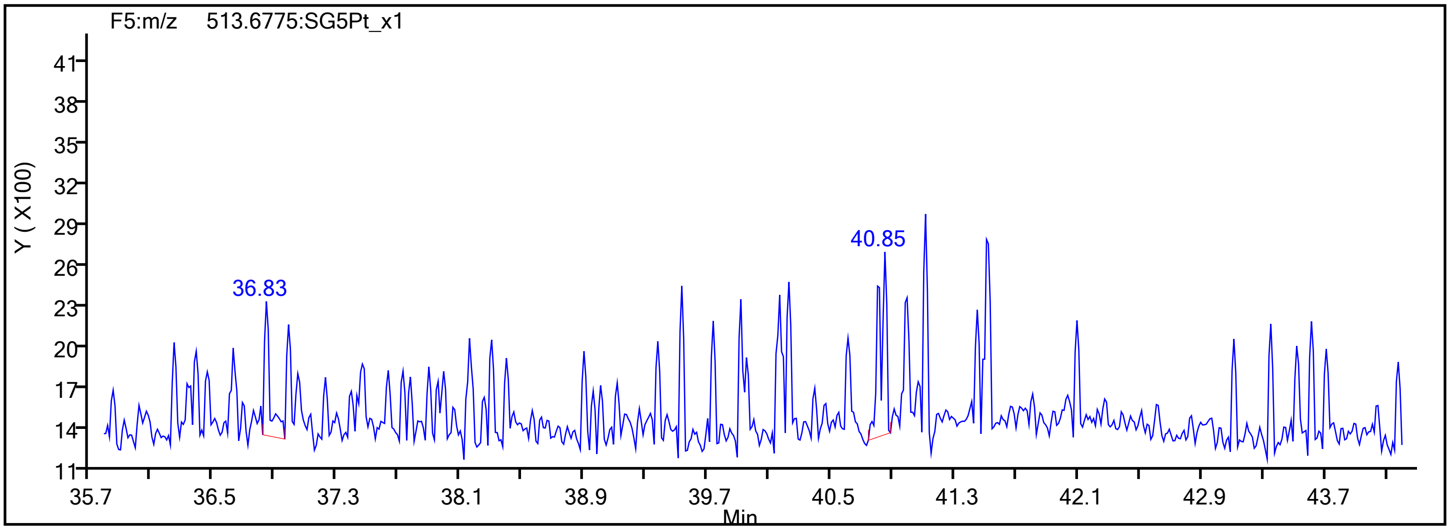

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

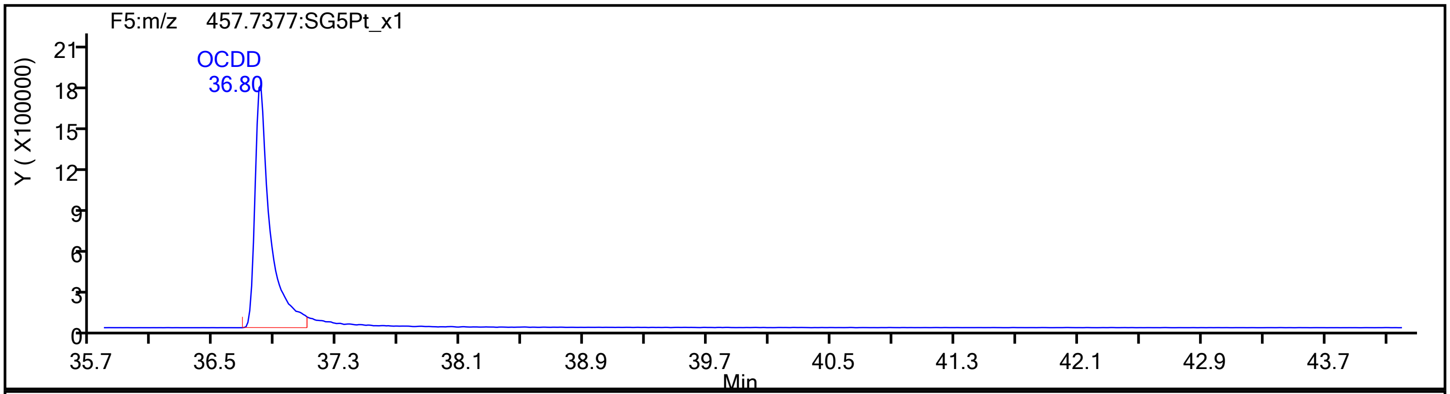

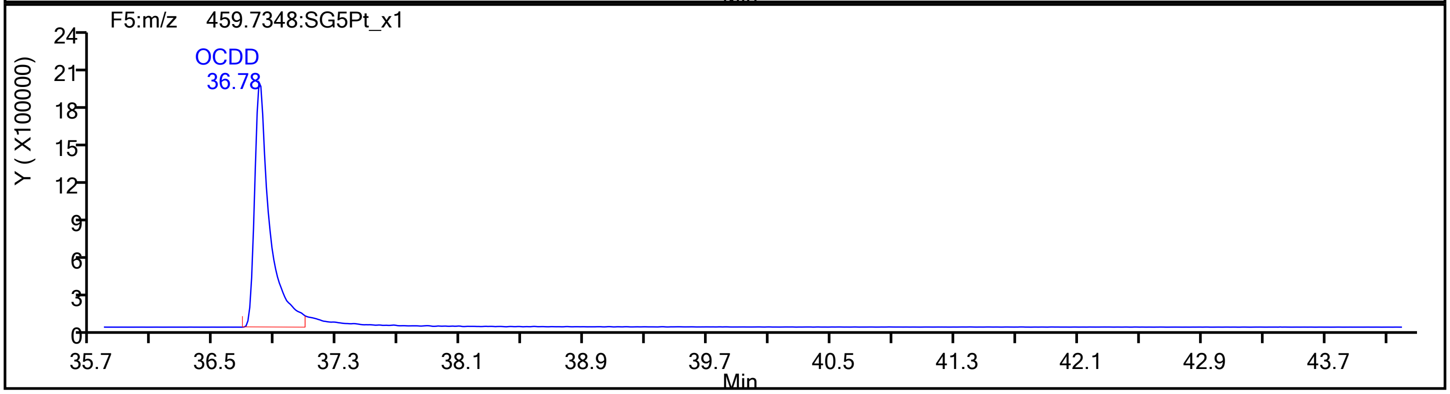

OCDD Standards

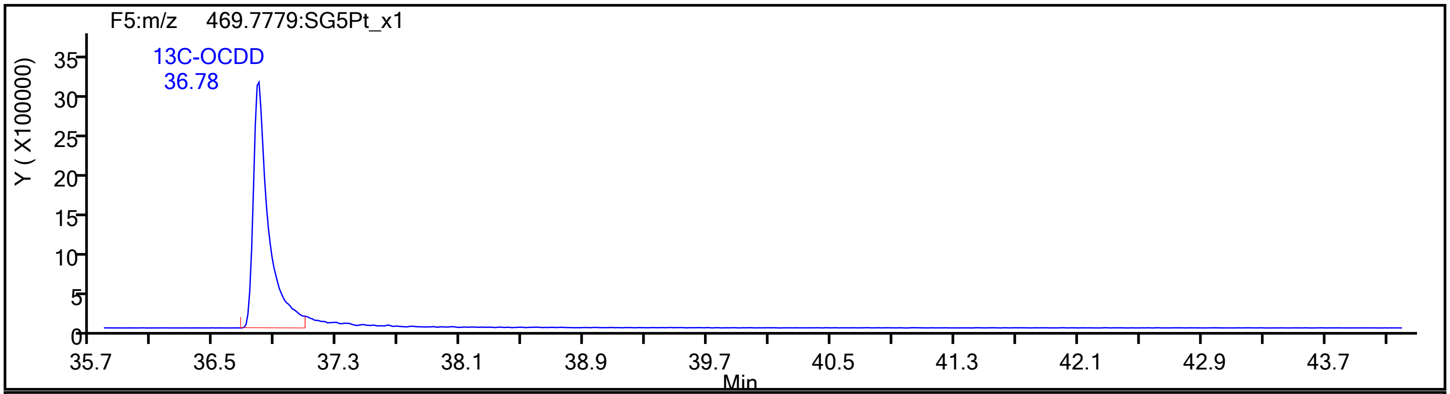

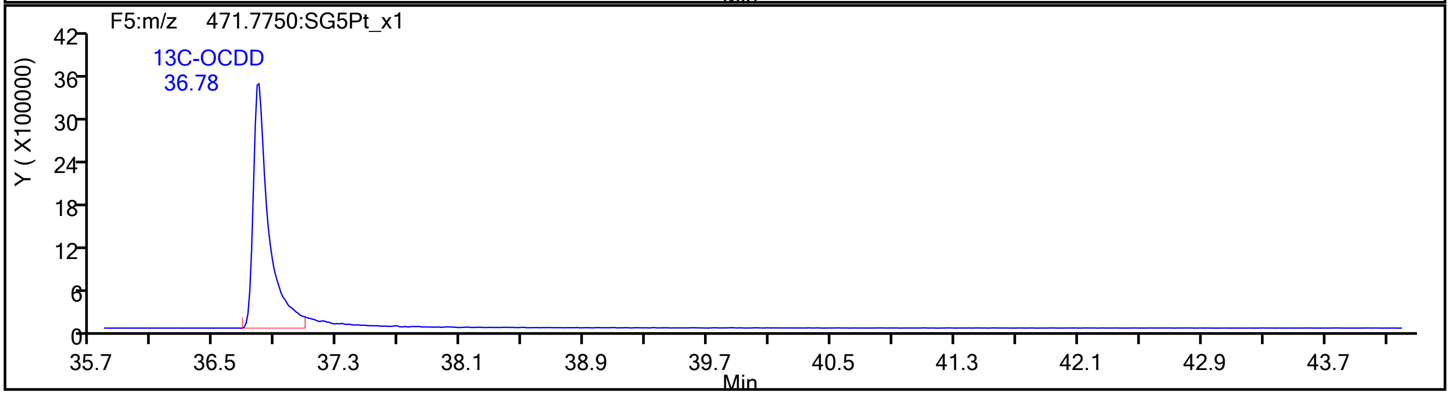

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d

Injection Date: 27-Jun-2020 16:13:16

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

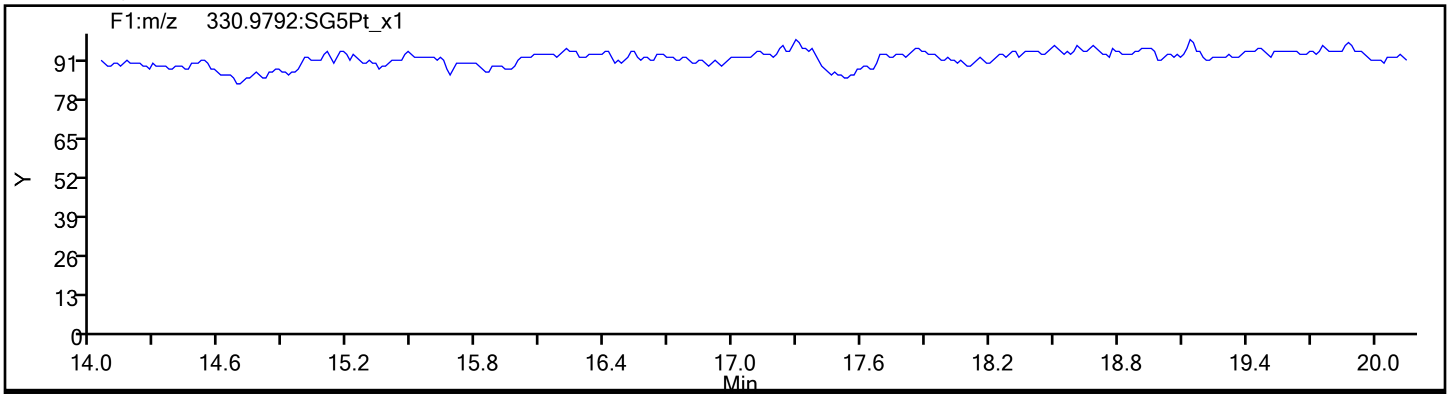

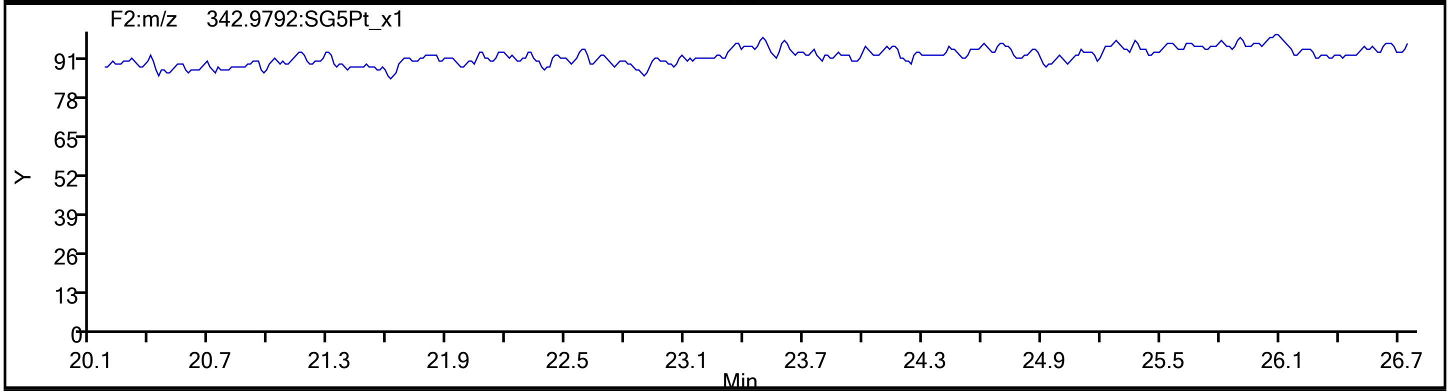

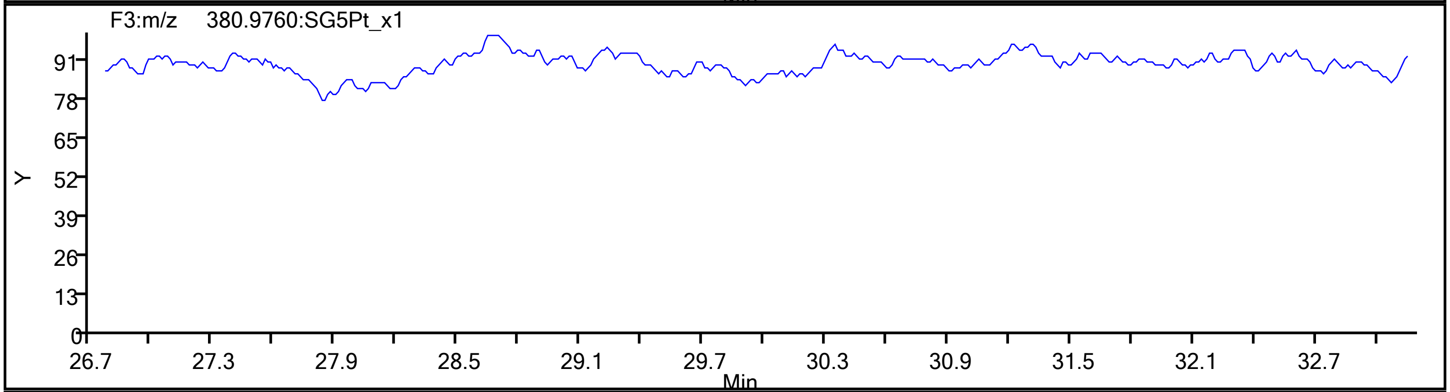

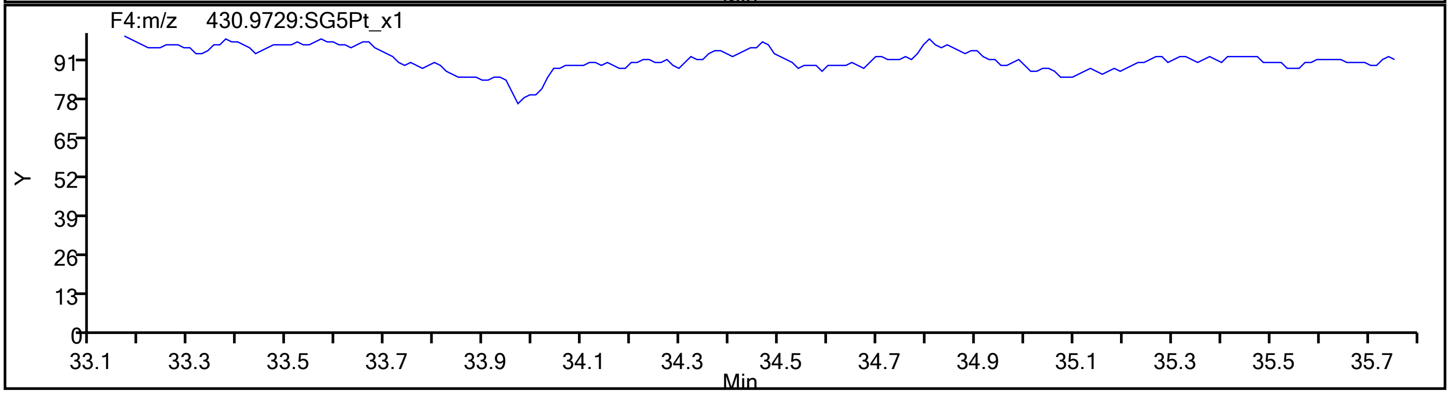

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d

Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

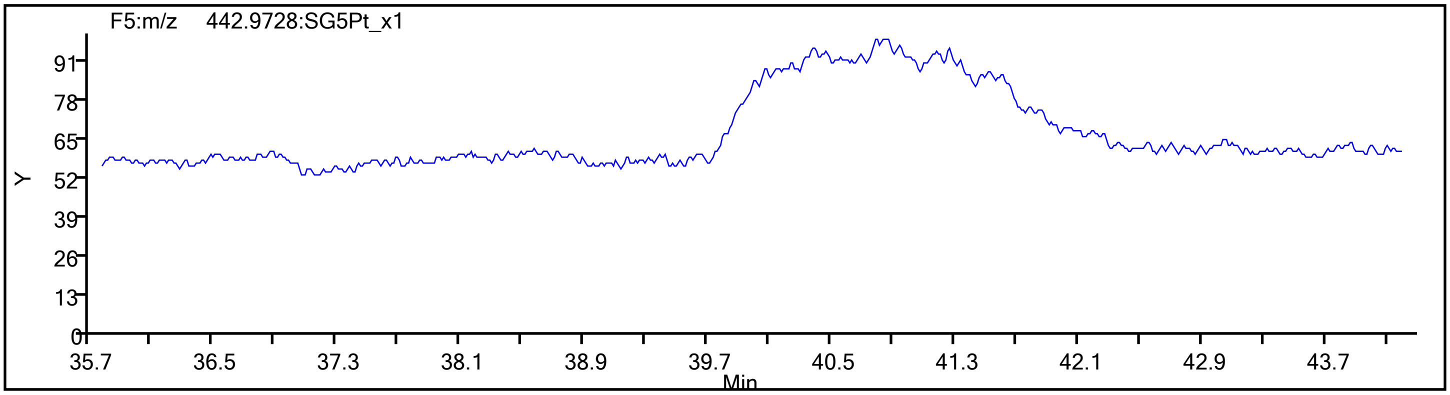

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 27-Jun-2020 16:58:26 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720C CS-5 HRDXNL5_00030
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:11 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	47091167	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	66092582	0.78	1.3726	102.3	102.3	0.2034	0.2034	102	
2,3,7,8-TCDF	17.218	24031823	0.74	0.9104	39.9	39.9	0.0737	0.0737	99.85	
S Total TCDF					39.9	39.9	0.0737	0.0737		
D 13C-2,3,7,8-TCDD	17.899	48446018	0.78	1.0192	100.9	100.9	0.2311	0.2311	101	
2,3,7,8-TCDD	17.914	20673669	0.77	1.0745	39.7	39.7	0.0685	0.0685	99.29	
$ 37Cl4-2,3,7,8-TCDD	17.914	20727504		1.0176	43.3	43.3	0.0494	0.0494	108	
S Total TCDD					39.7	39.7	0.0685	0.0685		
D 13C-1,2,3,7,8-PeCDF	22.142	55450977	1.60	1.1429	103.0	103.0	0.3740	0.3740	103	
1,2,3,7,8-PeCDF	22.170	111571715	1.55	0.9938	202.5	202.5	0.8779	0.8779	101	
D 13C-2,3,4,7,8-PeCDF	23.465	67318305	1.60	1.3997	102.1	102.1	0.3054	0.3054	102	
2,3,4,7,8-PeCDF	23.479	110300391	1.55	0.8117	201.9	201.9	0.9452	0.9452	101	
S Total PeCDF					404.3	404.3	0.9115	0.9115		
D 13C-1,2,3,7,8-PeCDD	24.174	39534333	1.57	0.8232	102.0	102.0	0.1806	0.1806	102	
1,2,3,7,8-PeCDD	24.202	81703665	1.58	1.0181	203.0	203.0	0.3084	0.3084	101	
S Total PeCDD					203.0	203.0	0.3084	0.3084		
D 13C-1,2,3,4,7,8-HxCDF	30.292	46230589	0.51	1.1388	100.4	100.4	0.7962	0.7962	100	
1,2,3,4,7,8-HxCDF	30.319	77185884	1.20	0.8061	207.1	207.1	2.257	2.257	104	
D 13C-1,2,3,6,7,8-HxCDF	30.492	43730114	0.51	1.0803	100.1	100.1	0.8393	0.8393	100	
1,2,3,6,7,8-HxCDF	30.518	87985501	1.20	0.9818	204.9	204.9	2.116	2.116	102	
D 13C-2,3,4,6,7,8-HxCDF	31.370	38999309	0.50	0.9494	101.6	101.6	0.9550	0.9550	102	
2,3,4,6,7,8-HxCDF	31.384	81444661	1.20	1.0382	201.1	201.1	1.658	1.658	101	
D 13C-1,2,3,7,8,9-HxCDF	32.195	35770919	0.50	0.8670	102.0	102.0	1.046	1.046	102	
1,2,3,7,8,9-HxCDF	32.209	74251577	1.21	1.0321	201.1	201.1	1.769	1.769	101	
S Total HxCDF					814.3	814.3	1.950	1.950		
* 13C-1,2,3,7,8,9-HxCDD	32.009	40436362	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	38766257	1.27	0.9356	102.5	102.5	0.5617	0.5617	102	
1,2,3,4,7,8-HxCDD	31.583	63965429	1.22	0.8202	201.2	201.2	1.041	1.041	101	
D 13C-1,2,3,6,7,8-HxCDD	31.677	42083843	1.27	1.0416	99.9	99.9	0.5045	0.5045	99.92	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	80138616	1.25	0.9367	203.3	203.3	0.9845	0.9845	102	
1,2,3,7,8,9-HxCDD	32.022	80351223	1.24	0.9905	200.7	200.7	0.8953	0.8953	100	
S Total HxCDD					605.1	605.1	0.9736	0.9736		
D 13C-1,2,3,4,6,7,8-HpCDF	33.652	32459322	0.44	0.7899	101.6	101.6	2.924	2.924	102	
1,2,3,4,6,7,8-HpCDF	33.664	95697028	1.03	1.4527	202.9	202.9	4.421	4.421	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.721	37143667	0.44	0.9093	101.0	101.0	2.540	2.540	101	
1,2,3,4,7,8,9-HpCDF	34.734	80293602	1.03	1.0585	204.2	204.2	6.090	6.090	102	
S Total HpCDF					407.2	407.2	5.256	5.256		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	31631816	1.07	0.7637	102.4	102.4	1.068	1.068	102	
1,2,3,4,6,7,8-HpCDD	34.454	67048589	1.05	1.0540	201.1	201.1	1.882	1.882	101	
S Total HpCDD					201.1	201.1	1.882	1.882		
D 13C-OCDD	36.773	53743483	0.91	0.6377	208.4	208.4	0.4319	0.4319	104	
OCDF	36.869	143689837	0.89	1.2965	412.4	412.4	0.7723	0.7723	103	
OCDD	36.785	124592297	0.89	1.1499	403.2	403.2	0.9180	0.9180	101	

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 27-Jun-2020 16:58:26 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720C CS-5 HRDXNL5_00030
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:11 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:33

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		20744114	5030304	5431	13577	926		
333.9339	17.702	17.702	0		26347053	6346743	5290	13225	1200	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.197	0	0.972	28997050	6604308	5848	14620	1129		
317.9389	17.203	17.197	0	0.972	37095532	8404092	6858	17145	1225	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.218	17.215	0	1.001	10233422	2325778	1577	3942	1475		
305.8987	17.218	17.215	0	1.001	13798401	3114518	2452	6130	1270	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.893	0	1.011	21290226	4514811	5431	13577	831		
333.9339	17.899	17.893	0	1.011	27155792	5764821	5290	13225	1090	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.001	9004735	1990219	1540	3850	1292		
321.8936	17.914	17.911	0	1.001	11668934	2586156	1486	3715	1740	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	20727504	4526738	2289	5722	1978		
13C-1,2,3,7,8-PeCDF											
351.9000	22.142	22.148	0	1.251	34101952	5568566	11676	29190	477		
353.8970	22.142	22.148	0	1.251	21349025	3536770	7775	19437	455	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.164	0	1.001	67870240	10977307	18889	47222	581		
341.8567	22.170	22.164	0	1.001	43701475	7080026	12886	32215	549	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.465	23.460	0	1.326	41421444	6395001	11676	29190	548		
353.8970	23.451	23.460	0	1.325	25896861	3959331	7775	19437	509	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.479	23.487	0	1.001	66994283	10114093	18889	47222	535		
341.8567	23.493	23.487	0	1.001	43306108	6551142	12886	32215	508	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.174	24.180	0	1.366	24127675	3502452	3897	9742	899		
369.8919	24.174	24.180	0	1.366	15406658	2212743	2867	7167	772	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	50045436	7220038	4277	10692	1688		
357.8516	24.202	24.204	0	1.001	31658229	4577726	2900	7250	1579	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.292	30.298	0	0.946	15561006	2492673	10006	25015	249		
385.8610	30.292	30.298	0	0.946	30669583	4958650	19430	48575	255	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.319	30.319	0	1.001	42097722	6728295	29717	74292	226		
375.8178	30.319	30.319	0	1.001	35088162	5562996	24501	61252	227	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.492	30.497	0	0.953	14754136	2189365	10006	25015	219		
385.8610	30.492	30.497	0	0.953	28975978	4334204	19430	48575	223	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.518	30.519	0	1.001	47992478	7313210	29717	74292	246		
375.8178	30.518	30.519	0	1.001	39993023	6069882	24501	61252	248	1.20(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.370	31.370	0	0.980	12959157	2586887	10006	25015	259		
385.8610	31.370	31.370	0	0.980	26040152	5287733	19430	48575	272	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	44371063	9110423	29717	74292	307		
375.8178	31.384	31.384	0	1.000	37073598	7633338	24501	61252	312	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.195	32.201	0	1.006	11860781	2490082	10006	25015	249		
385.8610	32.195	32.201	0	1.006	23910138	4934913	19430	48575	254	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.209	32.214	0	1.000	40688418	8483661	29717	74292	285		
375.8178	32.209	32.214	0	1.000	33563159	7129851	24501	61252	291	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.009	32.015	0		22604268	4479291	9683	24207	463		
403.8529	32.009	32.015	0		17832094	3637016	7378	18445	493	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	21667317	5107064	9683	24207	527		
403.8529	31.570	31.570	0	0.986	17098940	4059677	7378	18445	550	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	35170994	8417198	18100	45250	465		
391.8127	31.583	31.583	0	1.000	28794435	6746086	13213	33032	511	1.22(1.05-1.43)	

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.990	23533948	4714323	9683	24207	487		
403.8529	31.677	31.677	0	0.990	18549895	3774597	7378	18445	512	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	44510729	9170037	18100	45250	507		
391.8127	31.690	31.693	0	1.000	35627887	7411916	13213	33032	561	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.022	32.028	0	1.014	44490231	9030618	18100	45250	499		
391.8127	32.022	32.028	0	1.014	35860992	7332793	13213	33032	555	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.652	33.657	0	1.051	9868521	2345962	22556	56390	104		
419.8220	33.652	33.657	0	1.051	22590801	5425904	52421	131052	104	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.664	33.667	0	1.000	48618981	11859818	100431	251077	118		
409.7789	33.664	33.667	0	1.000	47078047	11505537	99223	248057	116	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.721	34.731	-1	1.085	11304509	2375469	22556	56390	105		
419.8220	34.721	34.731	-1	1.085	25839158	5367040	52421	131052	102	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.734	34.739	0	1.000	40787420	8523593	100431	251077	85		
409.7789	34.734	34.739	0	1.000	39506182	8251813	99223	248057	83	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	16332026	3557440	12841	32102	277		
437.8140	34.442	34.444	0	1.076	15299790	3316206	13650	34125	243	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	34340240	7503008	27699	69247	271		
425.7737	34.454	34.457	0	1.000	32708349	7082283	26833	67082	264	1.05(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.149	25591254	3908654	4132	10330	946		
471.7750	36.773	36.775	0	1.149	28152229	4254272	4811	12027	884	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	67792500	11313219	7739	19347	1462		
443.7399	36.869	36.871	0	1.003	75897337	12584603	8607	21517	1462	0.89(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	58628225	8872230	7848	19620	1131		
459.7348	36.785	36.787	0	1.000	65964072	9828799	9385	23462	1047	0.89(0.76-1.02)	

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

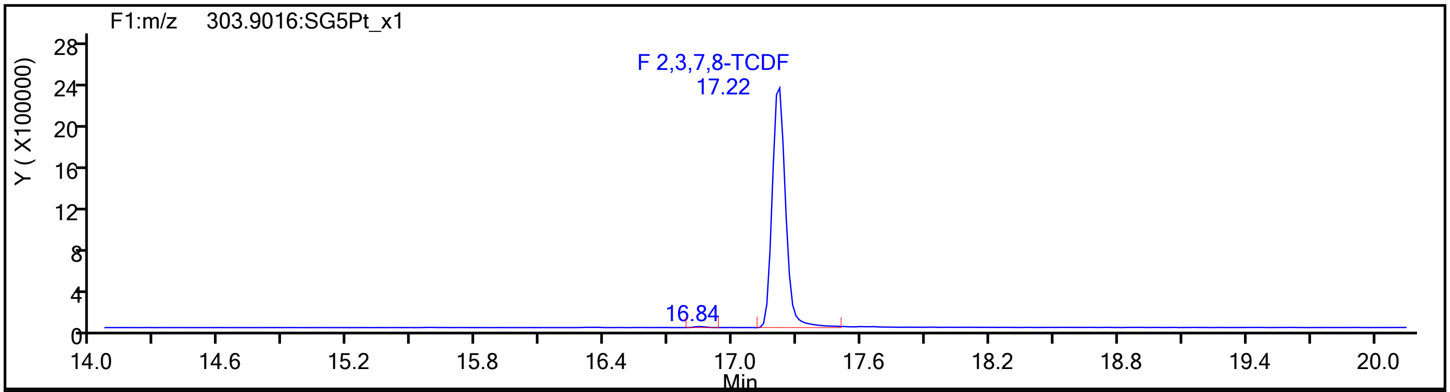

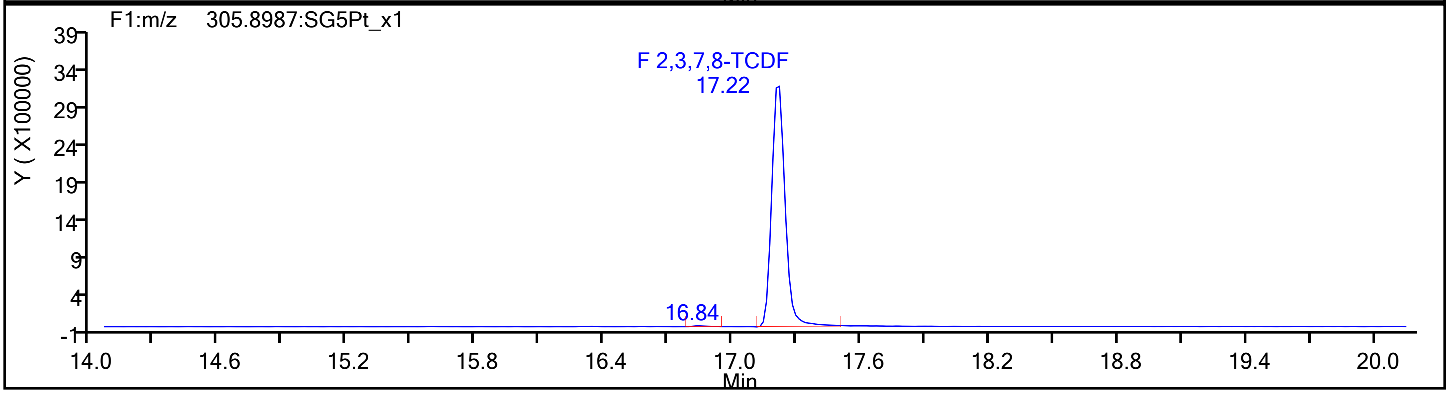

TCDF Standards

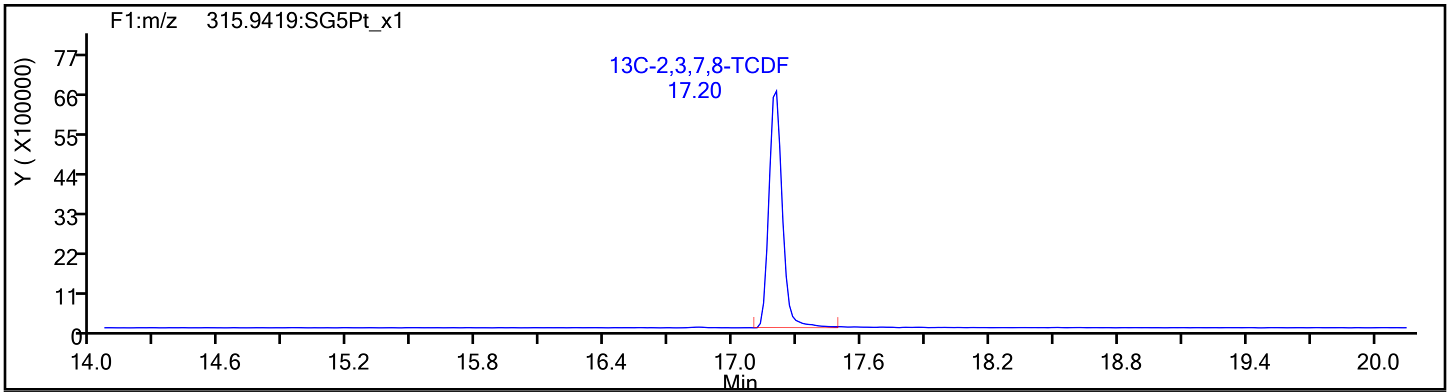

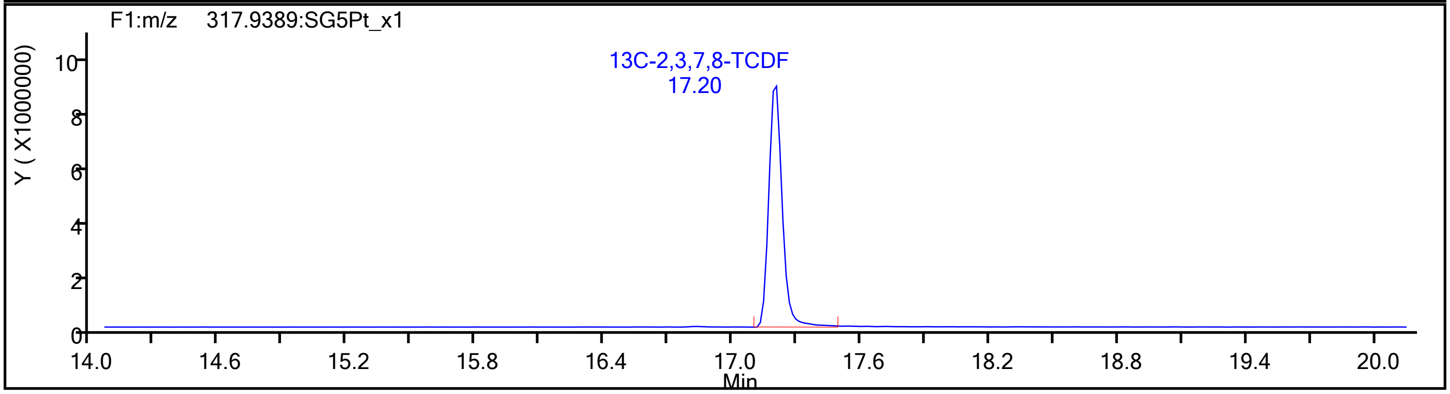

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

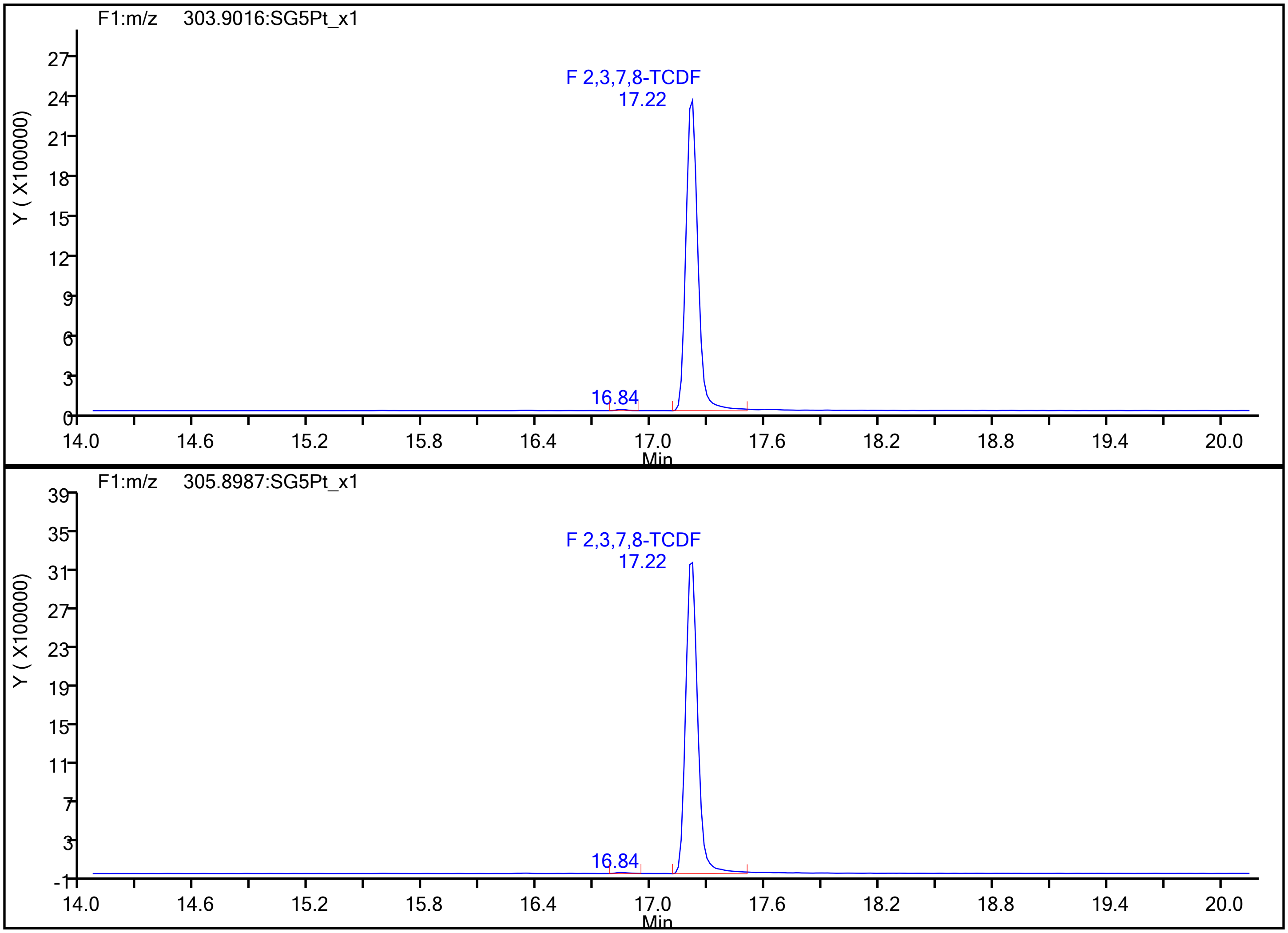

TCDF Interference Mass

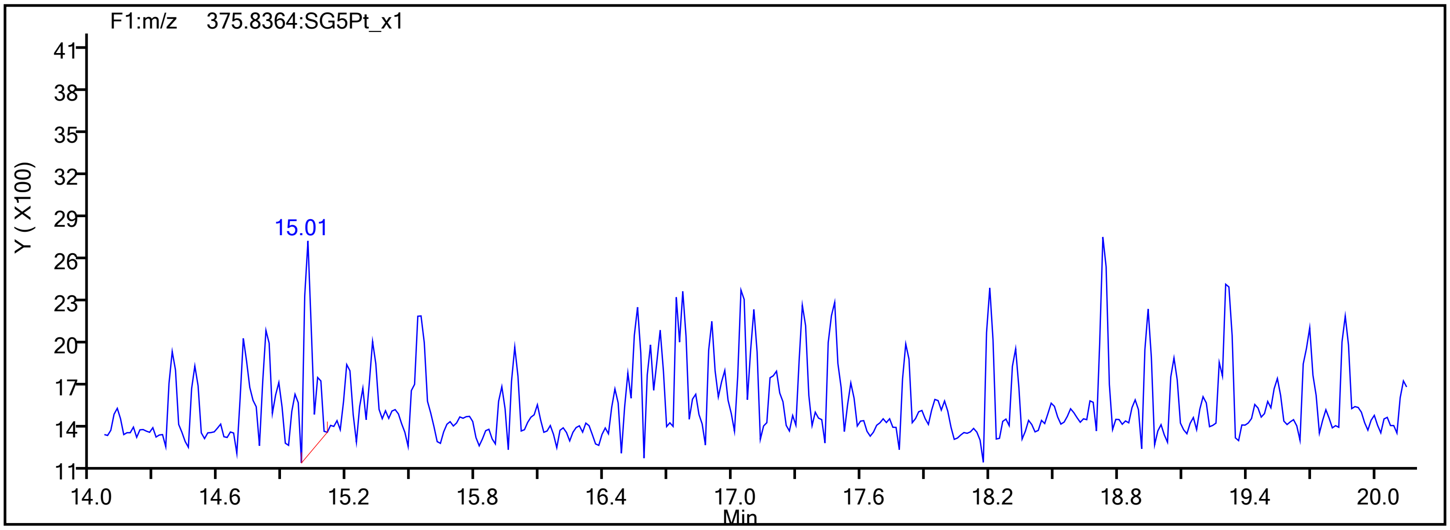

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

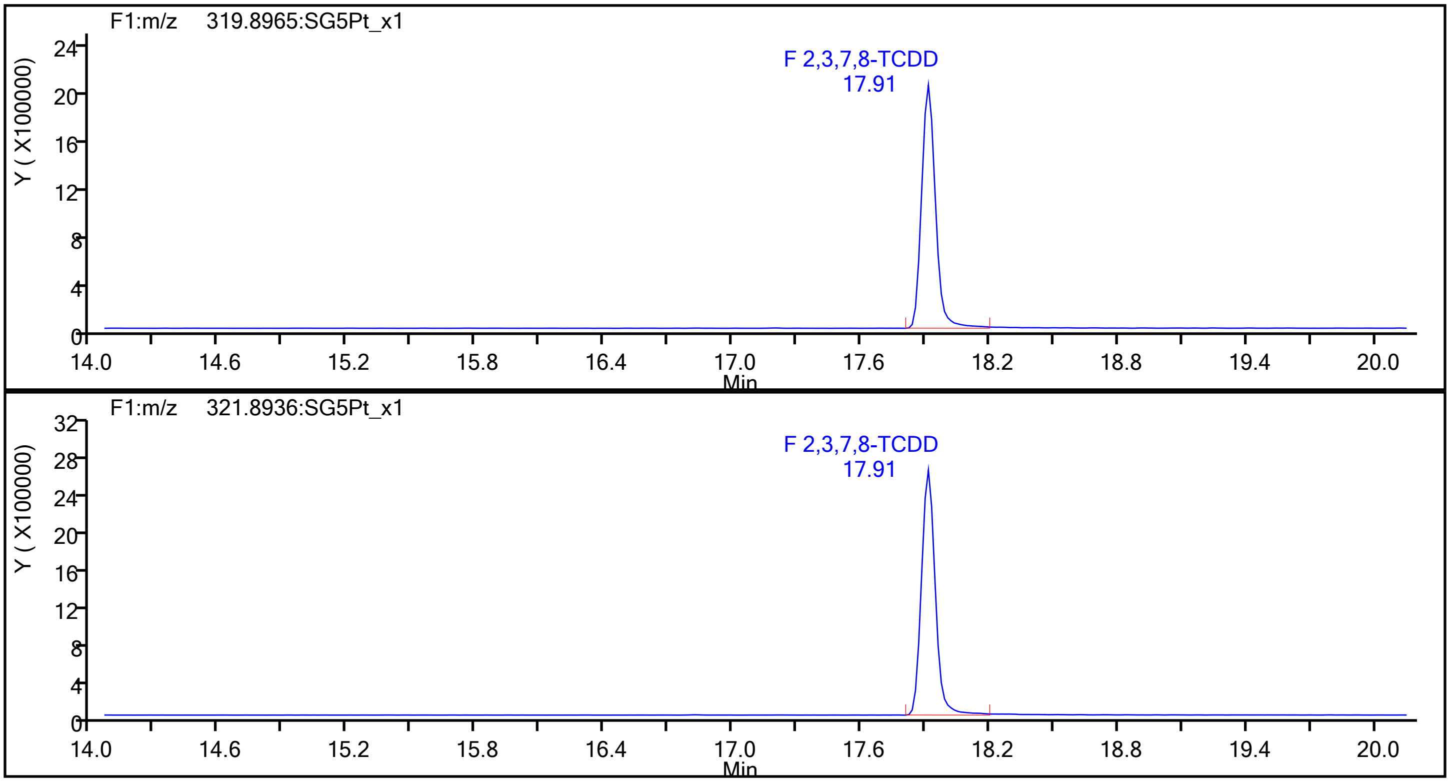

TCDD Standards

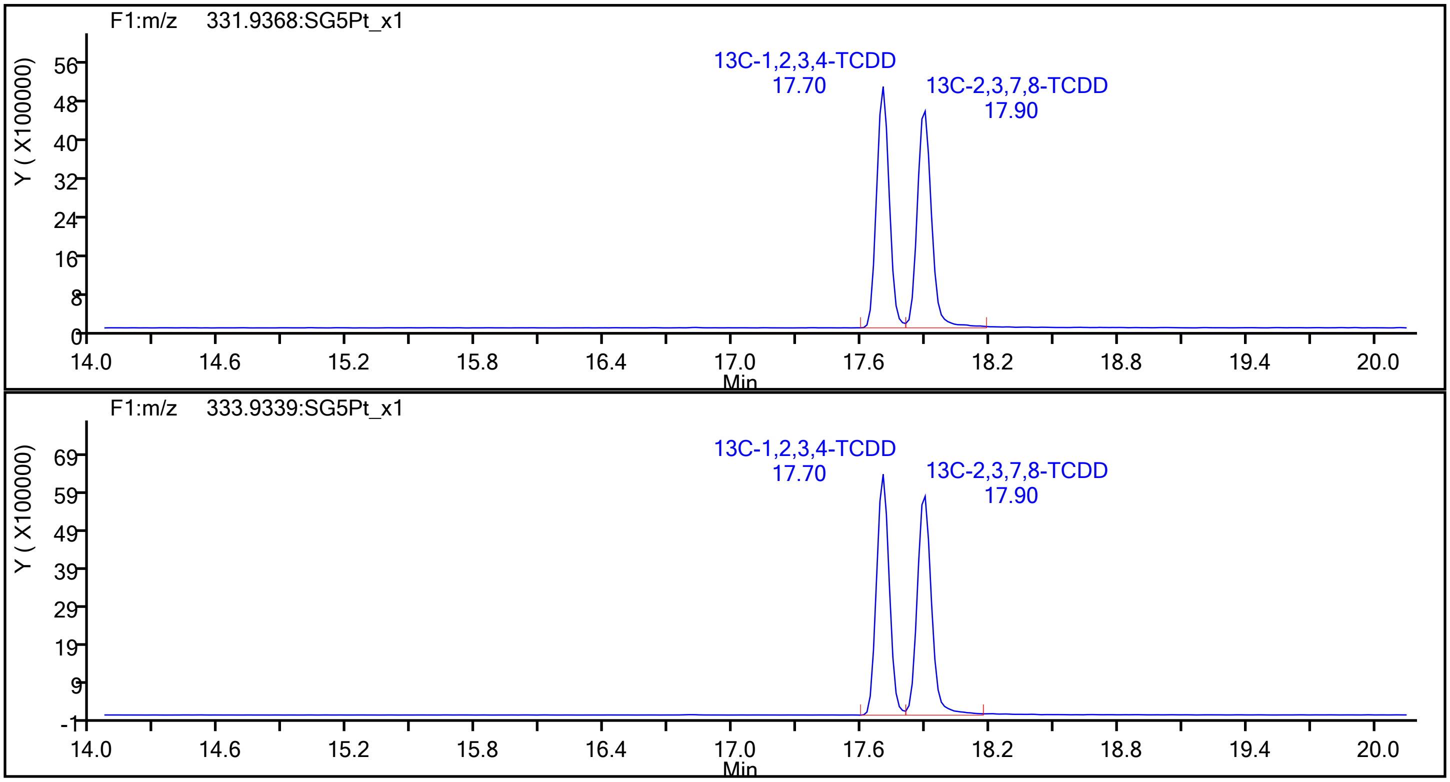

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

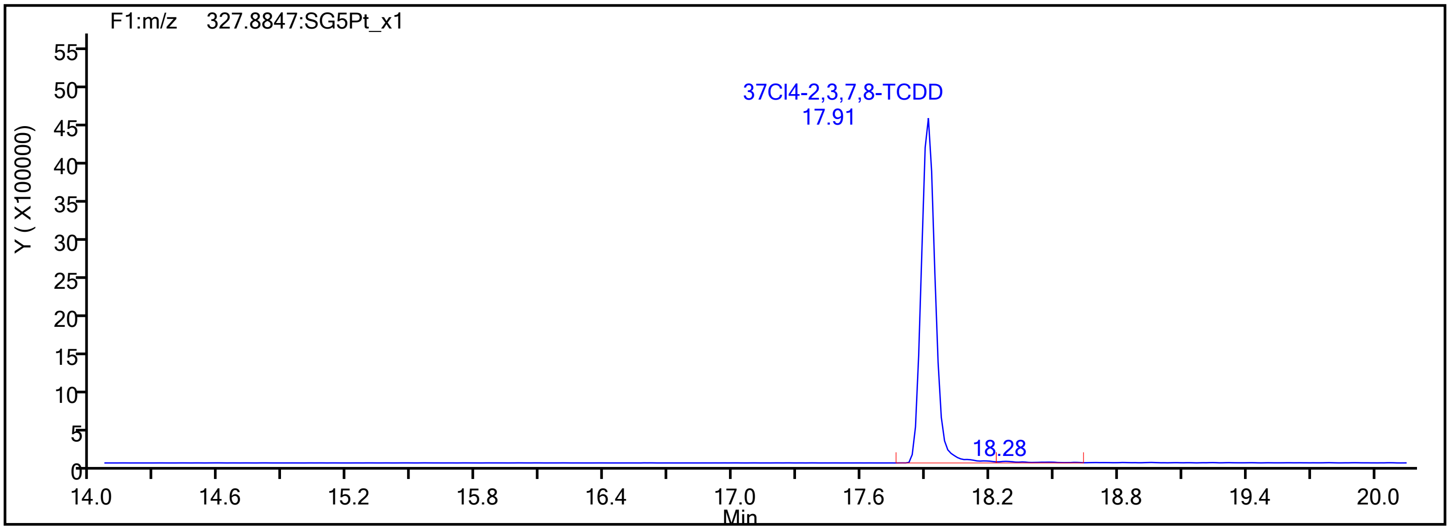

37Cl4-TCDD Standards

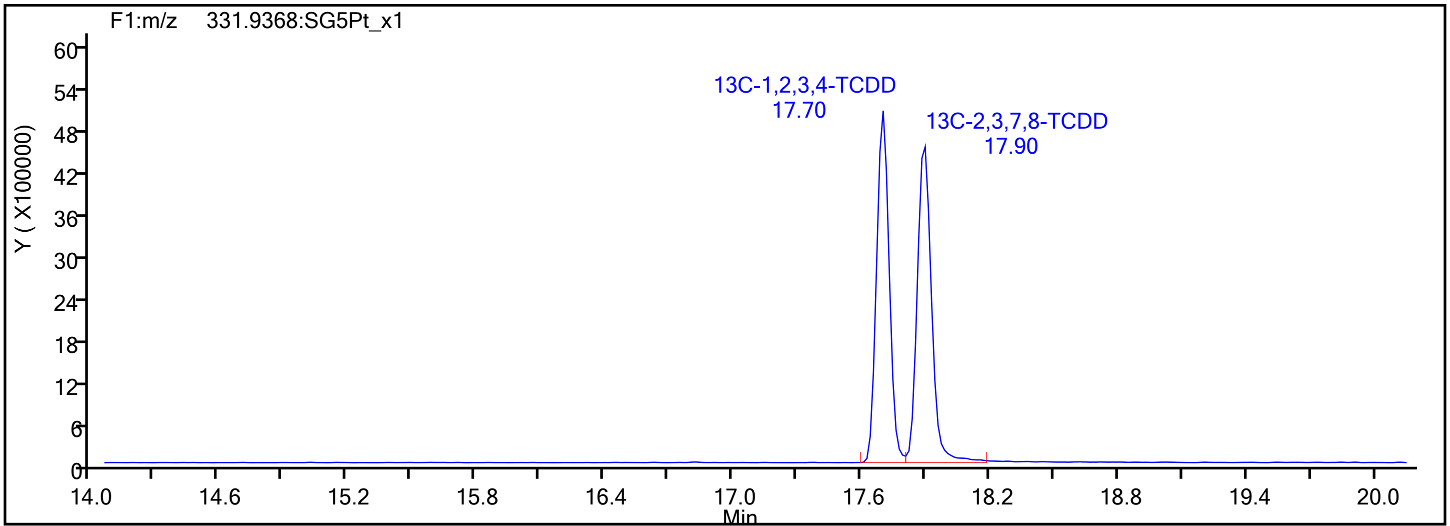

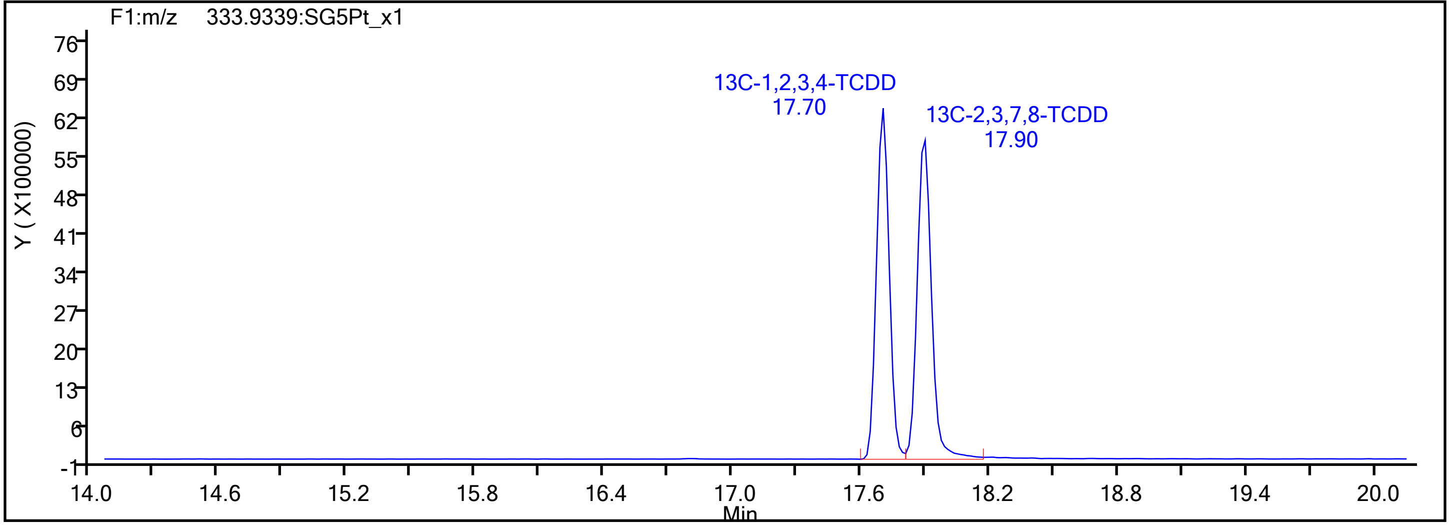

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

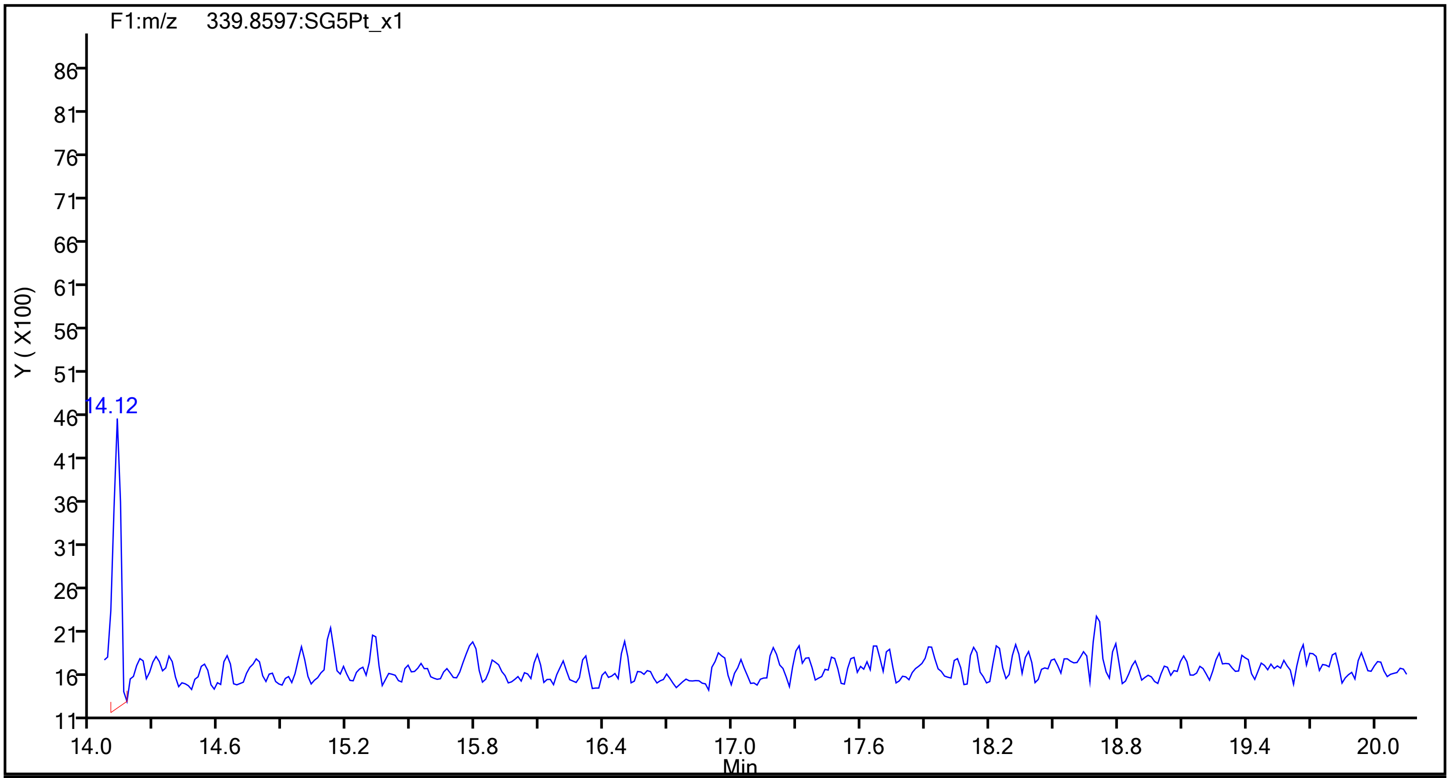

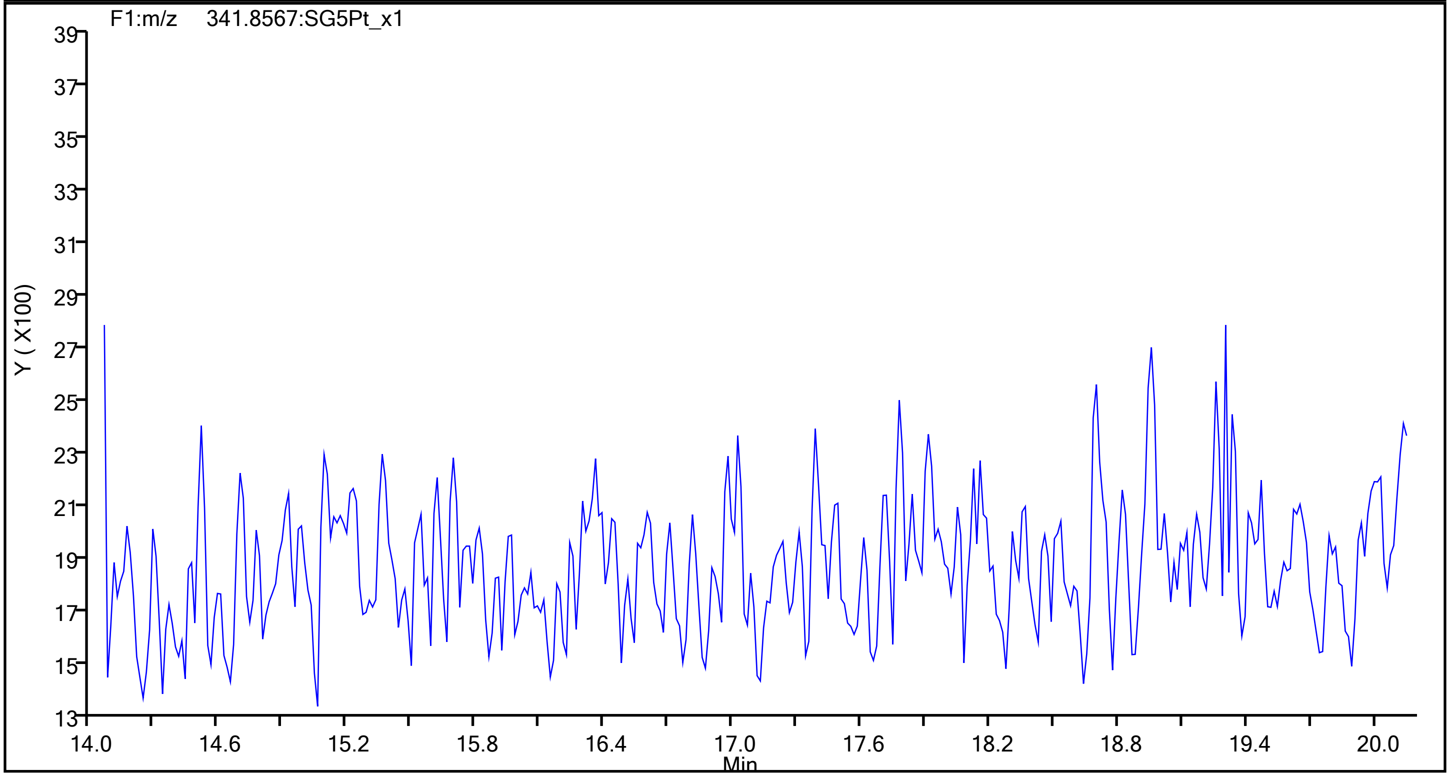

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

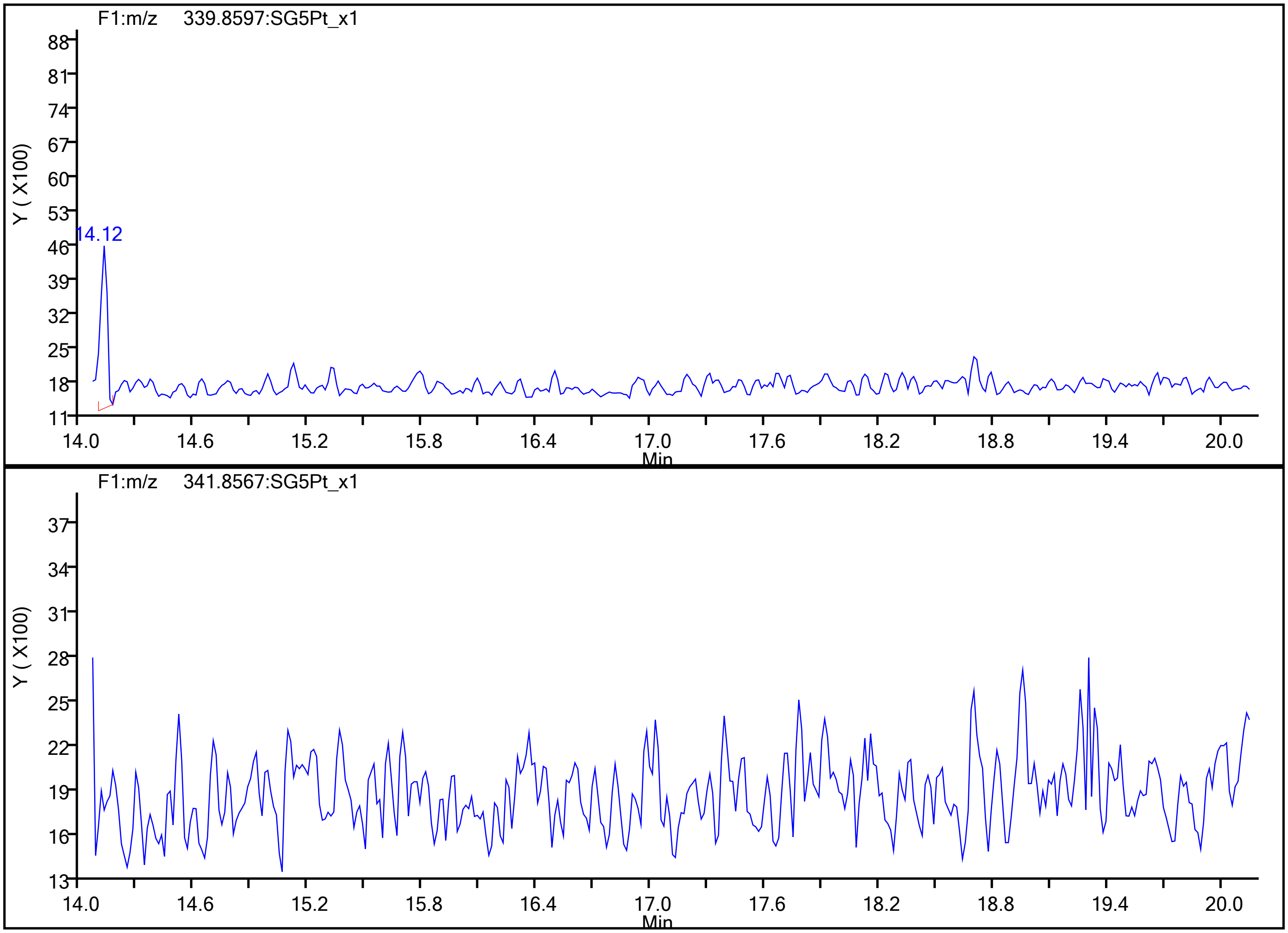

F1 PeCDFs Interference Mass

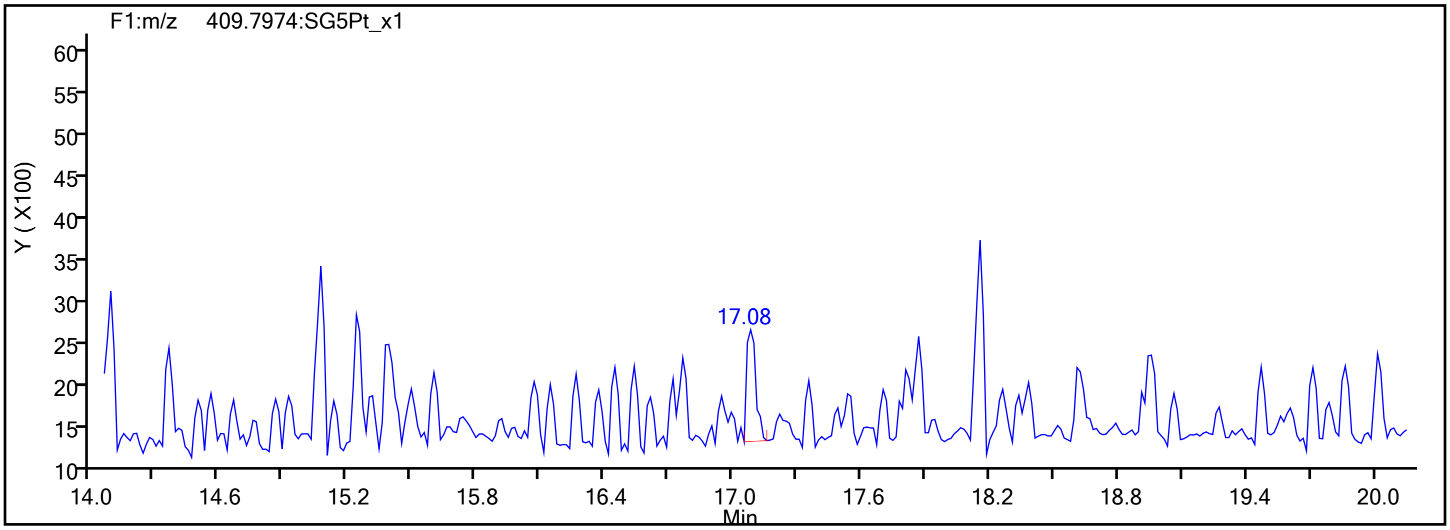

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

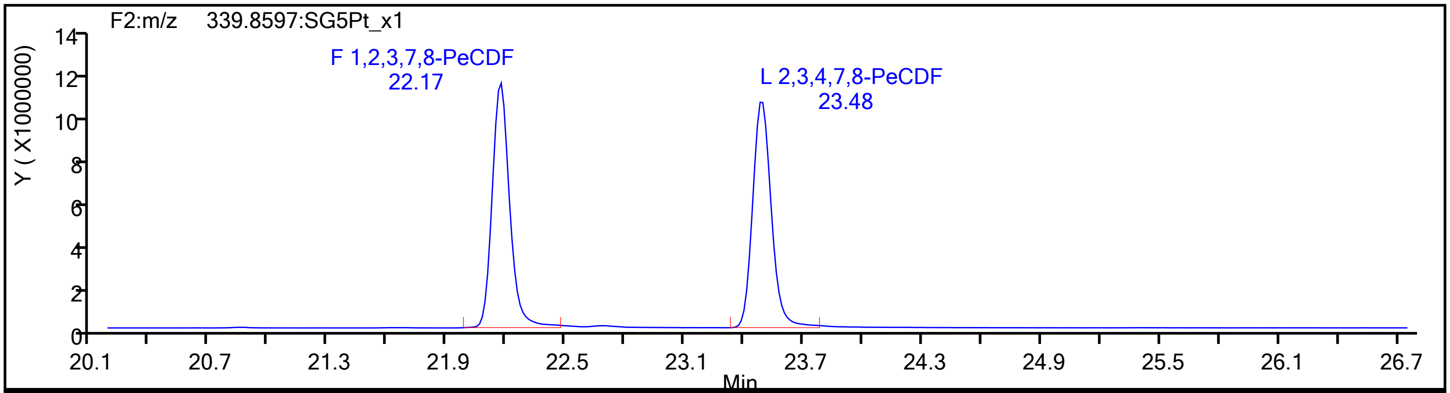

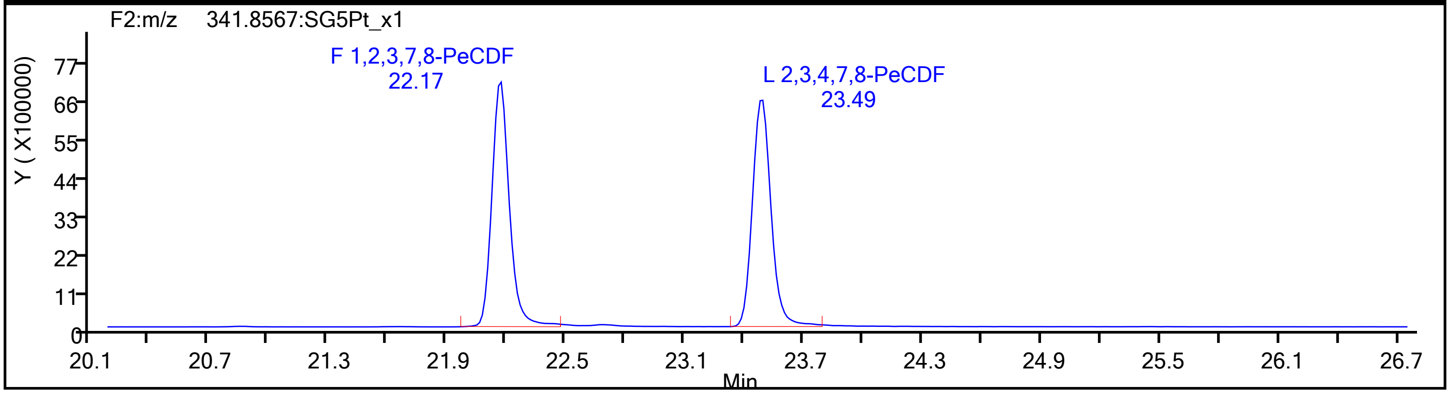

PeCDF Standards

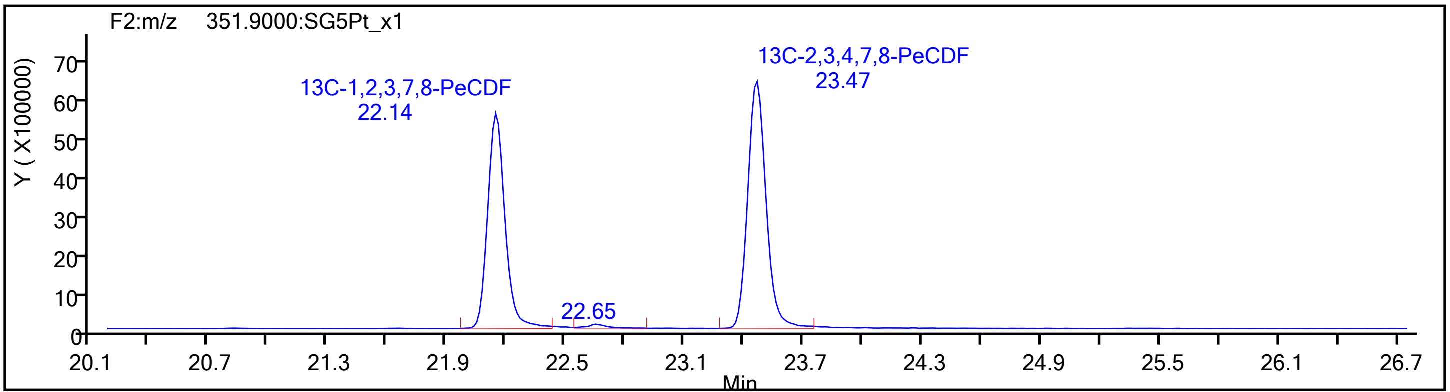

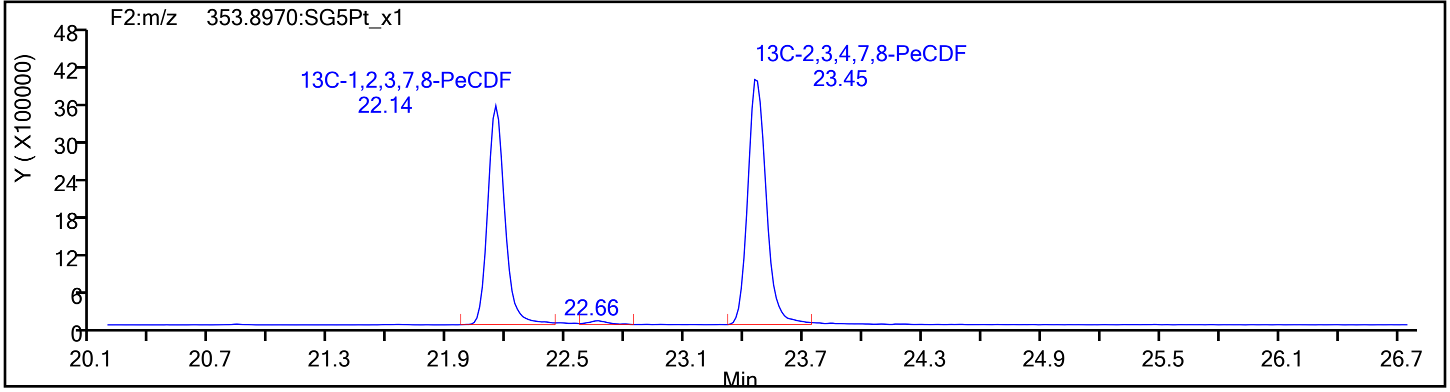

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

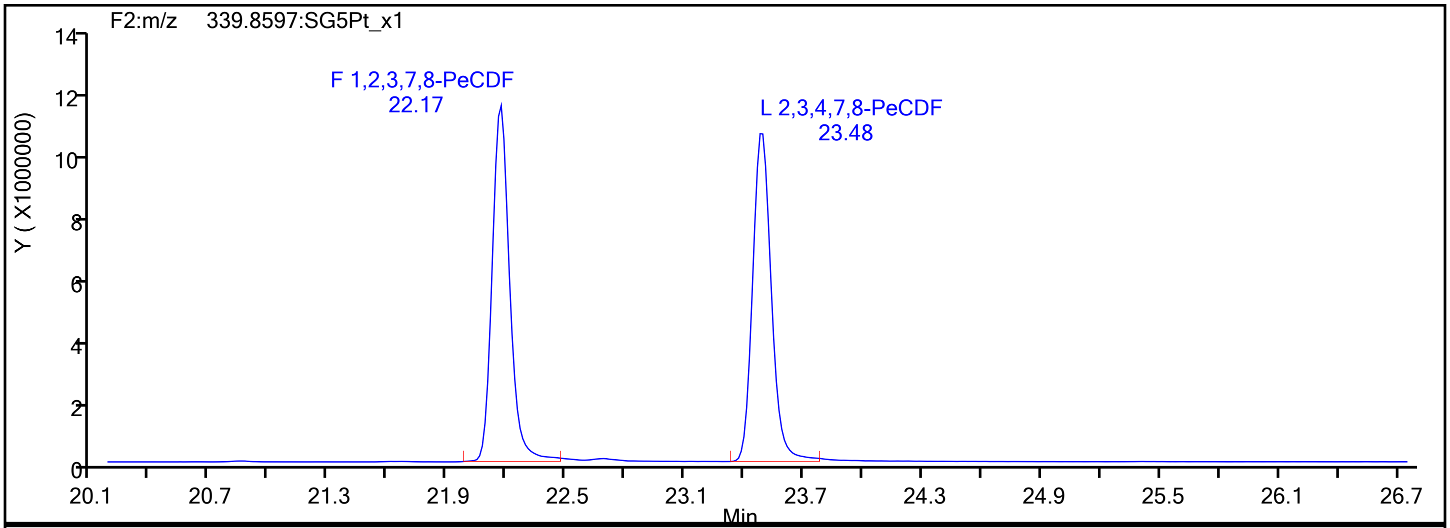

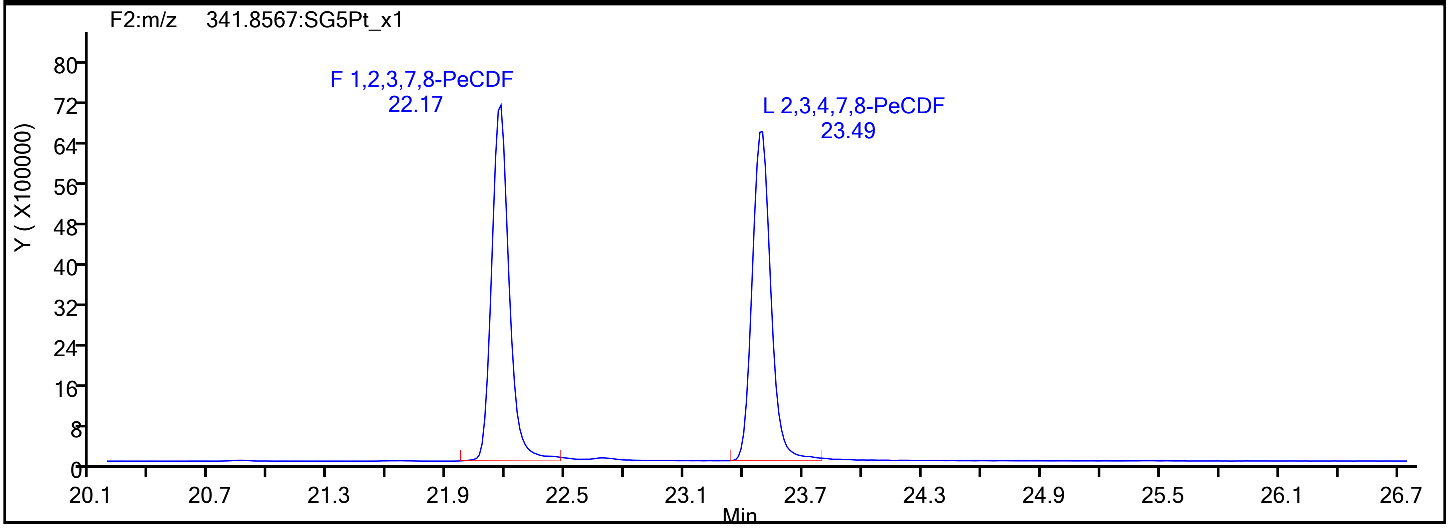

PeCDF Interference Mass

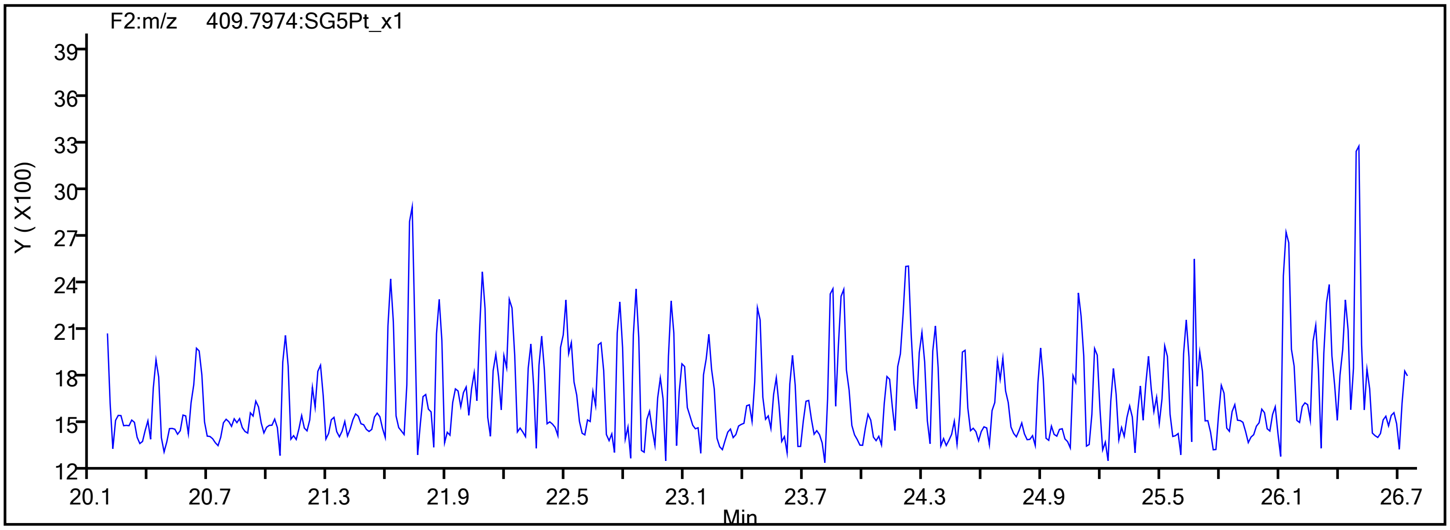

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

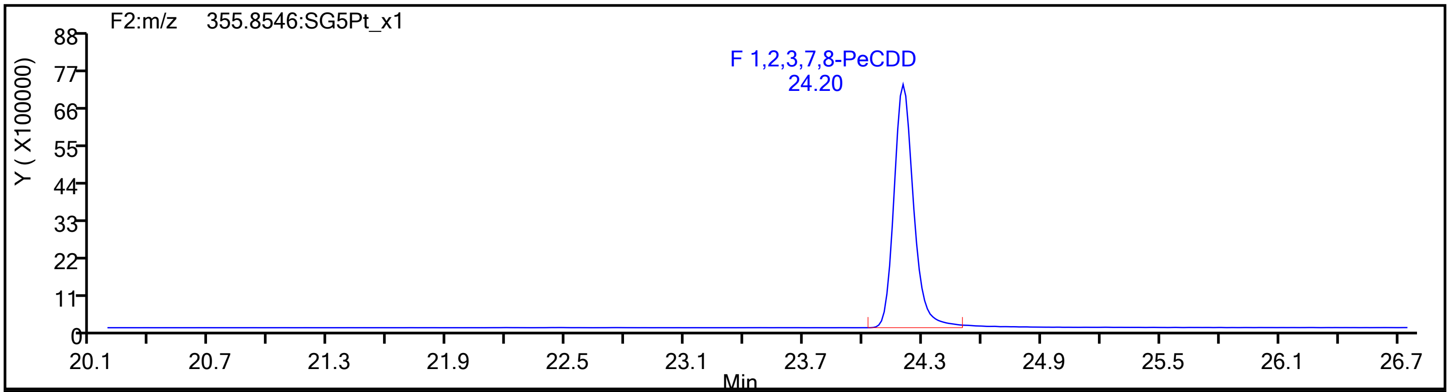

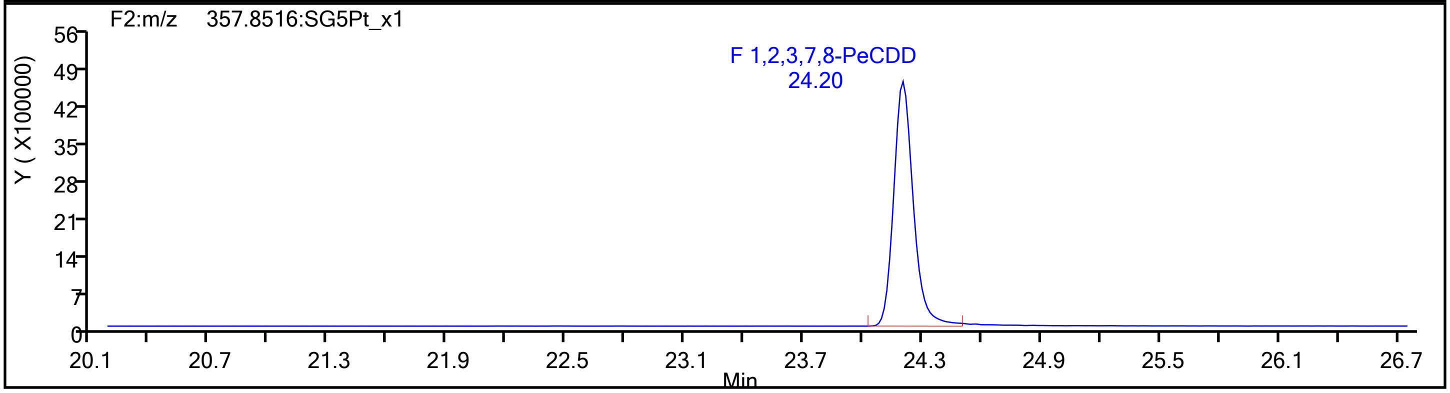

PeCDD Standards

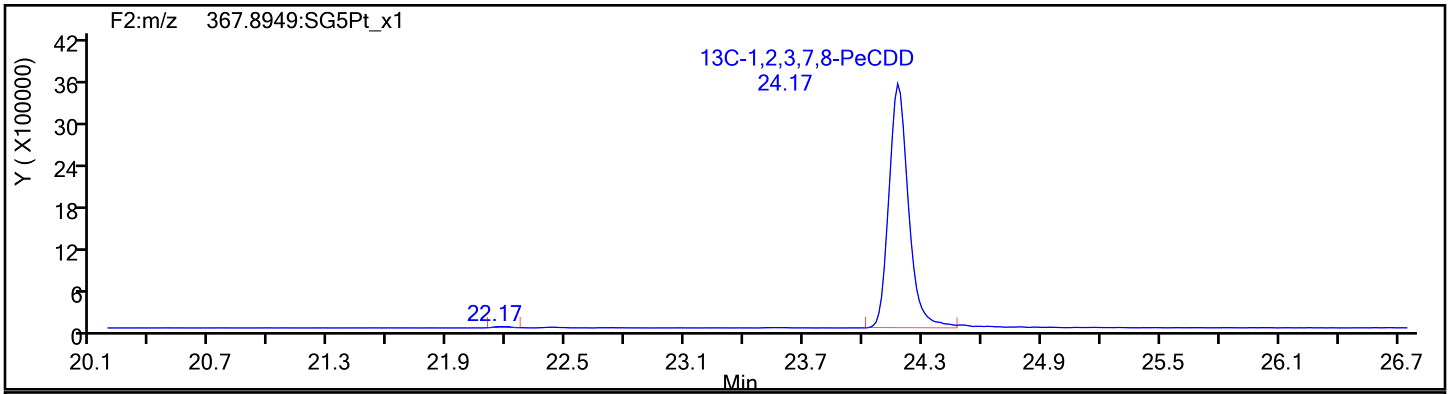

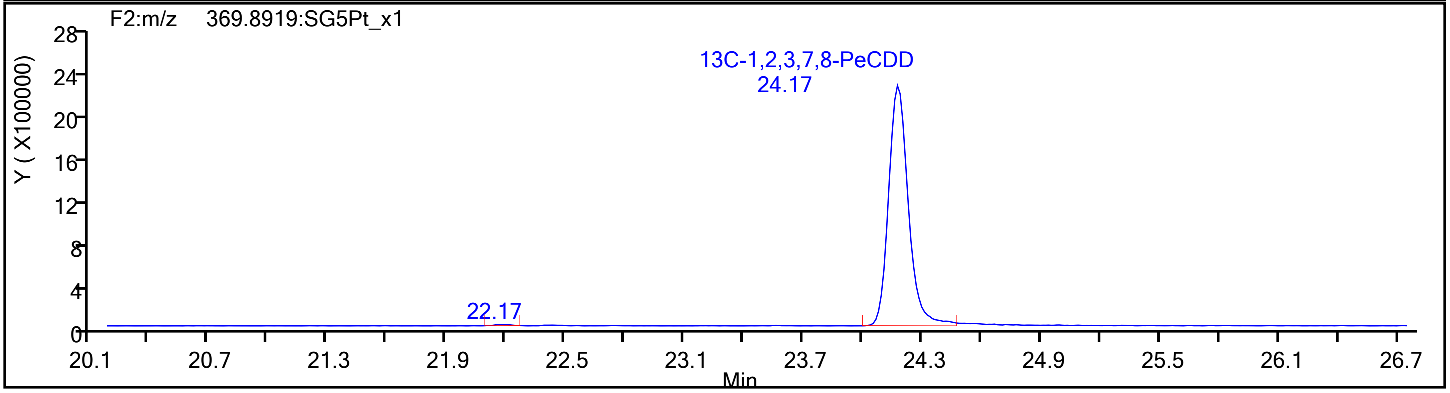

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Injection Date: 27-Jun-2020 16:58:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

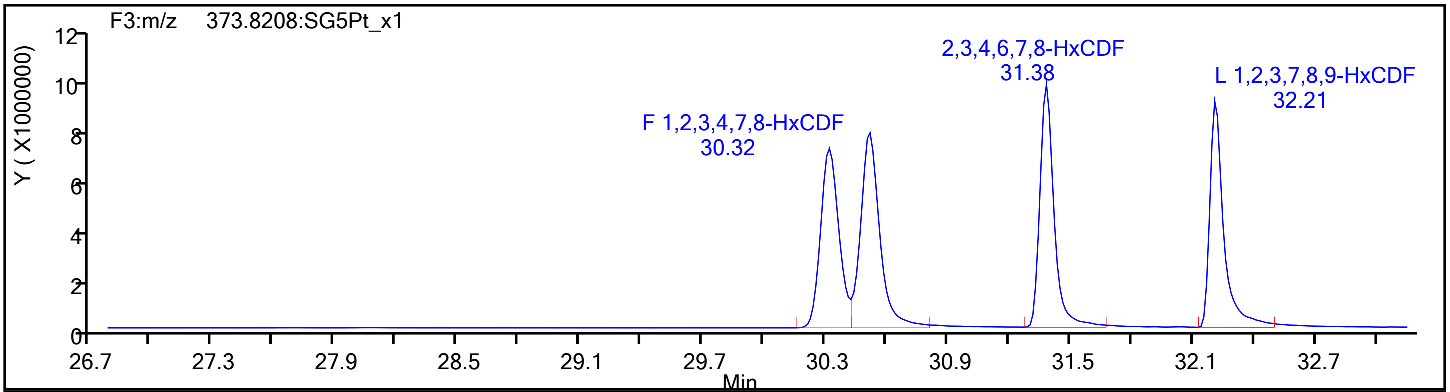

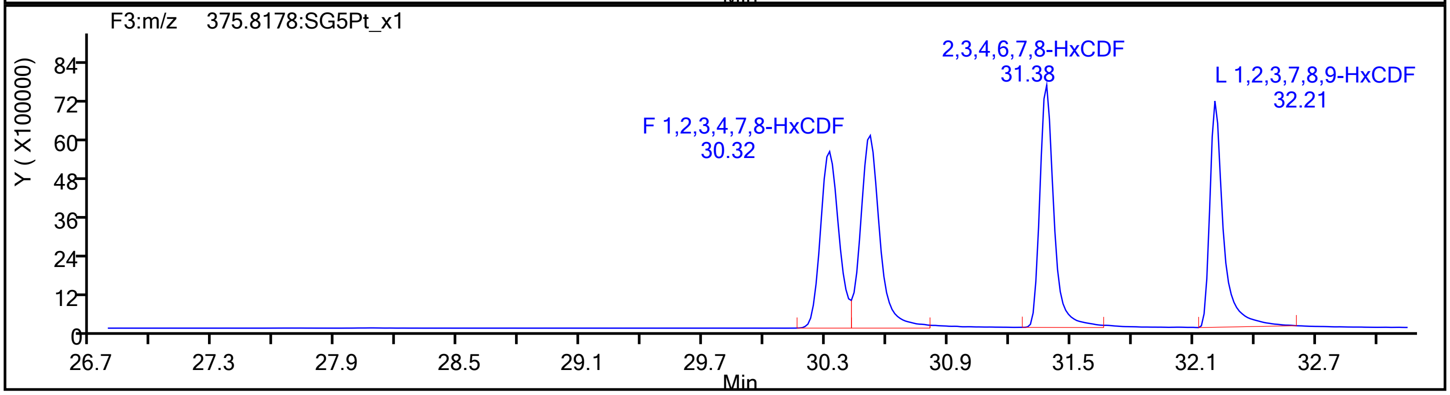

HxCDF Standards

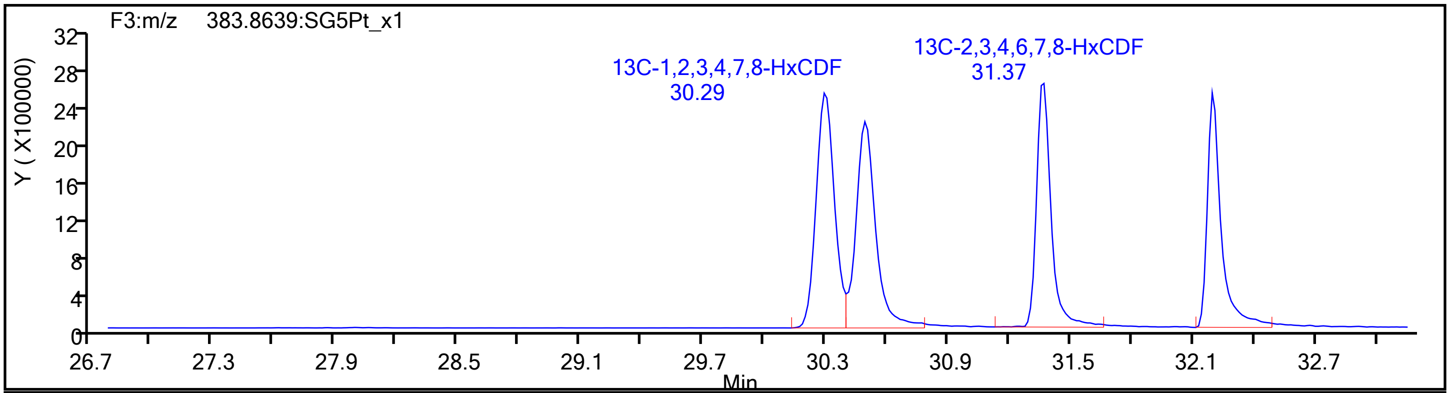

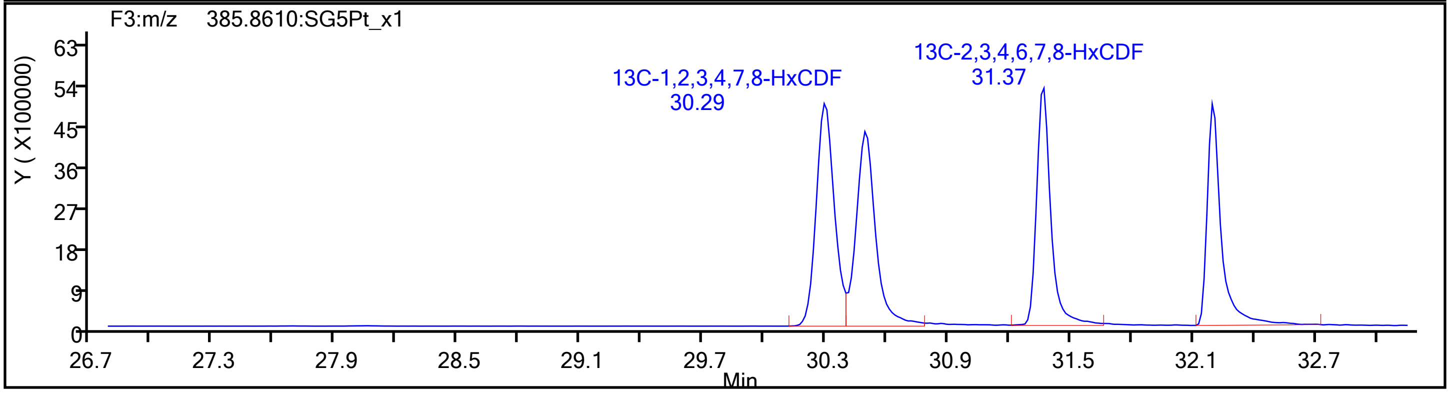

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Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Injection Date: 27-Jun-2020 16:58:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
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HxCDF

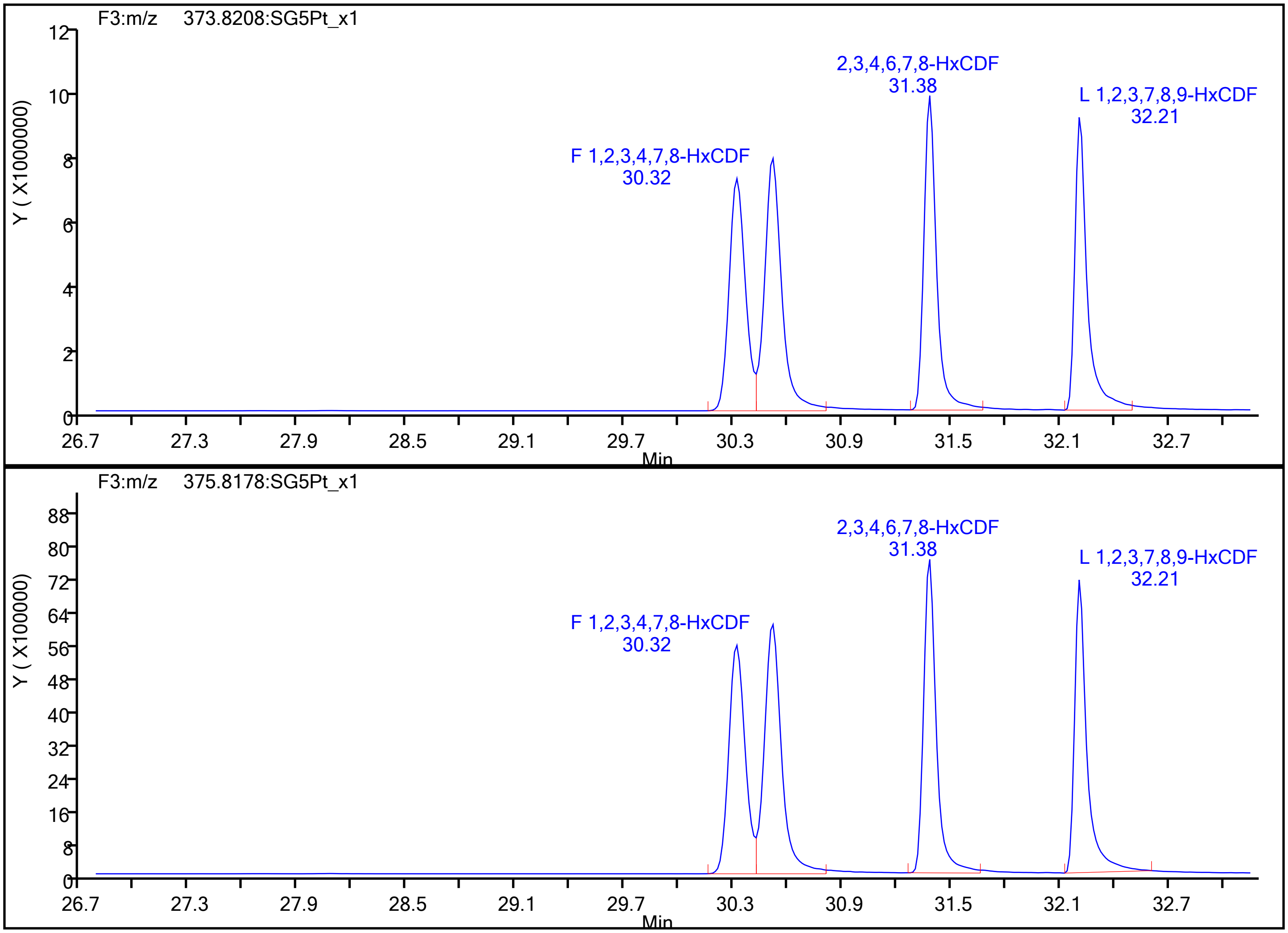

HxCDF Interference Mass

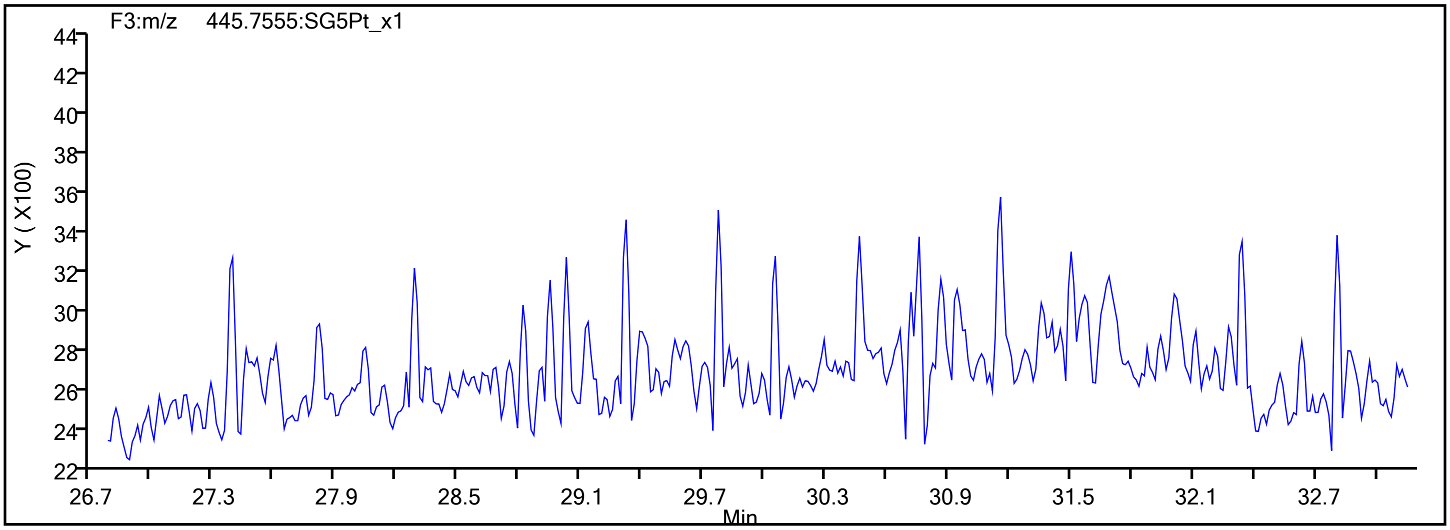

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

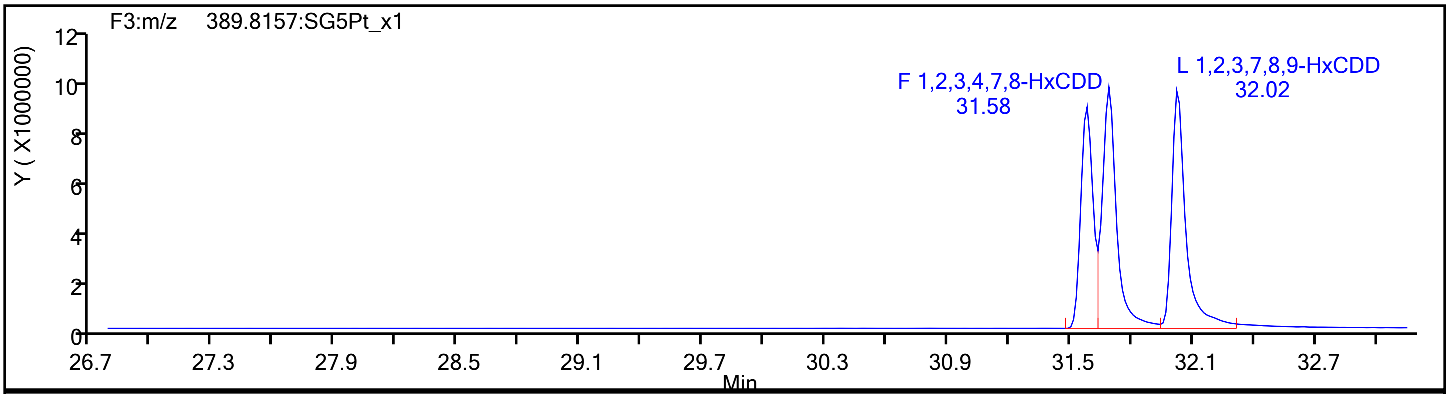

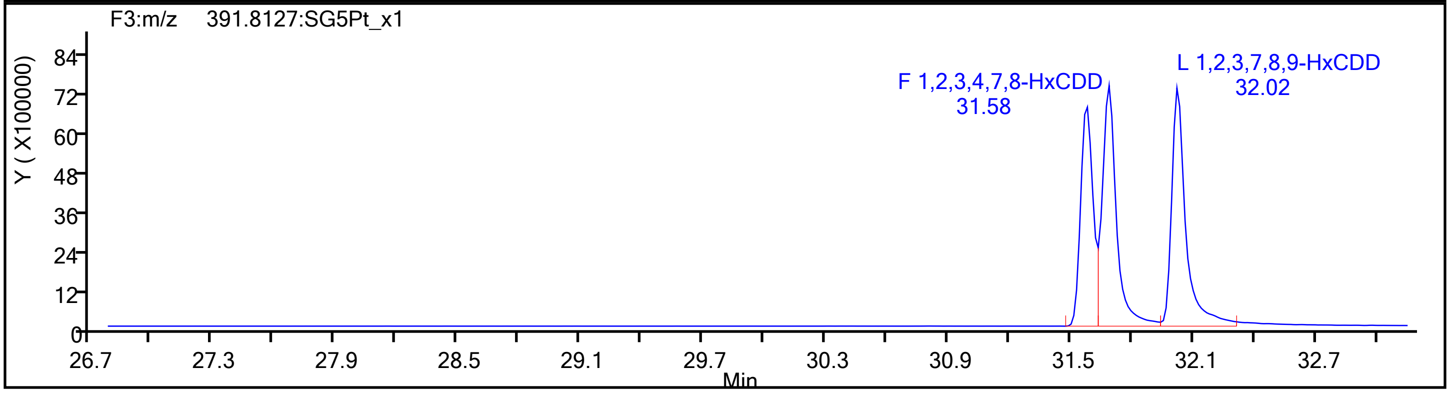

HxCDD Standards

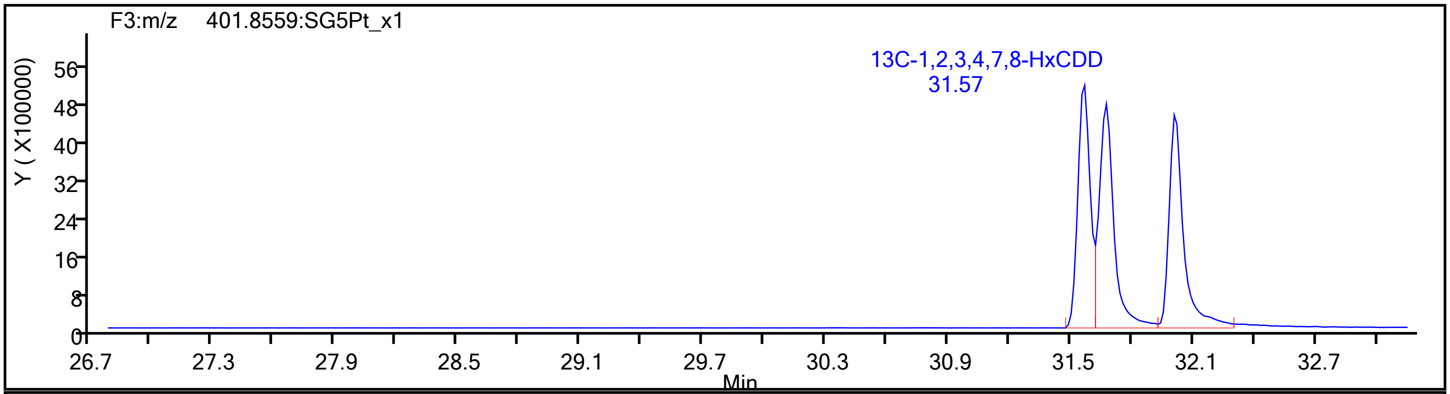

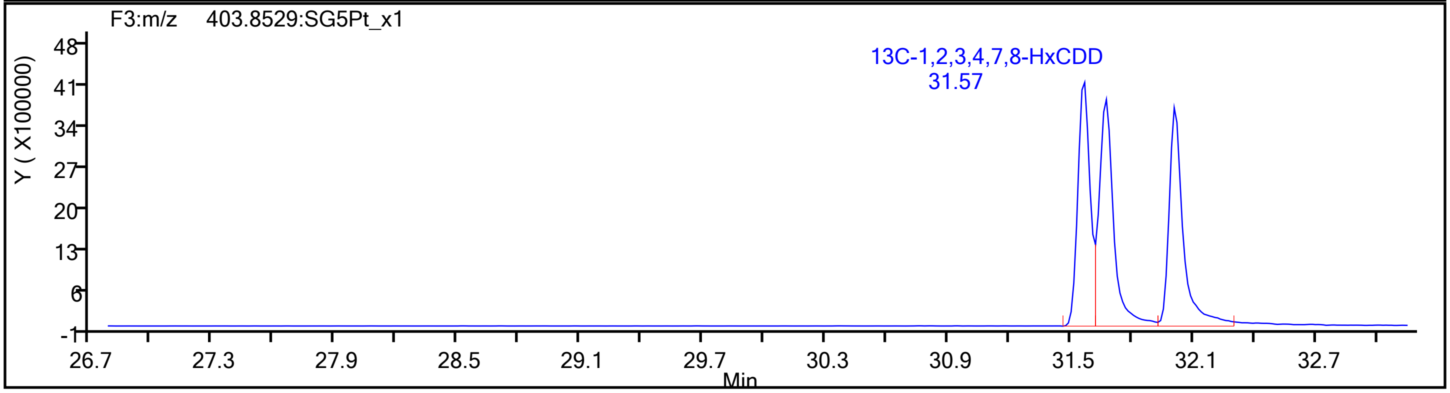

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDF

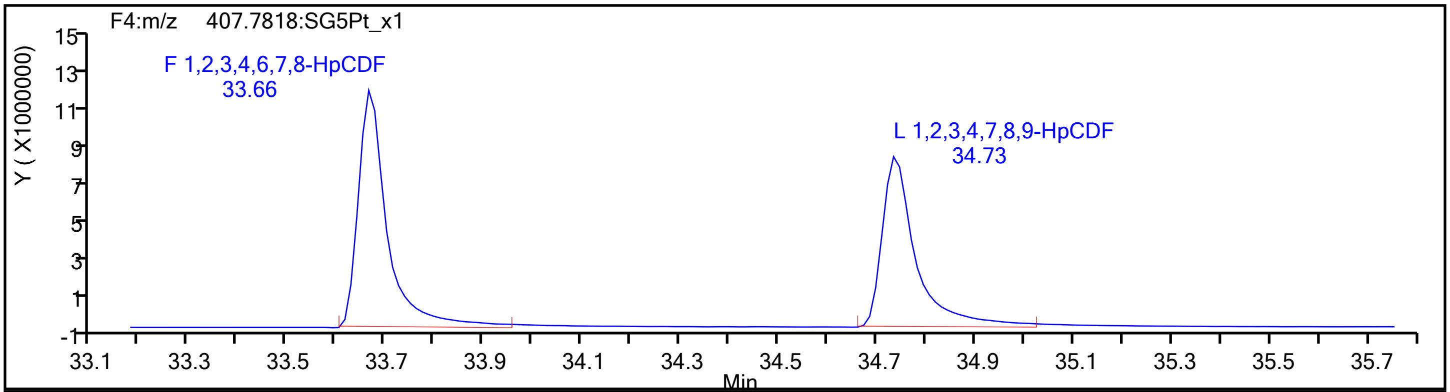

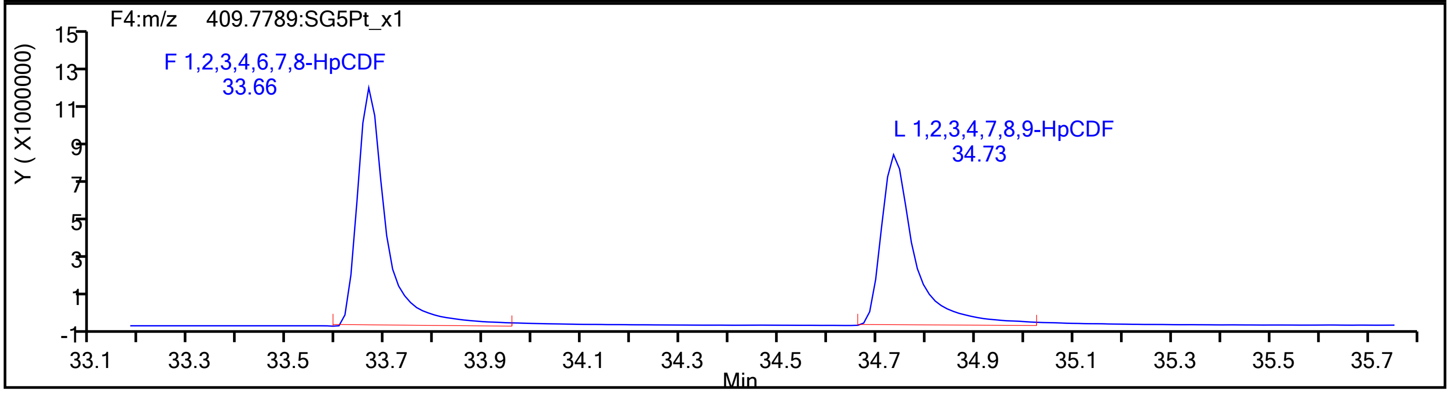

HpCDF Standards

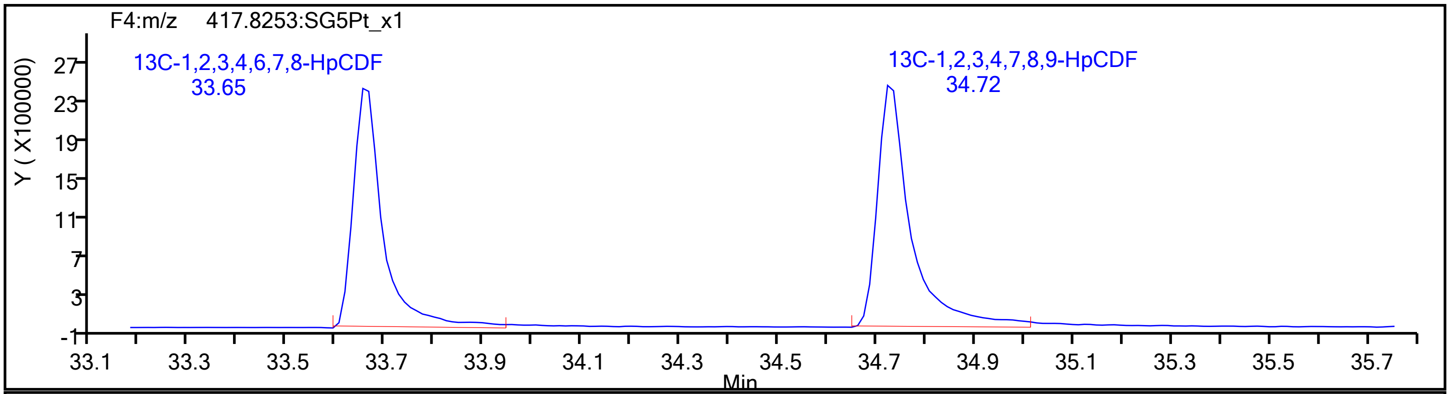

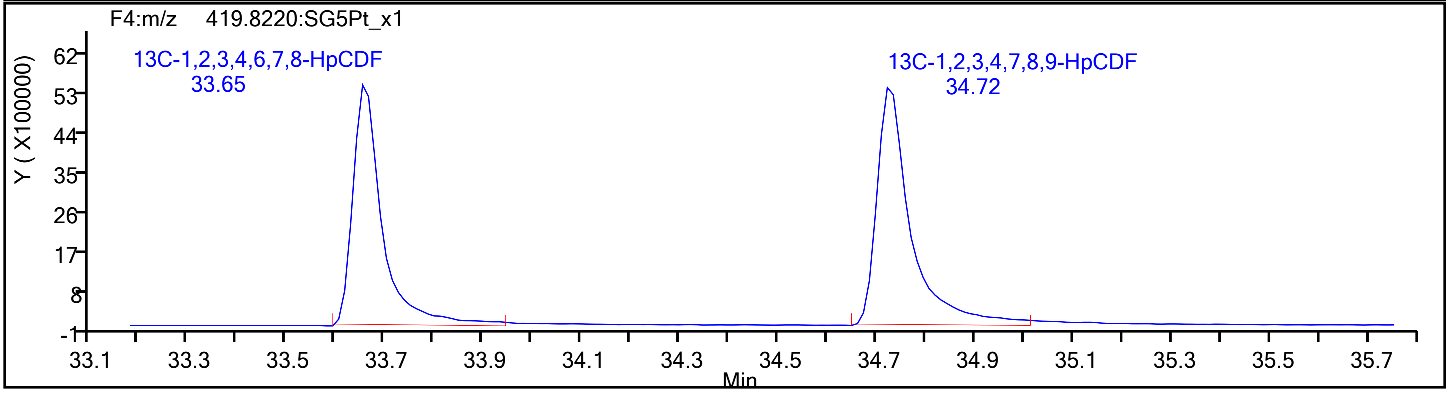

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

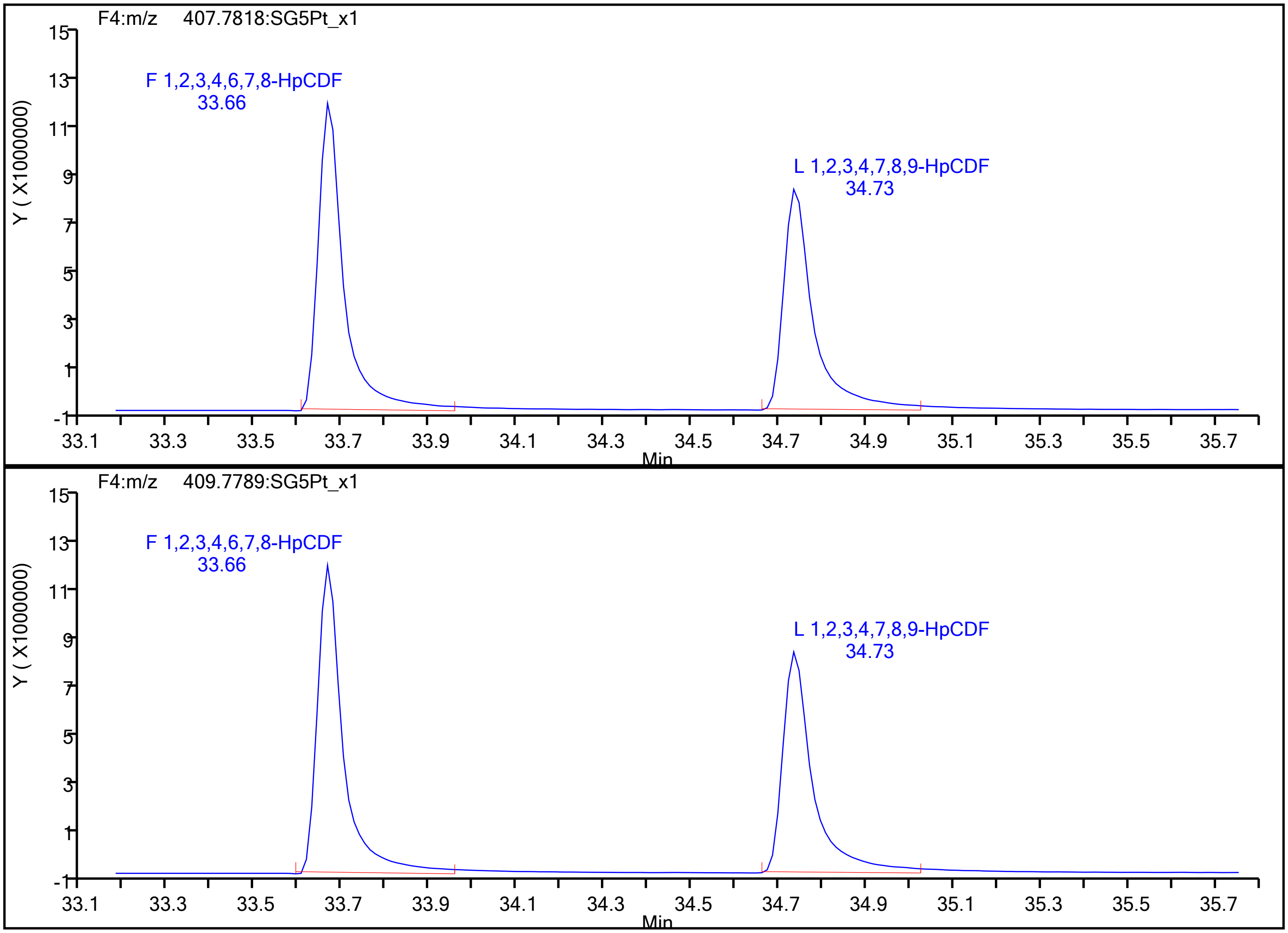

HpCDF Interference Mass

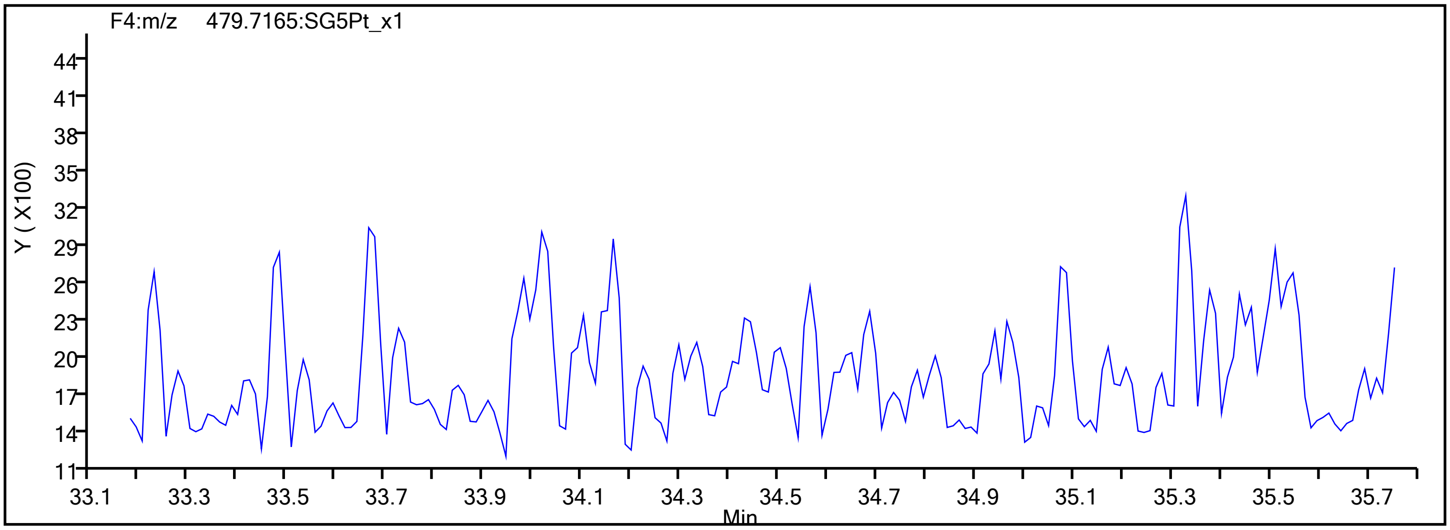

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

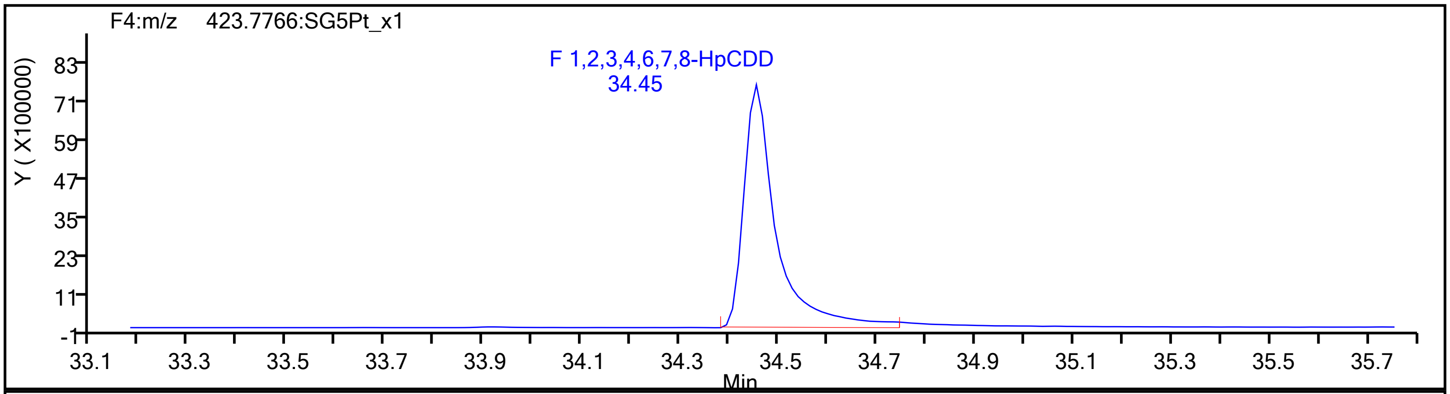

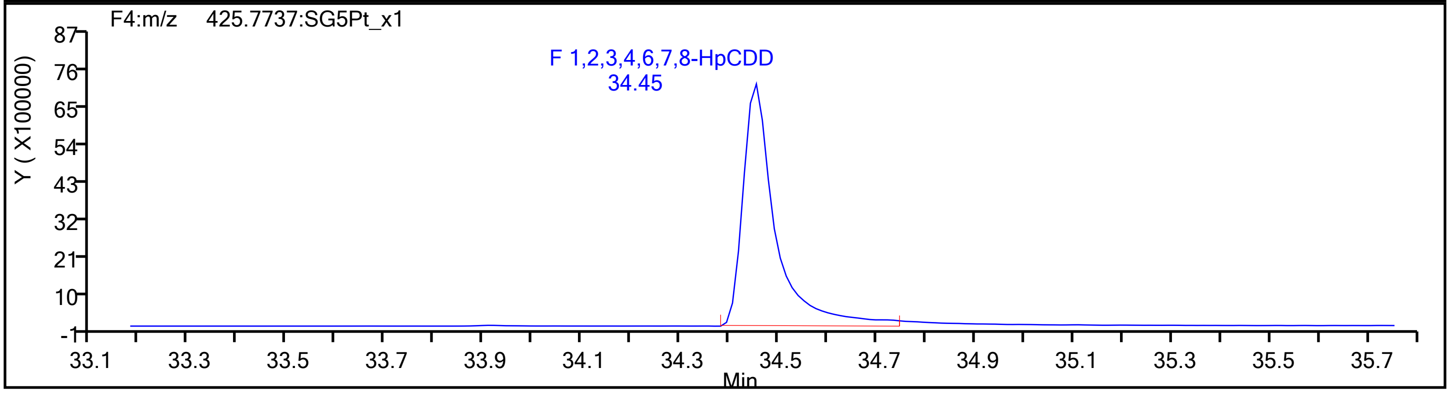

HpCDD Standards

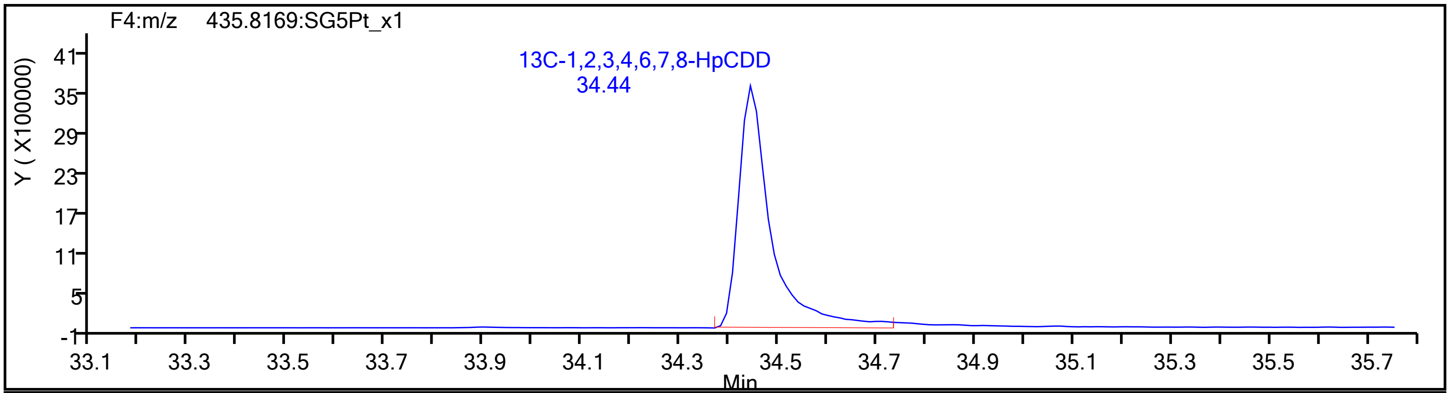

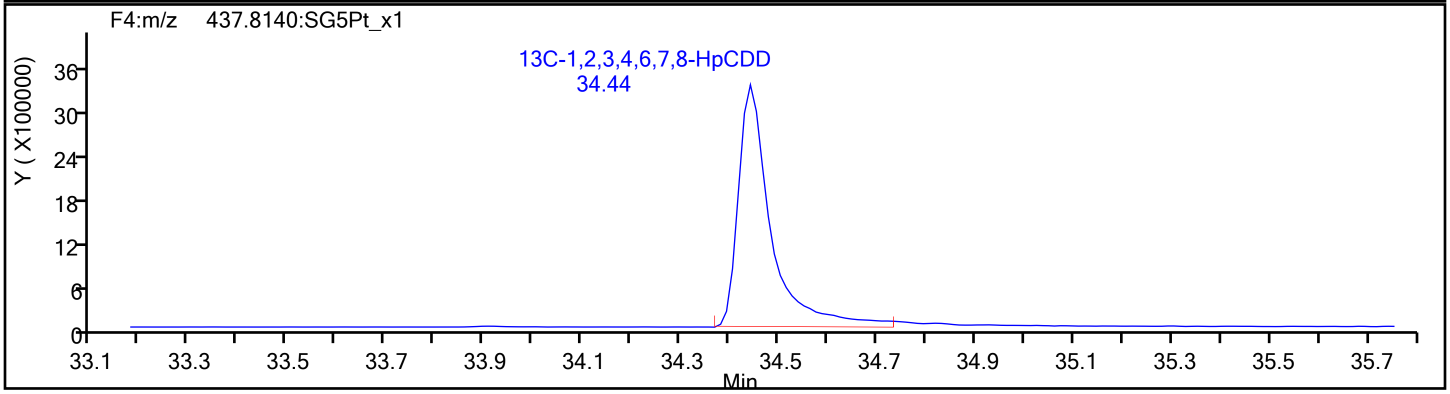

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

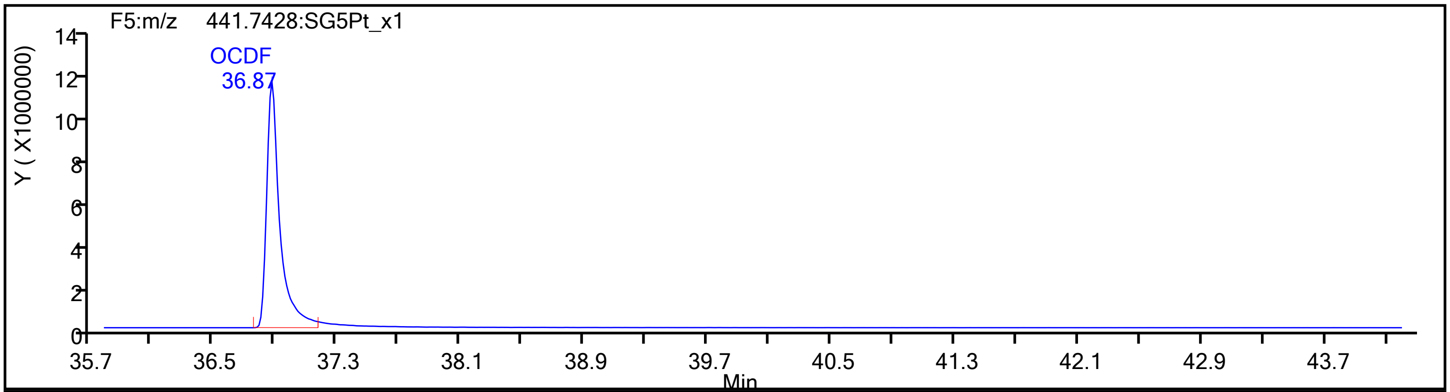

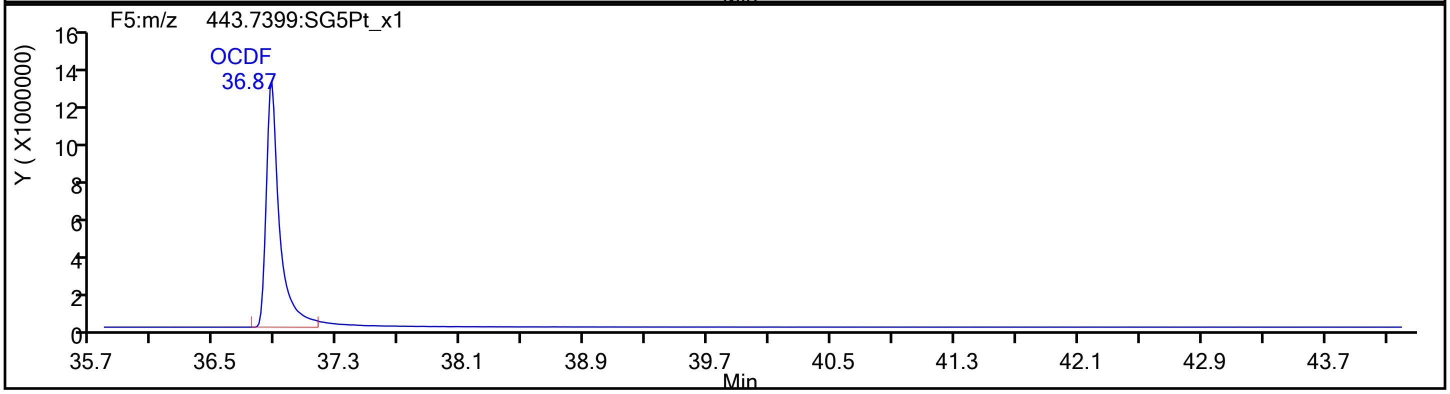

OCDF Standards

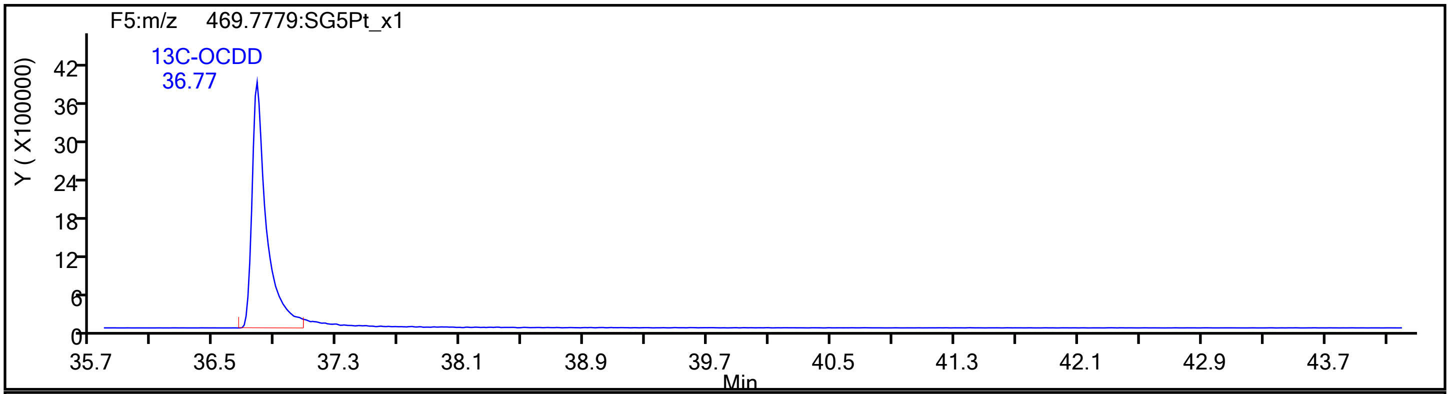

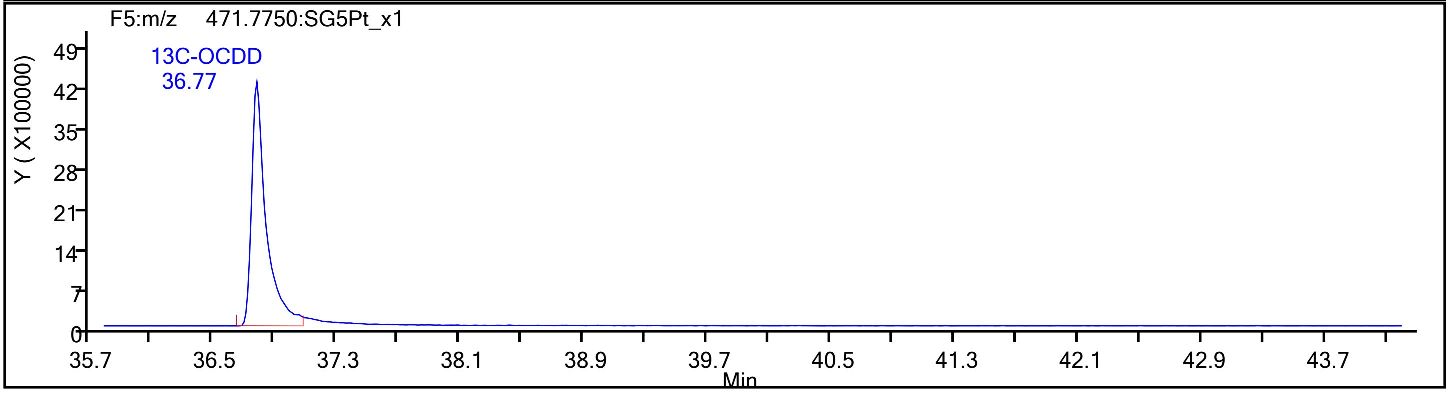

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Injection Date: 27-Jun-2020 16:58:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

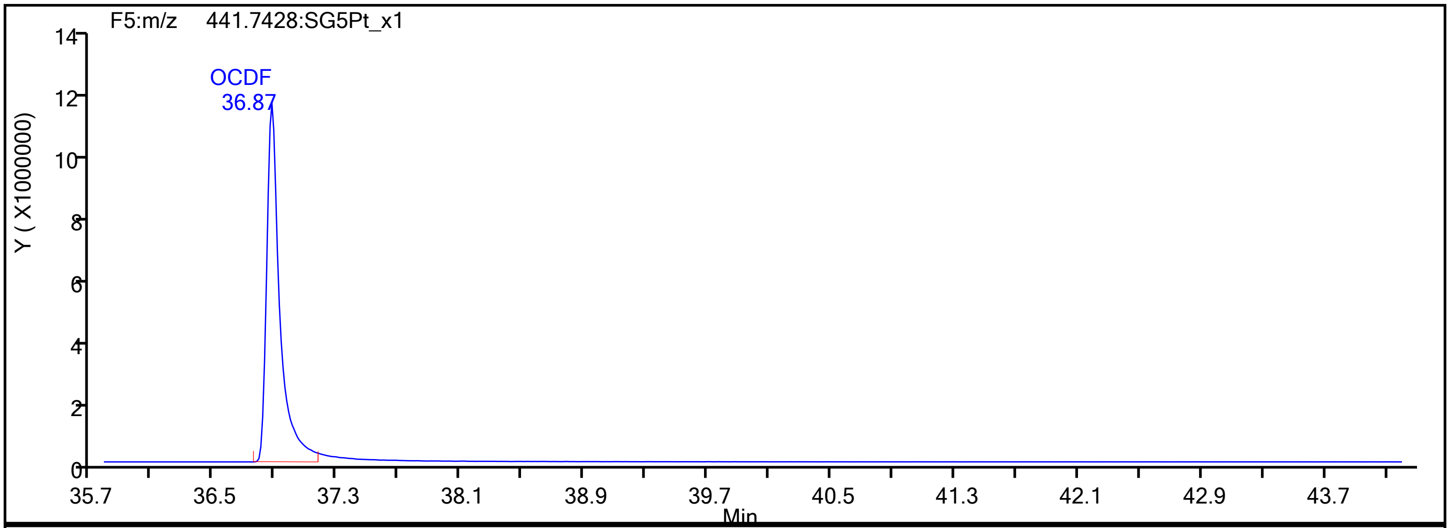

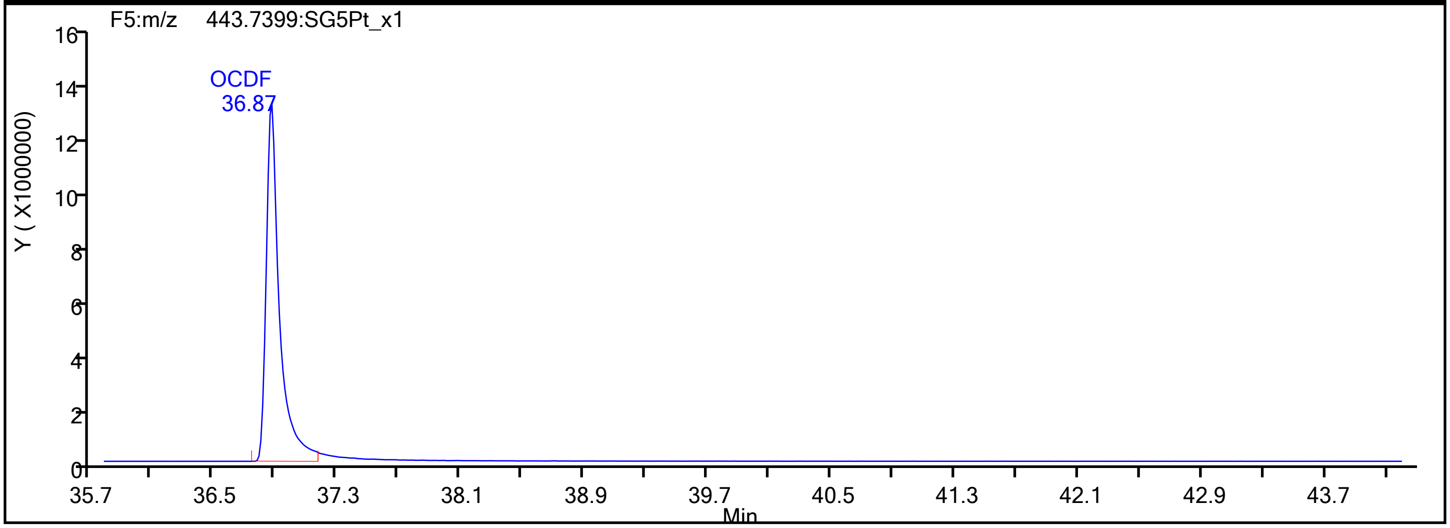

OCDF Interference Mass

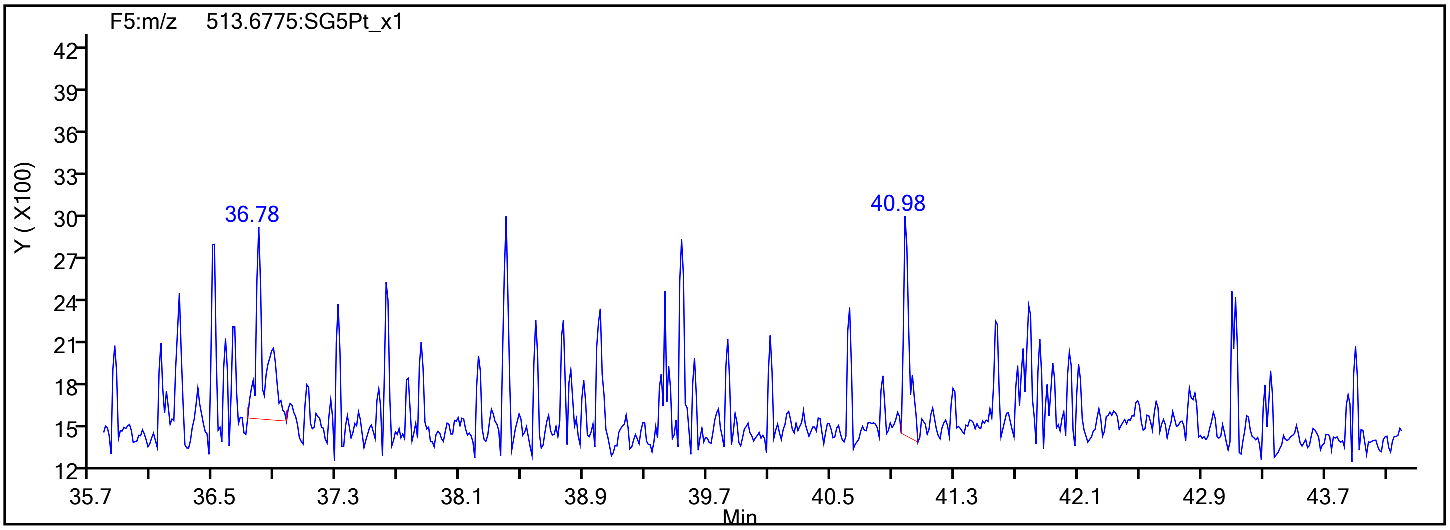

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

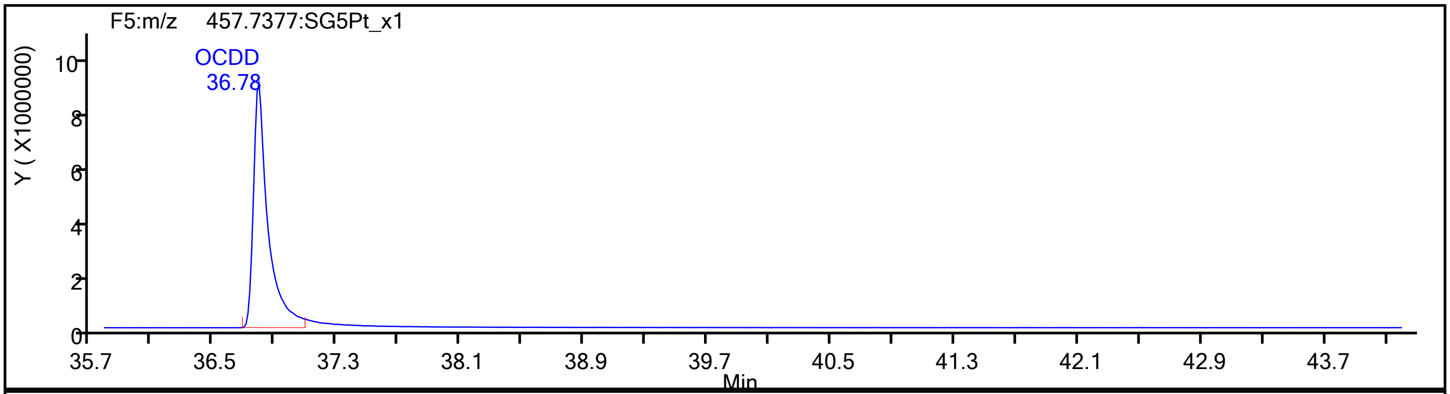

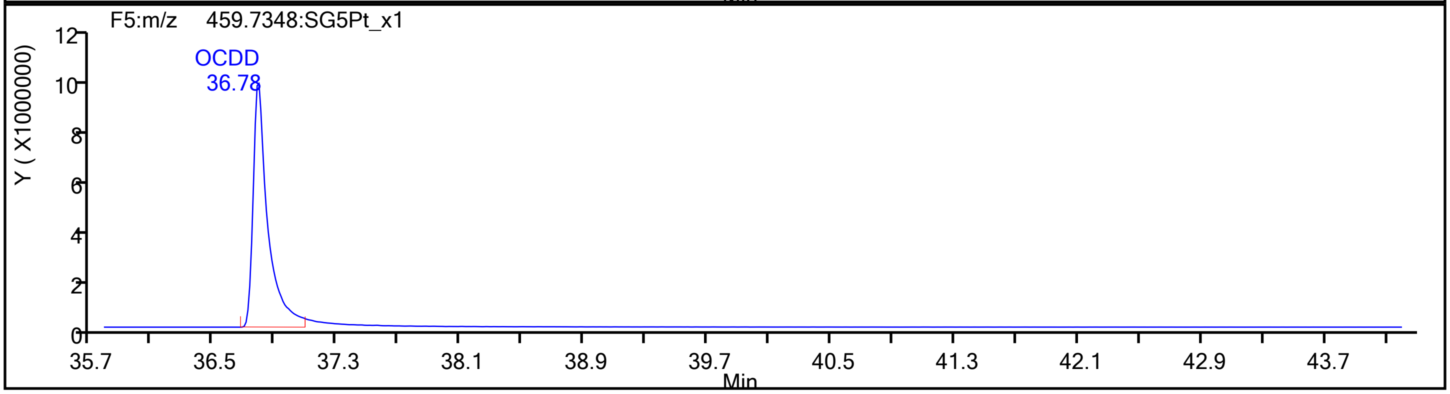

OCDD Standards

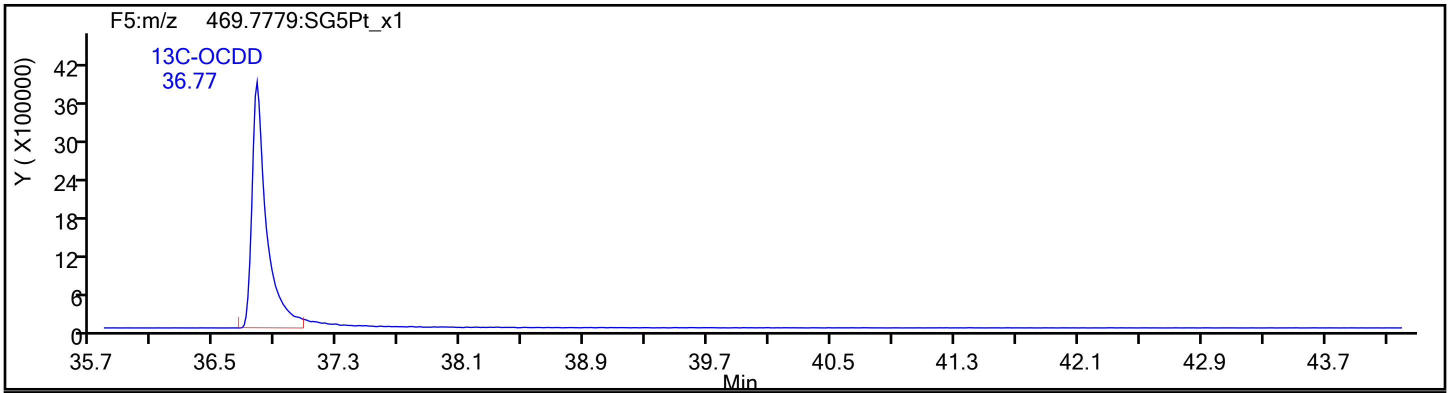

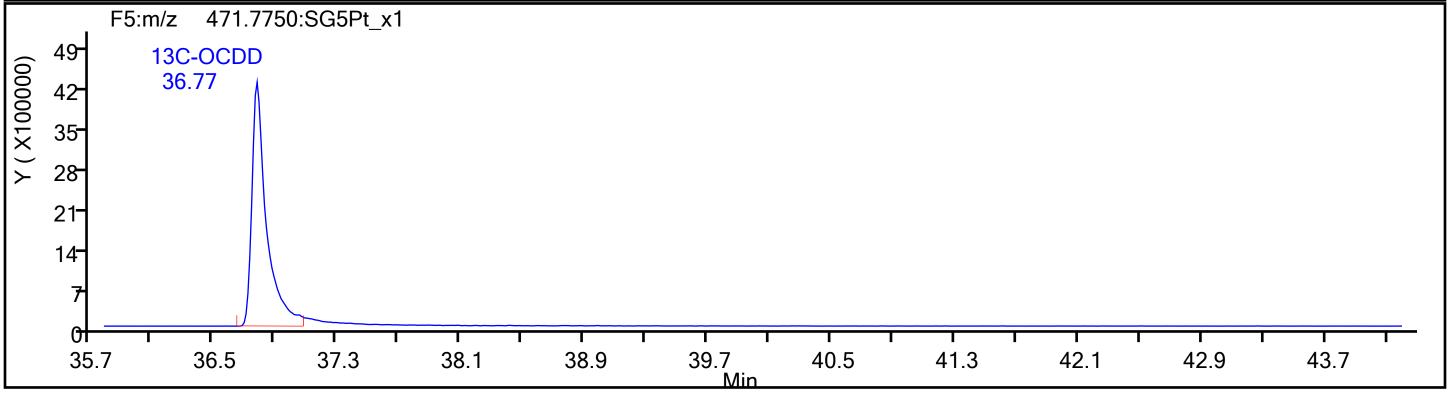

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

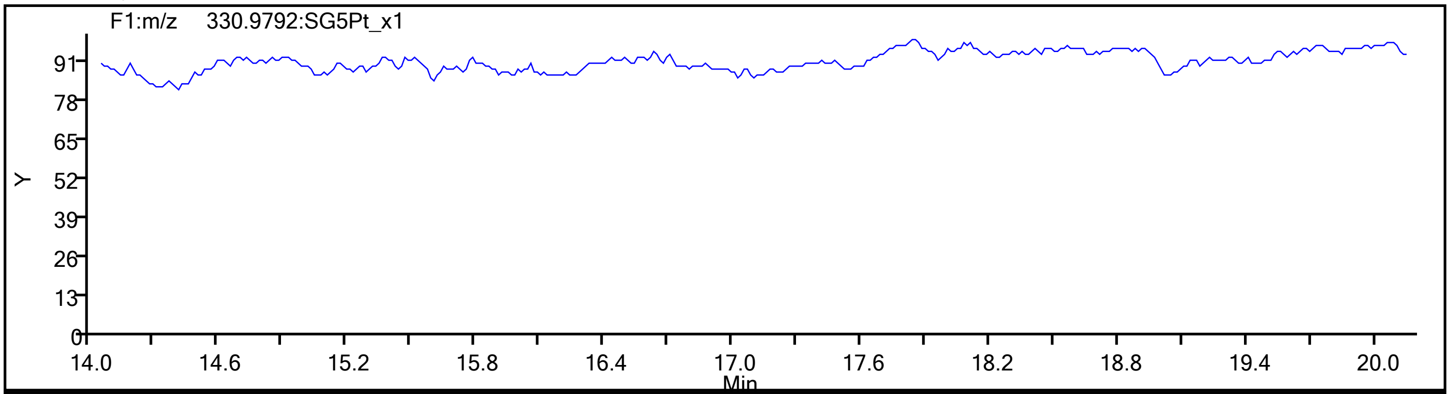

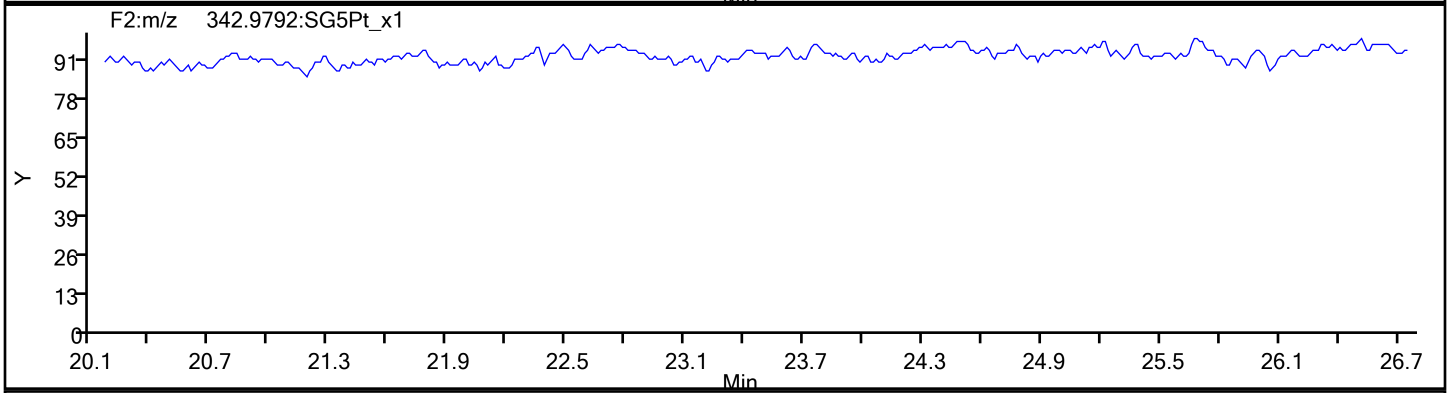

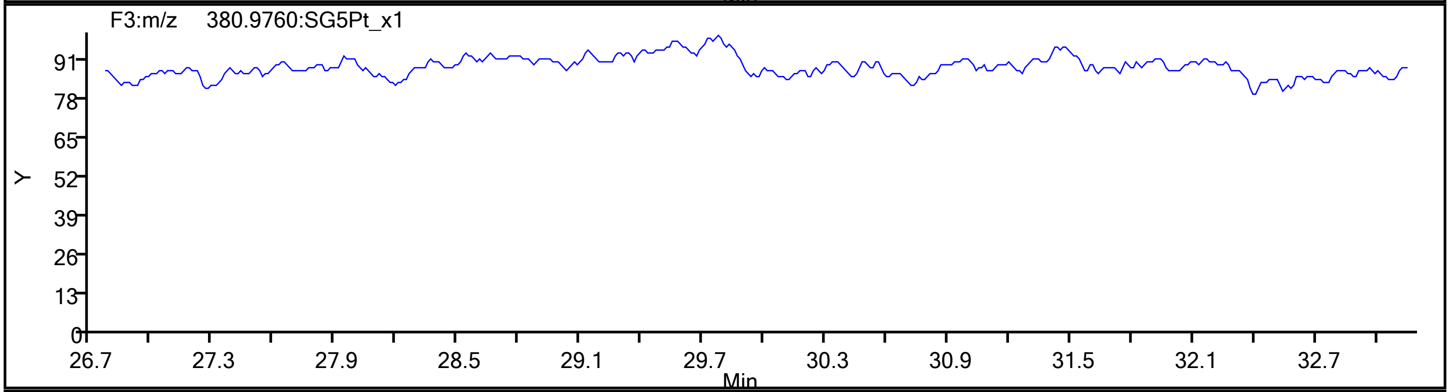

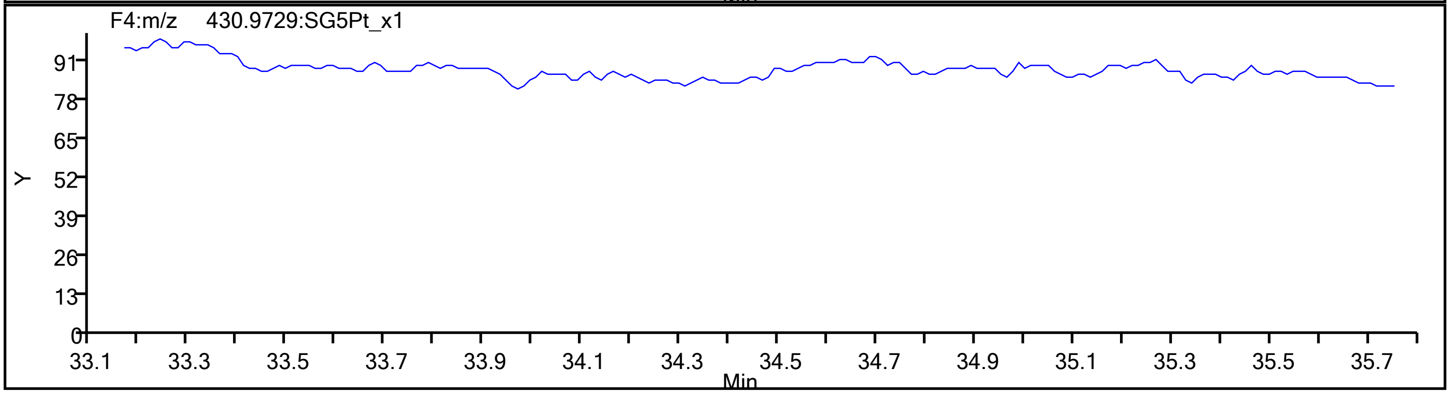

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

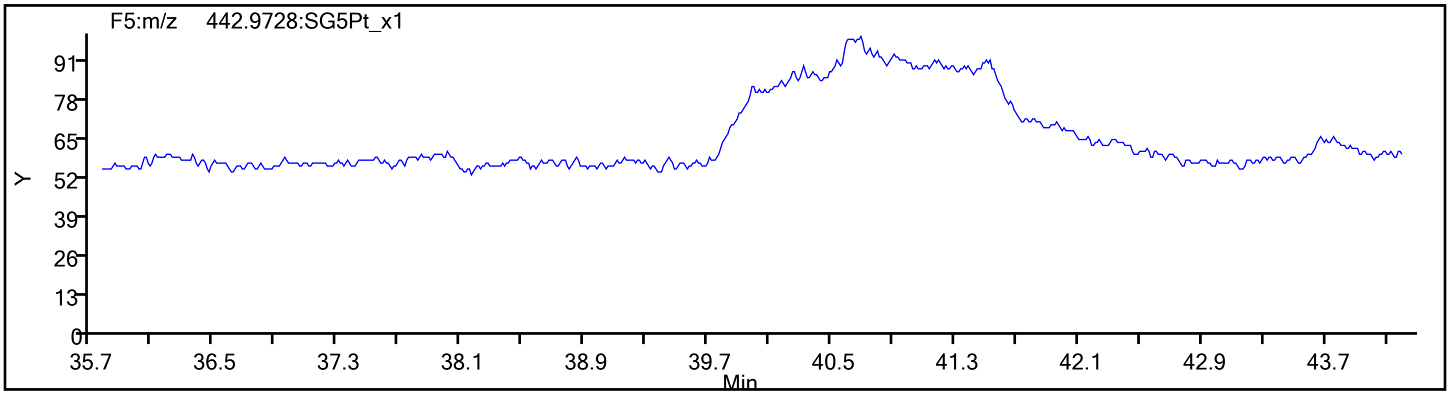

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 27-Jun-2020 17:43:35 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720D CS-6 HRDXNL6_00026
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:18 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	47126018	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	66365053	0.79	1.3726	102.6	102.6	0.2418	0.2418	103	
2,3,7,8-TCDF	17.219	122216235	0.75	0.9104	202.3	202.3	0.4221	0.4221	101	
S Total TCDF					202.3	202.3	0.4221	0.4221		
D 13C-2,3,7,8-TCDD	17.899	49229599	0.78	1.0192	102.5	102.5	0.3319	0.3319	102	
2,3,7,8-TCDD	17.914	106321386	0.77	1.0745	201.0	201.0	0.2286	0.2286	101	
$ 37Cl4-2,3,7,8-TCDD	17.914	106325815		1.0176	221.7	221.7	0.2198	0.2198	111	
S Total TCDD					201.0	201.0	0.2286	0.2286		
D 13C-1,2,3,7,8-PeCDF	22.156	57033386	1.59	1.1429	105.9	105.9	0.3285	0.3285	106	
1,2,3,7,8-PeCDF	22.170	566831479	1.55	0.9938	1000.1	1000.1	3.609	3.609	100	
D 13C-2,3,4,7,8-PeCDF	23.465	69514353	1.58	1.3997	105.4	105.4	0.2682	0.2682	105	
2,3,4,7,8-PeCDF	23.493	561858549	1.54	0.8117	995.8	995.8	3.818	3.818	99.58	
S Total PeCDF					1995.8	1995.8	3.713	3.713		
D 13C-1,2,3,7,8-PeCDD	24.188	40938052	1.56	0.8232	105.5	105.5	0.1358	0.1358	106	
1,2,3,7,8-PeCDD	24.202	418171926	1.57	1.0181	1003.3	1003.3	1.168	1.168	100	
S Total PeCDD					1003.3	1003.3	1.168	1.168		
D 13C-1,2,3,4,7,8-HxCDF	30.306	49341715	0.51	1.1388	102.6	102.6	0.6382	0.6382	103	
1,2,3,4,7,8-HxCDF	30.319	405180807	1.19	0.8061	1018.6	1018.6	9.030	9.030	102	
D 13C-1,2,3,6,7,8-HxCDF	30.505	45855303	0.51	1.0803	100.6	100.6	0.6728	0.6728	101	
1,2,3,6,7,8-HxCDF	30.519	454382367	1.19	0.9818	1009.2	1009.2	8.360	8.360	101	
D 13C-2,3,4,6,7,8-HxCDF	31.371	40745996	0.52	0.9494	101.7	101.7	0.7656	0.7656	102	
2,3,4,6,7,8-HxCDF	31.384	424474579	1.19	1.0382	1003.4	1003.4	6.455	6.455	100	
D 13C-1,2,3,7,8,9-HxCDF	32.209	38052377	0.51	0.8670	104.0	104.0	0.8383	0.8383	104	
1,2,3,7,8,9-HxCDF	32.222	394753597	1.20	1.0321	1005.2	1005.2	6.695	6.695	101	
S Total HxCDF					4036.5	4036.5	7.635	7.635		
* 13C-1,2,3,7,8,9-HxCDD	32.023	42214001	1.28	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	40903104	1.27	0.9356	103.6	103.6	0.4496	0.4496	104	
1,2,3,4,7,8-HxCDD	31.583	333187319	1.23	0.8202	993.1	993.1	4.058	4.058	99.31	
D 13C-1,2,3,6,7,8-HxCDD	31.677	43998213	1.24	1.0416	100.1	100.1	0.4039	0.4039	100	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	412697943	1.24	0.9367	1001.4	1001.4	3.865	3.865	100	
1,2,3,7,8,9-HxCDD	32.036	414077282	1.24	0.9905	984.8	984.8	3.501	3.501	98.48	
S Total HxCDD					2979.3	2979.3	3.808	3.808		
D 13C-1,2,3,4,6,7,8-HpCDF	33.665	34382848	0.44	0.7899	103.1	103.1	2.089	2.089	103	
1,2,3,4,6,7,8-HpCDF	33.665	498016185	1.03	1.4527	997.0	997.0	15.6	15.6	99.70	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	40565902	0.44	0.9093	105.7	105.7	1.815	1.815	106	
1,2,3,4,7,8,9-HpCDF	34.734	430556216	1.03	1.0585	1002.7	1002.7	20.9	20.9	100	
S Total HpCDF					1999.7	1999.7	18.3	18.3		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	33600359	1.07	0.7637	104.2	104.2	0.8754	0.8754	104	
1,2,3,4,6,7,8-HpCDD	34.454	356377100	1.04	1.0540	1006.3	1006.3	7.226	7.226	101	
S Total HpCDD					1006.3	1006.3	7.226	7.226		
D 13C-OCDD	36.773	59456751	0.91	0.6377	220.9	220.9	0.4953	0.4953	110	
OCDF	36.869	775885278	0.89	1.2965	2013.1	2013.1	2.635	2.635	101	
OCDD	36.785	672147206	0.89	1.1499	1966.2	1966.2	3.511	3.511	98.31	

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	27-Jun-2020 17:43:35	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 062720D CS-6 HRDXNL6_00026				
Misc. Info.:	27JN2010AD5				
Operator ID:	SMA	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-Jun-2020 13:17:18	Calib Date:	27-Jun-2020 17:43:35		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1062				
First Level Reviewer: shardaa		Date:	28-Jun-2020 13:07:51		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		20738026	4909758	7478	18695	657		
333.9339	17.702	17.702	0		26387992	6284425	7667	19167	820	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.197	0	0.972	29213449	6864431	7794	19485	881		
317.9389	17.203	17.197	0	0.972	37151604	8669208	7067	17667	1227	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.215	0	1.001	52445548	12221829	11086	27715	1102		
305.8987	17.219	17.215	0	1.001	69770687	16212070	12793	31982	1267	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.893	0	1.011	21556193	4697405	7478	18695	628		
333.9339	17.899	17.893	0	1.011	27673406	6082835	7667	19167	793	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.001	46306430	10229009	4270	10675	2396		
321.8936	17.914	17.911	0	1.001	60014956	13412568	6322	15805	2122	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	106325815	23667022	10013	25032	2364		
13C-1,2,3,7,8-PeCDF											
351.9000	22.156	22.148	0	1.252	35033156	5726327	9962	24905	575		
353.8970	22.156	22.148	0	1.252	22000230	3654990	6847	17117	534	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.164	0	1.001	344606256	56586528	81401	203502	695		
341.8567	22.170	22.164	0	1.001	222225223	36707217	53183	132957	690	1.55(1.32-1.78)	

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Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.465	23.460	0	1.326	42586948	6639664	9962	24905	666		
353.8970	23.465	23.460	0	1.326	26927405	4217024	6847	17117	616	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.493	23.487	0	1.001	340924224	53718326	81401	203502	660		
341.8567	23.493	23.487	0	1.001	220934325	34945873	53183	132957	657	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.188	24.180	0	1.366	24977071	3714121	2704	6760	1374		
369.8919	24.188	24.180	0	1.366	15960981	2365970	2303	5757	1027	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	255495979	37371264	17726	44315	2108		
357.8516	24.202	24.204	0	1.001	162675947	23894684	11192	27980	2135	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.306	30.298	0	0.946	16693946	2797827	8888	22220	315		
385.8610	30.306	30.298	0	0.946	32647769	5329196	17579	43947	303	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.319	30.319	0	1.000	220200810	36204112	129716	324290	279		
375.8178	30.319	30.319	0	1.000	184979997	30500370	106930	267325	285	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.505	30.497	0	0.953	15543750	2456895	8888	22220	276		
385.8610	30.505	30.497	0	0.953	30311553	4750677	17579	43947	270	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.000	247282657	40149109	129716	324290	310		
375.8178	30.519	30.519	0	1.000	207099710	33852265	106930	267325	317	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	13874771	2980613	8888	22220	335		
385.8610	31.371	31.370	0	0.980	26871225	5846794	17579	43947	333	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	230640761	50044830	129716	324290	386		
375.8178	31.384	31.384	0	1.000	193833818	42230515	106930	267325	395	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.209	32.201	0	1.006	12785730	2907229	8888	22220	327		
385.8610	32.209	32.201	0	1.006	25266647	5654550	17579	43947	322	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.222	32.214	0	1.000	215591083	48116052	129716	324290	371		
375.8178	32.209	32.214	0	1.000	179162514	40158997	106930	267325	376	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.023	32.015	0		23732347	5110646	8378	20945	610		
403.8529	32.023	32.015	0		18481654	3992833	6941	17352	575	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	22872048	5794317	8378	20945	692		
403.8529	31.570	31.570	0	0.986	18031056	4518362	6941	17352	651	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	183755080	46280885	75759	189397	611		
391.8127	31.583	31.583	0	1.000	149432239	37603879	61541	153852	611	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.989	24375722	5229298	8378	20945	624		
403.8529	31.677	31.677	0	0.989	19622491	4253242	6941	17352	613	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	228838318	49581834	75759	189397	654		
391.8127	31.690	31.693	0	1.000	183859625	40254769	61541	153852	654	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.036	32.028	0	1.015	229440882	50100860	75759	189397	661		
391.8127	32.023	32.028	0	1.014	184636400	40115967	61541	153852	652	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.665	33.657	0	1.051	10566007	2832995	17486	43715	162		
419.8220	33.665	33.657	0	1.051	23816841	6301216	42605	106512	148	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.665	33.667	0	1.000	252674071	66962410	417316	1043290	160		
409.7789	33.665	33.667	0	1.000	245342114	66088076	412134	1030335	160	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	12394885	2900144	17486	43715	166		
419.8220	34.734	34.731	0	1.085	28171017	6453325	42605	106512	151	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.734	34.739	0	1.000	218233205	49757692	417316	1043290	119		
409.7789	34.734	34.739	0	1.000	212323011	49057536	412134	1030335	119	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	17370762	4090039	13000	32500	315		
437.8140	34.442	34.444	0	1.076	16229597	3866490	11345	28362	341	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	182057255	43355616	125897	314742	344		
425.7737	34.454	34.457	0	1.000	174319845	41610770	116471	291177	357	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.148	28256484	4897646	4236	10590	1156		
471.7750	36.773	36.775	0	1.148	31200267	5399035	7265	18162	743	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	365589817	70074064	33071	82677	2119		
443.7399	36.869	36.871	0	1.003	410295461	79323533	37271	93177	2128	0.89(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	317017089	55607931	38765	96912	1434		
459.7348	36.785	36.787	0	1.000	355130117	62440680	44388	110970	1407	0.89(0.76-1.02)	

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d		
Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

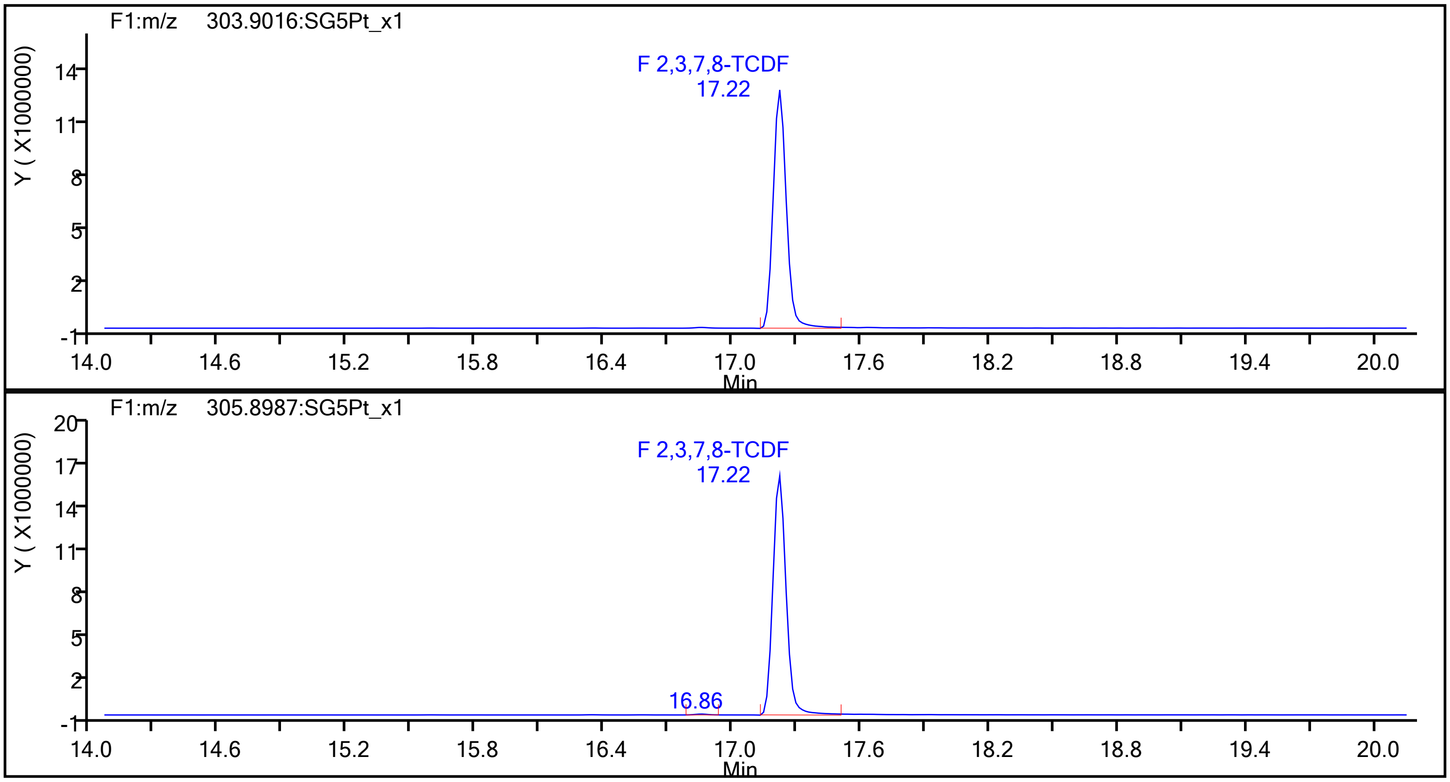

TCDF Standards

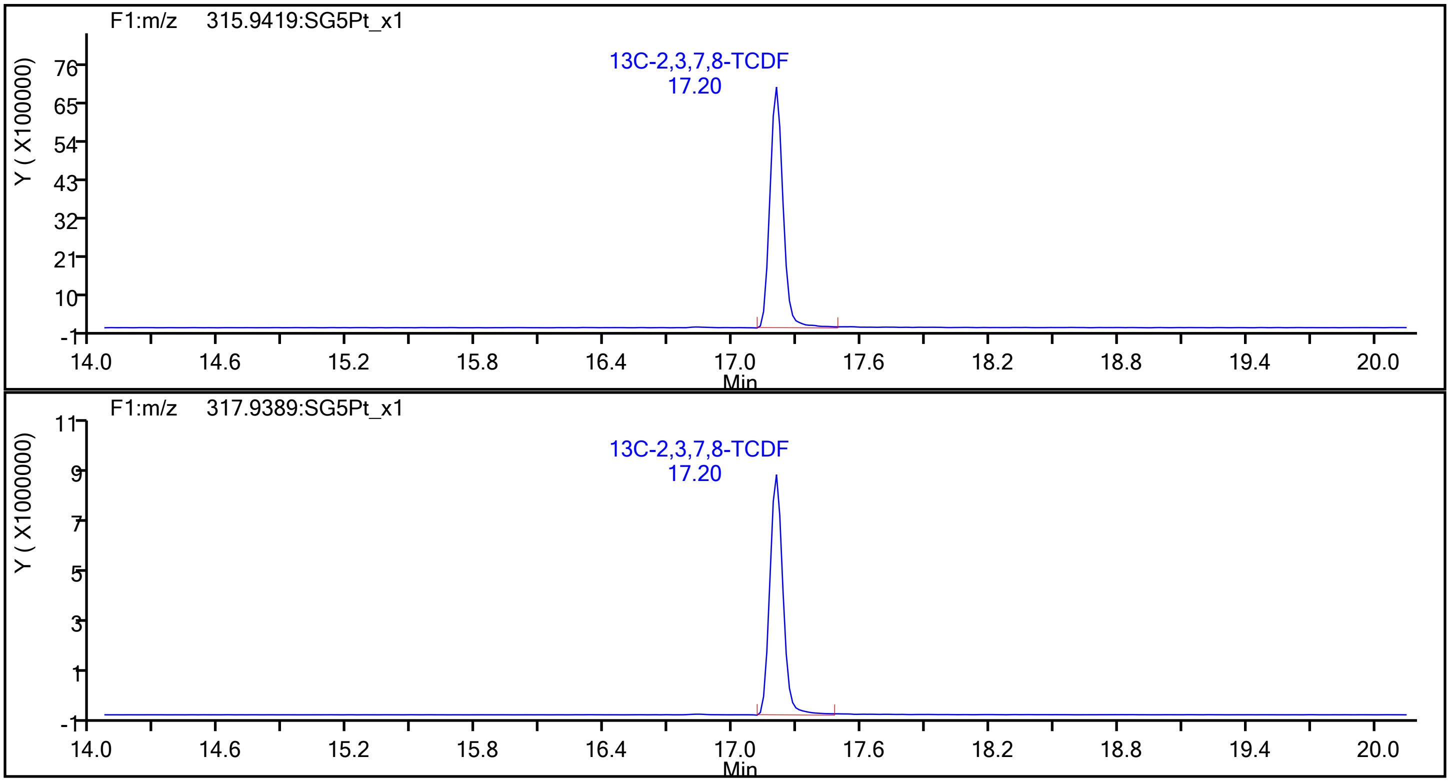

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d
Injection Date: 27-Jun-2020 17:43:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

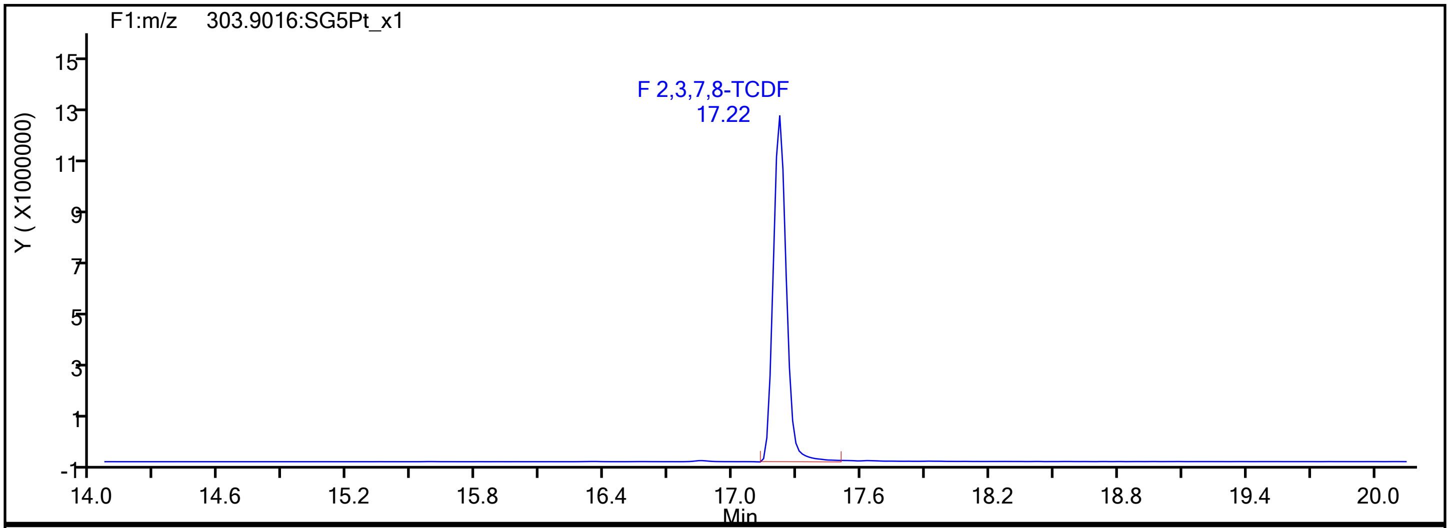

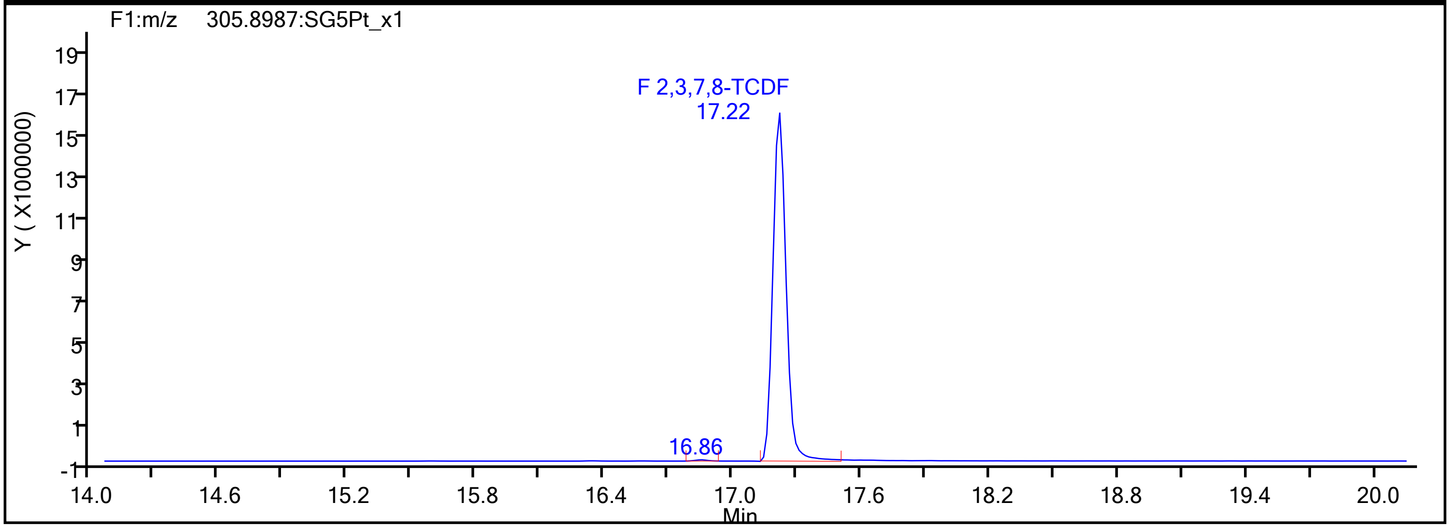

TCDF Interference Mass

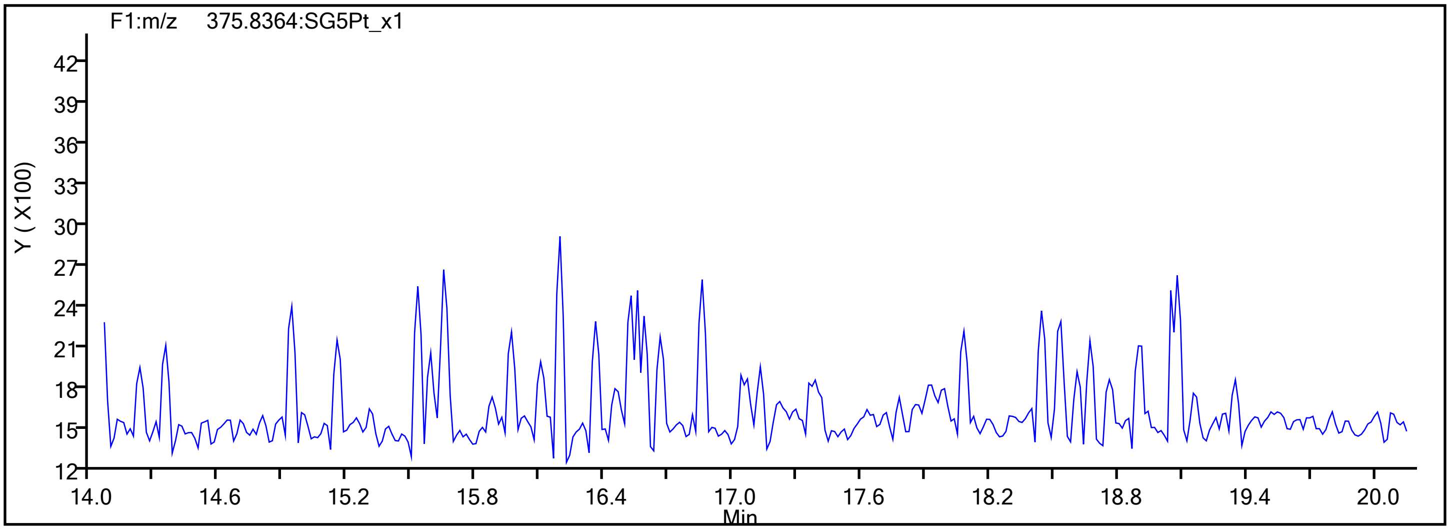

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d		
Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

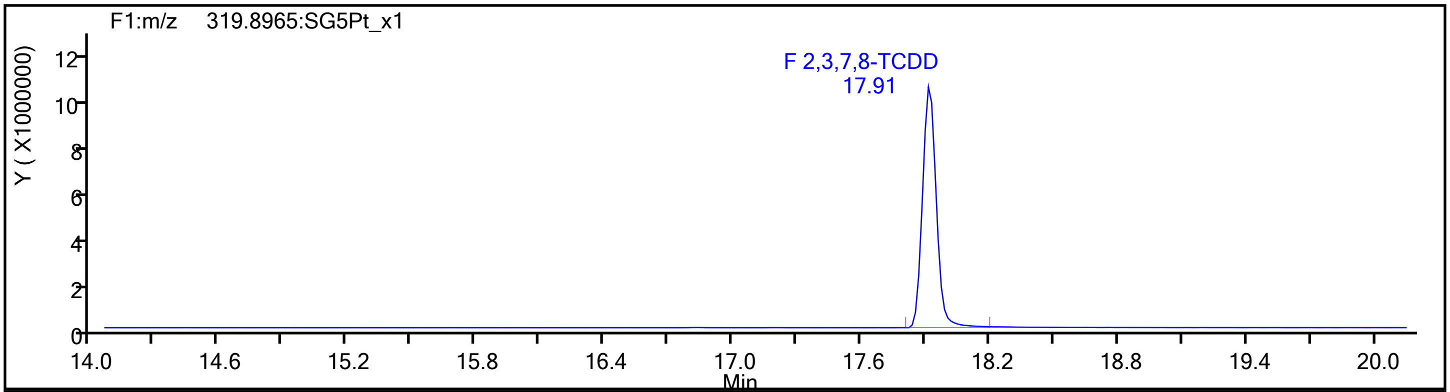

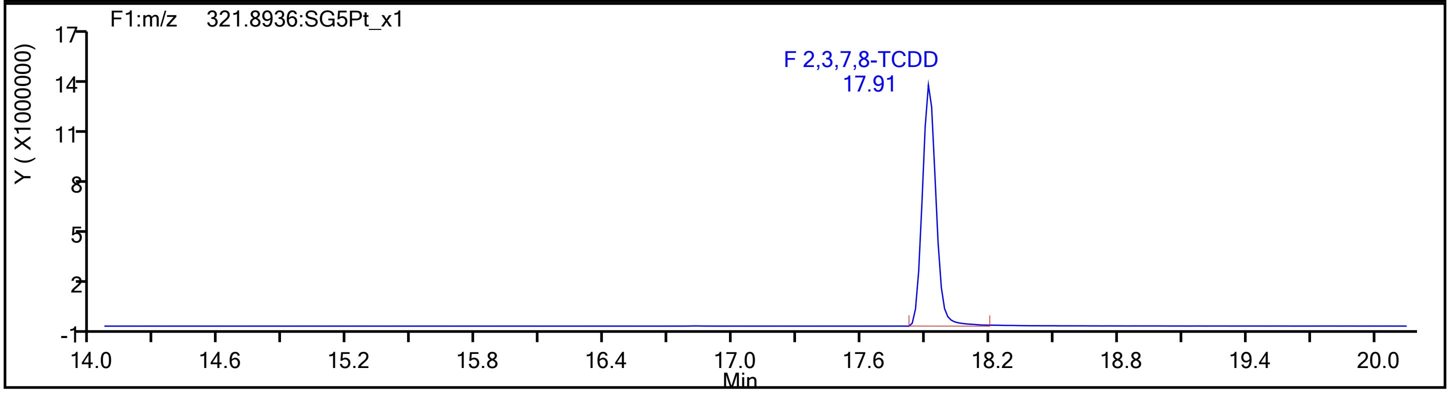

TCDD Standards

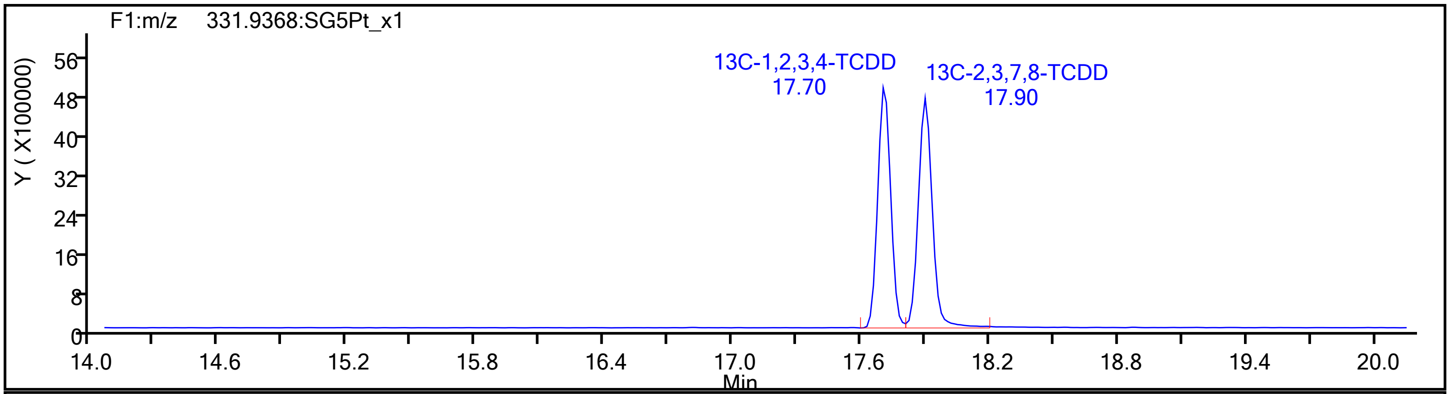

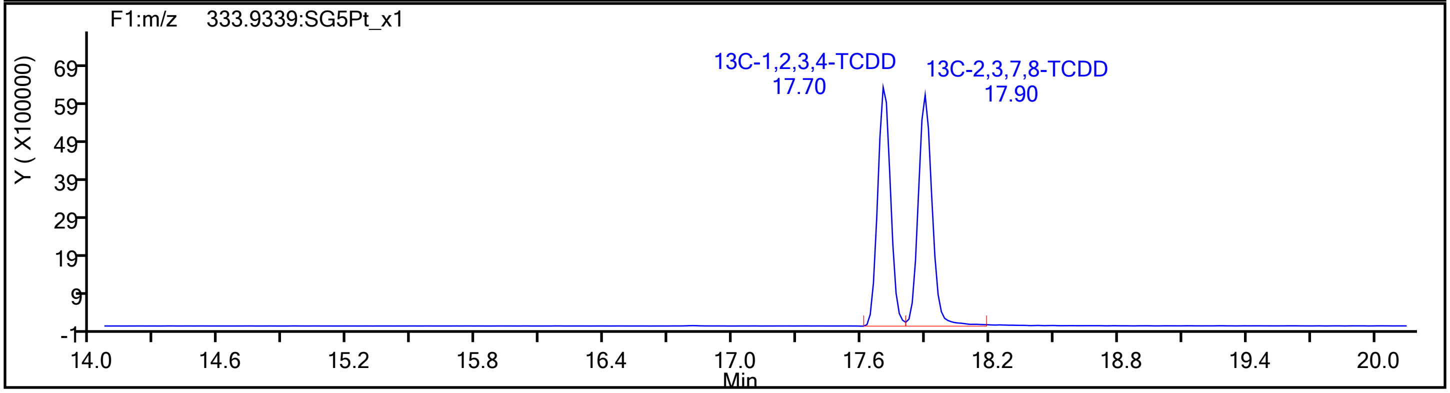

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

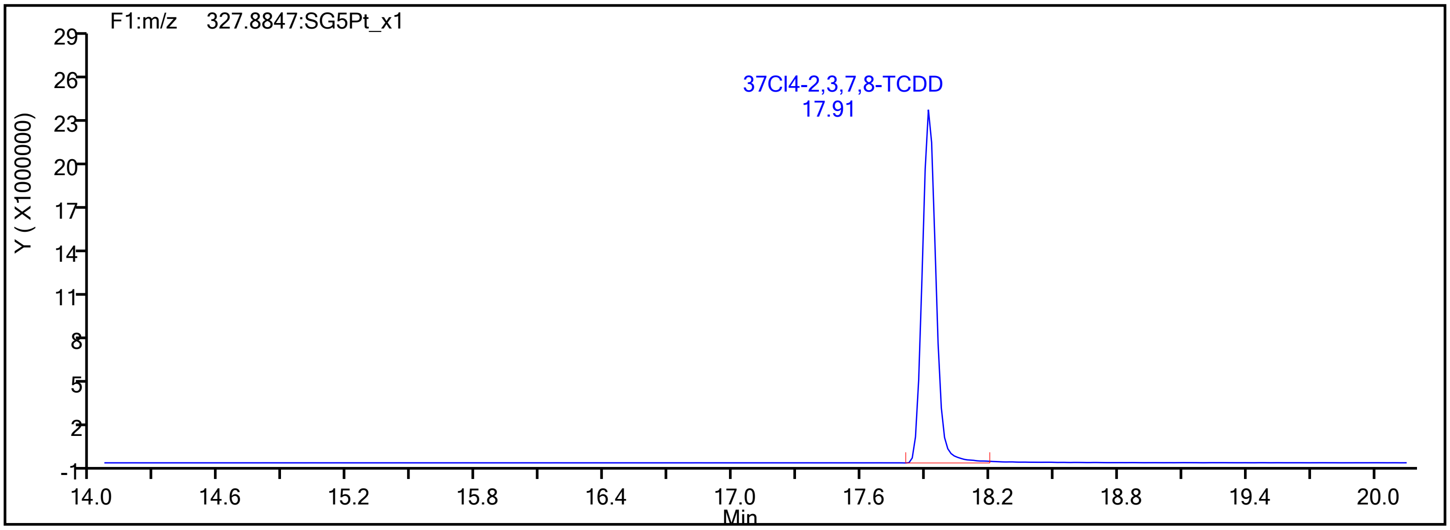

37Cl4-TCDD Standards

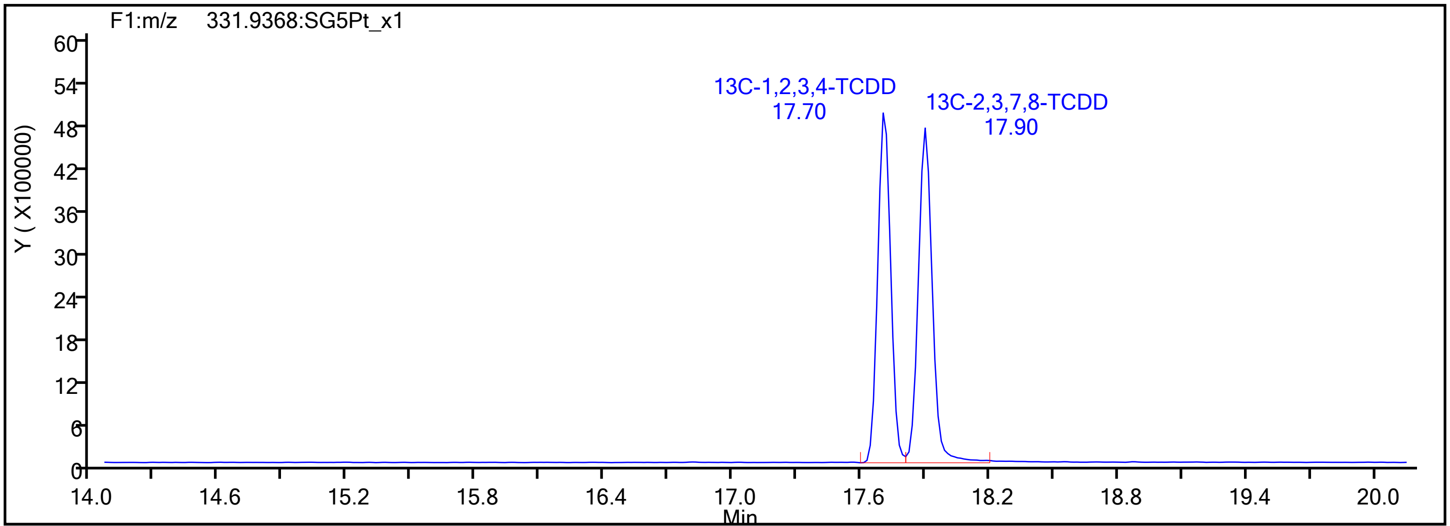

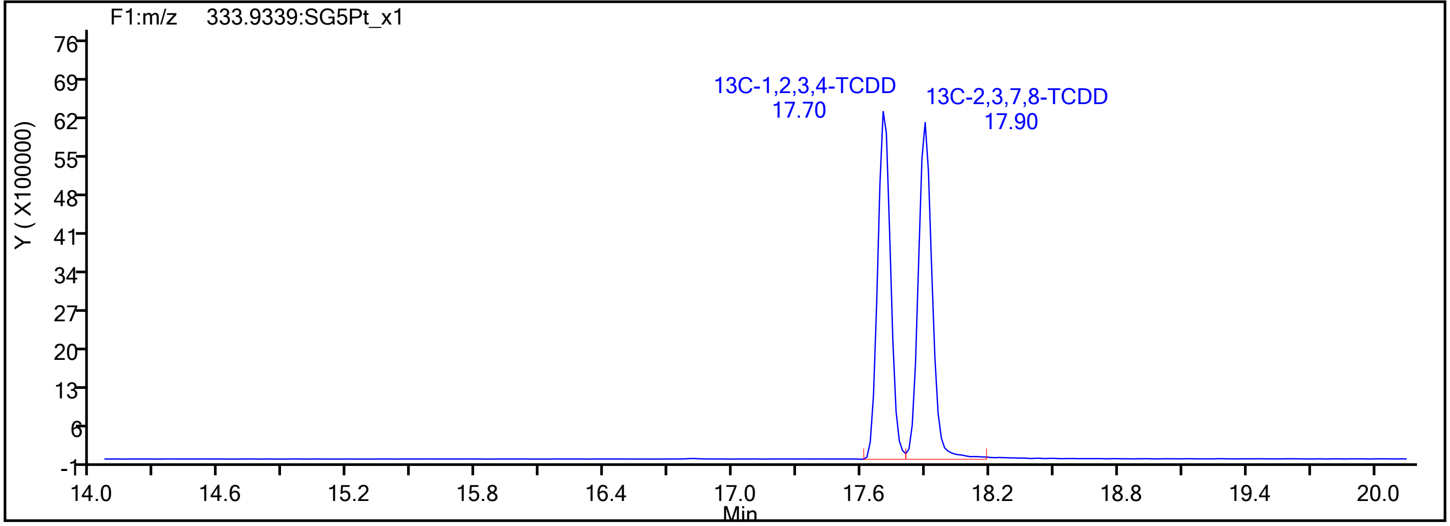

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d		
Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

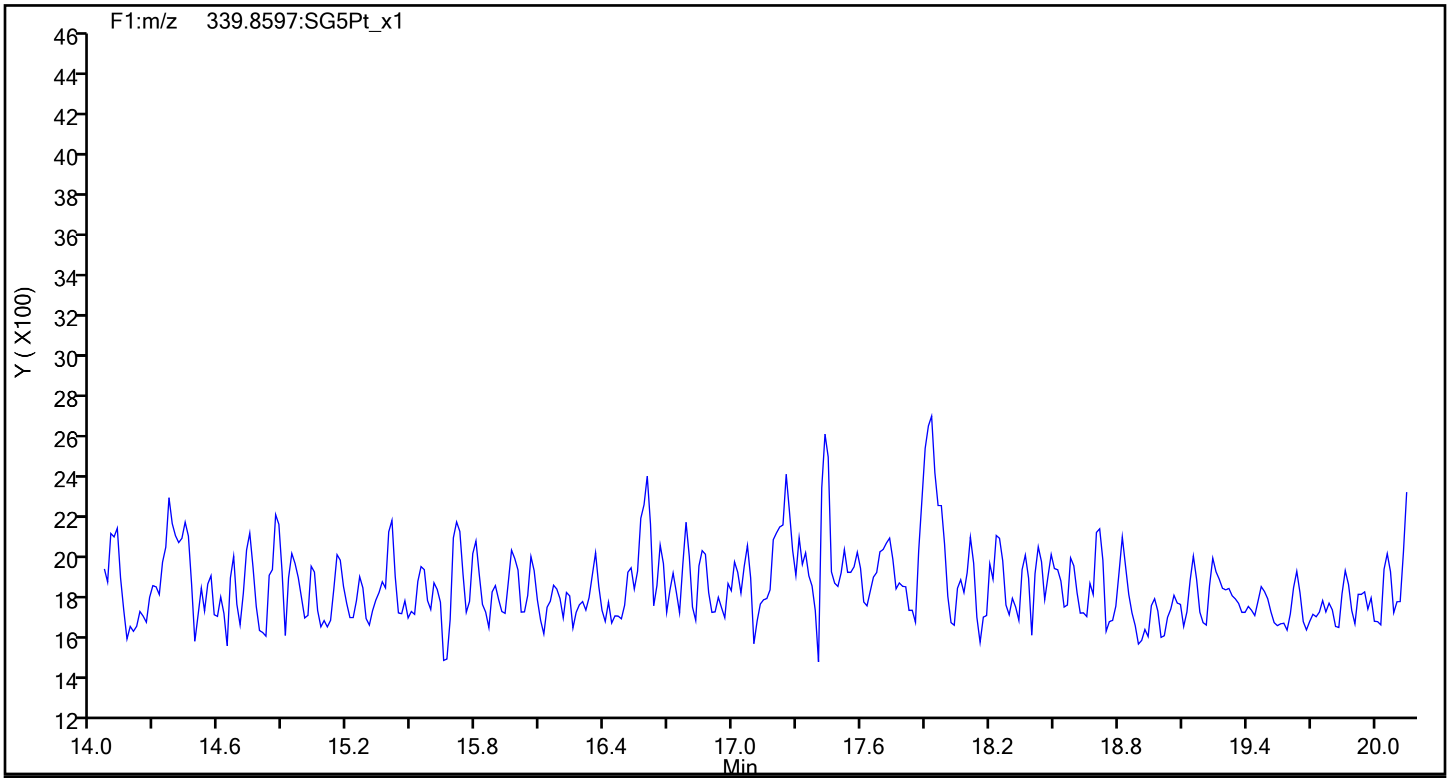

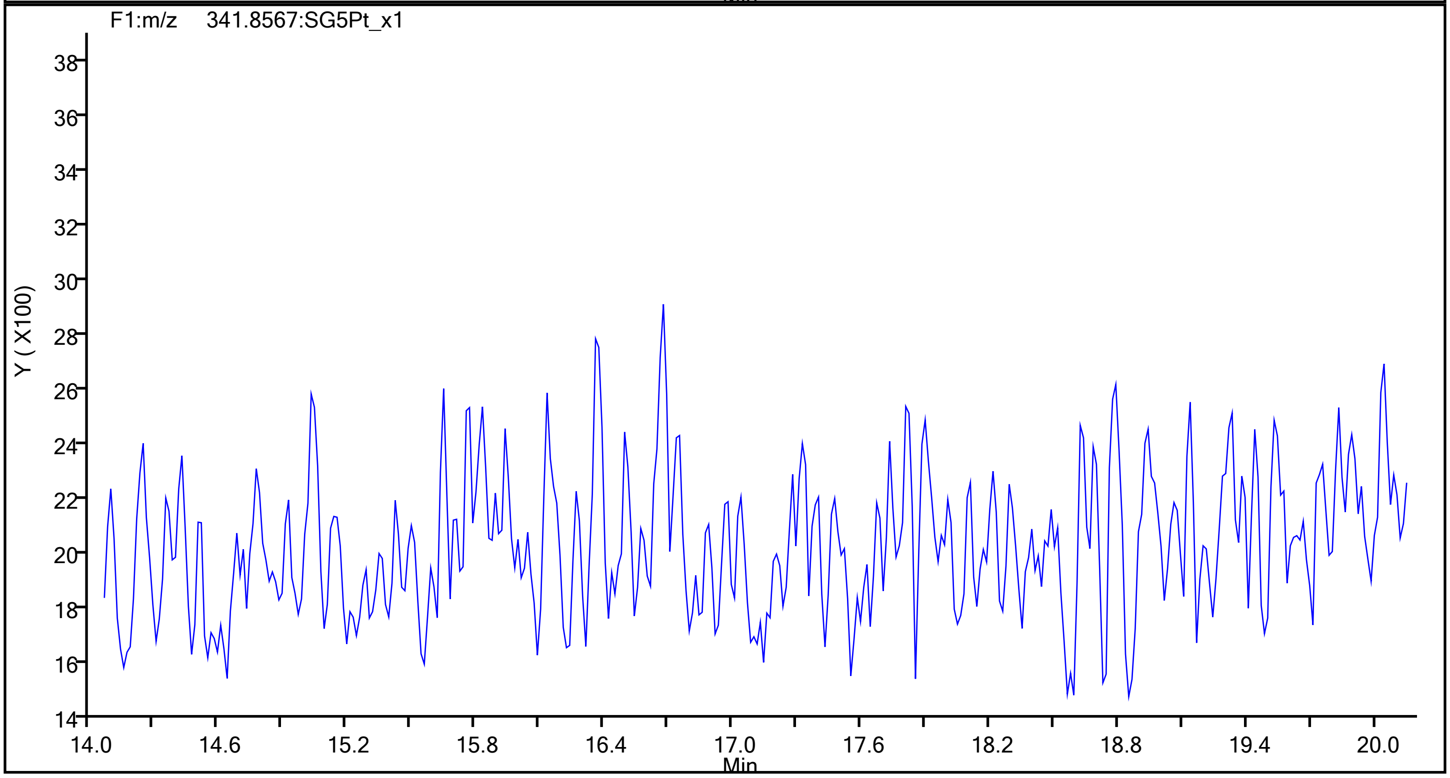

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d		
Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

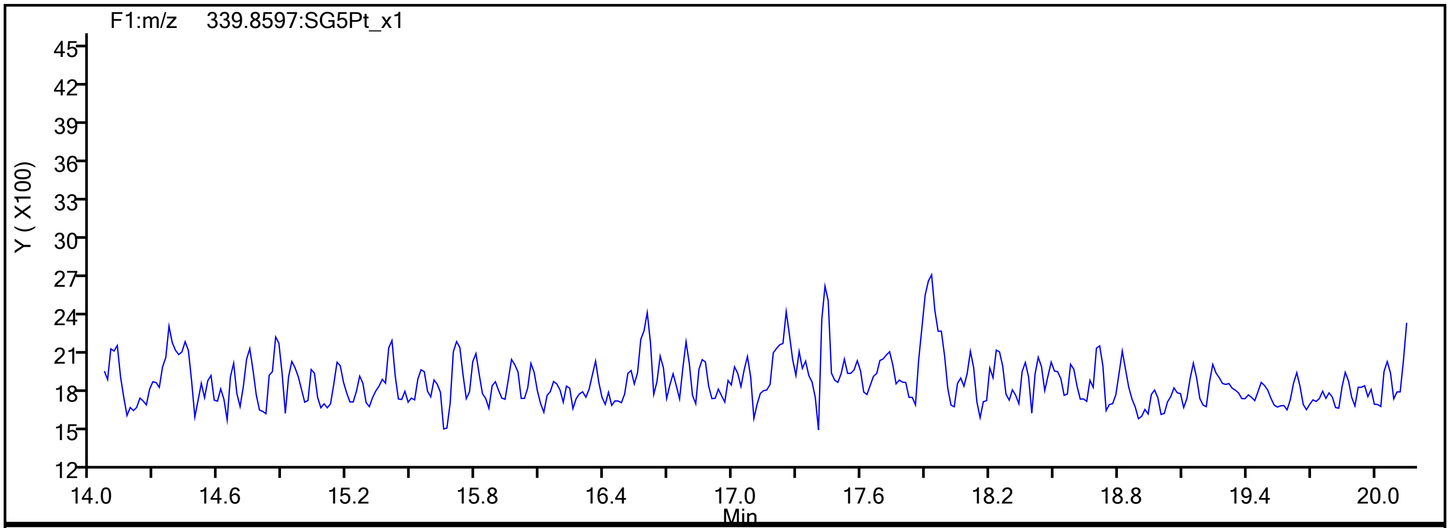

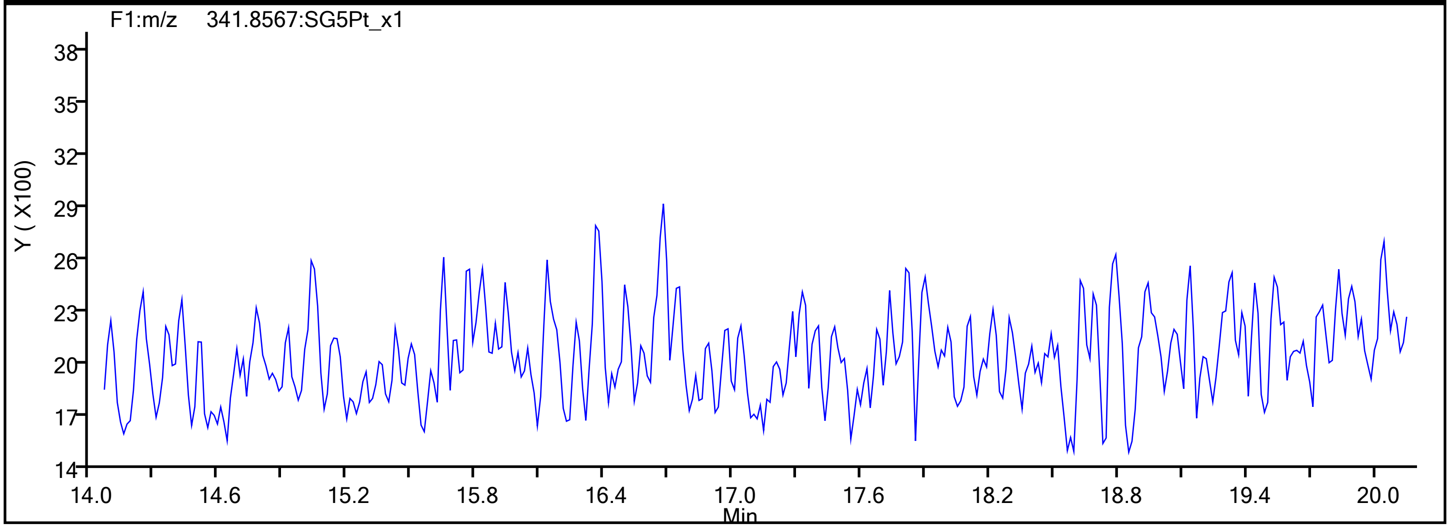

F1 PeCDFs Interference Mass

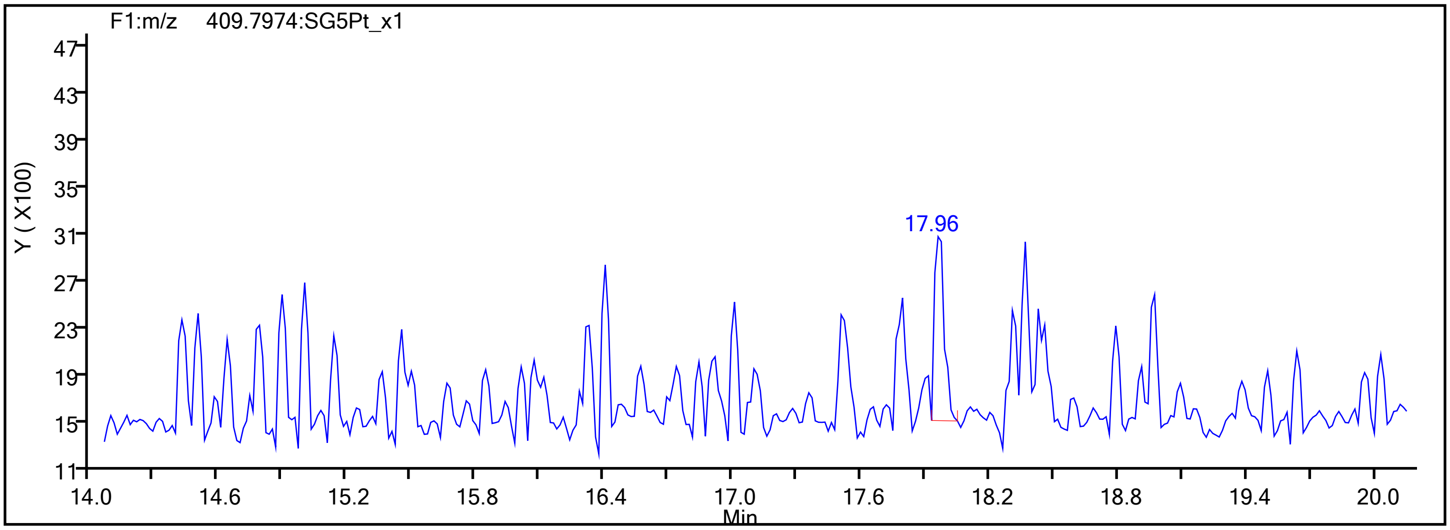

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

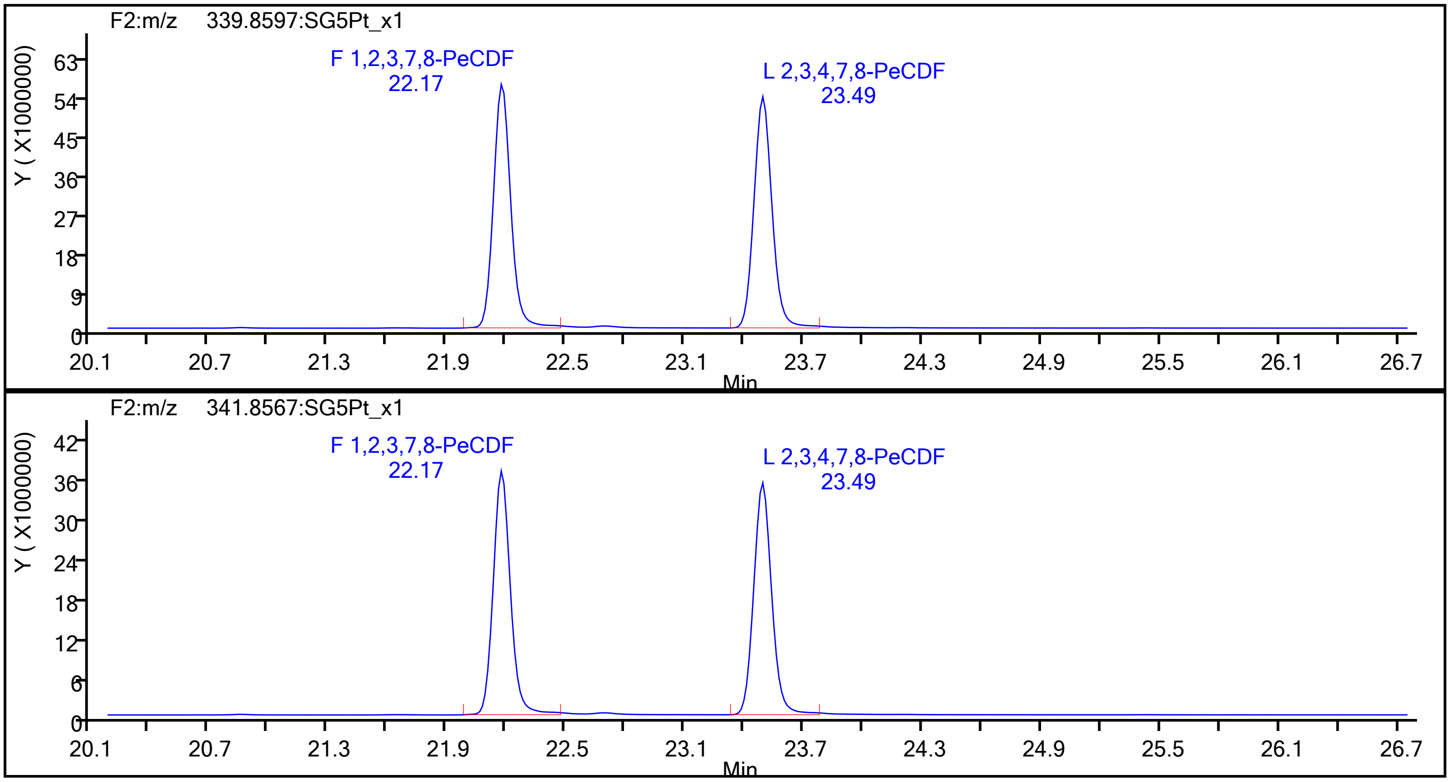

PeCDF Standards

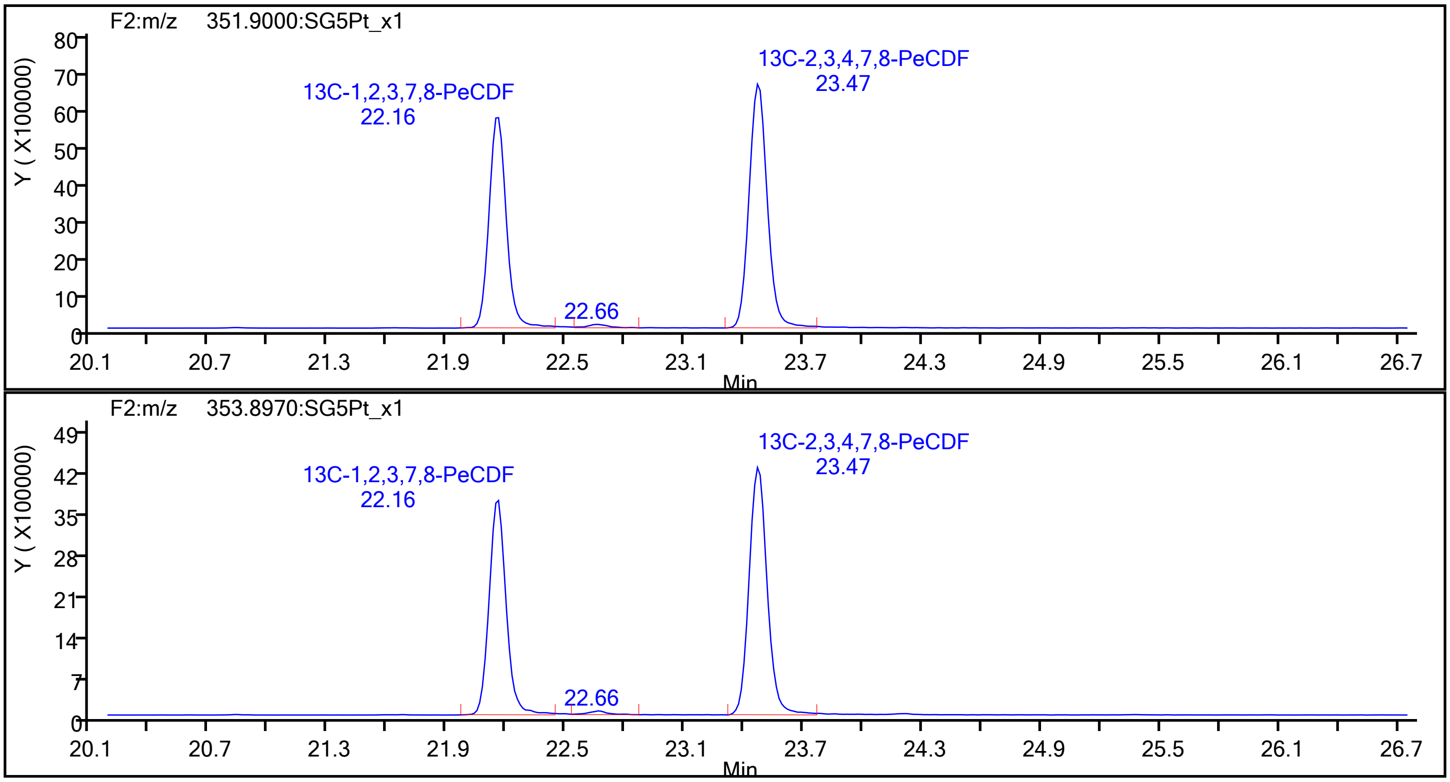

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Client ID:			
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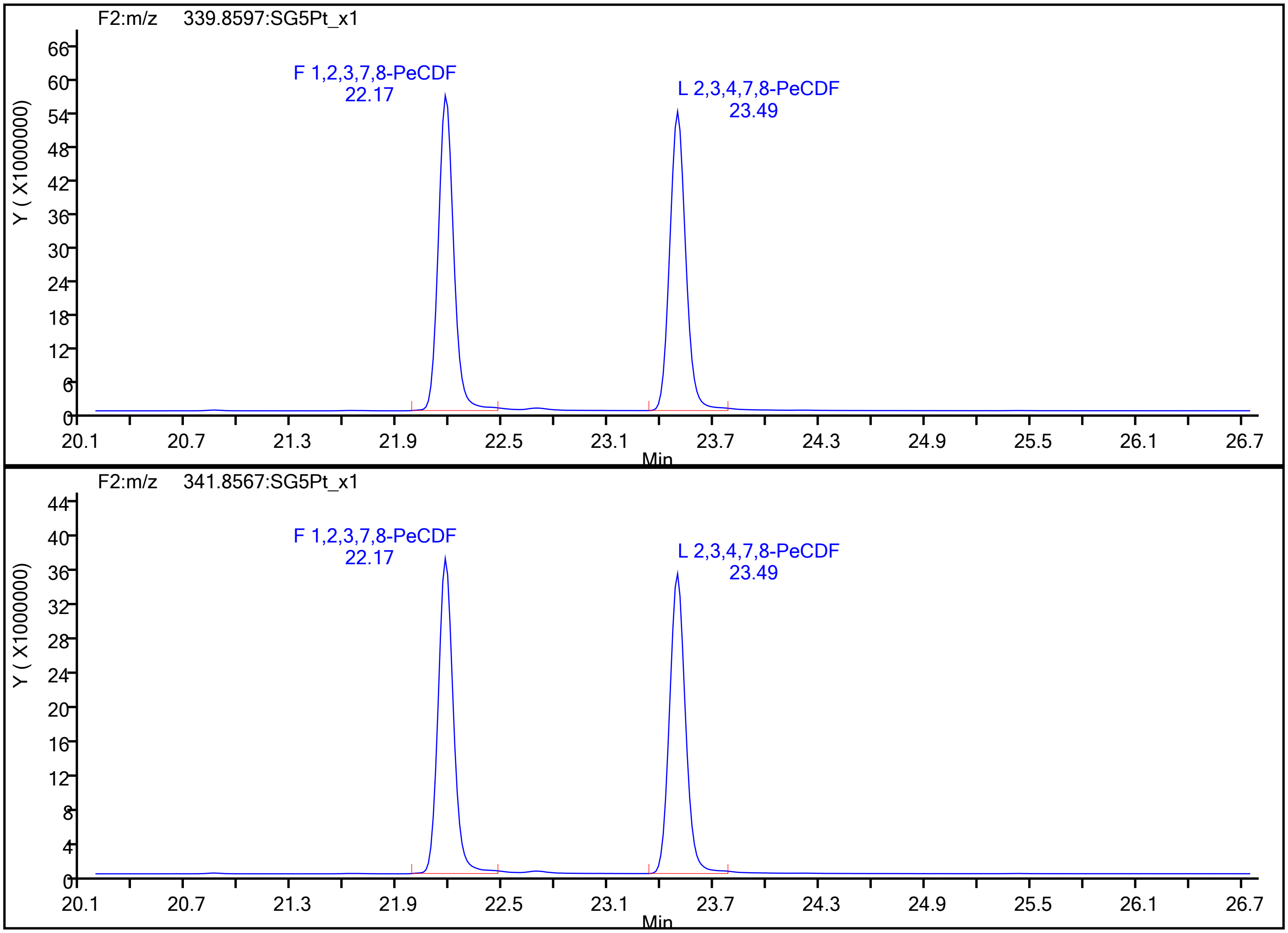

PeCDF Interference Mass

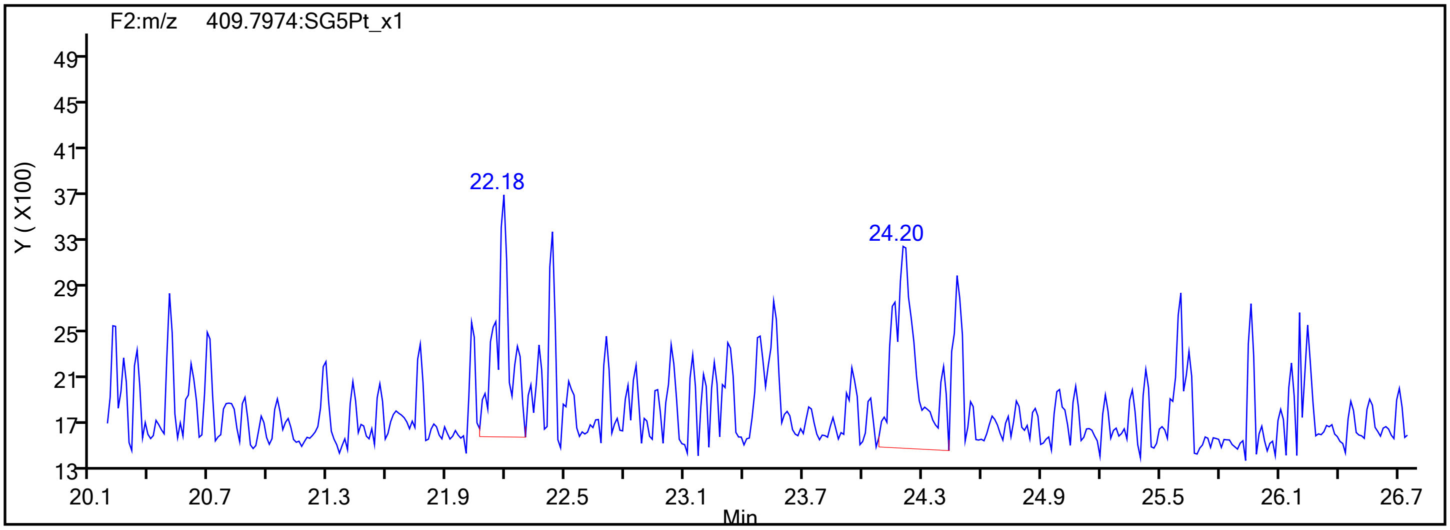

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Eurofins TestAmerica, Sacramento

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PeCDD

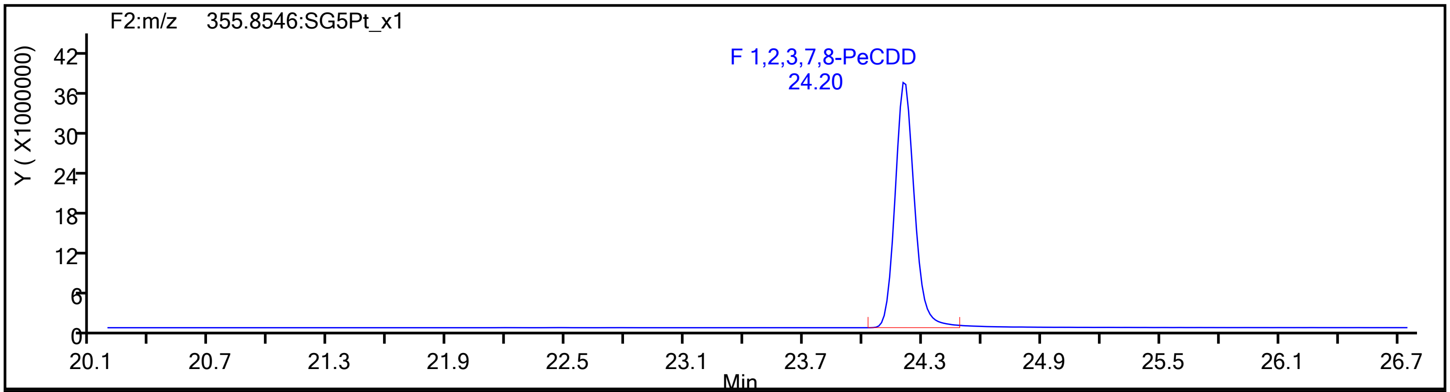

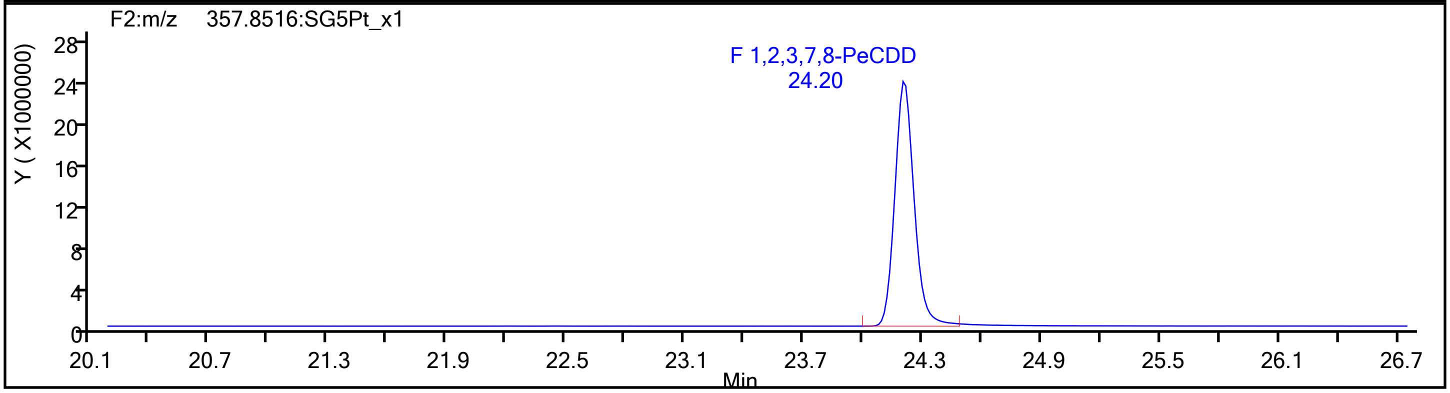

PeCDD Standards

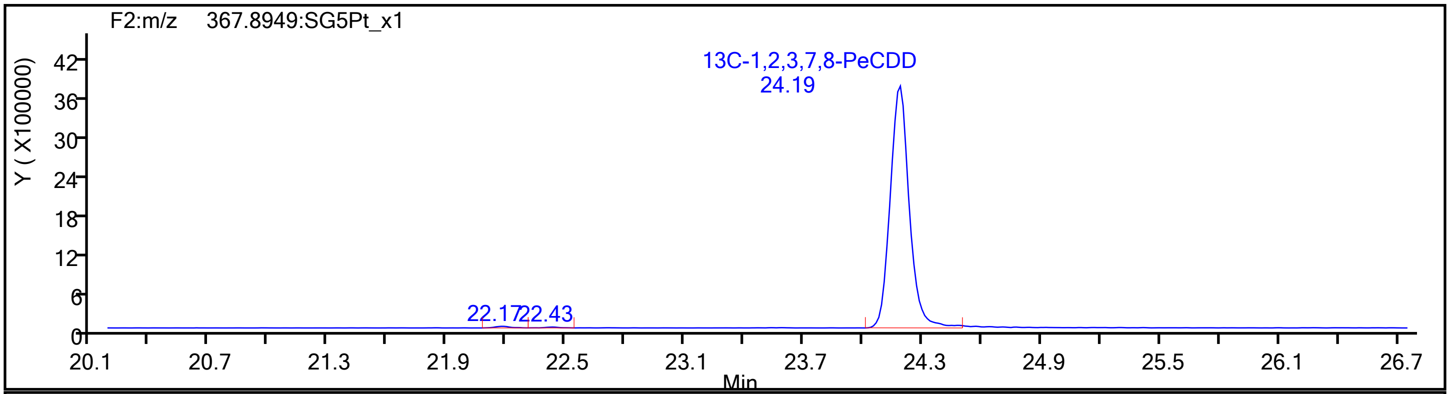

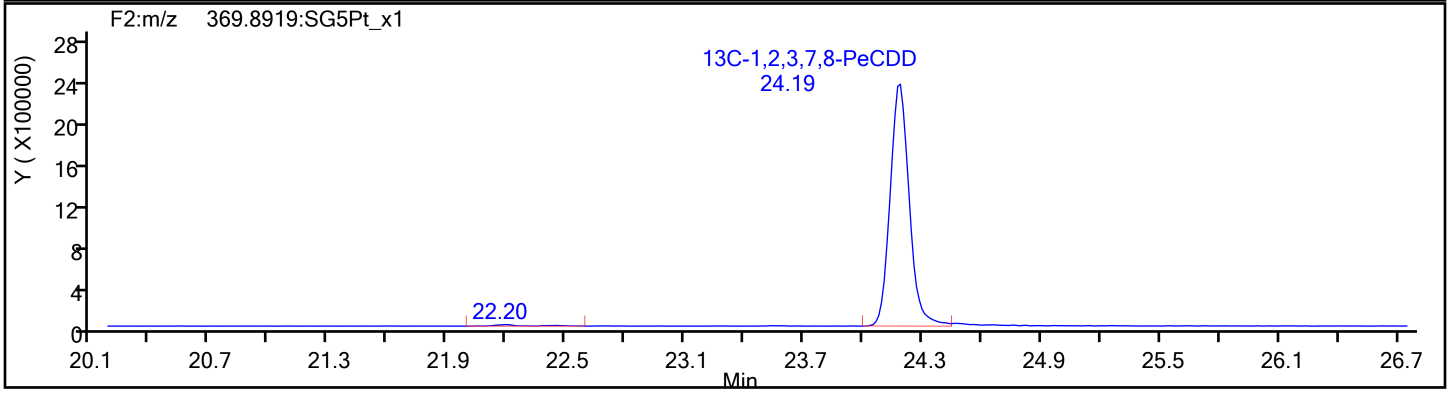

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

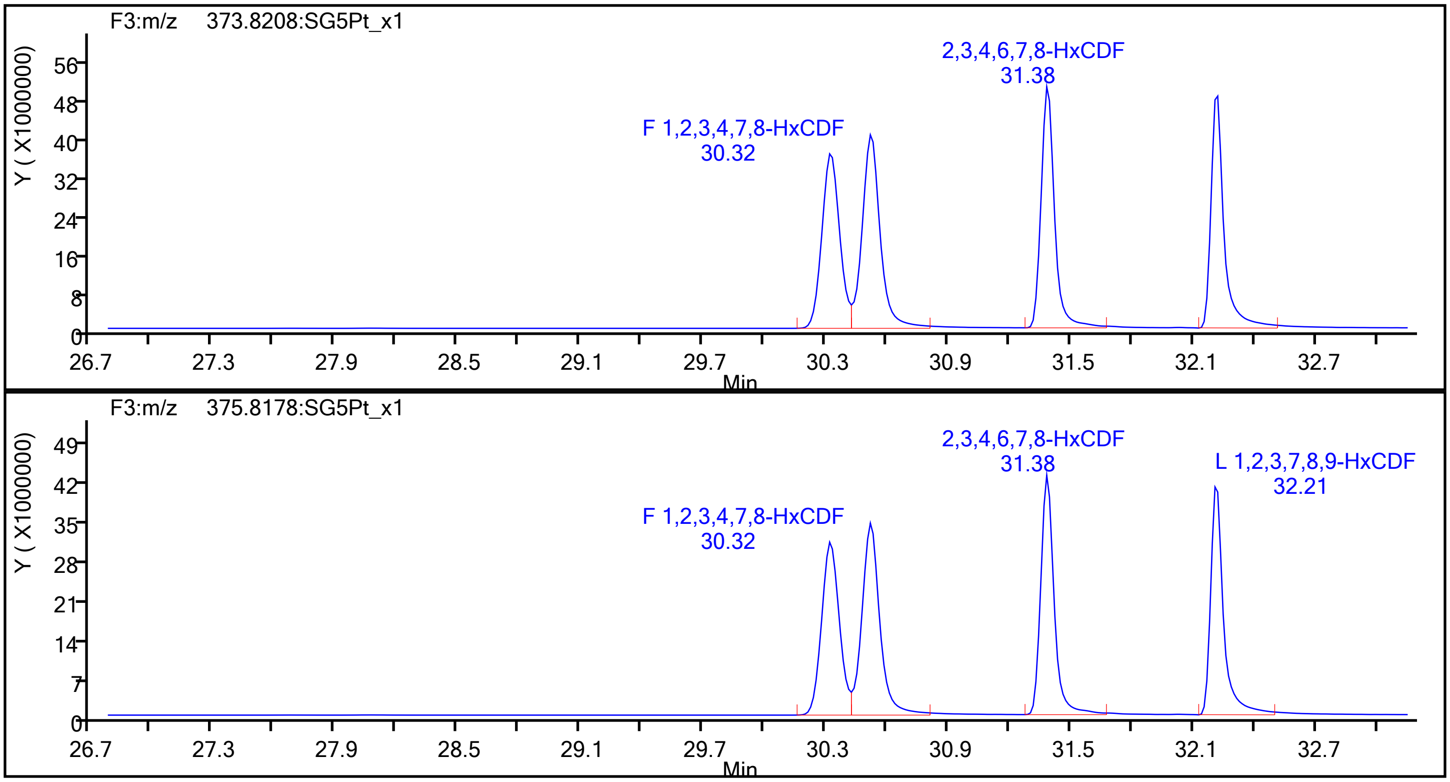

HxCDF Standards

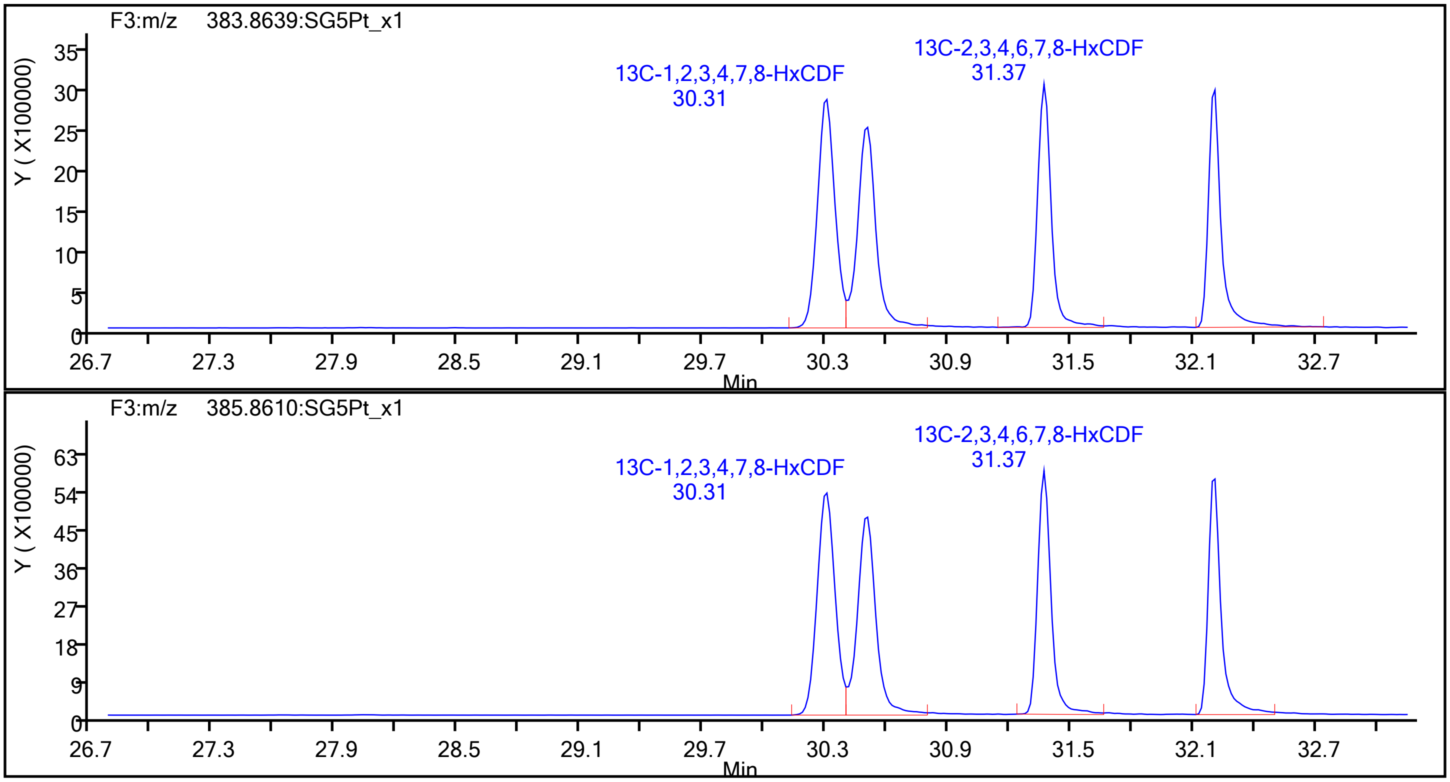

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Eurofins TestAmerica, Sacramento

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Client ID:
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HxCDF

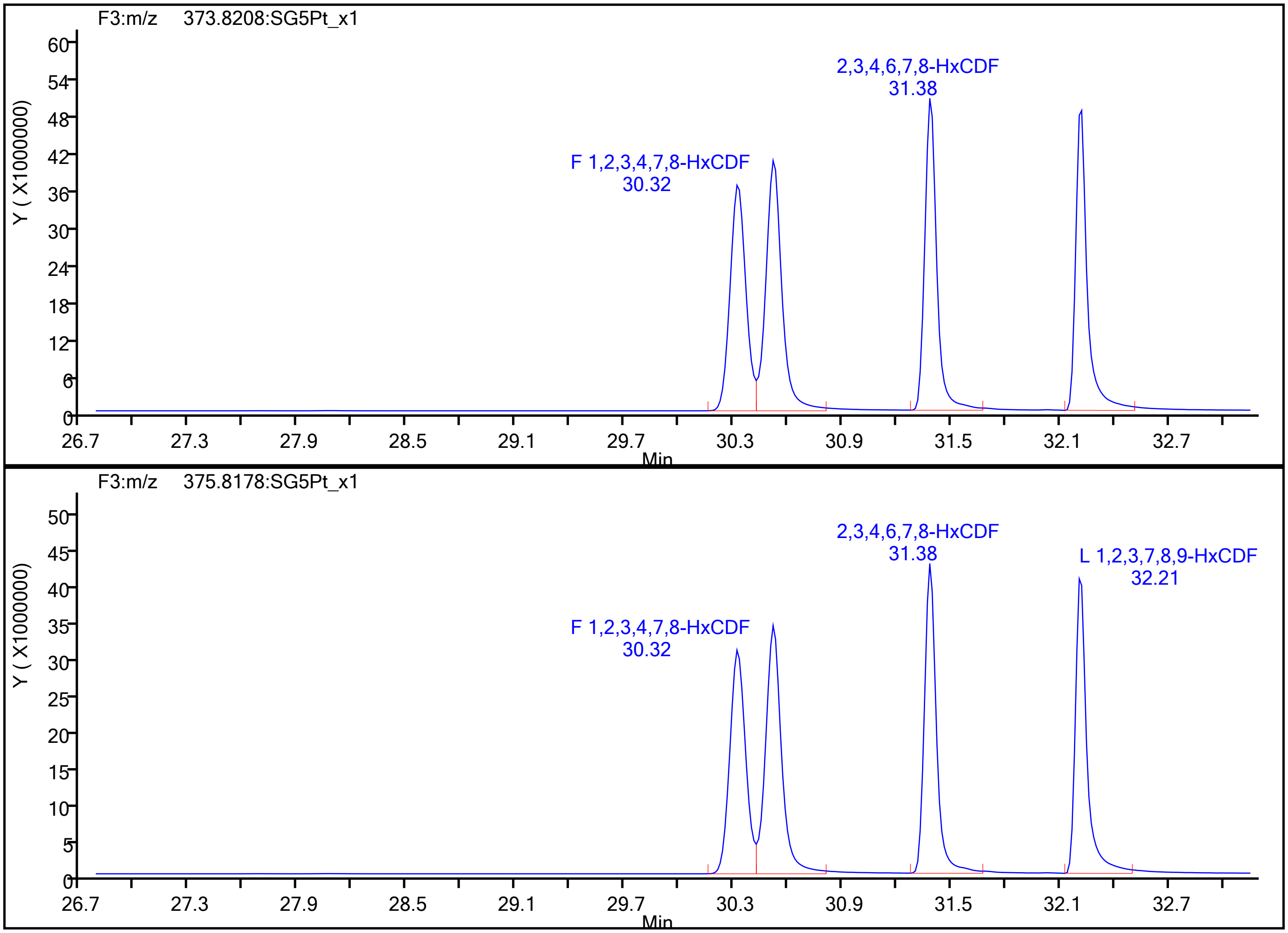

HxCDF Interference Mass

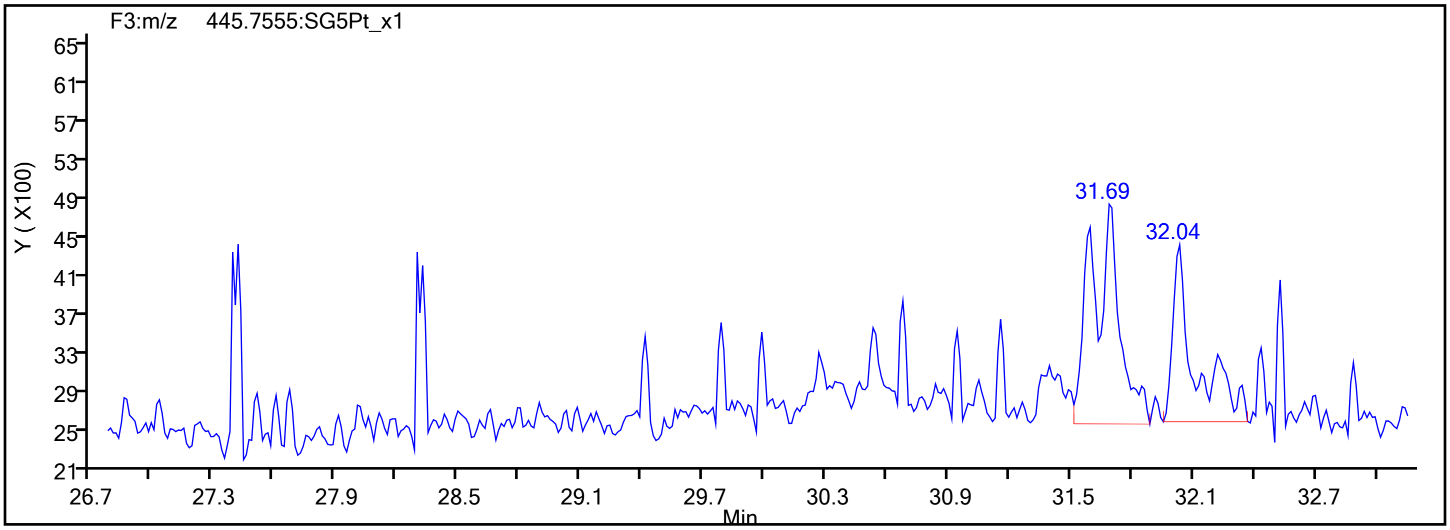

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35 Injection Vol: 2.0 ul
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Client ID:
Worklist#: 390253 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

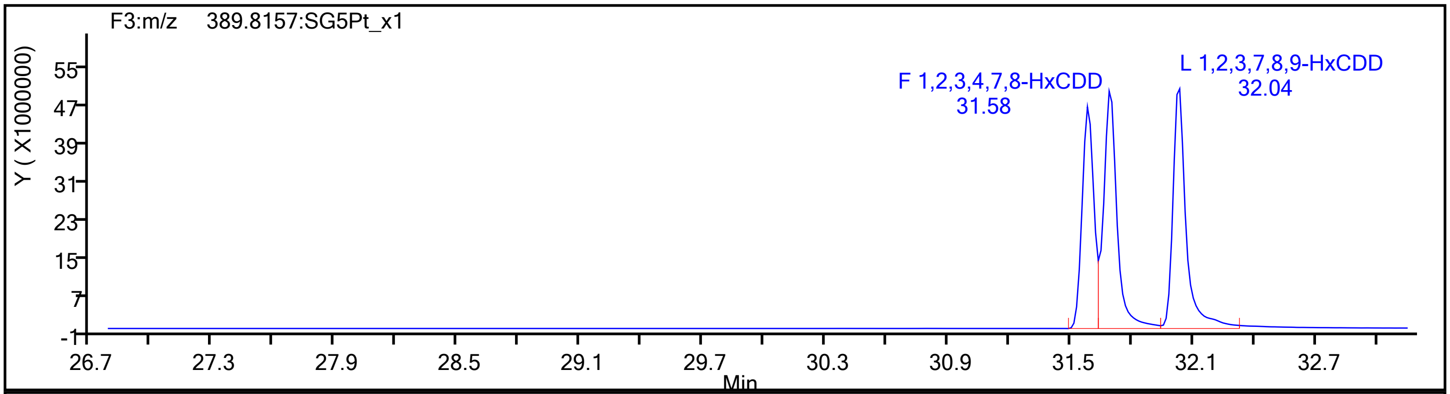

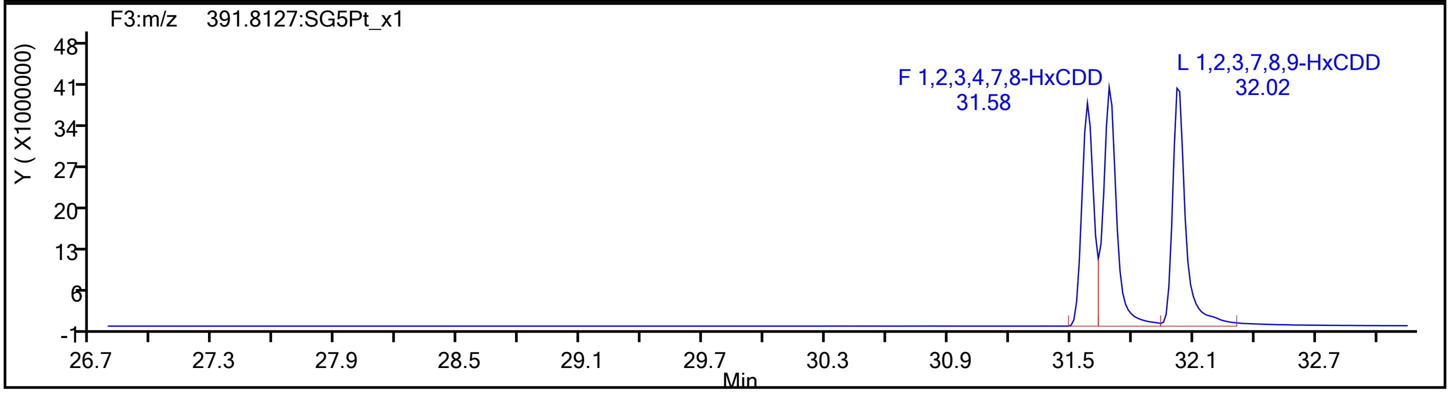

HxCDD Standards

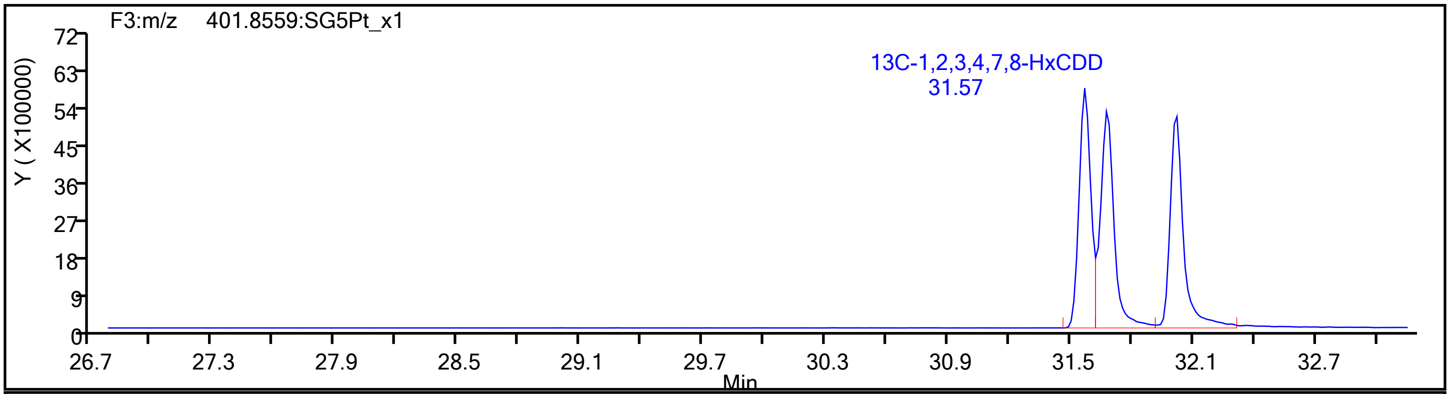

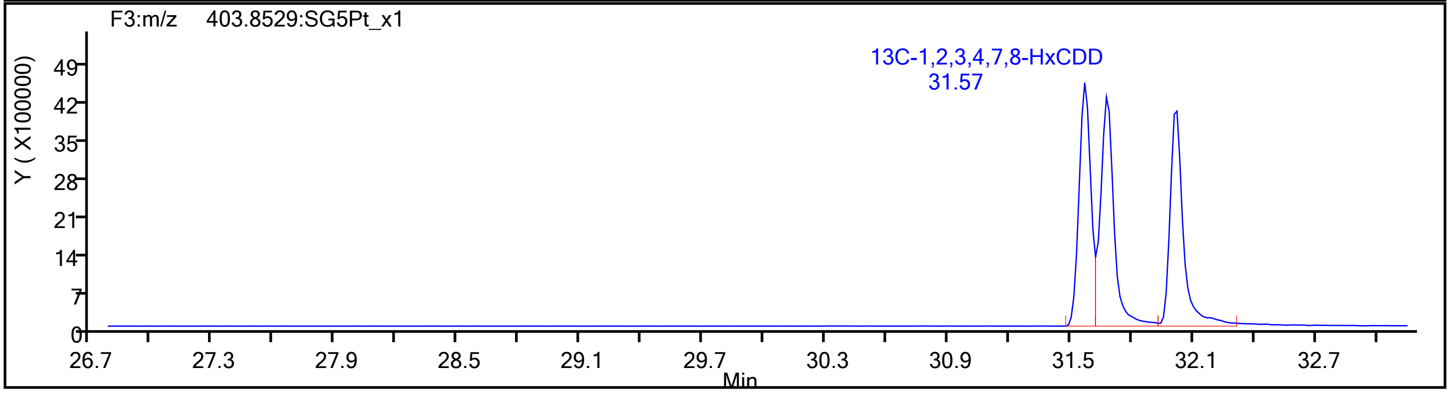

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35
Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

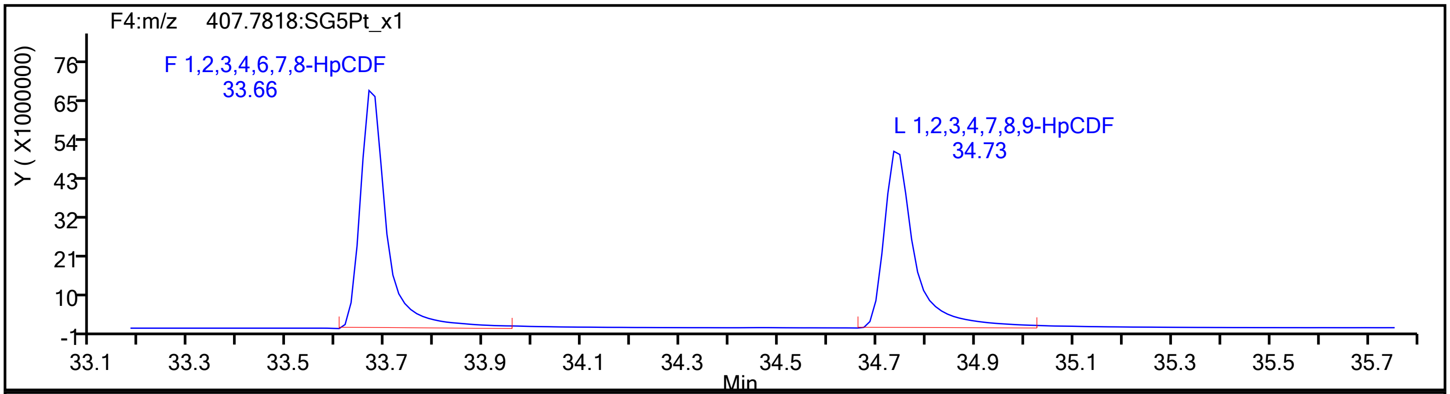

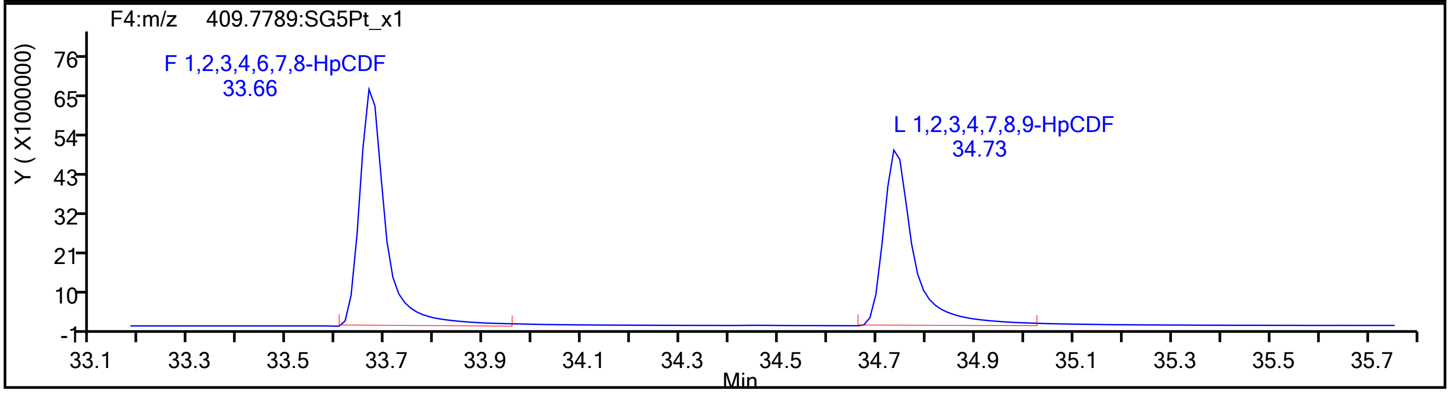

HpCDF Standards

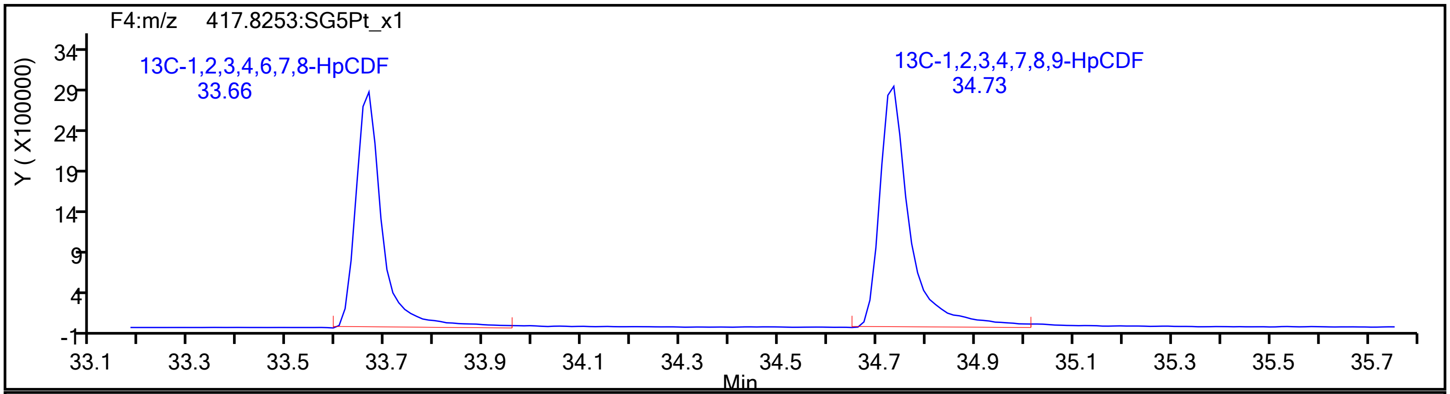

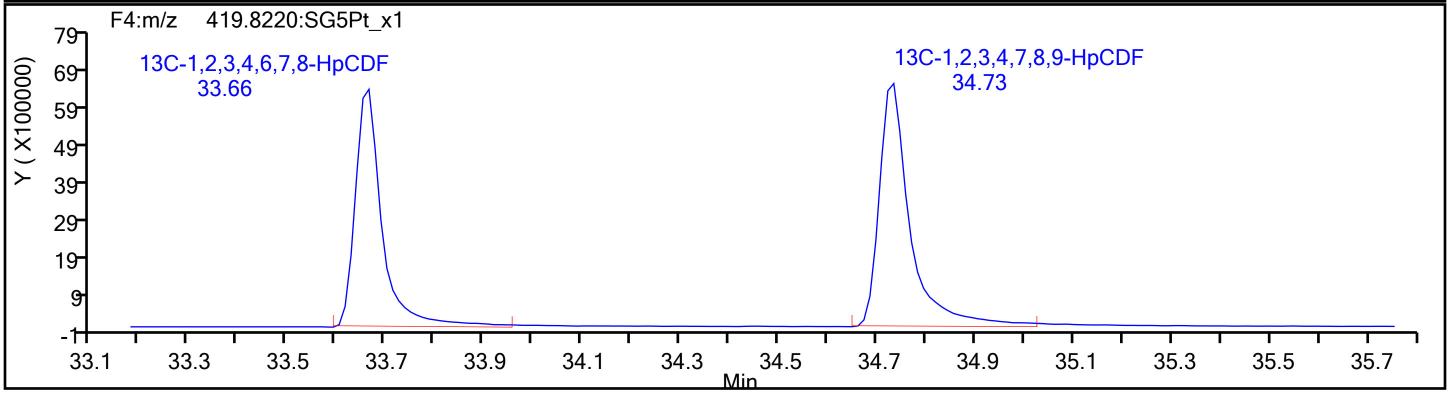

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Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

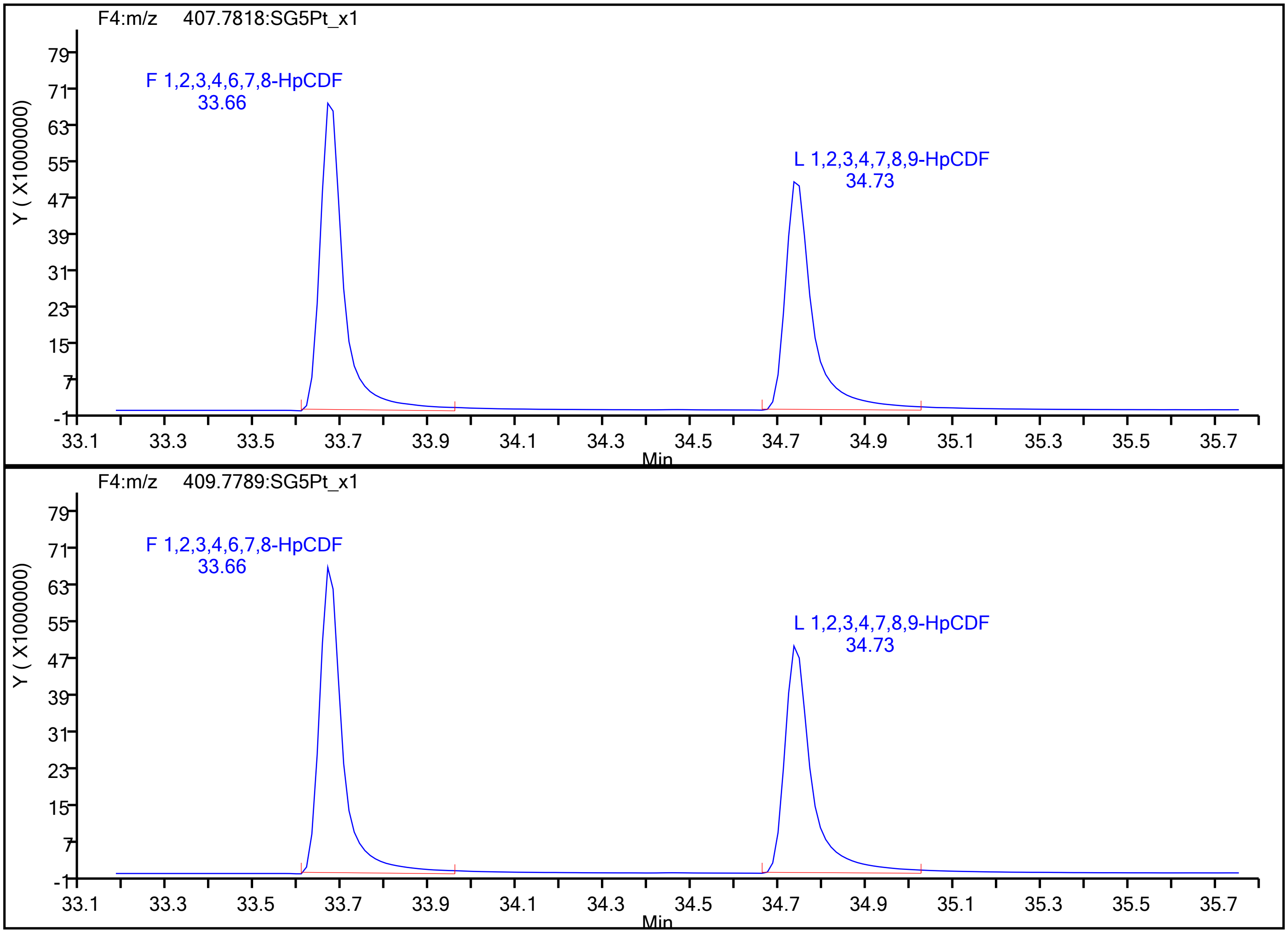

HpCDF Interference Mass

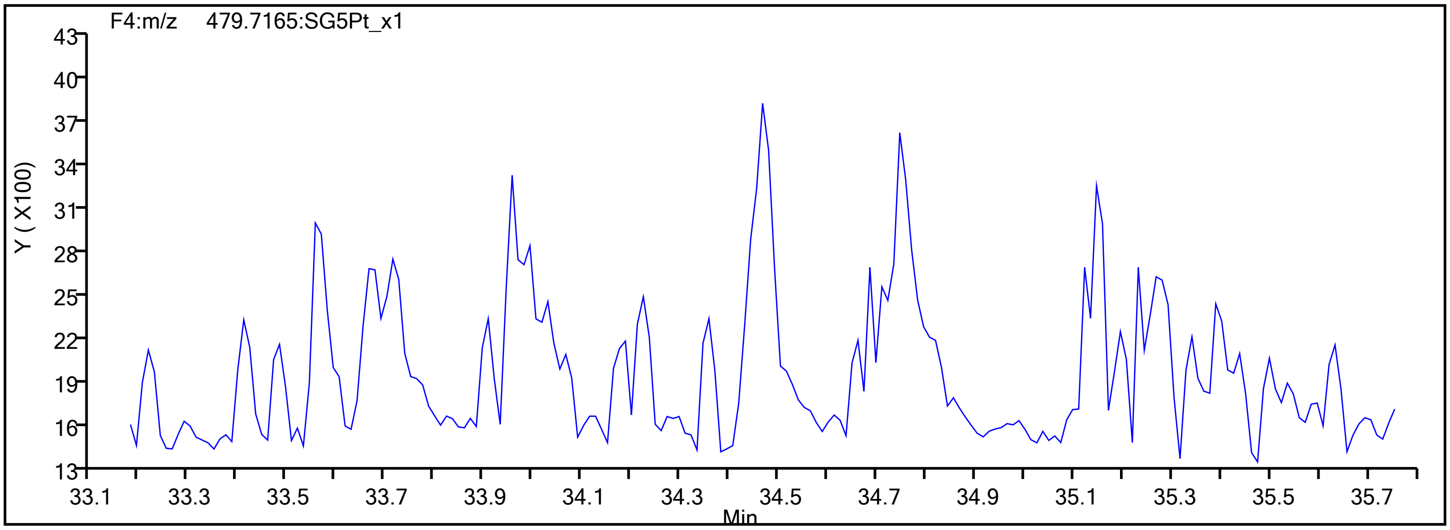

Report Date: 28-Jun-2020 13:17:22　Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
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HpCDD

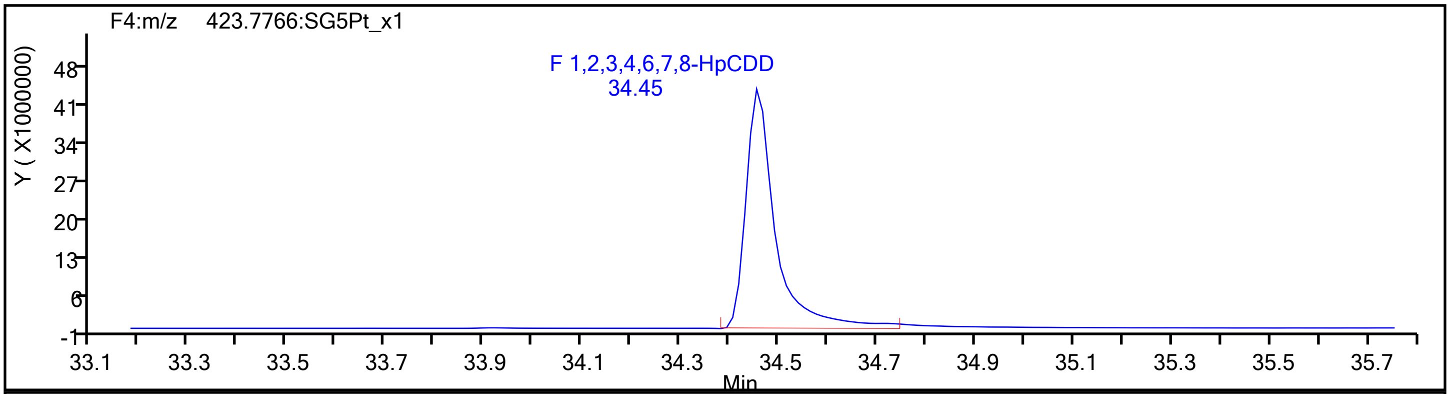

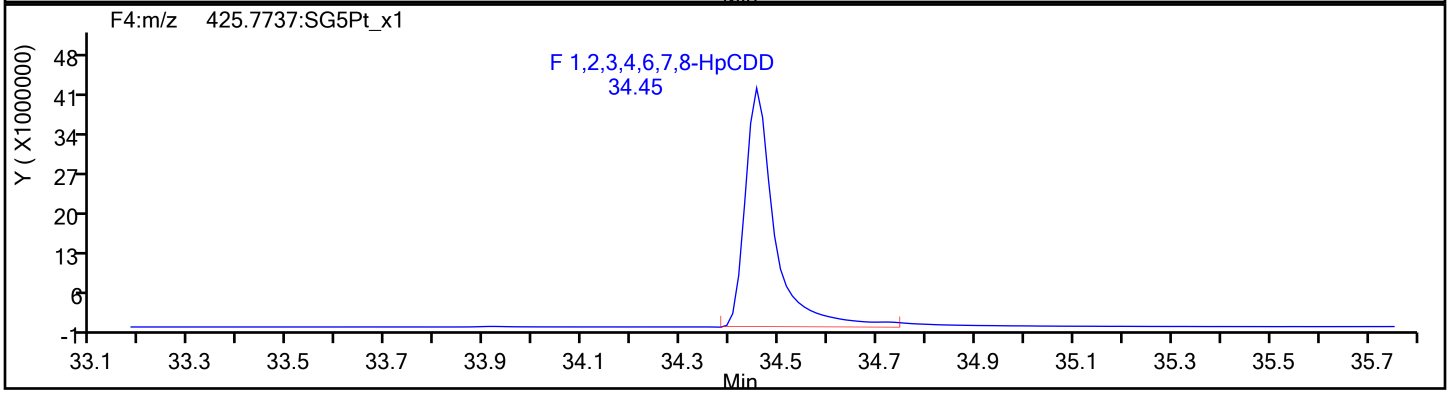

HpCDD Standards

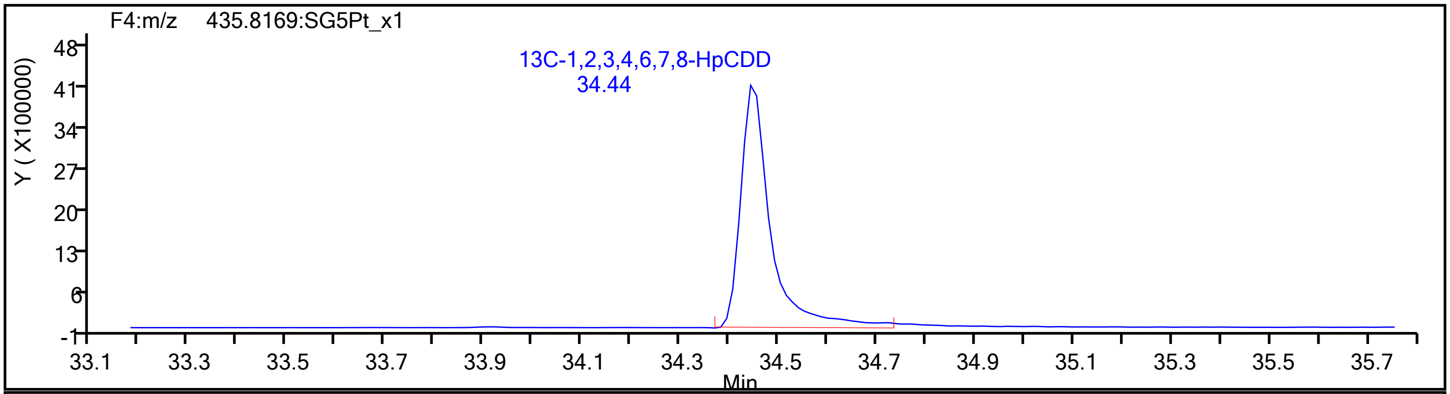

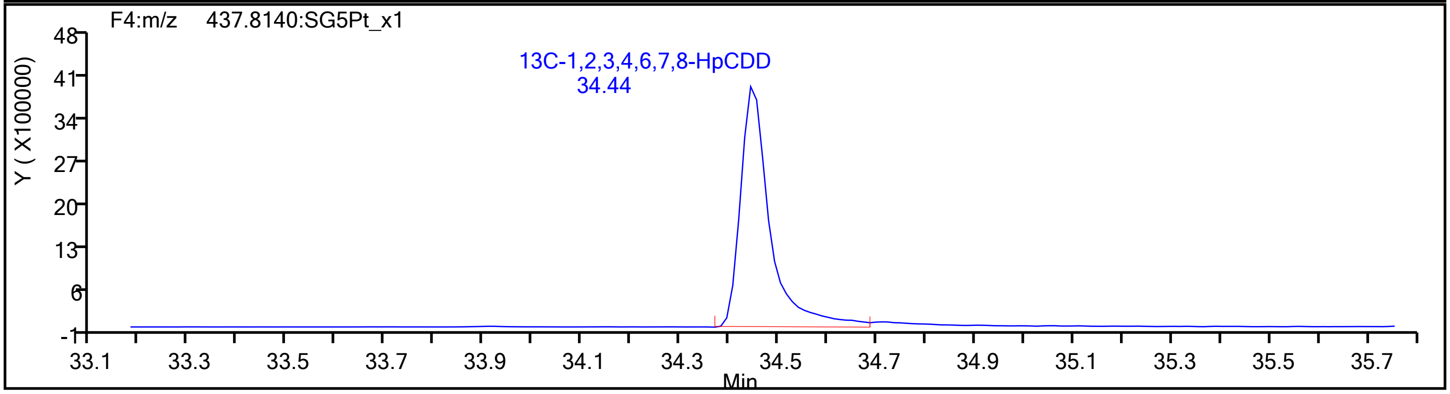

Report Date: 28-Jun-2020 13:17:22　Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35　Injection Vol: 2.0 ul

Instrument ID: 10D5　Operator ID: SMA

Method: Dioxin_10D5　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253　Sample Line#: 7

Column Type: DB-5　Column Dia: 0.32 mm

OCDF

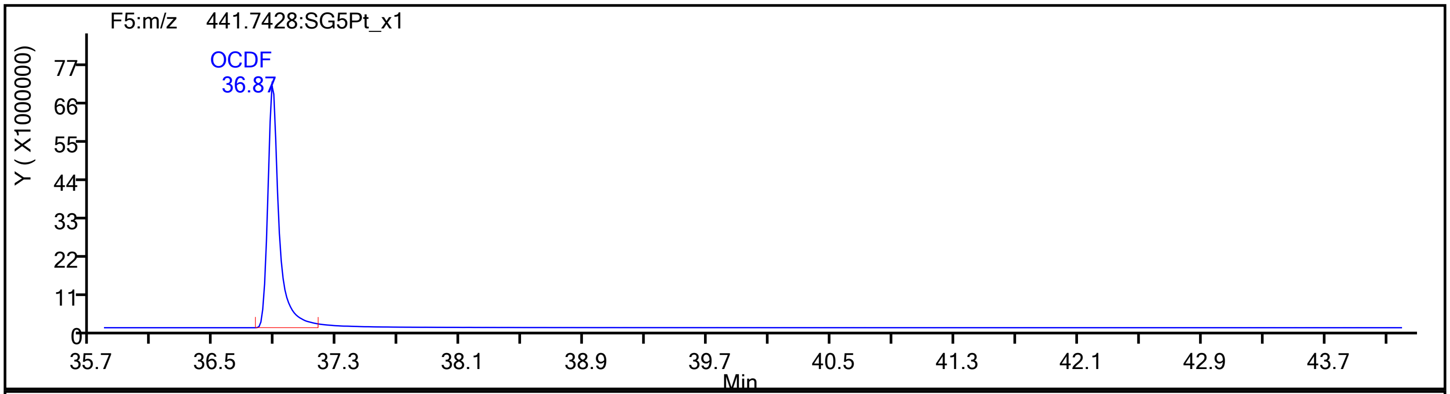

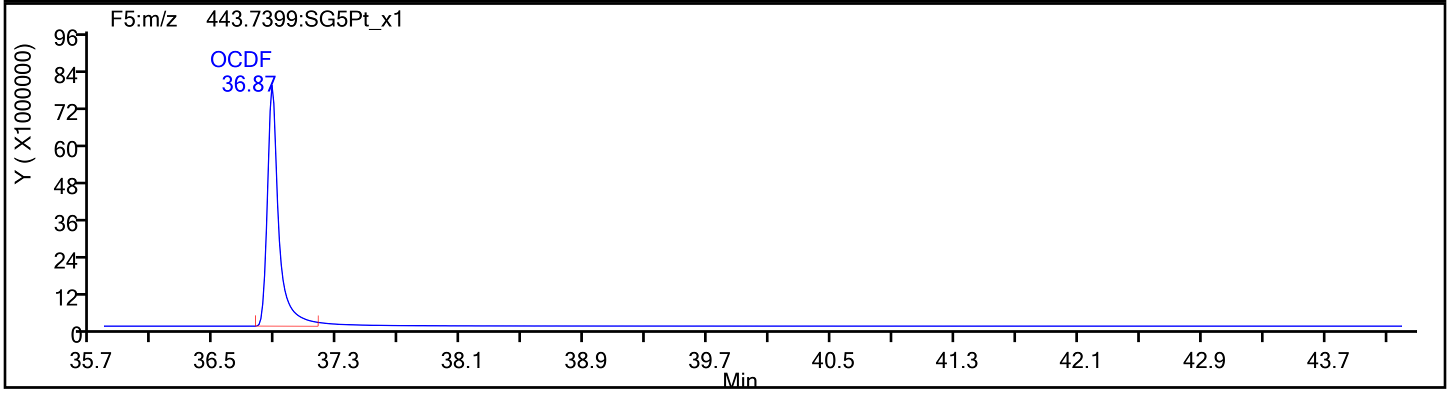

OCDF Standards

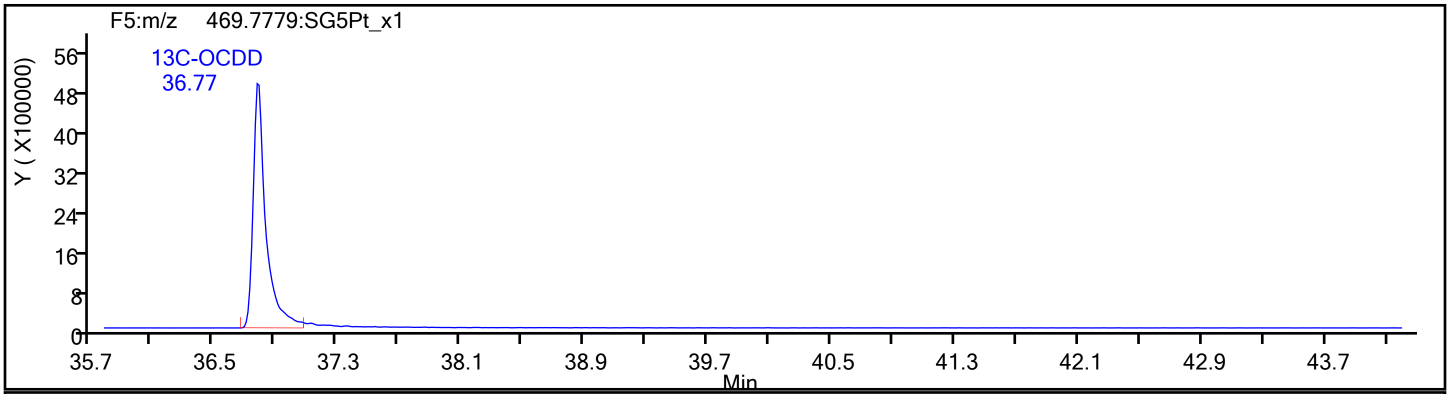

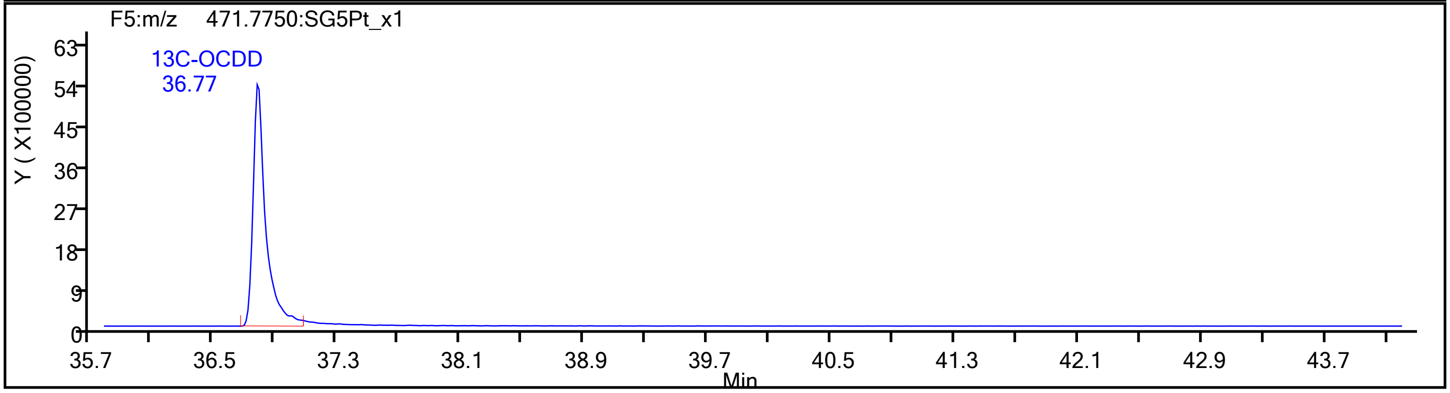

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

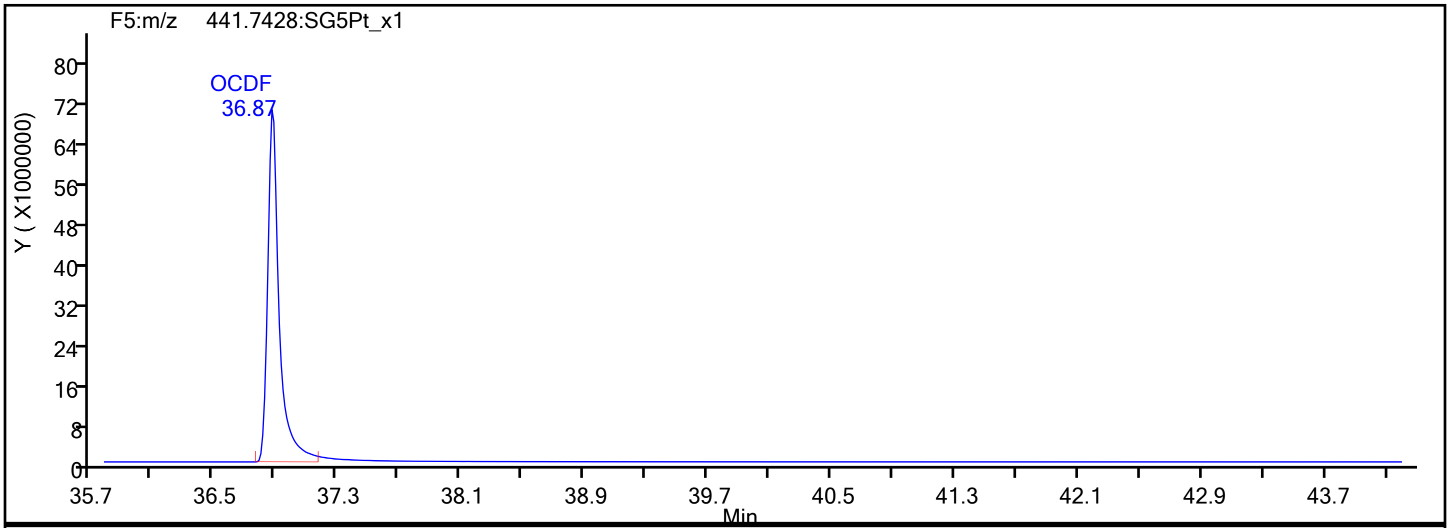

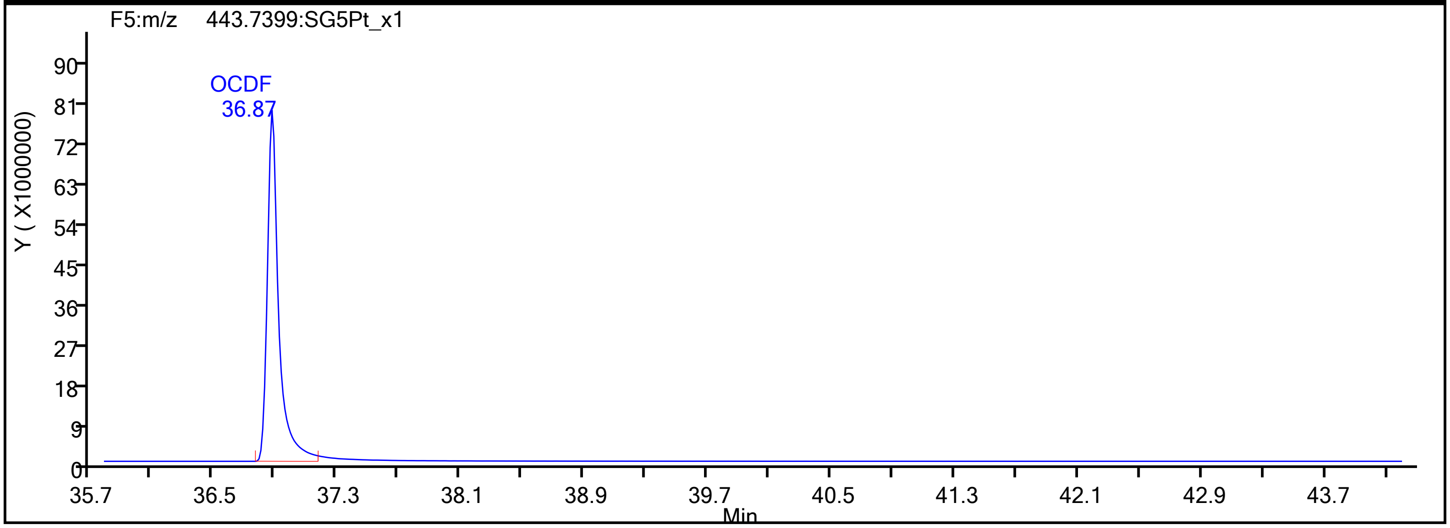

OCDF Interference Mass

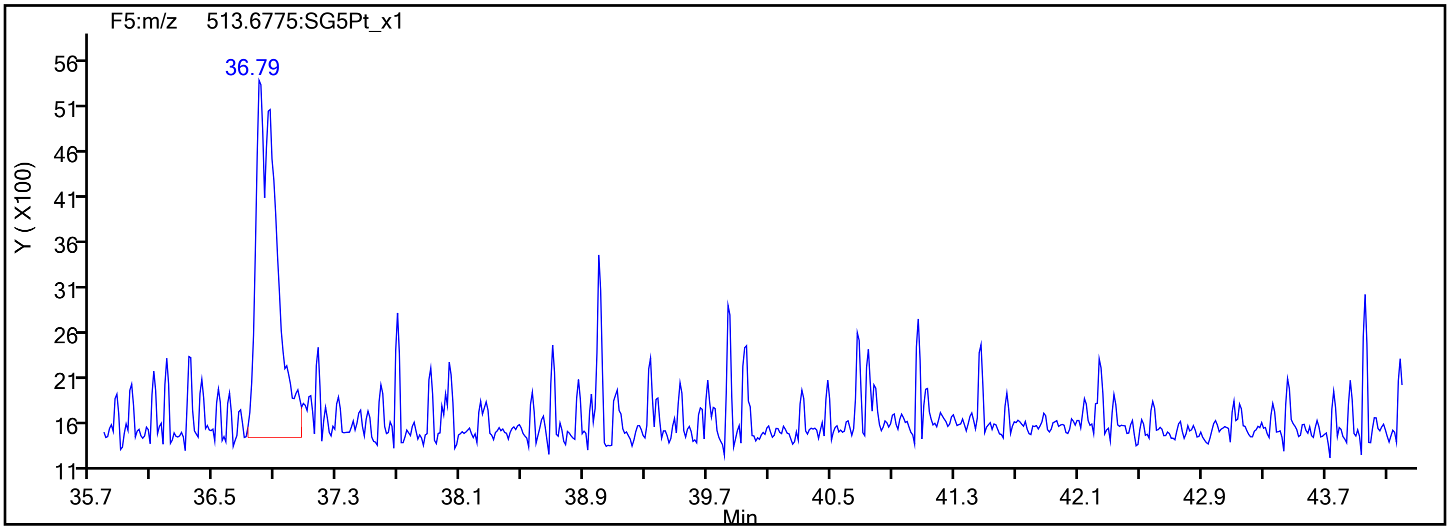

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

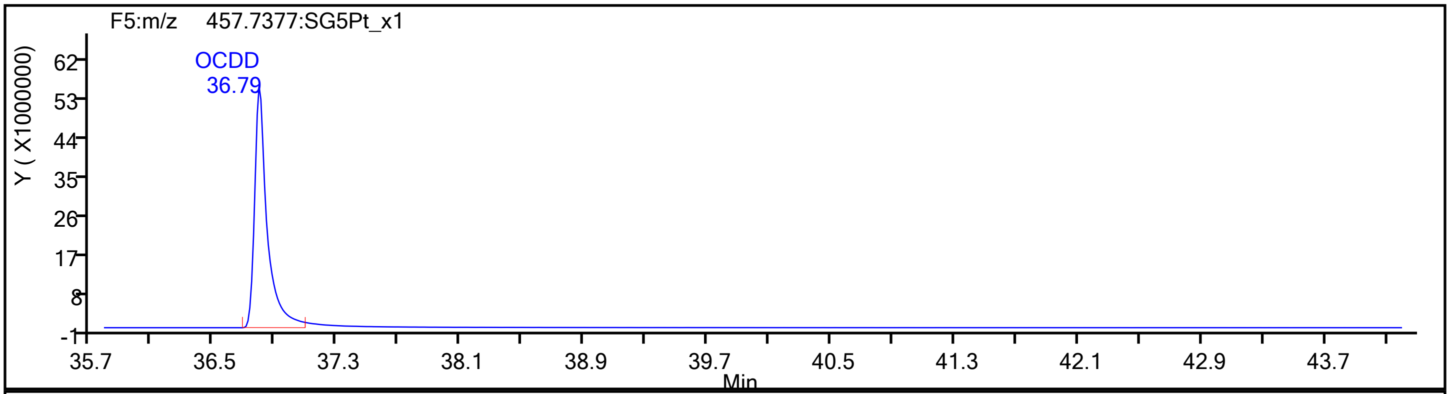

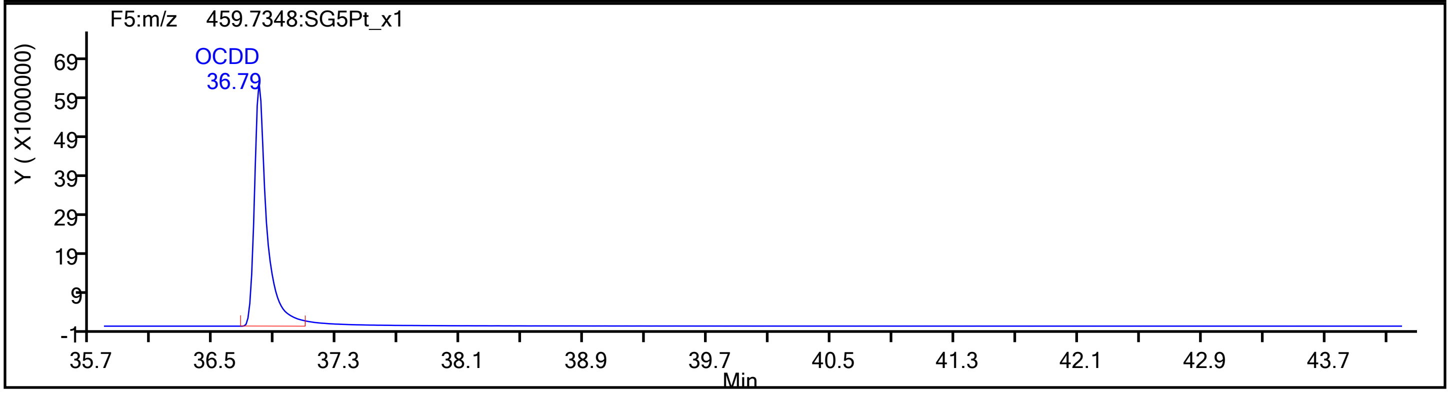

OCDD Standards

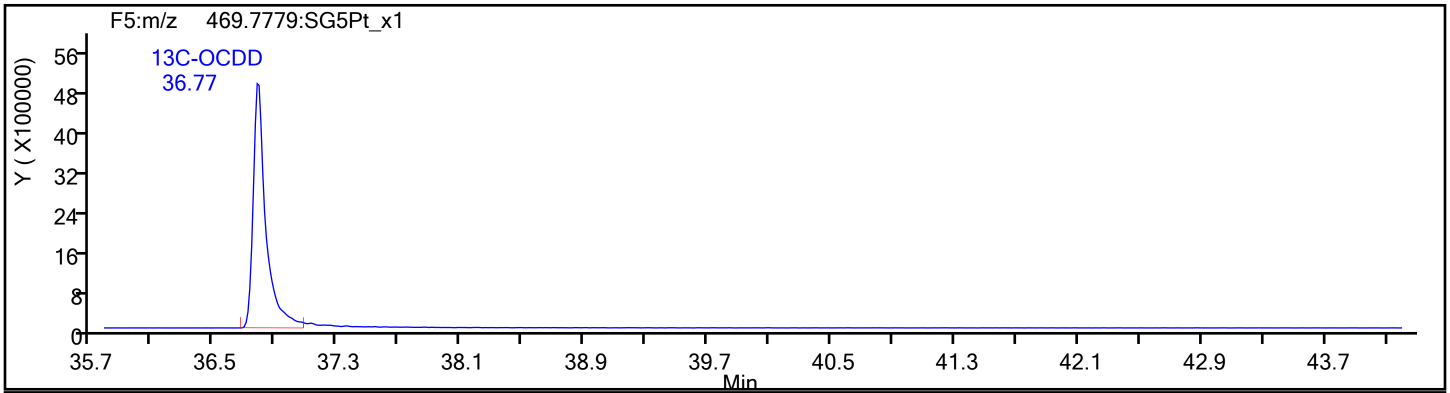

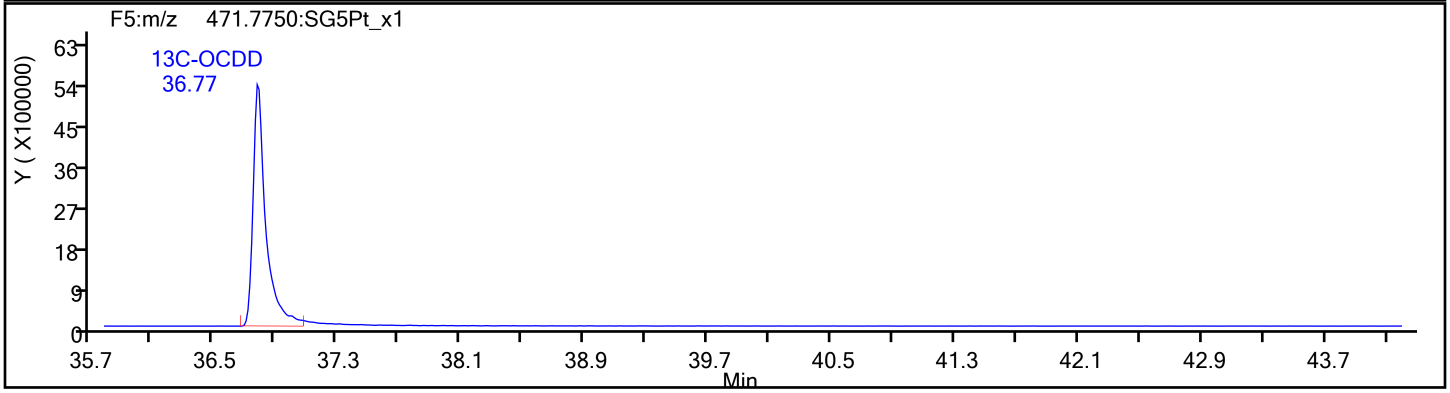

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

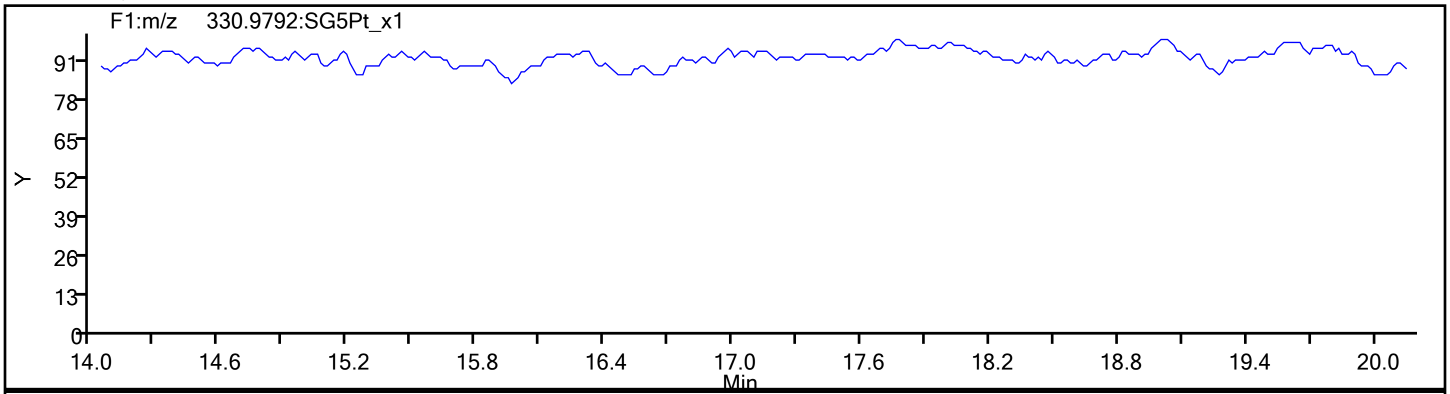

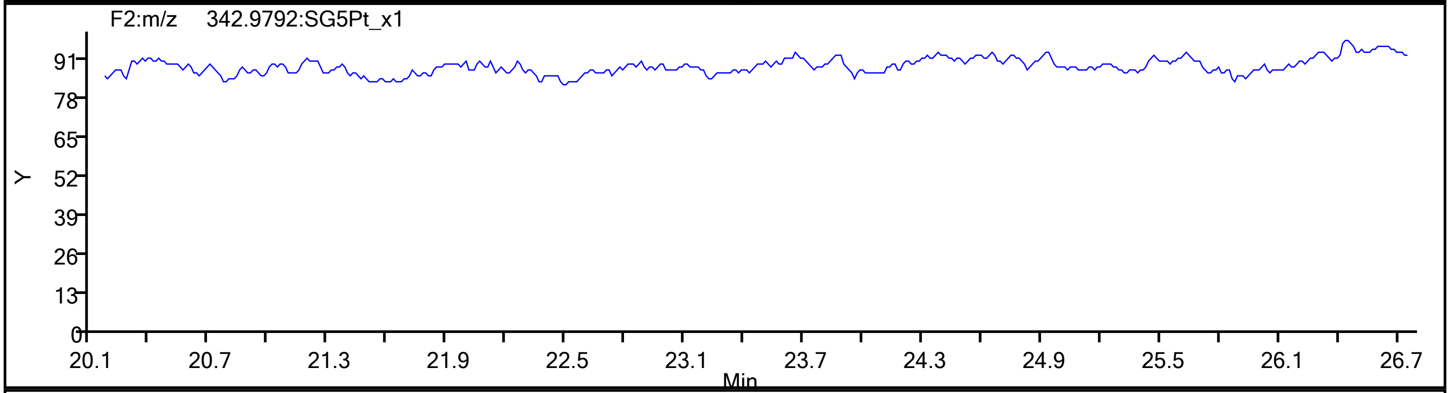

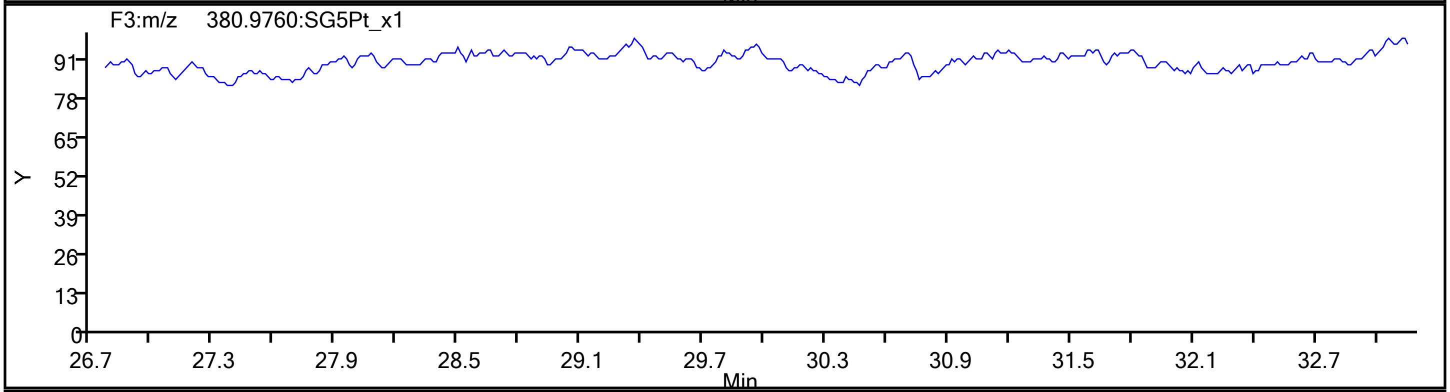

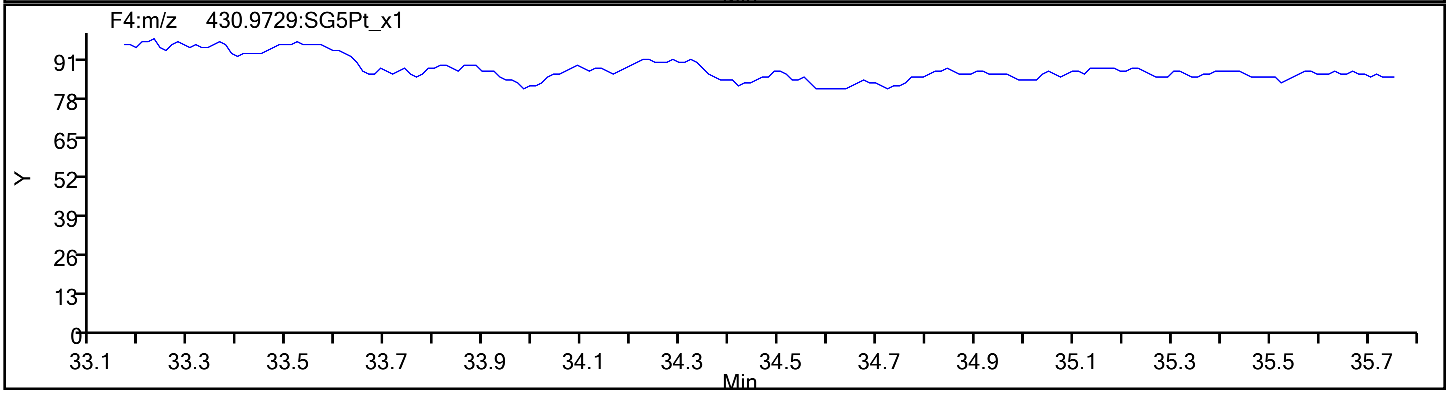

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

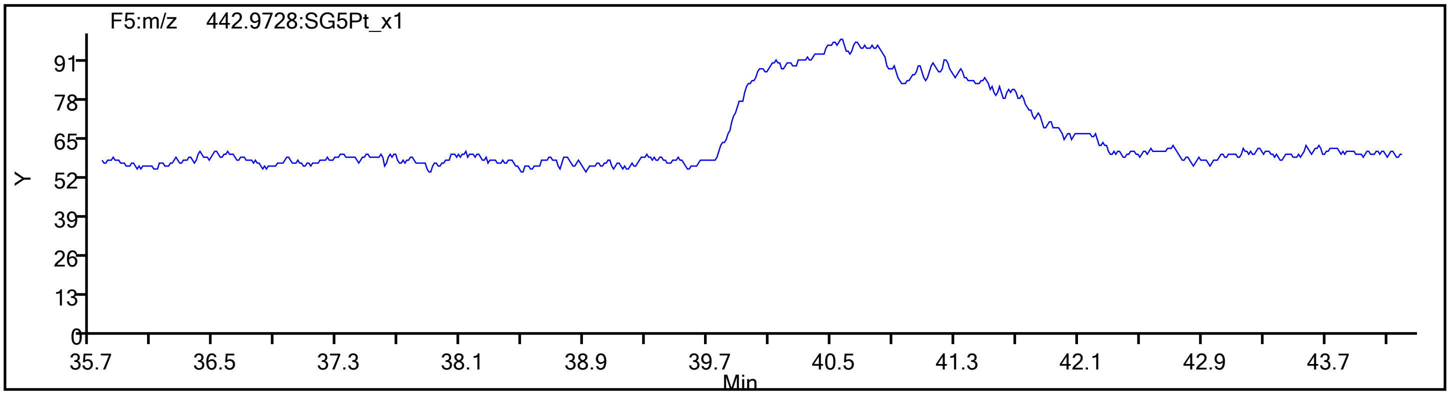

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.054

Error Coefficients

Standard Error:	181000000
Relative Standard Error:	1.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.688498	100.0	26936004.0	1.075399	Y
2	IC 320-390253/4	10.0	10.390949	100.0	26931716.0	1.039095	Y
3	IC 320-390253/5	50.0	51.739975	100.0	28040054.0	1.0348	Y
4	IC 320-390253/6	200.0	211.965665	100.0	31631816.0	1.059828	Y
5	IC 320-390253/7	1000.0	1060.634799	100.0	33600359.0	1.060635	Y

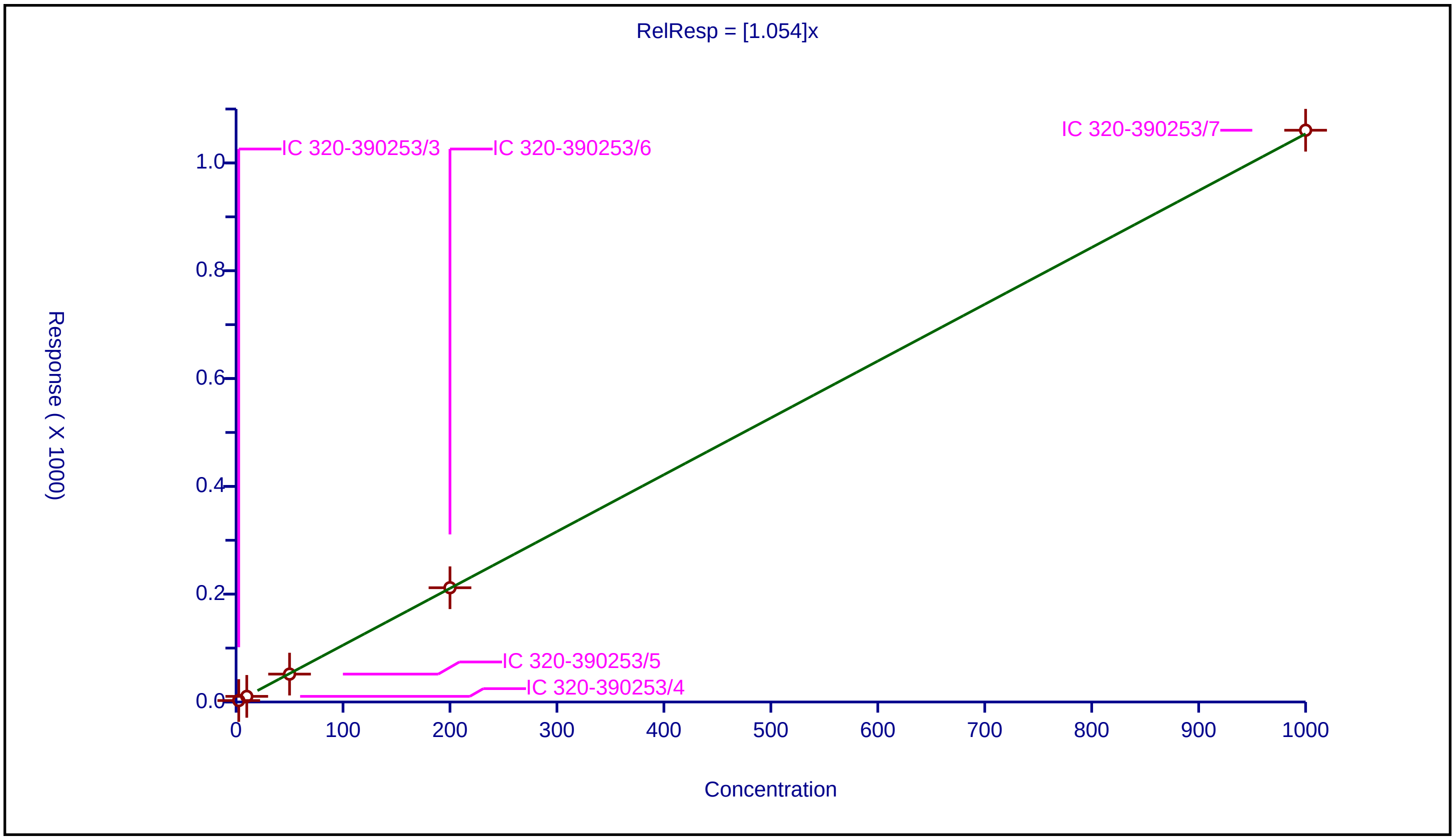

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.453

Error Coefficients

Standard Error:	254000000
Relative Standard Error:	1.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	3.675845	100.0	28095822.0	1.470338	Y
2	IC 320-390253/4	10.0	14.287255	100.0	28057147.0	1.428725	Y
3	IC 320-390253/5	50.0	72.102802	100.0	29115881.0	1.442056	Y
4	IC 320-390253/6	200.0	294.821401	100.0	32459322.0	1.474107	Y
5	IC 320-390253/7	1000.0	1448.443669	100.0	34382848.0	1.448444	Y

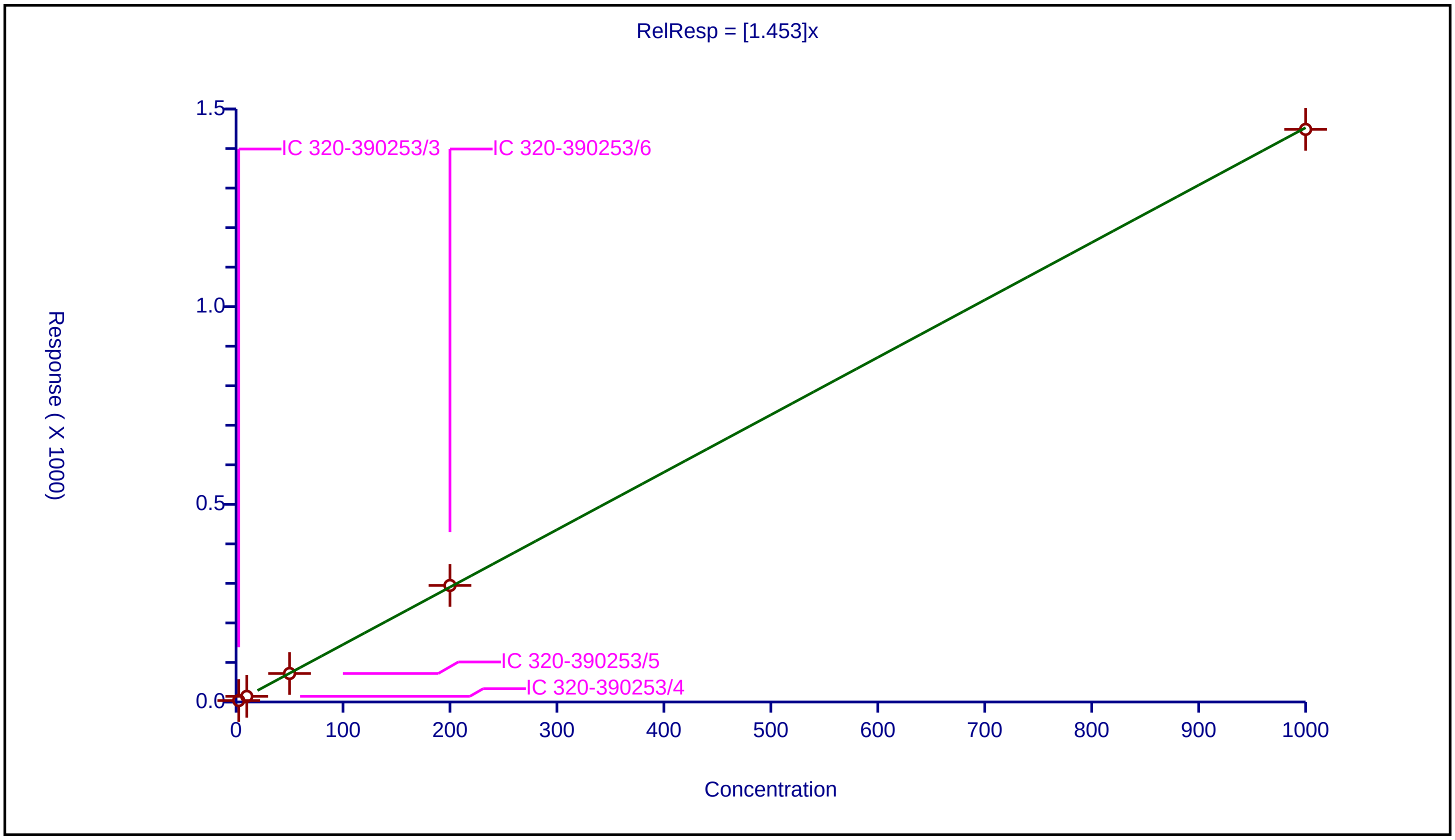

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.059

Error Coefficients

Standard Error:	219000000
Relative Standard Error:	3.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.730682	100.0	31425221.0	1.092273	Y
2	IC 320-390253/4	10.0	10.016491	100.0	33325163.0	1.001649	Y
3	IC 320-390253/5	50.0	52.82561	100.0	32761435.0	1.056512	Y
4	IC 320-390253/6	200.0	216.170369	100.0	37143667.0	1.080852	Y
5	IC 320-390253/7	1000.0	1061.374689	100.0	40565902.0	1.061375	Y

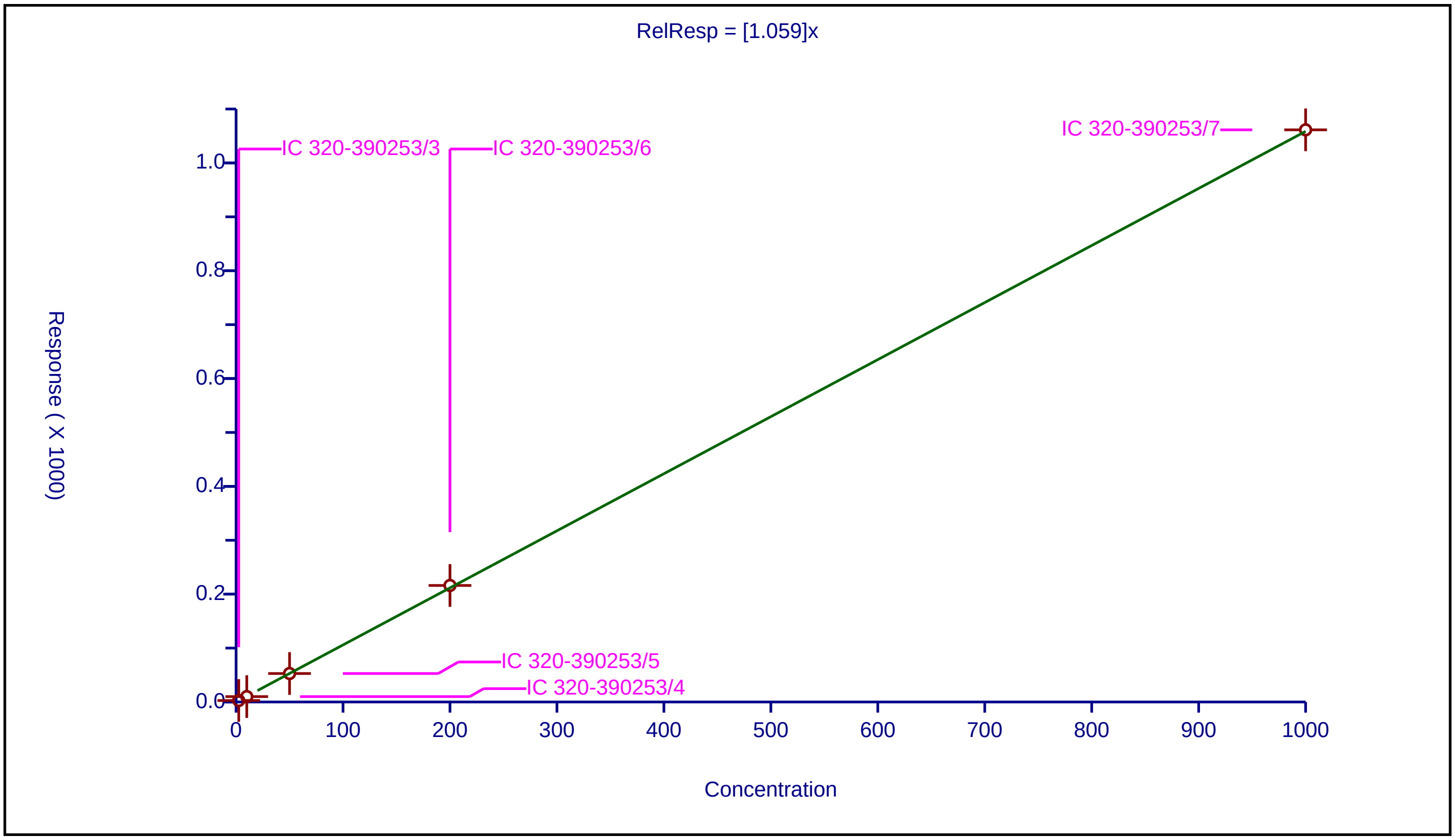

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8202

Error Coefficients

Standard Error:	170000000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.186198	100.0	32853663.0	0.874479	Y
2	IC 320-390253/4	10.0	7.771855	100.0	34994028.0	0.777185	Y
3	IC 320-390253/5	50.0	40.494783	100.0	32715286.0	0.809896	Y
4	IC 320-390253/6	200.0	165.00285	100.0	38766257.0	0.825014	Y
5	IC 320-390253/7	1000.0	814.577102	100.0	40903104.0	0.814577	Y

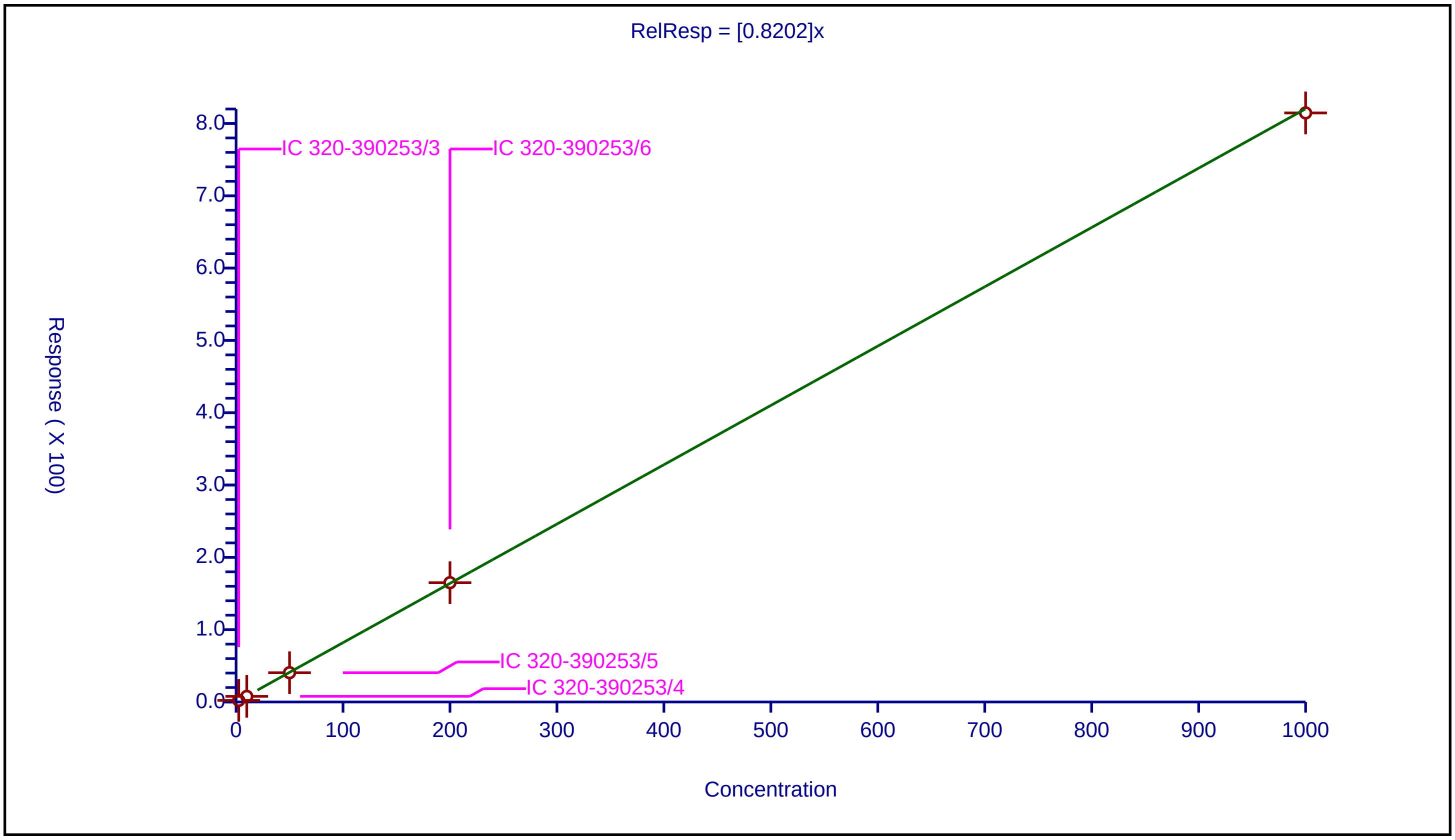

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8061

Error Coefficients

Standard Error:	206000000
Relative Standard Error:	4.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.066023	100.0	39521628.0	0.826409	Y
2	IC 320-390253/4	10.0	7.466479	100.0	42664742.0	0.746648	Y
3	IC 320-390253/5	50.0	40.085533	100.0	41483076.0	0.801711	Y
4	IC 320-390253/6	200.0	166.95847	100.0	46230589.0	0.834792	Y
5	IC 320-390253/7	1000.0	821.17293	100.0	49341715.0	0.821173	Y

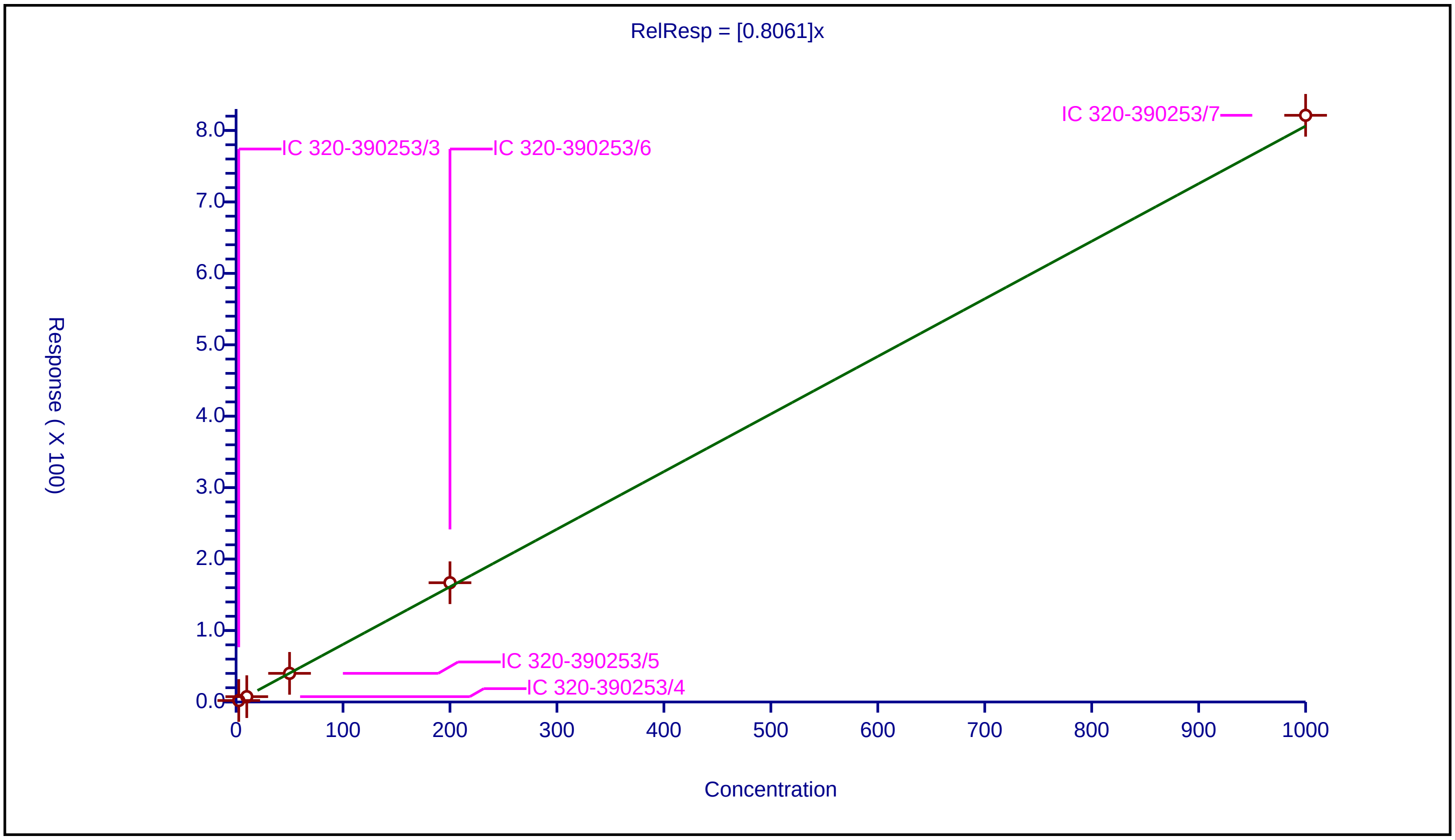

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9367

Error Coefficients

Standard Error:	210000000
Relative Standard Error:	1.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.383767	100.0	36797812.0	0.953507	Y
2	IC 320-390253/4	10.0	9.129319	100.0	37929467.0	0.912932	Y
3	IC 320-390253/5	50.0	46.340588	100.0	39539332.0	0.926812	Y
4	IC 320-390253/6	200.0	190.426088	100.0	42083843.0	0.95213	Y
5	IC 320-390253/7	1000.0	937.987966	100.0	43998213.0	0.937988	Y

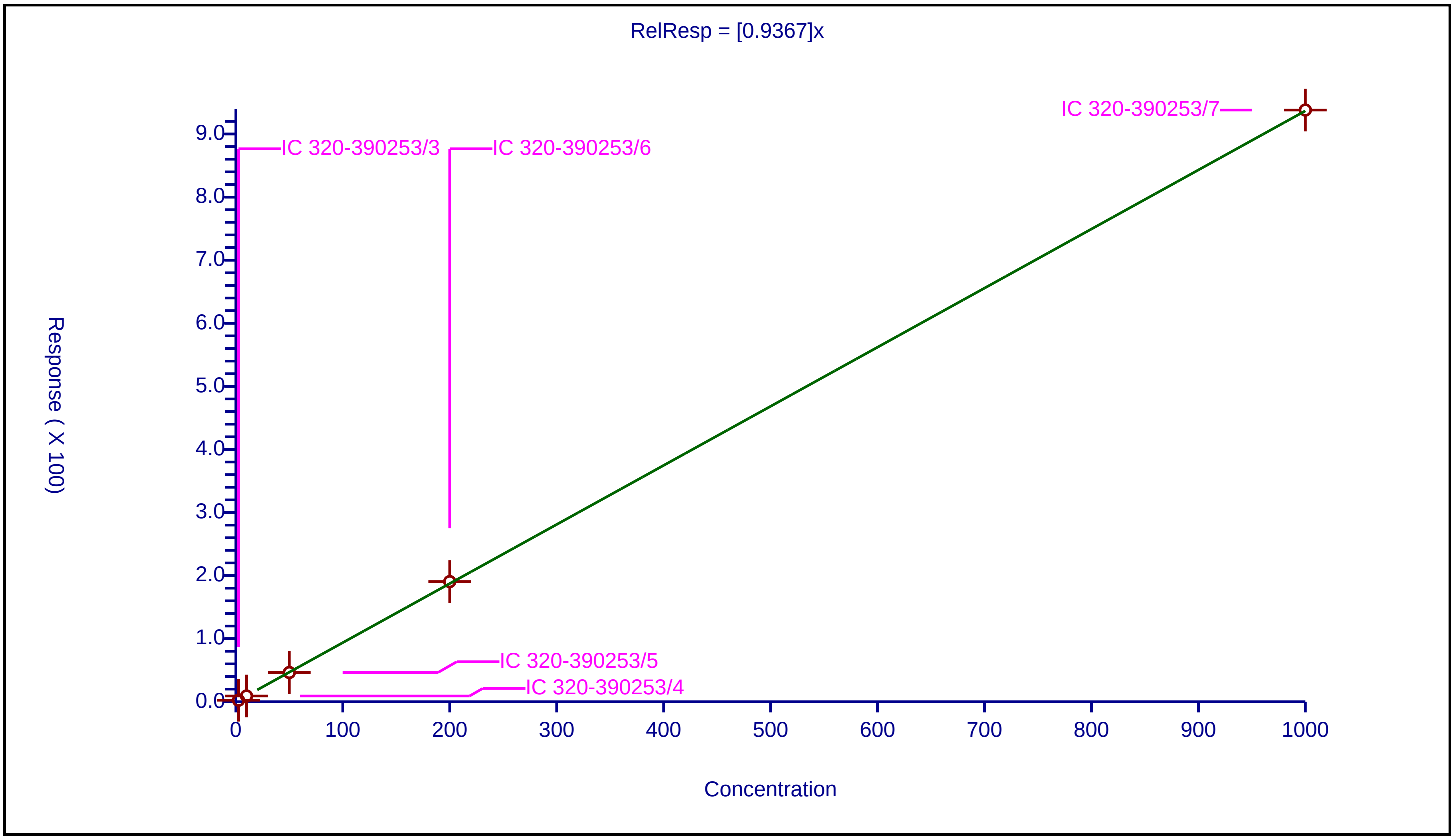

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9818

Error Coefficients

Standard Error:	232000000
Relative Standard Error:	2.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.481431	100.0	38469455.0	0.992572	Y
2	IC 320-390253/4	10.0	9.516536	100.0	39713843.0	0.951654	Y
3	IC 320-390253/5	50.0	48.403375	100.0	40051804.0	0.968068	Y
4	IC 320-390253/6	200.0	201.20117	100.0	43730114.0	1.006006	Y
5	IC 320-390253/7	1000.0	990.904731	100.0	45855303.0	0.990905	Y

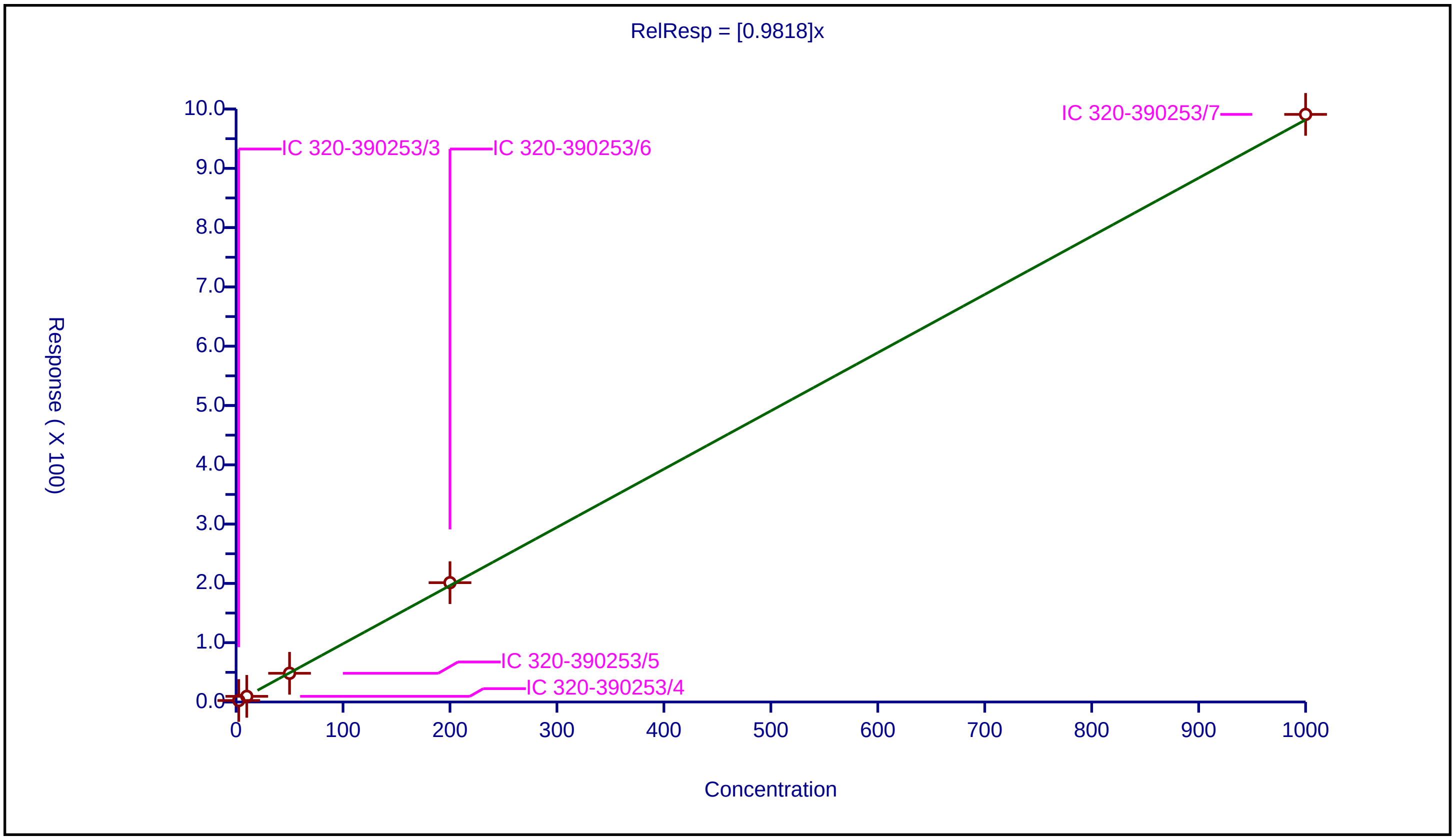

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.047

Error Coefficients

Standard Error:	211000000
Relative Standard Error:	4.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.776208	100.0	32853663.0	1.110483	Y
2	IC 320-390253/4	10.0	10.081314	100.0	34994028.0	1.008131	Y
3	IC 320-390253/5	50.0	53.448681	100.0	32715286.0	1.068974	Y
4	IC 320-390253/6	200.0	207.271037	100.0	38766257.0	1.036355	Y
5	IC 320-390253/7	1000.0	1012.337064	100.0	40903104.0	1.012337	Y

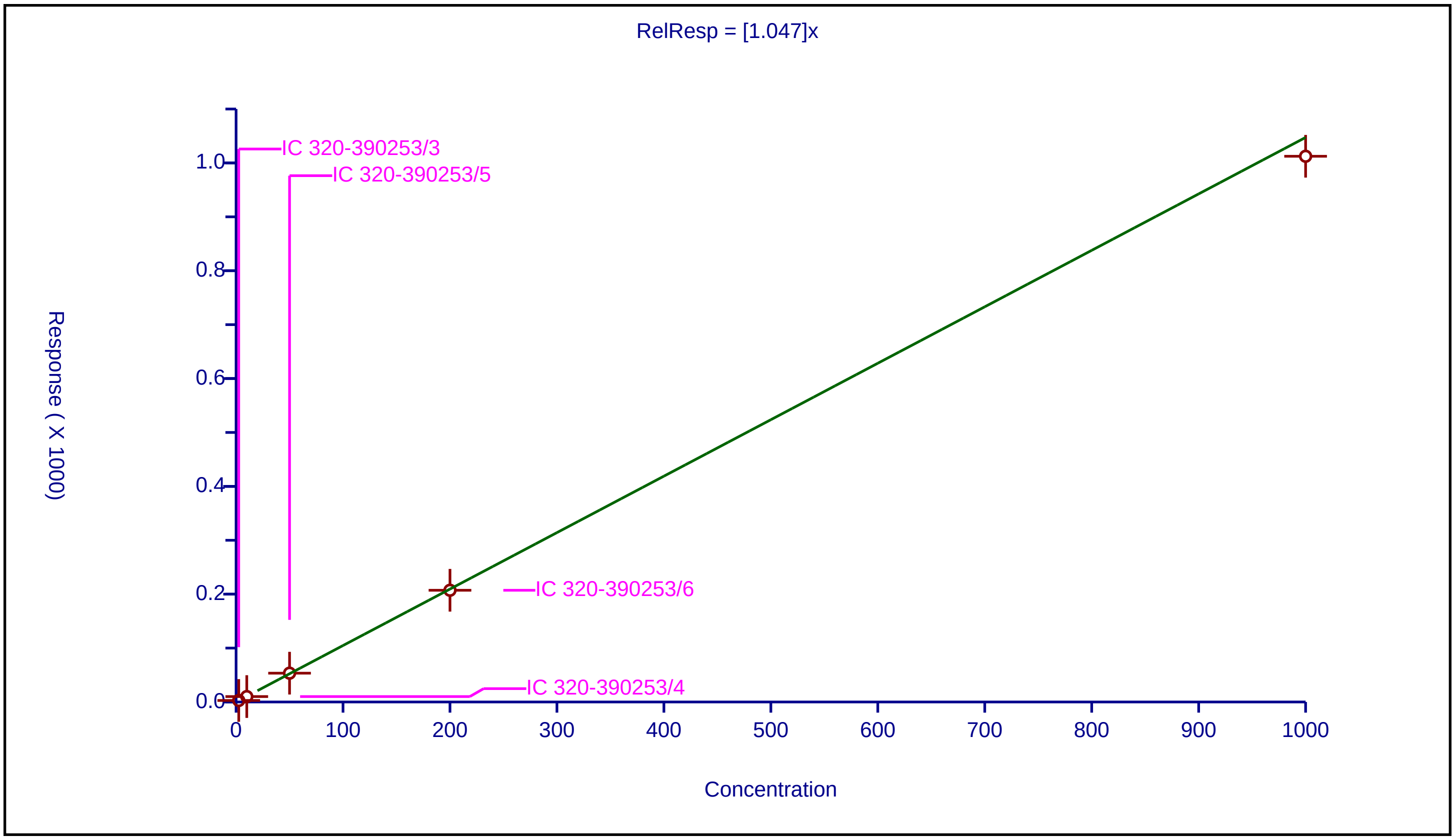

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.032

Error Coefficients

Standard Error:	201000000
Relative Standard Error:	0.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.592254	100.0	31185646.0	1.036901	Y
2	IC 320-390253/4	10.0	10.254828	100.0	30581048.0	1.025483	Y
3	IC 320-390253/5	50.0	51.130831	100.0	31414784.0	1.022617	Y
4	IC 320-390253/6	200.0	207.575257	100.0	35770919.0	1.037876	Y
5	IC 320-390253/7	1000.0	1037.39537	100.0	38052377.0	1.037395	Y

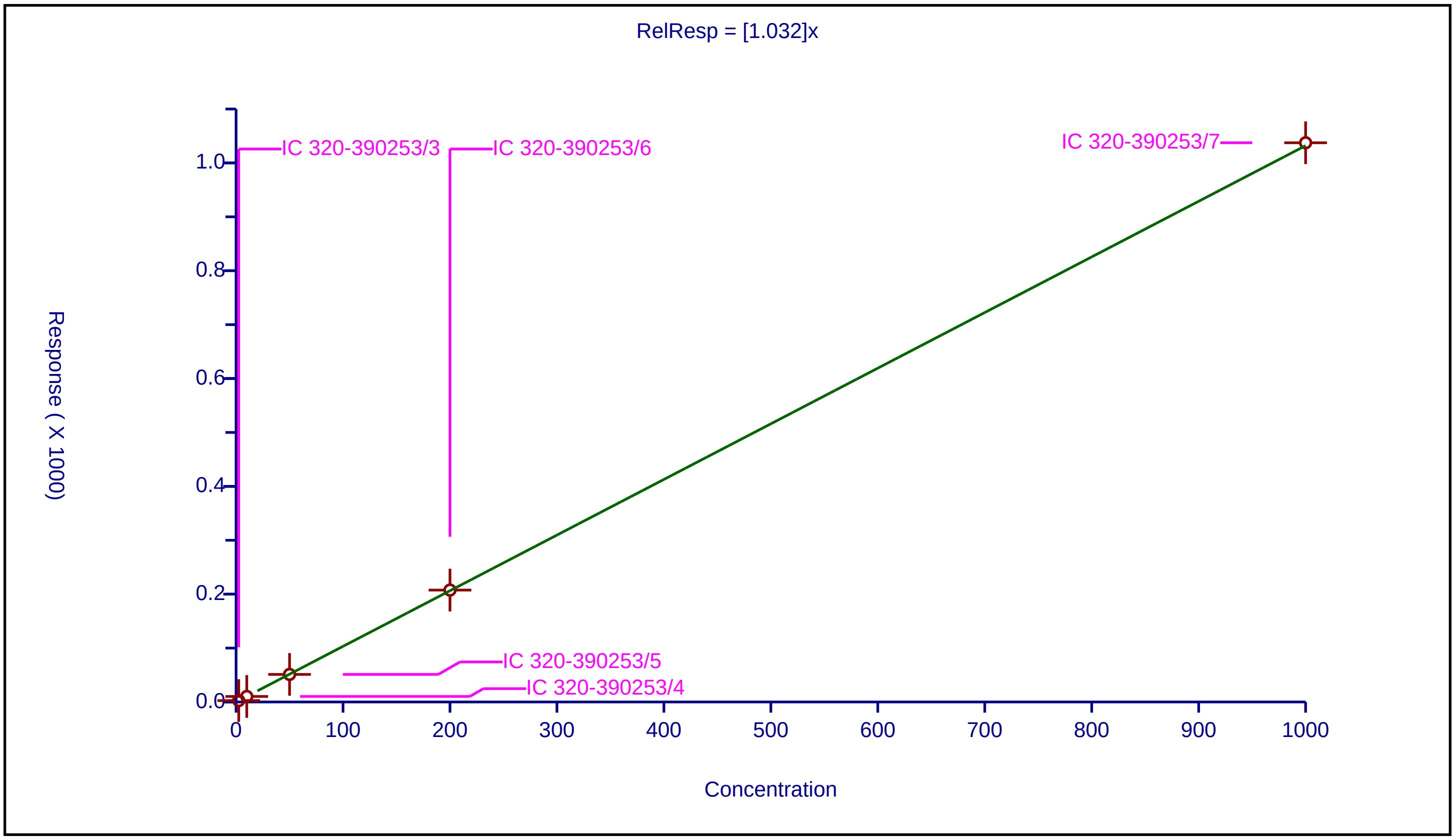

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.018

Error Coefficients

Standard Error:	213000000
Relative Standard Error:	1.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.573653	100.0	34874204.0	1.029461	Y
2	IC 320-390253/4	10.0	9.967568	100.0	34921306.0	0.996757	Y
3	IC 320-390253/5	50.0	50.475955	100.0	35888619.0	1.009519	Y
4	IC 320-390253/6	200.0	206.66509	100.0	39534333.0	1.033325	Y
5	IC 320-390253/7	1000.0	1021.474901	100.0	40938052.0	1.021475	Y

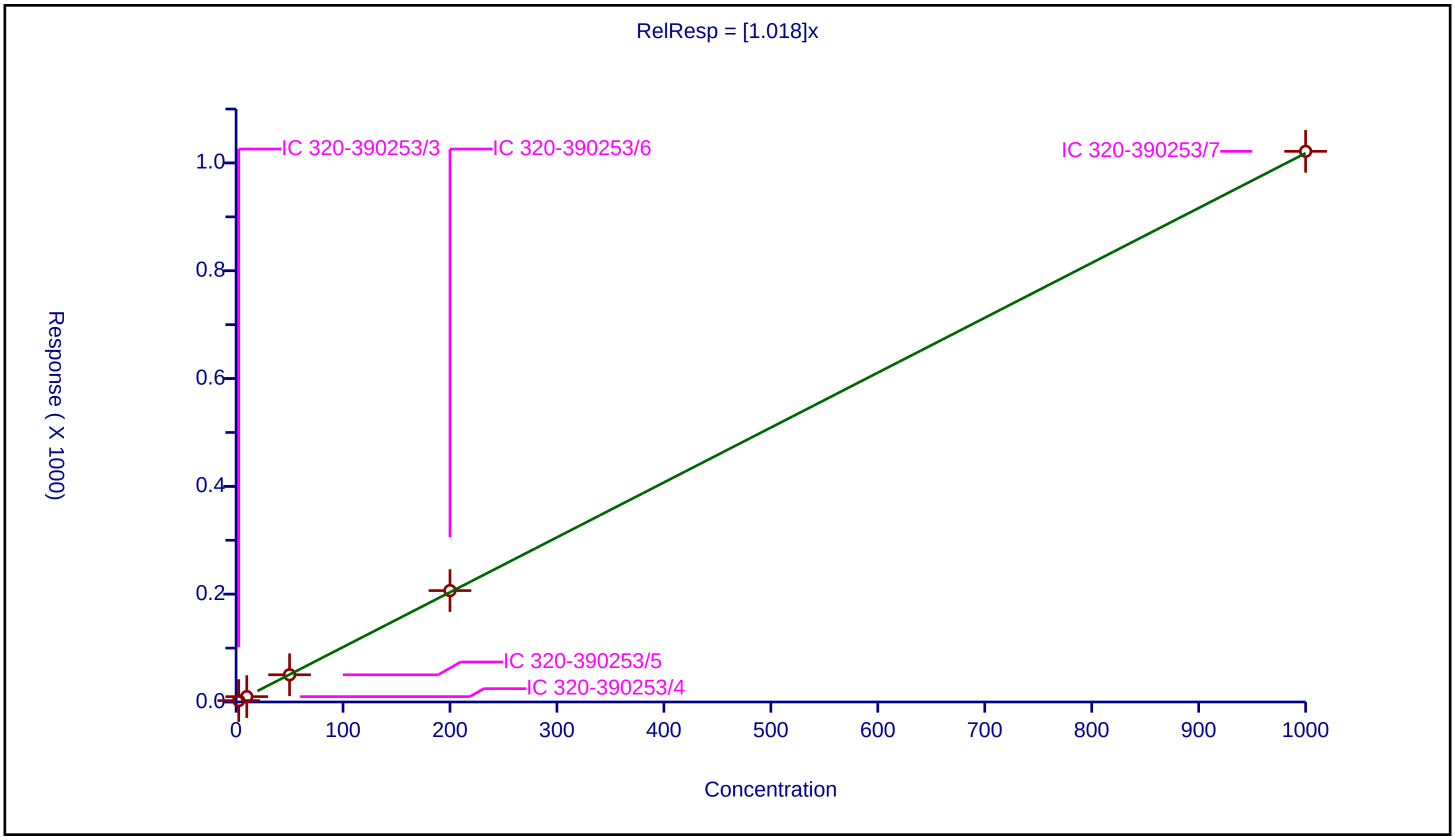

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9938

Error Coefficients

Standard Error:	289000000
Relative Standard Error:	1.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.544492	100.0	47366892.0	1.017797	Y
2	IC 320-390253/4	10.0	9.707478	100.0	49027297.0	0.970748	Y
3	IC 320-390253/5	50.0	49.029465	100.0	49635229.0	0.980589	Y
4	IC 320-390253/6	200.0	201.207843	100.0	55450977.0	1.006039	Y
5	IC 320-390253/7	1000.0	993.859069	100.0	57033386.0	0.993859	Y

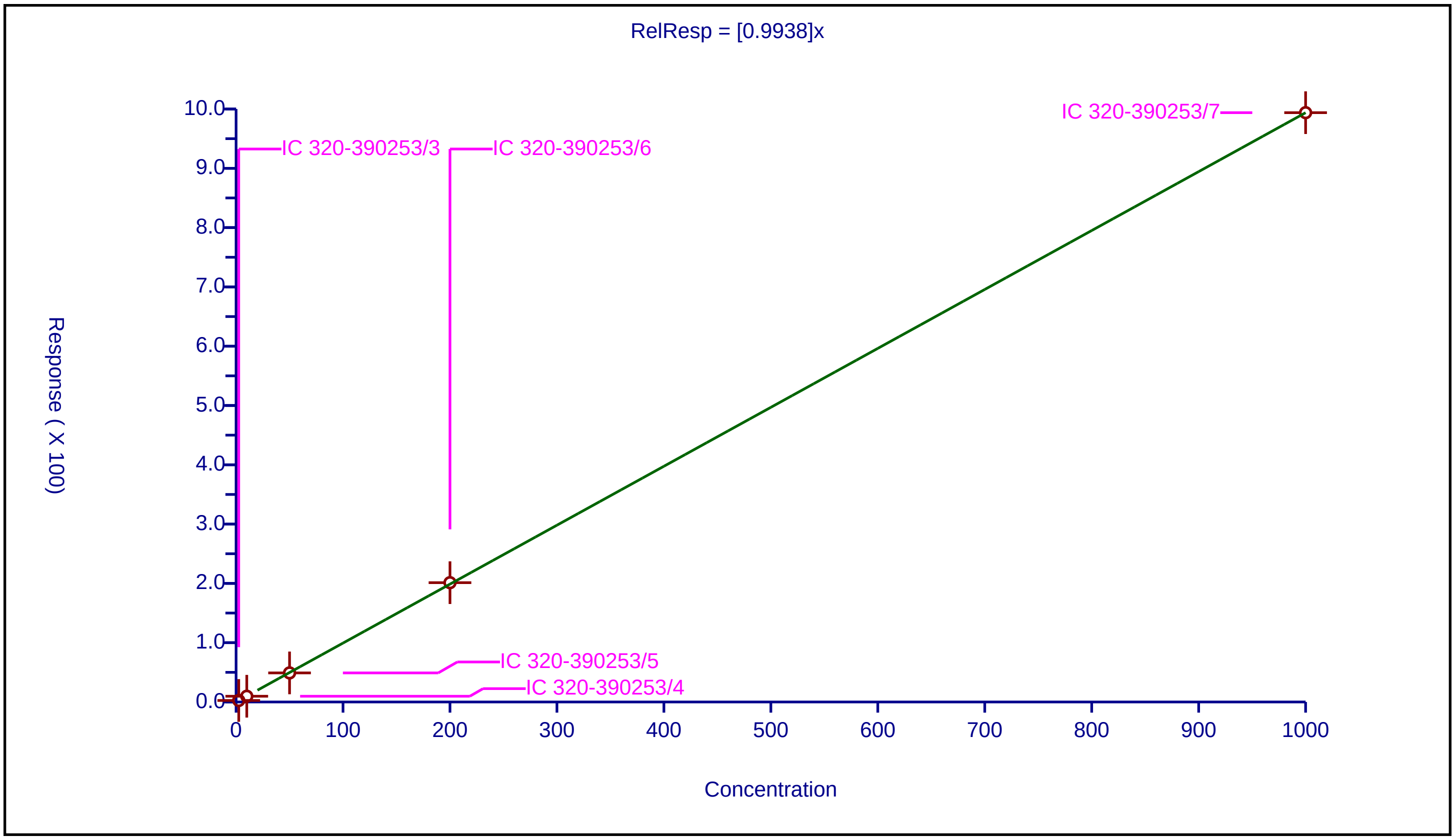

Calibration

/ 2,3,4,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.038

Error Coefficients

Standard Error:	216000000
Relative Standard Error:	1.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.651267	100.0	33841250.0	1.060507	Y
2	IC 320-390253/4	10.0	10.167692	100.0	34283463.0	1.016769	Y
3	IC 320-390253/5	50.0	51.393314	100.0	34877926.0	1.027866	Y
4	IC 320-390253/6	200.0	208.836164	100.0	38999309.0	1.044181	Y
5	IC 320-390253/7	1000.0	1041.757769	100.0	40745996.0	1.041758	Y

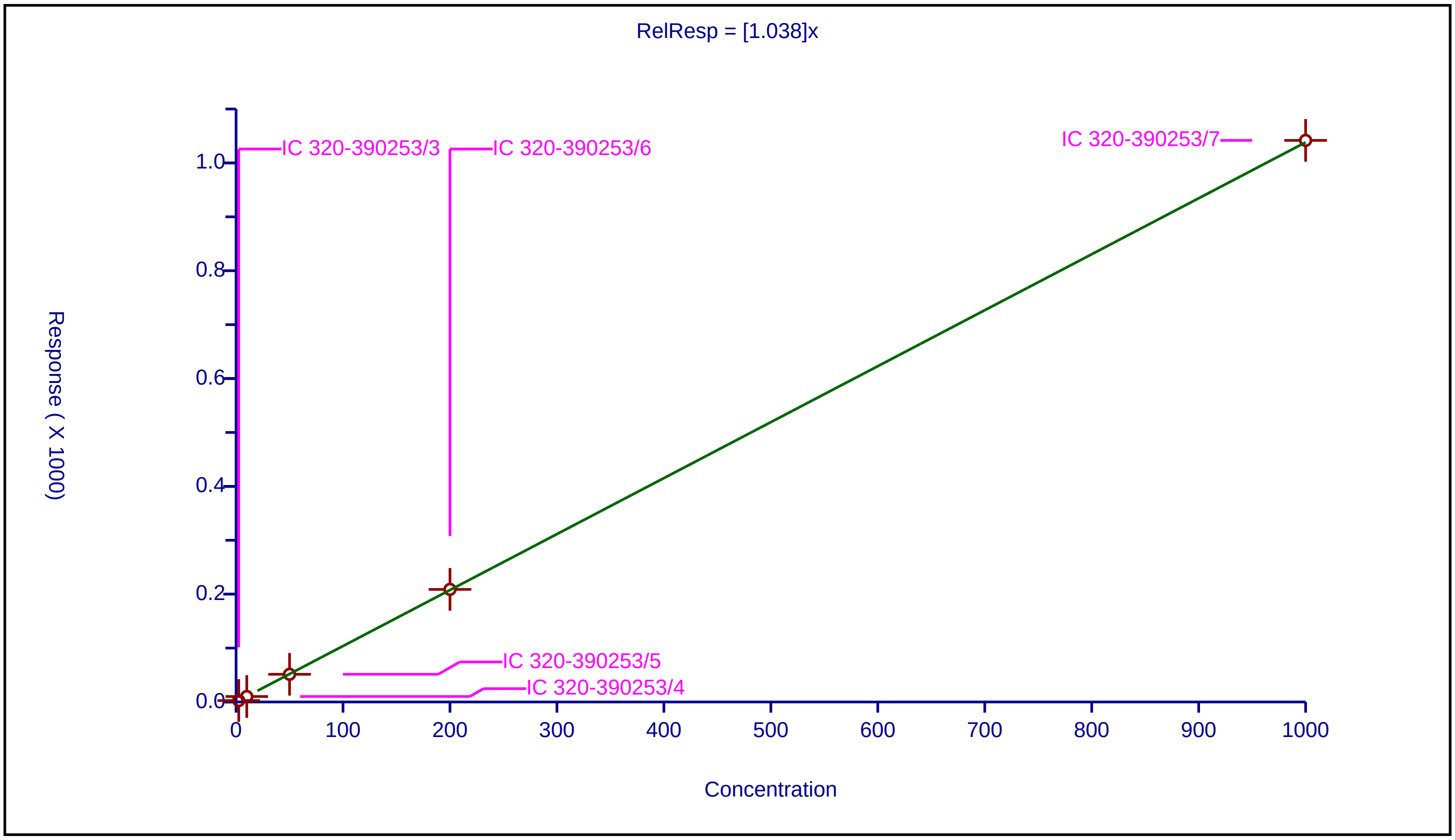

Calibration

/ 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8117

Error Coefficients

Standard Error:	287000000
Relative Standard Error:	4.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.142374	100.0	57527637.0	0.85695	Y
2	IC 320-390253/4	10.0	7.652714	100.0	62074161.0	0.765271	Y
3	IC 320-390253/5	50.0	40.438595	100.0	60093455.0	0.808772	Y
4	IC 320-390253/6	200.0	163.849032	100.0	67318305.0	0.819245	Y
5	IC 320-390253/7	1000.0	808.262646	100.0	69514353.0	0.808263	Y

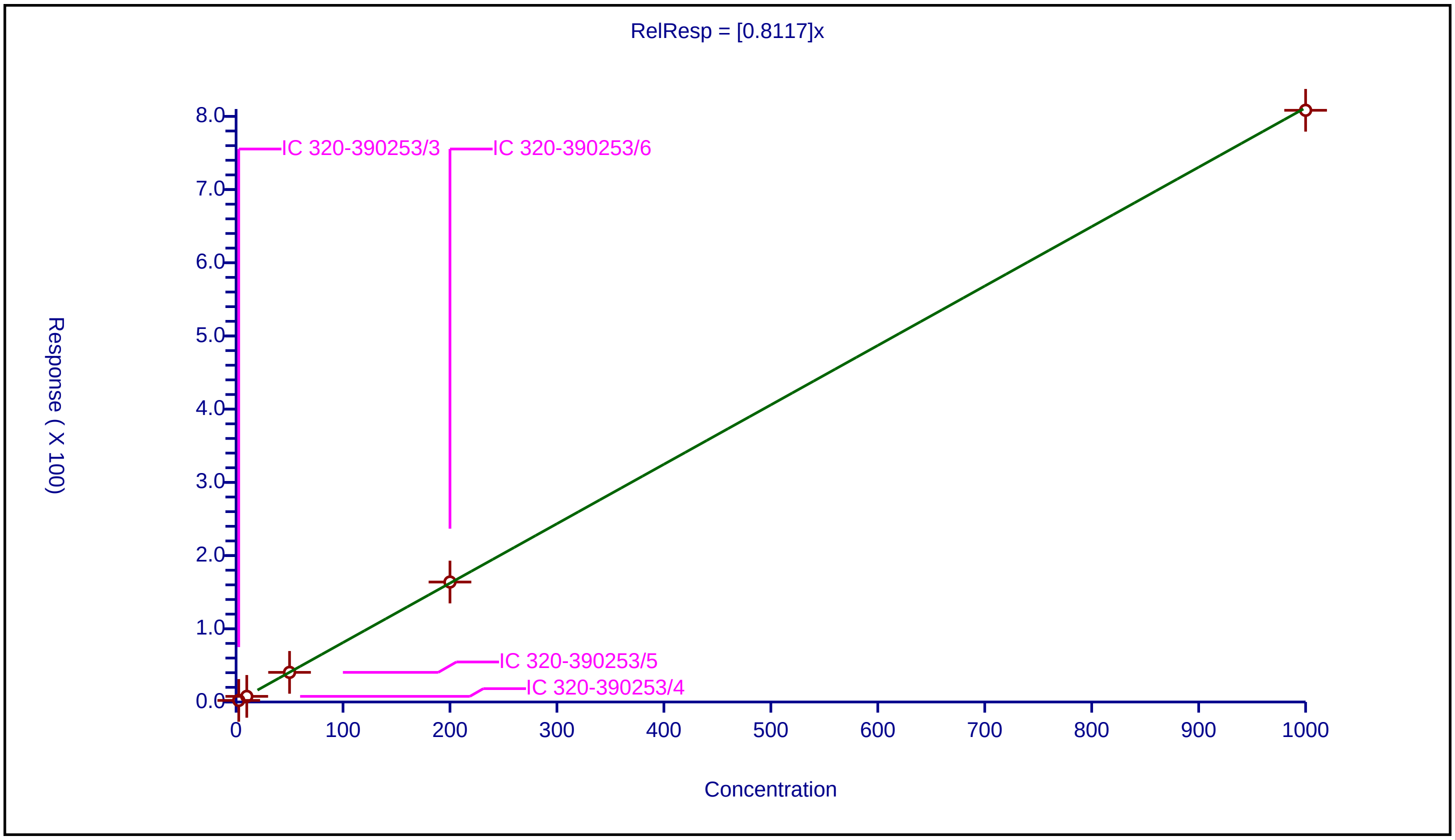

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.074

Error Coefficients

Standard Error:	54200000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	0.5	0.572946	100.0	42943807.0	1.145893	Y
2	IC 320-390253/4	2.0	2.127433	100.0	44824010.0	1.063717	Y
3	IC 320-390253/5	10.0	10.159962	100.0	44913870.0	1.015996	Y
4	IC 320-390253/6	40.0	42.673619	100.0	48446018.0	1.06684	Y
5	IC 320-390253/7	200.0	215.970449	100.0	49229599.0	1.079852	Y

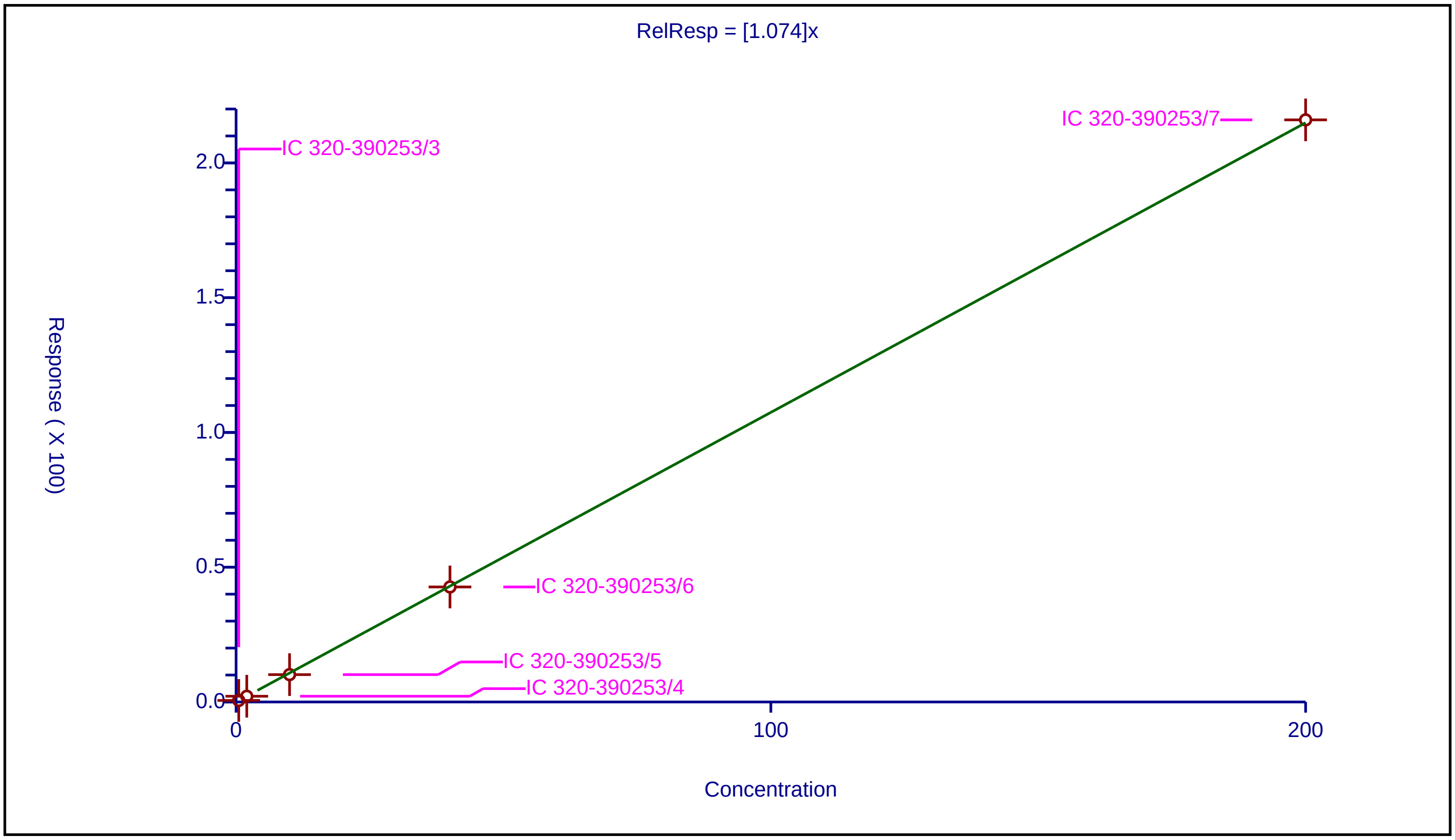

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9104

Error Coefficients

Standard Error:	62300000
Relative Standard Error:	3.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	0.5	0.481088	100.0	58386827.0	0.962176	Y
2	IC 320-390253/4	2.0	1.744554	100.0	59091712.0	0.872277	Y
3	IC 320-390253/5	10.0	8.878307	100.0	60344940.0	0.887831	Y
4	IC 320-390253/6	40.0	36.360848	100.0	66092582.0	0.909021	Y
5	IC 320-390253/7	200.0	184.157519	100.0	66365053.0	0.920788	Y

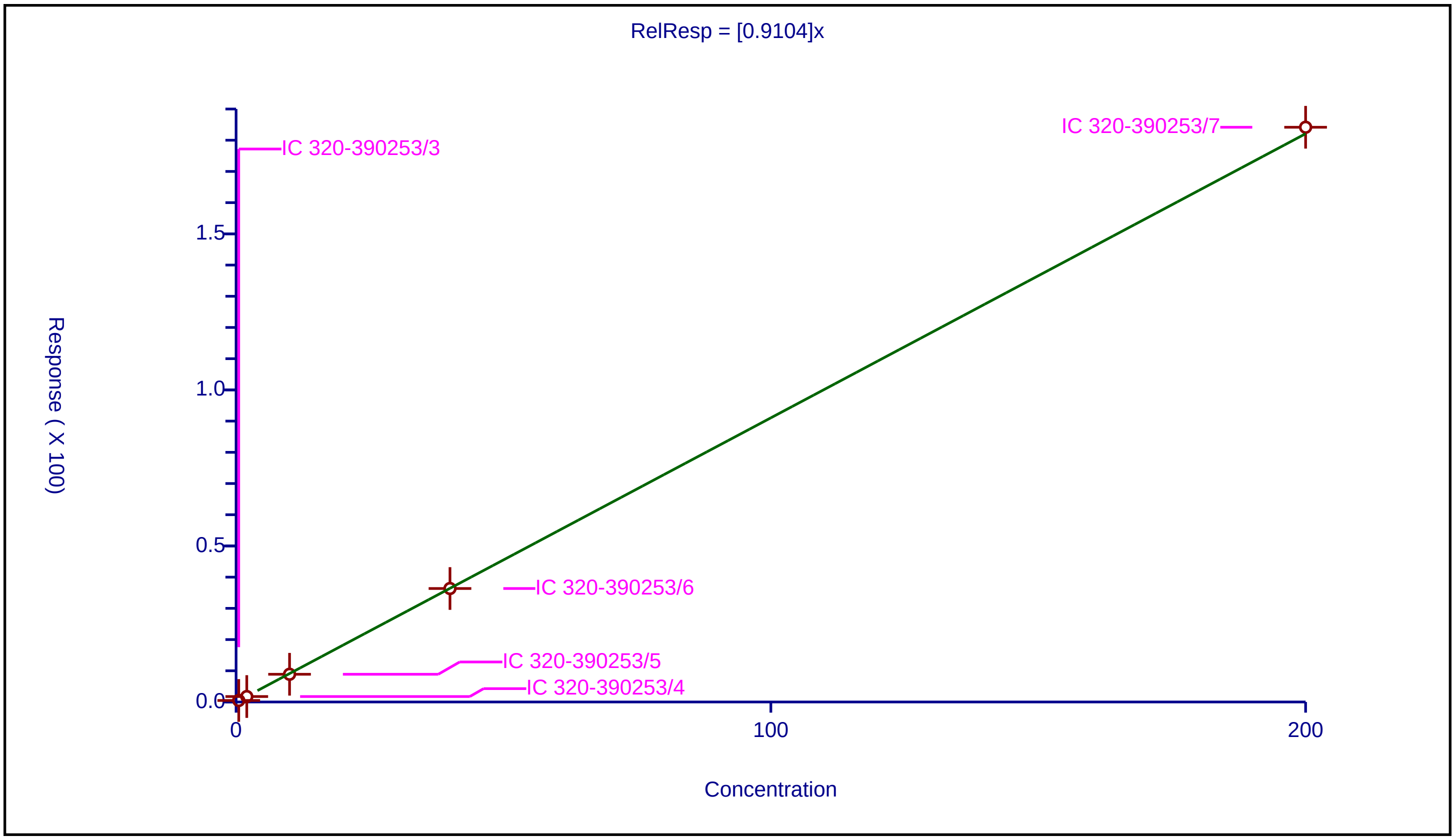

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.018

Error Coefficients

Standard Error:	54200000
Relative Standard Error:	10.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	0.5	0.434272	100.0	43132879.0	0.868544	Y
2	IC 320-390253/4	2.0	1.996303	100.0	43639065.0	0.998152	Y
3	IC 320-390253/5	10.0	9.927651	100.0	44921958.0	0.992765	Y
4	IC 320-390253/6	40.0	44.015694	100.0	47091167.0	1.100392	Y
5	IC 320-390253/7	200.0	225.620198	100.0	47126018.0	1.128101	Y

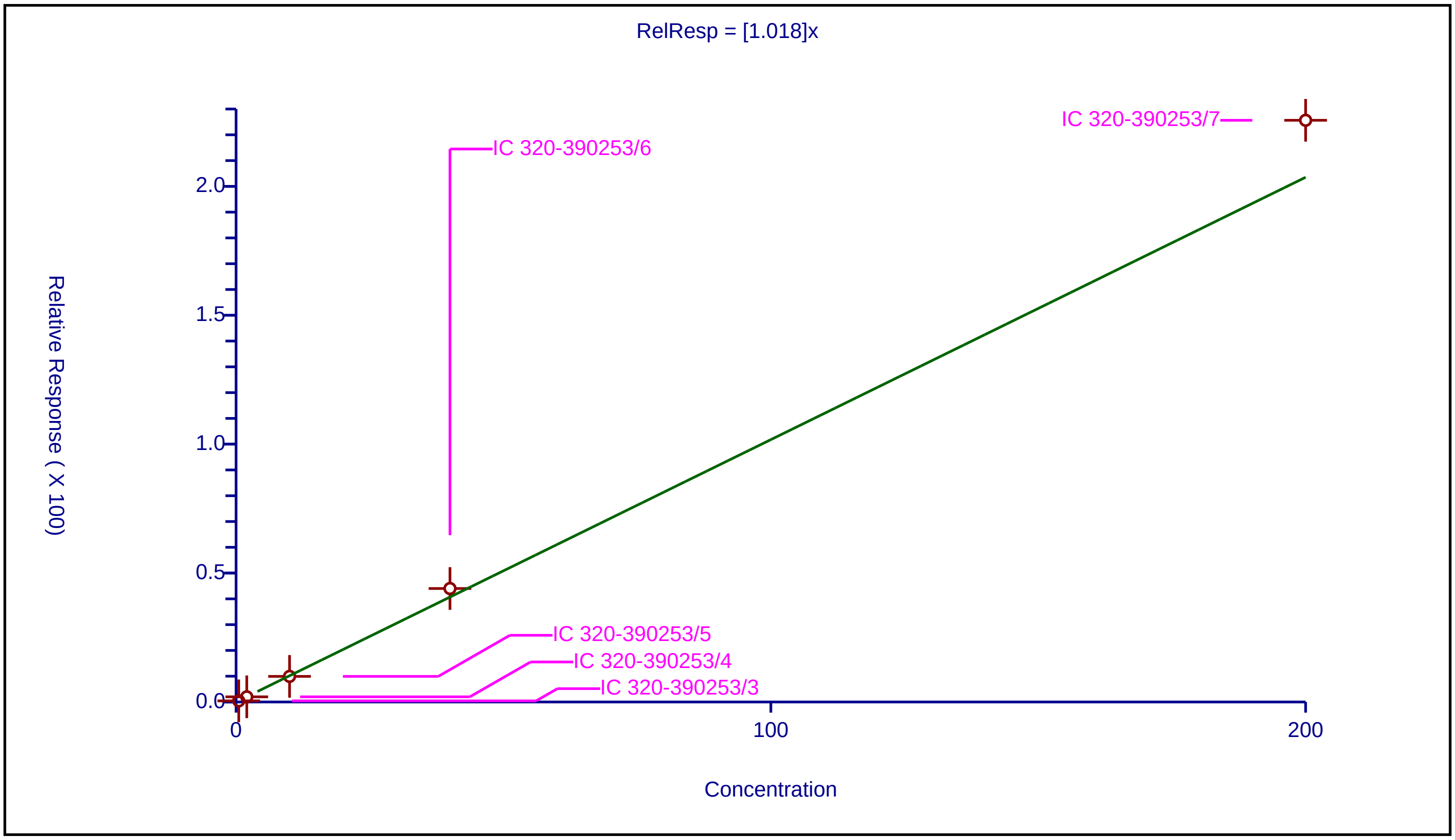

Calibration / OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.15

Error Coefficients

Standard Error:	342000000
Relative Standard Error:	3.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	5.0	6.096482	200.0	43232241.0	1.219296	Y
2	IC 320-390253/4	20.0	22.262493	200.0	43643747.0	1.113125	Y
3	IC 320-390253/5	100.0	112.746476	200.0	46201838.0	1.127465	Y
4	IC 320-390253/6	400.0	463.655461	200.0	53743483.0	1.159139	Y
5	IC 320-390253/7	2000.0	2260.961774	200.0	59456751.0	1.130481	Y

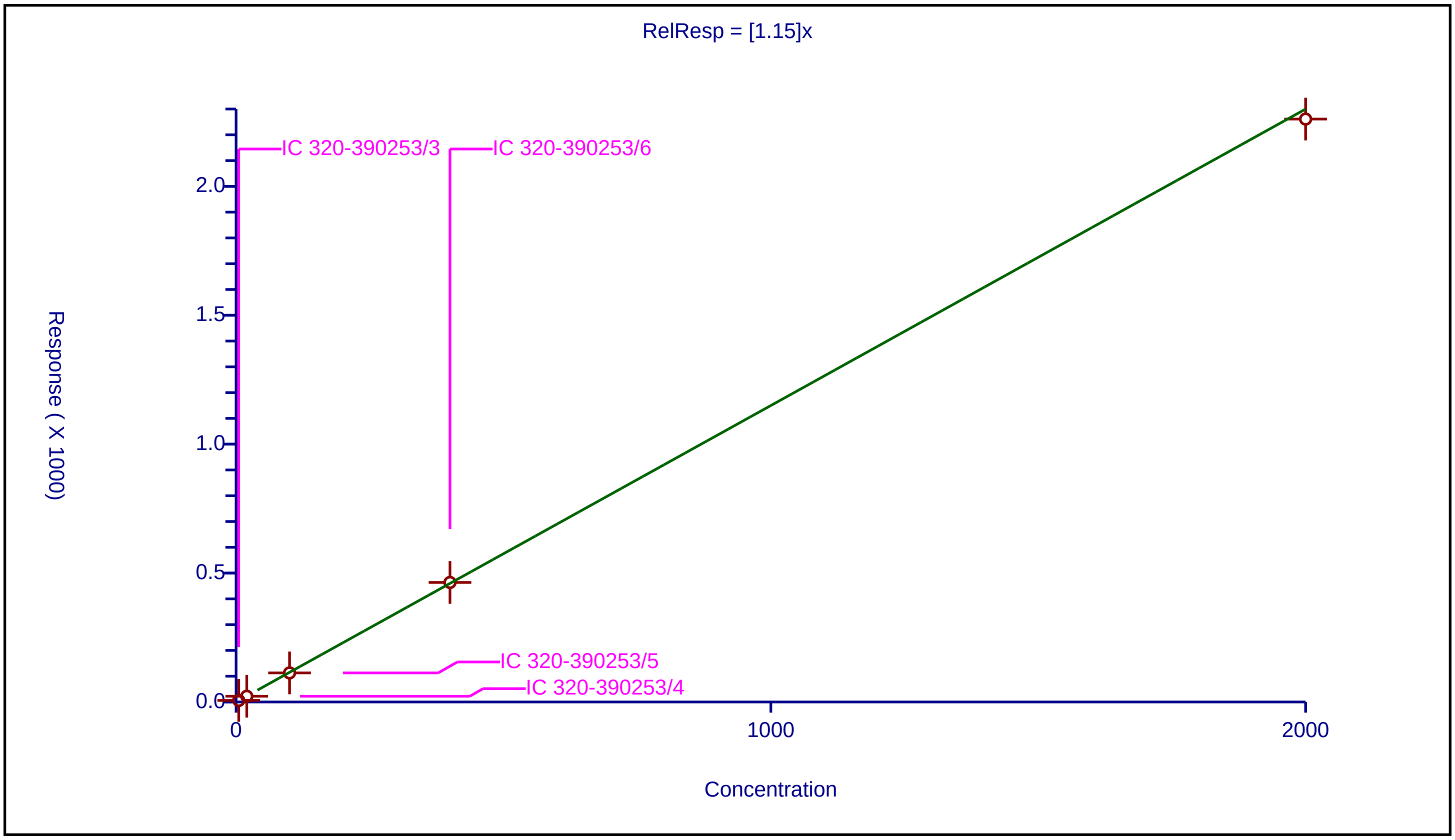

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.296

Error Coefficients

Standard Error:	395000000
Relative Standard Error:	2.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	5.0	6.534036	200.0	43232241.0	1.306807	Y
2	IC 320-390253/4	20.0	24.944985	200.0	43643747.0	1.247249	Y
3	IC 320-390253/5	100.0	128.647484	200.0	46201838.0	1.286475	Y
4	IC 320-390253/6	400.0	534.724692	200.0	53743483.0	1.336812	Y
5	IC 320-390253/7	2000.0	2609.91482	200.0	59456751.0	1.304957	Y

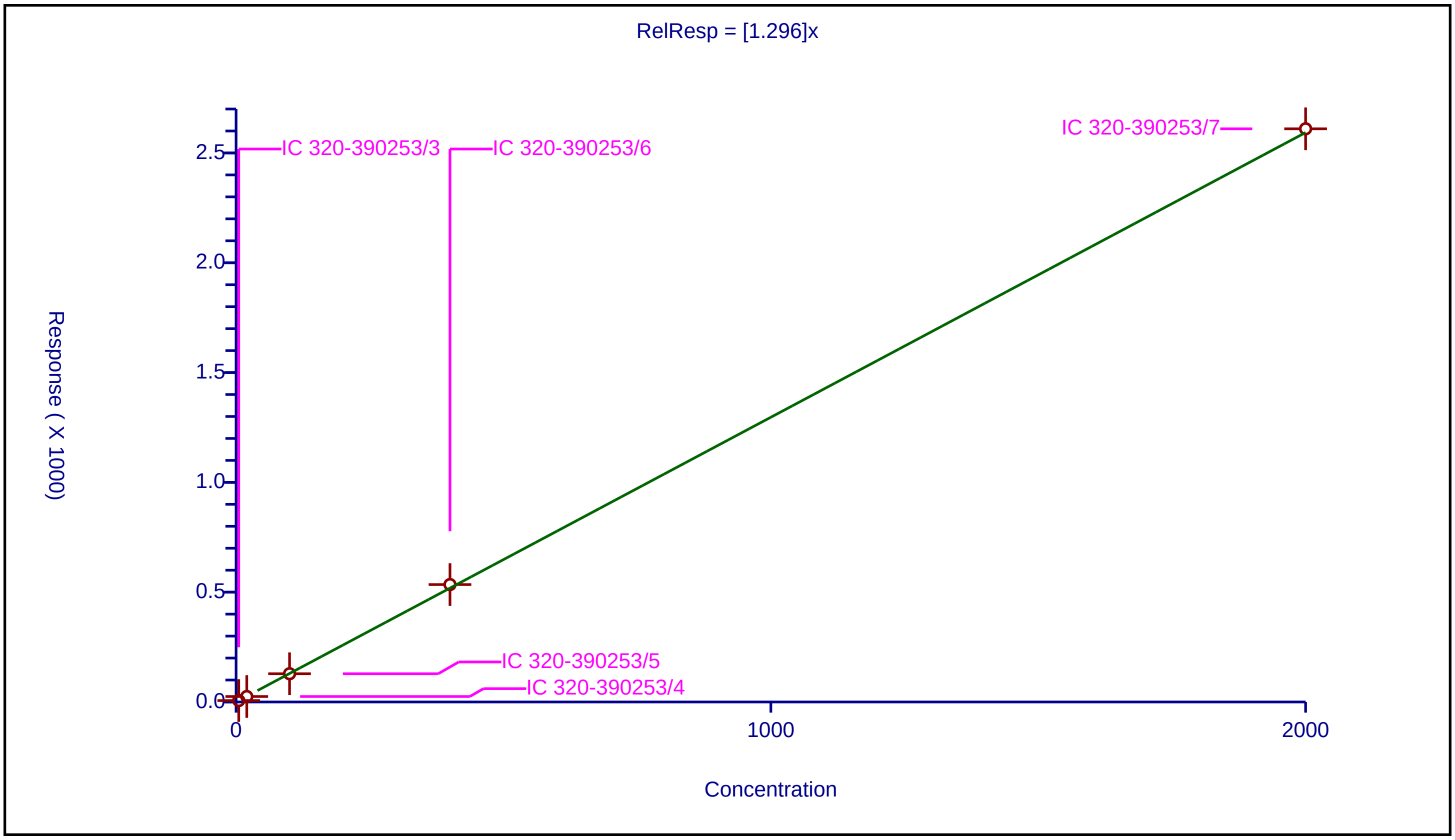

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 405198

SDG No.:

Instrument ID: 4D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/20/2020 02:46 Calibration End Date: 08/20/2020 05:17 Calibration ID: 51587

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-405198/3	20AU204D2_005.d
Level 2	IC 320-405198/4	20AU204D2_006.d
Level 3	IC 320-405198/5	20AU204D2_007.d
Level 4	IC 320-405198/6	20AU204D2_008.d
Level 5	IC 320-405198/7	20AU204D2_009.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.1949	1.1181	1.0121	1.1099	1.0774	AveID		1.1025				6.0		20.0			
2,3,7,8-TCDF	1.1075	0.9617	0.8435	0.8858	0.8722	AveID		0.9341				11.4		20.0			
13C-2,3,7,8-TCDD	0.8974	0.8991	0.9246	0.9232	0.9190	Ave		0.9126				1.5		35.0			
13C-2,3,7,8-TCDF	1.1958	1.2029	1.2696	1.2006	1.2504	Ave		1.2239				2.8		35.0			
37Cl4-2,3,7,8-TCDD	0.9488	0.9587	0.9446	0.9961	0.9839	Ave		0.9664				2.3					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-63525-1	Analy Batch No.:	405198
SDG No.:					
Instrument ID:	4D2	GC Column: DB-225	ID: 0.32(mm)	Heated Purge: (Y/N)	N
Calibration Start Date:	08/20/2020 02:46	Calibration End Date:	08/20/2020 05:17	Calibration ID:	51587

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-405198/3	20AU204D2_005.d
Level 2	IC 320-405198/4	20AU204D2_006.d
Level 3	IC 320-405198/5	20AU204D2_007.d
Level 4	IC 320-405198/6	20AU204D2_008.d
Level 5	IC 320-405198/7	20AU204D2_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	745237	2705024	7905875	55718414	267476547	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	920381	3113069	9047713	57825078	294625969	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTC	Ave	124733965	120964108	78113345	125499183	124134855	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTC	Ave	166211203	161845093	107261700	163207790	168904939	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTC	Ave	659437	2579789	7979970	54167691	265803360	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
20AU204D2	1	CPS 082020	DB225 CPSM HRDXNCP_00040				1.00000	
20AU204D2	2	CCV 082020	CCV CS-4 HRDXNL4_00089				1.00000	
20AU204D2	3	CPS 082020	DB225 CPSM HRDXNCP_00040				1.00000	
20AU204D2	4	SB 082020	SB Solvent Blank C-14				1.00000	
20AU204D2	5	IC 082020	CS-2 HRDXNL2_00029				1.00000	
20AU204D2	6	IC 082020A	CS-3 HRDXNL3_00027				1.00000	
20AU204D2	7	IC 082020B	CS-4 HRDXNL4_00092				1.00000	
20AU204D2	8	IC 082020C	CS-5 HRDXNL5_00030				1.00000	
20AU204D2	9	IC 082020D	CS-6 HRDXNL6_00026				1.00000	
20AU204D2	10	SB 082020A	SB Solvent Blank C-14				1.00000	
20AU204D2	11	ICV 082020	2nd Source HRDXNIC_00045				1.00000	
20AU204D2	12						1.00000	
20AU204D2	13						1.00000	
20AU204D2	14						1.00000	
20AU204D2	15						1.00000	
20AU204D2	16		ALM/SMA 08-20-20				1.00000	
20AU204D2	17						1.00000	
20AU204D2	18						1.00000	
20AU204D2	19						1.00000	
20AU204D2	20						1.00000	

Logfile checked
08/20/20 SMA

Peak Locate Examination:20-AUG-2020:00:08 File:20AU204D2
Experiment:DB225RES Function:1 Reference:PFK

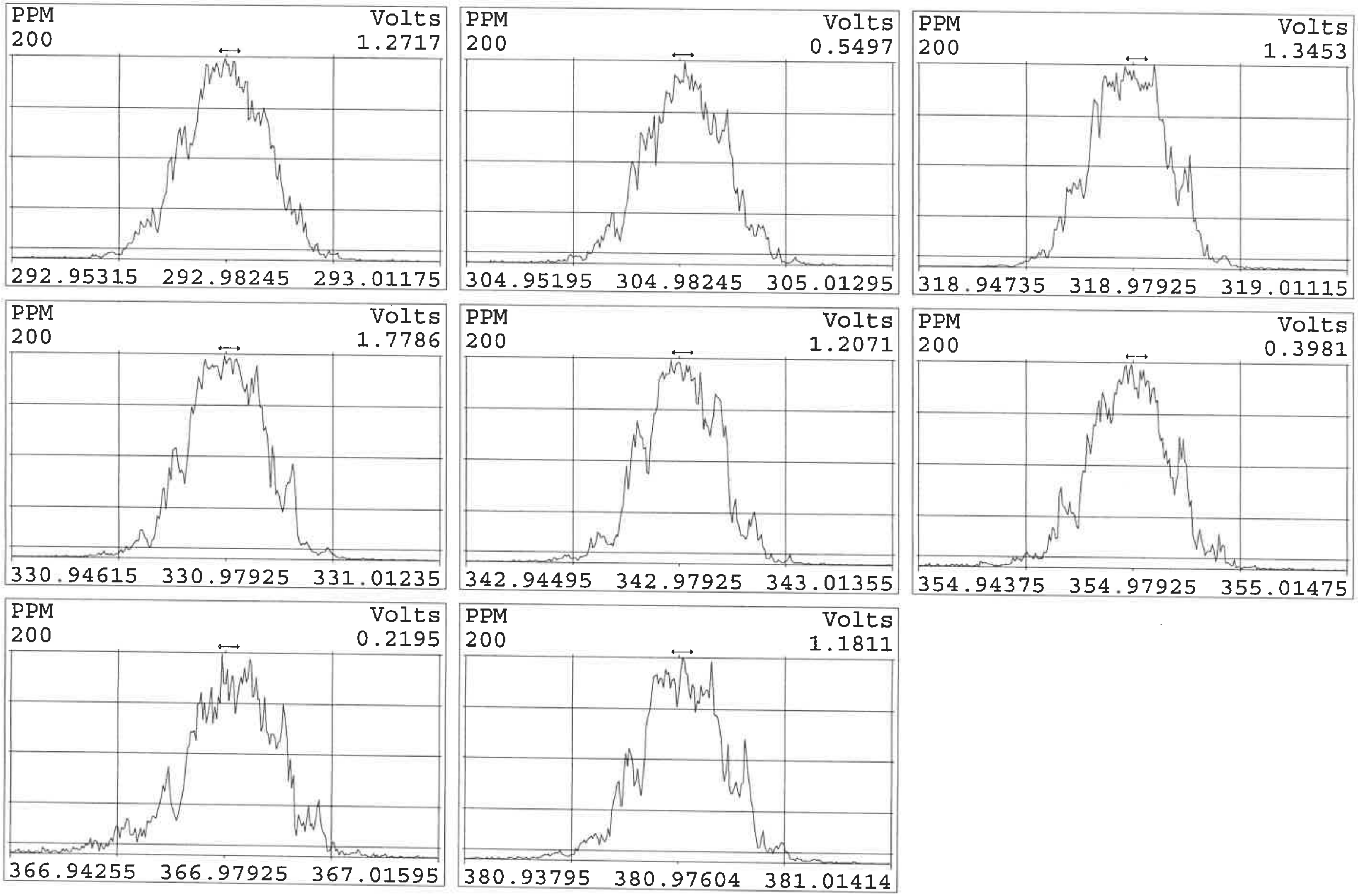

Peak Locate Examination:20-AUG-2020:07:52 File:20AU204D2ENDRES
Experiment:DB225RES Function:1 Reference:PFK

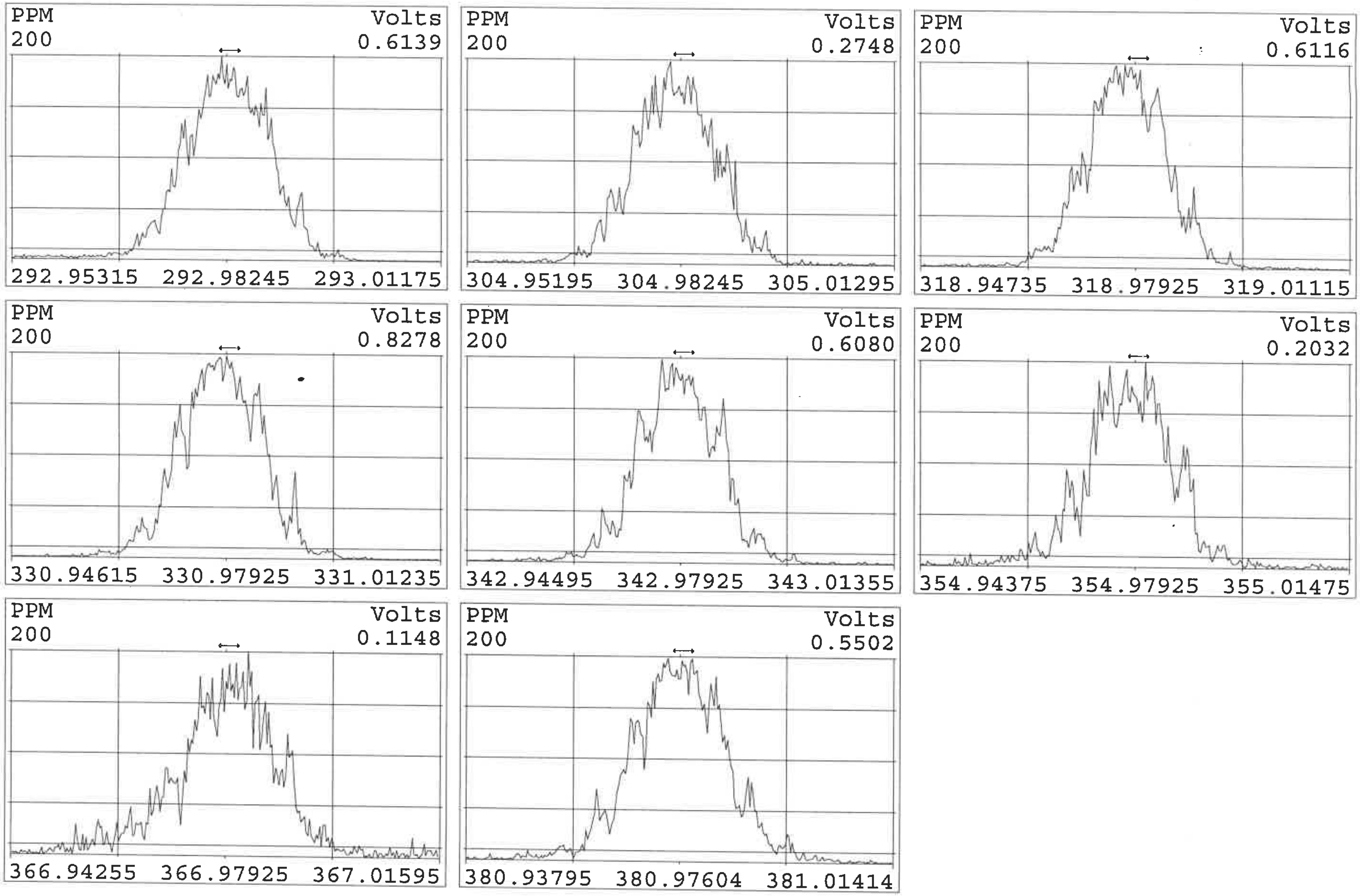

Report Date: 20-Aug-2020 09:19:21 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d				
Lims ID:	IC CS2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	20-Aug-2020 02:46:14	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	4D2		
Sublist:	chrom-DXN_DB225_4D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	20-Aug-2020 09:19:20	Calib Date:	20-Aug-2020 05:17:37		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1068				

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:03:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.913	139000778	0.79	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.024	166211203	0.77	1.2239	97.7	97.7	0.1344	0.1344	97.70	
2,3,7,8-TCDF	15.037	920381	0.74	0.9341	0.5928	0.5928	0.0199	0.0199	119	
D 13C-2,3,7,8-TCDD	13.652	124733965	0.79	0.9126	98.3	98.3	0.1413	0.1413	98.33	
2,3,7,8-TCDD	13.652	745237	0.74	1.1025	0.5419	0.5419	0.0392	0.0392	108	
$ 37Cl4-2,3,7,8-TCDD	13.666	659437		0.9664	0.4909	0.4909	0.0291	0.0291	98.18	

Reagents:

HRDXNL2_00029	Amount Added: 1.00	Units: mL

Report Date: 20-Aug-2020 09:19:21 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d
Lims ID: IC CS2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 20-Aug-2020 02:46:14 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:20 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:03:54

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.913	13.910	0		61156715	13477747	9169	22922	1470		
333.9339	13.913	13.910	0		77844063	16975272	6535	16337	2598	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.024	15.016	0	1.080	72088307	15465767	10722	26805	1442		
317.9389	15.024	15.016	0	1.080	94122896	20236987	9314	23285	2173	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.037	15.035	0	1.001	391856	75571	1075	2687	70		
305.8987	15.051	15.035	1	1.002	528525	104276	1585	3962	66	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.652	13.647	0	0.981	55141761	12061737	9169	22922	1315		
333.9339	13.652	13.647	0	0.981	69592204	15168936	6535	16337	2321	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.652	13.658	0	1.000	317534	72694	2526	6315	29		
321.8936	13.666	13.658	0	1.001	427703	99011	2186	5465	45	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.666	13.666	0	0.982	659437	151887	3423	8557	44		

Reagents:

HRDXNL2_00029 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:21 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d

Injection Date:	20-Aug-2020 02:46:14	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

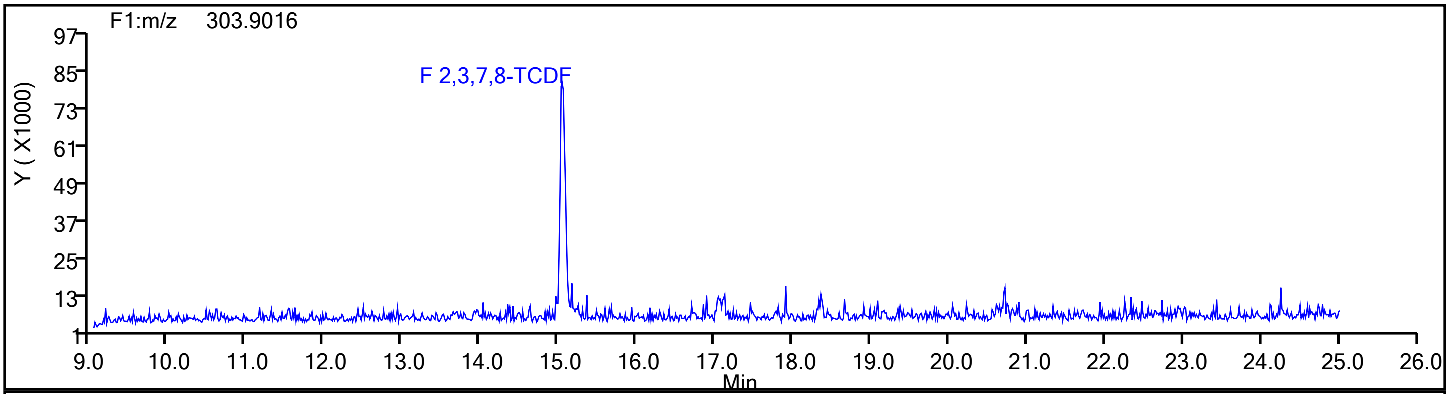

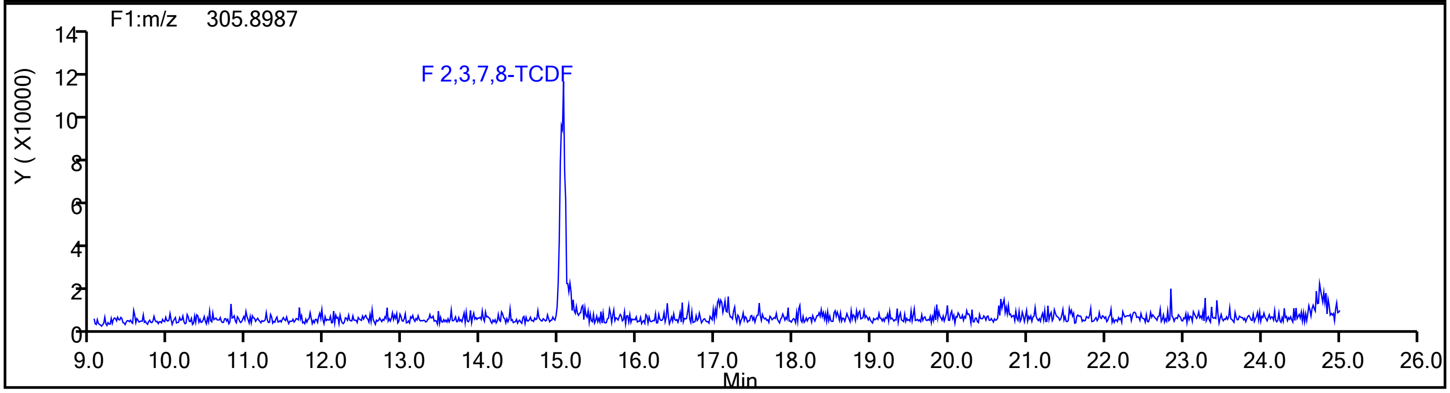

TCDF Standards

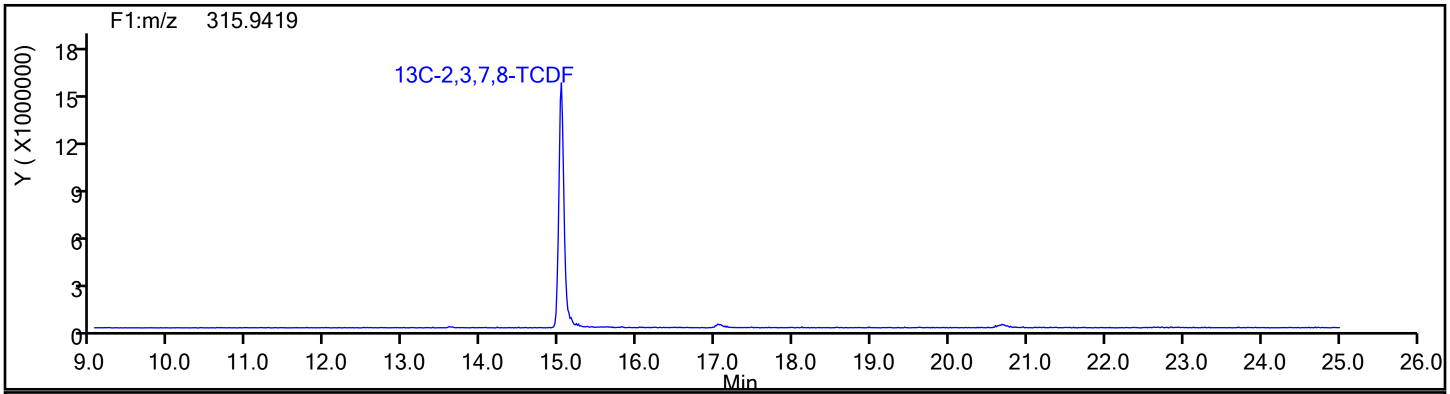

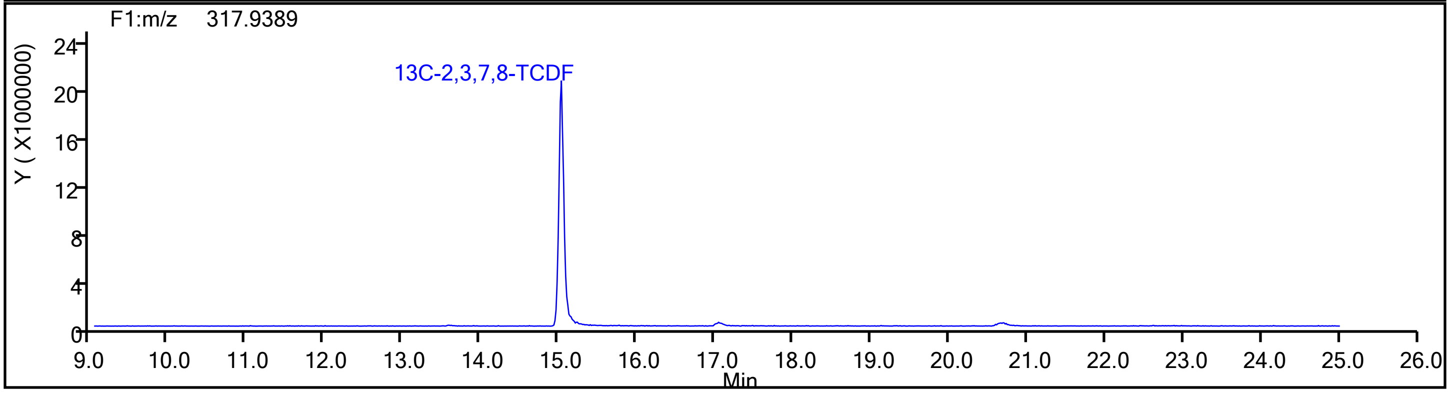

Report Date: 20-Aug-2020 09:19:21 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d
Injection Date: 20-Aug-2020 02:46:14
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

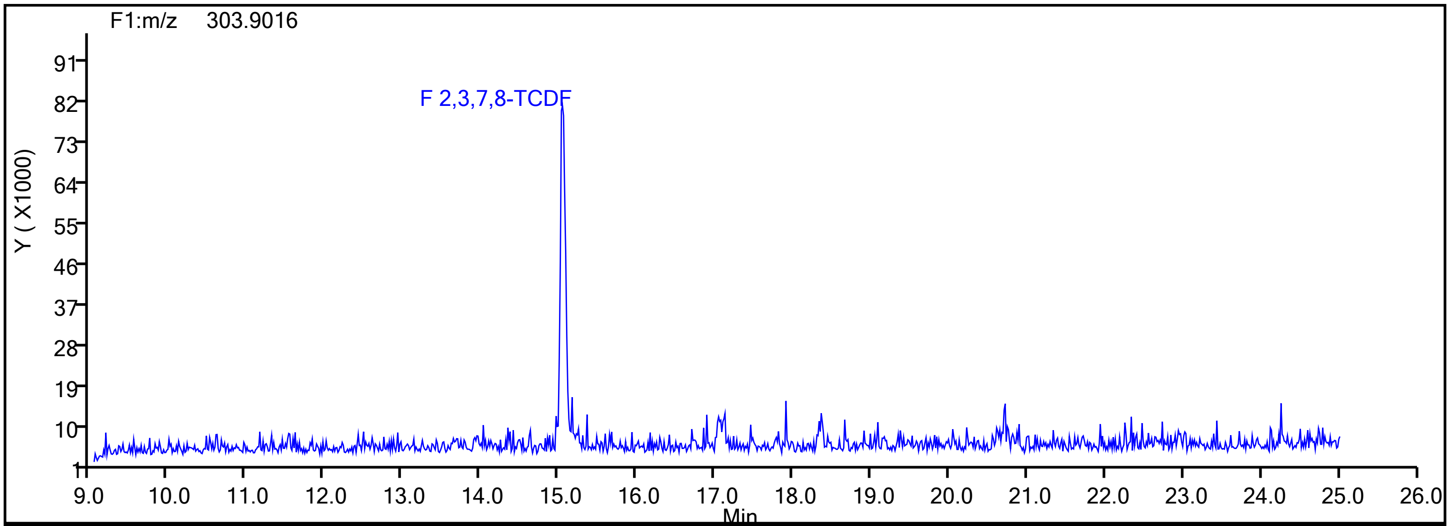

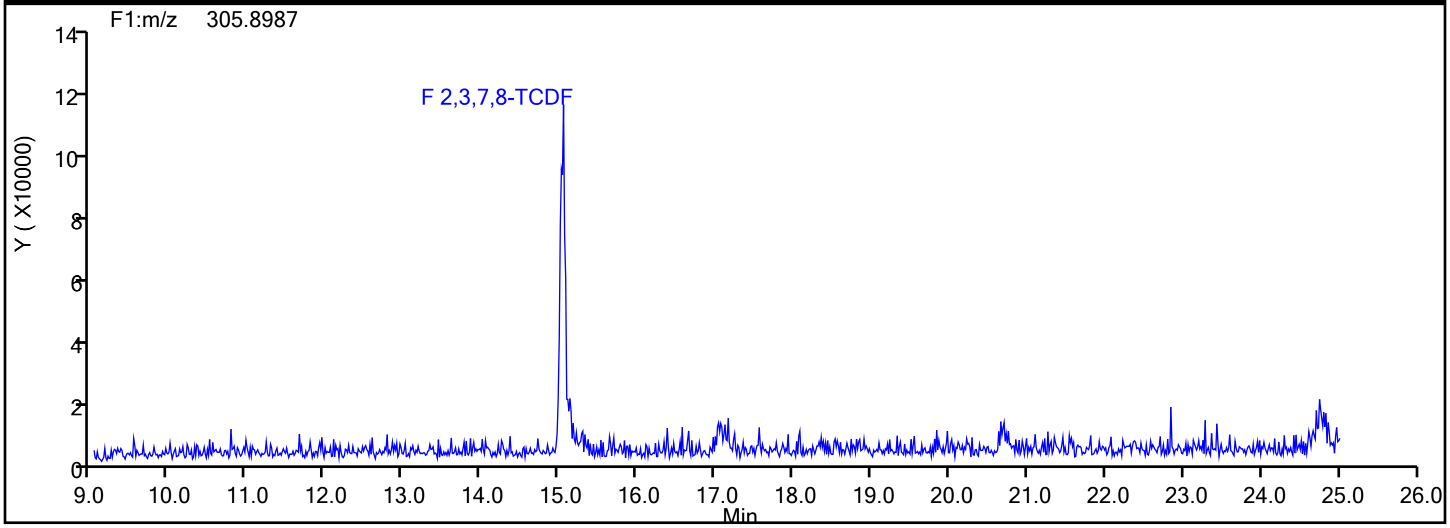

TCDF Interference Mass

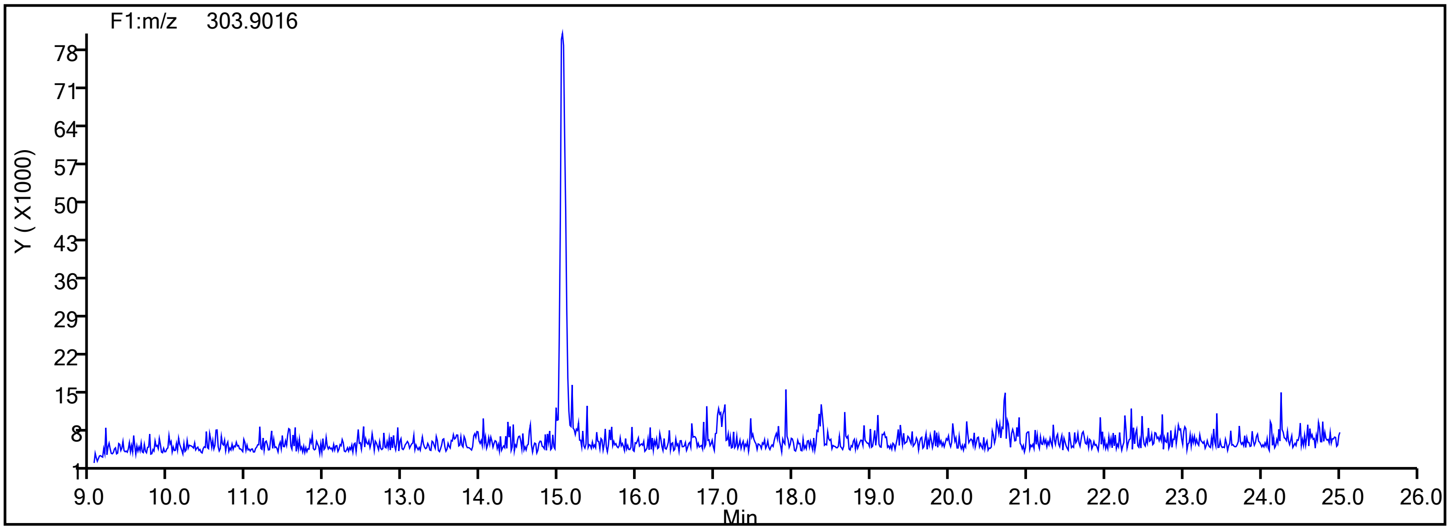

Report Date: 20-Aug-2020 09:19:21 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d		
Injection Date:	20-Aug-2020 02:46:14	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

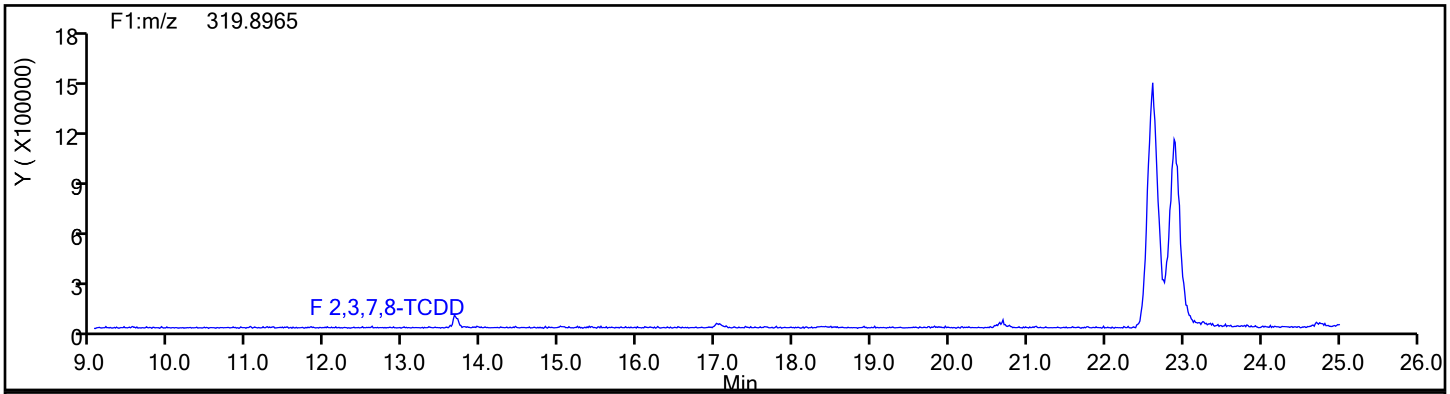

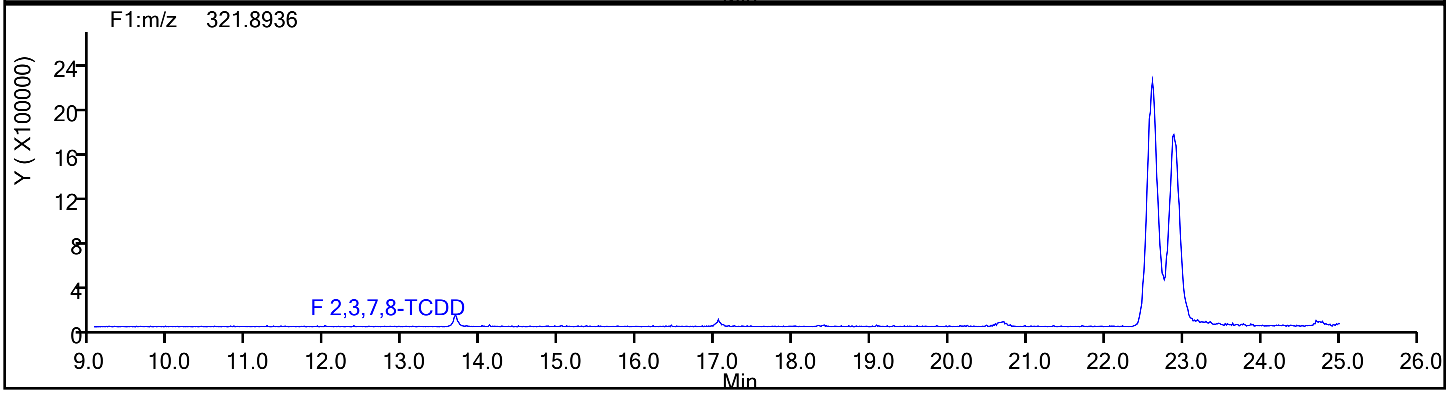

TCDD Standards

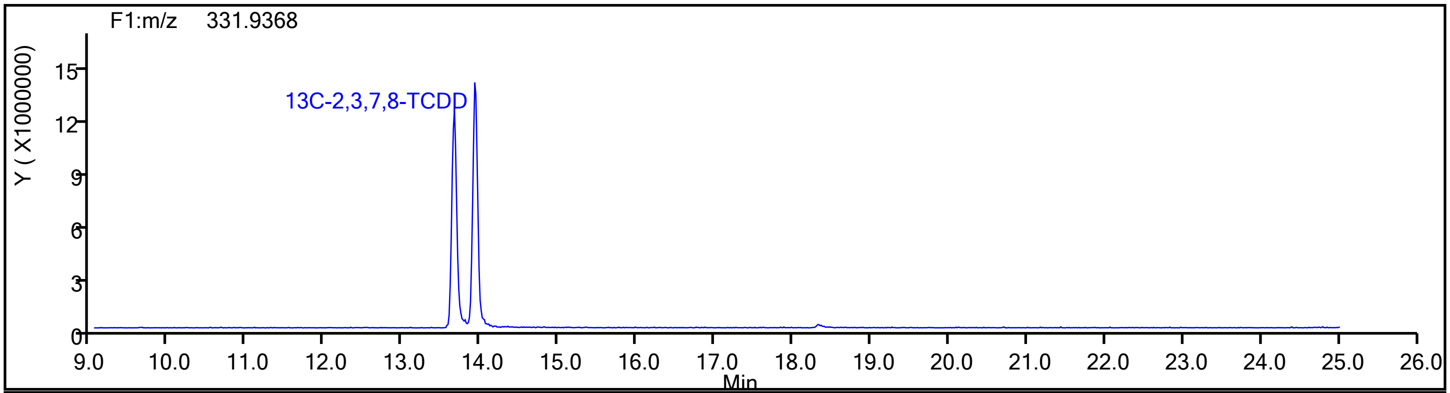

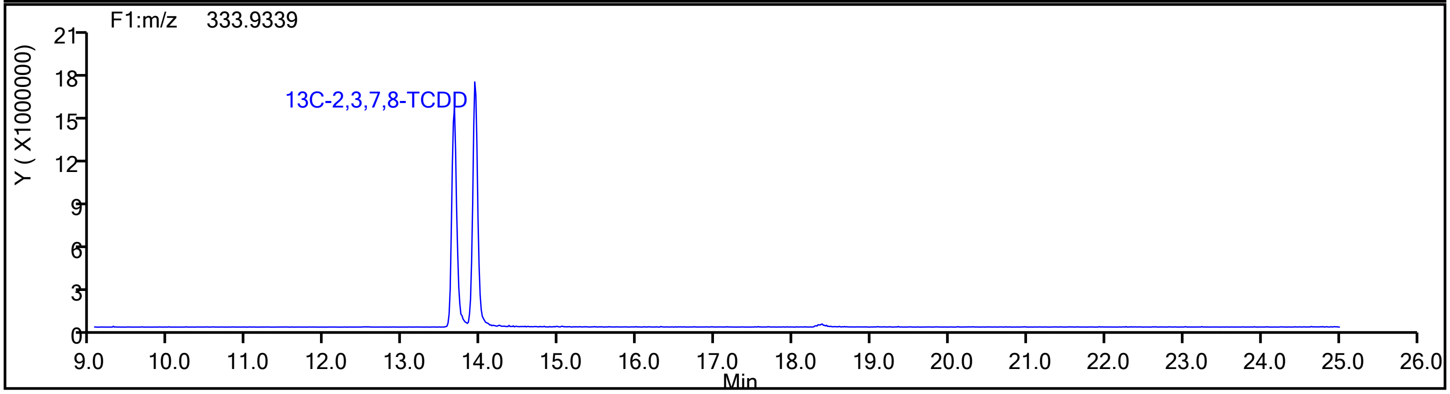

Report Date: 20-Aug-2020 09:19:21 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d
Injection Date: 20-Aug-2020 02:46:14 Injection Vol: 2.0 ul
Instrument ID: 4D2 Operator ID:
Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198 Sample Line#: 3
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

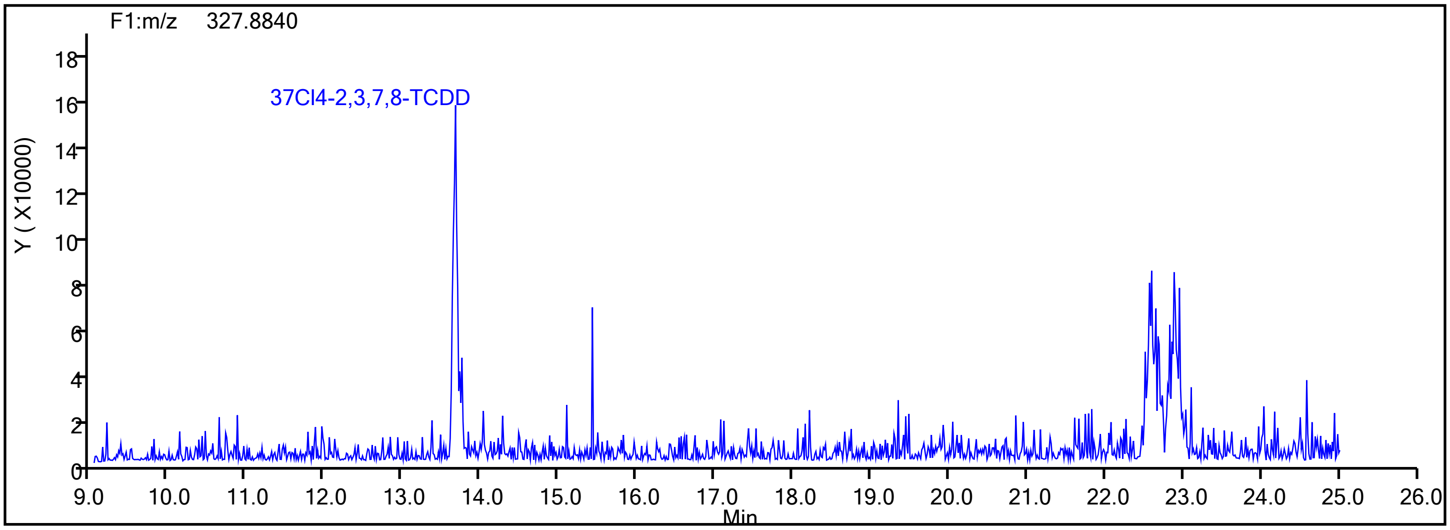

37Cl4-TCDD Standards

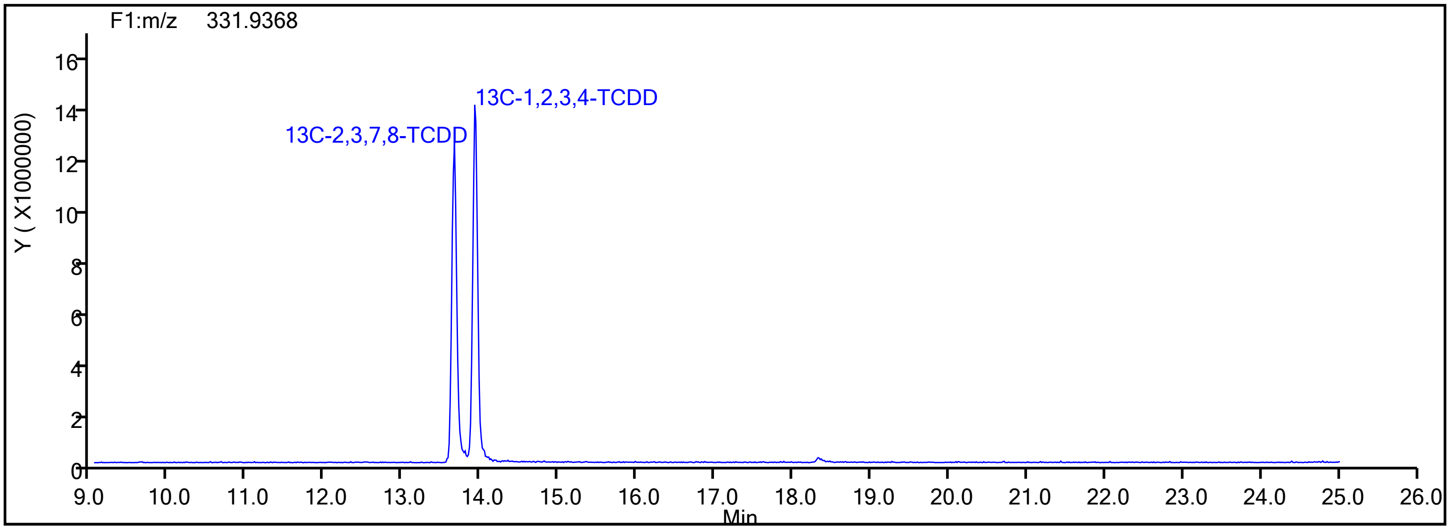

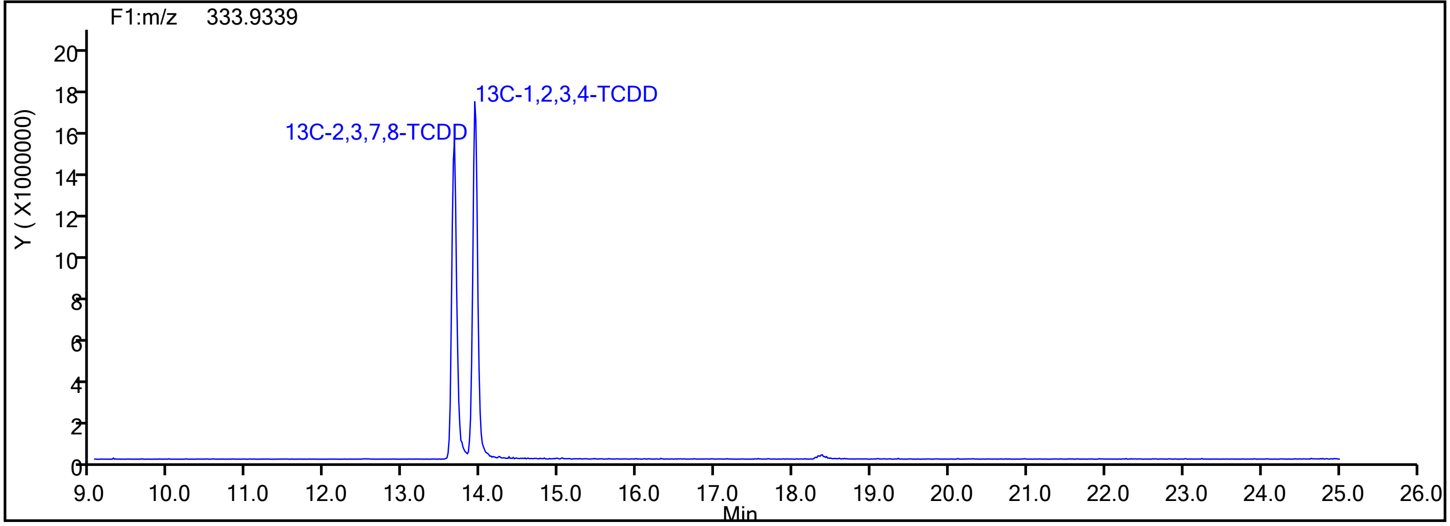

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_005.d		
Injection Date:	20-Aug-2020 02:46:14	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

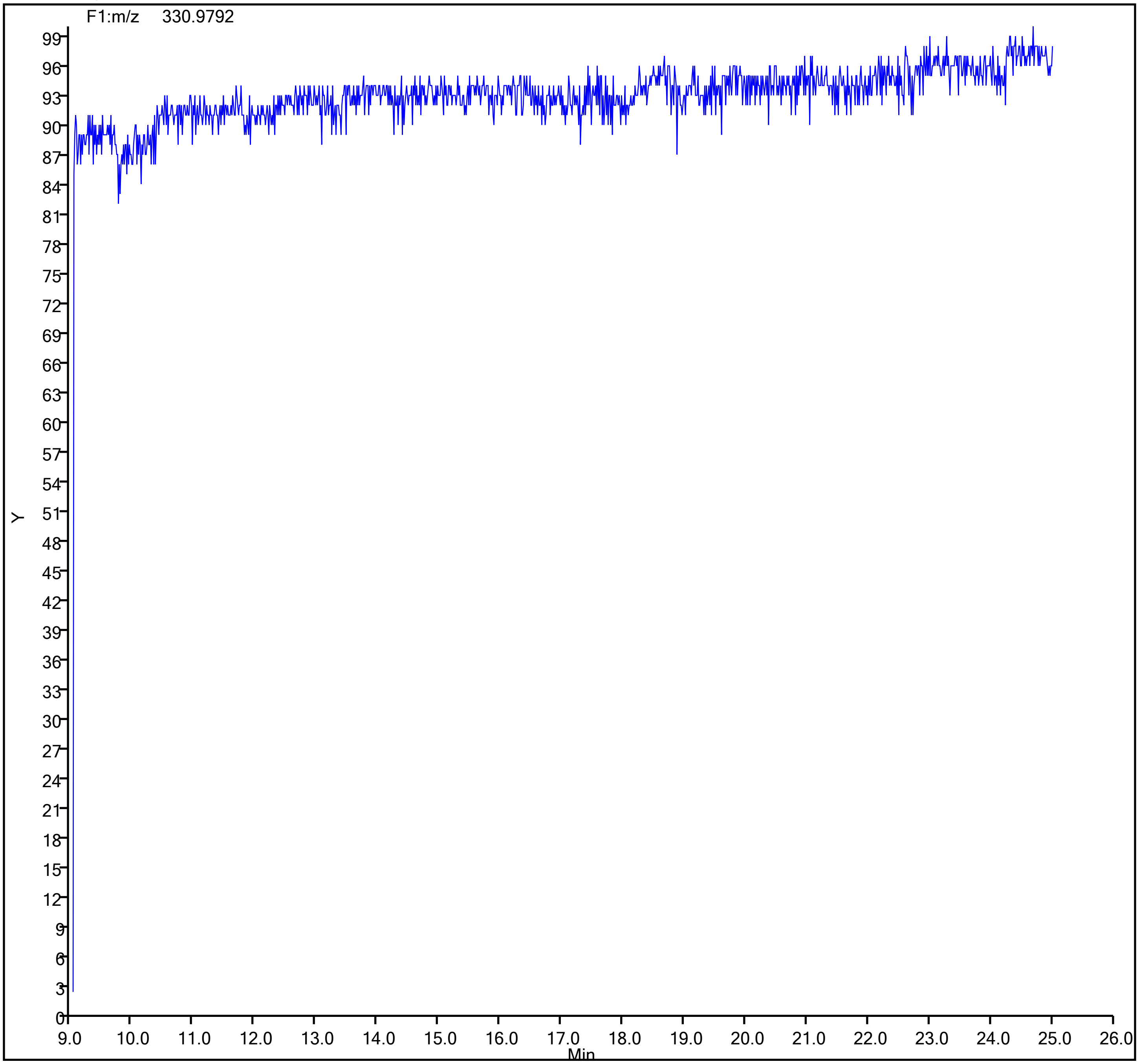

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d
Lims ID: IC CS3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 20-Aug-2020 03:24:05 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:24 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:04:16

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.900	134541847	0.80	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.011	161845093	0.77	1.2239	98.3	98.3	0.1420	0.1420	98.29	
2,3,7,8-TCDF	15.025	3113069	0.71	0.9341	2.059	2.059	0.0229	0.0229	103	
$ 37Cl4-2,3,7,8-TCDD	13.639	2579789		0.9664	1.984	1.984	0.0287	0.0287	99.20	a
D 13C-2,3,7,8-TCDD	13.639	120964108	0.81	0.9126	98.5	98.5	0.1450	0.1450	98.51	
2,3,7,8-TCDD	13.639	2705024	0.82	1.1025	2.028	2.028	0.0429	0.0429	101	

QC Flag Legend

Review Flags
a - User Assigned ID

Reagents:

HRDXNL3_00027 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d
Lims ID: IC CS3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 20-Aug-2020 03:24:05 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:24 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:04:16

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.900	13.910	-1		59693526	13077916	9171	22927	1426		
333.9339	13.900	13.910	-1		74848321	17350834	6937	17342	2501	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.011	15.016	0	1.080	70322193	14309710	11475	28687	1247		
317.9389	15.011	15.016	0	1.080	91522900	18908609	9676	24190	1954	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.025	15.035	-1	1.001	1292330	281319	1222	3055	230		
305.8987	15.025	15.035	-1	1.001	1820739	384034	1618	4045	237	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											a
327.8840	13.639	13.639	0	0.981	2579789	559635	3378	8445	166		a
13C-2,3,7,8-TCDD											
331.9368	13.639	13.647	0	0.981	53993504	11730332	9171	22927	1279		
333.9339	13.626	13.647	-1	0.980	66970604	15208626	6937	17342	2192	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.639	13.658	-1	1.000	1221564	260926	2676	6690	98		
321.8936	13.653	13.658	0	1.001	1483460	341446	2426	6065	141	0.82(0.65-0.89)	

QC Flag Legend

Review Flags
a - User Assigned ID

Reagents:

HRDXNL3_00027 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d				
Injection Date:	20-Aug-2020 03:24:05	Instrument ID:	4D2		
Lims ID:	IC CS3				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

37Cl4-2,3,7,8-TCDD, CAS: 85508-50-5

Signal: 1

Not Detected

Expected RT: 13.64

Processing Integration Results

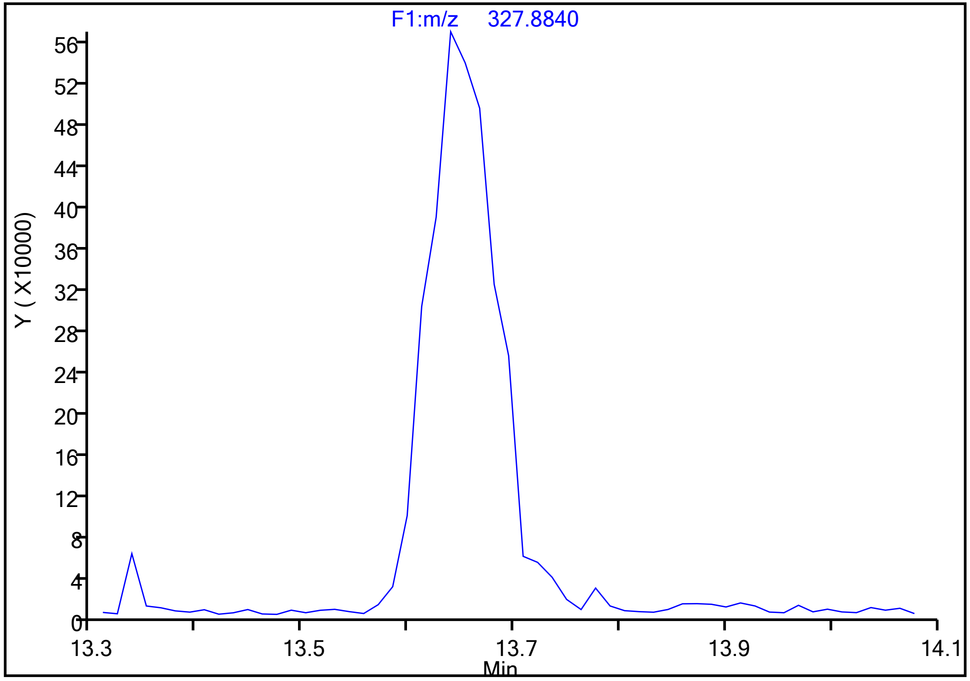

RT: 13.64

Area: 2579789

Amount: 1.984068

Amount Units: pg/ul

Manual Integration Results

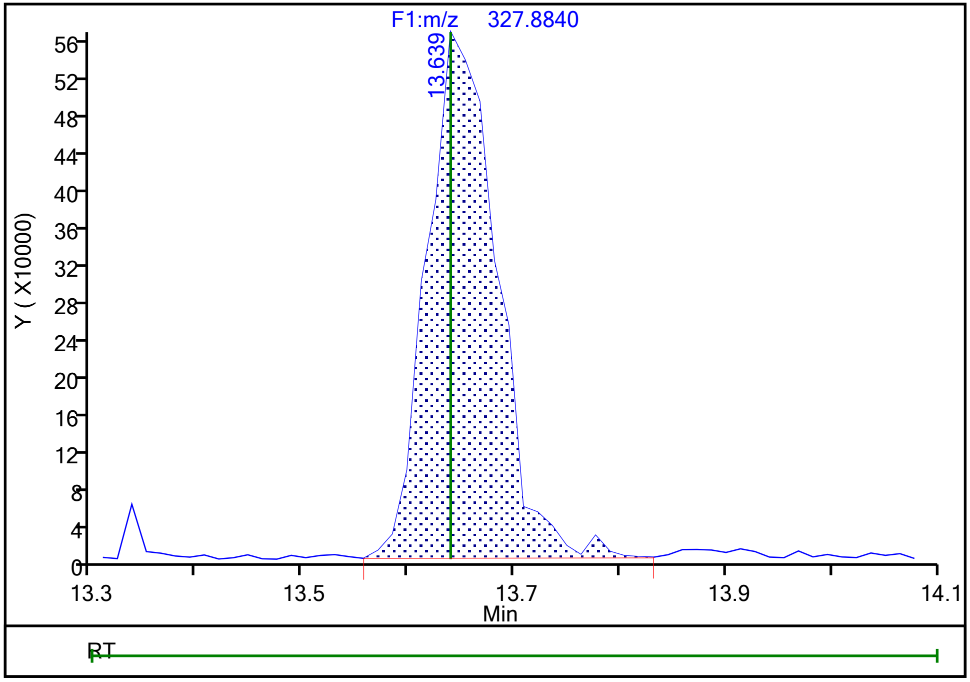

Reviewer: arghestanis, 20-Aug-2020 09:17:08

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 20-Aug-2020 09:19:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d		
Injection Date:	20-Aug-2020 03:24:05	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

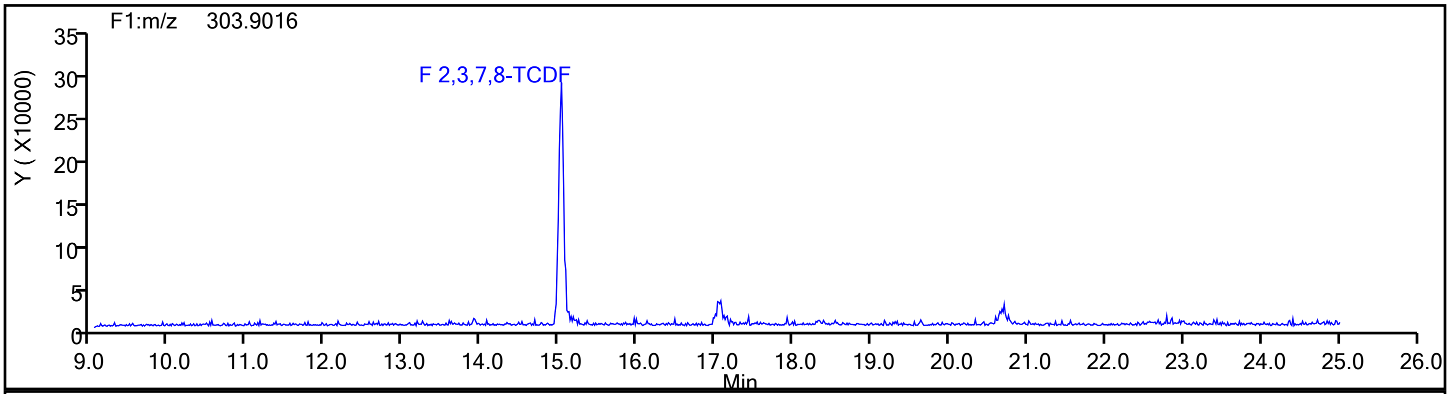

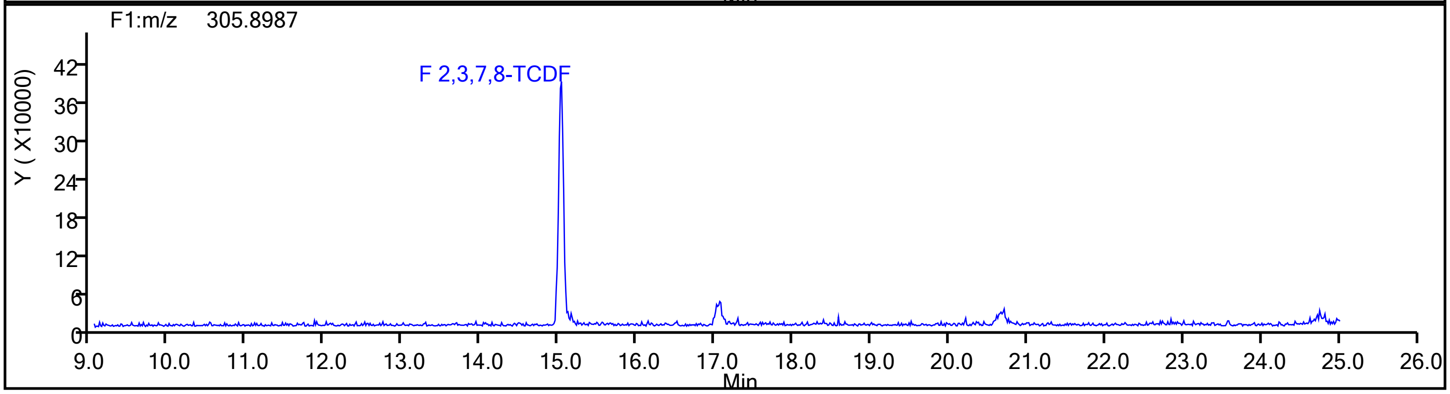

TCDF Standards

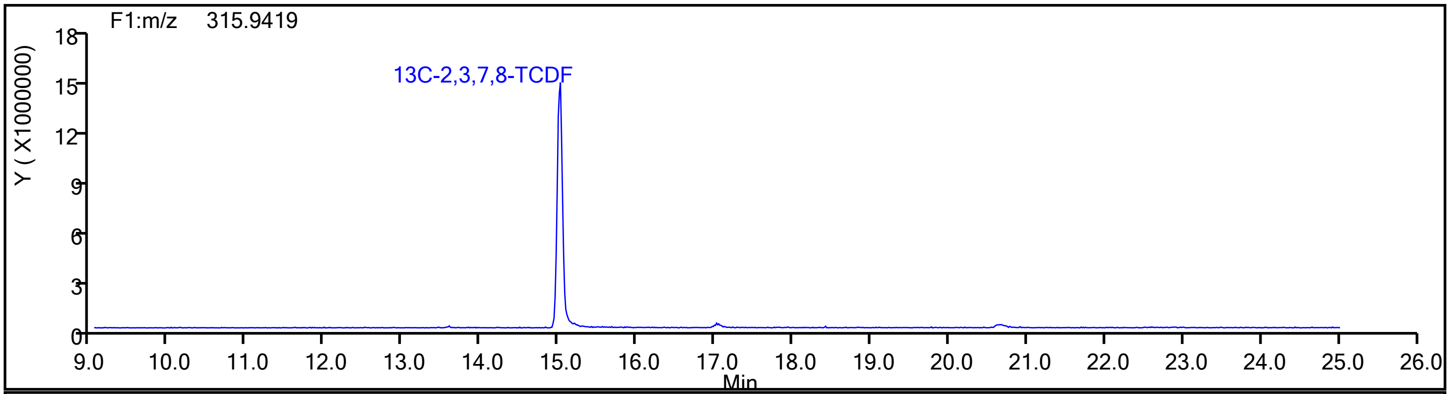

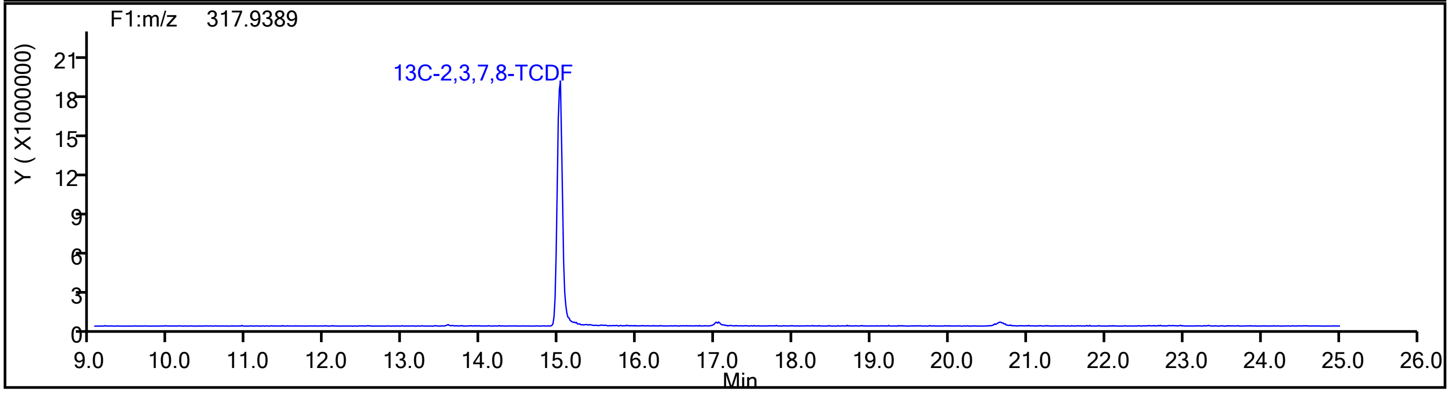

Report Date: 20-Aug-2020 09:19:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d

Injection Date:	20-Aug-2020 03:24:05	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

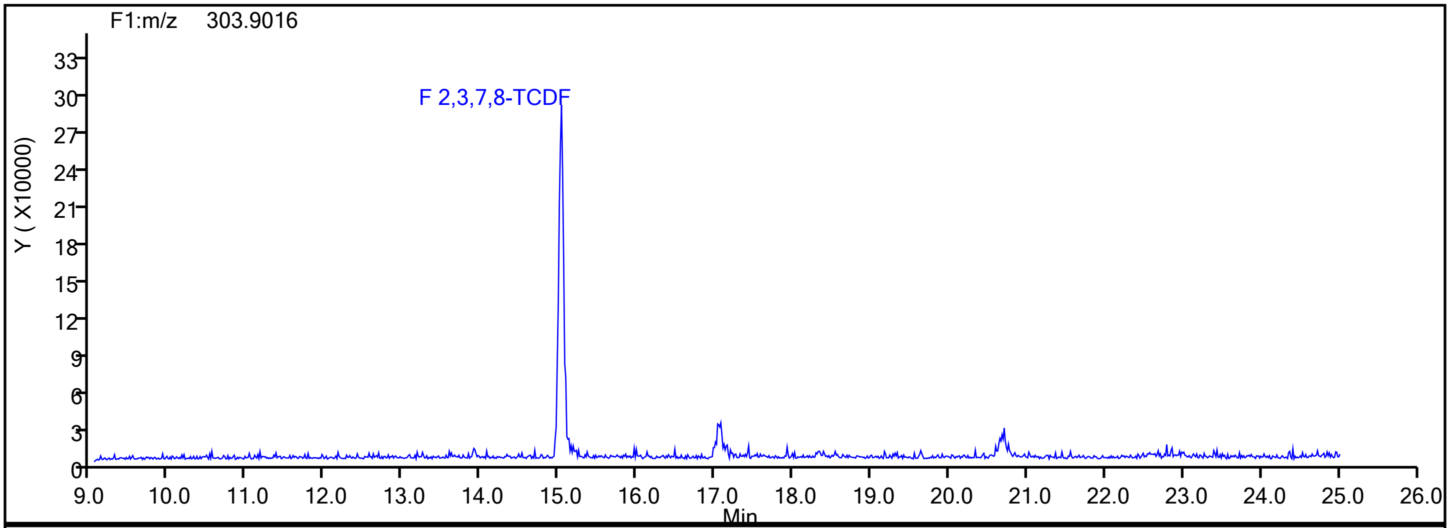

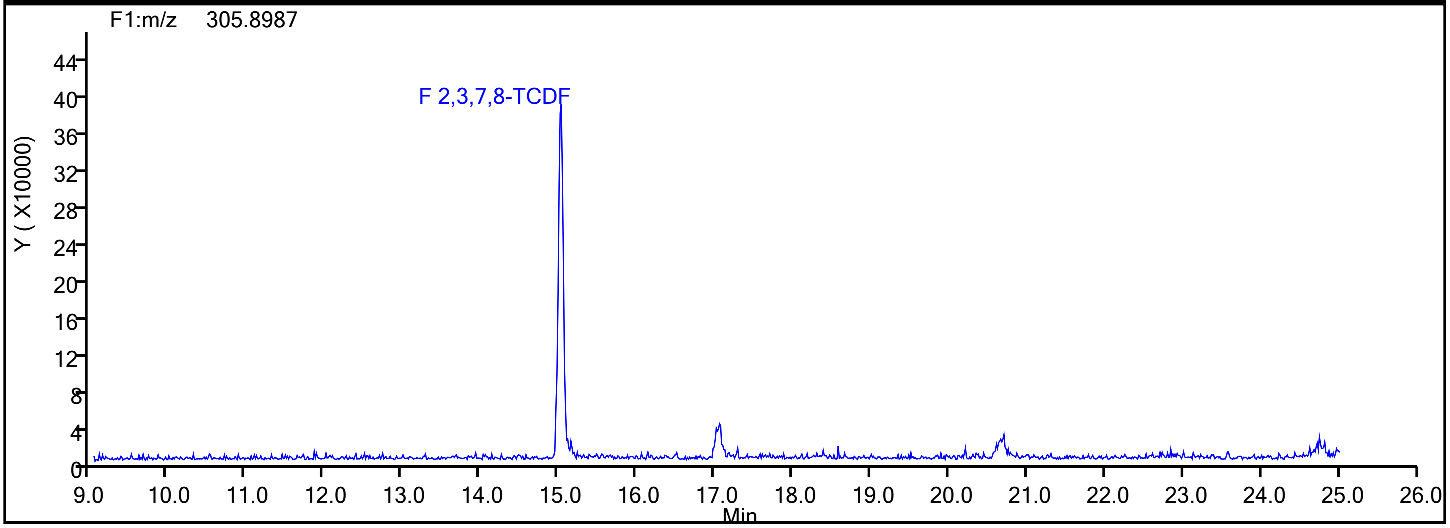

TCDF Interference Mass

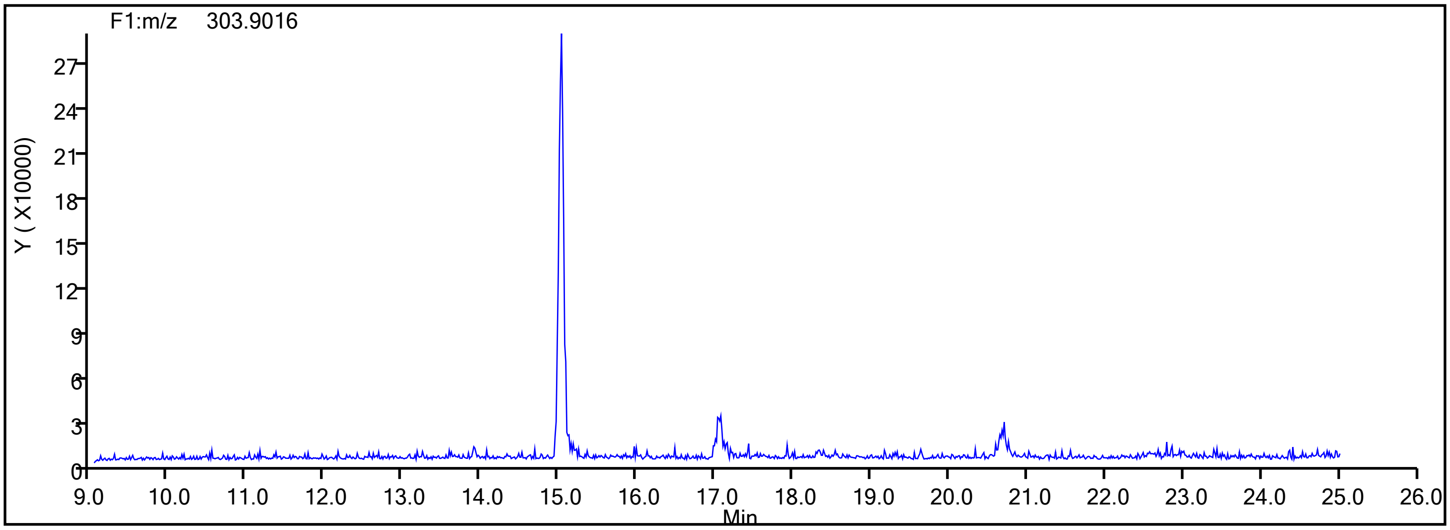

Report Date: 20-Aug-2020 09:19:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d		
Injection Date:	20-Aug-2020 03:24:05	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

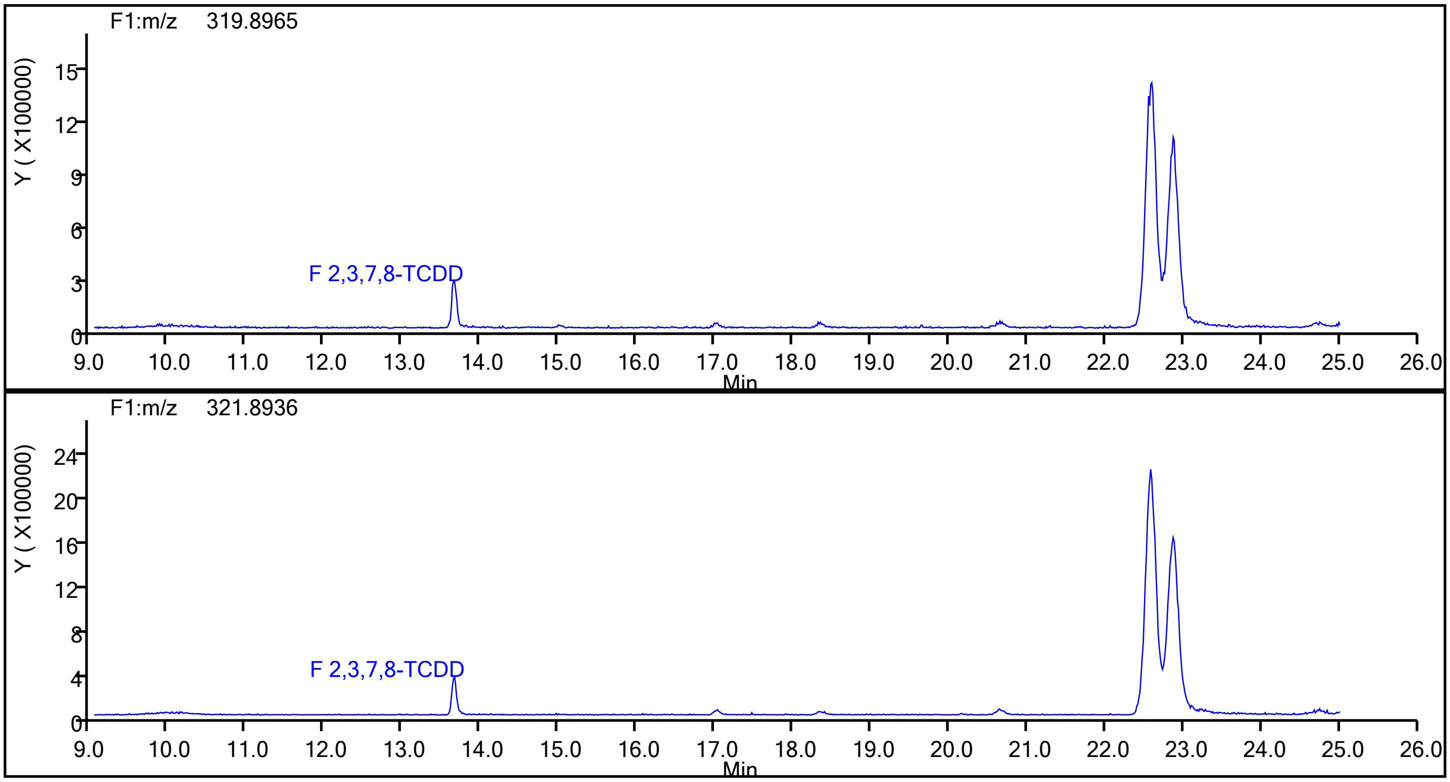

TCDD Standards

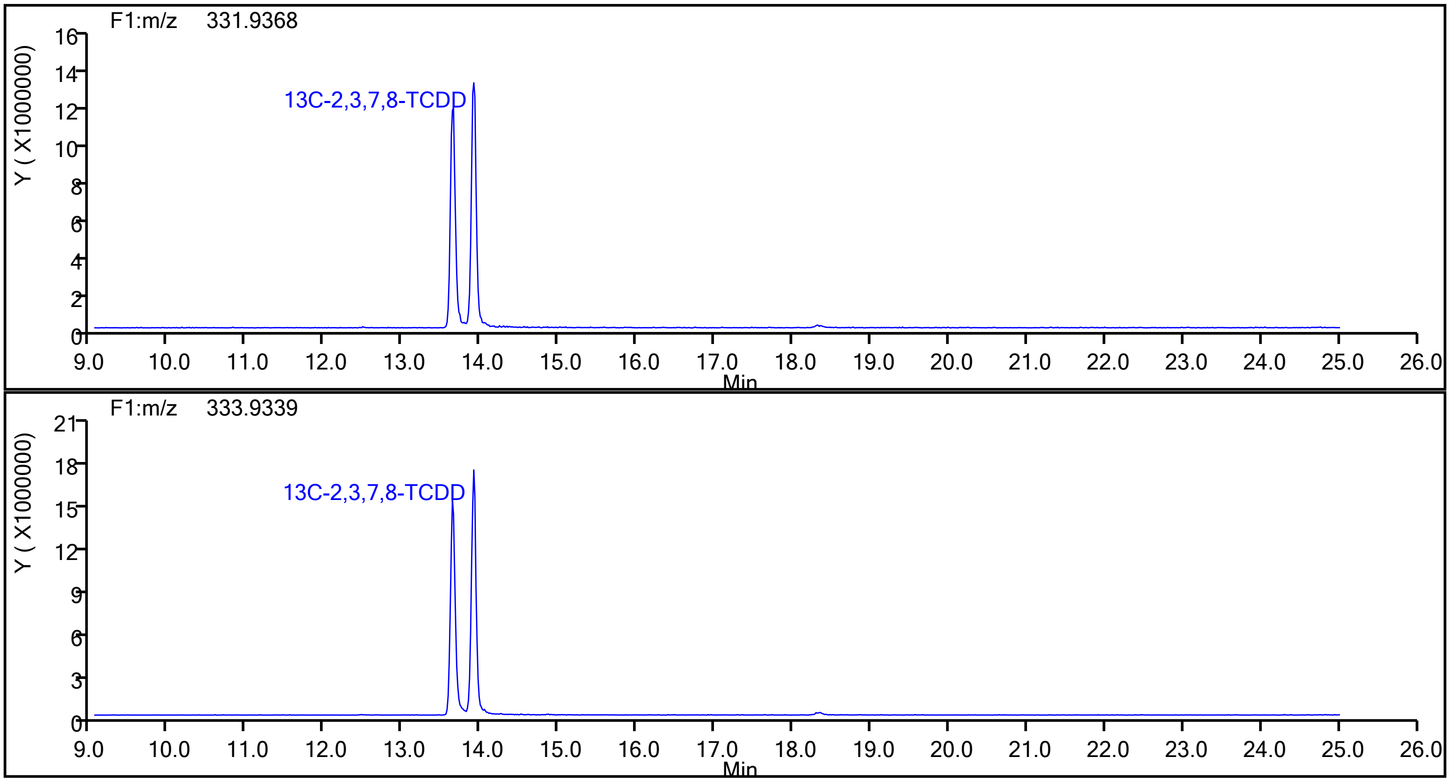

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d		
Injection Date:	20-Aug-2020 03:24:05	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

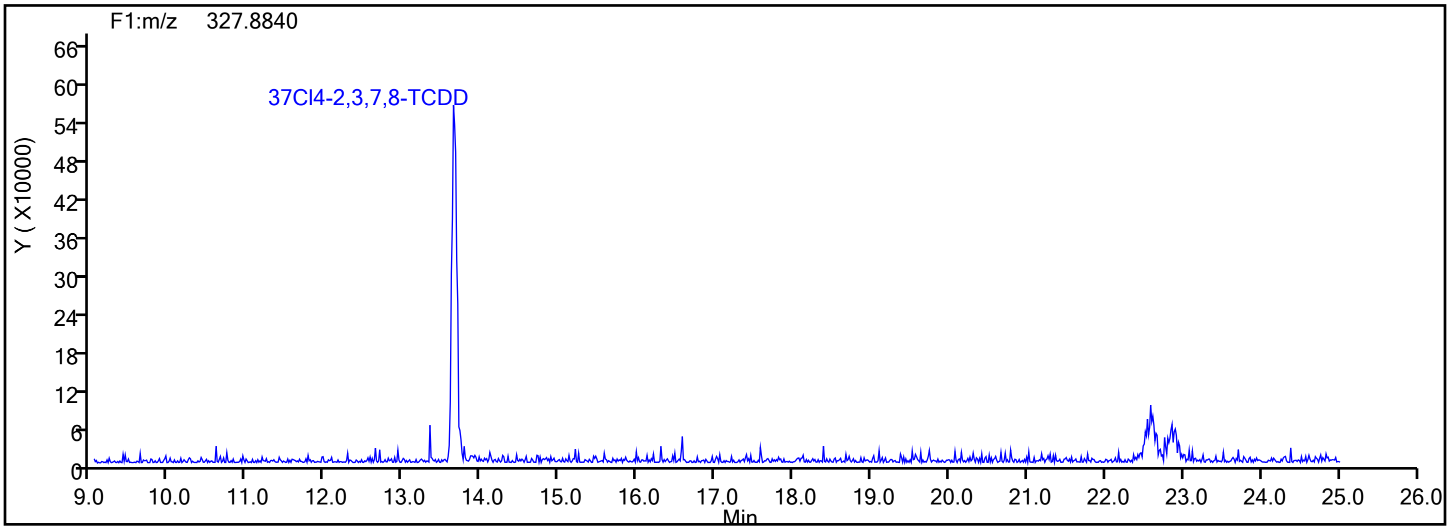

37Cl4-TCDD Standards

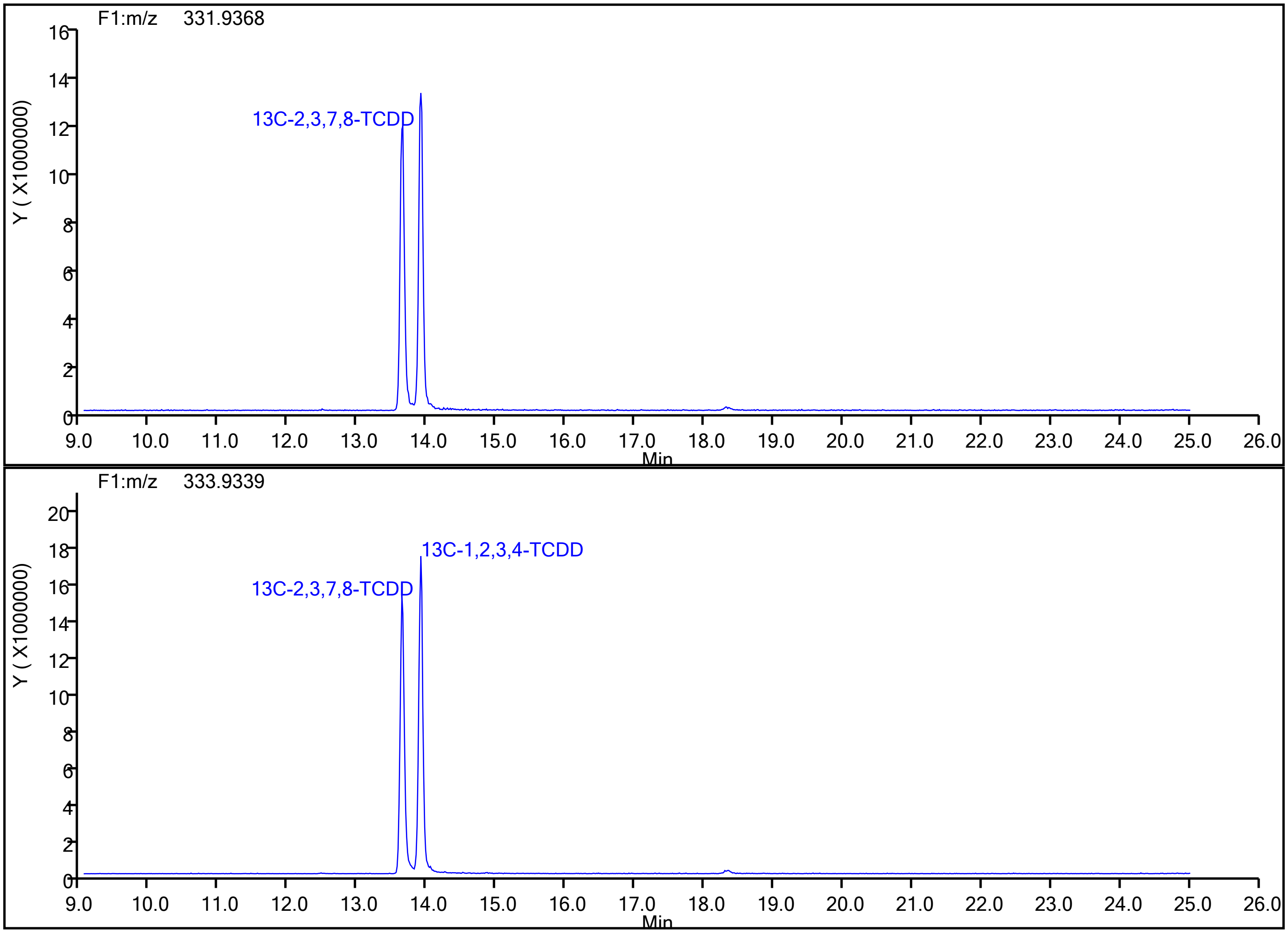

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_006.d		
Injection Date:	20-Aug-2020 03:24:05	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

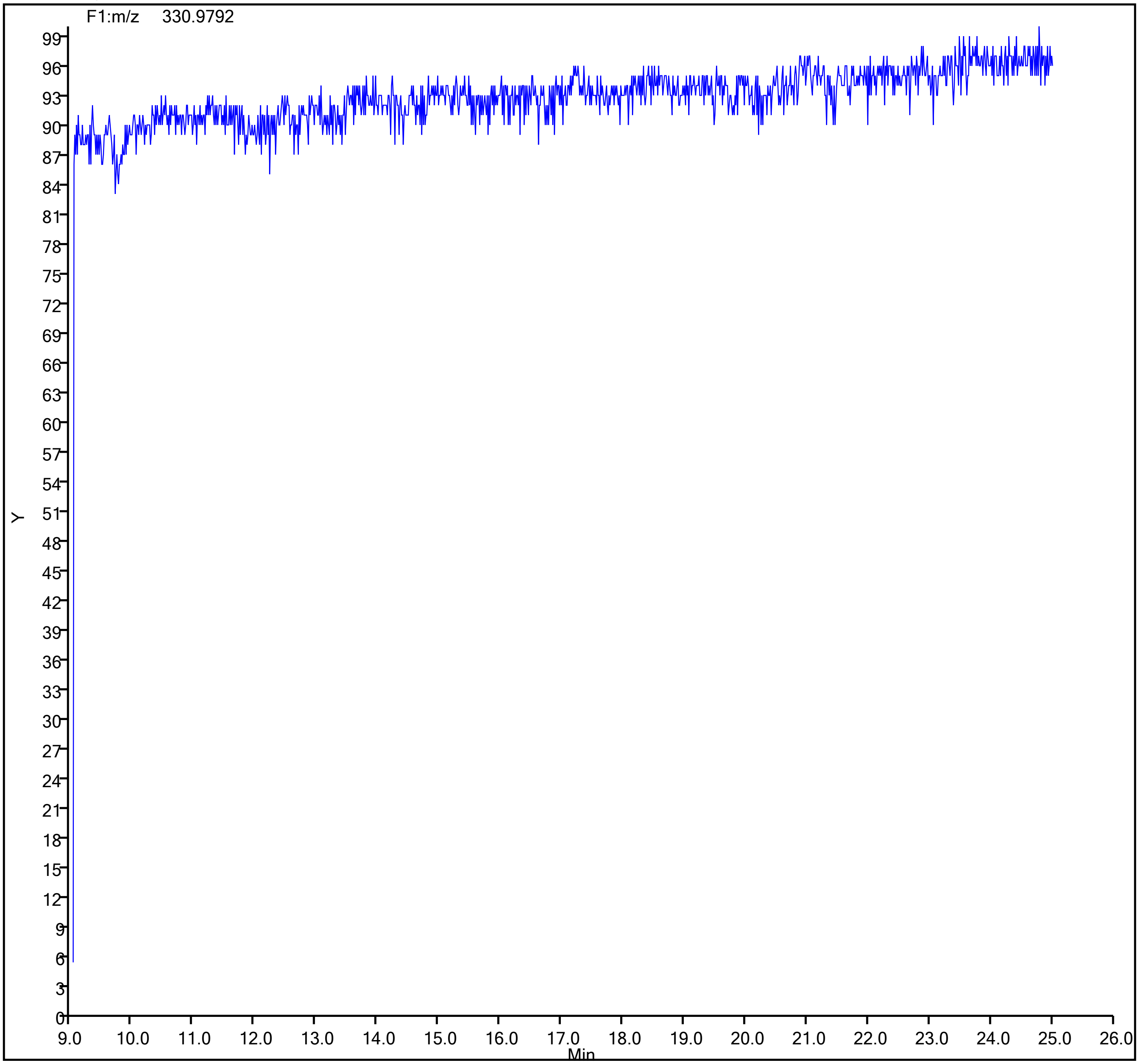

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d
Lims ID: IC CS4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 20-Aug-2020 04:01:56 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00092
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:27 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:02:48

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.914	84481942	0.82	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.011	107261700	0.76	1.2239	103.7	103.7	0.2188	0.2188	104	
2,3,7,8-TCDF	15.039	9047713	0.69	0.9341	9.030	9.030	0.0382	0.0382	90.30	
D 13C-2,3,7,8-TCDD	13.653	78113345	0.80	0.9126	101.3	101.3	0.2311	0.2311	101	
2,3,7,8-TCDD	13.667	7905875	0.80	1.1025	9.180	9.180	0.0756	0.0756	91.80	
$ 37Cl4-2,3,7,8-TCDD	13.667	7979970		0.9664	9.774	9.774	0.0496	0.0496	97.74	

Reagents:

HRDXNL4_00092 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:29 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d
Lims ID: IC CS4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 20-Aug-2020 04:01:56 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00092
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:27 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:02:48

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.914	13.910	0		38009404	8350608	9160	22900	912		
333.9339	13.914	13.910	0		46472538	10316142	6586	16465	1566	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.011	15.016	0	1.079	46458416	9800891	11421	28552	858		
317.9389	15.011	15.016	0	1.079	60803284	12982397	8577	21442	1514	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.039	15.035	0	1.002	3694905	781211	1399	3497	558		
305.8987	15.039	15.035	0	1.002	5352808	1126346	1856	4640	607	0.69(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.653	13.647	0	0.981	34713545	7358475	9160	22900	803		
333.9339	13.640	13.647	0	0.980	43399800	9176116	6586	16465	1393	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.667	13.658	1	1.001	3522530	768574	2808	7020	274		
321.8936	13.667	13.658	1	1.001	4383345	967304	2707	6767	357	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.667	13.667	0	0.982	7979970	1738804	3579	8947	486		

Reagents:

HRDXNL4_00092 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:29 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d
Injection Date: 20-Aug-2020 04:01:56
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

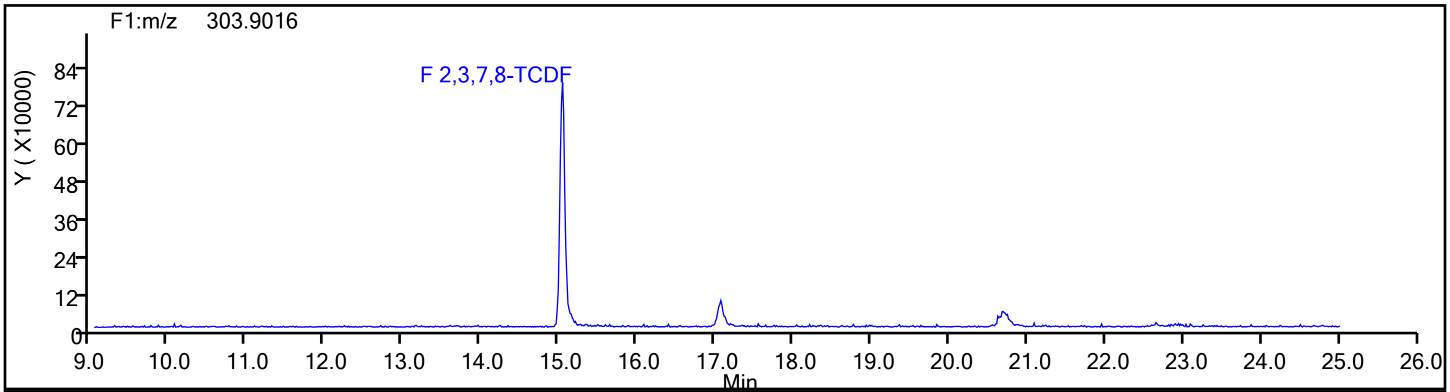

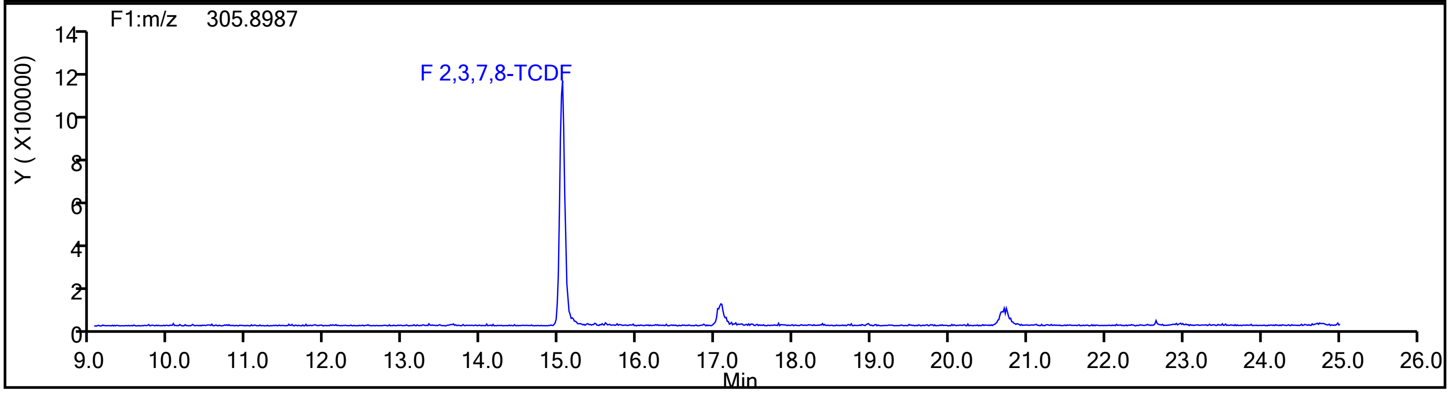

TCDF Standards

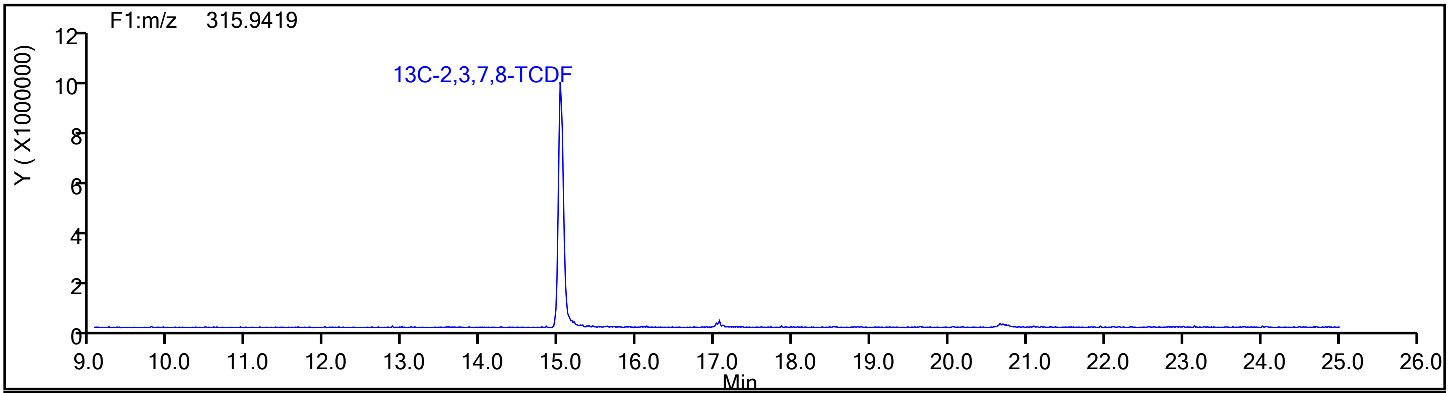

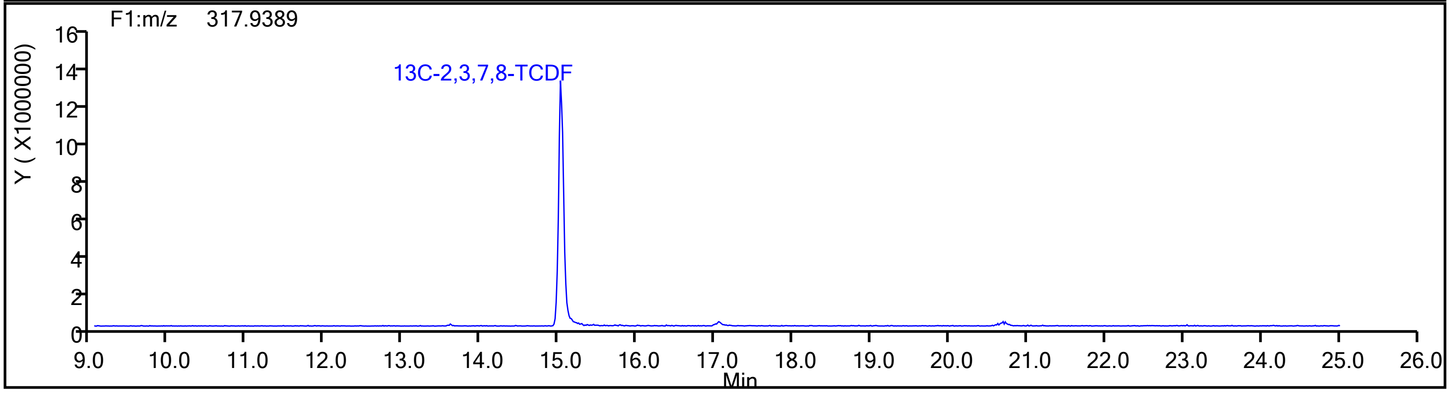

Report Date: 20-Aug-2020 09:19:29 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d		
Injection Date:	20-Aug-2020 04:01:56	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

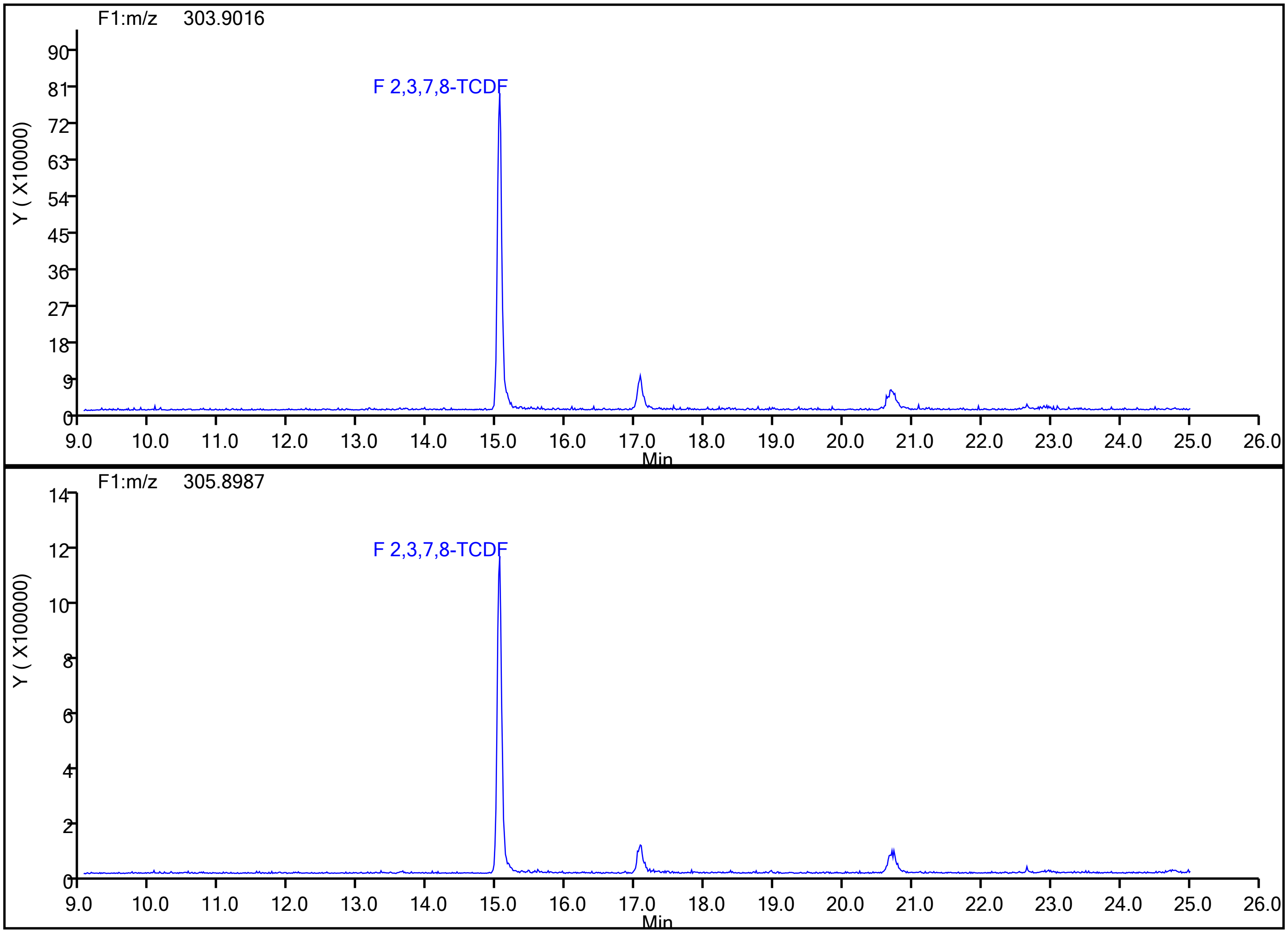

TCDF Interference Mass

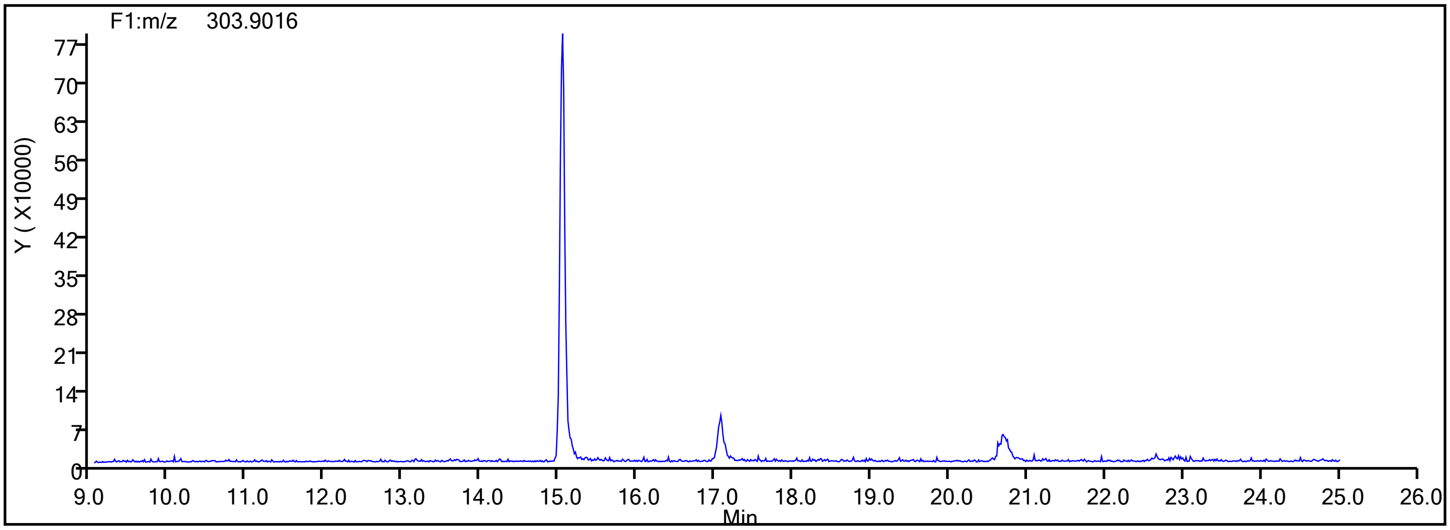

Report Date: 20-Aug-2020 09:19:29 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d
Injection Date: 20-Aug-2020 04:01:56
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

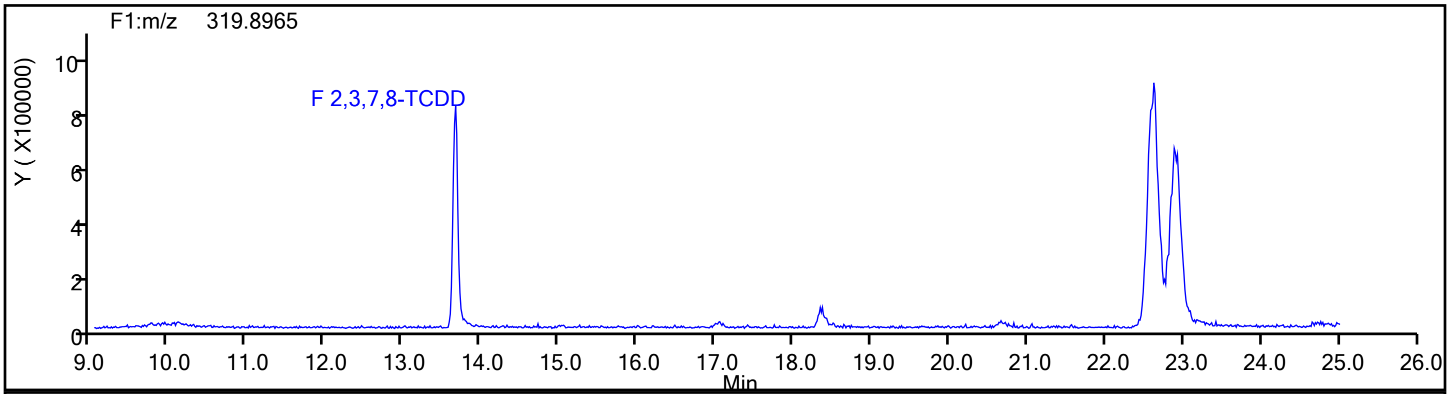

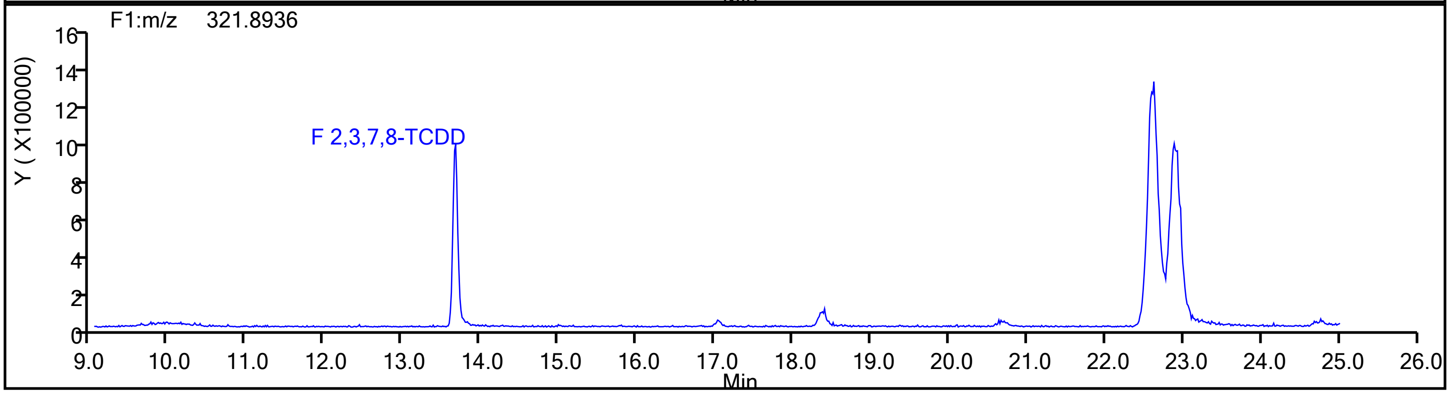

TCDD Standards

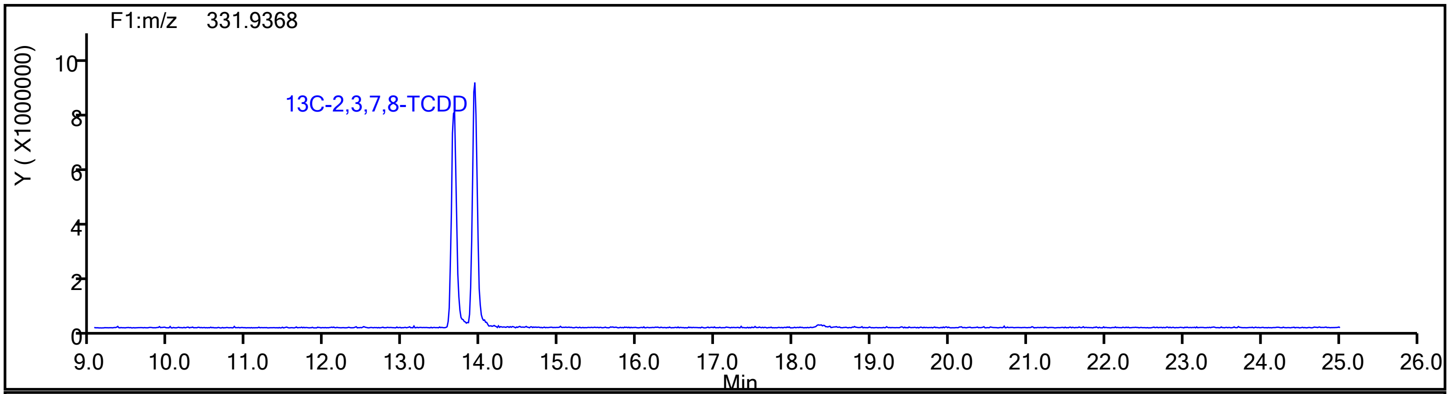

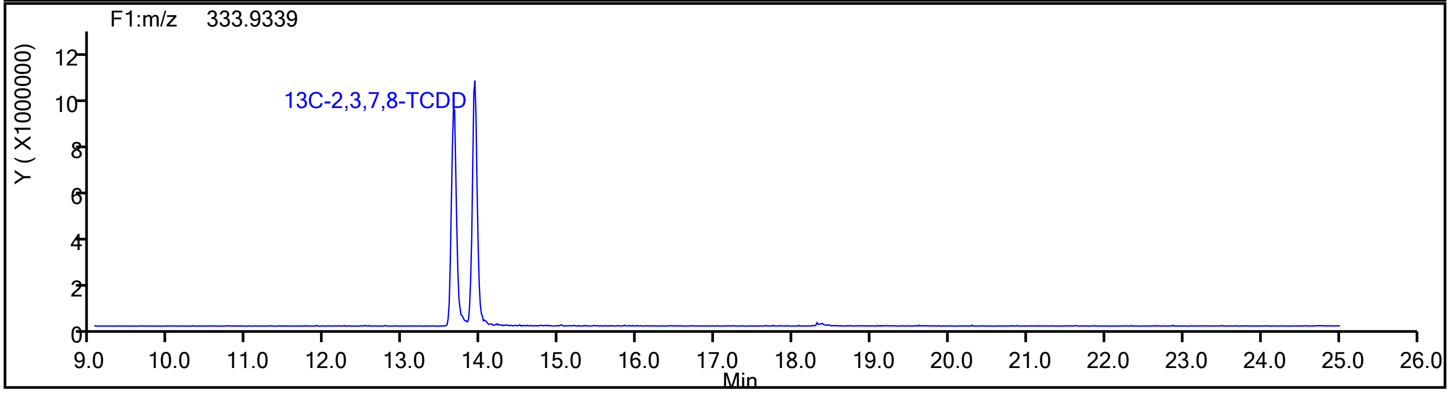

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d		
Injection Date:	20-Aug-2020 04:01:56	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

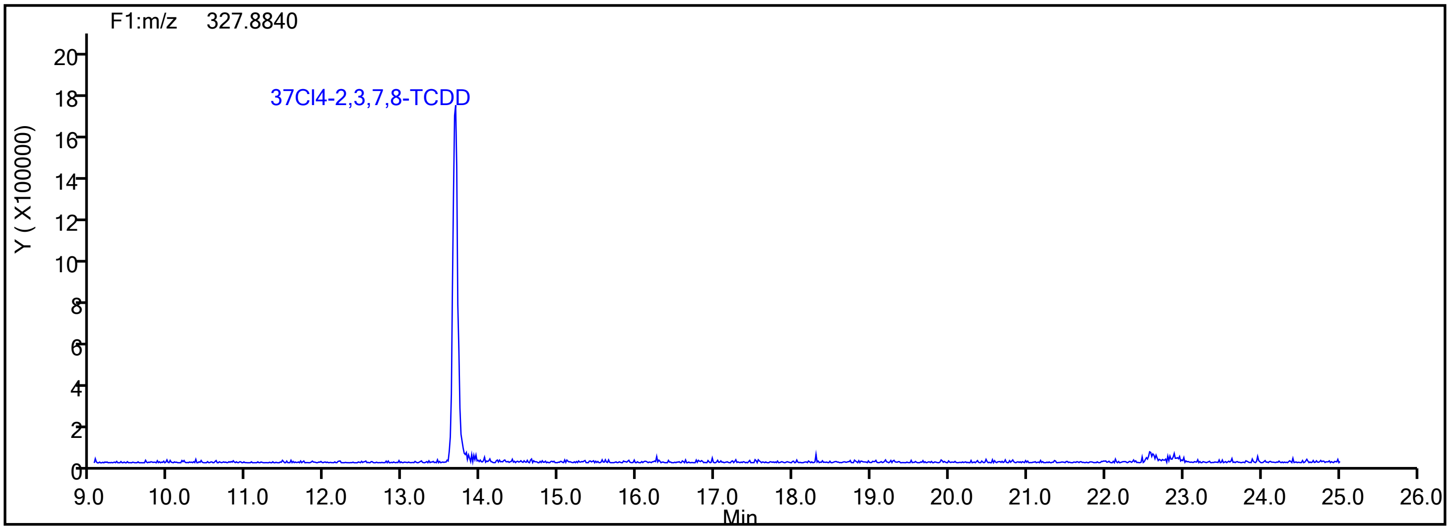

37Cl4-TCDD Standards

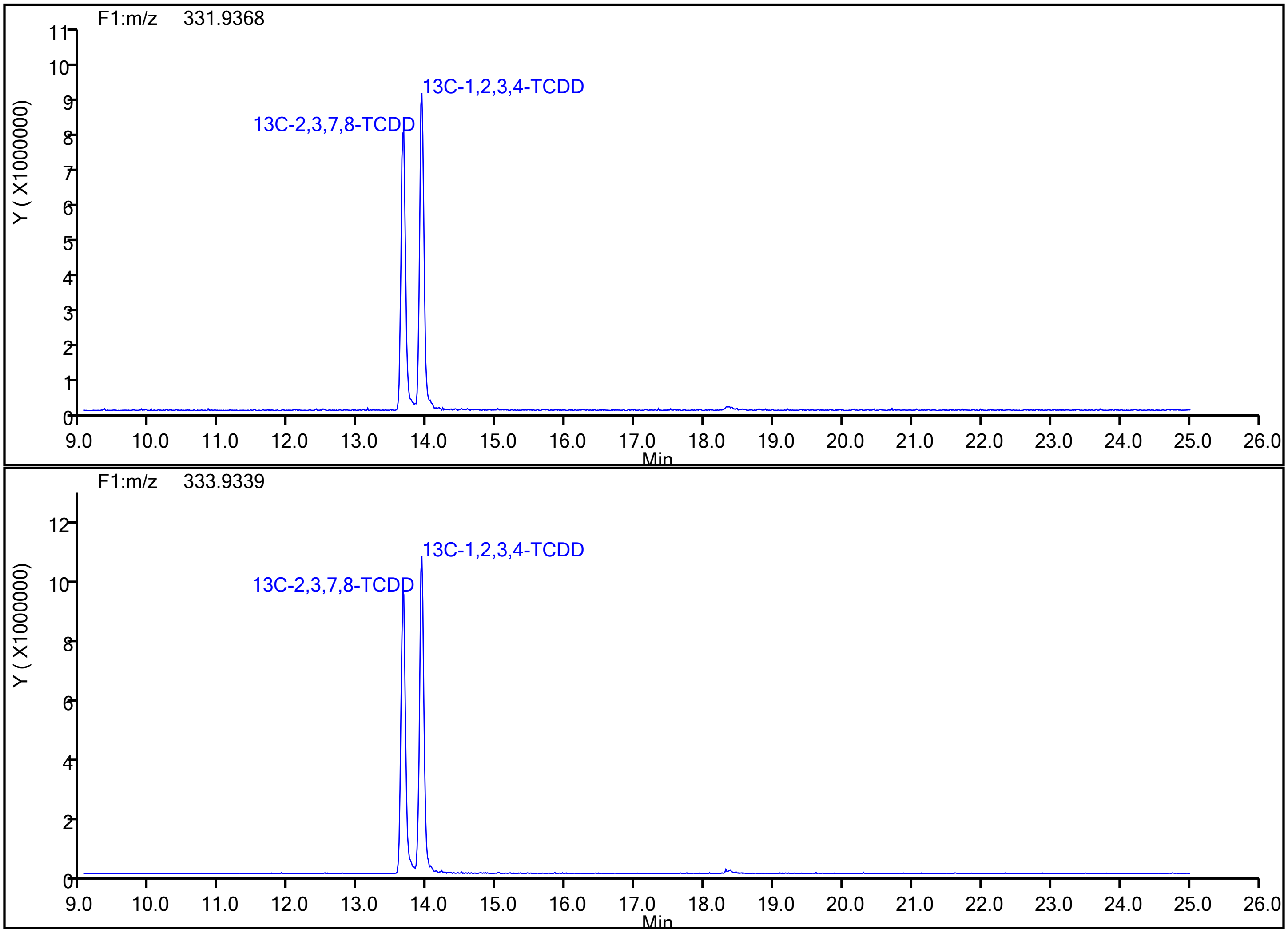

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_007.d		
Injection Date:	20-Aug-2020 04:01:56	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

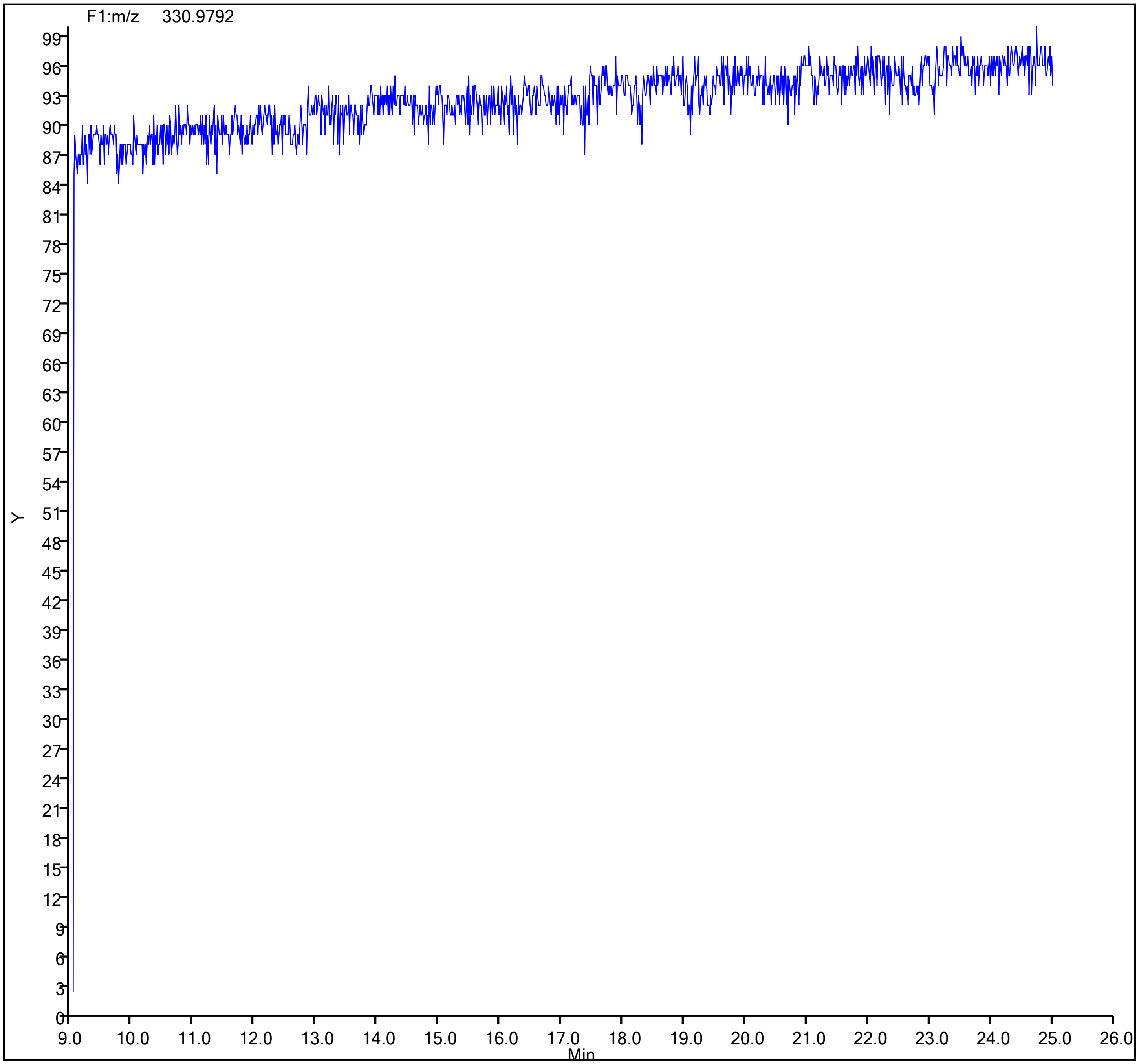

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d				
Lims ID:	IC CS5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	20-Aug-2020 04:39:47	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	4D2		
Sublist:	chrom-DXN_DB225_4D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	20-Aug-2020 09:19:31	Calib Date:	20-Aug-2020 05:17:37		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1068				

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:03:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.912	135943293	0.79	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.023	163207790	0.77	1.2239	98.1	98.1	0.1467	0.1467	98.10	
2,3,7,8-TCDF	15.037	57825078	0.68	0.9341	37.9	37.9	0.0360	0.0360	94.82	
D 13C-2,3,7,8-TCDD	13.652	125499183	0.80	0.9126	101.2	101.2	0.1509	0.1509	101	
2,3,7,8-TCDD	13.665	55718414	0.79	1.1025	40.3	40.3	0.0527	0.0527	101	
$ 37Cl4-2,3,7,8-TCDD	13.665	54167691		0.9664	41.2	41.2	0.0429	0.0429	103	

Reagents:

HRDXNL5_00030 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d				
Lims ID:	IC CS5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	20-Aug-2020 04:39:47	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	4D2		
Sublist:	chrom-DXN_DB225_4D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	20-Aug-2020 09:19:31	Calib Date:	20-Aug-2020 05:17:37		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1068				
First Level Reviewer: arghestanis		Date:	20-Aug-2020 09:03:06		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.912	13.910	0		59954311	13228416	9546	23865	1386		
333.9339	13.926	13.910	1		75988982	16694304	6943	17357	2404	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.023	15.016	0	1.080	71159718	14299349	11825	29562	1209		
317.9389	15.023	15.016	0	1.080	92048072	19442628	9671	24177	2010	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.037	15.035	0	1.001	23361647	4969258	2011	5027	2471		
305.8987	15.037	15.035	0	1.001	34463431	7236869	2530	6325	2860	0.68(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.652	13.647	0	0.981	55606566	12282240	9546	23865	1287		
333.9339	13.652	13.647	0	0.981	69892617	15357390	6943	17357	2212	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.665	13.658	0	1.001	24599671	5506662	3289	8222	1674		
321.8936	13.665	13.658	0	1.001	31118743	6727964	3139	7847	2143	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.665	13.665	0	0.982	54167691	11713345	4963	12407	2360		

Reagents:

HRDXNL5_00030	Amount Added: 1.00	Units: mL

Report Date: 20-Aug-2020 09:19:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d

Injection Date: 20-Aug-2020 04:39:47

Injection Vol: 2.0 ul

Instrument ID: 4D2

Operator ID:

Method: DXN_DB225_4D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405198

Sample Line#: 6

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

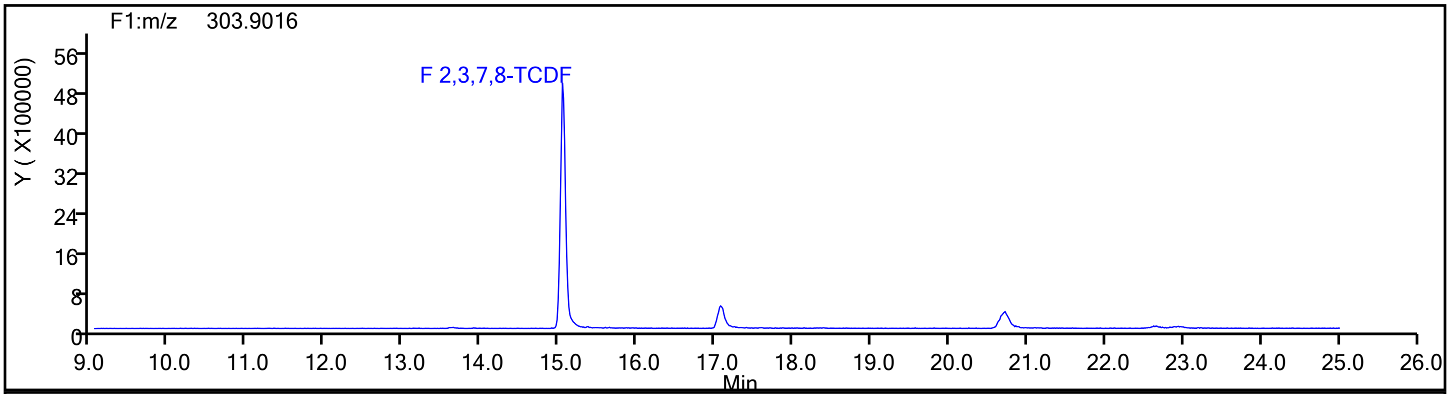

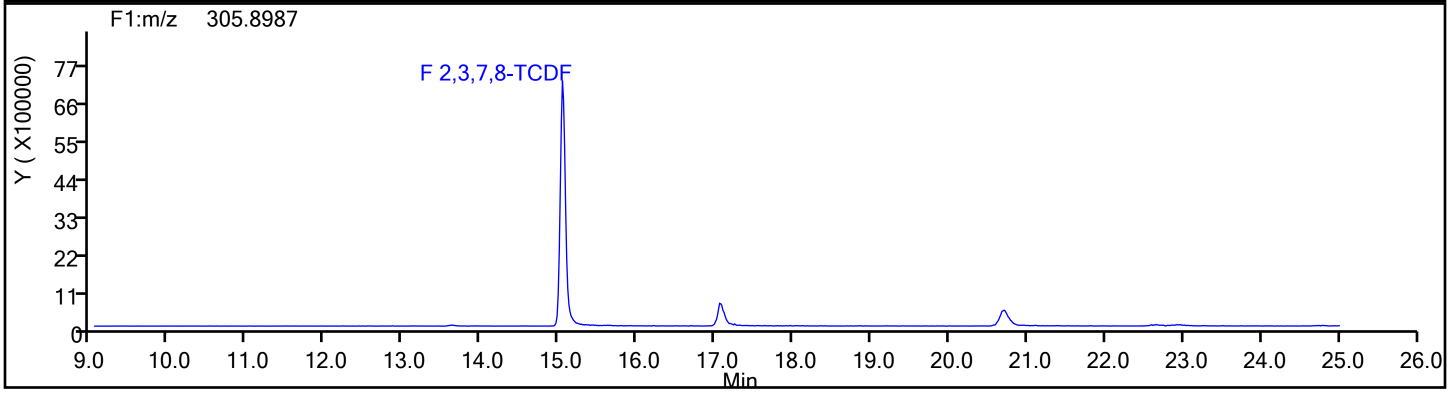

TCDF Standards

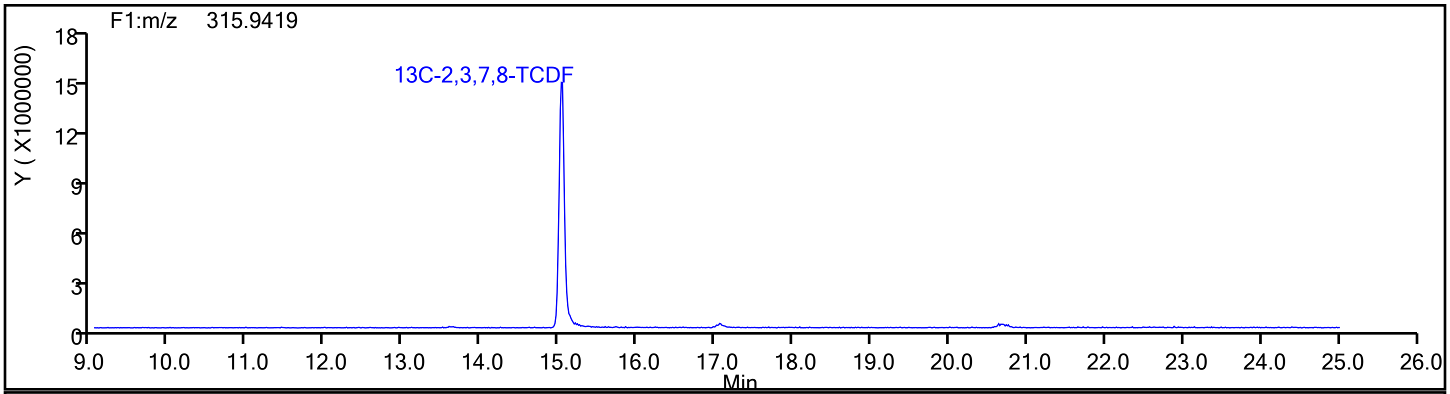

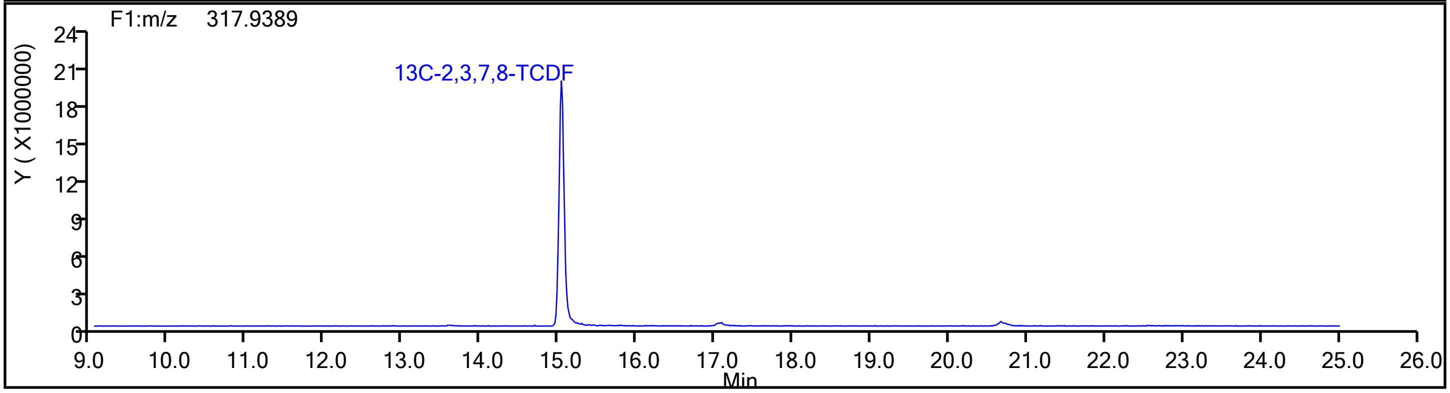

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d		
Injection Date:	20-Aug-2020 04:39:47	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

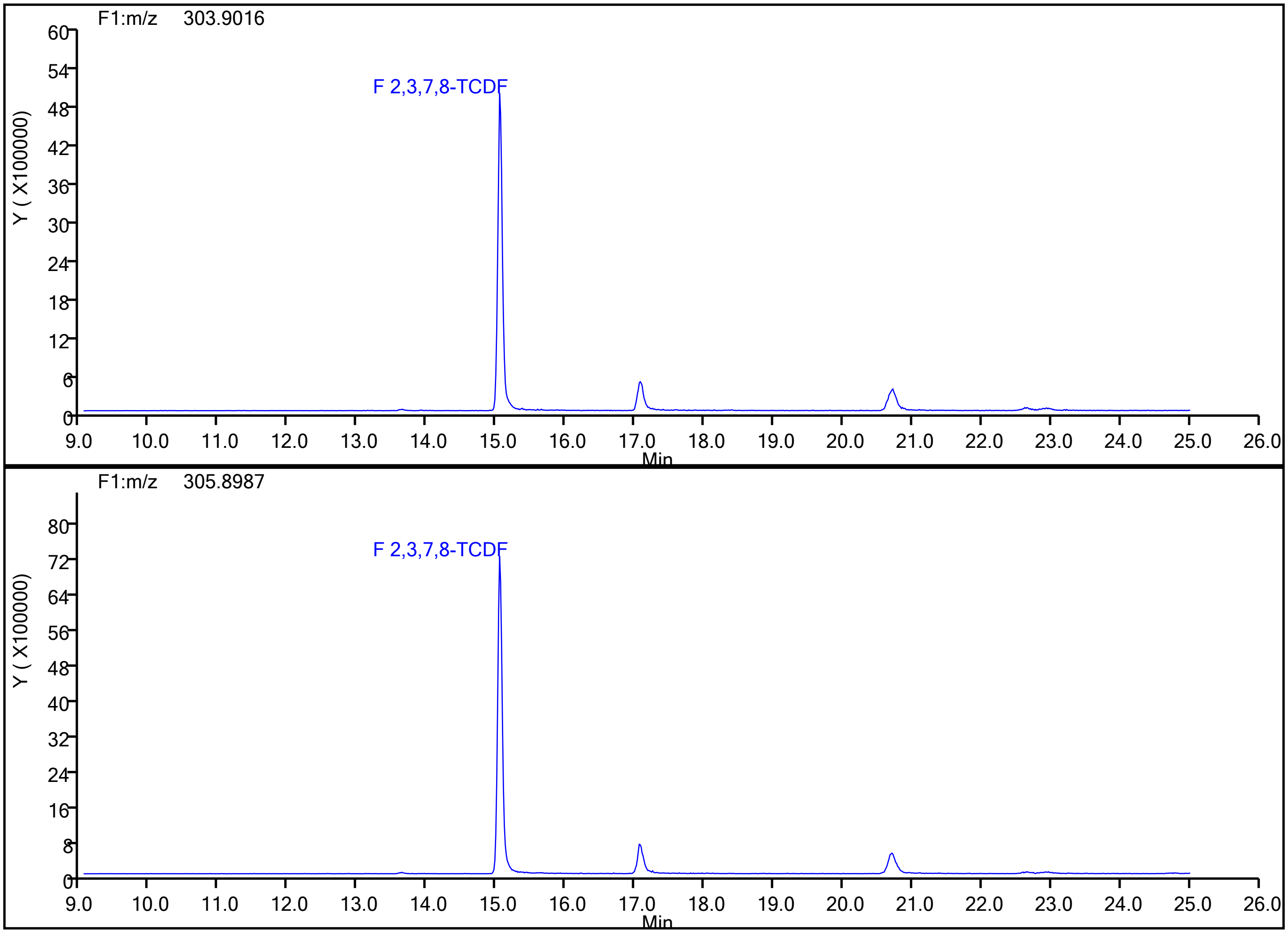

TCDF Interference Mass

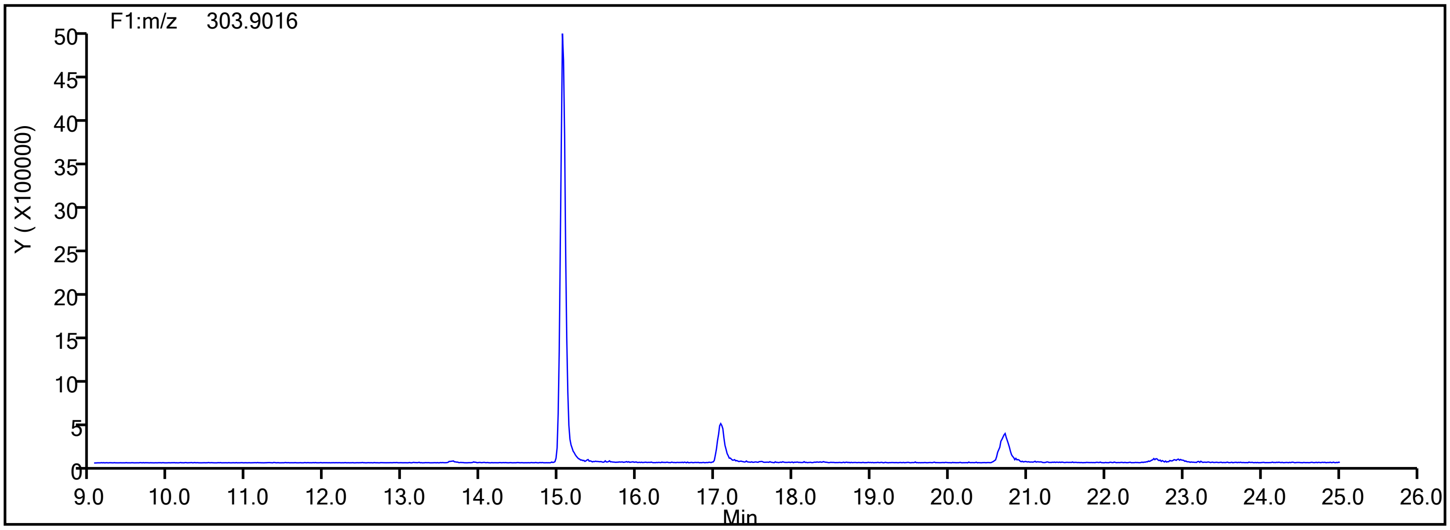

Report Date: 20-Aug-2020 09:19:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d		
Injection Date:	20-Aug-2020 04:39:47	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

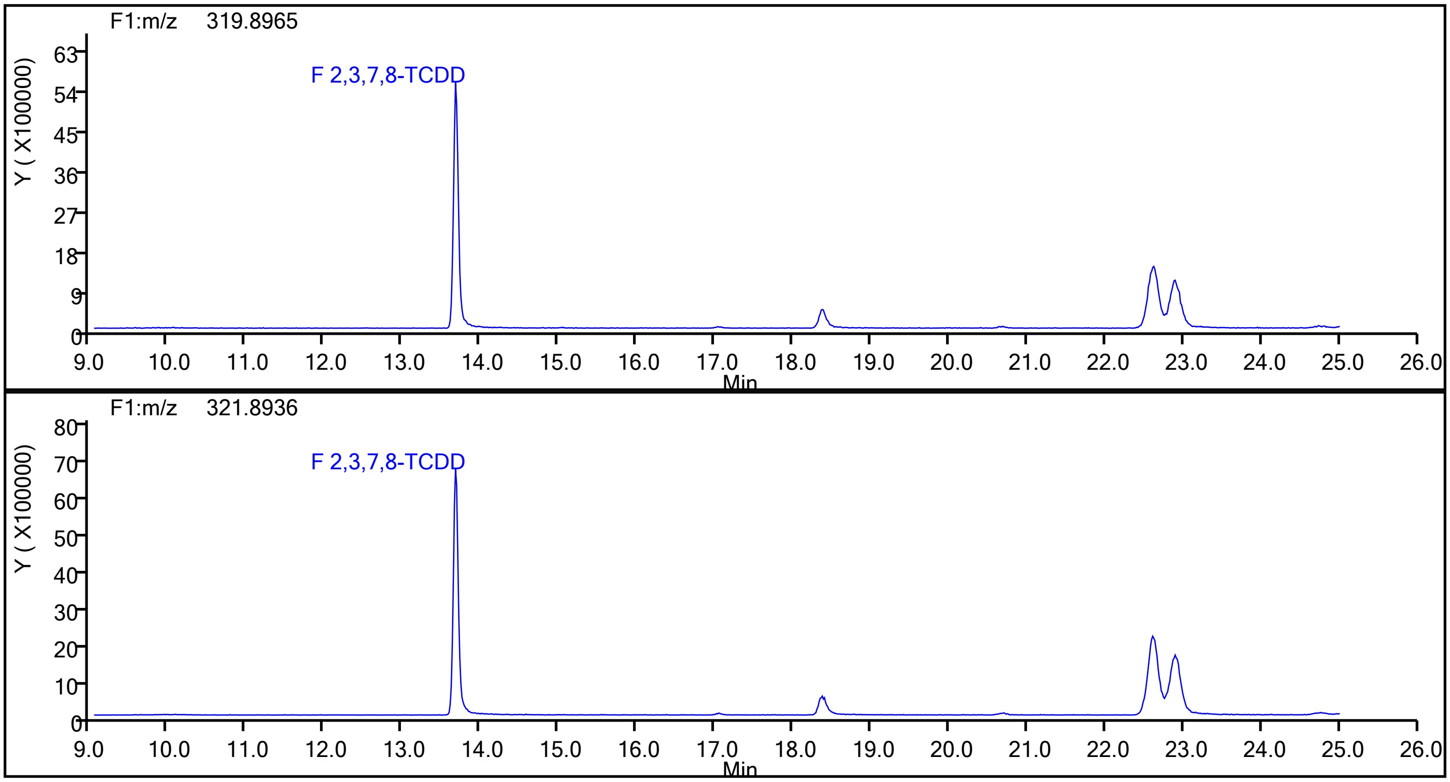

TCDD Standards

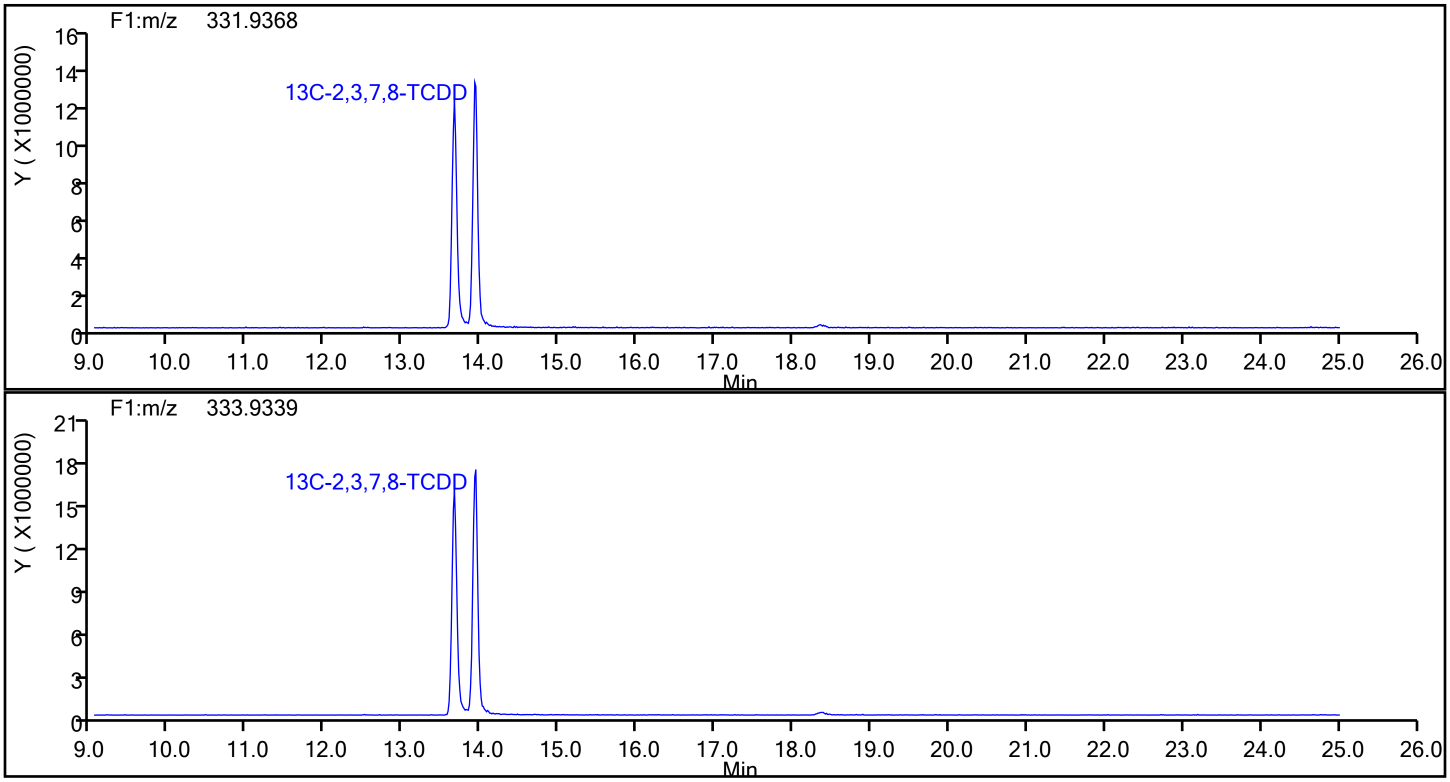

Report Date: 20-Aug-2020 09:19:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d
Injection Date: 20-Aug-2020 04:39:47
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

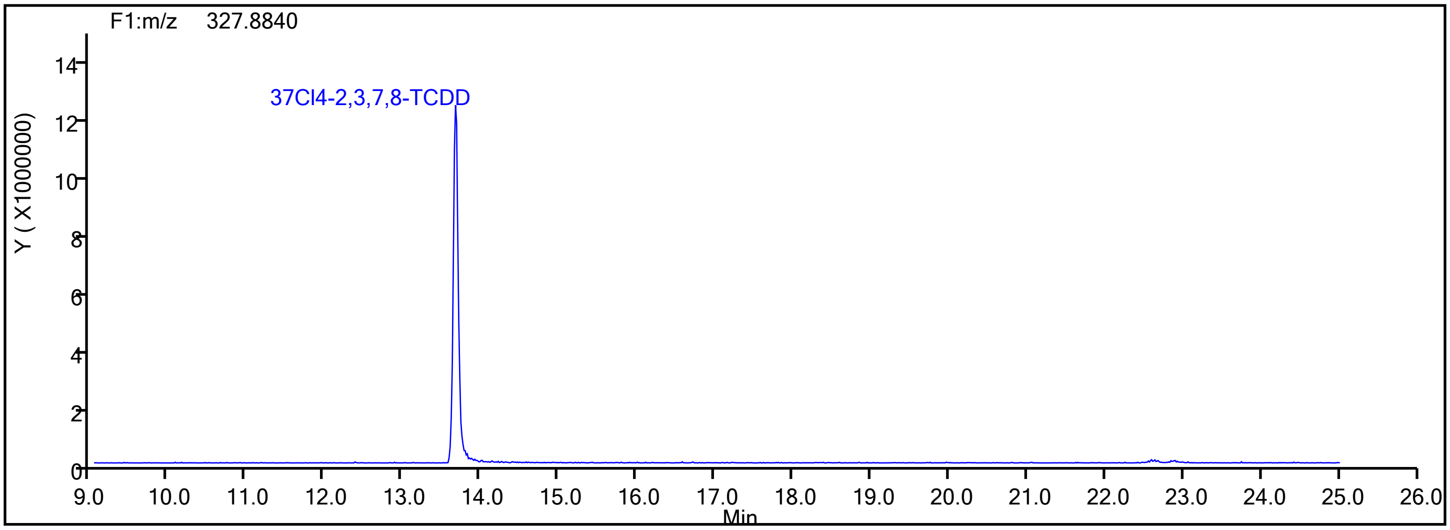

37Cl4-TCDD Standards

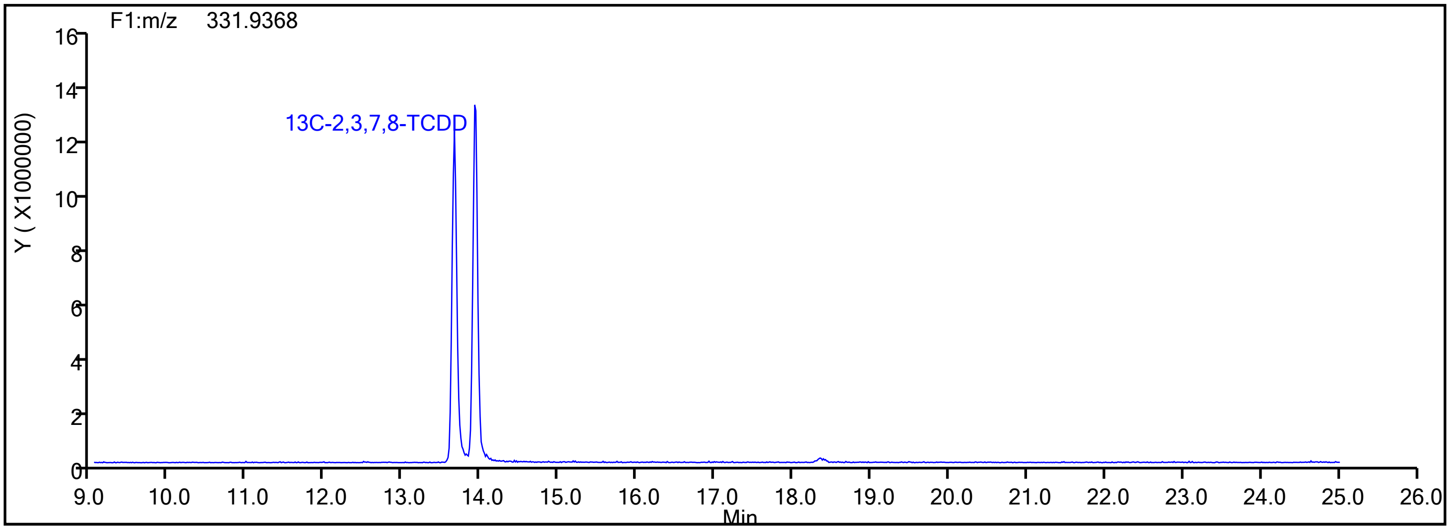

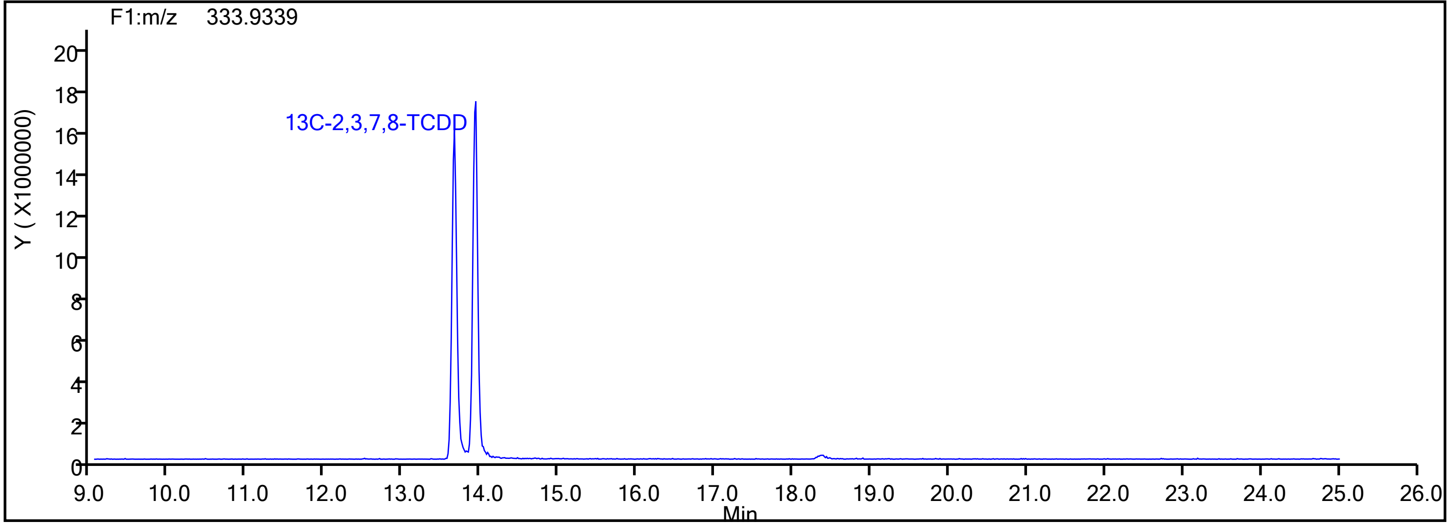

Report Date: 20-Aug-2020 09:19:32 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_008.d		
Injection Date:	20-Aug-2020 04:39:47	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

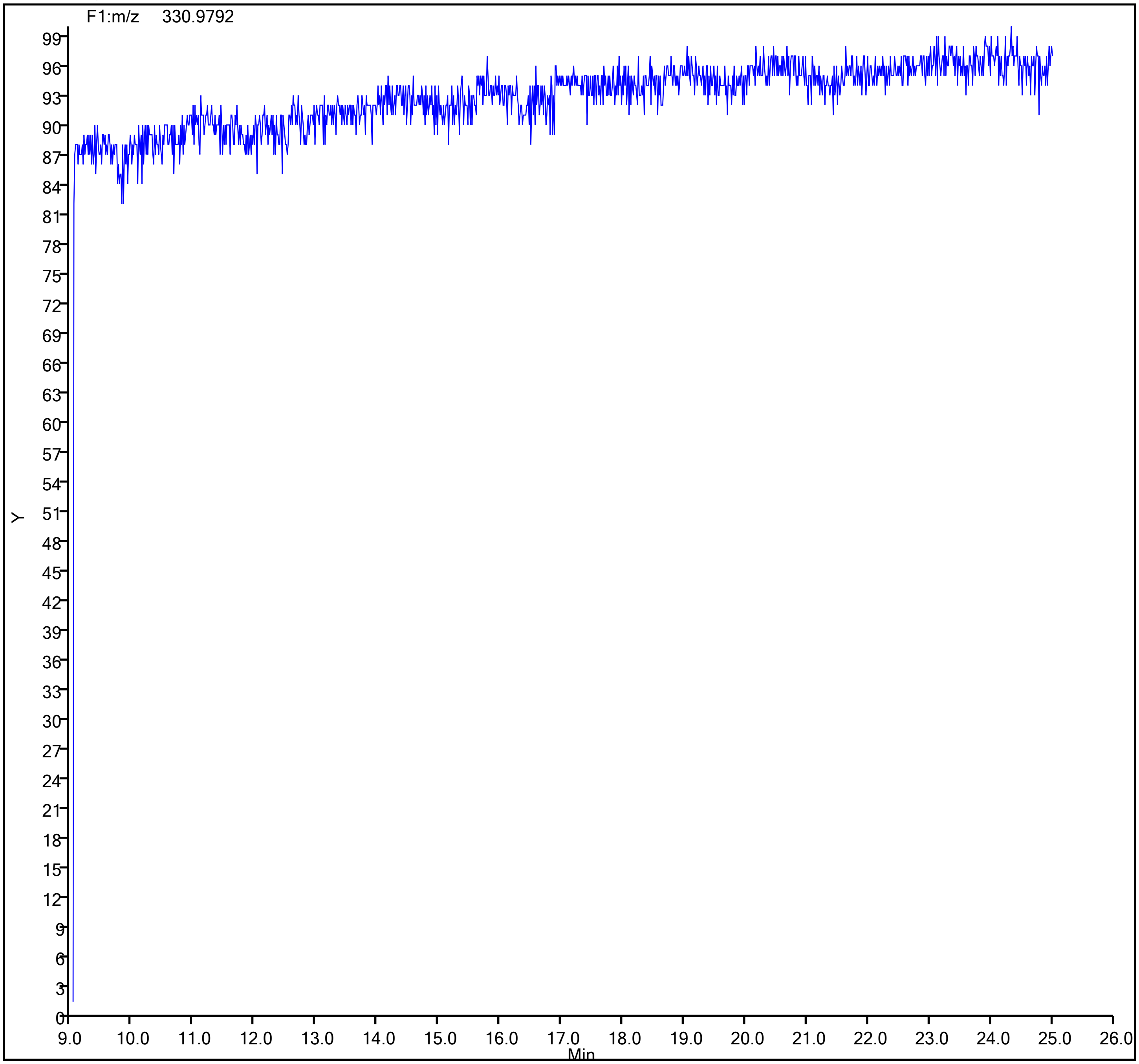

Report Date: 20-Aug-2020 09:19:35 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d
Lims ID: IC CS6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 20-Aug-2020 05:17:37 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:34 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:05:45

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.912	135080369	0.81	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.009	168904939	0.77	1.2239	102.2	102.2	0.1474	0.1474	102	
2,3,7,8-TCDF	15.037	294625969	0.69	0.9341	186.7	186.7	0.0615	0.0615	93.37	
D 13C-2,3,7,8-TCDD	13.637	124134855	0.79	0.9126	100.7	100.7	0.1464	0.1464	101	
$ 37Cl4-2,3,7,8-TCDD	13.651	265803360		0.9664	203.6	203.6	0.0697	0.0697	102	
2,3,7,8-TCDD	13.665	267476547	0.80	1.1025	195.4	195.4	0.0733	0.0733	97.72	

Reagents:

HRDXNL6_00026 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:35 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d
Lims ID: IC CS6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 20-Aug-2020 05:17:37 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:19:34 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:05:45

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.912	13.910	0		60311632	12825792	8607	21517	1490		
333.9339	13.912	13.910	0		74768737	16478796	7058	17645	2335	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.009	15.016	0	1.079	73349854	15988199	11369	28422	1406		
317.9389	15.009	15.016	0	1.079	95555085	20072865	9778	24445	2053	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.037	15.035	0	1.002	120753127	25751753	3709	9272	6943		
305.8987	15.037	15.035	0	1.002	173872842	35909899	4573	11432	7853	0.69(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.637	13.647	-1	0.980	54795980	11879616	8607	21517	1380		
333.9339	13.637	13.647	-1	0.980	69338875	15458892	7058	17645	2190	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.651	13.651	0	0.981	265803360	57457129	7898	19745	7275		
2,3,7,8-TCDD											
319.8965	13.665	13.658	0	1.002	118893160	25816300	4131	10327	6249		
321.8936	13.651	13.658	0	1.001	148583387	32892201	4711	11777	6982	0.80(0.65-0.89)	

Reagents:

HRDXNL6_00026 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:19:36 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d		
Injection Date:	20-Aug-2020 05:17:37	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

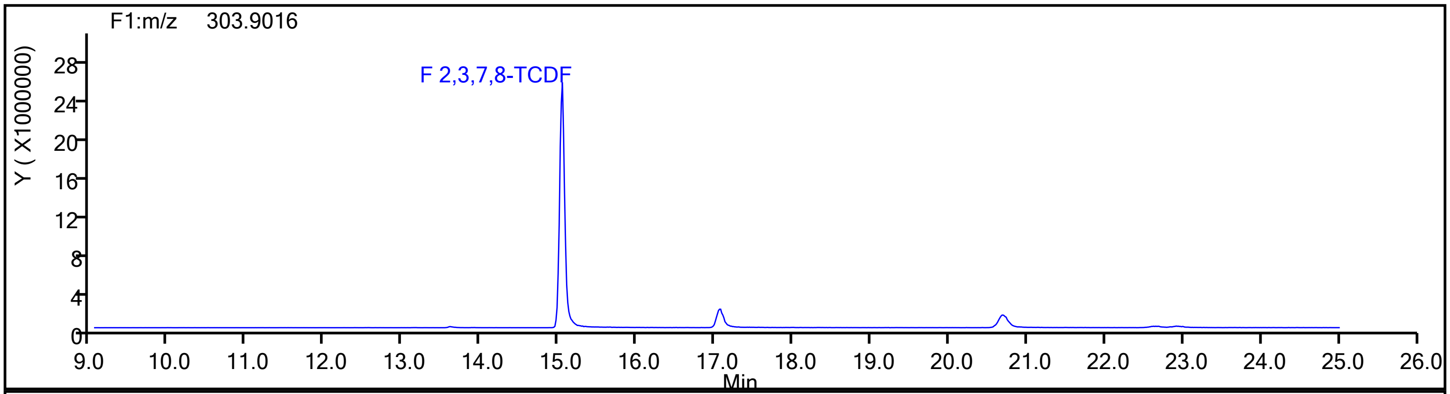

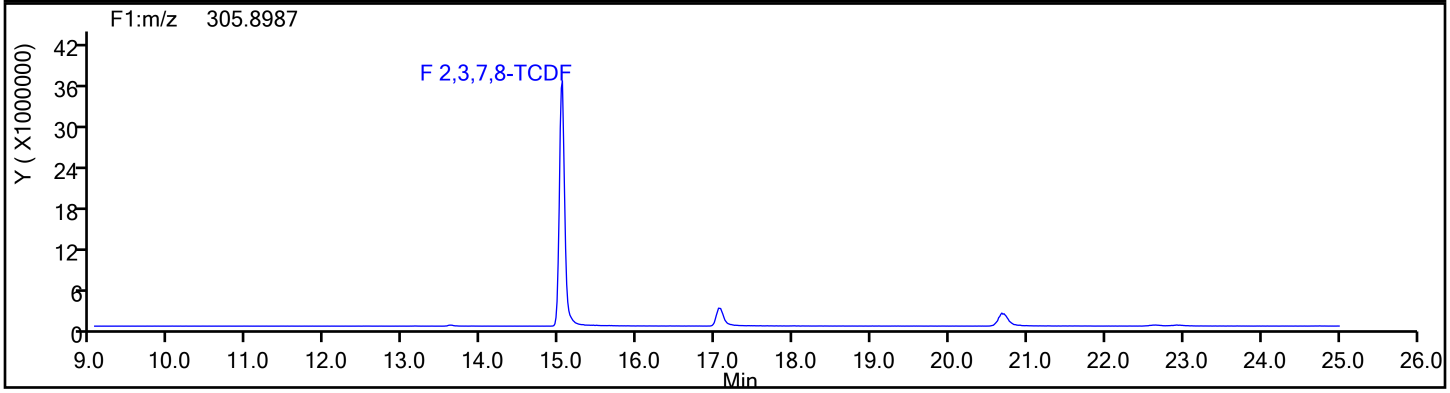

TCDF Standards

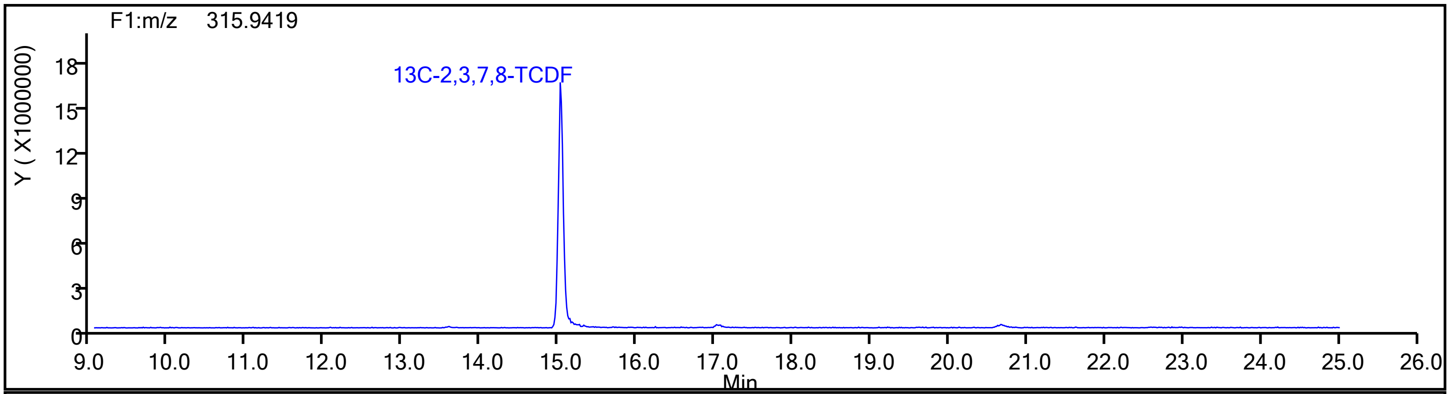

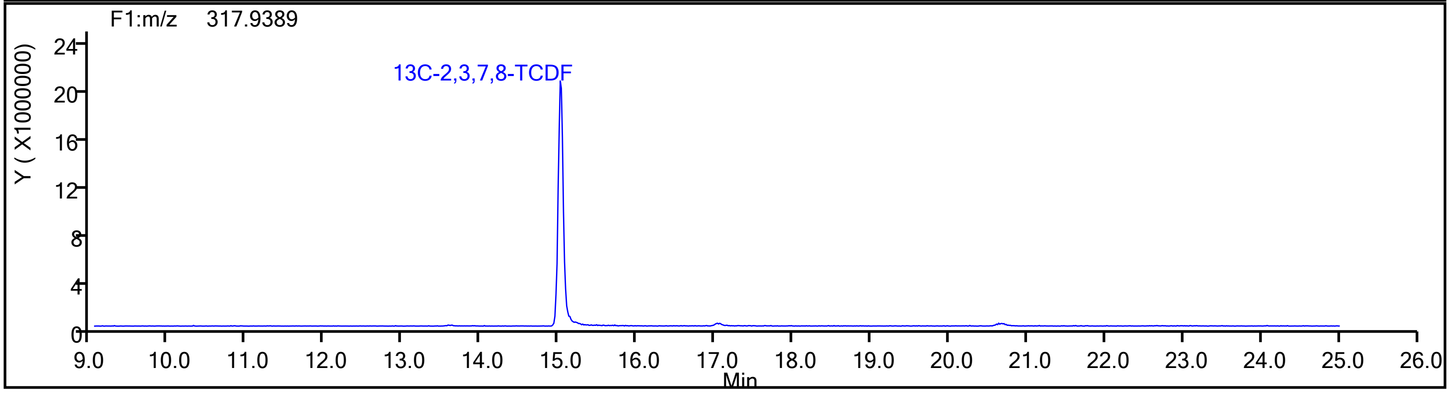

Report Date: 20-Aug-2020 09:19:36 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d		
Injection Date:	20-Aug-2020 05:17:37	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

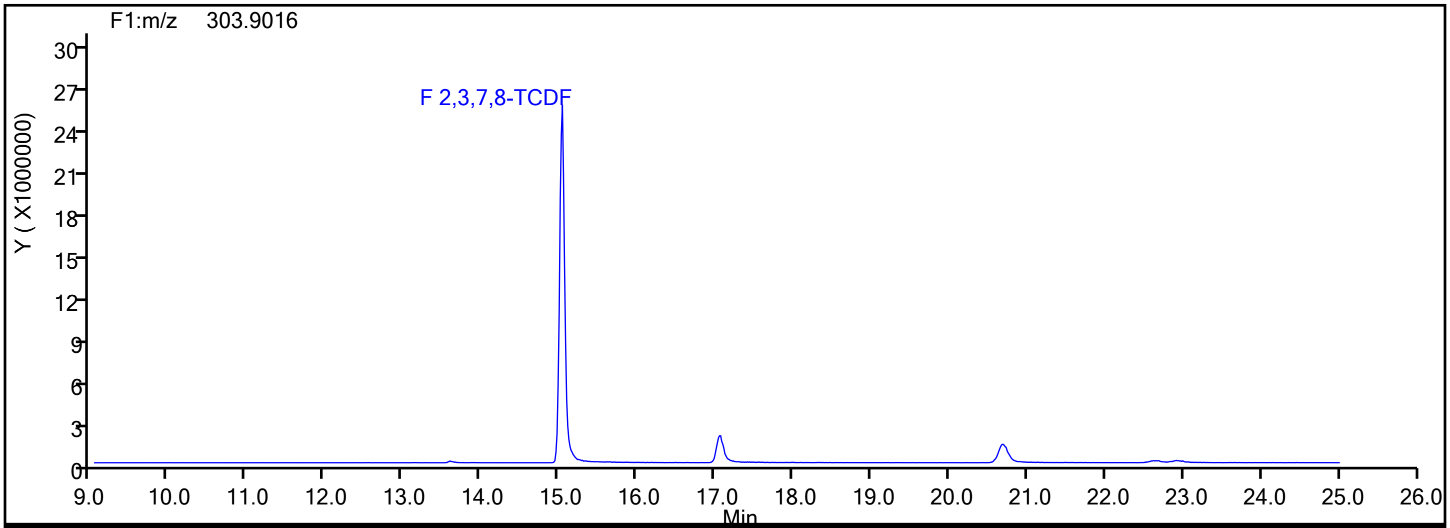

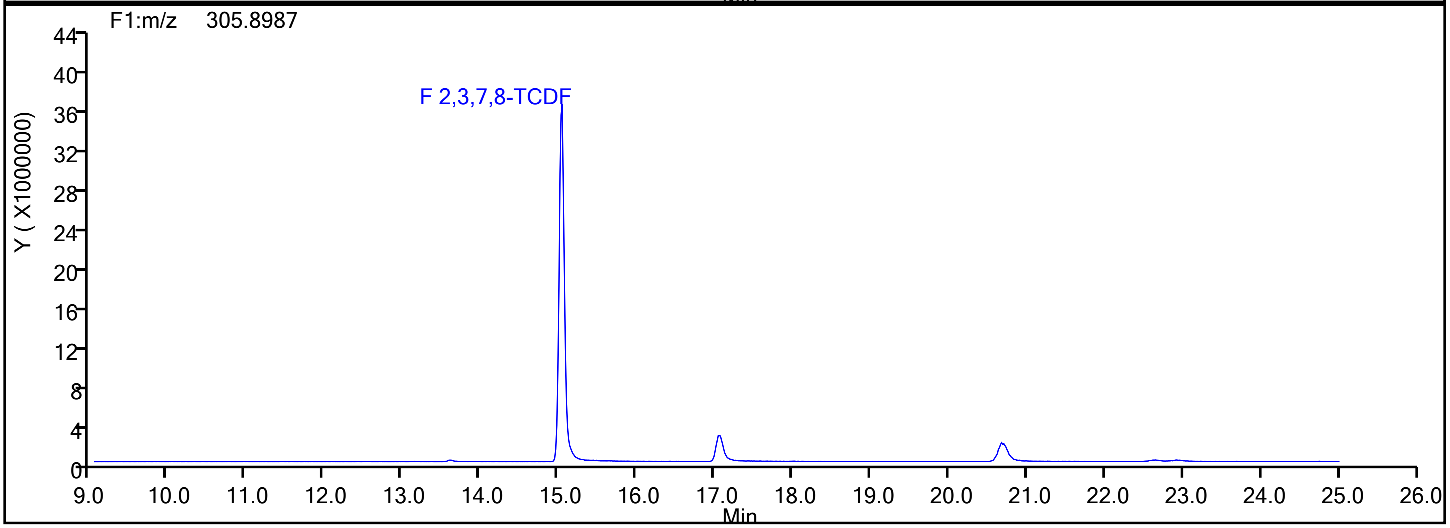

TCDF Interference Mass

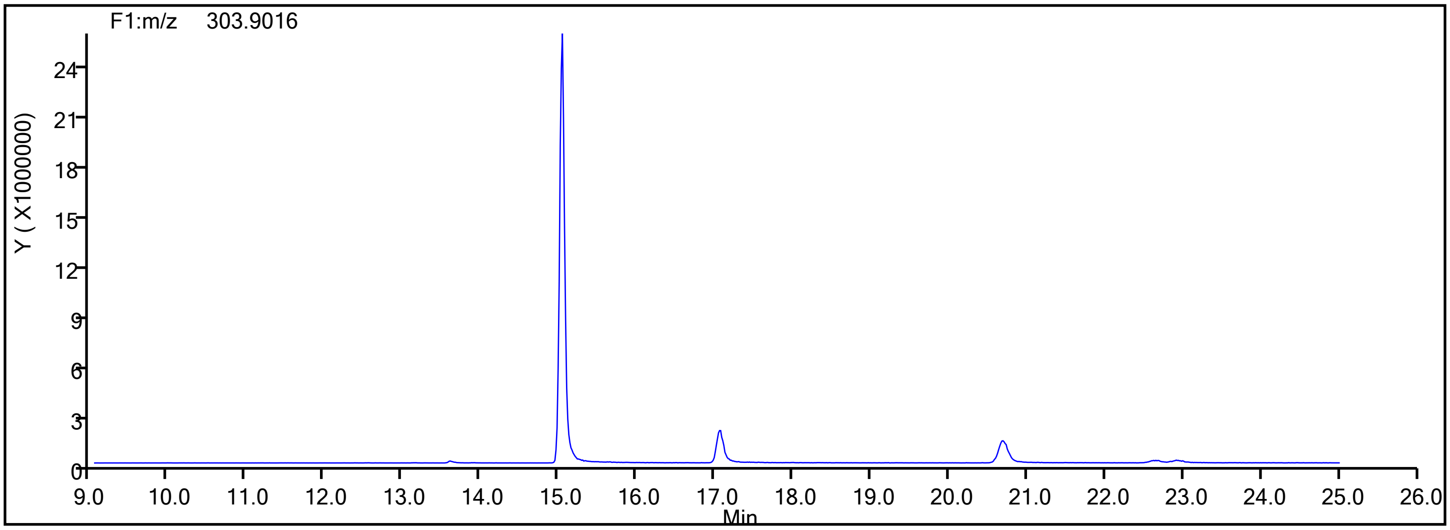

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d
Injection Date: 20-Aug-2020 05:17:37
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

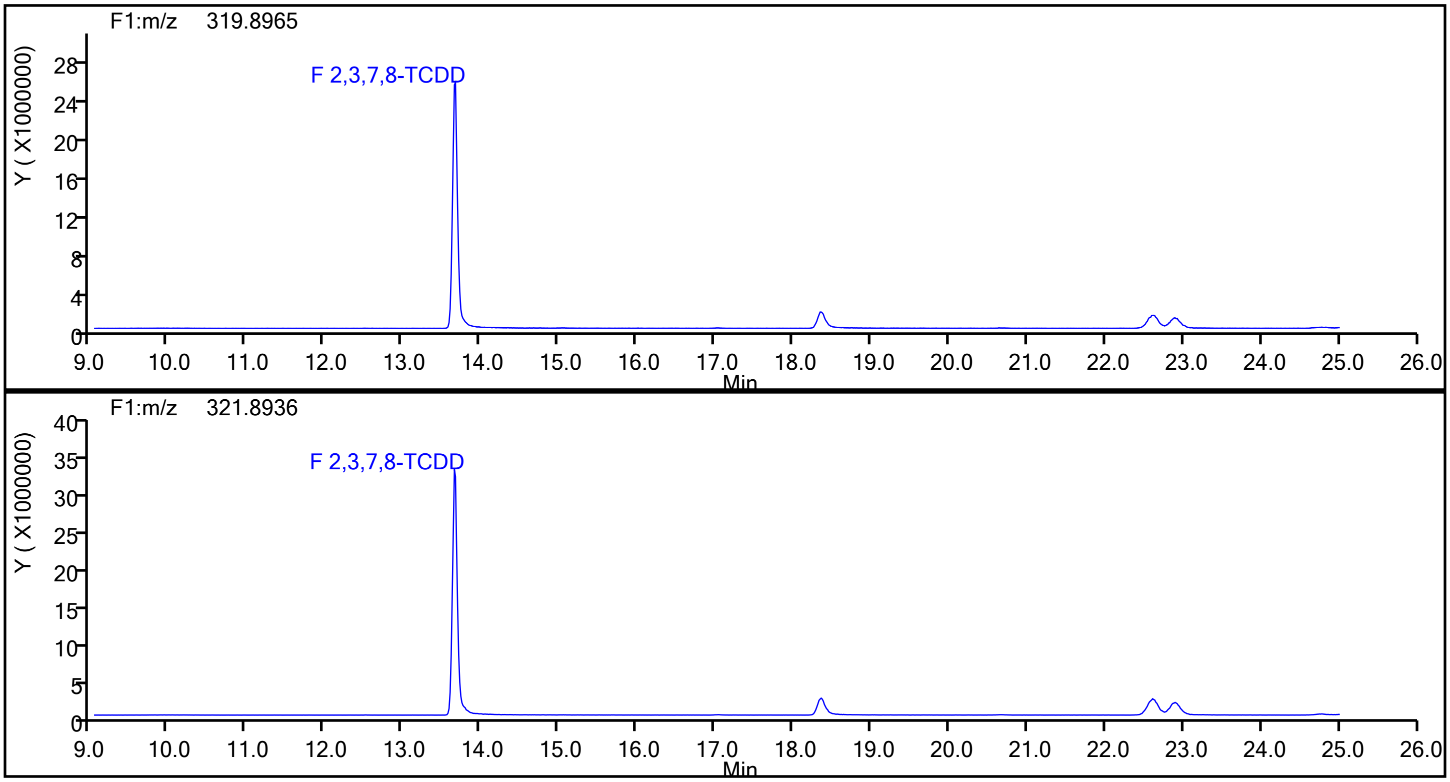

TCDD Standards

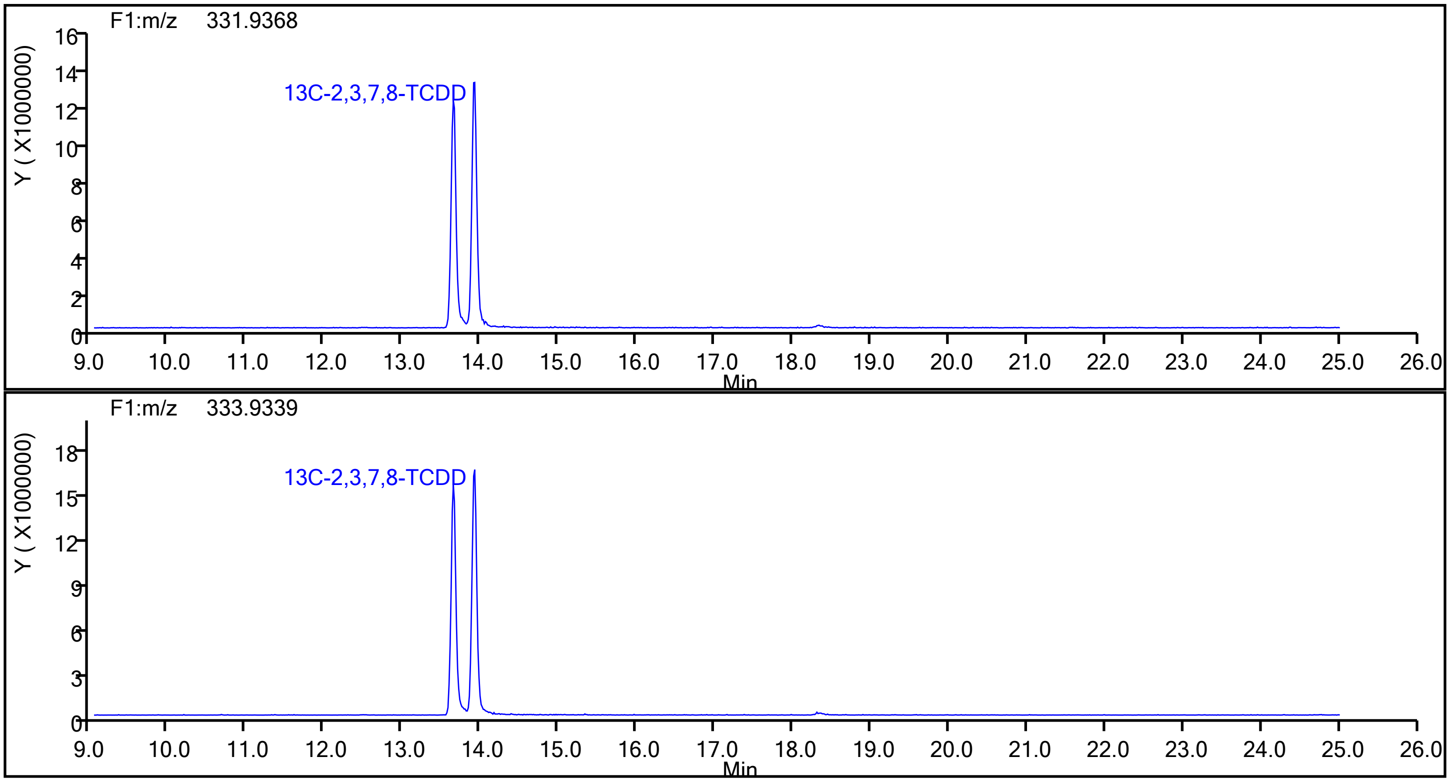

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d
Injection Date: 20-Aug-2020 05:17:37
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

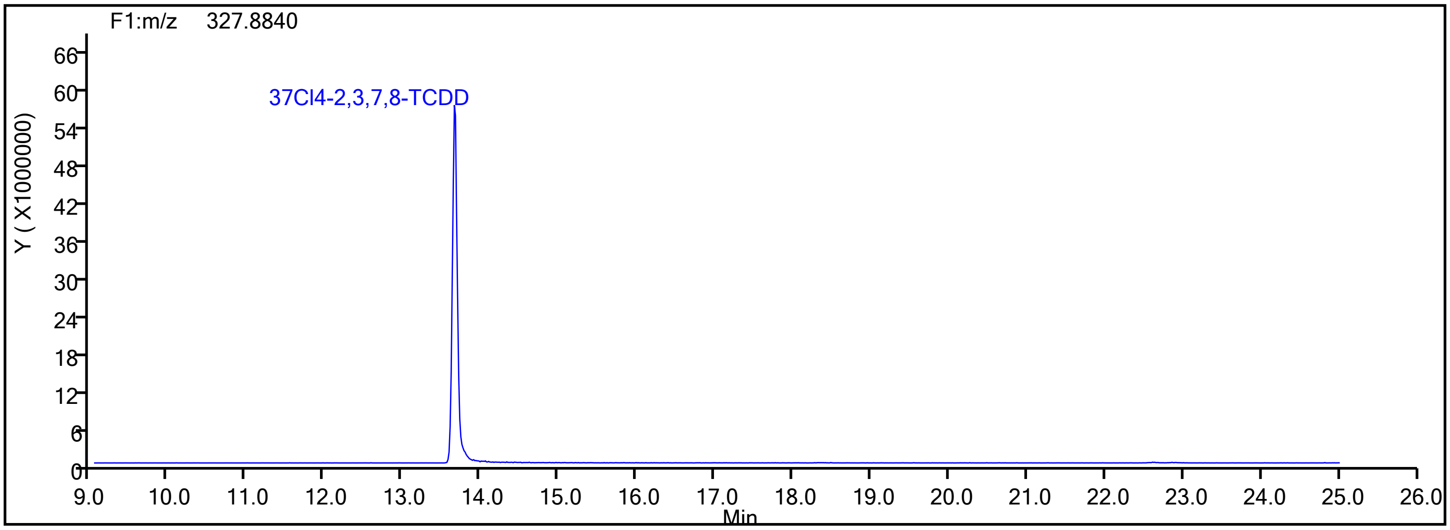

37Cl4-TCDD Standards

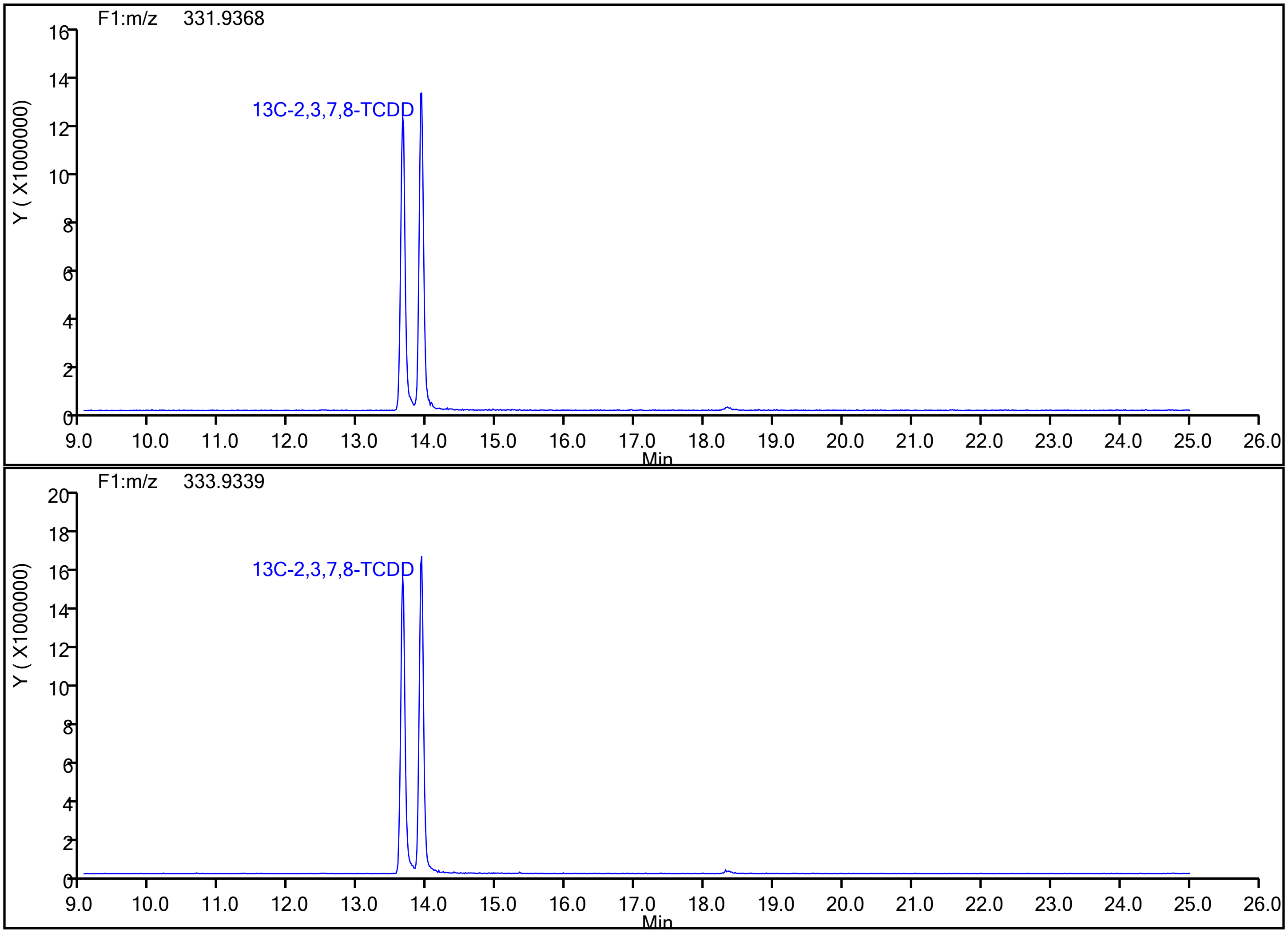

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Injection Date:	20-Aug-2020 05:17:37	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

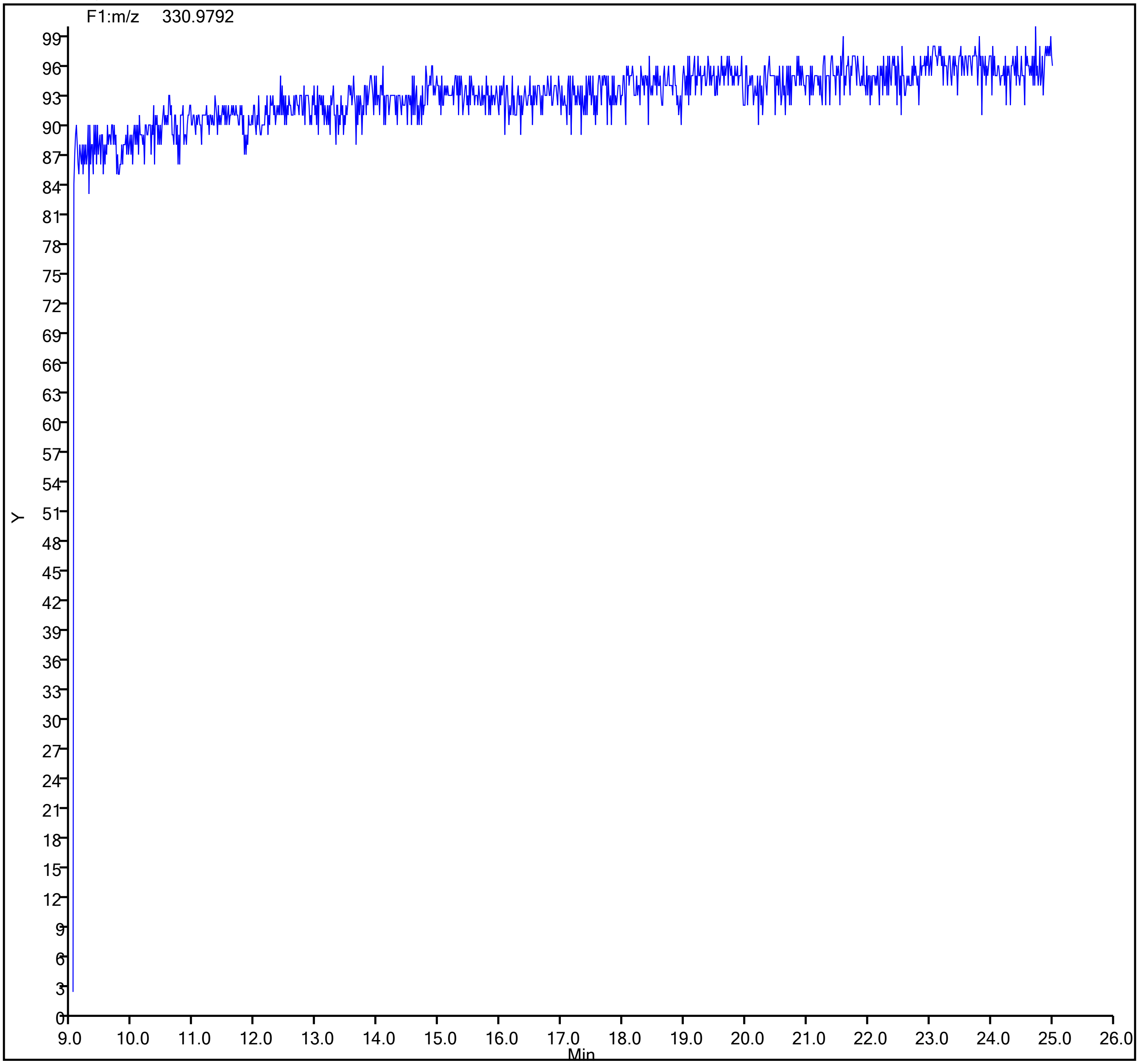

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383168/3	03jn20dfs1_4.d
Level 2	IC 320-383168/4	03jn20dfs1_5.d
Level 3	IC 320-383168/5	03jn20dfs1_6.d
Level 4	IC 320-383168/6	03jn20dfs1_7.d
Level 5	IC 320-383168/7	03jn20dfs1_8.d
Level 6	IC 320-383168/8	03jn20dfs1_9.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.2489 1.0311	1.2457	1.1199	1.0729	1.0690	AveID		1.1312				8.3		20.0			
2,3,7,8-TCDD	1.2981 1.1045	1.3019	1.1707	1.1077	1.1266	AveID		1.1849				7.8		20.0			
1,2,3,7,8-PeCDF	1.1549 1.0264	1.2012	1.1211	1.0846	1.0478	AveID		1.1060				6.0		20.0			
2,3,4,7,8-PeCDF	0.9481 0.8387	0.9928	0.8935	0.8987	0.8681	AveID		0.9067				6.1		20.0			
1,2,3,7,8-PeCDD	1.1382 1.0137	1.2141	1.1289	1.0771	1.0651	AveID		1.1062				6.3		20.0			
1,2,3,4,7,8-HxCDF	1.0703 0.9484	1.0897	0.9963	0.9883	0.9589	AveID		1.0087				5.8		20.0			
1,2,3,6,7,8-HxCDF	1.2936 1.1675	1.3499	1.2612	1.2174	1.1697	AveID		1.2432				5.8		20.0			
2,3,4,6,7,8-HxCDF	1.3615 1.1862	1.3607	1.2912	1.2421	1.1996	AveID		1.2736				6.1		20.0			
1,2,3,4,7,8-HxCDD	1.0012 0.8545	1.0651	0.9155	0.8898	0.8758	AveID		0.9336				8.8		20.0			
1,2,3,6,7,8-HxCDD	1.1274 0.9908	1.2124	1.0940	1.0531	1.0034	AveID		1.0802				7.7		20.0			
1,2,3,7,8,9-HxCDD	1.1207 0.9783	1.1970	1.0330	1.0168	0.9989	AveID		1.0574				8.0		20.0			
1,2,3,7,8,9-HxCDF	1.3836 1.2192	1.3817	1.3012	1.2385	1.2050	AveID		1.2882				6.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.6802 1.5340	1.7178	1.6558	1.5105	1.4758	AveID		1.5957				6.3		20.0			
1,2,3,4,6,7,8-HpCDD	1.1777 1.0385	1.2525	1.1244	1.0525	1.0446	AveID		1.1150				7.8		20.0			
1,2,3,4,7,8,9-HpCDF	1.2302 1.1148	1.3025	1.1475	1.1302	1.0906	AveID		1.1693				6.9		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
OCDD	1.2196 1.1486	1.2960	1.2379	1.1480	1.1183	AveID		1.1948				5.7		20.0			
OCDF	1.4925 1.5032	1.5719	1.4635	1.4207	1.4339	AveID		1.4809				3.7		20.0			
13C-2,3,7,8-TCDF	1.5195 1.5129	1.4658	1.5065	1.4651	1.5163	Ave		1.4977				1.7		35.0			
13C-2,3,7,8-TCDD	1.0418 1.0508	1.0331	1.0237	1.0247	1.0464	Ave		1.0367				1.1		35.0			
13C-1,2,3,7,8-PeCDF	1.2805 1.3977	1.2709	1.2945	1.2577	1.3332	Ave		1.3057				4.0		35.0			
13C-2,3,4,7,8-PeCDF	1.5085 1.6593	1.4669	1.5880	1.4594	1.5700	Ave		1.5420				5.0		35.0			
13C-1,2,3,7,8-PeCDD	0.8197 0.8948	0.7993	0.8177	0.7983	0.8467	Ave		0.8294				4.4		35.0			
13C-1,2,3,4,7,8-HxCDF	1.4650 1.4439	1.4461	1.5078	1.4675	1.4409	Ave		1.4619				1.7		35.0			
13C-1,2,3,6,7,8-HxCDF	1.3129 1.2818	1.2735	1.2873	1.2938	1.2702	Ave		1.2866				1.2		35.0			
13C-2,3,4,6,7,8-HxCDF	1.2399 1.2050	1.1720	1.1862	1.1905	1.1990	Ave		1.1988				1.9		35.0			
13C-1,2,3,4,7,8-HxCDD	1.1206 1.0995	1.0597	1.1590	1.0901	1.0987	Ave		1.1046				3.0		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0037 0.9905	0.9703	0.9936	0.9775	0.9869	Ave		0.9871				1.2		35.0			
13C-1,2,3,7,8,9-HxCDF	1.0659 1.0660	1.0821	1.0487	1.0384	1.1110	Ave		1.0687				2.4		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9129 0.9096	0.8950	0.8946	0.8960	0.9130	Ave		0.9035				1.0		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.9045 0.9044	0.8715	0.8582	0.8848	0.9018	Ave		0.8875				2.2		35.0			
13C-1,2,3,4,7,8,9-HpCDF	1.0310 1.0843	1.0096	1.0449	1.0053	1.1131	Ave		1.0480				4.1		35.0			
13C-OCDD	0.6128 0.6871	0.5863	0.5959	0.5904	0.7059	Ave		0.6297				8.4		35.0			
37Cl4-2,3,7,8-TCDD	1.1910 1.1238	1.1445	1.0672	1.0780	1.1200	Ave		1.1208				4.0					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383168/3	03jn20dfs1_4.d
Level 2	IC 320-383168/4	03jn20dfs1_5.d
Level 3	IC 320-383168/5	03jn20dfs1_6.d
Level 4	IC 320-383168/6	03jn20dfs1_7.d
Level 5	IC 320-383168/7	03jn20dfs1_8.d
Level 6	IC 320-383168/8	03jn20dfs1_9.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	36141 19184180	30510	179323	564303	4015485	0.250 200	0.500	2.00	10.0	40.0
2,3,7,8-TCDD		AveID	25755 14273681	22474	127378	407450	2920224	0.250 200	0.500	2.00	10.0	40.0
1,2,3,7,8-PeCDF		AveID	140816 88211420	127552	771318	2448425	17302938	1.25 1000	2.50	10.0	50.0	200
2,3,4,7,8-PeCDF		AveID	136191 85577950	121673	754082	2354236	16881683	1.25 1000	2.50	10.0	50.0	200
1,2,3,7,8-PeCDD		AveID	88840 55777410	81080	490548	1543250	11169661	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,7,8-HxCDF		AveID	133454 85729058	116239	724662	2250009	16431101	1.25 1000	2.50	10.0	50.0	200
1,2,3,6,7,8-HxCDF		AveID	144549 93685181	126804	783185	2443510	17668721	1.25 1000	2.50	10.0	50.0	200
2,3,4,6,7,8-HxCDF		AveID	143678 89484473	117631	738782	2293876	17105715	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,7,8-HxCDD		AveID	95486 58816794	83257	511840	1504748	11442921	1.25 1000	2.50	10.0	50.0	200
1,2,3,6,7,8-HxCDD		AveID	96309 61432617	86772	524375	1596914	11776532	1.25 1000	2.50	10.0	50.0	200
1,2,3,7,8,9-HxCDD		AveID	101310 63998716	89621	536354	1630655	12387633	1.25 1000	2.50	10.0	50.0	200
1,2,3,7,8,9-HxCDF		AveID	125519 81359736	110283	658245	1995030	15921391	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,6,7,8-HpCDF		AveID	130543 87355855	113413	714508	2099533	16024022	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,6,7,8-HpCDD		AveID	90659 58798928	80513	465468	1444510	11202668	1.25 1000	2.50	10.0	50.0	200
1,2,3,4,7,8,9-HpCDF		AveID	107944 75677908	96999	578385	1762547	14437207	1.25 1000	2.50	10.0	50.0	200
OCDD		AveID	127218 98819349	112091	711726	2102910	18776355	2.50 2000	5.00	20.0	100	400

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1 Analy Batch No.: 383168

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 14:05 Calibration End Date: 06/03/2020 18:06 Calibration ID: 50386

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
OCDF		AveID	155676 129322802	135953	841389	2602280	24073964	2.50 2000	5.00	20.0	100	400
13C-2,3,7,8-TCDF	13CT CDD	Ave	11575035 9303208	4898504	8006239	5259494	9390658	100 100	100	100	100	100
13C-2,3,7,8-TCDD	13CT CDD	Ave	7936120 6461409	3452470	5440325	3678459	6480345	100 100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CT CDD	Ave	9753916 8594514	4247335	6879768	4514934	8256577	100 100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CT CDD	Ave	11491396 10203149	4902358	8439398	5239072	9723087	100 100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CT CDD	Ave	6244315 5502316	2671208	4345521	2865674	5243649	100 100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CH xCD	Ave	9974678 9039472	4266858	7273246	4553149	8568017	100 100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CH xCD	Ave	8939187 8024539	3757506	6209740	4014247	7552939	100 100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CH xCD	Ave	8442074 7543852	3457908	5721877	3693532	7129573	100 100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CH xCD	Ave	7630092 6883032	3126748	5591026	3382241	6533048	100 100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CH xCD	Ave	6834320 6200617	2862915	4793122	3032823	5868202	100 100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CH xCD	Ave	7257441 6673211	3192644	5058891	3221618	6606392	100 100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CH xCD	Ave	6215600 5694573	2640868	4315198	2779850	5428999	100 100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CH xCD	Ave	6158504 5661728	2571343	4139807	2745033	5362323	100 100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CH xCD	Ave	7019746 6788271	2978774	5040340	3118998	6618644	100 100	100	100	100	100
13C-OCDD	13CH xCD	Ave	8344650 8603138	3459611	5749279	3663484	8394716	200 200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CT CDD	Ave	22681 13821356	19124	113435	386993	2774592	0.250 200	0.500	2.00	10.0	40.0

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

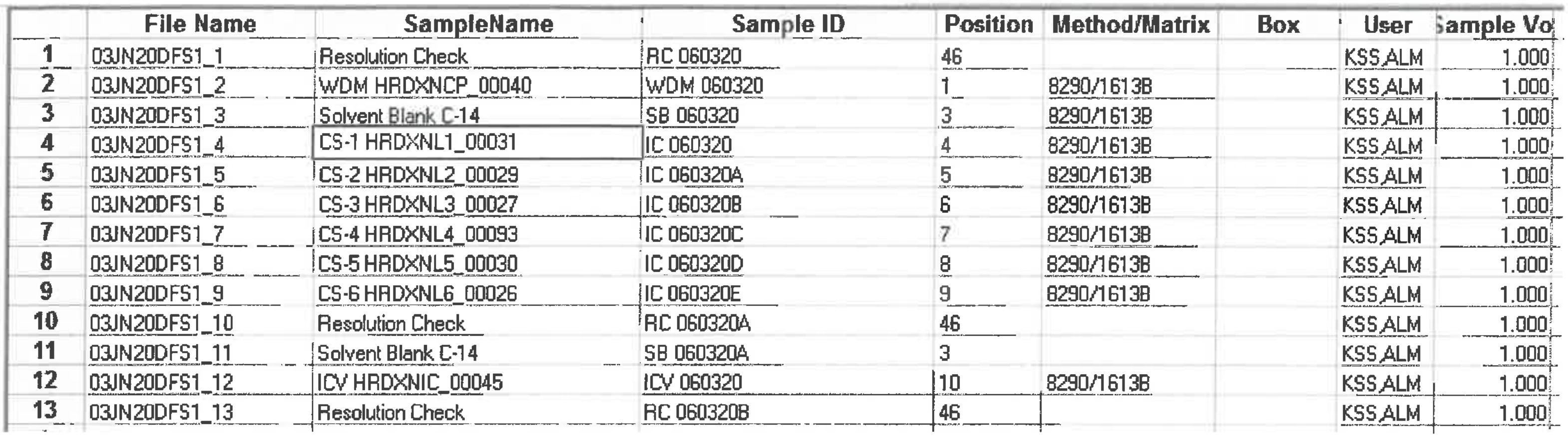

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vo
1	03JN20DFS1_1	Resolution Check	RC 060320	46			KSS,ALM	1.000
2	03JN20DFS1_2	WDM HRDXNCP_00040	WDM 060320	1	8290/1613B		KSS,ALM	1.000
3	03JN20DFS1_3	Solvent Blank C-14	SB 060320	3	8290/1613B		KSS,ALM	1.000
4	03JN20DFS1_4	CS-1 HRDXNL1_00031	IC 060320	4	8290/1613B		KSS,ALM	1.000
5	03JN20DFS1_5	CS-2 HRDXNL2_00029	IC 060320A	5	8290/1613B		KSS,ALM	1.000
6	03JN20DFS1_6	CS-3 HRDXNL3_00027	IC 060320B	6	8290/1613B		KSS,ALM	1.000
7	03JN20DFS1_7	CS-4 HRDXNL4_00093	IC 060320C	7	8290/1613B		KSS,ALM	1.000
8	03JN20DFS1_8	CS-5 HRDXNL5_00030	IC 060320D	8	8290/1613B		KSS,ALM	1.000
9	03JN20DFS1_9	CS-6 HRDXNL6_00026	IC 060320E	9	8290/1613B		KSS,ALM	1.000
10	03JN20DFS1_10	Resolution Check	RC 060320A	46			KSS,ALM	1.000
11	03JN20DFS1_11	Solvent Blank C-14	SB 060320A	3			KSS,ALM	1.000
12	03JN20DFS1_12	ICV HRDXNIC_00045	ICV 060320	10	8290/1613B		KSS,ALM	1.000
13	03JN20DFS1_13	Resolution Check	RC 060320B	46			KSS,ALM	1.000

Logfile checked
06/04/20 SMA

Resolution Check Report (DFS SN: 3441)

eurofins | Environment Testing TestAmerica

Date: 03 Jun 2020 12:06
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11351 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11073 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11131 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11181 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11204 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11310 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10868 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11116 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11141 [5%height]

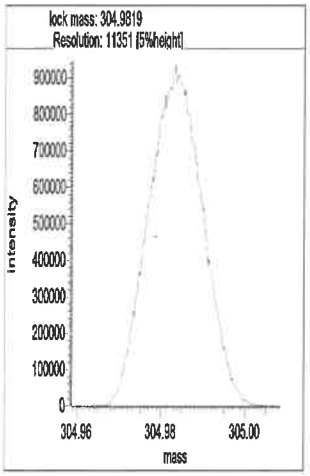

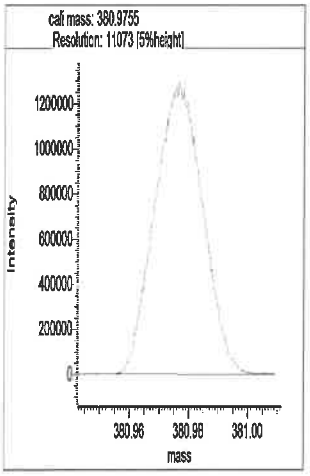

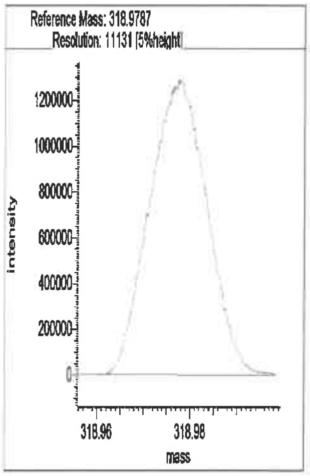

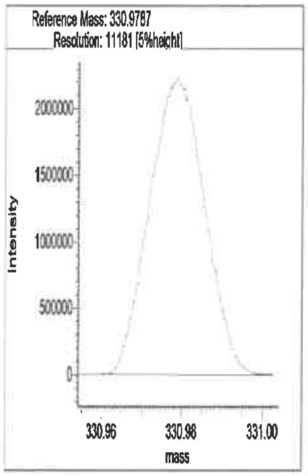

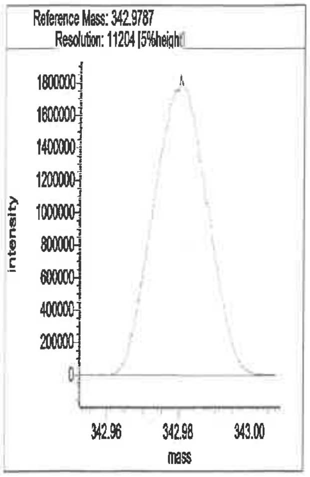

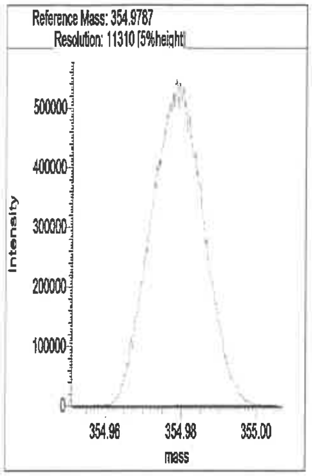

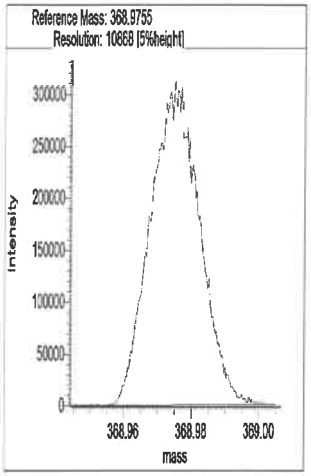

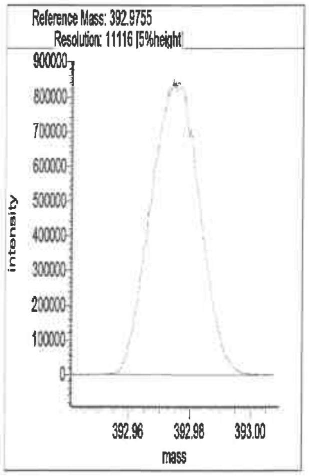

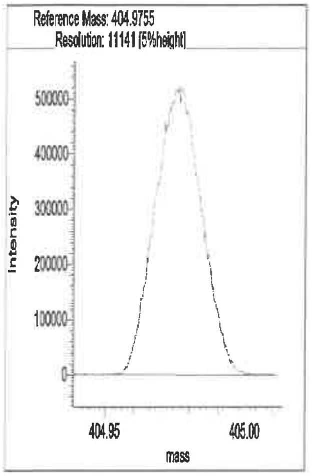

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11267 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11173 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11332 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11307 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10901 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11217 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11200 [5%height]

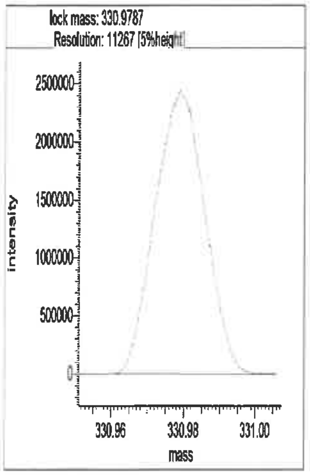

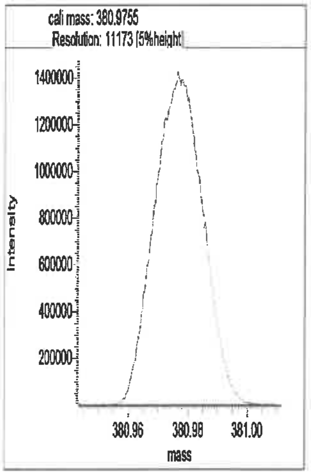

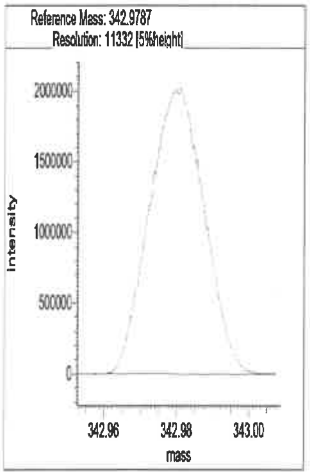

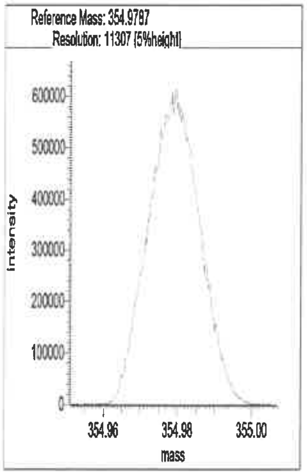

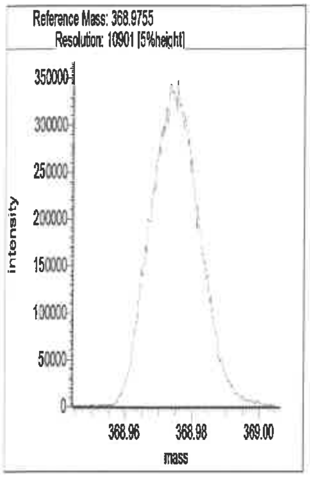
Reference Mass: 368.9755
Resolution: 10901 [5%height]

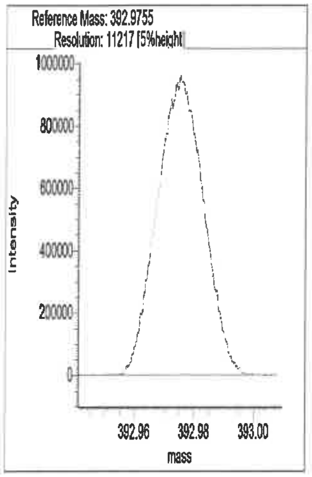
Reference Mass: 392.9755
Resolution: 11217 [5%height]

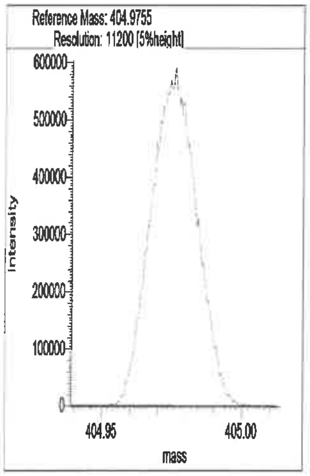
Reference Mass: 404.9755
Resolution: 11200 [5%height]

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11281 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11156 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11126 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11271 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11198 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11155 [5%height]

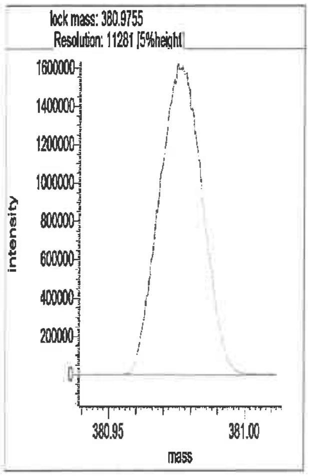
lock mass: 380.9755
Resolution: 11281 [5%height]

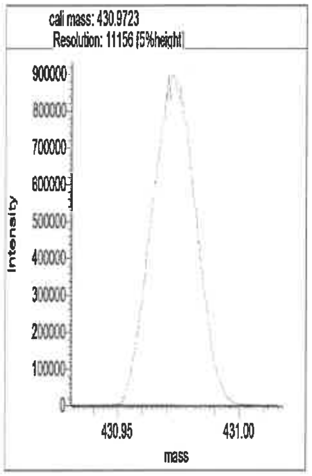
cali mass: 430.9723
Resolution: 11156 [5%height]

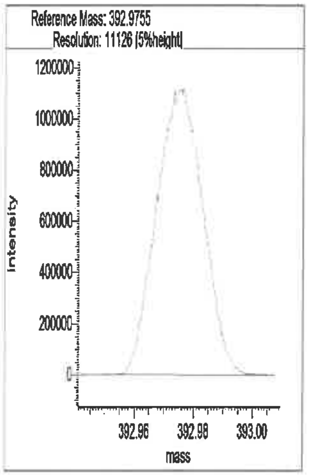
Reference Mass: 392.9755
Resolution: 11126 [5%height]

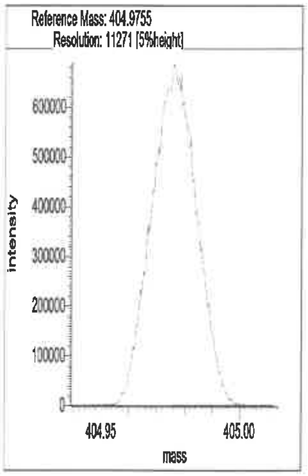
Reference Mass: 404.9755
Resolution: 11271 [5%height]

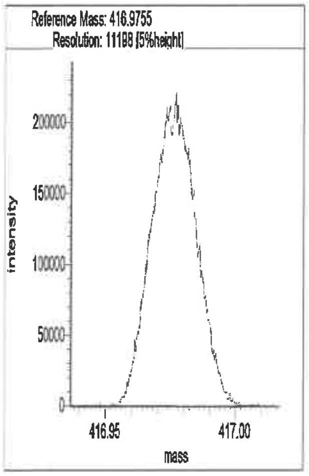
Reference Mass: 416.9755
Resolution: 11198 [5%height]

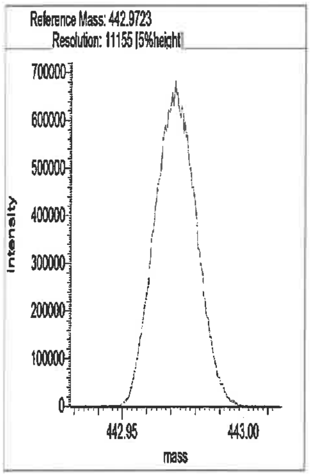
Reference Mass: 442.9723
Resolution: 11155 [5%height]

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11245 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11036 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11412 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11141 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11181 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11190 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11372 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 10863 [5%height]

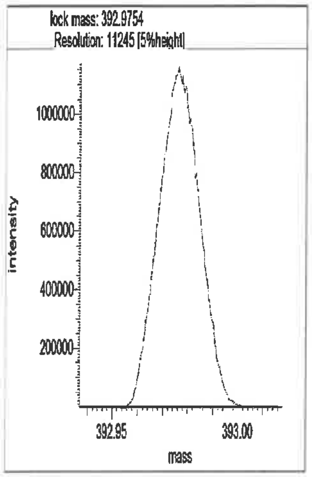

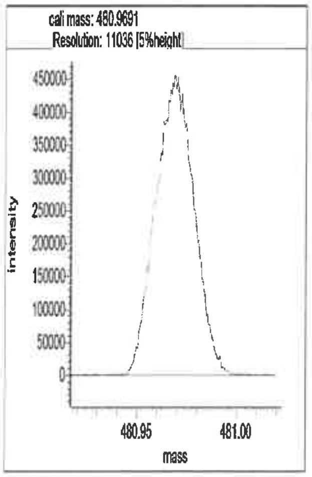

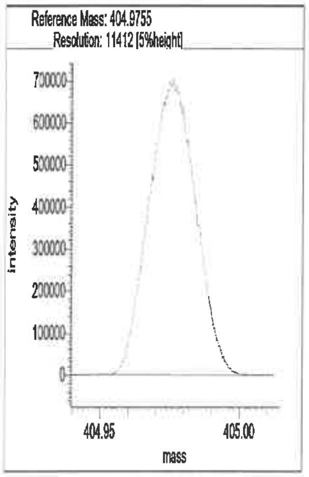

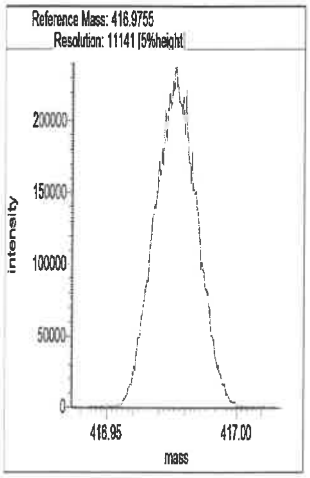

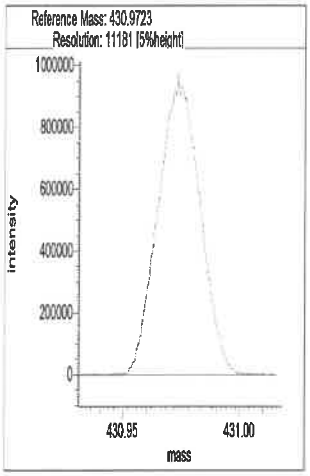

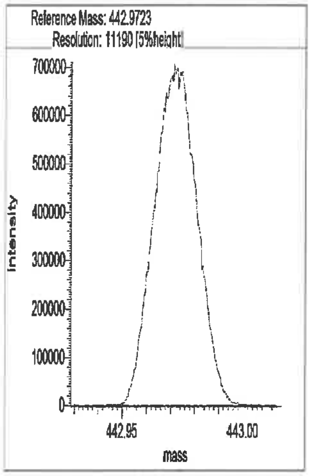

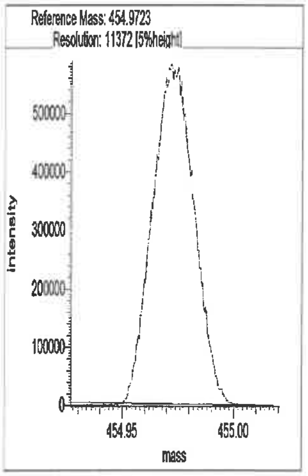

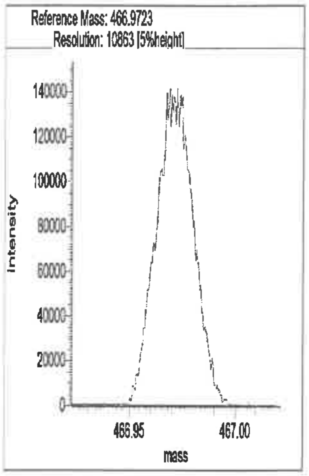

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11067 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11328 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11188 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11484 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11325 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11240 [5%height]

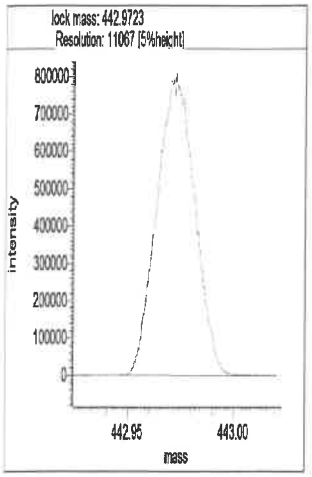
lock mass: 442.9723
Resolution: 11067 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

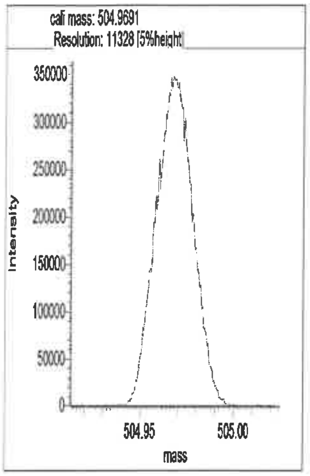
cali mass: 504.9691
Resolution: 11328 [5%height]
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

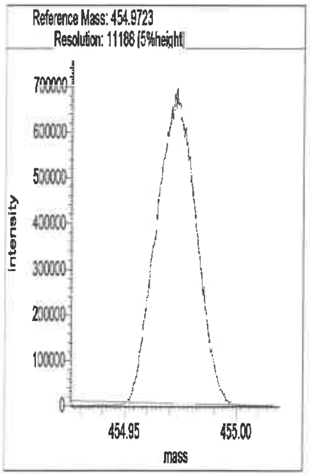
Reference Mass: 454.9723
Resolution: 11186 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

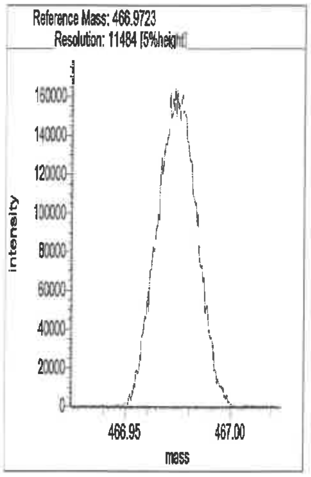
Reference Mass: 466.9723
Resolution: 11484 [5%height]
160000
140000
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

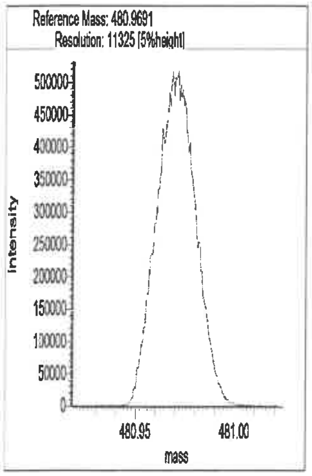
Reference Mass: 480.9691
Resolution: 11325 [5%height]
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
480.95
481.00
mass

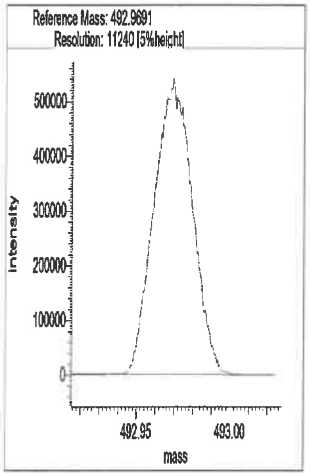
Reference Mass: 492.9691
Resolution: 11240 [5%height]
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3441)

Date: 03 Jun 2020 18:54
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11531 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11090 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11404 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11295 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11269 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11237 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10809 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11108 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11198 [5%height]

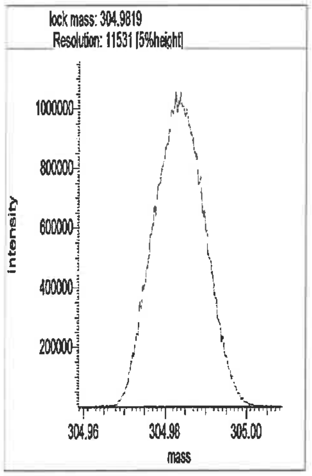

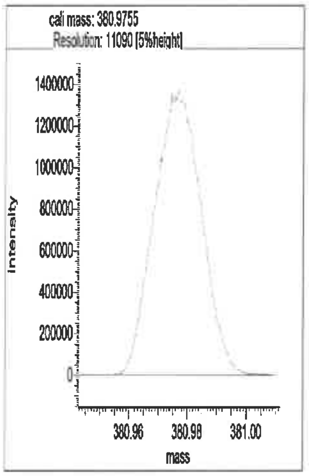

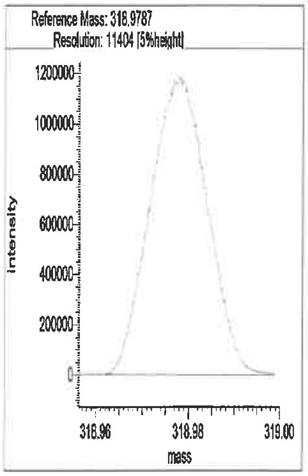

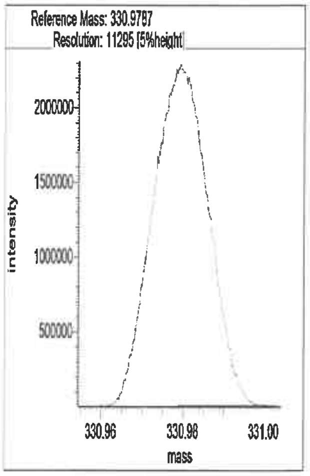

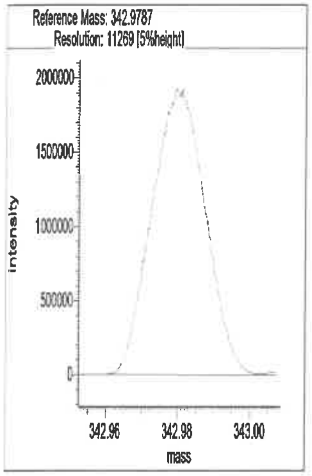

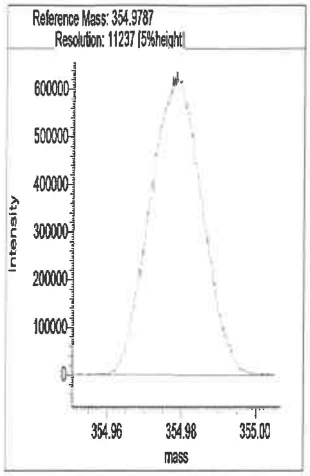

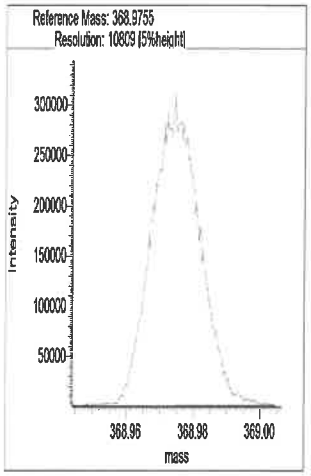

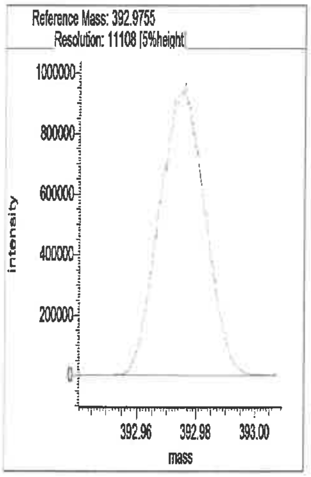

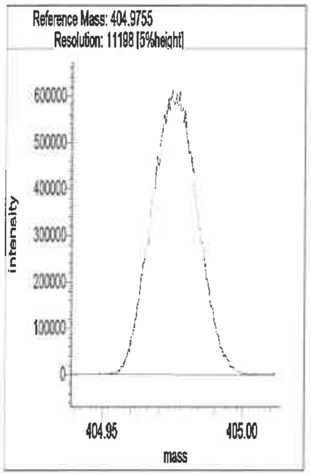

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11525 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11099 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11415 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11283 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10907 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11265 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11121 [5%height]

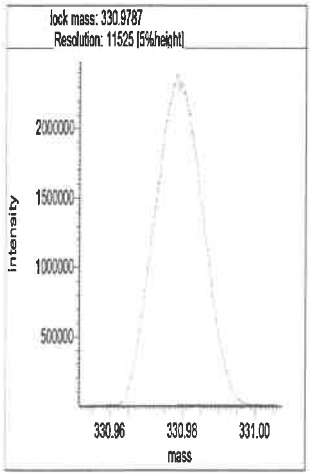

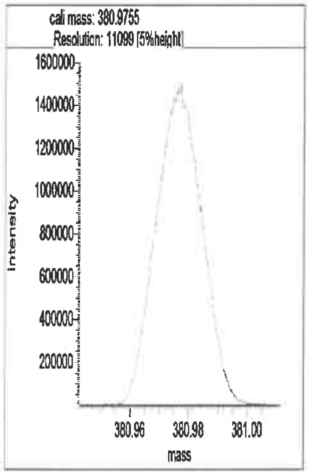

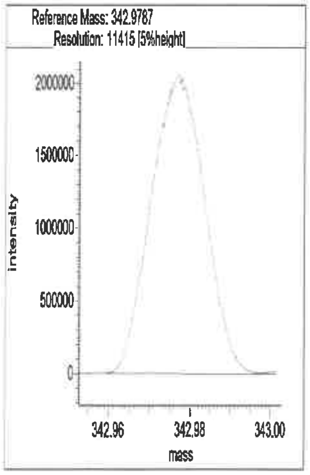

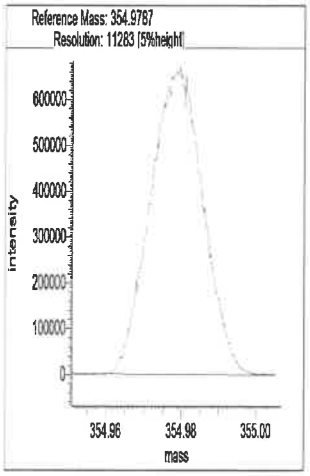

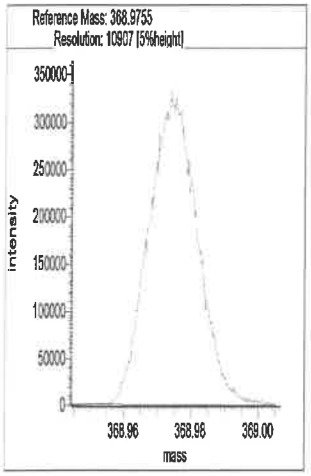

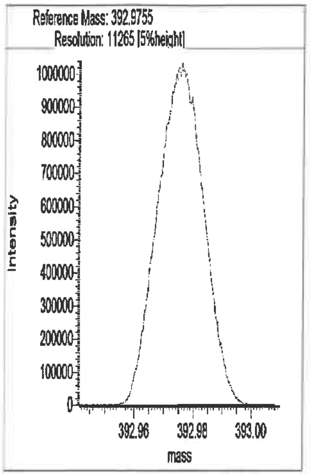

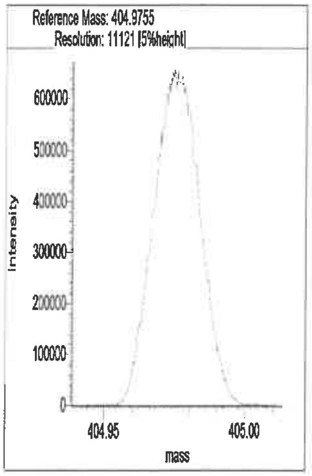

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11441 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11375 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11428 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11506 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11463 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11283 [5%height]

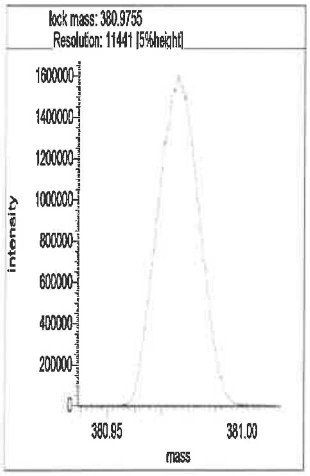

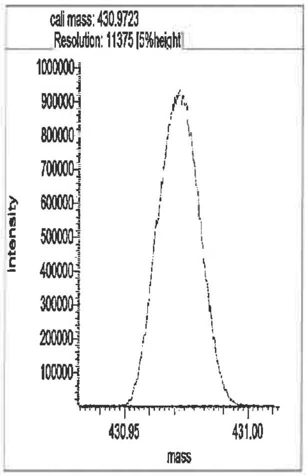

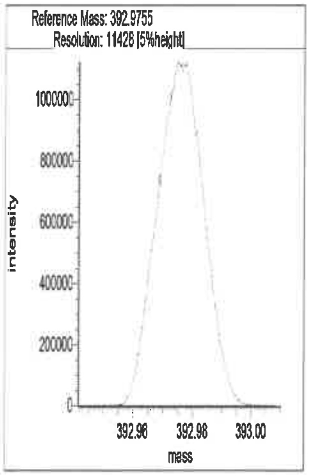

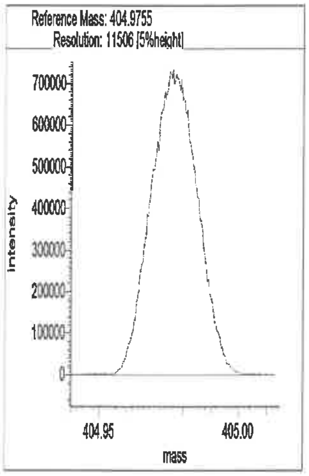

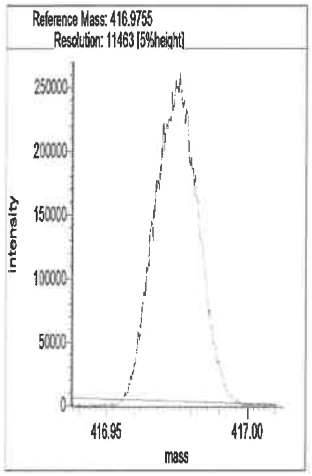

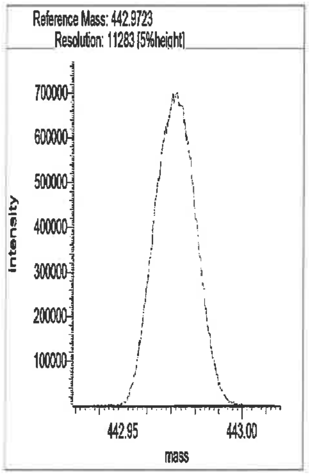

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11591 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11319 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11502 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11627 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11449 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11479 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11406 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11240 [5%height]

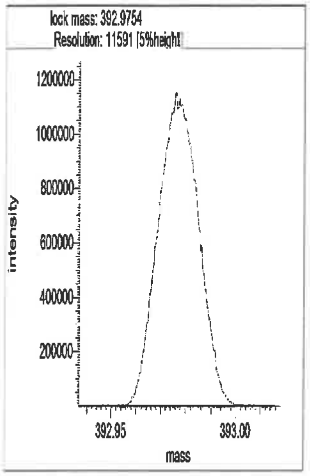

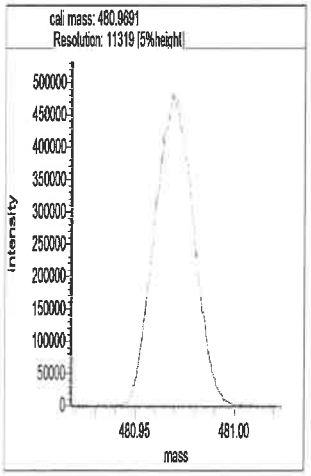

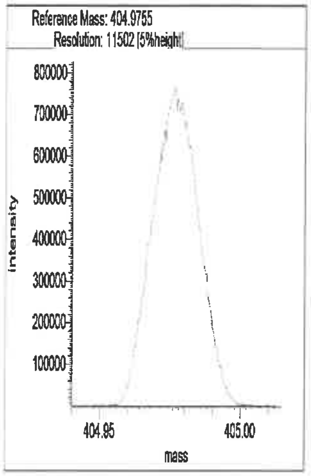

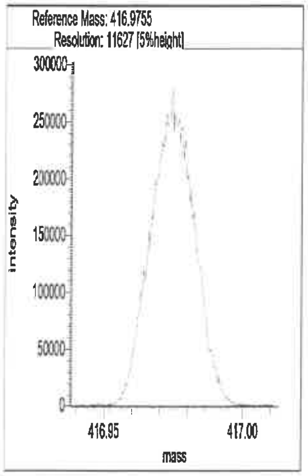

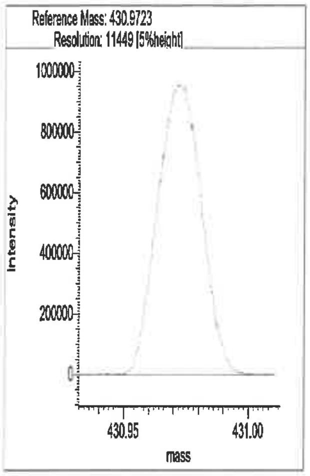

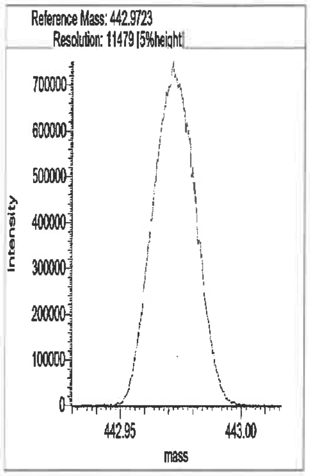

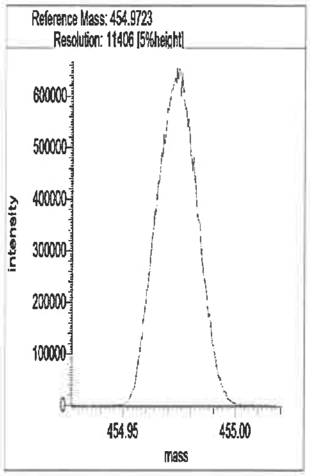

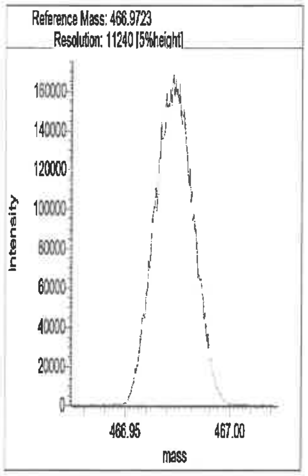

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11632 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11208 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11578 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11688 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11231 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11406 [5%height]

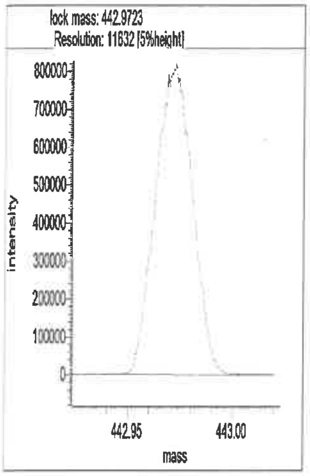
lock mass: 442.9723
Resolution: 11632 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

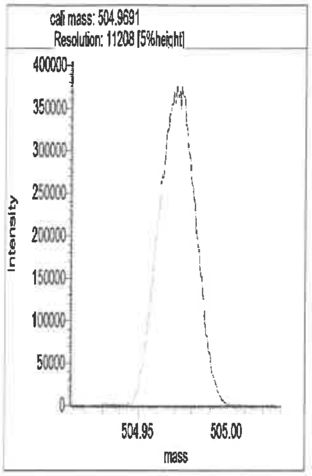
cali mass: 504.9691
Resolution: 11208 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

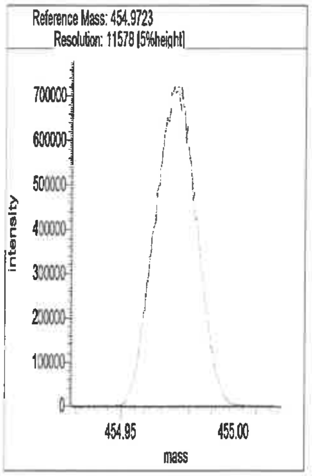
Reference Mass: 454.9723
Resolution: 11578 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

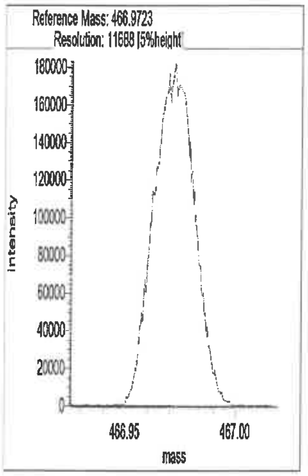
Reference Mass: 466.9723
Resolution: 11688 [5%height]
intensity
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

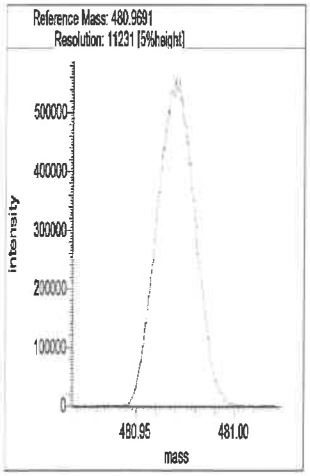
Reference Mass: 480.9691
Resolution: 11231 [5%height]
intensity
500000
400000
300000
200000
100000
0
480.95
481.00
mass

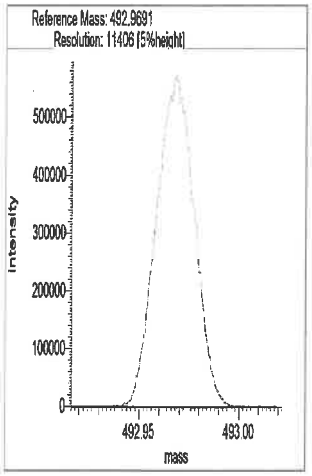
Reference Mass: 492.9691
Resolution: 11406 [5%height]
intensity
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3441)

Date:	03 Jun 2020 20:49
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11461 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11025 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11259 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11217 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11308 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11083 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10843 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 10916 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10632 [5%height]

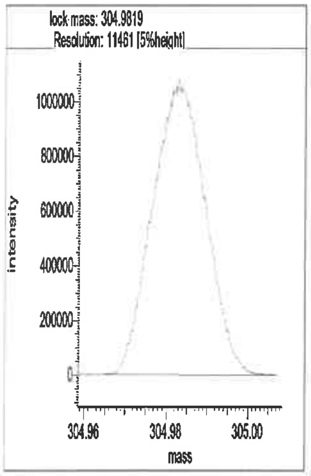

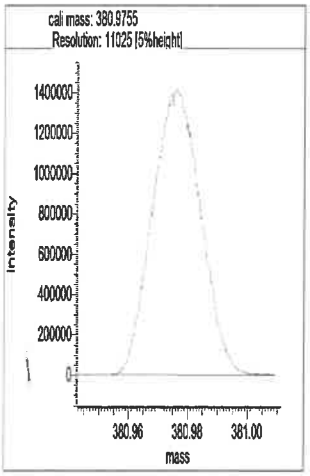

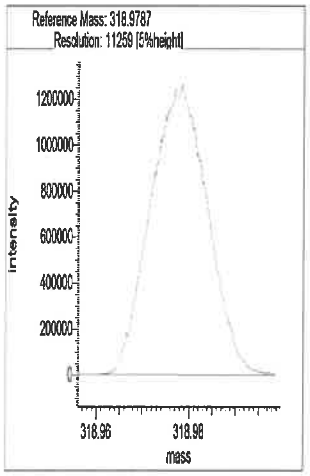

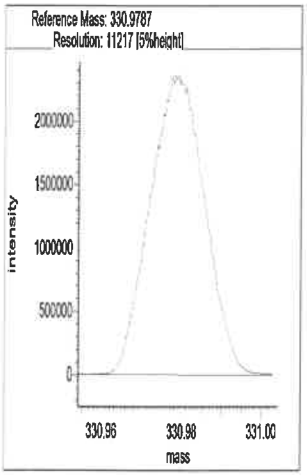

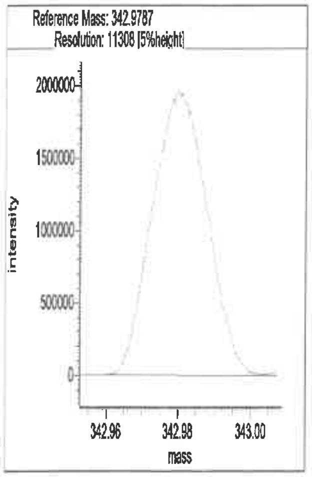

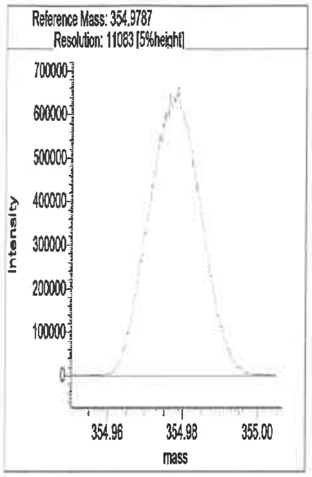

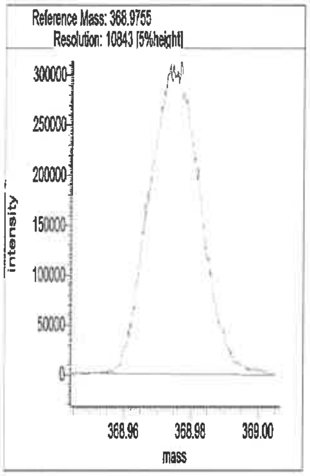

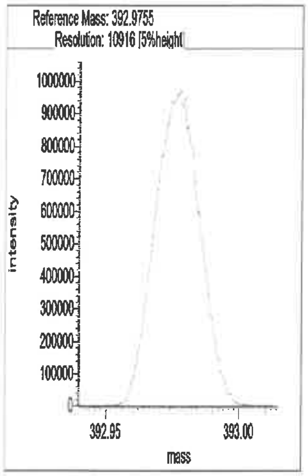

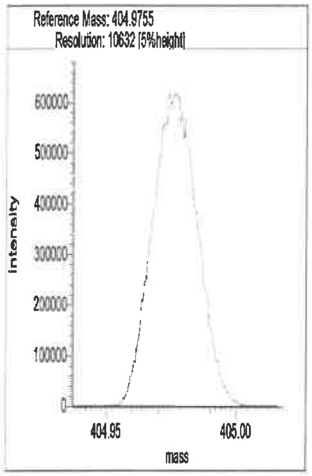

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11337 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11217 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11370 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11281 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10756 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11133 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11070 [5%height]

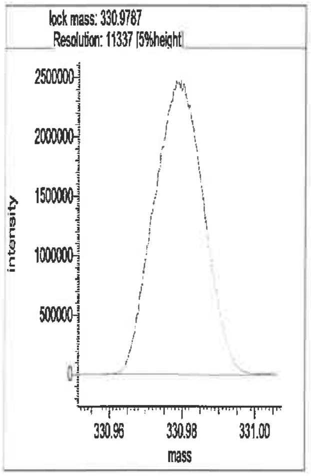

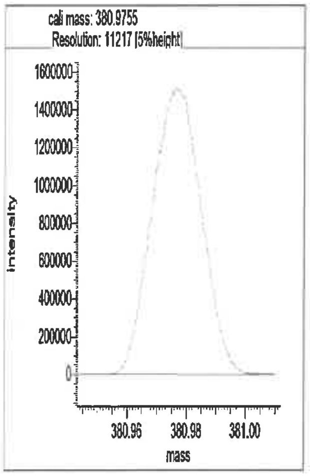

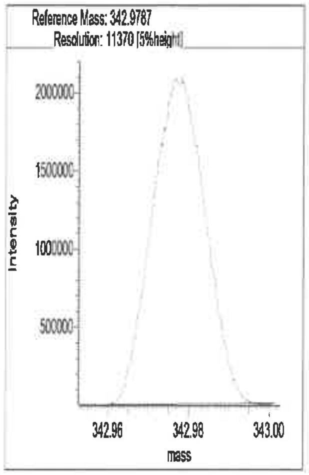

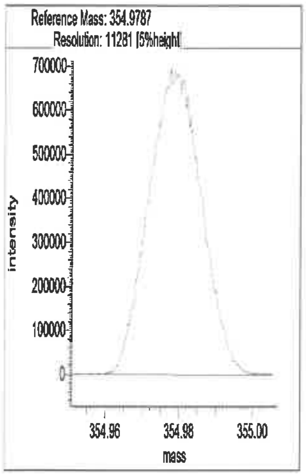

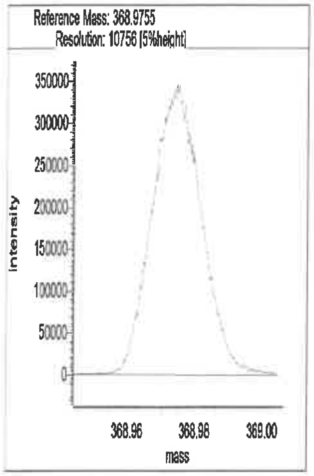

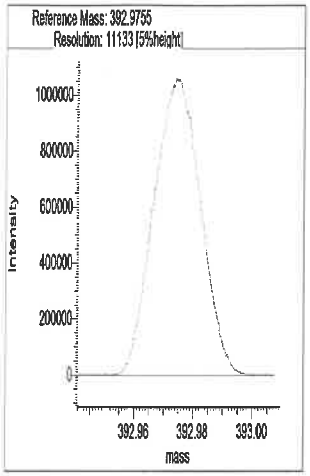

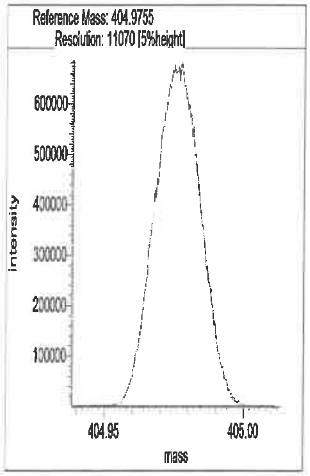

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11385 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11276 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11581 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11411 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11374 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11209 [5%height]

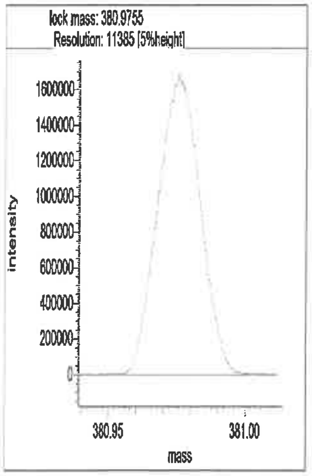

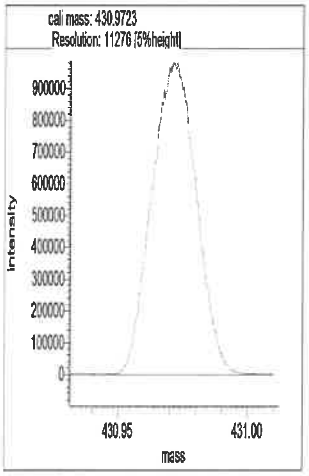

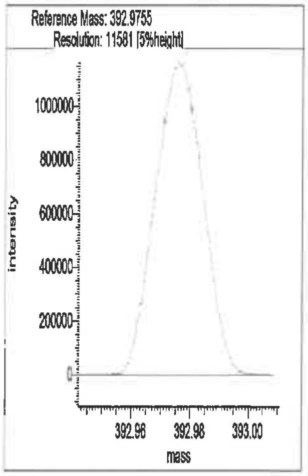

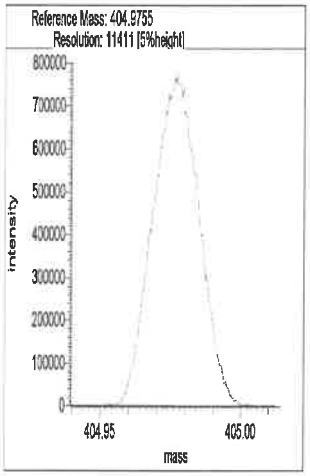

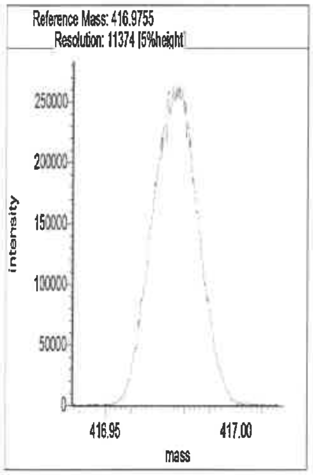

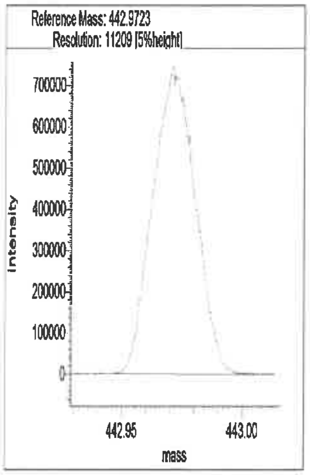

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11400 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11068 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11454 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11276 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11270 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11301 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11125 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11161 [5%height]

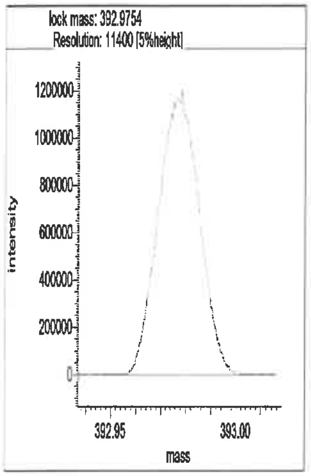

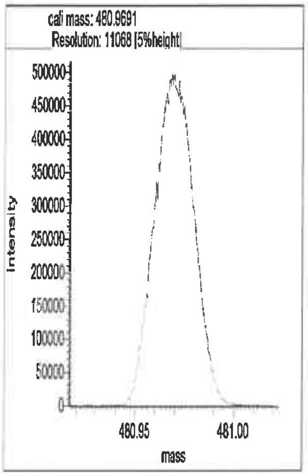

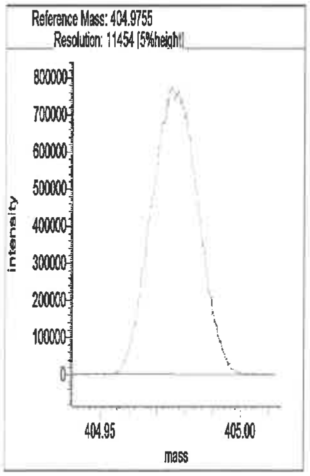

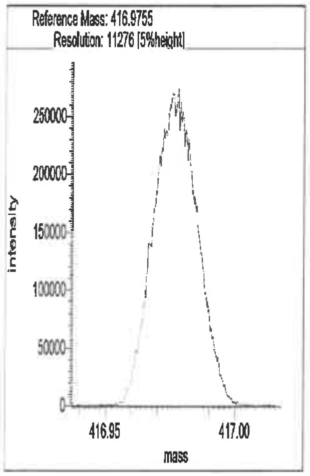

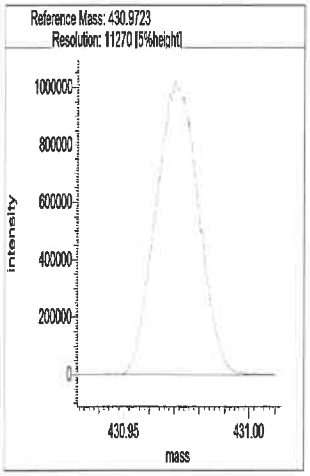

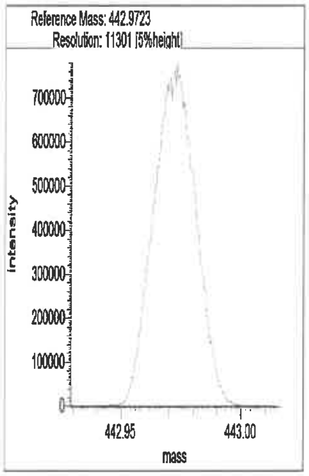

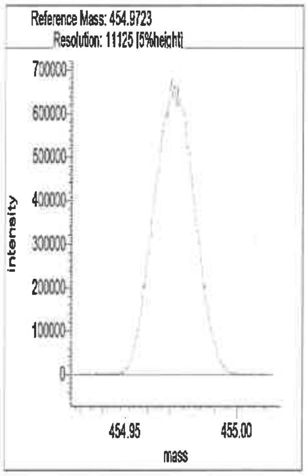

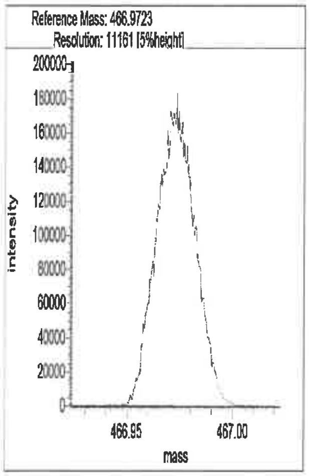

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11474 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11281 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11452 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11304 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11169 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11443 [5%height]

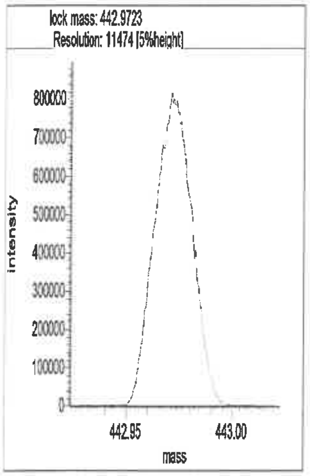
lock mass: 442.9723
Resolution: 11474 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

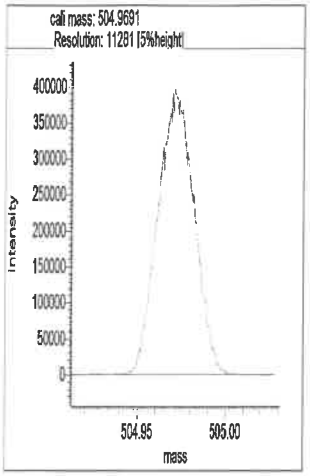
cali mass: 504.9691
Resolution: 11281 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

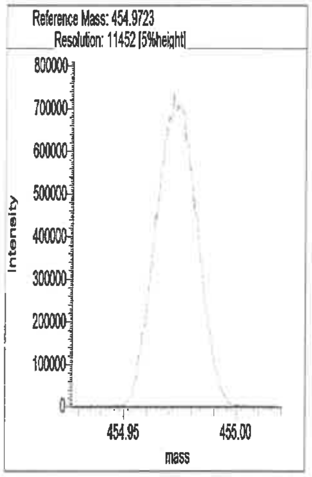
Reference Mass: 454.9723
Resolution: 11452 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

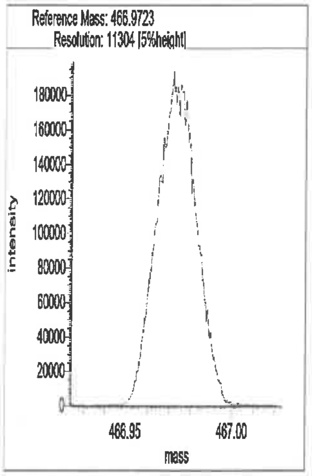
Reference Mass: 466.9723
Resolution: 11304 [5%height]
intensity
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

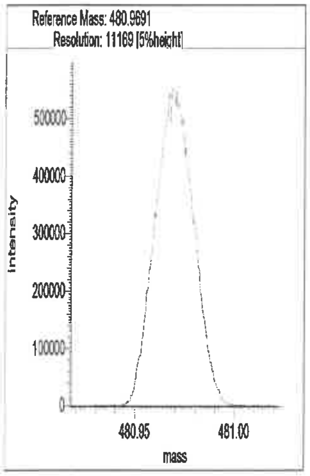
Reference Mass: 480.9691
Resolution: 11169 [5%height]
intensity
500000
400000
300000
200000
100000
0
480.95
481.00
mass

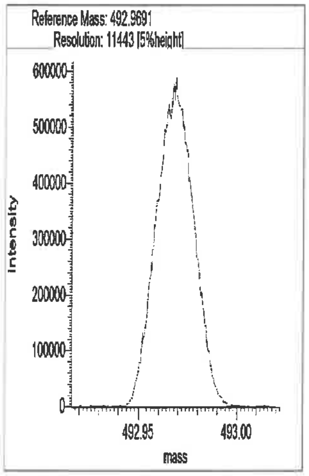
Reference Mass: 492.9691
Resolution: 11443 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 03-Jun-2020 14:05:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-1 HRDXNL1_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:39 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 05-Jun-2020 10:06:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.298	7617551	0.80	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.308	11575035	0.79	1.4977	101.5	101.5	0.1893	0.1893	101	
2,3,7,8-TCDF	20.351	36141	0.68	1.1312	0.2760	0.2760	0.007932	0.007932	110	M
S Total TCDF					0.2760	0.2760	0.007932	0.007932		
D 13C-2,3,7,8-TCDD	21.685	7936120	0.79	1.0367	100.5	100.5	0.1971	0.1971	100	
2,3,7,8-TCDD	21.702	25755	0.78	1.1849	0.2739	0.2739	0.0213	0.0213	110	M
$ 37Cl4-2,3,7,8-TCDD	21.728	22681		1.1208	0.2657	0.2657	0.0110	0.0110	106	
S Total TCDD					0.2739	0.2739	0.0213	0.0213		
D 13C-1,2,3,7,8-PeCDF	27.298	9753916	1.58	1.3057	98.1	98.1	0.3836	0.3836	98.06	
1,2,3,7,8-PeCDF	27.323	140816	1.55	1.1060	1.305	1.305	0.0178	0.0178	104	
D 13C-2,3,4,7,8-PeCDF	28.829	11491396	1.58	1.5420	97.8	97.8	0.3248	0.3248	97.83	
2,3,4,7,8-PeCDF	28.846	136191	1.62	0.9067	1.307	1.307	0.0193	0.0193	105	
S Total PeCDF					2.612	2.612	0.0186	0.0186		
D 13C-1,2,3,7,8-PeCDD	29.646	6244315	1.59	0.8294	98.8	98.8	0.1483	0.1483	98.83	
1,2,3,7,8-PeCDD	29.671	88840	1.57	1.1062	1.286	1.286	0.0217	0.0217	103	
S Total PeCDD					1.286	1.286	0.0217	0.0217		
D 13C-1,2,3,4,7,8-HxCDF	34.979	9974678	0.54	1.4619	100.2	100.2	0.2722	0.2722	100	
1,2,3,4,7,8-HxCDF	34.996	133454	1.28	1.0087	1.326	1.326	0.0146	0.0146	106	
D 13C-1,2,3,6,7,8-HxCDF	35.139	8939187	0.53	1.2866	102.0	102.0	0.3093	0.3093	102	
1,2,3,6,7,8-HxCDF	35.156	144549	1.27	1.2432	1.301	1.301	0.0139	0.0139	104	
D 13C-2,3,4,6,7,8-HxCDF	35.964	8442074	0.53	1.1988	103.4	103.4	0.3319	0.3319	103	
2,3,4,6,7,8-HxCDF	35.981	143678	1.25	1.2736	1.336	1.336	0.0125	0.0125	107	
D 13C-1,2,3,7,8,9-HxCDF	36.848	7257441	0.53	1.0687	99.7	99.7	0.3723	0.3723	99.74	
1,2,3,7,8,9-HxCDF	36.865	125519	1.28	1.2882	1.343	1.343	0.0132	0.0132	107	
S Total HxCDF					5.306	5.306	0.0135	0.0135		
* 13C-1,2,3,7,8,9-HxCDD	36.646	6808866	1.25	5E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	36.166	7630092	1.27	1.1046	101.4	101.4	0.1779	0.1779	101	a
1,2,3,4,7,8-HxCDD	36.183	95486	1.27	0.9336	1.340	1.340	0.0209	0.0209	107	
D 13C-1,2,3,6,7,8-HxCDD	36.284	6834320	1.26	0.9871	101.7	101.7	0.1991	0.1991	102	a
1,2,3,6,7,8-HxCDD	36.301	96309	1.25	1.0802	1.305	1.305	0.0213	0.0213	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.663	101310	1.29	1.0574	1.325	1.325	0.0200	0.0200	106	
S Total HxCDD					3.970	3.970	0.0207	0.0207		
D 13C-1,2,3,4,6,7,8-HpCDF	38.638	6215600	0.46	0.9035	101.0	101.0	0.4227	0.4227	101	
1,2,3,4,6,7,8-HpCDF	38.655	130543	1.01	1.5957	1.316	1.316	0.0161	0.0161	105	
D 13C-1,2,3,4,7,8,9-HpCDF	39.885	7019746	0.46	1.0480	98.4	98.4	0.3644	0.3644	98.37	
1,2,3,4,7,8,9-HpCDF	39.894	107944	1.09	1.1693	1.315	1.315	0.0180	0.0180	105	
S Total HpCDF					2.631	2.631	0.0171	0.0171		
D 13C-1,2,3,4,6,7,8-HpCDD	39.582	6158504	1.07	0.8875	101.9	101.9	0.3260	0.3260	102	
1,2,3,4,6,7,8-HpCDD	39.590	90659	1.05	1.1150	1.320	1.320	0.0132	0.0132	106	
S Total HpCDD					1.320	1.320	0.0132	0.0132		
D 13C-OCDD	42.031	8344650	0.91	0.6297	194.6	194.6	0.1612	0.1612	97.31	
OCDF	42.132	155676	0.89	1.4809	2.519	2.519	0.0179	0.0179	101	
OCDD	42.039	127218	0.88	1.1948	2.552	2.552	0.0151	0.0151	102	

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Reagents:

HRDXNL1_00031 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 03-Jun-2020 14:05:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-1 HRDXNL1_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:39 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 05-Jun-2020 10:06:52

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.298	21.309	-1		3390101	490691	524	1310	936		a
333.9338	21.298	21.309	-1		4227450	602843	370	925	1629	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.308	20.321	-1	0.954	5113136	746617	821	2052	909		
317.9389	20.308	20.321	-1	0.954	6461899	925048	419	1047	2208	0.79(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	20.351	20.347	0	1.002	14567	1955	13	32	150		M
305.8987	20.343	20.347	0	1.002	21574	3216	47	117	68	0.68(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	21.685	21.692	0	1.018	3495773	472331	524	1310	901		
333.9338	21.685	21.692	0	1.018	4440347	597745	370	925	1616	0.79(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	21.702	21.722	-1	1.001	11323	1687	87	217	19		M
321.8936	21.719	21.722	0	1.002	14432	1944	21	52	93	0.78(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	21.728	21.724	0	1.020	22681	3111	54	135	58		
13C-1,2,3,7,8-PeCDF											
351.9000	27.298	27.300	0	1.282	5969130	944581	1343	3357	703		
353.8970	27.298	27.300	0	1.282	3784786	601555	848	2120	709	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.323	27.325	0	1.001	85561	14411	42	105	343		
341.8567	27.323	27.325	0	1.001	55255	9325	80	200	117	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.829	28.834	0	1.354	7043748	1064837	1343	3357	793		
353.8970	28.829	28.834	0	1.354	4447648	679900	848	2120	802	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.846	28.857	-1	1.001	84250	13307	42	105	317		
341.8567	28.846	28.857	-1	1.001	51941	7642	80	200	96	1.62(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.646	29.651	0	1.392	3835956	546449	349	872	1566		
369.8919	29.646	29.651	0	1.392	2408359	356453	189	472	1886	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.671	29.682	-1	1.001	54246	7869	69	172	114		
357.8516	29.688	29.682	0	1.001	34594	5010	18	45	278	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.979	34.982	0	0.955	3481637	790179	968	2420	816		
385.8610	34.979	34.982	0	0.955	6493041	1453538	1870	4675	777	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.996	35.000	0	1.000	74858	17266	79	197	219		
375.8178	34.996	35.000	0	1.000	58596	12769	53	132	241	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.139	35.145	0	0.959	3115312	675596	968	2420	698		
385.8610	35.139	35.145	0	0.959	5823875	1238227	1870	4675	662	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.156	35.163	0	1.000	80832	17153	79	197	217		
375.8178	35.148	35.163	-1	1.000	63717	13966	53	132	264	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.964	35.966	0	0.981	2934176	722173	968	2420	746		
385.8610	35.964	35.966	0	0.981	5507898	1358722	1870	4675	727	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.981	35.981	0	1.000	79779	20713	79	197	262		
375.8178	35.981	35.981	0	1.000	63899	15895	53	132	300	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.848	36.848	0	1.006	2526941	676007	968	2420	698		
385.8610	36.848	36.848	0	1.006	4730500	1268678	1870	4675	678	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.865	36.862	0	1.000	70352	18043	79	197	228		
375.8178	36.857	36.862	0	1.000	55167	15118	53	132	285	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	36.646	36.653	0		3787421	996210	853	2132	1168		a
403.8529	36.646	36.653	0		3021445	786957	549	1372	1433	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	36.166	36.173	0	0.987	4272278	1154955	853	2132	1354		a
403.8529	36.166	36.173	0	0.987	3357814	904760	549	1372	1648	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.183	36.187	0	1.000	53352	14654	99	247	148		
391.8127	36.183	36.187	0	1.000	42134	11981	62	155	193	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	36.284	36.291	0	0.990	3803630	977918	853	2132	1146		a
403.8529	36.284	36.291	0	0.990	3030690	766852	549	1372	1397	1.26(1.05-1.43)	

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.301	36.304	0	1.000	53500	13838	99	247	140		
391.8127	36.301	36.304	0	1.000	42809	10703	62	155	173	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.663	36.669	0	1.014	57064	15118	99	247	153		
391.8127	36.663	36.669	0	1.014	44246	10954	62	155	177	1.29(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.638	38.640	0	1.054	1958679	627943	979	2447	641		
419.8220	38.638	38.640	0	1.054	4256921	1371970	1745	4362	786	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.655	38.655	0	1.000	65648	21623	155	387	140		
409.7788	38.646	38.655	-1	1.000	64895	20747	51	127	407	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.885	39.885	0	1.088	2227974	775107	979	2447	792		
419.8220	39.885	39.885	0	1.088	4791772	1671789	1745	4362	958	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.894	39.893	0	1.000	56354	19134	155	387	123		
409.7788	39.894	39.893	0	1.000	51590	18547	51	127	364	1.09(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.582	39.582	0	1.080	3179261	1098105	1039	2597	1057		
437.8140	39.582	39.582	0	1.080	2979243	1016135	1025	2562	991	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.590	39.590	0	1.000	46393	15653	87	217	180		
425.7737	39.590	39.590	0	1.000	44266	14958	37	92	404	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.031	42.035	0	1.147	3980257	1308931	460	1150	2846		
471.7750	42.031	42.035	0	1.147	4364393	1421029	264	660	5383	0.91(0.76-1.02)	
OCDF											
441.7428	42.132	42.131	0	1.002	73500	24385	42	105	581		
443.7399	42.123	42.131	0	1.002	82176	26537	103	257	258	0.89(0.76-1.02)	
OCDD											
457.7377	42.039	42.043	0	1.000	59700	18676	40	100	467		
459.7348	42.039	42.043	0	1.000	67518	22234	59	147	377	0.88(0.76-1.02)	

QC Flag Legend

Review Flags

M - Manually Integrated
a - User Assigned ID

Reagents:

HRDXNL1_00031 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.31

Processing Integration Results

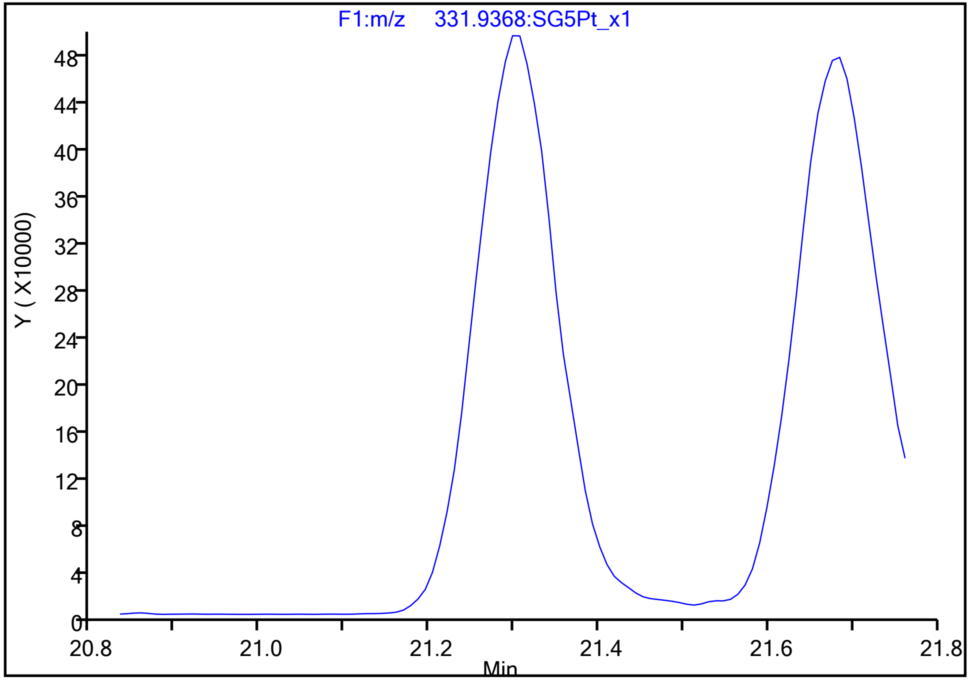

RT: 21.30

Area: 3390101

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

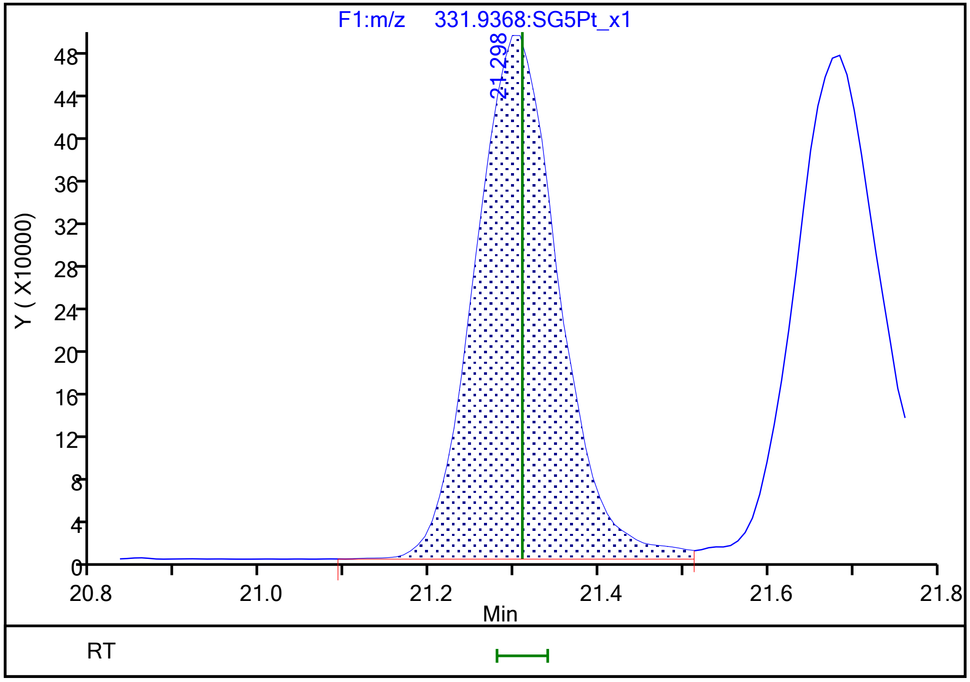

Reviewer: stephensk, 03-Jun-2020 16:25:41

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	20.35
Area:	13365
Amount:	0.277094
Amount Units:	pg/ul

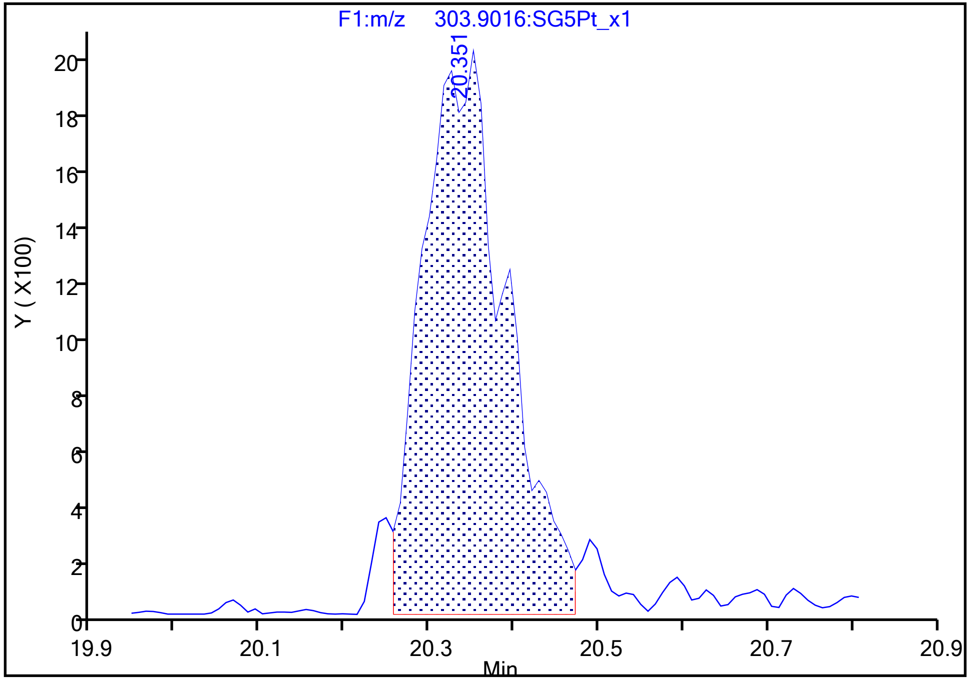

Manual Integration Results

RT:	20.35
Area:	14567
Amount:	0.276007
Amount Units:	pg/ul

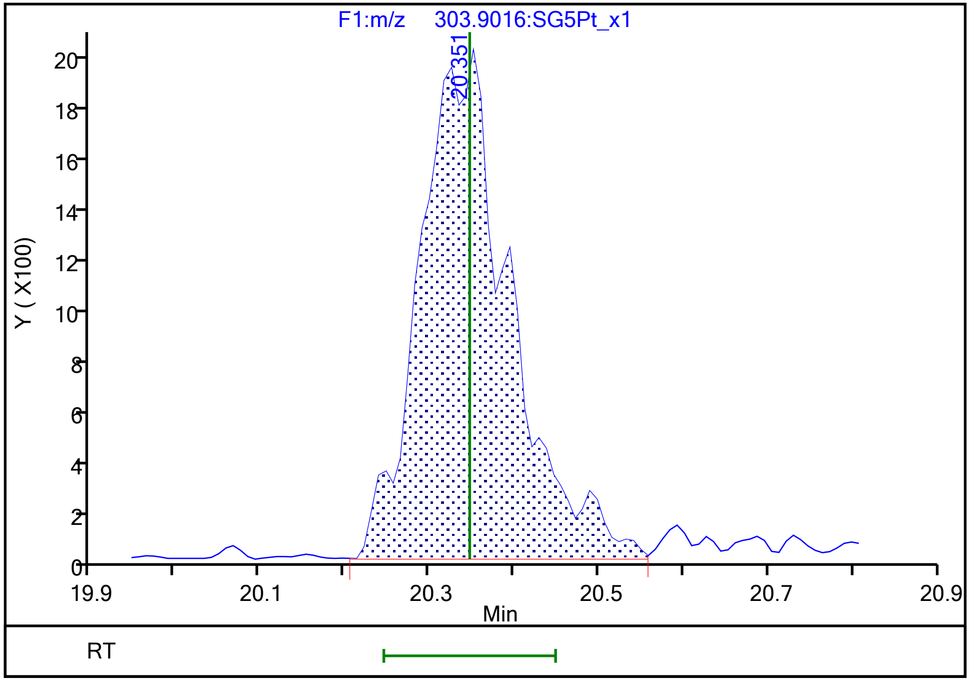

Reviewer: stephensk, 04-Jun-2020 08:12:35

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT: 20.34
Area: 22171
Amount: 0.277094
Amount Units: pg/ul

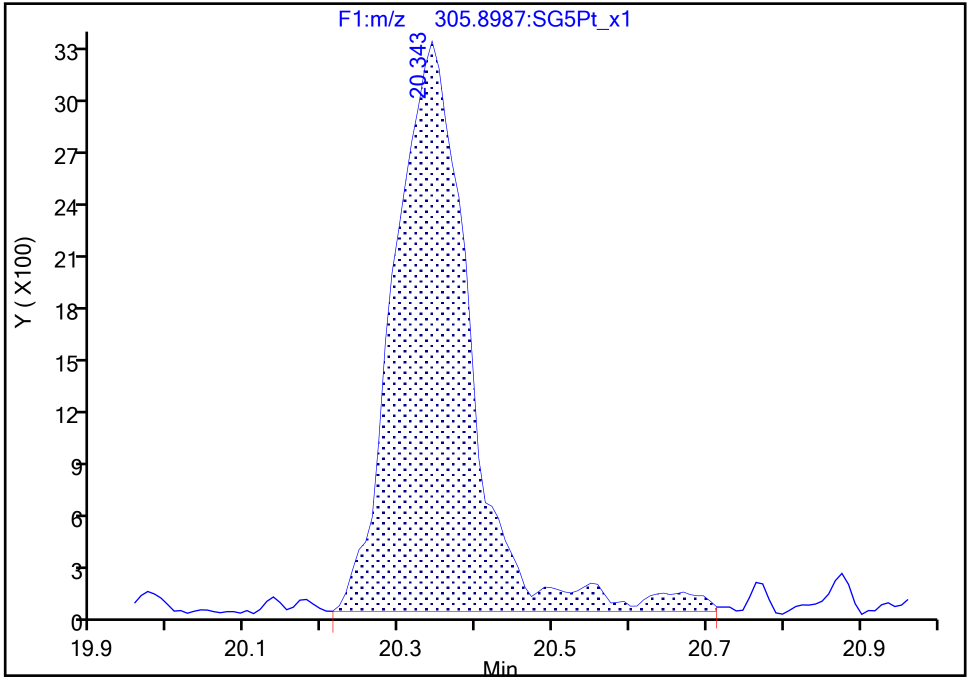

Manual Integration Results

RT: 20.34
Area: 21574
Amount: 0.276007
Amount Units: pg/ul

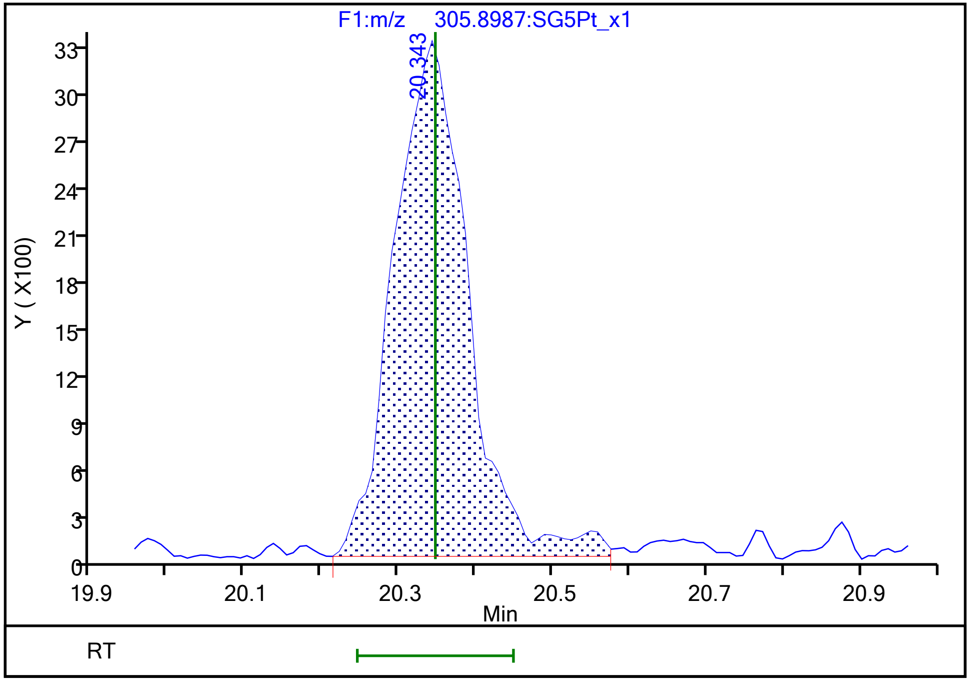

Reviewer: stephensk, 04-Jun-2020 08:12:43

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	21.70
Area:	10278
Amount:	0.261504
Amount Units:	pg/ul

Processing Integration Results

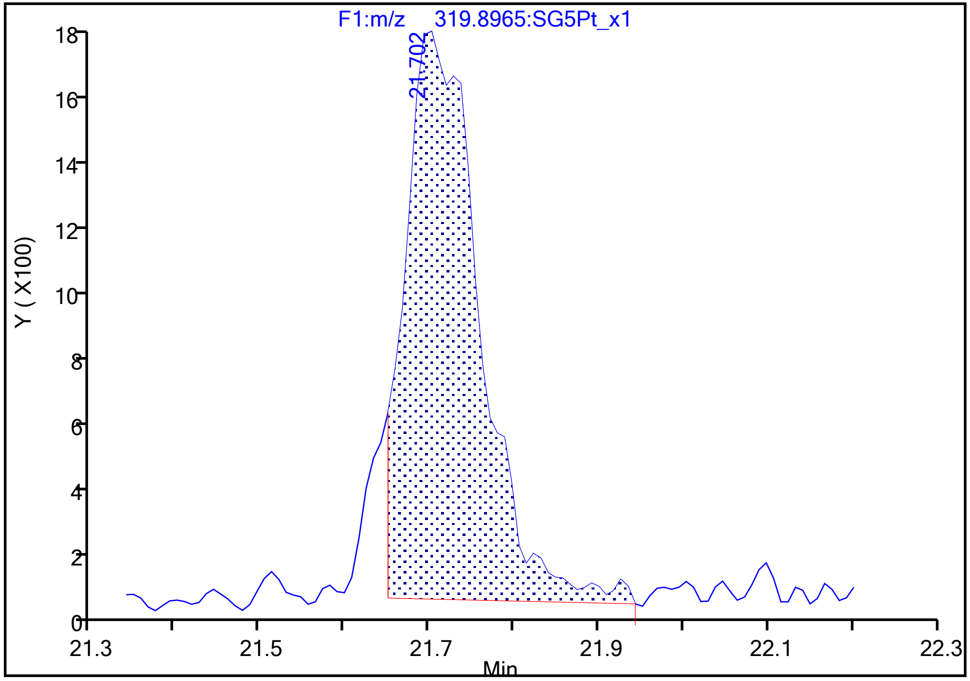

RT:	21.70
Area:	11323
Amount:	0.273884
Amount Units:	pg/ul

Manual Integration Results

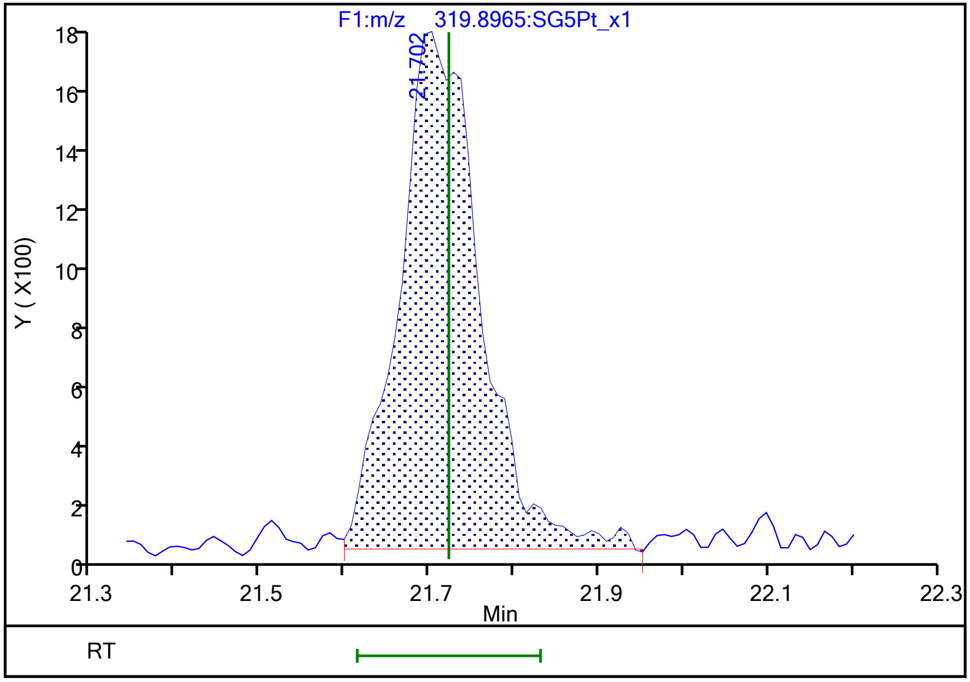

Reviewer: stephensk, 04-Jun-2020 08:13:14

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT:	21.72
Area:	14067
Amount:	0.261504
Amount Units:	pg/ul

Processing Integration Results

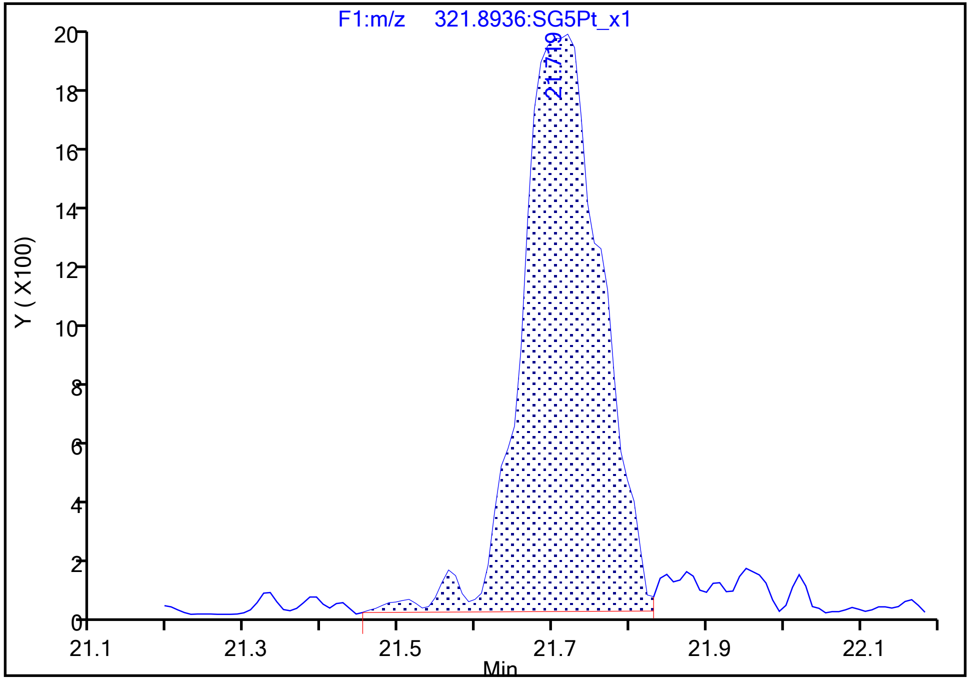

RT:	21.72
Area:	14432
Amount:	0.273884
Amount Units:	pg/ul

Manual Integration Results

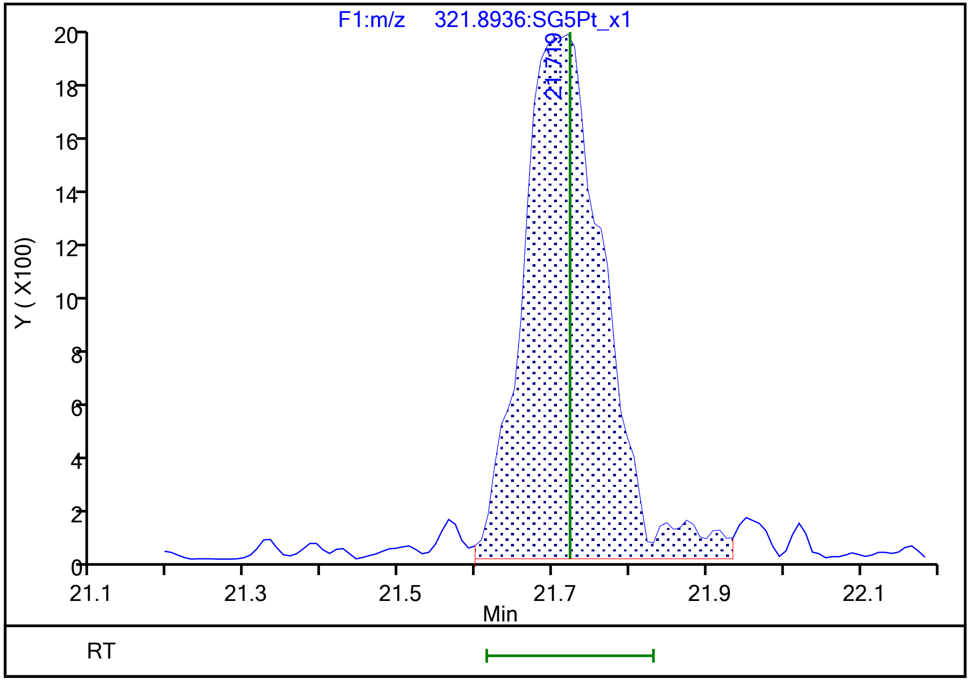

Reviewer: stephensk, 04-Jun-2020 08:13:39

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,7,8,9-HxCDD, CAS: 109719-82-6

Signal: 1

Not Detected

Expected RT: 36.65

Processing Integration Results

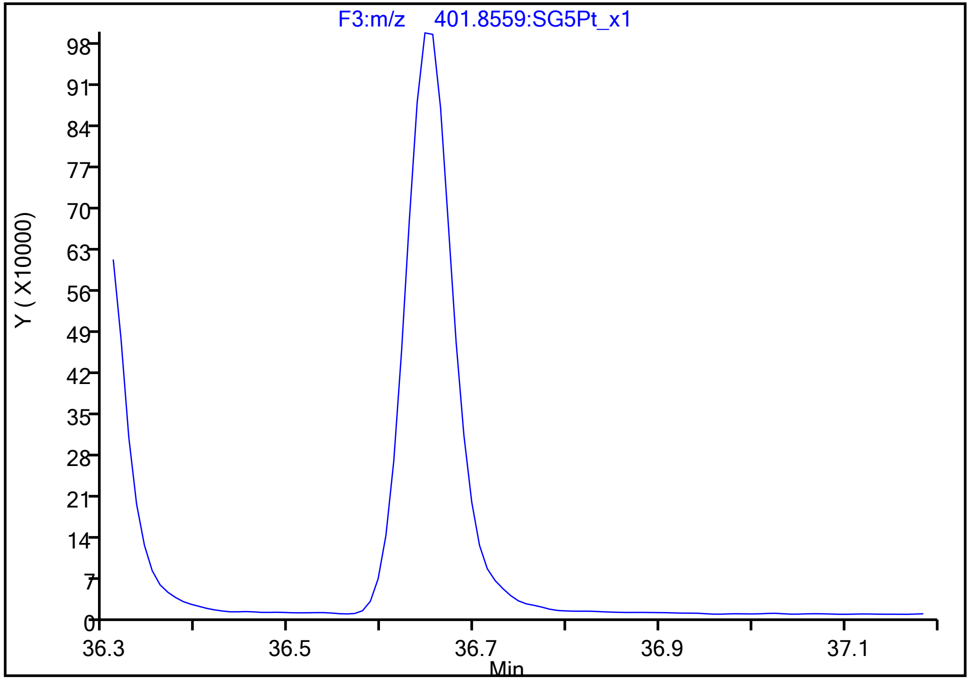

Manual Integration Results

RT: 36.65

Area: 3787421

Amount: 100.0000

Amount Units: pg/ul

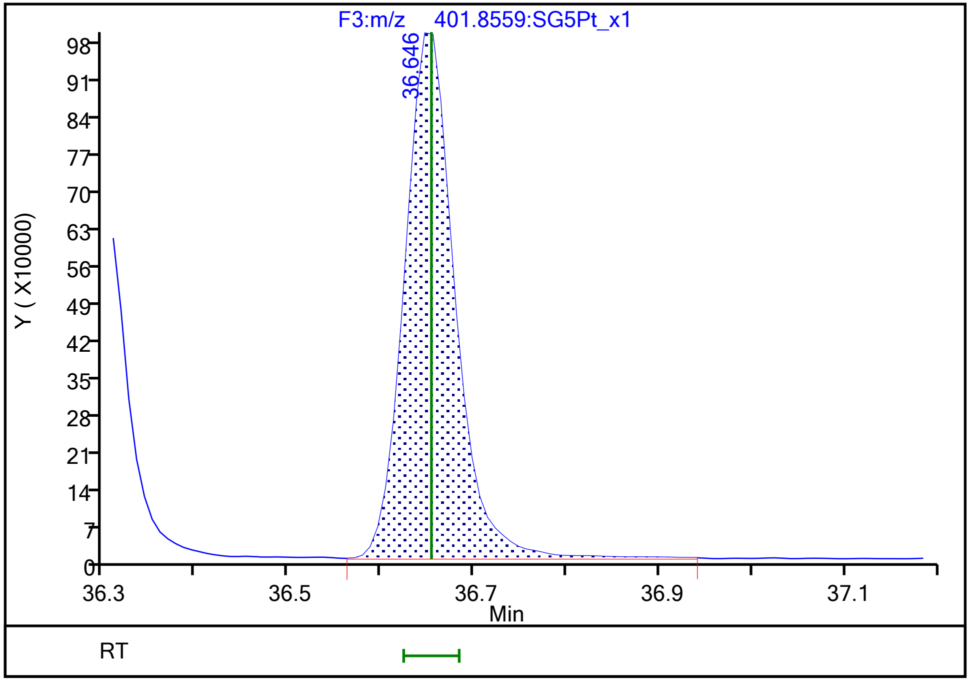

Reviewer: stephensk, 03-Jun-2020 16:25:48

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d				
Injection Date:	03-Jun-2020 14:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

RT: 36.28
Area: 3803630
Amount: 100.0000
Amount Units: pg/ul

Processing Integration Results

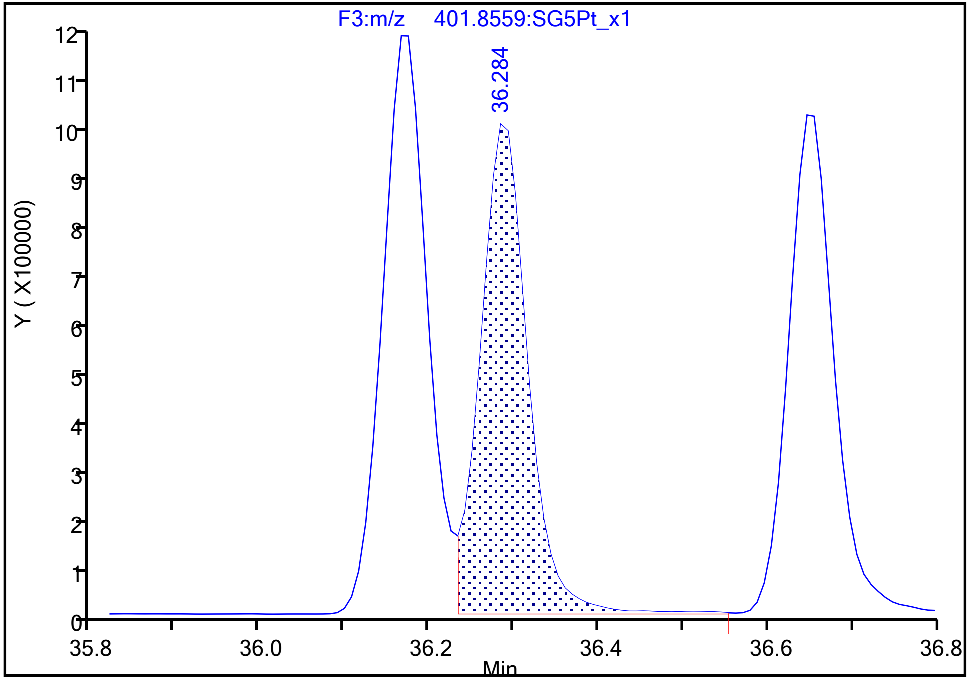

RT: 36.17
Area: 4272278
Amount: 101.4480
Amount Units: pg/ul

Manual Integration Results

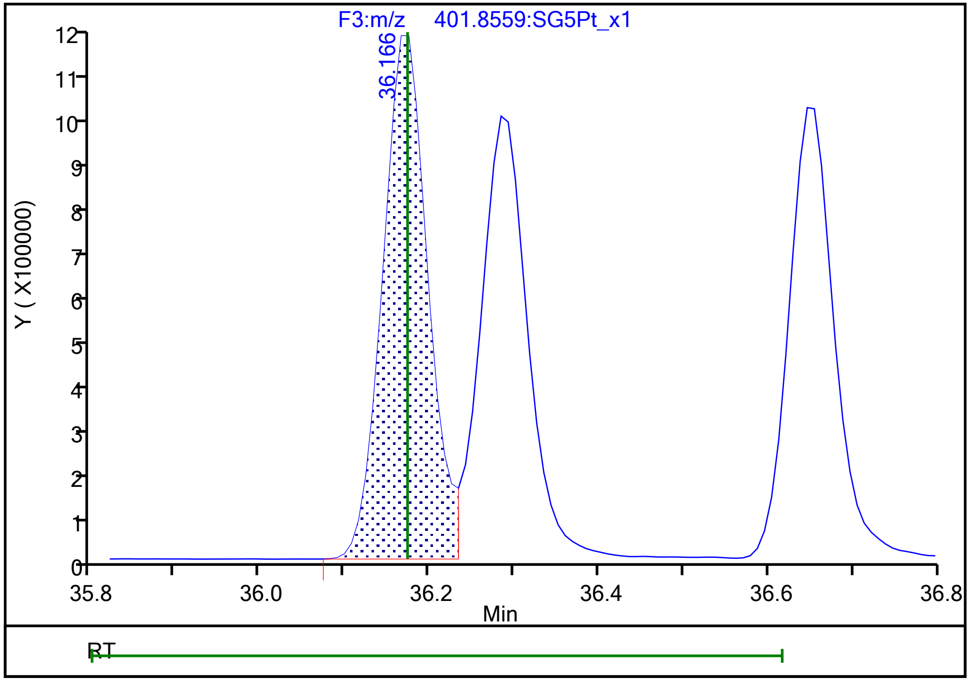

Reviewer: stephensk, 03-Jun-2020 16:26:30

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 10:10:49

Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d
Injection Date: 03-Jun-2020 14:05:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 3
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT: 36.65
Area: 3787421
Amount: 100.0000
Amount Units: pg/ul

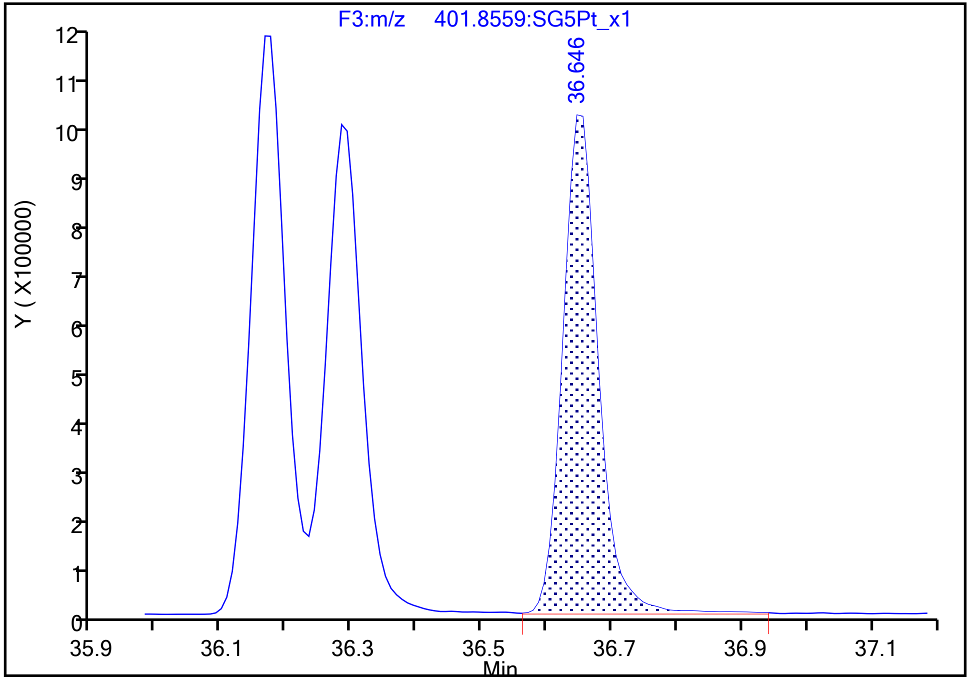

Manual Integration Results

RT: 36.28
Area: 3803630
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Amount Units: pg/ul

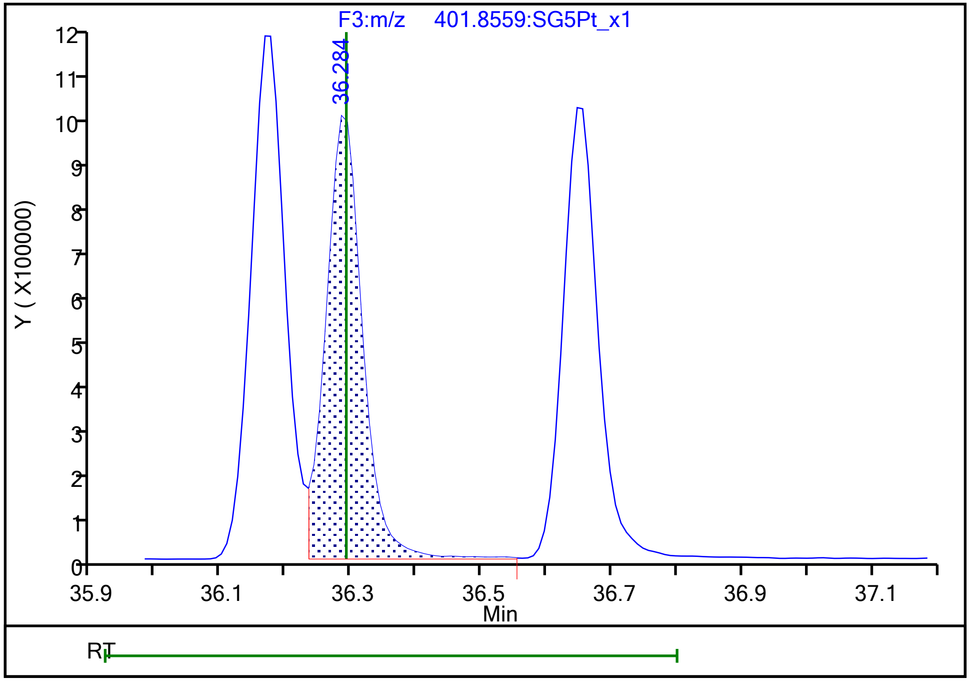

Reviewer: stephensk, 03-Jun-2020 16:26:37

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Column Dia: 0.32 mm

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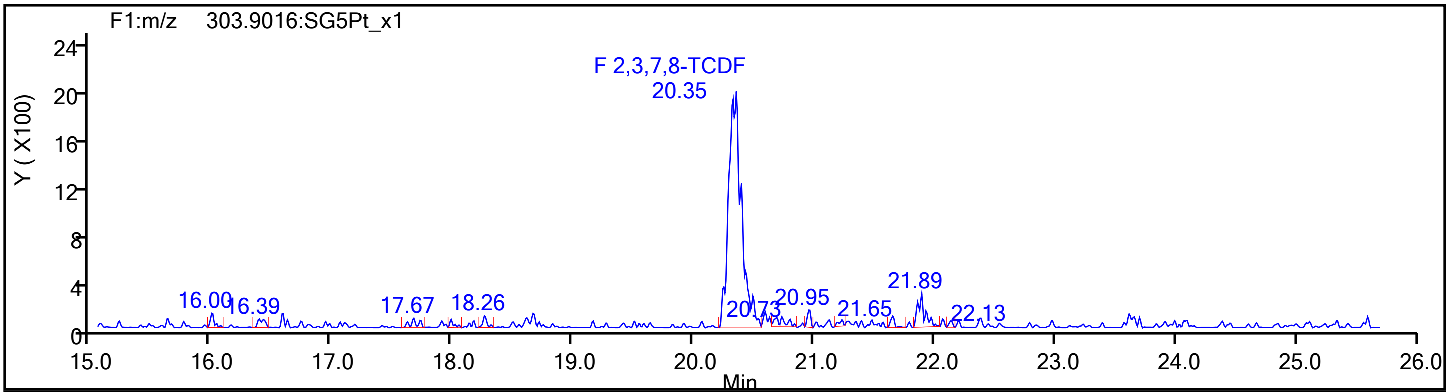

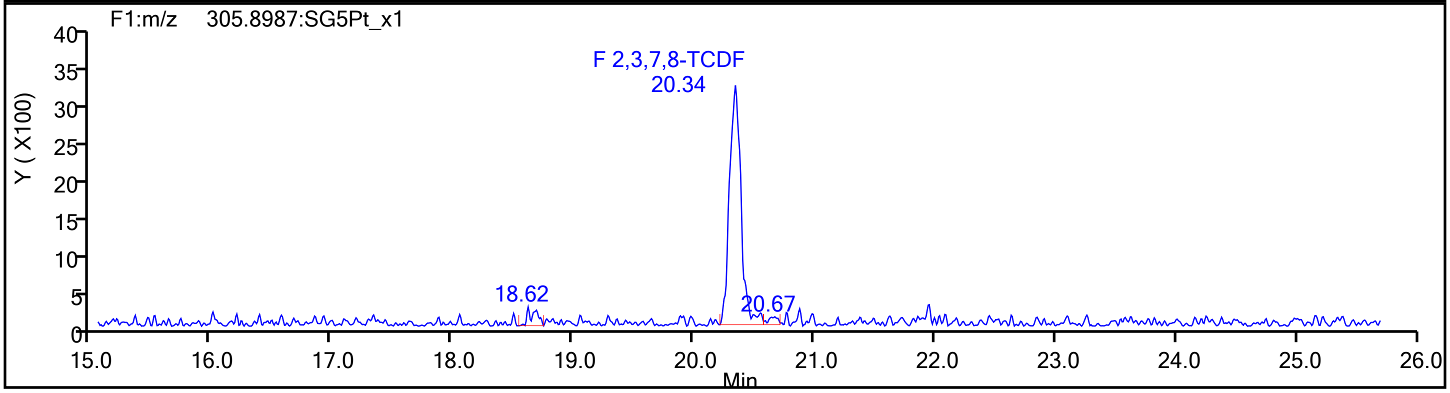

TCDF Standards

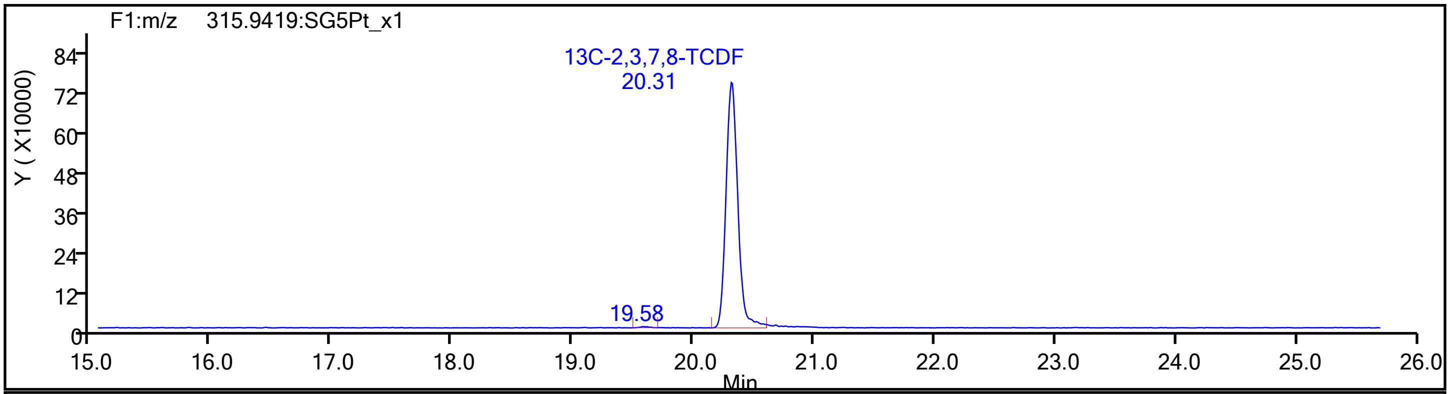

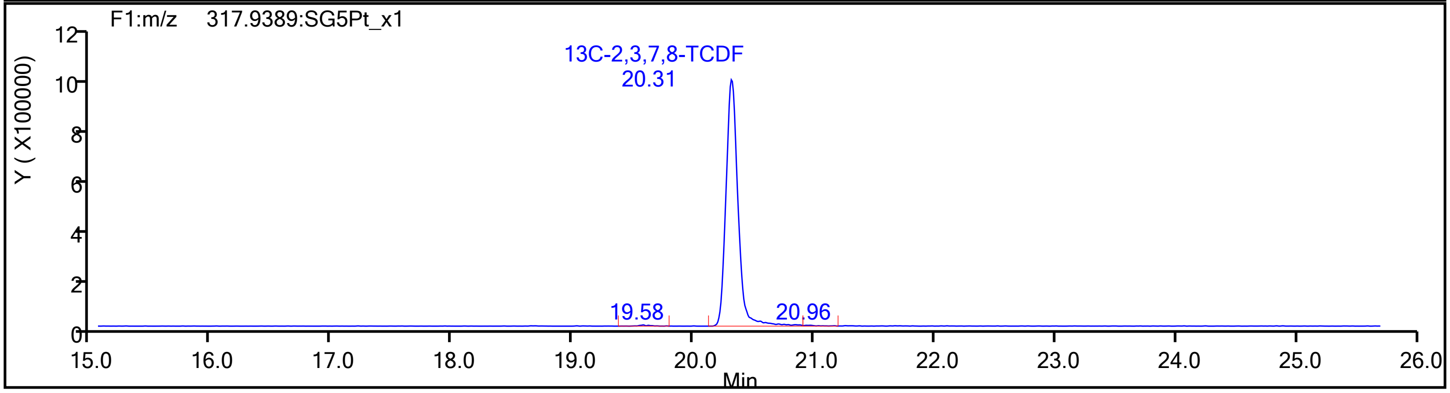

Report Date: 05-Jun-2020 10:10:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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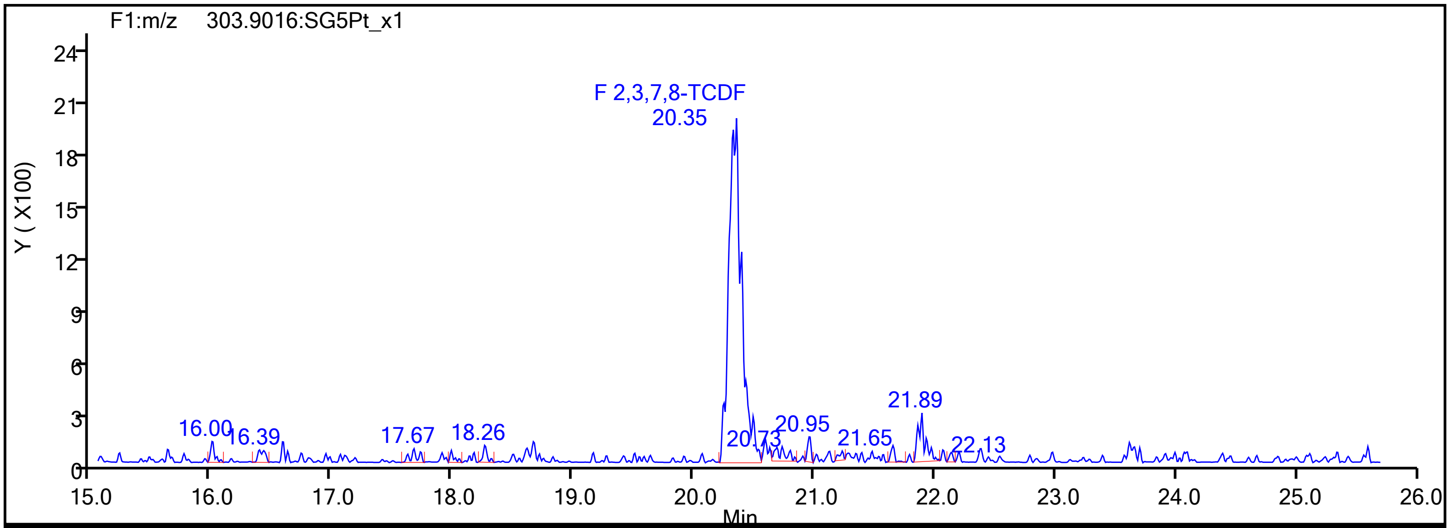

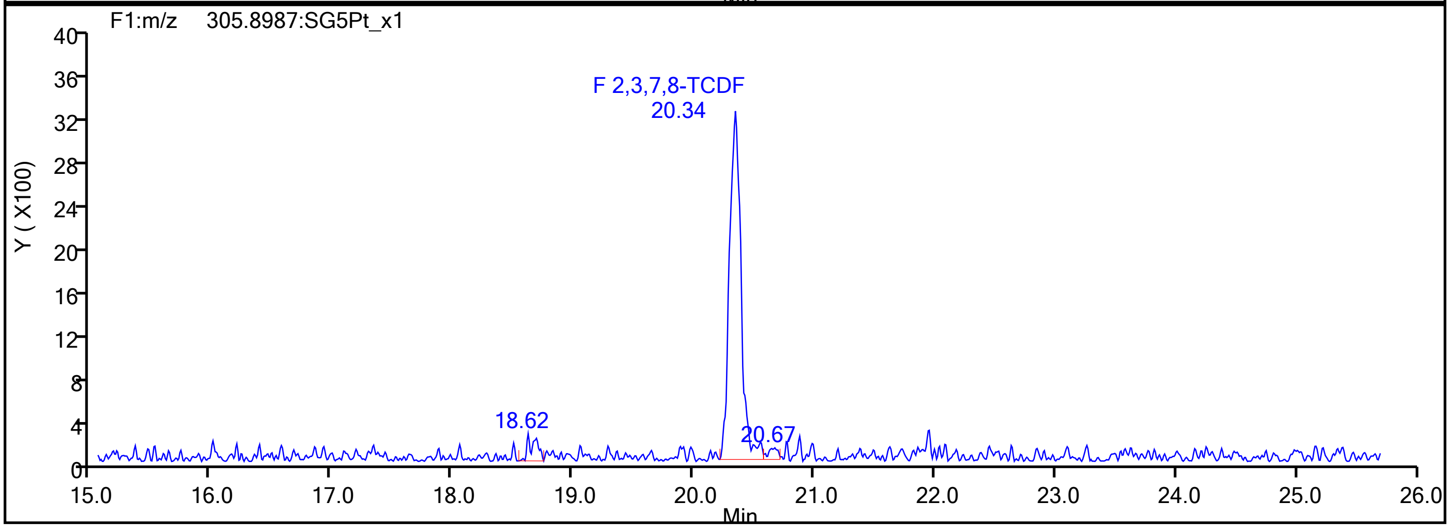

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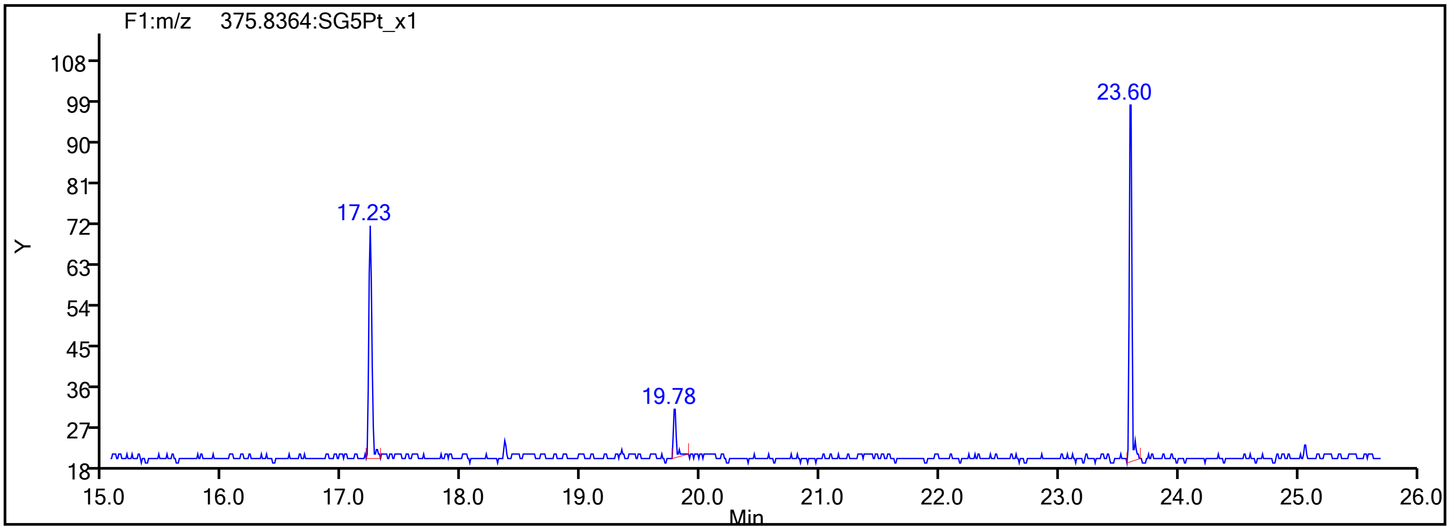

Report Date: 05-Jun-2020 10:10:49
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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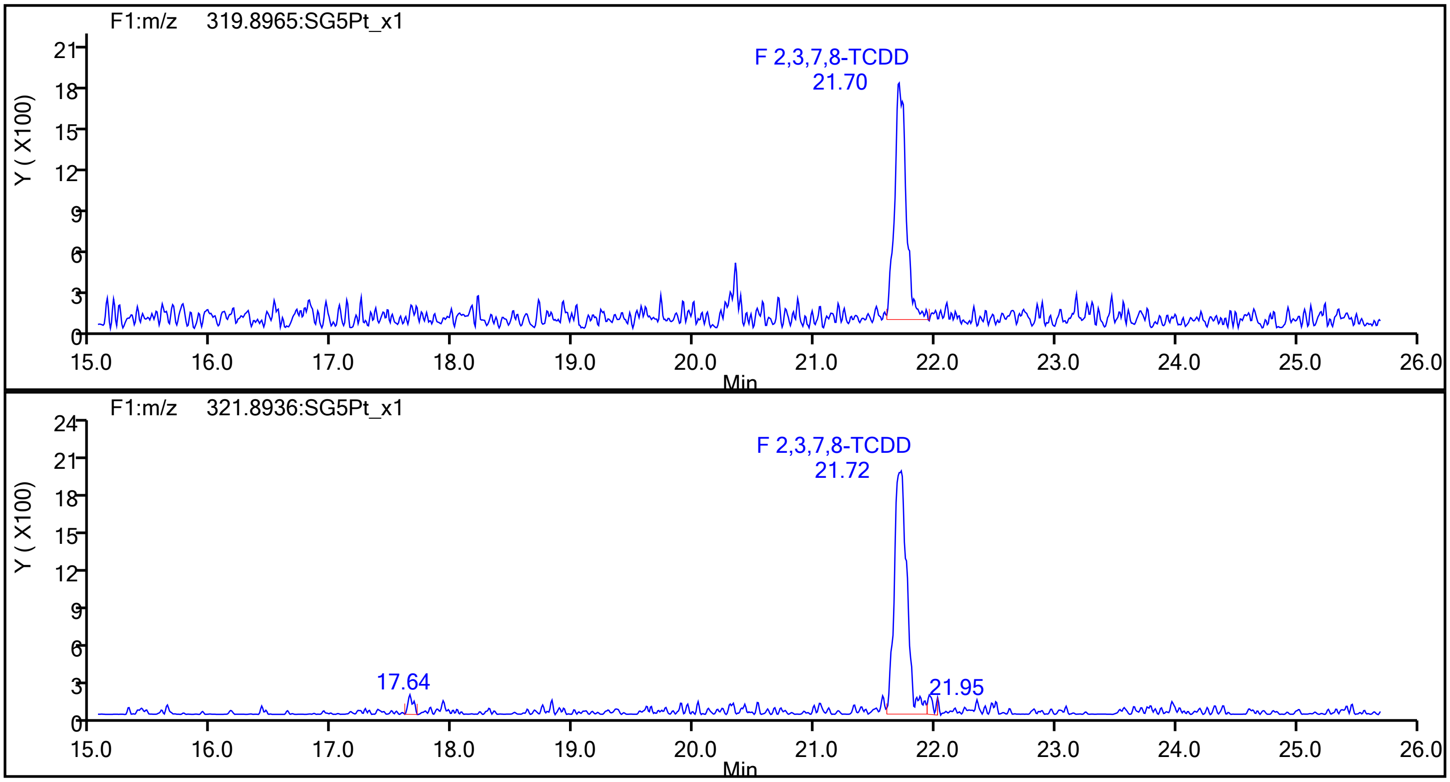

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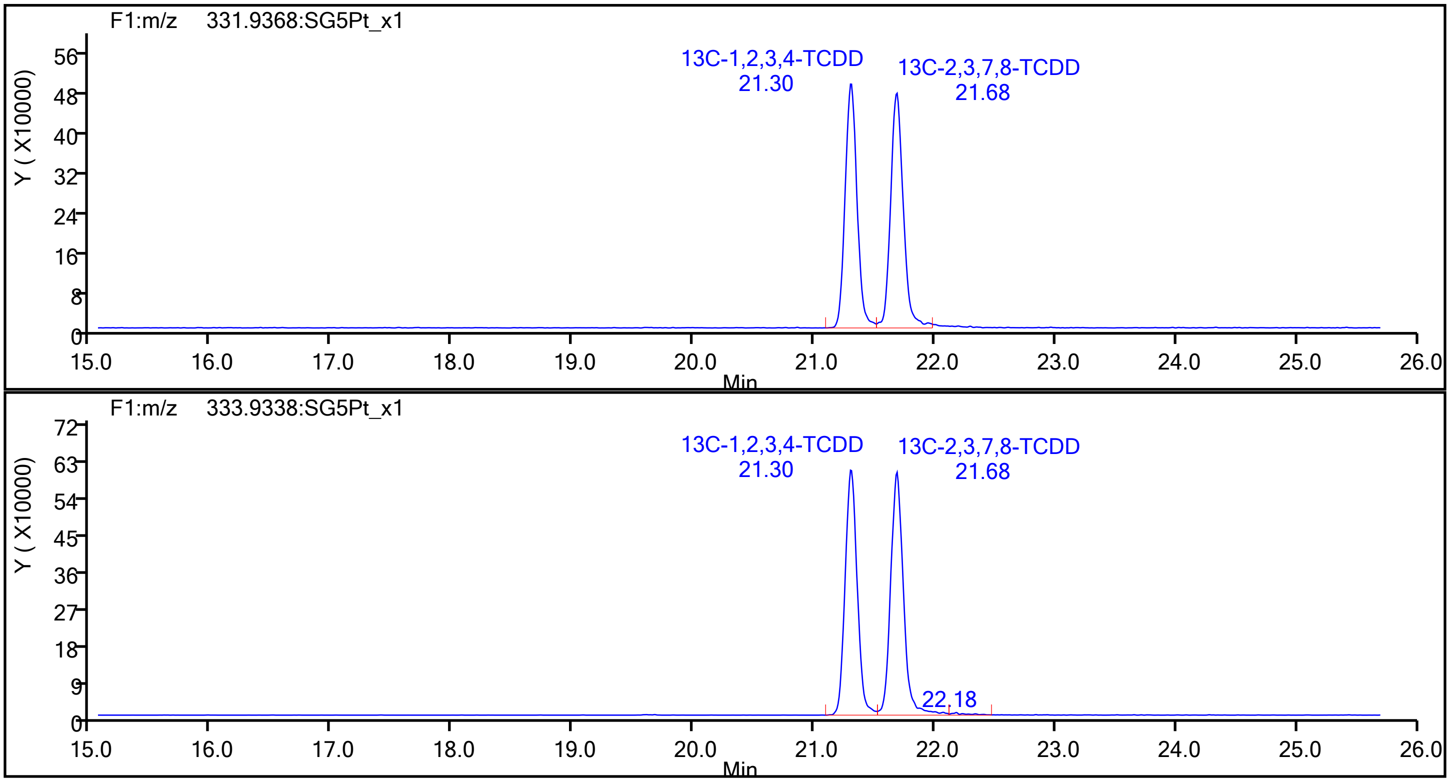

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

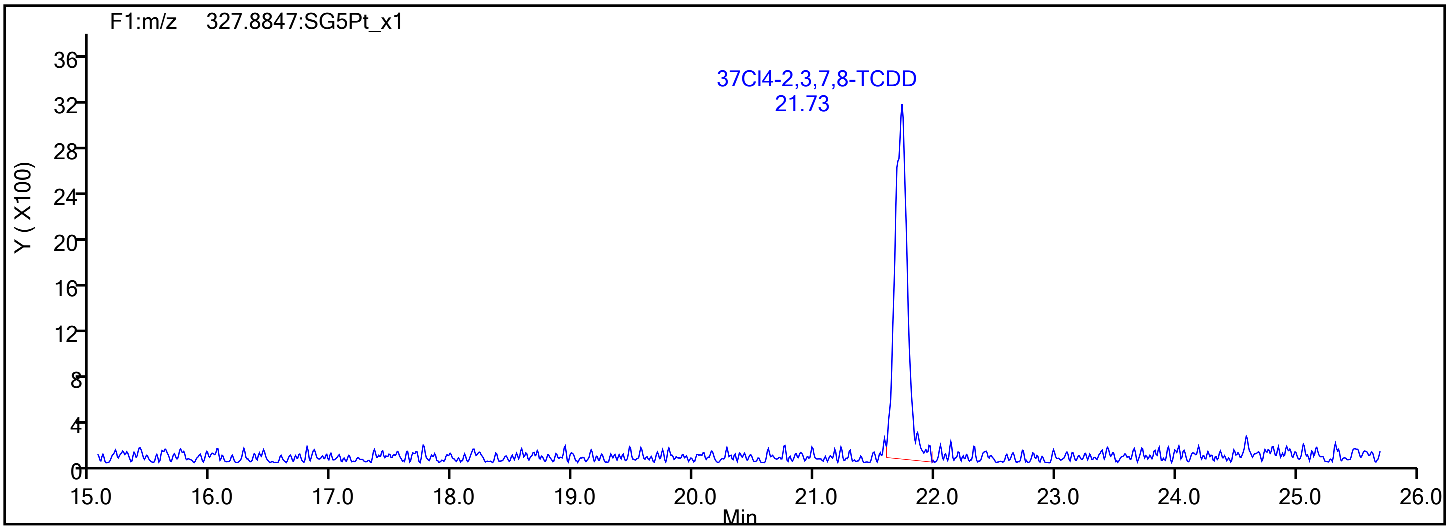

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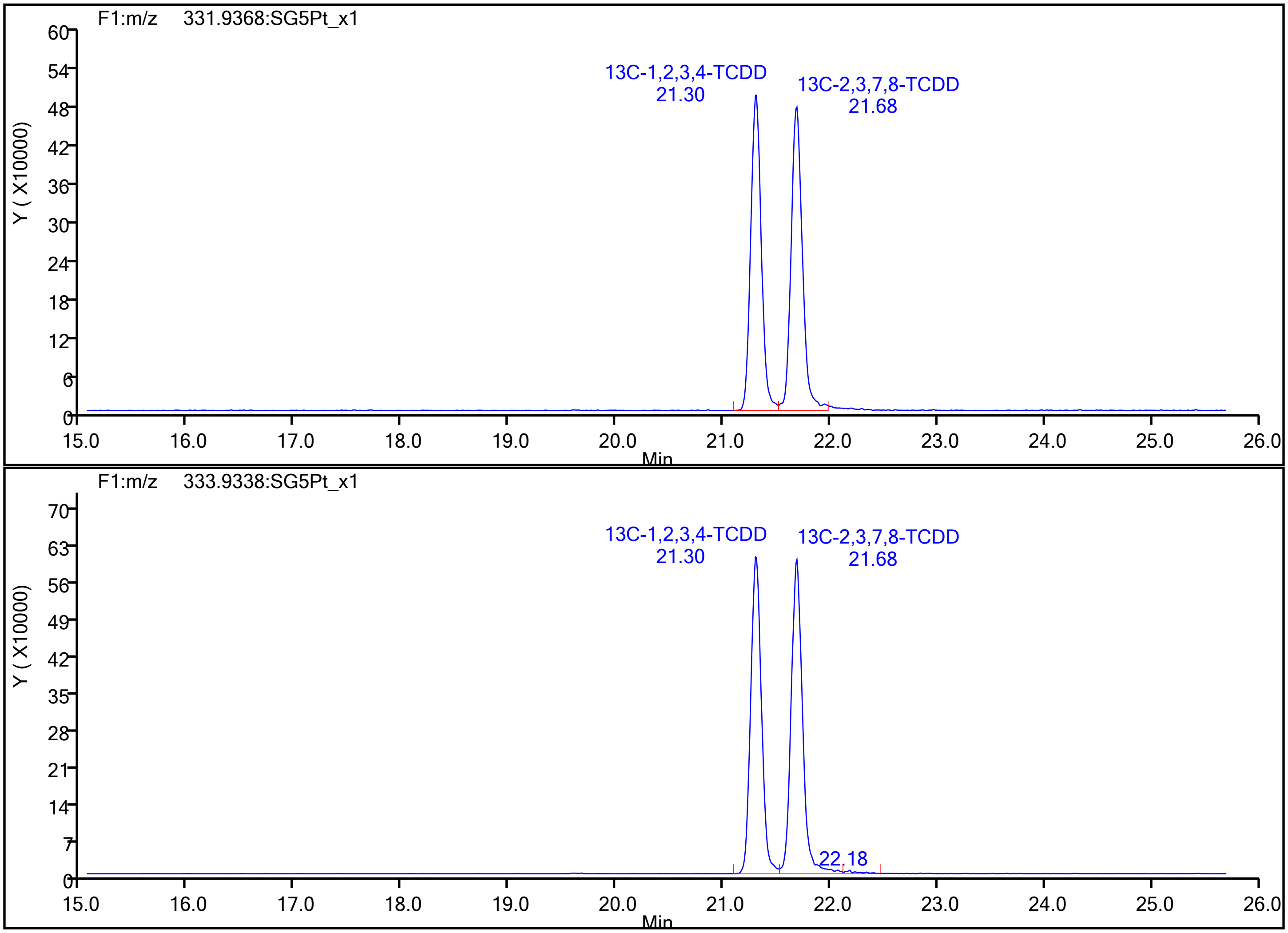

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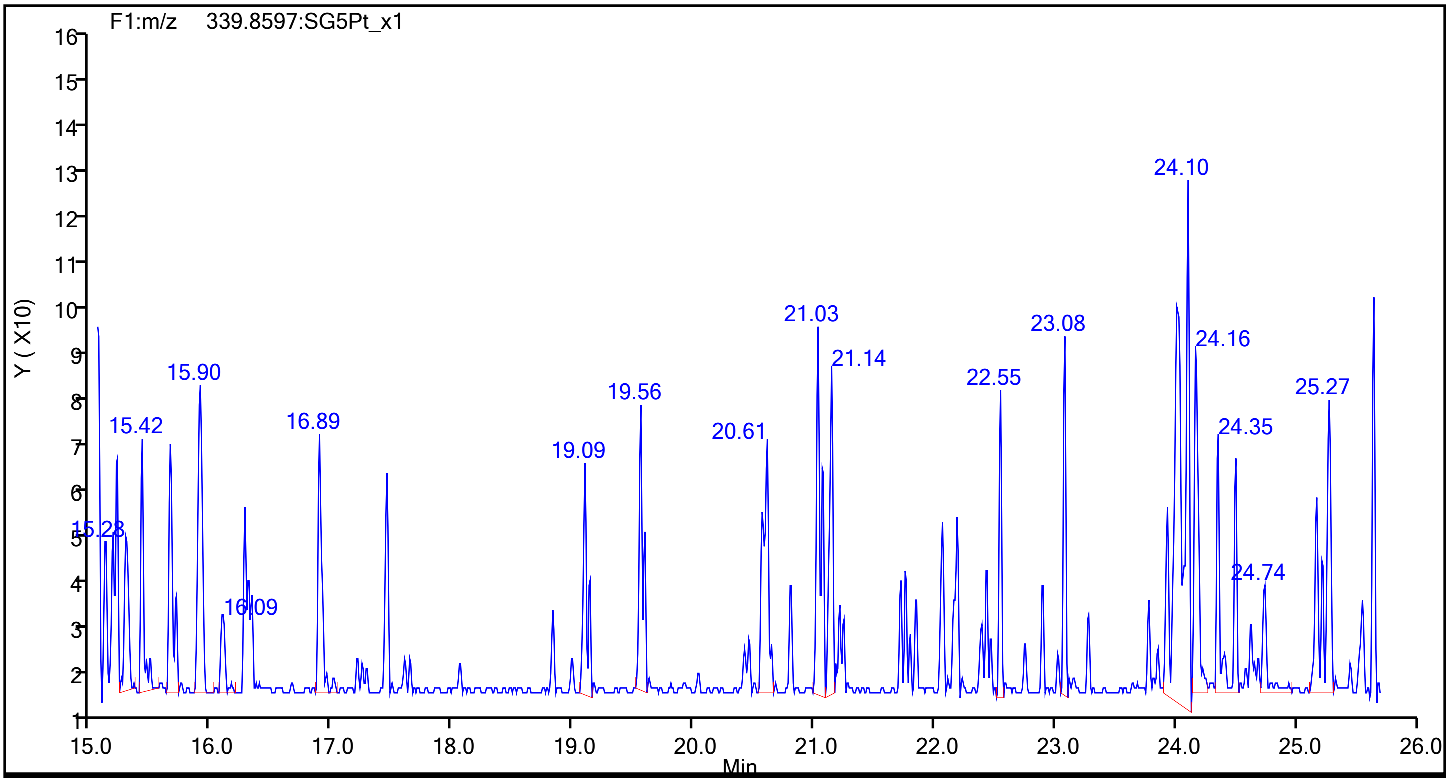

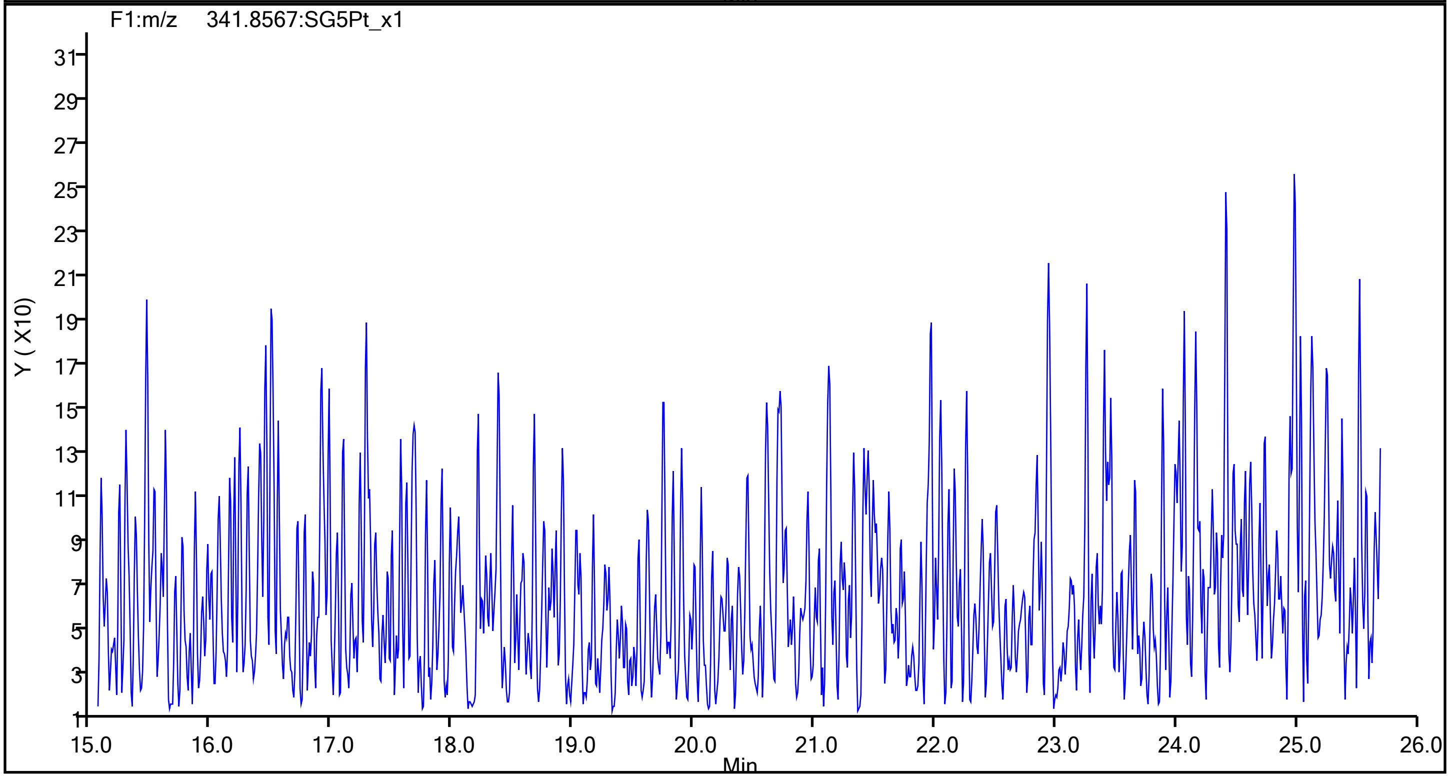

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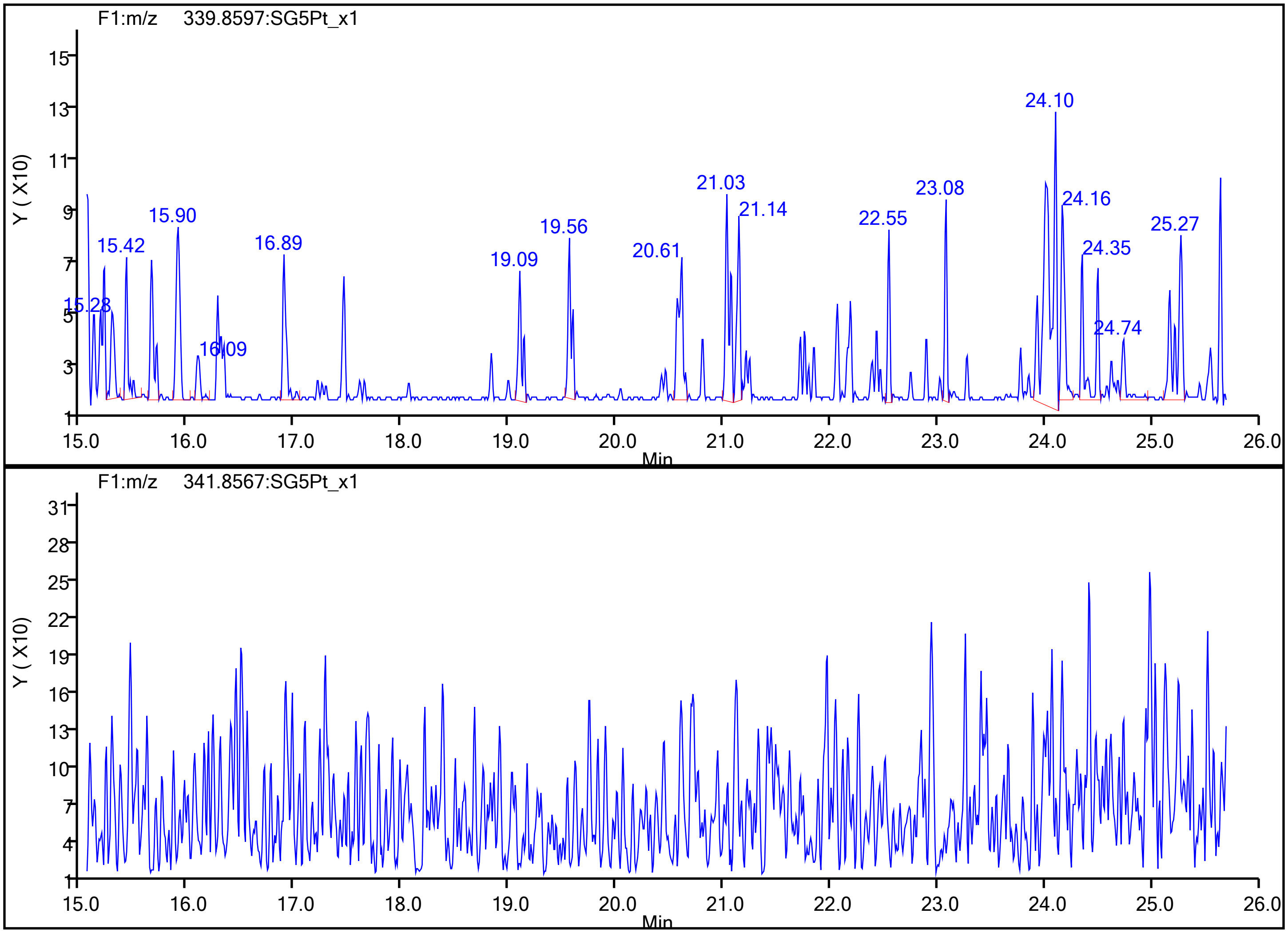

F1 PeCDFs Interference Mass

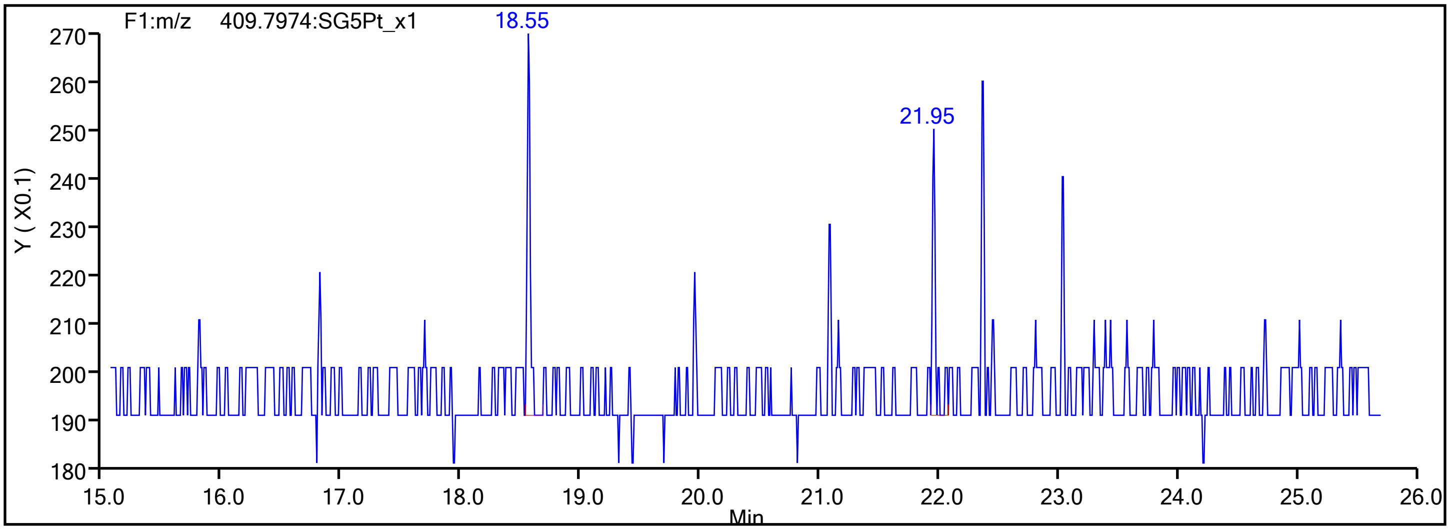

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Eurofins TestAmerica, Sacramento

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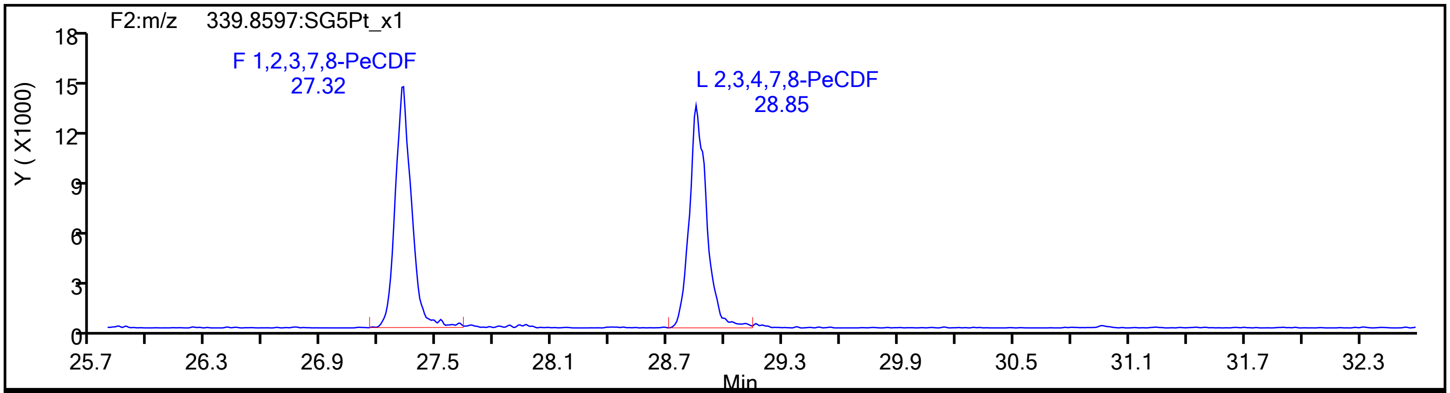

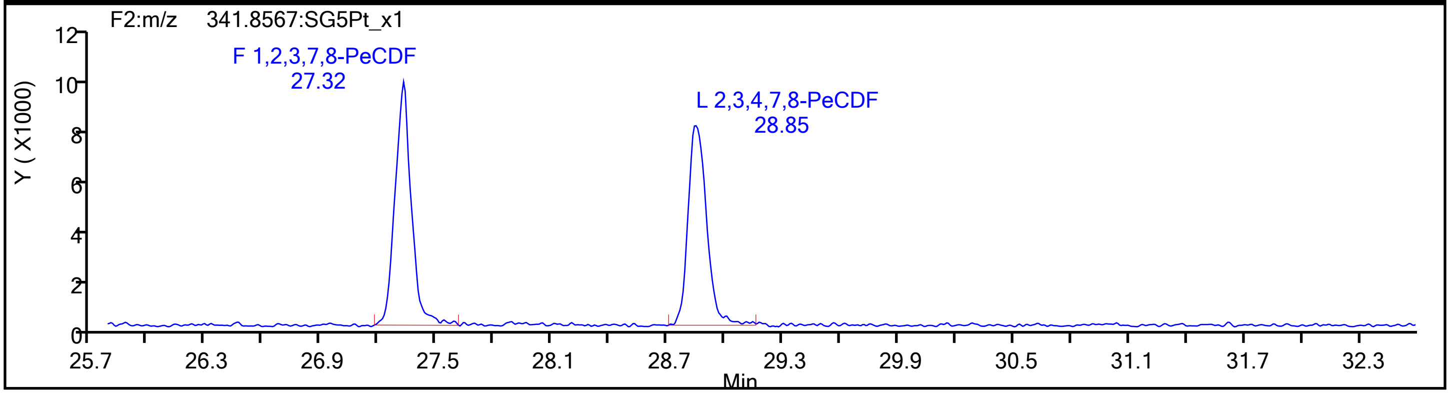

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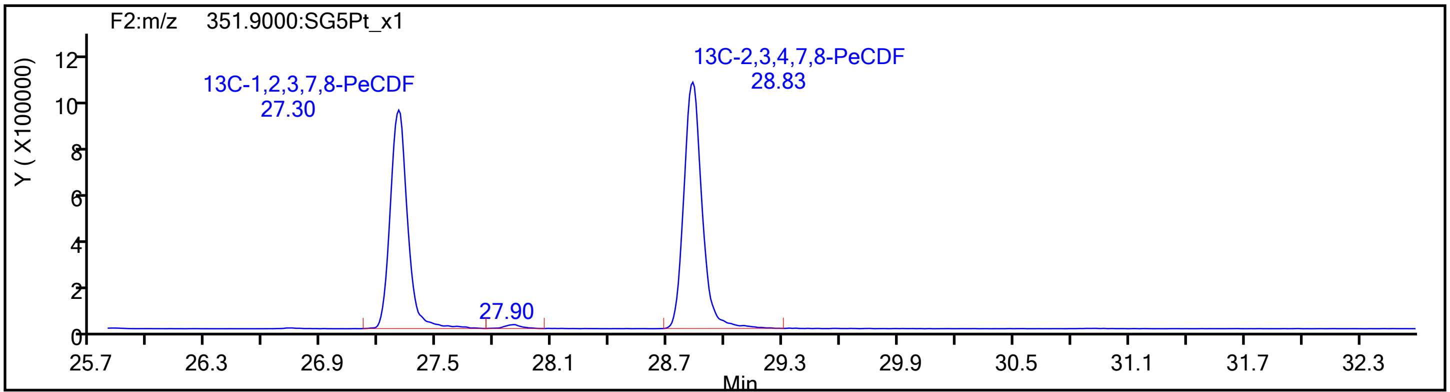

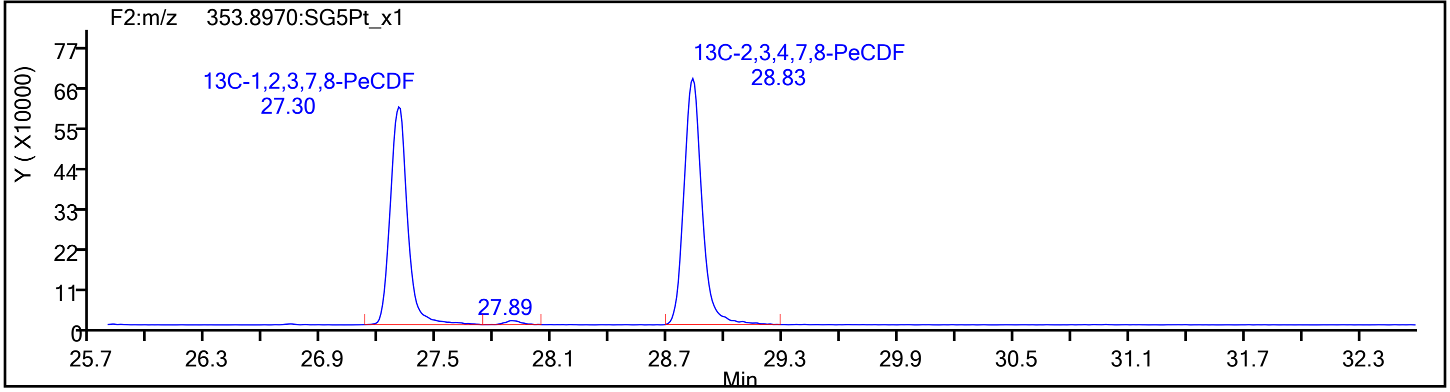

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Eurofins TestAmerica, Sacramento

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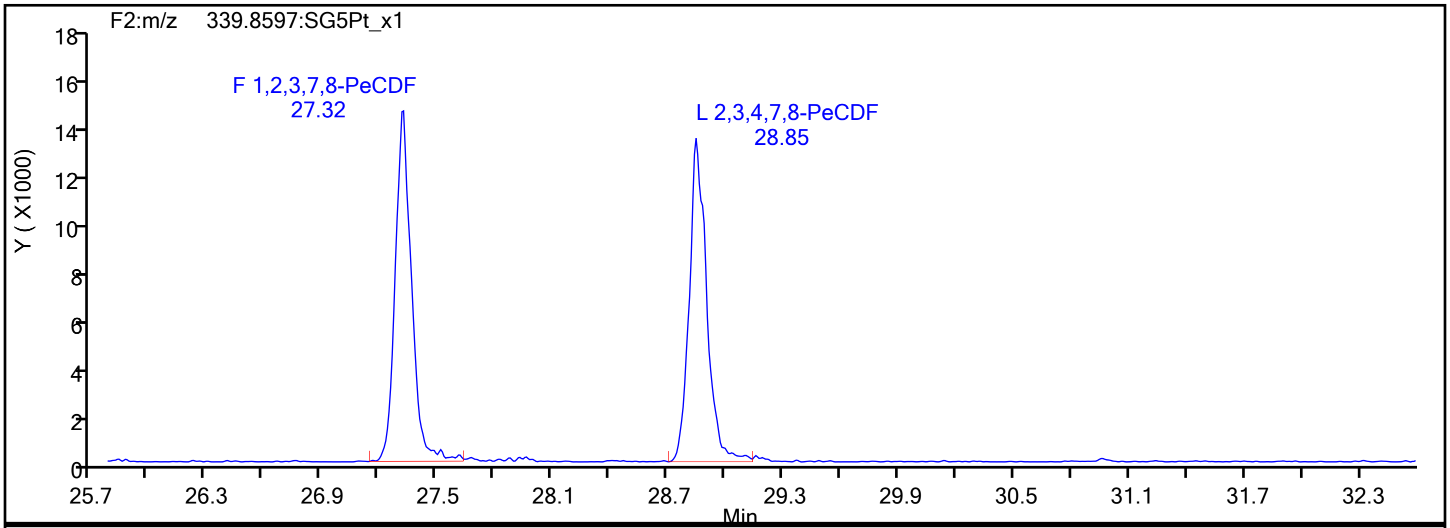

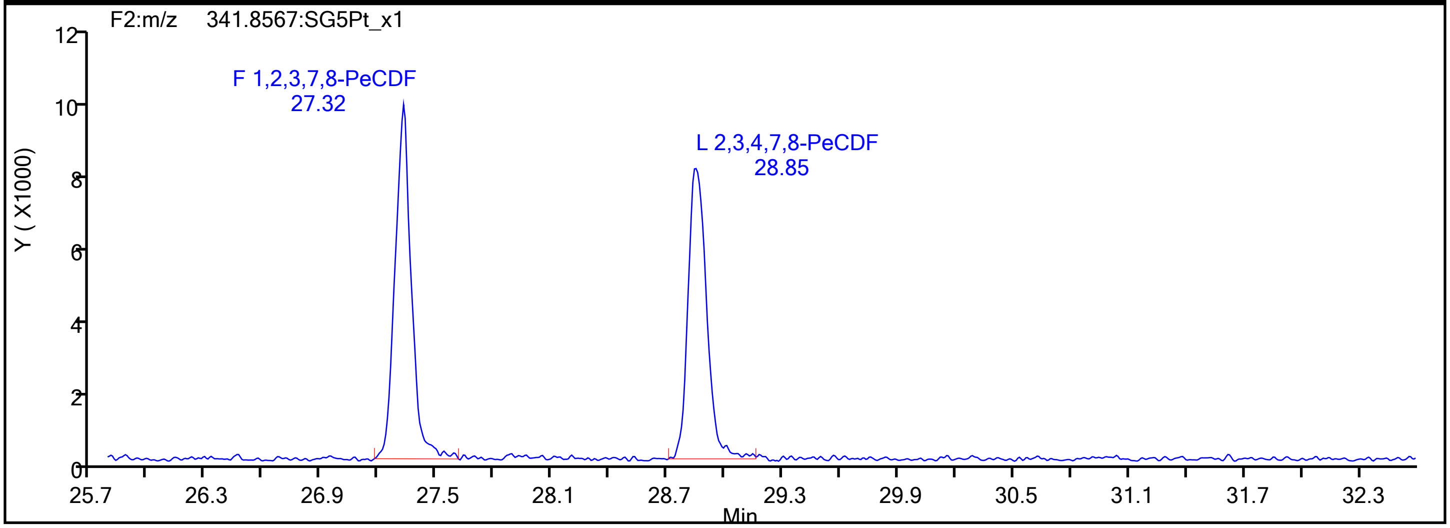

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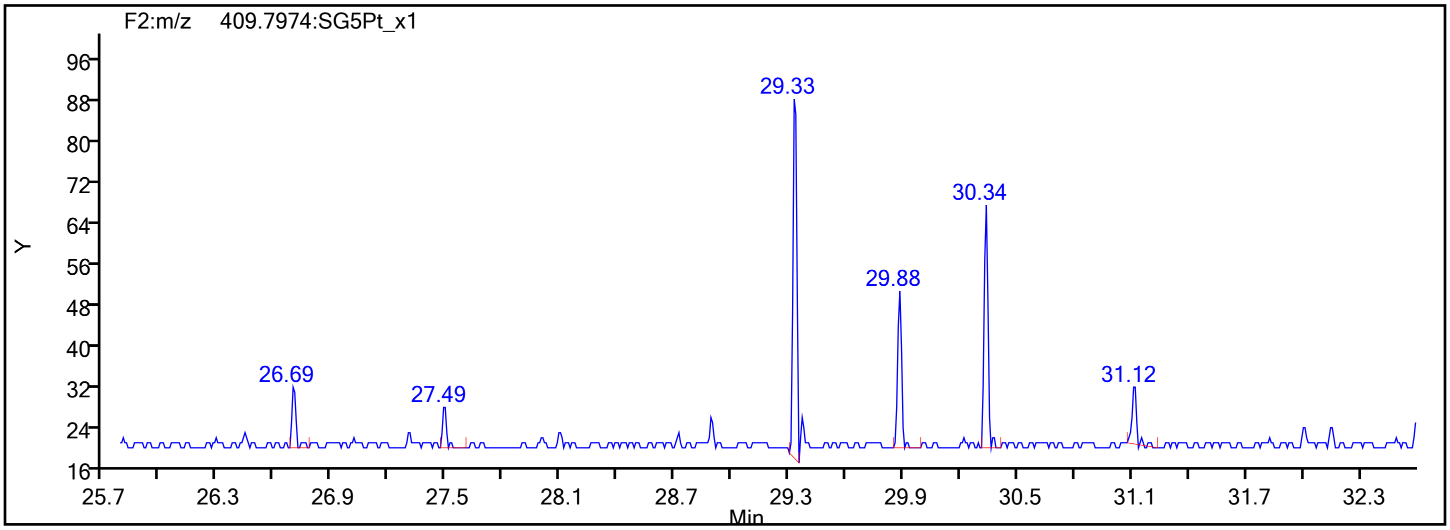

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Eurofins TestAmerica, Sacramento

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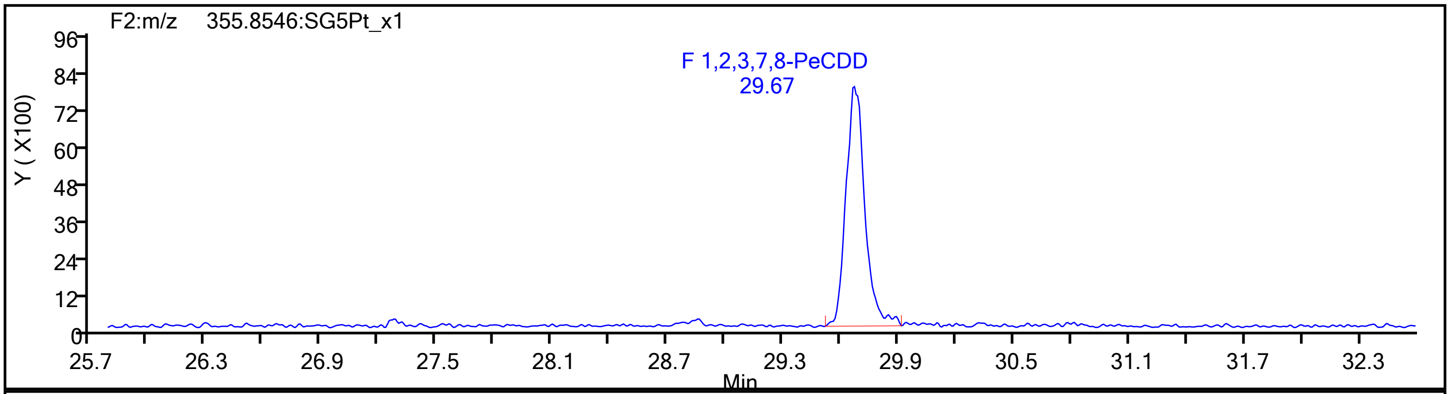

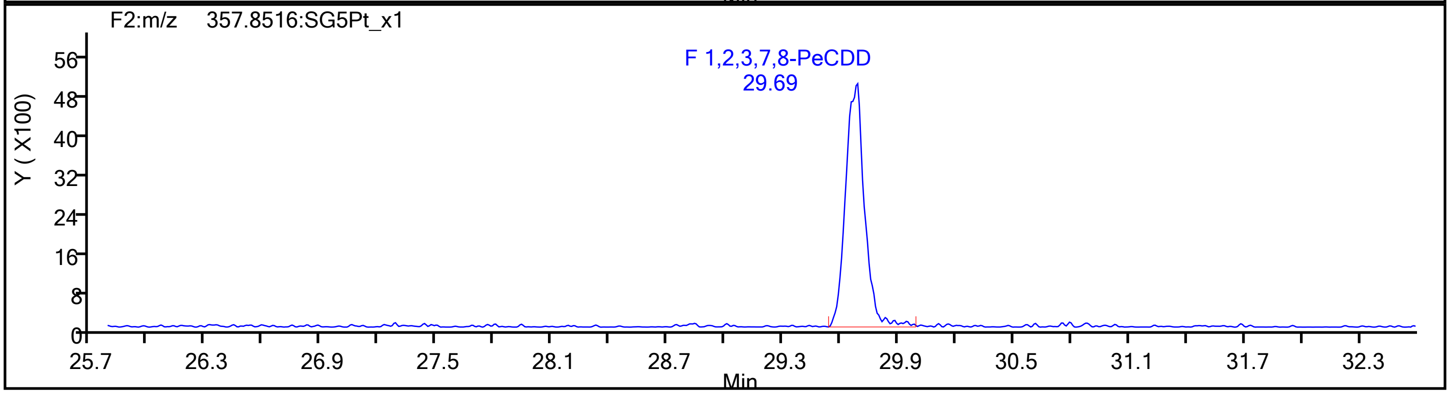

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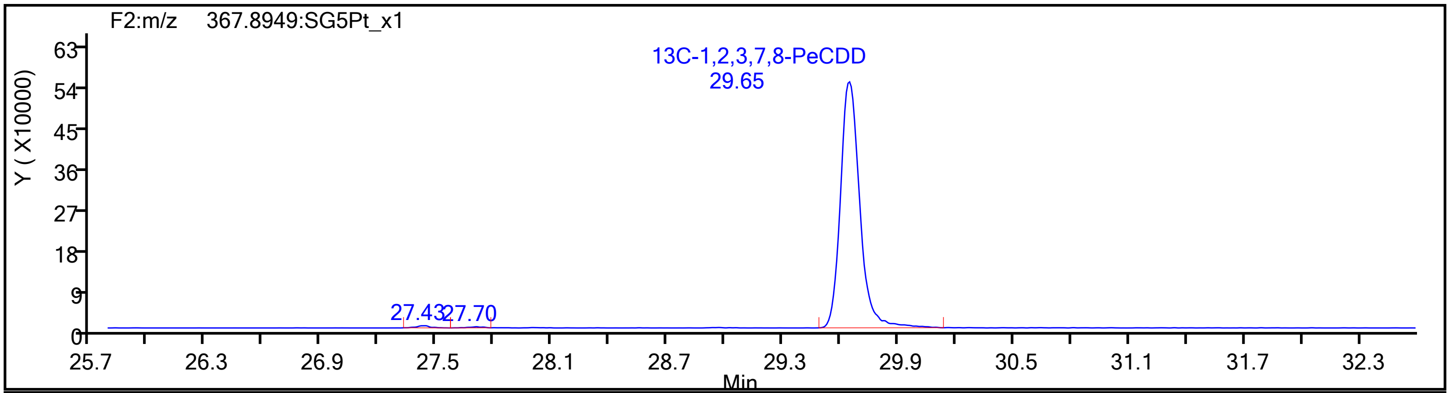

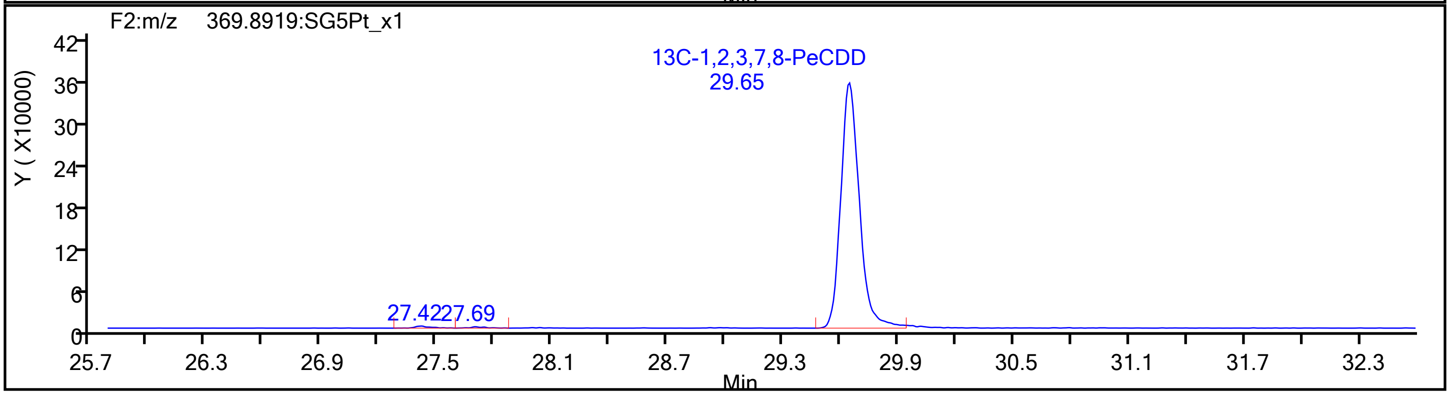

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Eurofins TestAmerica, Sacramento

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HxCDF

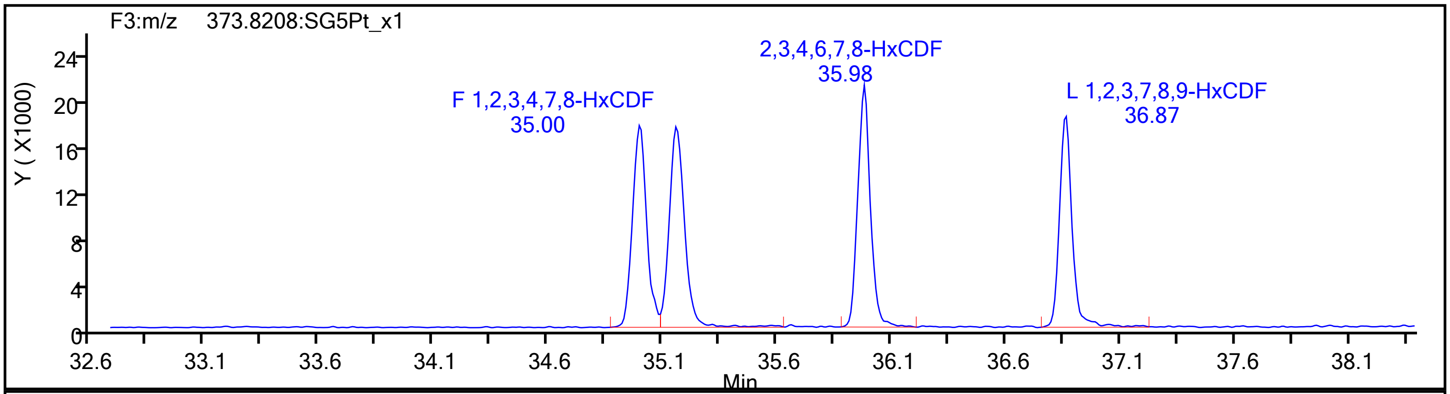

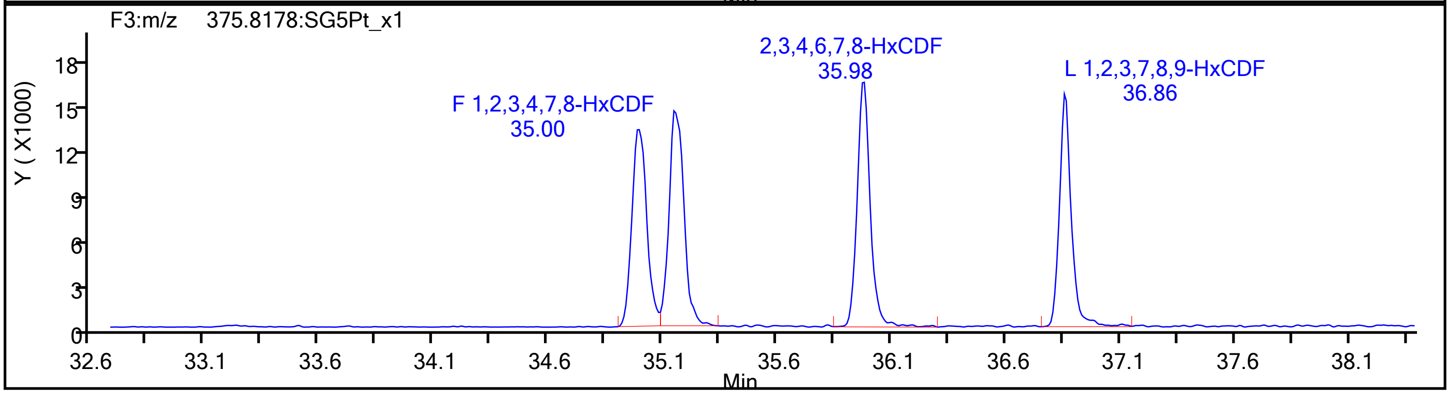

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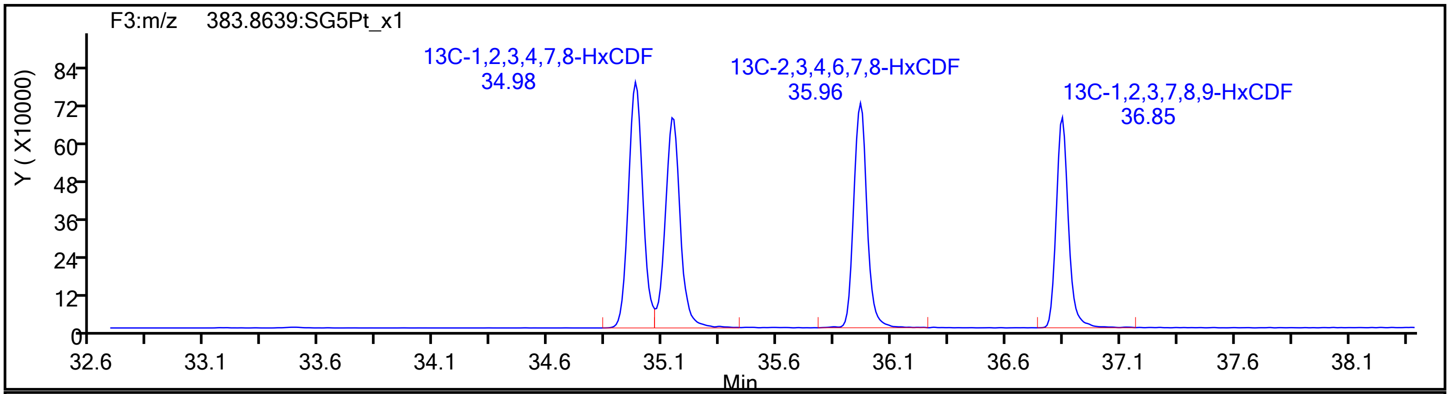

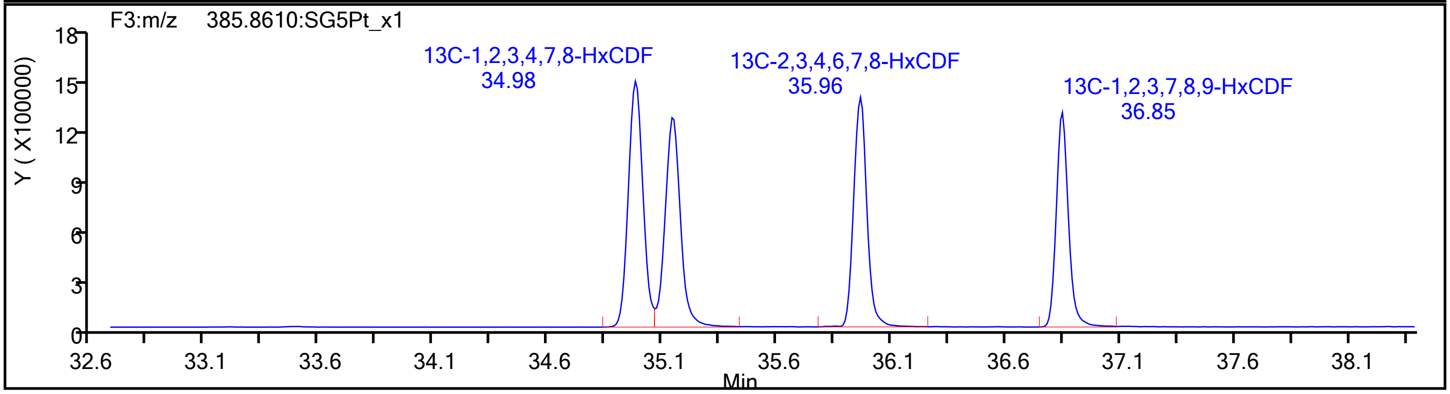

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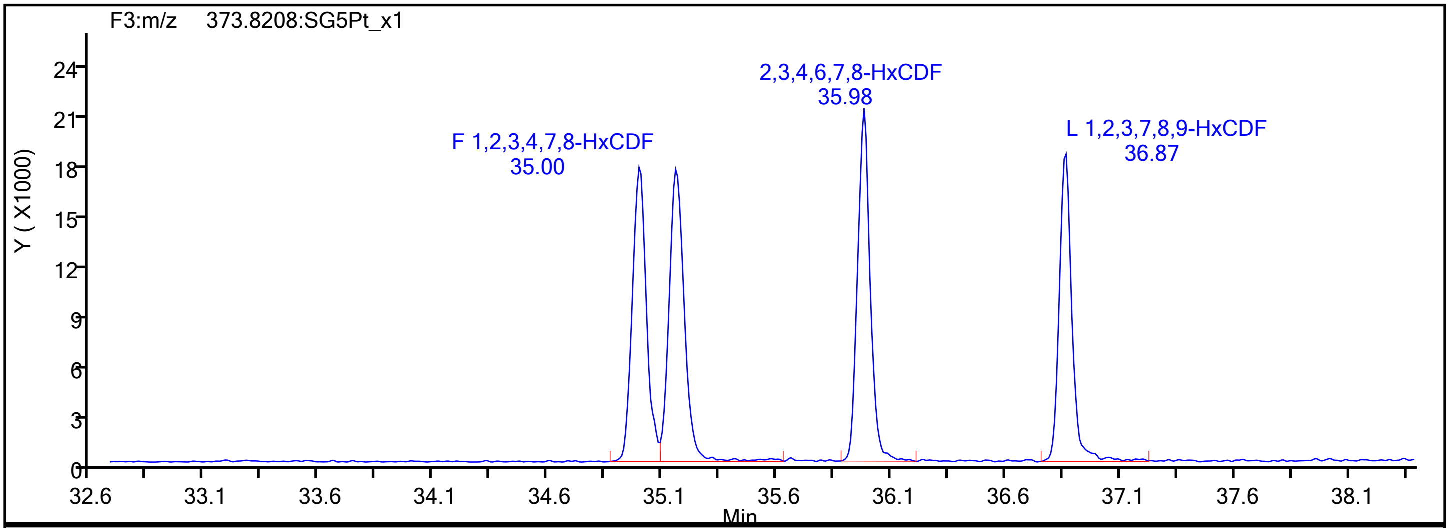

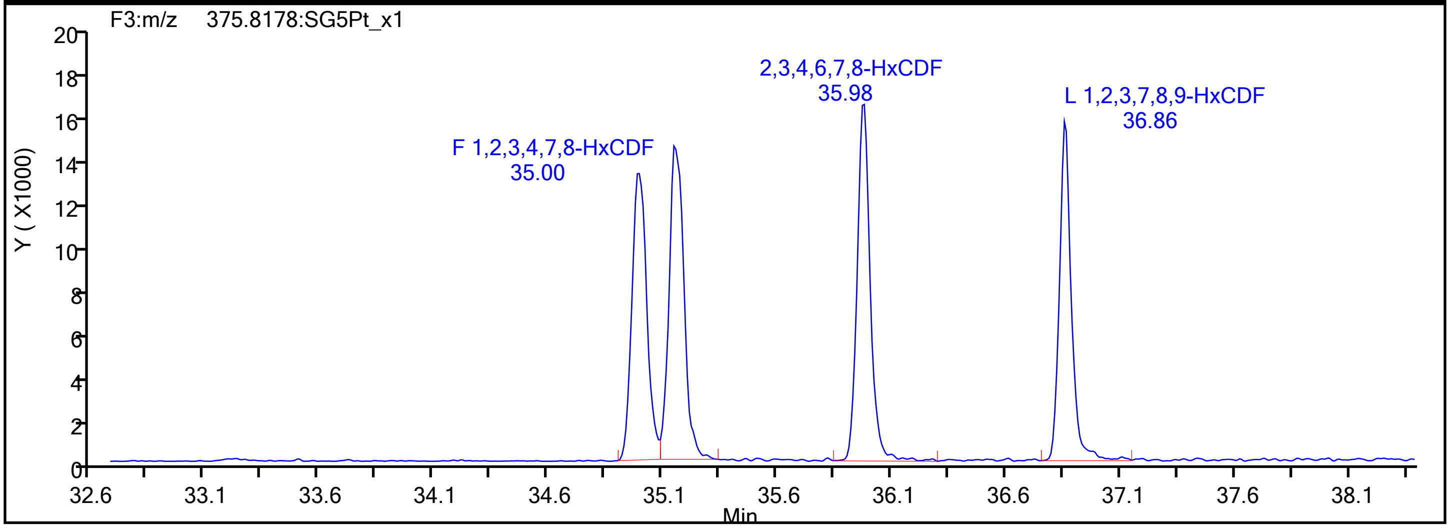

HxCDF Interference Mass

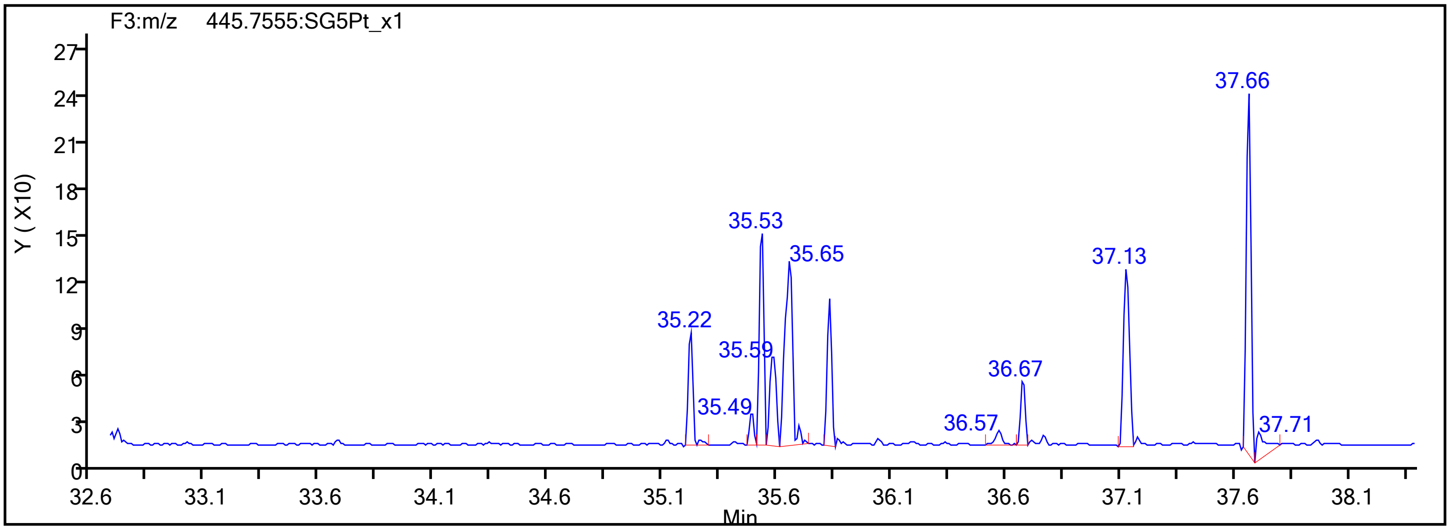

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Eurofins TestAmerica, Sacramento

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HxCDD

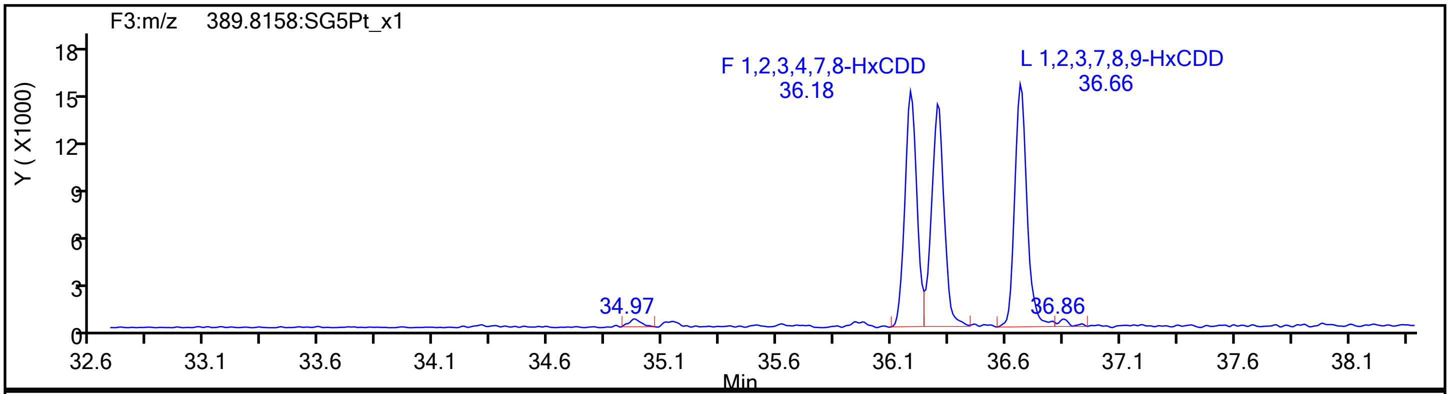

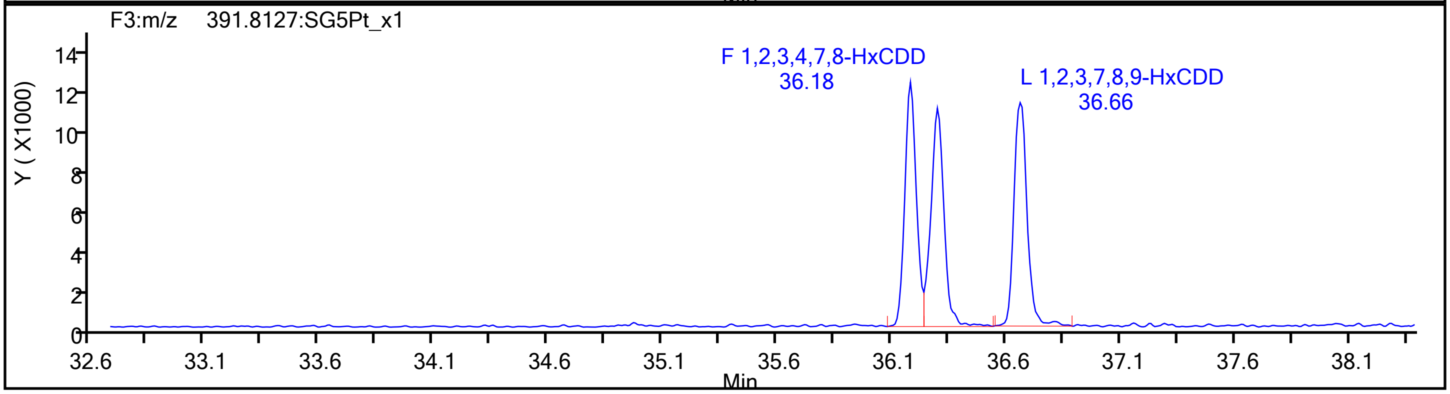

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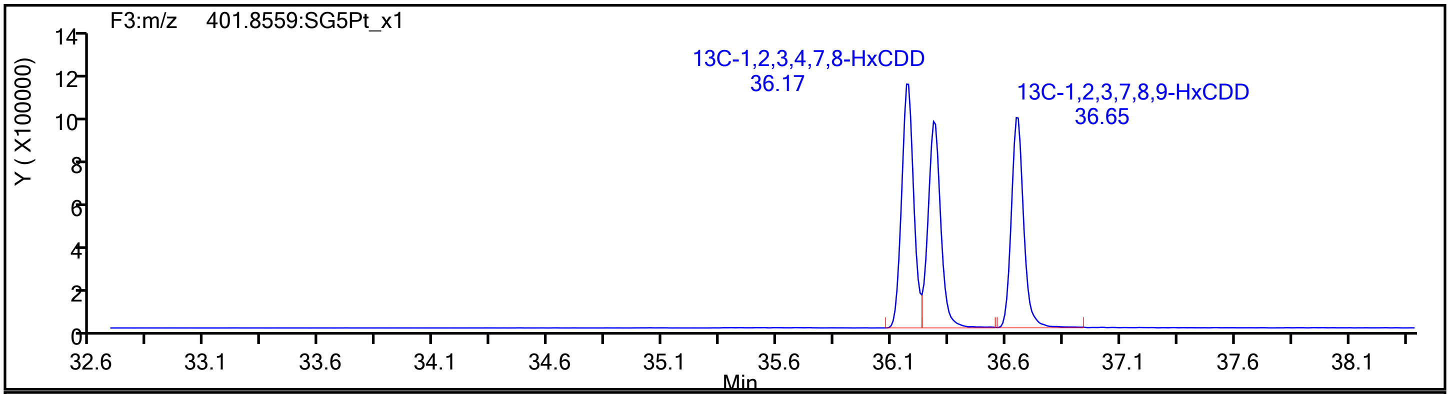

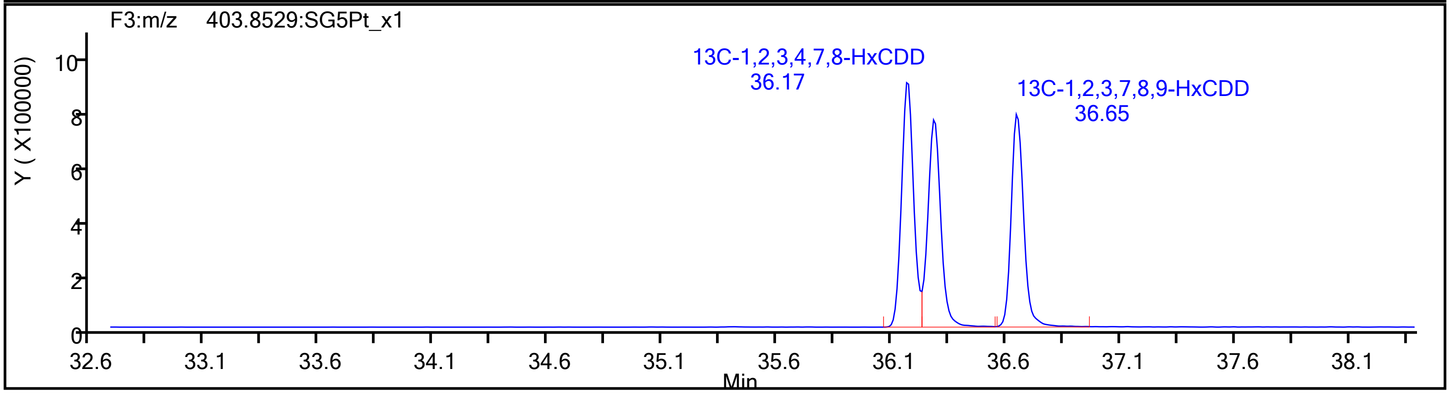

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Eurofins TestAmerica, Sacramento

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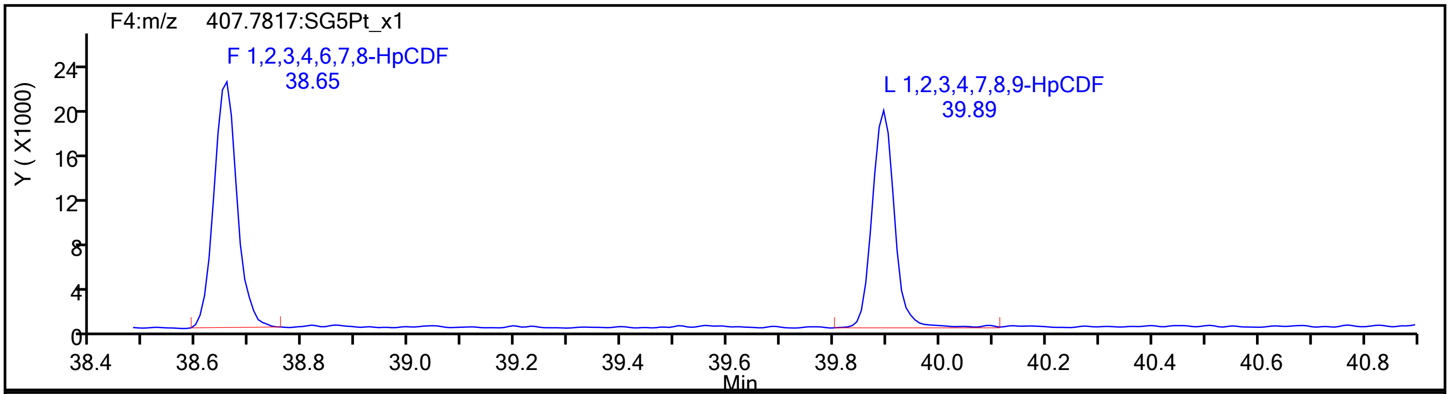

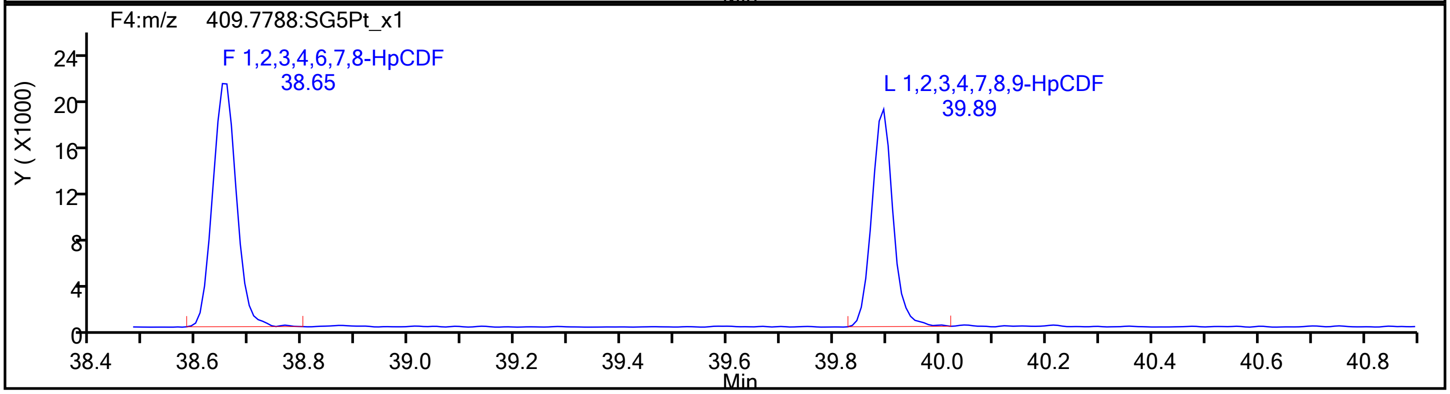

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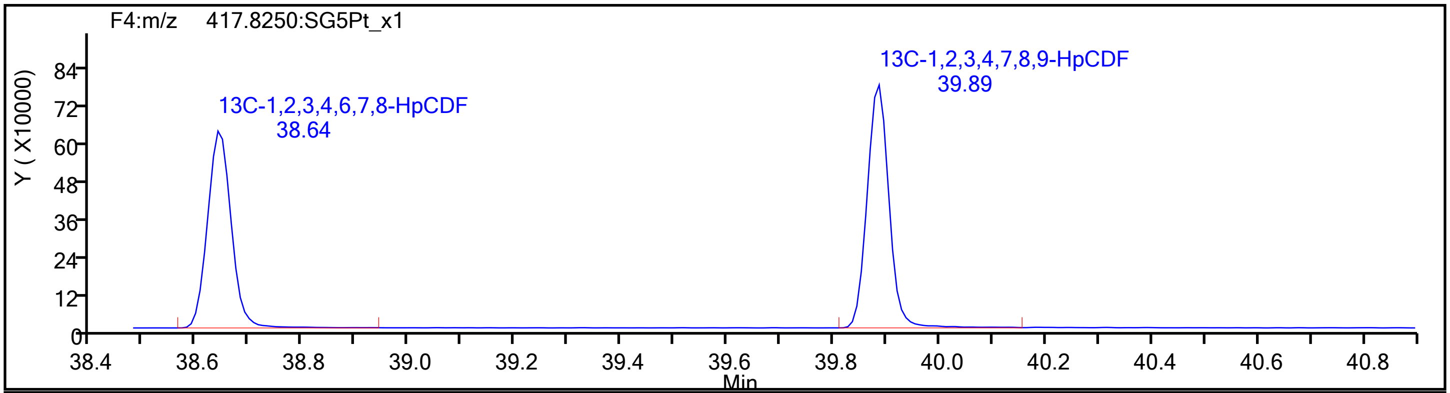

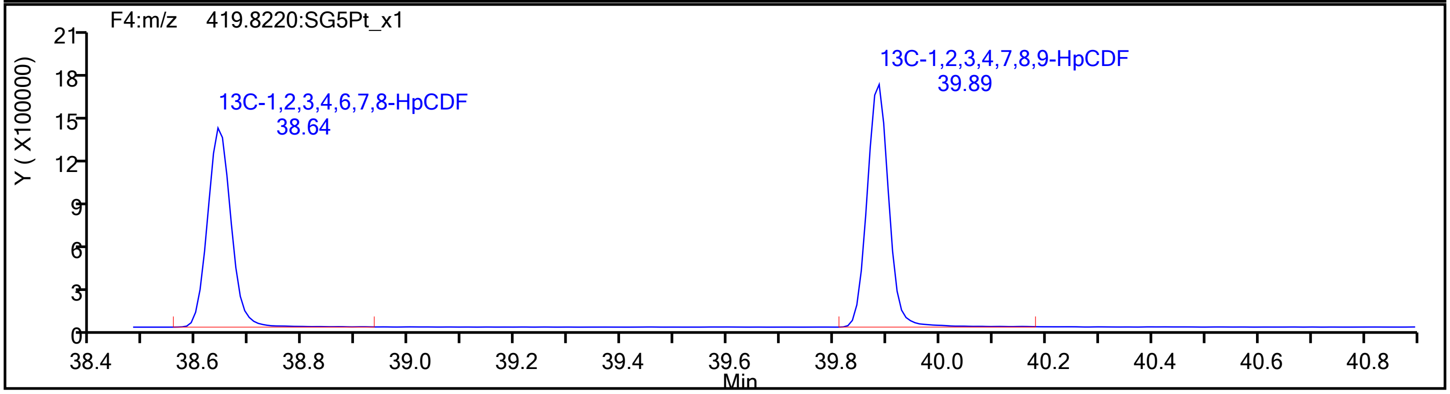

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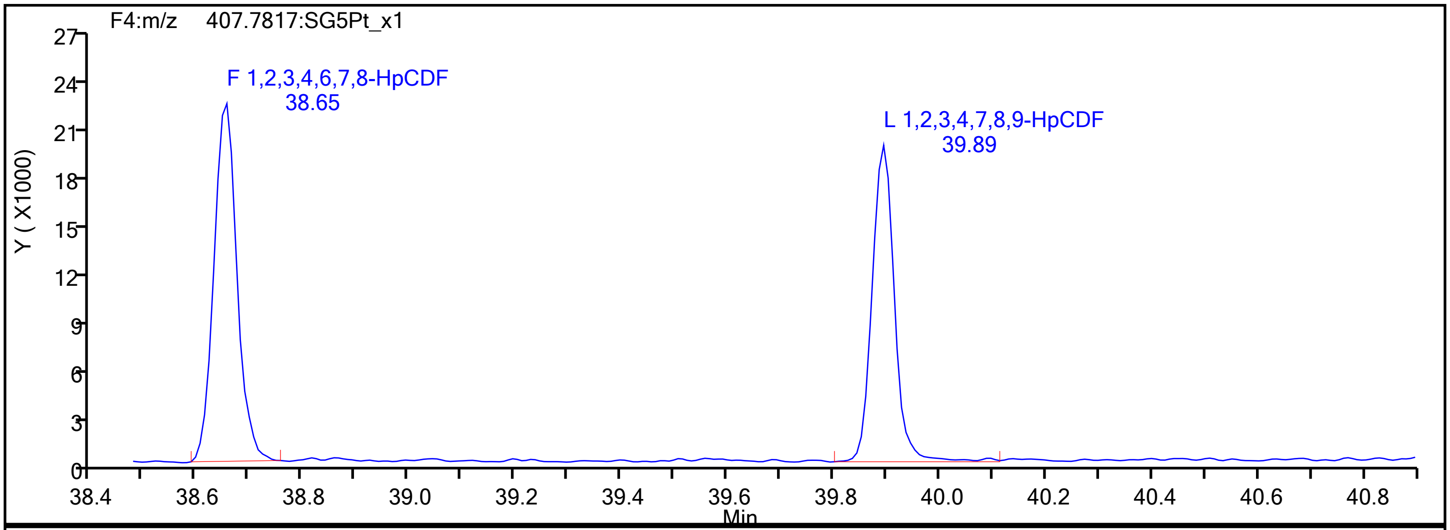

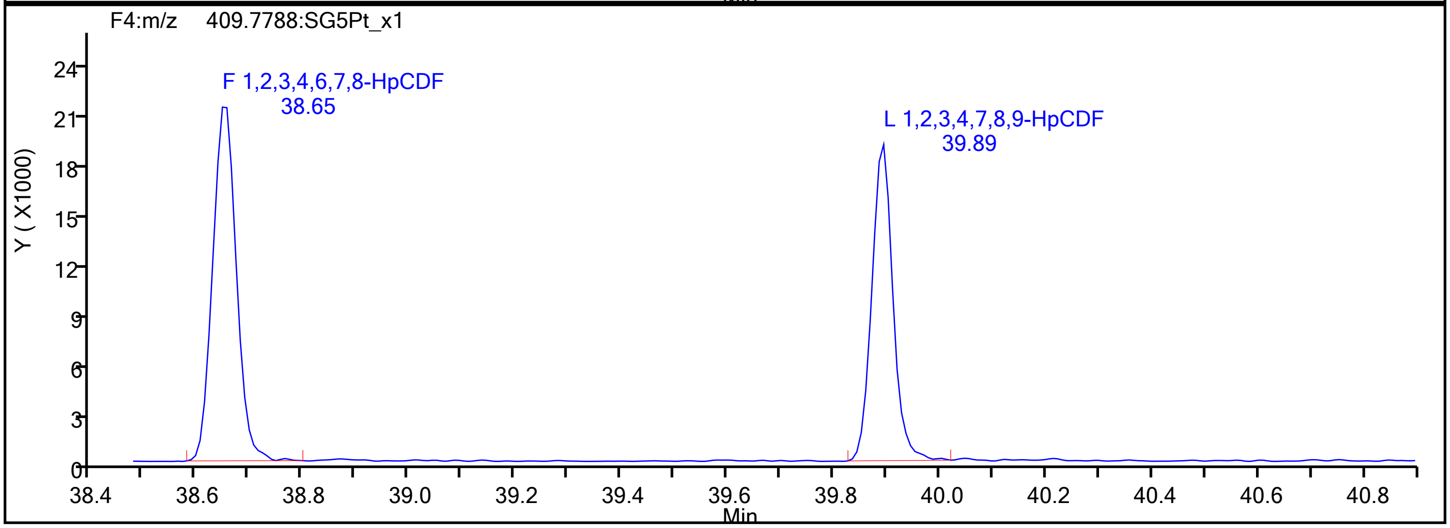

HpCDF Interference Mass

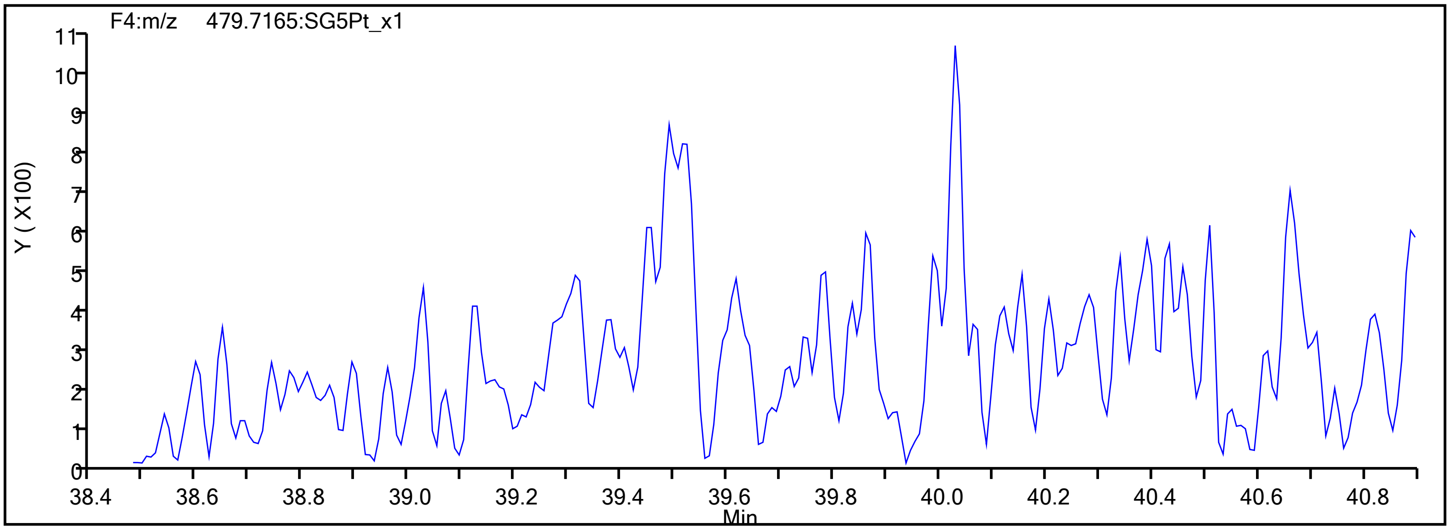

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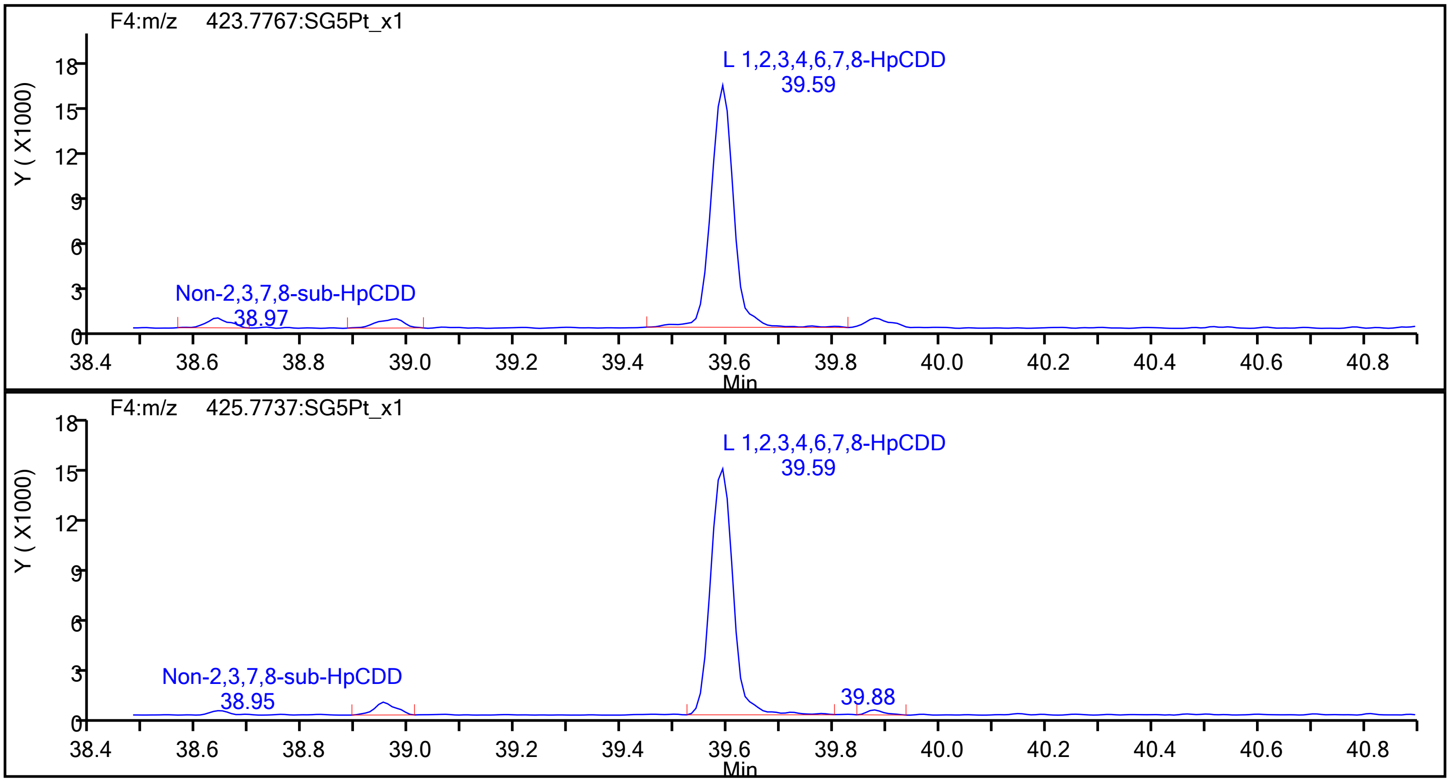

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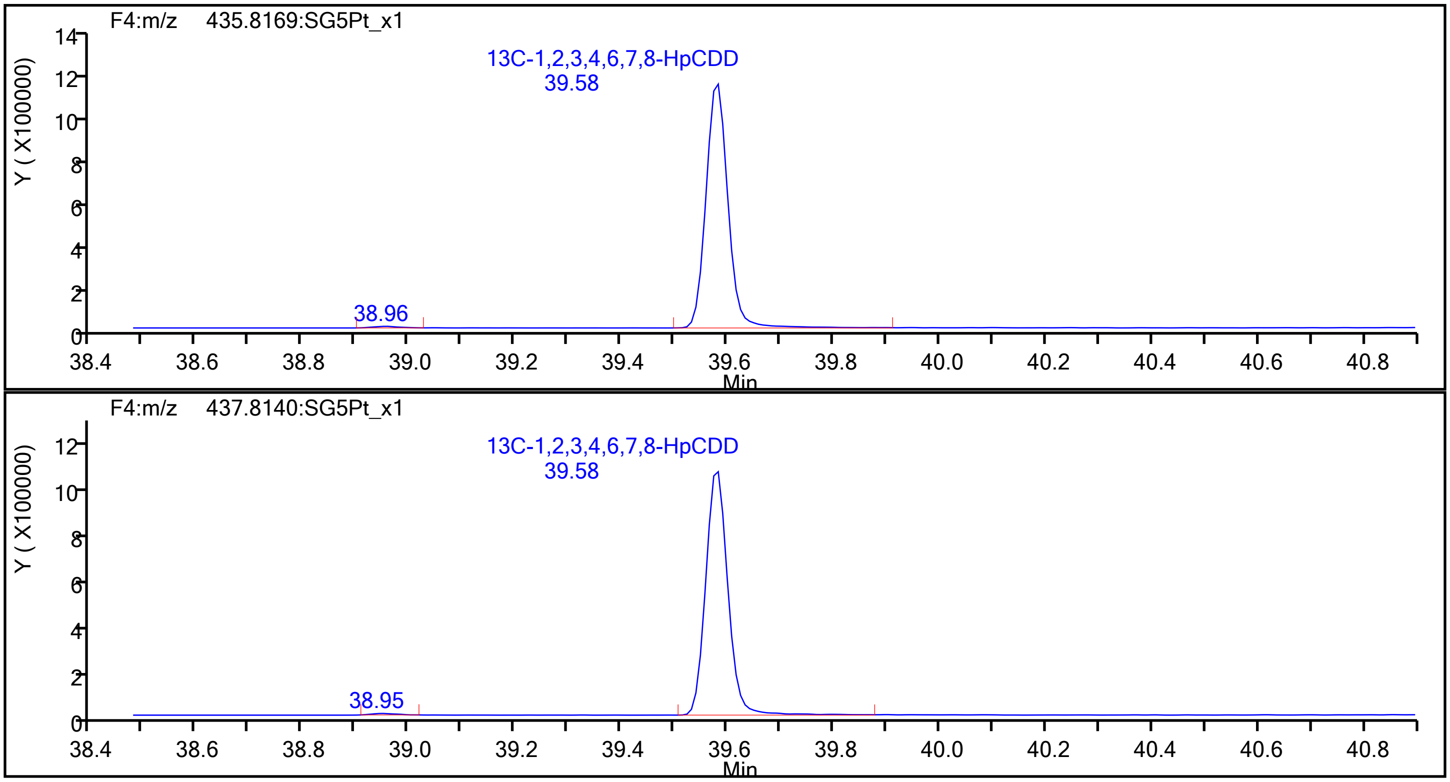

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

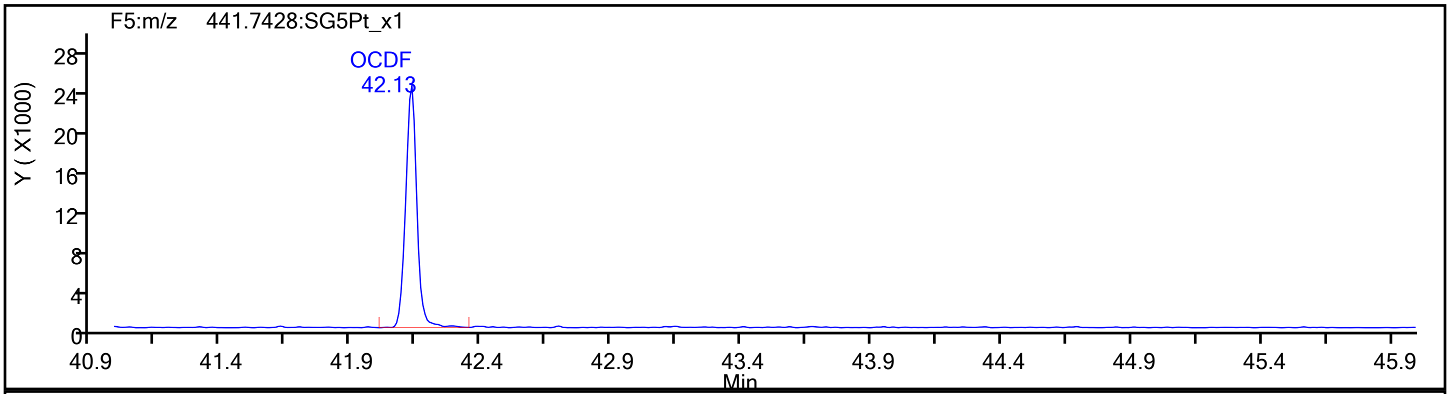

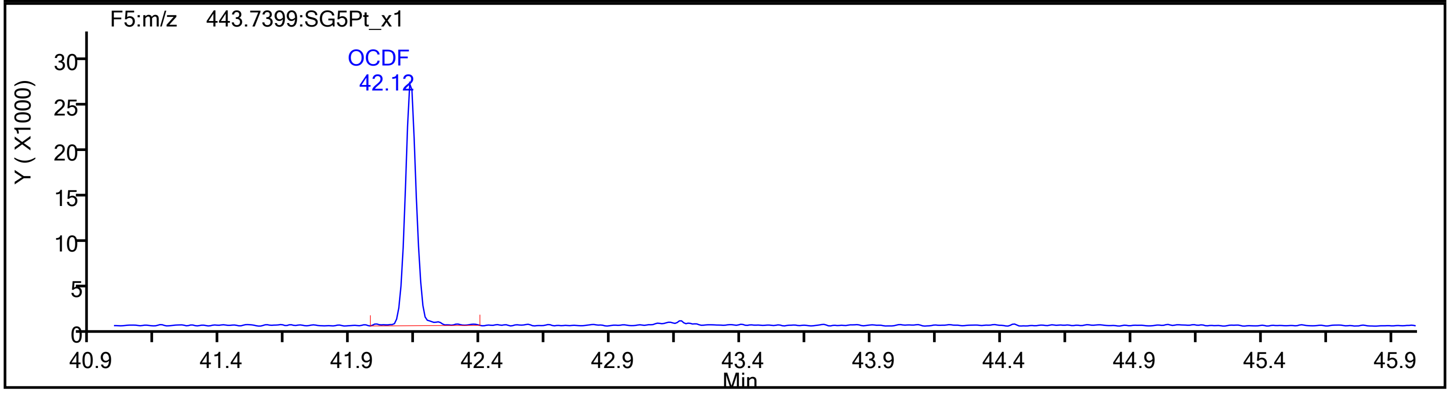

OCDF Standards

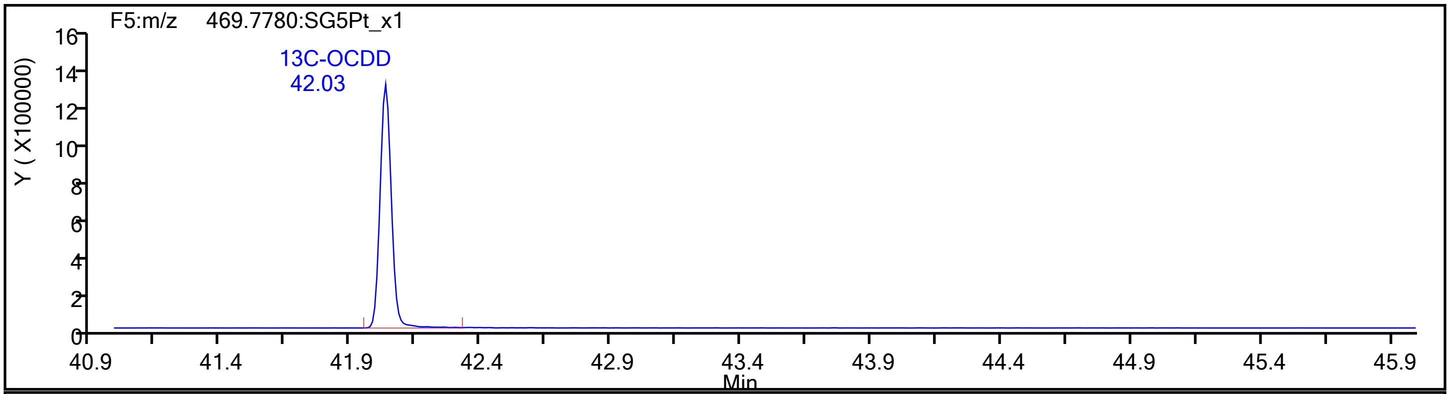

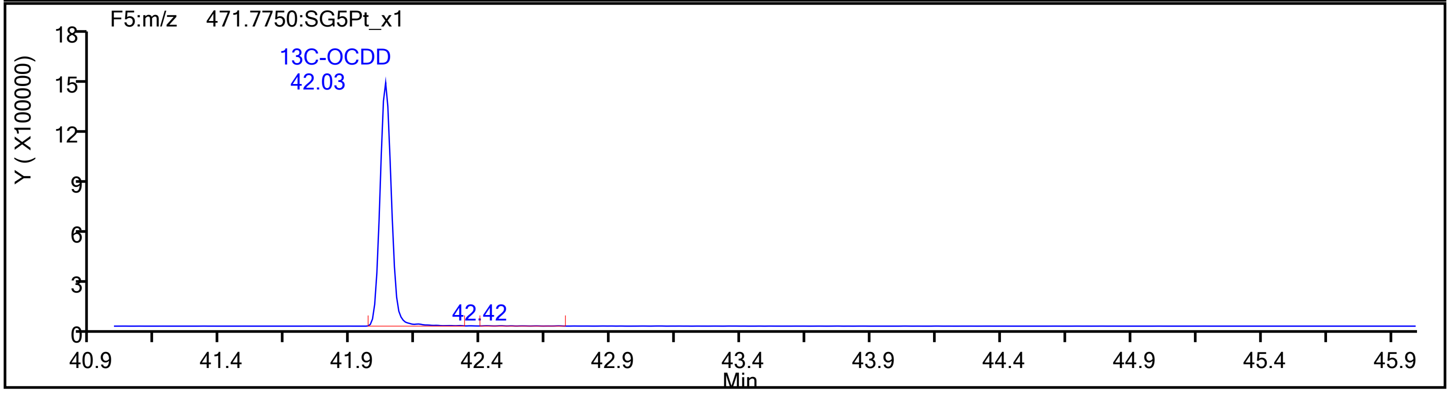

Report Date: 05-Jun-2020 10:10:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d		
Injection Date:	03-Jun-2020 14:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

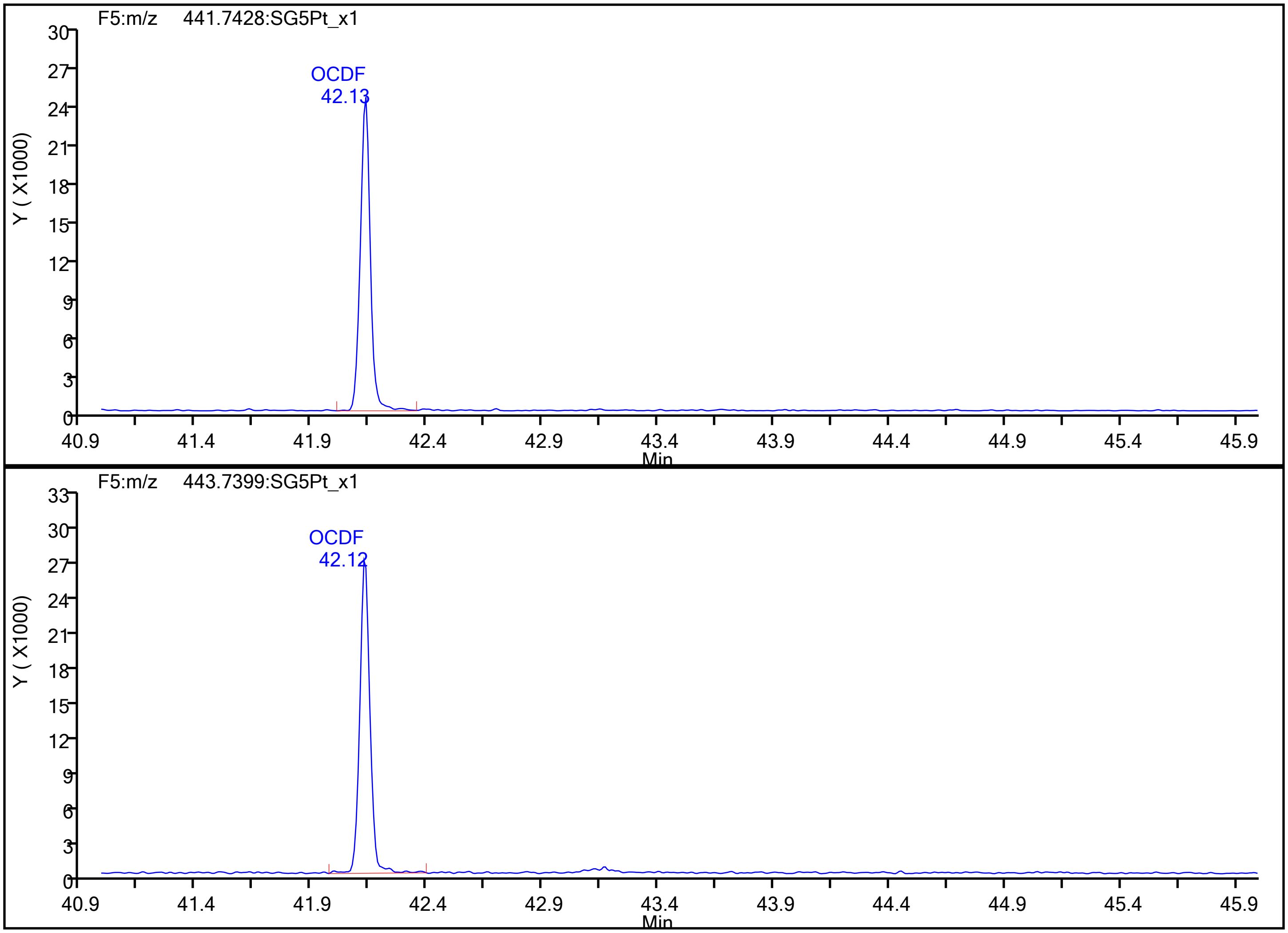

OCDF Interference Mass

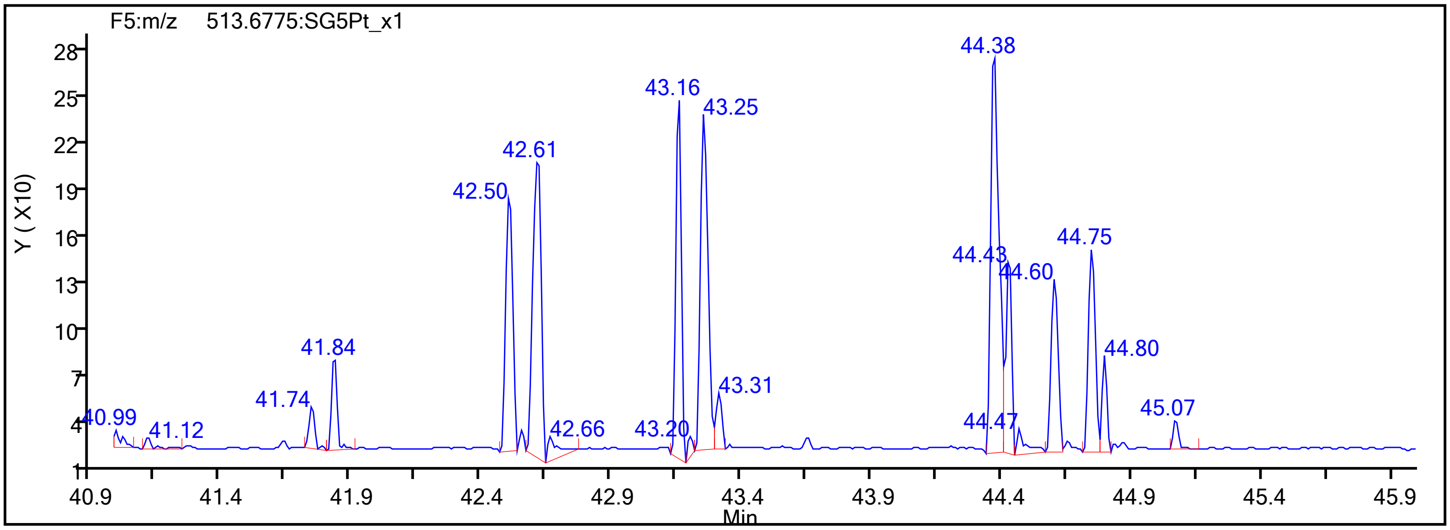

Report Date: 05-Jun-2020 10:10:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d		
Injection Date:	03-Jun-2020 14:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

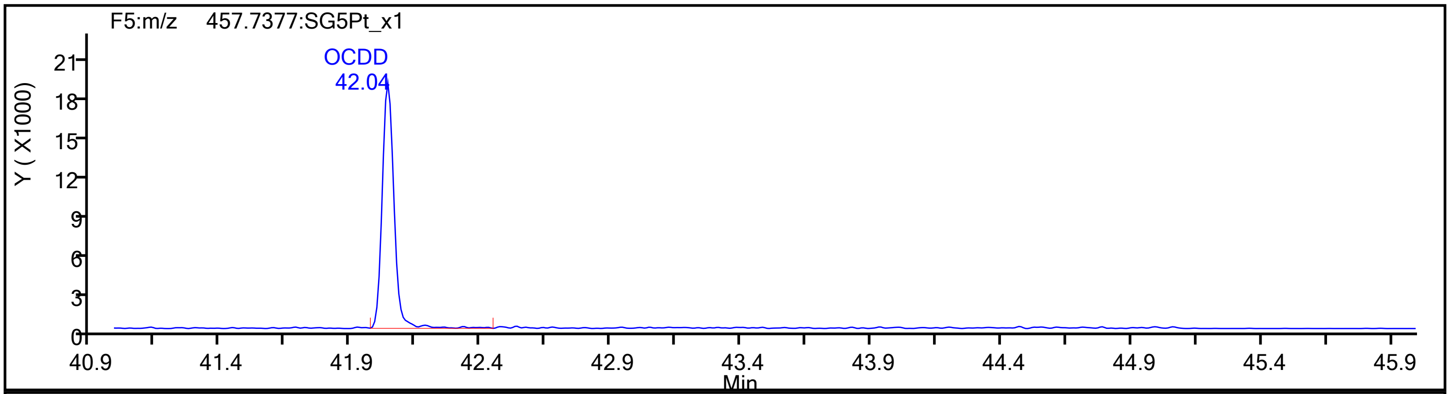

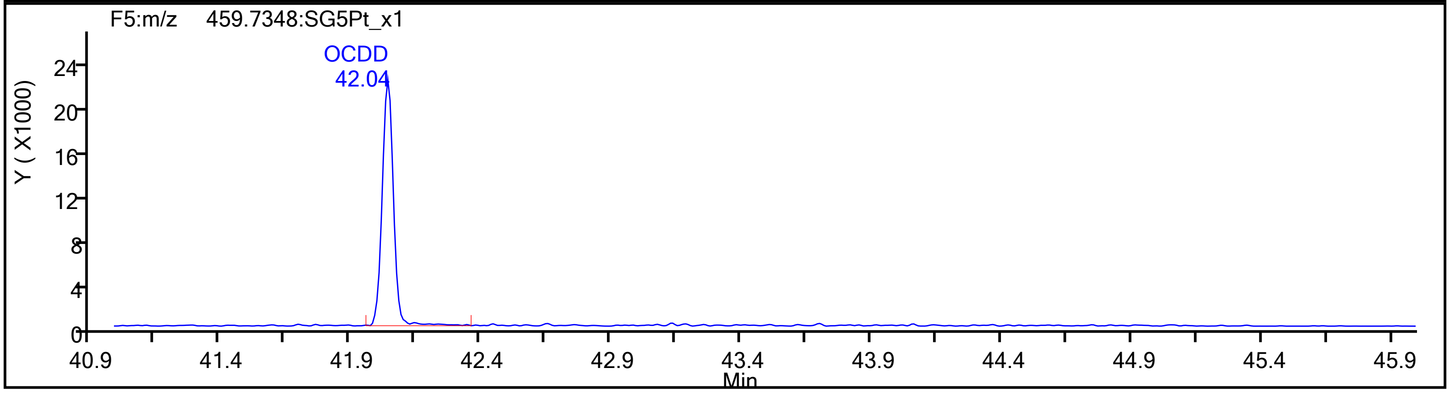

OCDD Standards

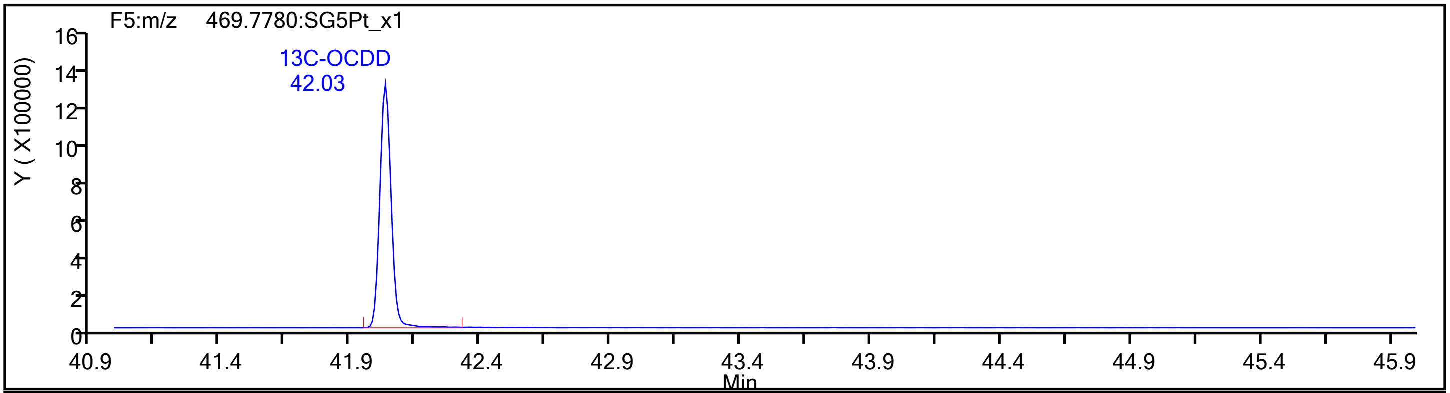

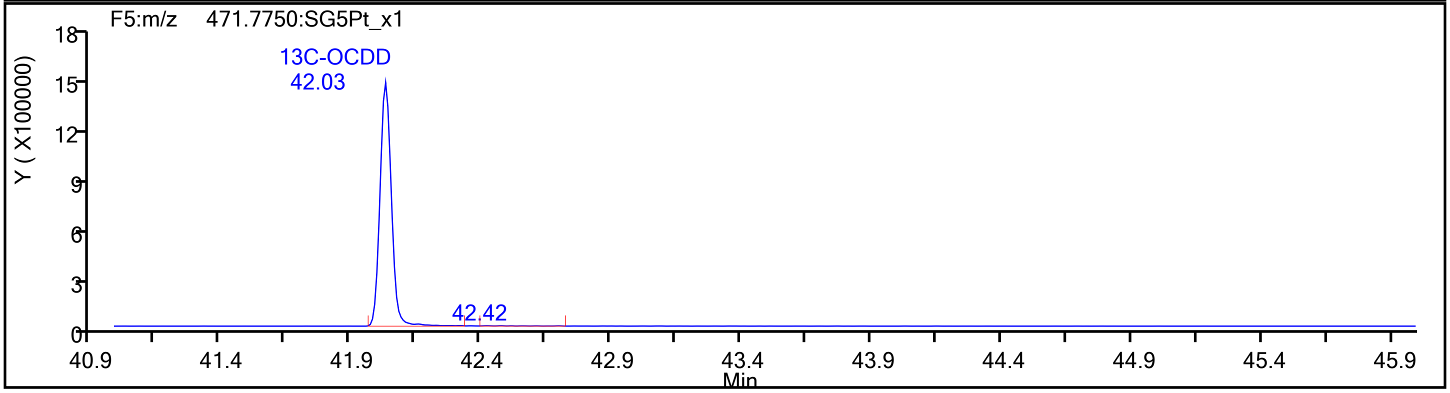

Report Date: 05-Jun-2020 10:10:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d

Injection Date: 03-Jun-2020 14:05:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 3

Column Type: DB-5

Column Dia: 0.32 mm

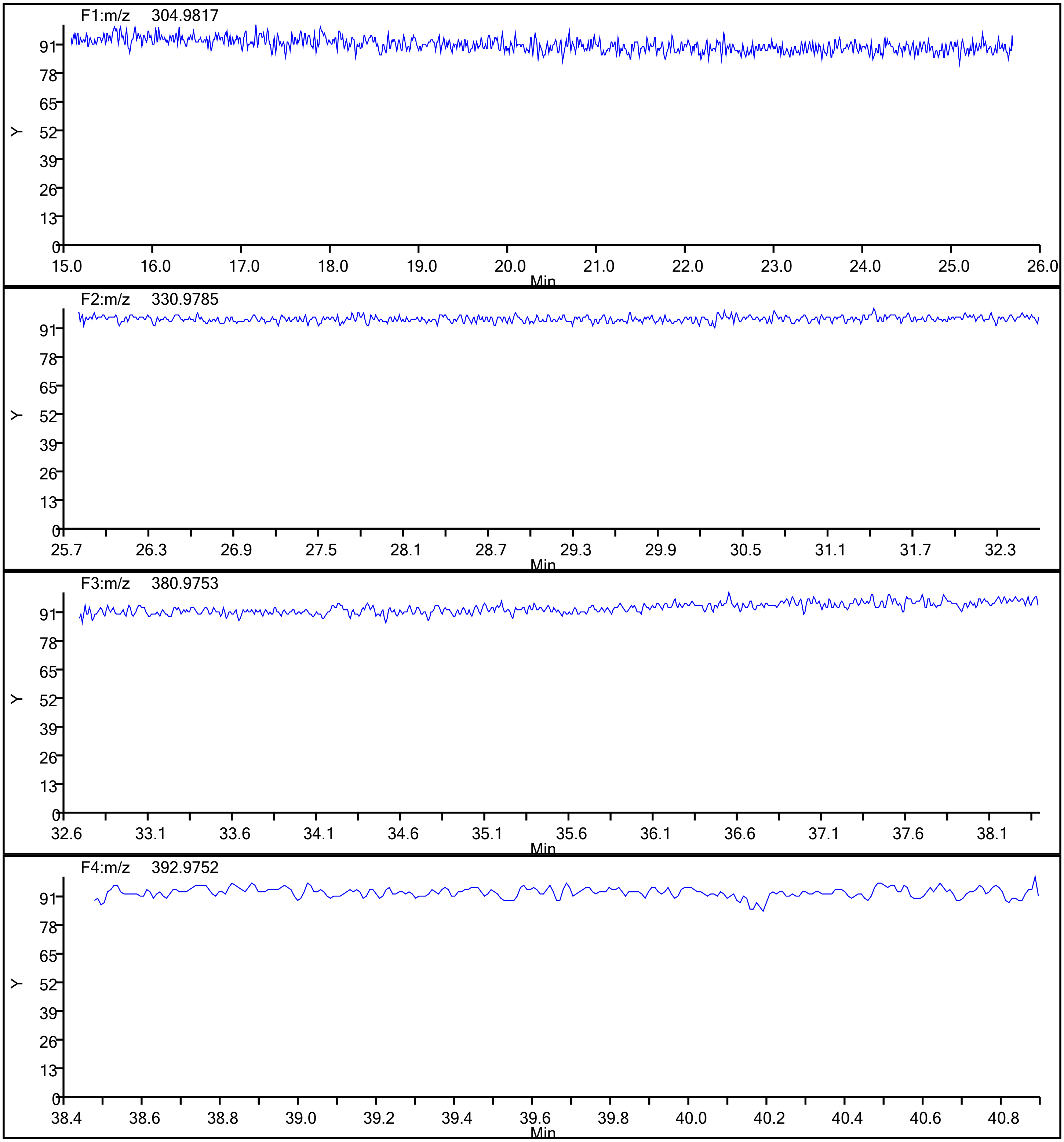

Report Date: 05-Jun-2020 10:10:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_4.d		
Injection Date:	03-Jun-2020 14:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

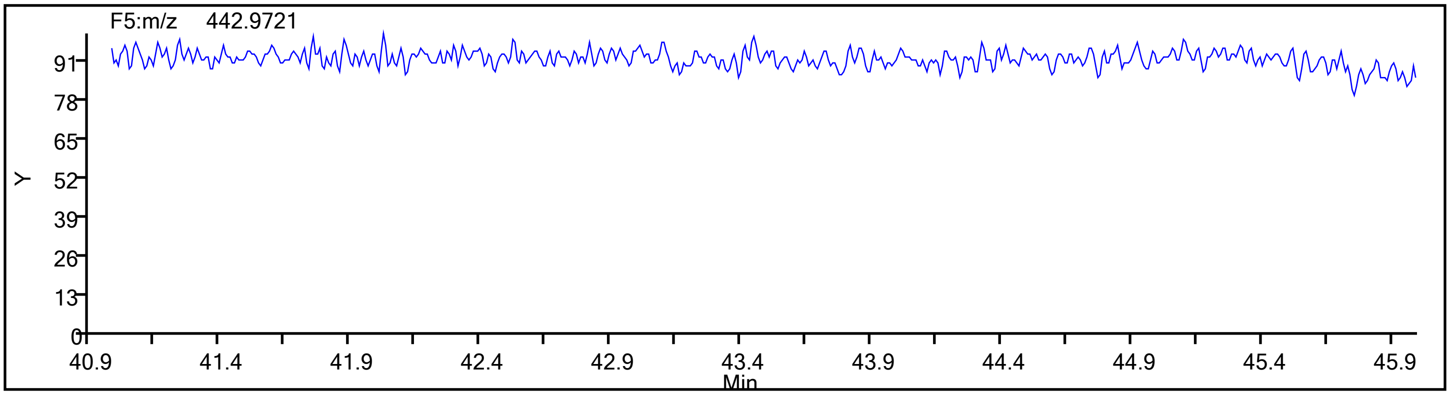

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 03-Jun-2020 14:53:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:53 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 03-Jun-2020 16:30:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.295	3341895	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.306	4898504	0.80	1.4977	97.9	97.9	0.3919	0.3919	97.87	
2,3,7,8-TCDF	20.323	30510	0.80	1.1312	0.5506	0.5506	0.0198	0.0198	110	M
S Total TCDF					0.5506	0.5506	0.0198	0.0198		
D 13C-2,3,7,8-TCDD	21.682	3452470	0.77	1.0367	99.6	99.6	0.3282	0.3282	99.65	
2,3,7,8-TCDD	21.716	22474	0.71	1.1849	0.5494	0.5494	0.0440	0.0440	110	
$ 37Cl4-2,3,7,8-TCDD	21.708	19124		1.1208	0.5106	0.5106	0.0251	0.0251	102	
S Total TCDD					0.5494	0.5494	0.0440	0.0440		
D 13C-1,2,3,7,8-PeCDF	27.286	4247335	1.59	1.3057	97.3	97.3	0.4035	0.4035	97.33	
1,2,3,7,8-PeCDF	27.311	127552	1.55	1.1060	2.715	2.715	0.0336	0.0336	109	
D 13C-2,3,4,7,8-PeCDF	28.818	4902358	1.58	1.5420	95.1	95.1	0.3416	0.3416	95.13	
2,3,4,7,8-PeCDF	28.852	121673	1.42	0.9067	2.737	2.737	0.0386	0.0386	109	
S Total PeCDF					5.453	5.453	0.0361	0.0361		
D 13C-1,2,3,7,8-PeCDD	29.635	2671208	1.55	0.8294	96.4	96.4	0.1521	0.1521	96.37	
1,2,3,7,8-PeCDD	29.677	81080	1.55	1.1062	2.744	2.744	0.0528	0.0528	110	
S Total PeCDD					2.744	2.744	0.0528	0.0528		
D 13C-1,2,3,4,7,8-HxCDF	34.968	4266858	0.52	1.4619	98.9	98.9	0.2969	0.2969	98.92	
1,2,3,4,7,8-HxCDF	34.985	116239	1.22	1.0087	2.701	2.701	0.0313	0.0313	108	
D 13C-1,2,3,6,7,8-HxCDF	35.137	3757506	0.54	1.2866	99.0	99.0	0.3374	0.3374	98.98	
1,2,3,6,7,8-HxCDF	35.154	126804	1.24	1.2432	2.714	2.714	0.0291	0.0291	109	
D 13C-2,3,4,6,7,8-HxCDF	35.954	3457908	0.52	1.1988	97.8	97.8	0.3621	0.3621	97.77	
2,3,4,6,7,8-HxCDF	35.971	117631	1.23	1.2736	2.671	2.671	0.0274	0.0274	107	
D 13C-1,2,3,7,8,9-HxCDF	36.838	3192644	0.52	1.0687	101.3	101.3	0.4062	0.4062	101	
1,2,3,7,8,9-HxCDF	36.846	110283	1.28	1.2882	2.681	2.681	0.0267	0.0267	107	
S Total HxCDF					10.8	10.8	0.0286	0.0286		
* 13C-1,2,3,7,8,9-HxCDD	36.644	2950527	1.26	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.164	3126748	1.29	1.1046	95.9	95.9	0.2433	0.2433	95.94	
1,2,3,4,7,8-HxCDD	36.173	83257	1.19	0.9336	2.852	2.852	0.0431	0.0431	114	
D 13C-1,2,3,6,7,8-HxCDD	36.282	2862915	1.30	0.9871	98.3	98.3	0.2723	0.2723	98.30	
1,2,3,6,7,8-HxCDD	36.291	86772	1.21	1.0802	2.806	2.806	0.0441	0.0441	112	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.661	89621	1.26	1.0574	2.830	2.830	0.0412	0.0412	113	
S Total HxCDD					8.488	8.488	0.0428	0.0428		
D 13C-1,2,3,4,6,7,8-HpCDF	38.628	2640868	0.44	0.9035	99.1	99.1	0.5203	0.5203	99.06	
1,2,3,4,6,7,8-HpCDF	38.645	113413	1.03	1.5957	2.691	2.691	0.0334	0.0334	108	
D 13C-1,2,3,4,7,8,9-HpCDF	39.874	2978774	0.46	1.0480	96.3	96.3	0.4486	0.4486	96.33	
1,2,3,4,7,8,9-HpCDF	39.883	96999	1.05	1.1693	2.785	2.785	0.0373	0.0373	111	
S Total HpCDF					5.476	5.476	0.0353	0.0353		
D 13C-1,2,3,4,6,7,8-HpCDD	39.571	2571343	1.07	0.8875	98.2	98.2	0.3449	0.3449	98.19	
1,2,3,4,6,7,8-HpCDD	39.580	80513	1.09	1.1150	2.808	2.808	0.0231	0.0231	112	
S Total HpCDD					2.808	2.808	0.0231	0.0231		
D 13C-OCDD	42.026	3459611	0.92	0.6297	186.2	186.2	0.2360	0.2360	93.10	
OCDF	42.119	135953	0.89	1.4809	5.307	5.307	0.0358	0.0358	106	
OCDD	42.035	112091	0.89	1.1948	5.424	5.424	0.0356	0.0356	108	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00029 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:02   Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 2
Inject. Date: 03-Jun-2020 14:53:00   ALS Bottle#: 0   Worklist Smp#: 4
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:10:53   Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk   Date: 03-Jun-2020 16:30:54

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.295	21.309	-1		1479703	218196	483	1207	452		
333.9338	21.303	21.309	0		1862192	261463	170	425	1538	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.306	20.321	-1	0.954	2180545	318369	828	2070	385		
317.9389	20.306	20.321	-1	0.954	2717959	397529	298	745	1334	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	20.323	20.347	-1	1.001	13598	1967	12	30	164		M
305.8987	20.340	20.347	0	1.002	16912	2549	52	130	49	0.80(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	21.682	21.692	-1	1.018	1505136	204759	483	1207	424		
333.9338	21.682	21.692	-1	1.018	1947334	265405	170	425	1561	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.716	21.722	0	1.002	9313	1412	78	195	18		
321.8936	21.699	21.722	-1	1.001	13161	1883	20	50	94	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.708	21.724	-1	1.019	19124	2948	54	135	55		
13C-1,2,3,7,8-PeCDF											
351.9000	27.286	27.300	-1	1.281	2607793	419385	591	1477	710		
353.8970	27.286	27.300	-1	1.281	1639542	267708	420	1050	637	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.311	27.325	-1	1.001	77540	12385	29	72	427		
341.8567	27.302	27.325	-1	1.001	50012	8086	73	182	111	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.818	28.834	-1	1.353	3003476	442235	591	1477	748		
353.8970	28.818	28.834	-1	1.353	1898882	286704	420	1050	683	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.852	28.857	0	1.001	71426	10999	29	72	379		
341.8567	28.843	28.857	-1	1.001	50247	7459	73	182	102	1.42(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.635	29.651	-1	1.392	1623523	234246	149	372	1572		
369.8919	29.643	29.651	0	1.392	1047685	150670	93	232	1620	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.677	29.682	0	1.001	49228	7245	71	177	102		
357.8516	29.669	29.682	-1	1.001	31852	4483	19	47	236	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.968	34.982	-1	0.954	1459931	319575	477	1192	670		
385.8610	34.968	34.982	-1	0.954	2806927	630595	857	2142	736	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.985	35.000	-1	1.000	63921	14435	69	172	209		
375.8178	34.994	35.000	0	1.001	52318	11613	51	127	228	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.137	35.145	0	0.959	1311382	290946	477	1192	610		
385.8610	35.137	35.145	0	0.959	2446124	538066	857	2142	628	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.154	35.163	-1	1.000	70210	15533	69	172	225		
375.8178	35.154	35.163	-1	1.000	56594	12321	51	127	242	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.954	35.966	-1	0.981	1182926	291905	477	1192	612		
385.8610	35.954	35.966	-1	0.981	2274982	568737	857	2142	664	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.971	35.981	-1	1.000	64871	16865	69	172	244		
375.8178	35.971	35.981	-1	1.000	52760	14017	51	127	275	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.838	36.848	-1	1.005	1095474	297544	477	1192	624		
385.8610	36.838	36.848	-1	1.005	2097170	573690	857	2142	669	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.846	36.862	-1	1.000	61987	16078	69	172	233		
375.8178	36.846	36.862	-1	1.000	48296	12686	51	127	249	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.644	36.653	-1		1646326	427879	469	1172	912		
403.8529	36.644	36.653	-1		1304201	340453	357	892	954	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.164	36.173	-1	0.987	1761630	475006	469	1172	1013		
403.8529	36.164	36.173	-1	0.987	1365118	375216	357	892	1051	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.173	36.187	-1	1.000	45307	12653	84	210	151		
391.8127	36.173	36.187	-1	1.000	37950	10272	53	132	194	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.282	36.291	-1	0.990	1619724	403000	469	1172	859		
403.8529	36.282	36.291	-1	0.990	1243191	315287	357	892	883	1.30(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.291	36.304	-1	1.000	47429	11831	84	210	141		
391.8127	36.299	36.304	0	1.000	39343	9883	53	132	186	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.661	36.669	0	1.014	50050	12369	84	210	147		
391.8127	36.653	36.669	-1	1.014	39571	9461	53	132	179	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.628	38.640	-1	1.054	809811	263990	564	1410	468		
419.8220	38.636	38.640	0	1.054	1831057	599435	881	2202	680	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.645	38.655	-1	1.000	57496	20114	133	332	151		
409.7788	38.645	38.655	-1	1.000	55917	18736	51	127	367	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.874	39.885	-1	1.088	942571	328249	564	1410	582		
419.8220	39.874	39.885	-1	1.088	2036203	727146	881	2202	825	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.883	39.893	-1	1.000	49759	17780	133	332	134		
409.7788	39.883	39.893	-1	1.000	47240	16478	51	127	323	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.571	39.582	-1	1.080	1328992	462264	508	1270	910		
437.8140	39.571	39.582	-1	1.080	1242351	430111	433	1082	993	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.580	39.590	-1	1.000	42003	14818	58	145	255		
425.7737	39.580	39.590	-1	1.000	38510	13431	34	85	395	1.09(0.88-1.20)	
13C-OCDD											
469.7780	42.026	42.035	-1	1.147	1657577	546027	246	615	2220		
471.7750	42.026	42.035	-1	1.147	1802034	606135	211	527	2873	0.92(0.76-1.02)	
OCDF											
441.7428	42.119	42.131	-1	1.002	63952	20245	33	82	613		
443.7399	42.119	42.131	-1	1.002	72001	23825	89	222	268	0.89(0.76-1.02)	
OCDD											
457.7377	42.035	42.043	-1	1.000	52808	18407	40	100	460		
459.7348	42.035	42.043	-1	1.000	59283	19089	58	145	329	0.89(0.76-1.02)	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00029 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date:	03-Jun-2020 14:53:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 20.32
Area: 10341
Amount: 0.506910
Amount Units: pg/ul

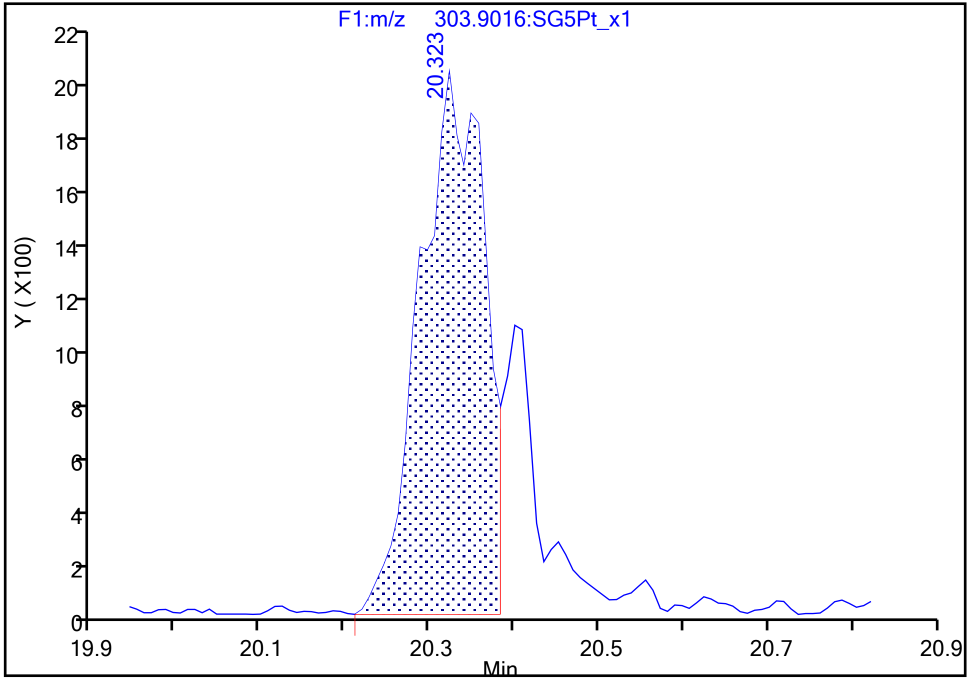

Manual Integration Results

RT: 20.32
Area: 13598
Amount: 0.550580
Amount Units: pg/ul

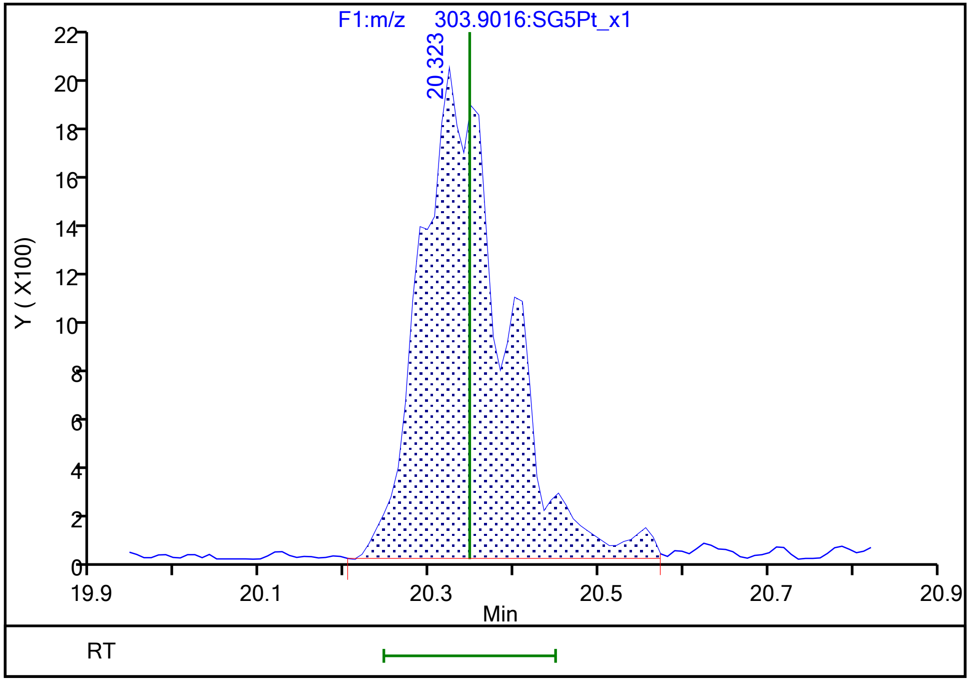

Reviewer: stephensk, 04-Jun-2020 08:15:12

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d				
Injection Date:	03-Jun-2020 14:53:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	20.34
Area:	17257
Amount:	0.506910
Amount Units:	pg/ul

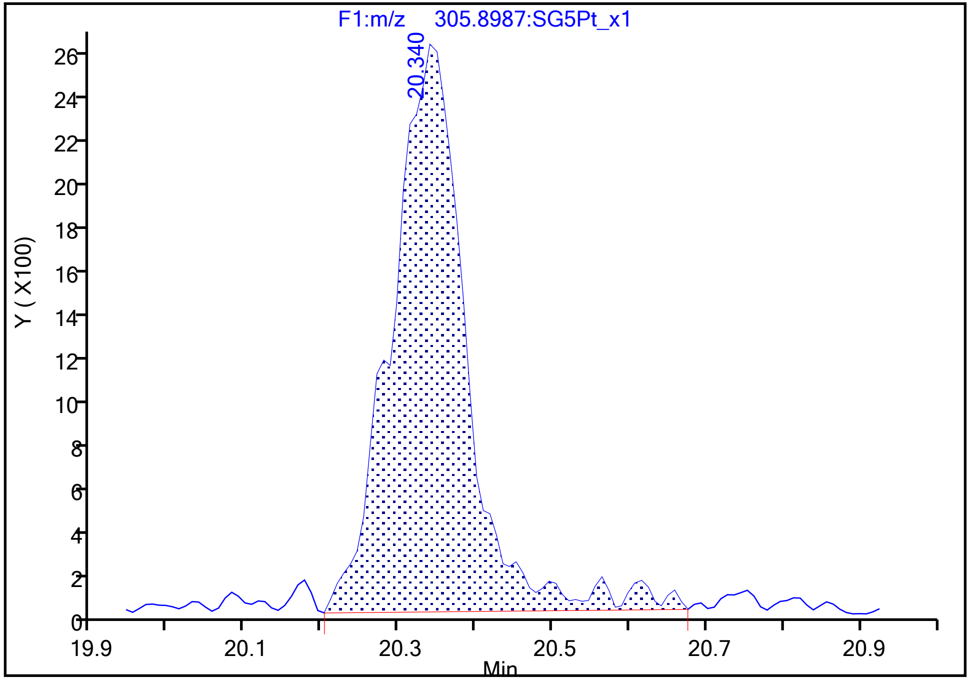

Manual Integration Results

RT:	20.34
Area:	16912
Amount:	0.550580
Amount Units:	pg/ul

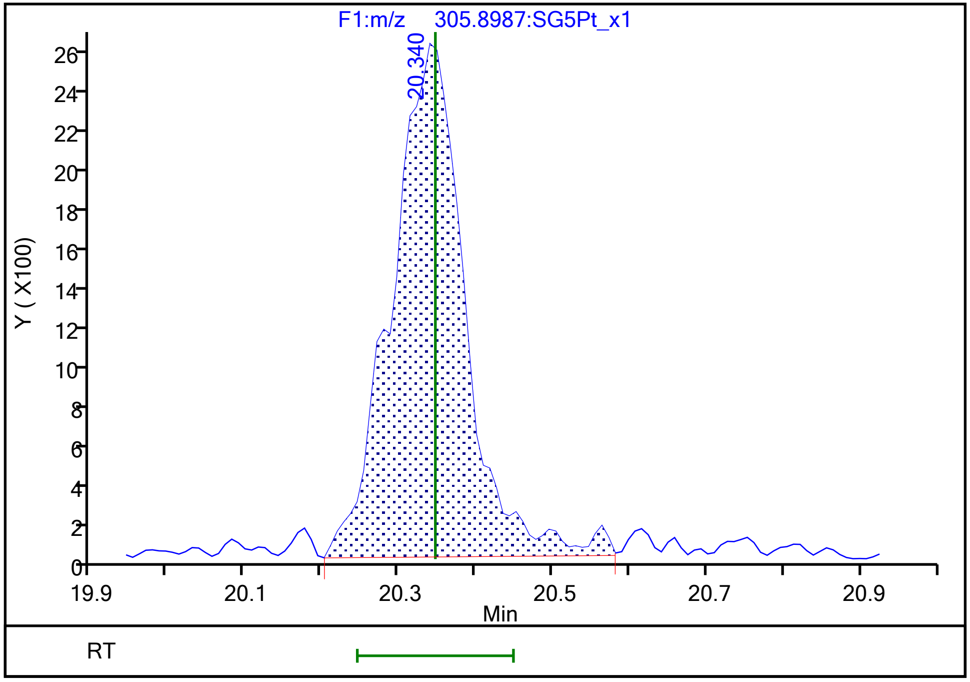

Reviewer: stephensk, 04-Jun-2020 08:15:23
Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

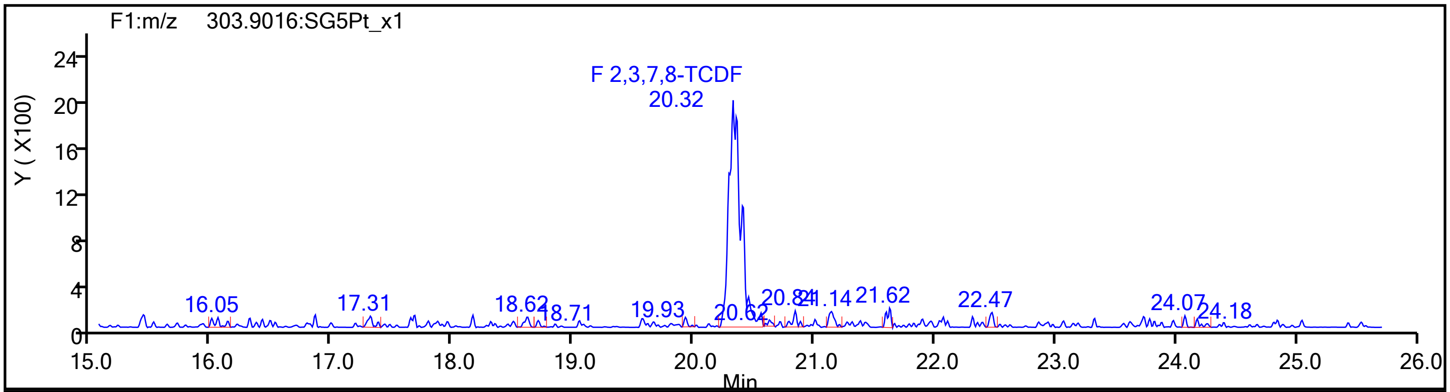

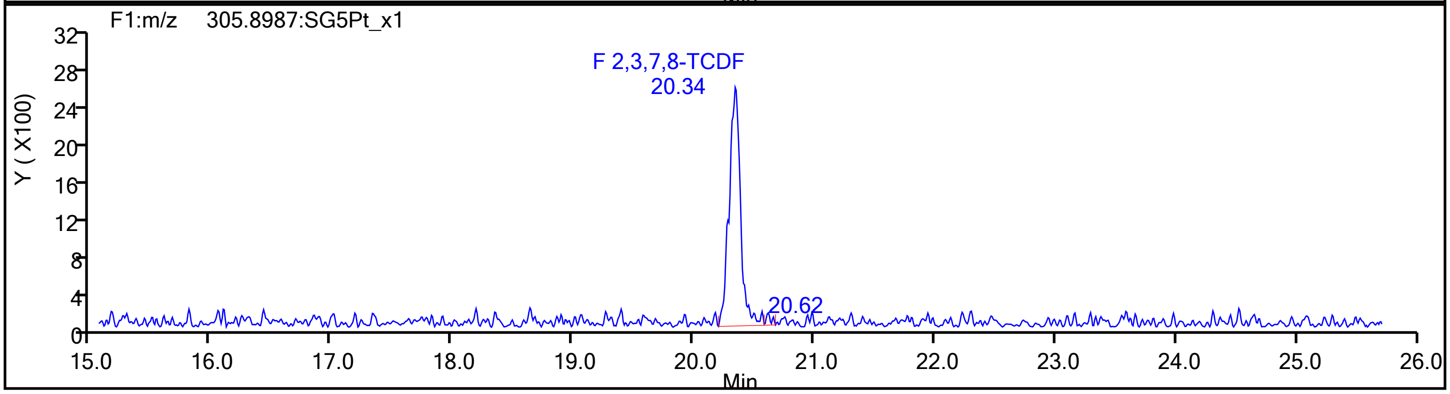

TCDF Standards

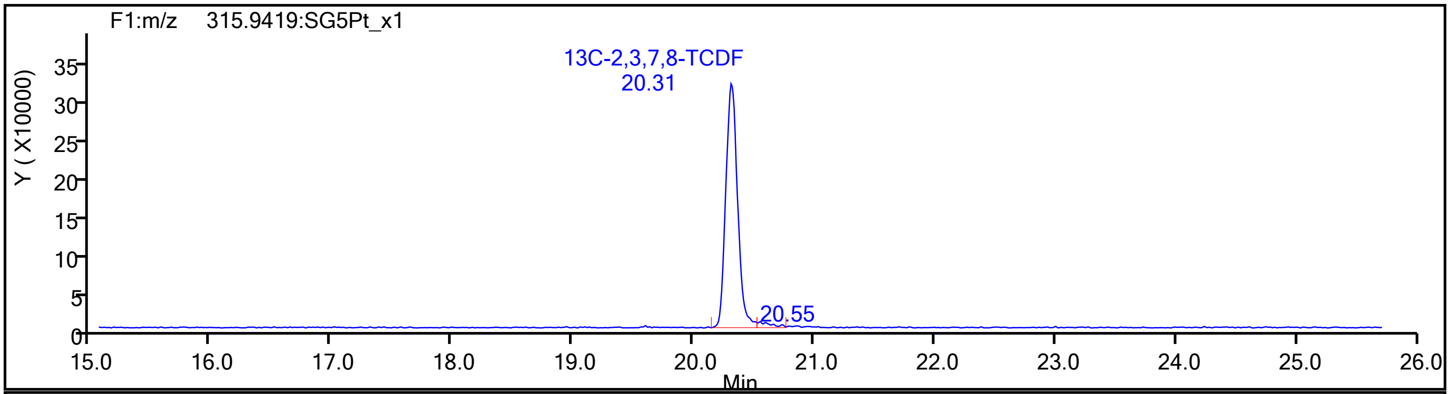

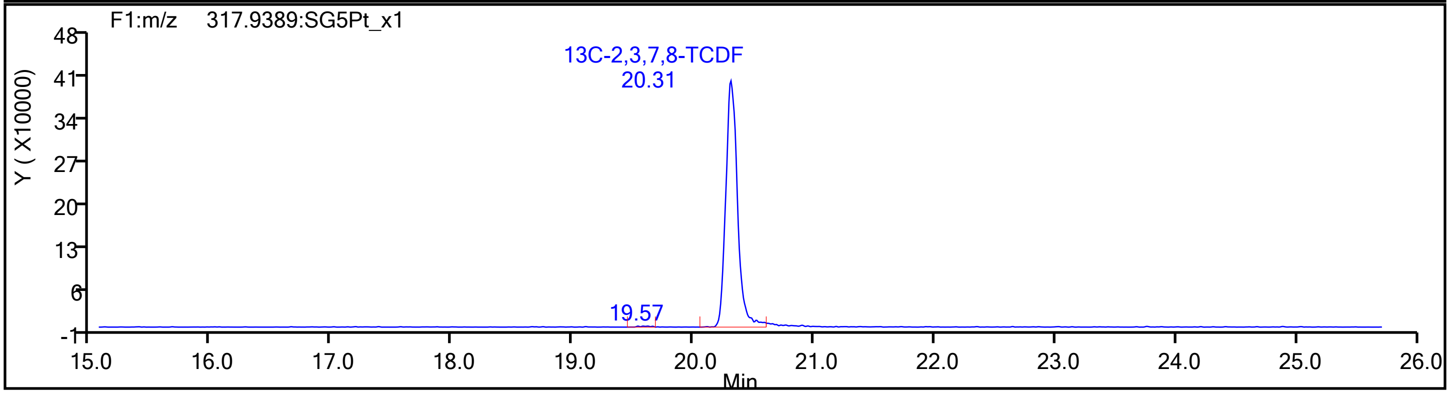

Report Date: 05-Jun-2020 10:11:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

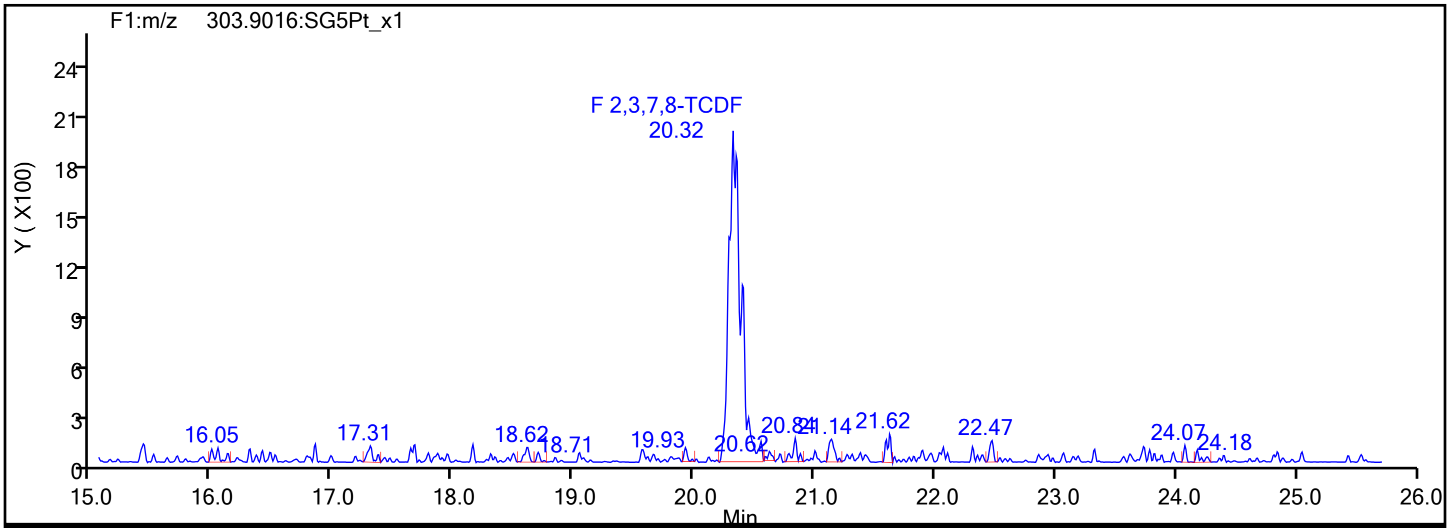

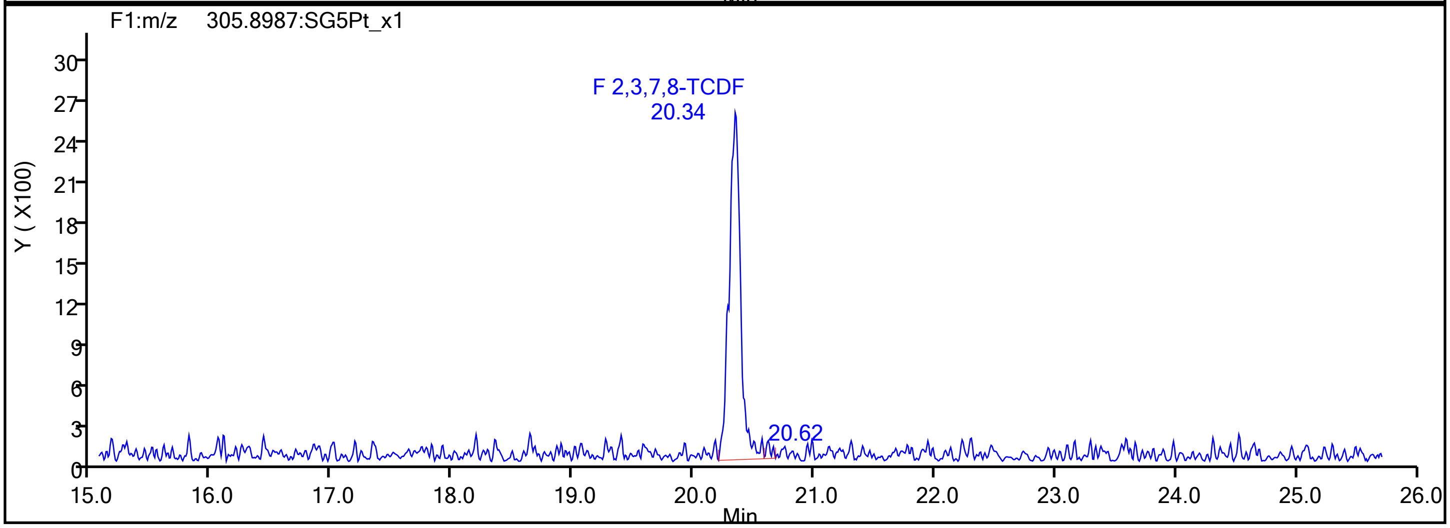

TCDF Interference Mass

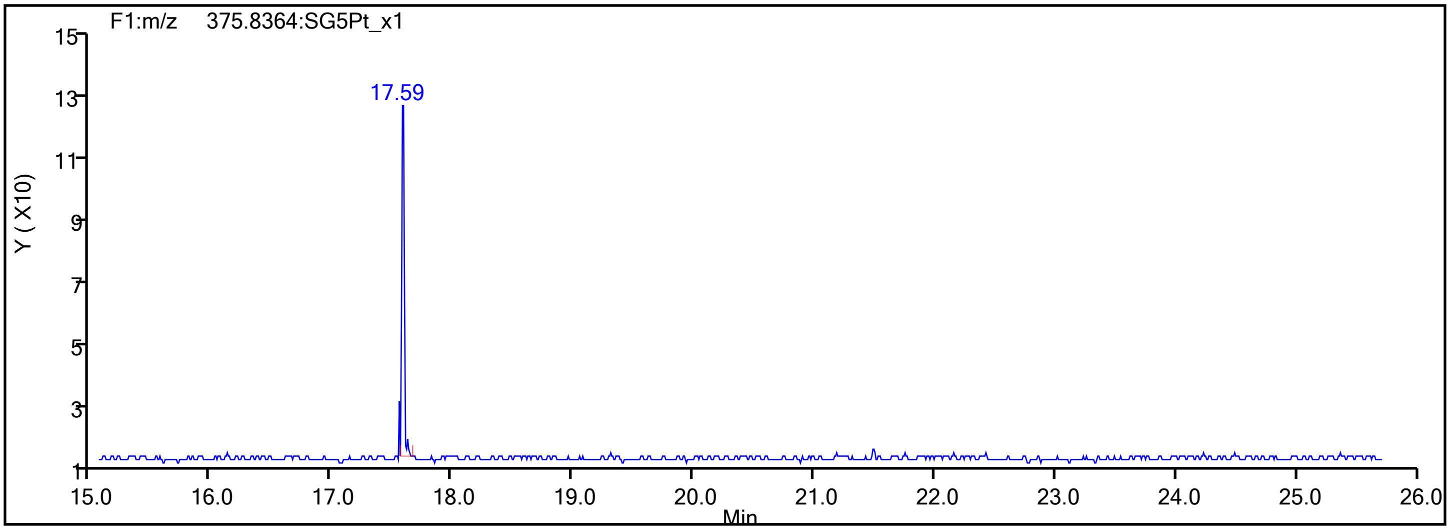

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

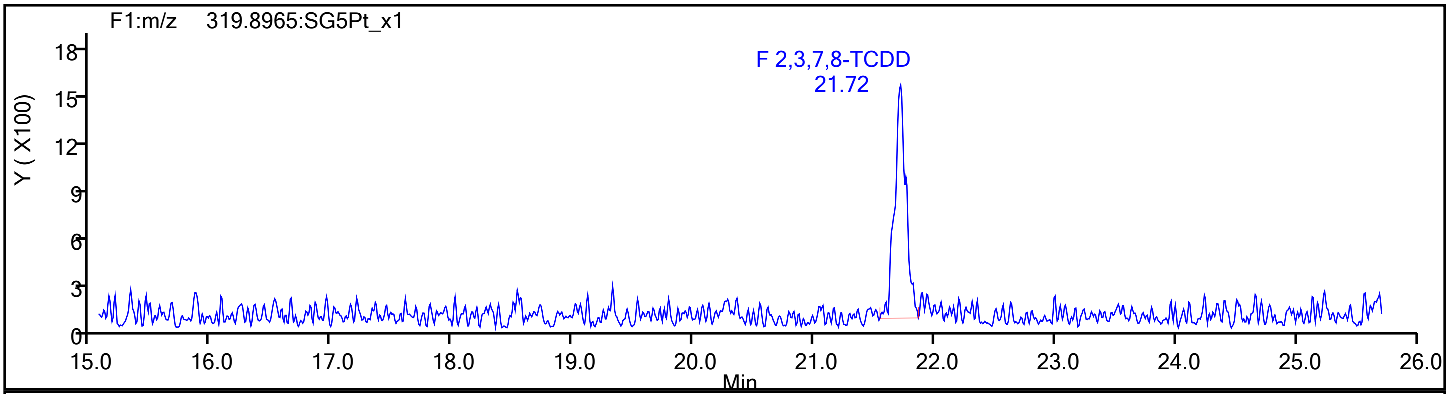

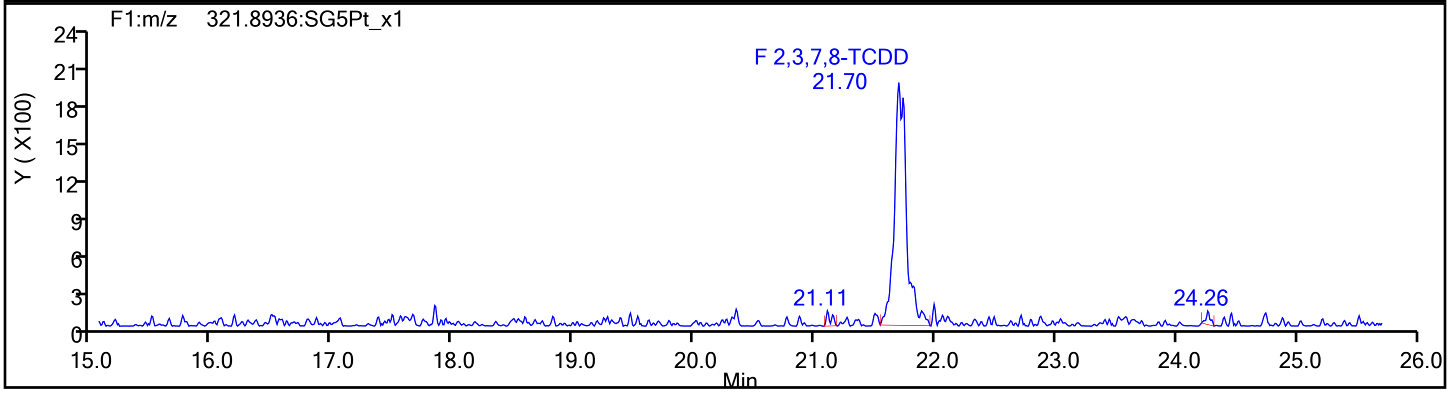

TCDD Standards

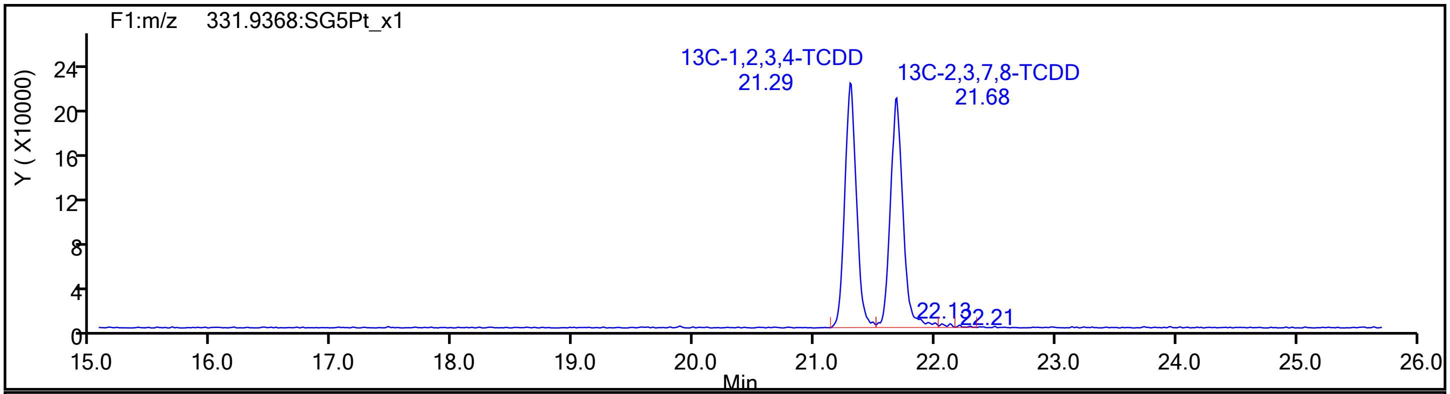

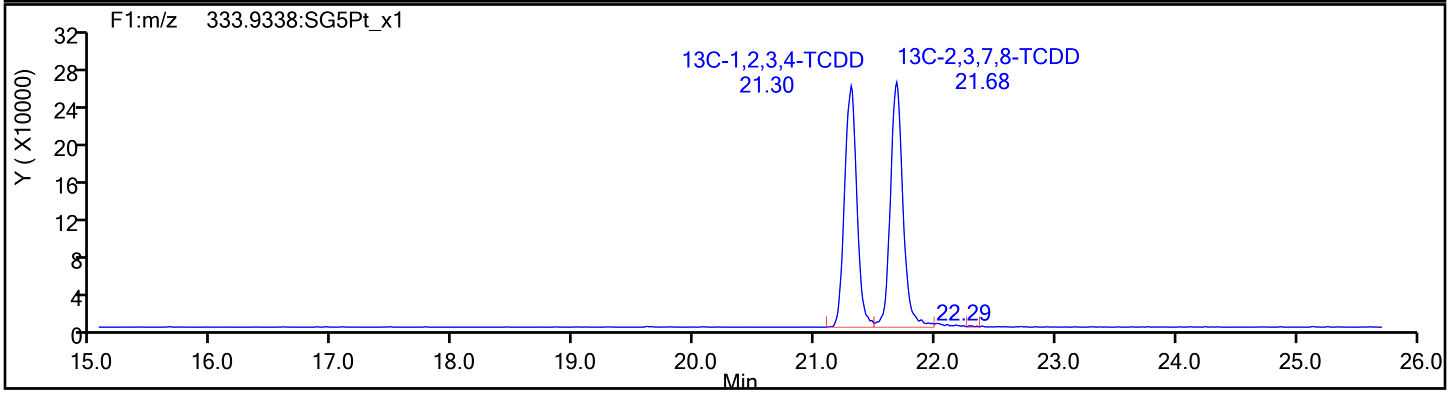

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

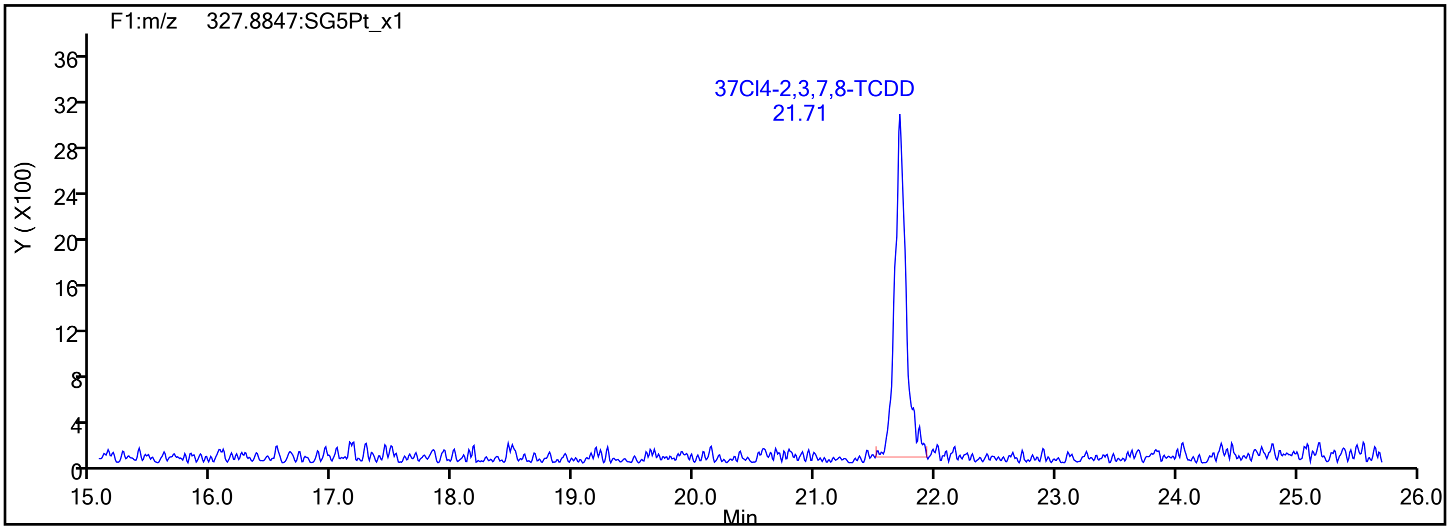

37Cl4-TCDD Standards

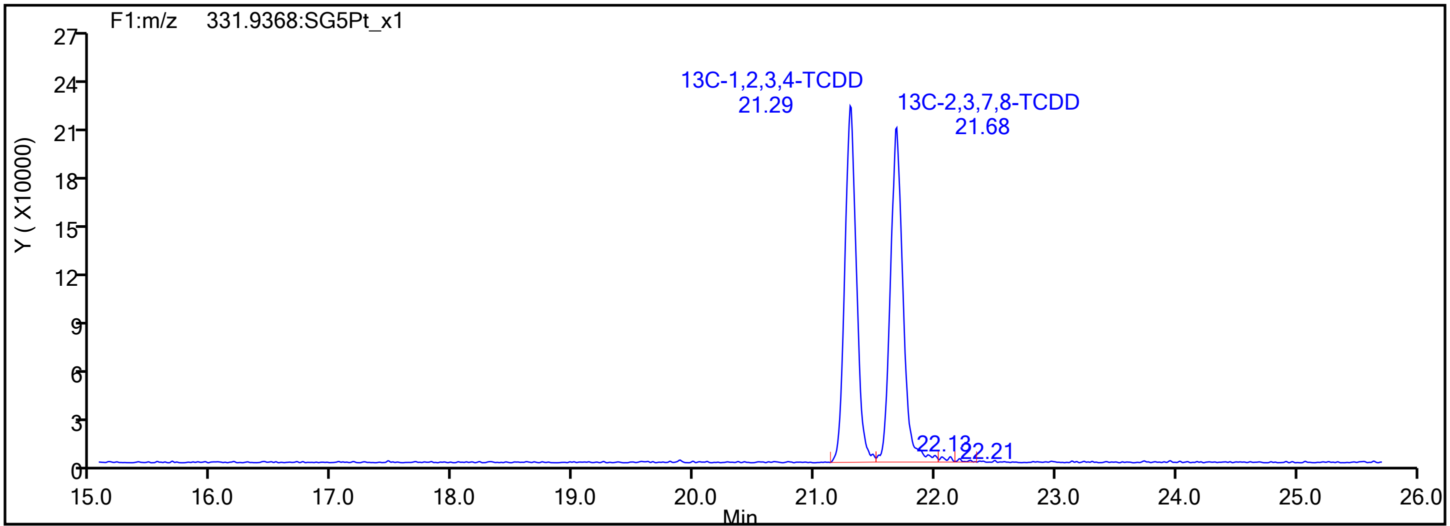

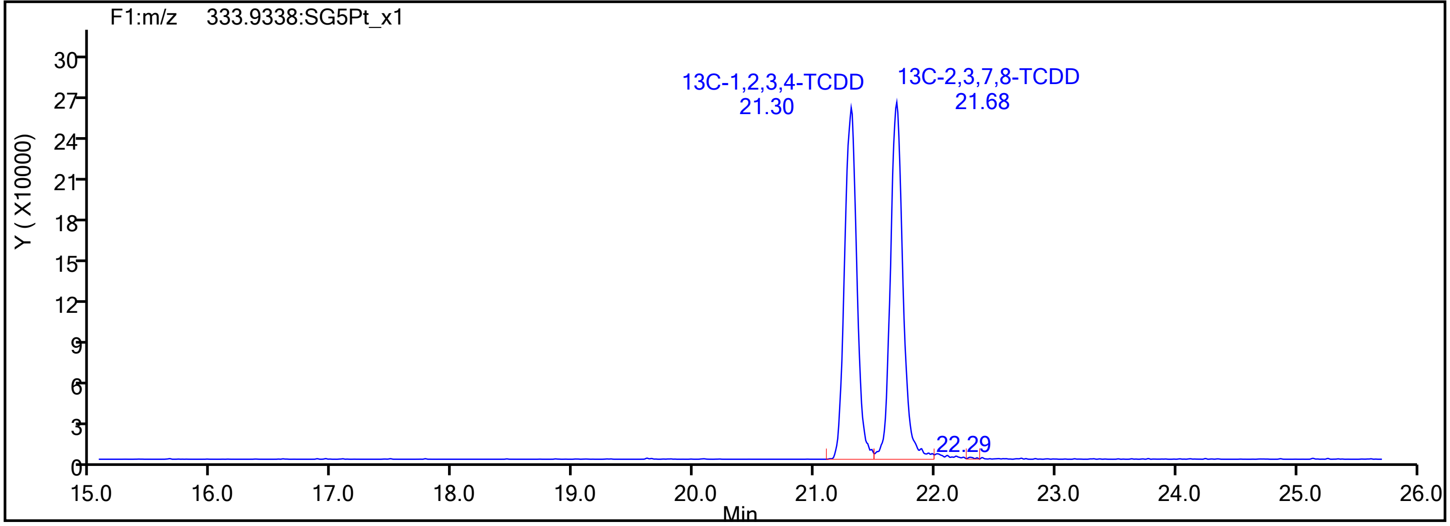

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

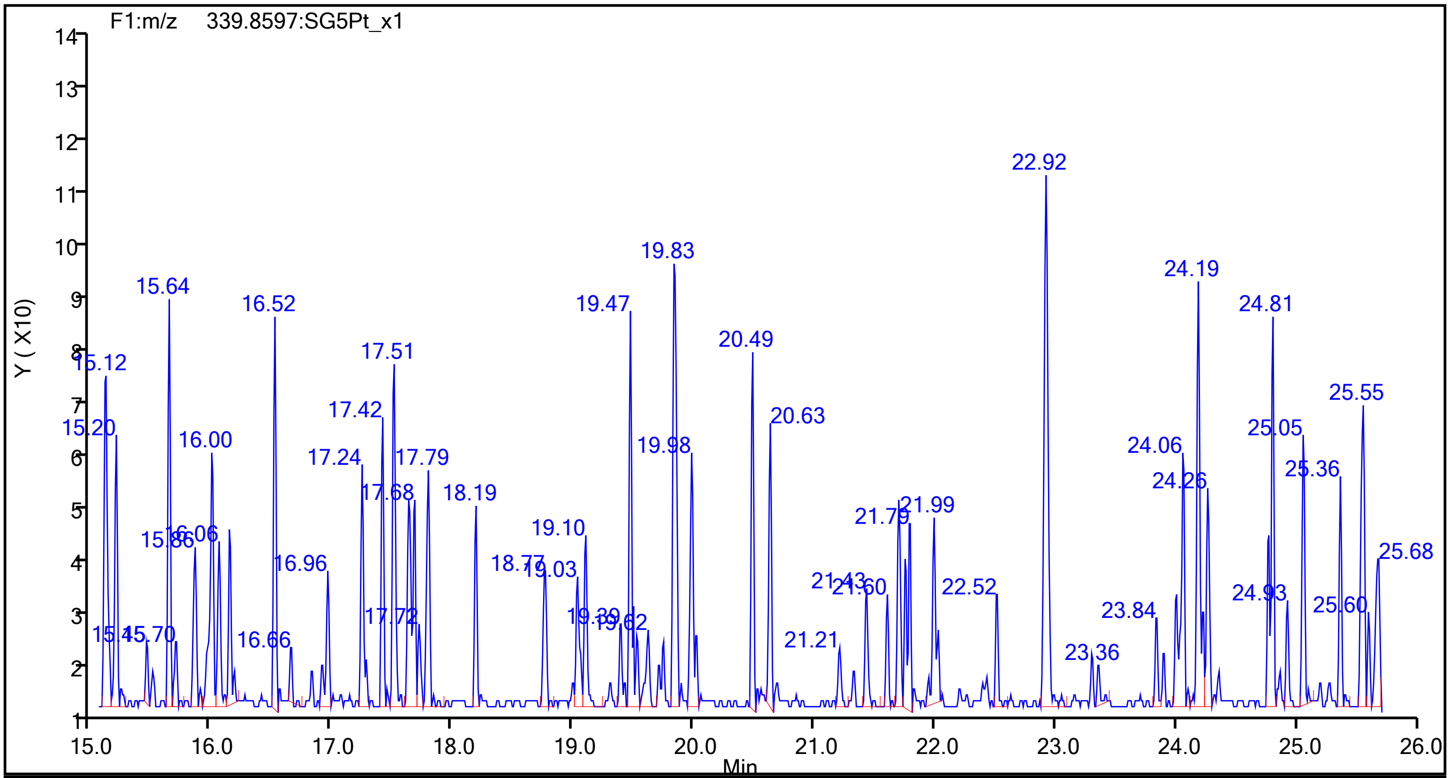

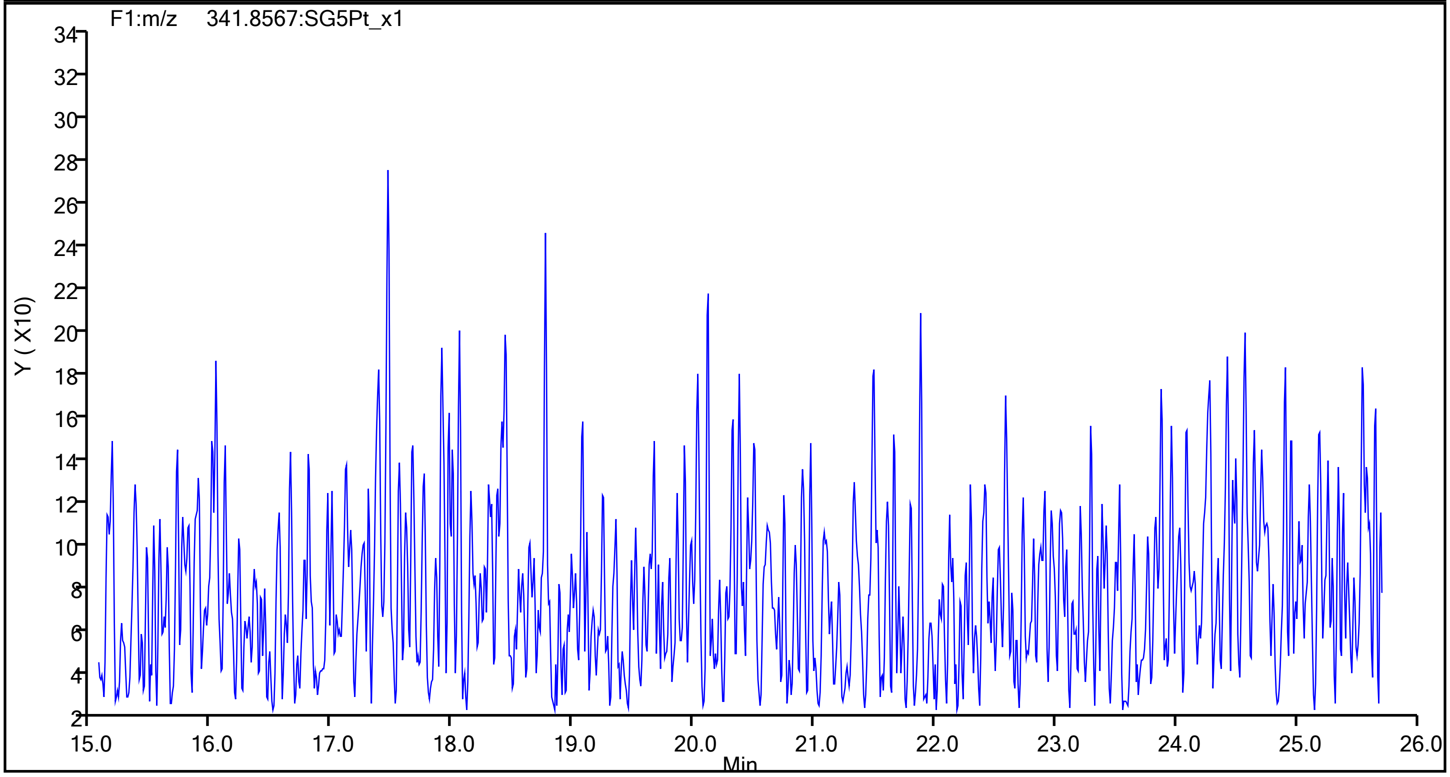

Report Date: 05-Jun-2020 10:11:03	Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

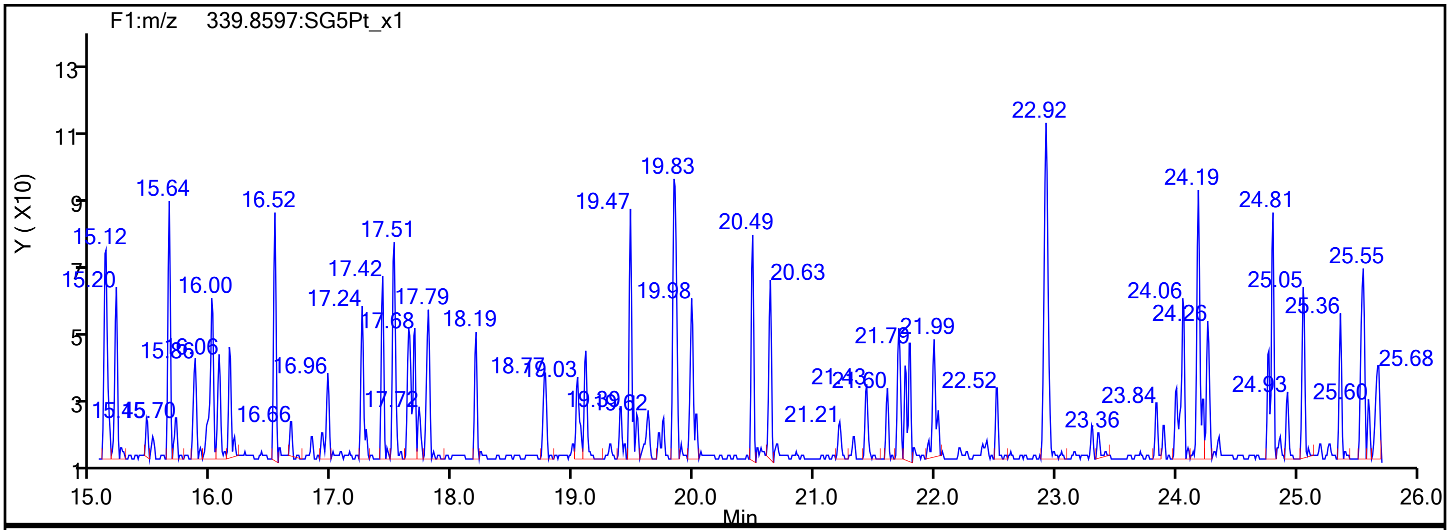

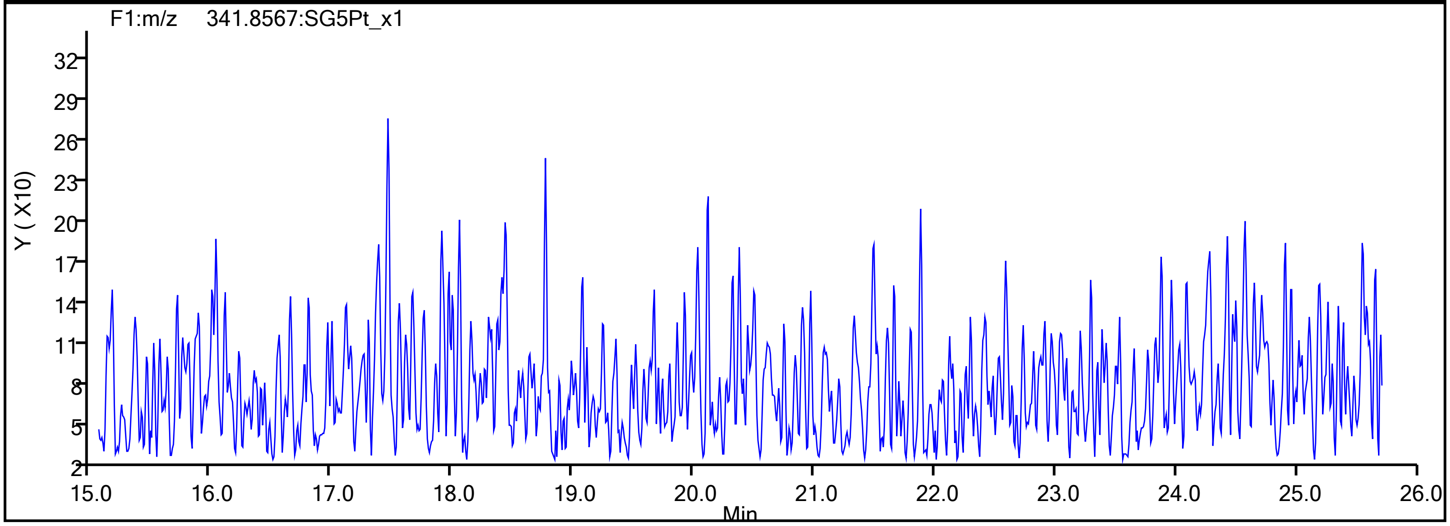

F1 PeCDFs Interference Mass

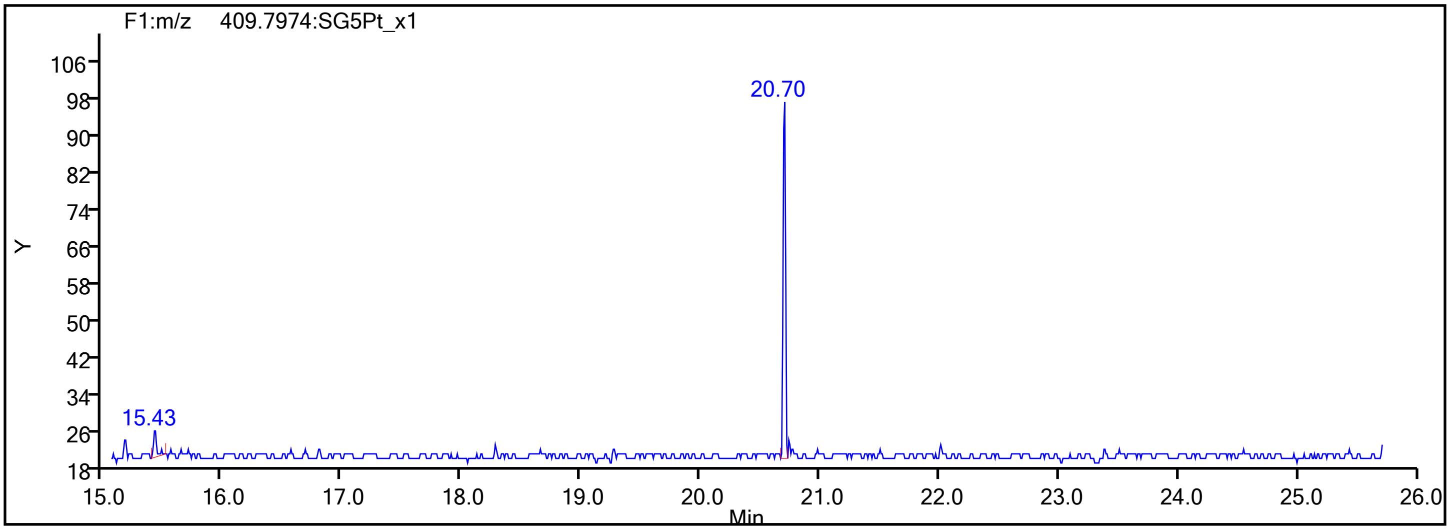

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

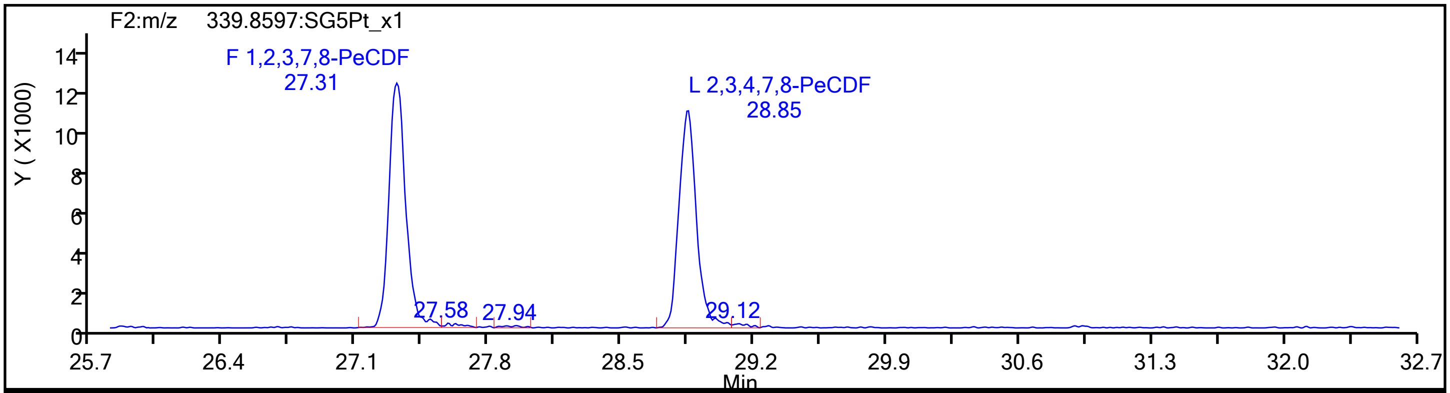

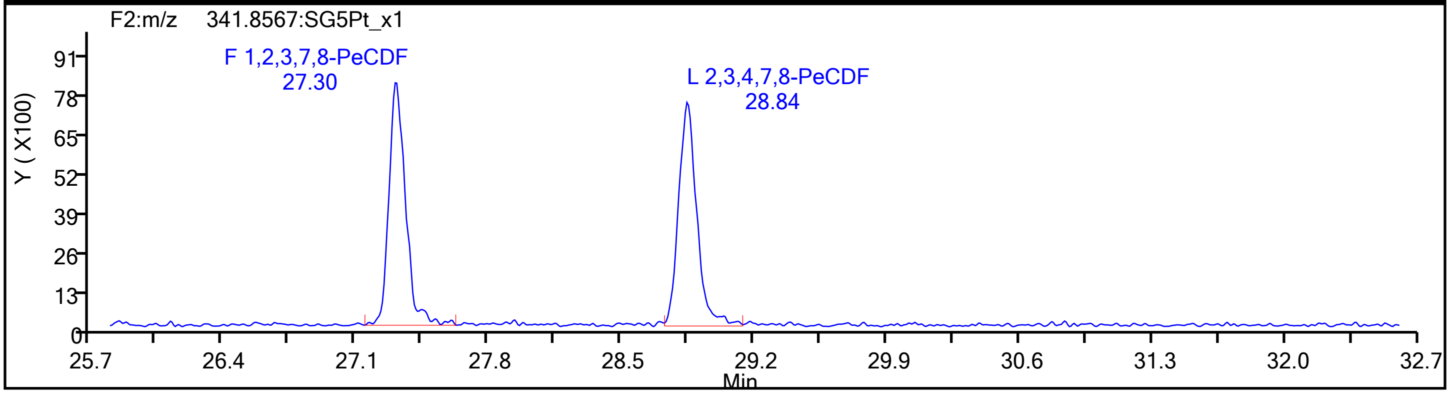

PeCDF Standards

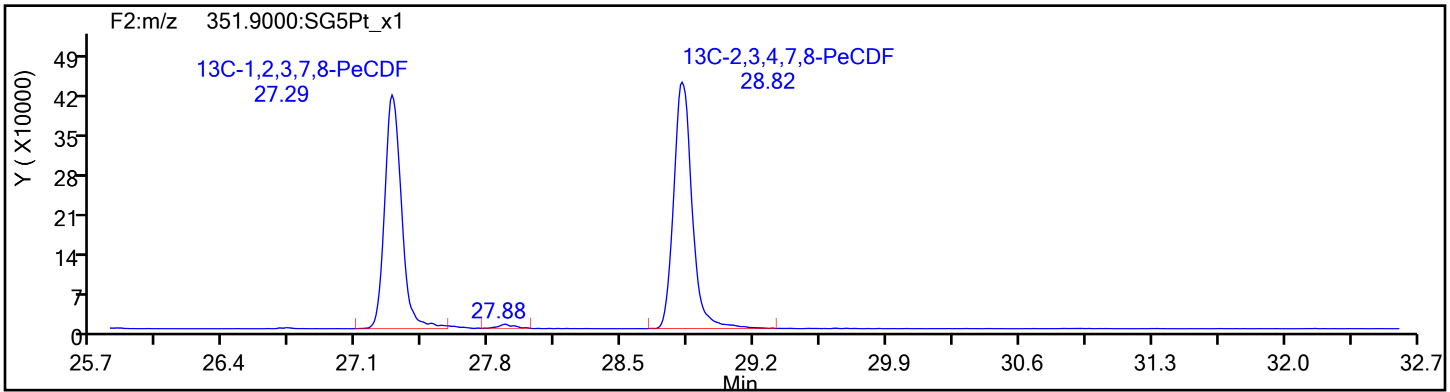

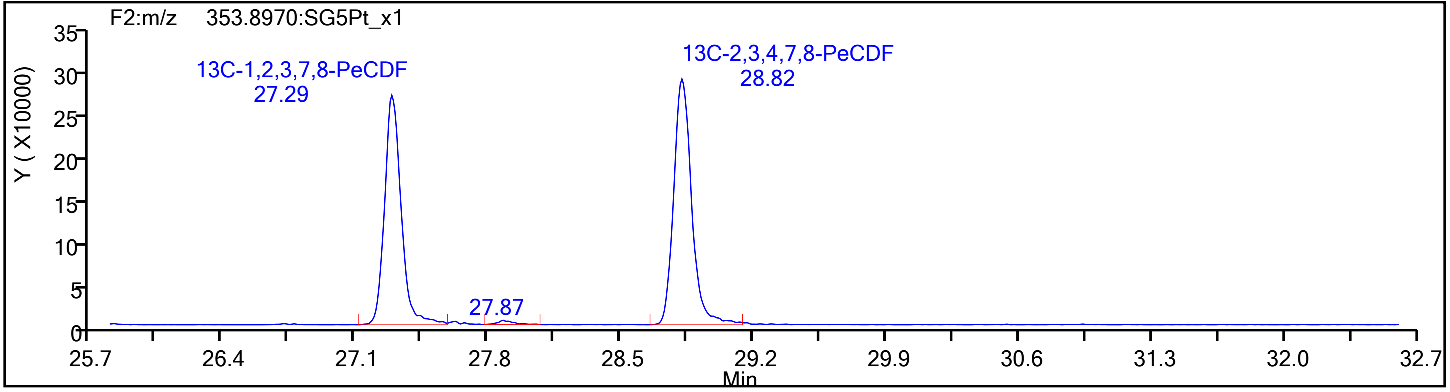

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

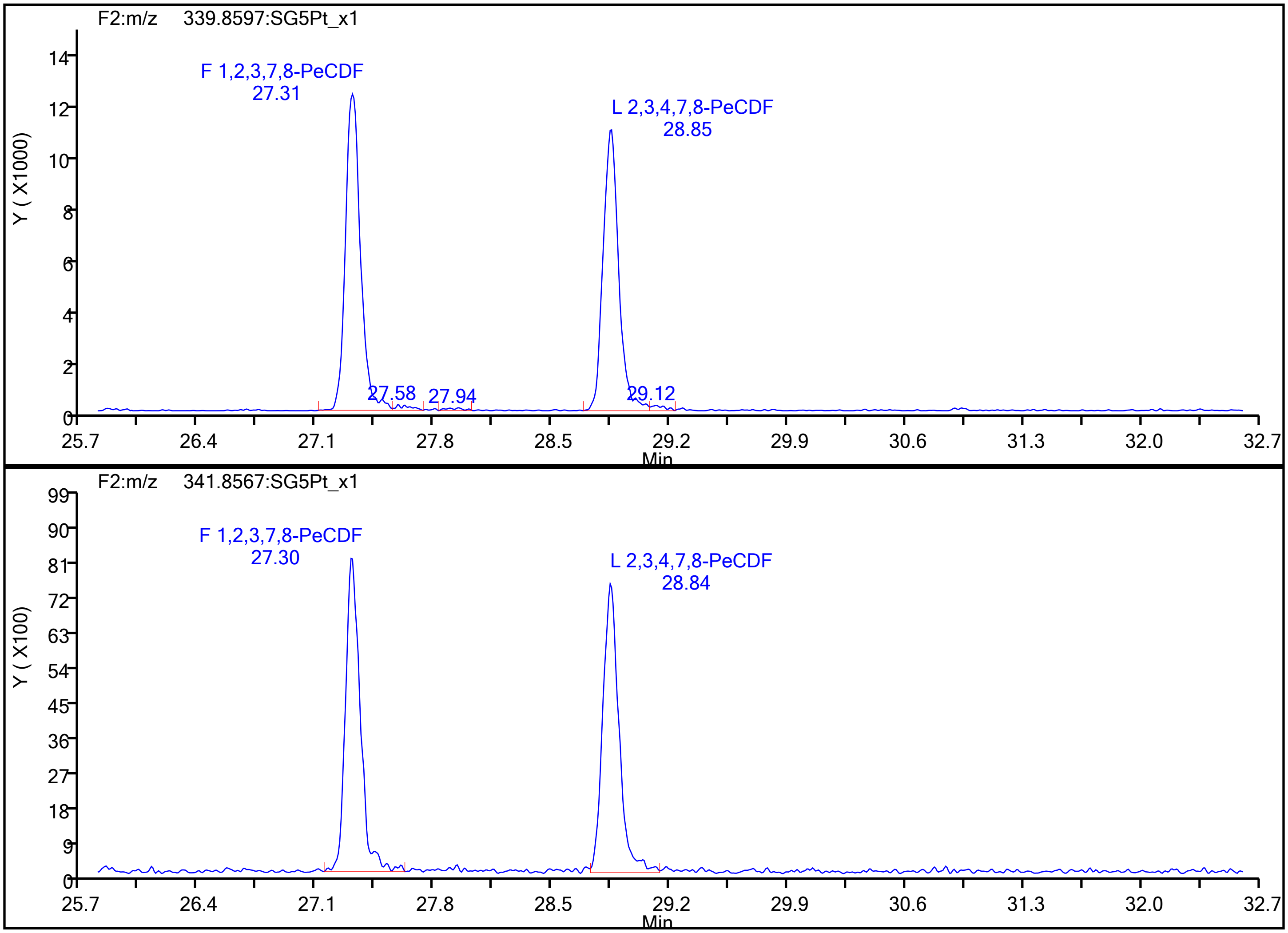

PeCDF Interference Mass

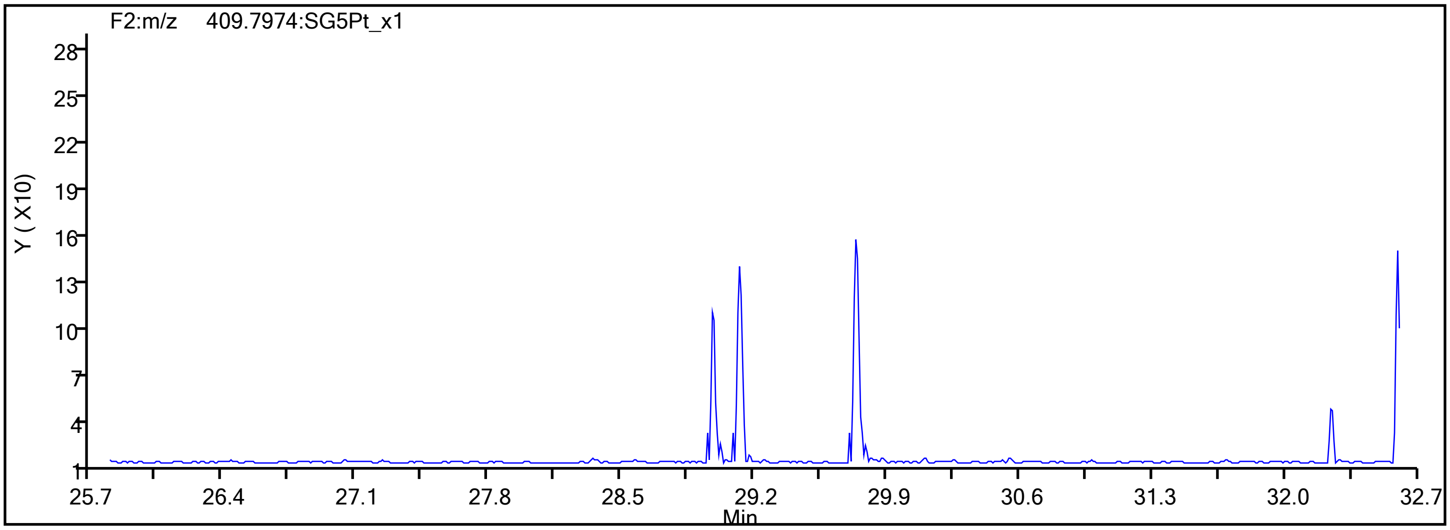

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

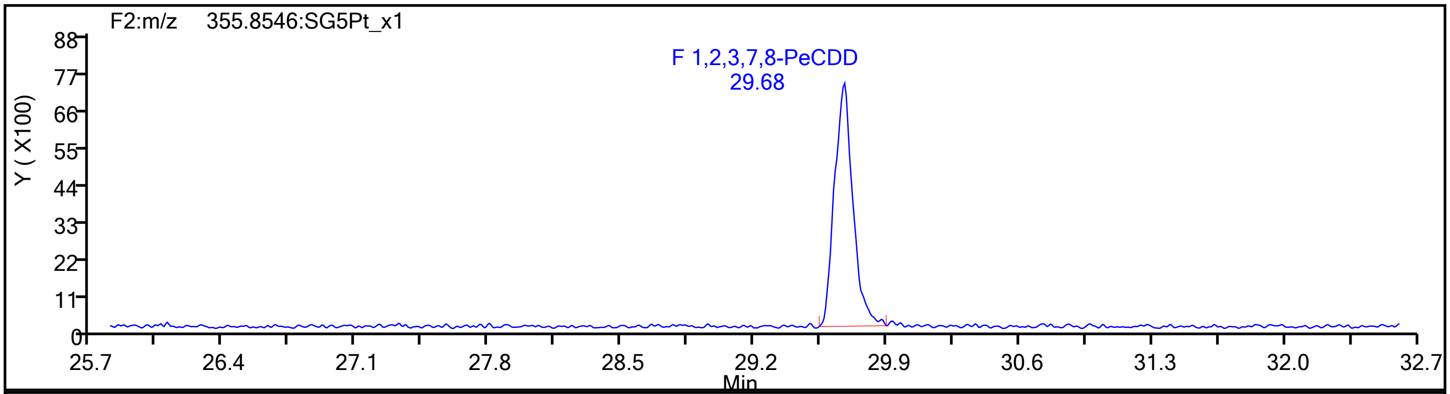

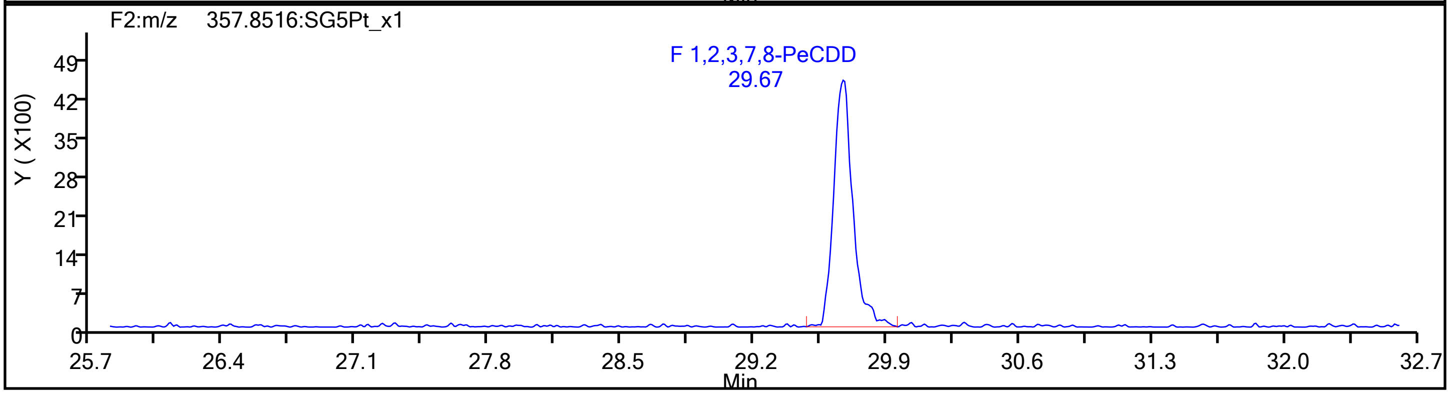

PeCDD Standards

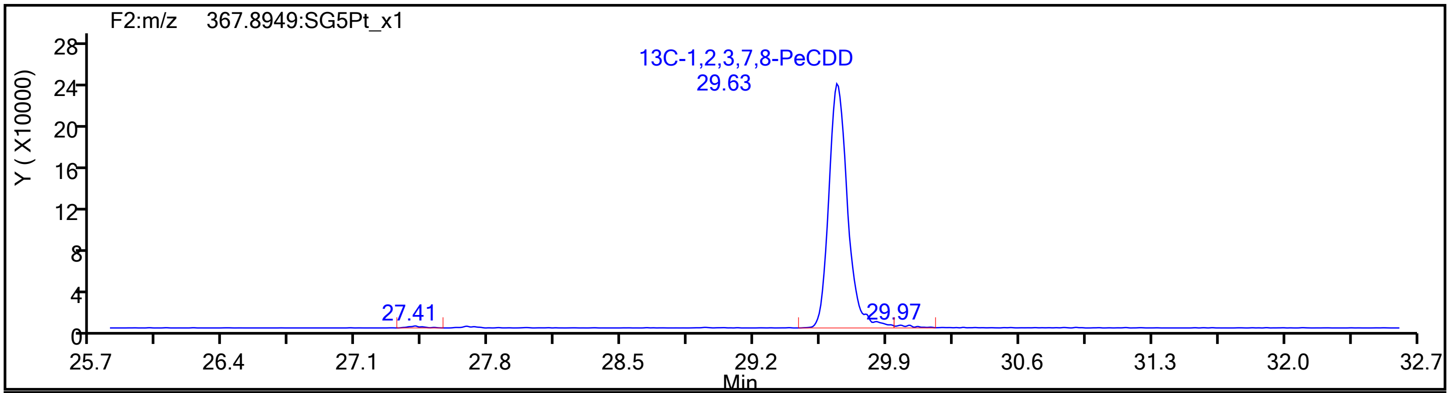

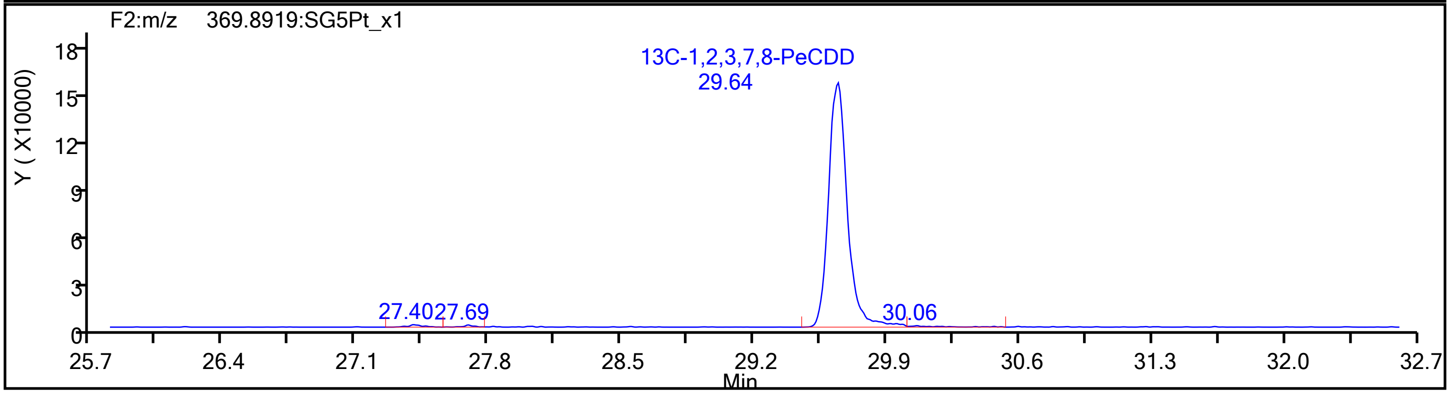

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date: 03-Jun-2020 14:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

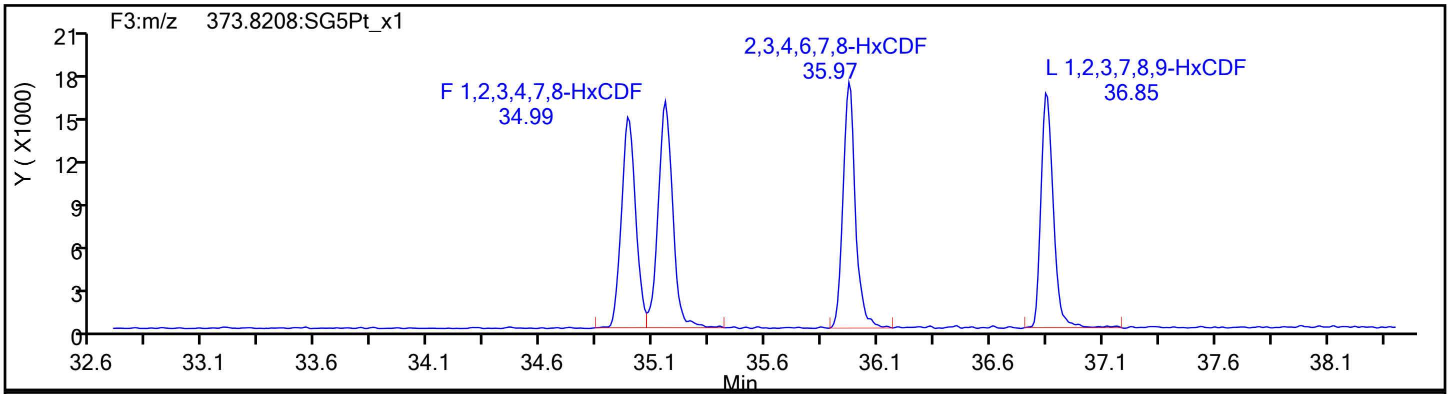

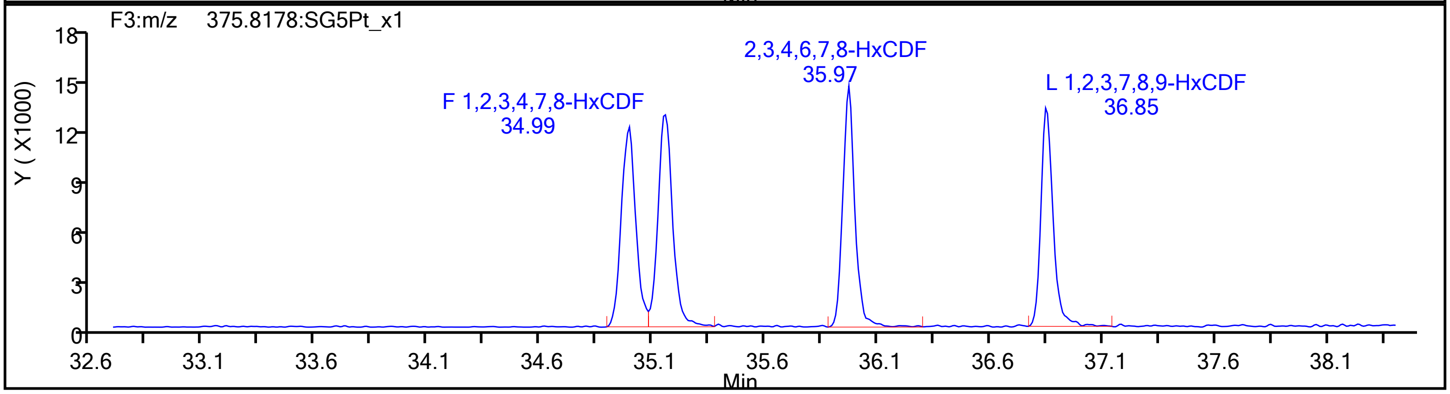

HxCDF Standards

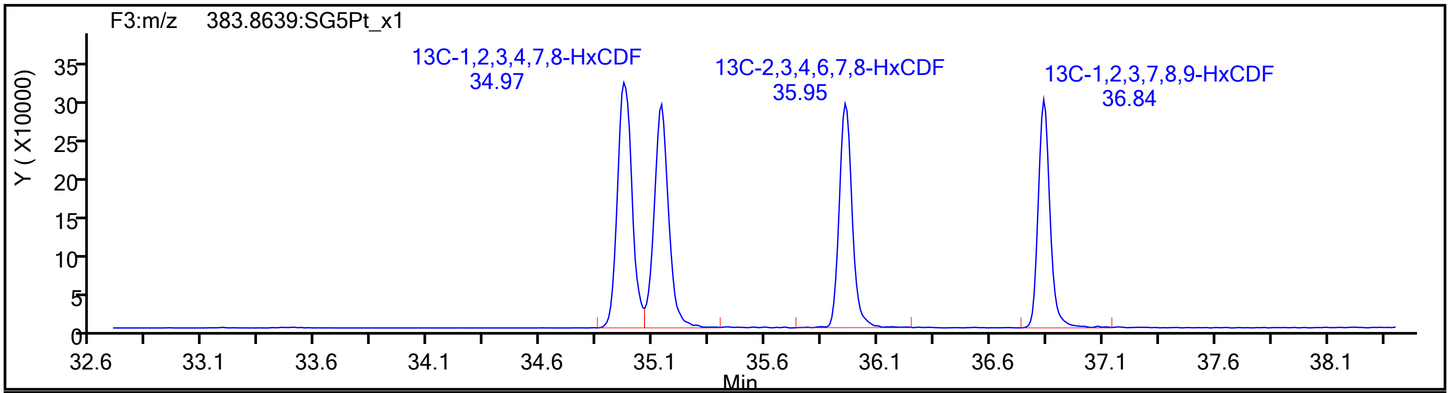

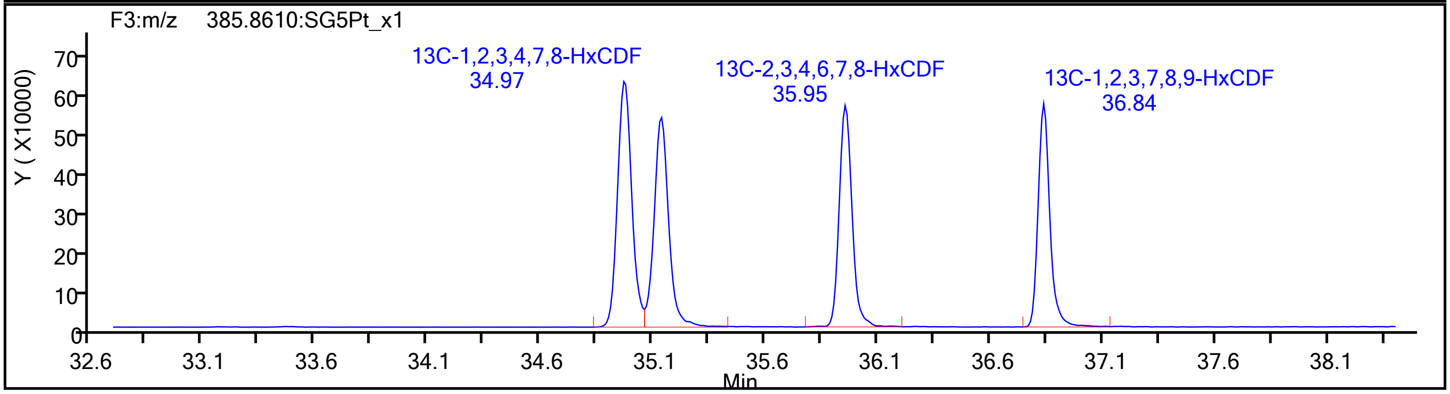

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date: 03-Jun-2020 14:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

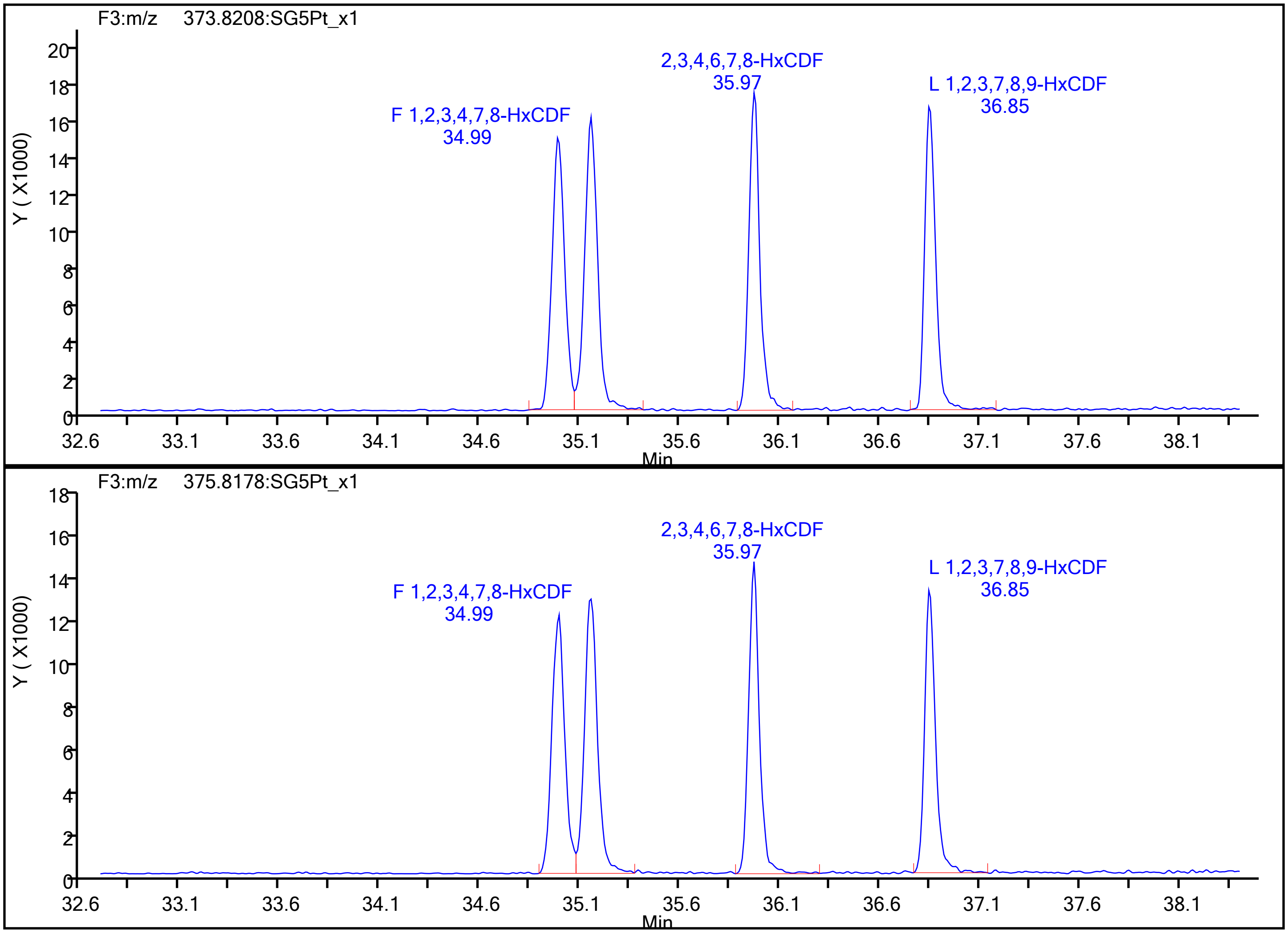

HxCDF Interference Mass

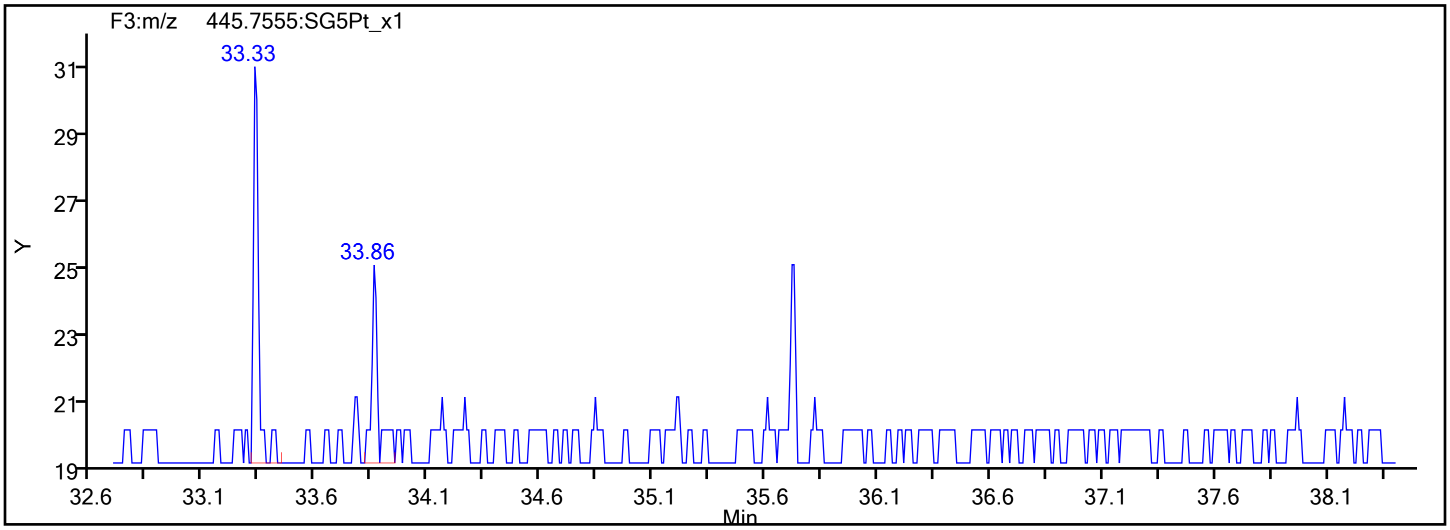

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

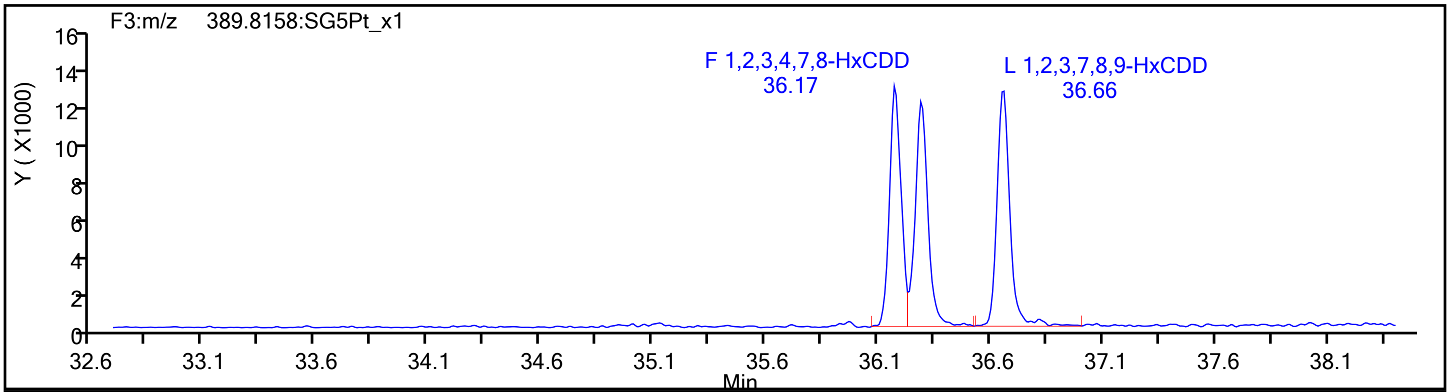

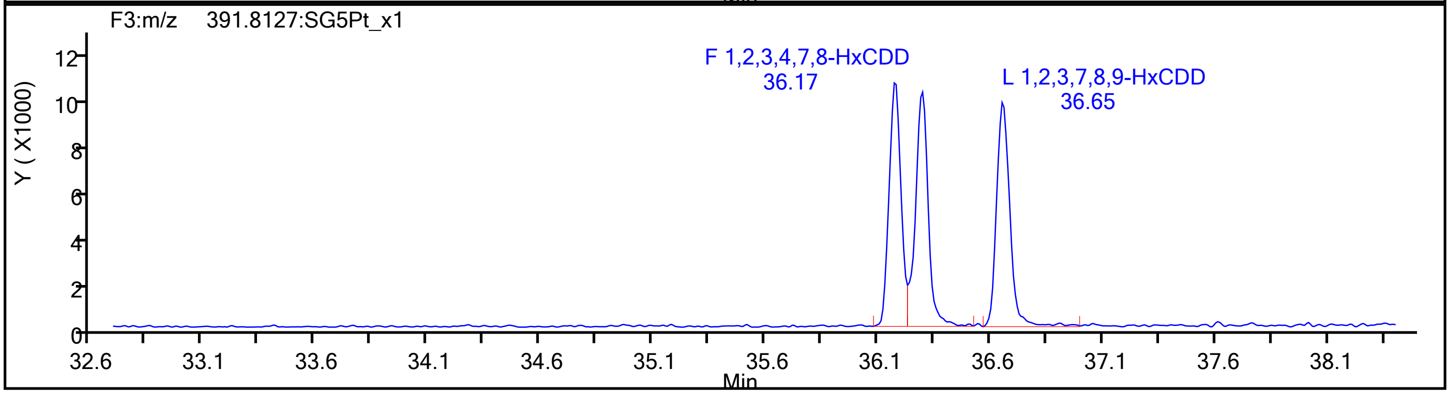

HxCDD Standards

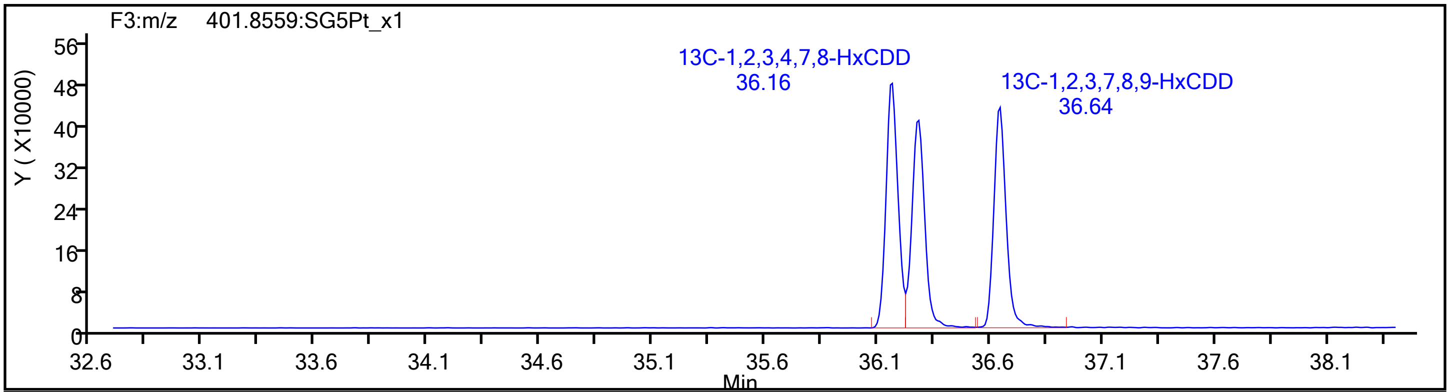

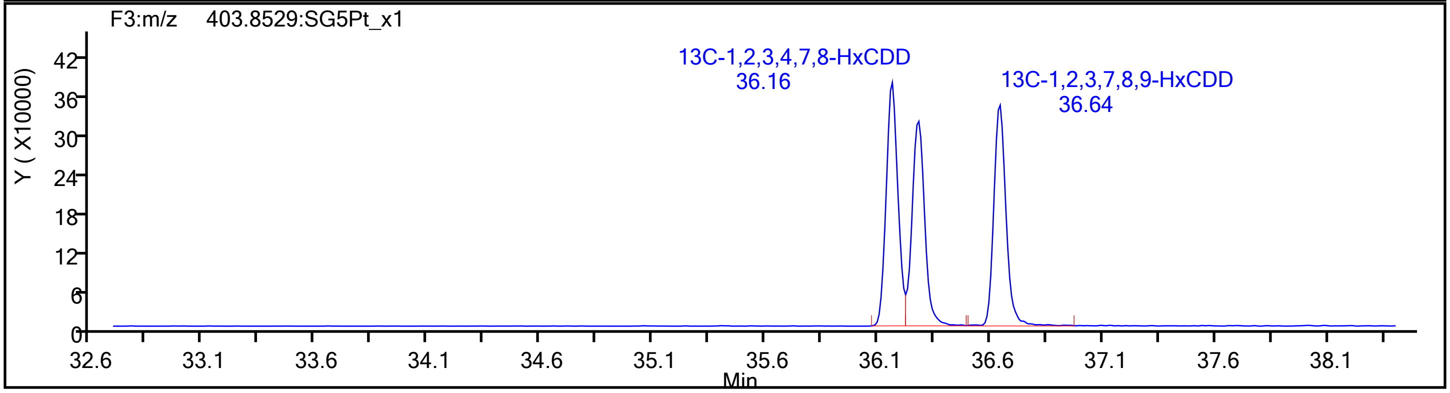

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

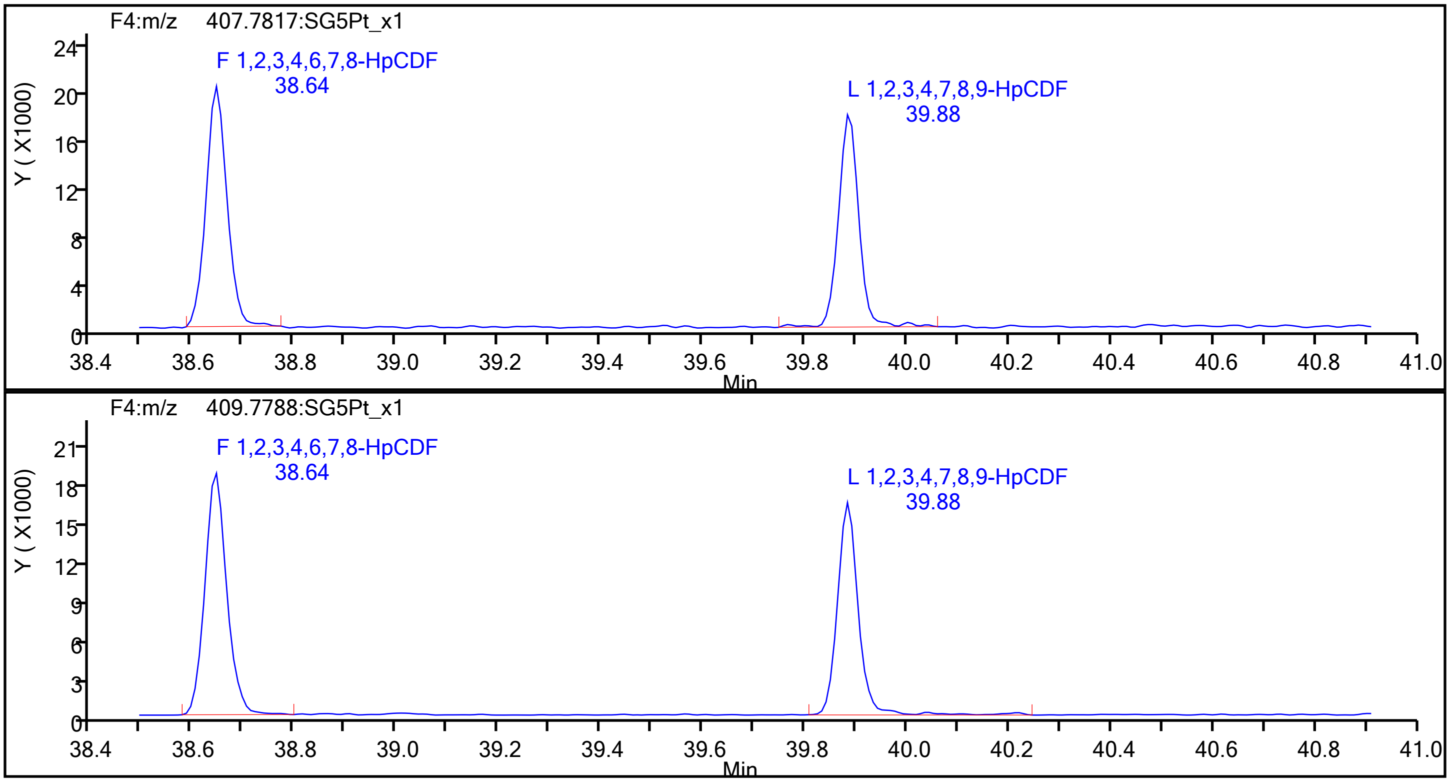

HpCDF Standards

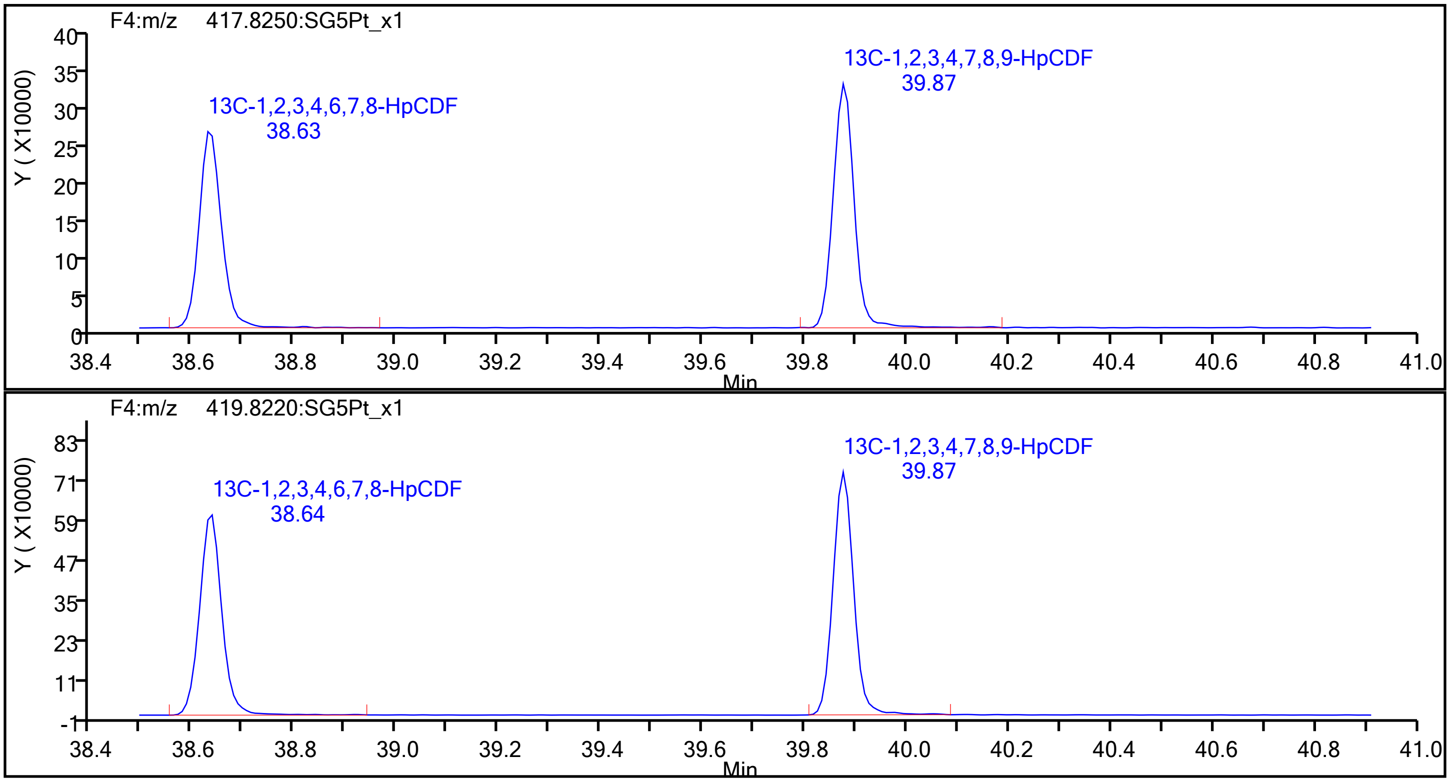

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

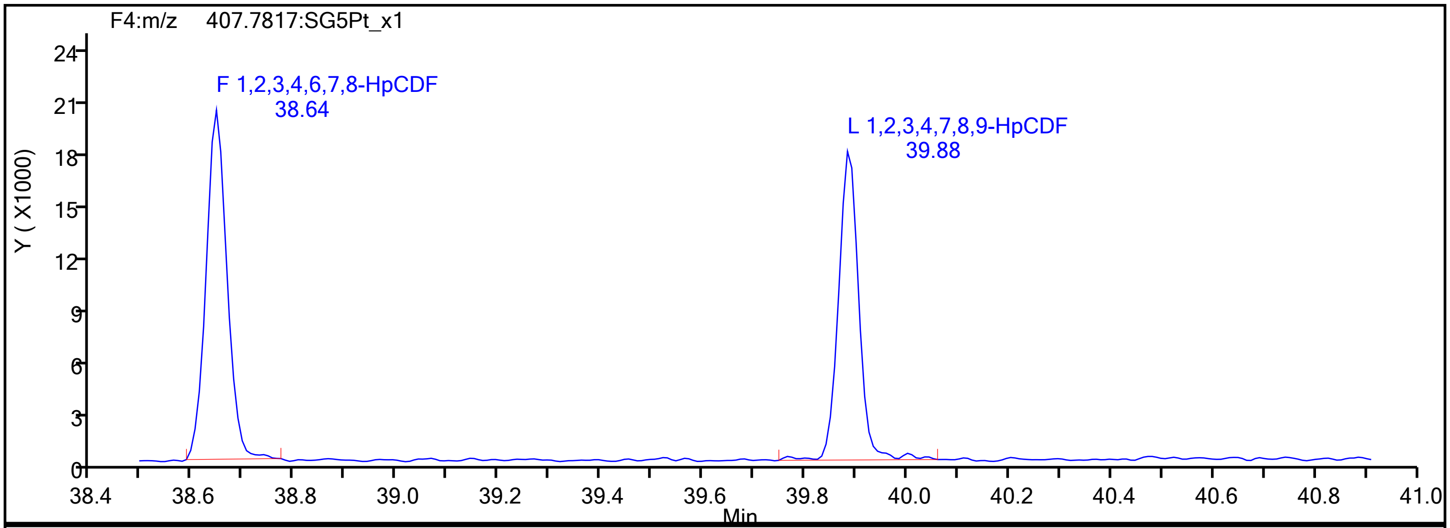

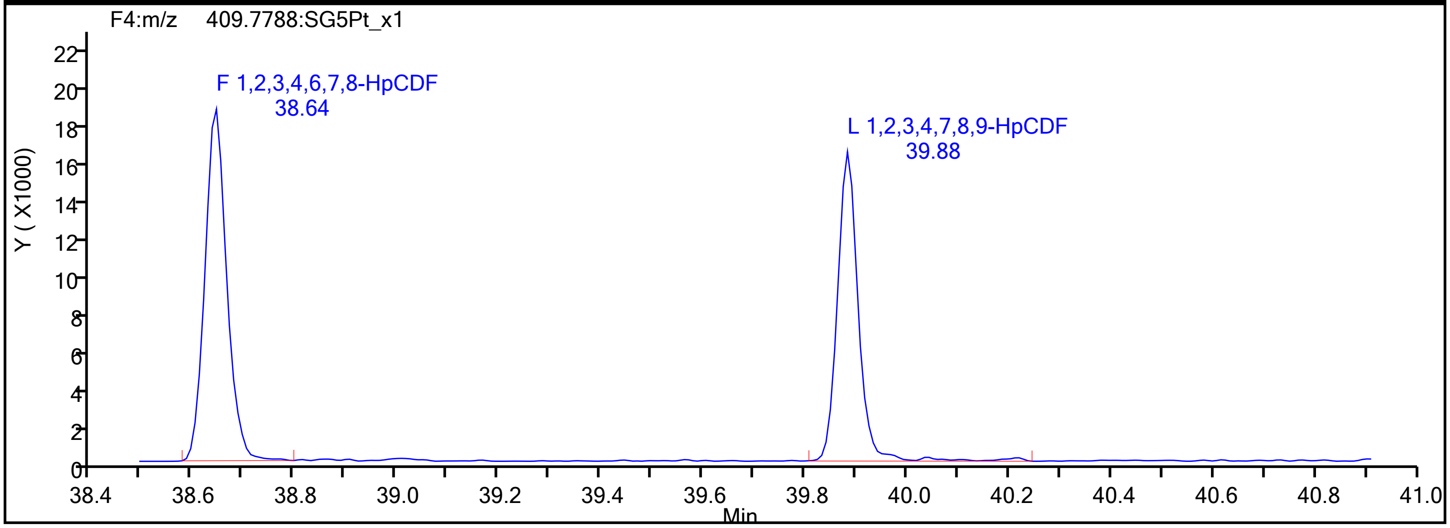

HpCDF Interference Mass

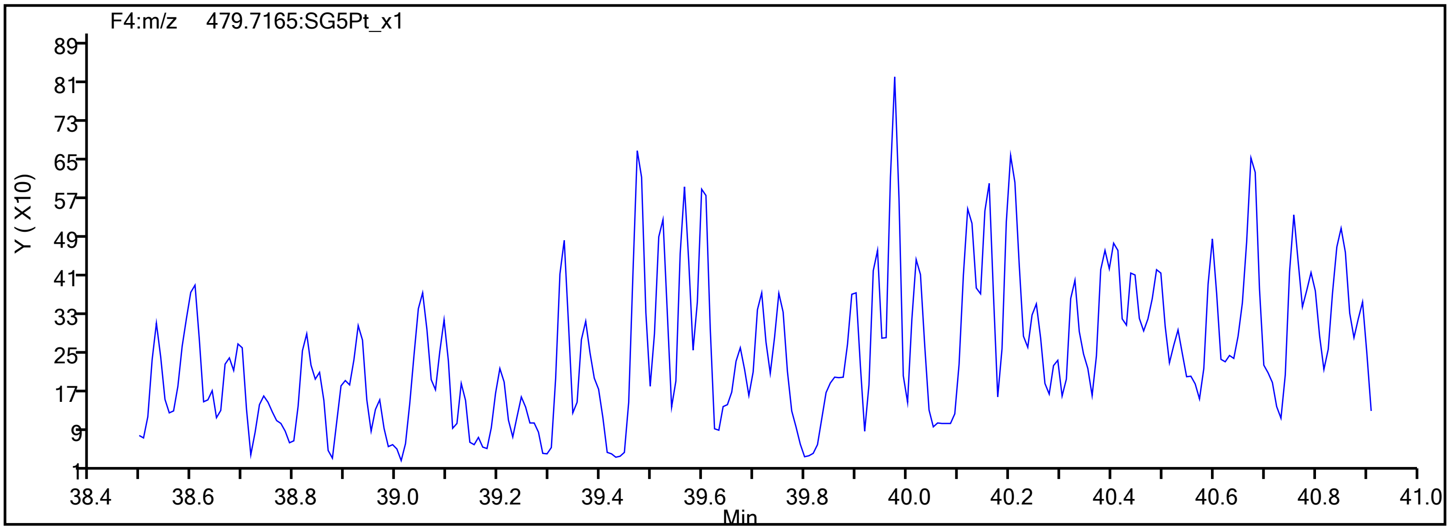

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

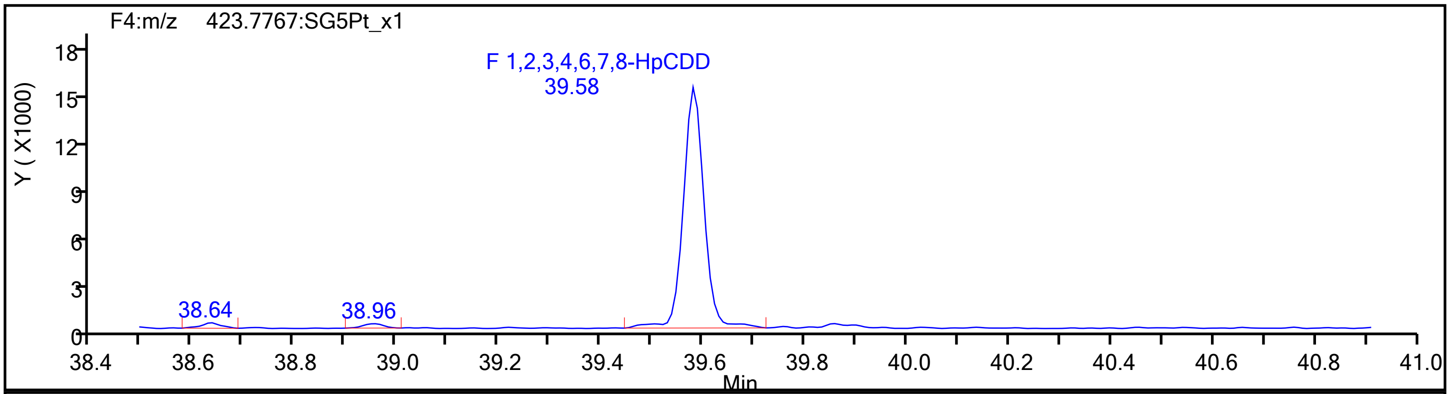

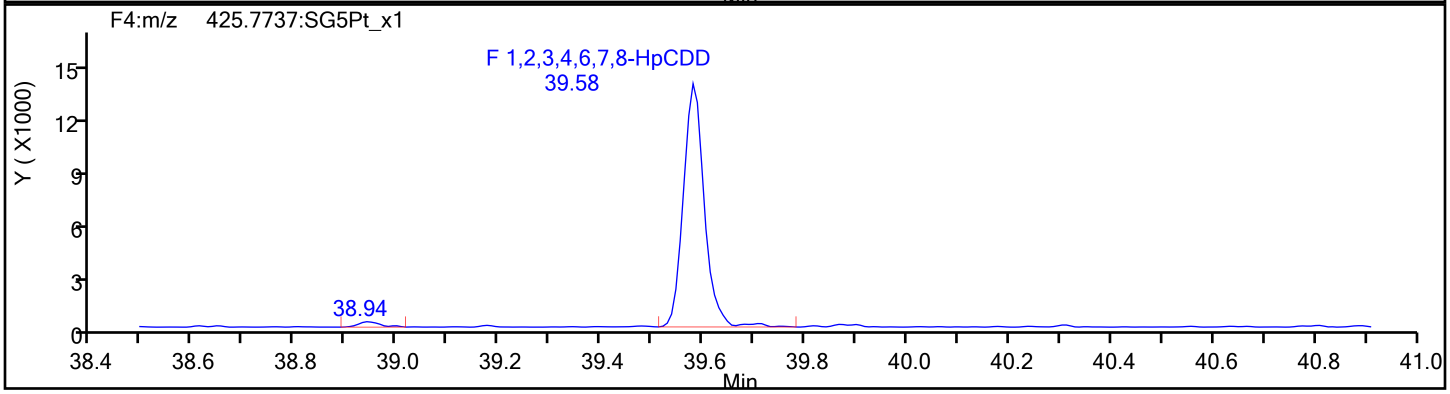

HpCDD Standards

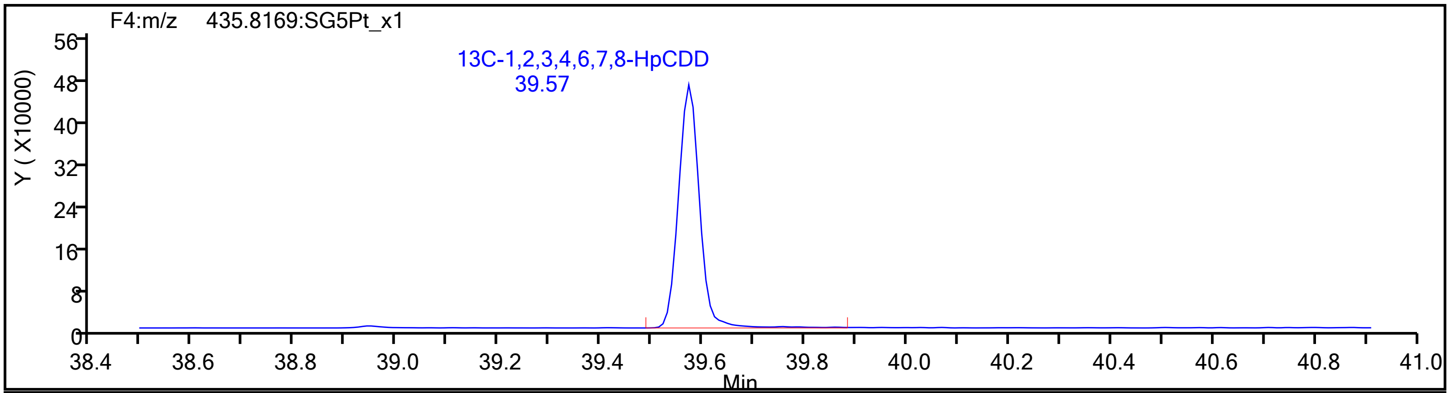

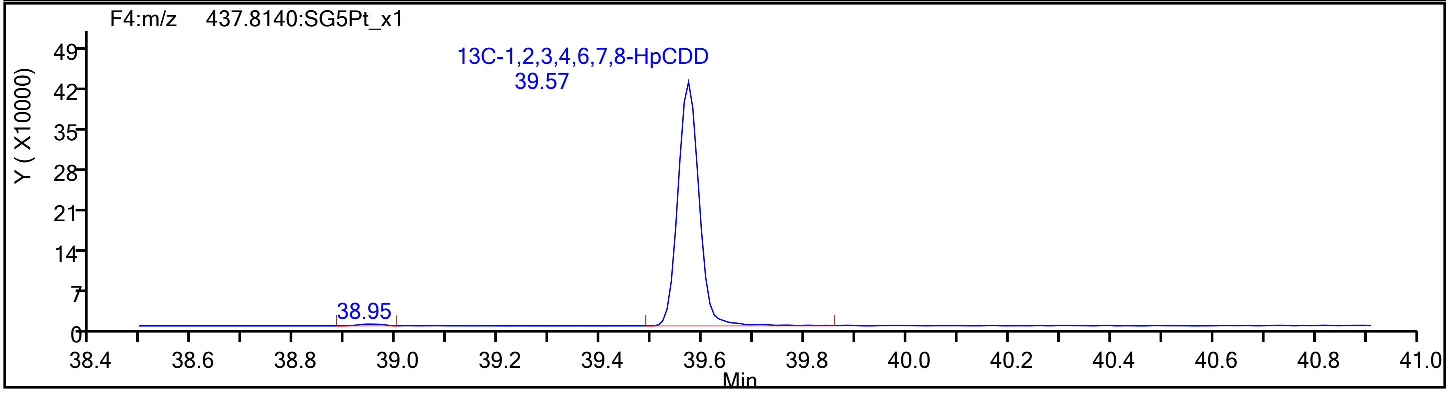

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

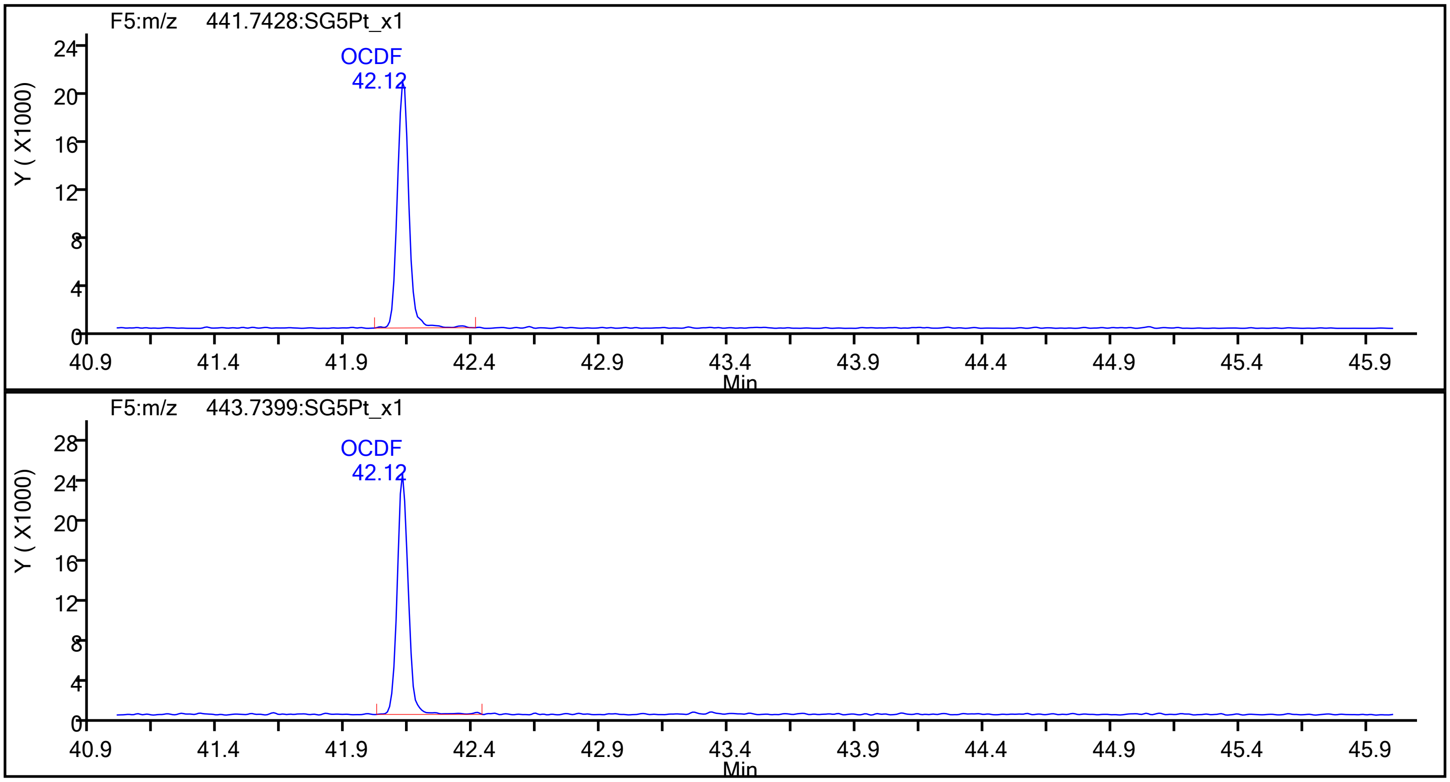

OCDF Standards

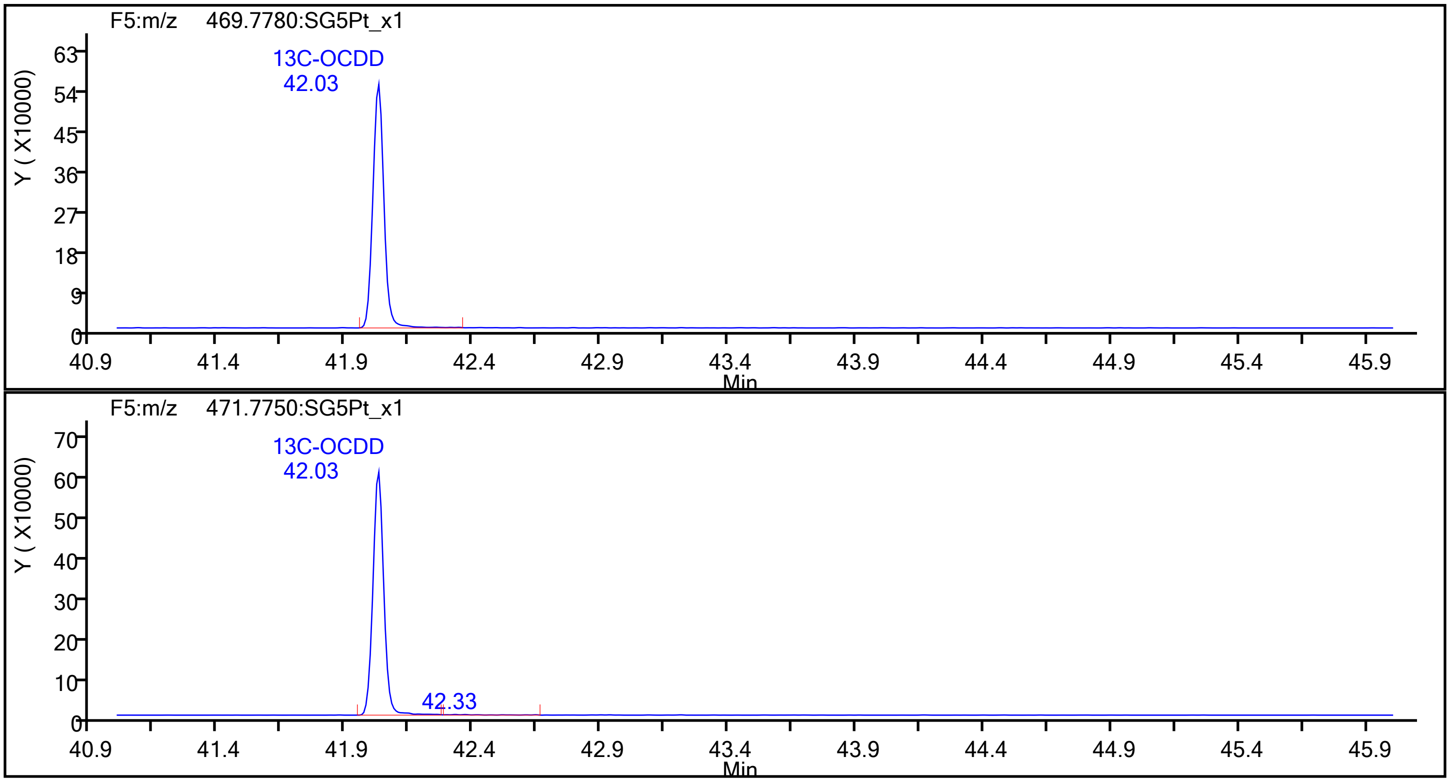

Report Date: 05-Jun-2020 10:11:03
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d
Injection Date: 03-Jun-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

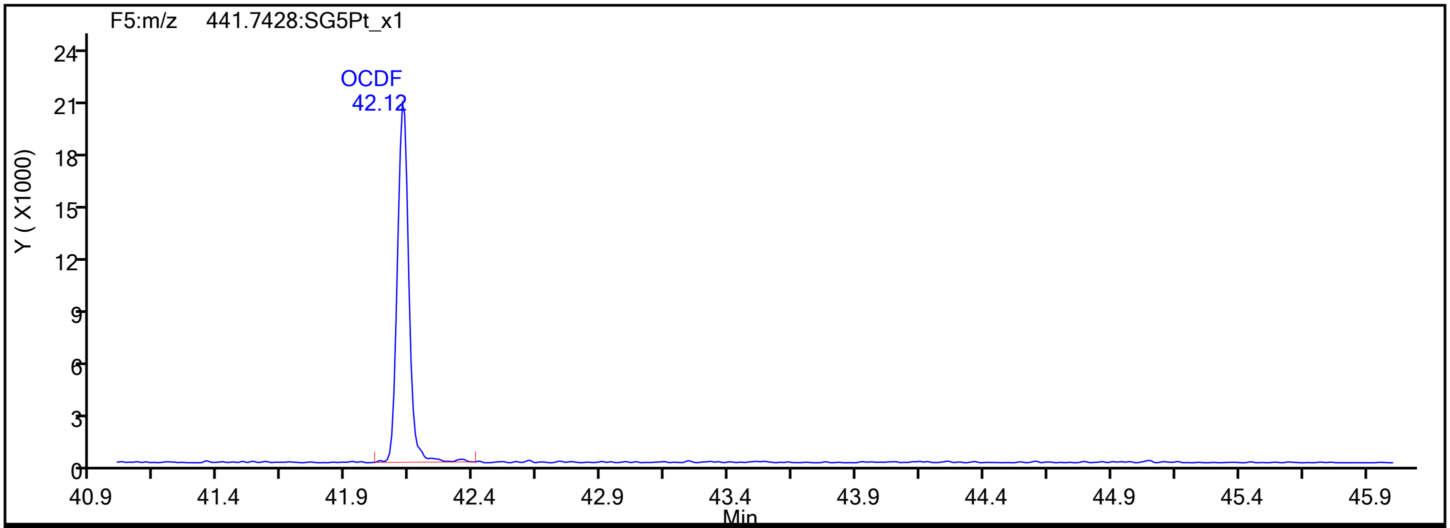

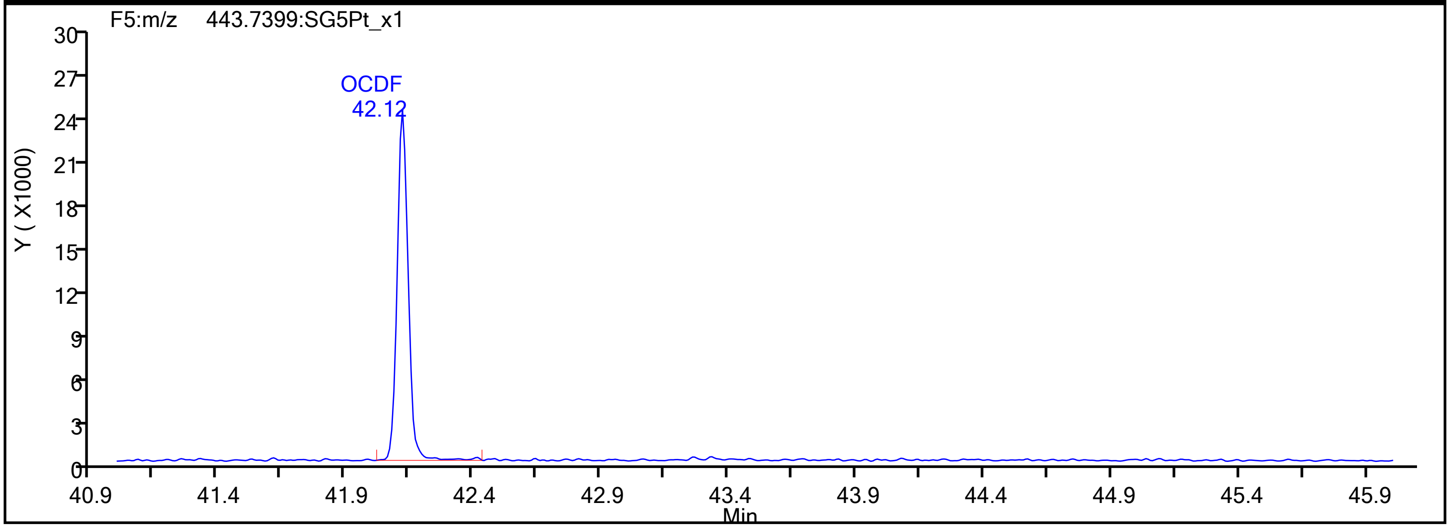

OCDF Interference Mass

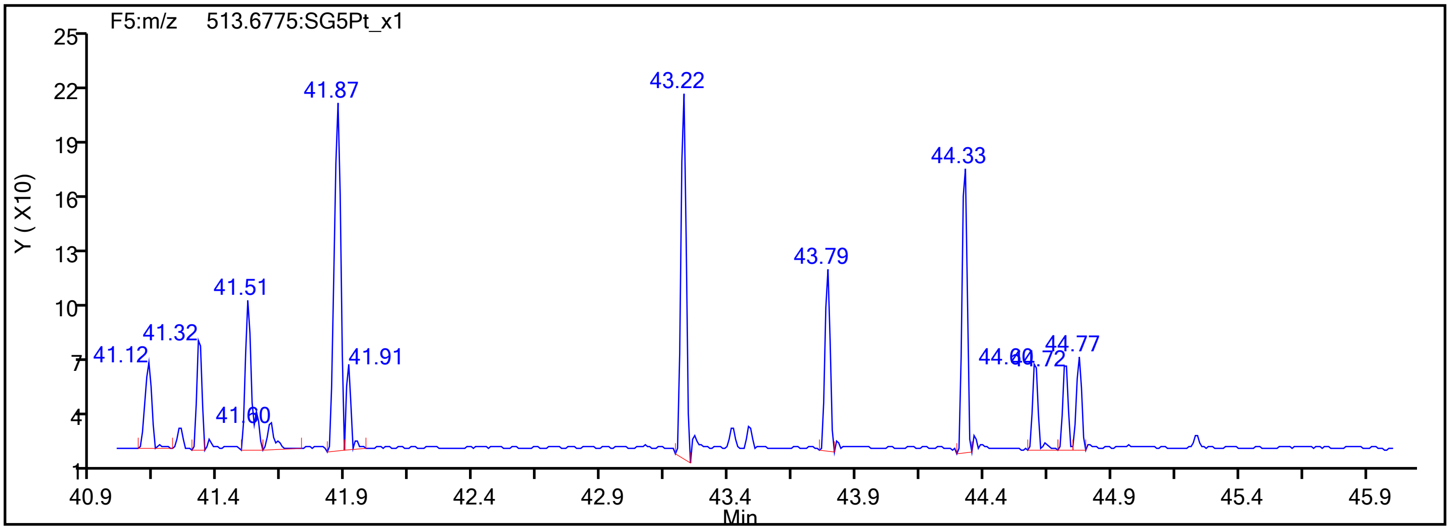

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

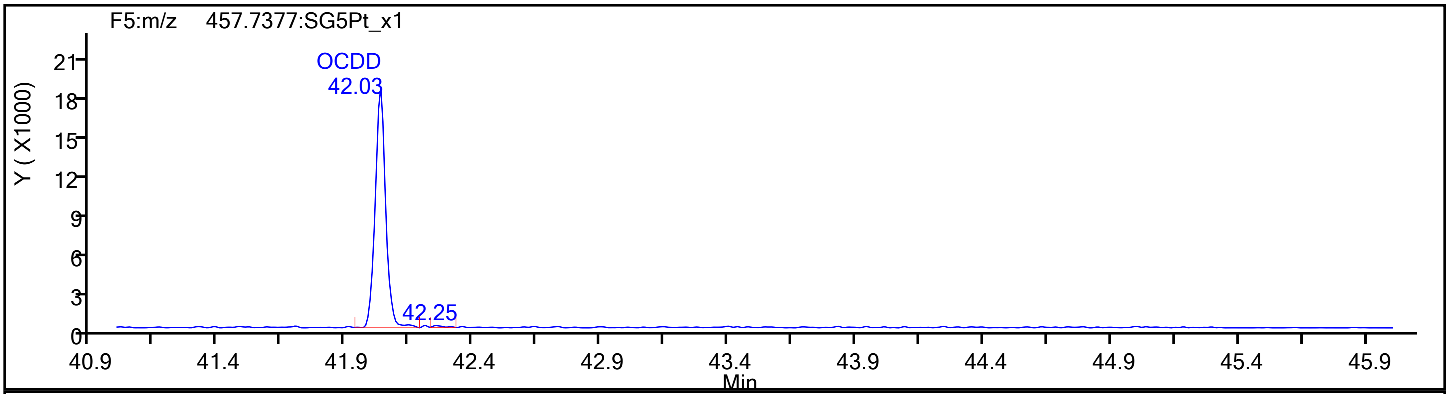

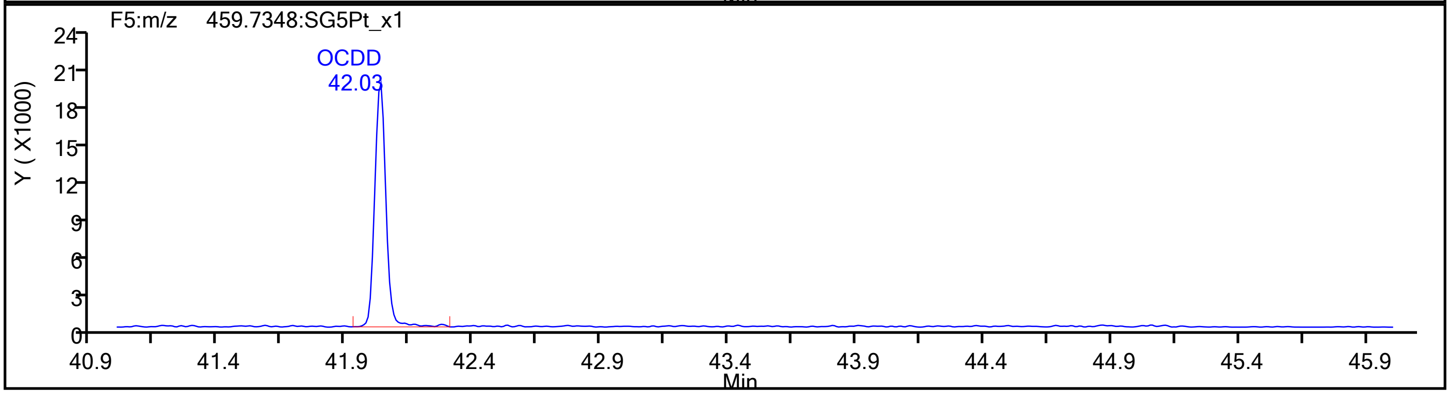

OCDD Standards

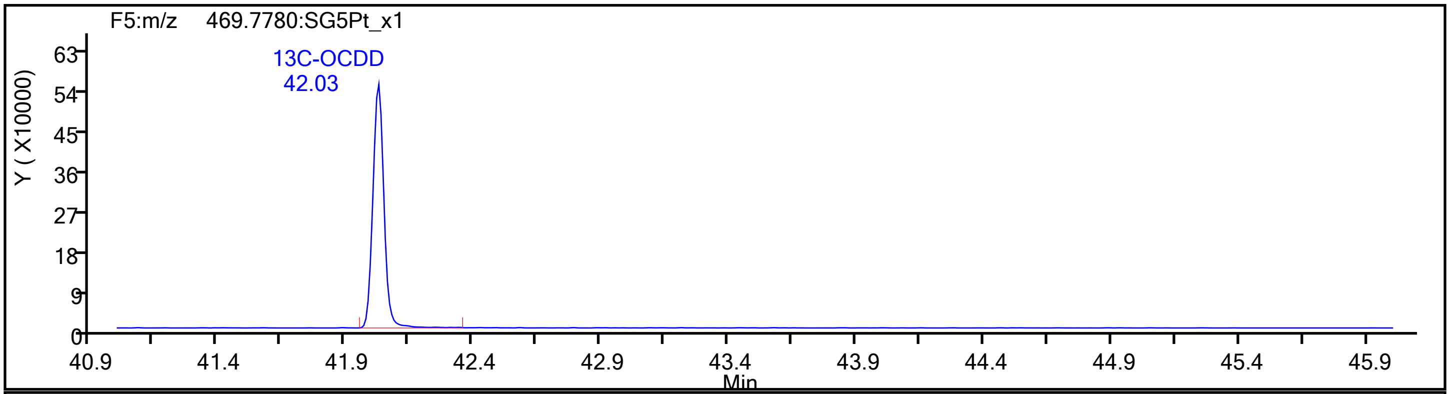

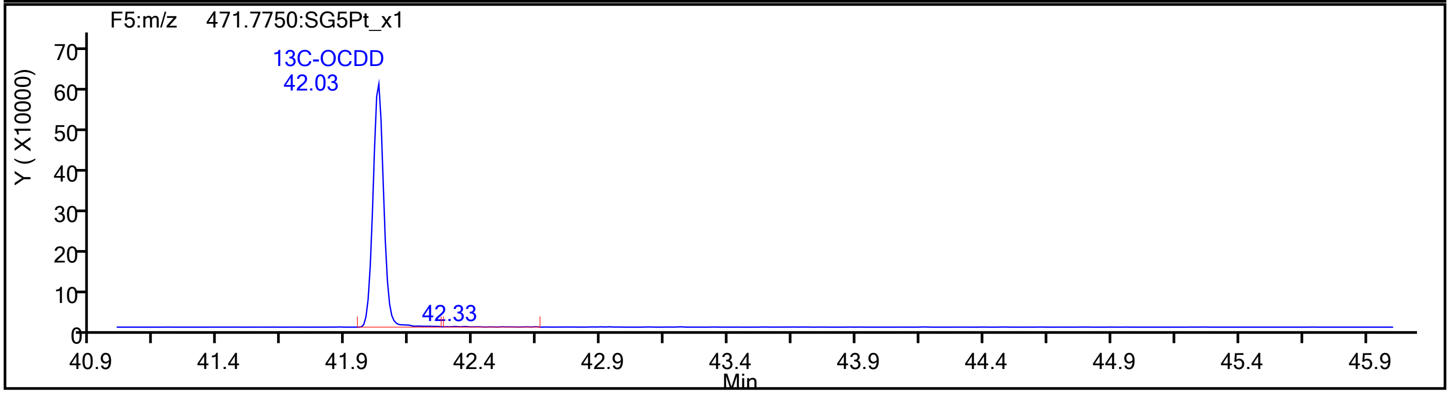

Report Date: 05-Jun-2020 10:11:03 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d

Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

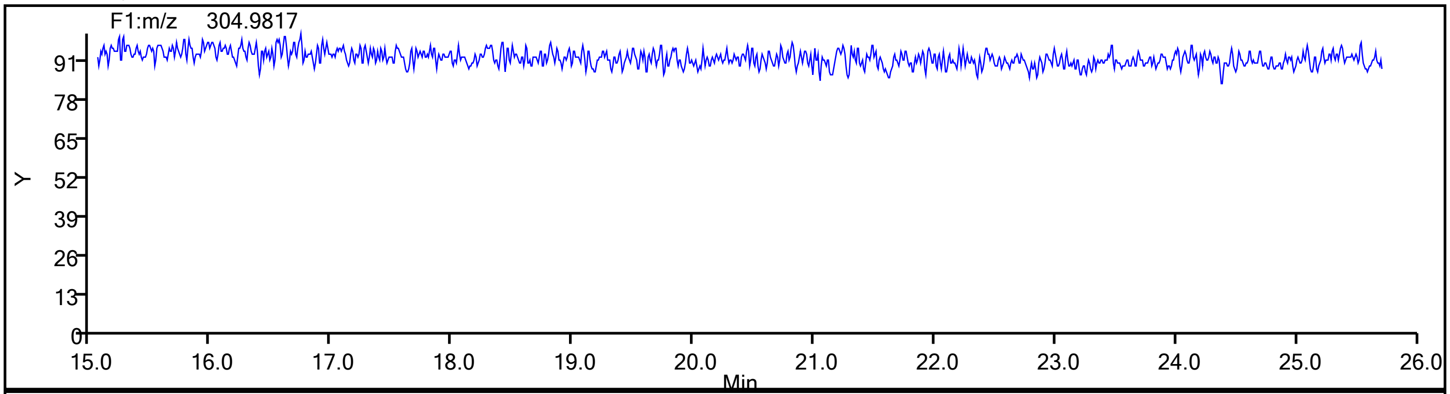

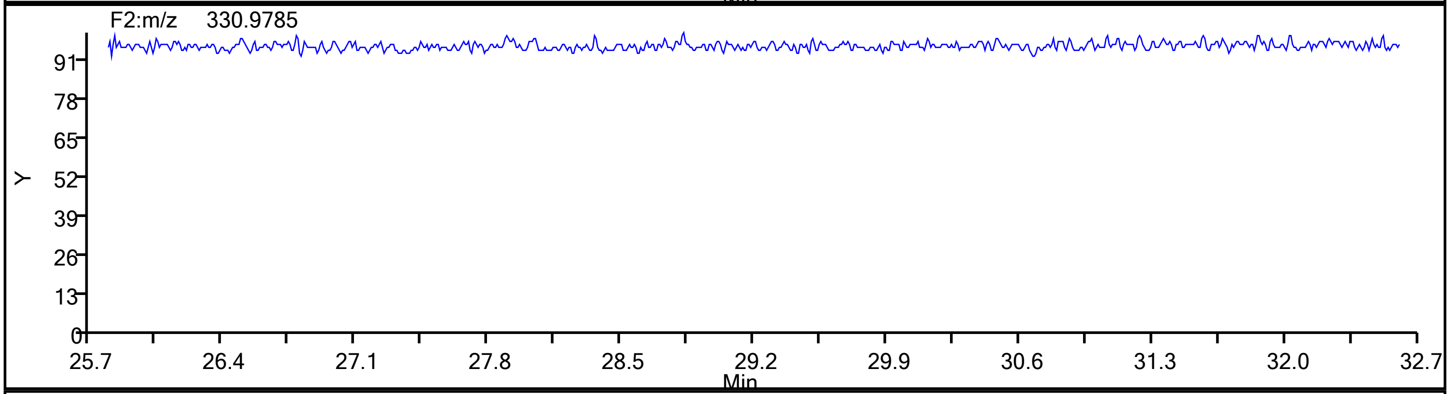

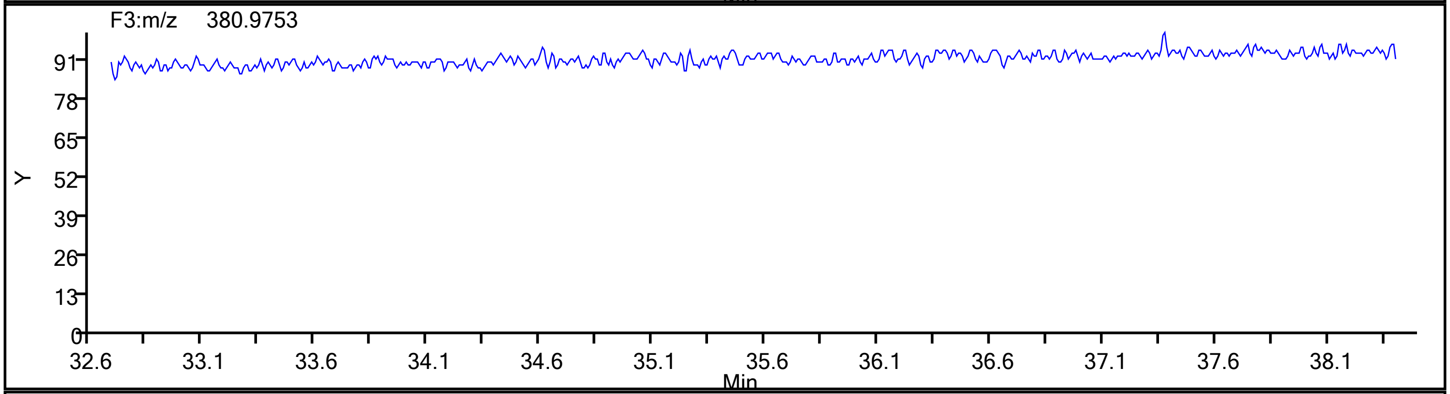

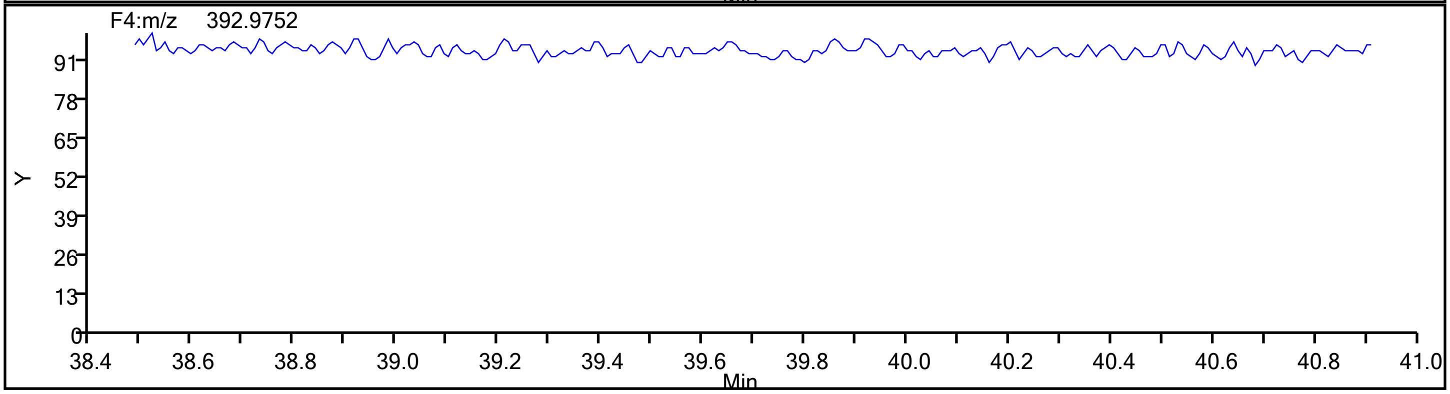

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_5.d		
Injection Date:	03-Jun-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

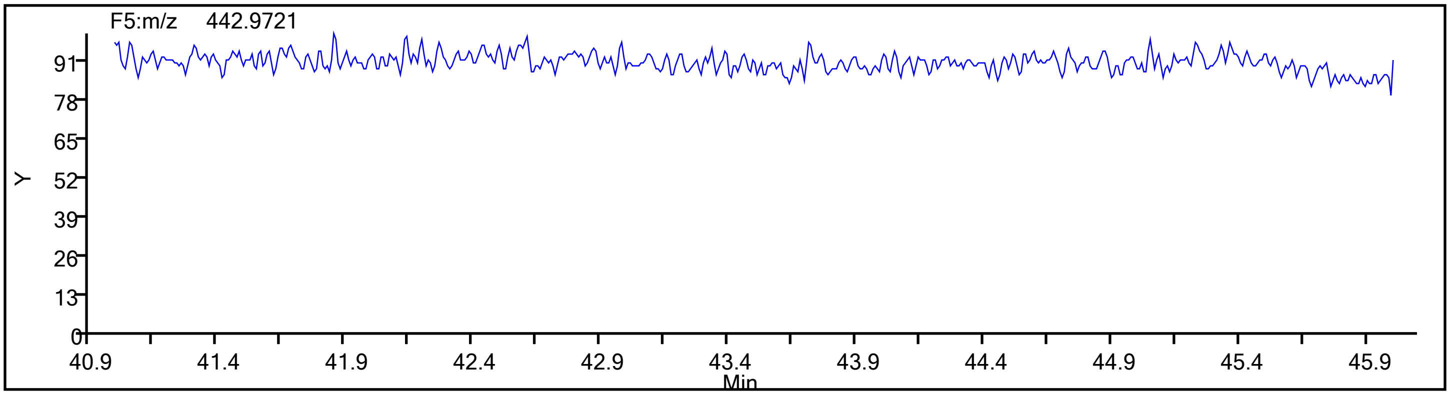

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 03-Jun-2020 15:42:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 14:02:14 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: stephensk Date: 03-Jun-2020 16:34:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.315	5314575	0.80	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.334	8006239	0.79	1.4977	100.6	100.6	0.2319	0.2319	101	
2,3,7,8-TCDF	20.351	179323	0.76	1.1312	1.980	1.980	0.0151	0.0151	99.00	
S Total TCDF					1.980	1.980	0.0151	0.0151		
D 13C-2,3,7,8-TCDD	21.702	5440325	0.79	1.0367	98.7	98.7	0.2137	0.2137	98.74	
2,3,7,8-TCDD	21.728	127378	0.74	1.1849	1.976	1.976	0.0305	0.0305	98.80	
$ 37Cl4-2,3,7,8-TCDD	21.728	113435		1.1208	1.904	1.904	0.0179	0.0179	95.22	
S Total TCDD					1.976	1.976	0.0305	0.0305		
D 13C-1,2,3,7,8-PeCDF	27.306	6879768	1.58	1.3057	99.1	99.1	0.4041	0.4041	99.14	
1,2,3,7,8-PeCDF	27.331	771318	1.58	1.1060	10.1	10.1	0.0443	0.0443	101	
D 13C-2,3,4,7,8-PeCDF	28.847	8439398	1.60	1.5420	103.0	103.0	0.3422	0.3422	103	
2,3,4,7,8-PeCDF	28.863	754082	1.57	0.9067	9.855	9.855	0.0467	0.0467	98.55	
S Total PeCDF					20.0	20.0	0.0455	0.0455		
D 13C-1,2,3,7,8-PeCDD	29.655	4345521	1.59	0.8294	98.6	98.6	0.1496	0.1496	98.58	
1,2,3,7,8-PeCDD	29.688	490548	1.53	1.1062	10.2	10.2	0.0418	0.0418	102	
S Total PeCDD					10.2	10.2	0.0418	0.0418		
D 13C-1,2,3,4,7,8-HxCDF	34.987	7273246	0.53	1.4619	103.1	103.1	0.2783	0.2783	103	
1,2,3,4,7,8-HxCDF	35.012	724662	1.25	1.0087	9.878	9.878	0.0485	0.0485	98.78	
D 13C-1,2,3,6,7,8-HxCDF	35.155	6209740	0.53	1.2866	100.1	100.1	0.3162	0.3162	100	
1,2,3,6,7,8-HxCDF	35.172	783185	1.26	1.2432	10.1	10.1	0.0483	0.0483	101	
D 13C-2,3,4,6,7,8-HxCDF	35.972	5721877	0.54	1.1988	98.9	98.9	0.3394	0.3394	98.95	
2,3,4,6,7,8-HxCDF	35.989	738782	1.28	1.2736	10.1	10.1	0.0440	0.0440	101	
D 13C-1,2,3,7,8,9-HxCDF	36.856	5058891	0.52	1.0687	98.1	98.1	0.3807	0.3807	98.13	
1,2,3,7,8,9-HxCDF	36.873	658245	1.27	1.2882	10.1	10.1	0.0458	0.0458	101	
S Total HxCDF					40.3	40.3	0.0466	0.0466		
* 13C-1,2,3,7,8,9-HxCDD	36.663	4823841	1.25	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.182	5591026	1.26	1.1046	104.9	104.9	0.2052	0.2052	105	
1,2,3,4,7,8-HxCDD	36.199	511840	1.27	0.9336	9.805	9.805	0.0345	0.0345	98.05	
D 13C-1,2,3,6,7,8-HxCDD	36.300	4793122	1.28	0.9871	100.7	100.7	0.2296	0.2296	101	
1,2,3,6,7,8-HxCDD	36.317	524375	1.24	1.0802	10.1	10.1	0.0369	0.0369	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.679	536354	1.21	1.0574	9.769	9.769	0.0337	0.0337	97.69	
S Total HxCDD					29.7	29.7	0.0350	0.0350		
D 13C-1,2,3,4,6,7,8-HpCDF	38.645	4315198	0.47	0.9035	99.0	99.0	0.4147	0.4147	99.01	
1,2,3,4,6,7,8-HpCDF	38.662	714508	1.01	1.5957	10.4	10.4	0.0570	0.0570	104	
D 13C-1,2,3,4,7,8,9-HpCDF	39.892	5040340	0.46	1.0480	99.7	99.7	0.3575	0.3575	99.70	
1,2,3,4,7,8,9-HpCDF	39.900	578385	1.03	1.1693	9.814	9.814	0.0615	0.0615	98.14	
S Total HpCDF					20.2	20.2	0.0593	0.0593		
D 13C-1,2,3,4,6,7,8-HpCDD	39.588	4139807	1.06	0.8875	96.7	96.7	0.3434	0.3434	96.70	
1,2,3,4,6,7,8-HpCDD	39.597	465468	1.04	1.1150	10.1	10.1	0.0373	0.0373	101	
S Total HpCDD					10.1	10.1	0.0373	0.0373		
D 13C-OCDD	42.042	5749279	0.90	0.6297	189.3	189.3	0.1871	0.1871	94.63	
OCDF	42.134	841389	0.91	1.4809	19.8	19.8	0.0325	0.0325	98.82	
OCDD	42.050	711726	0.90	1.1948	20.7	20.7	0.0352	0.0352	104	

Reagents:

HRDXNL3_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 03-Jun-2020 15:42:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 14:02:14 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: stephensk Date: 03-Jun-2020 16:34:37

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.315	21.309	0		2356924	340498	466	1165	731		
333.9338	21.324	21.309	1		2957651	441191	227	567	1944	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.334	20.321	1	0.954	3520988	532356	722	1805	737		
317.9389	20.325	20.321	0	0.954	4485251	669402	364	910	1839	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.351	20.347	0	1.001	77503	11907	24	60	496		
305.8987	20.351	20.347	0	1.001	101820	15057	58	145	260	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.702	21.692	1	1.018	2399434	338214	466	1165	726		
333.9338	21.702	21.692	1	1.018	3040891	415593	227	567	1831	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.728	21.722	0	1.001	54351	7998	83	207	96		
321.8936	21.754	21.722	2	1.002	73027	10309	26	65	397	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.728	21.724	0	1.019	113435	15998	63	157	254		
13C-1,2,3,7,8-PeCDF											
351.9000	27.306	27.300	0	1.281	4211758	677113	965	2412	702		
353.8970	27.314	27.300	1	1.281	2668010	428790	685	1712	626	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.331	27.325	0	1.001	472614	74619	100	250	746		
341.8567	27.340	27.325	1	1.001	298704	48008	117	292	410	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.847	28.834	1	1.353	5190403	778822	965	2412	807		
353.8970	28.847	28.834	1	1.353	3248995	502595	685	1712	734	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.863	28.857	0	1.001	460392	67566	100	250	676		
341.8567	28.863	28.857	0	1.001	293690	43461	117	292	371	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.655	29.651	0	1.391	2665792	375741	190	475	1978		
369.8919	29.663	29.651	1	1.392	1679729	240477	198	495	1215	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.688	29.682	0	1.001	297017	41931	88	220	476		
357.8516	29.697	29.682	1	1.001	193531	28320	26	65	1089	1.53(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.987	34.982	0	0.954	2519952	570418	705	1762	809		
385.8610	34.987	34.982	0	0.954	4753294	1060290	1356	3390	782	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.012	35.000	1	1.001	403019	89473	178	445	503		
375.8178	35.012	35.000	1	1.001	321643	70453	141	352	500	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.155	35.145	1	0.959	2142735	456483	705	1762	647		
385.8610	35.155	35.145	1	0.959	4067005	870626	1356	3390	642	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.172	35.163	1	1.000	437027	96553	178	445	542		
375.8178	35.172	35.163	1	1.000	346158	74869	141	352	531	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.972	35.966	0	0.981	2000221	499825	705	1762	709		
385.8610	35.972	35.966	0	0.981	3721656	920858	1356	3390	679	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.989	35.981	0	1.000	414064	106103	178	445	596		
375.8178	35.989	35.981	0	1.000	324718	81950	141	352	581	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.856	36.848	0	1.005	1728081	464964	705	1762	660		
385.8610	36.856	36.848	0	1.005	3330810	887326	1356	3390	654	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.873	36.862	1	1.000	368683	97720	178	445	549		
375.8178	36.873	36.862	1	1.000	289562	75315	141	352	534	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.663	36.653	1		2678016	703208	648	1620	1085		
403.8529	36.663	36.653	1		2145825	563188	500	1250	1126	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.182	36.173	1	0.987	3115241	836841	648	1620	1291		
403.8529	36.182	36.173	1	0.987	2475785	661026	500	1250	1322	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.199	36.187	1	1.000	286100	73242	120	300	610		
391.8127	36.191	36.187	0	1.000	225740	58343	73	182	799	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.300	36.291	1	0.990	2688113	682653	648	1620	1053		
403.8529	36.300	36.291	1	0.990	2105009	526396	500	1250	1053	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.317	36.304	1	1.000	289777	74637	120	300	622		
391.8127	36.309	36.304	0	1.000	234598	60454	73	182	828	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.679	36.669	1	1.014	293361	78785	120	300	657		
391.8127	36.679	36.669	1	1.014	242993	63912	73	182	876	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.645	38.640	0	1.054	1376232	442447	737	1842	600		
419.8220	38.645	38.640	0	1.054	2938966	969487	1161	2902	835	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.662	38.655	0	1.000	359235	116338	319	797	365		
409.7788	38.654	38.655	0	1.000	355273	111488	195	487	572	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.892	39.885	0	1.088	1594894	565882	737	1842	768		
419.8220	39.892	39.885	0	1.088	3445446	1221800	1161	2902	1052	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.900	39.893	0	1.000	294044	105213	319	797	330		
409.7788	39.900	39.893	0	1.000	284341	102194	195	487	524	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.588	39.582	0	1.080	2134165	746372	776	1940	962		
437.8140	39.588	39.582	0	1.080	2005642	702252	768	1920	914	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.597	39.590	0	1.000	236751	83736	140	350	598		
425.7737	39.597	39.590	0	1.000	228717	80520	101	252	797	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.042	42.035	0	1.147	2716730	893950	306	765	2921		
471.7750	42.042	42.035	0	1.147	3032549	1006988	291	727	3460	0.90(0.76-1.02)	
OCDF											
441.7428	42.134	42.131	0	1.002	399914	128527	65	162	1977		
443.7399	42.134	42.131	0	1.002	441475	142605	118	295	1209	0.91(0.76-1.02)	
OCDD											
457.7377	42.050	42.043	0	1.000	336937	110921	66	165	1681		
459.7348	42.050	42.043	0	1.000	374789	121137	94	235	1289	0.90(0.76-1.02)	

Reagents:

HRDXNL3_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date: 03-Jun-2020 15:42:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

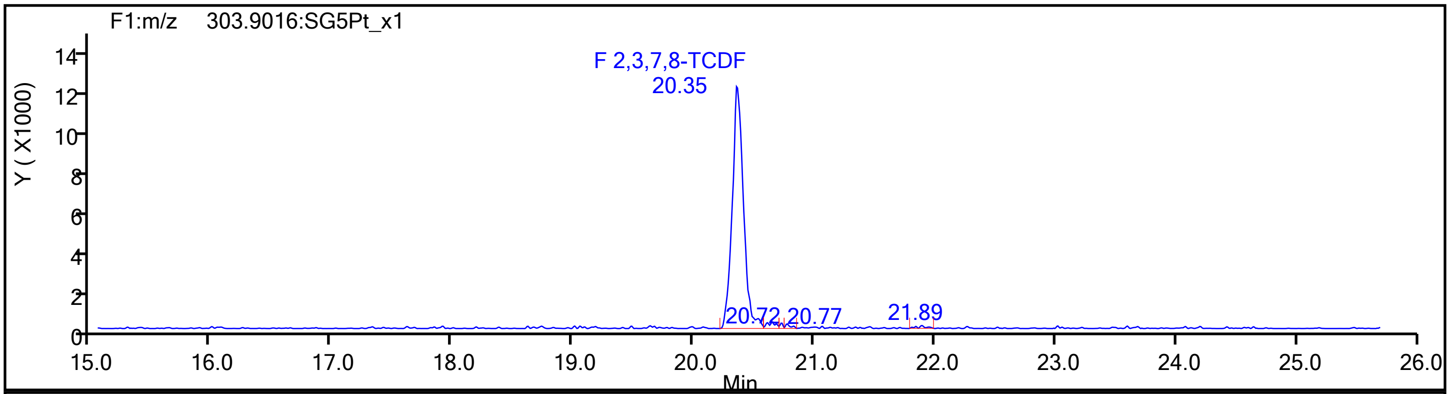

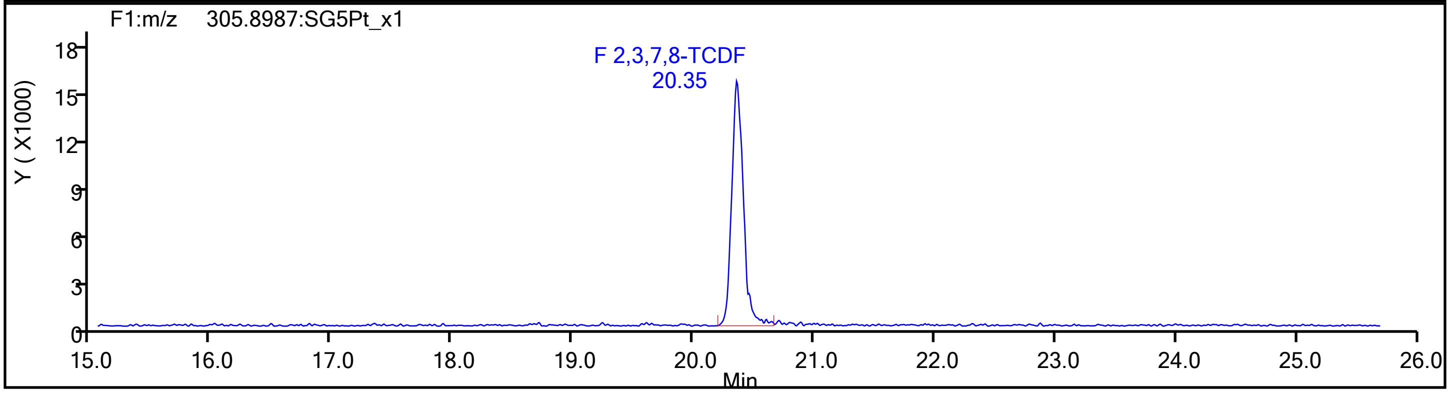

TCDF Standards

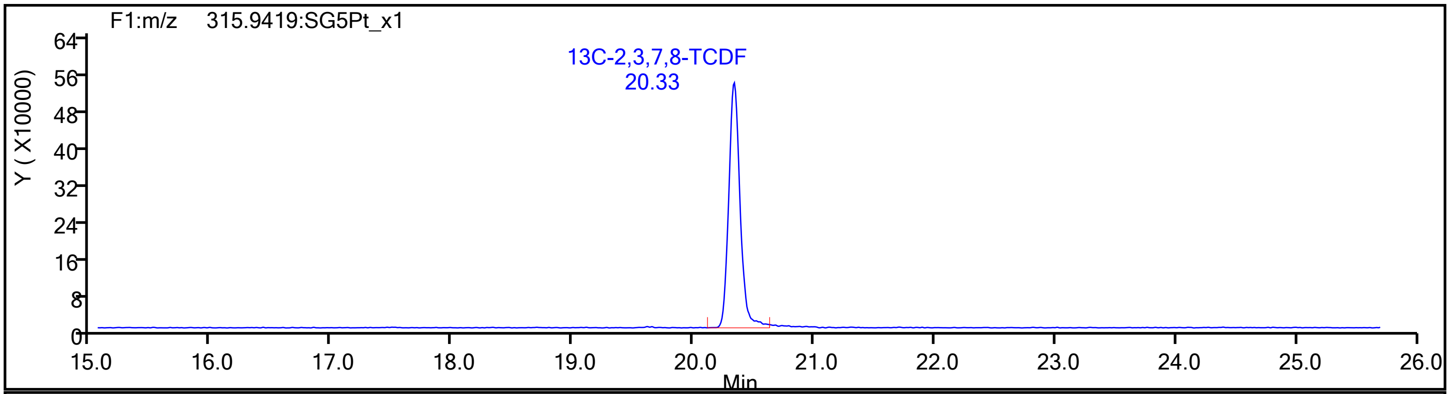

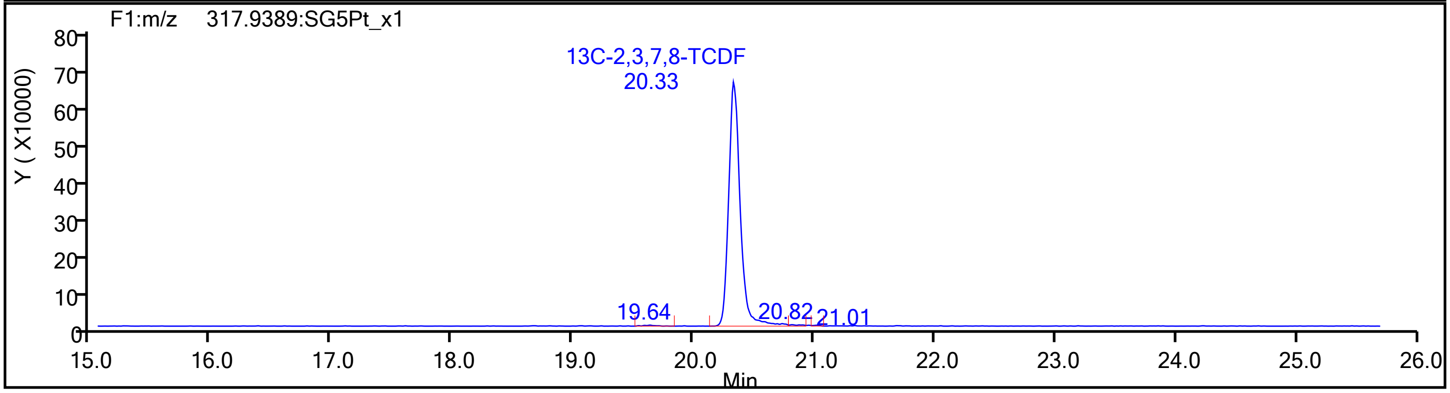

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

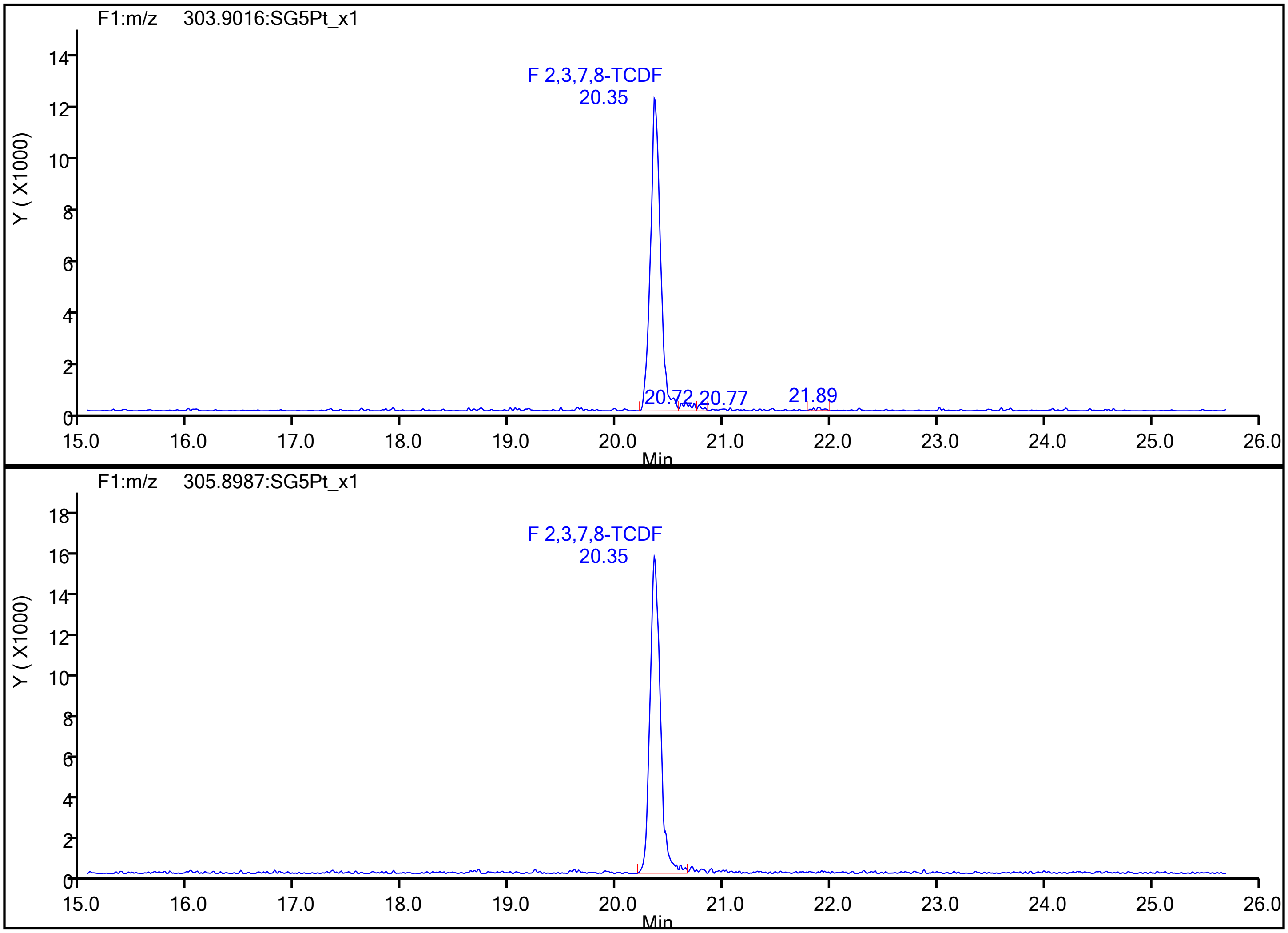

TCDF Interference Mass

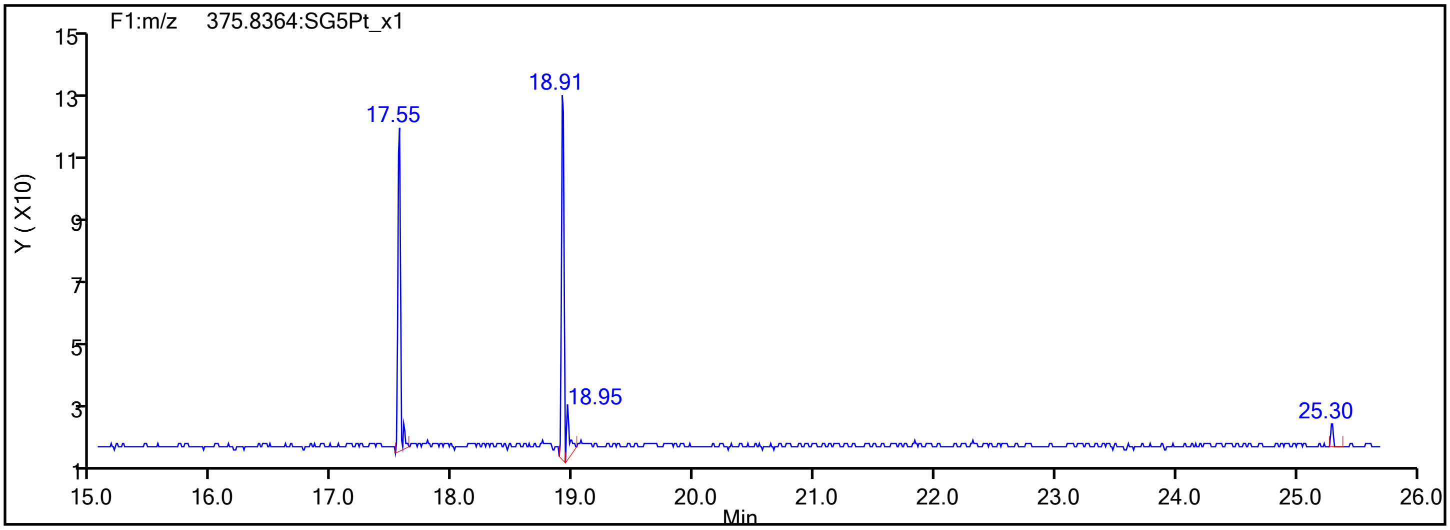

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

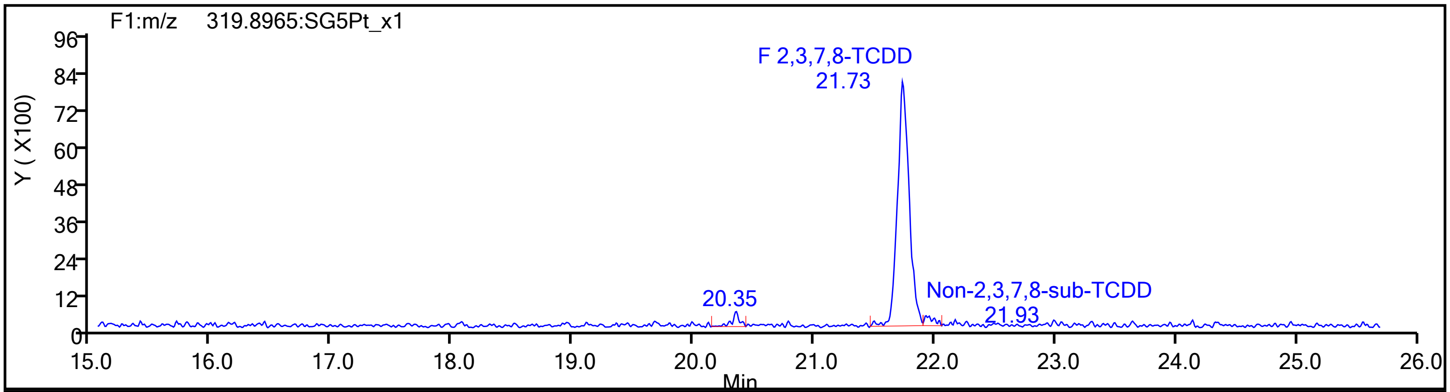

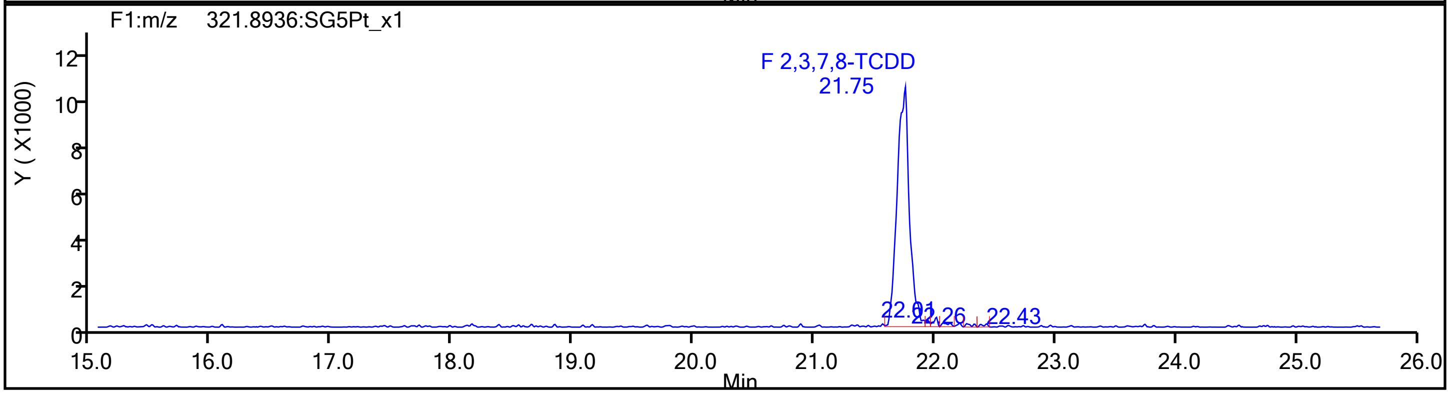

TCDD Standards

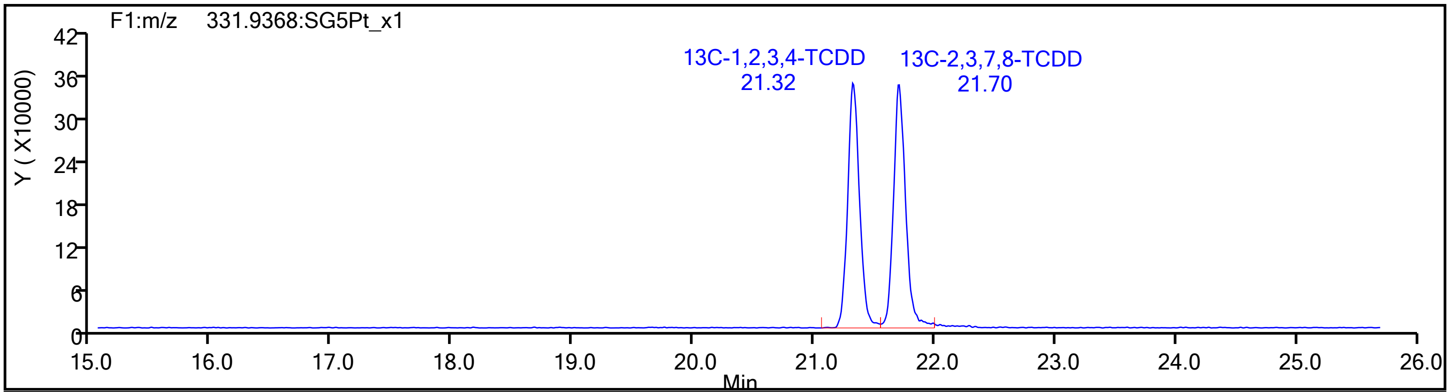

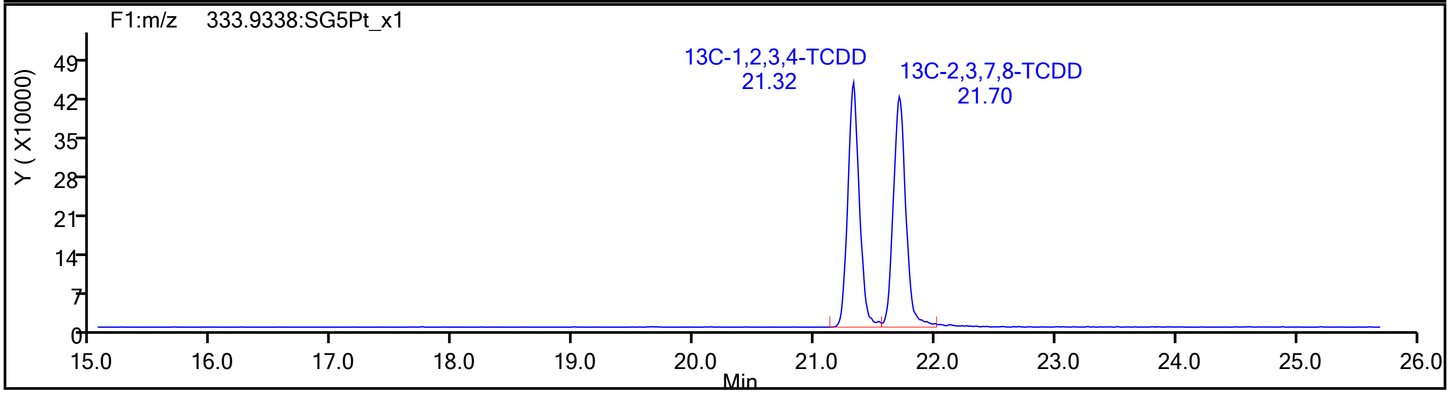

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

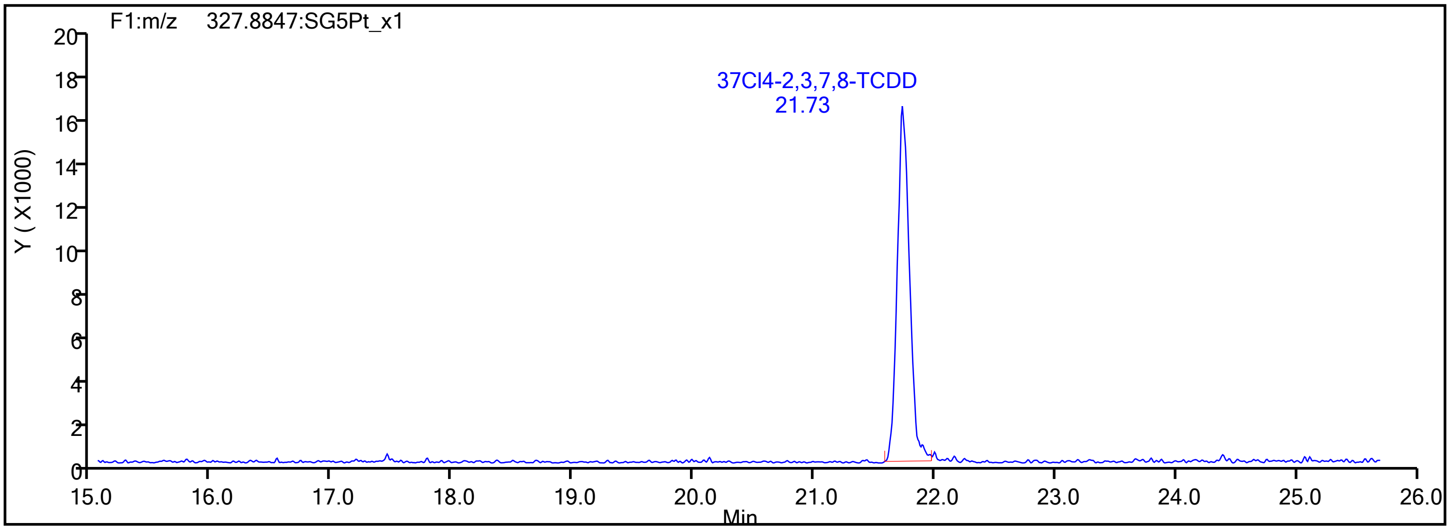

37Cl4-TCDD Standards

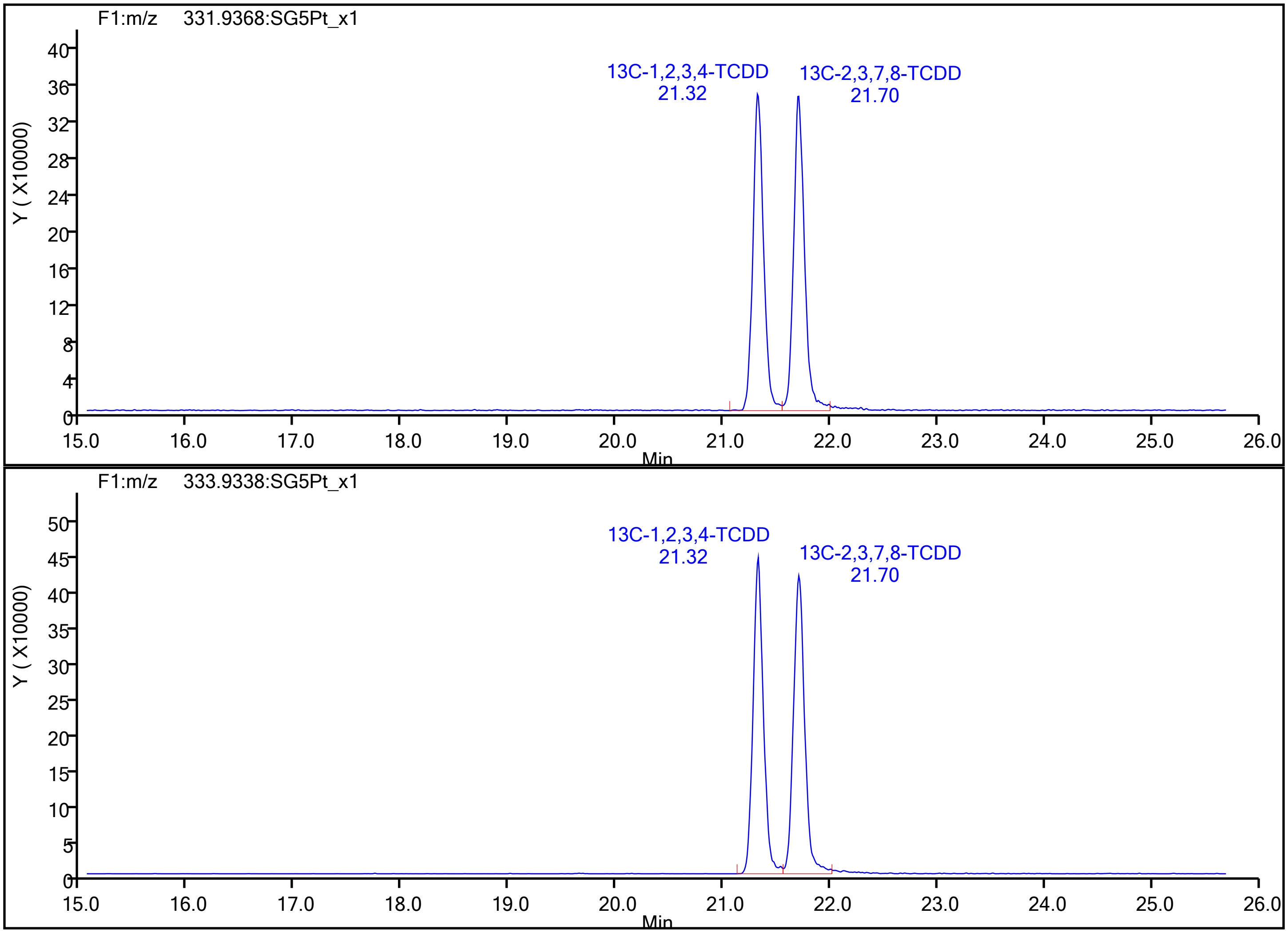

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

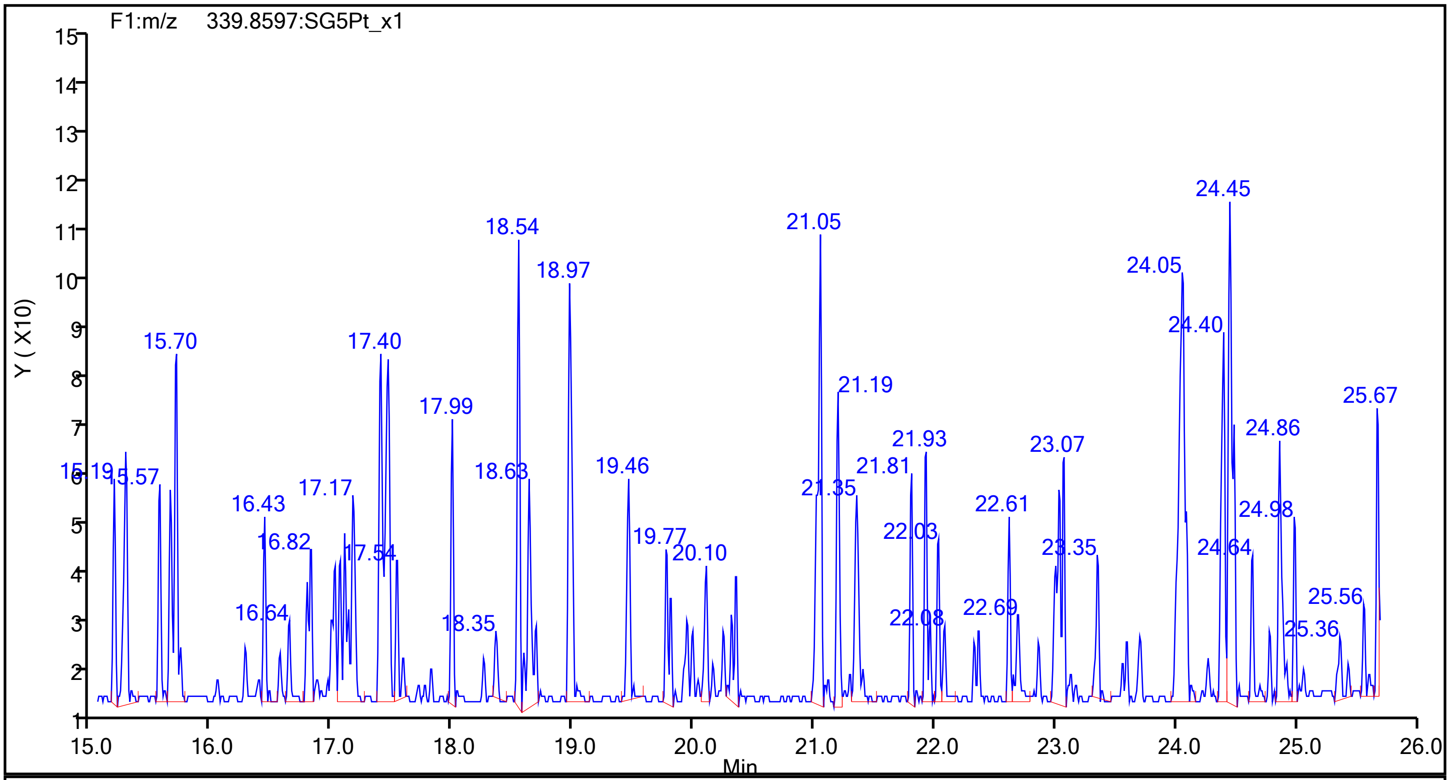

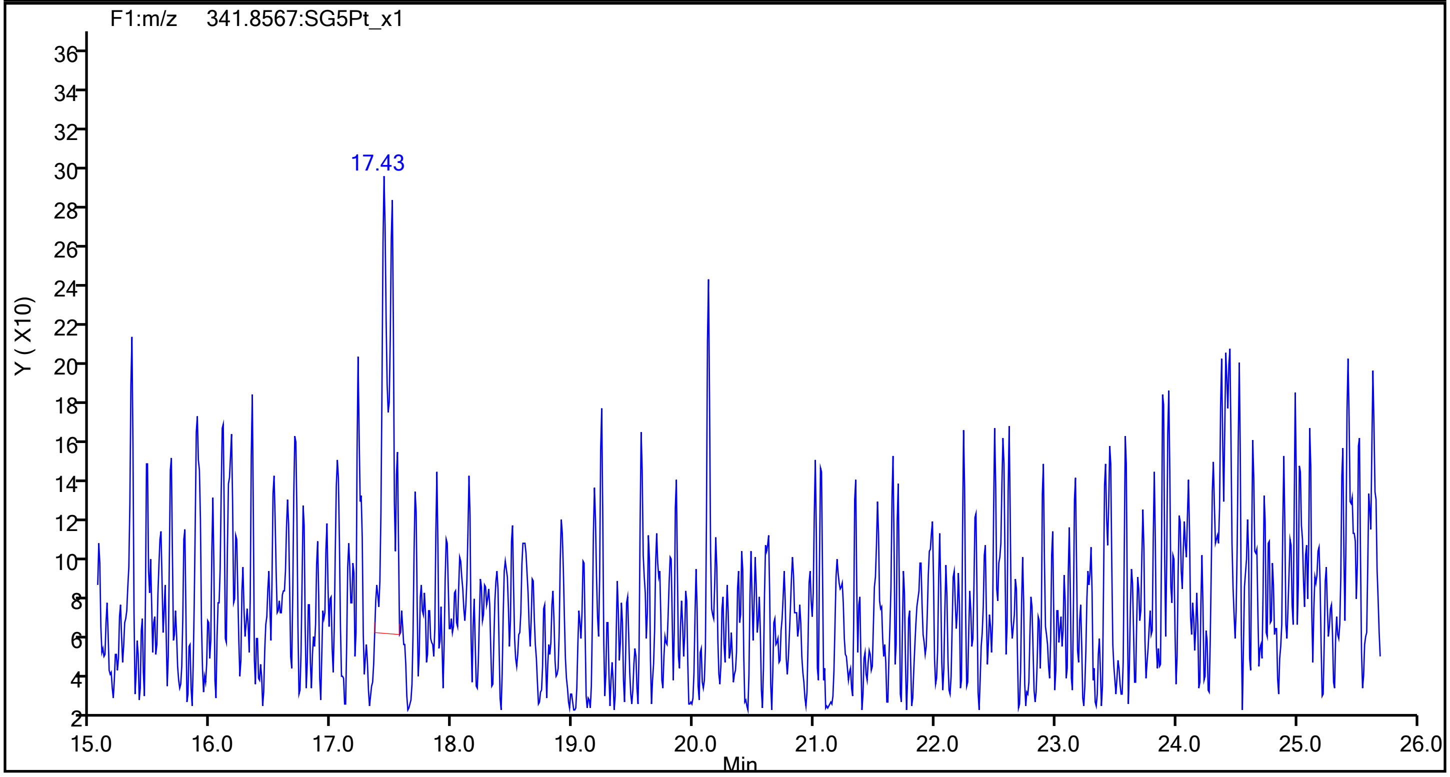

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

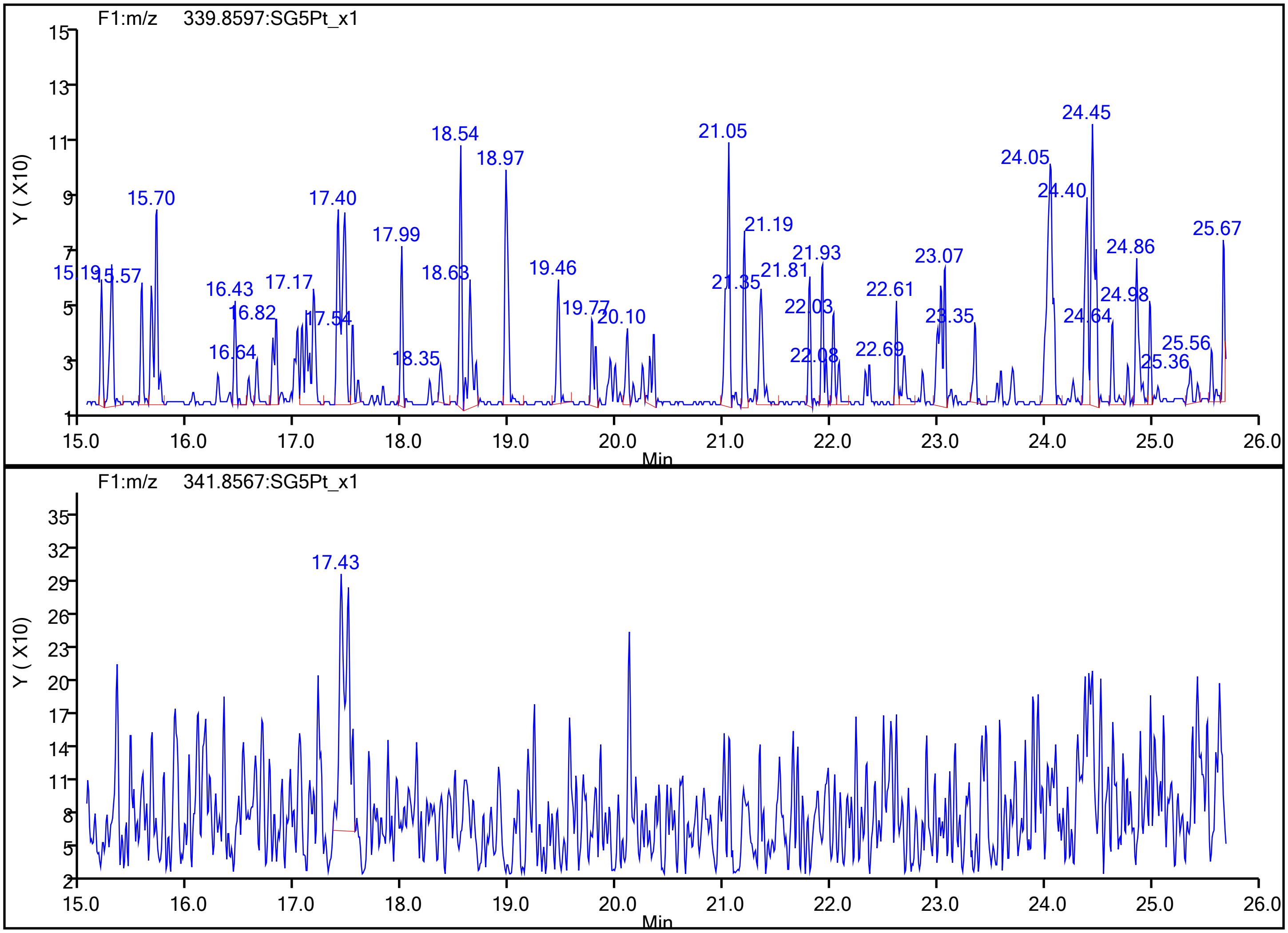

F1 PeCDFs Interference Mass

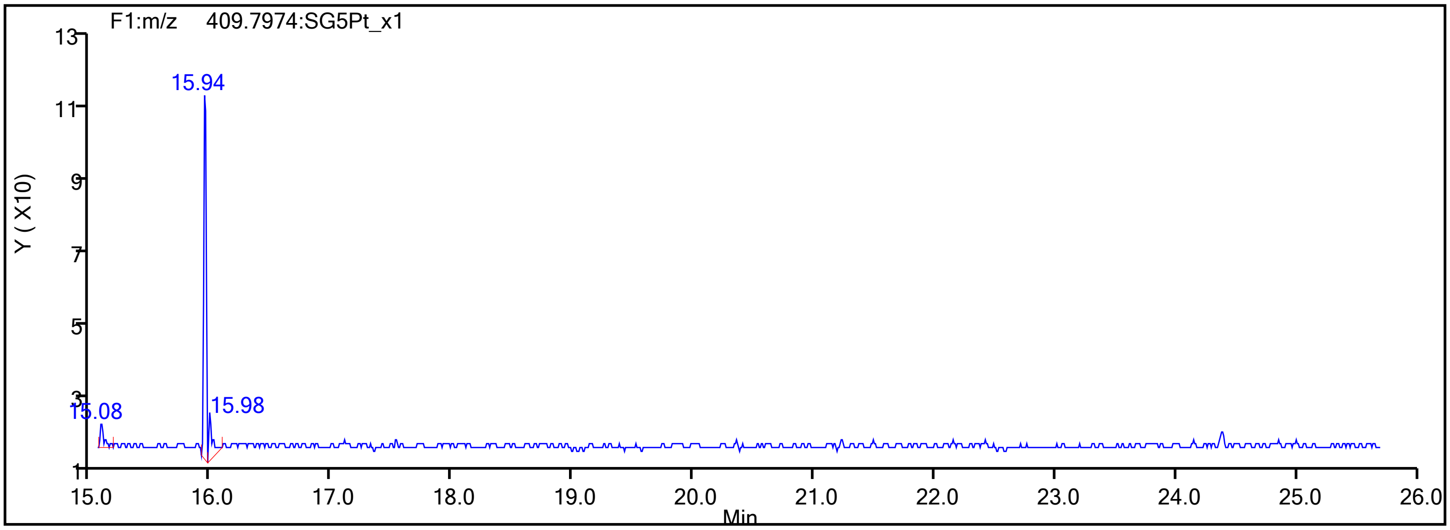

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

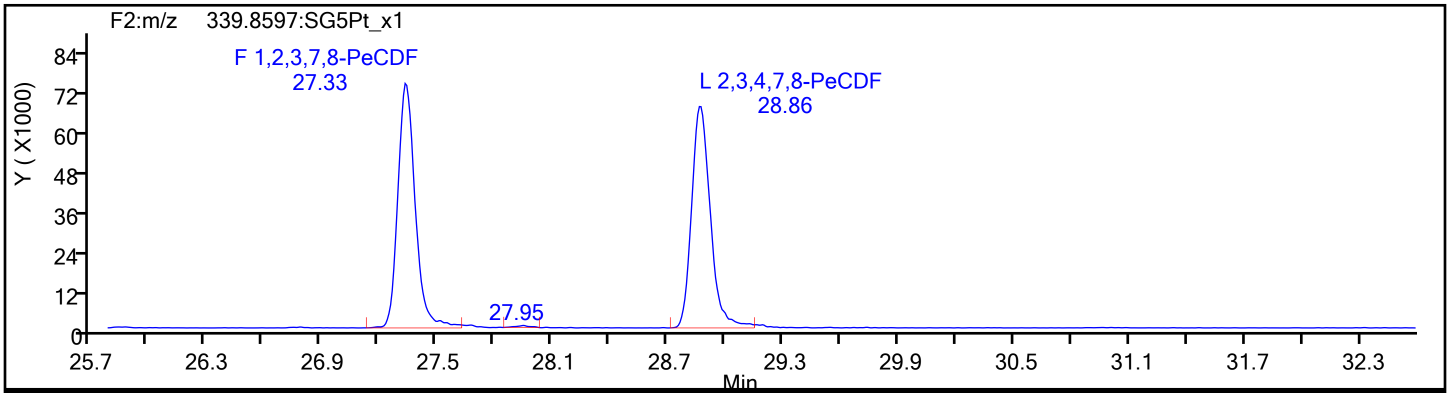

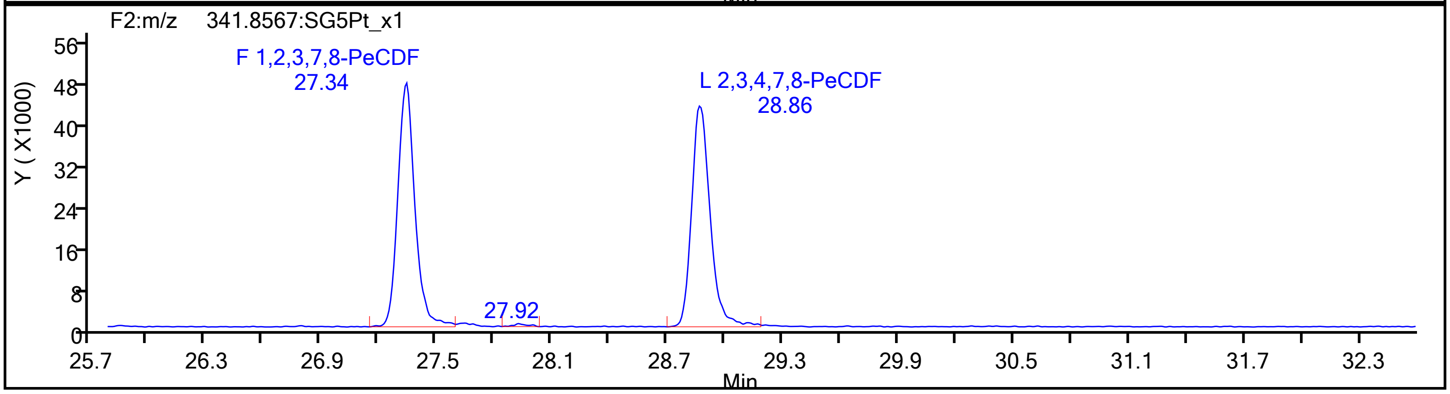

PeCDF Standards

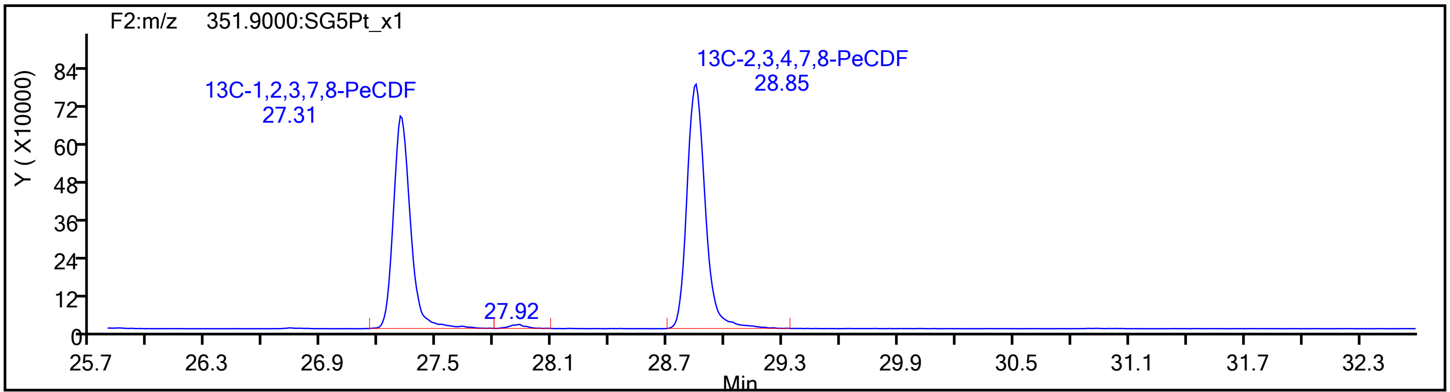

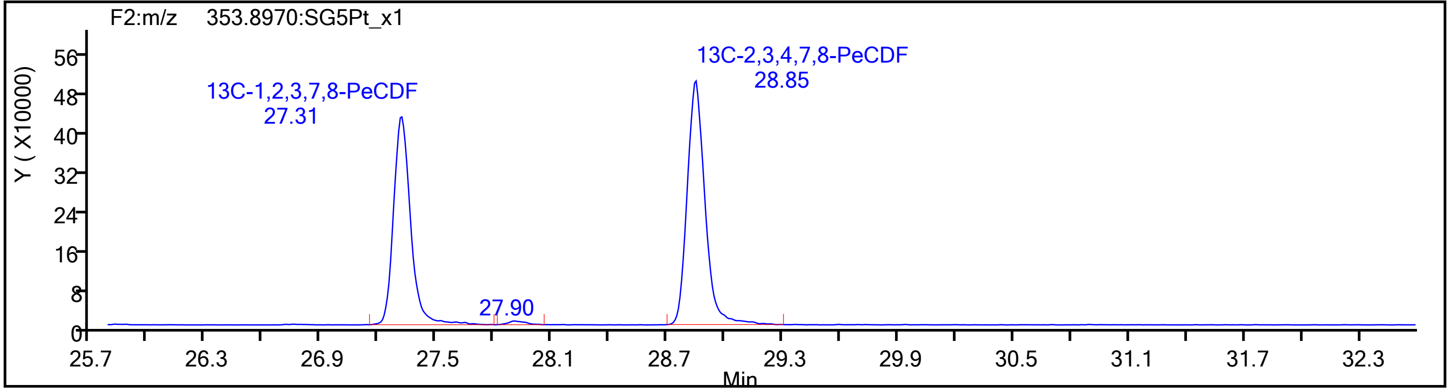

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

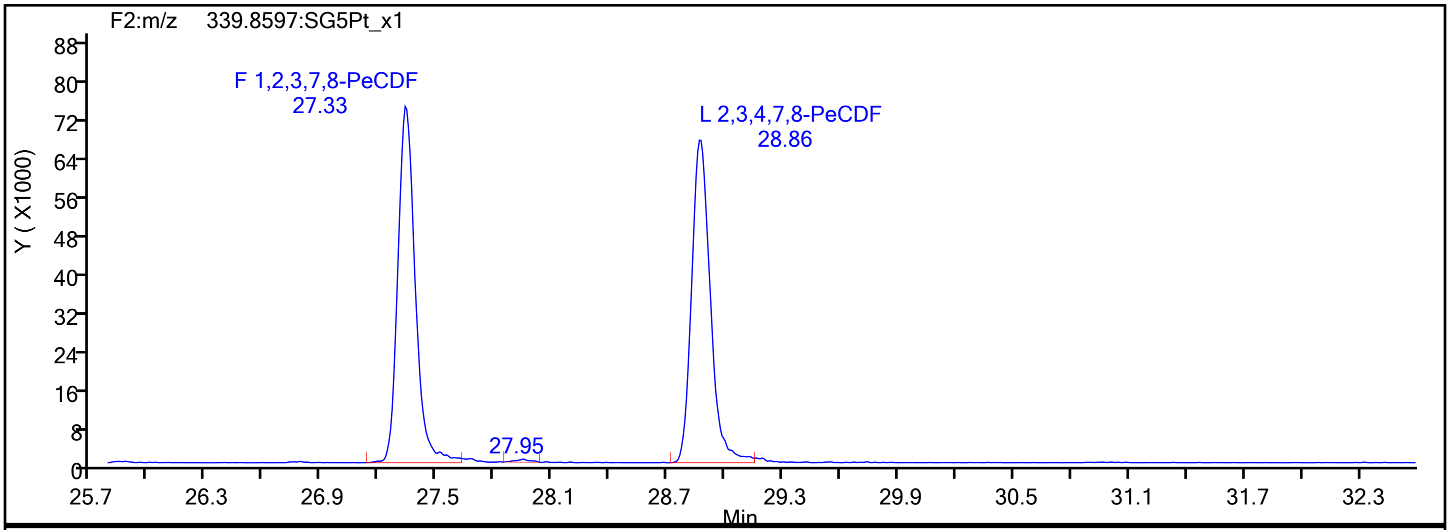

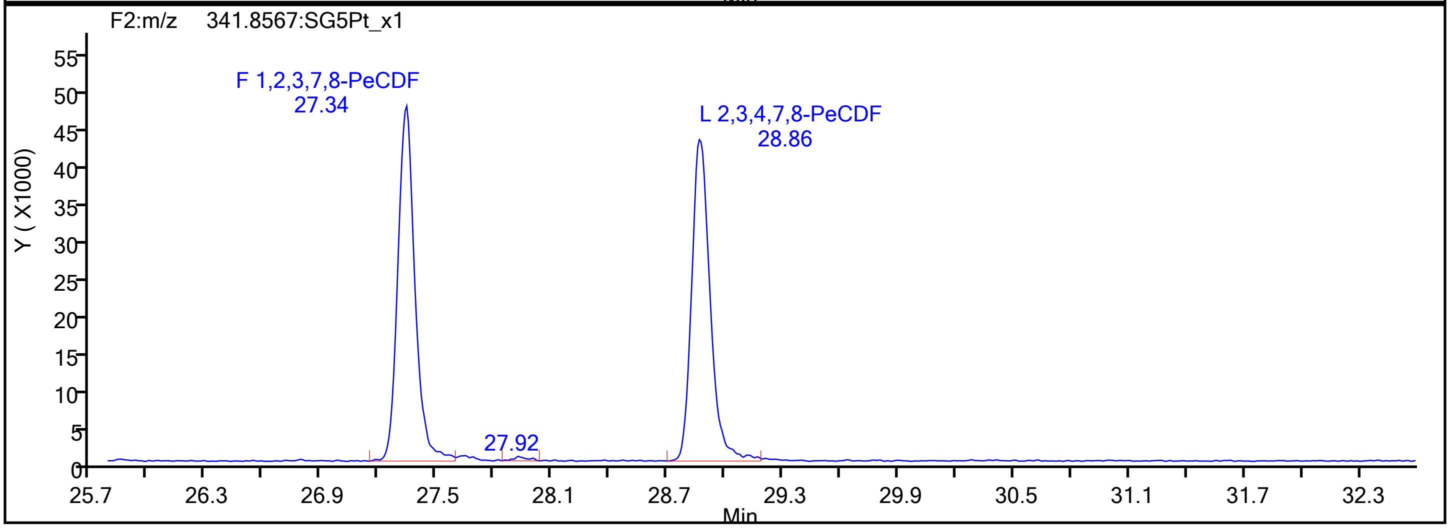

PeCDF Interference Mass

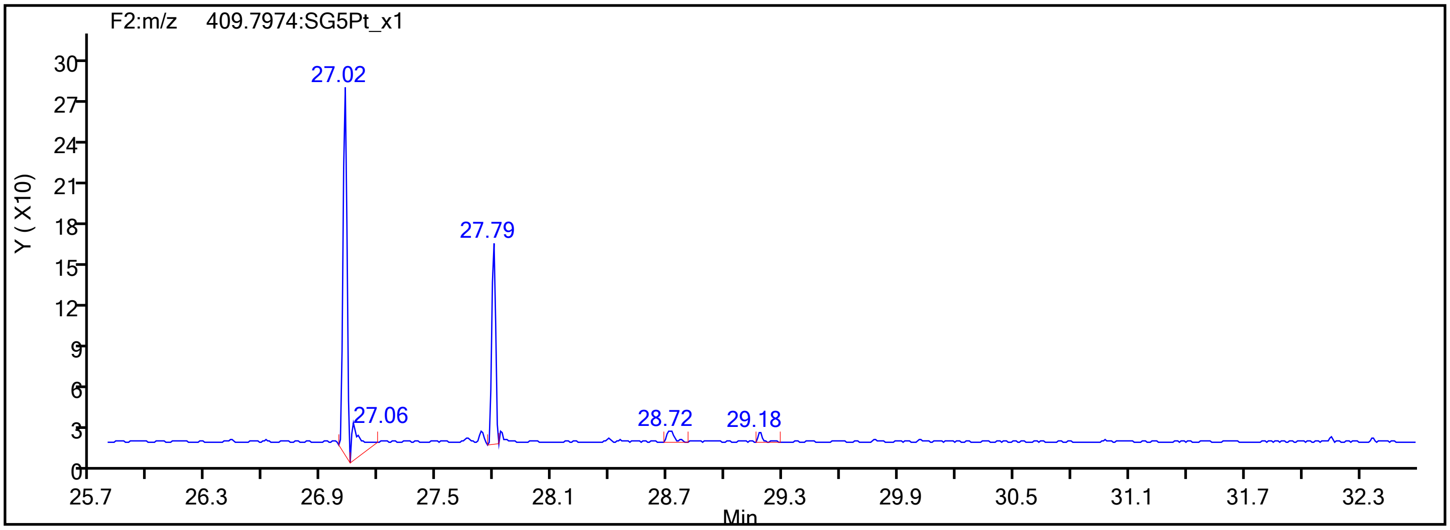

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date: 03-Jun-2020 15:42:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

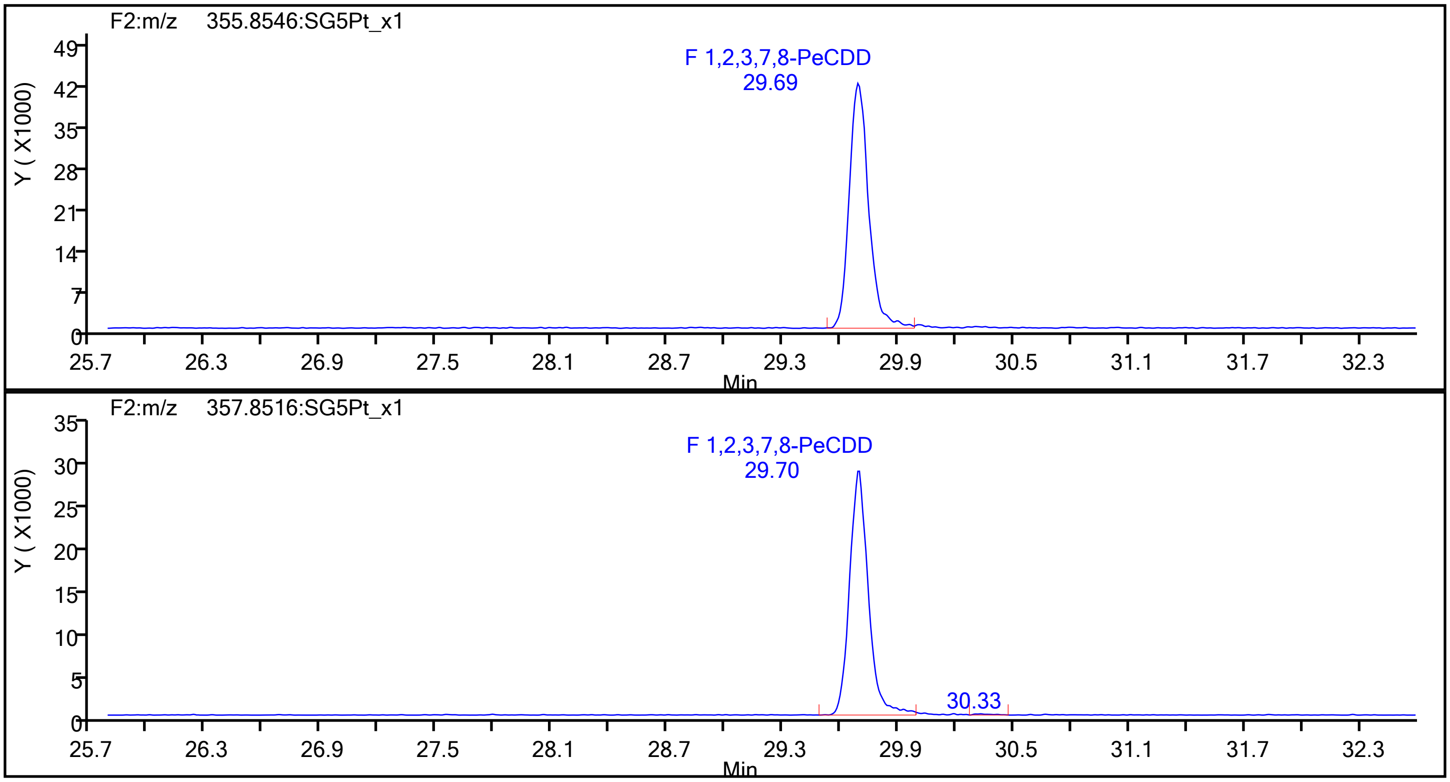

PeCDD Standards

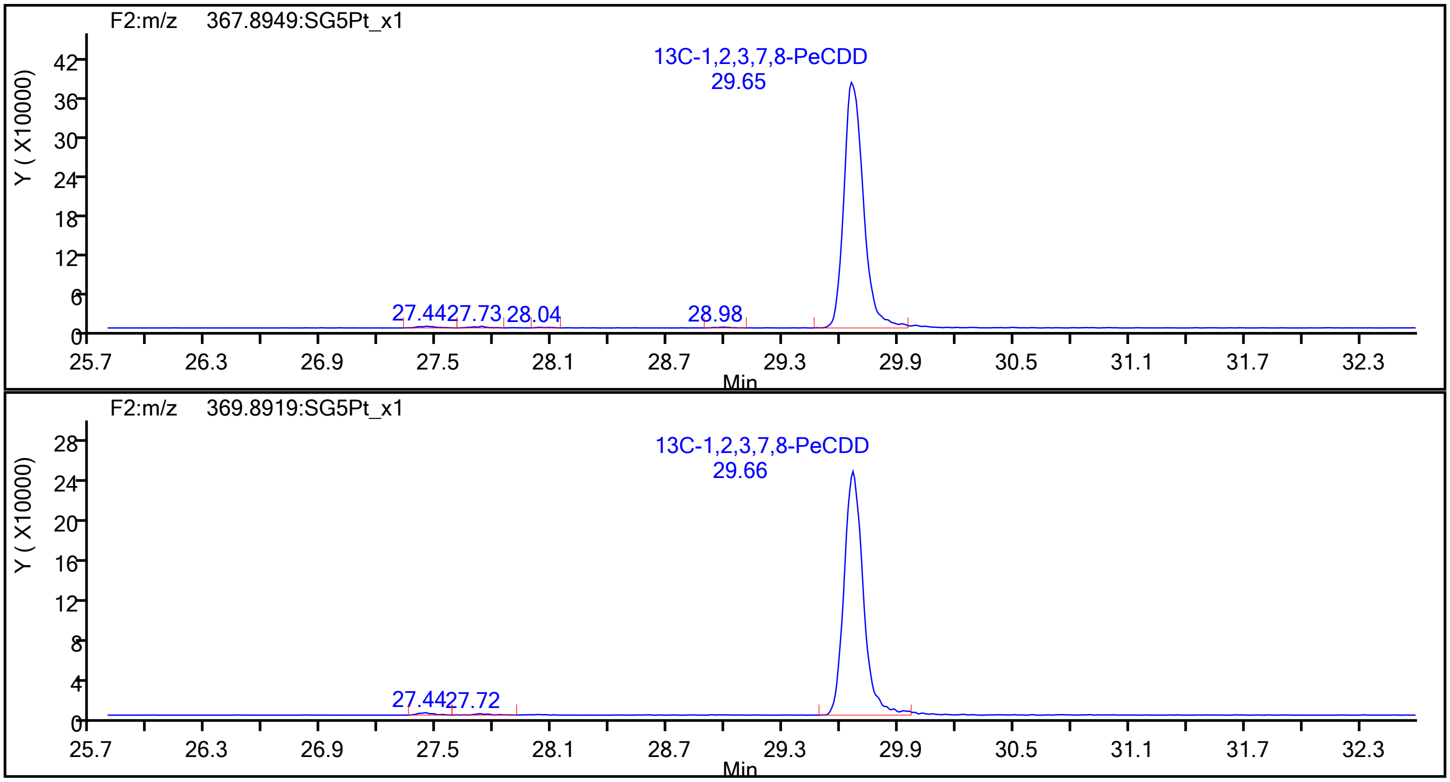

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

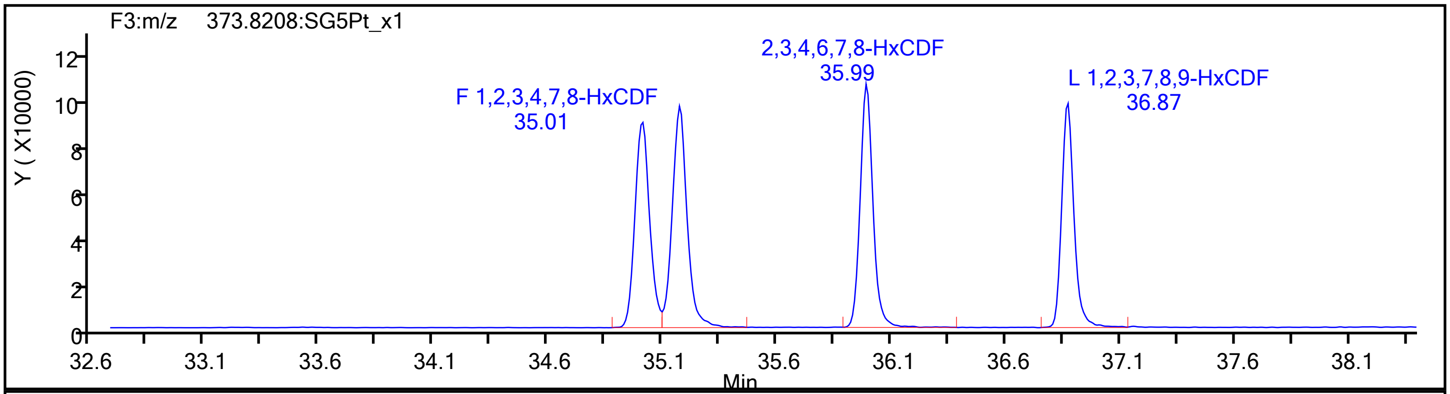

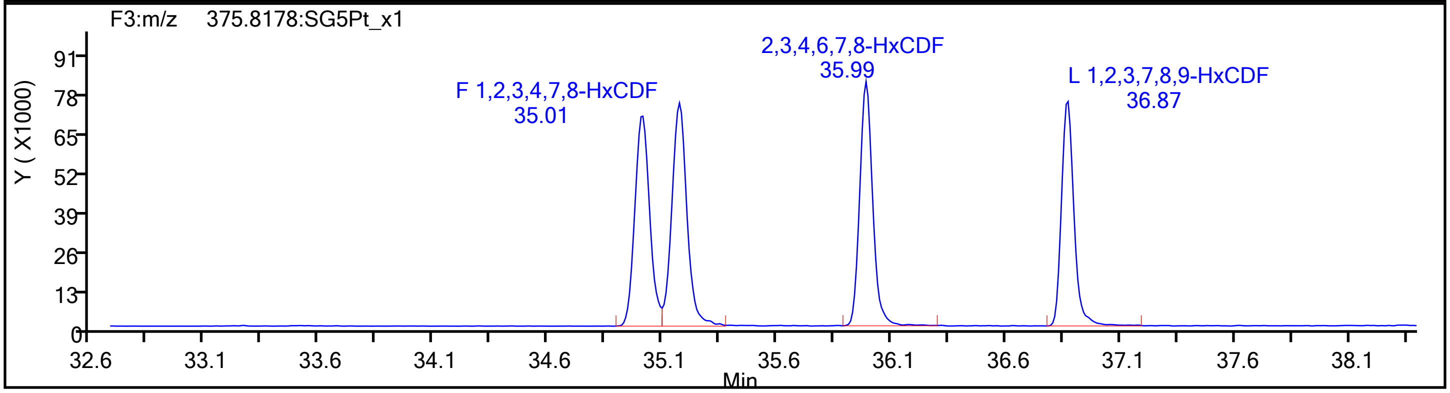

HxCDF Standards

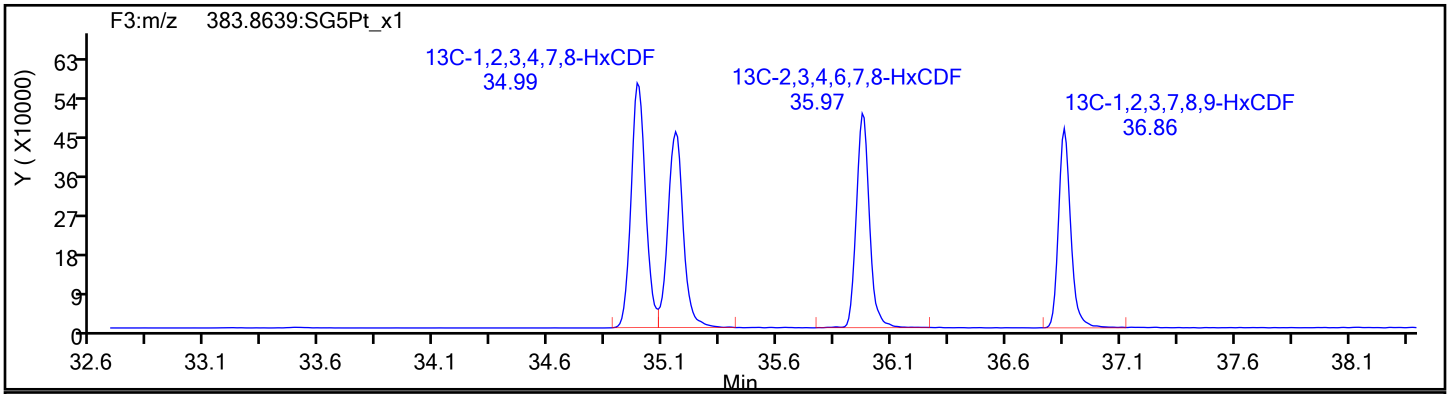

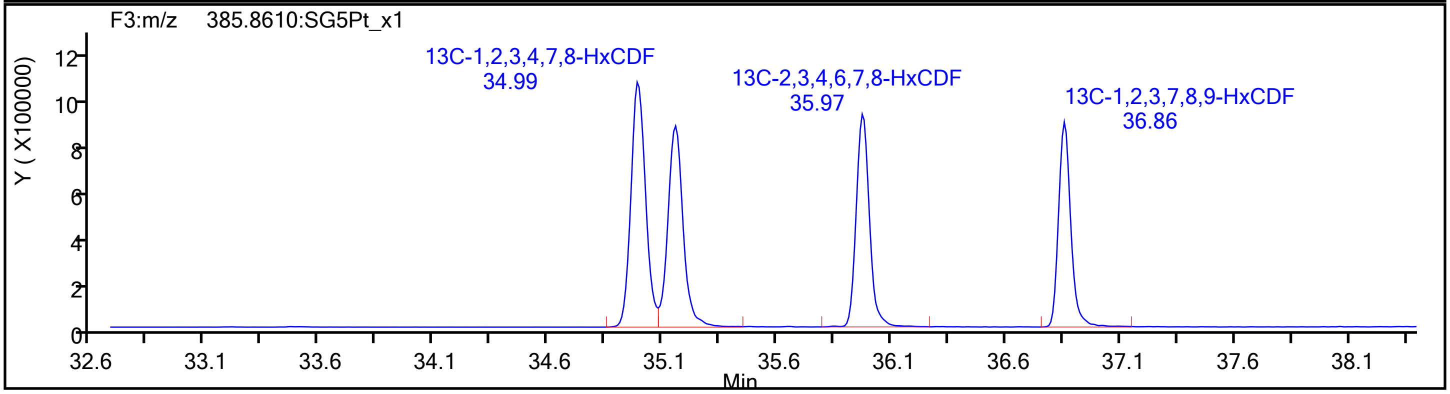

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

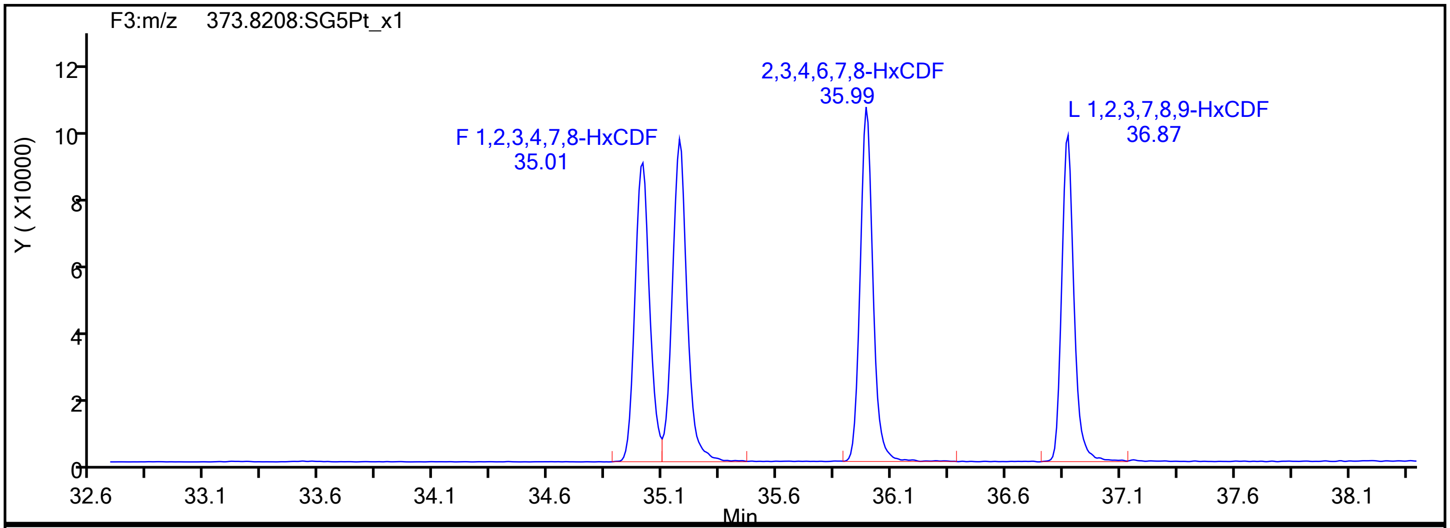

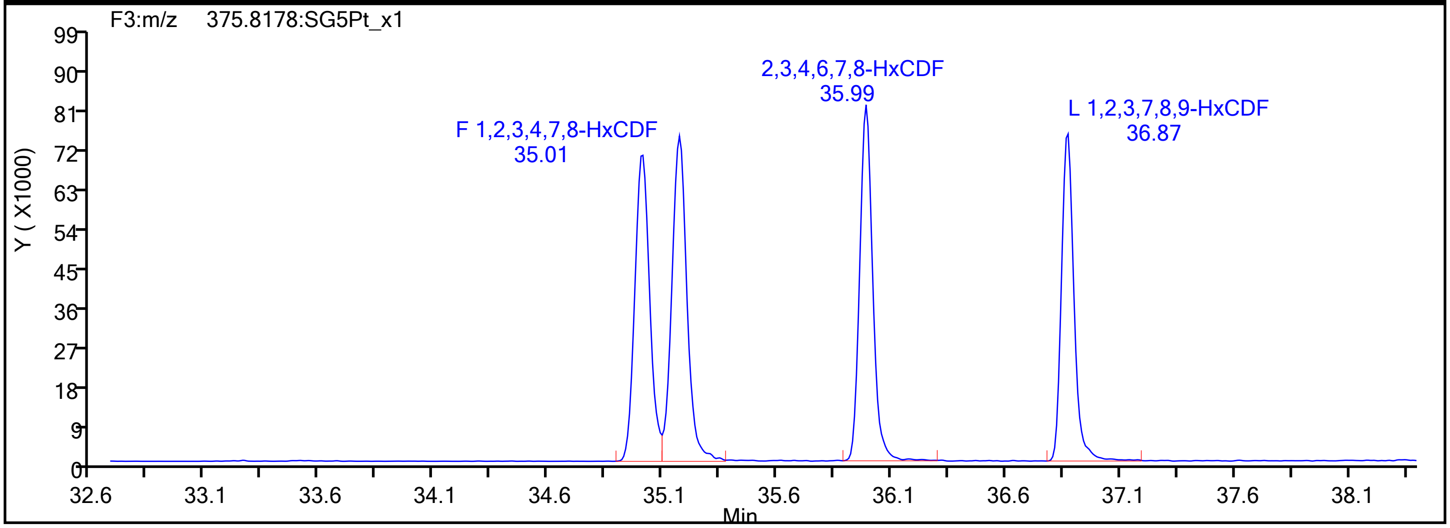

HxCDF Interference Mass

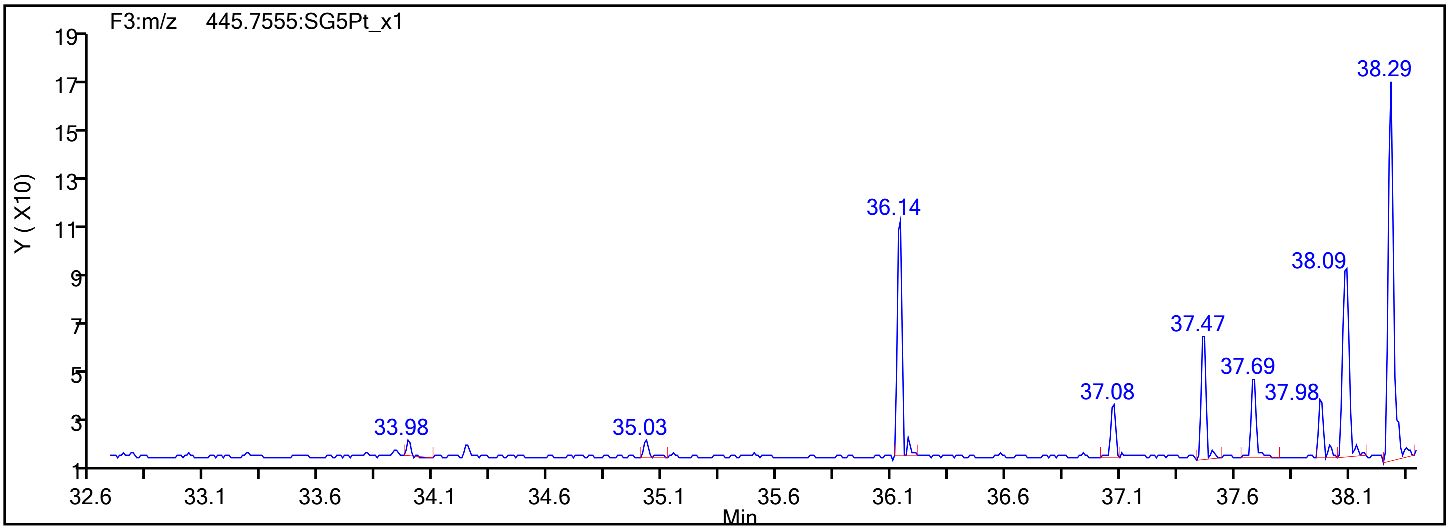

Report Date: 05-Jun-2020 14:02:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

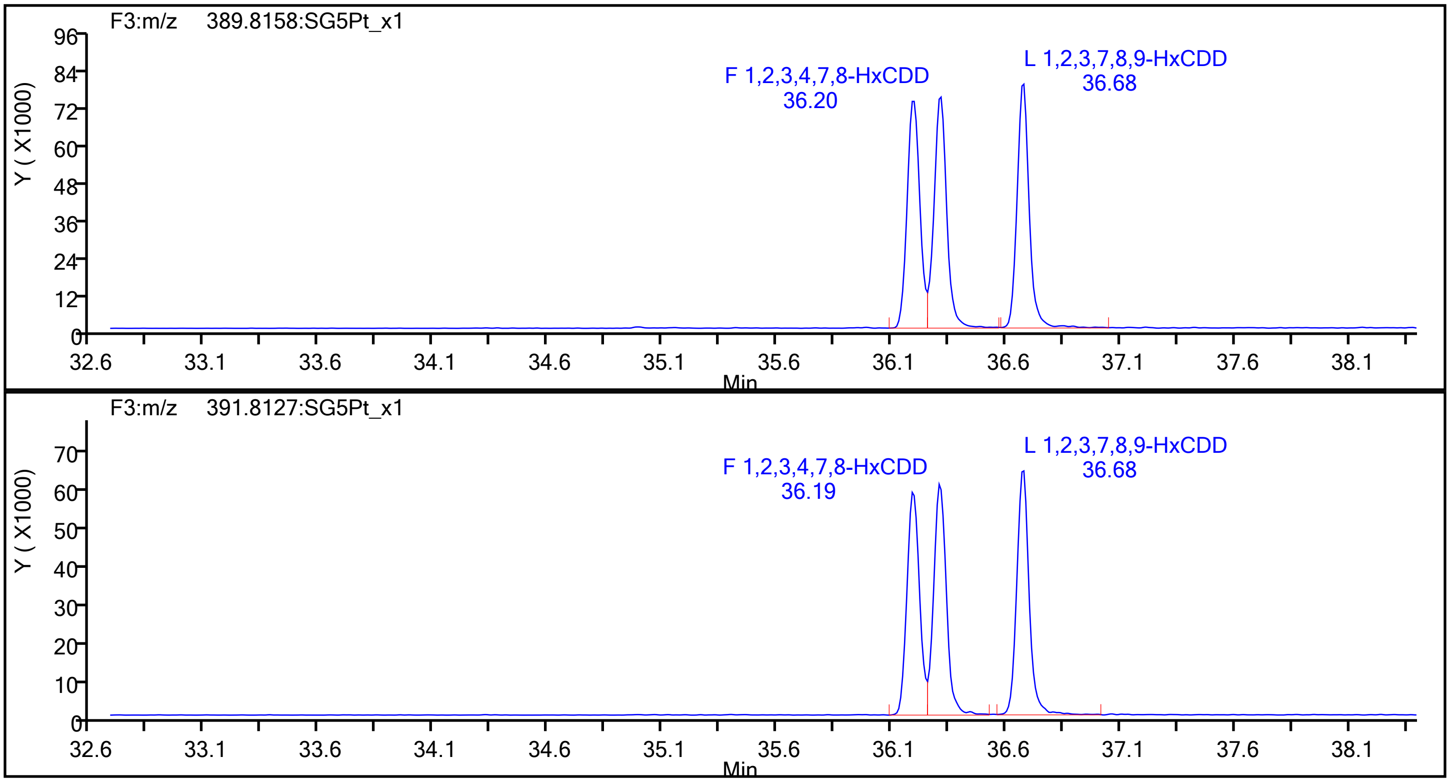

HxCDD Standards

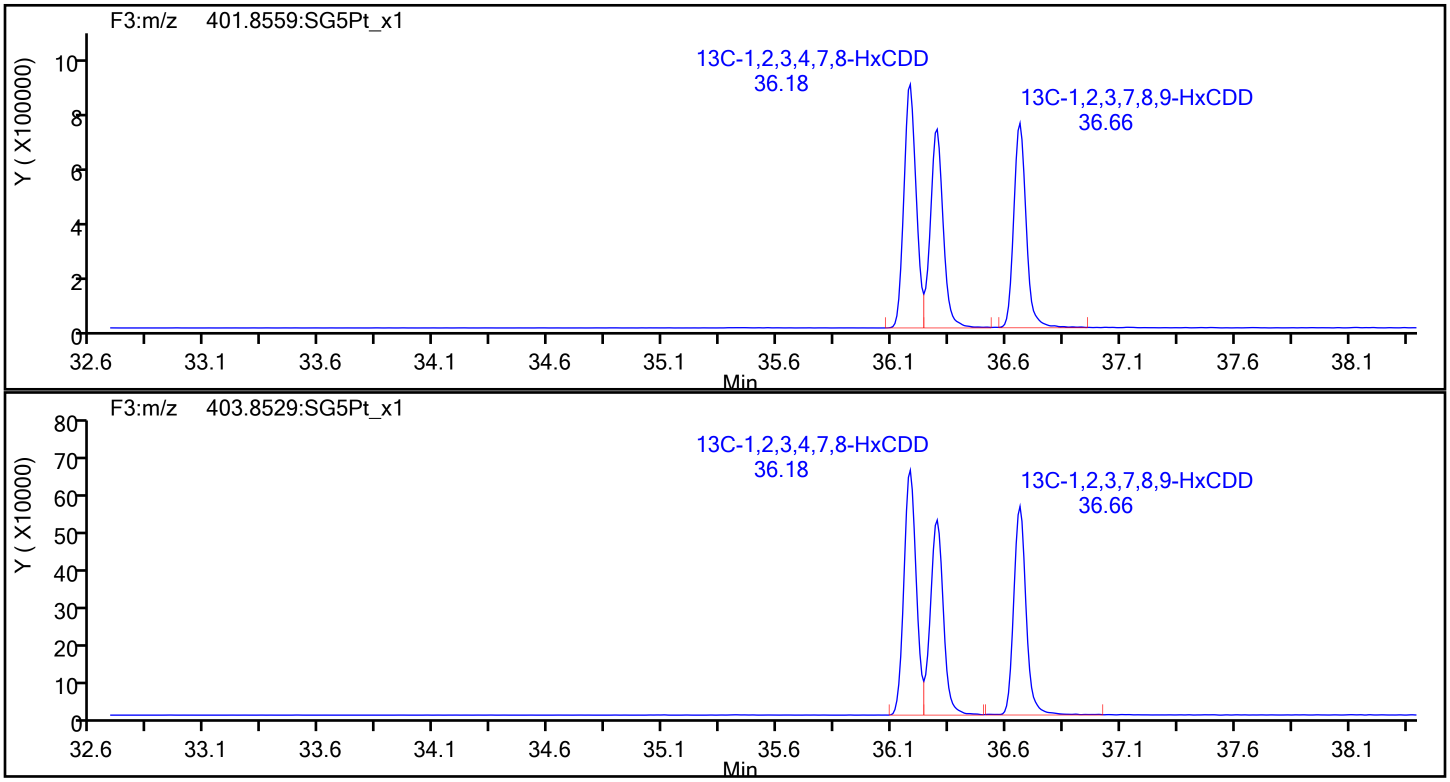

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date: 03-Jun-2020 15:42:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

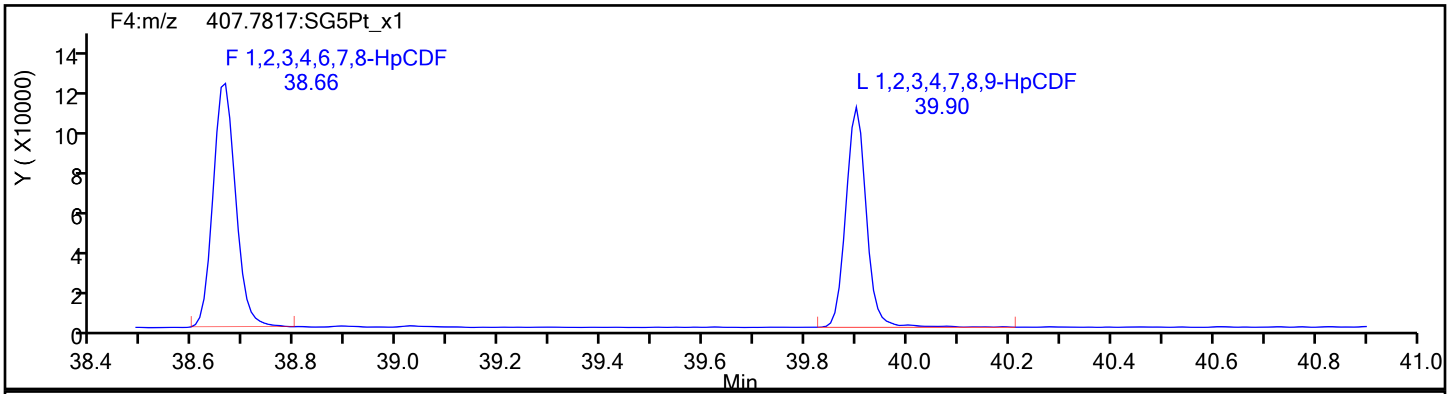

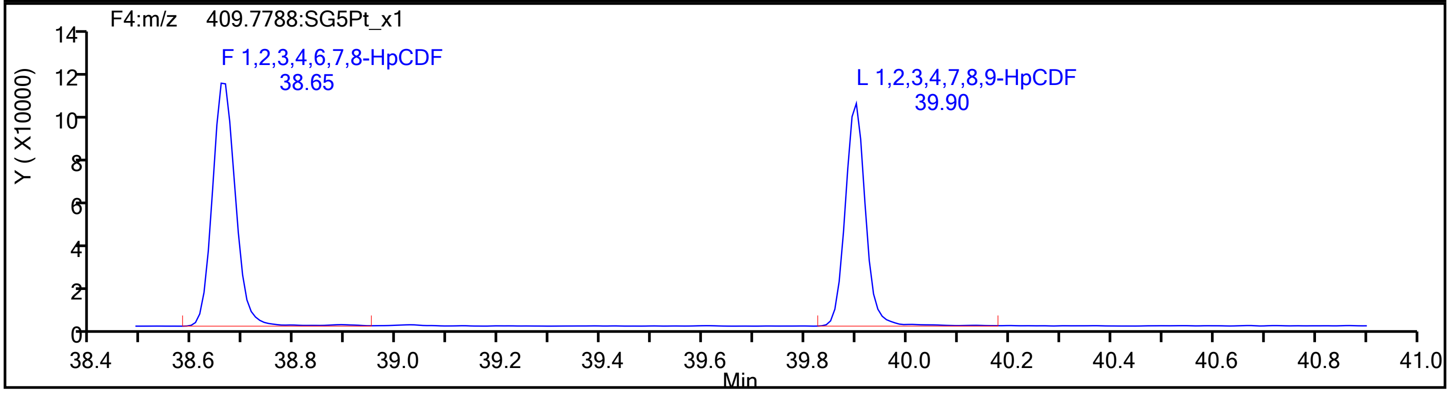

HpCDF Standards

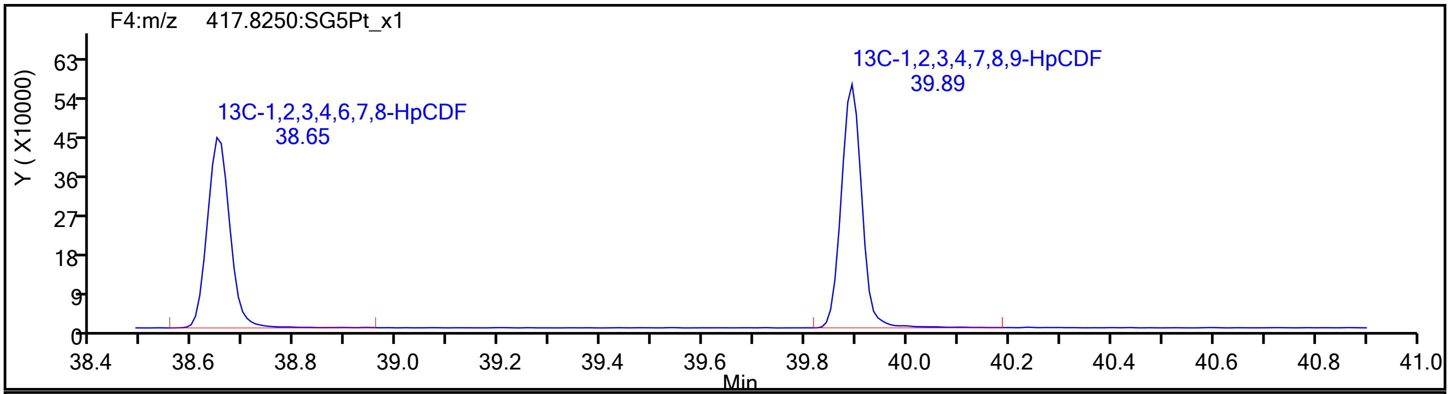

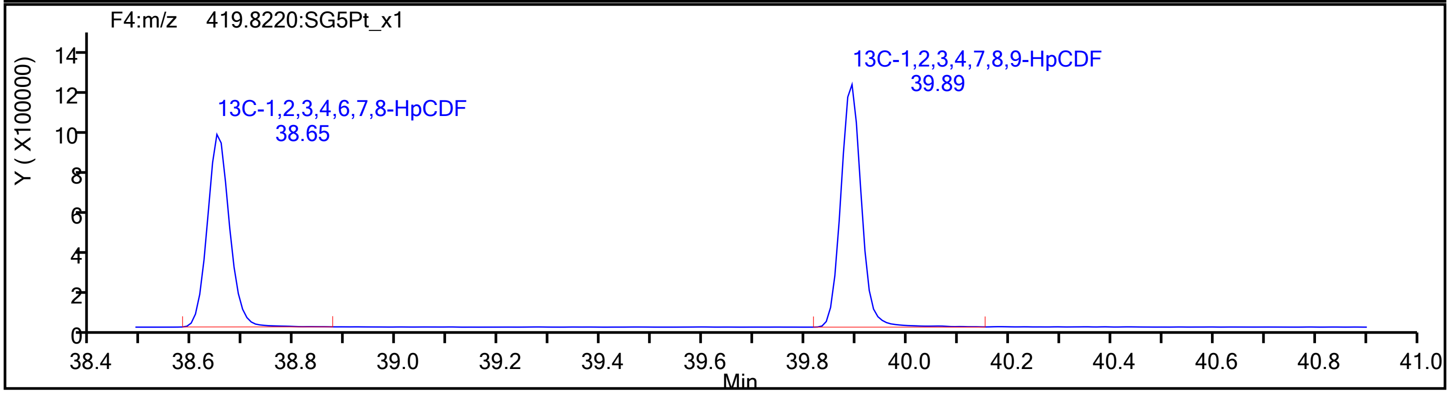

Report Date: 05-Jun-2020 14:02:25

Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

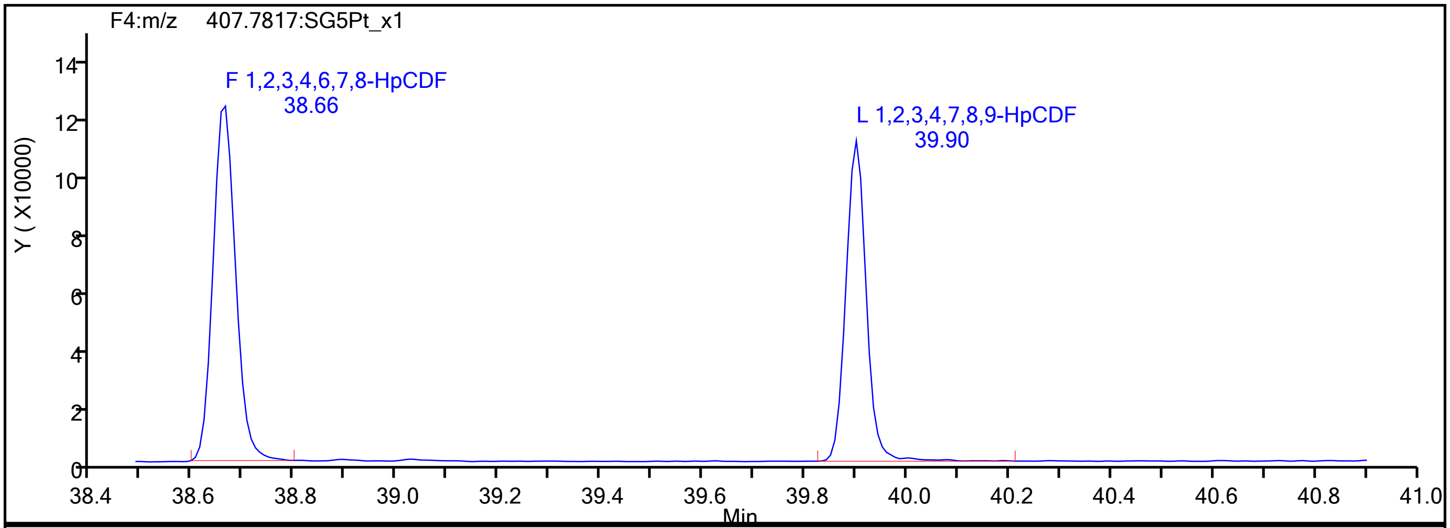

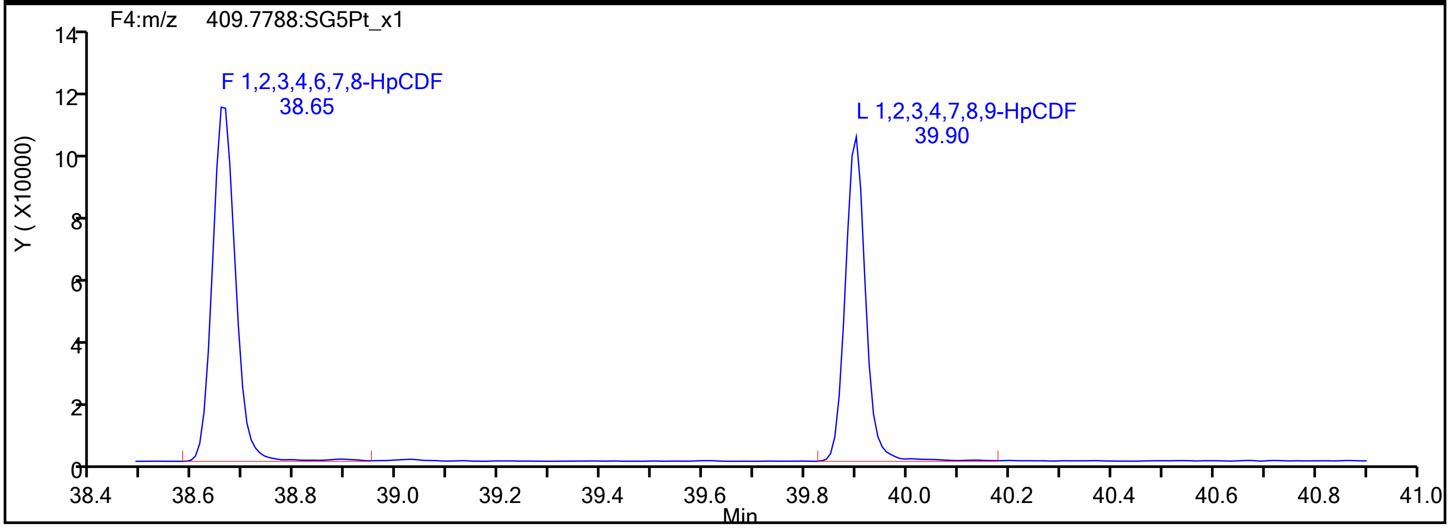

HpCDF Interference Mass

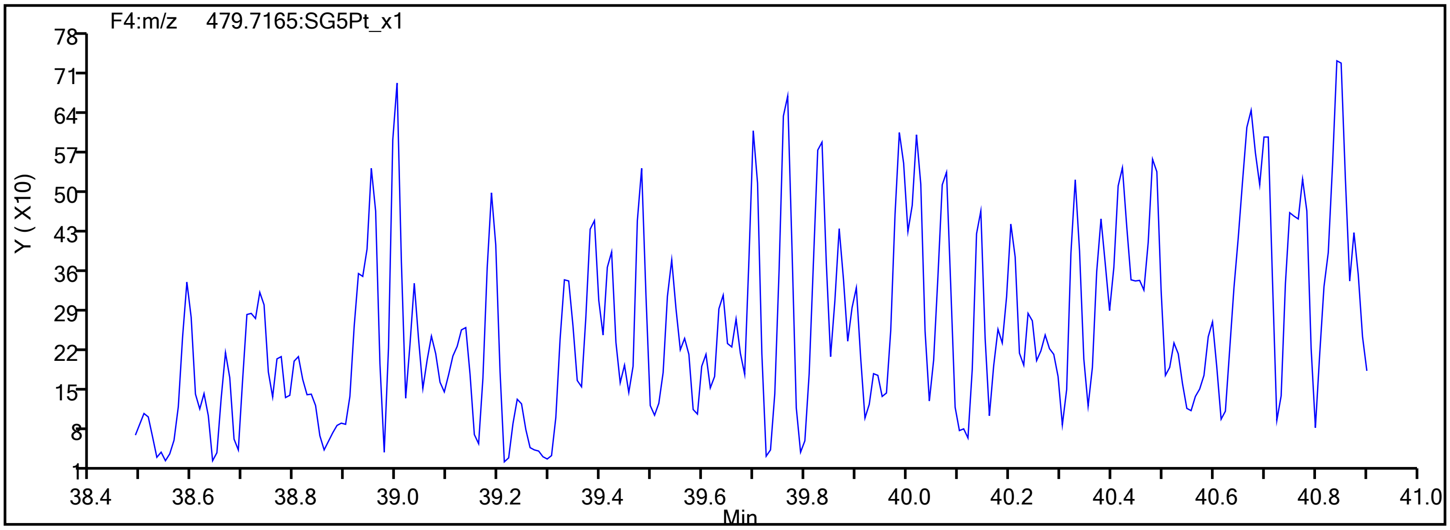

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

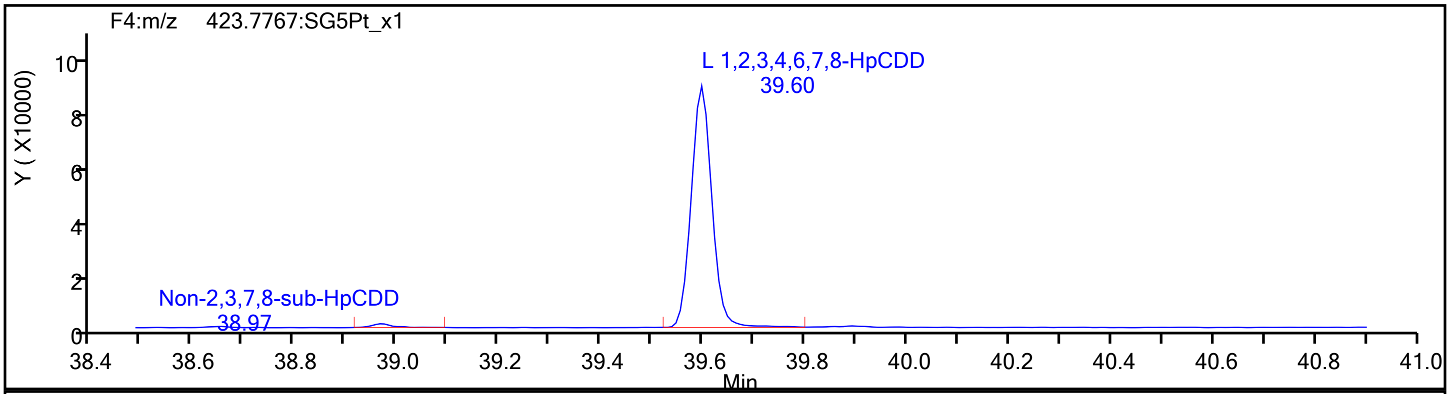

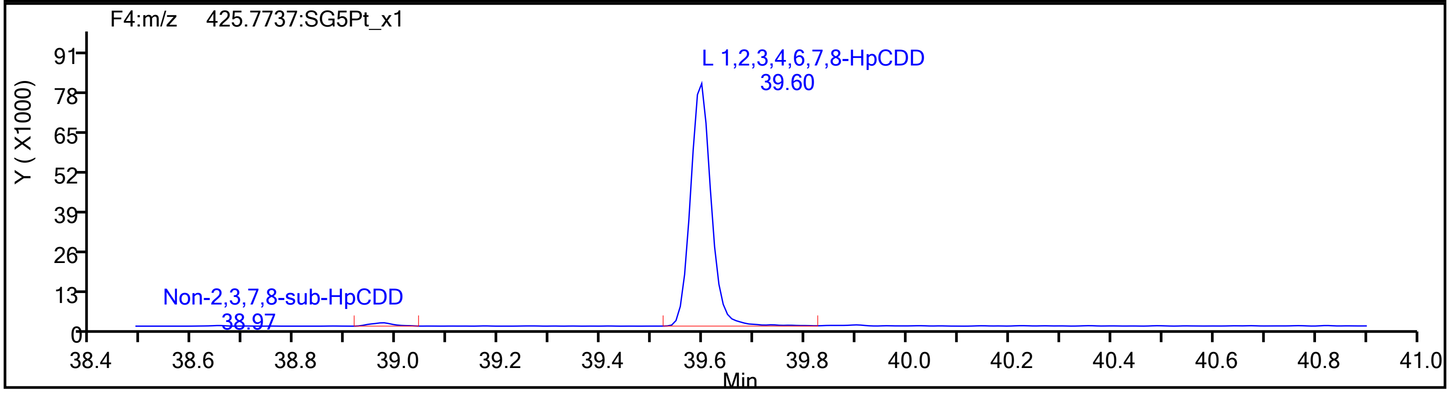

HpCDD Standards

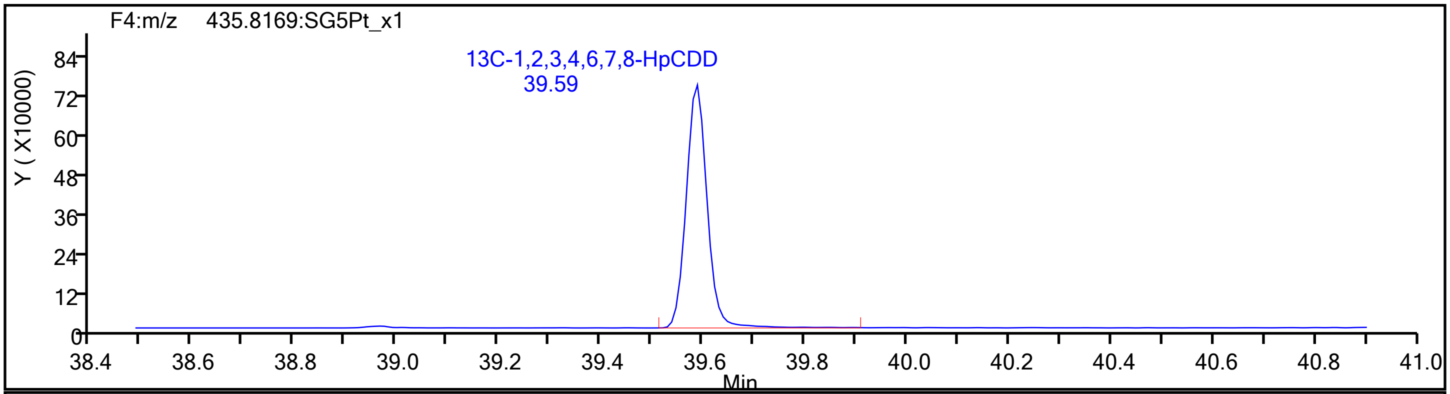

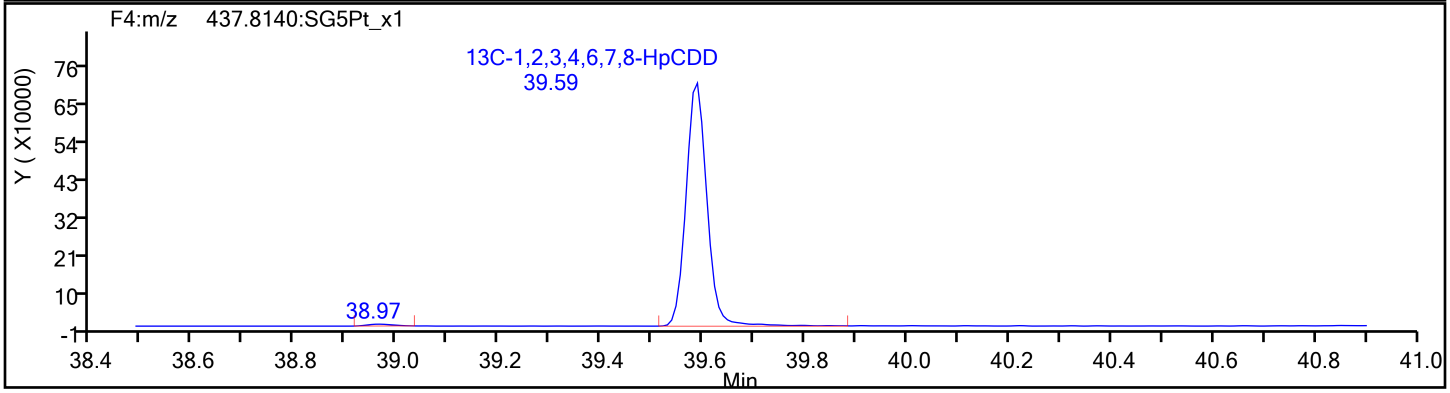

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

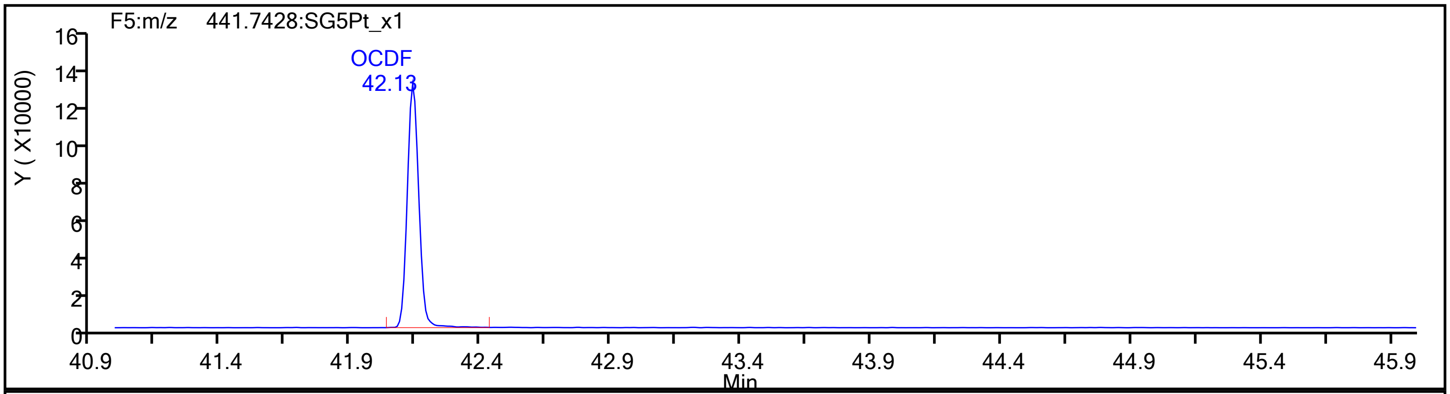

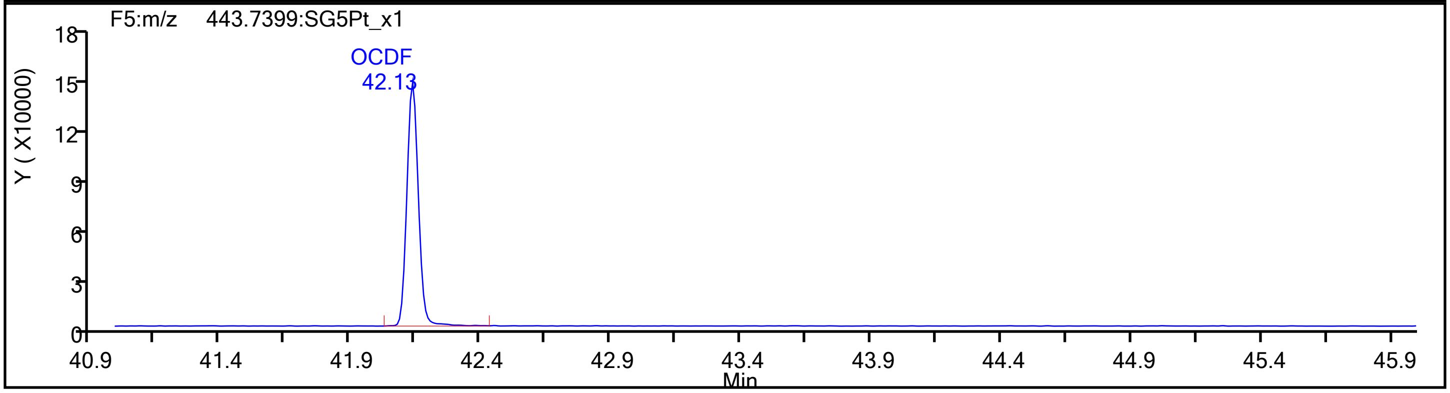

OCDF Standards

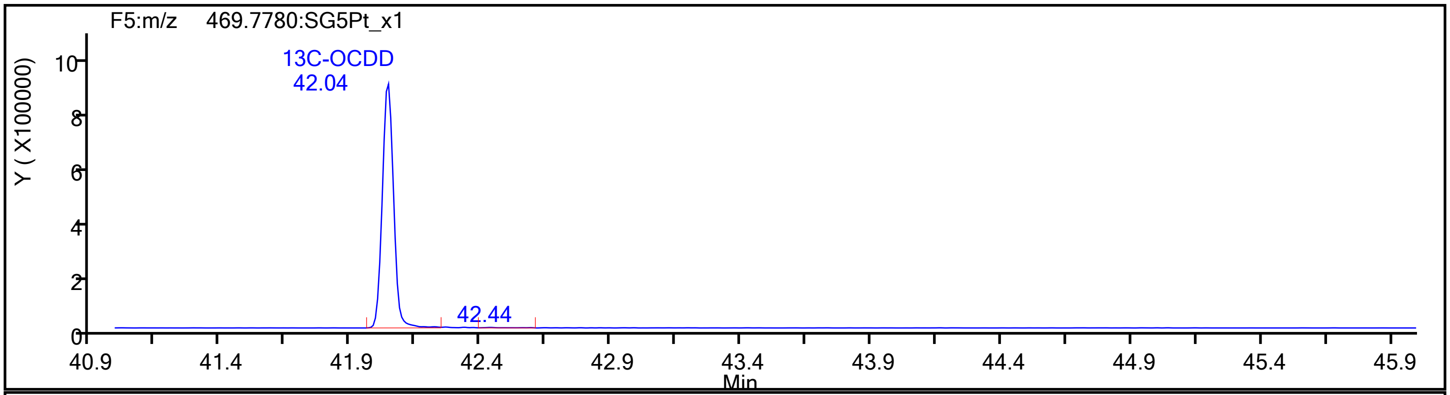

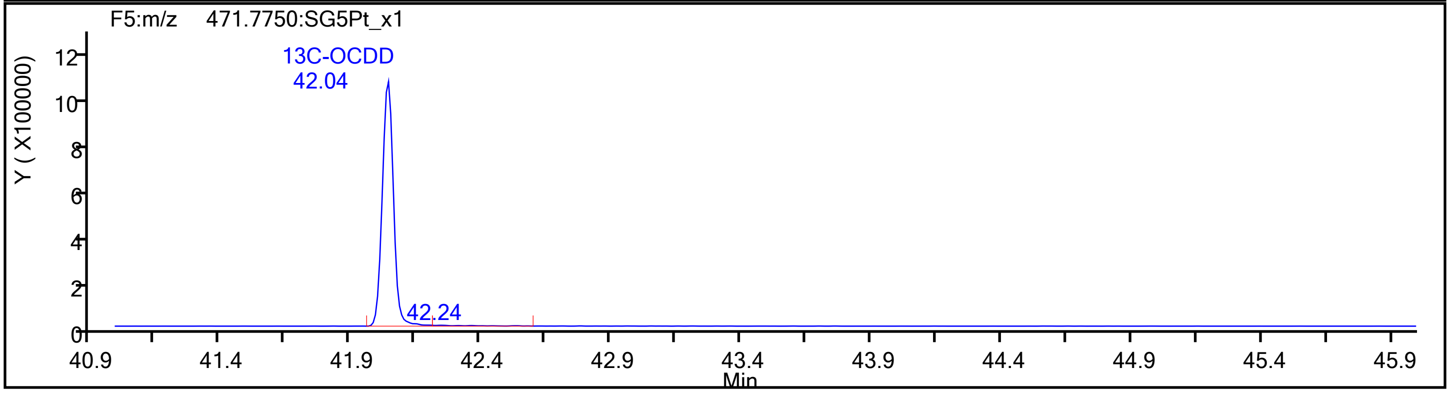

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d

Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

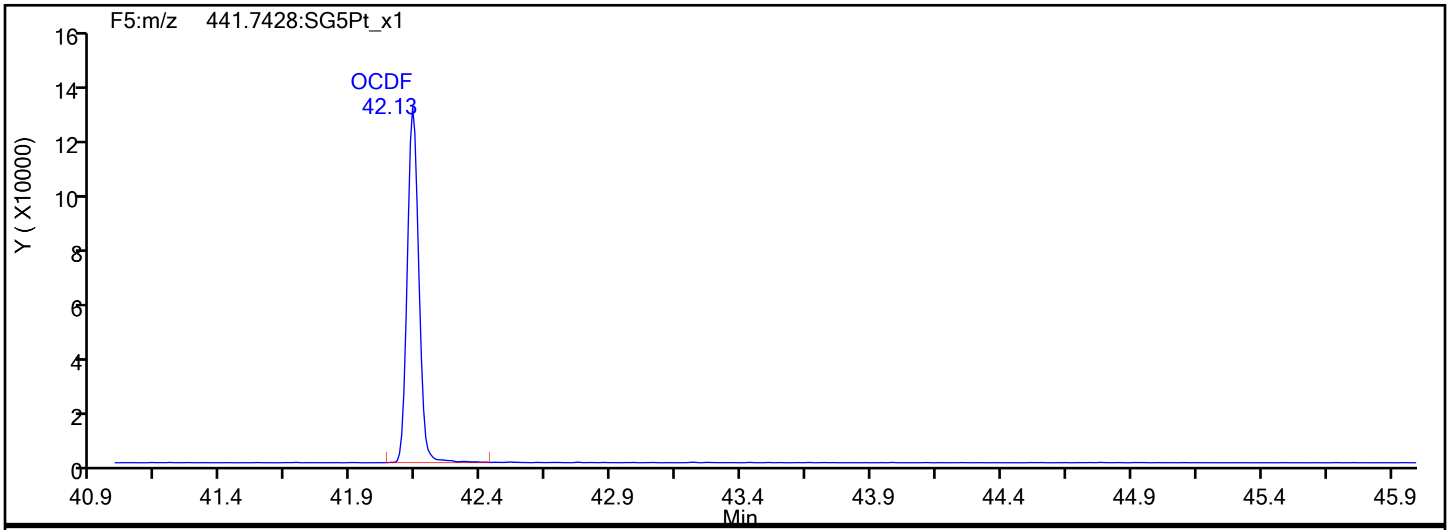

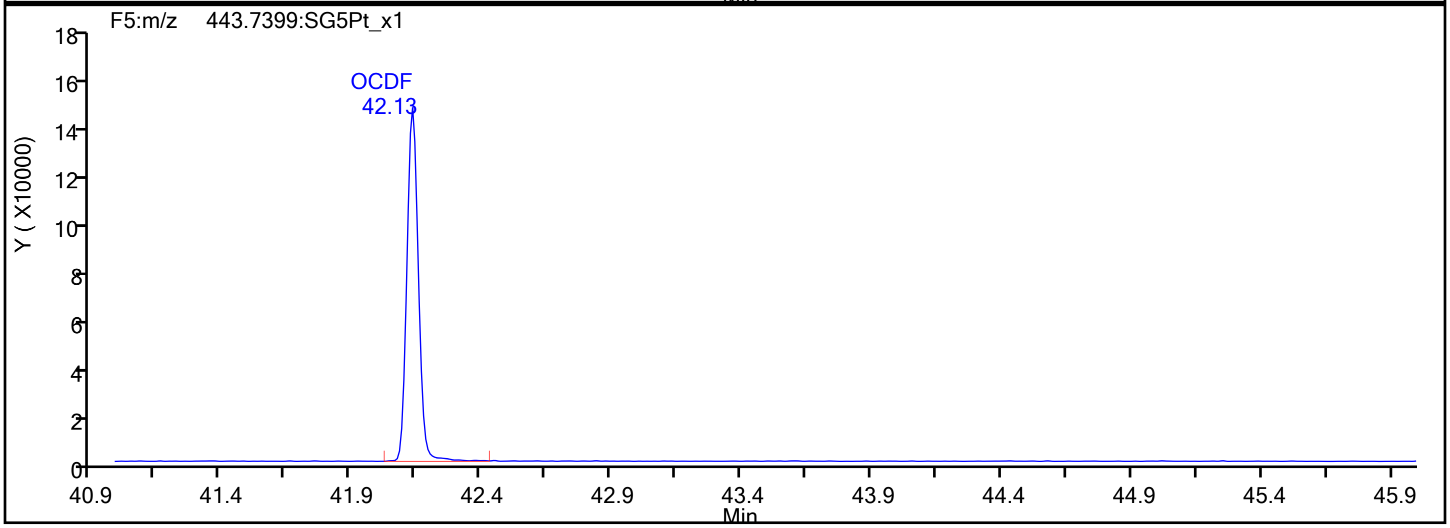

OCDF Interference Mass

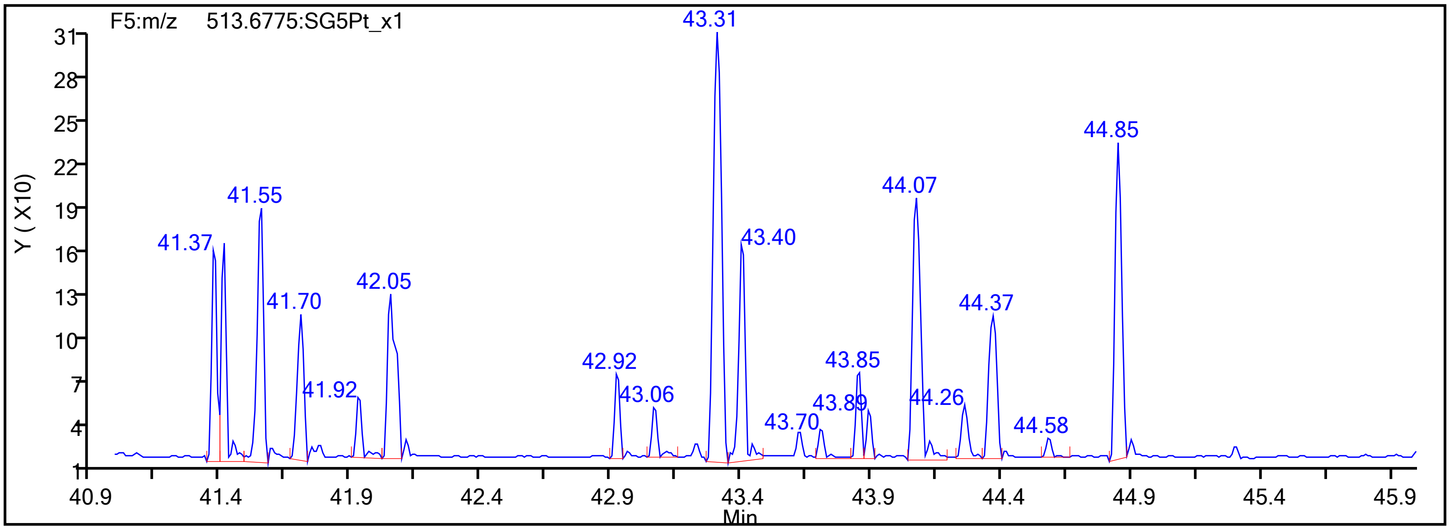

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

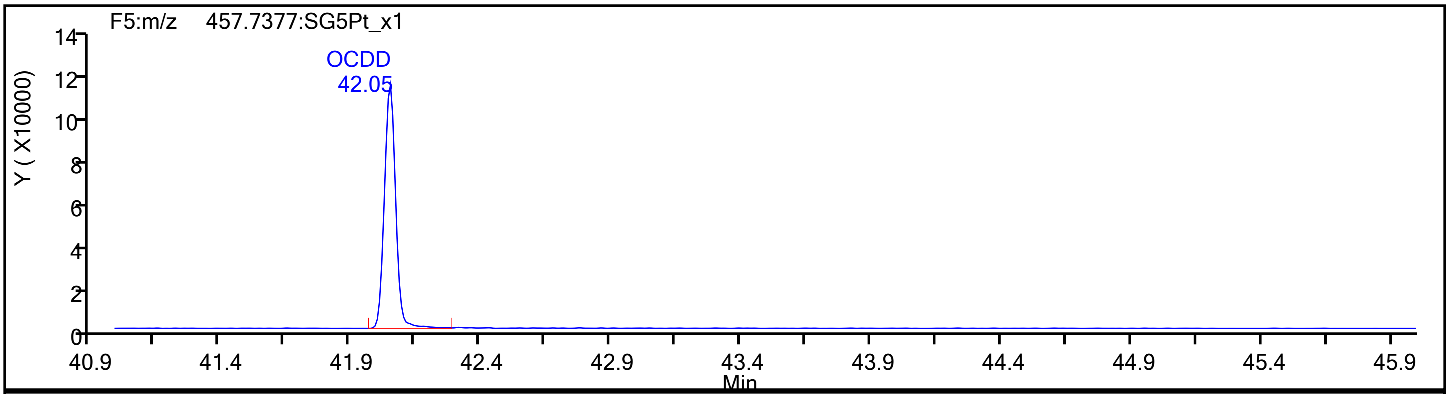

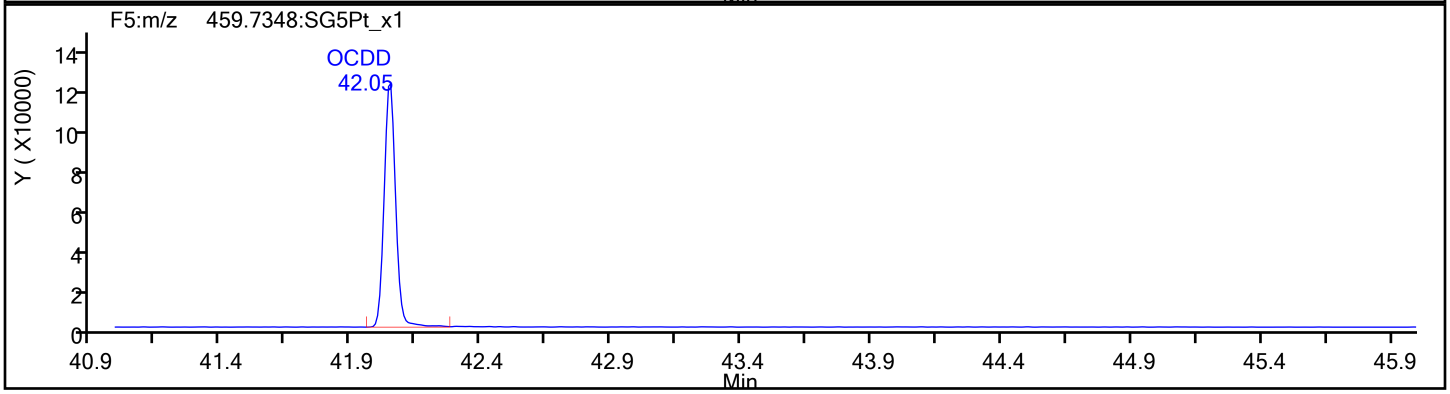

OCDD Standards

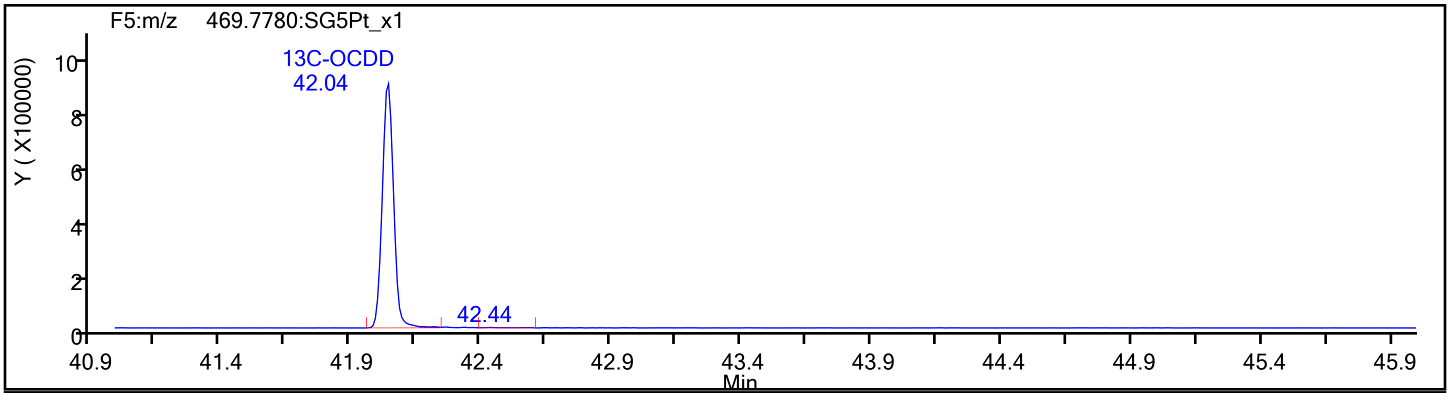

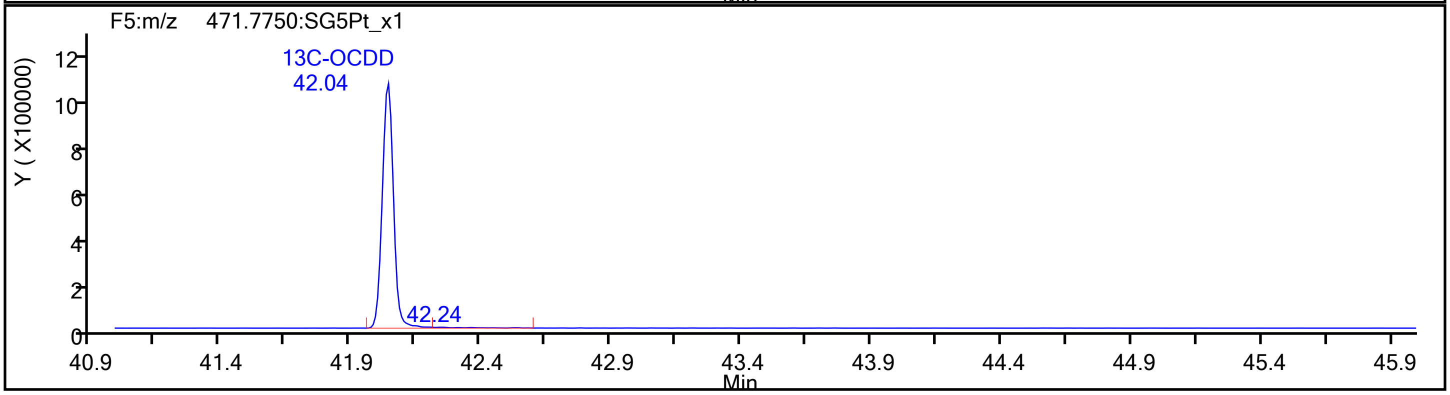

Report Date: 05-Jun-2020 14:02:25
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d
Injection Date: 03-Jun-2020 15:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

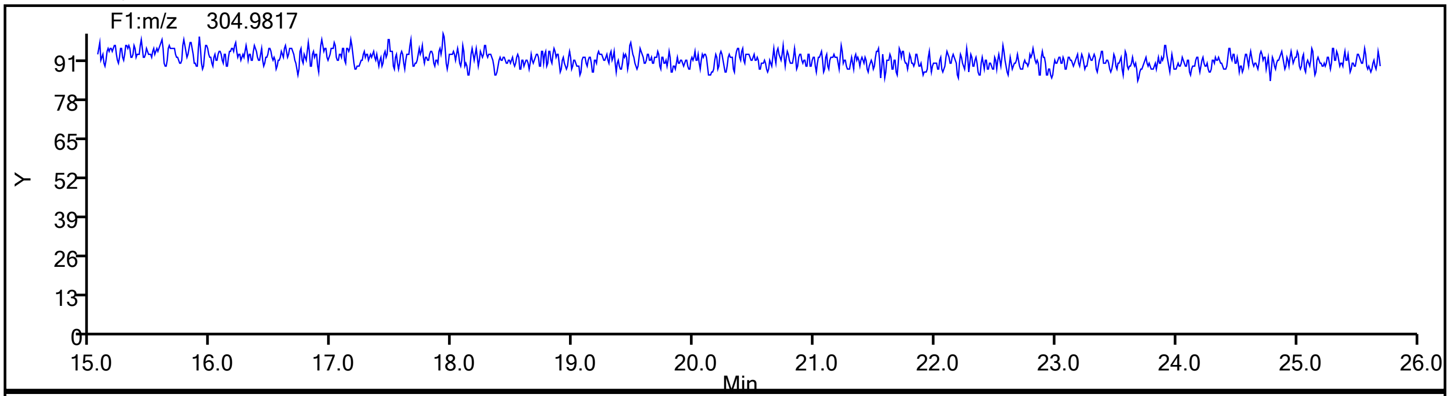

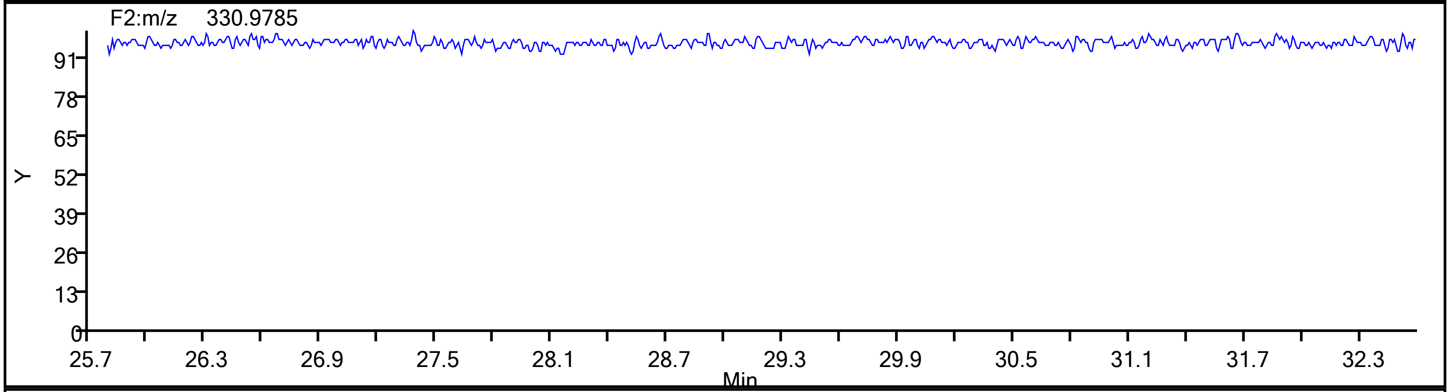

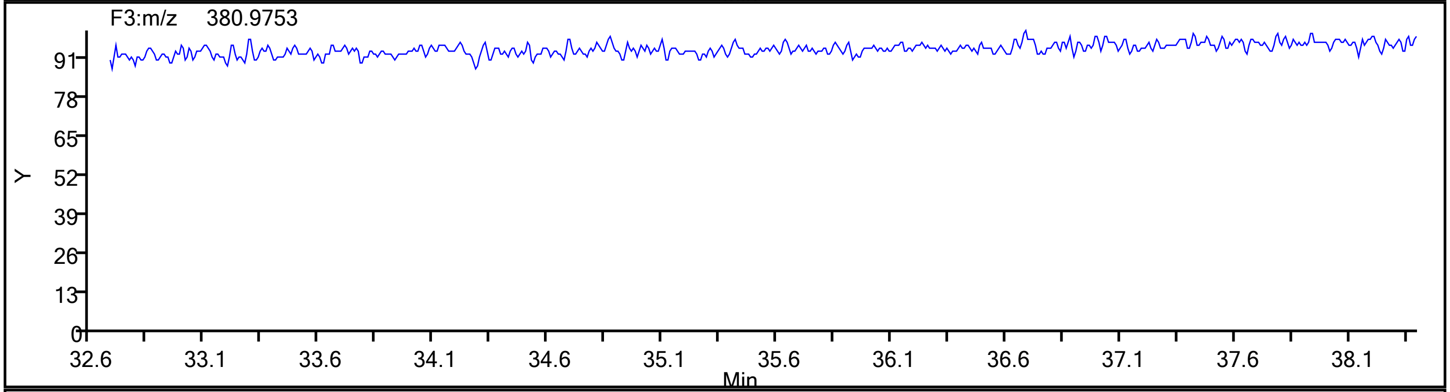

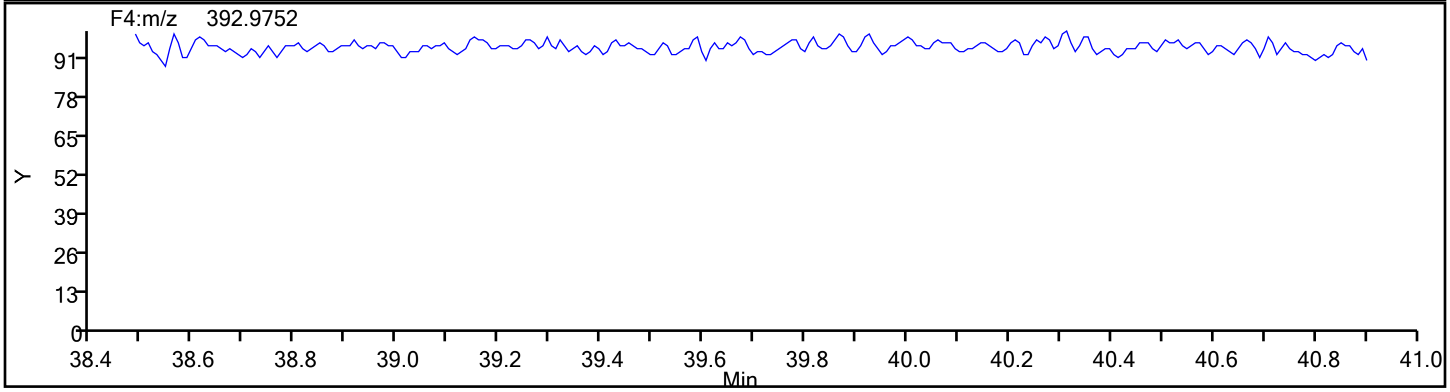

Report Date: 05-Jun-2020 14:02:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_6.d		
Injection Date:	03-Jun-2020 15:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

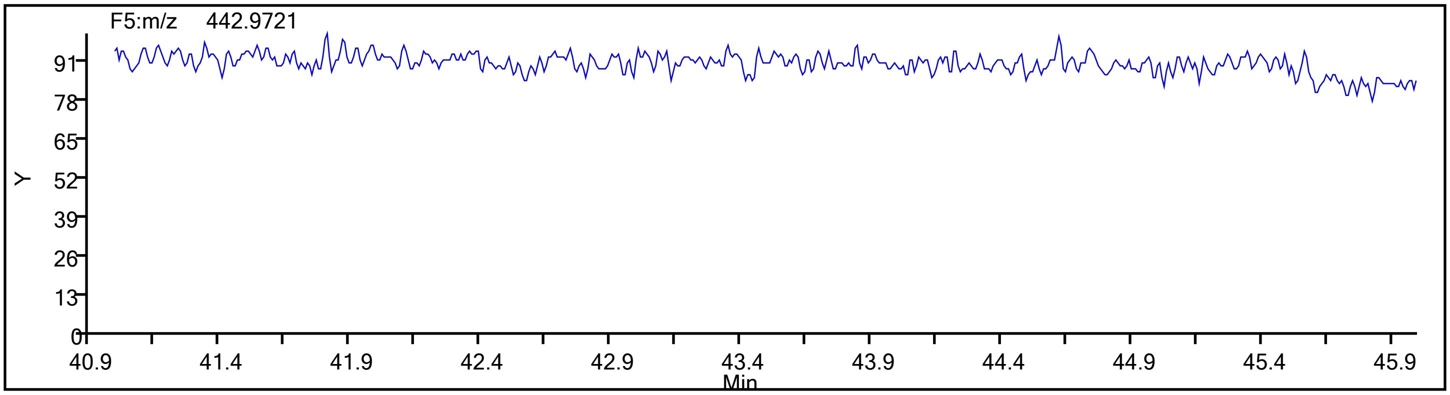

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 03-Jun-2020 16:30:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 11:34:23 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:11:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.321	3589784	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.331	5259494	0.79	1.4977	97.8	97.8	0.4078	0.4078	97.83	
2,3,7,8-TCDF	20.357	564303	0.80	1.1312	9.484	9.484	0.0378	0.0378	94.84	
S Total TCDF					9.484	9.484	0.0378	0.0378		
D 13C-2,3,7,8-TCDD	21.700	3678459	0.78	1.0367	98.8	98.8	0.2866	0.2866	98.84	
2,3,7,8-TCDD	21.743	407450	0.80	1.1849	9.348	9.348	0.0598	0.0598	93.48	
$ 37Cl4-2,3,7,8-TCDD	21.734	386993		1.1208	9.619	9.619	0.0312	0.0312	96.19	
S Total TCDD					9.348	9.348	0.0598	0.0598		
D 13C-1,2,3,7,8-PeCDF	27.312	4514934	1.56	1.3057	96.3	96.3	0.4547	0.4547	96.32	
1,2,3,7,8-PeCDF	27.337	2448425	1.57	1.1060	49.0	49.0	0.1674	0.1674	98.06	
D 13C-2,3,4,7,8-PeCDF	28.843	5239072	1.58	1.5420	94.6	94.6	0.3850	0.3850	94.64	a
2,3,4,7,8-PeCDF	28.868	2354236	1.56	0.9067	49.6	49.6	0.1938	0.1938	99.12	
S Total PeCDF					98.6	98.6	0.1806	0.1806		
D 13C-1,2,3,7,8-PeCDD	29.667	2865674	1.58	0.8294	96.2	96.2	0.2007	0.2007	96.25	
1,2,3,7,8-PeCDD	29.693	1543250	1.60	1.1062	48.7	48.7	0.0820	0.0820	97.37	
S Total PeCDD					48.7	48.7	0.0820	0.0820		
D 13C-1,2,3,4,7,8-HxCDF	34.988	4553149	0.52	1.4619	100.4	100.4	0.2876	0.2876	100	a
1,2,3,4,7,8-HxCDF	35.005	2250009	1.24	1.0087	49.0	49.0	0.1850	0.1850	97.98	
D 13C-1,2,3,6,7,8-HxCDF	35.148	4014247	0.53	1.2866	100.6	100.6	0.3268	0.3268	101	
1,2,3,6,7,8-HxCDF	35.173	2443510	1.25	1.2432	49.0	49.0	0.1796	0.1796	97.93	
D 13C-2,3,4,6,7,8-HxCDF	35.973	3693532	0.53	1.1988	99.3	99.3	0.3508	0.3508	99.31	
2,3,4,6,7,8-HxCDF	35.990	2293876	1.23	1.2736	48.8	48.8	0.1594	0.1594	97.53	
D 13C-1,2,3,7,8,9-HxCDF	36.857	3221618	0.53	1.0687	97.2	97.2	0.3935	0.3935	97.16	
1,2,3,7,8,9-HxCDF	36.866	1995030	1.27	1.2882	48.1	48.1	0.1782	0.1782	96.14	
S Total HxCDF					194.8	194.8	0.1756	0.1756		
* 13C-1,2,3,7,8,9-HxCDD	36.664	3102560	1.28	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.184	3382241	1.27	1.1046	98.7	98.7	0.2030	0.2030	98.69	a
1,2,3,4,7,8-HxCDD	36.192	1504748	1.24	0.9336	47.7	47.7	0.1031	0.1031	95.30	
D 13C-1,2,3,6,7,8-HxCDD	36.302	3032823	1.28	0.9871	99.0	99.0	0.2272	0.2272	99.03	
1,2,3,6,7,8-HxCDD	36.310	1596914	1.27	1.0802	48.7	48.7	0.1073	0.1073	97.49	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.672	1630655	1.24	1.0574	48.1	48.1	0.0995	0.0995	96.15	
S Total HxCDD					144.5	144.5	0.1033	0.1033		
D 13C-1,2,3,4,6,7,8-HpCDF	38.645	2779850	0.46	0.9035	99.2	99.2	0.4571	0.4571	99.17	
1,2,3,4,6,7,8-HpCDF	38.662	2099533	1.05	1.5957	47.3	47.3	0.2183	0.2183	94.66	
D 13C-1,2,3,4,7,8,9-HpCDF	39.892	3118998	0.46	1.0480	95.9	95.9	0.3941	0.3941	95.92	a
1,2,3,4,7,8,9-HpCDF	39.900	1762547	1.05	1.1693	48.3	48.3	0.2415	0.2415	96.65	
S Total HpCDF					95.7	95.7	0.2299	0.2299		
D 13C-1,2,3,4,6,7,8-HpCDD	39.589	2745033	1.05	0.8875	99.7	99.7	0.3010	0.3010	99.69	
1,2,3,4,6,7,8-HpCDD	39.597	1444510	1.04	1.1150	47.2	47.2	0.1276	0.1276	94.39	
S Total HpCDD					47.2	47.2	0.1276	0.1276		
D 13C-OCDD	42.042	3663484	0.90	0.6297	187.5	187.5	0.2228	0.2228	93.75	
OCDF	42.135	2602280	0.91	1.4809	95.9	95.9	0.0779	0.0779	95.93	
OCDD	42.051	2102910	0.87	1.1948	96.1	96.1	0.0855	0.0855	96.09	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00093 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 03-Jun-2020 16:30:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00093
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 11:34:23 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:11:47

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.321	21.309	1		1583062	226781	408	1020	556		
333.9338	21.321	21.309	1		2006722	288126	204	510	1412	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.331	20.321	1	0.954	2323776	339320	742	1855	457		
317.9389	20.340	20.321	1	0.954	2935718	420130	516	1290	814	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.357	20.347	1	1.001	250705	37195	44	110	845		
305.8987	20.357	20.347	1	1.001	313598	45300	86	215	527	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.700	21.692	0	1.018	1613108	215133	408	1020	527		
333.9338	21.691	21.692	0	1.017	2065351	285628	204	510	1400	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.743	21.722	1	1.002	180745	23124	91	227	254		
321.8936	21.725	21.722	0	1.001	226705	30748	51	127	603	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.734	21.724	1	1.019	386993	52715	72	180	732		
13C-1,2,3,7,8-PeCDF											
351.9000	27.312	27.300	1	1.281	2750587	449553	739	1847	608		
353.8970	27.312	27.300	1	1.281	1764347	291613	484	1210	603	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.337	27.325	1	1.001	1496247	236348	298	745	793		
341.8567	27.337	27.325	1	1.001	952178	155089	251	627	618	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	28.843	28.834	1	1.353	3206911	481192	739	1847	651		a
353.8970	28.843	28.834	1	1.353	2032161	299569	484	1210	619	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.868	28.857	1	1.001	1435337	207959	298	745	698		
341.8567	28.868	28.857	1	1.001	918899	134899	251	627	537	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.667	29.651	1	1.391	1753334	247629	153	382	1618		
369.8919	29.676	29.651	1	1.392	1112340	160290	190	475	844	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.693	29.682	1	1.001	948739	135637	106	265	1280		
357.8516	29.693	29.682	1	1.001	594511	83974	42	105	1999	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											a
383.8639	34.988	34.982	0	0.954	1566895	353279	483	1207	731		a
385.8610	34.988	34.982	0	0.954	2986254	670303	916	2290	732	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.005	35.000	0	1.000	1245850	279084	434	1085	643		
375.8178	35.005	35.000	0	1.000	1004159	223563	330	825	677	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.148	35.145	0	0.959	1382534	302697	483	1207	627		
385.8610	35.148	35.145	0	0.959	2631713	552729	916	2290	603	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.173	35.163	1	1.001	1355228	286014	434	1085	659		
375.8178	35.173	35.163	1	1.001	1088282	229932	330	825	697	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.973	35.966	0	0.981	1276459	324295	483	1207	671		
385.8610	35.973	35.966	0	0.981	2417073	616302	916	2290	673	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.990	35.981	1	1.000	1266271	320259	434	1085	738		
375.8178	35.990	35.981	1	1.000	1027605	259289	330	825	786	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.857	36.848	1	1.005	1115457	289828	483	1207	600		
385.8610	36.857	36.848	1	1.005	2106161	542082	916	2290	592	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.866	36.862	0	1.000	1115091	288848	434	1085	666		
375.8178	36.866	36.862	0	1.000	879939	231252	330	825	701	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.664	36.653	1		1744021	464904	401	1002	1159		
403.8529	36.655	36.653	0		1358539	366755	345	862	1063	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	36.184	36.173	1	0.987	1891868	509469	401	1002	1270		a
403.8529	36.184	36.173	1	0.987	1490373	399219	345	862	1157	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.192	36.187	0	1.000	832628	225512	209	522	1079		
391.8127	36.192	36.187	0	1.000	672120	183944	141	352	1305	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.302	36.291	1	0.990	1705407	425243	401	1002	1060		
403.8529	36.293	36.291	0	0.990	1327416	329373	345	862	955	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.310	36.304	0	1.000	892915	226194	209	522	1082		
391.8127	36.310	36.304	0	1.000	703999	178929	141	352	1269	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.672	36.669	0	1.013	903080	245484	209	522	1175		
391.8127	36.672	36.669	0	1.013	727575	192795	141	352	1367	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.645	38.640	0	1.054	876514	283484	540	1350	525		
419.8220	38.645	38.640	0	1.054	1903336	610730	834	2085	732	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.662	38.655	0	1.000	1076424	344769	673	1682	512		
409.7788	38.654	38.655	0	1.000	1023109	327596	573	1432	572	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8250	39.892	39.885	0	1.088	980104	348909	540	1350	646		a
419.8220	39.892	39.885	0	1.088	2138894	754248	834	2085	904	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.900	39.893	0	1.000	901552	318670	673	1682	474		
409.7788	39.900	39.893	0	1.000	860995	304051	573	1432	531	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.589	39.582	0	1.080	1403051	485433	476	1190	1020		
437.8140	39.589	39.582	0	1.080	1341982	470475	413	1032	1139	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.597	39.590	0	1.000	736933	258688	295	737	877		
425.7737	39.597	39.590	0	1.000	707577	243646	249	622	978	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.042	42.035	0	1.147	1739784	592300	263	657	2252		
471.7750	42.042	42.035	0	1.147	1923700	641803	204	510	3146	0.90(0.76-1.02)	
OCDF											
441.7428	42.135	42.131	0	1.002	1239669	410513	108	270	3801		
443.7399	42.135	42.131	0	1.002	1362611	445123	177	442	2515	0.91(0.76-1.02)	
OCDD											
457.7377	42.051	42.043	0	1.000	980762	327911	123	307	2666		
459.7348	42.042	42.043	0	1.000	1122148	369366	129	322	2863	0.87(0.76-1.02)	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00093 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d				
Injection Date:	03-Jun-2020 16:30:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Processing Integration Results

Not Detected

Expected RT: 28.83

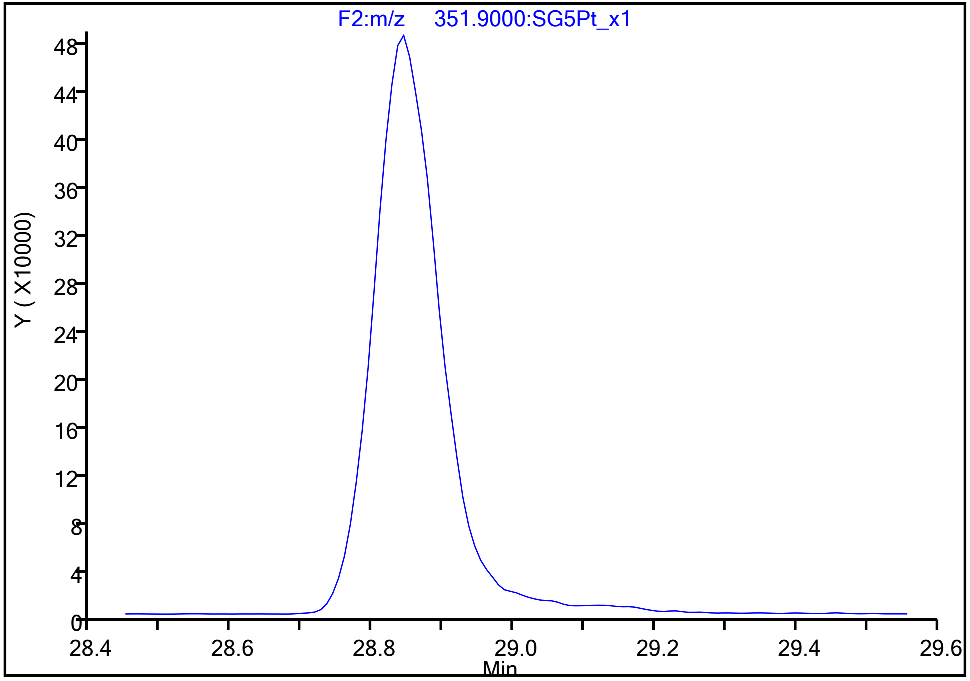

Manual Integration Results

RT: 28.84

Area: 3206911

Amount: 94.644350

Amount Units: pg/ul

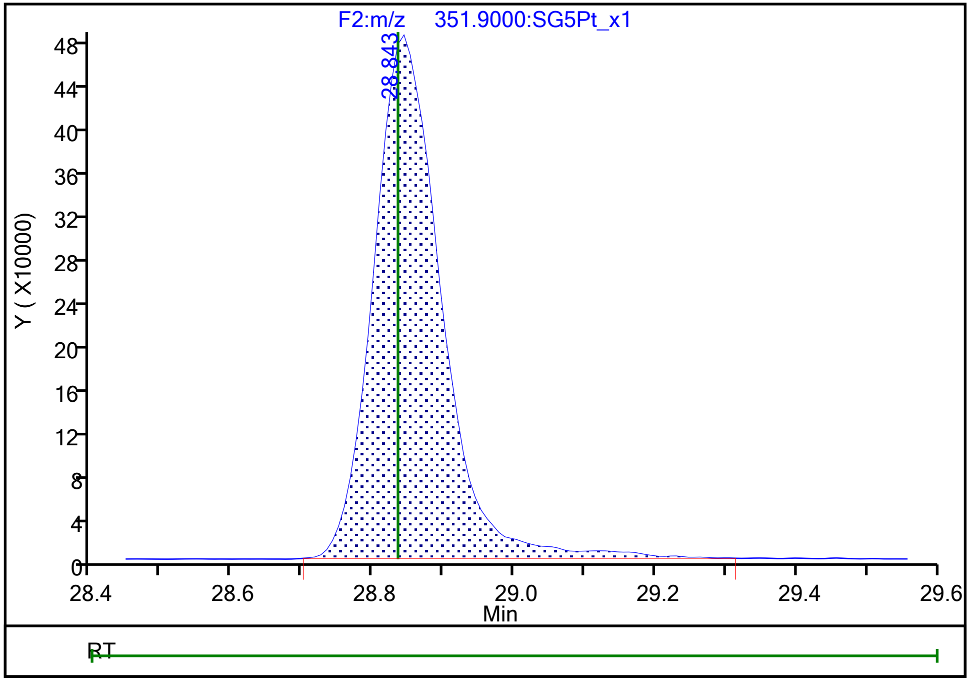

Reviewer: stephensk, 04-Jun-2020 08:11:16

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34

Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d				
Injection Date:	03-Jun-2020 16:30:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Not Detected

Expected RT: 34.98

Processing Integration Results

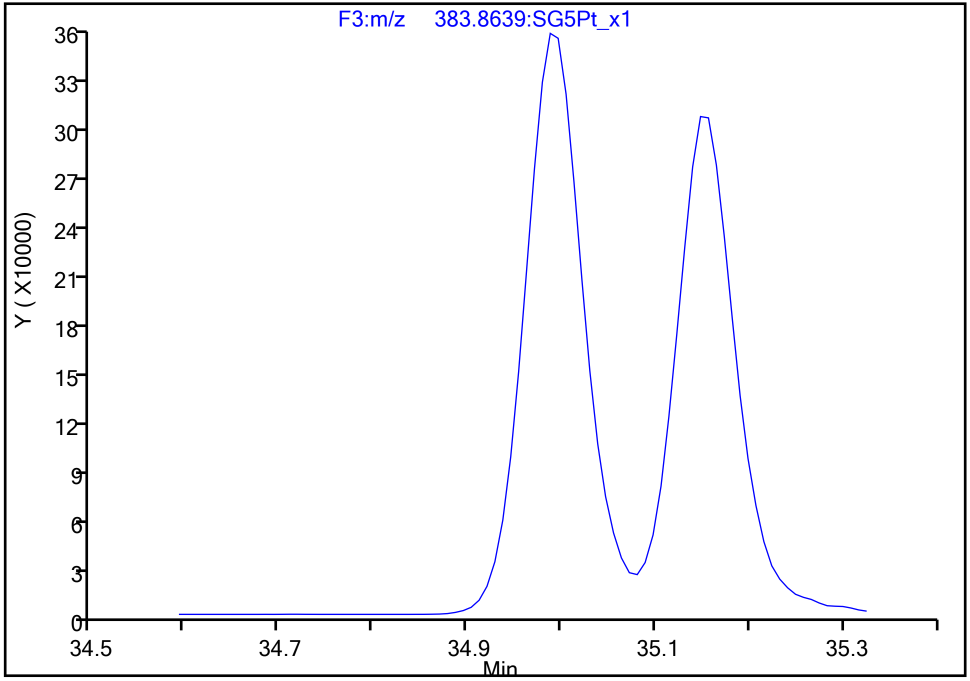

RT:	34.99
Area:	1566895
Amount:	100.3876
Amount Units:	pg/ul

Manual Integration Results

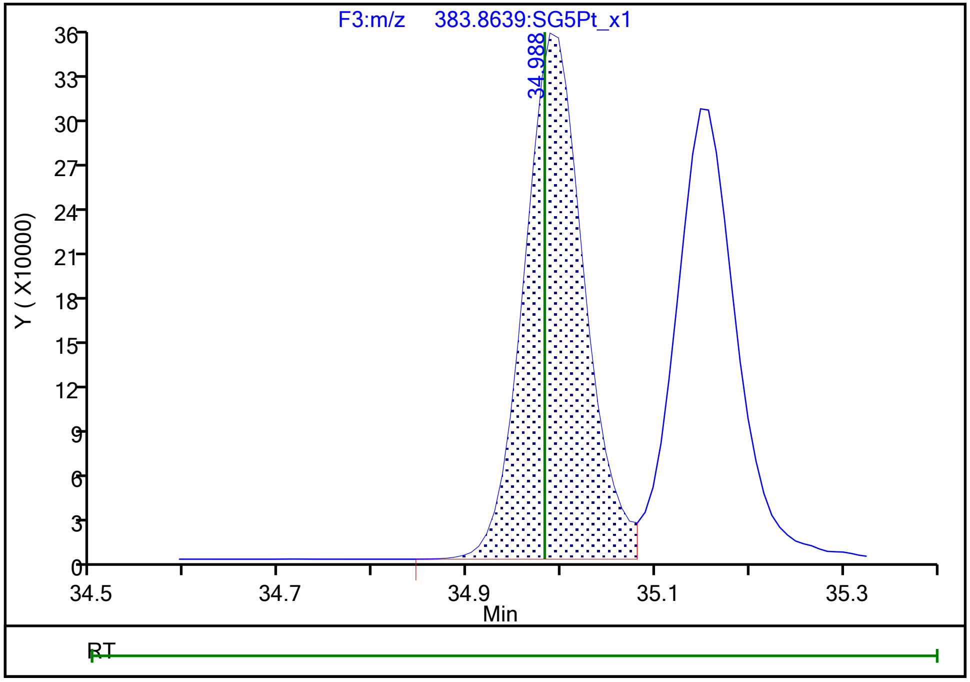

Reviewer: stephensk, 04-Jun-2020 08:11:23

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Injection Date: 03-Jun-2020 16:30:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 36.17

Processing Integration Results

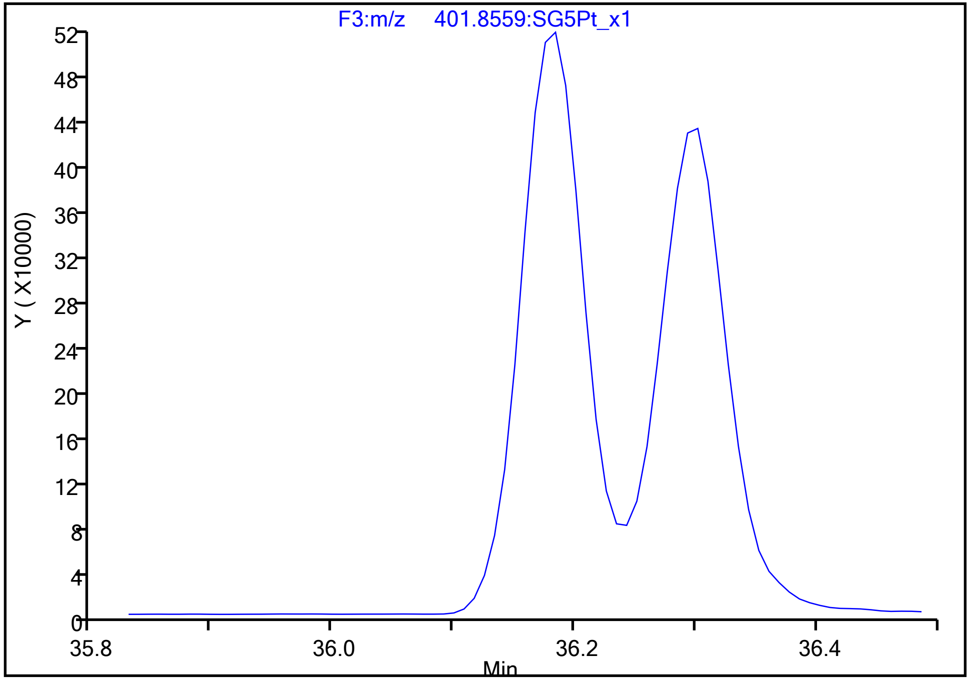

RT: 36.18
Area: 1891868
Amount: 98.689934
Amount Units: pg/ul

Manual Integration Results

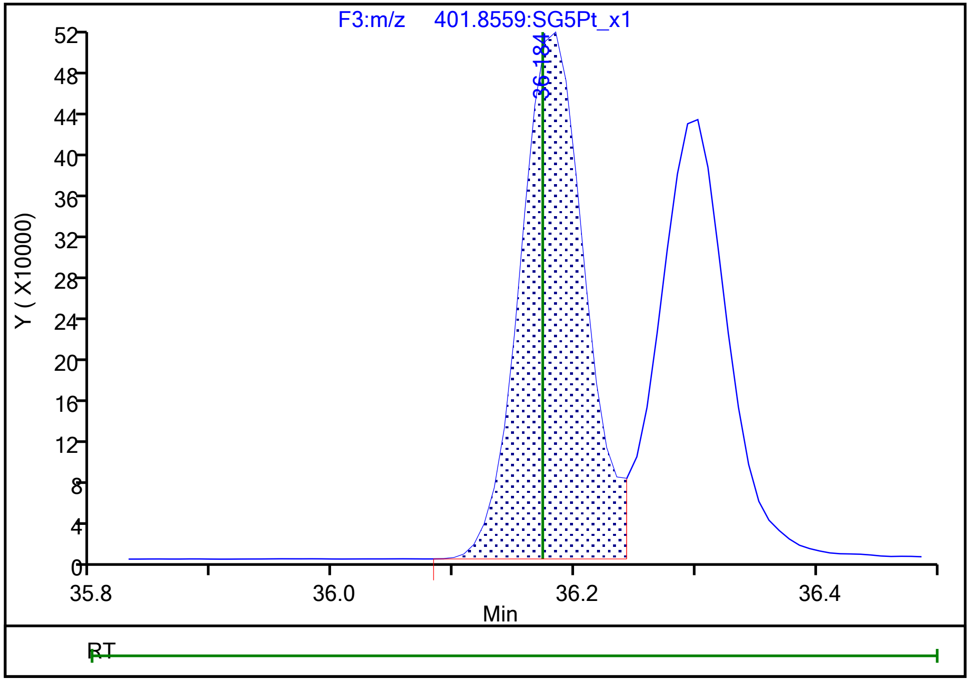

Reviewer: stephensk, 04-Jun-2020 08:11:30

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34

Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d				
Injection Date:	03-Jun-2020 16:30:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Not Detected
Expected RT: 39.88

Processing Integration Results

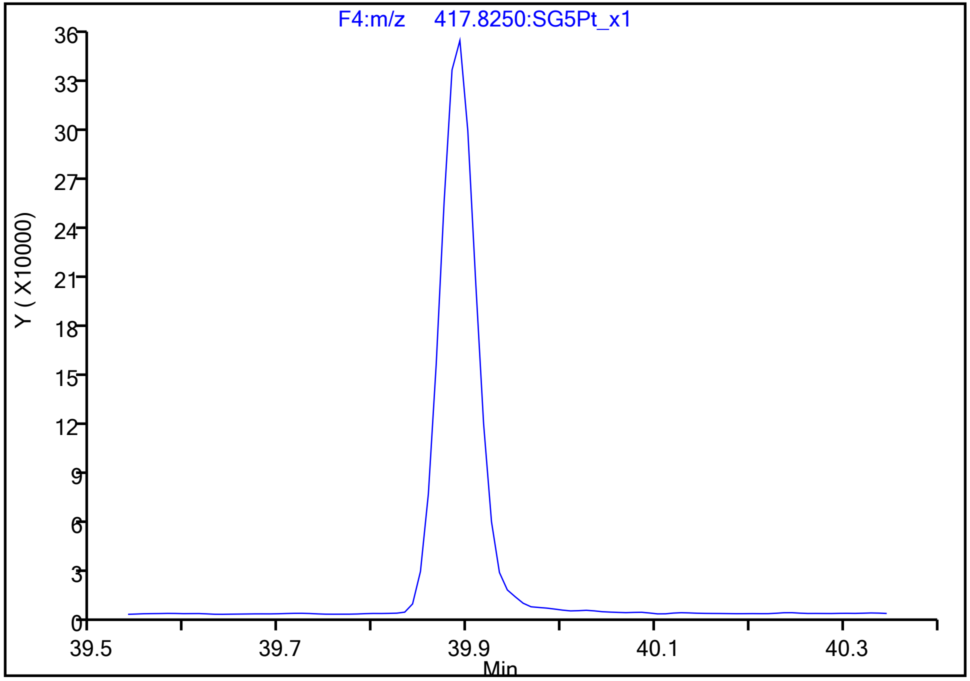

RT: 39.89
Area: 980104
Amount: 95.922974
Amount Units: pg/ul

Manual Integration Results

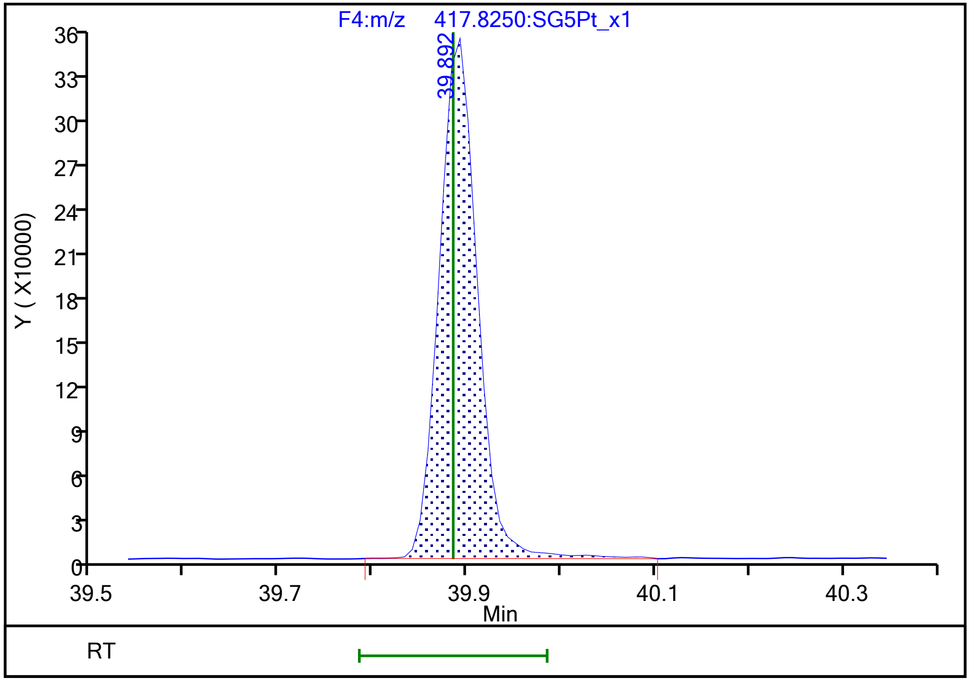

Reviewer: stephensk, 04-Jun-2020 08:11:38

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d		
Injection Date:	03-Jun-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

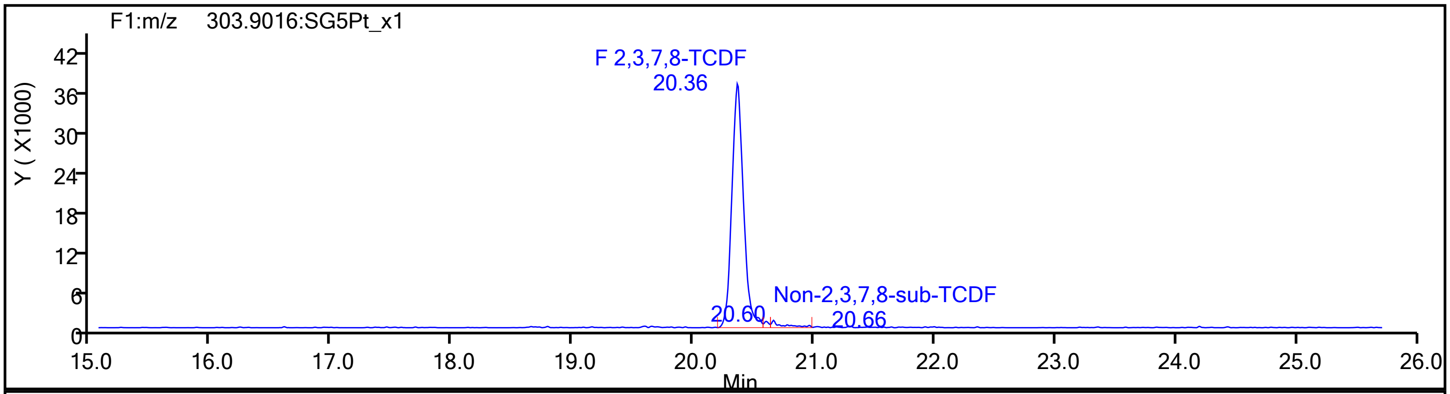

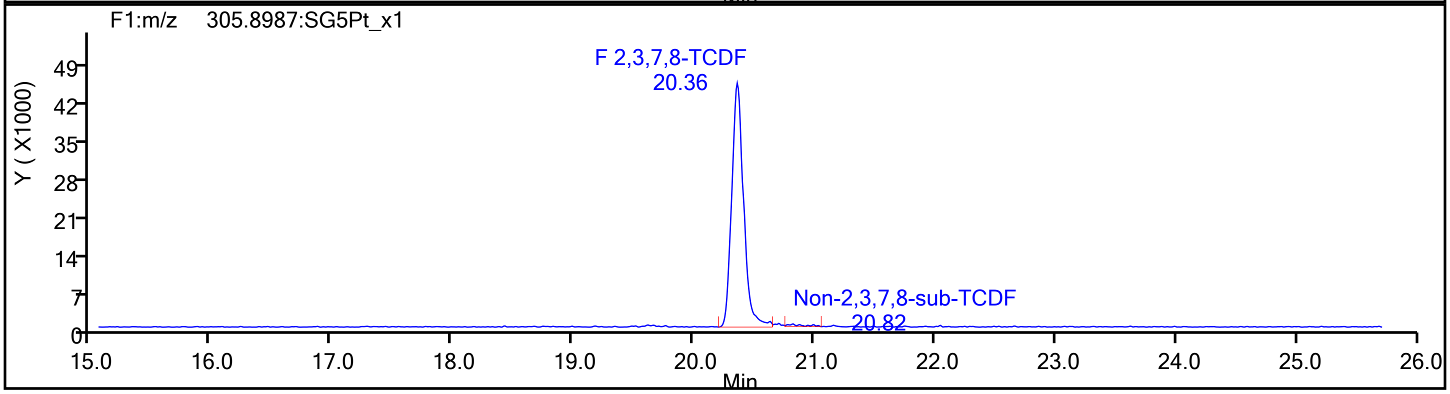

TCDF Standards

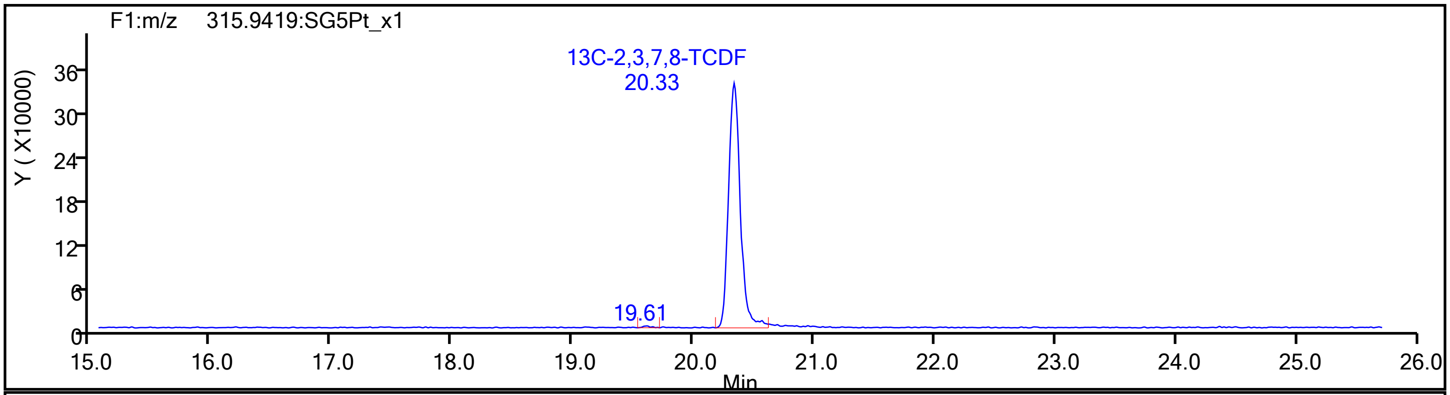

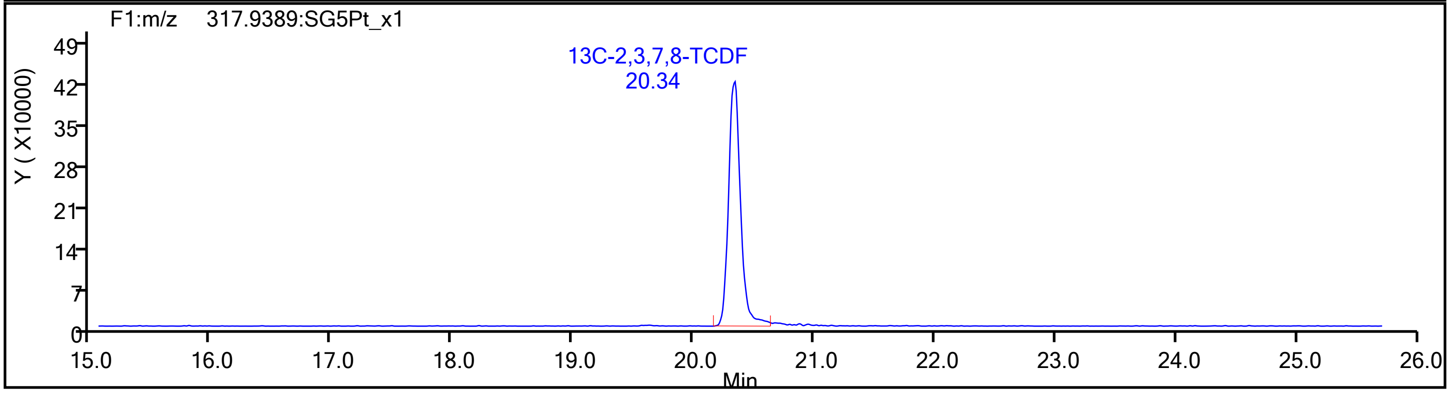

Report Date: 05-Jun-2020 11:34:34

Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d
Injection Date: 03-Jun-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

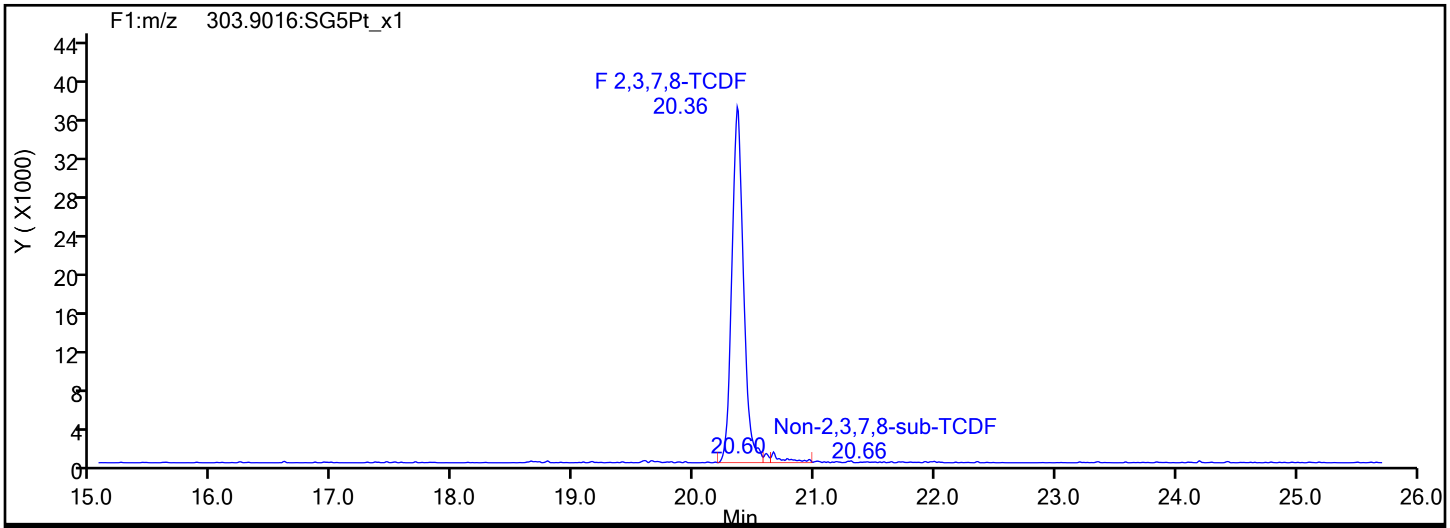

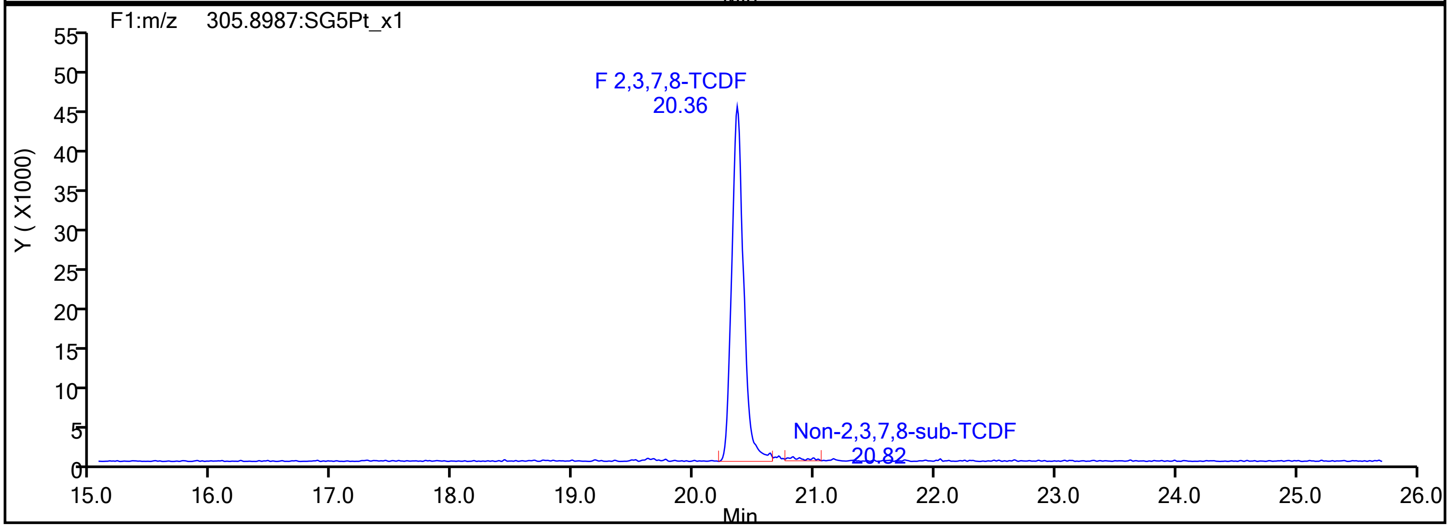

TCDF Interference Mass

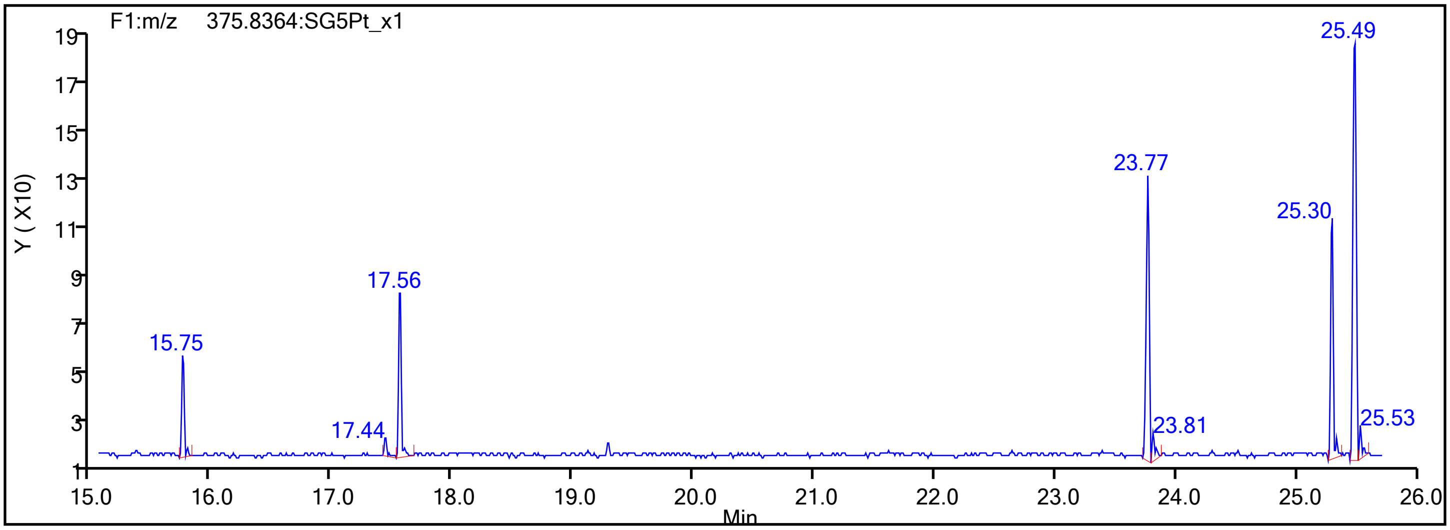

Report Date: 05-Jun-2020 11:34:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d

Injection Date: 03-Jun-2020 16:30:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

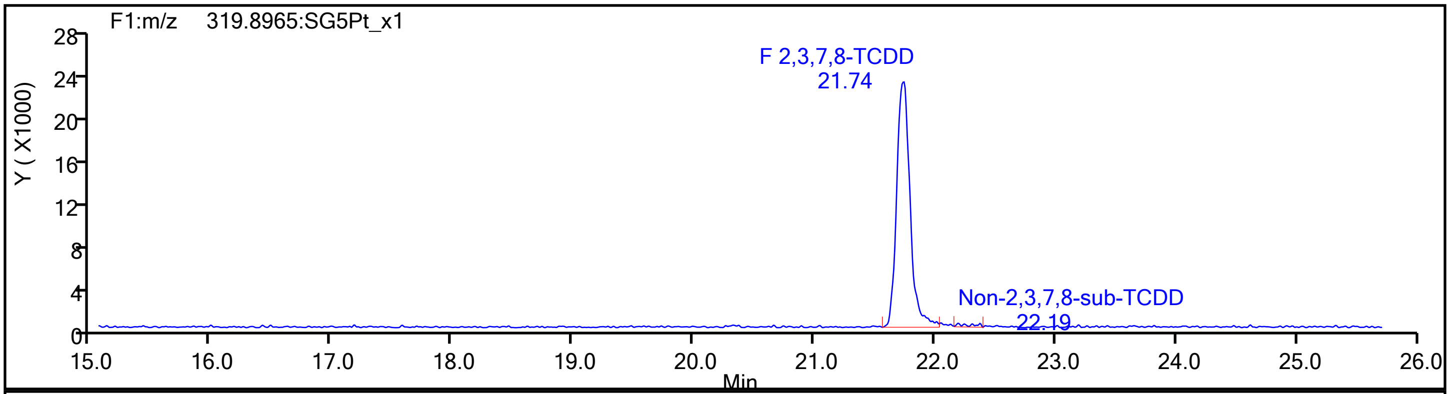

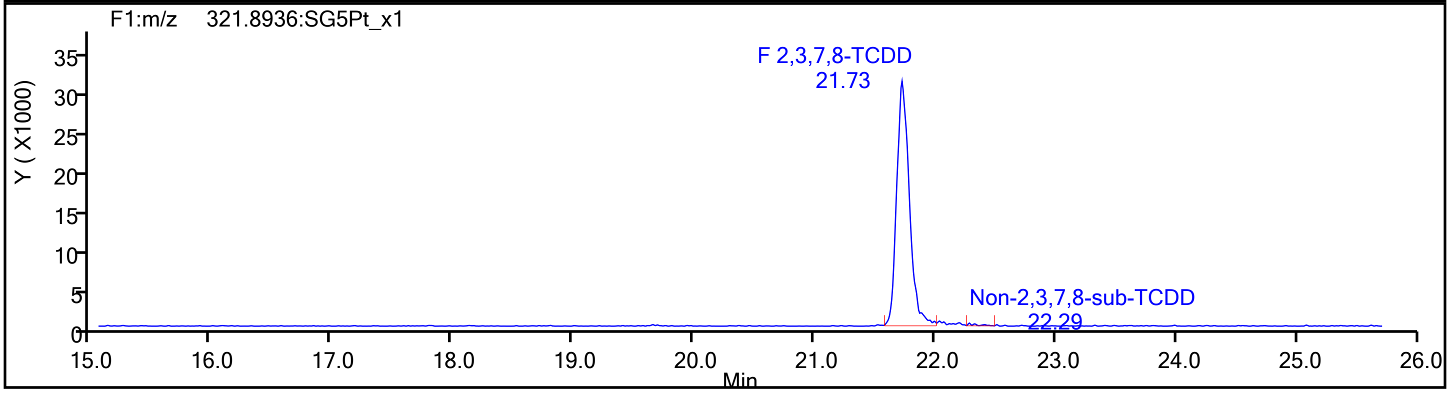

TCDD Standards

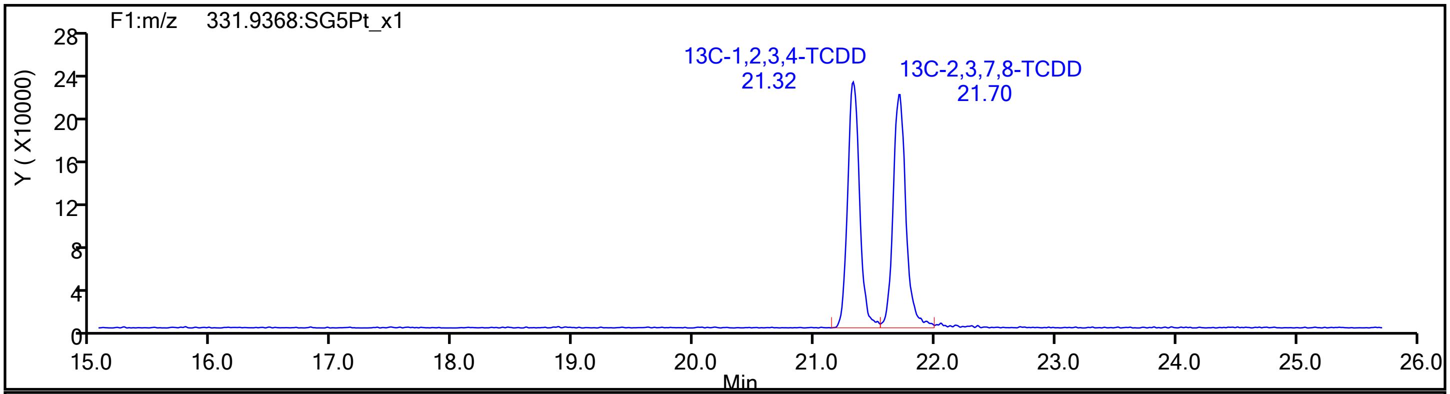

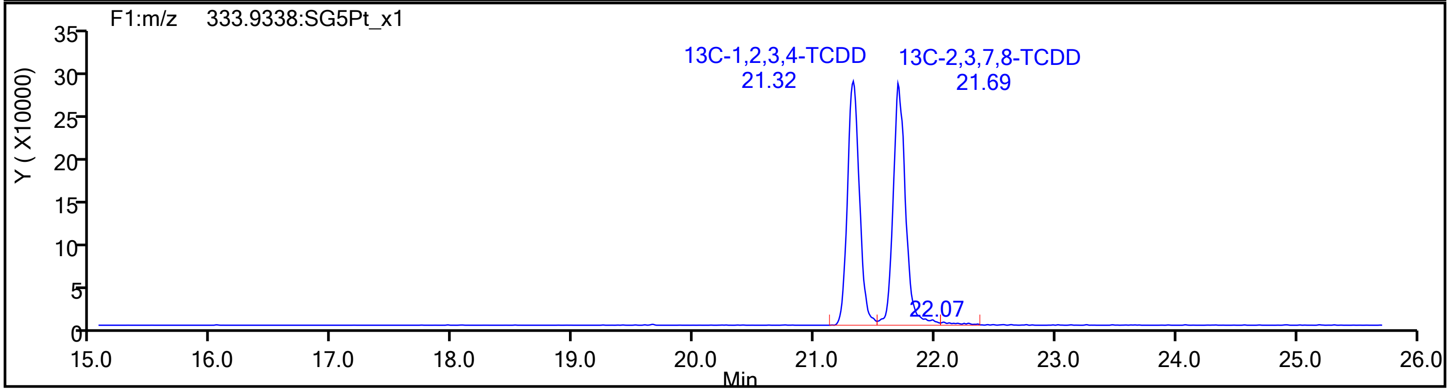

Report Date: 05-Jun-2020 11:34:34　　Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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37Cl4-TCDD

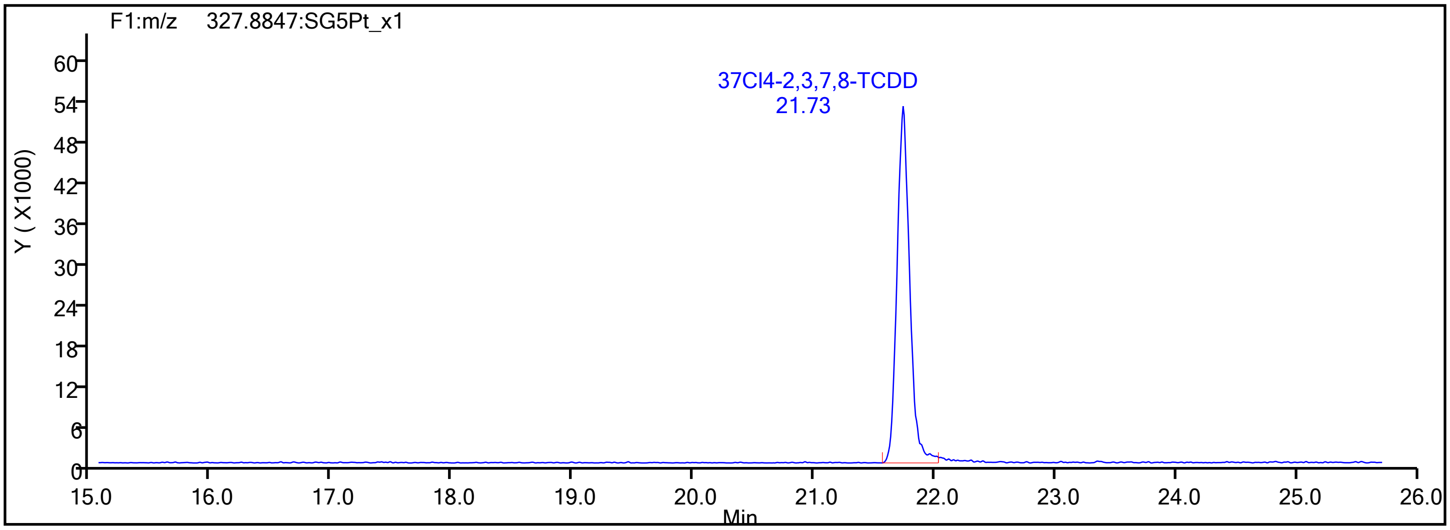

37Cl4-TCDD Standards

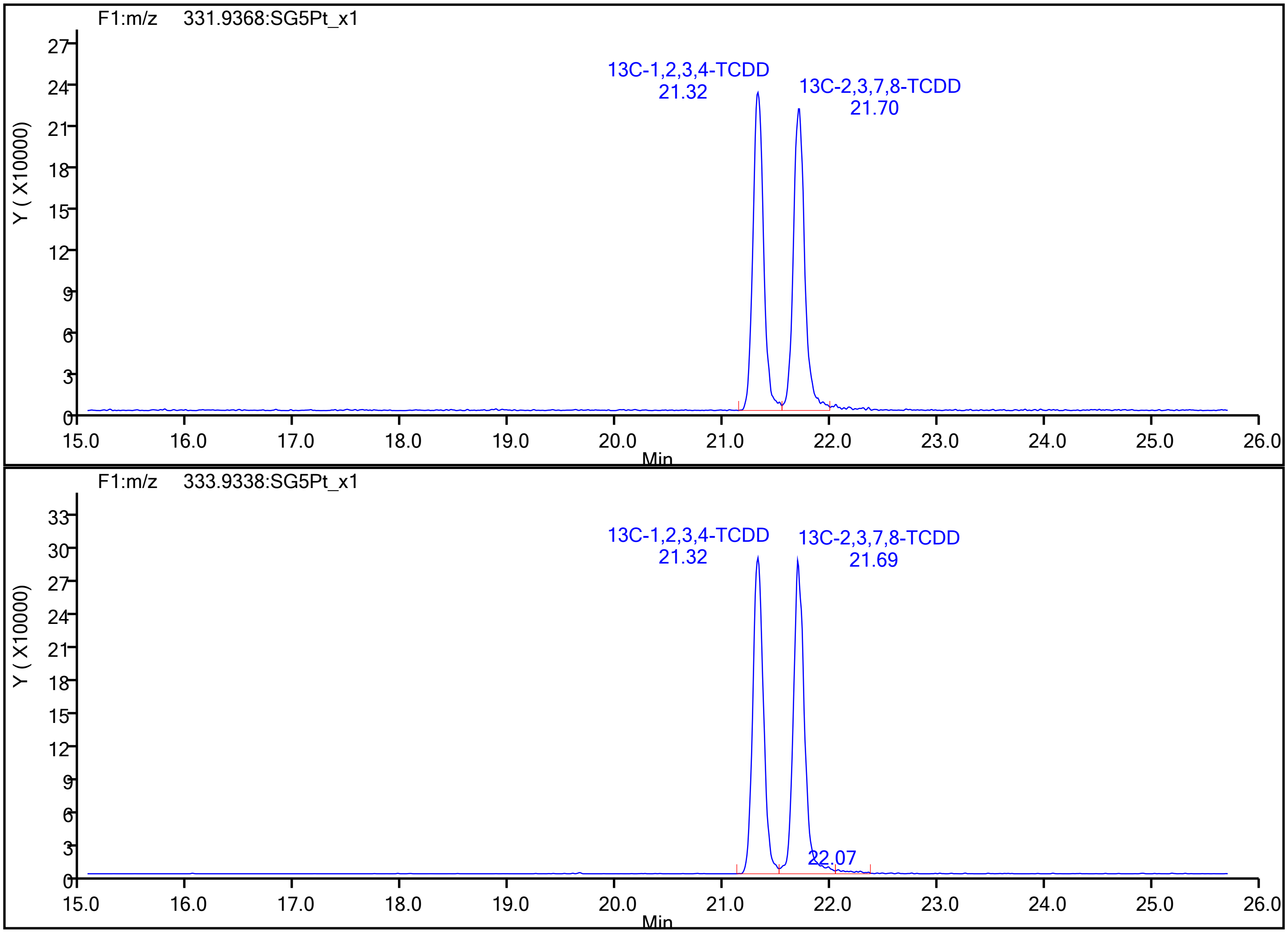

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Eurofins TestAmerica, Sacramento

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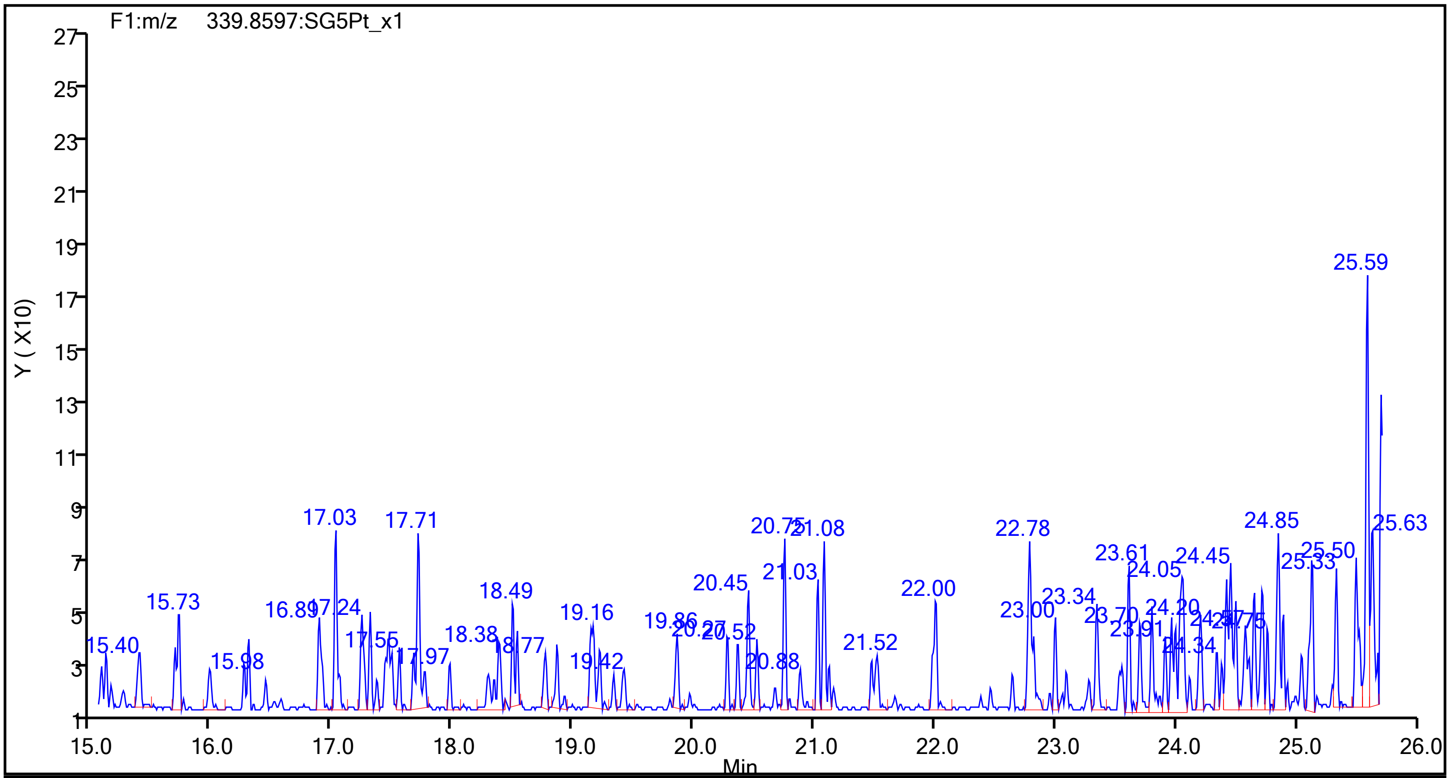

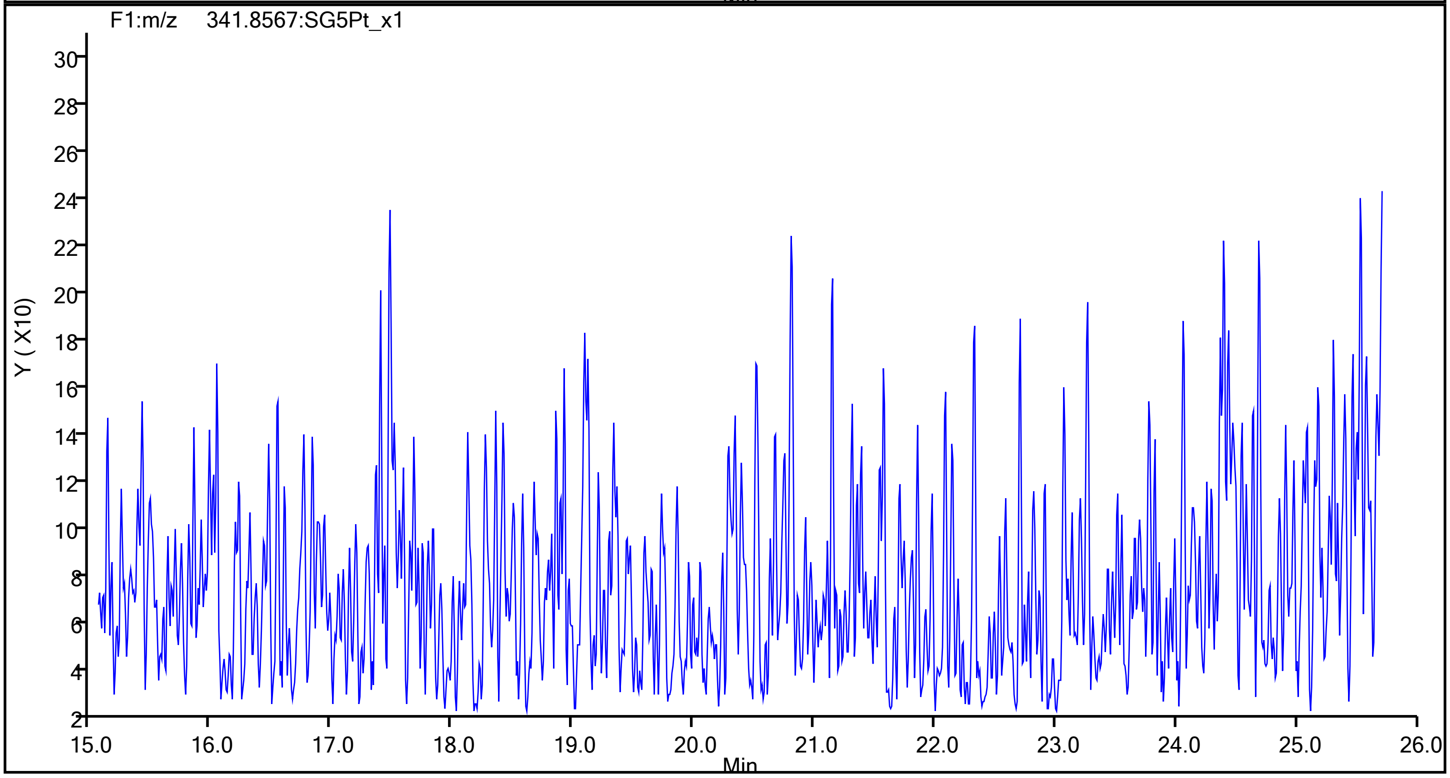

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Eurofins TestAmerica, Sacramento

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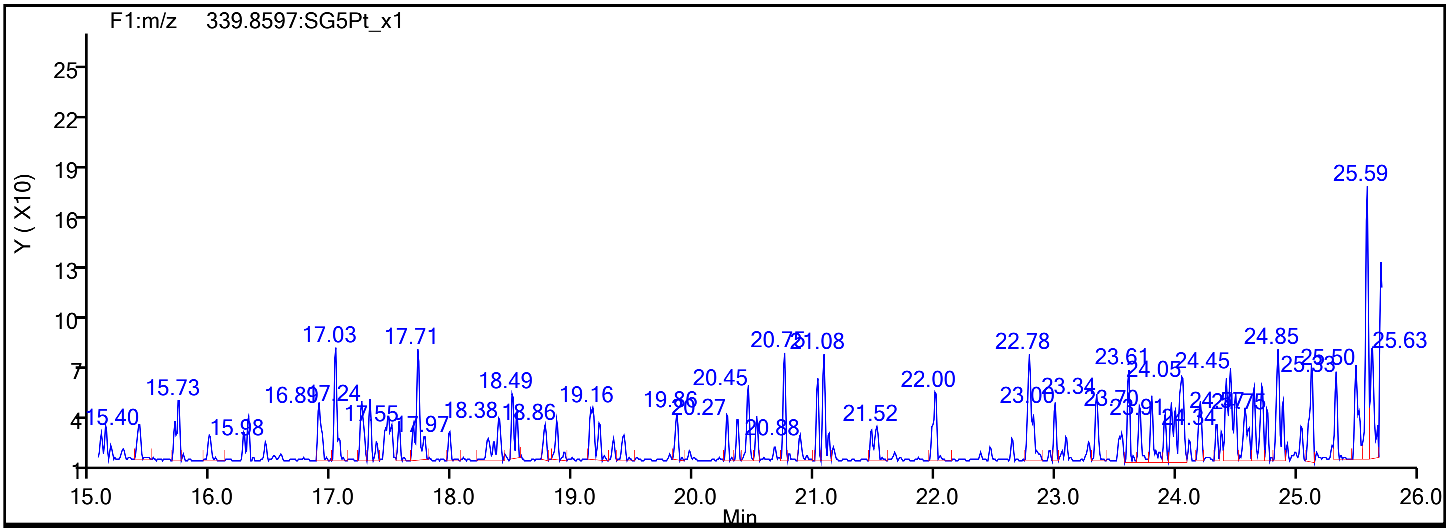

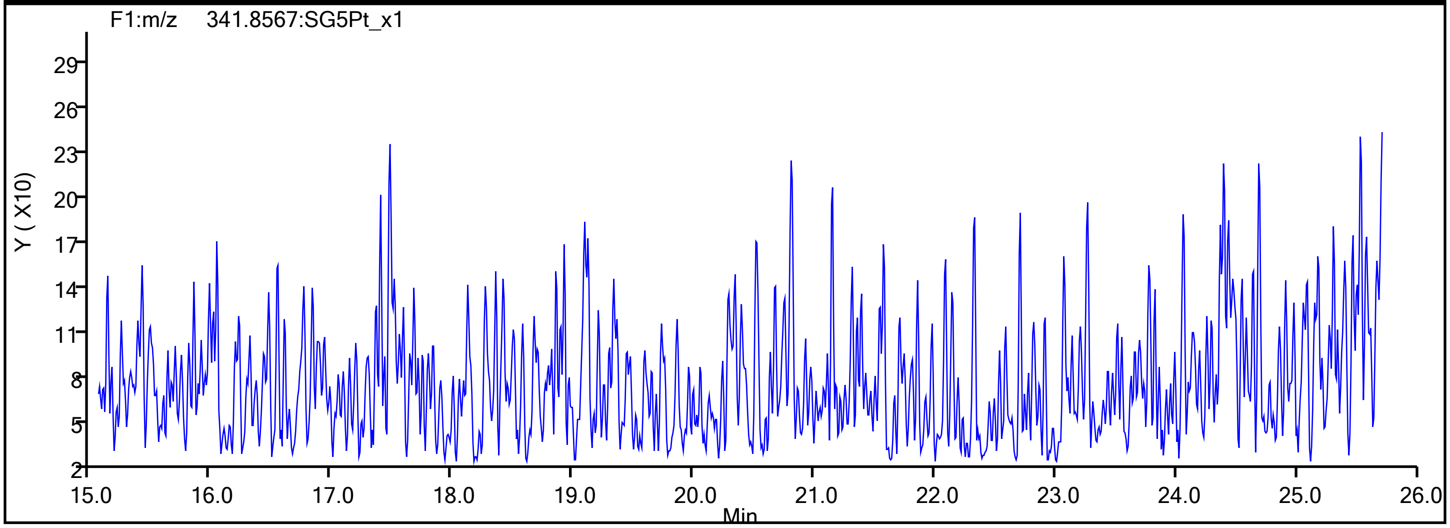

F1 PeCDFs Interference Mass

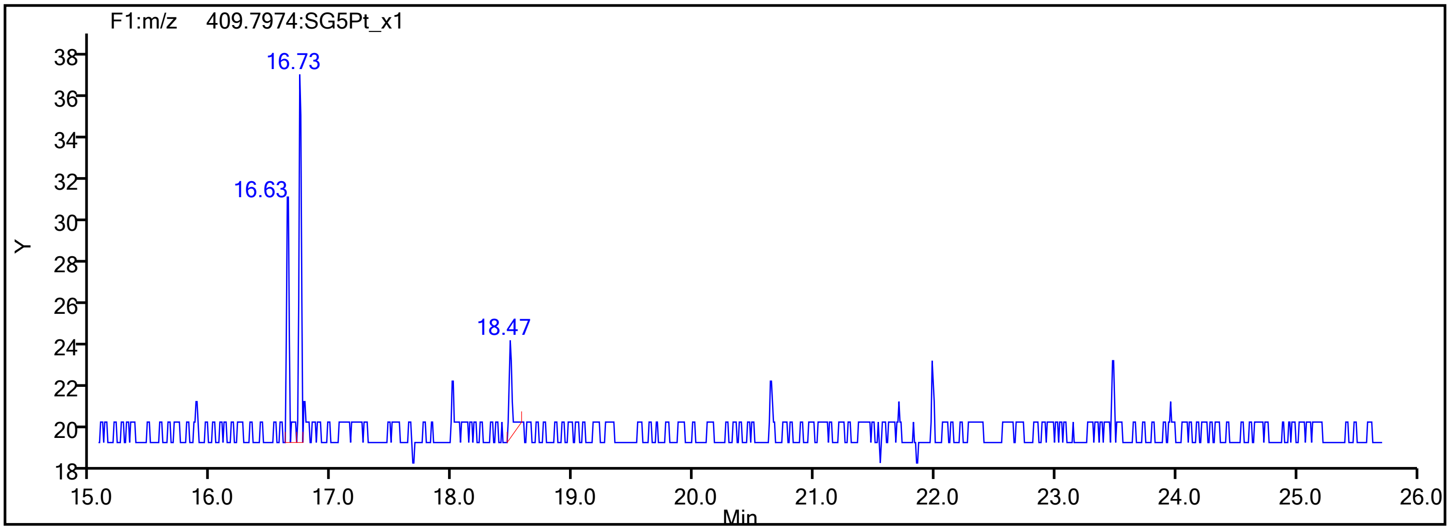

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PeCDF

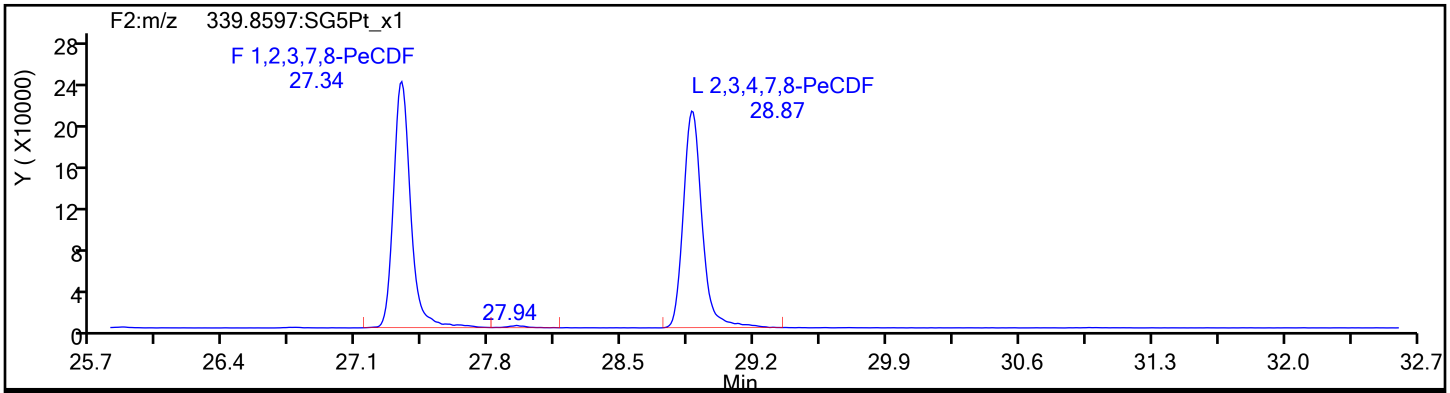

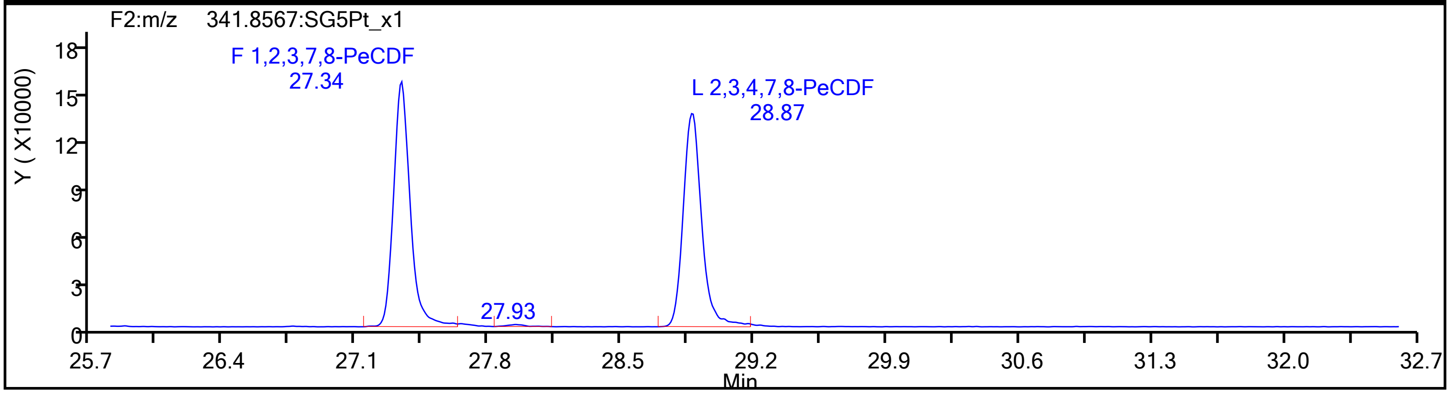

PeCDF Standards

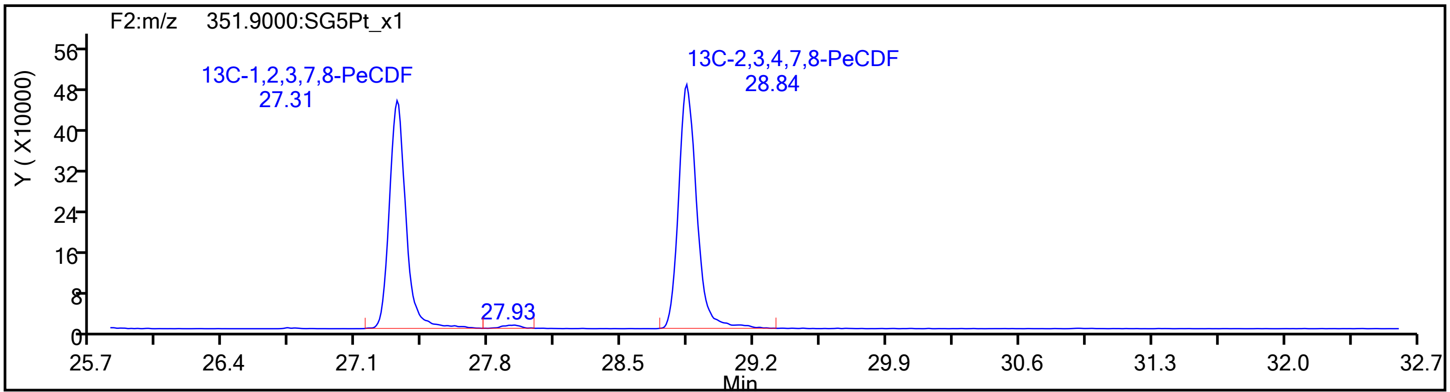

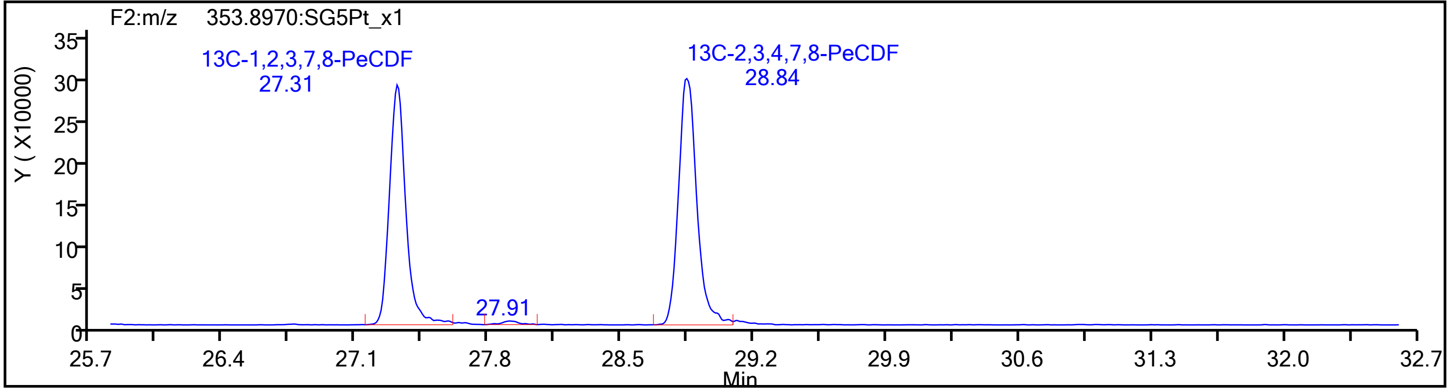

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Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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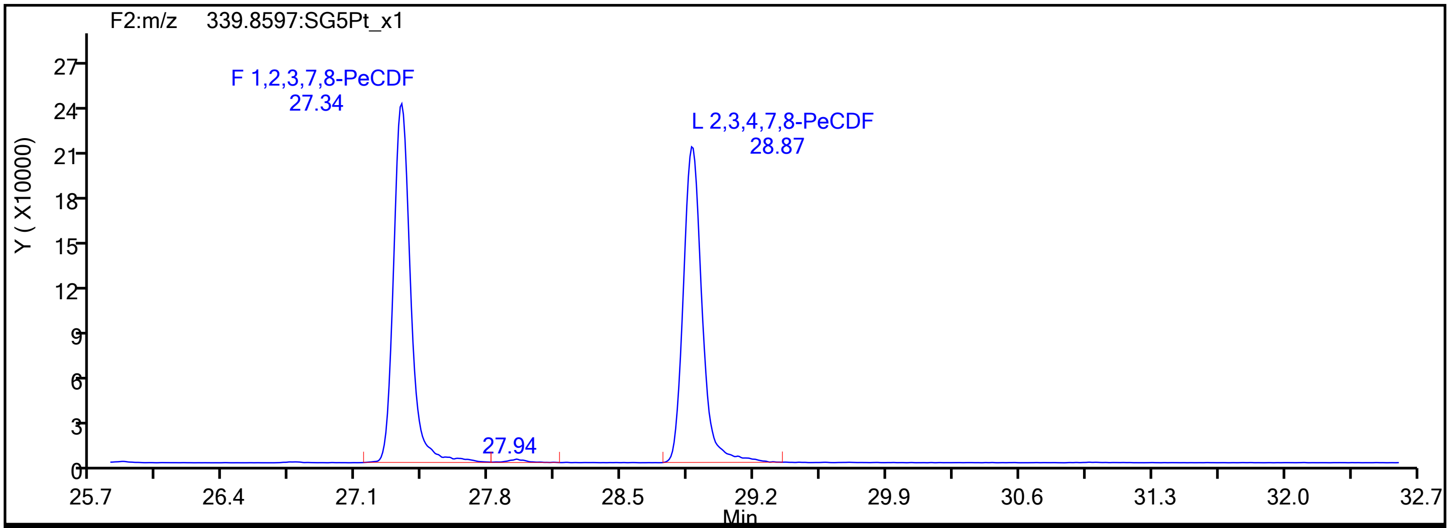

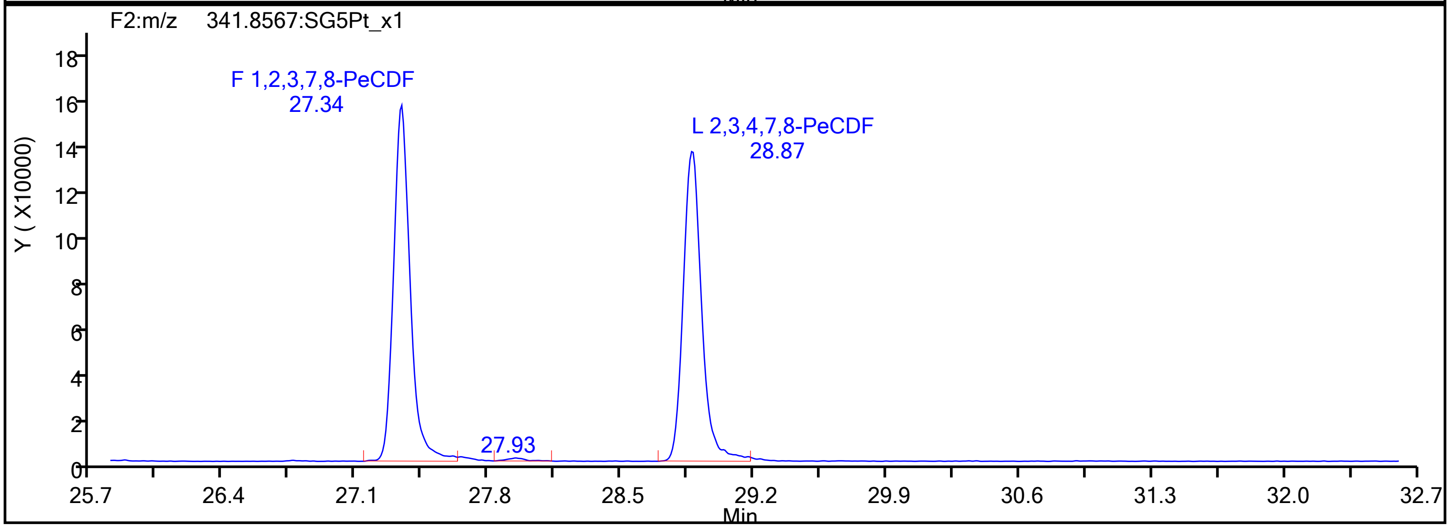

PeCDF Interference Mass

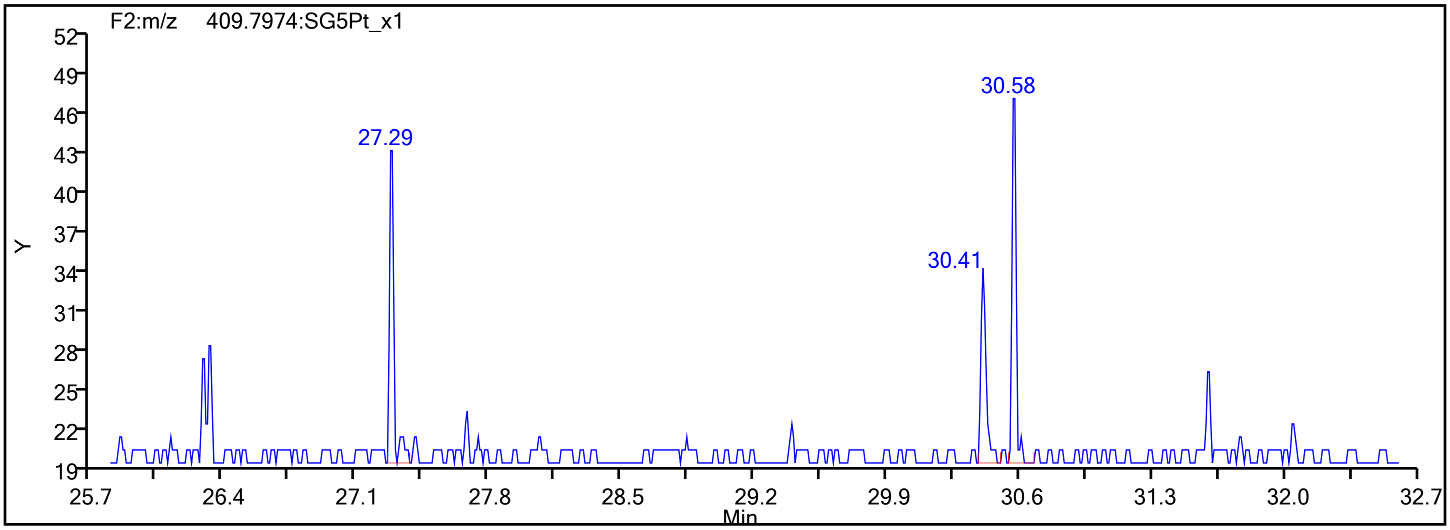

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Eurofins TestAmerica, Sacramento

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PeCDD

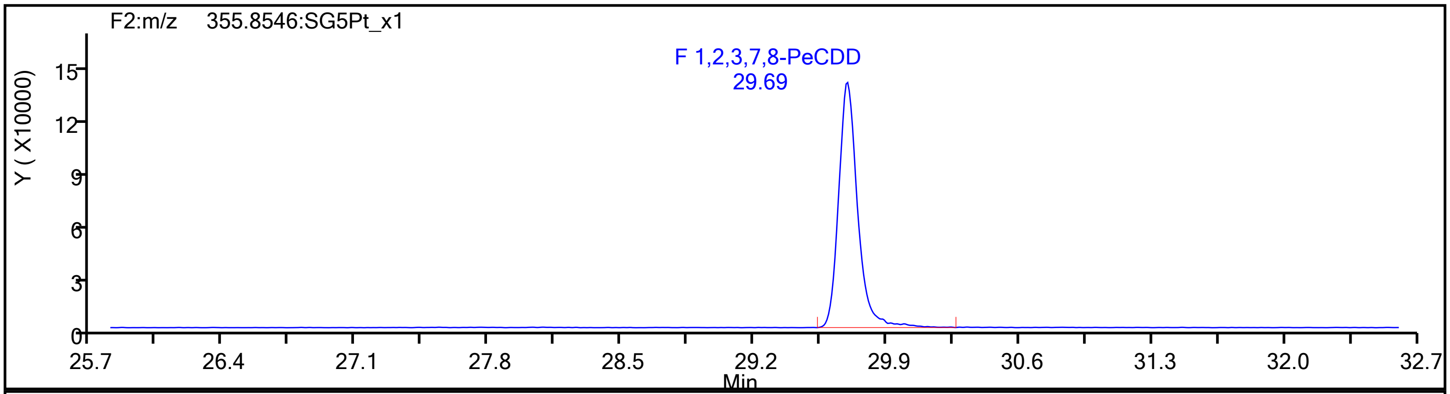

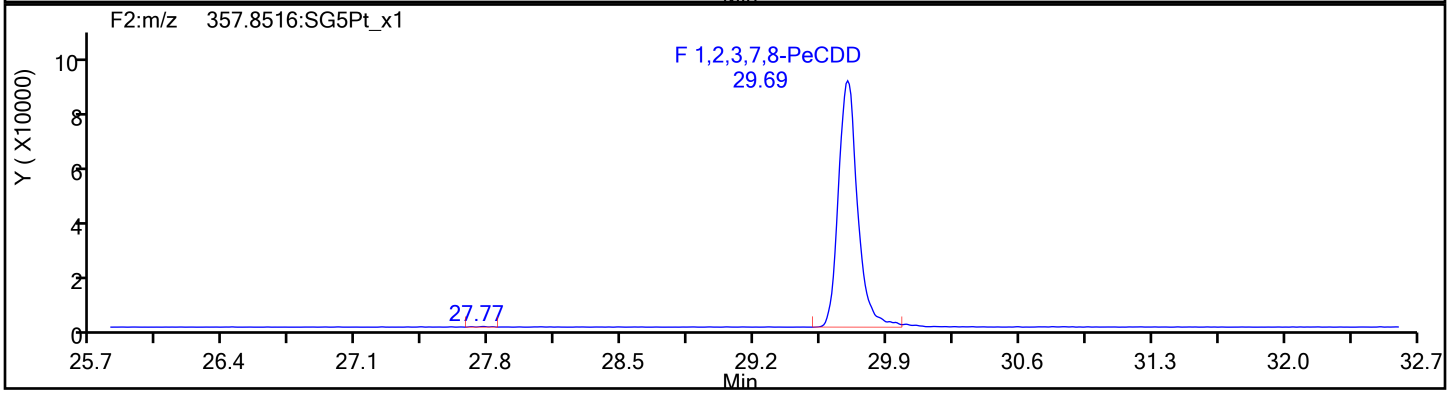

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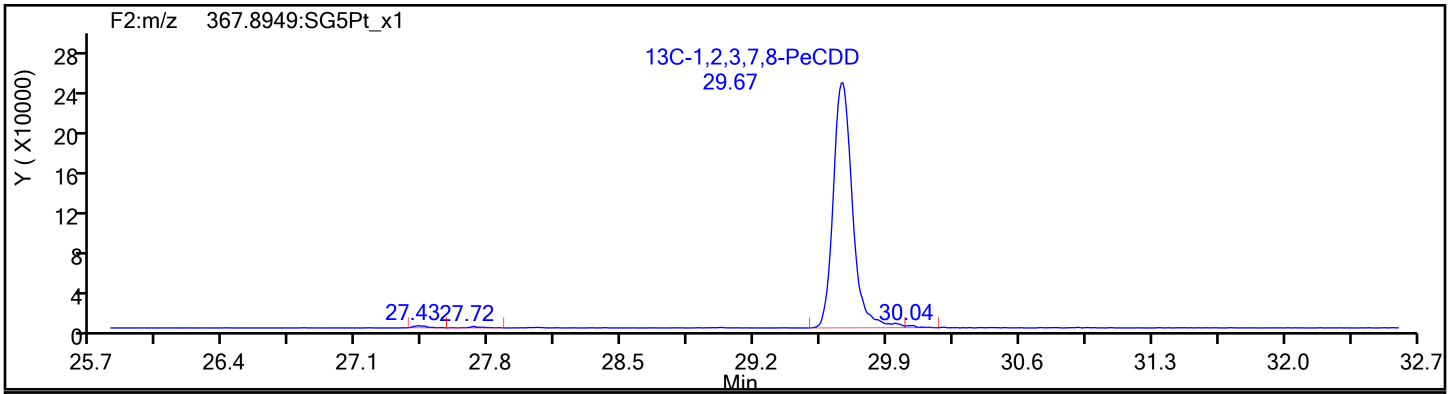

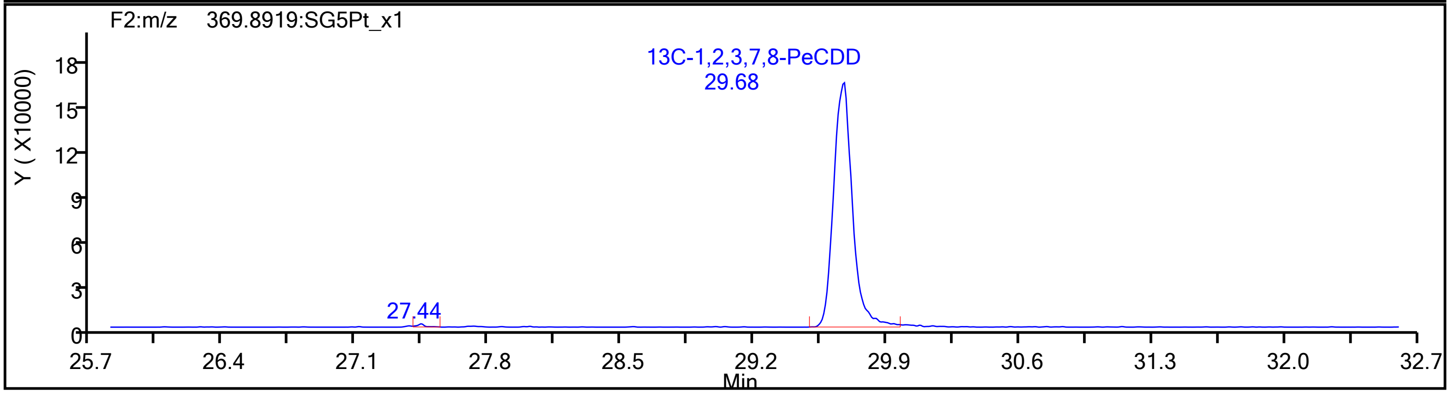

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Eurofins TestAmerica, Sacramento

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HxCDF

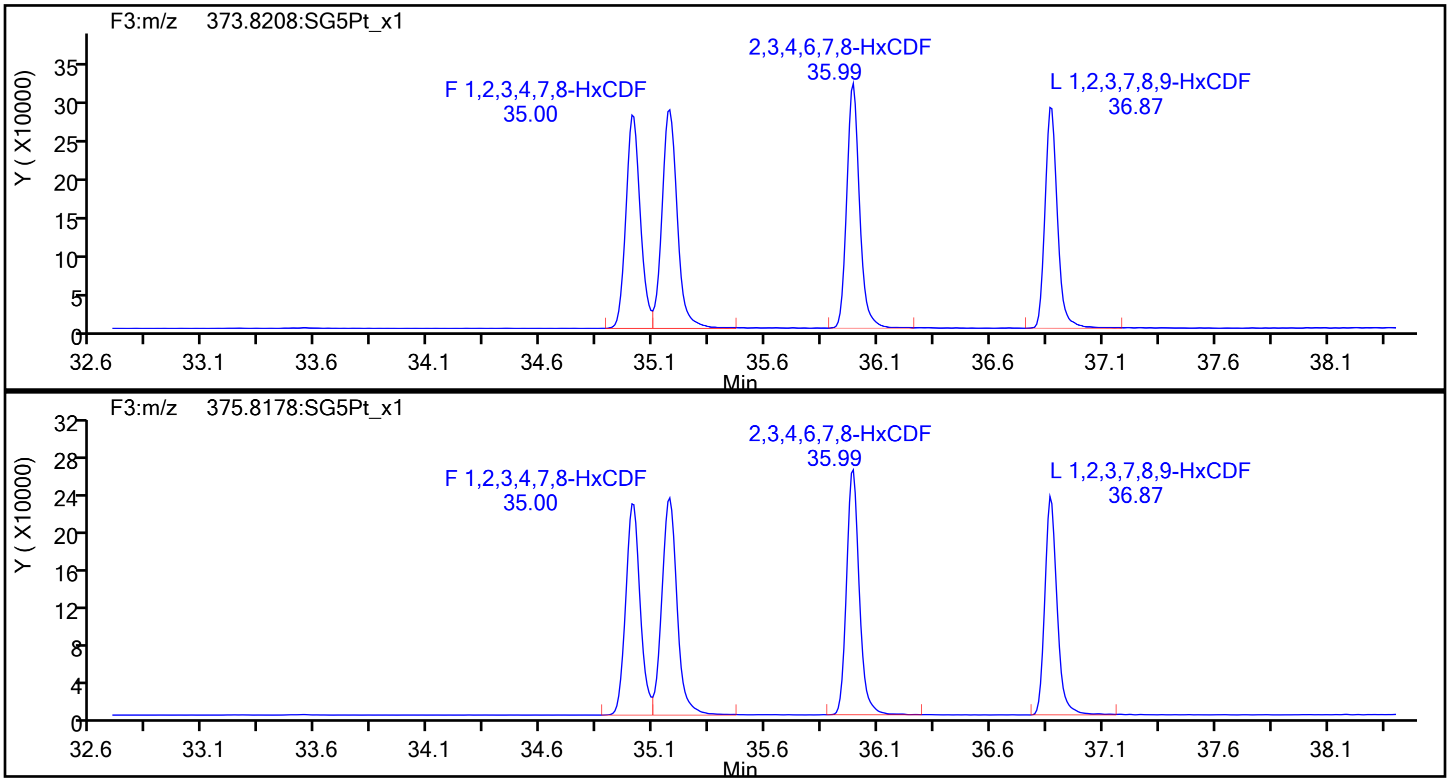

HxCDF Standards

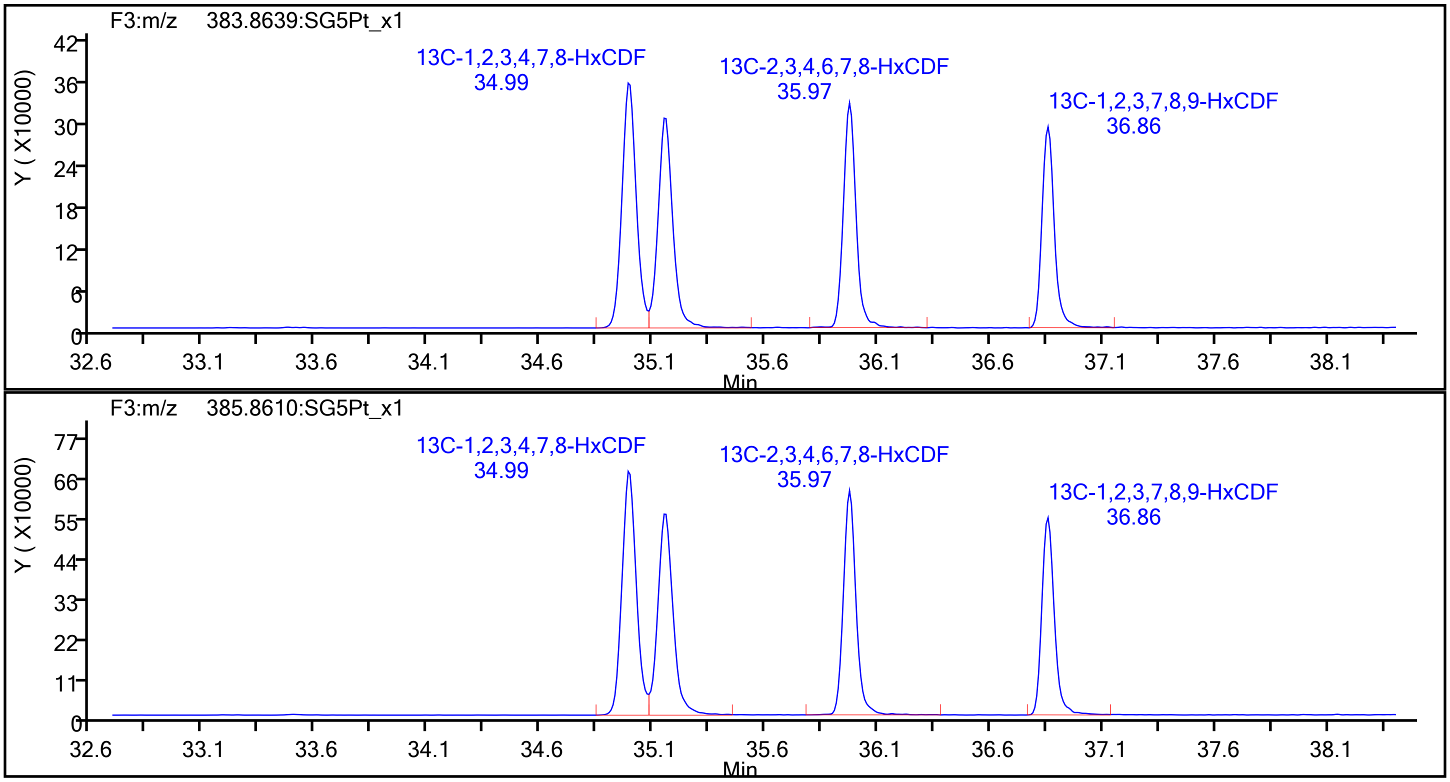

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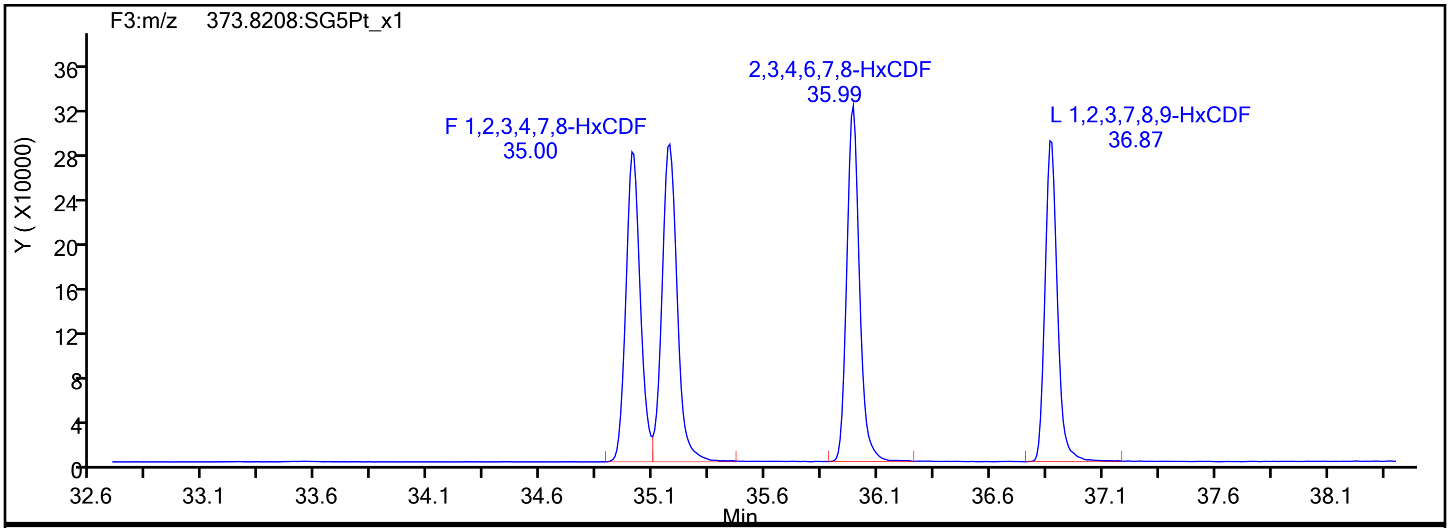

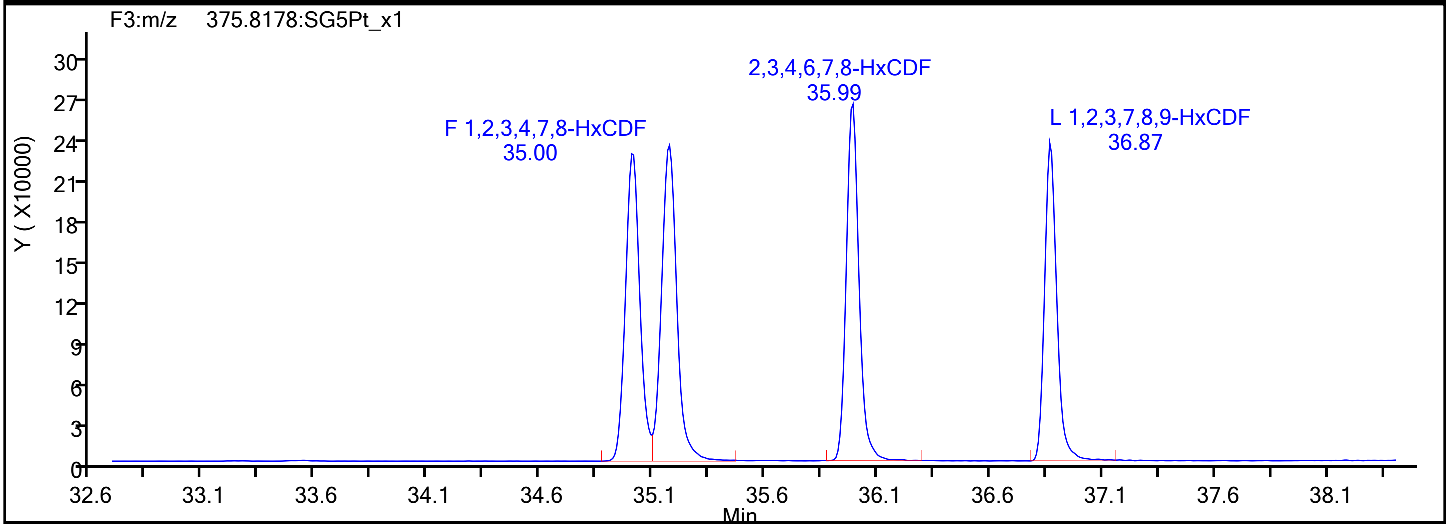

HxCDF Interference Mass

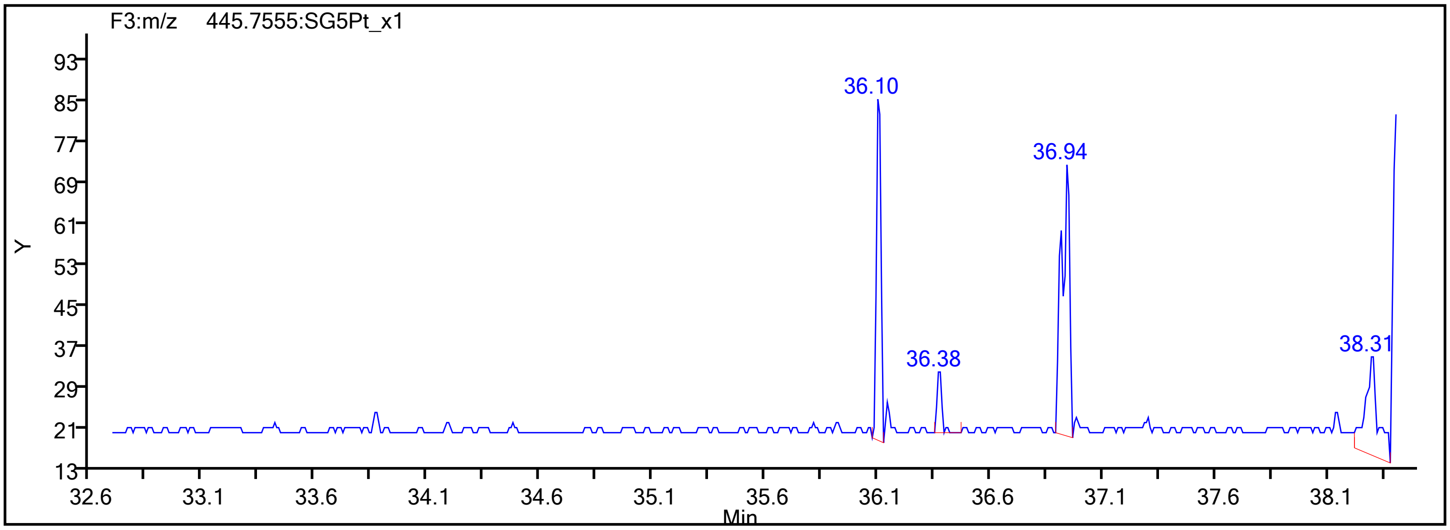

Eurofins TestAmerica, Sacramento

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HxCDD

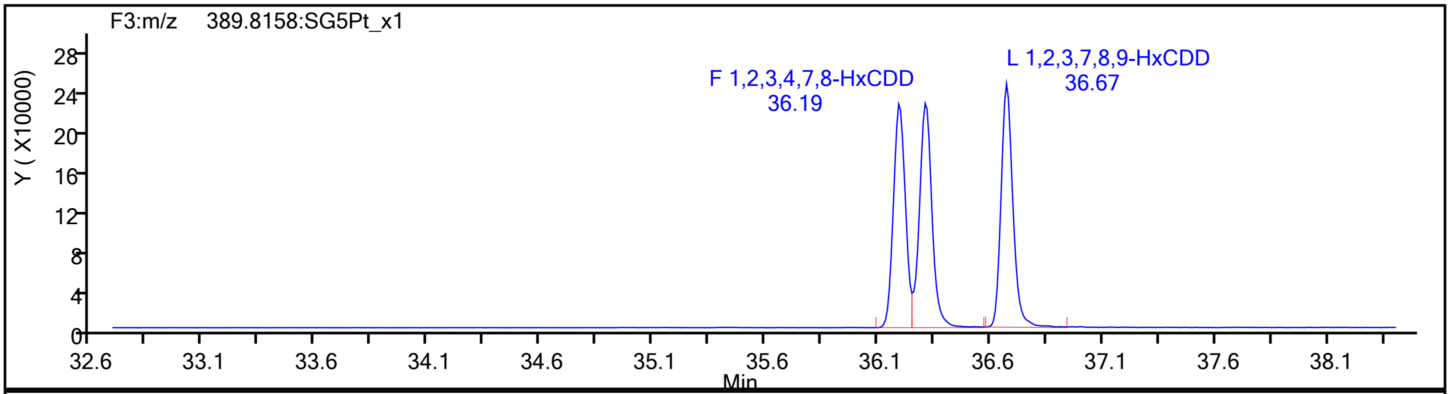

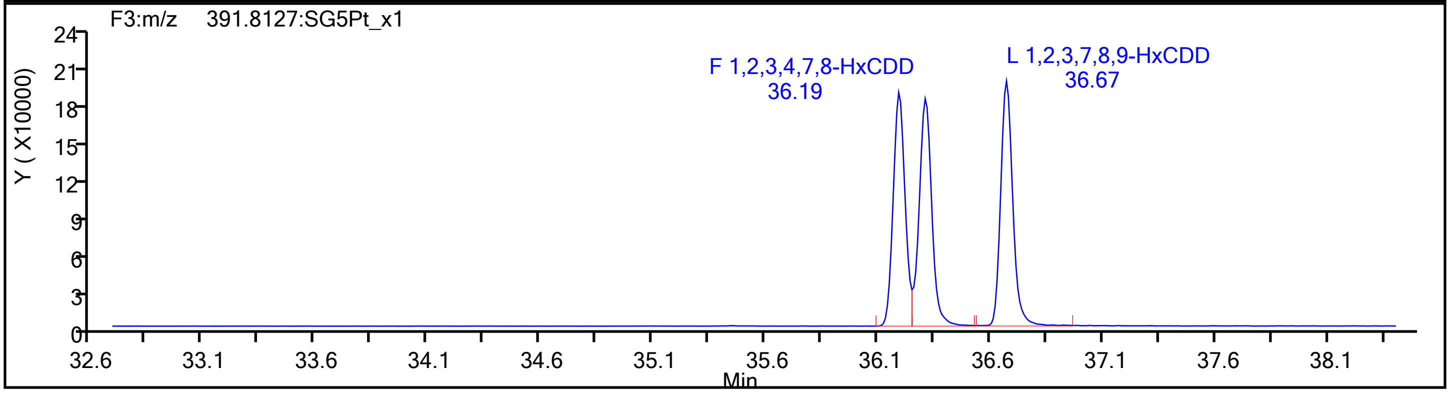

HxCDD Standards

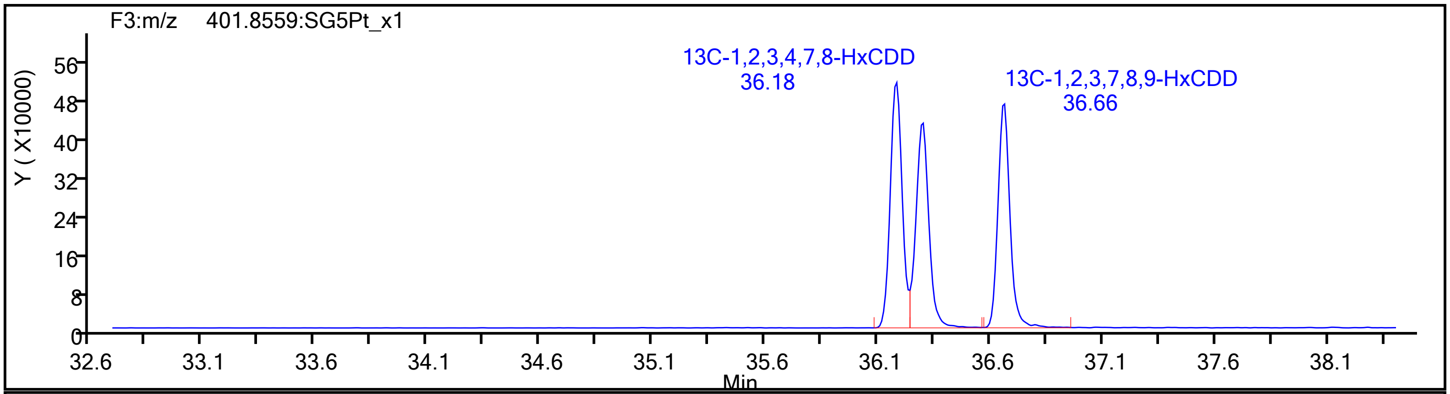

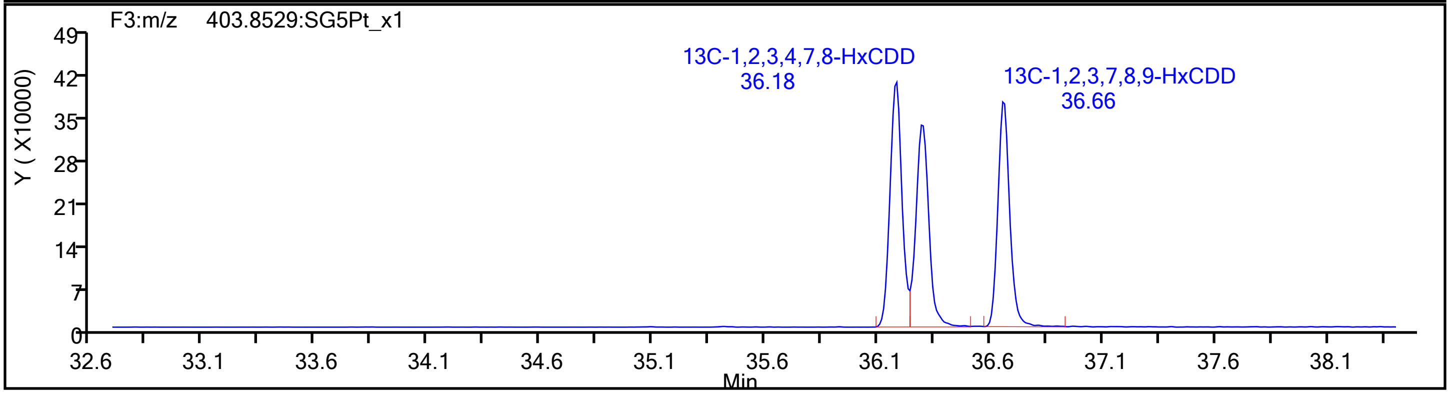

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Eurofins TestAmerica, Sacramento

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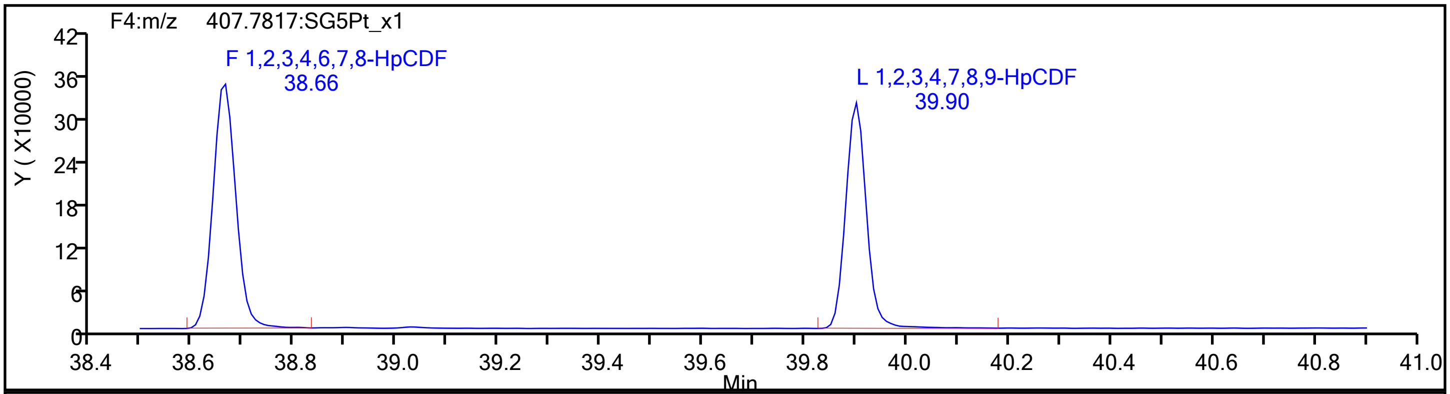

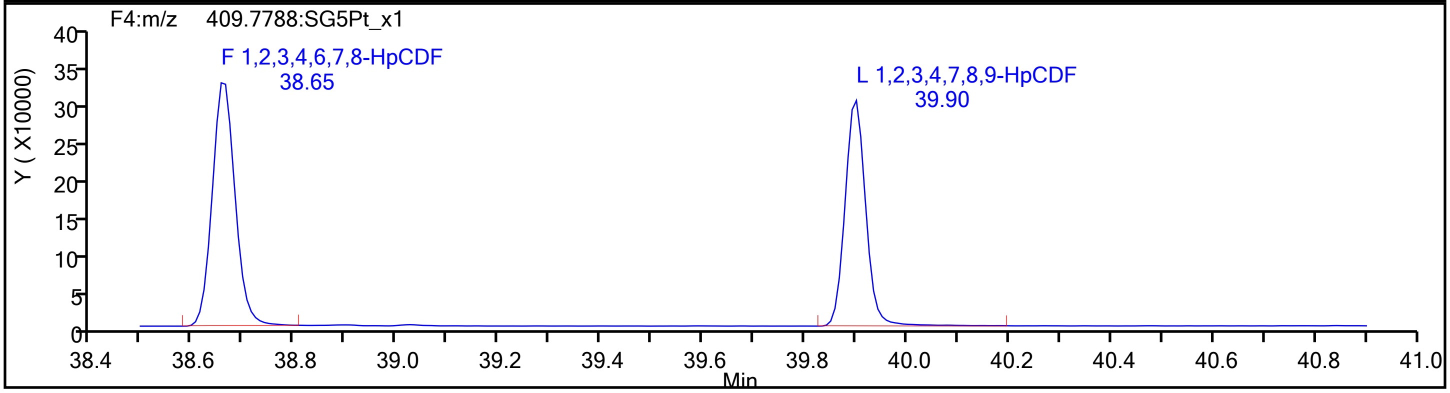

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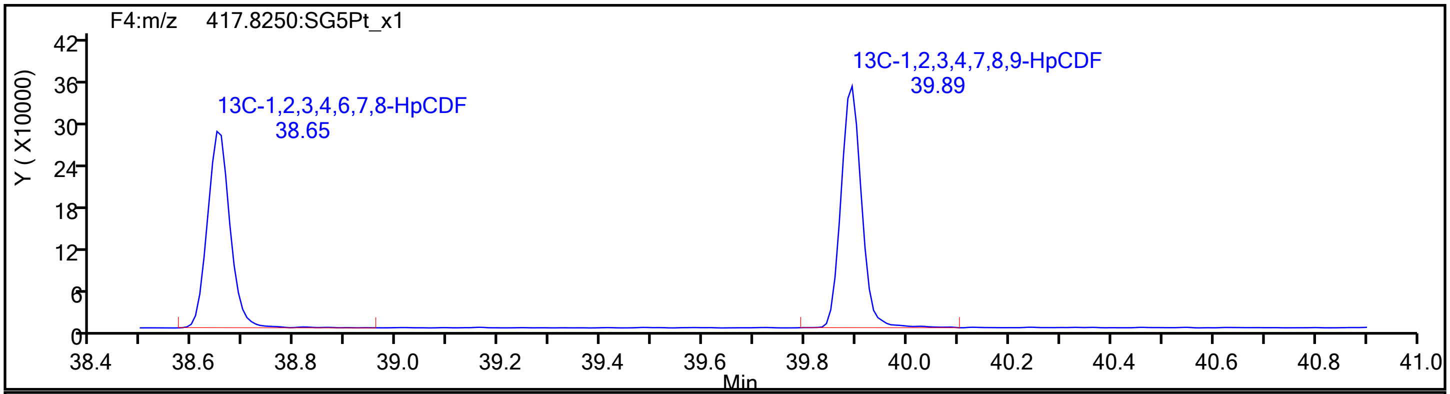

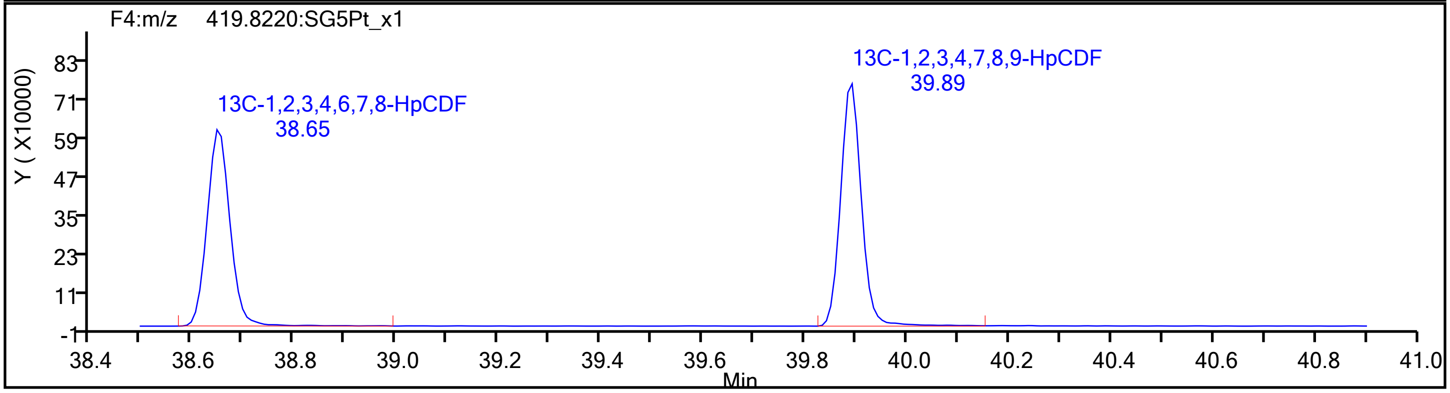

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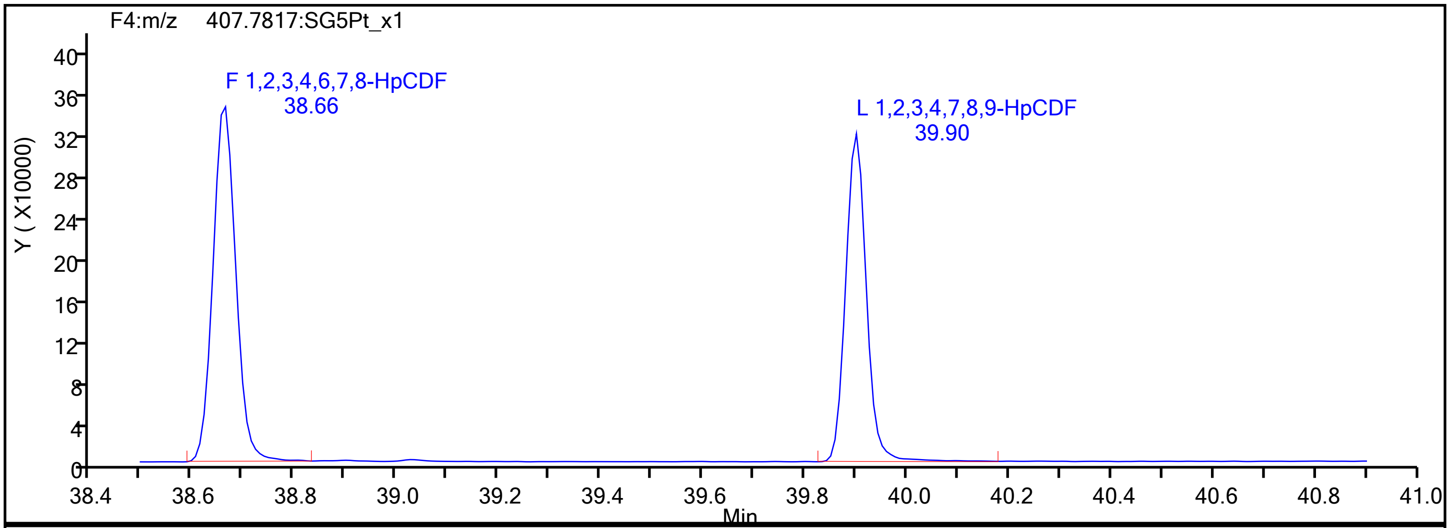

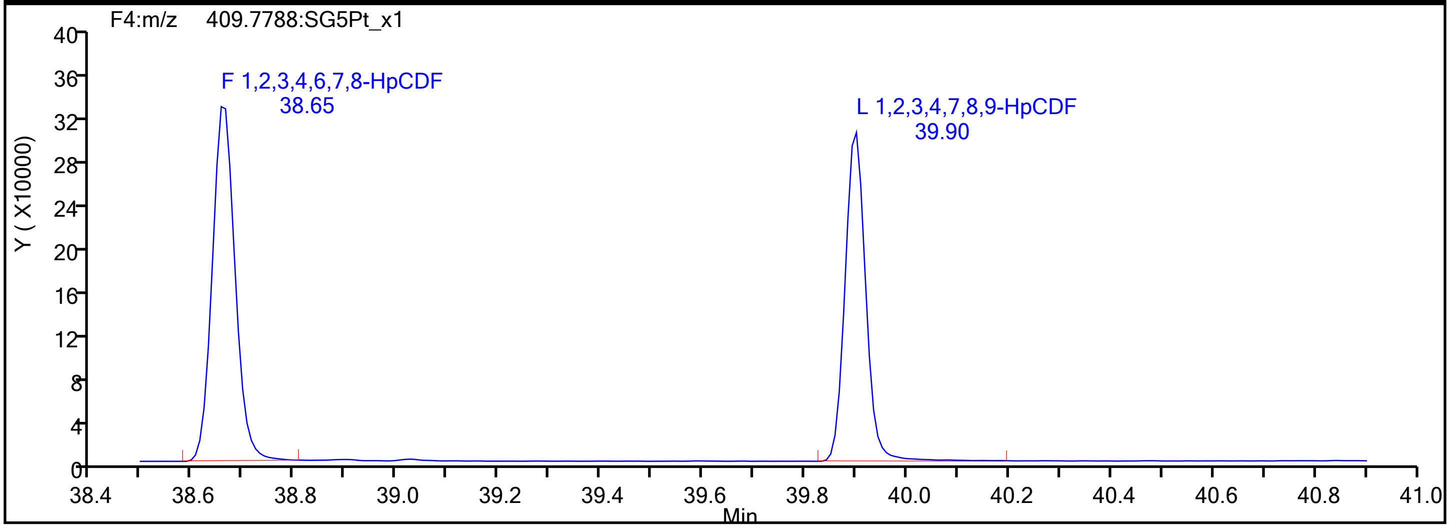

HpCDF Interference Mass

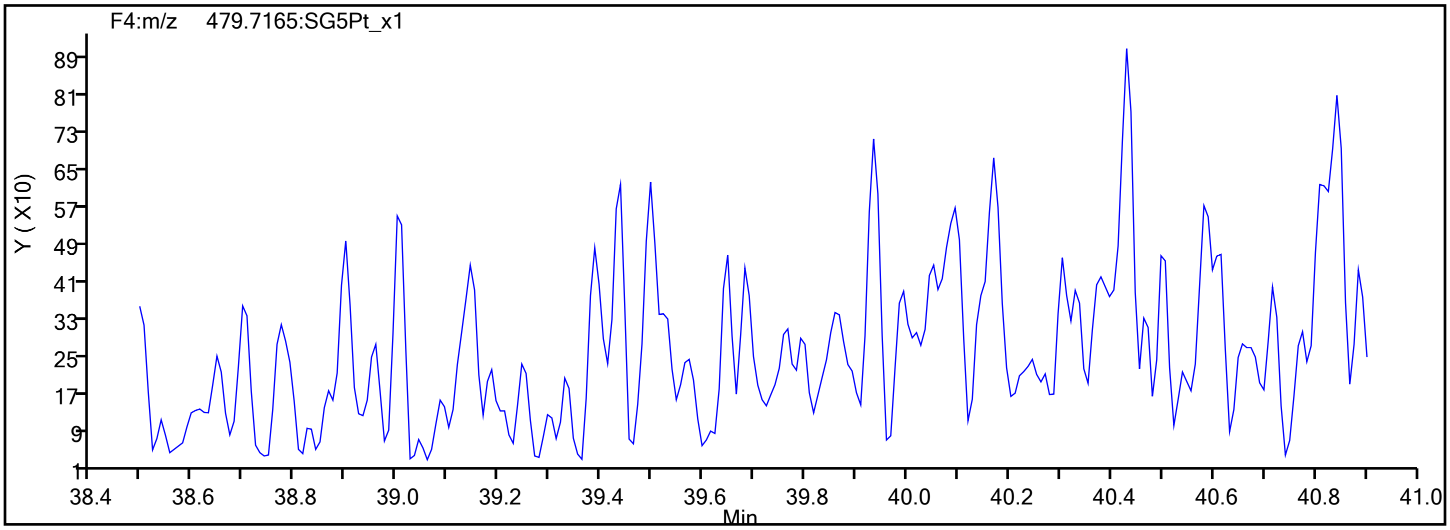

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HpCDD

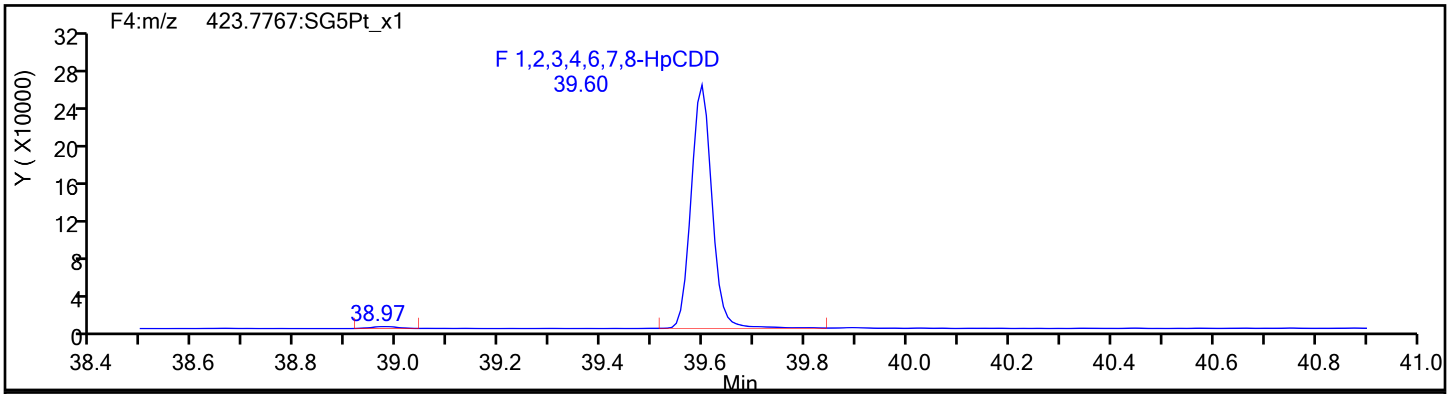

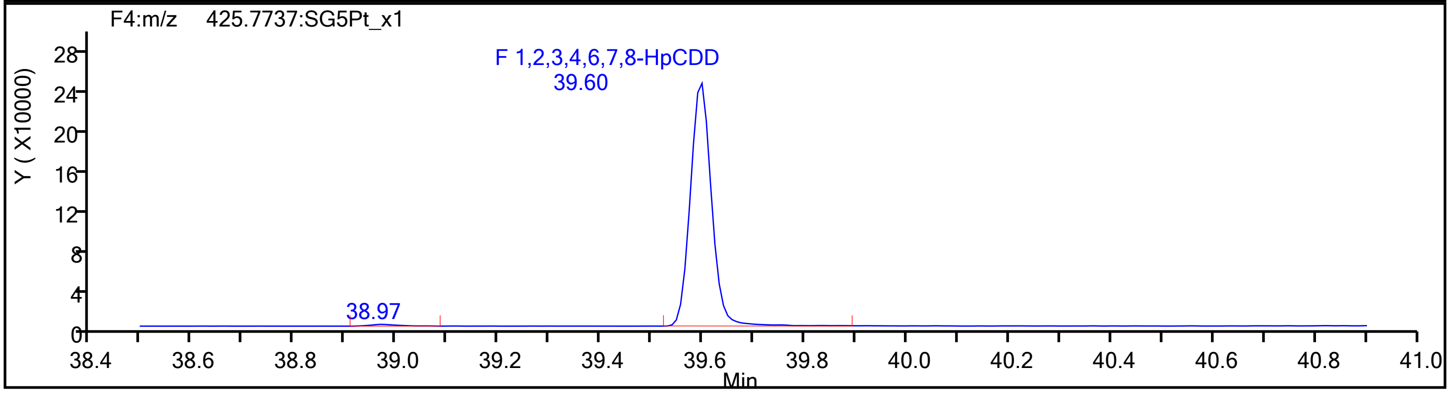

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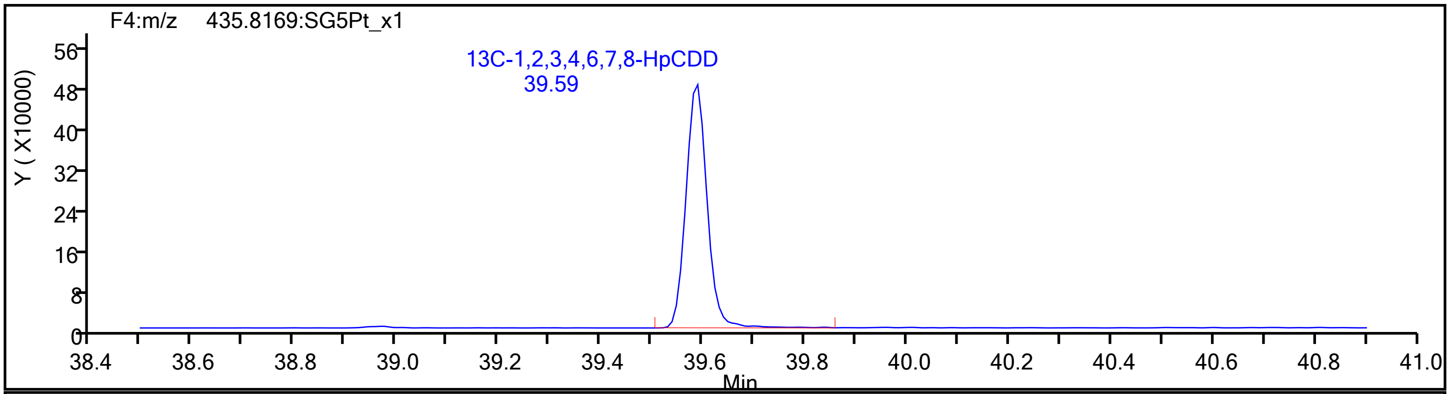

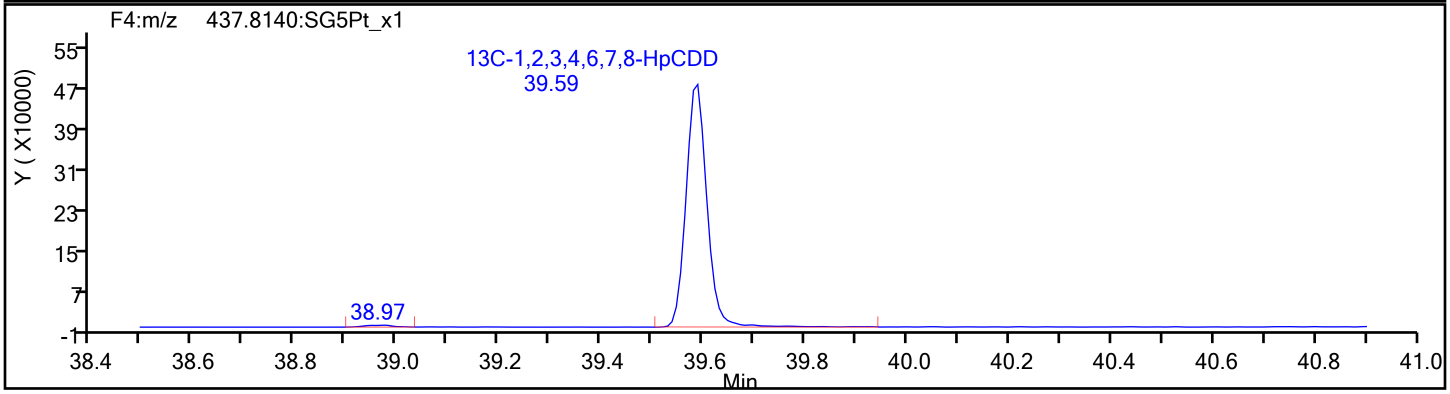

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Eurofins TestAmerica, Sacramento

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OCDF

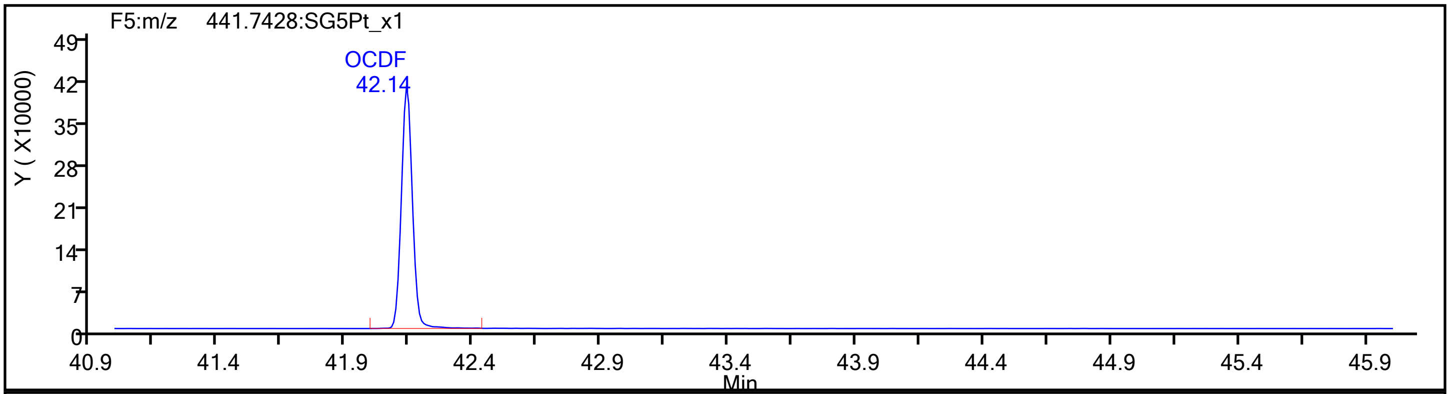

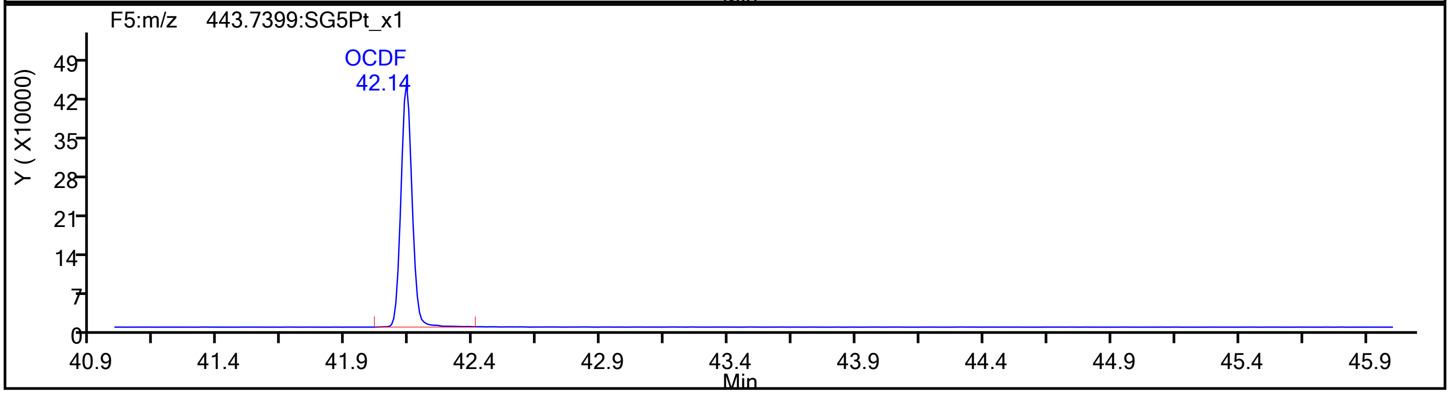

OCDF Standards

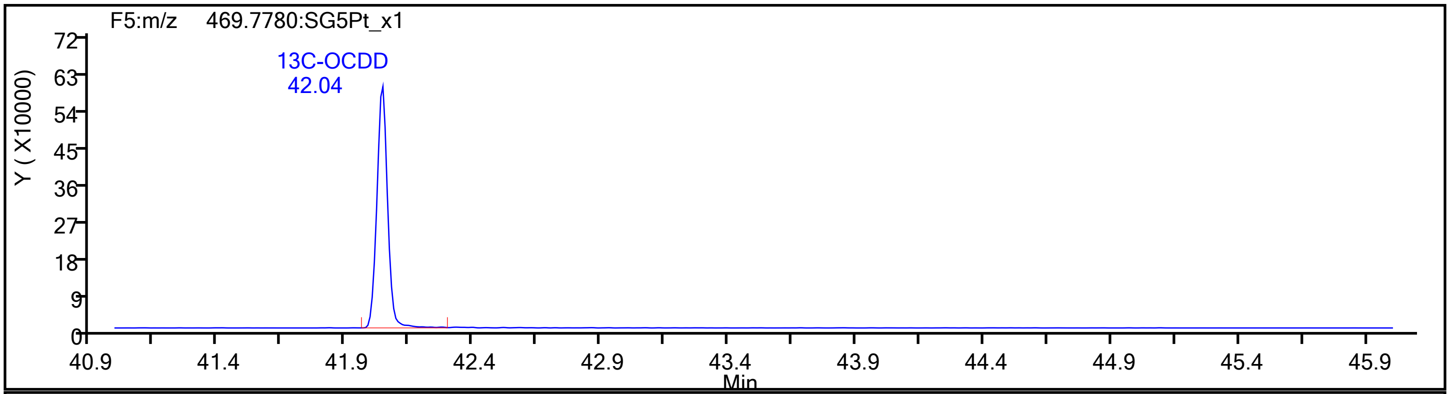

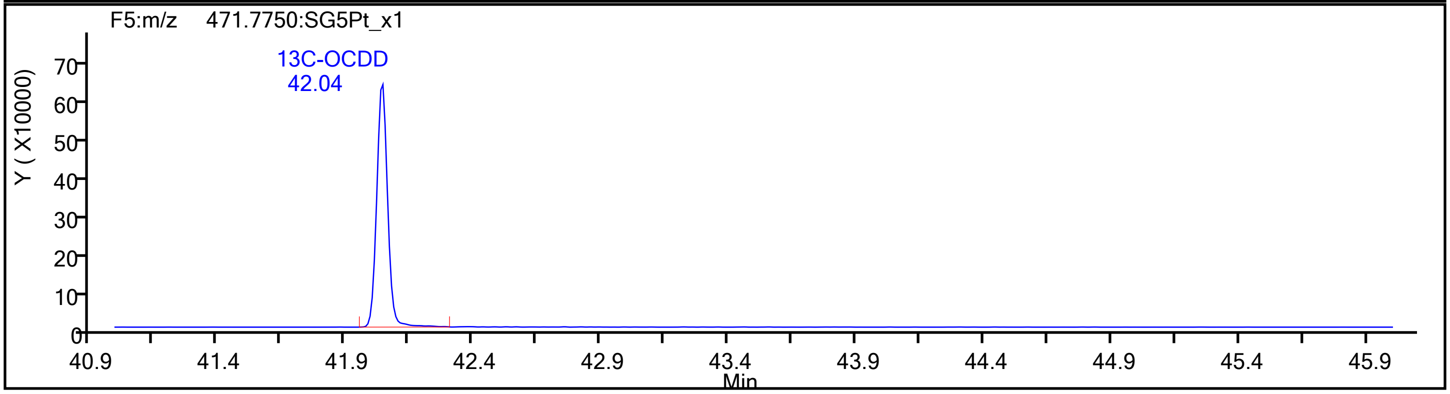

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Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 6

Column Type: DB-5

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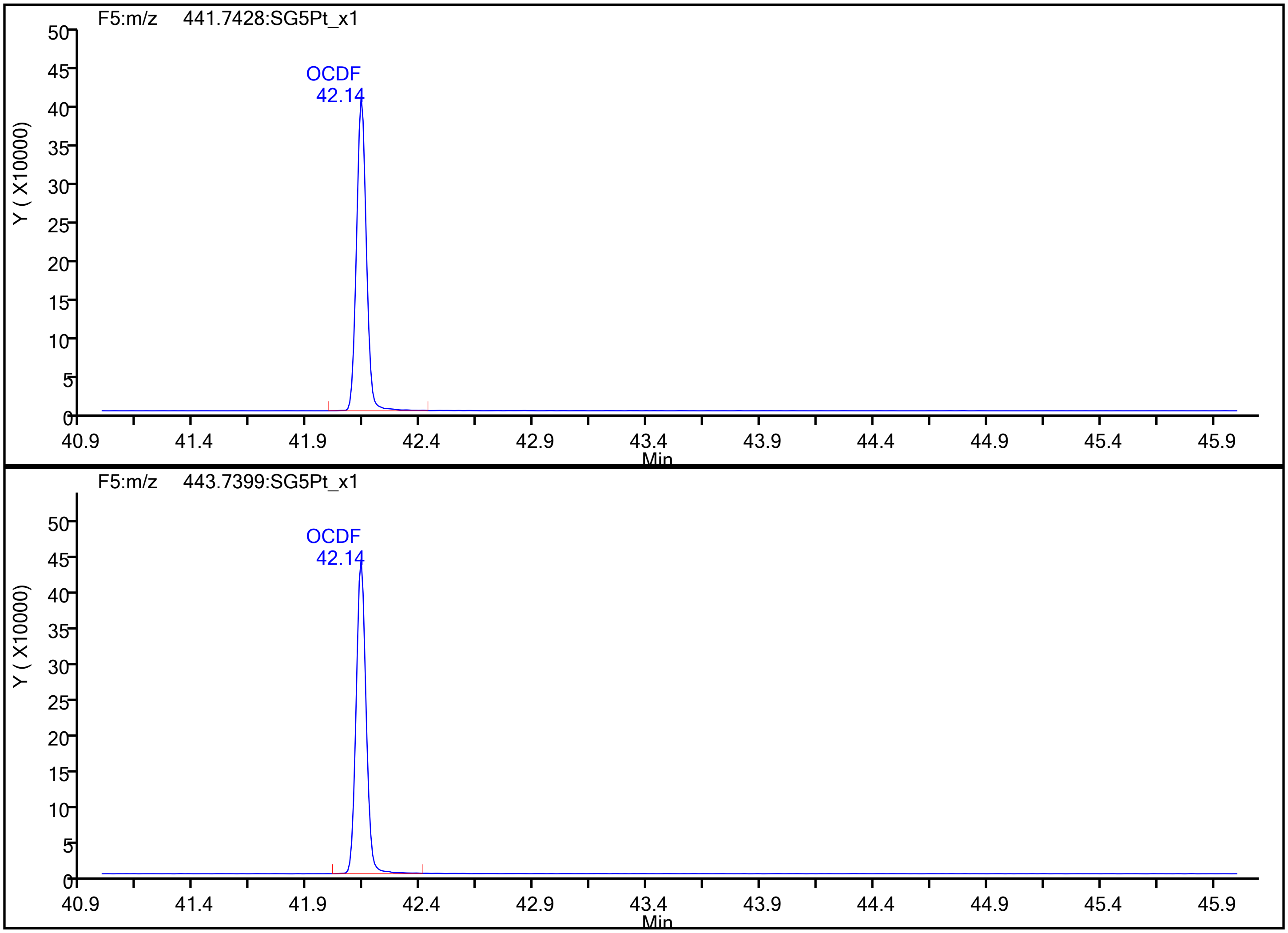

OCDF Interference Mass

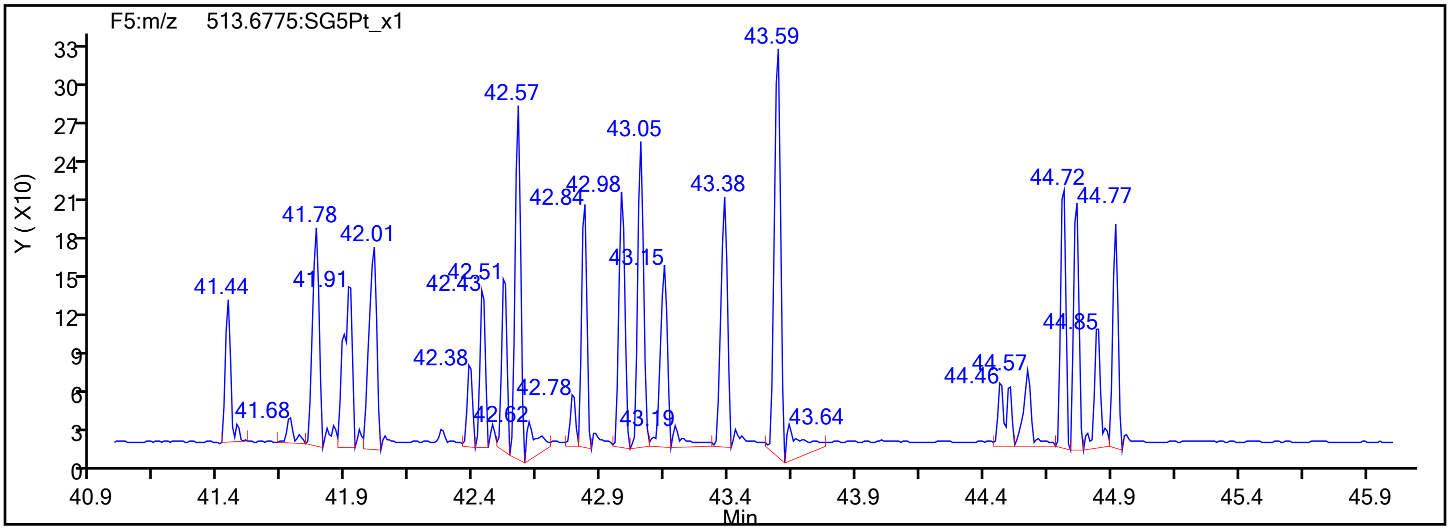

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Eurofins TestAmerica, Sacramento

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OCDD

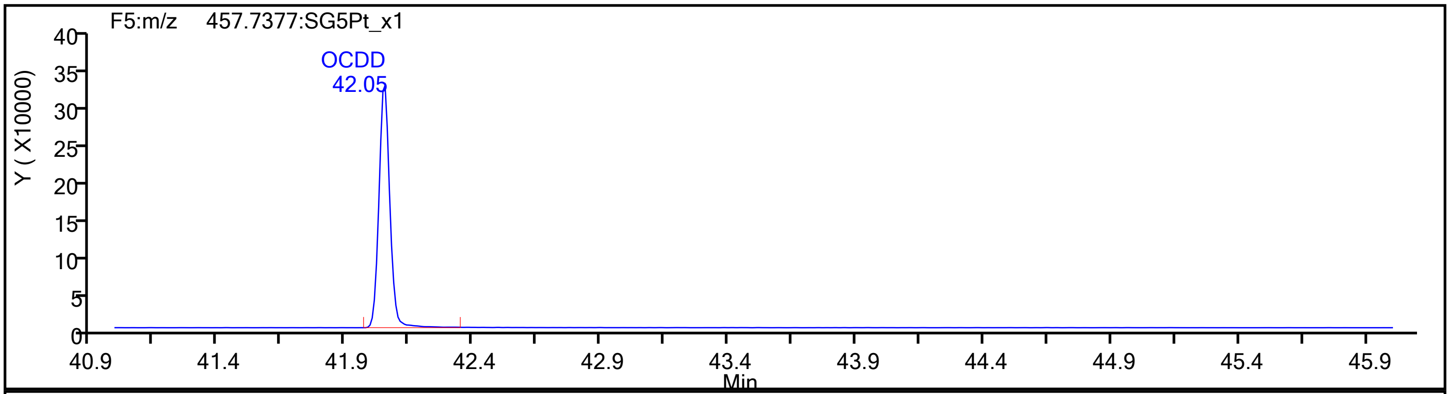

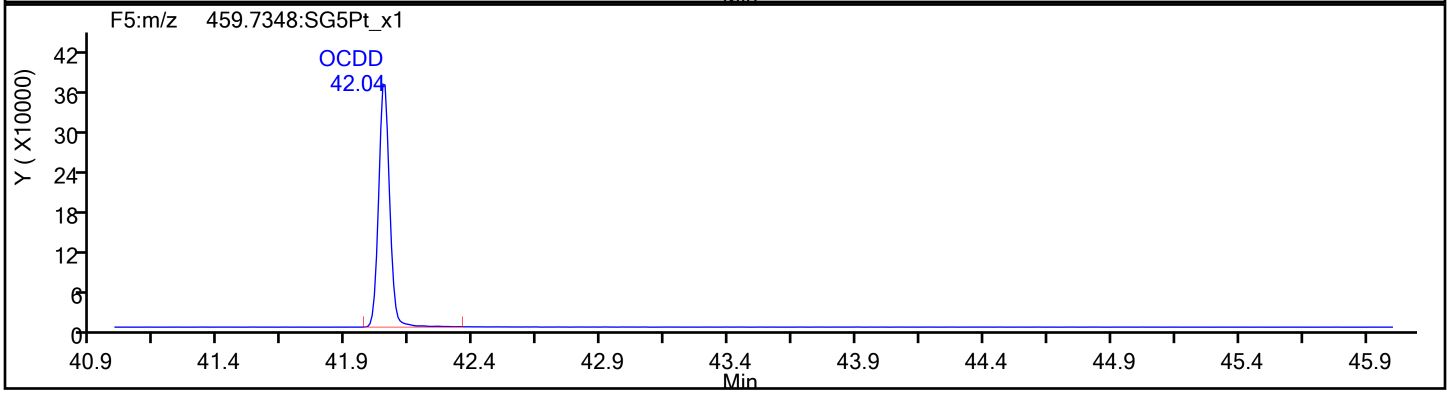

OCDD Standards

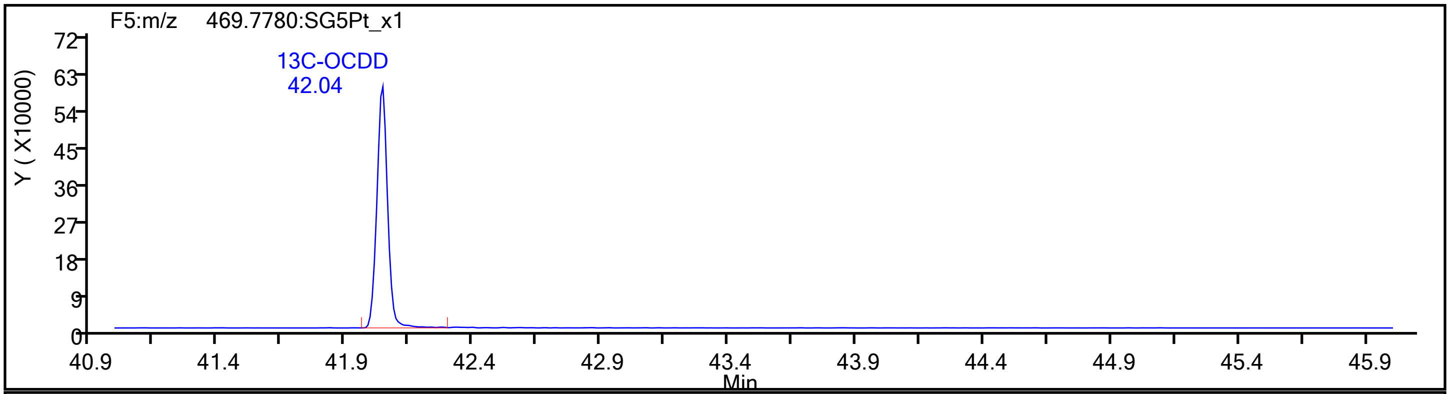

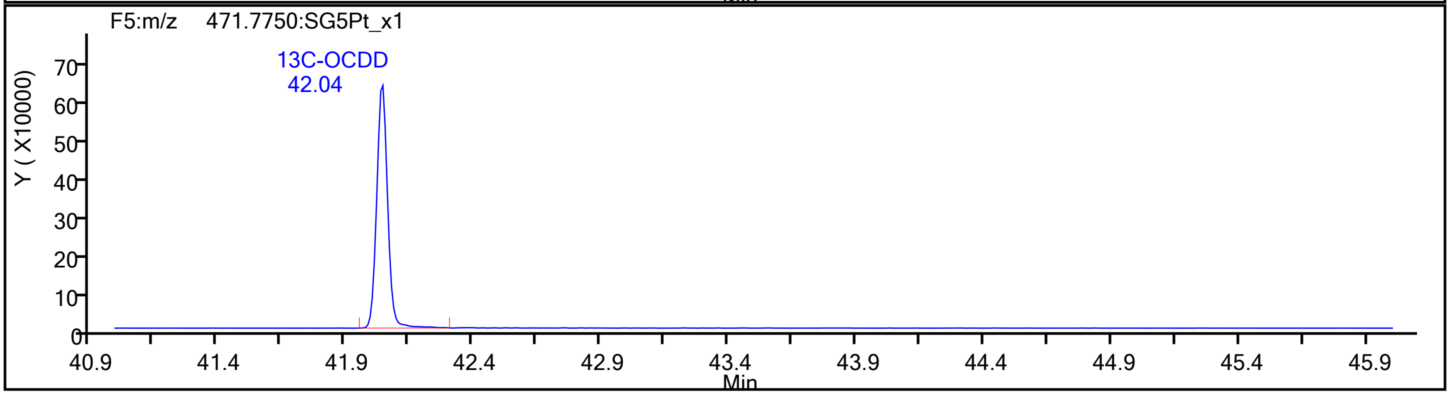

Report Date: 05-Jun-2020 11:34:35 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d

Injection Date: 03-Jun-2020 16:30:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

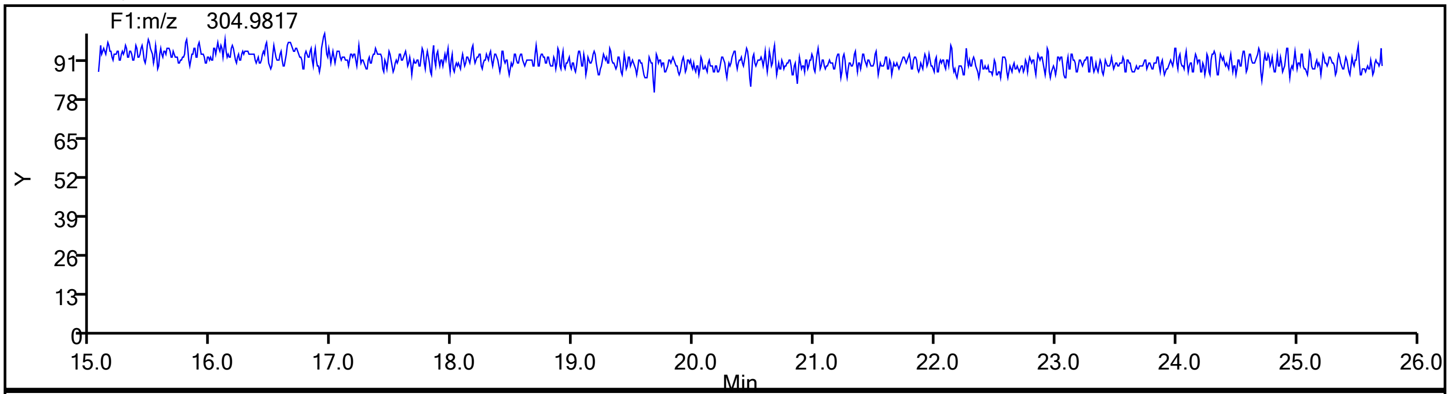

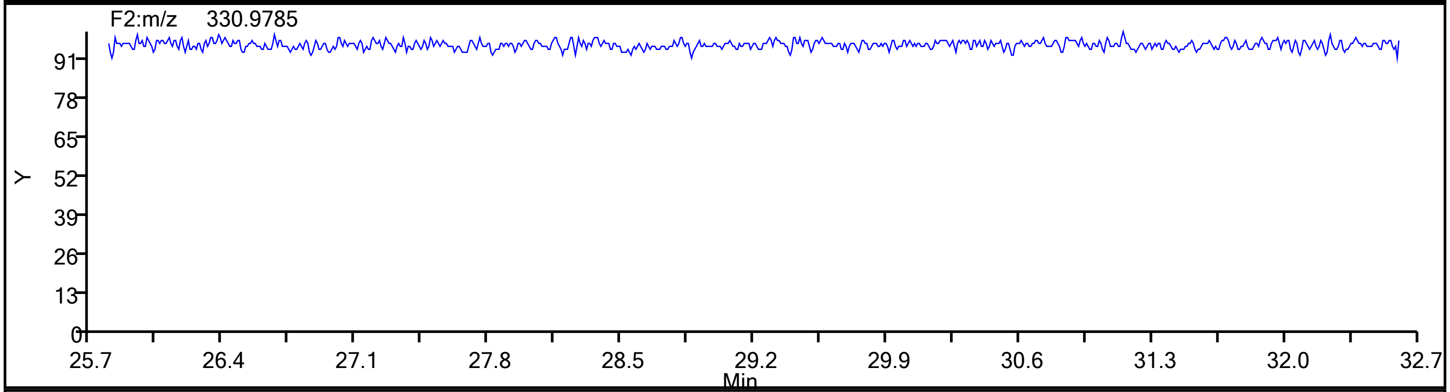

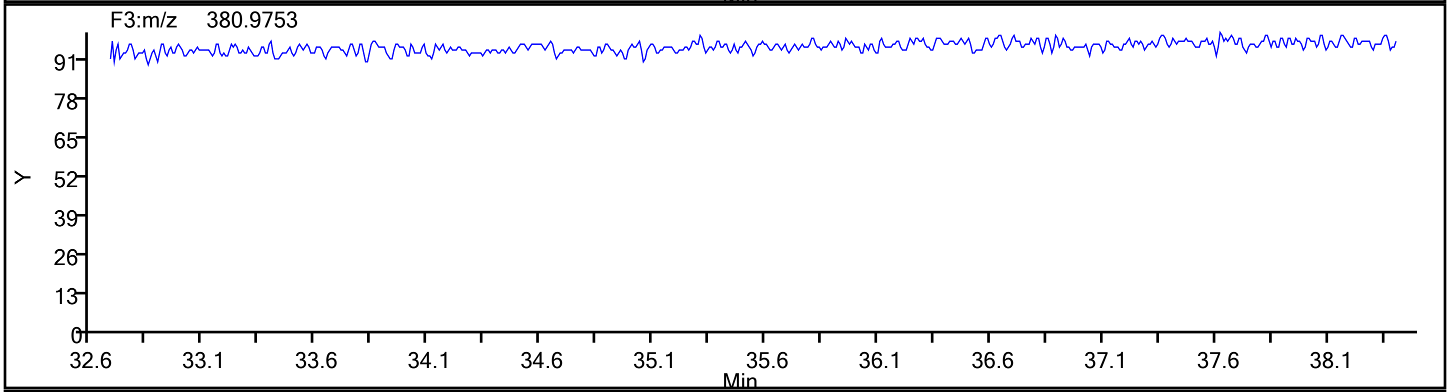

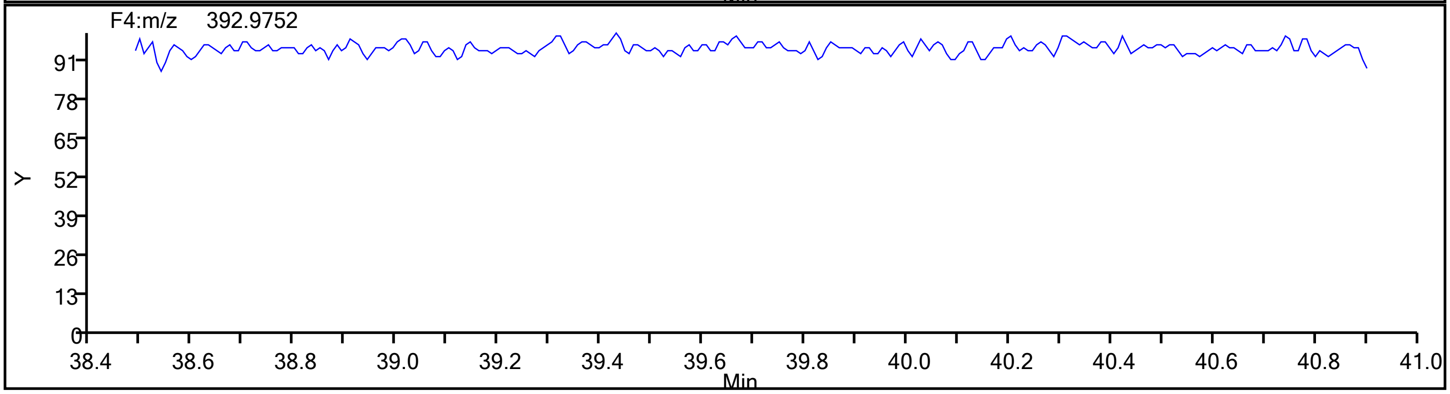

Report Date: 05-Jun-2020 11:34:35 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_7.d		
Injection Date:	03-Jun-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

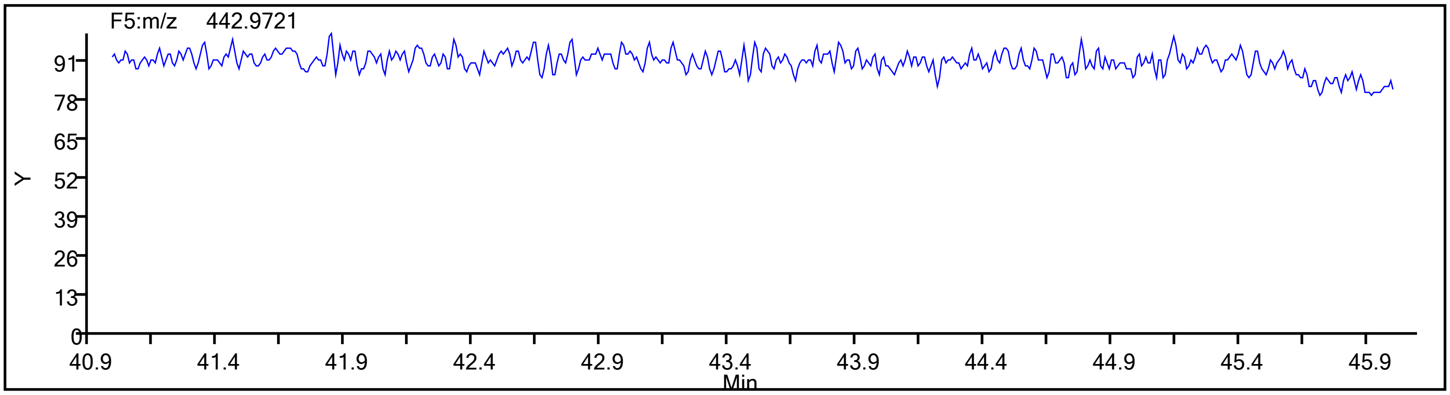

Report Date: 05-Jun-2020 10:11:41 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 03-Jun-2020 17:18:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:11:32 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 04-Jun-2020 08:18:58

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.303	6193112	0.79	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.313	9390658	0.80	1.4977	101.2	101.2	0.2208	0.2208	101	
2,3,7,8-TCDF	20.339	4015485	0.78	1.1312	37.8	37.8	0.0509	0.0509	94.50	
S Total TCDF					37.8	37.8	0.0509	0.0509		
D 13C-2,3,7,8-TCDD	21.682	6480345	0.80	1.0367	100.9	100.9	0.1862	0.1862	101	
2,3,7,8-TCDD	21.716	2920224	0.78	1.1849	38.0	38.0	0.0489	0.0489	95.08	
$ 37Cl4-2,3,7,8-TCDD	21.707	2774592		1.1208	40.0	40.0	0.0245	0.0245	99.93	
S Total TCDD					38.0	38.0	0.0489	0.0489		
D 13C-1,2,3,7,8-PeCDF	27.287	8256577	1.58	1.3057	102.1	102.1	0.3386	0.3386	102	
1,2,3,7,8-PeCDF	27.313	17302938	1.55	1.1060	189.5	189.5	0.4765	0.4765	94.74	
D 13C-2,3,4,7,8-PeCDF	28.819	9723087	1.56	1.5420	101.8	101.8	0.2867	0.2867	102	
2,3,4,7,8-PeCDF	28.845	16881683	1.56	0.9067	191.5	191.5	0.5304	0.5304	95.75	
S Total PeCDF					381.0	381.0	0.5034	0.5034		
D 13C-1,2,3,7,8-PeCDD	29.636	5243649	1.60	0.8294	102.1	102.1	0.1220	0.1220	102	
1,2,3,7,8-PeCDD	29.669	11169661	1.55	1.1062	192.6	192.6	0.1215	0.1215	96.28	
S Total PeCDD					192.6	192.6	0.1215	0.1215		
D 13C-1,2,3,4,7,8-HxCDF	34.975	8568017	0.53	1.4619	98.6	98.6	0.2394	0.2394	98.57	
1,2,3,4,7,8-HxCDF	34.991	16431101	1.24	1.0087	190.1	190.1	0.6304	0.6304	95.06	
D 13C-1,2,3,6,7,8-HxCDF	35.134	7552939	0.54	1.2866	98.7	98.7	0.2720	0.2720	98.73	
1,2,3,6,7,8-HxCDF	35.151	17668721	1.24	1.2432	188.2	188.2	0.5985	0.5985	94.08	
D 13C-2,3,4,6,7,8-HxCDF	35.959	7129573	0.53	1.1988	100.0	100.0	0.2919	0.2919	100	
2,3,4,6,7,8-HxCDF	35.967	17105715	1.23	1.2736	188.4	188.4	0.5368	0.5368	94.20	
D 13C-1,2,3,7,8,9-HxCDF	36.834	6606392	0.54	1.0687	104.0	104.0	0.3275	0.3275	104	
1,2,3,7,8,9-HxCDF	36.851	15921391	1.25	1.2882	187.1	187.1	0.5261	0.5261	93.54	
S Total HxCDF					753.8	753.8	0.5730	0.5730		
* 13C-1,2,3,7,8,9-HxCDD	36.641	5946154	1.26	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.161	6533048	1.25	1.1046	99.5	99.5	0.1578	0.1578	99.46	
1,2,3,4,7,8-HxCDD	36.178	11442921	1.25	0.9336	187.6	187.6	0.2559	0.2559	93.80	
D 13C-1,2,3,6,7,8-HxCDD	36.279	5868202	1.26	0.9871	100.0	100.0	0.1766	0.1766	99.98	
1,2,3,6,7,8-HxCDD	36.295	11776532	1.24	1.0802	185.8	185.8	0.2545	0.2545	92.90	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.657	12387633	1.24	1.0574	188.9	188.9	0.2418	0.2418	94.46	
S Total HxCDD					562.3	562.3	0.2507	0.2507		
D 13C-1,2,3,4,6,7,8-HpCDF	38.630	5428999	0.47	0.9035	101.1	101.1	0.3952	0.3952	101	
1,2,3,4,6,7,8-HpCDF	38.647	16024022	1.04	1.5957	185.0	185.0	0.6818	0.6818	92.49	
D 13C-1,2,3,4,7,8,9-HpCDF	39.876	6618644	0.46	1.0480	106.2	106.2	0.3407	0.3407	106	
1,2,3,4,7,8,9-HpCDF	39.884	14437207	1.04	1.1693	186.5	186.5	0.6938	0.6938	93.27	
S Total HpCDF					371.5	371.5	0.6878	0.6878		
D 13C-1,2,3,4,6,7,8-HpCDD	39.573	5362323	1.07	0.8875	101.6	101.6	0.3002	0.3002	102	
1,2,3,4,6,7,8-HpCDD	39.581	11202668	1.04	1.1150	187.4	187.4	0.4043	0.4043	93.68	
S Total HpCDD					187.4	187.4	0.4043	0.4043		
D 13C-OCDD	42.027	8394716	0.90	0.6297	224.2	224.2	0.1647	0.1647	112	
OCDF	42.119	24073964	0.91	1.4809	387.3	387.3	0.1630	0.1630	96.82	
OCDD	42.035	18776355	0.89	1.1948	374.4	374.4	0.1946	0.1946	93.60	

Reagents:

HRDXNL5_00030 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:41 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	03-Jun-2020 17:18:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	05-Jun-2020 10:11:32	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1030				
First Level Reviewer: stephensk		Date:	04-Jun-2020 08:18:58		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.303	21.309	0		2732325	393292	487	1217	808		
333.9338	21.303	21.309	0		3460787	497847	201	502	2477	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.313	20.321	0	0.954	4180901	636442	821	2052	775		
317.9389	20.313	20.321	0	0.954	5209757	813655	358	895	2273	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.339	20.347	0	1.001	1759534	266564	119	297	2240		
305.8987	20.339	20.347	0	1.001	2255951	337479	215	537	1570	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.682	21.692	-1	1.018	2882708	398692	487	1217	819		
333.9338	21.682	21.692	-1	1.018	3597637	501661	201	502	2496	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.716	21.722	0	1.002	1284221	178469	136	340	1312		
321.8936	21.716	21.722	0	1.002	1636003	226532	73	182	3103	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.707	21.724	-1	1.019	2774592	382052	98	245	3898		
13C-1,2,3,7,8-PeCDF											
351.9000	27.287	27.300	-1	1.281	5057184	852032	998	2495	854		
353.8970	27.296	27.300	0	1.281	3199393	553551	578	1445	958	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.313	27.325	-1	1.001	10525618	1810809	1827	4567	991		
341.8567	27.313	27.325	-1	1.001	6777320	1174785	1136	2840	1034	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.819	28.834	-1	1.353	5925968	936826	998	2495	939		
353.8970	28.819	28.834	-1	1.353	3797119	603398	578	1445	1044	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.845	28.857	-1	1.001	10275009	1589526	1827	4567	870		
341.8567	28.845	28.857	-1	1.001	6606674	1027804	1136	2840	905	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.636	29.651	-1	1.391	3227994	491999	187	467	2631		
369.8919	29.636	29.651	-1	1.391	2015655	308093	174	435	1771	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.669	29.682	-1	1.001	6793597	1010757	263	657	3843		
357.8516	29.669	29.682	-1	1.001	4376064	647756	167	417	3879	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.975	34.982	0	0.955	2974950	697225	802	2005	869		
385.8610	34.975	34.982	0	0.955	5593067	1285356	1553	3882	828	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.991	35.000	-1	1.000	9093358	2121704	2775	6937	765		
375.8178	34.991	35.000	-1	1.000	7337743	1718817	2268	5670	758	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.134	35.145	-1	0.959	2638588	595750	802	2005	743		
385.8610	35.134	35.145	-1	0.959	4914351	1098467	1553	3882	707	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.151	35.163	-1	1.000	9794249	2261779	2775	6937	815		
375.8178	35.151	35.163	-1	1.000	7874472	1824889	2268	5670	805	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.959	35.966	0	0.981	2468612	639080	802	2005	797		
385.8610	35.959	35.966	0	0.981	4660961	1205032	1553	3882	776	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.967	35.981	-1	1.000	9443276	2471562	2775	6937	891		
375.8178	35.967	35.981	-1	1.000	7662439	2015475	2268	5670	889	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.834	36.848	-1	1.005	2322999	659496	802	2005	822		
385.8610	36.834	36.848	-1	1.005	4283393	1200671	1553	3882	773	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.851	36.862	-1	1.000	8834683	2489386	2775	6937	897		
375.8178	36.851	36.862	-1	1.000	7086708	1998647	2268	5670	881	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.641	36.653	-1		3309897	931058	665	1662	1400		
403.8529	36.641	36.653	-1		2636257	751122	508	1270	1479	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.161	36.173	-1	0.987	3634131	1021500	665	1662	1536		
403.8529	36.161	36.173	-1	0.987	2898917	818600	508	1270	1611	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.178	36.187	-1	1.000	6346944	1788384	998	2495	1792		
391.8127	36.178	36.187	-1	1.000	5095977	1430996	761	1902	1880	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.279	36.291	-1	0.990	3266155	890357	665	1662	1339		
403.8529	36.279	36.291	-1	0.990	2602047	709104	508	1270	1396	1.26(1.05-1.43)	

Report Date: 05-Jun-2020 10:11:41 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.295	36.304	0	1.000	6526665	1764097	998	2495	1768		
391.8127	36.295	36.304	0	1.000	5249867	1423482	761	1902	1871	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.657	36.669	-1	1.014	6856309	1907554	998	2495	1911		
391.8127	36.657	36.669	-1	1.014	5531324	1535485	761	1902	2018	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.630	38.640	-1	1.054	1728151	579959	854	2135	679		
419.8220	38.630	38.640	-1	1.054	3700848	1246571	1549	3872	805	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.647	38.655	0	1.000	8162407	2747824	4068	10170	675		
409.7788	38.638	38.655	-1	1.000	7861615	2646471	3881	9702	682	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.876	39.885	-1	1.088	2074527	777402	854	2135	910		
419.8220	39.876	39.885	-1	1.088	4544117	1672177	1549	3872	1080	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.884	39.893	-1	1.000	7356730	2719041	4068	10170	668		
409.7788	39.884	39.893	-1	1.000	7080477	2608284	3881	9702	672	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.573	39.582	-1	1.080	2770436	989695	947	2367	1045		
437.8140	39.573	39.582	-1	1.080	2591887	922792	846	2115	1091	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.581	39.590	-1	1.000	5701562	2054004	1780	4450	1154		
425.7737	39.581	39.590	-1	1.000	5501106	1972622	1669	4172	1182	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.027	42.035	0	1.147	3981941	1344380	395	987	3403		
471.7750	42.027	42.035	0	1.147	4412775	1507938	303	757	4977	0.90(0.76-1.02)	
OCDF											
441.7428	42.119	42.131	-1	1.002	11472886	3907390	612	1530	6385		
443.7399	42.119	42.131	-1	1.002	12601078	4311313	765	1912	5636	0.91(0.76-1.02)	
OCDD											
457.7377	42.035	42.043	-1	1.000	8852116	3022946	646	1615	4679		
459.7348	42.035	42.043	-1	1.000	9924239	3389952	680	1700	4985	0.89(0.76-1.02)	

Reagents:

HRDXNL5_00030 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d

Injection Date: 03-Jun-2020 17:18:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

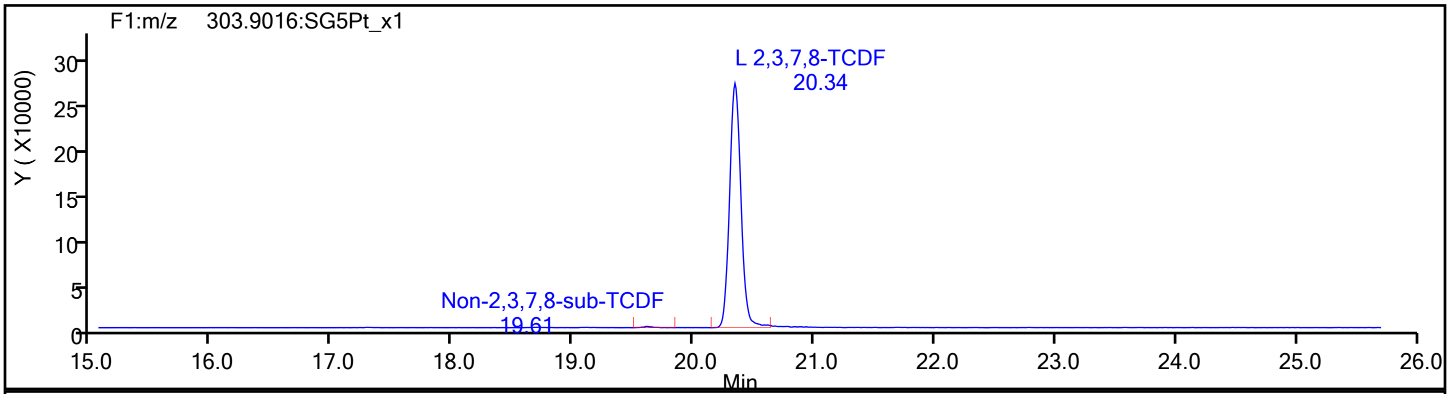

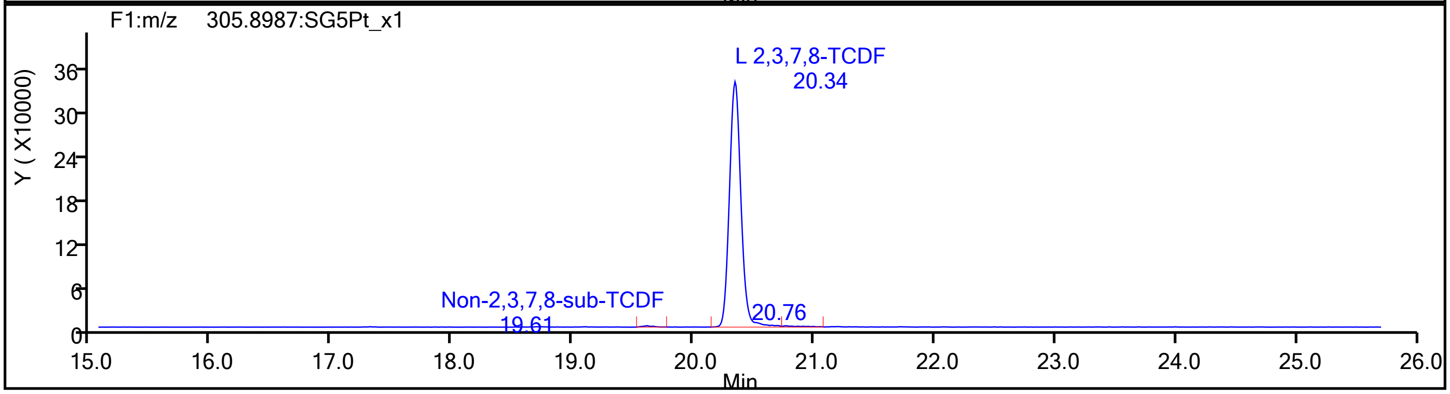

TCDF Standards

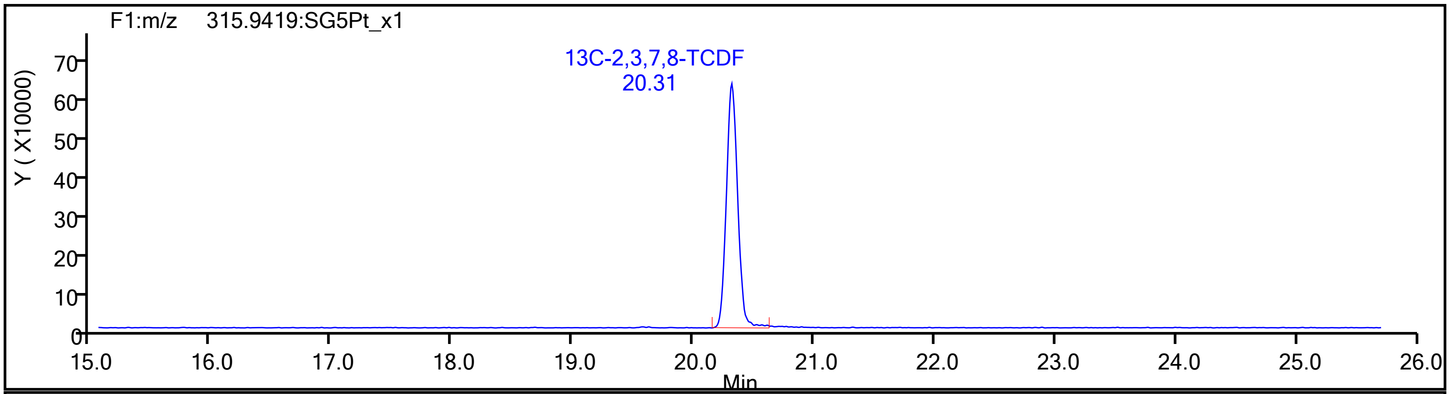

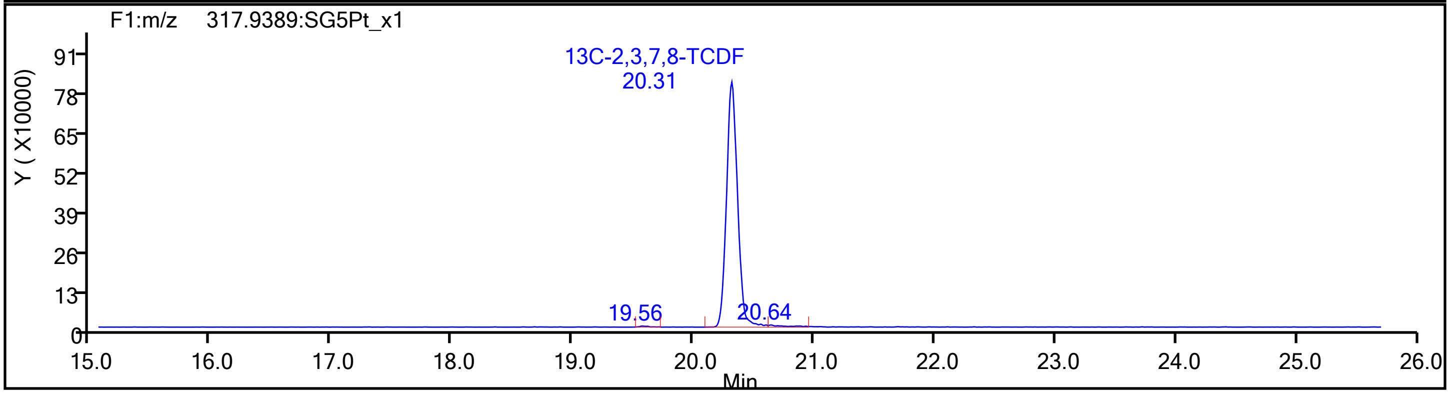

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Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Client ID:
Worklist#: 383168
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

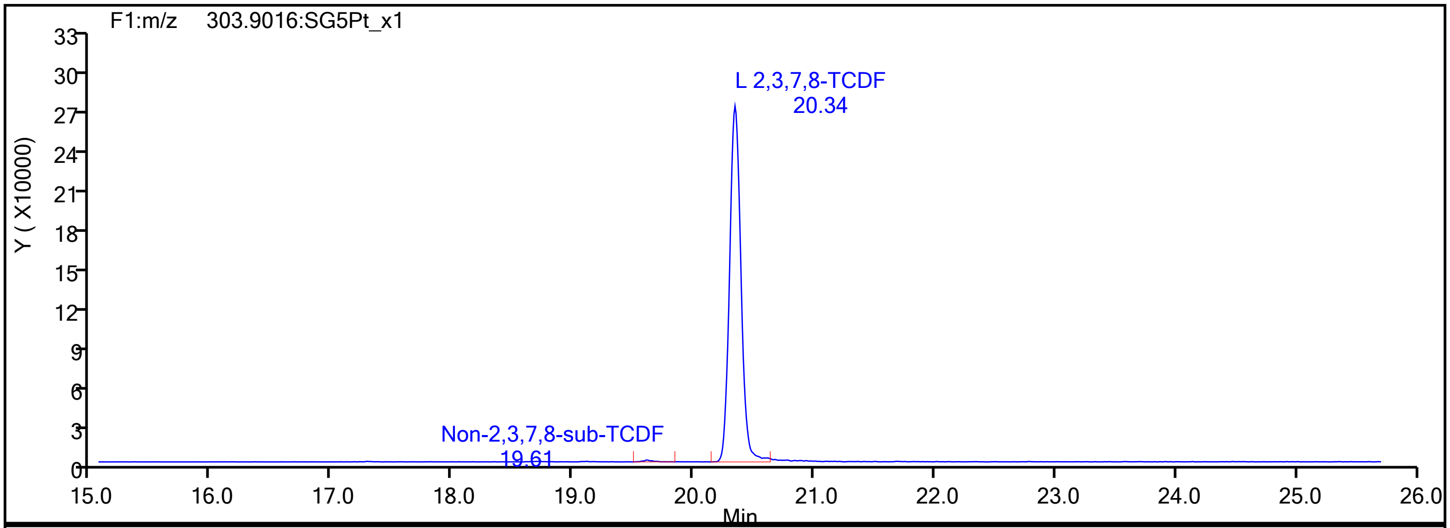

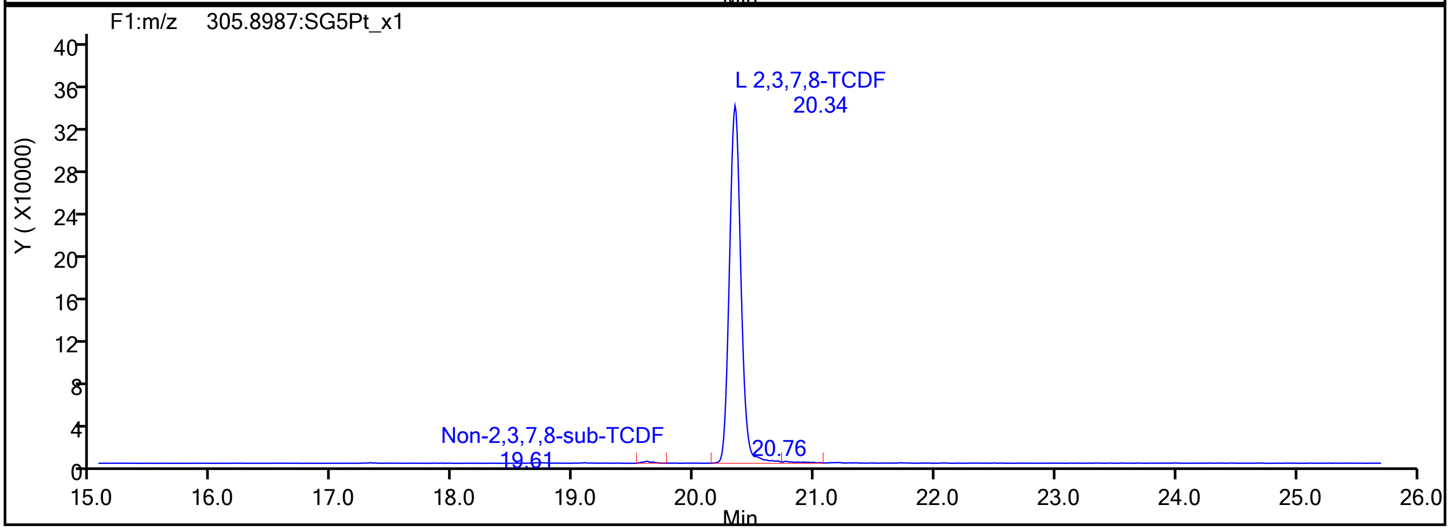

TCDF Interference Mass

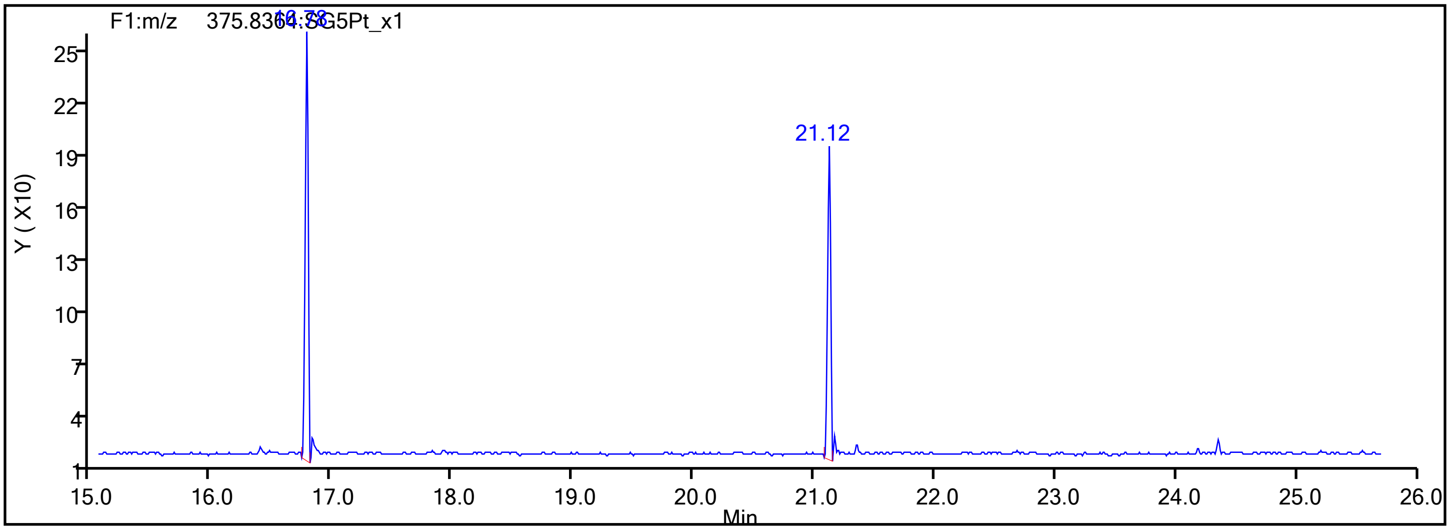

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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TCDD

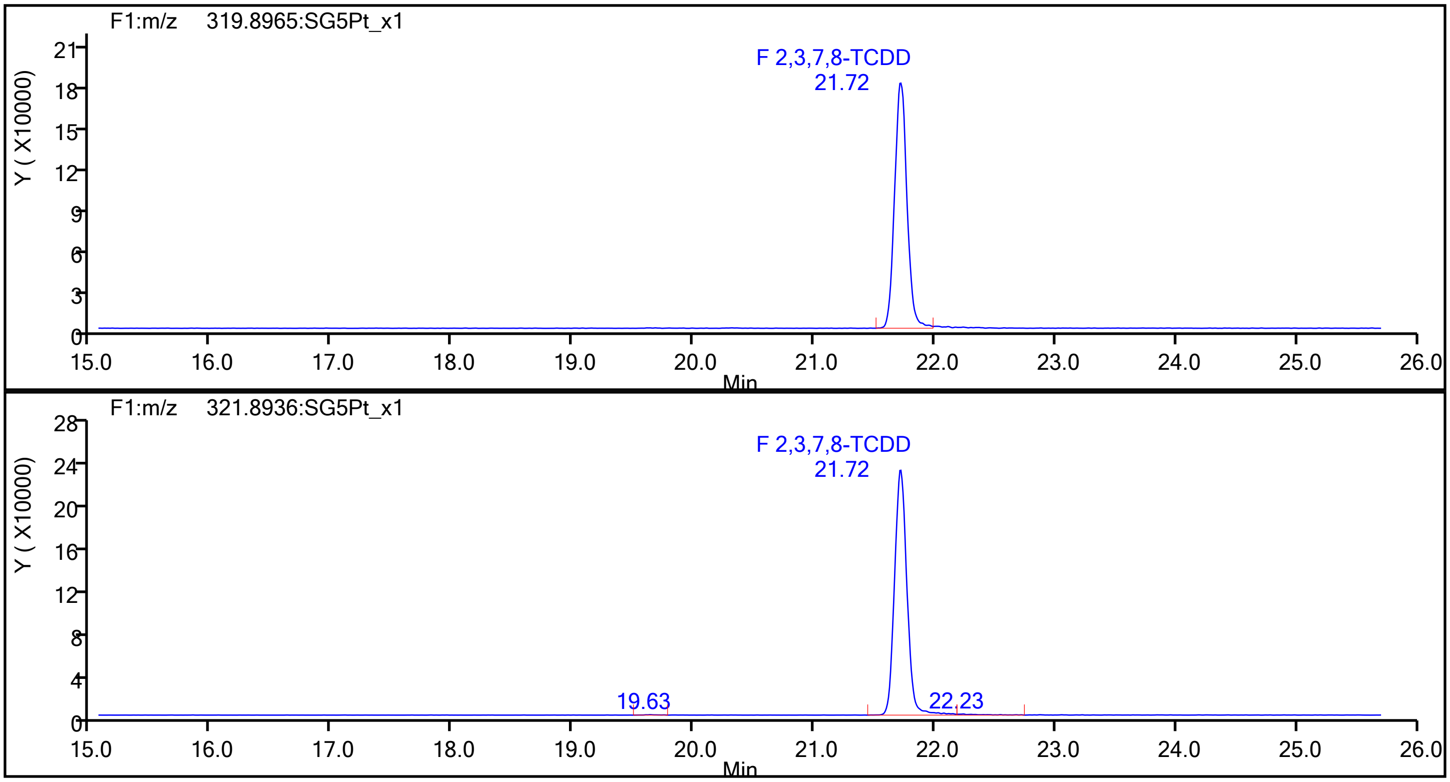

TCDD Standards

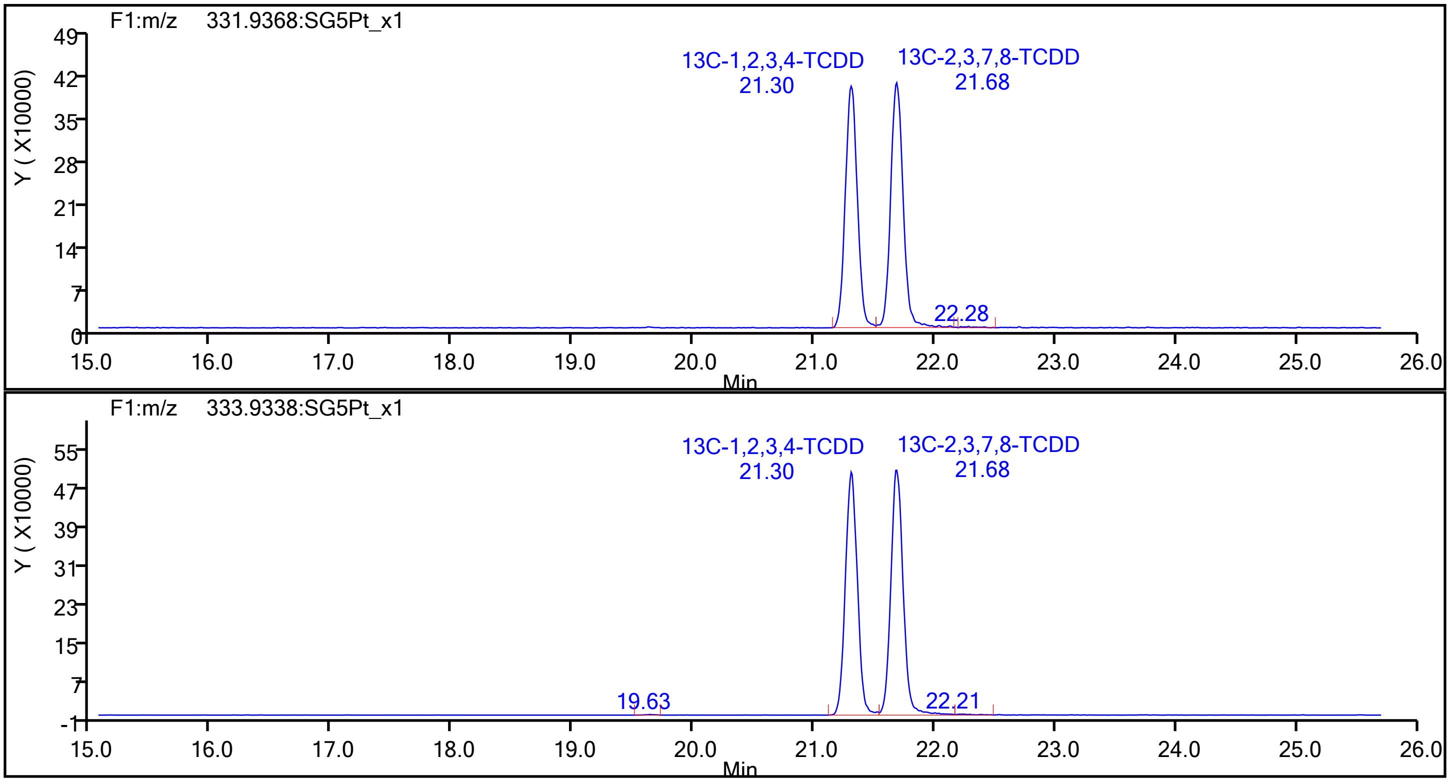

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Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 17:18:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
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Client ID:
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37Cl4-TCDD

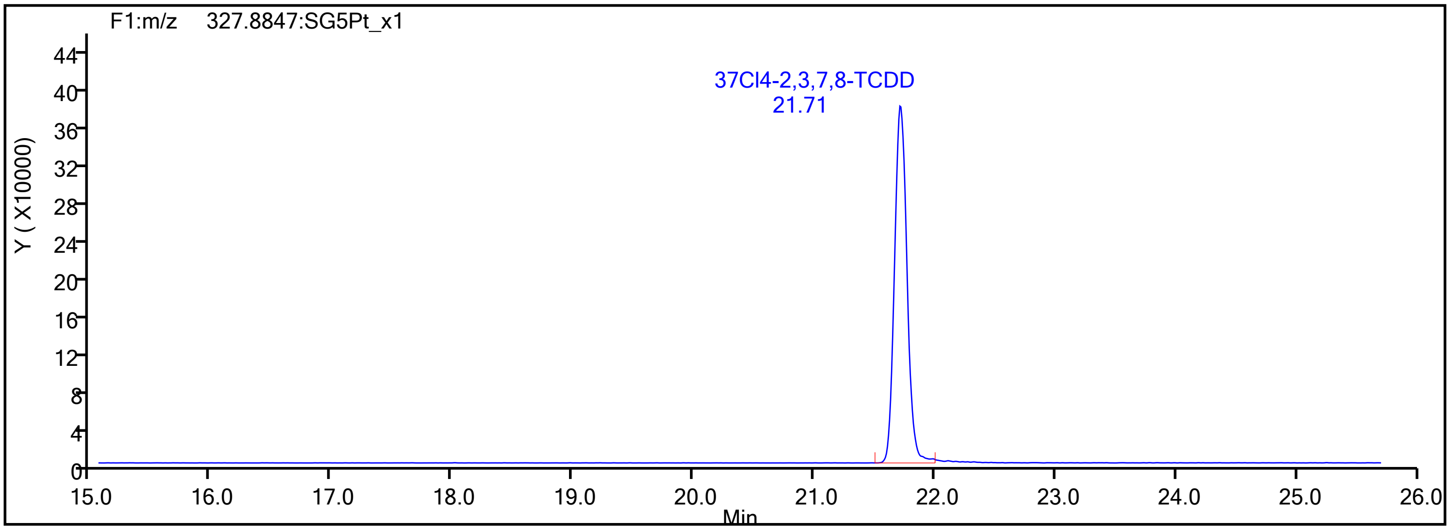

37Cl4-TCDD Standards

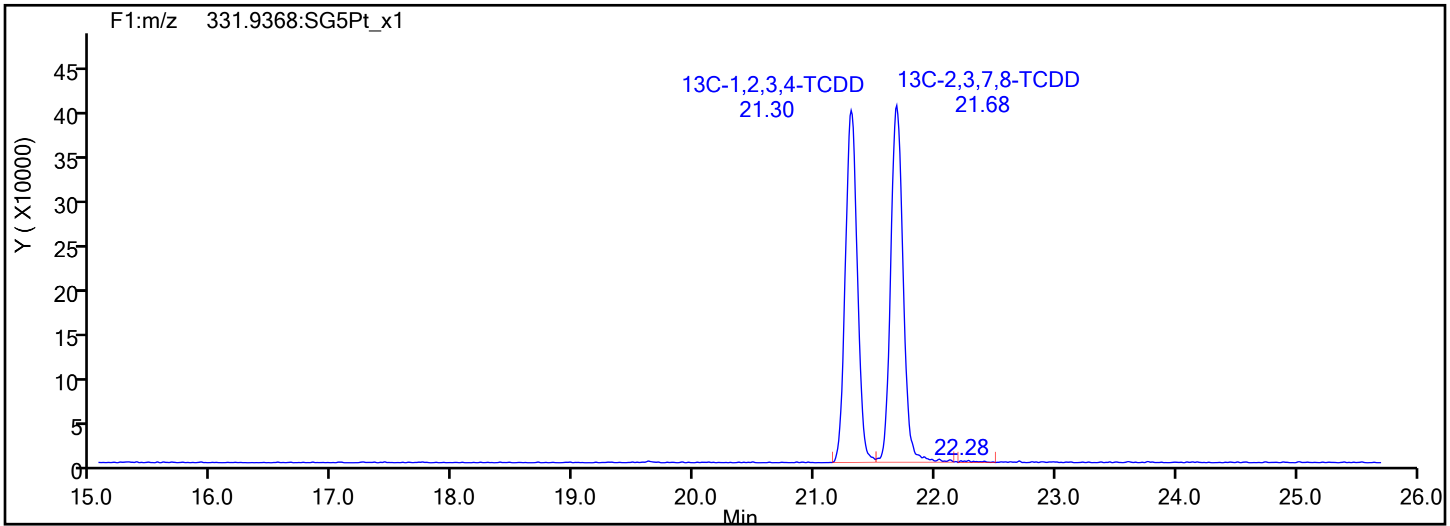

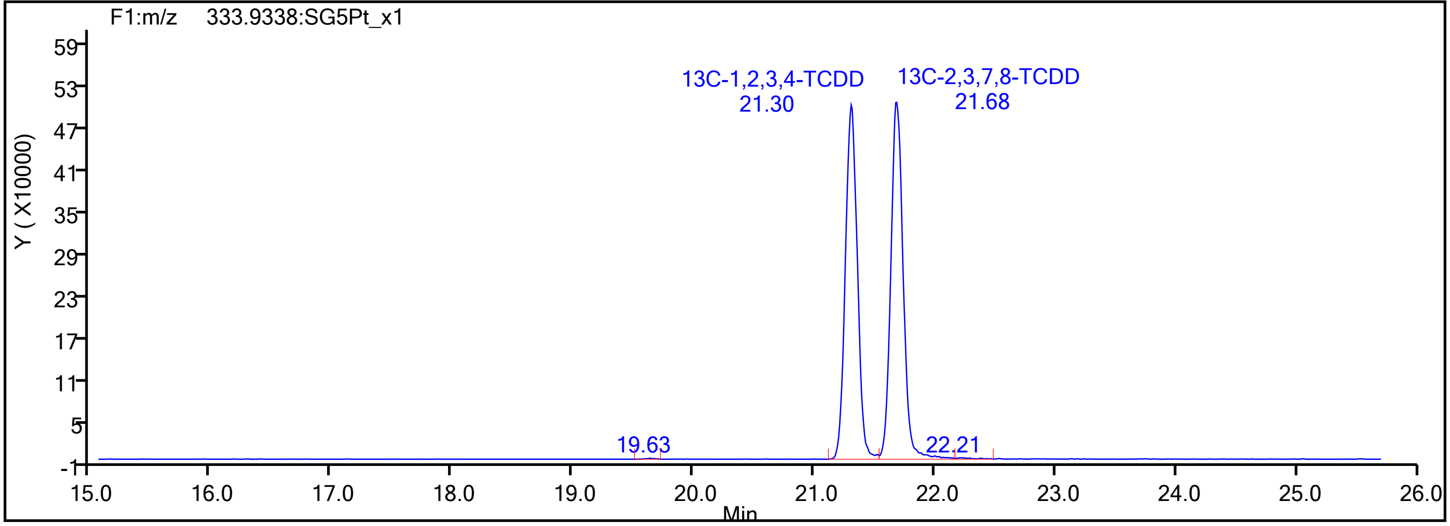

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

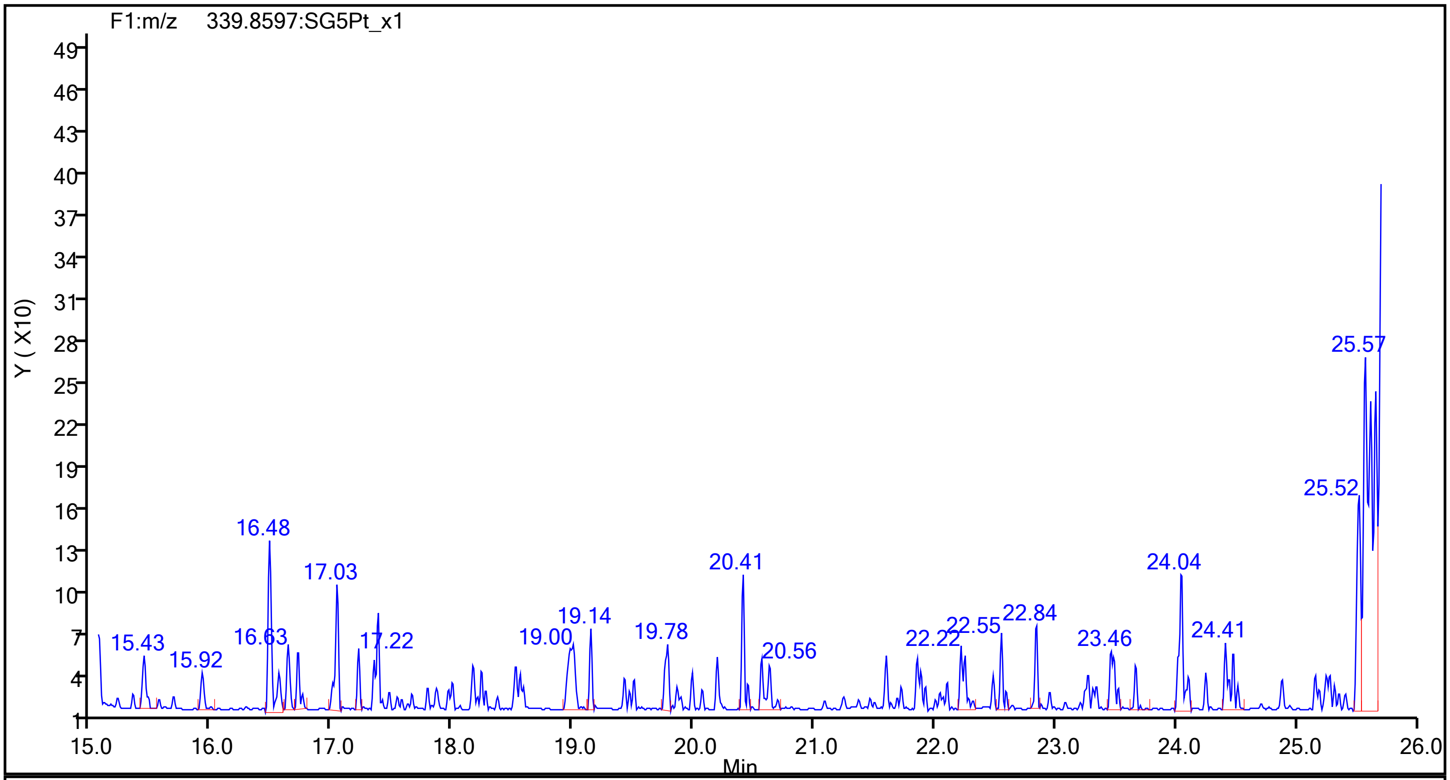

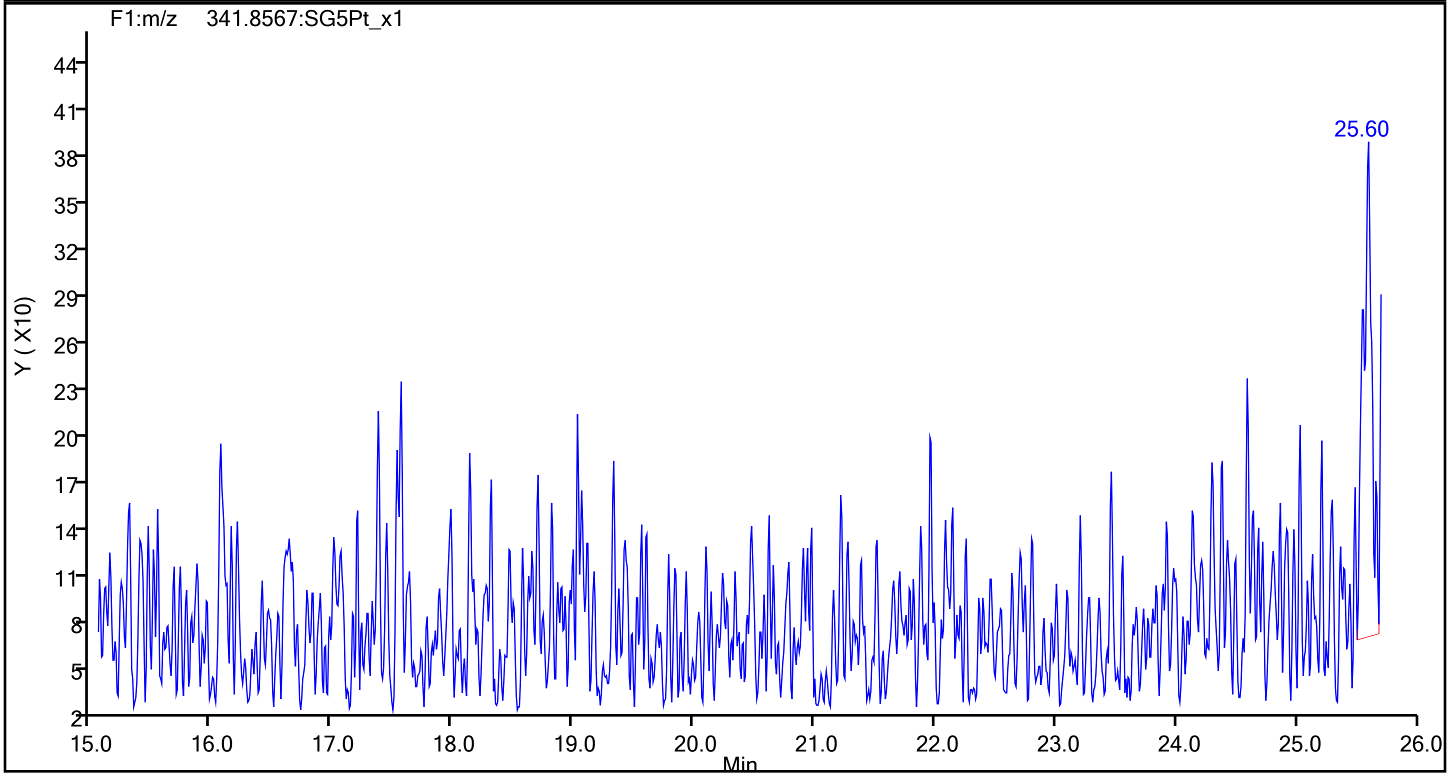

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

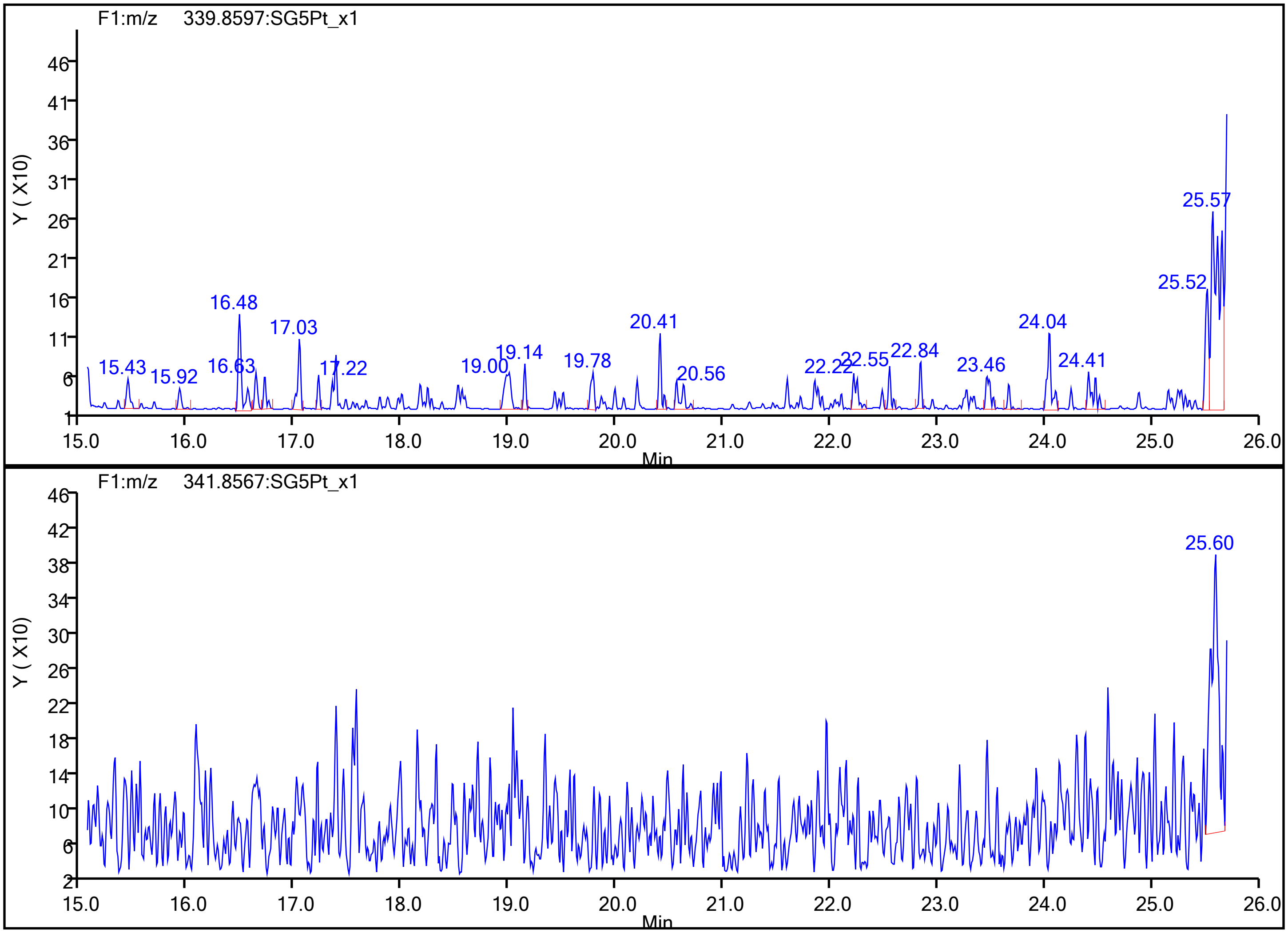

F1 PeCDFs Interference Mass

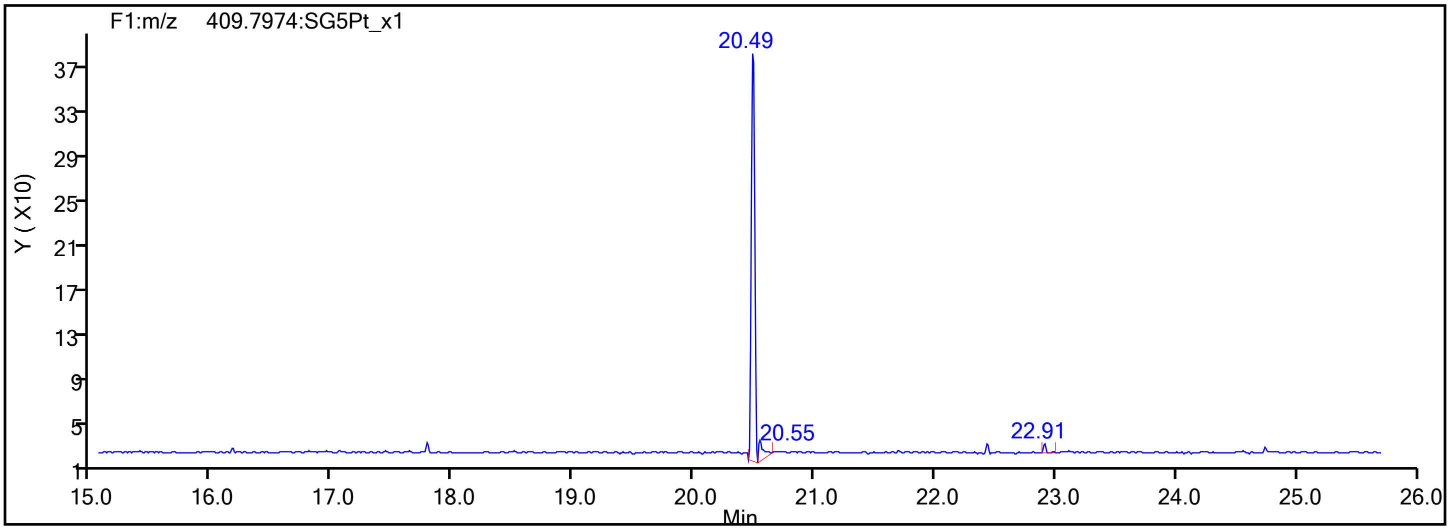

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Eurofins TestAmerica, Sacramento

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PeCDF

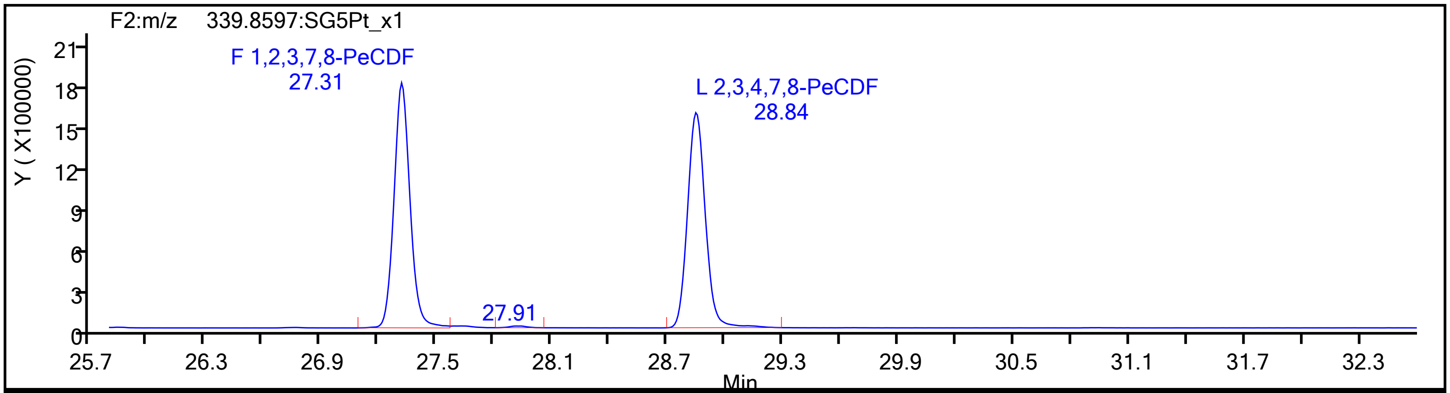

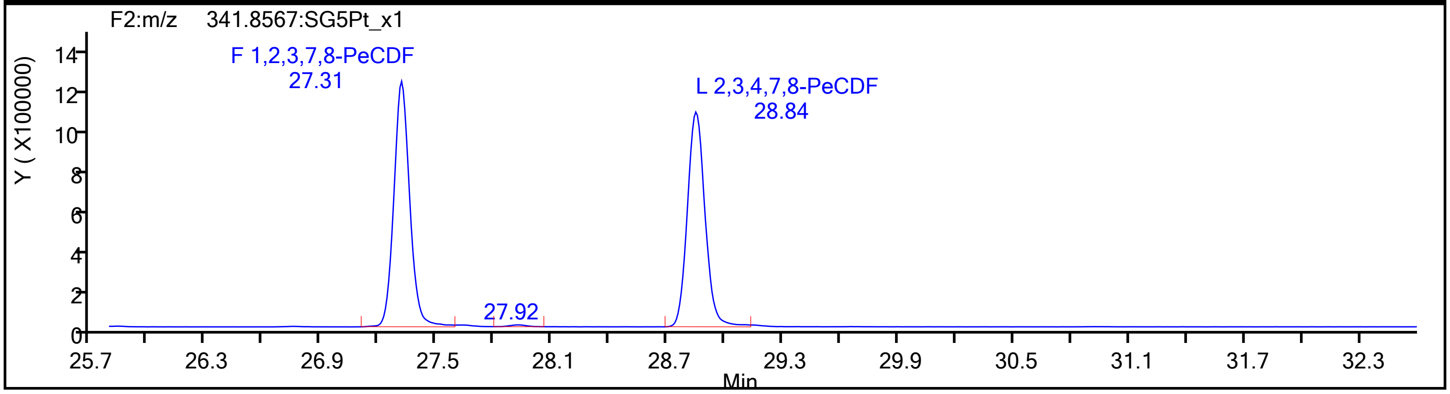

PeCDF Standards

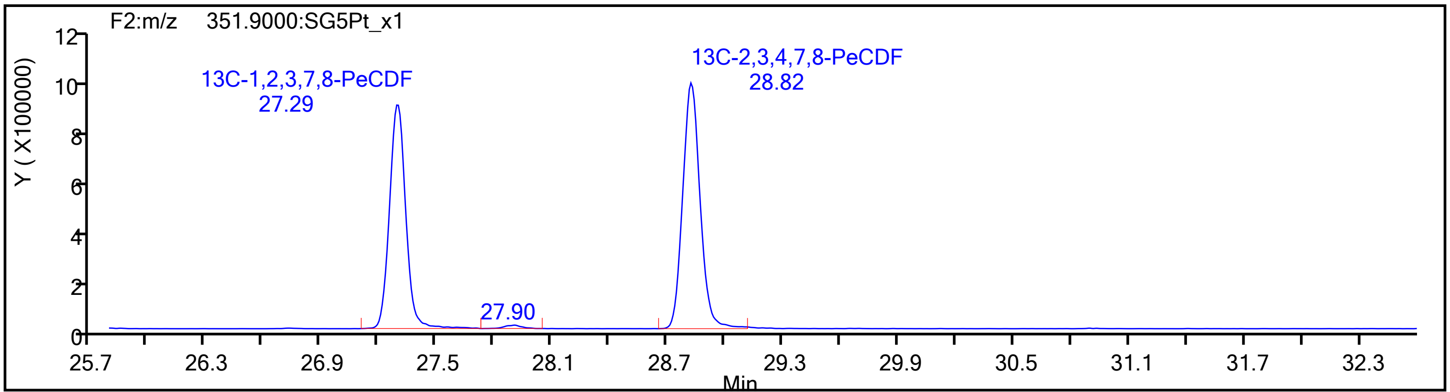

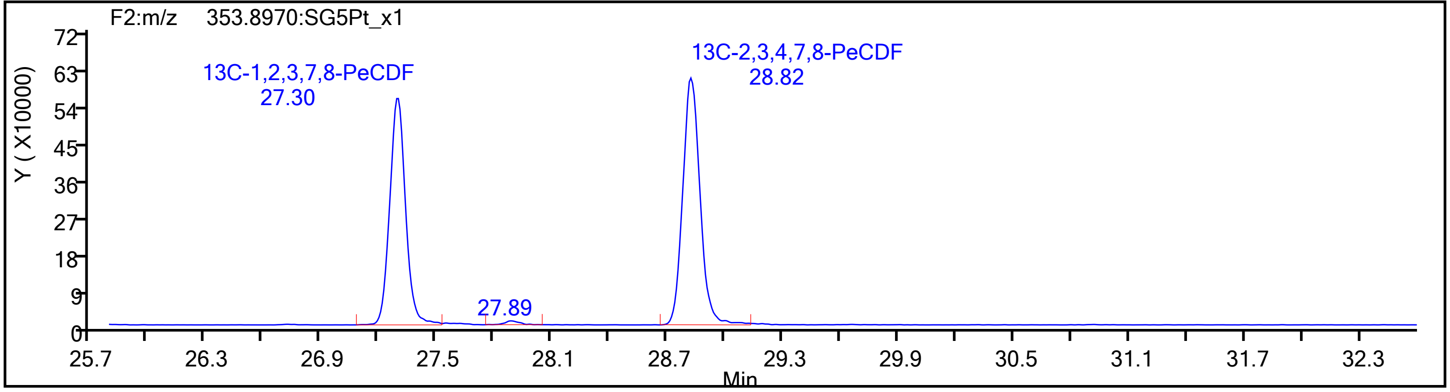

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Eurofins TestAmerica, Sacramento

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PeCDF

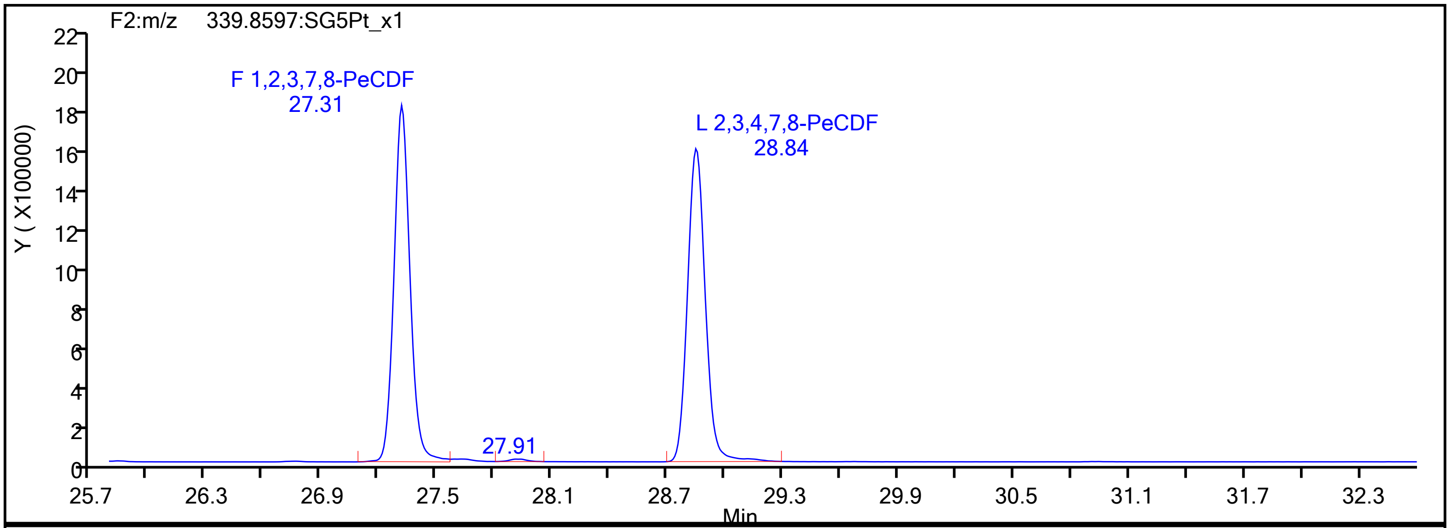

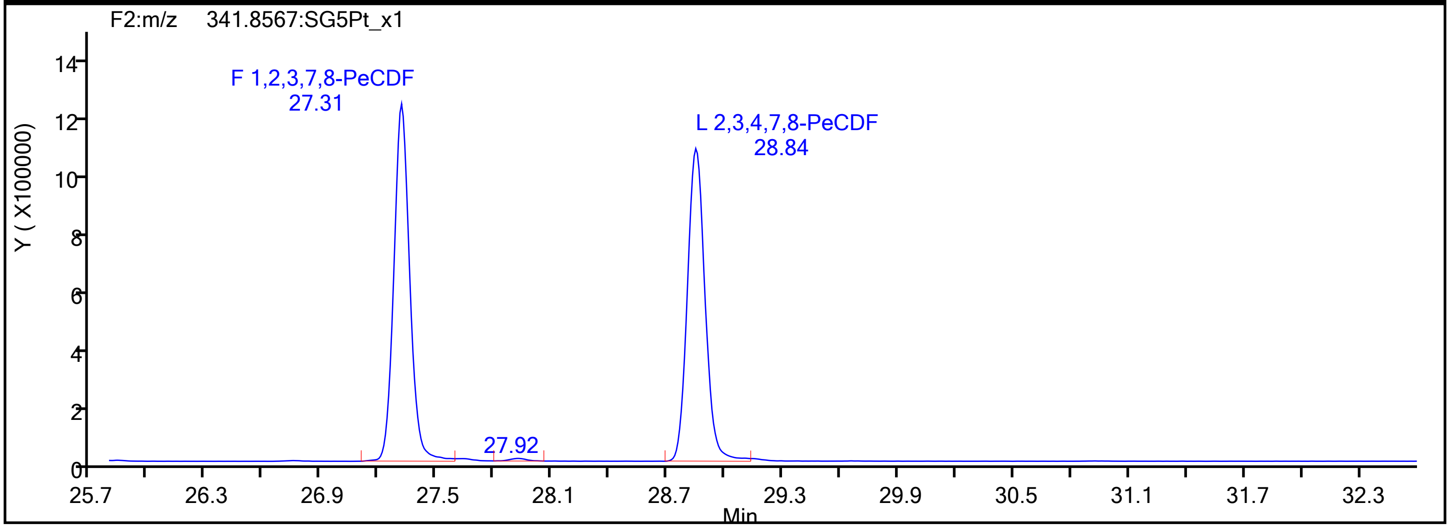

PeCDF Interference Mass

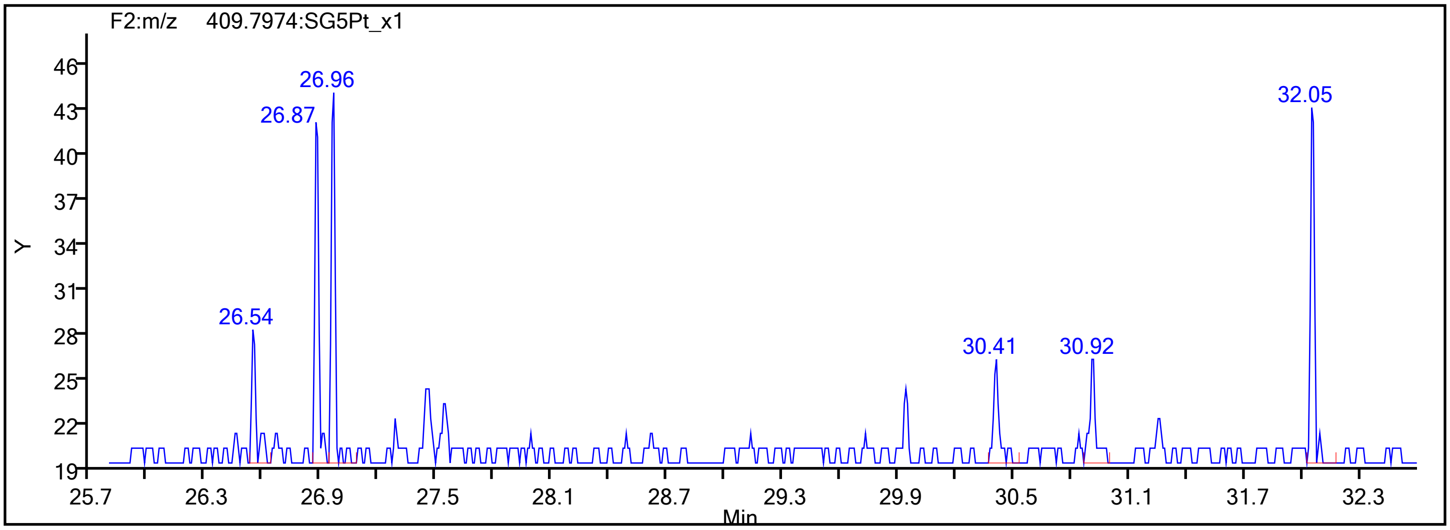

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDD

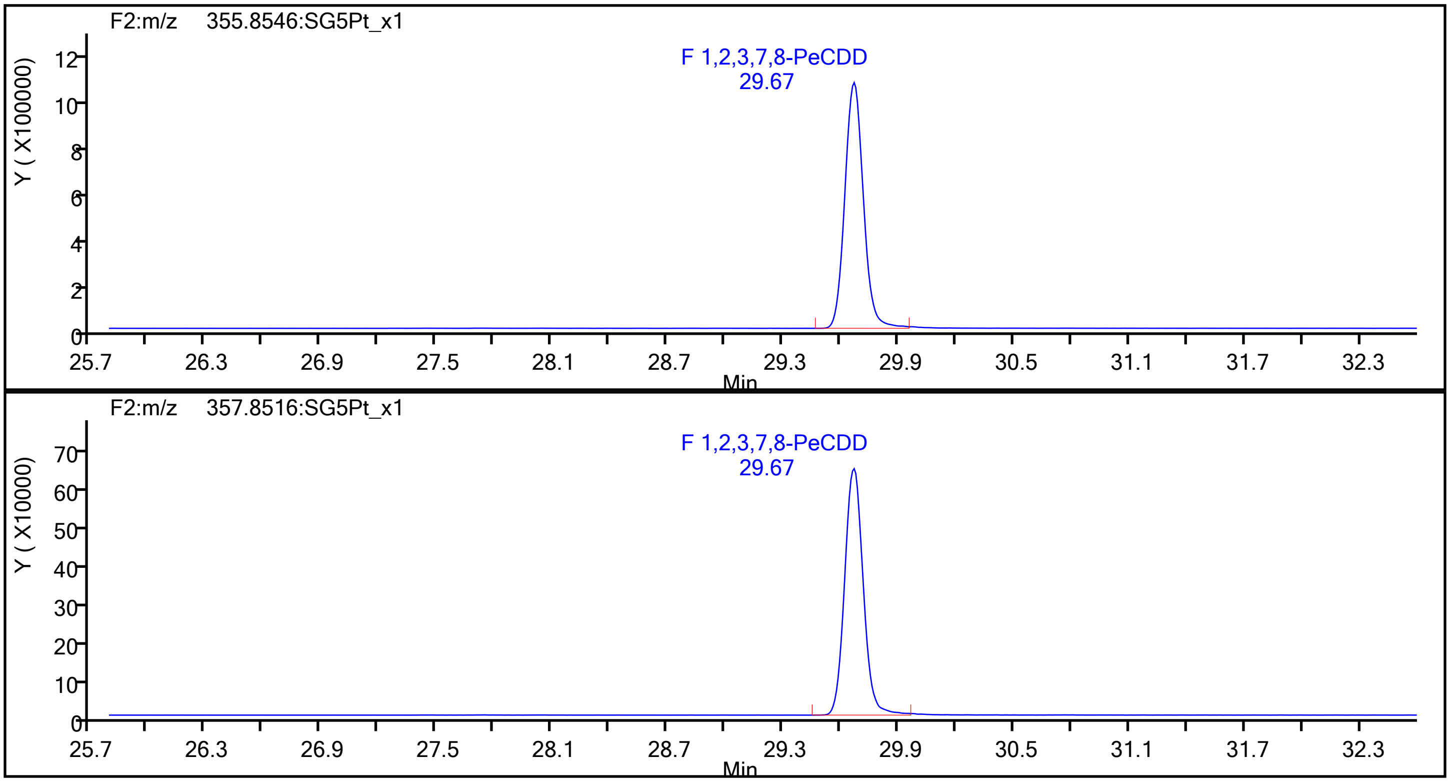

PeCDD Standards

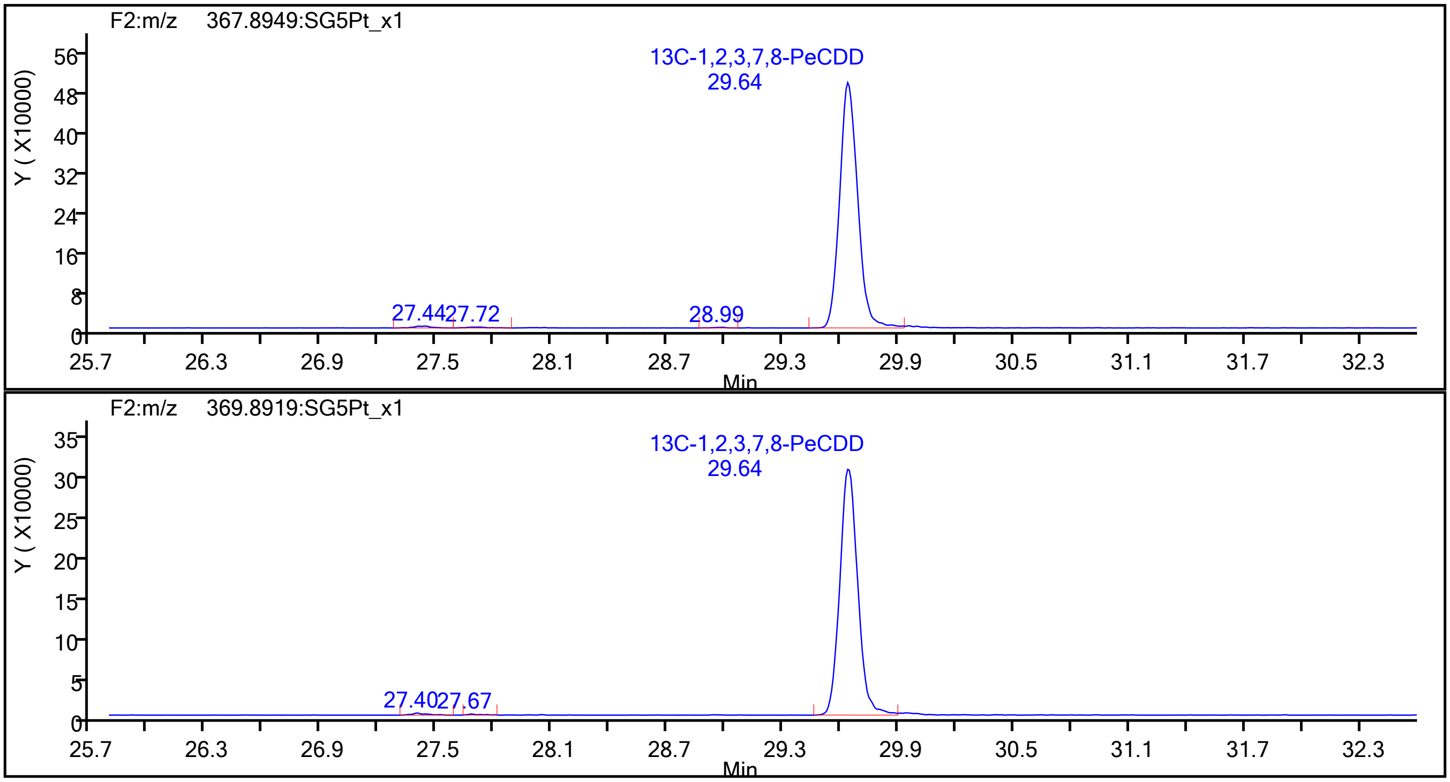

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Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

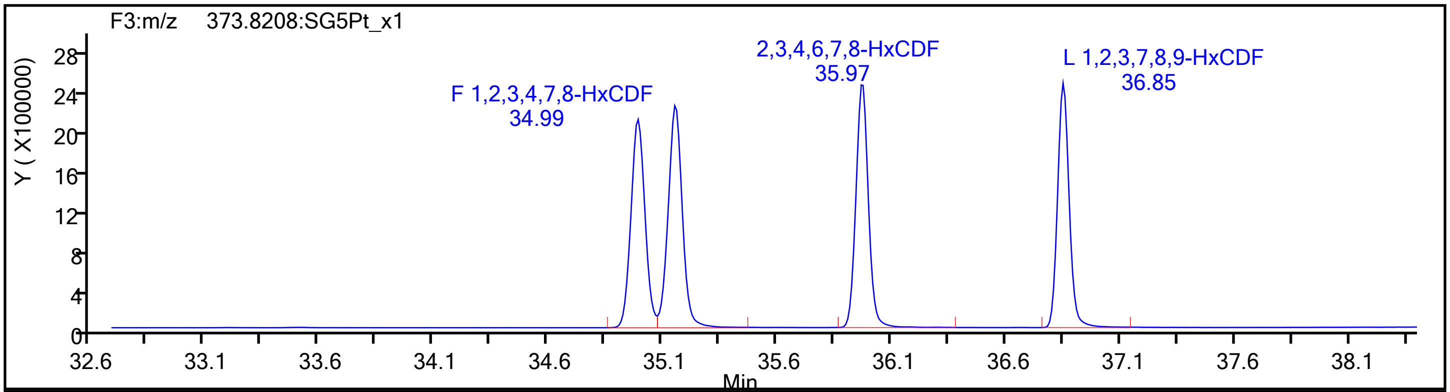

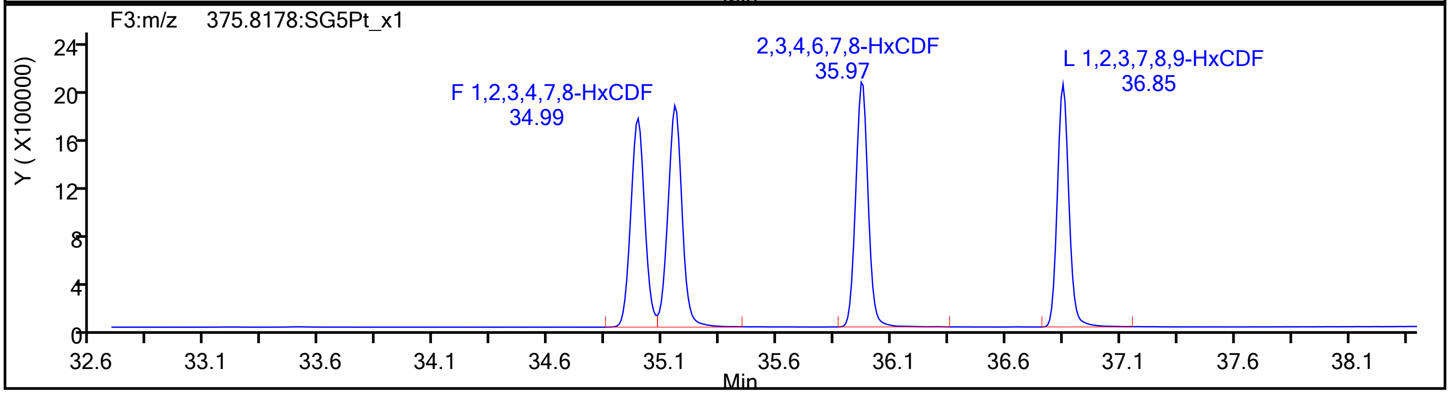

HxCDF Standards

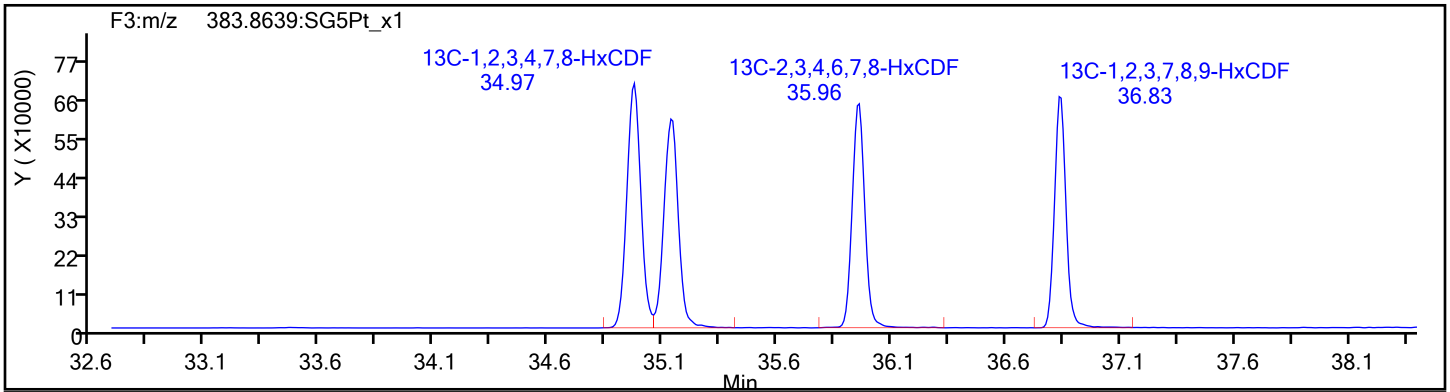

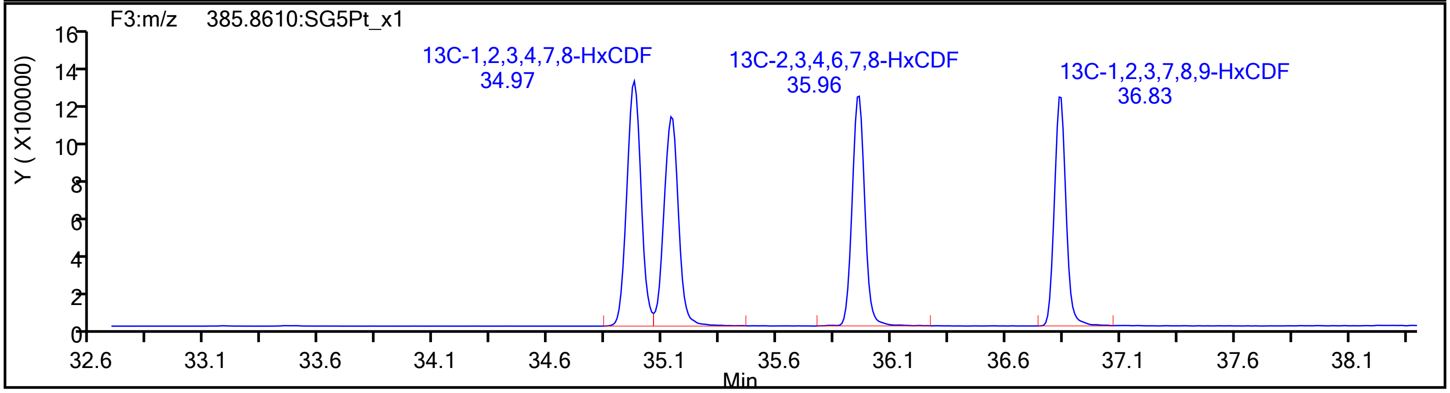

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Eurofins TestAmerica, Sacramento

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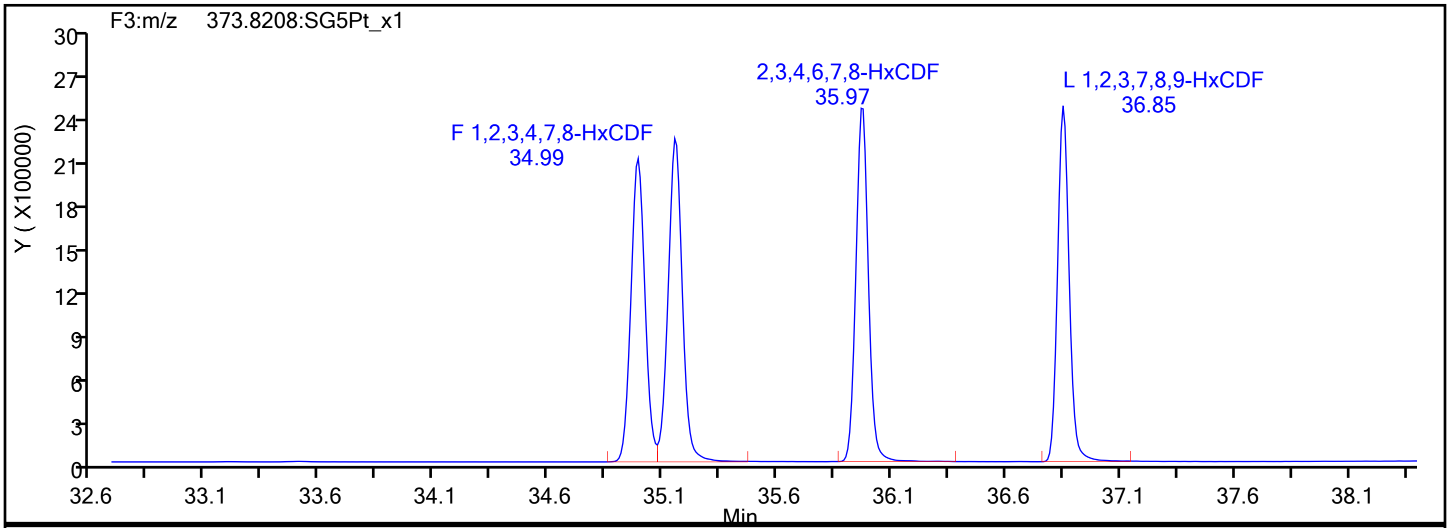

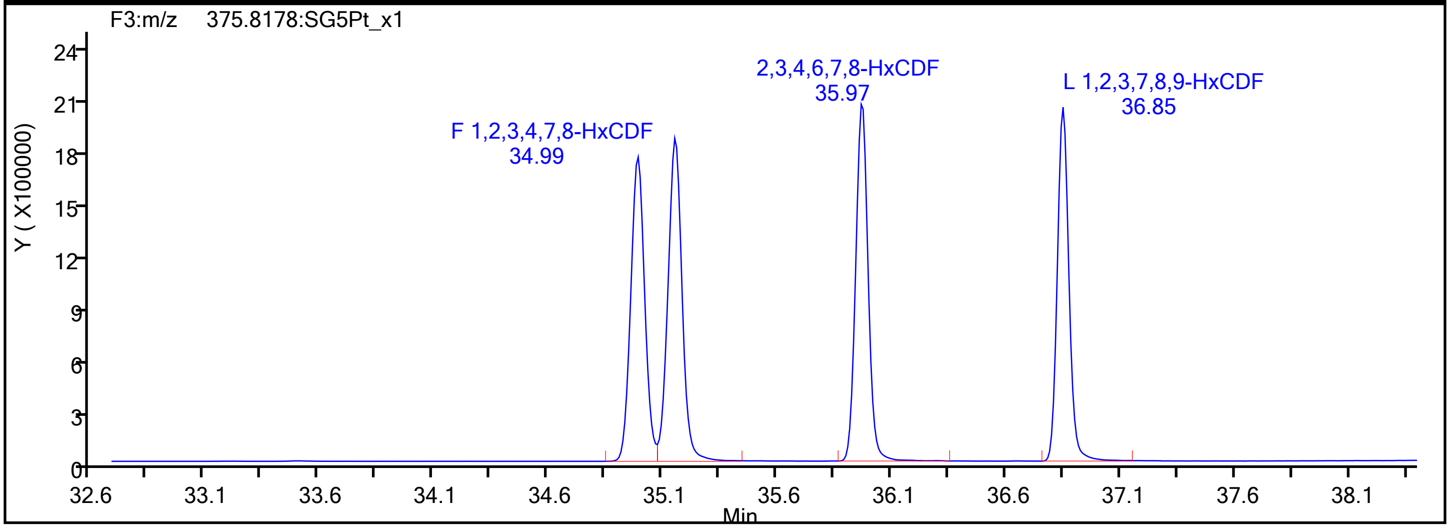

HxCDF Interference Mass

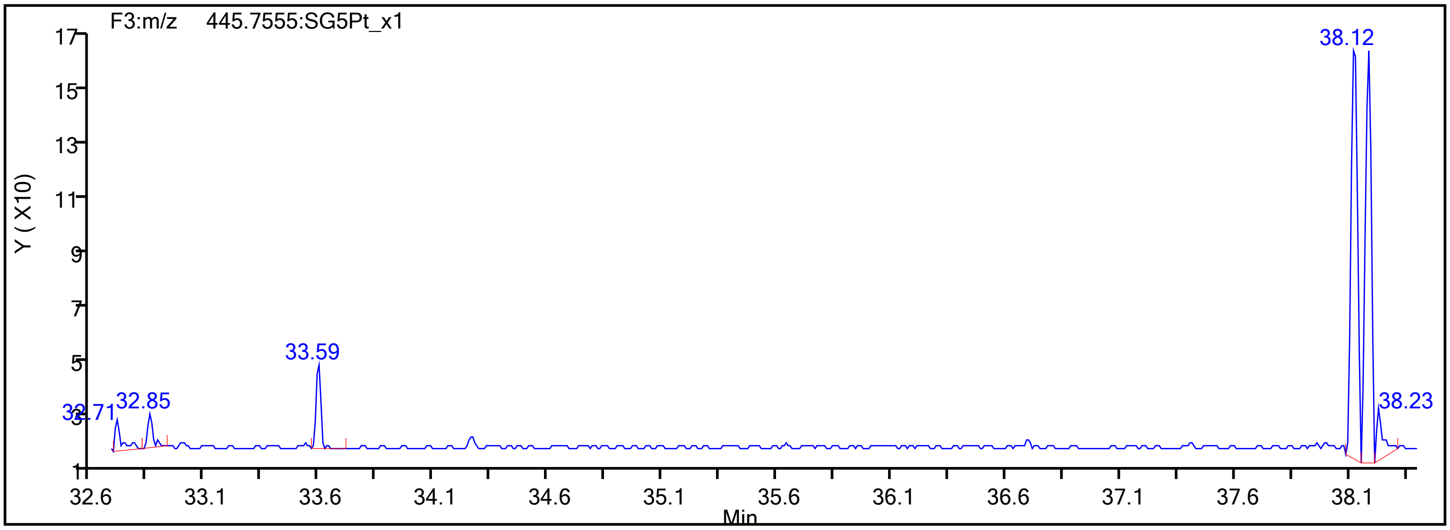

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Eurofins TestAmerica, Sacramento

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Injection Date: 03-Jun-2020 17:18:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

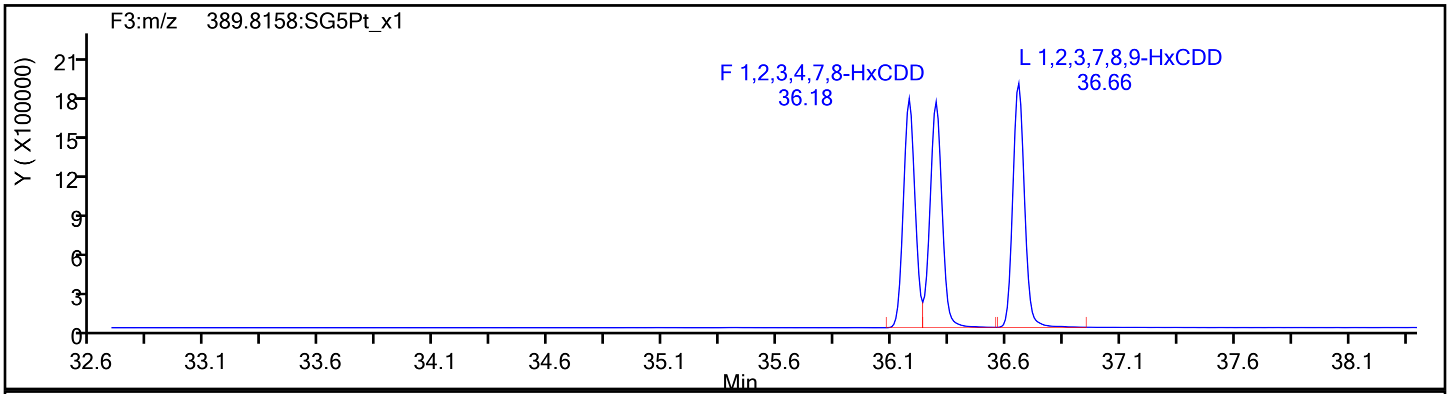

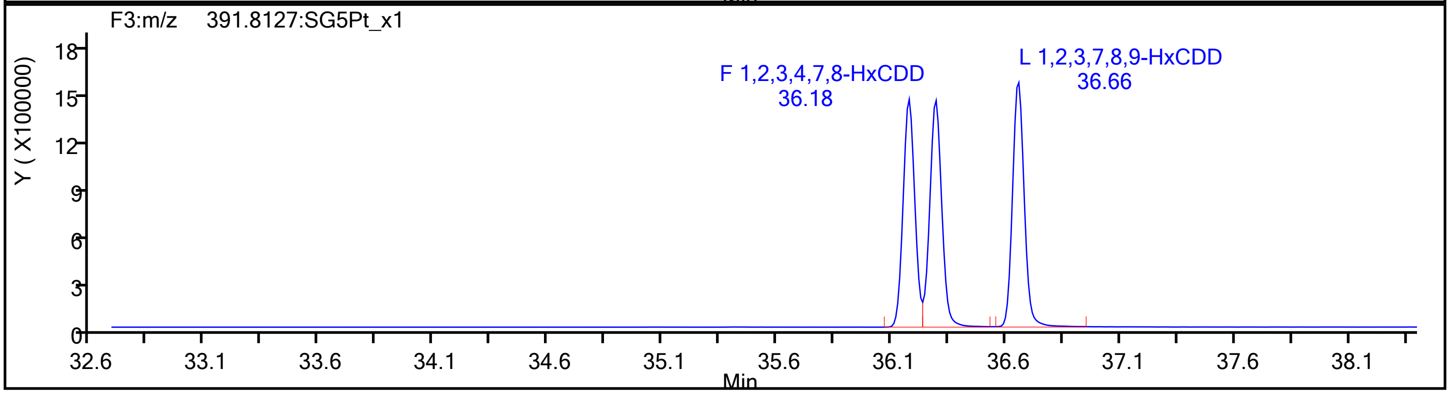

HxCDD Standards

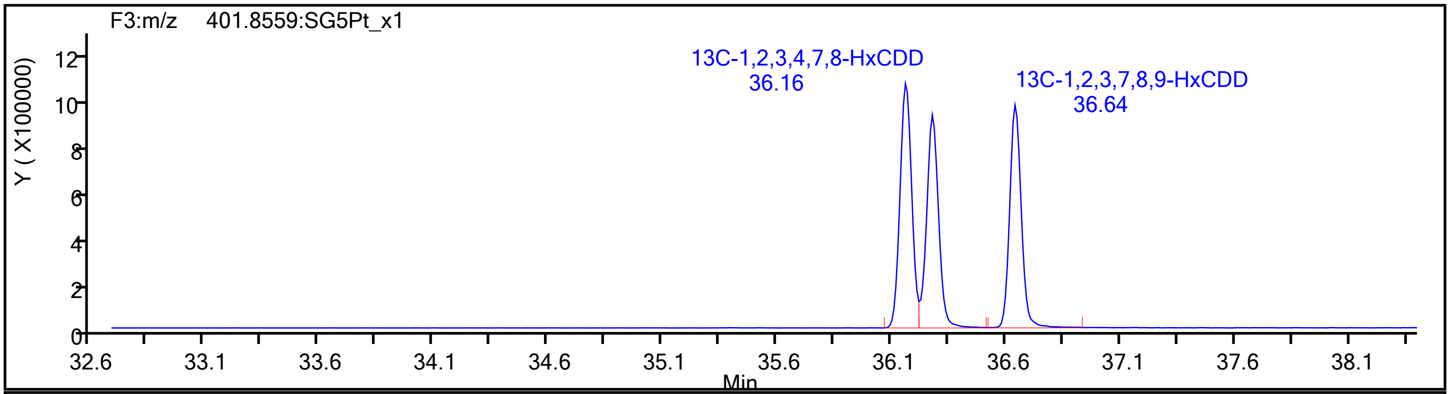

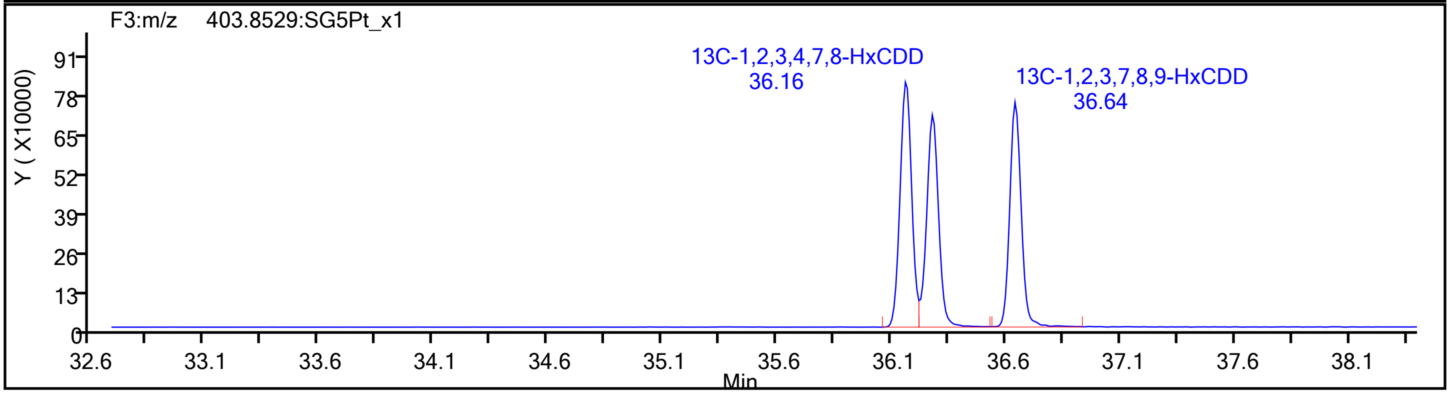

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Eurofins TestAmerica, Sacramento

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HpCDF

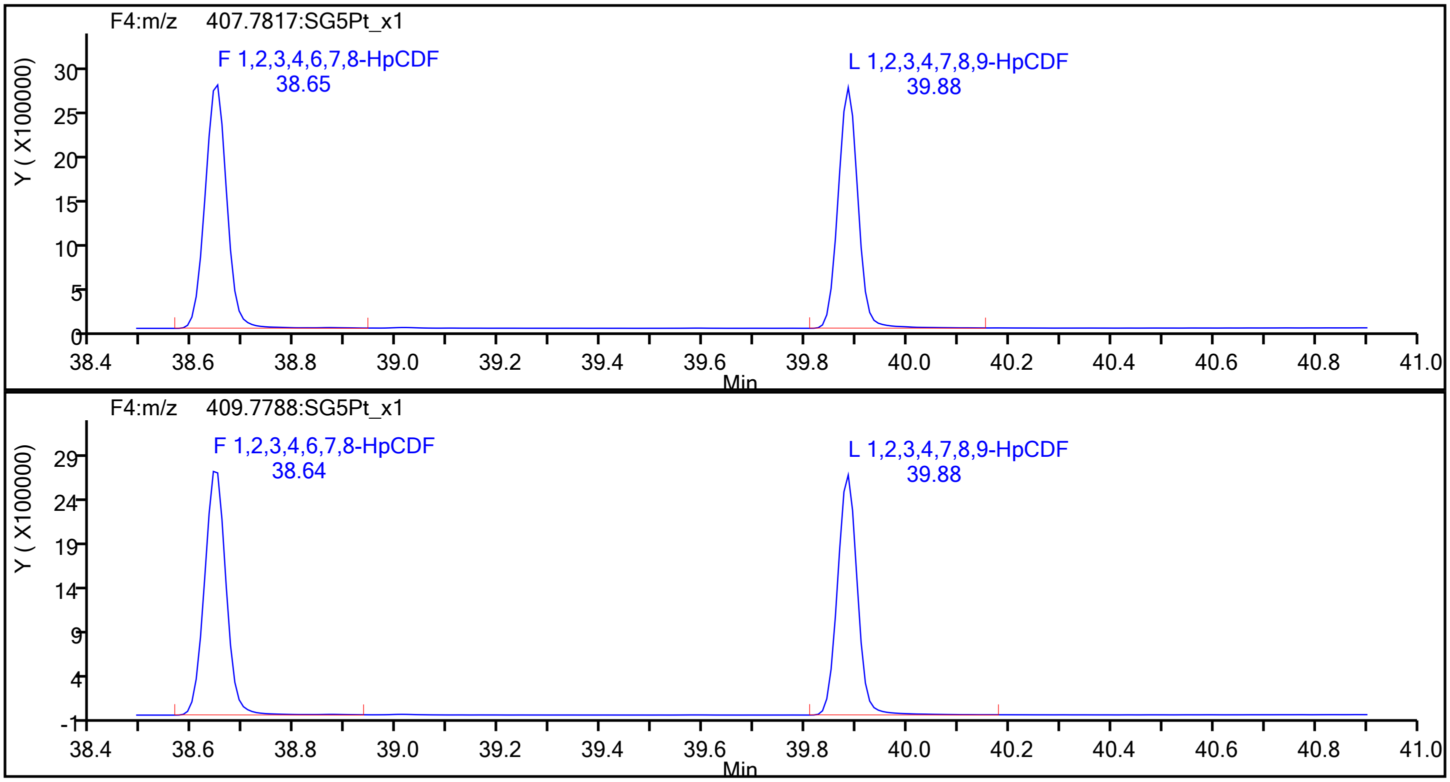

HpCDF Standards

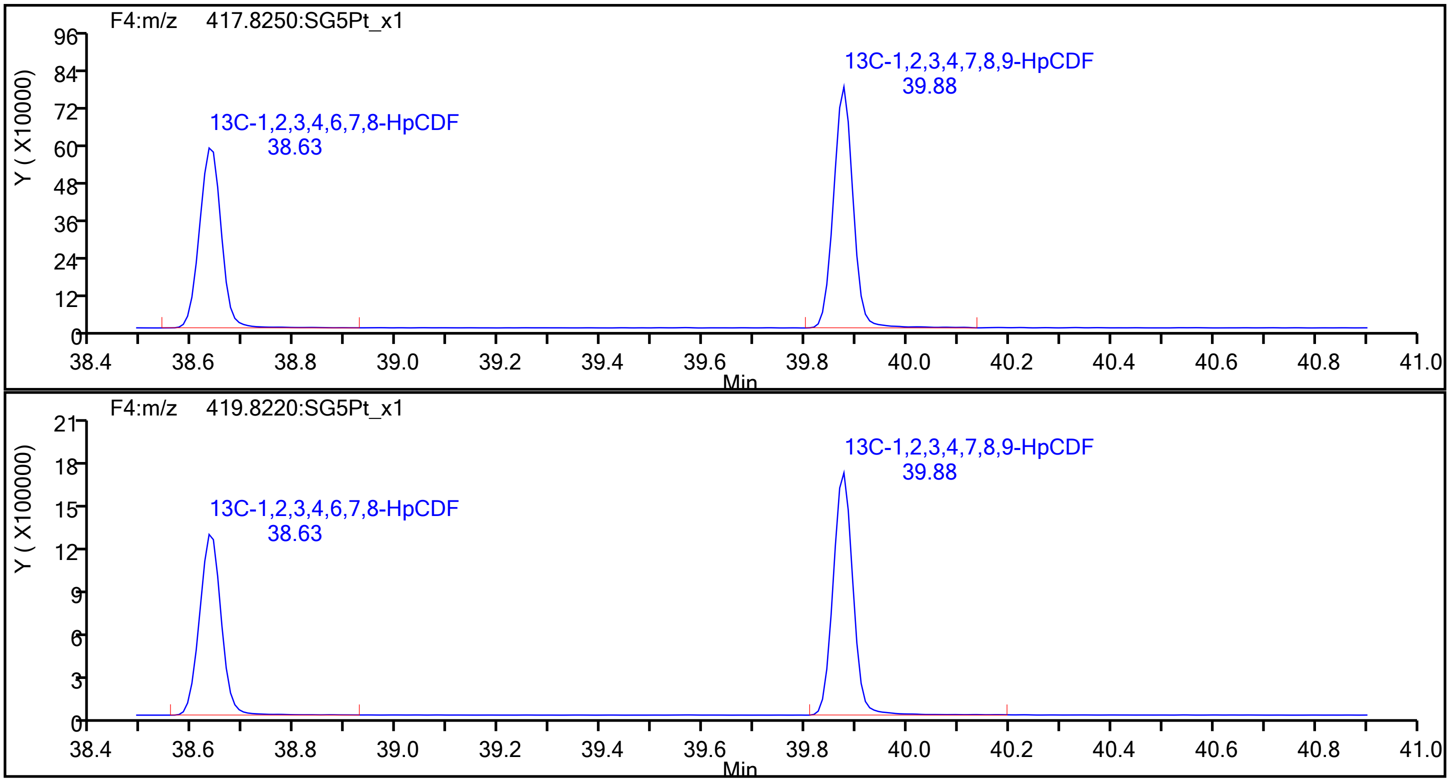

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Eurofins TestAmerica, Sacramento

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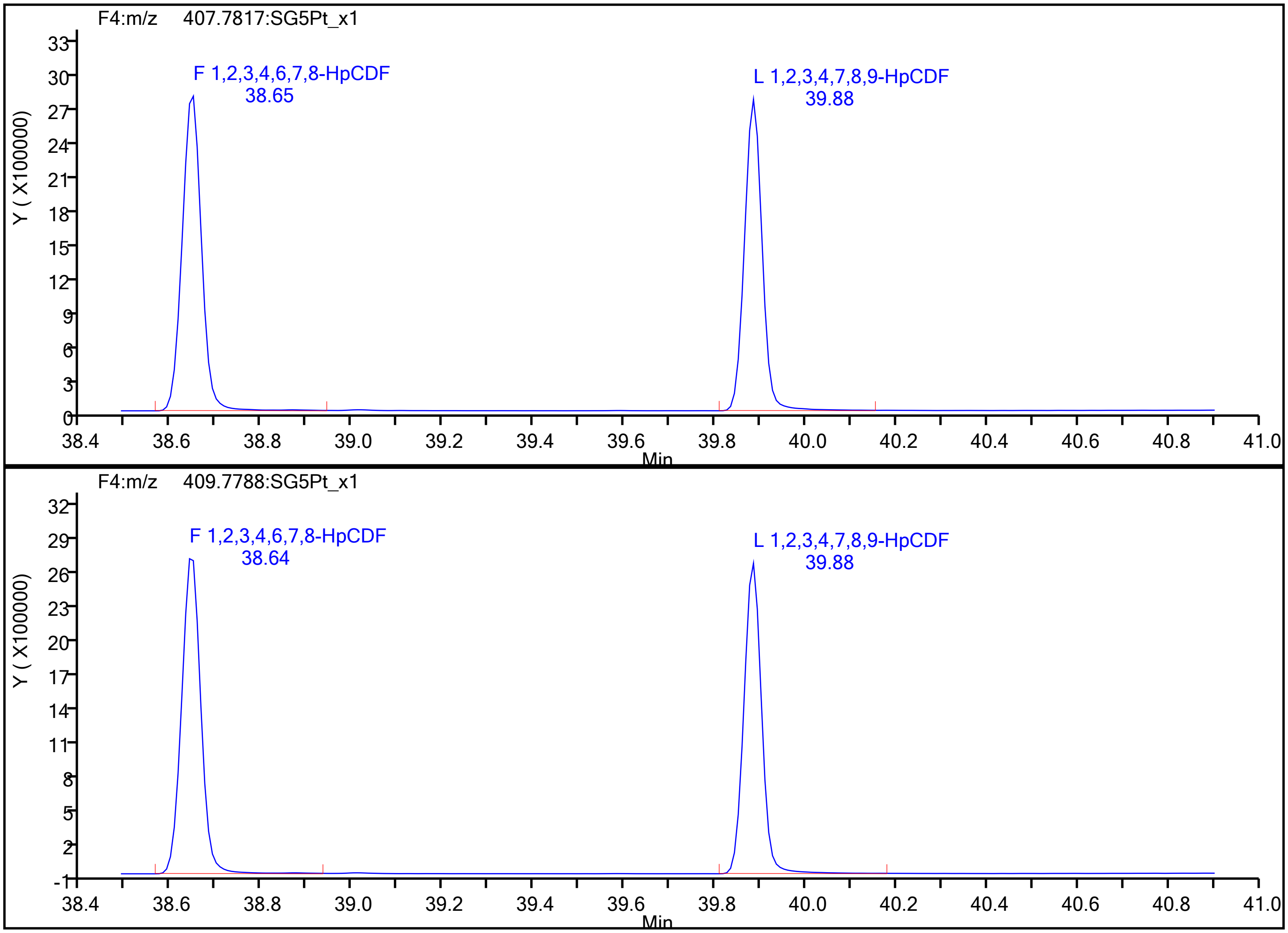

HpCDF Interference Mass

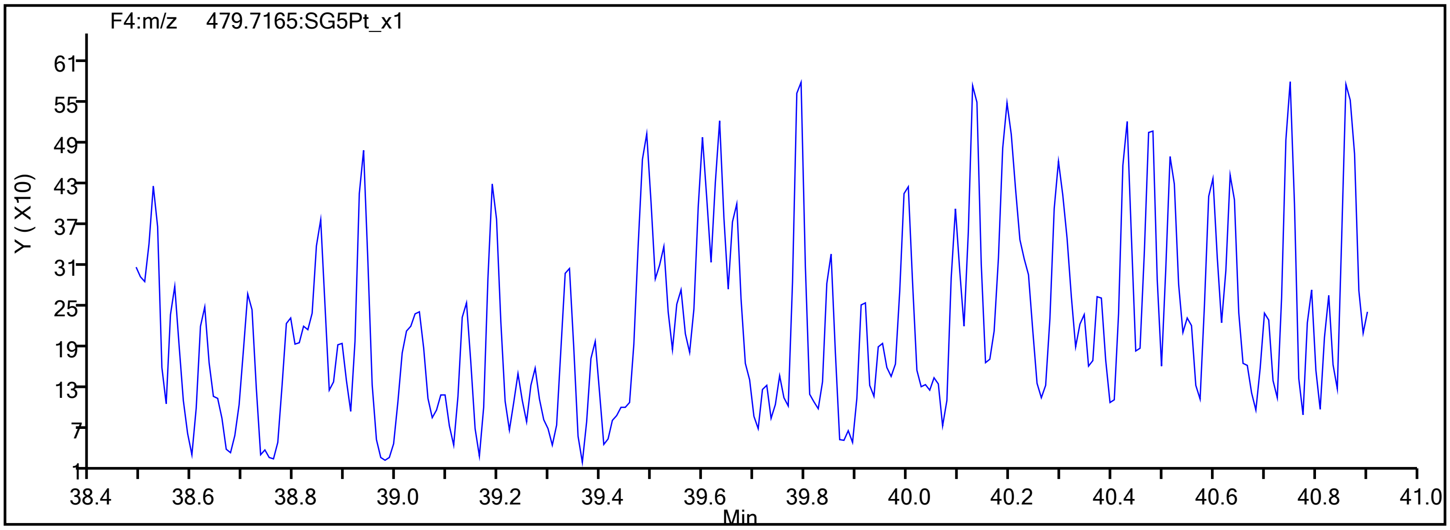

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Eurofins TestAmerica, Sacramento

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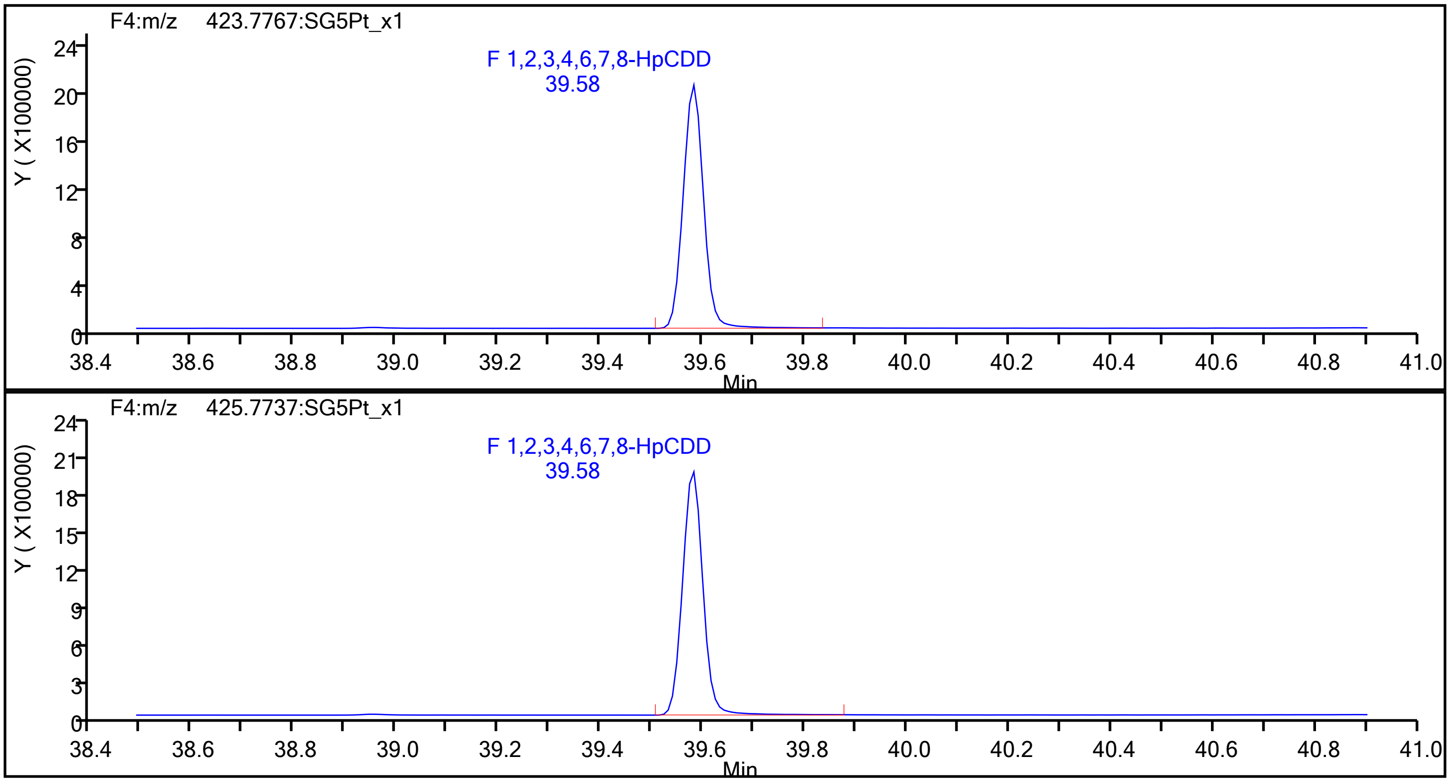

HpCDD Standards

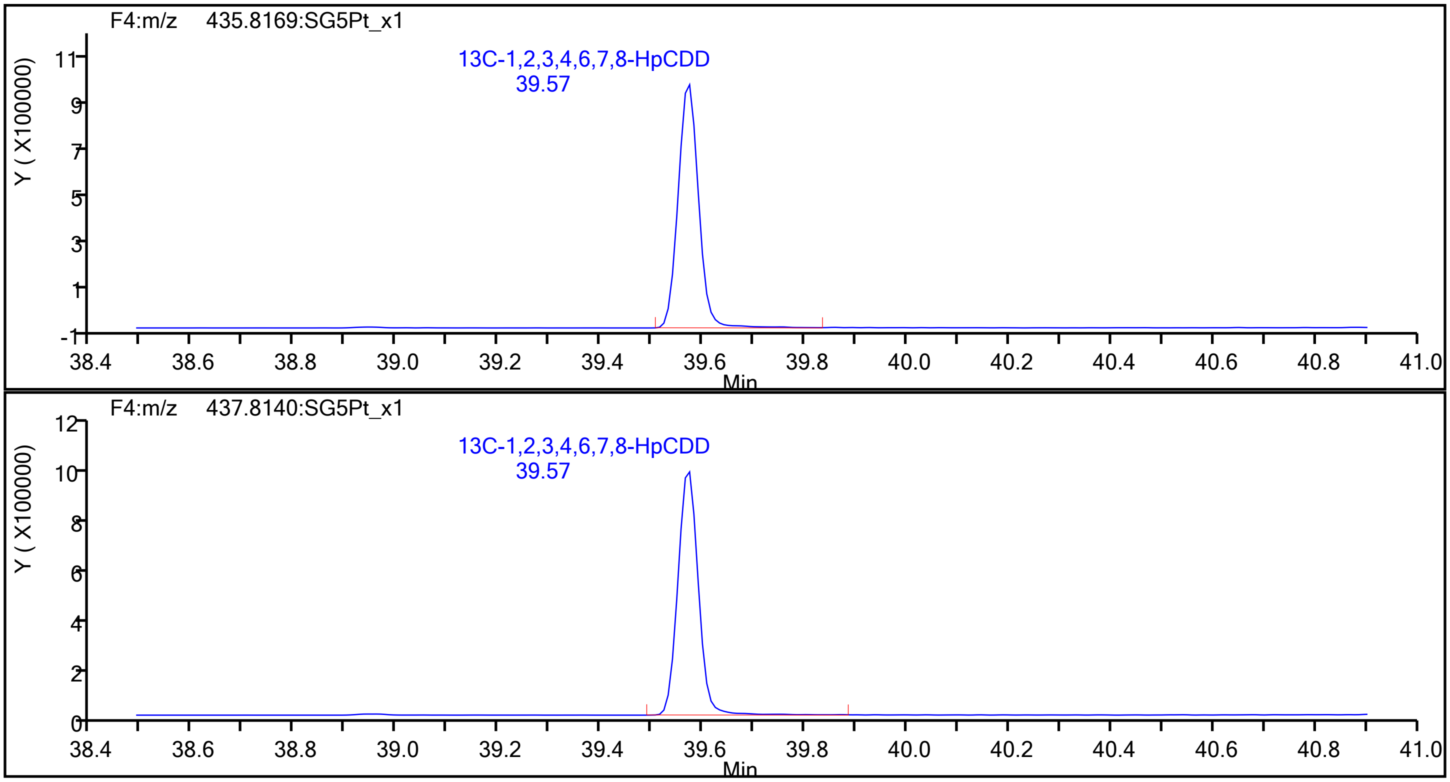

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OCDF

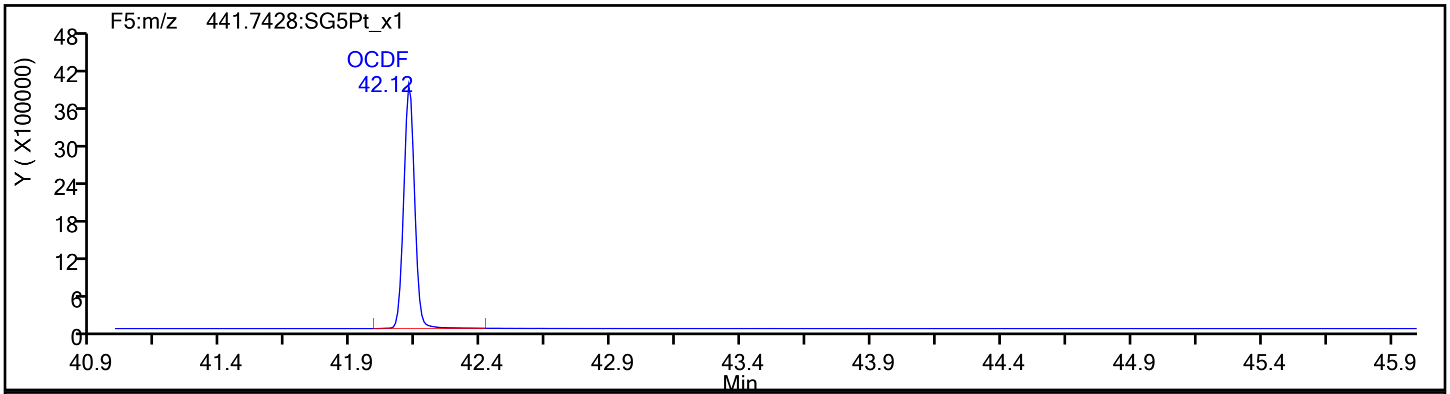

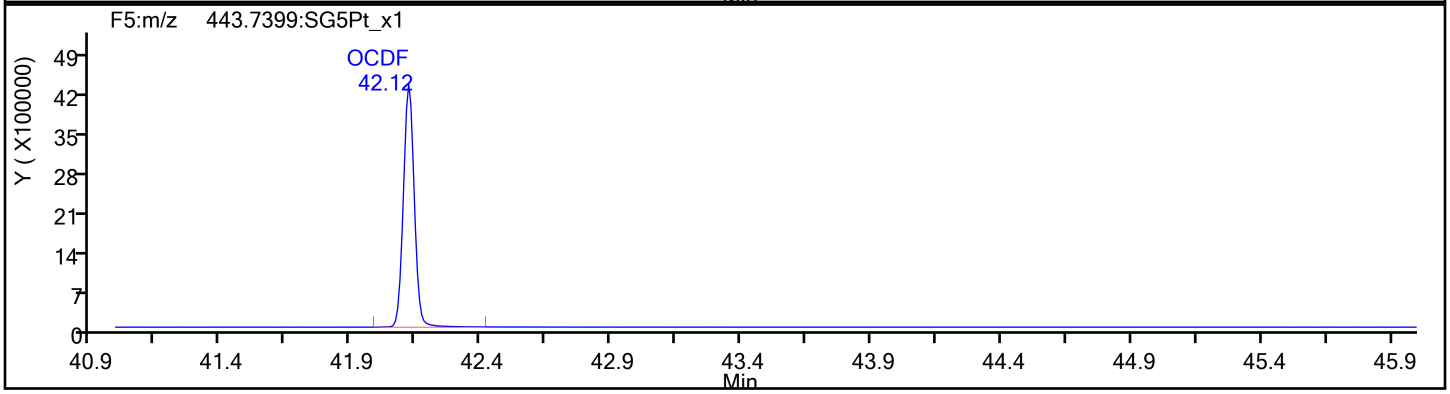

OCDF Standards

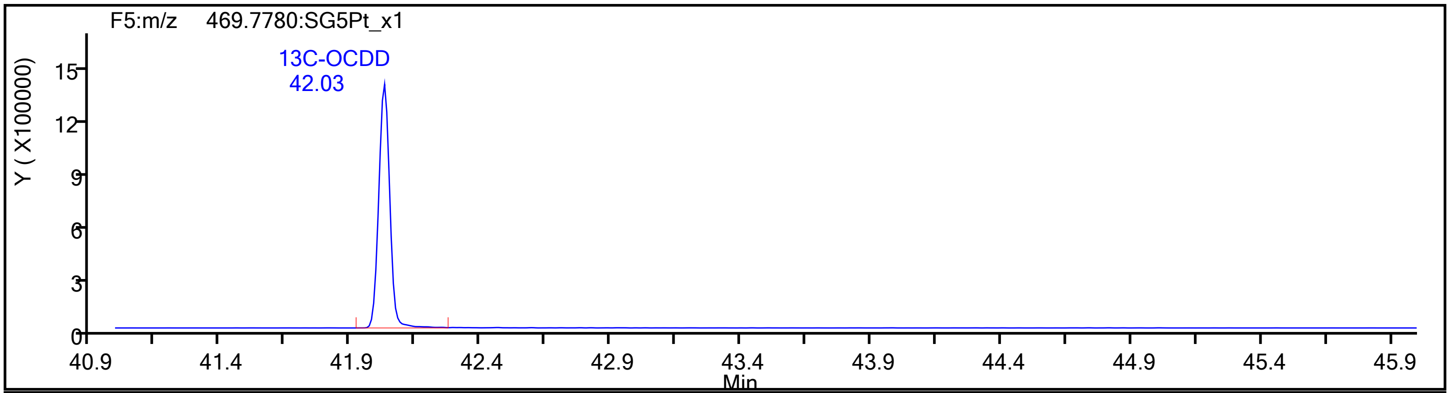

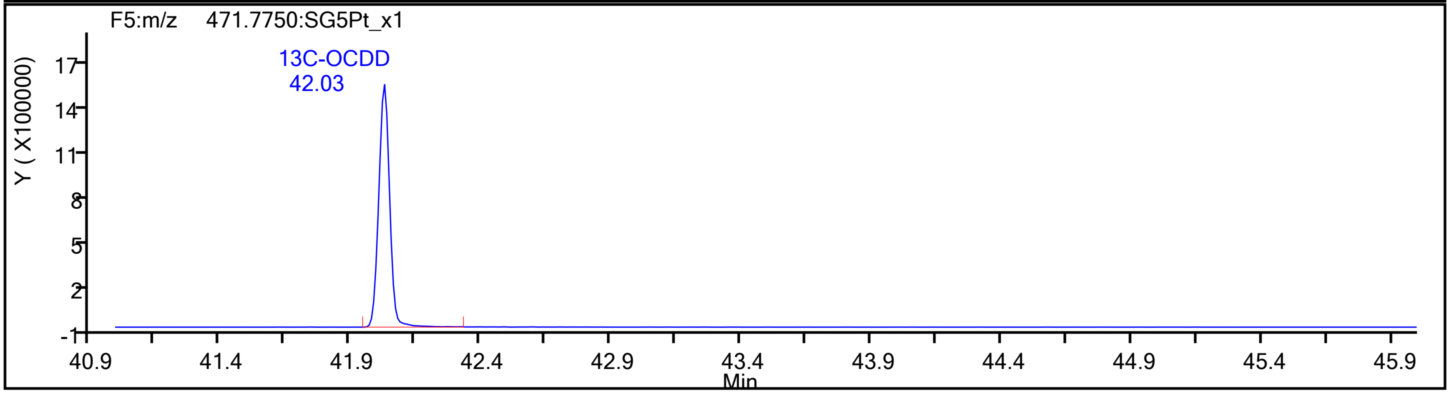

Report Date: 05-Jun-2020 10:11:43 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d		
Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

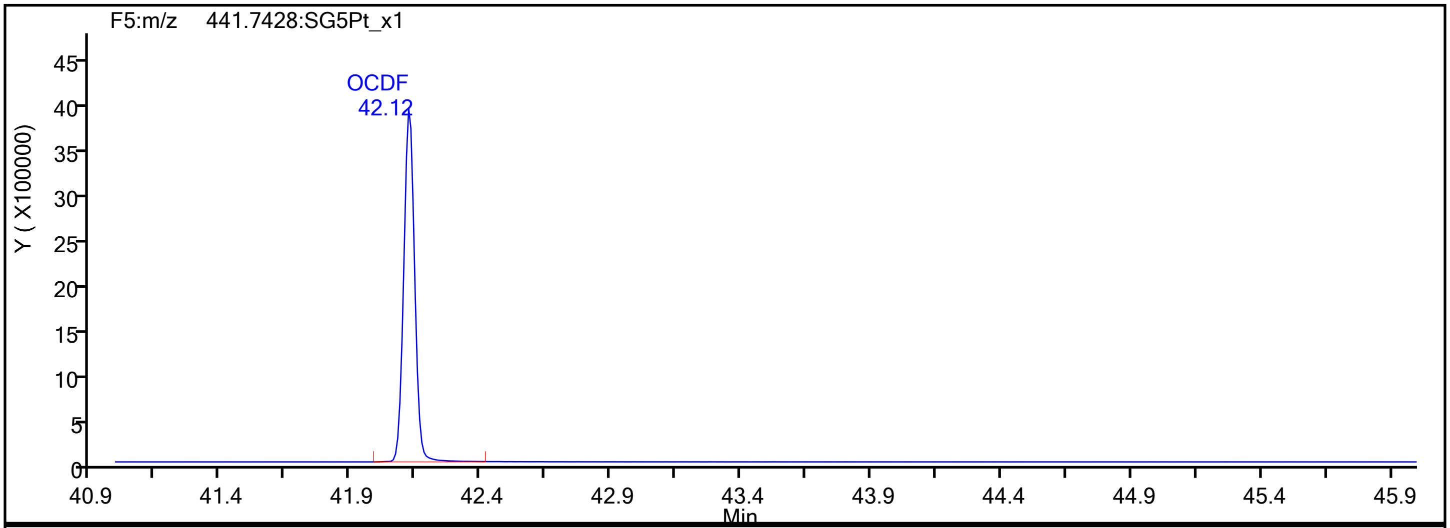

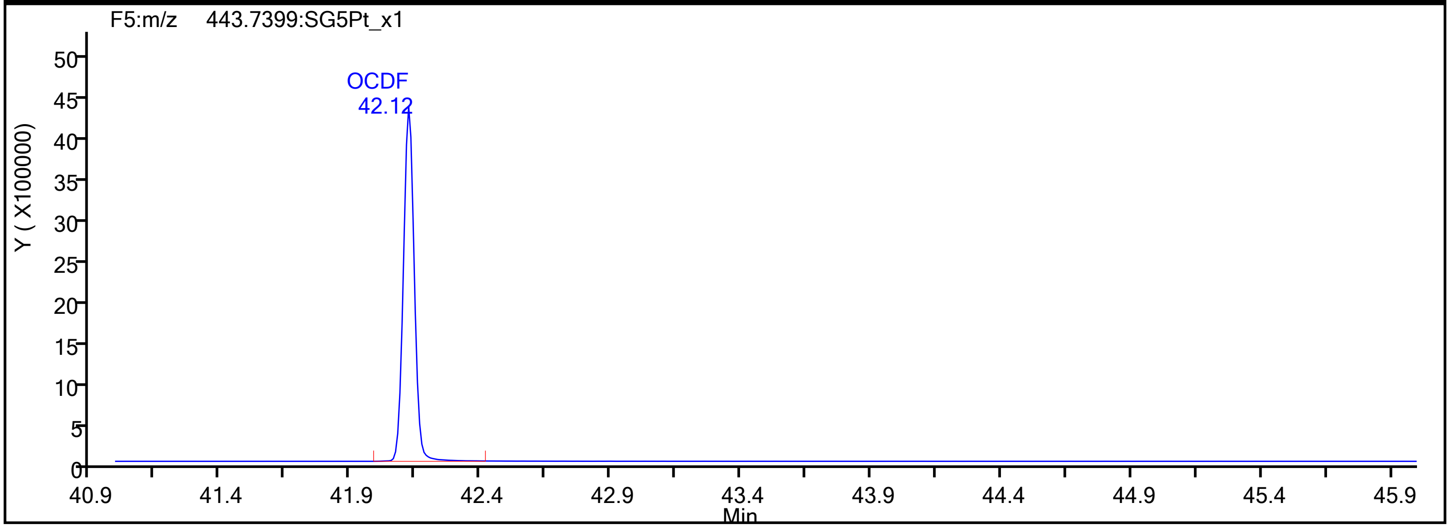

OCDF Interference Mass

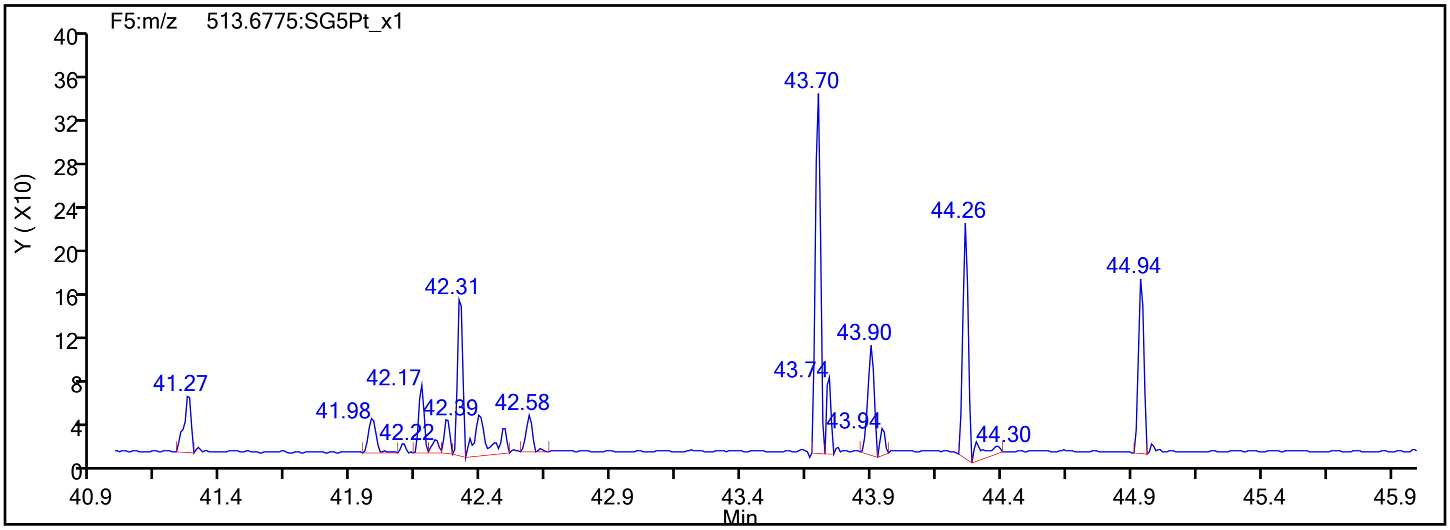

Report Date: 05-Jun-2020 10:11:43 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d		
Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

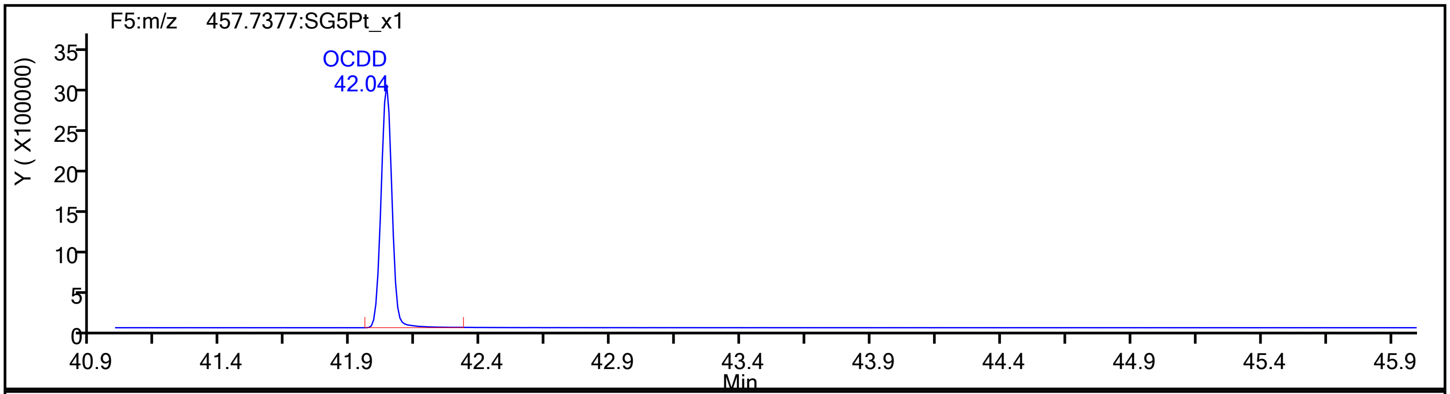

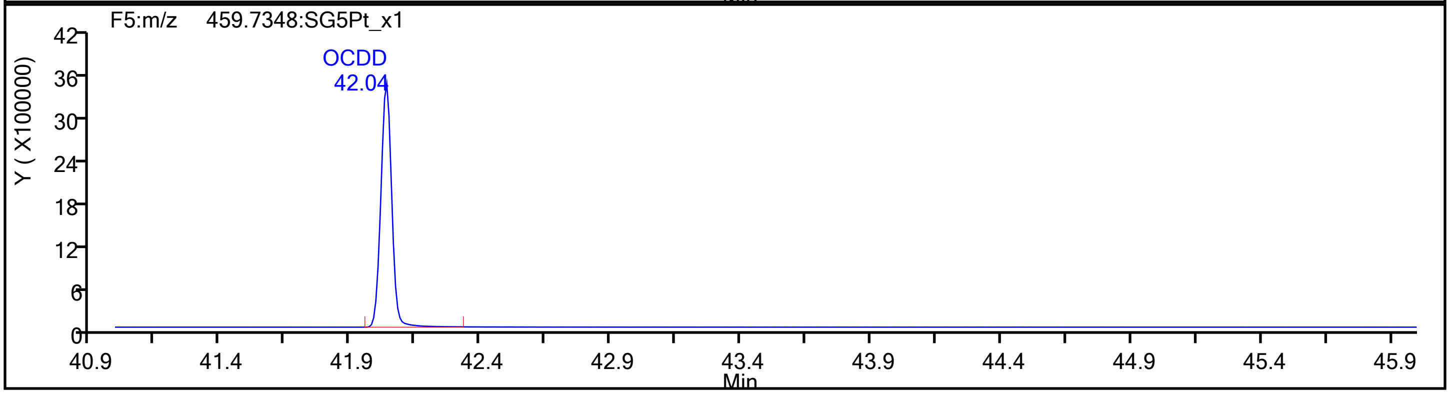

OCDD Standards

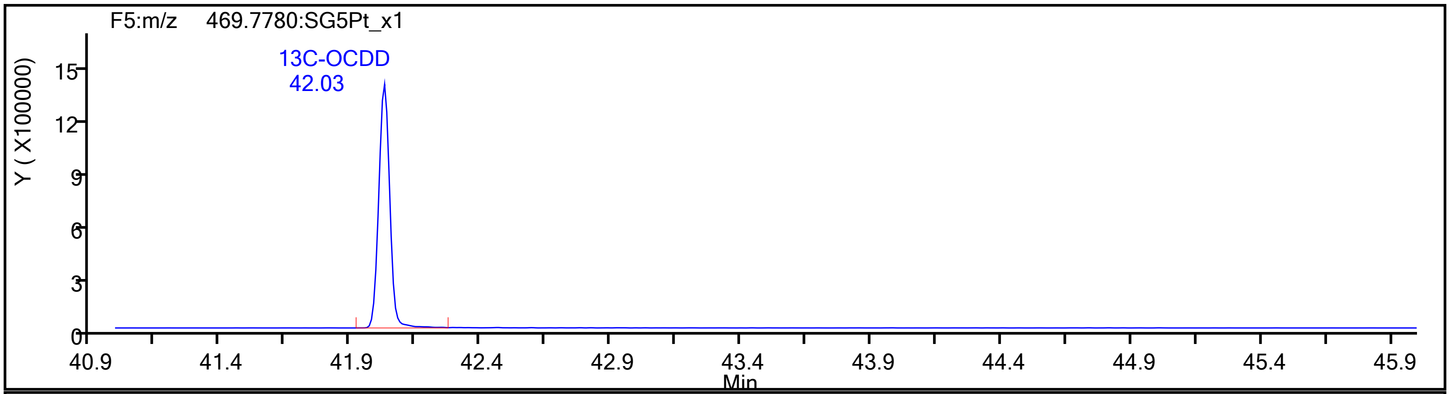

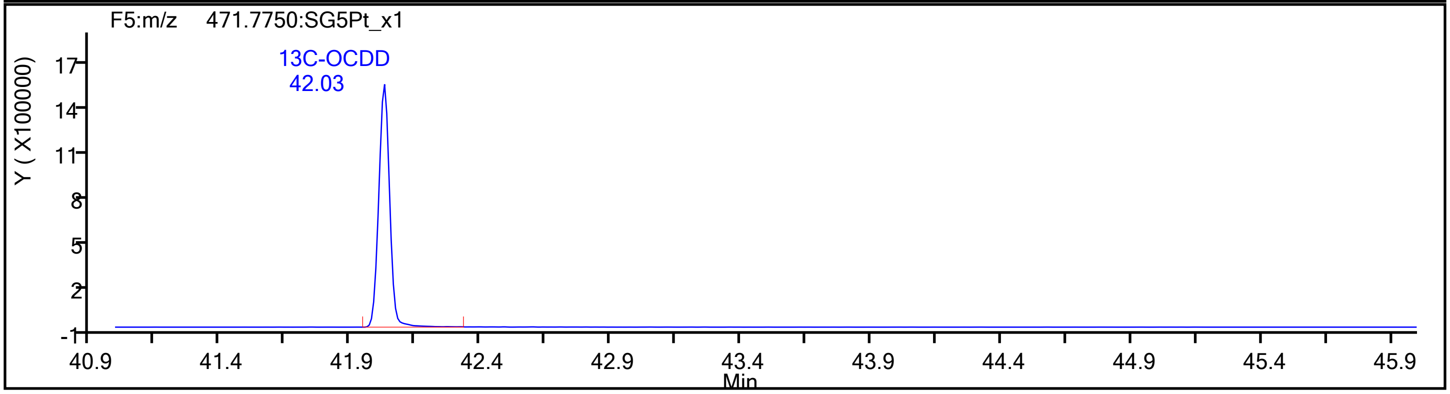

Report Date: 05-Jun-2020 10:11:43 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d		
Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

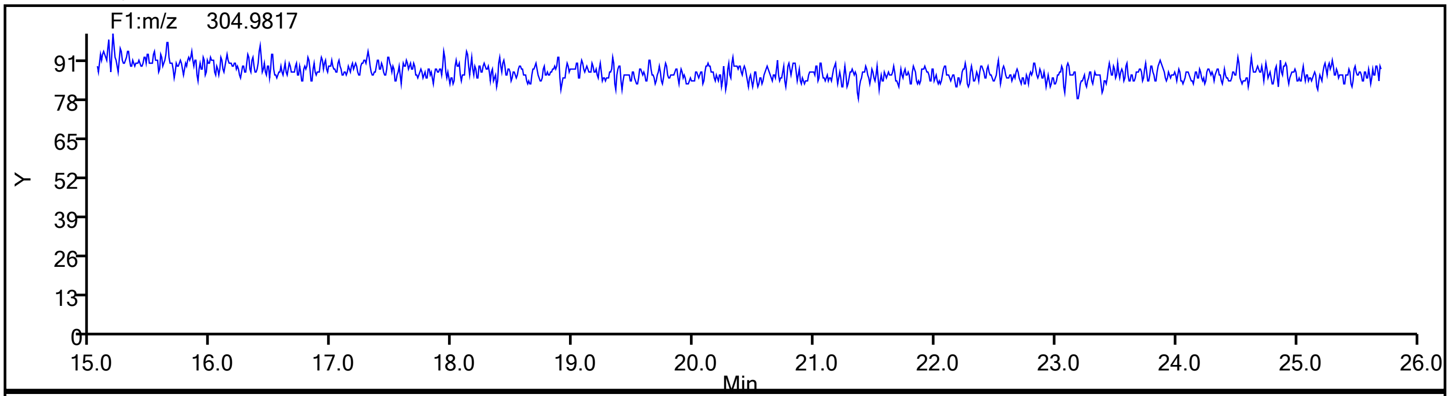

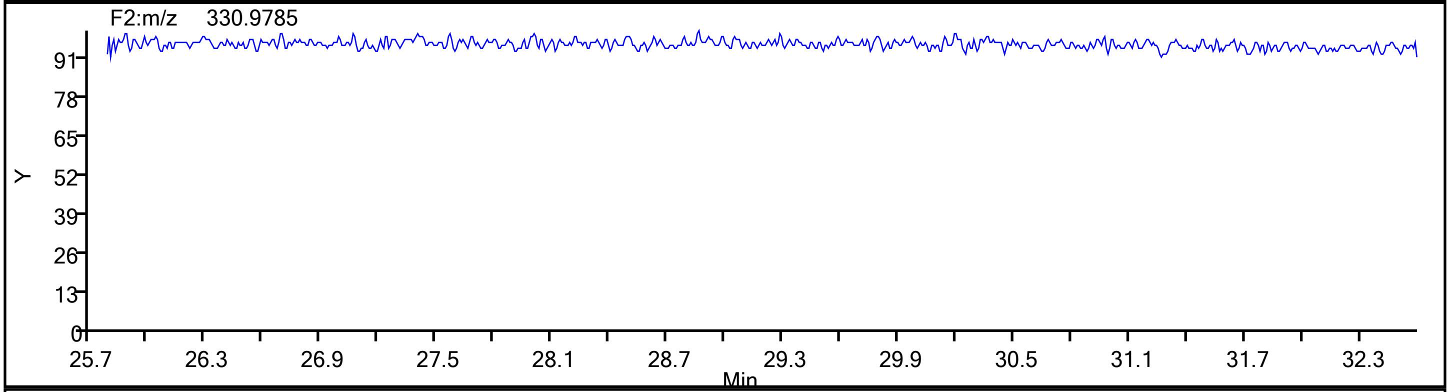

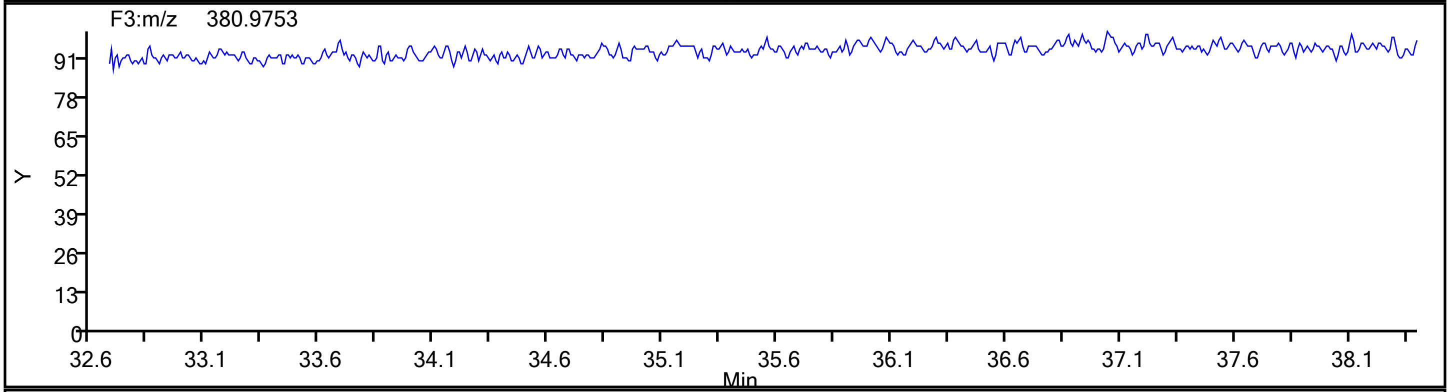

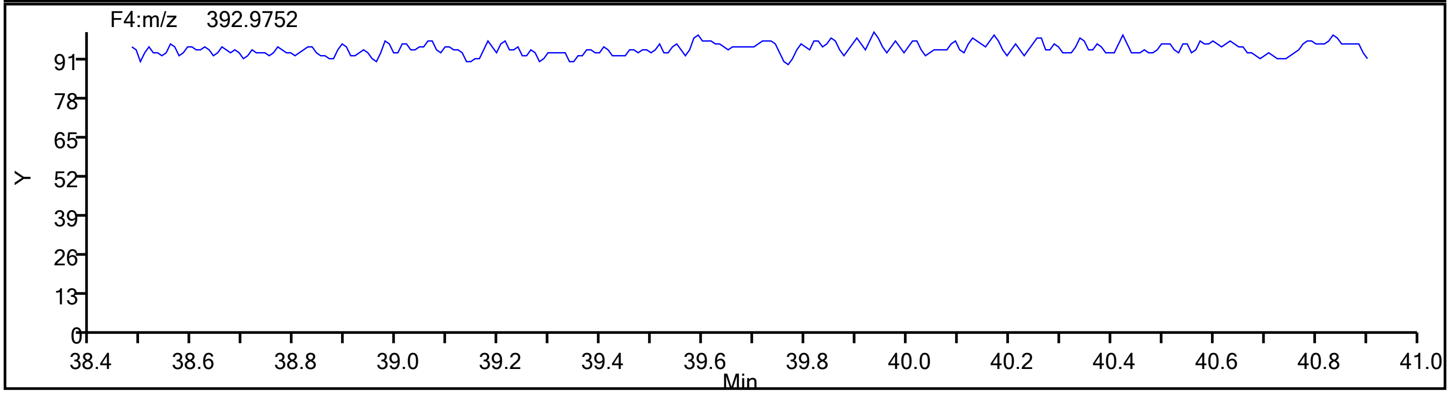

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_8.d		
Injection Date:	03-Jun-2020 17:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

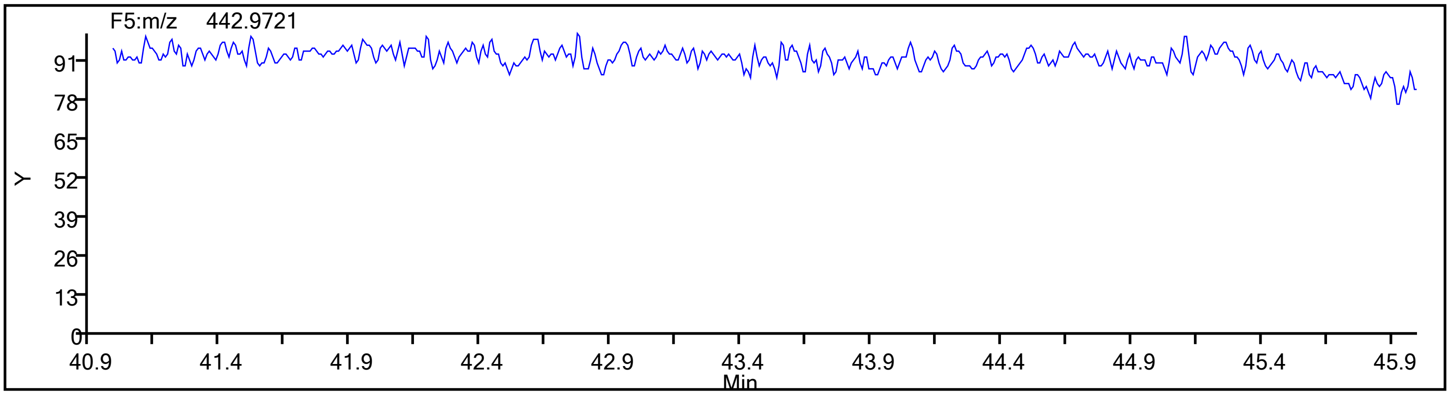

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 03-Jun-2020 18:06:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:11:45 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 05-Jun-2020 10:10:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.324	6149174	0.81	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.334	9303208	0.82	1.4977	101.0	101.0	0.2677	0.2677	101	
2,3,7,8-TCDF	20.360	19184180	0.79	1.1312	182.3	182.3	0.1943	0.1943	91.14	
S Total TCDF					182.3	182.3	0.1943	0.1943		
D 13C-2,3,7,8-TCDD	21.703	6461409	0.78	1.0367	101.4	101.4	0.1880	0.1880	101	
2,3,7,8-TCDD	21.728	14273681	0.78	1.1849	186.4	186.4	0.1284	0.1284	93.22	
$ 37Cl4-2,3,7,8-TCDD	21.737	13821356		1.1208	200.5	200.5	0.0959	0.0959	100	
S Total TCDD					186.4	186.4	0.1284	0.1284		
D 13C-1,2,3,7,8-PeCDF	27.310	8594514	1.59	1.3057	107.0	107.0	0.3711	0.3711	107	
1,2,3,7,8-PeCDF	27.335	88211420	1.59	1.1060	928.0	928.0	2.287	2.287	92.80	
D 13C-2,3,4,7,8-PeCDF	28.850	10203149	1.58	1.5420	107.6	107.6	0.3142	0.3142	108	
2,3,4,7,8-PeCDF	28.867	85577950	1.58	0.9067	925.1	925.1	2.564	2.564	92.51	
S Total PeCDF					1853.1	1853.1	2.426	2.426		
D 13C-1,2,3,7,8-PeCDD	29.667	5502316	1.60	0.8294	107.9	107.9	0.1212	0.1212	108	
1,2,3,7,8-PeCDD	29.692	55777410	1.57	1.1062	916.4	916.4	0.4208	0.4208	91.64	
S Total PeCDD					916.4	916.4	0.4208	0.4208		
D 13C-1,2,3,4,7,8-HxCDF	34.996	9039472	0.54	1.4619	98.8	98.8	0.2053	0.2053	98.77	
1,2,3,4,7,8-HxCDF	35.013	85729058	1.27	1.0087	940.2	940.2	2.476	2.476	94.02	
D 13C-1,2,3,6,7,8-HxCDF	35.156	8024539	0.53	1.2866	99.6	99.6	0.2333	0.2333	99.63	
1,2,3,6,7,8-HxCDF	35.173	93685181	1.24	1.2432	939.1	939.1	2.347	2.347	93.91	
D 13C-2,3,4,6,7,8-HxCDF	35.972	7543852	0.53	1.1988	100.5	100.5	0.2504	0.2504	101	
2,3,4,6,7,8-HxCDF	35.989	89484473	1.25	1.2736	931.4	931.4	2.133	2.133	93.14	
D 13C-1,2,3,7,8,9-HxCDF	36.856	6673211	0.53	1.0687	99.7	99.7	0.2809	0.2809	99.75	
1,2,3,7,8,9-HxCDF	36.872	81359736	1.26	1.2882	946.4	946.4	2.157	2.157	94.64	
S Total HxCDF					3757.2	3757.2	2.278	2.278		
* 13C-1,2,3,7,8,9-HxCDD	36.662	6260289	1.26	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.182	6883032	1.26	1.1046	99.5	99.5	0.1253	0.1253	99.53	
1,2,3,4,7,8-HxCDD	36.199	58816794	1.28	0.9336	915.3	915.3	0.9319	0.9319	91.53	
D 13C-1,2,3,6,7,8-HxCDD	36.300	6200617	1.26	0.9871	100.3	100.3	0.1402	0.1402	100	
1,2,3,6,7,8-HxCDD	36.309	61432617	1.24	1.0802	917.2	917.2	0.8849	0.8849	91.72	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.679	63998716	1.25	1.0574	925.2	925.2	0.8615	0.8615	92.52	
S Total HxCDD					2757.6	2757.6	0.8928	0.8928		
D 13C-1,2,3,4,6,7,8-HpCDF	38.652	5694573	0.46	0.9035	100.7	100.7	0.3319	0.3319	101	
1,2,3,4,6,7,8-HpCDF	38.660	87355855	1.04	1.5957	961.4	961.4	2.491	2.491	96.14	
D 13C-1,2,3,4,7,8,9-HpCDF	39.889	6788271	0.46	1.0480	103.5	103.5	0.2862	0.2862	103	
1,2,3,4,7,8,9-HpCDF	39.898	75677908	1.04	1.1693	953.4	953.4	2.608	2.608	95.34	
S Total HpCDF					1914.8	1914.8	2.550	2.550		
D 13C-1,2,3,4,6,7,8-HpCDD	39.586	5661728	1.05	0.8875	101.9	101.9	0.2156	0.2156	102	
1,2,3,4,6,7,8-HpCDD	39.595	58798928	1.04	1.1150	931.4	931.4	1.392	1.392	93.14	
S Total HpCDD					931.4	931.4	1.392	1.392		
D 13C-OCDD	42.042	8603138	0.90	0.6297	218.2	218.2	0.1414	0.1414	109	
OCDF	42.144	129322802	0.89	1.4809	2030.1	2030.1	0.5493	0.5493	102	
OCDD	42.051	98819349	0.88	1.1948	1922.8	1922.8	0.7094	0.7094	96.14	

Reagents:

HRDXNL6_00026 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	03-Jun-2020 18:06:00	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	05-Jun-2020 10:11:45	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1030				
First Level Reviewer: stephensk		Date:	05-Jun-2020 10:10:20		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.324	21.309	1		2752172	384691	484	1210	795		
333.9338	21.324	21.309	1		3397002	482564	192	480	2513	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.334	20.321	1	0.954	4194069	629371	712	1780	884		
317.9389	20.334	20.321	1	0.954	5109139	793092	679	1697	1168	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.360	20.347	1	1.001	8444062	1235511	543	1357	2275		
305.8987	20.360	20.347	1	1.001	10740118	1566762	708	1770	2213	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.703	21.692	1	1.018	2837141	394858	484	1210	816		
333.9338	21.703	21.692	1	1.018	3624268	500345	192	480	2606	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.728	21.722	0	1.001	6232967	868807	275	687	3159		
321.8936	21.728	21.722	0	1.001	8040714	1093877	270	675	4051	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.737	21.724	1	1.019	13821356	1875473	373	932	5028		
13C-1,2,3,7,8-PeCDF											
351.9000	27.310	27.300	1	1.281	5274212	863845	973	2432	888		
353.8970	27.318	27.300	1	1.281	3320302	542409	708	1770	766	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.335	27.325	1	1.001	54107852	9014376	8708	21770	1035		
341.8567	27.335	27.325	1	1.001	34103568	5623120	5521	13802	1018	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.850	28.834	1	1.353	6247378	939778	973	2432	966		
353.8970	28.842	28.834	0	1.353	3955771	590146	708	1770	834	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.867	28.857	1	1.001	52415488	8204138	8708	21770	942		
341.8567	28.867	28.857	1	1.001	33162462	5132922	5521	13802	930	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.667	29.651	1	1.391	3389280	484137	209	522	2316		
369.8919	29.667	29.651	1	1.391	2113036	298228	140	350	2130	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.692	29.682	1	1.001	34073880	5054260	905	2262	5585		
357.8516	29.692	29.682	1	1.001	21703530	3178691	552	1380	5758	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.996	34.982	1	0.955	3183853	716531	719	1797	997		
385.8610	34.996	34.982	1	0.955	5855619	1336595	1361	3402	982	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.013	35.000	1	1.000	47974937	11403179	11452	28630	996		
375.8178	35.013	35.000	1	1.000	37754121	8941908	9062	22655	987	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.156	35.145	1	0.959	2767155	617033	719	1797	858		
385.8610	35.156	35.145	1	0.959	5257384	1140608	1361	3402	838	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.173	35.163	1	1.000	51919333	12149468	11452	28630	1061		
375.8178	35.173	35.163	1	1.000	41765848	9624081	9062	22655	1062	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.972	35.966	0	0.981	2619635	658867	719	1797	916		
385.8610	35.972	35.966	0	0.981	4924217	1228924	1361	3402	903	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.989	35.981	0	1.000	49658819	13234191	11452	28630	1156		
375.8178	35.989	35.981	0	1.000	39825654	10593498	9062	22655	1169	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.856	36.848	0	1.005	2308524	641159	719	1797	892		
385.8610	36.856	36.848	0	1.005	4364687	1204518	1361	3402	885	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.872	36.862	1	1.000	45393077	12710822	11452	28630	1110		
375.8178	36.872	36.862	1	1.000	35966659	10020211	9062	22655	1106	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.662	36.653	1		3488279	964837	562	1405	1717		
403.8529	36.662	36.653	1		2772010	767432	397	992	1933	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.182	36.173	1	0.987	3838925	1005153	562	1405	1789		
403.8529	36.182	36.173	1	0.987	3044107	801551	397	992	2019	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.199	36.187	1	1.000	33016057	9081328	3451	8627	2632		
391.8127	36.199	36.187	1	1.000	25800737	7128397	2837	7092	2513	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.300	36.291	1	0.990	3455058	919331	562	1405	1636		
403.8529	36.300	36.291	1	0.990	2745559	725362	397	992	1827	1.26(1.05-1.43)	

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.309	36.304	0	1.000	33982400	9257064	3451	8627	2682		
391.8127	36.309	36.304	0	1.000	27450217	7346182	2837	7092	2589	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.679	36.669	1	1.014	35607948	10101089	3451	8627	2927		
391.8127	36.670	36.669	0	1.013	28390768	8053038	2837	7092	2839	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.652	38.640	1	1.054	1793007	606559	767	1917	791		
419.8220	38.652	38.640	1	1.054	3901566	1300112	1311	3277	992	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.660	38.655	0	1.000	44493921	15464239	15466	38665	1000		
409.7788	38.660	38.655	0	1.000	42861934	14834081	14855	37137	999	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.889	39.885	0	1.088	2137708	783032	767	1917	1021		
419.8220	39.889	39.885	0	1.088	4650563	1702985	1311	3277	1299	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.898	39.893	0	1.000	38589368	14686761	15466	38665	950		
409.7788	39.898	39.893	0	1.000	37088540	14171025	14855	37137	954	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.586	39.582	0	1.080	2898102	1055495	684	1710	1543		
437.8140	39.586	39.582	0	1.080	2763626	1018564	642	1605	1587	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.595	39.590	0	1.000	30028589	11189281	6616	16540	1691		
425.7737	39.595	39.590	0	1.000	28770339	10751370	6256	15640	1719	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.042	42.035	0	1.147	4082304	1387130	350	875	3963		
471.7750	42.042	42.035	0	1.147	4520834	1526949	267	667	5719	0.90(0.76-1.02)	
OCDF											
441.7428	42.144	42.131	1	1.002	61049674	20950450	2235	5587	9374		
443.7399	42.135	42.131	0	1.002	68273128	23618026	2506	6265	9425	0.89(0.76-1.02)	
OCDD											
457.7377	42.051	42.043	0	1.000	46267287	16472709	2429	6072	6782		
459.7348	42.051	42.043	0	1.000	52552062	18921931	2511	6277	7536	0.88(0.76-1.02)	

Reagents:

HRDXNL6_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

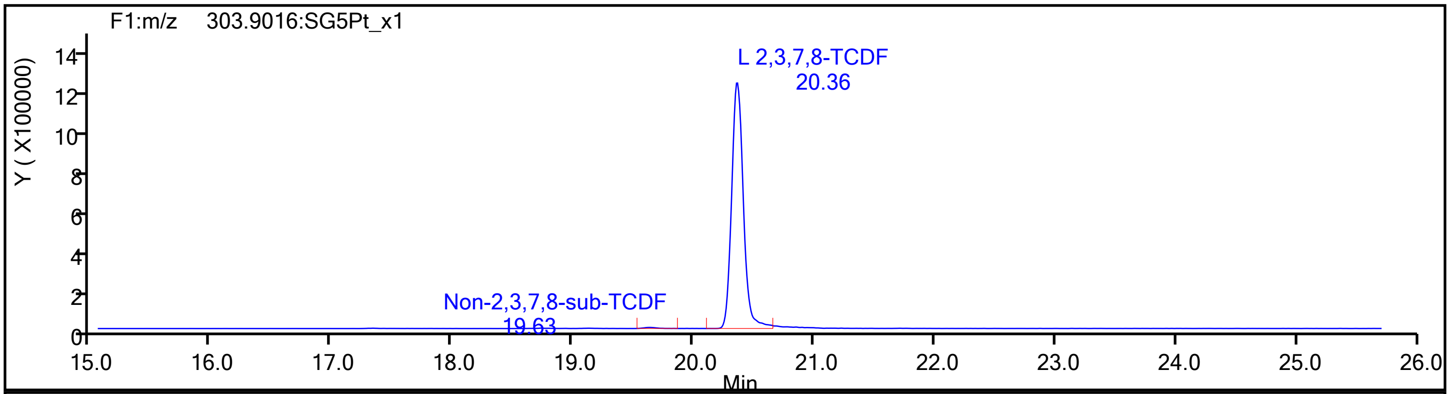

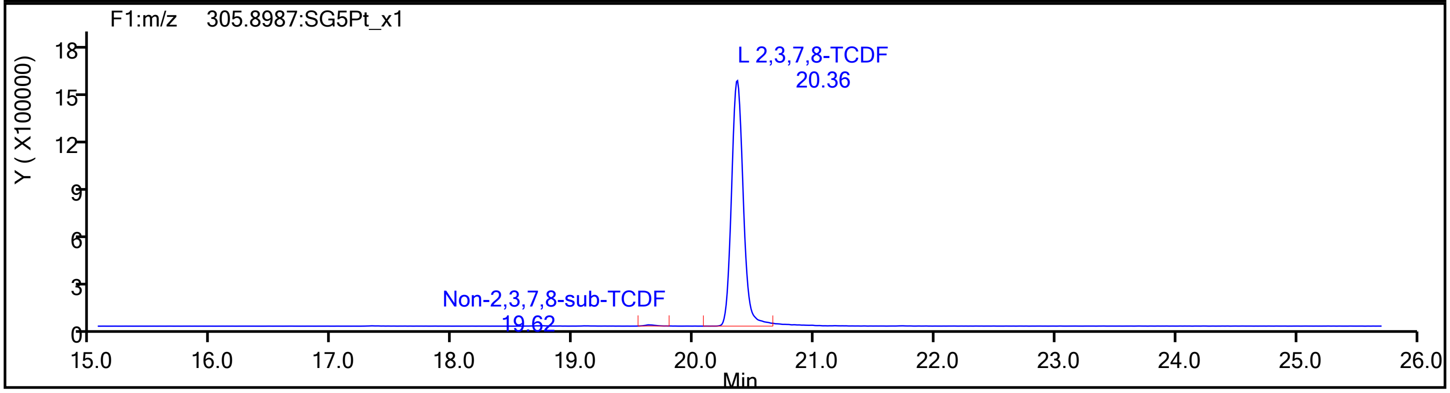

TCDF Standards

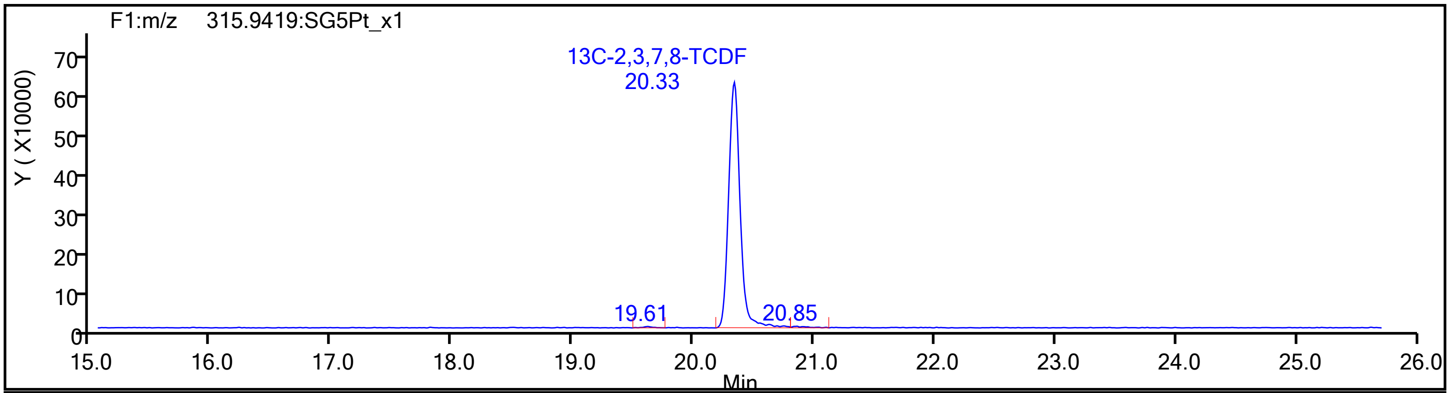

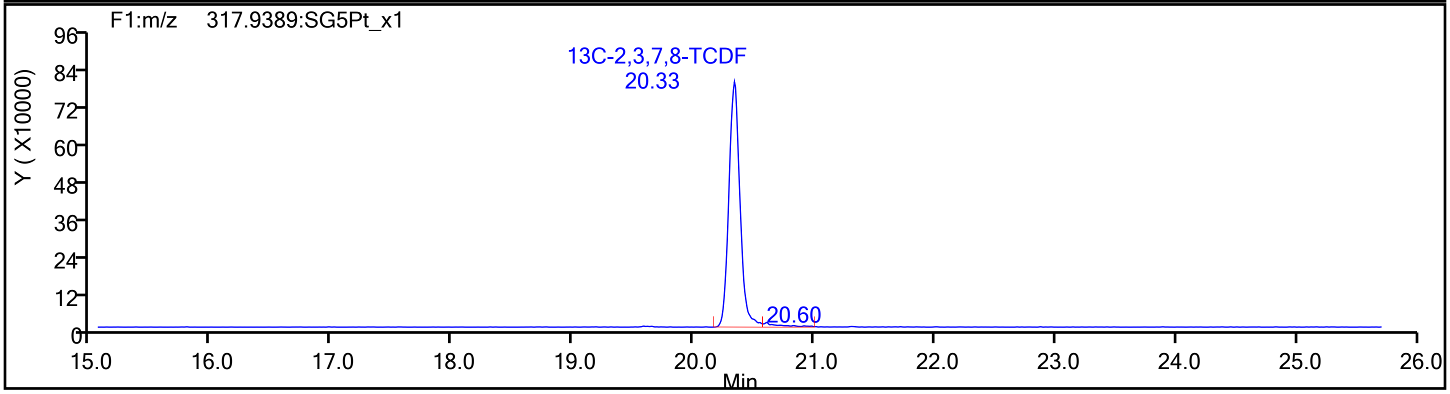

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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TCDF

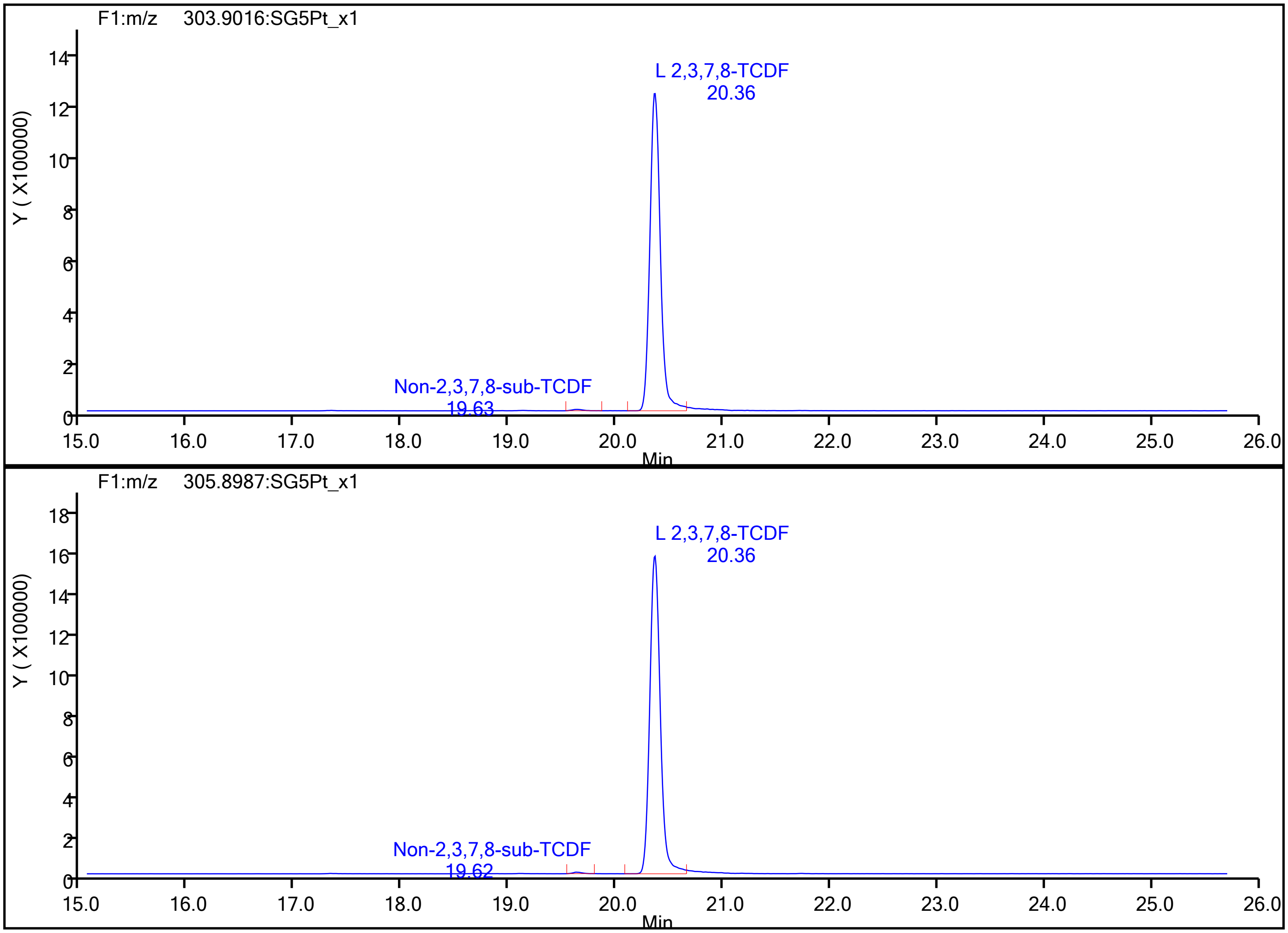

TCDF Interference Mass

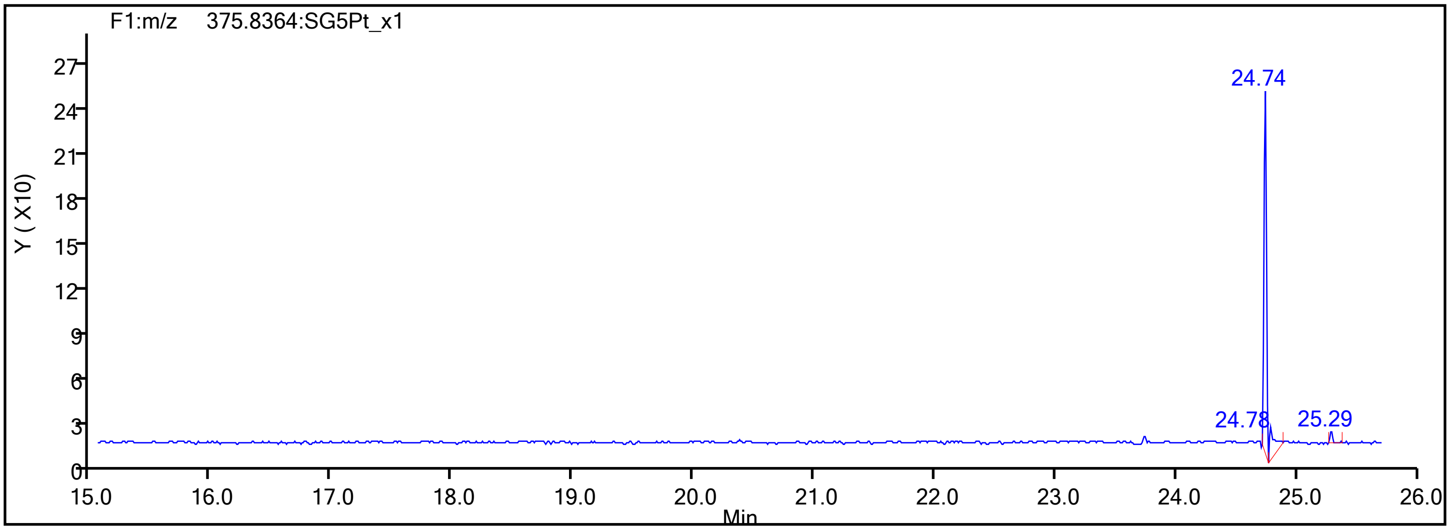

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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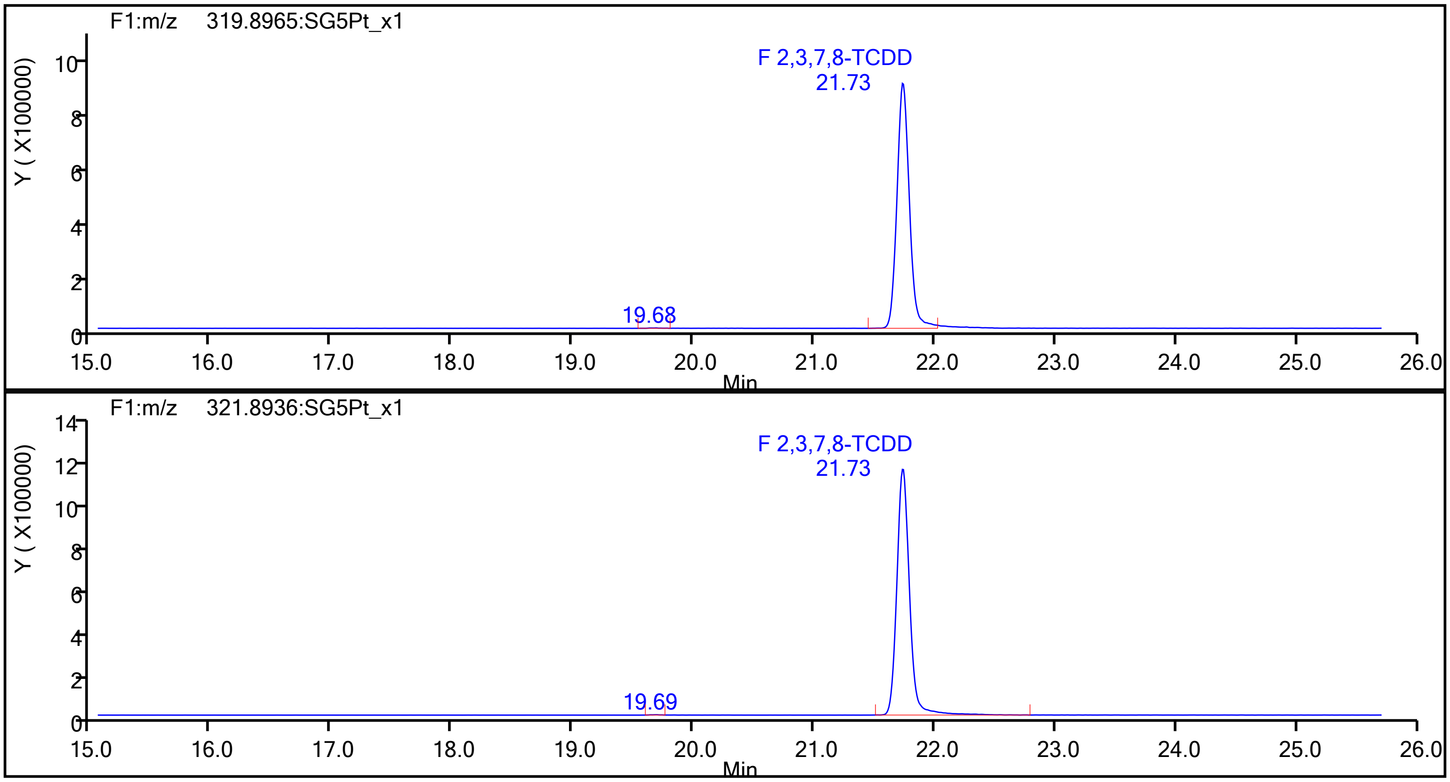

TCDD Standards

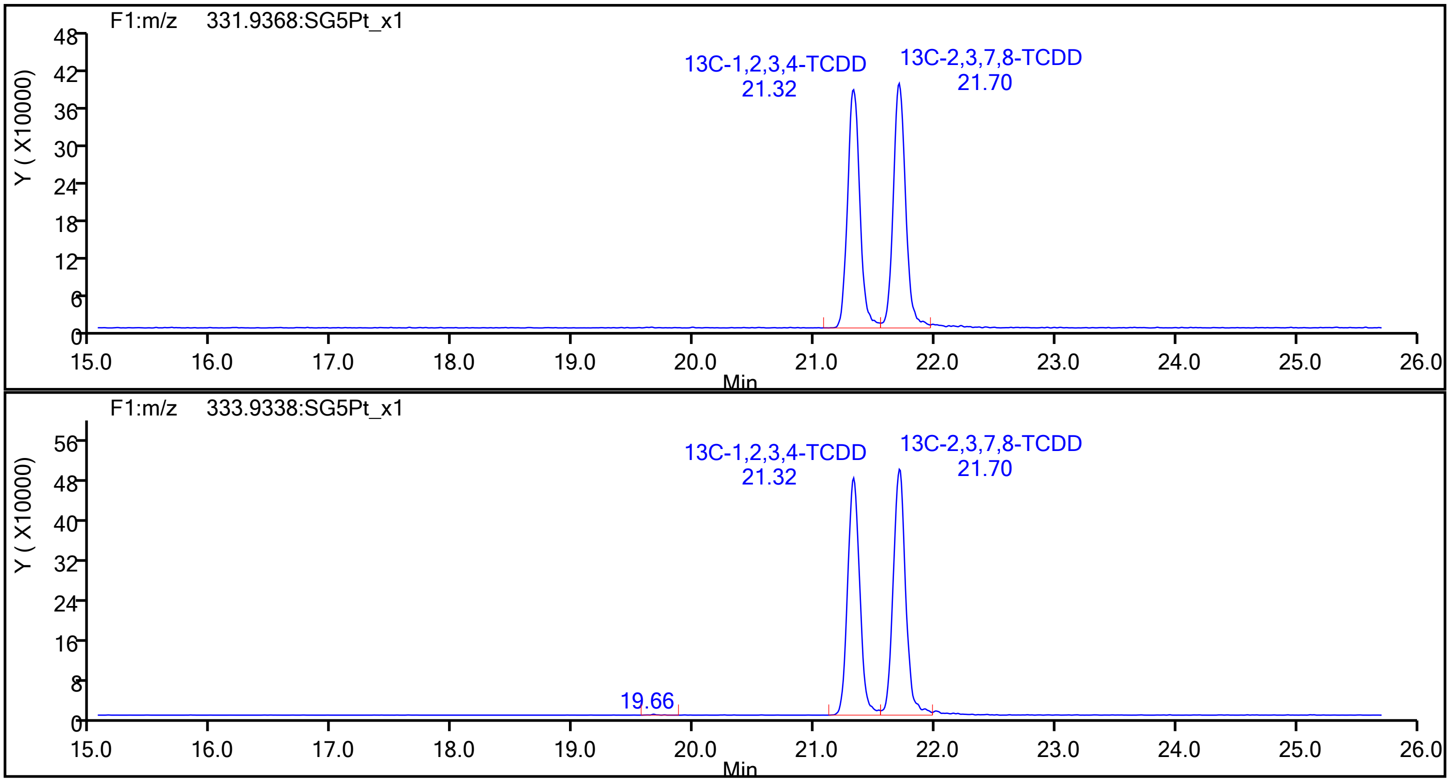

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

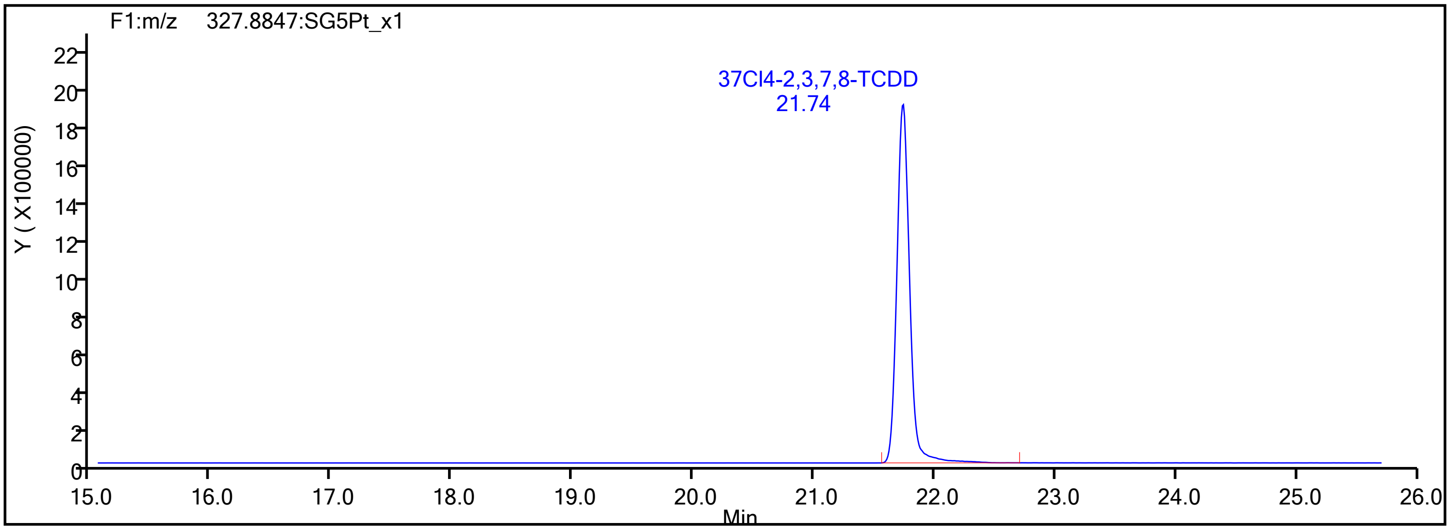

37Cl4-TCDD Standards

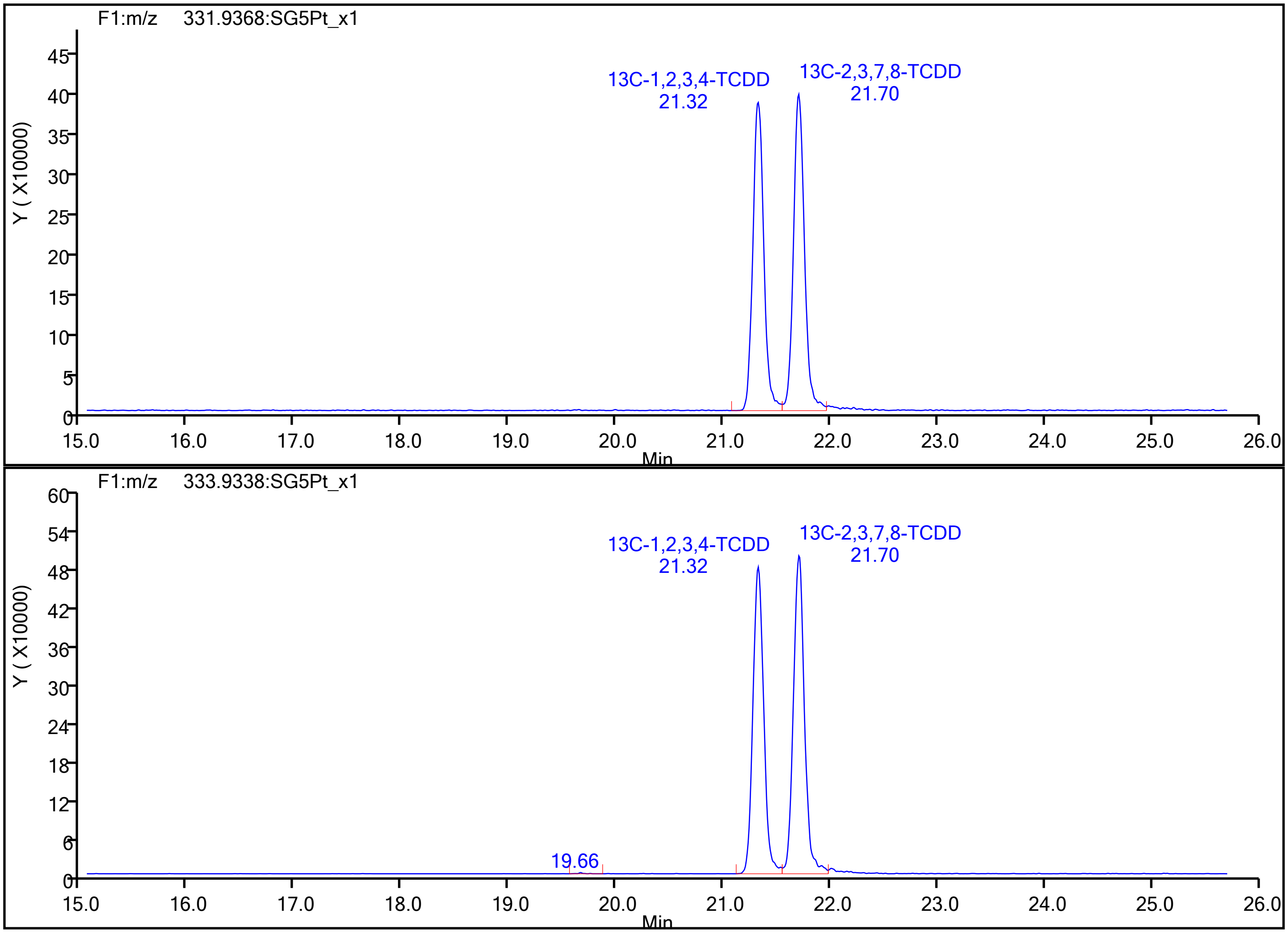

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

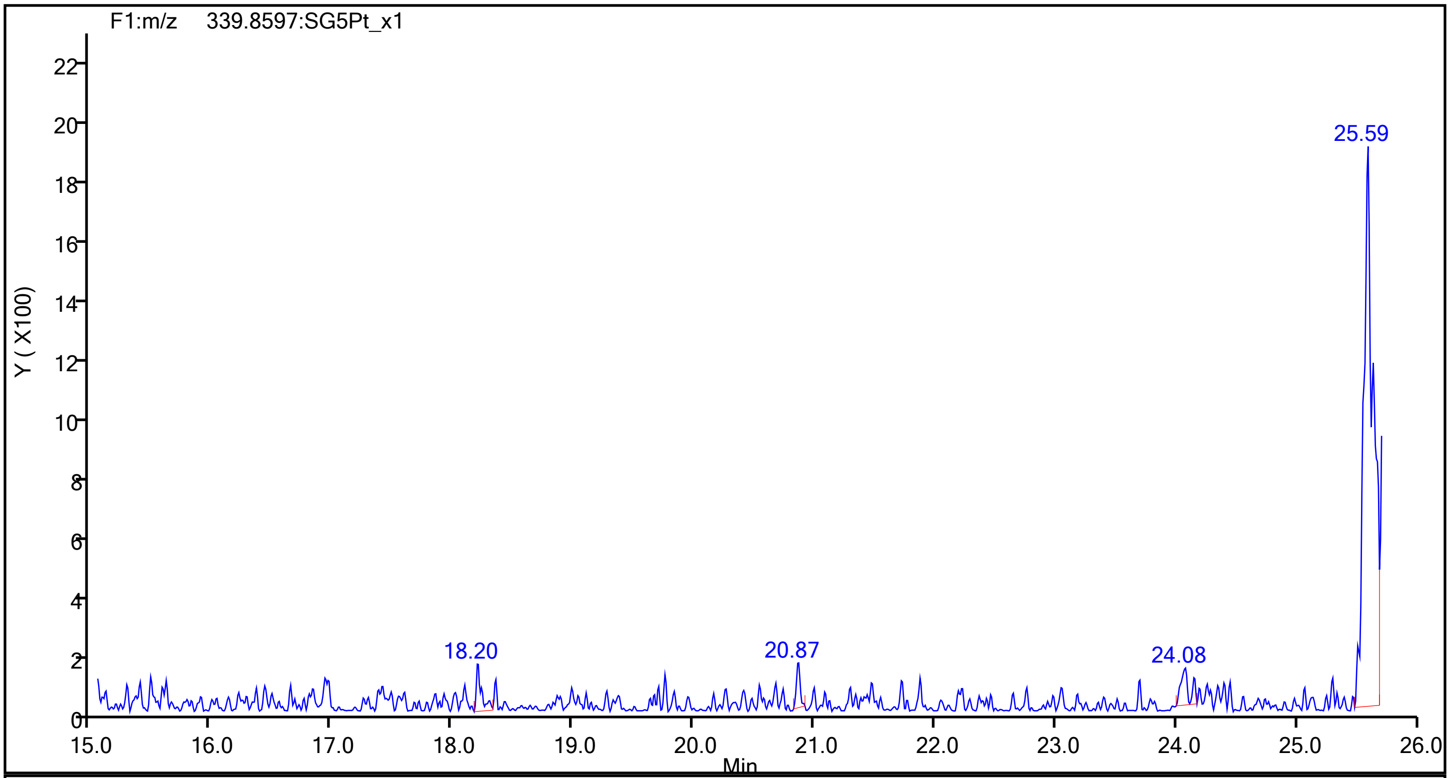

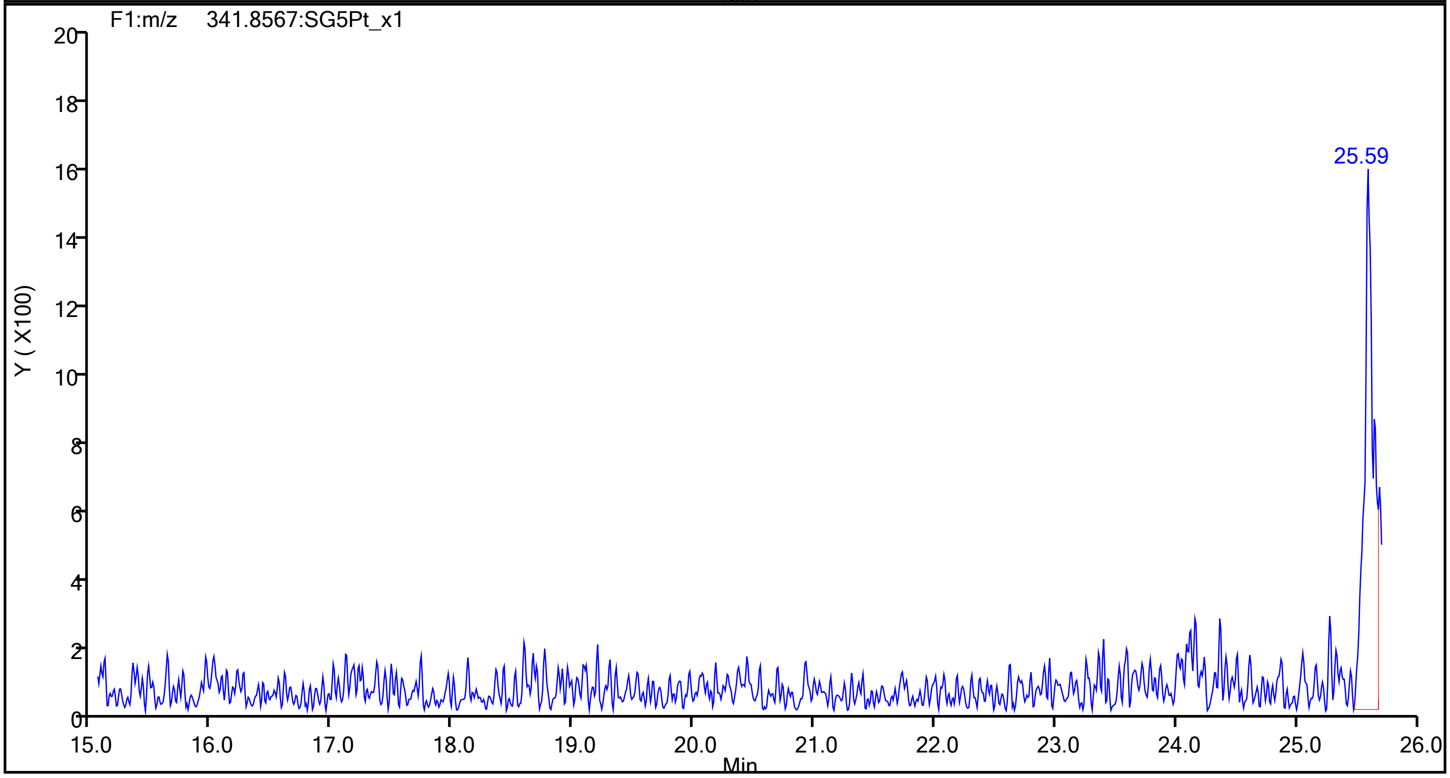

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

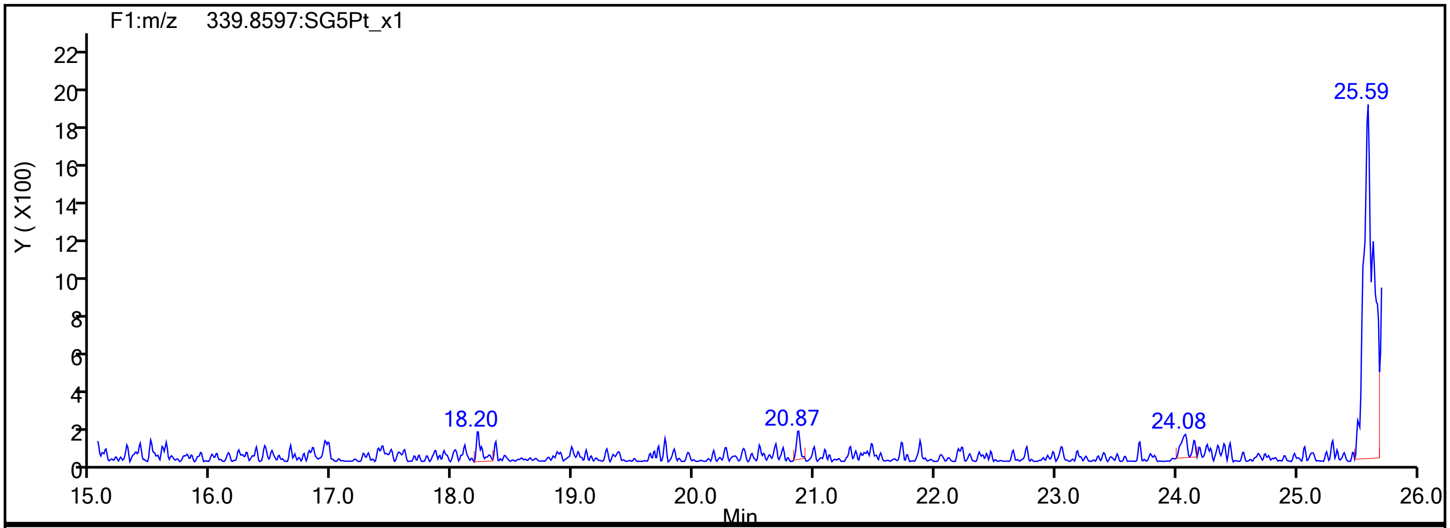

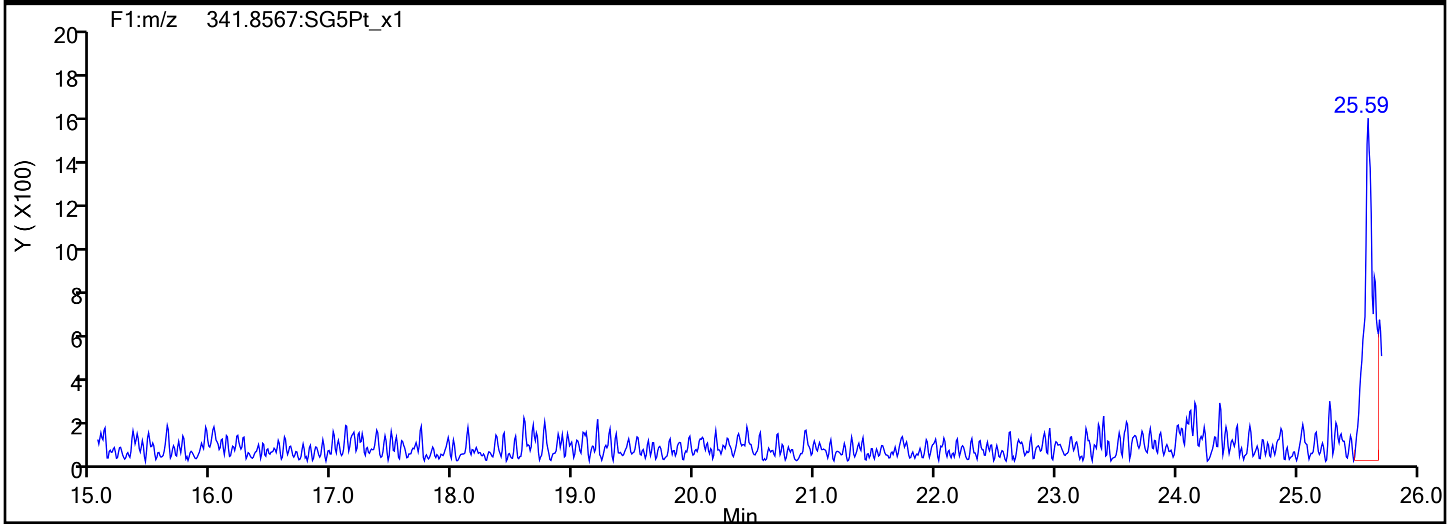

F1 PeCDFs Interference Mass

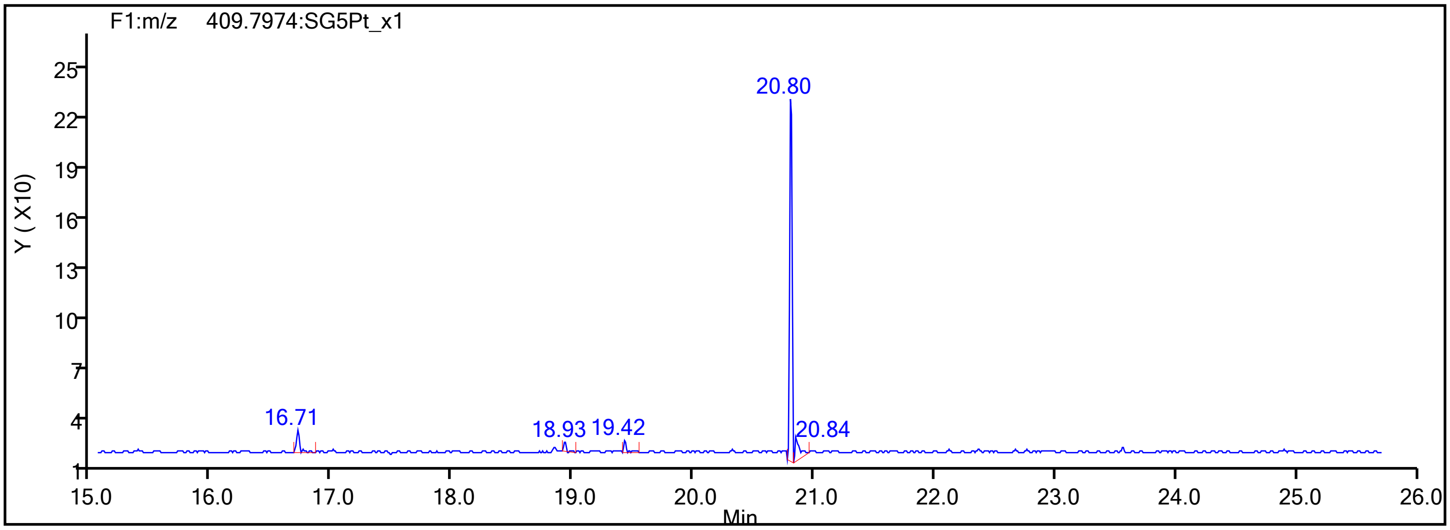

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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PeCDF

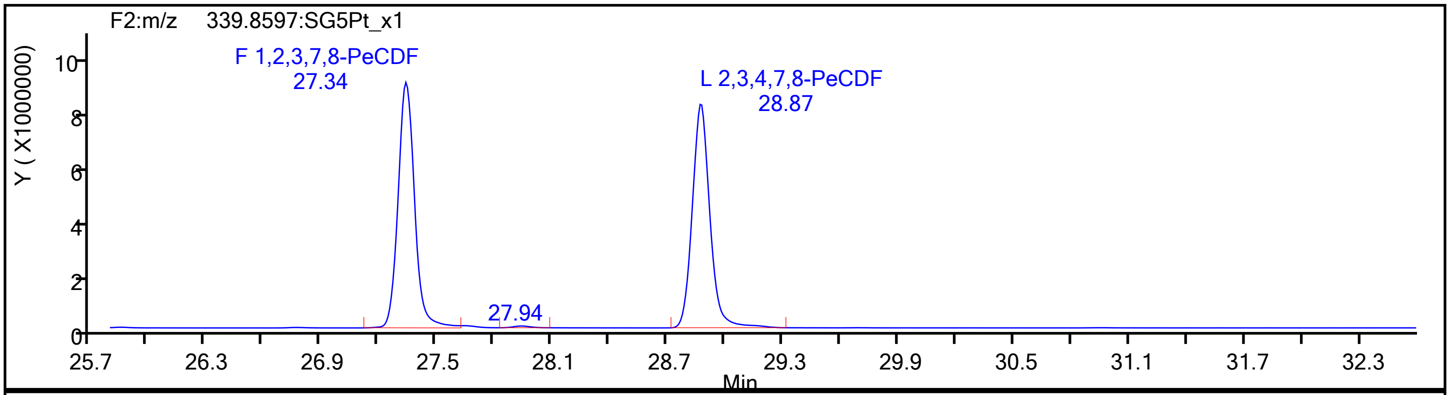

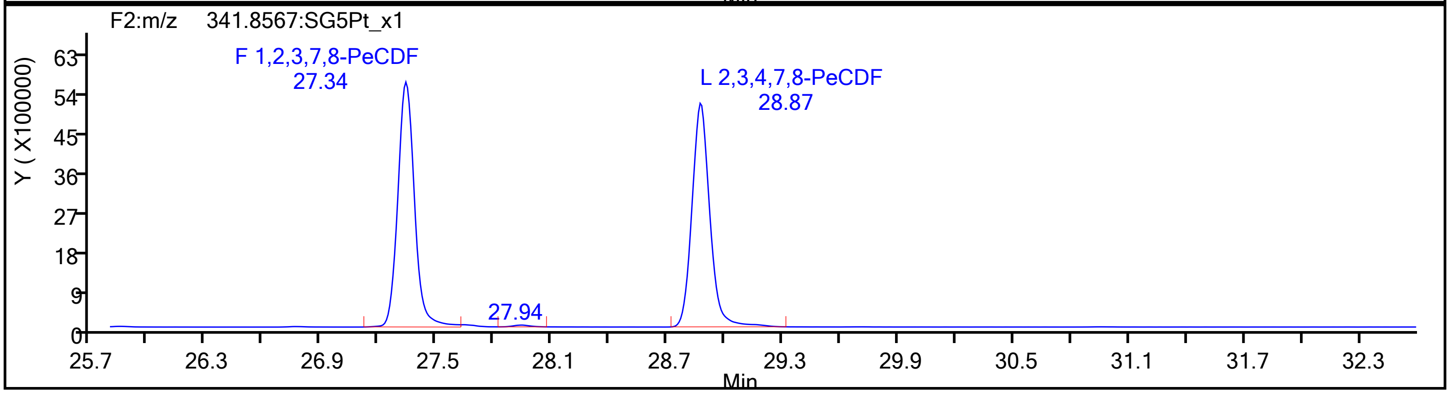

PeCDF Standards

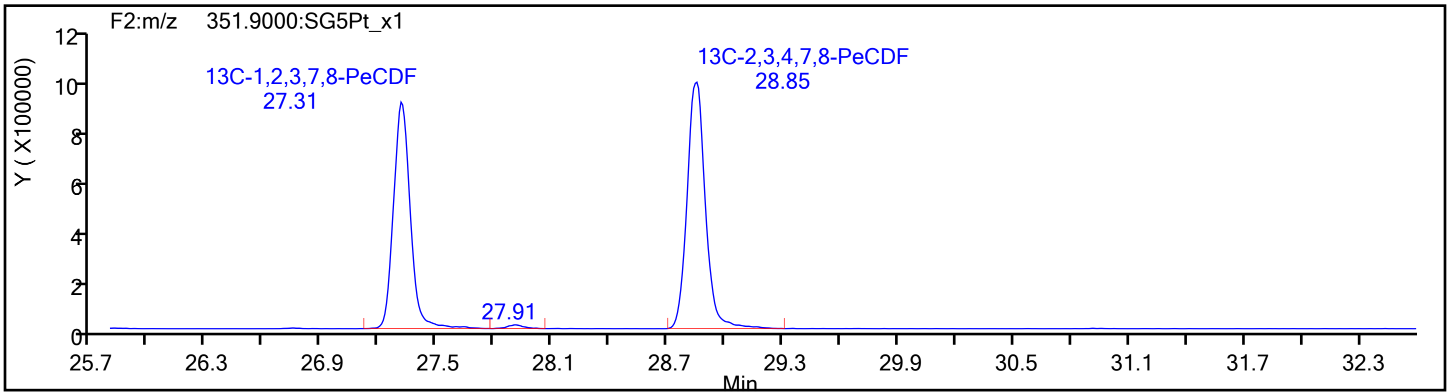

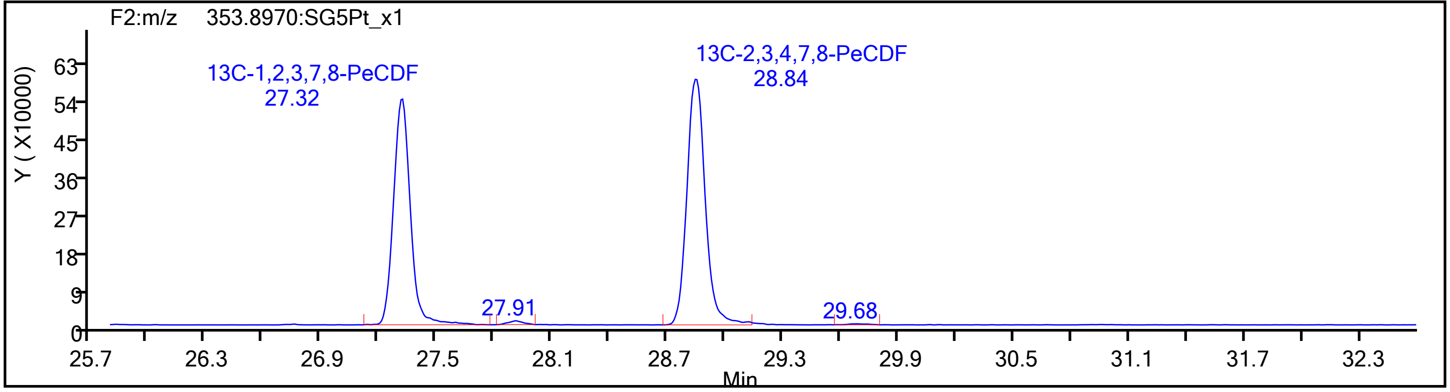

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Eurofins TestAmerica, Sacramento

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PeCDF

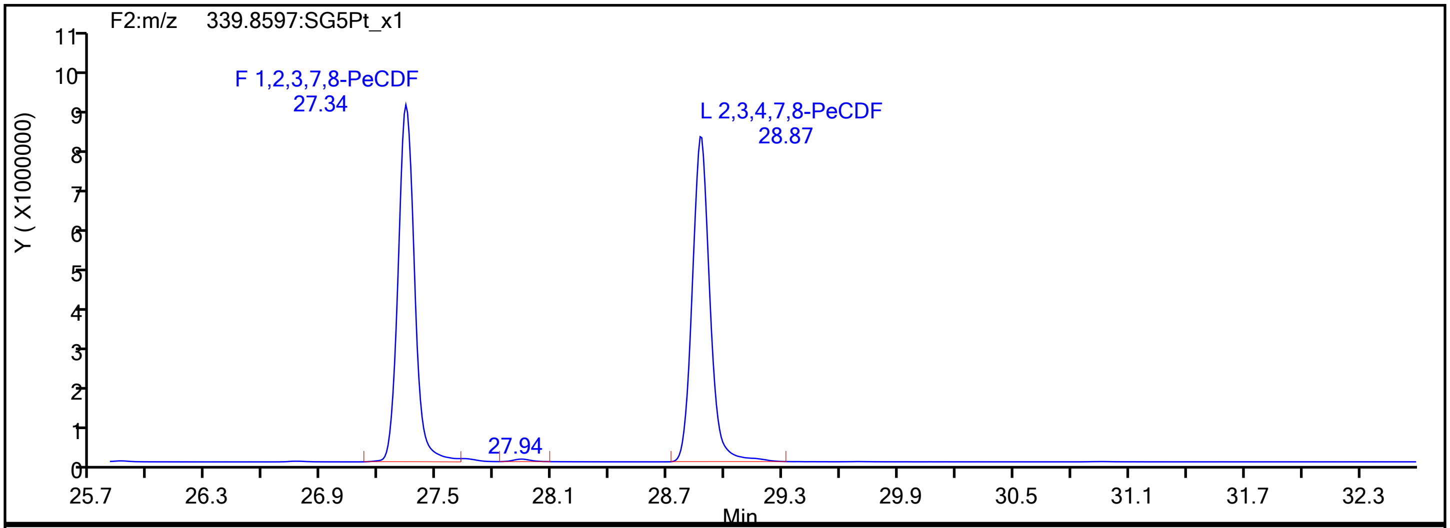

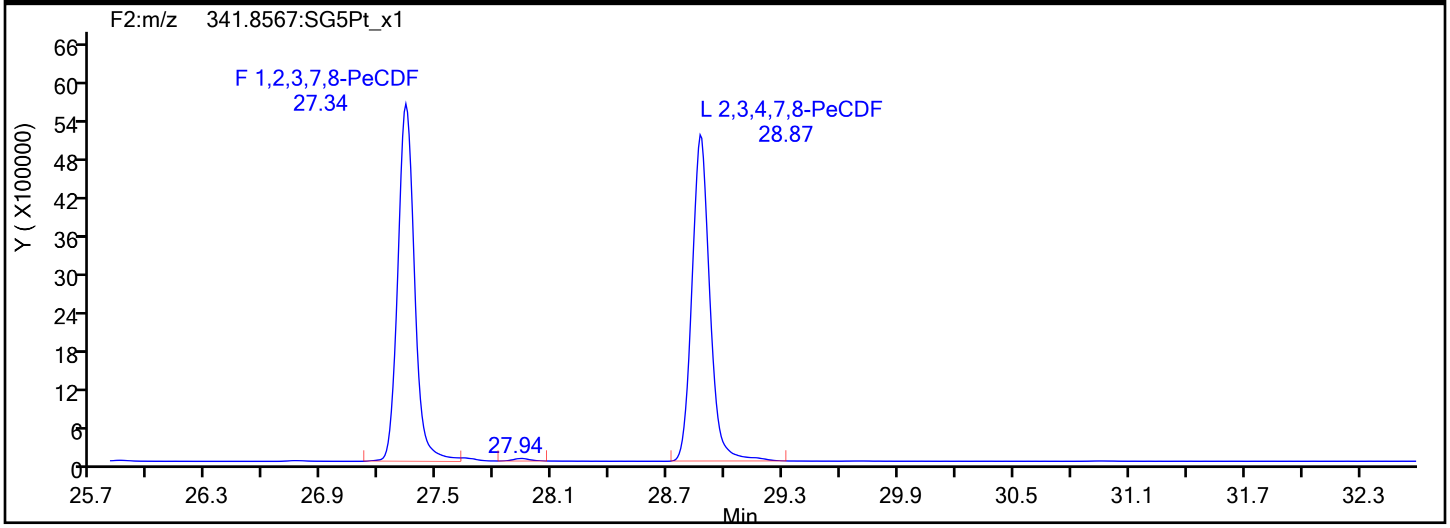

PeCDF Interference Mass

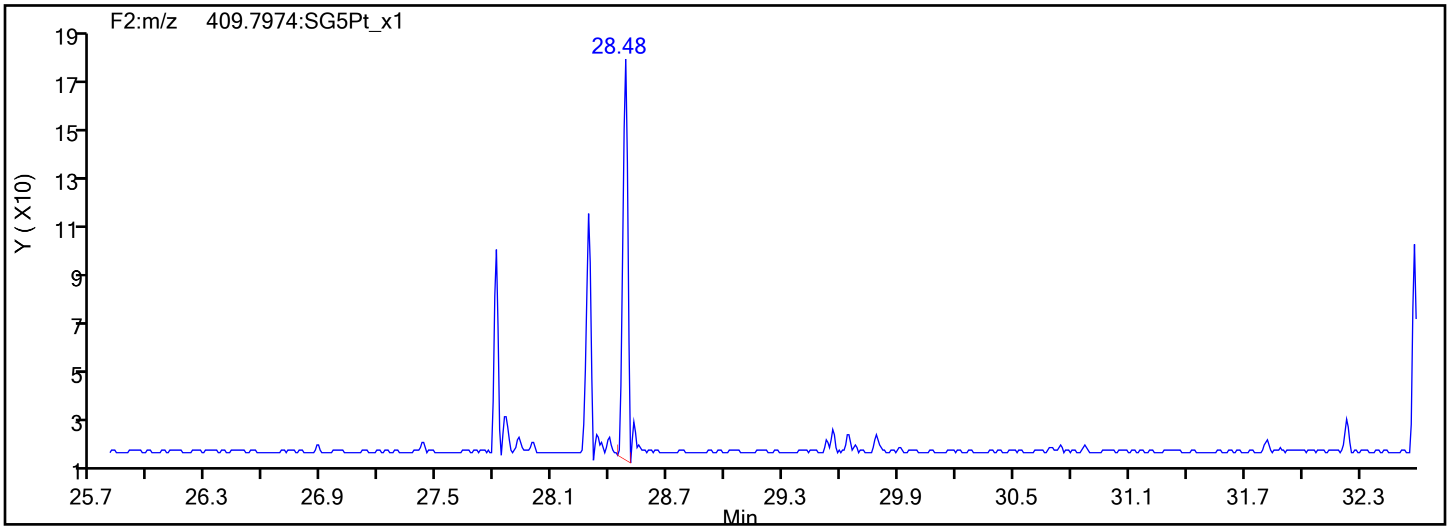

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Eurofins TestAmerica, Sacramento

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PeCDD

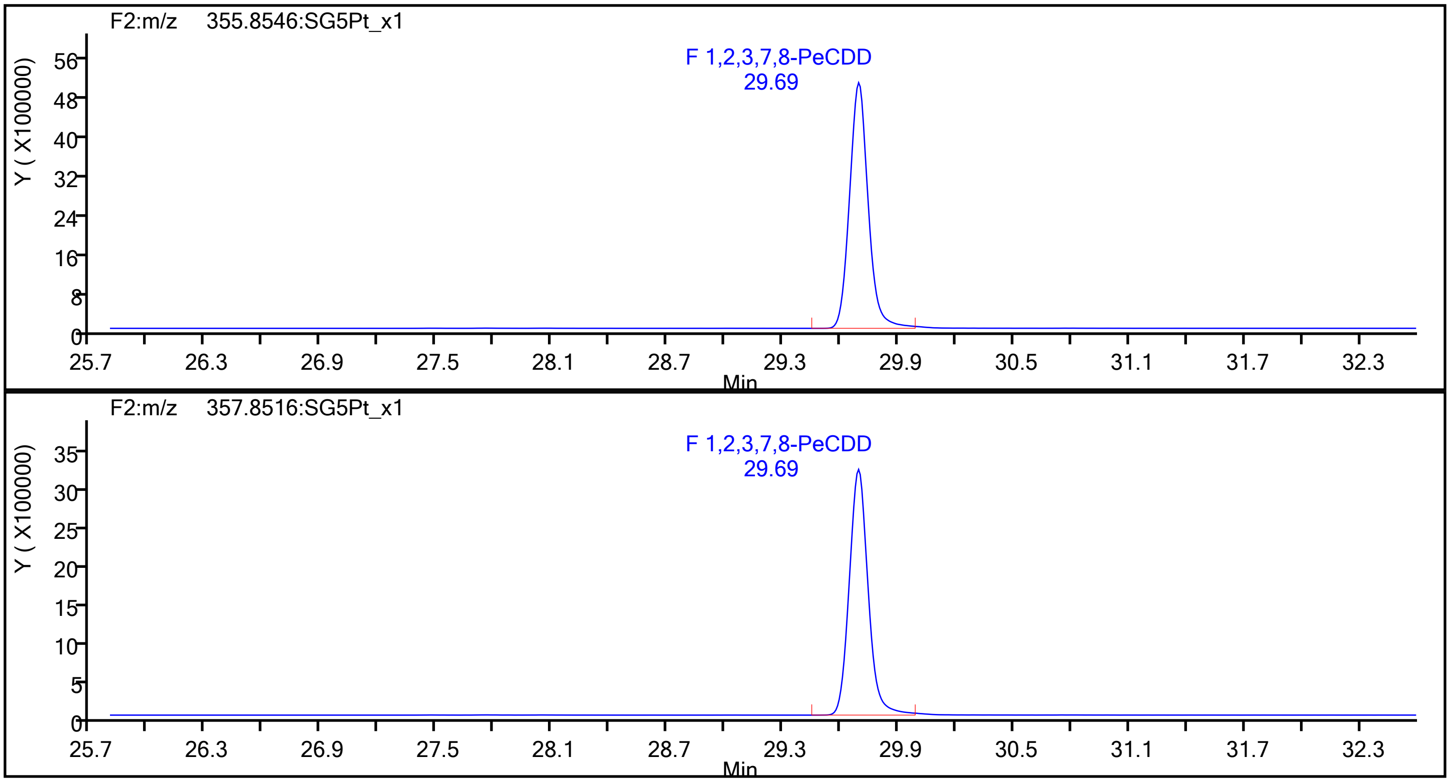

PeCDD Standards

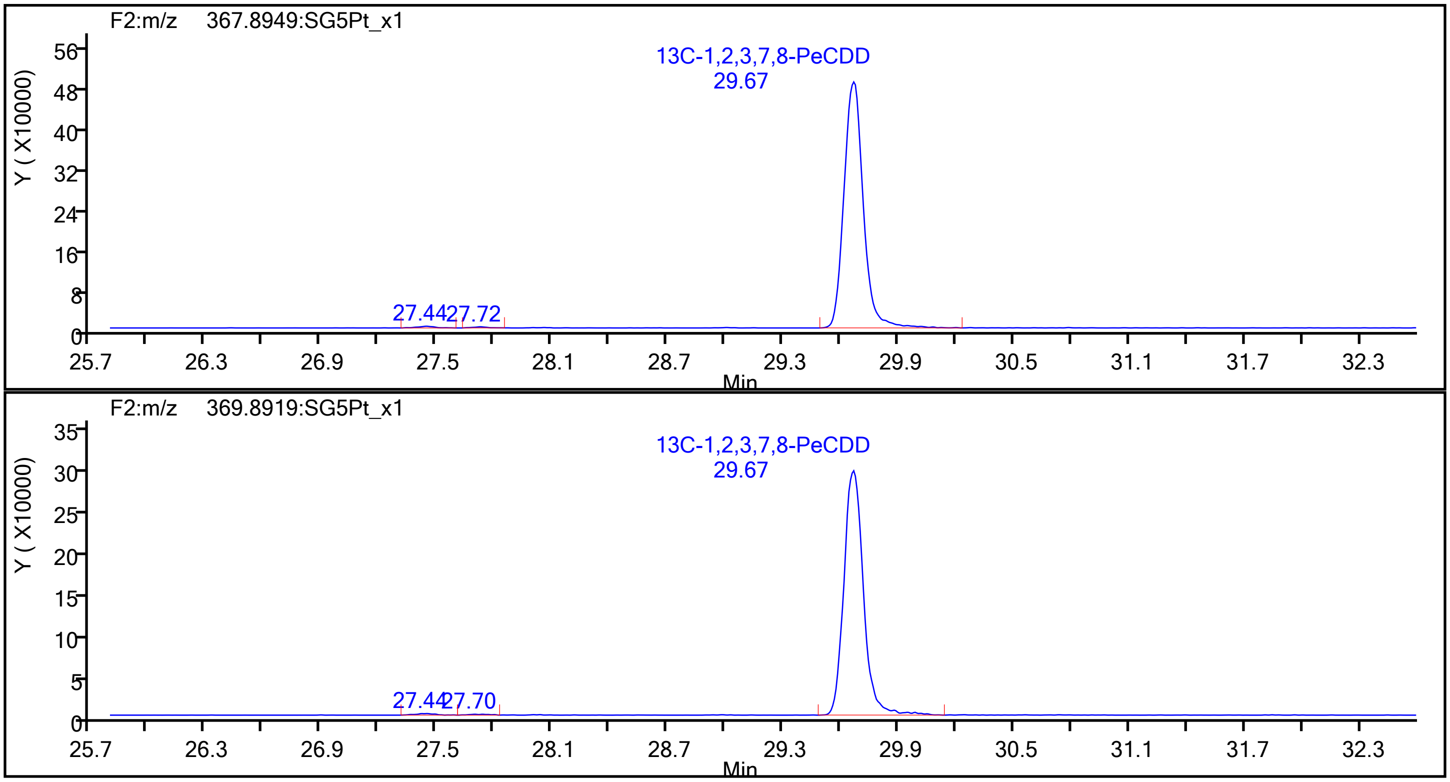

Report Date: 05-Jun-2020 10:11:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Client ID:			
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HxCDF

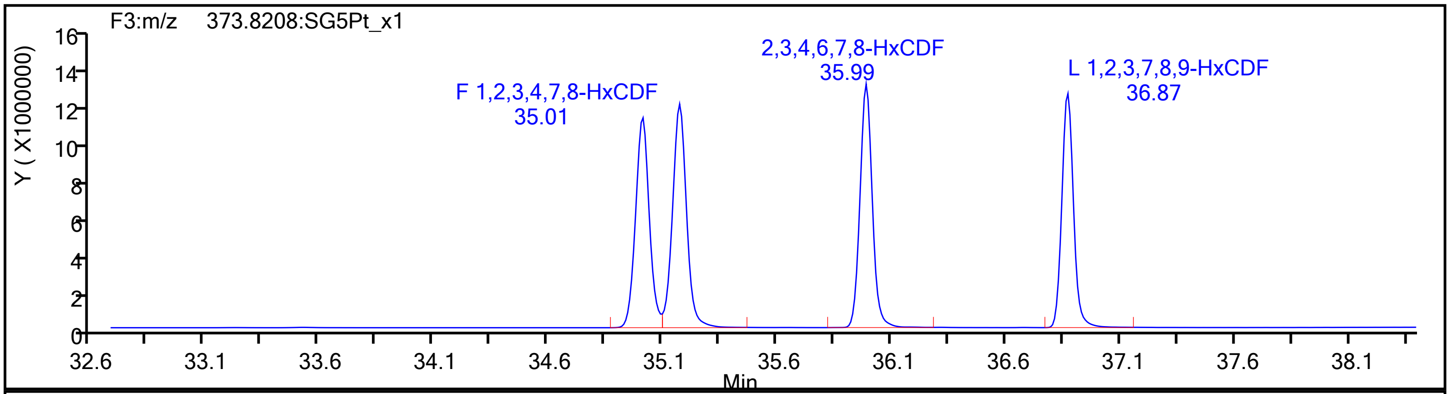

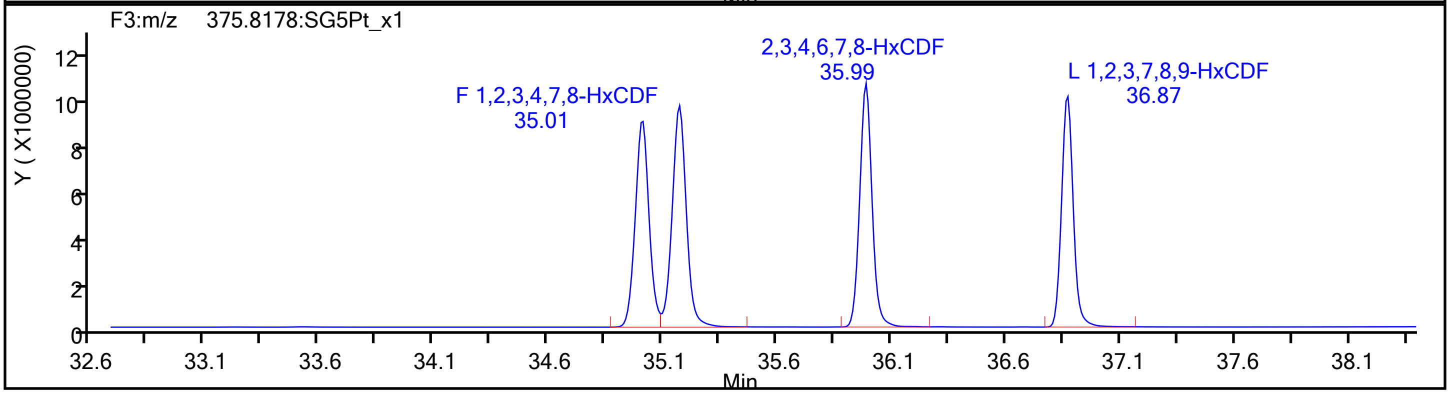

HxCDF Standards

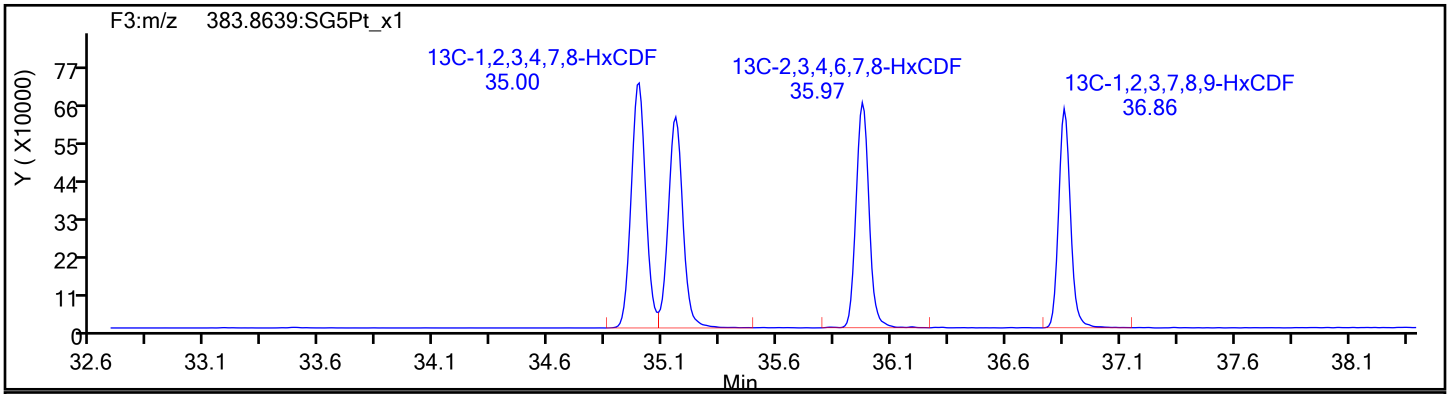

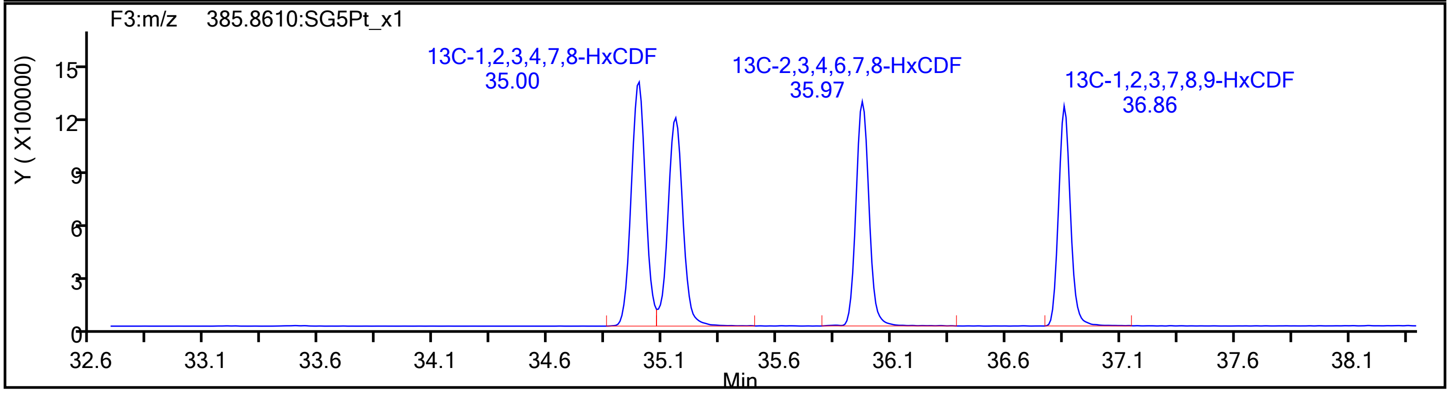

Eurofins TestAmerica, Sacramento

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HxCDF

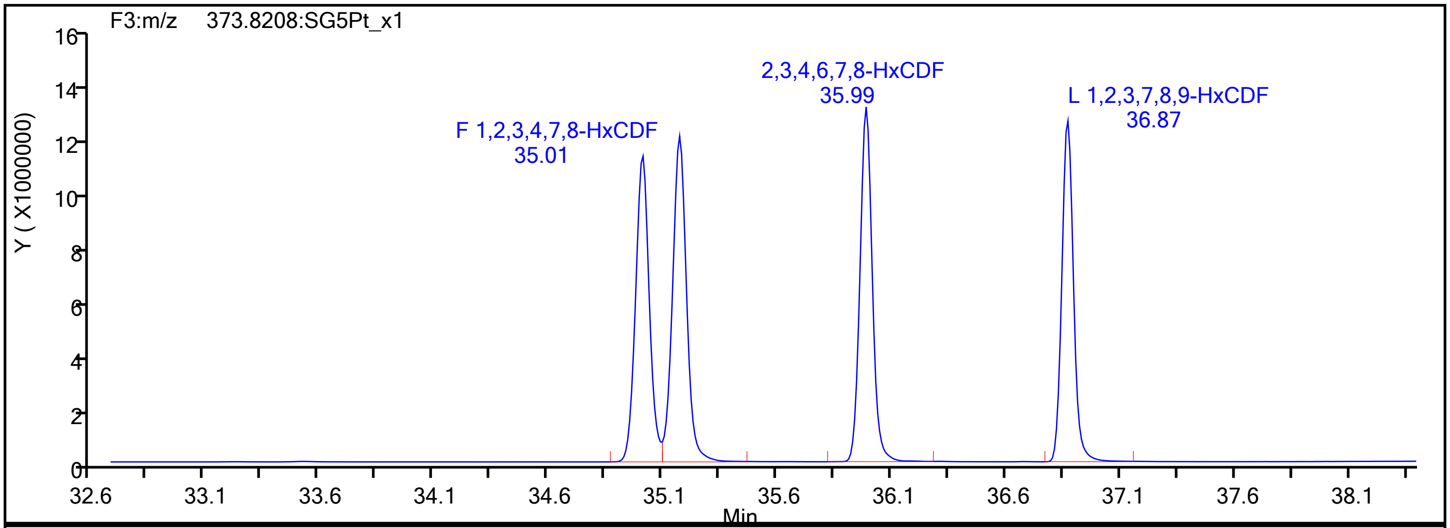

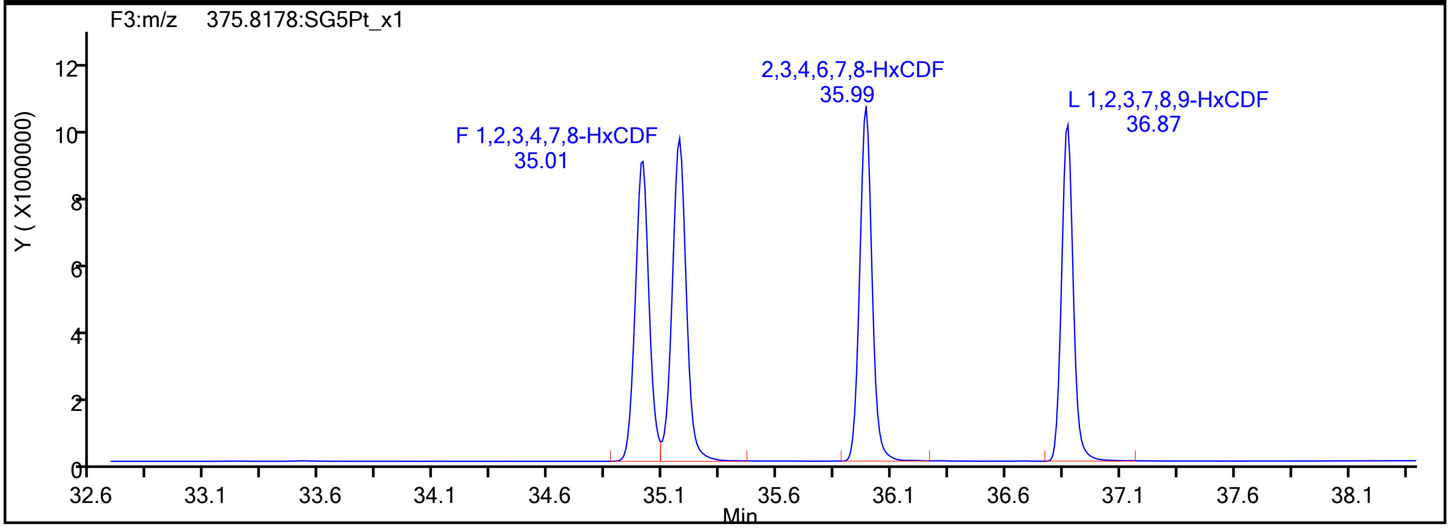

HxCDF Interference Mass

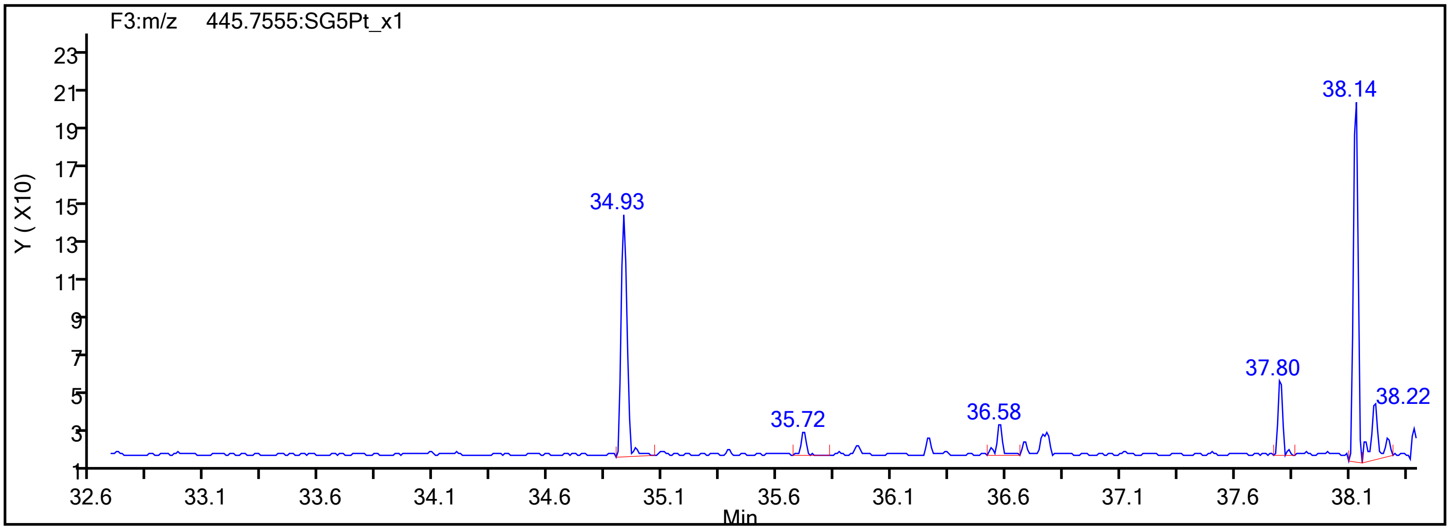

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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HxCDD

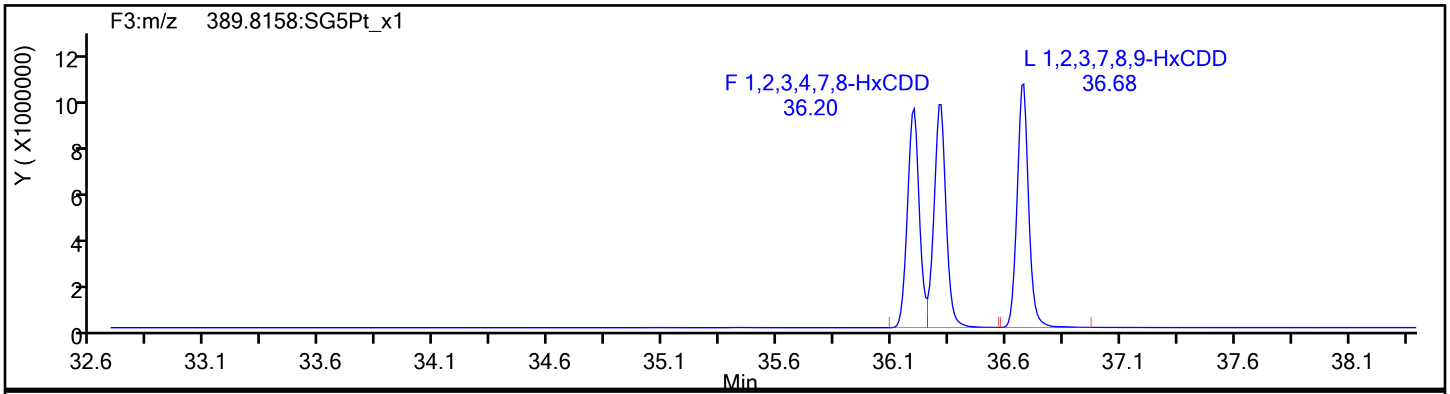

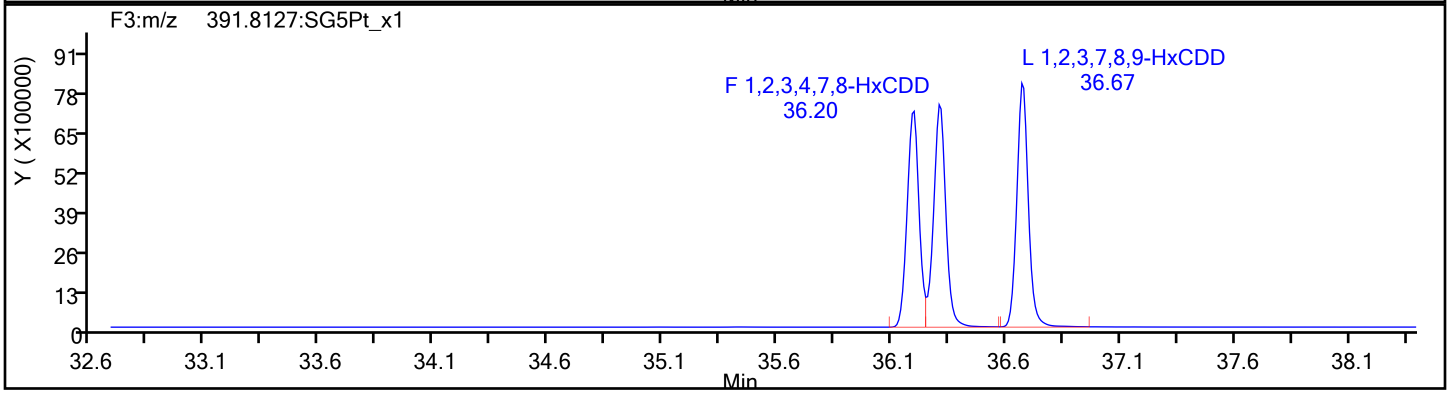

HxCDD Standards

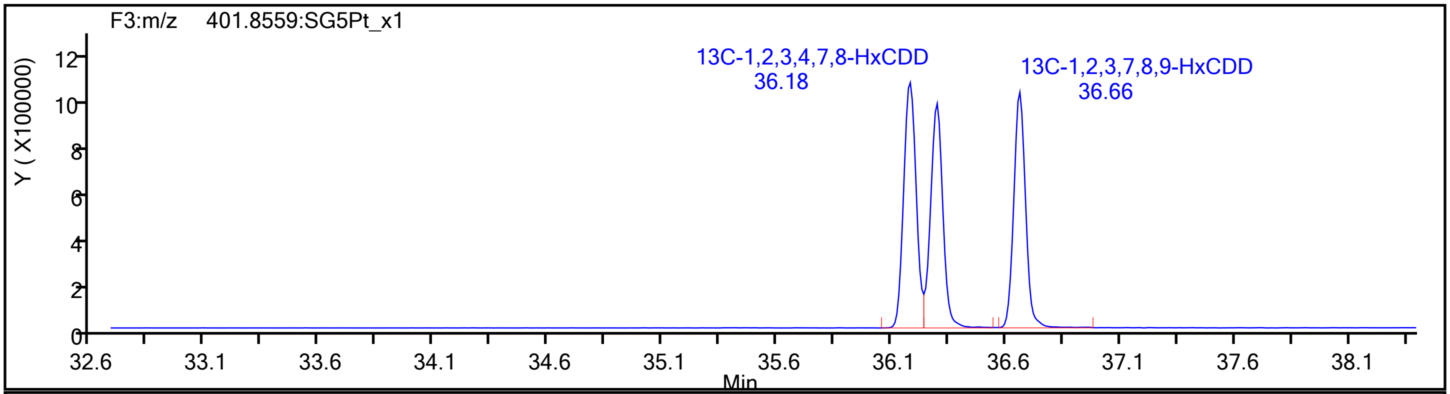

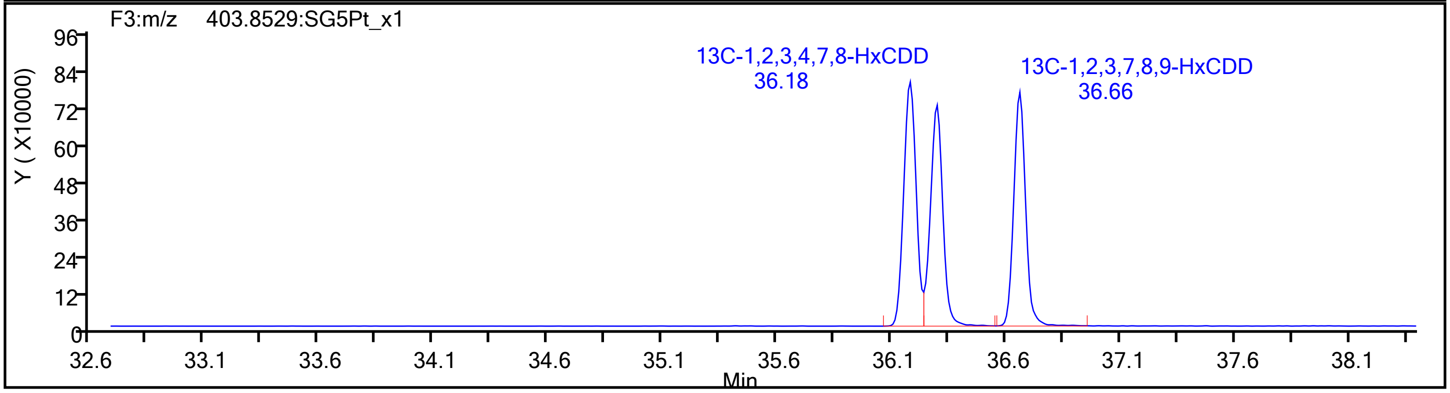

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Sample Line#: 8
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Column Dia: 0.32 mm

HpCDF

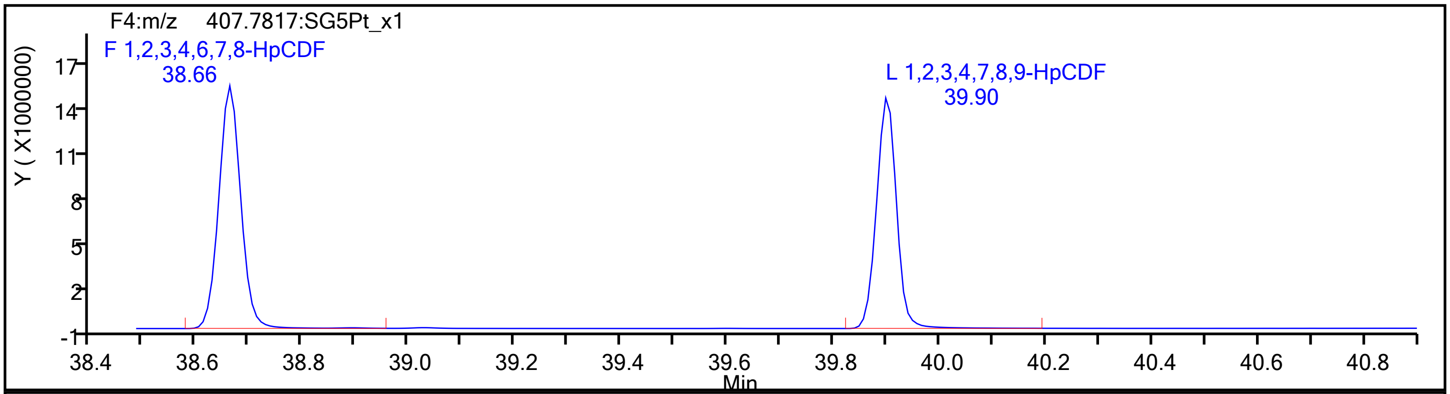

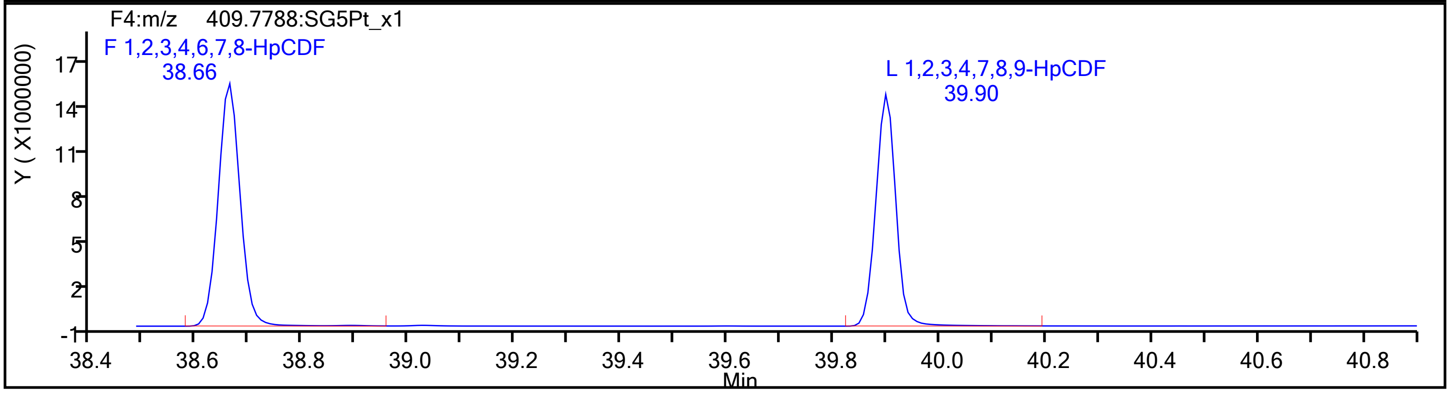

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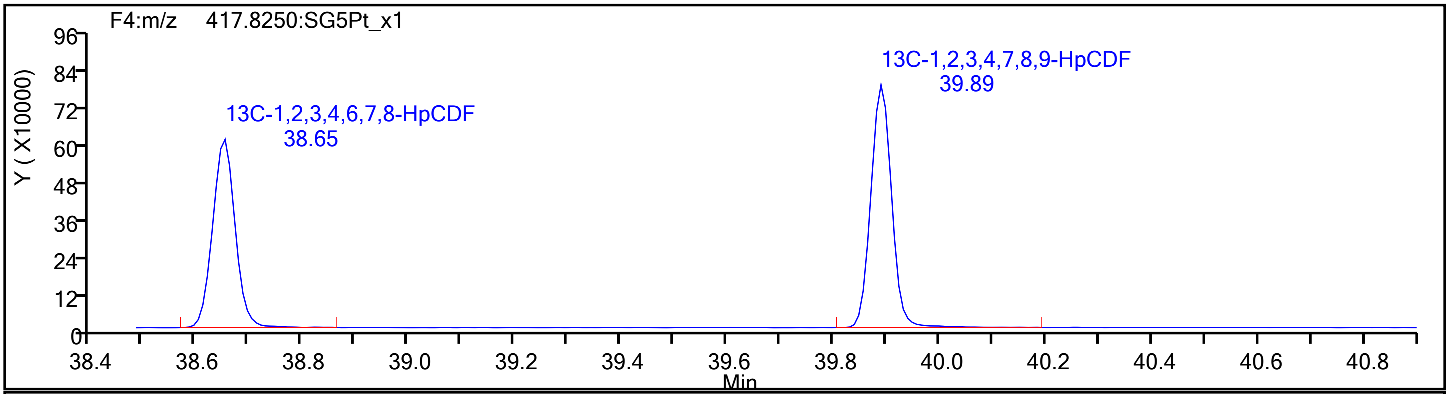

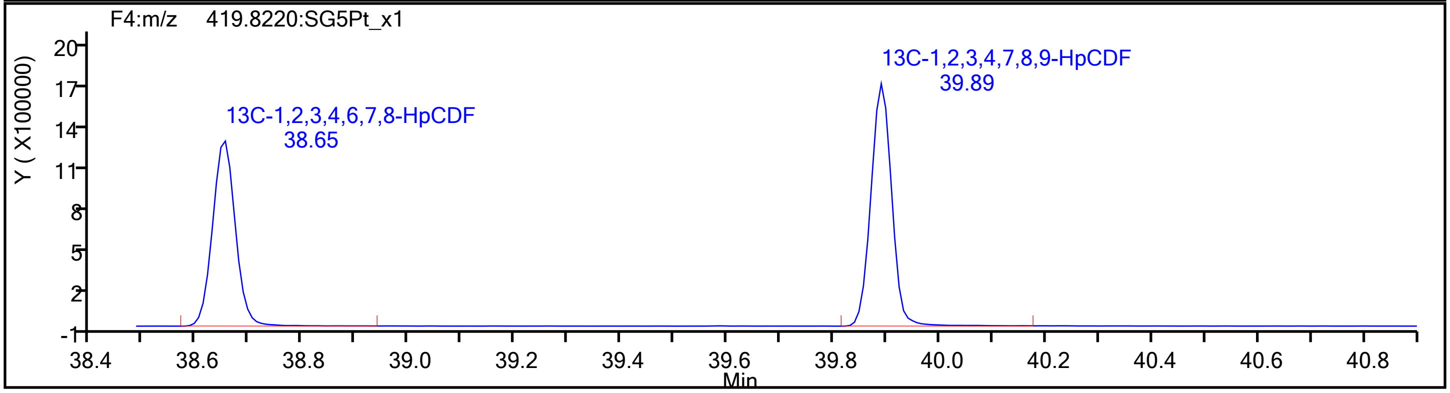

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

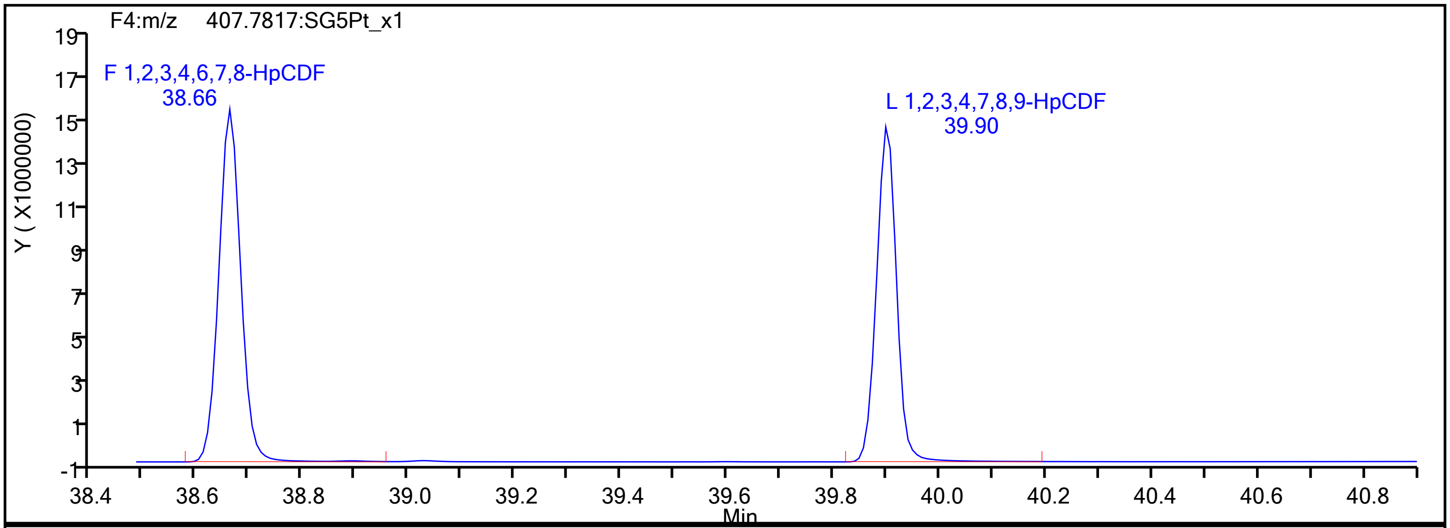

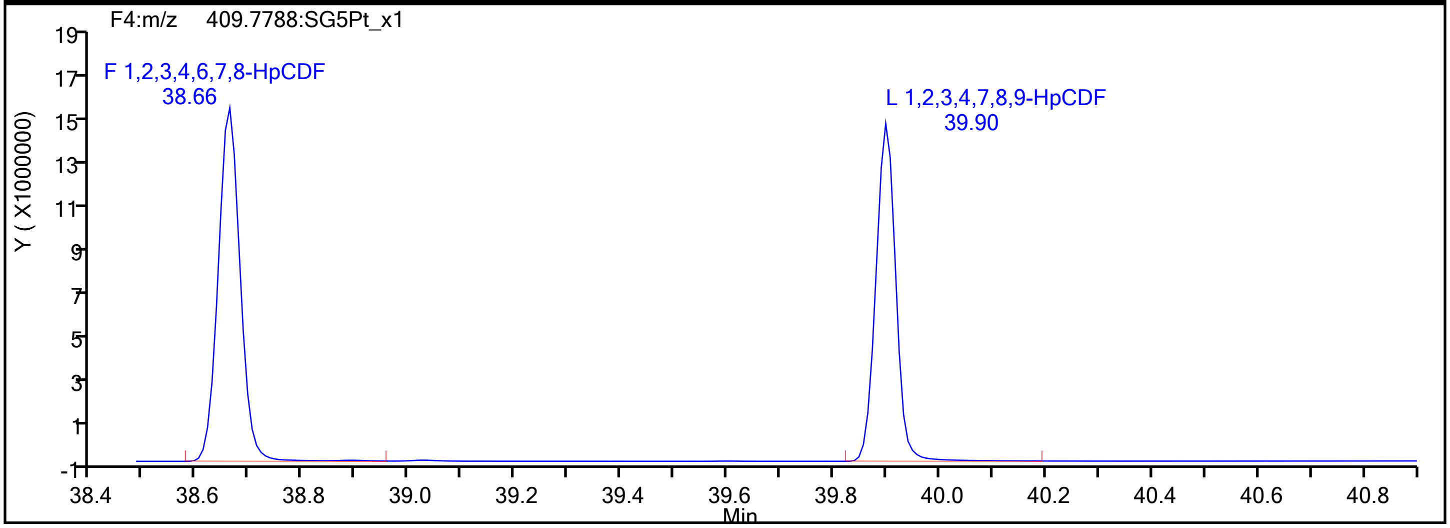

HpCDF Interference Mass

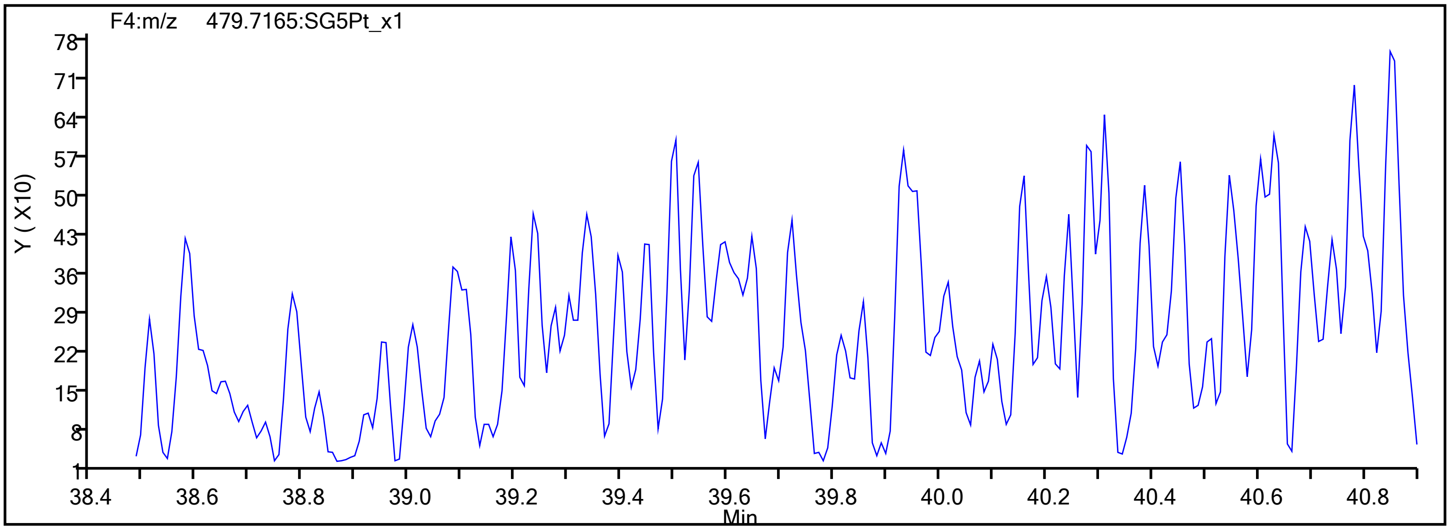

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

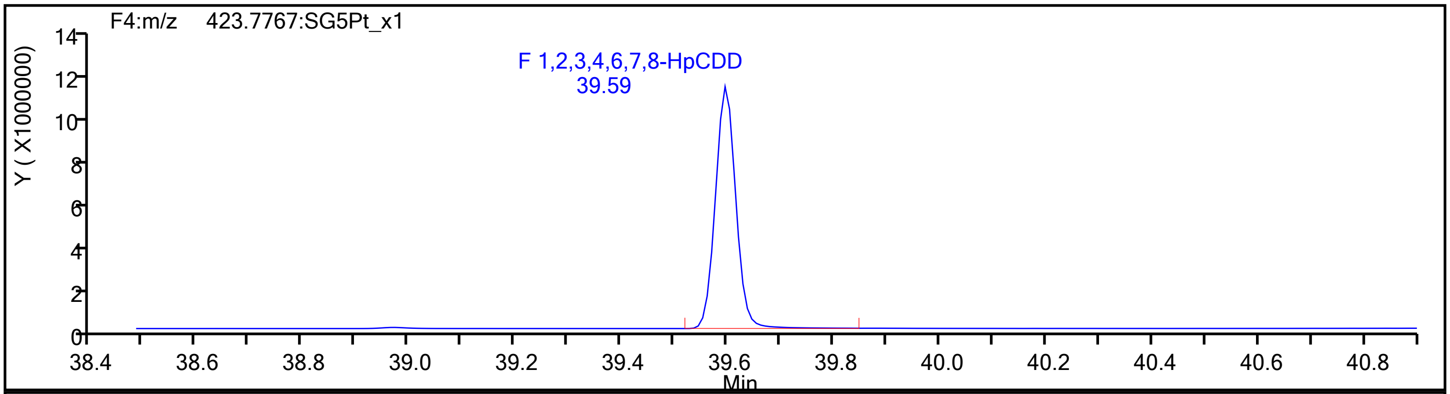

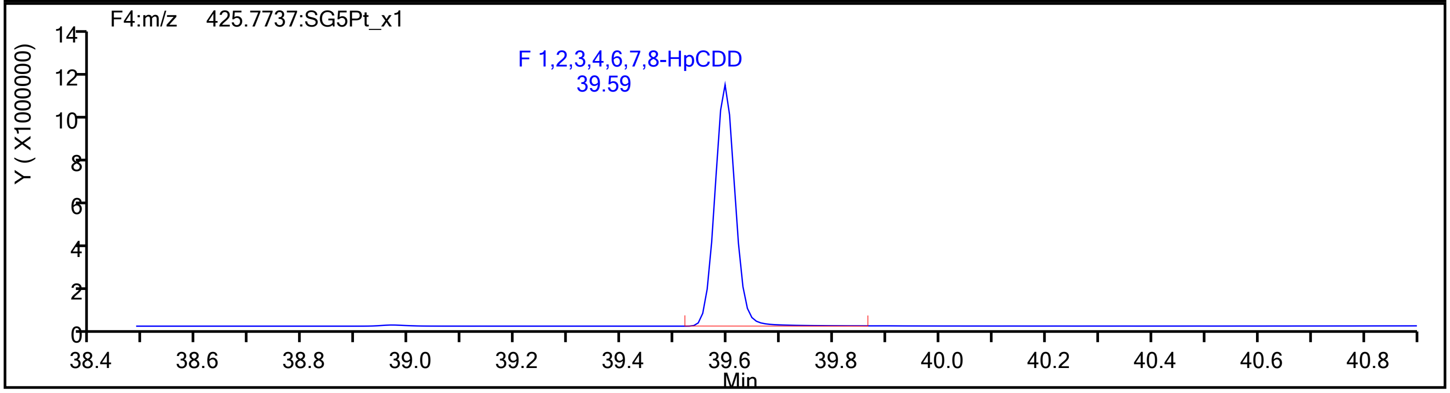

HpCDD Standards

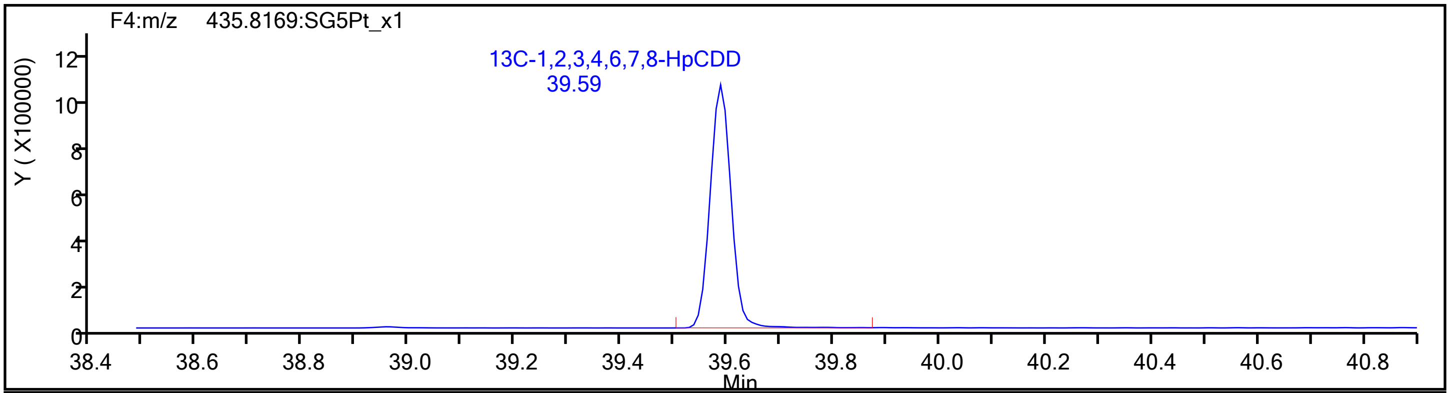

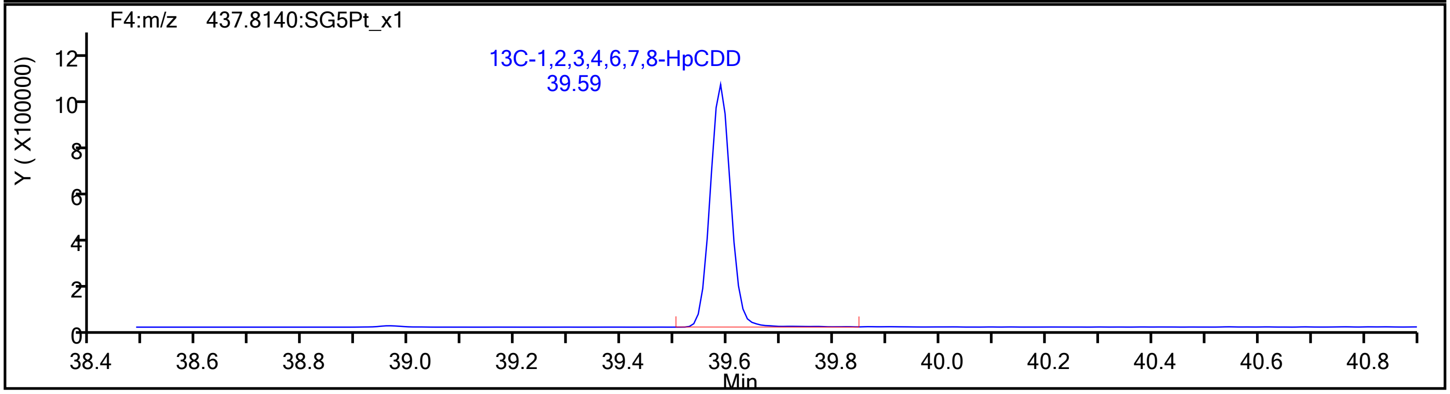

Report Date: 05-Jun-2020 10:11:57
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d
Injection Date: 03-Jun-2020 18:06:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

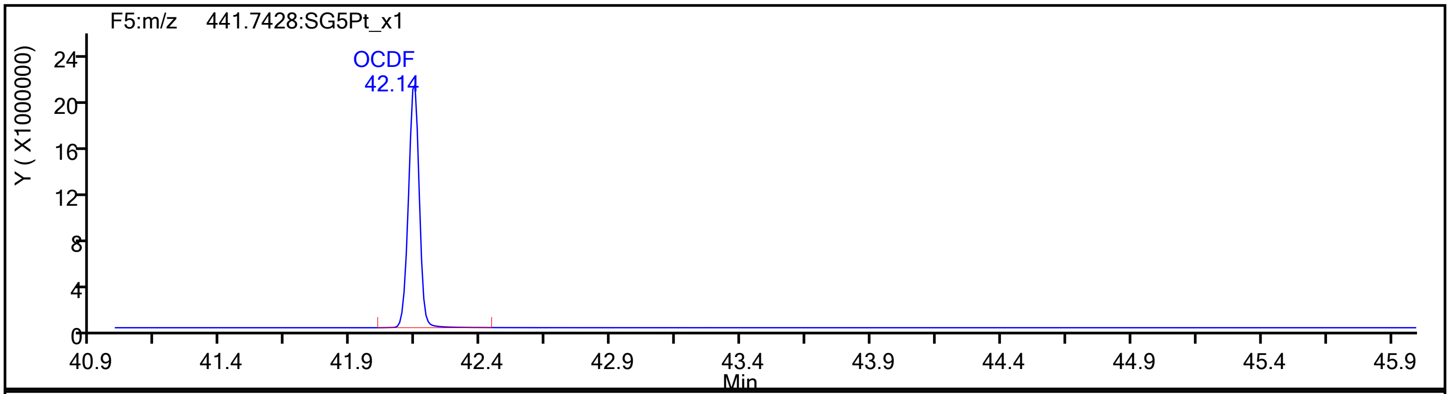

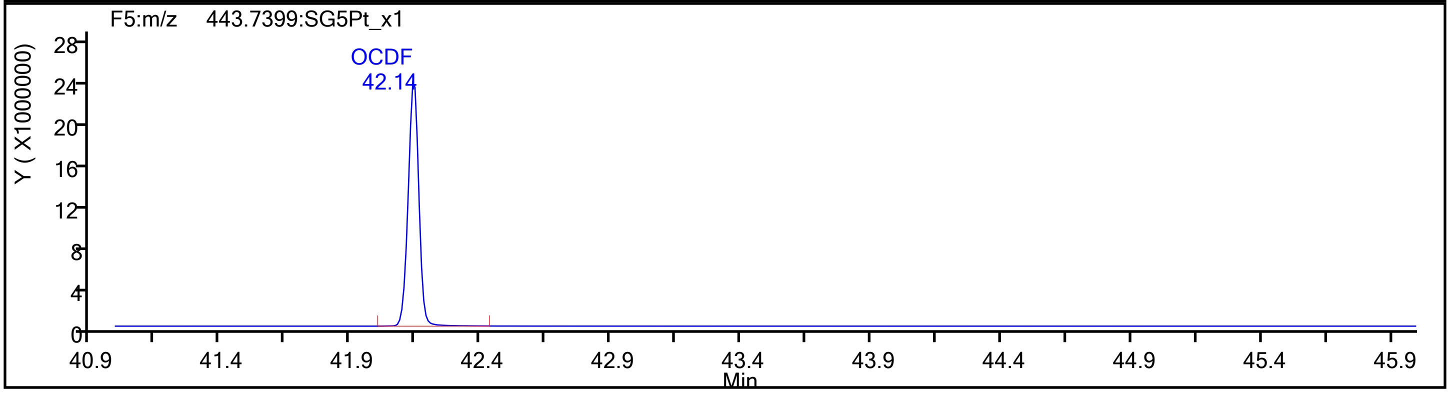

OCDF Standards

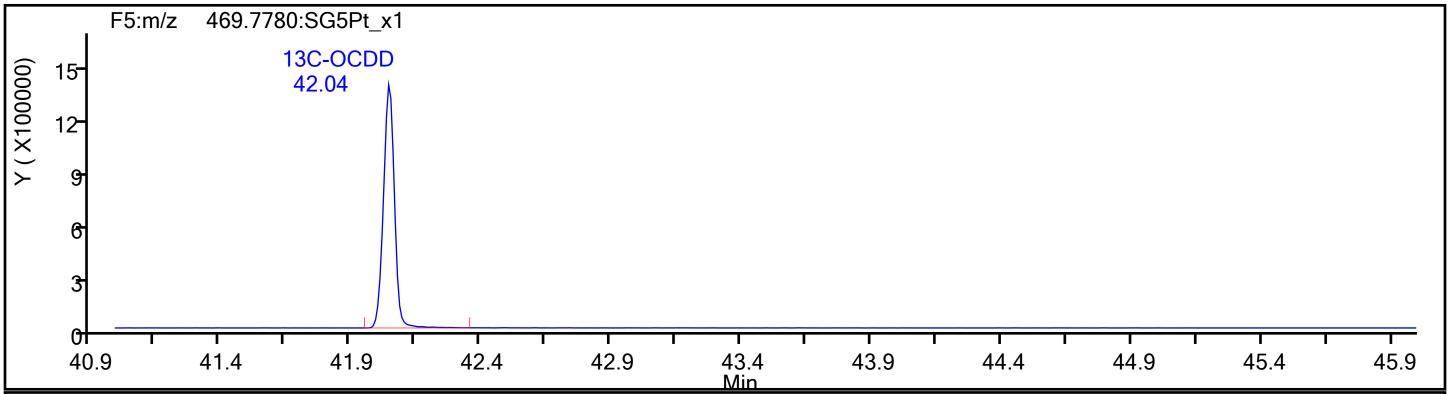

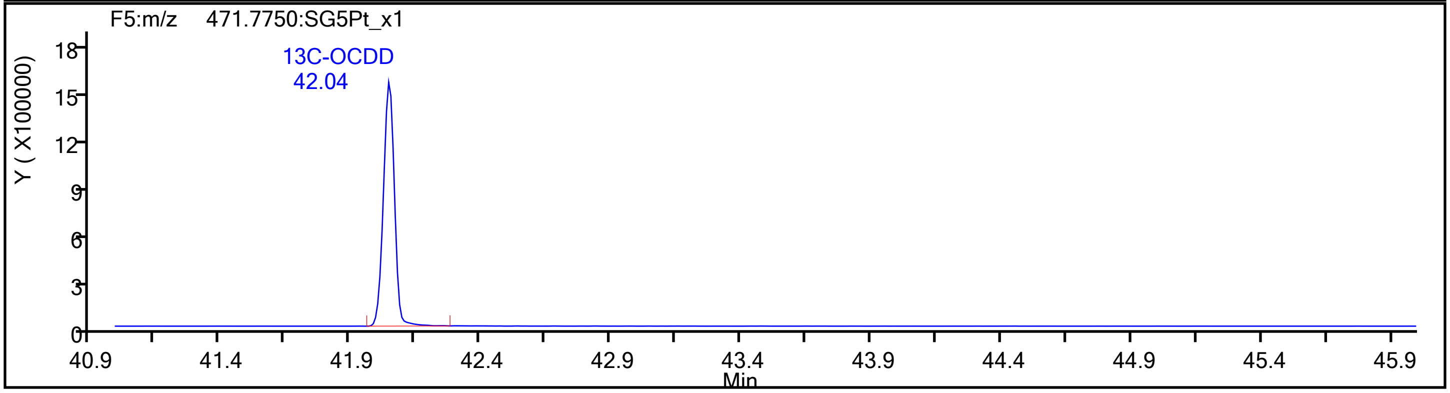

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

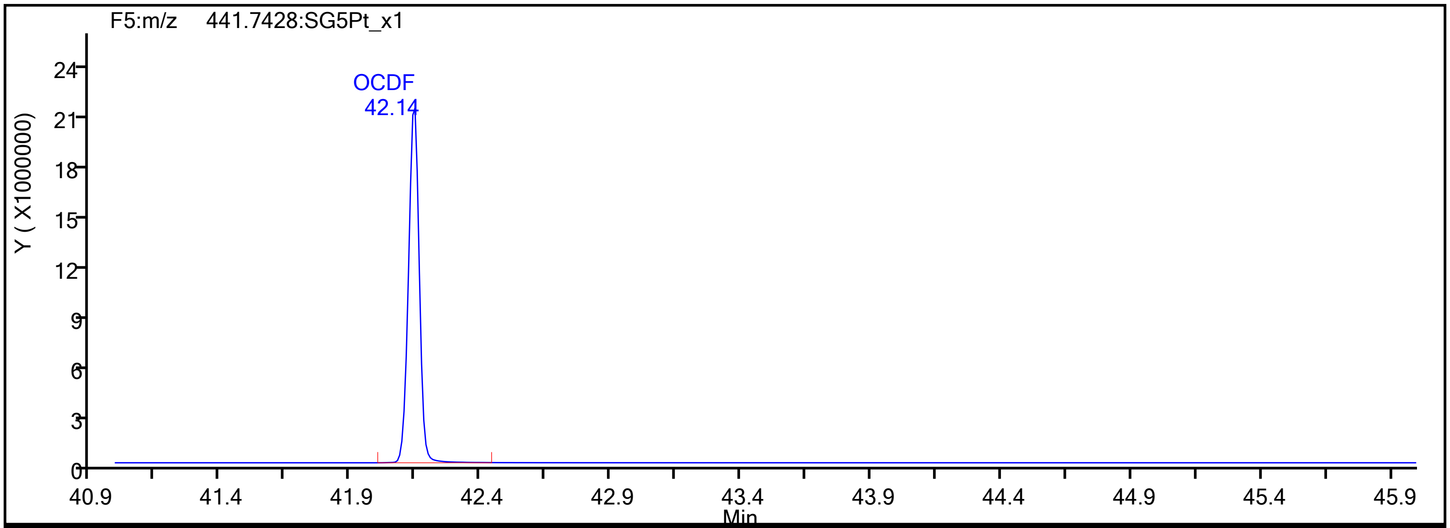

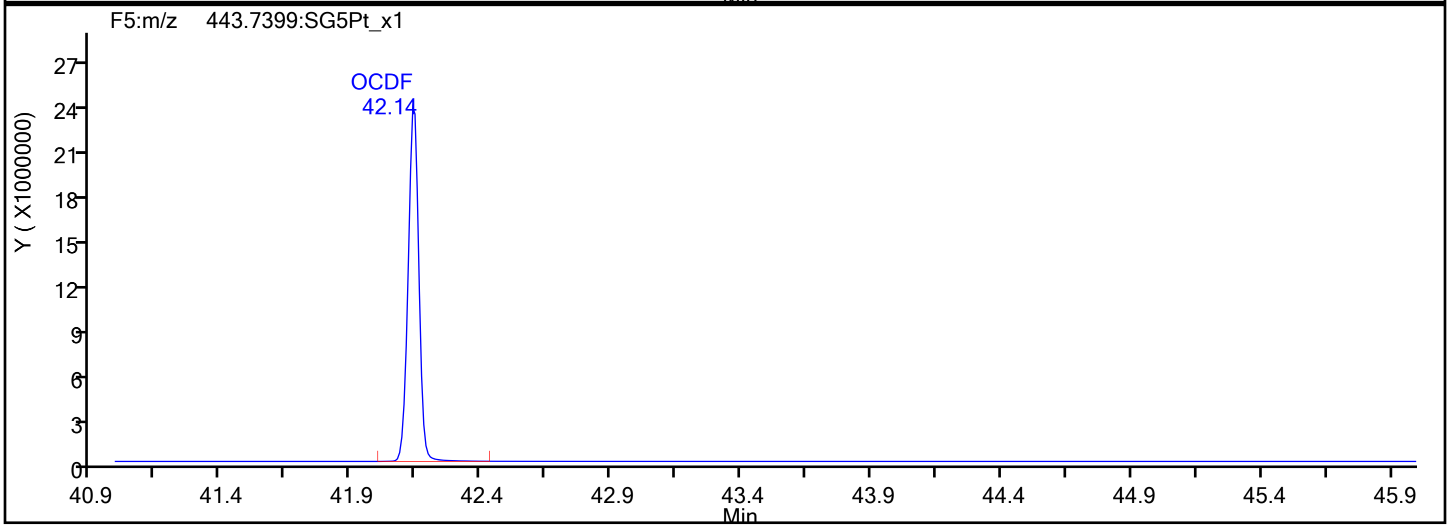

OCDF Interference Mass

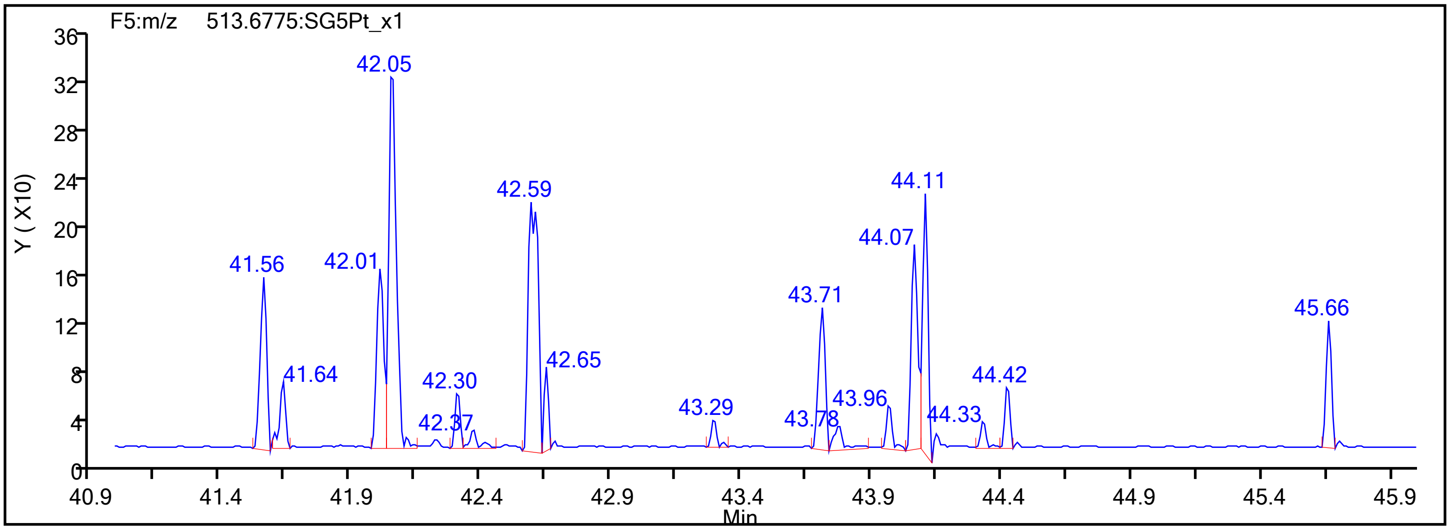

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d
Injection Date: 03-Jun-2020 18:06:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

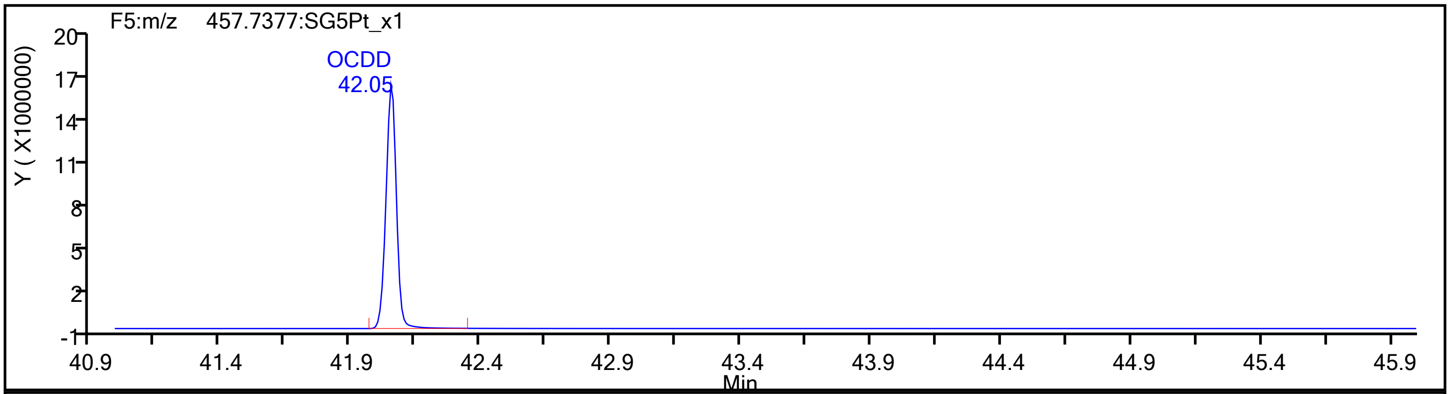

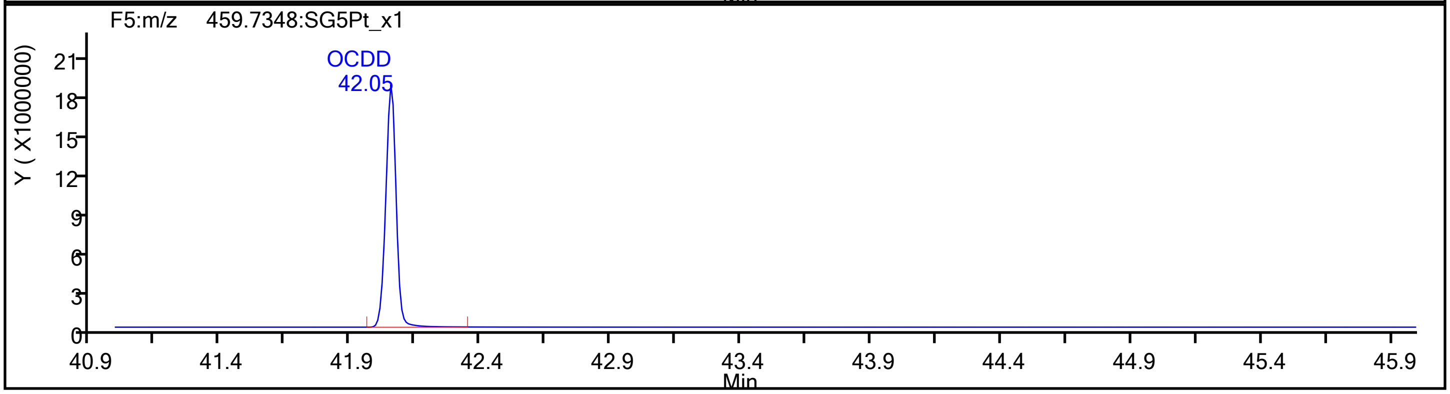

OCDD Standards

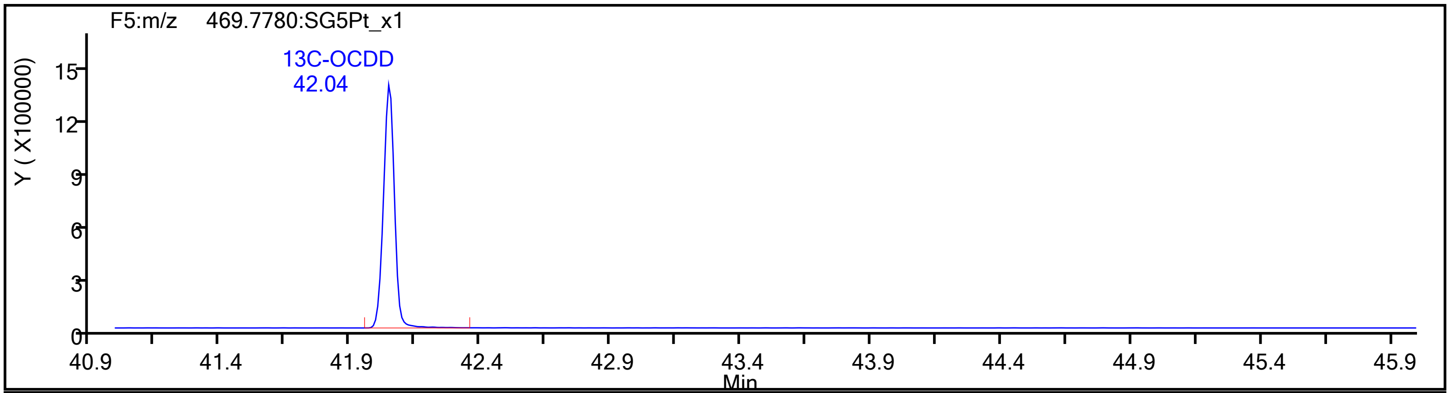

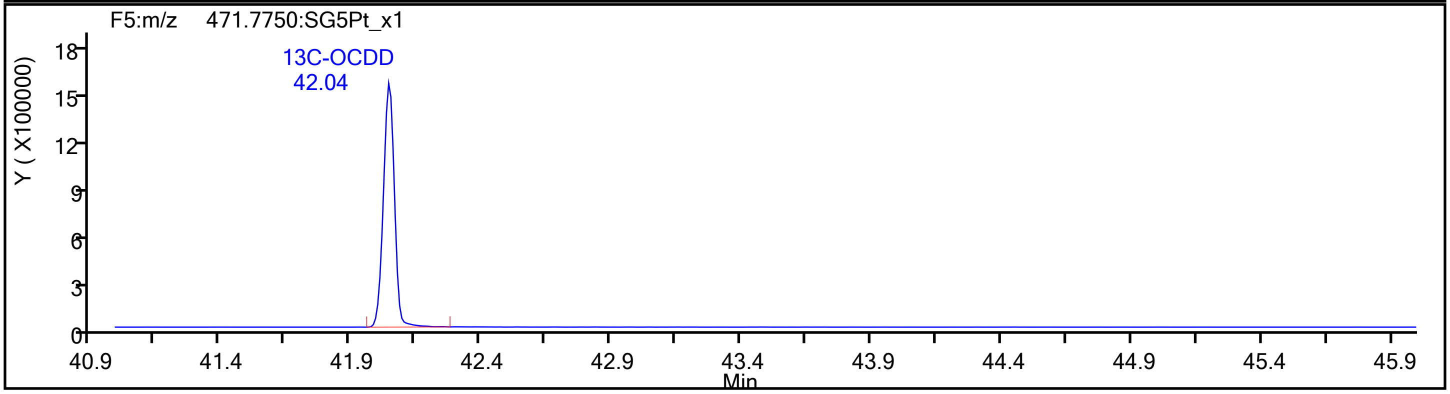

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Injection Date: 03-Jun-2020 18:06:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

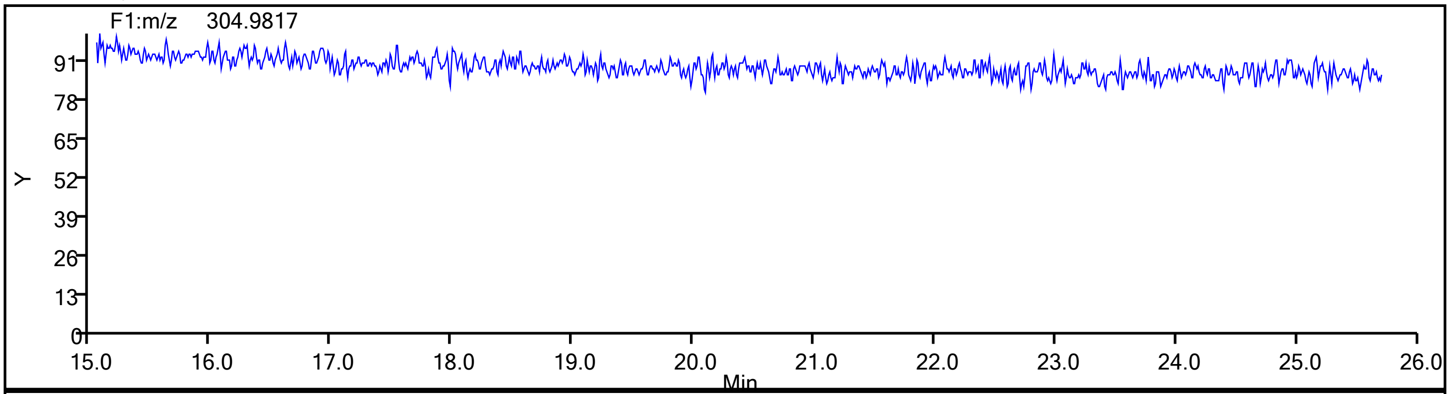
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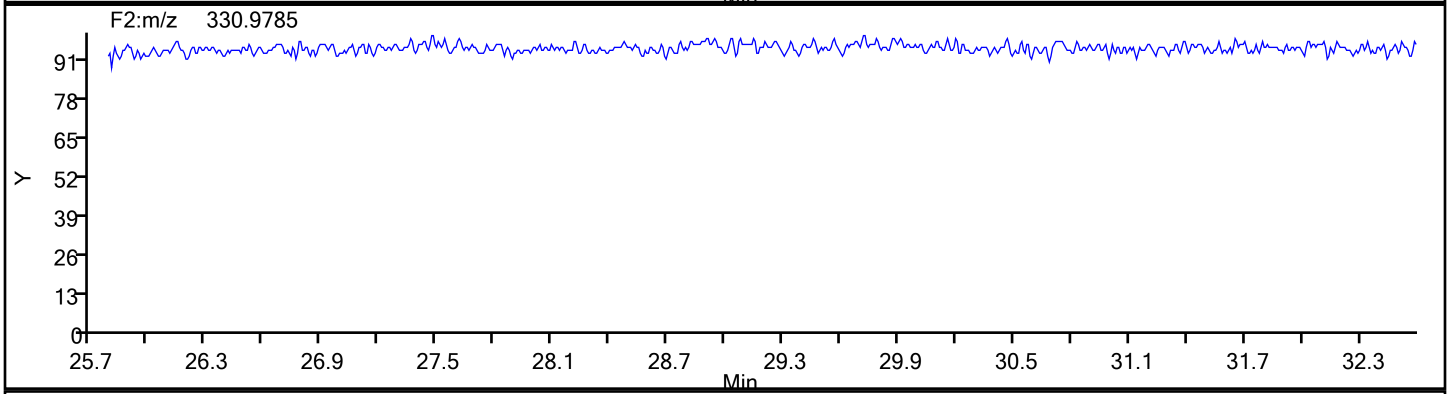
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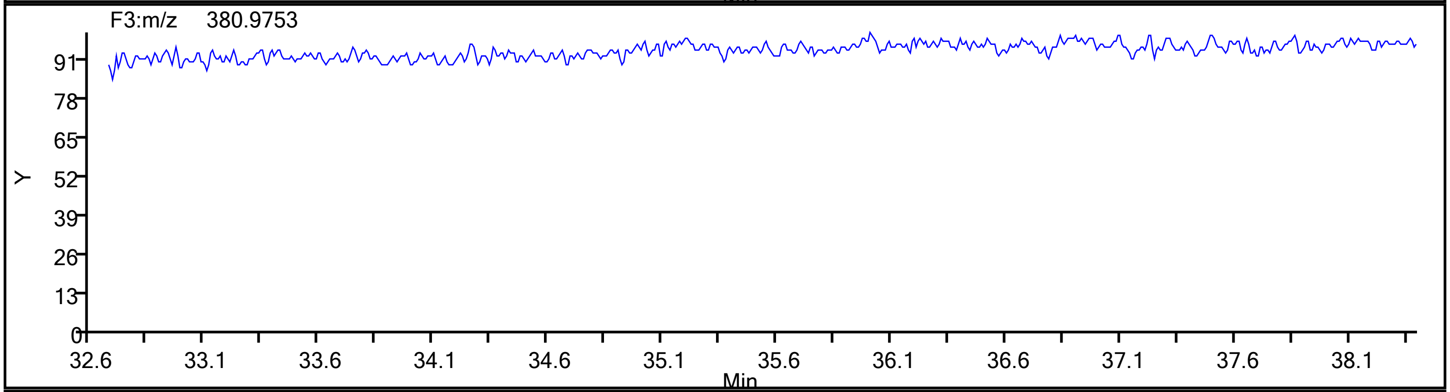
F3:m/z 380.9753

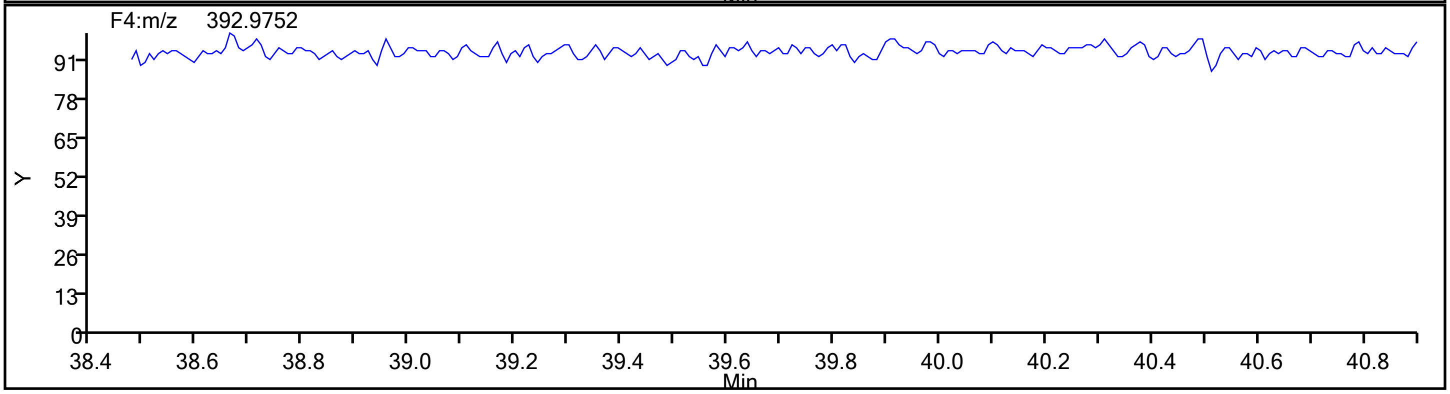
F4:m/z 392.9752

Report Date: 05-Jun-2020 10:11:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d		
Injection Date:	03-Jun-2020 18:06:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

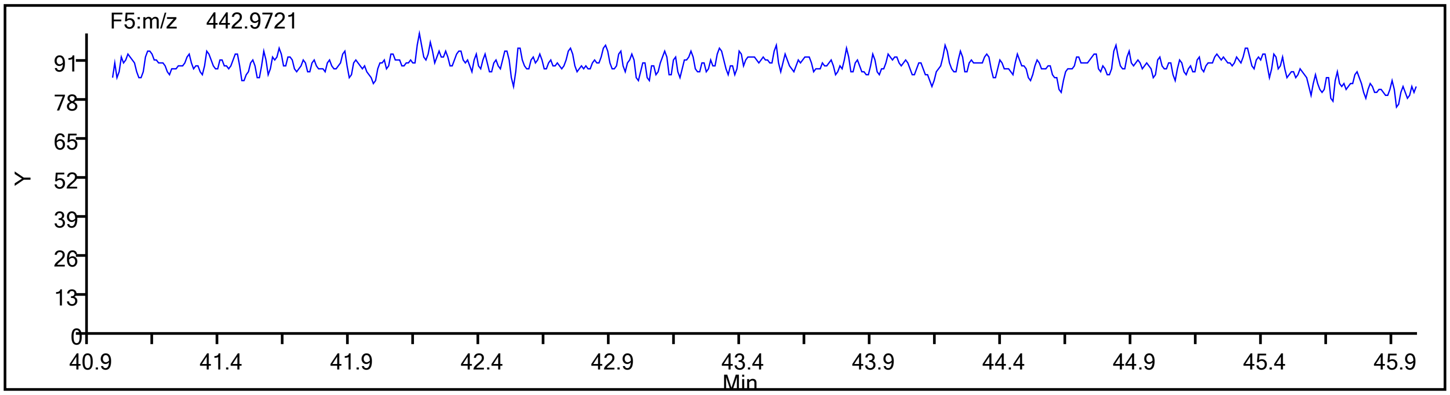

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.115

Error Coefficients

Standard Error:	26800000
Relative Standard Error:	7.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.472095	100.0	6158504.0	1.177676	Y
2	IC 320-383168/4	2.5	3.131165	100.0	2571343.0	1.252466	Y
3	IC 320-383168/5	10.0	11.243713	100.0	4139807.0	1.124371	Y
4	IC 320-383168/6	50.0	52.622682	100.0	2745033.0	1.052454	Y
5	IC 320-383168/7	200.0	208.914457	100.0	5362323.0	1.044572	Y
6	IC 320-383168/8	1000.0	1038.533253	100.0	5661728.0	1.038533	Y

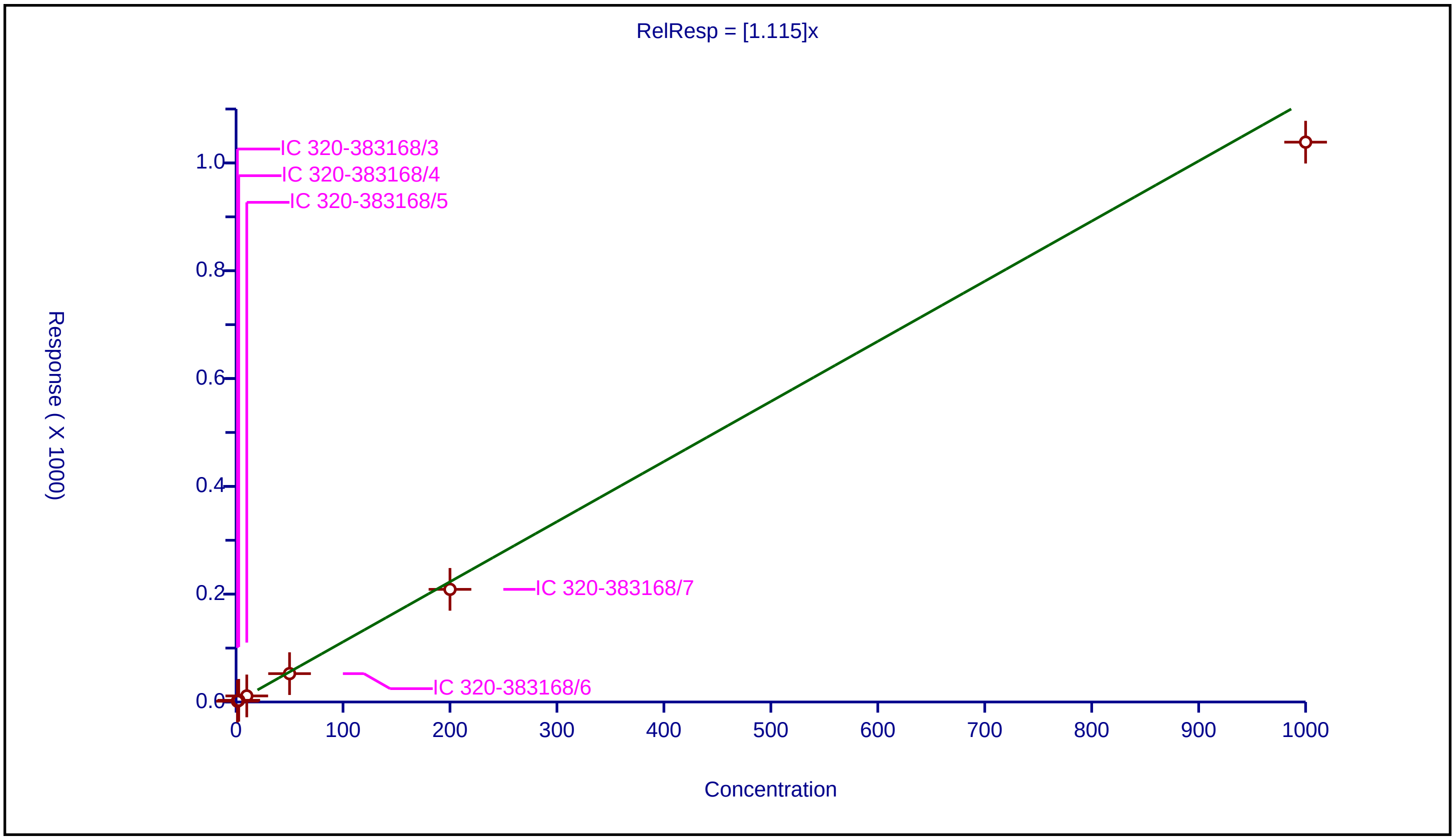

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.596

Error Coefficients

Standard Error:	39700000
Relative Standard Error:	6.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	2.100248	100.0	6215600.0	1.680198	Y
2	IC 320-383168/4	2.5	4.294535	100.0	2640868.0	1.717814	Y
3	IC 320-383168/5	10.0	16.557942	100.0	4315198.0	1.655794	Y
4	IC 320-383168/6	50.0	75.526845	100.0	2779850.0	1.510537	Y
5	IC 320-383168/7	200.0	295.156105	100.0	5428999.0	1.475781	Y
6	IC 320-383168/8	1000.0	1534.019408	100.0	5694573.0	1.534019	Y

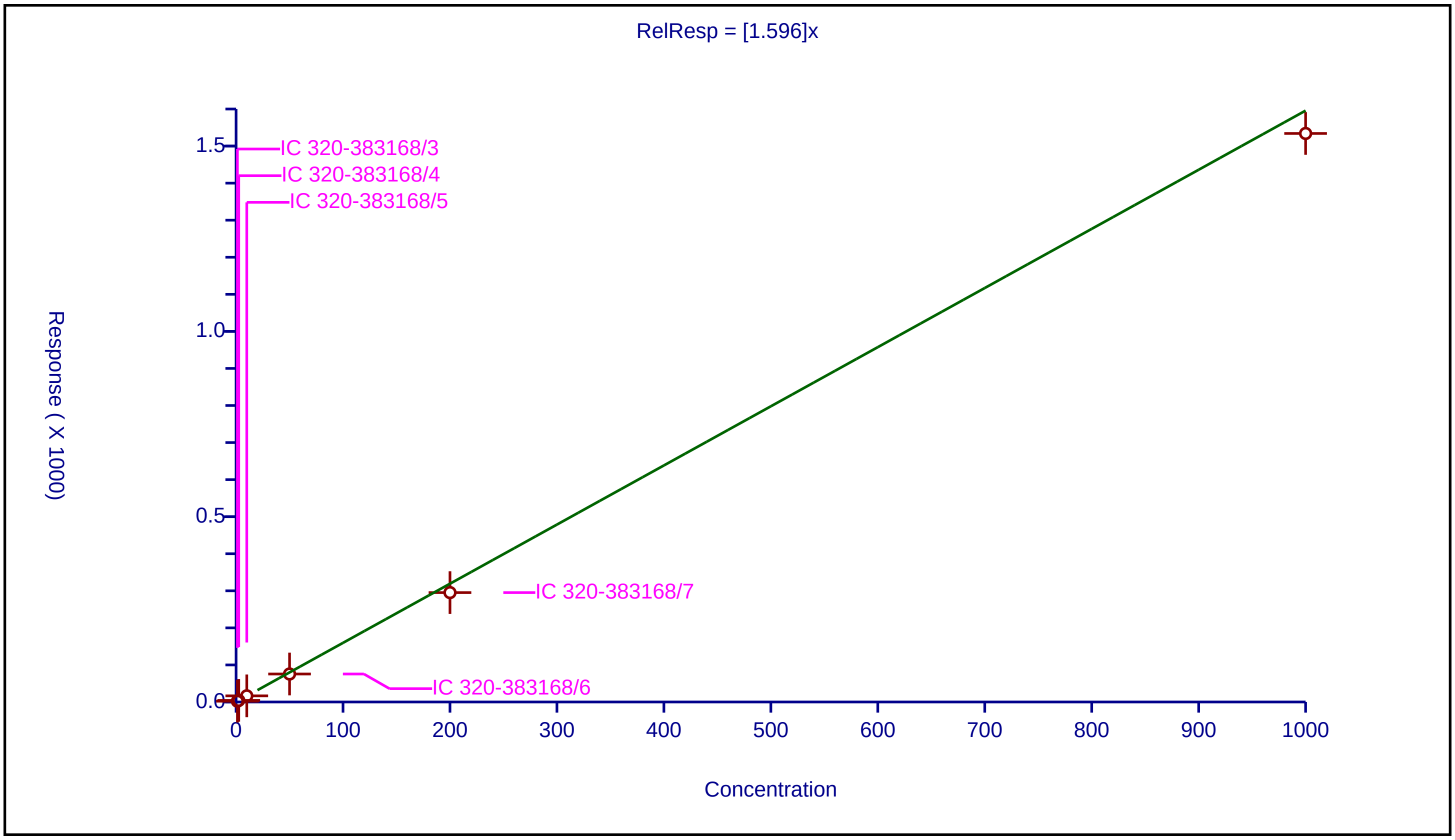

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.169

Error Coefficients

Standard Error:	34500000
Relative Standard Error:	6.9
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.537719	100.0	7019746.0	1.230176	Y
2	IC 320-383168/4	2.5	3.25634	100.0	2978774.0	1.302536	Y
3	IC 320-383168/5	10.0	11.475119	100.0	5040340.0	1.147512	Y
4	IC 320-383168/6	50.0	56.510039	100.0	3118998.0	1.130201	Y
5	IC 320-383168/7	200.0	218.129378	100.0	6618644.0	1.090647	Y
6	IC 320-383168/8	1000.0	1114.833335	100.0	6788271.0	1.114833	Y

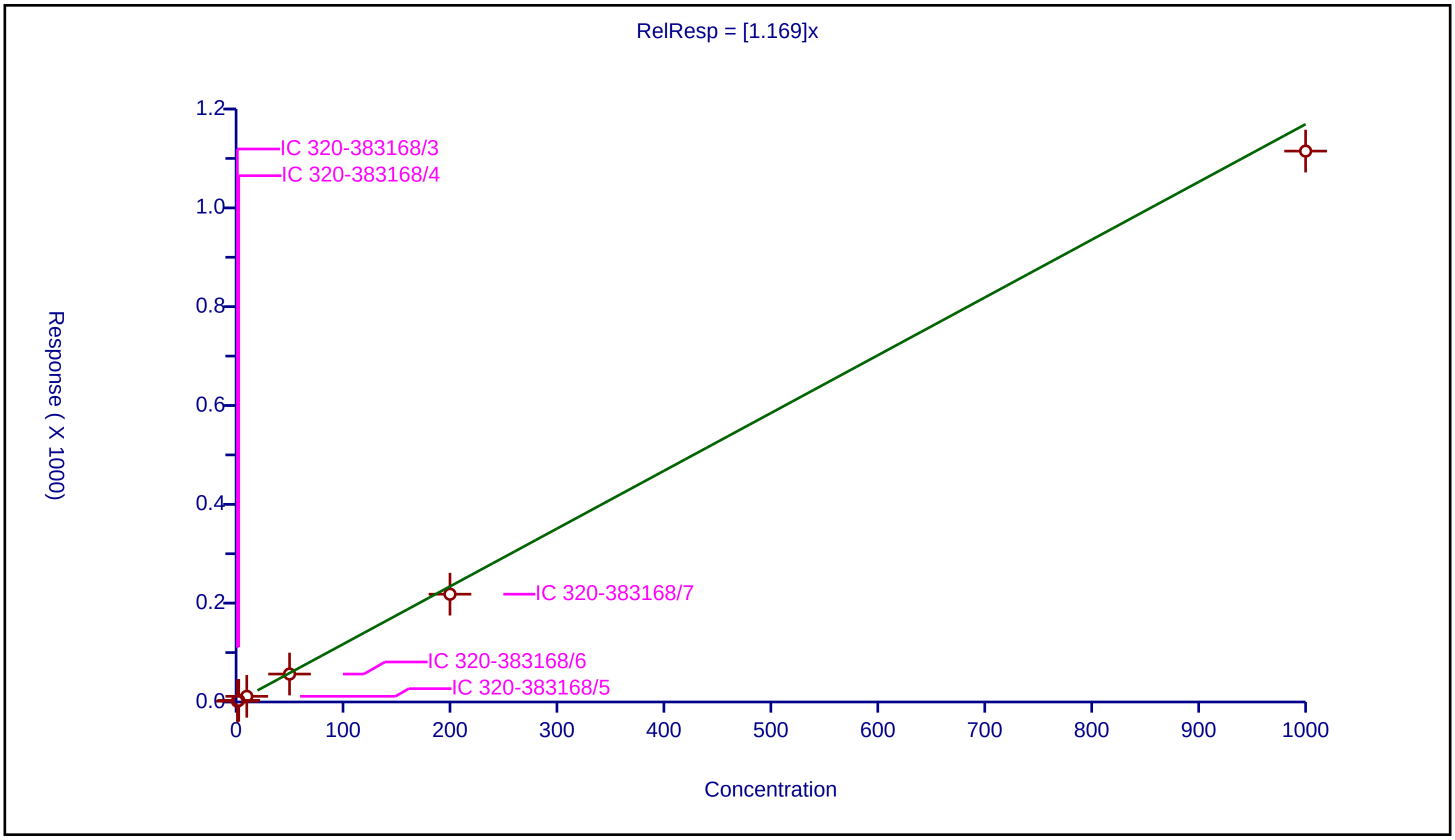

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9336

Error Coefficients

Standard Error:	26800000
Relative Standard Error:	8.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.25144	100.0	7630092.0	1.001152	Y
2	IC 320-383168/4	2.5	2.662735	100.0	3126748.0	1.065094	Y
3	IC 320-383168/5	10.0	9.15467	100.0	5591026.0	0.915467	Y
4	IC 320-383168/6	50.0	44.489674	100.0	3382241.0	0.889793	Y
5	IC 320-383168/7	200.0	175.1544	100.0	6533048.0	0.875772	Y
6	IC 320-383168/8	1000.0	854.518677	100.0	6883032.0	0.854519	Y

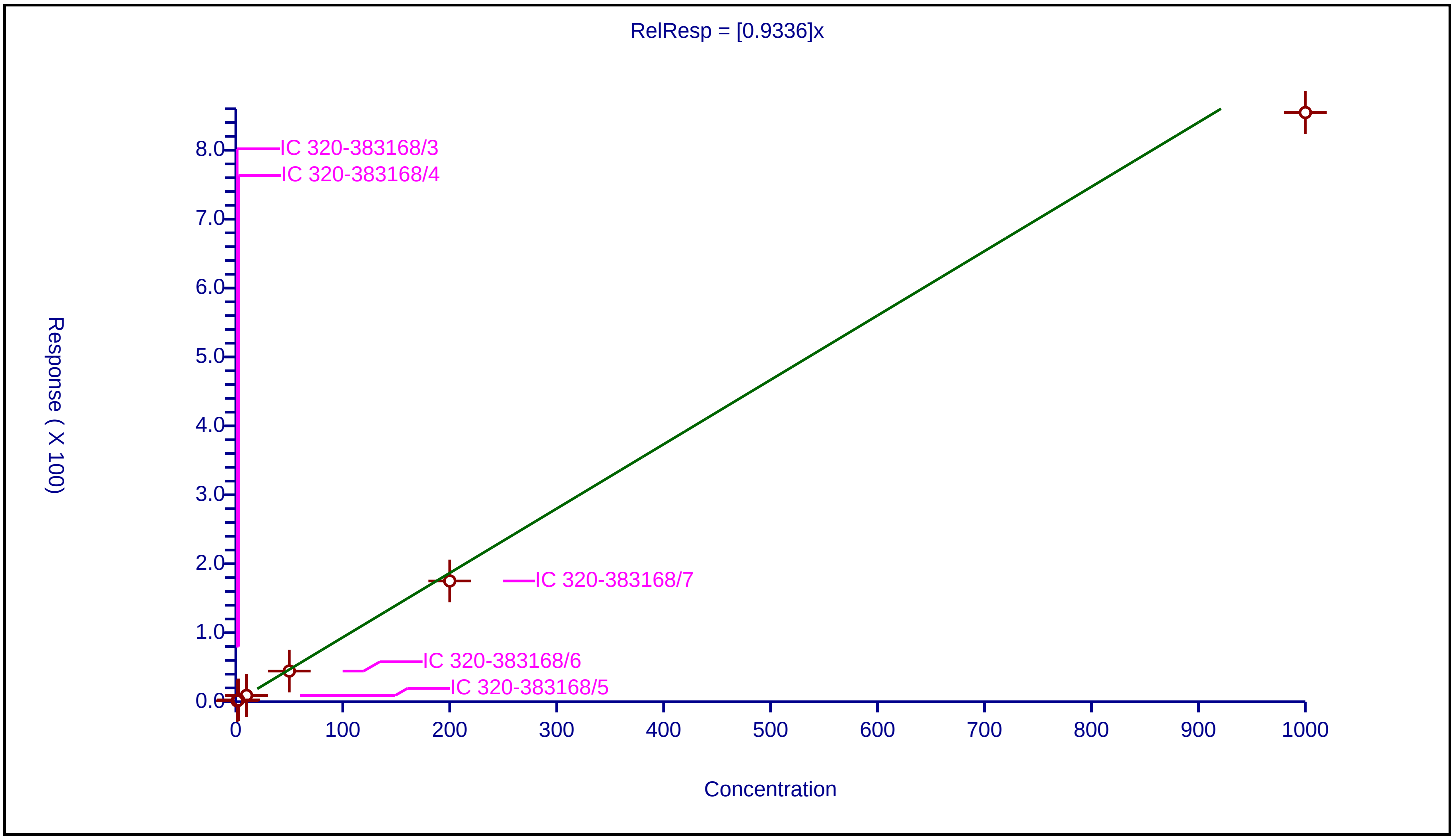

Calibration / 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.009

Error Coefficients

Standard Error:	39100000
Relative Standard Error:	5.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.337928	100.0	9974678.0	1.070342	Y
2	IC 320-383168/4	2.5	2.724229	100.0	4266858.0	1.089692	Y
3	IC 320-383168/5	10.0	9.963392	100.0	7273246.0	0.996339	Y
4	IC 320-383168/6	50.0	49.416547	100.0	4553149.0	0.988331	Y
5	IC 320-383168/7	200.0	191.772507	100.0	8568017.0	0.958863	Y
6	IC 320-383168/8	1000.0	948.38568	100.0	9039472.0	0.948386	Y

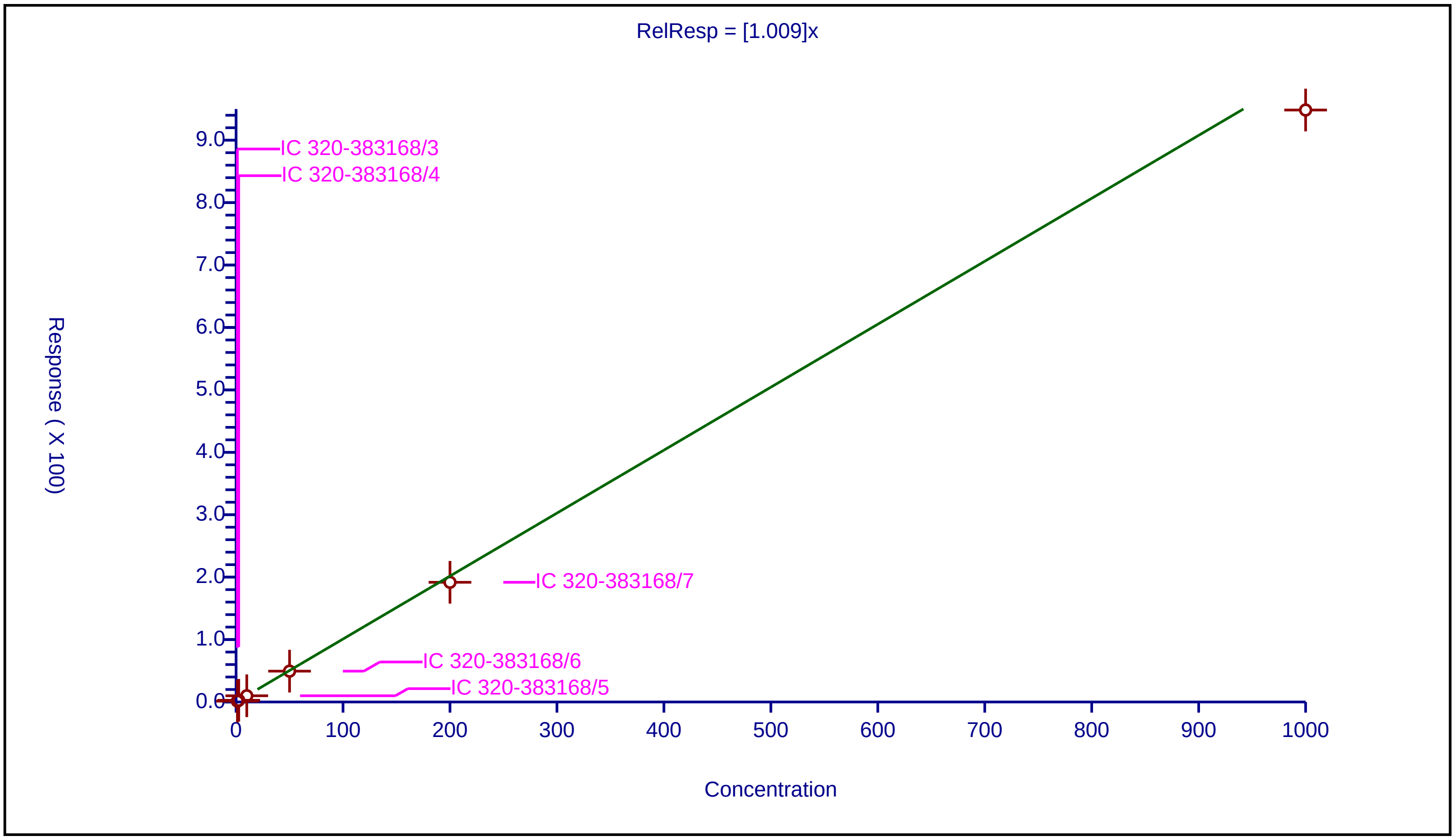

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.08

Error Coefficients

Standard Error:	28000000
Relative Standard Error:	7.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.409197	100.0	6834320.0	1.127357	Y
2	IC 320-383168/4	2.5	3.030897	100.0	2862915.0	1.212359	Y
3	IC 320-383168/5	10.0	10.940155	100.0	4793122.0	1.094016	Y
4	IC 320-383168/6	50.0	52.654375	100.0	3032823.0	1.053088	Y
5	IC 320-383168/7	200.0	200.683821	100.0	5868202.0	1.003419	Y
6	IC 320-383168/8	1000.0	990.750066	100.0	6200617.0	0.99075	Y

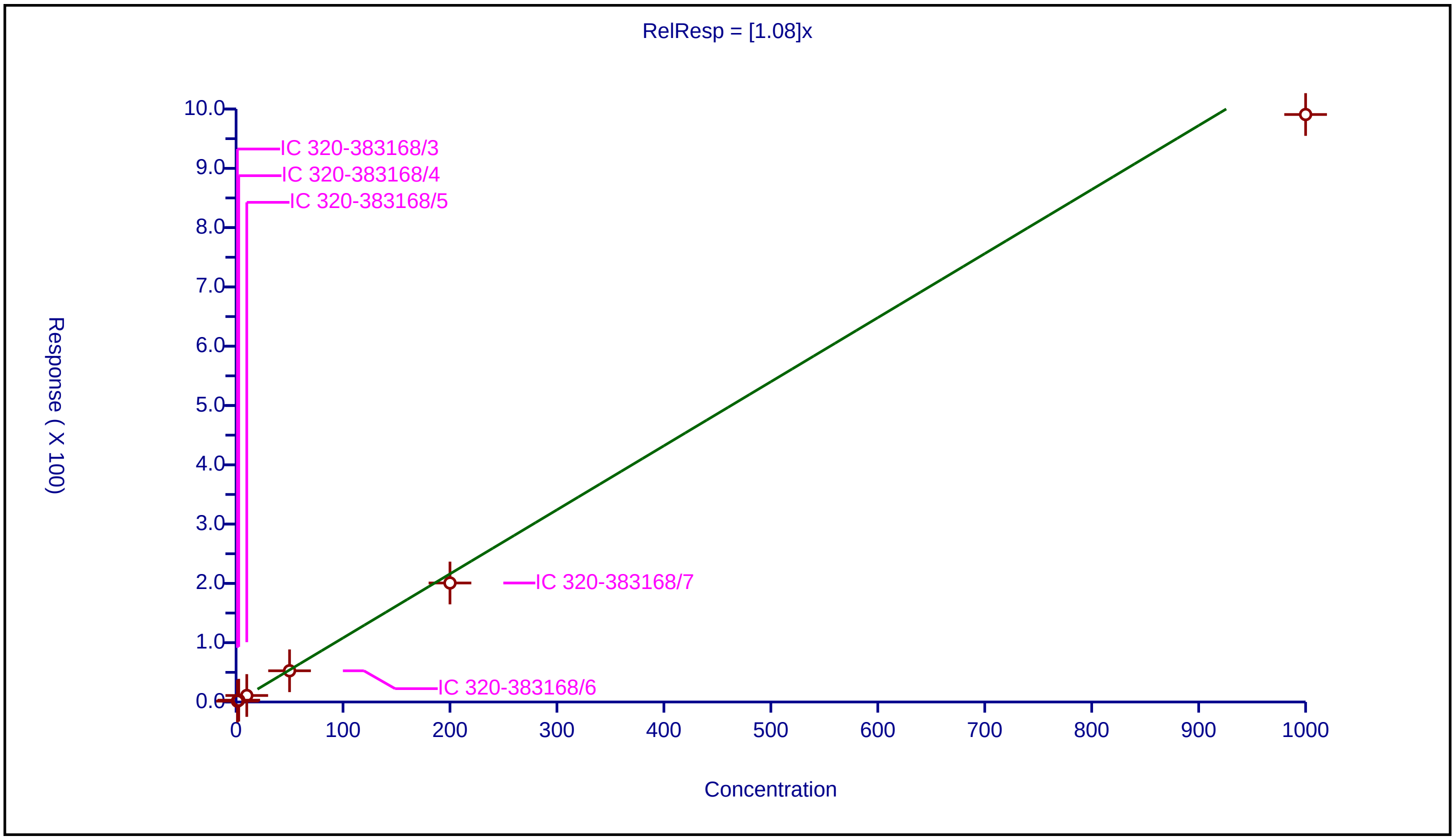

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.243

Error Coefficients

Standard Error:	42700000
Relative Standard Error:	5.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.617026	100.0	8939187.0	1.293621	Y
2	IC 320-383168/4	2.5	3.374685	100.0	3757506.0	1.349874	Y
3	IC 320-383168/5	10.0	12.612203	100.0	6209740.0	1.26122	Y
4	IC 320-383168/6	50.0	60.870943	100.0	4014247.0	1.217419	Y
5	IC 320-383168/7	200.0	233.931732	100.0	7552939.0	1.169659	Y
6	IC 320-383168/8	1000.0	1167.483652	100.0	8024539.0	1.167484	Y

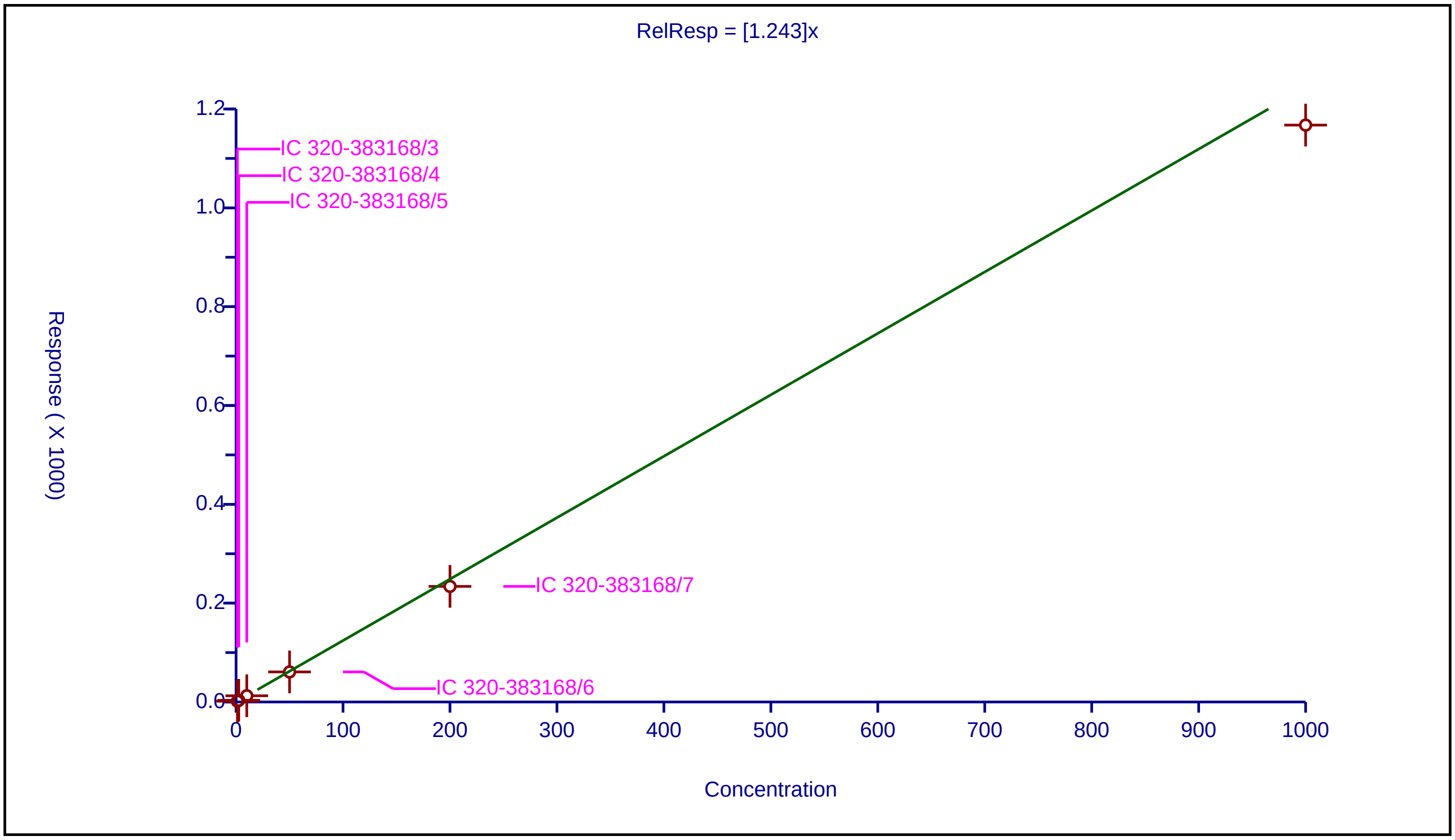

Calibration

/ 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.002

Error Coefficients

Standard Error:	29200000
Relative Standard Error:	8.5
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.327769	100.0	7630092.0	1.062215	Y
2	IC 320-383168/4	2.5	2.866269	100.0	3126748.0	1.146507	Y
3	IC 320-383168/5	10.0	9.593123	100.0	5591026.0	0.959312	Y
4	IC 320-383168/6	50.0	48.212265	100.0	3382241.0	0.964245	Y
5	IC 320-383168/7	200.0	189.614909	100.0	6533048.0	0.948075	Y
6	IC 320-383168/8	1000.0	929.804133	100.0	6883032.0	0.929804	Y

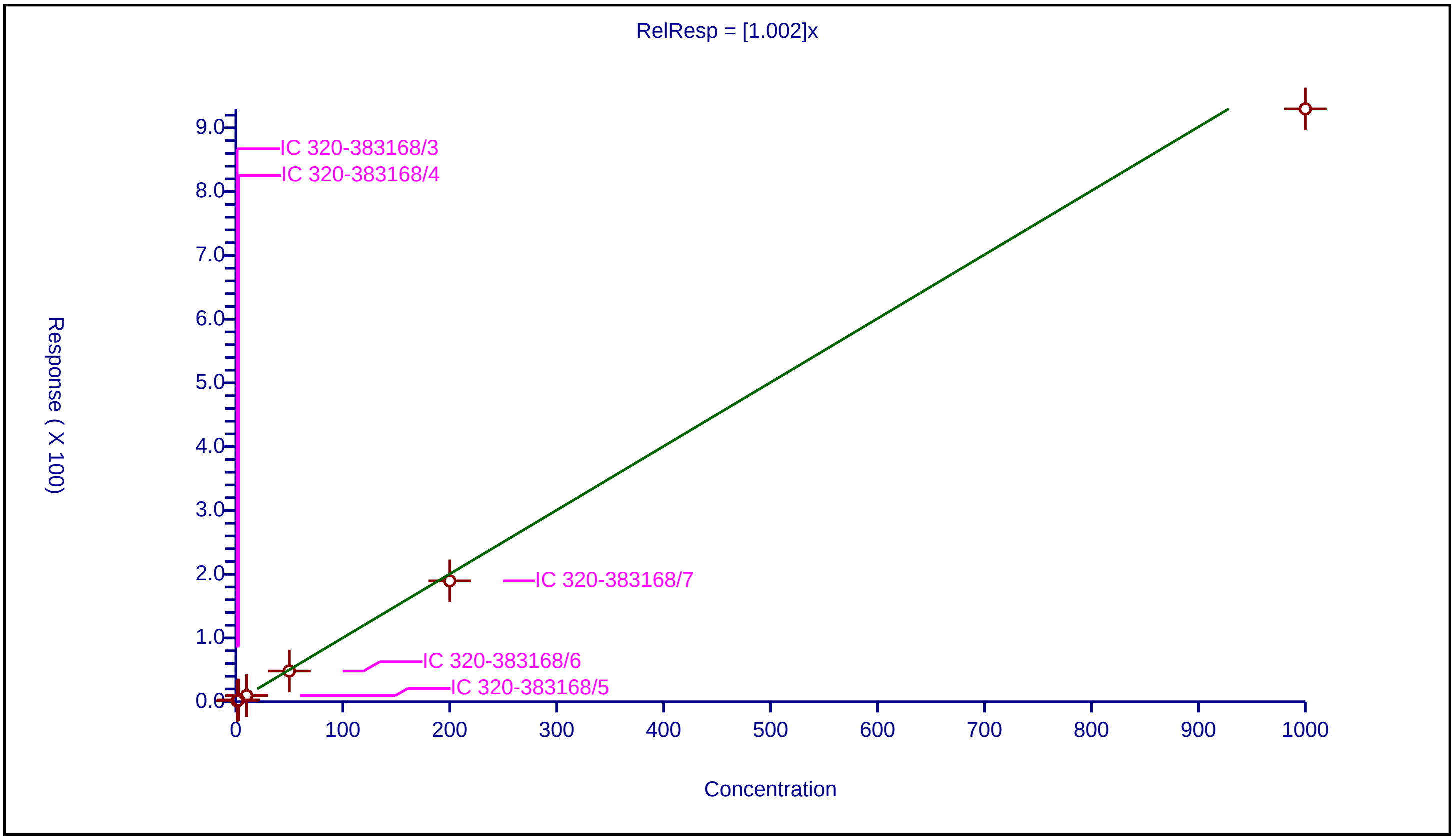

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.288

Error Coefficients

Standard Error:	37100000
Relative Standard Error:	6.2
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.729521	100.0	7257441.0	1.383617	Y
2	IC 320-383168/4	2.5	3.454284	100.0	3192644.0	1.381714	Y
3	IC 320-383168/5	10.0	13.011646	100.0	5058891.0	1.301165	Y
4	IC 320-383168/6	50.0	61.926336	100.0	3221618.0	1.238527	Y
5	IC 320-383168/7	200.0	240.999792	100.0	6606392.0	1.204999	Y
6	IC 320-383168/8	1000.0	1219.199213	100.0	6673211.0	1.219199	Y

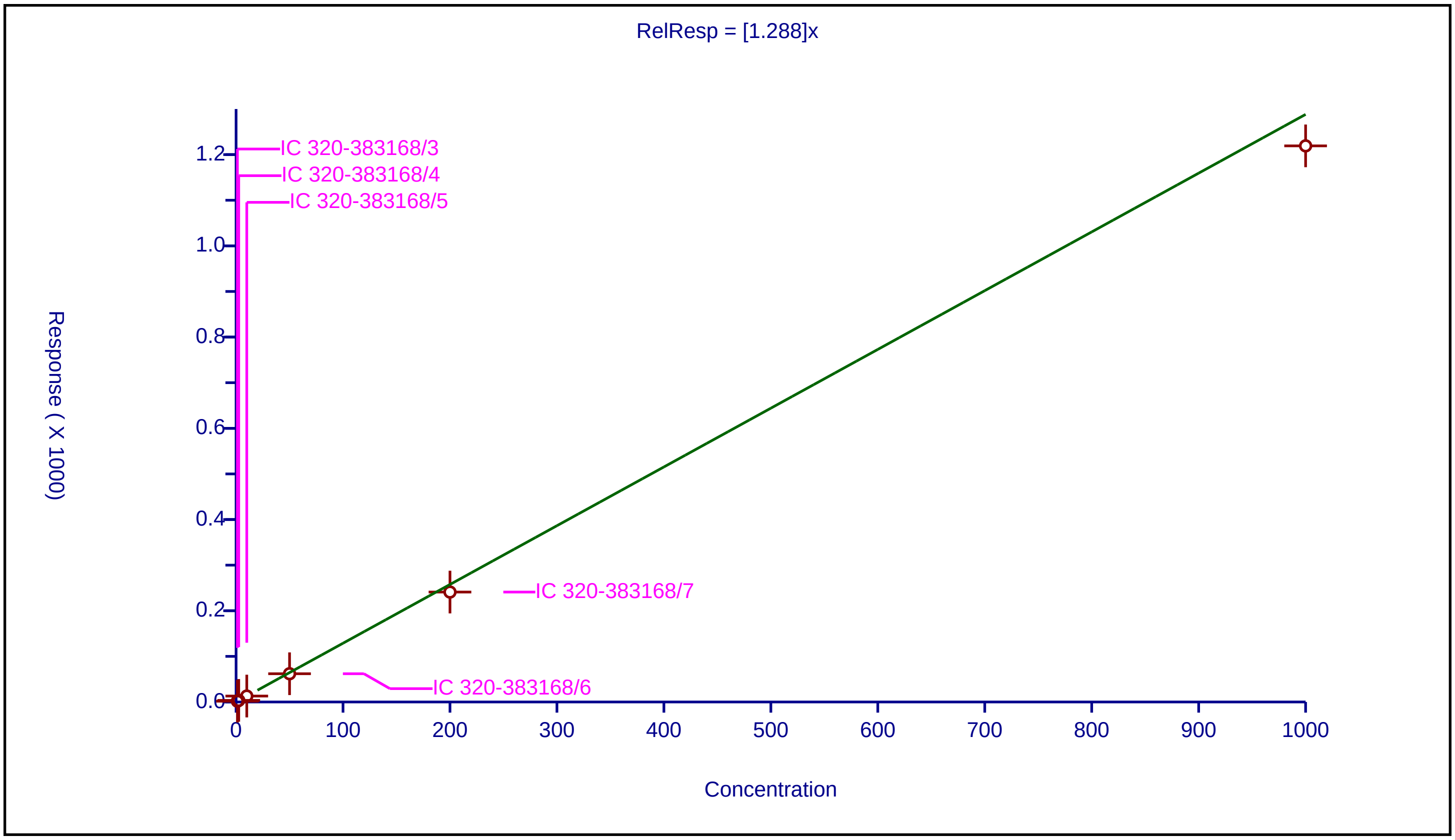

Calibration **/ 1,2,3,7,8-PeCDD**

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.106

Error Coefficients

Standard Error:	25400000
Relative Standard Error:	6.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.422734	100.0	6244315.0	1.138187	Y
2	IC 320-383168/4	2.5	3.035331	100.0	2671208.0	1.214132	Y
3	IC 320-383168/5	10.0	11.288589	100.0	4345521.0	1.128859	Y
4	IC 320-383168/6	50.0	53.85295	100.0	2865674.0	1.077059	Y
5	IC 320-383168/7	200.0	213.013133	100.0	5243649.0	1.065066	Y
6	IC 320-383168/8	1000.0	1013.707864	100.0	5502316.0	1.013708	Y

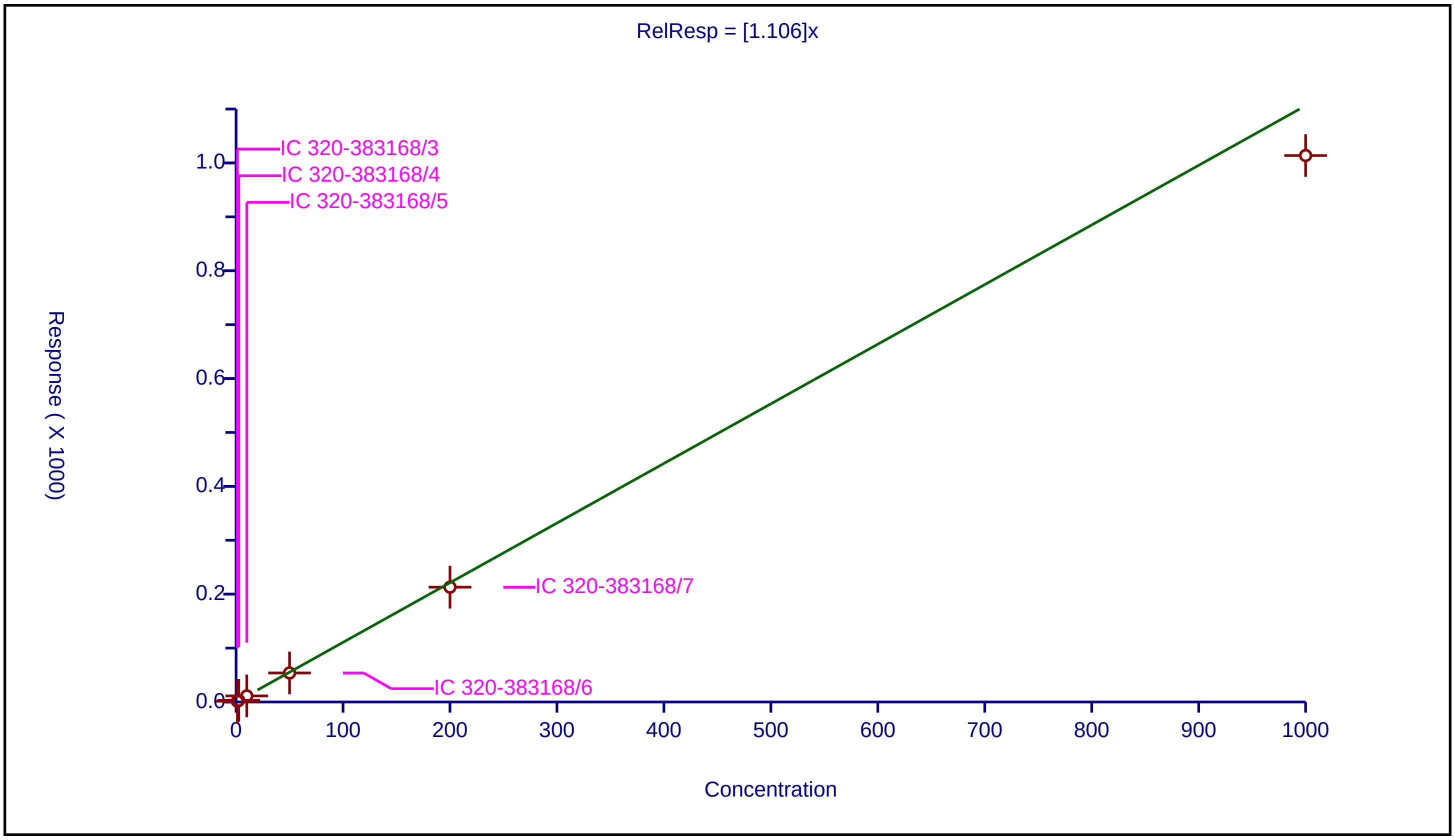

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.106

Error Coefficients

Standard Error:	40200000
Relative Standard Error:	6.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.443687	100.0	9753916.0	1.154949	Y
2	IC 320-383168/4	2.5	3.003107	100.0	4247335.0	1.201243	Y
3	IC 320-383168/5	10.0	11.211396	100.0	6879768.0	1.12114	Y
4	IC 320-383168/6	50.0	54.229475	100.0	4514934.0	1.084589	Y
5	IC 320-383168/7	200.0	209.565514	100.0	8256577.0	1.047828	Y
6	IC 320-383168/8	1000.0	1026.368914	100.0	8594514.0	1.026369	Y

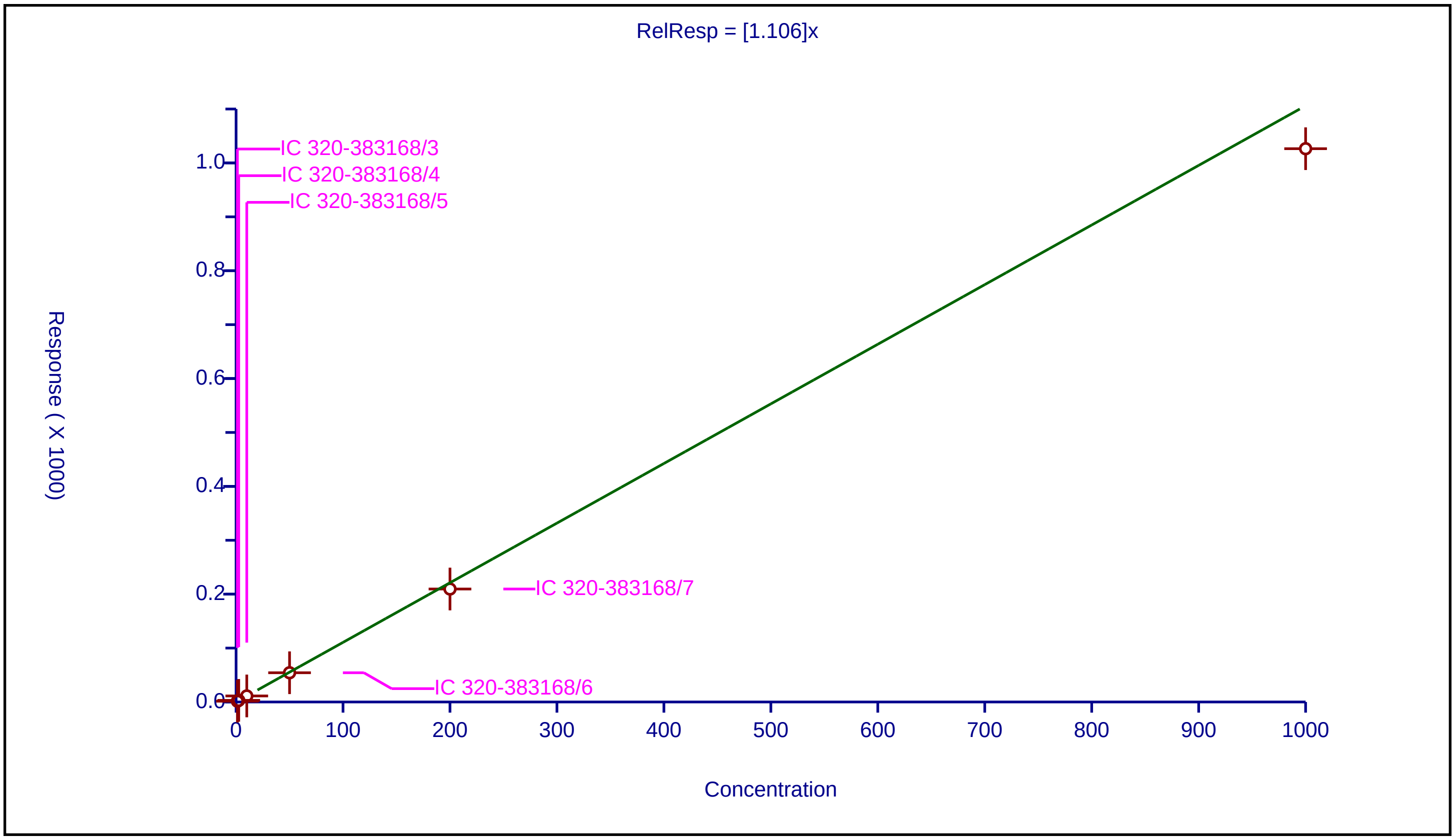

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.274

Error Coefficients

Standard Error:	40800000
Relative Standard Error:	6.1
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.701928	100.0	8442074.0	1.361542	Y
2	IC 320-383168/4	2.5	3.401797	100.0	3457908.0	1.360719	Y
3	IC 320-383168/5	10.0	12.911532	100.0	5721877.0	1.291153	Y
4	IC 320-383168/6	50.0	62.105215	100.0	3693532.0	1.242104	Y
5	IC 320-383168/7	200.0	239.92622	100.0	7129573.0	1.199631	Y
6	IC 320-383168/8	1000.0	1186.190729	100.0	7543852.0	1.186191	Y

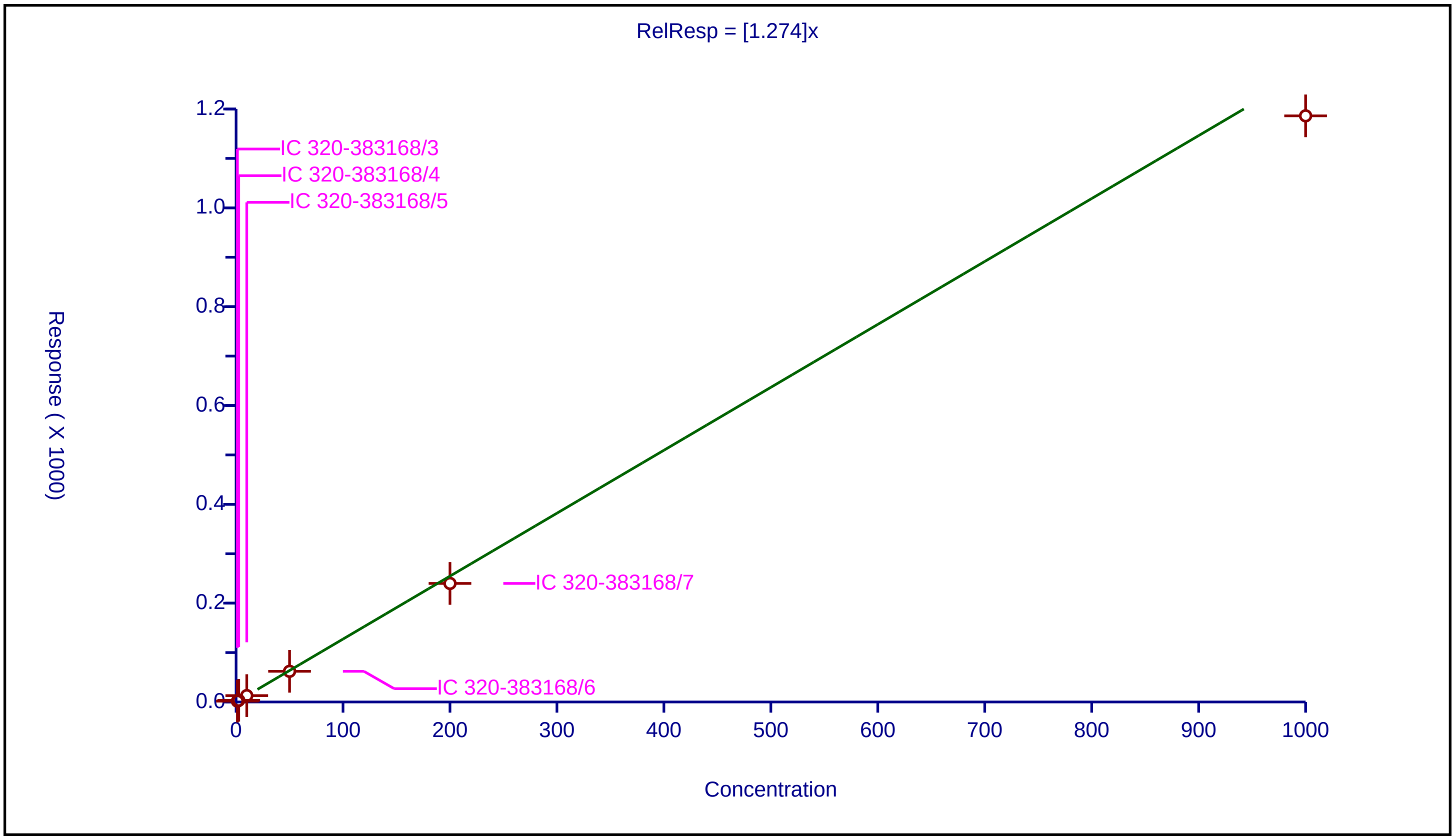

Calibration / 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9067

Error Coefficients

Standard Error:	39000000
Relative Standard Error:	6.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	1.25	1.185156	100.0	11491396.0	0.948125	Y
2	IC 320-383168/4	2.5	2.481928	100.0	4902358.0	0.992771	Y
3	IC 320-383168/5	10.0	8.935258	100.0	8439398.0	0.893526	Y
4	IC 320-383168/6	50.0	44.936126	100.0	5239072.0	0.898723	Y
5	IC 320-383168/7	200.0	173.624724	100.0	9723087.0	0.868124	Y
6	IC 320-383168/8	1000.0	838.740569	100.0	10203149.0	0.838741	Y

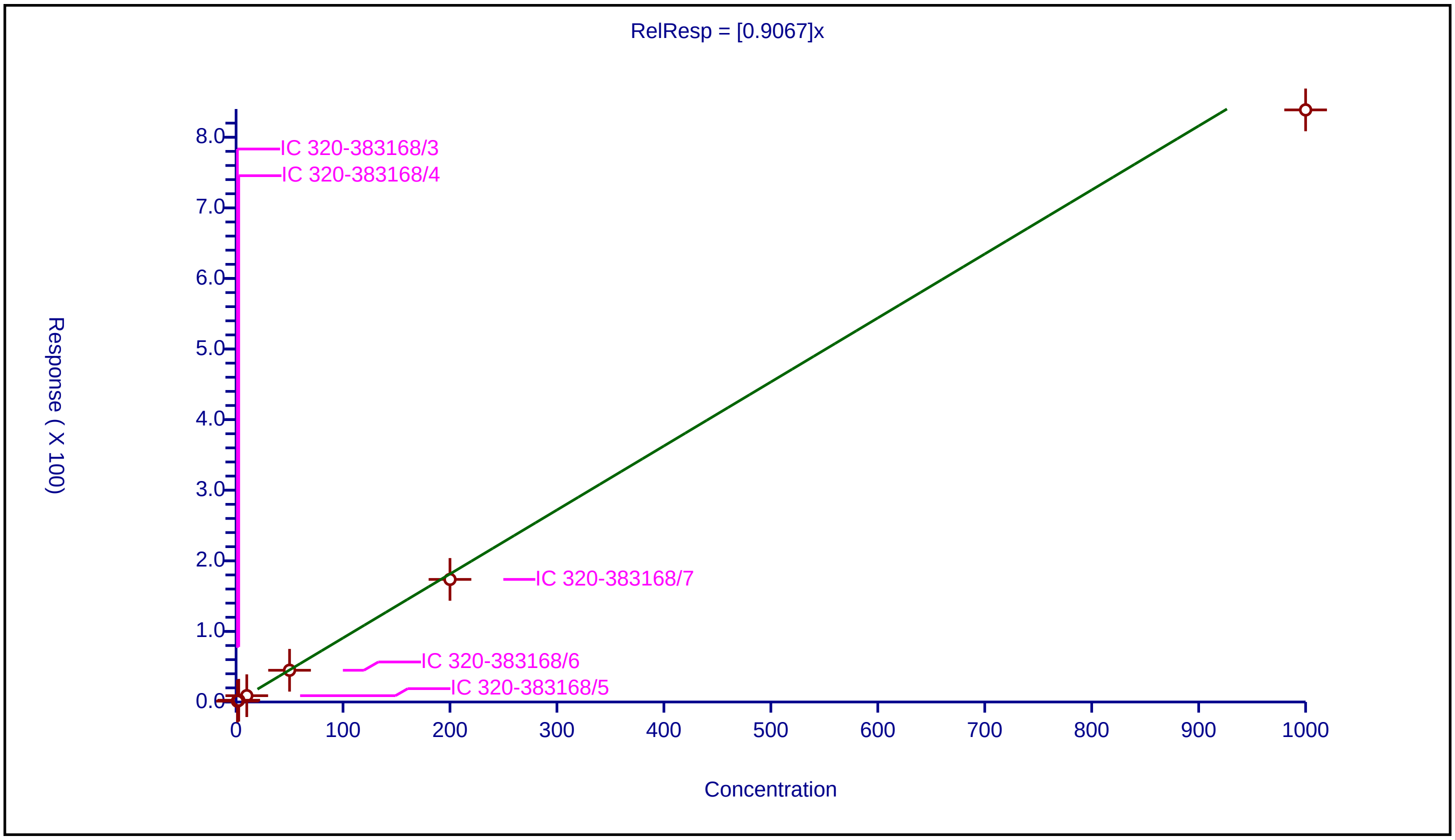

Calibration / 2,3,7,8-TCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept: 0
Slope: 1.185

Error Coefficients

Standard Error: 6520000
Relative Standard Error: 7.8
Correlation Coefficient: 0.999
Coefficient of Determination (Adjusted): 0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	0.25	0.324529	100.0	7936120.0	1.298115	Y
2	IC 320-383168/4	0.5	0.650954	100.0	3452470.0	1.301908	Y
3	IC 320-383168/5	2.0	2.341367	100.0	5440325.0	1.170684	Y
4	IC 320-383168/6	10.0	11.076649	100.0	3678459.0	1.107665	Y
5	IC 320-383168/7	40.0	45.062786	100.0	6480345.0	1.12657	Y
6	IC 320-383168/8	200.0	220.906632	100.0	6461409.0	1.104533	Y

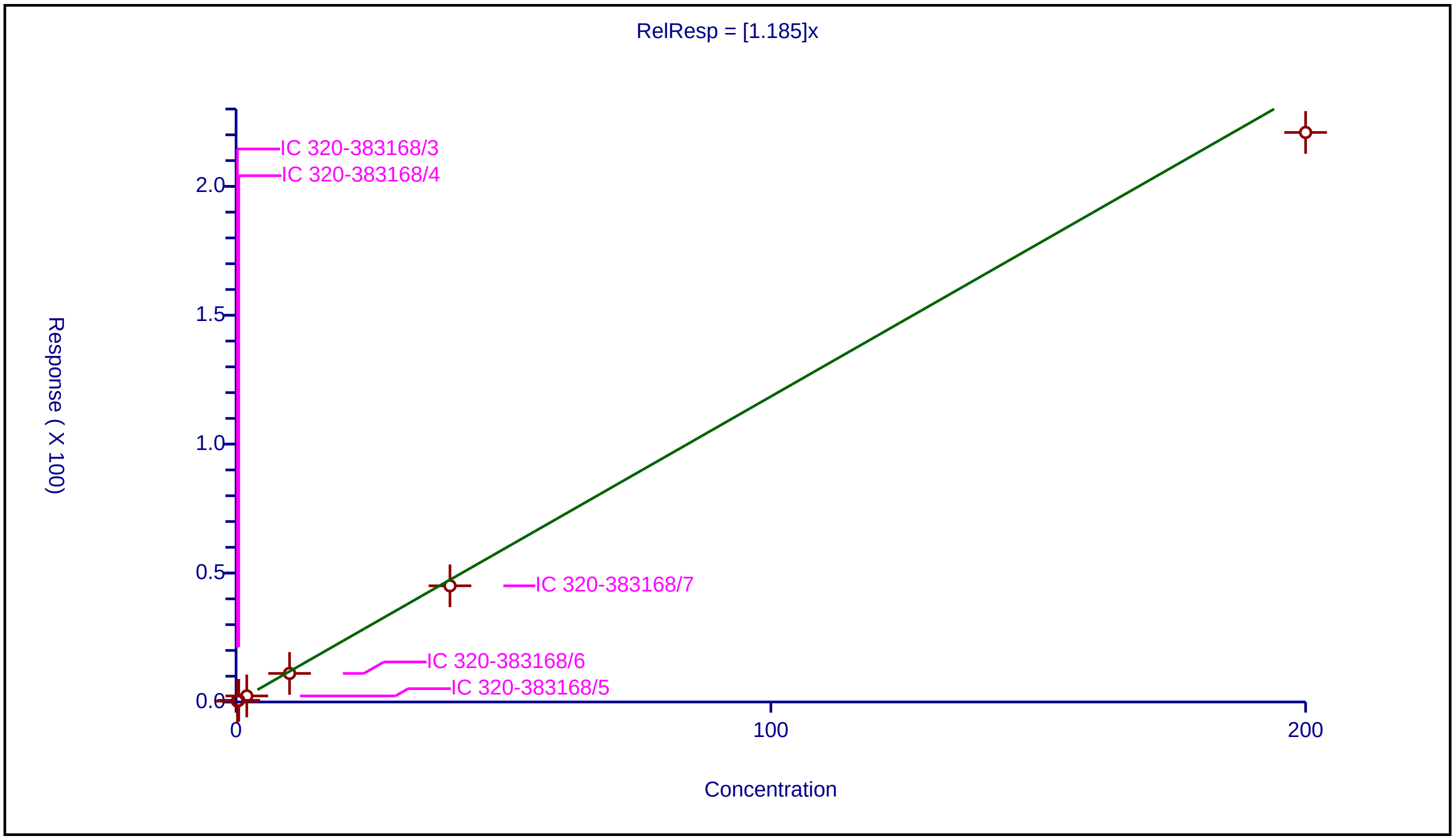

Calibration / 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.131

Error Coefficients

Standard Error:	8770000
Relative Standard Error:	8.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	0.25	0.312232	100.0	11575035.0	1.248929	Y
2	IC 320-383168/4	0.5	0.622843	100.0	4898504.0	1.245686	Y
3	IC 320-383168/5	2.0	2.239791	100.0	8006239.0	1.119895	Y
4	IC 320-383168/6	10.0	10.729226	100.0	5259494.0	1.072923	Y
5	IC 320-383168/7	40.0	42.760422	100.0	9390658.0	1.069011	Y
6	IC 320-383168/8	200.0	206.210374	100.0	9303208.0	1.031052	Y

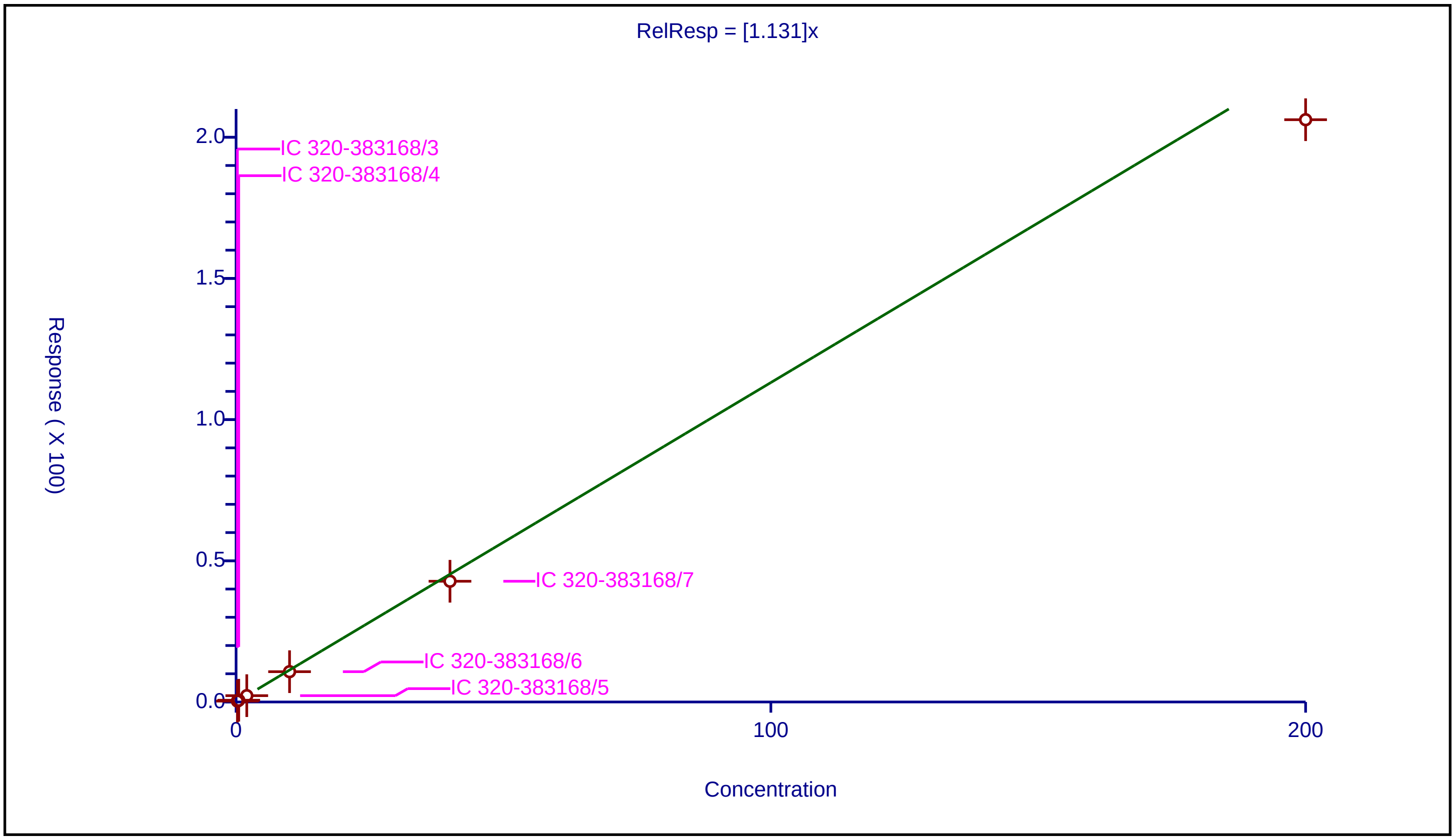

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.121

Error Coefficients

Standard Error:	6310000
Relative Standard Error:	4.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	0.25	0.297747	100.0	7617551.0	1.190986	Y
2	IC 320-383168/4	0.5	0.57225	100.0	3341895.0	1.1445	Y
3	IC 320-383168/5	2.0	2.134413	100.0	5314575.0	1.067207	Y
4	IC 320-383168/6	10.0	10.780398	100.0	3589784.0	1.07804	Y
5	IC 320-383168/7	40.0	44.801257	100.0	6193112.0	1.120031	Y
6	IC 320-383168/8	200.0	224.767684	100.0	6149174.0	1.123838	Y

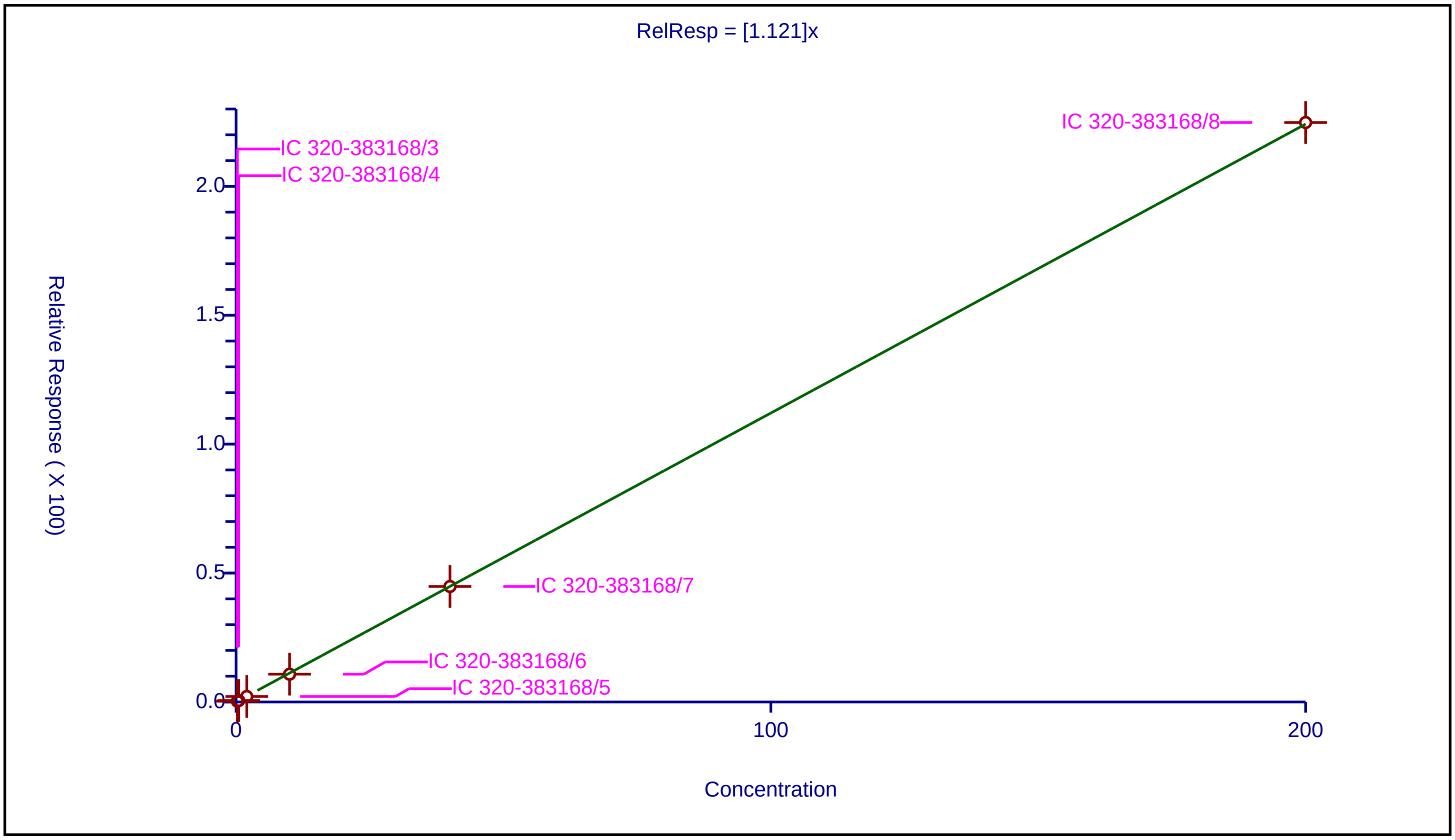

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.195

Error Coefficients

Standard Error:	45000000
Relative Standard Error:	5.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	2.5	3.049091	200.0	8344650.0	1.219637	Y
2	IC 320-383168/4	5.0	6.479977	200.0	3459611.0	1.295995	Y
3	IC 320-383168/5	20.0	24.758791	200.0	5749279.0	1.23794	Y
4	IC 320-383168/6	100.0	114.803832	200.0	3663484.0	1.148038	Y
5	IC 320-383168/7	400.0	447.337468	200.0	8394716.0	1.118344	Y
6	IC 320-383168/8	2000.0	2297.286153	200.0	8603138.0	1.148643	Y

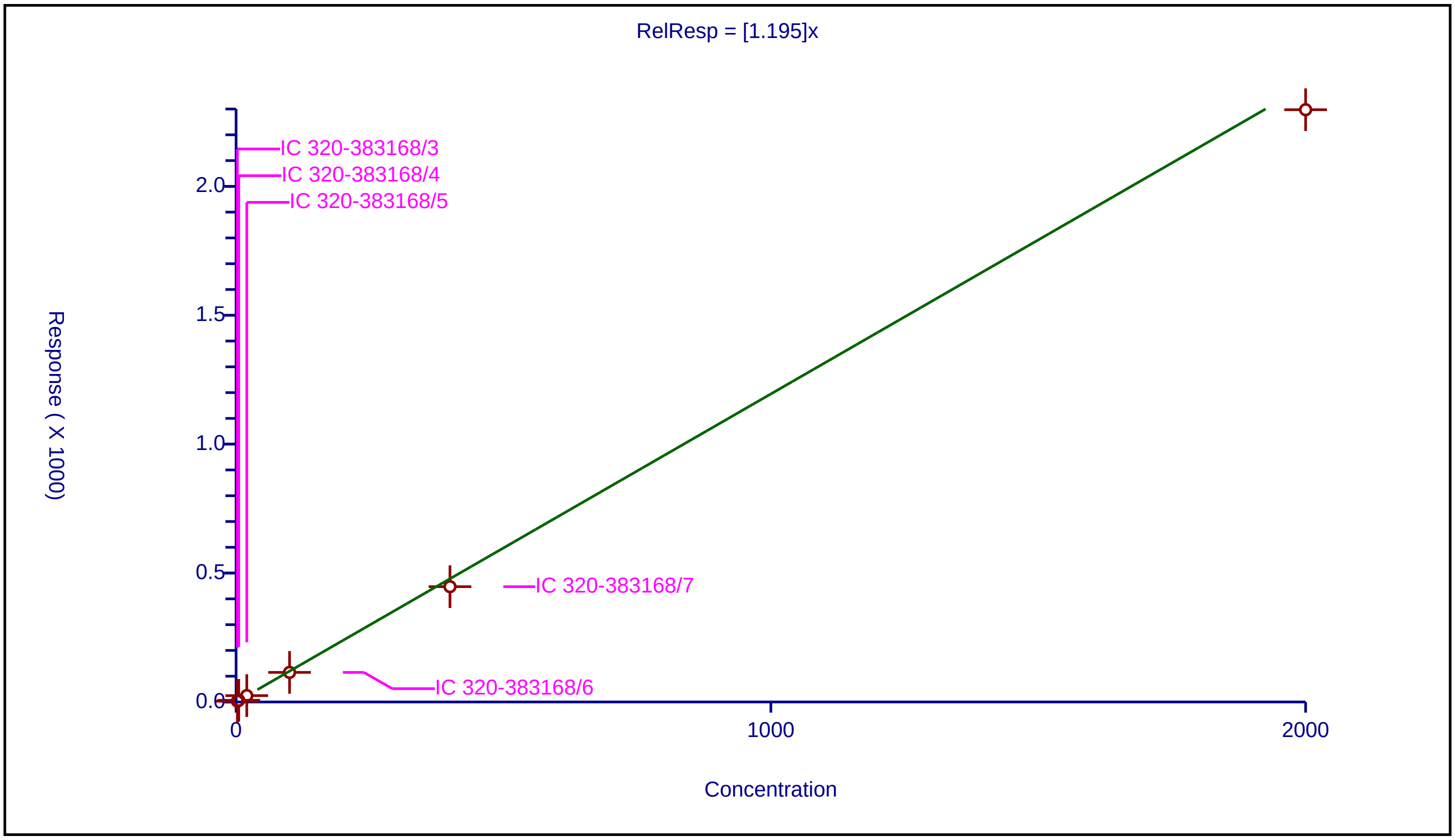

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.481

Error Coefficients

Standard Error:	58800000
Relative Standard Error:	3.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-383168/3	2.5	3.731157	200.0	8344650.0	1.492463	Y
2	IC 320-383168/4	5.0	7.859439	200.0	3459611.0	1.571888	Y
3	IC 320-383168/5	20.0	29.269374	200.0	5749279.0	1.463469	Y
4	IC 320-383168/6	100.0	142.065859	200.0	3663484.0	1.420659	Y
5	IC 320-383168/7	400.0	573.55041	200.0	8394716.0	1.433876	Y
6	IC 320-383168/8	2000.0	3006.410033	200.0	8603138.0	1.503205	Y

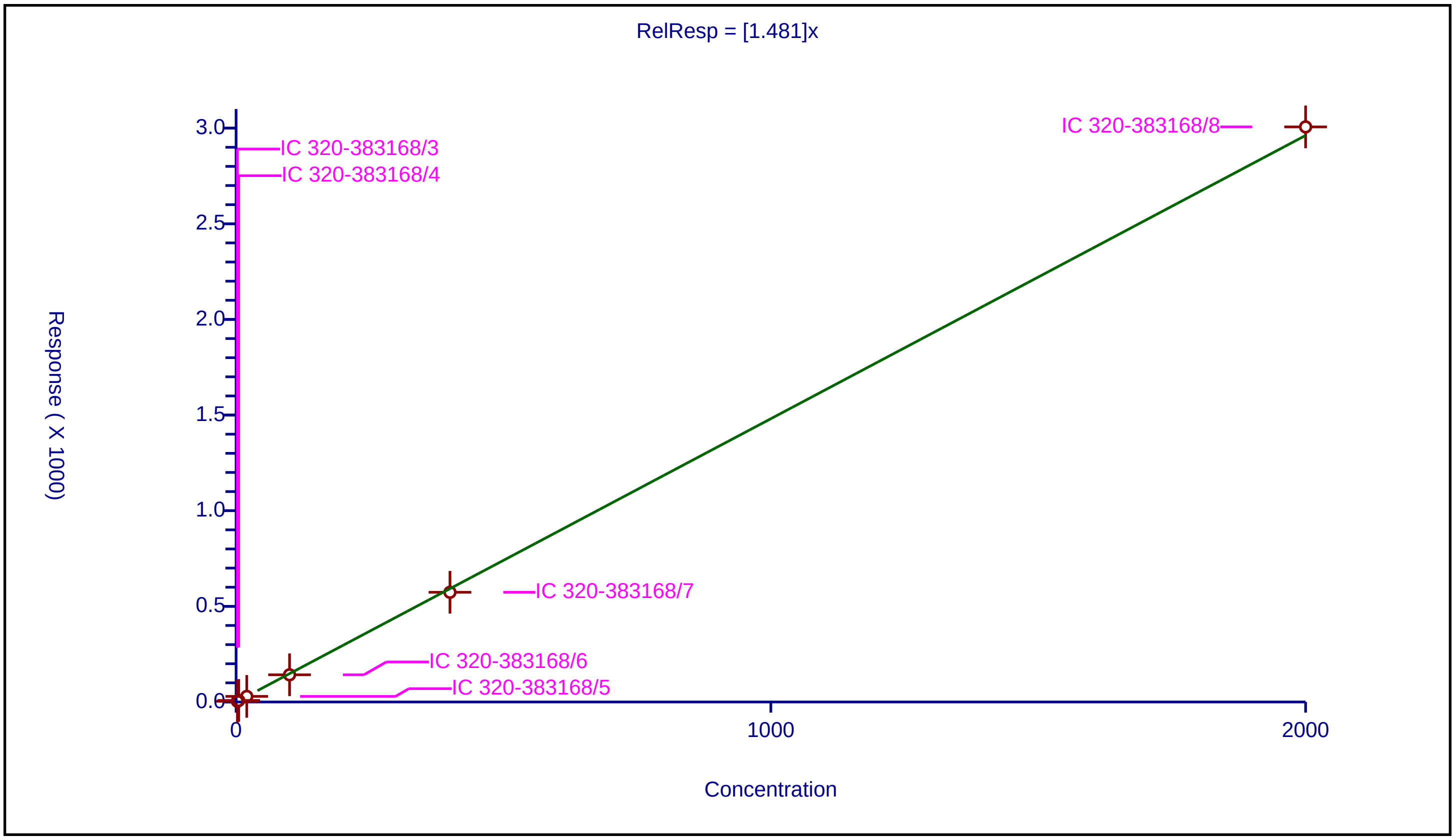

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): WDM 320-383168/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 06/03/2020 12:28

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.79	15

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d				
Injection Date:	03-Jun-2020 12:28:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 26368
H (Peak Height) = 180464

%R = 15 <= 25
Passed

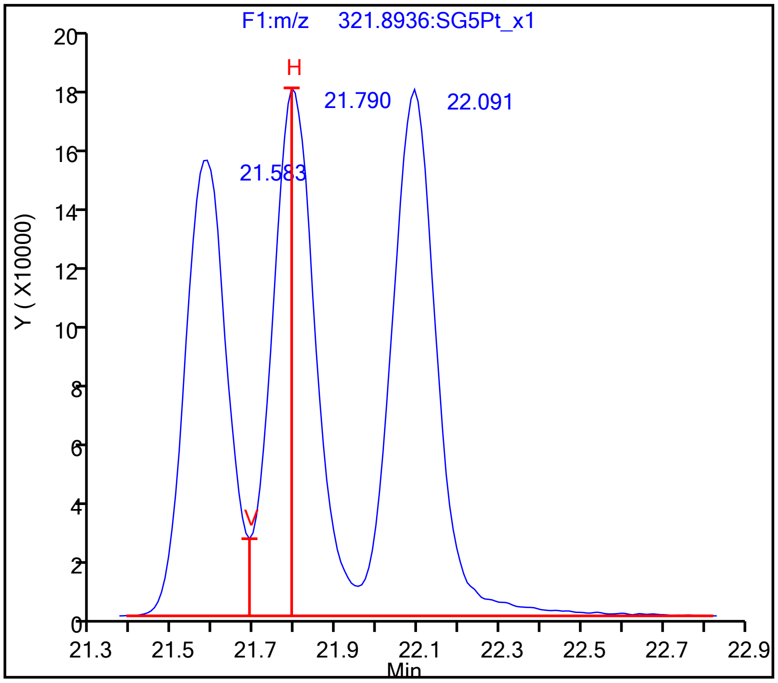

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): WDM 320-390253/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 06/27/2020 13:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.91	23

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d				
Injection Date:	27-Jun-2020 13:12:28	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 549299
H (Peak Height) = 2342681

%R = 23 <= 25
Passed

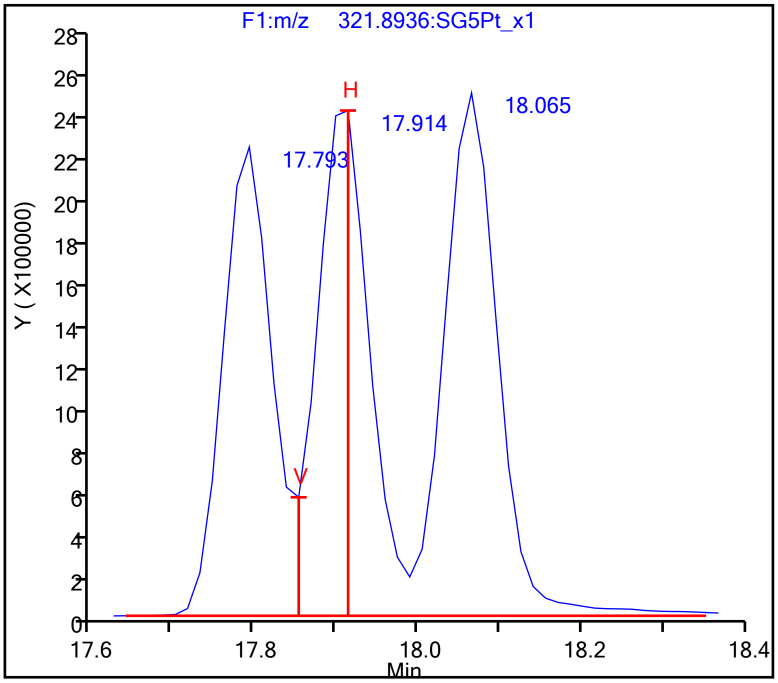

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): WDM 320-405028/1   Instrument ID (1): 10D5

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 08/19/2020 10:20

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.67	23

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d				
Injection Date:	19-Aug-2020 10:20:00	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 271054
H (Peak Height) = 1179094

%R = 23 <= 25
Passed

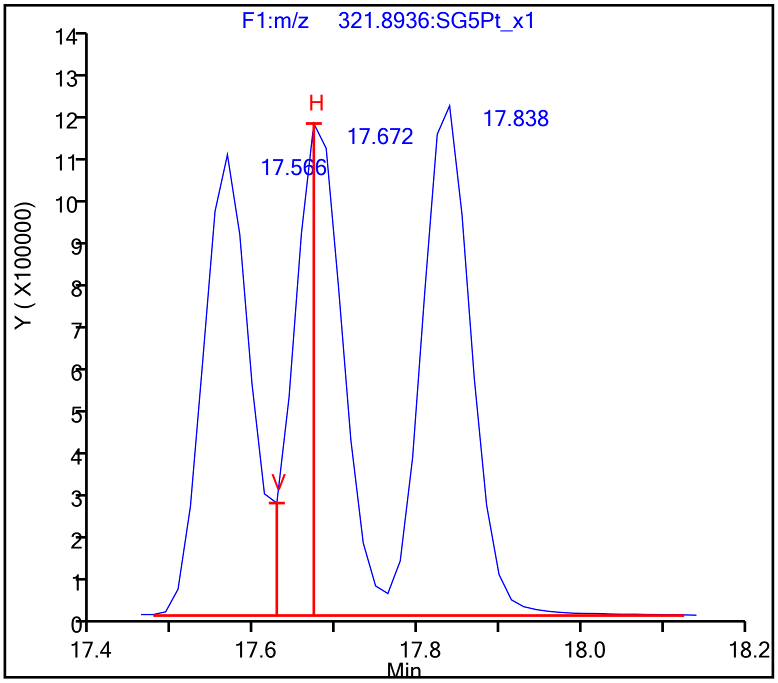

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): WDM 320-405030/15 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 08/19/2020 22:17

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.69	22

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d				
Injection Date:	19-Aug-2020 22:17:59	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA/AJS	ALS Bottle#:	1	Worklist Smp#:	15
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 244434
H (Peak Height) = 1138237

%R = 22 <= 25
Passed

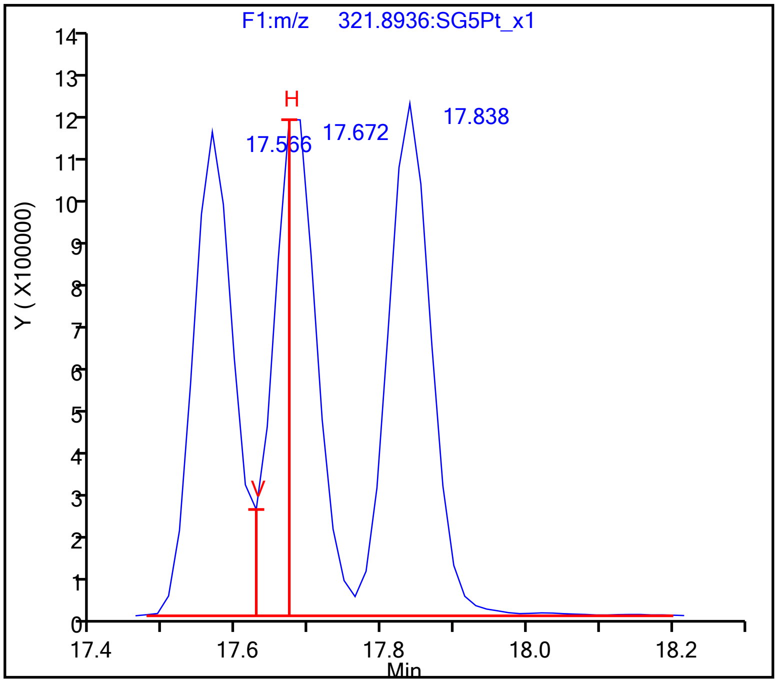

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): CPS 320-405198/1 Instrument ID (1): 4D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 08/20/2020 01:30

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	15.02	23

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d				
Injection Date:	20-Aug-2020 01:30:34	Instrument ID:	4D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1809746
H (Peak Height) = 7727954

%R = 23 <= 25
Passed

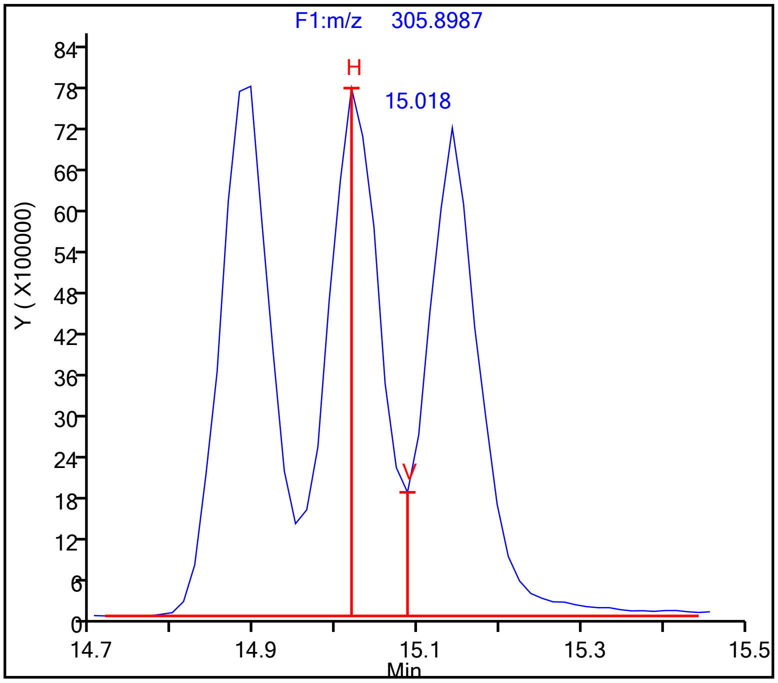

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d				
Injection Date:	20-Aug-2020 01:30:34	Instrument ID:	4D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): WDM 320-405471/15   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 08/20/2020 23:09

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.65	17

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d				
Injection Date:	20-Aug-2020 23:09:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 19696
H (Peak Height) = 115043

%R = 17 <= 25
Passed

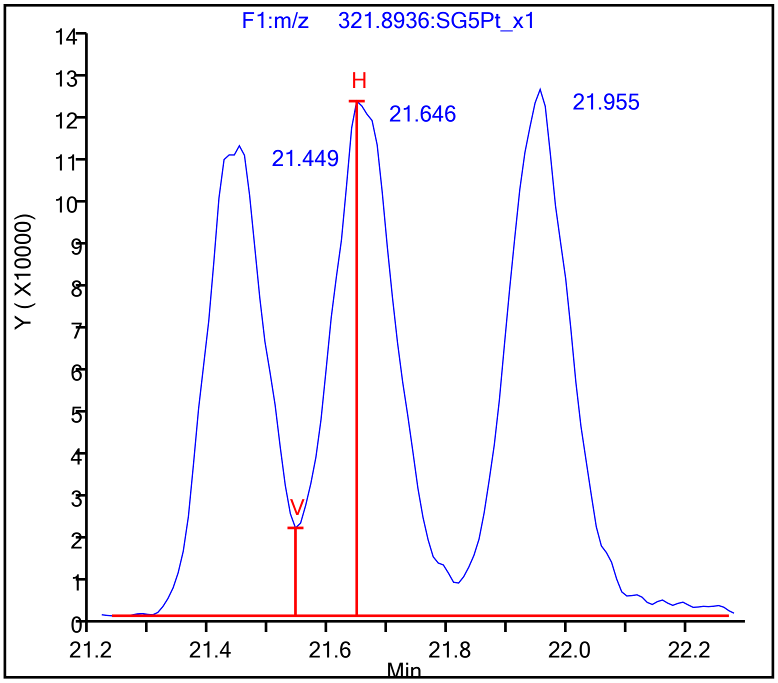

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Lab Sample ID (1): CPS 320-405652/2   Instrument ID (1): 4D2

GC Column (1): DB-225   ID: 0.32(mm)   Date Analyzed (1): 08/20/2020 16:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	14.97	24

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d				
Injection Date:	20-Aug-2020 16:57:18	Instrument ID:	4D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1887570
H (Peak Height) = 7755090

%R = 24 <= 25
Passed

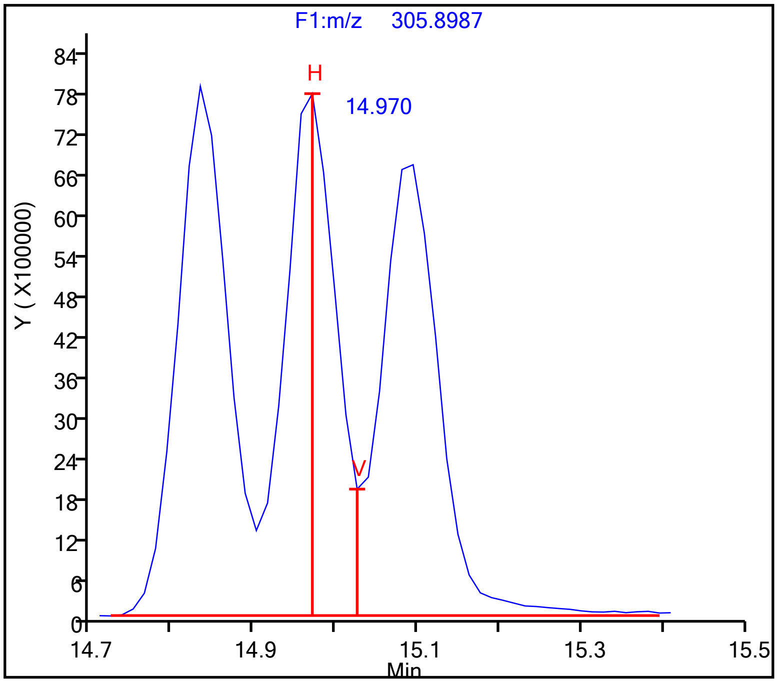

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d				
Injection Date:	20-Aug-2020 16:57:18	Instrument ID:	4D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL		

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICV 320-390253/9 Calibration Date: 06/27/2020 19:24

Instrument ID: 10D5 Calib Start Date: 06/27/2020 14:42

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/27/2020 17:43

Lab File ID: 27JN20A10D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9104	0.9329		41.0	40.0	102	70-130
2,3,7,8-TCDD	AveID	1.074	1.143		42.6	40.0	106	70-130
1,2,3,7,8-PeCDF	AveID	0.9938	0.9927		200	200	100	70-130
2,3,4,7,8-PeCDF	AveID	0.8117	0.9105		224	200	112	70-130
1,2,3,7,8-PeCDD	AveID	1.018	0.999		196	200	98	70-130
1,2,3,4,7,8-HxCDF	AveID	0.8061	0.8457		210	200	105	70-130
1,2,3,6,7,8-HxCDF	AveID	0.9818	1.070		218	200	109	70-130
2,3,4,6,7,8-HxCDF	AveID	1.038	1.117		215	200	108	70-130
1,2,3,4,7,8-HxCDD	AveID	0.8202	0.8568		209	200	104	70-130
1,2,3,6,7,8-HxCDD	AveID	0.9367	1.016		217	200	108	70-130
1,2,3,7,8,9-HxCDD	AveID	0.9905	1.038		210	200	105	70-130
1,2,3,7,8,9-HxCDF	AveID	1.032	1.055		205	200	102	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.453	1.530		211	200	105	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.054	1.115		211	200	106	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.059	1.093		207	200	103	70-130
OCDD	AveID	1.150	1.213		422	400	106	70-130
OCDF	AveID	1.296	1.345		415	400	104	70-130
13C-2,3,7,8-TCDF	Ave	1.373	1.343		97.8	100	98	71-140
13C-2,3,7,8-TCDD	Ave	1.019	1.011		99.2	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.143	1.122		98.2	100	98	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.400	1.387		99.1	100	99	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8232	0.8094		98.3	100	98	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.139	1.099		96.5	100	97	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.080	0.9919		91.8	100	92	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9494	0.8976		94.5	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.9356	0.8970		95.9	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	0.9852		94.6	100	95	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8670	0.8457		97.5	100	98	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7899	0.7719		97.7	100	98	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7637	0.7479		97.9	100	98	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9093	0.8979		98.7	100	99	77-129
13C-OCDD	Ave	0.6377	0.6642		208	200	104	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.018	1.018		40.0	40.0	100	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 27-Jun-2020 19:24:02 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 062720 ICV HRDXNIC_00045
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:19:35 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:19:29

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	39980836	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	53691088	0.77	1.3726	97.8	97.8	0.1864	0.1864	97.84	
2,3,7,8-TCDF	17.219	20035915	0.75	0.9104	41.0	41.0	0.1026	0.1026	102	
A Non-2,3,7,8-sub-TCDF	16.916						0.1026	0.1026		Rn
S Total TCDF					41.0	41.0	0.1026	0.1026		
D 13C-2,3,7,8-TCDD	17.899	40402335	0.79	1.0192	99.2	99.2	0.2917	0.2917	99.15	
2,3,7,8-TCDD	17.914	18472887	0.76	1.0745	42.6	42.6	0.0830	0.0830	106	
$ 37Cl4-2,3,7,8-TCDD	17.914	16278432		1.0176	40.0	40.0	0.0508	0.0508	100	
A Non-2,3,7,8-sub-TCDD	17.354	265730	0.76	1.0745	0.6121	0.6121	0.0830	0.6121		
S Total TCDD					43.2	43.2	0.0830	0.0830		
D 13C-1,2,3,7,8-PeCDF	22.156	44855811	1.58	1.1429	98.2	98.2	0.3536	0.3536	98.17	
1,2,3,7,8-PeCDF	22.170	89058870	1.56	0.9938	199.8	199.8	1.136	1.136	99.89	
D 13C-2,3,4,7,8-PeCDF	23.479	55440558	1.61	1.3997	99.1	99.1	0.2887	0.2887	99.07	
2,3,4,7,8-PeCDF	23.506	100959270	1.54	0.8117	224.3	224.3	1.206	1.206	112	
A F1 PeCDFs	19.698						0.0272	0.0272		
A Non-2,3,7,8-sub-PeCDF	22.798	2481708	1.47	0.9028	5.482	5.482	1.162	5.482		
S Total PeCDF					429.6	429.6	1.171	1.171		
D 13C-1,2,3,7,8-PeCDD	24.188	32361061	1.59	0.8232	98.3	98.3	0.1463	0.1463	98.33	
1,2,3,7,8-PeCDD	24.215	64639955	1.58	1.0181	196.2	196.2	0.3406	0.3406	98.10	
A Non-2,3,7,8-sub-PeCDD	23.104						0.3406	0.3406		
S Total PeCDD					196.2	196.2	0.3406	0.3406		
D 13C-1,2,3,4,7,8-HxCDF	30.319	39285418	0.50	1.1388	96.5	96.5	0.7552	0.7552	96.53	
1,2,3,4,7,8-HxCDF	30.332	66450707	1.19	0.8061	209.8	209.8	2.274	2.274	105	
D 13C-1,2,3,6,7,8-HxCDF	30.519	35447677	0.50	1.0803	91.8	91.8	0.7961	0.7961	91.82	
1,2,3,6,7,8-HxCDF	30.532	75847150	1.20	0.9818	217.9	217.9	2.145	2.145	109	
D 13C-2,3,4,6,7,8-HxCDF	31.384	32078109	0.51	0.9494	94.5	94.5	0.9059	0.9059	94.55	
2,3,4,6,7,8-HxCDF	31.397	71688168	1.19	1.0382	215.3	215.3	1.645	1.645	108	
D 13C-1,2,3,7,8,9-HxCDF	32.209	30222131	0.49	0.8670	97.5	97.5	0.992	0.992	97.54	
1,2,3,7,8,9-HxCDF	32.222	63786157	1.23	1.0321	204.5	204.5	1.788	1.788	102	

Report Date: 28-Jun-2020 13:19:38 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	29.979						1.931	1.931		
S Total HxCDF					847.5	847.5	1.963	1.963		
* 13C-1,2,3,7,8,9-HxCDD	32.023	35737073	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.583	32056230	1.26	0.9356	95.9	95.9	0.5709	0.5709	95.87	
1,2,3,4,7,8-HxCDD	31.597	54933790	1.23	0.8202	208.9	208.9	0.9898	0.9898	104	
D 13C-1,2,3,6,7,8-HxCDD	31.690	35206608	1.28	1.0416	94.6	94.6	0.5128	0.5128	94.58	
1,2,3,6,7,8-HxCDD	31.703	71540105	1.24	0.9367	216.9	216.9	0.9669	0.9669	108	
1,2,3,7,8,9-HxCDD	32.036	69847050	1.23	0.9905	209.7	209.7	0.8645	0.8645	105	
A Non-2,3,7,8-sub-HxCDD	30.652						0.9350	0.9350		
S Total HxCDD					635.5	635.5	0.9404	0.9404		
D 13C-1,2,3,4,6,7,8-HpCDF	33.676	27585908	0.44	0.7899	97.7	97.7	2.561	2.561	97.72	
1,2,3,4,6,7,8-HpCDF	33.676	84389092	1.03	1.4527	210.6	210.6	3.859	3.859	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.746	32087666	0.43	0.9093	98.7	98.7	2.225	2.225	98.75	
1,2,3,4,7,8,9-HpCDF	34.758	70141199	1.03	1.0585	206.5	206.5	5.297	5.297	103	
A Non-2,3,7,8-sub-HpCDF	34.211						4.465	4.465		
S Total HpCDF					417.1	417.1	4.578	4.578		
D 13C-1,2,3,4,6,7,8-HpCDD	34.454	26726357	1.05	0.7637	97.9	97.9	1.011	1.011	97.92	
1,2,3,4,6,7,8-HpCDD	34.466	59574143	1.04	1.0540	211.5	211.5	1.906	1.906	106	
A Non-2,3,7,8-sub-HpCDD	35.164						1.906	1.906		
S Total HpCDD					211.5	211.5	1.906	1.906		
D 13C-OCDD	36.785	47475510	0.91	0.6377	208.3	208.3	0.4298	0.4298	104	
OCDF	36.881	127724196	0.89	1.2965	415.0	415.0	0.8160	0.8160	104	
OCDD	36.797	115213567	0.90	1.1499	422.1	422.1	1.065	1.065	106	

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:19:38 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 27-Jun-2020 19:24:02 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 062720 ICV HRDXNIC_00045
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:19:35 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:19:29

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		17647142	4255580	5552	13880	766		
333.9339	17.702	17.702	0		22333694	5323058	5840	14600	911	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.971	23364296	5210218	5285	13212	986		
317.9389	17.188	17.203	-1	0.971	30326792	6686043	4518	11295	1480	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.219	0	1.002	8602902	1907347	1972	4930	967		
305.8987	17.203	17.219	-1	1.001	11433013	2553723	2474	6185	1032	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.840	16.916	-5	0.980	39448	9898	1972	4930	5		
305.8987	16.840	16.916	-5	0.980	64987	15648	2474	6185	6	0.61(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.899	0	1.011	17807728	3742366	5552	13880	674		
333.9339	17.899	17.899	0	1.011	22594607	4670874	5840	14600	800	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.914	0	1.001	7997083	1751174	1643	4107	1066		
321.8936	17.914	17.914	0	1.001	10475804	2269085	1360	3400	1668	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.914	0	1.012	16278432	3556881	1981	4952	1795		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.808	17.354	27	0.995	114330	34901	1643	4107	21		
321.8936	17.808	17.354	27	0.995	151400	46912	1360	3400	34	0.76(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.156	22.156	0	1.252	27458971	4455587	9595	23987	464		
353.8970	22.156	22.156	0	1.252	17396840	2871351	5888	14720	488	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.170	0	1.001	54233640	8599057	19969	49922	431		
341.8567	22.170	22.170	0	1.001	34825230	5570097	13108	32770	425	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.479	23.465	1	1.326	34181764	5236706	9595	23987	546		
353.8970	23.479	23.465	1	1.326	21258794	3208160	5888	14720	545	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.506	23.493	1	1.001	61193561	9252669	19969	49922	463		
341.8567	23.506	23.493	1	1.001	39765709	5981010	13108	32770	456	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.698						315	787			
341.8567	19.698						459	1147			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.688	22.798	-7	1.024	1476044	201143	19969	49922	10		
341.8567	22.702	22.798	-6	1.025	1005664	133406	13108	32770	10	1.47(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.188	24.188	0	1.366	19848492	2754901	2921	7302	943		
369.8919	24.188	24.188	0	1.366	12512569	1776087	1694	4235	1048	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.215	24.202	1	1.001	39559122	5515149	3642	9105	1514		
357.8516	24.215	24.202	1	1.001	25080833	3504508	2643	6607	1326	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.104						3642	9105			
357.8516	23.104						2643	6607			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.319	30.306	1	0.947	13100371	2082854	8489	21222	245		
385.8610	30.319	30.306	1	0.947	26185047	4074348	15392	38480	265	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.332	30.319	1	1.000	36138882	5846691	24532	61330	238		
375.8178	30.332	30.319	1	1.000	30311825	4889952	20620	51550	237	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.519	30.505	1	0.953	11840113	1794263	8489	21222	211		
385.8610	30.505	30.505	0	0.953	23607564	3564460	15392	38480	232	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.532	30.519	1	1.000	41377816	6357241	24532	61330	259		
375.8178	30.532	30.519	1	1.000	34469334	5316467	20620	51550	258	1.20(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.384	31.371	1	0.980	10791035	2238150	8489	21222	264		
385.8610	31.384	31.371	1	0.980	21287074	4371445	15392	38480	284	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.397	31.384	1	1.000	38957044	8094217	24532	61330	330		
375.8178	31.397	31.384	1	1.000	32731124	6816856	20620	51550	331	1.19(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.209	32.209	0	1.006	9941714	2026925	8489	21222	239		
385.8610	32.209	32.209	0	1.006	20280417	4090632	15392	38480	266	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.222	32.222	0	1.000	35144733	7039143	24532	61330	287		
375.8178	32.222	32.222	0	1.000	28641424	5911805	20620	51550	287	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.979						24532	61330			
375.8178	29.979						20620	51550			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.023	32.023	0		19992280	3854712	7510	18775	513		
403.8529	32.023	32.023	0		15744793	3086905	7321	18302	422	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.583	31.570	1	0.986	17875605	4438012	7510	18775	591		
403.8529	31.583	31.570	1	0.986	14180625	3481069	7321	18302	475	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.597	31.583	1	1.000	30285077	7397336	14558	36395	508		
391.8127	31.597	31.583	1	1.000	24648713	5996888	11160	27900	537	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.690	31.677	1	0.990	19769102	3992027	7510	18775	532		
403.8529	31.690	31.677	1	0.990	15437506	3107085	7321	18302	424	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.703	31.690	1	1.000	39538678	8085661	14558	36395	555		
391.8127	31.703	31.690	1	1.000	32001427	6668710	11160	27900	598	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.036	32.036	0	1.014	38499859	7593642	14558	36395	522		
391.8127	32.036	32.036	0	1.014	31347191	6295810	11160	27900	564	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.652						14558	36395			
391.8127	30.652						11160	27900			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.676	33.665	1	1.052	8474748	2089545	17079	42697	122		
419.8220	33.676	33.665	1	1.052	19111160	4685350	39093	97732	120	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.676	33.665	1	1.000	42837280	10467305	77459	193647	135		
409.7789	33.676	33.665	1	1.000	41551812	10279478	74458	186145	138	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.746	34.734	1	1.085	9694390	2054030	17079	42697	120		
419.8220	34.746	34.734	1	1.085	22393276	4719072	39093	97732	121	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.758	34.734	1	1.000	35592208	7424972	77459	193647	96		
409.7789	34.746	34.734	1	1.000	34548991	7187804	74458	186145	97	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.211						77459	193647			
409.7789	34.211						74458	186145			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.454	34.442	1	1.076	13709936	2910092	11770	29425	247		
437.8140	34.454	34.442	1	1.076	13016421	2786732	9676	24190	288	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.466	34.454	1	1.000	30425229	6544138	24680	61700	265		
425.7737	34.466	34.454	1	1.000	29148914	6321917	21101	52752	300	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.164						24680	61700			
425.7737	35.164						21101	52752			
13C-OCDD											
469.7779	36.785	36.773	1	1.149	22670475	3431032	3165	7912	1084		
471.7750	36.785	36.773	1	1.149	24805035	3755252	4446	11115	845	0.91(0.76-1.02)	
OCDF											
441.7428	36.881	36.869	1	1.003	60133170	10102377	7590	18975	1331		
443.7399	36.881	36.869	1	1.003	67591026	11272814	7615	19037	1480	0.89(0.76-1.02)	
OCDD											
457.7377	36.797	36.785	1	1.000	54489585	8293193	8686	21715	955		
459.7348	36.797	36.785	1	1.000	60723982	9195048	8923	22307	1030	0.90(0.76-1.02)	

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	27-Jun-2020 19:24:02	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	390253	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDD, RT: 17.354

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.074	D 13C-2,3,7,8-TCDD	100.000	40402335	8413240

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.074		100.000	40402335	8413240

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.808	114330	34901	151400	46912	0.6121	0.76	
Signal Totals:							
	114330	34901	151400	46912			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	265730	81813				0.76	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6121 = (265730 * 100.000) / (40402335 * 1.074)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 27-Jun-2020 19:24:02 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 390253 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-PeCDF, RT: 22.798

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994	D 13C-1,2,3,7,8-PeCDF	100.000	44855811	7326938
2,3,4,7,8-PeCDF	0.812	D 13C-2,3,4,7,8-PeCDF	100.000	55440558	8444866

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.903		100.000	50148184	7885902

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.688	1476044	201143	1005664	133406	5.48	1.47	
Signal Totals:							
	1476044	201143	1005664	133406			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2481708	334549				1.47	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.482 = (2481708 * 100.000) / (50148184 * 0.903)

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

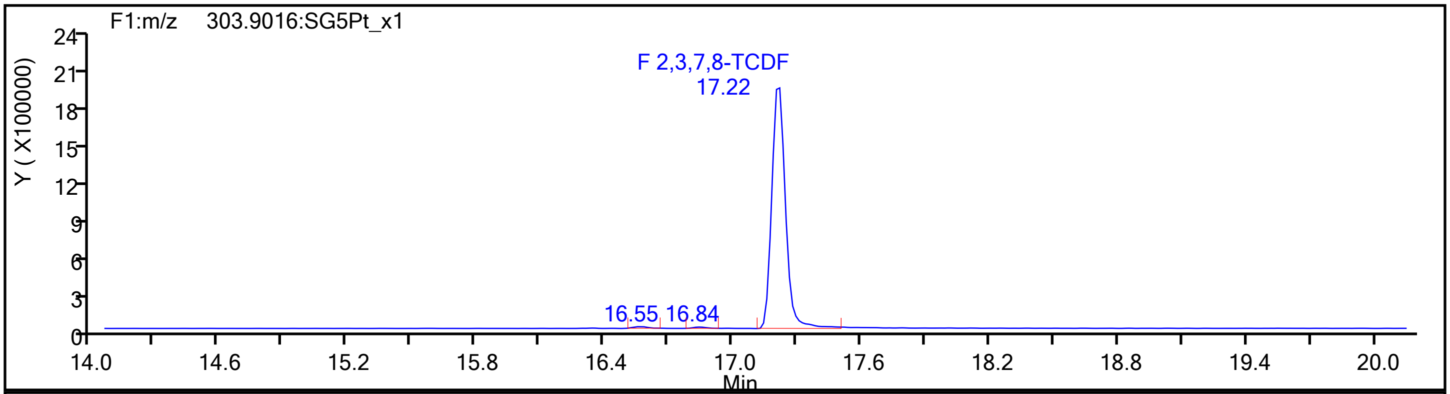

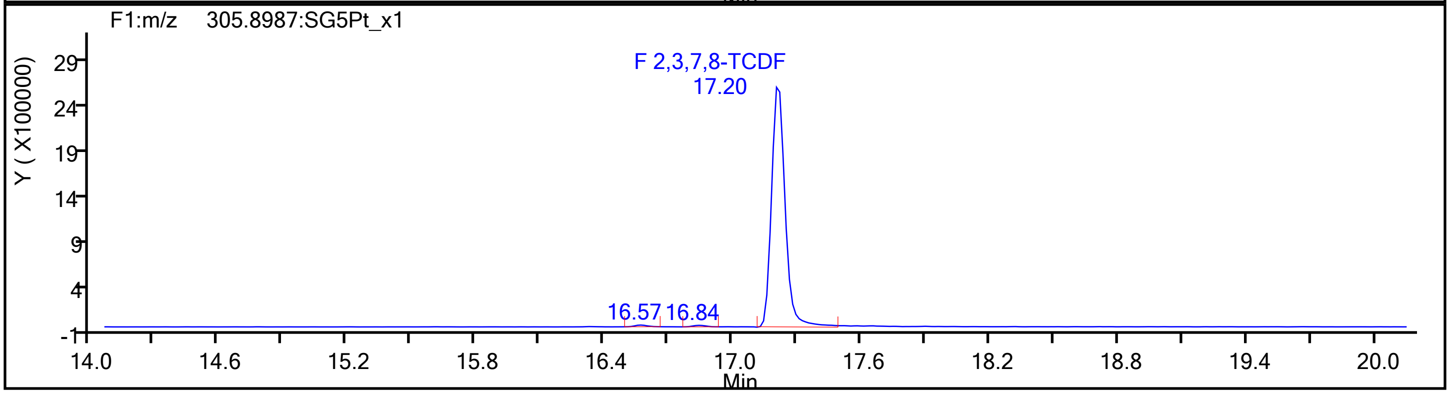

TCDF Standards

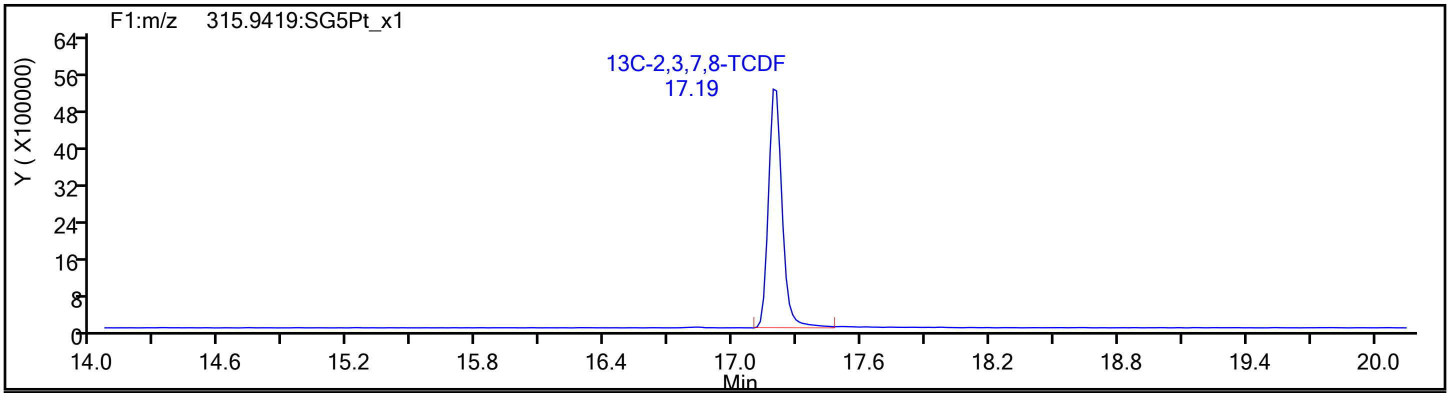

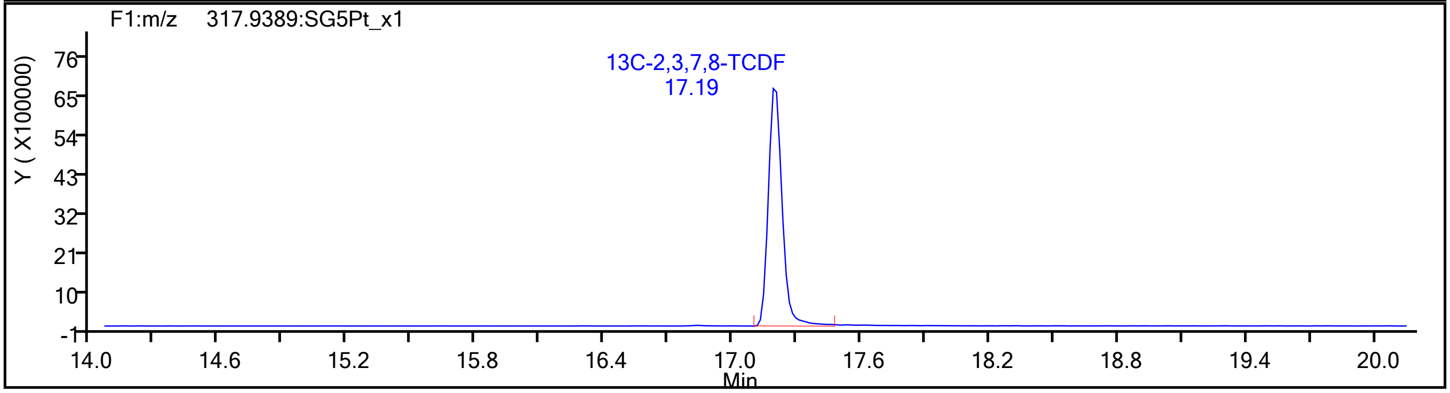

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

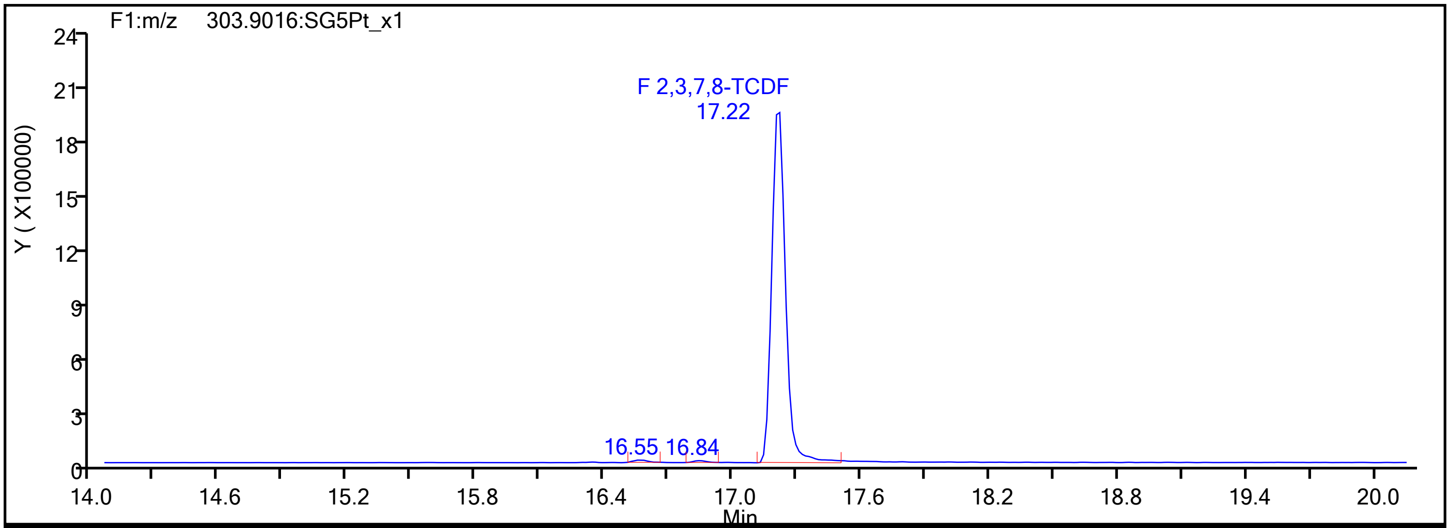

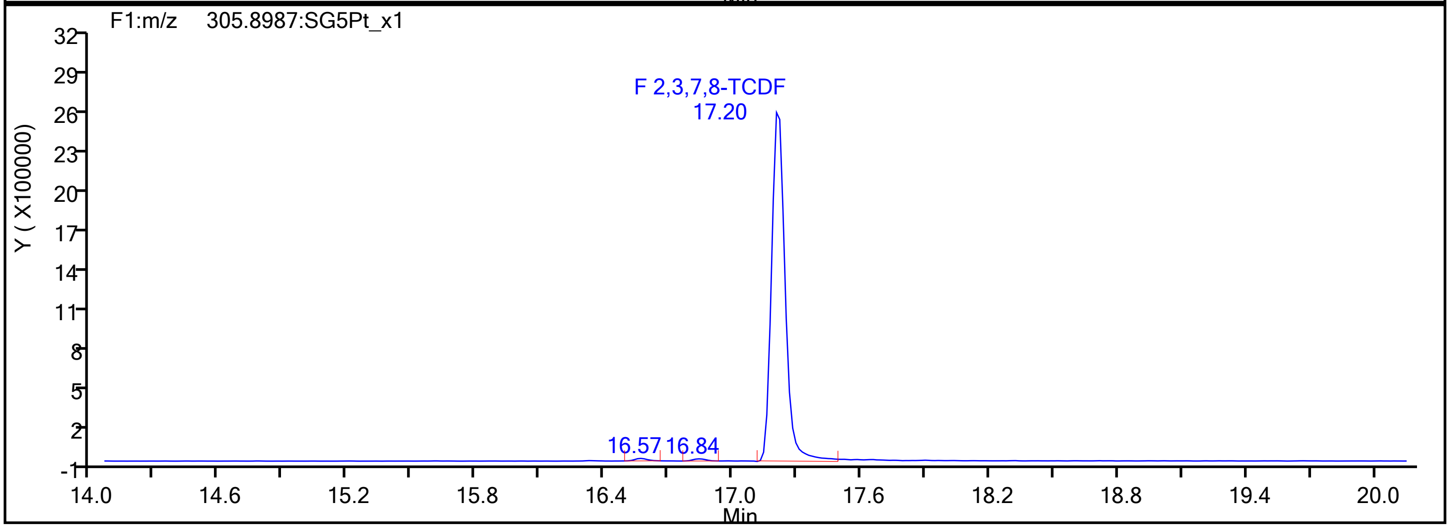

TCDF Interference Mass

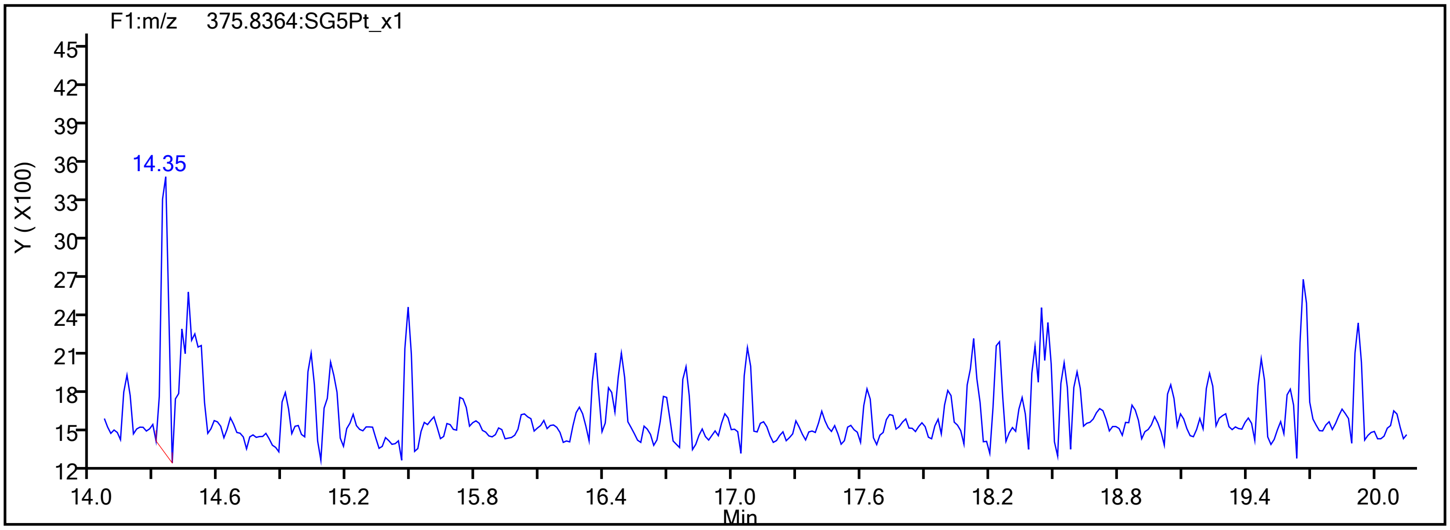

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Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

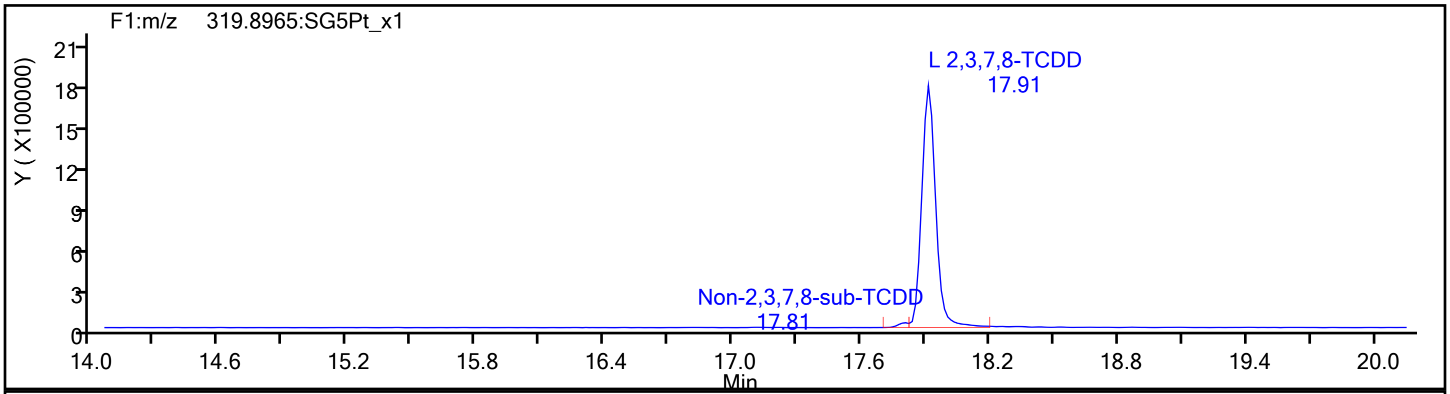

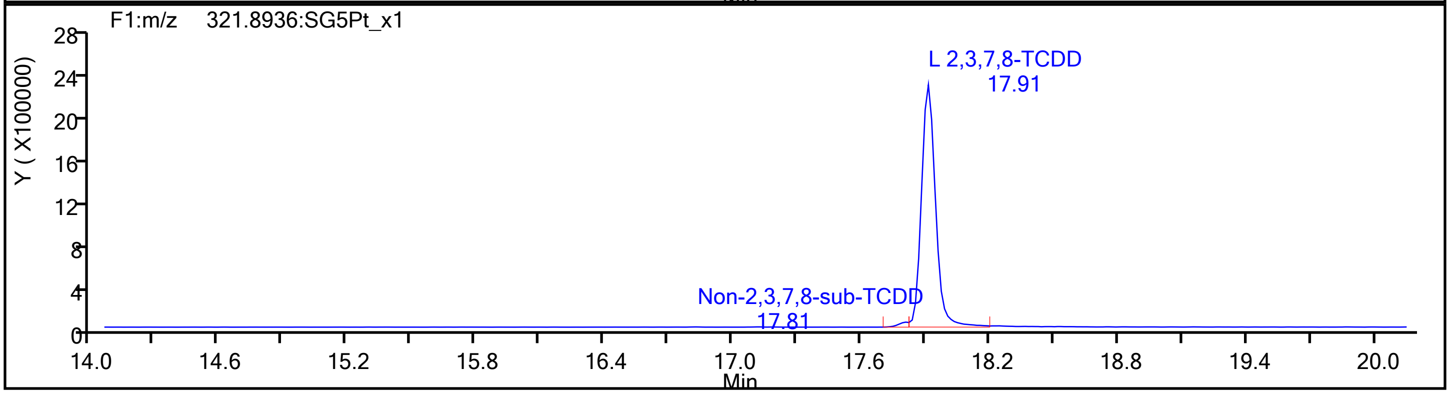

TCDD Standards

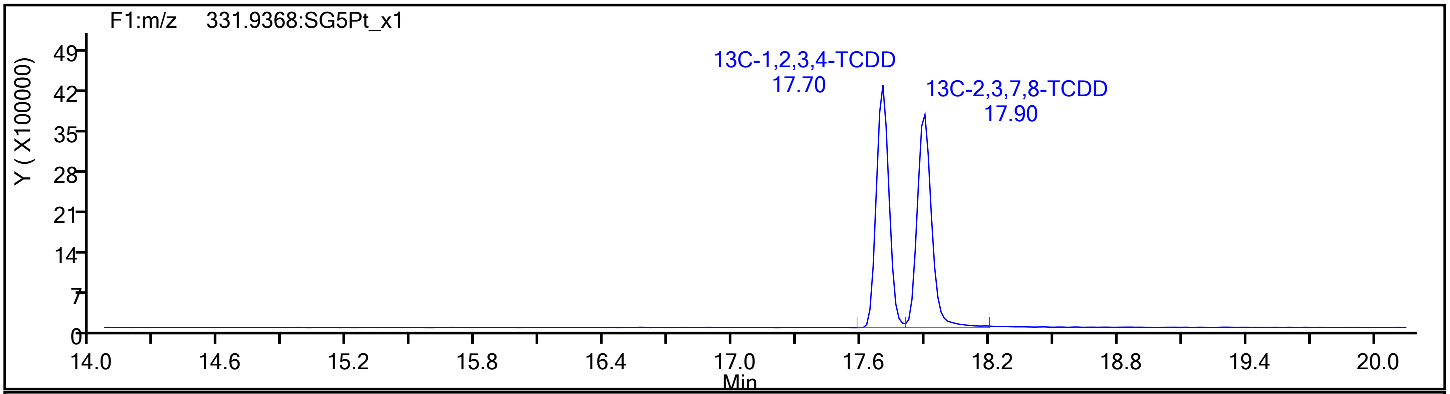

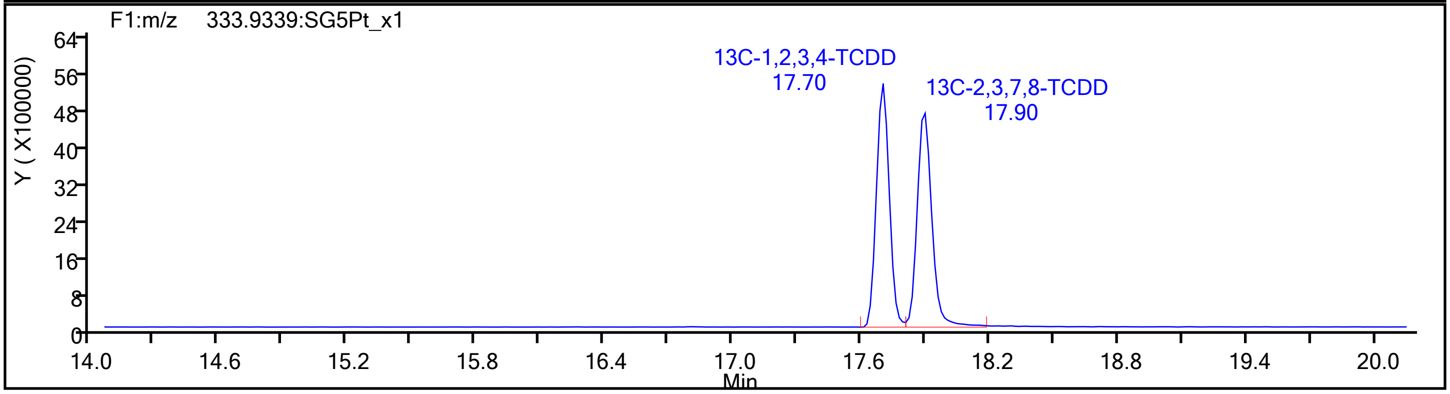

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

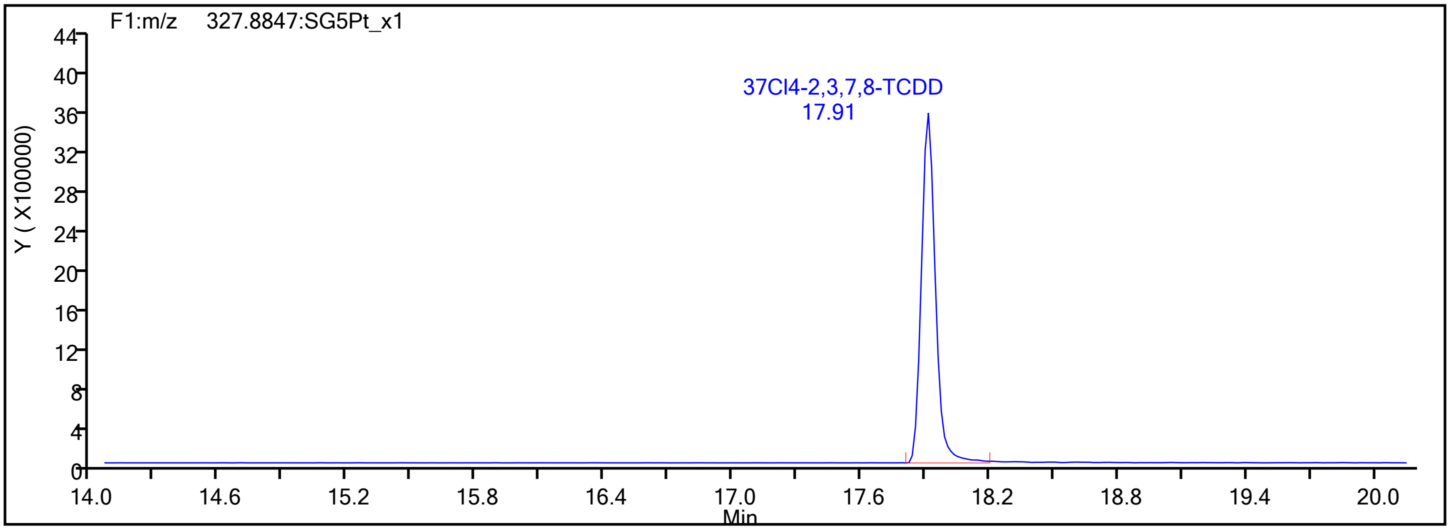

37Cl4-TCDD Standards

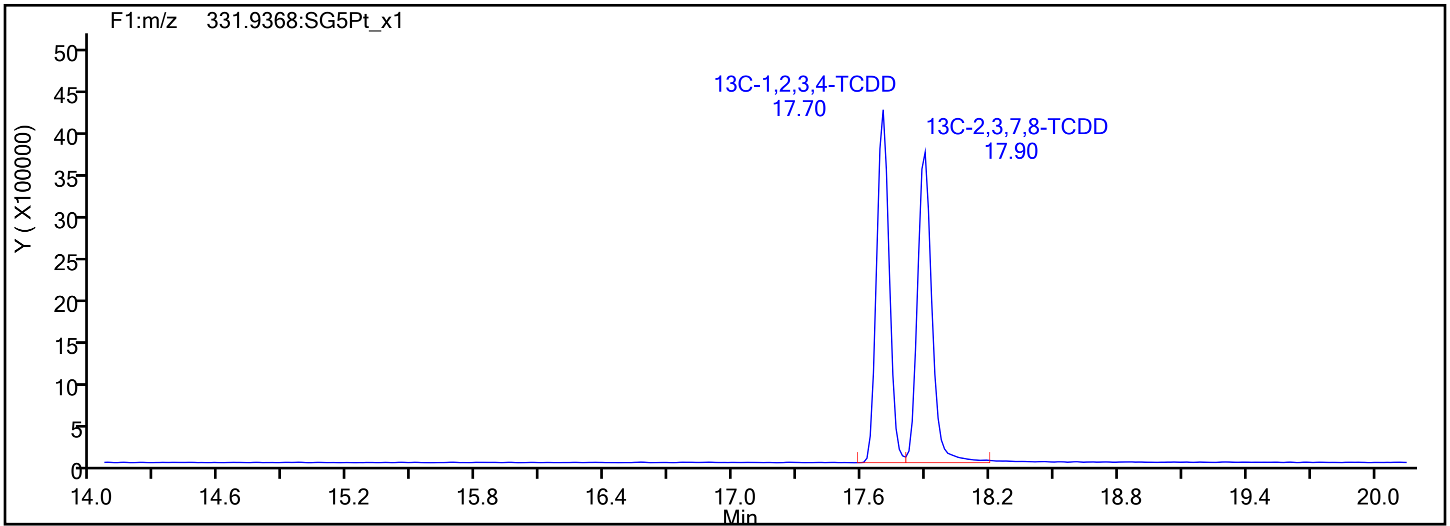

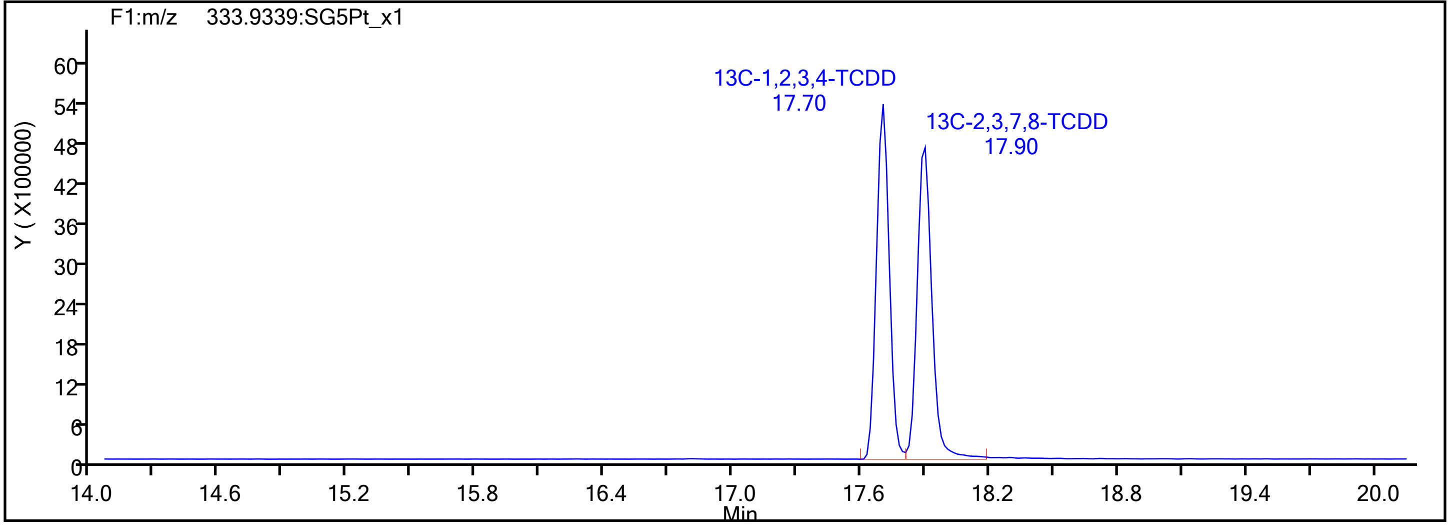

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

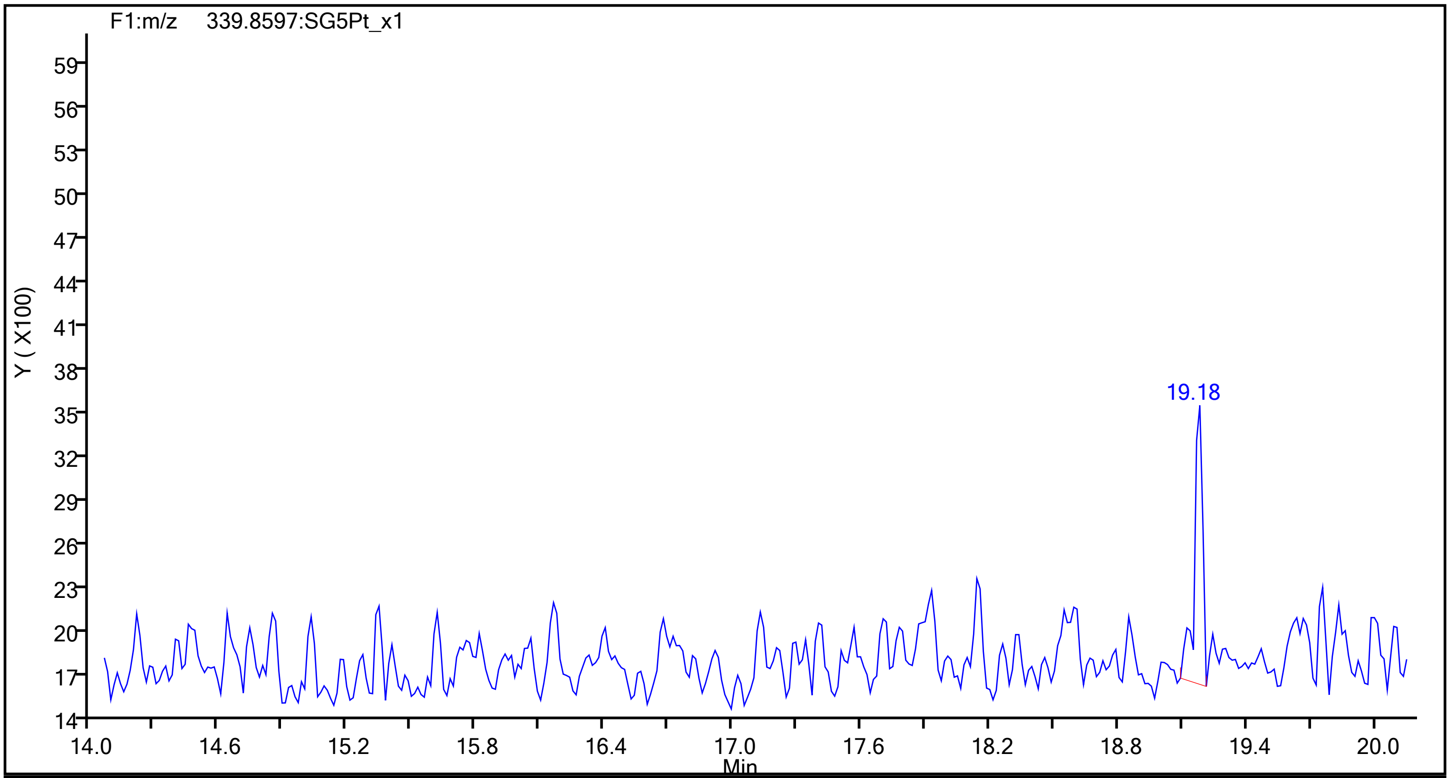

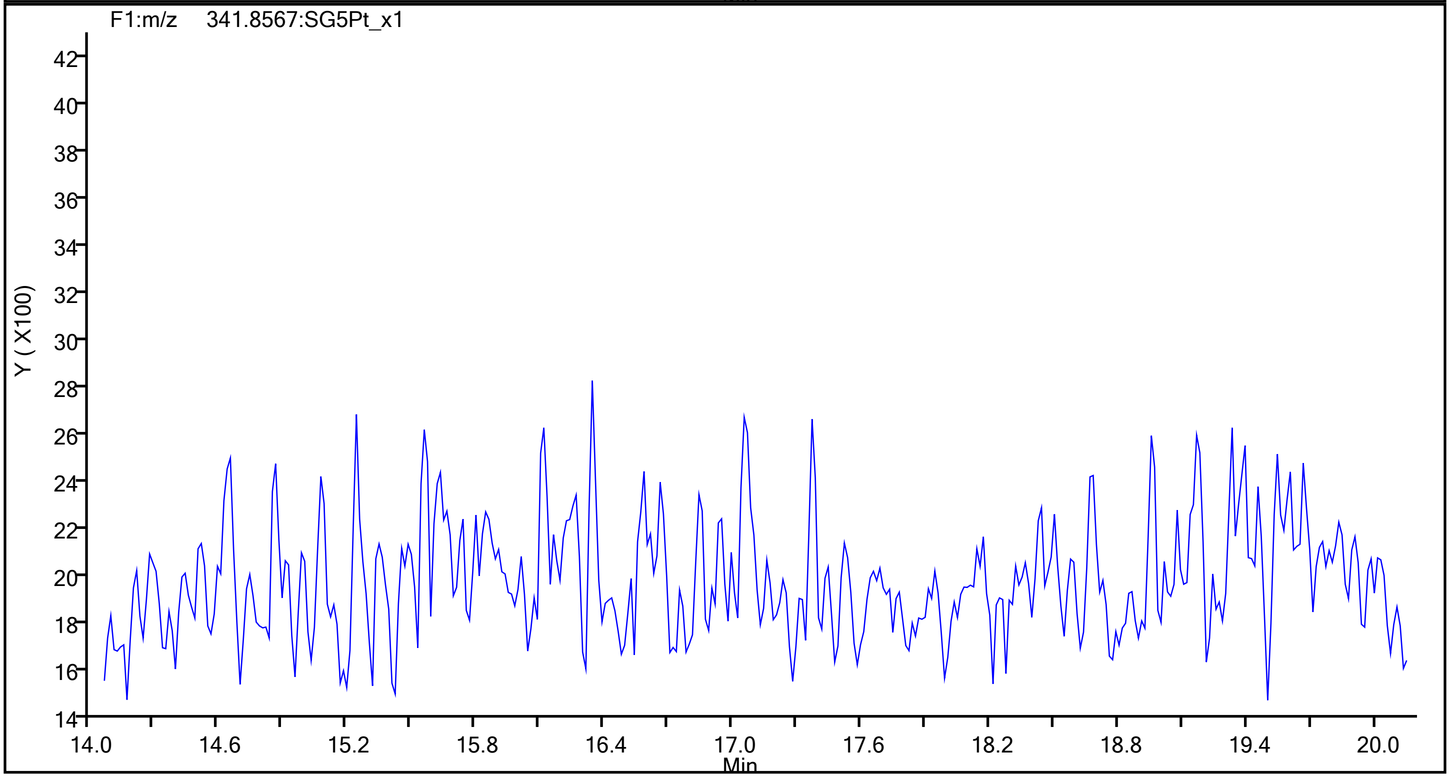

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

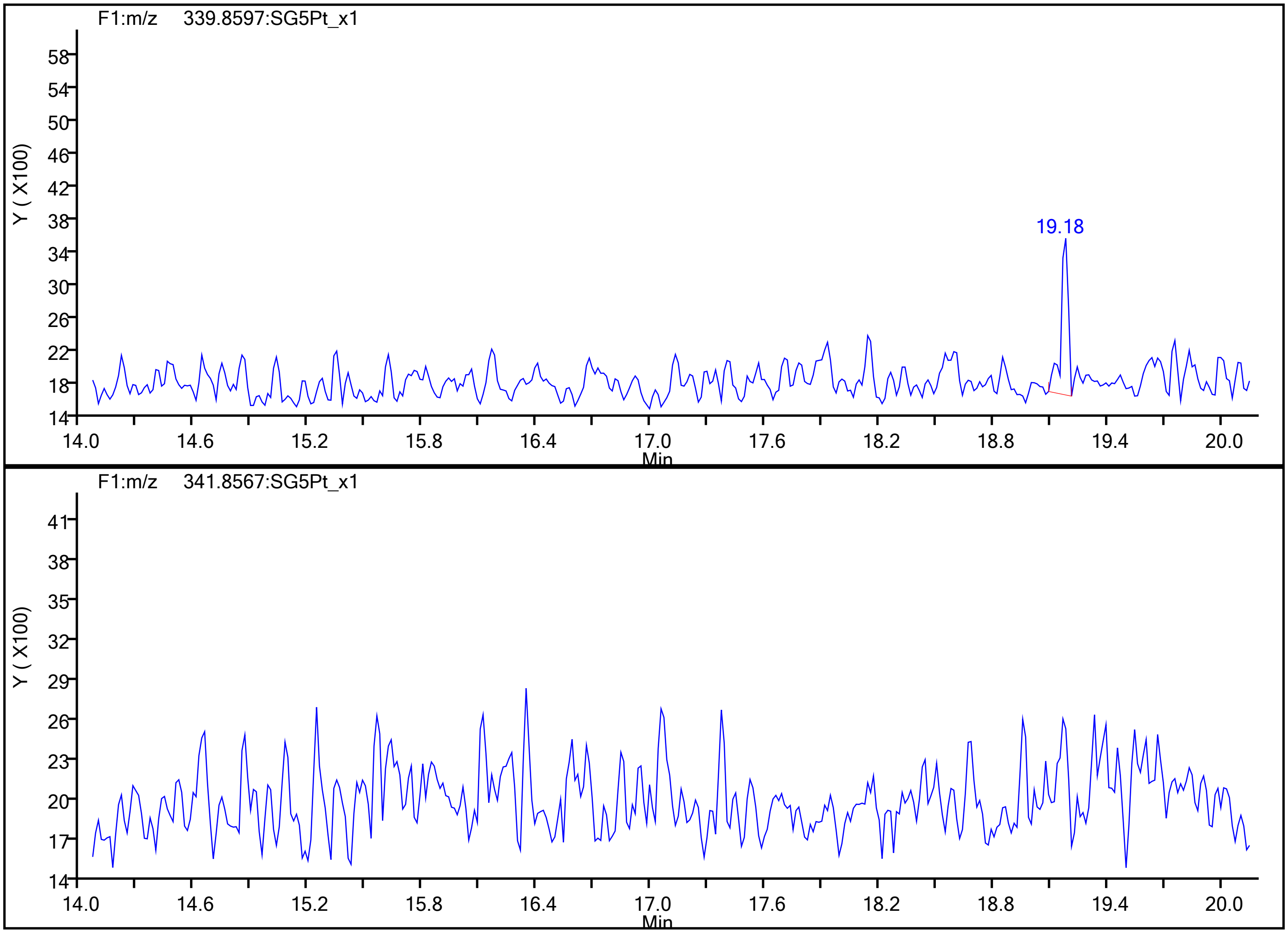

F1 PeCDFs Interference Mass

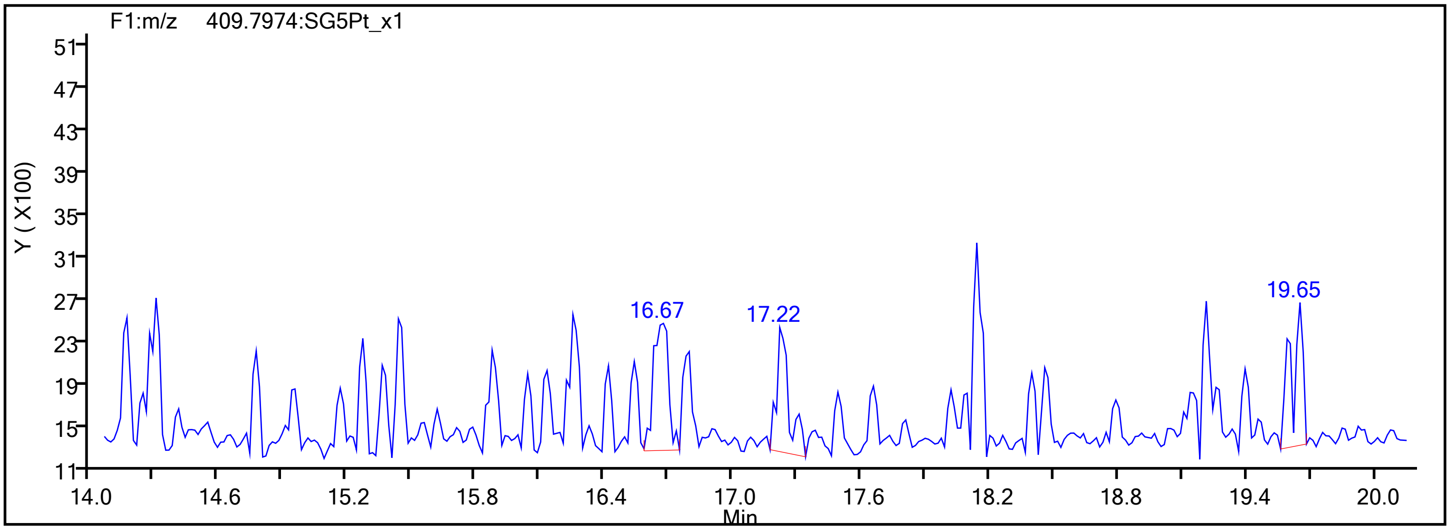

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Injection Date: 27-Jun-2020 19:24:02
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

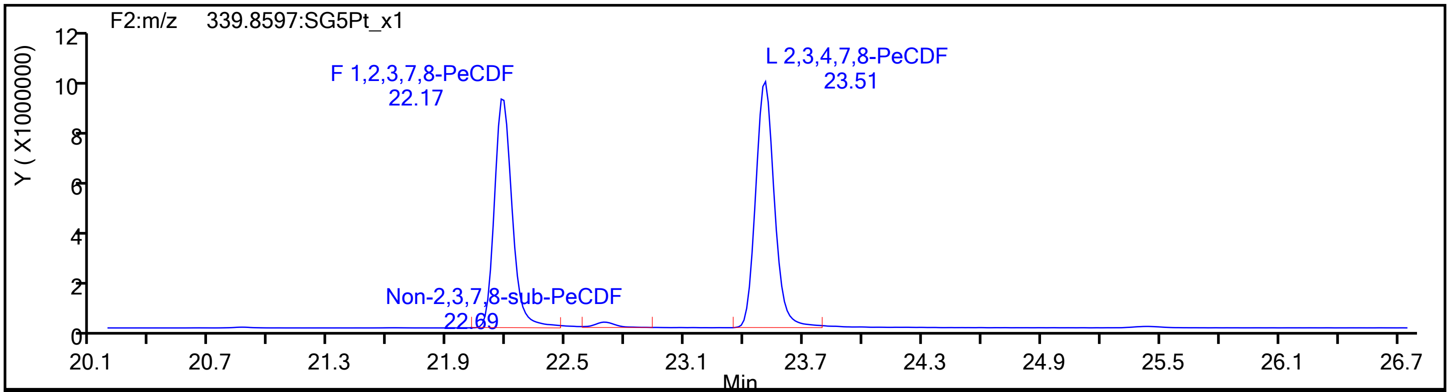

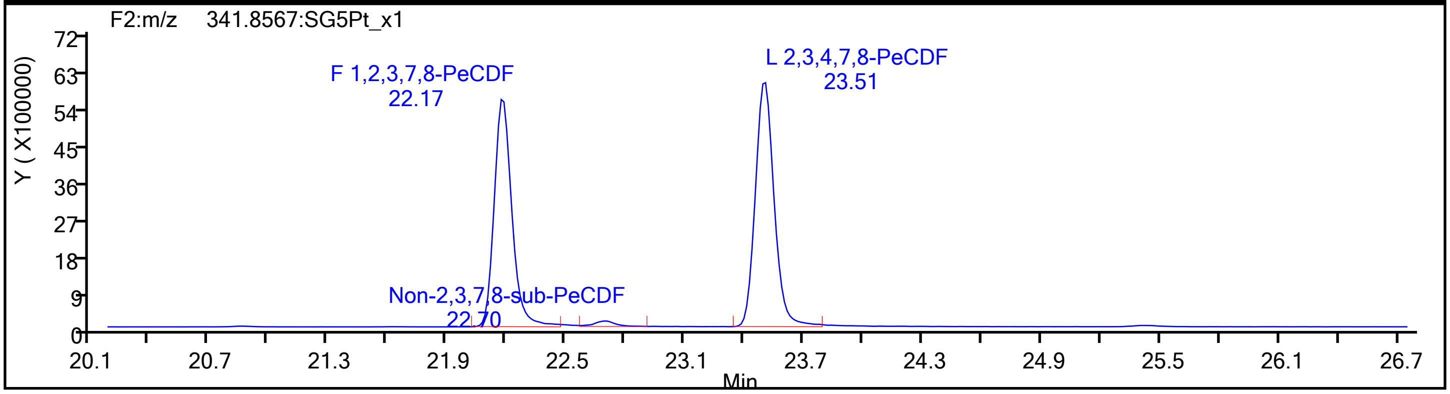

PeCDF Standards

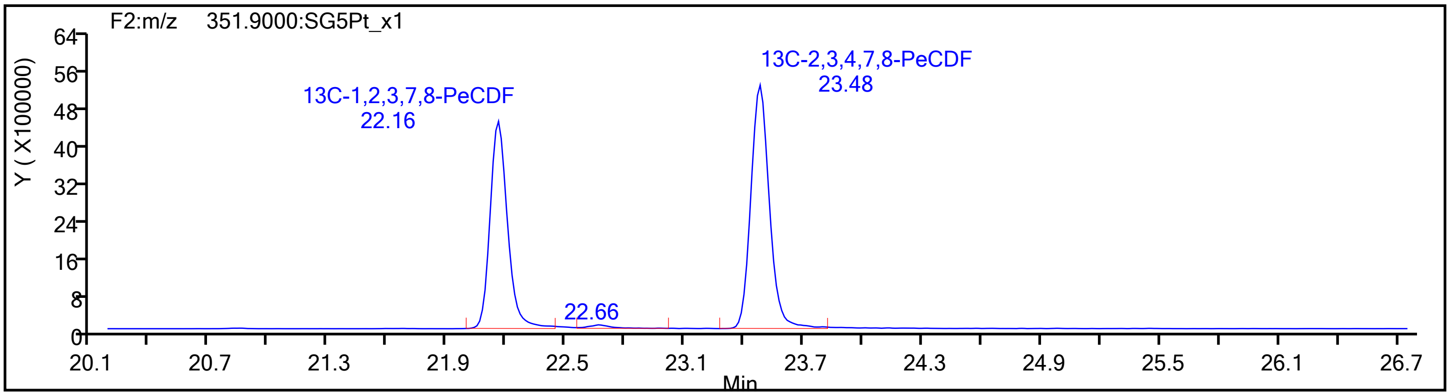

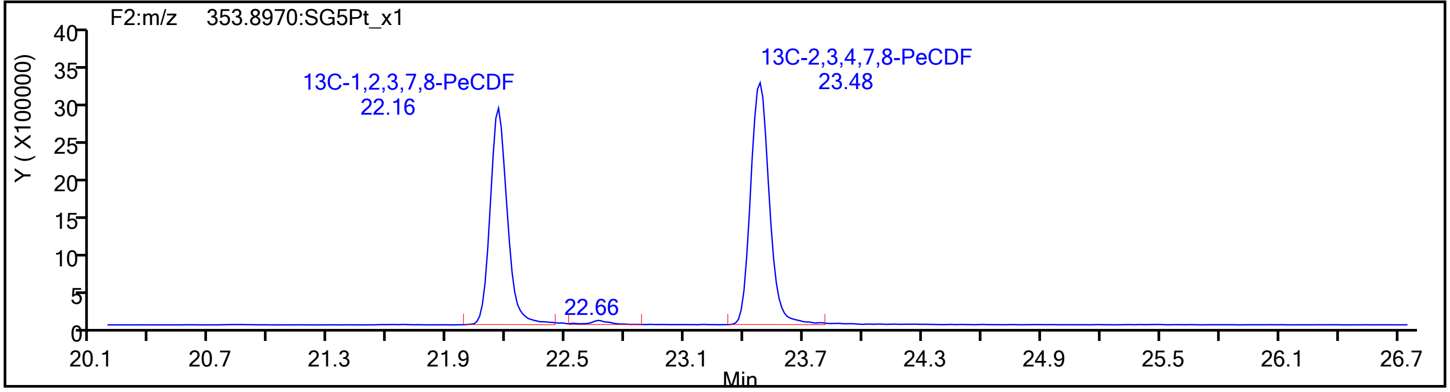

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

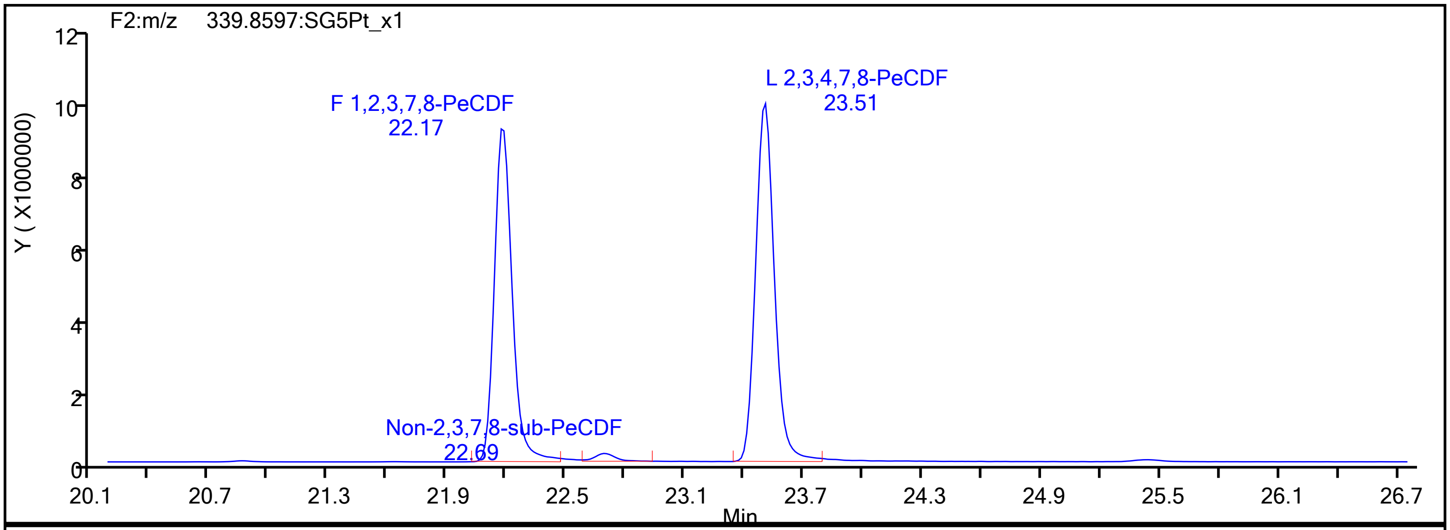

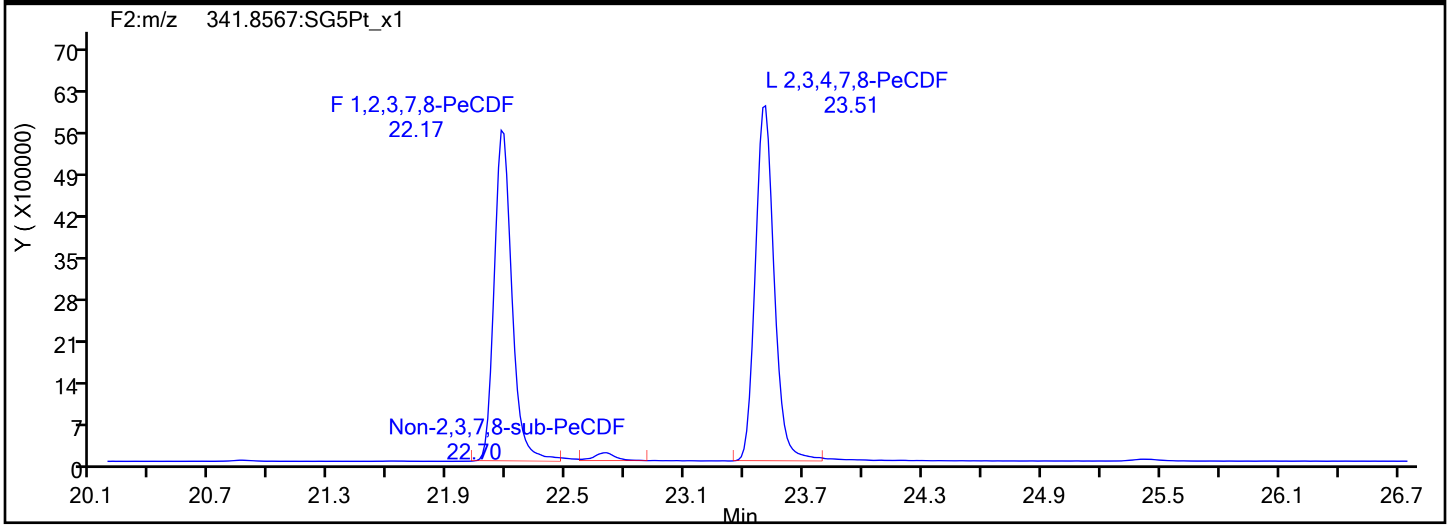

PeCDF Interference Mass

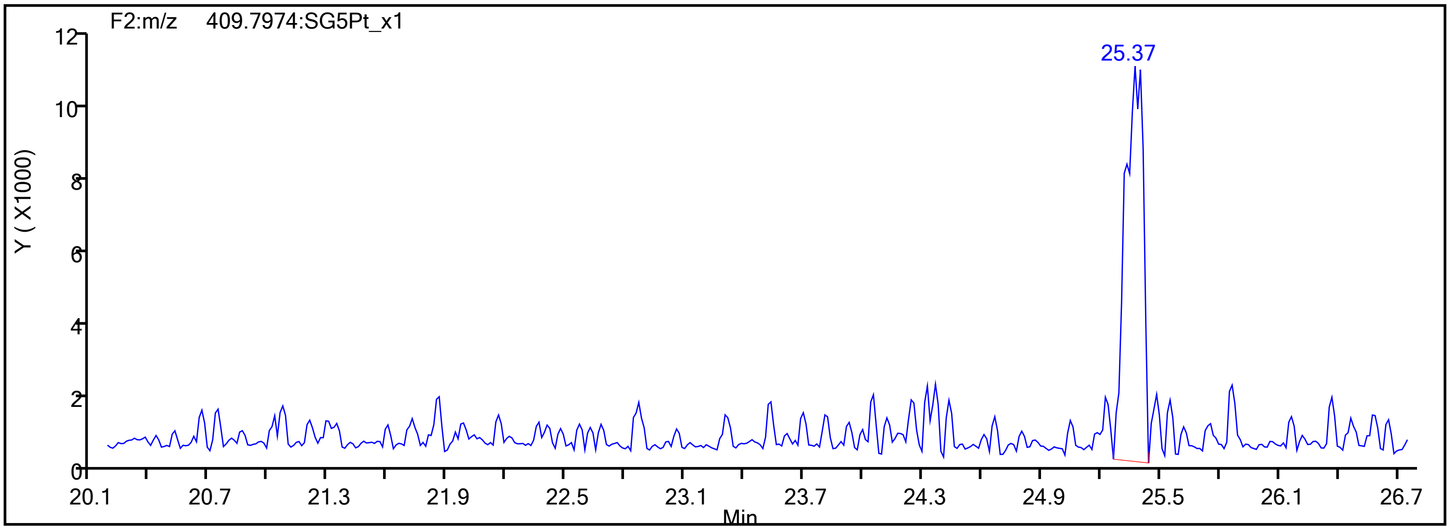

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

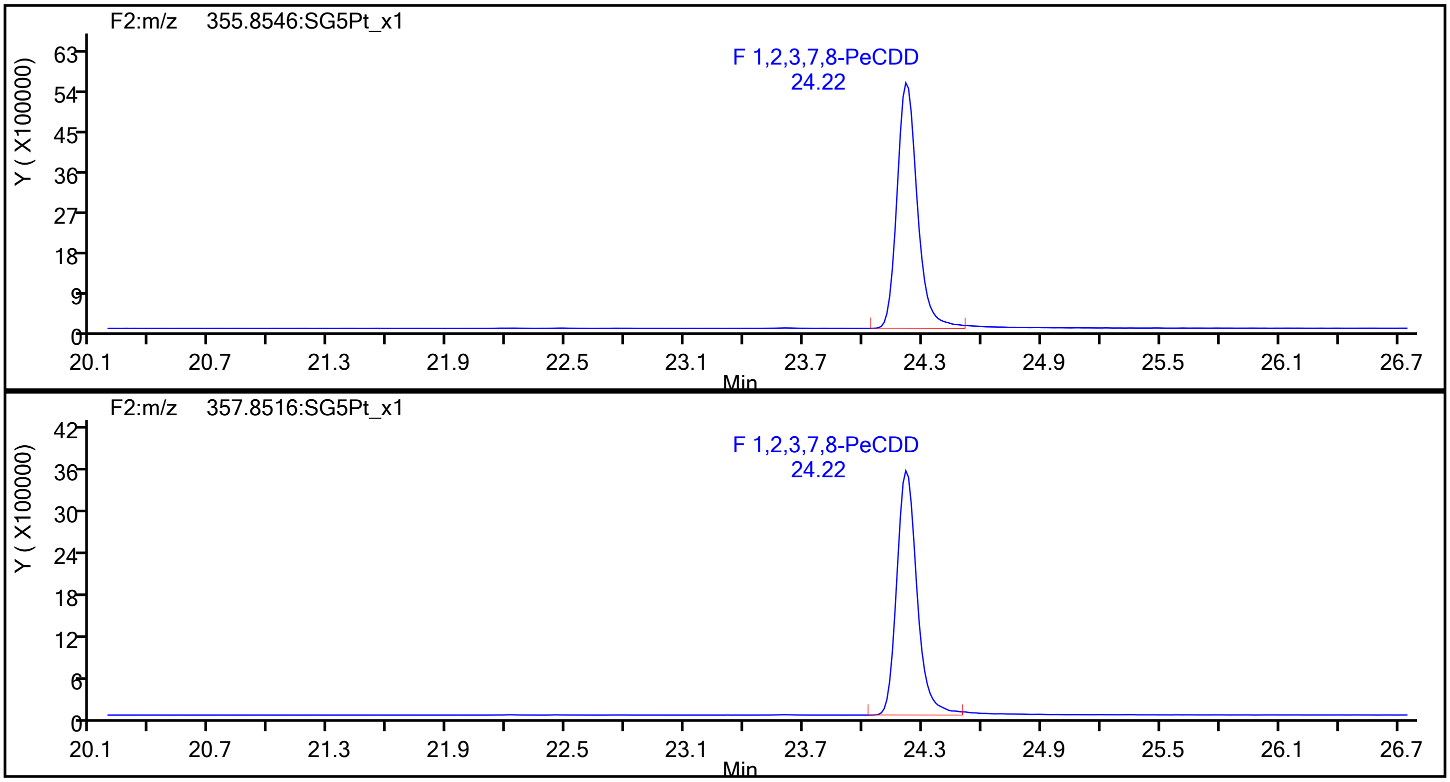

PeCDD Standards

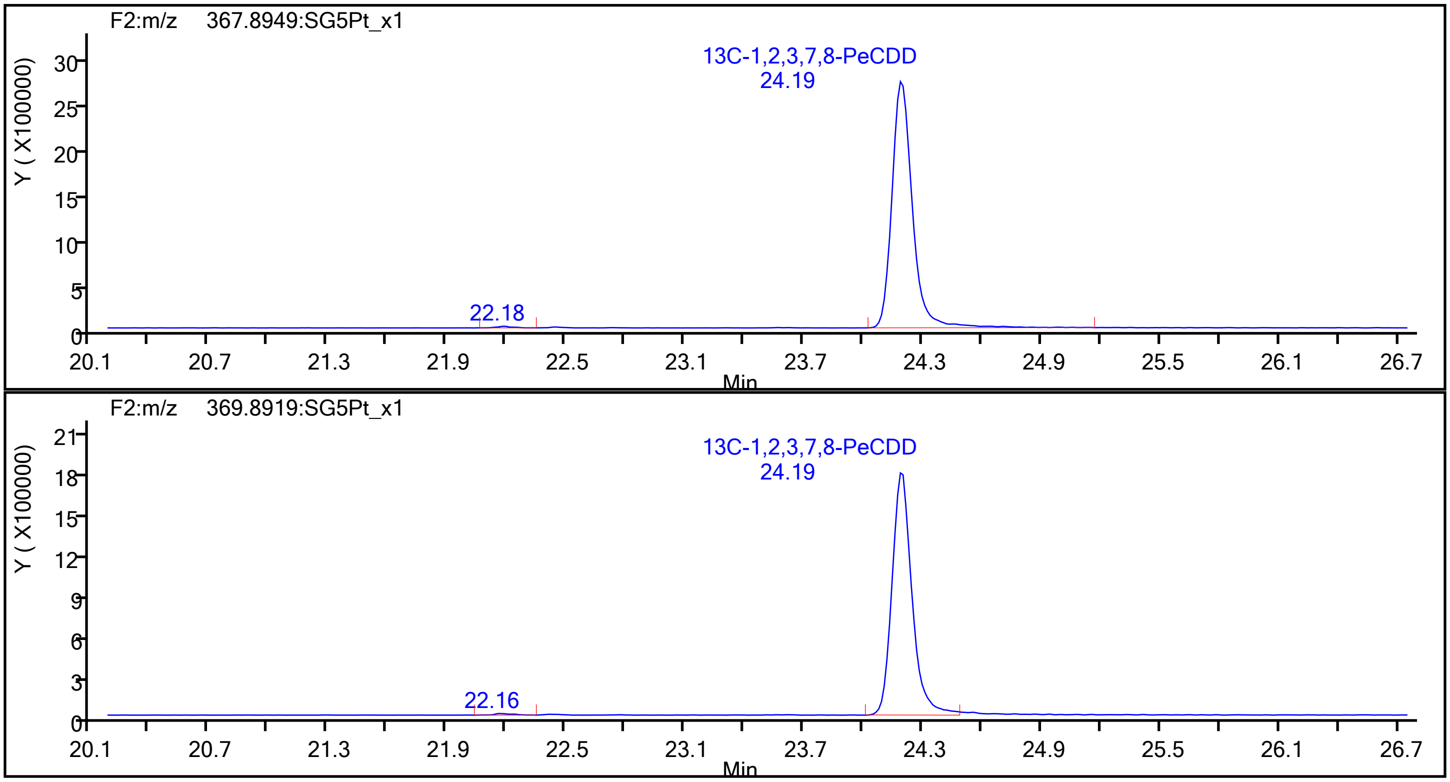

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d

Injection Date: 27-Jun-2020 19:24:02

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

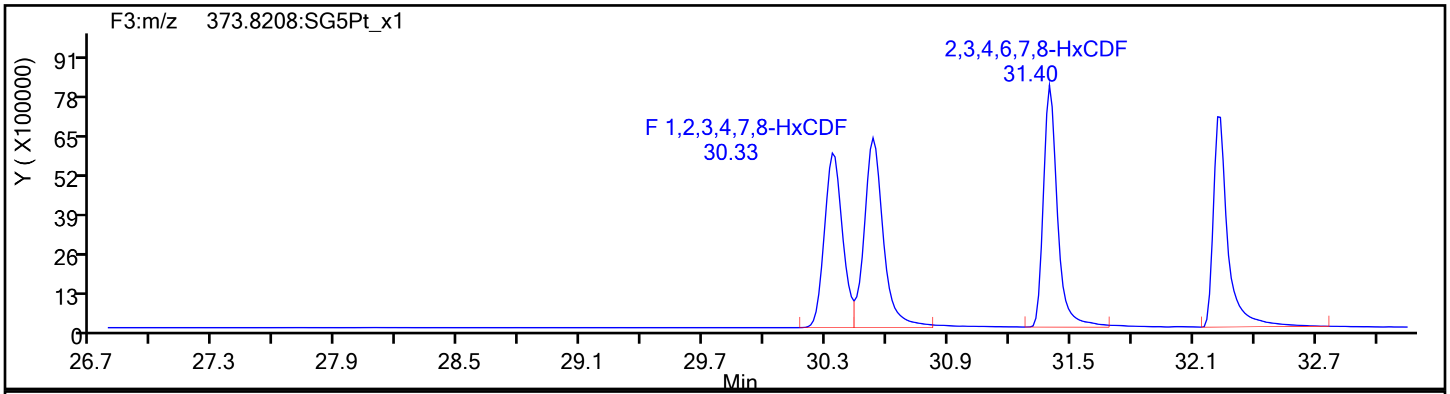

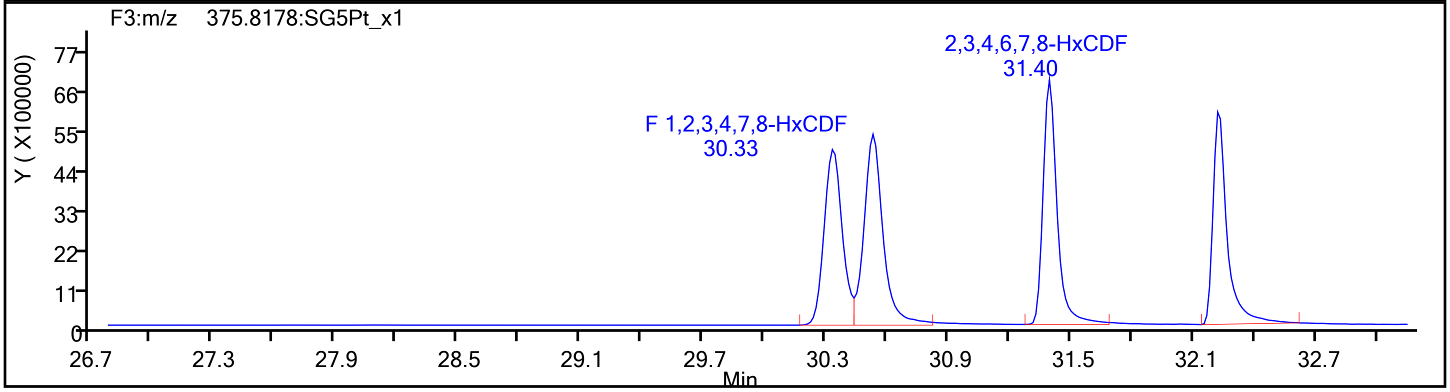

HxCDF Standards

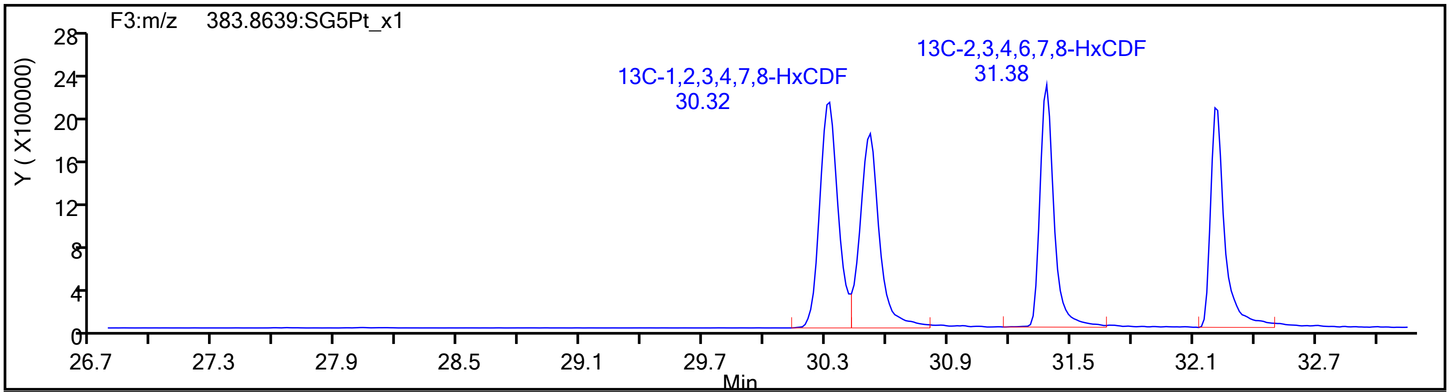

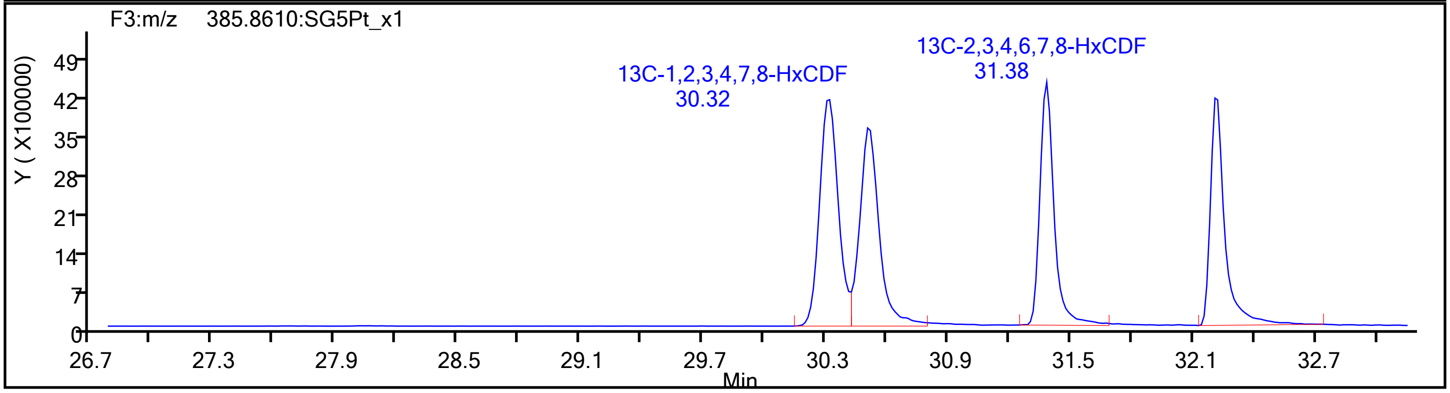

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

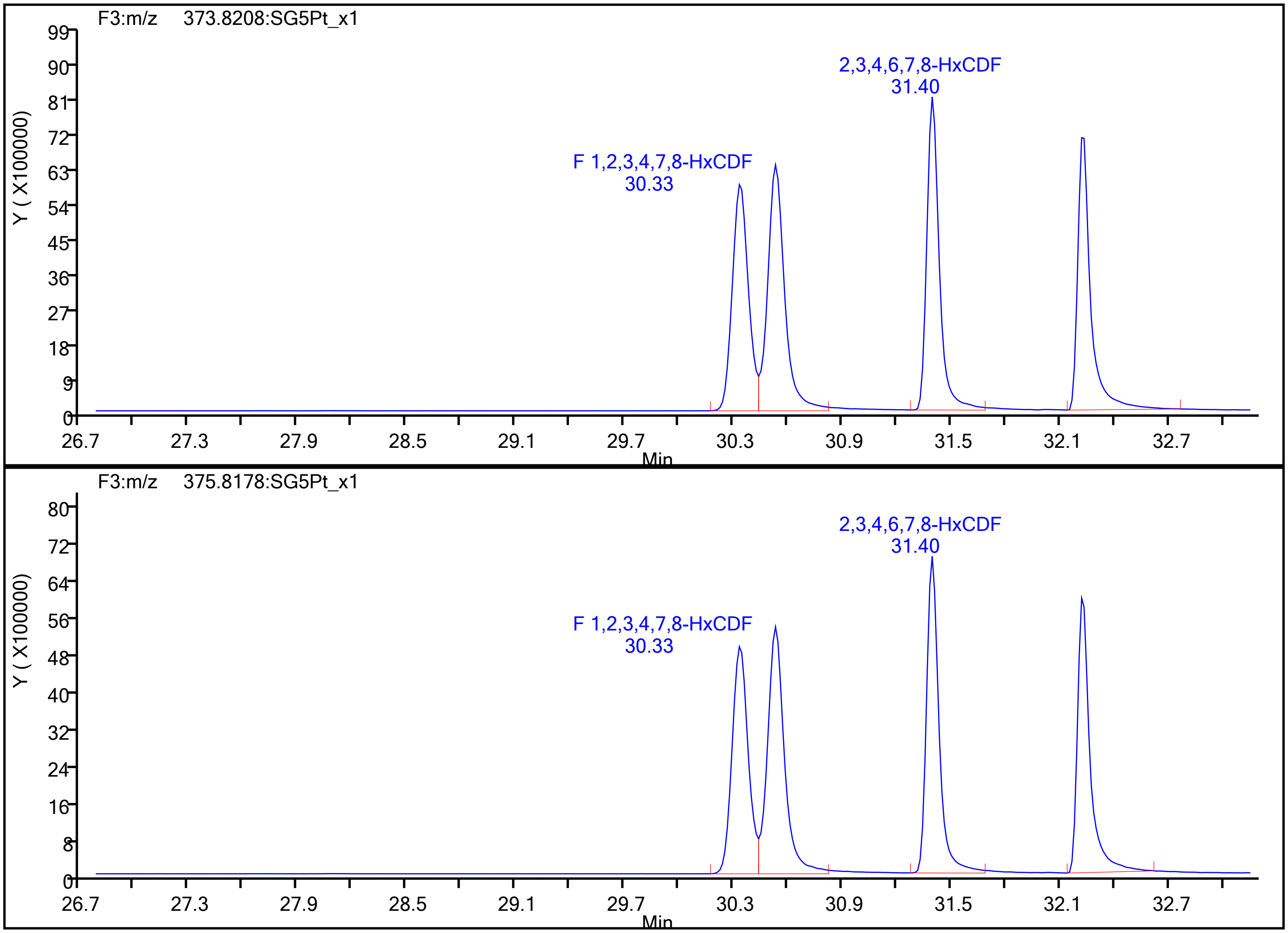

HxCDF Interference Mass

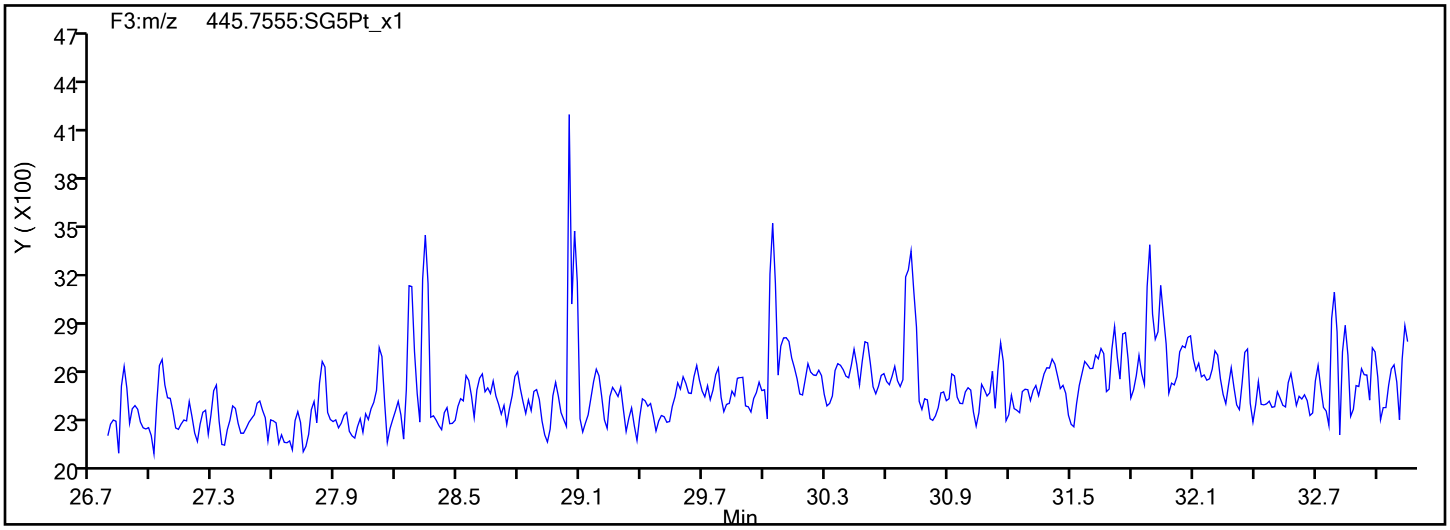

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDD

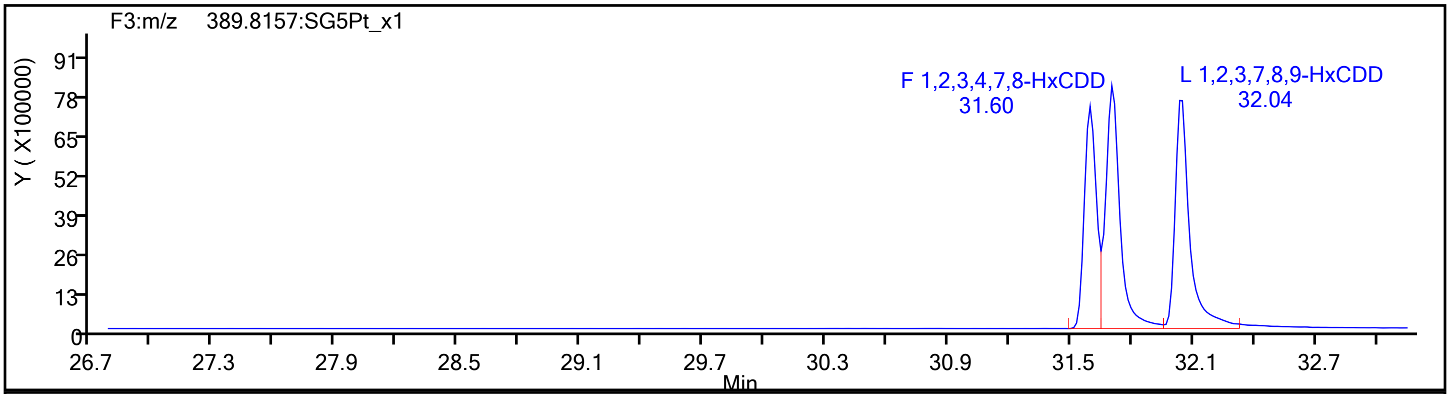

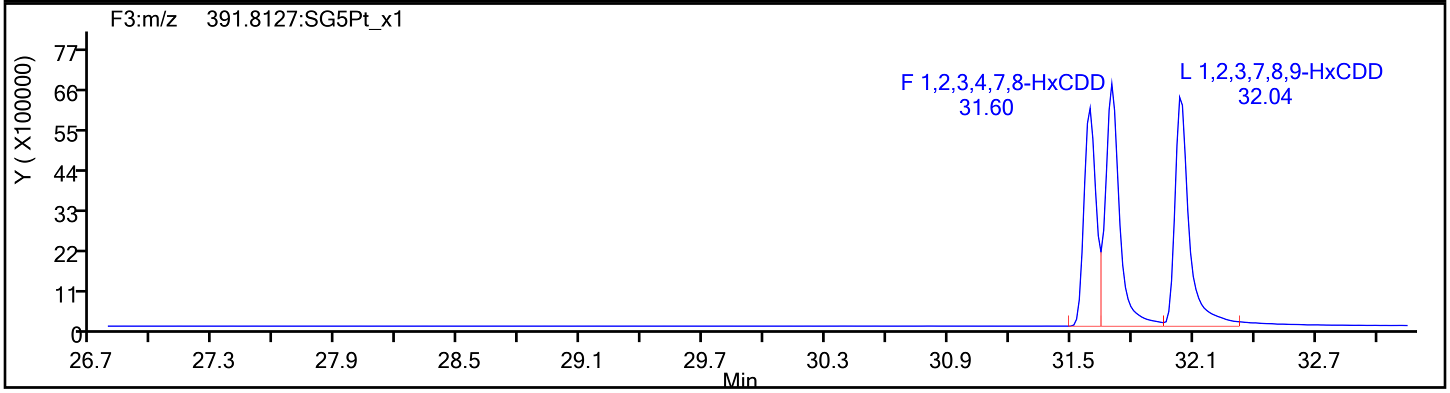

HxCDD Standards

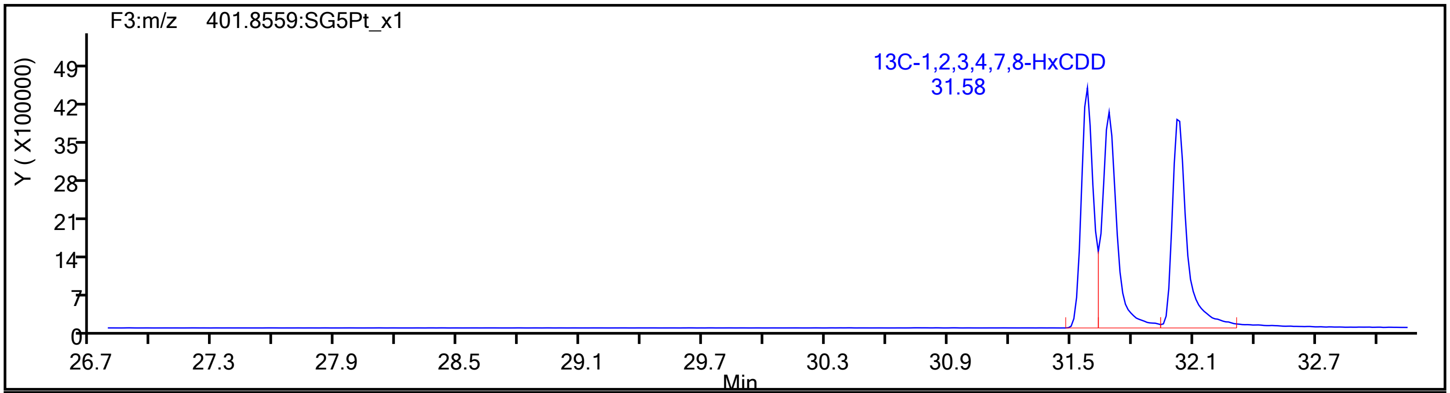

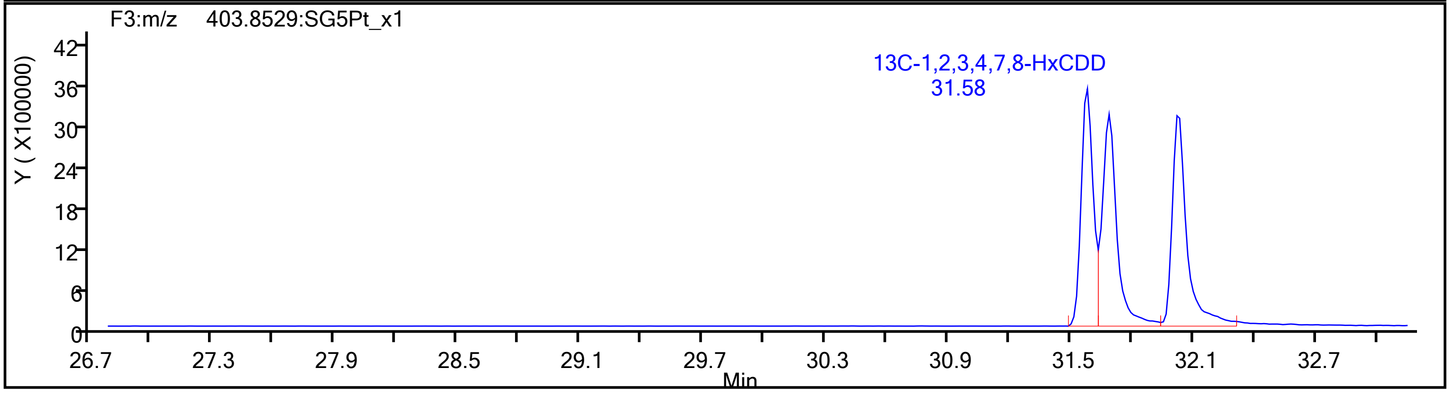

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Injection Date: 27-Jun-2020 19:24:02
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

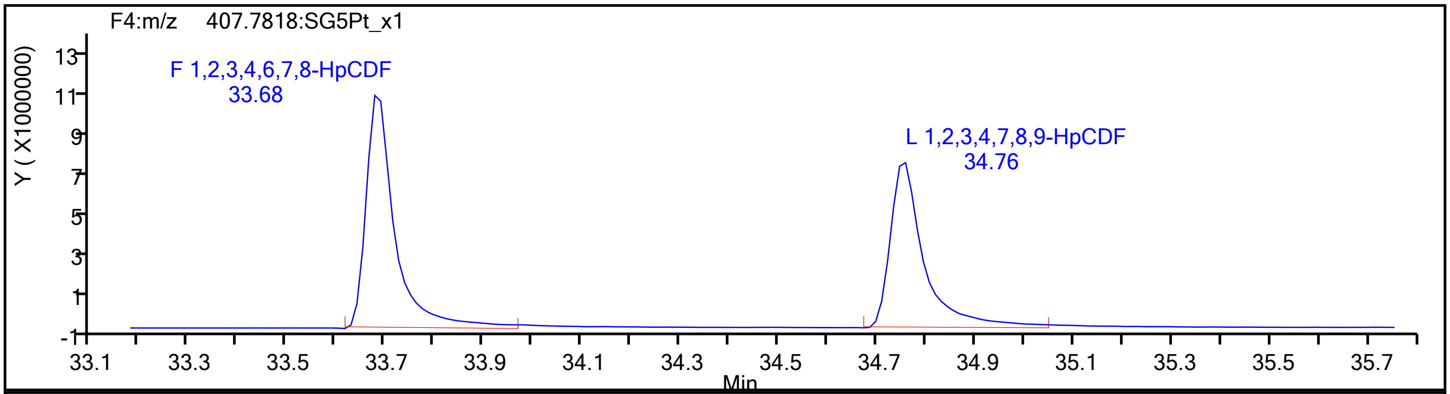

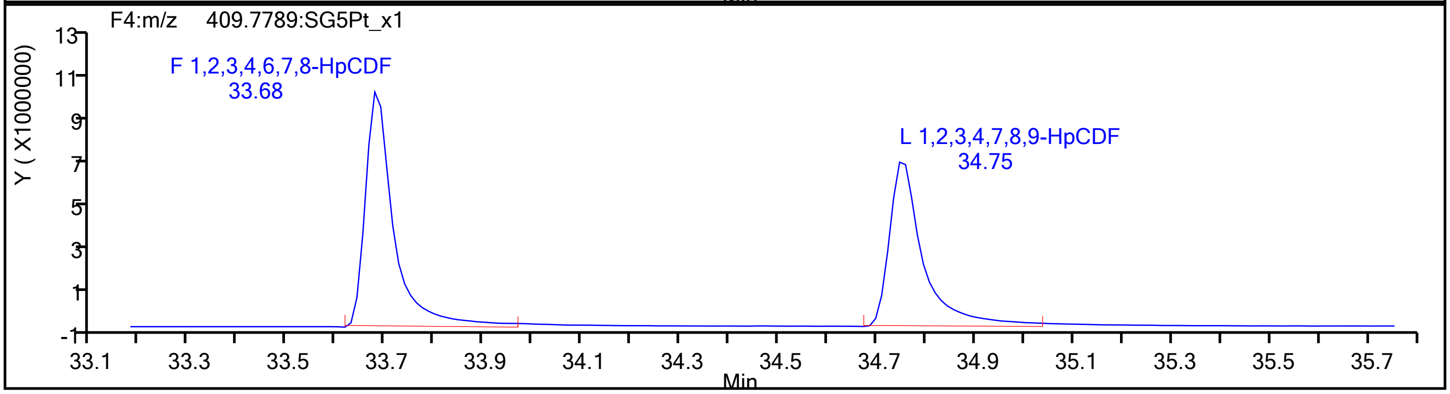

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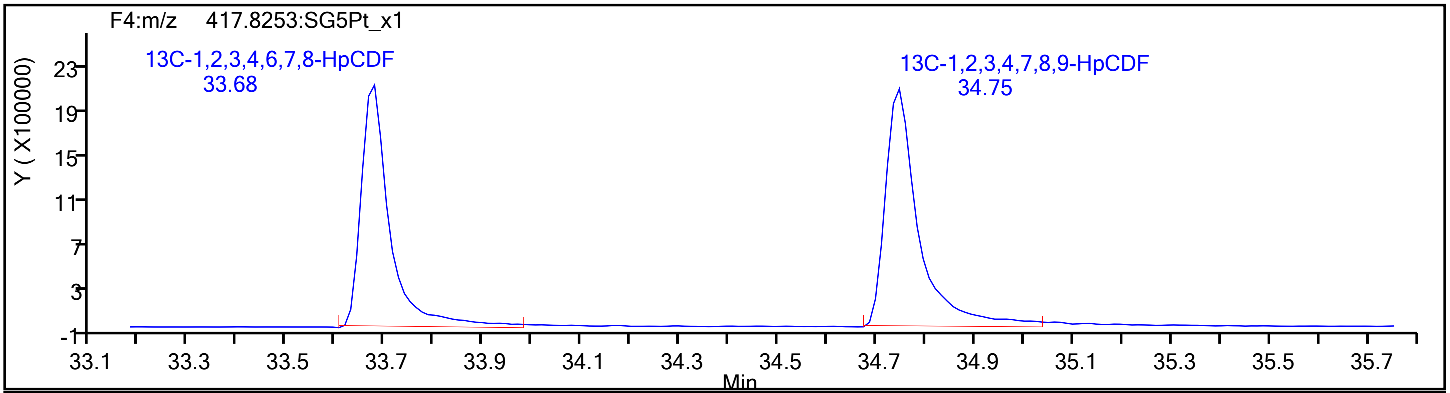

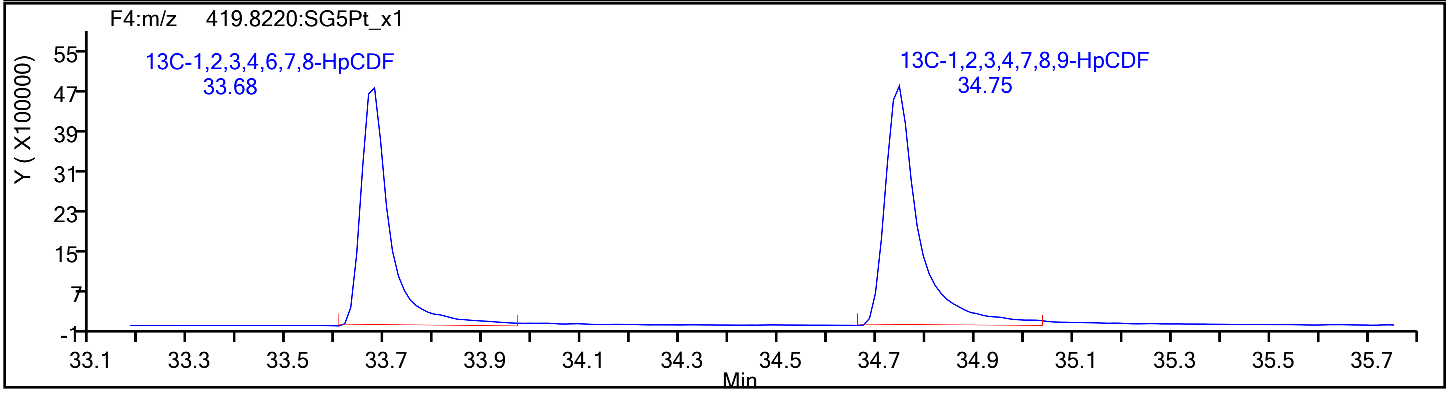

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

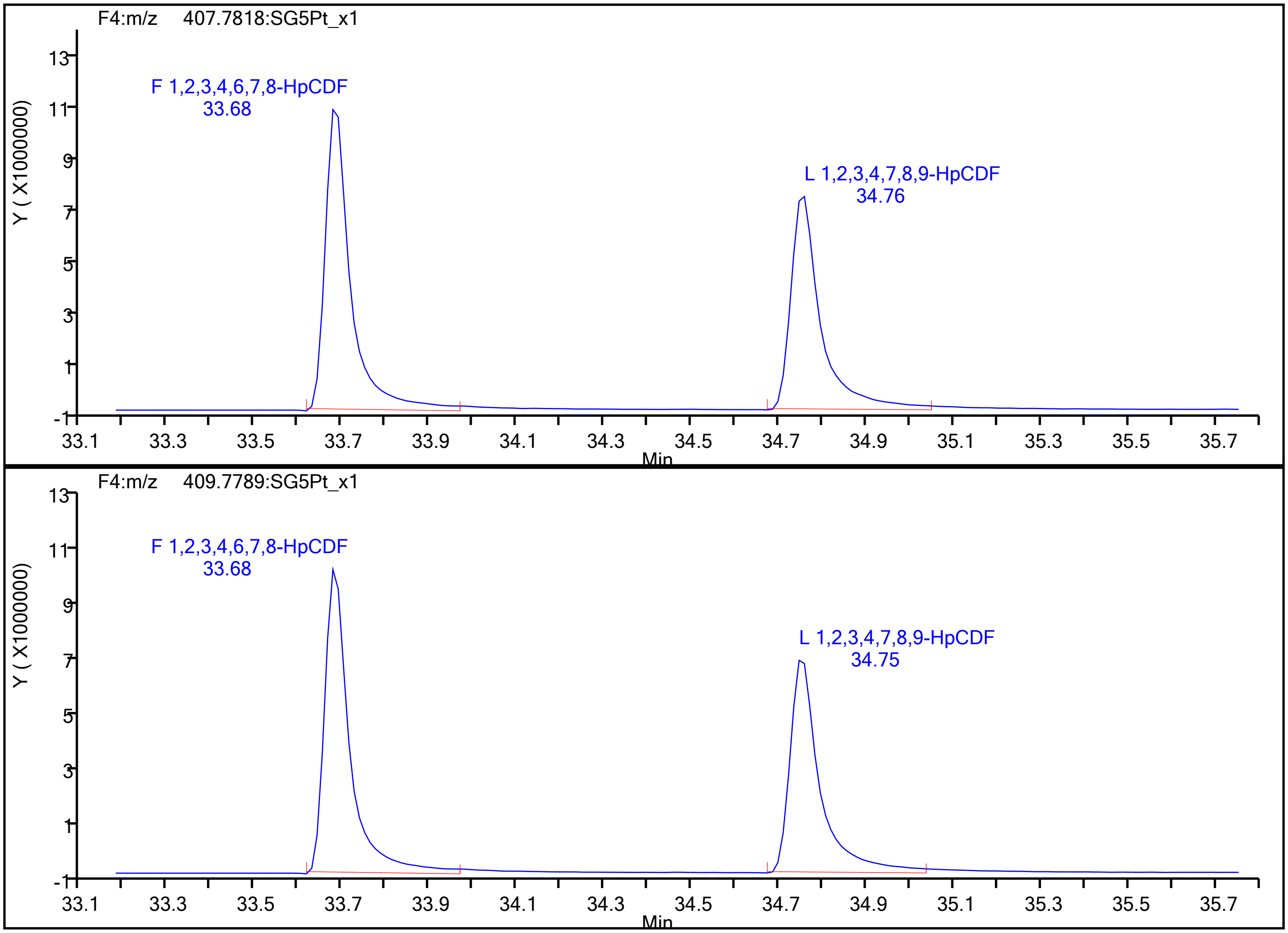

HpCDF Interference Mass

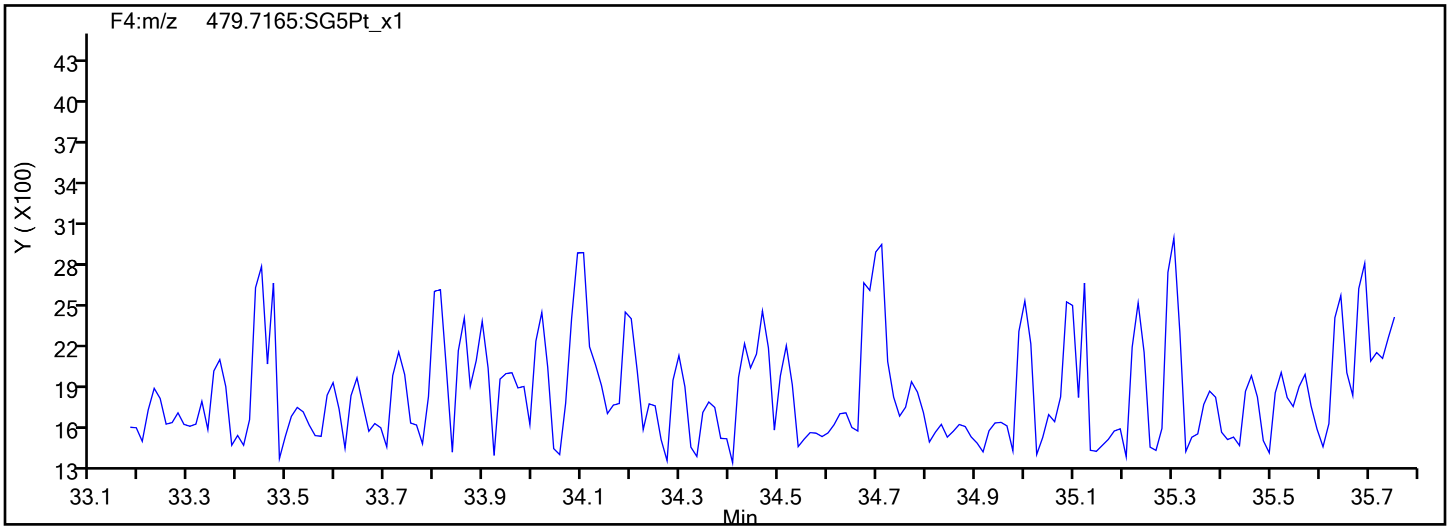

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

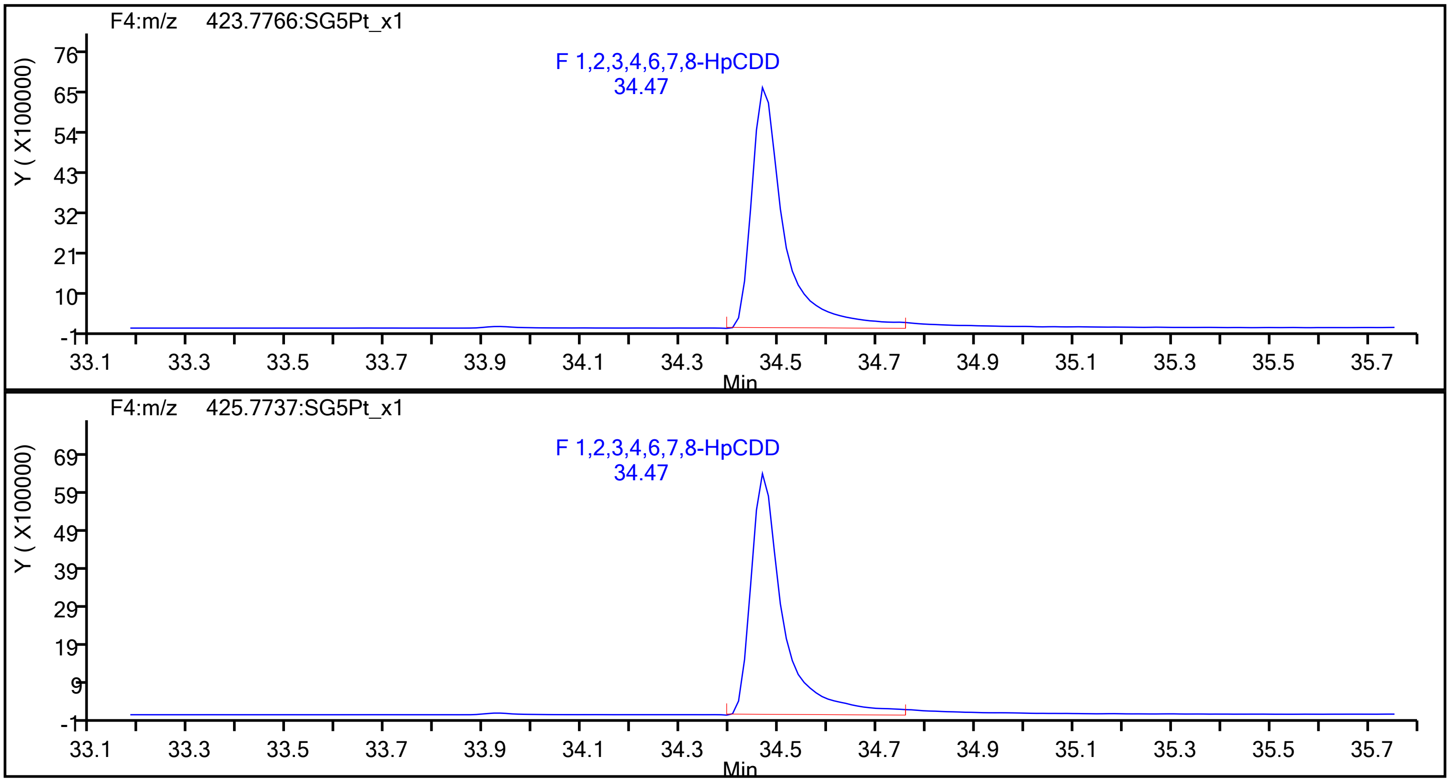

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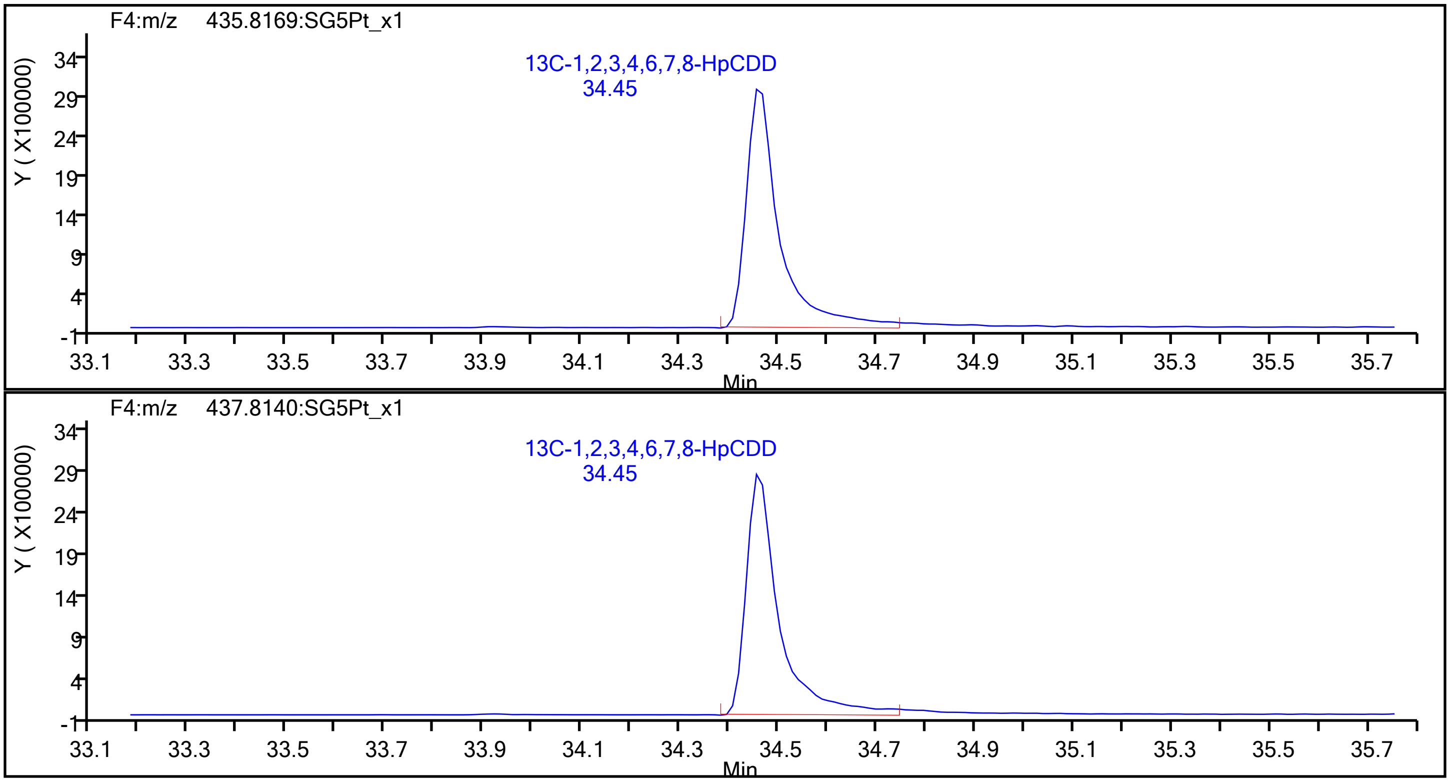

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Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

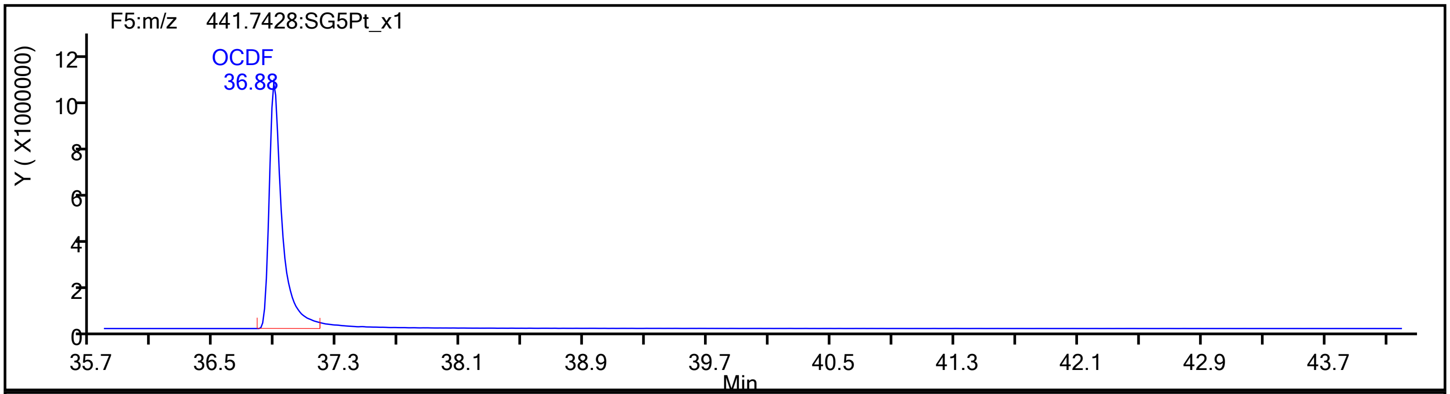

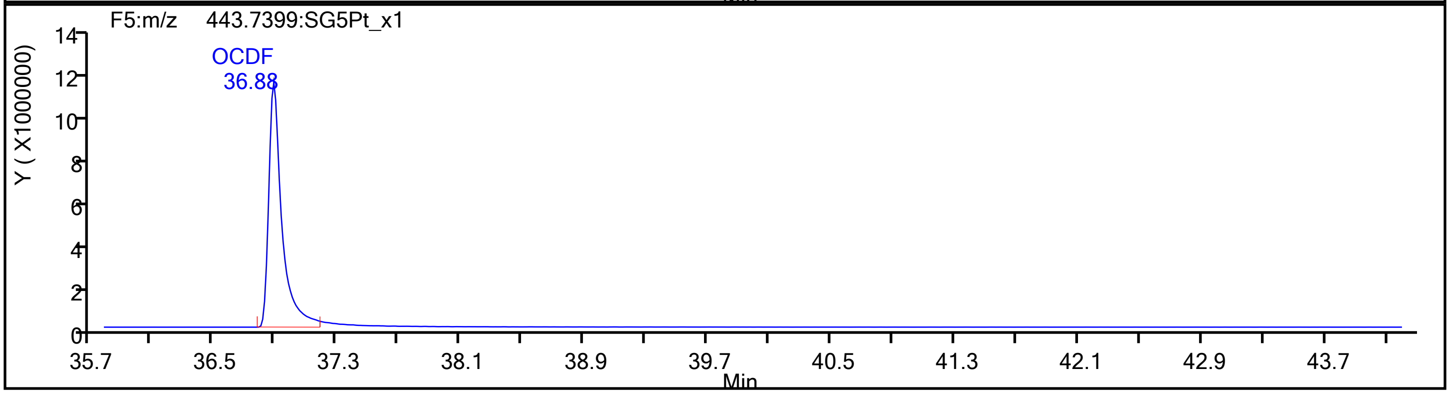

OCDF Standards

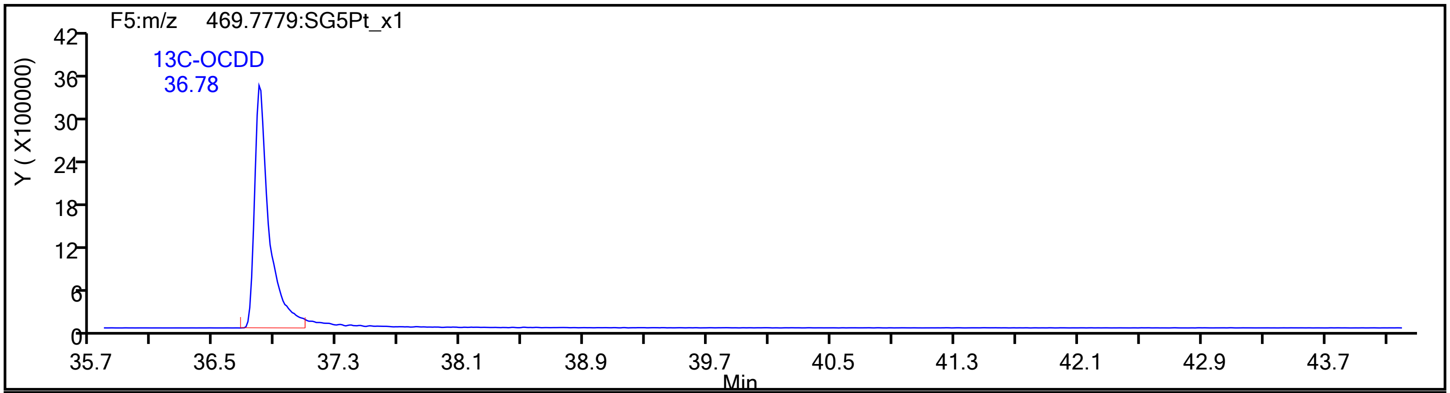

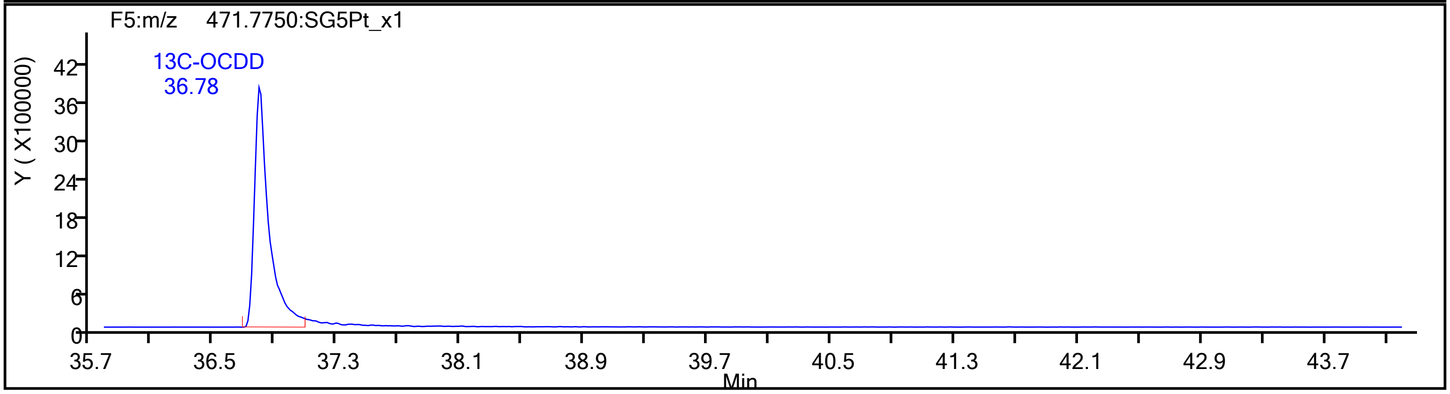

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d

Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

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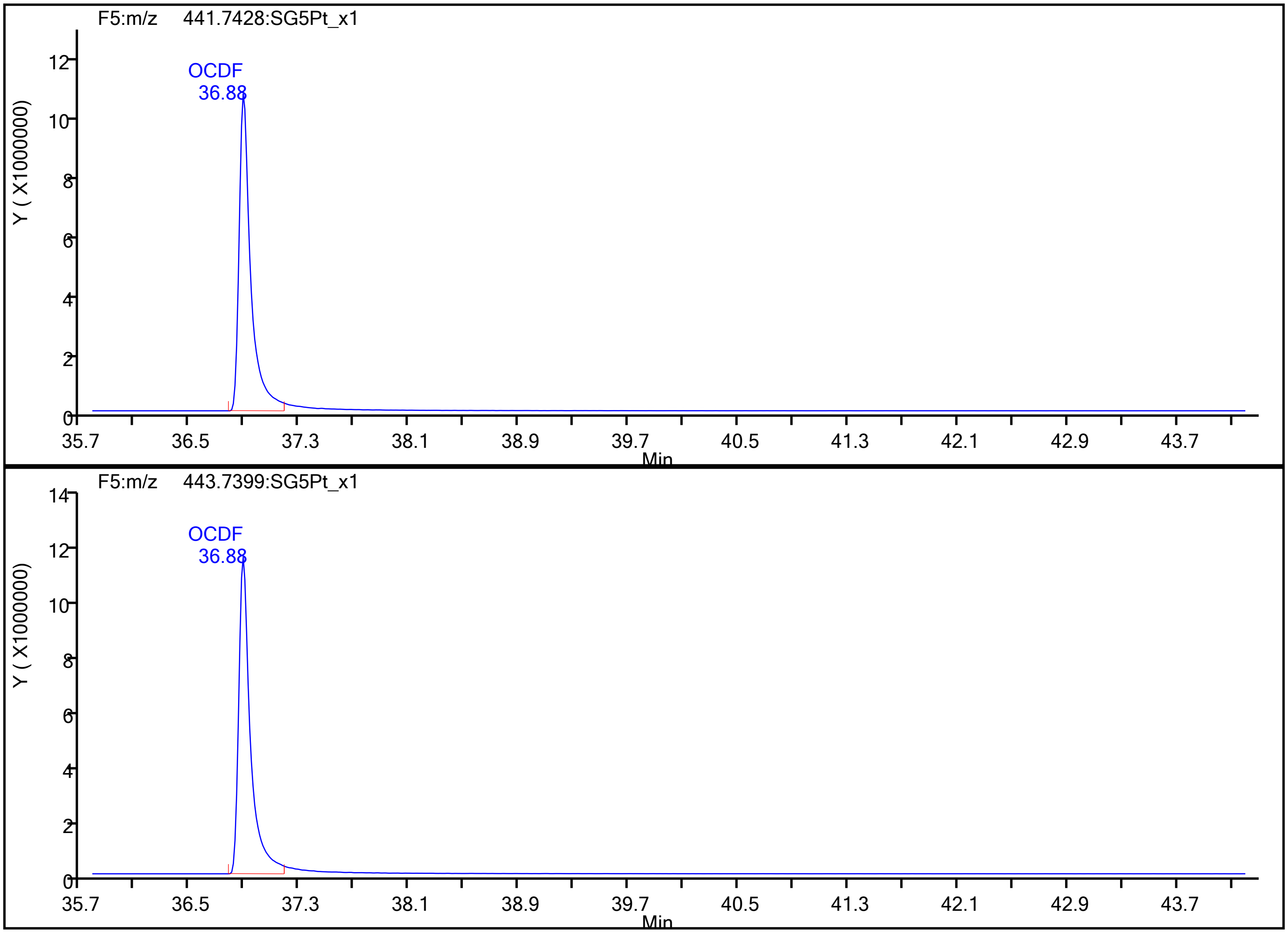

OCDF Interference Mass

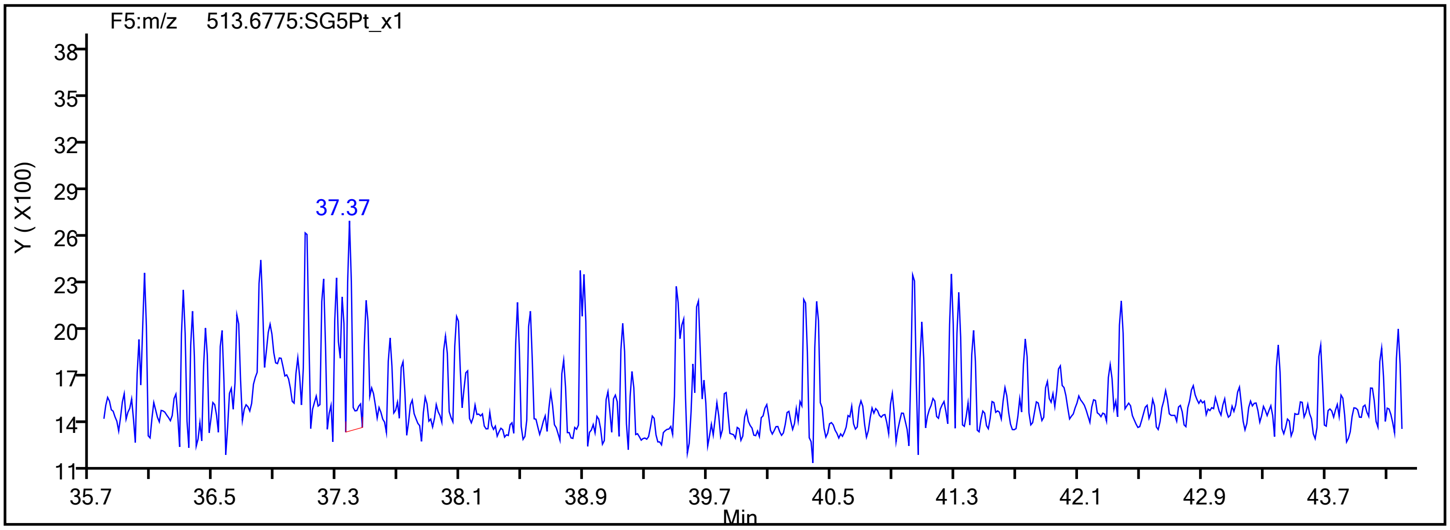

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

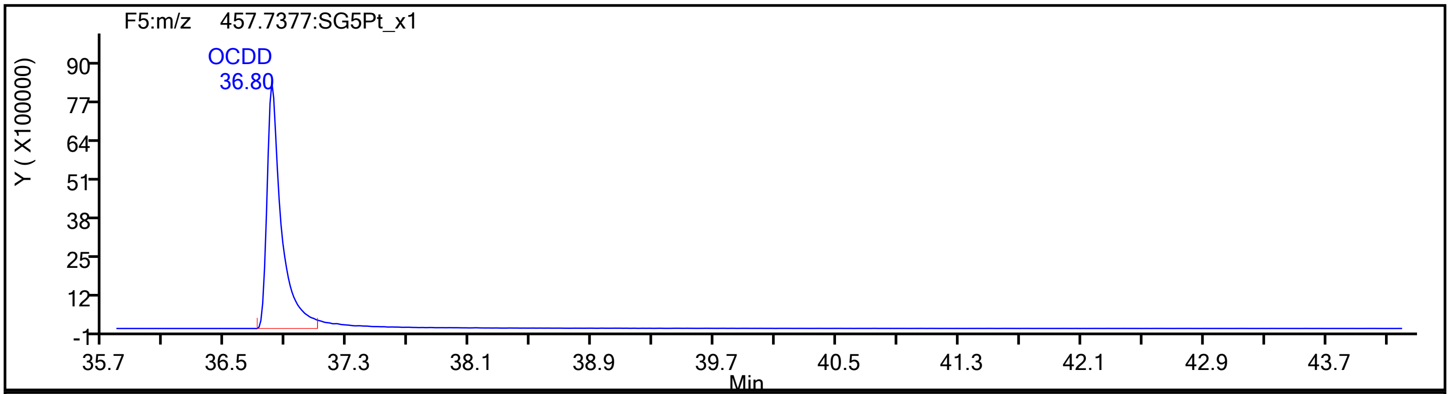

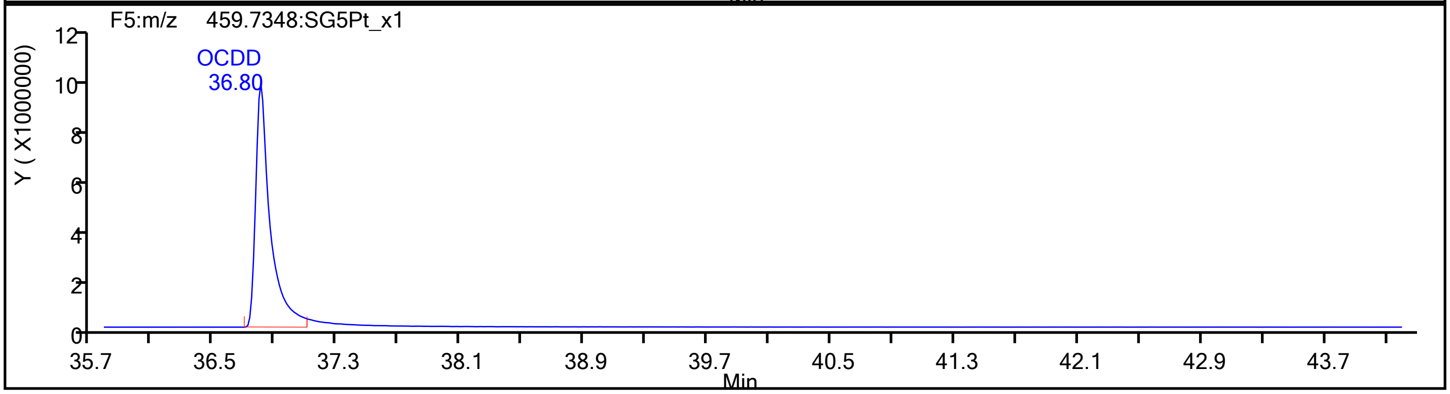

OCDD Standards

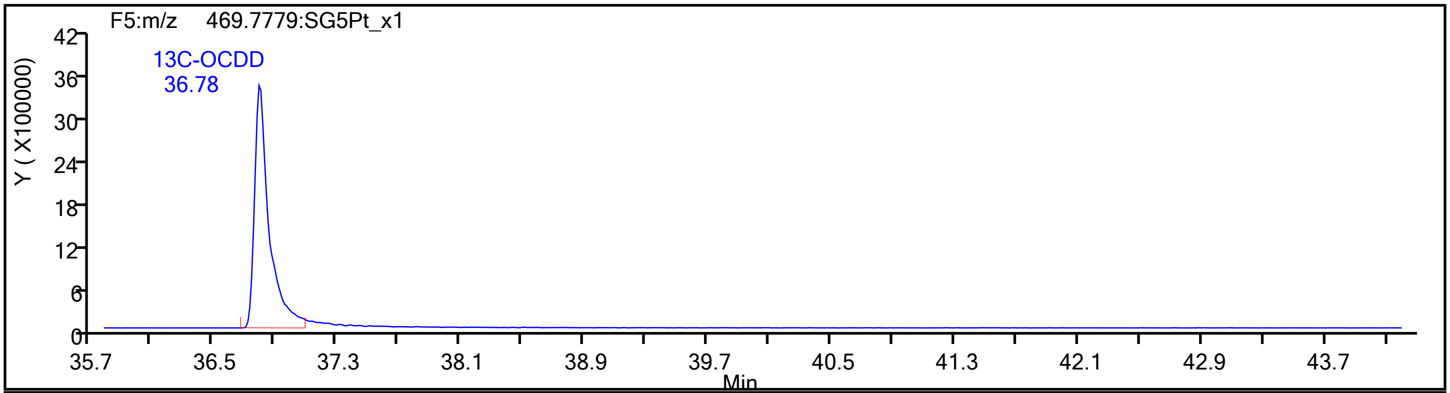

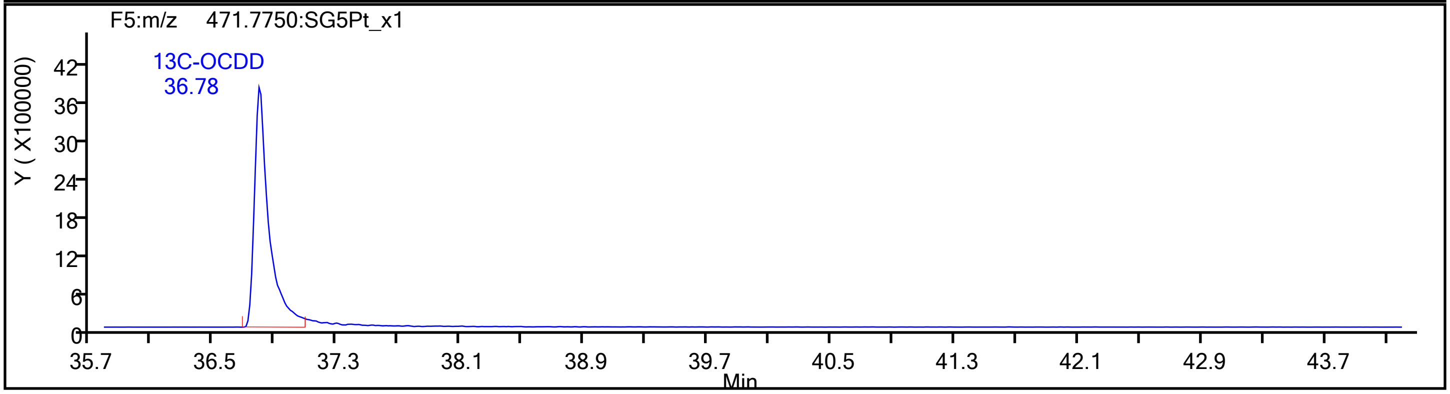

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

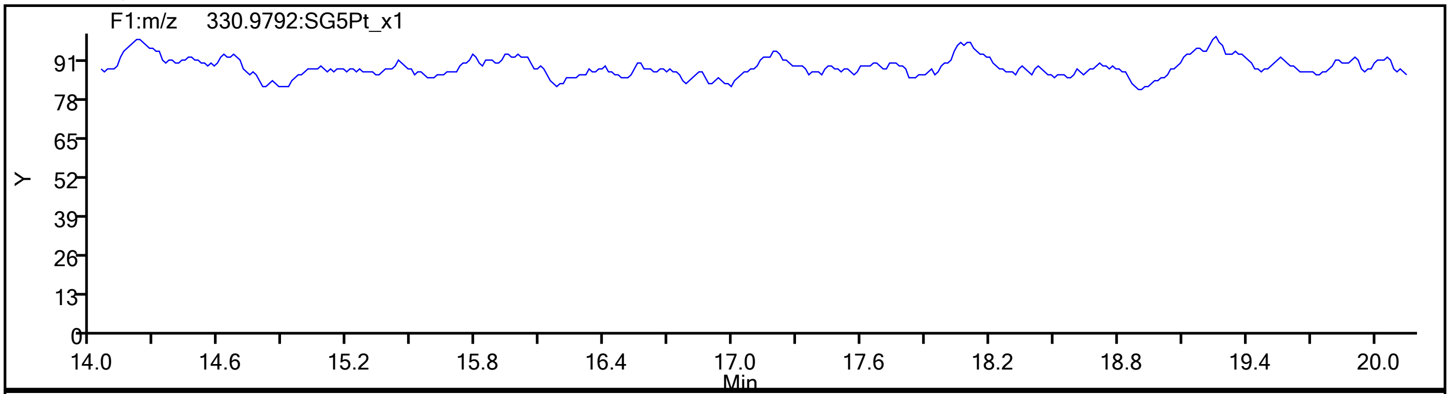

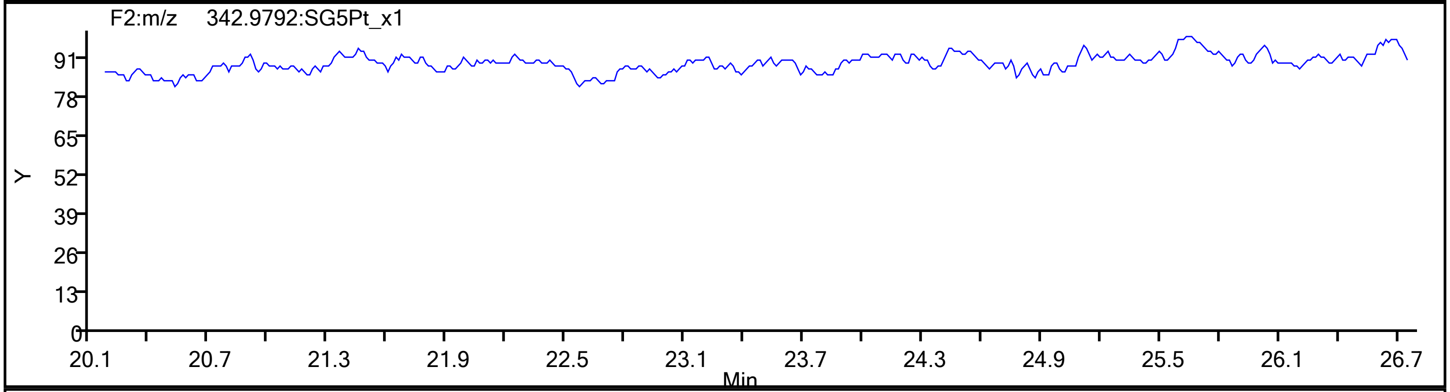

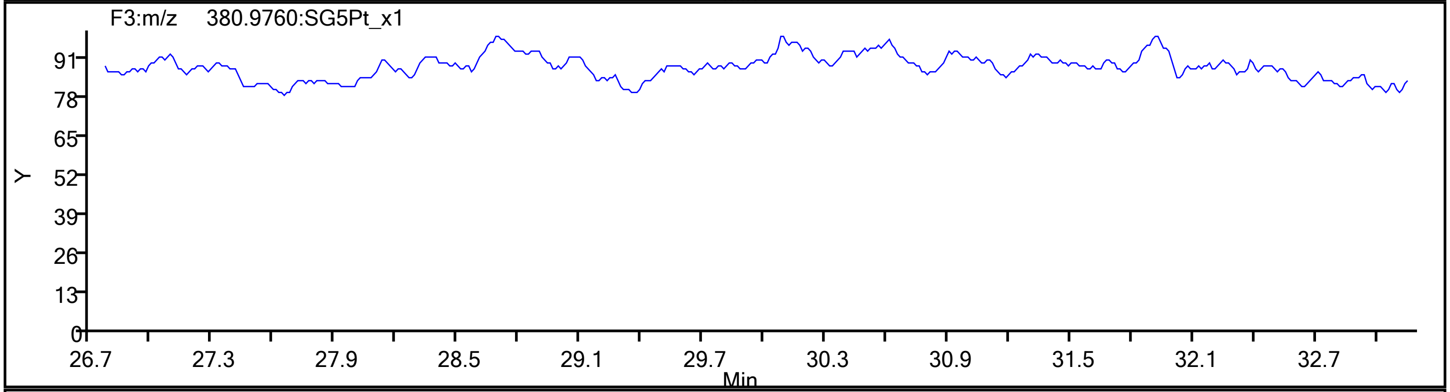

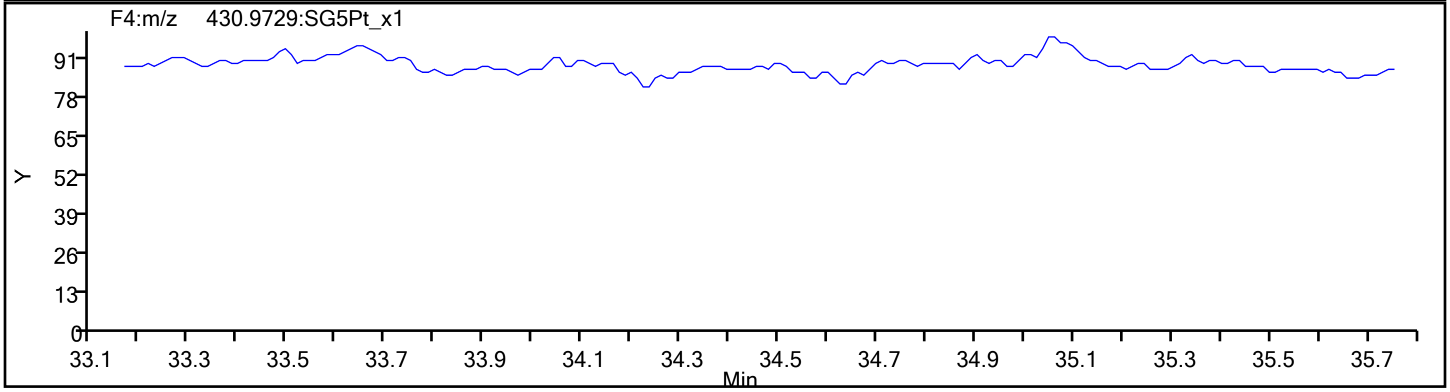

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

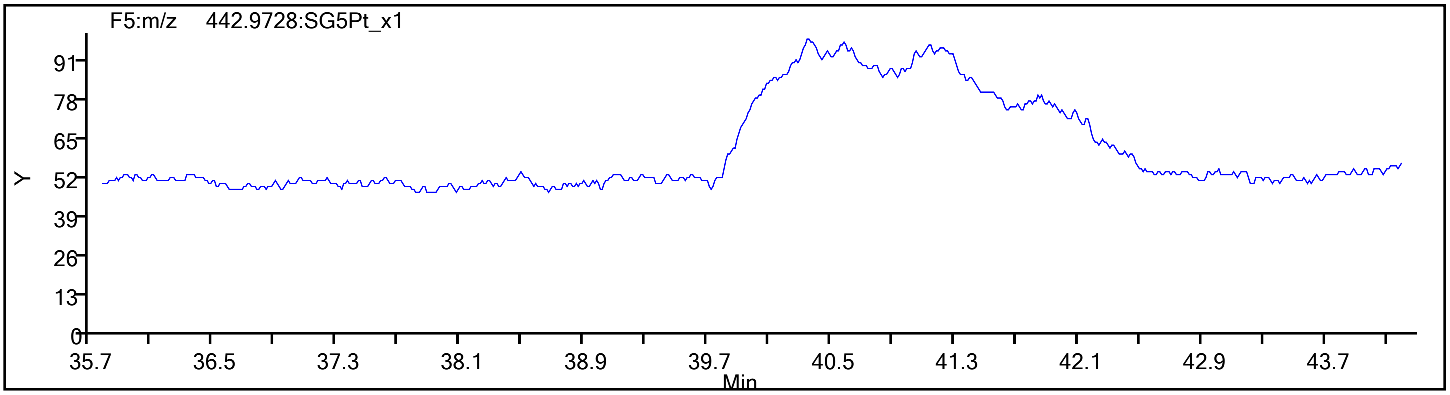

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID: CCV 320-405028/2 Calibration Date: 08/19/2020 11:27

Instrument ID: 10D5 Calib Start Date: 06/27/2020 14:42

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/27/2020 17:43

Lab File ID: 19AU2010D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9104	0.8650		9.50	10.0	95	84-120
2,3,7,8-TCDD	AveID	1.074	0.9611		8.94	10.0	89	78-129
1,2,3,7,8-PeCDF	AveID	0.9938	0.9674		48.7	50.0	97	82-120
2,3,4,7,8-PeCDF	AveID	0.8117	0.7938		48.9	50.0	98	82-122
1,2,3,7,8-PeCDD	AveID	1.018	0.9359		46.0	50.0	92	78-130
1,2,3,4,7,8-HxCDF	AveID	0.8061	0.8362		51.9	50.0	104	90-112
1,2,3,6,7,8-HxCDF	AveID	0.9818	1.031		52.5	50.0	105	88-114
2,3,4,6,7,8-HxCDF	AveID	1.038	1.077		51.8	50.0	104	88-114
1,2,3,4,7,8-HxCDD	AveID	0.8202	0.8228		50.2	50.0	100	78-128
1,2,3,6,7,8-HxCDD	AveID	0.9367	0.9187		49.0	50.0	98	78-128
1,2,3,7,8,9-HxCDD	AveID	0.9905	0.9589		48.4	50.0	97	82-122
1,2,3,7,8,9-HxCDF	AveID	1.032	1.061		51.4	50.0	103	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.453	1.417		48.8	50.0	98	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.054	0.9793		46.5	50.0	93	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.059	1.035		48.9	50.0	98	86-116
OCDD	AveID	1.150	1.153		100	100	100	79-126
OCDF	AveID	1.296	1.338		103	100	103	63-159
13C-2,3,7,8-TCDF	Ave	1.373	1.285		93.6	100	94	71-140
13C-2,3,7,8-TCDD	Ave	1.019	0.9734		95.5	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.143	1.023		89.5	100	90	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.400	1.235		88.2	100	88	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8232	0.7696		93.5	100	93	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.139	1.182		104	100	104	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.080	1.035		95.8	100	96	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9494	1.005		106	100	106	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.9356	0.9808		105	100	105	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	1.012		97.2	100	97	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8670	0.9380		108	100	108	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7899	0.8753		111	100	111	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7637	0.9246		121	100	121	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9093	1.054		116	100	116	77-129
13C-OCDD	Ave	0.6377	0.7998		251	200	125	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.018	0.9579		9.41	10.0	94	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\19AU2010D5.SPL Page 1 of 3
Last Modified: Wednesday, August 19, 2020 17:21:01 Pacific Daylight Time
Printed: Wednesday, August 19, 2020 17:21:03 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	19AU2010D5_1	WDM HRDXNCP_00040	WDM 081920	Tray01:1	Dioxin	
2	19AU2010D5_2	CS-4 HRDXNL4_00093	CCV 081920	Tray01:2	Dioxin	
3	19AU2010D5_3	Solvent Blank C-14	SB 081920	Tray01:3	---	
4	19AU2010D5_4	MB 320-404233/1-A	MB 320-404233/1-A	Tray01:4	1613B(T)/Water	D175
5	19AU2010D5_5	LCS 320-404233/2-A	LCS 320-404233/2-A	Tray01:5	1613B(T)/Water	
6	19AU2010D5_6	LCSD 320-404233/3-A	LCSD 320-404233/3-A	Tray01:6	1613B(T)/Water	
7	19AU2010D5_7	320-63525-A-1-A	320-63525-A-1-A	Tray01:7	1613B/Water	
8	19AU2010D5_8	320-63525-A-2-A	320-63525-A-2-A	Tray01:8	1613B/Water	
9	19AU2010D5_9	440-270148-O-1-A	440-270148-O-1-A	Tray01:9	1613B_T/Water	
10	19AU2010D5_10	400-192036-M-1-A	400-192036-M-1-A	Tray01:10	1613B_T/Water	
11	19AU2010D5_11	440-270274-E-1-A	440-270274-E-1-A	Tray01:11	1613B/Water	
12	19AU2010D5_12	550-147138-G-2-A	550-147138-G-2-A	Tray01:12	1613B_T/Water	
13	19AU2010D5_13	Solvent Blank C-14	SB 081920A	Tray01:3	---	
14	19AU2010D5_14	CS-4 HRDXNL4_00093	CCV 081920A	Tray01:2	Dioxin	
15	19AU2010D5_15	WDM HRDXNCP_00040	WDM 081920A	Tray01:1	Dioxin	
16	19AU2010D5_16	Solvent Blank C-14	SB 081920B	Tray01:3	---	
17	19AU2010D5_17	LCSD 320-404233/3-A RI	LCSD 320-404233/3-A RI	Tray01:6	1613B(T)/Water	D175
18	19AU2010D5_18	570-35718-B-1-A	570-35718-B-1-A	Tray01:15	1613B/Water	
19	19AU2010D5_19	570-35718-F-5-A	570-35718-F-5-A	Tray01:16	1613B/Water	
20	19AU2010D5_20	570-35718-B-6-A	570-35718-B-6-A	Tray01:17	1613B/Water	
21	19AU2010D5_21	570-35718-B-7-A	570-35718-B-7-A	Tray01:18	1613B/Water	
22	19AU2010D5_22	570-35718-A-8-A	570-35718-A-8-A	Tray01:19	1613B/Water	
23	19AU2010D5_23	660-103599-C-1-A	660-103599-C-1-A	Tray01:20	1613B_T/Water	
24	19AU2010D5_24	660-103620-D-1-A	660-103620-D-1-A	Tray01:21	1613B_T/Water	
25	19AU2010D5_25	660-103620-D-2-A	660-103620-D-2-A	Tray01:22	1613B_T/Water	
26	19AU2010D5_26	680-187248-A-1-A	680-187248-A-1-A	Tray01:23	1613B_T/Water	
27	19AU2010D5_27	Solvent Blank C-14	SB 081920C	Tray01:3	---	
28	19AU2010D5_28	QC IDA HRDXNIDA_00434	QC IDA HRDXNIDA_00434	Tray01:24	1613B/8290	Q87
29	19AU2010D5_29	QC TA HRDXNTA_00122	QC TA HRDXNTA_00122	Tray01:25	1613B/8290	
30	19AU2010D5_30	CS-4 HRDXNL4_00093	CCV 081920B	Tray01:2	Dioxin	

log file checked
8-19-20 ALM

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA/AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA/AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA/AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA/AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

Process Options	**Action On Error**	**s5**
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---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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---	---	C:\CHROM
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---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 10:13:05 Pacific Daylight Time

M 292.9824 R 10162

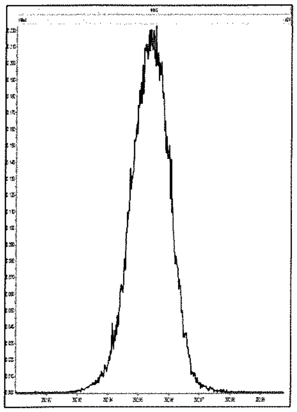

M 304.9824 R 10161

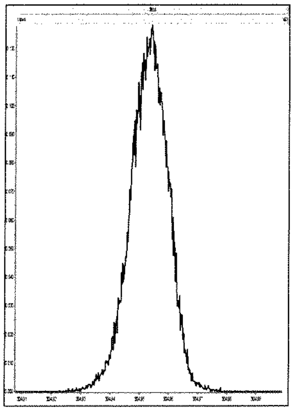

M 318.9792 R 10962

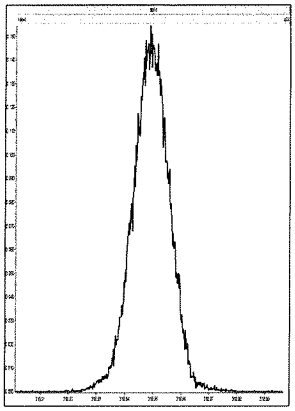

M 330.9792 R 10417

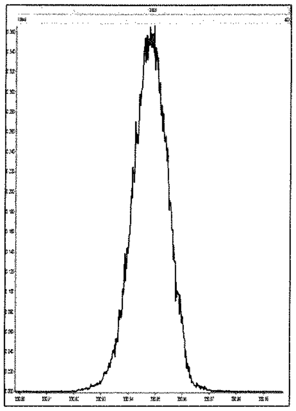

M 342.9792 R 10549

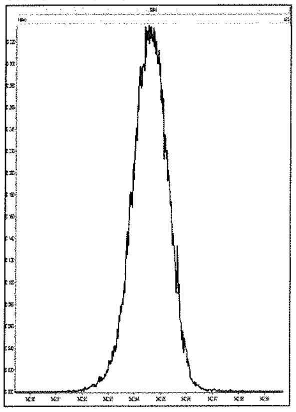

M 354.9792 R 10549

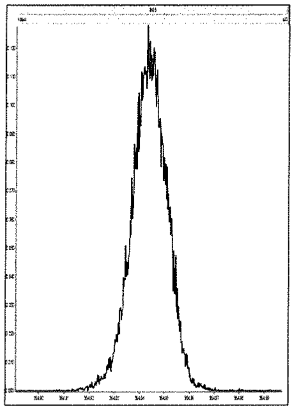

M 366.9792 R 10549

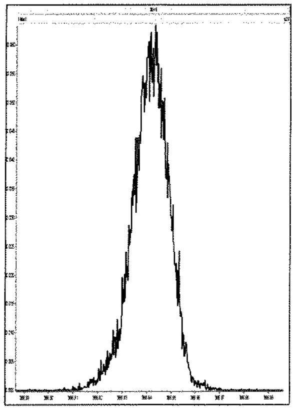

M 380.9760 R 11414

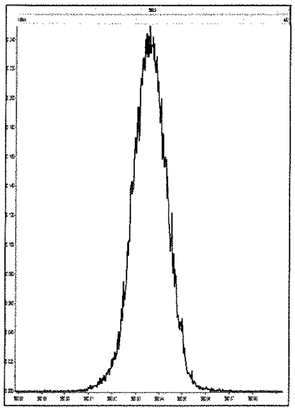

M 392.9760 R 11036

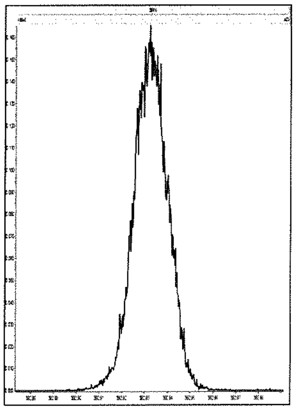

M 404.9760 R 11735

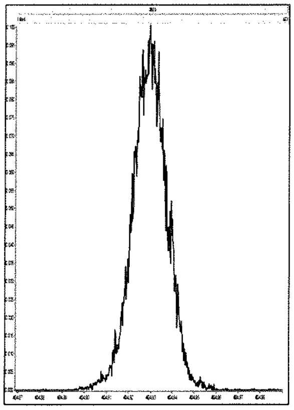

M 416.9760 R 12167

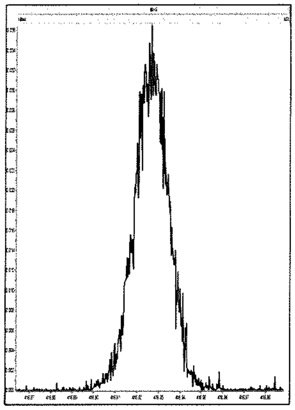

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 10:14:24 Pacific Daylight Time

M 318.9792 R 10819

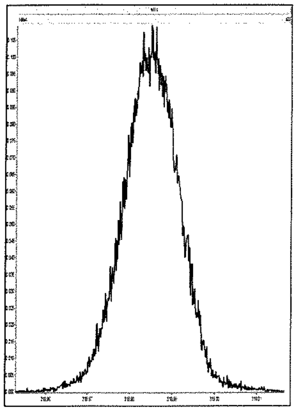

M 330.9792 R 10288

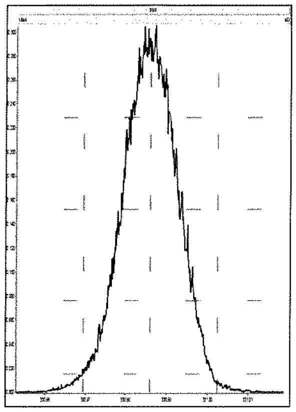

M 342.9792 R 10774

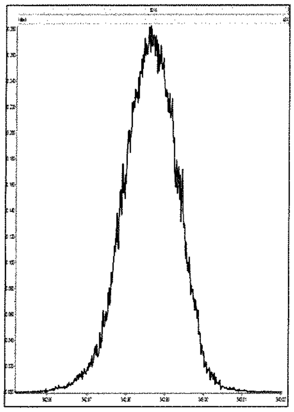

M 354.9792 R 10966

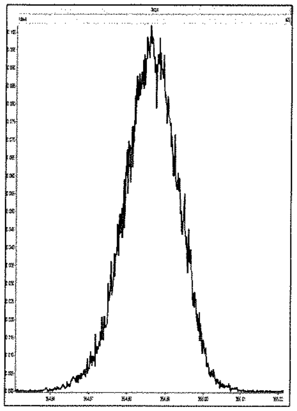

M 366.9792 R 10460

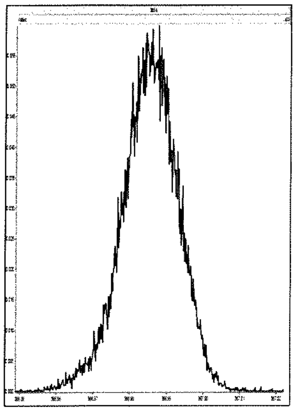

M 380.9760 R 11260

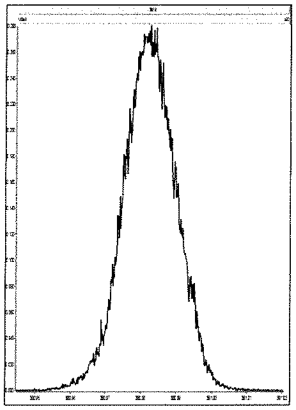

M 392.9760 R 11314

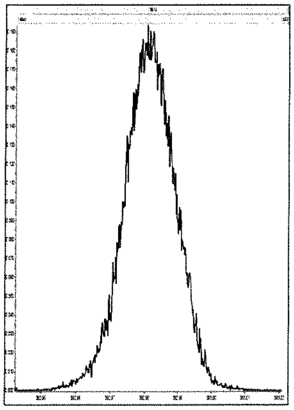

M 404.9760 R 11261

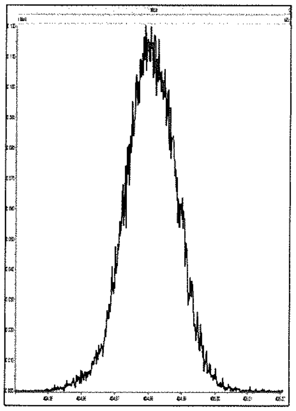

M 416.9760 R 11572

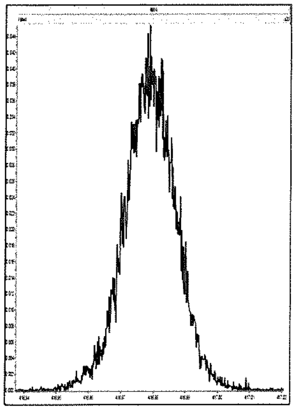

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 10:15:07 Pacific Daylight Time

M 366.9792 R 10122

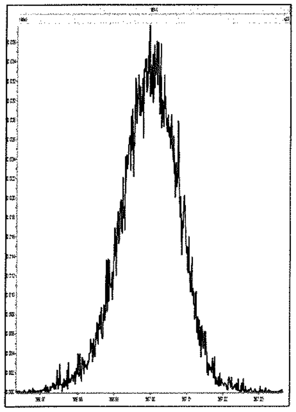

M 380.9760 R 10964

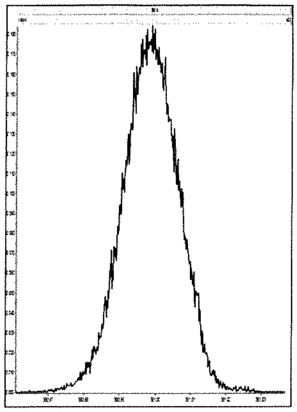

M 392.9760 R 10774

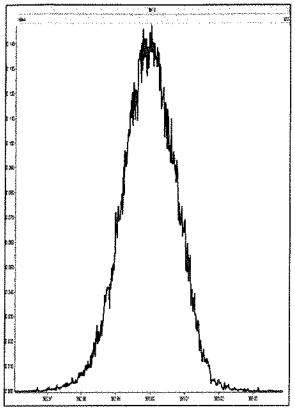

M 404.9760 R 11211

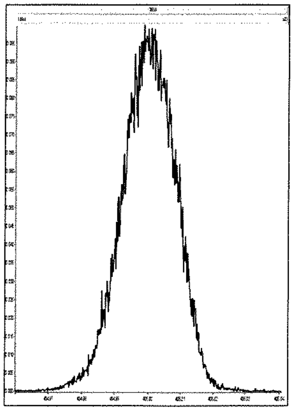

M 416.9760 R 11577

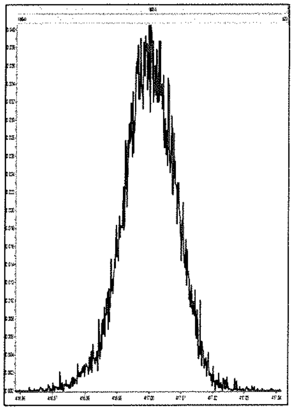

M 430.9728 R 11417

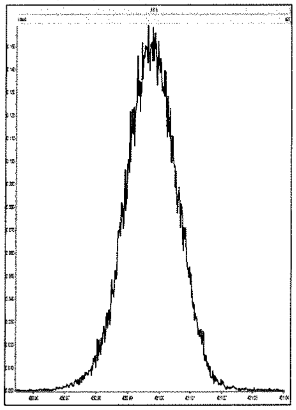

M 442.9728 R 11111

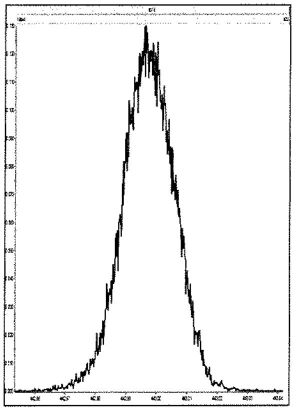

M 454.9728 R 11012

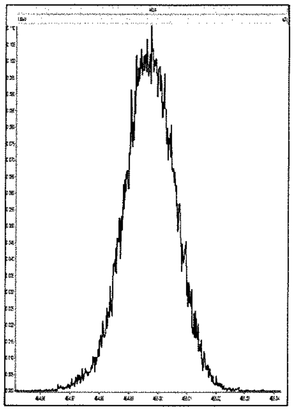

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 10:16:49 Pacific Daylight Time

M 380.9760 R 10200

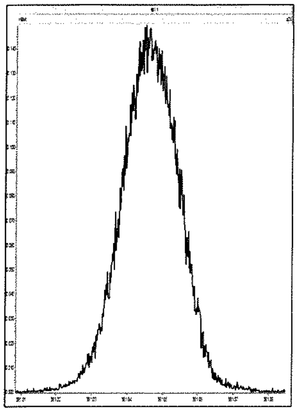

M 392.9760 R 10683

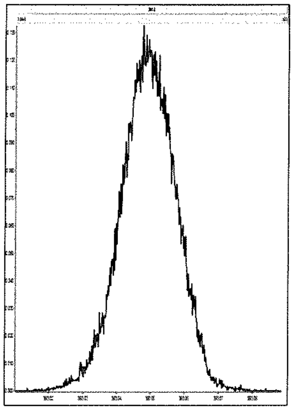

M 404.9760 R 10502

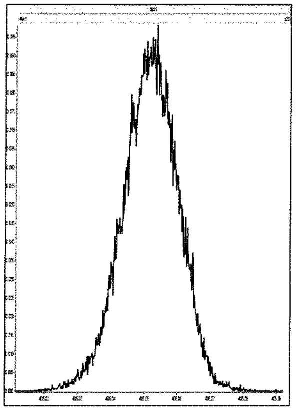

M 416.9760 R 10680

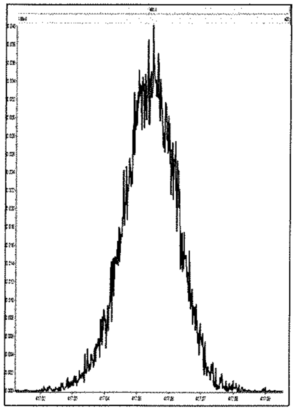

M 430.9728 R 10729

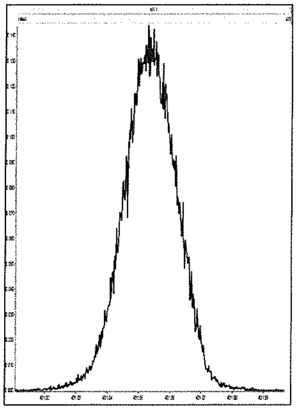

M 442.9728 R 11413

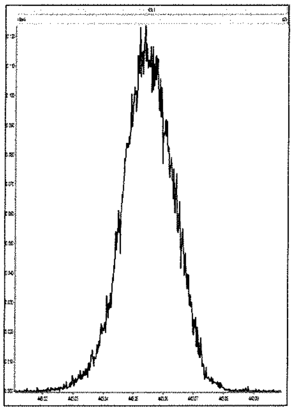

M 454.9728 R 10965

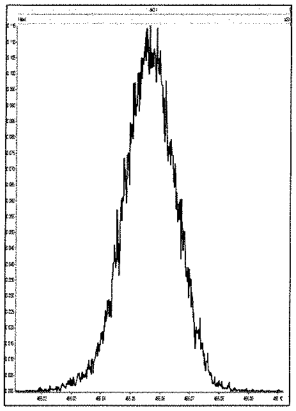

M 466.9728 R 11260

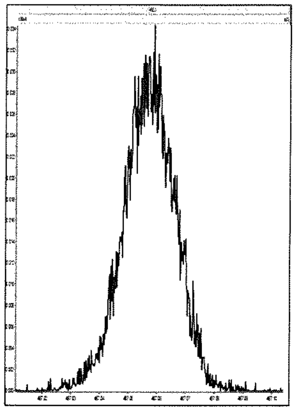

M 480.9696 R 11626

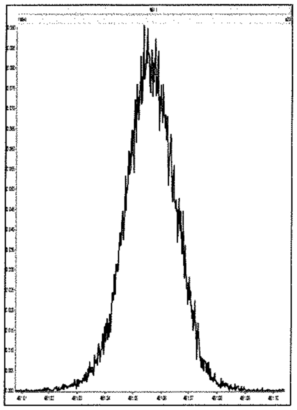

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 10:17:44 Pacific Daylight Time

M 380.9760 R 10224

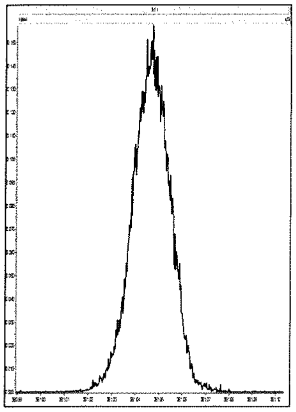

M 392.9760 R 10548

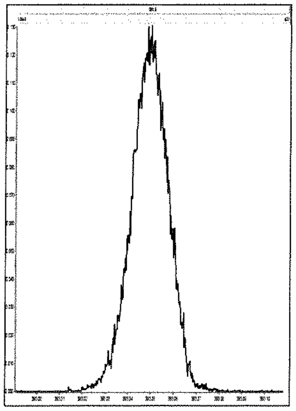

M 404.9760 R 10548

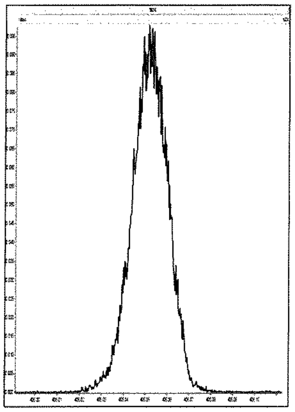

M 416.9760 R 10892

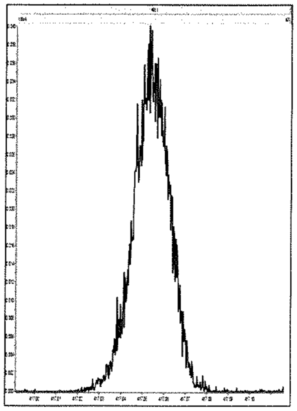

M 430.9728 R 10753

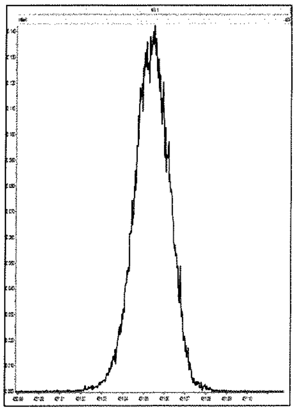

M 442.9728 R 10684

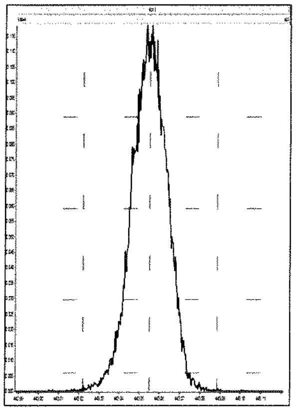

M 454.9728 R 10894

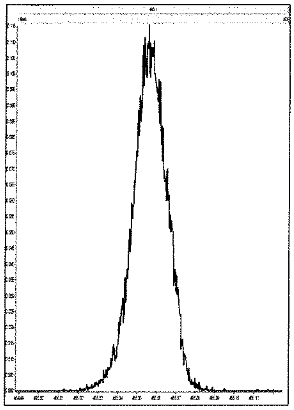

M 466.9728 R 11735

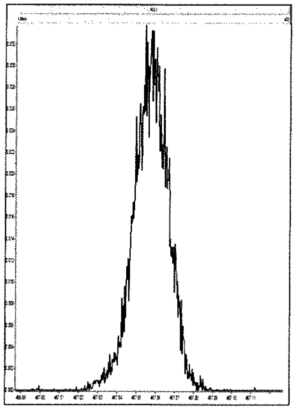

M 480.9696 R 10964

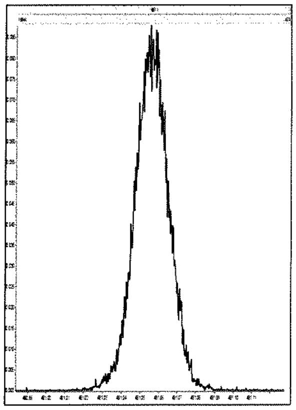

M 492.9696 R 11415

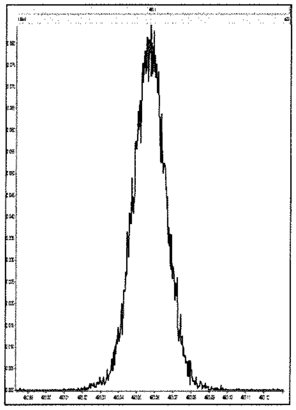

M 504.9696 R 11904

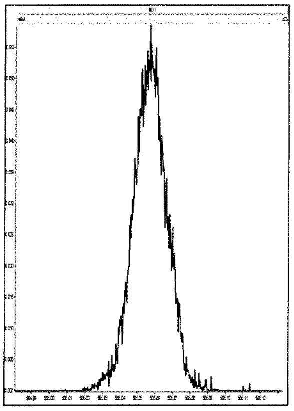

M 516.9697 R 12347

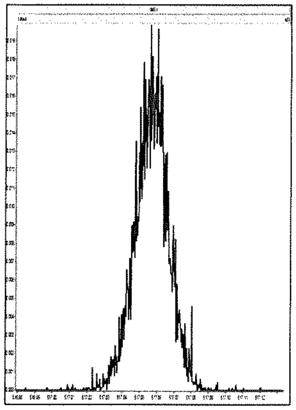

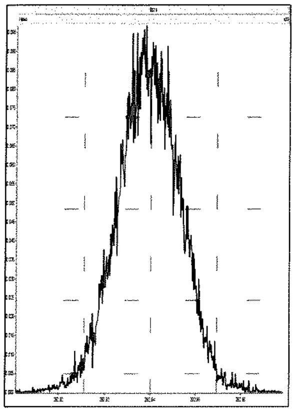
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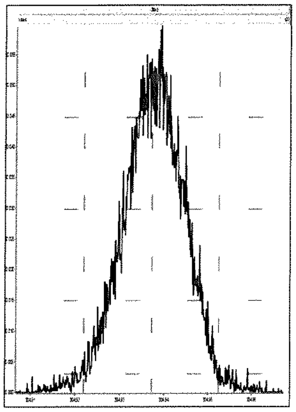
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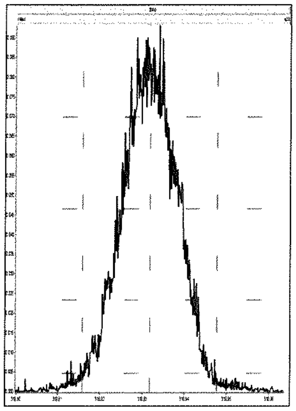
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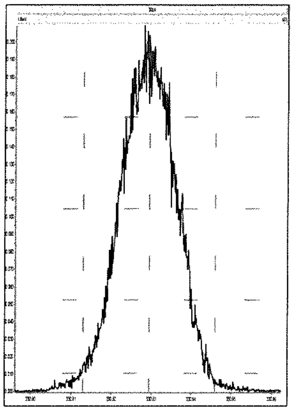
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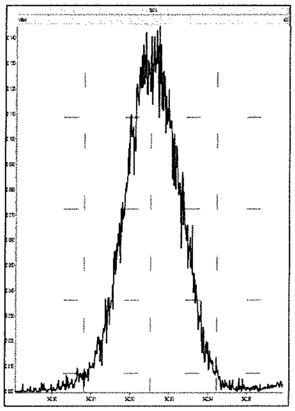
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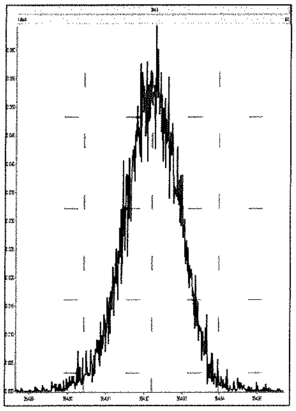
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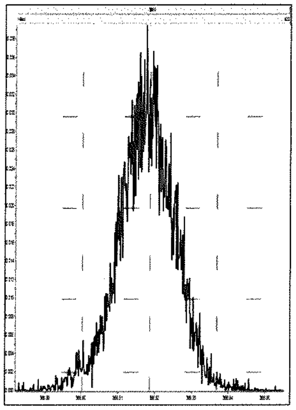
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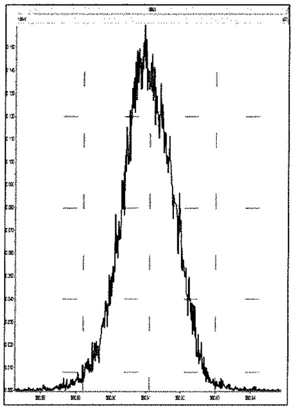
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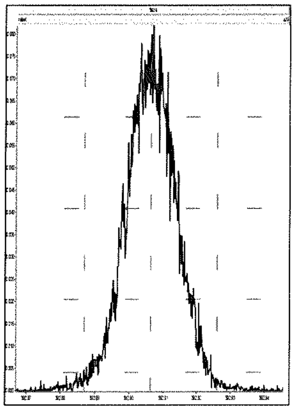
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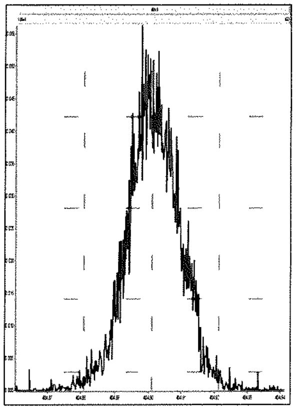
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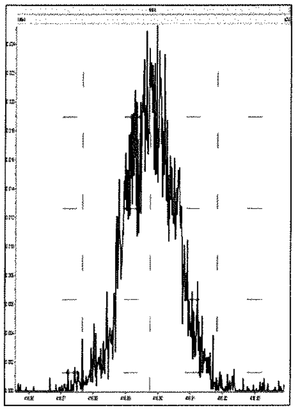
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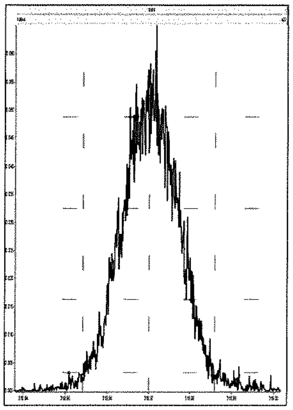
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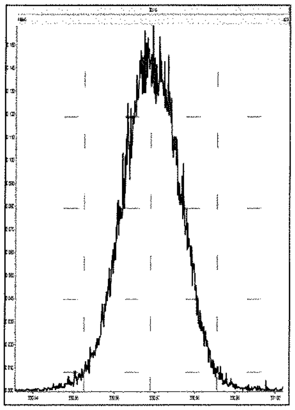
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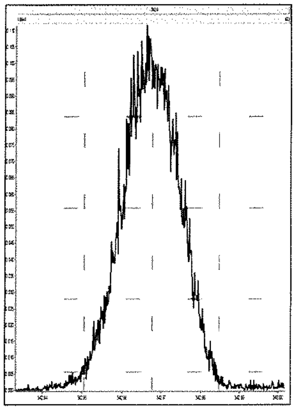
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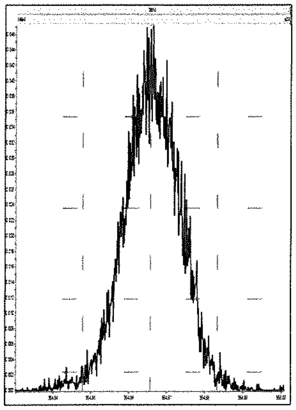
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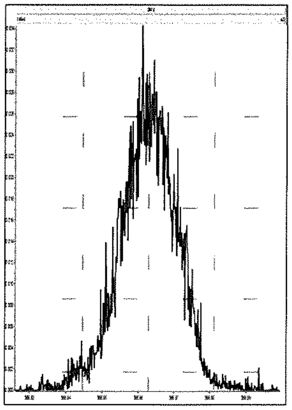
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M 380.9760 R 10874

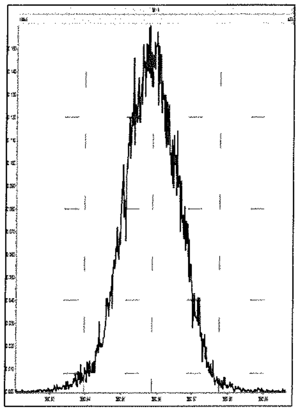

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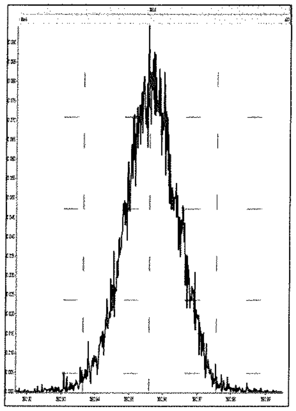

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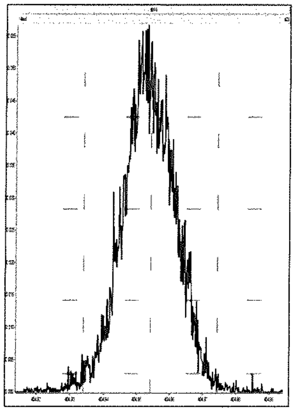

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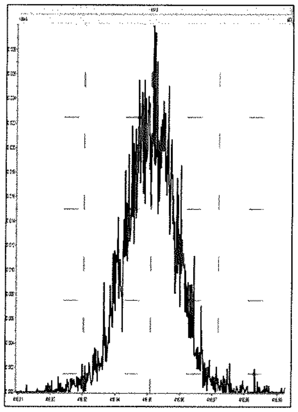

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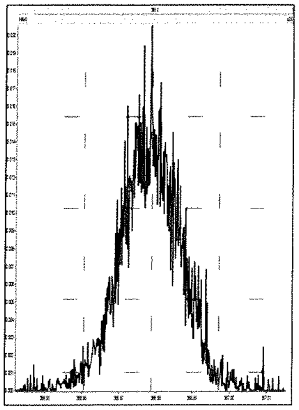

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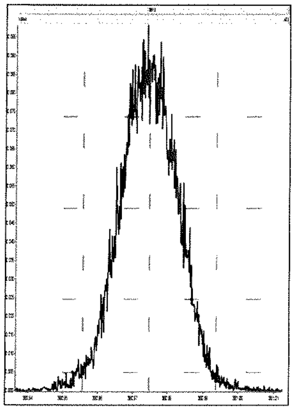

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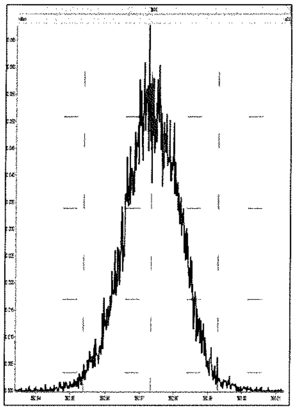

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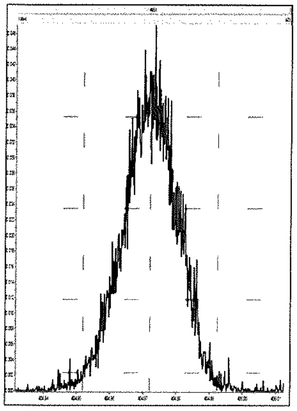

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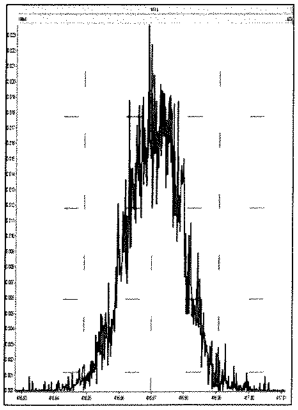

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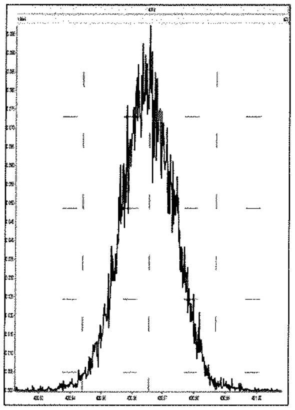

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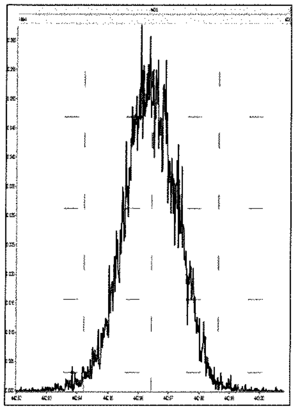

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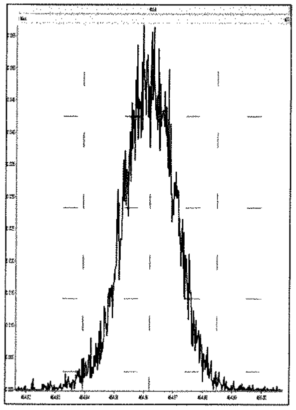

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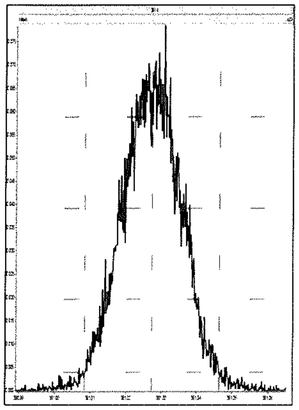

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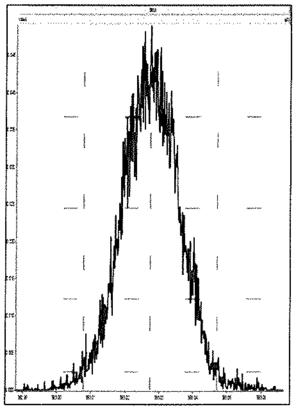

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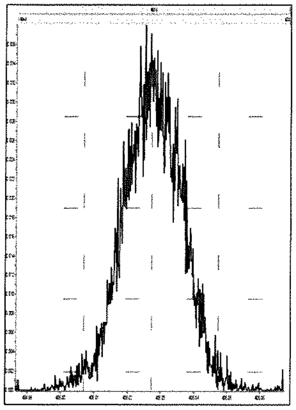

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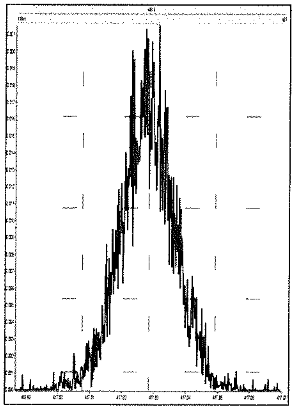

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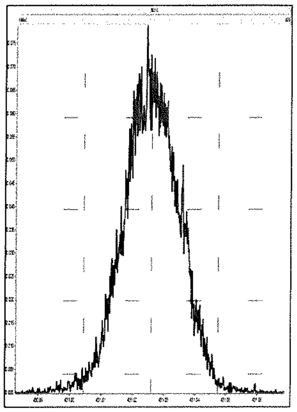

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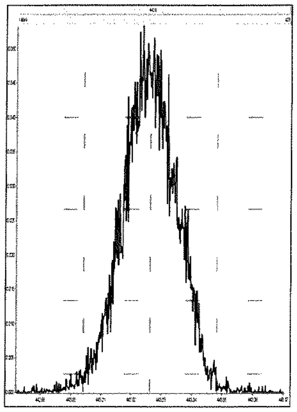

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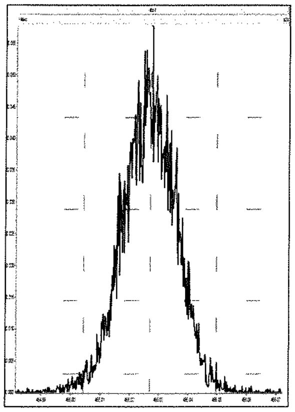

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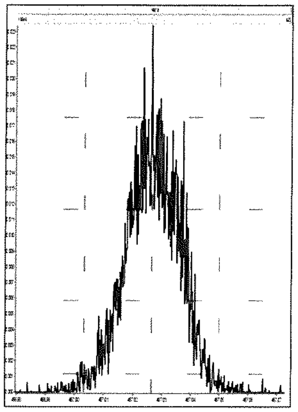

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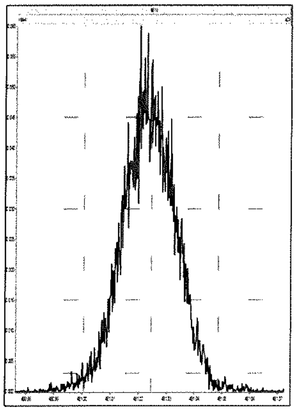

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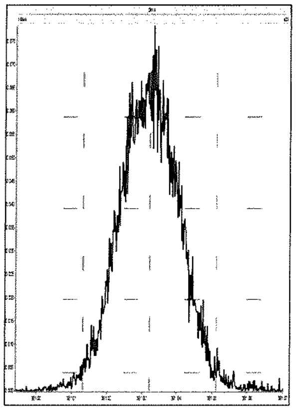

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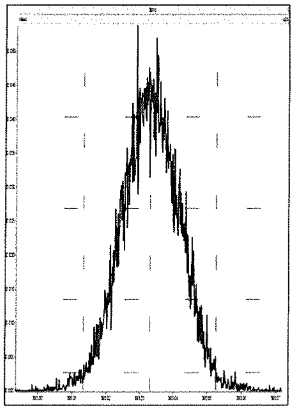

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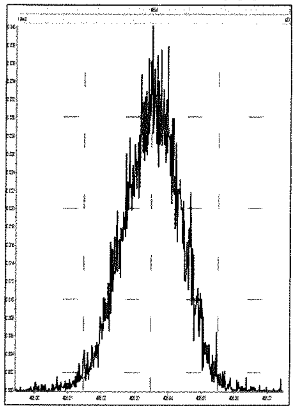

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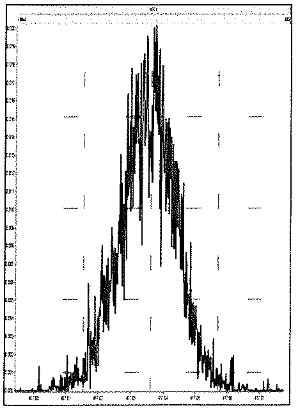

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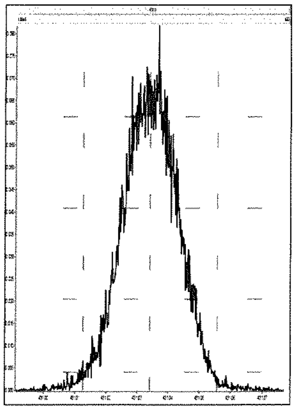

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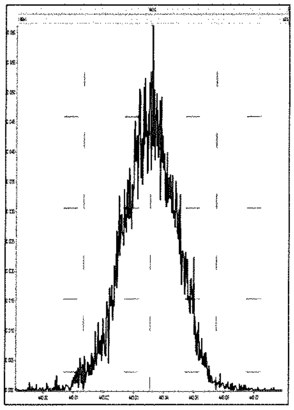

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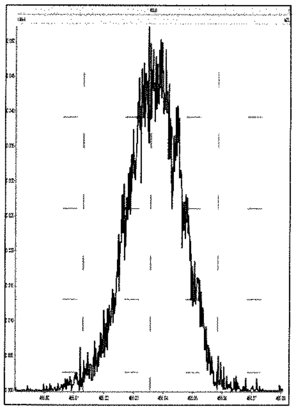

M 466.9728 R 12851

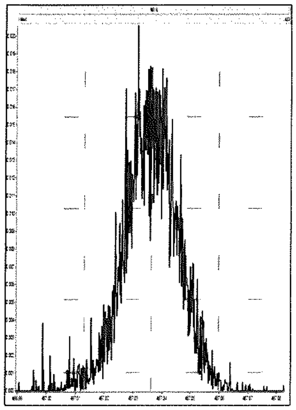

M 480.9696 R 11713

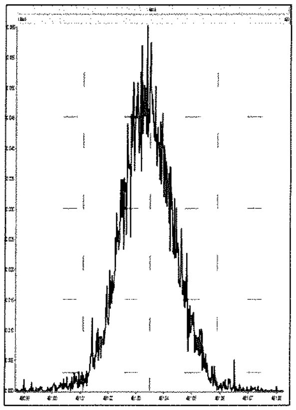

M 492.9696 R 12519

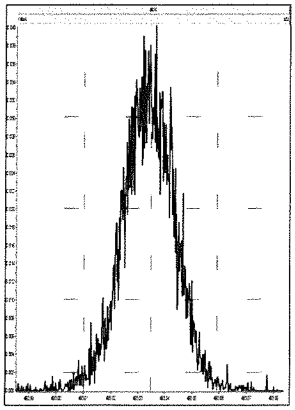

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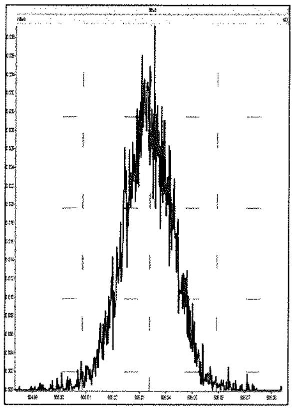

M 516.9697 R 14102

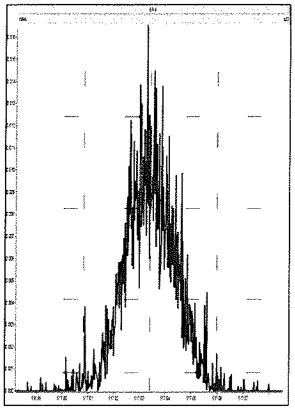

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 19-Aug-2020 11:27:46 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 081920 CS-4 HRDXNL4_00093
Misc. Info.: 19AU2010D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Aug-2020 16:15:24 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1028

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.460	23056223	0.78	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.961	29635145	0.77	1.3726	93.6	93.6	0.1918	0.1918	93.65	
2,3,7,8-TCDF	16.976	2563420	0.72	0.9104	9.501	9.501	0.0425	0.0425	95.01	
A Non-2,3,7,8-sub-TCDF	16.689						0.0425	0.0425		
S Total TCDF					9.501	9.501	0.0425	0.0425		
D 13C-2,3,7,8-TCDD	17.657	22442889	0.76	1.0192	95.5	95.5	0.2350	0.2350	95.51	
2,3,7,8-TCDD	17.672	2156971	0.74	1.0745	8.945	8.945	0.0543	0.0543	89.45	
$ 37Cl4-2,3,7,8-TCDD	17.672	2208554		1.0176	9.413	9.413	0.0264	0.0264	94.13	
A Non-2,3,7,8-sub-TCDD	17.135						0.0543	0.0543		
S Total TCDD					8.945	8.945	0.0543	0.0543		
D 13C-1,2,3,7,8-PeCDF	21.811	23584341	1.55	1.1429	89.5	89.5	0.2165	0.2165	89.50	
1,2,3,7,8-PeCDF	21.838	11407348	1.58	0.9938	48.7	48.7	0.1653	0.1653	97.34	
D 13C-2,3,4,7,8-PeCDF	23.106	28469527	1.52	1.3997	88.2	88.2	0.1768	0.1768	88.22	
2,3,4,7,8-PeCDF	23.133	11299981	1.57	0.8117	48.9	48.9	0.1751	0.1751	97.80	
A F1 PeCDFs	19.547						0.0428	0.0428		
A Non-2,3,7,8-sub-PeCDF	22.583						0.1688	0.1688		
S Total PeCDF					97.6	97.6	0.1702	0.1702		
D 13C-1,2,3,7,8-PeCDD	23.815	17743083	1.60	0.8232	93.5	93.5	0.1543	0.1543	93.49	
1,2,3,7,8-PeCDD	23.829	8302589	1.61	1.0181	46.0	46.0	0.0840	0.0840	91.92	
A Non-2,3,7,8-sub-PeCDD	22.765						0.0840	0.0840		
S Total PeCDD					46.0	46.0	0.0840	0.0840		
D 13C-1,2,3,4,7,8-HxCDF	29.956	19589177	0.50	1.1388	103.8	103.8	0.4496	0.4496	104	
1,2,3,4,7,8-HxCDF	29.969	8190417	1.24	0.8061	51.9	51.9	0.4462	0.4462	104	
D 13C-1,2,3,6,7,8-HxCDF	30.182	17142096	0.50	1.0803	95.8	95.8	0.4739	0.4739	95.78	
1,2,3,6,7,8-HxCDF	30.209	8837577	1.24	0.9818	52.5	52.5	0.3834	0.3834	105	
D 13C-2,3,4,6,7,8-HxCDF	31.154	16645436	0.49	0.9494	105.8	105.8	0.5393	0.5393	106	
2,3,4,6,7,8-HxCDF	31.167	8960413	1.21	1.0382	51.8	51.8	0.2589	0.2589	104	
D 13C-1,2,3,7,8,9-HxCDF	32.032	15538883	0.49	0.8670	108.2	108.2	0.5905	0.5905	108	
1,2,3,7,8,9-HxCDF	32.046	8246677	1.27	1.0321	51.4	51.4	0.2521	0.2521	103	
A Non-2,3,7,8-sub-HxCDF	29.682						0.3190	0.3190		
S Total HxCDF					207.6	207.6	0.3352	0.3352		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.846	16566812	1.23	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.367	16248896	1.21	0.9356	104.8	104.8	0.3338	0.3338	105	
1,2,3,4,7,8-HxCDD	31.380	6685188	1.30	0.8202	50.2	50.2	0.1963	0.1963	100	
D 13C-1,2,3,6,7,8-HxCDD	31.486	16773892	1.22	1.0416	97.2	97.2	0.2998	0.2998	97.21	
1,2,3,6,7,8-HxCDD	31.500	7704941	1.18	0.9367	49.0	49.0	0.1923	0.1923	98.08	
1,2,3,7,8,9-HxCDD	31.859	7916018	1.24	0.9905	48.4	48.4	0.1717	0.1717	96.81	
A Non-2,3,7,8-sub-HxCDD	30.328						0.1857	0.1857		
S Total HxCDD					147.6	147.6	0.1867	0.1867		
D 13C-1,2,3,4,6,7,8-HpCDF	33.542	14501322	0.43	0.7899	110.8	110.8	1.682	1.682	111	
1,2,3,4,6,7,8-HpCDF	33.555	10276165	1.03	1.4527	48.8	48.8	0.4792	0.4792	97.56	
D 13C-1,2,3,4,7,8,9-HpCDF	34.612	17464276	0.42	0.9093	115.9	115.9	1.461	1.461	116	
1,2,3,4,7,8,9-HpCDF	34.624	9041133	1.04	1.0585	48.9	48.9	0.6073	0.6073	97.81	
A Non-2,3,7,8-sub-HpCDF	34.089						0.5323	0.5323		
S Total HpCDF					97.7	97.7	0.5432	0.5432		
D 13C-1,2,3,4,6,7,8-HpCDD	34.332	15318079	1.05	0.7637	121.1	121.1	0.7402	0.7402	121	
1,2,3,4,6,7,8-HpCDD	34.344	7500119	1.05	1.0540	46.5	46.5	0.2284	0.2284	92.91	
A Non-2,3,7,8-sub-HpCDD	34.623						0.2284	0.2284		
S Total HpCDD					46.5	46.5	0.2284	0.2284		
D 13C-OCDD	36.639	26501391	0.89	0.6377	250.8	250.8	0.4502	0.4502	125	
OCDF	36.735	17727867	0.88	1.2965	103.2	103.2	0.1231	0.1231	103	
OCDD	36.651	15272949	0.90	1.1499	100.2	100.2	0.1382	0.1382	100	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	19-Aug-2020 11:27:46	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV 081920 CS-4 HRDXNL4_00093				
Misc. Info.:	19AU2010D5				
Operator ID:	ALM	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Aug-2020 16:15:24	Calib Date:	27-Jun-2020 17:43:35		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1028				

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.460	17.460	0		10070441	2555079	3300	8250	774		
333.9339	17.460	17.460	0		12985782	3241158	2252	5630	1439	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.961	16.961	0	0.971	12920953	3247646	3505	8762	927		
317.9389	16.961	16.961	0	0.971	16714192	4236304	2598	6495	1631	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.976	16.976	0	1.001	1072343	254858	476	1190	535		
305.8987	16.976	16.976	0	1.001	1491077	365243	683	1707	535	0.72(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.689						476	1190			
305.8987	16.689						683	1707			
13C-2,3,7,8-TCDD											
331.9368	17.657	17.657	0	1.011	9709189	2303114	3300	8250	698		
333.9339	17.657	17.657	0	1.011	12733700	3025791	2252	5630	1344	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.672	17.672	0	1.001	919724	220105	822	2055	268		
321.8936	17.672	17.672	0	1.001	1237247	293125	421	1052	696	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.672	17.672	0	1.012	2208554	510496	622	1555	821		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						822	2055			
321.8936	17.135						421	1052			
13C-1,2,3,7,8-PeCDF											
351.9000	21.811	21.811	0	1.249	14337328	2499767	3379	8447	740		
353.8970	21.811	21.811	0	1.249	9247013	1676861	2358	5895	711	1.55(1.32-1.78)	

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.838	21.838	0	1.001	6981077	1228204	1571	3927	782		
341.8567	21.838	21.838	0	1.001	4426271	784978	1173	2932	669	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.106	23.106	0	1.323	17156747	2921709	3379	8447	865		
353.8970	23.106	23.106	0	1.323	11312780	1905753	2358	5895	808	1.52(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.133	23.133	0	1.001	6896892	1162486	1571	3927	740		
341.8567	23.133	23.133	0	1.001	4403089	733804	1173	2932	626	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.547						194	485			
341.8567	19.547						502	1255			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.583						1571	3927			
341.8567	22.583						1173	2932			
13C-1,2,3,7,8-PeCDD											
367.8949	23.815	23.815	0	1.364	10914457	1650944	1755	4387	941		
369.8919	23.815	23.815	0	1.364	6828626	1056331	1189	2972	888	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.829	23.829	0	1.001	5124539	781799	579	1447	1350		
357.8516	23.829	23.829	0	1.001	3178050	495817	347	867	1429	1.61(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.765						579	1447			
357.8516	22.765						347	867			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.956	29.956	0	0.941	6520477	884478	2645	6612	334		
385.8610	29.942	29.956	-1	0.940	13068700	1831892	4898	12245	374	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.969	29.969	0	1.000	4528280	651897	2144	5360	304		
375.8178	29.969	29.969	0	1.000	3662137	525464	1764	4410	298	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.182	30.182	0	0.948	5720645	873759	2645	6612	330		
385.8610	30.182	30.182	0	0.948	11421451	1721390	4898	12245	351	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.209	30.209	0	1.001	4887370	739666	2144	5360	345		
375.8178	30.209	30.209	0	1.001	3950207	594098	1764	4410	337	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.154	31.154	0	0.978	5449616	1200884	2645	6612	454		
385.8610	31.154	31.154	0	0.978	11195820	2433183	4898	12245	497	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.167	31.167	0	1.000	4913740	1072968	2144	5360	500		
375.8178	31.167	31.167	0	1.000	4046673	889091	1764	4410	504	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.032	32.032	0	1.006	5105129	1224652	2645	6612	463		
385.8610	32.032	32.032	0	1.006	10433754	2530835	4898	12245	517	0.49(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.046	32.046	0	1.000	4607874	1109172	2144	5360	517		
375.8178	32.046	32.046	0	1.000	3638803	873764	1764	4410	495	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.682						2144	5360			
375.8178	29.682						1764	4410			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.846	31.846	0		9148120	2052523	2432	6080	844		
403.8529	31.833	31.846	-1		7418692	1630689	2169	5422	752	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.367	31.367	0	0.985	8902179	2233808	2432	6080	919		
403.8529	31.367	31.367	0	0.985	7346717	1836207	2169	5422	847	1.21(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.380	31.380	0	1.000	3777403	911690	1379	3447	661		
391.8127	31.380	31.380	0	1.000	2907785	736762	1242	3105	593	1.30(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.486	31.486	0	0.989	9223701	1983296	2432	6080	816		
403.8529	31.486	31.486	0	0.989	7550191	1653750	2169	5422	762	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.500	31.500	0	1.000	4167712	931769	1379	3447	676		
391.8127	31.500	31.500	0	1.000	3537229	755448	1242	3105	608	1.18(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.859	31.859	0	1.016	4384064	978881	1379	3447	710		
391.8127	31.859	31.859	0	1.016	3531954	780121	1242	3105	628	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.328						1379	3447			
391.8127	30.328						1242	3105			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.542	33.542	0	1.053	4363844	1413276	5951	14877	237		
419.8220	33.542	33.542	0	1.053	10137478	3216758	13619	34047	236	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.555	33.555	0	1.000	5218520	1639010	6780	16950	242		
409.7789	33.555	33.555	0	1.000	5057645	1583307	6113	15282	259	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.612	34.612	0	1.087	5204554	1502744	5951	14877	253		
419.8220	34.612	34.612	0	1.087	12259722	3511362	13619	34047	258	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.624	34.624	0	1.000	4600566	1299649	6780	16950	192		
409.7789	34.624	34.624	0	1.000	4440567	1261367	6113	15282	206	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.089						6780	16950			
409.7789	34.089						6113	15282			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.332	34.332	0	1.078	7837527	2213772	4190	10475	528		
437.8140	34.332	34.332	0	1.078	7480552	2120934	4139	10347	512	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.344	34.344	0	1.000	3840418	1082815	2150	5375	504		
425.7737	34.344	34.344	0	1.000	3659701	1038502	2024	5060	513	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.623						2150	5375			
425.7737	34.623						2024	5060			
13C-OCDD											
469.7779	36.639	36.639	0	1.150	12453011	3090126	1712	4280	1805		
471.7750	36.639	36.639	0	1.150	14048380	3452751	2518	6295	1371	0.89(0.76-1.02)	
OCDF											
441.7428	36.735	36.735	0	1.003	8305436	2123143	756	1890	2808		
443.7399	36.735	36.735	0	1.003	9422431	2324029	1333	3332	1743	0.88(0.76-1.02)	
OCDD											
457.7377	36.651	36.651	0	1.000	7220940	1802094	1127	2817	1599		
459.7348	36.651	36.651	0	1.000	8052009	1969734	952	2380	2069	0.90(0.76-1.02)	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d
Injection Date: 19-Aug-2020 11:27:46 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028 Sample Line#: 2
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

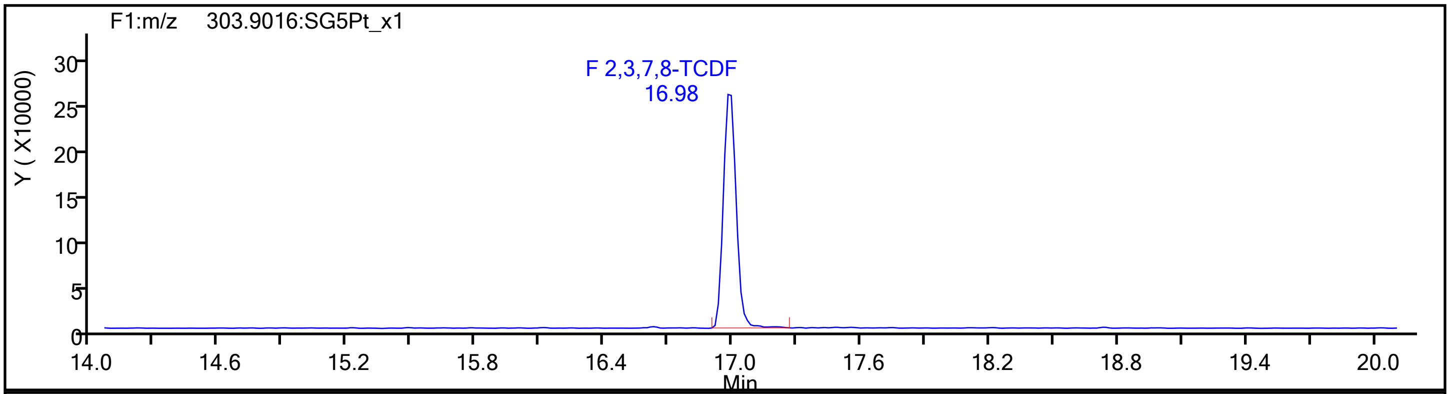

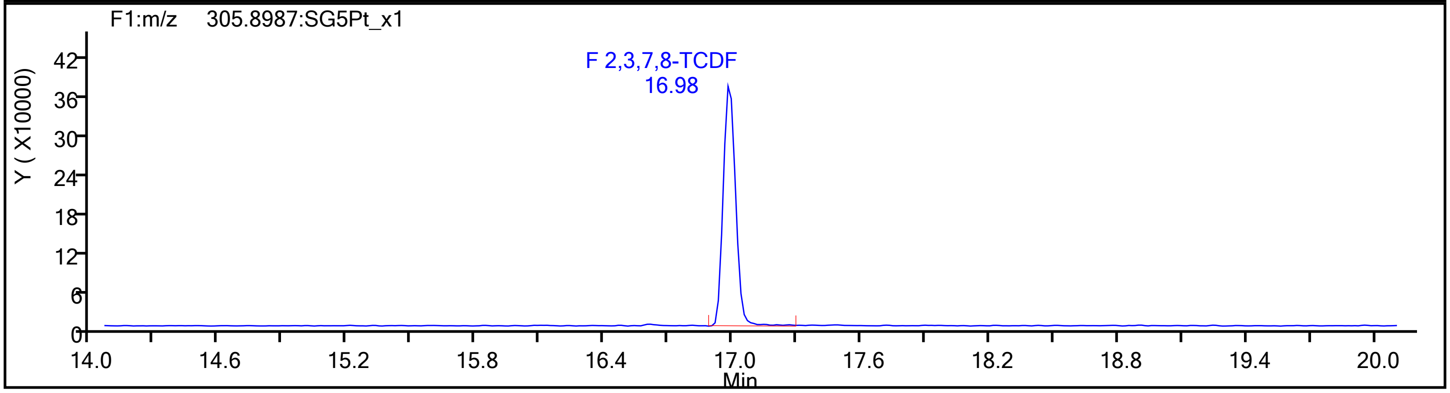

TCDF Standards

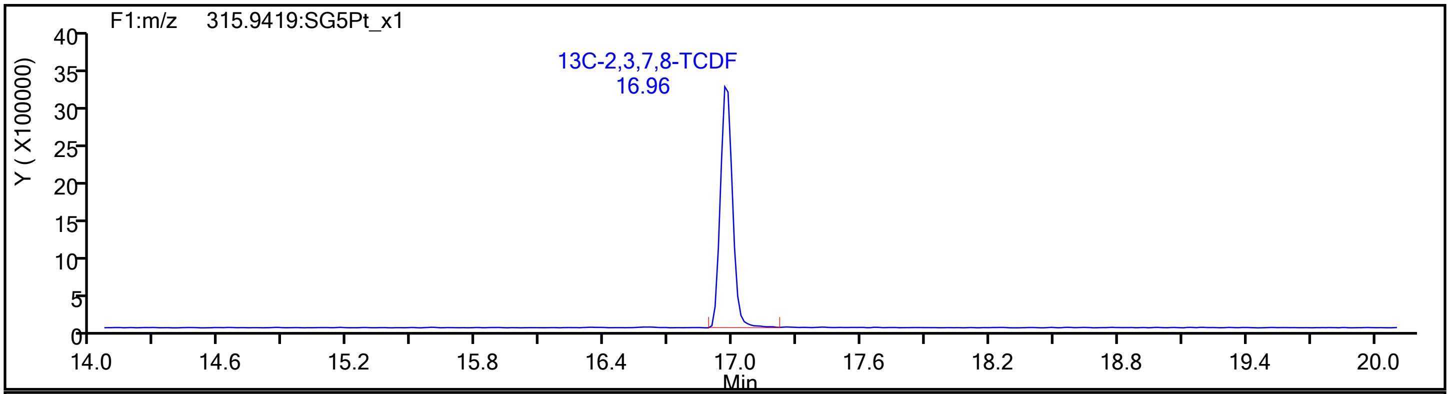

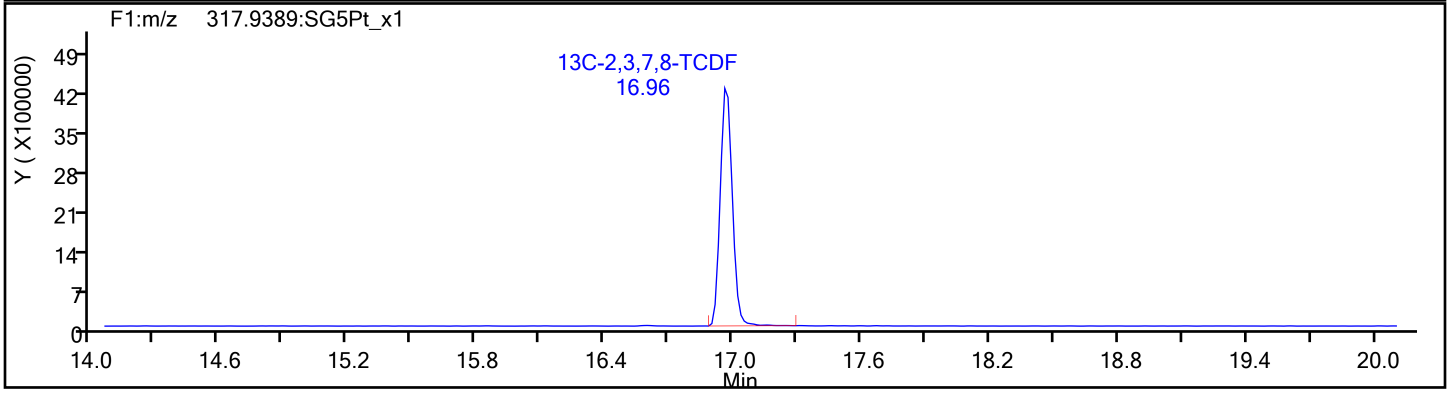

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d		
Injection Date:	19-Aug-2020 11:27:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

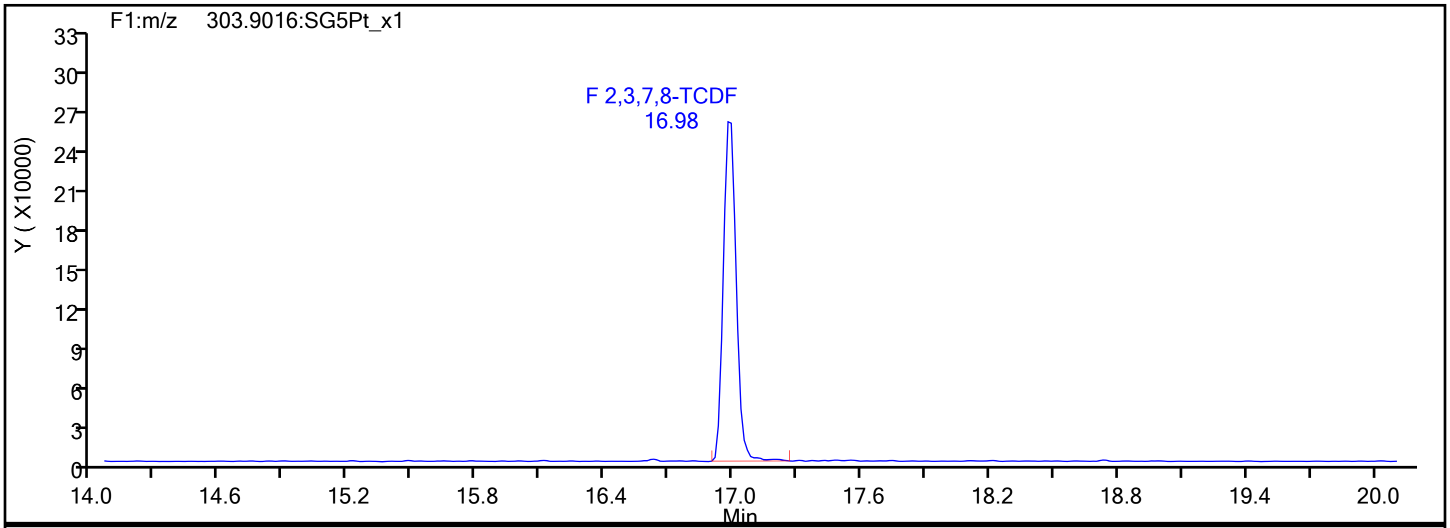

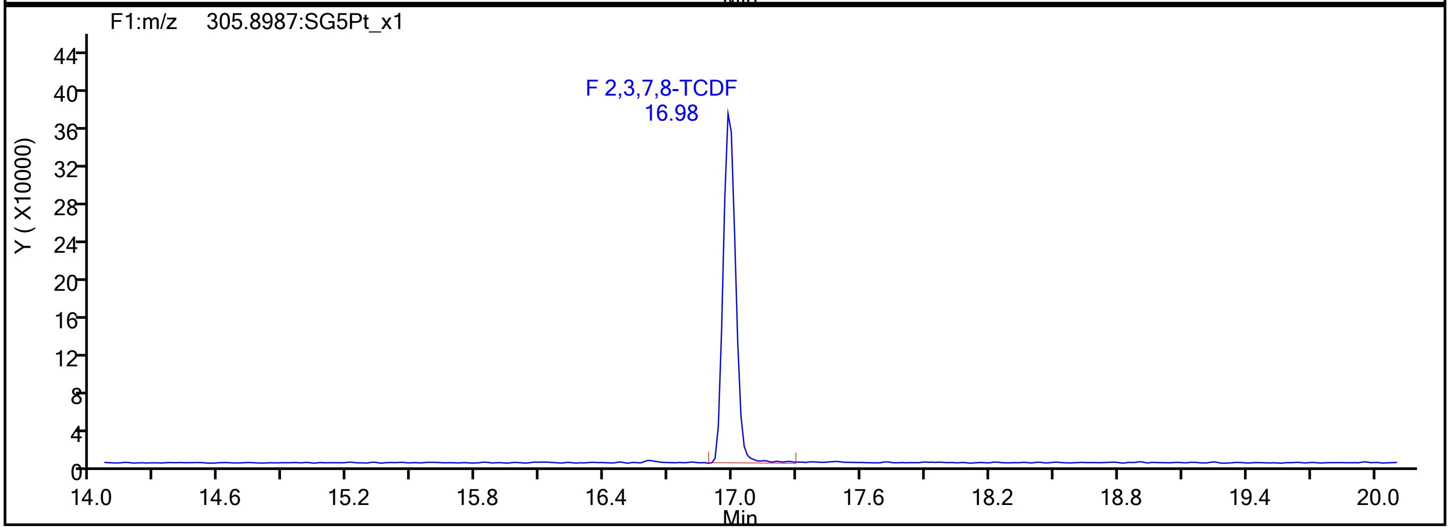

TCDF Interference Mass

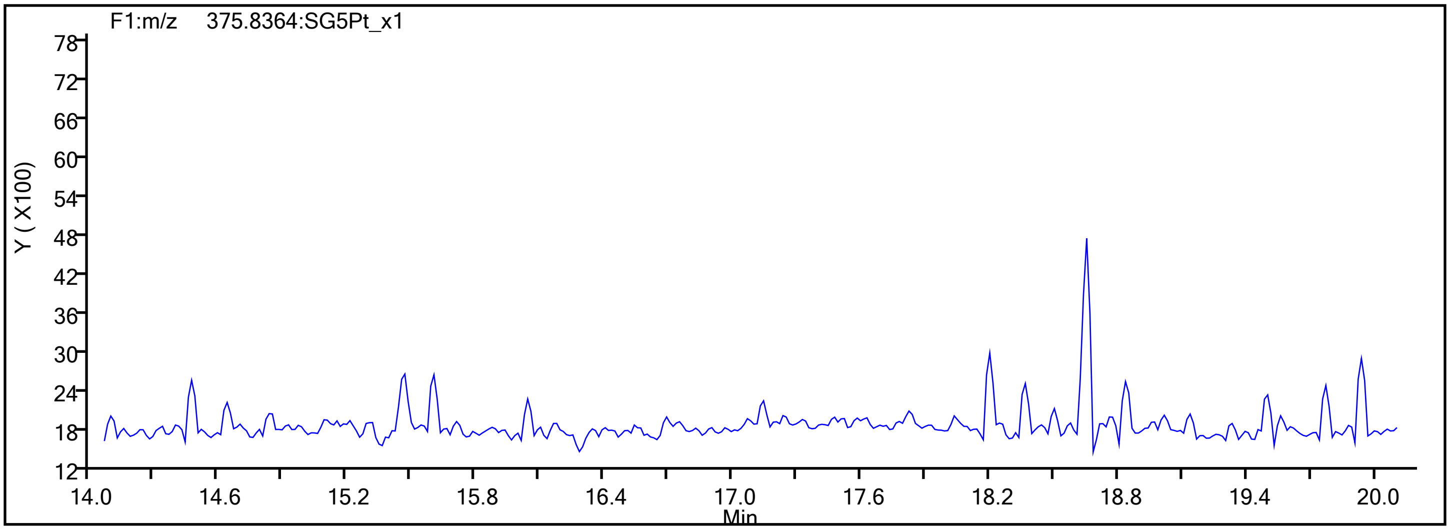

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d		
Injection Date:	19-Aug-2020 11:27:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

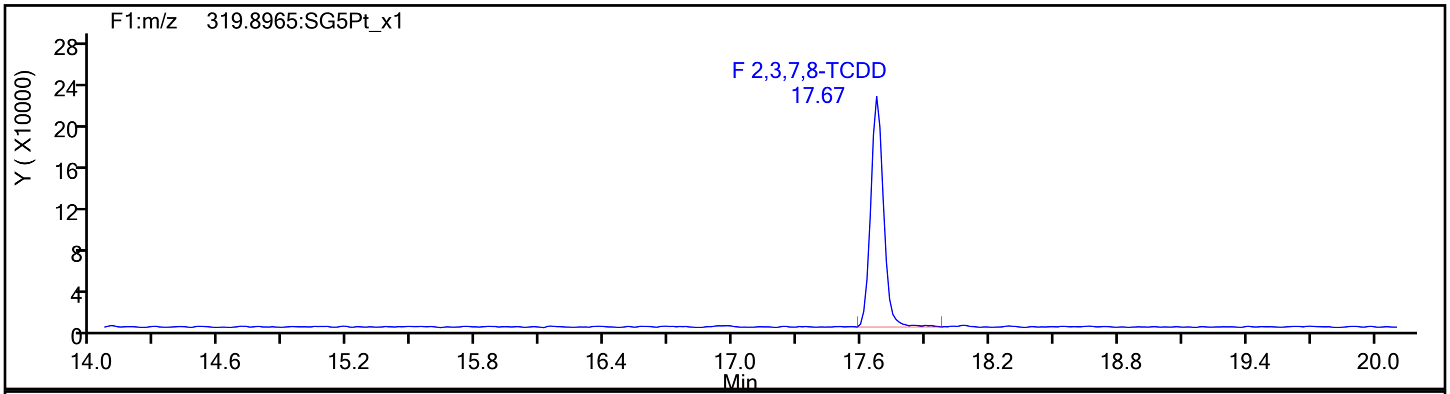

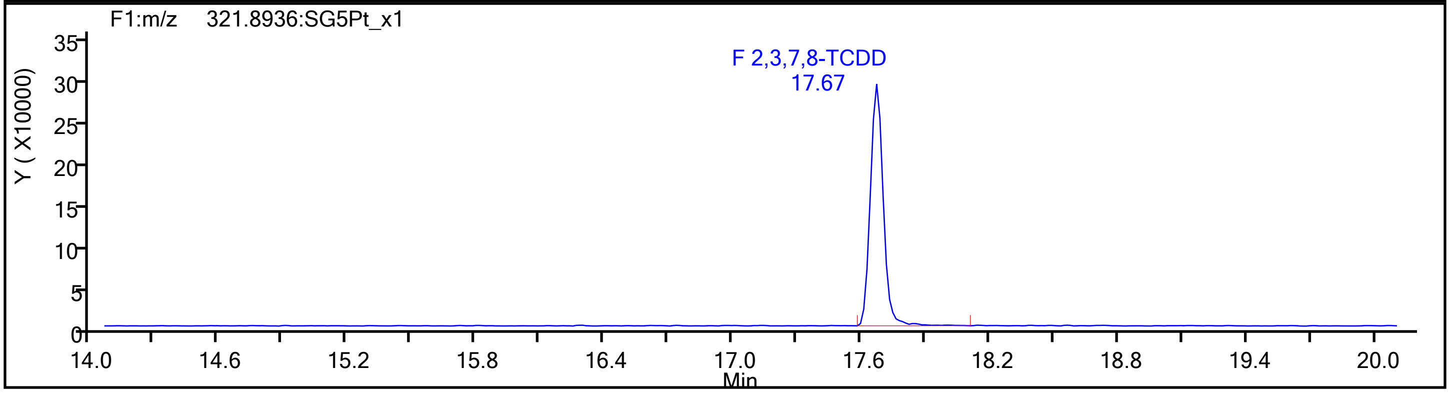

TCDD Standards

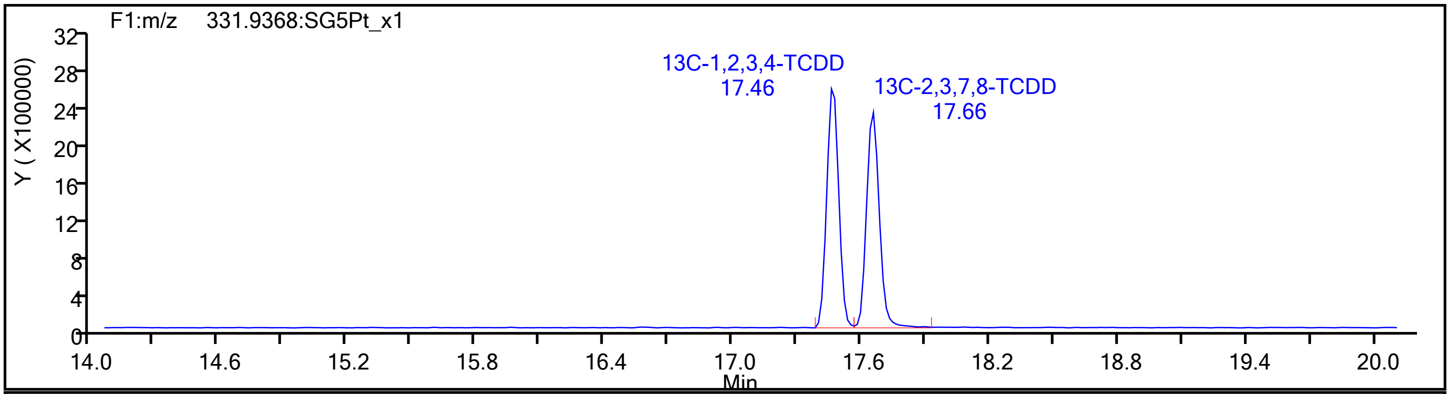

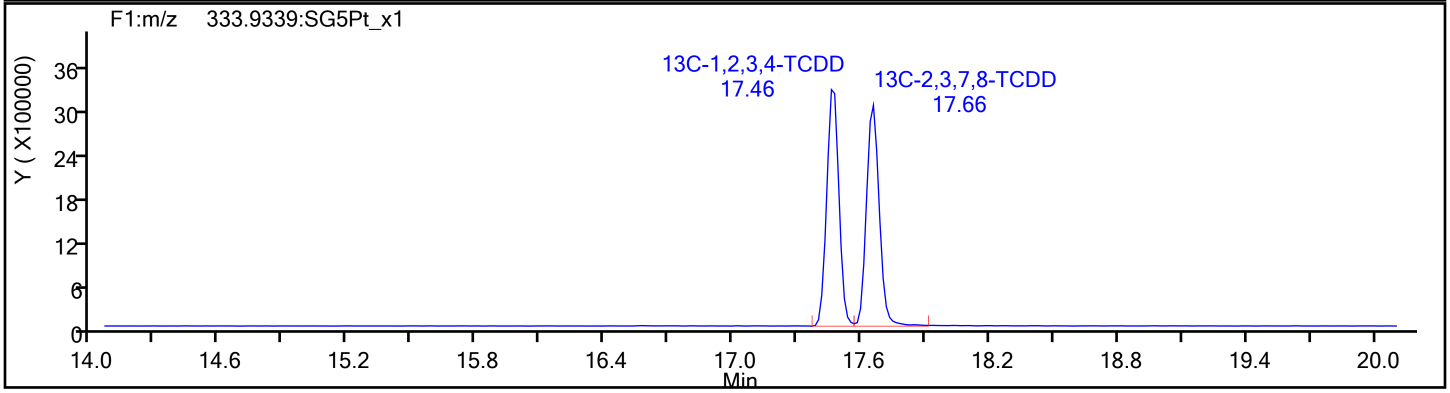

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d

Injection Date:	19-Aug-2020 11:27:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

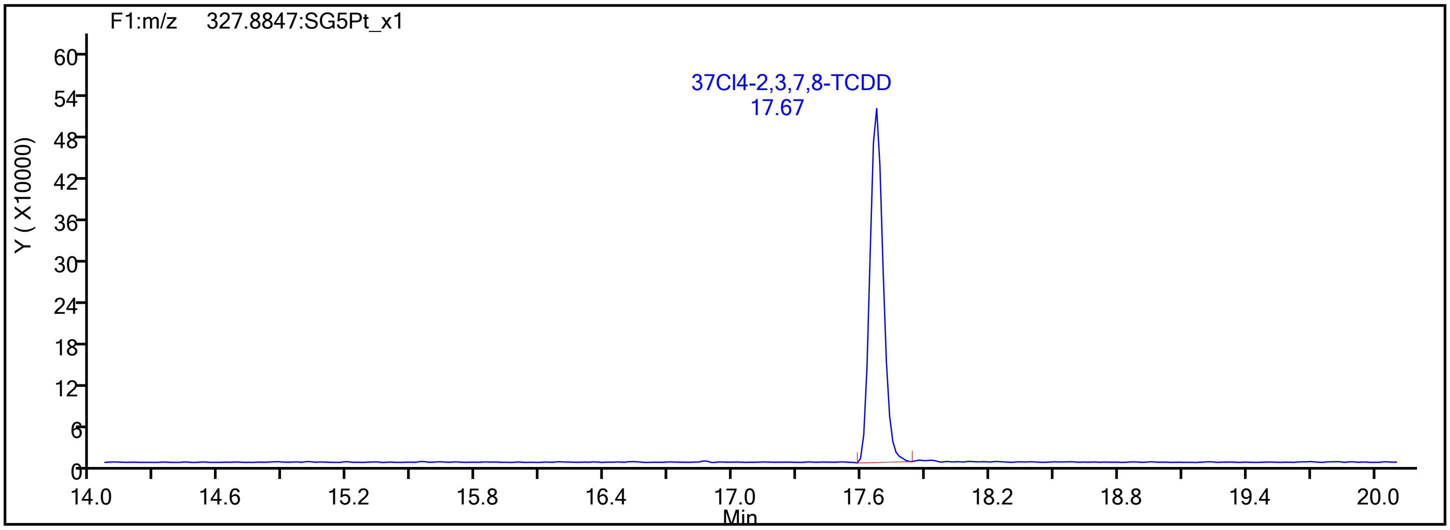

37Cl4-TCDD Standards

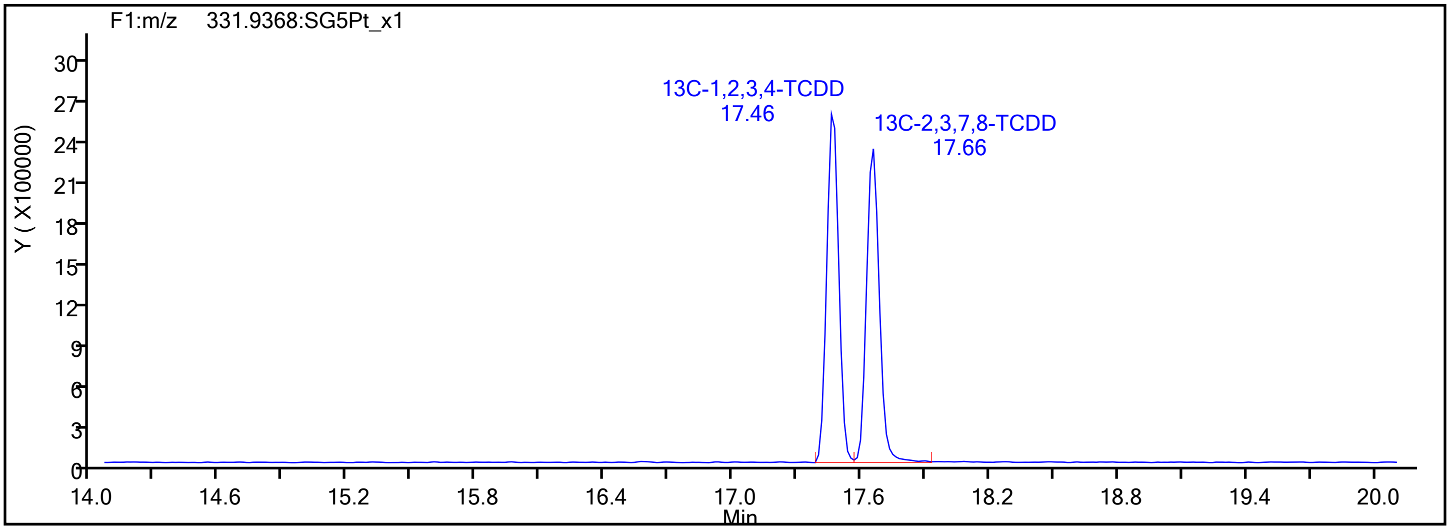

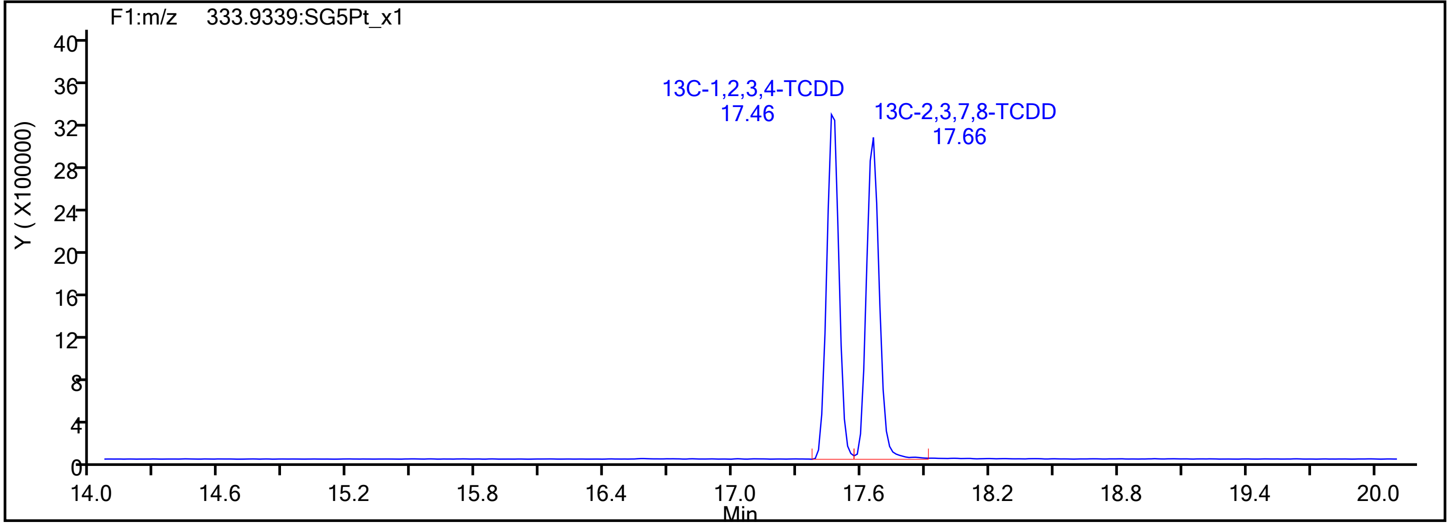

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d		
Injection Date:	19-Aug-2020 11:27:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

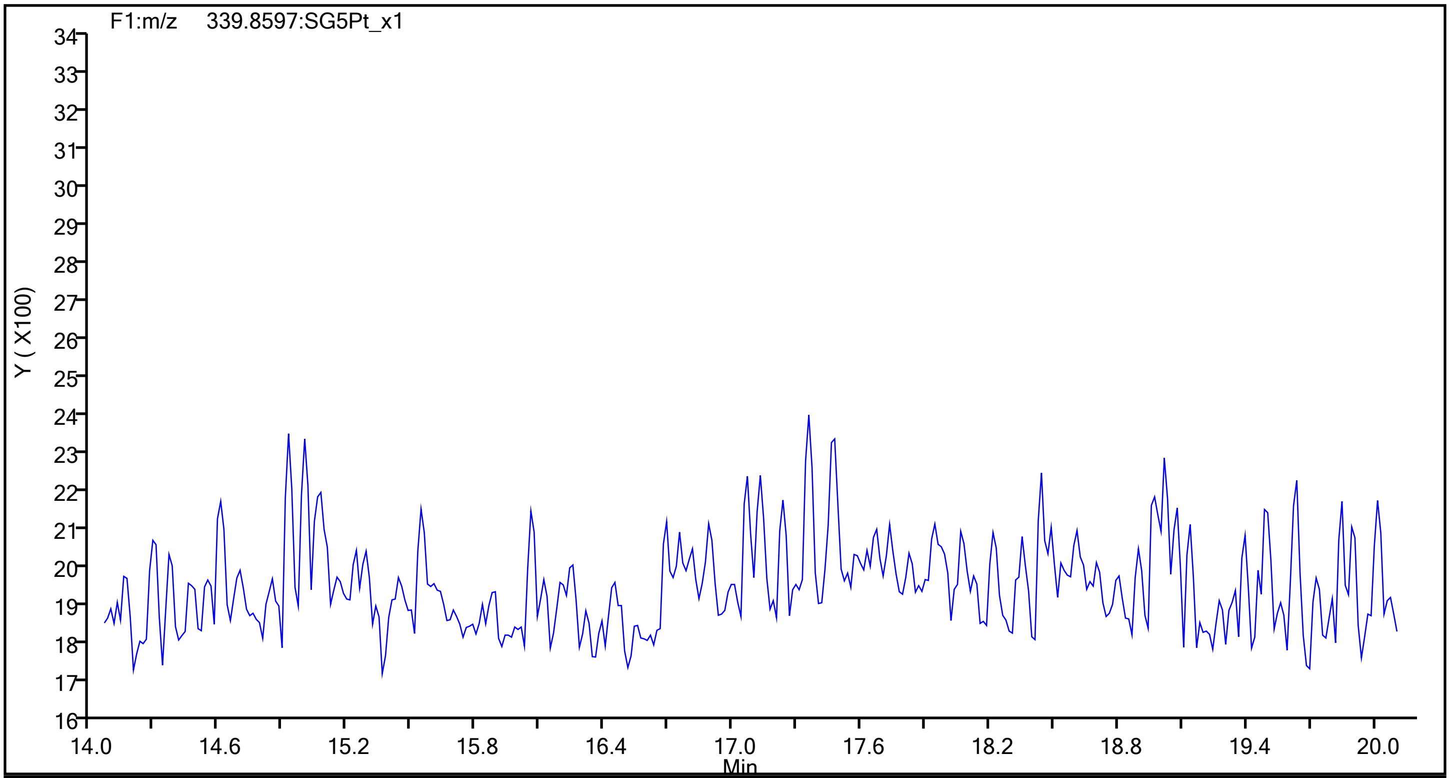

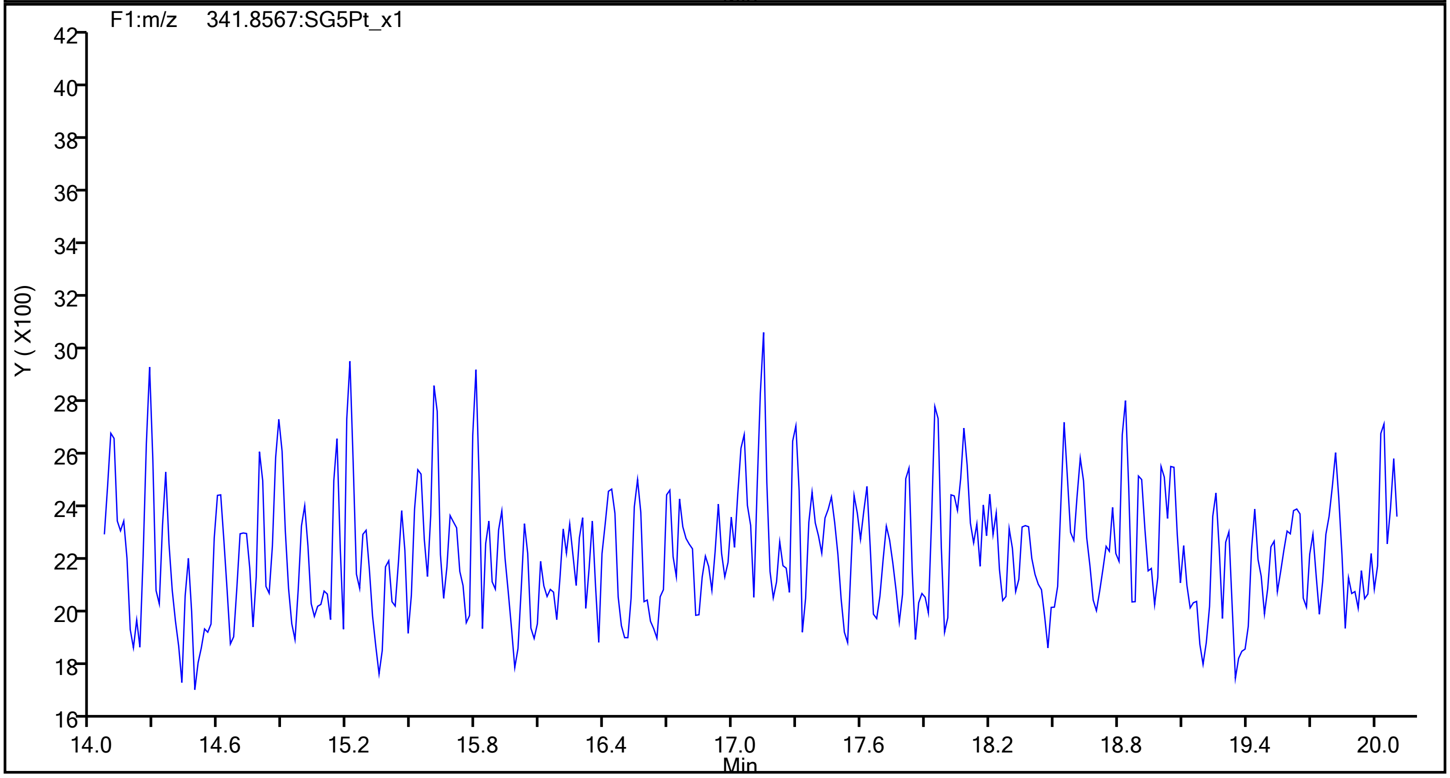

Report Date: 19-Aug-2020 16:15:25
Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_2.d
Injection Date: 19-Aug-2020 11:27:46
Injection Vol: 2.0 ul
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Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

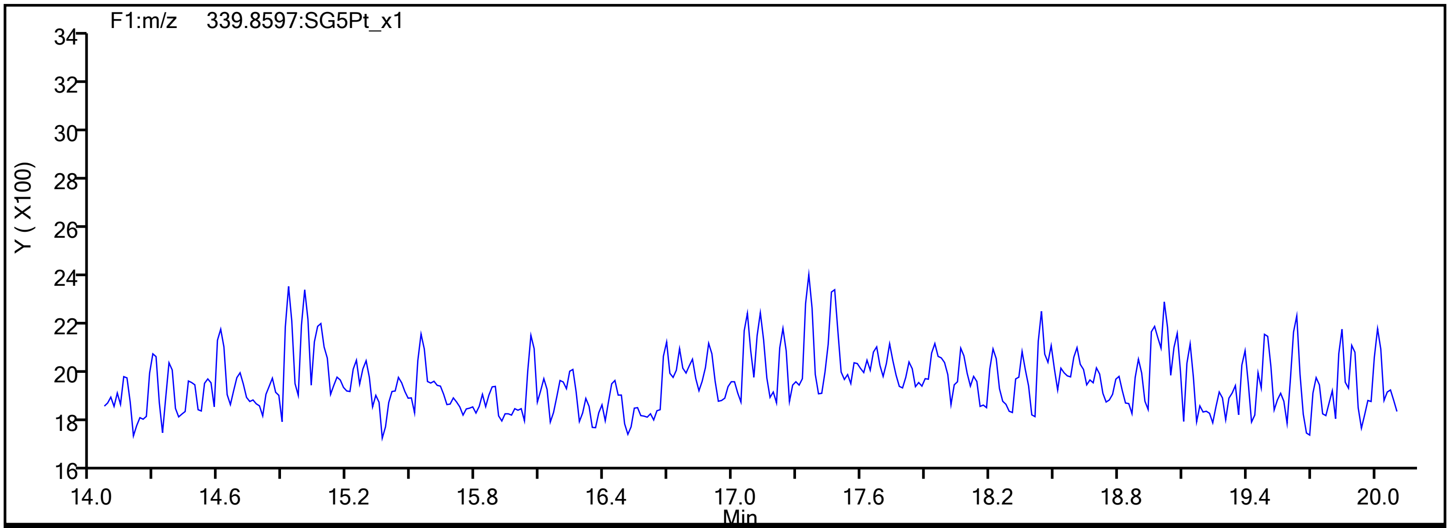

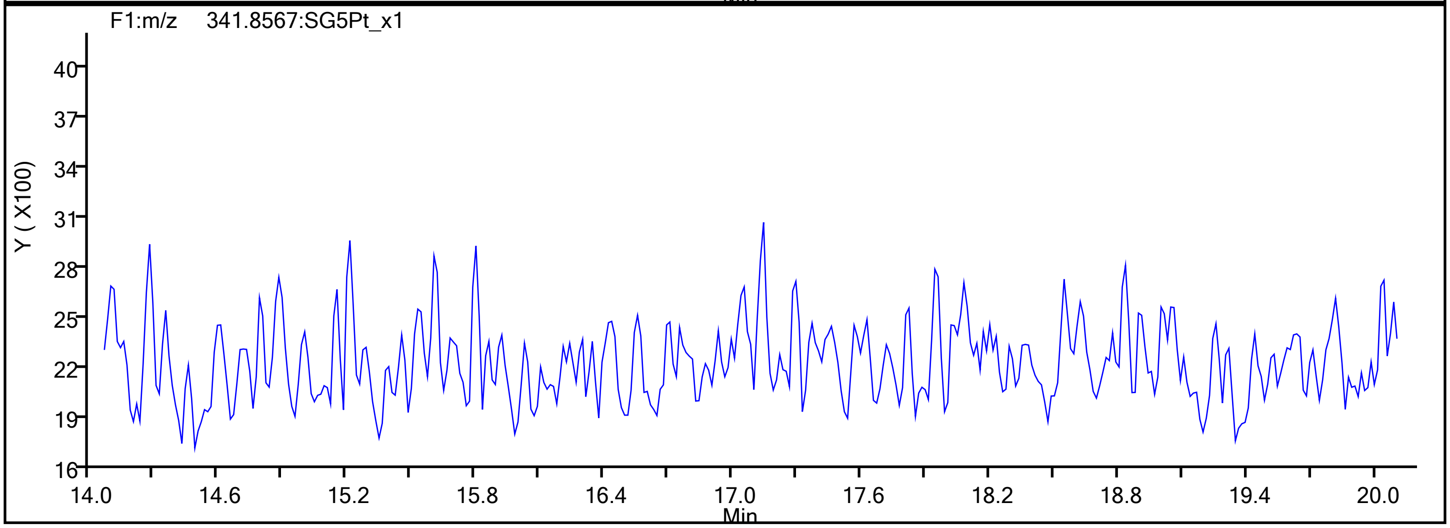

F1 PeCDFs Interference Mass

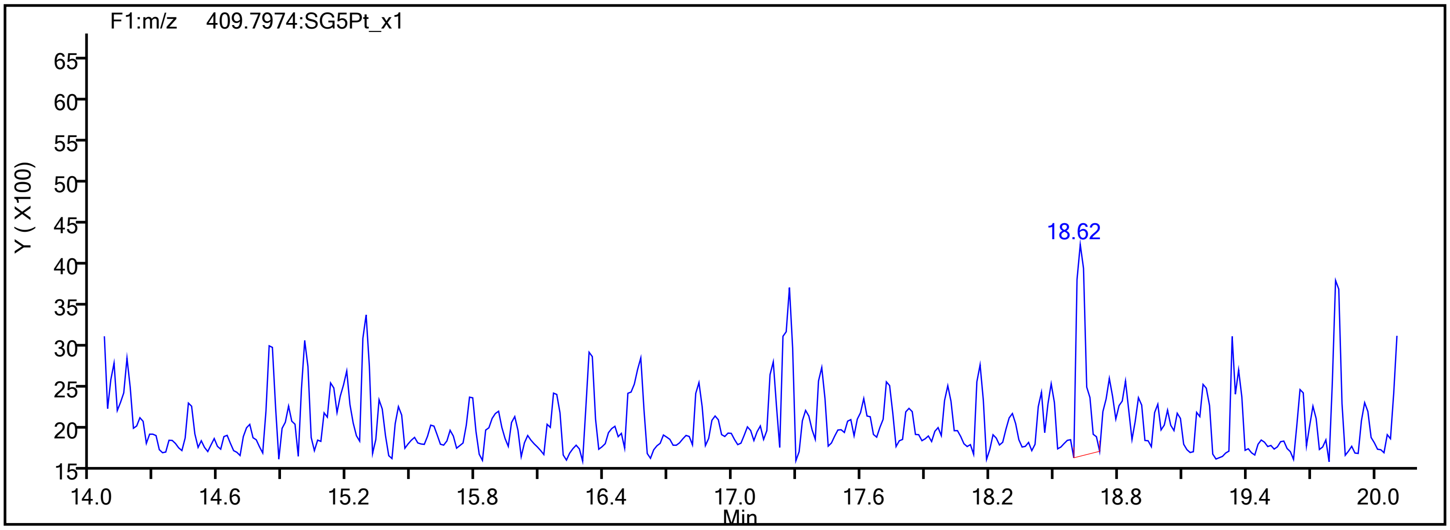

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Eurofins TestAmerica, Sacramento

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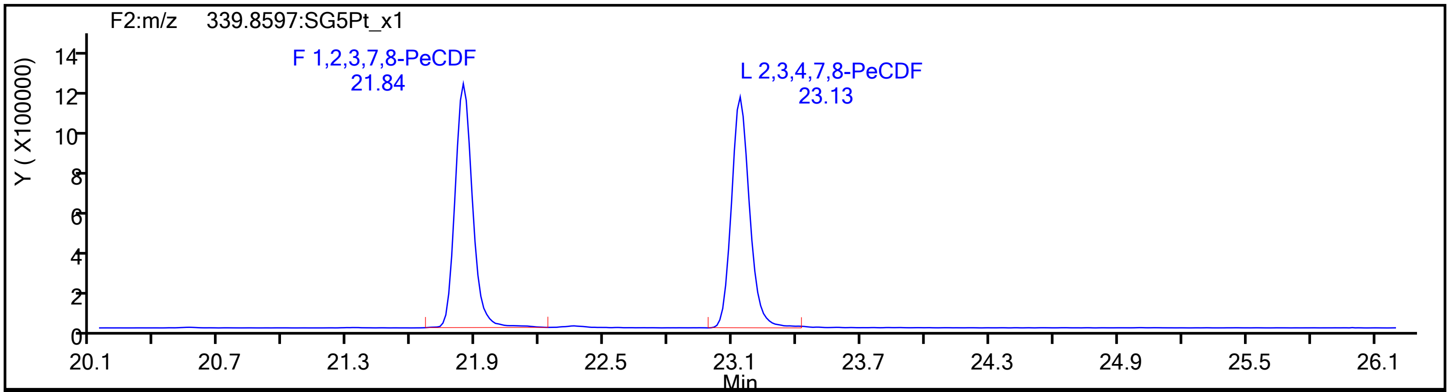

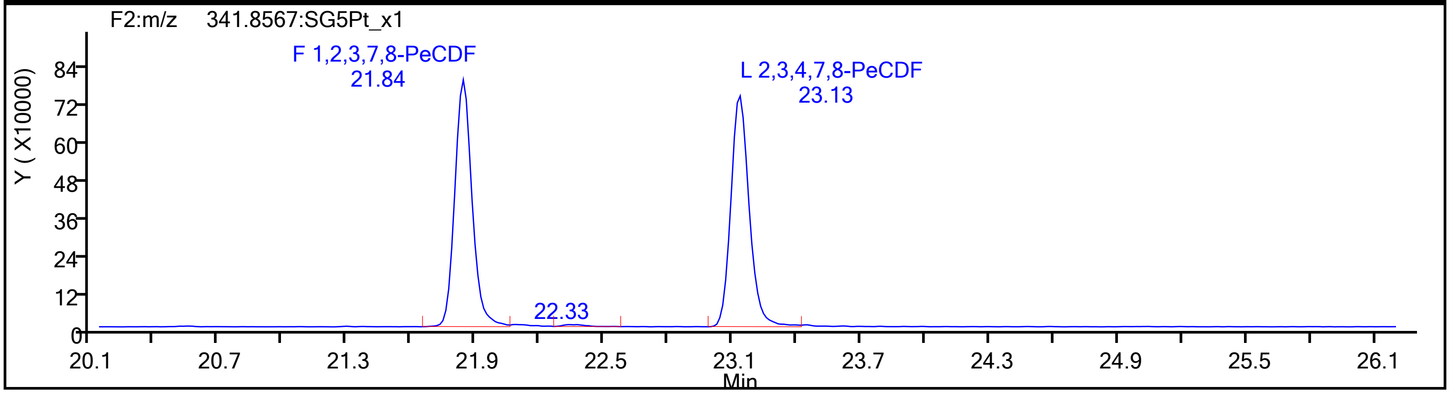

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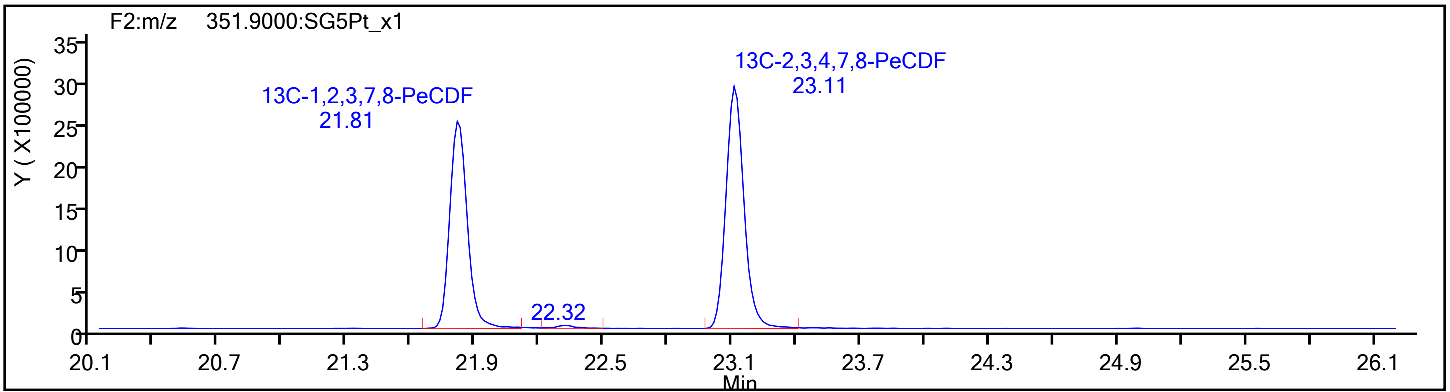

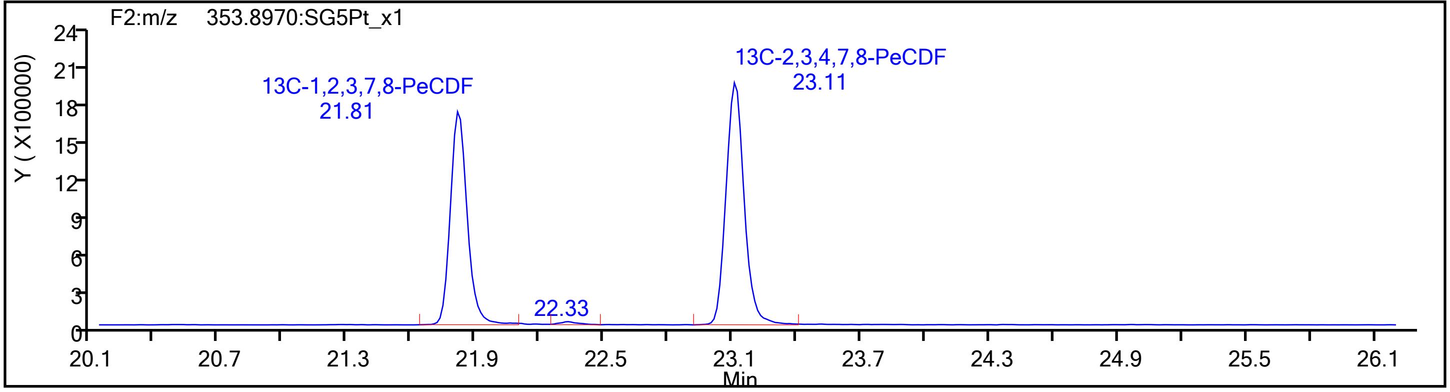

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Eurofins TestAmerica, Sacramento

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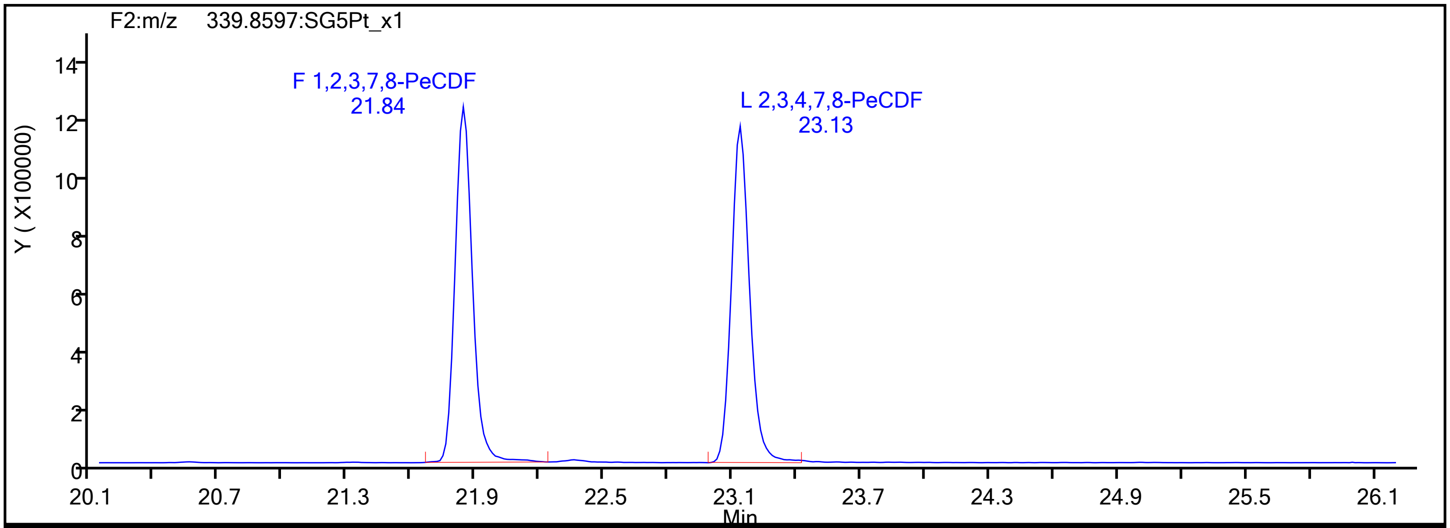

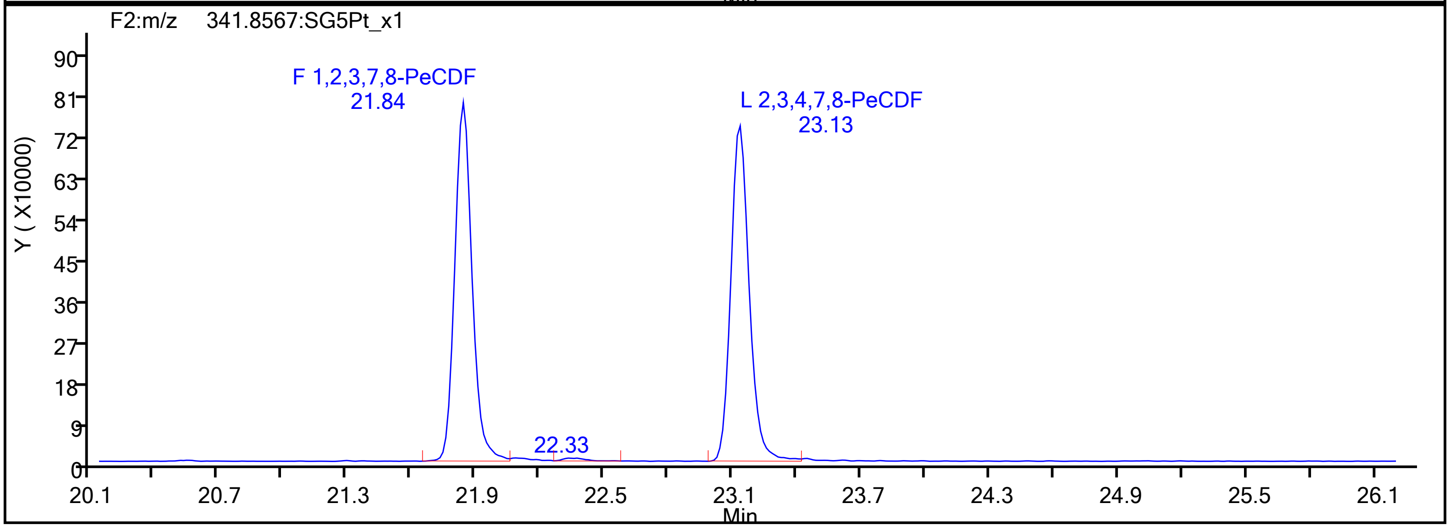

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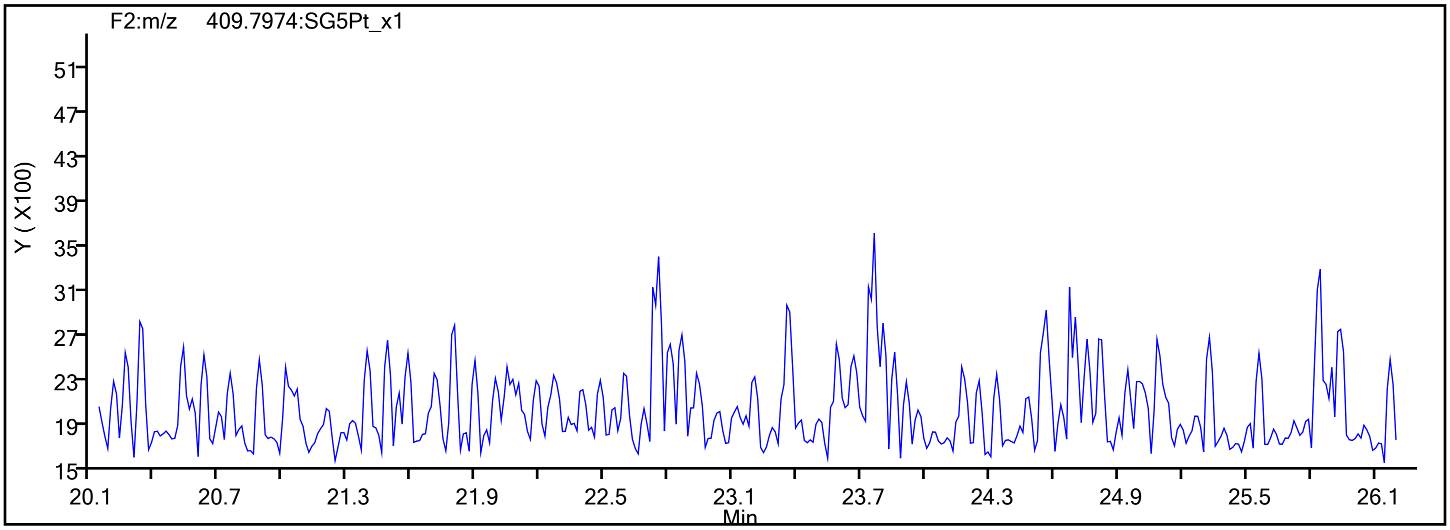

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Eurofins TestAmerica, Sacramento

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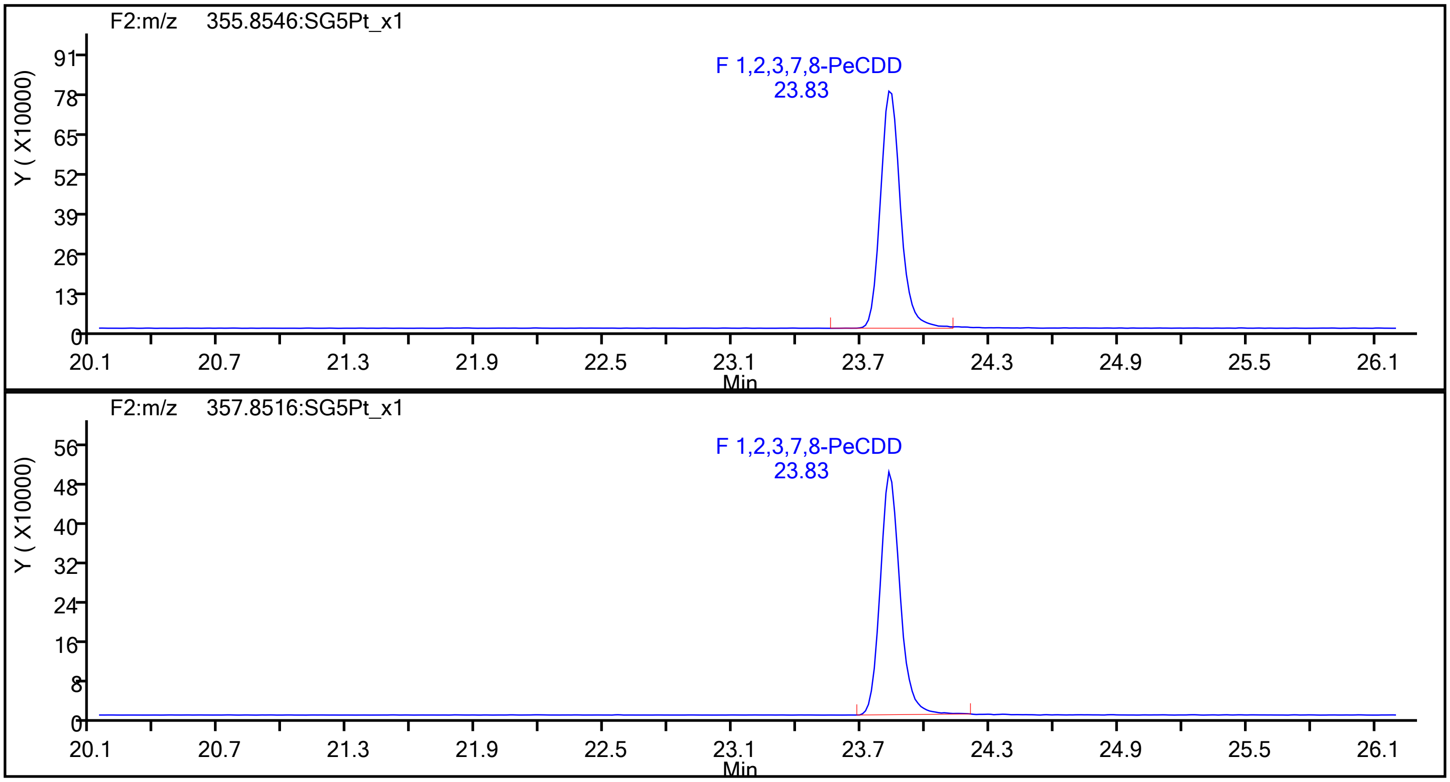

PeCDD Standards

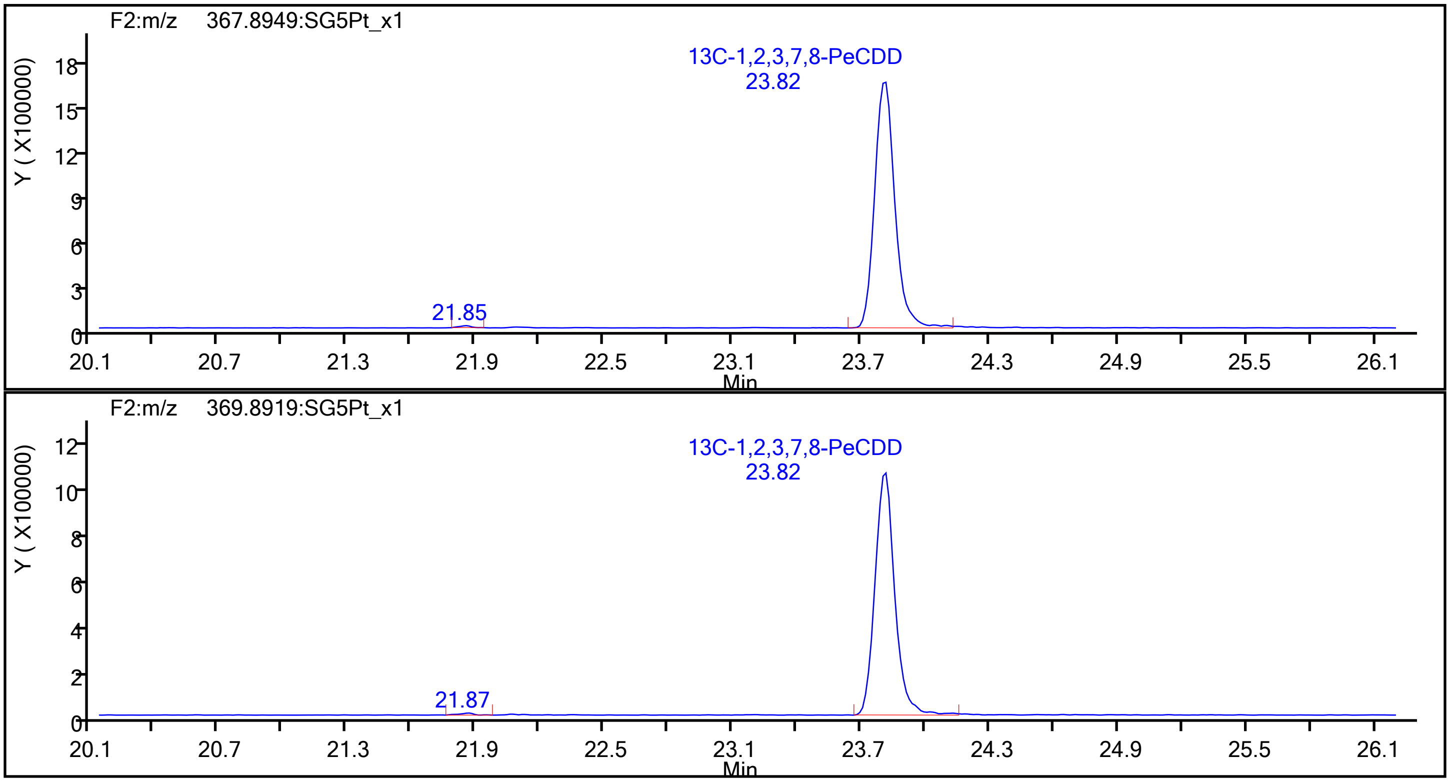

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Eurofins TestAmerica, Sacramento

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HxCDF

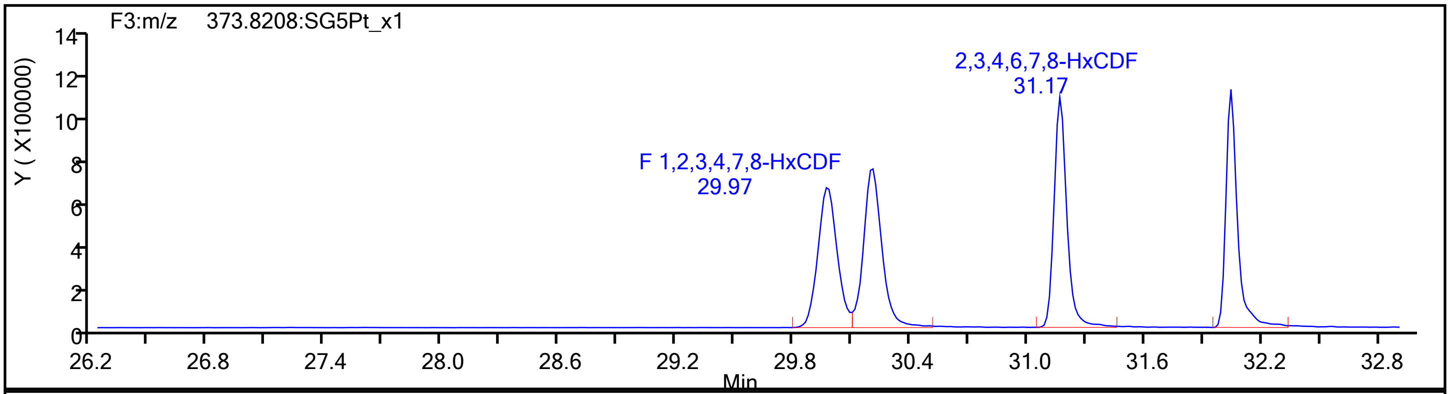

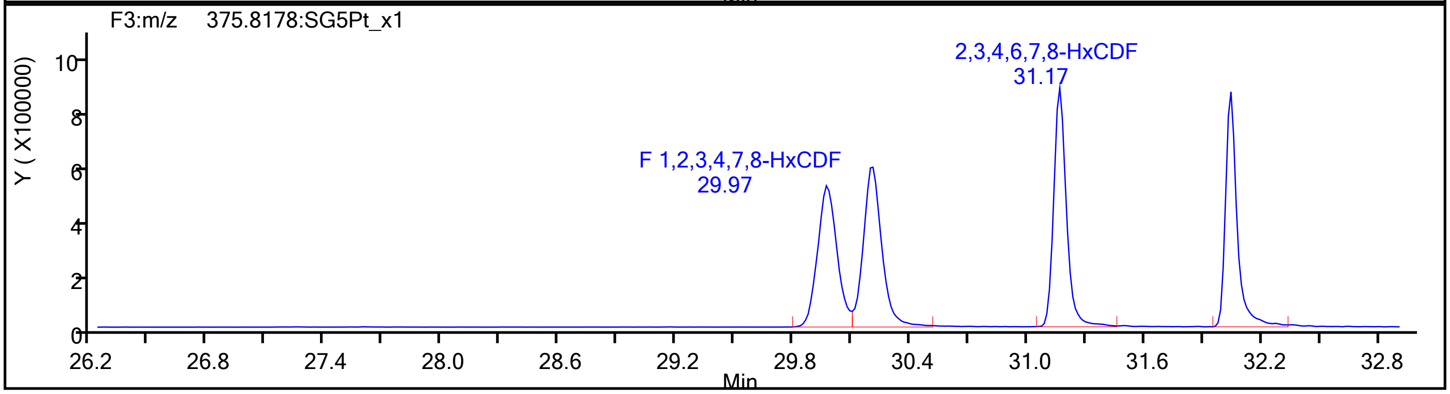

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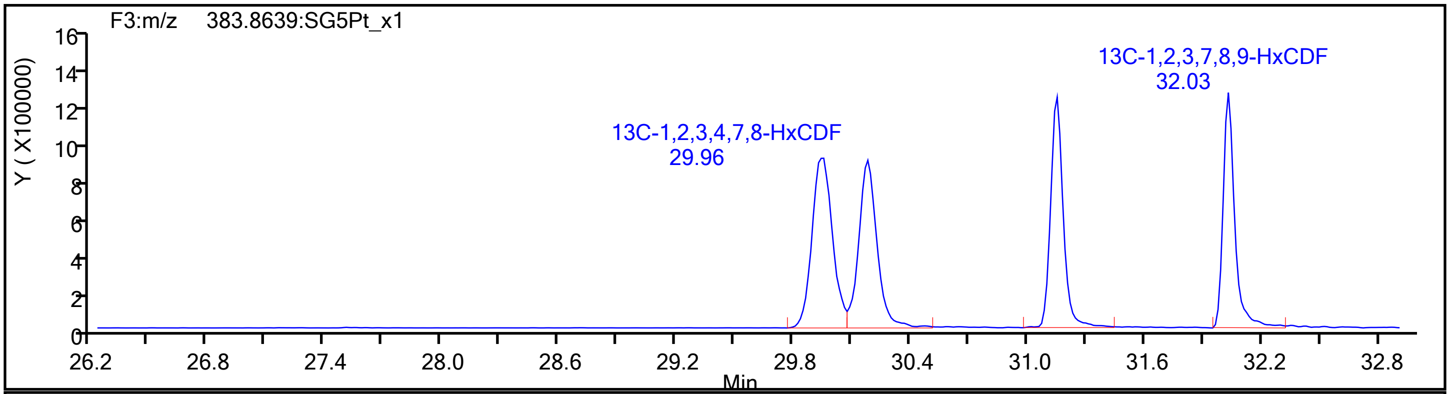

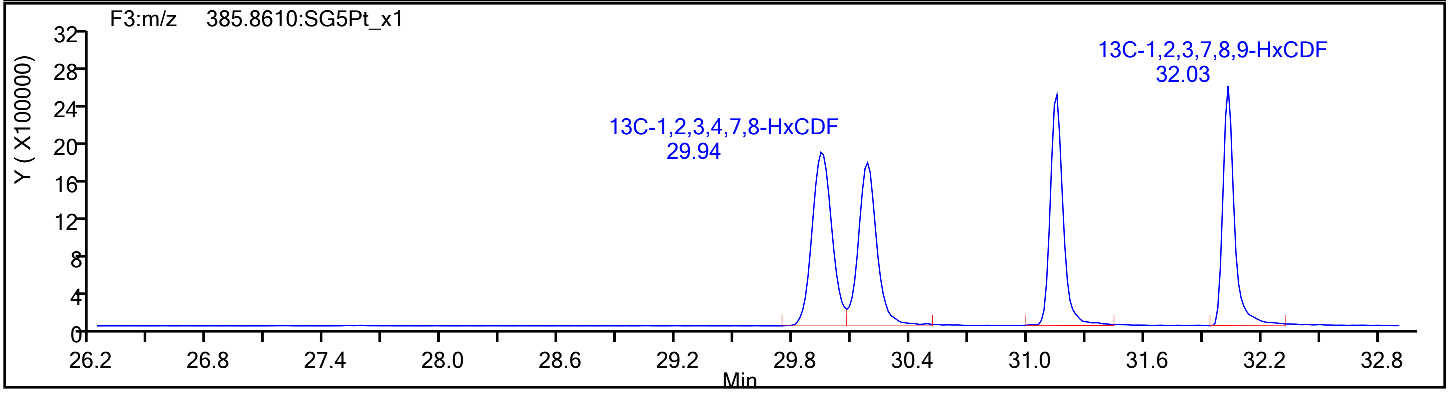

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Eurofins TestAmerica, Sacramento

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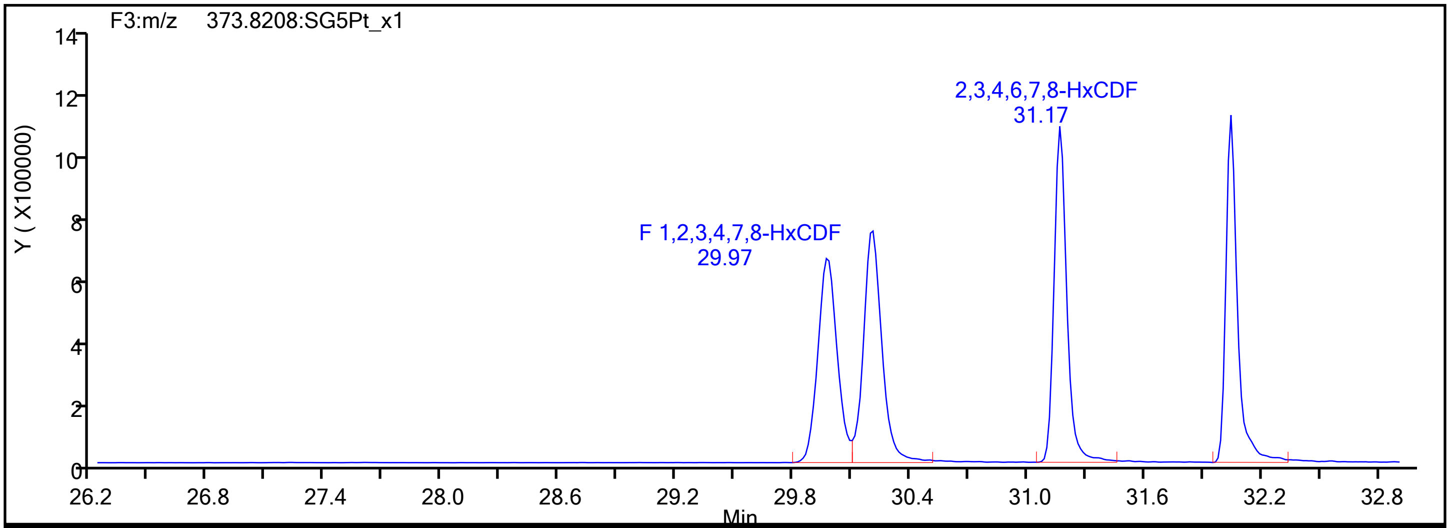

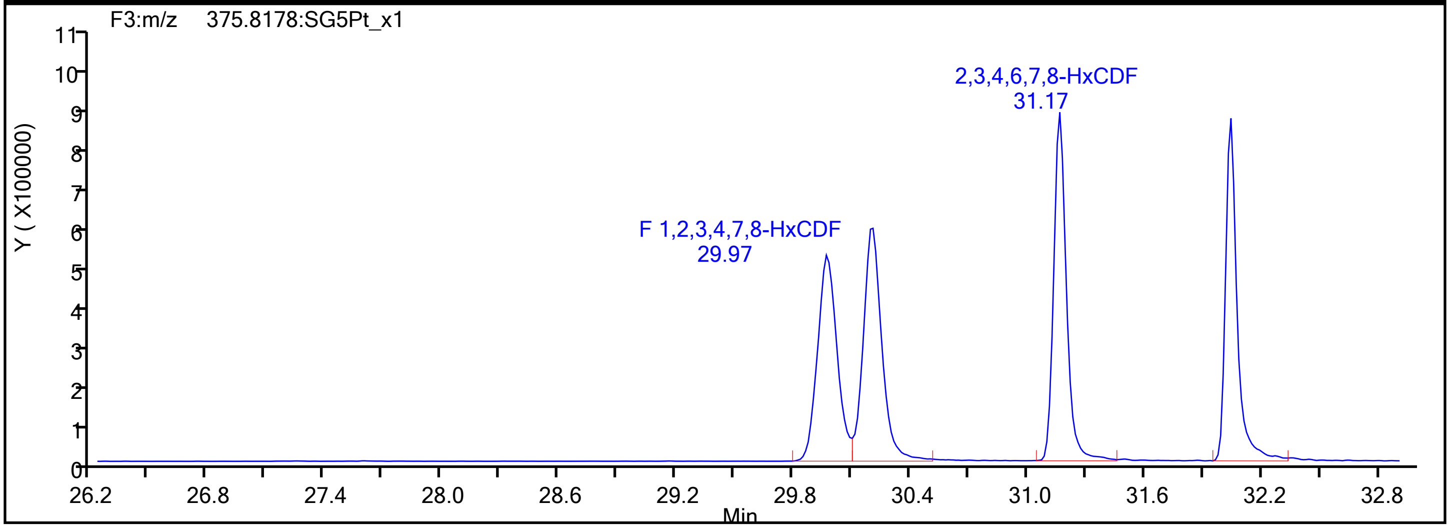

HxCDF Interference Mass

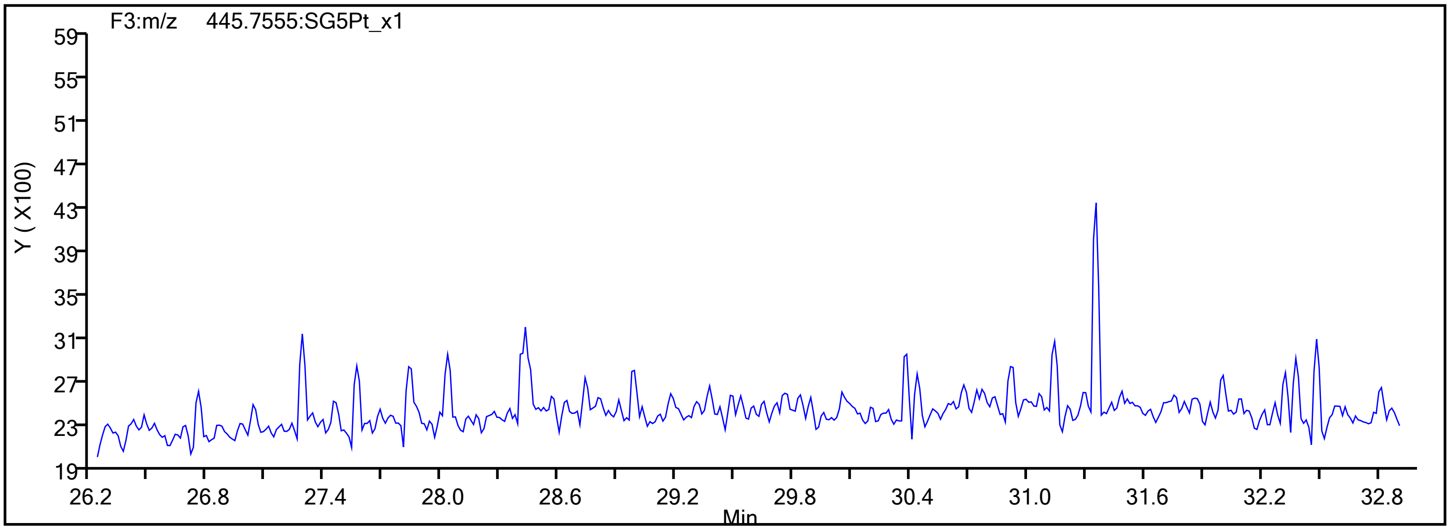

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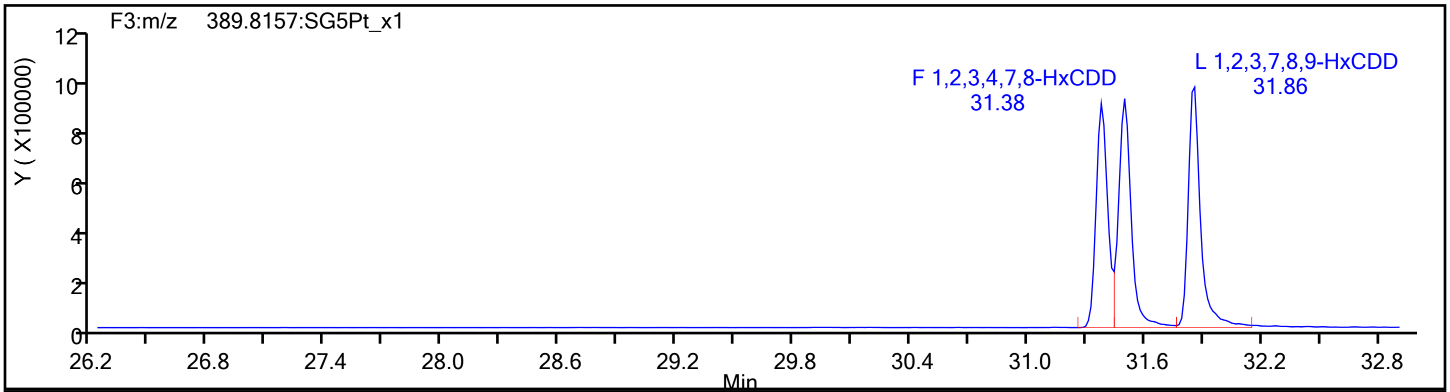

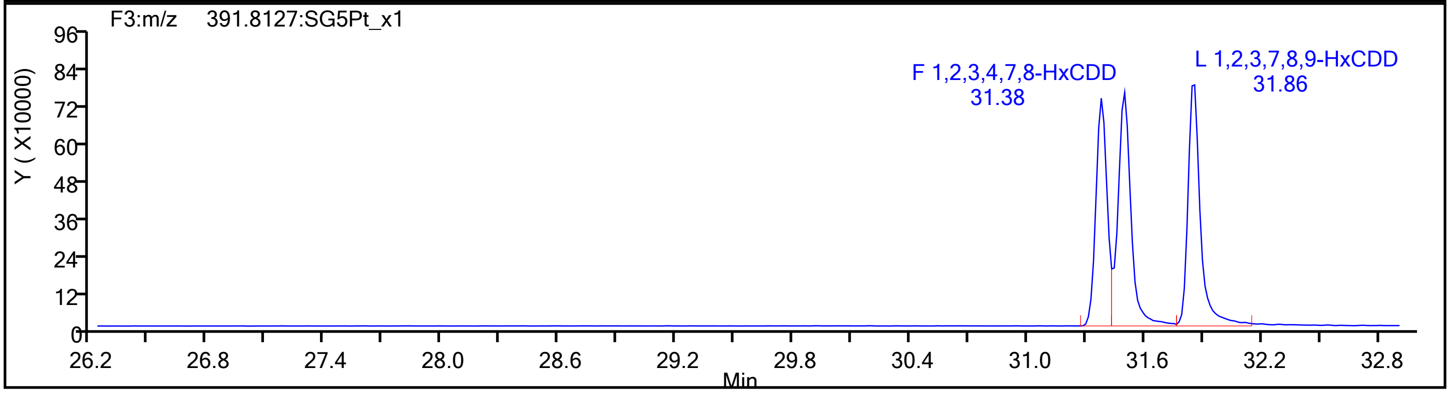

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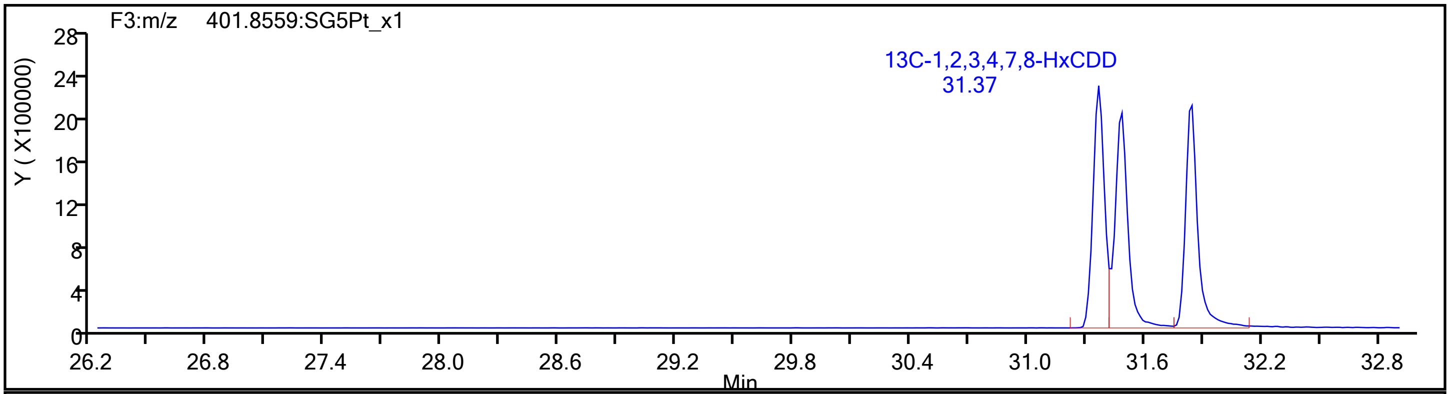

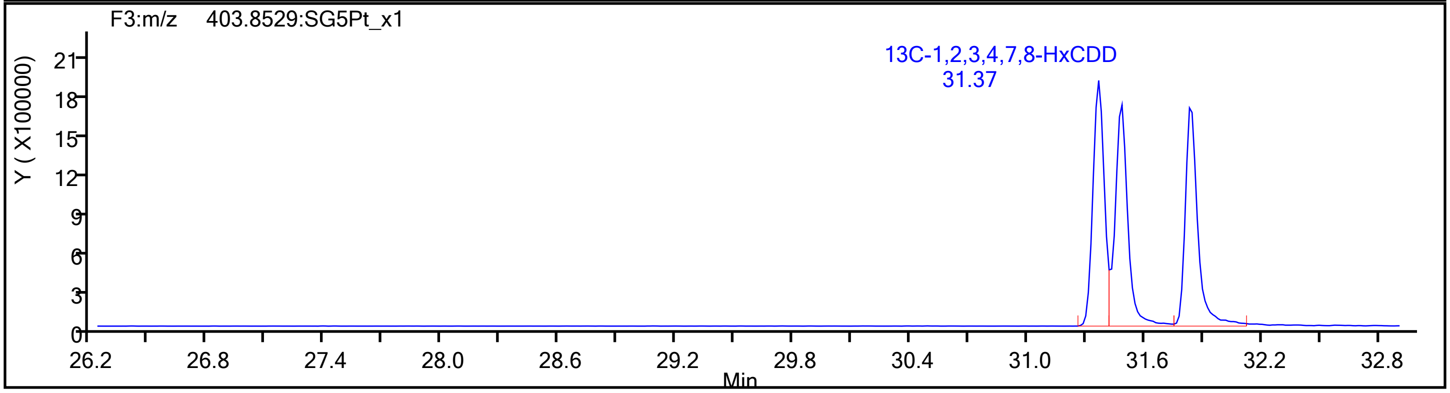

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Eurofins TestAmerica, Sacramento

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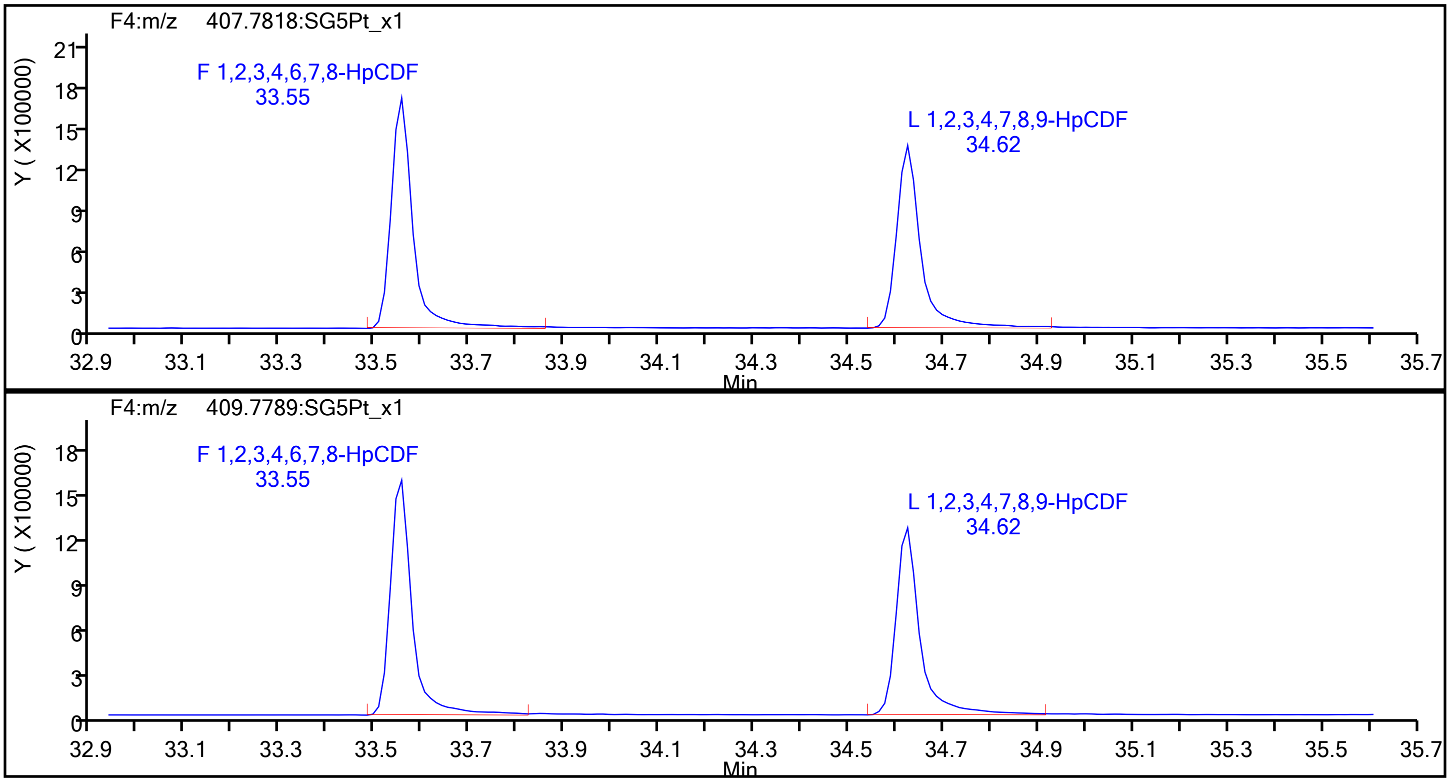

HpCDF Standards

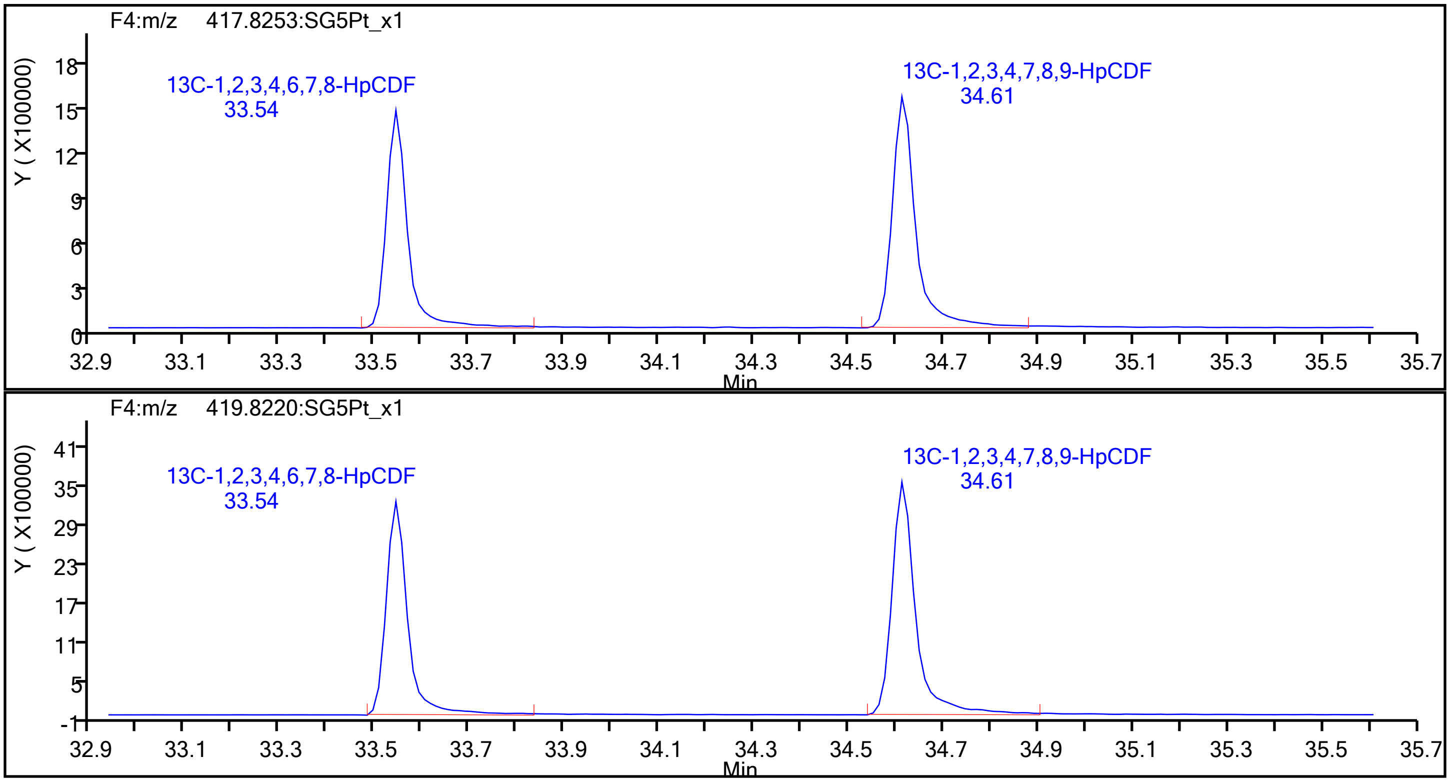

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Eurofins TestAmerica, Sacramento

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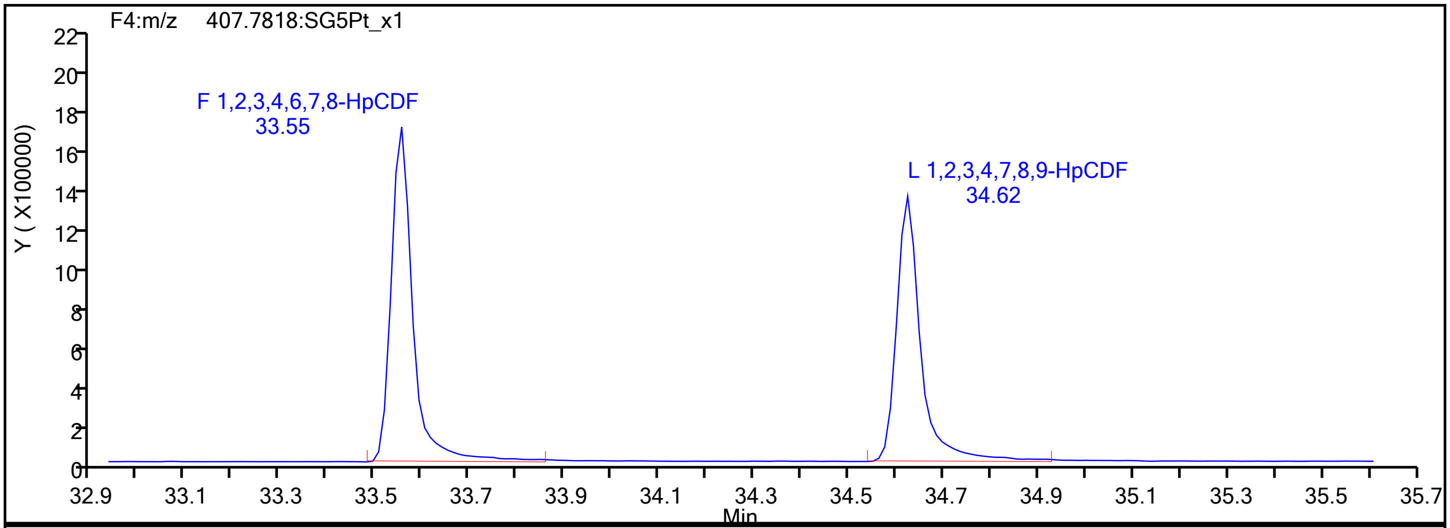

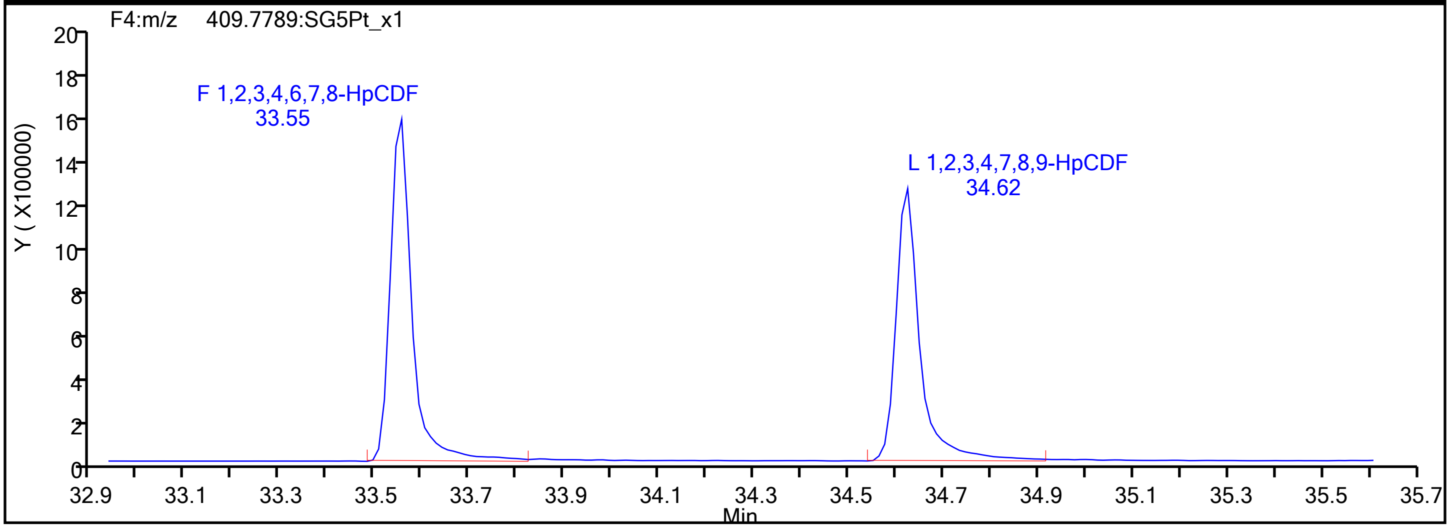

HpCDF Interference Mass

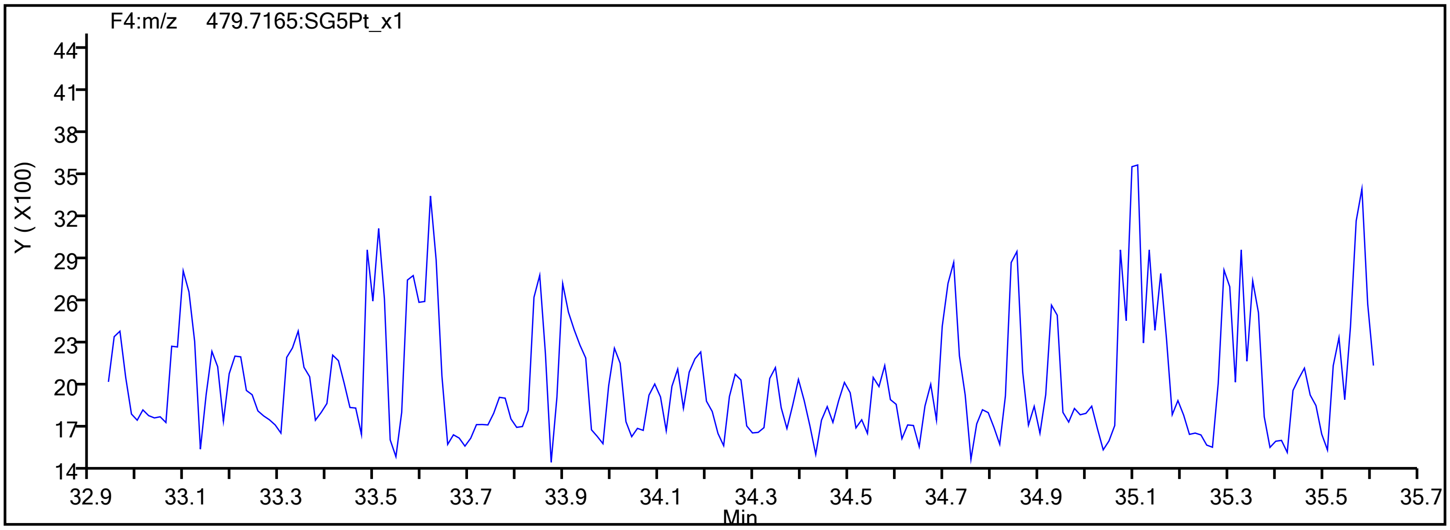

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HpCDD

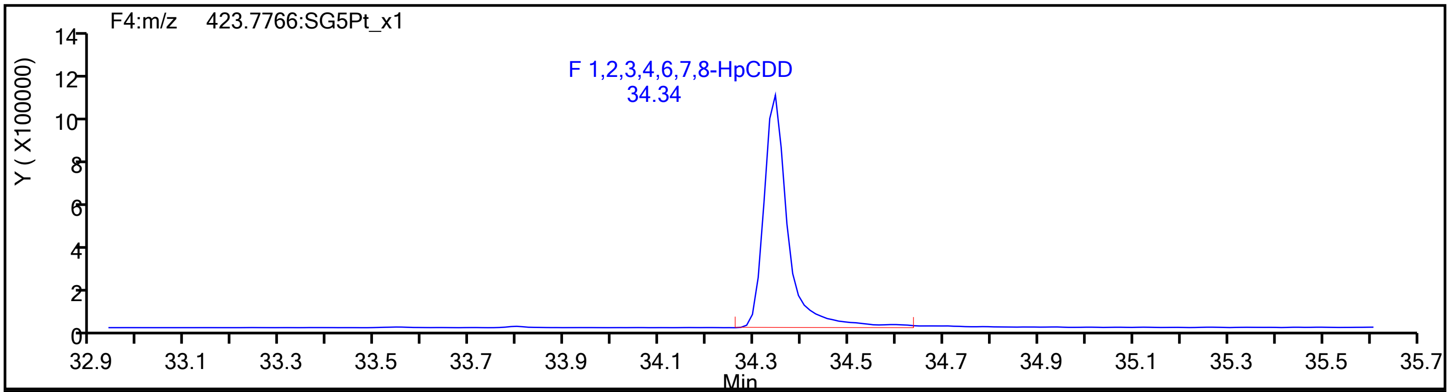

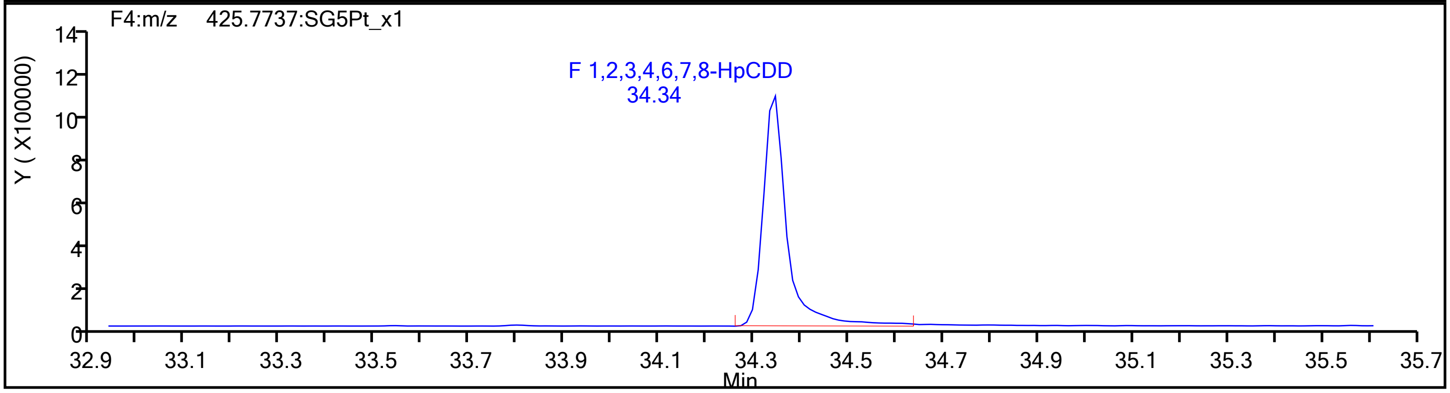

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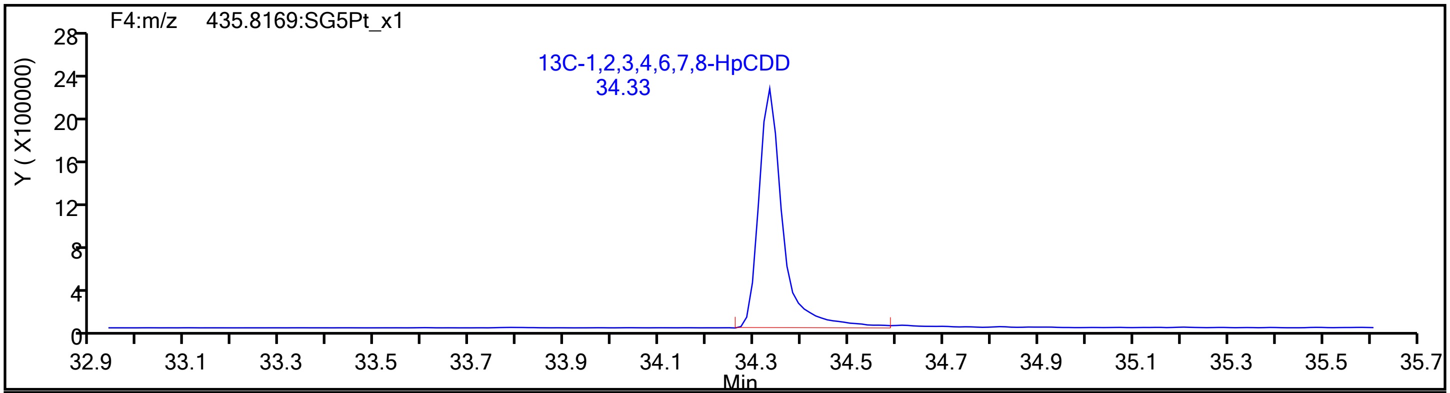

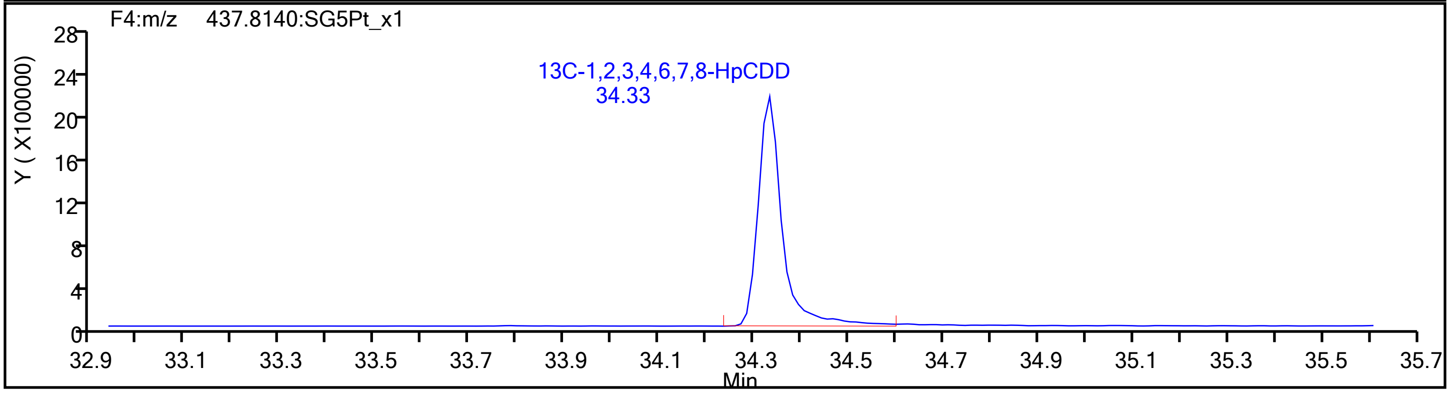

Report Date: 19-Aug-2020 16:15:25　　Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Client ID:			
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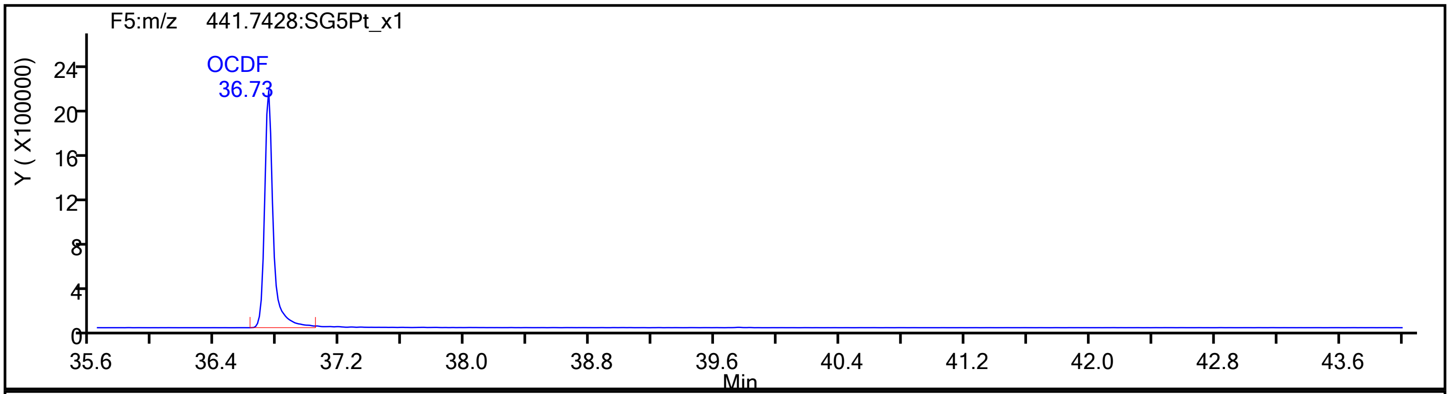

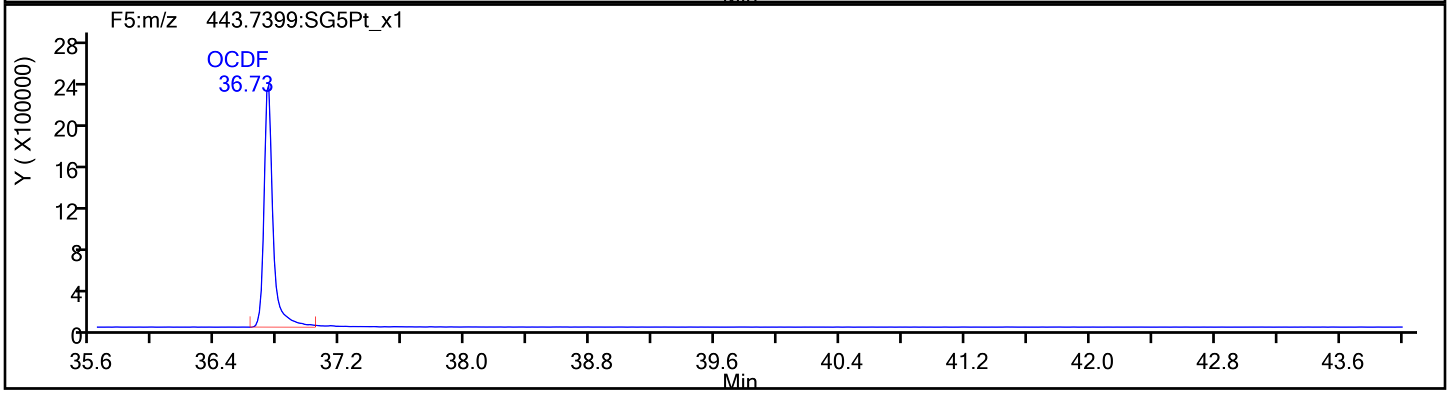

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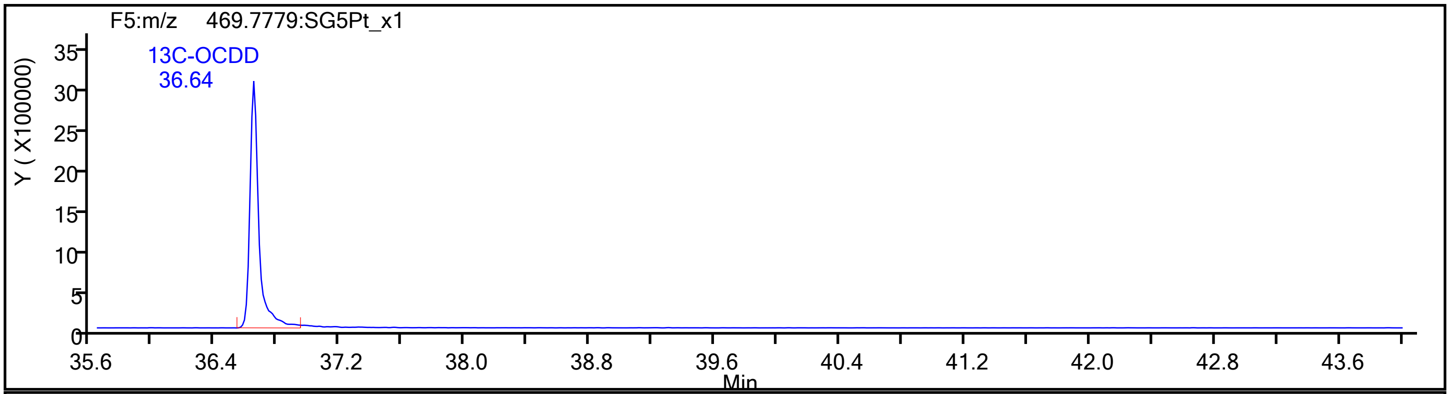

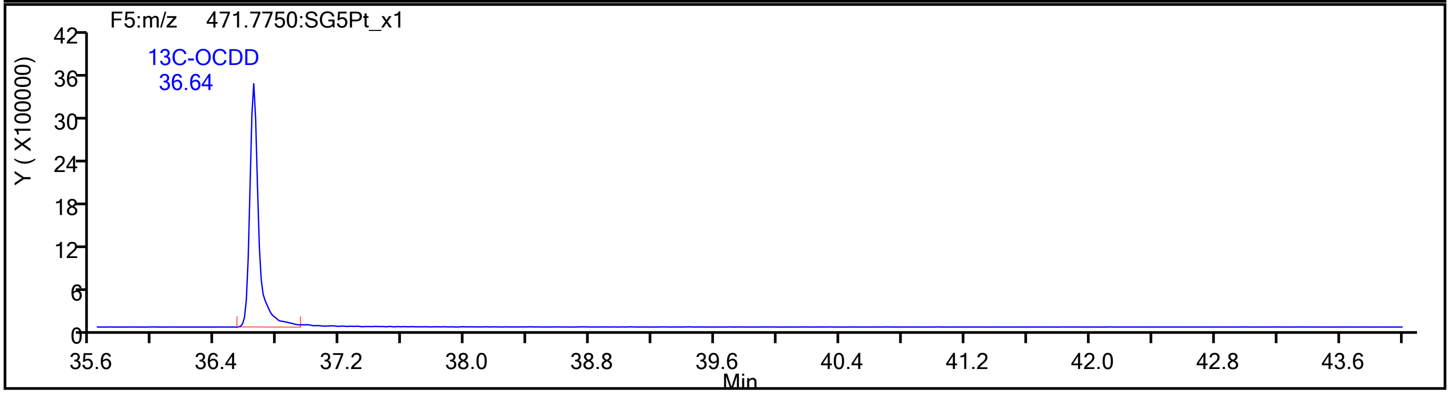

Report Date: 19-Aug-2020 16:15:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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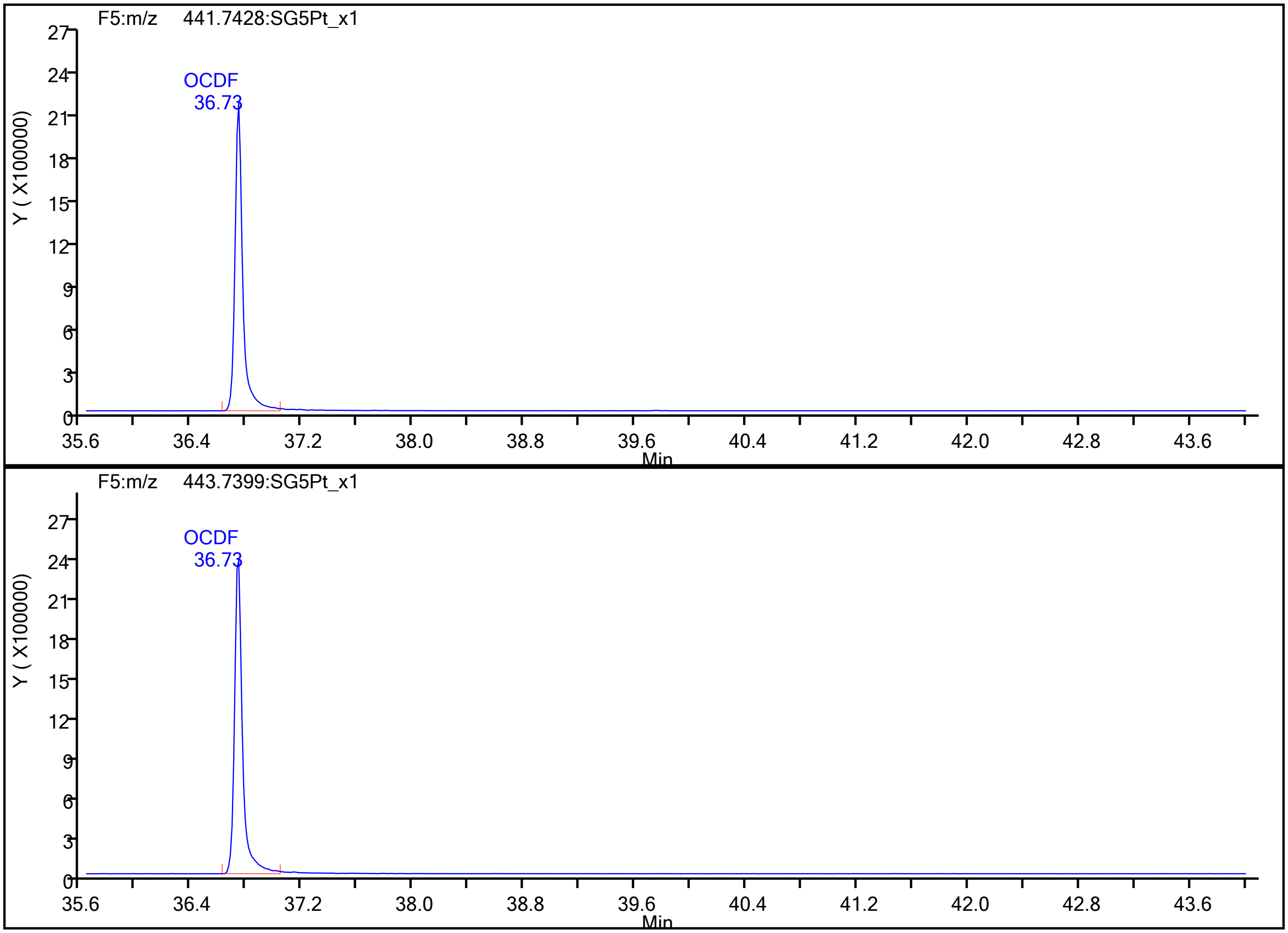

OCDF Interference Mass

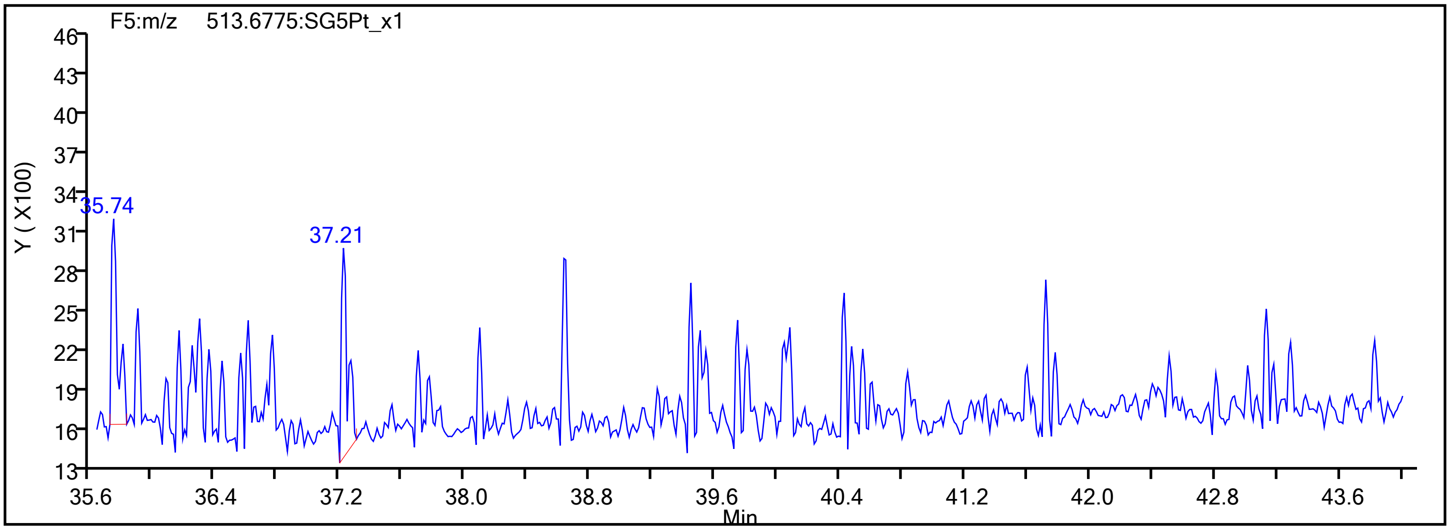

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Eurofins TestAmerica, Sacramento

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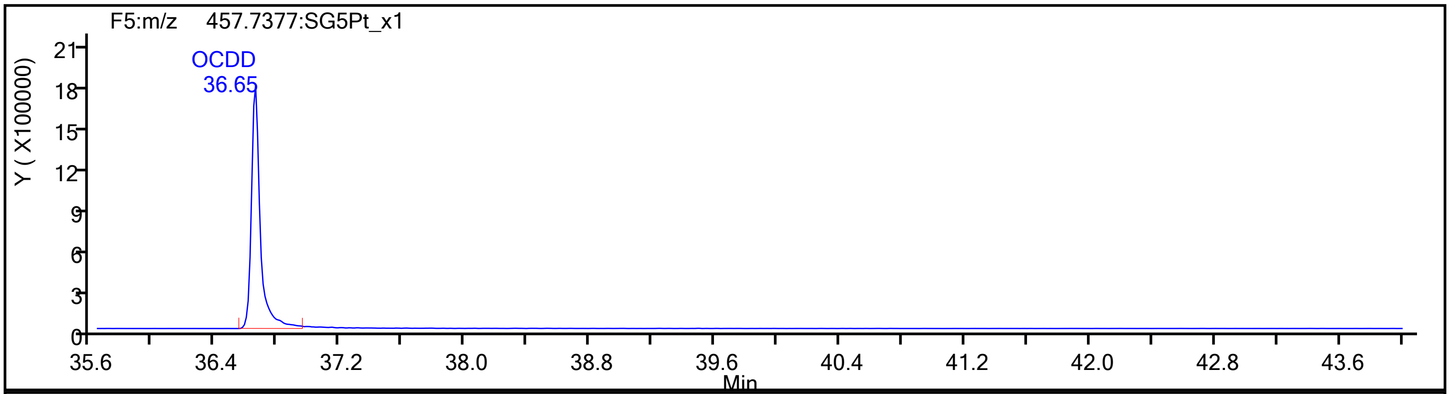

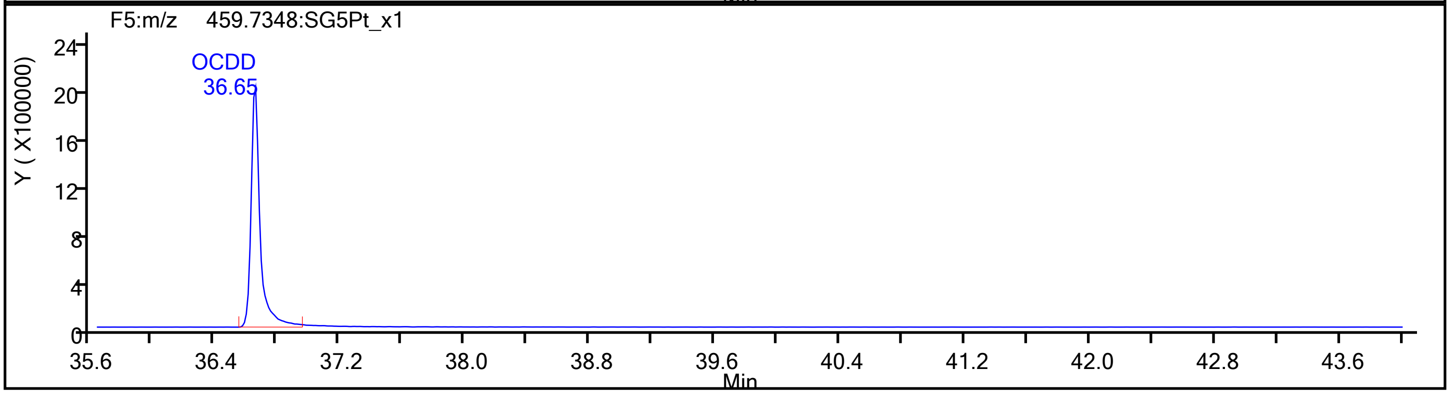

OCDD Standards

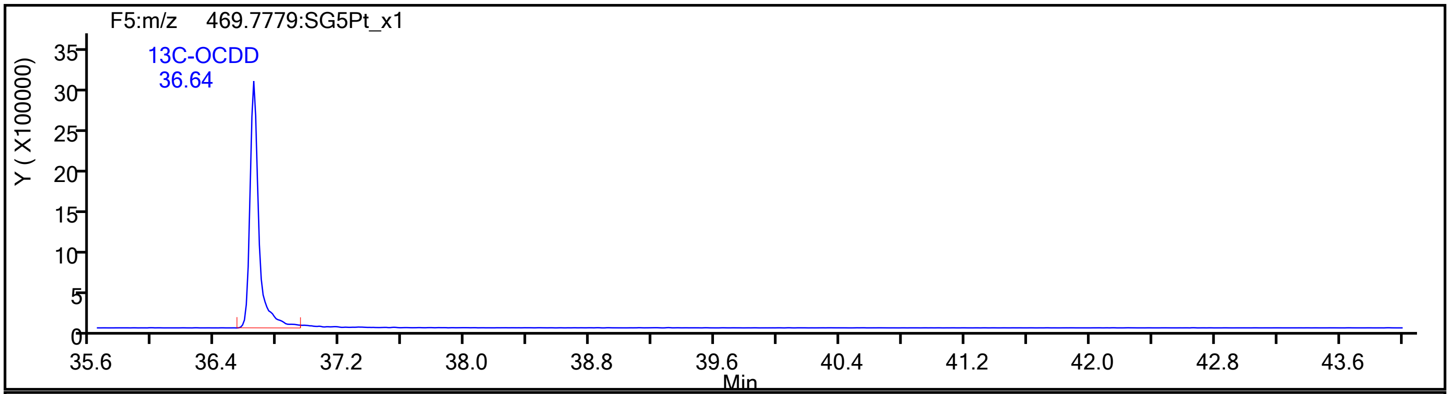

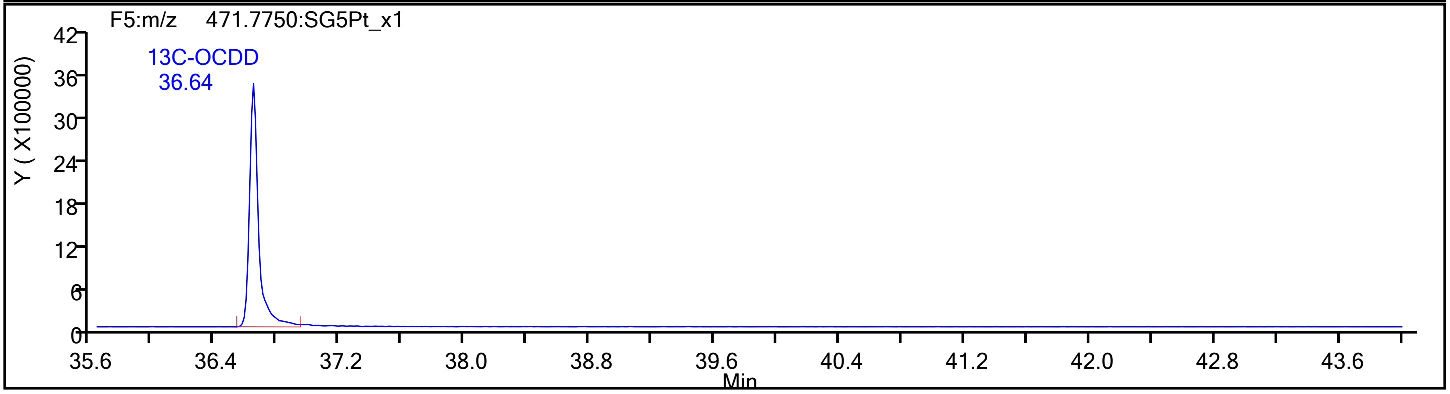

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Eurofins TestAmerica, Sacramento

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Injection Date: 19-Aug-2020 11:27:46 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405028 Sample Line#: 2

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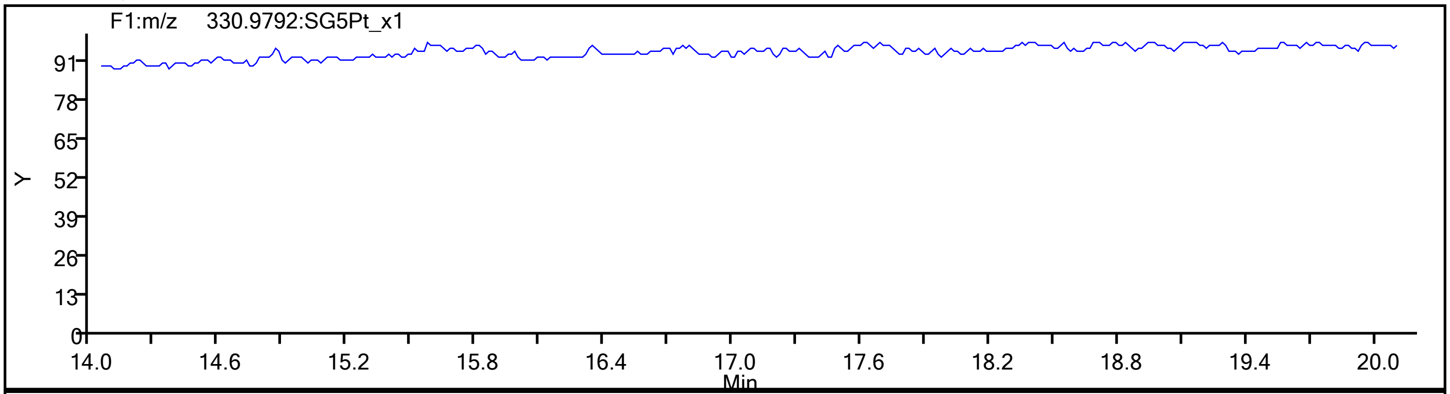

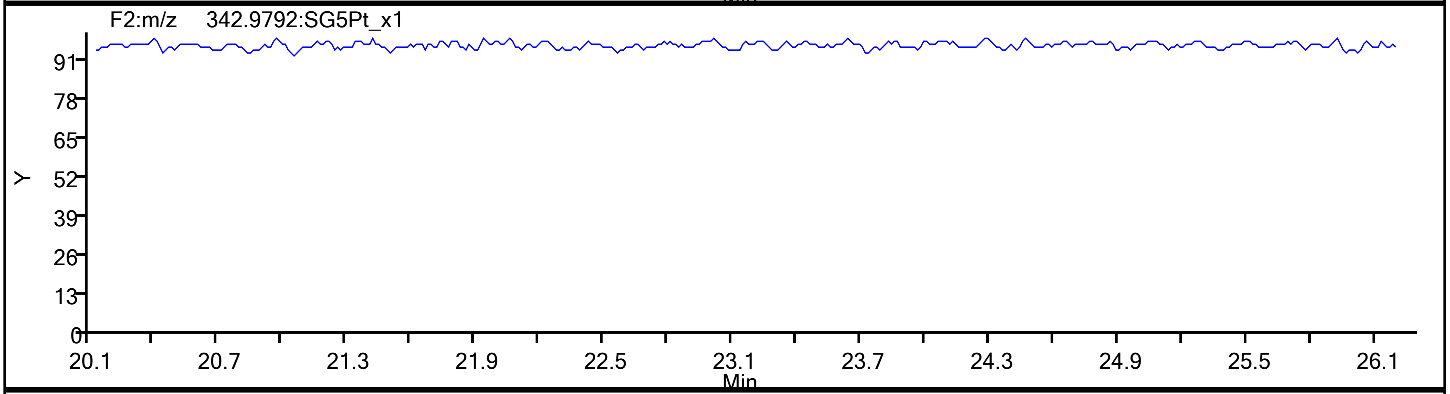

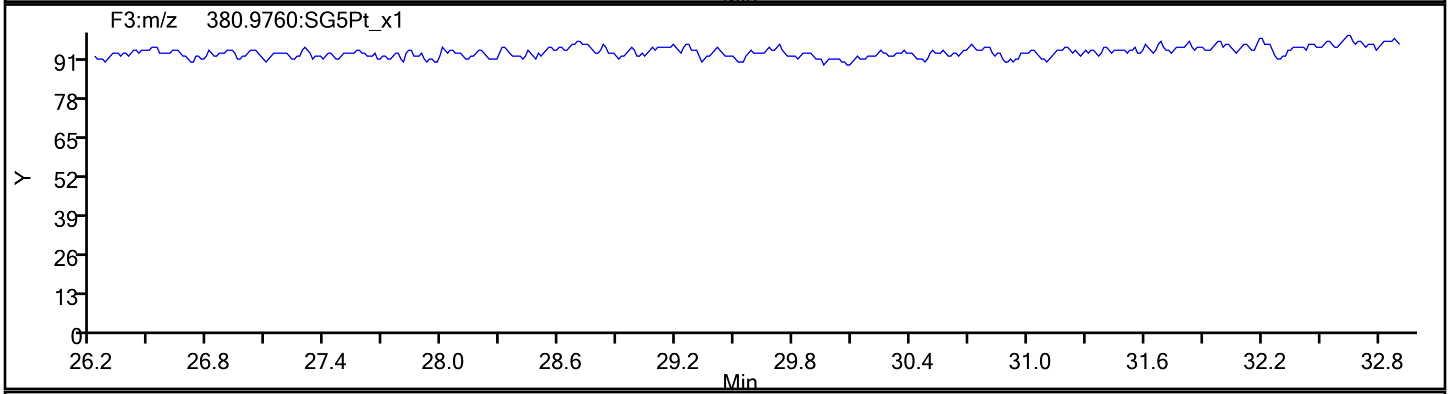

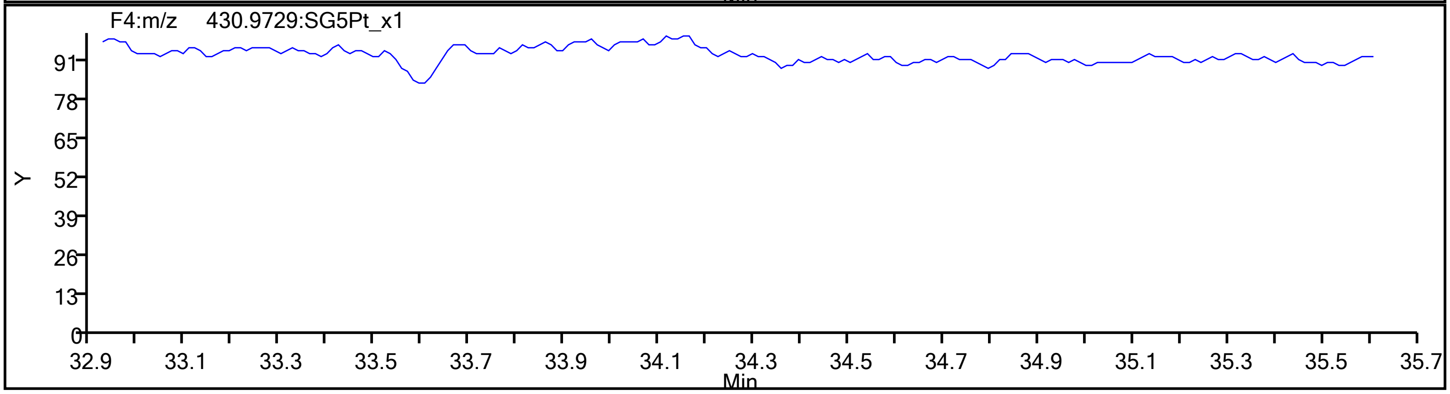

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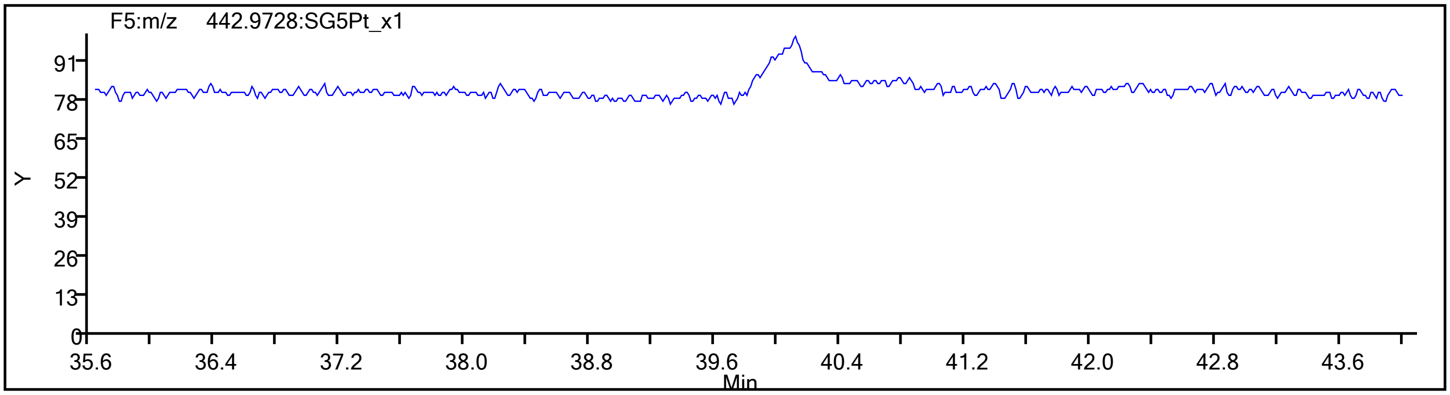

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID: CCV 320-405030/14 Calibration Date: 08/19/2020 21:23

Instrument ID: 10D5 Calib Start Date: 06/27/2020 14:42

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/27/2020 17:43

Lab File ID: 19AU2010D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9104	0.9126		10.0	10.0	100	84-120
2,3,7,8-TCDD	AveID	1.074	1.049		9.77	10.0	98	78-129
1,2,3,7,8-PeCDF	AveID	0.9938	1.030		51.8	50.0	104	82-120
2,3,4,7,8-PeCDF	AveID	0.8117	0.8369		51.6	50.0	103	82-122
1,2,3,7,8-PeCDD	AveID	1.018	1.021		50.2	50.0	100	78-130
1,2,3,4,7,8-HxCDF	AveID	0.8061	0.8734		54.2	50.0	108	90-112
1,2,3,6,7,8-HxCDF	AveID	0.9818	1.065		54.2	50.0	108	88-114
2,3,4,6,7,8-HxCDF	AveID	1.038	1.103		53.1	50.0	106	88-114
1,2,3,4,7,8-HxCDD	AveID	0.8202	0.8283		50.5	50.0	101	78-128
1,2,3,6,7,8-HxCDD	AveID	0.9367	0.9872		52.7	50.0	105	78-128
1,2,3,7,8,9-HxCDD	AveID	0.9905	1.012		51.1	50.0	102	82-122
1,2,3,7,8,9-HxCDF	AveID	1.032	1.113		53.9	50.0	108	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.453	1.495		51.5	50.0	103	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.054	1.060		50.3	50.0	101	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.059	1.080		51.0	50.0	102	86-116
OCDD	AveID	1.150	1.176		102	100	102	79-126
OCDF	AveID	1.296	1.411		109	100	109	63-159
13C-2,3,7,8-TCDF	Ave	1.373	1.425		104	100	104	71-140
13C-2,3,7,8-TCDD	Ave	1.019	1.005		98.6	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.143	1.141		99.8	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.400	1.444		103	100	103	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8232	0.8008		97.3	100	97	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.139	1.262		111	100	111	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.080	1.101		102	100	102	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9494	1.057		111	100	111	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.9356	1.017		109	100	109	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	0.9448		90.7	100	91	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8670	0.9798		113	100	113	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7899	0.8130		103	100	103	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7637	0.8243		108	100	108	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9093	1.023		113	100	113	77-129
13C-OCDD	Ave	0.6377	0.6490		204	200	102	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.018	0.9831		9.66	10.0	97	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\19AU2010D5.SPL Page 1 of 3
Last Modified: Wednesday, August 19, 2020 17:21:01 Pacific Daylight Time
Printed: Wednesday, August 19, 2020 17:21:03 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	19AU2010D5_1	WDM HRDXNCP_00040	WDM 081920	Tray01:1	Dioxin	
2	19AU2010D5_2	CS-4 HRDXNL4_00093	CCV 081920	Tray01:2	Dioxin	
3	19AU2010D5_3	Solvent Blank C-14	SB 081920	Tray01:3	---	
4	19AU2010D5_4	MB 320-404233/1-A	MB 320-404233/1-A	Tray01:4	1613B(T)/Water	D175
5	19AU2010D5_5	LCS 320-404233/2-A	LCS 320-404233/2-A	Tray01:5	1613B(T)/Water	
6	19AU2010D5_6	LCSD 320-404233/3-A	LCSD 320-404233/3-A	Tray01:6	1613B(T)/Water	
7	19AU2010D5_7	320-63525-A-1-A	320-63525-A-1-A	Tray01:7	1613B/Water	
8	19AU2010D5_8	320-63525-A-2-A	320-63525-A-2-A	Tray01:8	1613B/Water	
9	19AU2010D5_9	440-270148-O-1-A	440-270148-O-1-A	Tray01:9	1613B_T/Water	
10	19AU2010D5_10	400-192036-M-1-A	400-192036-M-1-A	Tray01:10	1613B_T/Water	
11	19AU2010D5_11	440-270274-E-1-A	440-270274-E-1-A	Tray01:11	1613B/Water	
12	19AU2010D5_12	550-147138-G-2-A	550-147138-G-2-A	Tray01:12	1613B_T/Water	
13	19AU2010D5_13	Solvent Blank C-14	SB 081920A	Tray01:3	---	
14	19AU2010D5_14	CS-4 HRDXNL4_00093	CCV 081920A	Tray01:2	Dioxin	
15	19AU2010D5_15	WDM HRDXNCP_00040	WDM 081920A	Tray01:1	Dioxin	
16	19AU2010D5_16	Solvent Blank C-14	SB 081920B	Tray01:3	---	
17	19AU2010D5_17	LCSD 320-404233/3-A RI	LCSD 320-404233/3-A RI	Tray01:6	1613B(T)/Water	D175
18	19AU2010D5_18	570-35718-B-1-A	570-35718-B-1-A	Tray01:15	1613B/Water	
19	19AU2010D5_19	570-35718-F-5-A	570-35718-F-5-A	Tray01:16	1613B/Water	
20	19AU2010D5_20	570-35718-B-6-A	570-35718-B-6-A	Tray01:17	1613B/Water	
21	19AU2010D5_21	570-35718-B-7-A	570-35718-B-7-A	Tray01:18	1613B/Water	
22	19AU2010D5_22	570-35718-A-8-A	570-35718-A-8-A	Tray01:19	1613B/Water	
23	19AU2010D5_23	660-103599-C-1-A	660-103599-C-1-A	Tray01:20	1613B_T/Water	
24	19AU2010D5_24	660-103620-D-1-A	660-103620-D-1-A	Tray01:21	1613B_T/Water	
25	19AU2010D5_25	660-103620-D-2-A	660-103620-D-2-A	Tray01:22	1613B_T/Water	
26	19AU2010D5_26	680-187248-A-1-A	680-187248-A-1-A	Tray01:23	1613B_T/Water	
27	19AU2010D5_27	Solvent Blank C-14	SB 081920C	Tray01:3	---	
28	19AU2010D5_28	QC IDA HRDXNIDA_00434	QC IDA HRDXNIDA_00434	Tray01:24	1613B/8290	Q87
29	19AU2010D5_29	QC TA HRDXNTA_00122	QC TA HRDXNTA_00122	Tray01:25	1613B/8290	
30	19AU2010D5_30	CS-4 HRDXNL4_00093	CCV 081920B	Tray01:2	Dioxin	

log file checked
8-19-20 ALM

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 21:15:29 Pacific Daylight Time

M 292.9824 R 10547

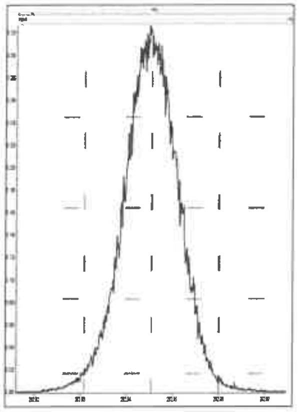

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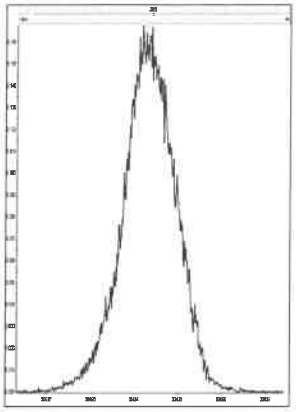

M 318.9792 R 11313

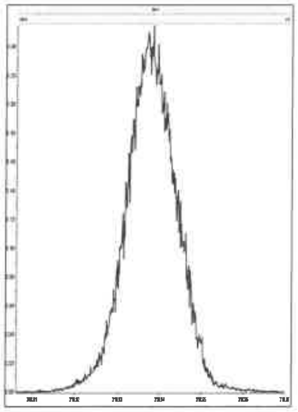

M 330.9792 R 11159

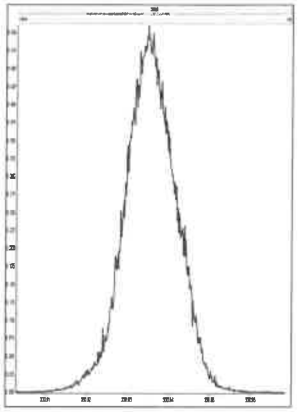

M 342.9792 R 11162

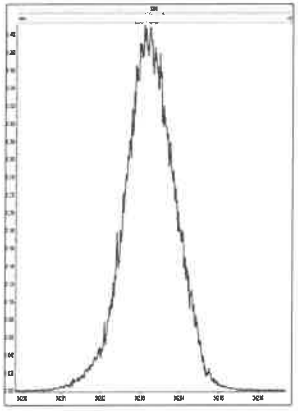

M 354.9792 R 11415

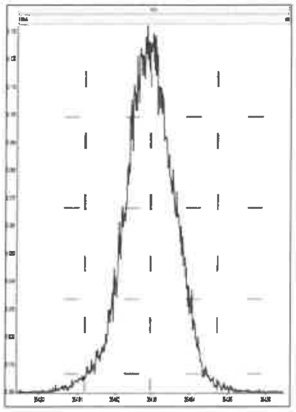

M 366.9792 R 11114

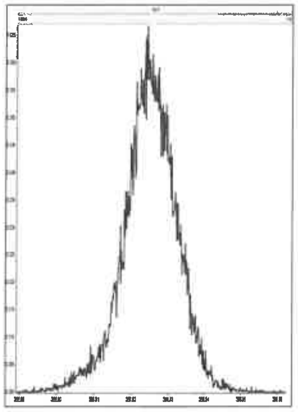

M 380.9760 R 11625

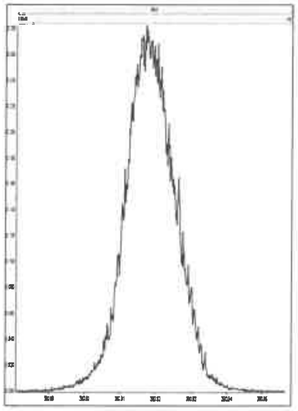

M 392.9760 R 12019

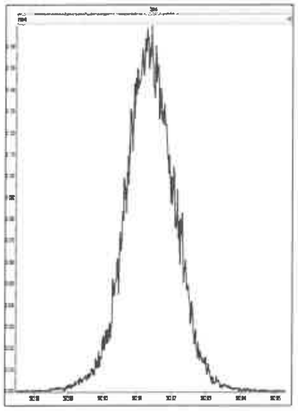

M 404.9760 R 11626

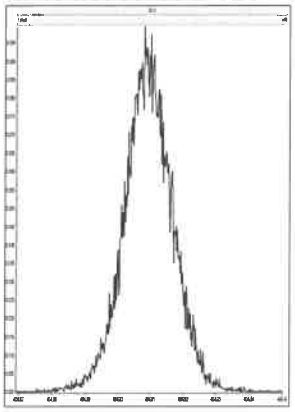

M 416.9760 R 12627

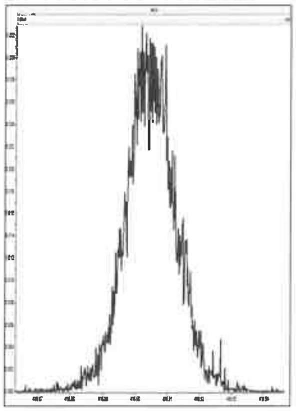

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 21:17:18 Pacific Daylight Time

M 318.9792 R 11163

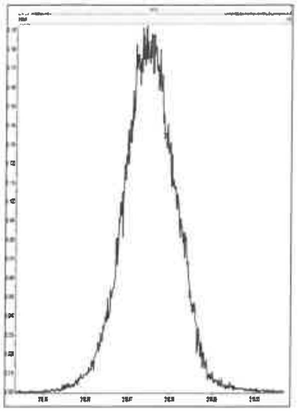

M 330.9792 R 11261

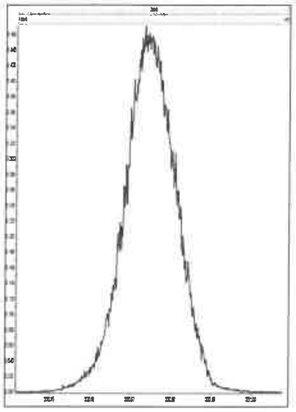

M 342.9792 R 11164

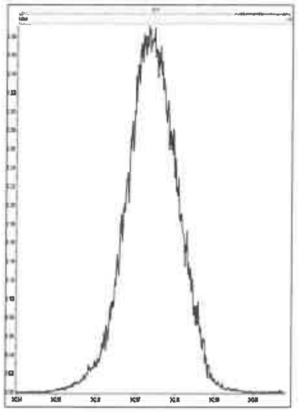

M 354.9792 R 11313

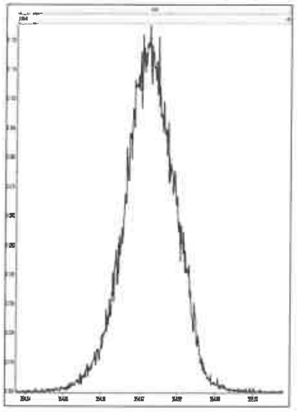

M 366.9792 R 10775

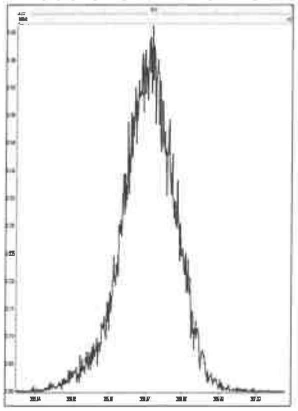

M 380.9760 R 11310

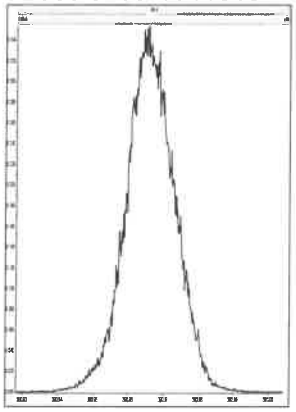

M 392.9760 R 11313

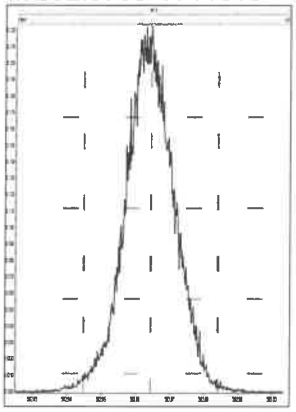

M 404.9760 R 11682

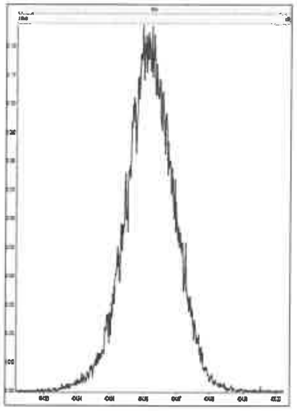

M 416.9760 R 12017

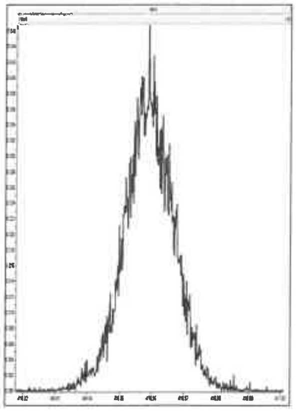

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 21:18:38 Pacific Daylight Time

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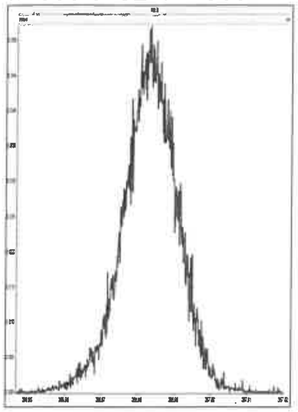

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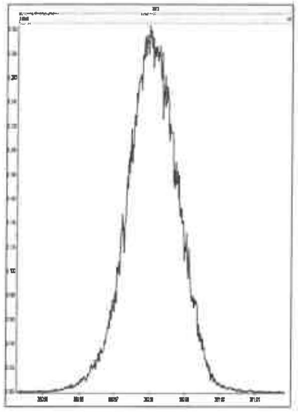

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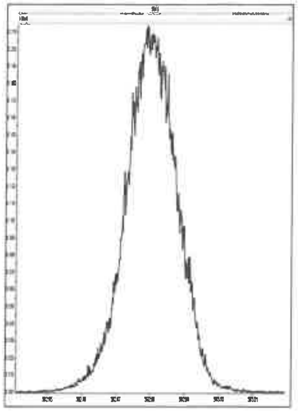

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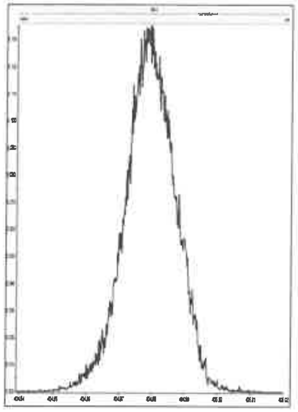

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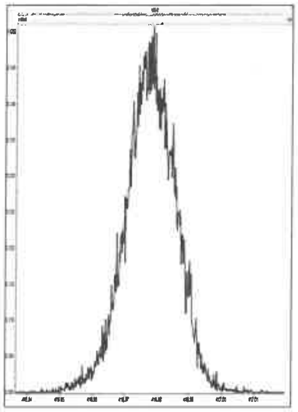

M 430.9728 R 11906

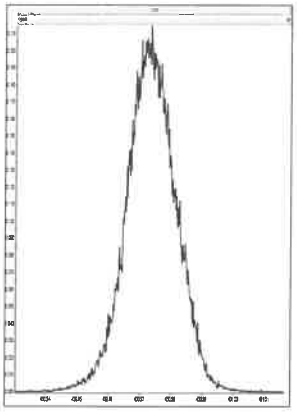

M 442.9728 R 12136

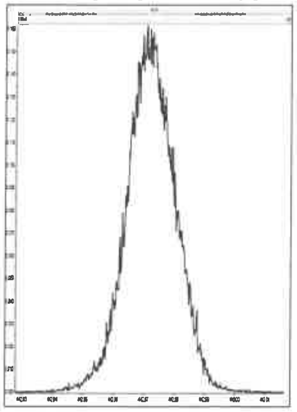

M 454.9728 R 11519

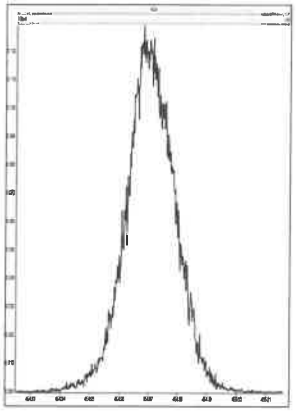

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

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M 380.9760 R 11062

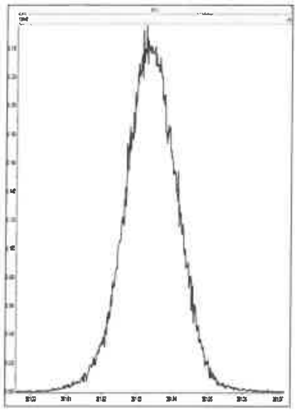

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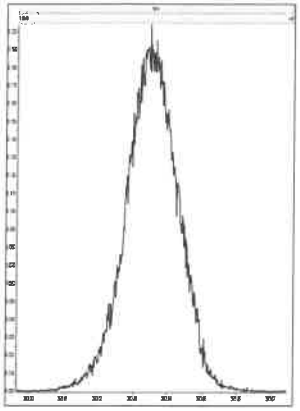

M 404.9760 R 10962

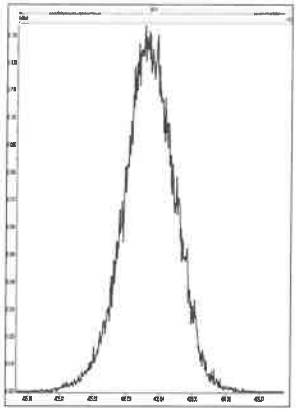

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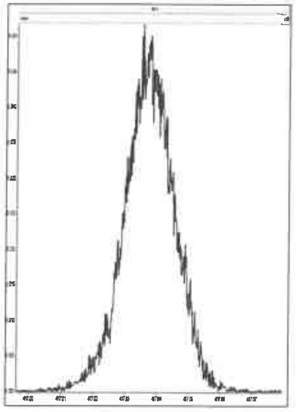

M 430.9728 R 11627

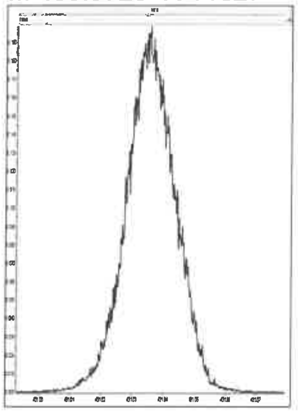

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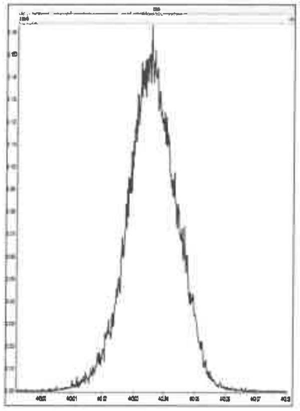

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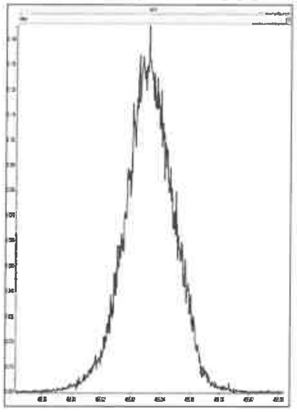

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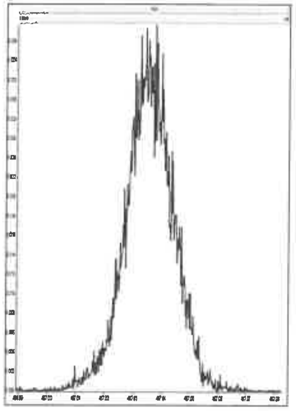

M 480.9696 R 12317

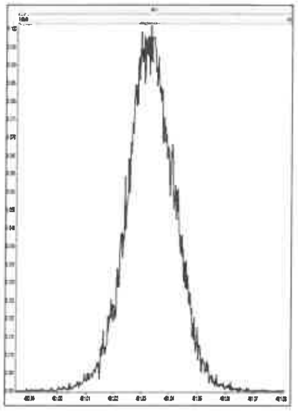

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, August 19, 2020 21:21:30 Pacific Daylight Time

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M 380.9760 R 10870

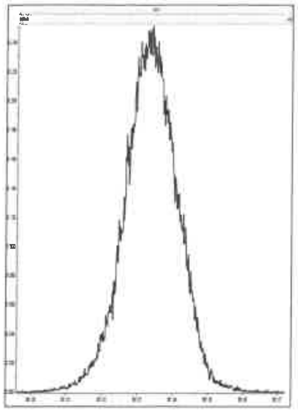

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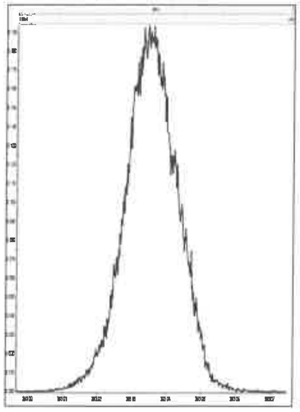

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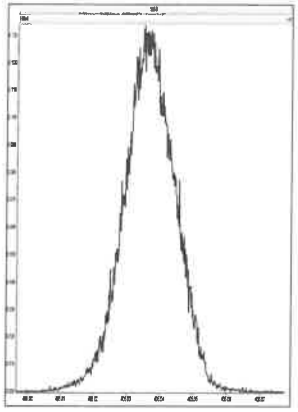

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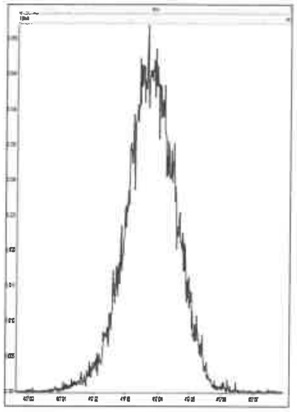

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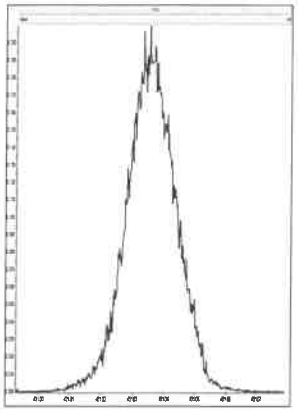

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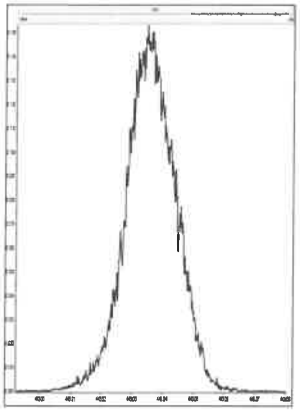

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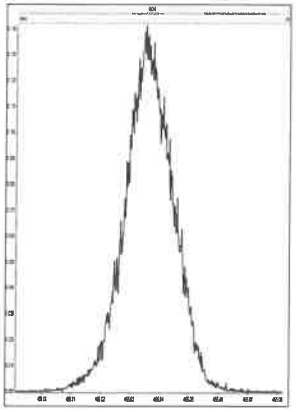

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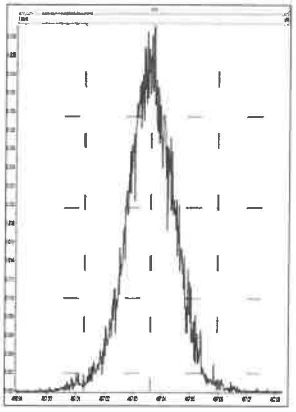

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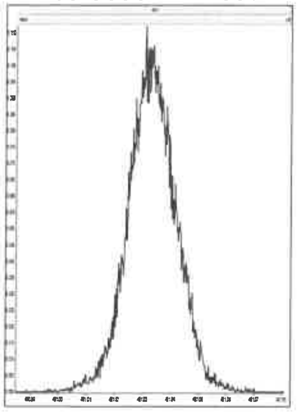

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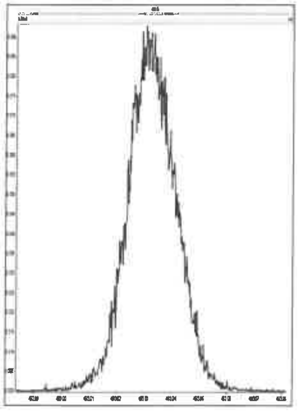

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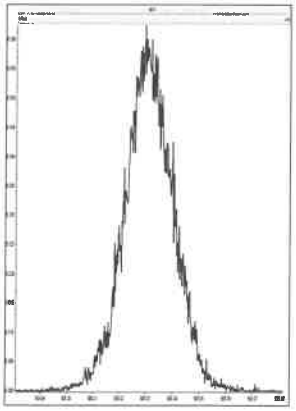

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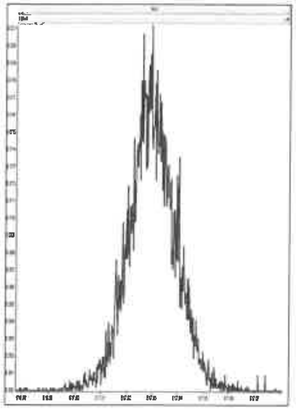

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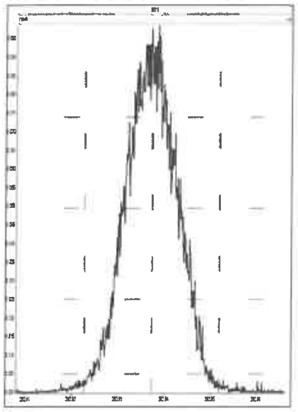

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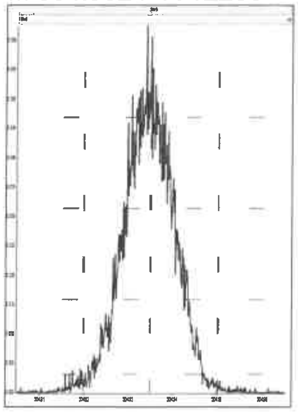

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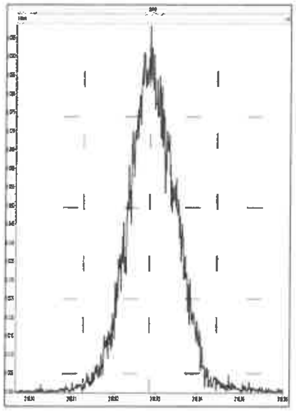

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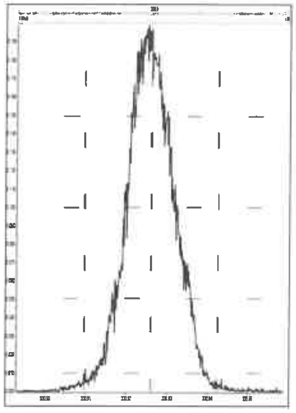

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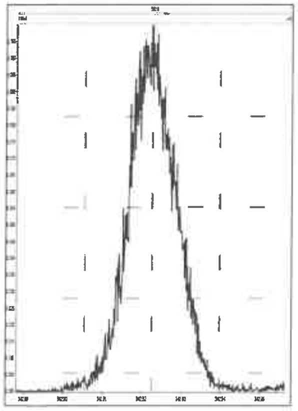

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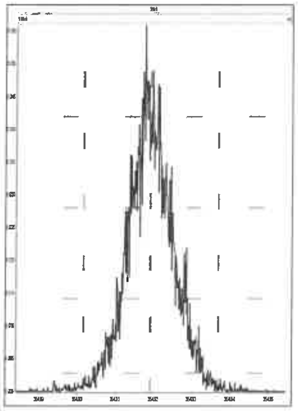

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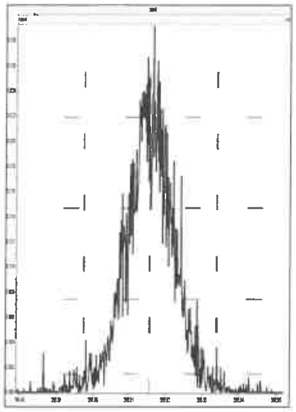

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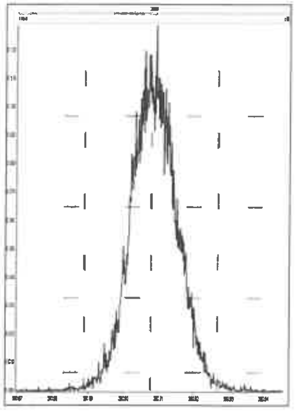

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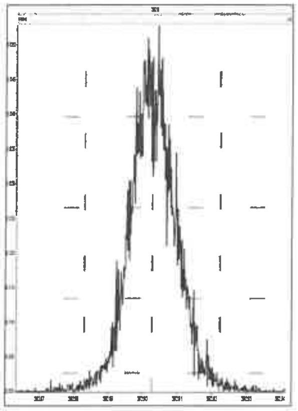

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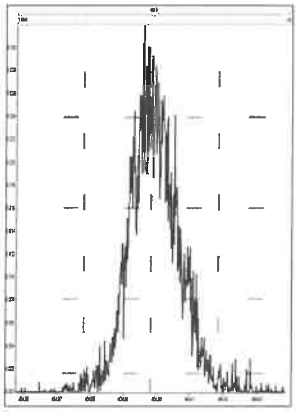

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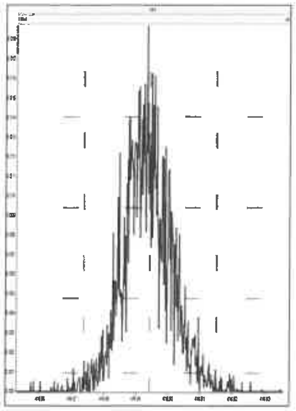

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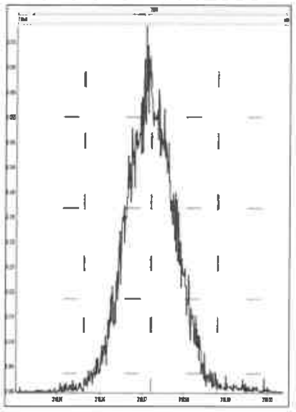

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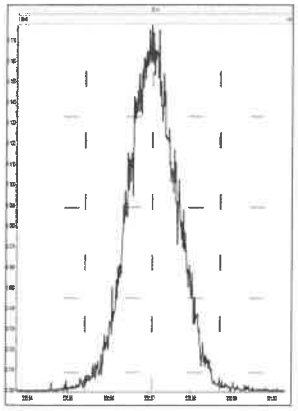

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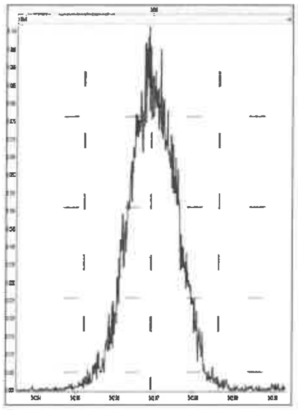

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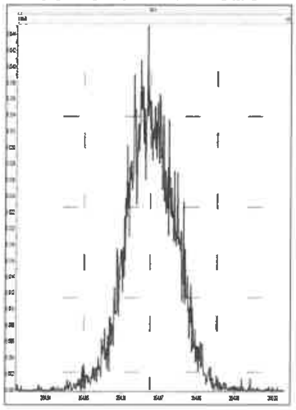

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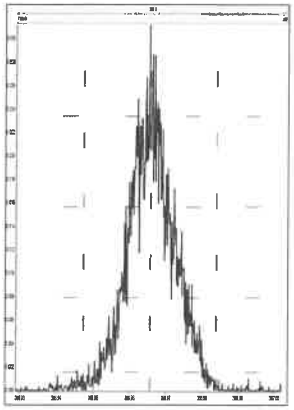

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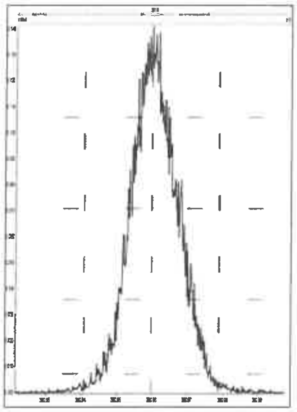

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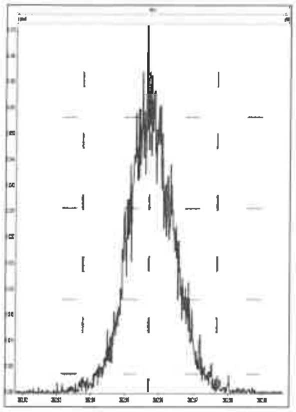

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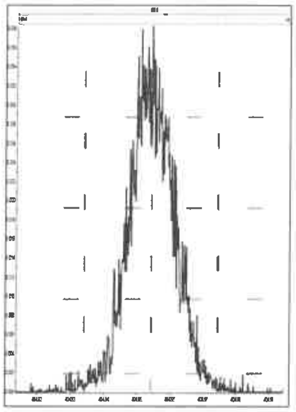

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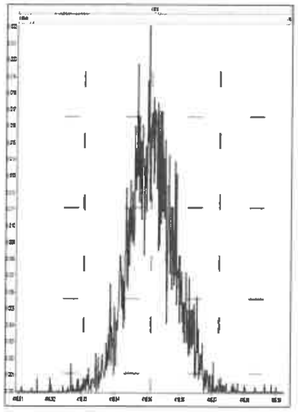

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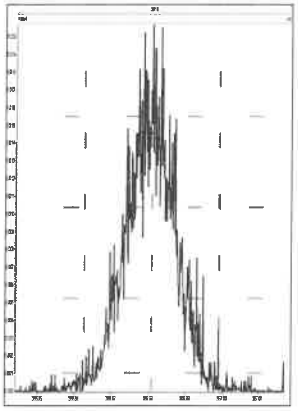

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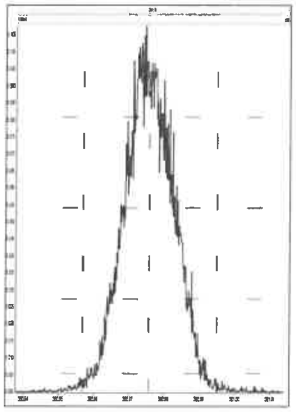

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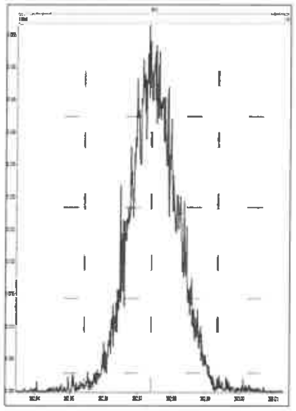

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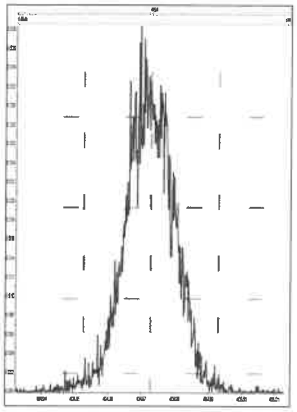

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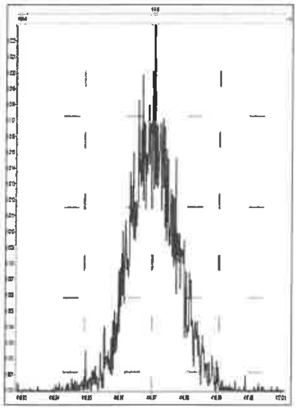

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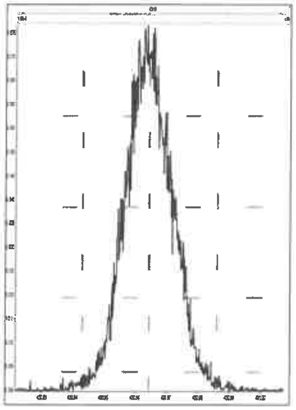

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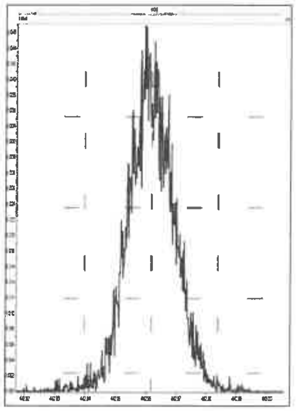

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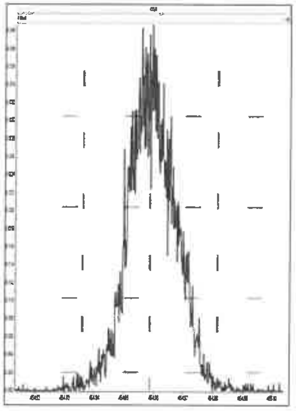

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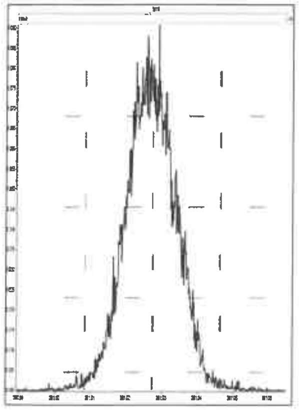

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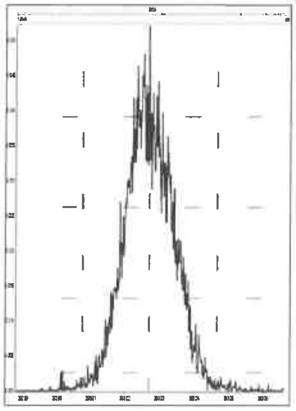

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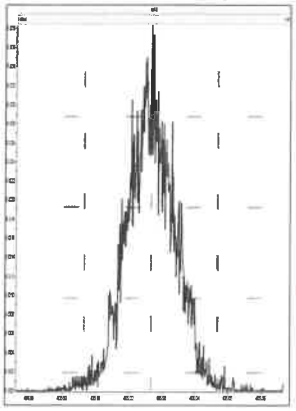

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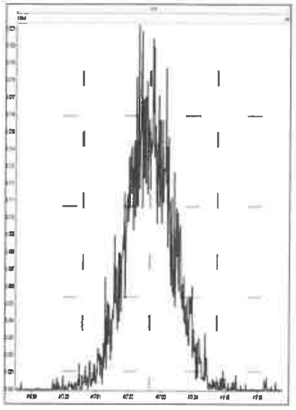

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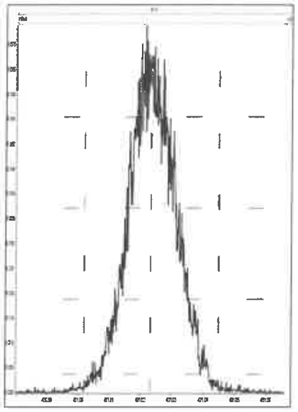

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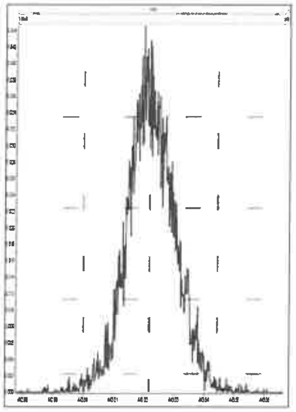

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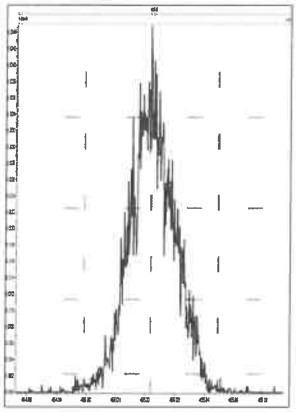

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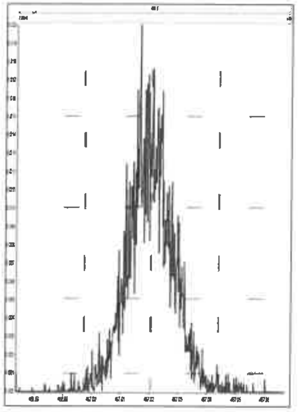

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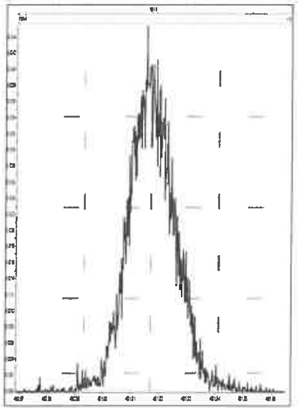

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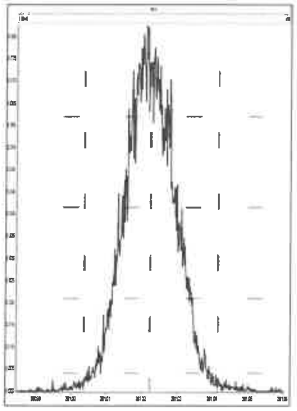

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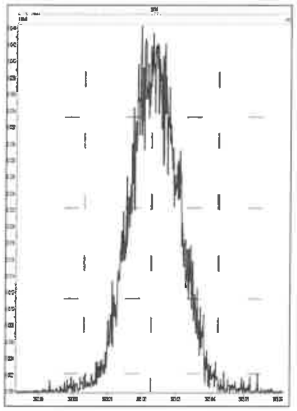

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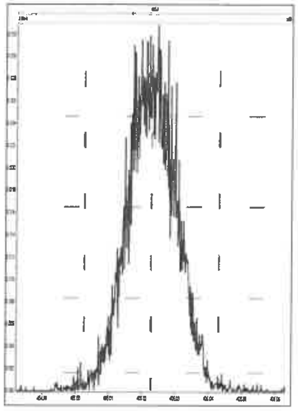

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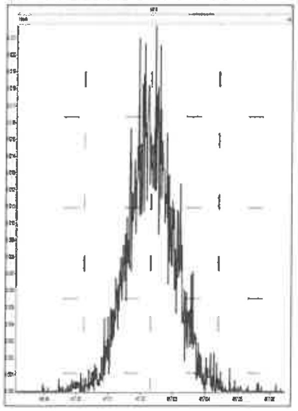

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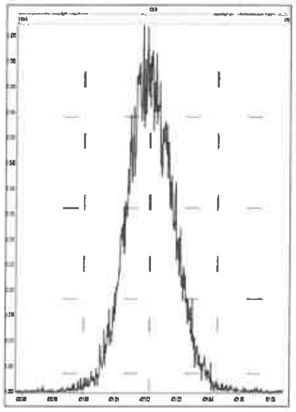

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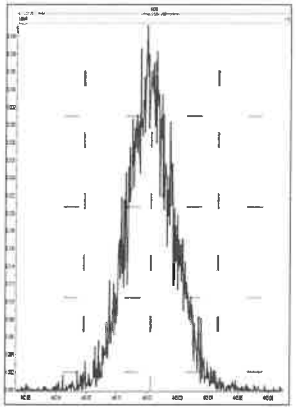

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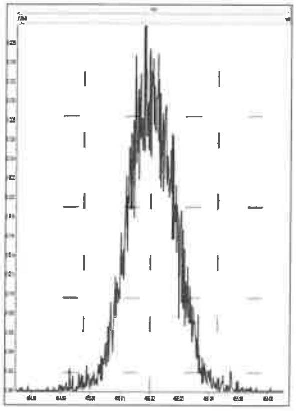

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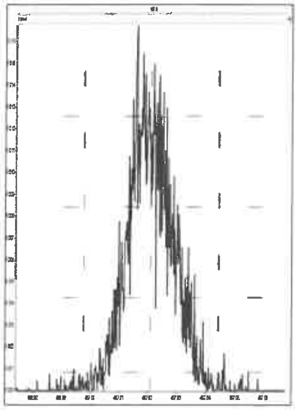

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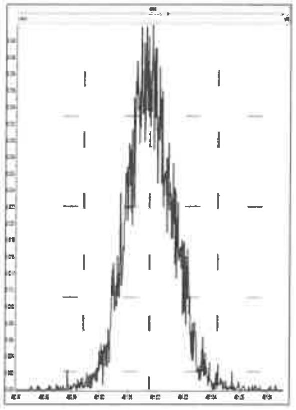

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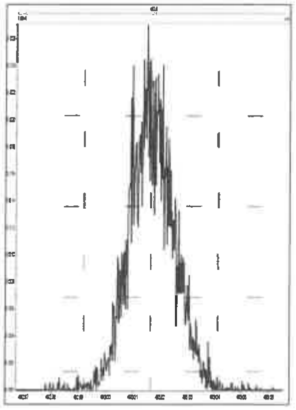

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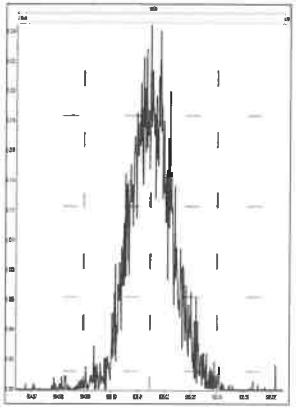

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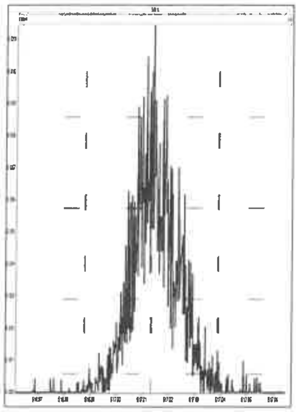

Report Date: 20-Aug-2020 14:54:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 19-Aug-2020 21:23:08 ALS Bottle#: 2 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 081920A CS-4 HRDXNL4_00093
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 14:54:26 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1027

First Level Reviewer: shardaa Date: 20-Aug-2020 14:52:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.475	17028925	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.976	24263896	0.75	1.3726	103.8	103.8	0.3107	0.3107	104	
2,3,7,8-TCDF	16.992	2214399	0.76	0.9104	10.0	10.0	0.0526	0.0526	100	
A Non-2,3,7,8-sub-TCDF	16.689						0.0526	0.0526		
S Total TCDF					10.0	10.0	0.0526	0.0526		
D 13C-2,3,7,8-TCDD	17.657	17112488	0.81	1.0192	98.6	98.6	0.3659	0.3659	98.60	
2,3,7,8-TCDD	17.672	1795915	0.78	1.0745	9.767	9.767	0.0617	0.0617	97.67	
$ 37Cl4-2,3,7,8-TCDD	17.672	1674110		1.0176	9.661	9.661	0.0304	0.0304	96.61	
A Non-2,3,7,8-sub-TCDD	17.135						0.0617	0.0617		
S Total TCDD					9.767	9.767	0.0617	0.0617		
D 13C-1,2,3,7,8-PeCDF	21.824	19427898	1.56	1.1429	99.8	99.8	0.2590	0.2590	99.83	
1,2,3,7,8-PeCDF	21.838	10001957	1.58	0.9938	51.8	51.8	0.1862	0.1862	104	
D 13C-2,3,4,7,8-PeCDF	23.106	24585108	1.57	1.3997	103.1	103.1	0.2115	0.2115	103	
2,3,4,7,8-PeCDF	23.133	10287199	1.57	0.8117	51.6	51.6	0.1932	0.1932	103	
A F1 PeCDFs	19.555						0.0458	0.0458		
A Non-2,3,7,8-sub-PeCDF	22.583						0.1881	0.1881		Rn
S Total PeCDF					103.4	103.4	0.1897	0.1897		
D 13C-1,2,3,7,8-PeCDD	23.815	13635945	1.60	0.8232	97.3	97.3	0.1747	0.1747	97.28	
1,2,3,7,8-PeCDD	23.843	6964281	1.61	1.0181	50.2	50.2	0.1246	0.1246	100	
A Non-2,3,7,8-sub-PeCDD	22.772						0.1246	0.1246		
S Total PeCDD					50.2	50.2	0.1246	0.1246		
D 13C-1,2,3,4,7,8-HxCDF	29.955	18157180	0.50	1.1388	110.8	110.8	0.3956	0.3956	111	
1,2,3,4,7,8-HxCDF	29.982	7928914	1.25	0.8061	54.2	54.2	0.4314	0.4314	108	
D 13C-1,2,3,6,7,8-HxCDF	30.181	15851091	0.50	1.0803	102.0	102.0	0.4171	0.4171	102	
1,2,3,6,7,8-HxCDF	30.208	8437497	1.28	0.9818	54.2	54.2	0.3827	0.3827	108	
D 13C-2,3,4,6,7,8-HxCDF	31.153	15215282	0.50	0.9494	111.4	111.4	0.4745	0.4745	111	
2,3,4,6,7,8-HxCDF	31.180	8391885	1.25	1.0382	53.1	53.1	0.2652	0.2652	106	
D 13C-1,2,3,7,8,9-HxCDF	32.032	14101452	0.50	0.8670	113.0	113.0	0.5196	0.5196	113	
1,2,3,7,8,9-HxCDF	32.045	7849003	1.26	1.0321	53.9	53.9	0.2520	0.2520	108	
A Non-2,3,7,8-sub-HxCDF	29.689						0.3186	0.3186		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					215.4	215.4	0.3328	0.3328		
* 13C-1,2,3,7,8,9-HxCDD	31.845	14391578	1.22	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.366	14641010	1.24	0.9356	108.7	108.7	0.2980	0.2980	109	
1,2,3,4,7,8-HxCDD	31.392	6063837	1.24	0.8202	50.5	50.5	0.1717	0.1717	101	
D 13C-1,2,3,6,7,8-HxCDD	31.486	13596686	1.22	1.0416	90.7	90.7	0.2677	0.2677	90.70	
1,2,3,6,7,8-HxCDD	31.499	6711125	1.26	0.9367	52.7	52.7	0.1700	0.1700	105	
1,2,3,7,8,9-HxCDD	31.858	7146414	1.25	0.9905	51.1	51.1	0.1509	0.1509	102	
A Non-2,3,7,8-sub-HxCDD	30.321						0.1632	0.1632		
S Total HxCDD					154.3	154.3	0.1642	0.1642		
D 13C-1,2,3,4,6,7,8-HpCDF	33.554	11700999	0.42	0.7899	102.9	102.9	1.306	1.306	103	
1,2,3,4,6,7,8-HpCDF	33.554	8749010	1.04	1.4527	51.5	51.5	0.4150	0.4150	103	
D 13C-1,2,3,4,7,8,9-HpCDF	34.623	14722426	0.43	0.9093	112.5	112.5	1.135	1.135	113	
1,2,3,4,7,8,9-HpCDF	34.623	7949476	1.03	1.0585	51.0	51.0	0.4889	0.4889	102	
A Non-2,3,7,8-sub-HpCDF	34.101						0.4435	0.4435		
S Total HpCDF					102.5	102.5	0.4519	0.4519		
D 13C-1,2,3,4,6,7,8-HpCDD	34.332	11862275	1.05	0.7637	107.9	107.9	0.6020	0.6020	108	
1,2,3,4,6,7,8-HpCDD	34.344	6287221	1.04	1.0540	50.3	50.3	0.2477	0.2477	101	
A Non-2,3,7,8-sub-HpCDD	34.623						0.2477	0.2477		
S Total HpCDD					50.3	50.3	0.2477	0.2477		
D 13C-OCDD	36.650	18680750	0.89	0.6377	203.5	203.5	0.3247	0.3247	102	
OCDF	36.734	13183667	0.89	1.2965	108.9	108.9	0.1704	0.1704	109	
OCDD	36.650	10983642	0.86	1.1499	102.3	102.3	0.1502	0.1502	102	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	19-Aug-2020 21:23:08	ALS Bottle#:	2	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV 081920A CS-4 HRDXNL4_00093				
Misc. Info.:	19AU2010D5				
Operator ID:	SMA/AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	20-Aug-2020 14:54:26	Calib Date:	27-Jun-2020 17:43:35		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1027				
First Level Reviewer: shardaa		Date:	20-Aug-2020 14:52:00		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.475	17.475	0		7503707	1961960	3179	7947	617		
333.9339	17.475	17.475	0		9525218	2446961	3397	8492	720	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.976	16.976	0	0.971	10416507	2706178	4969	12422	545		
317.9389	16.976	16.976	0	0.971	13847389	3582126	2553	6382	1403	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.992	16.992	0	1.001	959175	244278	454	1135	538		
305.8987	16.992	16.992	0	1.001	1255224	315952	750	1875	421	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.689						454	1135			
305.8987	16.689						750	1875			
13C-2,3,7,8-TCDD											
331.9368	17.657	17.657	0	1.010	7662858	1876242	3179	7947	590		
333.9339	17.657	17.657	0	1.010	9449630	2309707	3397	8492	680	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.672	17.672	0	1.001	786129	179039	717	1792	250		
321.8936	17.672	17.672	0	1.001	1009786	237140	393	982	603	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.672	17.672	0	1.011	1674110	387552	546	1365	710		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						717	1792			
321.8936	17.135						393	982			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	21.824	21.824	0	1.249	11828204	2145073	3121	7802	687		
353.8970	21.824	21.824	0	1.249	7599694	1364900	2099	5247	650	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.838	21.838	0	1.001	6130378	1108436	1459	3647	760		
341.8567	21.838	21.838	0	1.001	3871579	705050	1139	2847	619	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.106	23.106	0	1.322	15007958	2517454	3121	7802	807		
353.8970	23.106	23.106	0	1.322	9577150	1624211	2099	5247	774	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.133	23.133	0	1.001	6289966	1065095	1459	3647	730		
341.8567	23.133	23.133	0	1.001	3997233	672371	1139	2847	590	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.555						243	607			
341.8567	19.555						390	975			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.370	22.583	-13	1.025	51360	7877	1459	3647	5		
341.8567	22.356	22.583	-14	1.024	40539	5613	1139	2847	5	1.27(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.815	23.815	0	1.363	8390969	1332906	1403	3507	950		
369.8919	23.815	23.815	0	1.363	5244976	843437	1133	2832	744	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.843	23.843	0	1.001	4297810	678981	718	1795	946		
357.8516	23.843	23.843	0	1.001	2666471	421996	386	965	1093	1.61(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.772						718	1795			
357.8516	22.772						386	965			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.955	29.955	0	0.941	6012178	890074	2199	5497	405		
385.8610	29.955	29.955	0	0.941	12145002	1778550	4028	10070	442	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.982	29.982	0	1.001	4407897	645745	2026	5065	319		
375.8178	29.982	29.982	0	1.001	3521017	513934	1686	4215	305	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.181	30.181	0	0.948	5279907	817508	2199	5497	372		
385.8610	30.181	30.181	0	0.948	10571184	1652477	4028	10070	410	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.208	30.208	0	1.001	4731153	751470	2026	5065	371		
375.8178	30.208	30.208	0	1.001	3706344	590560	1686	4215	350	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.153	31.153	0	0.978	5064846	1153653	2199	5497	525		
385.8610	31.153	31.153	0	0.978	10150436	2216686	4028	10070	550	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.180	31.180	0	1.001	4668969	1040432	2026	5065	514		
375.8178	31.166	31.180	-1	1.000	3722916	818391	1686	4215	485	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.032	32.032	0	1.006	4696438	1186260	2199	5497	539		
385.8610	32.032	32.032	0	1.006	9405014	2382397	4028	10070	591	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.045	32.045	0	1.000	4382879	1078108	2026	5065	532		
375.8178	32.045	32.045	0	1.000	3466124	856932	1686	4215	508	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.689						2026	5065			
375.8178	29.689						1686	4215			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.845	31.845	0		7922374	1897873	2089	5222	909		
403.8529	31.845	31.845	0		6469204	1557334	1765	4412	882	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.366	31.366	0	0.985	8116281	2001690	2089	5222	958		
403.8529	31.366	31.366	0	0.985	6524729	1602641	1765	4412	908	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.392	31.392	0	1.001	3358395	835763	1043	2607	801		
391.8127	31.392	31.392	0	1.001	2705442	652192	987	2467	661	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.486	31.486	0	0.989	7467072	1745554	2089	5222	836		
403.8529	31.486	31.486	0	0.989	6129614	1441908	1765	4412	817	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.499	31.499	0	1.000	3745909	857547	1043	2607	822		
391.8127	31.499	31.499	0	1.000	2965216	688138	987	2467	697	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.858	31.858	0	1.016	3971283	974651	1043	2607	934		
391.8127	31.858	31.858	0	1.016	3175131	764866	987	2467	775	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.321						1043	2607			
391.8127	30.321						987	2467			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.554	33.554	0	1.054	3459593	1079733	4031	10077	268		
419.8220	33.542	33.554	-1	1.053	8241406	2552503	10227	25567	250	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.554	33.554	0	1.000	4466547	1430481	4591	11477	312		
409.7789	33.554	33.554	0	1.000	4282463	1385371	4168	10420	332	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.623	34.623	0	1.087	4427965	1305475	4031	10077	324		
419.8220	34.623	34.623	0	1.087	10294461	2925685	10227	25567	286	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.623	34.623	0	1.000	4034302	1169065	4591	11477	255		
409.7789	34.623	34.623	0	1.000	3915174	1155140	4168	10420	277	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.101						4591	11477			
409.7789	34.101						4168	10420			

Report Date: 20-Aug-2020 14:54:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.332	34.332	0	1.078	6088852	1842356	3357	8392	549		
437.8140	34.332	34.332	0	1.078	5773423	1702778	2997	7492	568	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.344	34.344	0	1.000	3208606	979154	1885	4712	519		
425.7737	34.344	34.344	0	1.000	3078615	941163	1817	4542	518	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.623						1885	4712			
425.7737	34.623						1817	4542			
13C-OCDD											
469.7779	36.650	36.650	0	1.151	8783256	2191576	1169	2922	1875		
471.7750	36.638	36.650	-1	1.151	9897494	2476771	1693	4232	1463	0.89(0.76-1.02)	
OCDF											
441.7428	36.734	36.734	0	1.002	6215960	1581496	890	2225	1777		
443.7399	36.734	36.734	0	1.002	6967707	1840393	1173	2932	1569	0.89(0.76-1.02)	
OCDD											
457.7377	36.650	36.650	0	1.000	5088537	1311442	934	2335	1404		
459.7348	36.650	36.650	0	1.000	5895105	1525963	679	1697	2247	0.86(0.76-1.02)	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 20-Aug-2020 14:54:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d		
Injection Date:	19-Aug-2020 21:23:08	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

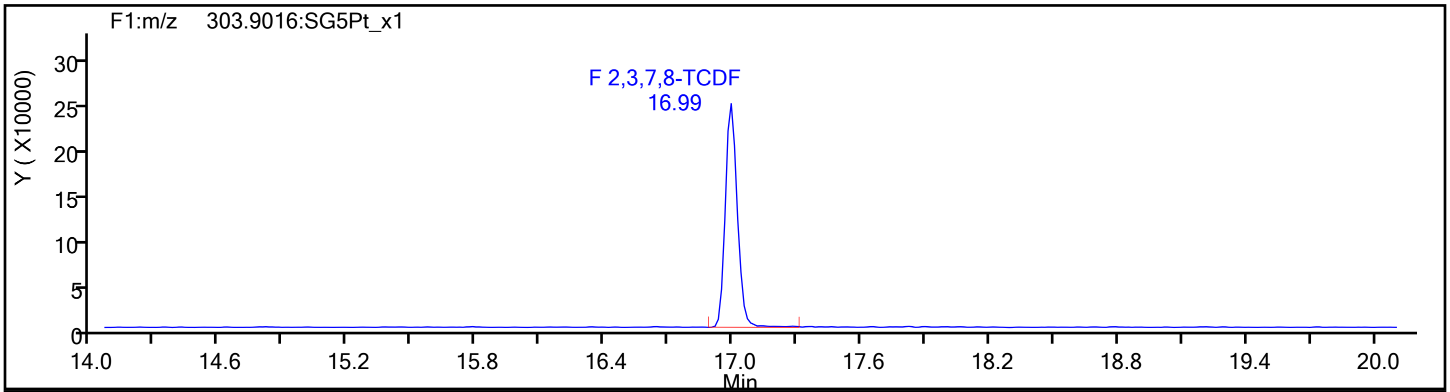

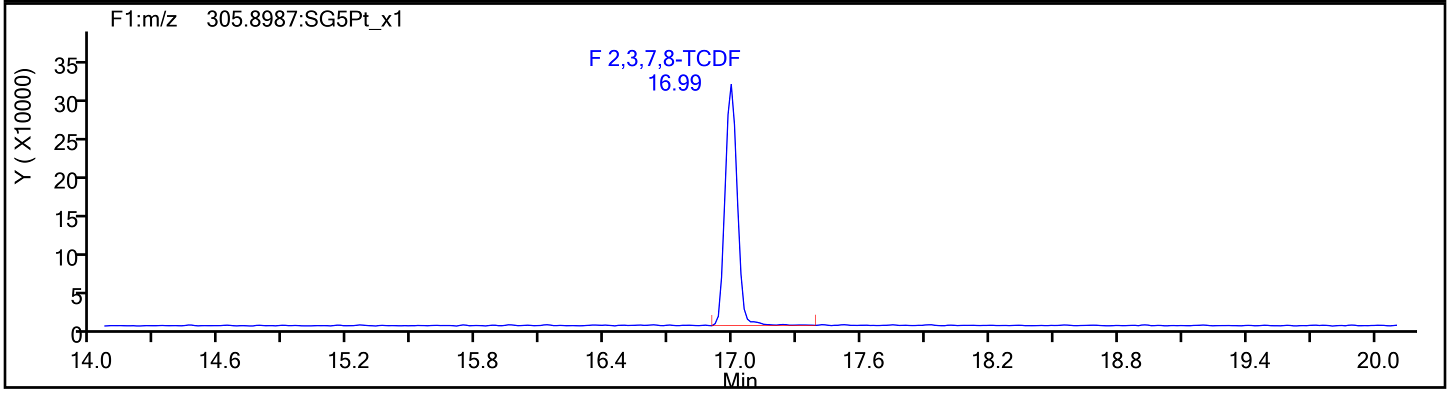

TCDF Standards

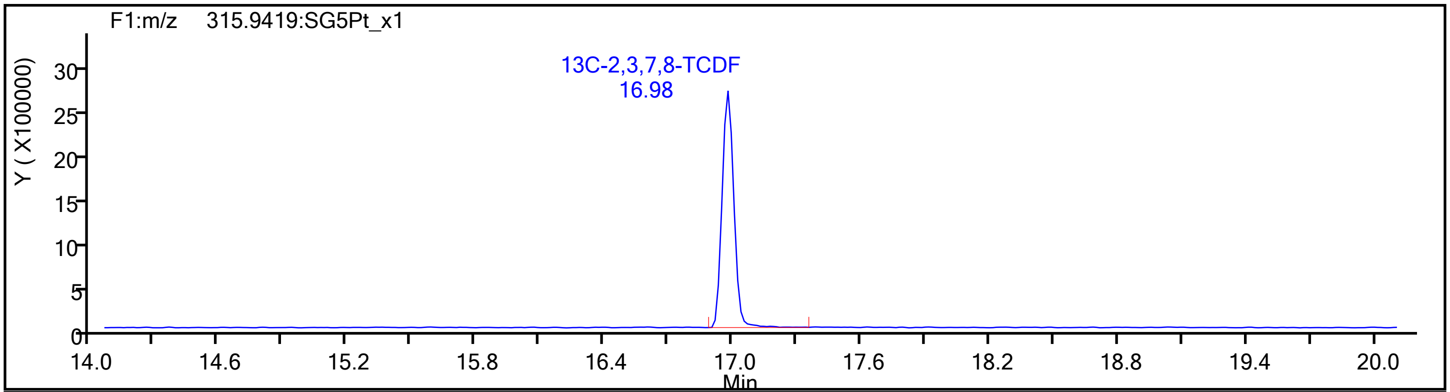

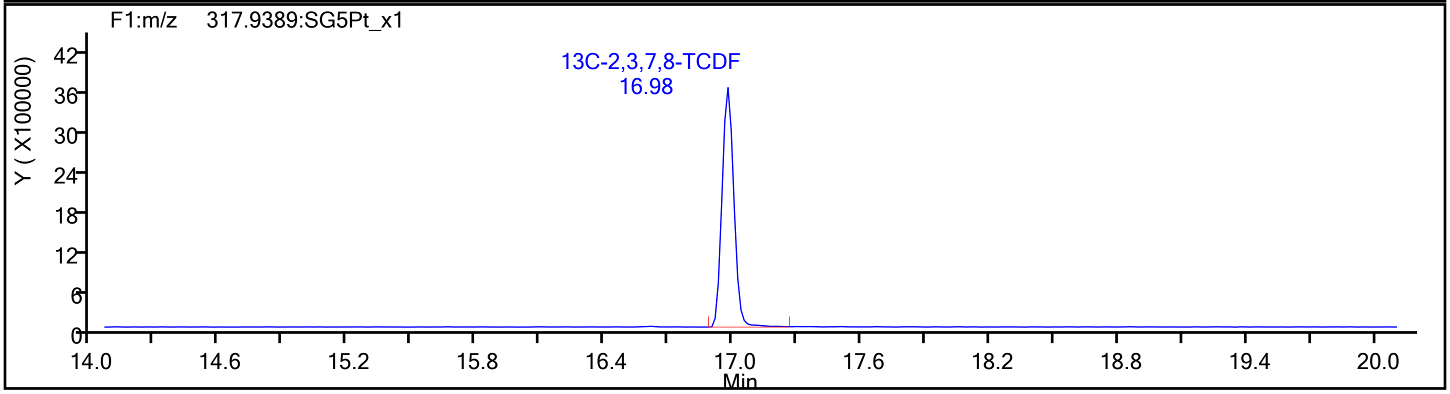

Report Date: 20-Aug-2020 14:54:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d
Injection Date: 19-Aug-2020 21:23:08
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

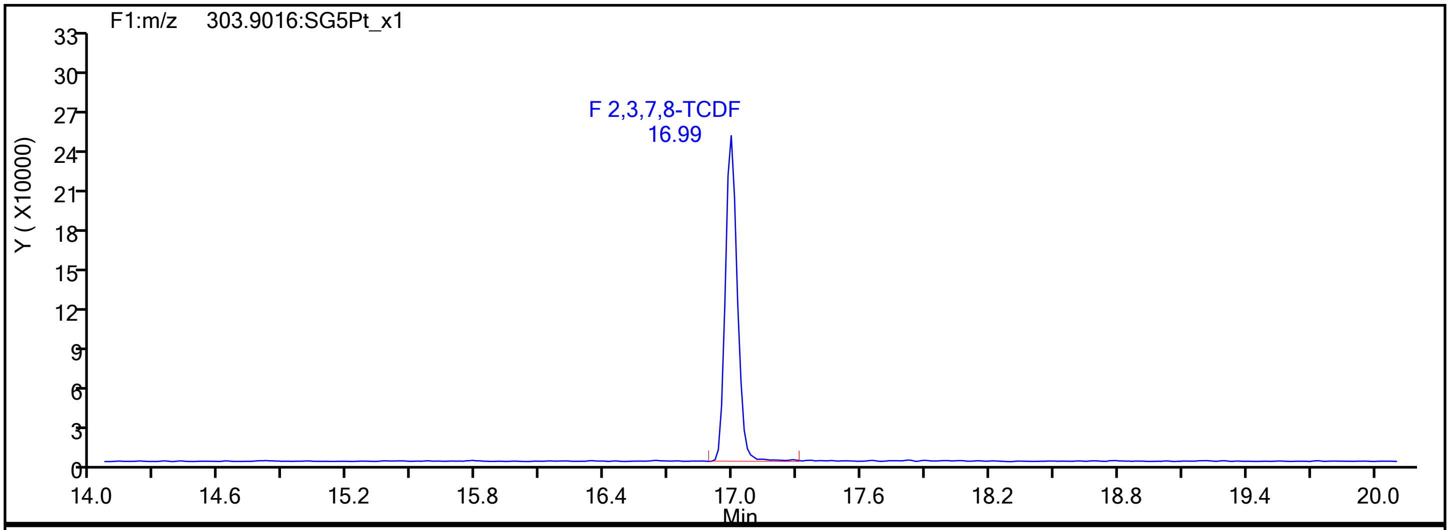

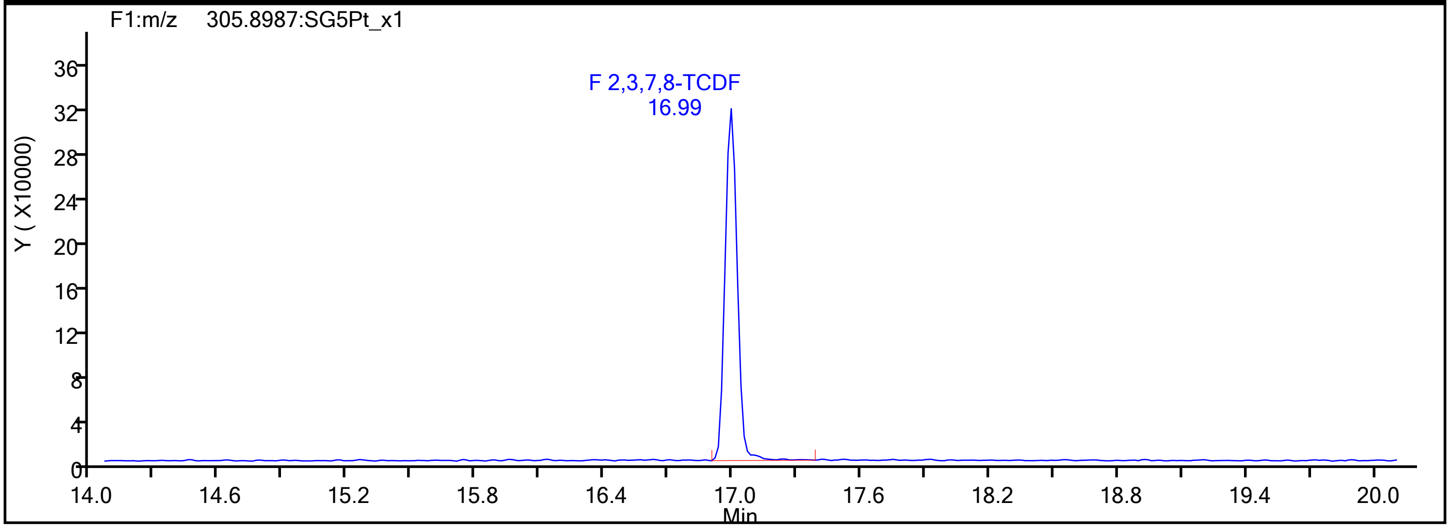

TCDF Interference Mass

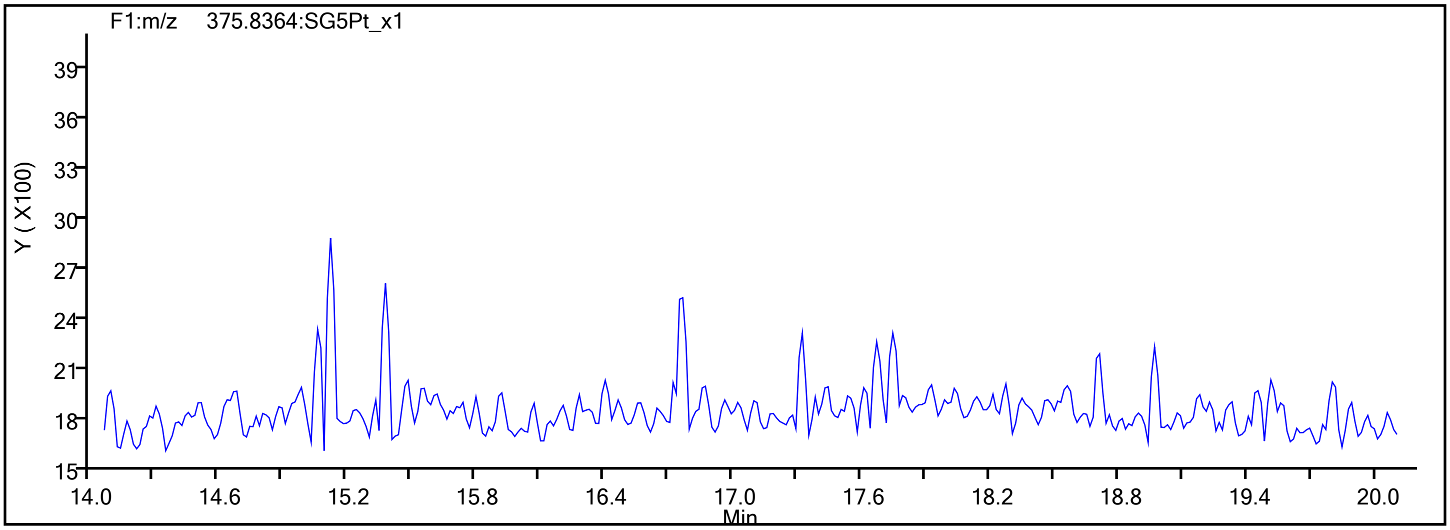

Report Date: 20-Aug-2020 14:54:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d
Injection Date: 19-Aug-2020 21:23:08
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

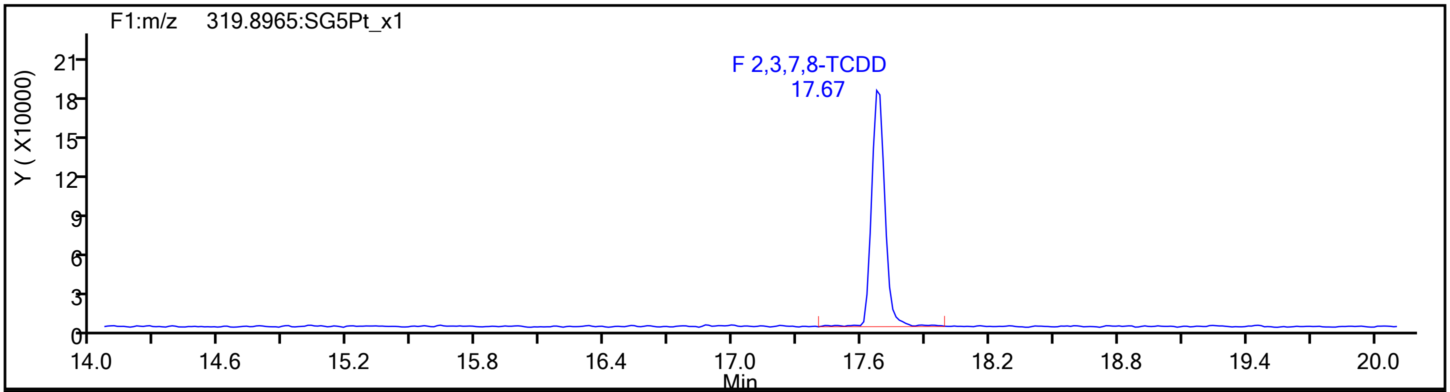

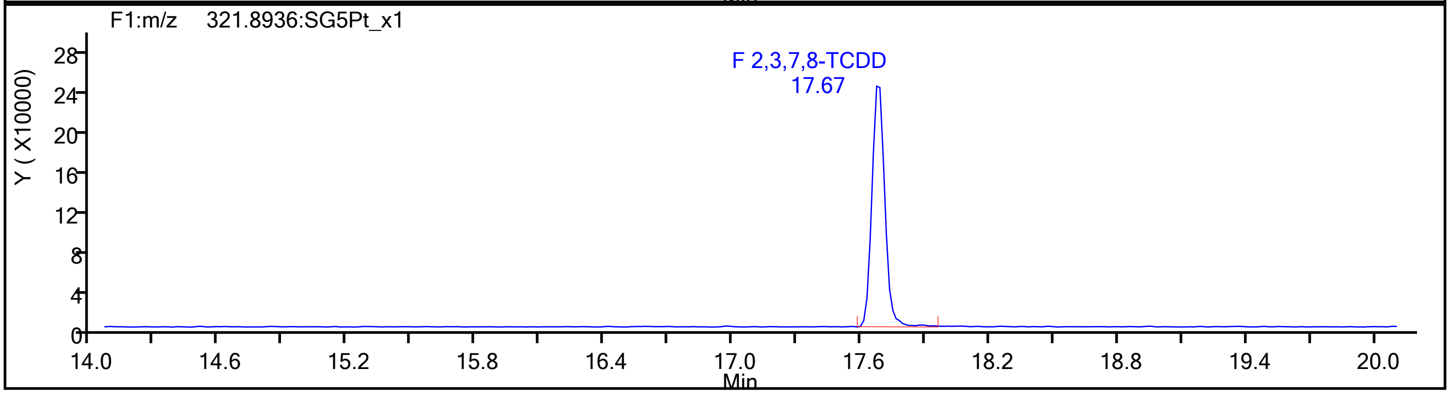

TCDD Standards

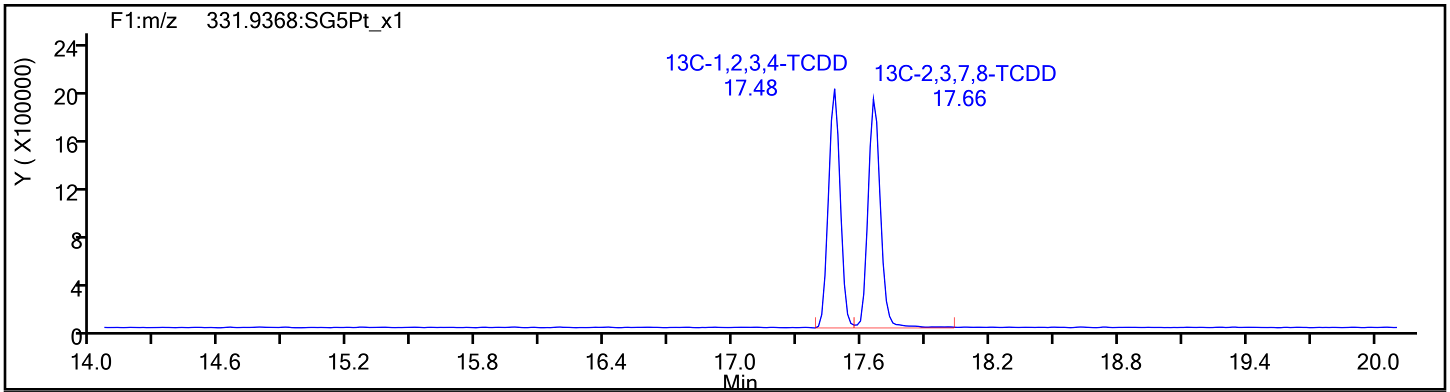

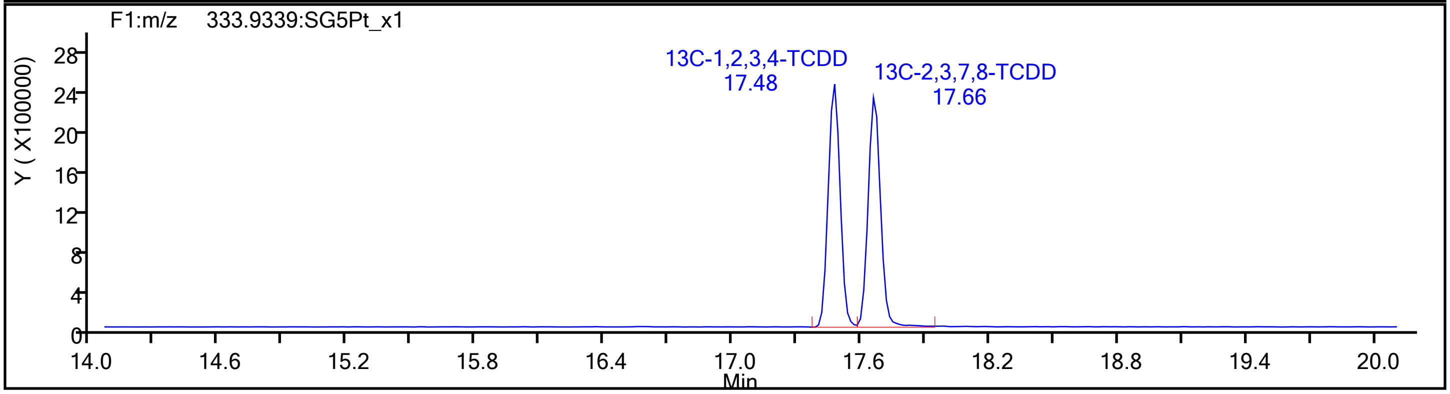

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

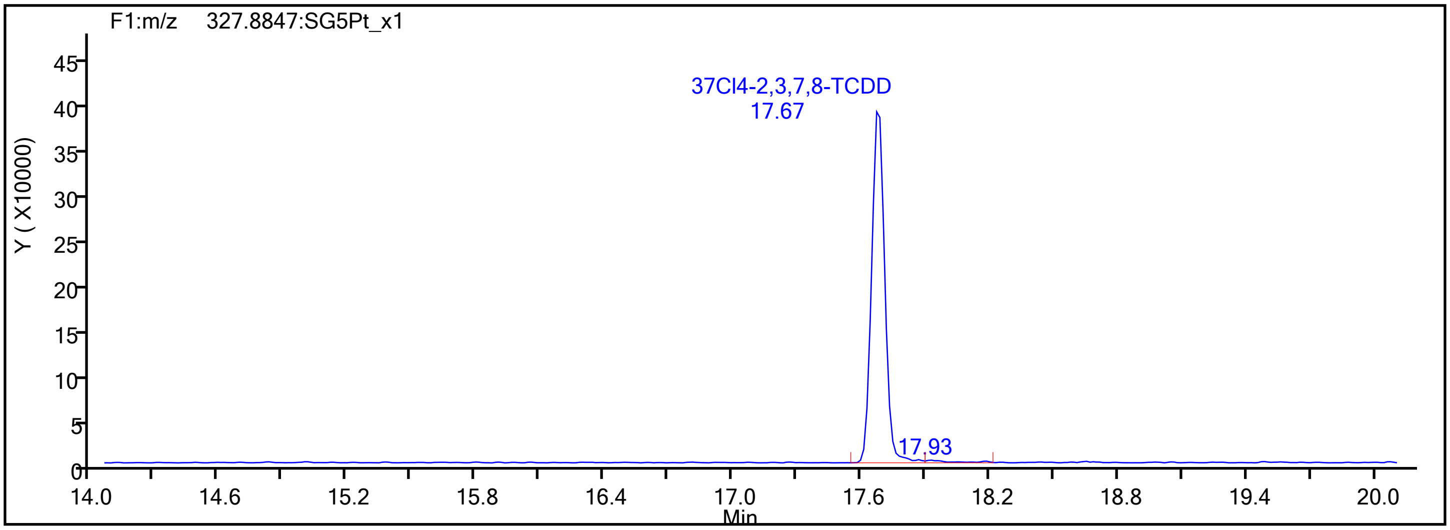

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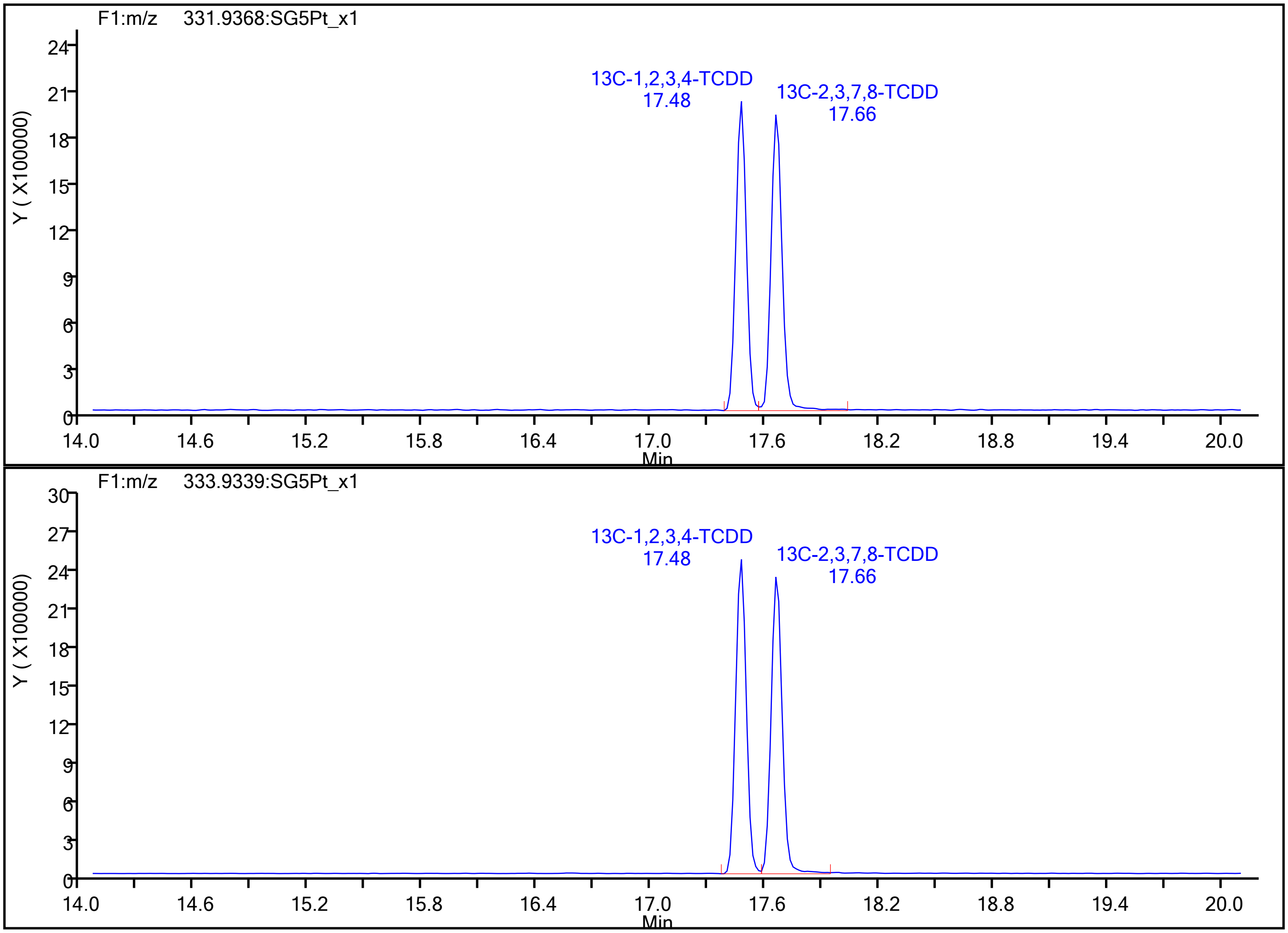

Report Date: 20-Aug-2020 14:54:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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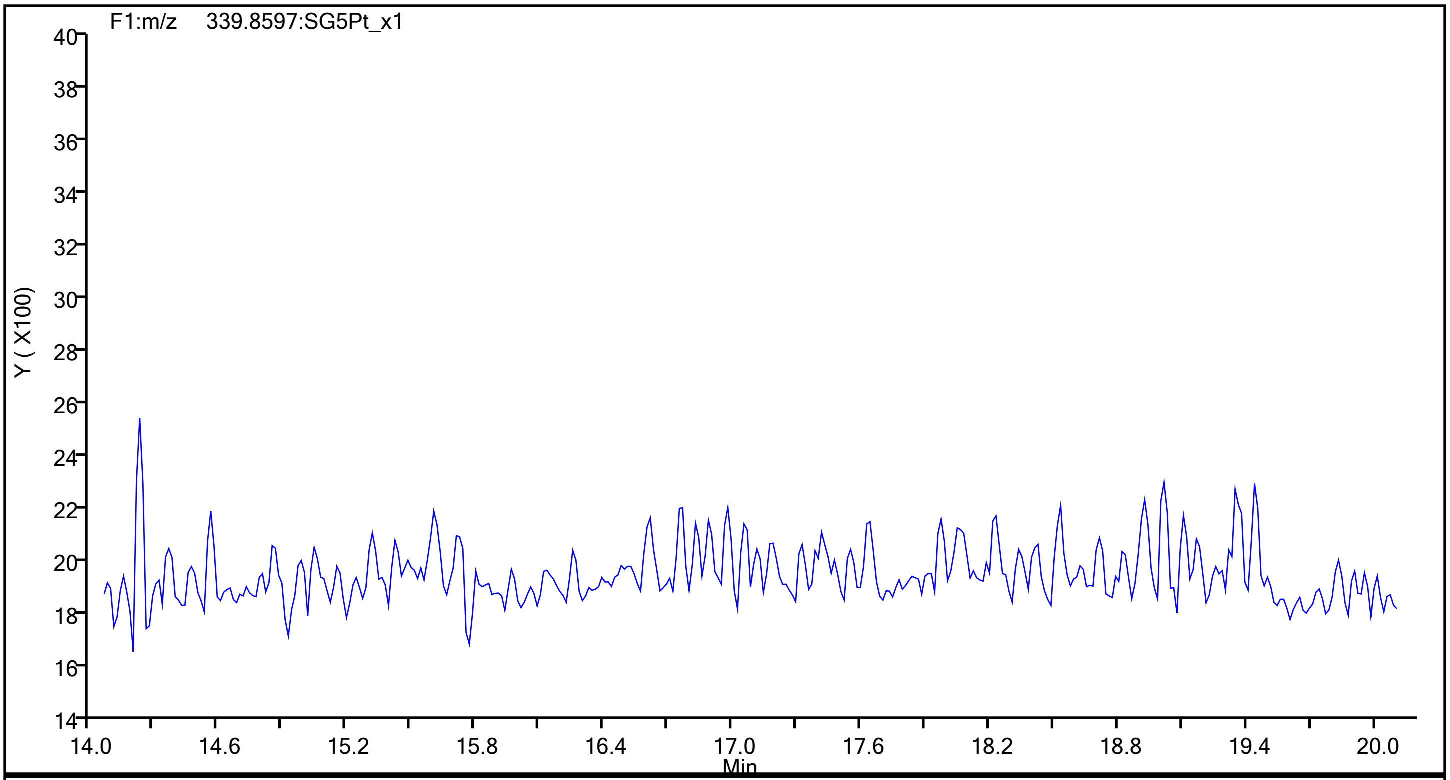

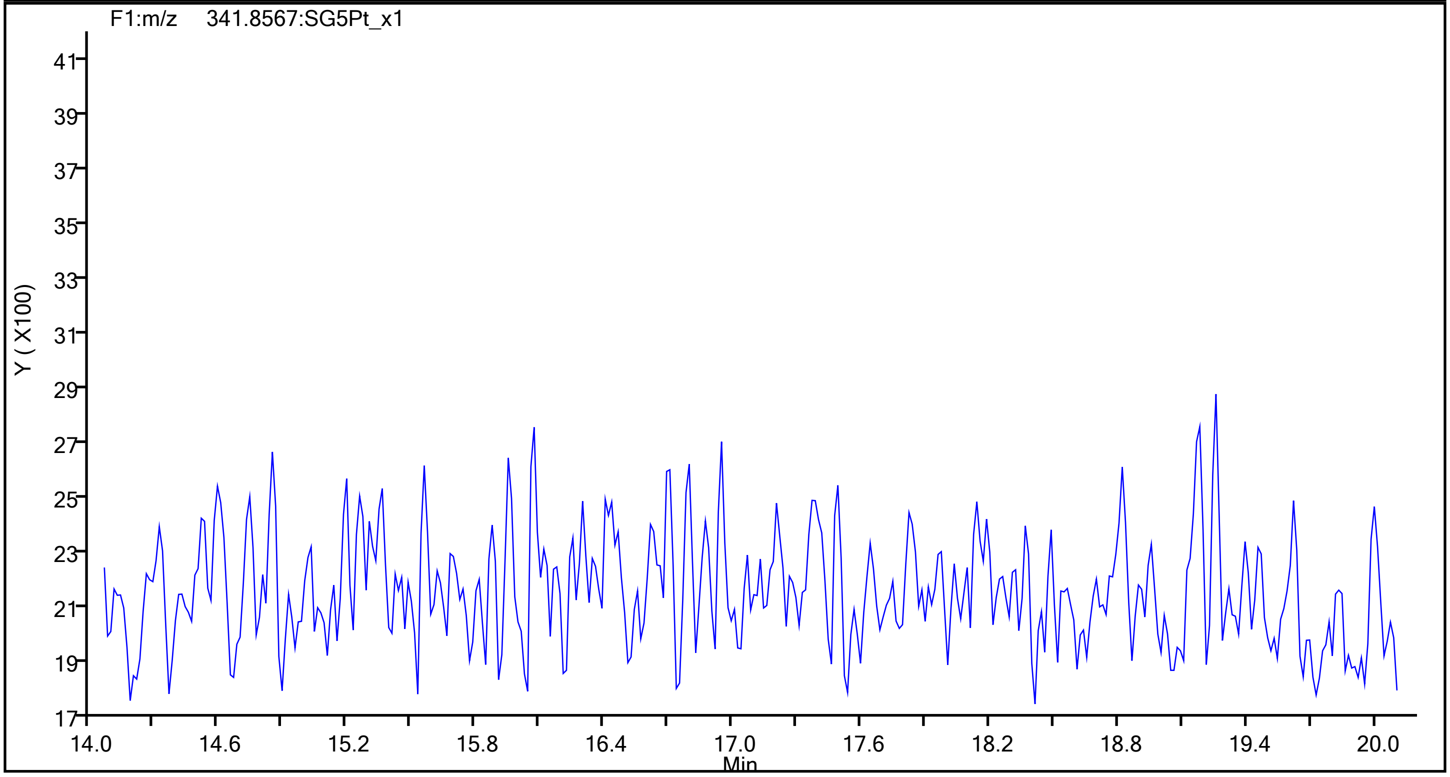

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Eurofins TestAmerica, Sacramento

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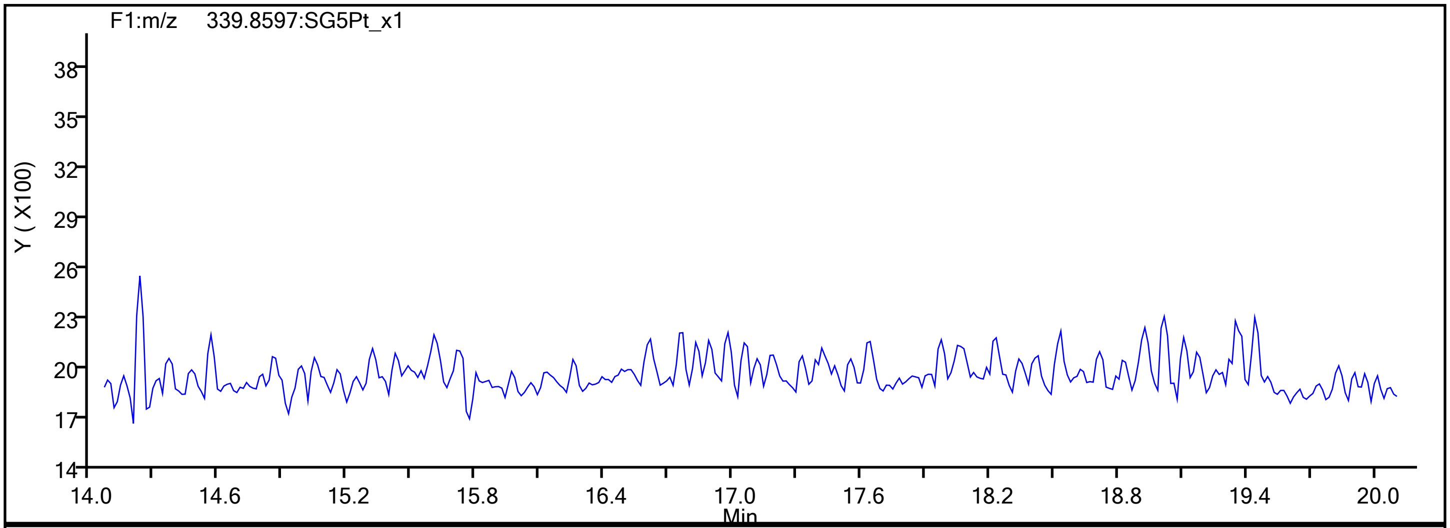

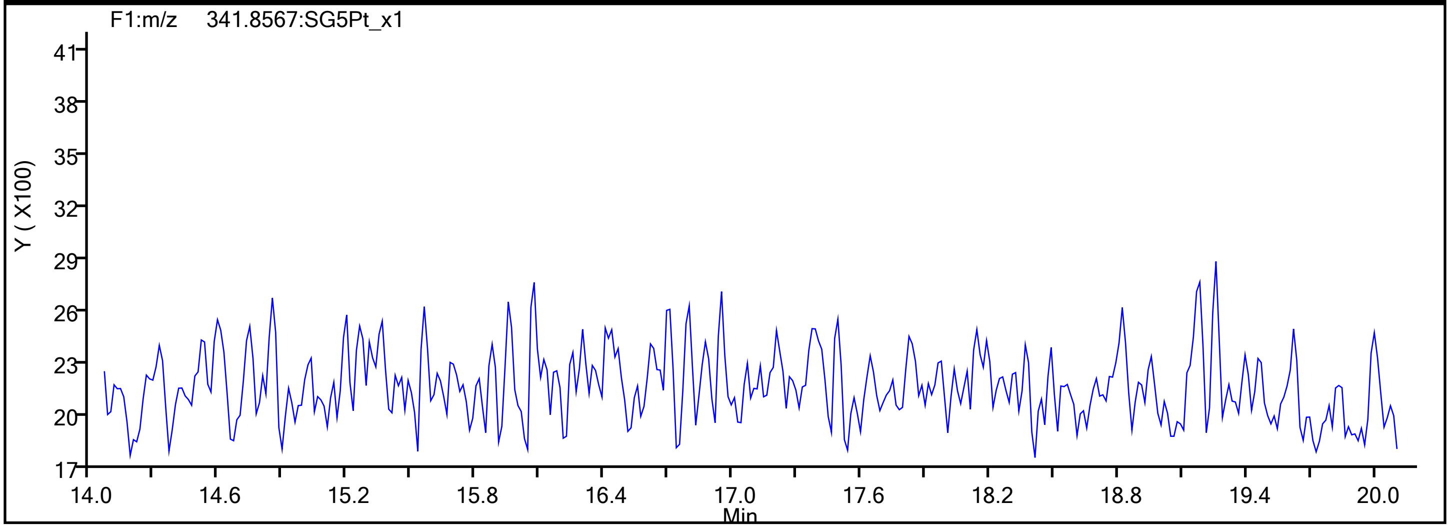

F1 PeCDFs Interference Mass

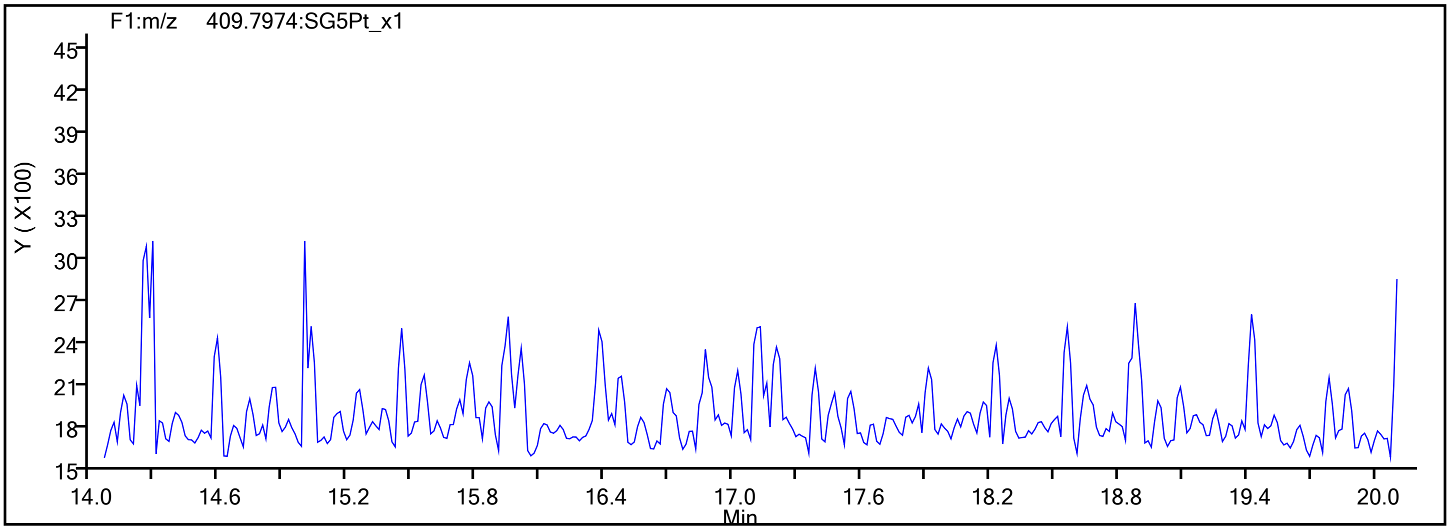

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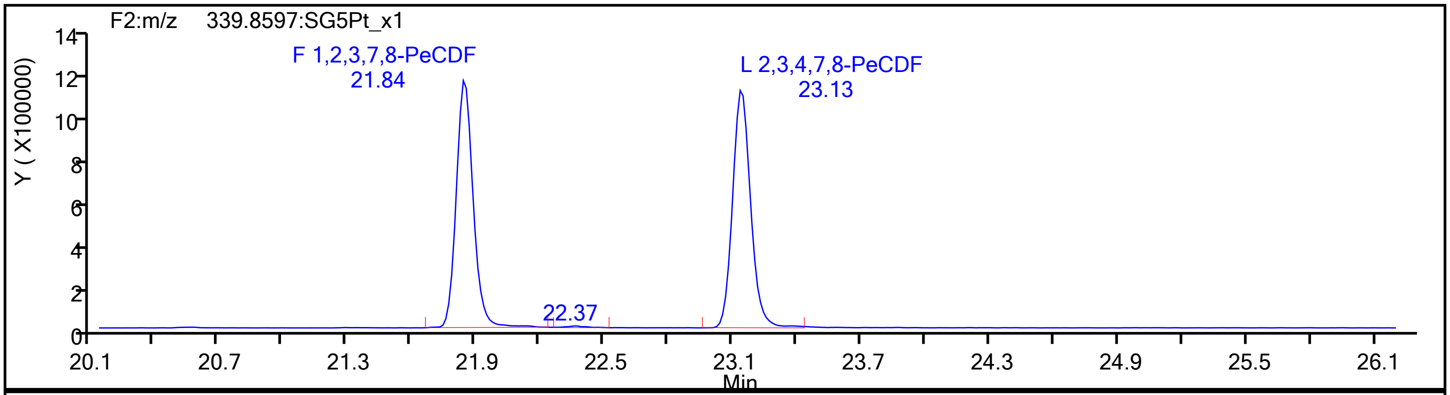

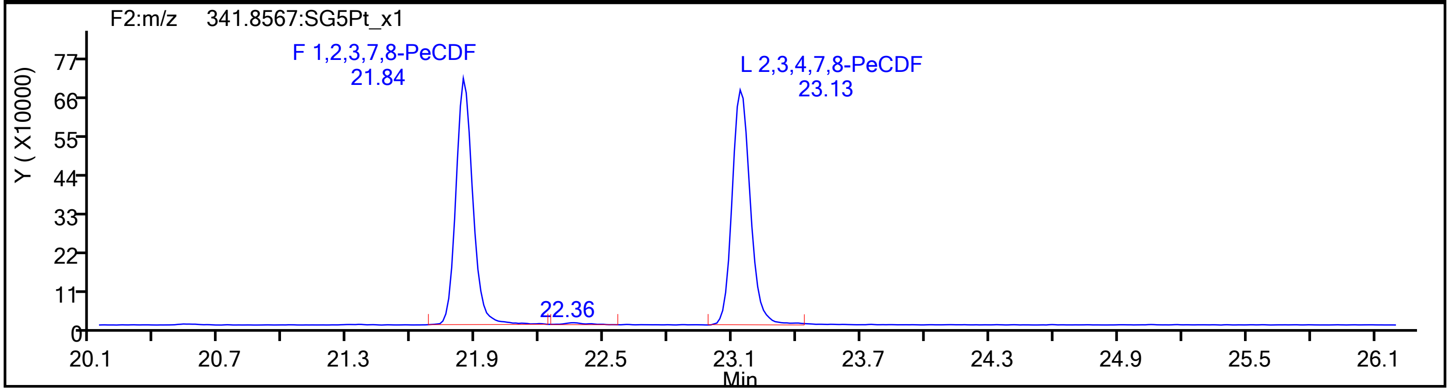

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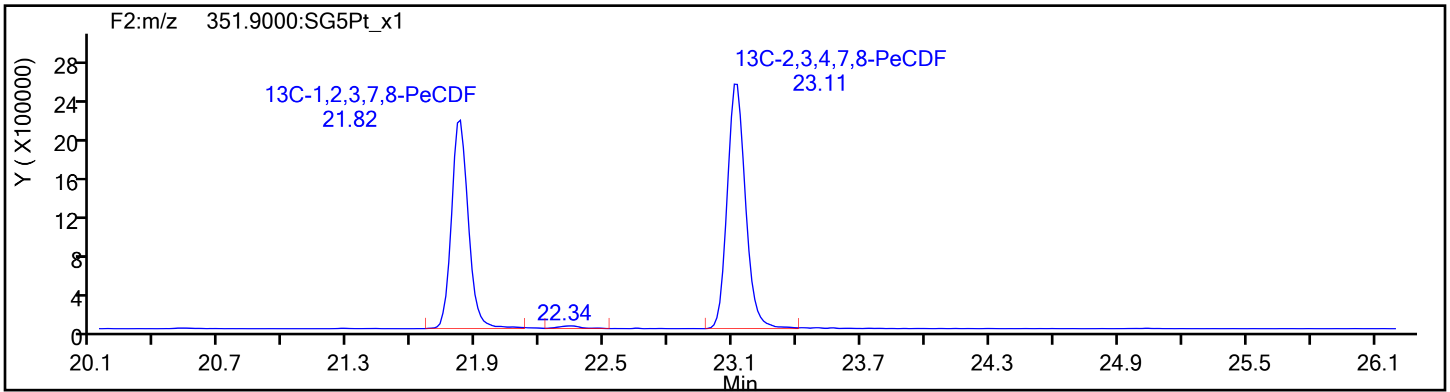

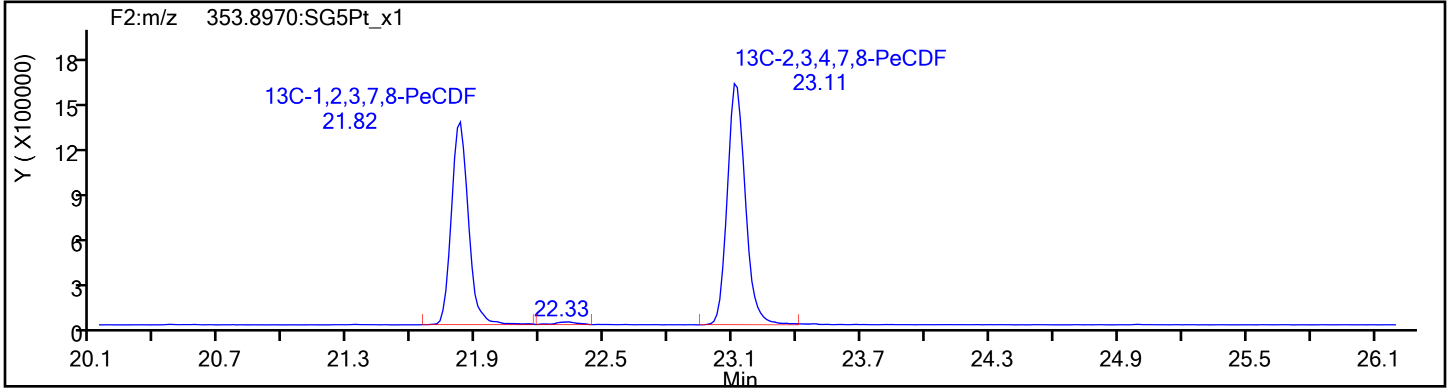

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Eurofins TestAmerica, Sacramento

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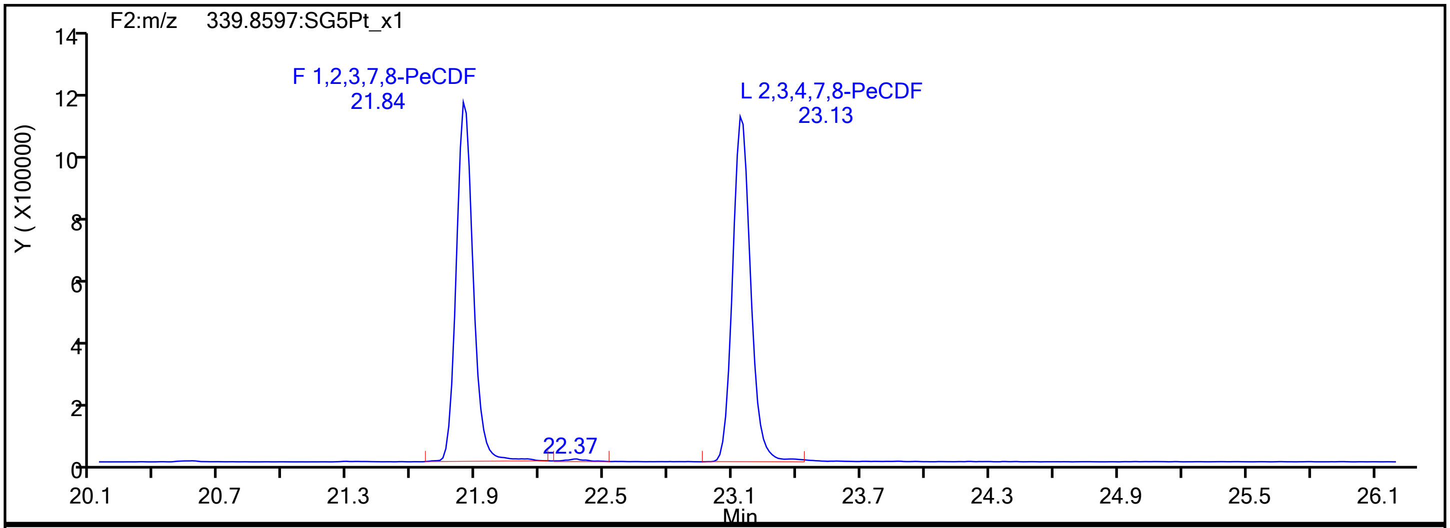

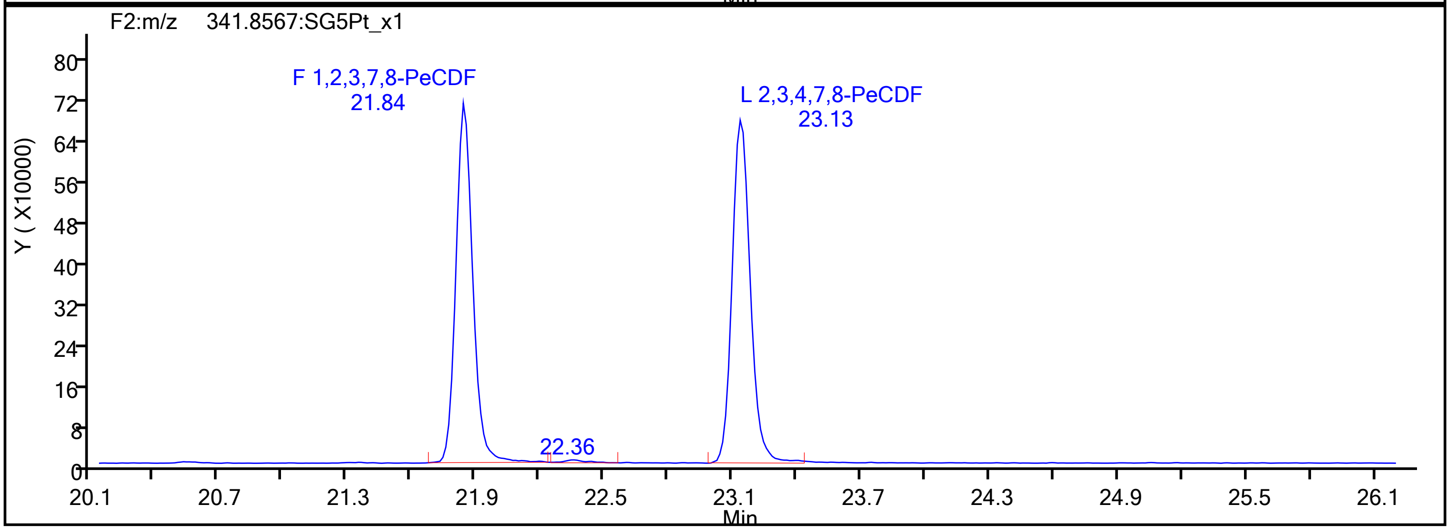

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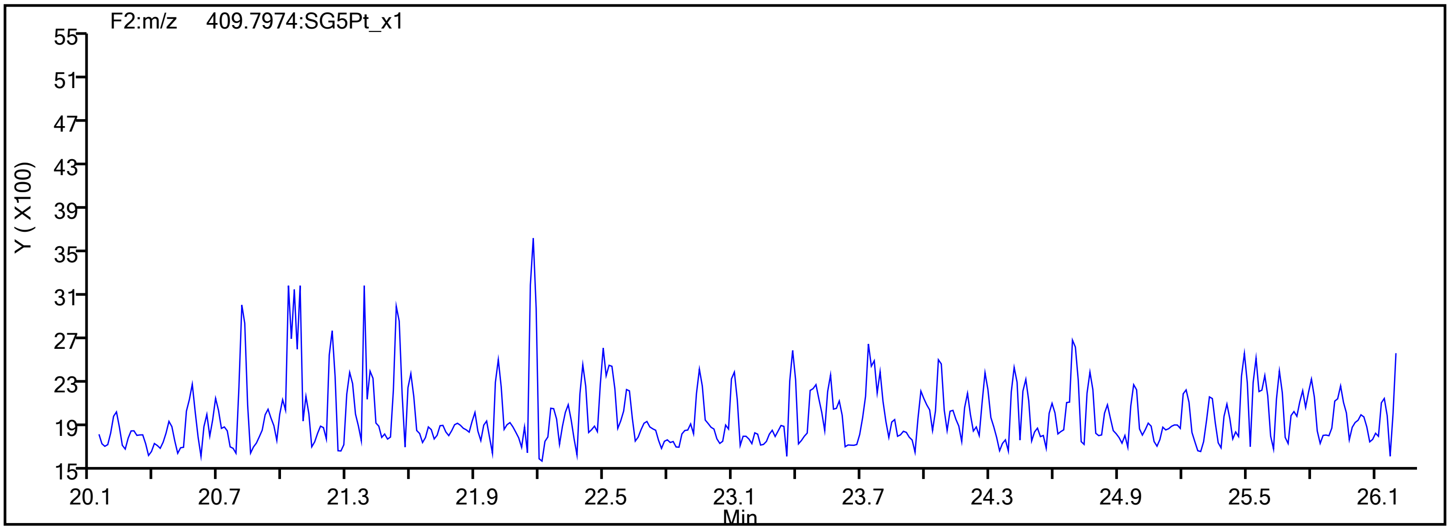

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Eurofins TestAmerica, Sacramento

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PeCDD

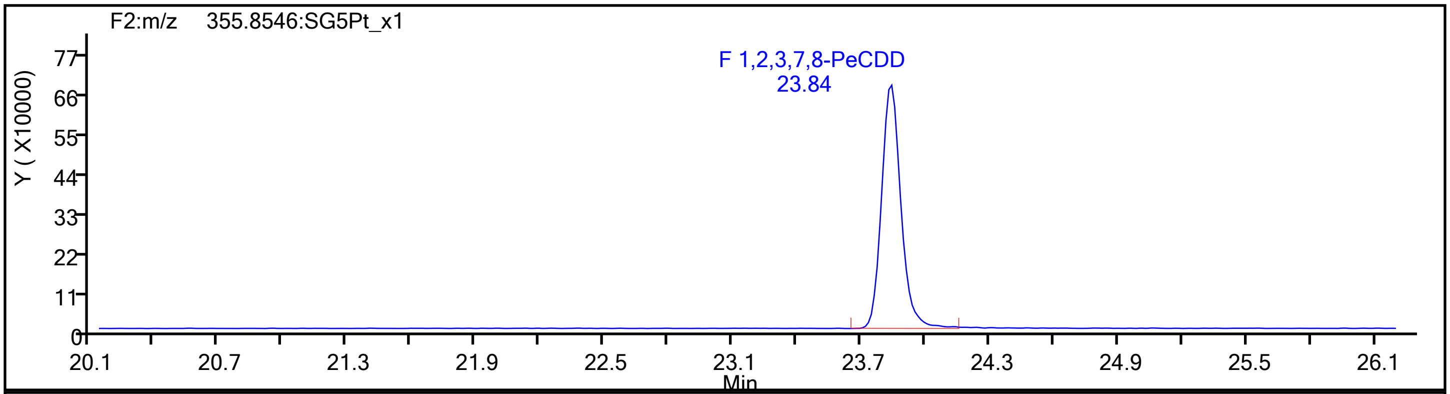

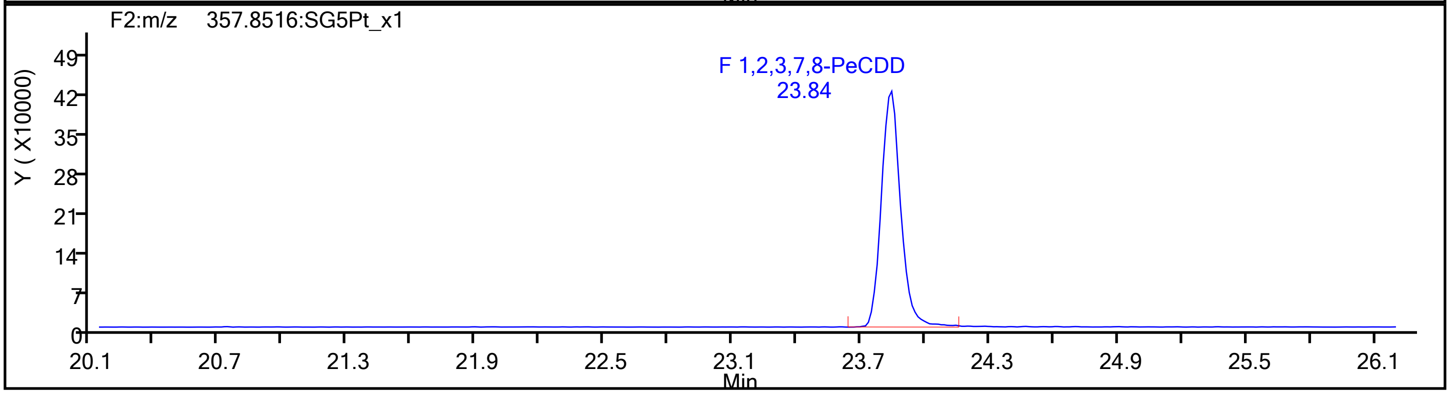

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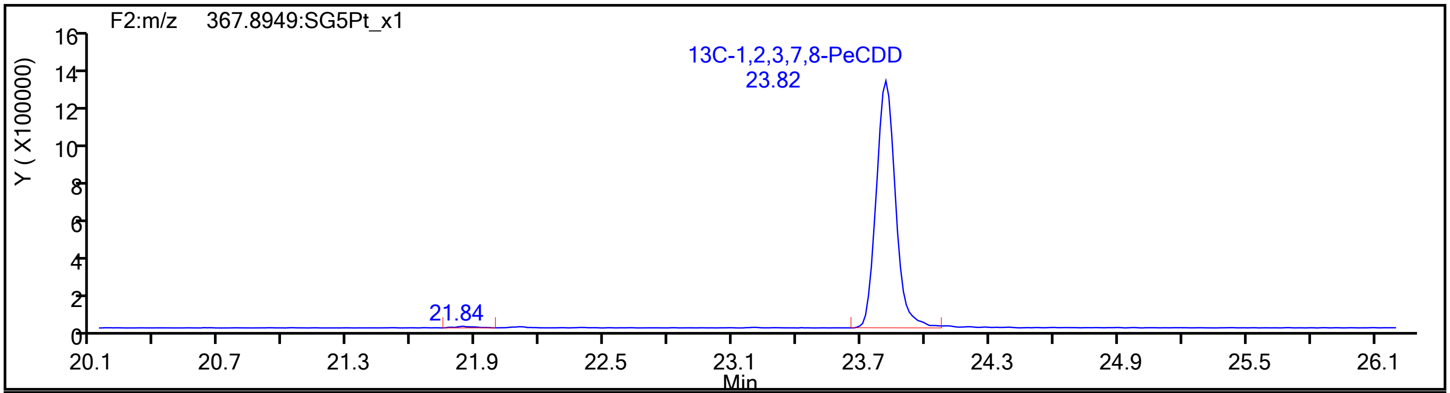

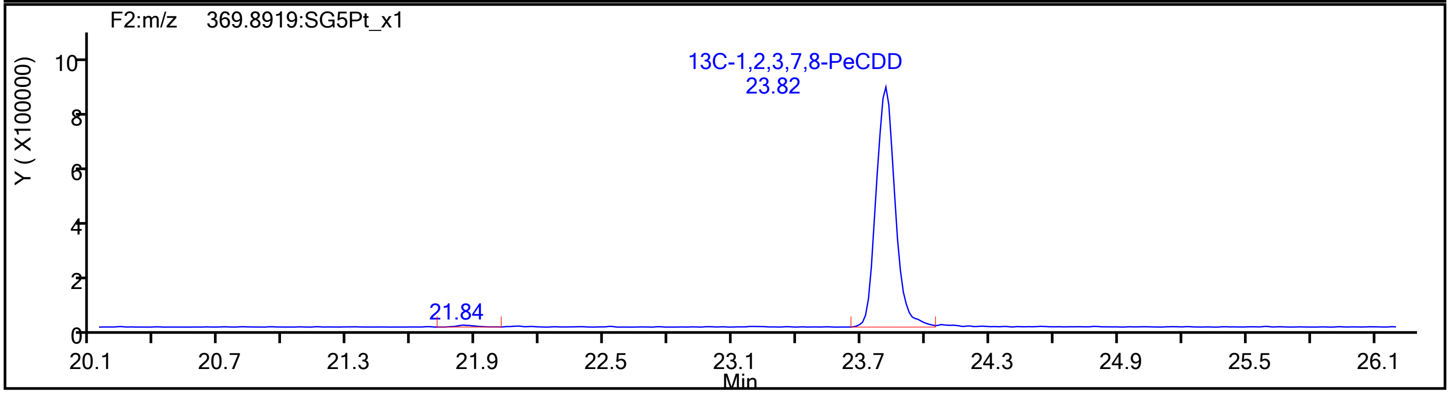

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Eurofins TestAmerica, Sacramento

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HxCDF

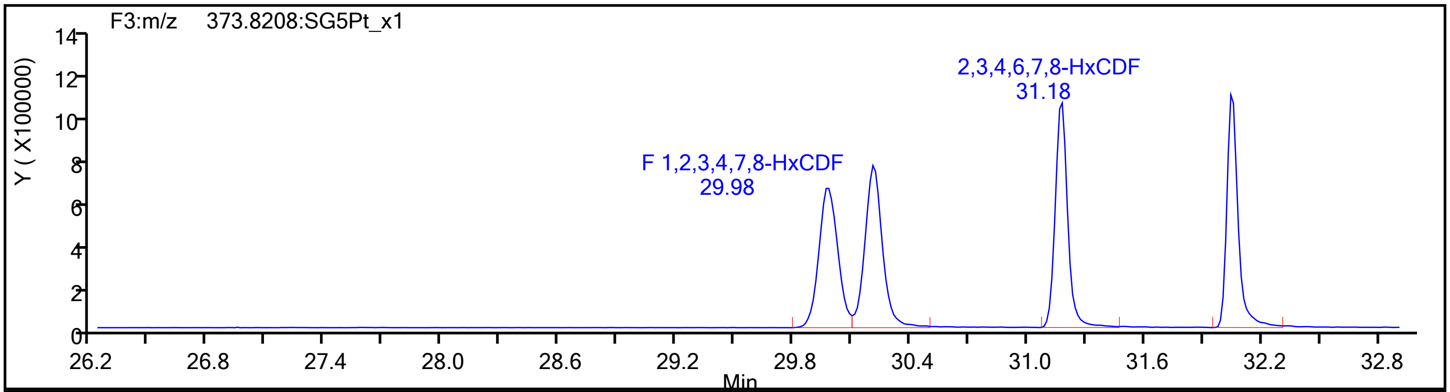

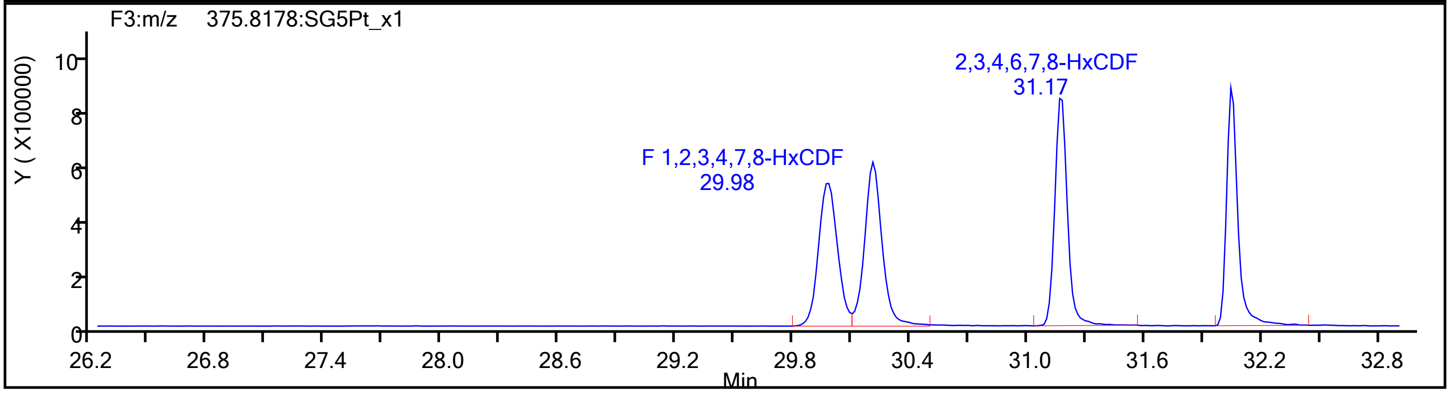

HxCDF Standards

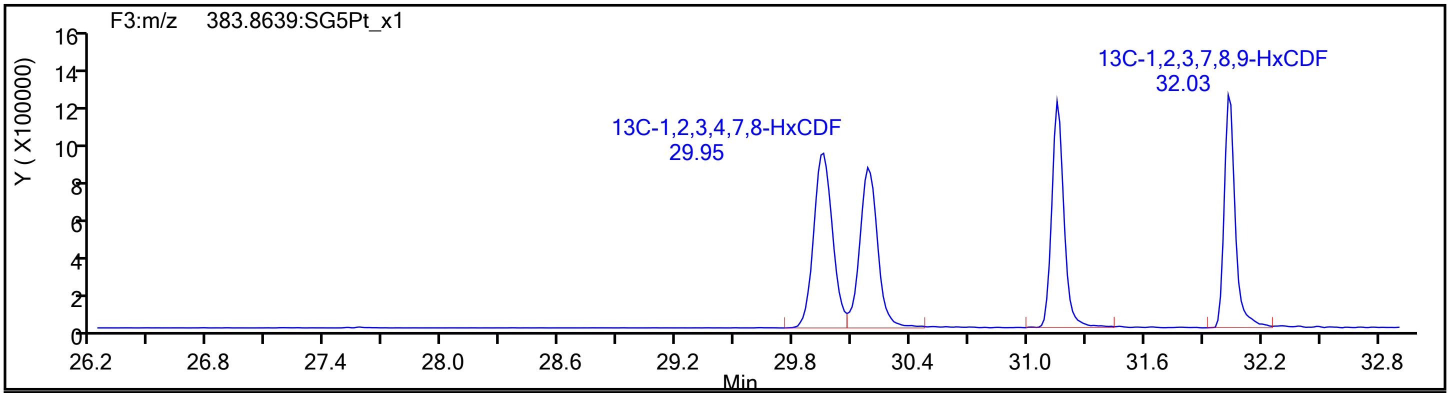

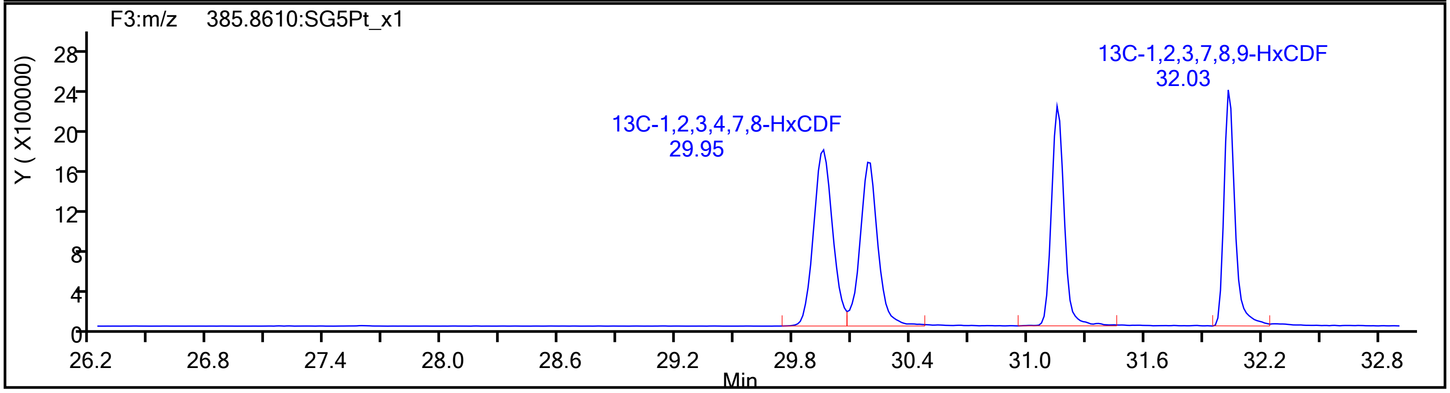

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Eurofins TestAmerica, Sacramento

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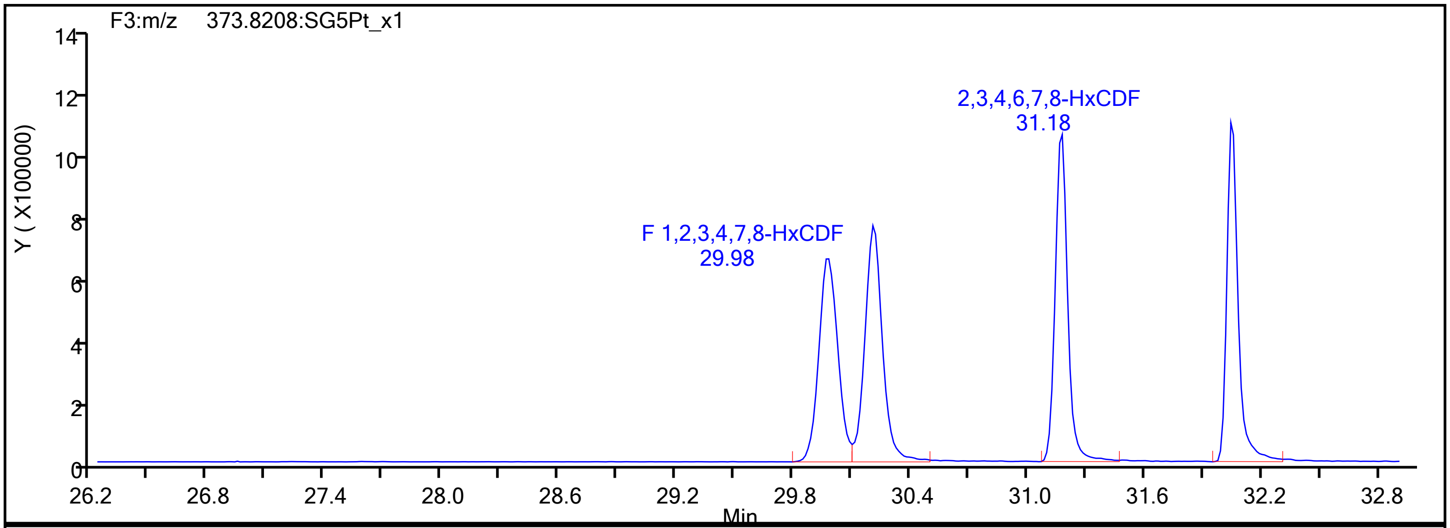

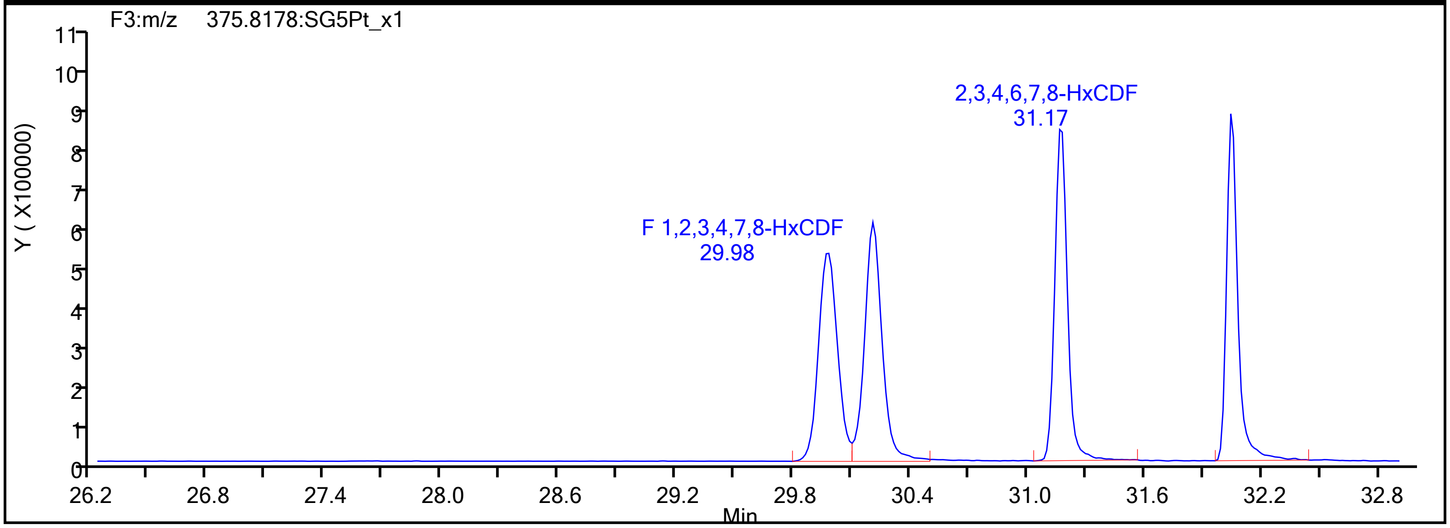

HxCDF Interference Mass

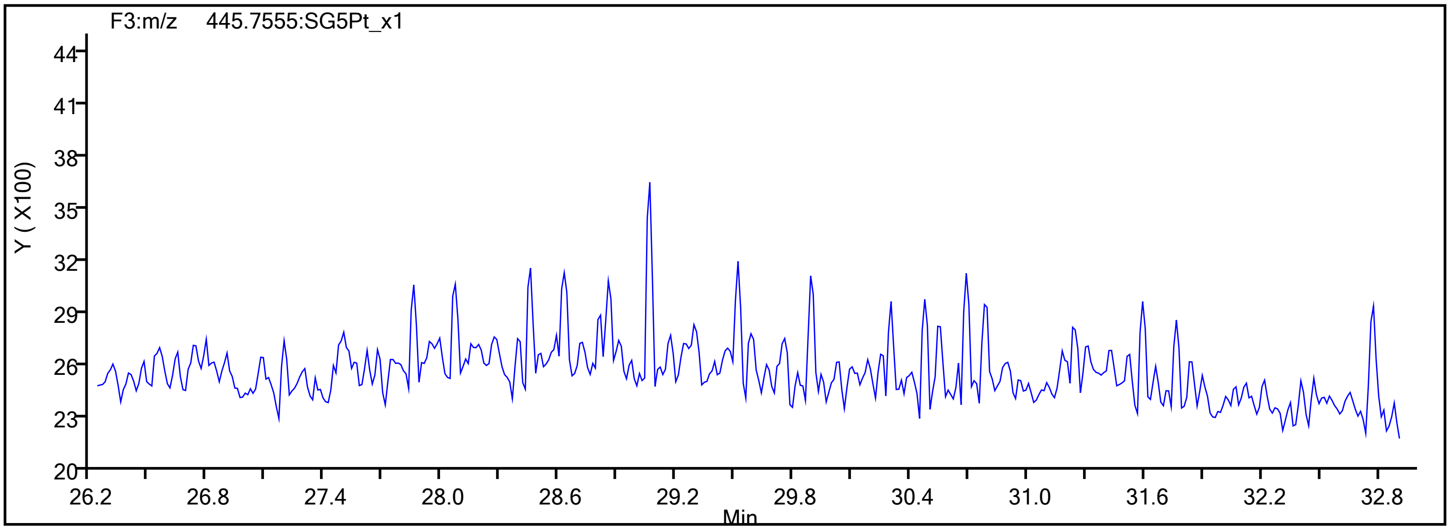

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HxCDD

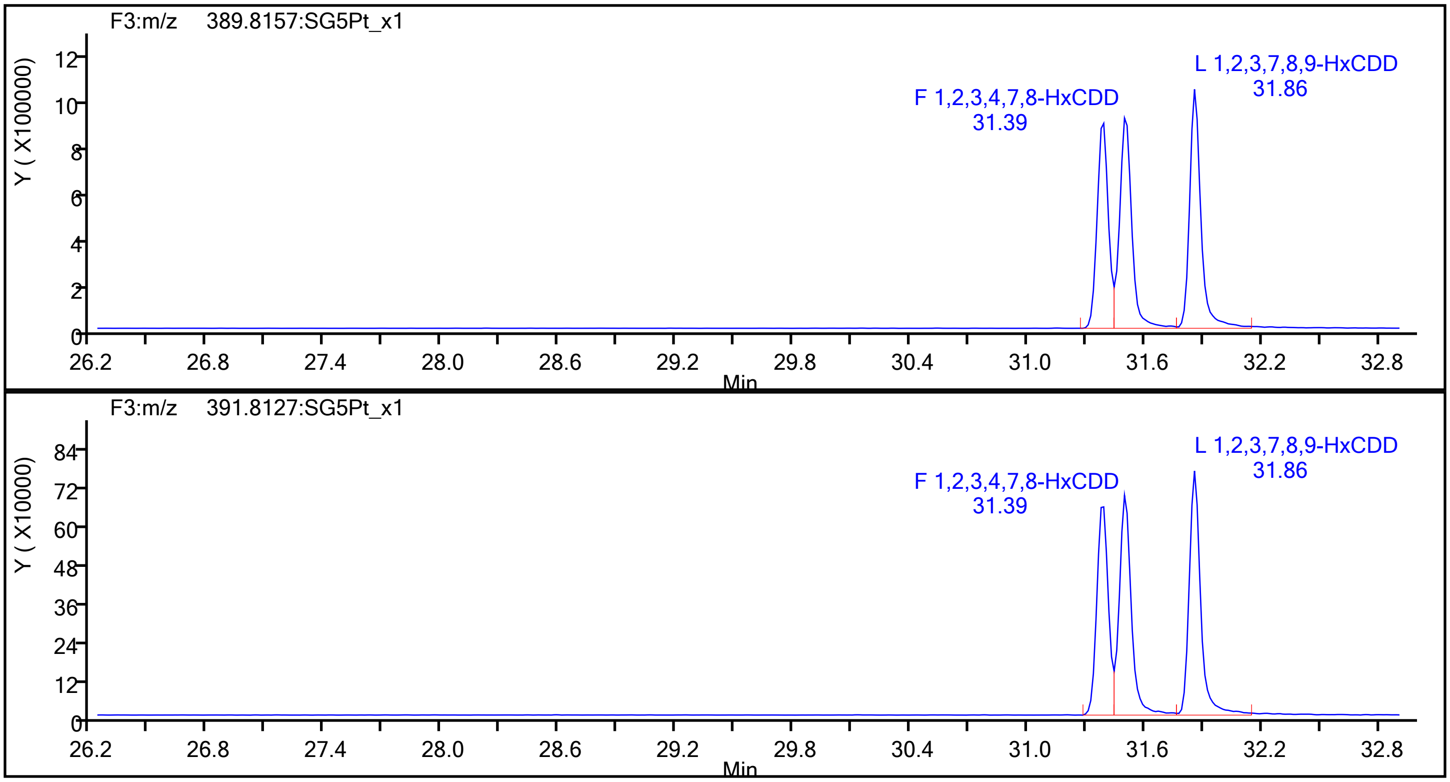

HxCDD Standards

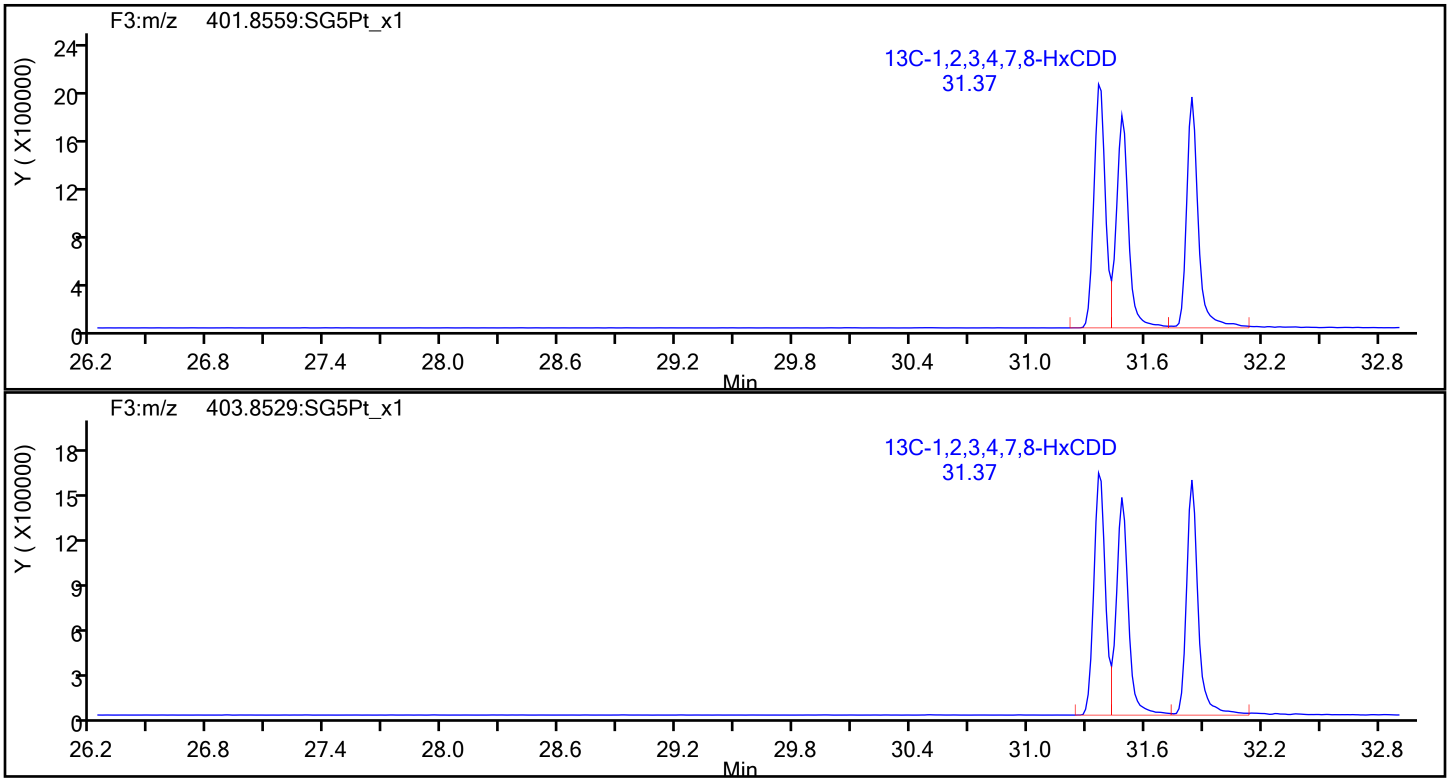

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Eurofins TestAmerica, Sacramento

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HpCDF

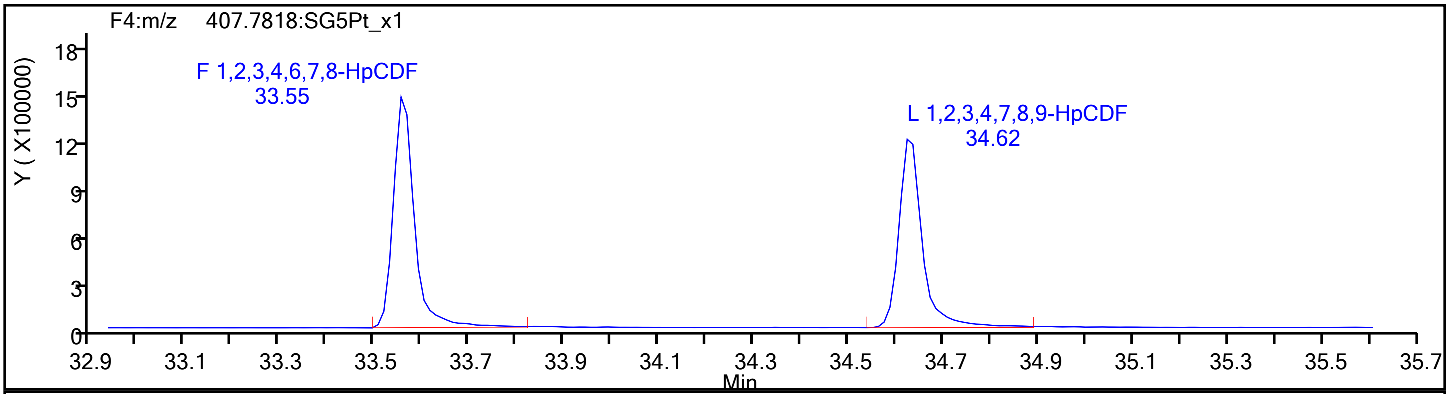

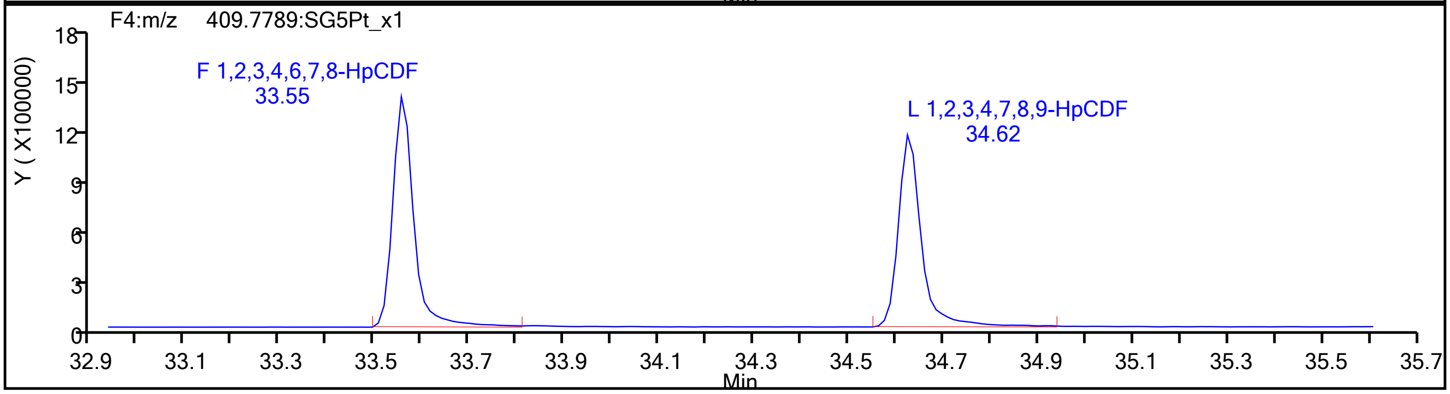

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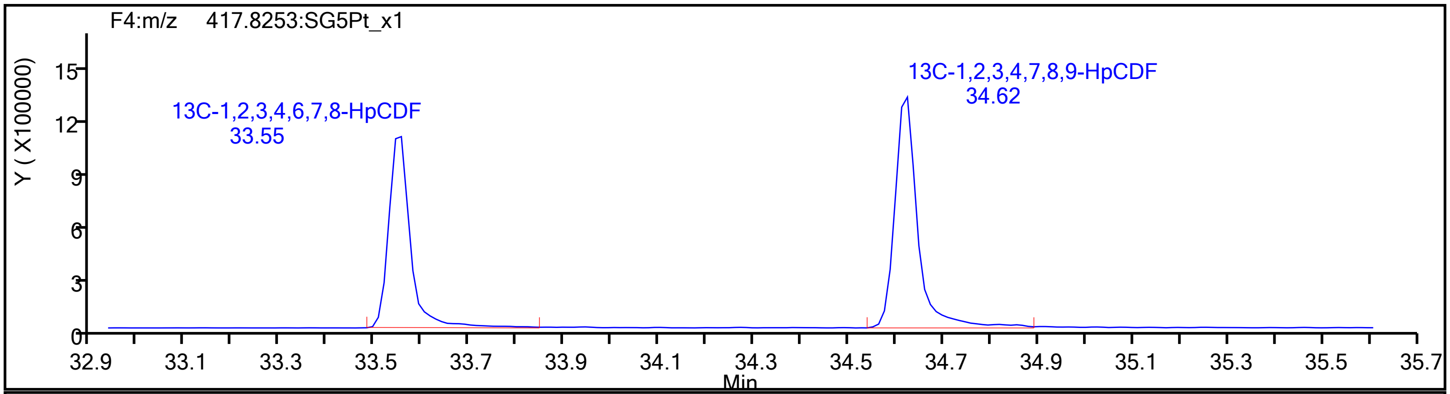

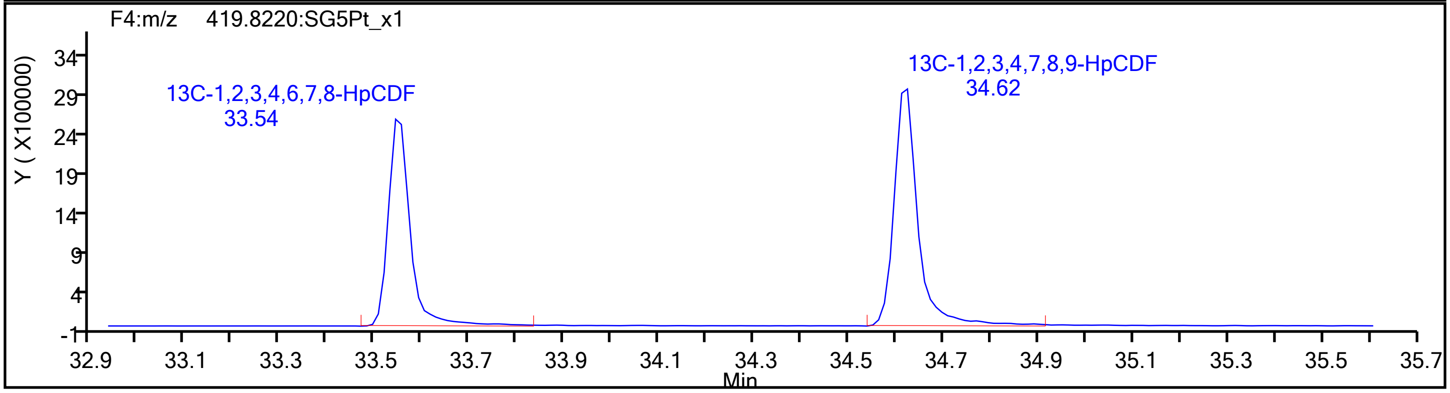

Eurofins TestAmerica, Sacramento

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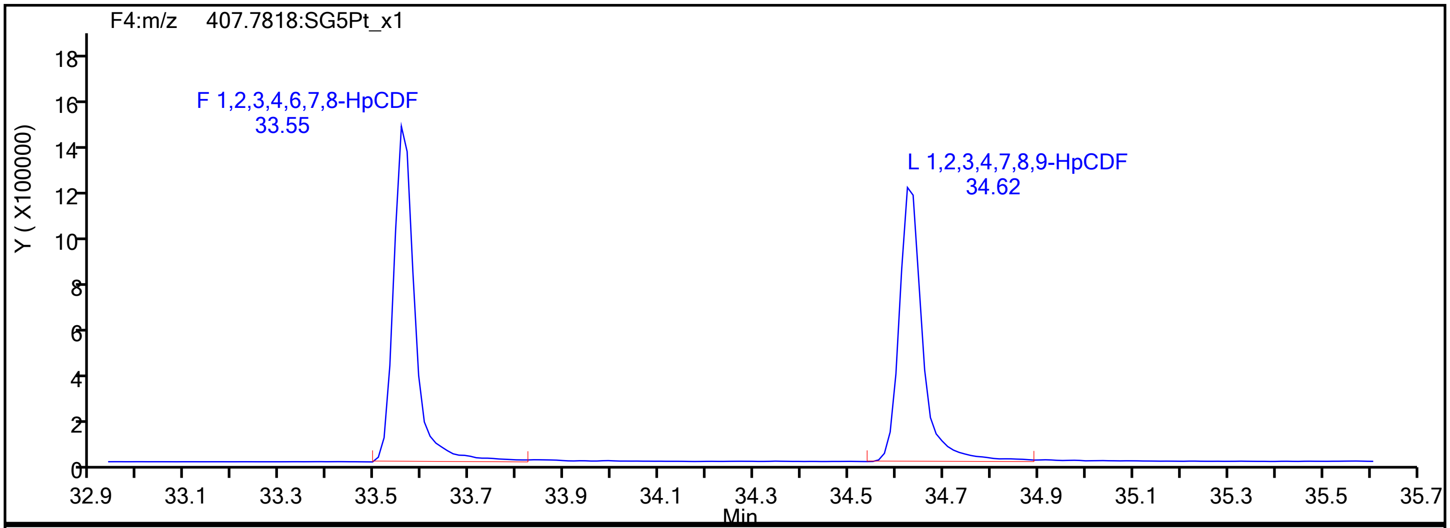

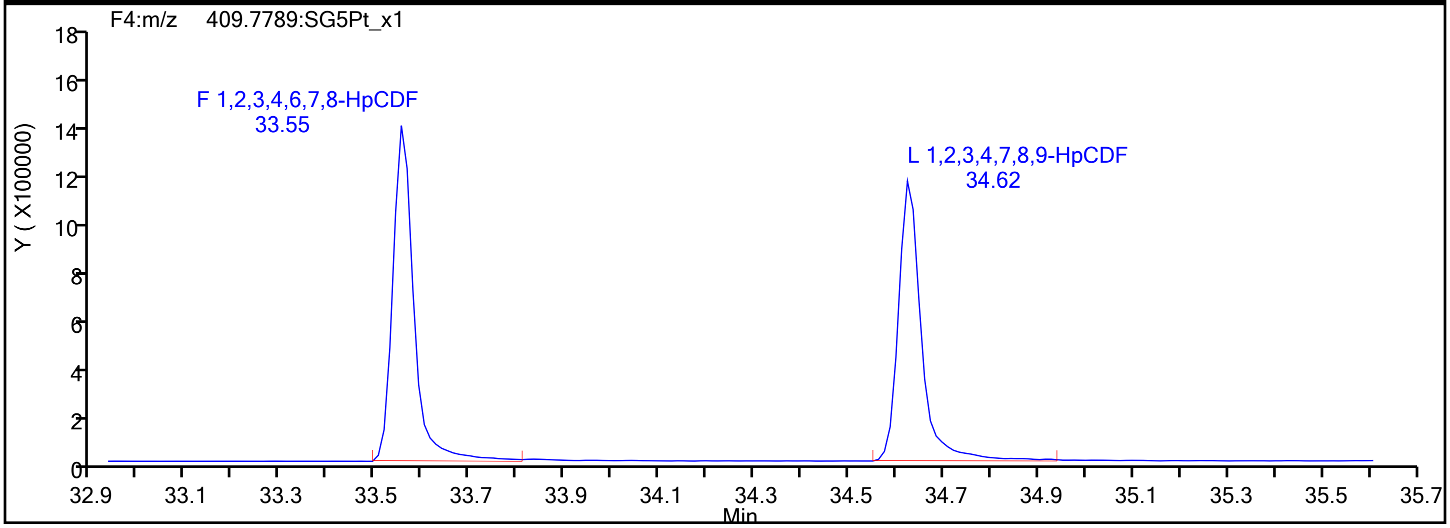

HpCDF Interference Mass

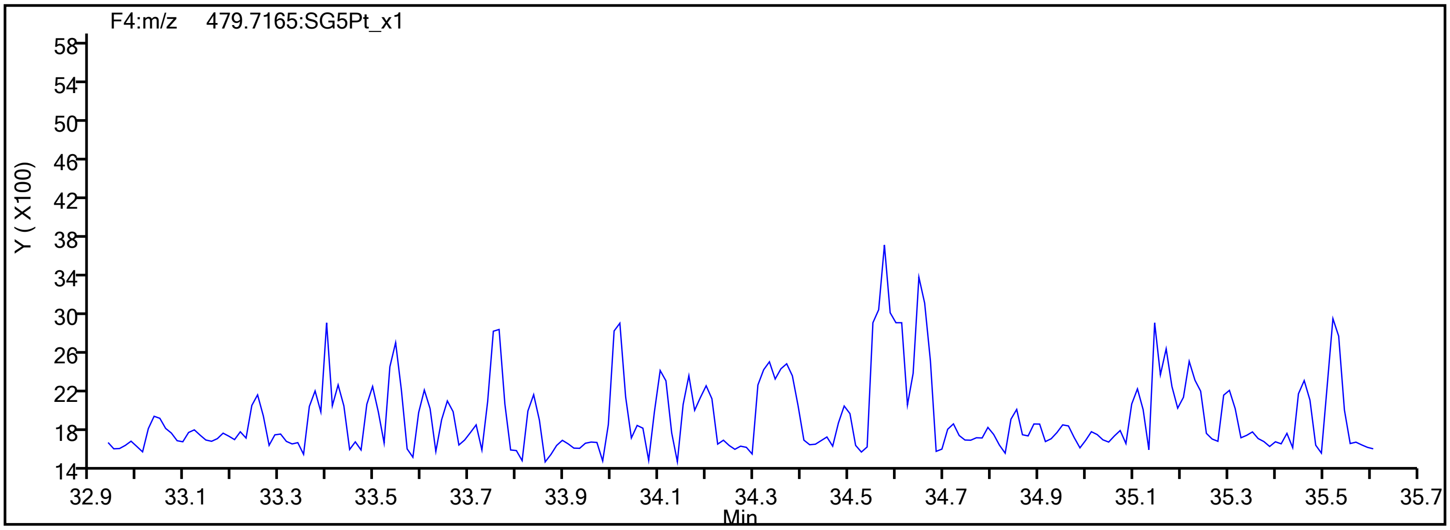

Report Date: 20-Aug-2020 14:54:27　　Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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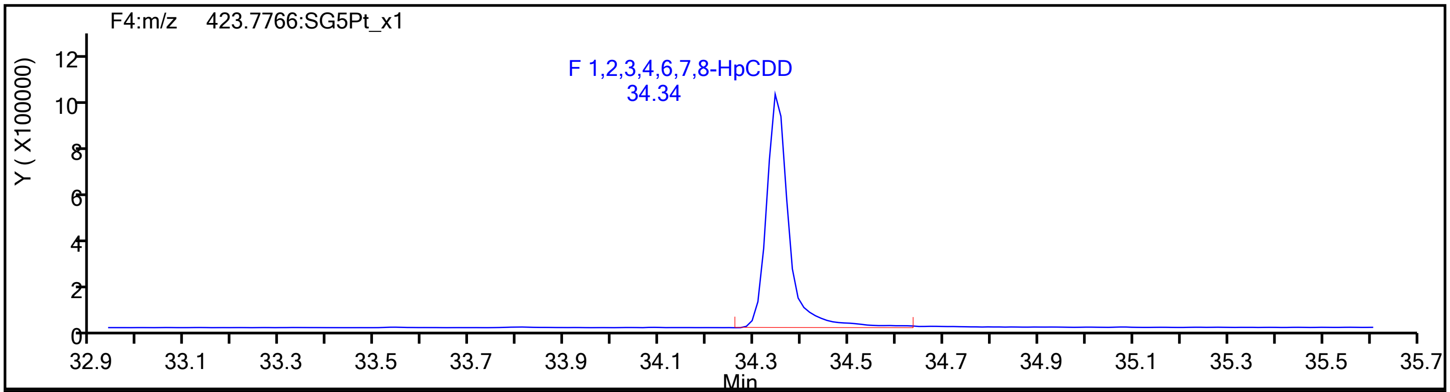

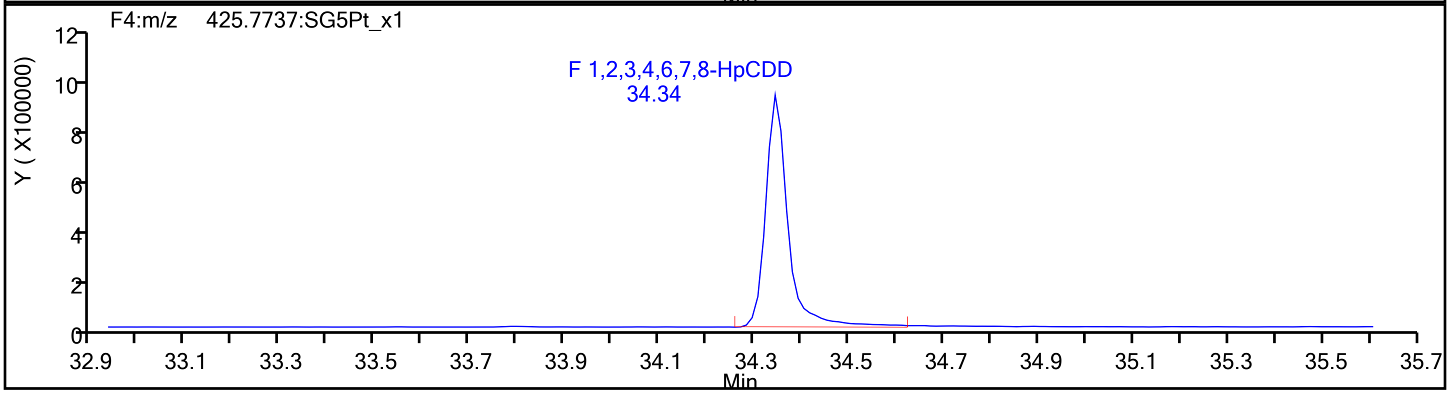

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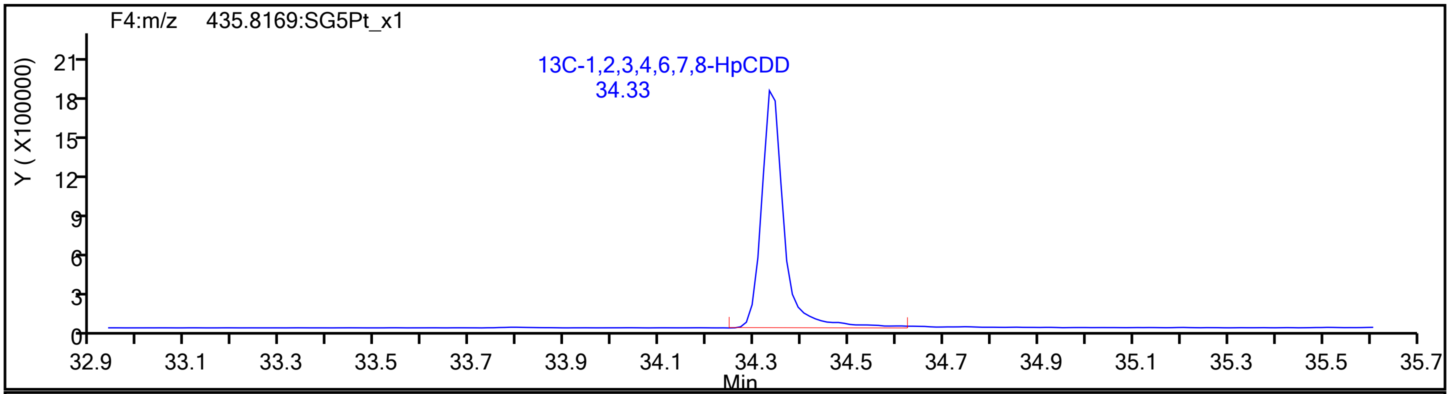

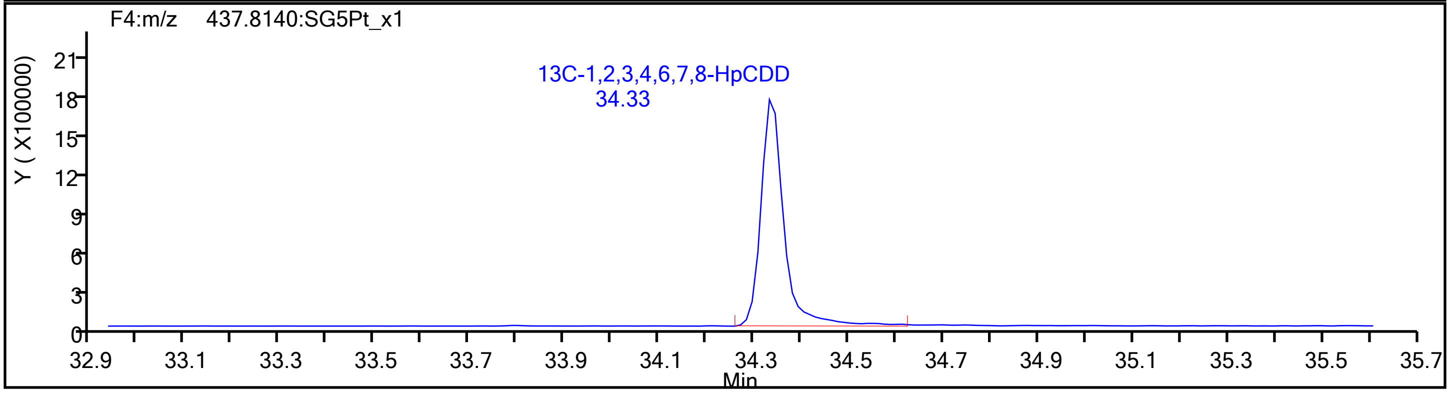

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Eurofins TestAmerica, Sacramento

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OCDF

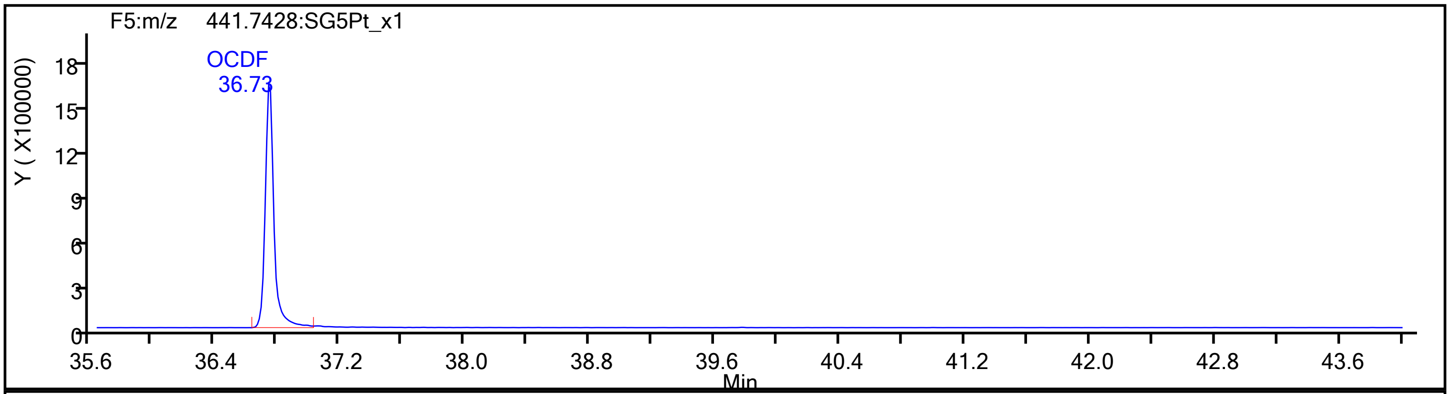

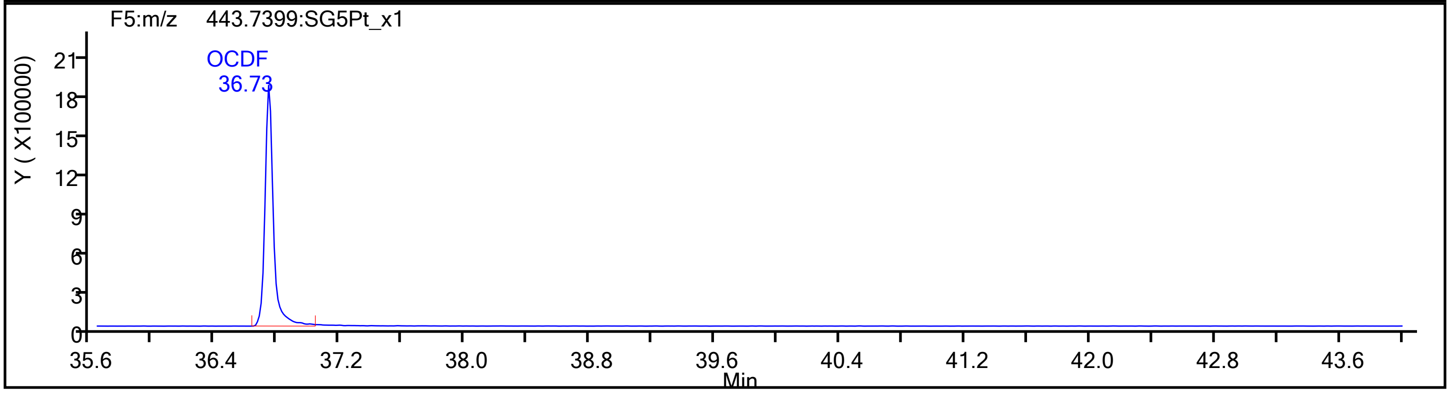

OCDF Standards

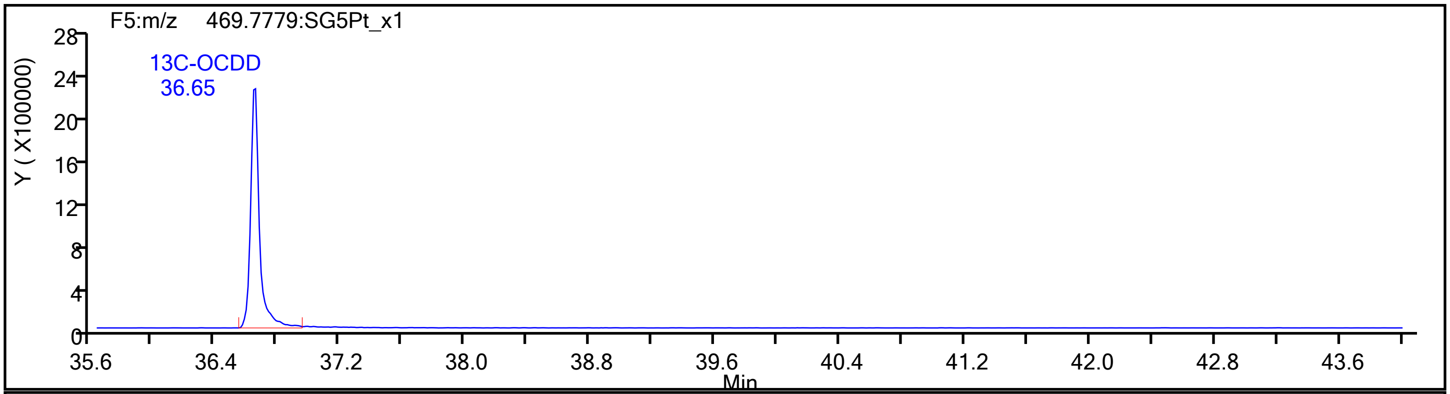

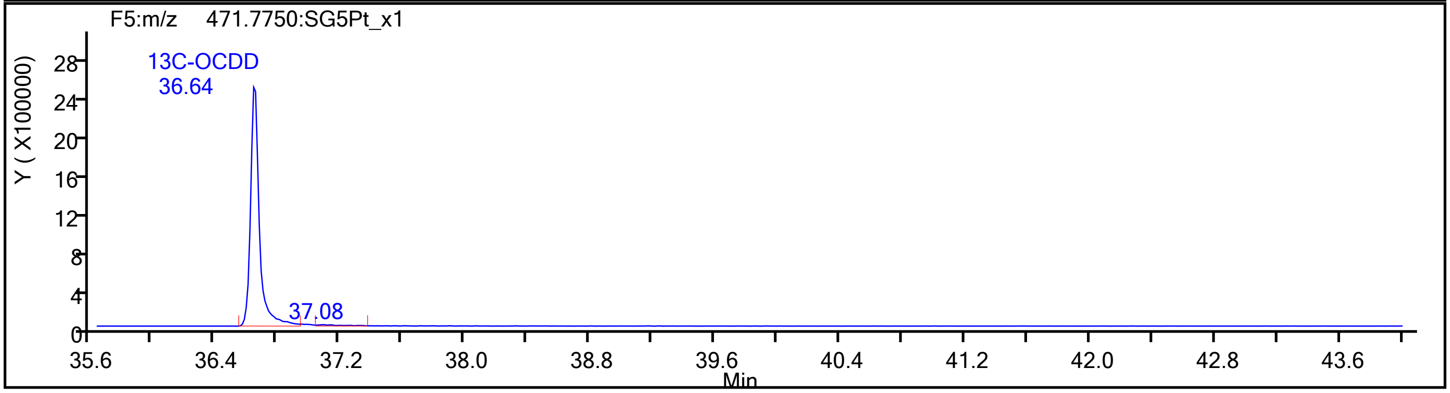

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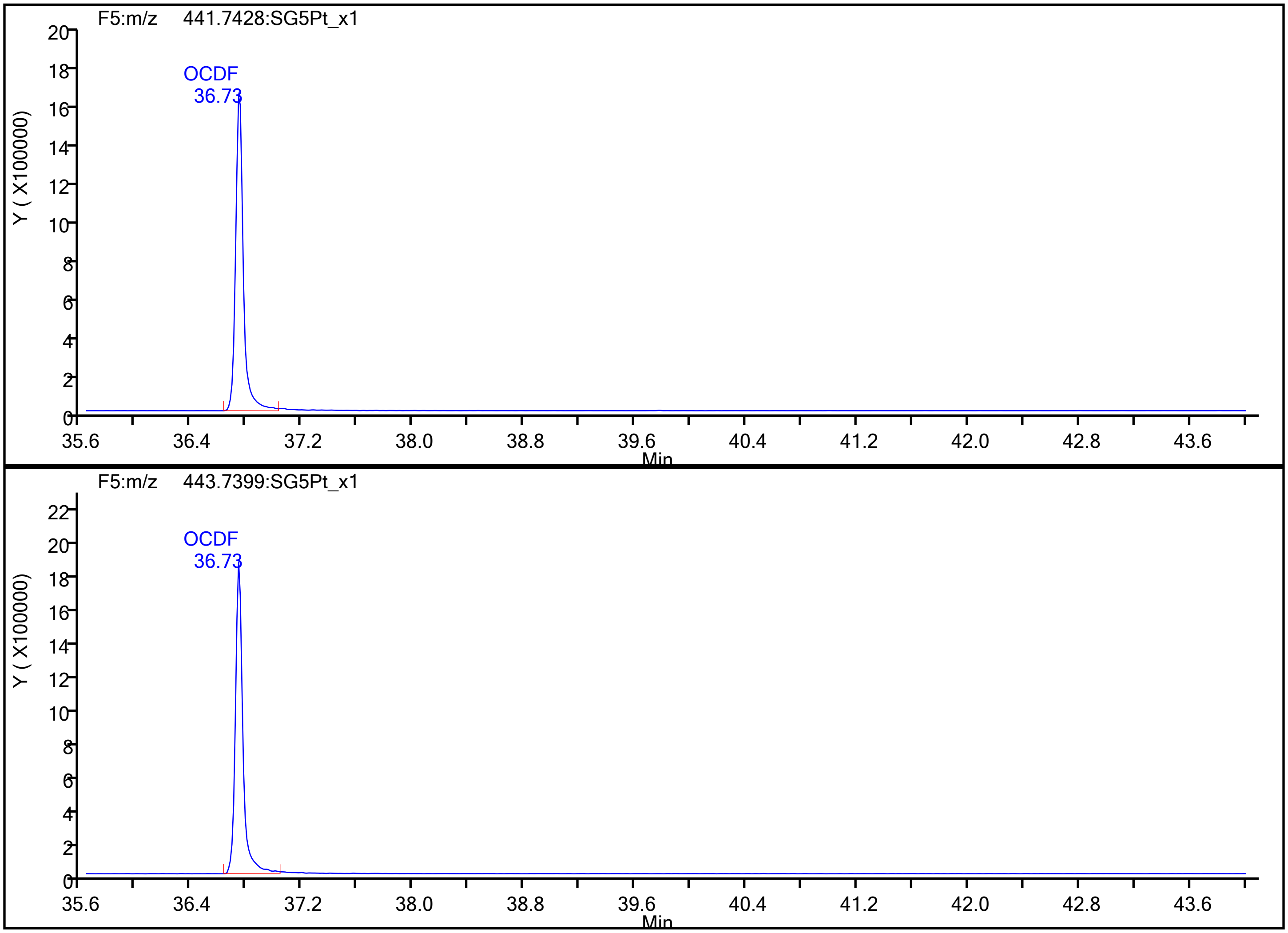

OCDF Interference Mass

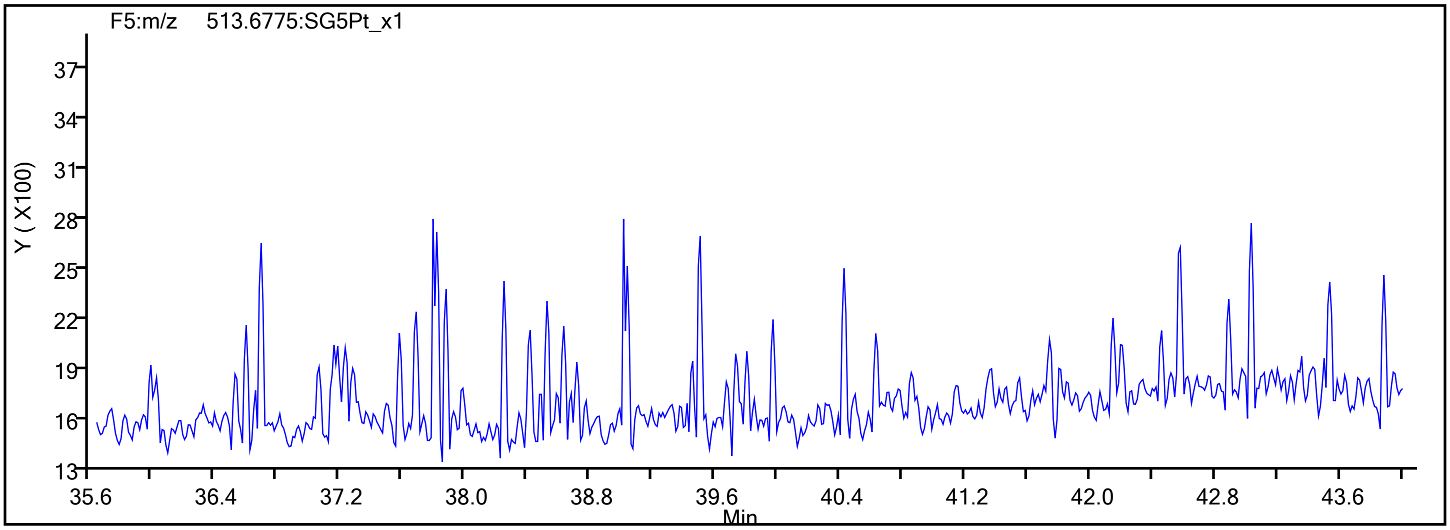

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Eurofins TestAmerica, Sacramento

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OCDD

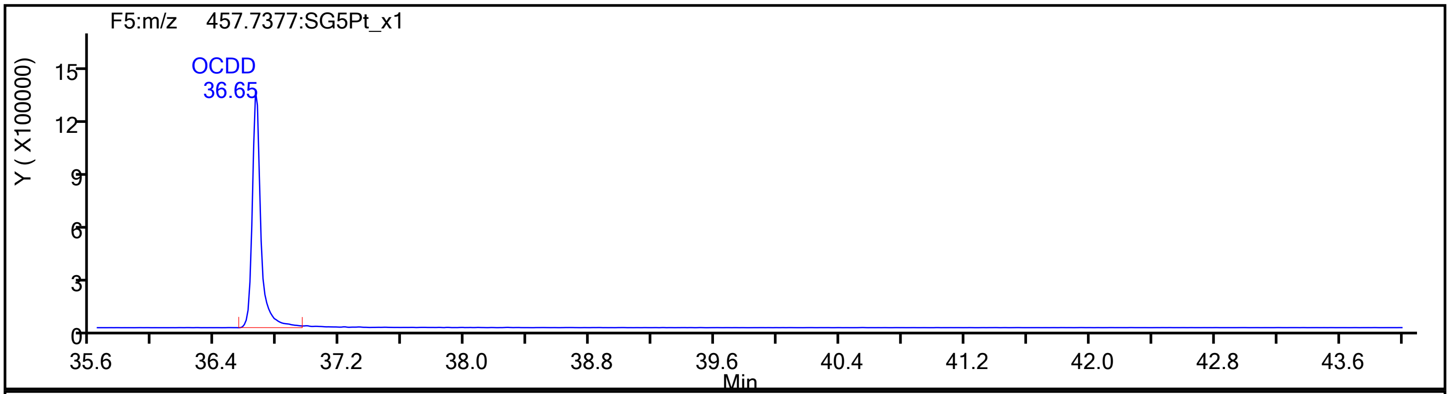

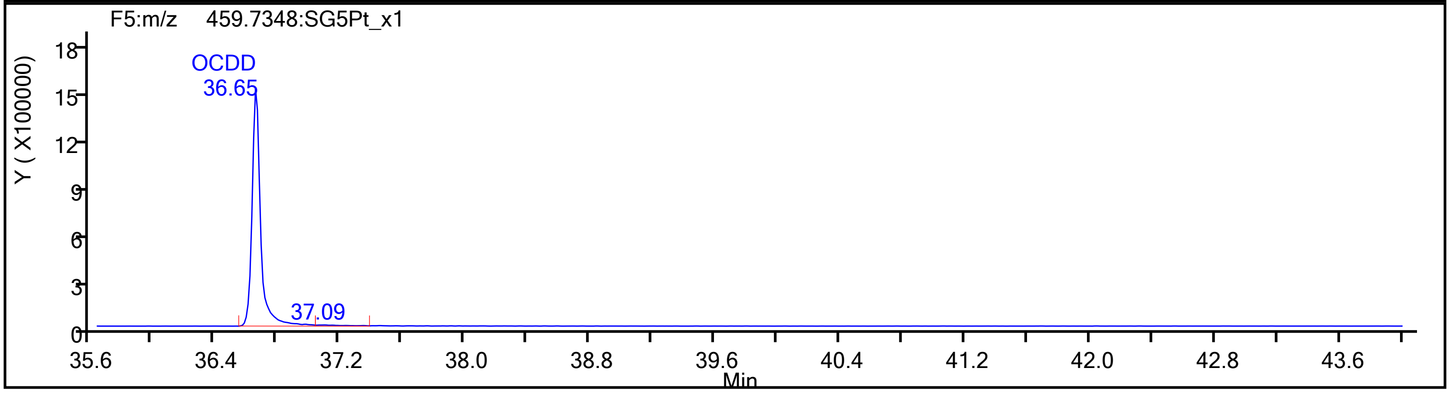

OCDD Standards

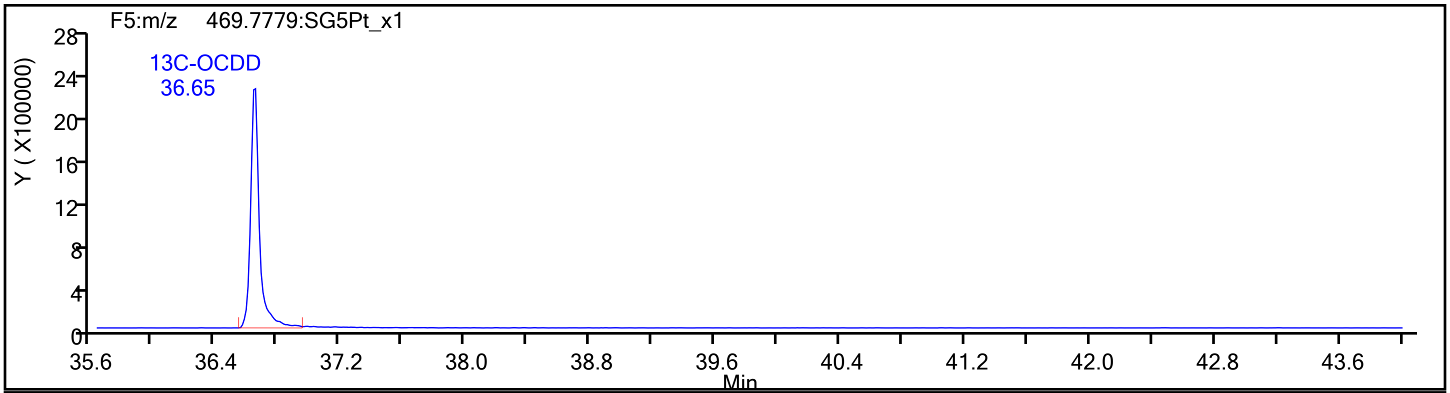

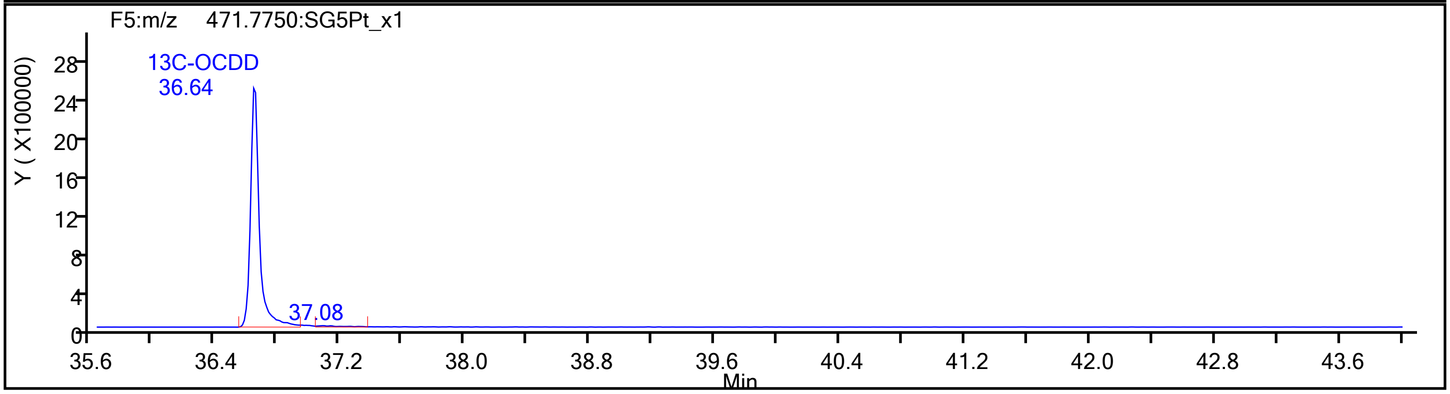

Report Date: 20-Aug-2020 14:54:28 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d

Injection Date: 19-Aug-2020 21:23:08

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA/AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405030

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

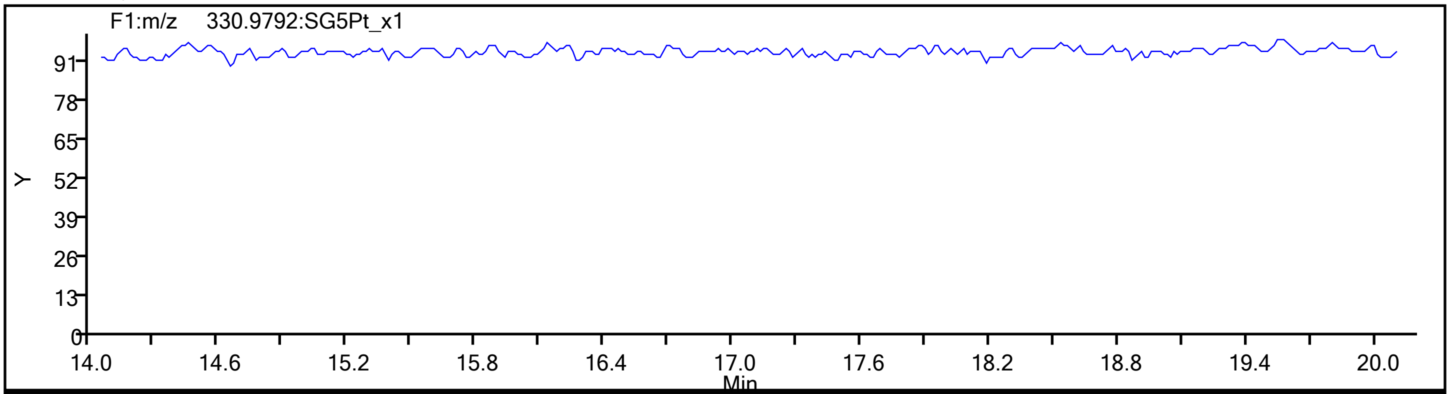

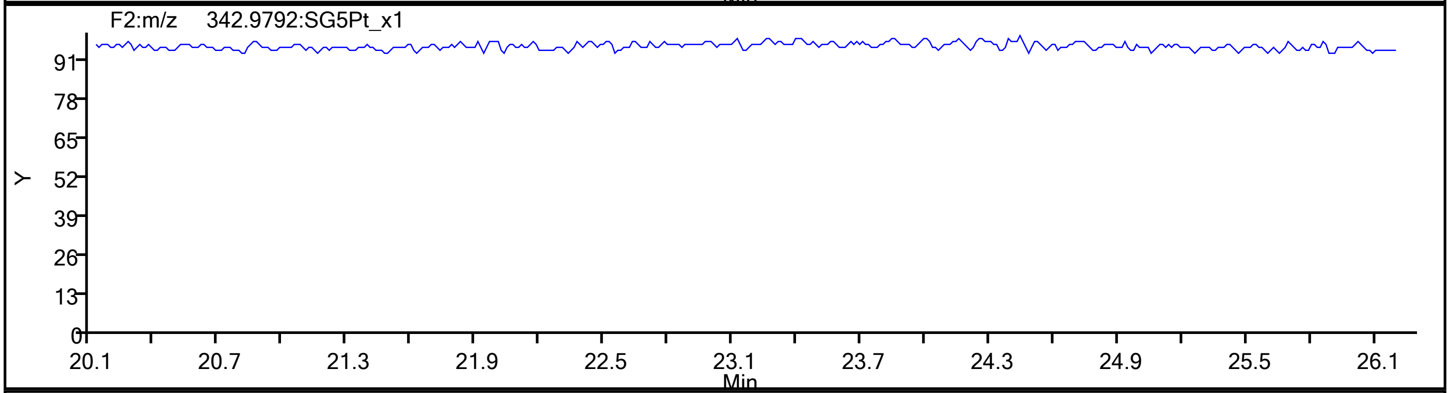

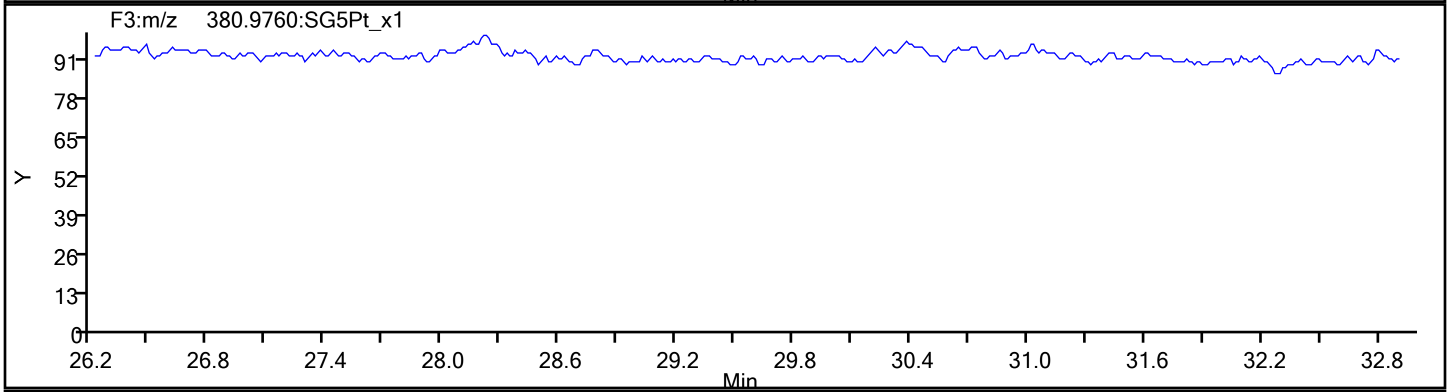

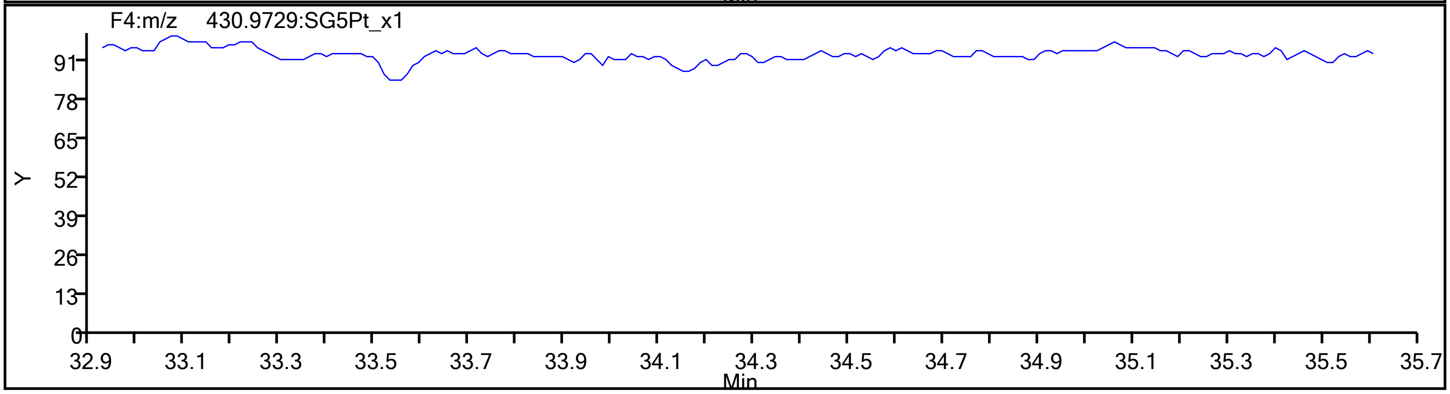

Report Date: 20-Aug-2020 14:54:28 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_14.d		
Injection Date:	19-Aug-2020 21:23:08	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

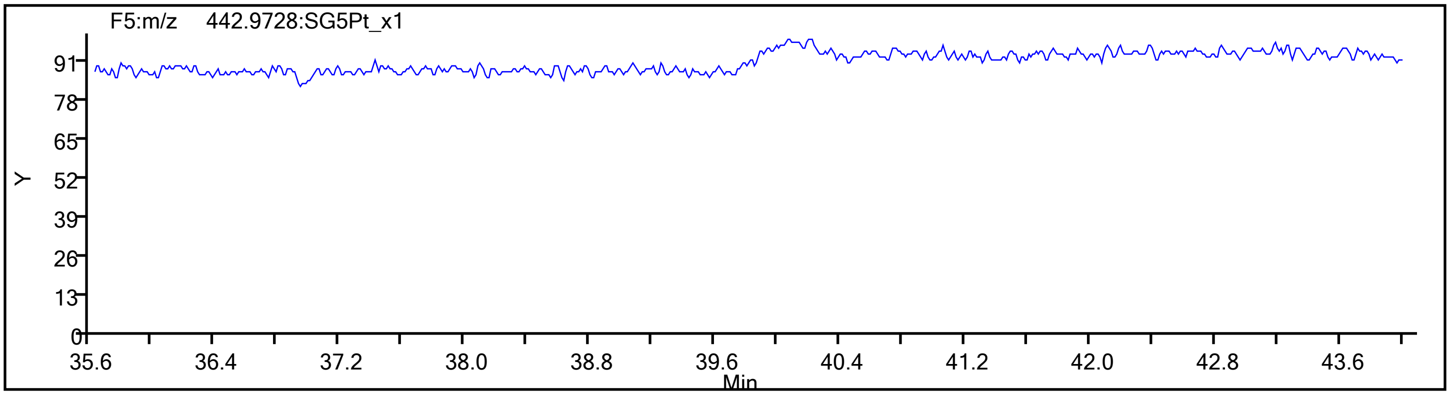

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICV 320-405198/9 Calibration Date: 08/20/2020 06:33

Instrument ID: 4D2 Calib Start Date: 08/20/2020 02:46

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/20/2020 05:17

Lab File ID: 20AU204D2_011.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.102	1.194		43.3	40.0	108	70-130
2,3,7,8-TCDF	AveID	0.9341	0.9177		39.3	40.0	98	70-130
13C-2,3,7,8-TCDD	Ave	0.9126	0.8955		98.1	100	98	82-121
13C-2,3,7,8-TCDF	Ave	1.224	1.212		99.0	100	99	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9664	0.9328		38.6	40.0	97	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	20-Aug-2020 06:33:20	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	2nd Source HRDXNIC_00045				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	4D2		
Sublist:	chrom-DXN_DB225_4D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	20-Aug-2020 09:22:18	Calib Date:	20-Aug-2020 05:17:37		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1068				

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:18:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.914	106959845	0.78	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.026	129598658	0.76	1.2239	99.0	99.0	0.1851	0.1851	99.00	
2,3,7,8-TCDF	15.053	47570875	0.69	0.9341	39.3	39.3	0.0507	0.0507	98.24	
D 13C-2,3,7,8-TCDD	13.654	95782166	0.80	0.9126	98.1	98.1	0.1781	0.1781	98.12	
2,3,7,8-TCDD	13.668	45740430	0.81	1.1025	43.3	43.3	0.0709	0.0709	108	
$ 37Cl4-2,3,7,8-TCDD	13.668	39908329		0.9664	38.6	38.6	0.0510	0.0510	96.52	

Reagents:

HRDXNIC_00045	Amount Added: 1.00	Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 20-Aug-2020 06:33:20 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 2nd Source HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:22:18 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:18:19

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.914	13.912	0		47037321	10253824	8512	21280	1205		
333.9339	13.914	13.912	0		59922524	12727478	6427	16067	1980	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.026	15.004	1	1.080	55864430	10449519	11708	29270	893		
317.9389	15.026	15.004	1	1.080	73734228	14304219	9120	22800	1568	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.053	15.018	2	1.002	19376792	3759391	2207	5517	1703		
305.8987	15.053	15.018	2	1.002	28194083	5209788	2486	6215	2096	0.69(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.654	13.633	1	0.981	42465554	8730389	8512	21280	1026		
333.9339	13.654	13.633	1	0.981	53316612	10745014	6427	16067	1672	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.668	13.646	1	1.001	20451514	4154138	2896	7240	1434		
321.8936	13.668	13.646	1	1.001	25288916	5222214	3193	7982	1636	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.668	13.651	1	0.982	39908329	7991246	4531	11327	1764		

Reagents:

HRDXNIC_00045 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:22:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d		
Injection Date:	20-Aug-2020 06:33:20	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

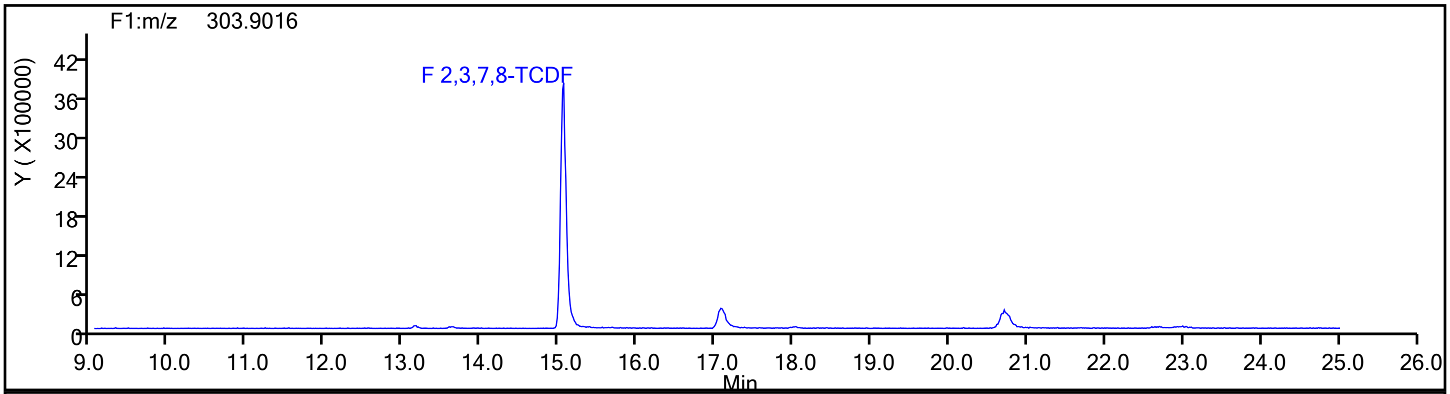

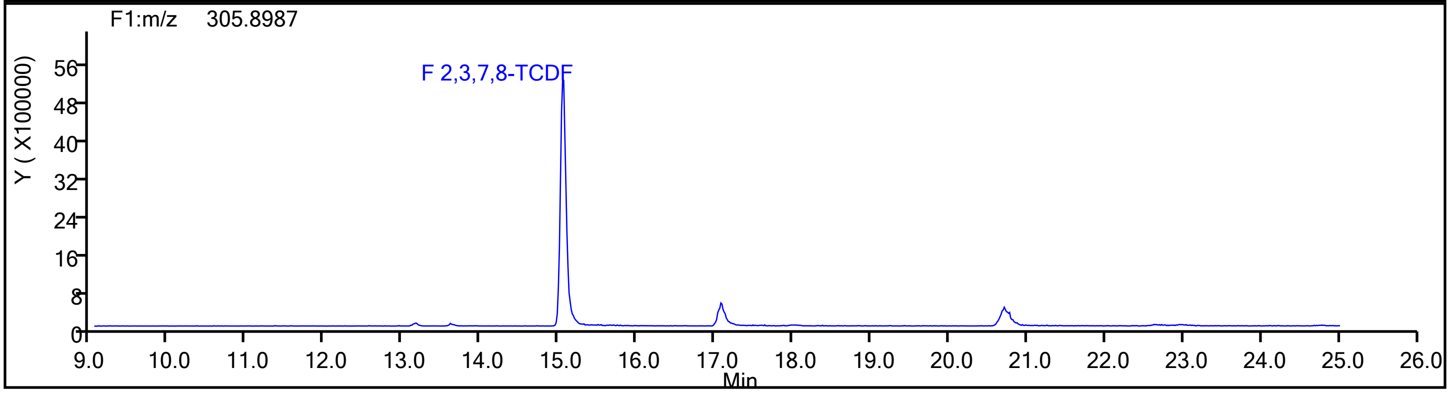

TCDF Standards

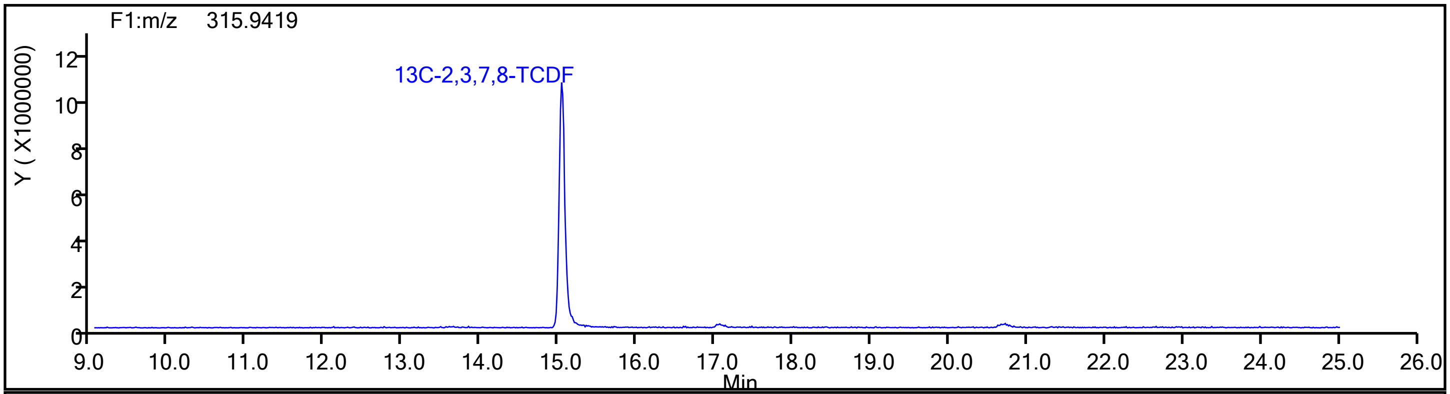

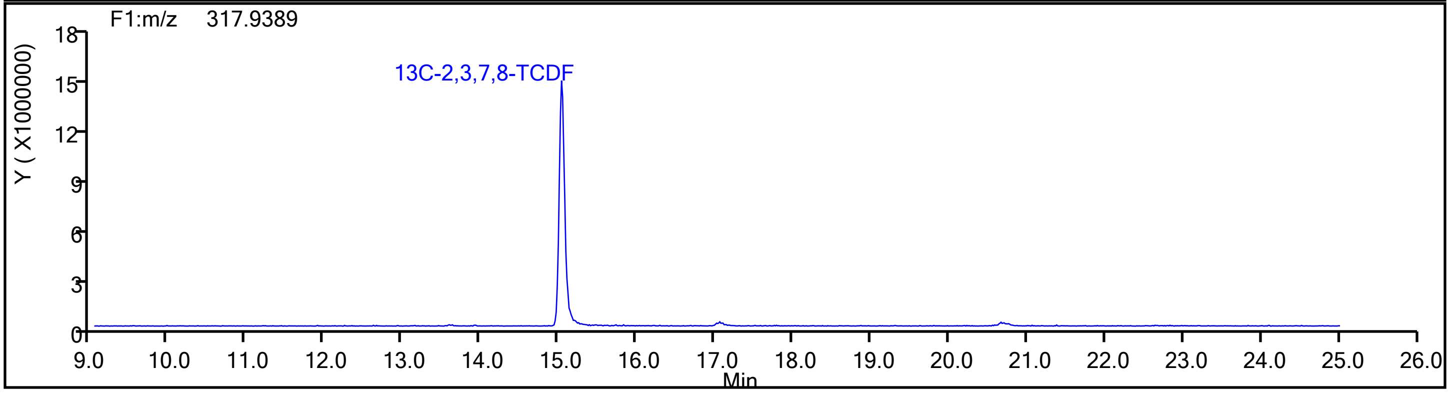

Report Date: 20-Aug-2020 09:22:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d		
Injection Date:	20-Aug-2020 06:33:20	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

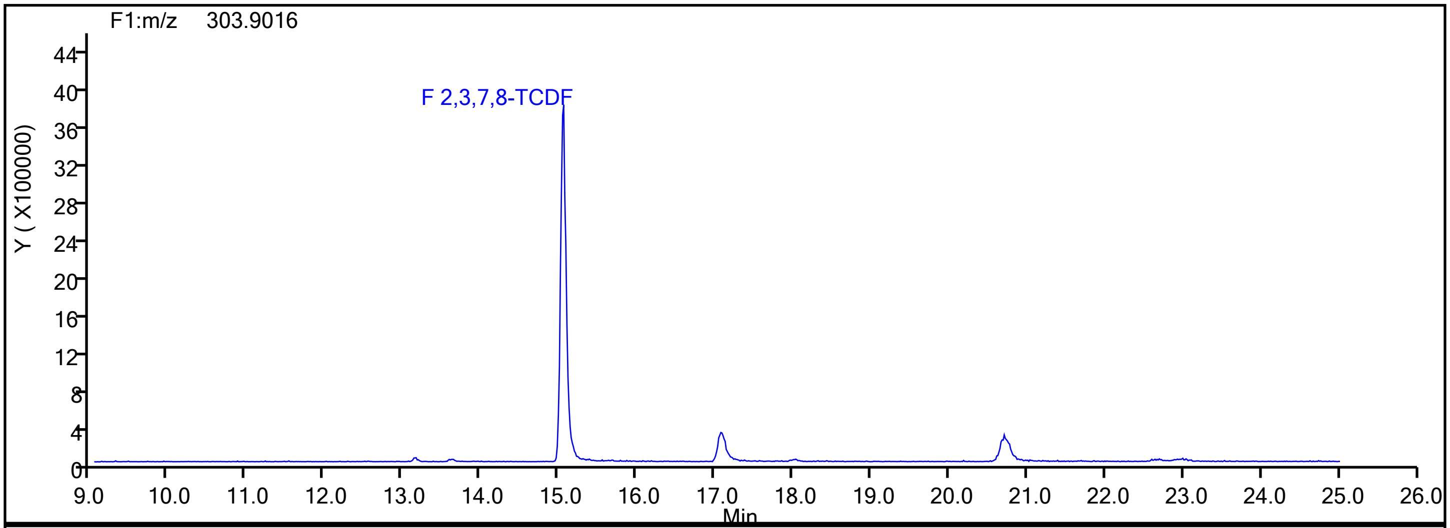

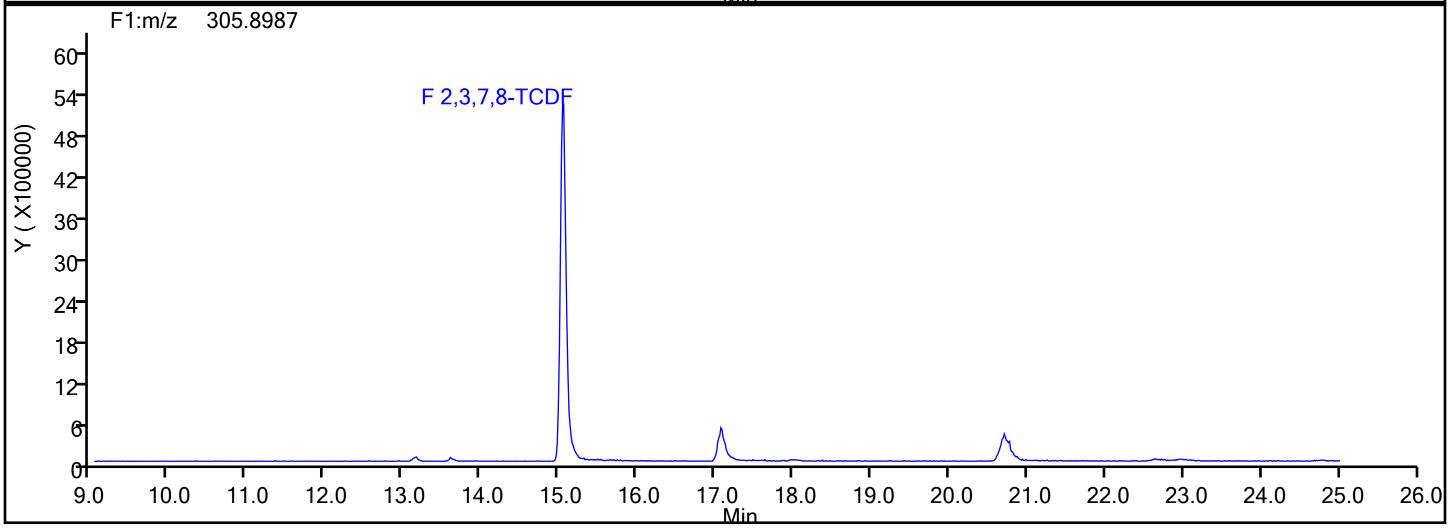

TCDF Interference Mass

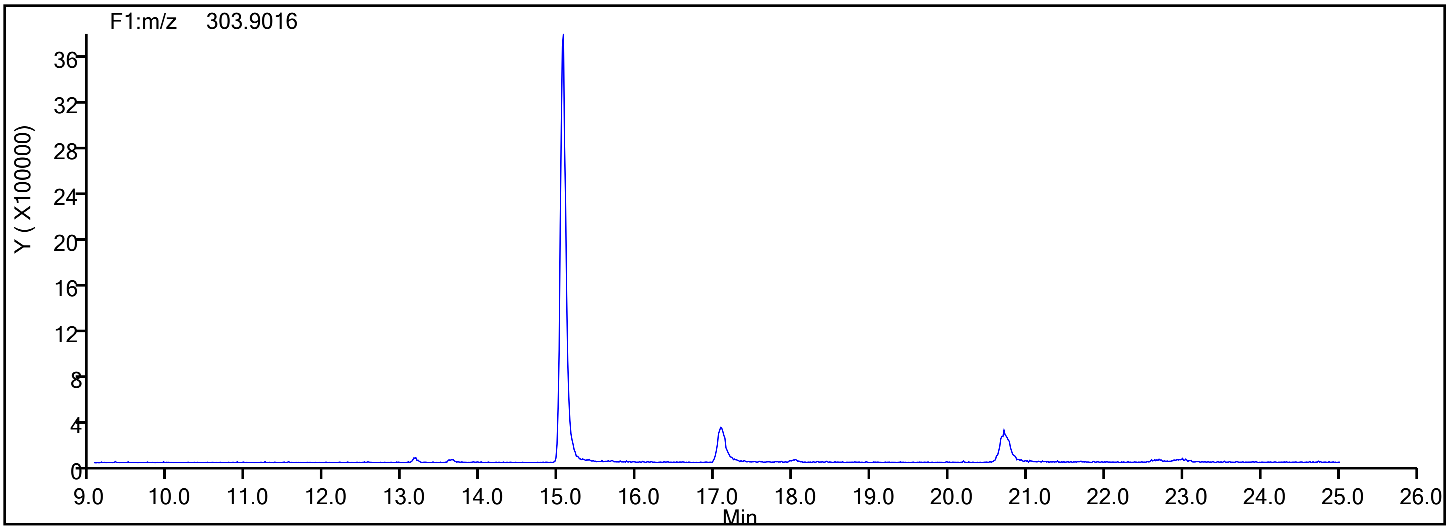

Report Date: 20-Aug-2020 09:22:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d
Injection Date: 20-Aug-2020 06:33:20
Injection Vol: 2.0 ul
Instrument ID: 4D2
Operator ID:
Method: DXN_DB225_4D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

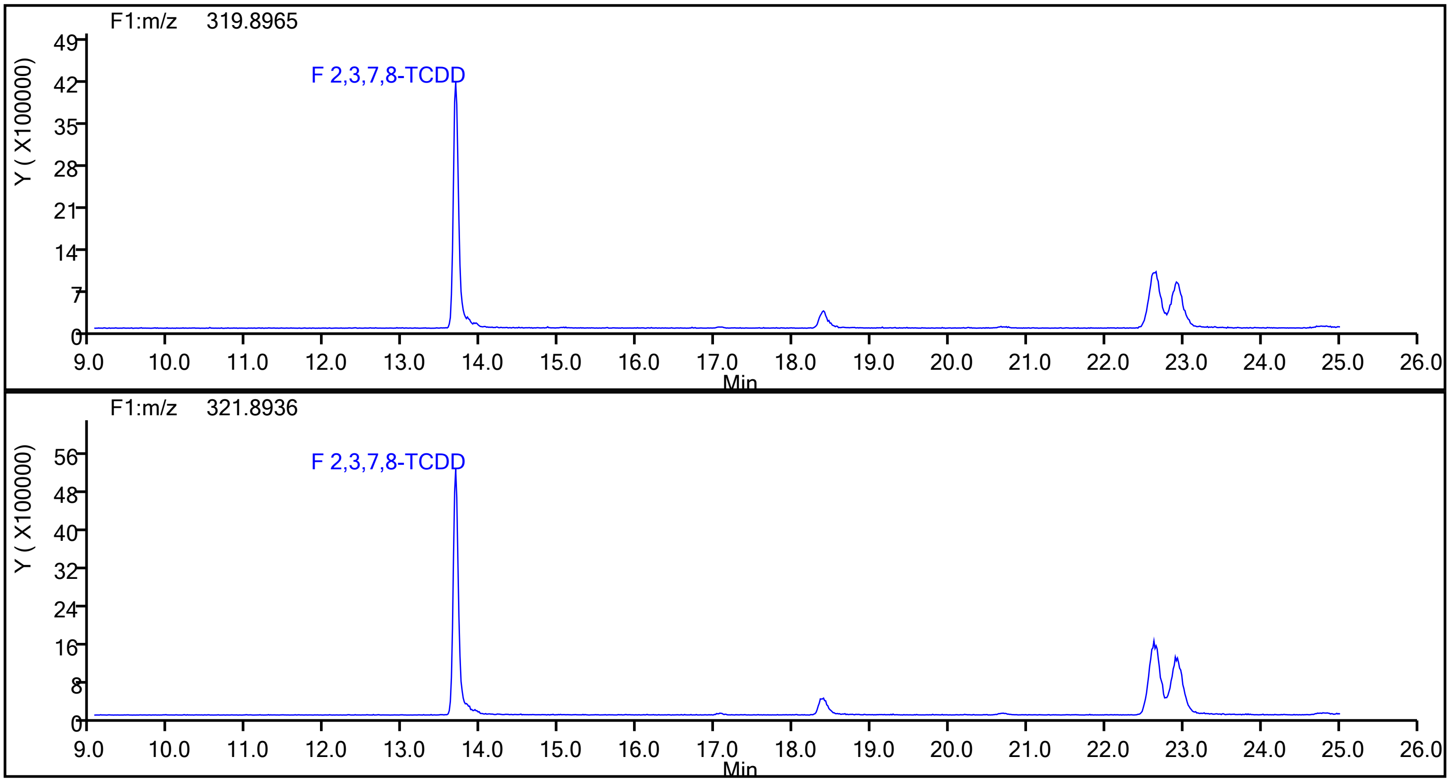

TCDD Standards

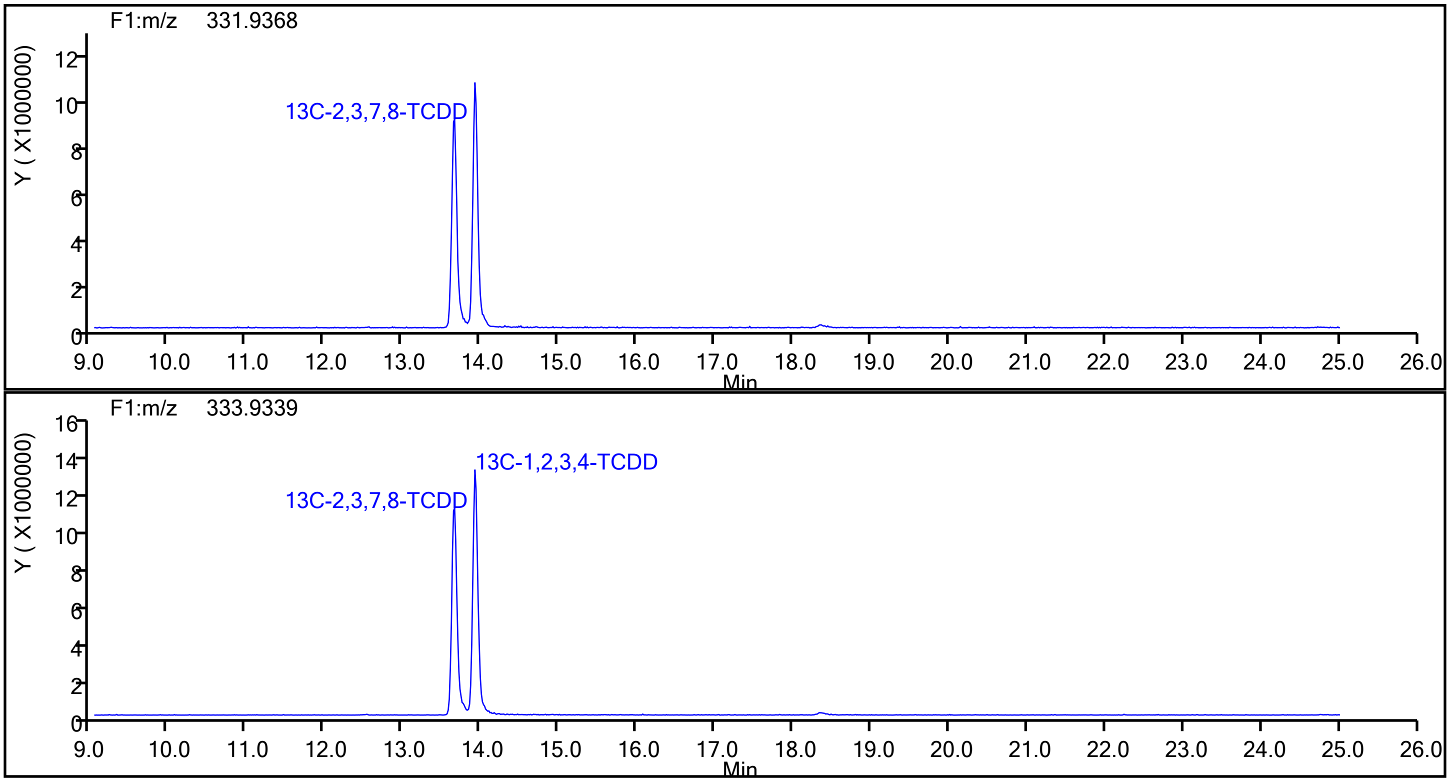

Report Date: 20-Aug-2020 09:22:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d		
Injection Date:	20-Aug-2020 06:33:20	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

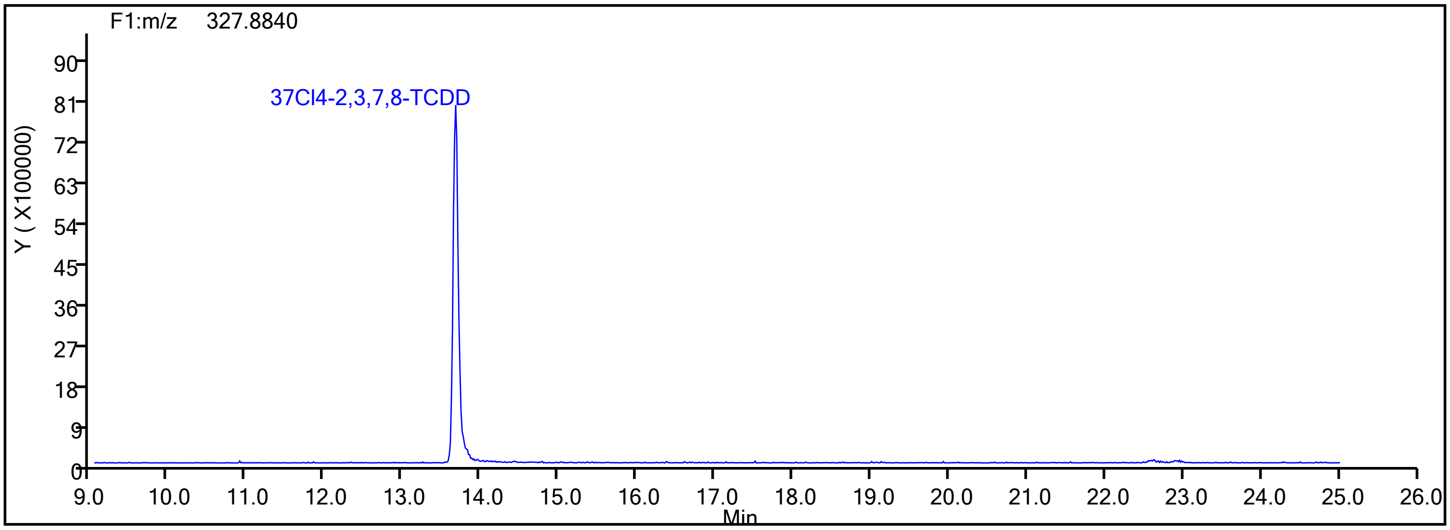

37Cl4-TCDD Standards

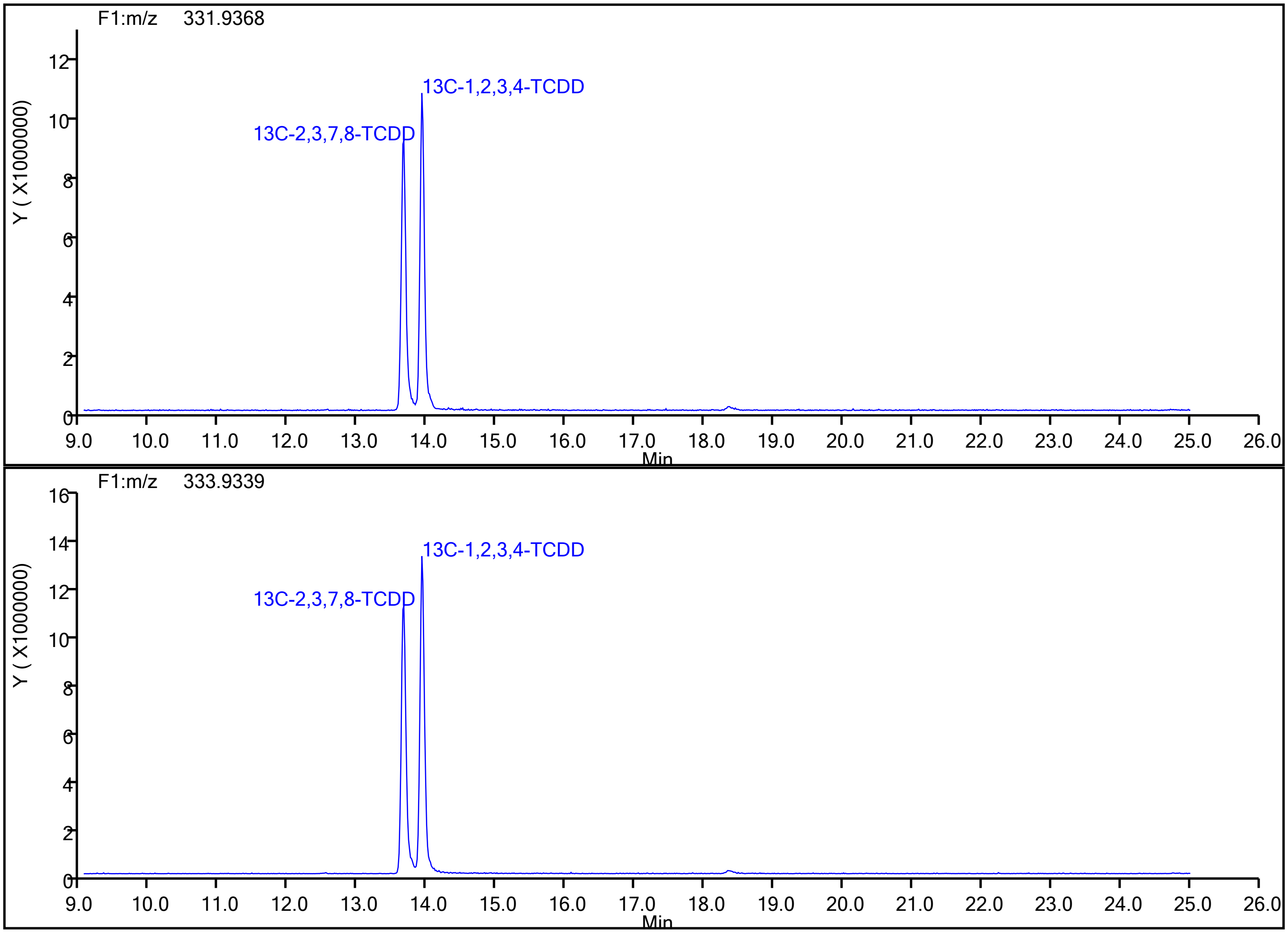

Report Date: 20-Aug-2020 09:22:19 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_011.d		
Injection Date:	20-Aug-2020 06:33:20	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

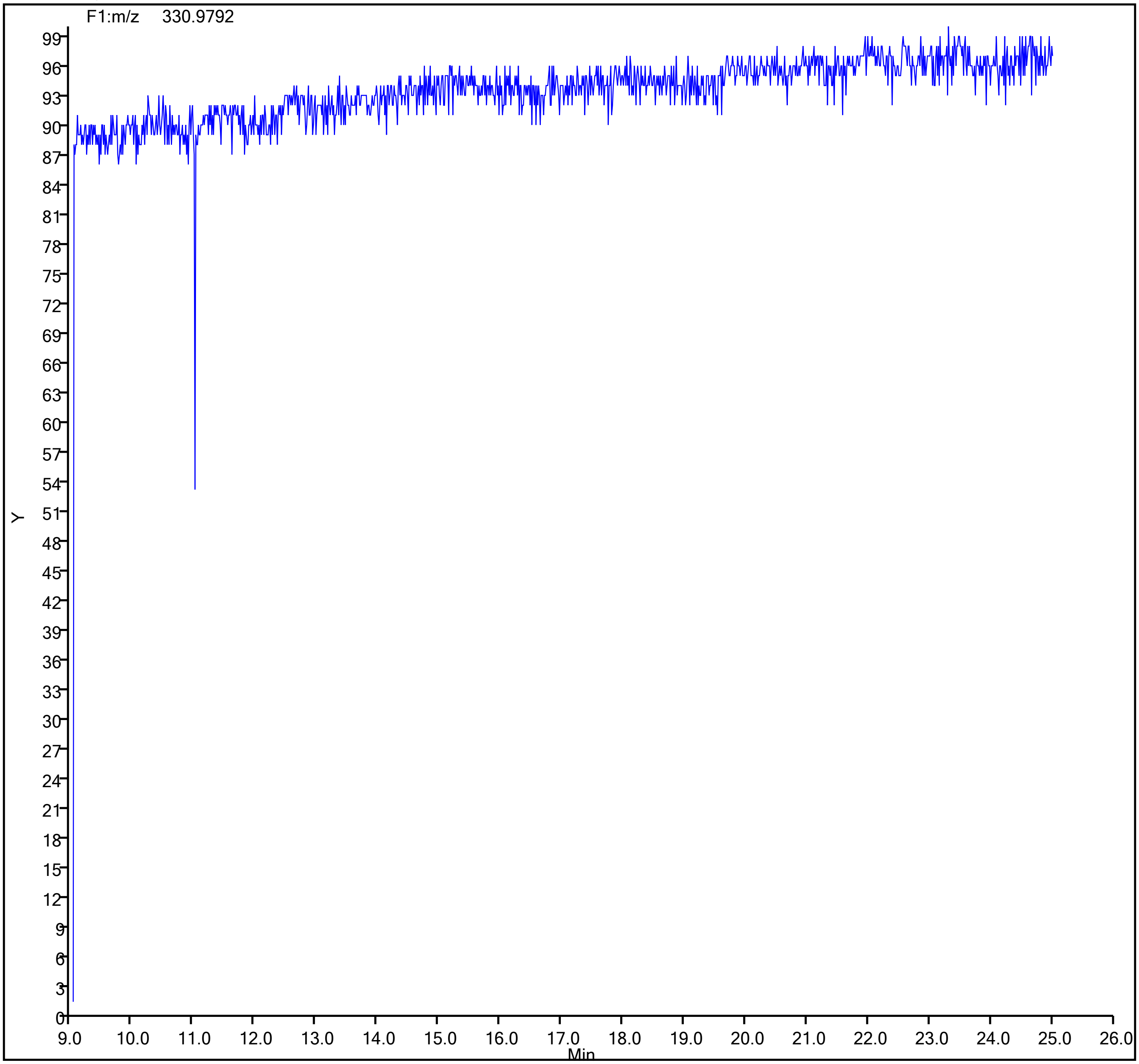

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Lab Sample ID: CCV 320-405652/3   Calibration Date: 08/20/2020 17:35

Instrument ID: 4D2   Calib Start Date: 08/20/2020 02:46

GC Column: DB-225   ID: 0.32(mm)   Calib End Date: 08/20/2020 05:17

Lab File ID: 20AU20D4D2_003.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.102	1.022		9.27	10.0	93	78-129
2,3,7,8-TCDF	AveID	0.9341	0.8812		9.43	10.0	94	84-120
13C-2,3,7,8-TCDD	Ave	0.9126	0.8198		89.8	100	90	82-121
13C-2,3,7,8-TCDF	Ave	1.224	1.129		92.2	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9664	0.9274		9.60	10.0	96	79-127

```
Data file   Smp Work Order    Sample ID                   FV-uL Method/Matrix Box  Size     U

20AU20D4D2  1   CPS 082020B   DB225 CPSM HRDXNCP_00040                             1.00000
20AU20D4D2  2   CPS 082020C   DB225 CPSM HRDXNCP_00040                             1.00000
20AU20D4D2  3   CCV 082020A   CCV CS-4 HRDXNL4_00089                               1.00000
20AU20D4D2  4   SB 082020     SB Solvent Blank C-14                                1.00000
20AU20D4D2  5   320-402320    580-96271-G-1-B             20    8290_D5/Solid 79   10.00000 g
20AU20D4D2  6   320-402320    580-96271-G-1-C MS          20    8290_D5/Solid      10.00000 g
20AU20D4D2  7   320-402320    580-96271-G-1-D MSD         20    8290_D5/Solid      10.00000 g
20AU20D4D2  8   320-404233    320-63525-A-1-A             20    1613B/Water   D175 1.00000  L
20AU20D4D2  9   320-404233    320-63525-A-2-A             20    1613B/Water        1.00000  L
20AU20D4D2  10  320-403231    570-35535-C-1-A             20    1613B_T/Solid D174 10.00000 g
20AU20D4D2  11  320-403231    LCS 320-403231/2-A          20    1613B_T/Solid      10.00000 g
20AU20D4D2  12  320-403231    LCSD 320-403231/3-A         20    1613B_T/Solid      10.00000 g
20AU20D4D2  13  320-403231    MB 320-403231/1-A           20    1613B_T/Solid      10.00000 g
20AU20D4D2  14  CCV 082020B   CCV CS-4 HRDXNL4_00089                               1.00000
20AU20D4D2  15                                                                     1.00000
20AU20D4D2  16                                                                     1.00000
20AU20D4D2  17                                                                     1.00000
20AU20D4D2  18                                                                     1.00000
20AU20D4D2  19                                                                     1.00000
20AU20D4D2  20                                                                     1.00000
20AU20D4D2  21                                                                     1.00000
20AU20D4D2  22                AJS 08-20-20                                         1.00000
20AU20D4D2  23                                                                     1.00000
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logfile checked
8-20-20 ALM

Peak Locate Examination:20-AUG-2020:16:18 File:20AU20D4D2
Experiment:DB225RES Function:1 Reference:PFK

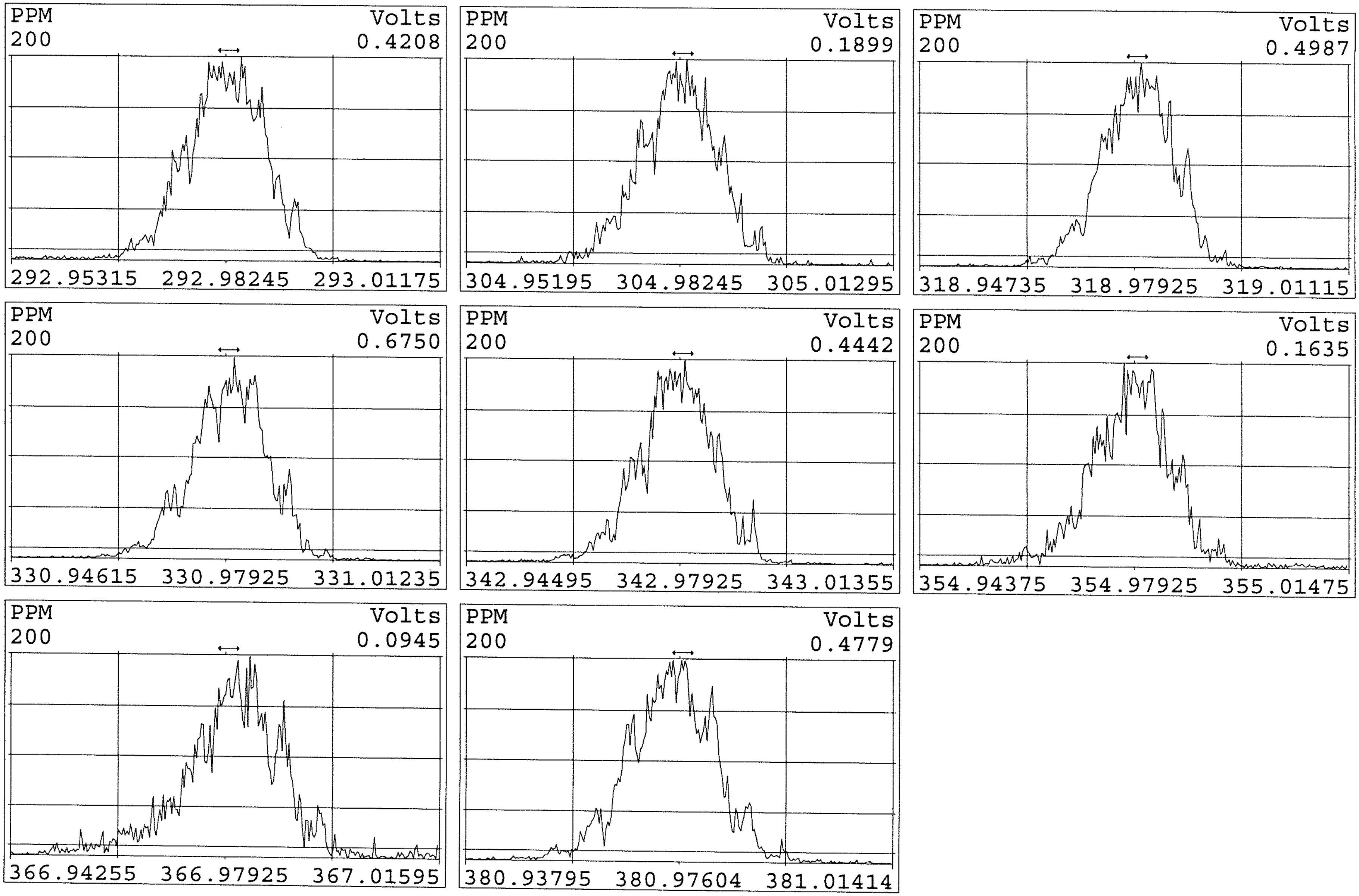

Peak Locate Examination:21-AUG-2020:01:26 File:RESCHK20AU20D4D2
Experiment:DB225RES Function:1 Reference:PFK

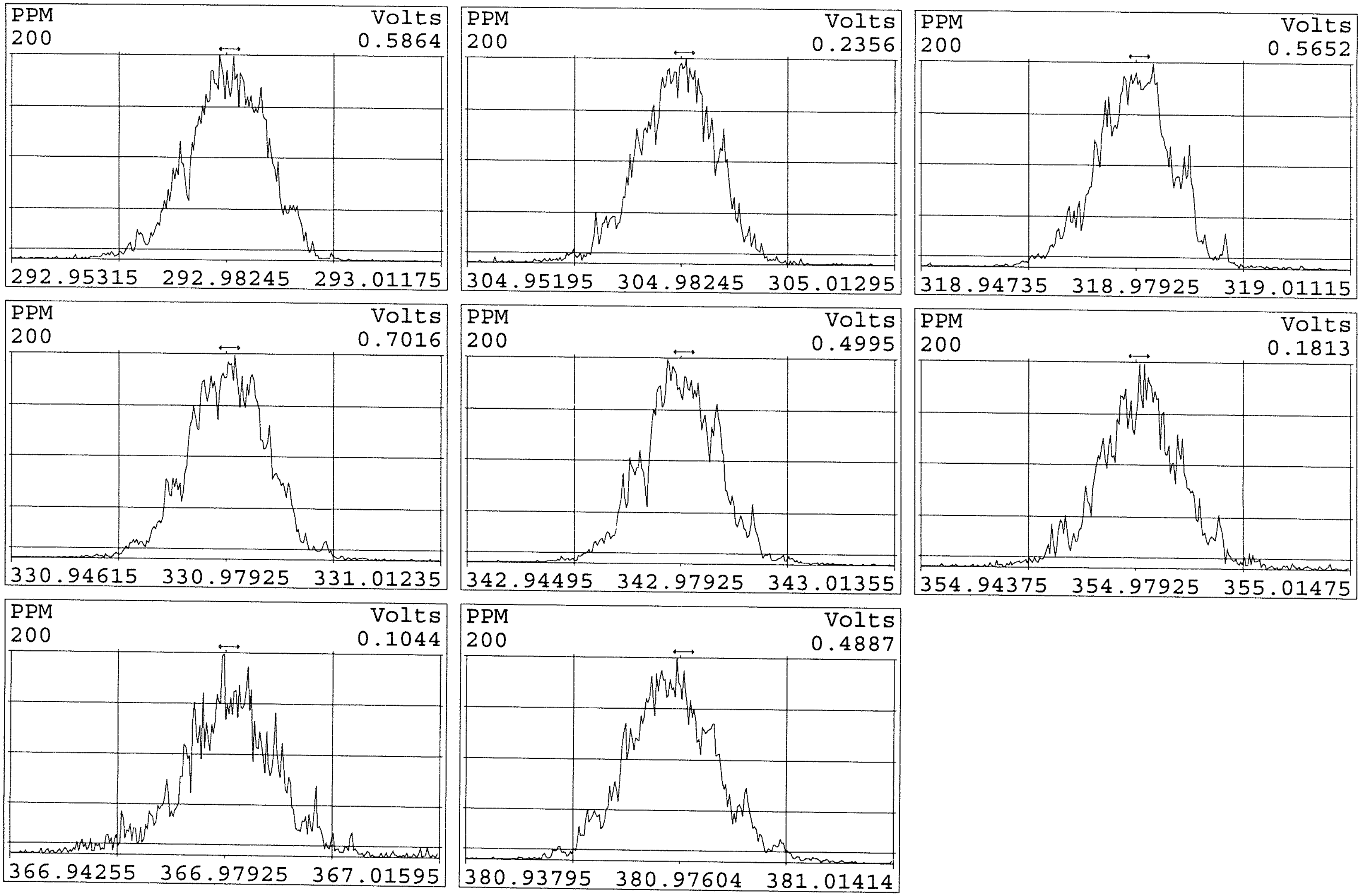

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Aug-2020 17:35:09 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00089
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 11:46:43 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1052

First Level Reviewer: shardaa Date: 21-Aug-2020 11:36:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	13.859	145284128	0.76	1.3E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	14.956	163955883	0.78	1.2239	92.2	92.2	0.1271	0.1271	92.21	
2,3,7,8-TCDF	14.984	14448161	0.71	0.9341	9.434	9.434	0.0259	0.0259	94.34	
D 13C-2,3,7,8-TCDD	13.585	119102391	0.75	0.9126	89.8	89.8	0.1089	0.1089	89.83	
2,3,7,8-TCDD	13.612	12174436	0.84	1.1025	9.272	9.272	0.0426	0.0426	92.72	
$ 37Cl4-2,3,7,8-TCDD	13.612	13473381		0.9664	9.596	9.596	0.0233	0.0233	95.96	

Reagents:

HRDXNL4_00092 Amount Added: 1.00 Units: mL

Report Date: 21-Aug-2020 11:46:44 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Aug-2020 17:35:09 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00089
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2
Sublist: chrom-DXN_DB225_4D2*sub1

Method: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 11:46:43 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1052

First Level Reviewer: shardaa Date: 21-Aug-2020 11:36:28

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	13.859	13.859	0		62726135	14520440	7368	18420	1971		
333.9339	13.859	13.859	0		82557993	18693740	5839	14597	3202	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	14.956	14.956	0	1.079	71706226	14958817	11093	27732	1348		
317.9389	14.956	14.956	0	1.079	92249657	20055204	9576	23940	2094	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	14.984	14.984	0	1.002	6019985	1280594	1561	3902	820		
305.8987	14.984	14.984	0	1.002	8428176	1871102	1821	4552	1028	0.71(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.585	13.585	0	0.980	51019707	11520654	7368	18420	1564		
333.9339	13.585	13.585	0	0.980	68082684	14959107	5839	14597	2562	0.75(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.612	13.612	0	1.002	5556510	1183966	2332	5830	508		
321.8936	13.612	13.612	0	1.002	6617926	1496044	2641	6602	566	0.84(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	13.612	13.612	0	0.982	13473381	3045467	2993	7482	1018		

Reagents:

HRDXNL4_00092 Amount Added: 1.00 Units: mL

Report Date: 21-Aug-2020 11:46:44 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d		
Injection Date:	20-Aug-2020 17:35:09	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

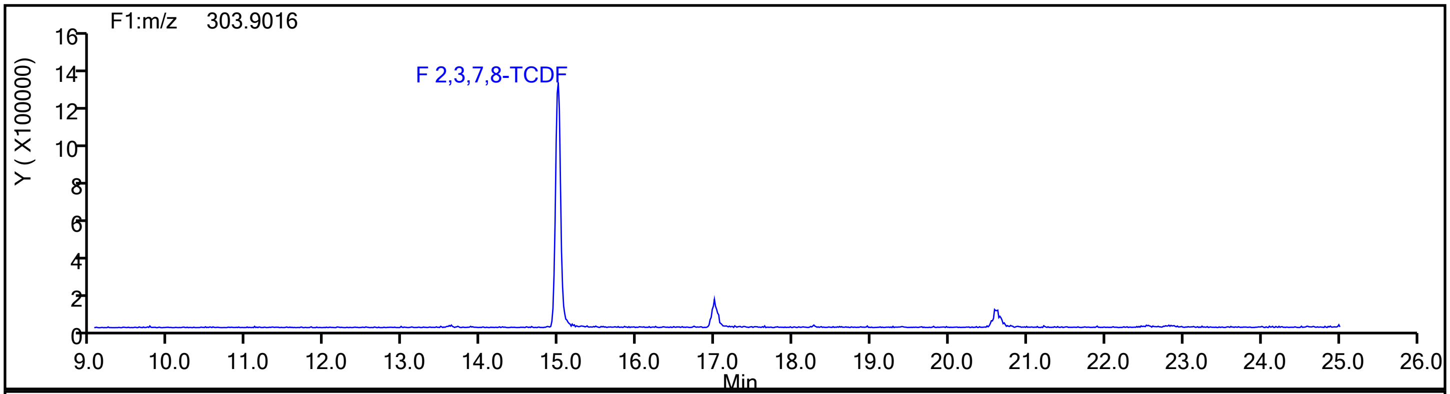

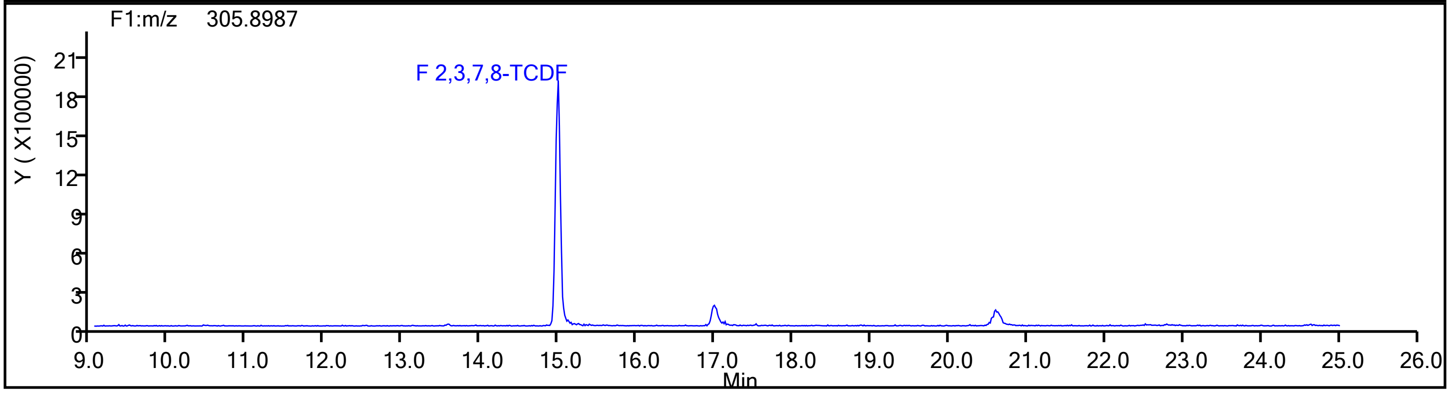

TCDF Standards

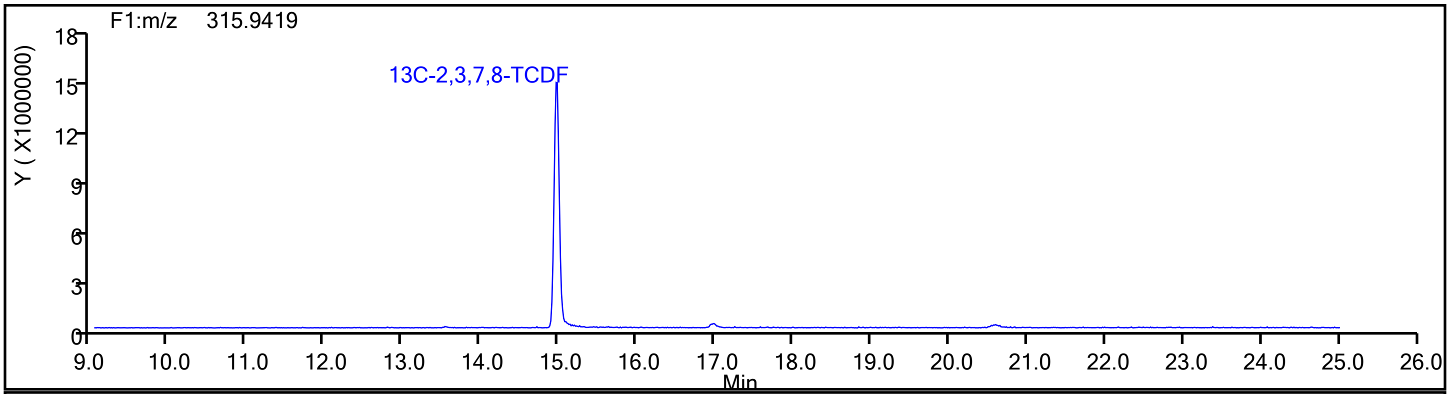

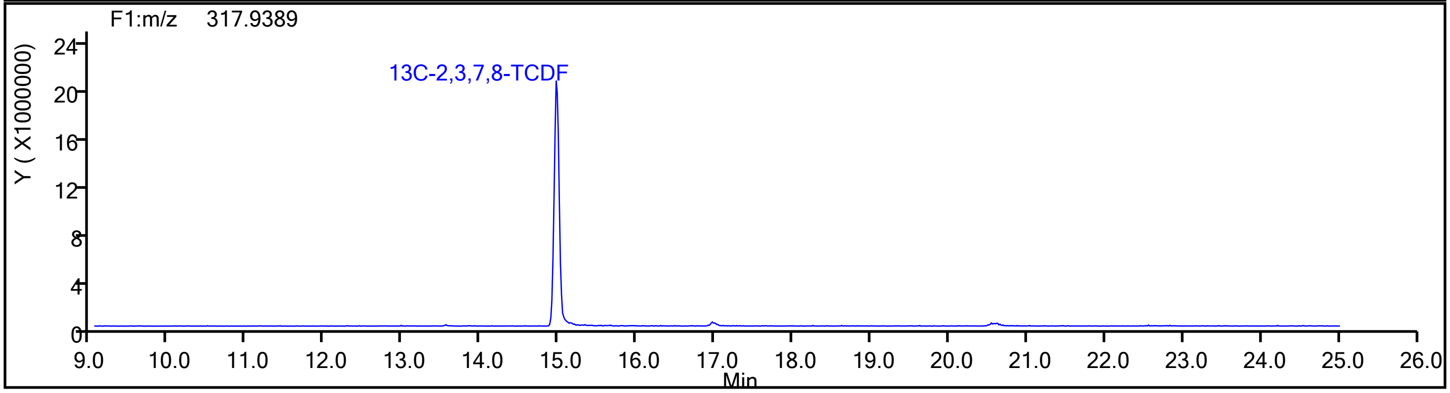

Report Date: 21-Aug-2020 11:46:44 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d
Injection Date: 20-Aug-2020 17:35:09 Injection Vol: 2.0 ul
Instrument ID: 4D2 Operator ID:
Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405652 Sample Line#: 3
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

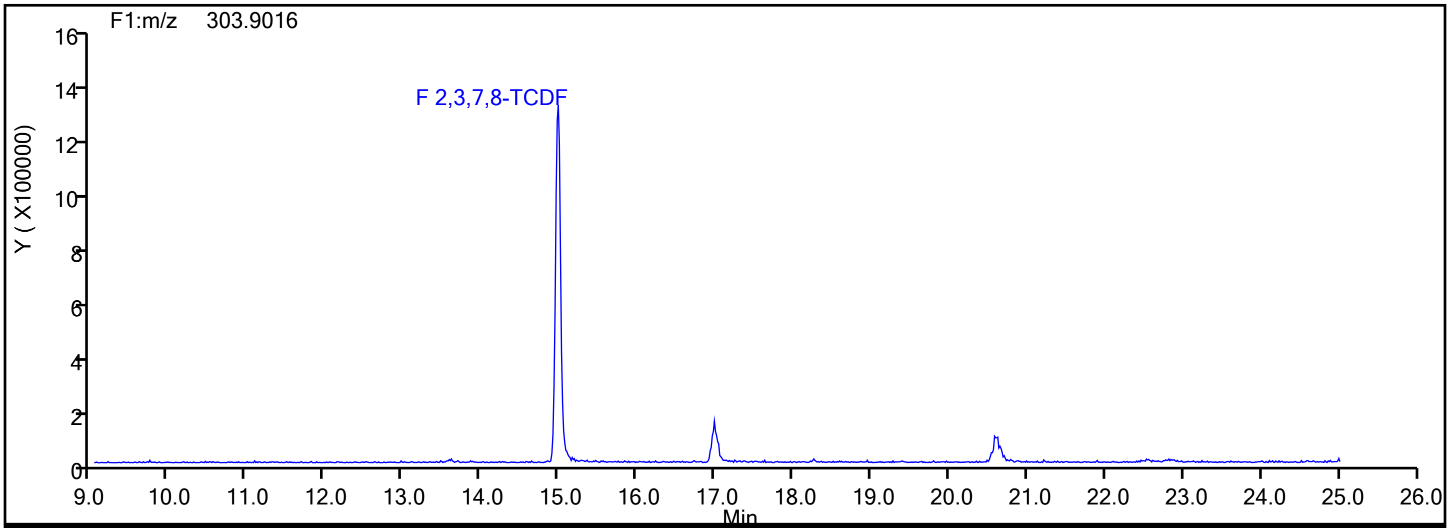

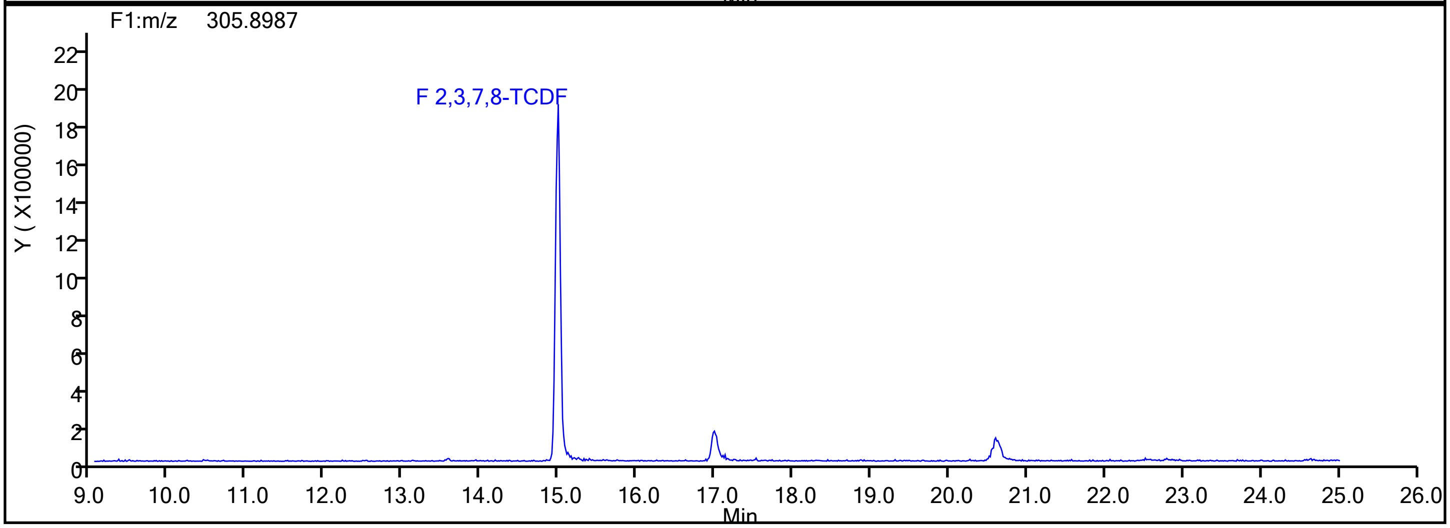

TCDF Interference Mass

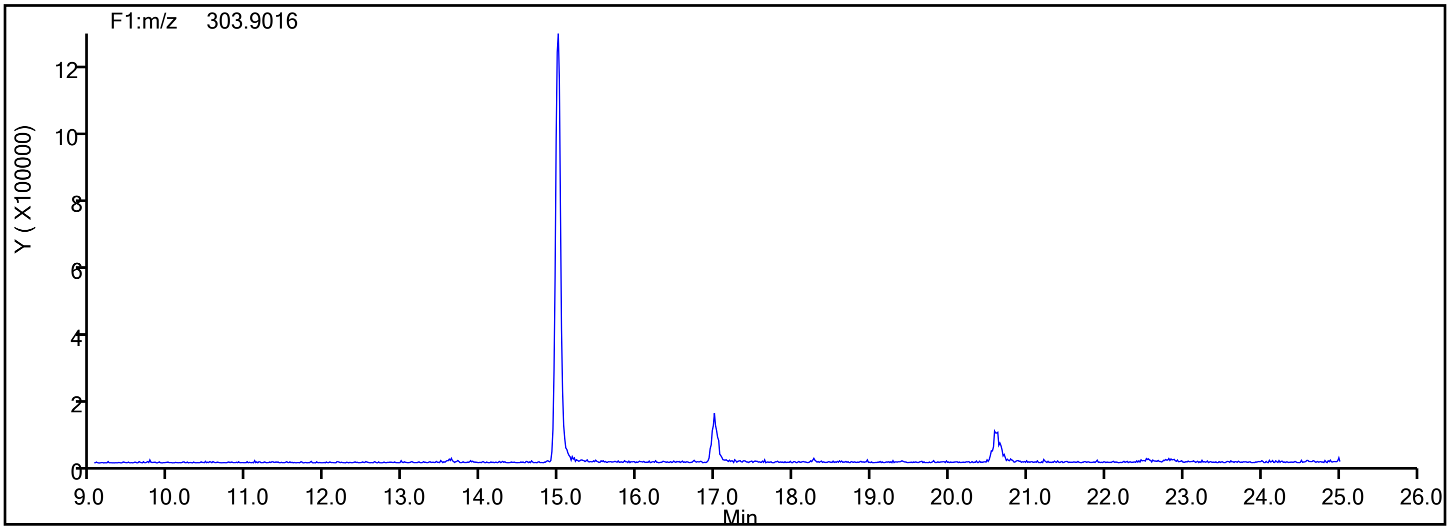

Report Date: 21-Aug-2020 11:46:44 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d		
Injection Date:	20-Aug-2020 17:35:09	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

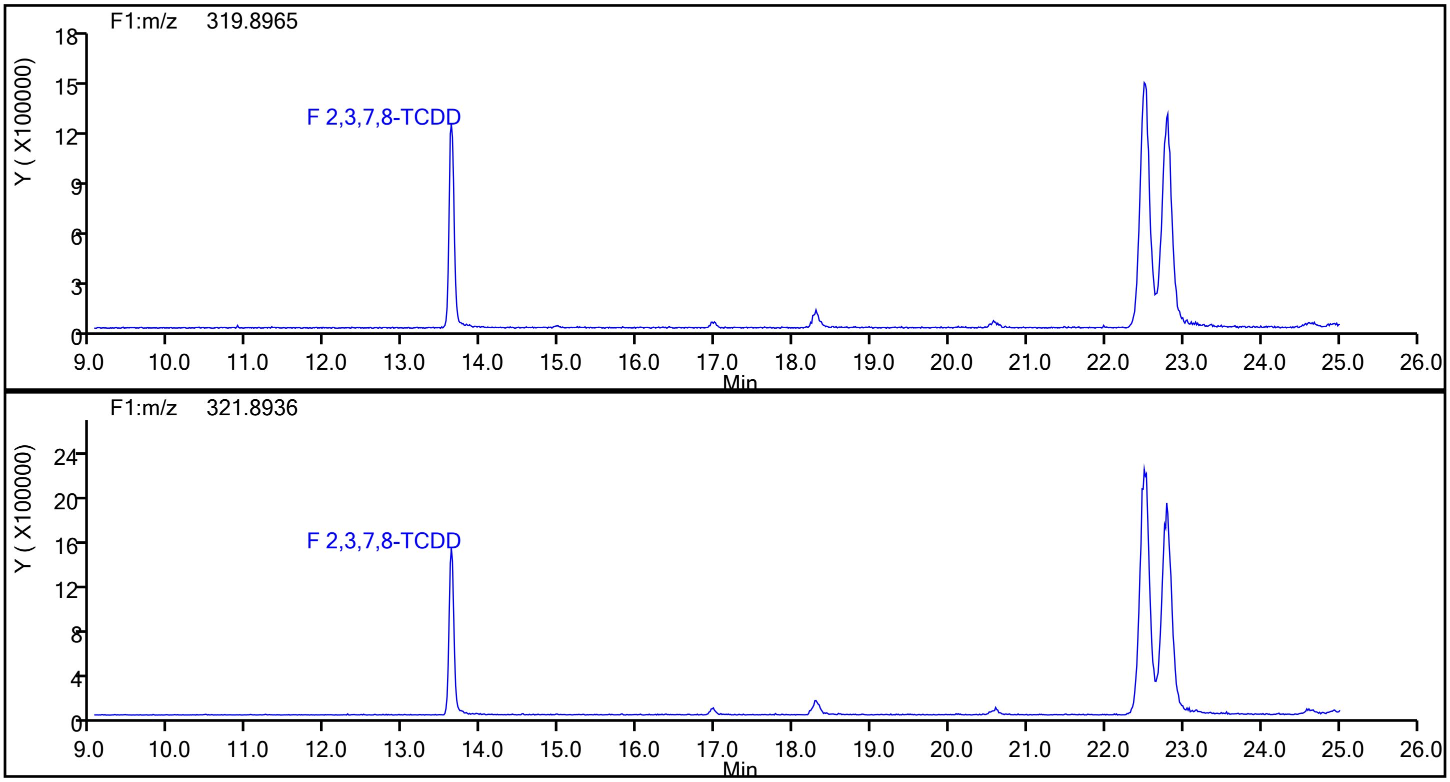

TCDD Standards

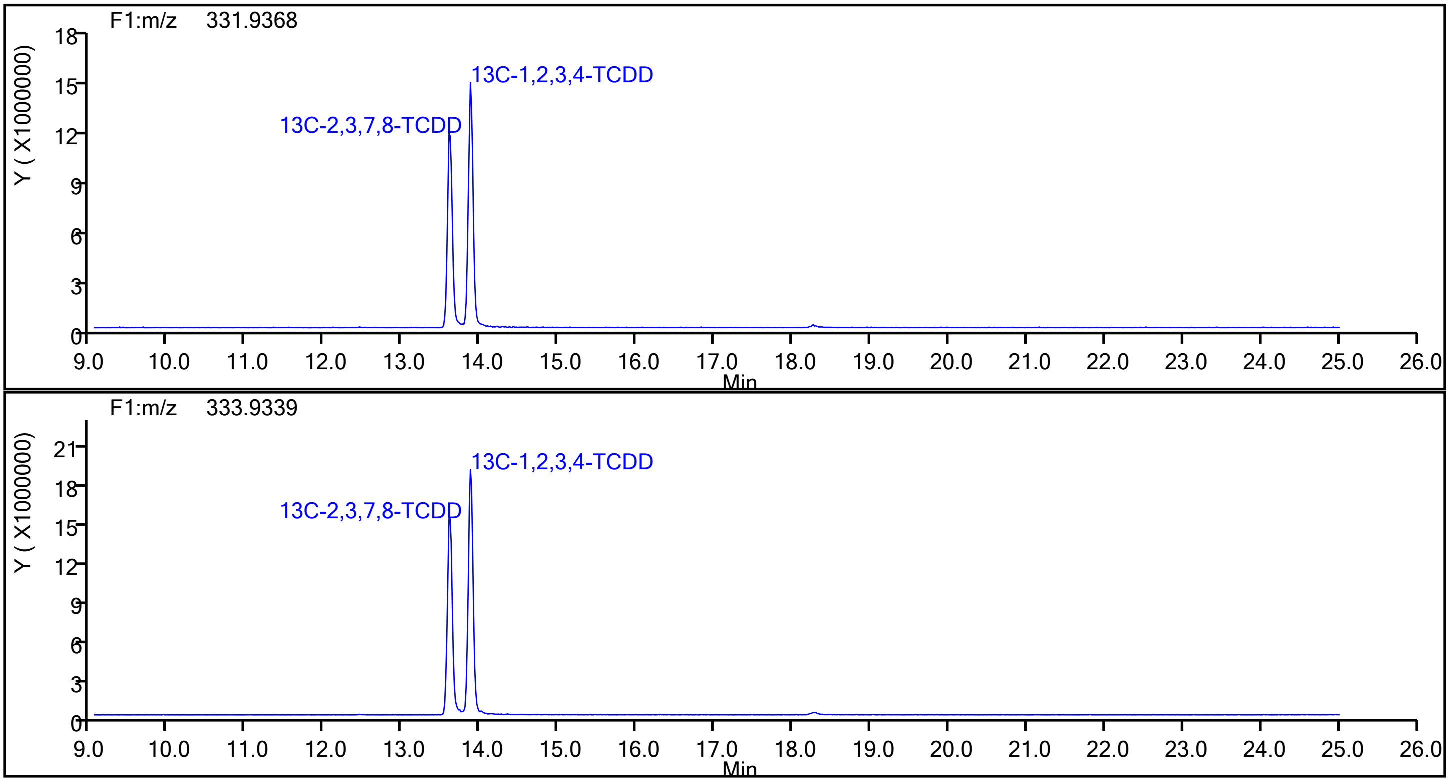

Report Date: 21-Aug-2020 11:46:44 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d
Injection Date: 20-Aug-2020 17:35:09 Injection Vol: 2.0 ul
Instrument ID: 4D2 Operator ID:
Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405652 Sample Line#: 3
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

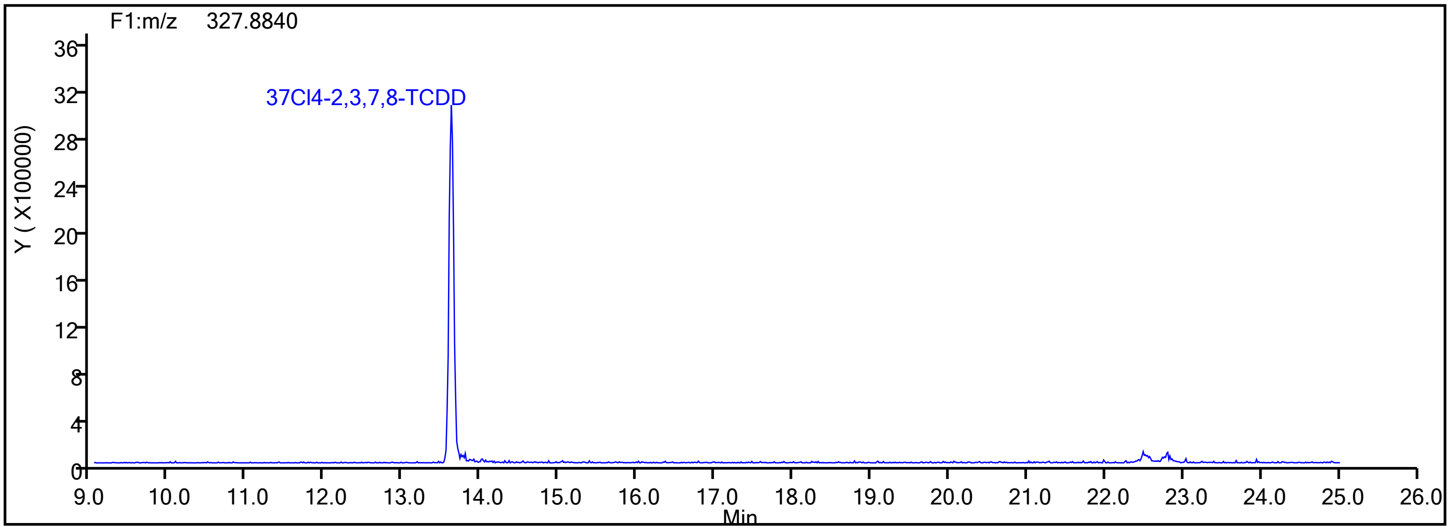

37Cl4-TCDD Standards

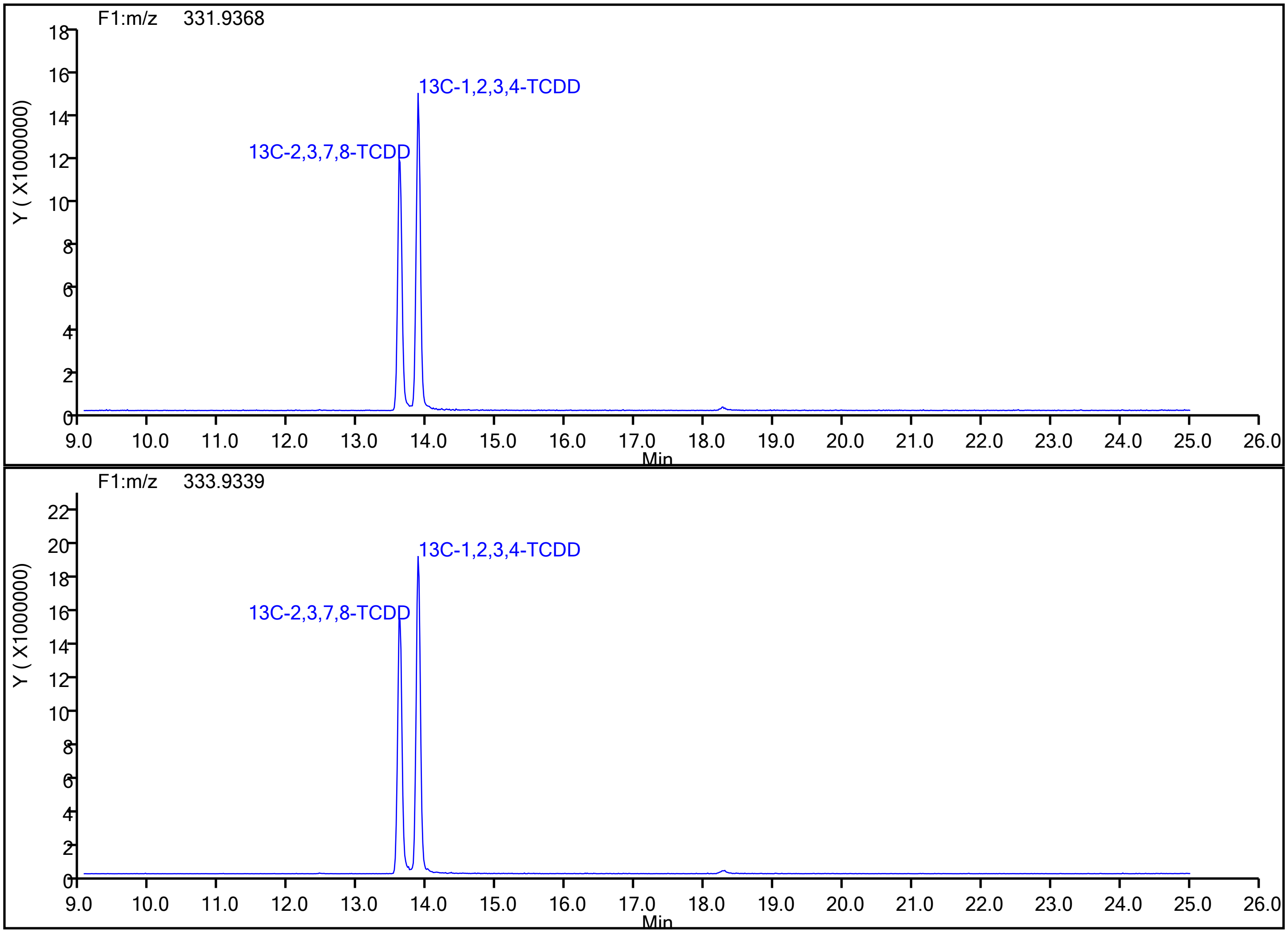

Report Date: 21-Aug-2020 11:46:44 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_003.d		
Injection Date:	20-Aug-2020 17:35:09	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

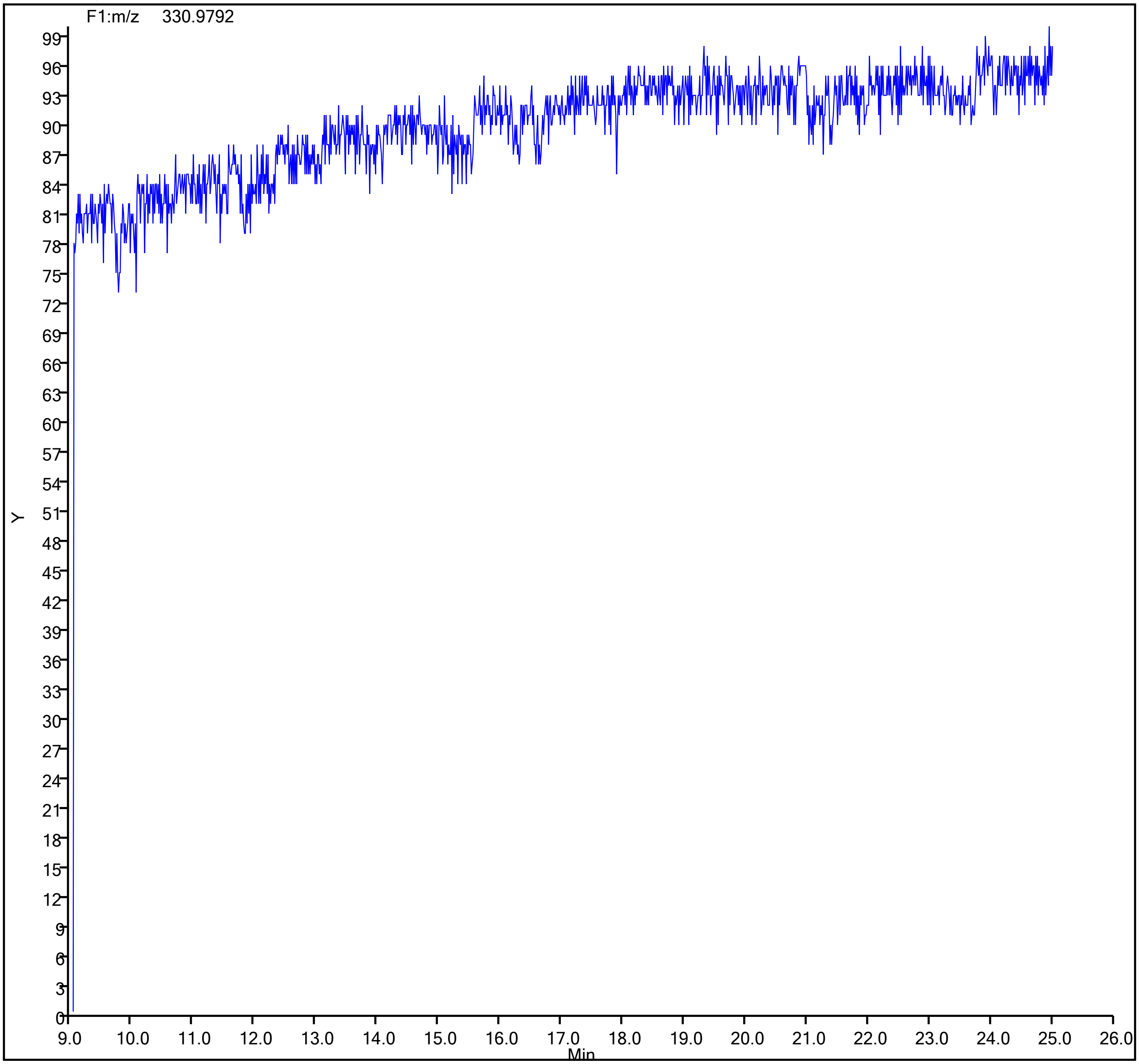

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICV 320-383168/10 Calibration Date: 06/03/2020 20:01

Instrument ID: DFS 1 Calib Start Date: 06/03/2020 14:05

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/03/2020 18:06

Lab File ID: 03jn20dfs1_12.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.131	1.092		38.6	40.0	97	70-130
2,3,7,8-TCDD	AveID	1.185	1.170		39.5	40.0	99	70-130
1,2,3,7,8-PeCDF	AveID	1.106	1.045		189	200	95	70-130
2,3,4,7,8-PeCDF	AveID	0.9067	0.9637		213	200	106	70-130
1,2,3,7,8-PeCDD	AveID	1.106	1.038		188	200	94	70-130
1,2,3,4,7,8-HxCDF	AveID	1.009	1.006		199	200	100	70-130
1,2,3,6,7,8-HxCDF	AveID	1.243	1.217		196	200	98	70-130
2,3,4,6,7,8-HxCDF	AveID	1.274	1.280		201	200	100	70-130
1,2,3,4,7,8-HxCDD	AveID	0.9336	0.9235		198	200	99	70-130
1,2,3,6,7,8-HxCDD	AveID	1.080	1.099		204	200	102	70-130
1,2,3,7,8,9-HxCDD	AveID	1.057	1.024		194	200	97	70-130
1,2,3,7,8,9-HxCDF	AveID	1.288	1.219		189	200	95	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.596	1.568		197	200	98	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.085		195	200	97	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.169	1.102		189	200	94	70-130
OCDD	AveID	1.195	1.179		395	400	99	70-130
OCDF	AveID	1.481	1.444		390	400	98	70-130
13C-2,3,7,8-TCDF	Ave	1.498	1.498		100	100	100	71-140
13C-2,3,7,8-TCDD	Ave	1.037	1.049		101	100	101	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.306	1.308		100	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.542	1.530		99.2	100	99	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8294	0.8169		98.5	100	98	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.462	1.415		96.8	100	97	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.287	1.260		97.9	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.199	1.170		97.6	100	98	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	1.105	1.064		96.3	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9871	0.9470		95.9	100	96	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.069	1.109		104	100	104	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9035	0.8738		96.7	100	97	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8875	0.8859		99.8	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	1.048	1.088		104	100	104	77-129
13C-OCDD	Ave	0.6297	0.6432		204	200	102	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.121	1.041		37.2	40.0	93	79-127

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Jun-2020 20:01:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Jun-2020 08:41:41 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1005

First Level Reviewer: arghestanis Date: 08-Jun-2020 08:41:16

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.282	3829313	0.80	5.4E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.293	5736579	0.81	1.4977	100.0	100.0	0.3062	0.3062	100	
2,3,7,8-TCDF	20.310	2505820	0.79	1.1312	38.6	38.6	0.0611	0.0611	96.53	a
A Non-2,3,7,8-sub-TCDF	19.865	2548986	0.77	1.1312	39.3	39.3	0.0611	38.6		RQ
S Total TCDF					77.9	77.9	0.0611	0.0611		RQ
D 13C-2,3,7,8-TCDD	21.652	4015710	0.81	1.0367	101.2	101.2	0.2456	0.2456	101	
2,3,7,8-TCDD	21.687	1879807	0.78	1.1849	39.5	39.5	0.0930	0.0930	98.77	
$ 37Cl4-2,3,7,8-TCDD	21.687	1594870		1.1208	37.2	37.2	0.0452	0.0452	92.90	
A Non-2,3,7,8-sub-TCDD	20.722						0.0930	0.7726		U
S Total TCDD					39.5	39.5	0.0930	0.0930		
D 13C-1,2,3,7,8-PeCDF	27.283	5009619	1.61	1.3057	100.2	100.2	0.3600	0.3600	100	
1,2,3,7,8-PeCDF	27.299	10473182	1.56	1.1060	189.0	189.0	0.6855	0.6855	94.51	
D 13C-2,3,4,7,8-PeCDF	28.807	5859497	1.60	1.5420	99.2	99.2	0.3048	0.3048	99.23	
2,3,4,7,8-PeCDF	28.832	11293616	1.56	0.9067	212.6	212.6	0.7918	0.7918	106	
A F1 PeCDFs	24.878						0.0200	0.0200		
A Non-2,3,7,8-sub-PeCDF	28.397						0.7328	4.476		U
S Total PeCDF					401.6	401.6	0.7387	0.7387		
D 13C-1,2,3,7,8-PeCDD	29.632	3128203	1.61	0.8294	98.5	98.5	0.1590	0.1590	98.49	
1,2,3,7,8-PeCDD	29.657	6491040	1.56	1.1062	187.6	187.6	0.1443	0.1443	93.79	
A Non-2,3,7,8-sub-PeCDD	28.482						0.1443	0.1443		n
S Total PeCDD					187.6	187.6	0.1443	0.1443		
D 13C-1,2,3,4,7,8-HxCDF	34.965	5027181	0.53	1.4619	96.8	96.8	0.2366	0.2366	96.80	
1,2,3,4,7,8-HxCDF	34.982	10109902	1.24	1.0087	199.4	199.4	0.6612	0.6612	99.69	
D 13C-1,2,3,6,7,8-HxCDF	35.134	4474579	0.53	1.2866	97.9	97.9	0.2688	0.2688	97.90	
1,2,3,6,7,8-HxCDF	35.150	10893538	1.25	1.2432	195.8	195.8	0.6316	0.6316	97.91	
D 13C-2,3,4,6,7,8-HxCDF	35.950	4154917	0.52	1.1988	97.6	97.6	0.2885	0.2885	97.56	
2,3,4,6,7,8-HxCDF	35.967	10634822	1.24	1.2736	201.0	201.0	0.5880	0.5880	100	
D 13C-1,2,3,7,8,9-HxCDF	36.834	3938760	0.53	1.0687	103.7	103.7	0.3237	0.3237	104	
1,2,3,7,8,9-HxCDF	36.851	9598825	1.24	1.2882	189.2	189.2	0.5528	0.5528	94.59	
A Non-2,3,7,8-sub-HxCDF	35.118						0.6030	0.6030		
S Total HxCDF					785.4	785.4	0.6084	0.6084		

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.641	3552595	1.28	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.161	3780155	1.26	1.1046	96.3	96.3	0.2054	0.2054	96.33	
1,2,3,4,7,8-HxCDD	36.178	6981764	1.27	0.9336	197.8	197.8	0.2894	0.2894	98.91	
D 13C-1,2,3,6,7,8-HxCDD	36.279	3364240	1.25	0.9871	95.9	95.9	0.2299	0.2299	95.94	
1,2,3,6,7,8-HxCDD	36.287	7397028	1.22	1.0802	203.6	203.6	0.2830	0.2830	102	
1,2,3,7,8,9-HxCDD	36.649	7312688	1.24	1.0574	193.6	193.6	0.2713	0.2713	96.80	
A Non-2,3,7,8-sub-HxCDD	35.480						0.2802	0.2802		
S Total HxCDD					595.0	595.0	0.2812	0.2812		
D 13C-1,2,3,4,6,7,8-HpCDF	38.631	3104266	0.46	0.9035	96.7	96.7	0.4385	0.4385	96.71	
1,2,3,4,6,7,8-HpCDF	38.640	9733791	1.04	1.5957	196.5	196.5	0.6626	0.6626	98.25	
D 13C-1,2,3,4,7,8,9-HpCDF	39.870	3866849	0.46	1.0480	103.9	103.9	0.3780	0.3780	104	
1,2,3,4,7,8,9-HpCDF	39.878	8525178	1.05	1.1693	188.5	188.5	0.6638	0.6638	94.27	
A Non-2,3,7,8-sub-HpCDF	39.283						0.6475	0.6475		
S Total HpCDF					385.0	385.0	0.6632	0.6632		
D 13C-1,2,3,4,6,7,8-HpCDD	39.567	3147288	1.05	0.8875	99.8	99.8	0.2648	0.2648	99.82	
1,2,3,4,6,7,8-HpCDD	39.575	6828961	1.05	1.1150	194.6	194.6	0.4176	0.4176	97.30	
A Non-2,3,7,8-sub-HpCDD	39.515						0.4176	0.4176		
S Total HpCDD					194.6	194.6	0.4176	0.4176		
D 13C-OCDD	42.020	4569938	0.90	0.6297	204.3	204.3	0.1956	0.1956	102	
OCDF	42.113	13197733	0.91	1.4809	390.0	390.0	0.2034	0.2034	97.50	
OCDD	42.029	10778846	0.90	1.1948	394.8	394.8	0.2110	0.2110	98.71	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- U - Marked Undetected
- a - User Assigned ID

Reagents:

HRDXNIC_00045	Amount Added: 1.00	Units: mL

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Jun-2020 20:01:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Jun-2020 08:41:41 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1005

First Level Reviewer: arghestanis Date: 08-Jun-2020 08:41:16

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.282	21.315	-2		1700364	255684	435	1087	588		a
333.9338	21.282	21.315	-2		2128949	310673	142	355	2188	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.293	20.334	-2	0.954	2563633	382024	720	1800	531		
317.9389	20.284	20.334	-3	0.953	3172946	474691	319	797	1488	0.81(0.65-0.89)	
2,3,7,8-TCDF											a
303.9016	20.310	20.351	-2	1.001	1107561	159091	95	237	1675		a
305.8987	20.310	20.351	-2	1.001	1398259	201349	142	355	1418	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	19.079	19.865	-47	0.940	11559	1811	95	237	19		
305.8987	19.062	19.865	-48	0.939	14494	2212	142	355	16	0.80(0.65-0.89)	
303.9016	19.587	19.865	-17	0.965	7445	1466	95	237	15		
305.8987	19.587	19.865	-17	0.965	12020	1709	142	355	12	0.62(0.65-0.89)	
	Empc Correction				9668	1903	142	355	13		
303.9016	20.310	19.865	27	1.001	1107561	159091	95	237	1675		
305.8987	20.310	19.865	27	1.001	1398259	201349	142	355	1418	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.652	21.702	-3	1.017	1801156	241090	435	1087	554		
333.9338	21.661	21.702	-2	1.018	2214554	295898	142	355	2084	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.687	21.728	-2	1.002	826451	112675	135	337	835		
321.8936	21.687	21.728	-2	1.002	1053356	144603	102	255	1418	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.687	21.728	-2	1.019	1594870	217222	115	287	1889		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.722	20.722	0	0.957	15973	2675	135	337			
321.8936	20.722	20.722	0	0.957	20787	3440	102	255		0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.283	27.306	-1	1.282	3086918	522276	617	1542	846		
353.8970	27.283	27.306	-1	1.282	1922701	331345	448	1120	740	1.61(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.299	27.331	-2	1.001	6374511	1086398	1573	3932	691		
341.8567	27.299	27.331	-2	1.001	4098671	689290	1016	2540	678	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.807	28.847	-2	1.354	3610160	558245	617	1542	905		
353.8970	28.807	28.847	-2	1.354	2249337	343272	448	1120	766	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.832	28.863	-2	1.001	6885540	1038964	1573	3932	660		
341.8567	28.832	28.863	-2	1.001	4408076	670171	1016	2540	660	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.878						11	27			
341.8567	24.878						60	150			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	27.897	28.397	-30	1.023	148217	23798	1573	3932	15		
341.8567	27.906	28.397	-29	1.023	96559	15469	1016	2540	15	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.632	29.655	-1	1.392	1930314	300323	181	452	1659		
369.8919	29.632	29.655	-1	1.392	1197889	185075	118	295	1568	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.657	29.688	-2	1.001	3955065	607918	203	507	2995		
357.8516	29.657	29.688	-2	1.001	2535975	389100	107	267	3636	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.992	28.482	31	0.978	5970	972	203	507	5		
357.8516	28.958	28.482	28	0.977	3891	599	107	267	6	1.53(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.965	34.987	-1	0.954	1730950	406733	466	1165	873		
385.8610	34.965	34.987	-1	0.954	3296231	775147	910	2275	852	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.982	35.012	-2	1.000	5594614	1327253	1770	4425	750		
375.8178	34.982	35.012	-2	1.000	4515288	1069430	1383	3457	773	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.134	35.155	-1	0.959	1557166	343835	466	1165	738		
385.8610	35.134	35.155	-1	0.959	2917413	659916	910	2275	725	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.150	35.172	-1	1.000	6043165	1344049	1770	4425	759		
375.8178	35.142	35.172	-2	1.000	4850373	1088770	1383	3457	787	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.950	35.972	-1	0.981	1429220	361877	466	1165	777		
385.8610	35.950	35.972	-1	0.981	2725697	690737	910	2275	759	0.52(0.43-0.59)	

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	35.967	35.989	-1	1.000	5890163	1504518	1770	4425	850		
375.8178	35.967	35.989	-1	1.000	4744659	1211022	1383	3457	876	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.834	36.856	-1	1.005	1369581	383689	466	1165	823		
385.8610	36.834	36.856	-1	1.005	2569179	723084	910	2275	795	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.851	36.873	-1	1.000	5322904	1488982	1770	4425	841		
375.8178	36.851	36.873	-1	1.000	4275921	1187447	1383	3457	859	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.118						1770	4425			
375.8178	35.118						1383	3457			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.641	36.663	-1		1997770	555377	577	1442	963		
403.8529	36.641	36.663	-1		1554825	439174	326	815	1347	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.161	36.182	-1	0.987	2107209	570205	577	1442	988		
403.8529	36.161	36.182	-1	0.987	1672946	446357	326	815	1369	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.178	36.199	-1	1.000	3904193	1040045	610	1525	1705		
391.8127	36.169	36.199	-2	1.000	3077571	836755	489	1222	1711	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.279	36.300	-1	0.990	1870700	500180	577	1442	867		
403.8529	36.279	36.300	-1	0.990	1493540	398444	326	815	1222	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.287	36.317	-2	1.000	4063508	1078379	610	1525	1768		
391.8127	36.287	36.317	-2	1.000	3333520	875844	489	1222	1791	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.649	36.679	-2	1.014	4050701	1128092	610	1525	1849		
391.8127	36.649	36.679	-2	1.014	3261987	910704	489	1222	1862	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.480						610	1525			
391.8127	35.480						489	1222			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.631	38.645	-1	1.054	971964	334631	656	1640	510		
419.8220	38.631	38.645	-1	1.054	2132302	721063	920	2300	784	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.640	38.662	-1	1.000	4964734	1709024	2353	5882	726		
409.7788	38.640	38.662	-1	1.000	4769057	1628710	2112	5280	771	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.870	39.892	-1	1.088	1223534	452570	656	1640	690		
419.8220	39.870	39.892	-1	1.088	2643315	985428	920	2300	1071	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.878	39.900	-1	1.000	4368416	1619338	2353	5882	688		
409.7788	39.878	39.900	-1	1.000	4156762	1545573	2112	5280	732	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.283						2353	5882			
409.7788	39.283						2112	5280			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.567	39.588	-1	1.080	1611276	593070	502	1255	1181		
437.8140	39.567	39.588	-1	1.080	1536012	567017	433	1082	1310	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.575	39.597	-1	1.000	3497768	1274583	1118	2795	1140		
425.7737	39.575	39.597	-1	1.000	3331193	1226966	1043	2607	1176	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.515						1118	2795			
425.7737	39.515						1043	2607			
13C-OCDD											
469.7780	42.020	42.042	-1	1.147	2159833	714499	267	667	2676		
471.7750	42.020	42.042	-1	1.147	2410105	802648	223	557	3599	0.90(0.76-1.02)	
OCDF											
441.7428	42.113	42.134	-1	1.002	6293777	2135754	404	1010	5287		
443.7399	42.113	42.134	-1	1.002	6903956	2368076	510	1275	4643	0.91(0.76-1.02)	
OCDD											
457.7377	42.029	42.050	-1	1.000	5096470	1708906	366	915	4669		
459.7348	42.029	42.050	-1	1.000	5682376	1913680	399	997	4796	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

U - Marked Undetected
a - User Assigned ID

Reagents:

HRDXNIC_00045 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Jun-2020 20:01:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-TCDF, RT: 19.865

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	5736579	856715

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	5736579	856715

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.079	11559	1811	14494	2212	0.4015	0.80	
19.587	7445	1466	12020	1709	0.2999	0.62	RQ
19.587	7445	1466	9668	1903	0.2637		Empc Correction
20.310	1107561	159091	1398259	201349	38.6	0.79	
Signal Totals:							
	1126565	162368	1422421	205464			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2551338	367638				0.79	RQ
	2548986	367832					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 39.315 = (2551338 * 100.000) / (5736579 * 1.131)
Empc Amount: 39.279 = (2548986 * 100.000) / (5736579 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Jun-2020 20:01:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-TCDD, RT: 20.722

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	4015710	536988

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	4015710	536988

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.506	15973	2675	20787	3440	0.7726	0.77	

Compound is Marked ND

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Jun-2020 20:01:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 28.397

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	5009619	853621
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	5859497	901517

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	5434558	877569

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.897	148217	23798	96559	15469	4.48	1.53	

Compound is Marked ND

Report Date: 08-Jun-2020 08:41:55
Chrom Revision: 2.3 03-Jun-2020 23:27:16
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d				
Injection Date:	03-Jun-2020 20:01:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.32

Processing Integration Results

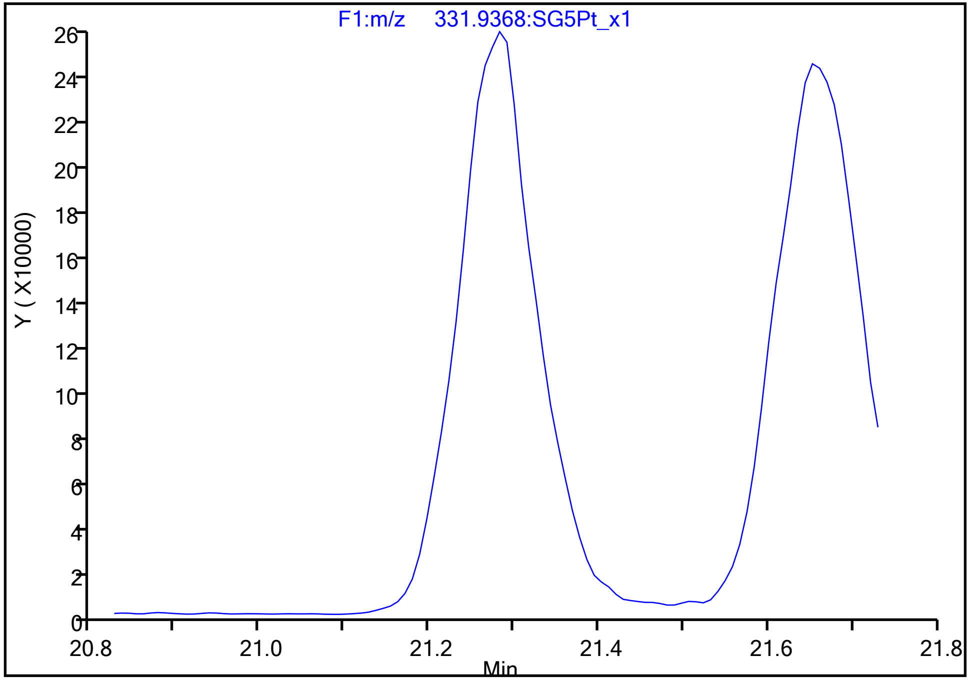

RT:	21.28
Area:	1700364
Amount:	100.0000
Amount Units:	pg/ul

Manual Integration Results

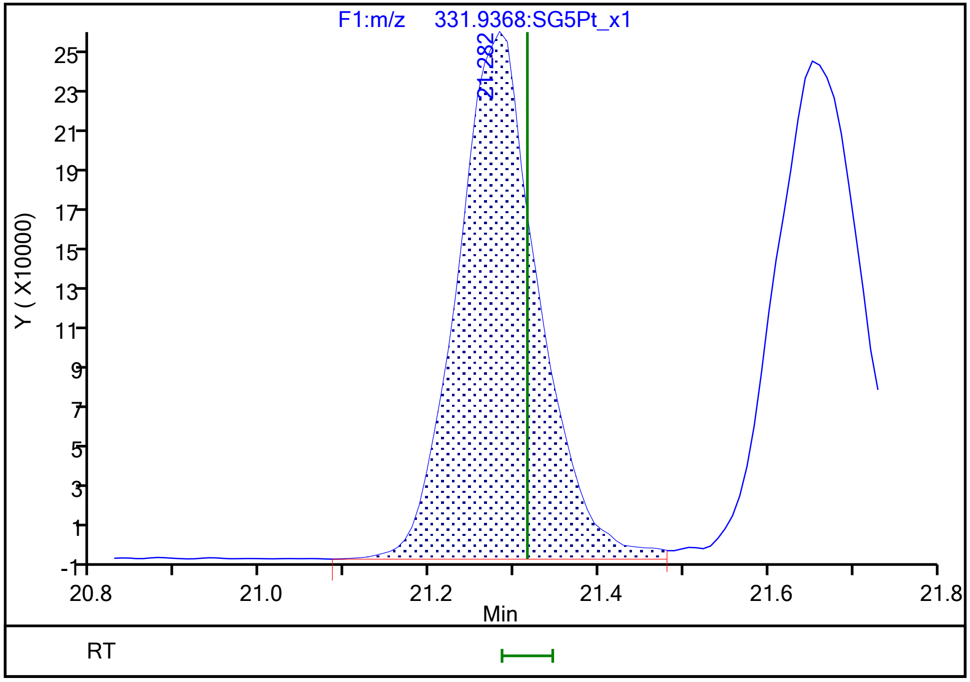

Reviewer: stephensk, 04-Jun-2020 08:22:07
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d				
Injection Date:	03-Jun-2020 20:01:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Not Detected
Expected RT: 20.35

Processing Integration Results

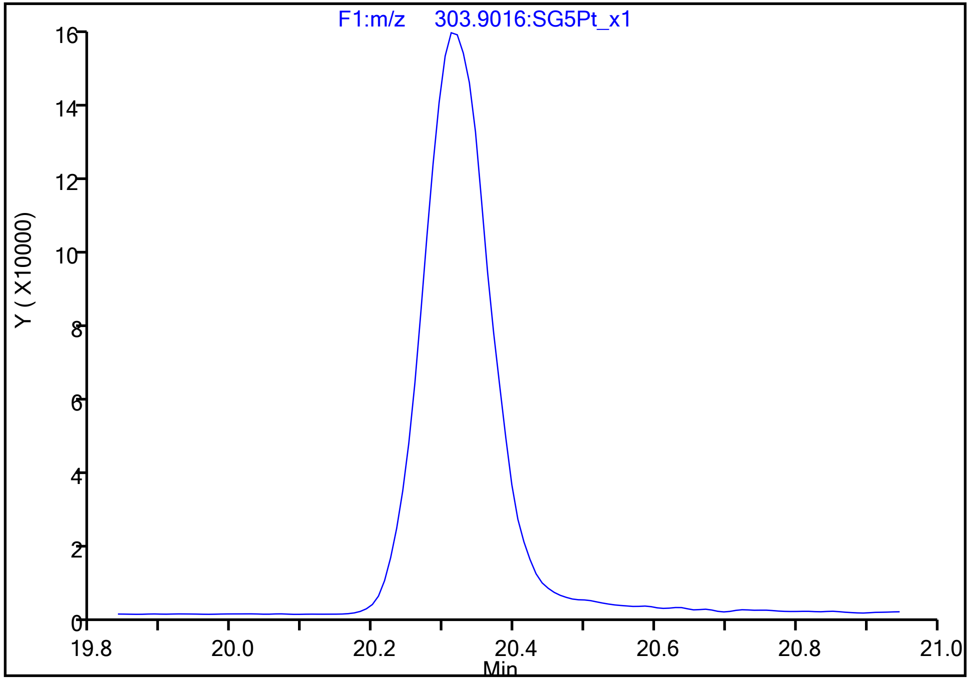

RT: 20.31
Area: 1107561
Amount: 38.613445
Amount Units: pg/ul

Manual Integration Results

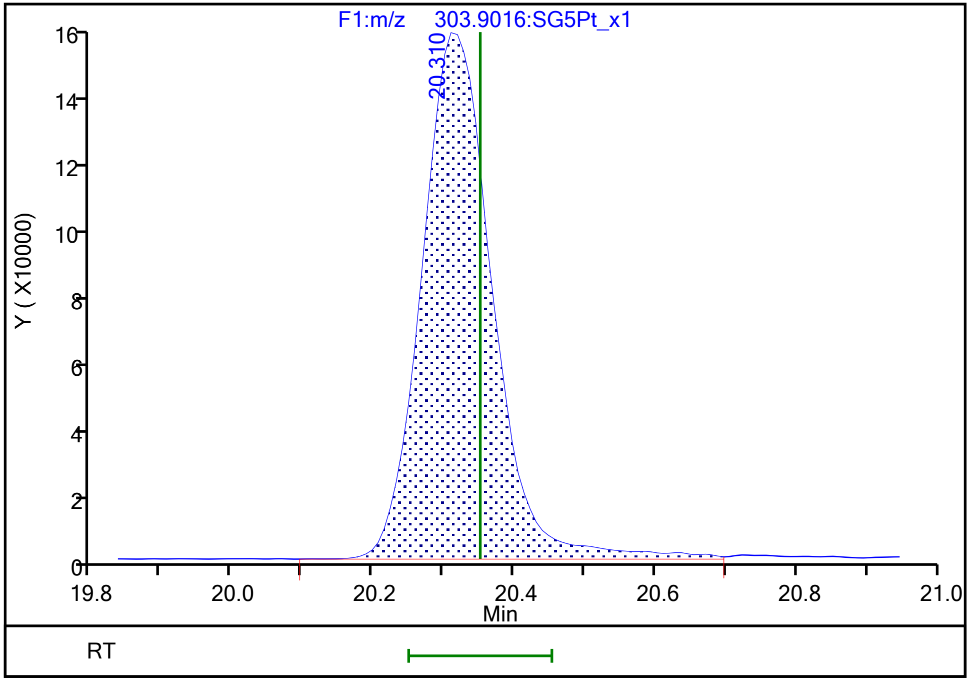

Reviewer: arghestanis, 08-Jun-2020 08:40:50

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

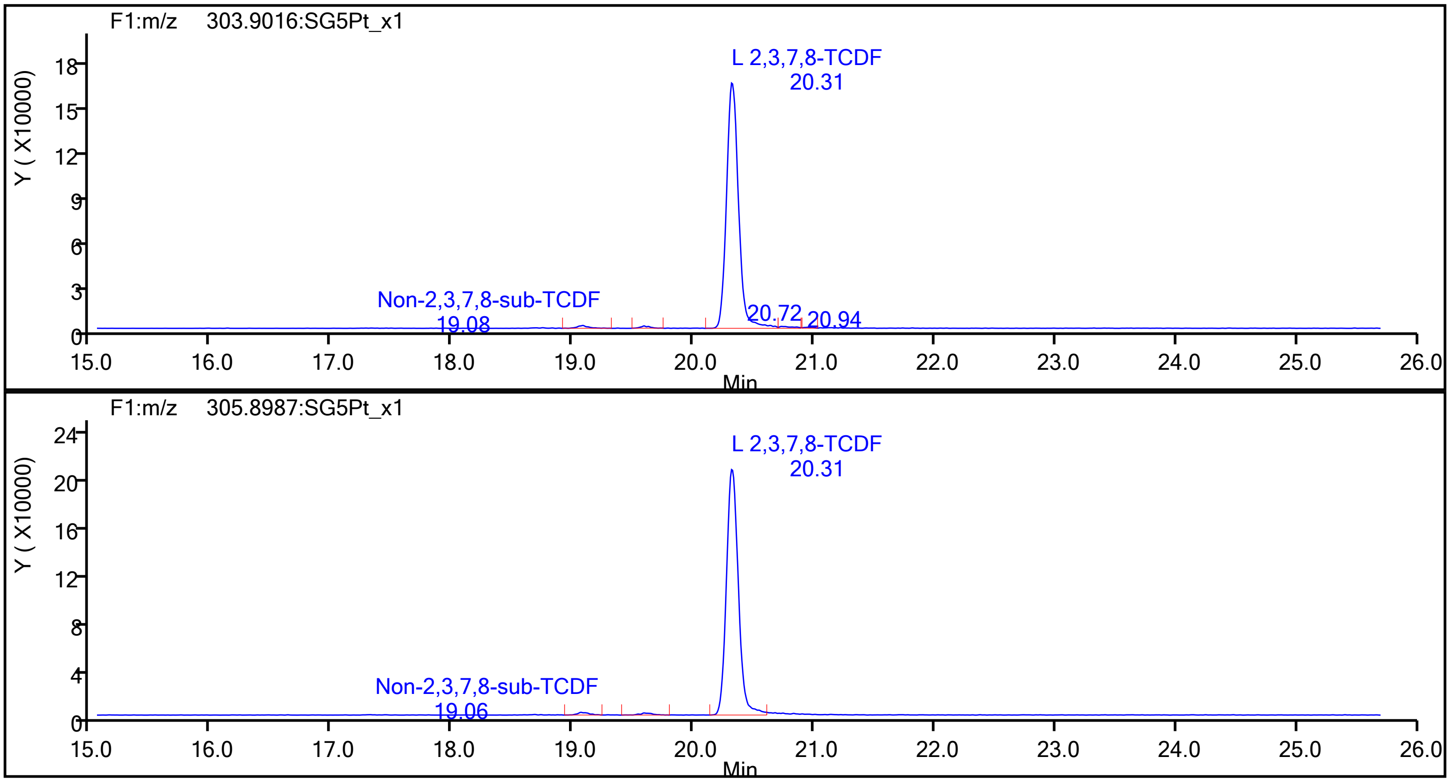

TCDF Standards

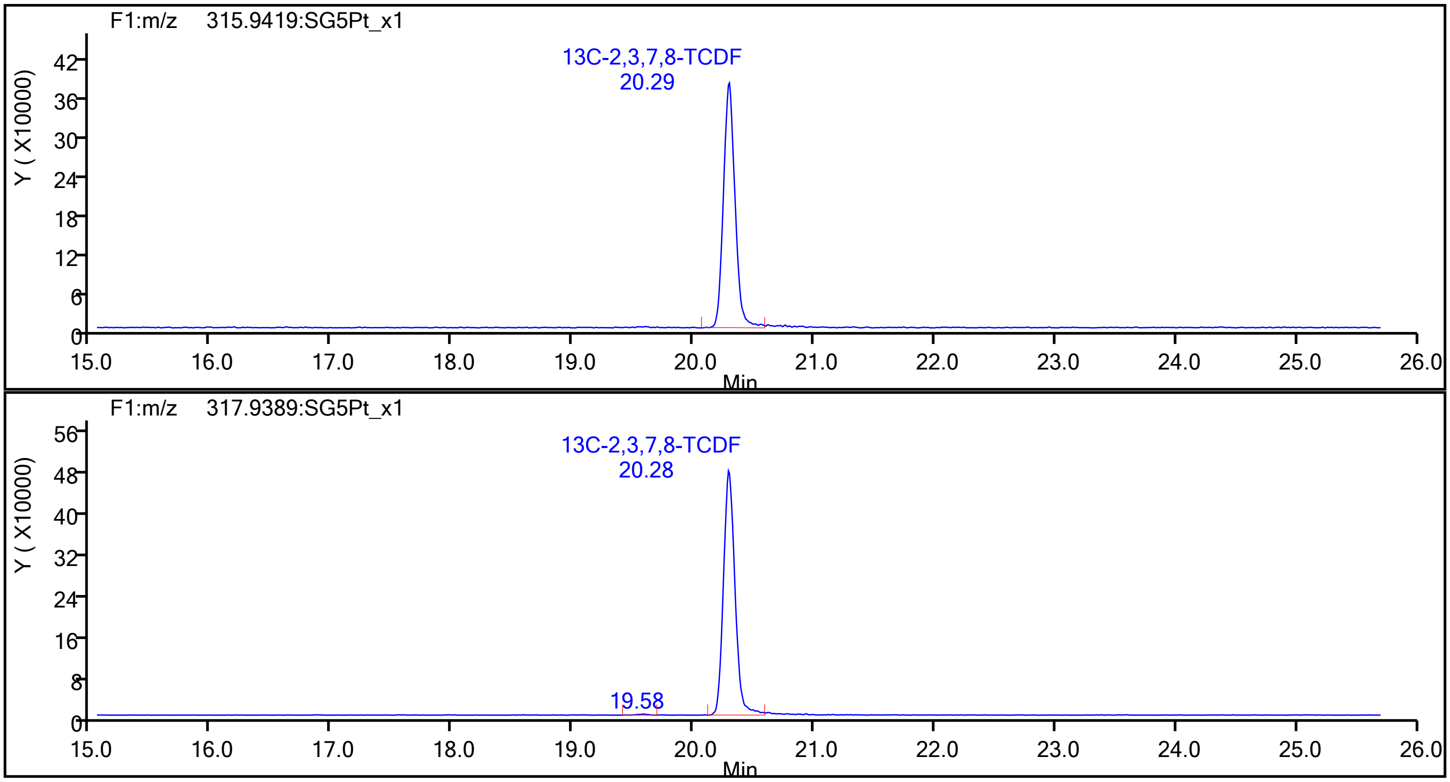

Eurofins TestAmerica, Sacramento

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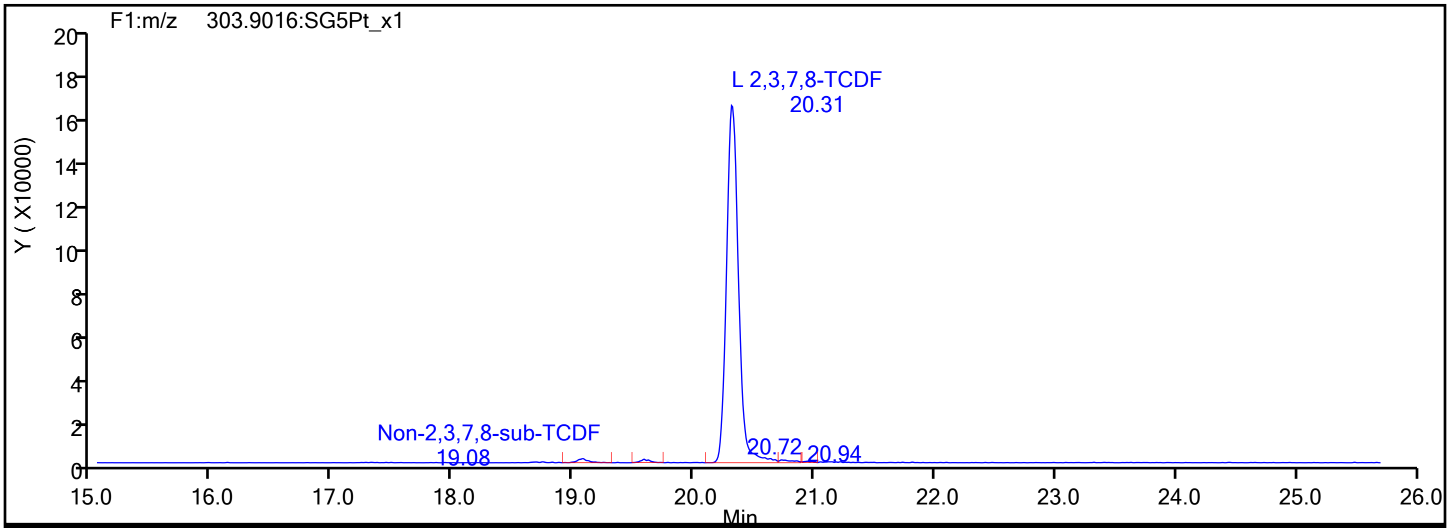

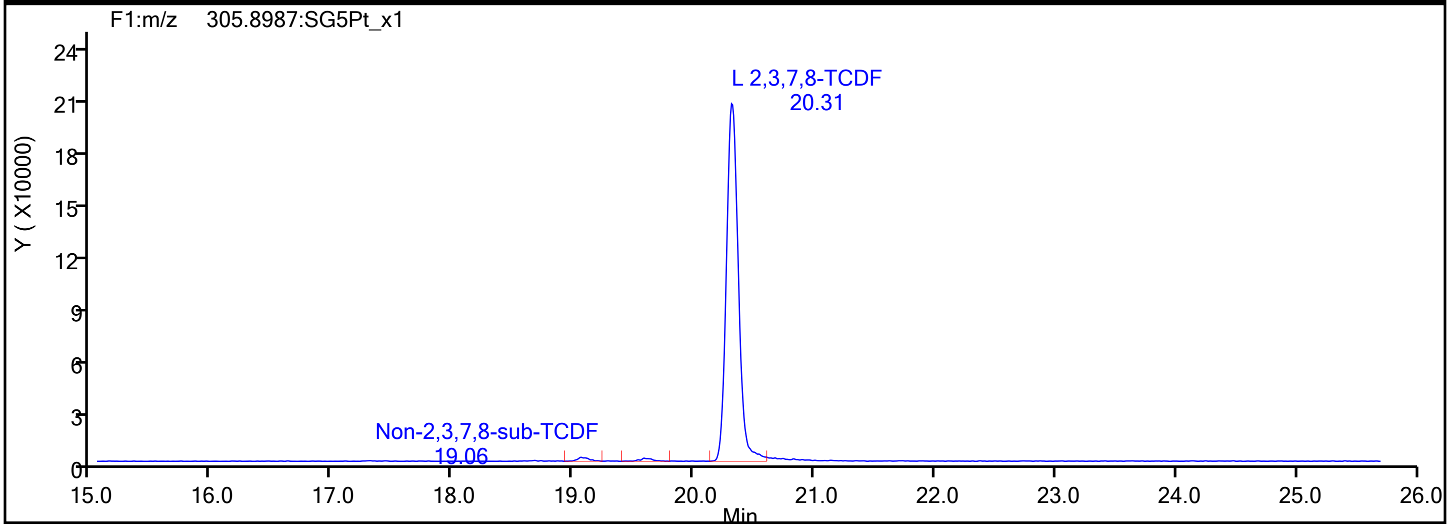

TCDF Interference Mass

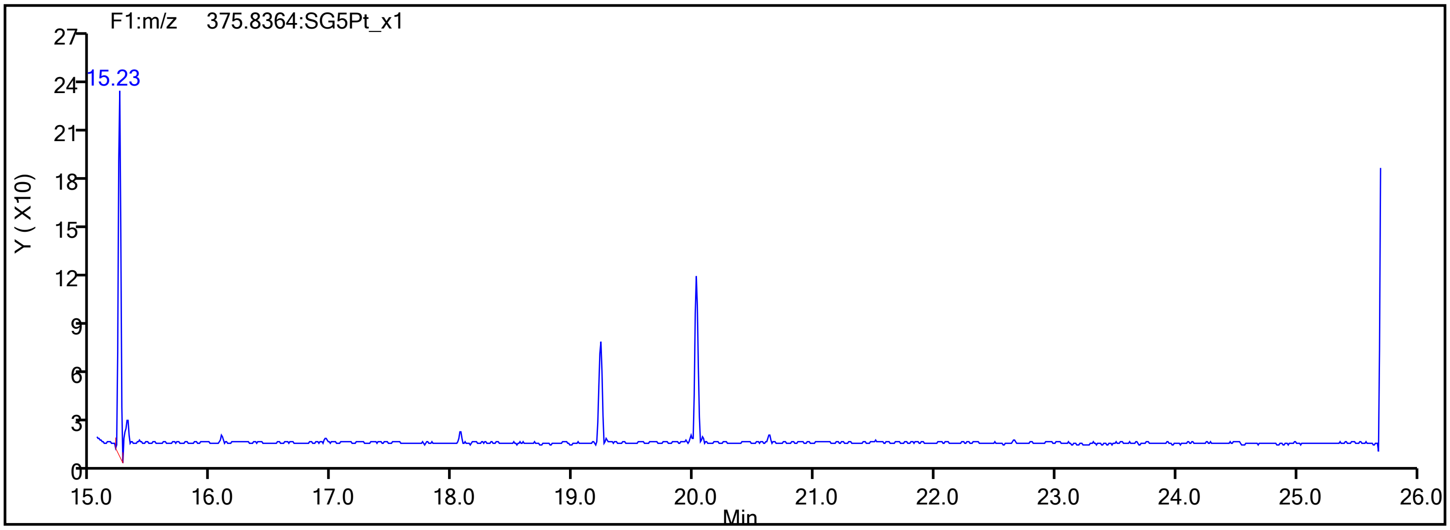

Report Date: 08-Jun-2020 08:41:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Eurofins TestAmerica, Sacramento

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TCDD

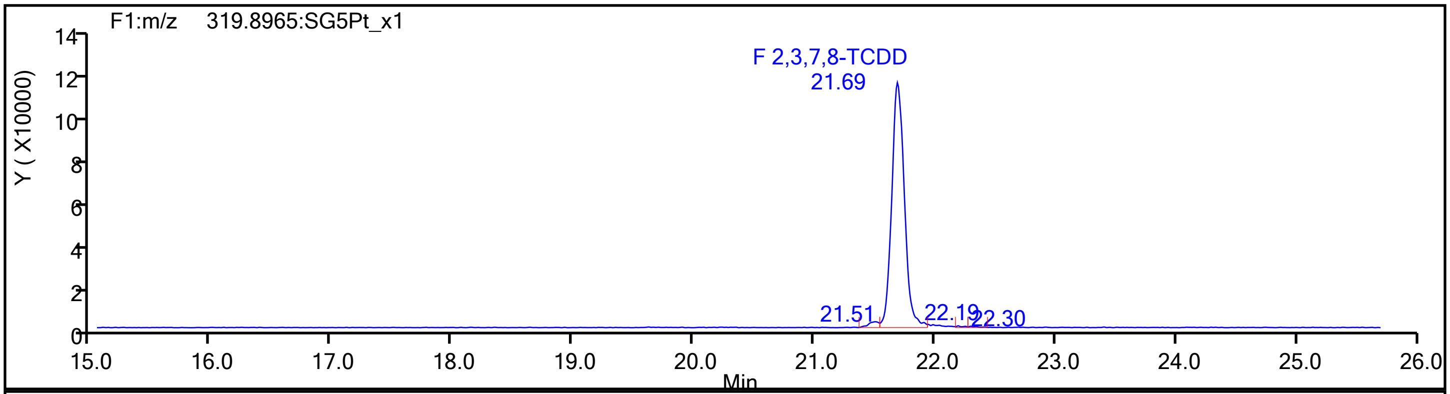

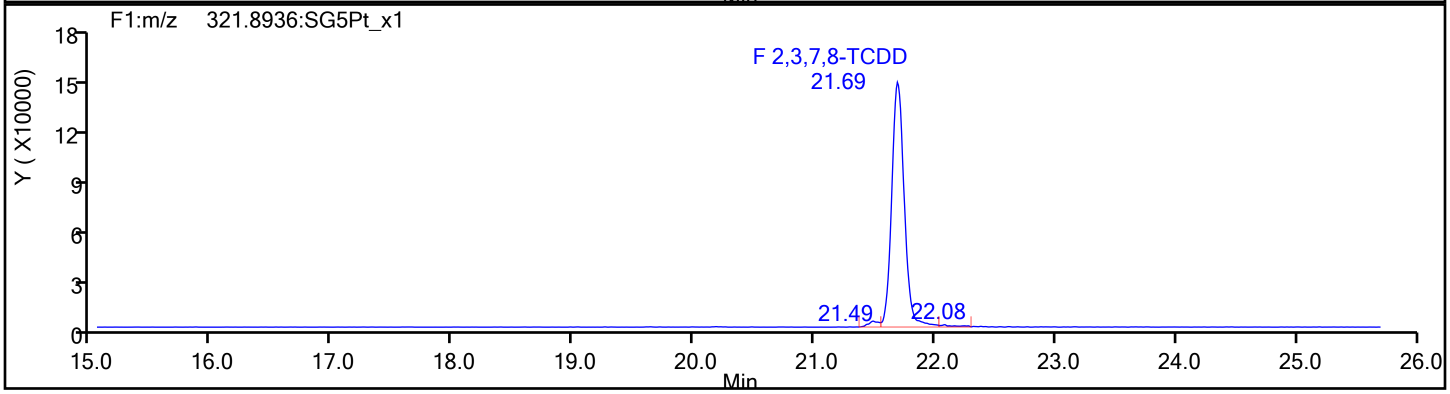

TCDD Standards

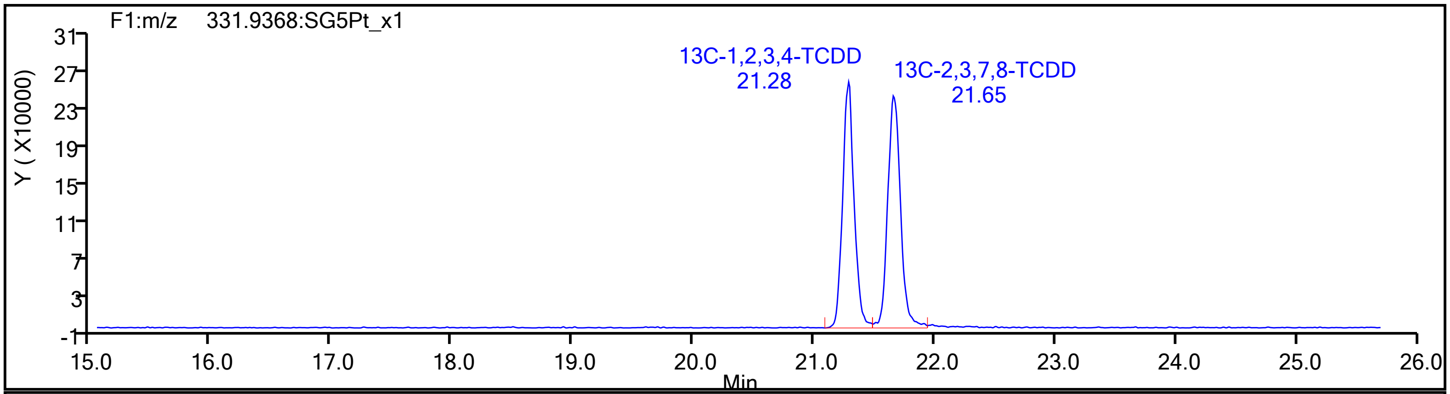

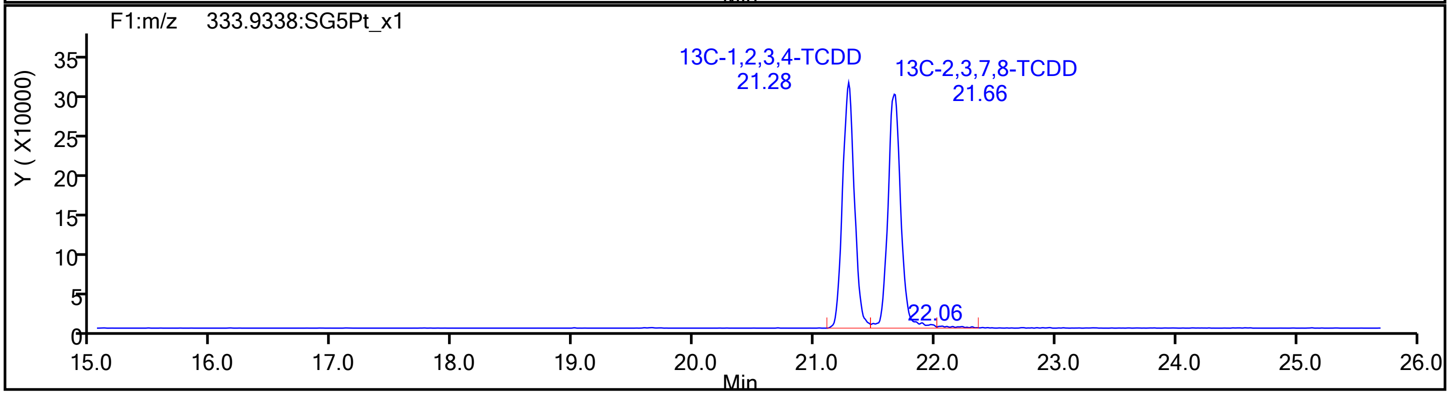

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

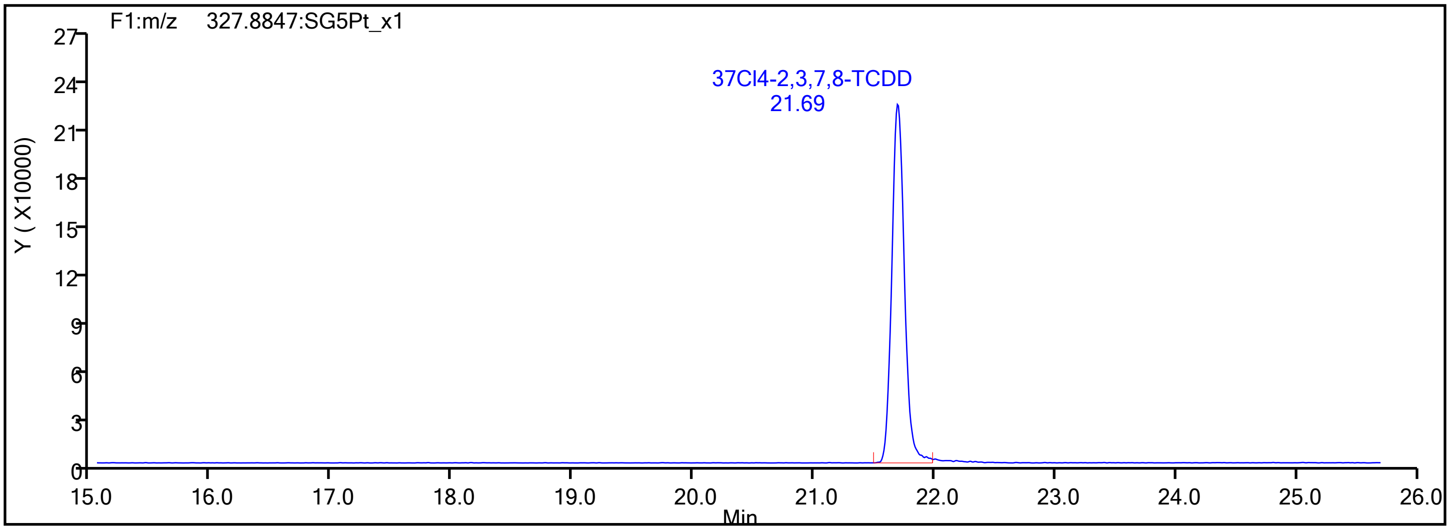

37Cl4-TCDD Standards

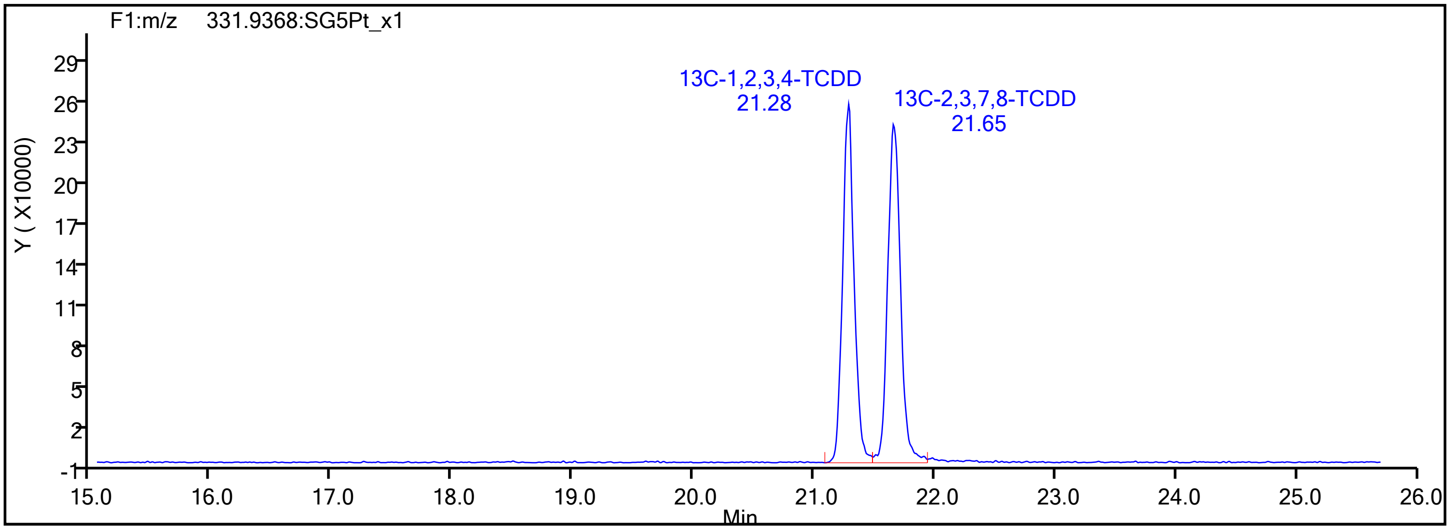

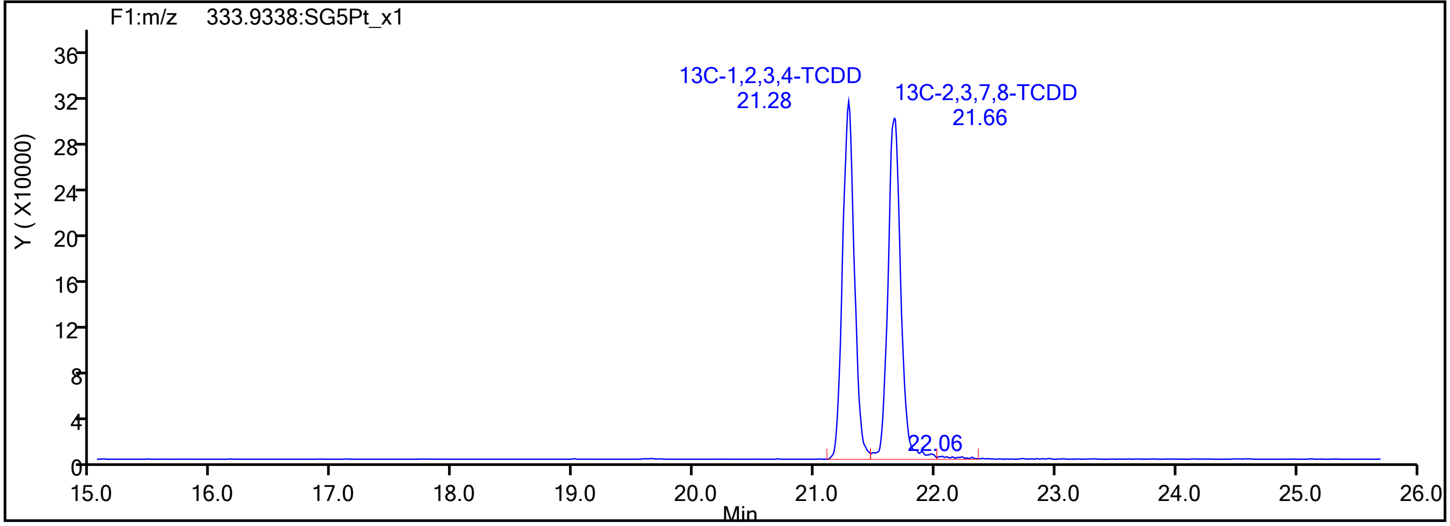

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

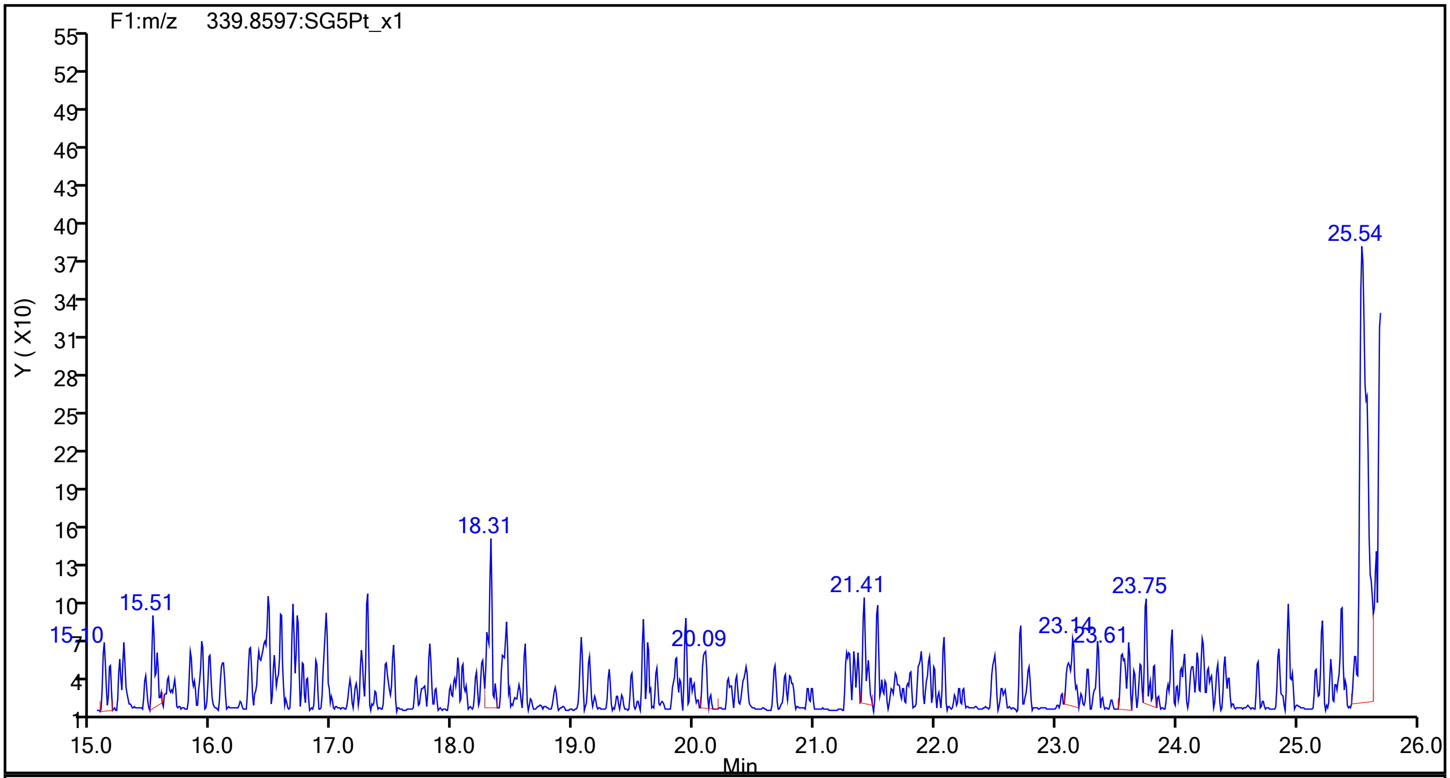

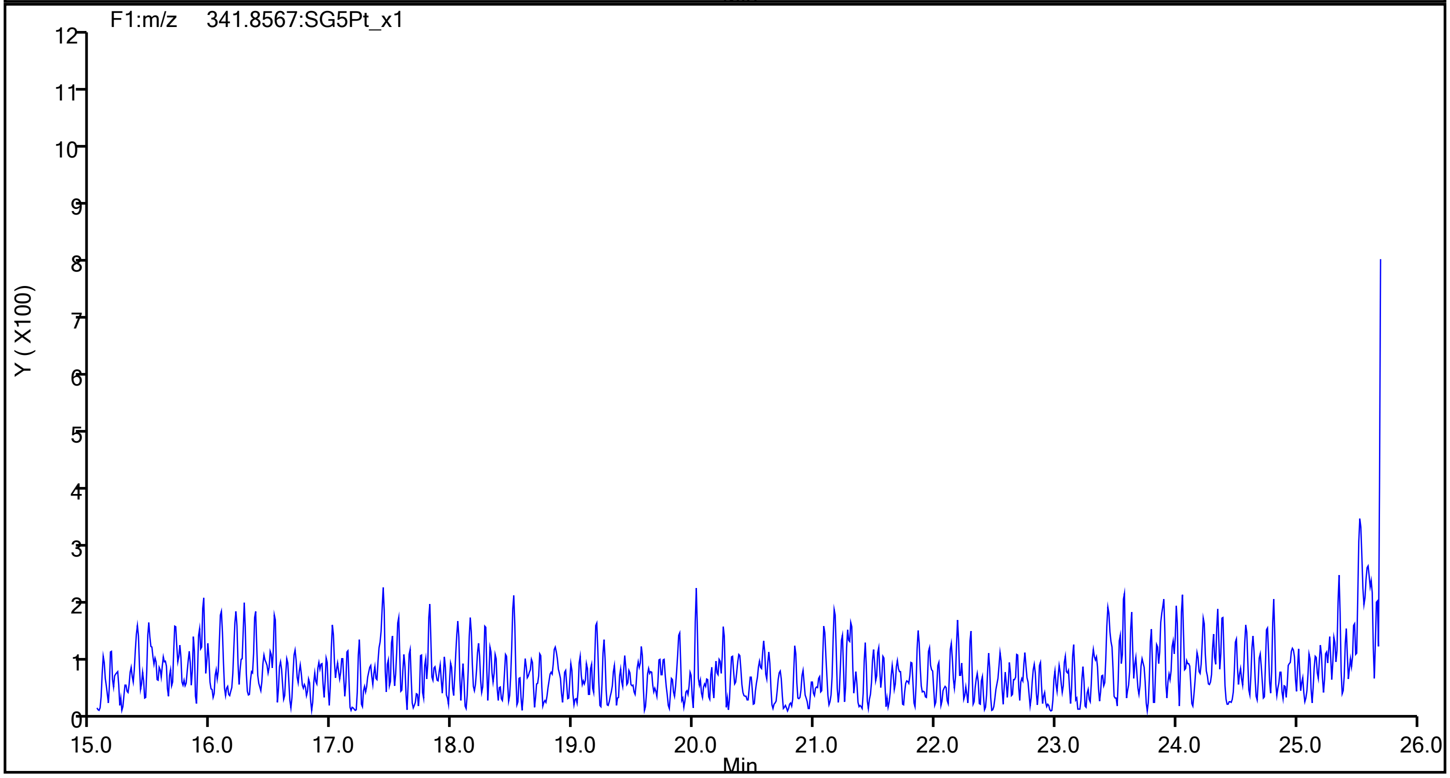

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

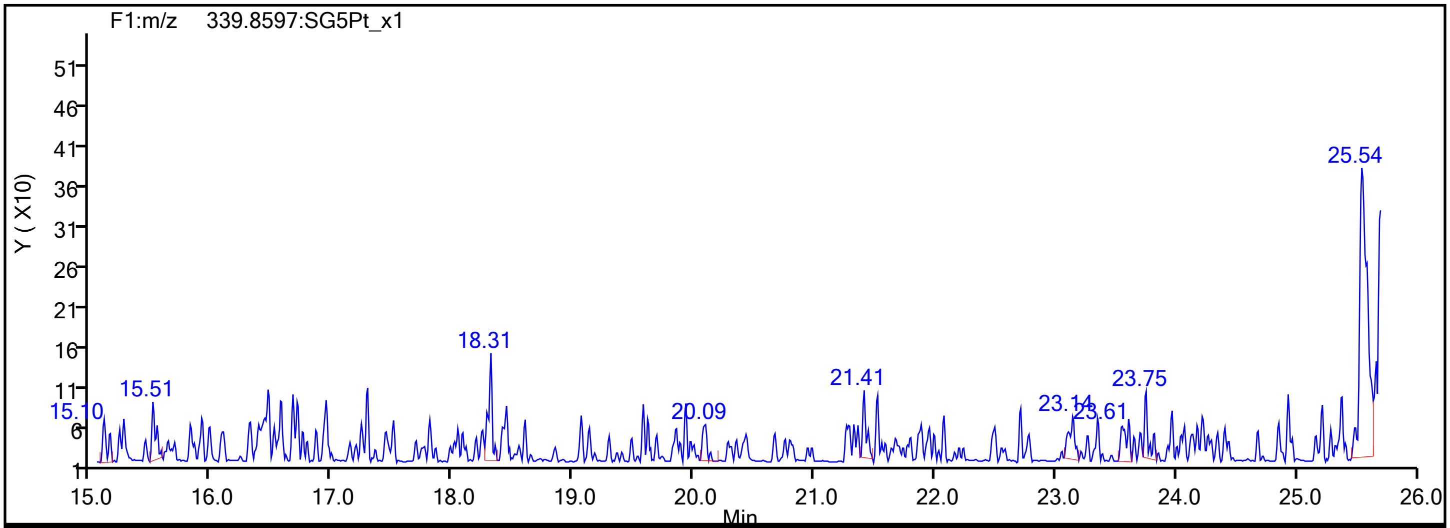

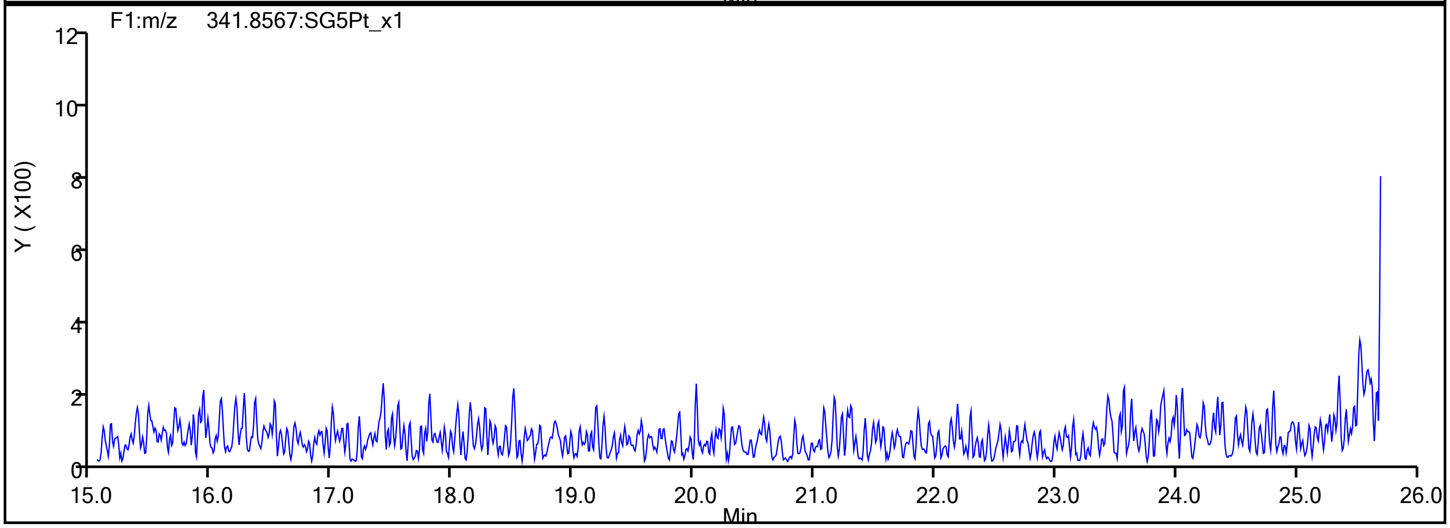

F1 PeCDFs Interference Mass

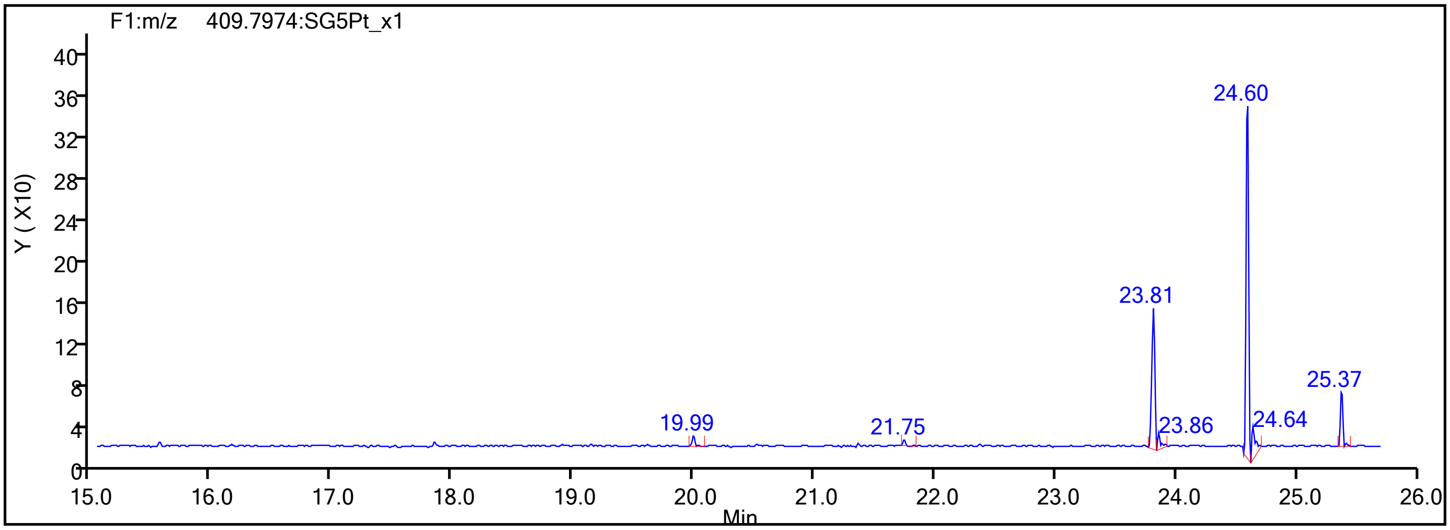

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Eurofins TestAmerica, Sacramento

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PeCDF

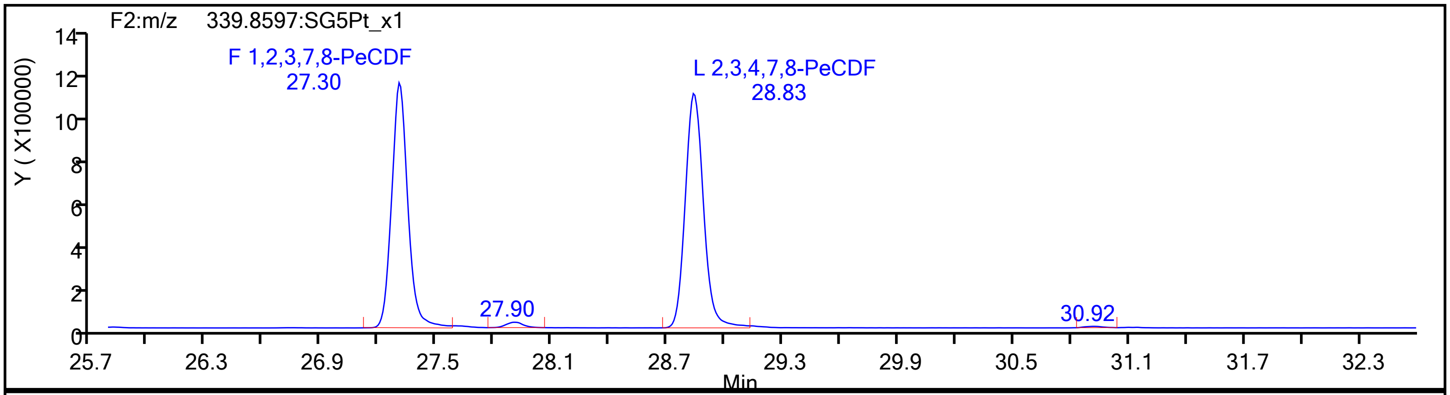

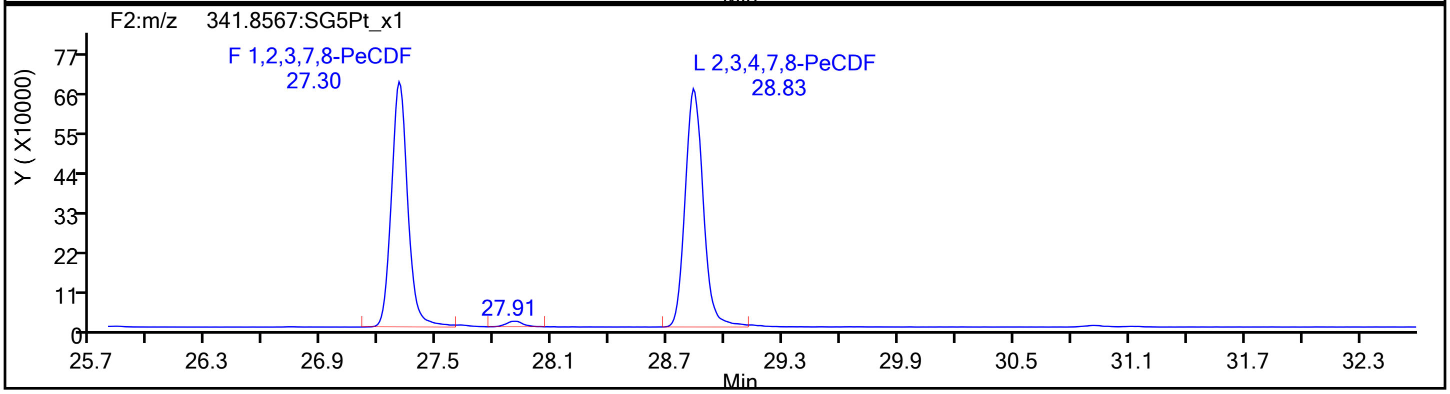

PeCDF Standards

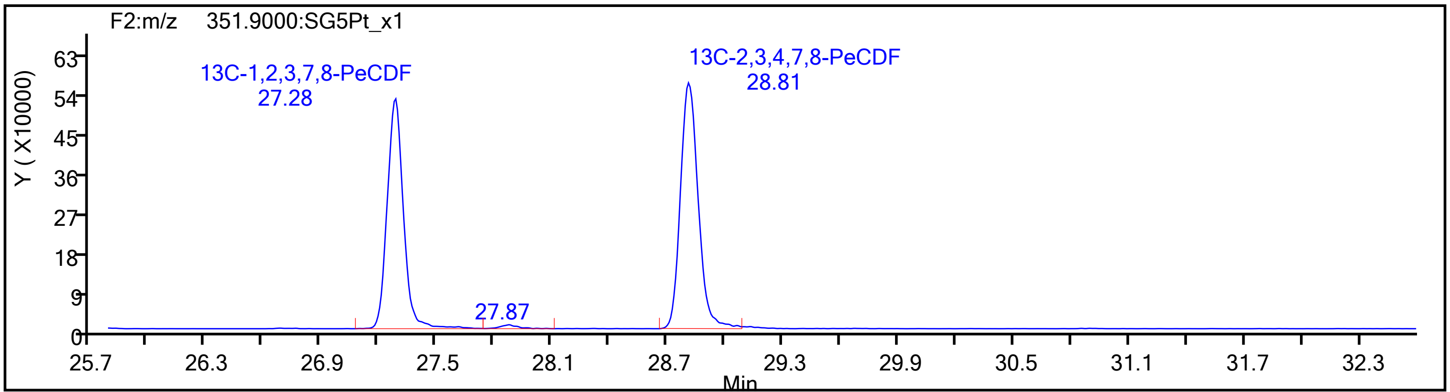

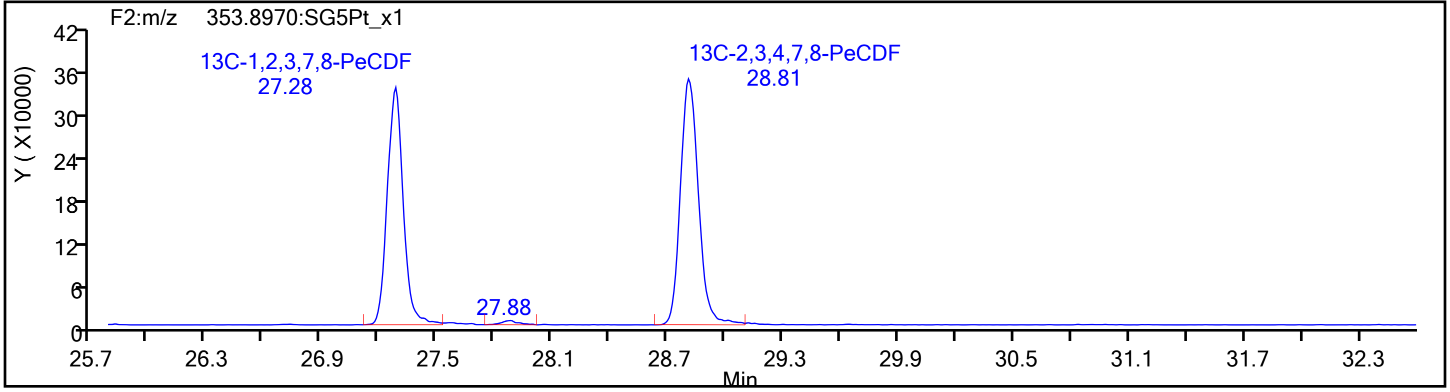

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Eurofins TestAmerica, Sacramento

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PeCDF

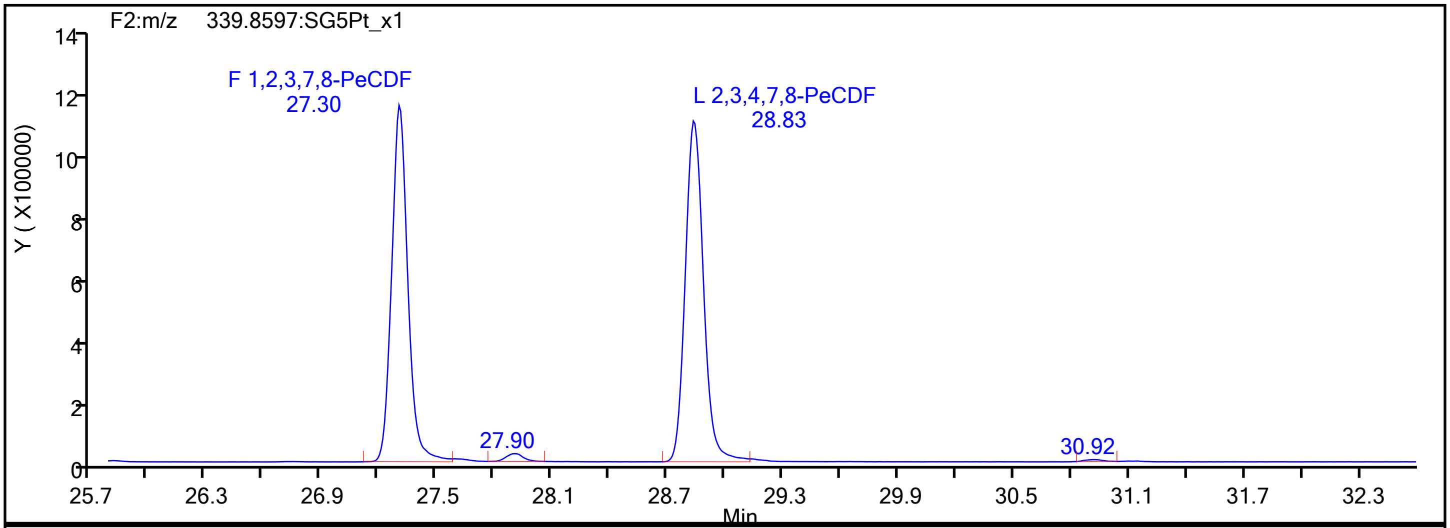

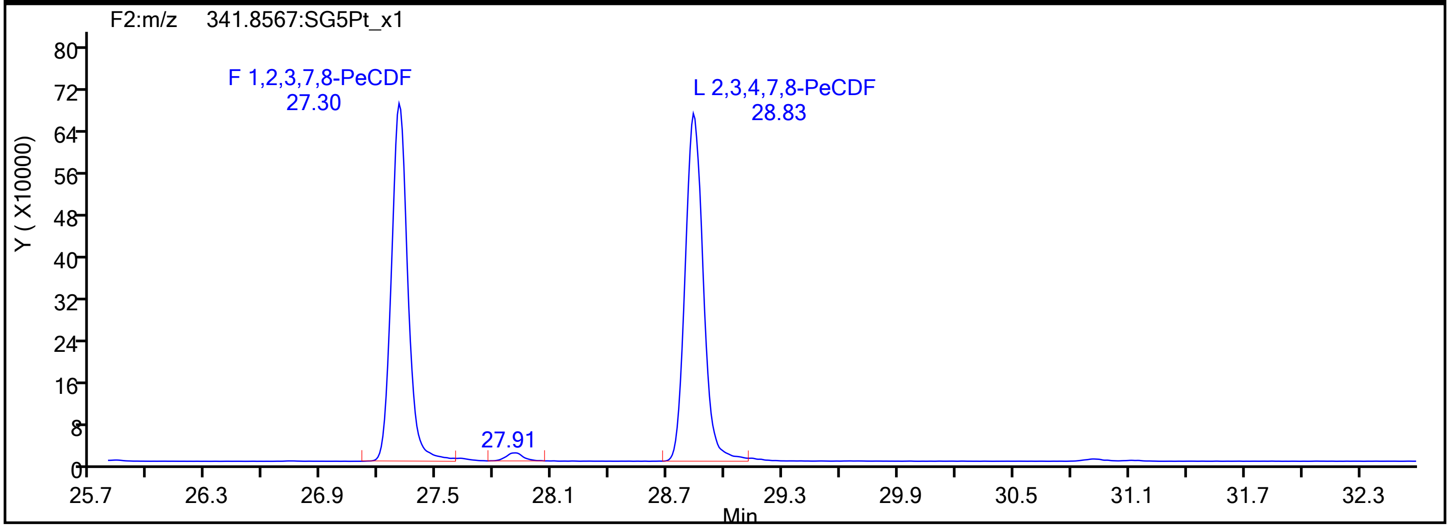

PeCDF Interference Mass

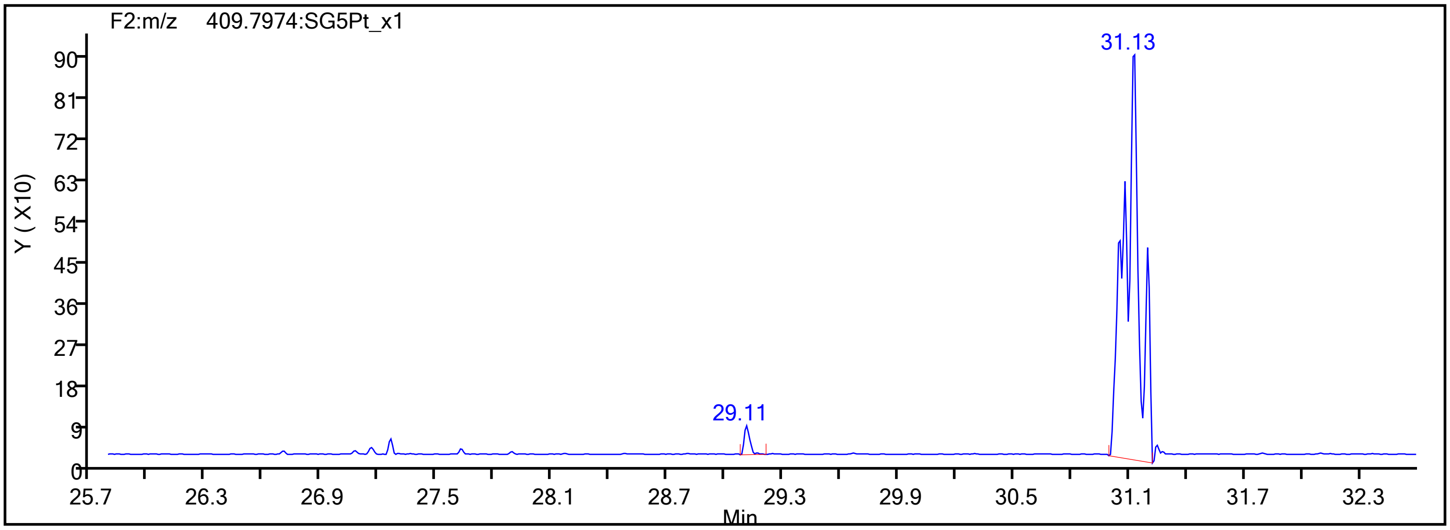

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Eurofins TestAmerica, Sacramento

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PeCDD

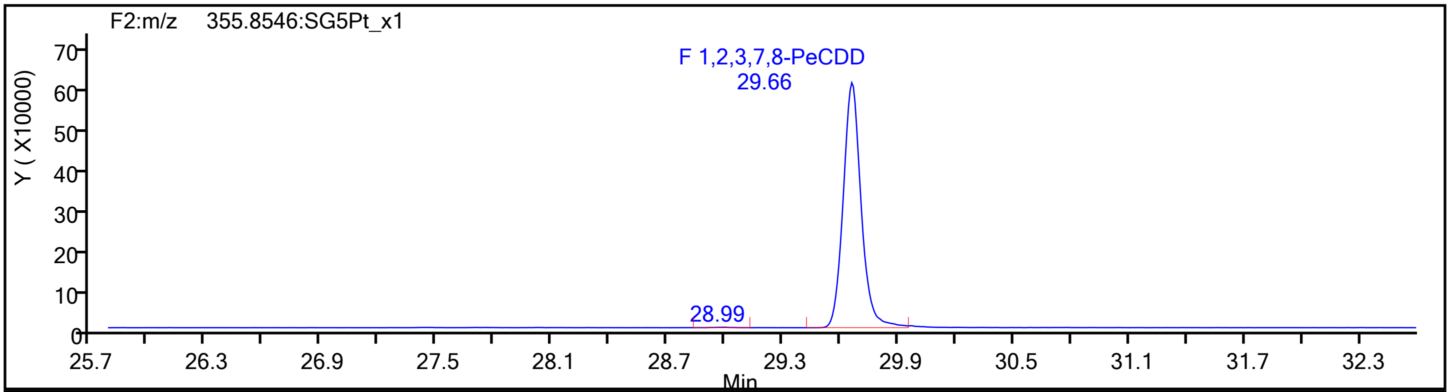

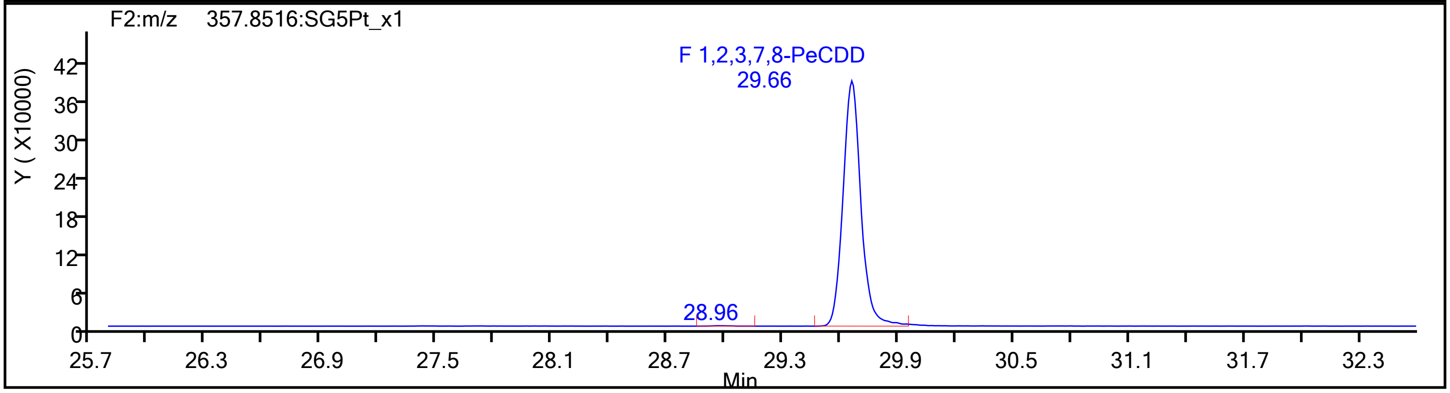

PeCDD Standards

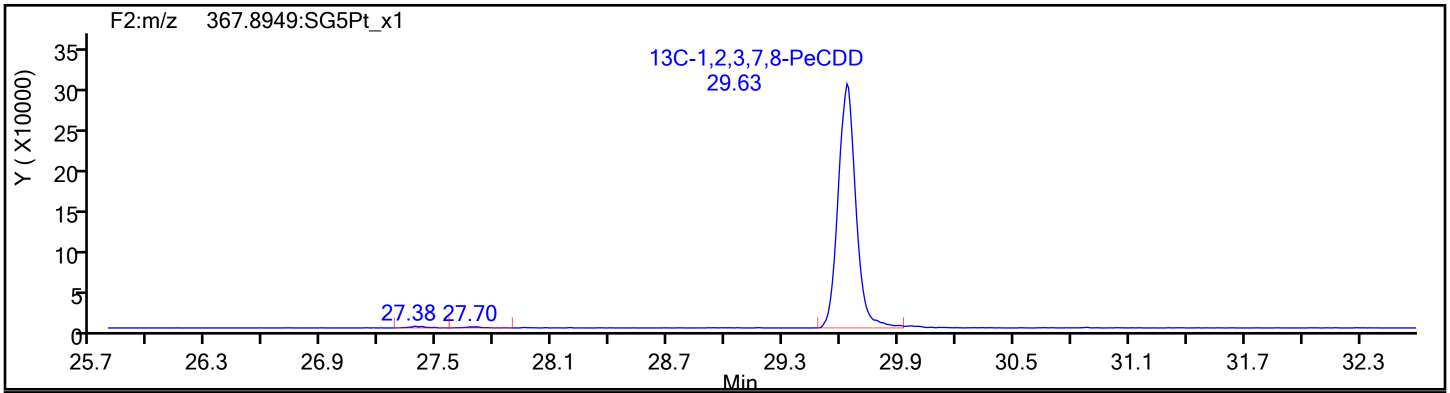

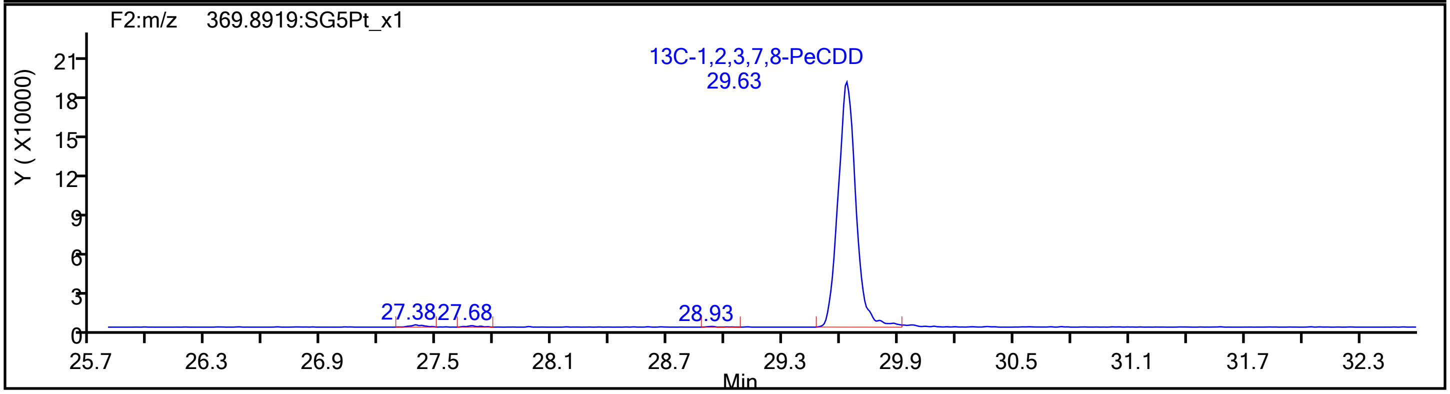

Report Date: 08-Jun-2020 08:41:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Sample Line#: 10
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Column Dia: 0.32 mm

HxCDF

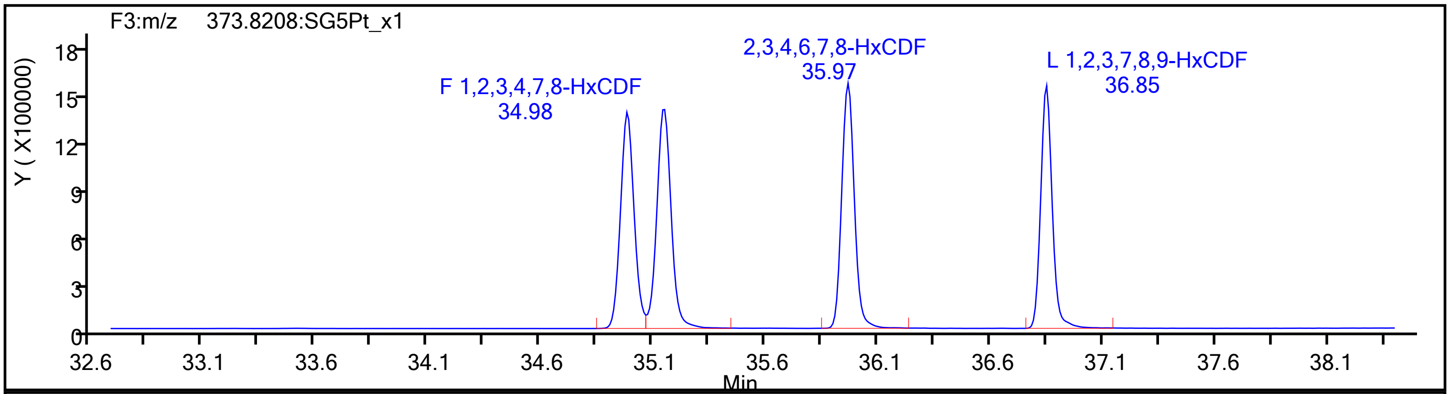

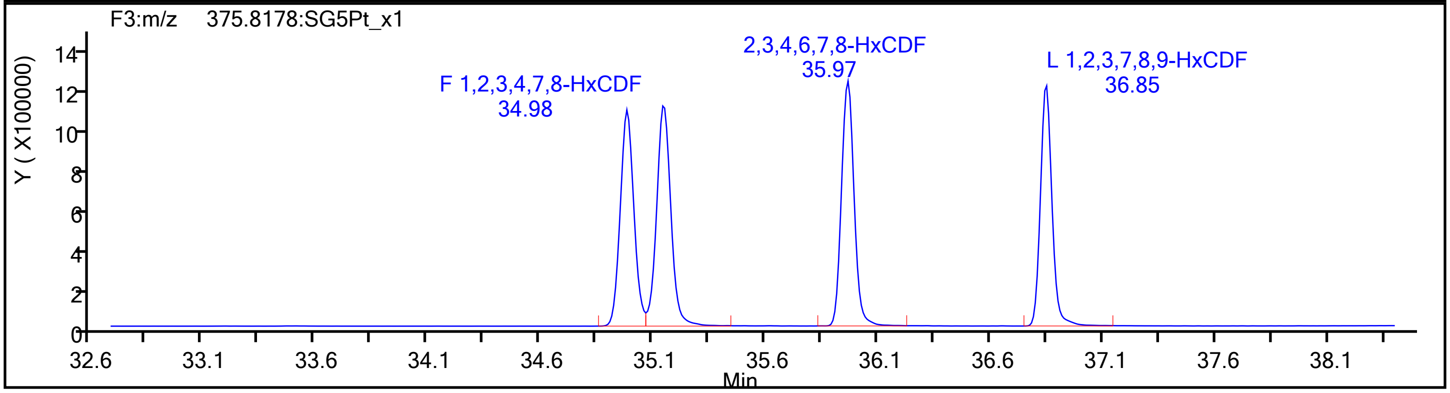

HxCDF Standards

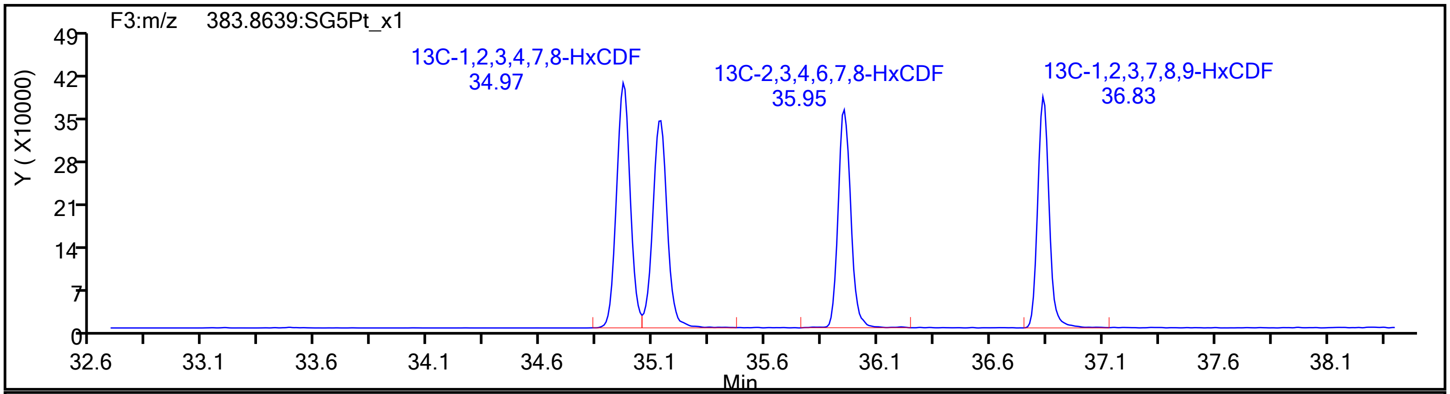

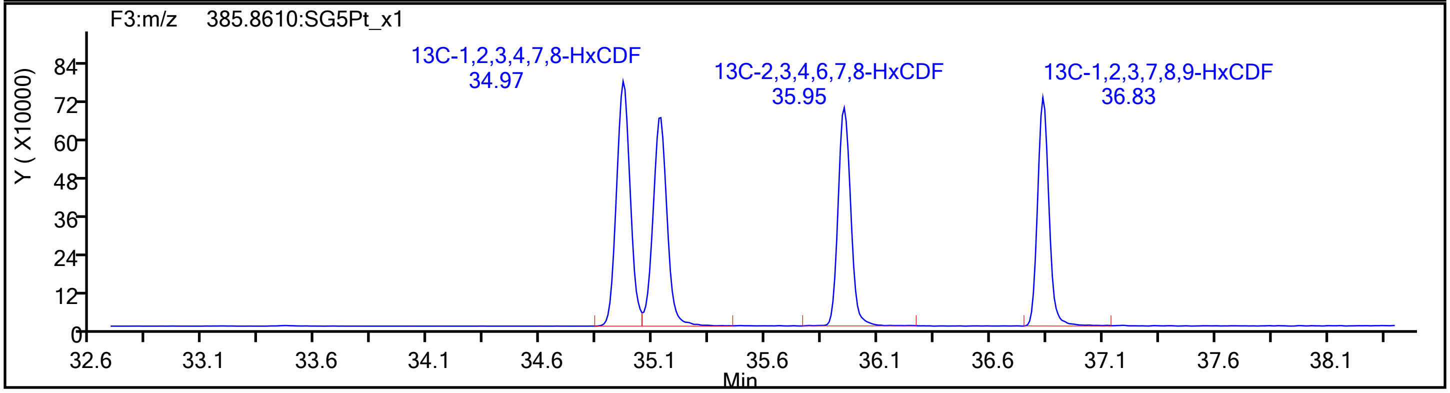

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Eurofins TestAmerica, Sacramento

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Client ID:

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HxCDF

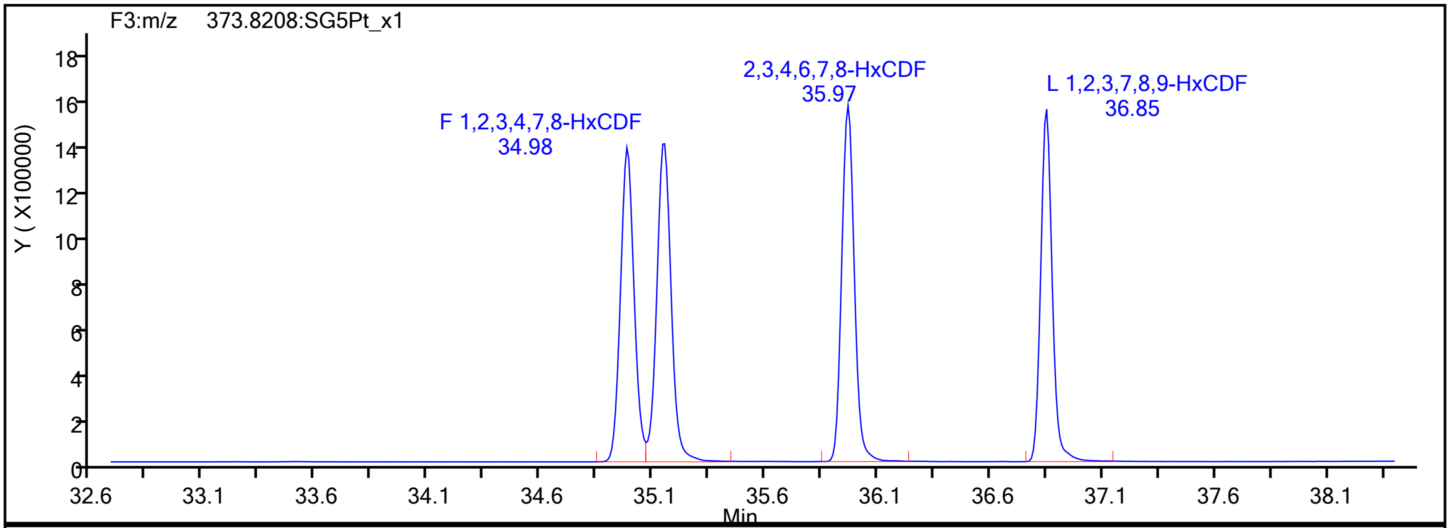

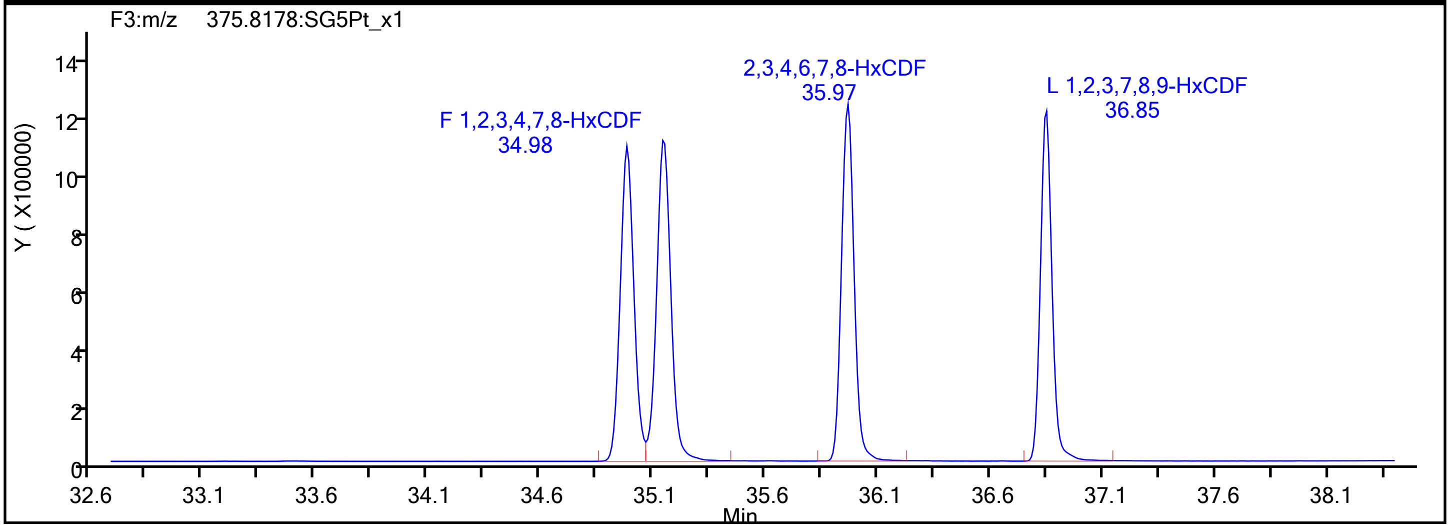

HxCDF Interference Mass

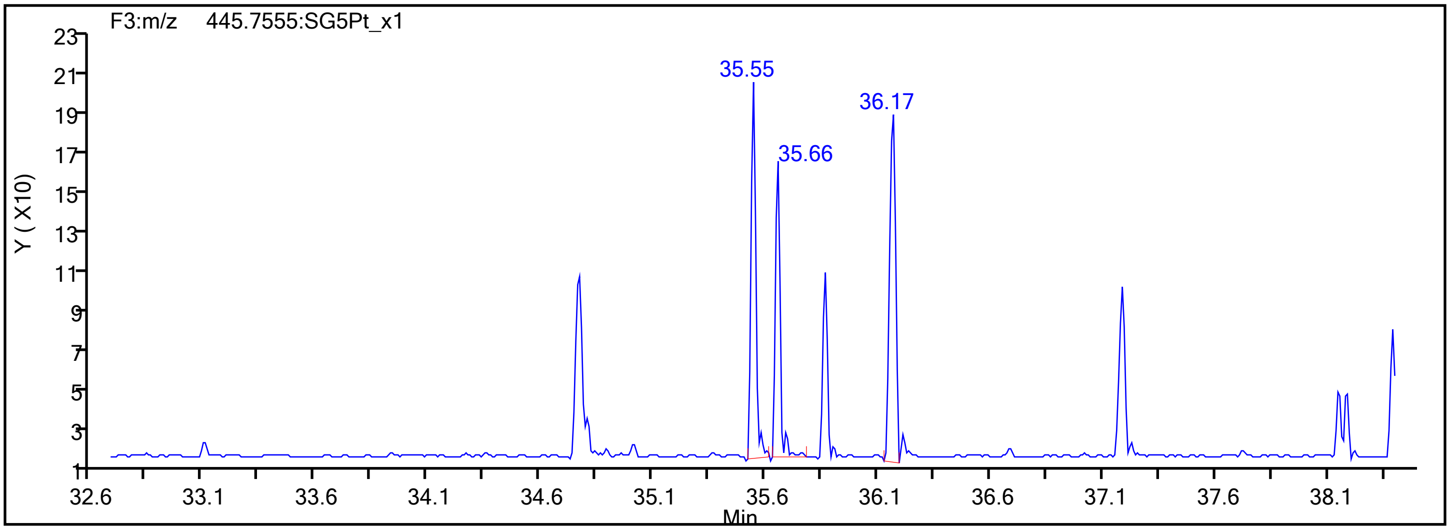

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Eurofins TestAmerica, Sacramento

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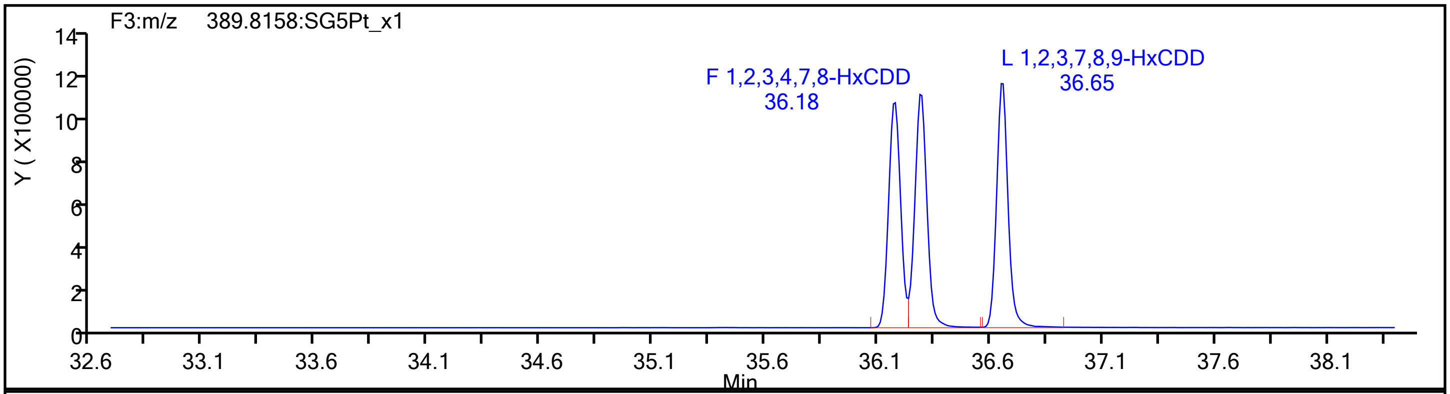

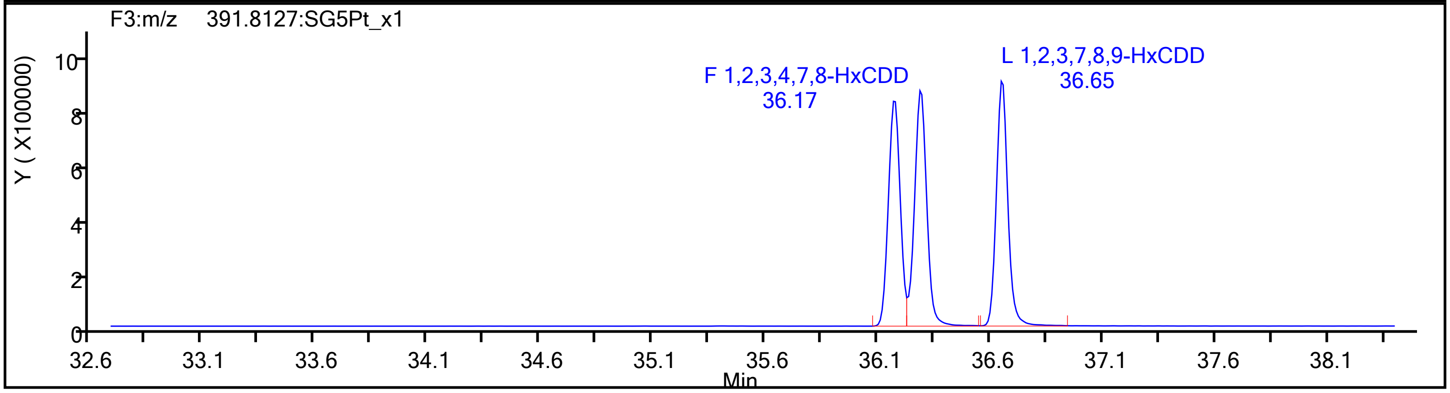

HxCDD Standards

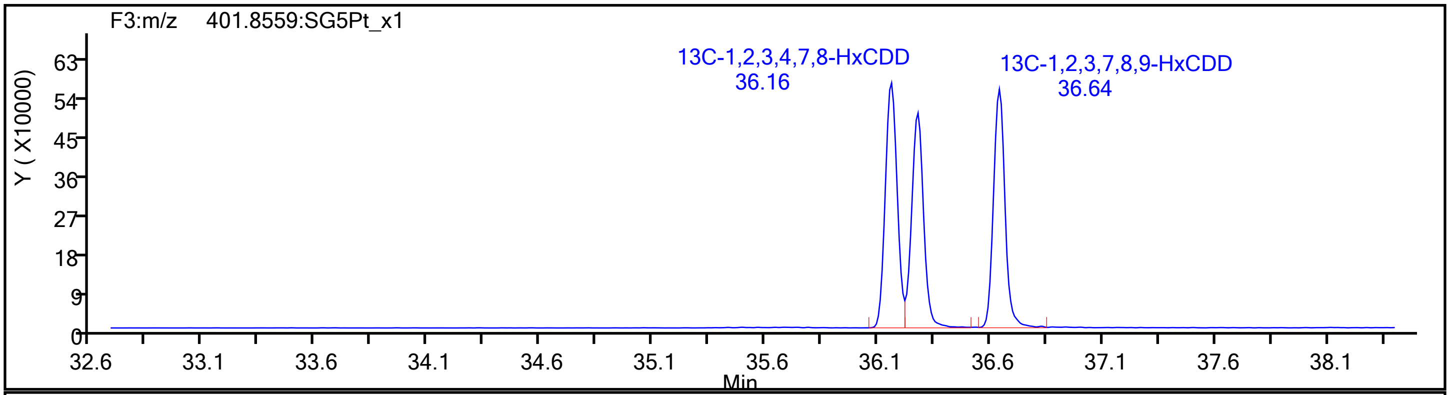

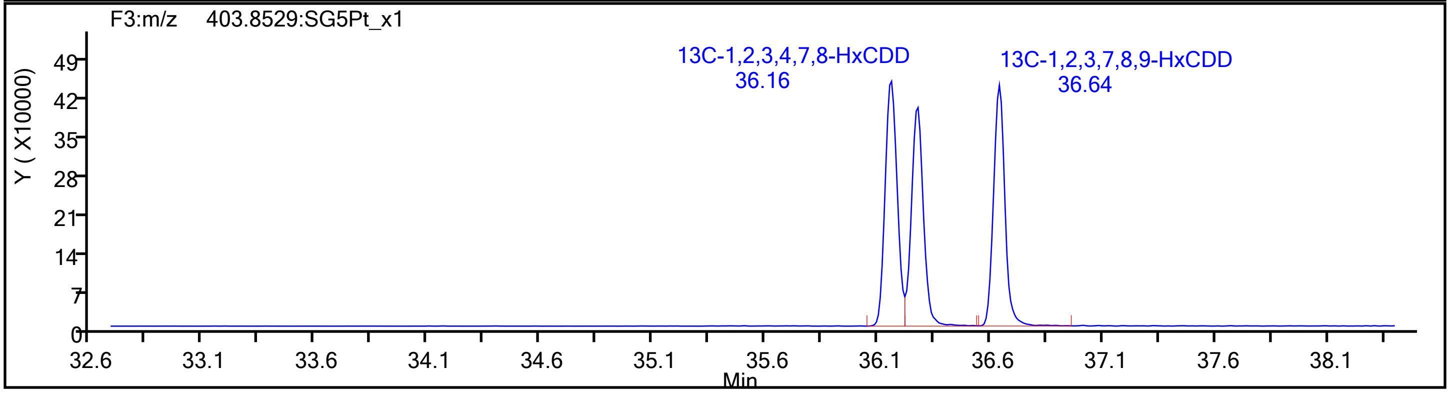

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Eurofins TestAmerica, Sacramento

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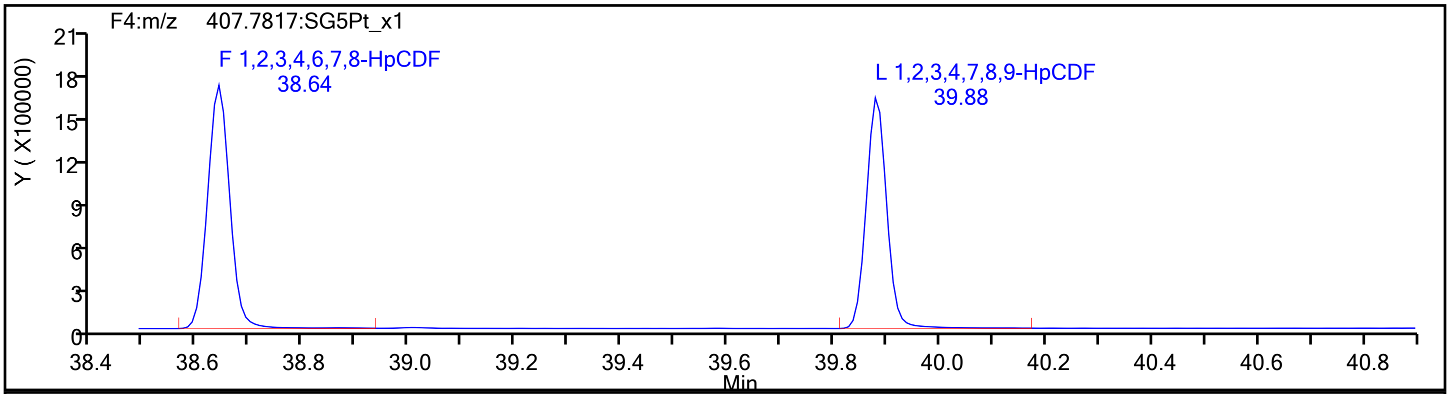

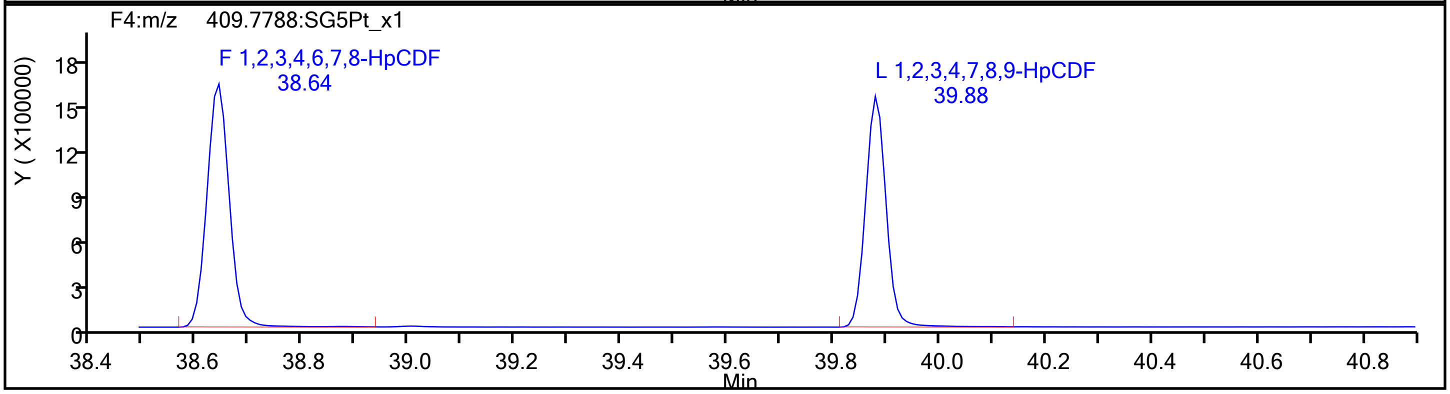

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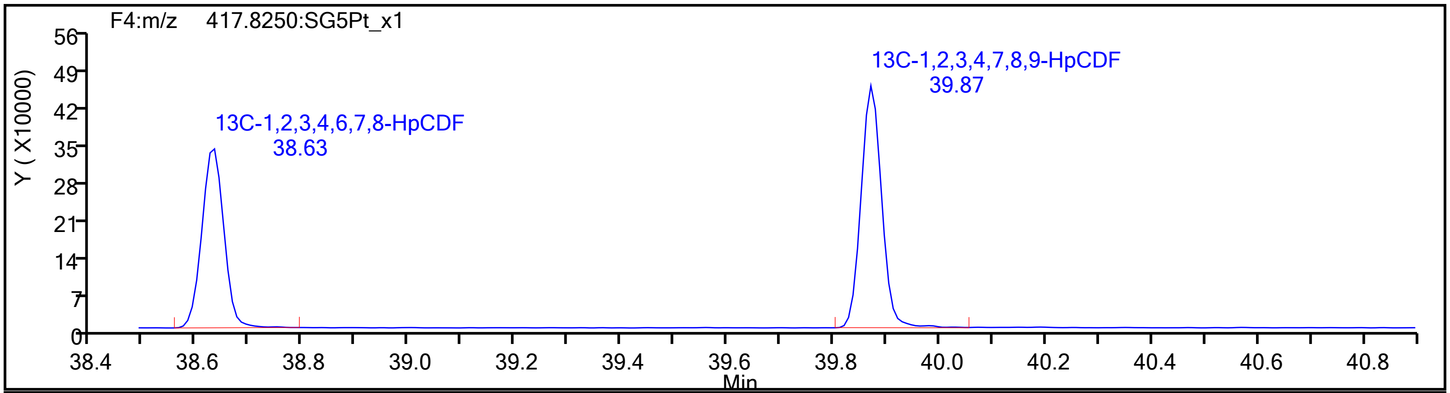

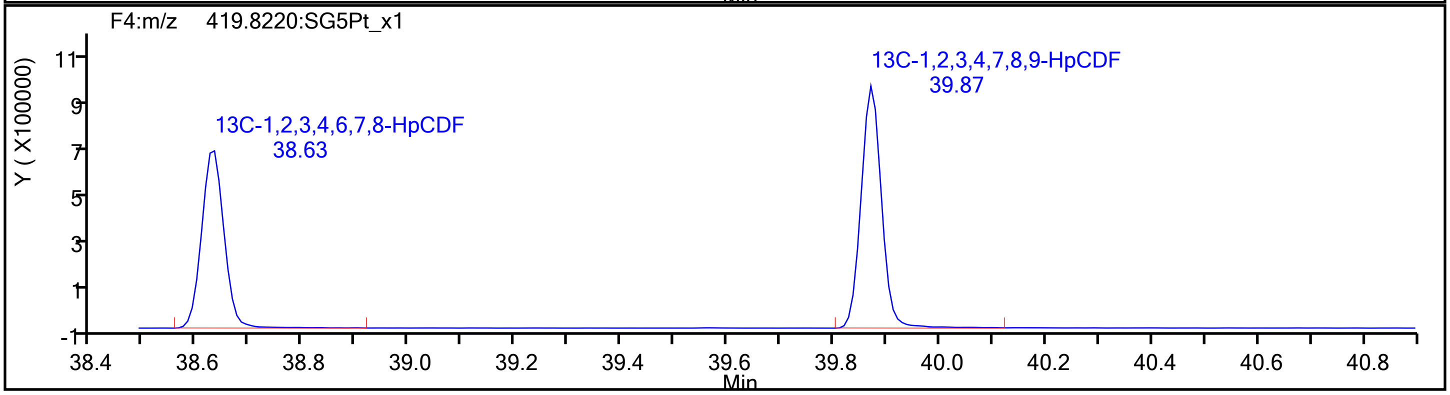

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Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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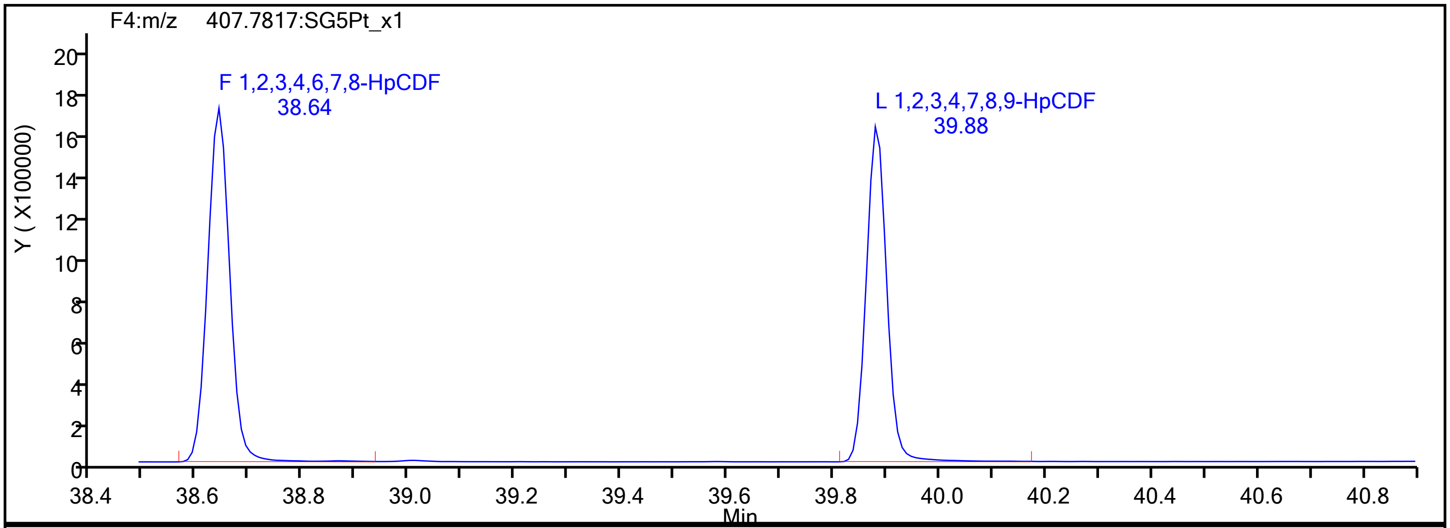

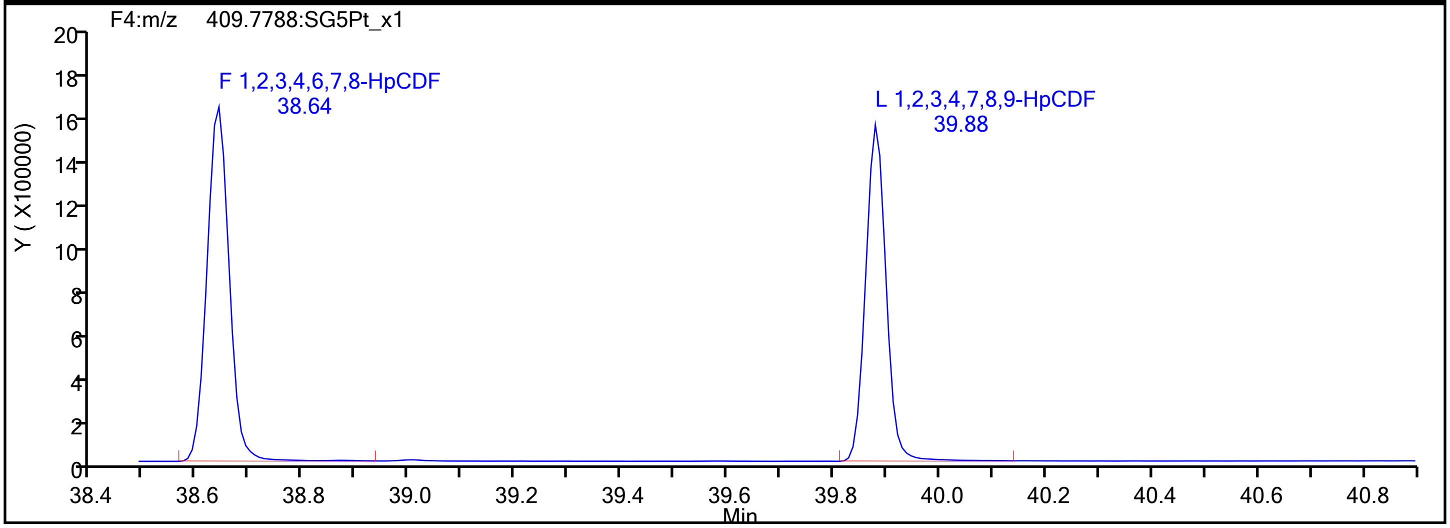

HpCDF Interference Mass

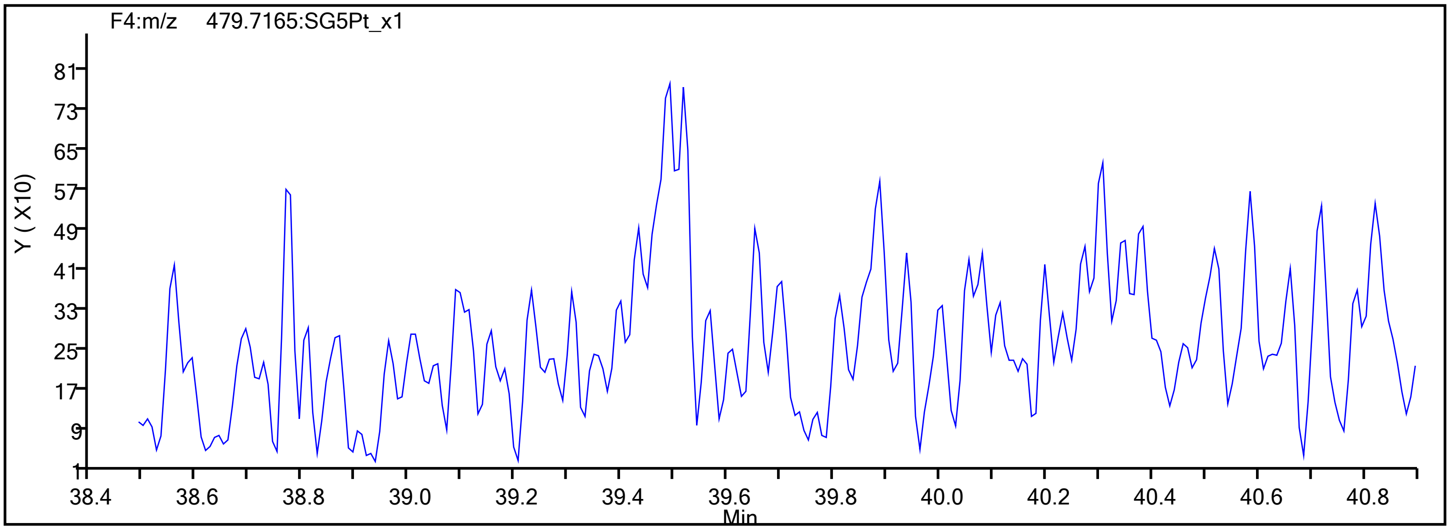

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Eurofins TestAmerica, Sacramento

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HpCDD

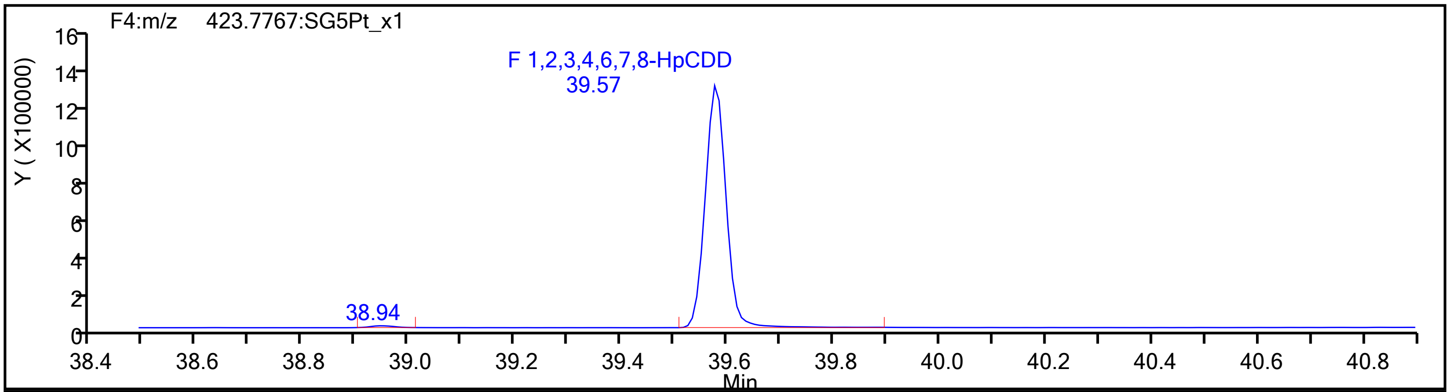

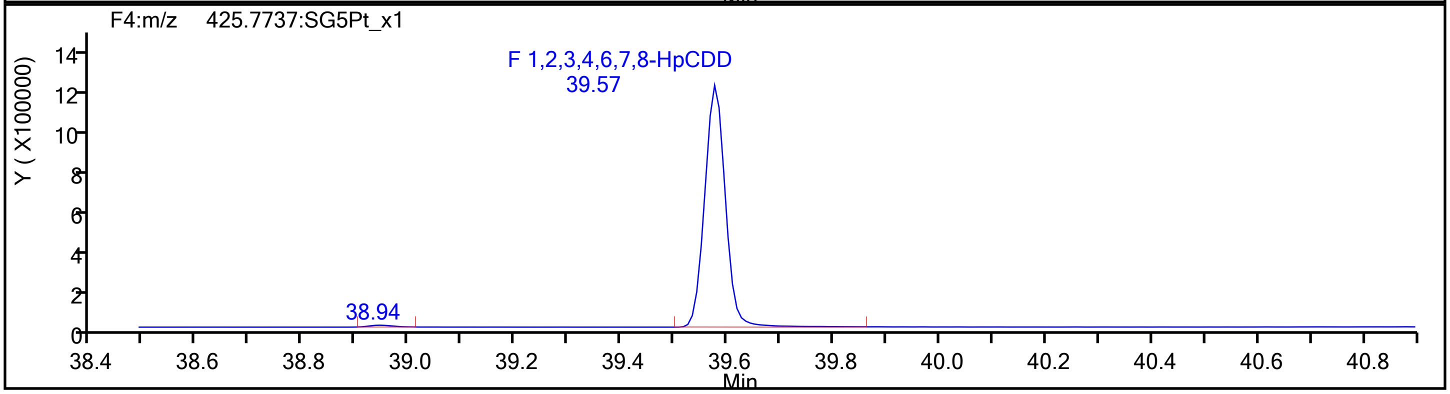

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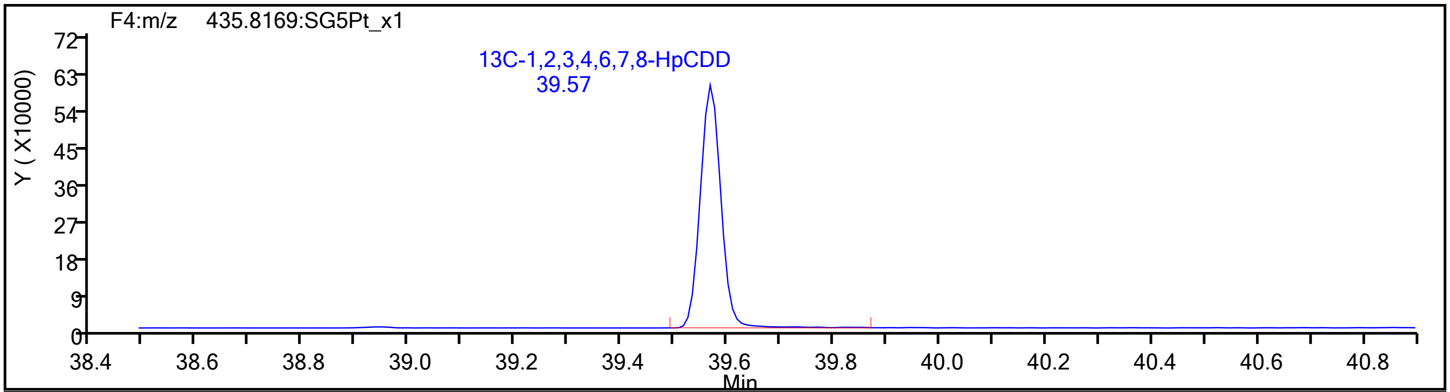

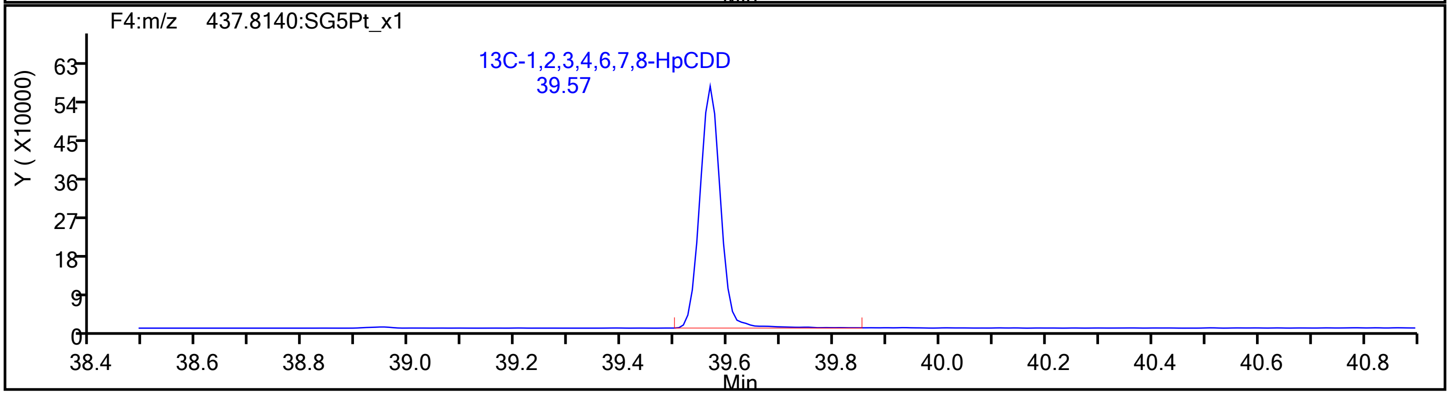

Report Date: 08-Jun-2020 08:41:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d

Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

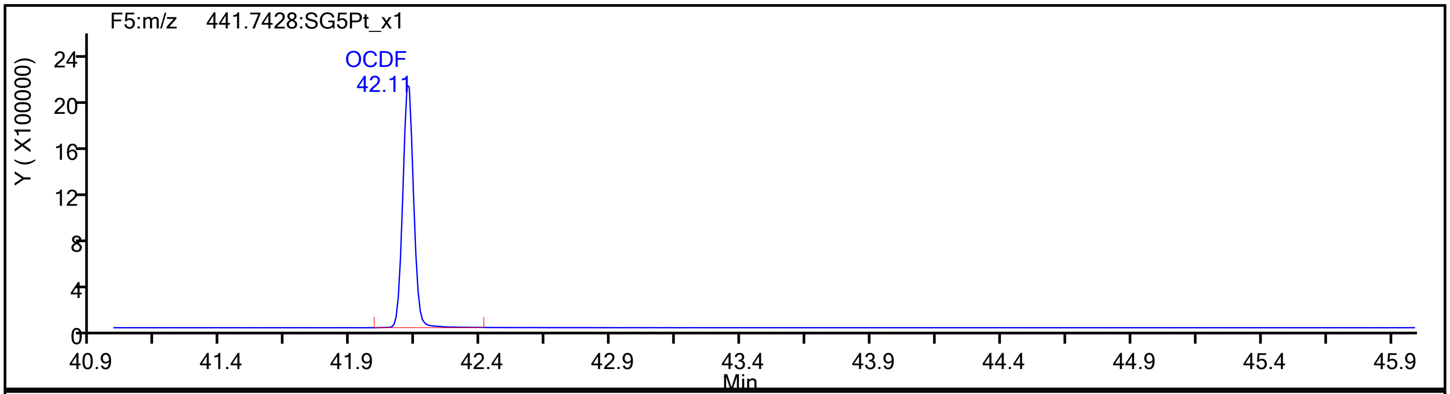

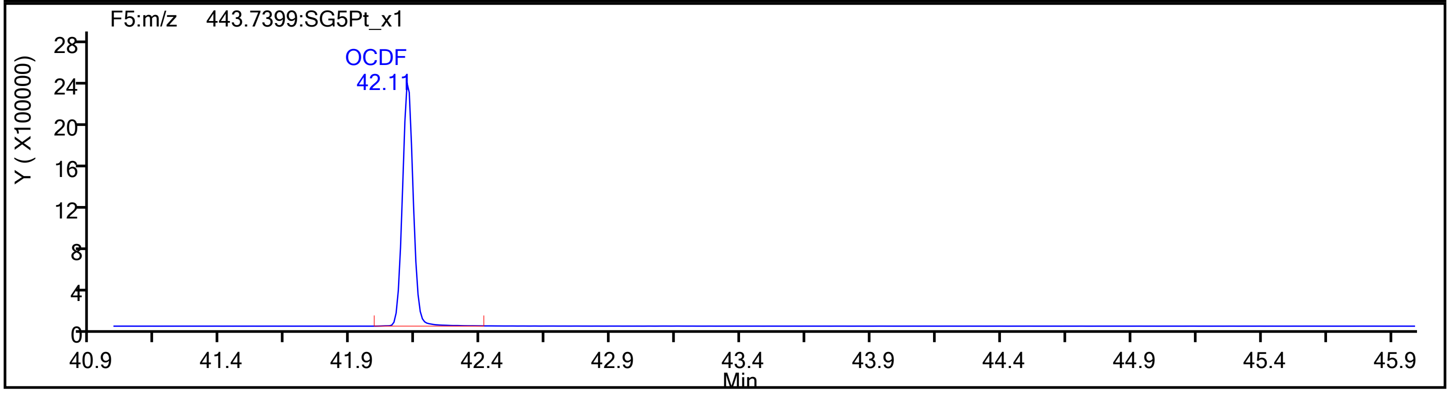

OCDF Standards

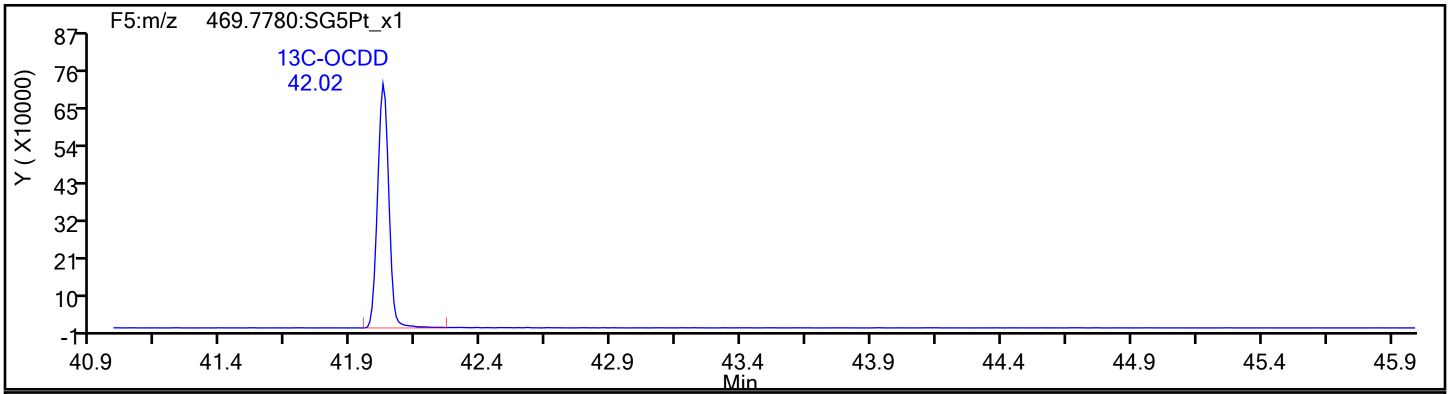

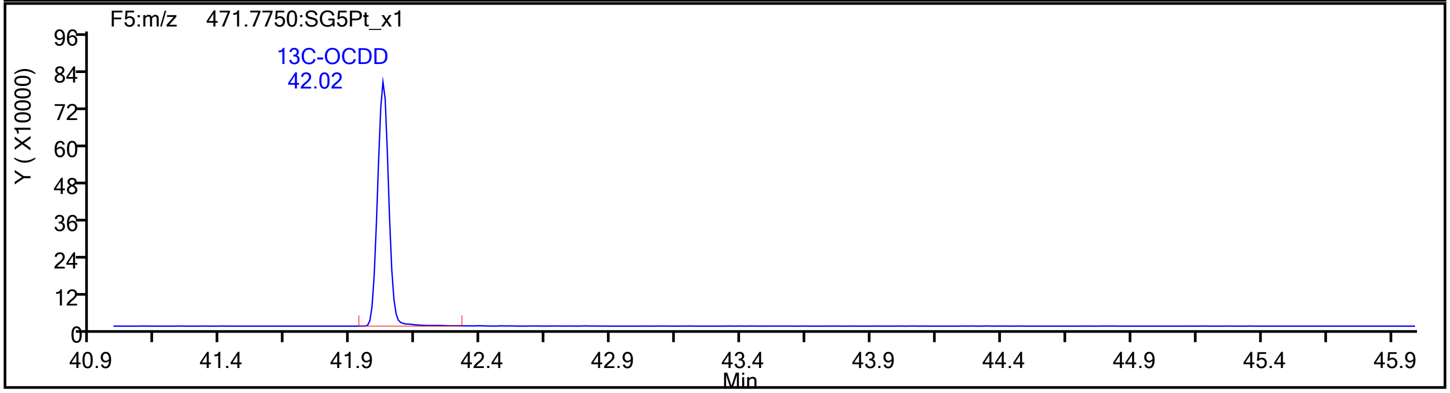

Report Date: 08-Jun-2020 08:41:56   Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

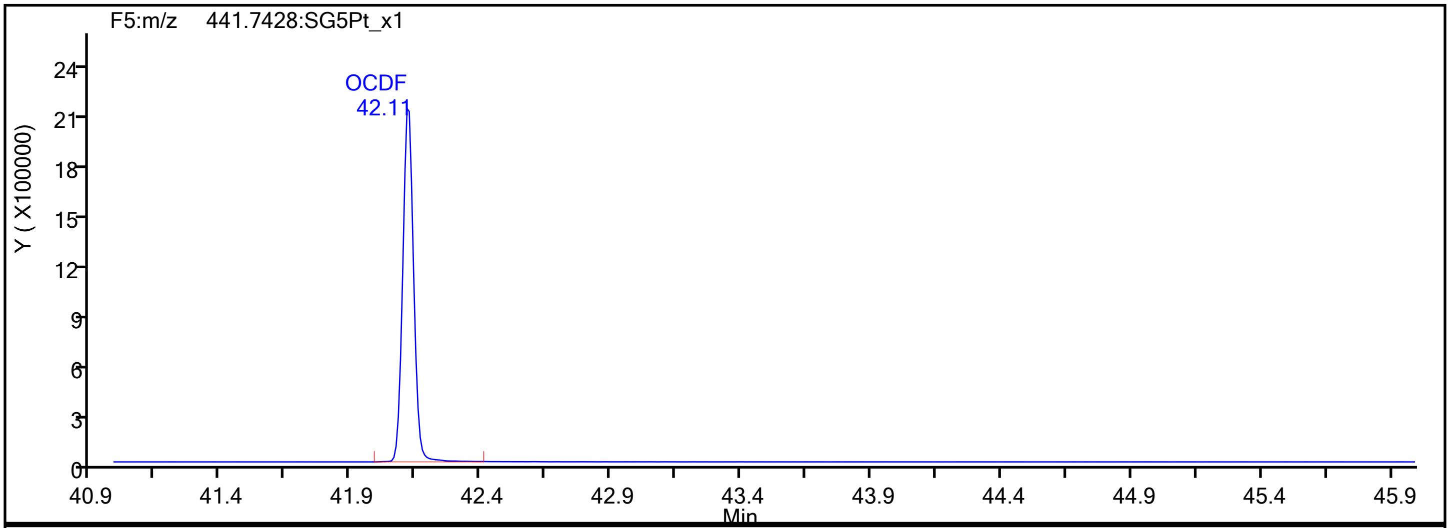

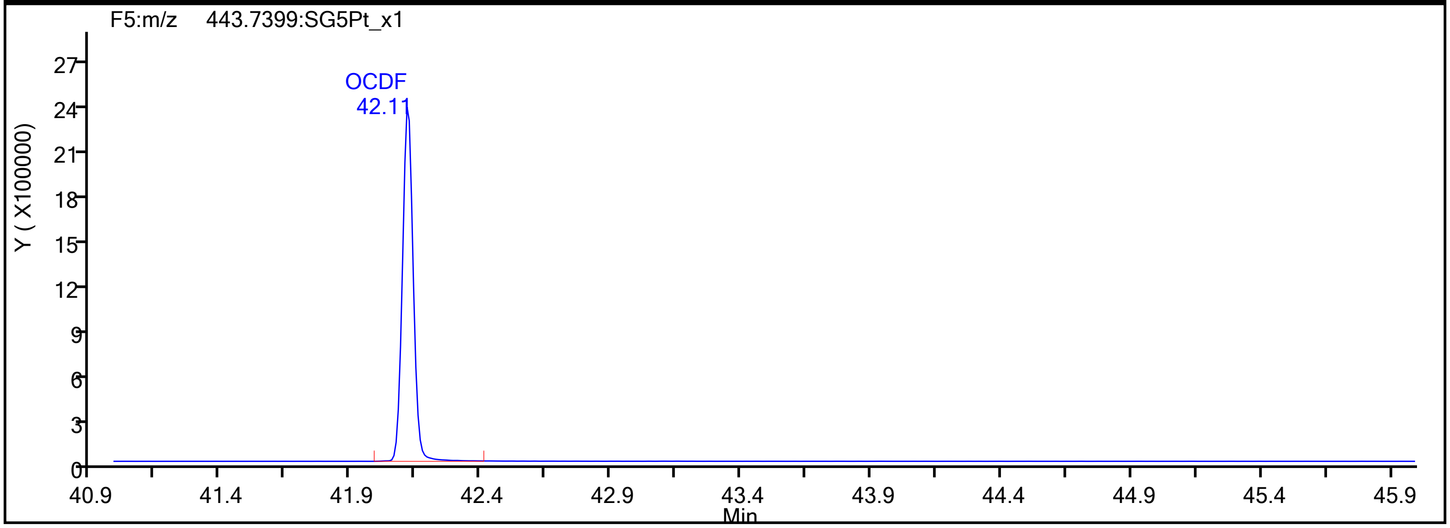

OCDF Interference Mass

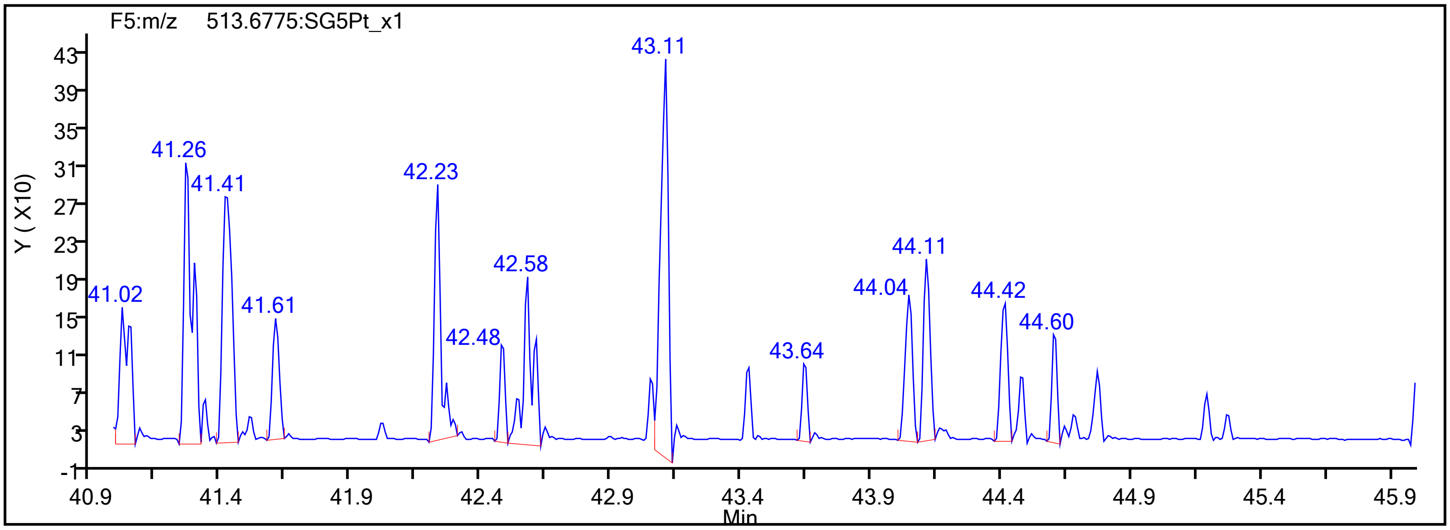

Report Date: 08-Jun-2020 08:41:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

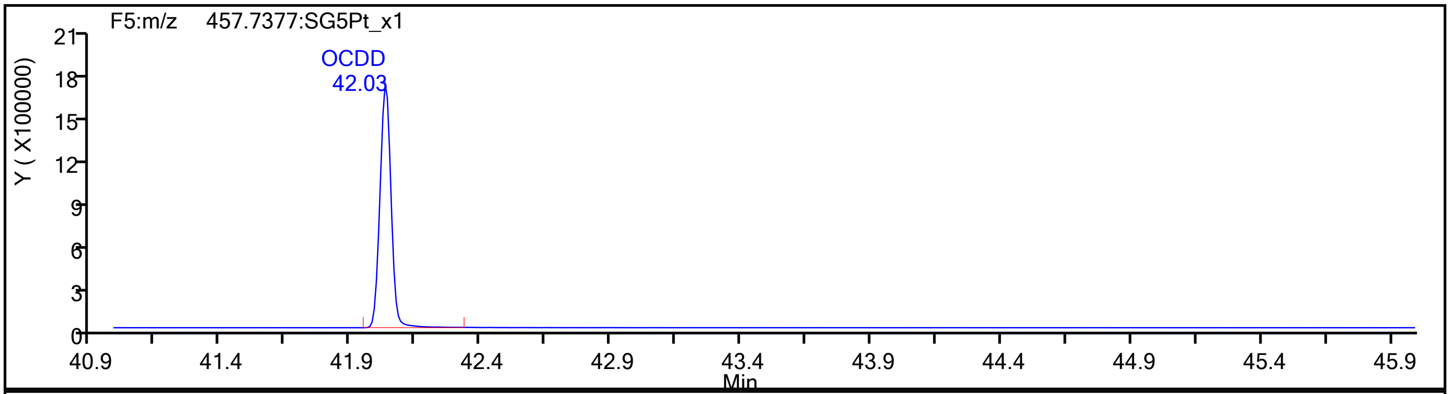

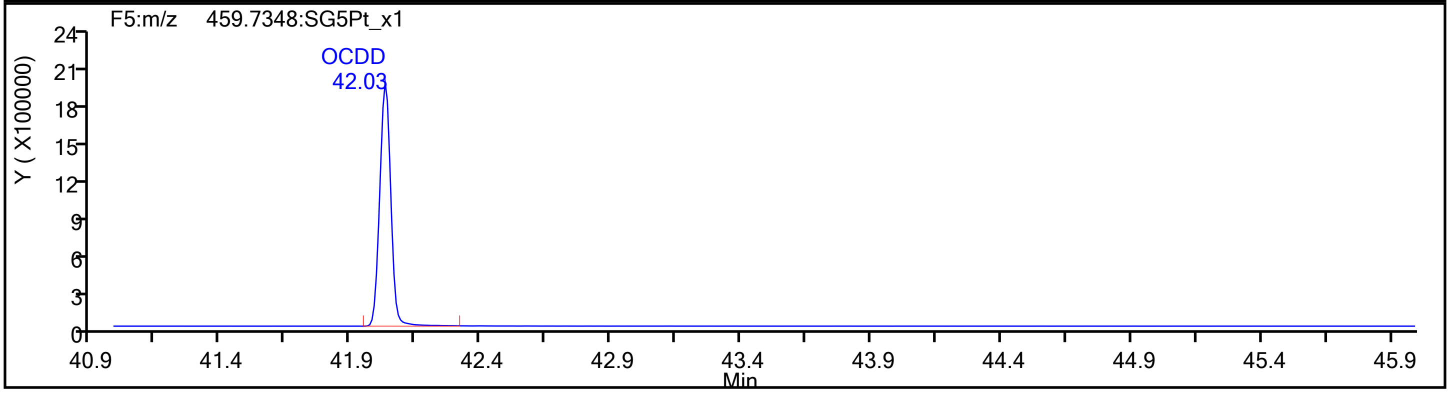

OCDD Standards

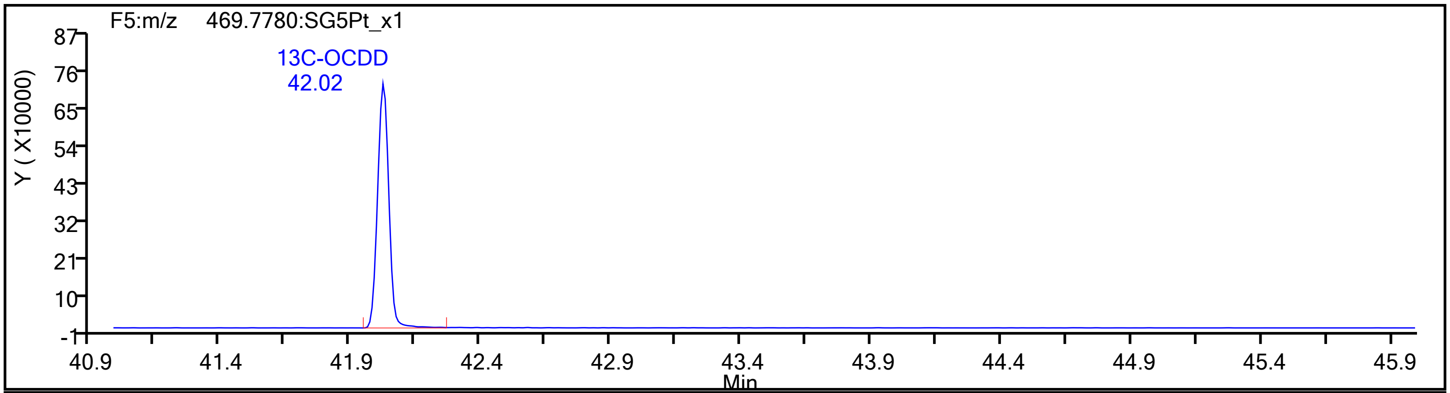

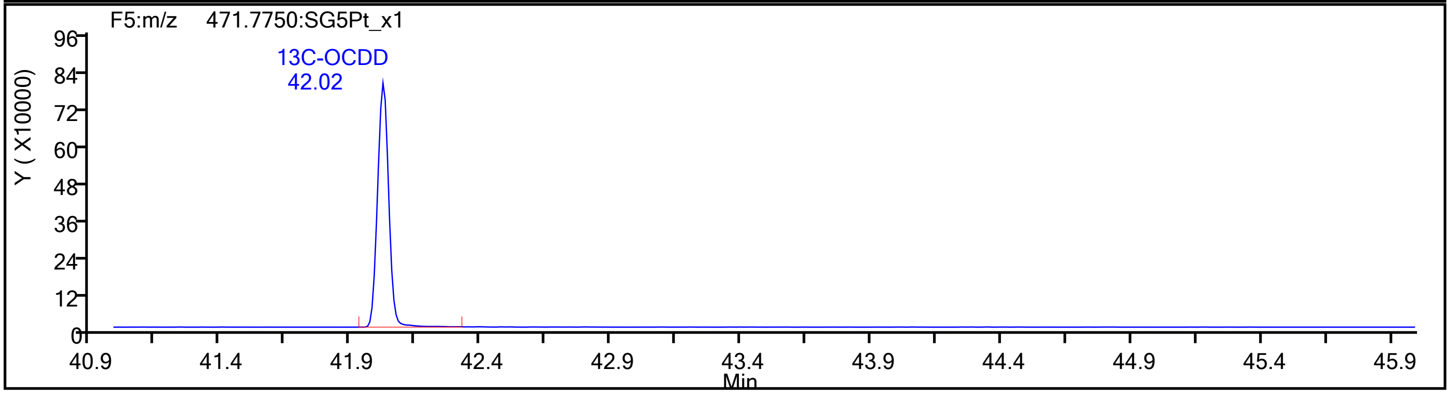

Report Date: 08-Jun-2020 08:41:56 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d
Injection Date: 03-Jun-2020 20:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

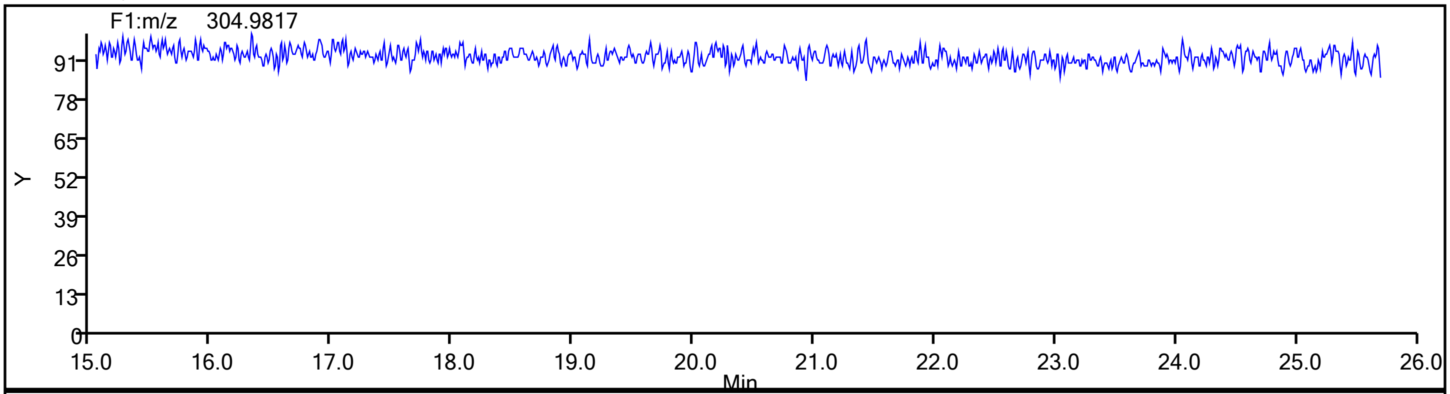

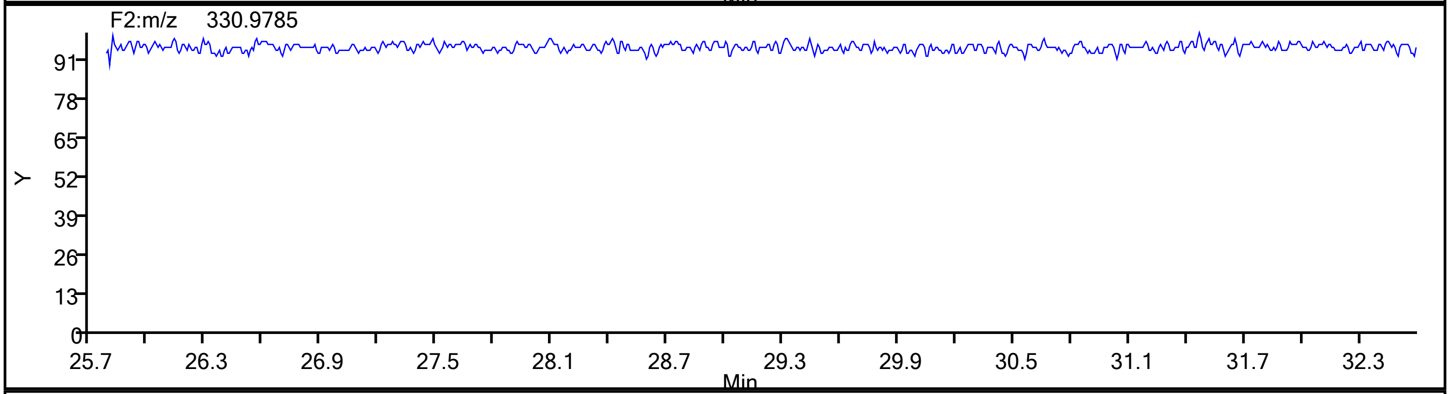

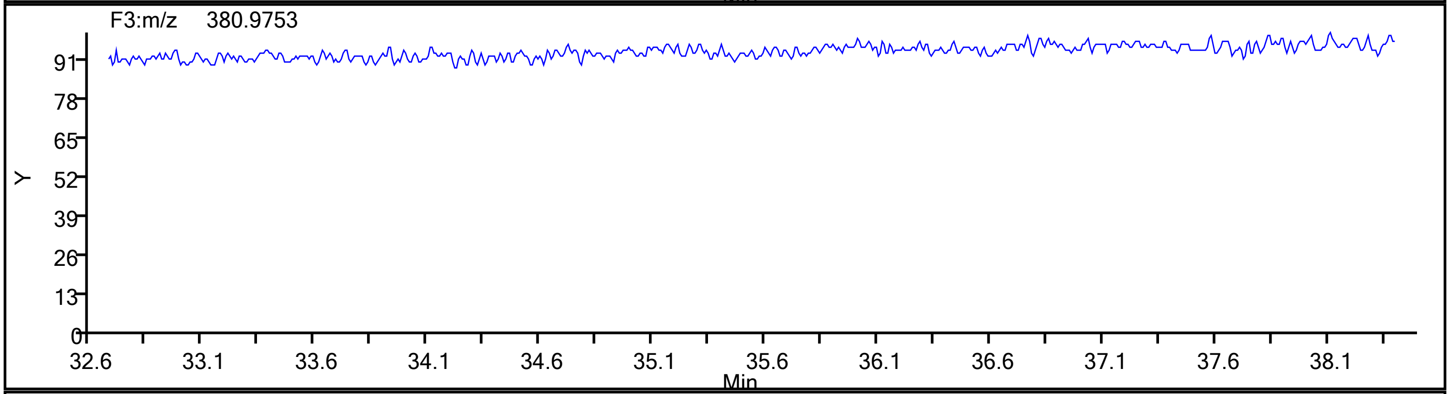

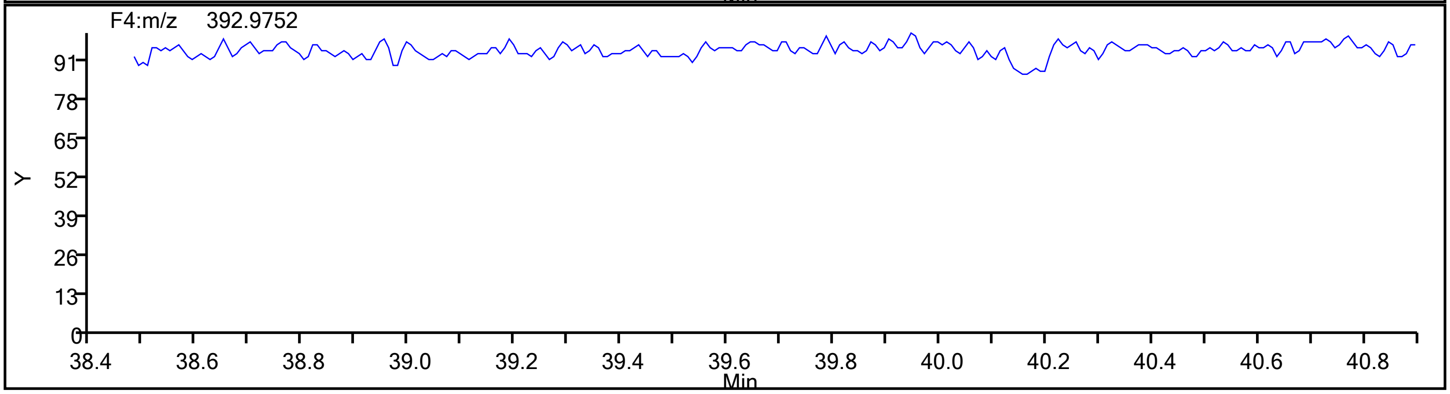

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_12.d		
Injection Date:	03-Jun-2020 20:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

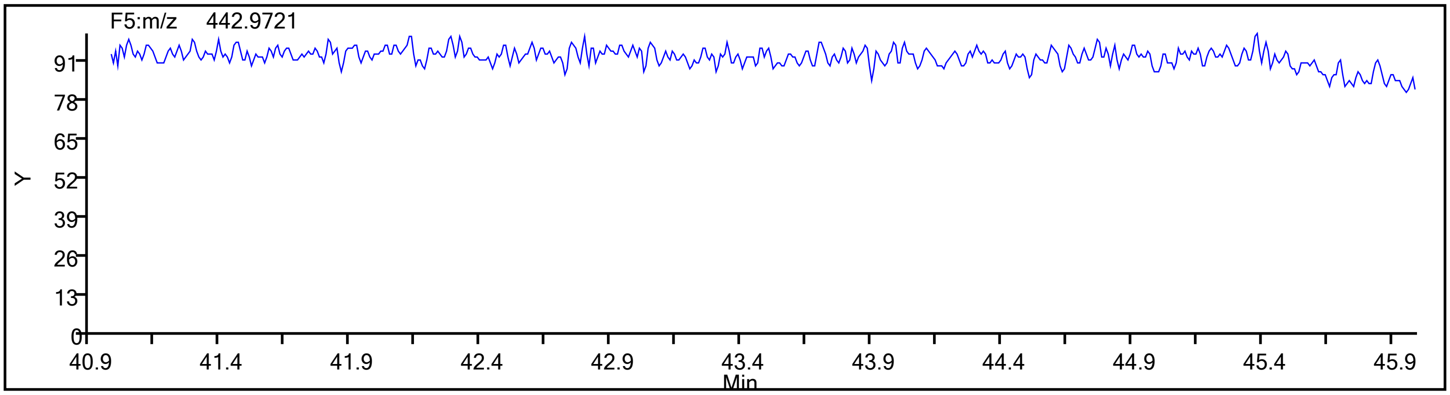

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Lab Sample ID: CCV 320-405471/14 Calibration Date: 08/20/2020 21:48

Instrument ID: DFS 1 Calib Start Date: 06/03/2020 14:05

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/03/2020 18:06

Lab File ID: 20au20dfs1_16.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.131	1.222		10.8	10.0	108	84-120
2,3,7,8-TCDD	AveID	1.185	1.271		10.7	10.0	107	78-129
1,2,3,7,8-PeCDF	AveID	1.106	1.151		52.0	50.0	104	82-120
2,3,4,7,8-PeCDF	AveID	0.9067	0.9471		52.2	50.0	104	82-122
1,2,3,7,8-PeCDD	AveID	1.106	1.153		52.1	50.0	104	78-130
1,2,3,4,7,8-HxCDF	AveID	1.009	0.998		49.5	50.0	99	90-112
1,2,3,6,7,8-HxCDF	AveID	1.243	1.219		49.0	50.0	98	88-114
2,3,4,6,7,8-HxCDF	AveID	1.274	1.230		48.3	50.0	97	88-114
1,2,3,4,7,8-HxCDD	AveID	0.9336	0.9243		49.5	50.0	99	78-128
1,2,3,6,7,8-HxCDD	AveID	1.080	1.064		49.2	50.0	98	78-128
1,2,3,7,8,9-HxCDD	AveID	1.057	1.085		51.3	50.0	103	82-122
1,2,3,7,8,9-HxCDF	AveID	1.288	1.251		48.6	50.0	97	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.596	1.531		48.0	50.0	96	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.110		49.8	50.0	100	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.169	1.131		48.4	50.0	97	86-116
OCDD	AveID	1.195	1.148		96.1	100	96	79-126
OCDF	AveID	1.481	1.538		104	100	104	63-159
13C-2,3,7,8-TCDF	Ave	1.498	1.827		122	100	122	71-140
13C-2,3,7,8-TCDD	Ave	1.037	1.007		97.2	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.306	1.645		126	100	126	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.542	2.003		130	100	130	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8294	0.9308		112	100	112	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.462	1.568		107	100	107	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.287	1.385		108	100	108	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.199	1.310		109	100	109	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	1.105	1.066		96.5	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9871	0.9628		97.5	100	98	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.069	1.209		113	100	113	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9035	0.9440		104	100	104	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8875	0.8126		91.6	100	92	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	1.048	1.157		110	100	110	77-129
13C-OCDD	Ave	0.6297	0.7838		249	200	124	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.121	1.176		10.5	10.0	105	79-127

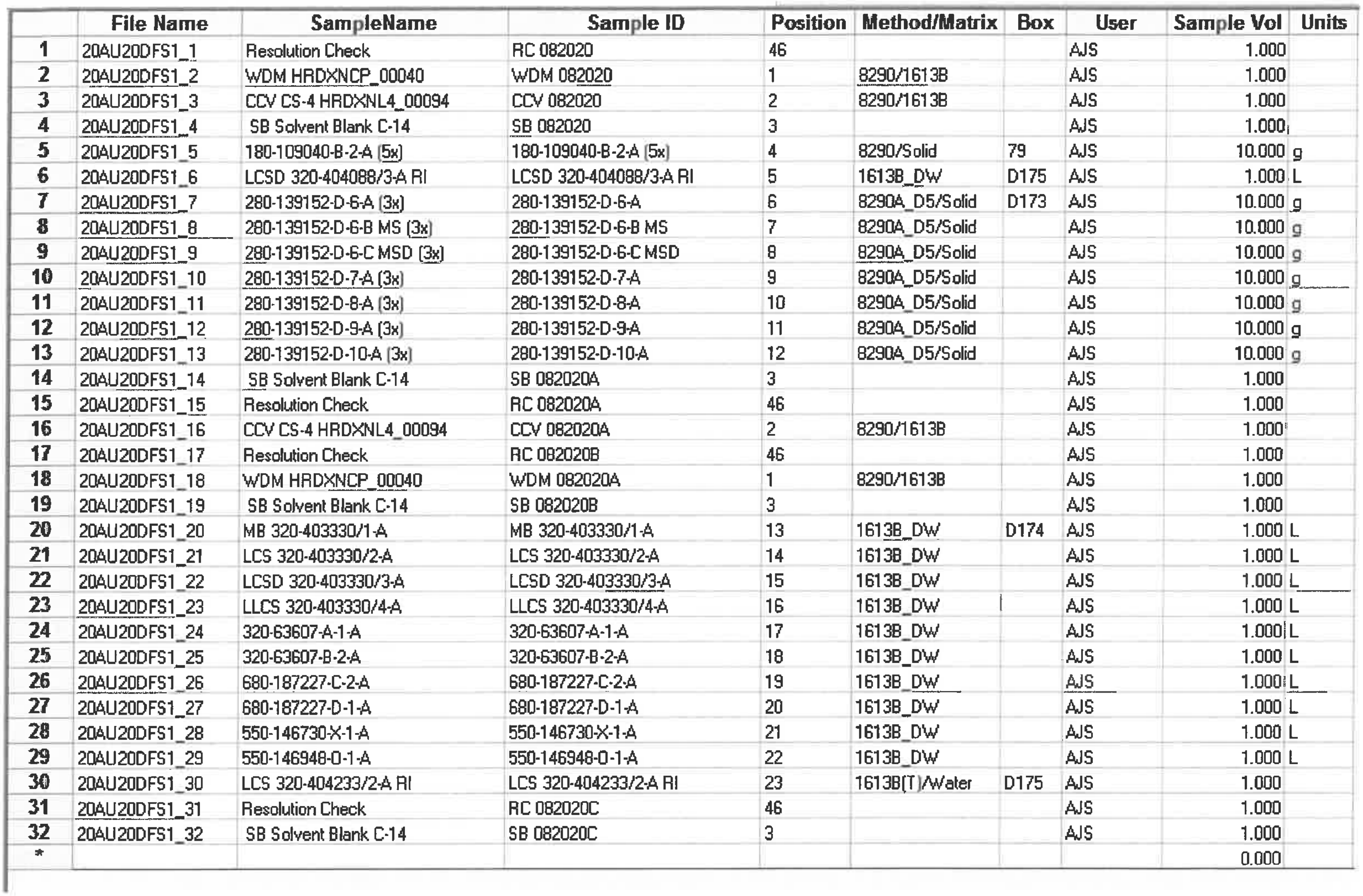

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	20AU20DFS1_1	Resolution Check	RC 082020	46			AJS	1.000	
2	20AU20DFS1_2	WDM HRDXNCP_00040	WDM 082020	1	8290/1613B		AJS	1.000	
3	20AU20DFS1_3	CCV CS-4 HRDXNL4_00094	CCV 082020	2	8290/1613B		AJS	1.000	
4	20AU20DFS1_4	SB Solvent Blank C-14	SB 082020	3			AJS	1.000	
5	20AU20DFS1_5	180-109040-B-2-A (5x)	180-109040-B-2-A (5x)	4	8290/Solid	79	AJS	10.000	g
6	20AU20DFS1_6	LCSD 320-404088/3-A RI	LCSD 320-404088/3-A RI	5	1613B_DW	D175	AJS	1.000	L
7	20AU20DFS1_7	280-139152-D-6-A (3x)	280-139152-D-6-A	6	8290A_D5/Solid	D173	AJS	10.000	g
8	20AU20DFS1_8	280-139152-D-6-B MS (3x)	280-139152-D-6-B MS	7	8290A_D5/Solid		AJS	10.000	g
9	20AU20DFS1_9	280-139152-D-6-C MSD (3x)	280-139152-D-6-C MSD	8	8290A_D5/Solid		AJS	10.000	g
10	20AU20DFS1_10	280-139152-D-7-A (3x)	280-139152-D-7-A	9	8290A_D5/Solid		AJS	10.000	g
11	20AU20DFS1_11	280-139152-D-8-A (3x)	280-139152-D-8-A	10	8290A_D5/Solid		AJS	10.000	g
12	20AU20DFS1_12	280-139152-D-9-A (3x)	280-139152-D-9-A	11	8290A_D5/Solid		AJS	10.000	g
13	20AU20DFS1_13	280-139152-D-10-A (3x)	280-139152-D-10-A	12	8290A_D5/Solid		AJS	10.000	g
14	20AU20DFS1_14	SB Solvent Blank C-14	SB 082020A	3			AJS	1.000	
15	20AU20DFS1_15	Resolution Check	RC 082020A	46			AJS	1.000	
16	20AU20DFS1_16	CCV CS-4 HRDXNL4_00094	CCV 082020A	2	8290/1613B		AJS	1.000	
17	20AU20DFS1_17	Resolution Check	RC 082020B	46			AJS	1.000	
18	20AU20DFS1_18	WDM HRDXNCP_00040	WDM 082020A	1	8290/1613B		AJS	1.000	
19	20AU20DFS1_19	SB Solvent Blank C-14	SB 082020B	3			AJS	1.000	
20	20AU20DFS1_20	MB 320-403330/1-A	MB 320-403330/1-A	13	1613B_DW	D174	AJS	1.000	L
21	20AU20DFS1_21	LCS 320-403330/2-A	LCS 320-403330/2-A	14	1613B_DW		AJS	1.000	L
22	20AU20DFS1_22	LCSD 320-403330/3-A	LCSD 320-403330/3-A	15	1613B_DW		AJS	1.000	L
23	20AU20DFS1_23	LLCS 320-403330/4-A	LLCS 320-403330/4-A	16	1613B_DW		AJS	1.000	L
24	20AU20DFS1_24	320-63607-A-1-A	320-63607-A-1-A	17	1613B_DW		AJS	1.000	L
25	20AU20DFS1_25	320-63607-B-2-A	320-63607-B-2-A	18	1613B_DW		AJS	1.000	L
26	20AU20DFS1_26	680-187227-C-2-A	680-187227-C-2-A	19	1613B_DW		AJS	1.000	L
27	20AU20DFS1_27	680-187227-D-1-A	680-187227-D-1-A	20	1613B_DW		AJS	1.000	L
28	20AU20DFS1_28	550-146730-X-1-A	550-146730-X-1-A	21	1613B_DW		AJS	1.000	L
29	20AU20DFS1_29	550-146948-O-1-A	550-146948-O-1-A	22	1613B_DW		AJS	1.000	L
30	20AU20DFS1_30	LCS 320-404233/2-A RI	LCS 320-404233/2-A RI	23	1613B(T)/Water	D175	AJS	1.000	
31	20AU20DFS1_31	Resolution Check	RC 082020C	46			AJS	1.000	
32	20AU20DFS1_32	SB Solvent Blank C-14	SB 082020C	3			AJS	1.000	
*								0.000	

log file checked
8-20-20 ALM

Resolution Check Report (DFS SN: 3441)

eurofins Environment Testing
TestAmerica

Date: 20 Aug 2020 21:29
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12508 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11992 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12475 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12329 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12550 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12169 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11917 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11395 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11432 [5%height]

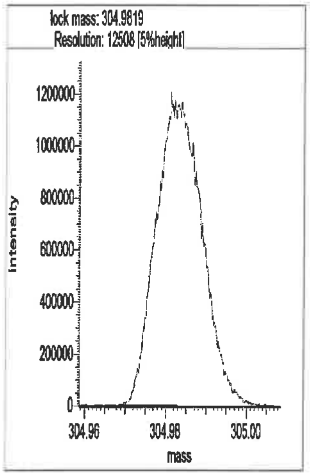

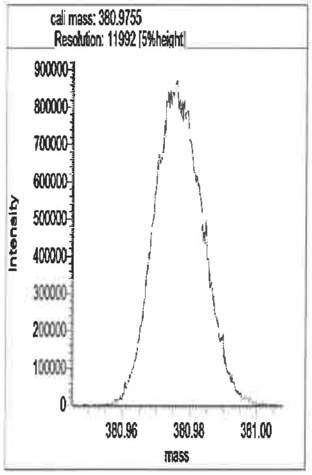

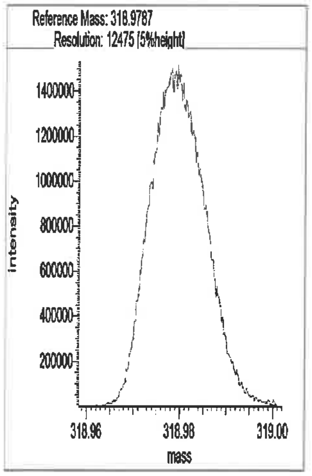

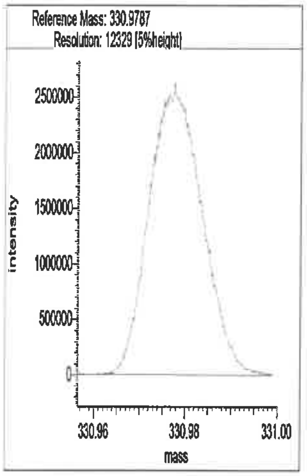

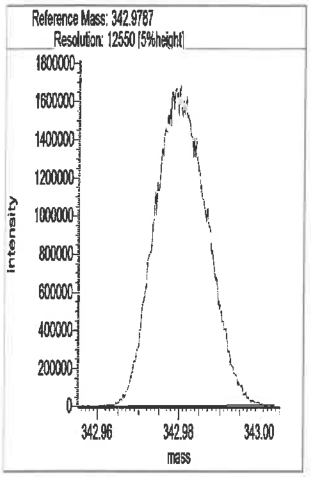

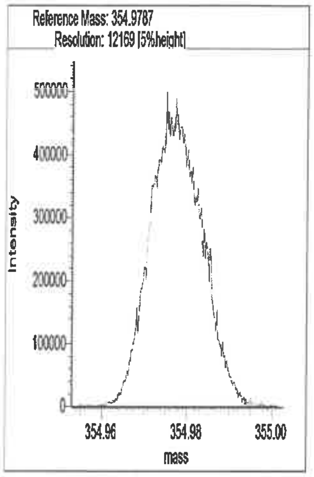

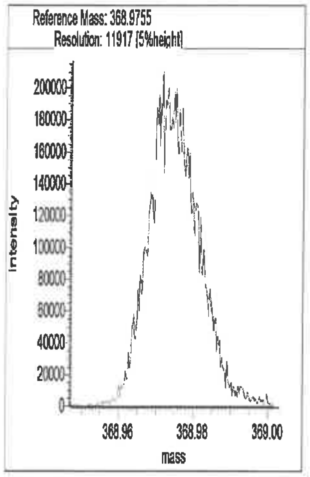

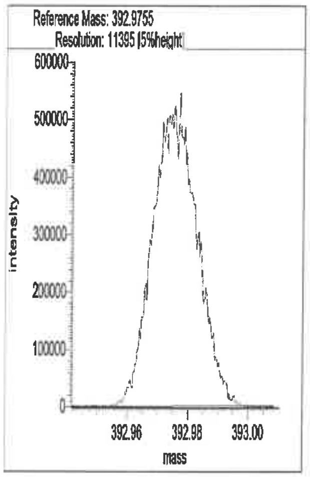

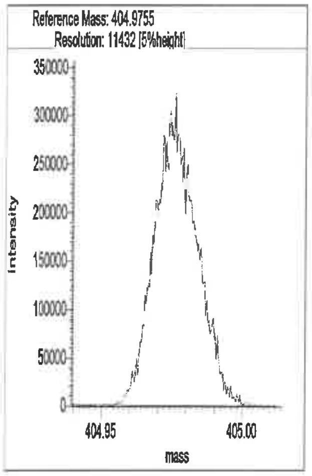

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12774 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12444 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12744 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12404 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11509 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12349 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11832 [5%height]

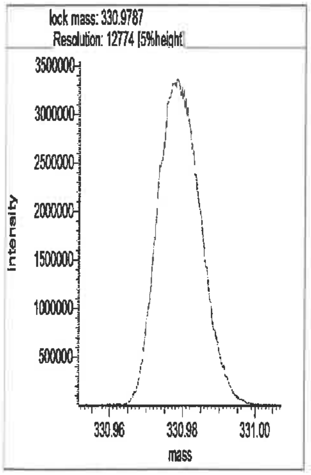

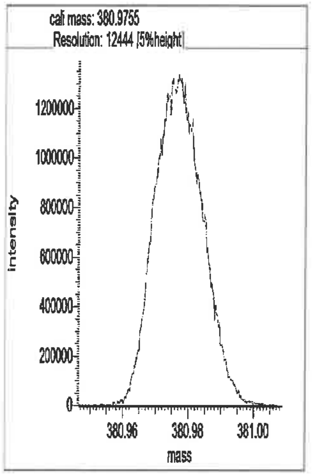

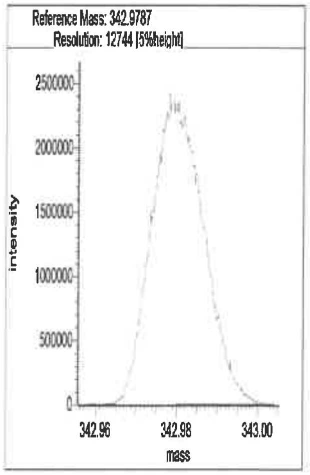

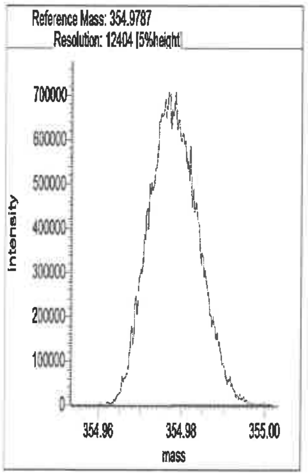

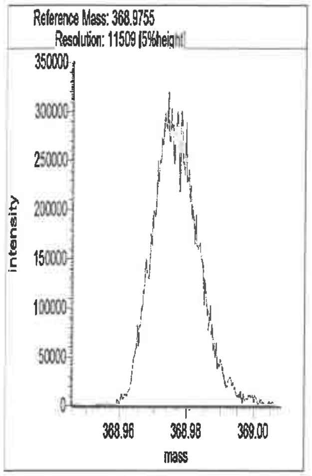

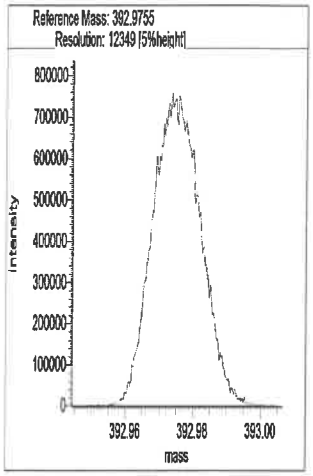

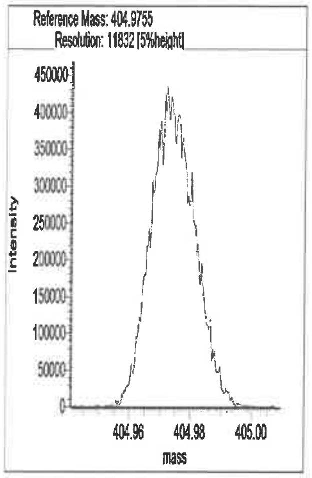

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12553 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12153 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12532 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12422 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12707 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12109 [5%height]

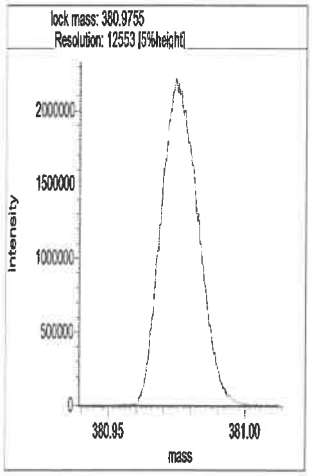

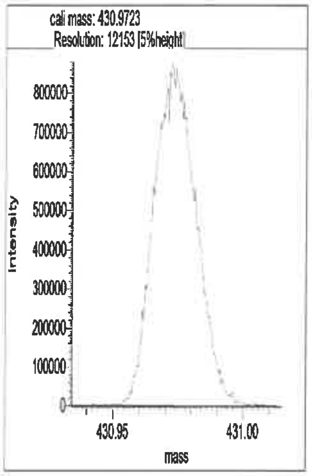

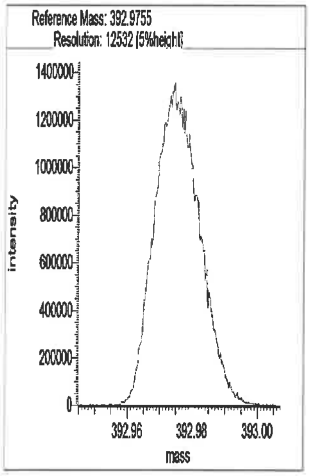

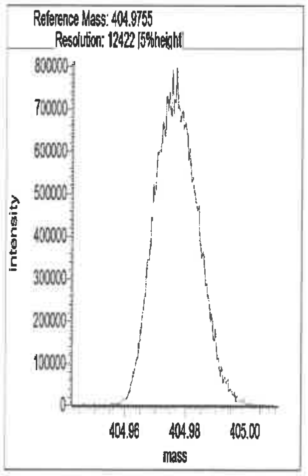

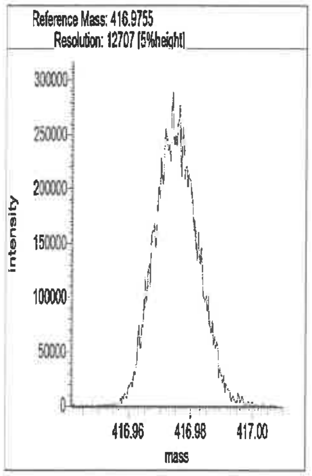

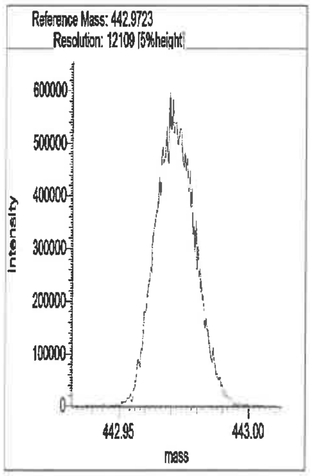

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12907 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11795 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12422 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12486 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12064 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12378 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12095 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12630 [5%height]

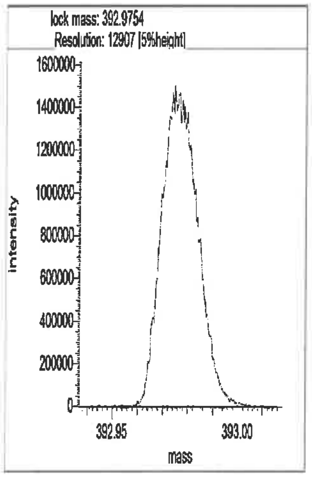

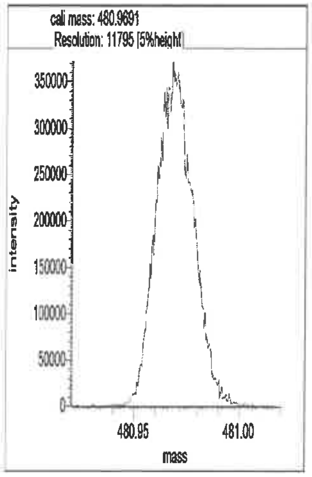

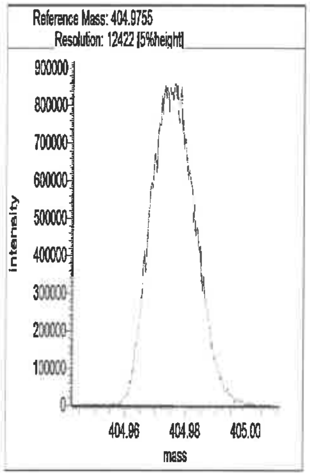

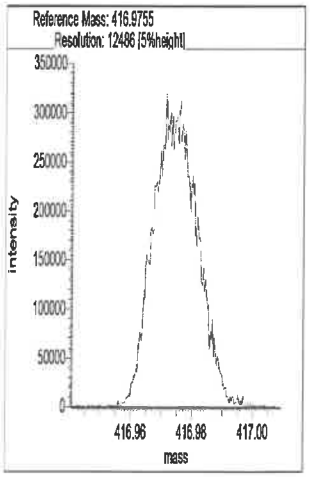

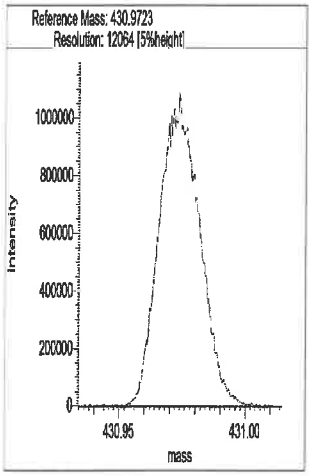

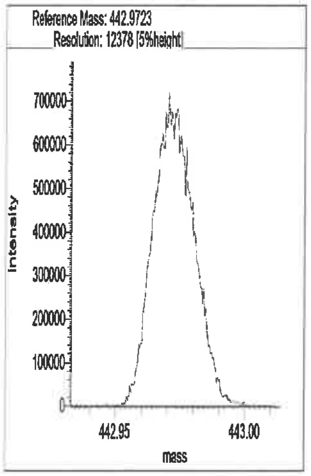

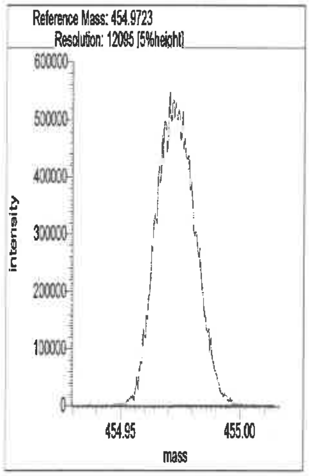

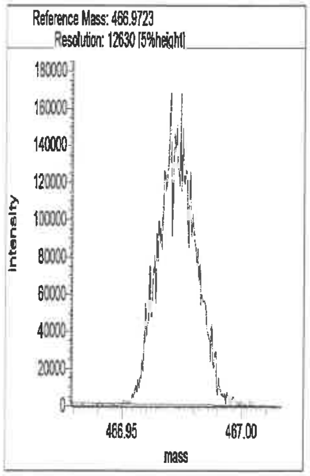

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12935 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12747 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12704 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12483 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12316 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12888 [5%height]

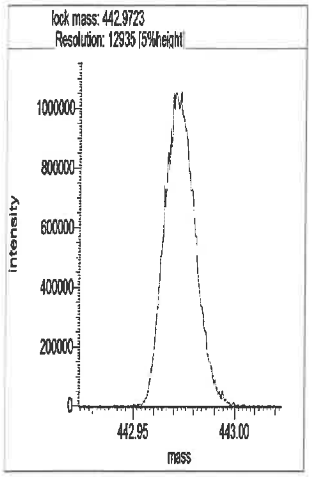
lock mass: 442.9723
Resolution: 12935 [5%height]
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

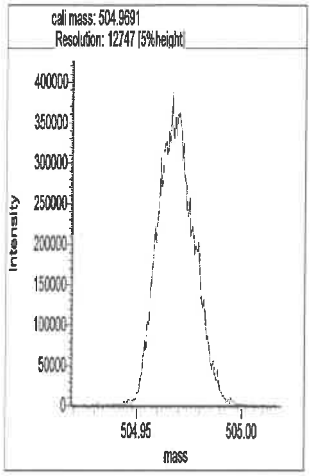
cali mass: 504.9691
Resolution: 12747 [5%height]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

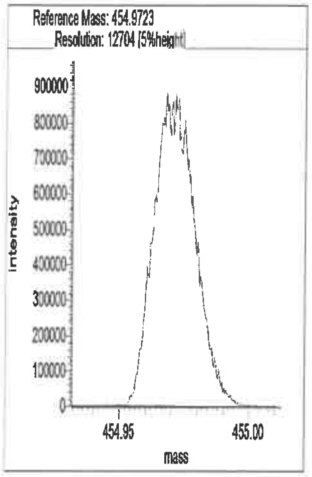
Reference Mass: 454.9723
Resolution: 12704 [5%height]
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

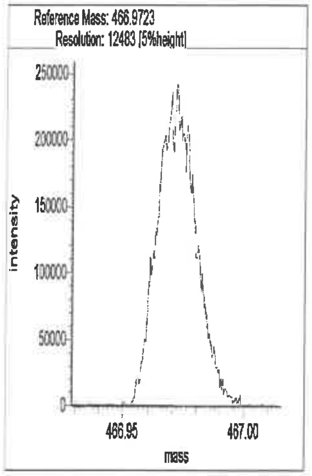
Reference Mass: 466.9723
Resolution: 12483 [5%height]
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

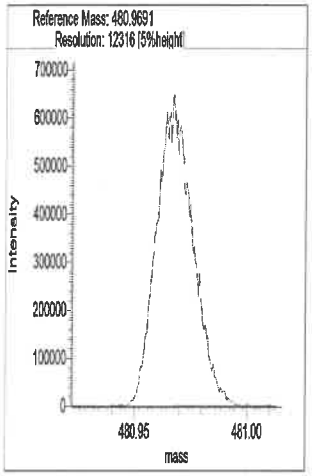
Reference Mass: 480.9691
Resolution: 12316 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

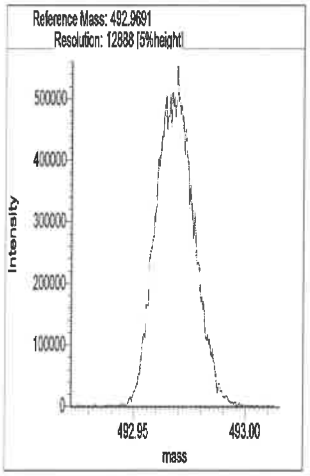
Reference Mass: 492.9691
Resolution: 12888 [5%height]
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3441)

eurofins | Environment Testing TestAmerica

Date:	20 Aug 2020 22:37
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12519 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11648 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12571 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12165 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12045 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12416 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11679 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11698 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11714 [5%height]

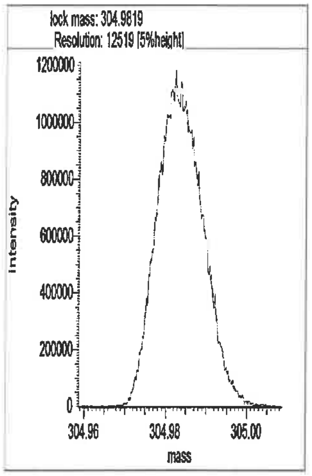

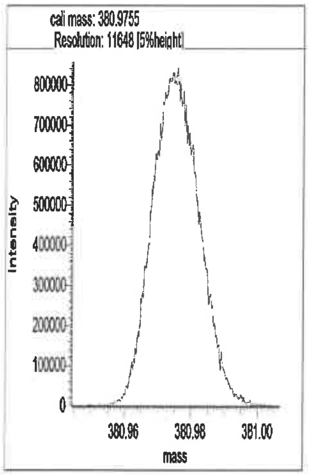

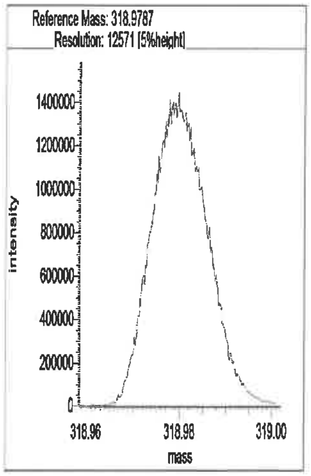

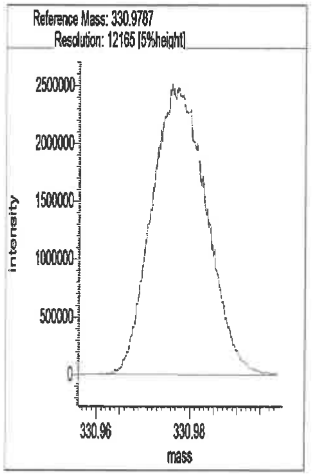

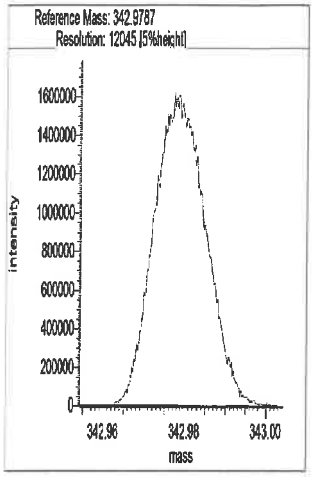

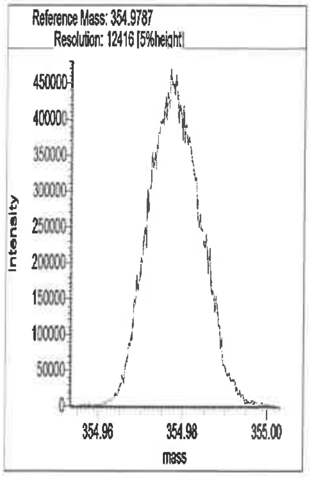

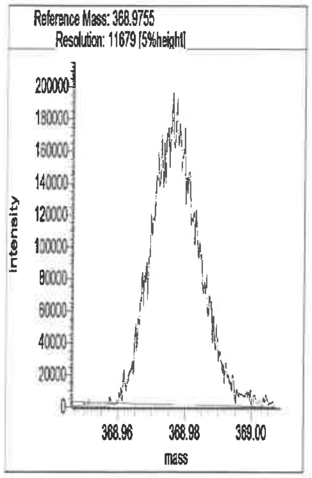

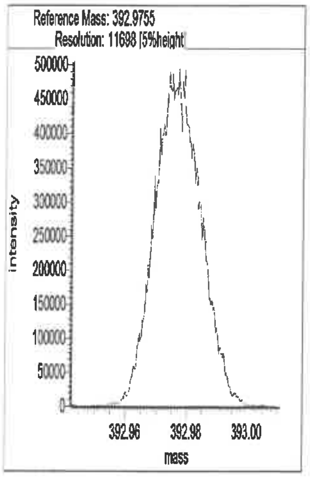

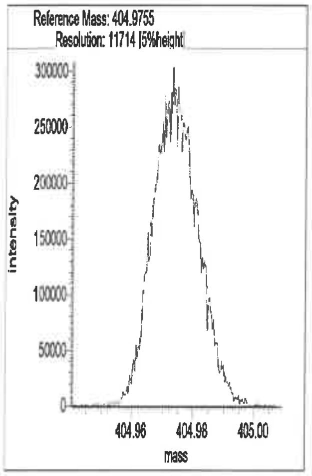

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12803 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12205 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12597 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12335 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11639 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11964 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12286 [5%height]

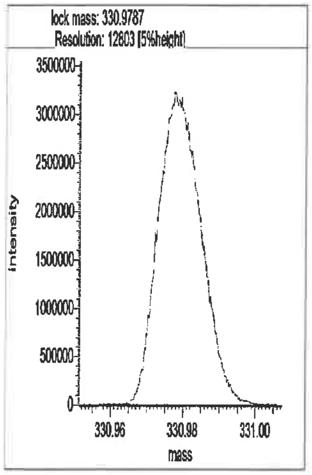

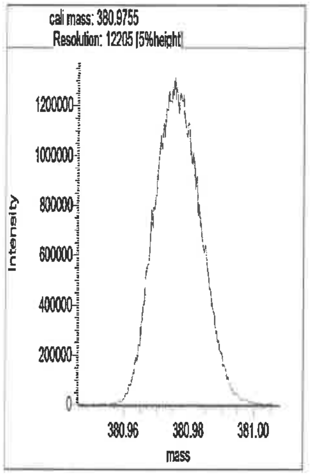

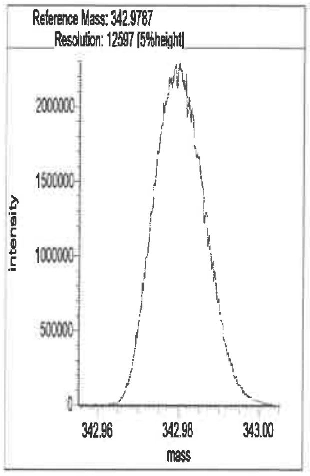

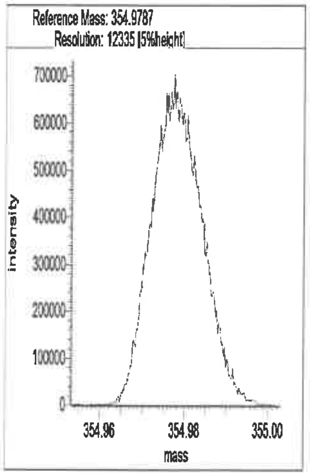

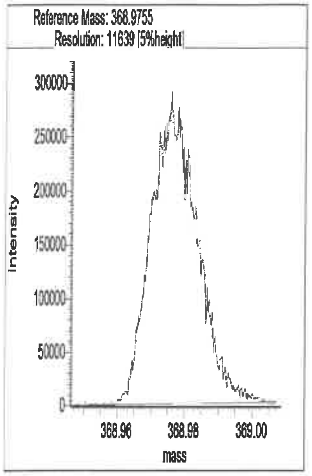

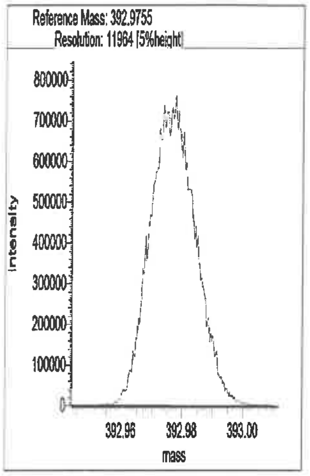

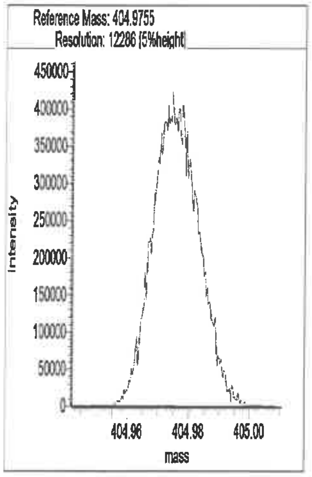

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12761 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12499 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12368 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12506 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12074 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12141 [5%height]

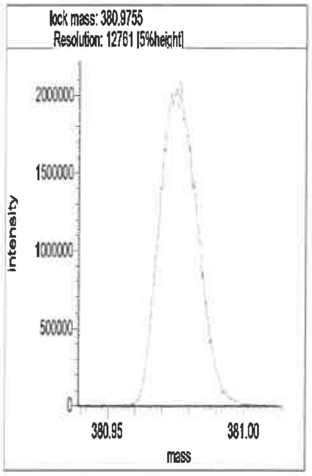

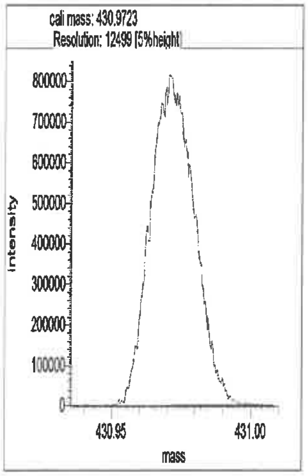

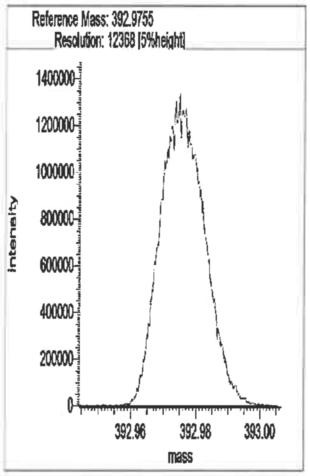

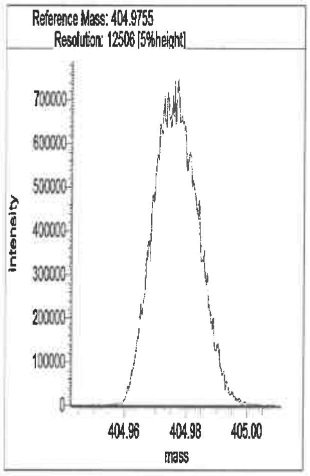

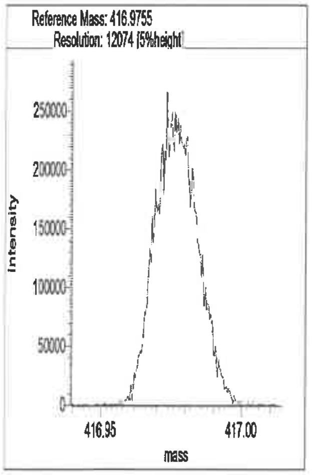

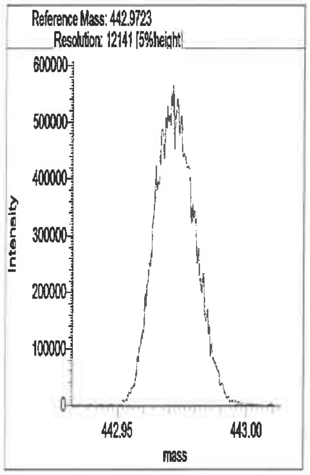

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13015 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11745 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12152 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12429 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12195 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12419 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12603 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11824 [5%height]

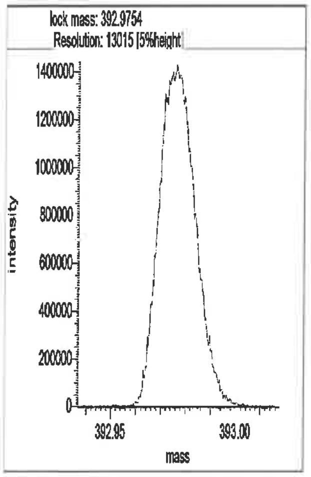

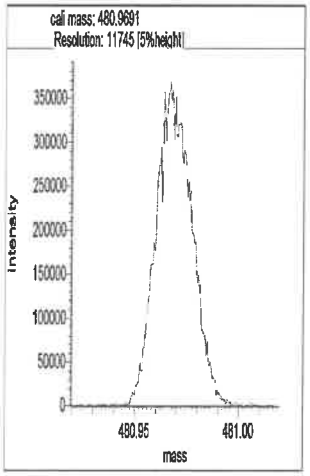

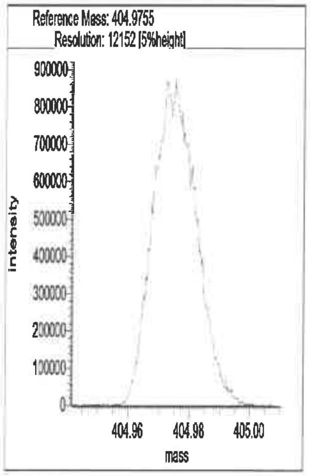

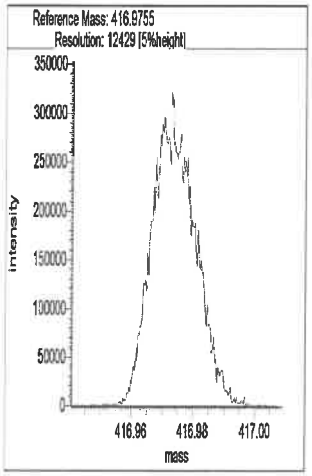

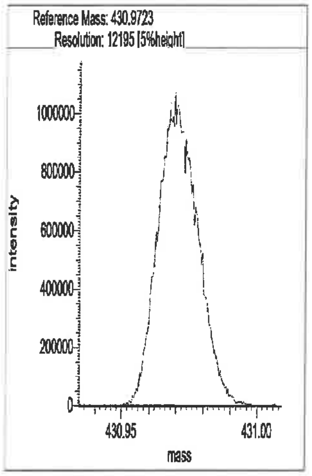

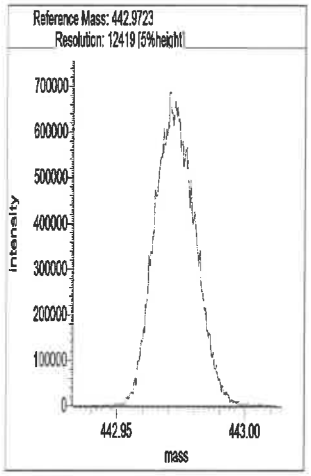

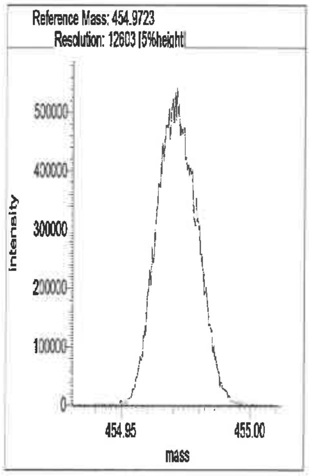

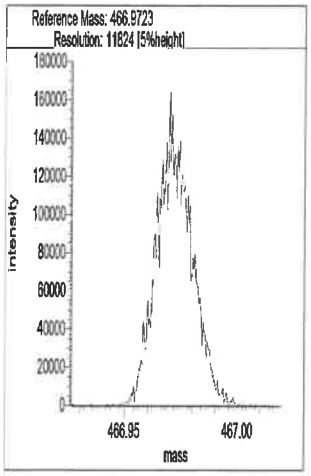

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13149 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12226 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12411 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13418 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12958 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11803 [5%height]

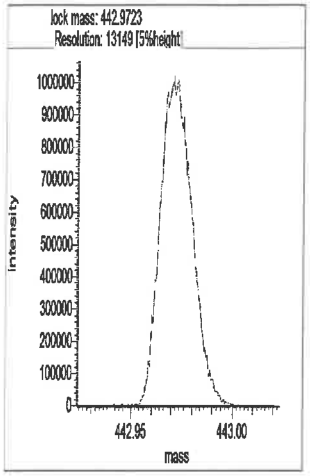
lock mass: 442.9723
Resolution: 13149 [5%height]

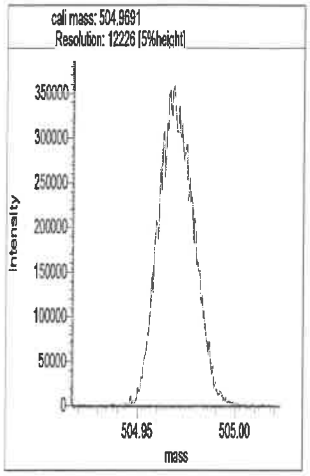
cali mass: 504.9691
Resolution: 12226 [5%height]

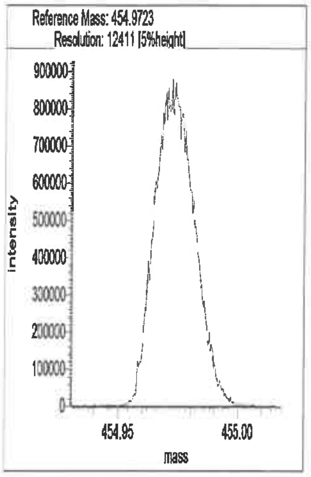
Reference Mass: 454.9723
Resolution: 12411 [5%height]

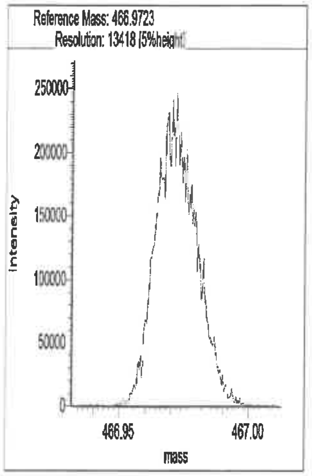
Reference Mass: 466.9723
Resolution: 13418 [5%height]

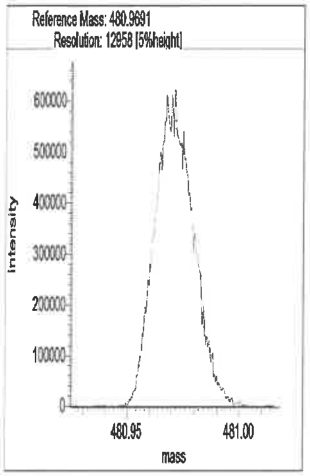
Reference Mass: 480.9691
Resolution: 12958 [5%height]

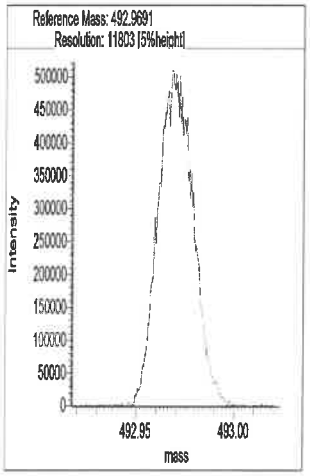
Reference Mass: 492.9691
Resolution: 11803 [5%height]

Resolution Check Report (DFS SN: 3441)

eurofins Environment Testing TestAmerica

Date:	21 Aug 2020 09:49
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12431 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11556 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12134 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11908 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12403 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11946 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11088 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11546 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11787 [5%height]

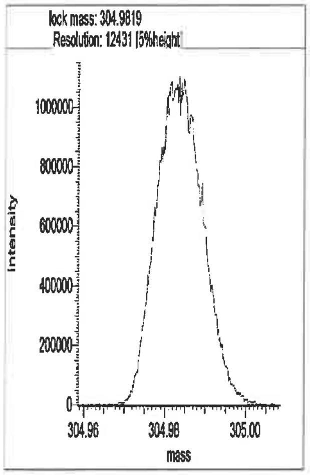

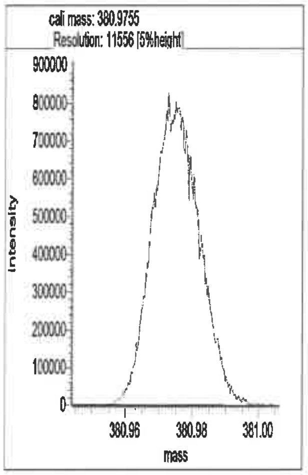

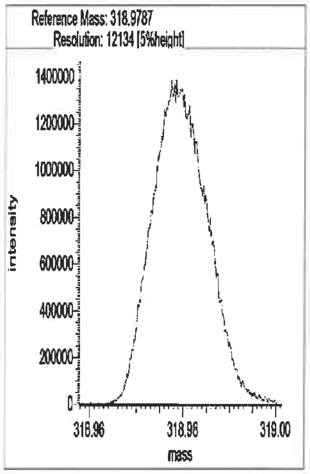

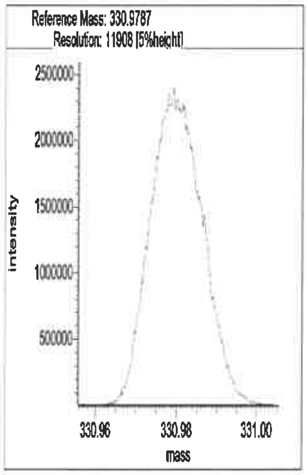

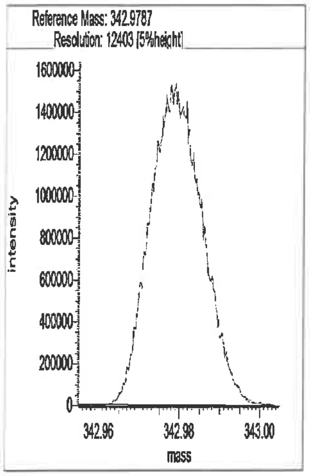

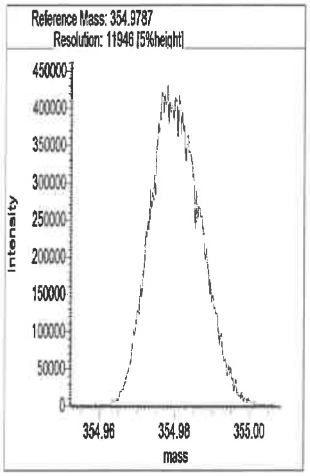

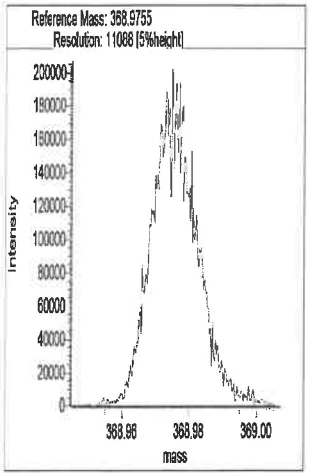

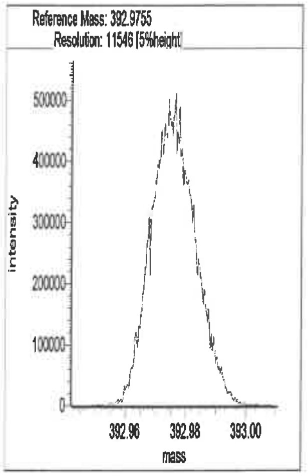

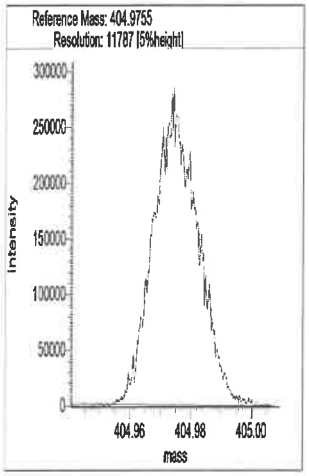

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12313 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12224 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12241 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12541 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11439 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11788 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11739 [5%height]

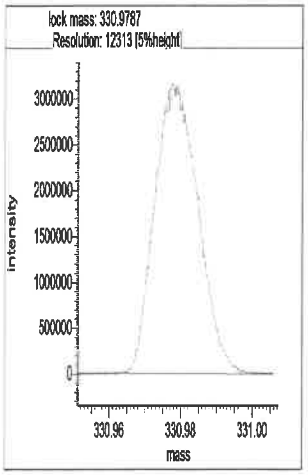

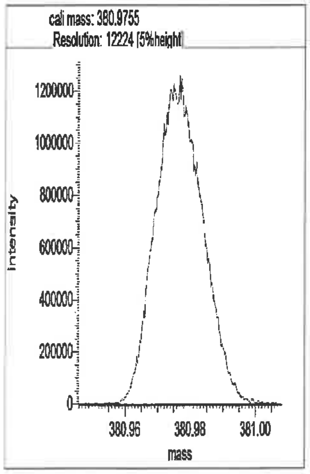

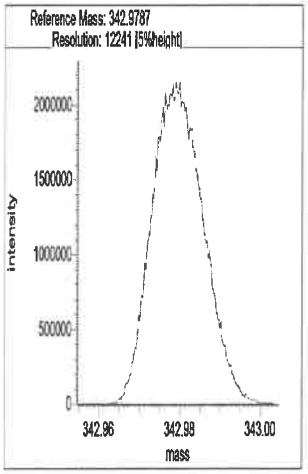

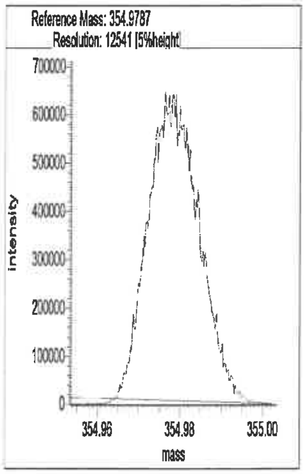

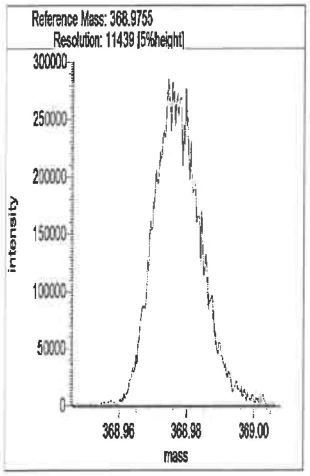

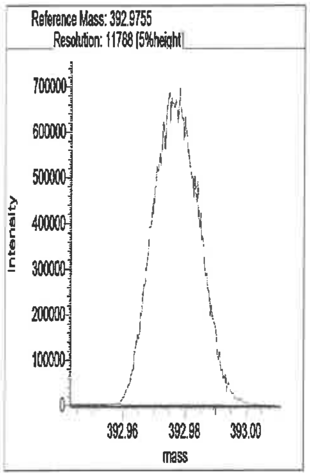

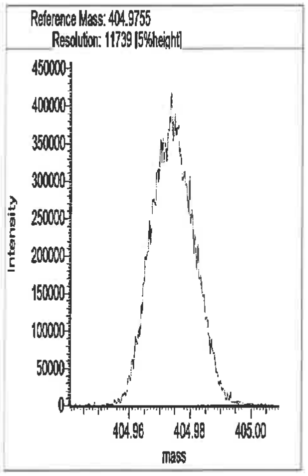

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12394 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12073 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12136 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12360 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12296 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12263 [5%height]

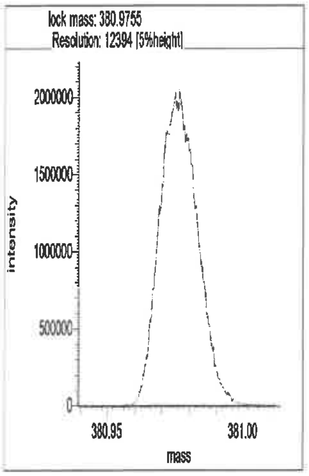

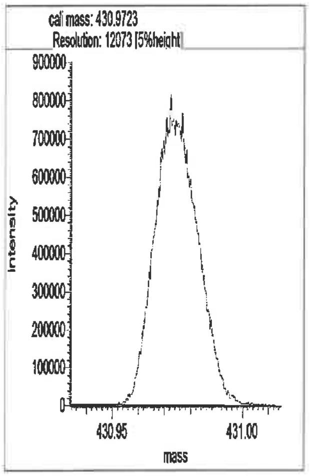

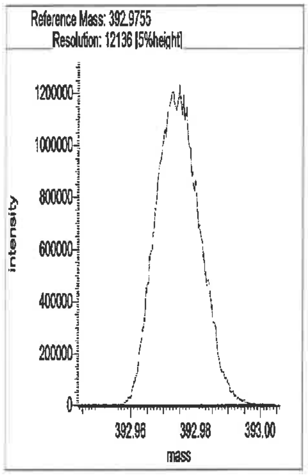

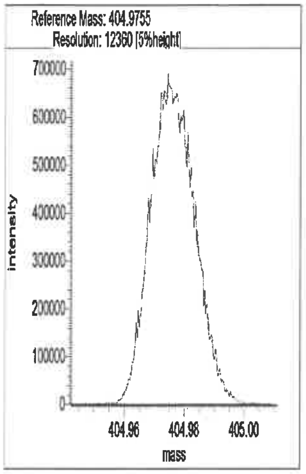

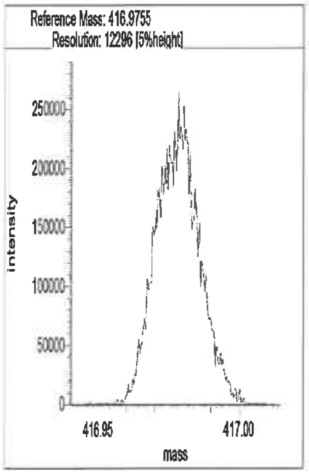

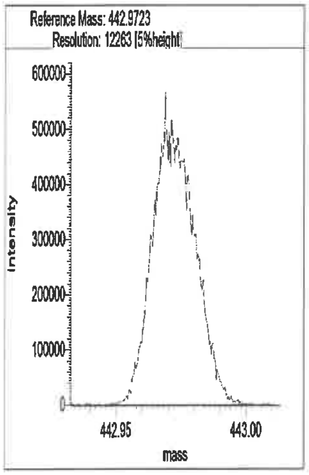

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12716 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11920 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12650 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12206 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12634 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11898 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11933 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11904 [5%height]

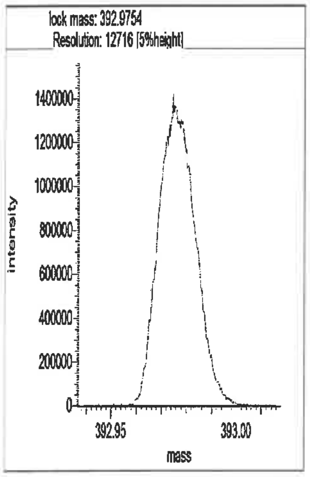

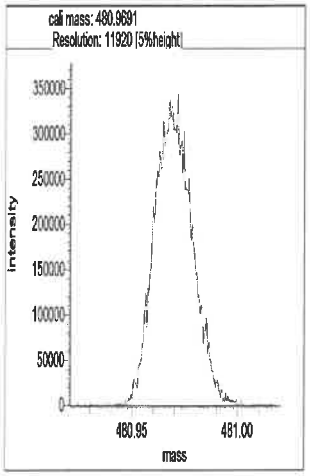

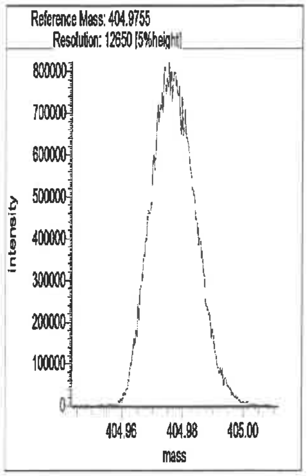

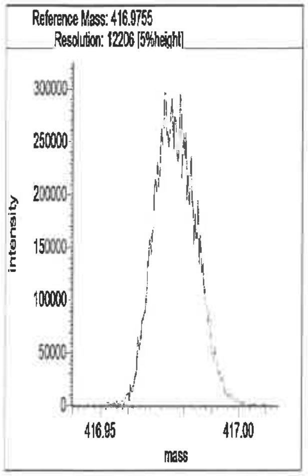

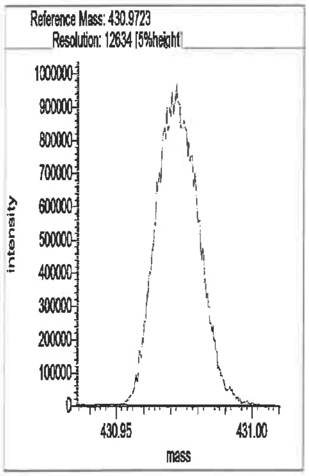

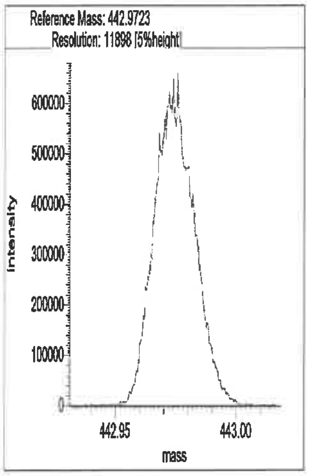

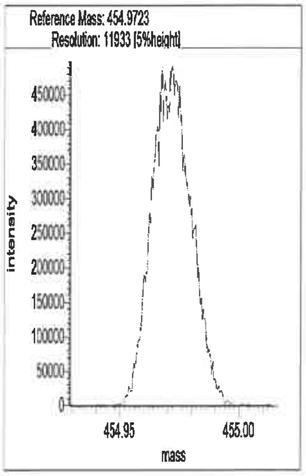

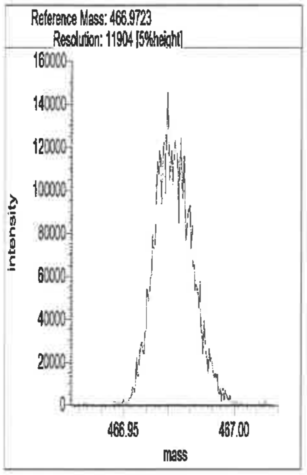

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12678 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12552 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12303 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12279 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11942 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12526 [5%height]

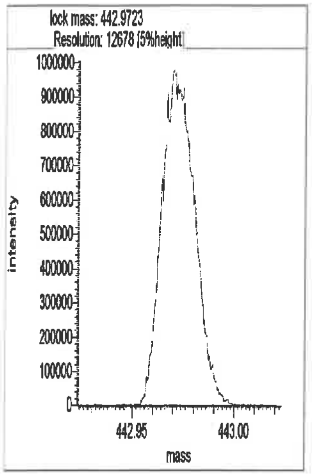
lock mass: 442.9723
Resolution: 12678 [5%height]
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
Intensity
442.95
443.00
mass

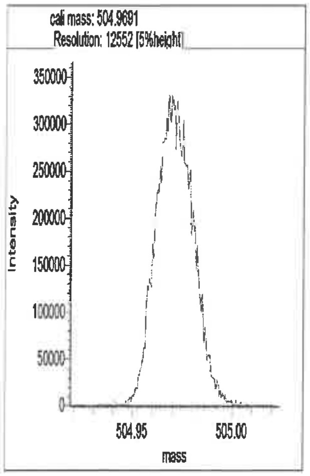
cali mass: 504.9691
Resolution: 12552 [5%height]
350000
300000
250000
200000
150000
100000
50000
0
Intensity
504.95
505.00
mass

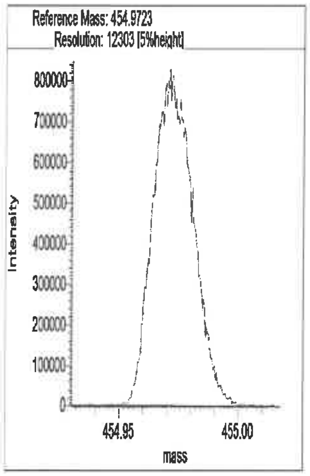
Reference Mass: 454.9723
Resolution: 12303 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
Intensity
454.95
455.00
mass

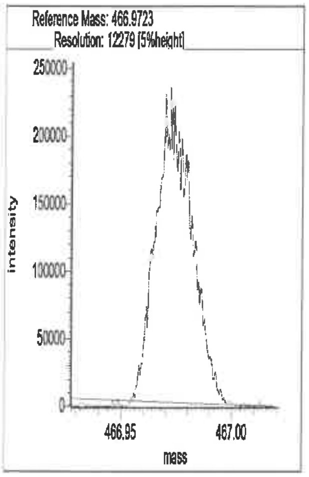
Reference Mass: 466.9723
Resolution: 12279 [5%height]
250000
200000
150000
100000
50000
0
Intensity
466.95
467.00
mass

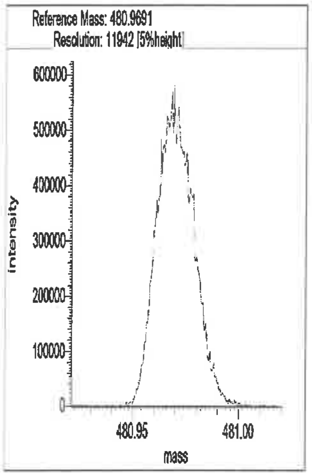
Reference Mass: 480.9691
Resolution: 11942 [5%height]
600000
500000
400000
300000
200000
100000
0
Intensity
480.95
481.00
mass

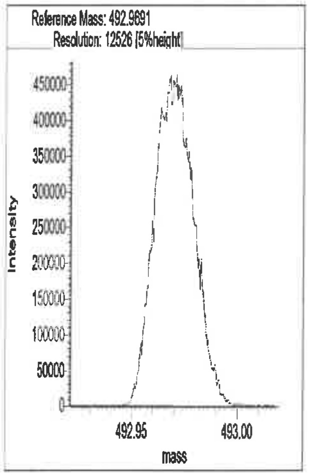
Reference Mass: 492.9691
Resolution: 12526 [5%height]
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Intensity
492.95
493.00
mass

Report Date: 21-Aug-2020 00:19:50 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Aug-2020 21:48:00 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 00:19:43 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1008

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.253	3472445	0.82	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.274	6345097	0.79	1.4977	122.0	122.0	0.2156	0.2156	122	
2,3,7,8-TCDF	20.308	775526	0.82	1.1312	10.8	10.8	0.0198	0.0198	108	
A Non-2,3,7,8-sub-TCDF	19.750	18880	0.77	1.1312	0.2735	0.2630	0.0198	0.1429	0.00	RQ
S Total TCDF					11.1	11.1	0.0198	0.0198		RQ
D 13C-2,3,7,8-TCDD	21.648	3498256	0.82	1.0367	97.2	97.2	0.2591	0.2591	97.17	
$ 37Cl4-2,3,7,8-TCDD	21.674	408291		1.1208	10.5	10.5	0.0227	0.0227	105	
2,3,7,8-TCDD	21.665	444736	0.78	1.1849	10.7	10.7	0.0296	0.0296	107	
A Non-2,3,7,8-sub-TCDD	20.600	11678	0.77	1.1849	0.3260	0.2817	0.0296	0.1295	0.00	RQ
S Total TCDD					11.1	11.0	0.0296	0.0296		RQ
D 13C-1,2,3,7,8-PeCDF	27.248	5713364	1.57	1.3057	126.0	126.0	0.4583	0.4583	126	
1,2,3,7,8-PeCDF	27.265	3288191	1.60	1.1060	52.0	52.0	0.1818	0.1818	104	
D 13C-2,3,4,7,8-PeCDF	28.780	6954237	1.65	1.5420	129.9	129.9	0.3880	0.3880	130	
2,3,4,7,8-PeCDF	28.805	3293116	1.56	0.9067	52.2	52.2	0.1890	0.1890	104	
A F1 PeCDFs	24.664						0.000529	0.000529		
A Non-2,3,7,8-sub-PeCDF	28.186						0.1839	0.1839		Rn
S Total PeCDF					104.3	104.3	0.1854	0.1854		
D 13C-1,2,3,7,8-PeCDD	29.597	3232035	1.60	0.8294	112.2	112.2	0.1648	0.1648	112	
1,2,3,7,8-PeCDD	29.622	1863981	1.63	1.1062	52.1	52.1	0.0610	0.0610	104	
A Non-2,3,7,8-sub-PeCDD	28.359	5860	1.67	1.1062	0.1639	0.1639	0.0610	0.1639	0.00	
S Total PeCDD					52.3	52.3	0.0610	0.0610		
D 13C-1,2,3,4,7,8-HxCDF	34.920	7468441	0.52	1.4619	107.2	107.2	0.2576	0.2576	107	
1,2,3,4,7,8-HxCDF	34.937	3725182	1.29	1.0087	49.5	49.5	0.1584	0.1584	98.90	
D 13C-1,2,3,6,7,8-HxCDF	35.089	6600135	0.54	1.2866	107.7	107.7	0.2927	0.2927	108	
1,2,3,6,7,8-HxCDF	35.106	4021158	1.27	1.2432	49.0	49.0	0.1580	0.1580	98.01	
D 13C-2,3,4,6,7,8-HxCDF	35.906	6241115	0.54	1.1988	109.3	109.3	0.3142	0.3142	109	
2,3,4,6,7,8-HxCDF	35.923	3837539	1.25	1.2736	48.3	48.3	0.1315	0.1315	96.56	
D 13C-1,2,3,7,8,9-HxCDF	36.790	5761795	0.53	1.0687	113.2	113.2	0.3524	0.3524	113	
1,2,3,7,8,9-HxCDF	36.807	3604830	1.26	1.2882	48.6	48.6	0.1377	0.1377	97.13	
A Non-2,3,7,8-sub-HxCDF	35.019						0.1448	0.1448		
S Total HxCDF					195.3	195.3	0.1464	0.1464		
* 13C-1,2,3,7,8,9-HxCDD	36.596	4763895	1.29	5E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.116	5076626	1.33	1.1046	96.5	96.5	0.1065	0.1065	96.47	
1,2,3,4,7,8-HxCDD	36.125	2346196	1.26	0.9336	49.5	49.5	0.0715	0.0715	99.00	
D 13C-1,2,3,6,7,8-HxCDD	36.226	4586914	1.30	0.9871	97.5	97.5	0.1192	0.1192	97.54	
1,2,3,6,7,8-HxCDD	36.243	2439478	1.26	1.0802	49.2	49.2	0.0707	0.0707	98.47	
1,2,3,7,8,9-HxCDD	36.605	2622046	1.26	1.0574	51.3	51.3	0.0674	0.0674	103	
A Non-2,3,7,8-sub-HxCDD	35.386						0.0696	0.0696		
S Total HxCDD					150.1	150.1	0.0699	0.0699		
D 13C-1,2,3,4,6,7,8-HpCDF	38.586	4497225	0.47	0.9035	104.5	104.5	0.4469	0.4469	104	
1,2,3,4,6,7,8-HpCDF	38.595	3443706	1.07	1.5957	48.0	48.0	0.1718	0.1718	95.98	
D 13C-1,2,3,4,7,8,9-HpCDF	39.832	5510179	0.45	1.0480	110.4	110.4	0.3853	0.3853	110	
1,2,3,4,7,8,9-HpCDF	39.840	3116161	1.06	1.1693	48.4	48.4	0.1691	0.1691	96.73	
A Non-2,3,7,8-sub-HpCDF	39.212						0.1662	0.1662		
S Total HpCDF					96.4	96.4	0.1704	0.1704		
D 13C-1,2,3,4,6,7,8-HpCDD	39.529	3871060	1.08	0.8875	91.6	91.6	0.1855	0.1855	91.56	
1,2,3,4,6,7,8-HpCDD	39.538	2148675	1.05	1.1150	49.8	49.8	0.1026	0.1026	99.56	
A Non-2,3,7,8-sub-HpCDD	39.555						0.1026	0.1026		
S Total HpCDD					49.8	49.8	0.1026	0.1026		
D 13C-OCDD	41.985	7467744	0.91	0.6297	248.9	248.9	0.3373	0.3373	124	
OCDF	42.087	5742072	0.91	1.4809	103.8	103.8	0.0805	0.0805	104	
OCDD	41.994	4288249	0.91	1.1948	96.1	96.1	0.0887	0.0887	96.13	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00094 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Aug-2020 21:48:00 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 00:19:43 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1008

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.253	21.176	5		1565578	214597	300	750	715		
333.9338	21.261	21.176	5		1906867	264535	215	537	1230	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.274	20.196	5	0.954	2798144	397448	350	875	1136		
317.9389	20.265	20.196	4	0.954	3546953	506009	269	672	1881	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.308	20.239	4	1.002	349742	50351	29	72	1736		
305.8987	20.291	20.239	3	1.001	425784	61631	52	130	1185	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	15.996	19.750	-225	0.789	1022	375	29	72	13		
	Empc Correction				595	229	29	72	8		
305.8987	15.927	19.750	-229	0.786	774	298	52	130	6	1.32(0.65-0.89)	
303.9016	20.497	19.750	45	1.011	4451	1392	29	72	48		
305.8987	20.514	19.750	46	1.012	5804	1289	52	130	25	0.77(0.65-0.89)	
303.9016	20.617	19.750	52	1.017	1895	497	29	72	17		
	Empc Correction				1574	449	29	72	15		
305.8987	20.626	19.750	52	1.017	2045	584	52	130	11	0.93(0.65-0.89)	
303.9016	20.703	19.750	57	1.021	1463	759	29	72	26		
305.8987	20.686	19.750	56	1.020	2174	531	52	130	10	0.67(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.648	21.572	5	1.019	1581394	222112	300	750	740		
333.9338	21.648	21.572	5	1.019	1916862	254044	215	537	1182	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.674	21.597	5	1.020	408291	55227	49	122	1127		

Report Date: 21-Aug-2020 00:19:50 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											
319.8965	21.665	21.606	4	1.001	194314	25806	57	142	453		
321.8936	21.665	21.606	4	1.001	250422	34831	10	25	3483	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	21.897	20.600	78	1.012	2181	768	57	142	13		
321.8936	21.914	20.600	79	1.012	3187	853	10	25	85	0.68(0.65-0.89)	
319.8965	21.949	20.600	81	1.014	2728	889	57	142	16		
	Empc Correction				1672	552	57	142	10		
321.8936	22.017	20.600	85	1.017	2172	718	10	25	72	1.26(0.65-0.89)	
319.8965	22.043	20.600	86	1.018	1073	699	57	142	12		
321.8936	22.017	20.600	85	1.017	2172	718	10	25	72	0.49(0.65-0.89)	
	Empc Correction				1393	907	10	25	91		
13C-1,2,3,7,8-PeCDF											
351.9000	27.248	27.184	4	1.282	3492898	534950	826	2065	648		
353.8970	27.248	27.184	4	1.282	2220466	329050	321	802	1025	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.265	27.218	3	1.001	2021827	321115	388	970	828		
341.8567	27.265	27.218	3	1.001	1266364	201817	307	767	657	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.780	28.725	3	1.354	4325115	639972	826	2065	775		
353.8970	28.780	28.725	3	1.354	2629122	373487	321	802	1164	1.65(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.805	28.750	3	1.001	2006485	289125	388	970	745		
341.8567	28.797	28.750	3	1.001	1286631	185905	307	767	606	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.664						1	2			
341.8567	24.664						1	2			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.871	28.180	-19	1.023	16728	2463	388	970	6		
341.8567	27.837	28.180	-21	1.022	9296	1570	307	767	5	1.80(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.597	29.542	3	1.393	1988844	273387	161	402	1698		
369.8919	29.605	29.542	4	1.393	1243191	178797	101	252	1770	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.622	29.576	3	1.001	1155584	161111	80	200	2014		
357.8516	29.630	29.576	3	1.001	708397	99807	42	105	2376	1.63(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	30.144	28.359	107	1.019	3668	574	80	200	7		
357.8516	30.127	28.359	106	1.018	2192	629	42	105	15	1.67(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.920	34.891	2	0.954	2551927	558479	768	1920	727		
385.8610	34.920	34.891	2	0.954	4916514	1031534	1076	2690	959	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.937	34.908	2	1.000	2095435	449118	547	1367	821		
375.8178	34.937	34.908	2	1.000	1629747	341416	469	1172	728	1.29(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.089	35.059	2	0.959	2306771	459887	768	1920	599		
385.8610	35.089	35.059	2	0.959	4293364	833100	1076	2690	774	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.106	35.076	2	1.000	2246620	467925	547	1367	855		
375.8178	35.106	35.076	2	1.000	1774538	365892	469	1172	780	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.906	35.876	2	0.981	2190560	544007	768	1920	708		
385.8610	35.906	35.876	2	0.981	4050555	972361	1076	2690	904	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.923	35.893	2	1.000	2130389	502418	547	1367	918		
375.8178	35.923	35.893	2	1.000	1707150	408284	469	1172	871	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.790	36.769	1	1.005	2007139	491873	768	1920	640		
385.8610	36.790	36.769	1	1.005	3754656	940012	1076	2690	874	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.807	36.778	2	1.000	2011918	499289	547	1367	913		
375.8178	36.807	36.778	2	1.000	1592912	398972	469	1172	851	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.019						547	1367			
375.8178	35.019						469	1172			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.596	36.567	2		2683006	702650	370	925	1899		
403.8529	36.596	36.567	2		2080889	521305	206	515	2531	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.116	36.087	2	0.987	2897284	729290	370	925	1971		
403.8529	36.116	36.087	2	0.987	2179342	551595	206	515	2678	1.33(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.125	36.095	2	1.000	1309585	334099	184	460	1816		
391.8127	36.125	36.095	2	1.000	1036611	267346	158	395	1692	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.226	36.205	1	0.990	2588589	627955	370	925	1697		
403.8529	36.226	36.205	1	0.990	1998325	491131	206	515	2384	1.30(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.243	36.213	2	1.000	1360012	340756	184	460	1852		
391.8127	36.243	36.213	2	1.000	1079466	264166	158	395	1672	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.605	36.584	1	1.014	1463049	371256	184	460	2018		
391.8127	36.605	36.584	1	1.014	1158997	297796	158	395	1885	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.386						184	460			
391.8127	35.386						158	395			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.586	38.565	1	1.054	1438979	427594	757	1892	565		
419.8220	38.586	38.565	1	1.054	3058246	892165	1220	3050	731	0.47(0.37-0.51)	

Report Date: 21-Aug-2020 00:19:50 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDF											
407.7817	38.595	38.581	1	1.000	1779440	510519	744	1860	686		
409.7788	38.595	38.581	1	1.000	1664266	479152	703	1757	682	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.832	39.811	1	1.088	1706789	570739	757	1892	754		
419.8220	39.832	39.811	1	1.088	3803390	1258257	1220	3050	1031	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.840	39.819	1	1.000	1602852	526031	744	1860	707		
409.7788	39.840	39.819	1	1.000	1513309	491125	703	1757	699	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.212						744	1860			
409.7788	39.212						703	1757			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.529	39.508	1	1.080	2009340	648495	425	1062	1526		
437.8140	39.521	39.508	1	1.080	1861720	586084	381	952	1538	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.538	39.516	1	1.000	1099762	355446	307	767	1158		
425.7737	39.538	39.516	1	1.000	1048913	331722	258	645	1286	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						307	767			
425.7737	39.555						258	645			
13C-OCDD											
469.7780	41.985	41.965	1	1.147	3557224	998824	399	997	2503		
471.7750	41.985	41.965	1	1.147	3910520	1085406	641	1602	1693	0.91(0.76-1.02)	
OCDF											
441.7428	42.087	42.066	1	1.002	2734945	765065	229	572	3341		
443.7399	42.078	42.066	1	1.002	3007127	853414	268	670	3184	0.91(0.76-1.02)	
OCDD											
457.7377	41.994	41.973	1	1.000	2044307	575877	224	560	2571		
459.7348	41.994	41.973	1	1.000	2243942	627566	218	545	2879	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00094 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d
Lims ID: CCV
Client ID:
Inject. Date: 20-Aug-2020 21:48:00
Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 405471
Lims Sample ID: 14
Sublist: chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDF, RT: 19.750

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	6345097	903457

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	6345097	903457

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.996	1022	375	774	298	0.0250	1.32	RnQ
15.996	595	229	774	298	0.0191		Empc Correction
20.497	4451	1392	5804	1289	0.1429	0.77	
20.617	1895	497	2045	584	0.0549	0.93	RQ
20.617	1574	449	2045	584	0.0504		Empc Correction
20.703	1463	759	2174	531	0.0507	0.67	
Signal Totals:							
	8083	2829	10797	2702			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	19628	5725				0.82	RQ
	18880	5531					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2735 = (19628 * 100.000) / (6345097 * 1.131)
Empc Amount: 0.2630 = (18880 * 100.000) / (6345097 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d
Lims ID: CCV
Client ID:
Inject. Date: 20-Aug-2020 21:48:00 Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 405471 Lims Sample ID: 14
Sublist: chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDD, RT: 20.600

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	3498256	476156

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	3498256	476156

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.897	2181	768	3187	853	0.1295	0.68	
21.949	2728	889	2172	718	0.1182	1.26	RQ
21.949	1672	552	2172	718	0.0927		Empc Correction
22.043	1073	699	2172	718	0.0783	0.49	RQ
22.043	1073	699	1393	907	0.0595		Empc Correction
Signal Totals:							
	4926	2019	6752	2478			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13513	4645				0.79	RQ
	11678	4497					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3260 = (13513 * 100.000) / (3498256 * 1.185)
Empc Amount: 0.2817 = (11678 * 100.000) / (3498256 * 1.185)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d		
Lims ID:	CCV		
Client ID:			
Inject. Date:	20-Aug-2020 21:48:00	Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	405471	Lims Sample ID:	14
Sublist:	chrom-Dioxin_DFS1*sub1		

Non-2,3,7,8-sub-PeCDD, RT: 28.359

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106	D 13C-1,2,3,7,8-PeCDD	100.000	3232035	452184

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.106		100.000	3232035	452184

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.144	3668	574	2192	629	0.1639	1.67	n
Signal Totals:							
	3668	574	2192	629			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5860	1203				1.67	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1639 = (5860 * 100.000) / (3232035 * 1.106)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Report Date: 21-Aug-2020 00:19:50   Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d

Injection Date: 20-Aug-2020 21:48:00   Injection Vol: 1.0 ul

Instrument ID: DFS 1   Operator ID: Xcalibur_System

Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405471   Sample Line#: 14

Column Type: DB-5   Column Dia: 0.32 mm

TCDF

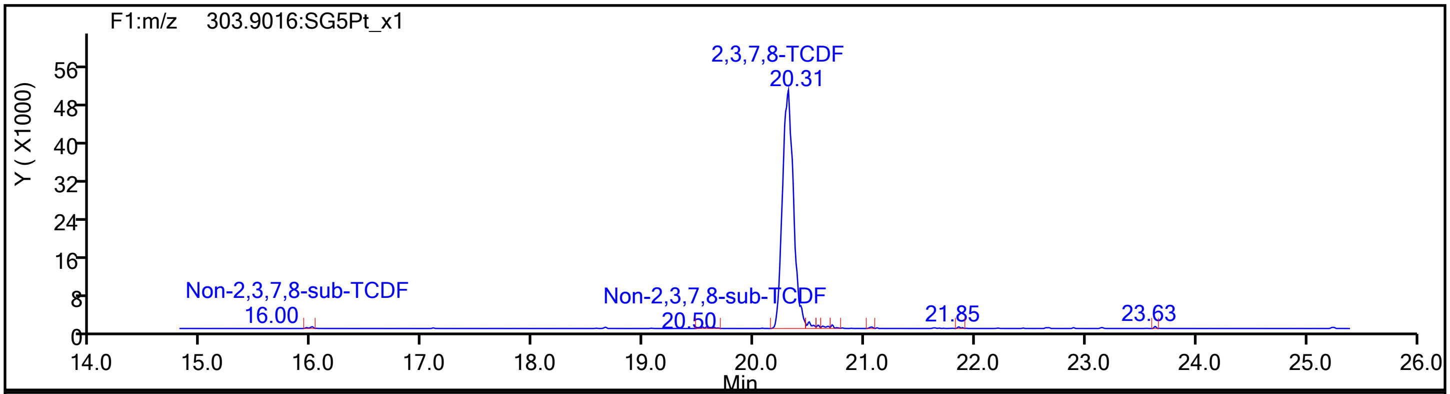

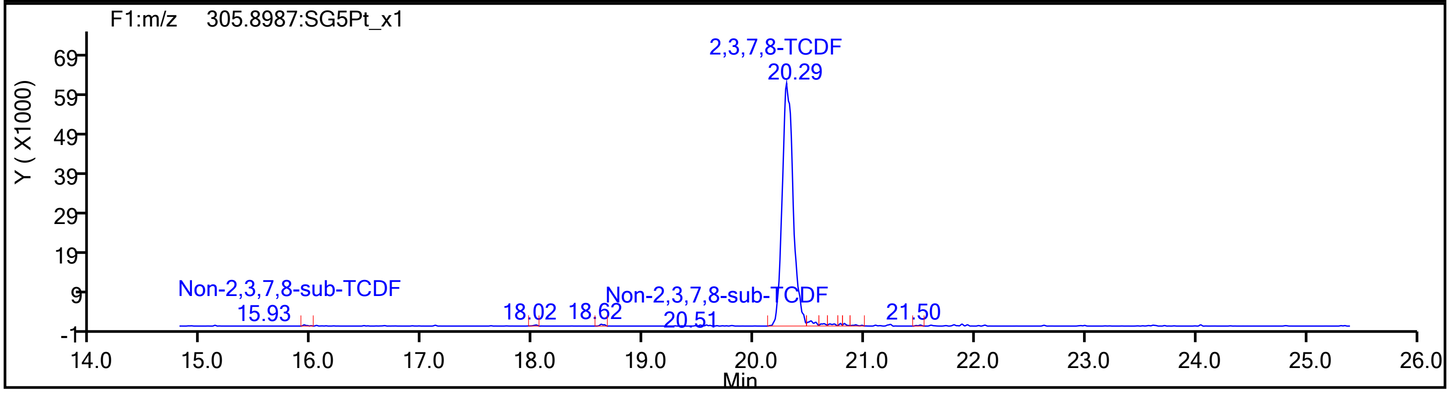

TCDF Standards

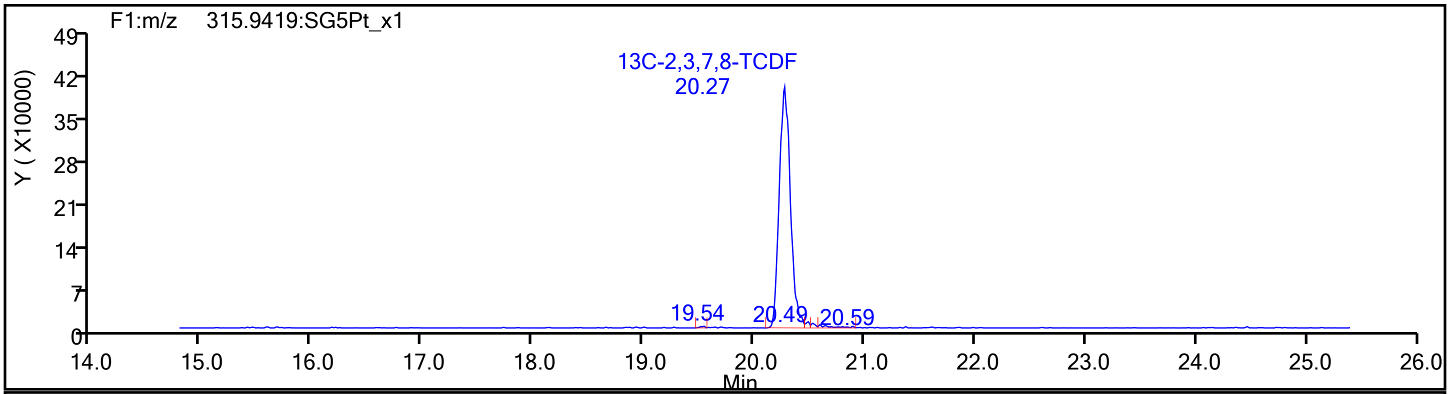

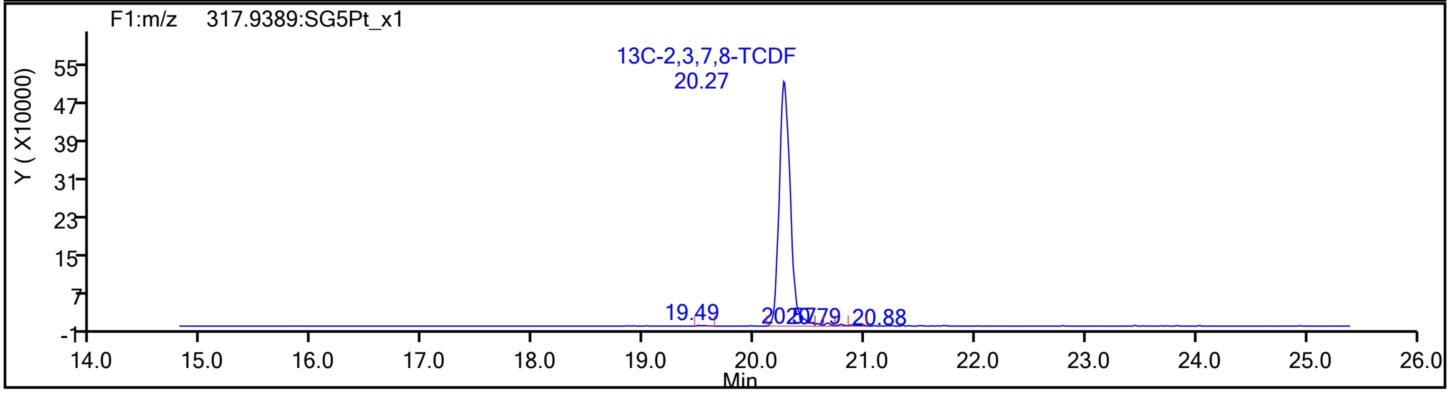

Report Date: 21-Aug-2020 00:19:50 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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TCDF

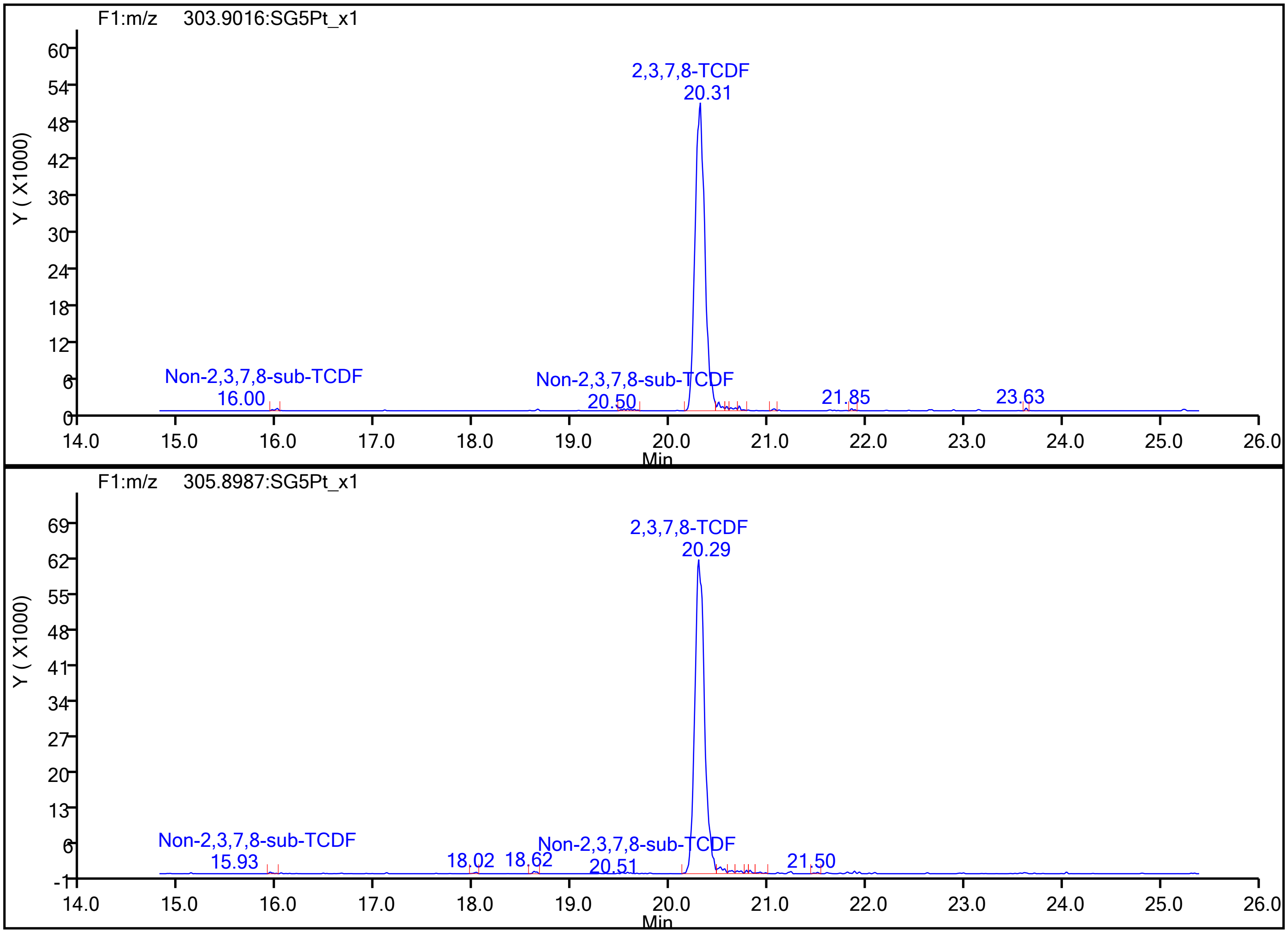

TCDF Interference Mass

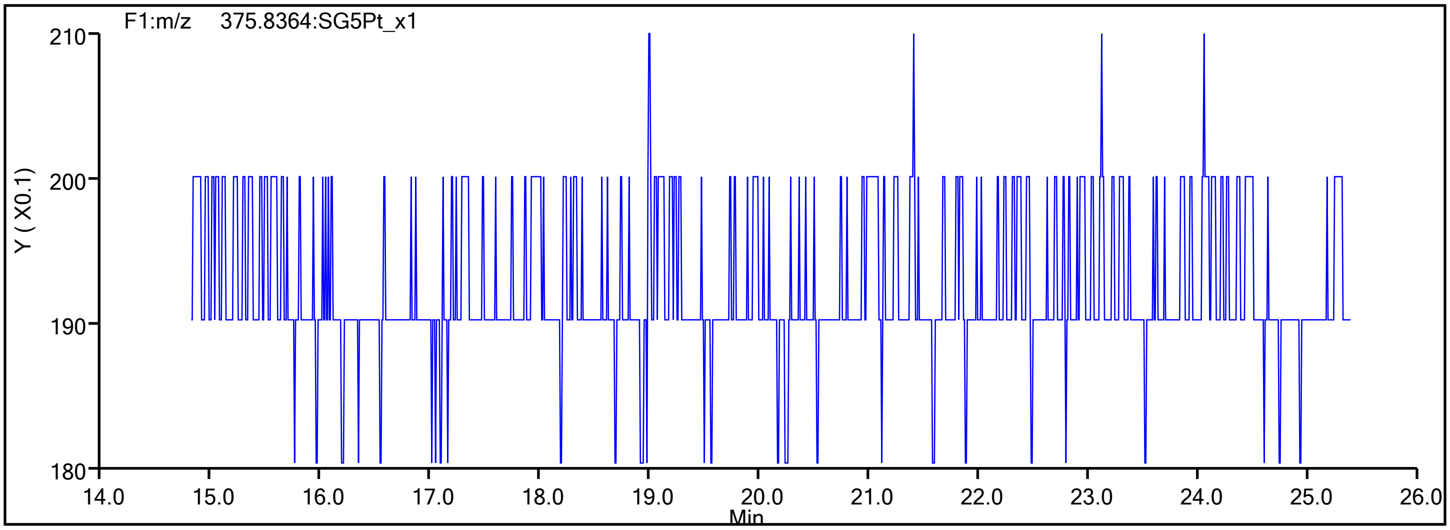

Report Date: 21-Aug-2020 00:19:50 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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TCDD

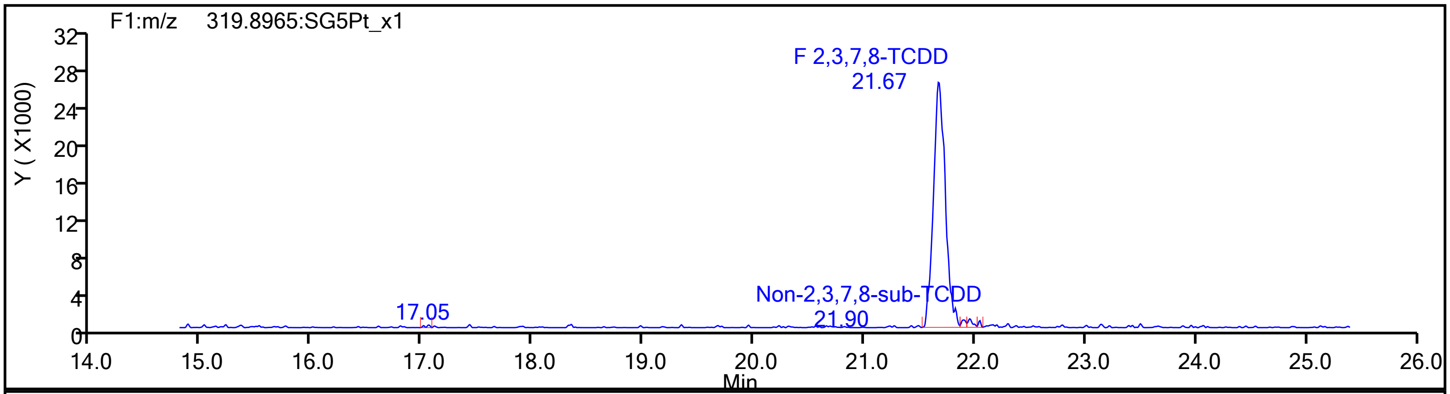

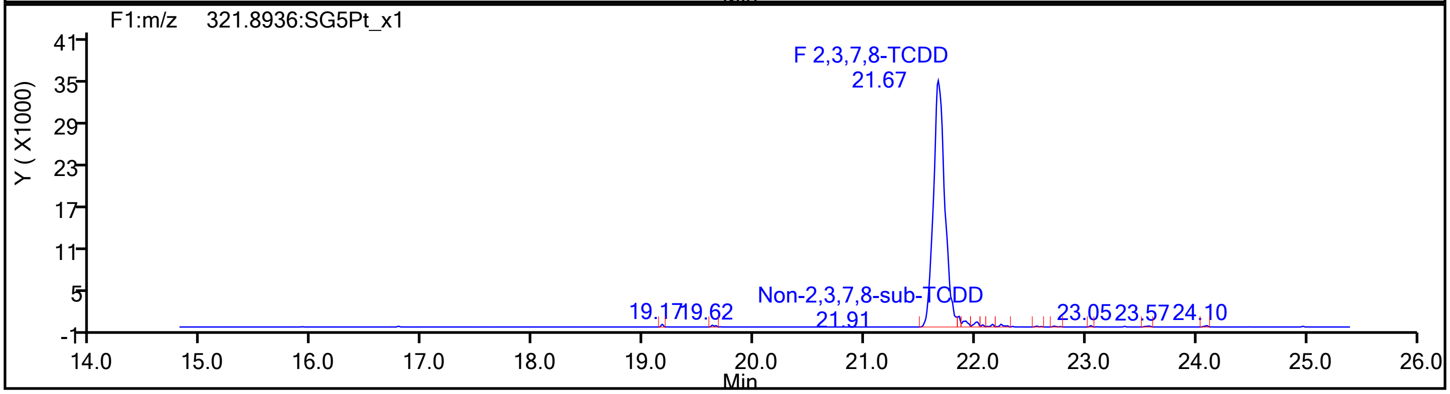

TCDD Standards

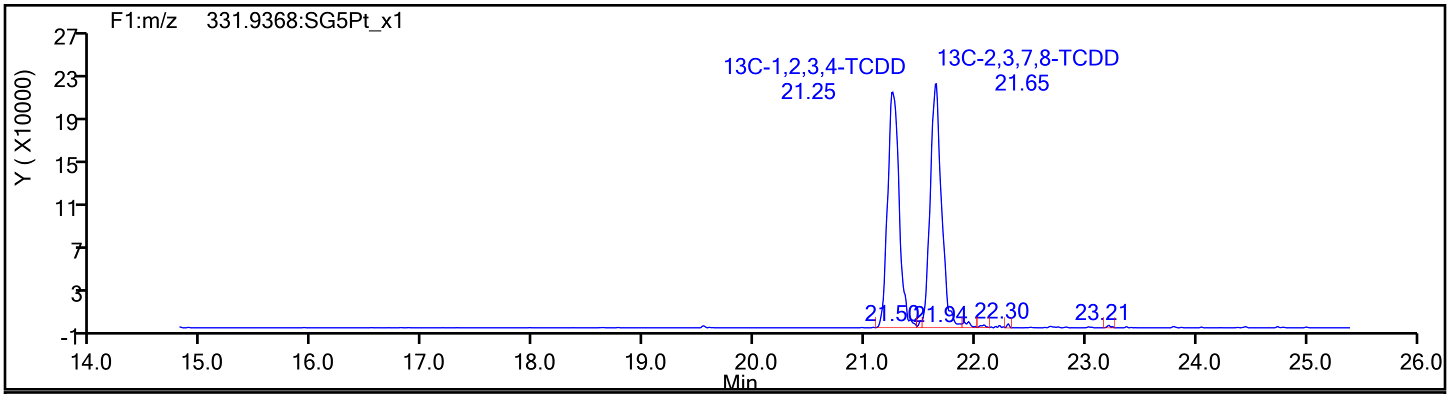

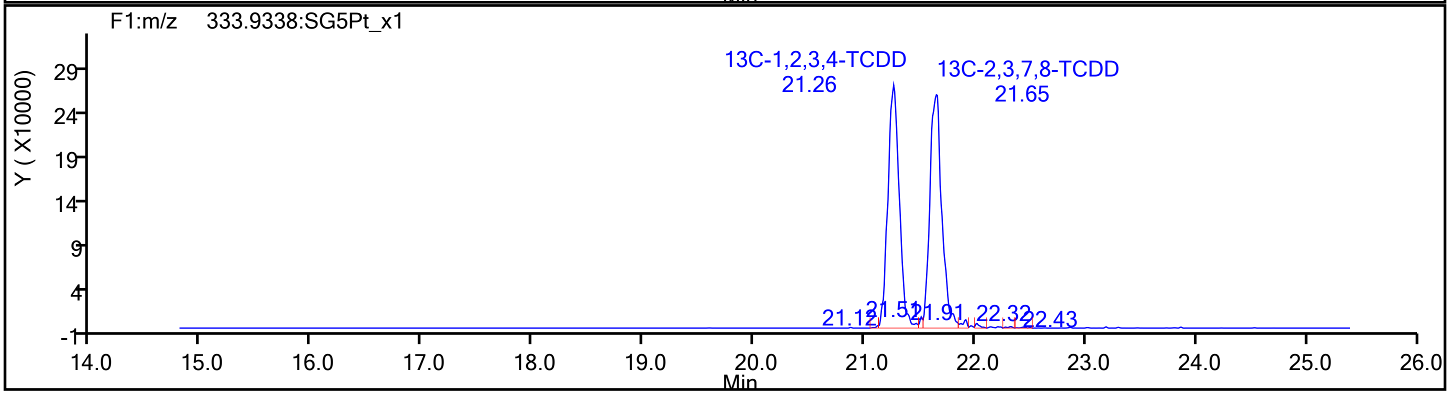

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Eurofins TestAmerica, Sacramento

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Injection Date: 20-Aug-2020 21:48:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405471 Sample Line#: 14

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37Cl4-TCDD

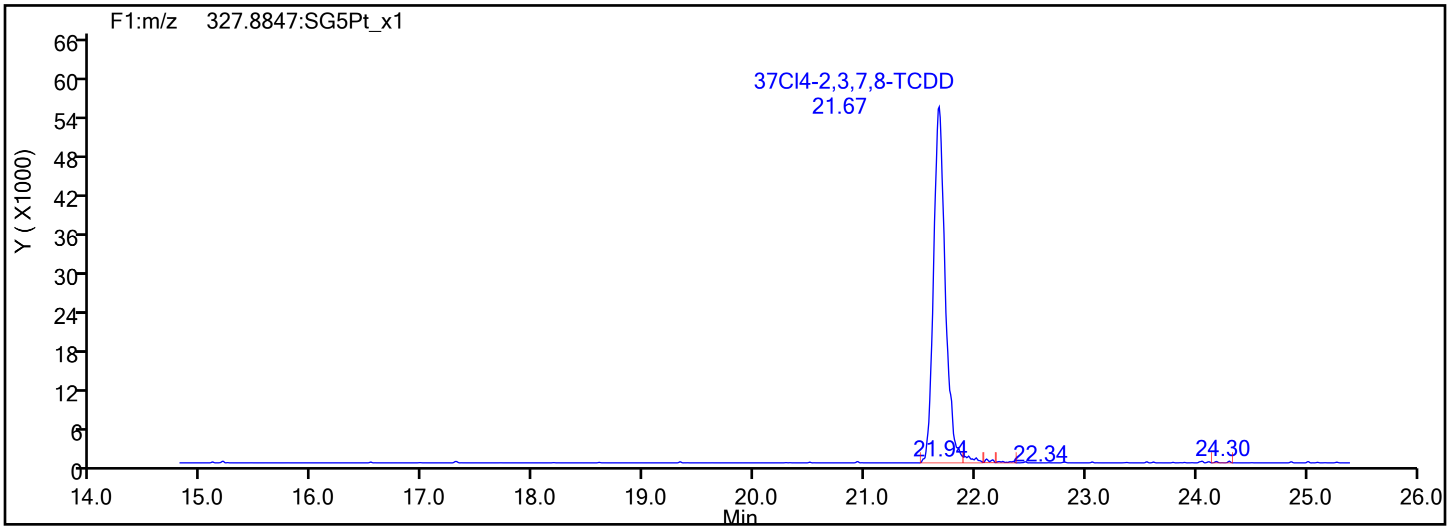

37Cl4-TCDD Standards

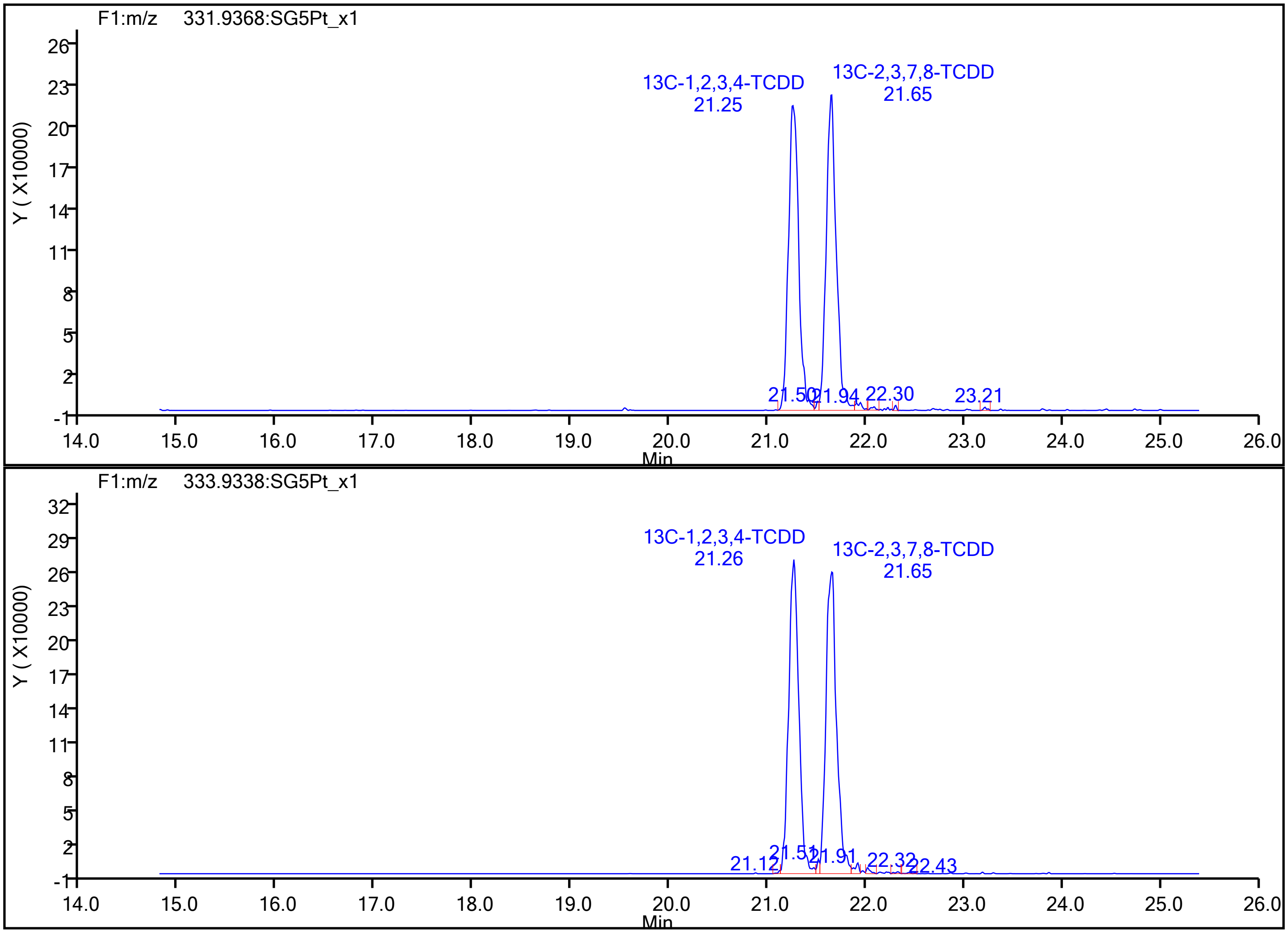

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

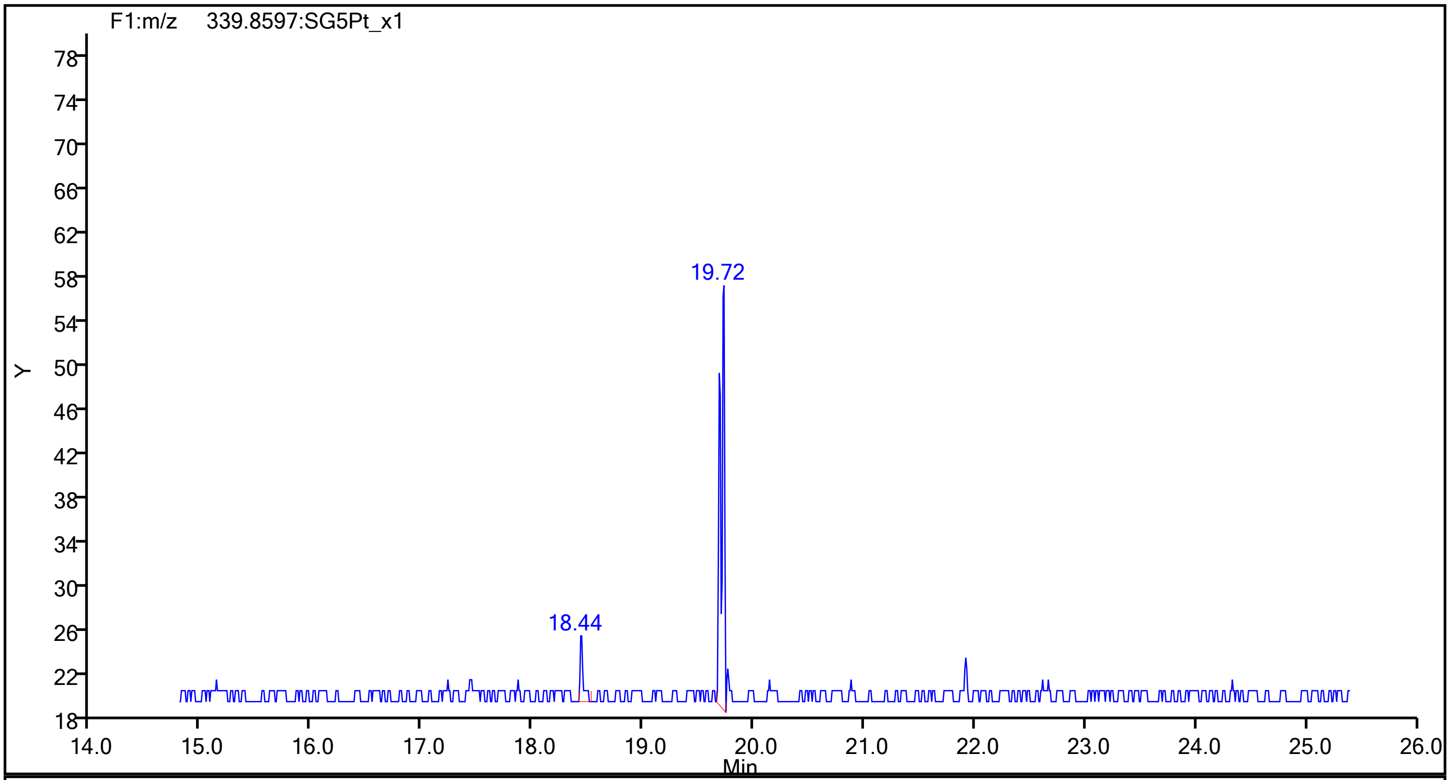

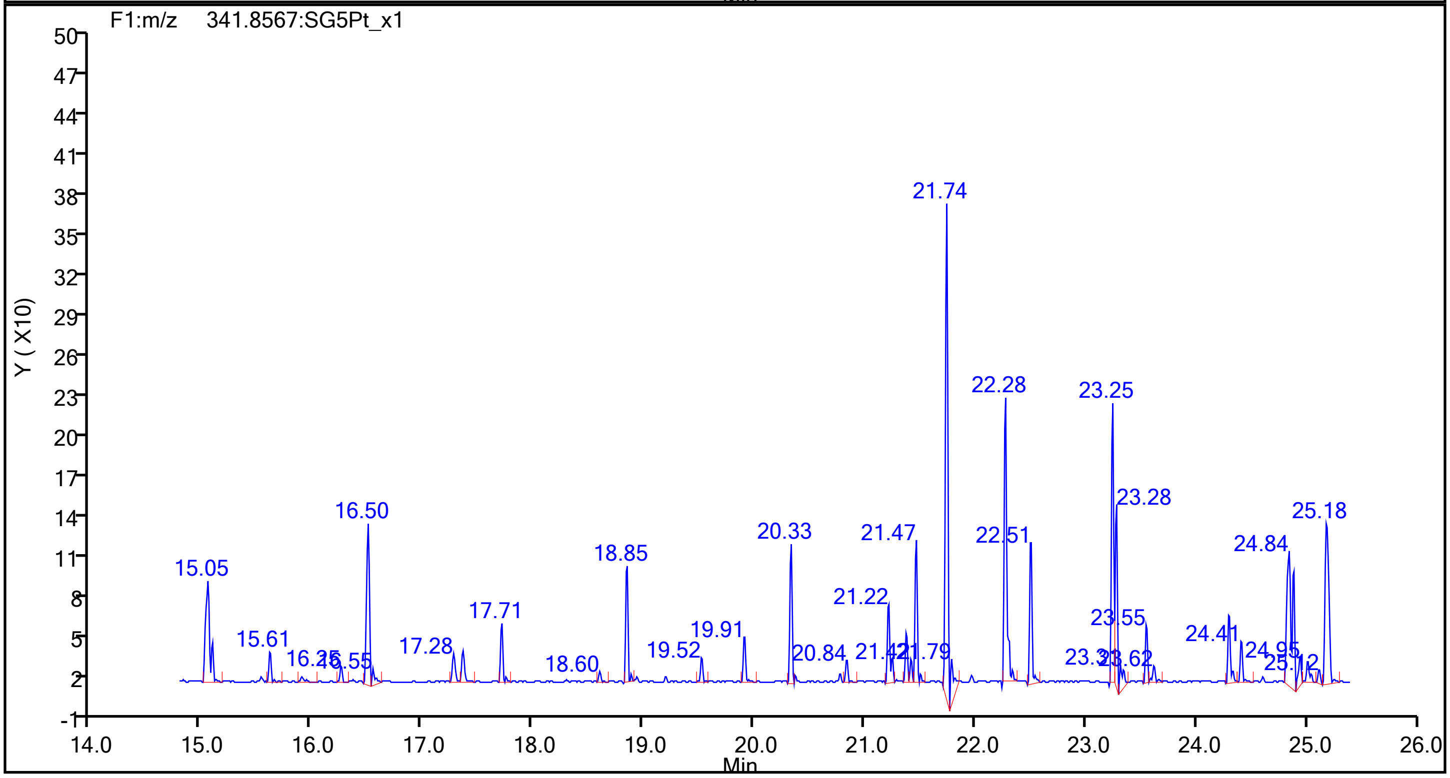

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

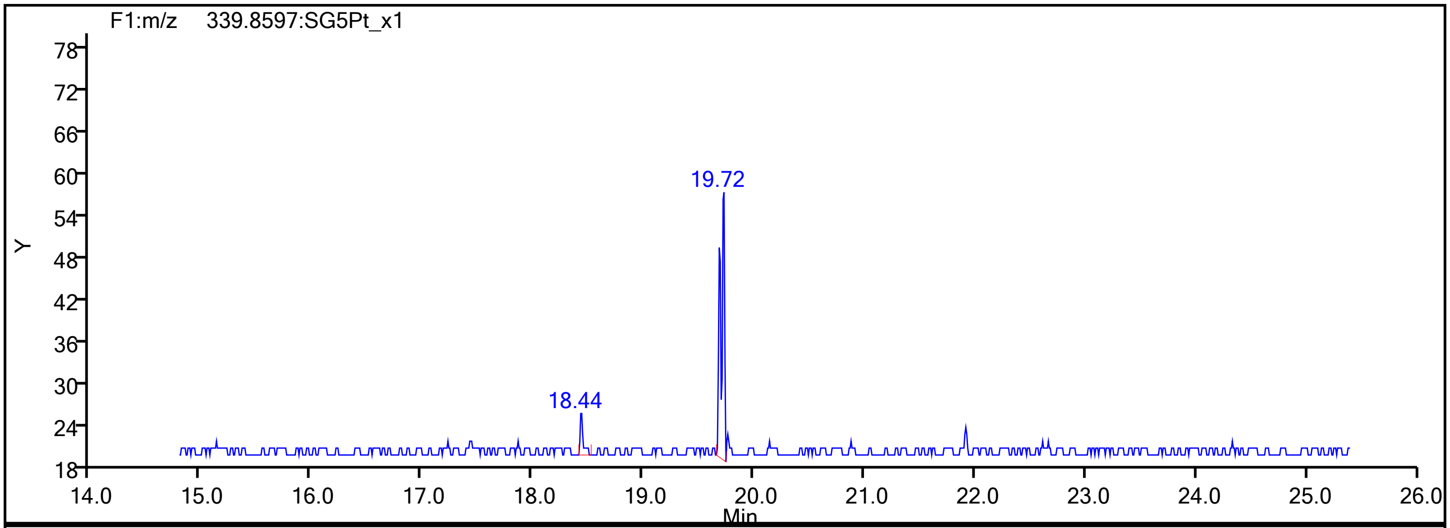

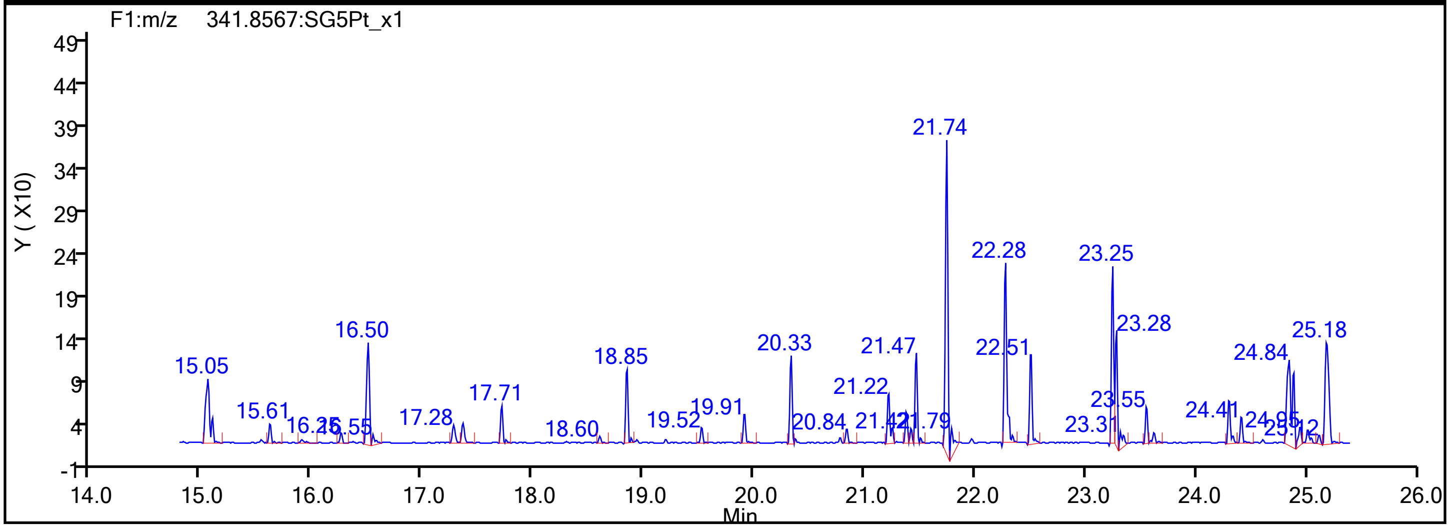

F1 PeCDFs Interference Mass

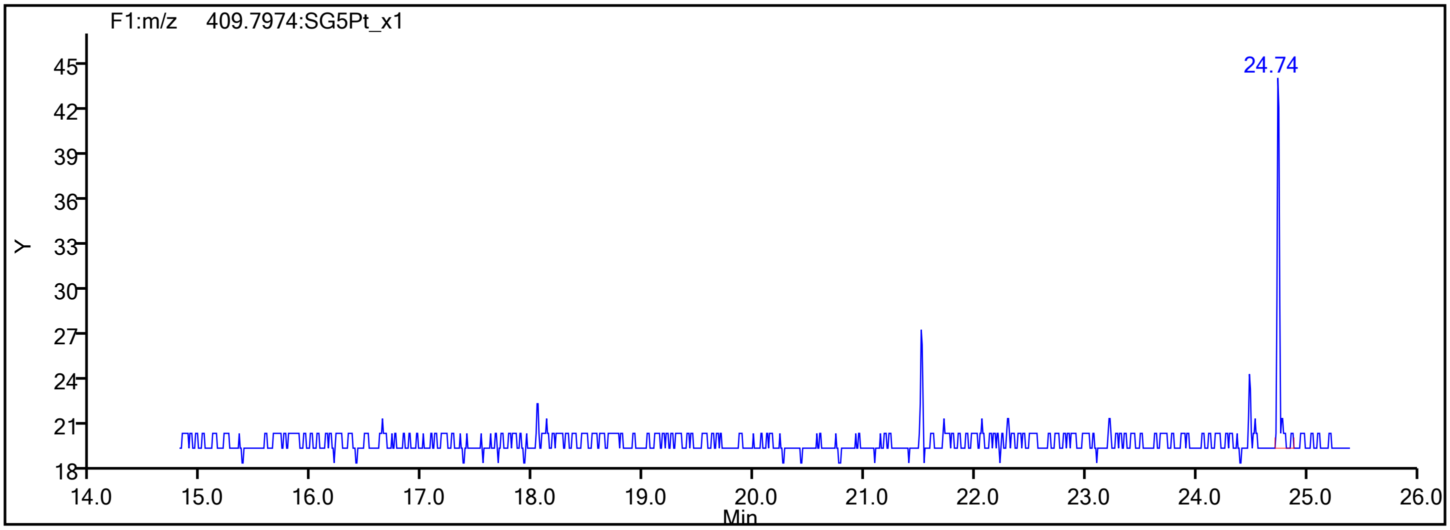

Report Date: 21-Aug-2020 00:19:50
Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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PeCDF

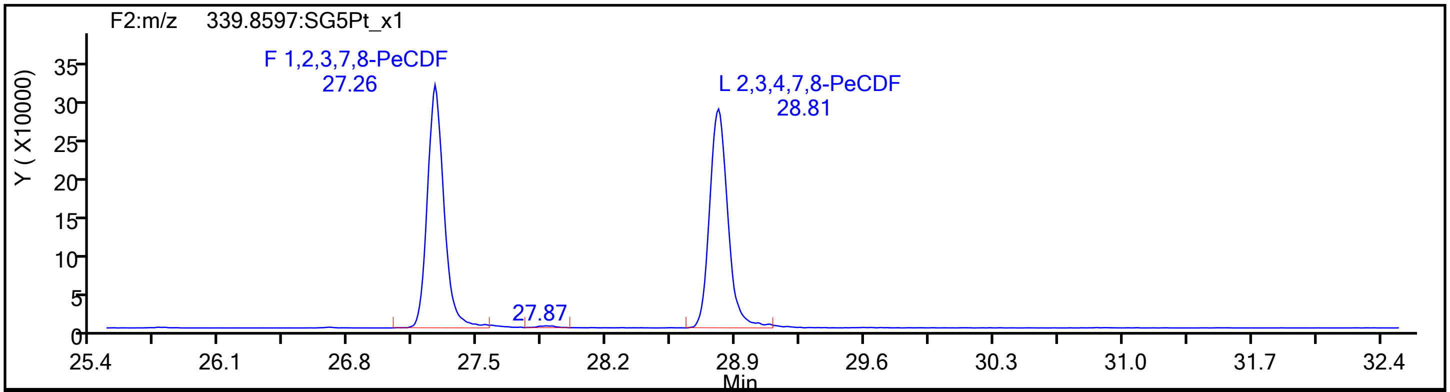

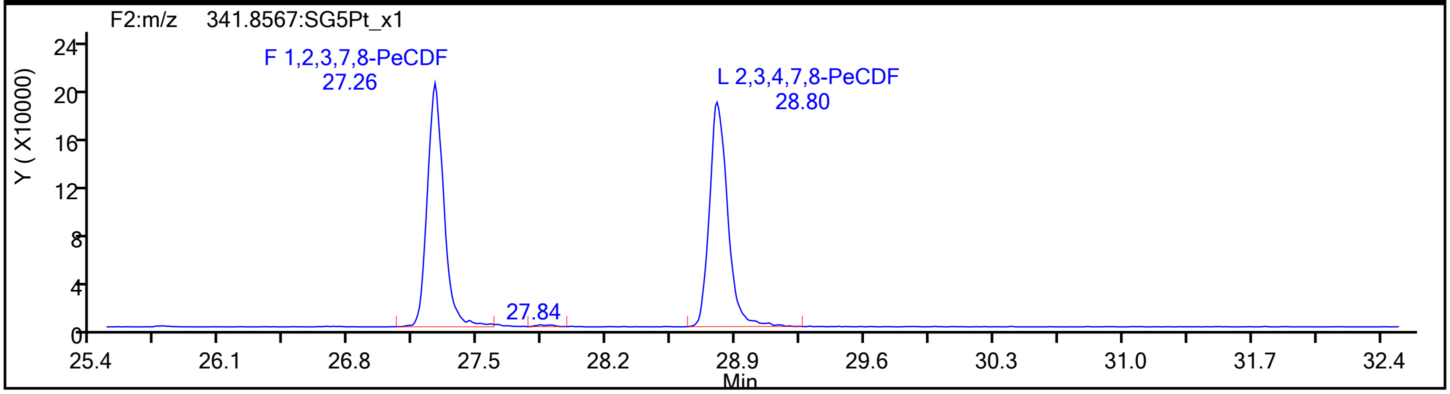

PeCDF Standards

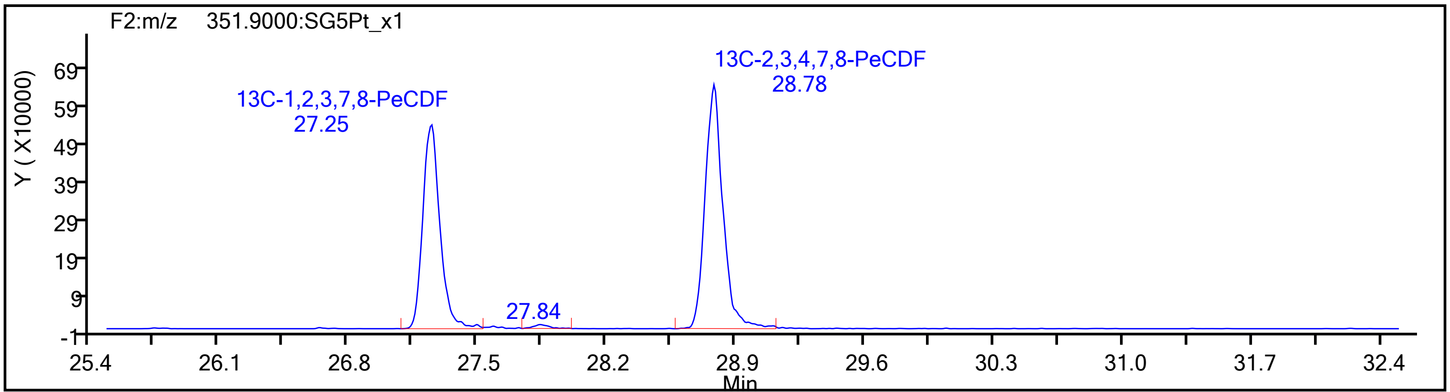

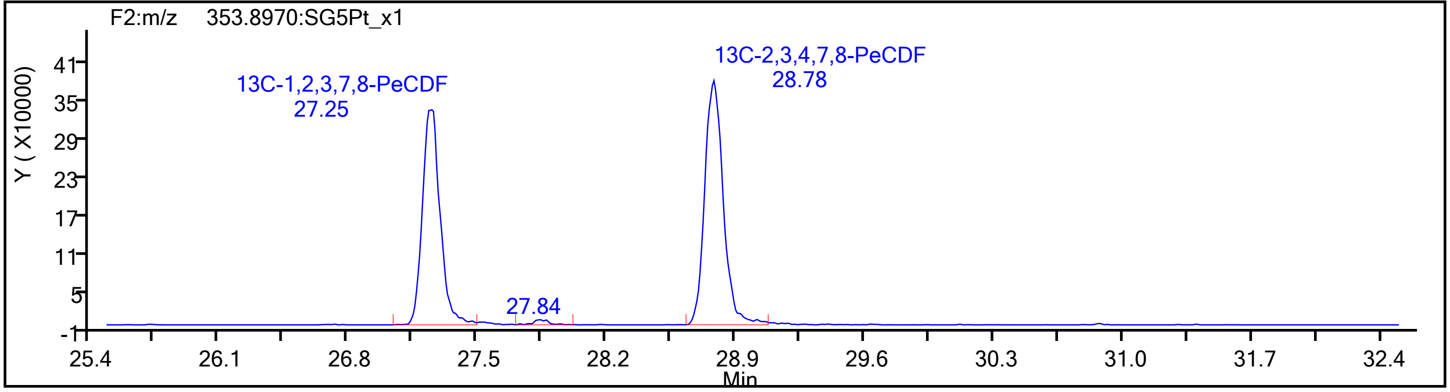

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Eurofins TestAmerica, Sacramento

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PeCDF

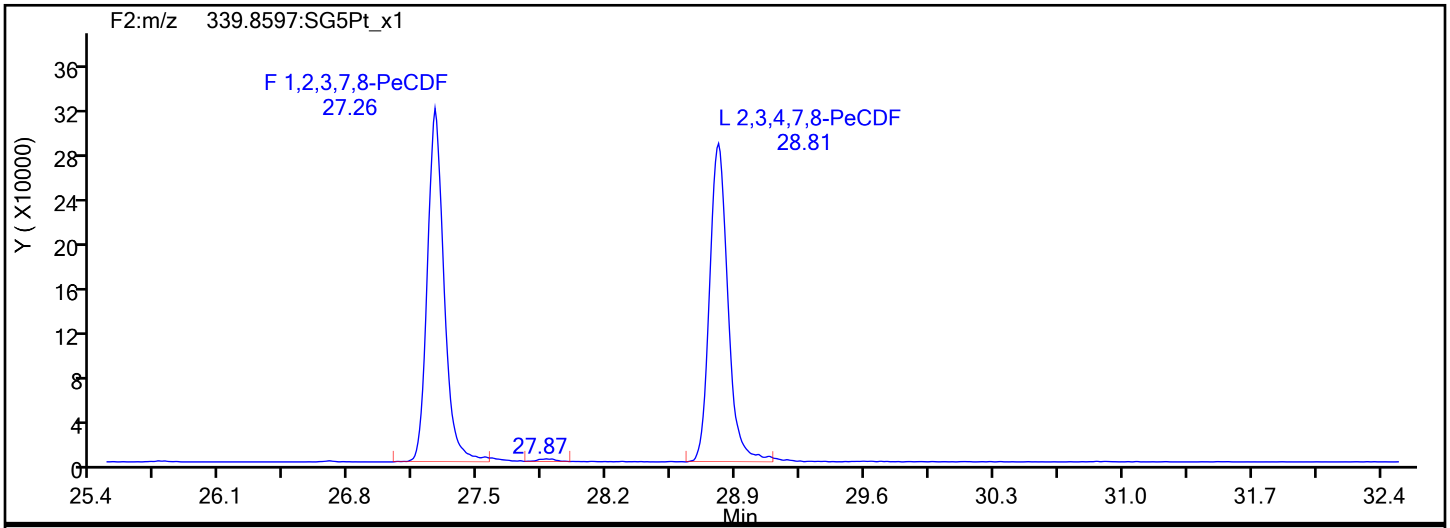

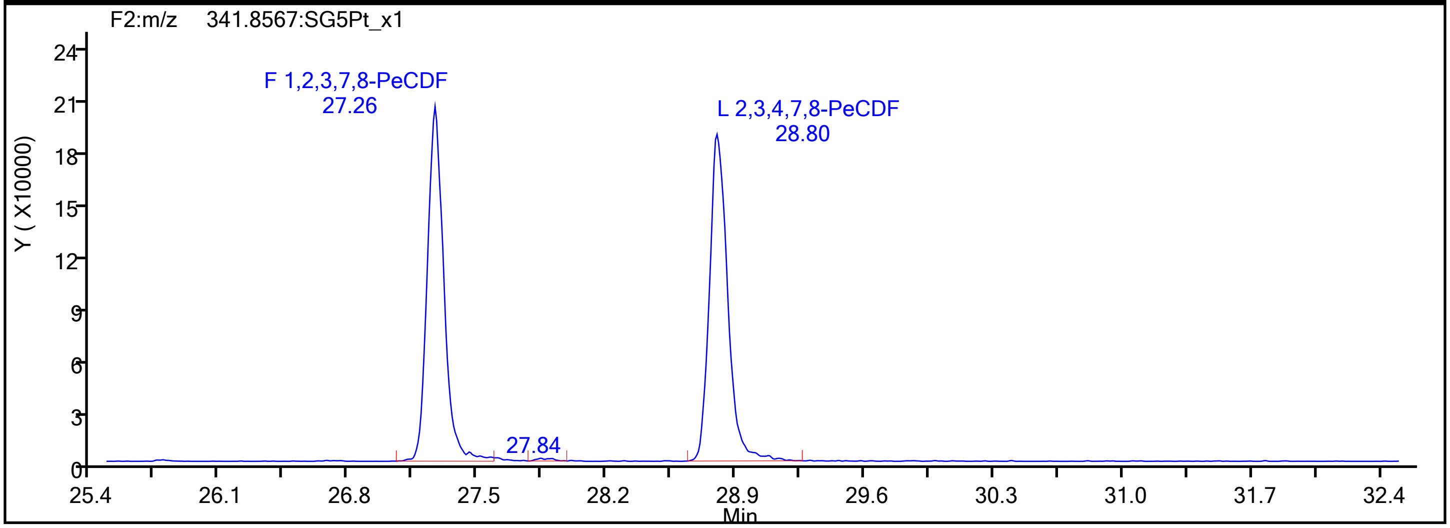

PeCDF Interference Mass

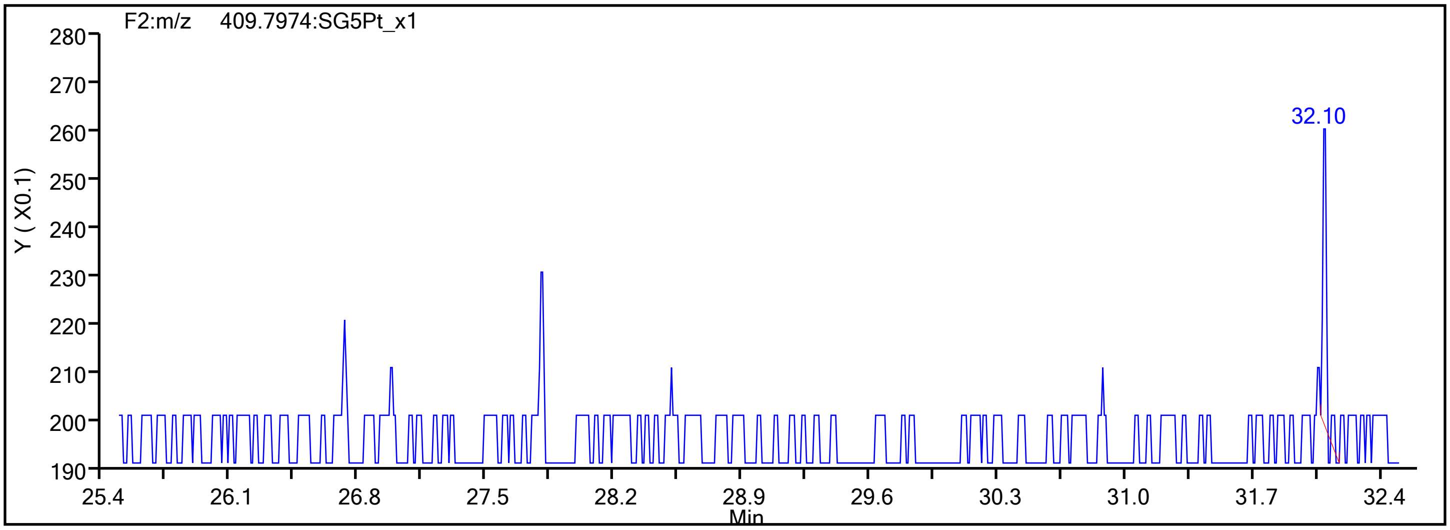

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Eurofins TestAmerica, Sacramento

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PeCDD

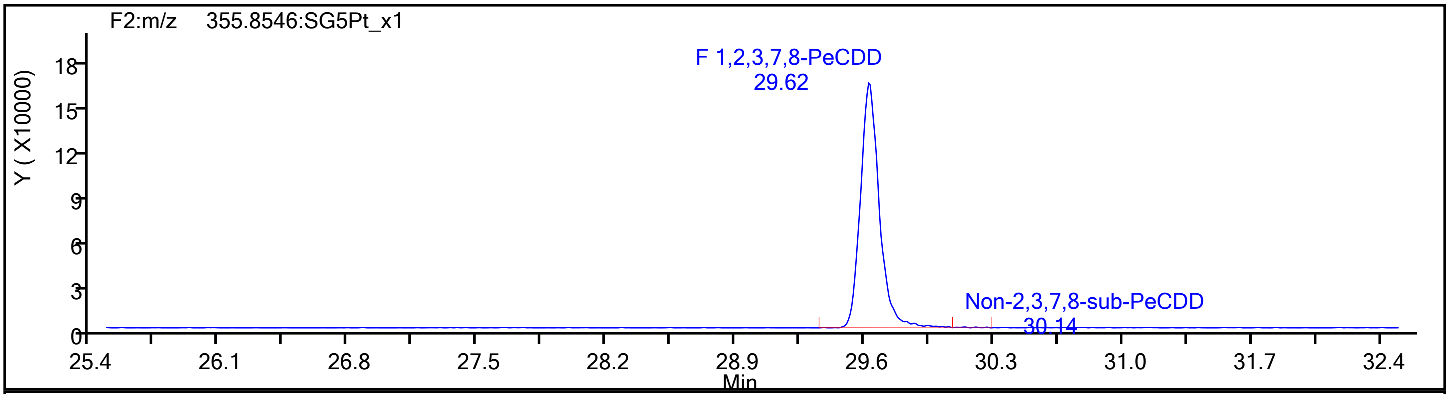

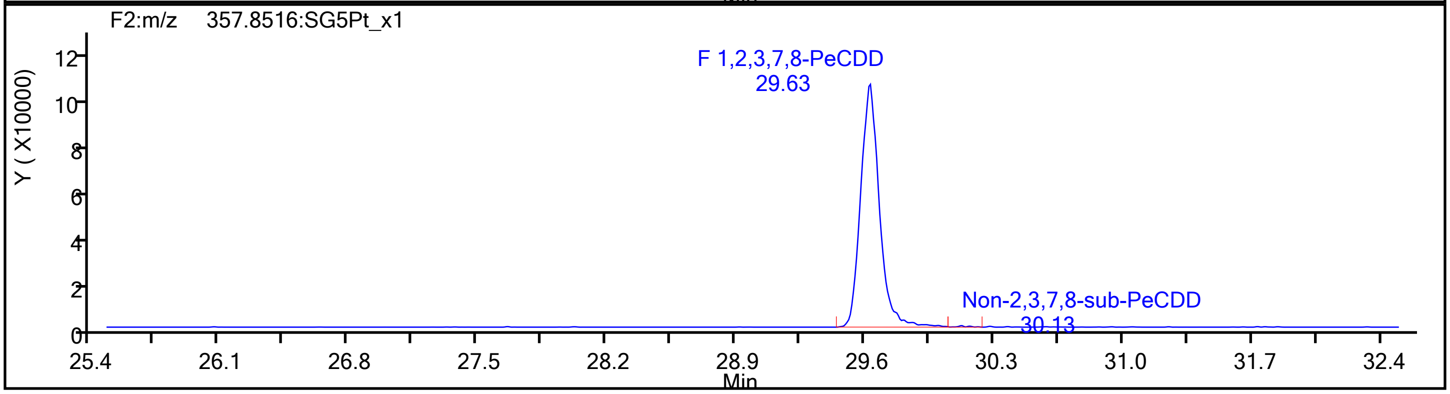

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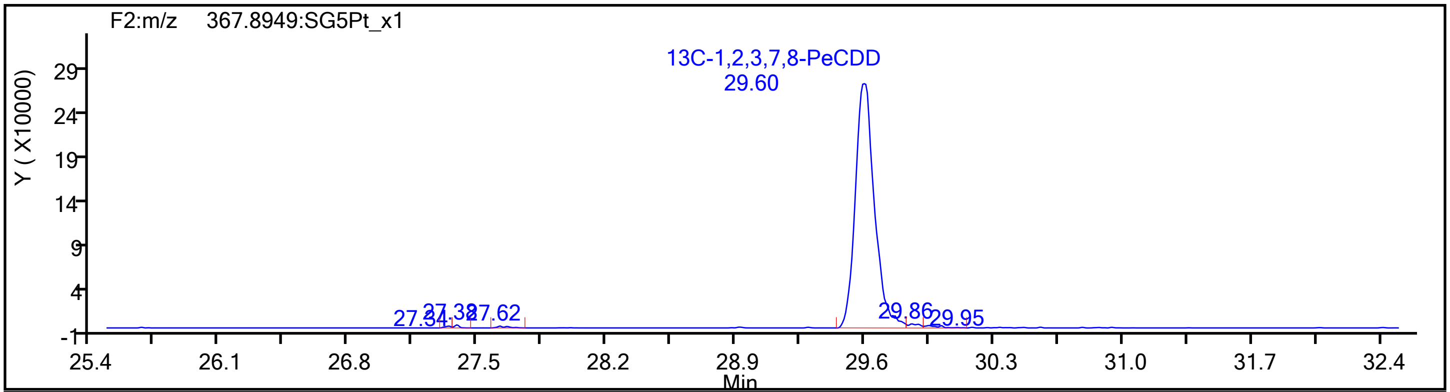

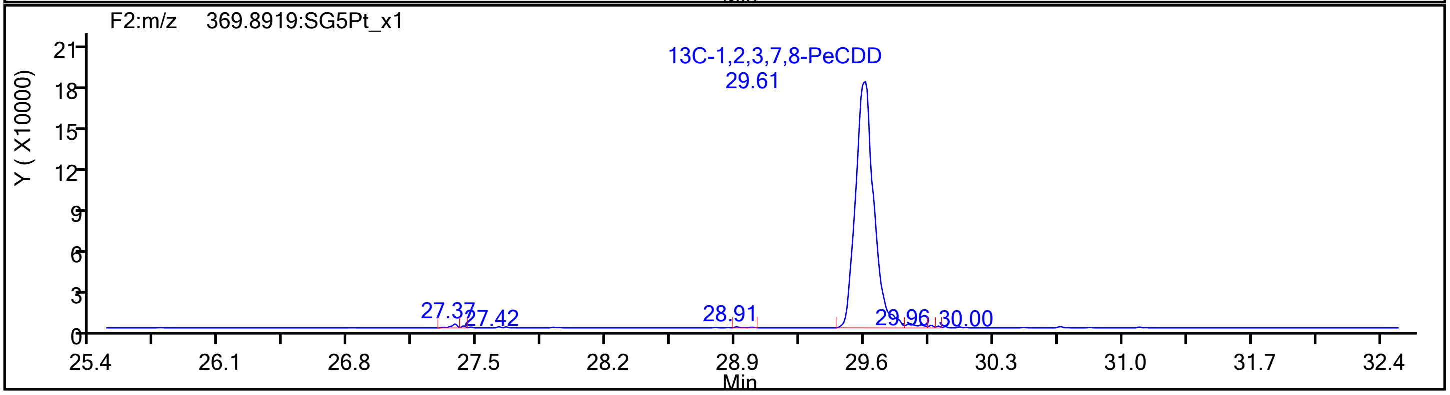

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Eurofins TestAmerica, Sacramento

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HxCDF

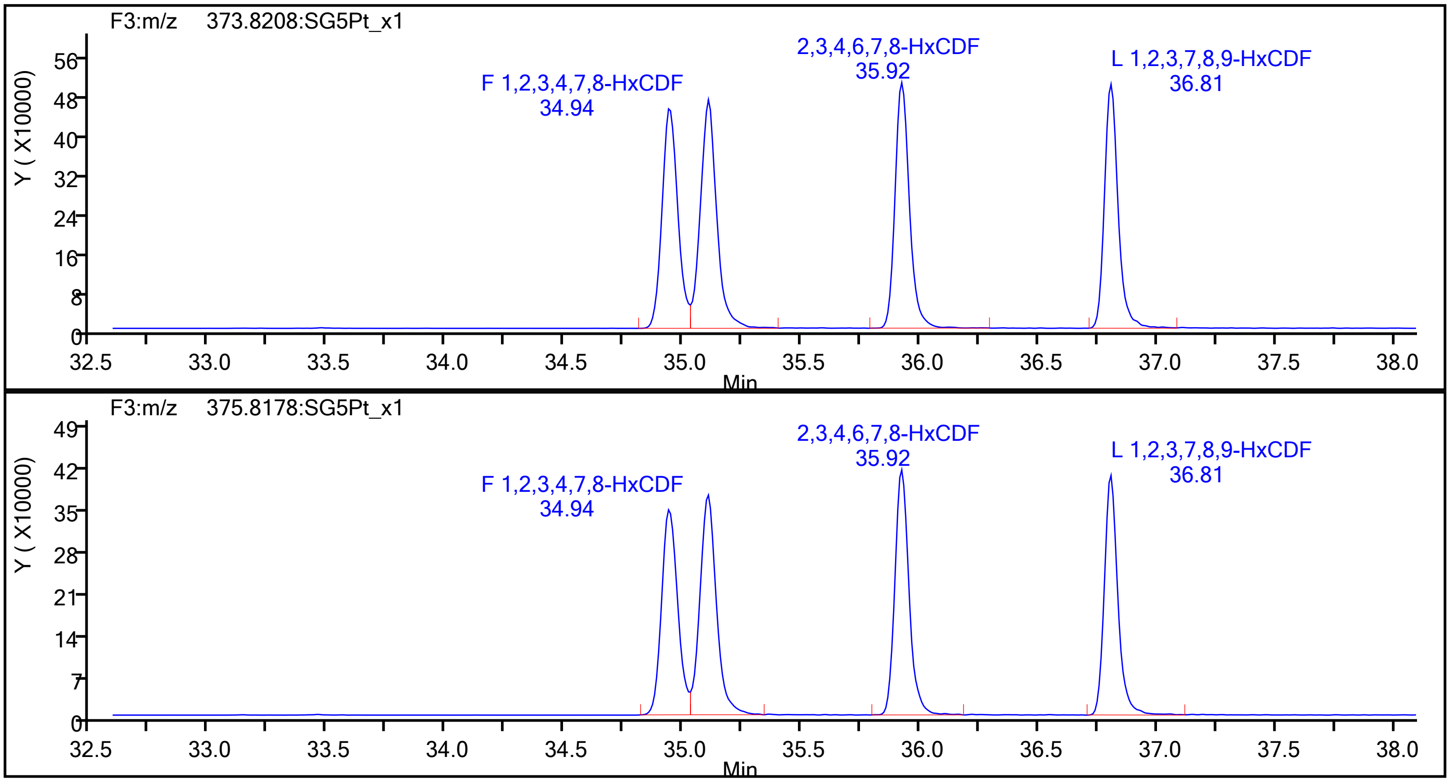

HxCDF Standards

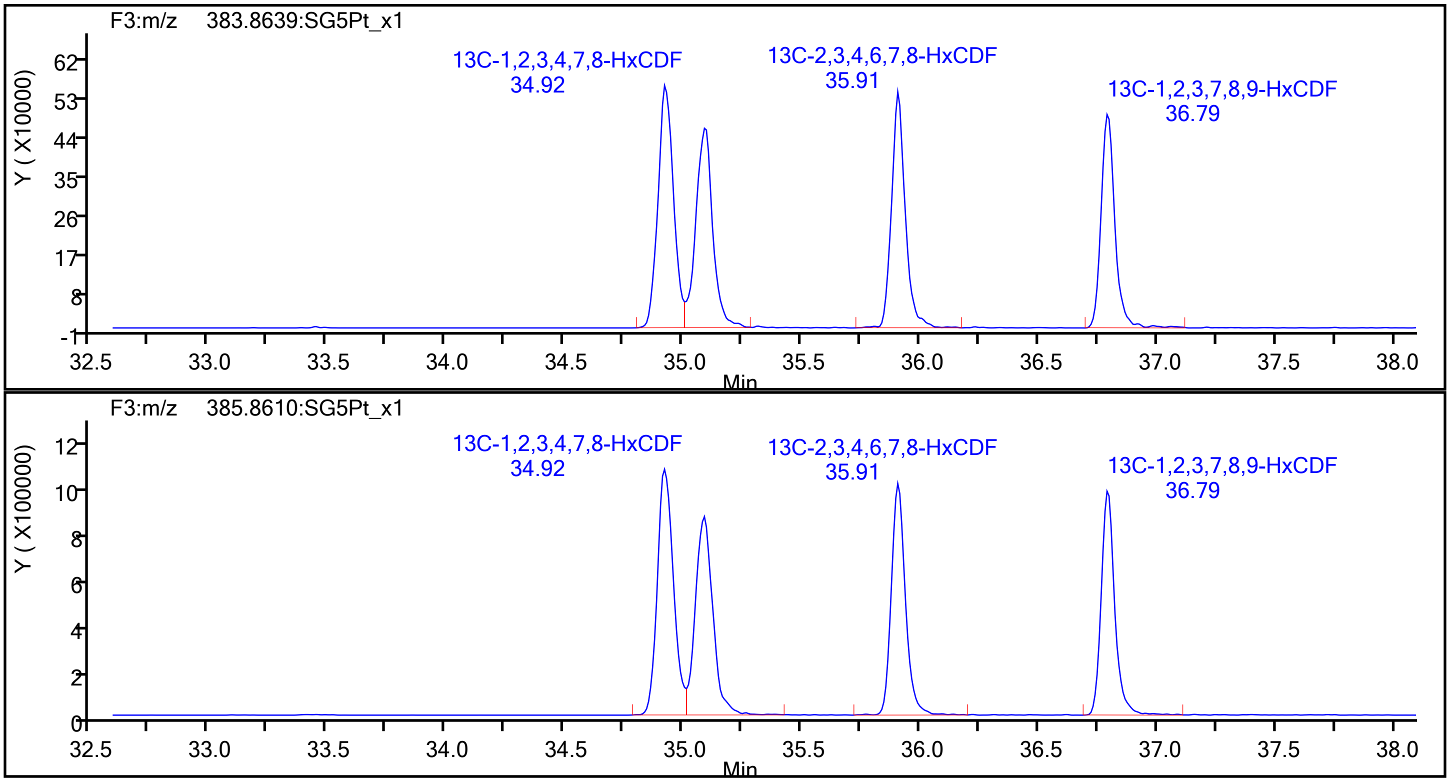

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Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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HxCDF

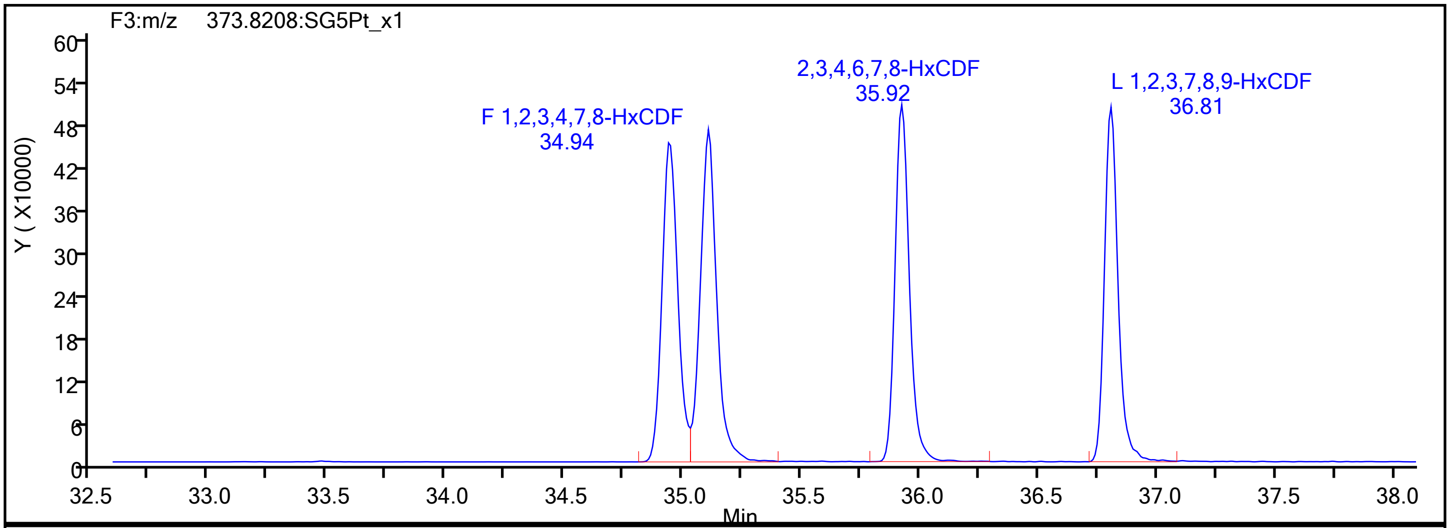

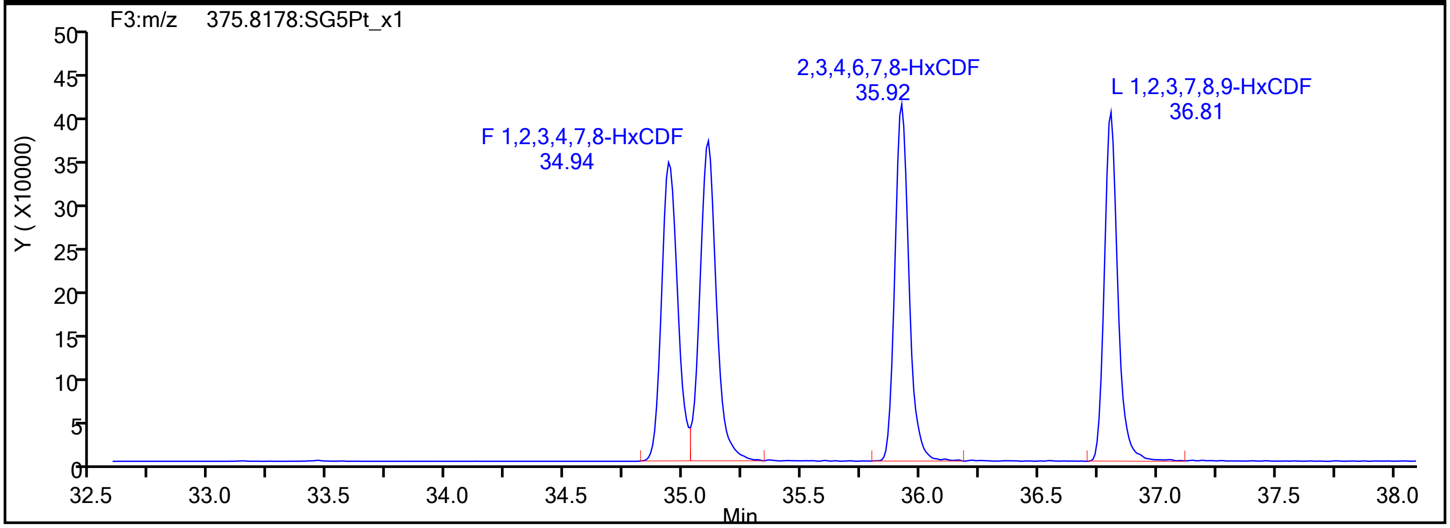

HxCDF Interference Mass

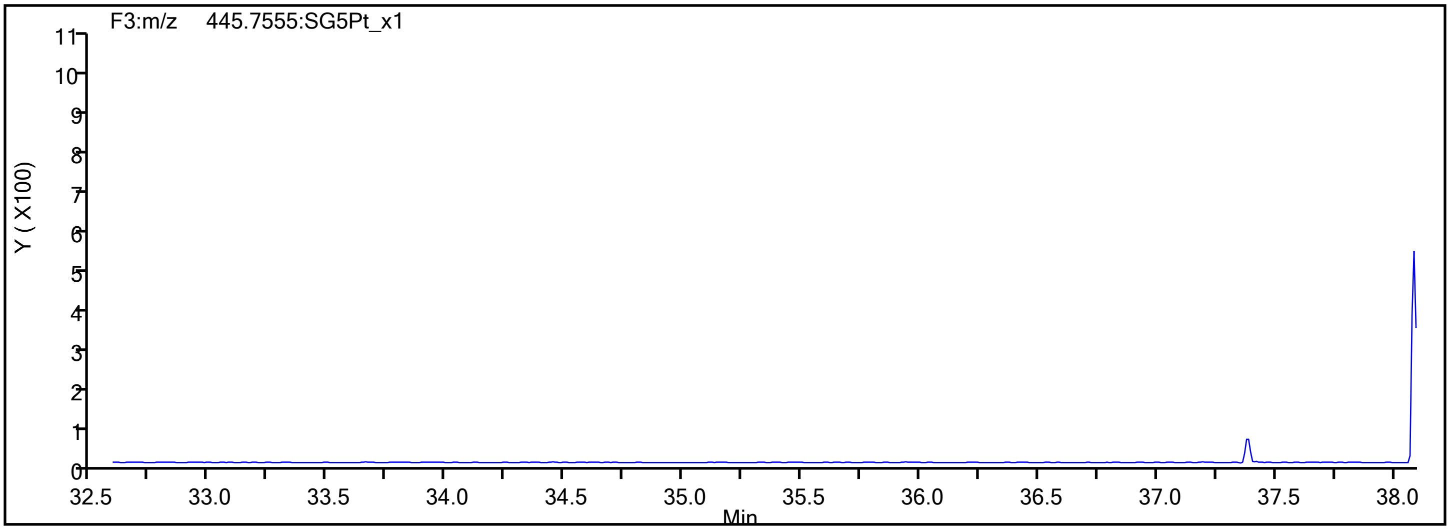

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Eurofins TestAmerica, Sacramento

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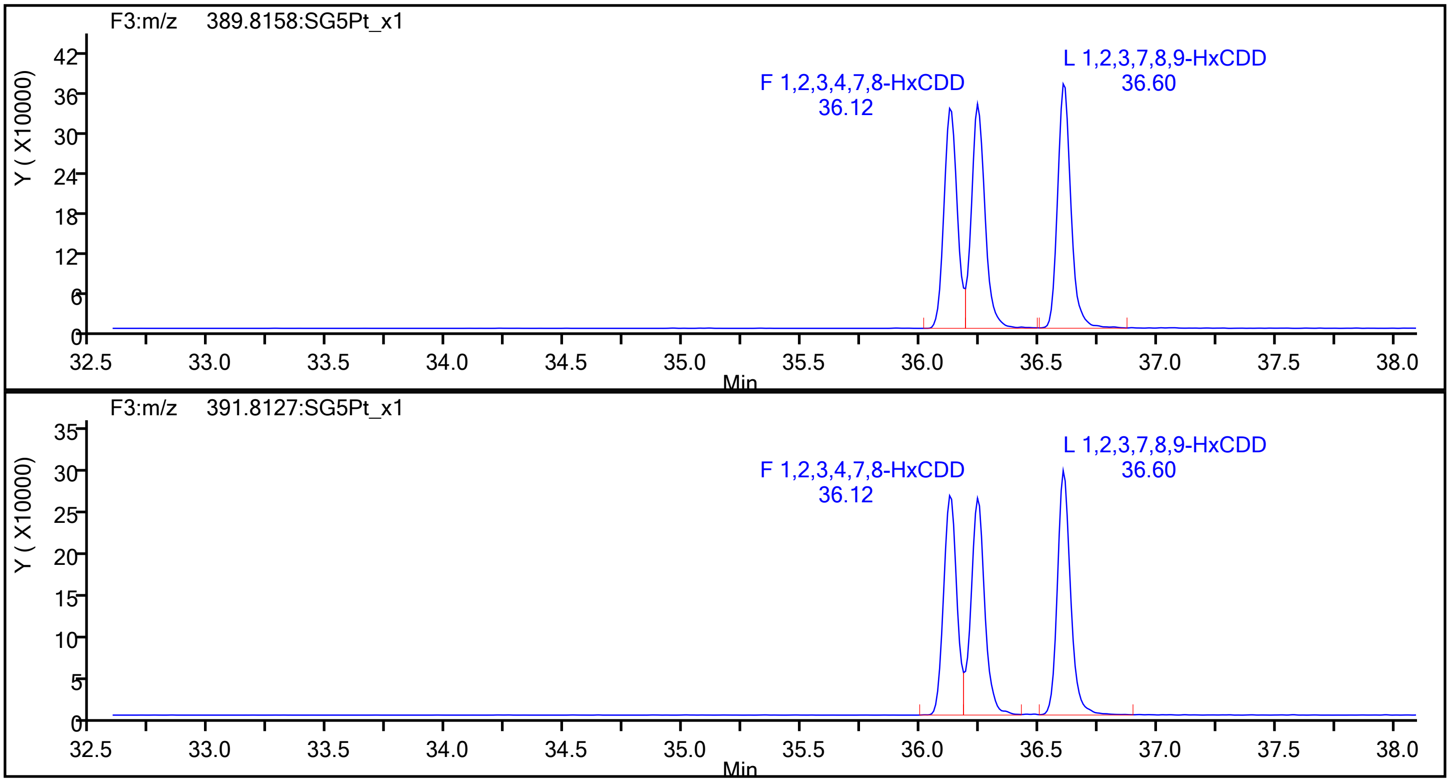

HxCDD Standards

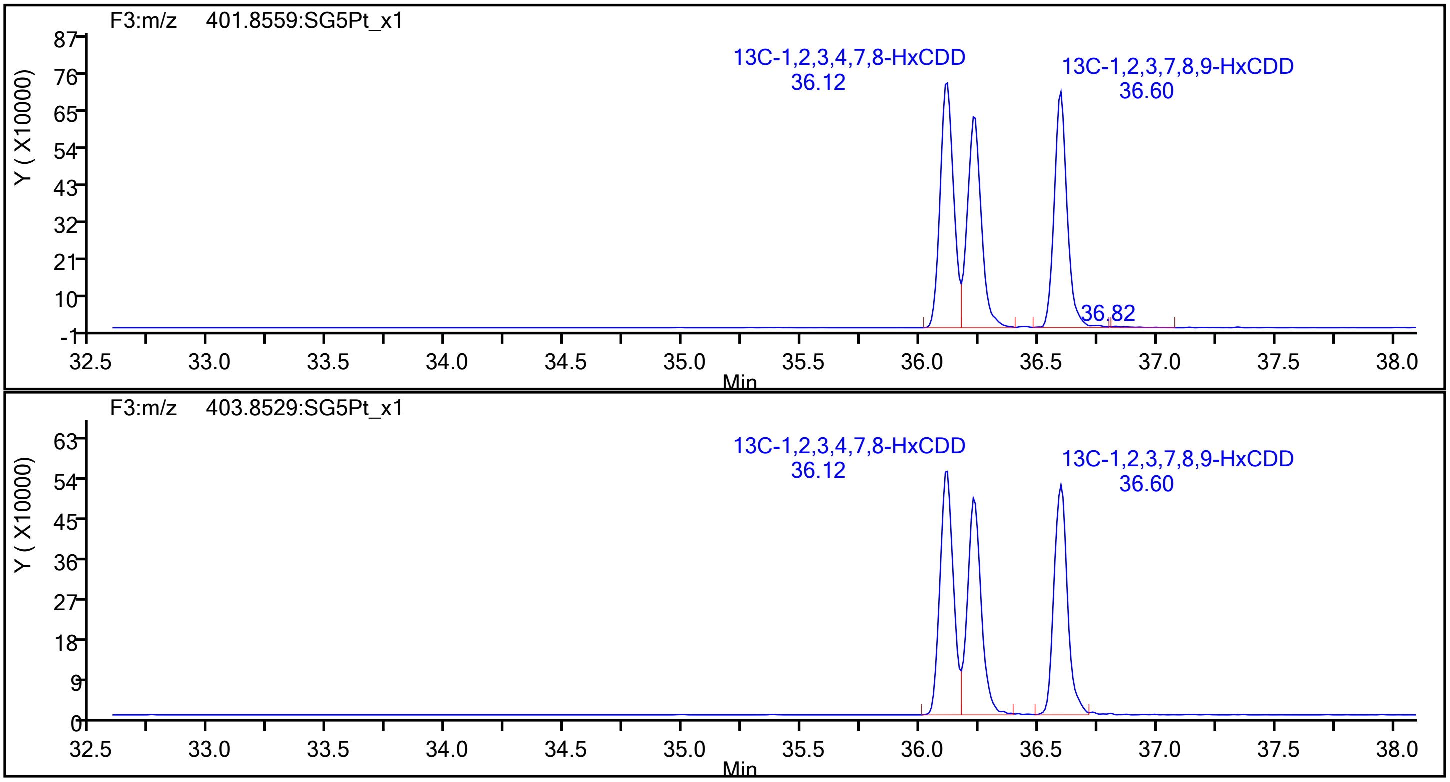

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Eurofins TestAmerica, Sacramento

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HpCDF

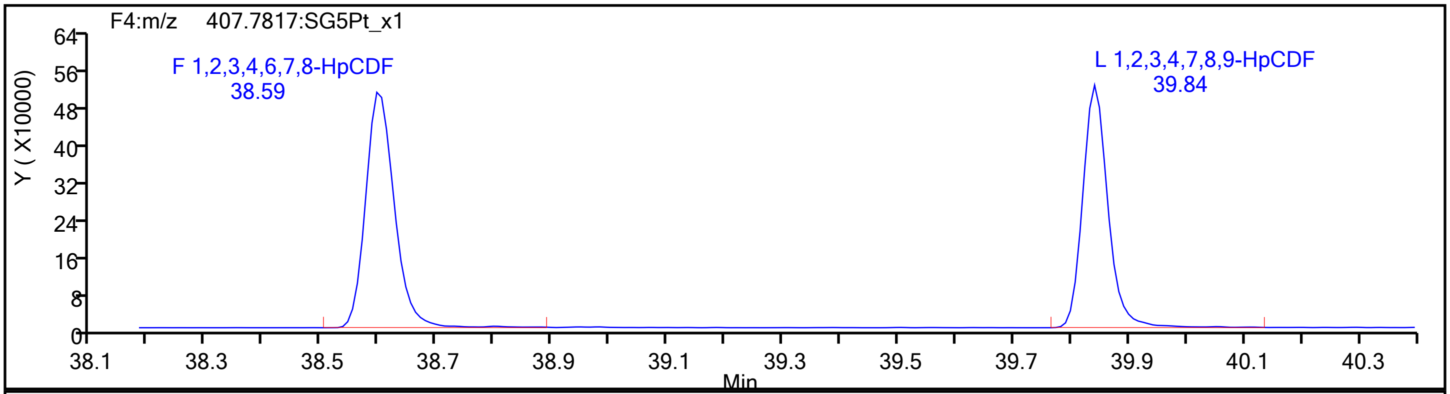

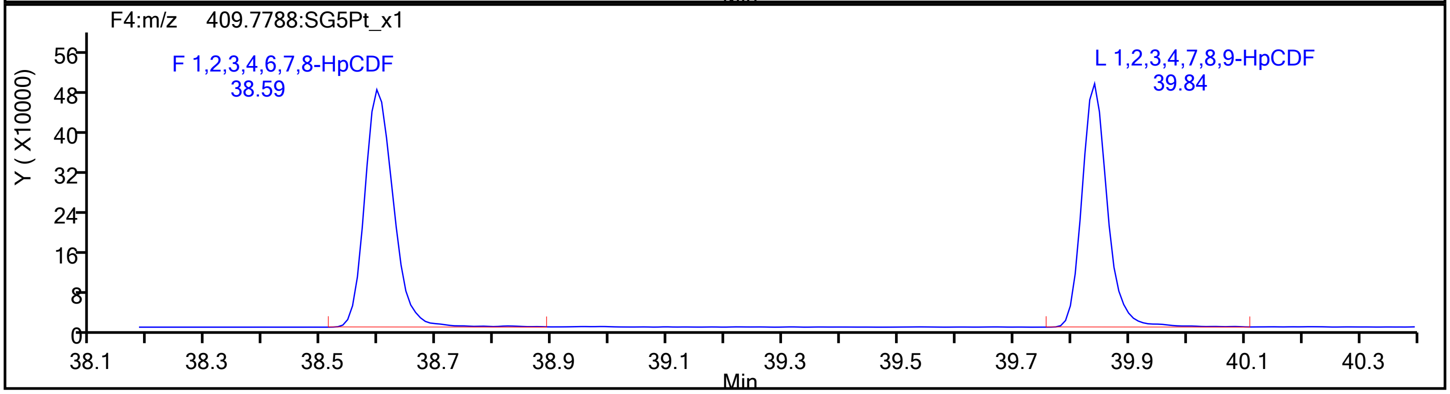

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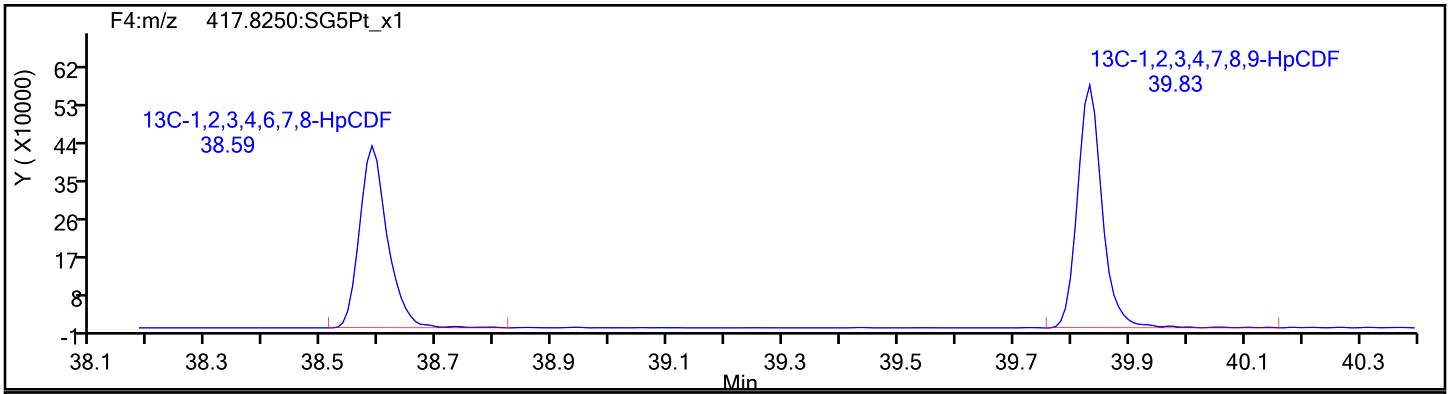

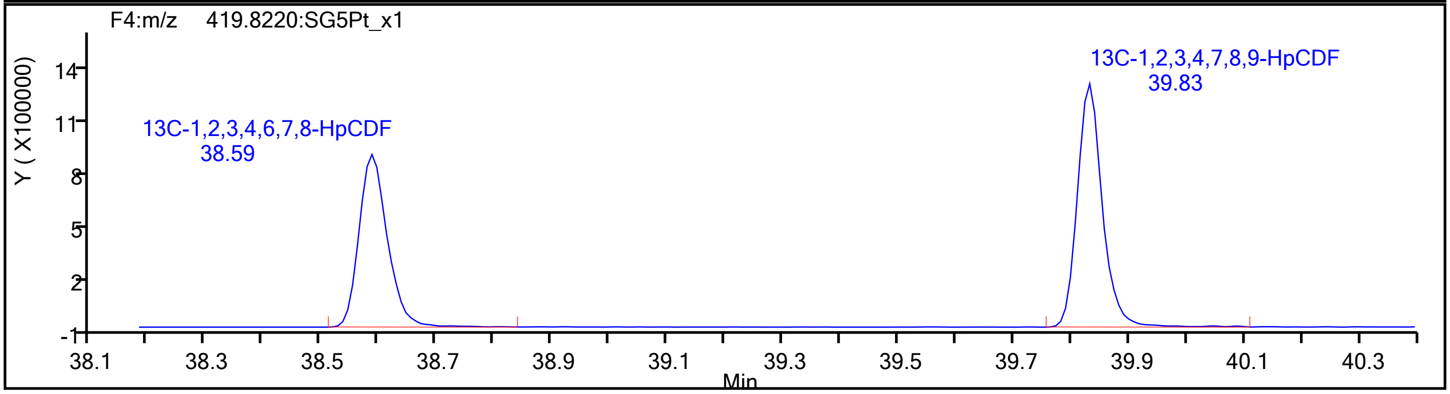

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HpCDF

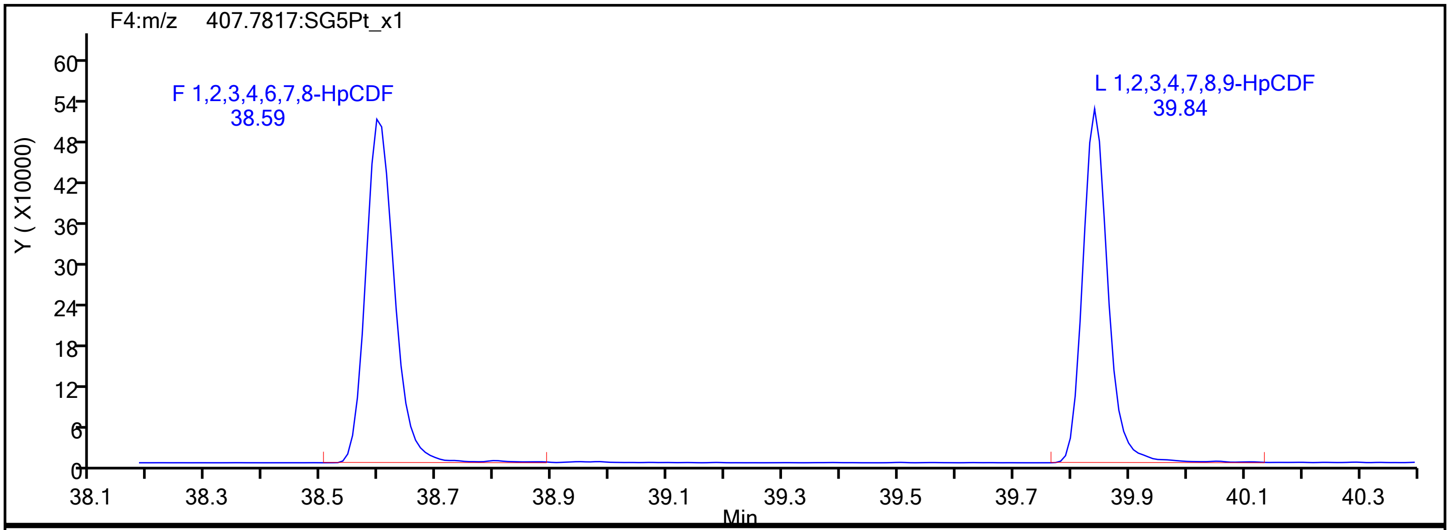

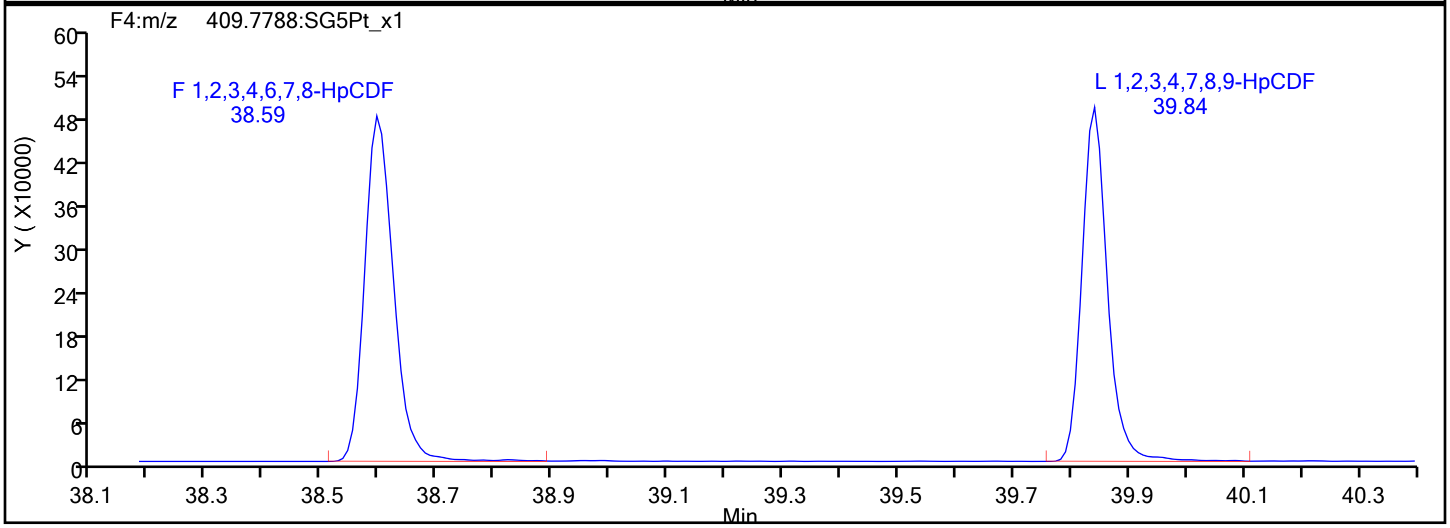

HpCDF Interference Mass

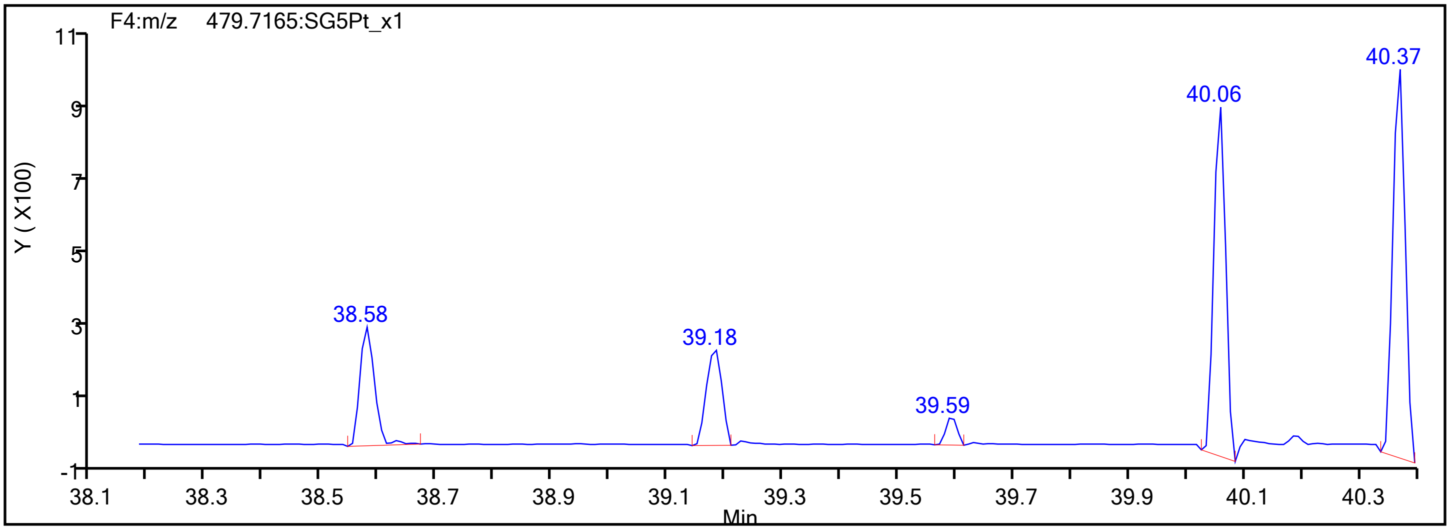

Report Date: 21-Aug-2020 00:19:51 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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HpCDD

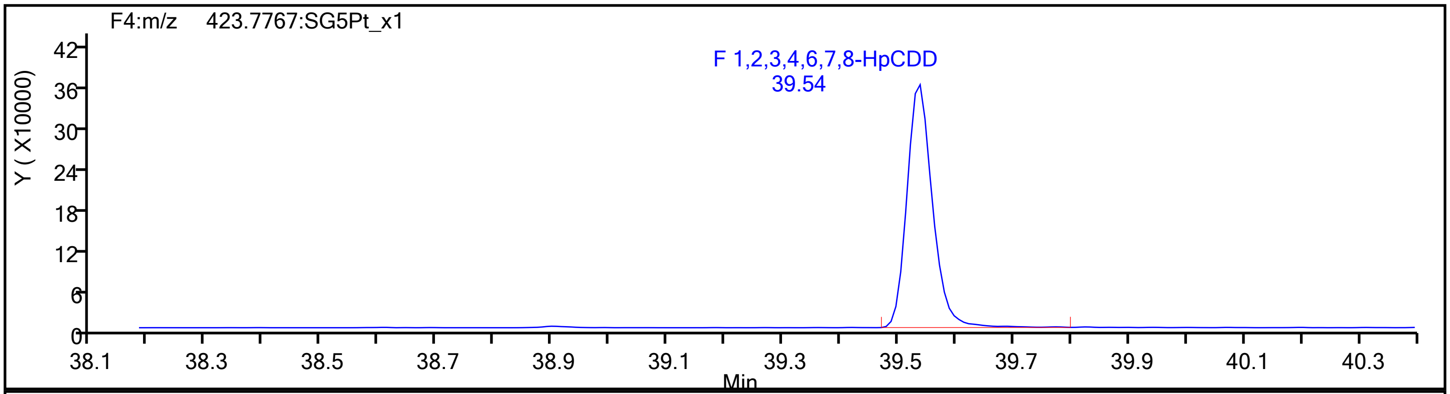

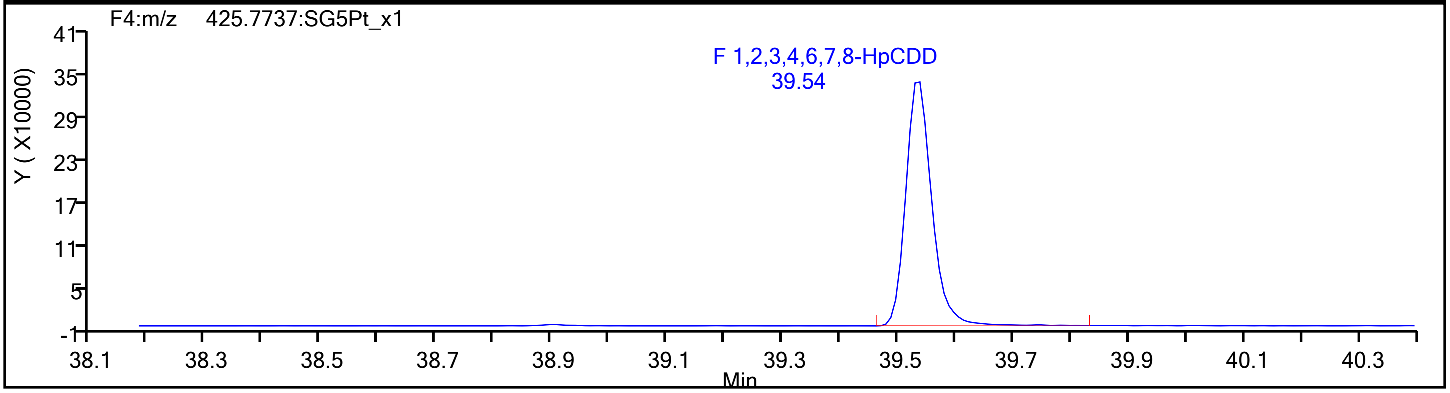

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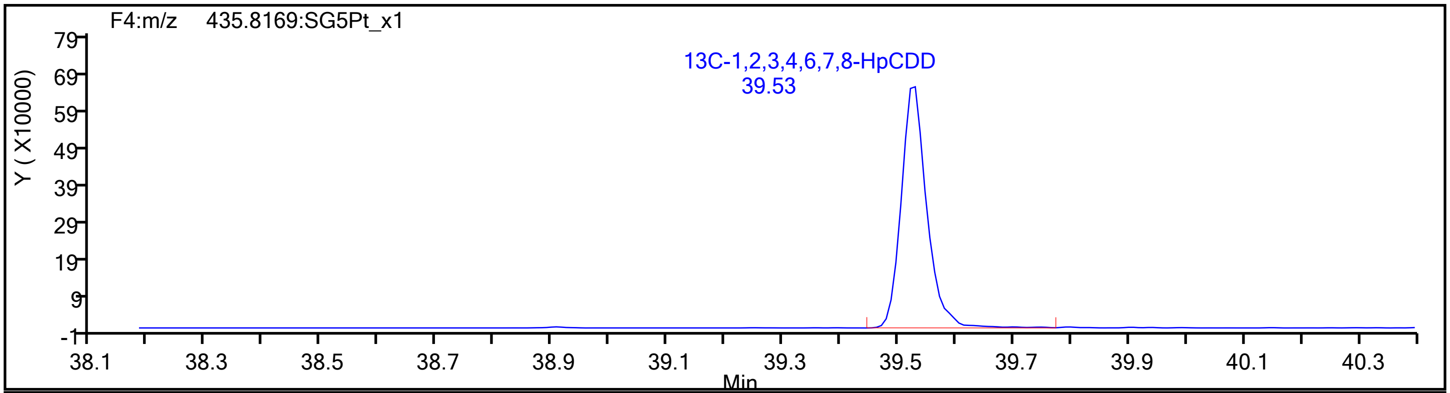

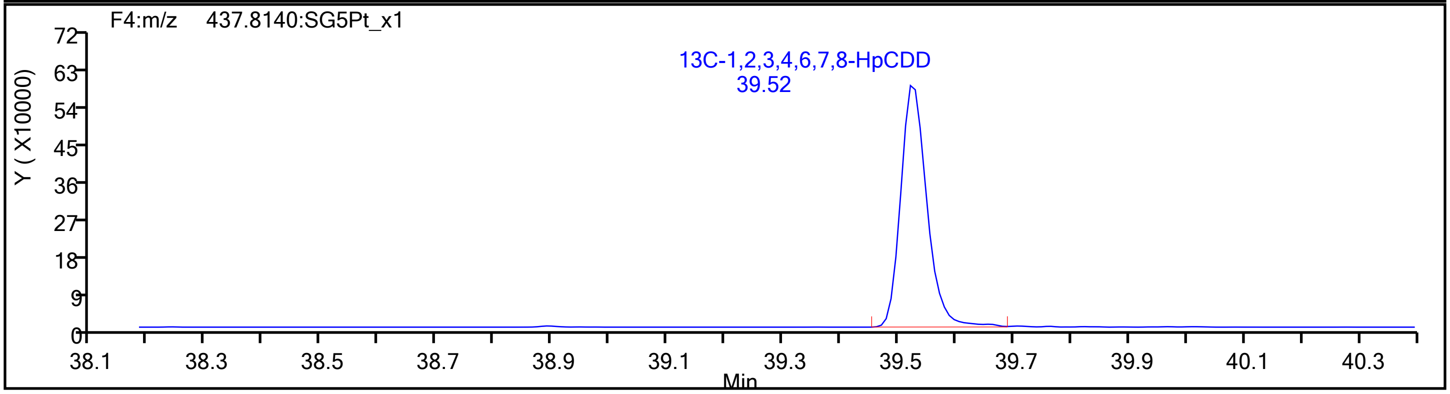

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Eurofins TestAmerica, Sacramento

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OCDF

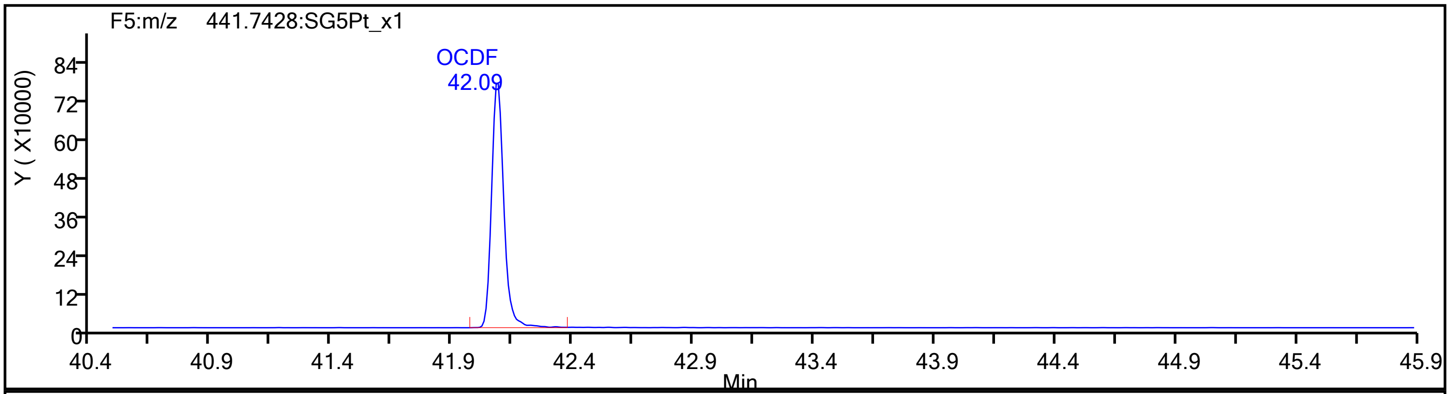

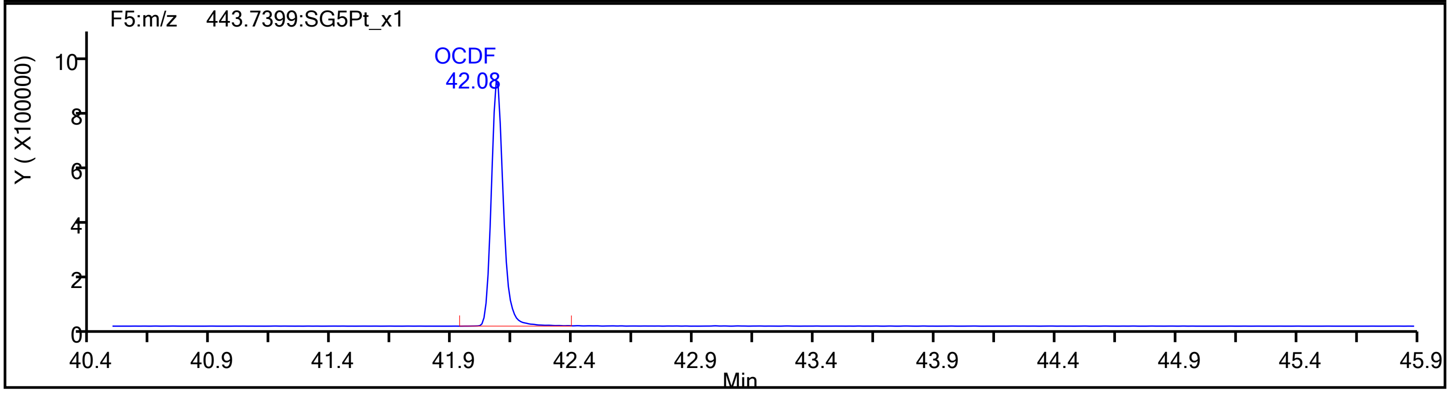

OCDF Standards

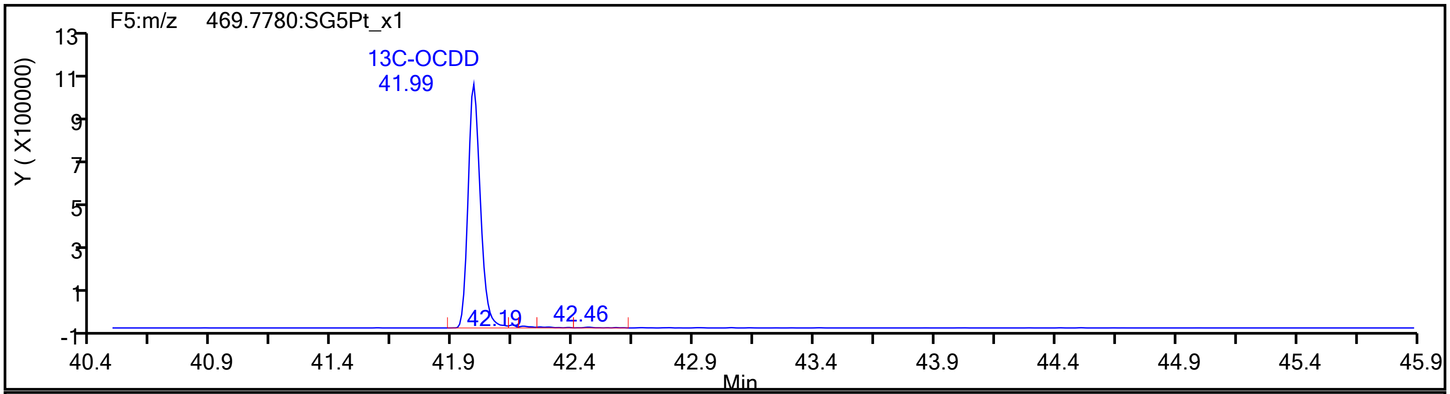

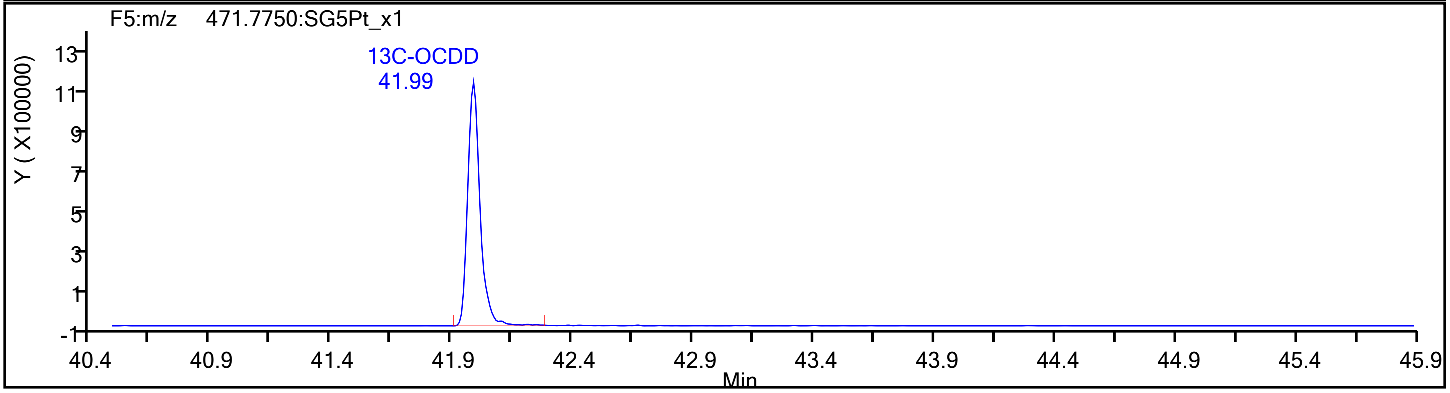

Report Date: 21-Aug-2020 00:19:51 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d		
Injection Date:	20-Aug-2020 21:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

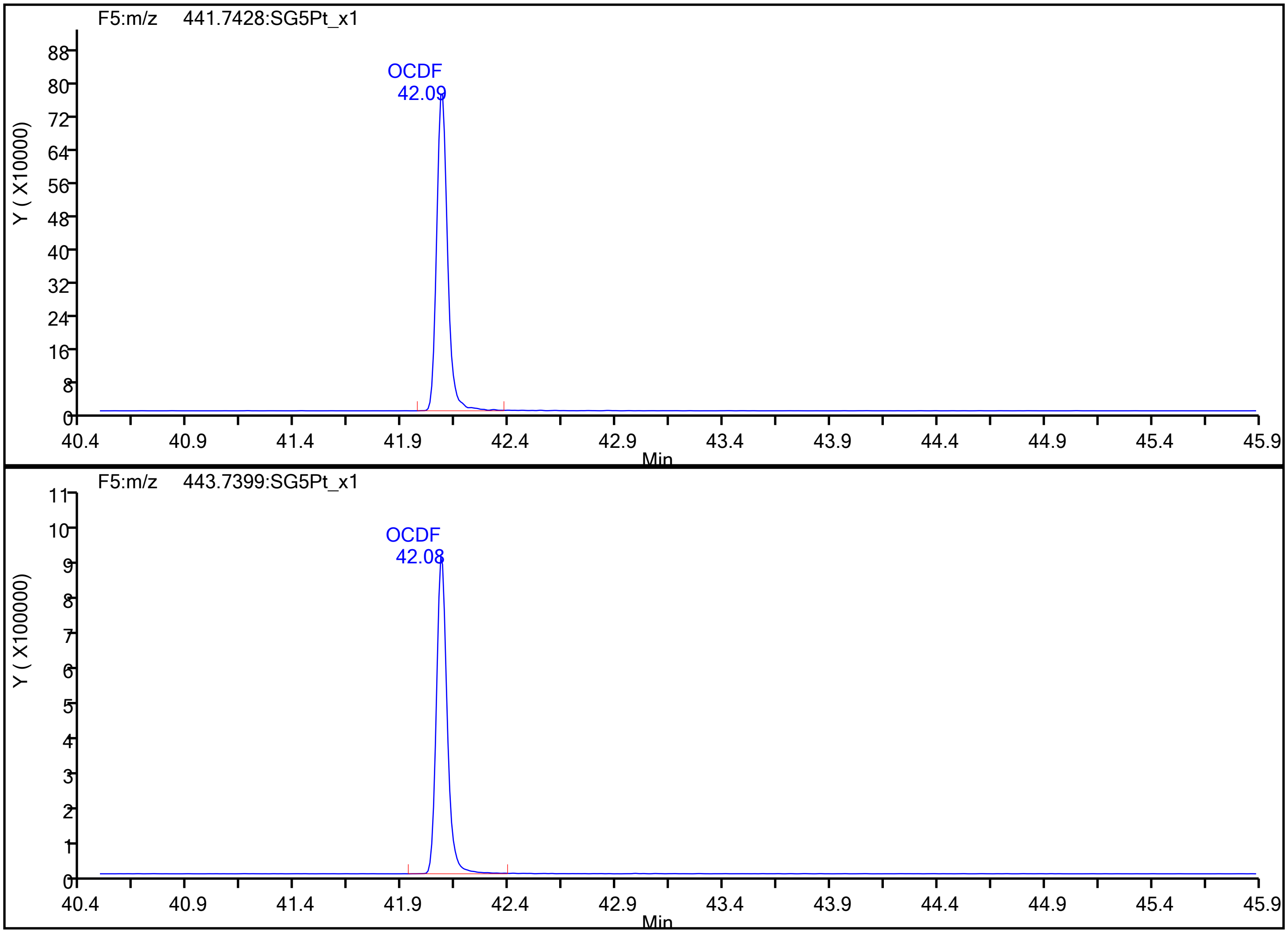

OCDF Interference Mass

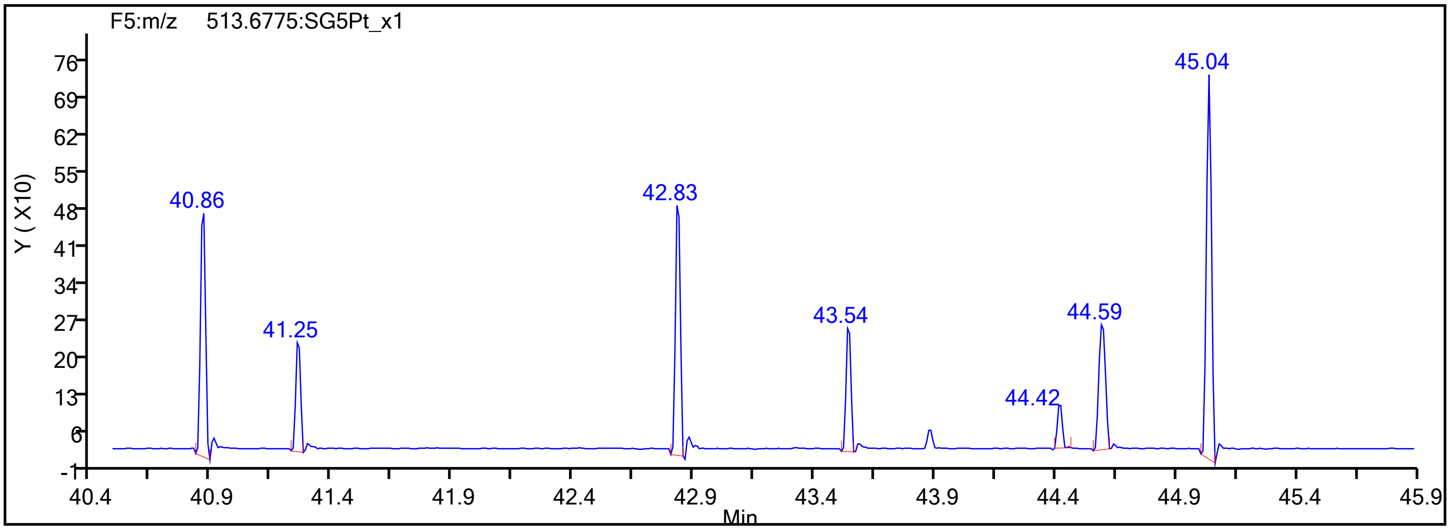

Report Date: 21-Aug-2020 00:19:51 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d		
Injection Date:	20-Aug-2020 21:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

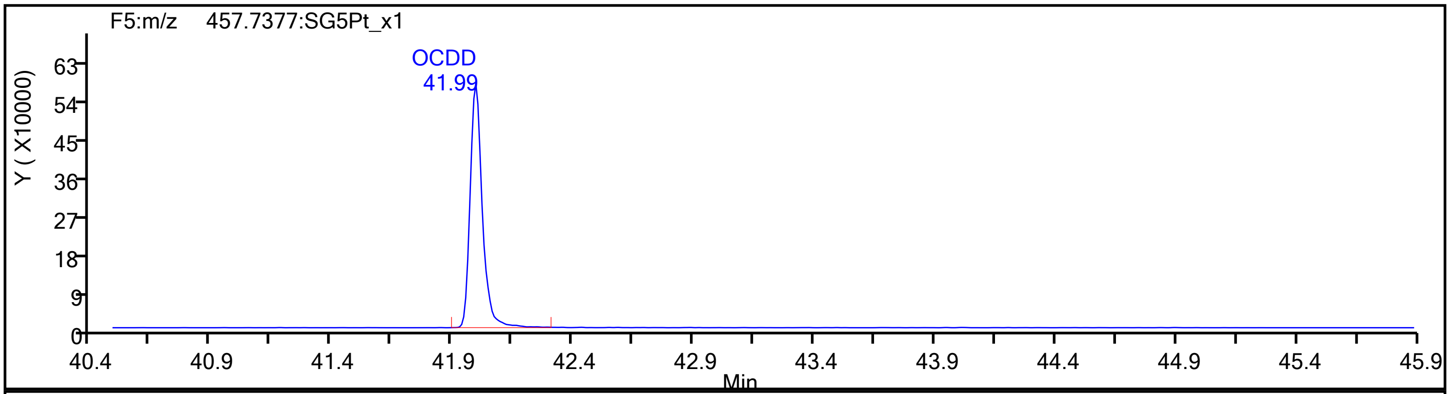

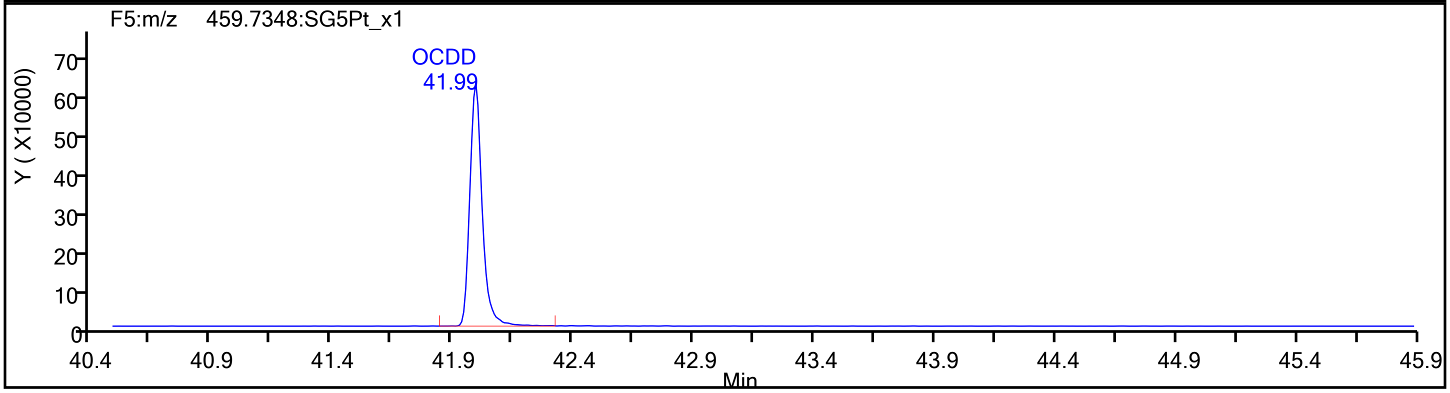

OCDD Standards

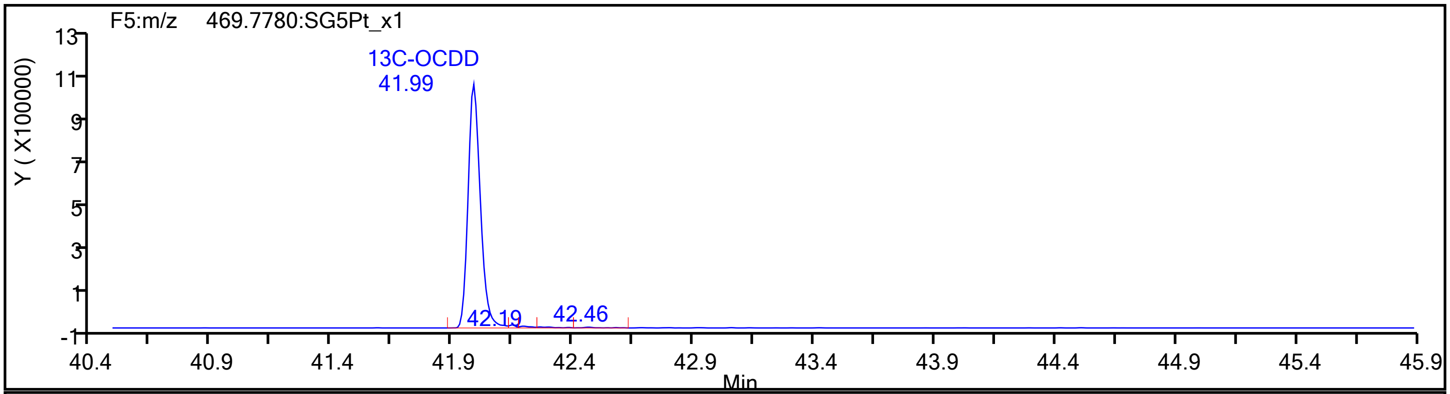

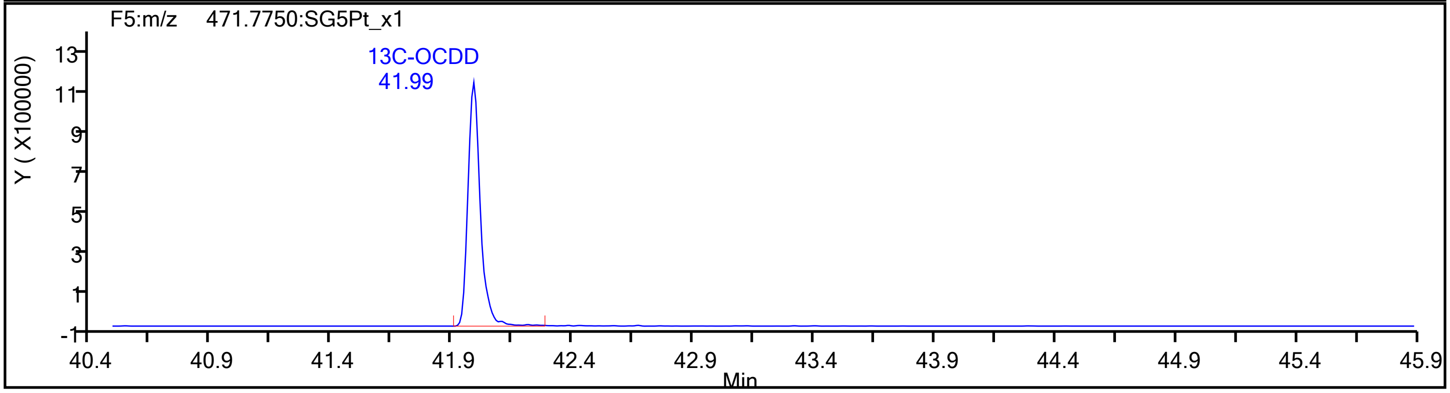

Report Date: 21-Aug-2020 00:19:51 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d

Injection Date: 20-Aug-2020 21:48:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405471

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

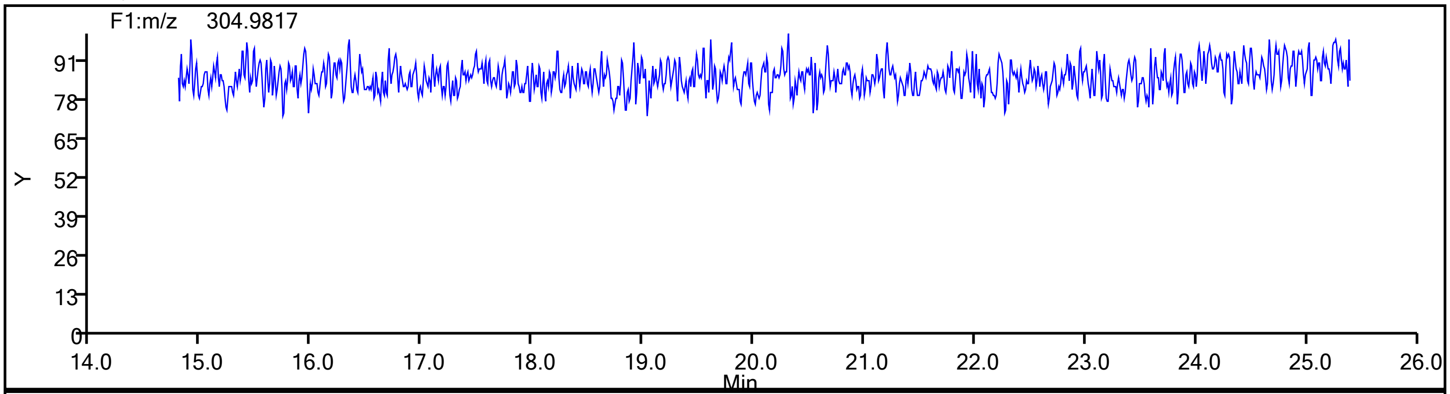

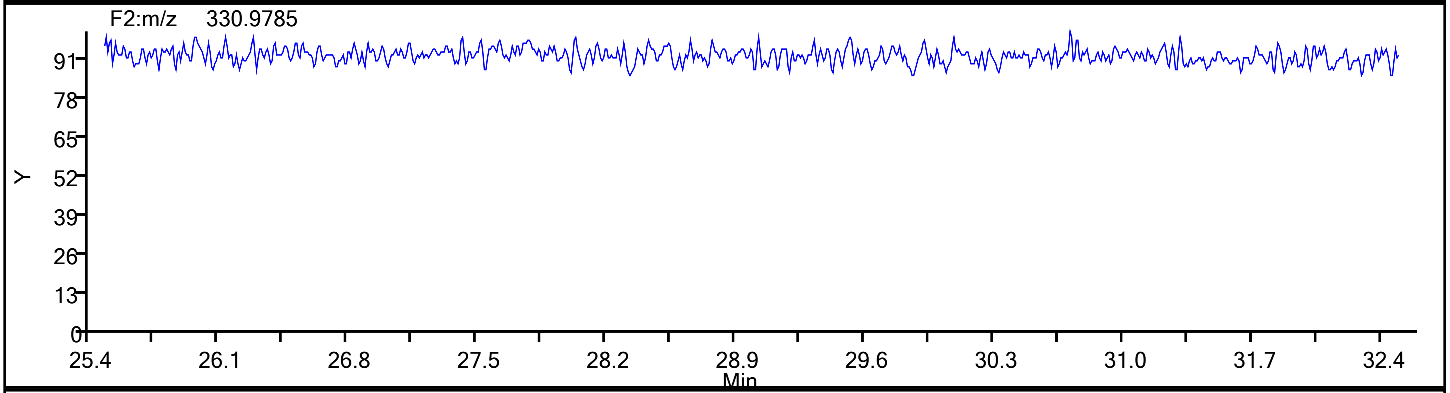

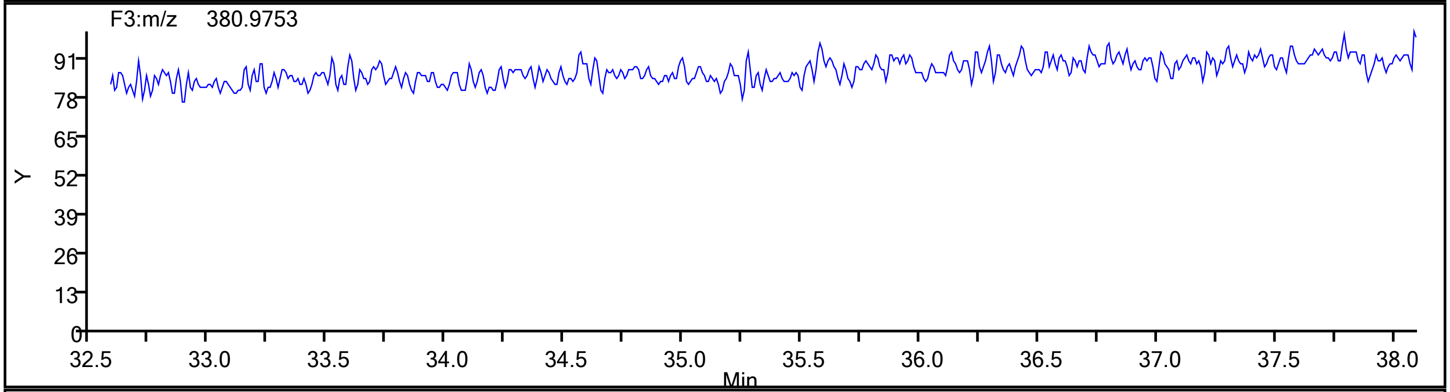

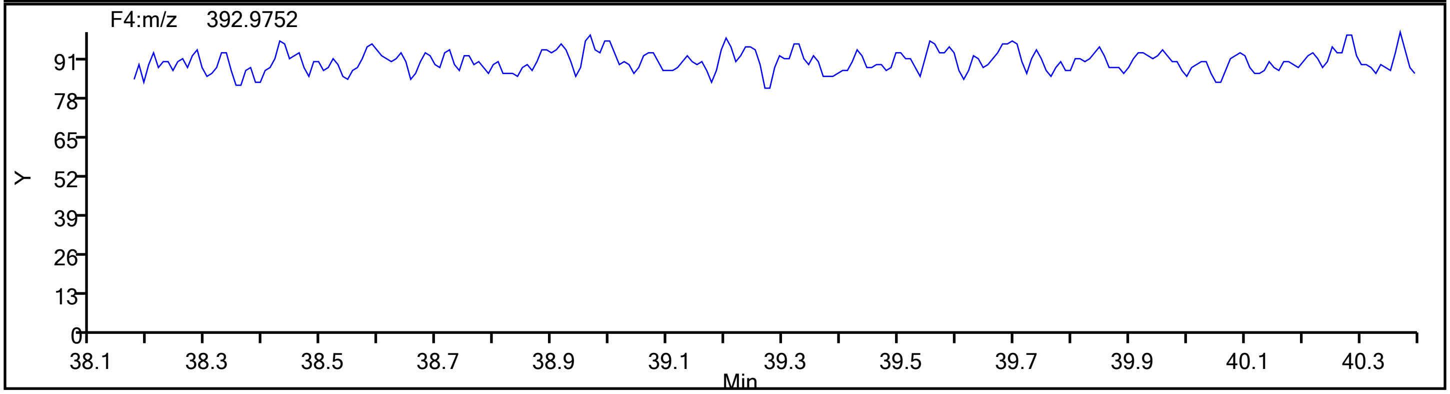

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_16.d		
Injection Date:	20-Aug-2020 21:48:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

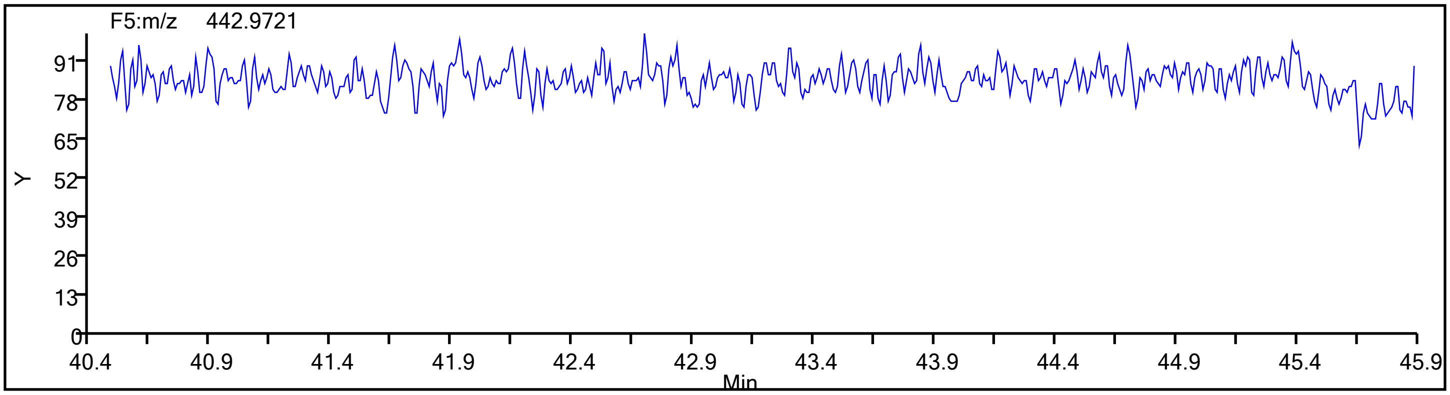

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jun-2020 13:12:28 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 062720A WDM HRDXNCP_00040
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:21 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:37:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.188	24325911	0.79	1.3726					0.00	
2,3,7,8-TCDF	17.219	46102914	0.75	0.9104	83.3	83.3	0.3197	0.3197		
A Non-2,3,7,8-sub-TCDF	16.916						0.3197	0.3197		
S Total TCDF					83.3	83.3	0.3197	0.3197		
D 13C-2,3,7,8-TCDD	17.884	16737508	0.81	1.0192					0.00	
2,3,7,8-TCDD	17.914	18251912	0.77	1.0745	40.6	40.6	0.2565	0.2565		
A Non-2,3,7,8-sub-TCDD	17.354						0.2565	0.2565		
S Total TCDD					40.6	40.6	0.2565	0.2565		
A F1 PeCDFs	19.698						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.798	95798	1.34	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	23.104						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.979						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.652						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.676	15424529	1.04	1.4527						
1,2,3,4,7,8,9-HpCDF	34.746	12173274	1.03	1.0585						
A Non-2,3,7,8-sub-HpCDF	34.211						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.466	10176922	1.03	1.0540						
A Non-2,3,7,8-sub-HpCDD	35.164						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.830	24618226	0.76							
1,3,6,8-TCDD	15.722	18675858	0.79							
2,3,4,7-TCDF	17.219	46102914	0.75							
1,2,3,7-TCDD	17.793	16167705	0.77							
1,2,3,9-TCDD	18.065	19778456	0.78							
1,2,3,9-TCDF	18.065	19789317	0.75							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	18.987	7575012								
1,2,8,9-TCDF	19.003	20285265	0.73							
1,3,4,6,8-PeCDF	19.275	24350114	1.54							
1,2,4,7,9-PeCDD	21.024	15228773	1.59							
1,2,3,8,9-PeCDD	25.184	14239957	1.62							
1,2,3,8,9-PeCDF	25.402	16985212	1.56							
1,2,3,4,6,8-HxCDF	27.657	14280063	1.20							
1,2,4,6,7,9-HxCDD	29.214	13675440	1.27							
1,2,3,4,6,7-HxCDD	31.983	13334366	1.25							
1,2,3,4,8,9-HxCDF	32.302	13578470	1.20							
1,2,3,4,6,7,9-HpCDD	33.919	11582583	1.04							

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jun-2020 13:12:28 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 062720A WDM HRDXNCP_00040
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:21 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:37:39

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.188	17.188	0	1.000	10726332	2551122	4528	11320	563		
317.9389	17.188	17.188	0	1.000	13599579	3251064	2964	7410	1097	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.215	0	1.002	19773259	4480955	7435	18587	603		
305.8987	17.219	17.215	0	1.002	26329655	5915338	9454	23635	626	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.916						7435	18587			
305.8987	16.916						9454	23635			
13C-2,3,7,8-TCDD											
331.9368	17.884	17.884	0	1.000	7500992	1693942	3852	9630	440		
333.9339	17.884	17.884	0	1.000	9236516	2080651	2086	5215	997	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.002	7921659	1782893	4840	12100	368		
321.8936	17.914	17.911	0	1.002	10330253	2341866	5562	13905	421	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.354						4840	12100			
321.8936	17.354						5562	13905			
A F1 PeCDFs											
339.8597	19.698						1405	3512			
341.8567	19.698						876	2190			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.170	22.798	-38	1.000	54792	8695	2091	5227	4		
341.8567	22.170	22.798	-38	1.000	41006	5817	1518	3795	4	1.34(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.104						3002	7505			
357.8516	23.104						2043	5107			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.979						3500	8750			
375.8178	29.979						2689	6722			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.652						3381	8452			
391.8127	30.652						2715	6787			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.676	33.667	1	1.000	7855527	1827537	17435	43587	105		
409.7789	33.676	33.667	1	1.000	7569002	1740715	16362	40905	106	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.746	34.739	0	1.000	6163806	1205590	17435	43587	69		
409.7789	34.746	34.739	0	1.000	6009468	1183947	16362	40905	72	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.211						17435	43587			
409.7789	34.211						16362	40905			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.466	34.457	1	1.000	5172822	1044846	13123	32807	80		
425.7737	34.466	34.457	1	1.000	5004100	978929	12841	32102	76	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.164						13123	32807			
425.7737	35.164						12841	32102			
1,3,6,8-TCDF											
303.9016	14.830	14.830	0		10669295	3290432	7435	18587	443		
305.8987	14.830	14.830	0		13948931	4323101	9454	23635	457	0.76(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.722	15.722	0		8227174	2297870	4840	12100	475		
321.8936	15.722	15.722	0		10448684	3001271	5562	13905	540	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.219	17.219	0		19773259	4480955	7435	18587	603		
305.8987	17.219	17.219	0		26329655	5915338	9454	23635	626	0.75(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.793	17.793	0		7033855	1680770	4840	12100	347		
321.8936	17.793	17.793	0		9133850	2173642	5562	13905	391	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.065	18.065	0		8658742	1907146	4840	12100	394		
321.8936	18.065	18.065	0		11119714	2424393	5562	13905	436	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.065	18.065	0		8476231	1932021	7435	18587	260		
305.8987	18.065	18.065	0		11313086	2585287	9454	23635	273	0.75(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.987	18.987	0		7575012	1582880	4840	12100	327		
1,2,8,9-TCDF											
303.9016	19.003	19.003	0		8583854	1737543	7435	18587	234		
305.8987	18.987	19.003	-1		11701411	2320715	9454	23635	245	0.73(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.275	19.275	0		14773450	3175151	1405	3512	2260		
341.8567	19.275	19.275	0		9576664	2041966	876	2190	2331	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	21.024	21.024	0		9346187	1558364	3002	7505	519		
357.8516	21.024	21.024	0		5882586	982676	2043	5107	481	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.184	25.184	0		8803327	1180835	3002	7505	393		
357.8516	25.184	25.184	0		5436630	720272	2043	5107	353	1.62(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.402	25.402	0		10356901	1353248	2091	5227	647		
341.8567	25.402	25.402	0		6628311	869626	1518	3795	573	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.657	27.657	0		7799888	929300	3500	8750	266		
375.8178	27.657	27.657	0		6480175	774262	2689	6722	288	1.20(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.214	29.214	0		7644053	819212	3381	8452	242		
391.8127	29.214	29.214	0		6031387	656665	2715	6787	242	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.983	31.983	0		7400023	1561477	3381	8452	462		
391.8127	31.983	31.983	0		5934343	1272505	2715	6787	469	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.302	32.302	0		7414354	1635355	3500	8750	467		
375.8178	32.302	32.302	0		6164116	1378803	2689	6722	513	1.20(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.919	33.919	0		5918360	1263900	13123	32807	96		
425.7737	33.919	33.919	0		5664223	1201009	12841	32102	94	1.04(0.88-1.20)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:16:24   Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	27-Jun-2020 13:12:28	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	390253	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 22.798

Initial Calibration RRF   IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994				
2,3,4,7,8-PeCDF	0.812				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.170	54792	8695	41006	5817		1.34	
Signal Totals:							
	54792	8695	41006	5817			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	95798	14512				1.34	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.0 = (95798 * 0.0) / (0 * 0.000)

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

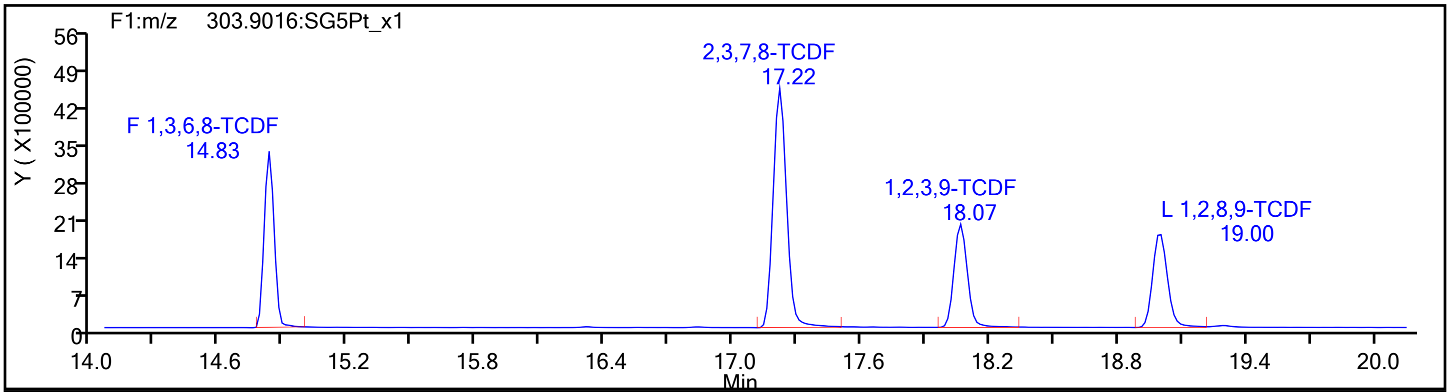

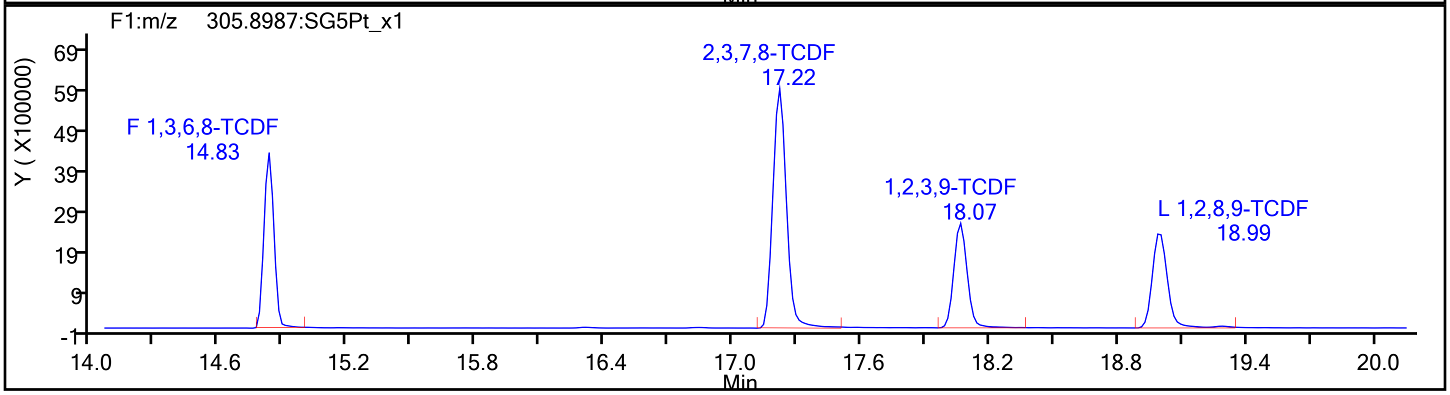

TCDF Standards

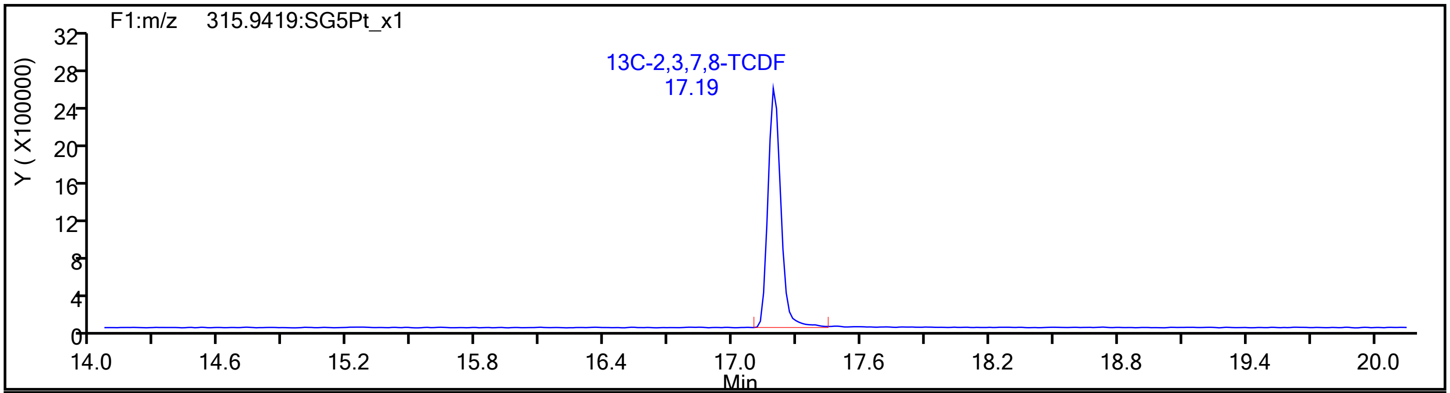

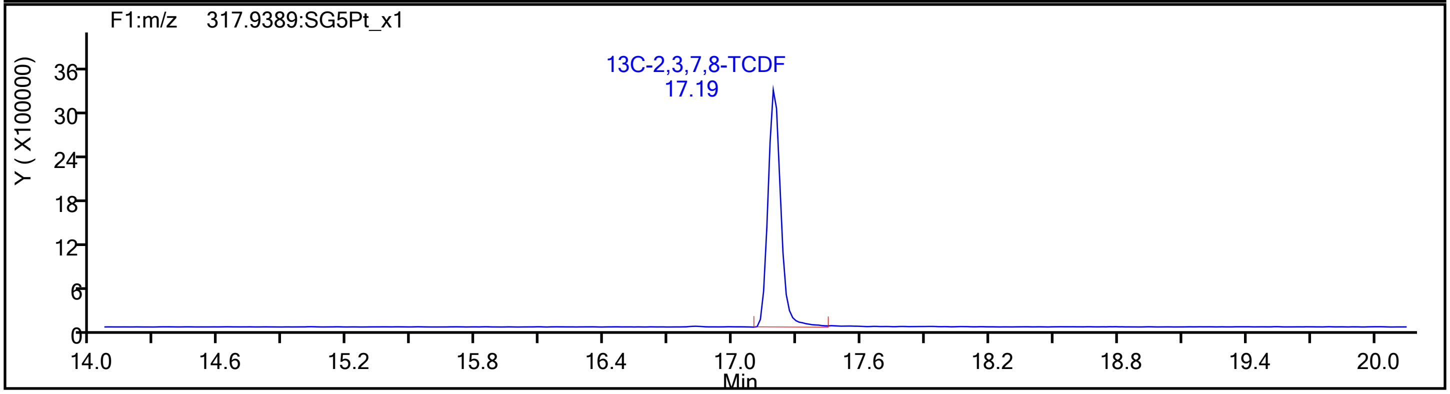

Report Date: 28-Jun-2020 13:16:24
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Client ID:			
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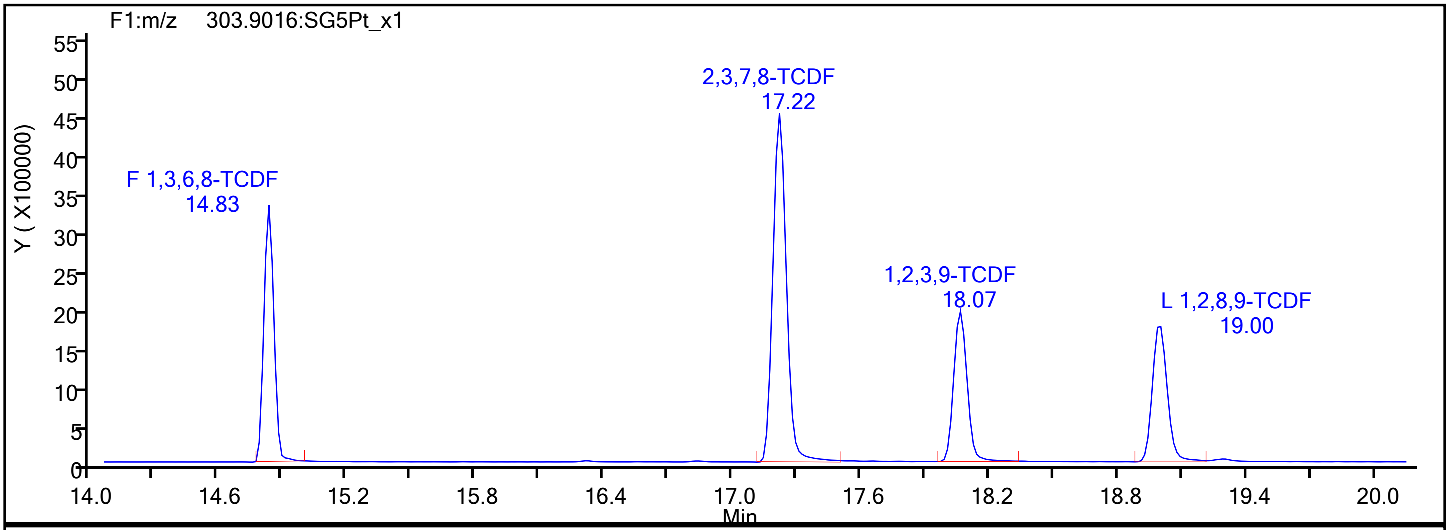

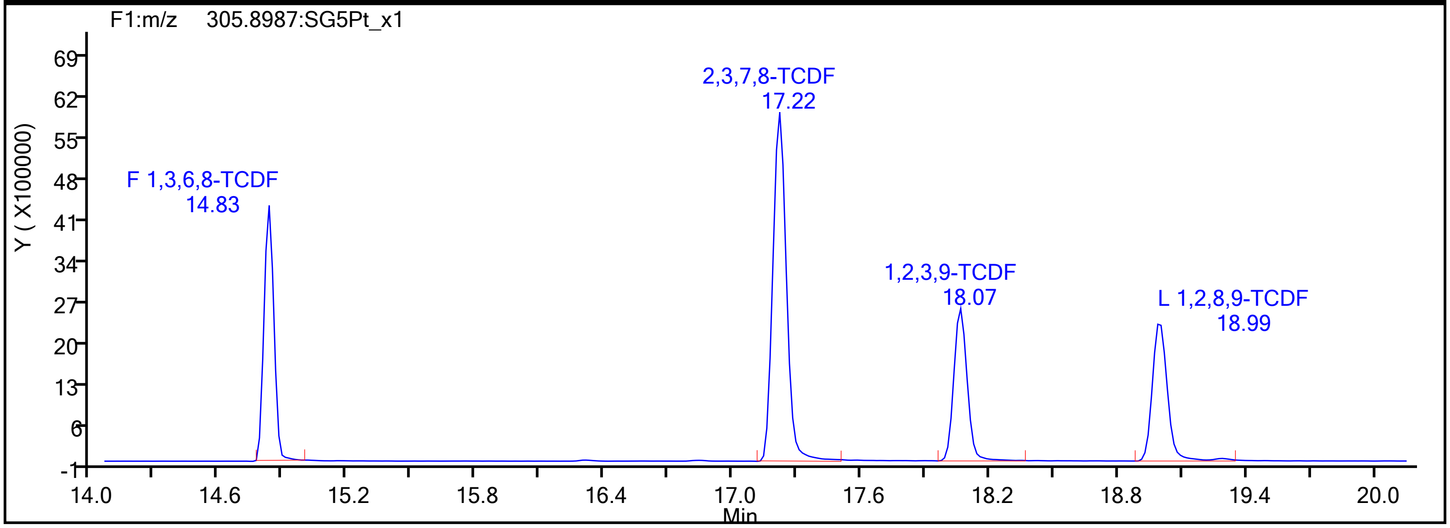

TCDF Interference Mass

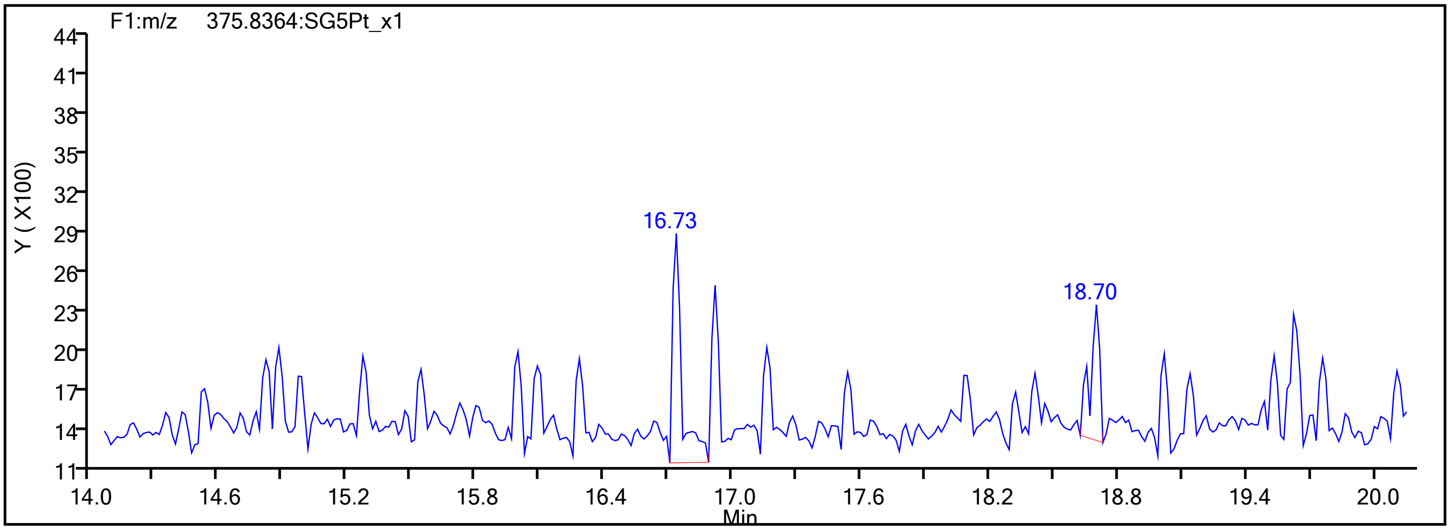

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Eurofins TestAmerica, Sacramento

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TCDD

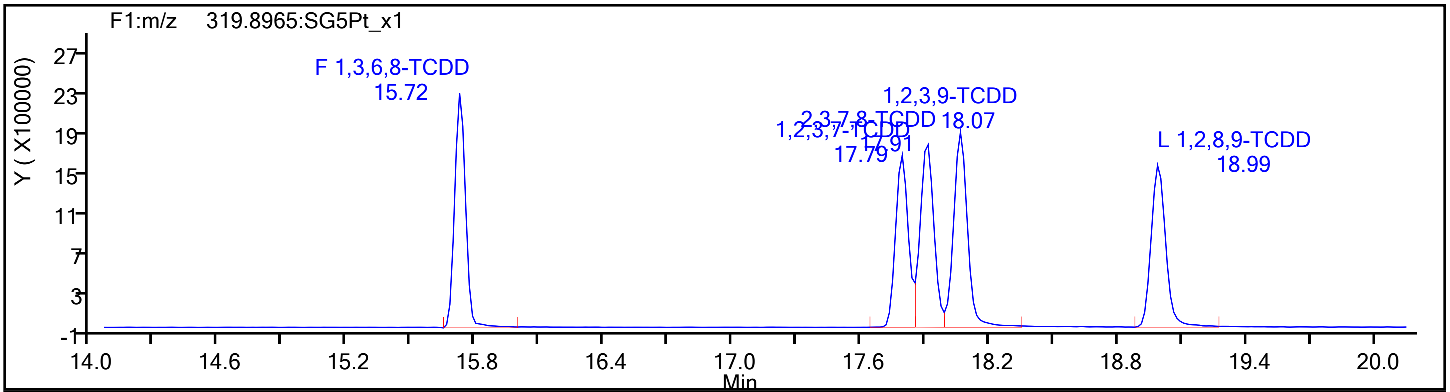

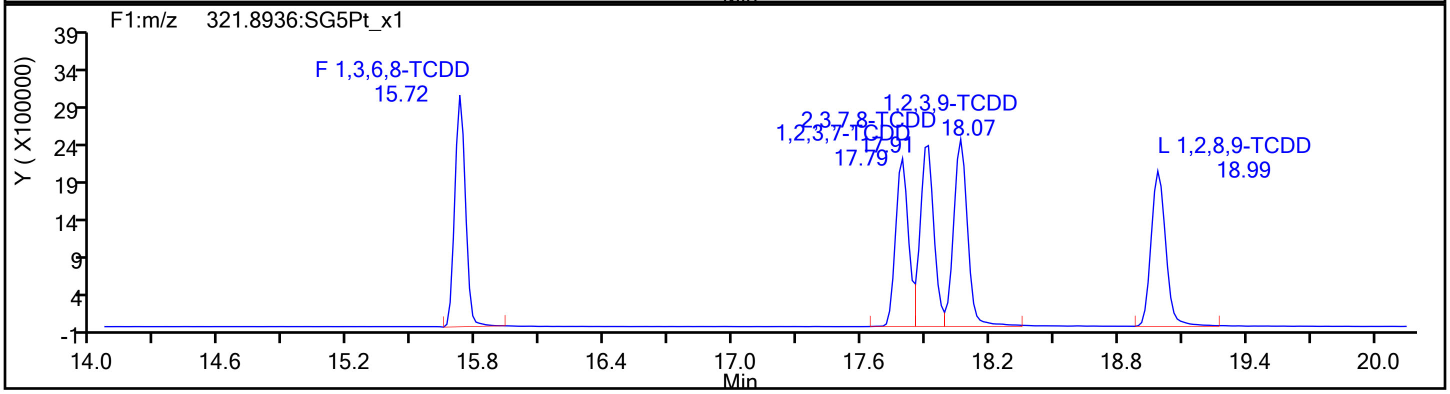

TCDD Standards

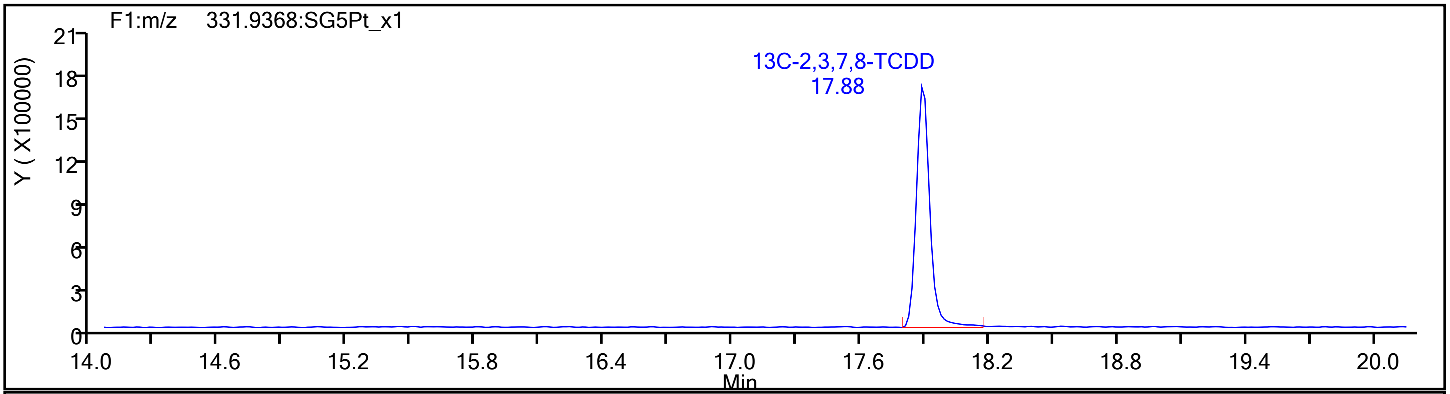

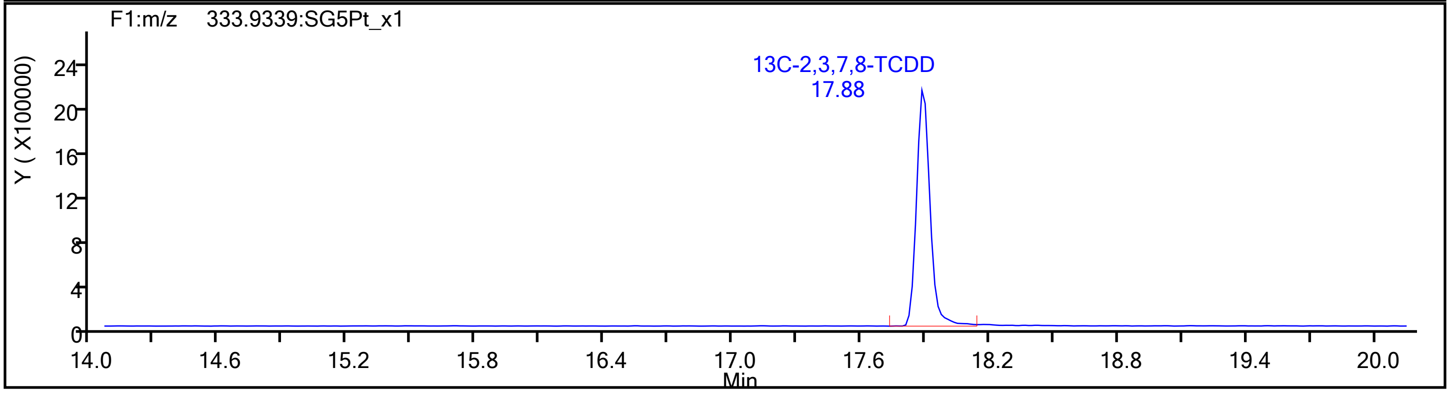

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

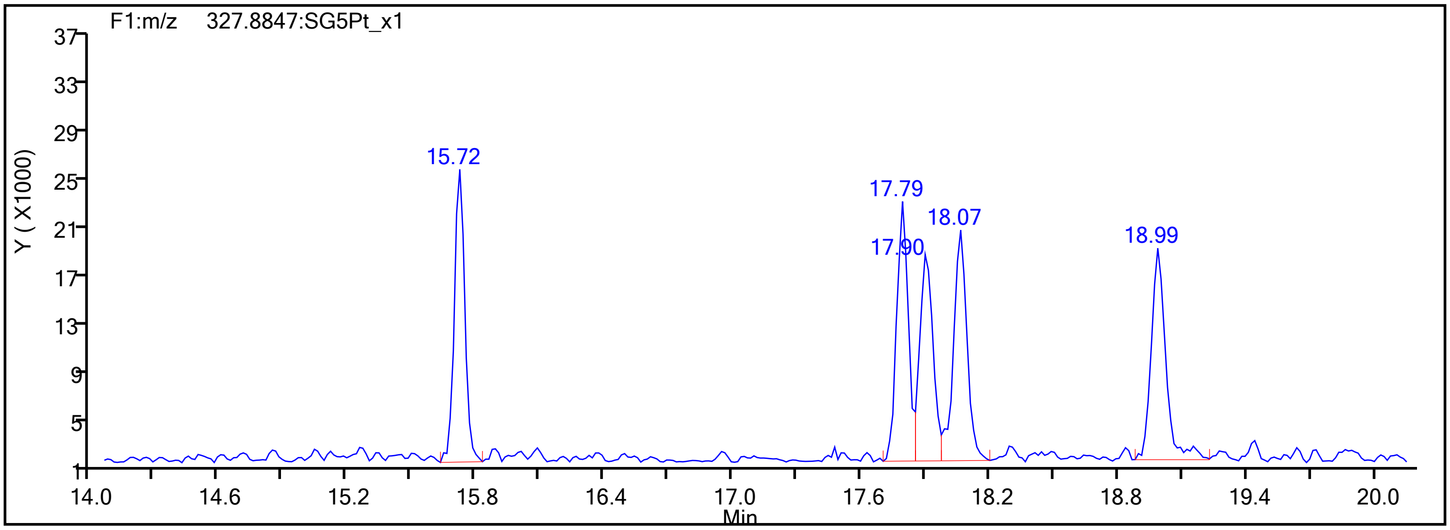

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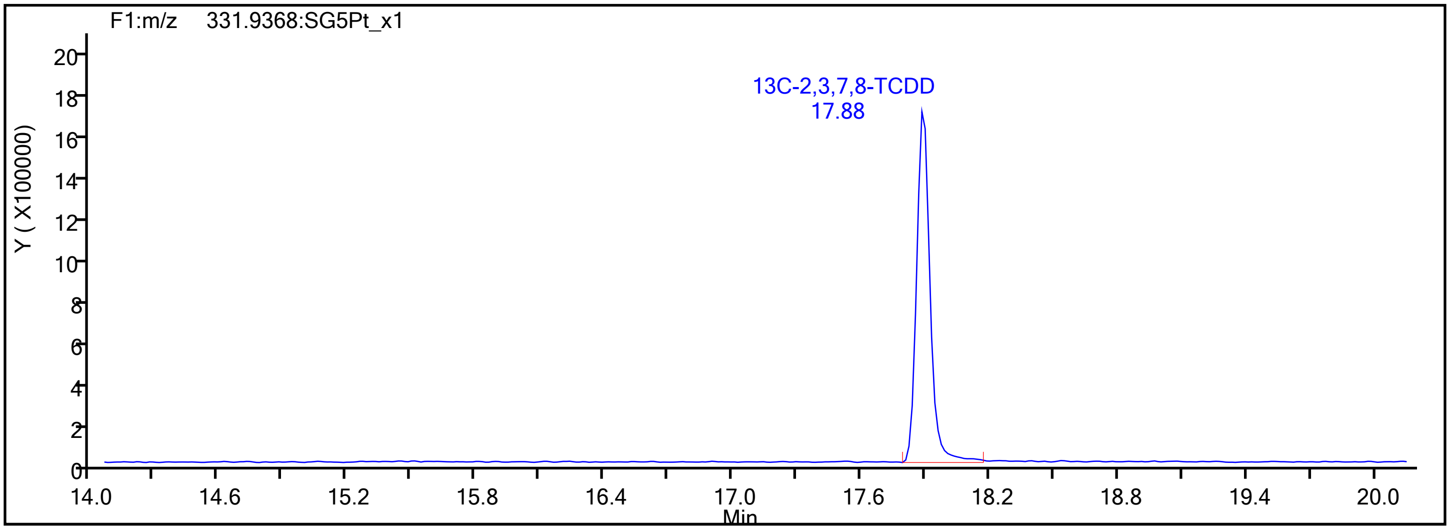

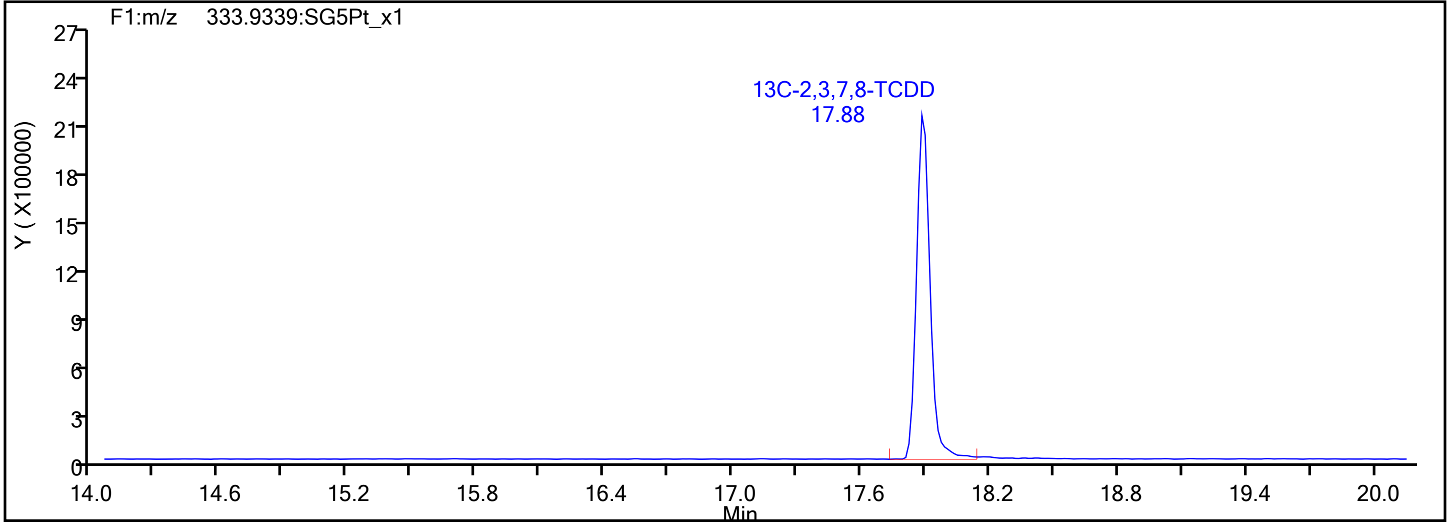

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F1 PeCDFs

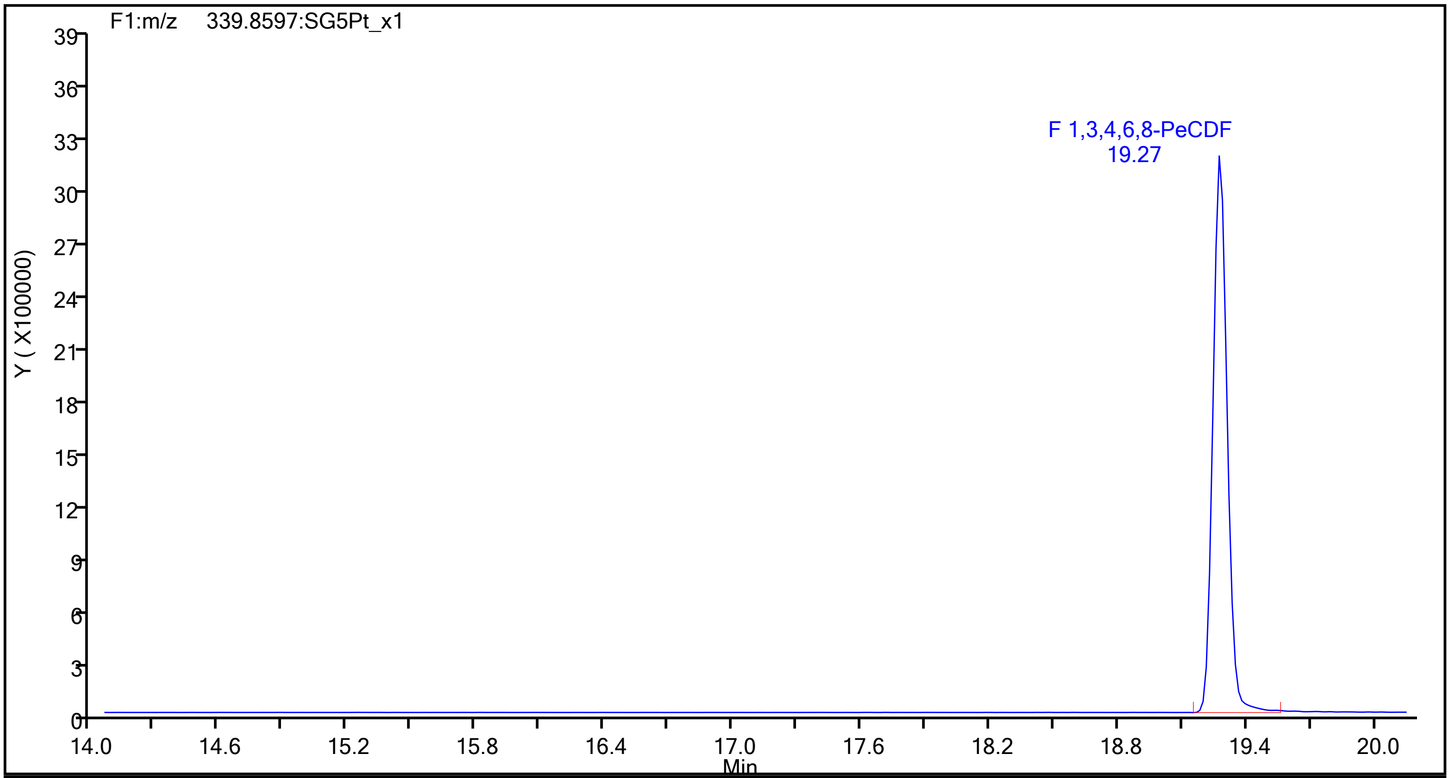

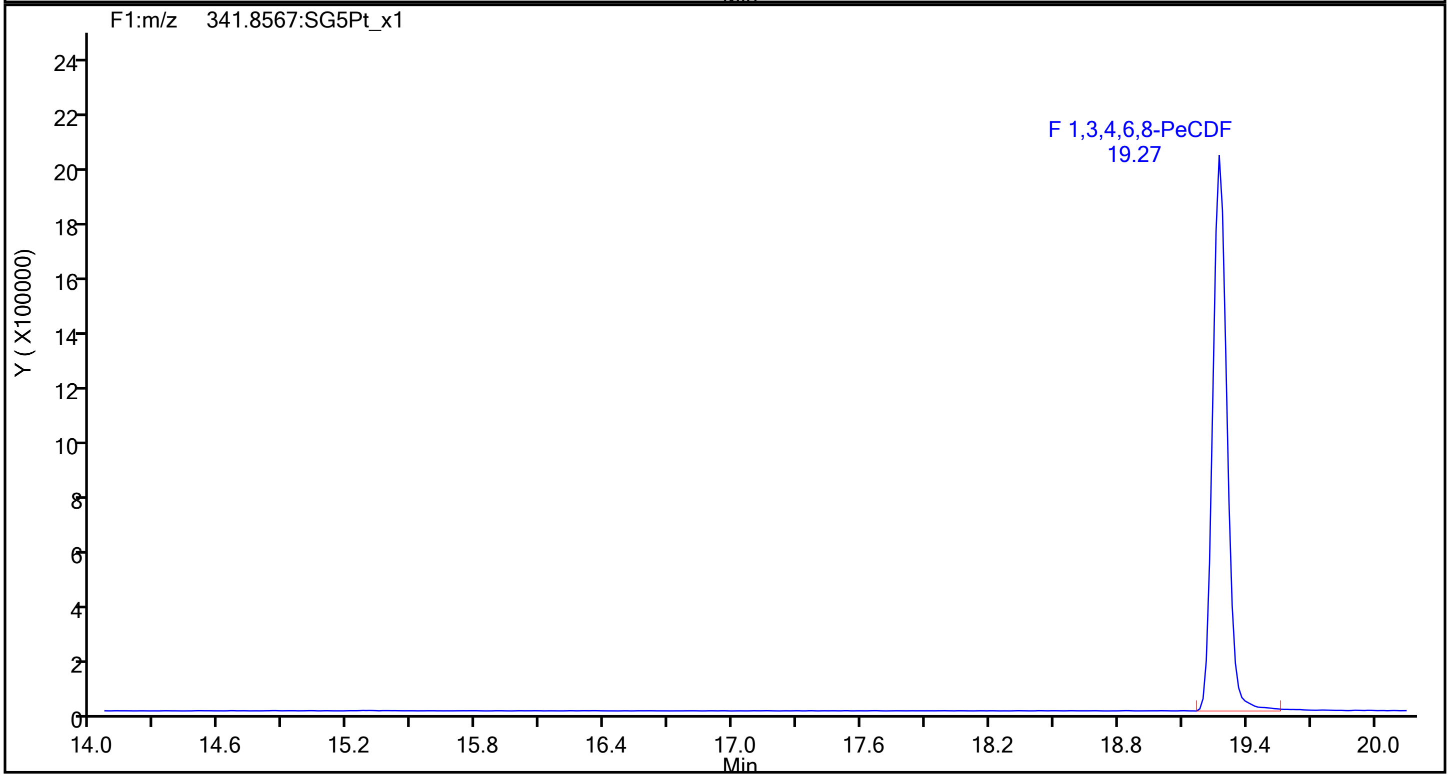

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

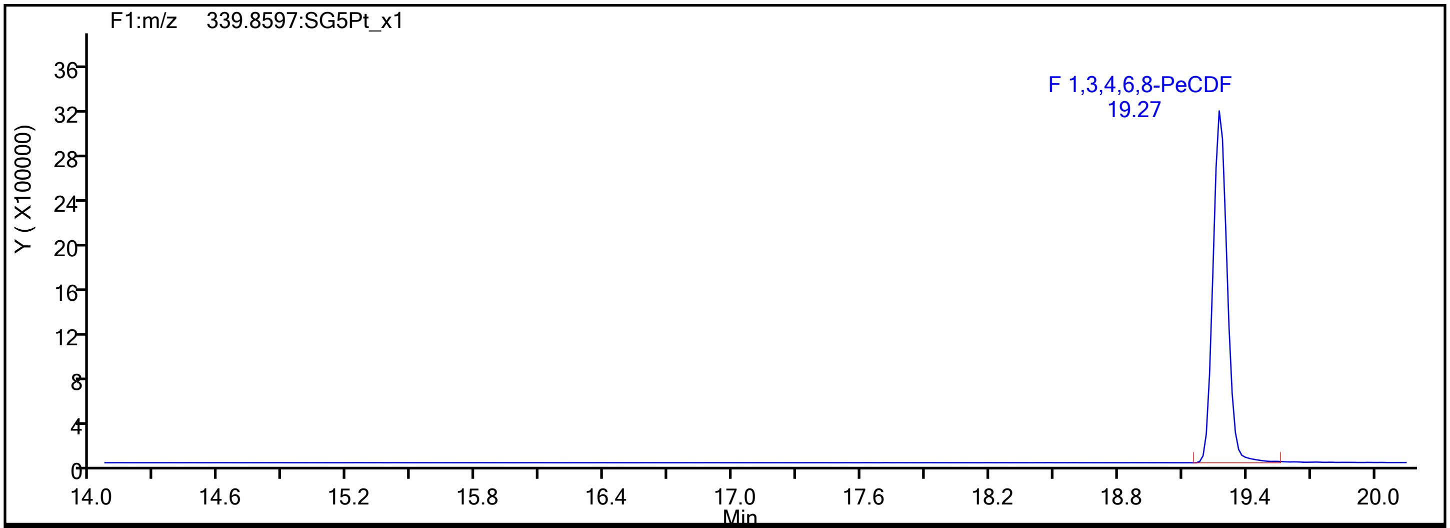

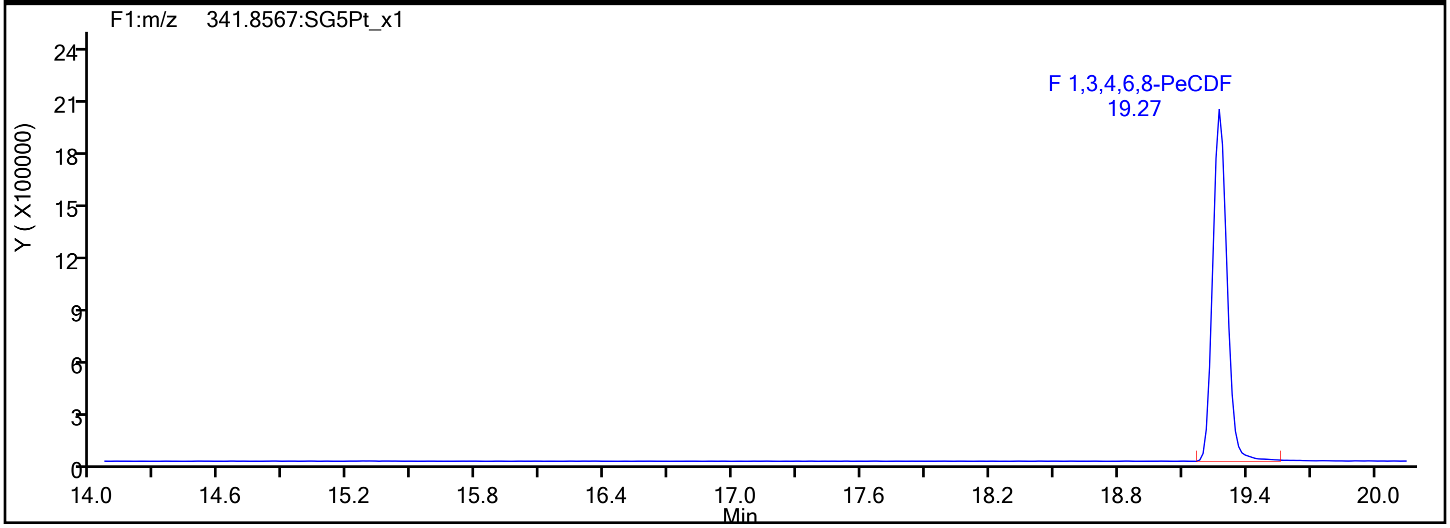

F1 PeCDFs Interference Mass

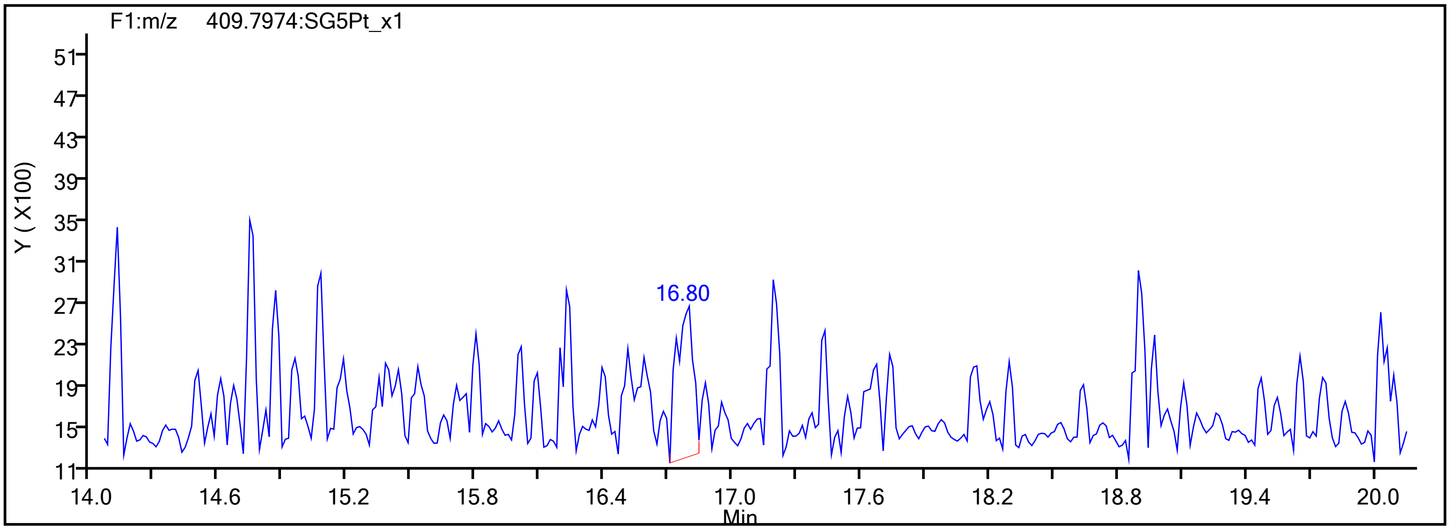

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Eurofins TestAmerica, Sacramento

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PeCDF

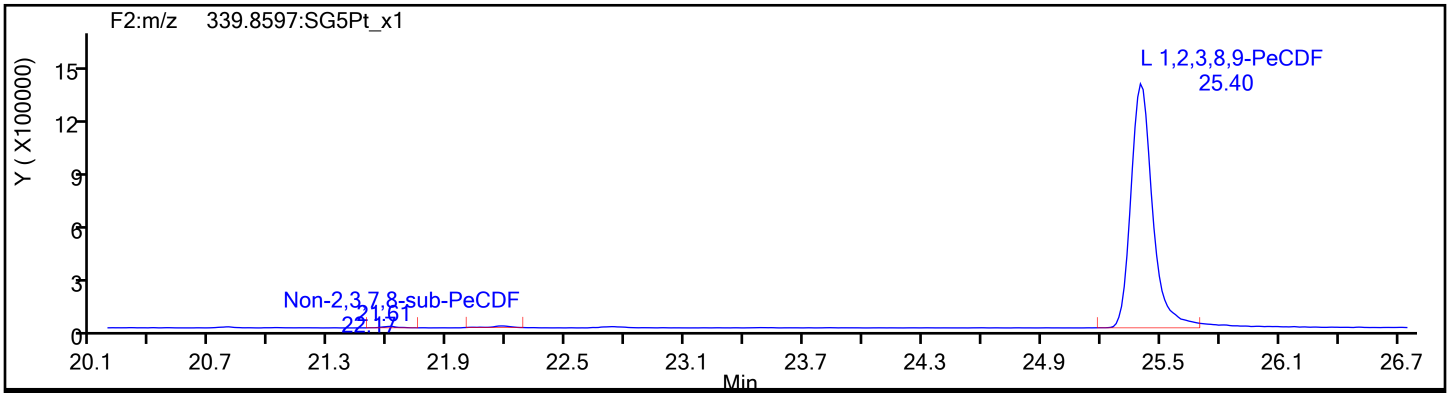

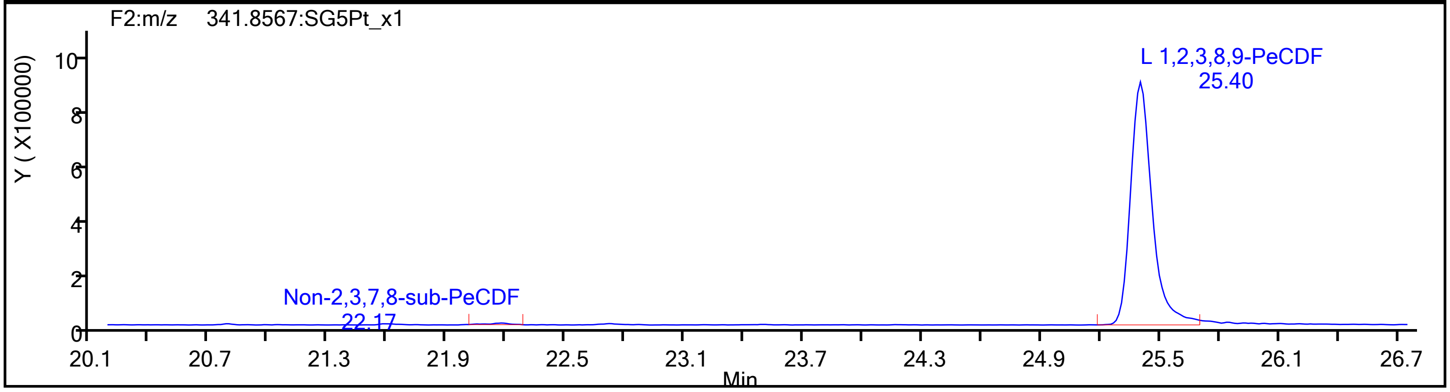

PeCDF Standards

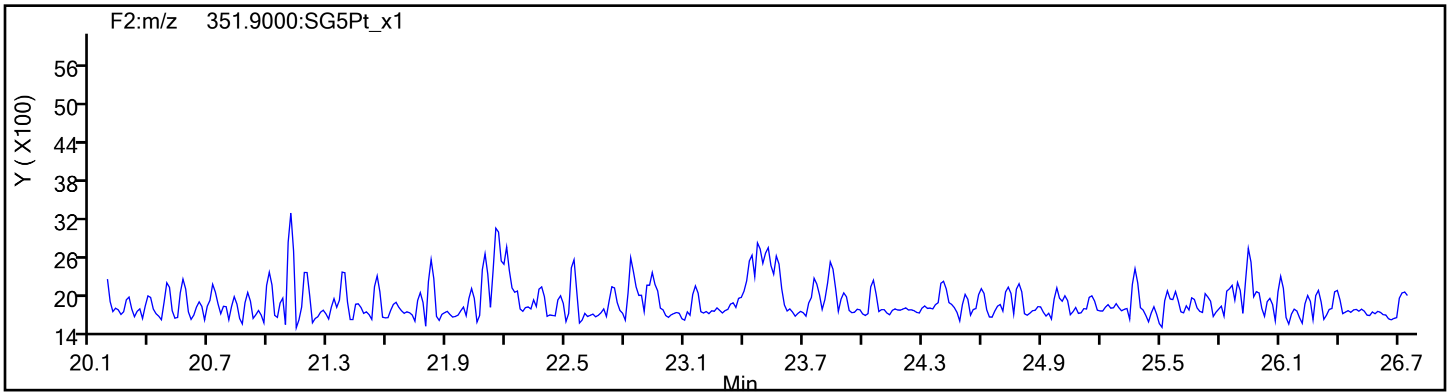

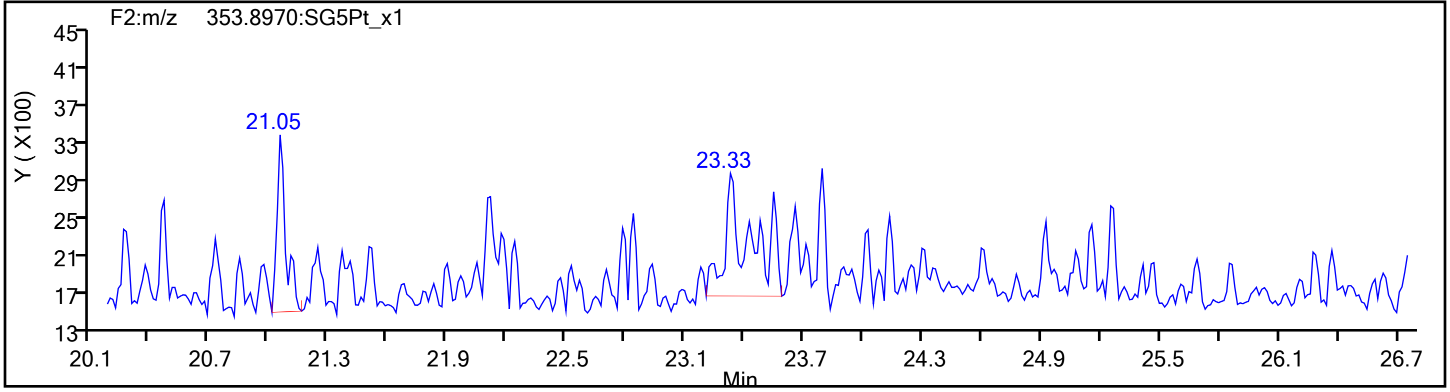

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PeCDF

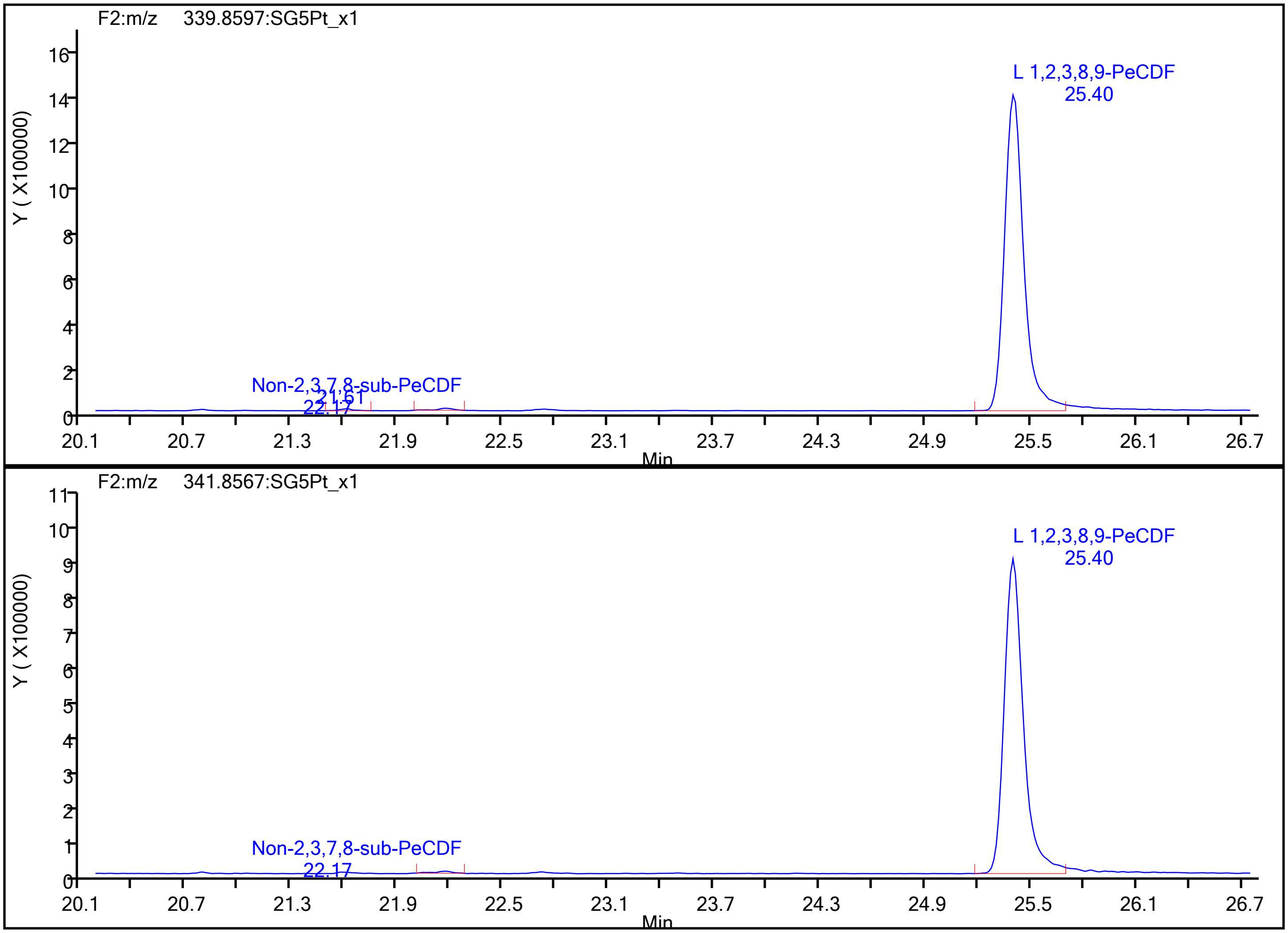

PeCDF Interference Mass

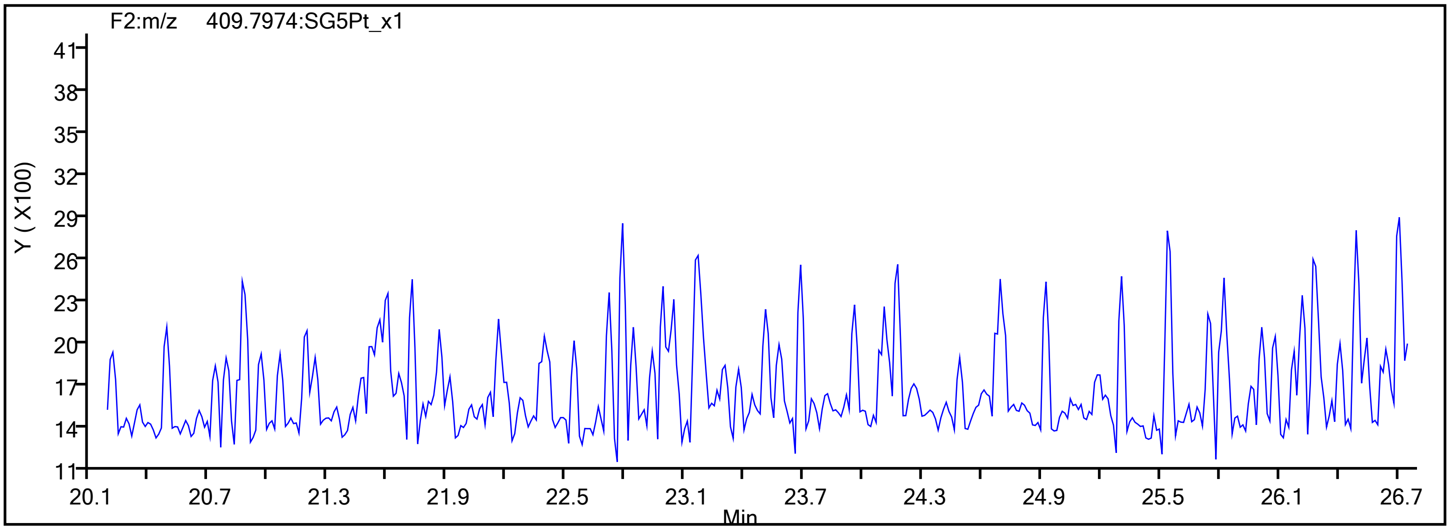

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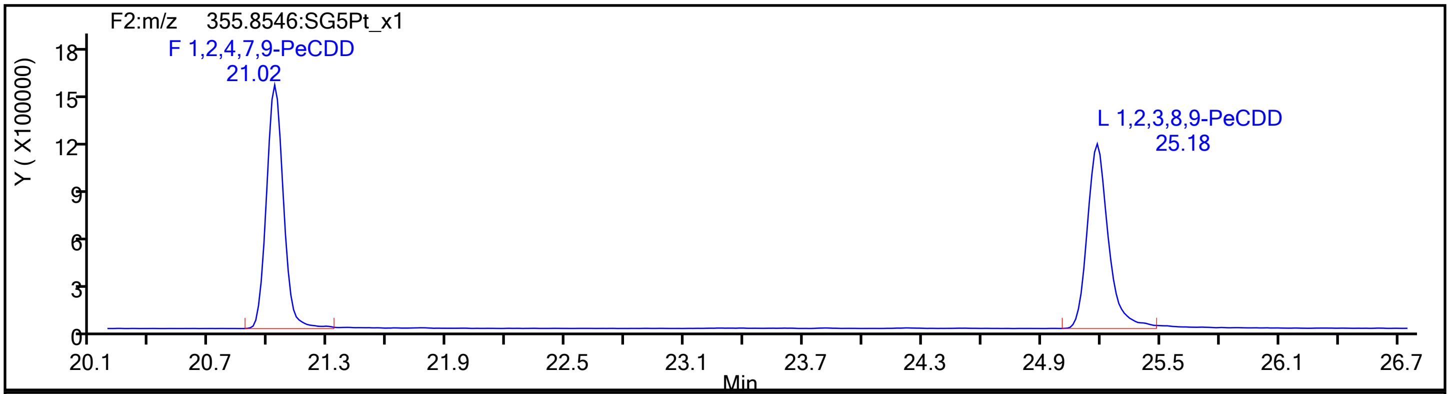

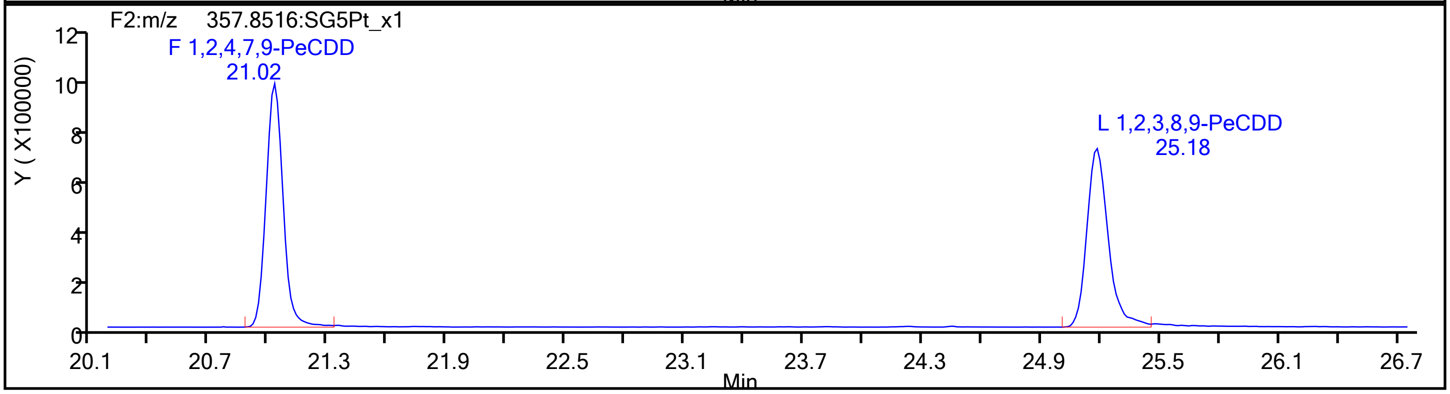

PeCDD Standards

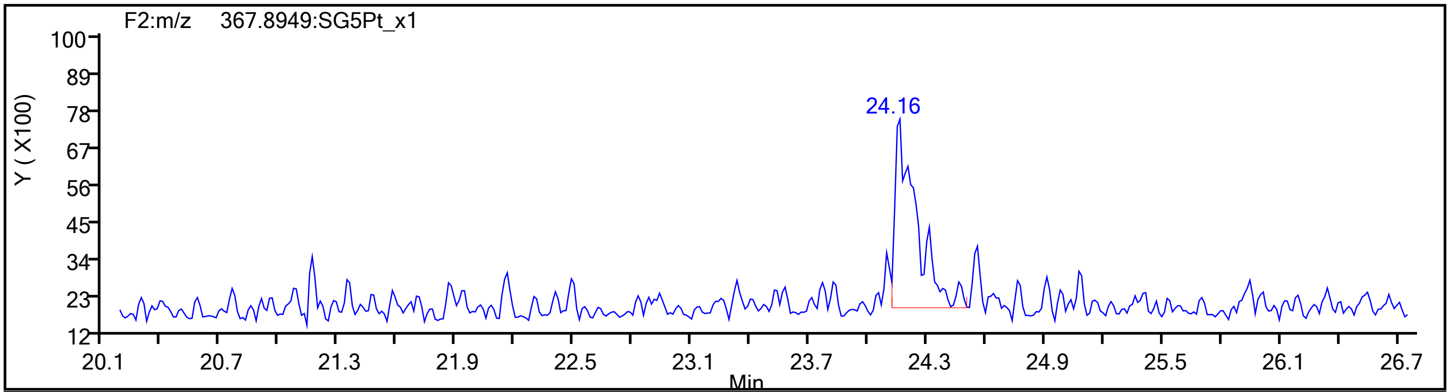

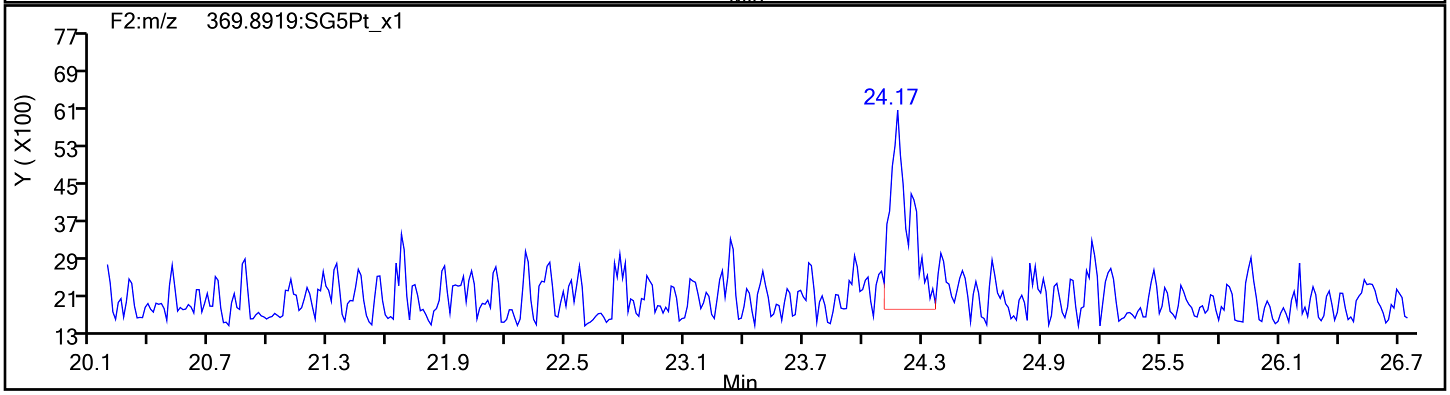

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Eurofins TestAmerica, Sacramento

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HxCDF

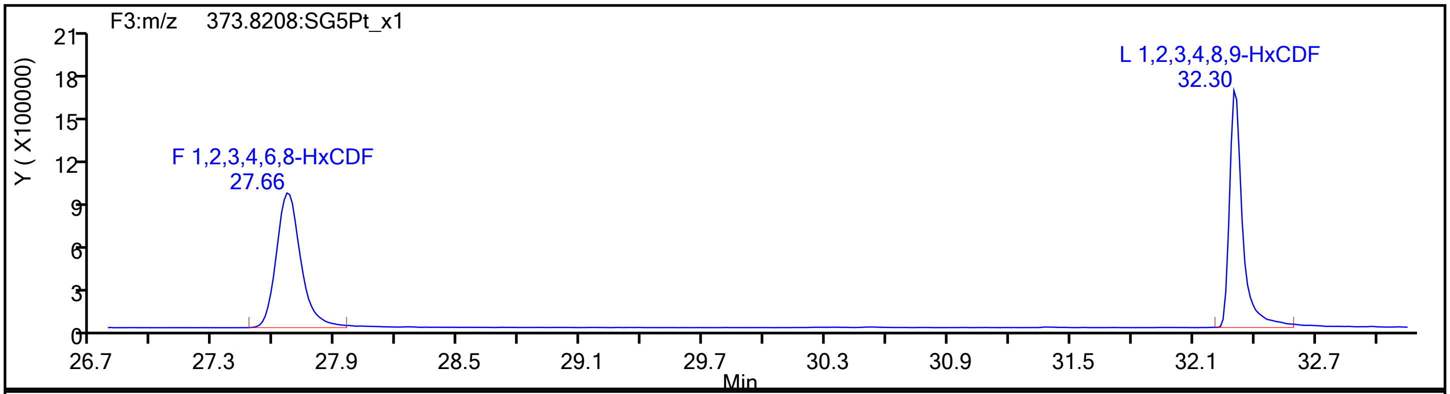

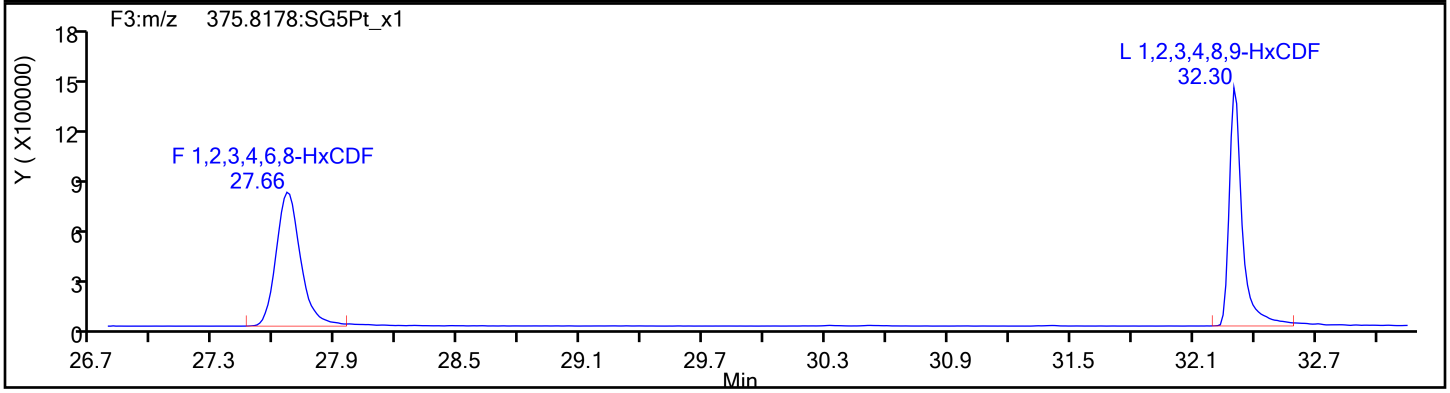

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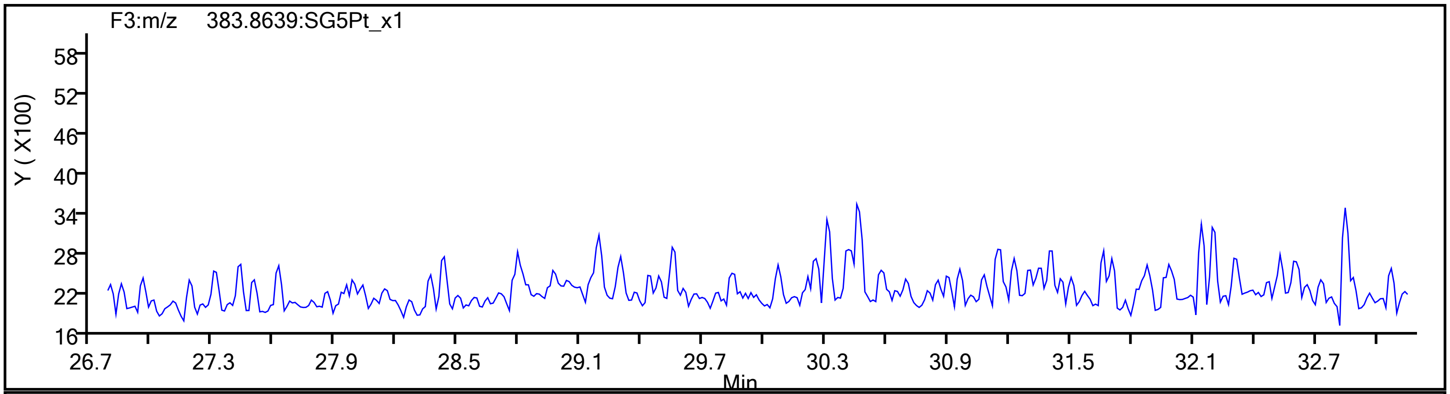

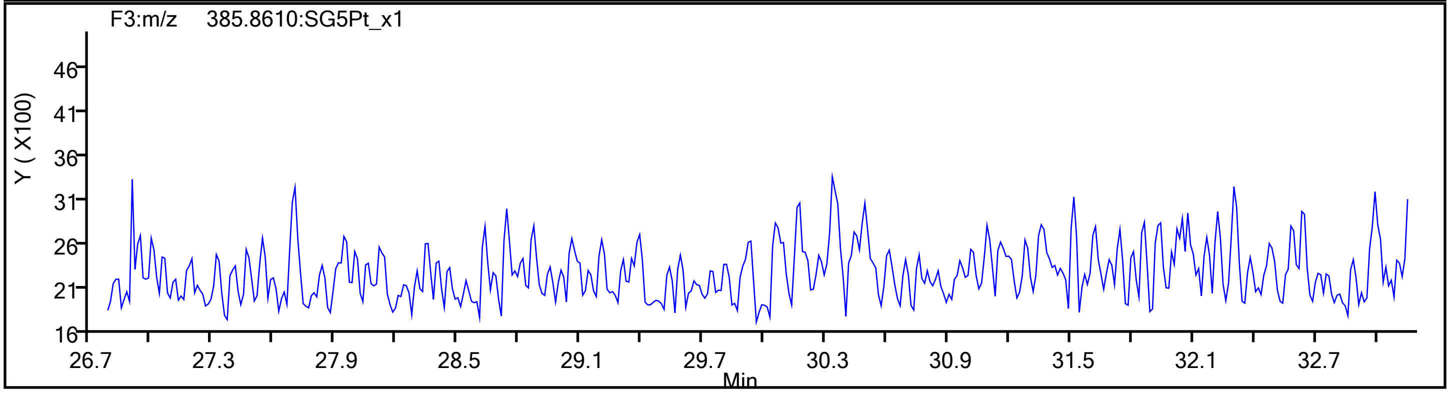

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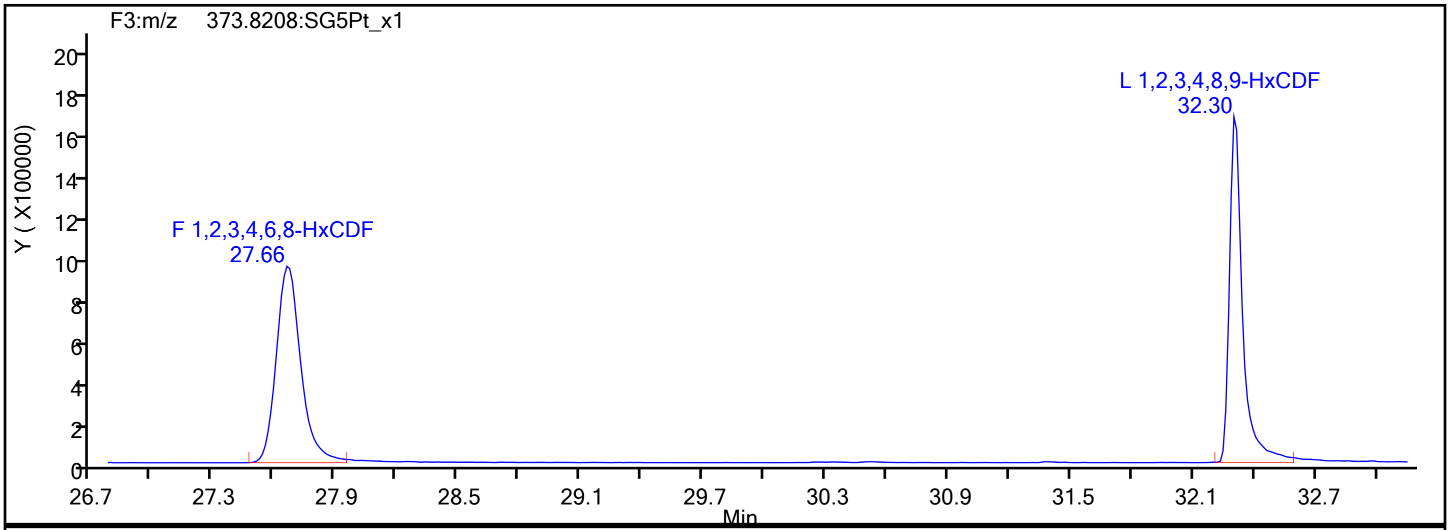

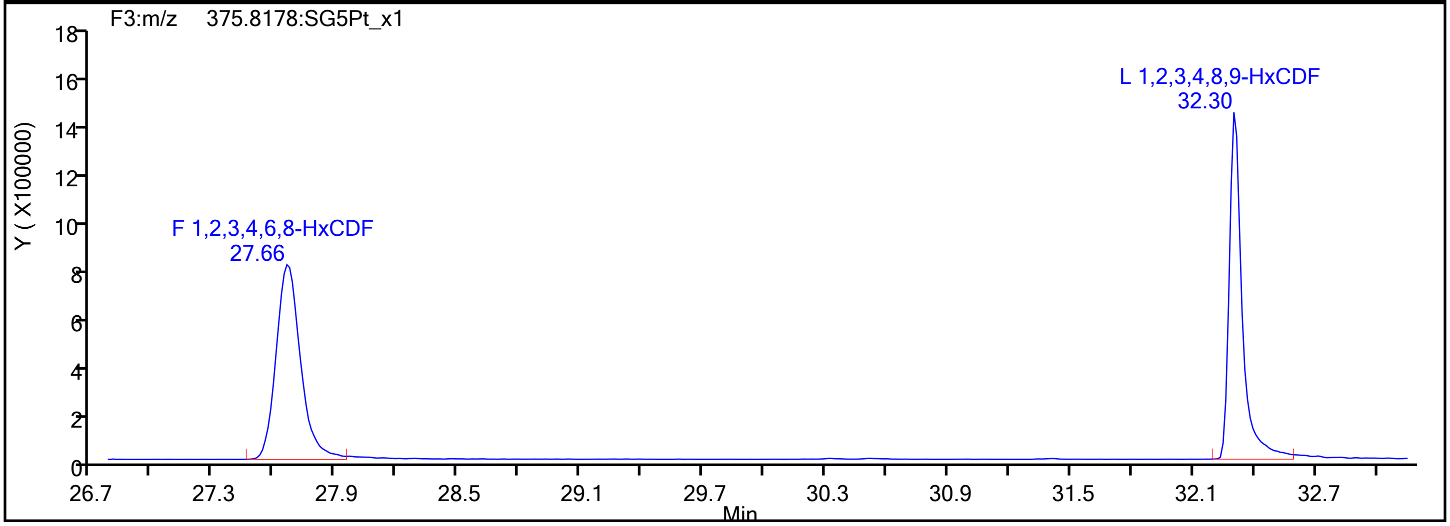

HxCDF Interference Mass

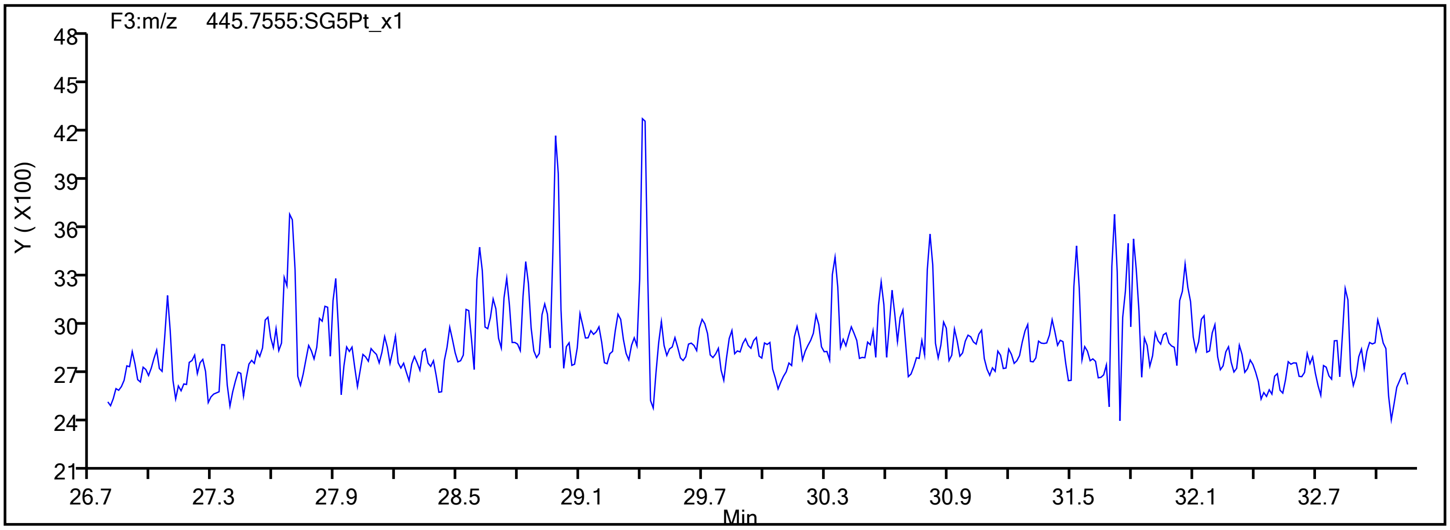

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Eurofins TestAmerica, Sacramento

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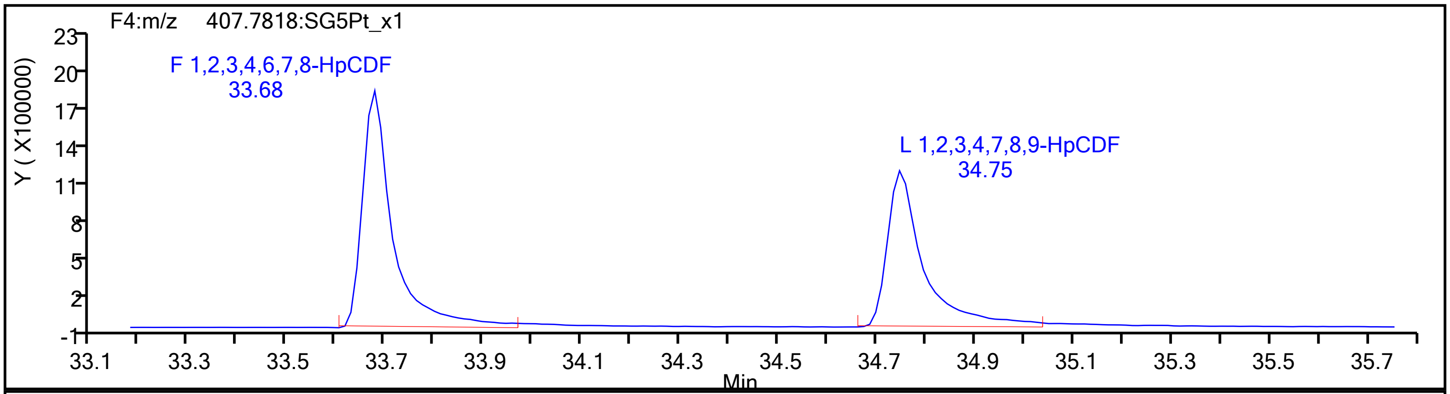

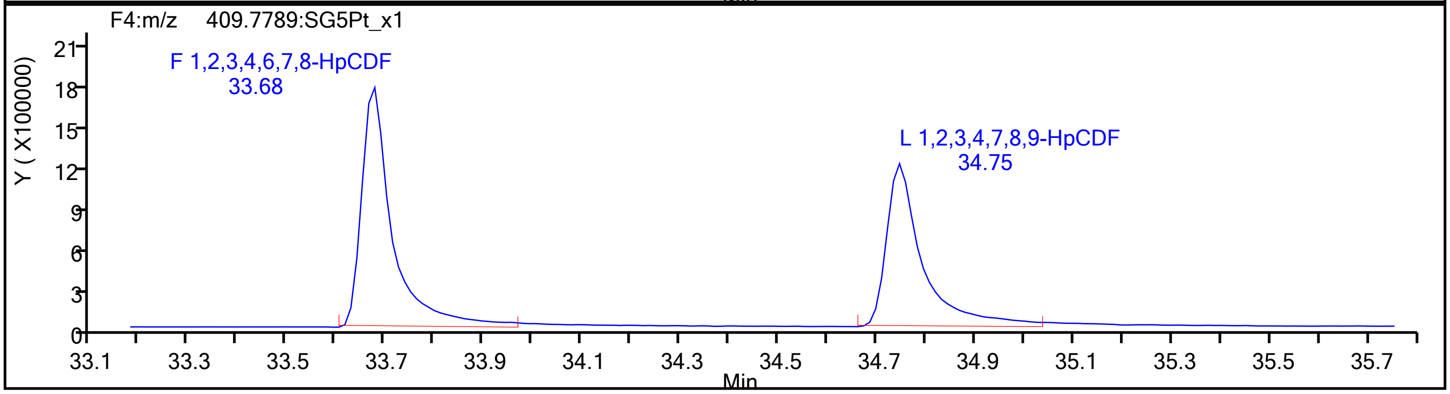

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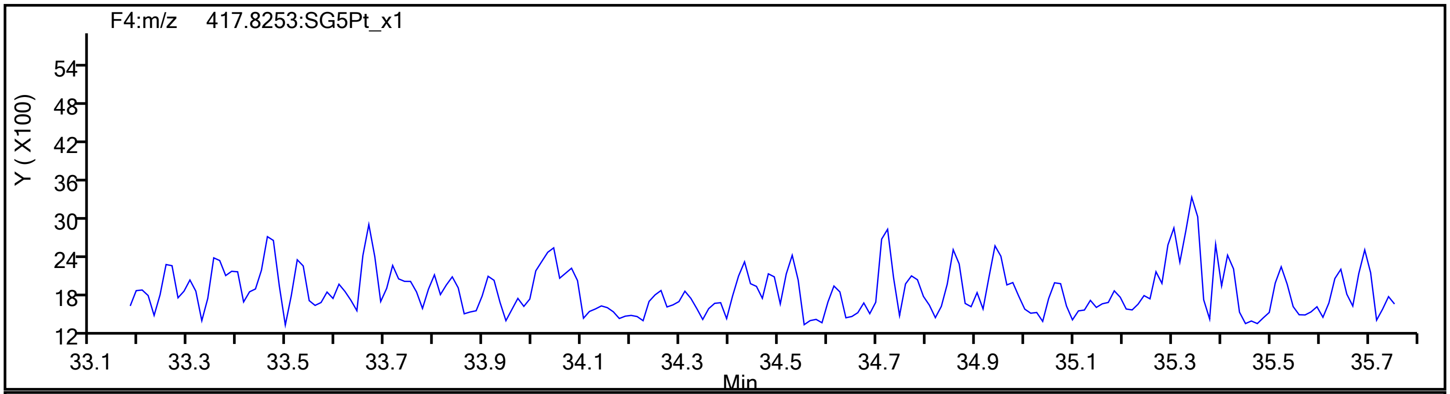

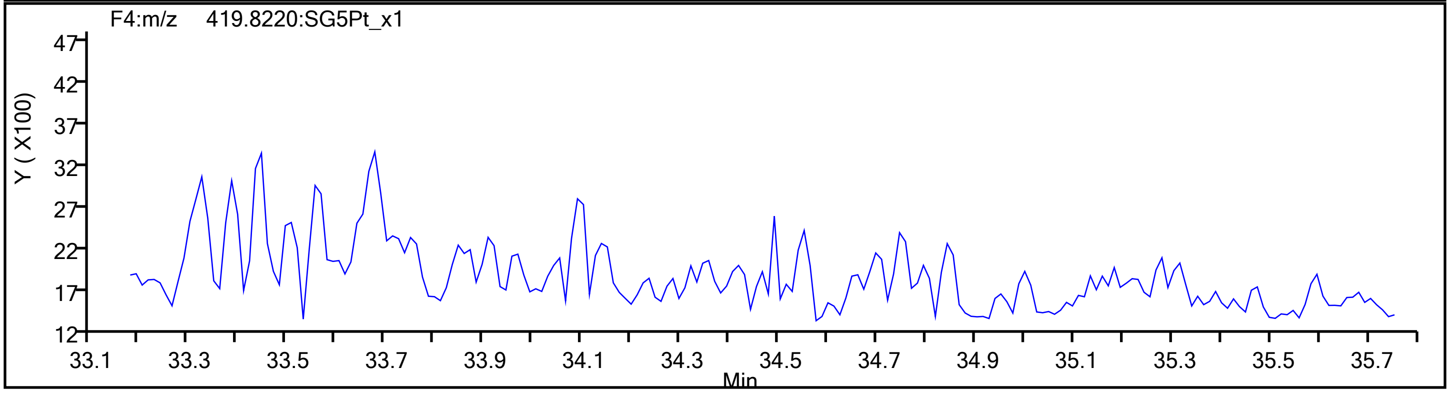

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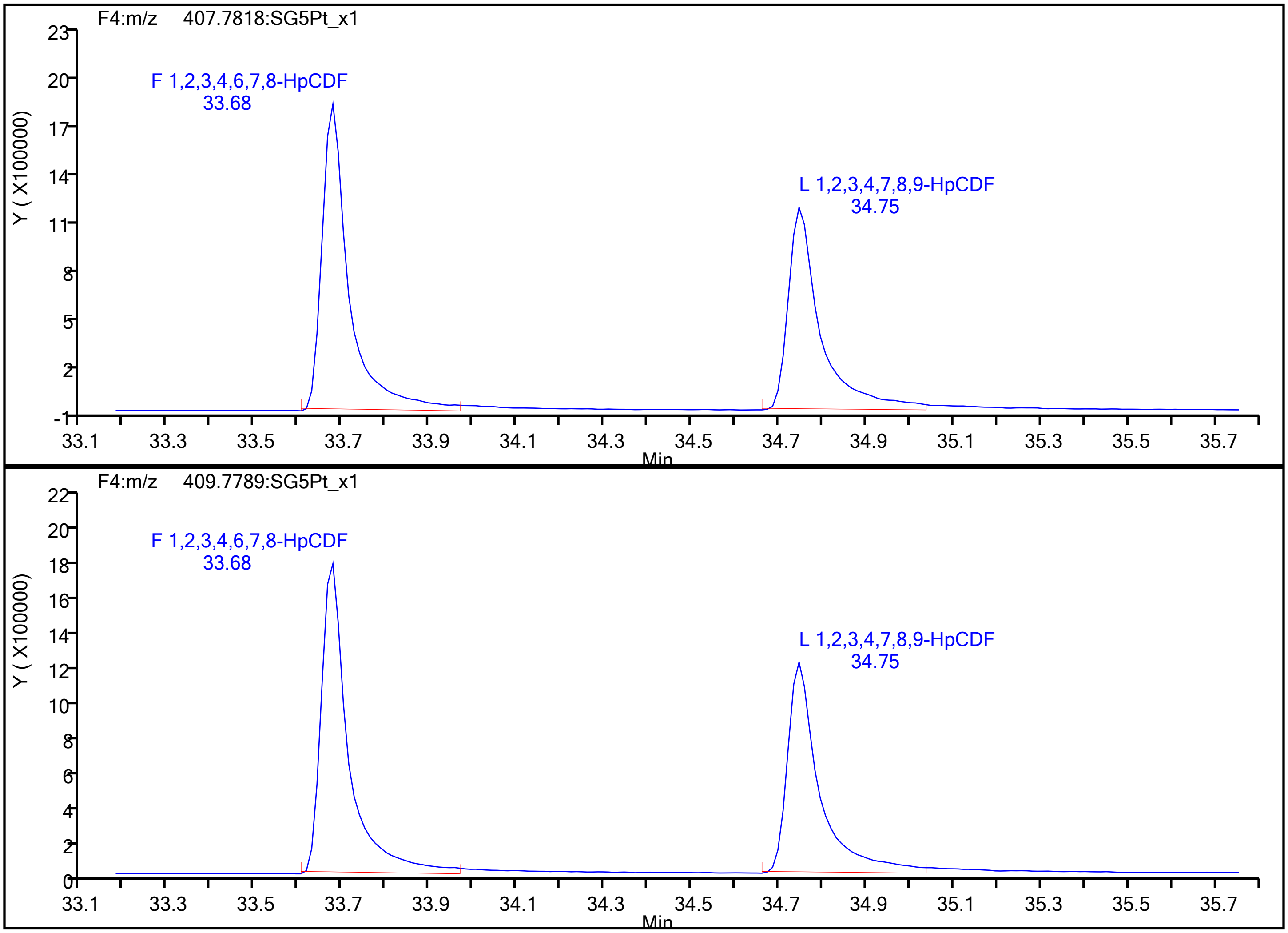

HpCDF Interference Mass

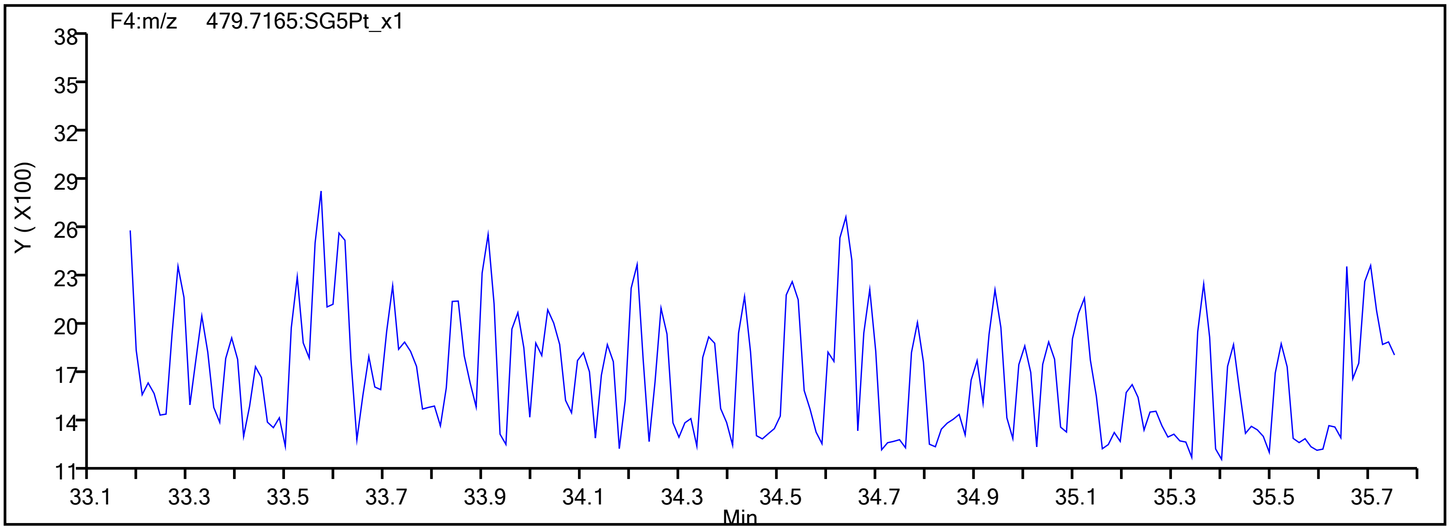

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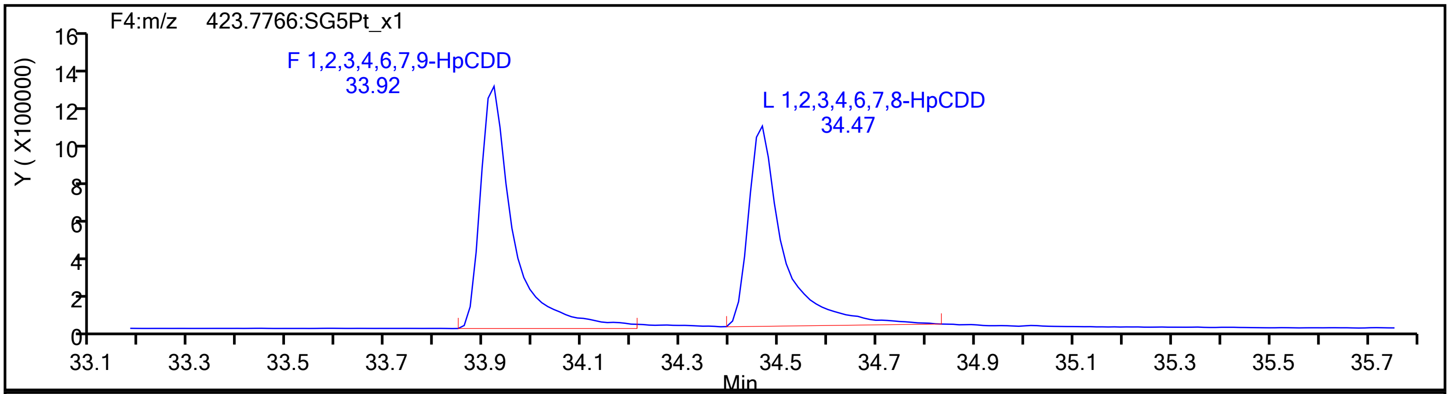

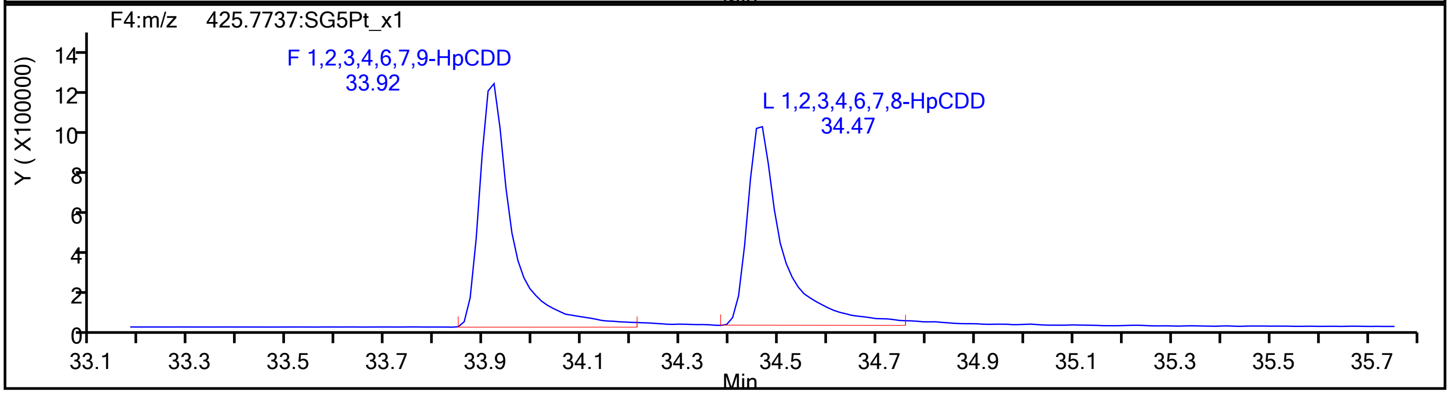

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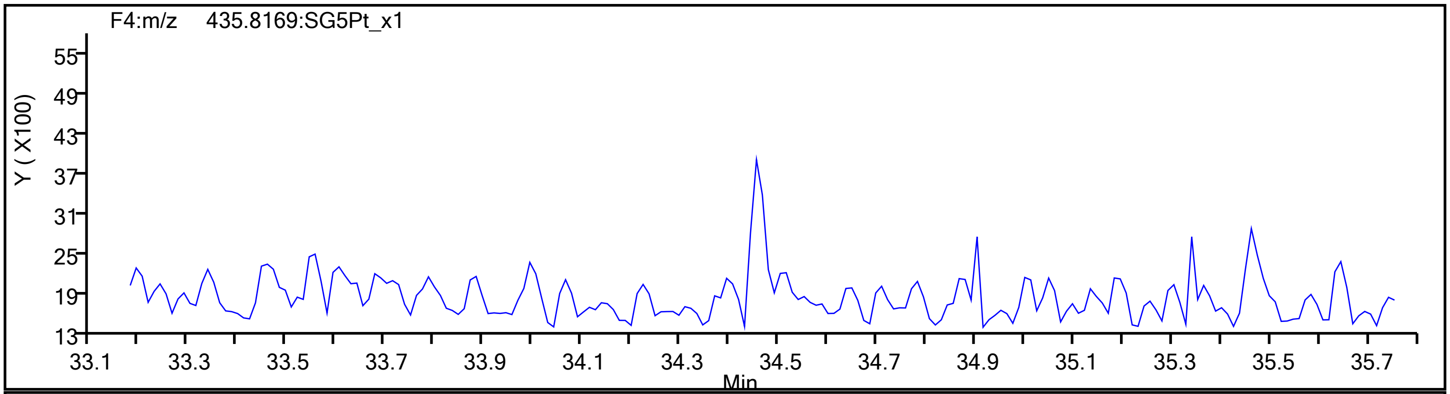

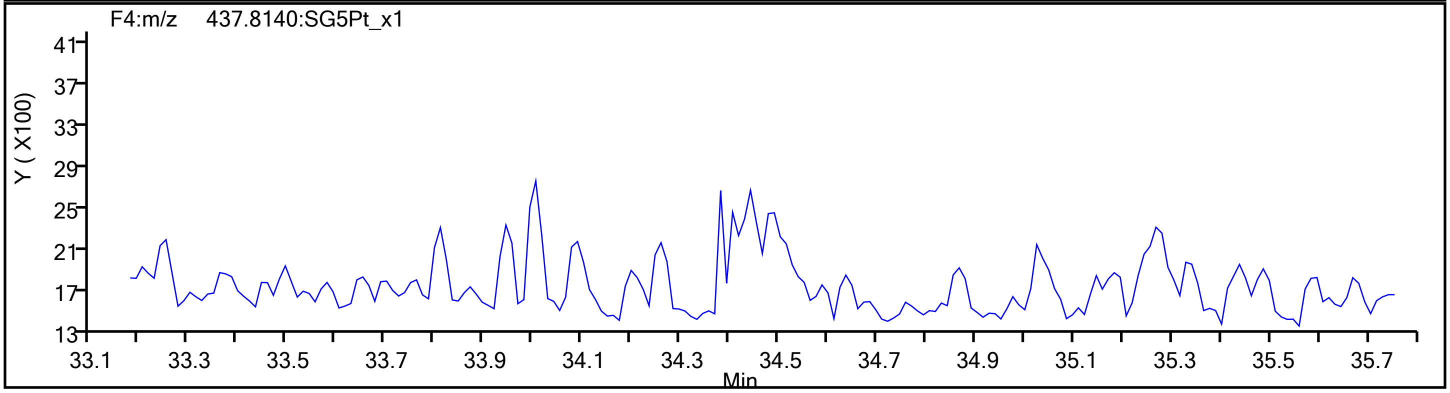

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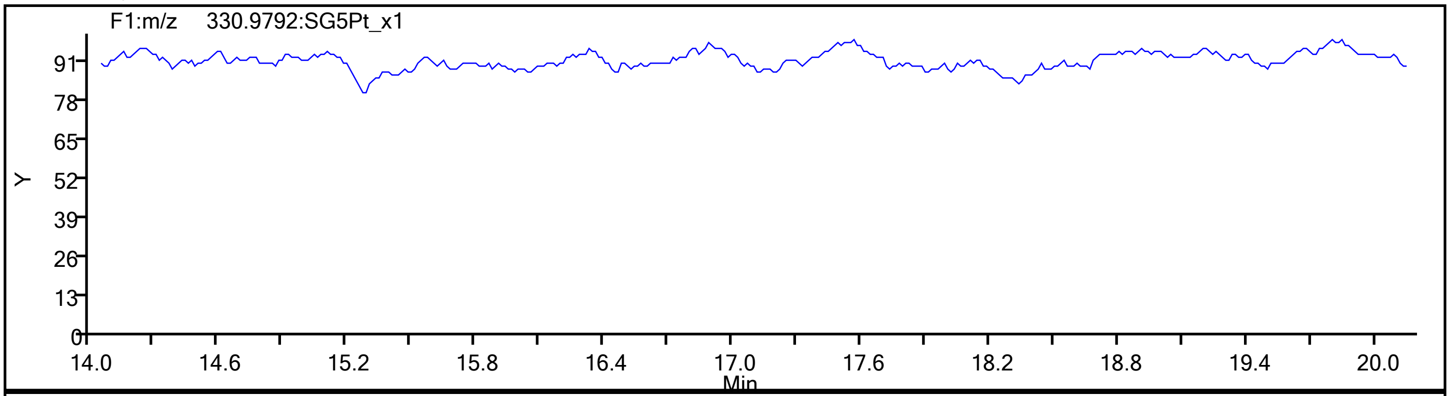

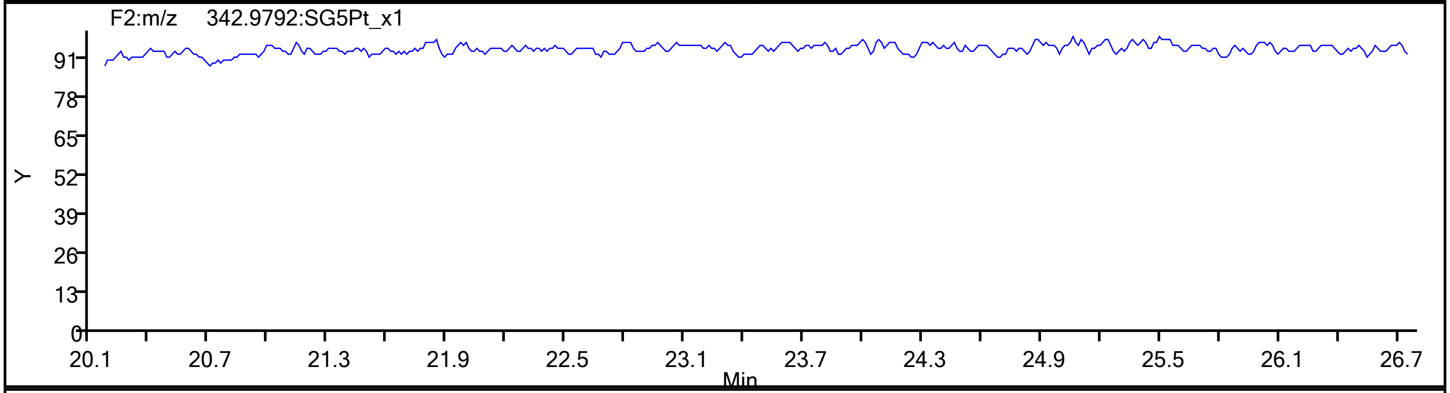

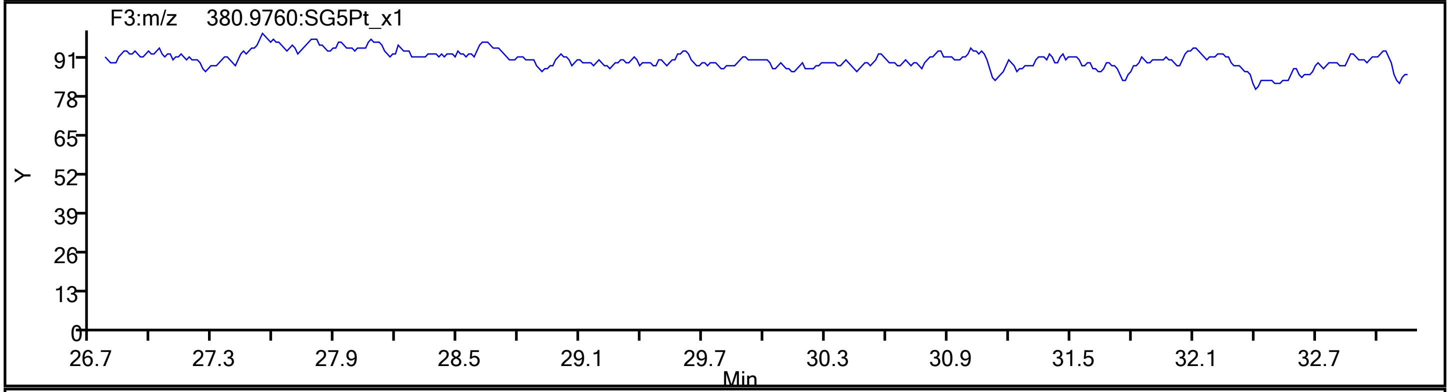

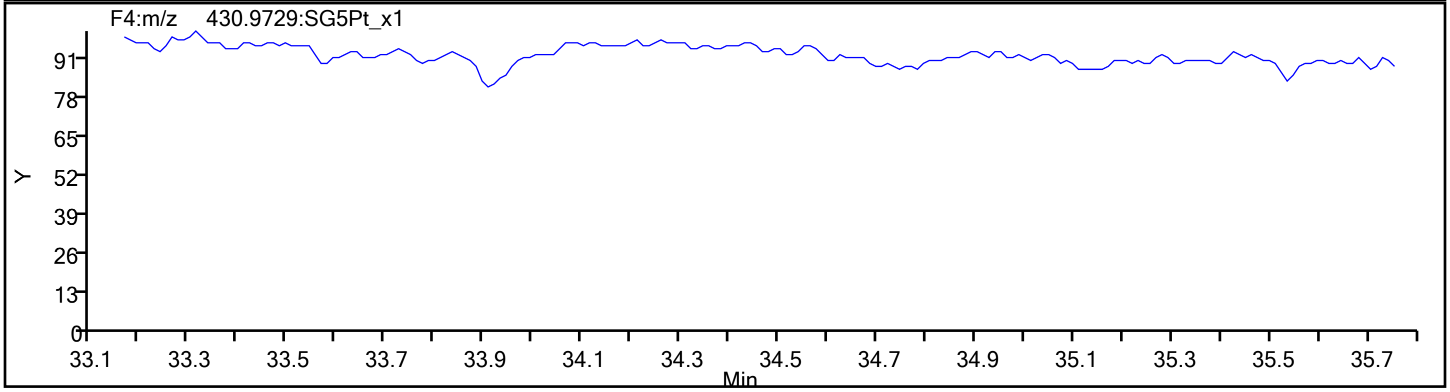

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

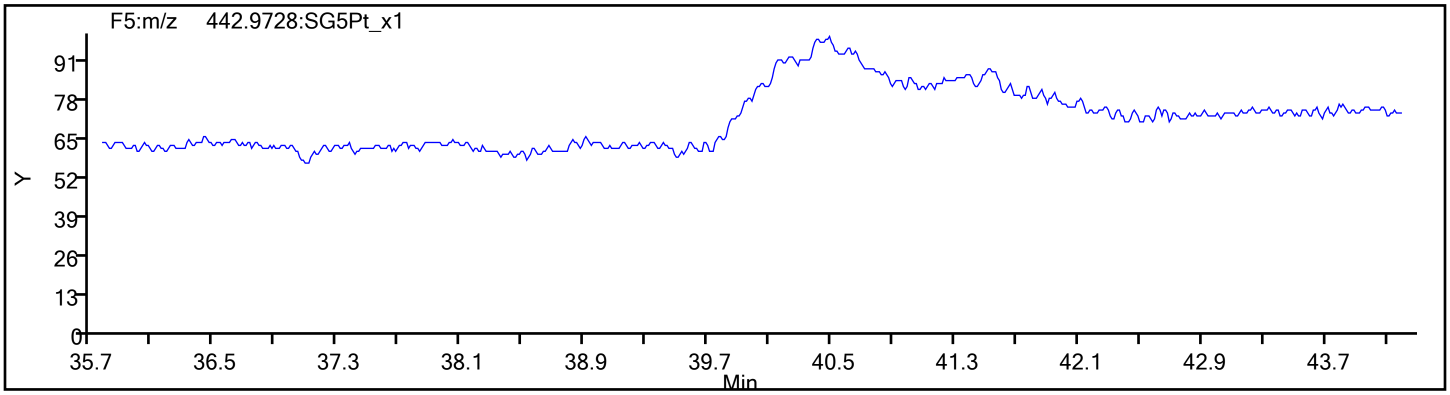

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 19-Aug-2020 10:20:00 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 081920 WDM HRDXNCP_00040
Misc. Info.: 19AU2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Aug-2020 16:15:26 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1028

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.976	11958764	0.75	1.3726					0.00	
2,3,7,8-TCDF	17.007	22450560	0.74	0.9104	82.5	82.5	0.3438	0.3438		
A Non-2,3,7,8-sub-TCDF	16.689	240106	0.77	0.9104	0.9793	0.8821	0.3438	0.8821		RQ
S Total TCDF					83.5	83.4	0.3438	0.3438		RQ
D 13C-2,3,7,8-TCDD	17.657	8657679	0.81	1.0192					0.00	
2,3,7,8-TCDD	17.672	8615865	0.77	1.0745	37.0	37.0	0.1506	0.1506		
A Non-2,3,7,8-sub-TCDD	17.135						0.1506	0.1506		
S Total TCDD					37.0	37.0	0.1506	0.1506		
A F1 PeCDFs	19.547						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.583	85287	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	22.765						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.682						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.328						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.554	7862574	1.04	1.4527						
1,2,3,4,7,8,9-HpCDF	34.624	6390271	1.02	1.0585						
A Non-2,3,7,8-sub-HpCDF	34.089						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.344	5279591	1.04	1.0540						
A Non-2,3,7,8-sub-HpCDD	34.623						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.633	12876616	0.74							
1,3,6,8-TCDD	15.525	9012273	0.76							
2,3,4,7-TCDF	17.007	22450560	0.74							
1,2,3,7-TCDD	17.566	7842326	0.76							
1,2,3,9-TCDD	17.838	9180502	0.76							
1,2,3,9-TCDF	17.838	9388269	0.74							
1,2,8,9-TCDD	18.746	3573121								
1,2,8,9-TCDF	18.746	9853471	0.72							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,3,4,6,8-PeCDF	19.018	13044244	1.56							
1,2,4,7,9-PeCDD	20.734	7093480	1.58							
1,2,3,8,9-PeCDD	24.797	6573534	1.58							
1,2,3,8,9-PeCDF	25.015	7916273	1.58							
1,2,3,4,6,8-HxCDF	27.227	6659723	1.24							
1,2,4,6,7,9-HxCDD	28.757	5749446	1.27							
1,2,3,4,6,7-HxCDD	31.819	5679027	1.24							
1,2,3,4,8,9-HxCDF	32.138	6340800	1.23							
1,2,3,4,6,7,9-HpCDD	33.797	6115104	1.05							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 19-Aug-2020 10:20:00 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 081920 WDM HRDXNCP_00040
Misc. Info.: 19AU2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Aug-2020 16:15:26 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1028

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.976	16.976	0	1.000	5142405	1330753	3835	9587	347		
317.9389	16.976	16.976	0	1.000	6816359	1769867	2265	5662	781	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.007	17.007	0	1.002	9527876	2224796	4473	11182	497		
305.8987	16.992	17.007	-1	1.001	12922684	2993746	5233	13082	572	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	19.033	16.689	140	1.121	104453	21250	4473	11182	5		
305.8987	19.033	16.689	140	1.121	162107	26267	5233	13082	5	0.64(0.65-0.89)	
	Empc Correction				135653	27597	5233	13082	5		
13C-2,3,7,8-TCDD											
331.9368	17.657	17.657	0	1.000	3863365	952626	2829	7072	337		
333.9339	17.657	17.657	0	1.000	4794314	1179240	1419	3547	831	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.672	17.672	0	1.001	3750580	899402	1433	3582	628		
321.8936	17.672	17.672	0	1.001	4865285	1178852	2016	5040	585	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						1433	3582			
321.8936	17.135						2016	5040			
A F1 PeCDFs											
339.8597	19.547						367	917			
341.8567	19.547						1179	2947			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	21.852	22.583	-44	1.000	36984	6204	794	1985	8		
341.8567	21.838	22.583	-45	1.000	18824	2669	736	1840	4	1.96(1.32-1.78)	
339.8597	22.397	22.583	-11	1.000	31813	4697	794	1985	6		
341.8567	22.384	22.583	-12	1.000	14622	2792	736	1840	4	2.18(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.765						972	2430			
357.8516	22.765						581	1452			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.682						1090	2725			
375.8178	29.682						824	2060			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.328						1268	3170			
391.8127	30.328						1093	2732			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.554	33.554	0	1.000	4004177	1157397	5866	14665	197		
409.7789	33.554	33.554	0	1.000	3858397	1159120	4784	11960	242	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.624	34.624	0	1.000	3220649	845975	5866	14665	144		
409.7789	34.624	34.624	0	1.000	3169622	829038	4784	11960	173	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.089						5866	14665			
409.7789	34.089						4784	11960			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.344	34.344	0	1.000	2693776	691760	4544	11360	152		
425.7737	34.344	34.344	0	1.000	2585815	675575	4015	10037	168	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.623						4544	11360			
425.7737	34.623						4015	10037			
1,3,6,8-TCDF											
303.9016	14.633	14.633	0		5463540	1691513	4473	11182	378		
305.8987	14.633	14.633	0		7413076	2321466	5233	13082	444	0.74(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.525	15.525	0		3883046	1177952	1433	3582	822		
321.8936	15.525	15.525	0		5129227	1539362	2016	5040	764	0.76(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.007	17.007	0		9527876	2224796	4473	11182	497		
305.8987	16.992	17.007	-1		12922684	2993746	5233	13082	572	0.74(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.566	17.566	0		3379249	840874	1433	3582	587		
321.8936	17.566	17.566	0		4463077	1104235	2016	5040	548	0.76(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	17.838	17.838	0		3969171	933817	1433	3582	652		
321.8936	17.838	17.838	0		5211331	1221445	2016	5040	606	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	17.838	17.838	0		3990308	945998	4473	11182	211		
305.8987	17.823	17.838	-1		5397961	1294076	5233	13082	247	0.74(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.746	18.746	0		3573121	792207	1433	3582	553		
1,2,8,9-TCDF											
303.9016	18.746	18.746	0		4128670	958461	4473	11182	214		
305.8987	18.746	18.746	0		5724801	1305350	5233	13082	249	0.72(0.65-0.89)	

Report Date: 19-Aug-2020 16:15:26 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	19.018	19.018	0		7945416	1755426	367	917	4783		
341.8567	19.018	19.018	0		5098828	1136167	1179	2947	964	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	20.734	20.734	0		4343673	791200	972	2430	814		
357.8516	20.734	20.734	0		2749807	492062	581	1452	847	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	24.797	24.797	0		4029696	584962	972	2430	602		
357.8516	24.811	24.797	1		2543838	367914	581	1452	633	1.58(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.015	25.015	0		4843647	689215	794	1985	868		
341.8567	25.015	25.015	0		3072626	449763	736	1840	611	1.58(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.227	27.227	0		3680188	495359	1090	2725	454		
375.8178	27.213	27.227	-1		2979535	389648	824	2060	473	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	28.757	28.757	0		3213172	369900	1268	3170	292		
391.8127	28.744	28.757	-1		2536274	298884	1093	2732	273	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.819	31.819	0		3144210	725811	1268	3170	572		
391.8127	31.806	31.819	-1		2534817	590469	1093	2732	540	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.138	32.138	0		3499663	853962	1090	2725	783		
375.8178	32.138	32.138	0		2841137	702888	824	2060	853	1.23(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.797	33.797	0		3134291	904320	4544	11360	199		
425.7737	33.797	33.797	0		2980813	860169	4015	10037	214	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 19-Aug-2020 16:15:26 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	19-Aug-2020 10:20:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	405028	Lims Sample ID:	1

Non-2,3,7,8-sub-TCDF, RT: 16.689

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.910	D 13C-2,3,7,8-TCDF	40.000	11958764	3100620

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.910		40.000	11958764	3100620

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.033	104453	21250	162107	26267	0.9793	0.64	RQ
19.033	104453	21250	135653	27597	0.8821		Empc Correction
Signal Totals:							
	104453	21250	135653	27597			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	266560	47517				0.64	RQ
	240106	48847					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.9793 = (266560 * 40.000) / (11958764 * 0.910)
Empc Amount: 0.8821 = (240106 * 40.000) / (11958764 * 0.910)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	19-Aug-2020 10:20:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	405028	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 22.583

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994				
2,3,4,7,8-PeCDF	0.812				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.852	36984	6204	18824	2669		1.96	R
22.397	31813	4697	14622	2792		2.18	R
Signal Totals:							
	68797	10901	33446	5461			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	102243	16362				2.06	RQ
	85287	13924					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (102243 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (85287 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 19-Aug-2020 16:15:27
Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Injection Date: 19-Aug-2020 10:20:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

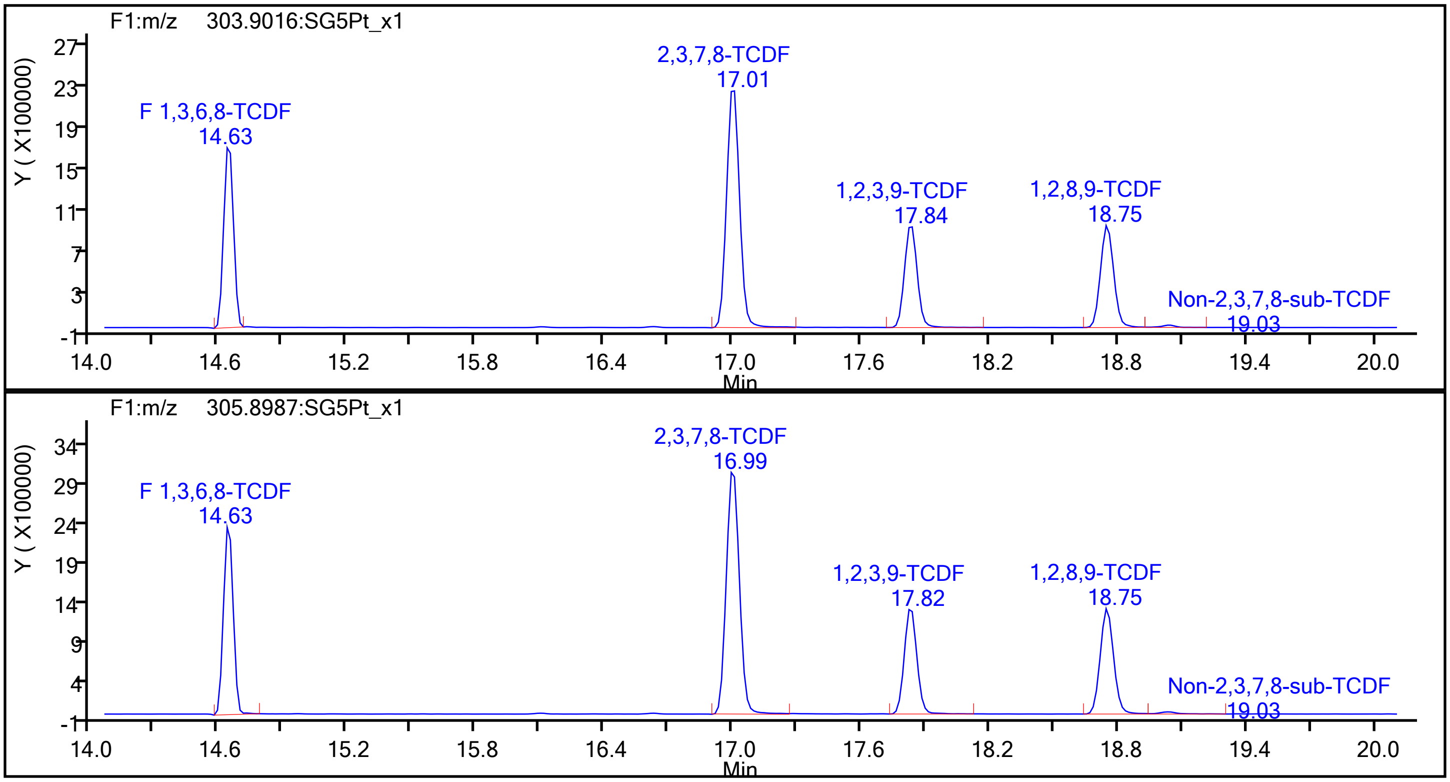

TCDF Standards

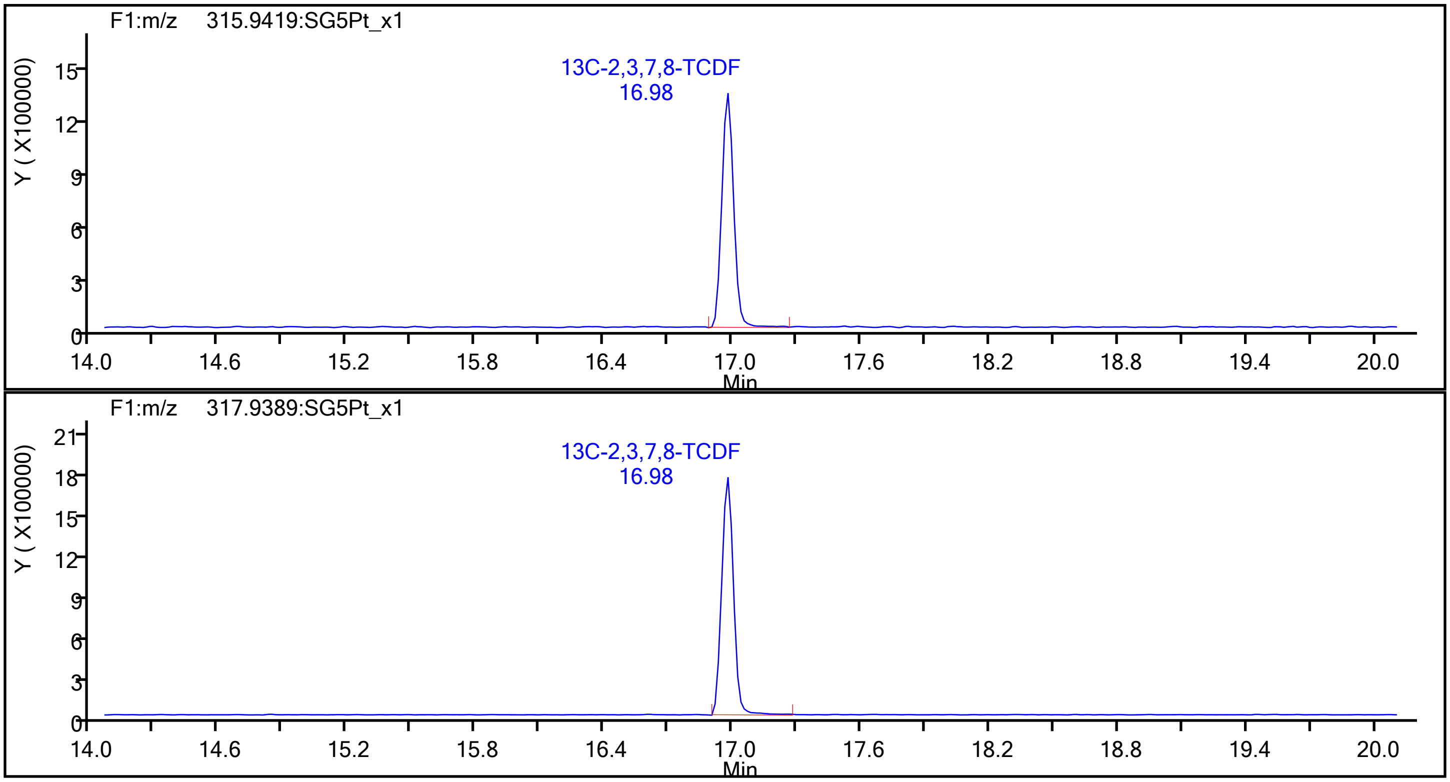

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

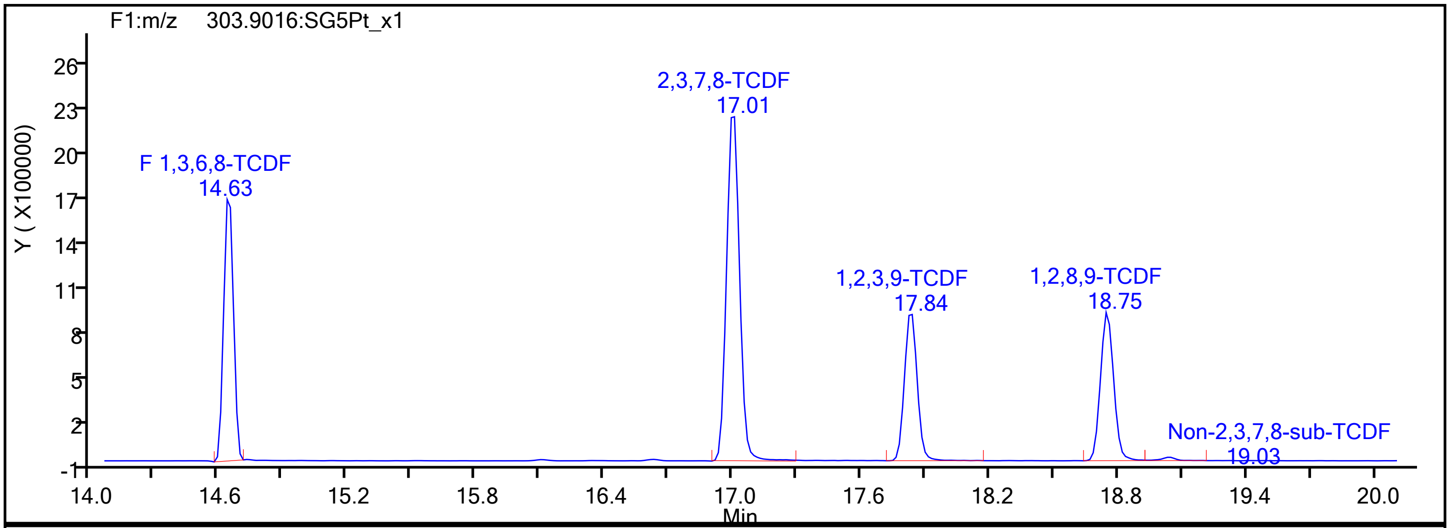

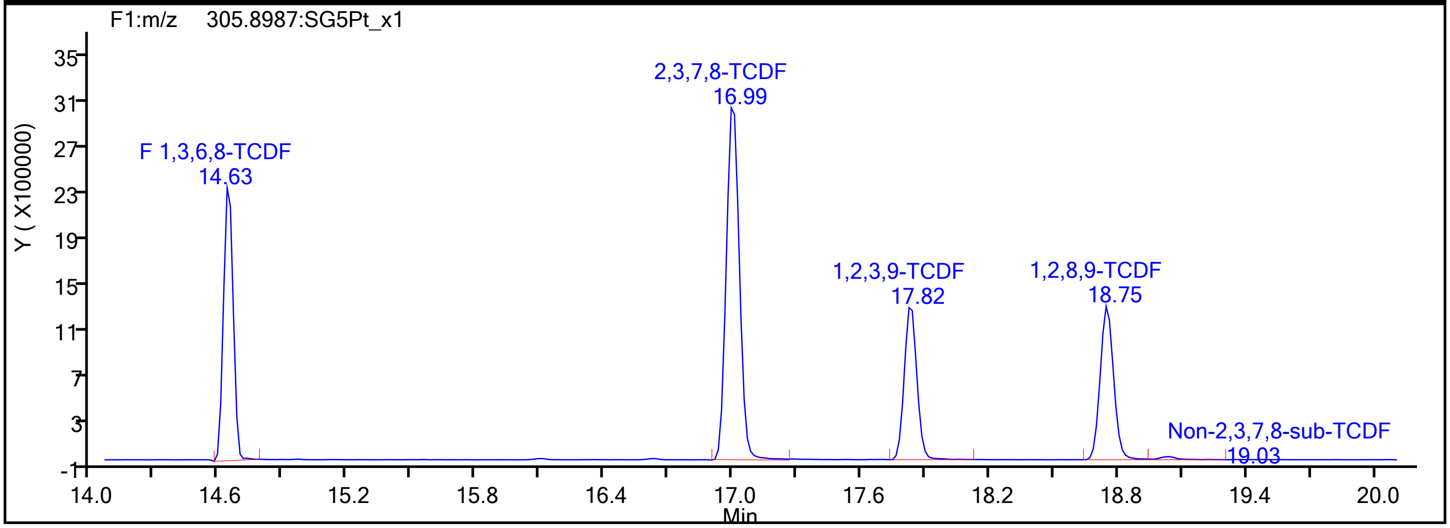

TCDF Interference Mass

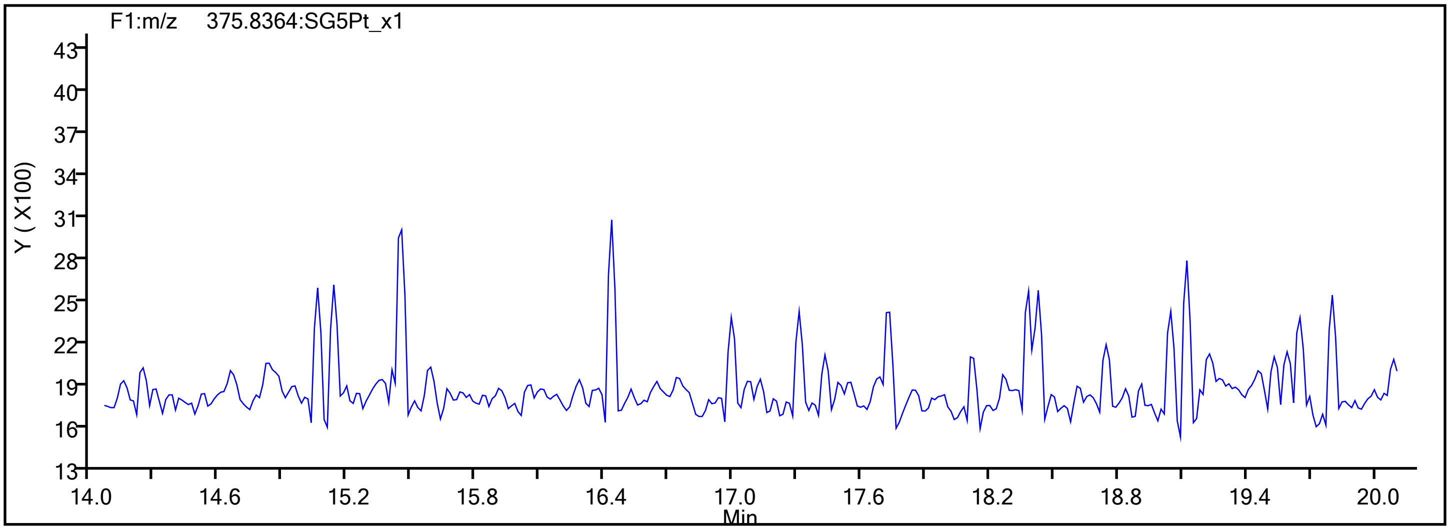

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Injection Date: 19-Aug-2020 10:20:00 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

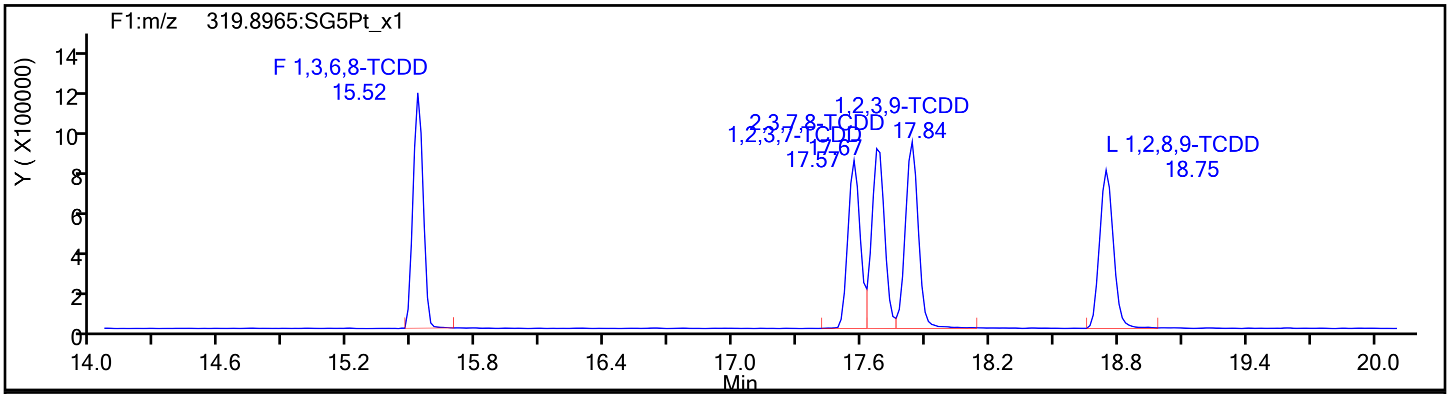

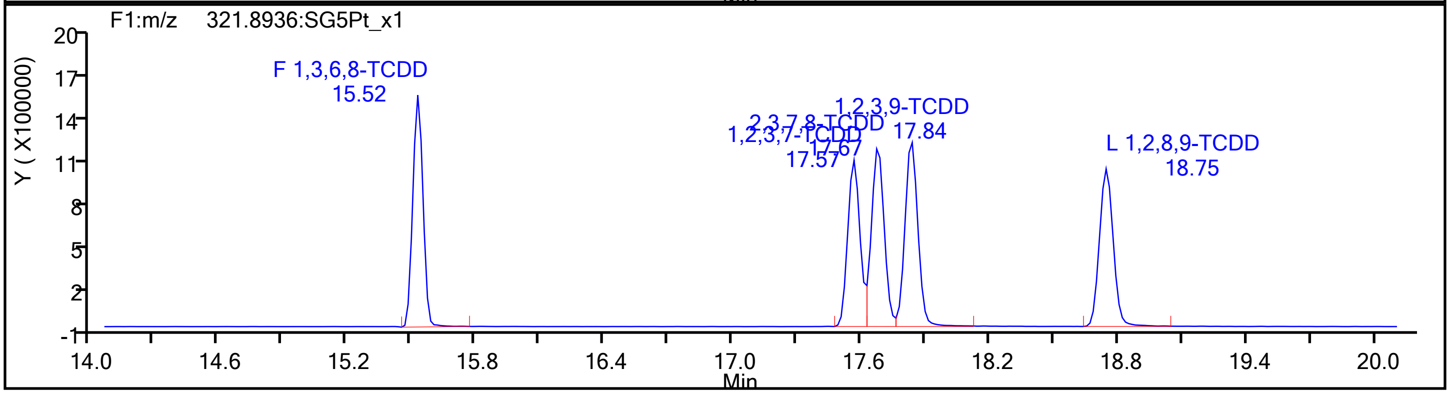

TCDD Standards

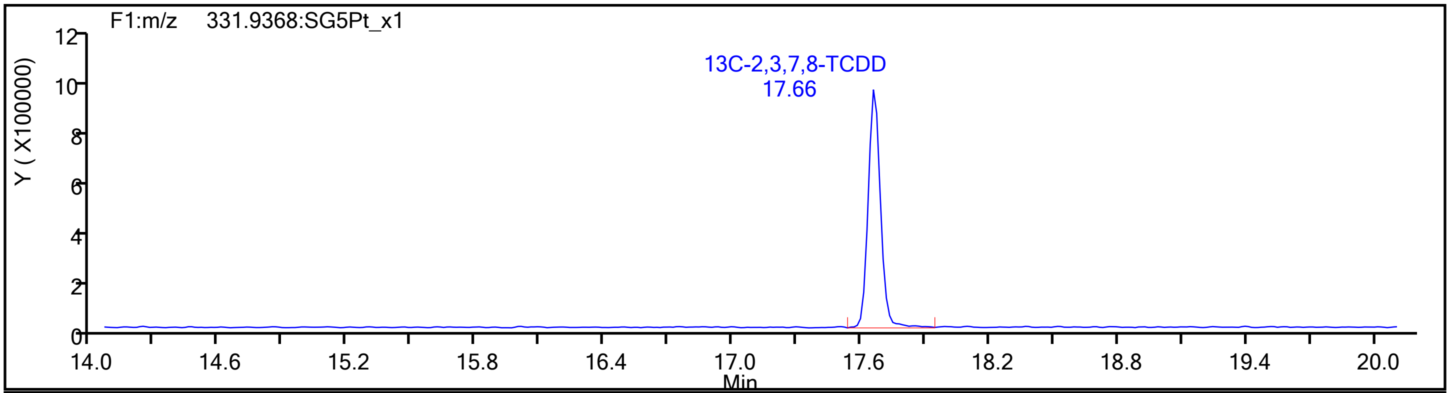

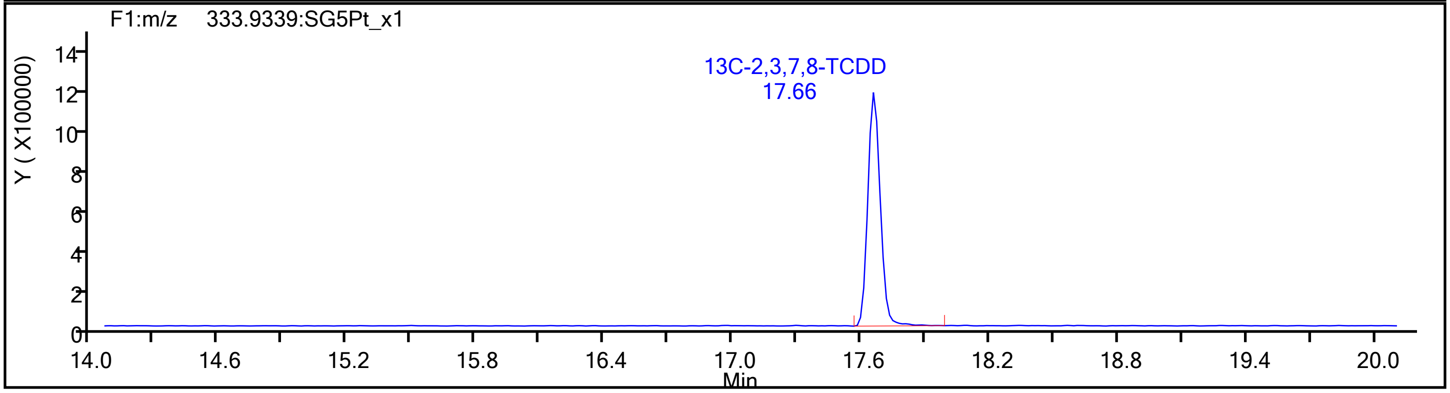

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

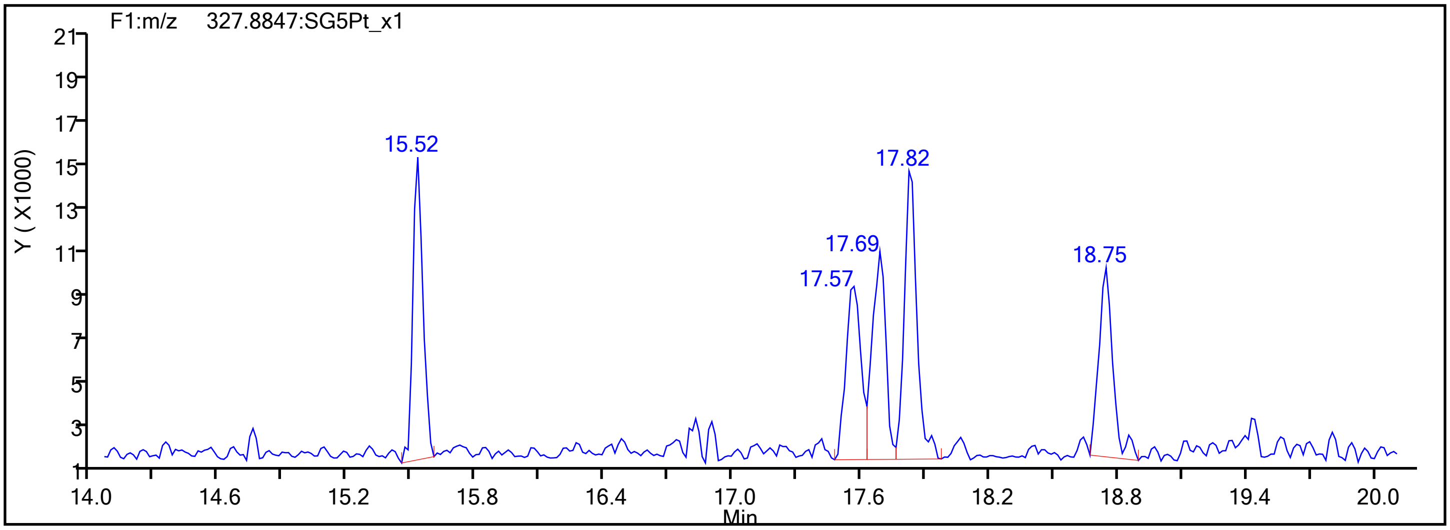

37Cl4-TCDD Standards

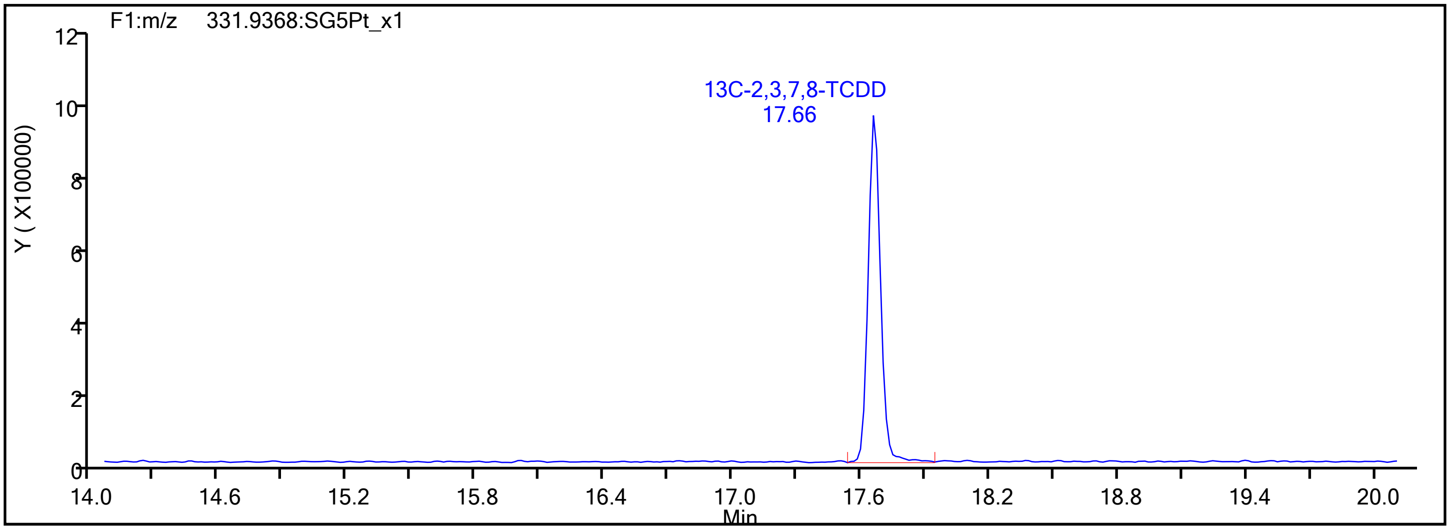

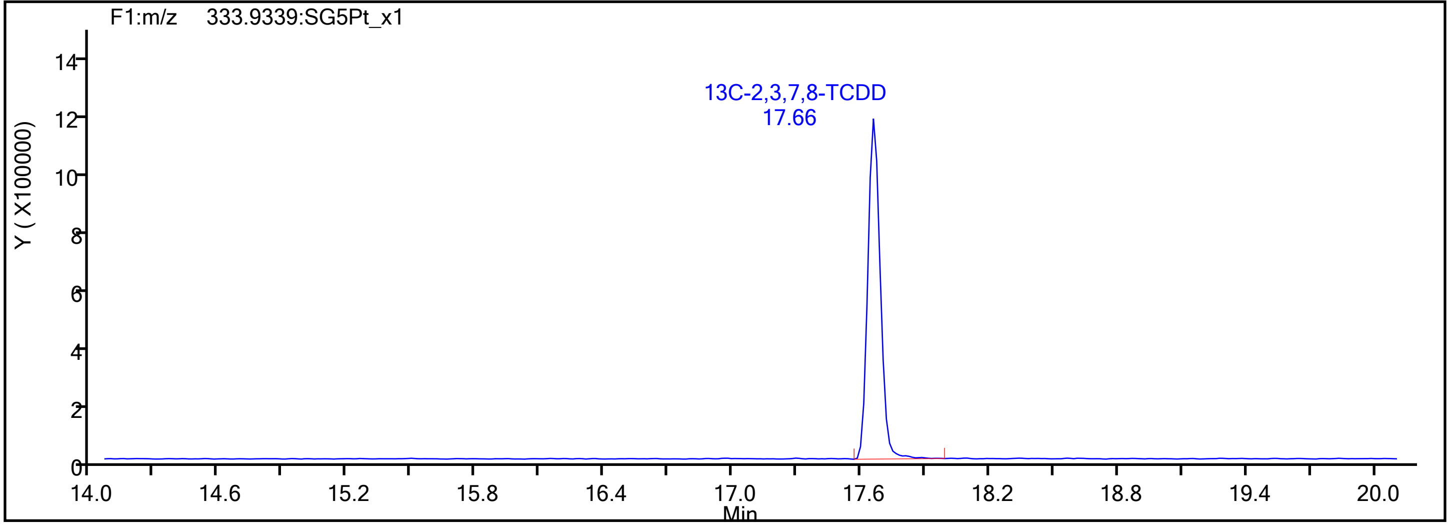

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

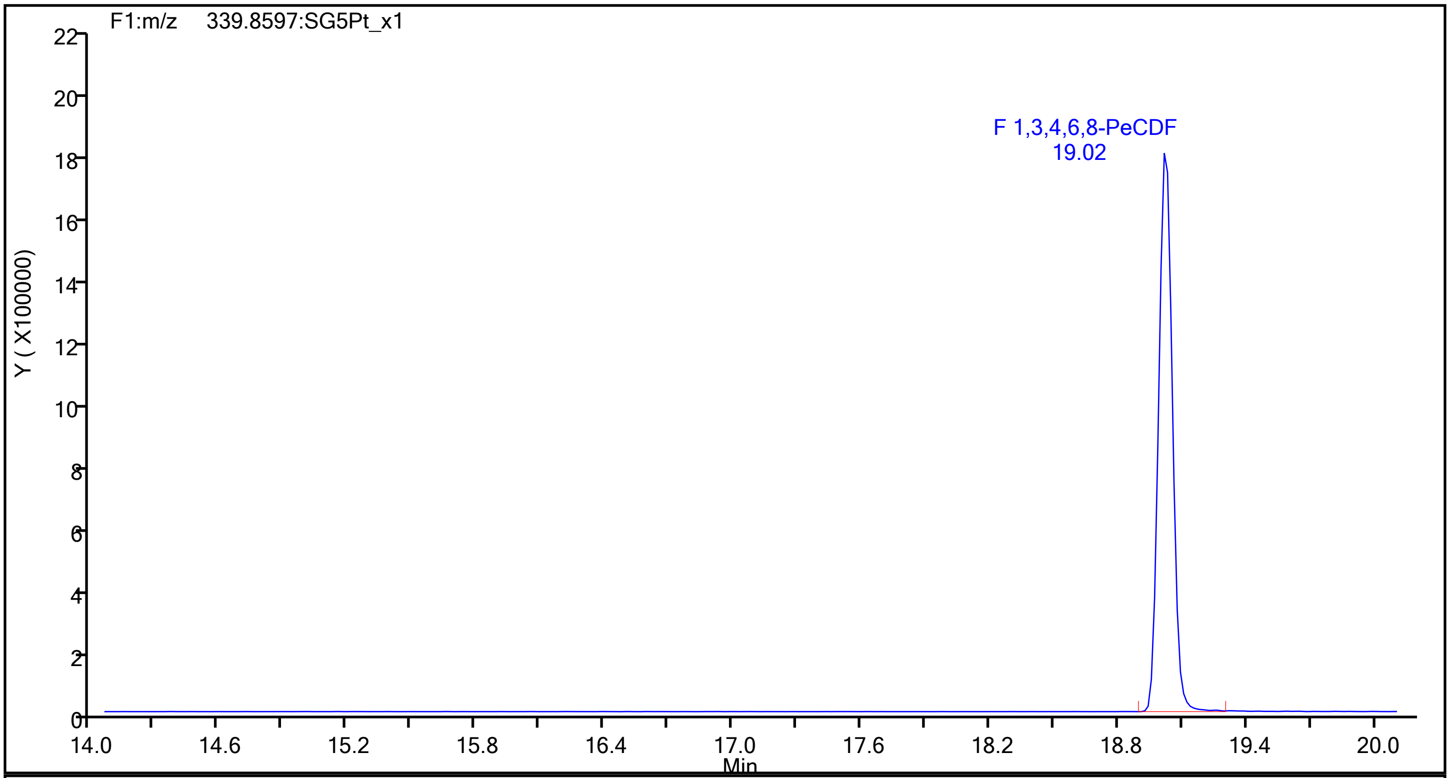

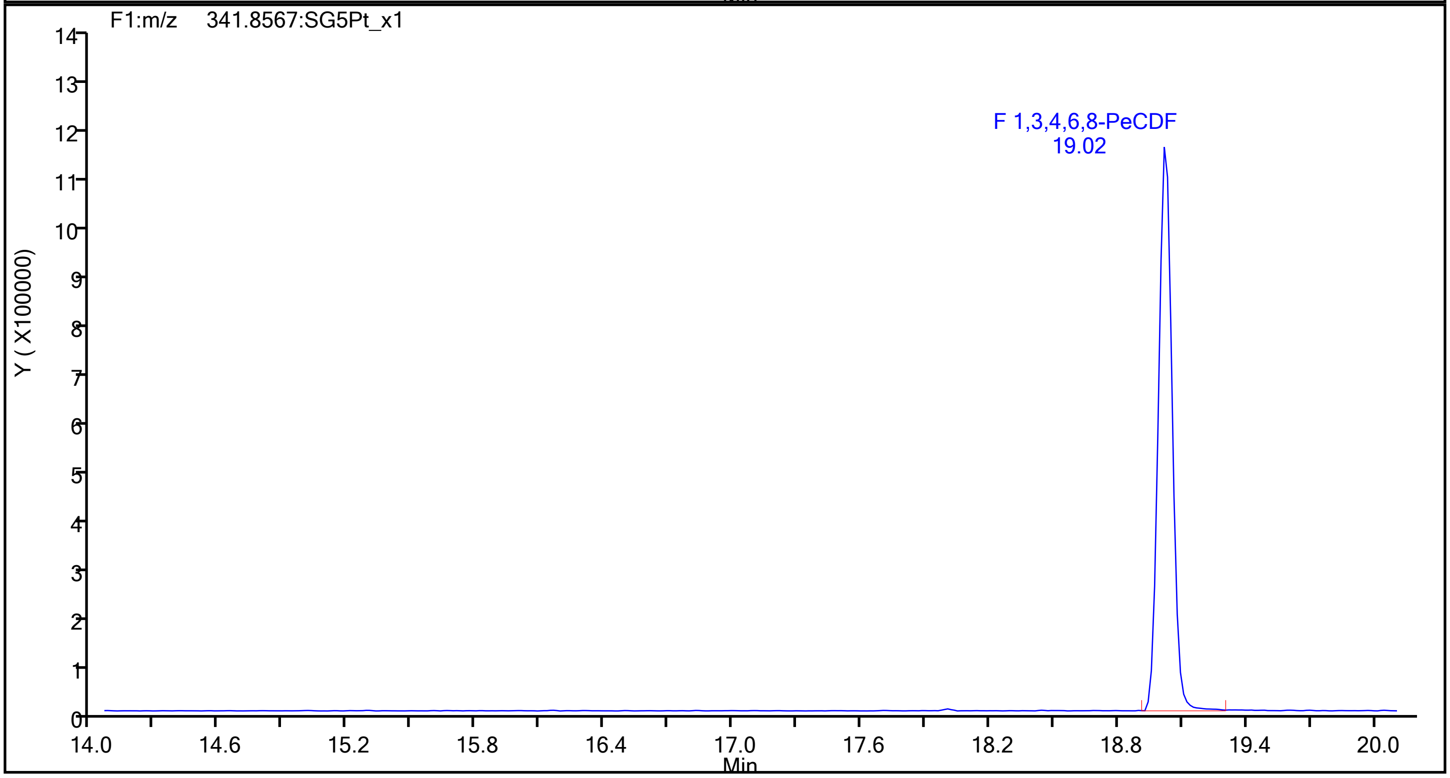

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

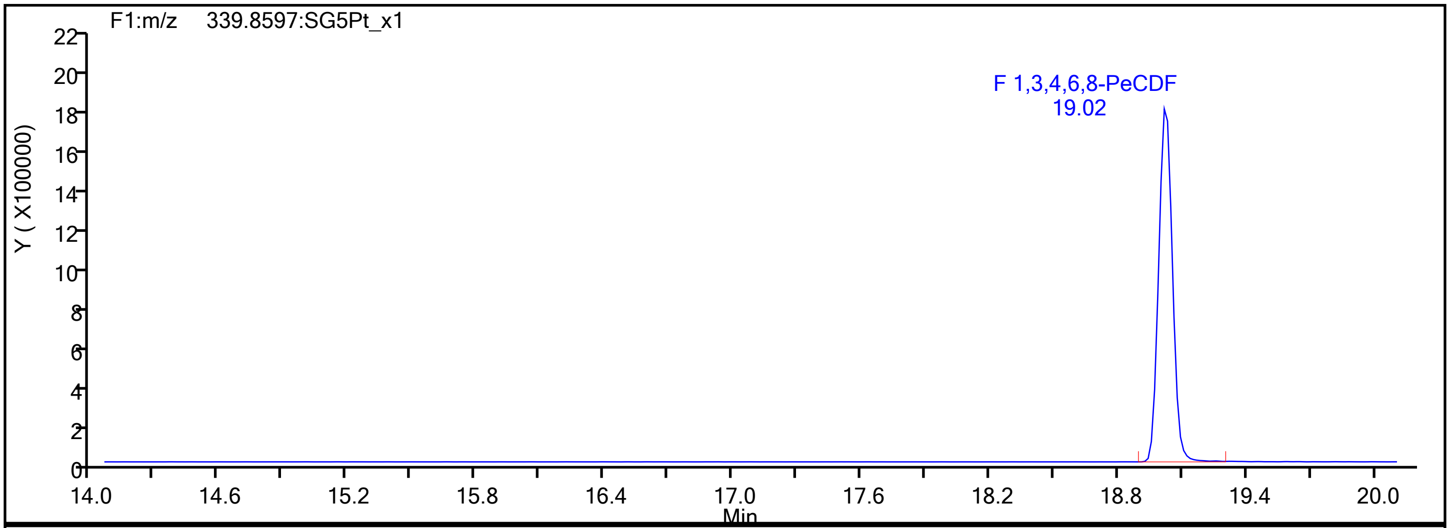

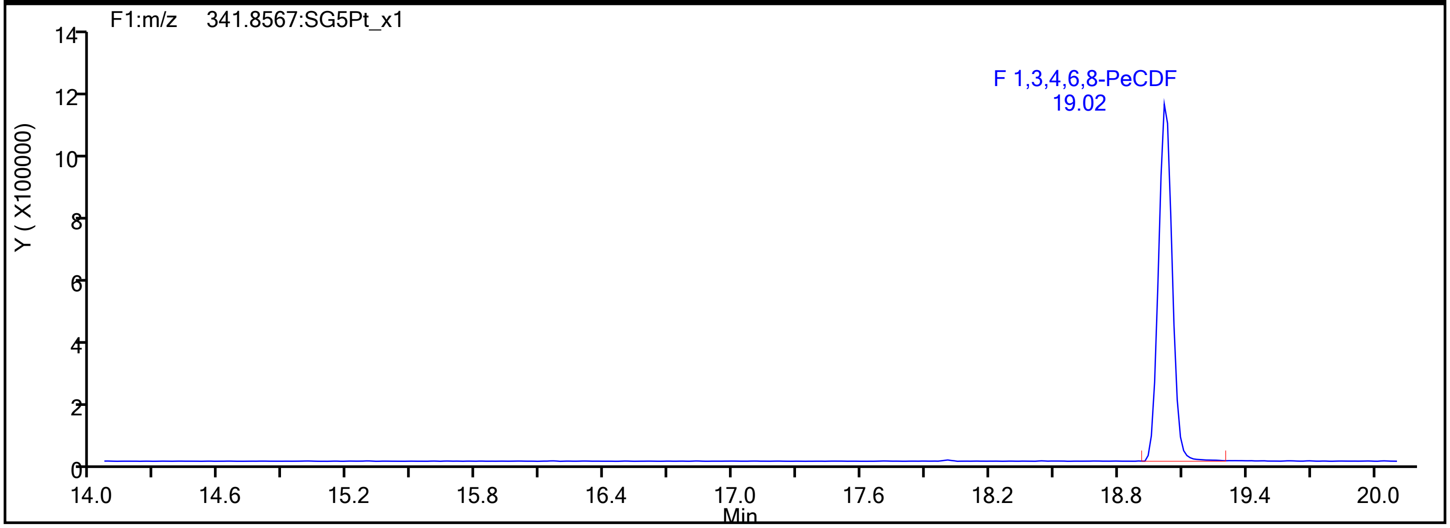

F1 PeCDFs Interference Mass

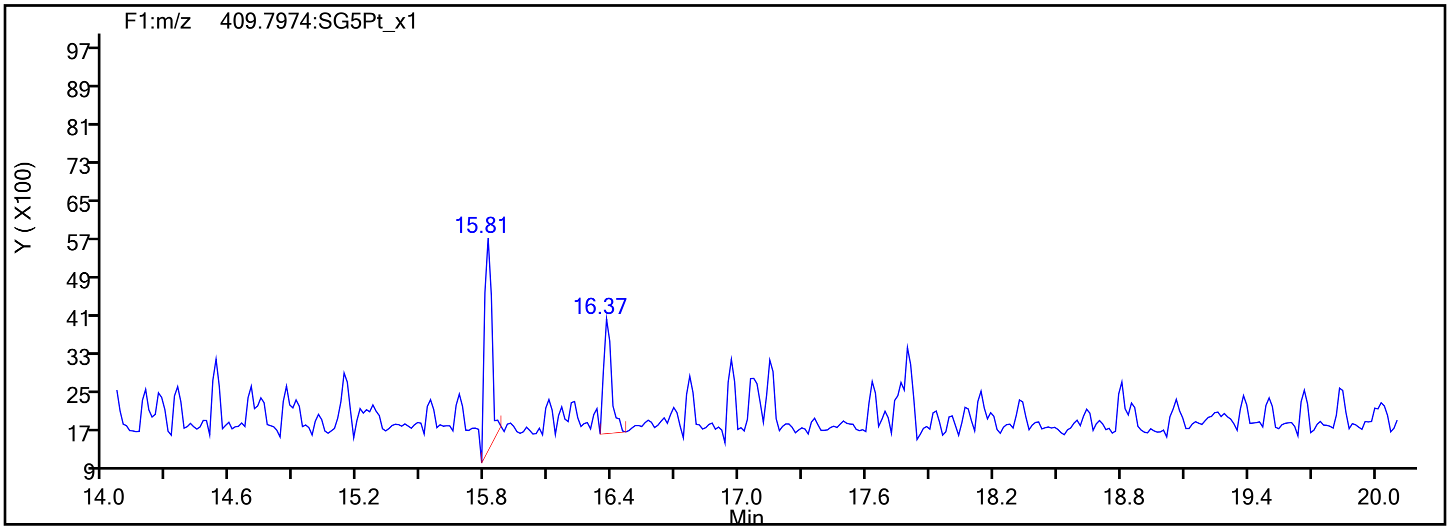

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Injection Date: 19-Aug-2020 10:20:00
Injection Vol: 2.0 ul
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Operator ID: ALM
Method: Dioxin_10D5
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Client ID:
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Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

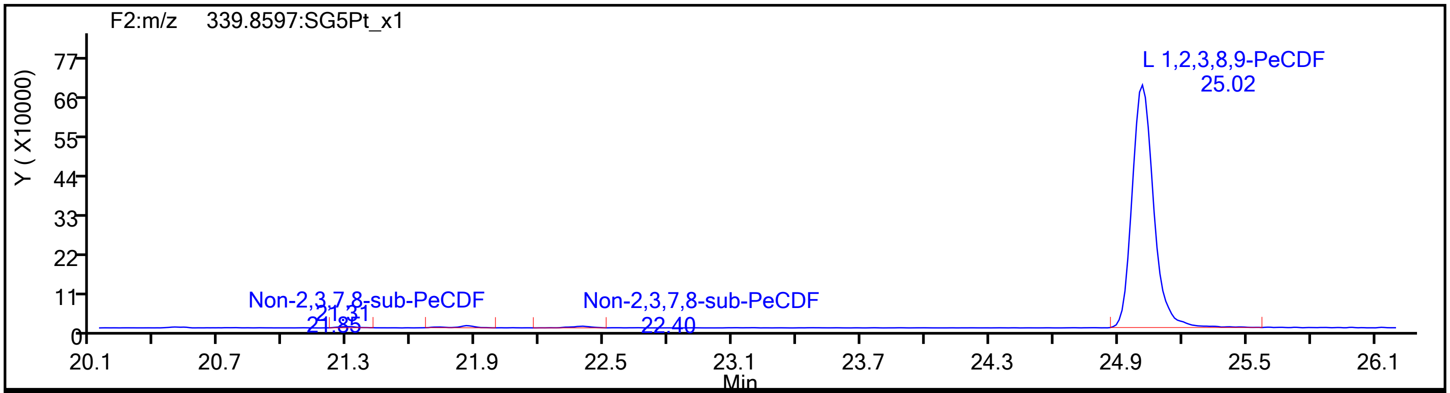

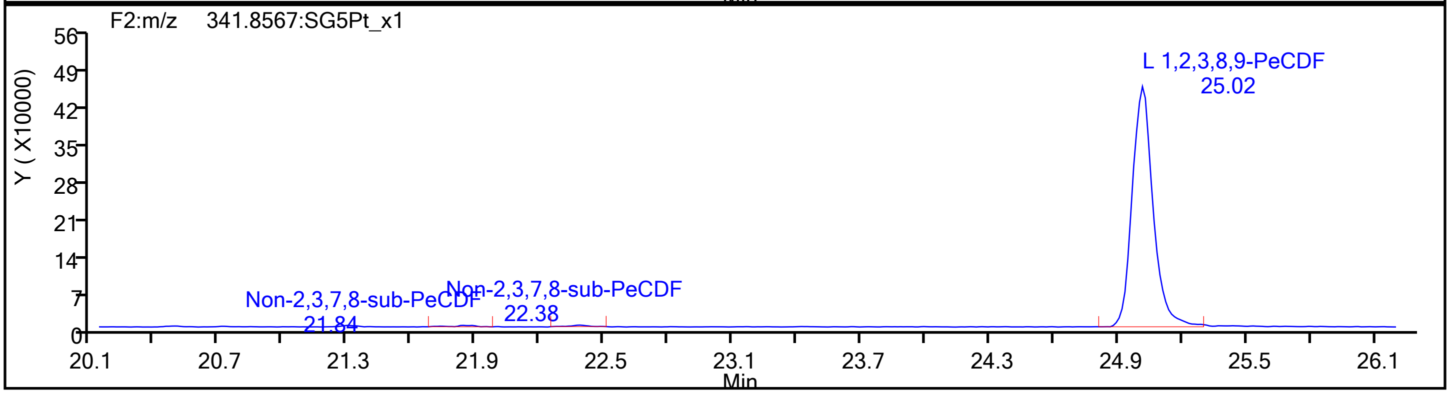

PeCDF Standards

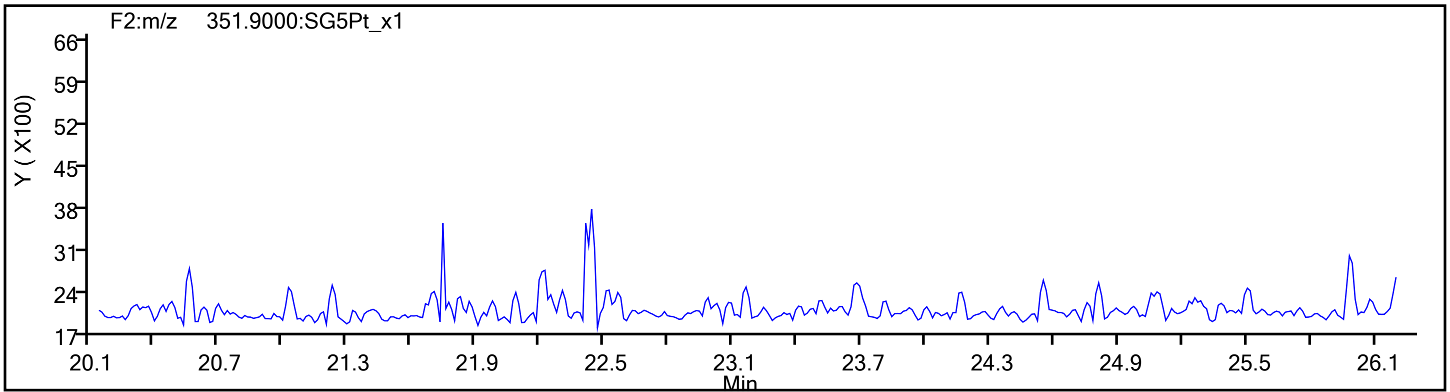

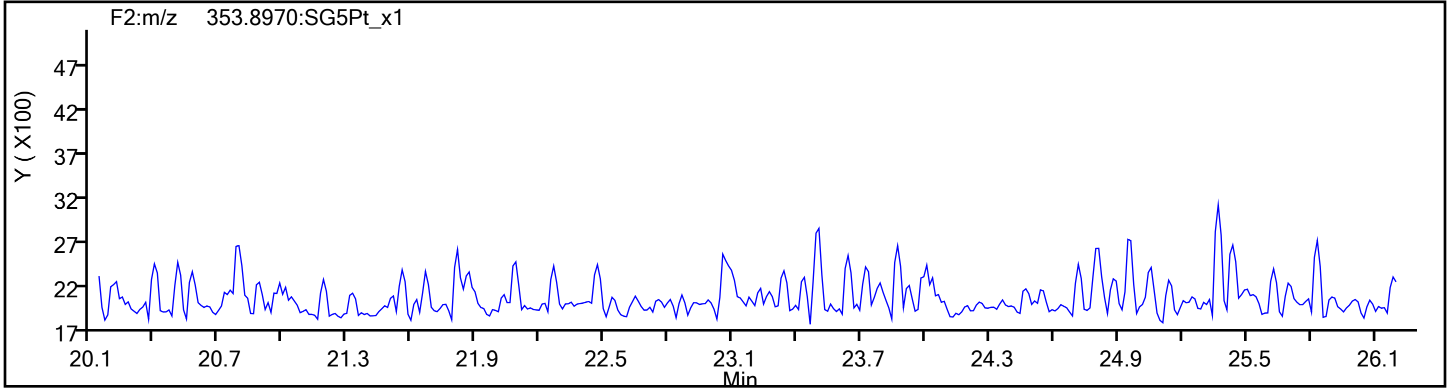

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

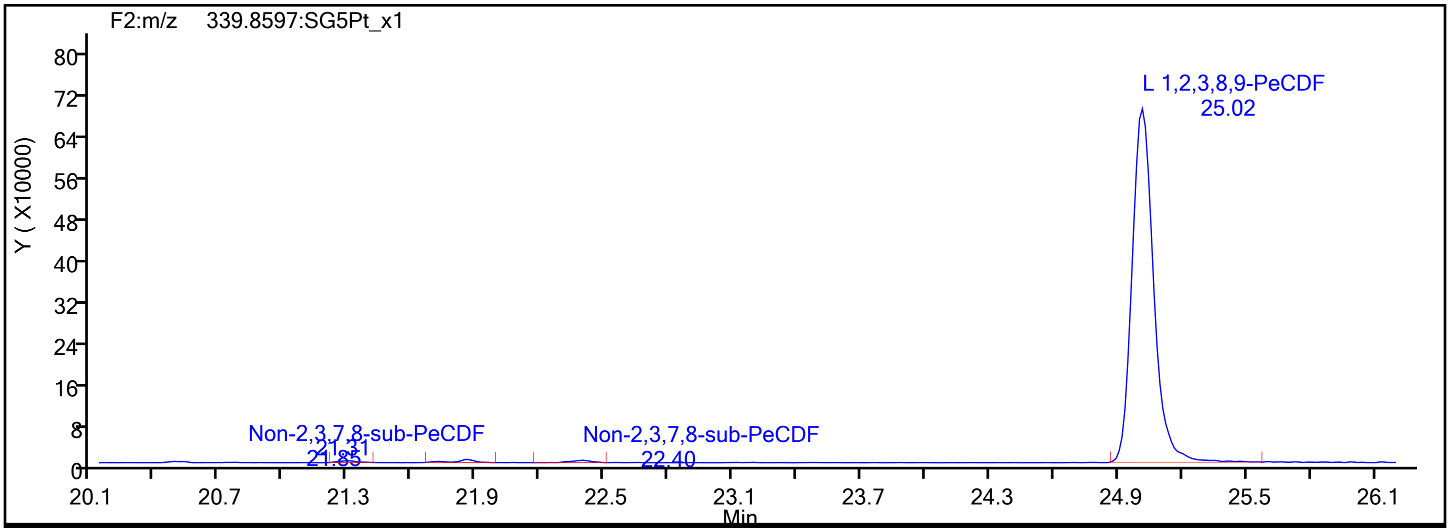

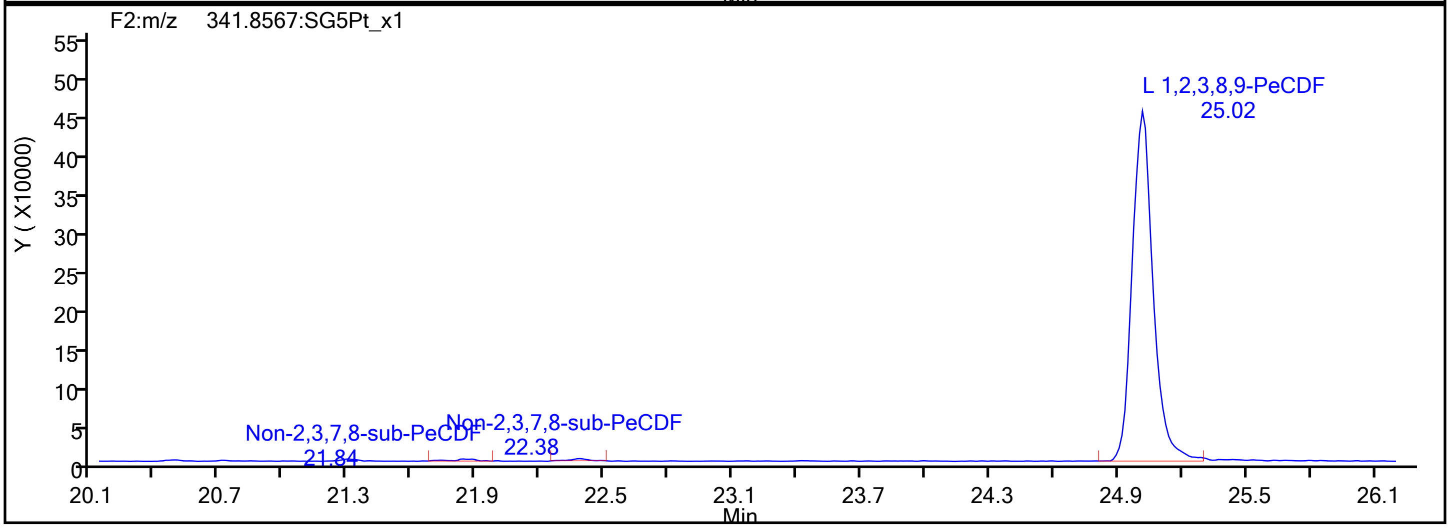

PeCDF Interference Mass

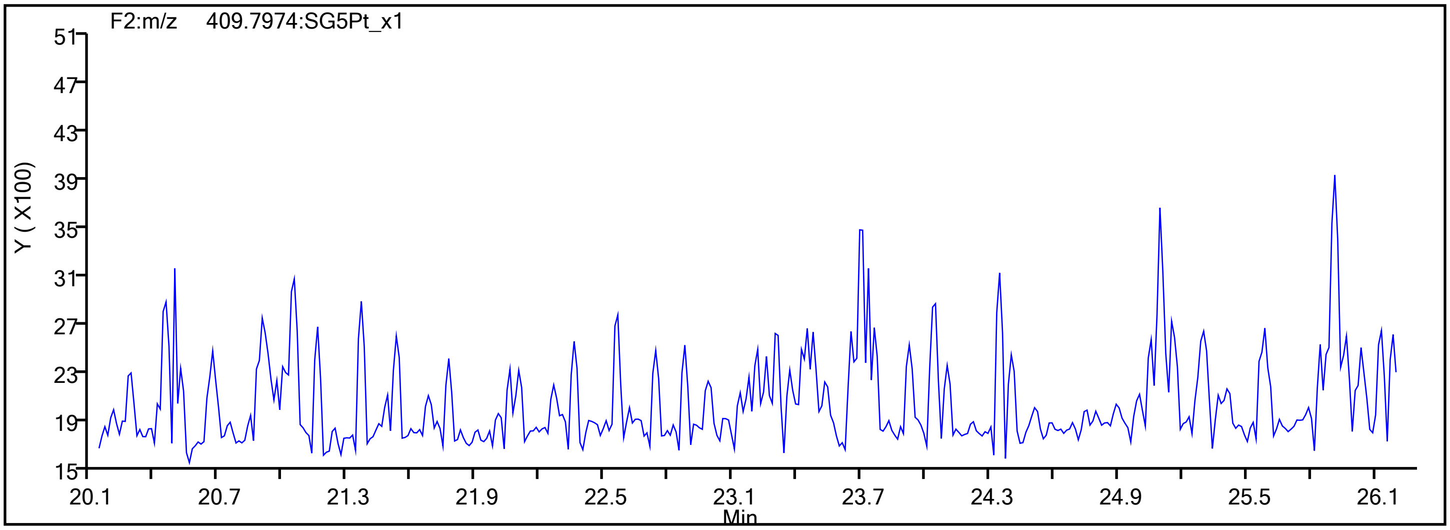

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

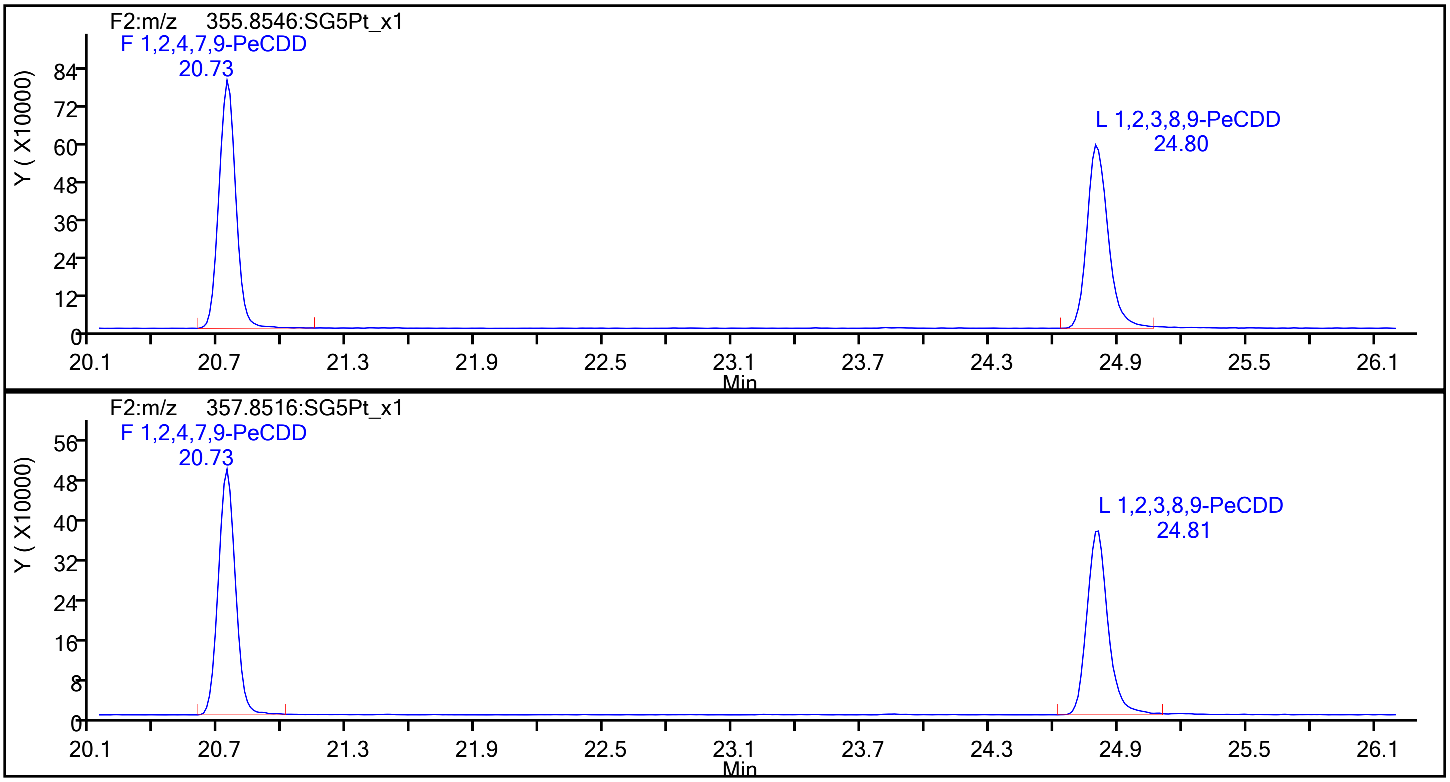

PeCDD Standards

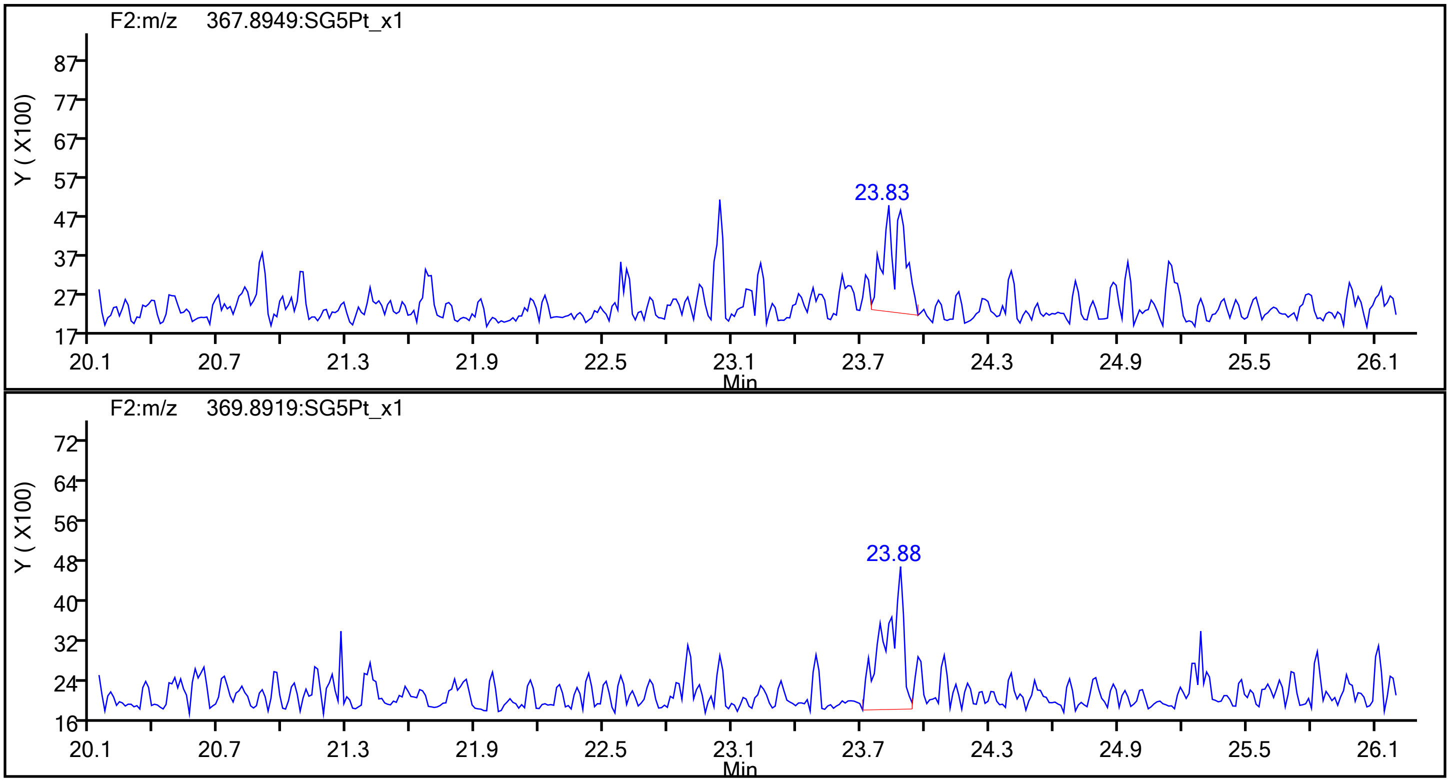

Report Date: 19-Aug-2020 16:15:27
Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Injection Date: 19-Aug-2020 10:20:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

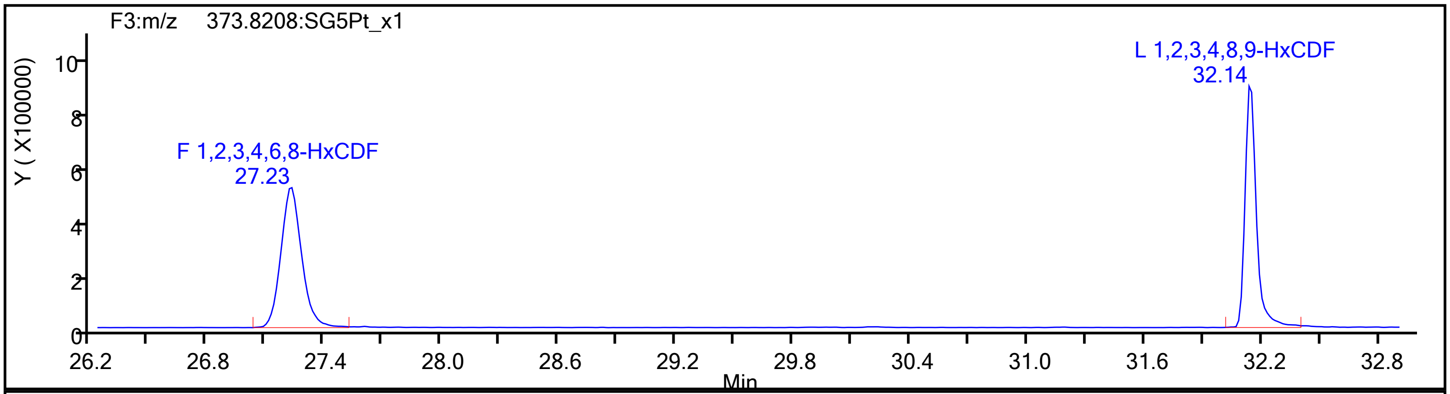

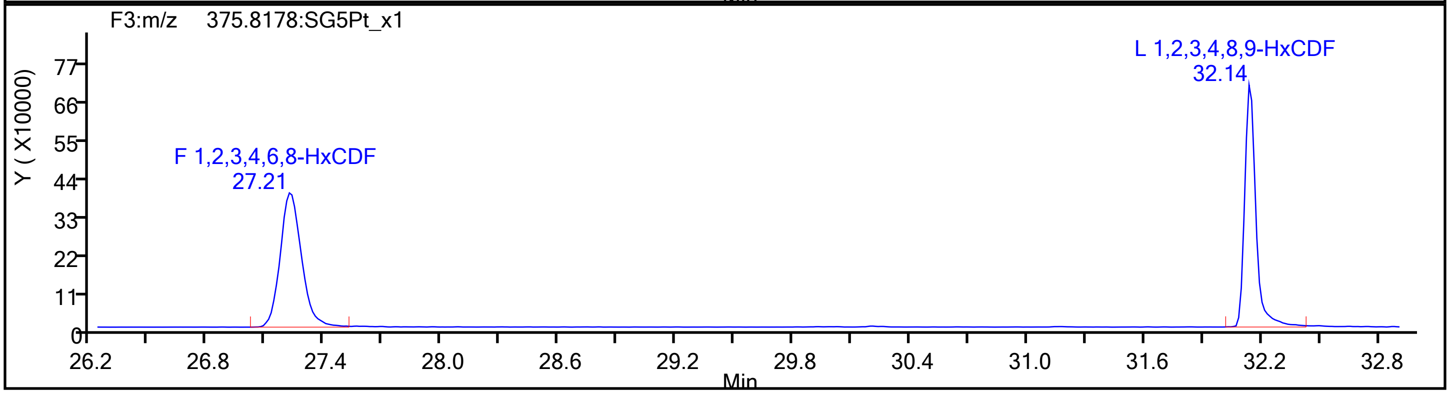

HxCDF Standards

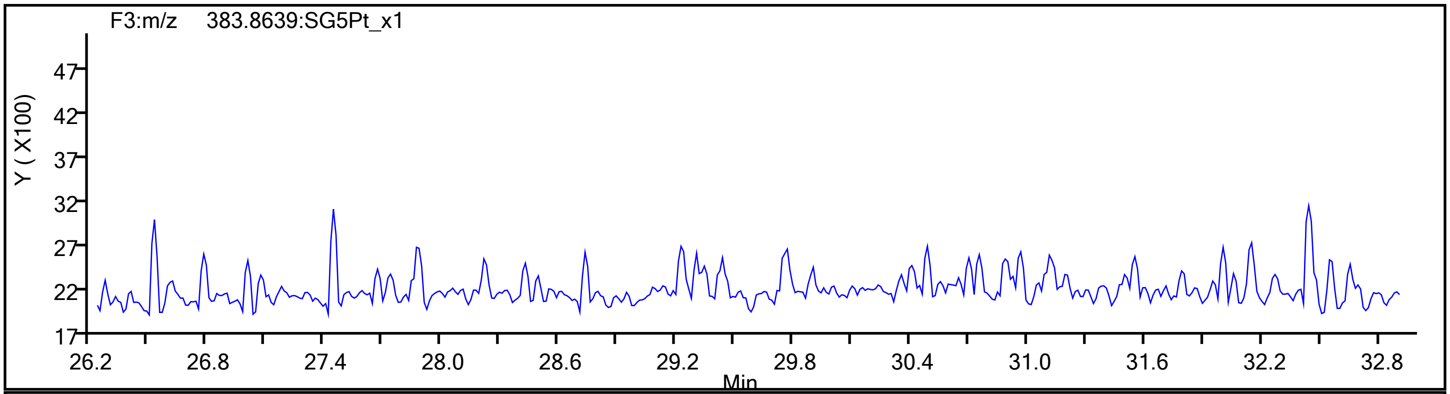

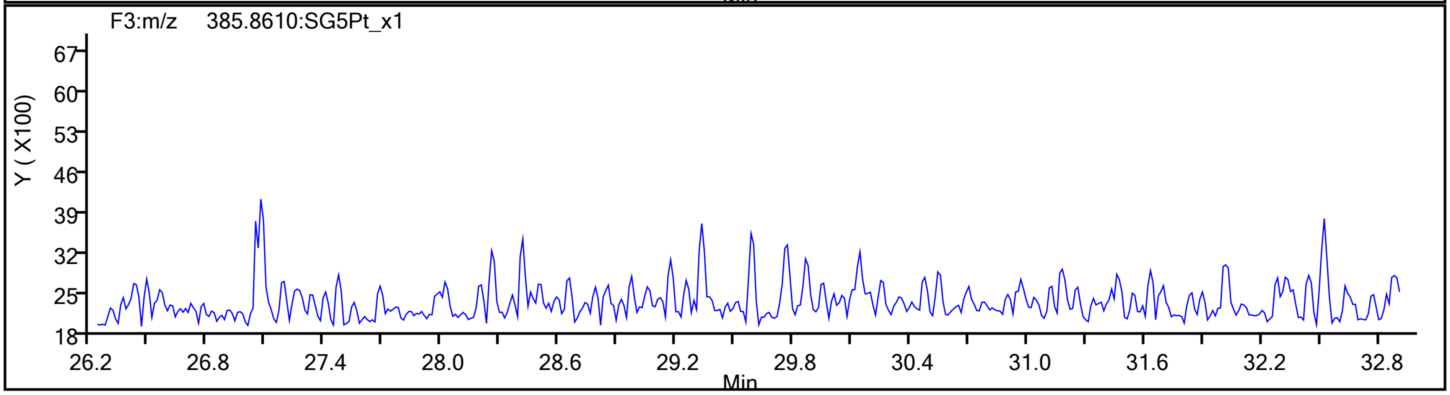

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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HxCDF

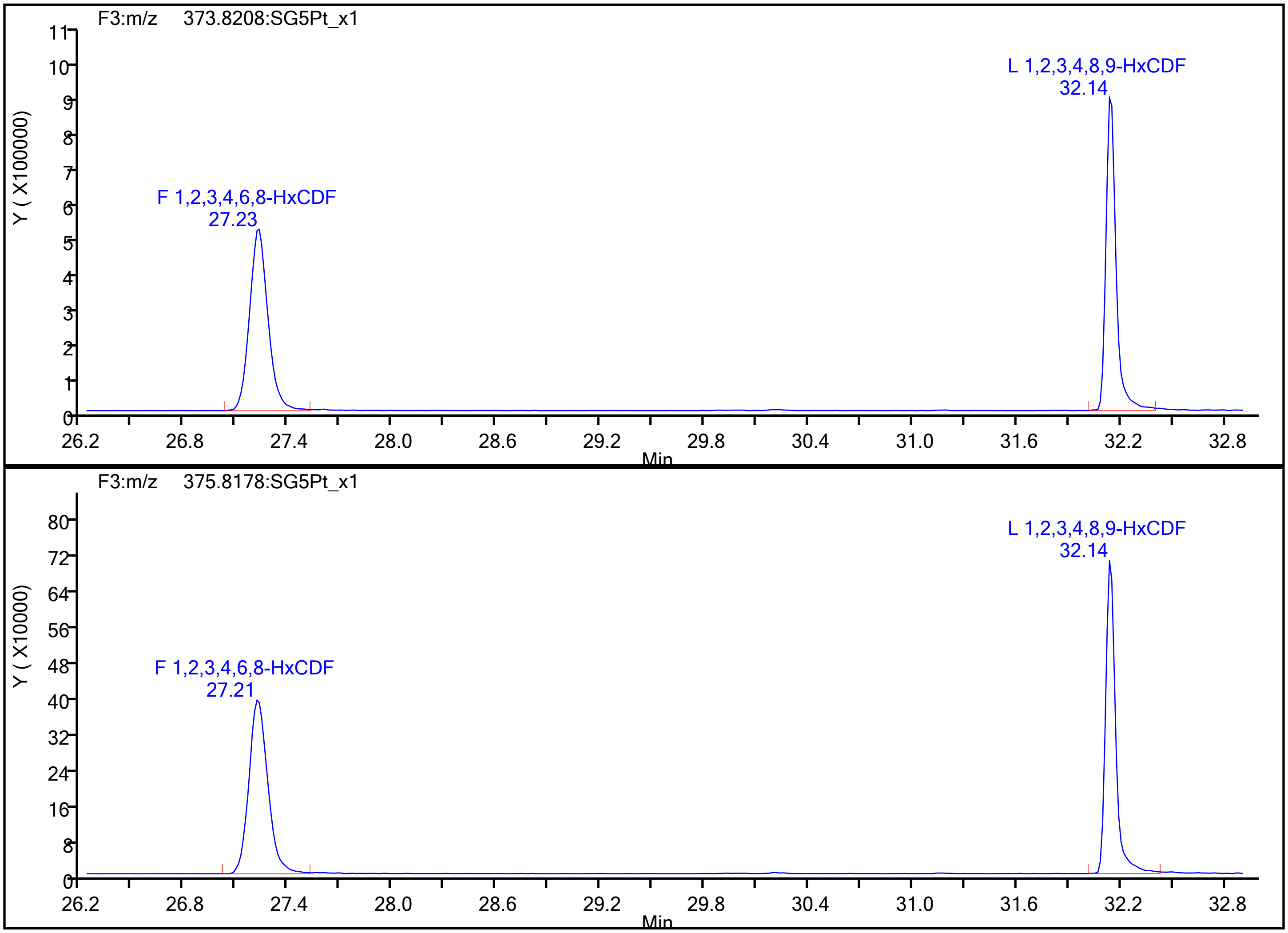

HxCDF Interference Mass

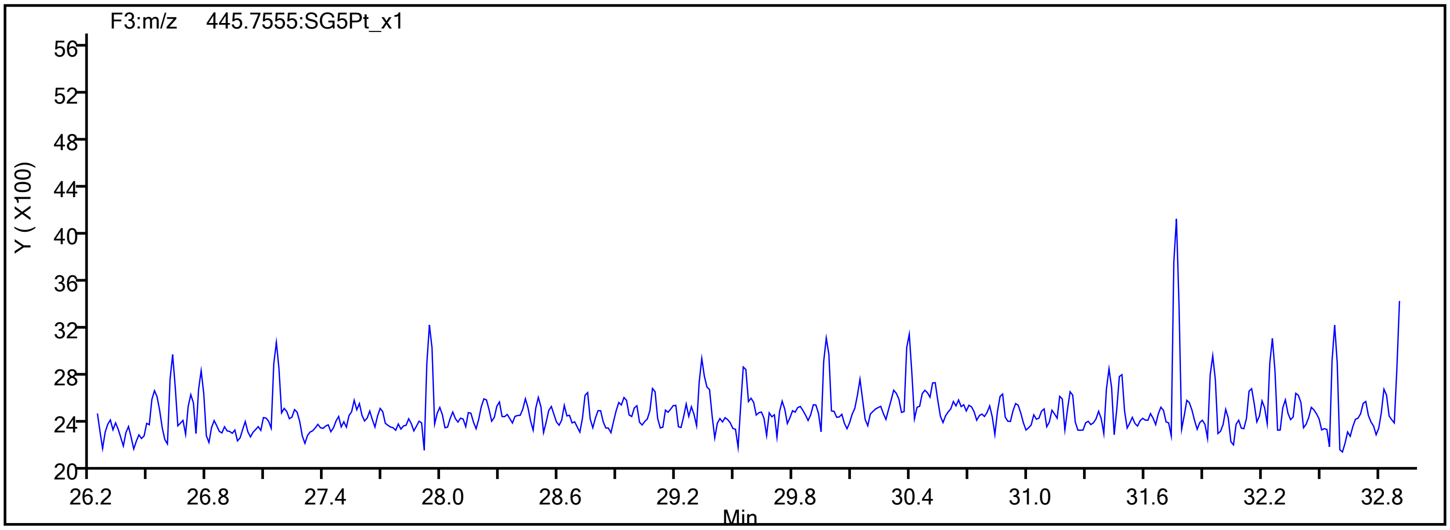

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Injection Date: 19-Aug-2020 10:20:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

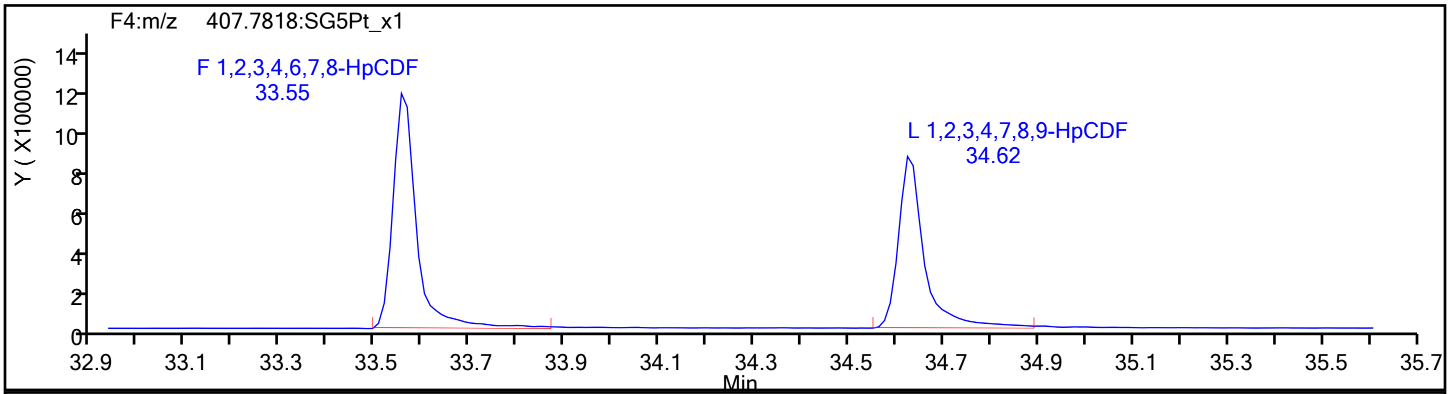

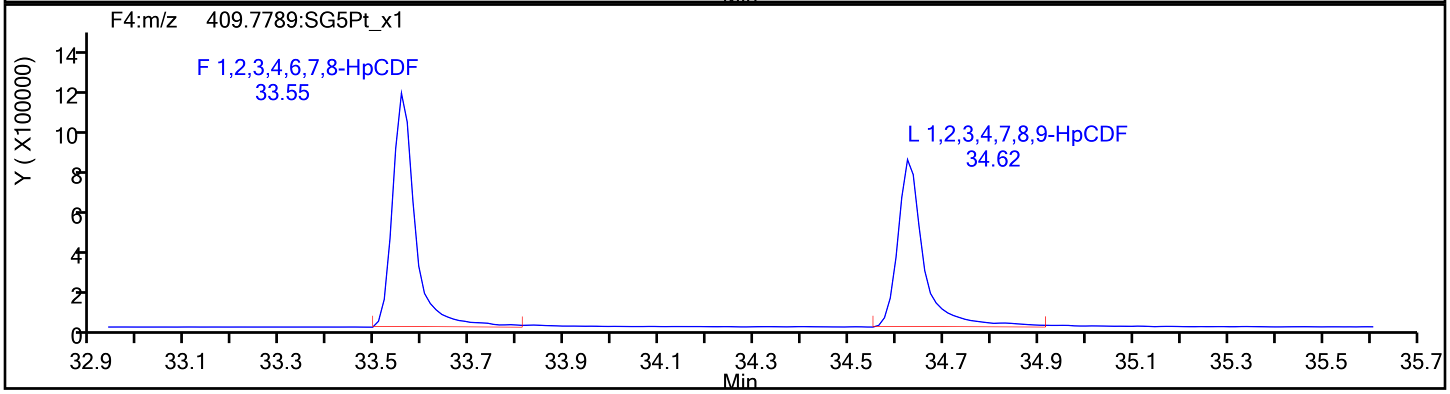

HpCDF Standards

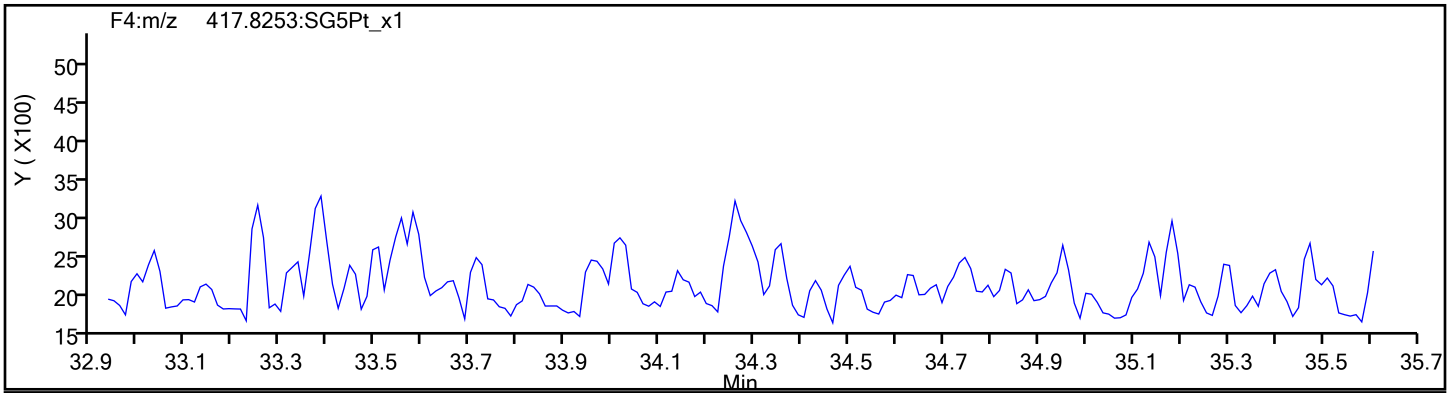

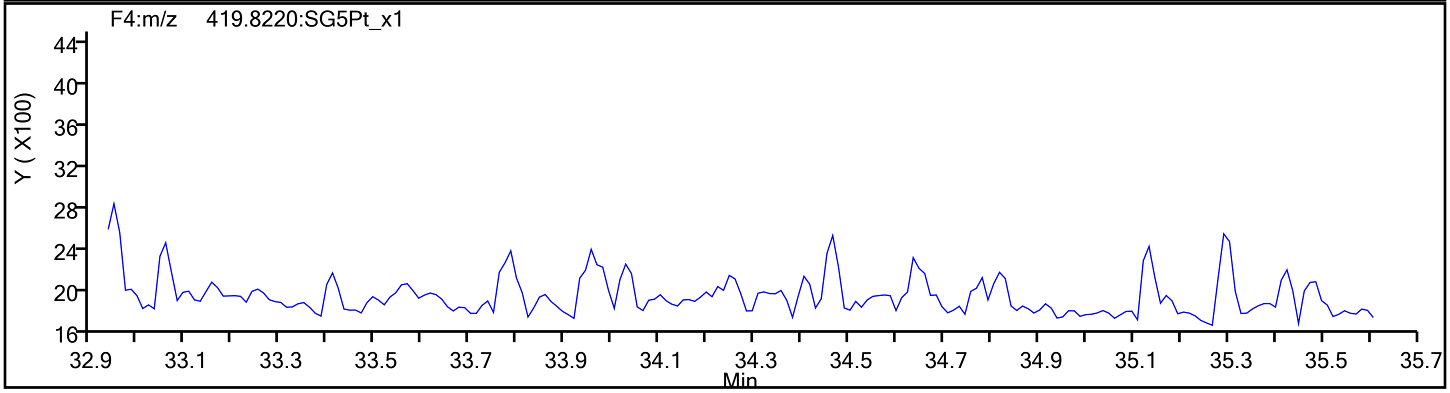

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDF

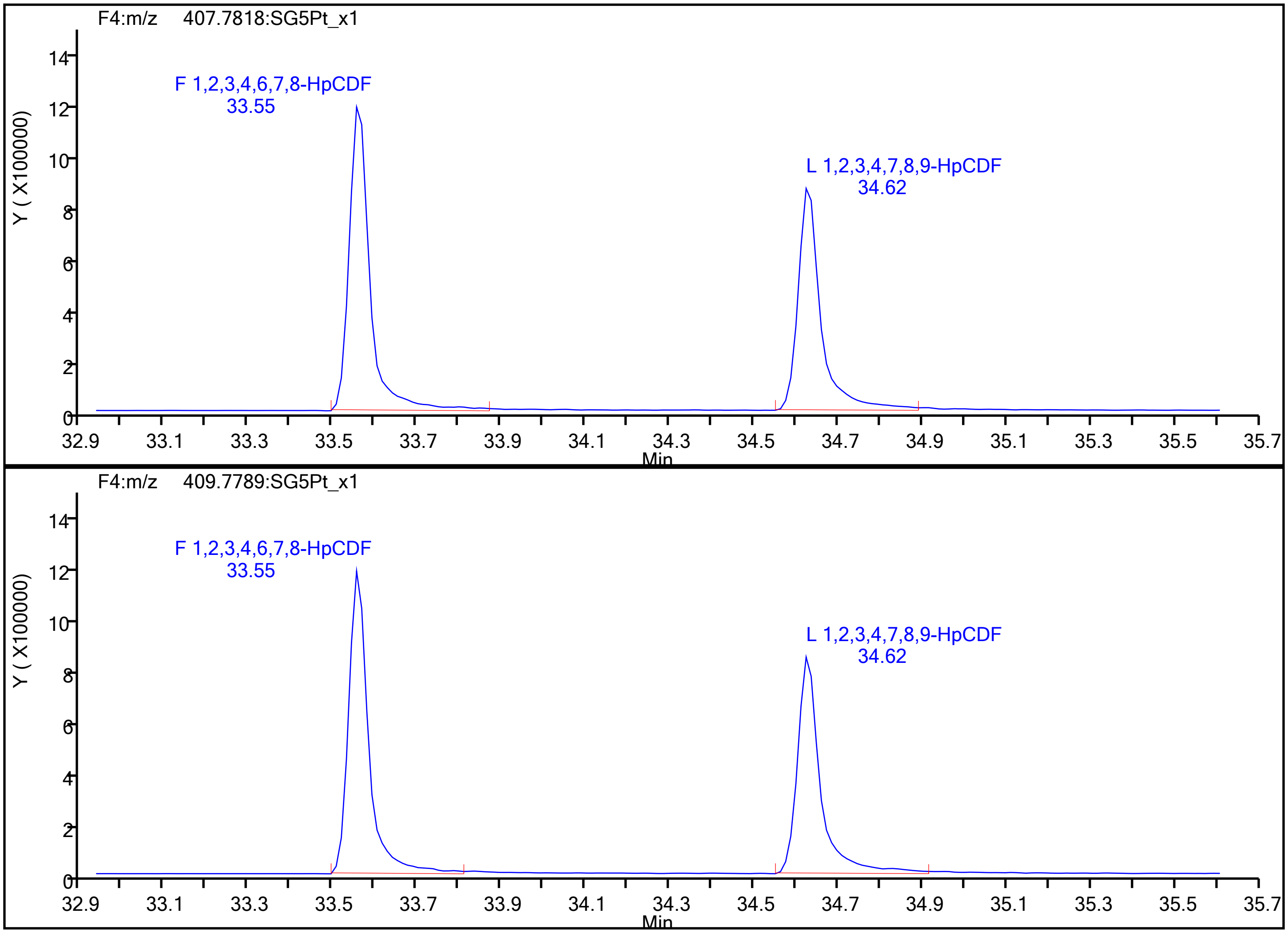

HpCDF Interference Mass

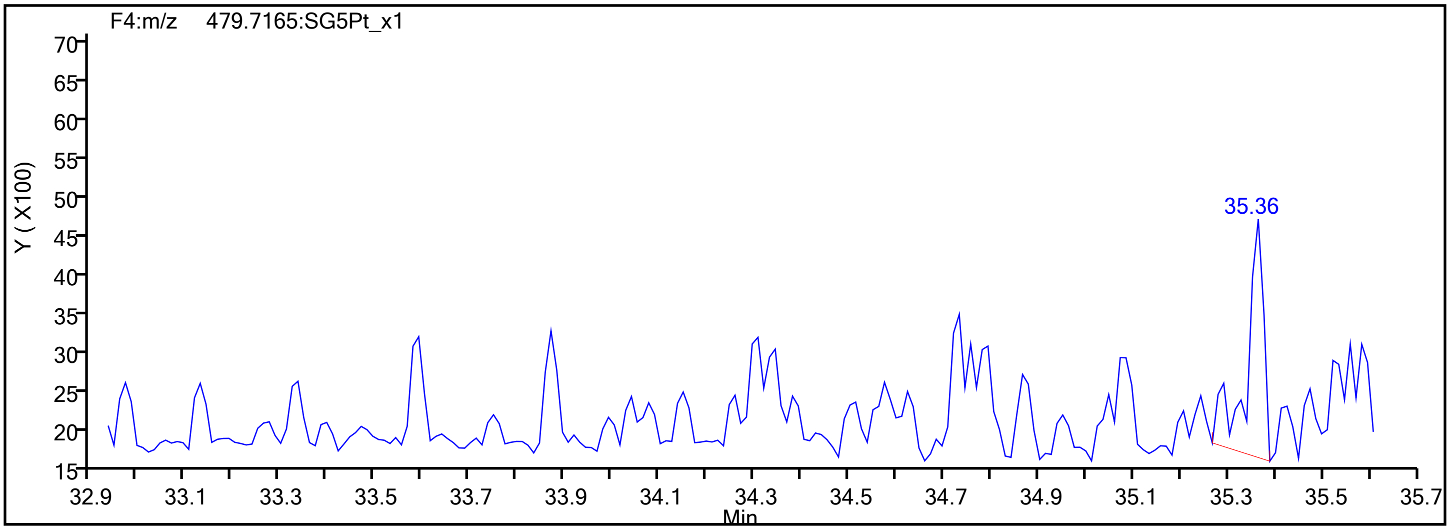

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d		
Injection Date:	19-Aug-2020 10:20:00	Injection Vol:	2.0 ul
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HpCDD

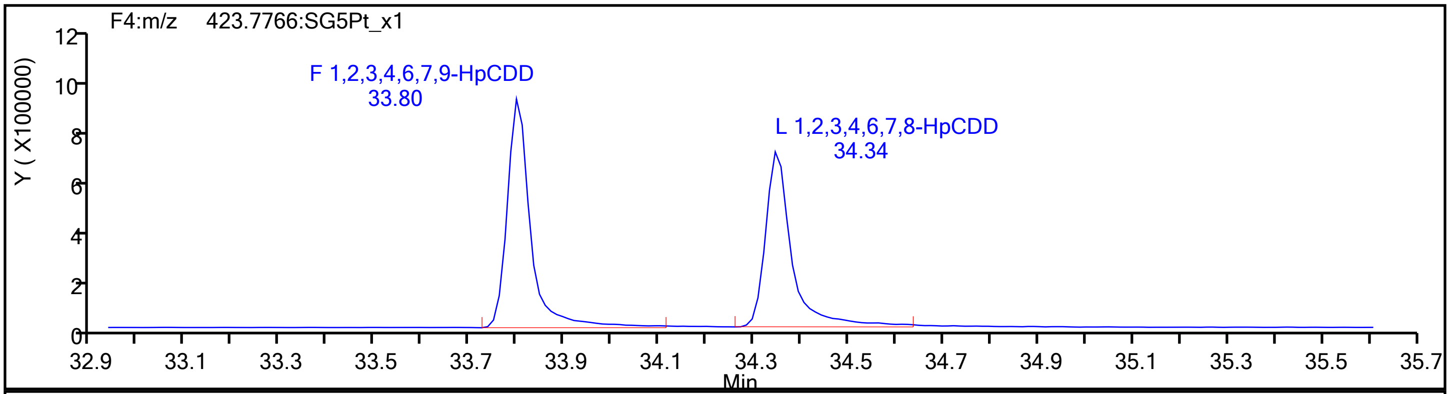

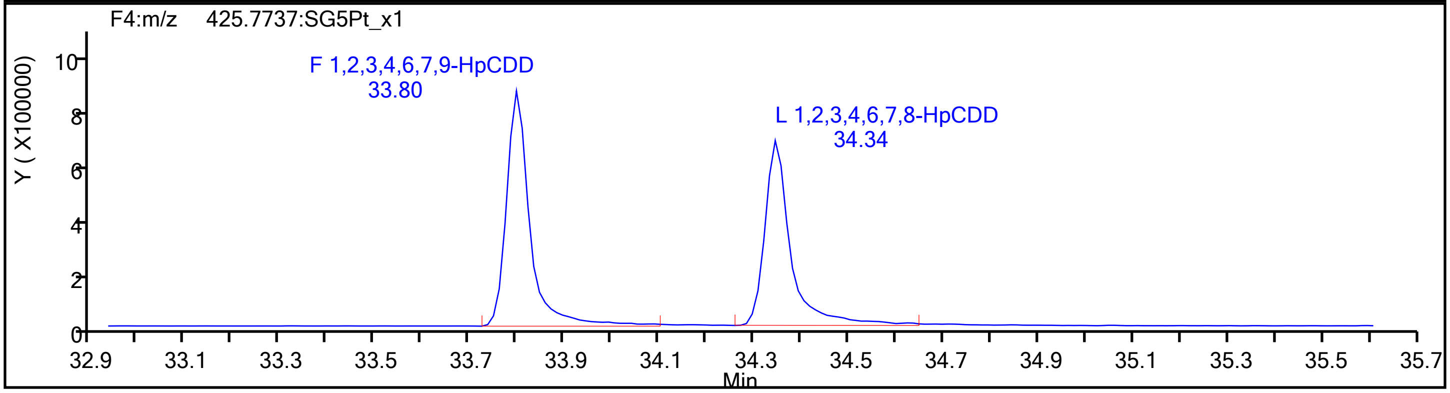

HpCDD Standards

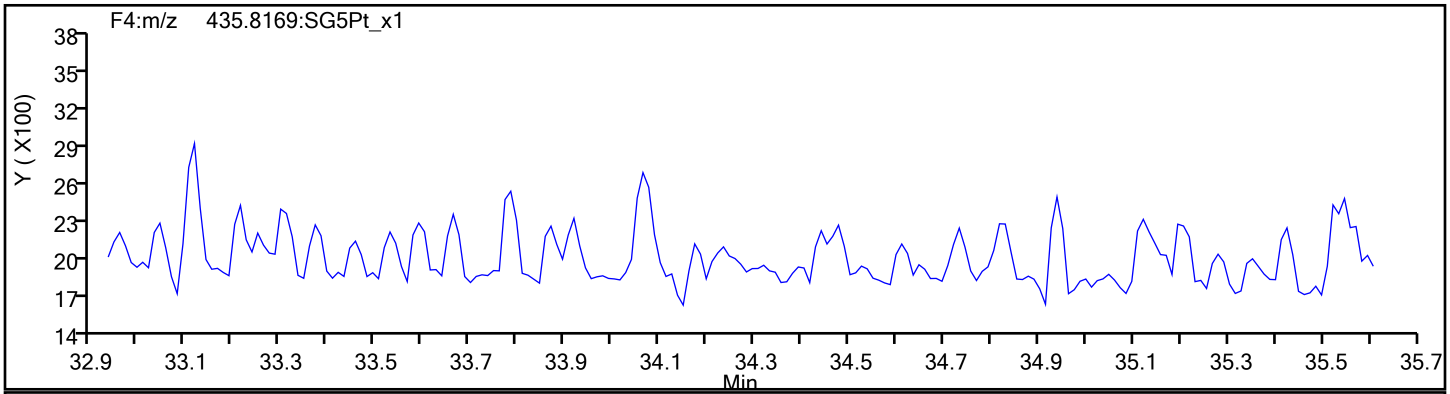

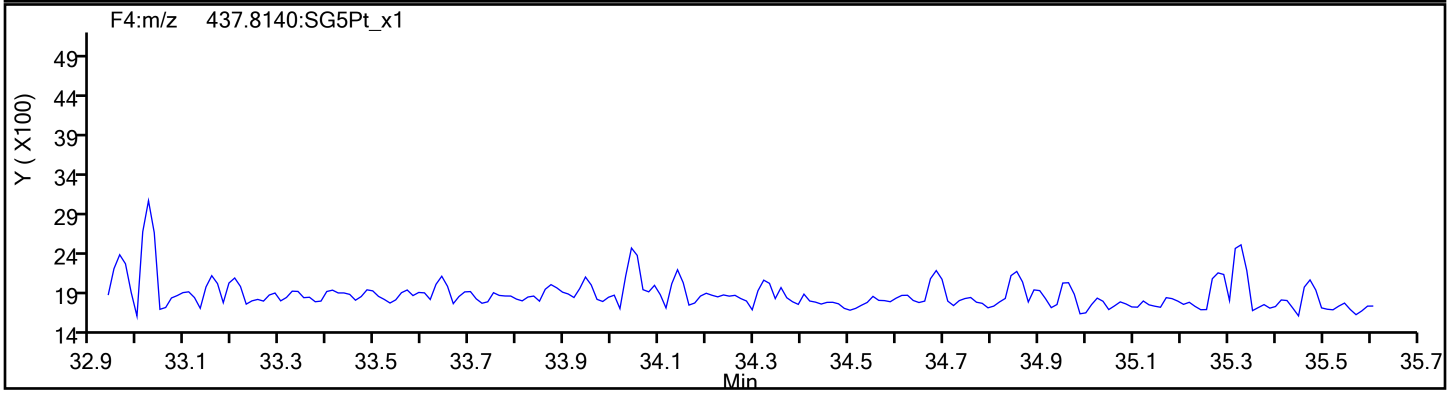

Report Date: 19-Aug-2020 16:15:27 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d

Injection Date: 19-Aug-2020 10:20:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
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Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
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Column Dia: 0.32 mm

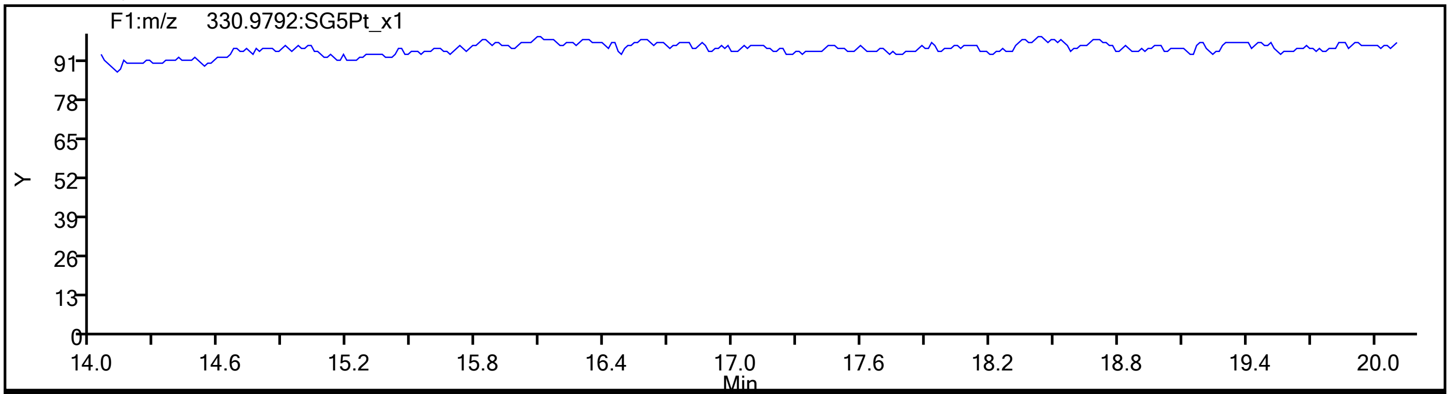
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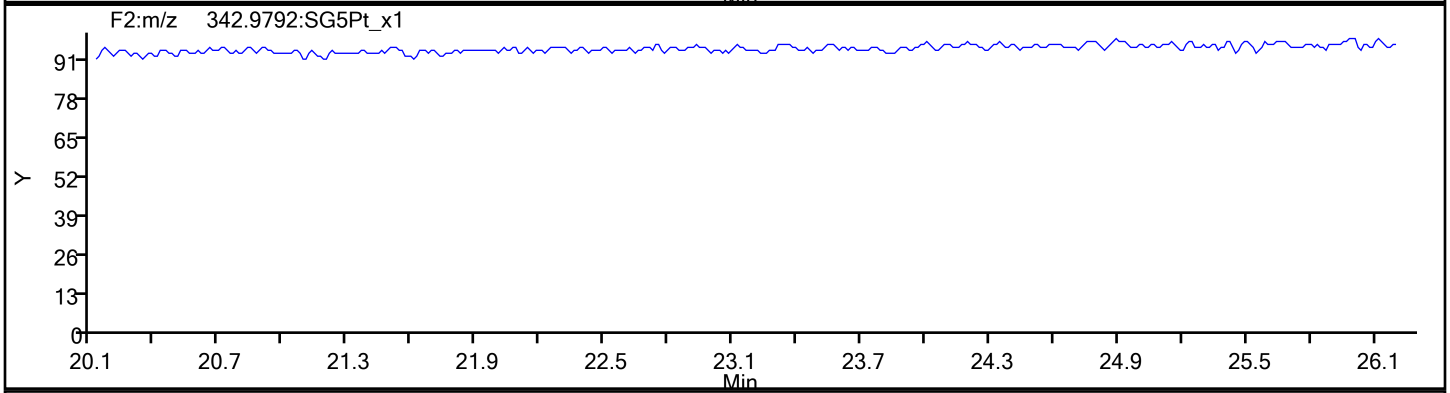
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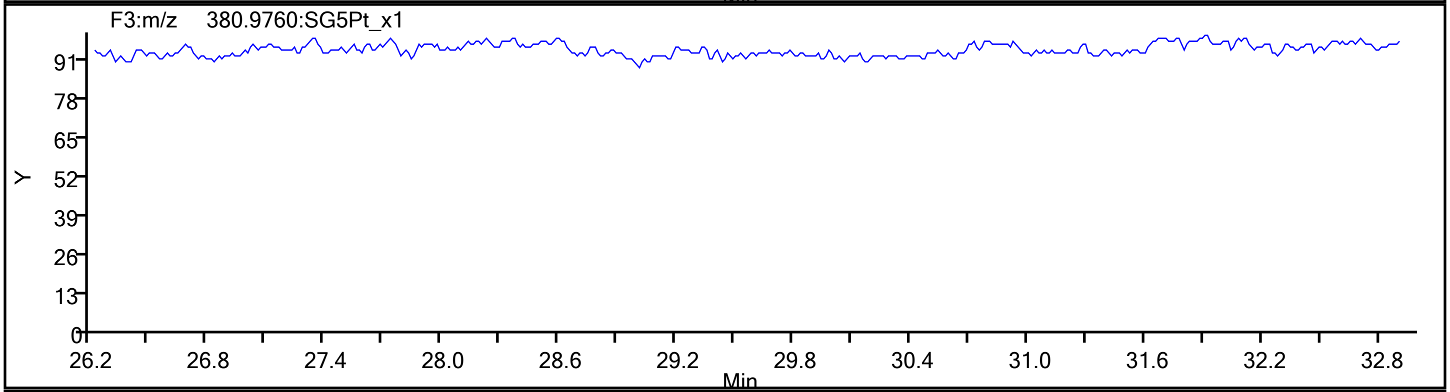
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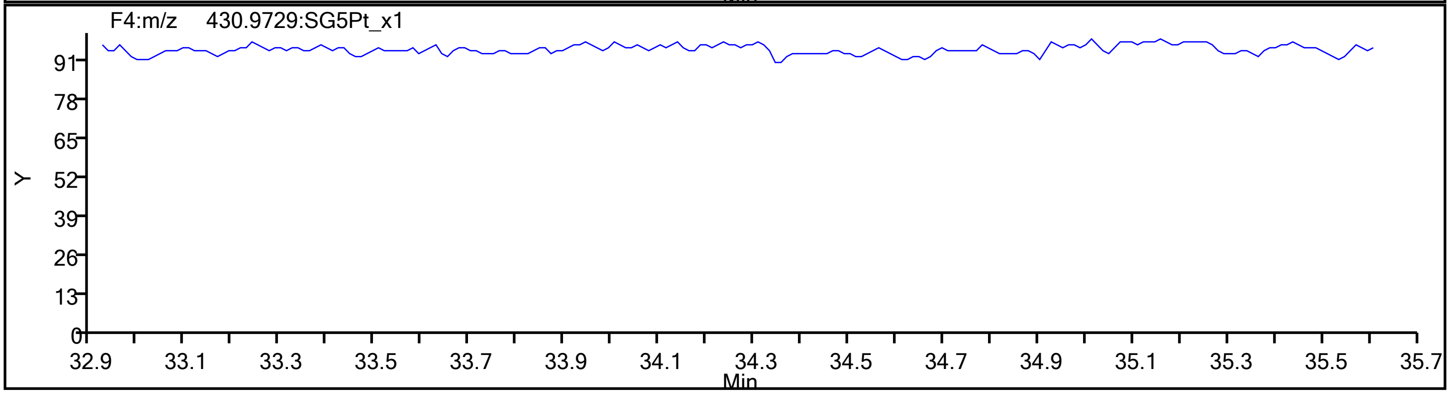
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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_1.d
Injection Date: 19-Aug-2020 10:20:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

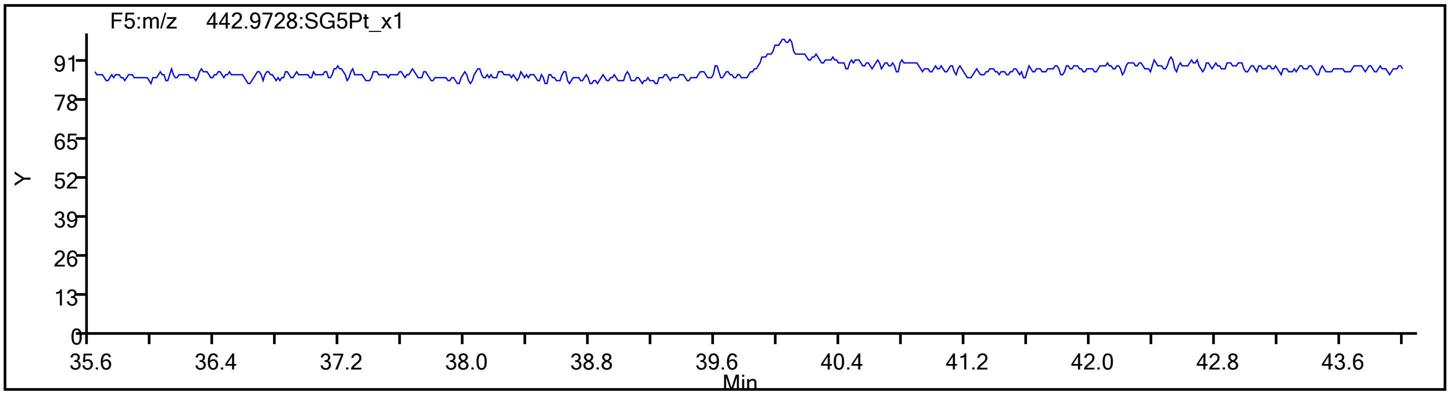

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 19-Aug-2020 22:17:59 ALS Bottle#: 1 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 081920A WDM HRDXNCP_00040
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 14:54:25 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1027

First Level Reviewer: shardaa Date: 20-Aug-2020 14:52:10

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.977	11622038	0.73	1.3726					0.00	
2,3,7,8-TCDF	17.007	23742497	0.74	0.9104	89.8	89.8	0.3184	0.3184		
A Non-2,3,7,8-sub-TCDF	16.689						0.3184	0.3184		
S Total TCDF					89.8	89.8	0.3184	0.3184		
D 13C-2,3,7,8-TCDD	17.657	7910867	0.78	1.0192					0.00	
2,3,7,8-TCDD	17.687	8464047	0.78	1.0745	39.8	39.8	0.1540	0.1540		
A Non-2,3,7,8-sub-TCDD	17.135						0.1540	0.1540		
S Total TCDD					39.8	39.8	0.1540	0.1540		
A F1 PeCDFs	19.555						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.583						0.0	0.0		
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	22.772						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.689						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.321						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.567	8228576	1.02	1.4527						
1,2,3,4,7,8,9-HpCDF	34.636	6726733	1.05	1.0585						
A Non-2,3,7,8-sub-HpCDF	34.101						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.356	5303388	1.03	1.0540						
A Non-2,3,7,8-sub-HpCDD	34.623						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.633	12732509	0.75							
1,3,6,8-TCDD	15.525	8698901	0.76							
2,3,4,7-TCDF	17.007	23742497	0.74							
1,2,3,7-TCDD	17.566	7640852	0.77							
1,2,3,9-TCDD	17.838	8893552	0.79							
1,2,3,9-TCDF	17.838	9816320	0.75							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	18.746	3666920								
1,2,8,9-TCDF	18.746	10239920	0.74							
1,3,4,6,8-PeCDF	19.033	11365211	1.61							
1,2,4,7,9-PeCDD	20.734	6936694	1.59							
1,2,3,8,9-PeCDD	24.811	6255085	1.60							
1,2,3,8,9-PeCDF	25.015	7911690	1.57							
1,2,3,4,6,8-HxCDF	27.227	7372100	1.27							
1,2,4,6,7,9-HxCDD	28.757	5947903	1.25							
1,2,3,4,6,7-HxCDD	31.819	5959739	1.25							
1,2,3,4,8,9-HxCDF	32.152	6955480	1.26							
1,2,3,4,6,7,9-HpCDD	33.810	5977957	1.08							

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 19-Aug-2020 22:17:59 ALS Bottle#: 1 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 081920A WDM HRDXNCP_00040
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 14:54:25 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1027

First Level Reviewer: shardaa Date: 20-Aug-2020 14:52:10

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.977	16.977	0	1.000	4919193	1294961	4179	10447	310		
317.9389	16.977	16.977	0	1.000	6702845	1742748	1877	4692	928	0.73(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.007	17.007	0	1.002	10112507	2404870	3490	8725	689		
305.8987	17.007	17.007	0	1.002	13629990	3227711	5315	13287	607	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.689						3490	8725			
305.8987	16.689						5315	13287			
13C-2,3,7,8-TCDD											
331.9368	17.657	17.657	0	1.000	3474452	828071	2896	7240	286		
333.9339	17.657	17.657	0	1.000	4436415	1082782	1610	4025	673	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.687	17.687	0	1.002	3719993	901926	1516	3790	595		
321.8936	17.672	17.687	-1	1.001	4744054	1138168	1646	4115	691	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						1516	3790			
321.8936	17.135						1646	4115			
A F1 PeCDFs											
339.8597	19.555						512	1280			
341.8567	19.555						569	1422			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.583						799	1997			
341.8567	22.583						830	2075			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.772						990	2475			
357.8516	22.772						663	1657			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.689						1183	2957			
375.8178	29.689						873	2182			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.321						1462	3655			
391.8127	30.321						925	2312			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.567	33.567	0	1.000	4162023	1307502	4569	11422	286		
409.7789	33.554	33.567	-1	1.000	4066553	1265730	4012	10030	315	1.02(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.636	34.636	0	1.000	3439854	978291	4569	11422	214		
409.7789	34.636	34.636	0	1.000	3286879	914743	4012	10030	228	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.101						4569	11422			
409.7789	34.101						4012	10030			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.356	34.356	0	1.000	2687115	767771	3311	8277	232		
425.7737	34.344	34.356	-1	1.000	2616273	742527	3474	8685	214	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.623						3311	8277			
425.7737	34.623						3474	8685			
1,3,6,8-TCDF											
303.9016	14.633	14.633	0		5446106	1652399	3490	8725	473		
305.8987	14.633	14.633	0		7286403	2239357	5315	13287	421	0.75(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.525	15.525	0		3754052	1136358	1516	3790	750		
321.8936	15.525	15.525	0		4944849	1480236	1646	4115	899	0.76(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.007	17.007	0		10112507	2404870	3490	8725	689		
305.8987	17.007	17.007	0		13629990	3227711	5315	13287	607	0.74(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.566	17.566	0		3316949	828787	1516	3790	547		
321.8936	17.566	17.566	0		4323903	1110319	1646	4115	675	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	17.838	17.838	0		3935188	933654	1516	3790	616		
321.8936	17.838	17.838	0		4958364	1175404	1646	4115	714	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	17.838	17.838	0		4197001	1012969	3490	8725	290		
305.8987	17.838	17.838	0		5619319	1340805	5315	13287	252	0.75(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.746	18.746	0		3666920	817144	1516	3790	539		
1,2,8,9-TCDF											
303.9016	18.746	18.746	0		4351211	981613	3490	8725	281		
305.8987	18.746	18.746	0		5888709	1348270	5315	13287	254	0.74(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.033	19.033	0		7008315	1573699	512	1280	3074		
341.8567	19.033	19.033	0		4356896	980248	569	1422	1723	1.61(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	20.734	20.734	0		4254967	750096	990	2475	758		
357.8516	20.734	20.734	0		2681727	471144	663	1657	711	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	24.811	24.811	0		3850959	565739	990	2475	571		
357.8516	24.811	24.811	0		2404126	342366	663	1657	516	1.60(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.015	25.015	0		4833431	693312	799	1997	868		
341.8567	25.015	25.015	0		3078259	437089	830	2075	527	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.227	27.227	0		4121403	524741	1183	2957	444		
375.8178	27.240	27.227	1		3250697	417544	873	2182	478	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	28.757	28.757	0		3307296	395697	1462	3655	271		
391.8127	28.757	28.757	0		2640607	309775	925	2312	335	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.819	31.819	0		3314019	833101	1462	3655	570		
391.8127	31.819	31.819	0		2645720	649223	925	2312	702	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.152	32.152	0		3874182	1027795	1183	2957	869		
375.8178	32.152	32.152	0		3081298	796579	873	2182	912	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.810	33.810	0		3101243	926735	3311	8277	280		
425.7737	33.797	33.810	-1		2876714	874751	3474	8685	252	1.08(0.88-1.20)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d
Injection Date: 19-Aug-2020 22:17:59
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

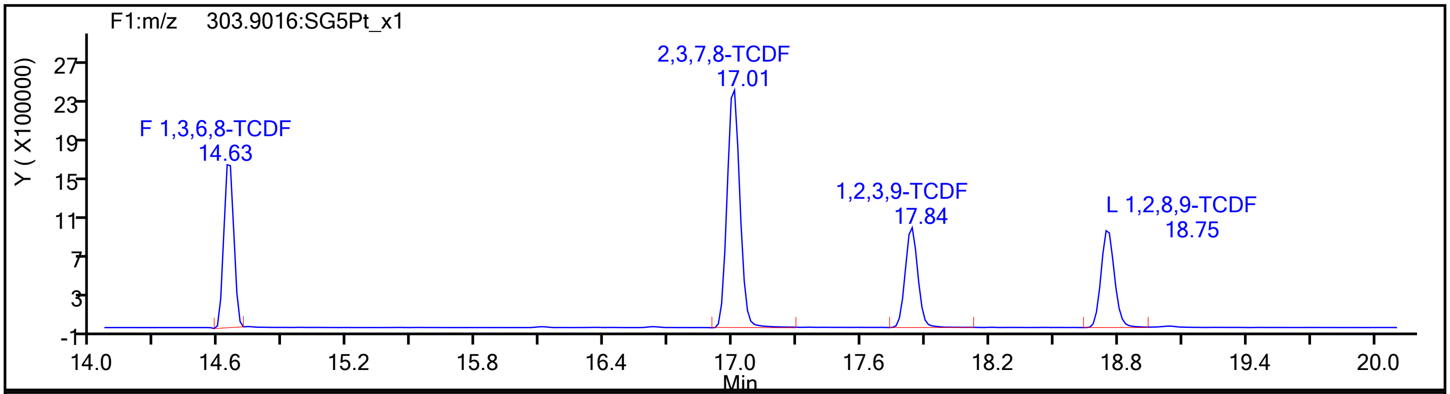

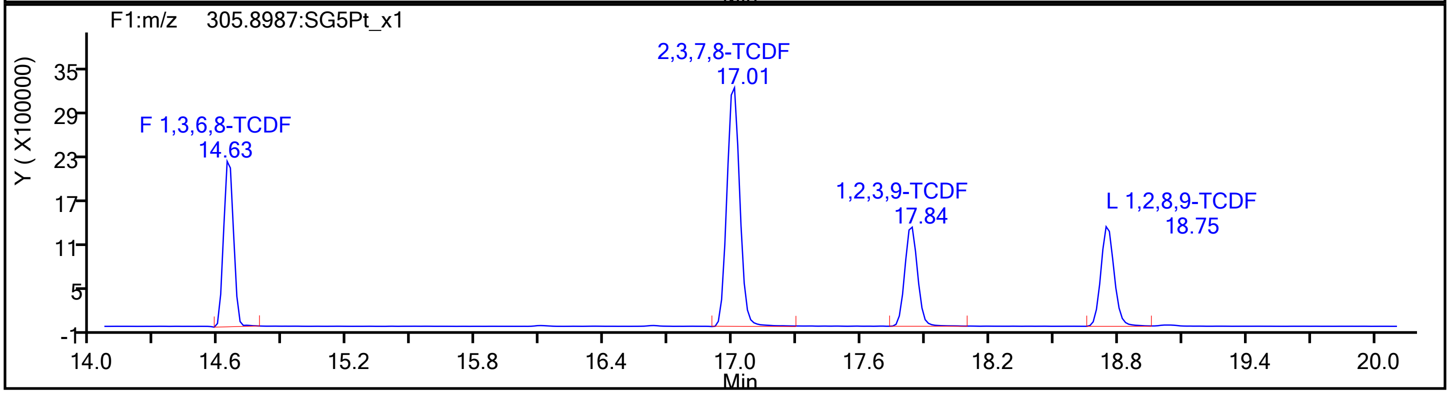

TCDF Standards

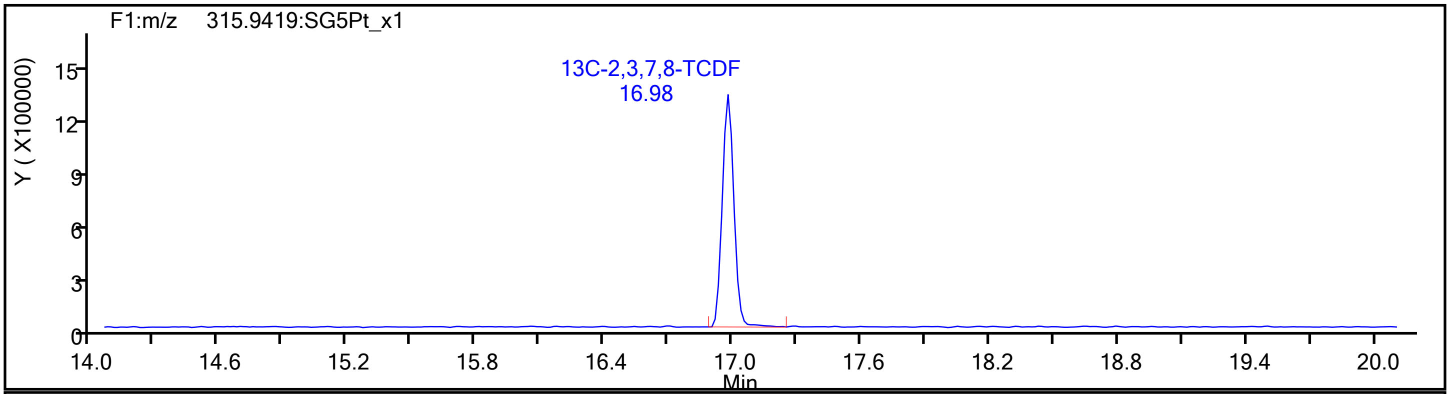

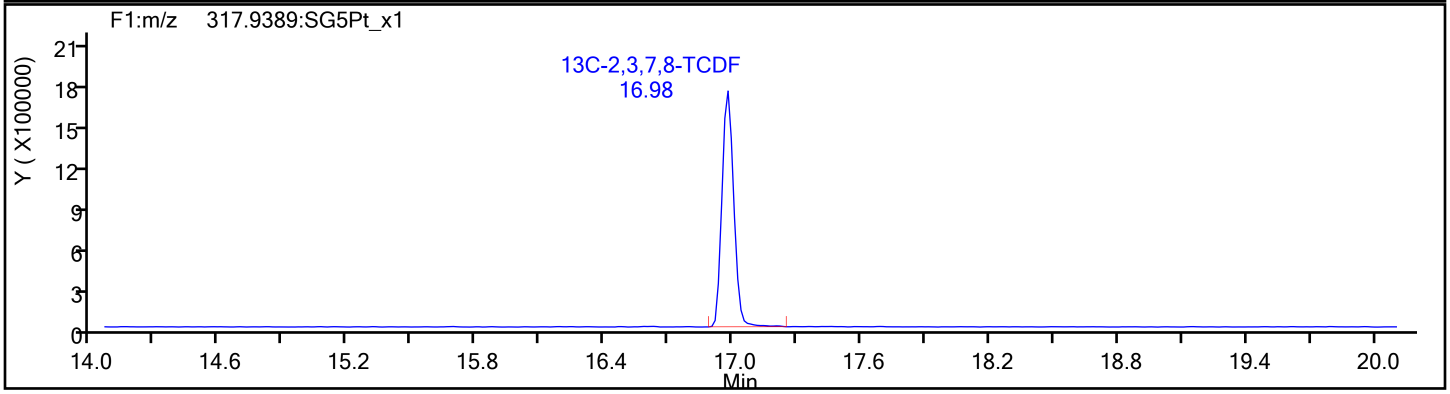

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

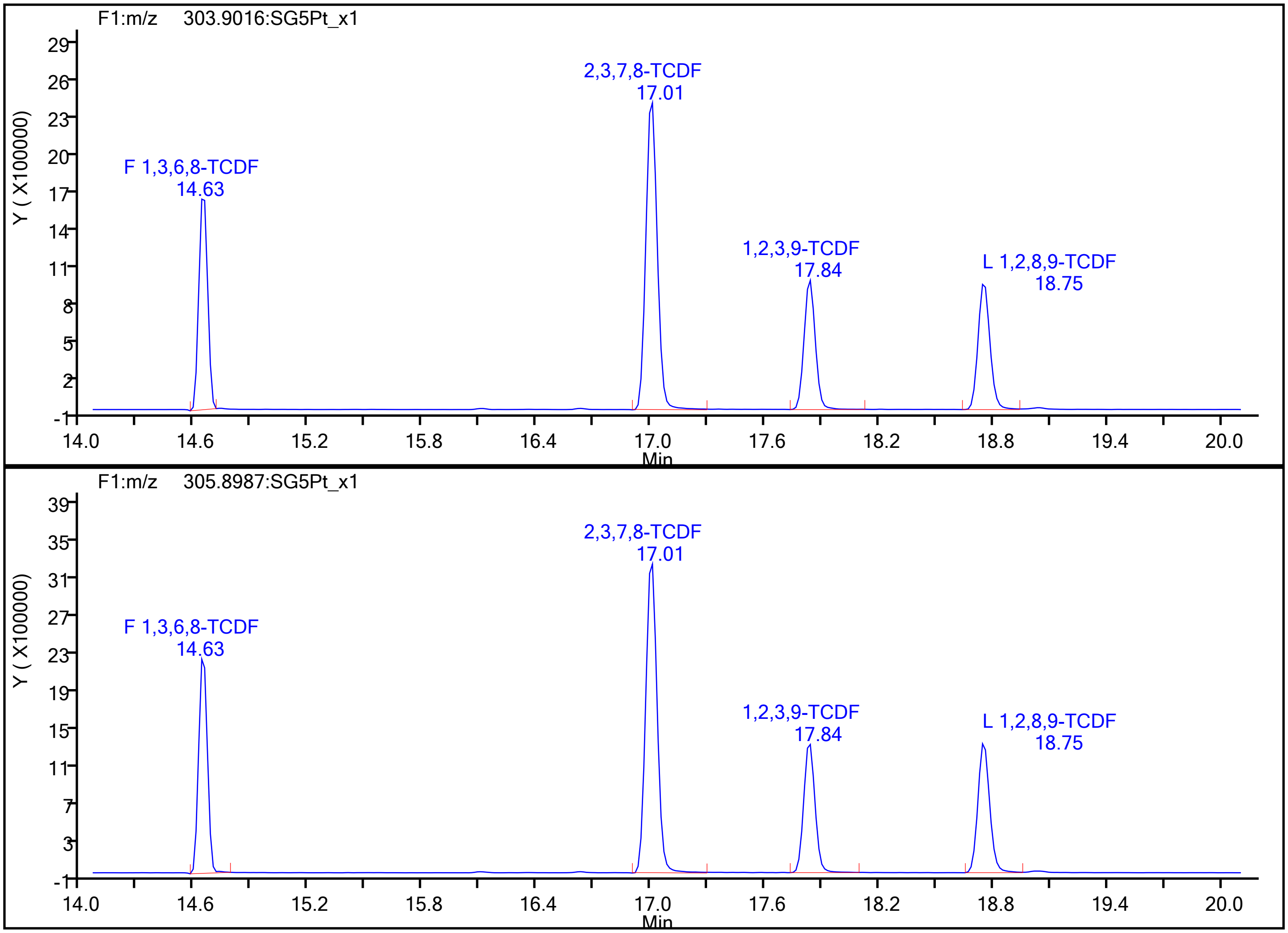

TCDF Interference Mass

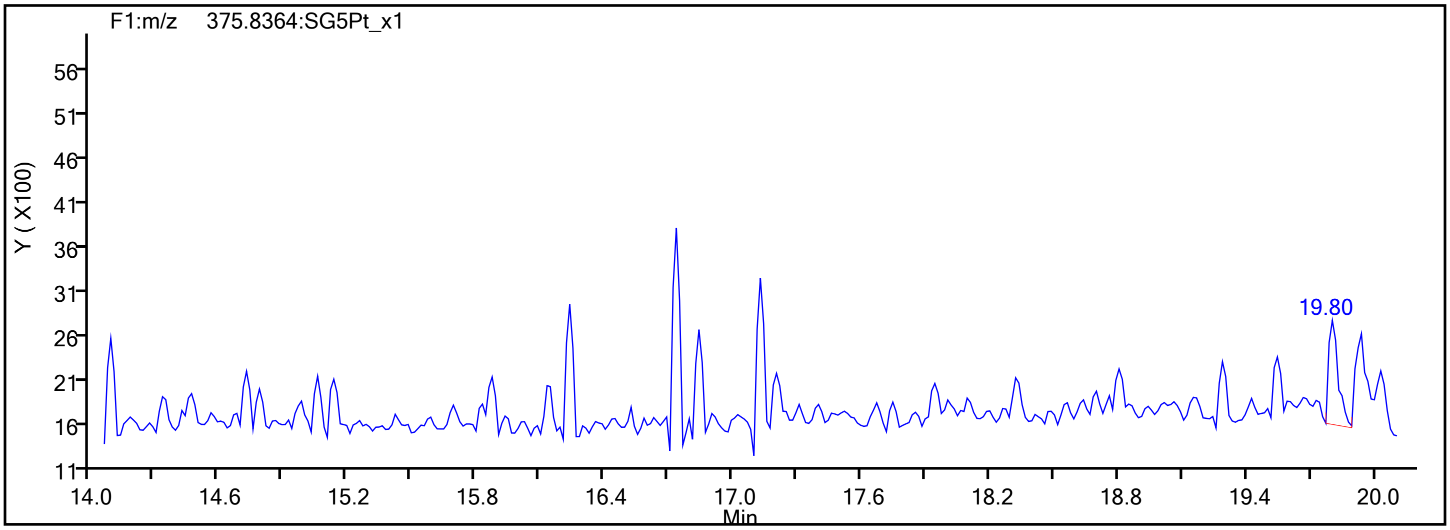

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d

Injection Date: 19-Aug-2020 22:17:59 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405030 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

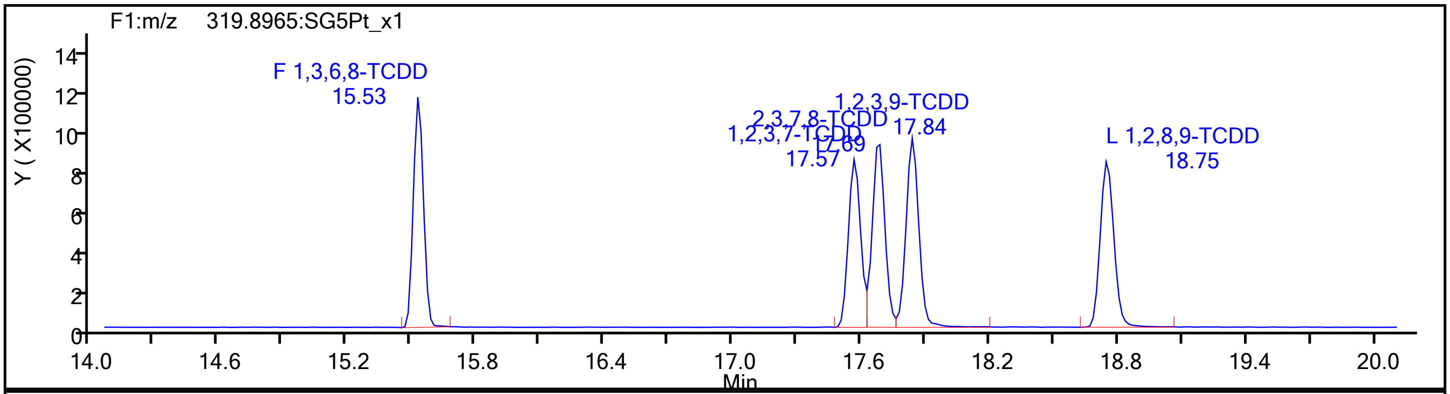

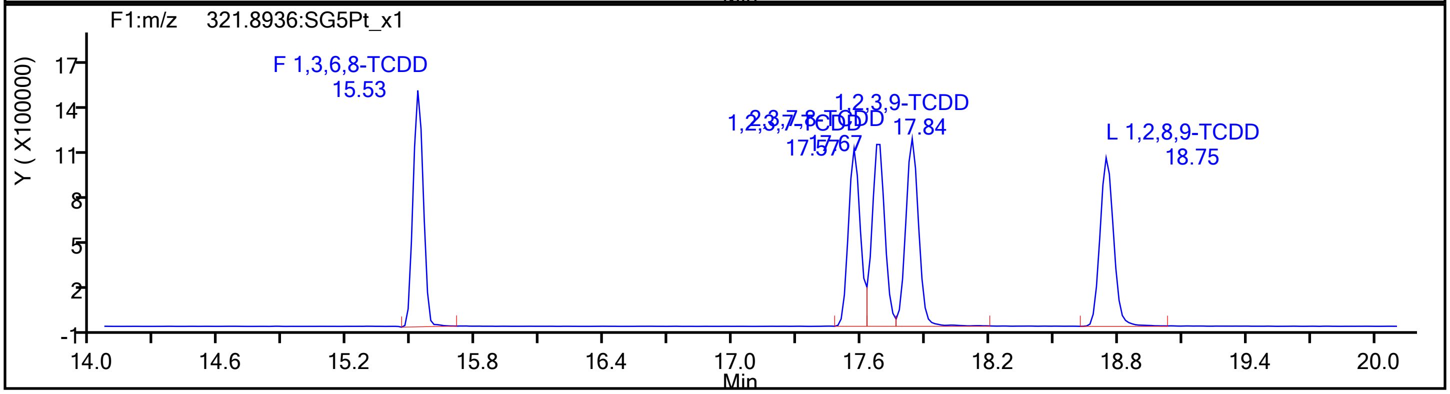

TCDD Standards

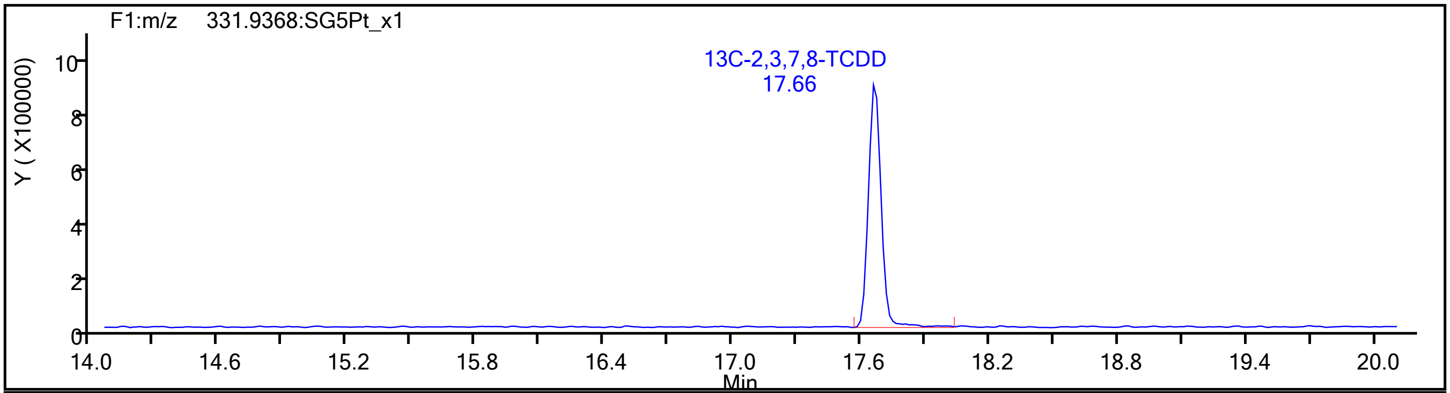

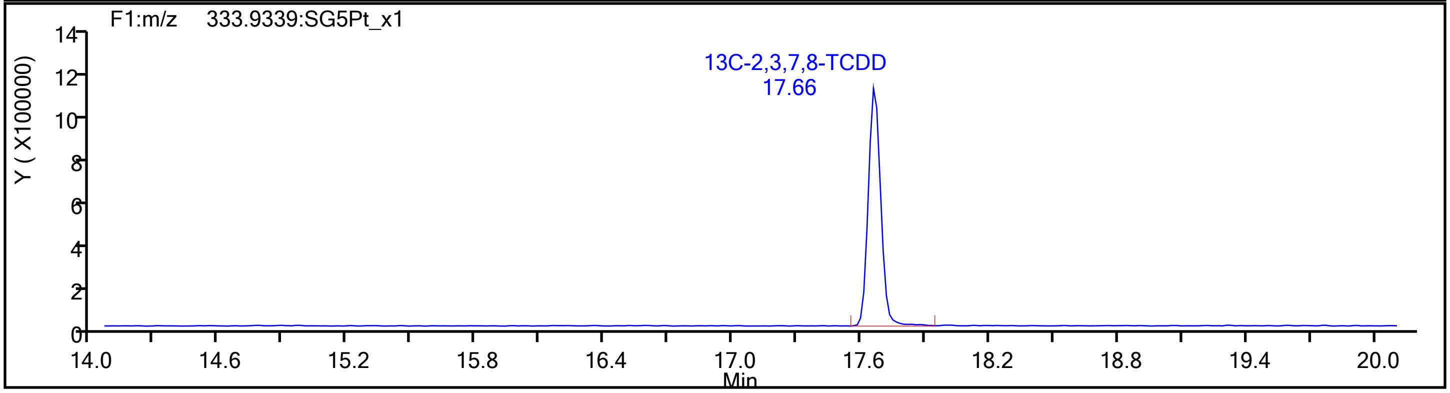

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d
Injection Date: 19-Aug-2020 22:17:59 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030 Sample Line#: 15
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

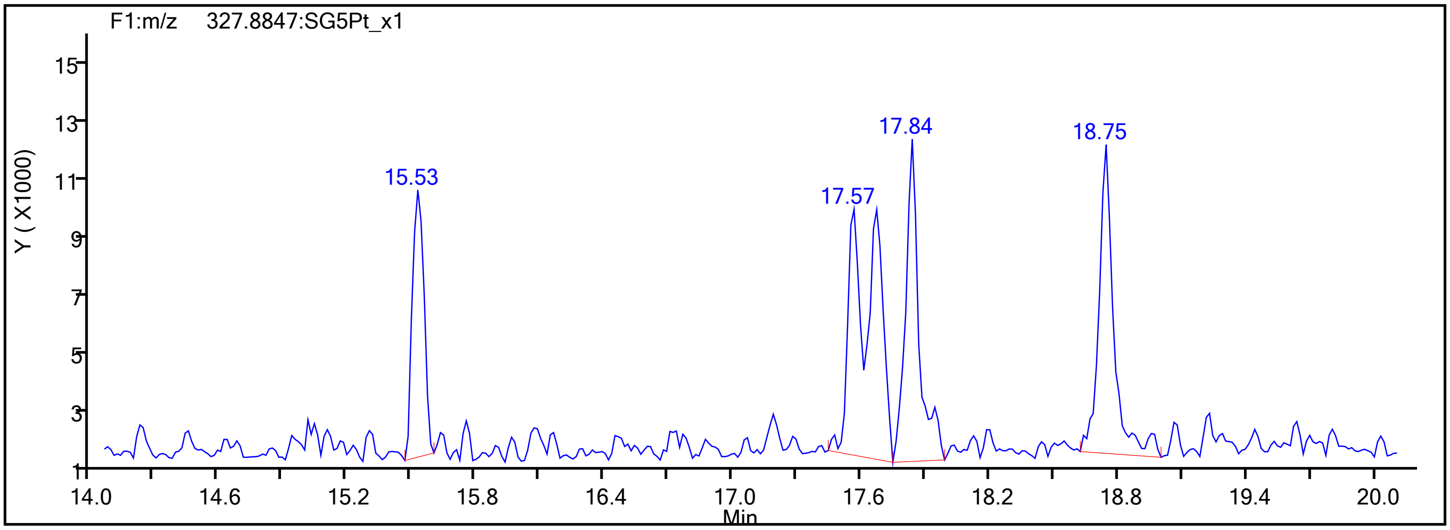

37Cl4-TCDD Standards

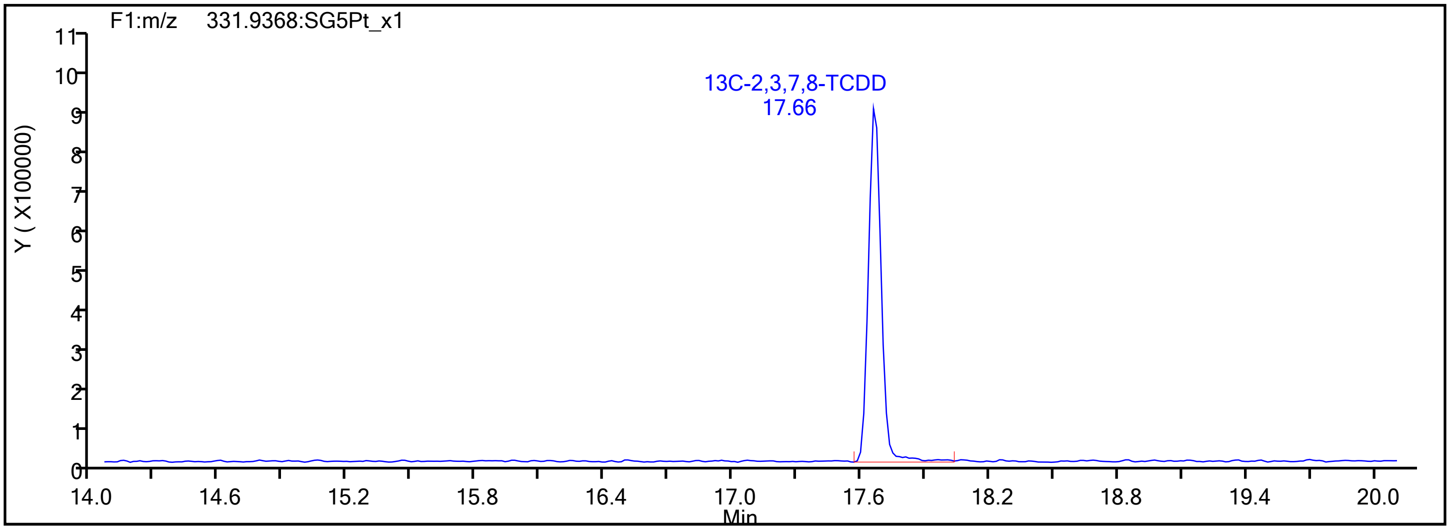

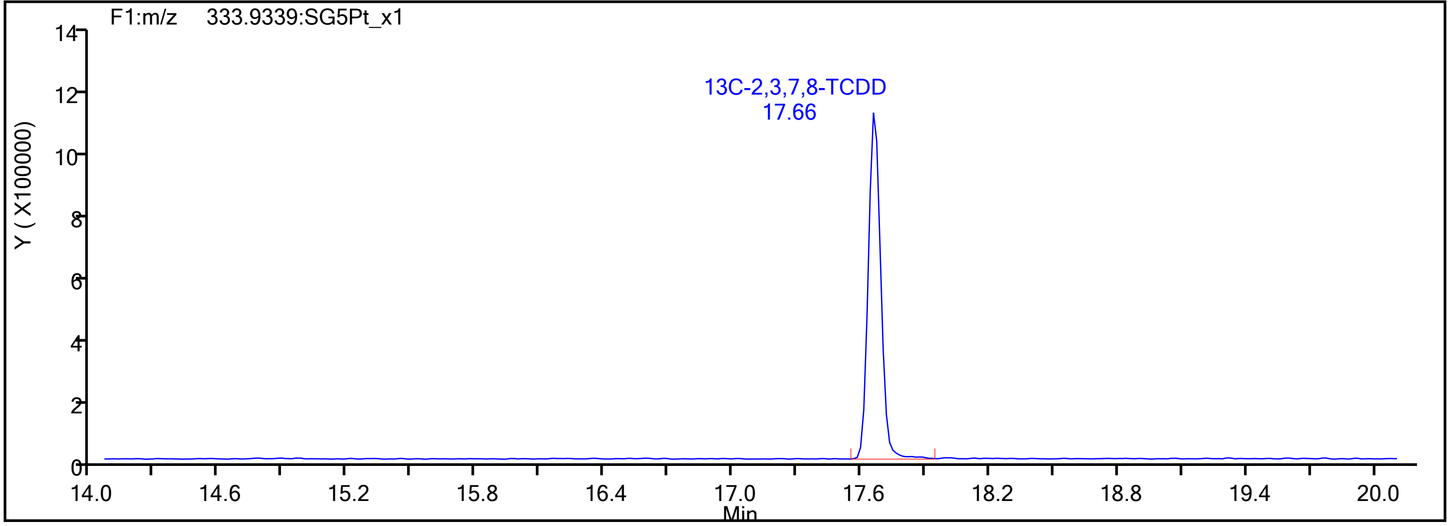

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

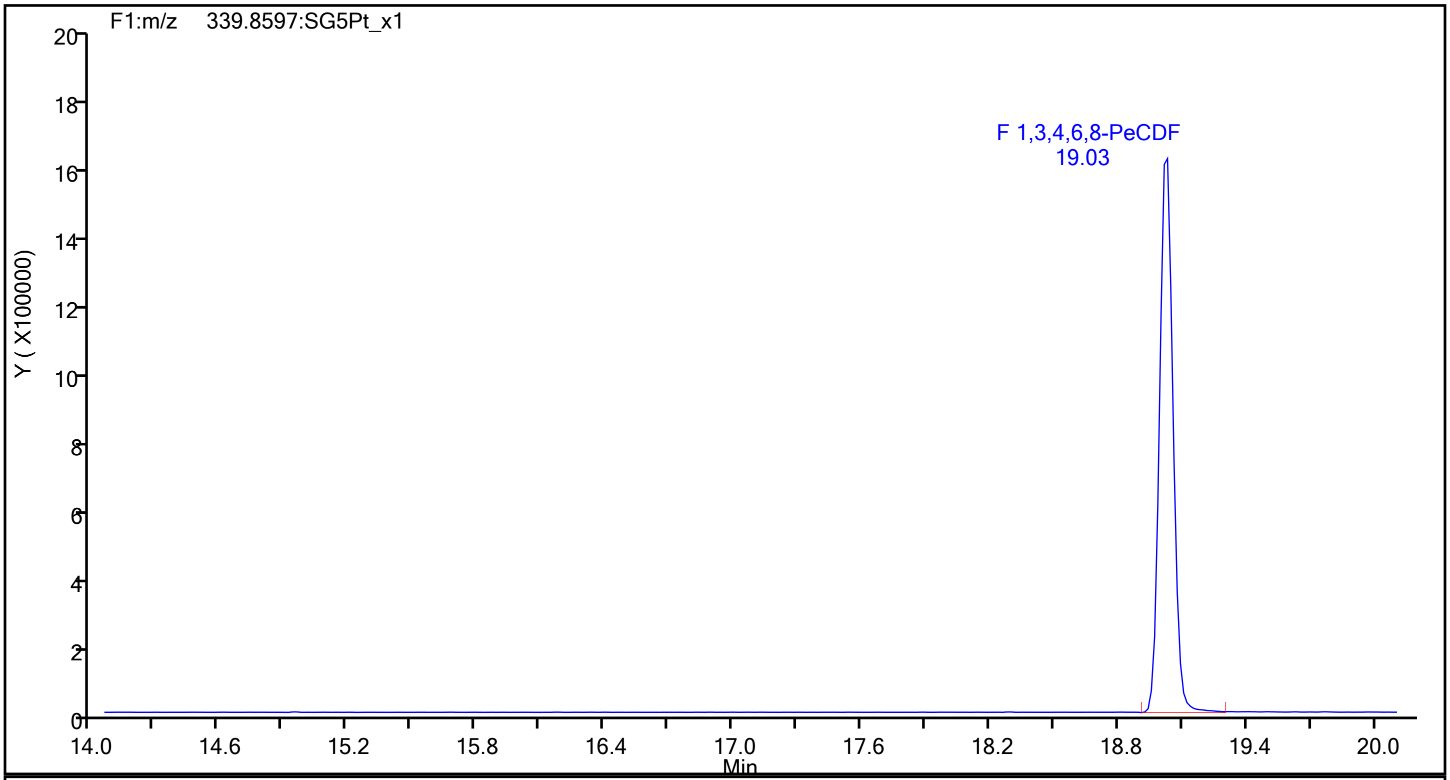

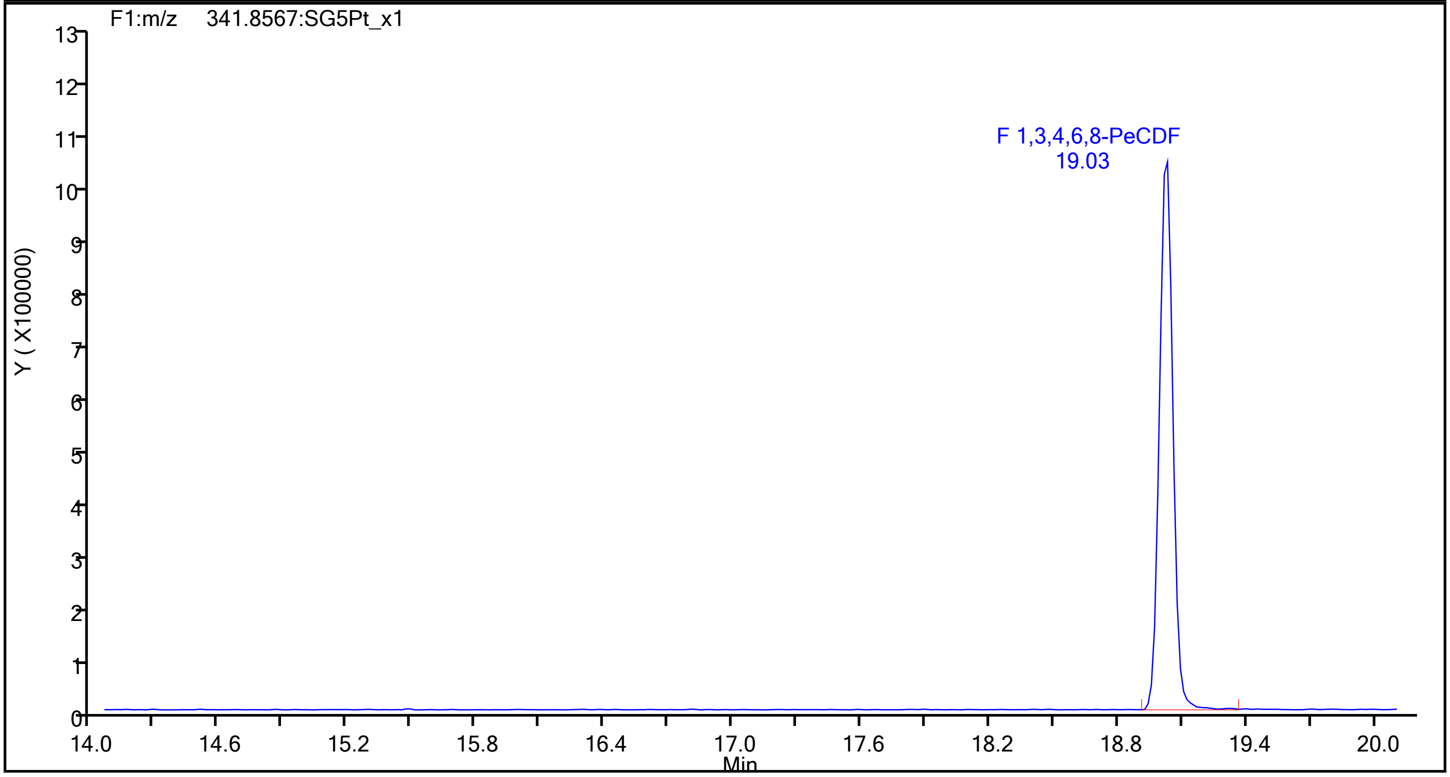

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

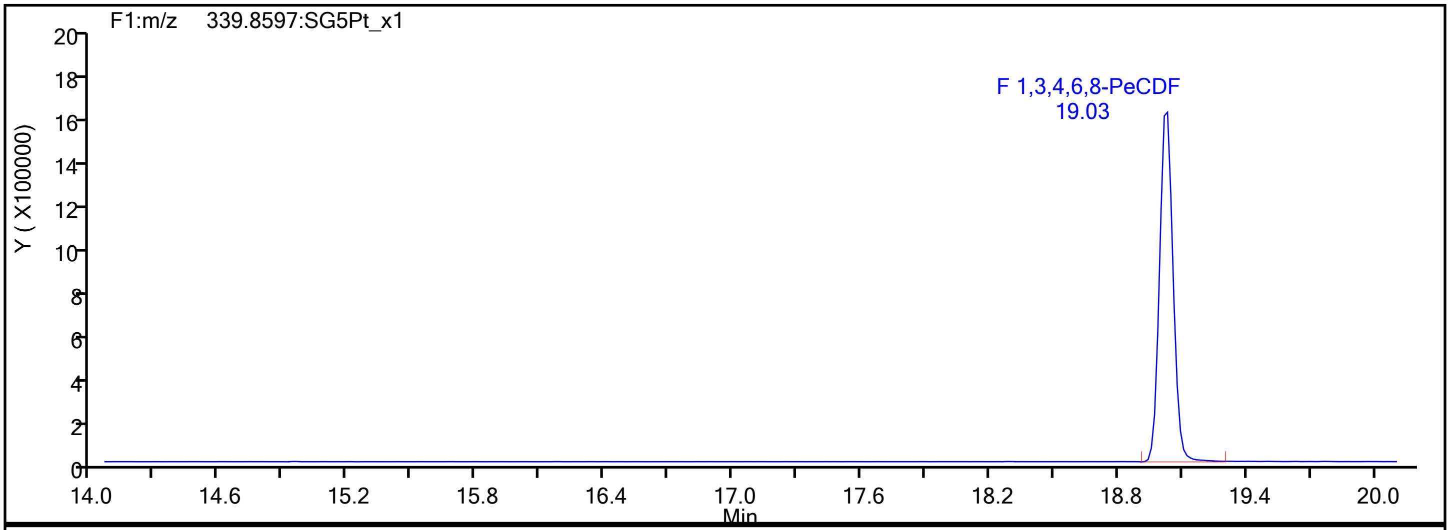

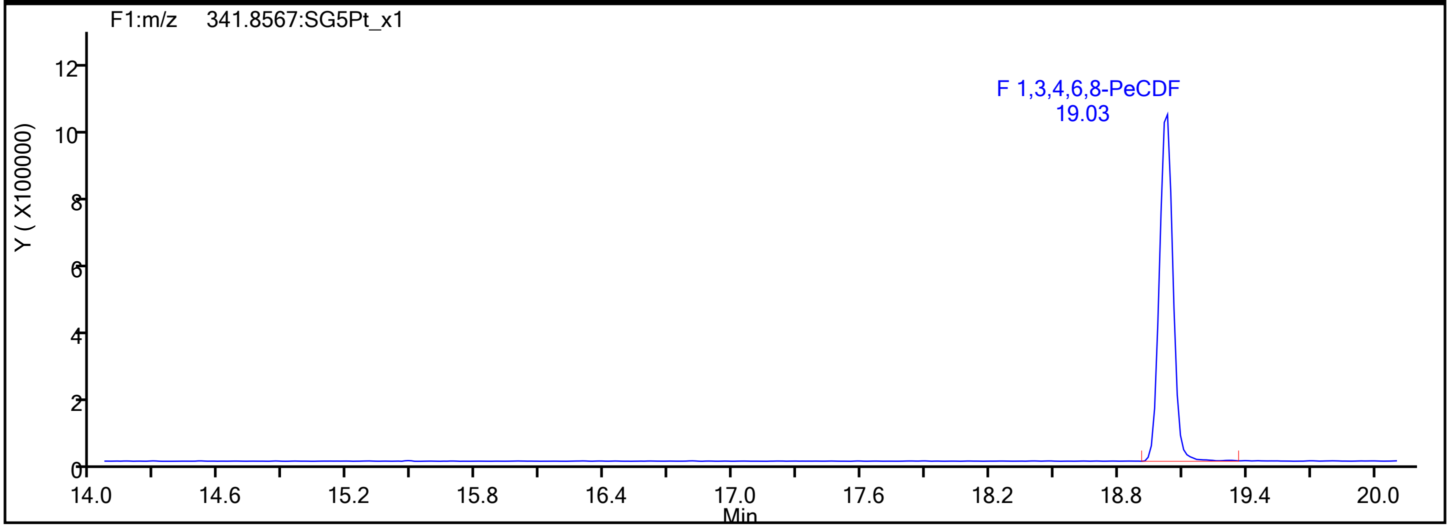

F1 PeCDFs Interference Mass

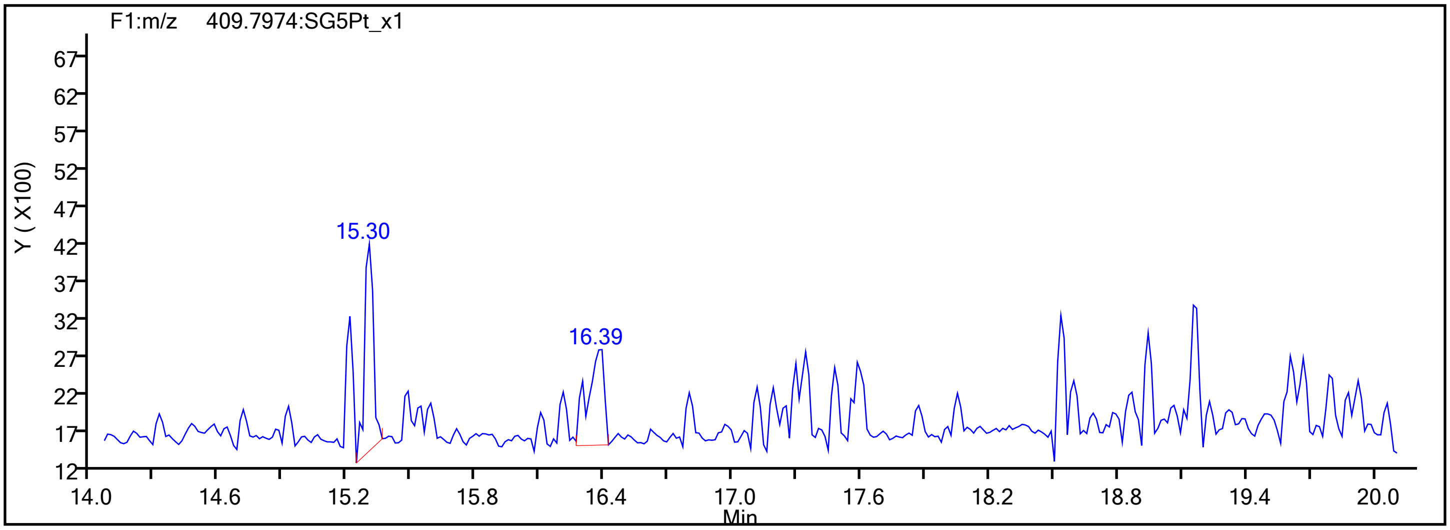

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

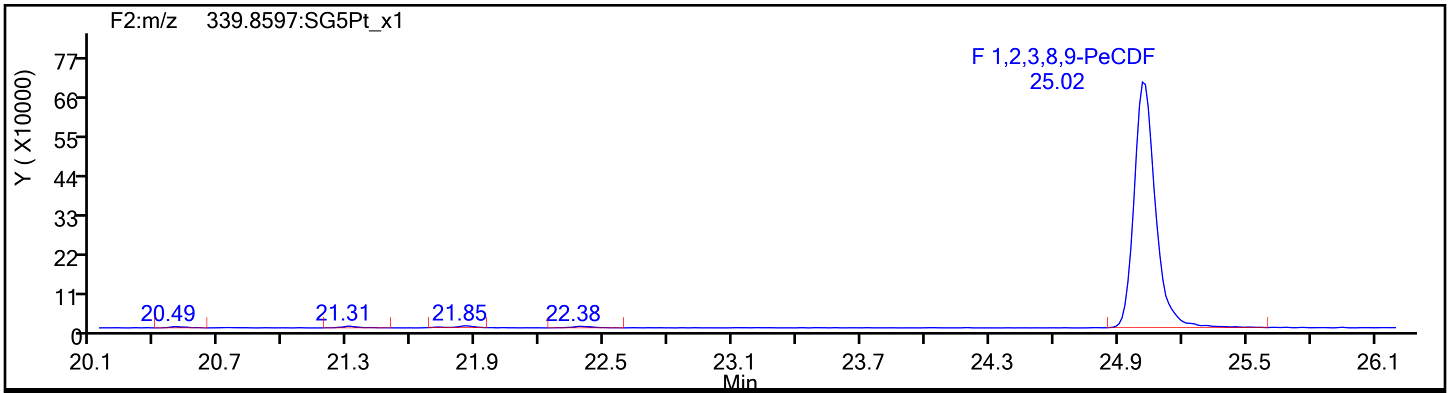

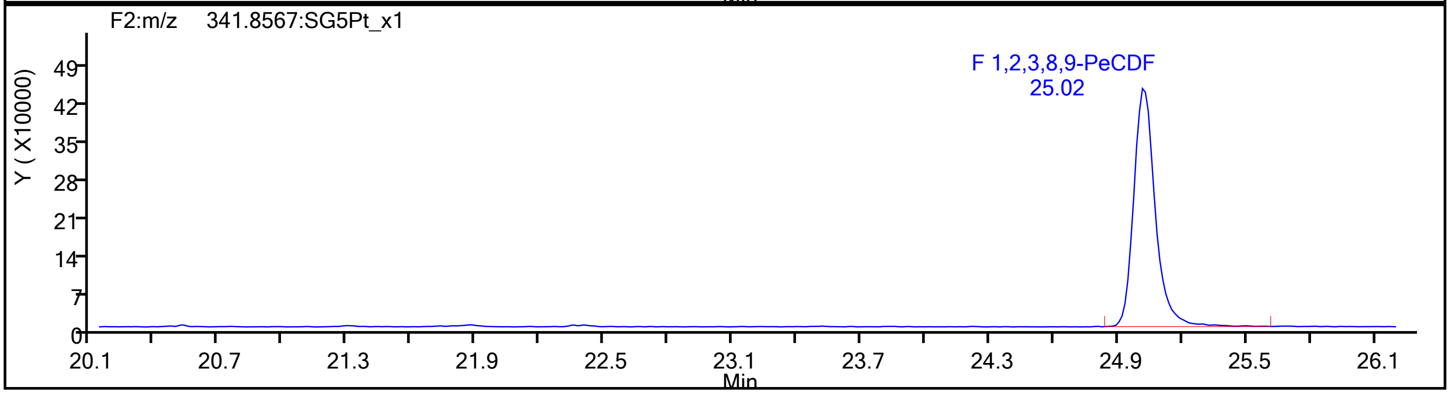

PeCDF Standards

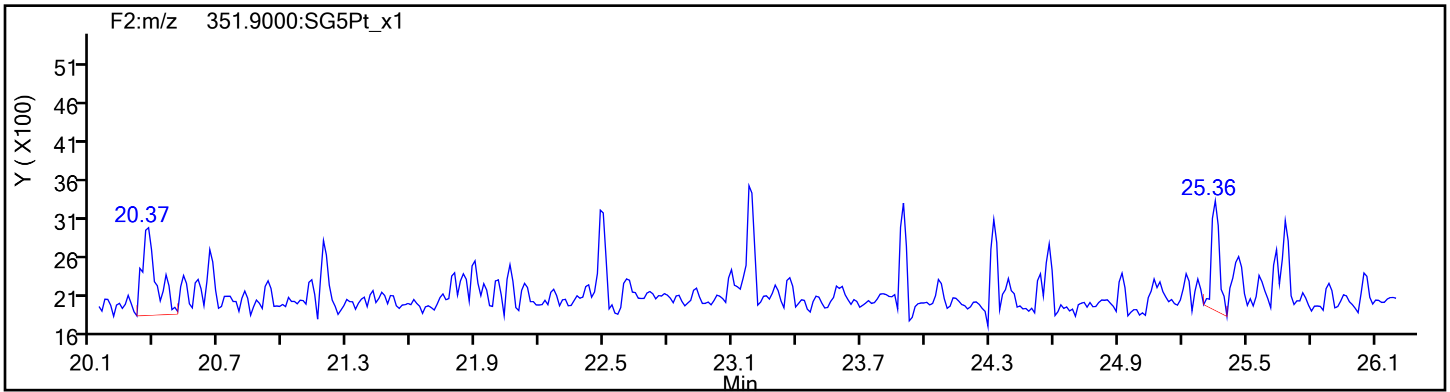

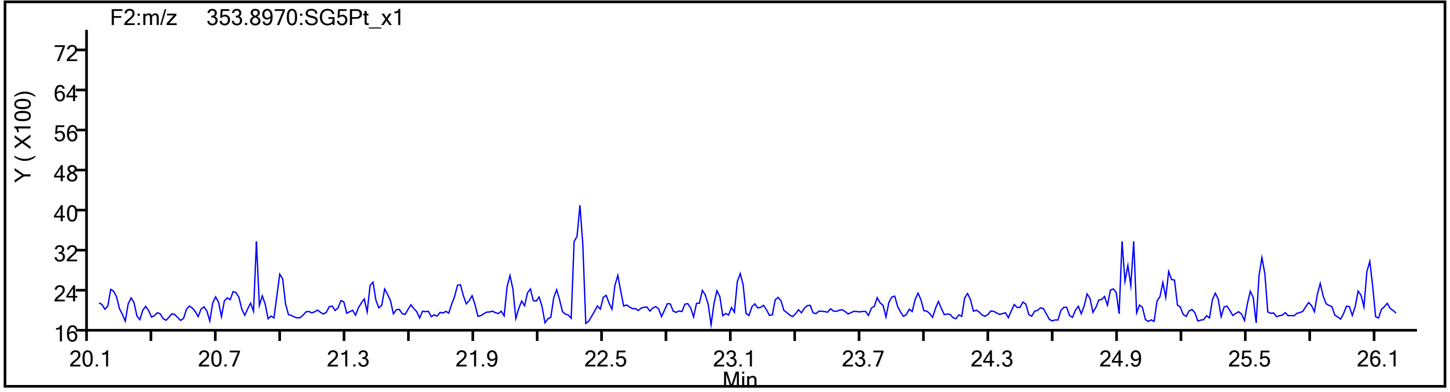

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

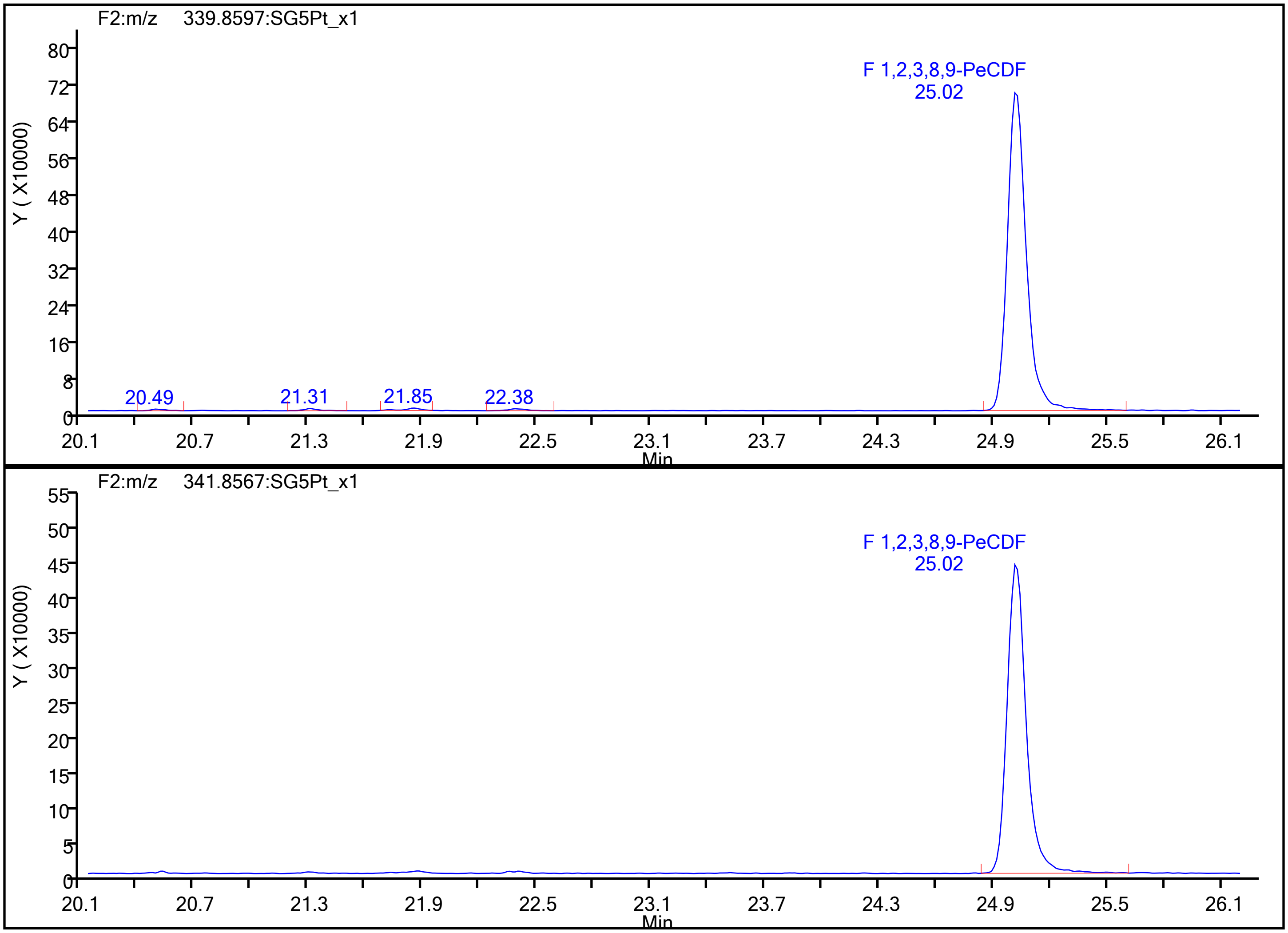

PeCDF Interference Mass

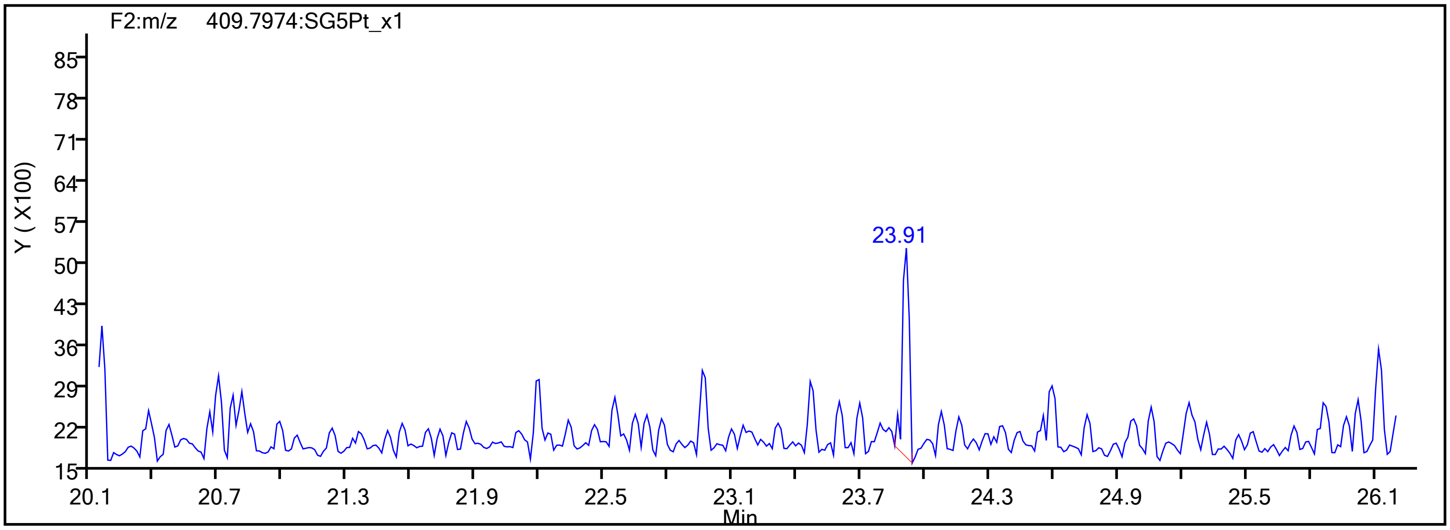

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d
Injection Date: 19-Aug-2020 22:17:59 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030 Sample Line#: 15
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

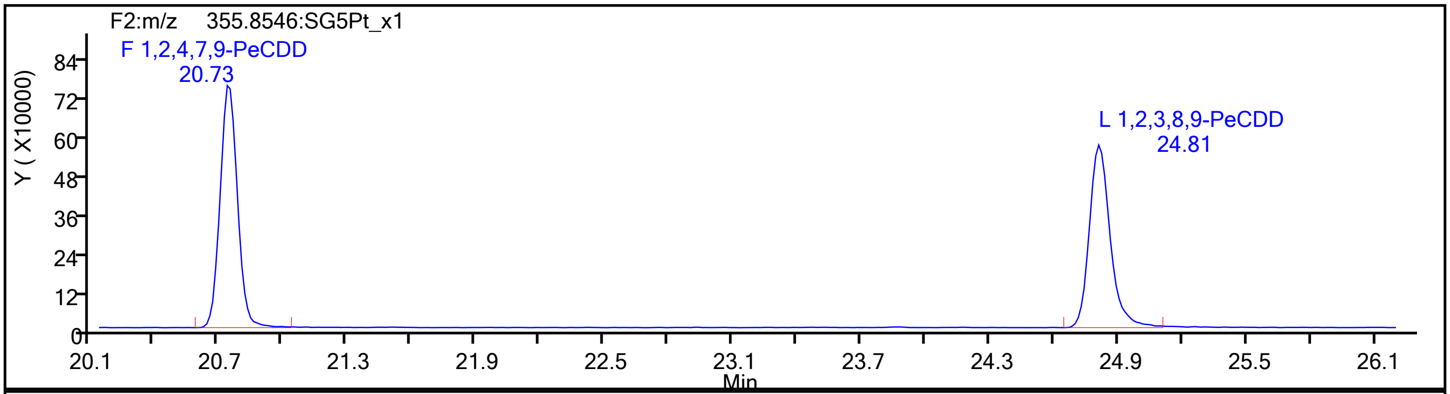

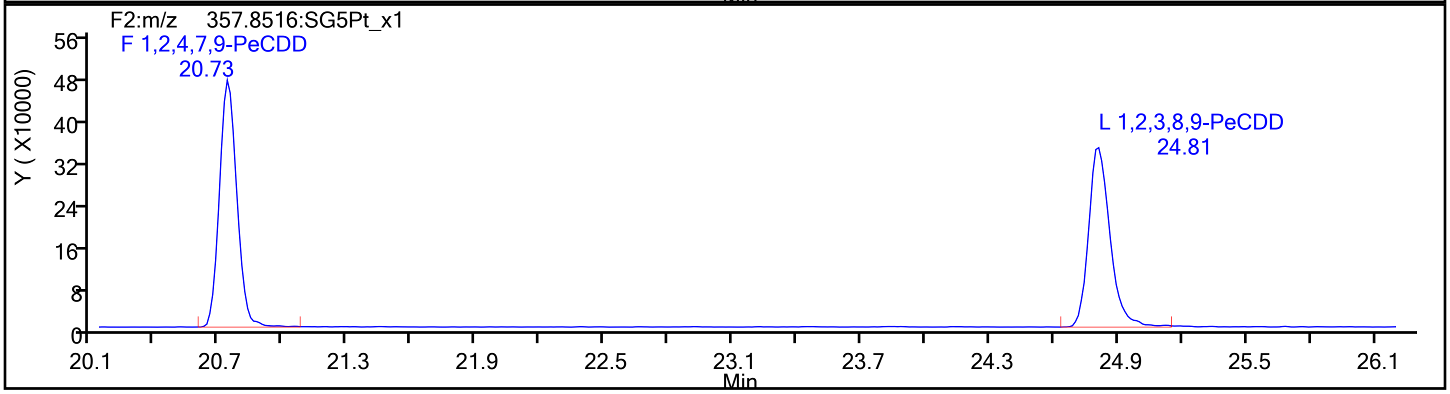

PeCDD Standards

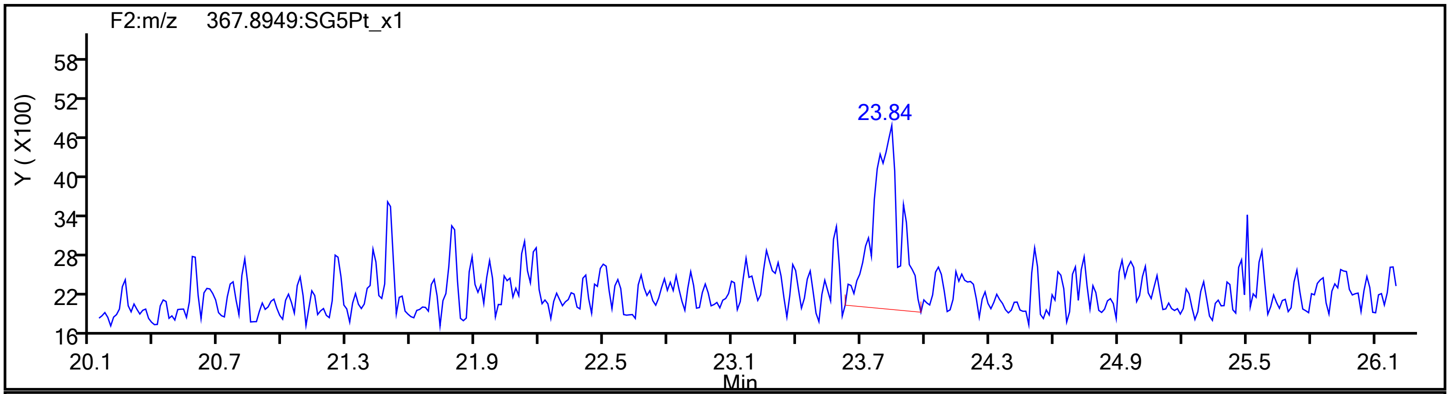

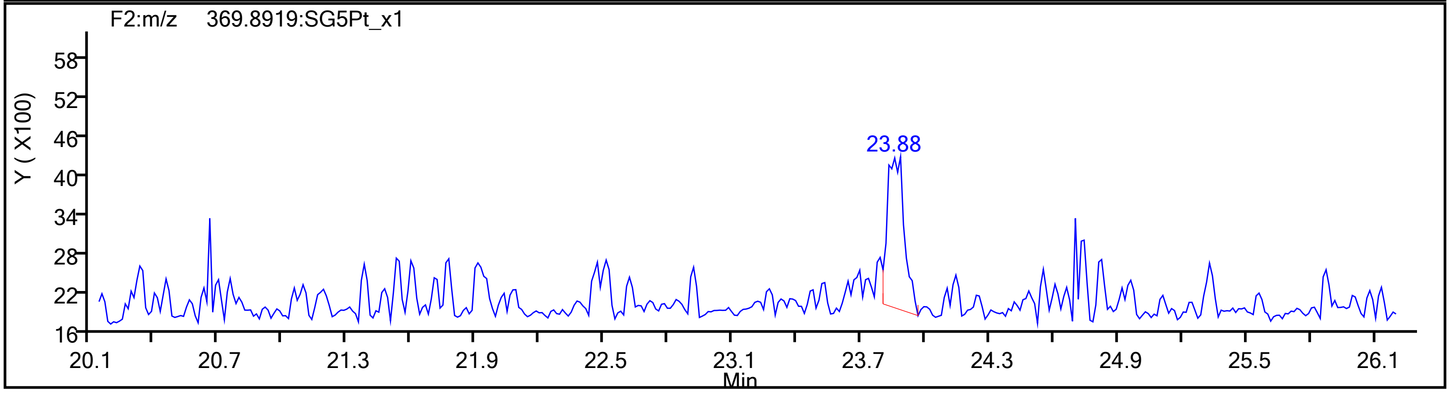

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

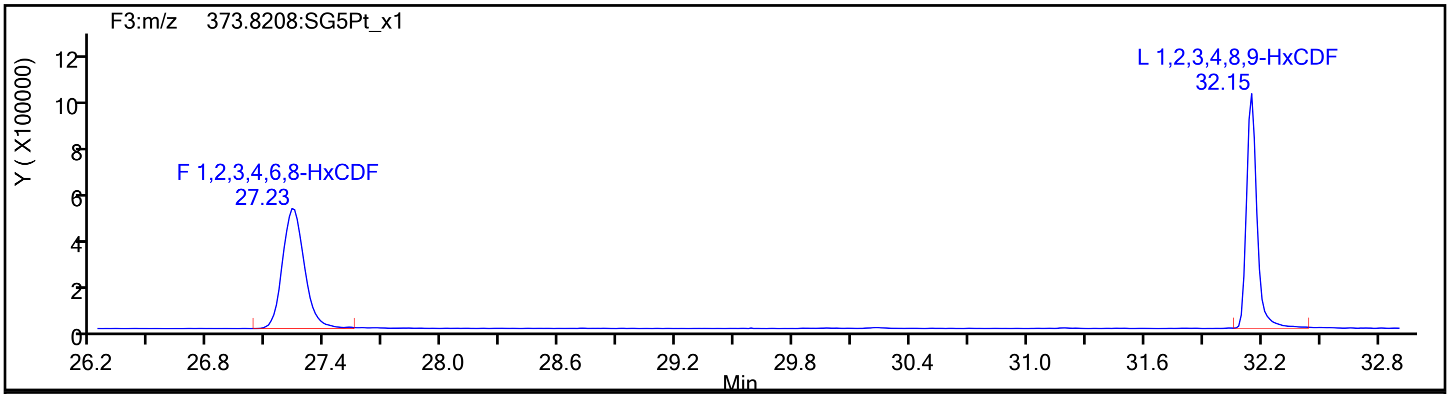

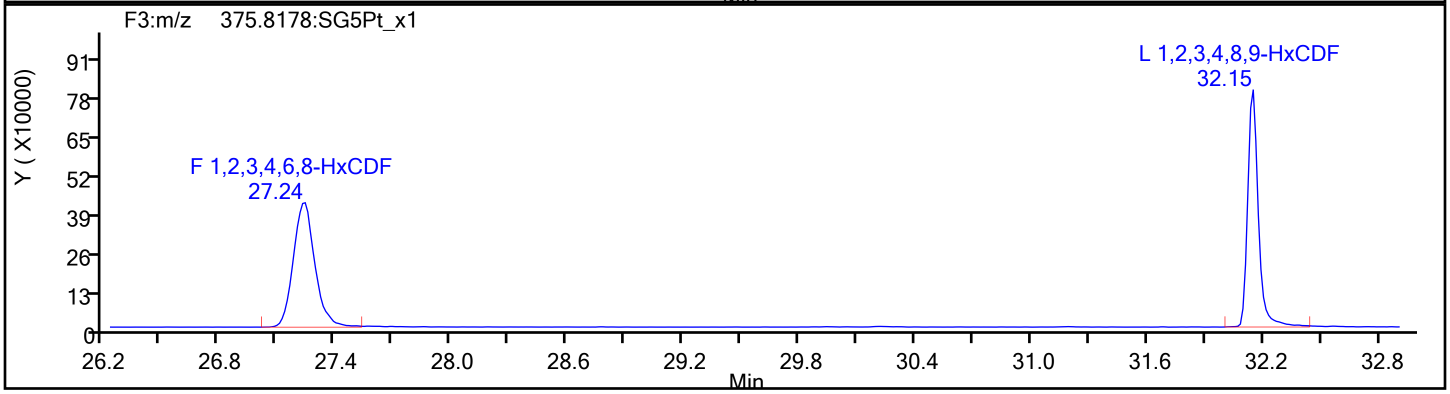

HxCDF Standards

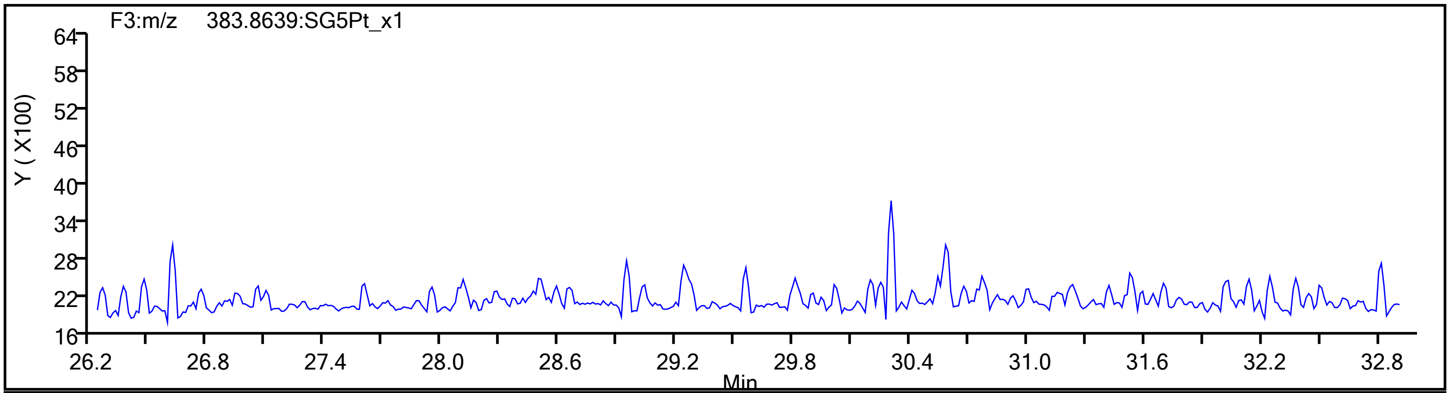

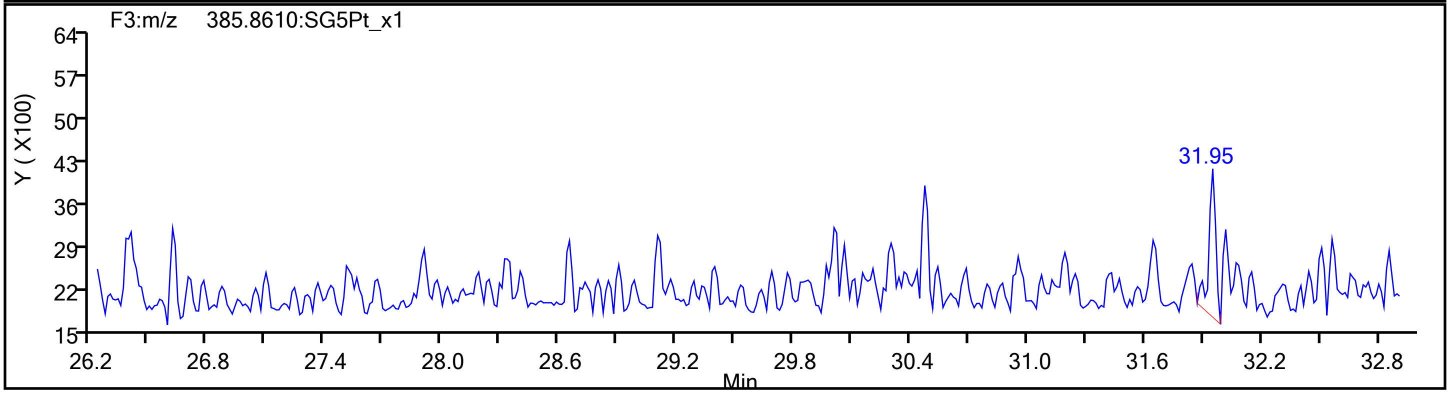

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

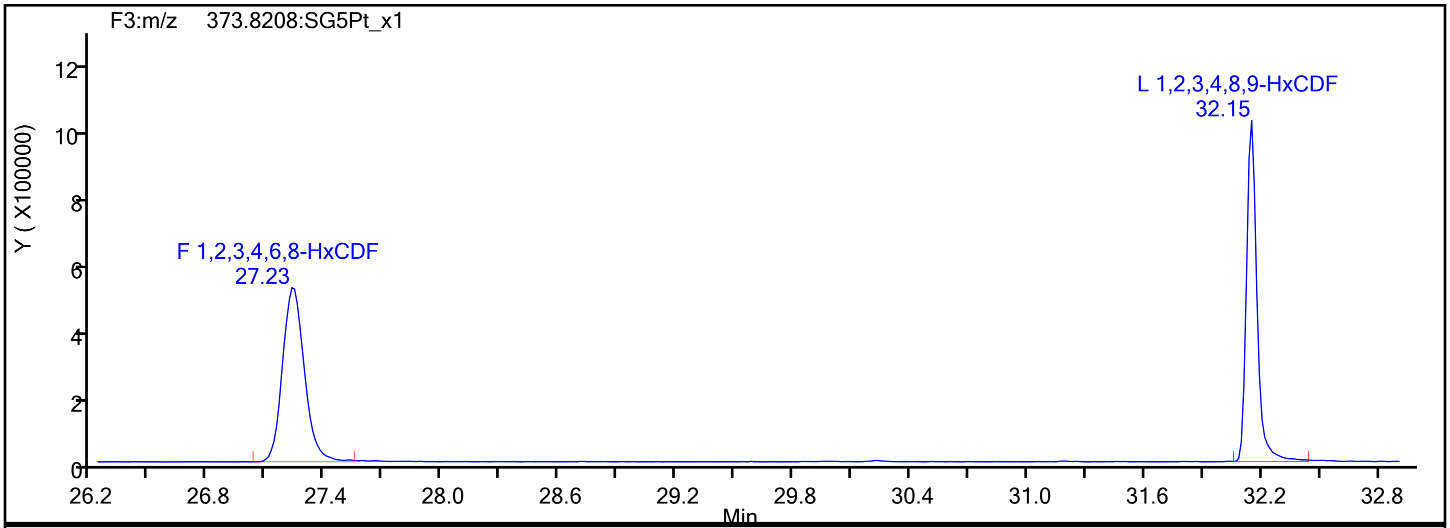

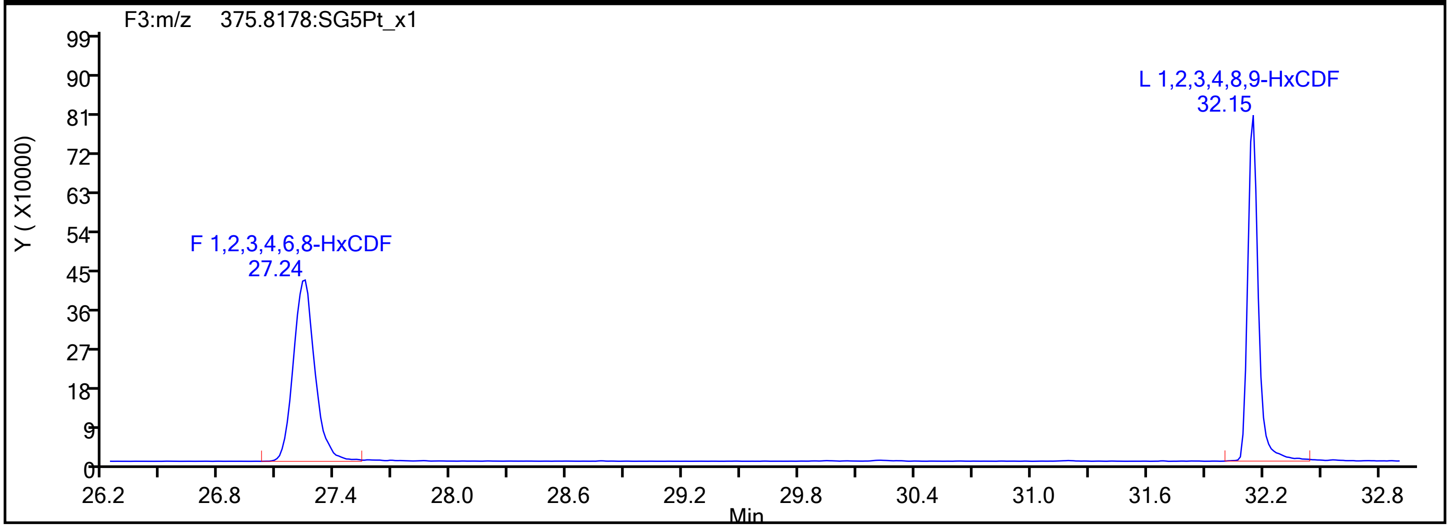

HxCDF Interference Mass

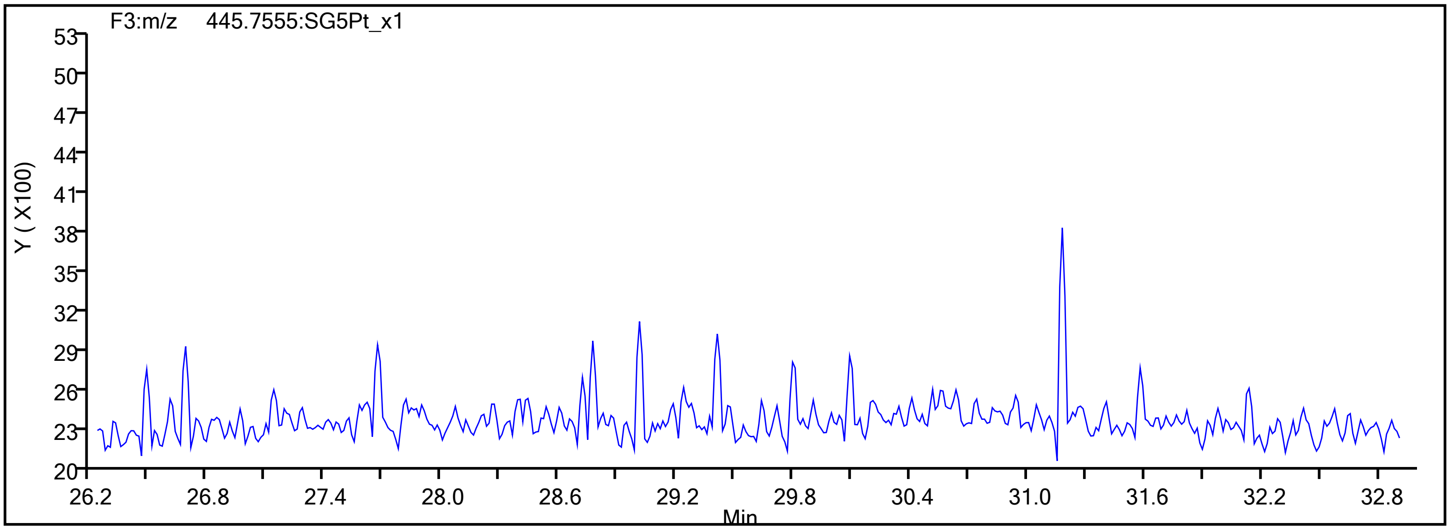

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d

Injection Date: 19-Aug-2020 22:17:59 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405030 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

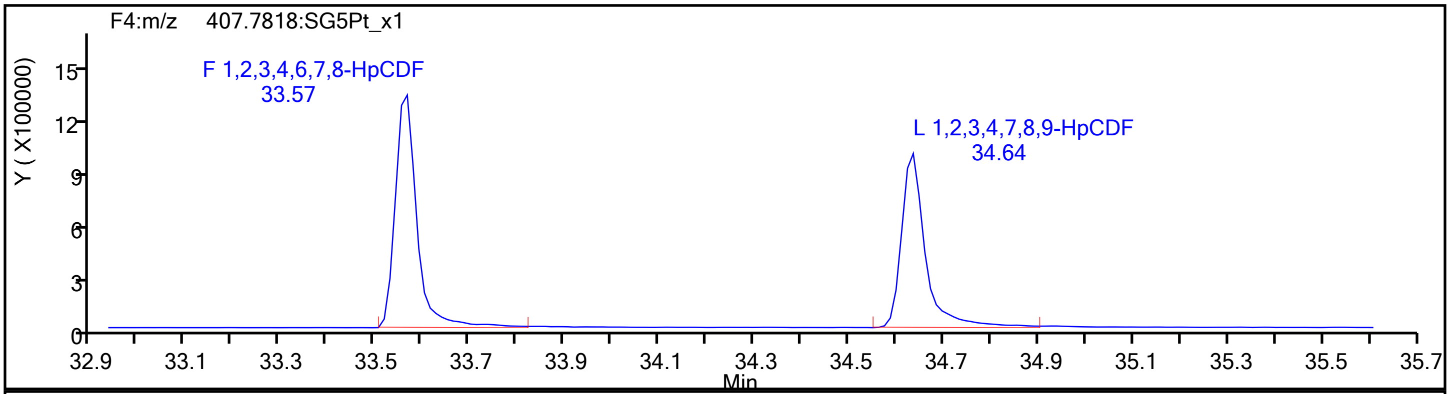

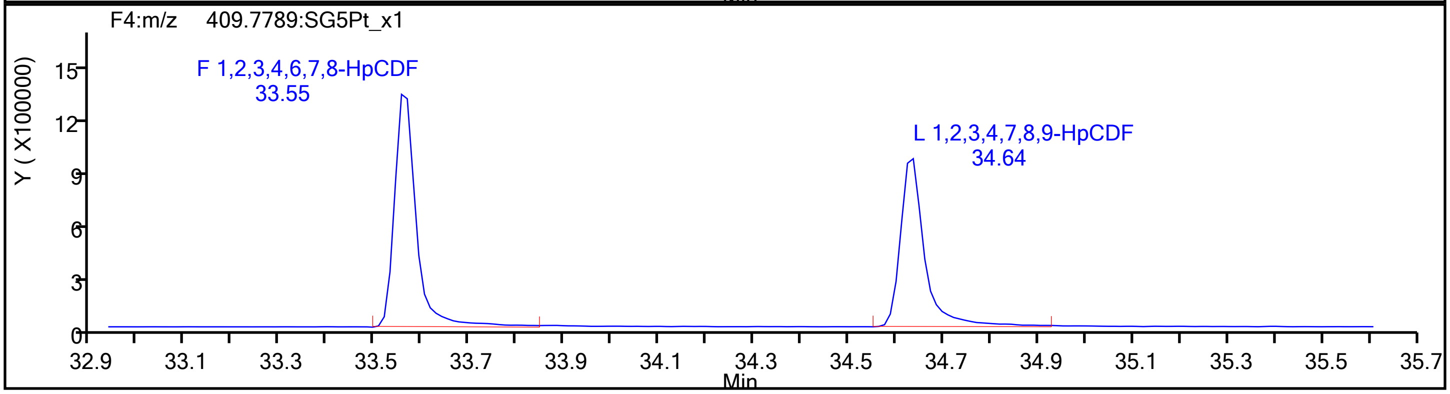

HpCDF Standards

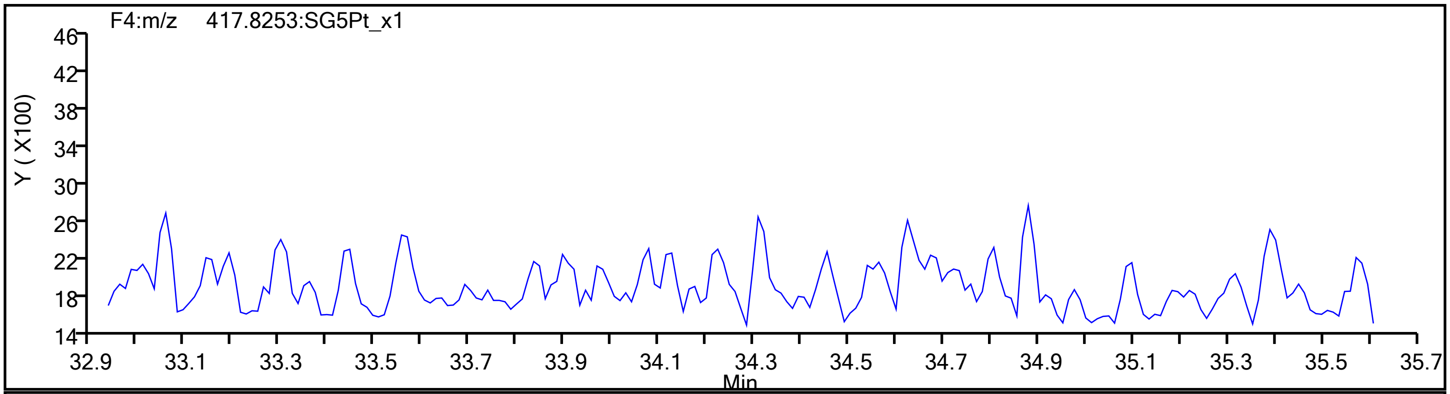

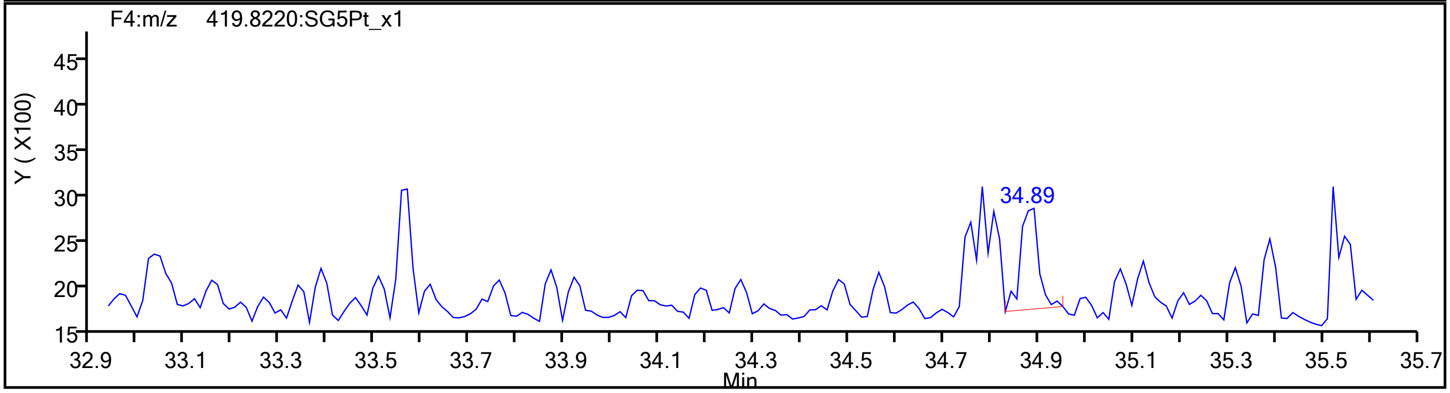

Report Date: 20-Aug-2020 14:54:25 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

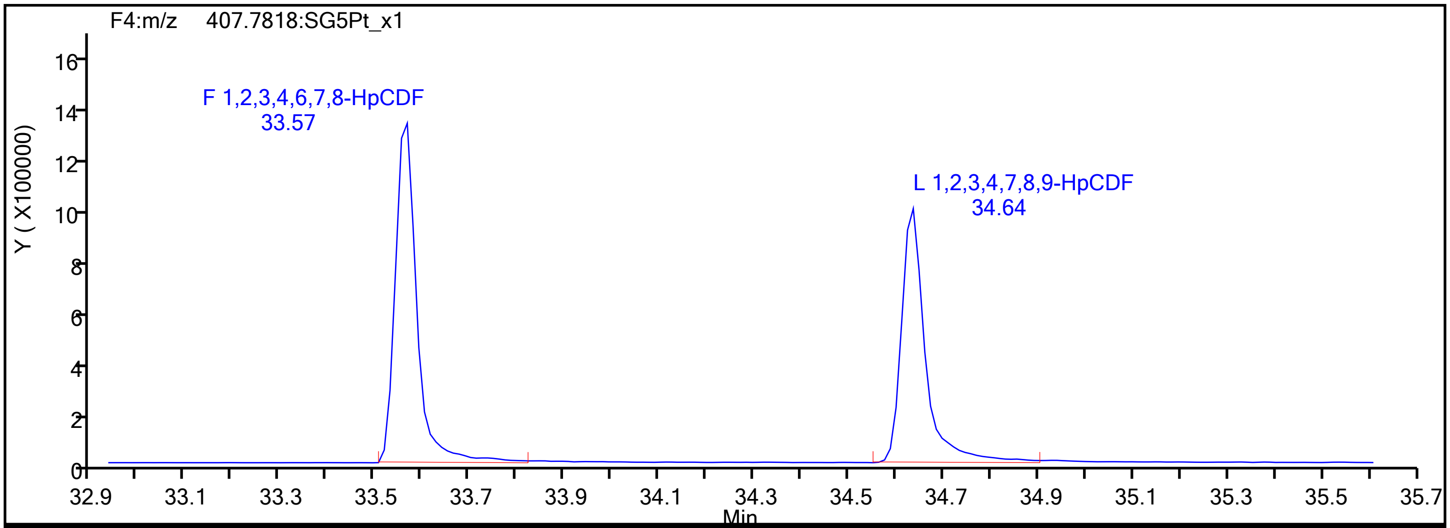

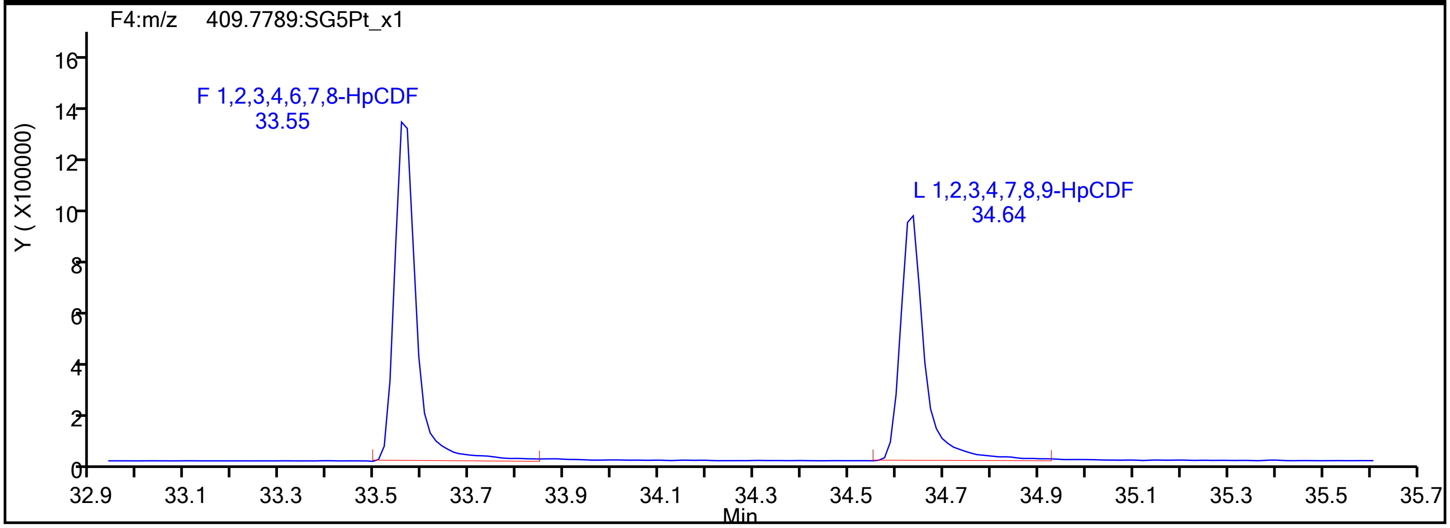

HpCDF Interference Mass

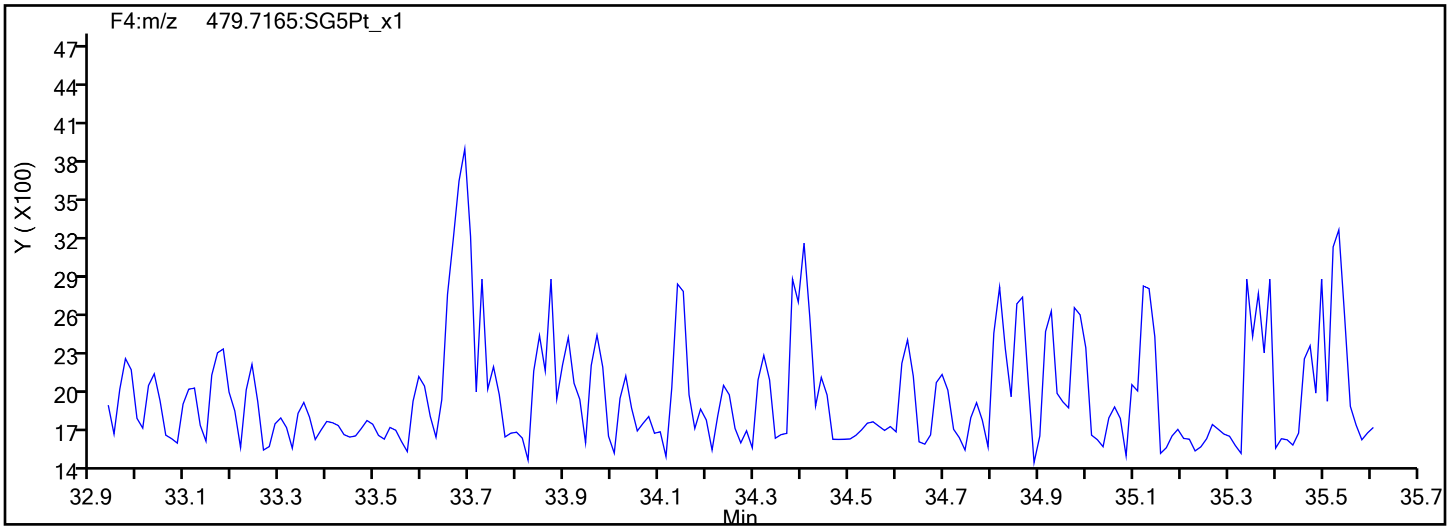

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

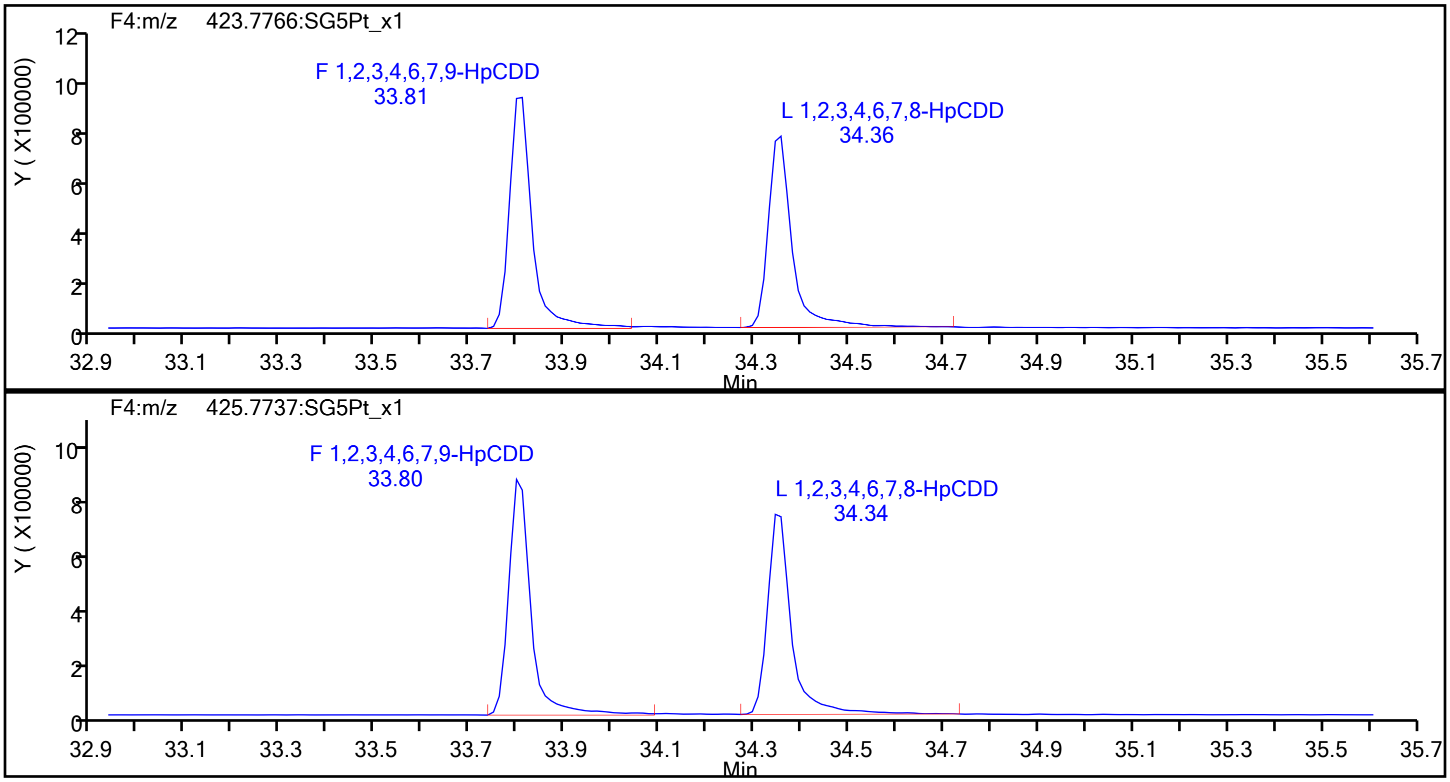

HpCDD Standards

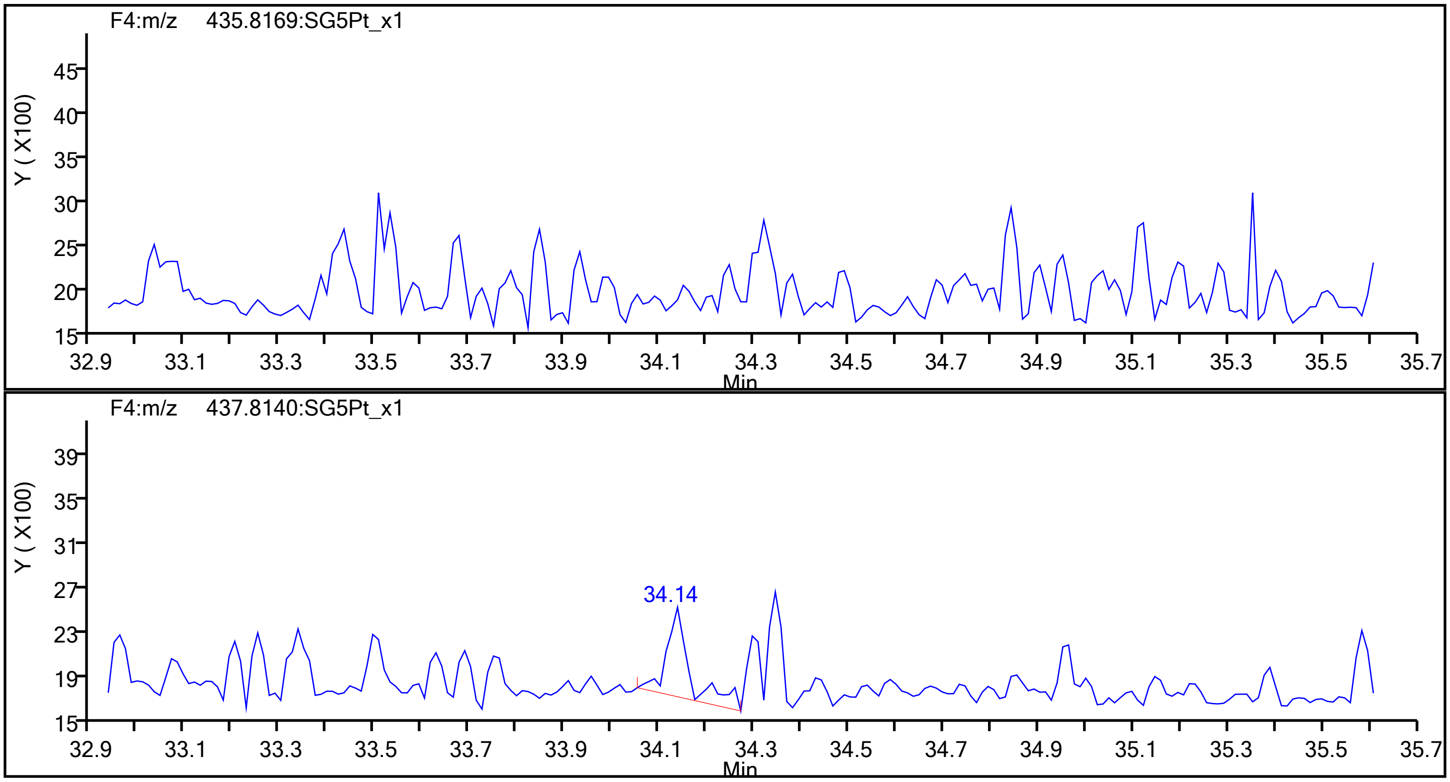

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d		
Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

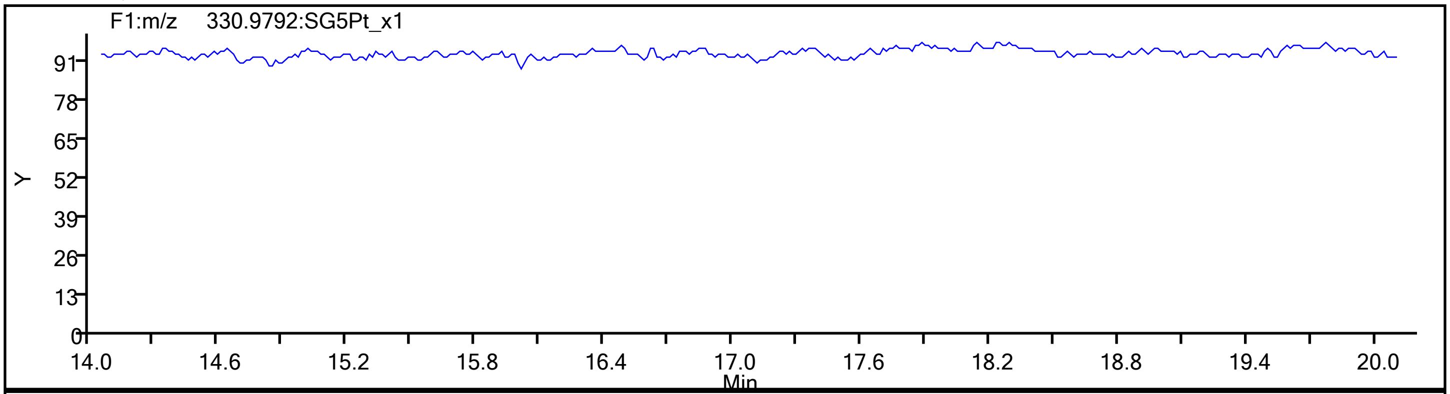

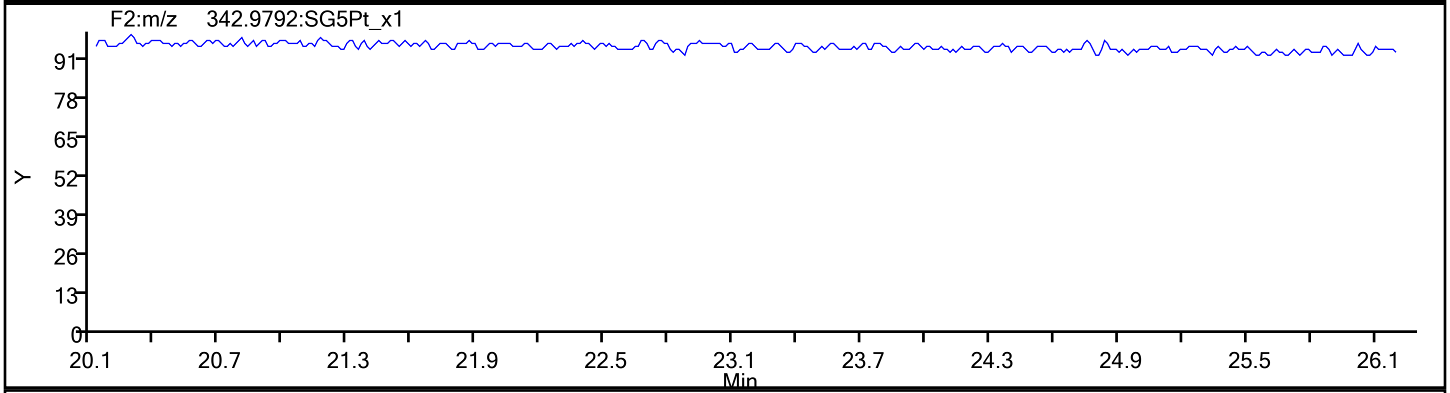

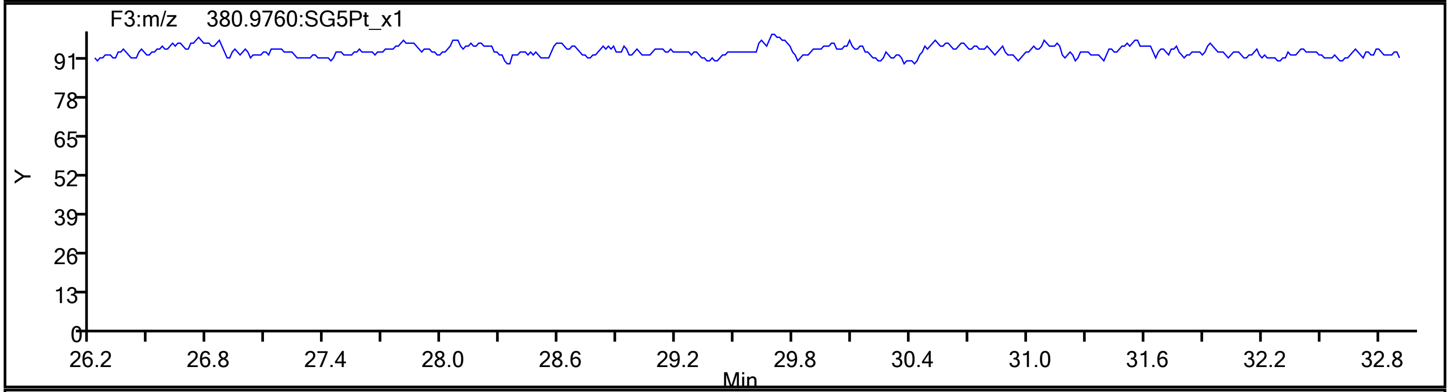

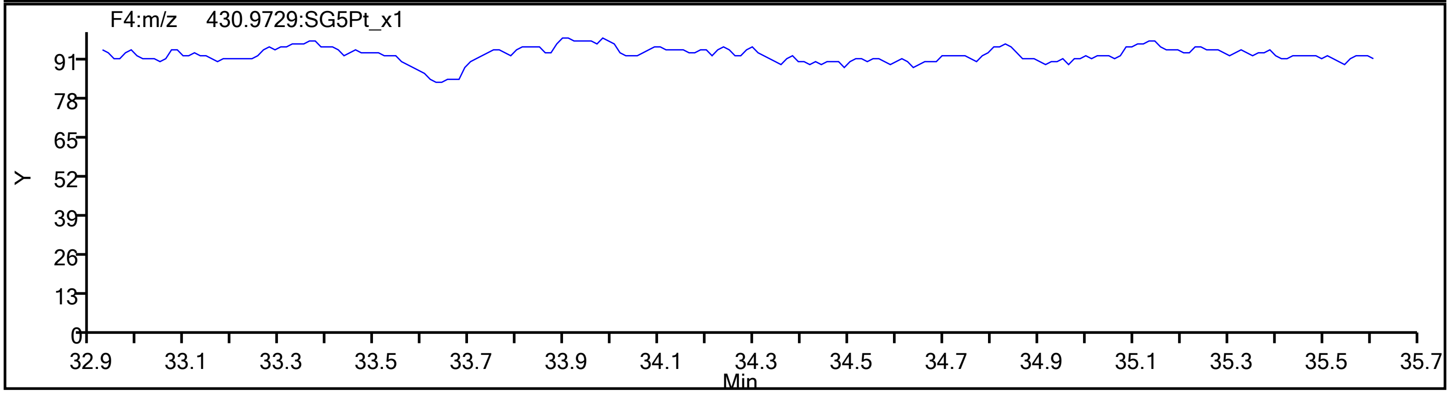

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_15.d

Injection Date:	19-Aug-2020 22:17:59	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

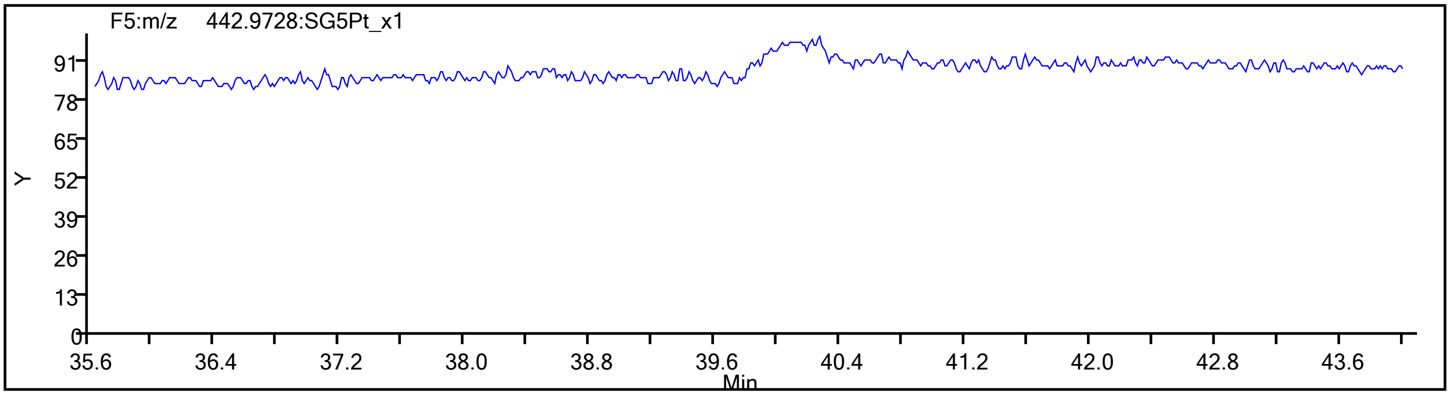

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 20-Aug-2020 01:30:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: DB225 CPSM HRDXNCP_00040
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:22:14 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:06:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	15.004	66613401	0.79	1.2239					0.00	
2,3,7,8-TCDF	15.018	58939402	0.68	0.9341	37.9	37.9	0.0459	0.0459		
D 13C-2,3,7,8-TCDD	13.633	51367055	0.81	0.9126					0.00	
2,3,7,8-TCDD	13.646	52089944	0.78	1.1025	36.8	36.8	0.0527	0.0527		

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:22:15 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 20-Aug-2020 01:30:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: DB225 CPSM HRDXNCP_00040
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2

Method: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Aug-2020 09:22:14 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1068

First Level Reviewer: arghestanis Date: 20-Aug-2020 09:06:00

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	15.004	15.004	0	1.000	29371540	6673715	8838	22095	755		
317.9389	15.004	15.004	0	1.000	37241861	8093528	7144	17860	1133	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.018	15.035	-1	1.001	23865552	5292488	2726	6815	1941		
305.8987	15.018	15.035	-1	1.001	35073850	7727954	3600	9000	2147	0.68(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.633	13.633	0	1.000	22955153	5409522	8199	20497	660		
333.9339	13.633	13.633	0	1.000	28411902	6593404	4864	12160	1356	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.646	13.658	-1	1.001	22806772	5396204	3469	8672	1556		
321.8936	13.646	13.658	-1	1.001	29283172	6941130	3510	8775	1978	0.78(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Report Date: 20-Aug-2020 09:22:15 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d		
Injection Date:	20-Aug-2020 01:30:34	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

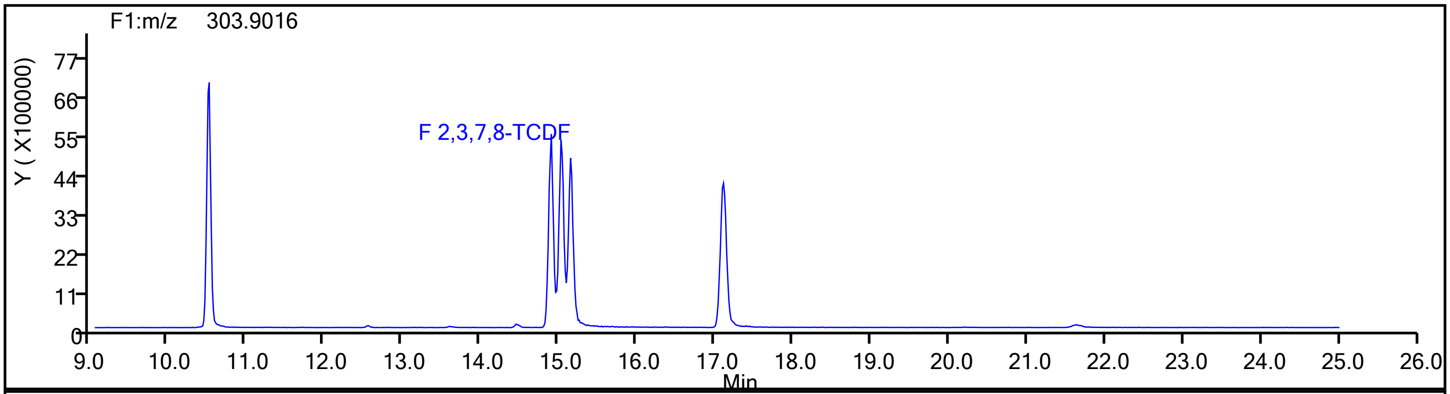

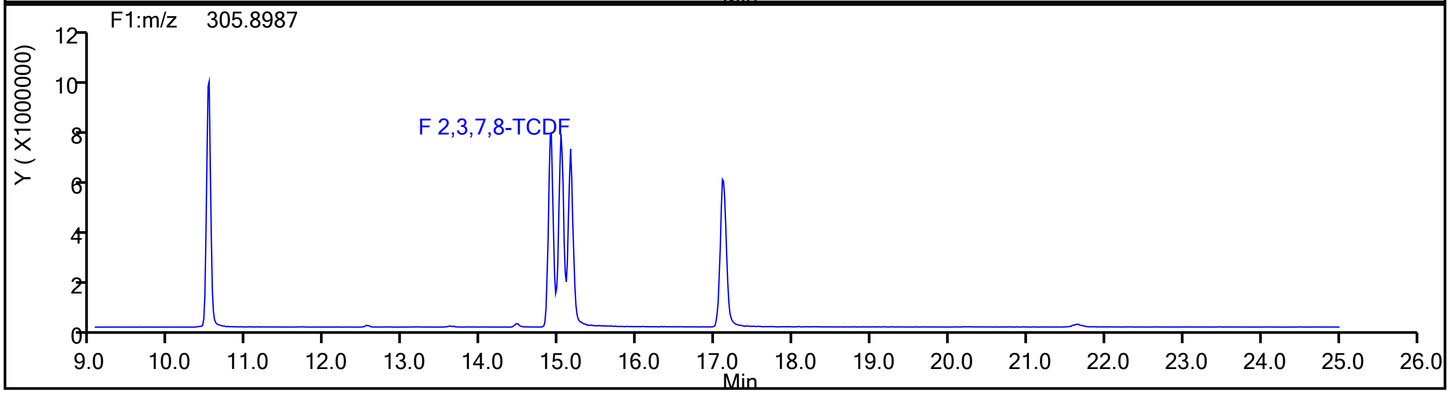

TCDF Standards

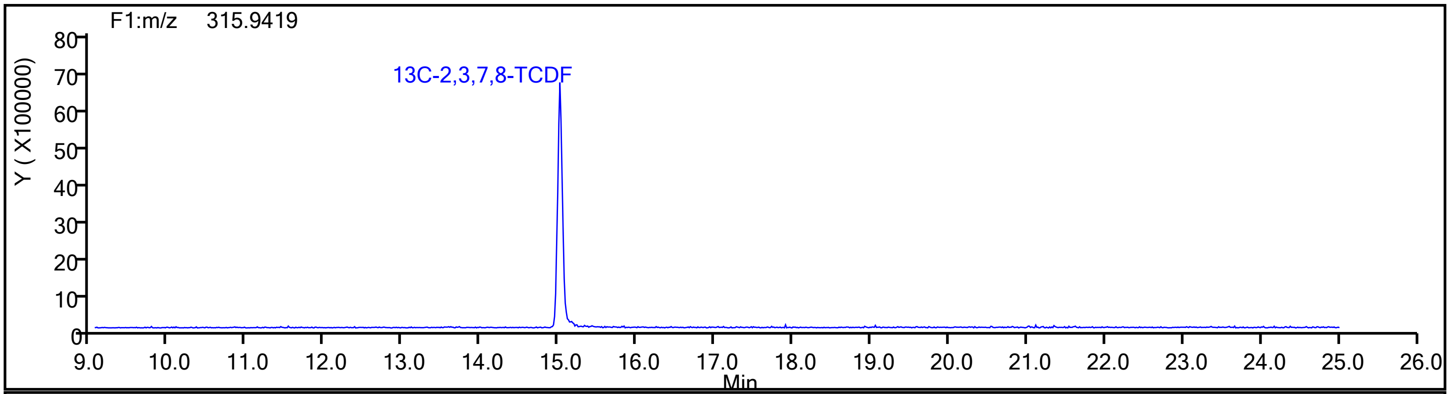

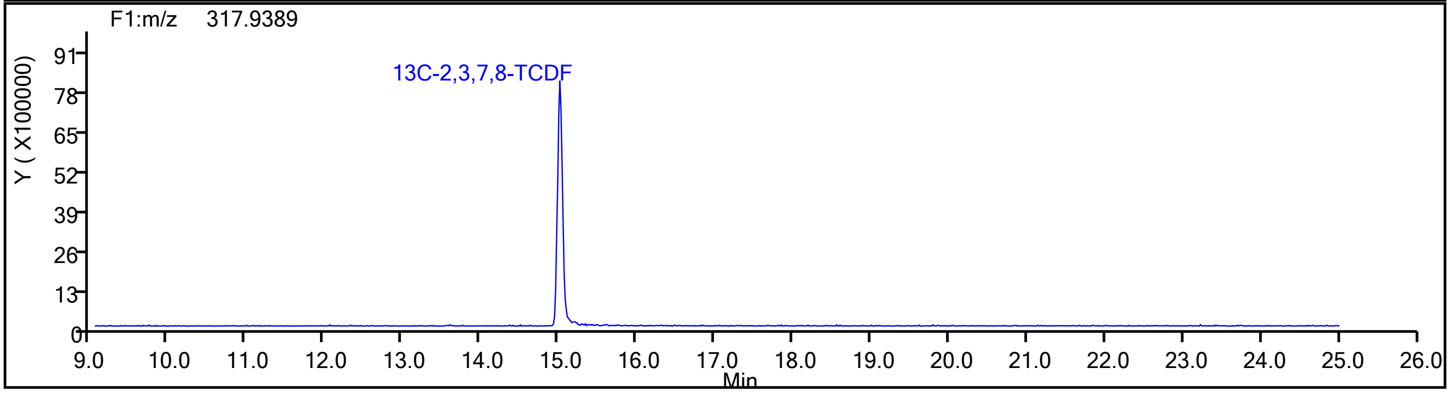

Report Date: 20-Aug-2020 09:22:15 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d		
Injection Date:	20-Aug-2020 01:30:34	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

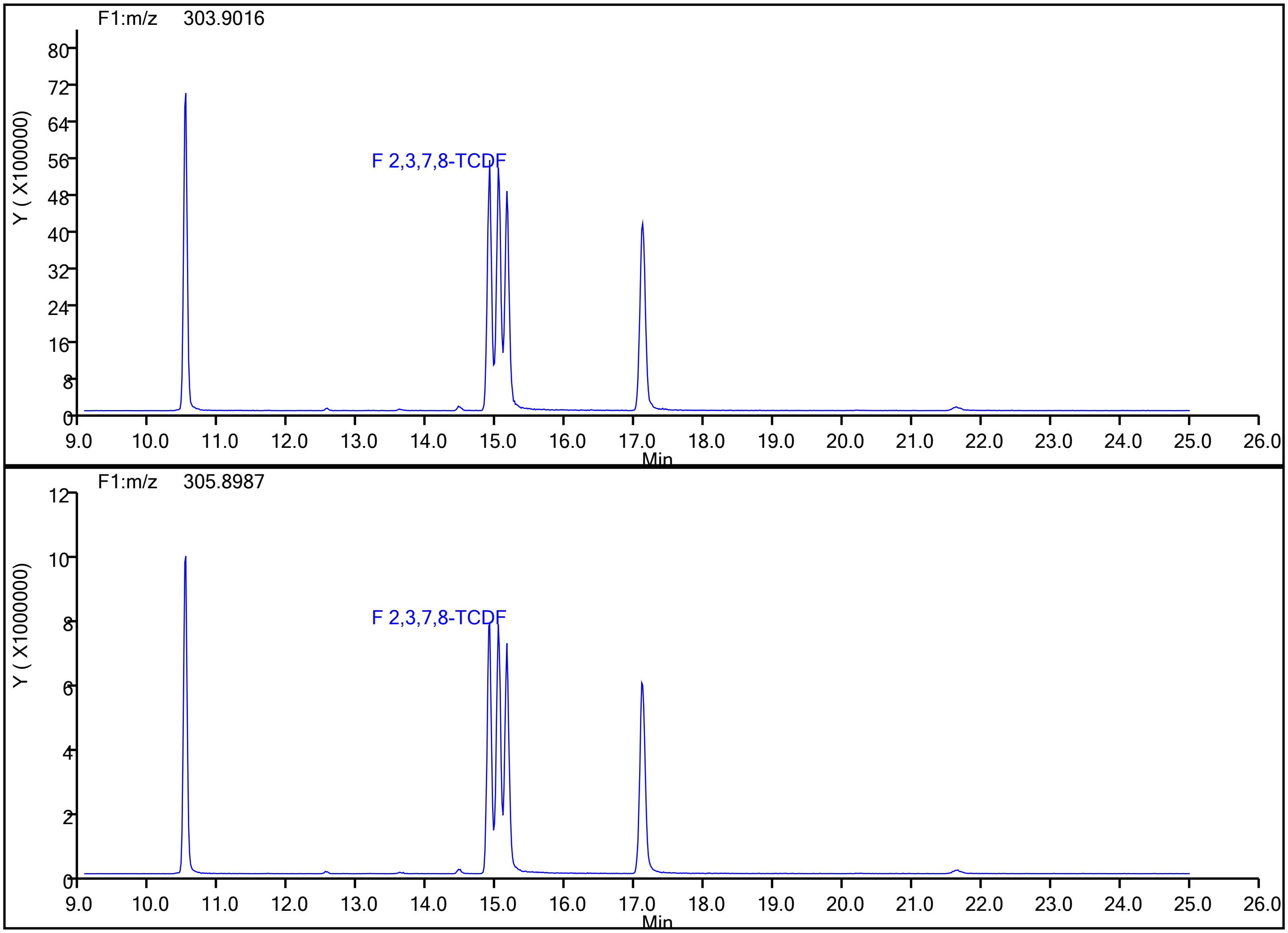

TCDF Interference Mass

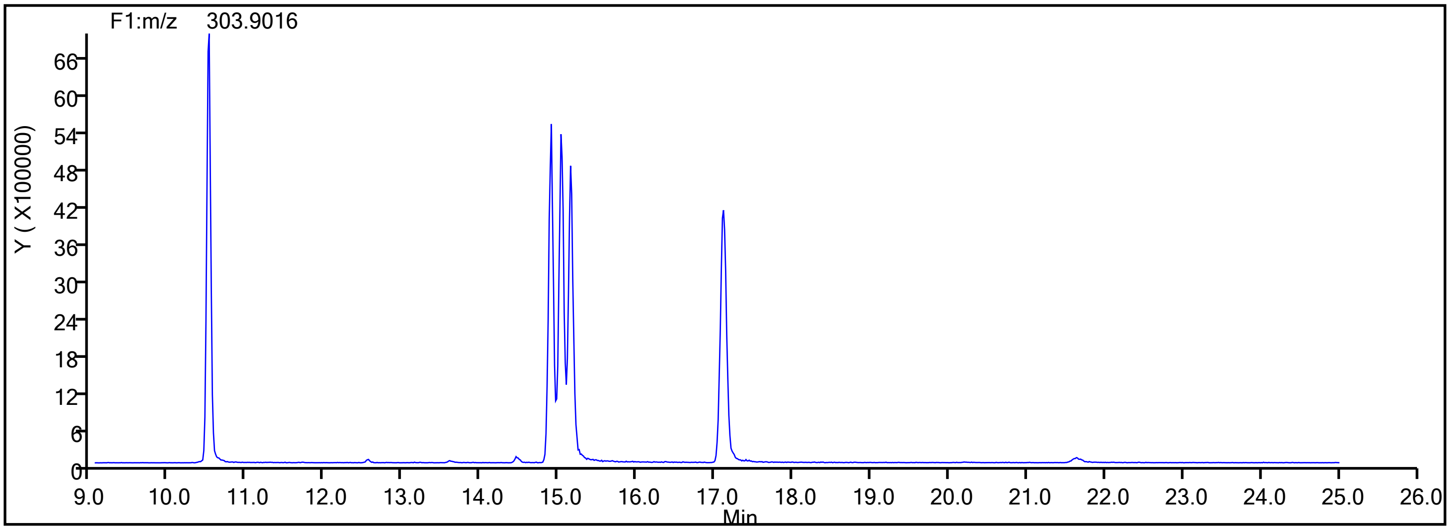

Report Date: 20-Aug-2020 09:22:15 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d		
Injection Date:	20-Aug-2020 01:30:34	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

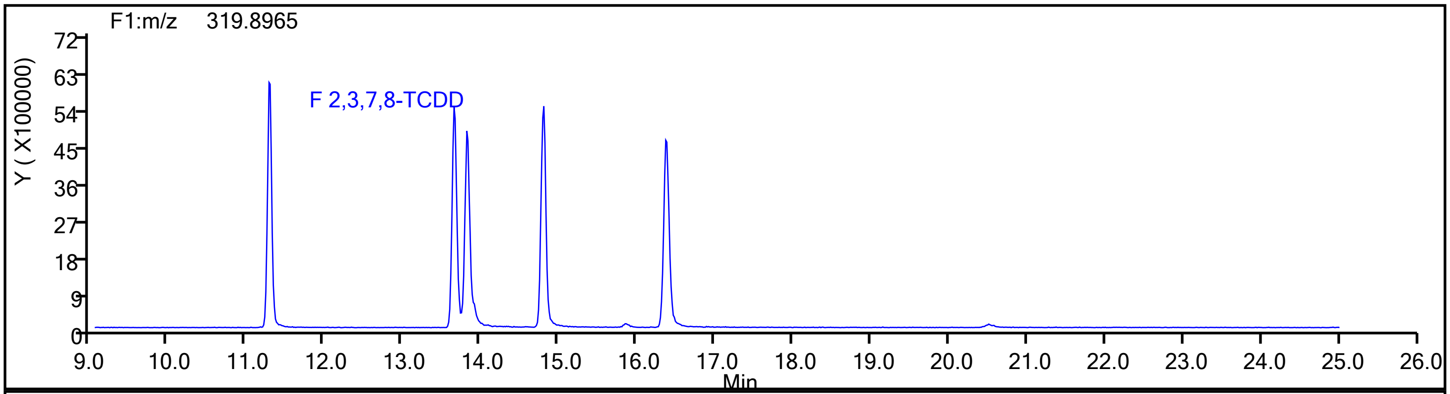

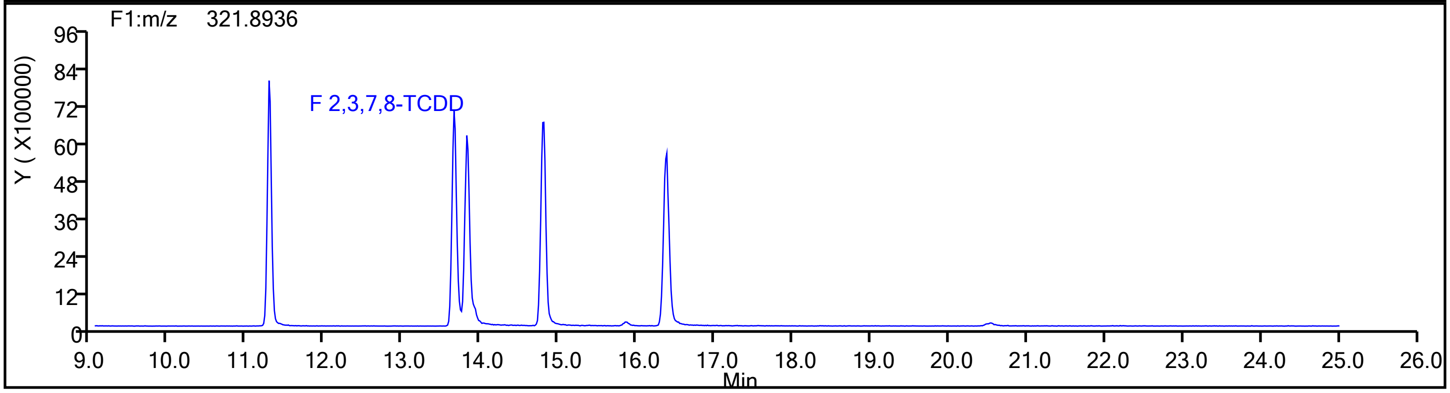

TCDD Standards

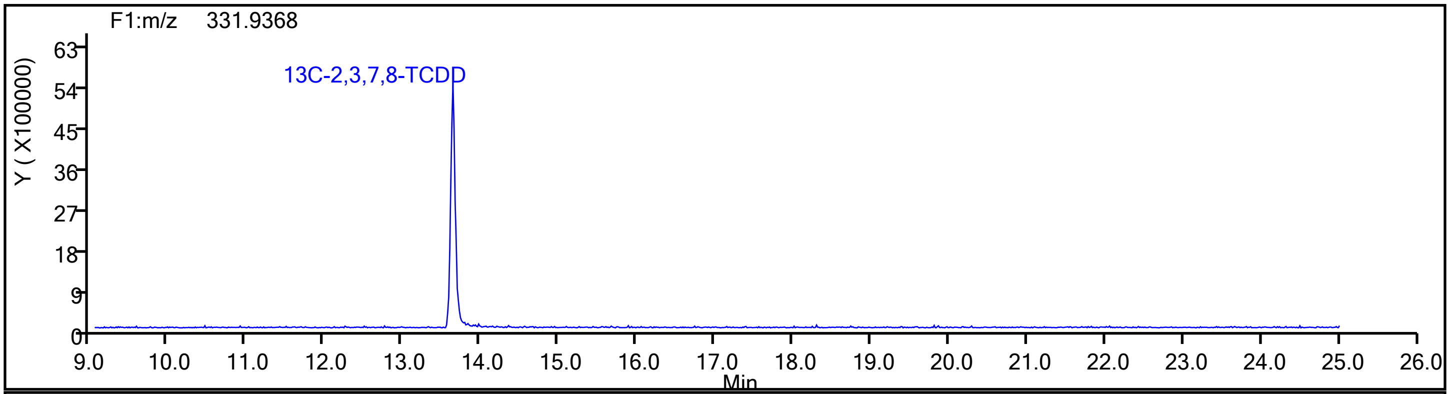

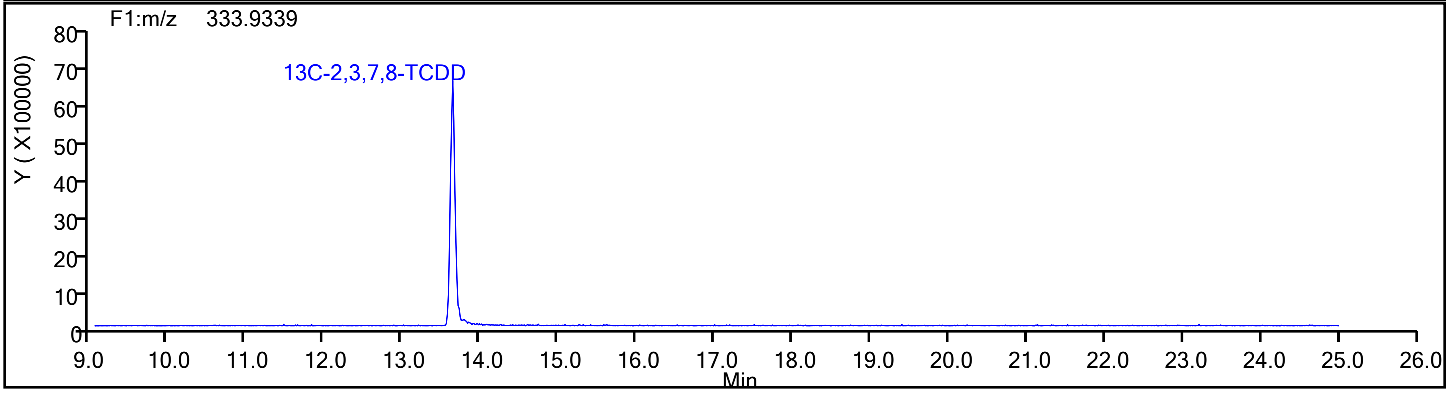

Data File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d
Injection Date: 20-Aug-2020 01:30:34 Injection Vol: 2.0 ul
Instrument ID: 4D2 Operator ID:
Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405198 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

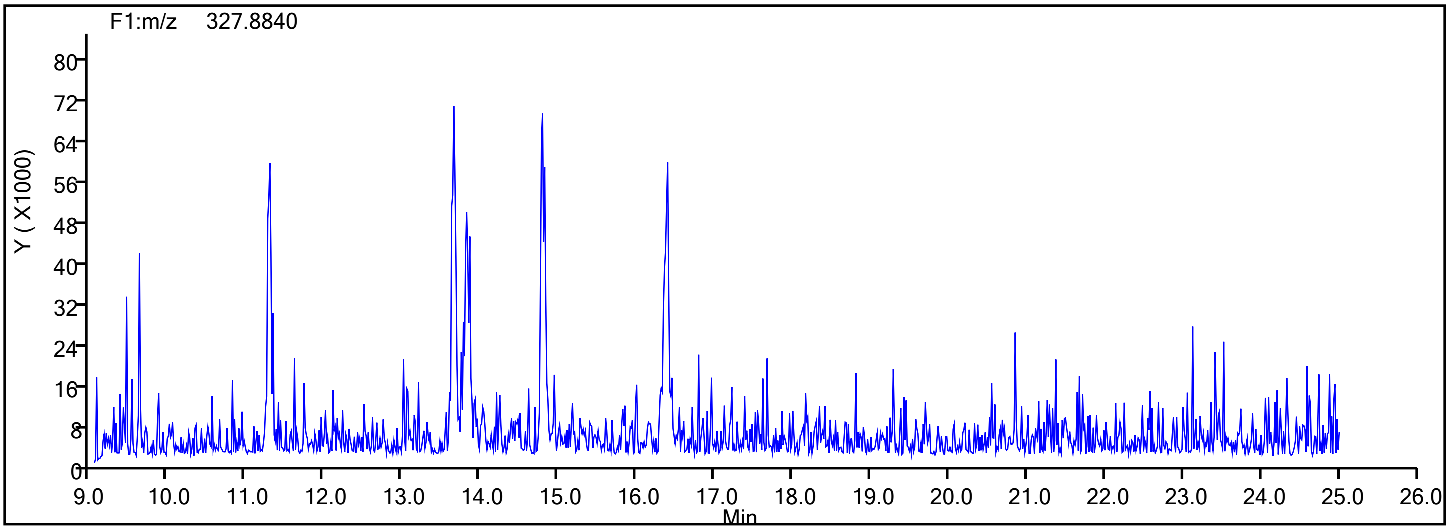

37Cl4-TCDD Standards

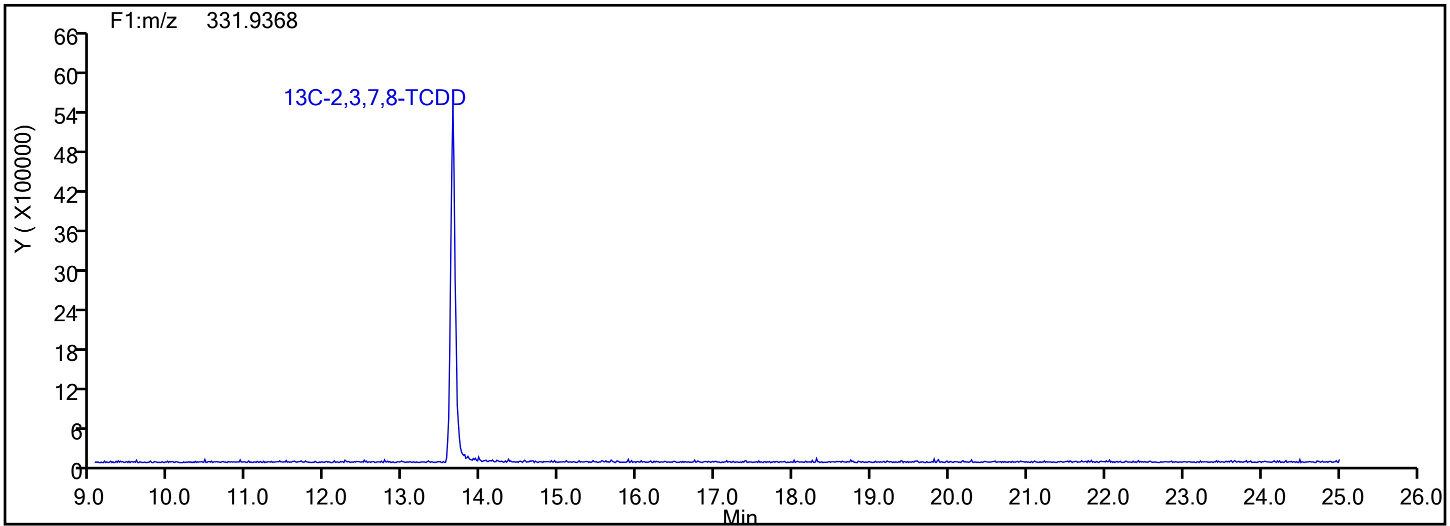

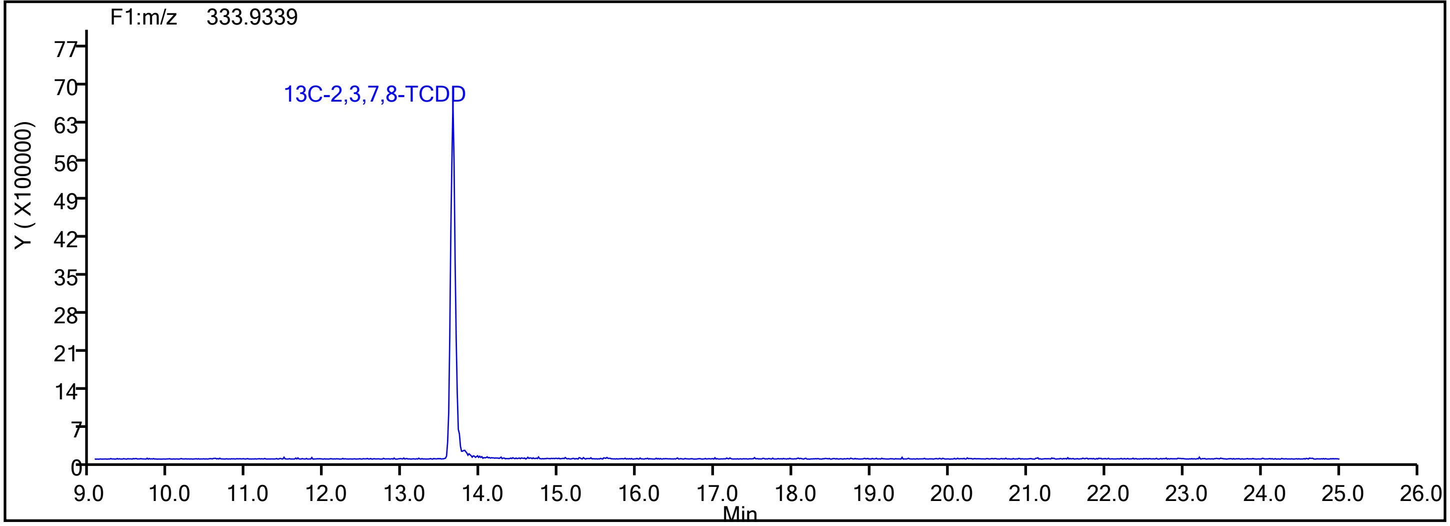

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_003.d		
Injection Date:	20-Aug-2020 01:30:34	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

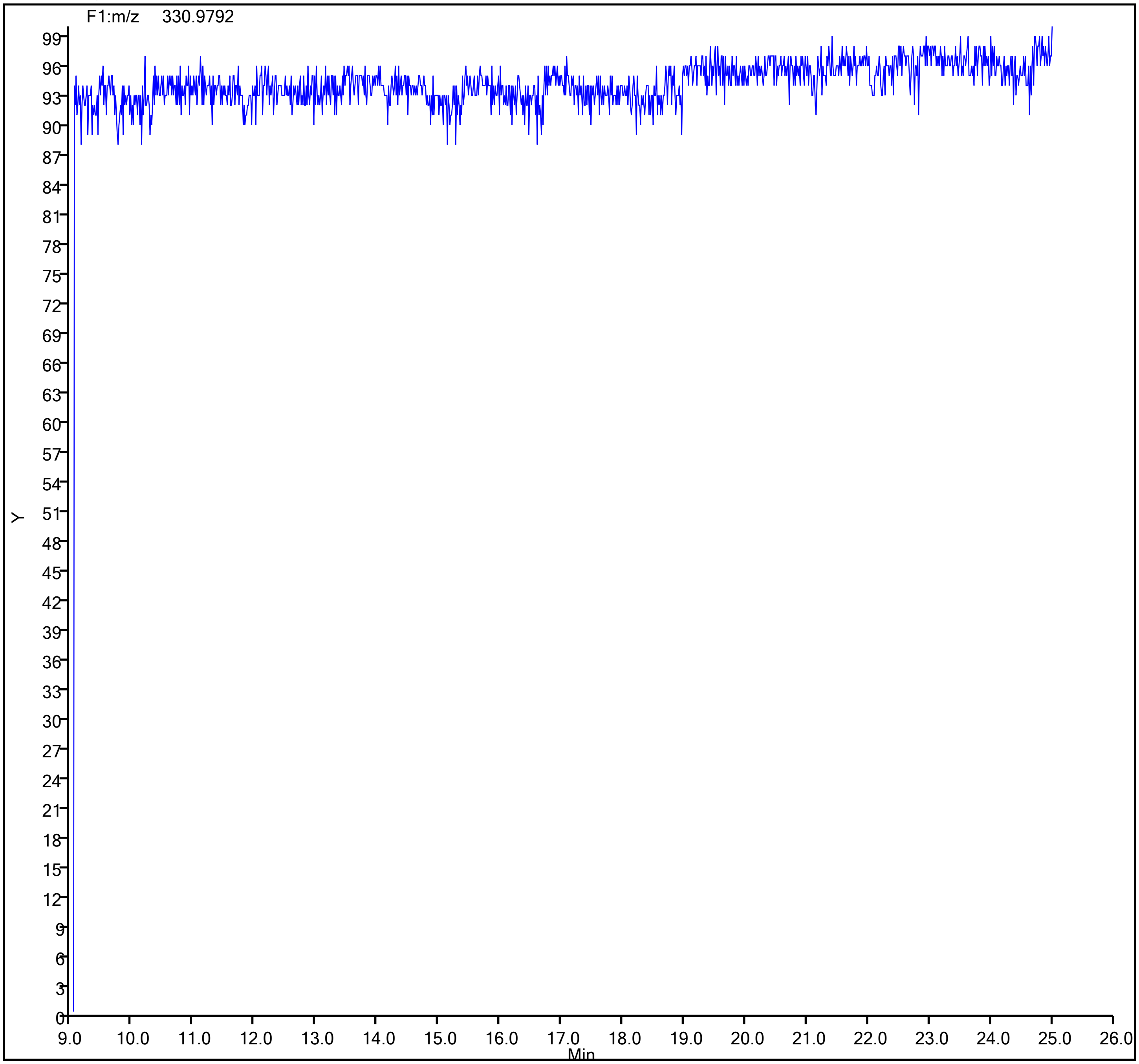

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	20-Aug-2020 16:57:18	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	DB225 CPSM HRDXNCP_00040				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	4D2		
Method:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	21-Aug-2020 11:46:45	Calib Date:	20-Aug-2020 05:17:37		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1052				

First Level Reviewer: shardaa Date: 21-Aug-2020 11:34:49

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	14.956	65222287	0.78	1.2239					0.00	
2,3,7,8-TCDF	14.970	58587159	0.73	0.9341	38.5	38.5	0.0414	0.0414		
D 13C-2,3,7,8-TCDD	13.585	45330372	0.76	0.9126					0.00	
2,3,7,8-TCDD	13.598	47074670	0.81	1.1025	37.7	37.7	0.0526	0.0526		

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Report Date: 21-Aug-2020 11:46:45 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 20-Aug-2020 16:57:18 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: DB225 CPSM HRDXNCP_00040
Misc. Info.: DB225RES
Operator ID: Instrument ID: 4D2

Method: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\DXN_DB225_4D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 11:46:45 Calib Date: 20-Aug-2020 05:17:37
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\4D2\20200820-101783.b\20AU204D2_009.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1052

First Level Reviewer: shardaa Date: 21-Aug-2020 11:34:49

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	14.956	14.956	0	1.000	28549522	6561564	9669	24172	679		
317.9389	14.956	14.956	0	1.000	36672765	8620412	7526	18815	1145	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	14.970	14.970	0	1.001	24727758	5747819	2596	6490	2214		
305.8987	14.970	14.970	0	1.001	33859401	7755090	3281	8202	2364	0.73(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	13.585	13.585	0	1.000	19520974	4272112	6450	16125	662		
333.9339	13.585	13.585	0	1.000	25809398	6230430	4802	12005	1297	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	13.598	13.598	0	1.001	21067879	4972339	3108	7770	1600		
321.8936	13.598	13.598	0	1.001	26006791	6167758	2980	7450	2070	0.81(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Report Date: 21-Aug-2020 11:46:46 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d		
Injection Date:	20-Aug-2020 16:57:18	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

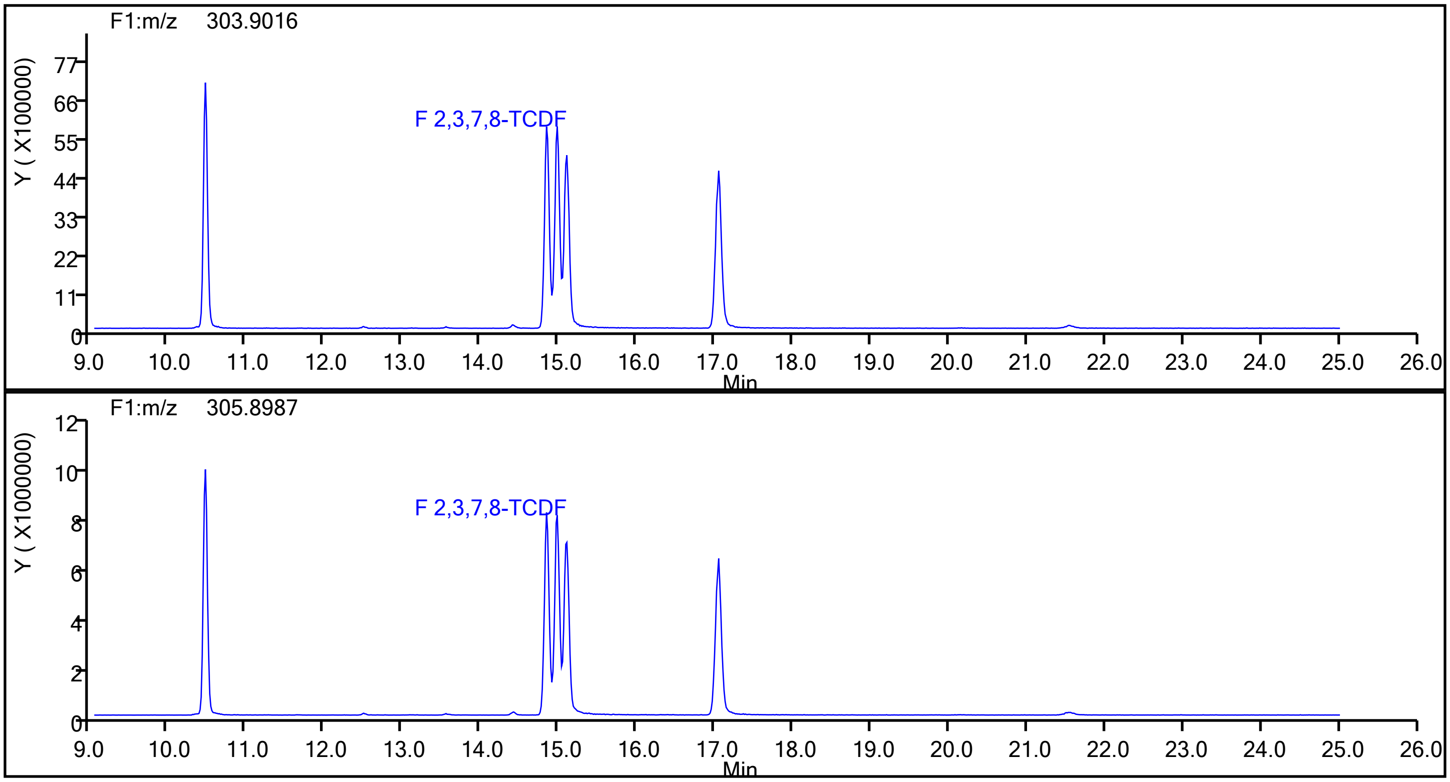

TCDF Standards

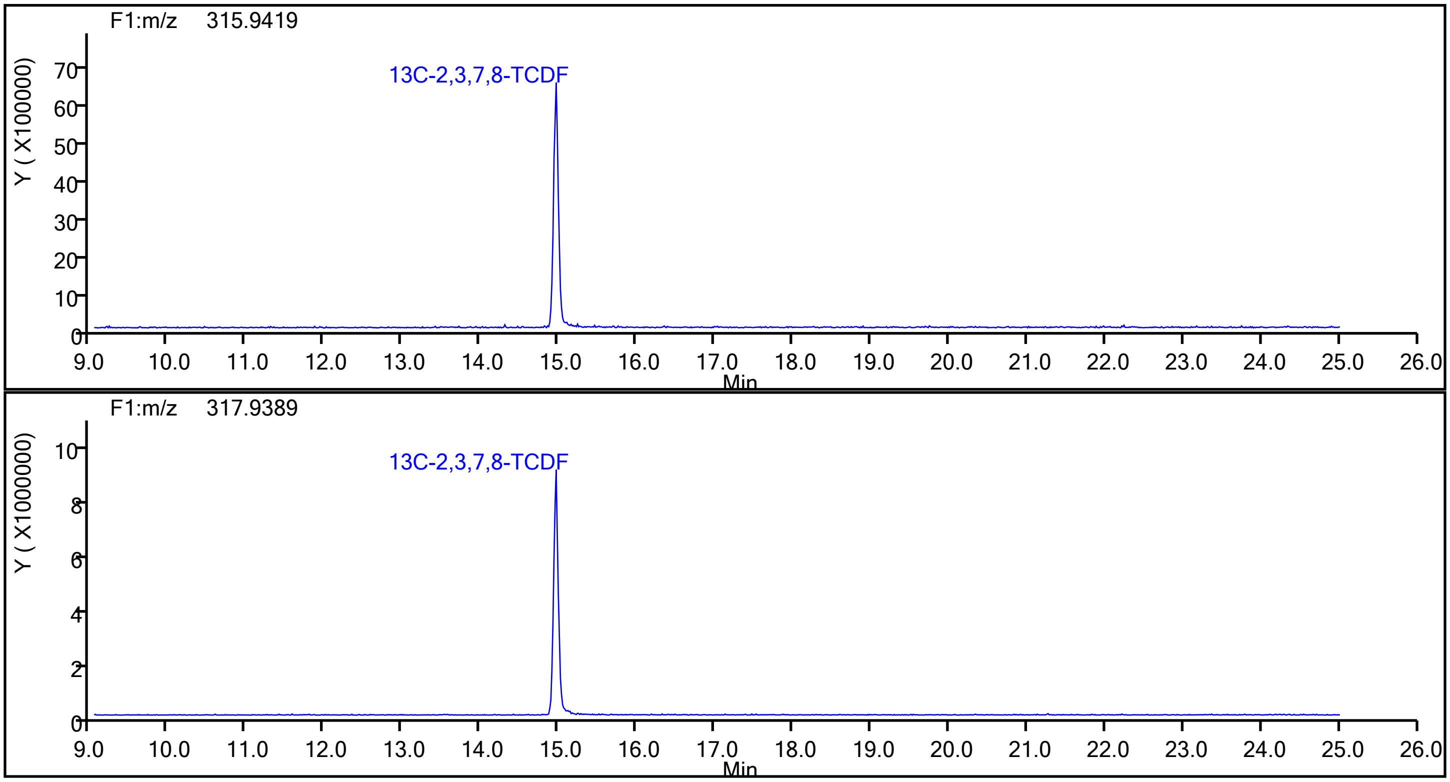

Report Date: 21-Aug-2020 11:46:46 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d		
Injection Date:	20-Aug-2020 16:57:18	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

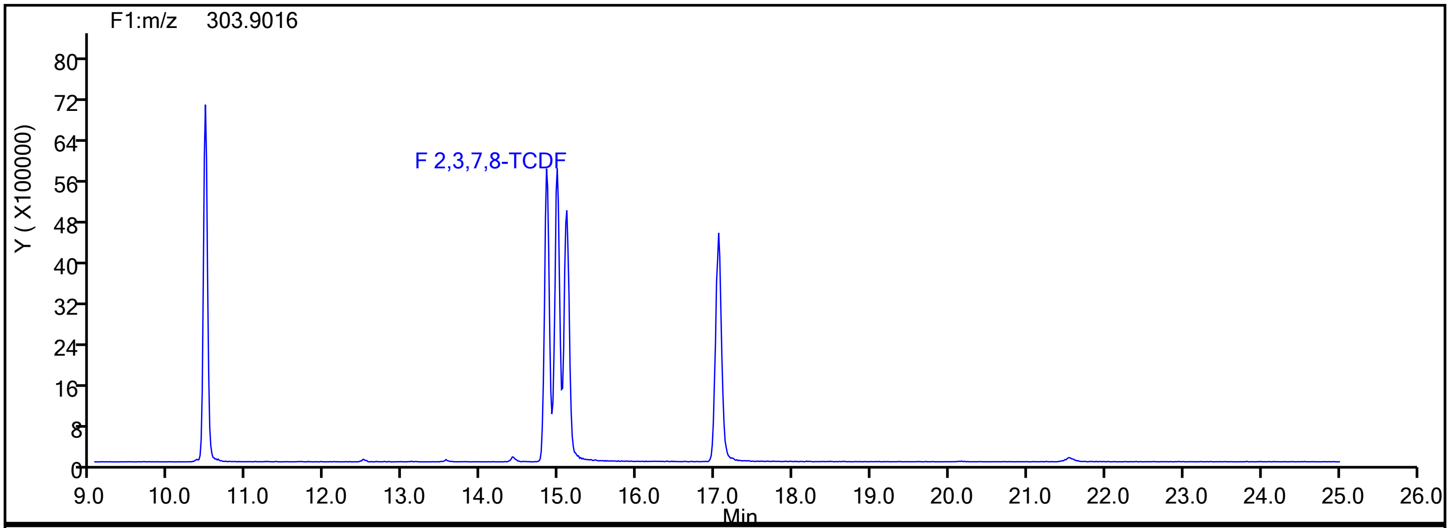

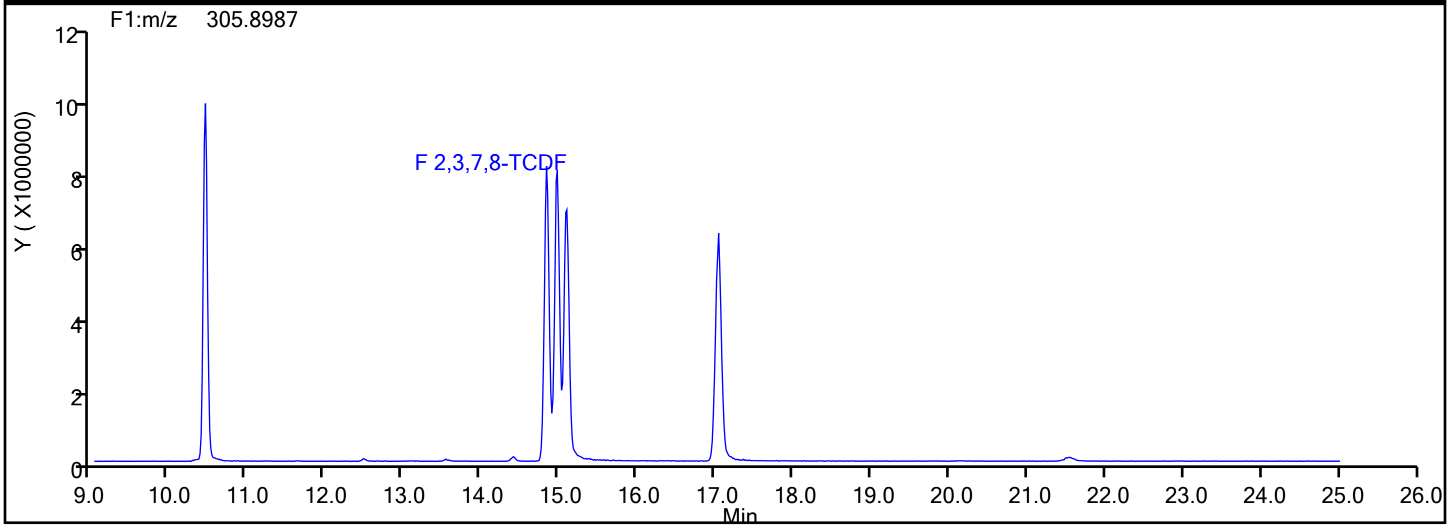

TCDF Interference Mass

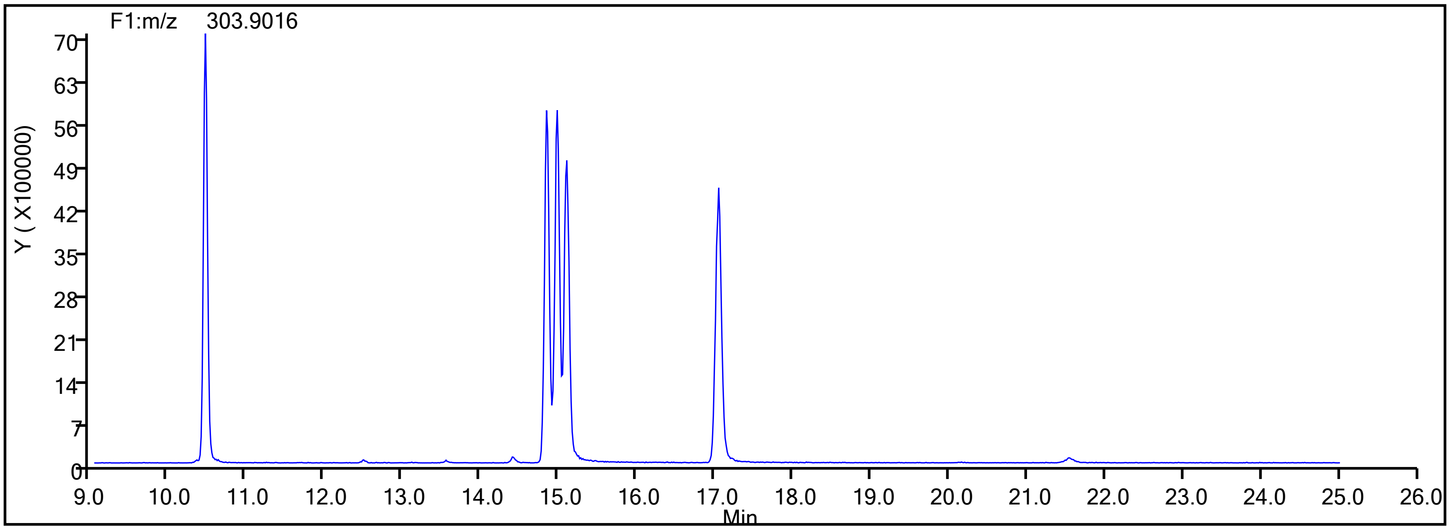

Report Date: 21-Aug-2020 11:46:46 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d

Injection Date: 20-Aug-2020 16:57:18 Injection Vol: 2.0 ul

Instrument ID: 4D2 Operator ID:

Method: DXN_DB225_4D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405652 Sample Line#: 2

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

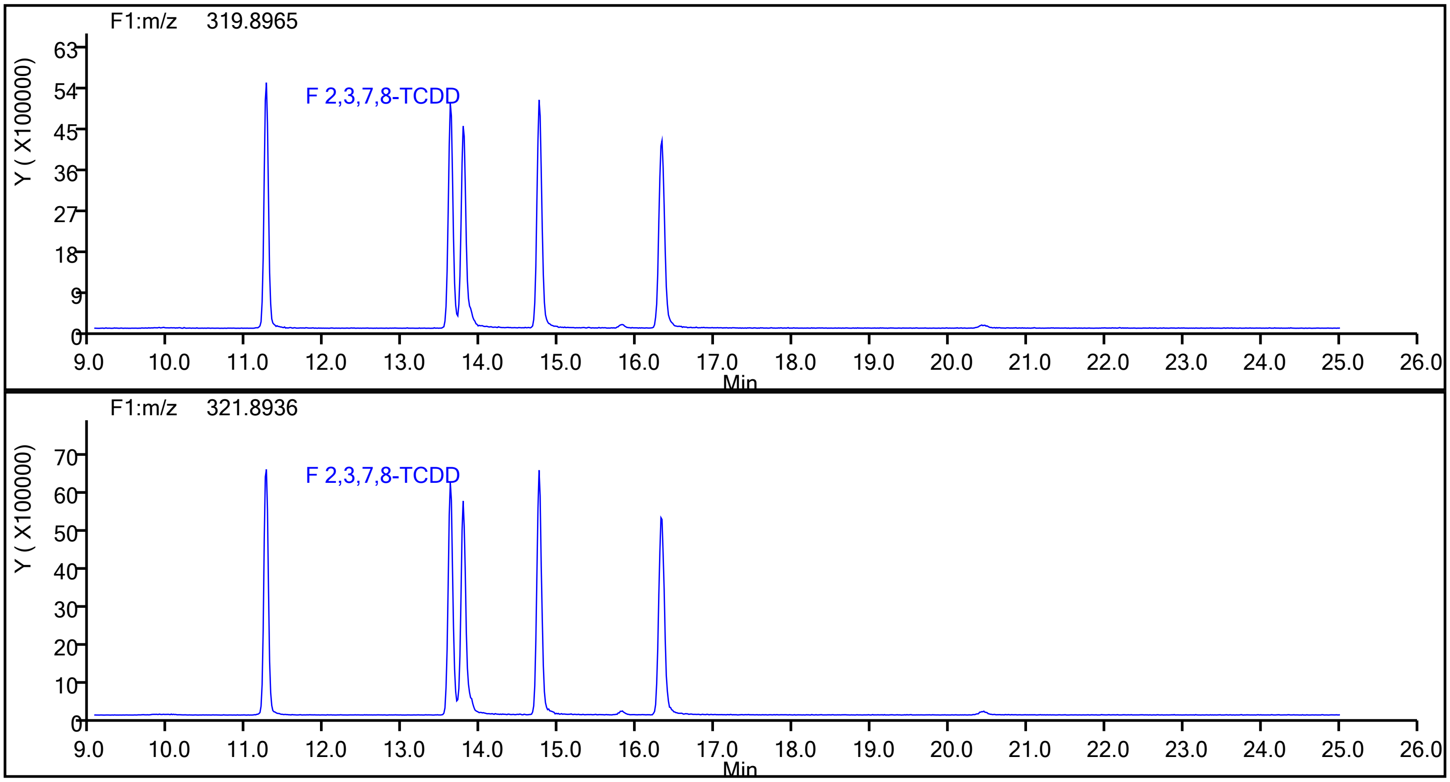

TCDD Standards

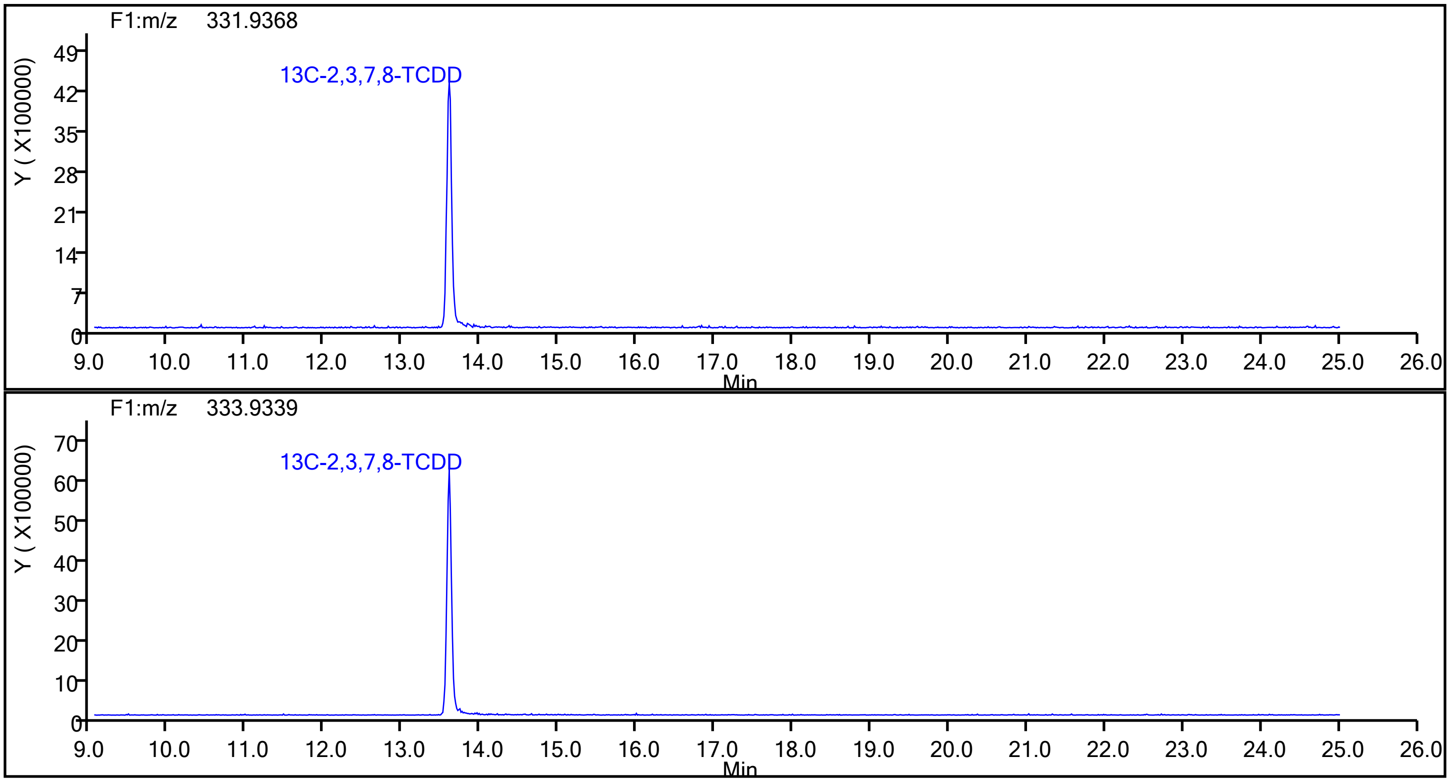

Report Date: 21-Aug-2020 11:46:46 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d		
Injection Date:	20-Aug-2020 16:57:18	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

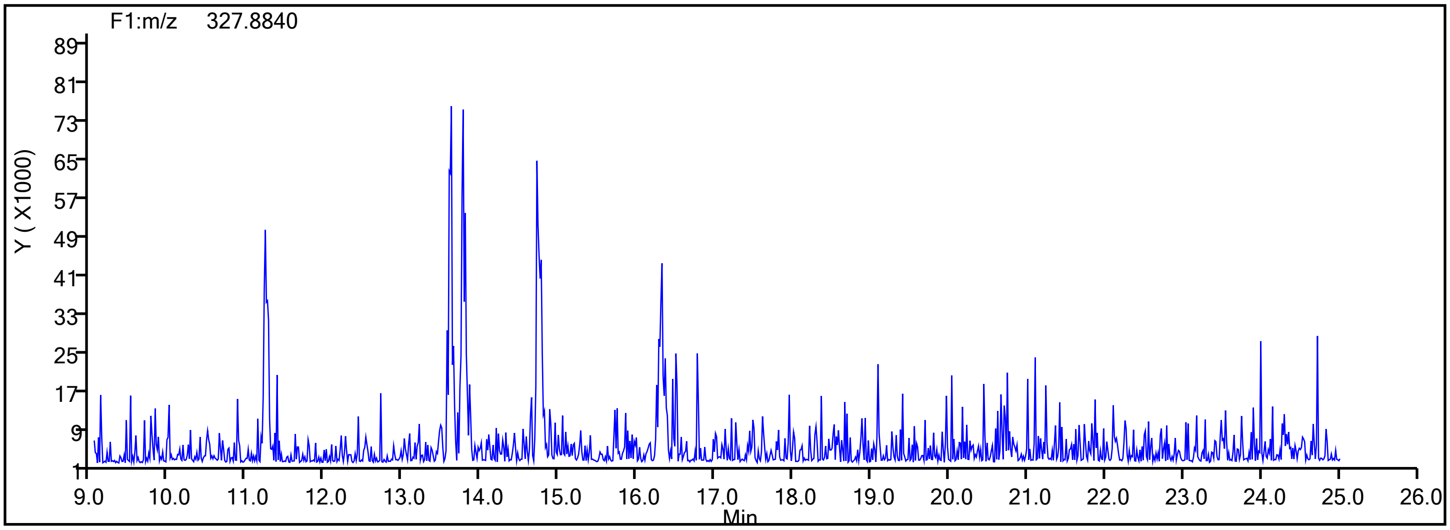

37Cl4-TCDD Standards

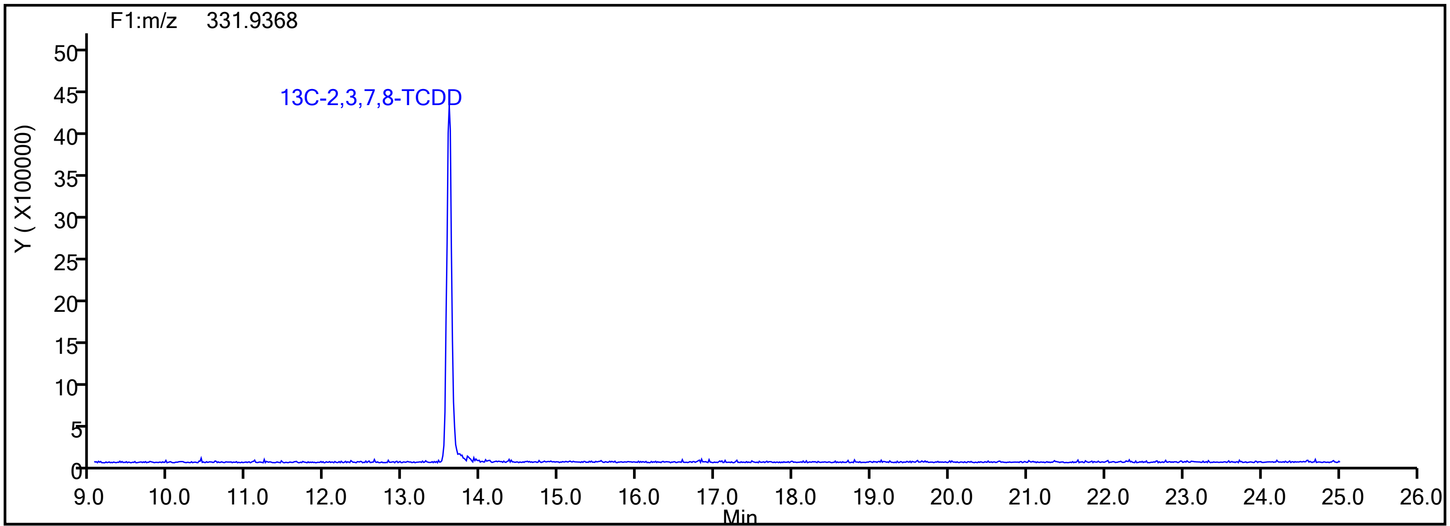

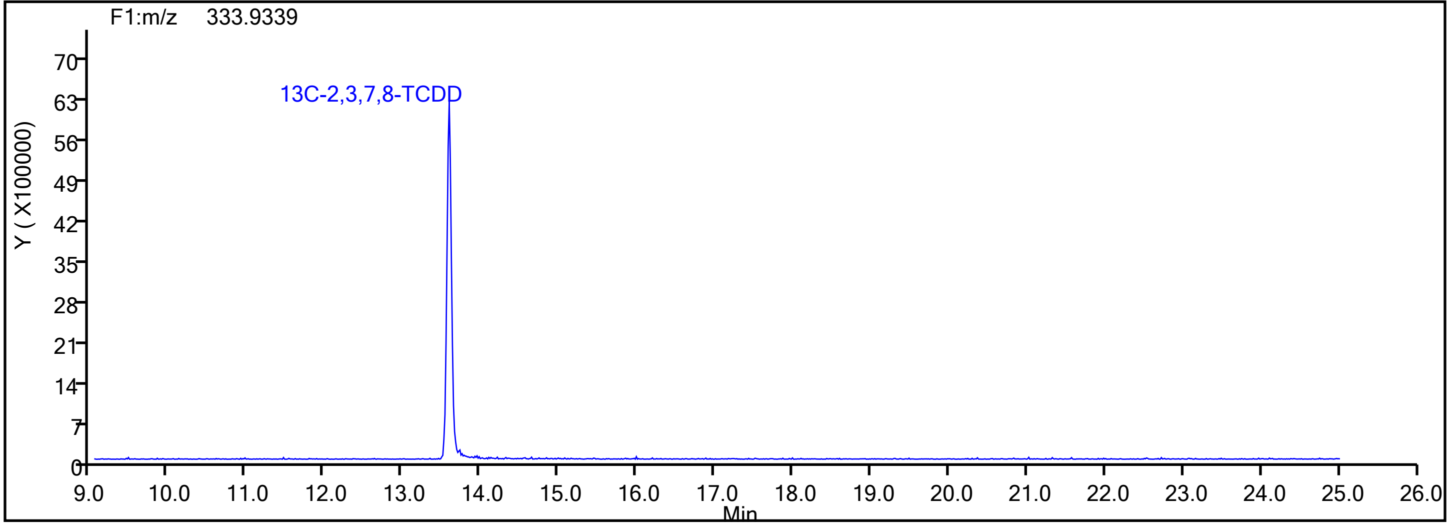

Report Date: 21-Aug-2020 11:46:46 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\4D2\20200821-101882.b\20AU20D4D2_002.d		
Injection Date:	20-Aug-2020 16:57:18	Injection Vol:	2.0 ul
Instrument ID:	4D2	Operator ID:	
Method:	DXN_DB225_4D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405652	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

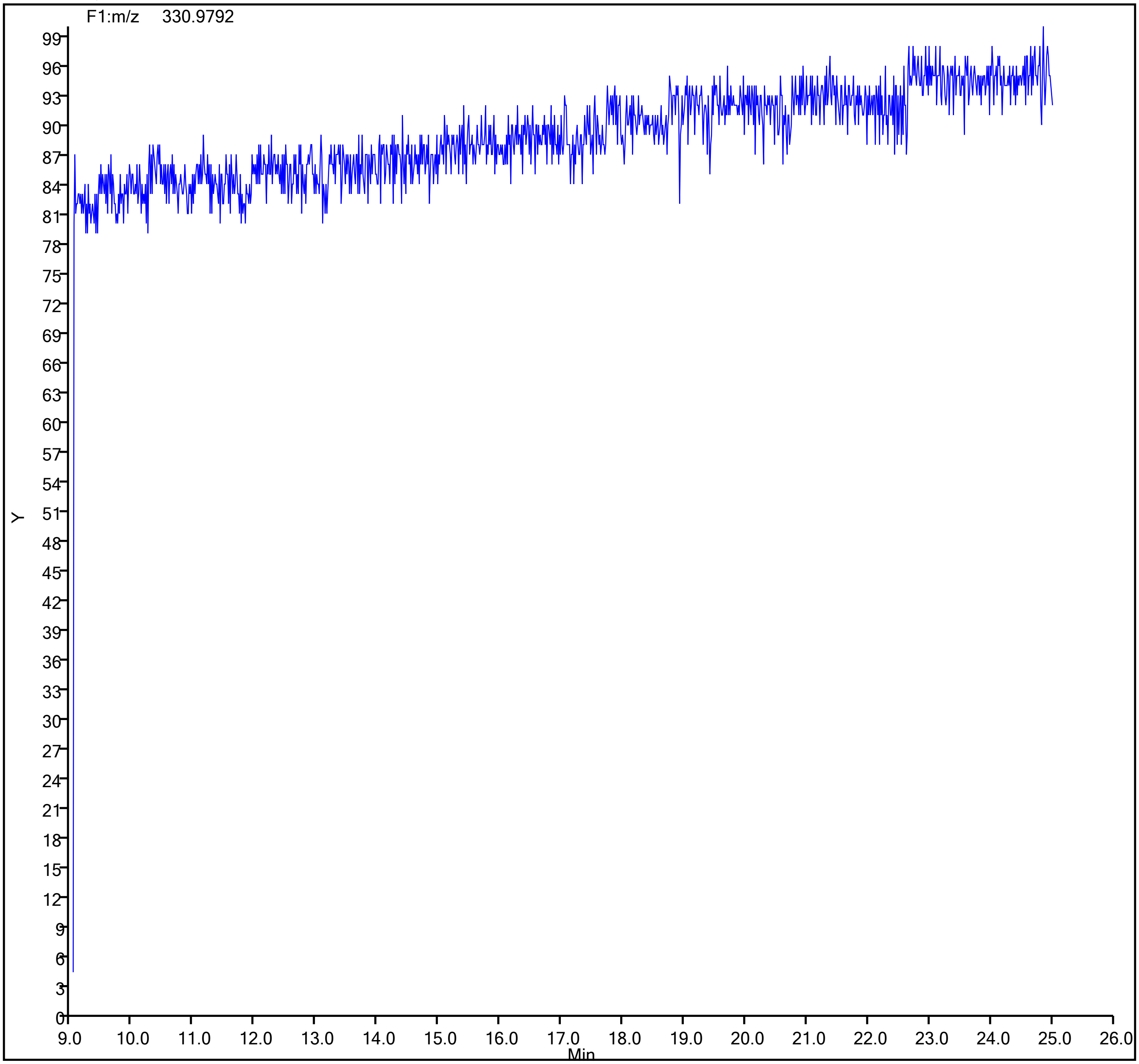

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	03-Jun-2020 12:28:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00040				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	05-Jun-2020 10:33:08	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1030				

First Level Reviewer: stephensk Date: 03-Jun-2020 16:25:34

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	20.429	6838404	0.78	1.1312	74.3	74.3	0.2575	0.2575		
D 13C-2,3,7,8-TCDF	20.395	3254697	0.79	1.4977					0.00	
A Non-2,3,7,8-sub-TCDF	19.865	94457	0.72	1.1312	1.026	1.026	0.2575	1.026		
S Total TCDF					75.3	75.3	0.2575	0.2575		
2,3,7,8-TCDD	21.790	2377143	0.78	1.1849	38.8	38.8	0.1516	0.1516		
D 13C-2,3,7,8-TCDD	21.764	2070574	0.81	1.0367					0.00	
A Non-2,3,7,8-sub-TCDD	20.722						0.1516	0.1516		
S Total TCDD					38.8	38.8	0.1516	0.1516		
A F1 PeCDFs	24.878						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.397	45482	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.482	1831163	1.57	0.0000						
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.118	14127	1.24	0.0000						RQ
S Total HxCDF										RQ
A Non-2,3,7,8-sub-HxCDD	35.480	24878	1.30	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.664	2573713	1.04	1.5957						
1,2,3,4,7,8,9-HpCDF	39.902	2056052	1.04	1.1693						
A Non-2,3,7,8-sub-HpCDF	39.283						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.599	1647702	1.05	1.1150						
A Non-2,3,7,8-sub-HpCDD	39.515						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.074	4238872	0.79							
1,3,6,8-TCDD	17.718	2483247	0.79							
2,3,4,7-TCDF	20.429	6838404	0.78							
1,2,3,7-TCDD	21.583	1999242	0.80							
1,2,3,9-TCDF	21.979	2957752	0.78							
1,2,3,9-TCDD	22.099	2503749	0.78							
1,2,8,9-TCDF	23.657	3039101	0.78							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	23.726	992595								
1,3,4,6,8-PeCDF	24.079	3027860	1.57							
1,2,4,7,9-PeCDD	26.164	2014316	1.56							
1,2,3,8,9-PeCDD	30.801	1831163	1.57							a
1,2,3,8,9-PeCDF	30.978	2382579	1.57							
1,2,3,4,6,8-HxCDF	33.254	2827686	1.25							
1,2,4,6,7,9-HxCDD	34.323	2091227	1.25							
1,2,3,4,6,7-HxCDD	36.637	2005318	1.26							
1,2,3,4,8,9-HxCDF	36.983	2462563	1.24							
1,2,3,4,6,7,9-HpCDD	38.967	1861432	1.05							

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- a - User Assigned ID

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 03-Jun-2020 12:28:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 05-Jun-2020 10:33:08 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1030

First Level Reviewer: stephensk Date: 03-Jun-2020 16:25:34

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	20.429	20.347	5	1.002	3003320	404777	611	1527	662		
305.8987	20.438	20.347	5	1.002	3835084	512310	766	1915	669	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.395	20.395	0	1.000	1438722	214702	491	1227	437		
317.9389	20.395	20.395	0	1.000	1815975	257902	216	540	1194	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	24.088	19.865	253	1.181	39413	6971	611	1527	11		
305.8987	24.079	19.865	252	1.181	55044	9207	766	1915	12	0.72(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.790	21.722	4	1.001	1043811	141782	266	665	533		
321.8936	21.790	21.722	4	1.001	1333332	180464	250	625	722	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.764	21.764	0	1.000	924282	126291	304	760	415		
333.9338	21.755	21.764	-1	1.000	1146292	161002	107	267	1505	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.722						266	665			
321.8936	20.722						250	625			
A F1 PeCDFs											
339.8597	24.878						14	35			
341.8567	24.878						53	132			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.795	28.397	-96	1.000	6599	1188	152	380	8		
341.8567	26.787	28.397	-96	1.000	5612	891	157	392	6	1.18(1.32-1.78)	
339.8597	27.376	28.397	-61	1.000	11478	1713	152	380	11		
341.8567	27.359	28.397	-62	1.000	7467	930	157	392	6	1.54(1.32-1.78)	

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	28.007	28.397	-23	1.000	9532	1531	152	380	10		
341.8567	28.015	28.397	-23	1.000	7286	809	157	392	5	1.31(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	30.801	28.482	139	1.000	1118917	152731	217	542	704		
357.8516	30.801	28.482	139	1.000	712246	95492	105	262	909	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	35.198	35.118	5	1.000	9229	1785	409	1022	4		
375.8178	35.207	35.118	5	1.000	6307	1340	330	825	4	1.46(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.434	35.480	-3	1.000	14072	2908	299	747	10		
391.8127	35.434	35.480	-3	1.000	10806	2639	235	587	11	1.30(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.664	38.655	1	1.000	1311143	415543	748	1870	556		
409.7788	38.664	38.655	1	1.000	1262570	404382	675	1687	599	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.902	39.893	1	1.000	1049036	359799	748	1870	481		
409.7788	39.902	39.893	1	1.000	1007016	348850	675	1687	517	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.283						748	1870			
409.7788	39.283						675	1687			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.599	39.590	1	1.000	844517	294453	528	1320	558		
425.7737	39.599	39.590	1	1.000	803185	277743	517	1292	537	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.515						528	1320			
425.7737	39.515						517	1292			
1,3,6,8-TCDF											
303.9016	16.074	16.074	0		1867974	364893	611	1527	597		
305.8987	16.074	16.074	0		2370898	464580	766	1915	607	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.718	17.718	0		1095764	191390	266	665	720		
321.8936	17.718	17.718	0		1387483	244285	250	625	977	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.429	20.429	0		3003320	404777	611	1527	662		
305.8987	20.438	20.429	1		3835084	512310	766	1915	669	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.583	21.583	0		888573	128289	266	665	482		
321.8936	21.583	21.583	0		1110669	155719	250	625	623	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	21.979	21.979	0		1291827	176198	611	1527	288		
305.8987	21.987	21.979	1		1665925	222342	766	1915	290	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.099	22.099	0		1101015	142666	266	665	536		
321.8936	22.091	22.099	-1		1402734	179929	250	625	720	0.78(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	23.657	23.657	0		1334921	232984	611	1527	381		
305.8987	23.657	23.657	0		1704180	297747	766	1915	389	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.726	23.726	0		992595	174175	266	665	655		
1,3,4,6,8-PeCDF											
339.8597	24.079	24.079	0		1848842	365648	14	35	26118		
341.8567	24.079	24.079	0		1179018	230312	53	132	4346	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.164	26.164	0		1227870	195567	217	542	901		
357.8516	26.164	26.164	0		786446	124594	105	262	1187	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											a
355.8546	30.801	30.801	0		1118917	152731	217	542	704		a
357.8516	30.801	30.801	0		712246	95492	105	262	909	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	30.978	30.978	0		1455021	191241	152	380	1258		
341.8567	30.969	30.978	-1		927558	121979	157	392	777	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.254	33.254	0		1569256	265134	409	1022	648		
375.8178	33.254	33.254	0		1258430	213521	330	825	647	1.25(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.323	34.323	0		1161800	232678	299	747	778		
391.8127	34.323	34.323	0		929427	184566	235	587	785	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.637	36.637	0		1116958	294590	299	747	985		
391.8127	36.637	36.637	0		888360	232687	235	587	990	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.983	36.983	0		1364341	371113	409	1022	907		
375.8178	36.983	36.983	0		1098222	296978	330	825	900	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.967	38.967	0		953230	317169	528	1320	601		
425.7737	38.967	38.967	0		908202	299538	517	1292	579	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

a - User Assigned ID

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 03-Jun-2020 12:28:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 383168 Lims Sample ID: 1

Non-2,3,7,8-sub-TCDF, RT: 19.865

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	40.000	3254697	472604

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		40.000	3254697	472604

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.088	39413	6971	55044	9207	1.03	0.72	
Signal Totals:							
	39413	6971	55044	9207			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	94457	16178				0.72	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.026 = (94457 * 40.000) / (3254697 * 1.131)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	03-Jun-2020 12:28:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 28.397

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.795	6599	1188	5612	891		1.18	R
27.376	11478	1713	7467	930		1.54	
28.007	9532	1531	7286	809		1.31	R
Signal Totals:							
	27609	4432	20365	2630			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	47974	7062				1.36	RQ
	45482	7115					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (47974 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (45482 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 03-Jun-2020 12:28:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 383168 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDD, RT: 28.482

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.106				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.801	1118917	152731	712246	95492		1.57	
Signal Totals:							
	1118917	152731	712246	95492			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1831163	248223				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (1831163 * 0.0) / (0 * 0.000)

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	03-Jun-2020 12:28:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 35.118

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.009				
1,2,3,6,7,8-HxCDF	1.243				
2,3,4,6,7,8-HxCDF	1.274				
1,2,3,7,8,9-HxCDF	1.288				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.198	9229	1785	6307	1340		1.46	R
Signal Totals:							
	9229	1785	6307	1340			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15536	3125				1.46	RQ
	14127	3001					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15536 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (14127 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	03-Jun-2020 12:28:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	383168	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 35.480

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934				
1,2,3,6,7,8-HxCDD	1.080				
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.434	14072	2908	10806	2639		1.30	
Signal Totals:							
	14072	2908	10806	2639			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24878	5547				1.30	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (24878 * 0.0) / (0 * 0.000)

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

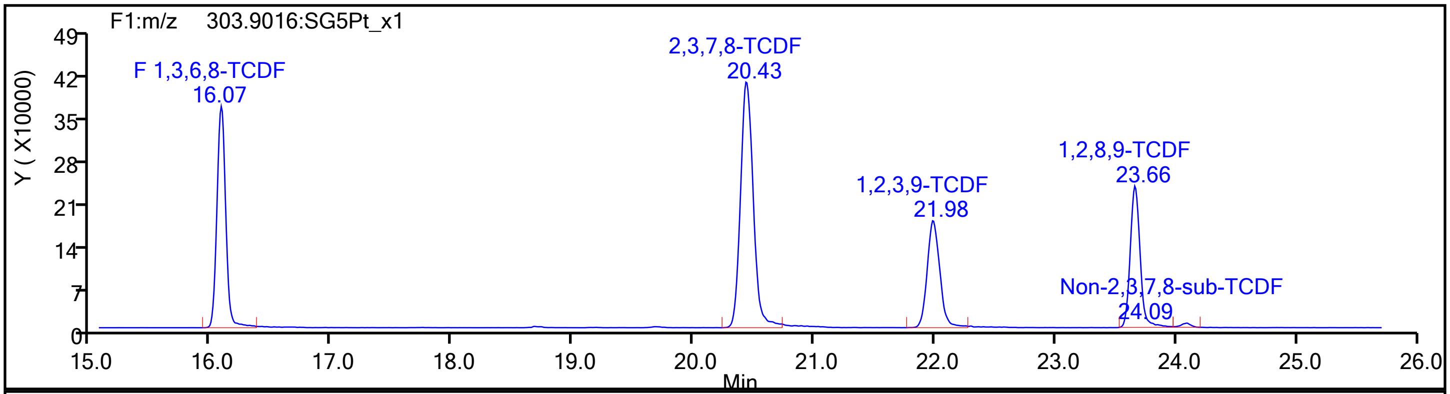

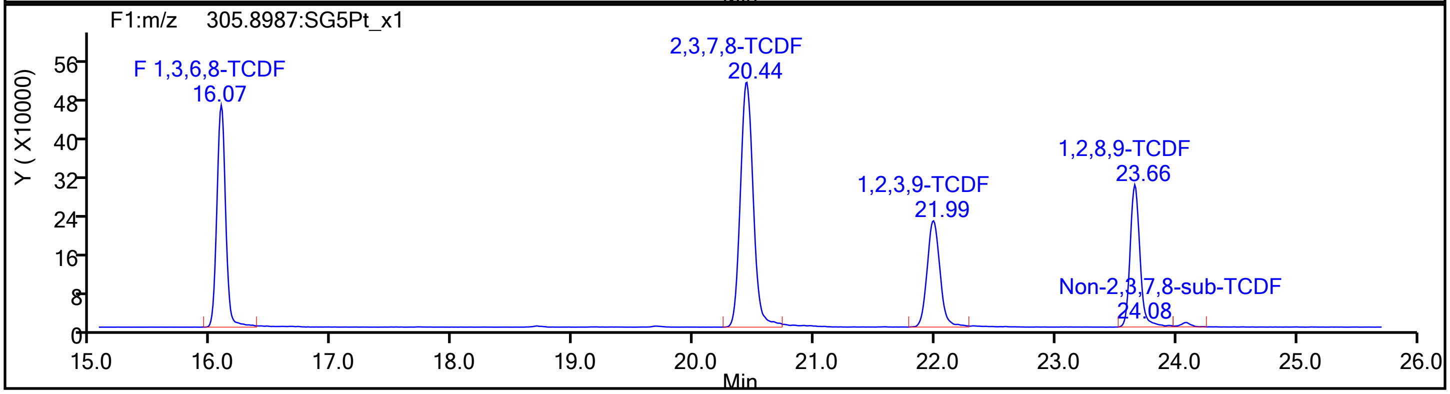

TCDF Standards

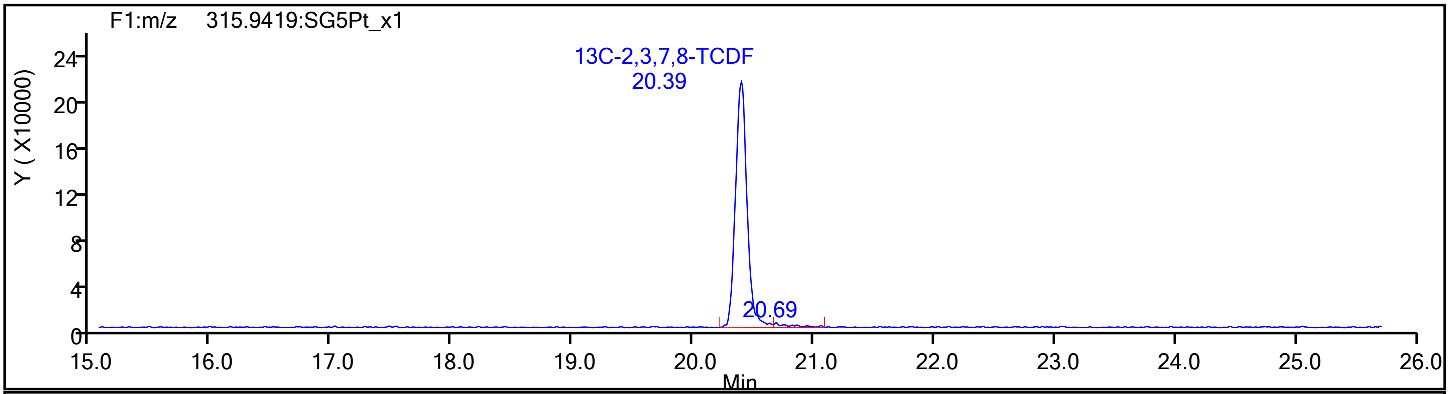

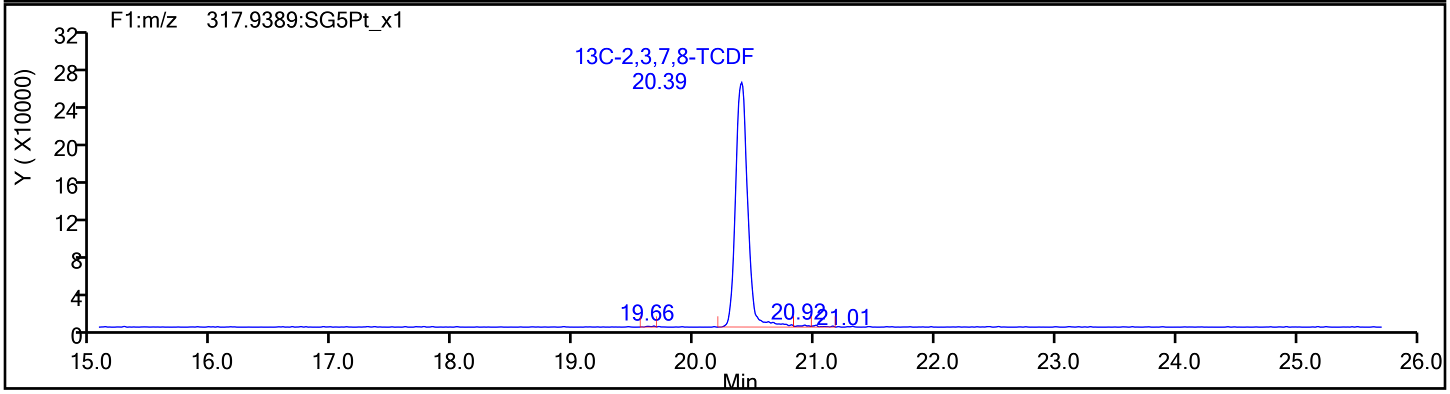

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

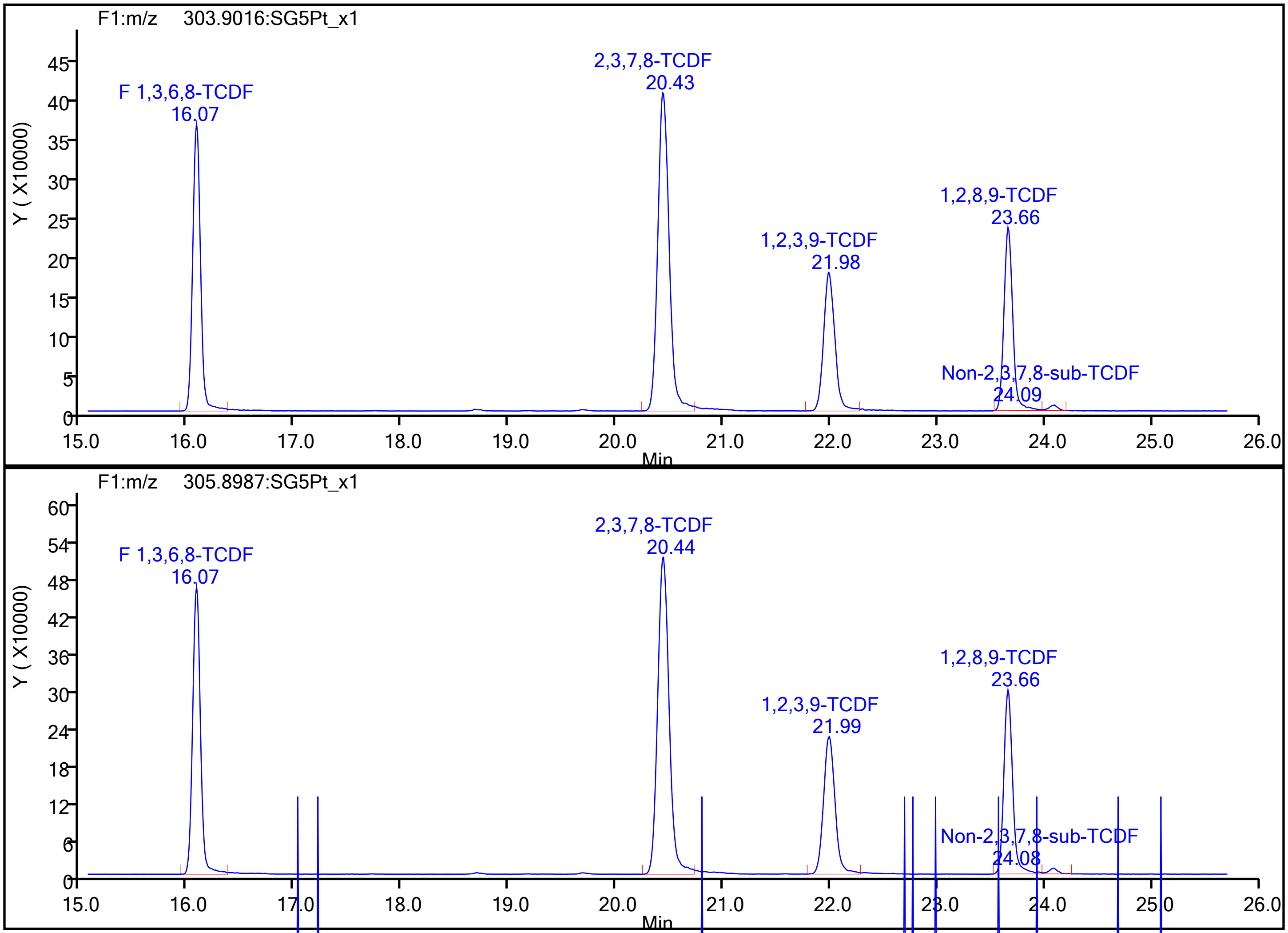

TCDF Interference Mass

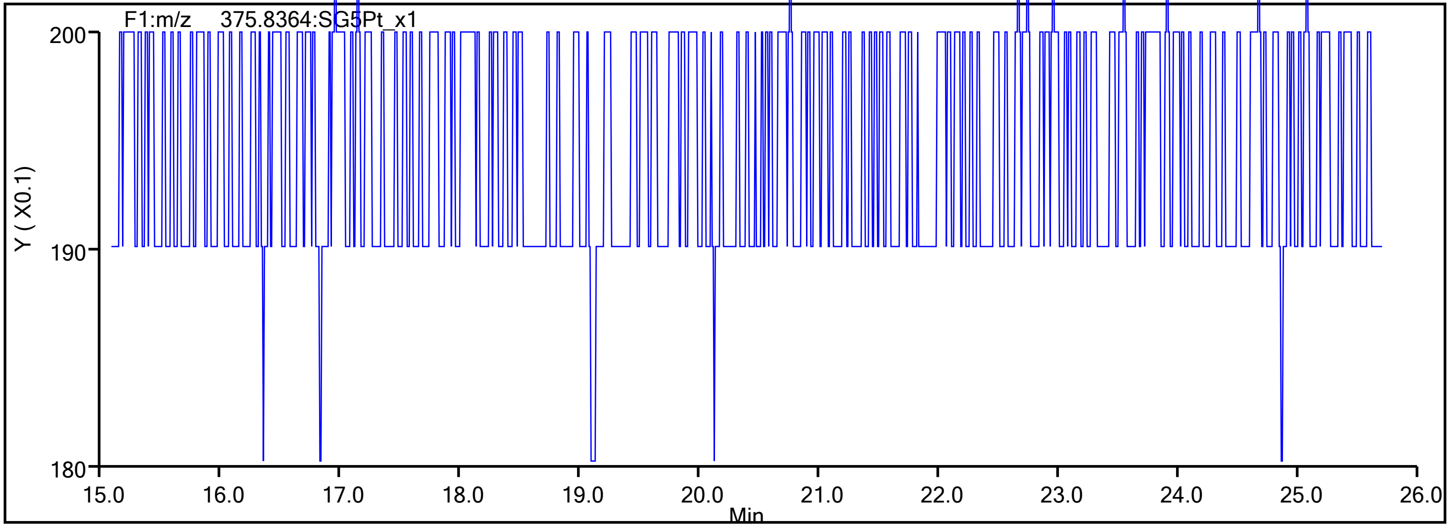

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

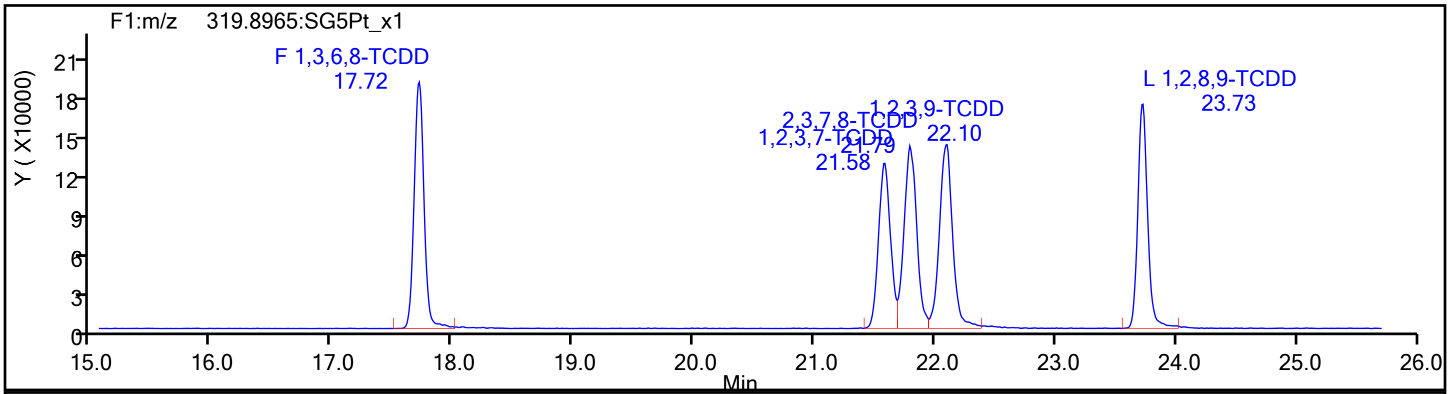

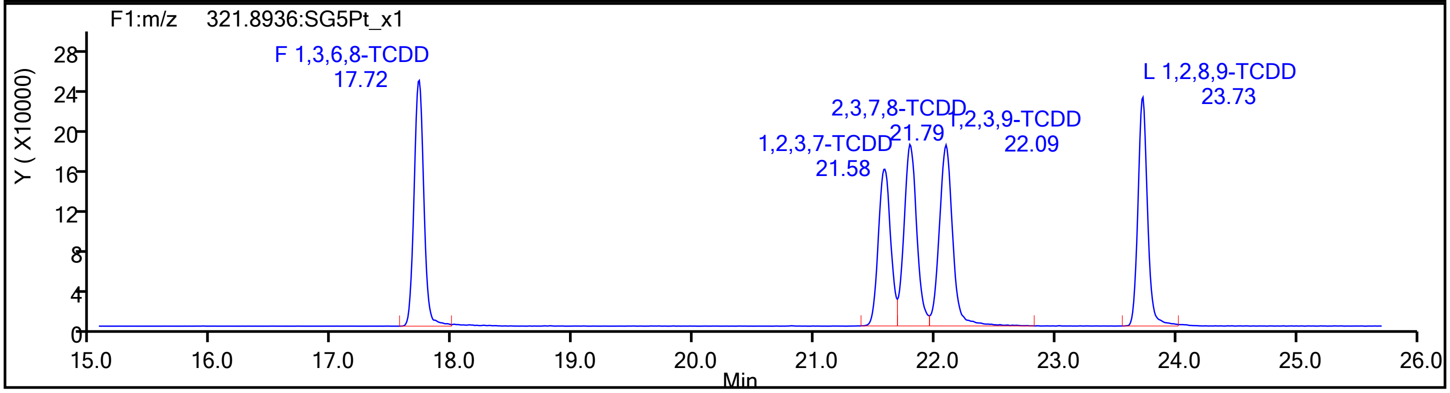

TCDD Standards

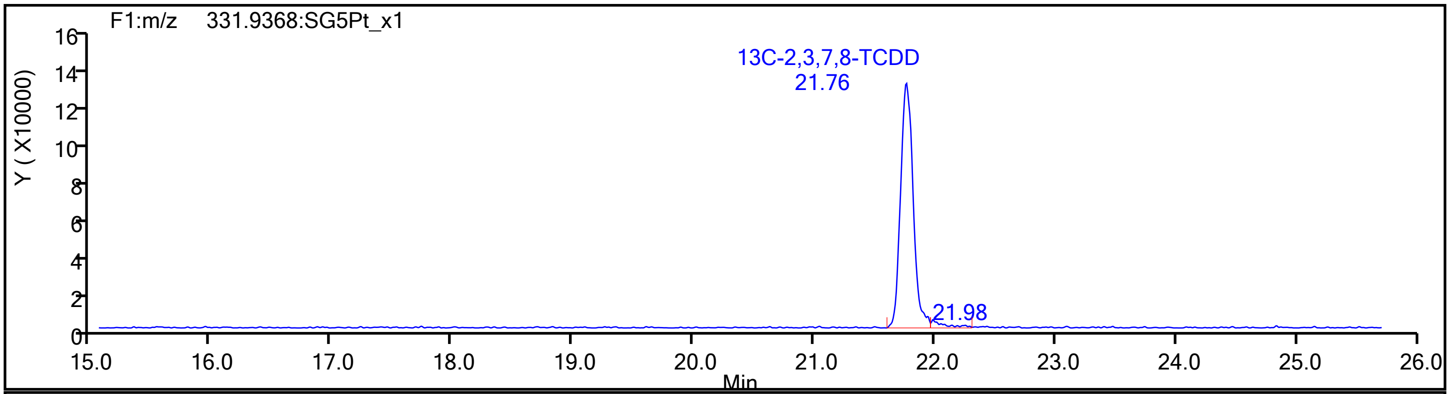

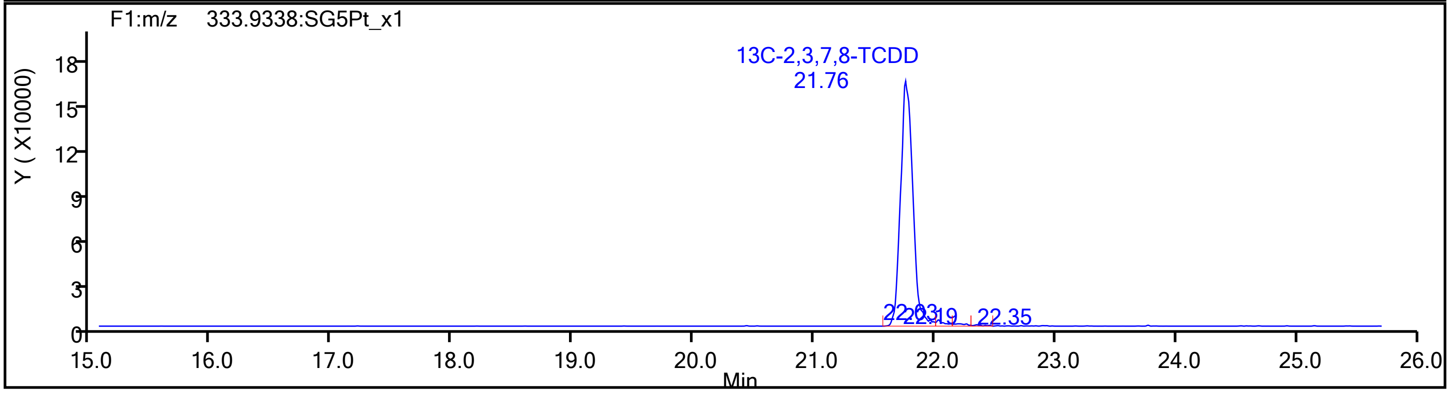

Report Date: 05-Jun-2020 10:33:18
Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

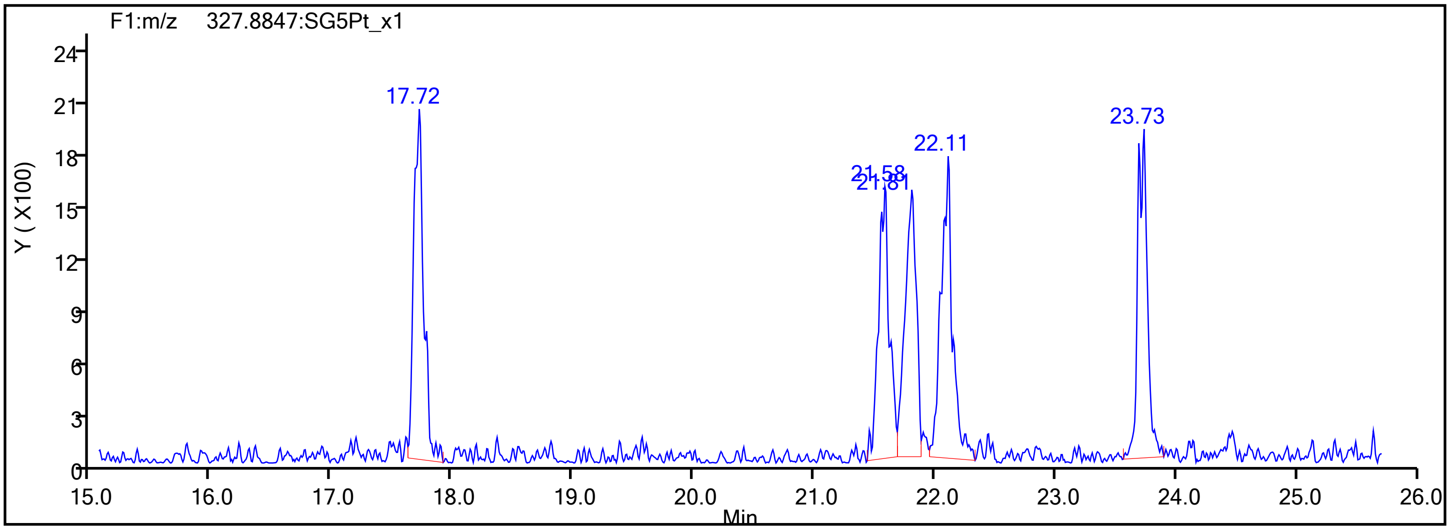

37Cl4-TCDD Standards

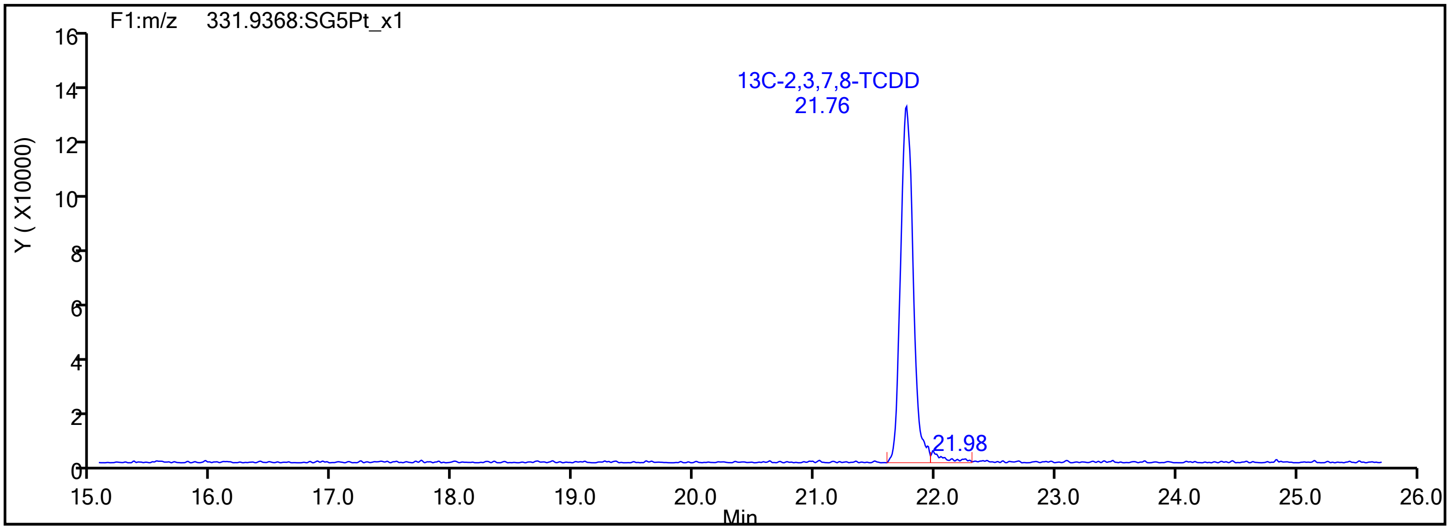

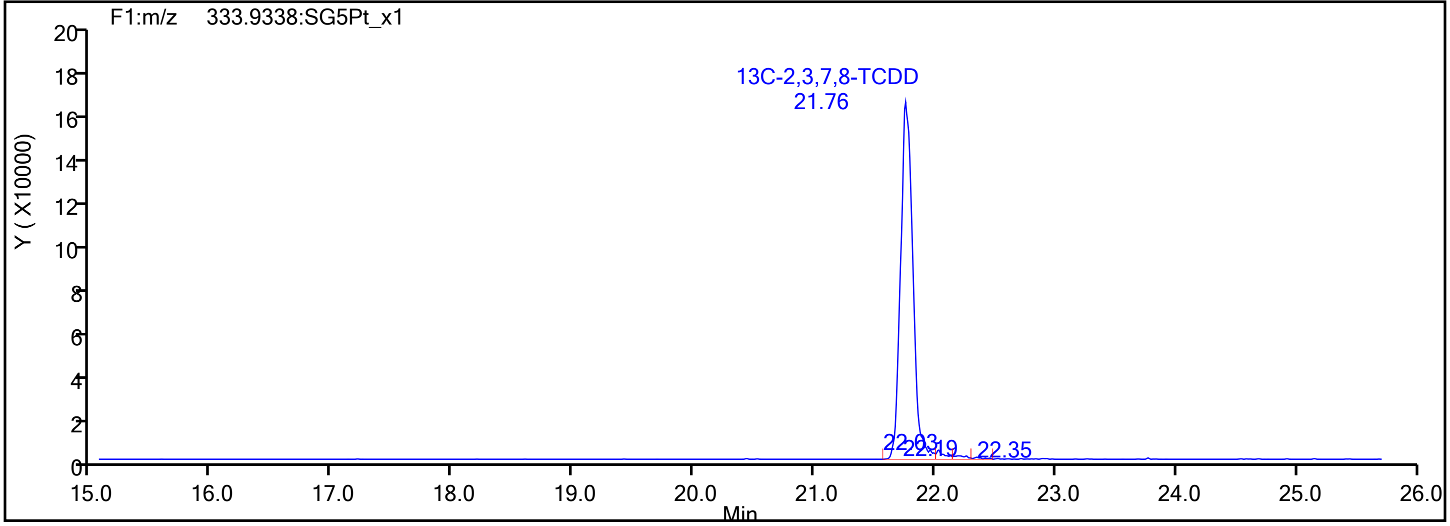

Report Date: 05-Jun-2020 10:33:18 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

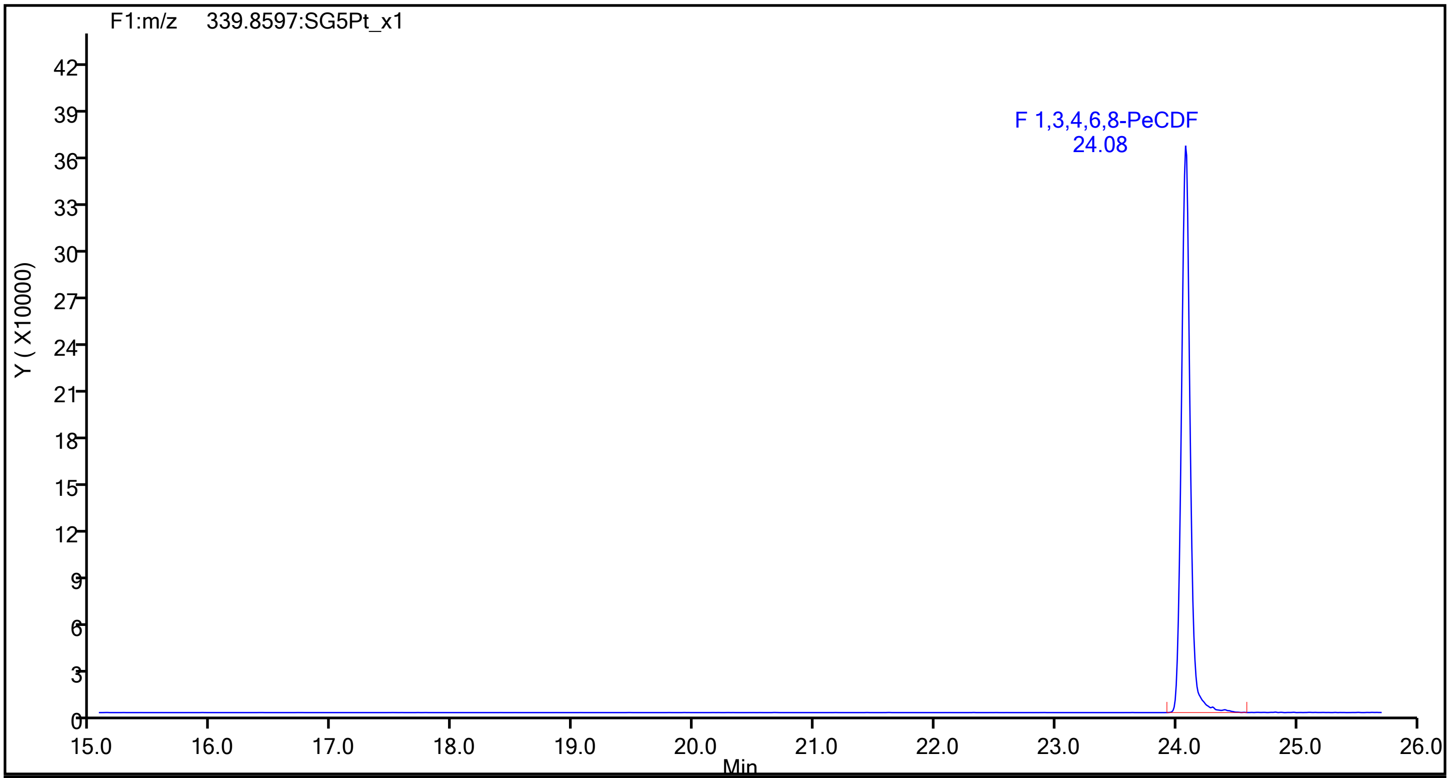

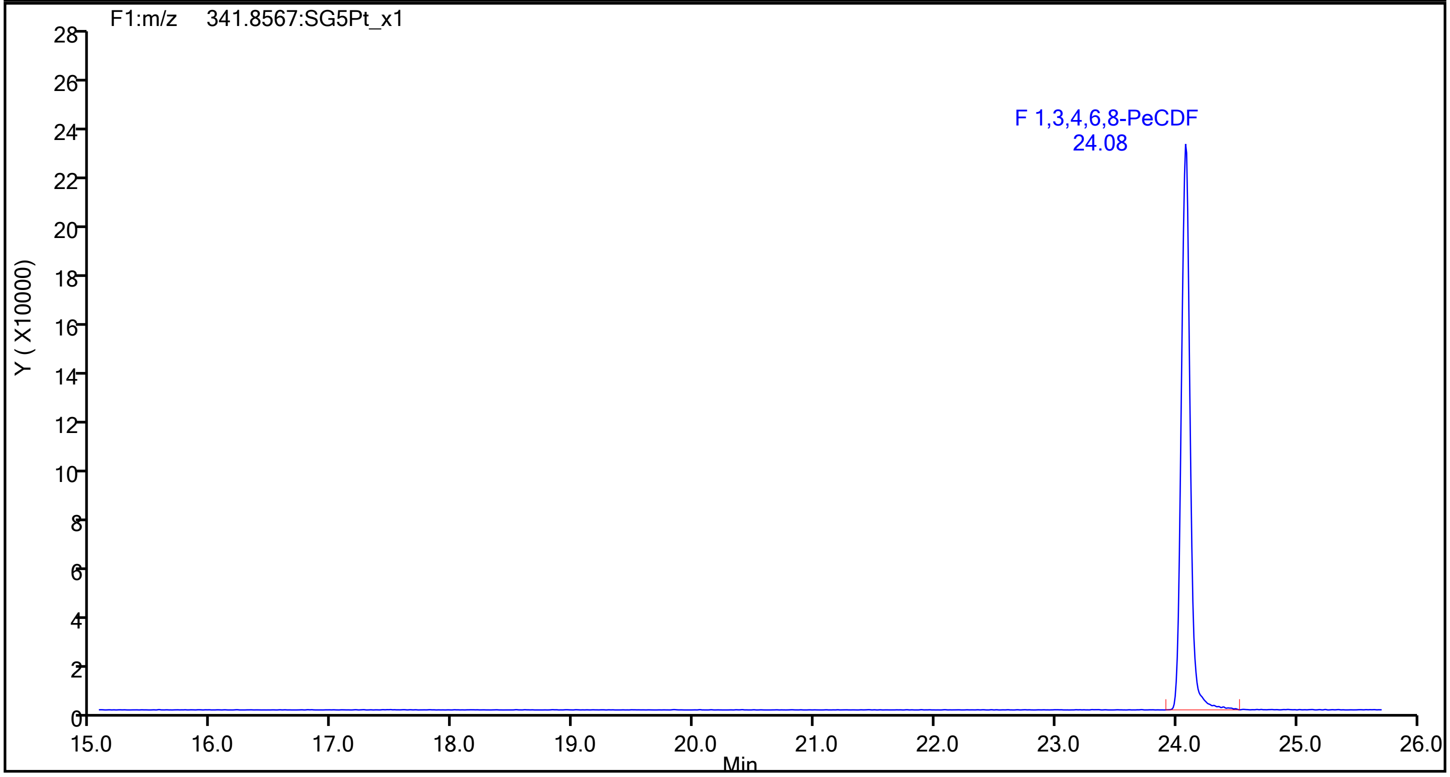

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168
Sample Line#: 1

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

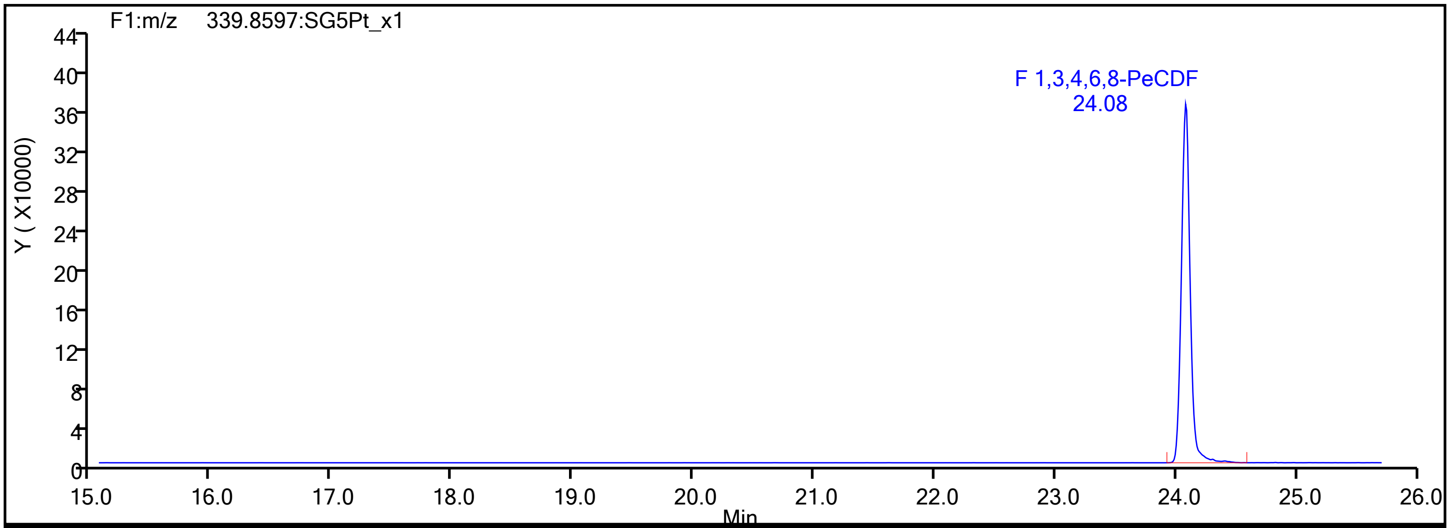

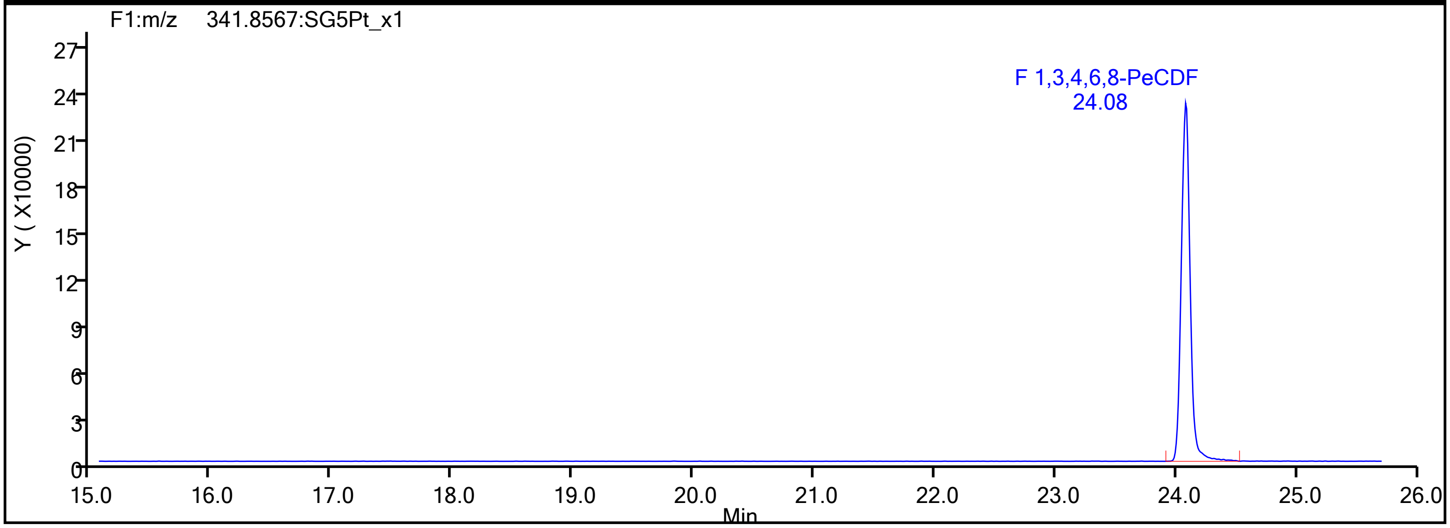

F1 PeCDFs Interference Mass

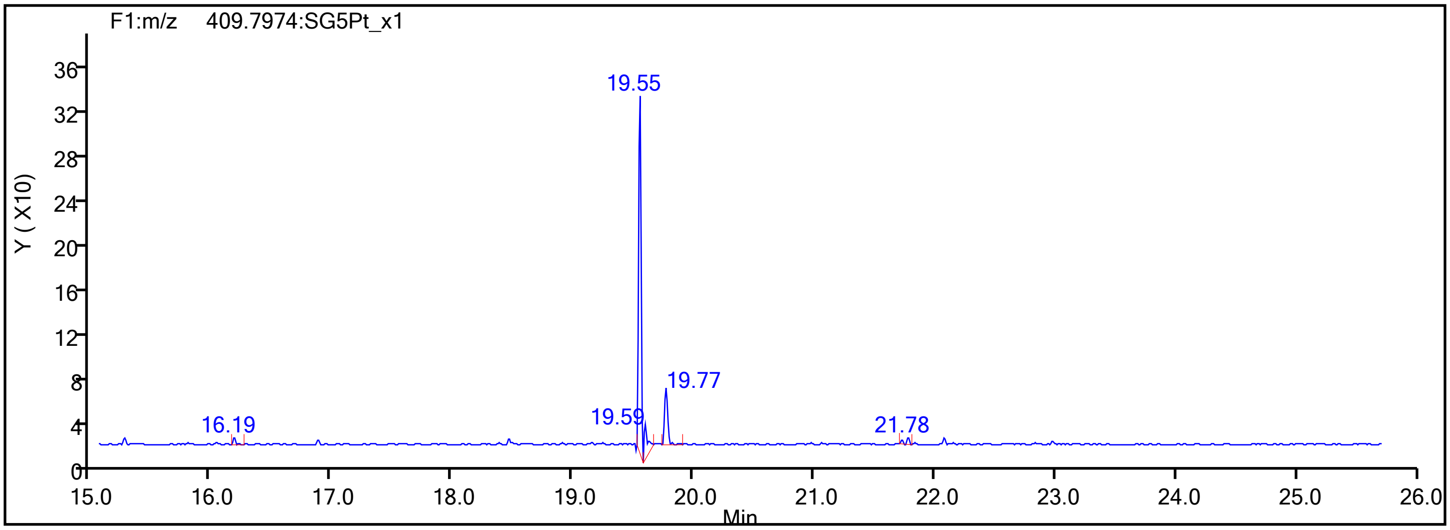

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

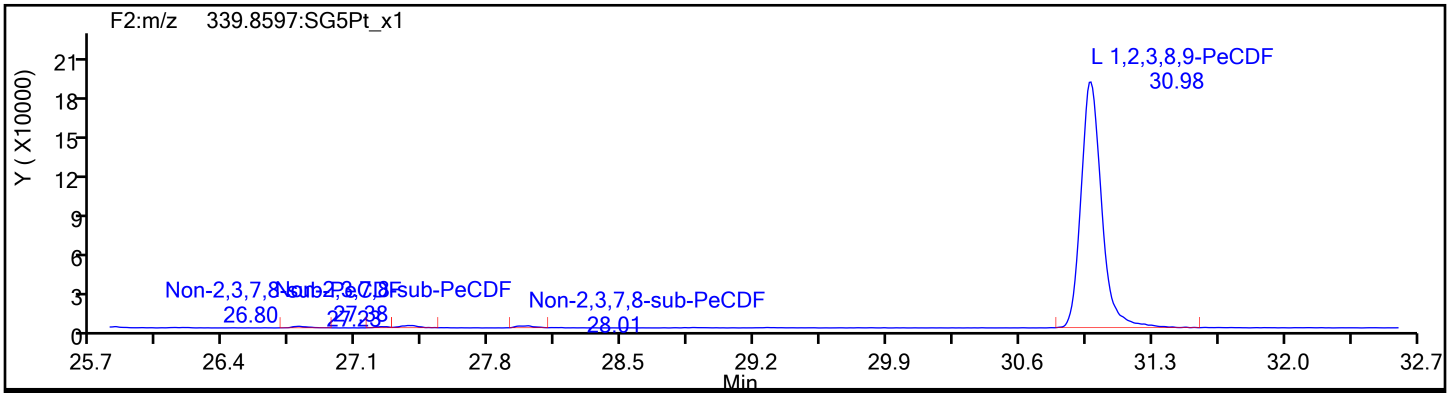

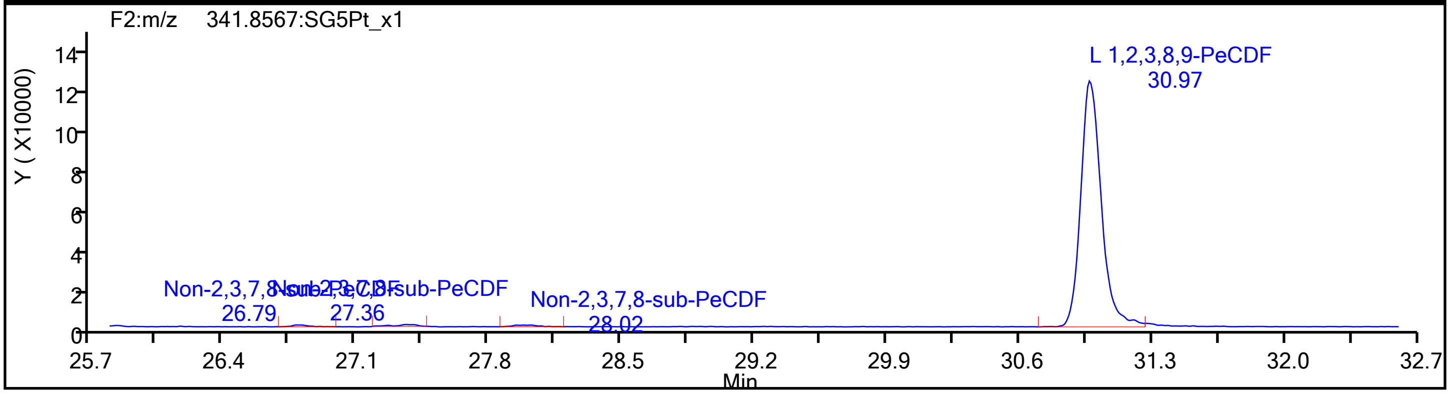

PeCDF Standards

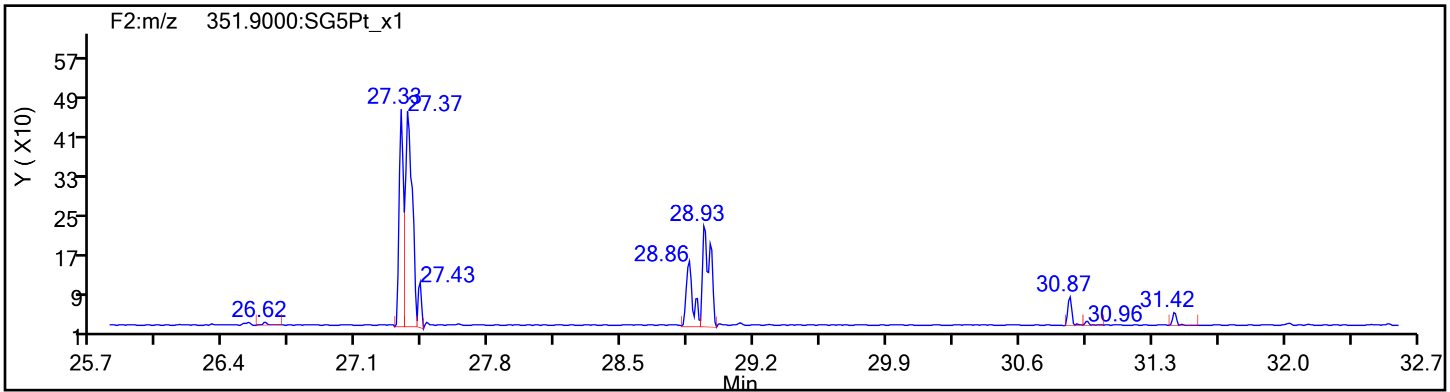

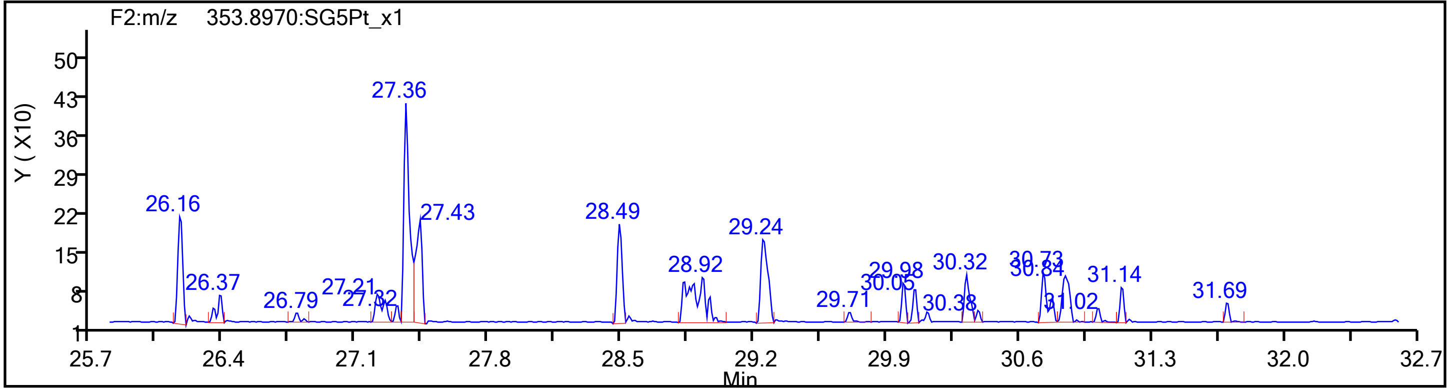

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

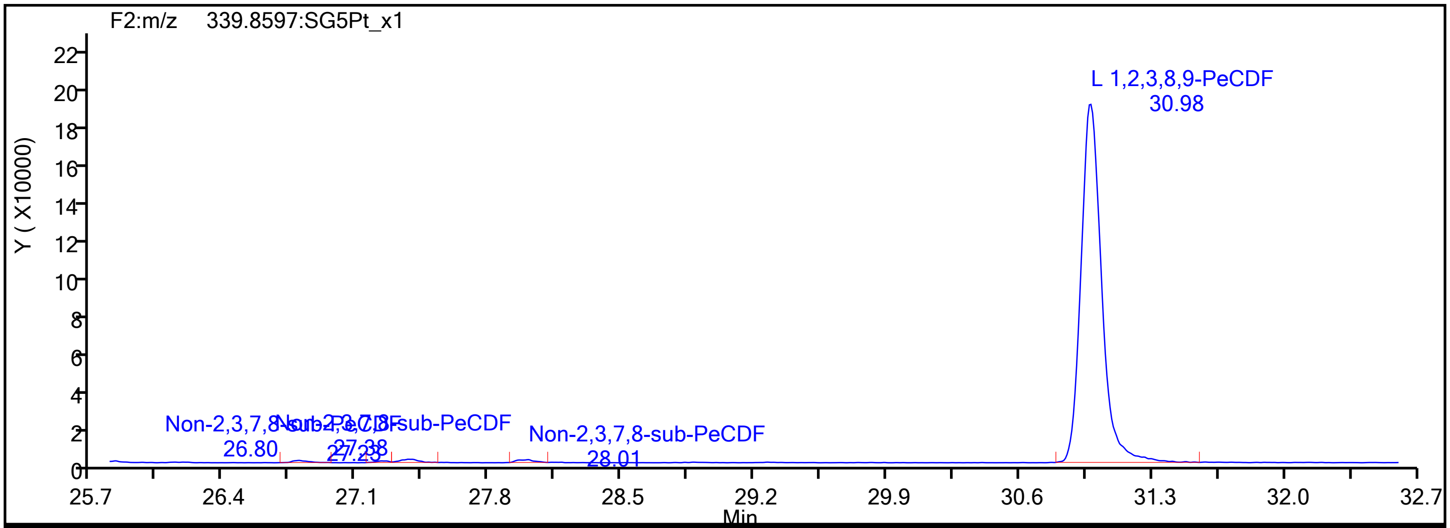

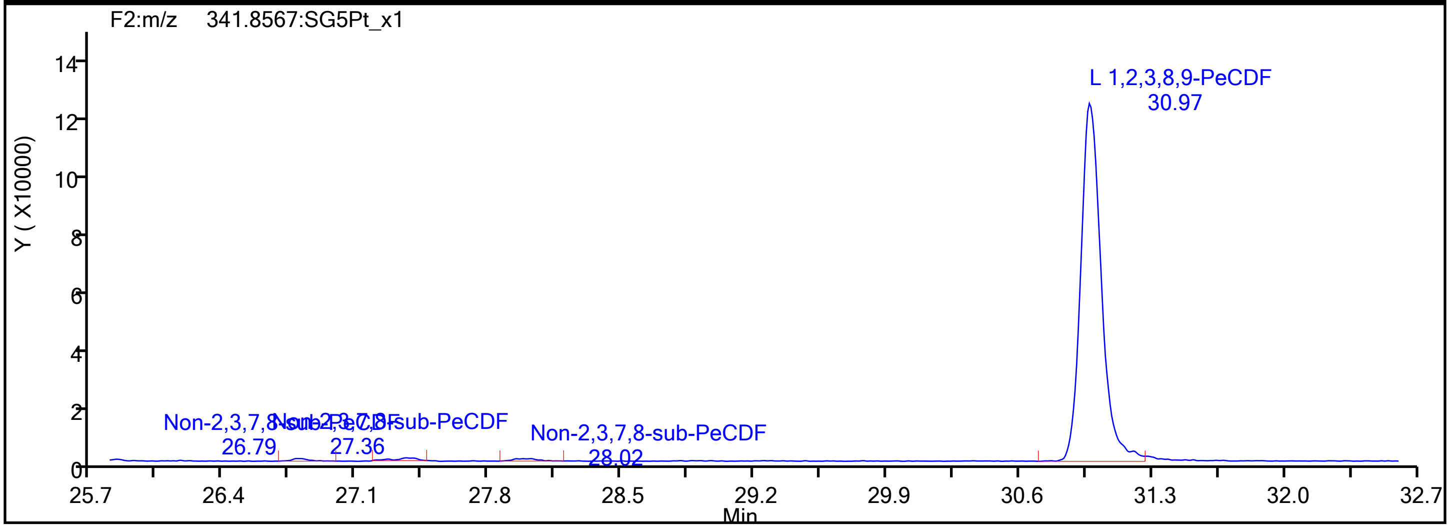

PeCDF Interference Mass

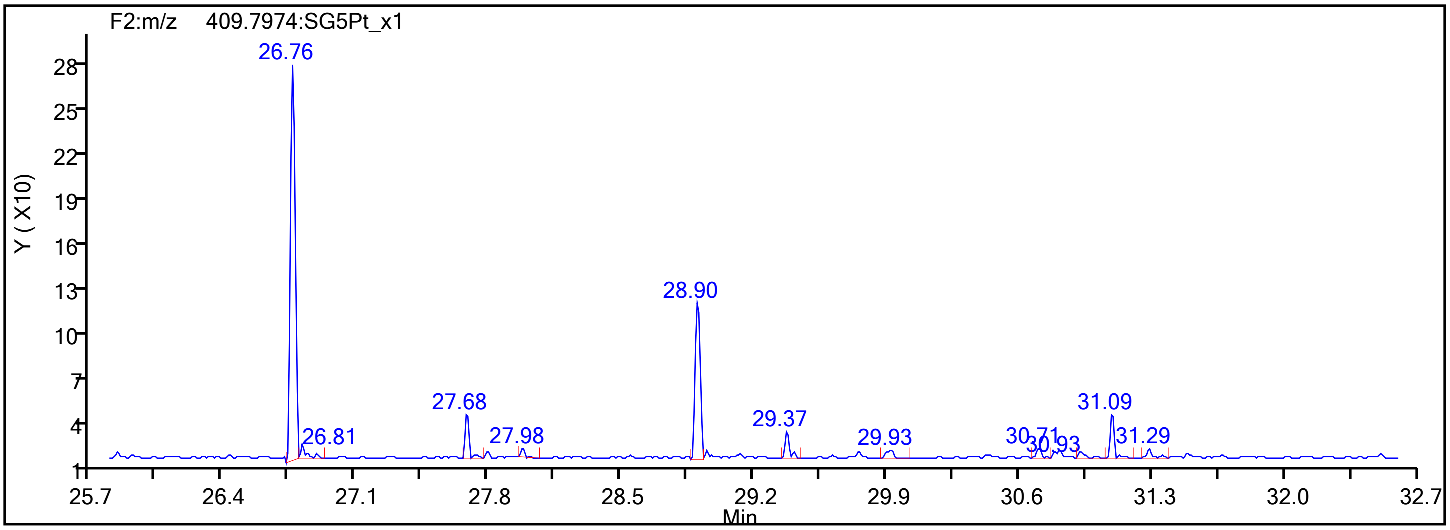

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d
Injection Date: 03-Jun-2020 12:28:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 383168
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

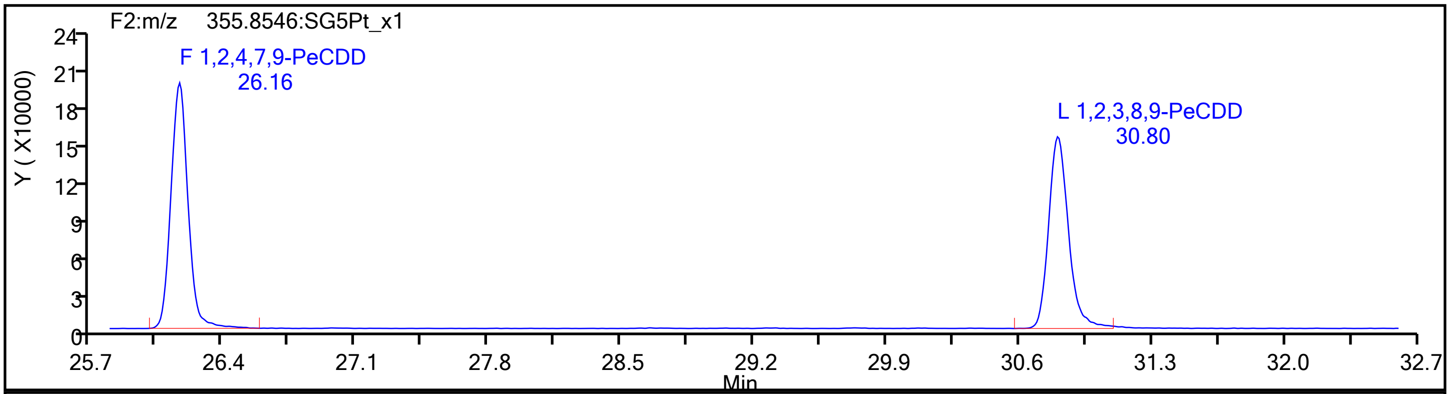

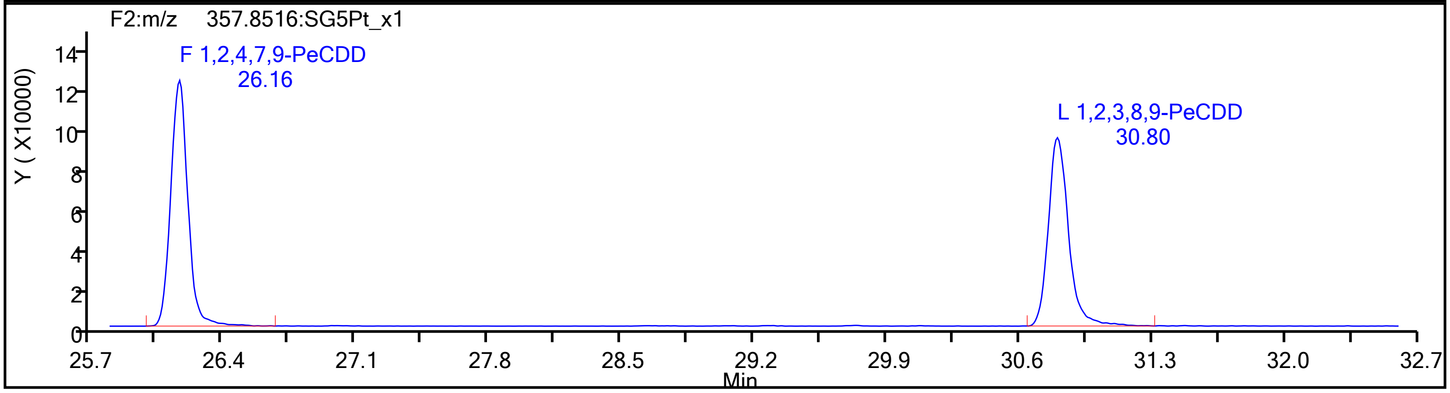

PeCDD Standards

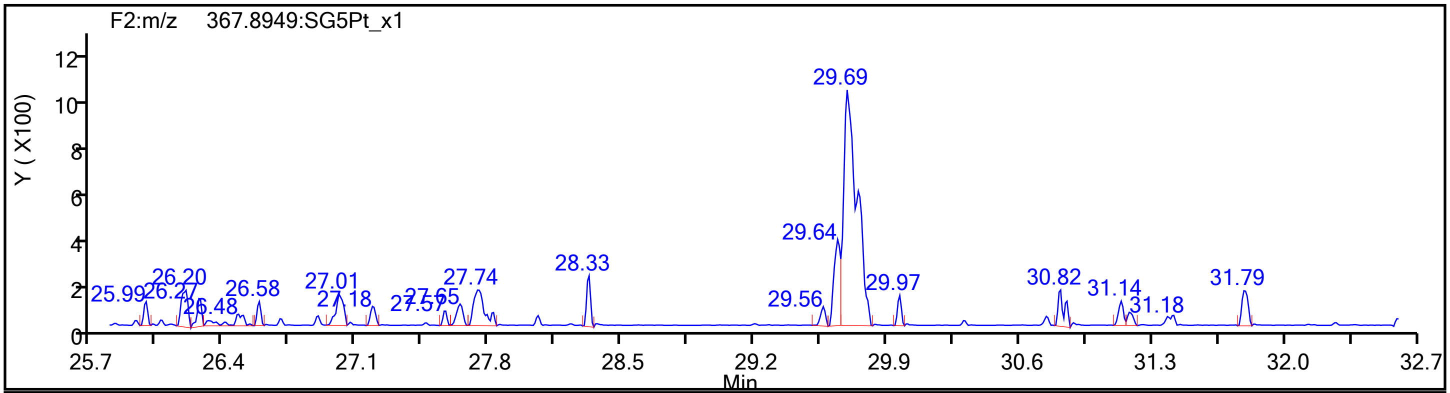

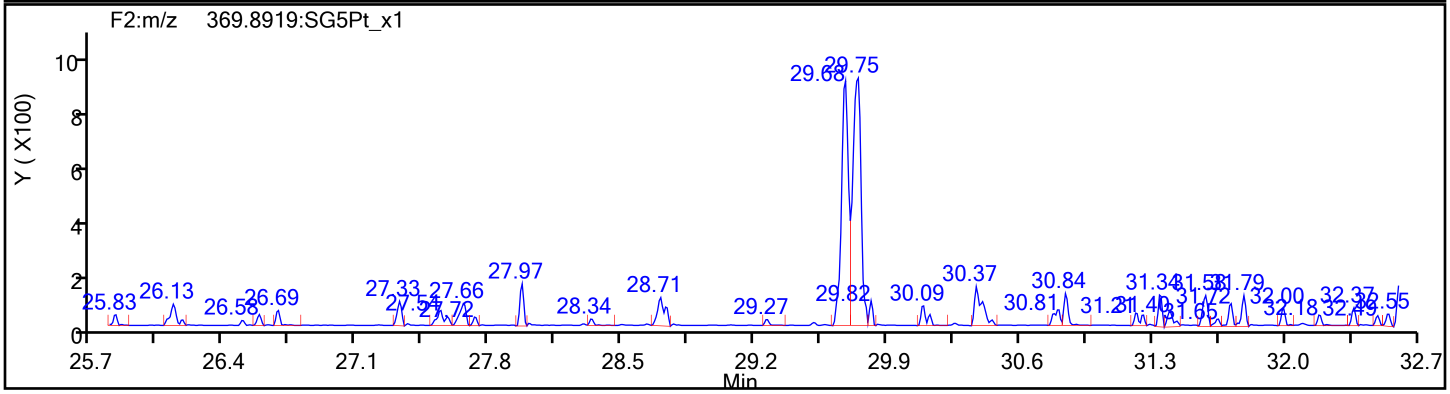

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date: 03-Jun-2020 12:28:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

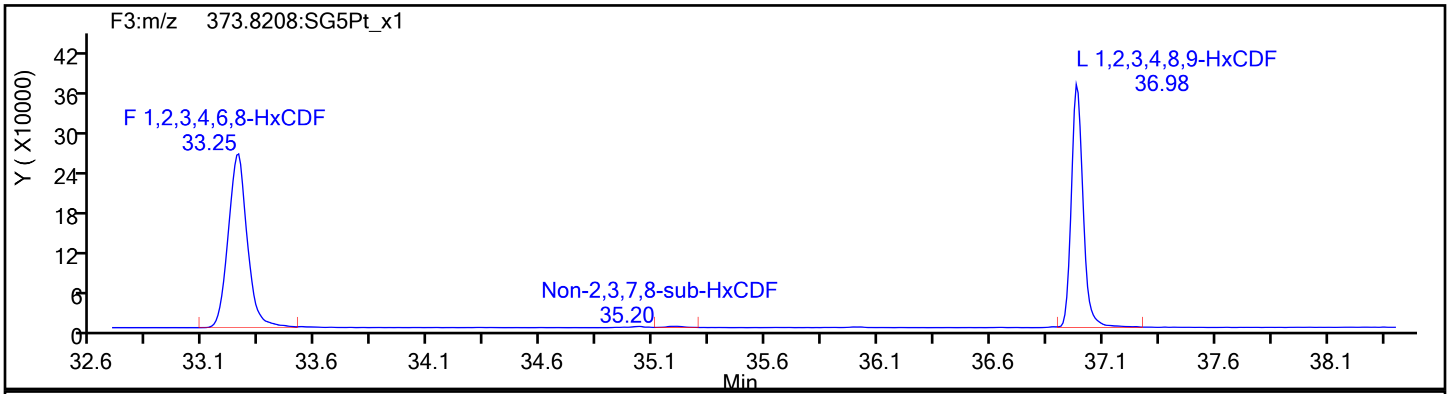

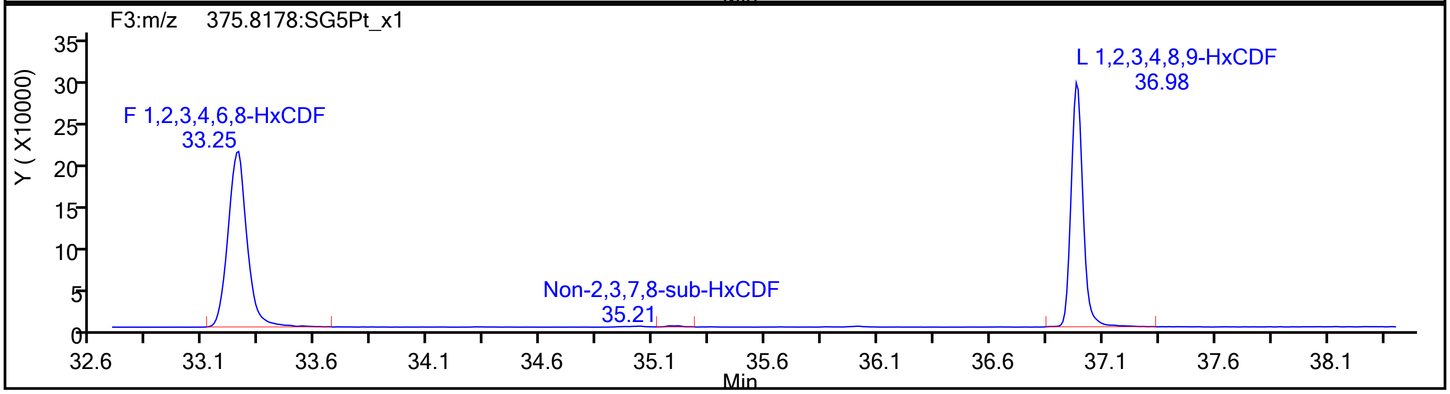

HxCDF Standards

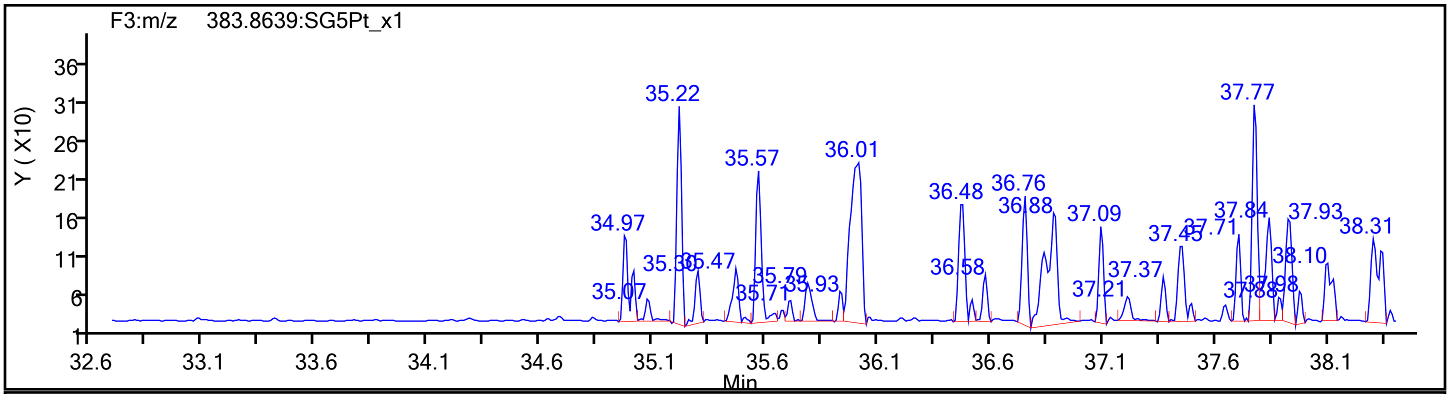

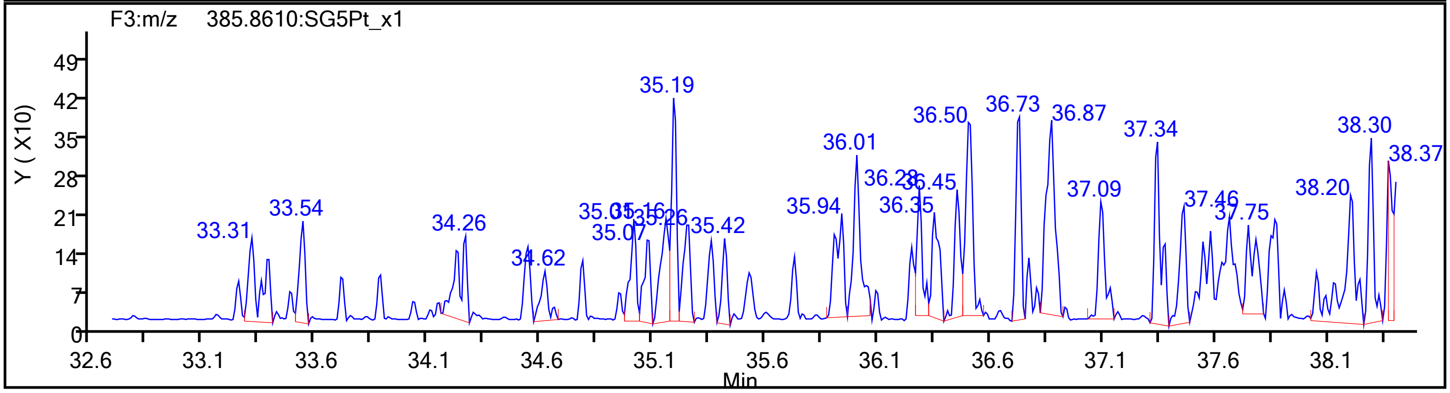

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

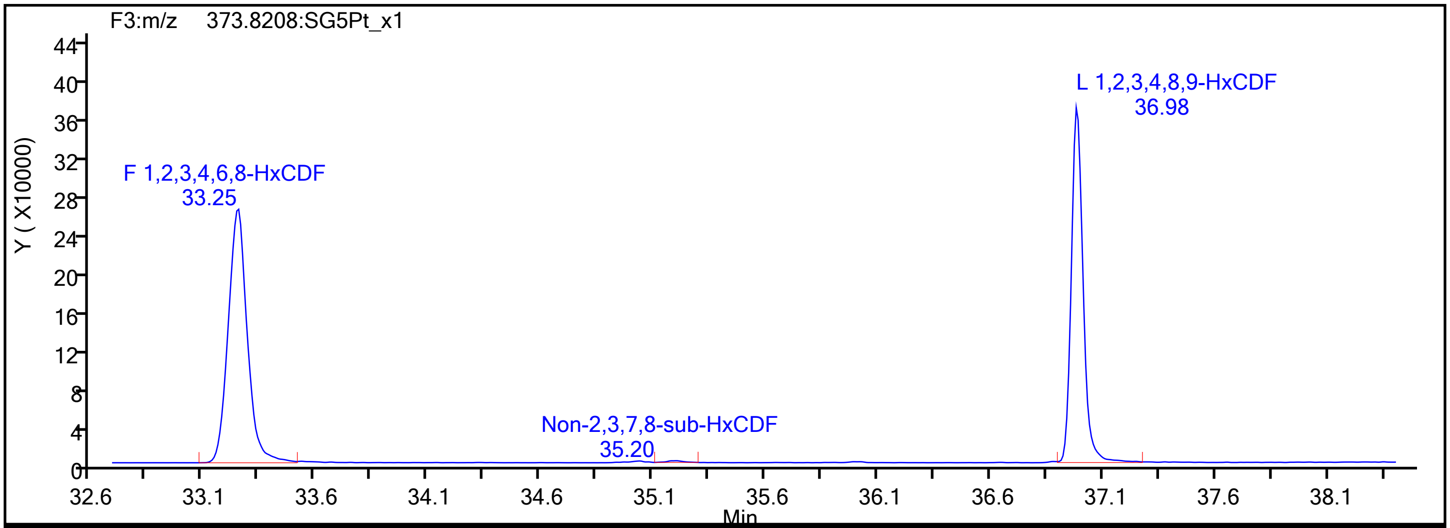

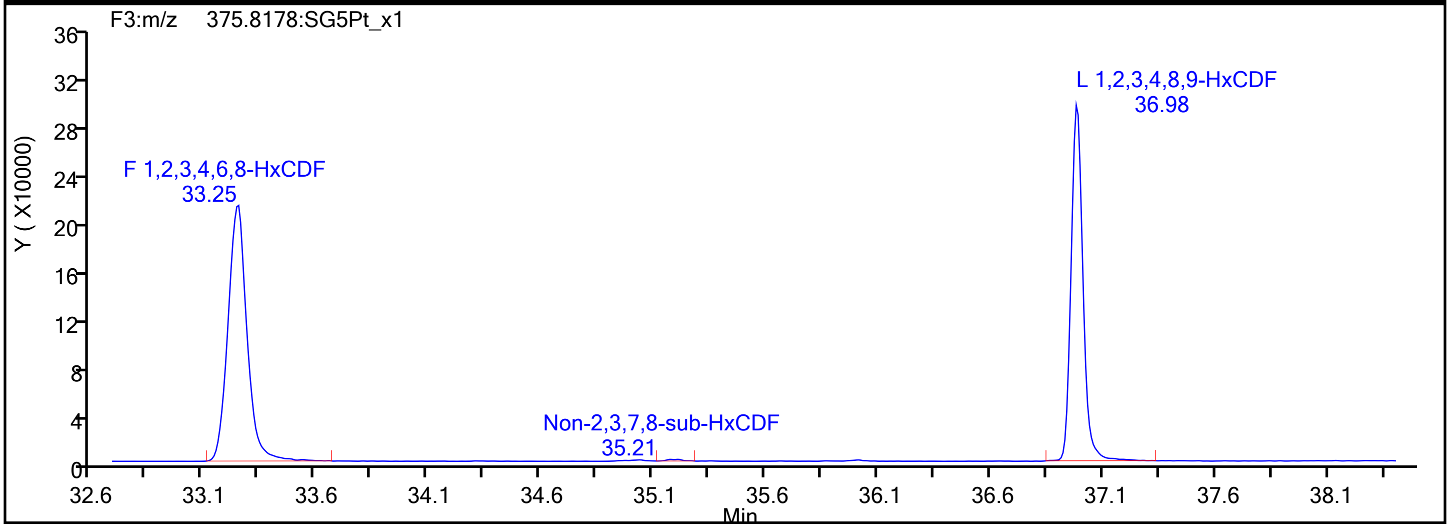

HxCDF Interference Mass

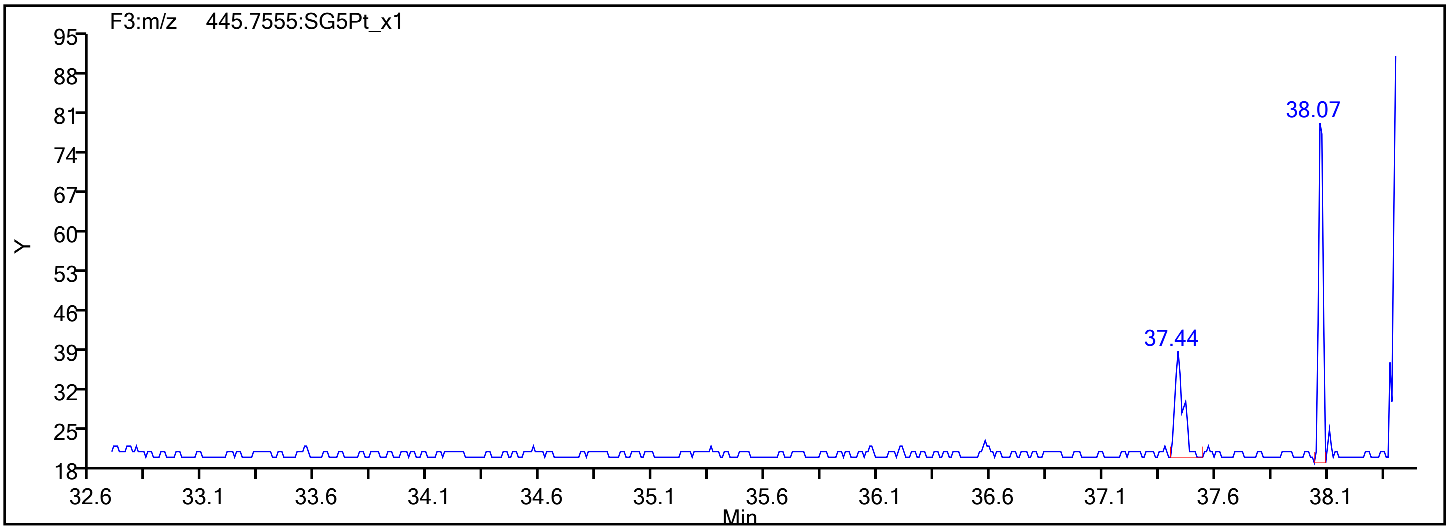

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

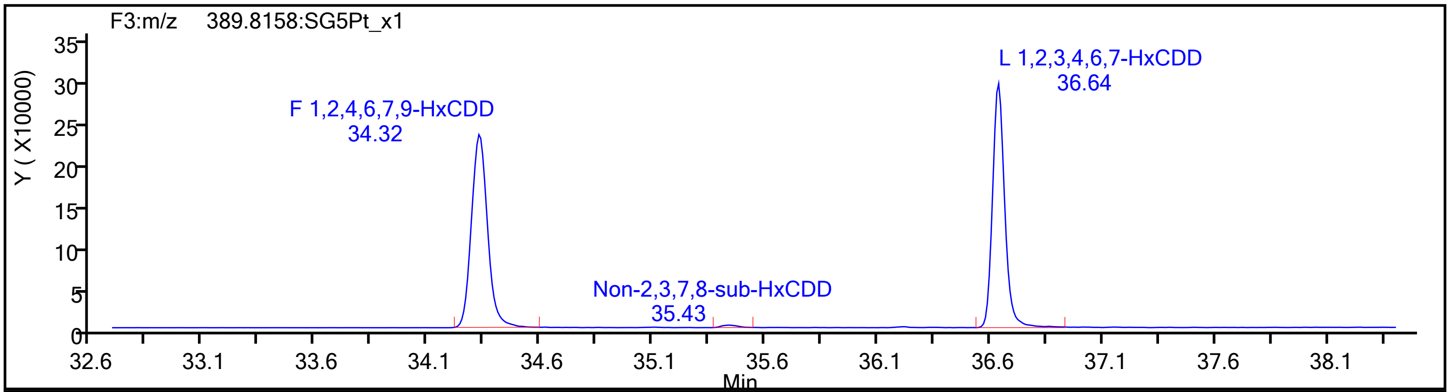

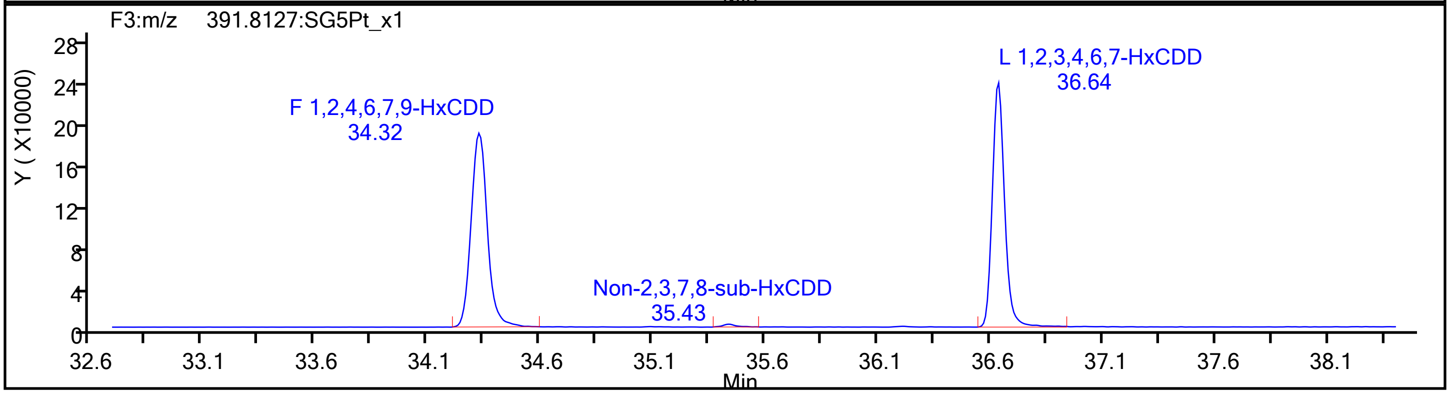

HxCDD Standards

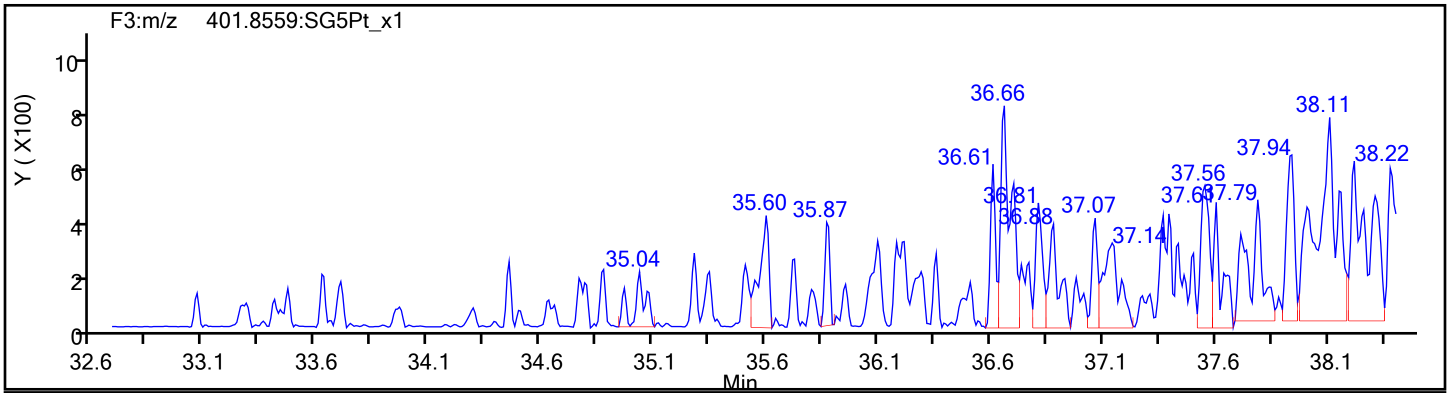

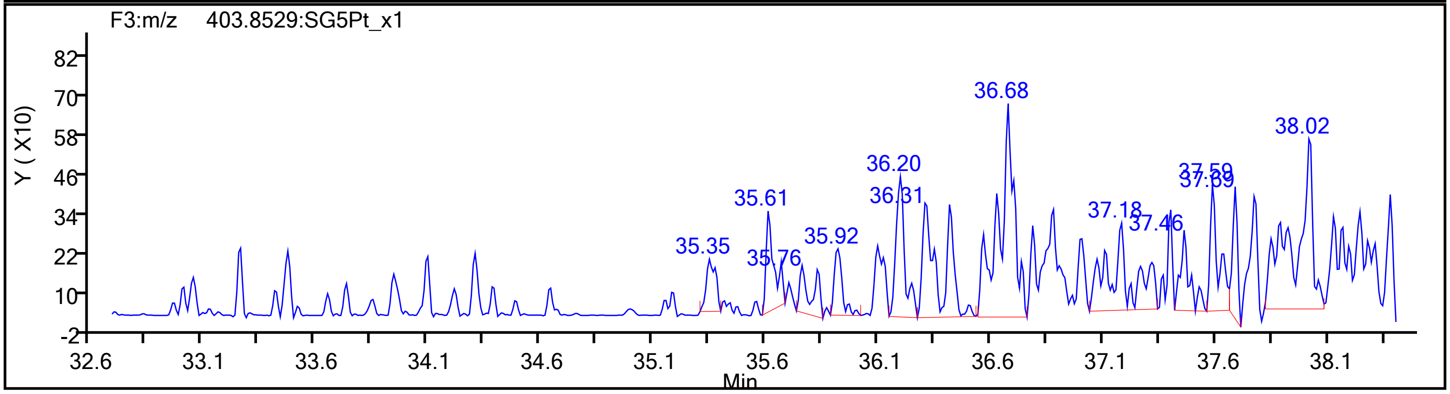

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d

Injection Date: 03-Jun-2020 12:28:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 383168

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

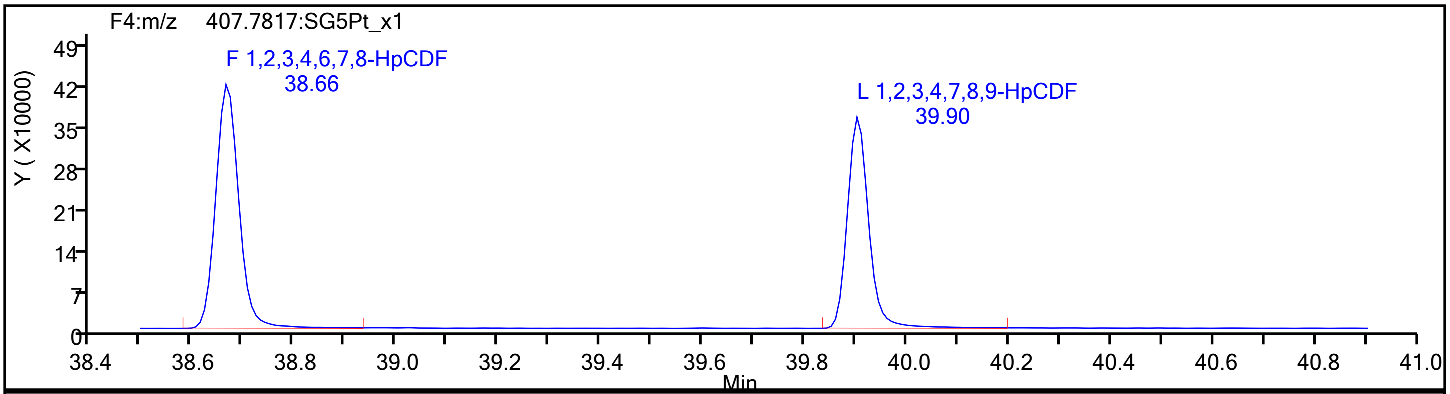

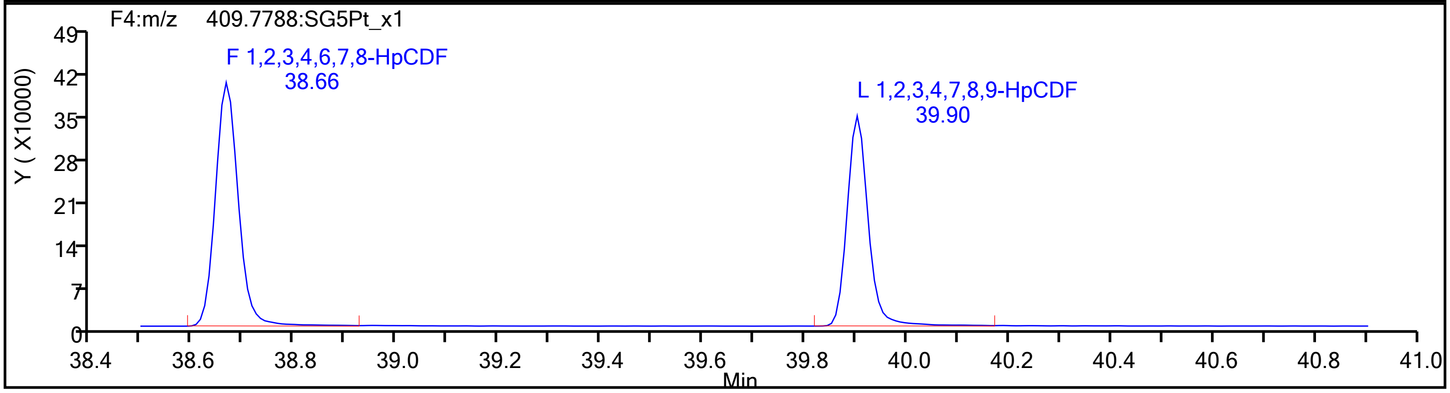

HpCDF Standards

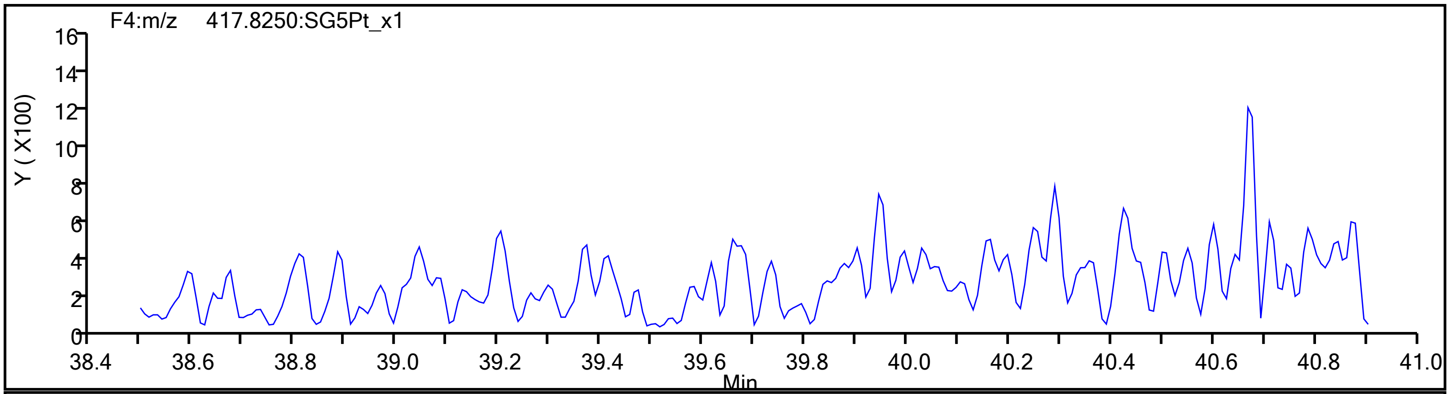

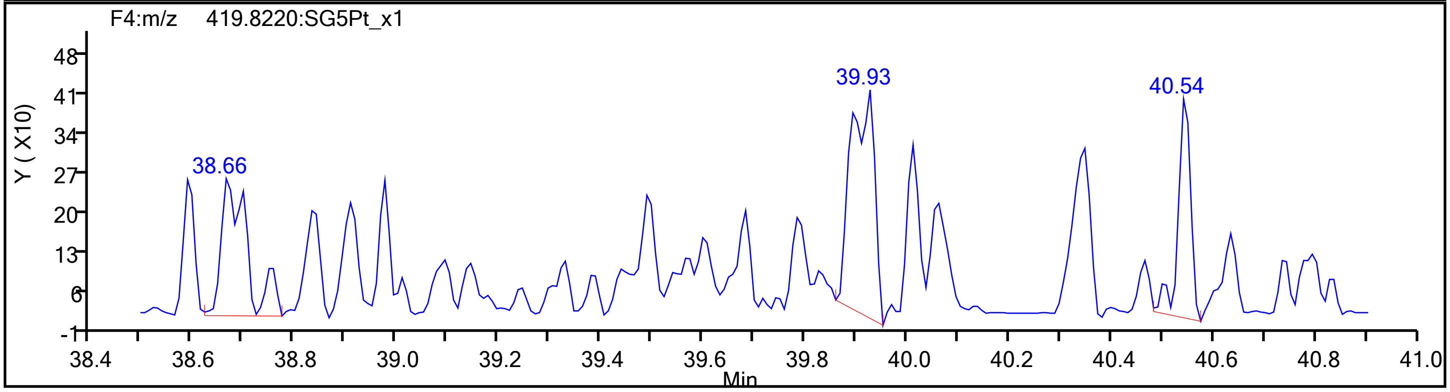

Report Date: 05-Jun-2020 10:33:19　　Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

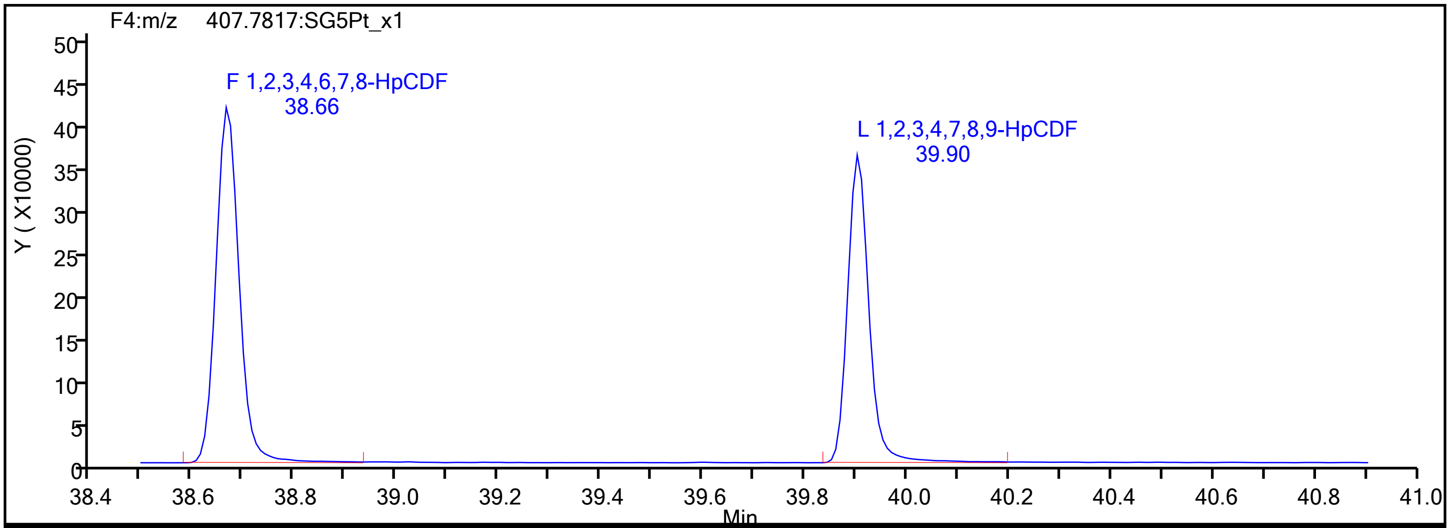

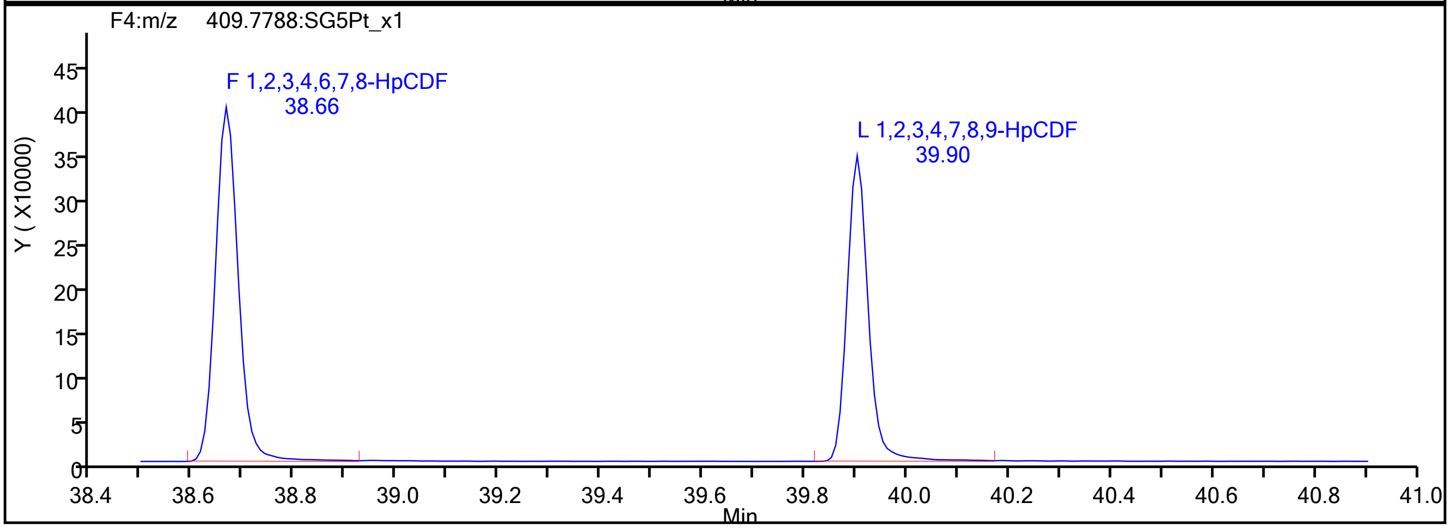

HpCDF Interference Mass

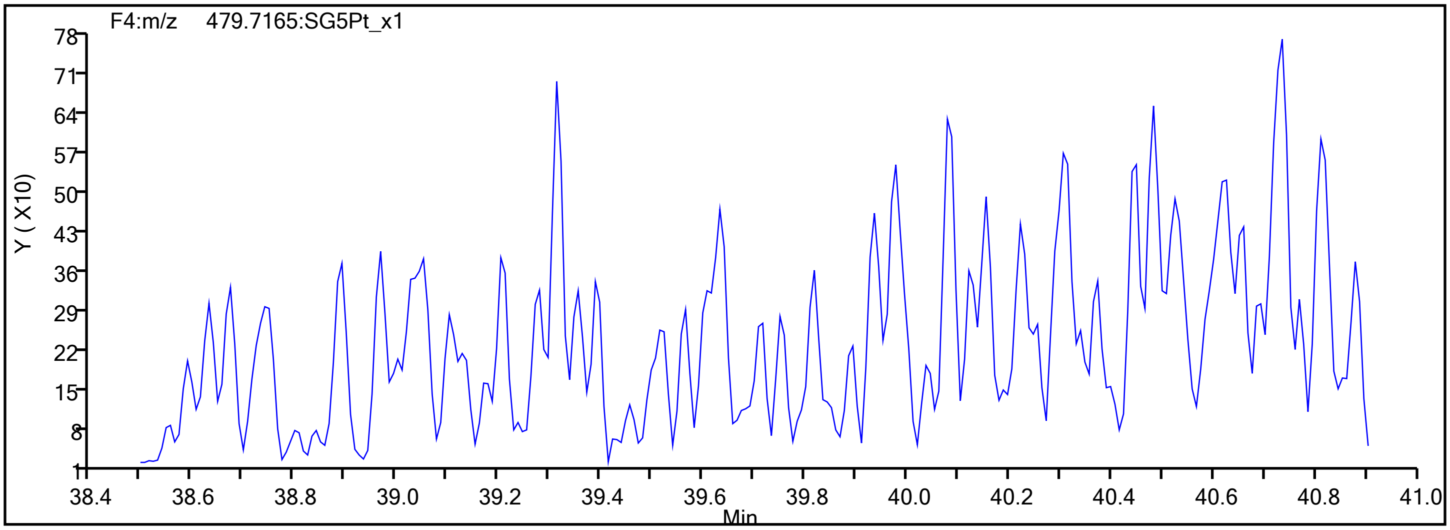

Report Date: 05-Jun-2020 10:33:19		Chrom Revision: 2.3 03-Jun-2020 23:27:16	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

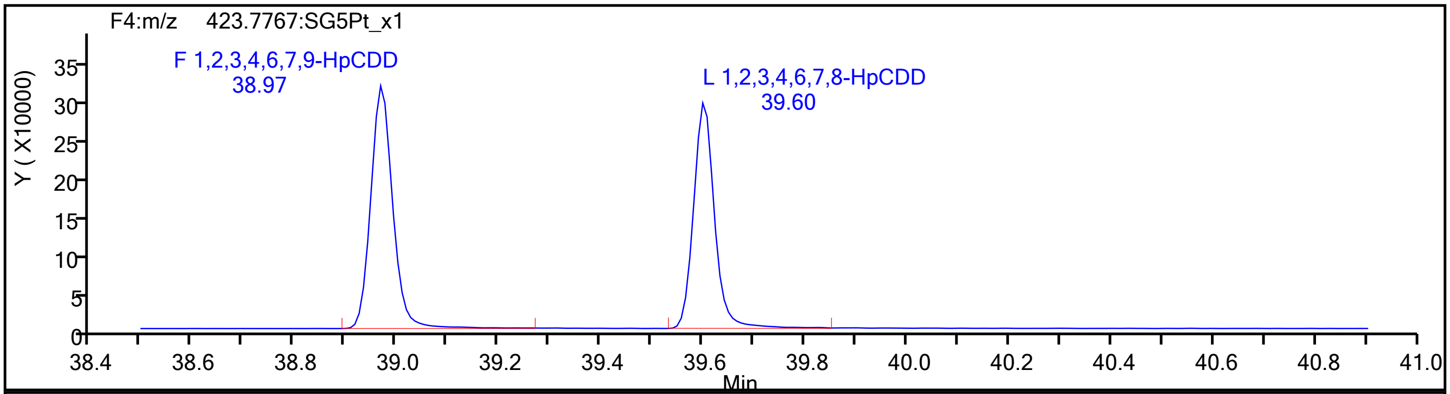

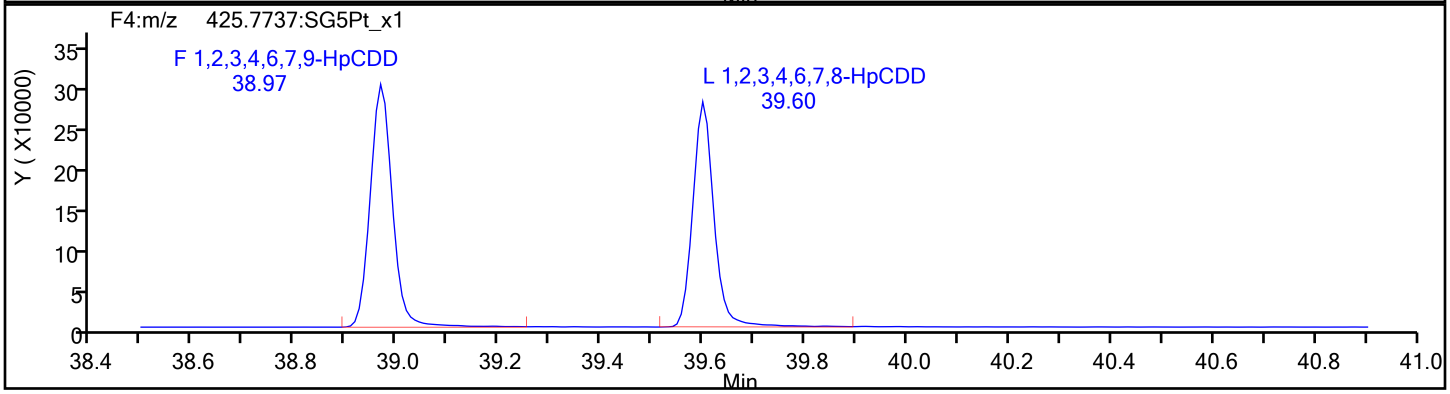

HpCDD Standards

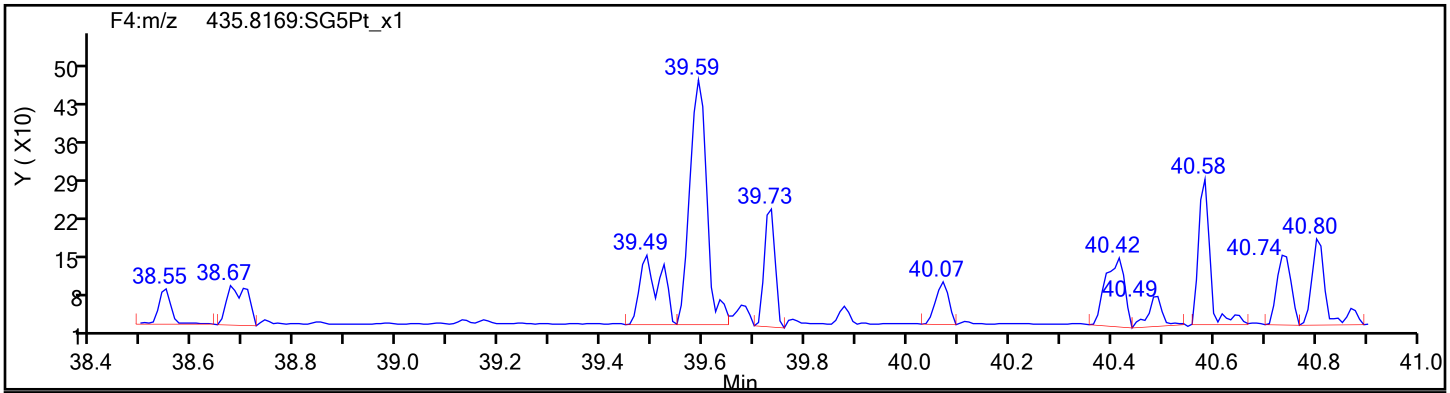

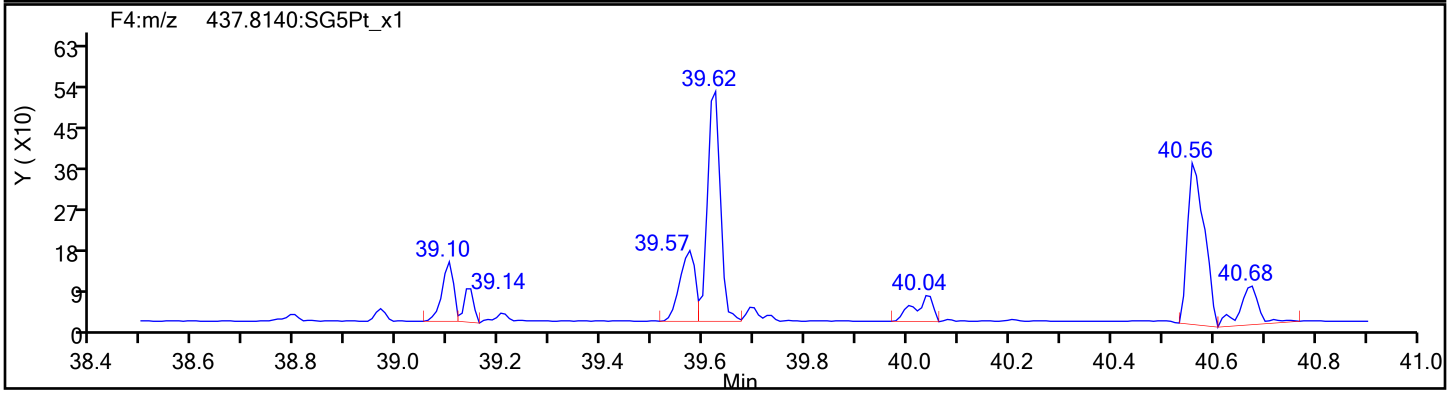

Report Date: 05-Jun-2020 10:33:19 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

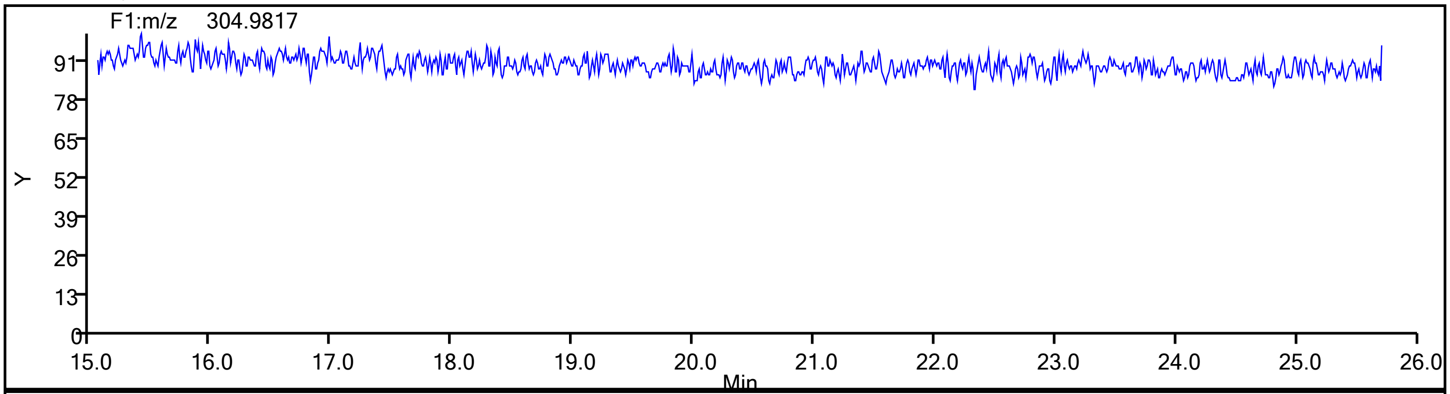

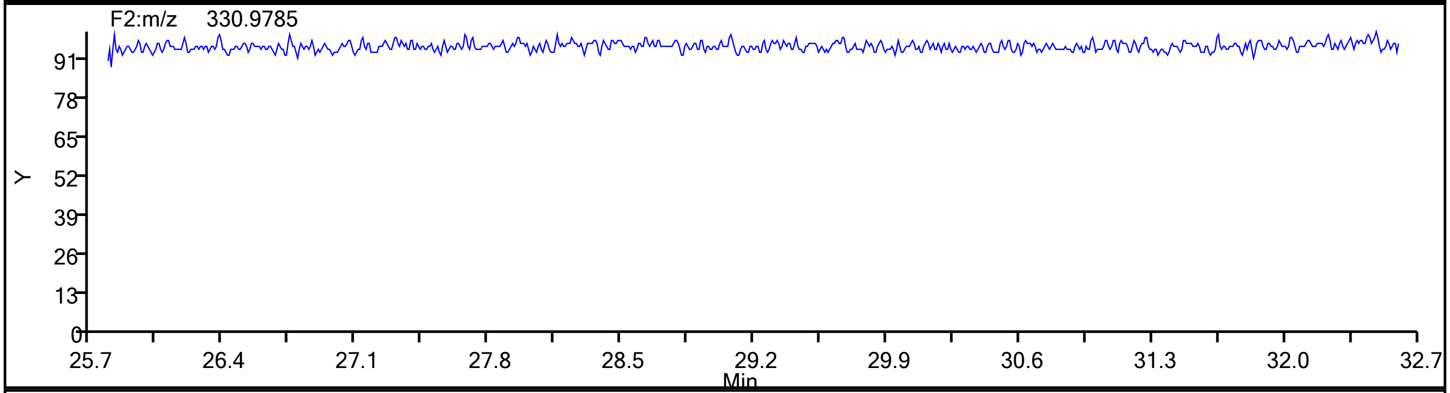

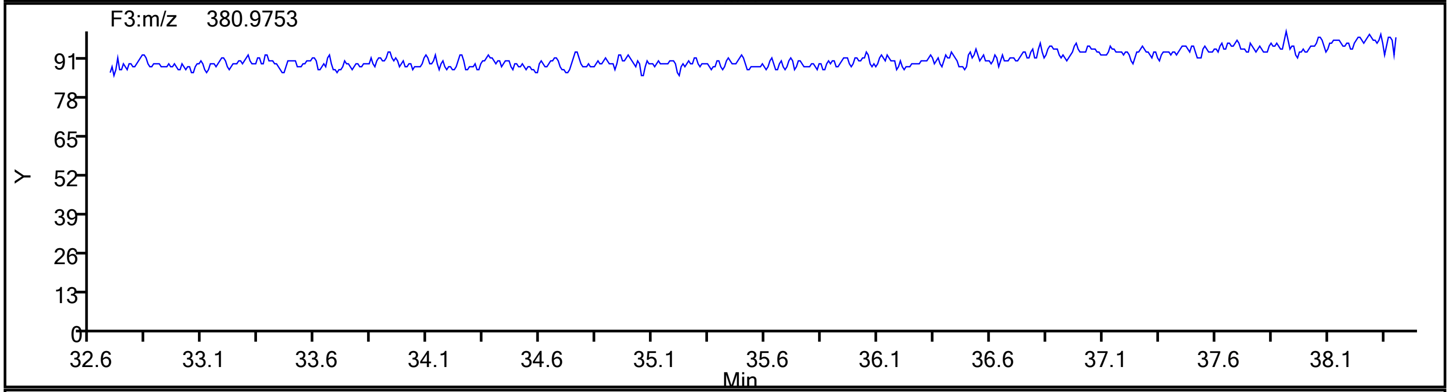

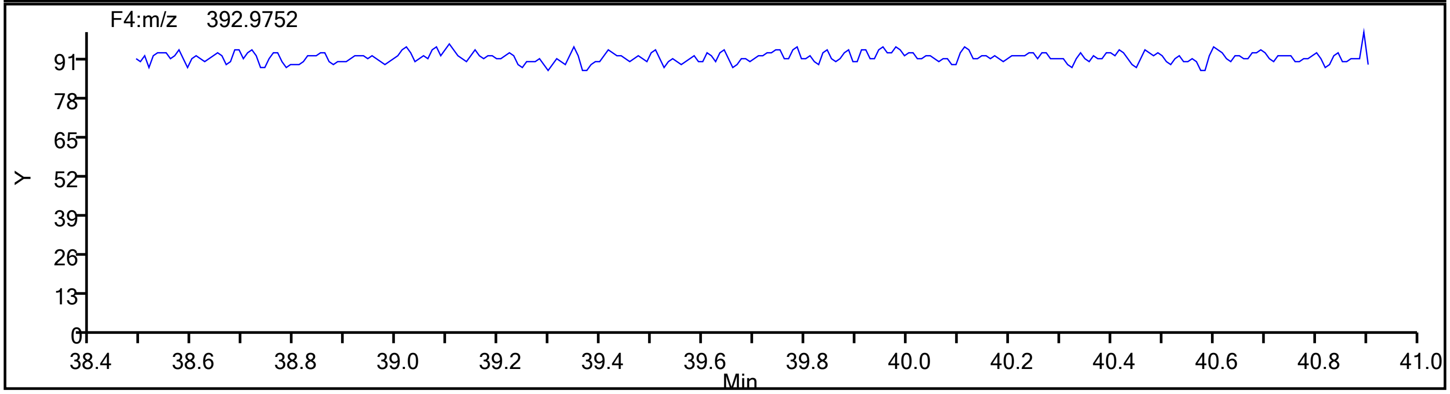

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_2.d		
Injection Date:	03-Jun-2020 12:28:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	383168	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

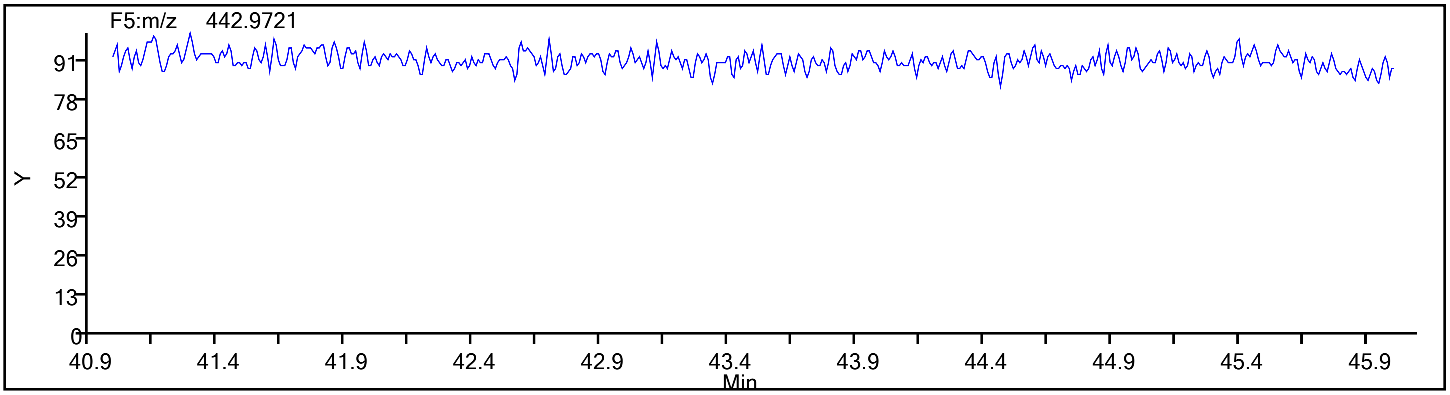

Report Date: 21-Aug-2020 16:51:15 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 20-Aug-2020 23:09:00 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 16:51:15 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1052

First Level Reviewer: shardaa Date: 21-Aug-2020 11:42:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.246	2343566	0.78	1.4977					0.00	
2,3,7,8-TCDF	20.306	5759817	0.81	1.1312	86.9	86.9	0.2758	0.2758		
A Non-2,3,7,8-sub-TCDF	19.744	35646	0.77	1.1312	0.6432	0.5378	0.2758	0.5378		RQ
S Total TCDF					87.5	87.4	0.2758	0.2758		RQ
D 13C-2,3,7,8-TCDD	21.629	1237468	0.76	1.0367					0.00	
2,3,7,8-TCDD	21.646	1652351	0.80	1.1849	45.1	45.1	0.1671	0.1671		
A Non-2,3,7,8-sub-TCDD	20.594						0.1671	0.1671		
S Total TCDD					45.1	45.1	0.1671	0.1671		
A F1 PeCDFs	24.667	18332	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	28.186	36966	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.361						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.016						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.382	25875	1.43	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.586	2539033	1.03	1.5957						
1,2,3,4,7,8,9-HpCDF	39.824	2322983	1.04	1.1693						
A Non-2,3,7,8-sub-HpCDF	39.205						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.520	1665085	1.07	1.1150						
A Non-2,3,7,8-sub-HpCDD	39.555						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.944	3256449	0.82							
1,3,6,8-TCDD	17.584	1639403	0.82							
2,3,4,7-TCDF	20.306	5759817	0.81							
1,2,3,7-TCDD	21.440	1357149	0.80							
1,2,3,9-TCDF	21.852	2459077	0.83							
1,2,3,9-TCDD	21.947	1669941	0.82							
1,2,8,9-TCDF	23.544	2685603	0.81							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	23.604	707141								
1,3,4,6,8-PeCDF	23.965	1647849	1.60							
1,2,4,7,9-PeCDD	26.033	1429494	1.60							
1,2,3,8,9-PeCDD	30.688	1440130	1.64							
1,2,3,8,9-PeCDF	30.865	2176869	1.56							
1,2,3,4,6,8-HxCDF	33.142	2707997	1.25							
1,2,4,6,7,9-HxCDD	34.220	1844183	1.24							
1,2,3,4,6,7-HxCDD	36.544	1915874	1.27							
1,2,3,4,8,9-HxCDF	36.890	2699453	1.26							
1,2,3,4,6,7,9-HpCDD	38.880	1738388	1.07							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	20-Aug-2020 23:09:00	ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00040				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	21-Aug-2020 16:51:15	Calib Date:	03-Jun-2020 18:06:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1052				
First Level Reviewer: shardaa		Date:	21-Aug-2020 11:42:28		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.246	20.246	0	1.000	1026781	145648	345	862	422		
317.9389	20.255	20.246	1	1.000	1316785	184763	106	265	1743	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.306	20.306	0	1.003	2582293	336931	471	1177	715		
305.8987	20.298	20.306	-1	1.003	3177524	412802	560	1400	737	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	23.982	19.744	254	1.185	22491	3654	471	1177	8		
	Empc Correction				15507	2970	471	1177	6		
305.8987	23.974	19.744	253	1.184	20139	3858	560	1400	7	1.12(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.629	21.629	0	1.000	533486	82234	159	397	517		
333.9338	21.621	21.629	-1	1.000	703982	97615	72	180	1356	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.646	21.646	0	1.001	736695	98551	185	462	533		
321.8936	21.646	21.646	0	1.001	915656	115043	171	427	673	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.594						185	462			
321.8936	20.594						171	427			
A F1 PeCDFs											RQ
339.8597	24.240	24.667	-26	1.000	11143	1718	22	55	78		
341.8567	24.223	24.667	-27	1.000	10116	1267	26	65	49	1.10(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.681	28.186	-90	1.000	5223	1196	170	425	7		
341.8567	26.656	28.186	-92	1.000	4208	493	118	295	4	1.24(1.32-1.78)	
339.8597	27.237	28.186	-57	1.000	15046	1734	170	425	10		
341.8567	27.270	28.186	-55	1.000	6197	1108	118	295	9	2.43(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	27.893	28.186	-18	1.000	7642	1016	170	425	6		
341.8567	27.851	28.186	-20	1.000	4930	591	118	295	5	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.361						130	325			
357.8516	28.361						60	150			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.016						289	722			
375.8178	35.016						232	580			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.340	35.382	-3	1.000	15242	3124	198	495	16		
391.8127	35.356	35.382	-2	1.000	10633	2125	162	405	13	1.43(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.586	38.586	0	1.000	1286270	358956	638	1595	563		
409.7788	38.577	38.586	-1	1.000	1252763	355850	613	1532	581	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.824	39.824	0	1.000	1183924	361844	638	1595	567		
409.7788	39.824	39.824	0	1.000	1139059	354027	613	1532	578	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.205						638	1595			
409.7788	39.205						613	1532			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.520	39.520	0	1.000	861790	267820	489	1222	548		
425.7737	39.520	39.520	0	1.000	803295	251464	433	1082	581	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						489	1222			
425.7737	39.555						433	1082			
1,3,6,8-TCDF											
303.9016	15.944	15.944	0		1470125	278529	471	1177	591		
305.8987	15.944	15.944	0		1786324	343735	560	1400	614	0.82(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.584	17.584	0		739109	118813	185	462	642		
321.8936	17.575	17.584	-1		900294	159402	171	427	932	0.82(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.306	20.306	0		2582293	336931	471	1177	715		
305.8987	20.298	20.306	-1		3177524	412802	560	1400	737	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.440	21.440	0		602892	87770	185	462	474		
321.8936	21.449	21.440	1		754257	105064	171	427	614	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	21.852	21.852	0		1114781	140954	471	1177	299		
305.8987	21.852	21.852	0		1344296	168003	560	1400	300	0.83(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	21.947	21.947	0		754748	92242	185	462	499		
321.8936	21.955	21.947	1		915193	117653	171	427	688	0.82(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.544	23.544	0		1202096	194312	471	1177	413		
305.8987	23.553	23.544	1		1483507	249967	560	1400	446	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	23.604	23.604	0		707141	119036	185	462	643		
1,3,4,6,8-PeCDF											
339.8597	23.965	23.965	0		1015052	195135	22	55	8870		
341.8567	23.956	23.965	-1		632797	120560	26	65	4637	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.033	26.033	0		879267	131173	130	325	1009		
357.8516	26.033	26.033	0		550227	80379	60	150	1340	1.60(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	30.688	30.688	0		894618	111566	130	325	858		
357.8516	30.680	30.688	-1		545512	68733	60	150	1146	1.64(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	30.865	30.865	0		1327486	159497	170	425	938		
341.8567	30.848	30.865	-1		849383	105752	118	295	896	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.142	33.142	0		1505337	231803	289	722	802		
375.8178	33.142	33.142	0		1202660	185081	232	580	798	1.25(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.220	34.220	0		1021122	186002	198	495	939		
391.8127	34.220	34.220	0		823061	148125	162	405	914	1.24(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.544	36.544	0		1073673	258150	198	495	1304		
391.8127	36.536	36.544	-1		842201	209775	162	405	1295	1.27(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.890	36.890	0		1507297	366197	289	722	1267		
375.8178	36.890	36.890	0		1192156	296335	232	580	1277	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.880	38.880	0		898765	268903	489	1222	550		
425.7737	38.880	38.880	0		839623	244780	433	1082	565	1.07(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	20-Aug-2020 23:09:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	405471	Lims Sample ID:	15

Non-2,3,7,8-sub-TCDF, RT: 19.744

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	40.000	2343566	330411

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		40.000	2343566	330411

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
23.982	22491	3654	20139	3858	0.6432	1.12	RQ
23.982	15507	2970	20139	3858	0.5378		Empc Correction
Signal Totals:							
	15507	2970	20139	3858			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	42630	7512				1.12	RQ
	35646	6828					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6432 = (42630 * 40.000) / (2343566 * 1.131)
Empc Amount: 0.5378 = (35646 * 40.000) / (2343566 * 1.131)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Lims ID: WDM
Client ID:
Inject. Date: 20-Aug-2020 23:09:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 405471
Lims Sample ID: 15

F1 PeCDFs, RT: 24.667

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.240	11143	1718	10116	1267		1.10	R
Signal Totals:							
	11143	1718	10116	1267			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	21259	2985				1.10	RQ
	18332	2826					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (21259 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (18332 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Lims ID: WDM
Client ID:
Inject. Date: 20-Aug-2020 23:09:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 405471
Lims Sample ID: 15

Non-2,3,7,8-sub-PeCDF, RT: 28.186

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106				
2,3,4,7,8-PeCDF	0.907				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.681	5223	1196	4208	493		1.24	R
27.237	15046	1734	6197	1108		2.43	R
27.893	7642	1016	4930	591		1.55	
Signal Totals:							
	27911	3946	15335	2192			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	43246	6138				1.82	RQ
	36966	6399					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (43246 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (36966 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Lims ID: WDM
Client ID:
Inject. Date: 20-Aug-2020 23:09:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 405471 Lims Sample ID: 15

Non-2,3,7,8-sub-HxCDD, RT: 35.382

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.934				
1,2,3,6,7,8-HxCDD	1.080				
1,2,3,7,8,9-HxCDD	1.057				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.340	15242	3124	10633	2125		1.43	
Signal Totals:							
	15242	3124	10633	2125			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	25875	5249				1.43	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (25875 * 0.0) / (0 * 0.000)

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d

Injection Date: 20-Aug-2020 23:09:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405471 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

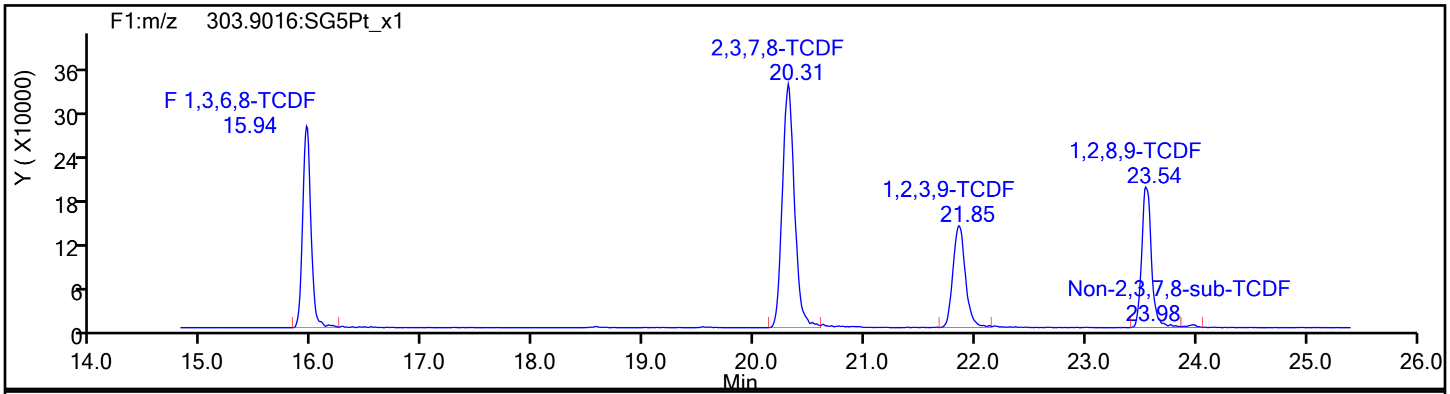

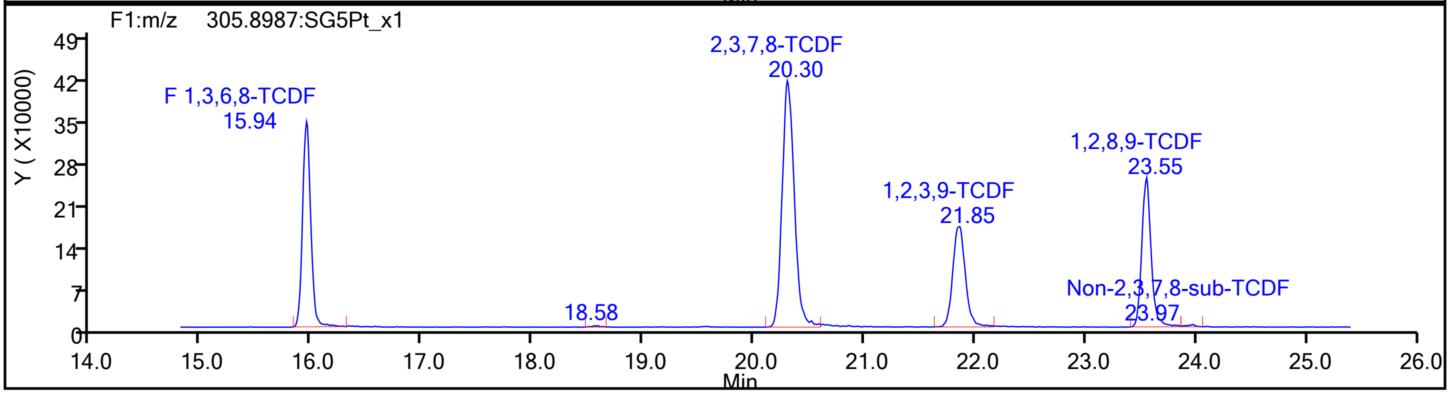

TCDF Standards

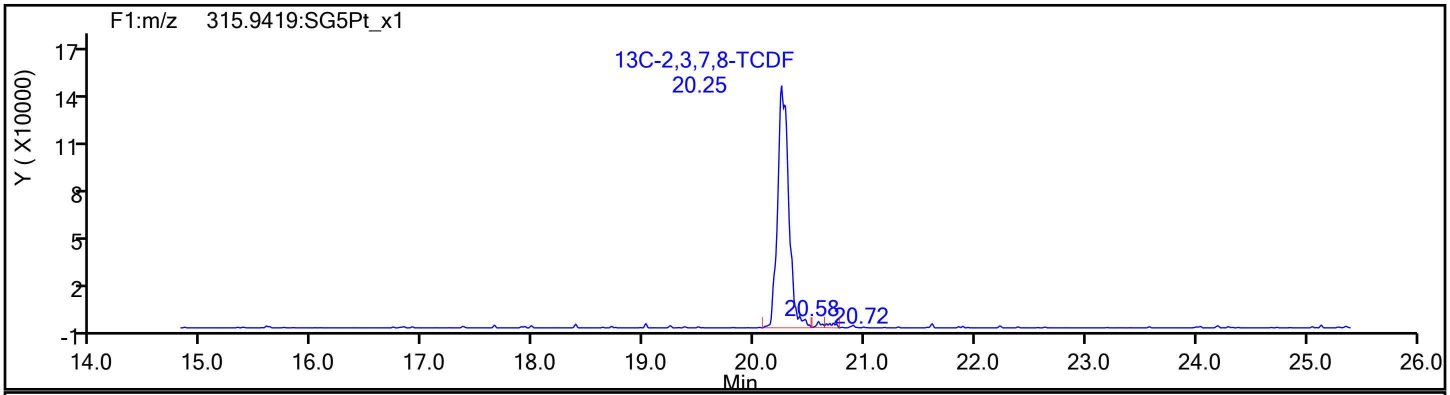

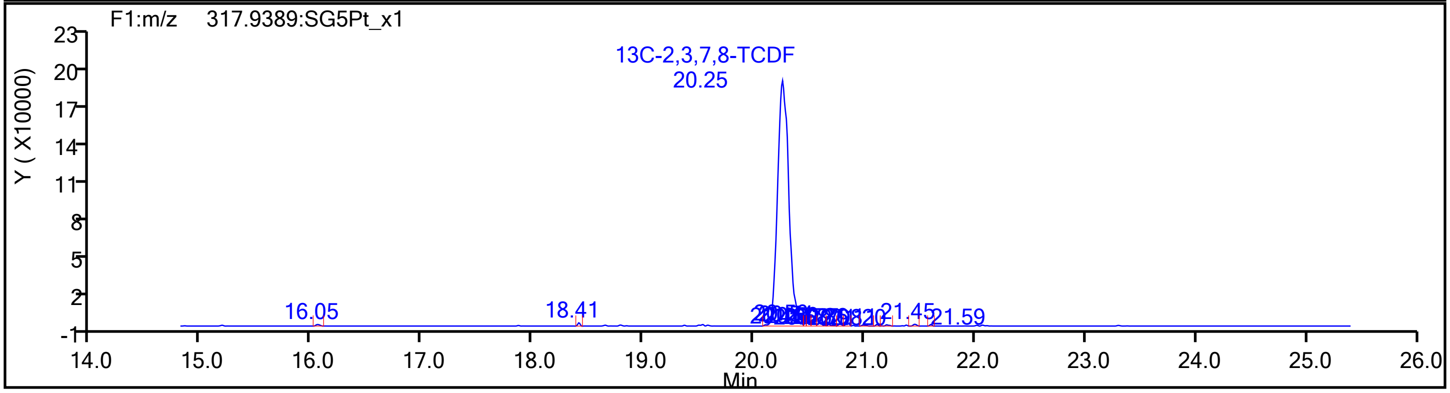

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
Injection Date:	20-Aug-2020 23:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

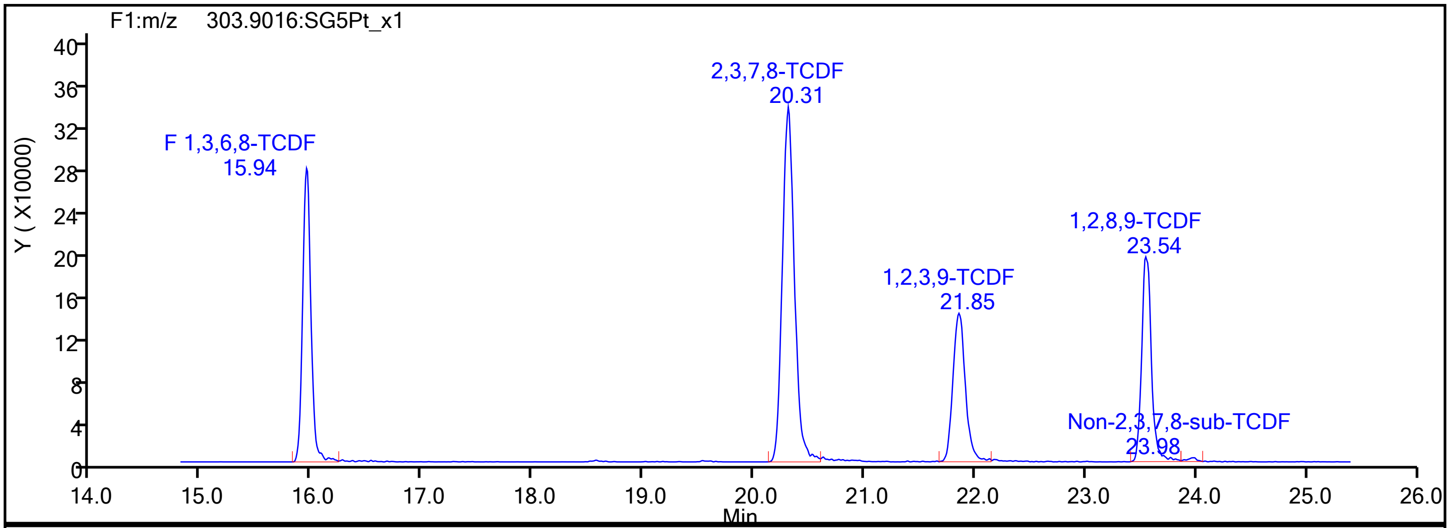

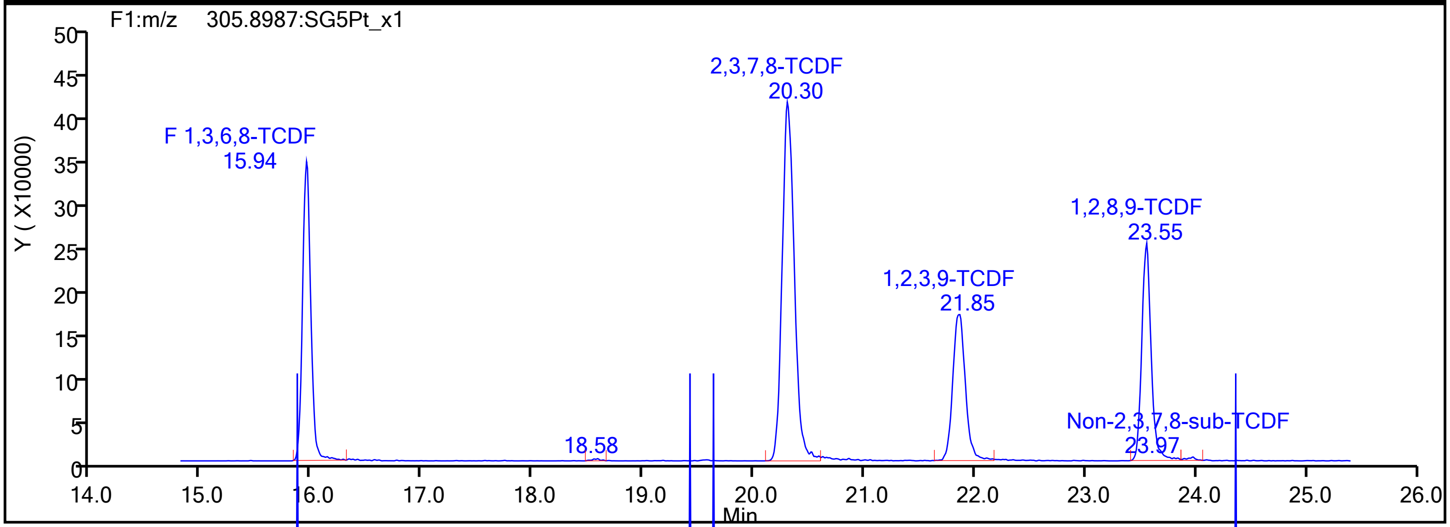

TCDF Interference Mass

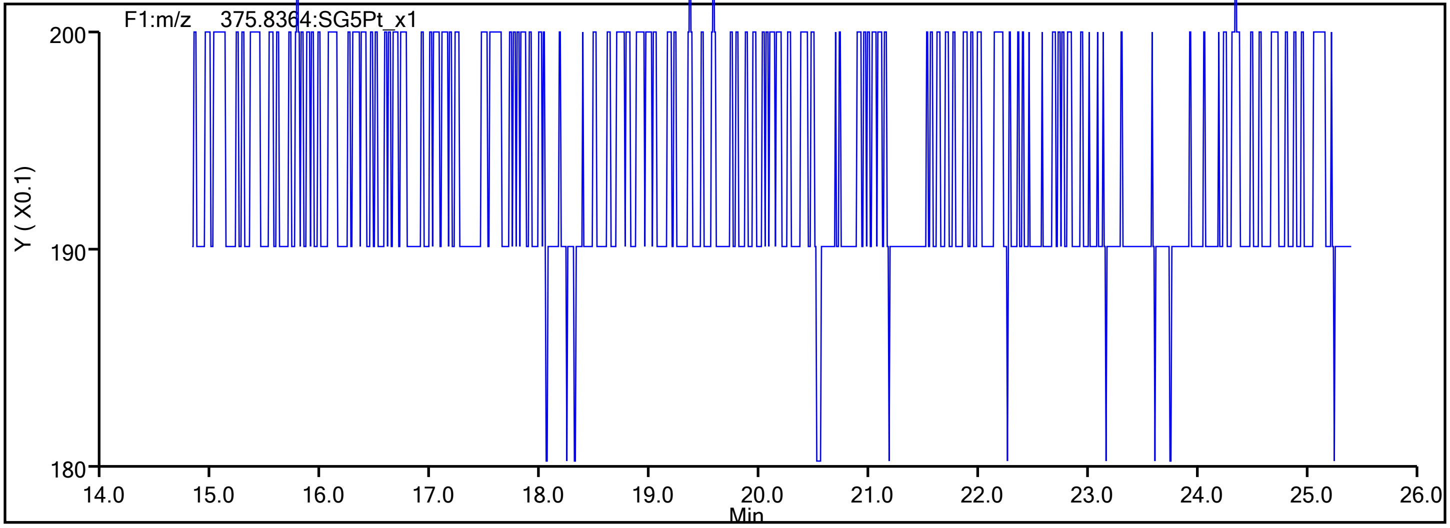

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Injection Date: 20-Aug-2020 23:09:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405471
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

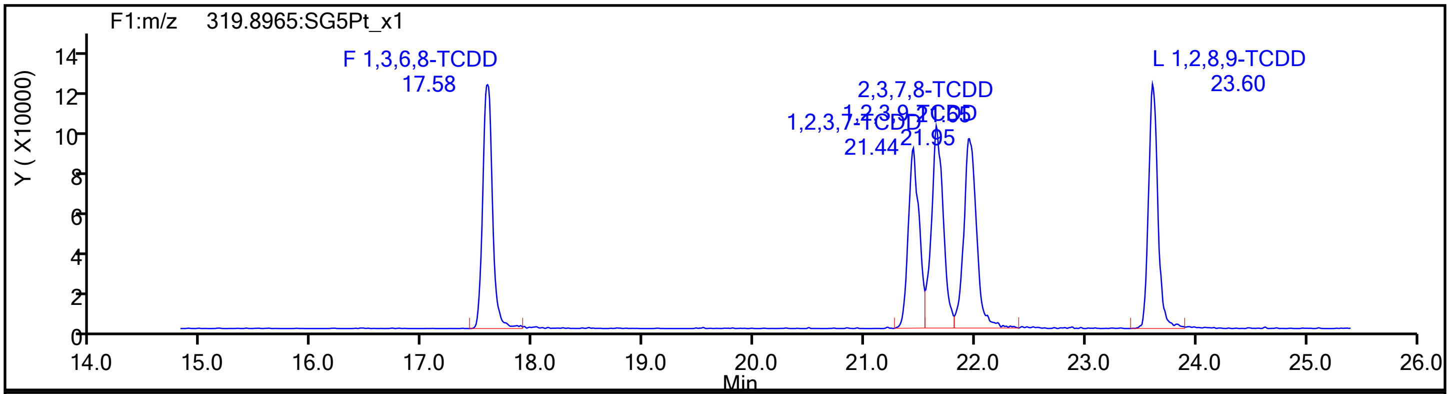

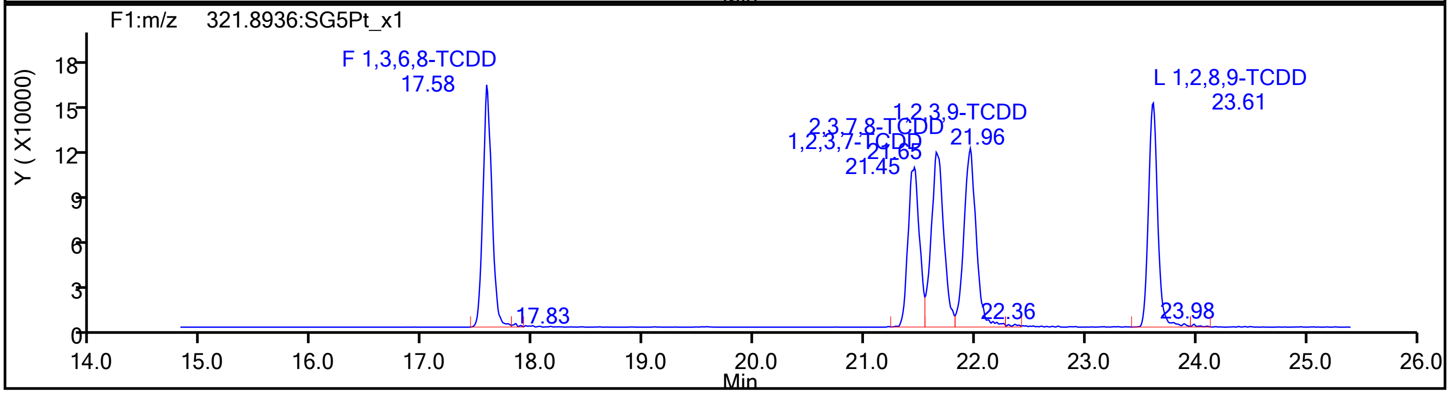

TCDD Standards

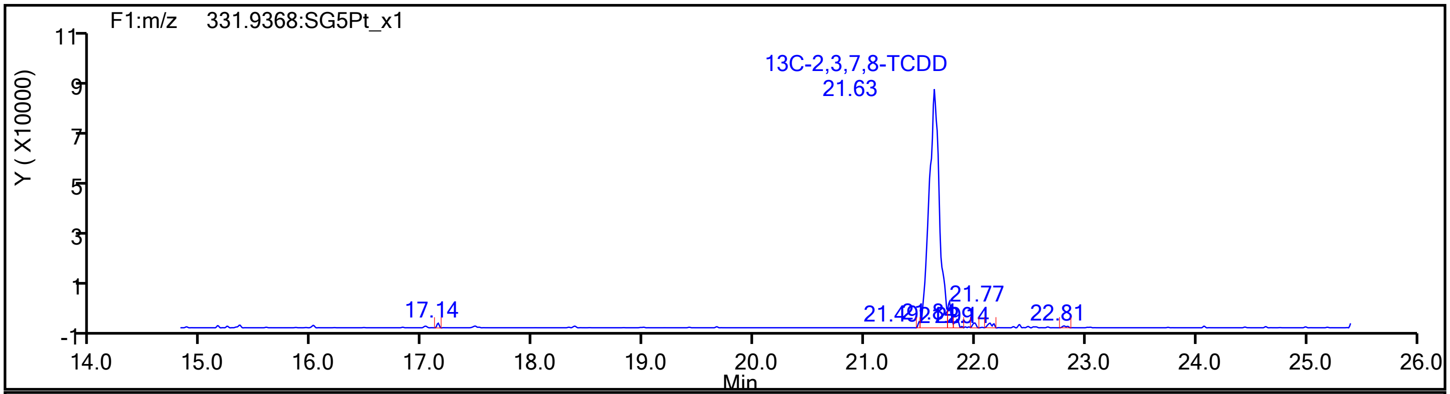

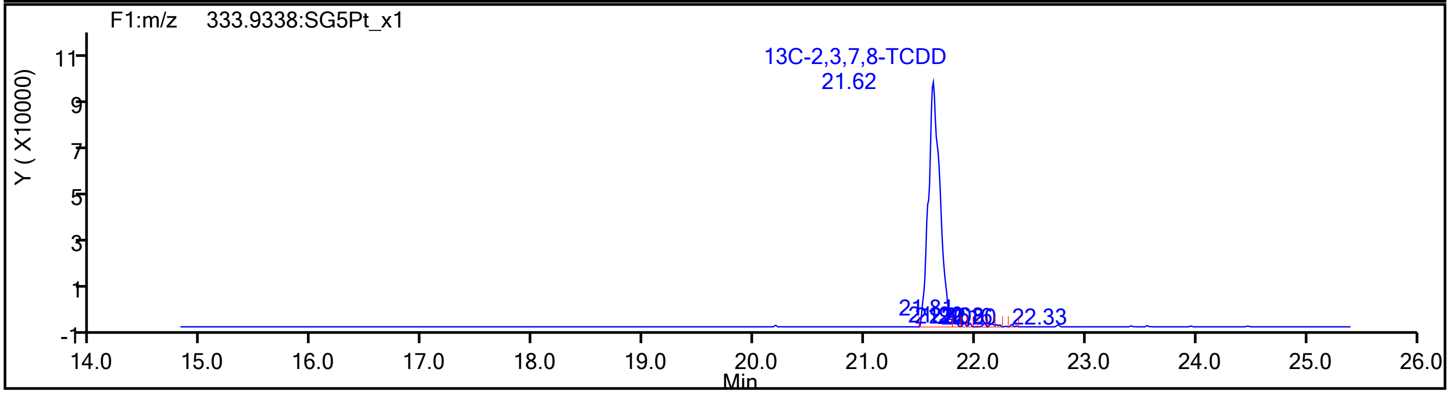

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d

Injection Date: 20-Aug-2020 23:09:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405471
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

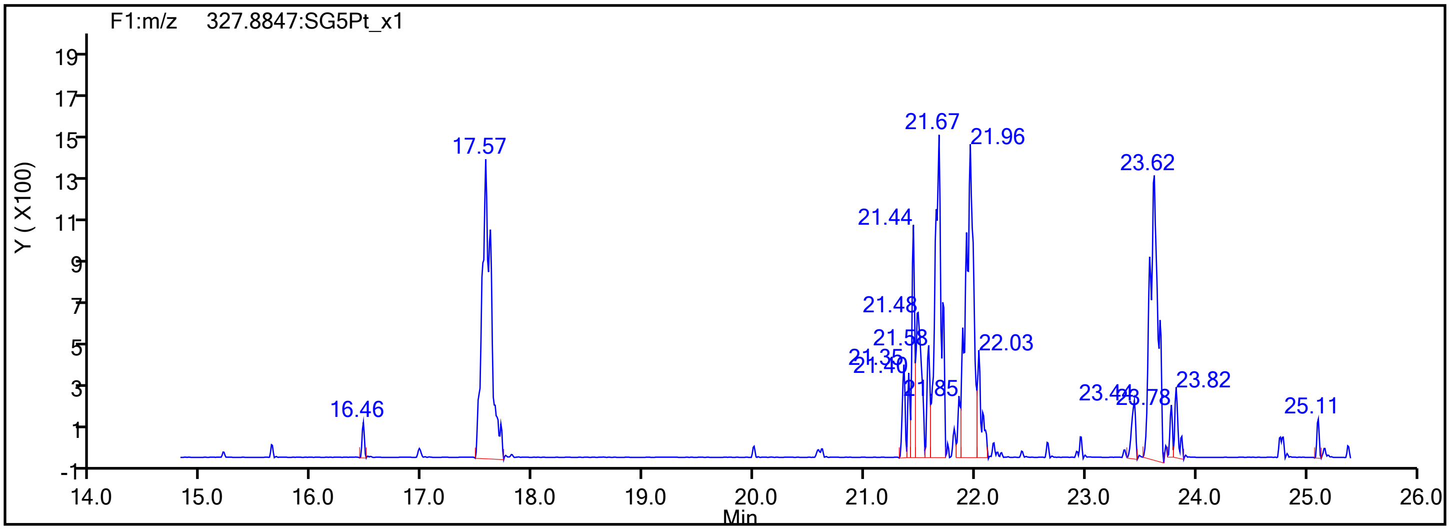

37Cl4-TCDD Standards

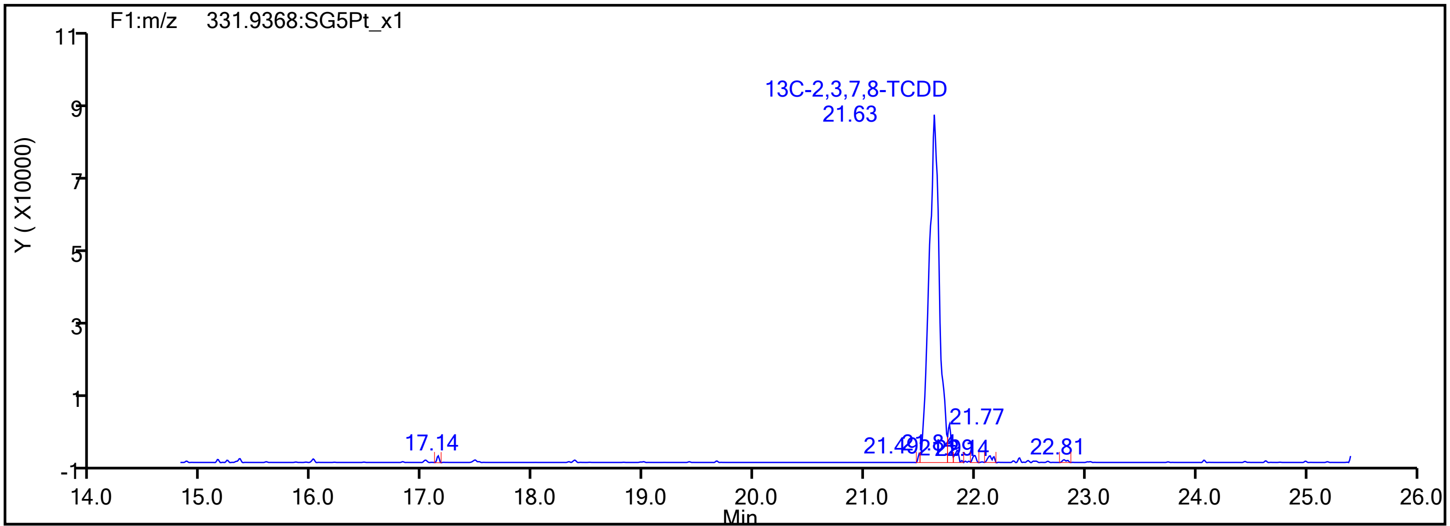

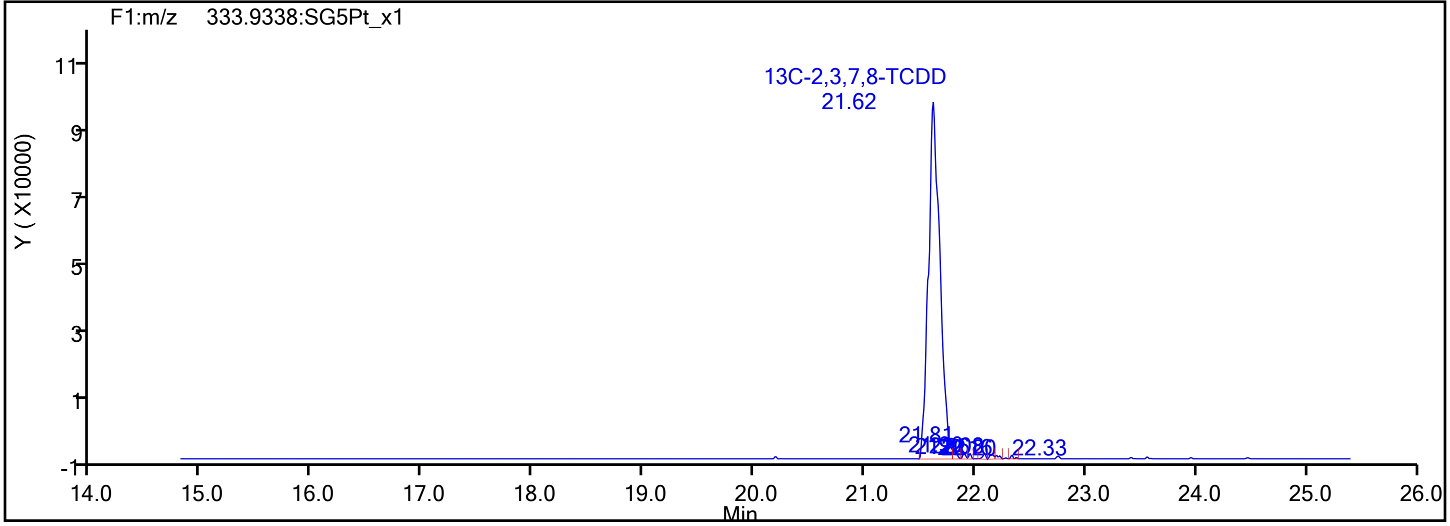

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
Injection Date:	20-Aug-2020 23:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

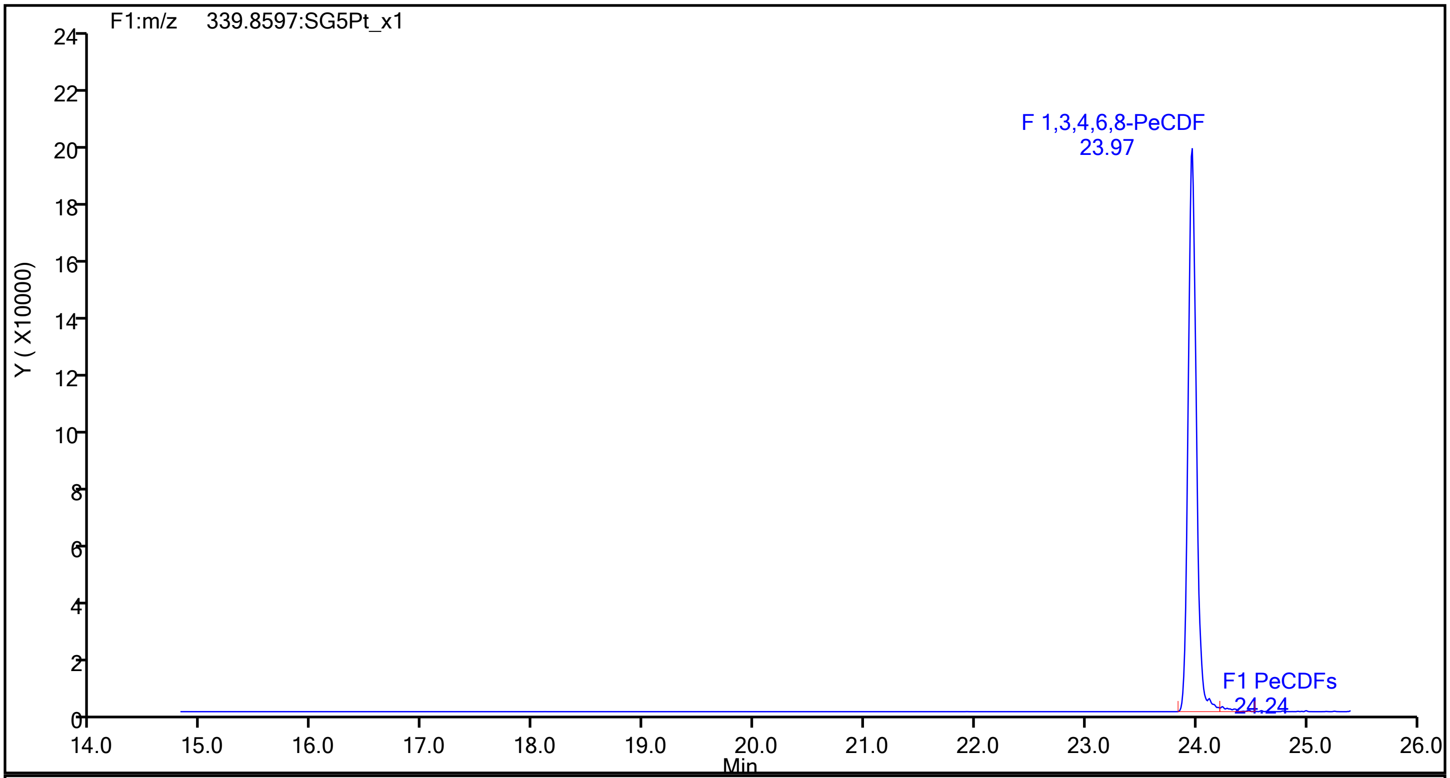

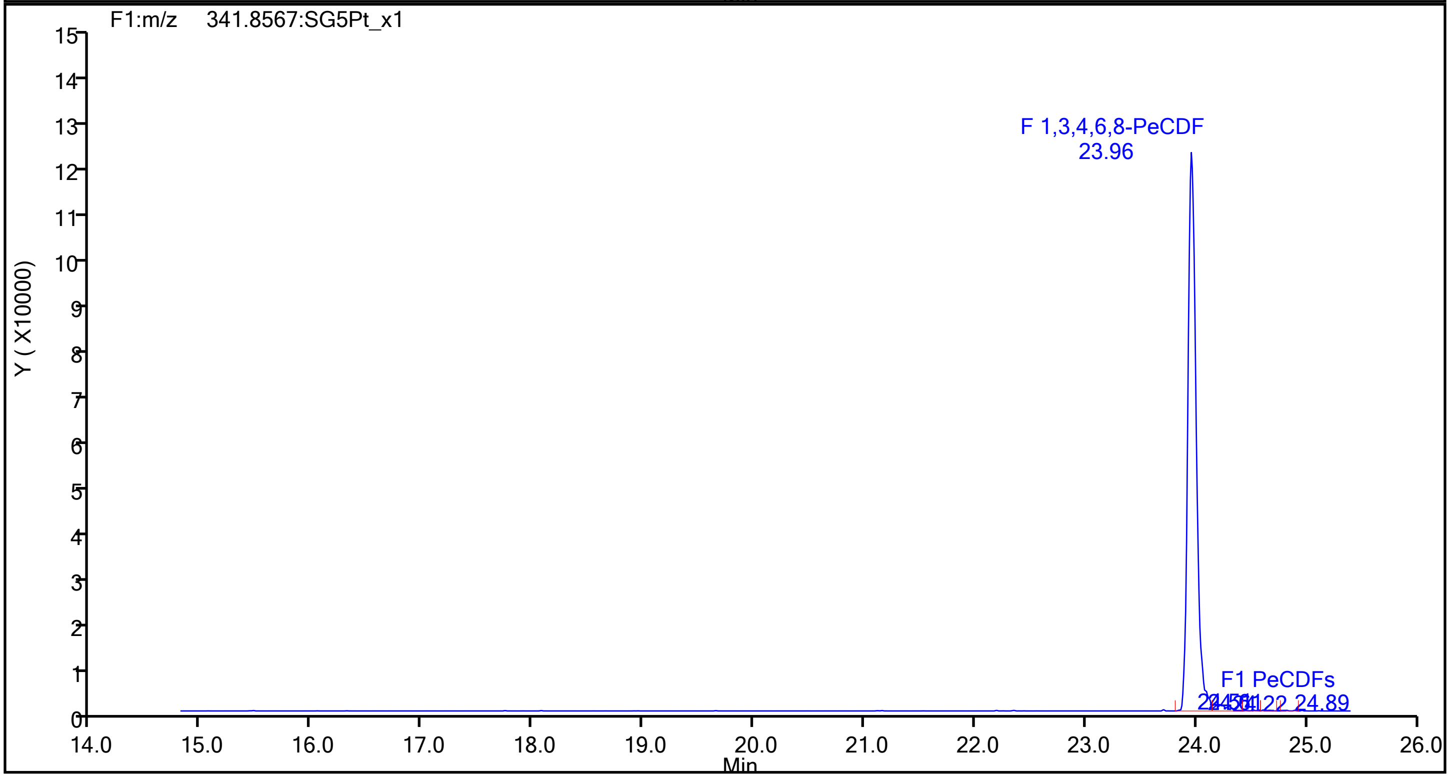

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
Injection Date:	20-Aug-2020 23:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

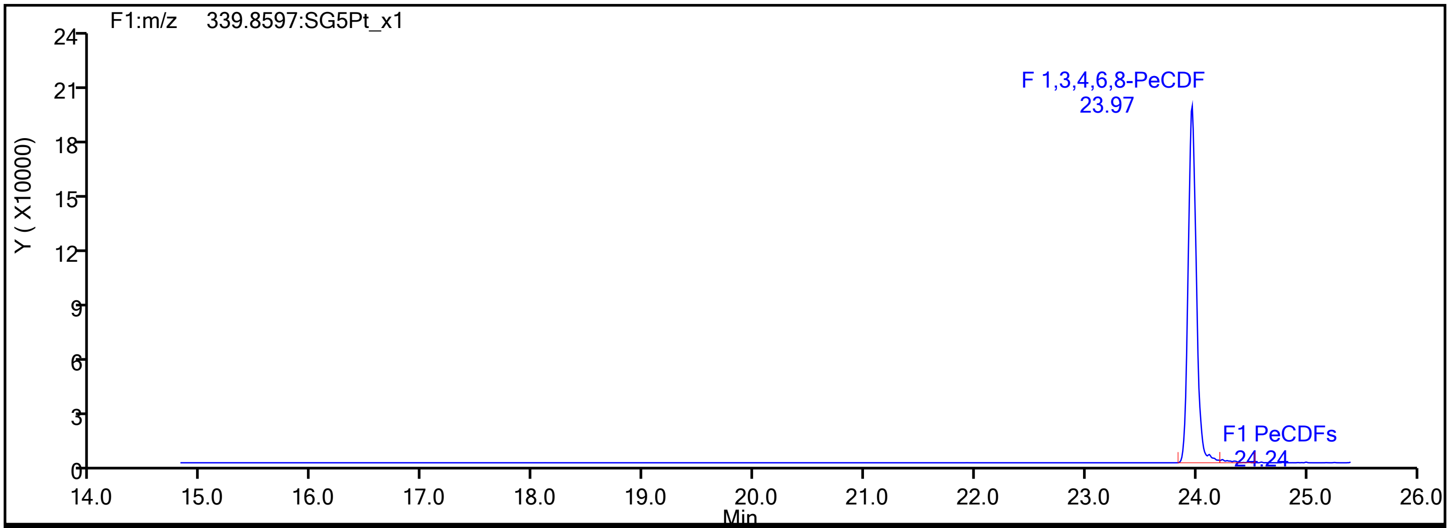

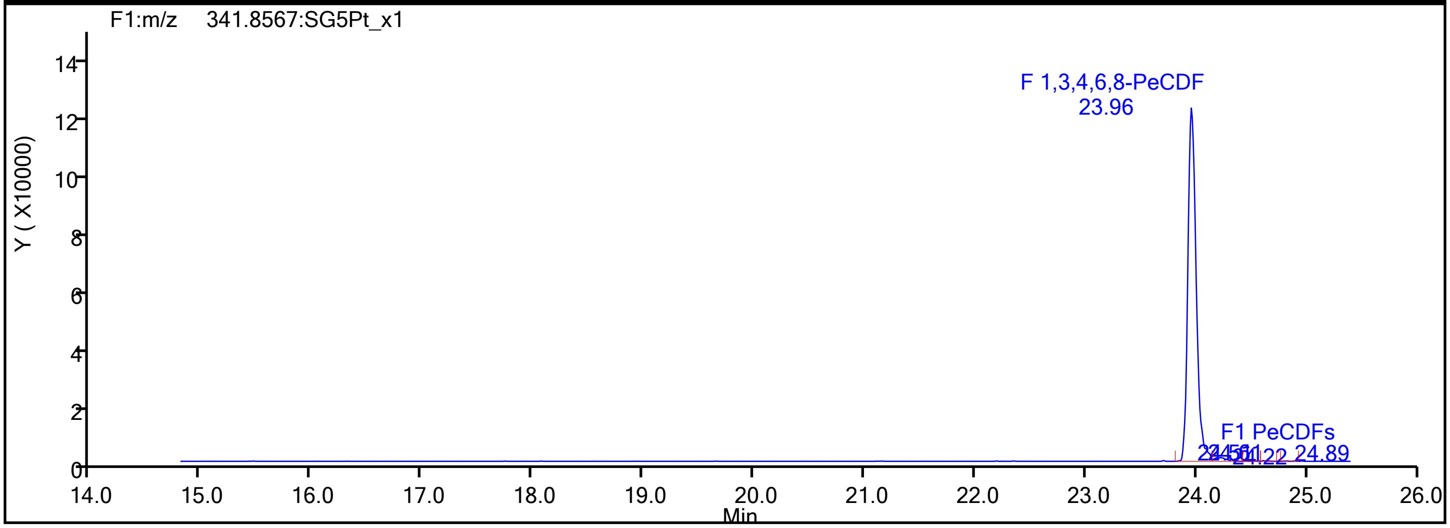

F1 PeCDFs Interference Mass

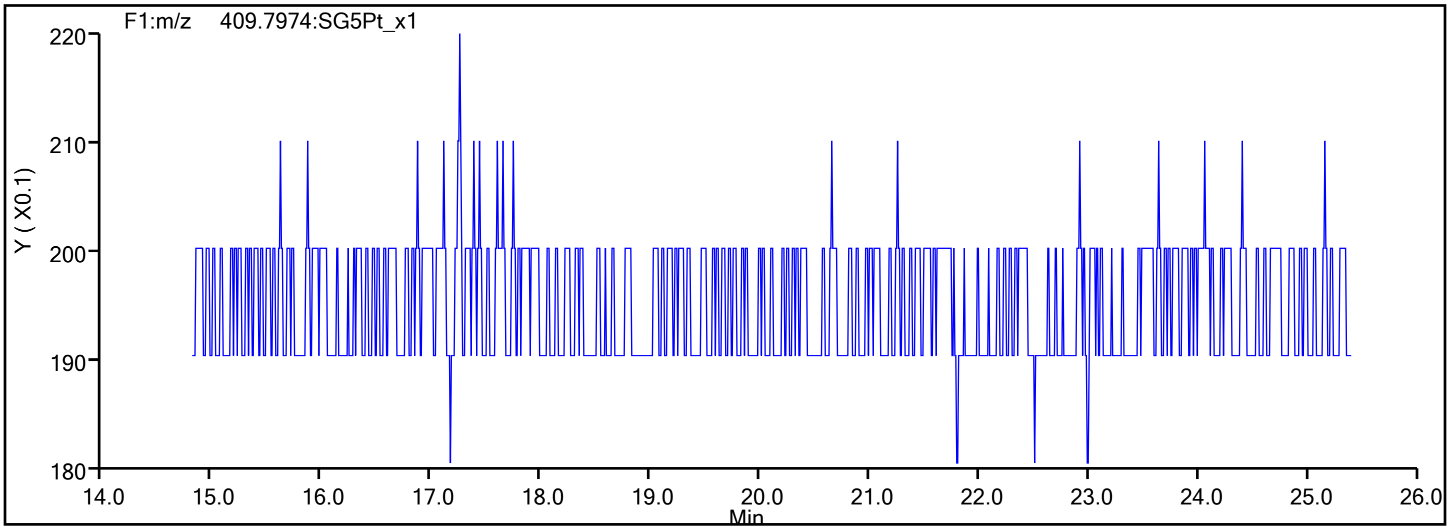

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
Injection Date:	20-Aug-2020 23:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

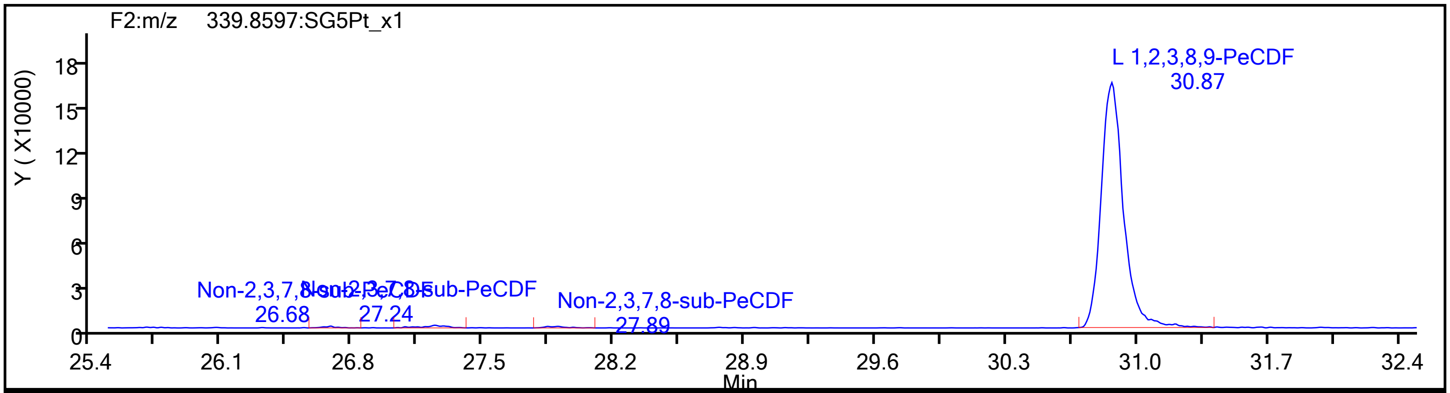

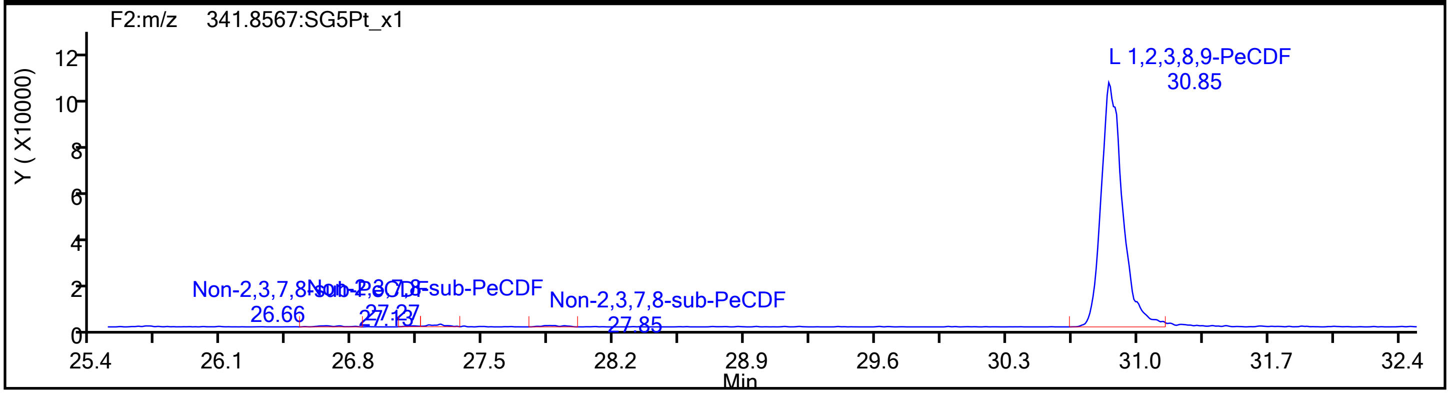

PeCDF Standards

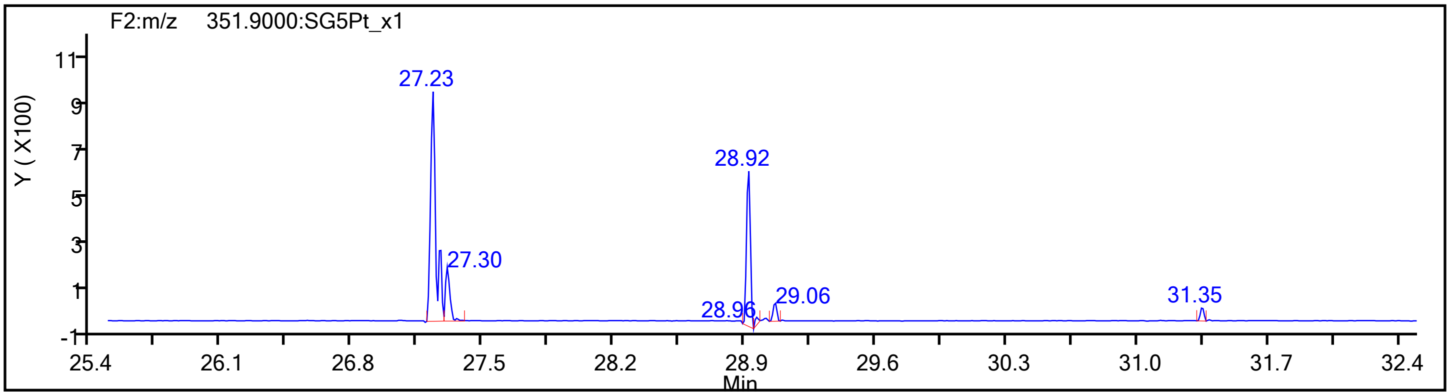

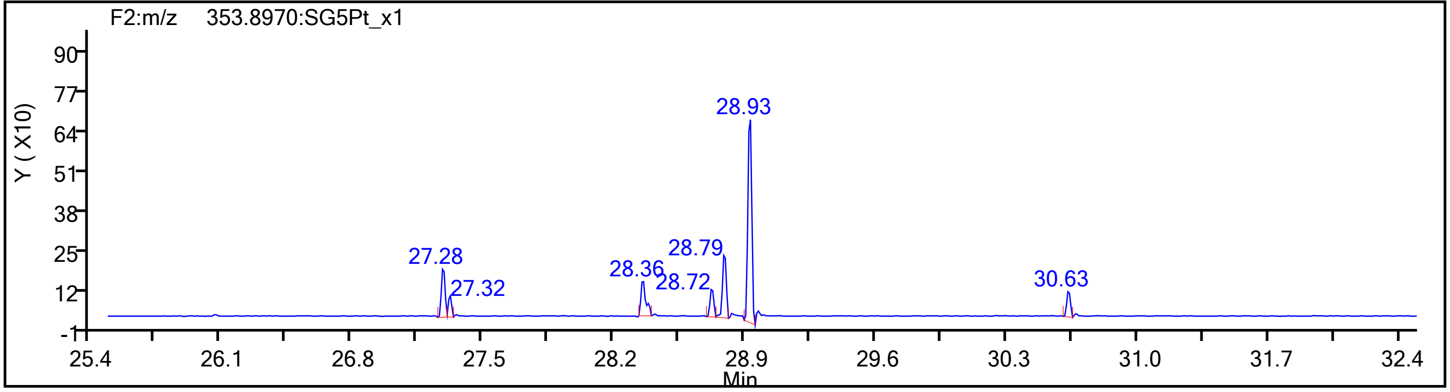

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Injection Date: 20-Aug-2020 23:09:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405471
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

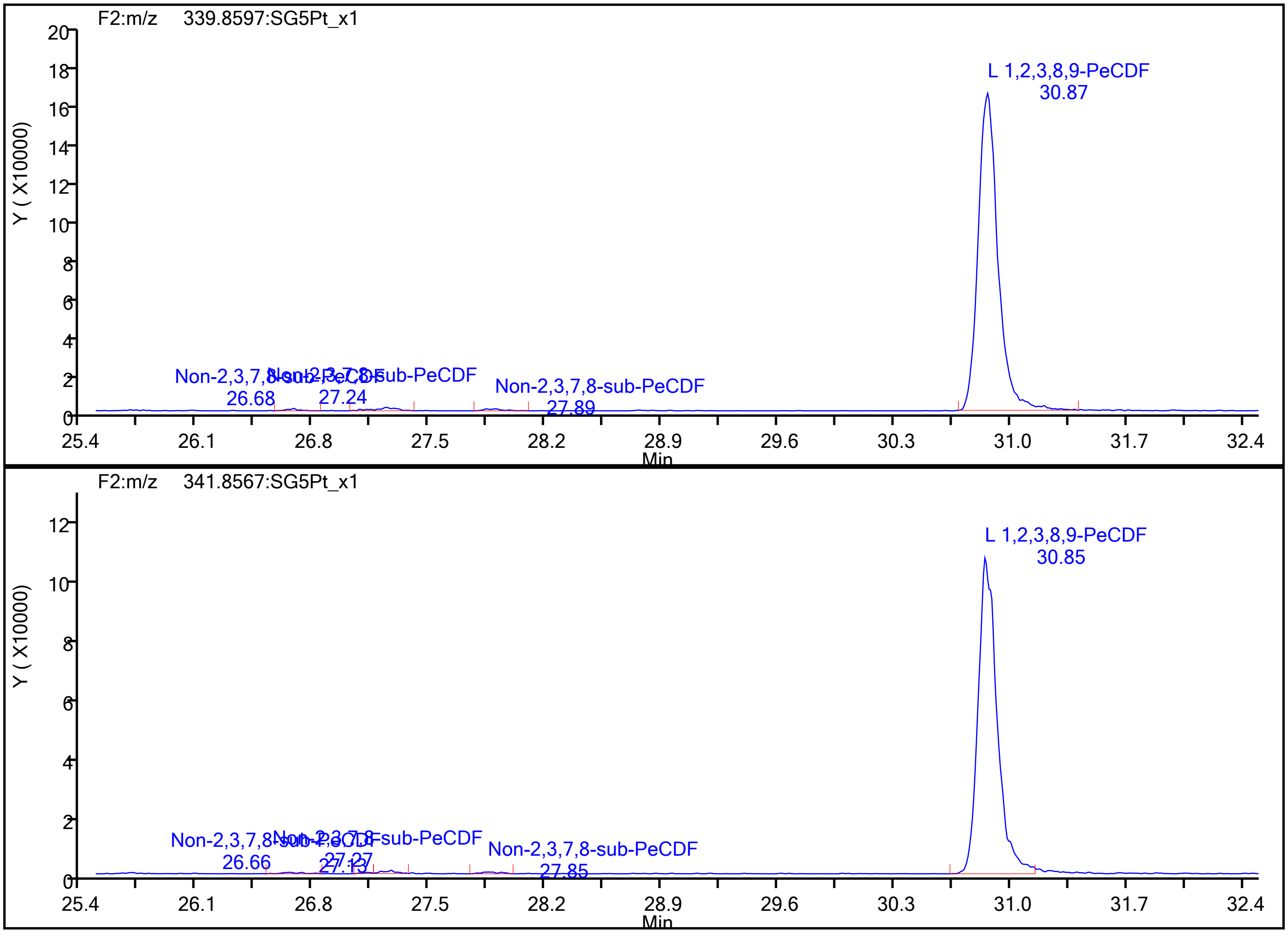

PeCDF Interference Mass

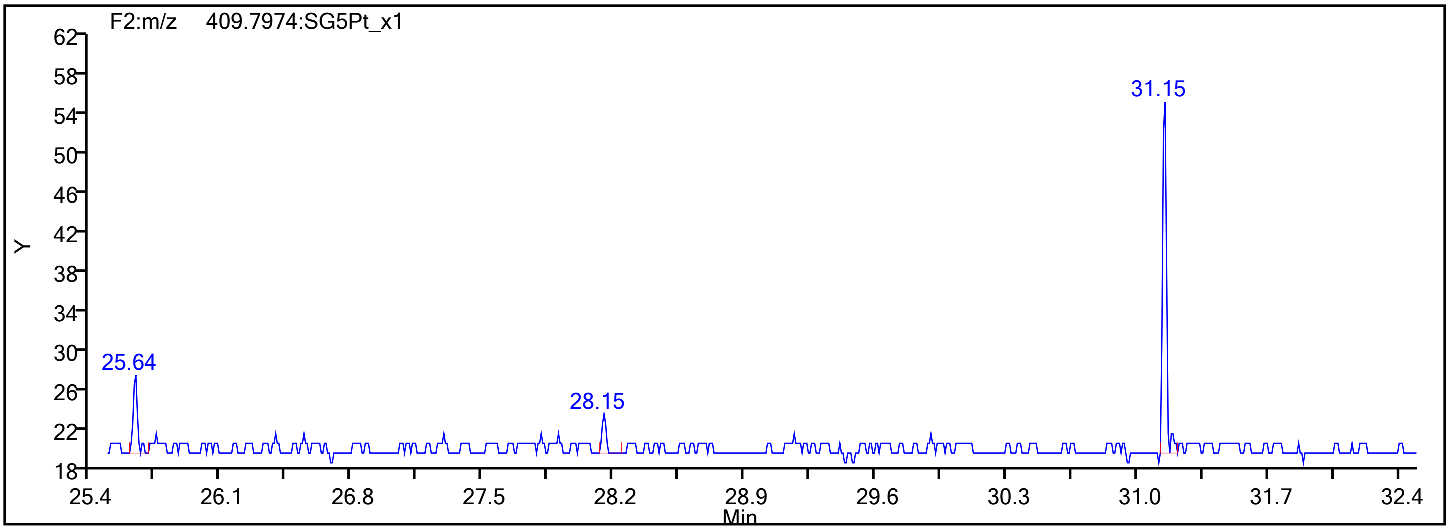

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Injection Date: 20-Aug-2020 23:09:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405471
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

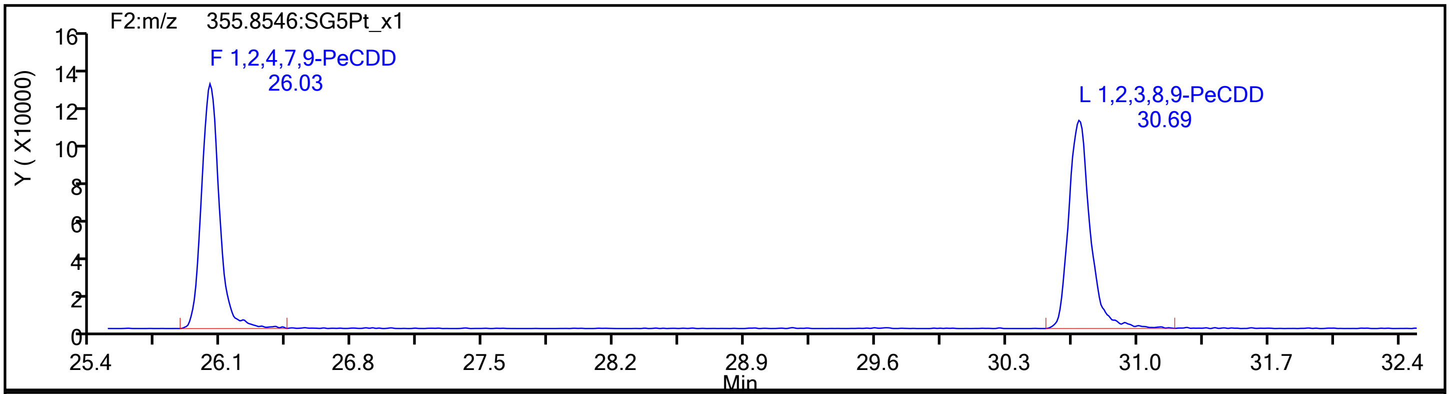

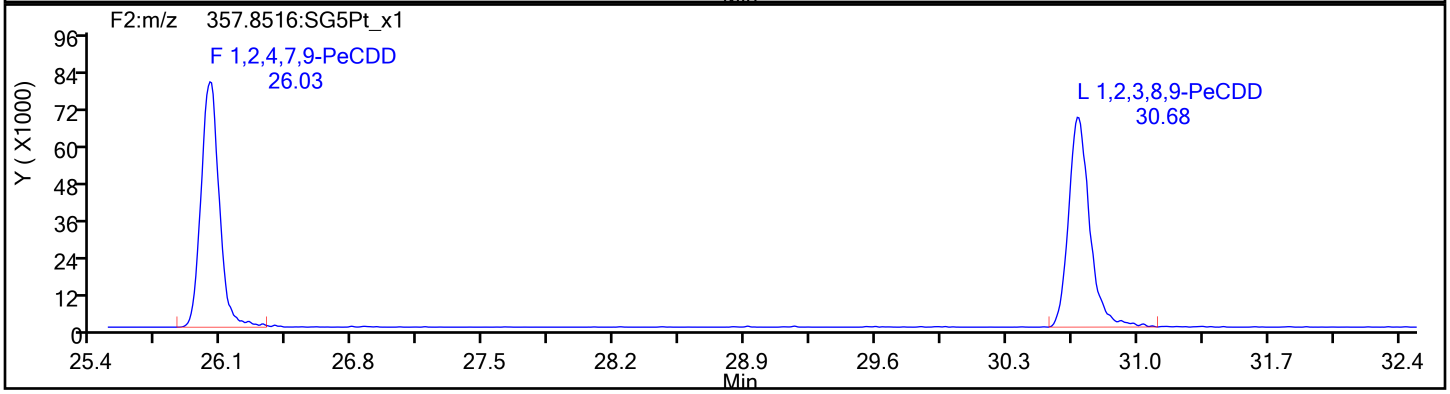

PeCDD Standards

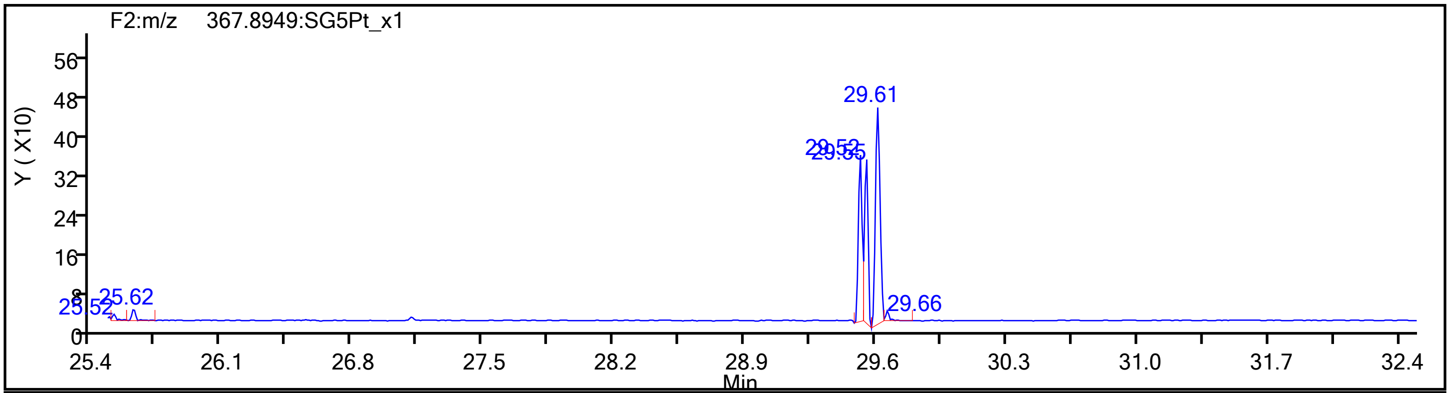

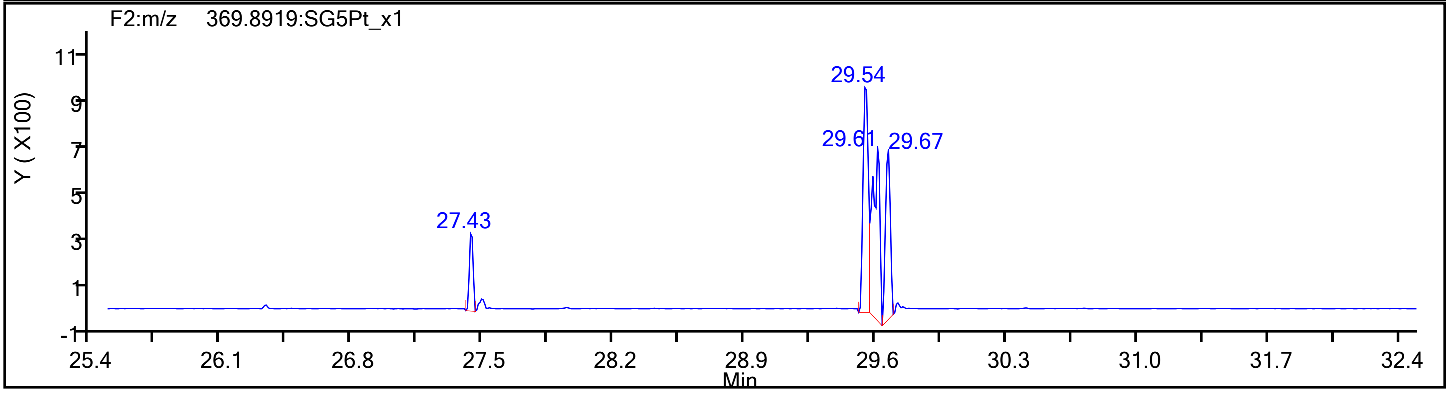

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d

Injection Date:	20-Aug-2020 23:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

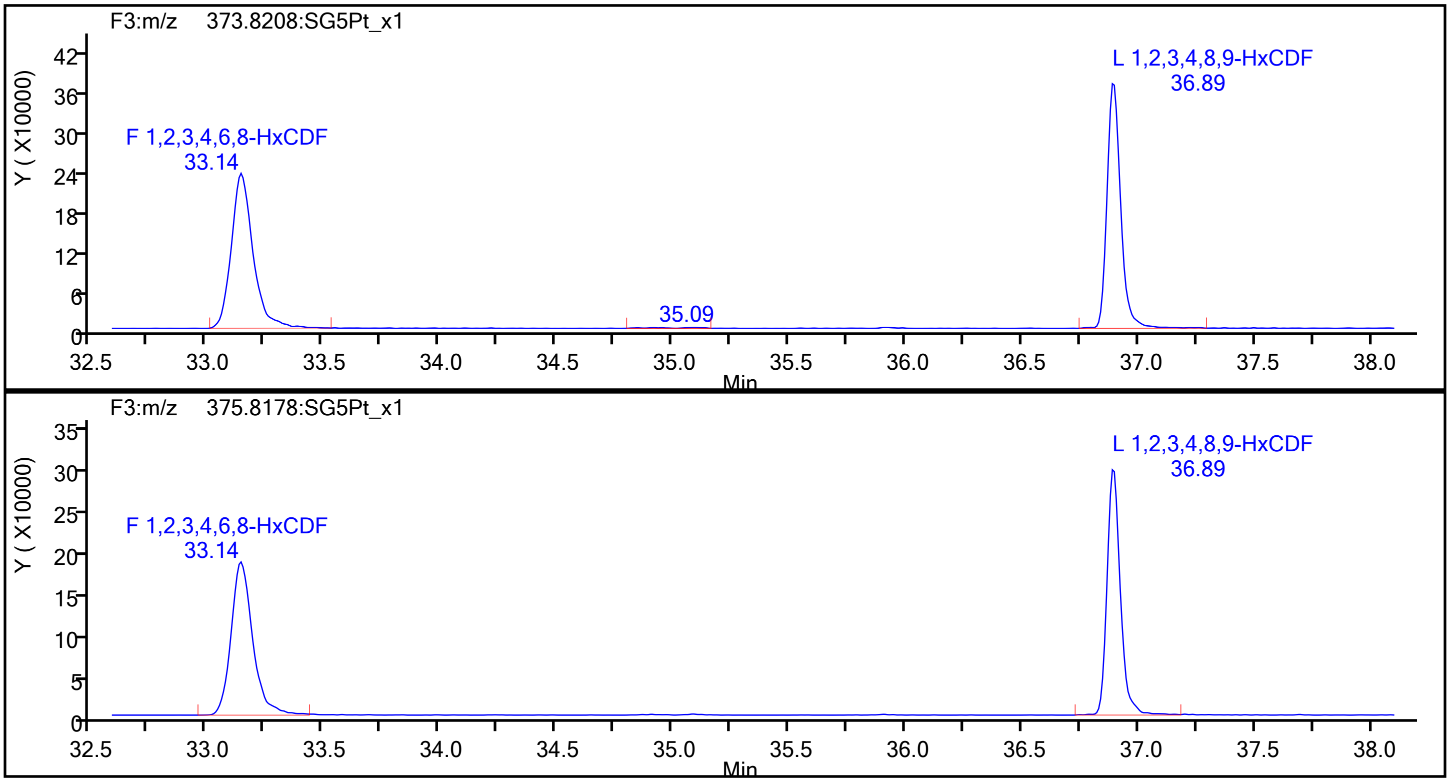

HxCDF Standards

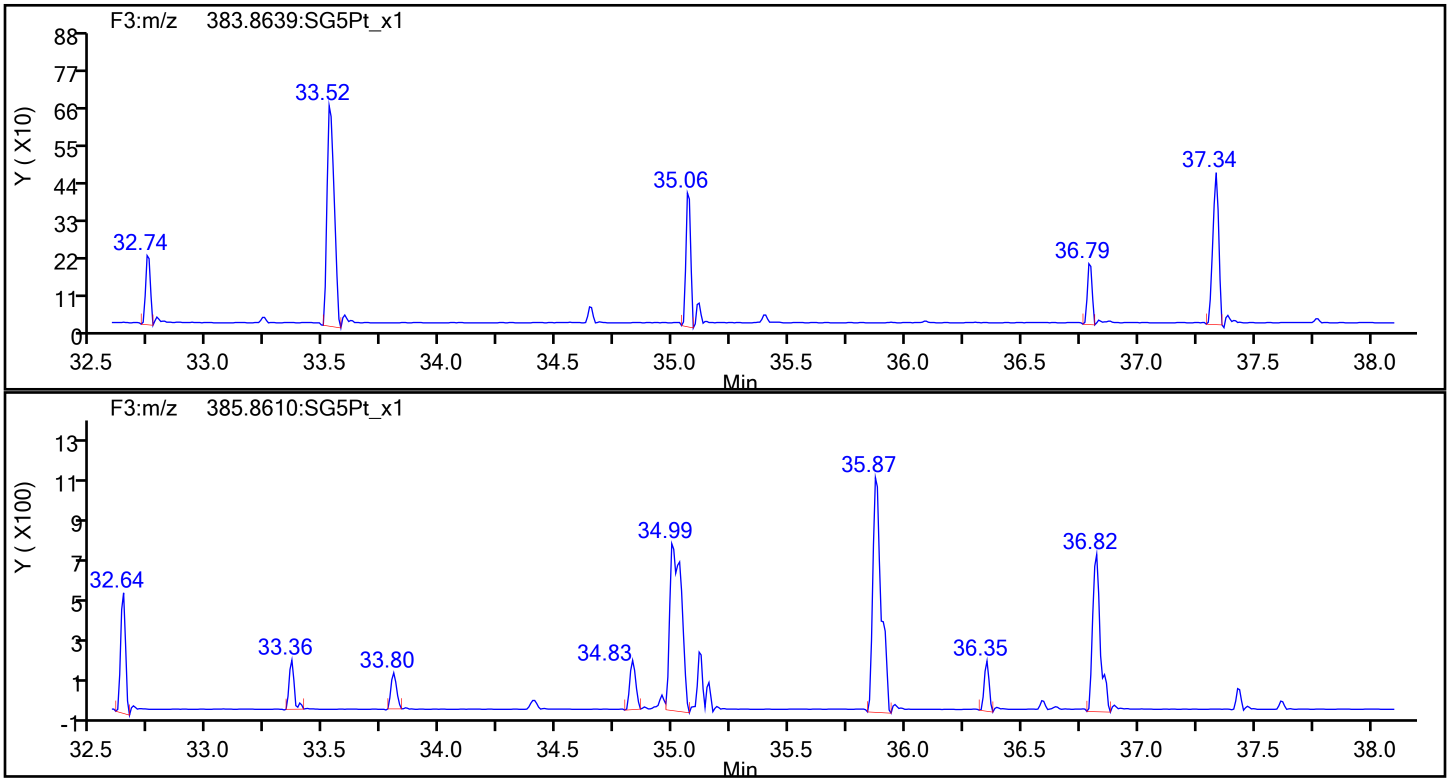

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

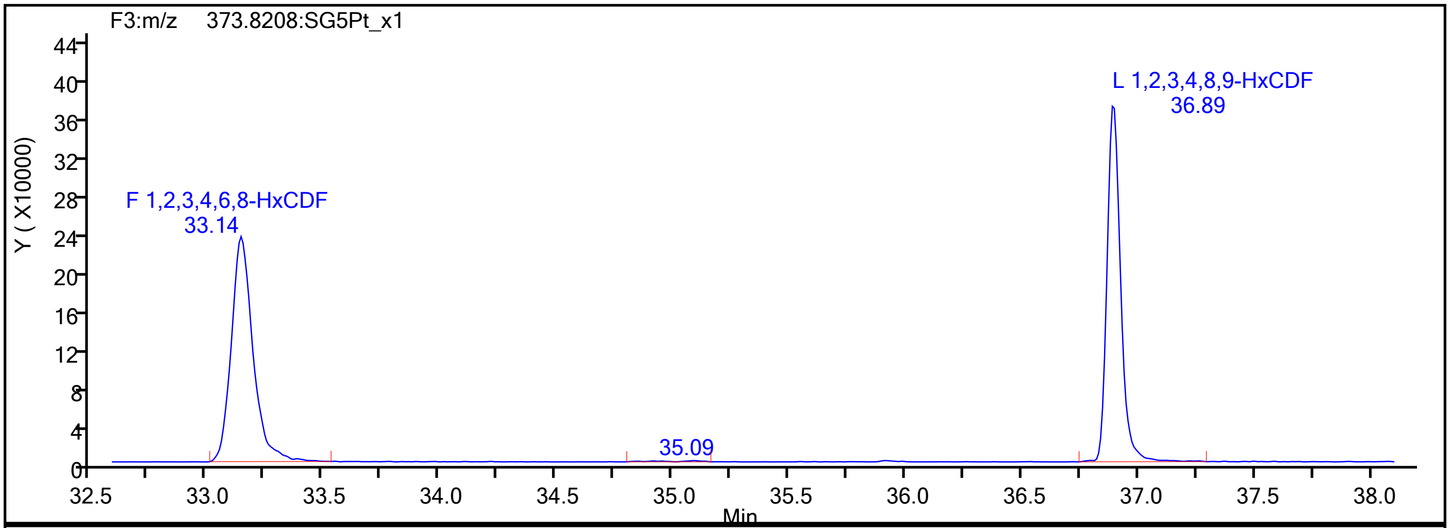

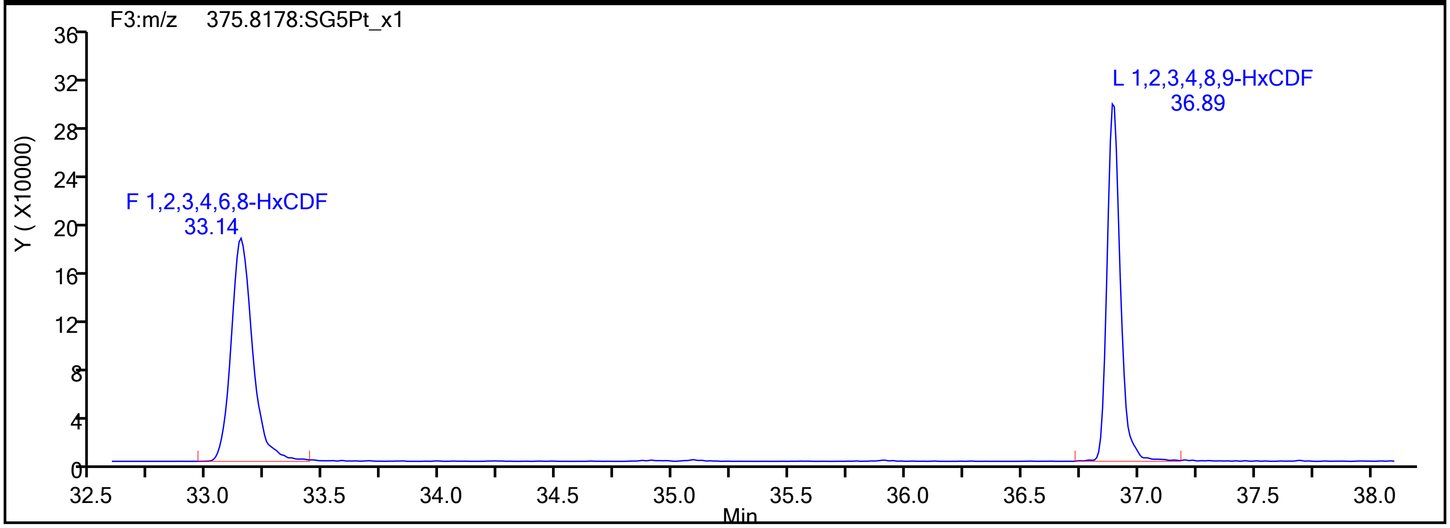

HxCDF Interference Mass

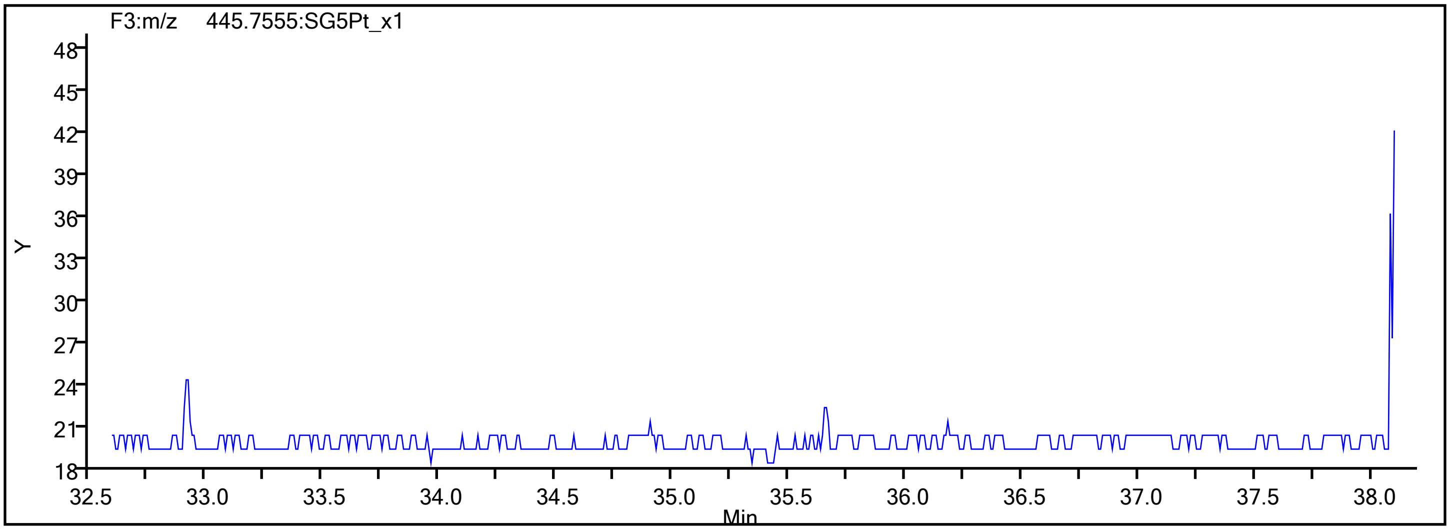

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Injection Date: 20-Aug-2020 23:09:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
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Client ID:
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HxCDD

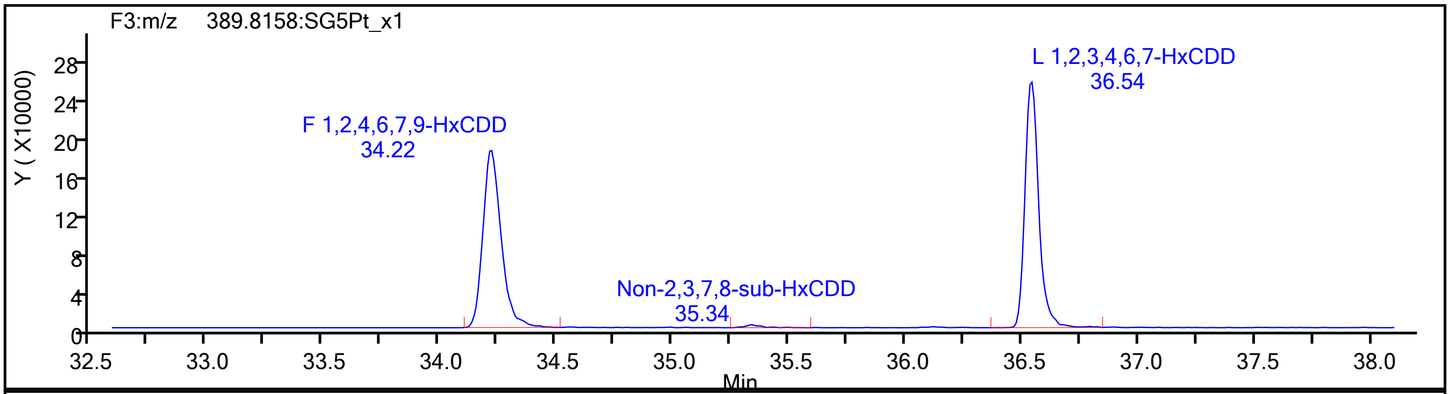

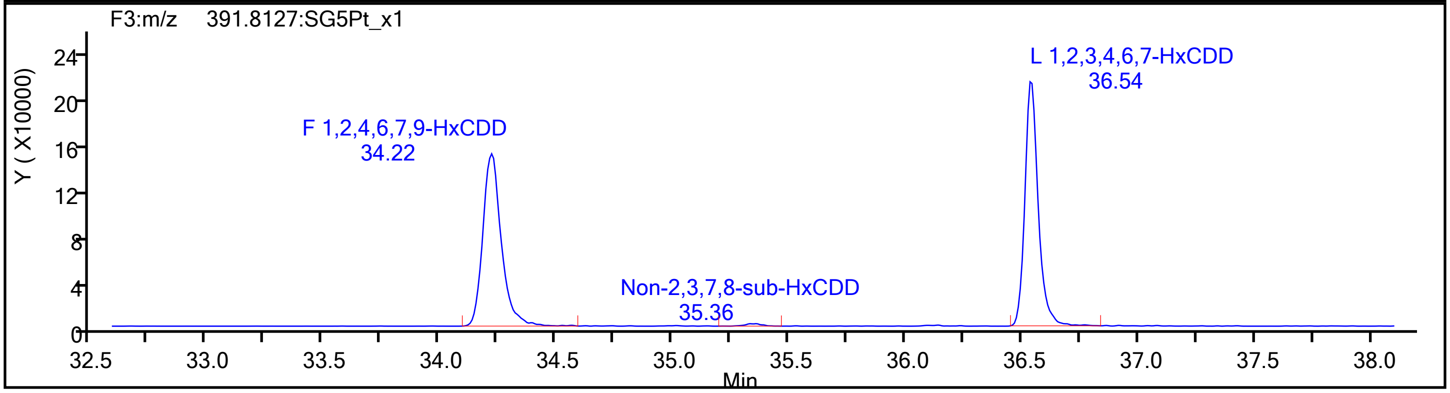

HxCDD Standards

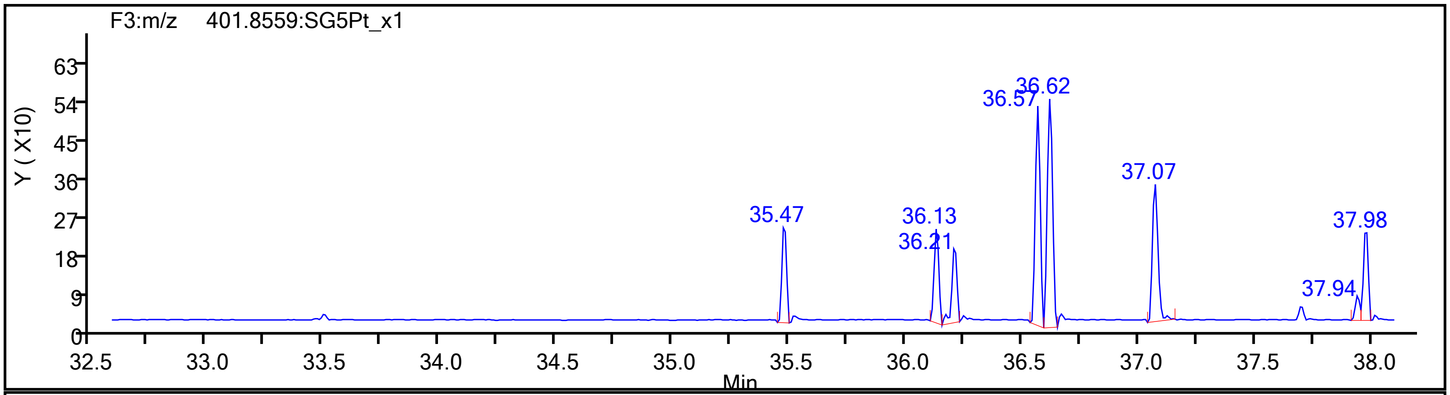

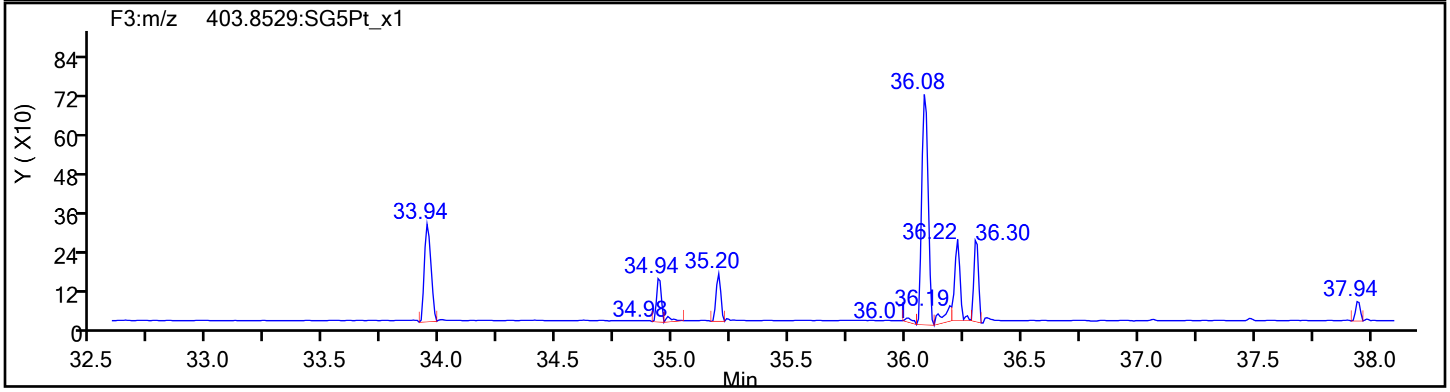

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

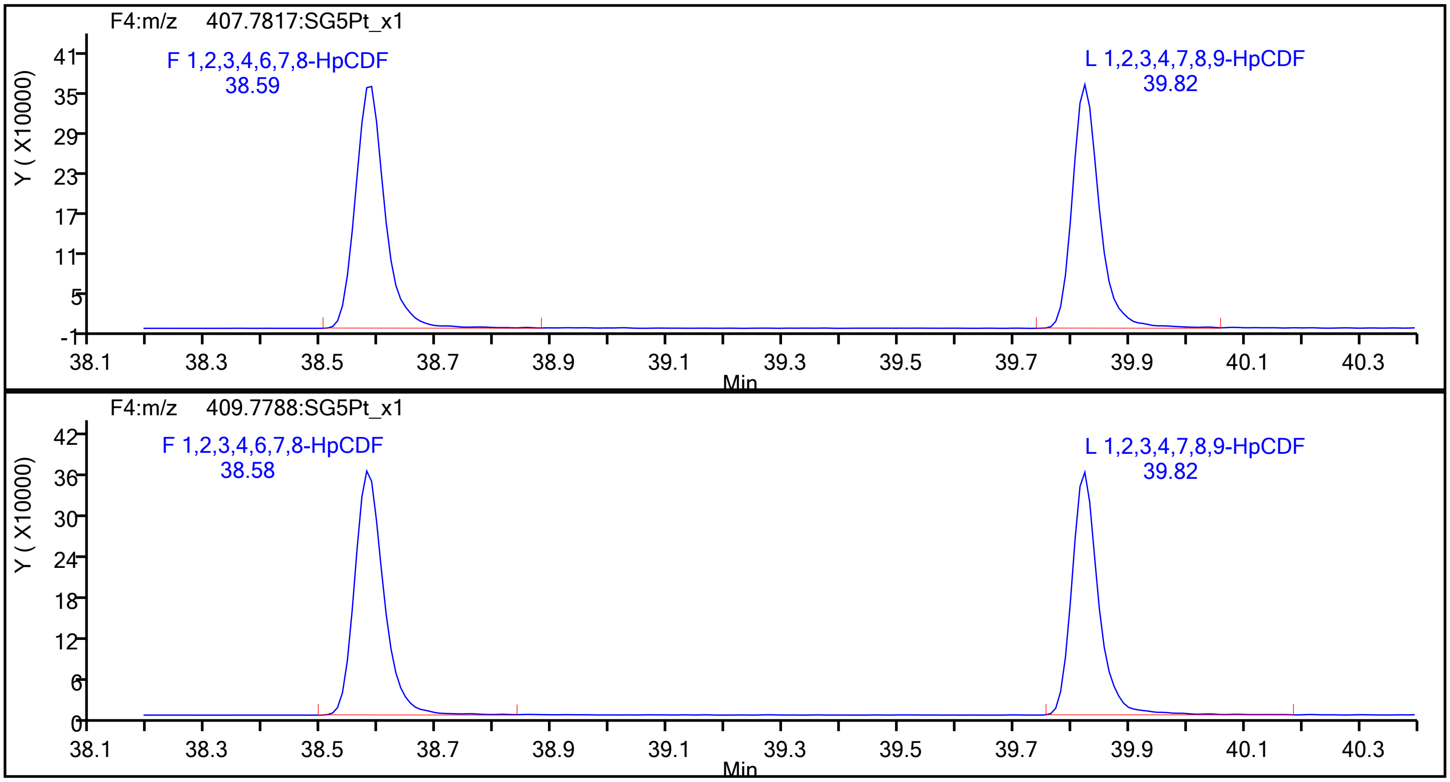

HpCDF Standards

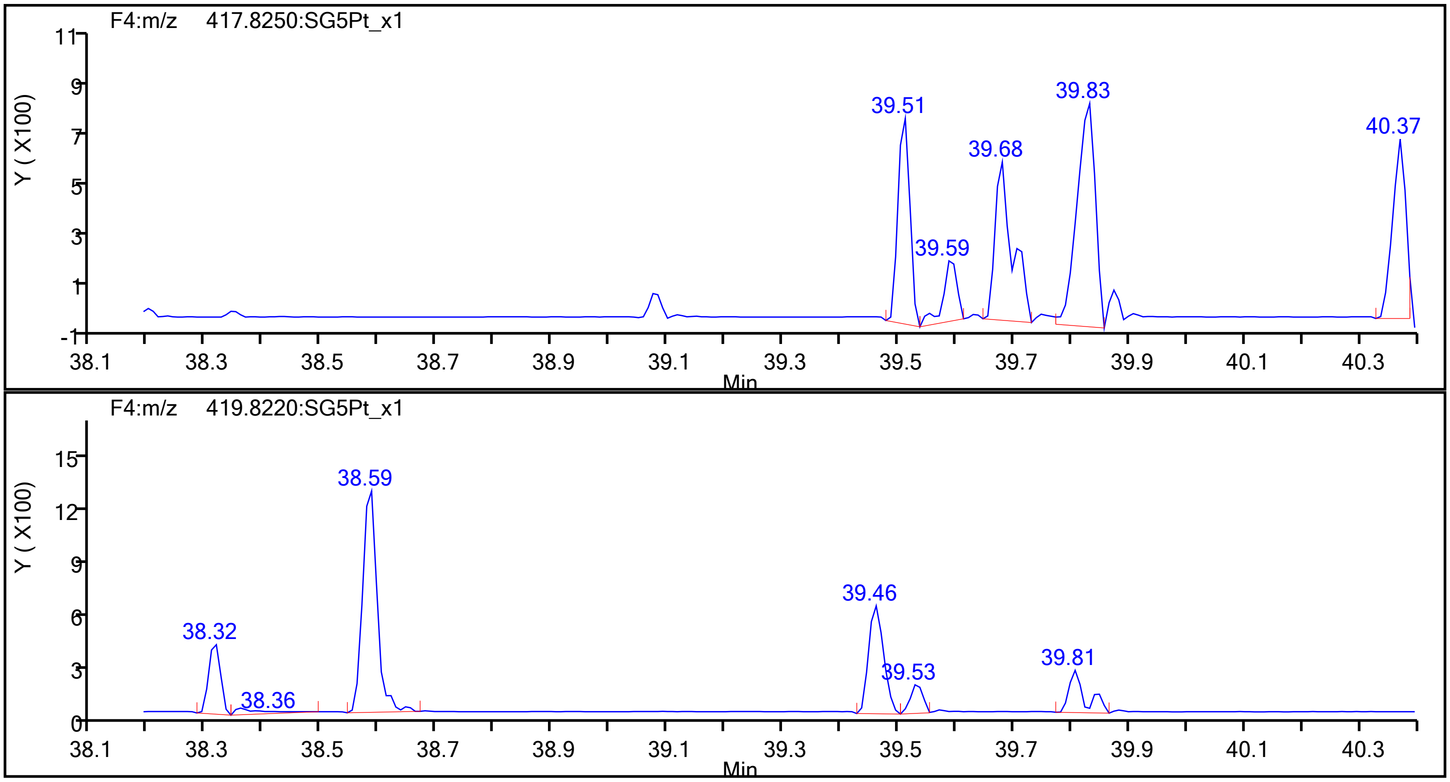

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d		
Injection Date:	20-Aug-2020 23:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

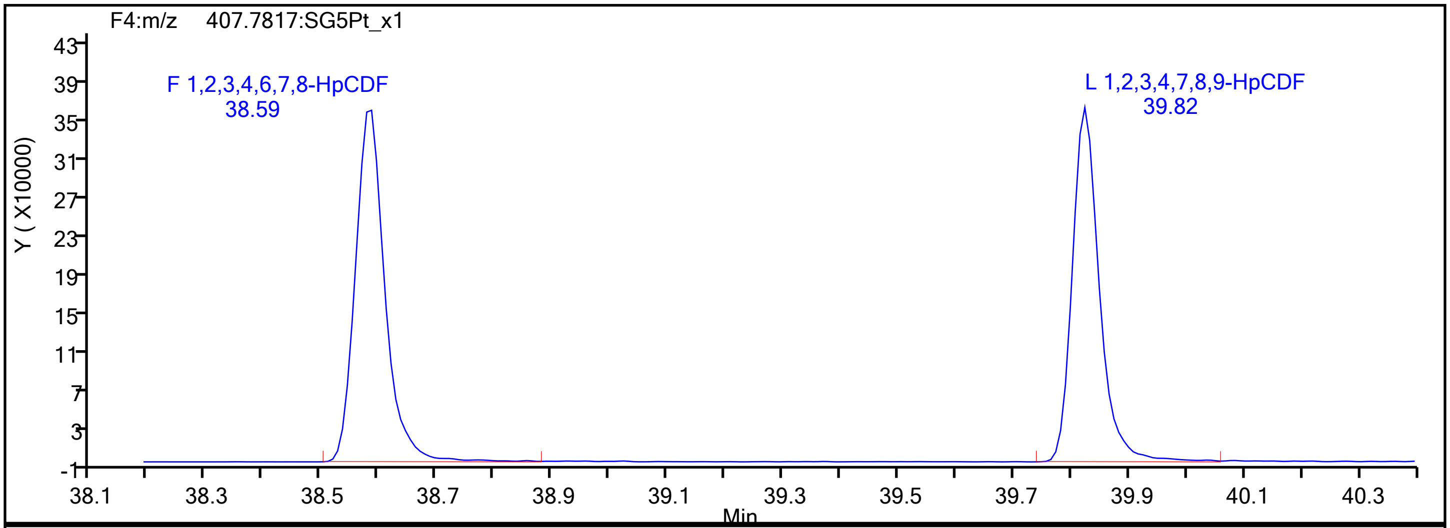

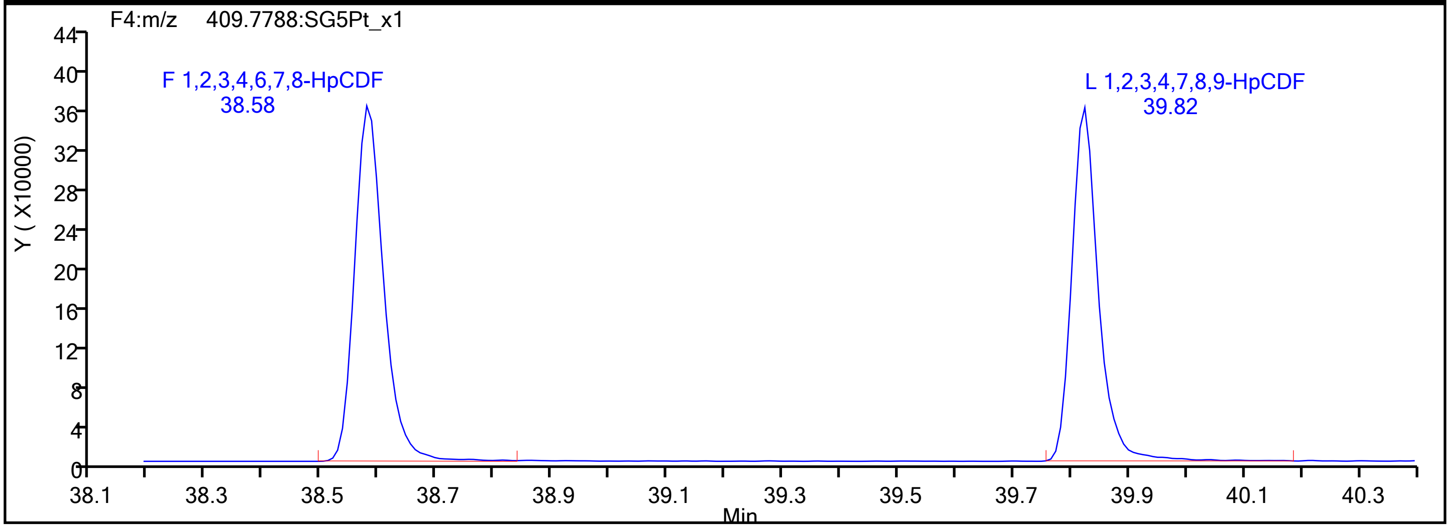

HpCDF Interference Mass

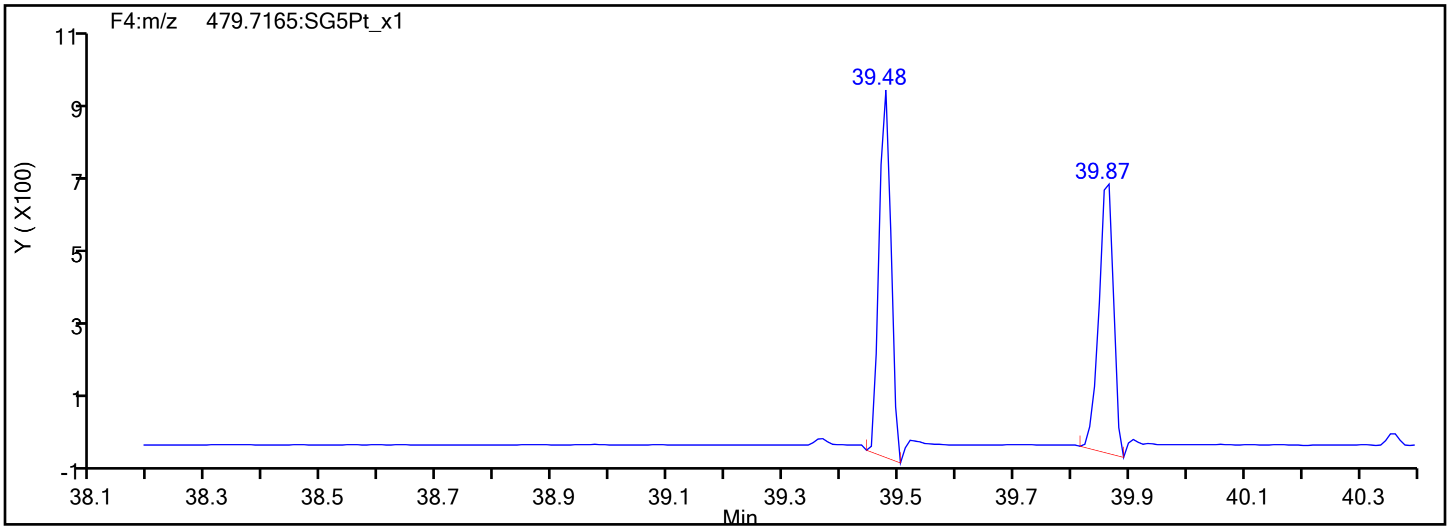

Report Date: 21-Aug-2020 16:51:16 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

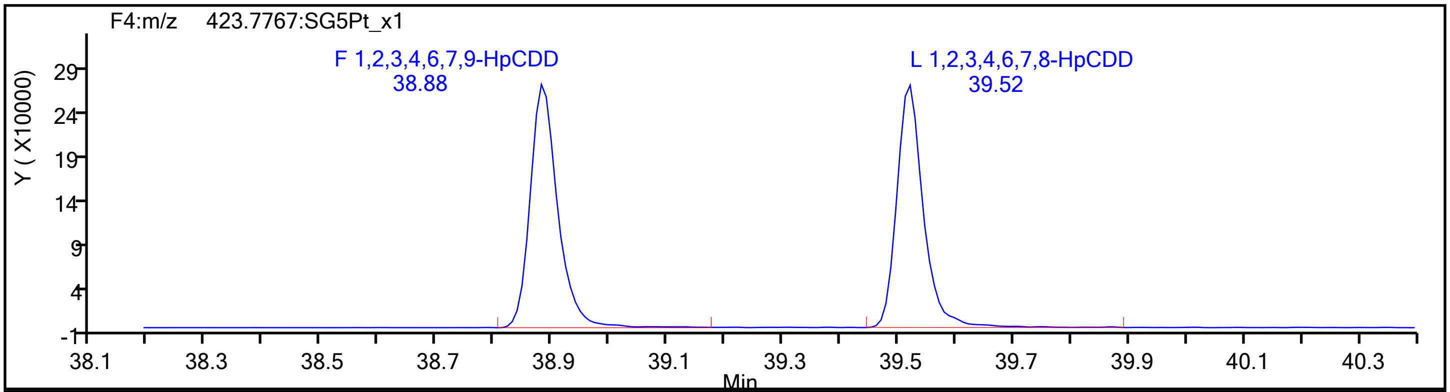

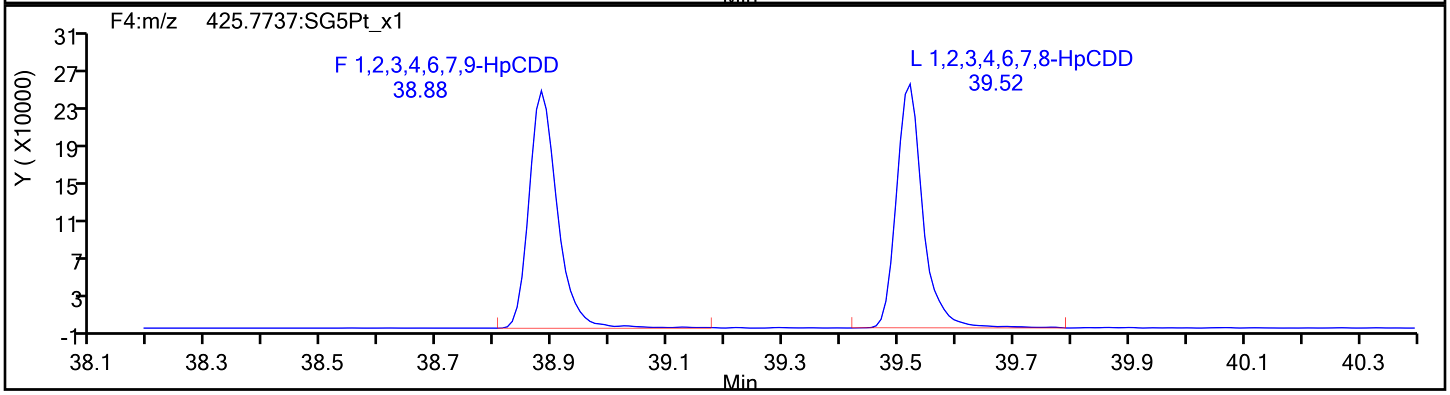

HpCDD Standards

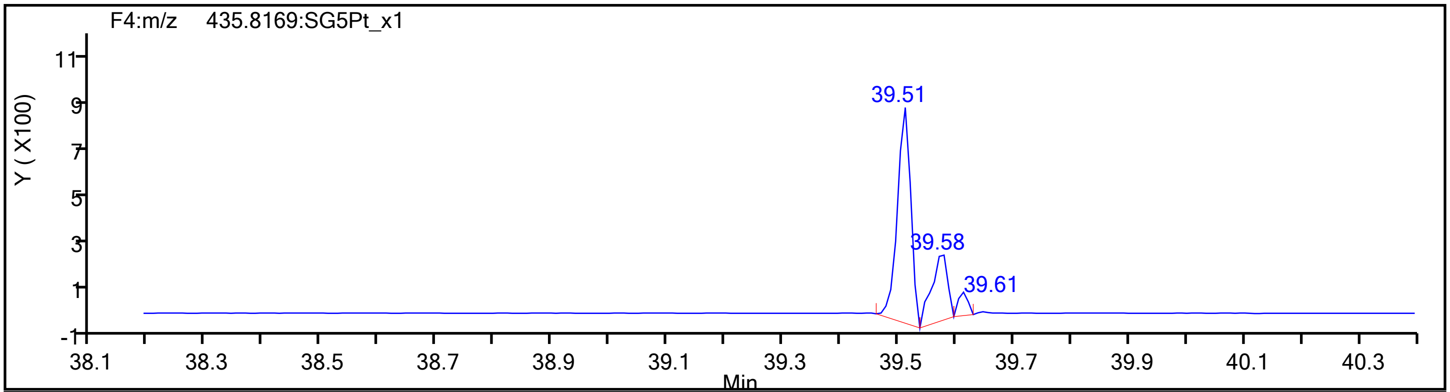

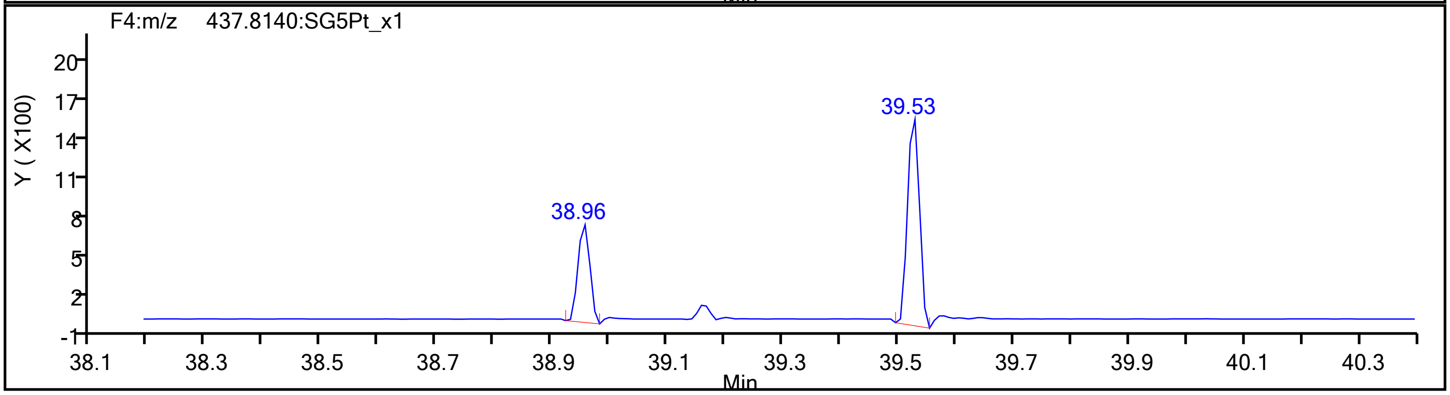

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_18.d
Injection Date: 20-Aug-2020 23:09:00 Injection Vol: 1.0 ul
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Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

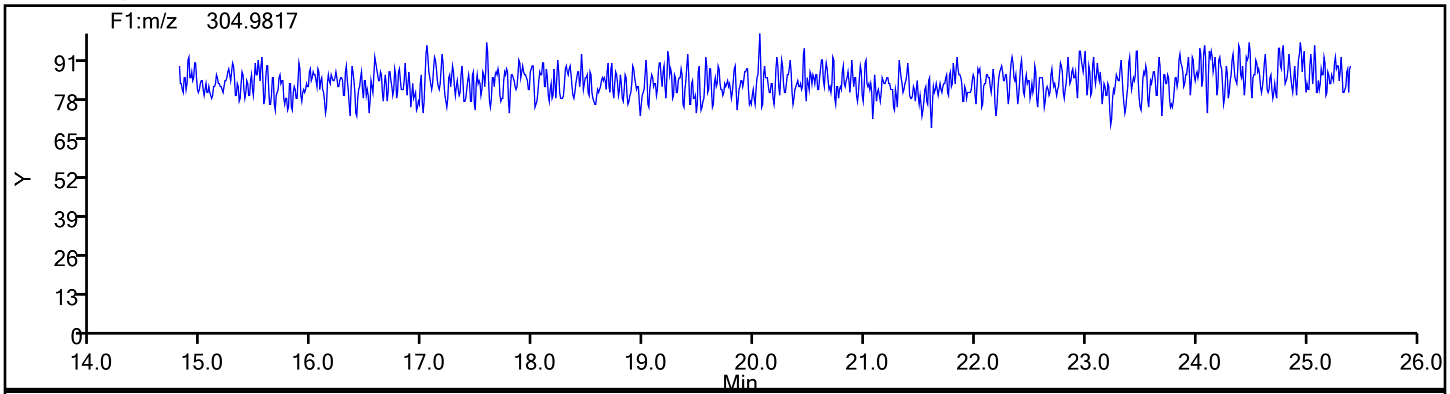

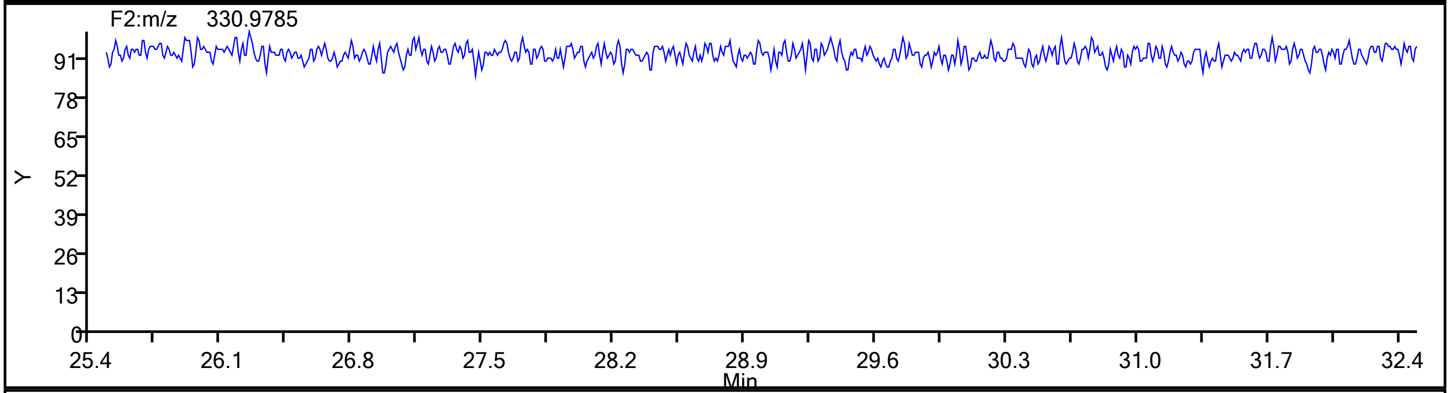

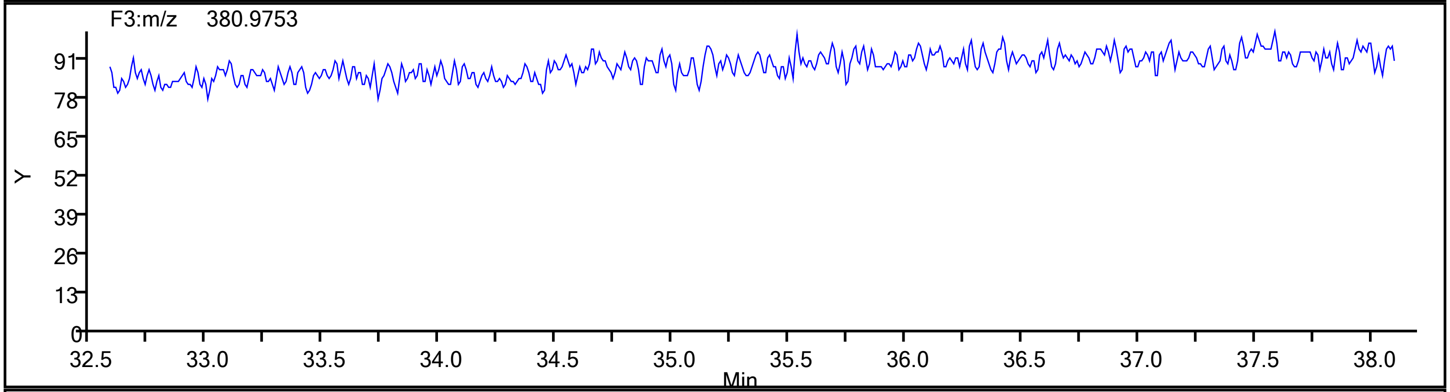

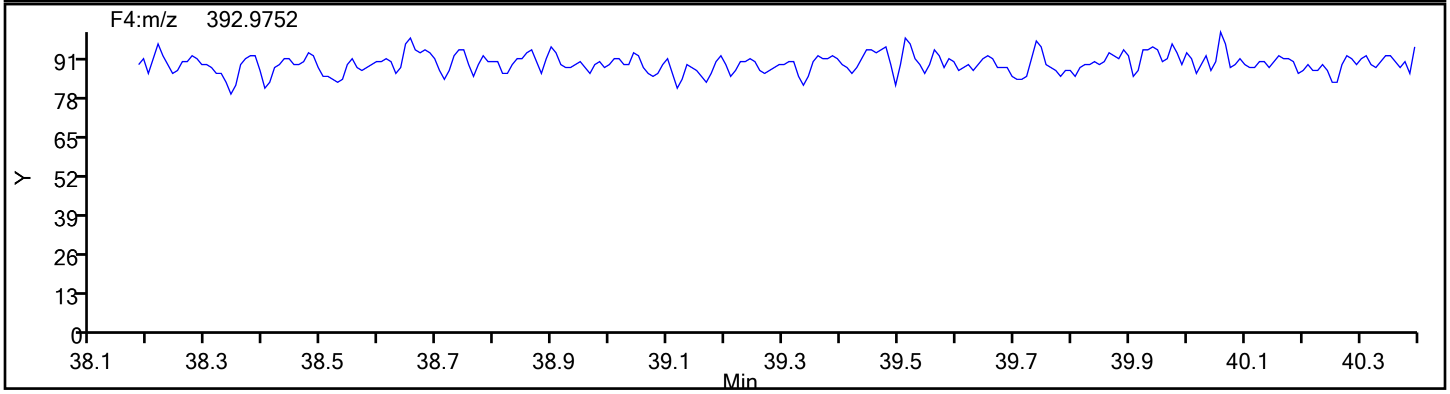

Report Date: 21-Aug-2020 16:51:17 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

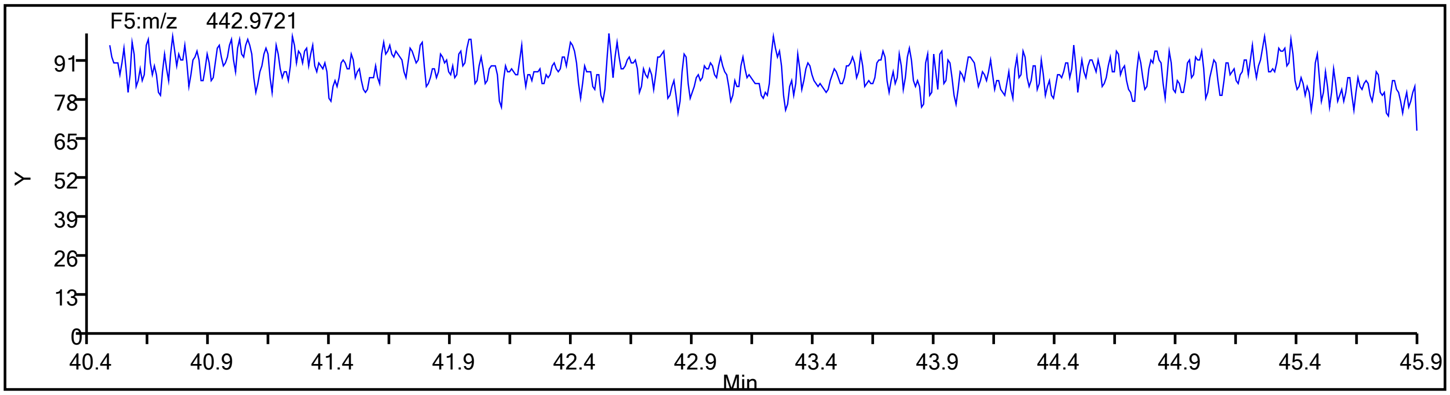

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-404233/1-A

Matrix: Water Lab File ID: 19AU2010D5_4.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1000(mL) Date Analyzed: 08/19/2020 12:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405028 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.74
51207-31-9	2,3,7,8-TCDF	ND		10	0.54
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.2
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.77
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.62
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.81
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.95
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.77
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	1.0
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	1.2
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.79
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.81
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.50
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.825	J	50	0.38
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.39
3268-87-9	OCDD	3.22	J	100	0.70
39001-02-0	OCDF	1.95	J	100	0.91
41903-57-5	Total TCDD	ND		10	0.74
30402-14-3	Total TCDF	ND		10	0.54
36088-22-9	Total PeCDD	ND		50	1.2
30402-15-4	Total PeCDF	ND		50	0.77
34465-46-8	Total HxCDD	ND		50	0.95
55684-94-1	Total HxCDF	ND		50	1.2
37871-00-4	Total HpCDD	0.829	J	50	0.50
38998-75-3	Total HpCDF	0.825	J	50	0.38

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-63525-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-404233/1-A
Matrix: Water	Lab File ID: 19AU2010D5_4.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 08/17/2020 08:45
Sample wt/vol: 1000(mL)	Date Analyzed: 08/19/2020 12:57
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 405028	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	88		25-164
89059-46-1	13C-2,3,7,8-TCDF	84		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	86		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	78		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	101		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	120		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	85		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	117		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	84		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	94		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	94		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	110		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	102		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	129		26-138
114423-97-1	13C-OCDD	112		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Lims ID: MB 320-404233/1-A
Client ID:
Sample Type: MB
Inject. Date: 19-Aug-2020 12:57:55 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-404233/1-A MB 320-404233/1-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 09:08:23 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1066

First Level Reviewer: dadunj Date: 21-Aug-2020 08:34:15

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.476	20578109	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.976	23840856	0.75	1.3726	84.4	84.4	0.1681	0.1681	84.41	
2,3,7,8-TCDF	16.976						0.0271	0.0271		
A Non-2,3,7,8-sub-TCDF	16.689						0.0271	0.0271		
S Total TCDF							0.0271	0.0271		
D 13C-2,3,7,8-TCDD	17.657	18356578	0.78	1.0192	87.5	87.5	0.2413	0.2413	87.52	
2,3,7,8-TCDD	17.657						0.0372	0.0372		
$ 37Cl4-2,3,7,8-TCDD	17.687	8512414		1.0176	40.7	40.7	0.0423	0.0423	102	
A Non-2,3,7,8-sub-TCDD	17.135						0.0372	0.0372		
S Total TCDD							0.0372	0.0372		
D 13C-1,2,3,7,8-PeCDF	21.824	18243108	1.52	1.1429	77.6	77.6	0.2172	0.2172	77.57	
1,2,3,7,8-PeCDF	21.811						0.0387	0.0387		
D 13C-2,3,4,7,8-PeCDF	23.120	29217024	1.54	1.3997	101.4	101.4	0.1773	0.1773	101	
2,3,4,7,8-PeCDF	23.106						0.0311	0.0311		
A F1 PeCDFs	19.555						0.0366	0.0366		
A Non-2,3,7,8-sub-PeCDF	22.583						0.0337	0.0337		
S Total PeCDF							0.0387	0.0387		
D 13C-1,2,3,7,8-PeCDD	23.815	14574375	1.60	0.8232	86.0	86.0	0.1250	0.1250	86.04	
1,2,3,7,8-PeCDD	23.816						0.0588	0.0588		
A Non-2,3,7,8-sub-PeCDD	22.772						0.0588	0.0588		
S Total PeCDD							0.0588	0.0588		
D 13C-1,2,3,4,7,8-HxCDF	29.955	19287140	0.49	1.1388	116.8	116.8	0.3510	0.3510	117	
1,2,3,4,7,8-HxCDF	29.942						0.0505	0.0505		
D 13C-1,2,3,6,7,8-HxCDF	30.195	13082701	0.48	1.0803	83.5	83.5	0.3700	0.3700	83.51	
1,2,3,6,7,8-HxCDF	30.182						0.0595	0.0595		
D 13C-2,3,4,6,7,8-HxCDF	31.153	12886384	0.50	0.9494	93.6	93.6	0.4211	0.4211	93.60	
2,3,4,6,7,8-HxCDF	31.153						0.0403	0.0403		
D 13C-1,2,3,7,8,9-HxCDF	32.045	11850909	0.50	0.8670	94.3	94.3	0.4611	0.4611	94.25	
1,2,3,7,8,9-HxCDF	32.032						0.0397	0.0397		
A Non-2,3,7,8-sub-HxCDF	29.689						0.0461	0.0461		
S Total HxCDF							0.0595	0.0595		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.845	14501963	1.23	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.366	16282259	1.22	0.9356	120.0	120.0	0.2822	0.2822	120	
1,2,3,4,7,8-HxCDD	31.380						0.0405	0.0405		
D 13C-1,2,3,6,7,8-HxCDD	31.486	12794659	1.22	1.0416	84.7	84.7	0.2535	0.2535	84.70	
1,2,3,6,7,8-HxCDD	31.500						0.0475	0.0475		
1,2,3,7,8,9-HxCDD	31.846						0.0384	0.0384		
A Non-2,3,7,8-sub-HxCDD	30.321						0.0415	0.0415		
S Total HxCDD							0.0475	0.0475		
D 13C-1,2,3,4,6,7,8-HpCDF	33.554	11701846	0.43	0.7899	102.2	102.2	1.363	1.363	102	
1,2,3,4,6,7,8-HpCDF	33.554	7013	1.04	1.4527	0.0587	0.0413	0.0188	0.0188		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	34.623	17010580	0.42	0.9093	129.0	129.0	1.184	1.184	129	
1,2,3,4,7,8,9-HpCDF	34.624						0.0196	0.0196		
A Non-2,3,7,8-sub-HpCDF	34.101						0.0188	0.0188		
S Total HpCDF					0.0587	0.0413	0.0192	0.0192		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	34.332	12130567	1.04	0.7637	109.5	109.5	0.5559	0.5559	110	
1,2,3,4,6,7,8-HpCDD	34.332						0.0252	0.0252		
A Non-2,3,7,8-sub-HpCDD	34.623	5298	0.97	1.0540	0.0414	0.0414	0.0252	0.0414		M
S Total HpCDD					0.0414	0.0414	0.0252	0.0252		
D 13C-OCDD	36.638	20753017	0.87	0.6377	224.4	224.4	0.3363	0.3363	112	
OCDF	36.746	13090	0.83	1.2965	0.0973	0.0973	0.0457	0.0457		M
OCDD	36.650	19226	0.89	1.1499	0.1766	0.1611	0.0348	0.0348		RQM

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated

Report Date: 24-Aug-2020 10:43:09 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Lims ID: MB 320-404233/1-A
Client ID:
Sample Type: MB
Inject. Date: 19-Aug-2020 12:57:55 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-404233/1-A MB 320-404233/1-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 09:08:23 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1066

First Level Reviewer: dadunj Date: 21-Aug-2020 08:34:15

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.476	17.460	1		9052635	2318449	3222	8055	720		
333.9339	17.476	17.460	1		11525474	2934008	1946	4865	1508	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.976	16.962	1	0.971	10243257	2647713	3086	7715	858		
317.9389	16.976	16.962	1	0.971	13597599	3496405	1763	4407	1983	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.976						228	570			
305.8987	16.976						378	945			
A Non-2,3,7,8-sub-TCDF											
303.9016	16.689						228	570			
305.8987	16.689						378	945			
13C-2,3,7,8-TCDD											
331.9368	17.657	17.642	1	1.010	8020635	1923528	3222	8055	597		
333.9339	17.657	17.642	1	1.010	10335943	2487329	1946	4865	1278	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.657						439	1097			
321.8936	17.657						267	667			
37Cl4-2,3,7,8-TCDD											
327.8847	17.687	17.657	2	1.012	8512414	2025200	904	2260	2240		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						439	1097			
321.8936	17.135						267	667			
13C-1,2,3,7,8-PeCDF											
351.9000	21.824	21.797	2	1.249	11012214	1981948	3105	7762	638		
353.8970	21.824	21.797	2	1.249	7230894	1337759	2110	5275	634	1.52(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.811						165	412			
341.8567	21.811						346	865			
13C-2,3,4,7,8-PeCDF											
351.9000	23.120	23.093	2	1.323	17720949	3087578	3105	7762	994		
353.8970	23.120	23.093	2	1.323	11496075	1977313	2110	5275	937	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.106						165	412			
341.8567	23.106						346	865			
A F1 PeCDFs											
339.8597	19.555						142	355			
341.8567	19.555						413	1032			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.583						165	412			
341.8567	22.583						346	865			
13C-1,2,3,7,8-PeCDD											
367.8949	23.815	23.774	2	1.363	8975379	1405625	1290	3225	1090		
369.8919	23.815	23.774	2	1.363	5598996	869796	872	2180	997	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.816						415	1037			
357.8516	23.816						130	325			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.772						415	1037			
357.8516	22.772						130	325			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.955	29.916	2	0.941	6381736	918909	1903	4757	483		
385.8610	29.955	29.916	2	0.941	12905404	1882636	3578	8945	526	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.942						295	737			
375.8178	29.942						161	402			
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.195	30.155	2	0.948	4268413	633364	1903	4757	333		
385.8610	30.195	30.155	2	0.948	8814288	1316406	3578	8945	368	0.48(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.182						295	737			
375.8178	30.182						161	402			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.153	31.127	2	0.978	4279866	927571	1903	4757	487		
385.8610	31.153	31.127	2	0.978	8606518	1794073	3578	8945	501	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.153						295	737			
375.8178	31.153						161	402			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.045	32.019	2	1.006	3959519	932228	1903	4757	490		
385.8610	32.032	32.019	1	1.006	7891390	1849645	3578	8945	517	0.50(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.032						295	737			
375.8178	32.032						161	402			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.689						295	737			
375.8178	29.689						161	402			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.845	31.832	1		7984436	1896910	2075	5187	914		
403.8529	31.845	31.832	1		6517527	1530711	1545	3862	991	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.366	31.353	1	0.985	8943950	2077781	2075	5187	1001		
403.8529	31.366	31.353	1	0.985	7338309	1749637	1545	3862	1132	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.366						245	612			
391.8127	31.366						263	657			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.486	31.473	1	0.989	7036164	1580198	2075	5187	762		
403.8529	31.486	31.473	1	0.989	5758495	1276957	1545	3862	827	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.486						245	612			
391.8127	31.486						263	657			
1,2,3,7,8,9-HxCDD											
389.8157	31.846						245	612			
391.8127	31.846						263	657			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.321						245	612			
391.8127	30.321						263	657			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.554	33.530	1	1.054	3494642	1075883	4664	11660	231		
419.8220	33.542	33.530	1	1.053	8207204	2510386	10095	25237	249	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7818	33.554	33.542	1	1.000	6548	1764	231	577	8		M
	Empc Correction				3575	1400	231	577	6		
409.7789	33.566	33.542	1	1.000	3438	1347	162	405	8	1.90(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.623	34.599	1	1.087	5059145	1419291	4664	11660	304		
419.8220	34.611	34.599	1	1.087	11951435	3304277	10095	25237	327	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.611						231	577			
409.7789	34.611						162	405			
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.101						231	577			
409.7789	34.101						162	405			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.332	34.320	1	1.078	6186069	1775388	2710	6775	655		
437.8140	34.332	34.320	1	1.078	5944498	1736225	3111	7777	558	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.332						163	407			
425.7737	34.332						210	525			
A Non-2,3,7,8-sub-HpCDD											M
423.7766	33.809	34.623	-49	0.985	2604	1084	163	407	7		M
425.7737	33.797	34.623	-49	0.984	2694	883	210	525	4	0.97(0.88-1.20)	M
13C-OCDD											
469.7779	36.638	36.626	1	1.151	9672478	2390273	1674	4185	1428		
471.7750	36.638	36.626	1	1.151	11080539	2662531	1266	3165	2103	0.87(0.76-1.02)	
OCDF											M
441.7428	36.746	36.722	1	1.003	5943	1347	215	537	6		
443.7399	36.722	36.722	0	1.002	7147	1497	384	960	4	0.83(0.76-1.02)	M
OCDD											RQM
457.7377	36.650	36.638	1	1.000	10900	3714	209	522	18		M
	Empc Correction				9053	2524	209	522	12		
459.7348	36.662	36.638	1	1.001	10173	2836	195	487	15	1.07(0.76-1.02)	M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Lims ID:	MB 320-404233/1-A		
Client ID:			
Inject. Date:	19-Aug-2020 12:57:55	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	10D5	Operator:	SMA/AJS
Lims Batch ID:	405028	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDD, RT: 34.623

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.054	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	12130567	3511613

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.054		100.000	12130567	3511613

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.809	2604	1084	2694	883	0.0414	0.97	M
Signal Totals:							
	2604	1084	2694	883			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5298	1967				0.97	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0414 = (5298 * 100.000) / (12130567 * 1.054)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 24-Aug-2020 10:43:10

Chrom Revision: 2.3 20-Aug-2020 13:57:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d				
Injection Date:	19-Aug-2020 12:57:55	Instrument ID:	10D5		
Lims ID:	MB 320-404233/1-A				
Client ID:					
Operator ID:	SMA/AJS	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT:	33.57
Area:	3628
Amount:	0.064542
Amount Units:	pg/ul

Processing Integration Results

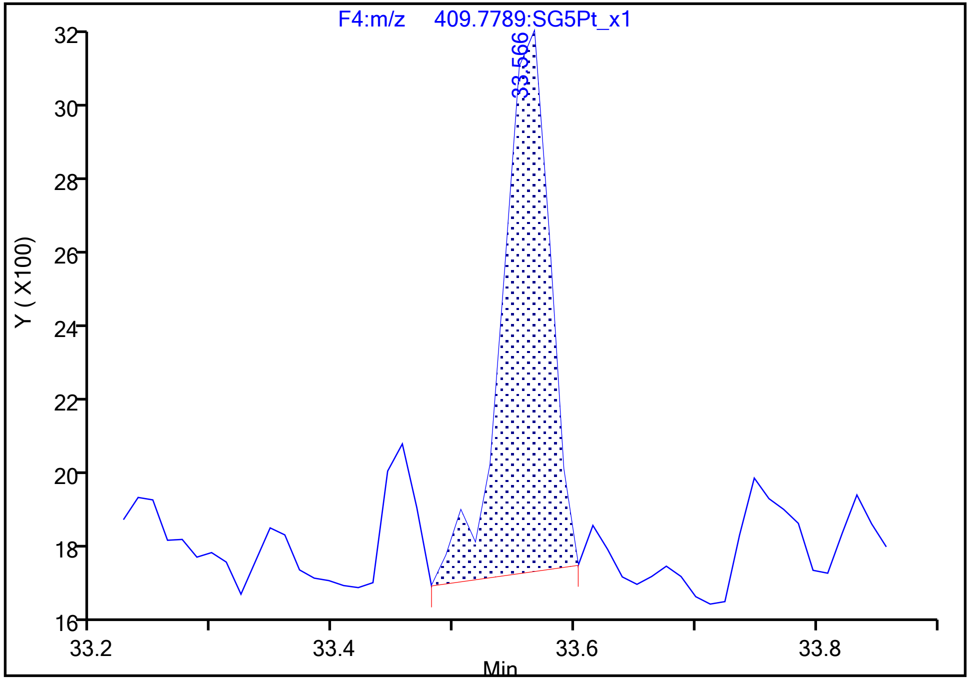

RT:	33.57
Area:	3438
Amount:	0.058742
Amount Units:	pg/ul

Manual Integration Results

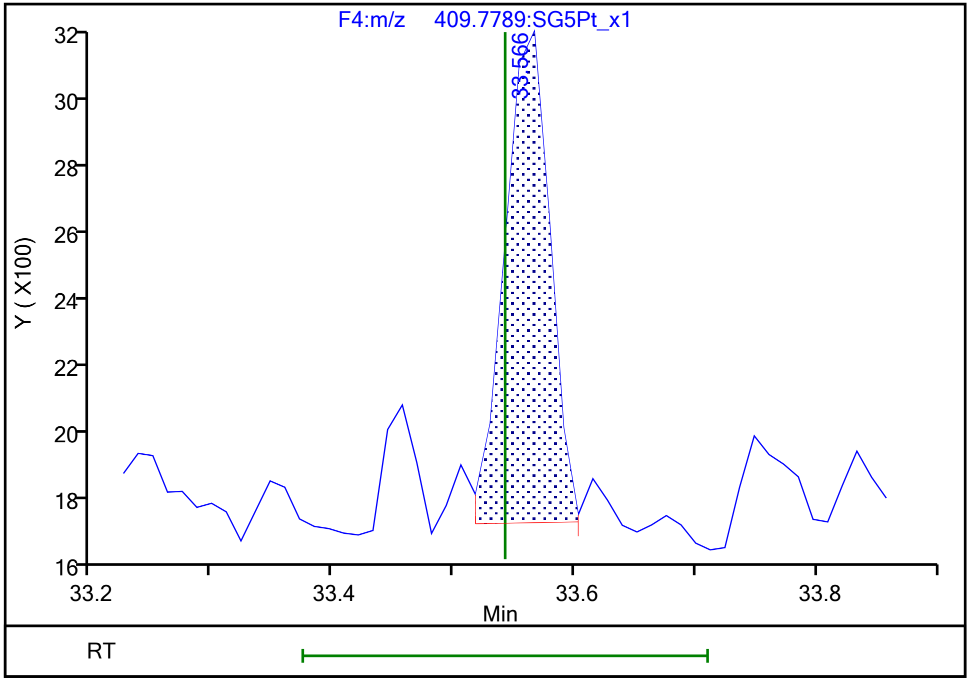

Reviewer: dadunj, 21-Aug-2020 08:32:42

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55
Instrument ID: 10D5
Lims ID: MB 320-404233/1-A
Client ID:
Operator ID: SMA/AJS
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT: 33.55
Area: 7344
Amount: 0.064542
Amount Units: pg/ul

Processing Integration Results

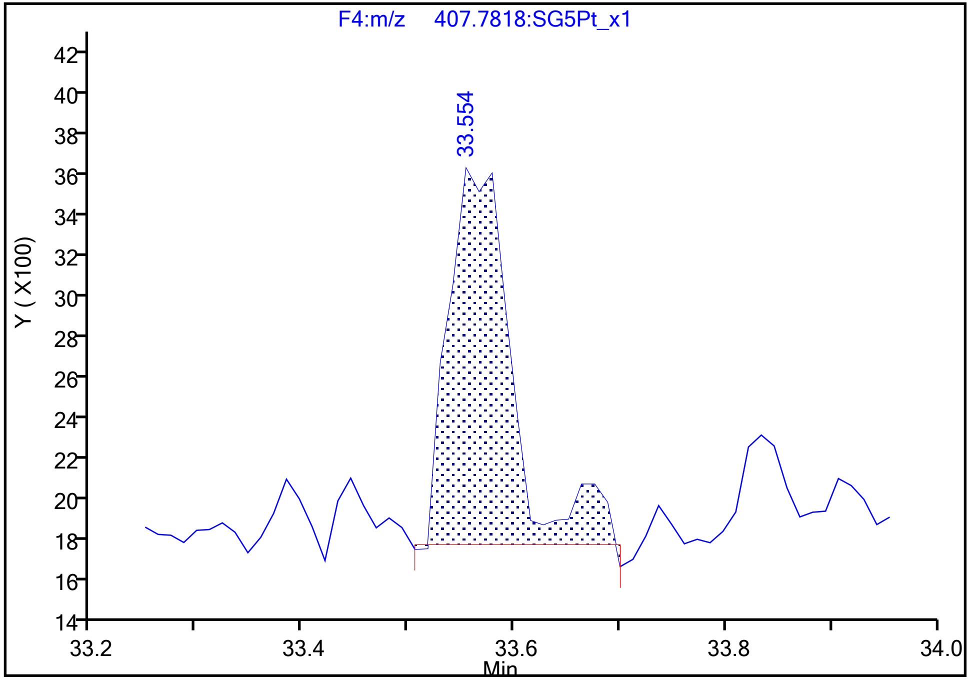

RT: 33.55
Area: 6548
Amount: 0.058742
Amount Units: pg/ul

Manual Integration Results

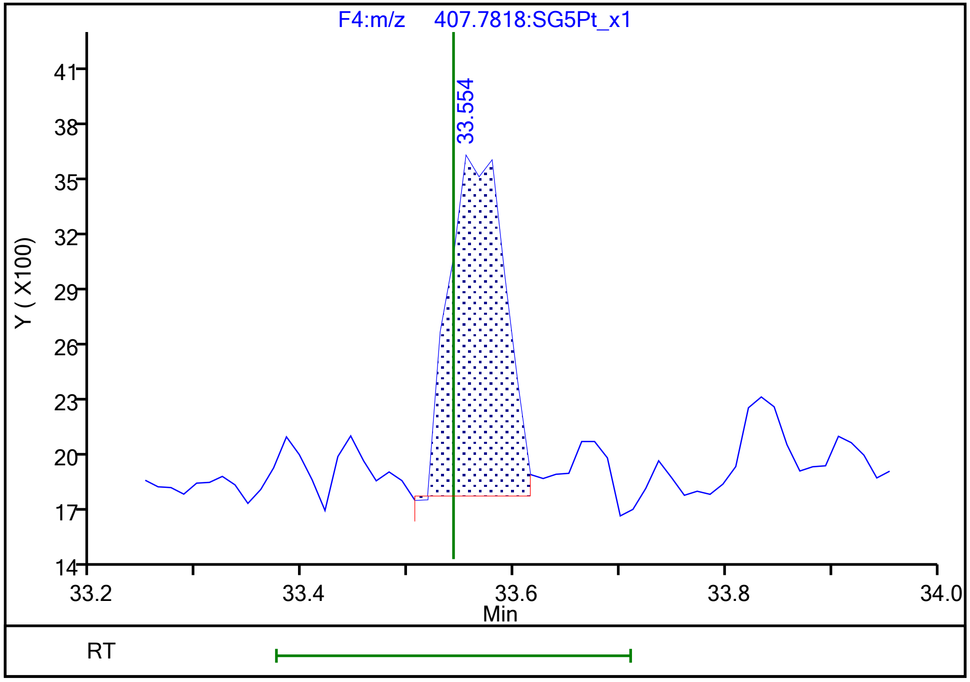

Reviewer: dadunj, 21-Aug-2020 08:32:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 24-Aug-2020 10:43:10

Chrom Revision: 2.3 20-Aug-2020 13:57:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d				
Injection Date:	19-Aug-2020 12:57:55	Instrument ID:	10D5		
Lims ID:	MB 320-404233/1-A				
Client ID:					
Operator ID:	SMA/AJS	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (34.16- 35.08)

Signal: 1

Processing Integration Results

RT = 33.809 Area = 2863

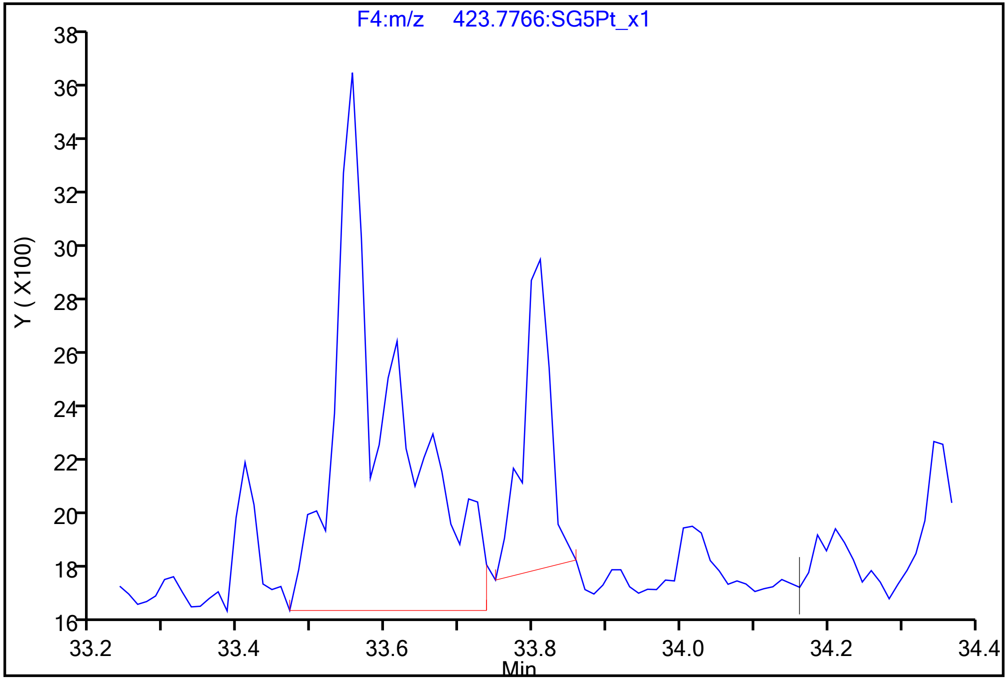

Manual Integration Results

RT = 33.809 Area = 2604 M

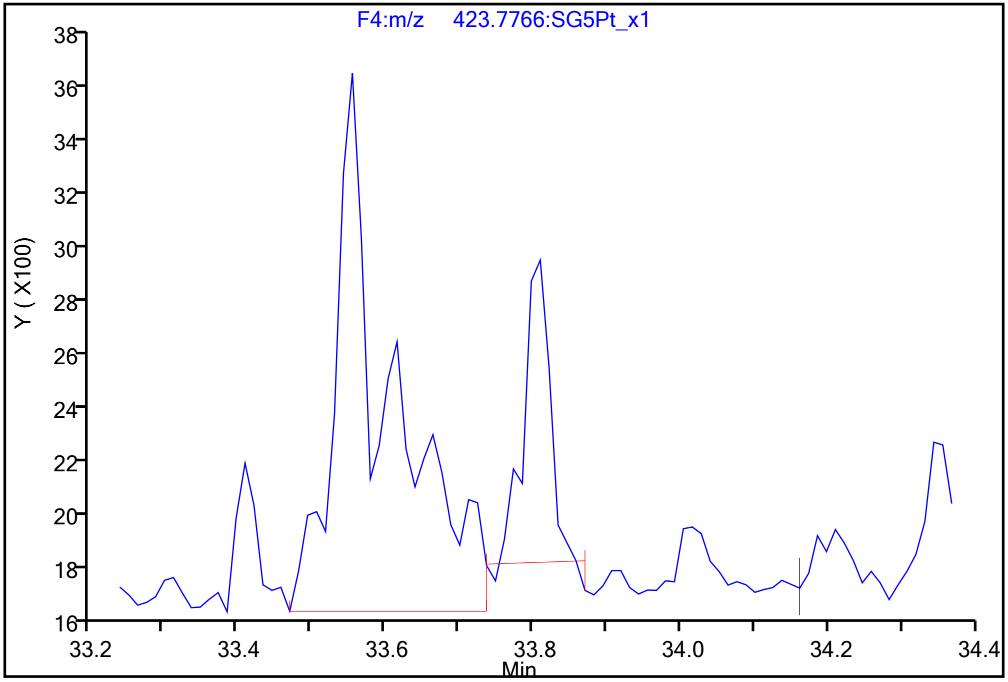

Reviewer: dadunj, 21-Aug-2020 08:33:10

Audit Action: Manually Integrated

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55 Instrument ID: 10D5
Lims ID: MB 320-404233/1-A
Client ID:
Operator ID: SMA/AJS ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F4:HRSIR

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (34.16- 35.08)

Signal: 2

RT = 33.797 Area = 2940

Processing Integration Results

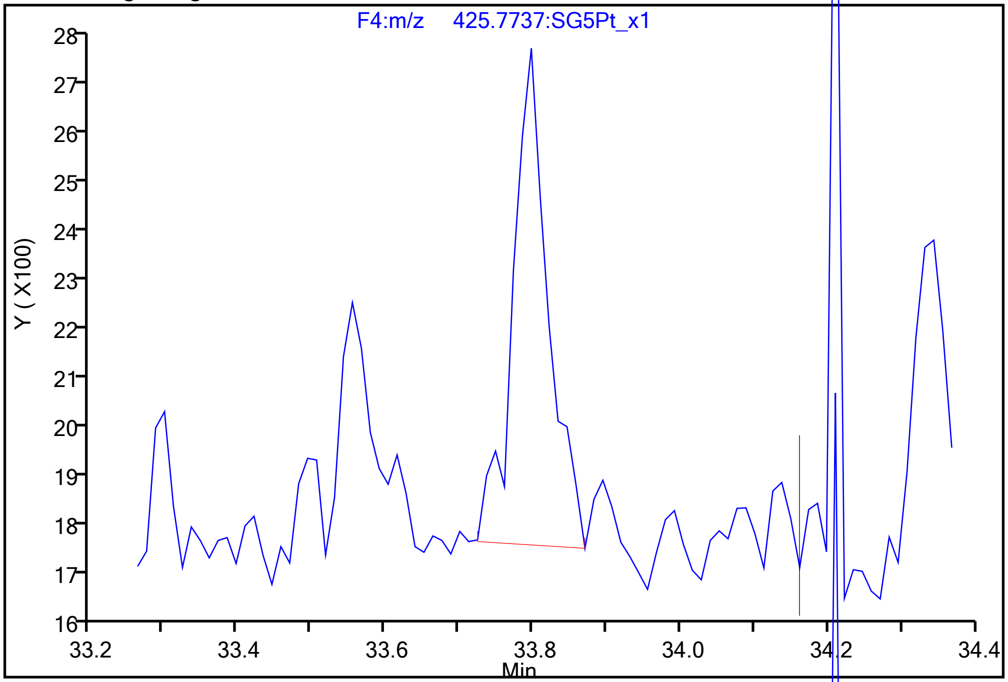

RT = 33.797 Area = 2694 M

Manual Integration Results

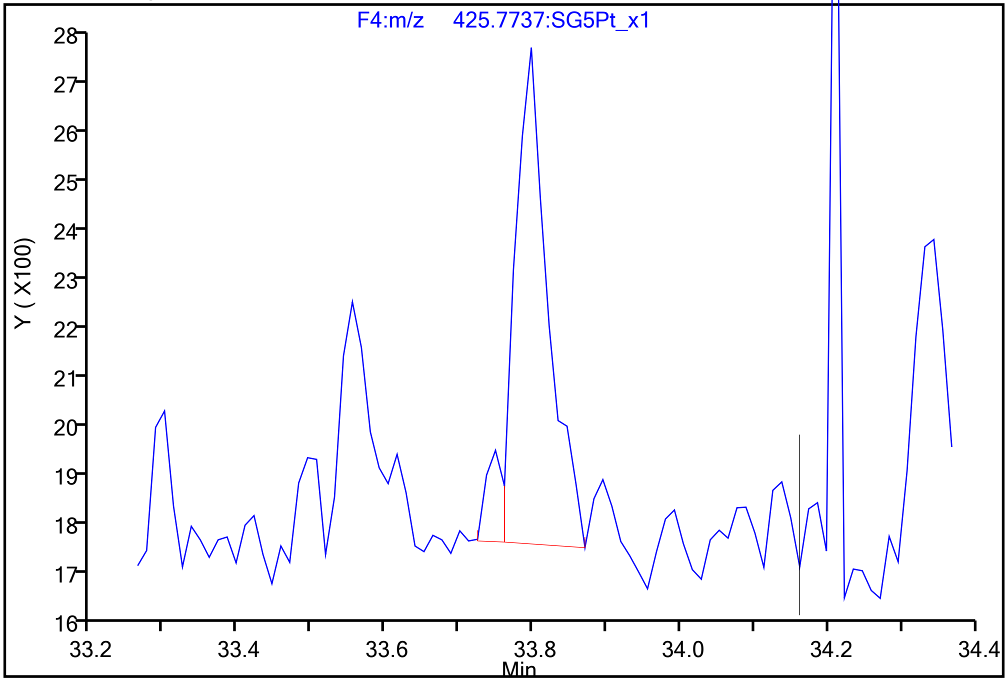

Reviewer: dadunj, 21-Aug-2020 08:33:51
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d				
Injection Date:	19-Aug-2020 12:57:55	Instrument ID:	10D5		
Lims ID:	MB 320-404233/1-A				
Client ID:					
Operator ID:	SMA/AJS	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

RT:	36.72
Area:	8251
Amount:	0.105510
Amount Units:	pg/ul

Processing Integration Results

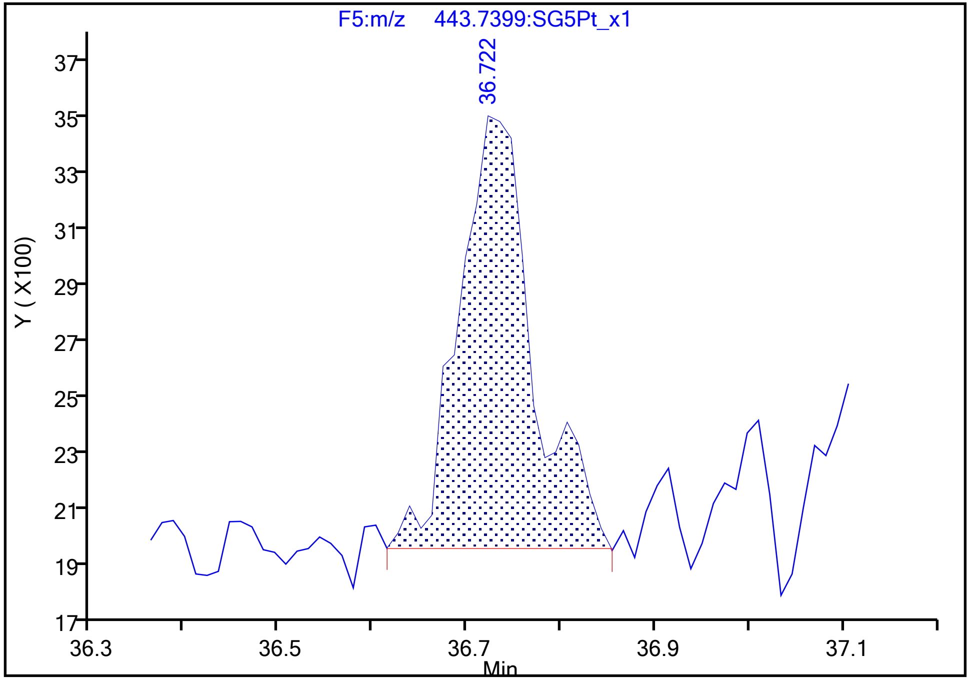

RT:	36.72
Area:	7147
Amount:	0.097304
Amount Units:	pg/ul

Manual Integration Results

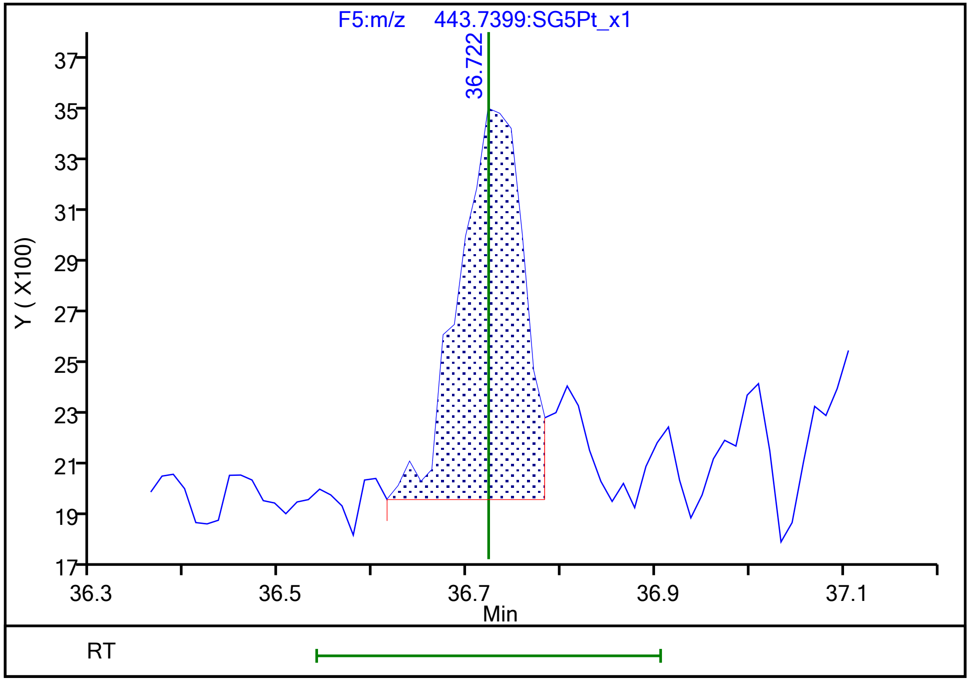

Reviewer: dadunj, 21-Aug-2020 08:33:45

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55 Instrument ID: 10D5
Lims ID: MB 320-404233/1-A
Client ID:
Operator ID: SMA/AJS ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F5:HRSIR

OCDD, CAS: 3268-87-9

Signal: 2

RT:	36.66
Area:	12437
Amount:	0.215002
Amount Units:	pg/ul

Processing Integration Results

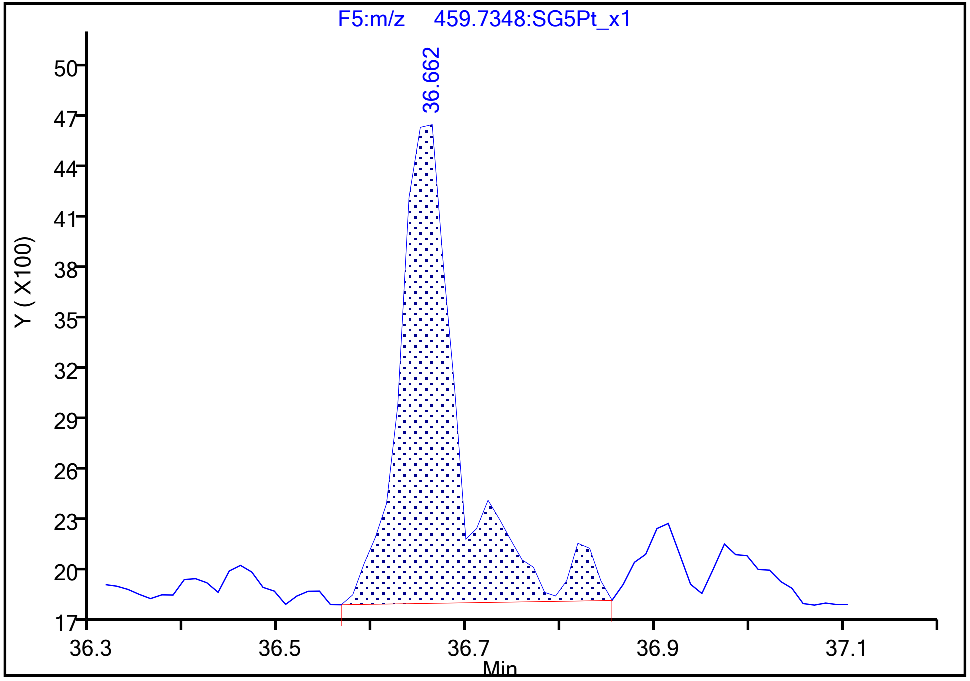

RT:	36.66
Area:	10173
Amount:	0.176610
Amount Units:	pg/ul

Manual Integration Results

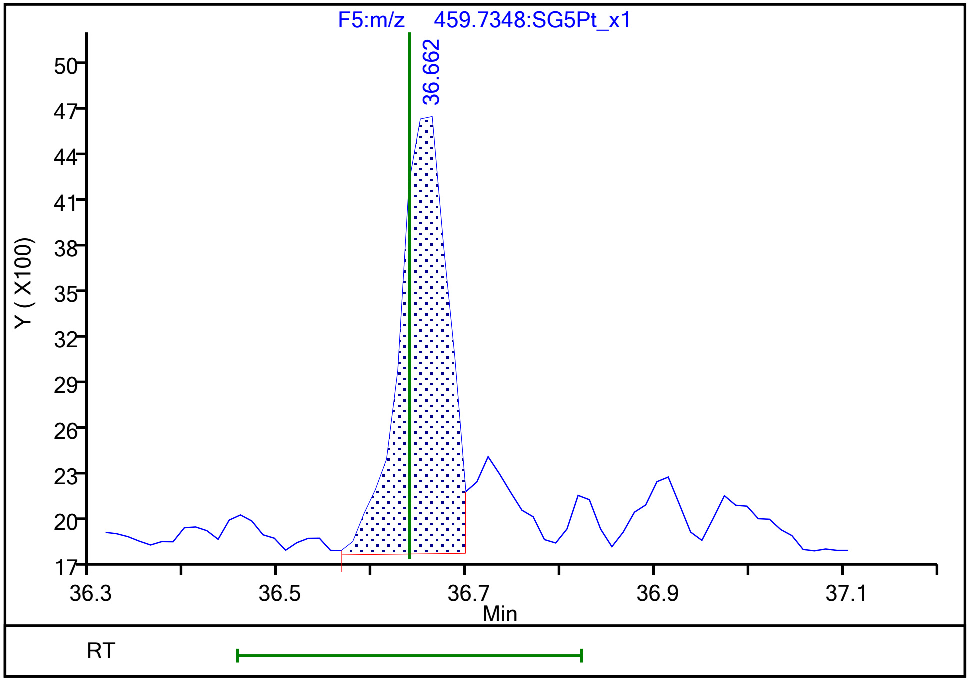

Reviewer: dadunj, 21-Aug-2020 08:33:35

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 24-Aug-2020 10:43:10		Chrom Revision: 2.3 20-Aug-2020 13:57:12			

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d				
Injection Date:	19-Aug-2020 12:57:55	Instrument ID:	10D5		
Lims ID:	MB 320-404233/1-A				
Client ID:					
Operator ID:	SMA/AJS	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT:	36.65
Area:	13217
Amount:	0.215002
Amount Units:	pg/ul

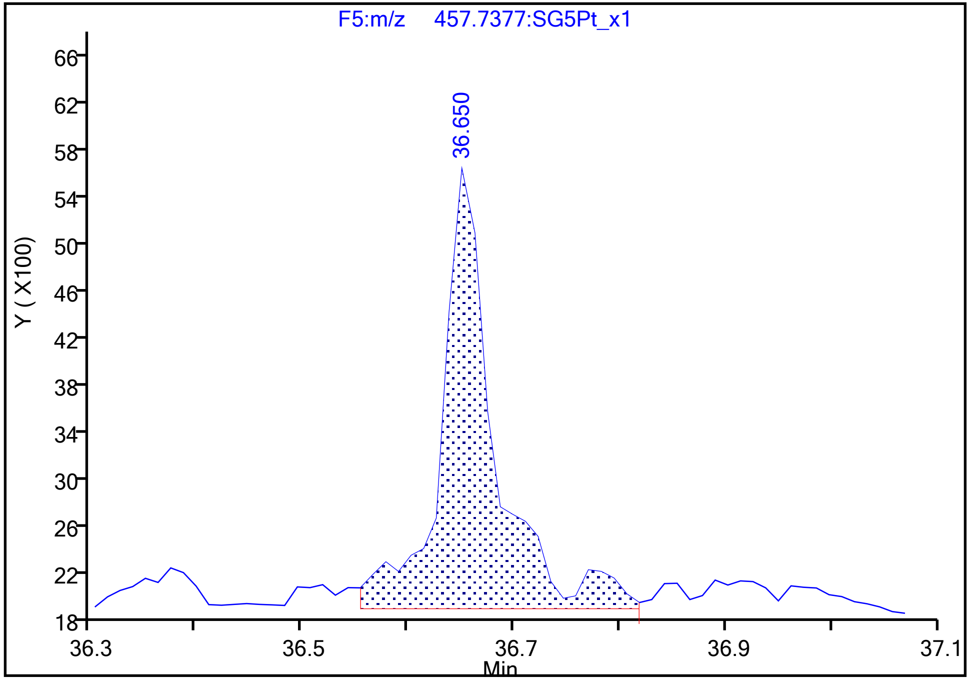

Manual Integration Results

RT:	36.65
Area:	10900
Amount:	0.176610
Amount Units:	pg/ul

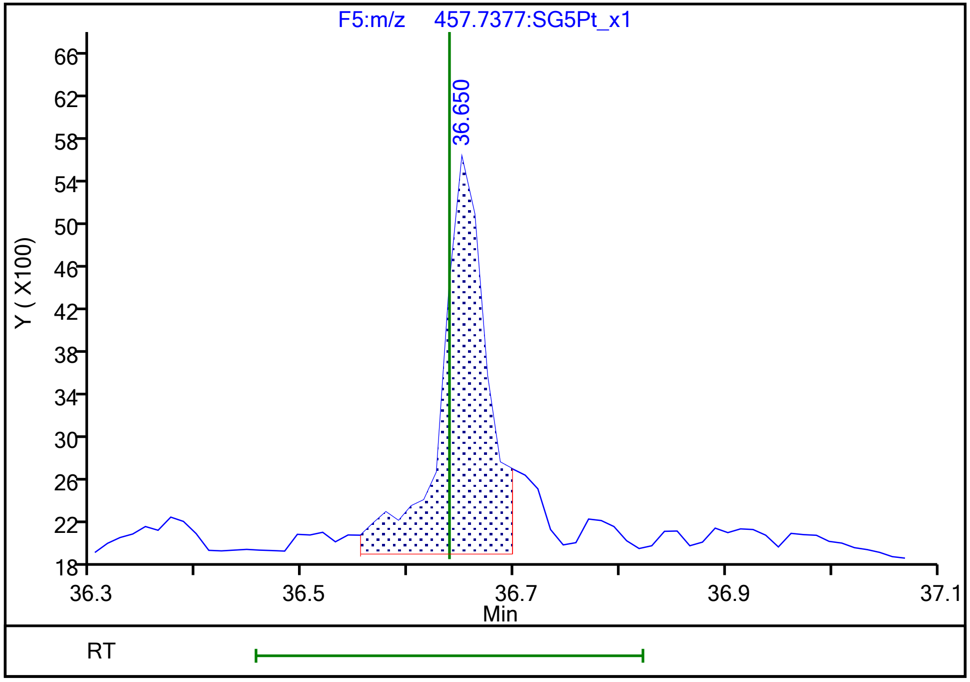

Reviewer: dadunj, 21-Aug-2020 08:33:38

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

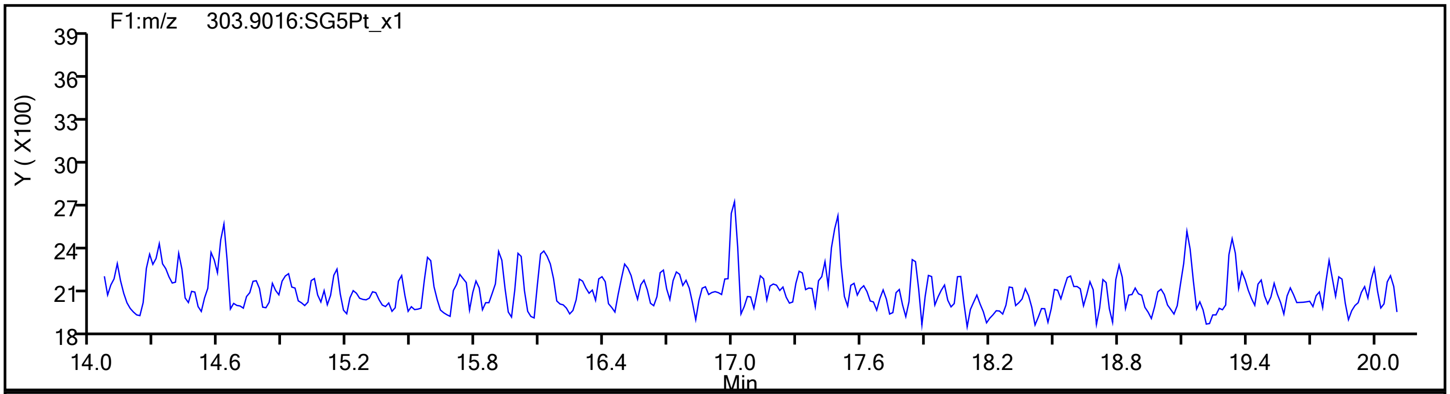

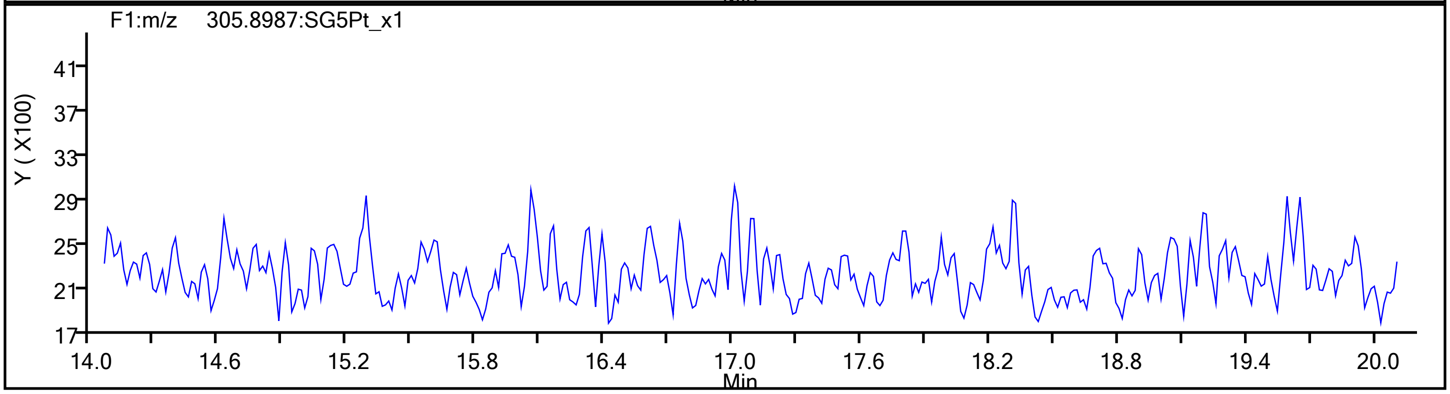

TCDF Standards

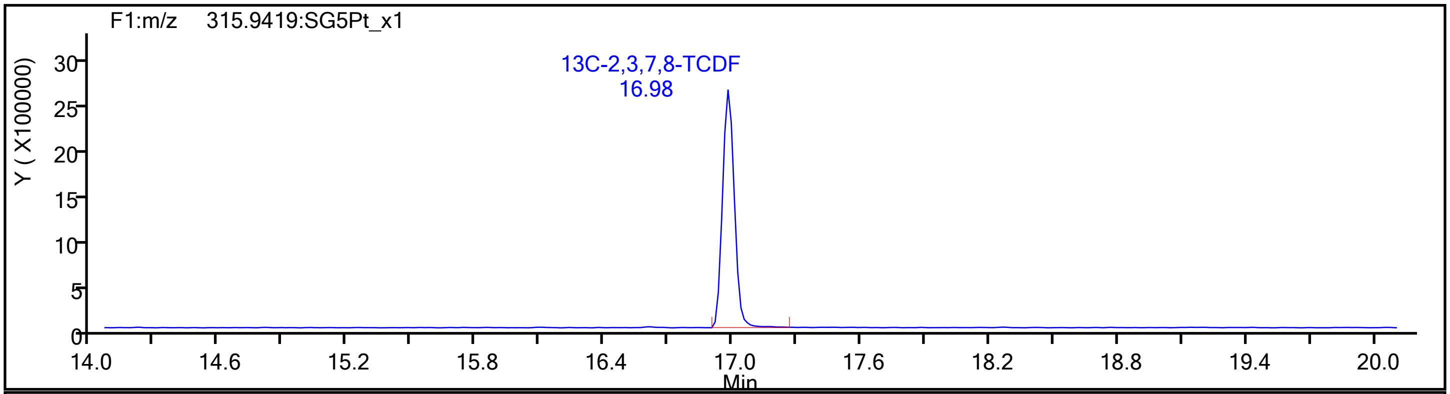

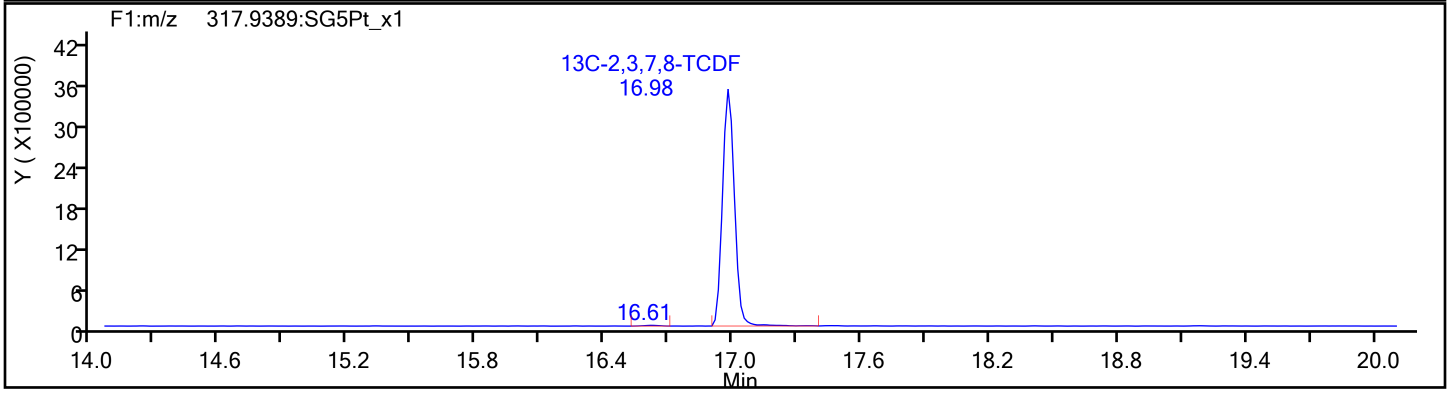

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

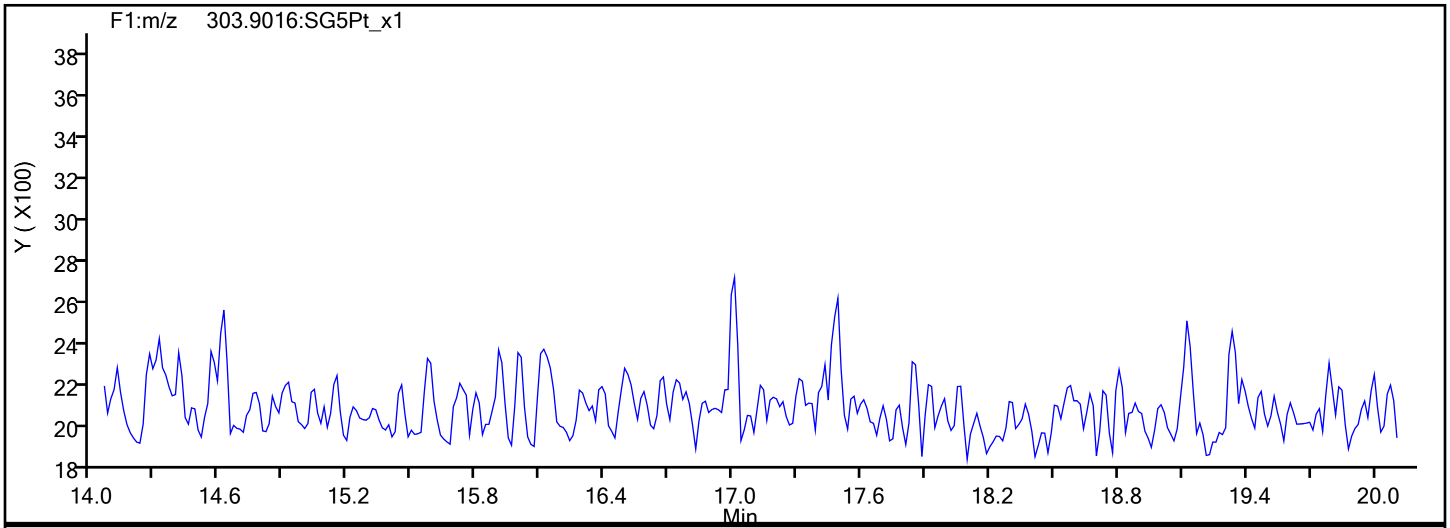

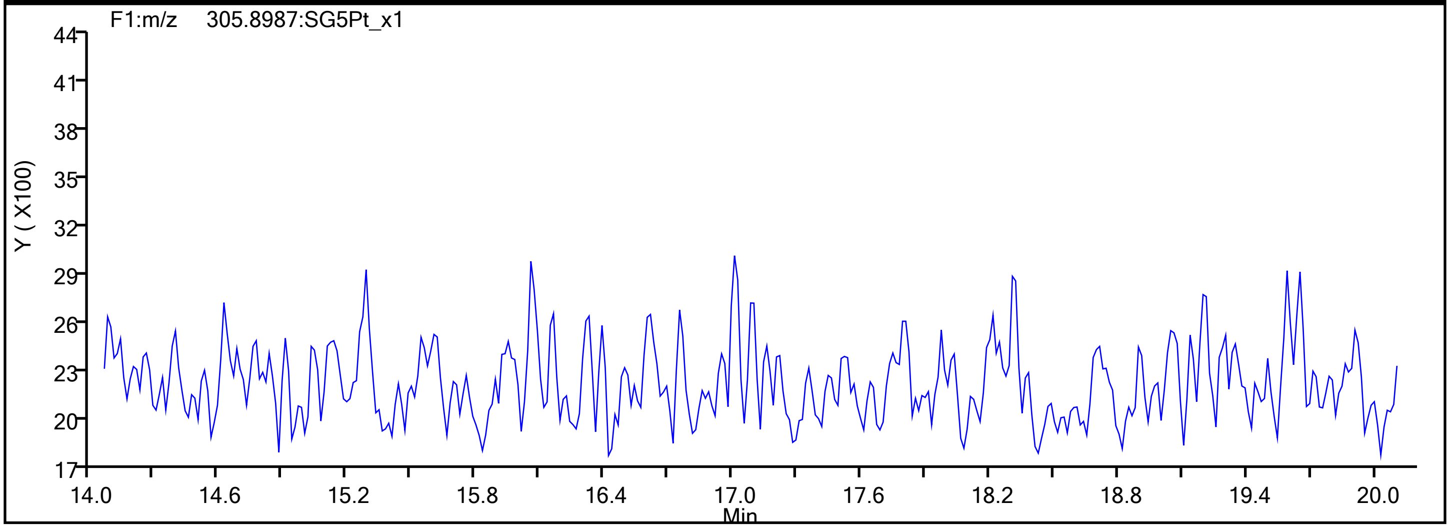

TCDF Interference Mass

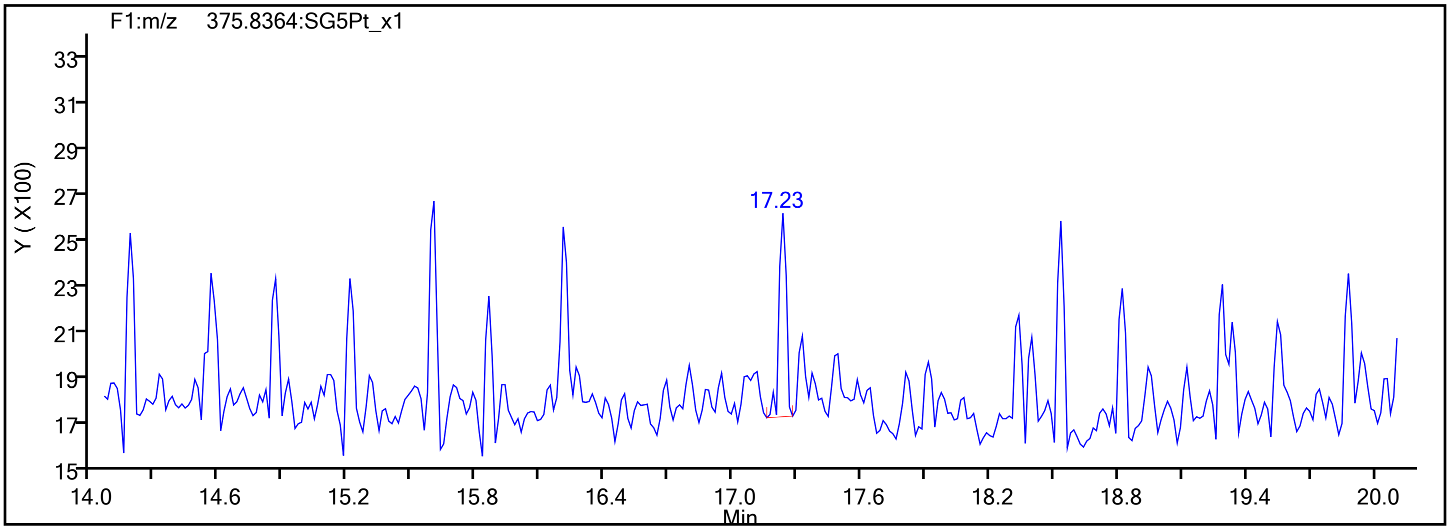

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

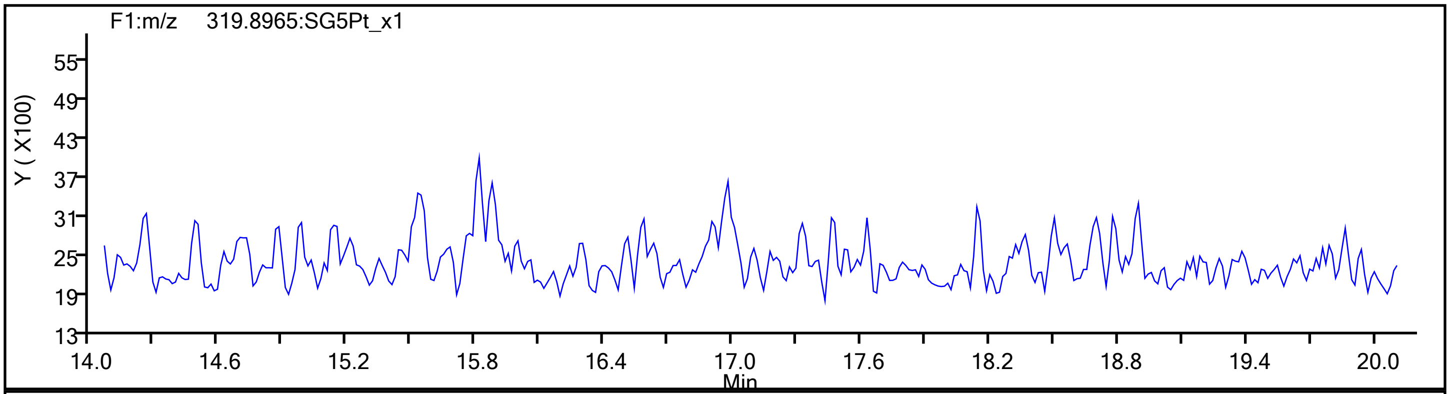

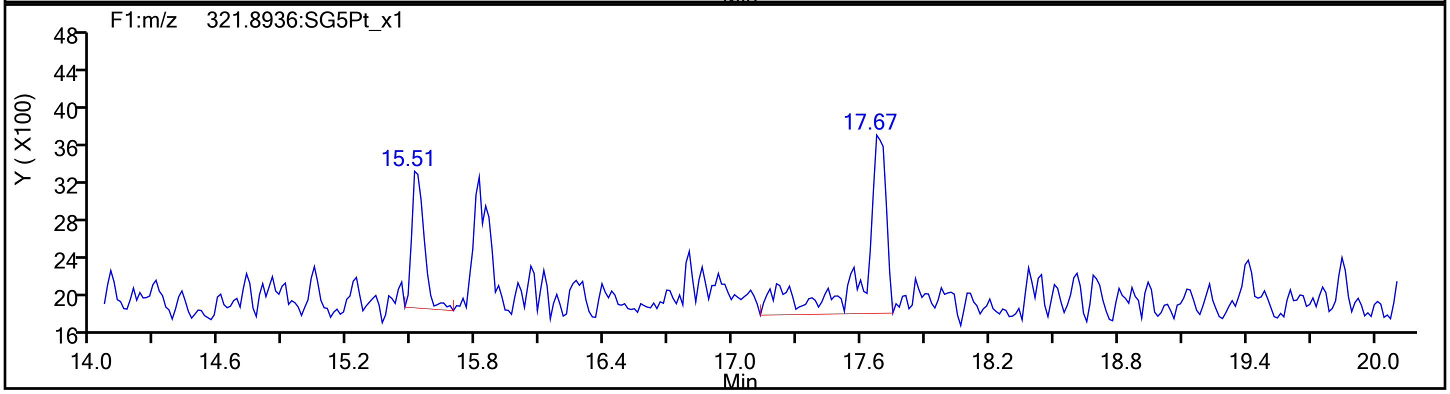

TCDD Standards

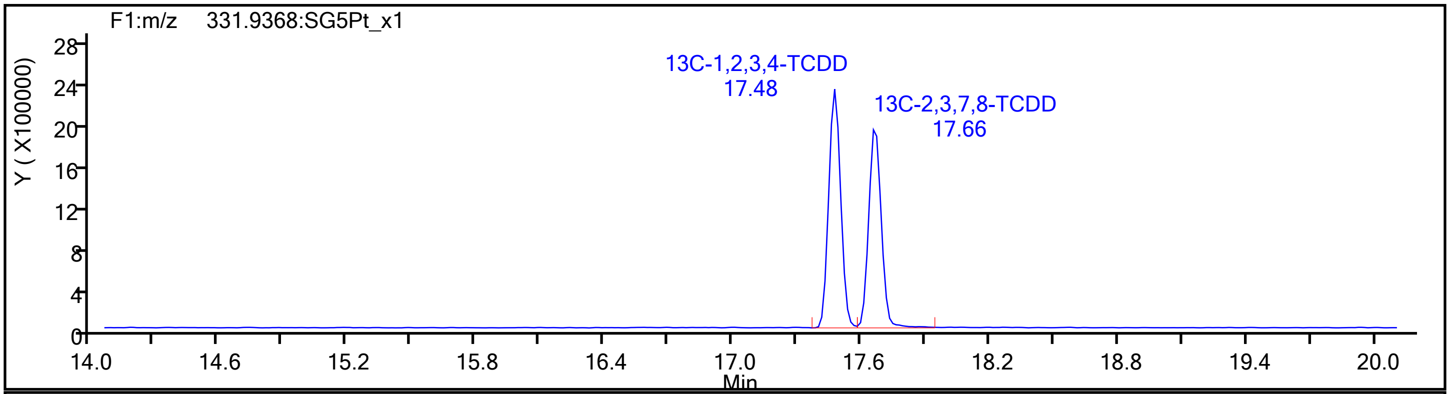

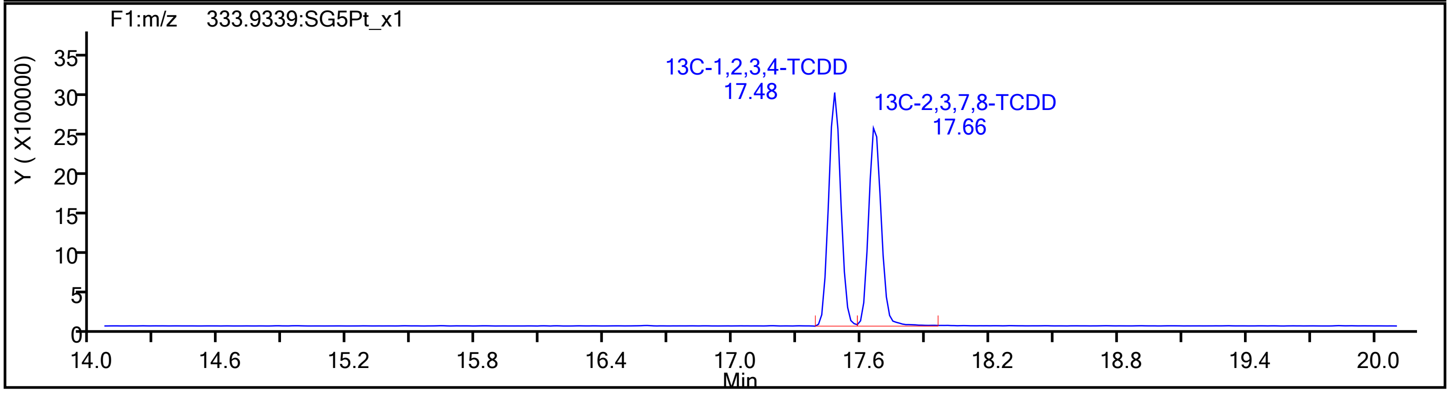

Report Date: 24-Aug-2020 10:43:10
Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

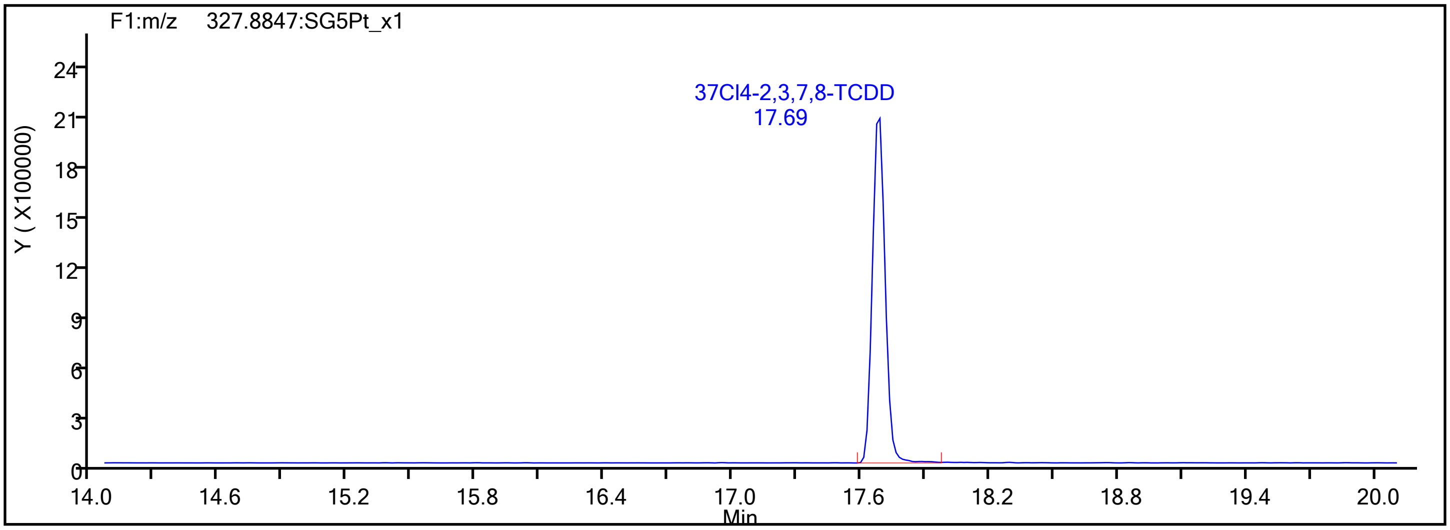

37Cl4-TCDD Standards

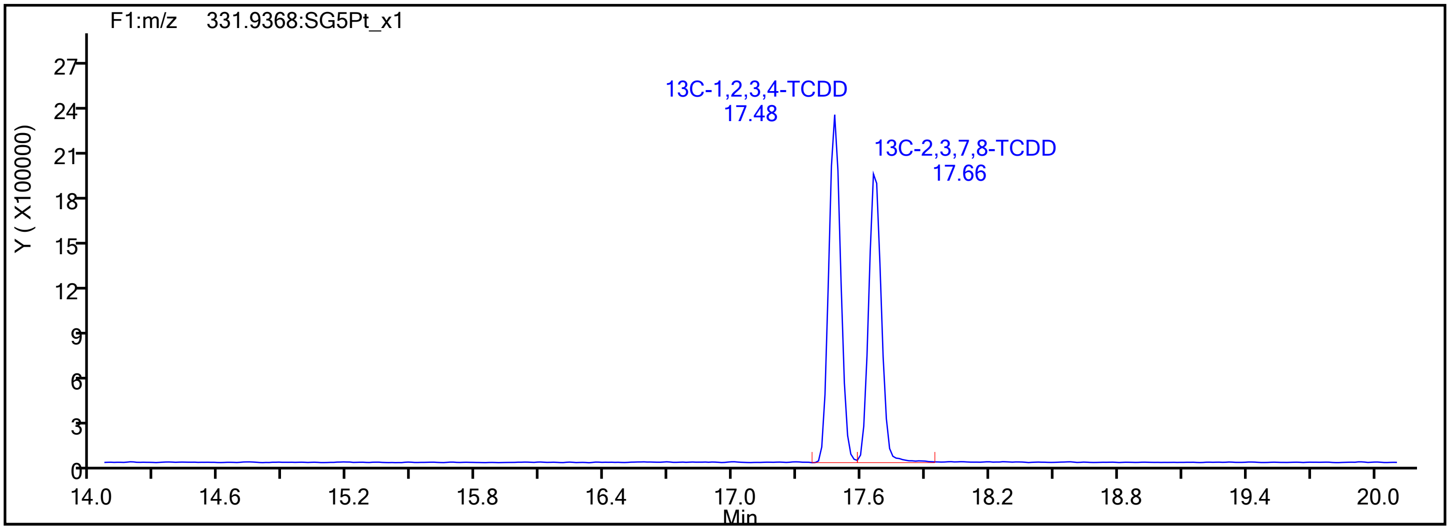

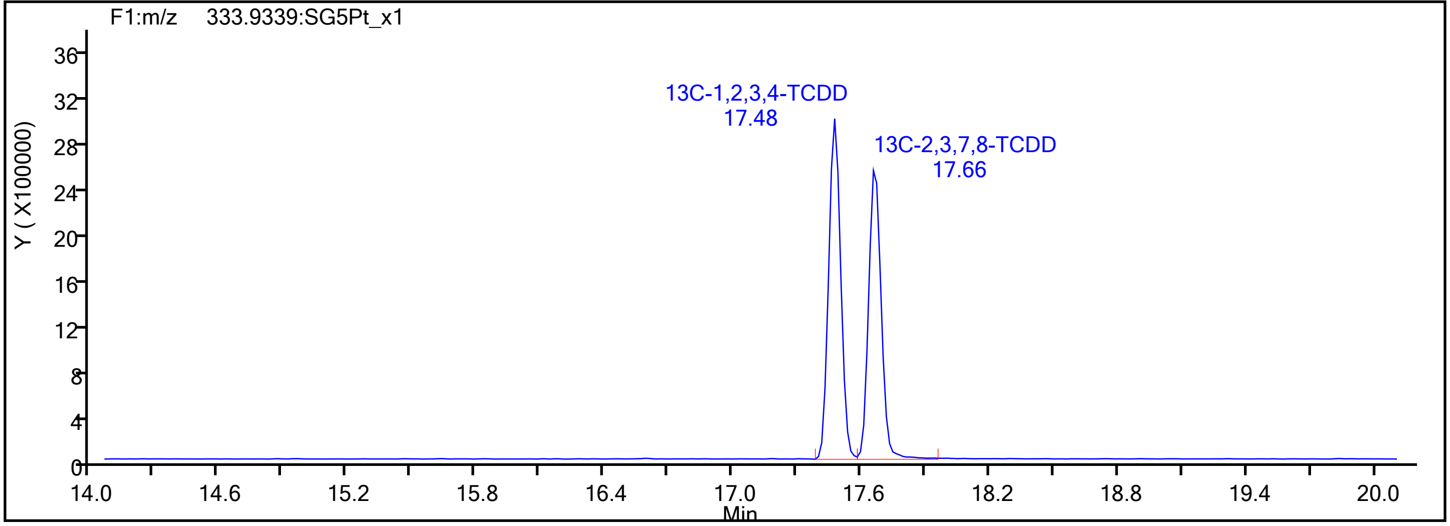

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

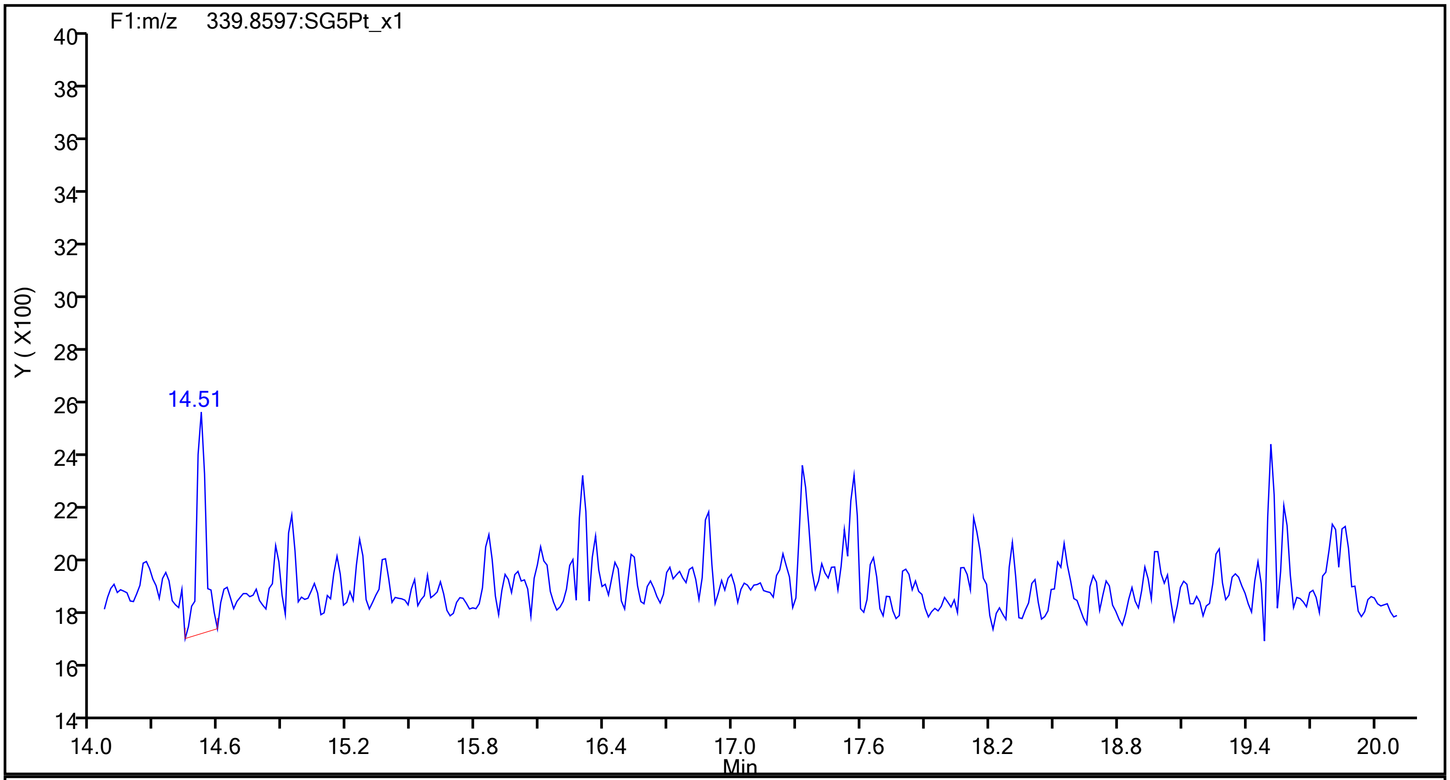

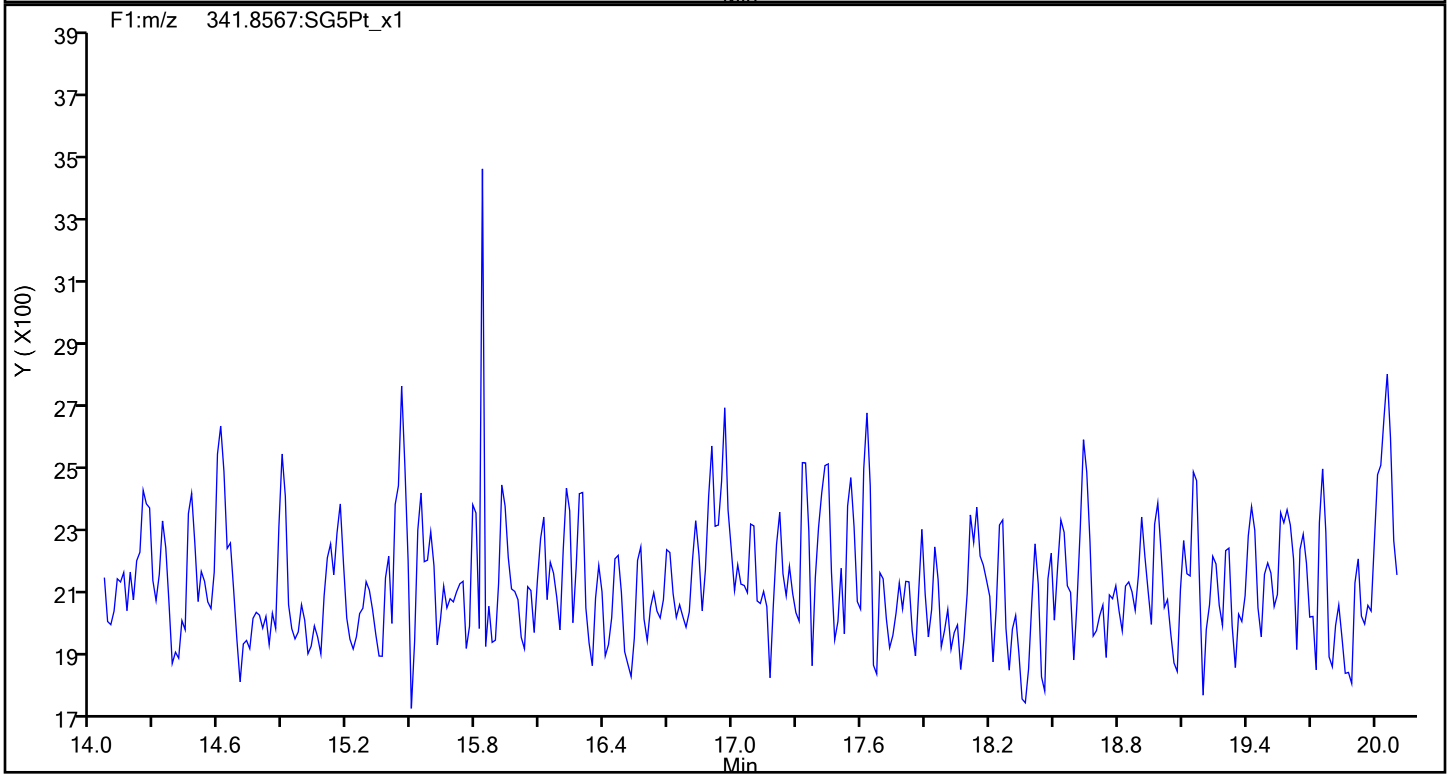

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

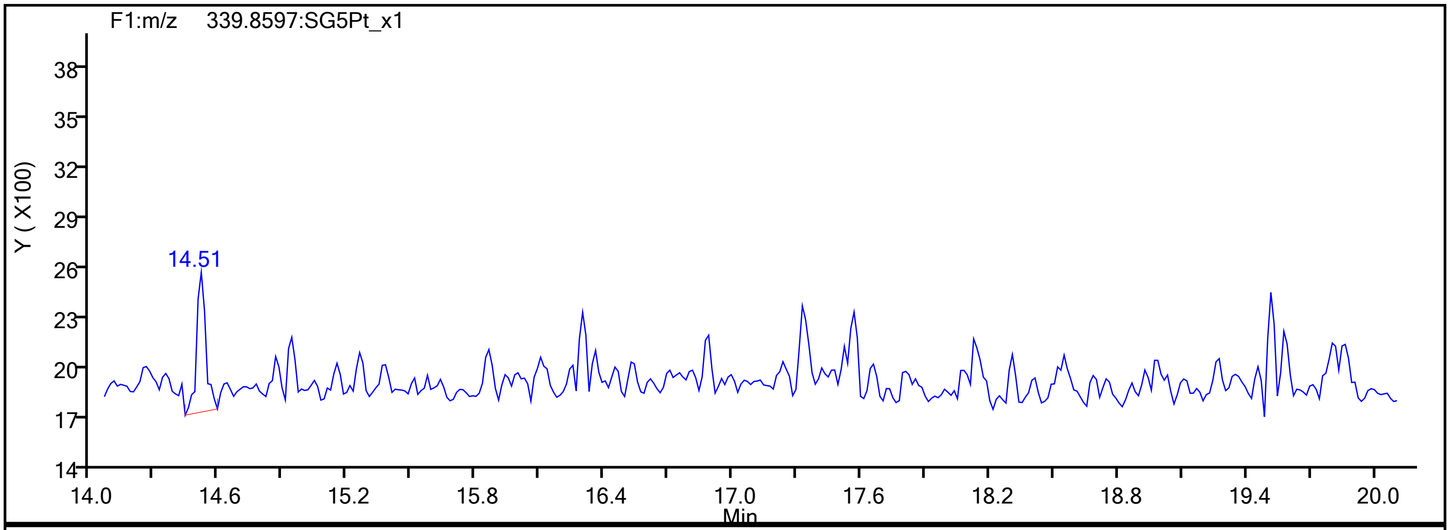

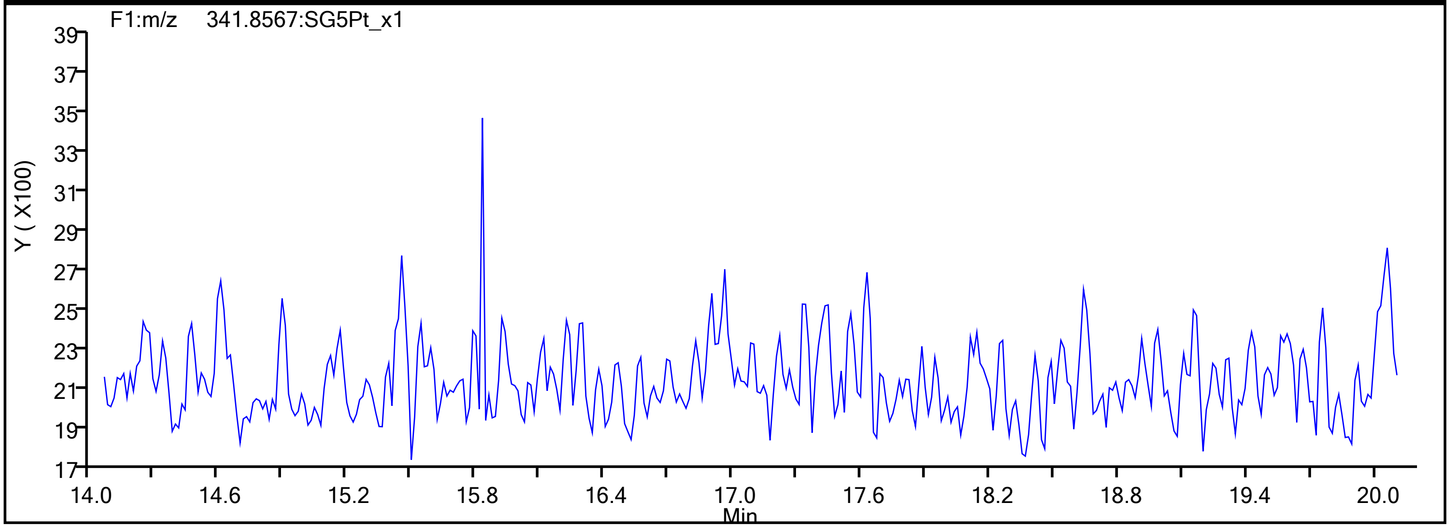

F1 PeCDFs Interference Mass

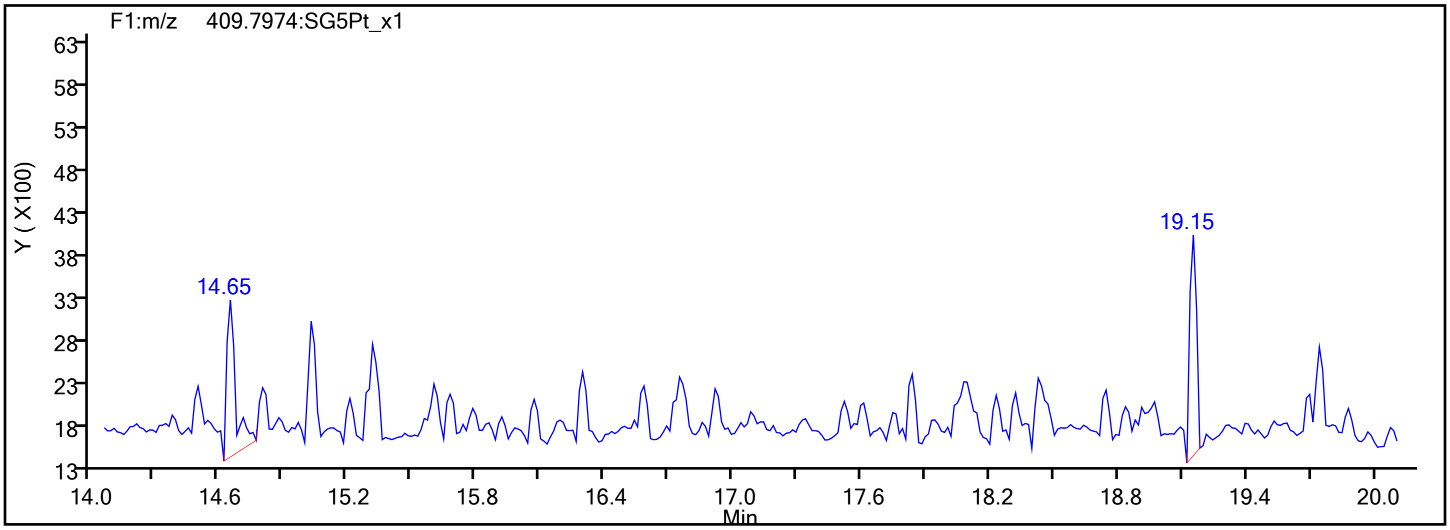

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

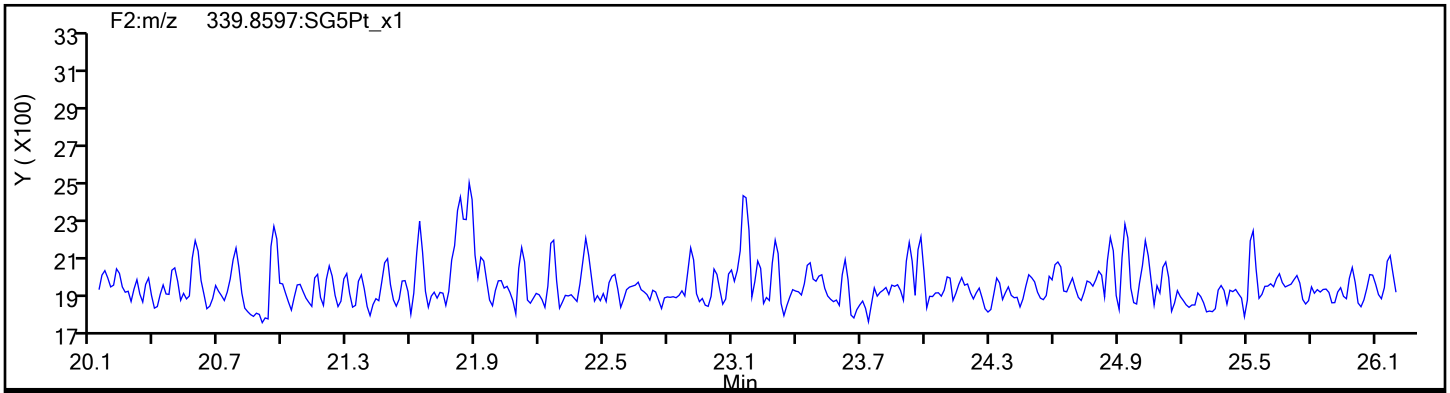

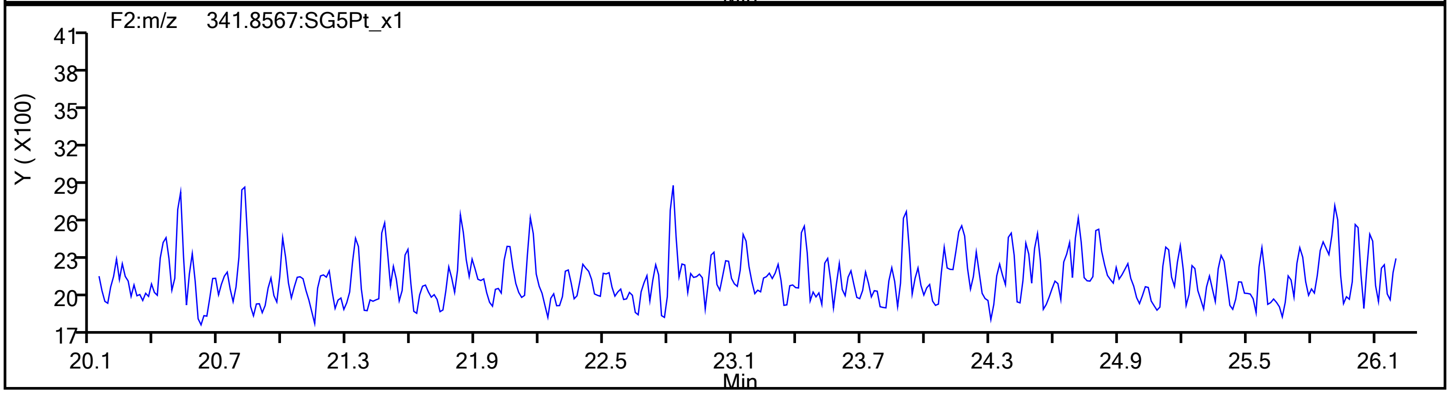

PeCDF Standards

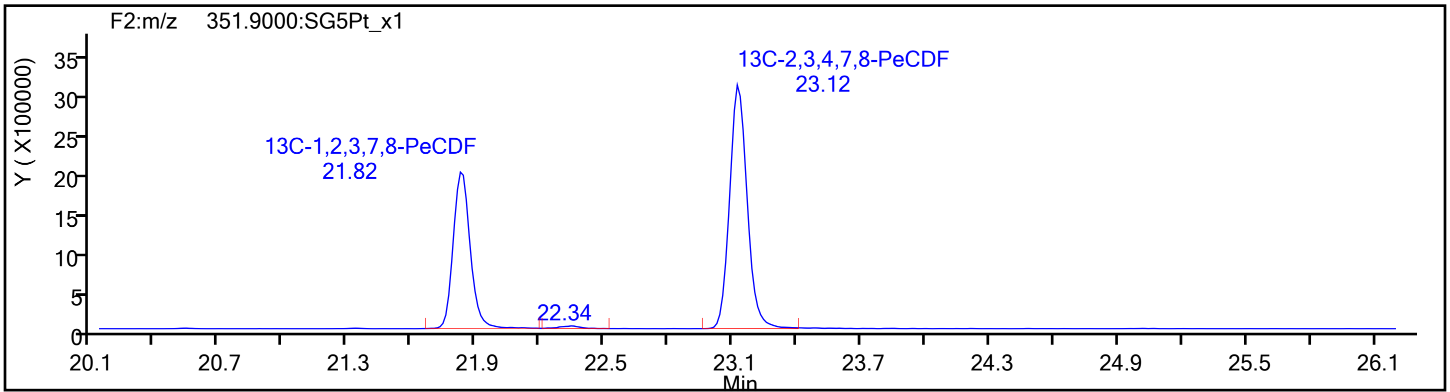

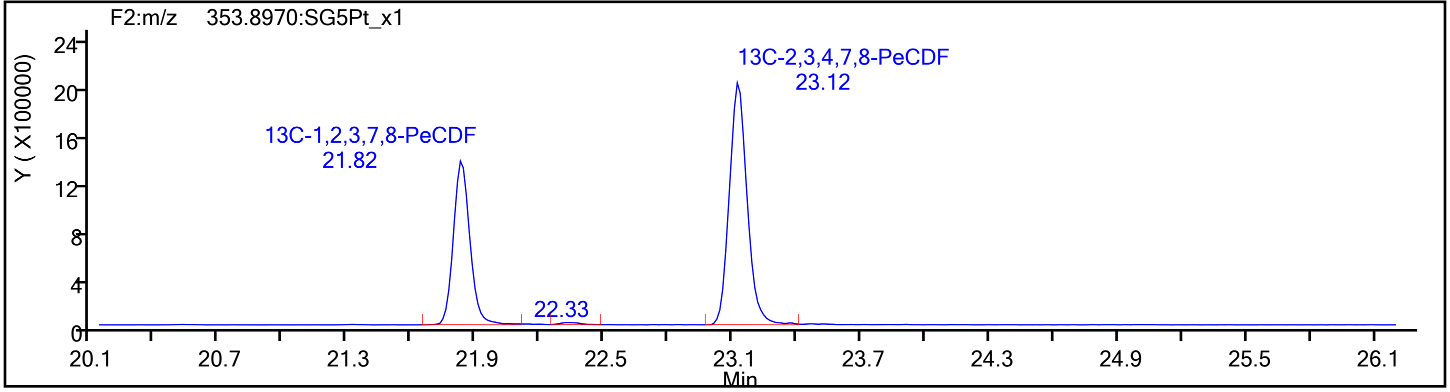

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

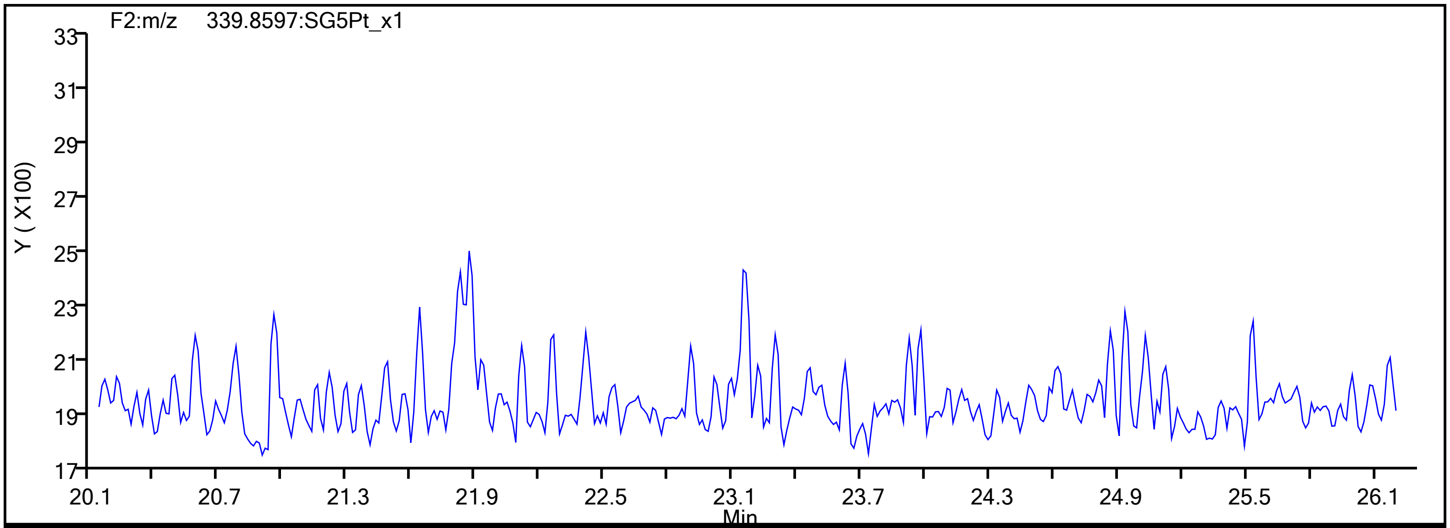

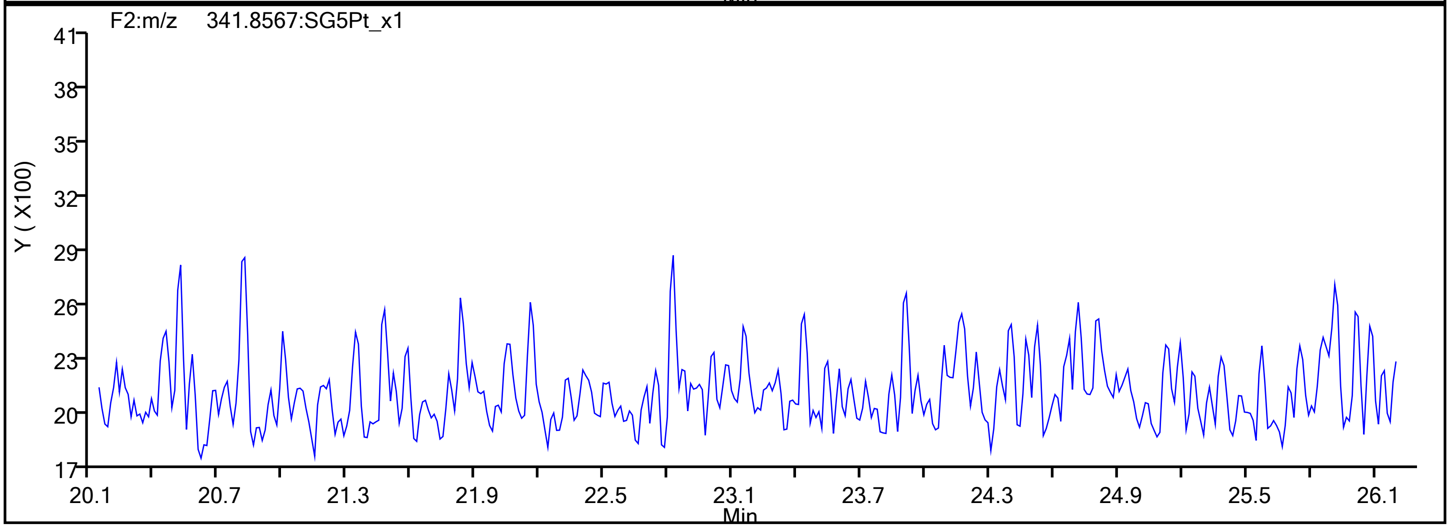

PeCDF Interference Mass

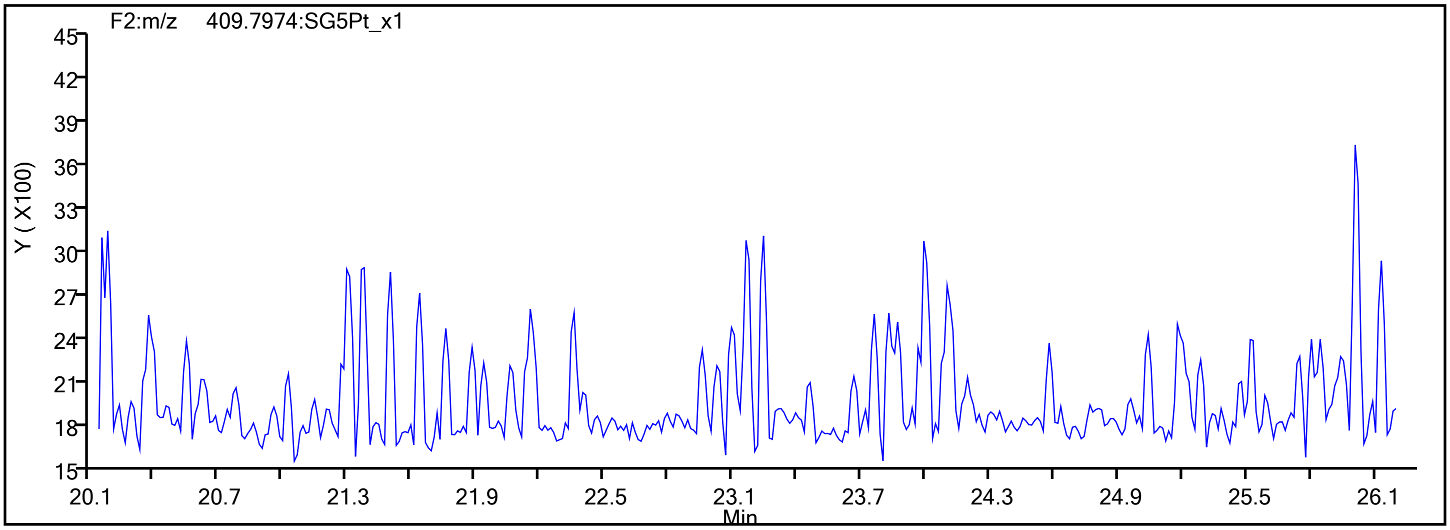

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

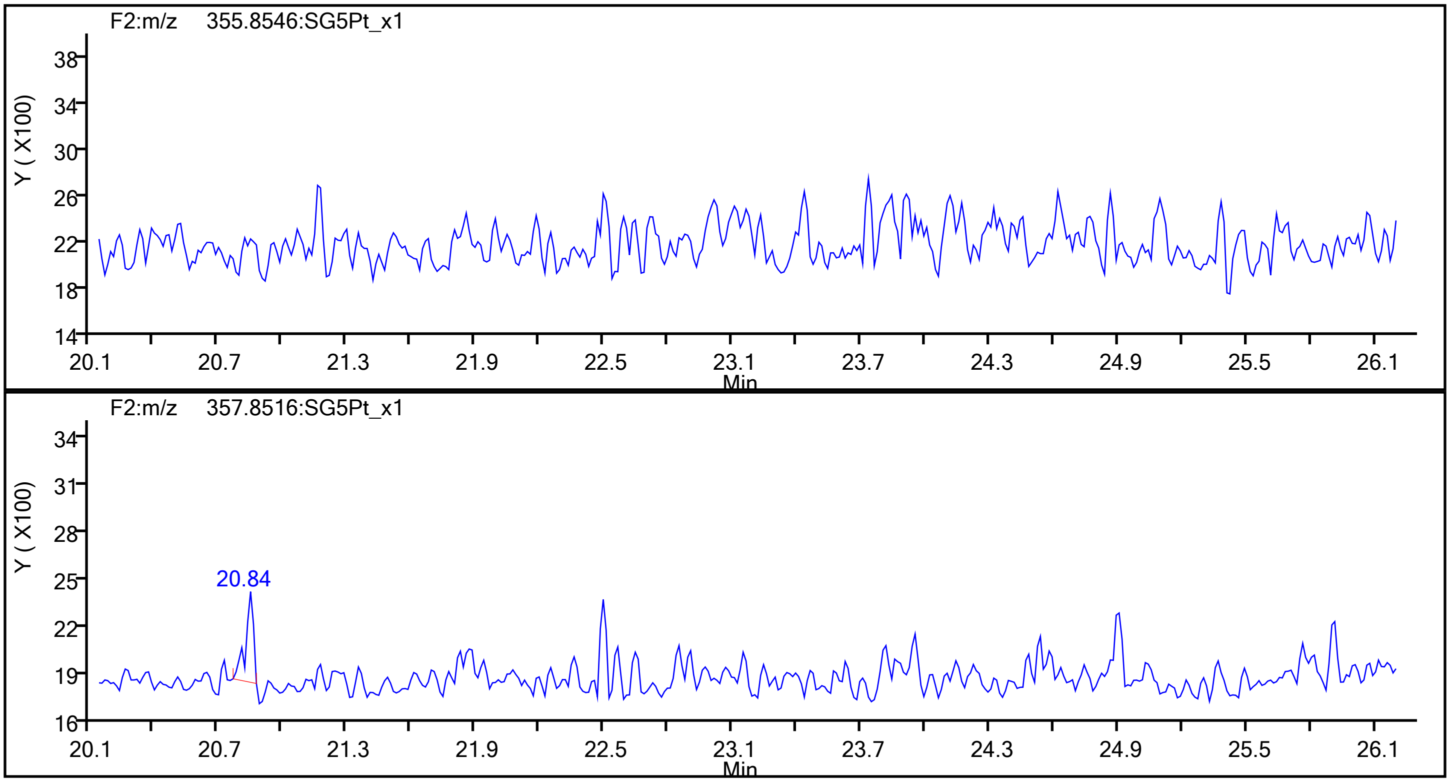

PeCDD Standards

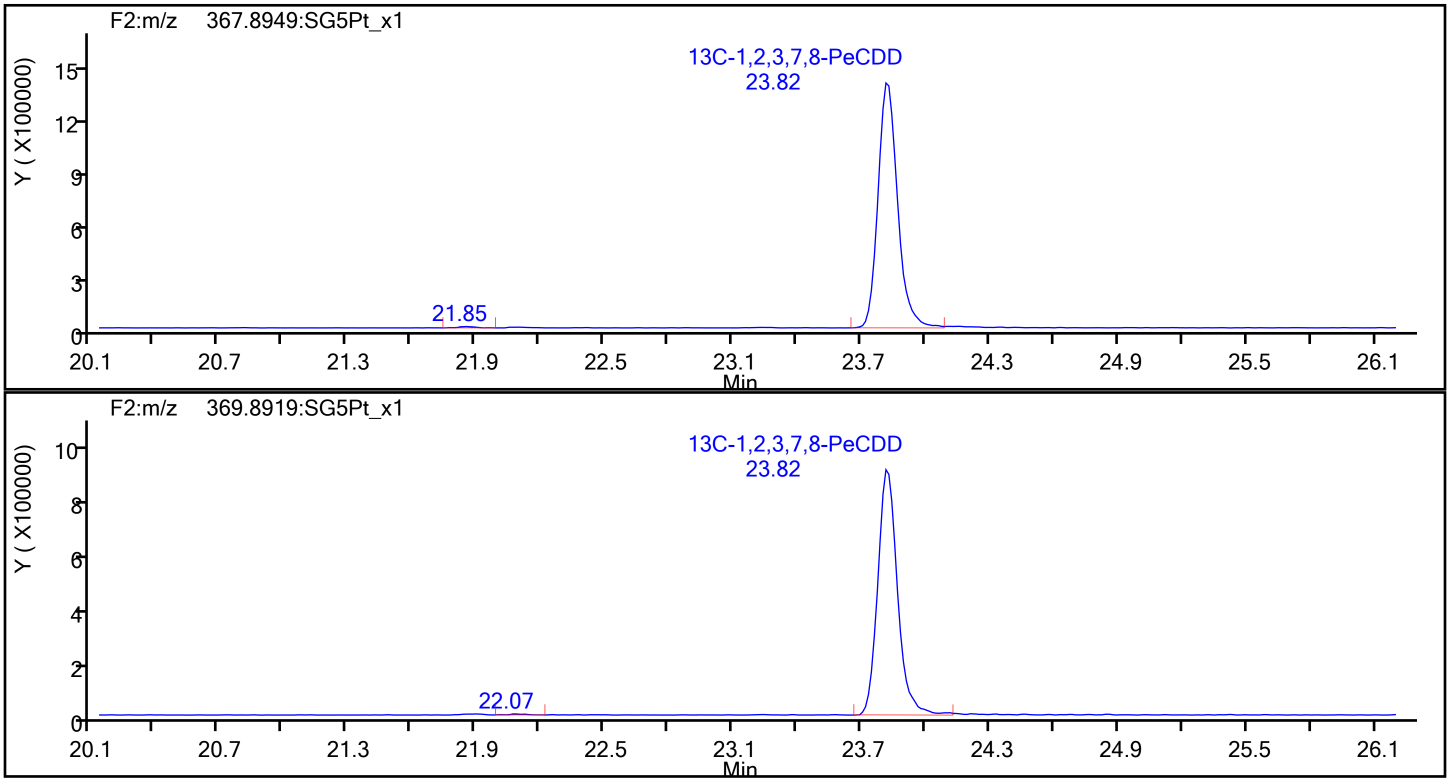

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d

Injection Date: 19-Aug-2020 12:57:55

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA/AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405028

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

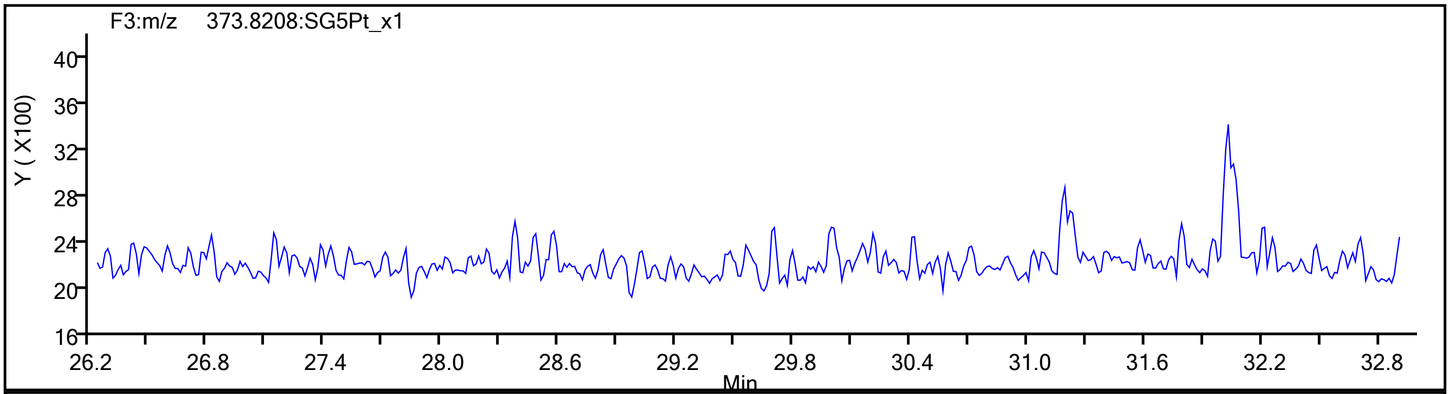

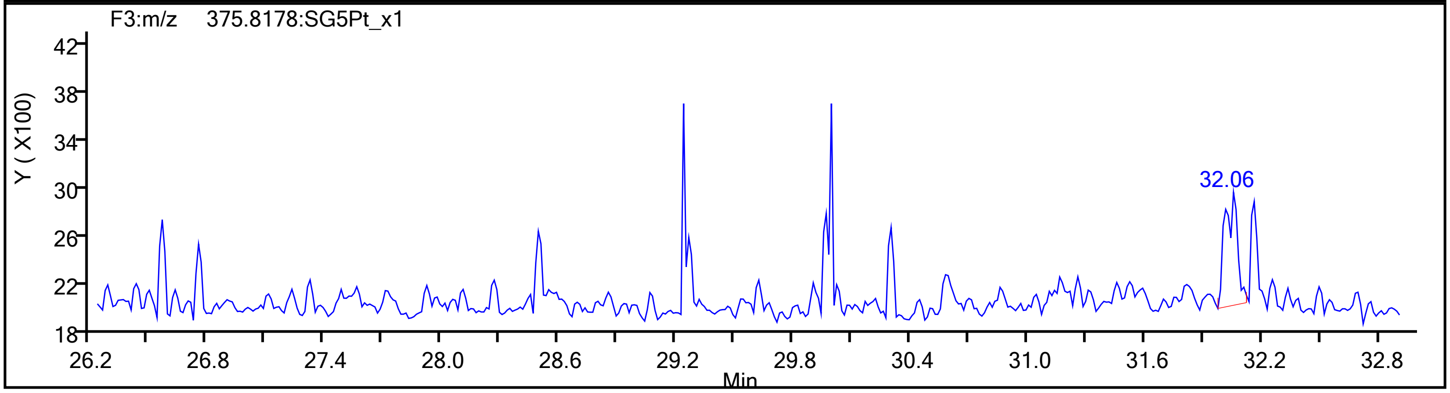

HxCDF Standards

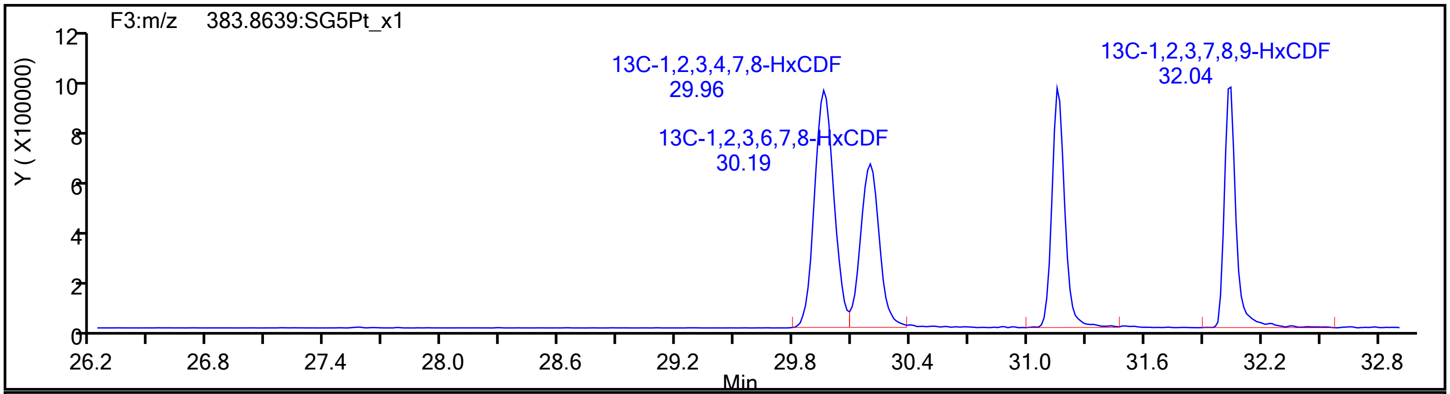

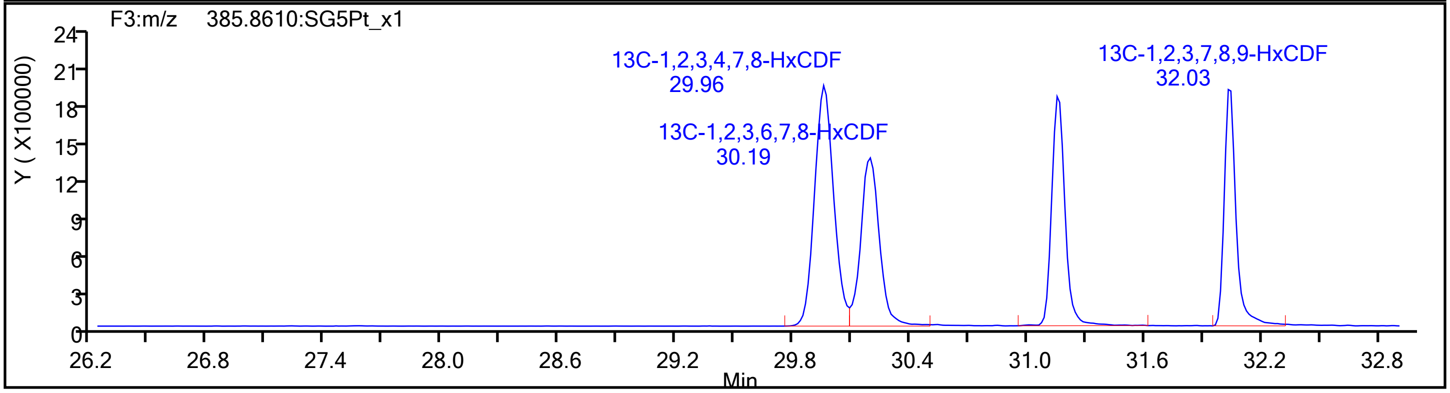

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

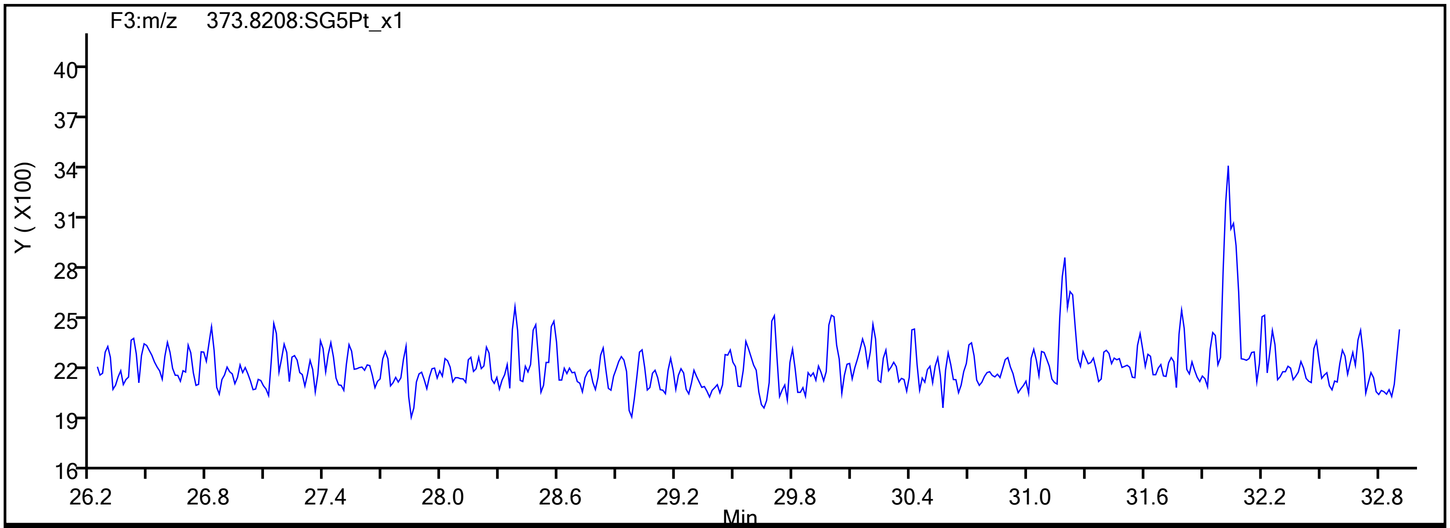

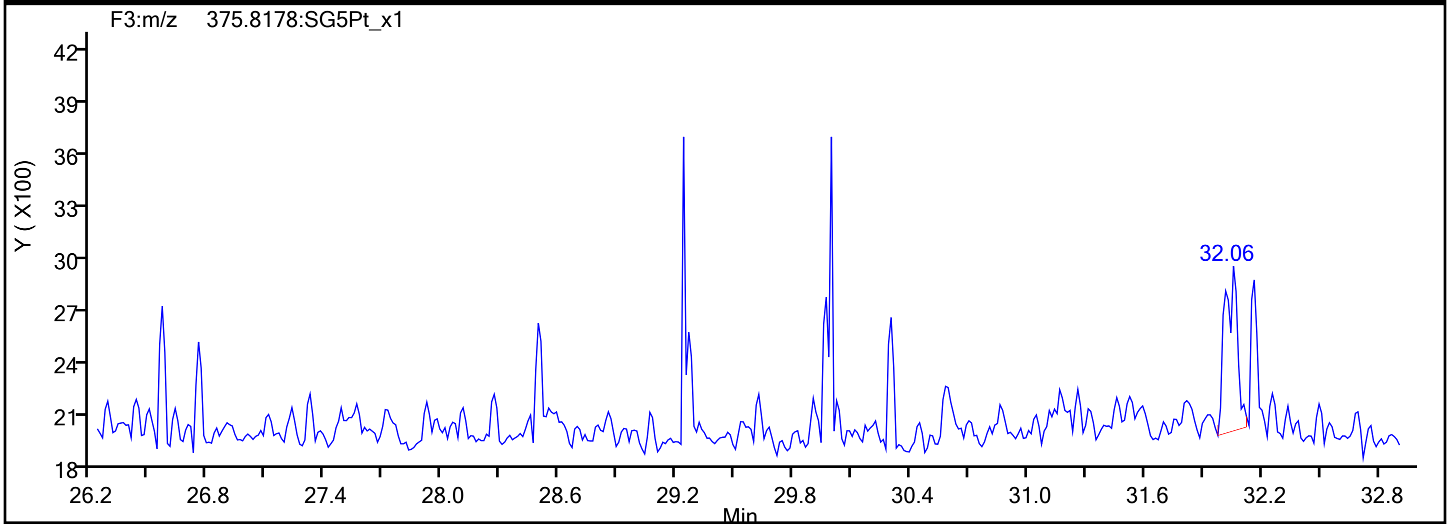

HxCDF Interference Mass

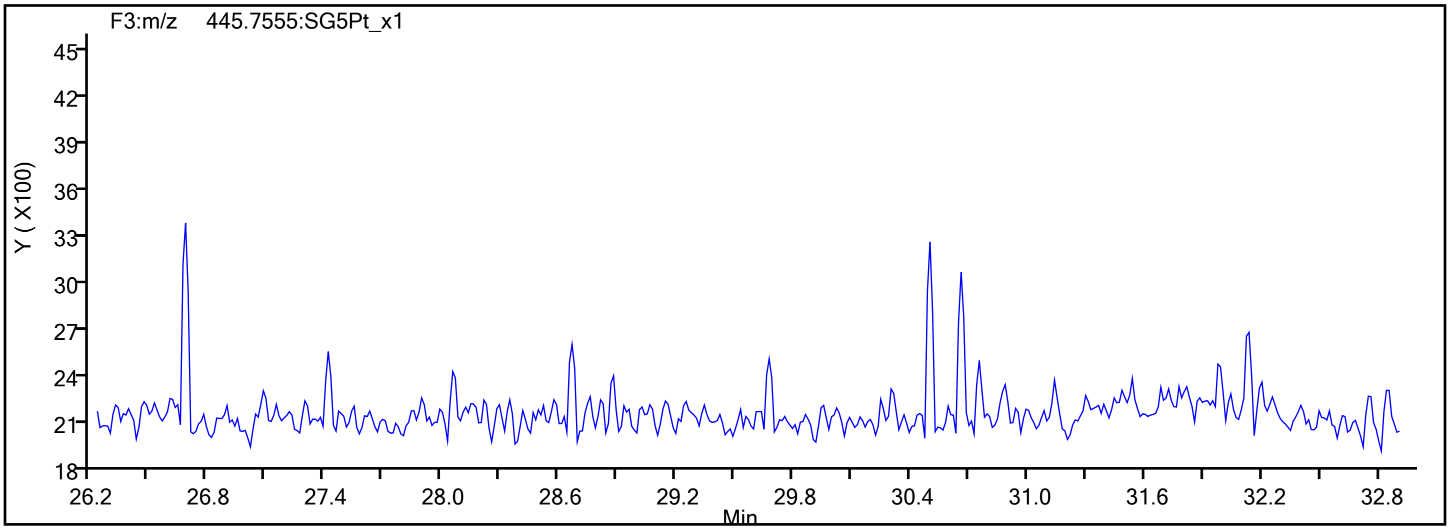

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

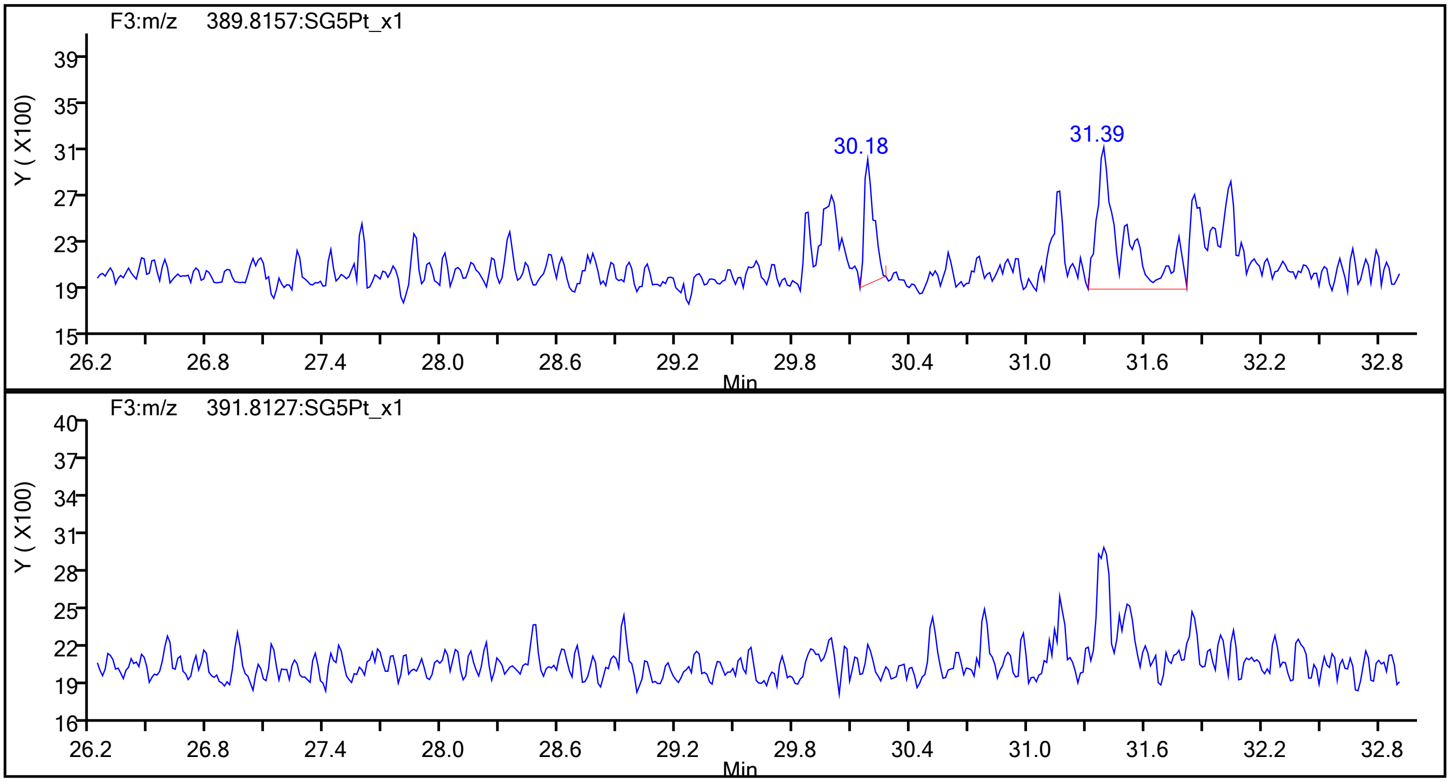

HxCDD Standards

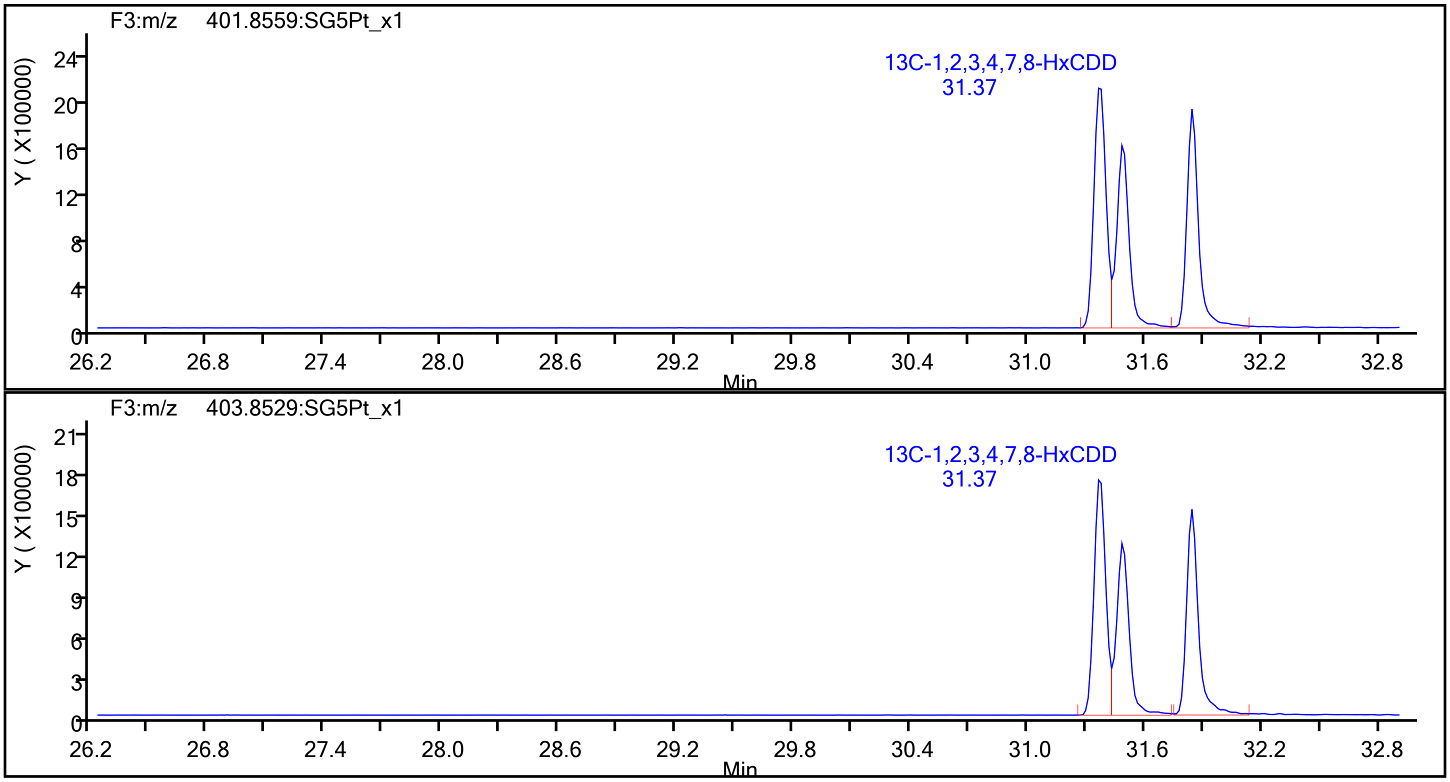

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d

Injection Date: 19-Aug-2020 12:57:55 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA/AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405028 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

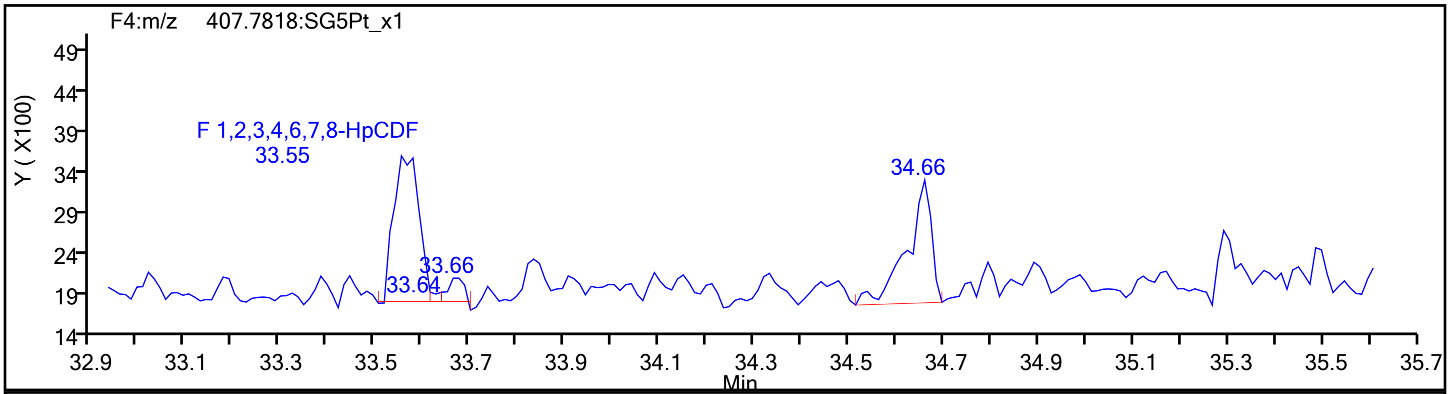

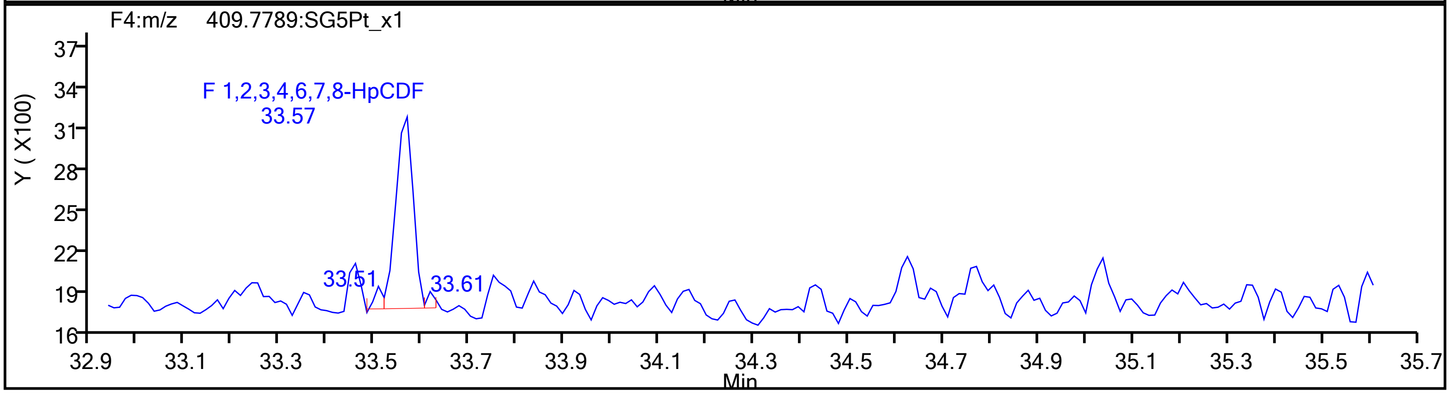

HpCDF Standards

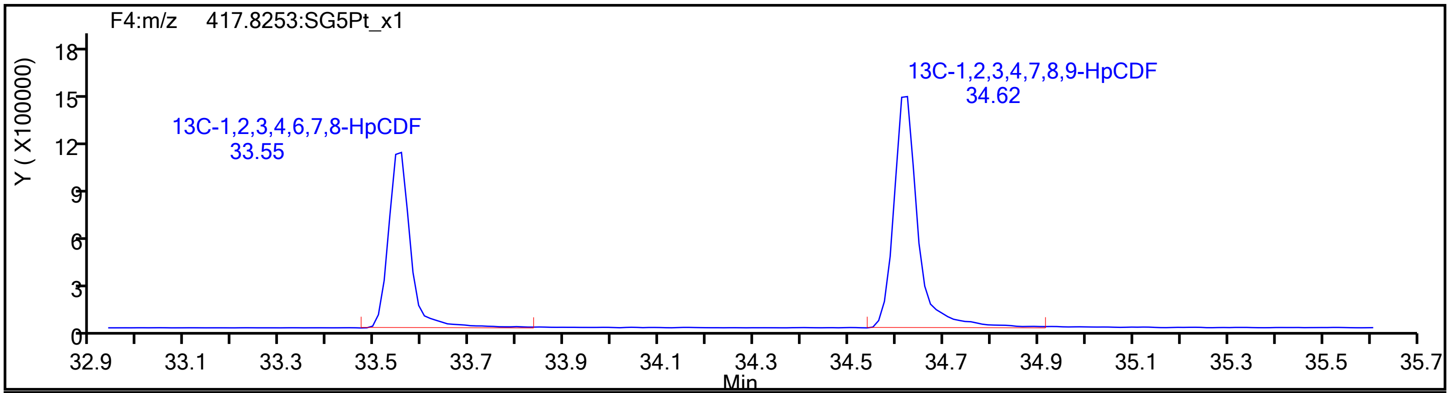

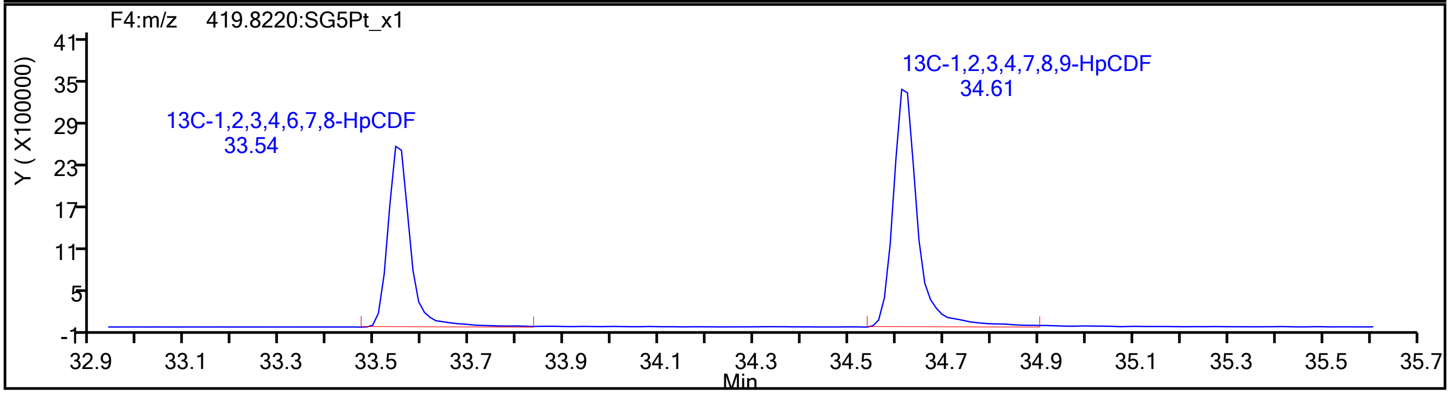

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

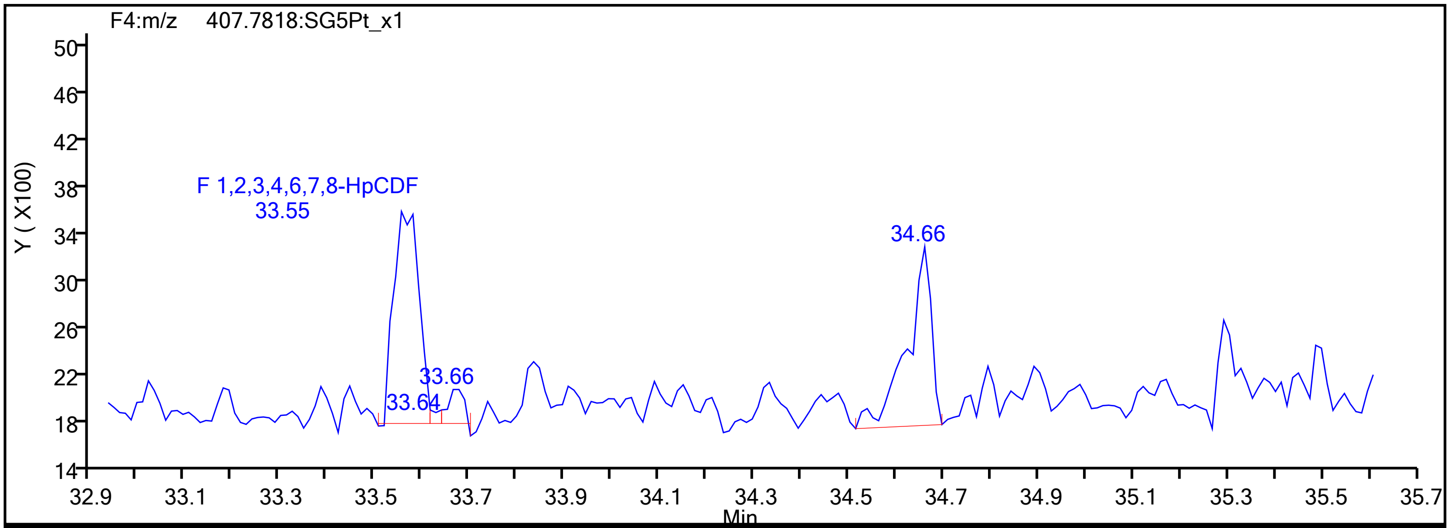

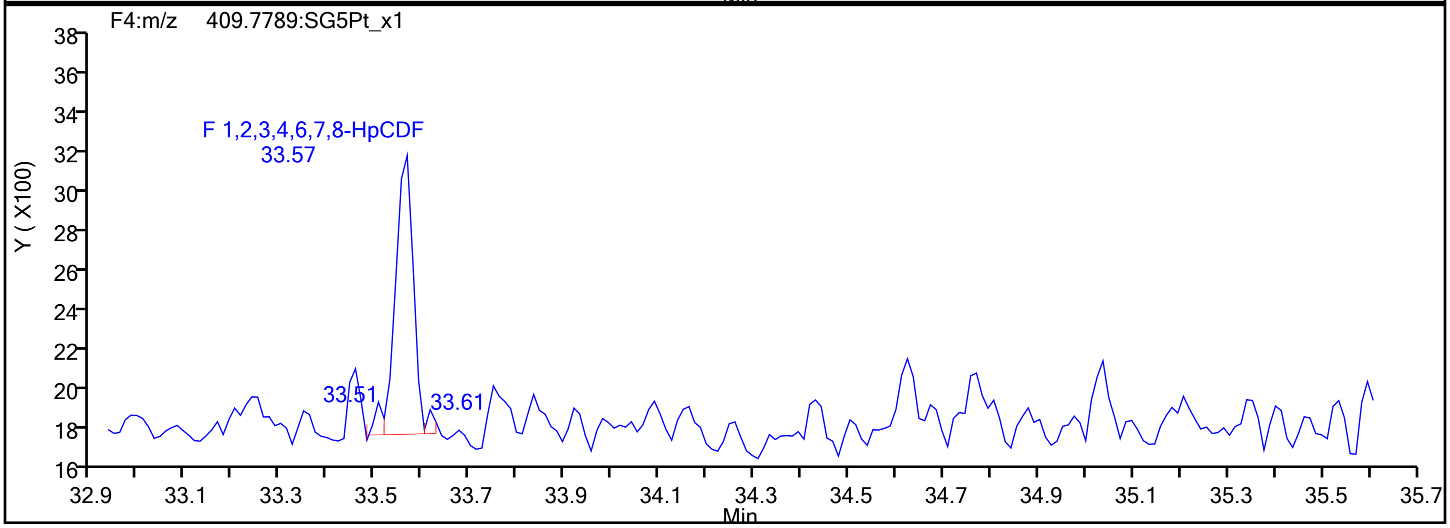

HpCDF Interference Mass

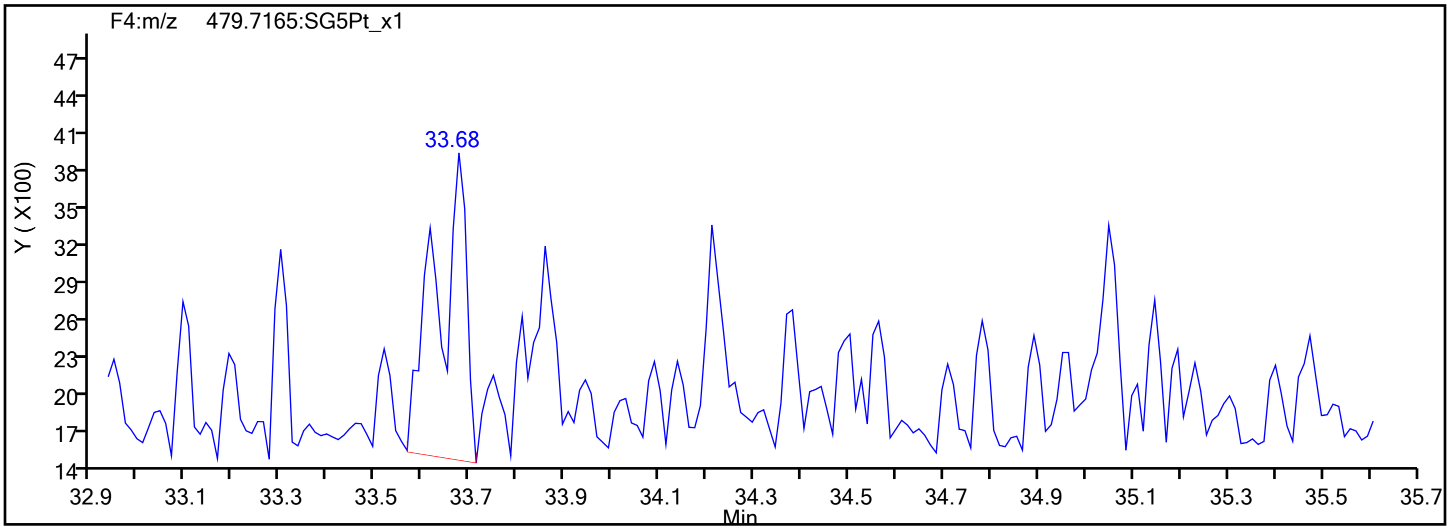

Report Date: 24-Aug-2020 10:43:10
Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

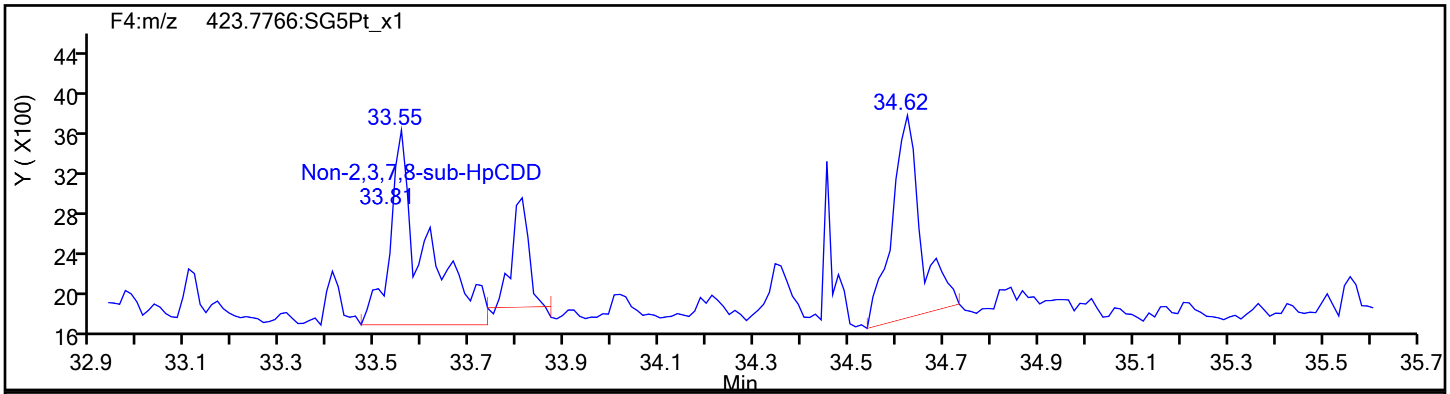

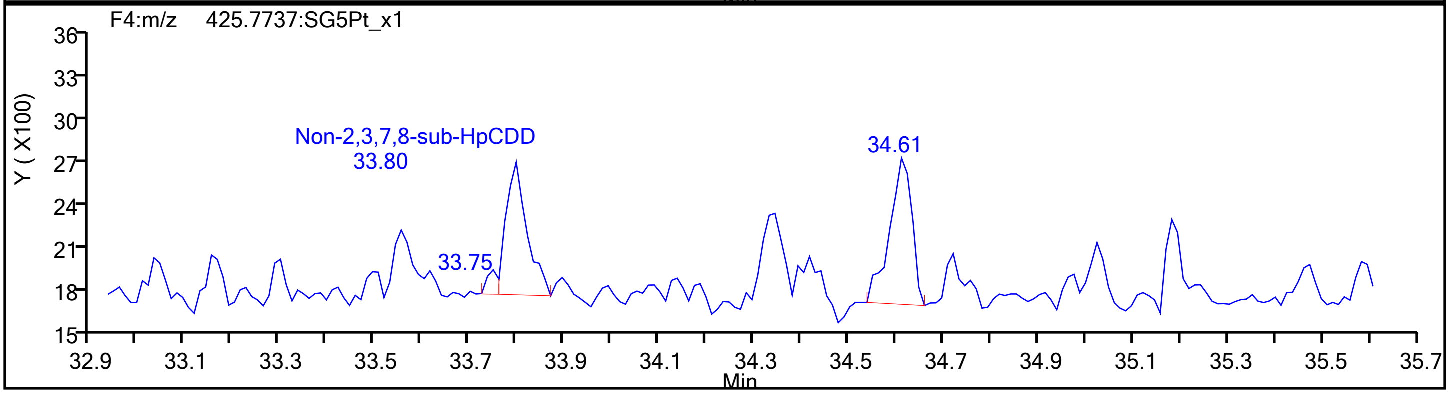

HpCDD Standards

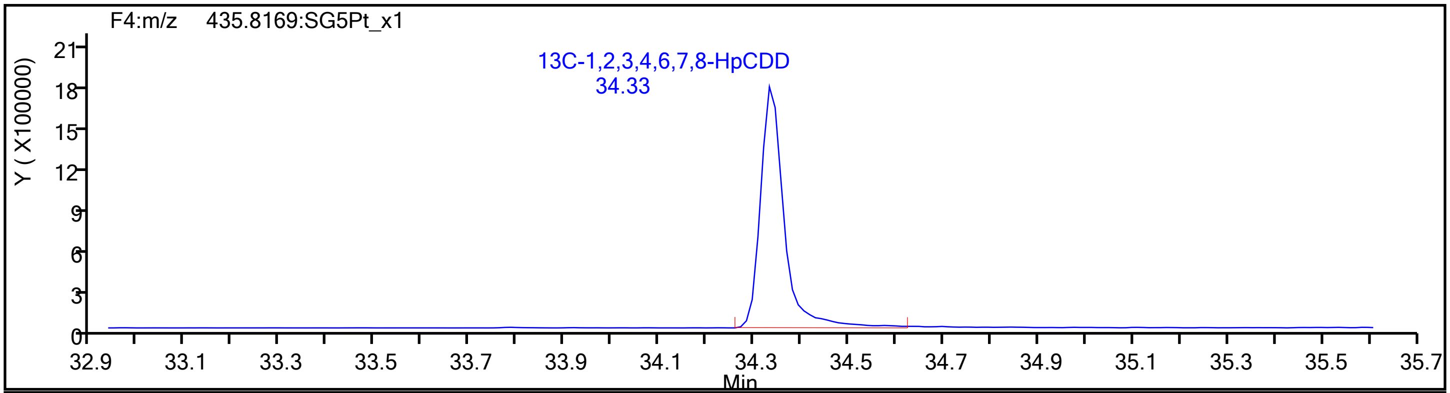

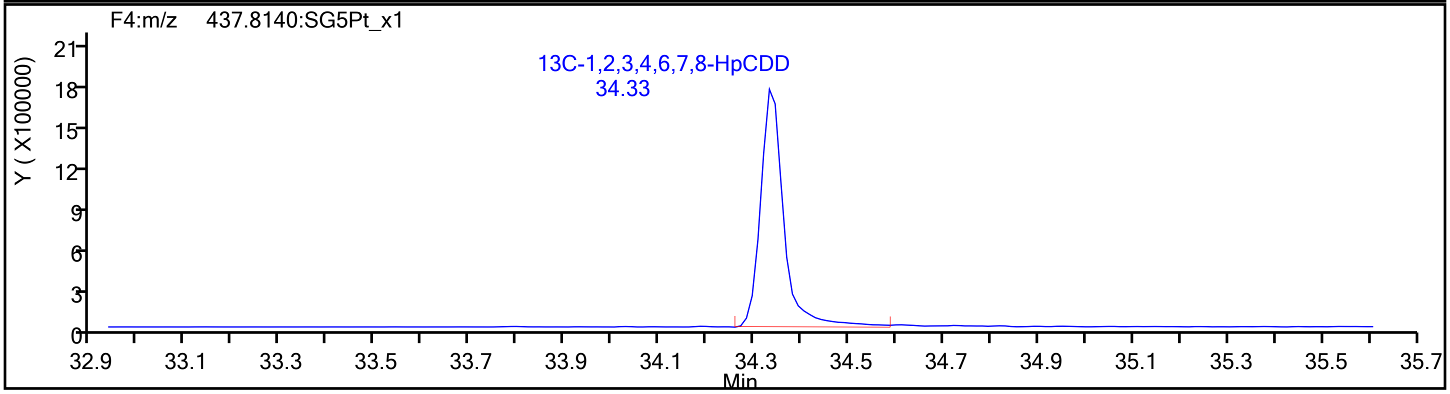

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

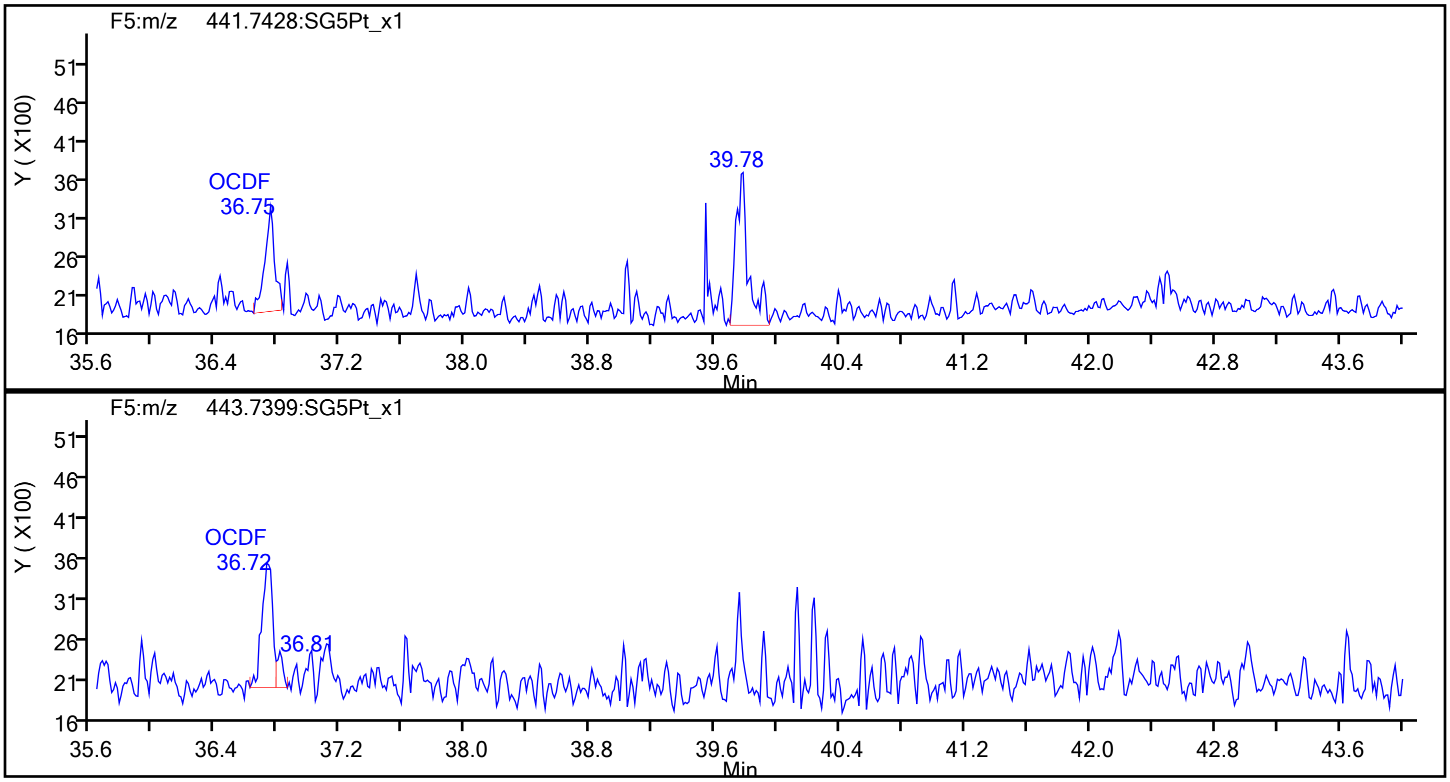

OCDF Standards

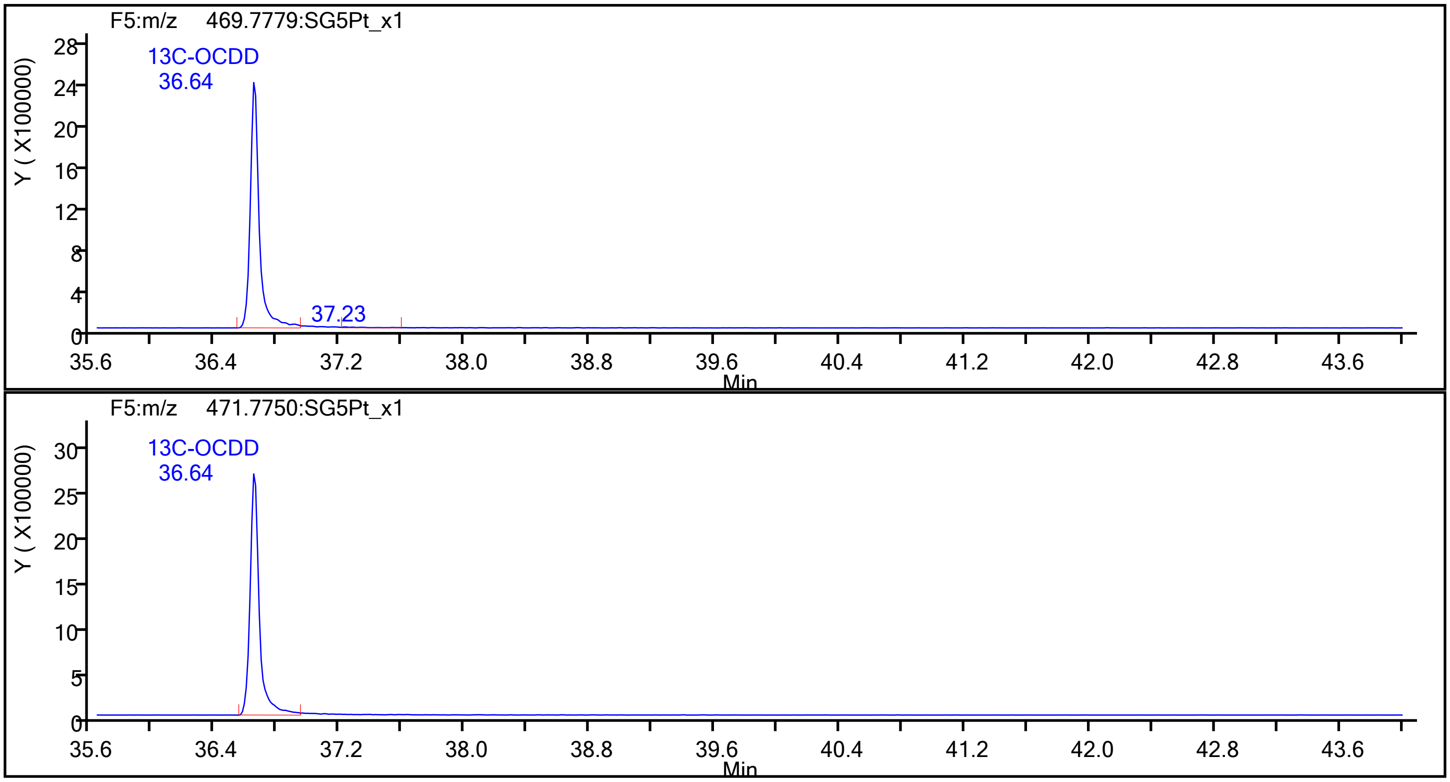

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

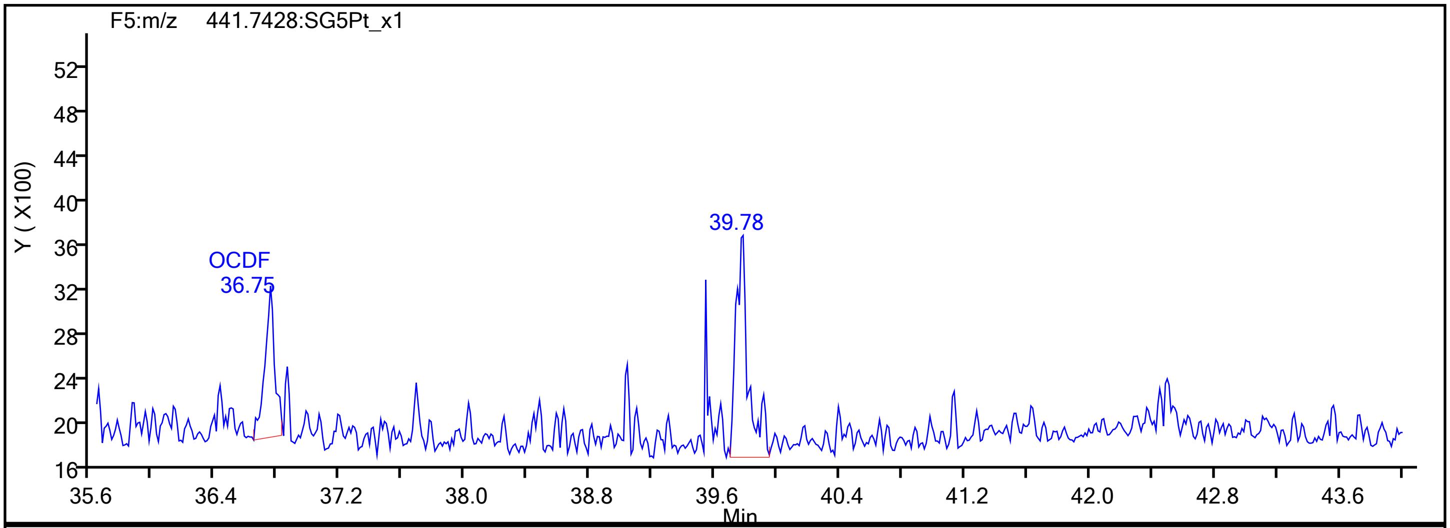

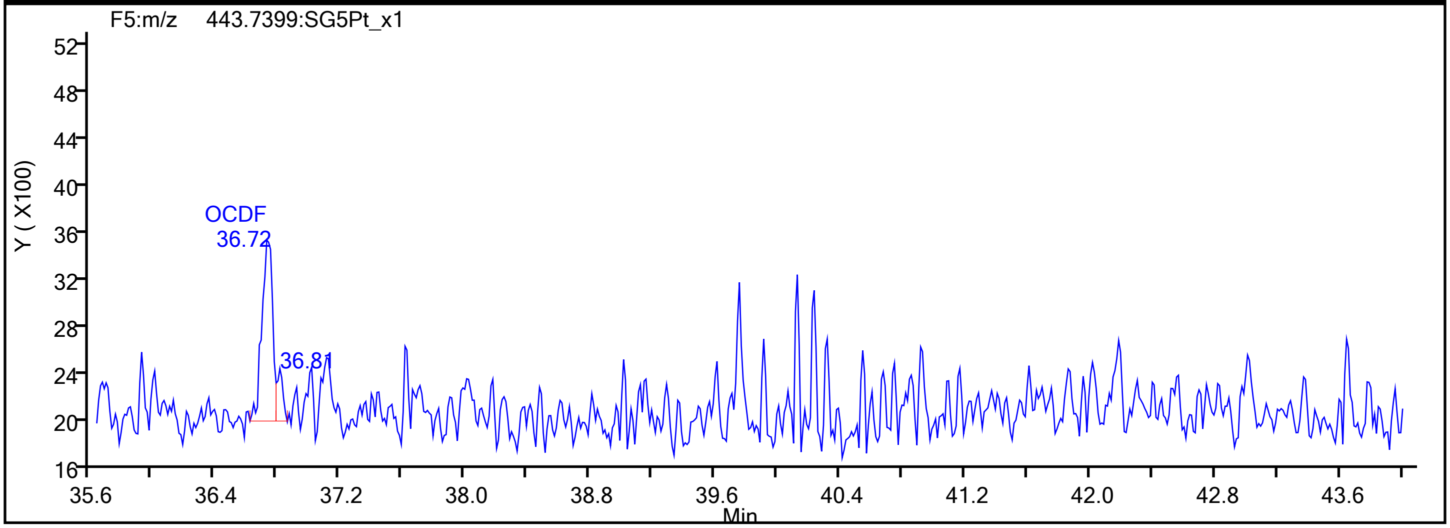

OCDF Interference Mass

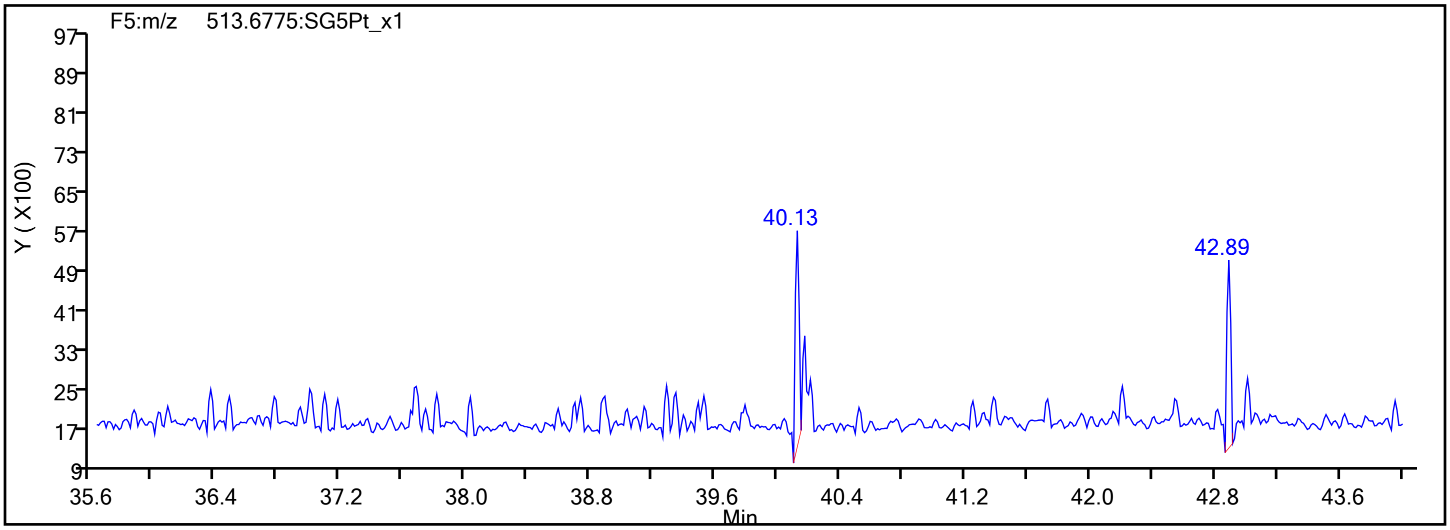

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

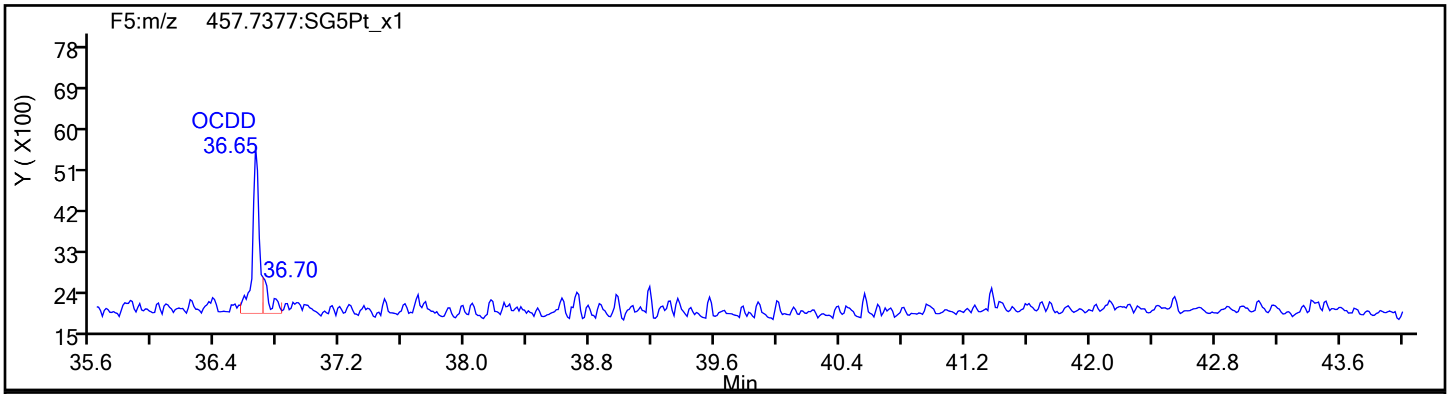

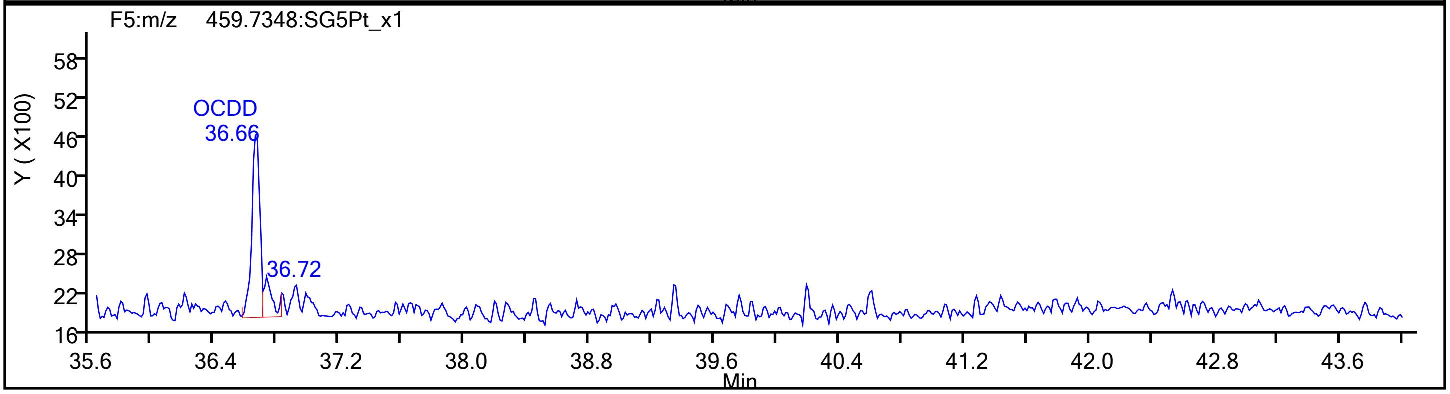

OCDD Standards

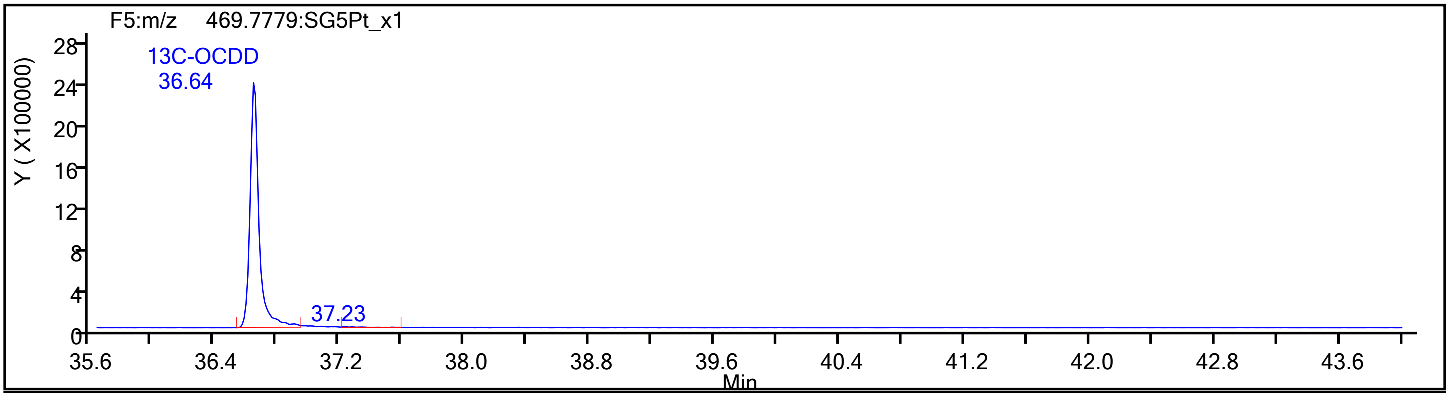

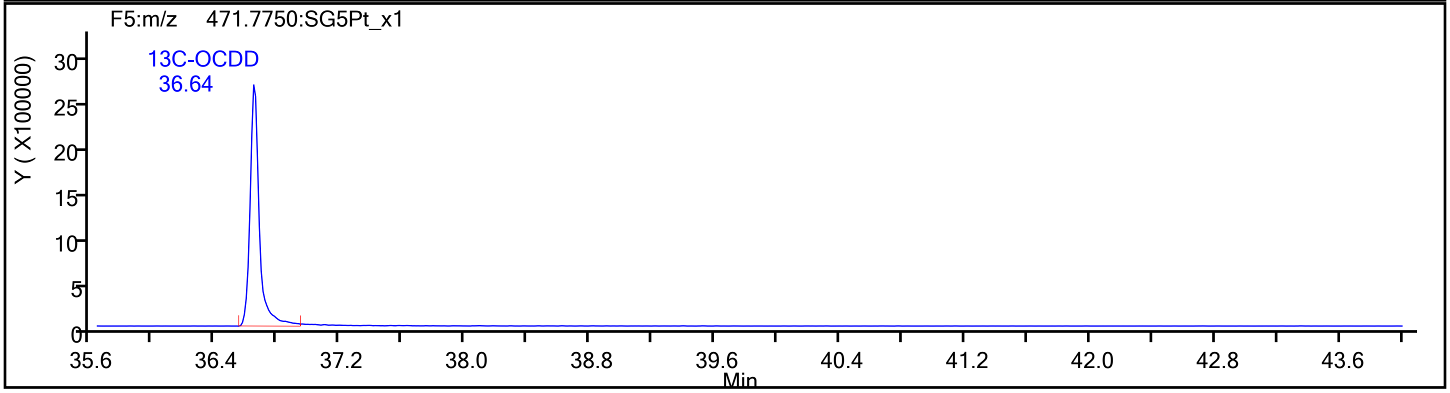

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d
Injection Date: 19-Aug-2020 12:57:55 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405028 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

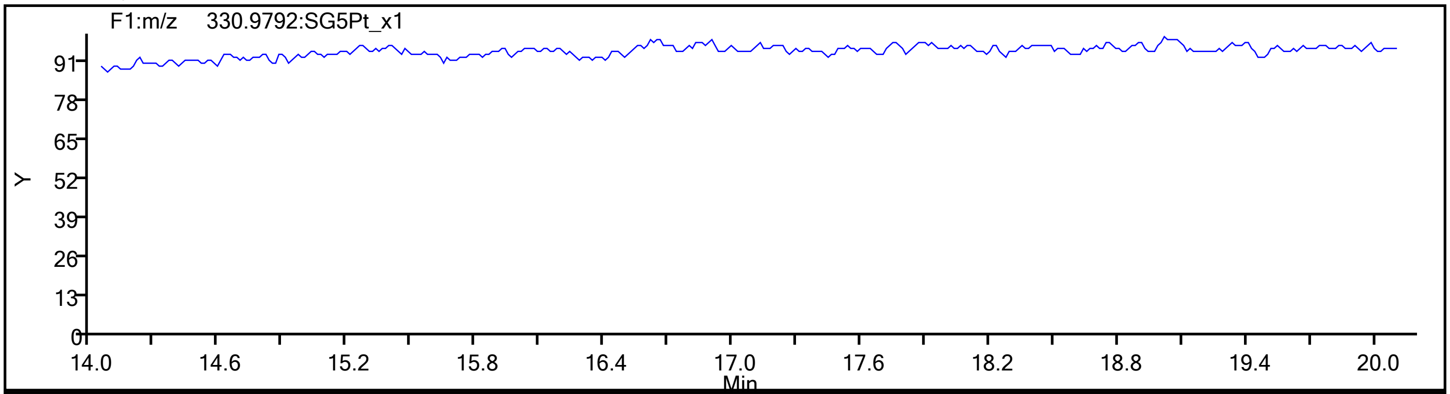

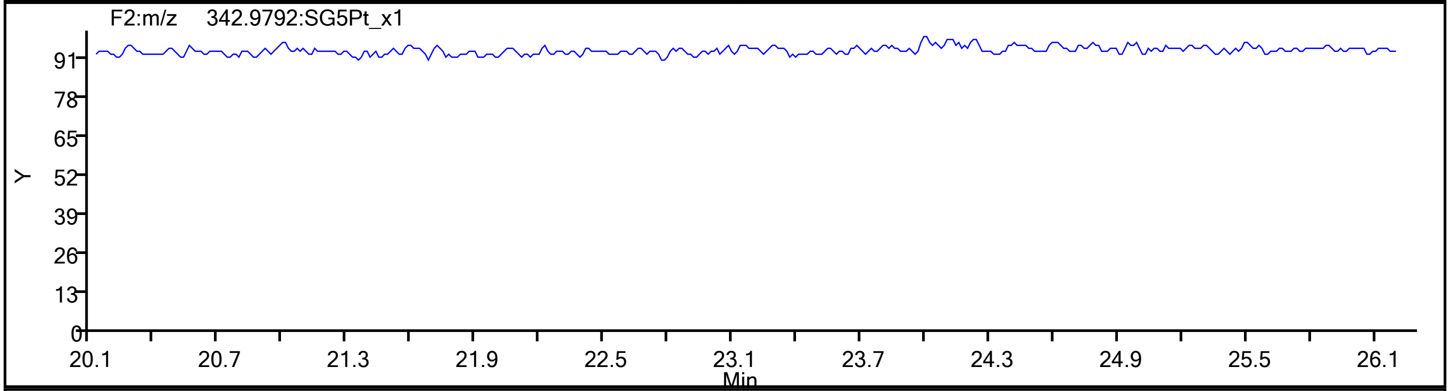

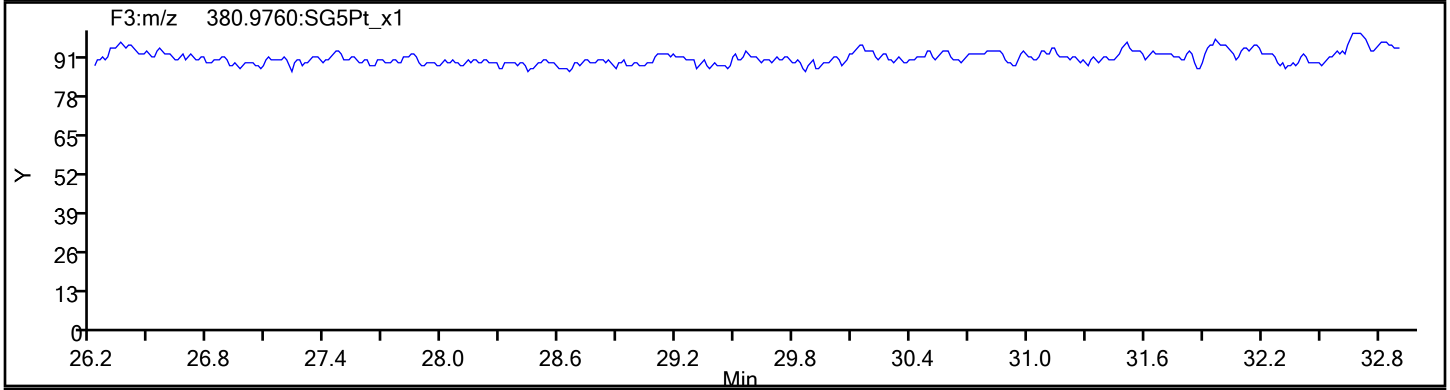

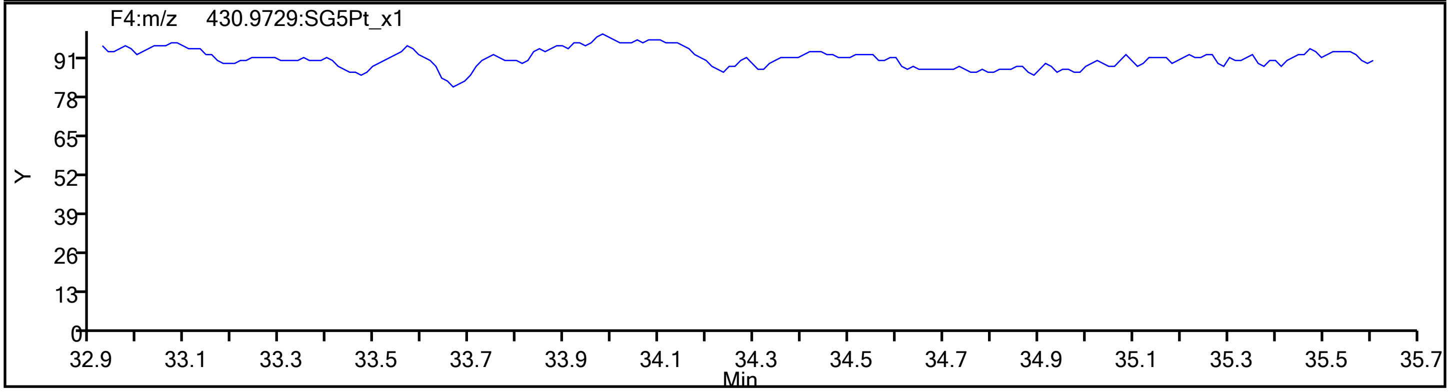

Report Date: 24-Aug-2020 10:43:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_4.d		
Injection Date:	19-Aug-2020 12:57:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405028	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

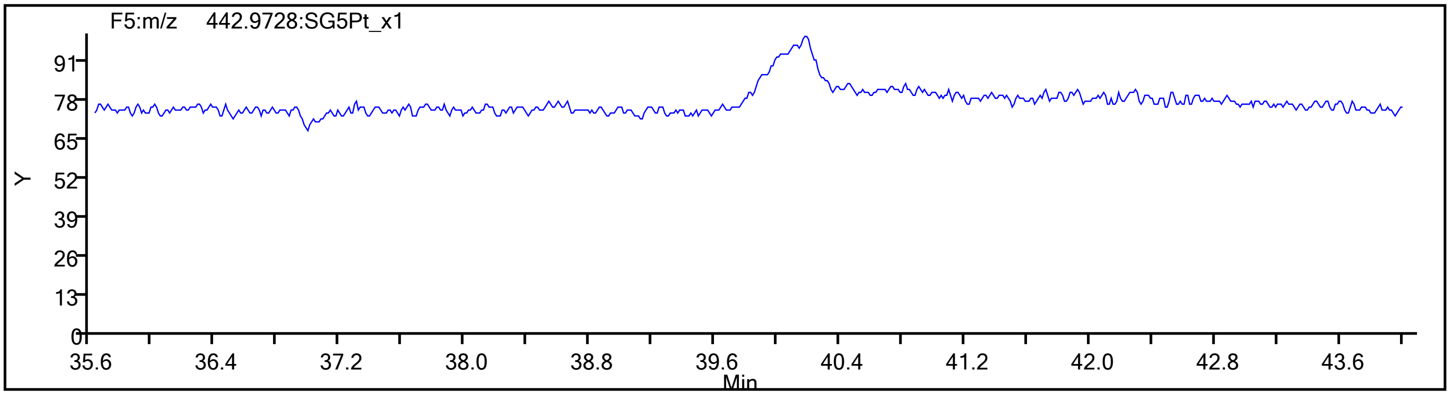

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-63525-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-404233/2-A
Matrix: Water	Lab File ID: 20au20dfs1_30.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 08/17/2020 08:45
Sample wt/vol: 1000(mL)	Date Analyzed: 08/21/2020 09:01
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 405471	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	218		10	1.1
51207-31-9	2,3,7,8-TCDF	222		10	0.37
40321-76-4	1,2,3,7,8-PeCDD	1120		50	1.2
57117-41-6	1,2,3,7,8-PeCDF	1070		50	3.8
57117-31-4	2,3,4,7,8-PeCDF	877		50	3.1
39227-28-6	1,2,3,4,7,8-HxCDD	809		50	1.4
57653-85-7	1,2,3,6,7,8-HxCDD	1030		50	1.7
19408-74-3	1,2,3,7,8,9-HxCDD	953		50	1.4
70648-26-9	1,2,3,4,7,8-HxCDF	831		50	3.2
57117-44-9	1,2,3,6,7,8-HxCDF	1020		50	4.0
72918-21-9	1,2,3,7,8,9-HxCDF	1010		50	3.4
60851-34-5	2,3,4,6,7,8-HxCDF	997		50	3.4
35822-46-9	1,2,3,4,6,7,8-HpCDD	1050		50	2.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	1020		50	4.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	803		50	3.5
3268-87-9	OCDD	1920		100	1.5
39001-02-0	OCDF	2070		100	1.8
41903-57-5	Total TCDD	218		10	1.1
30402-14-3	Total TCDF	222		10	0.37
36088-22-9	Total PeCDD	1120		50	1.2
30402-15-4	Total PeCDF	1960		50	3.5
34465-46-8	Total HxCDD	2800		50	1.5
55684-94-1	Total HxCDF	3860		50	3.5
37871-00-4	Total HpCDD	1050		50	2.3
38998-75-3	Total HpCDF	1830		50	3.9

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-404233/2-A

Matrix: Water Lab File ID: 20au20dfs1_30.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1000(mL) Date Analyzed: 08/21/2020 09:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405471 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		20-175
89059-46-1	13C-2,3,7,8-TCDF	97		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	83		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	98		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	125		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	95		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	107		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	86		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	96		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	90		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	71		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	82		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	110		20-186
114423-97-1	13C-OCDD	99		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	103		31-191

Report Date: 24-Aug-2020 10:59:09 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Lims ID: LCS 320-404233/2-A
Client ID:
Sample Type: LCS
Inject. Date: 21-Aug-2020 09:01:00 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-404233/2-A RI
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Aug-2020 10:58:59 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1066

First Level Reviewer: shardaa Date: 24-Aug-2020 10:58:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.168	3765410	0.81	5.4E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.198	5457382	0.80	1.4977	96.8	96.8	0.2038	0.2038	96.77	
2,3,7,8-TCDF	20.233	685239	0.78	1.1312	11.1	11.1	0.0185	0.0185	111	
A Non-2,3,7,8-sub-TCDF	19.744						0.0185	0.1519		RQU
S Total TCDF					11.1	11.1	0.0185	0.0185		
$ 37Cl4-2,3,7,8-TCDD	21.598	1737681		1.1208	41.2	41.2	0.0303	0.0303	103	
D 13C-2,3,7,8-TCDD	21.572	3148277	0.79	1.0367	80.6	80.6	0.5982	0.5982	80.65	
2,3,7,8-TCDD	21.581	406893	0.78	1.1849	10.9	10.9	0.0546	0.0546	109	
A Non-2,3,7,8-sub-TCDD	20.594						0.0546	0.1325		RQU
S Total TCDD					10.9	10.9	0.0546	0.0546		
D 13C-1,2,3,7,8-PeCDF	27.189	4812479	1.60	1.3057	97.9	97.9	0.3975	0.3975	97.88	
1,2,3,7,8-PeCDF	27.214	2846791	1.59	1.1060	53.5	53.5	0.1888	0.1888	107	
D 13C-2,3,4,7,8-PeCDF	28.730	7247560	1.61	1.5420	124.8	124.8	0.3366	0.3366	125	
2,3,4,7,8-PeCDF	28.746	2880398	1.59	0.9067	43.8	43.8	0.1569	0.1569	87.67	
A F1 PeCDFs	24.667						0.000559	0.000559		RQU
A Non-2,3,7,8-sub-PeCDF	28.186	27713	1.65	1.0063	0.4567	0.4567	0.1682	0.4567	0.00	
S Total PeCDF					97.8	97.8	0.1729	0.1729		
D 13C-1,2,3,7,8-PeCDD	29.547	2596343	1.76	0.8294	83.1	83.1	0.1588	0.1588	83.13	Ma
1,2,3,7,8-PeCDD	29.572	1611579	1.58	1.1062	56.1	56.1	0.0584	0.0584	112	
A Non-2,3,7,8-sub-PeCDD	28.361						0.0584	0.0584		
S Total PeCDD					56.1	56.1	0.0584	0.0584		
D 13C-1,2,3,4,7,8-HxCDF	34.897	7730385	0.55	1.4619	107.4	107.4	0.2782	0.2782	107	
1,2,3,4,7,8-HxCDF	34.914	3239266	1.25	1.0087	41.5	41.5	0.1607	0.1607	83.09	
D 13C-1,2,3,6,7,8-HxCDF	35.057	5471012	0.54	1.2866	86.3	86.3	0.3161	0.3161	86.33	
1,2,3,6,7,8-HxCDF	35.083	3476290	1.27	1.2432	51.1	51.1	0.1979	0.1979	102	
D 13C-2,3,4,6,7,8-HxCDF	35.891	5328547	0.53	1.1988	90.2	90.2	0.3393	0.3393	90.24	
2,3,4,6,7,8-HxCDF	35.908	3382619	1.25	1.2736	49.8	49.8	0.1675	0.1675	99.69	
D 13C-1,2,3,7,8,9-HxCDF	36.775	5044909	0.54	1.0687	95.8	95.8	0.3806	0.3806	95.84	
1,2,3,7,8,9-HxCDF	36.792	3279713	1.26	1.2882	50.5	50.5	0.1685	0.1685	101	
A Non-2,3,7,8-sub-HxCDF	35.016						0.1702	0.1702		
S Total HxCDF					193.0	193.0	0.1737	0.1737		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.582	4925850	1.27	5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.102	5150629	1.30	1.1046	94.7	94.7	0.1588	0.1588	94.66	
1,2,3,4,7,8-HxCDD	36.110	1945689	1.27	0.9336	40.5	40.5	0.0683	0.0683	80.92	
D 13C-1,2,3,6,7,8-HxCDD	36.220	3820512	1.24	0.9871	78.6	78.6	0.1777	0.1777	78.57	
1,2,3,6,7,8-HxCDD	36.228	2133318	1.28	1.0802	51.7	51.7	0.0843	0.0843	103	
1,2,3,7,8,9-HxCDD	36.599	2261001	1.25	1.0574	47.7	47.7	0.0709	0.0709	95.34	
A Non-2,3,7,8-sub-HxCDD	35.382						0.0733	0.0733		
S Total HxCDD					139.8	139.8	0.0745	0.0745		
1,2,3,4,6,7,8-HpCDF	38.589	2979395	1.07	1.5957	51.2	51.2	0.2158	0.2158	102	
D 13C-1,2,3,4,6,7,8-HpCDF	38.580	3646615	0.49	0.9035	81.9	81.9	0.5661	0.5661	81.94	
1,2,3,4,7,8,9-HpCDF	39.835	2666106	1.06	1.1693	40.1	40.1	0.1737	0.1737	80.30	
D 13C-1,2,3,4,7,8,9-HpCDF	39.827	5679057	0.47	1.0480	110.0	110.0	0.4881	0.4881	110	
A Non-2,3,7,8-sub-HpCDF	39.205						0.1848	0.1848		
S Total HpCDF					91.4	91.4	0.1947	0.1947		
1,2,3,4,6,7,8-HpCDD	39.532	1821995	1.08	1.1150	52.5	52.5	0.1153	0.1153	105	
D 13C-1,2,3,4,6,7,8-HpCDD	39.524	3111588	1.08	0.8875	71.2	71.2	0.2293	0.2293	71.17	
A Non-2,3,7,8-sub-HpCDD	39.555						0.1153	0.1153		
S Total HpCDD					52.5	52.5	0.1153	0.1153		
D 13C-OCDD	41.978	6150784	0.93	0.6297	198.3	198.3	0.1836	0.1836	99.14	
OCDF	42.079	4719965	0.94	1.4809	103.6	103.6	0.0913	0.0913	104	
OCDD	41.986	3526010	0.90	1.1948	96.0	96.0	0.0768	0.0768	95.96	

QC Flag Legend

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 24-Aug-2020 10:59:09 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Lims ID: LCS 320-404233/2-A
Client ID:
Sample Type: LCS
Inject. Date: 21-Aug-2020 09:01:00 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-404233/2-A RI
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Aug-2020 10:58:59 Calib Date: 03-Jun-2020 18:06:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200603-96917.b\03jn20dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1066

First Level Reviewer: shardaa Date: 24-Aug-2020 10:58:59

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.168	21.213	-3		1688246	234625	507	1267	463		
333.9338	21.186	21.213	-2		2077164	294589	806	2015	365	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.198	20.246	-3	0.954	2432900	375473	369	922	1018		
317.9389	20.198	20.246	-3	0.954	3024482	423202	277	692	1528	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.233	20.306	-4	1.002	299502	41506	17	42	2442		
305.8987	20.233	20.306	-4	1.002	385737	55213	50	125	1104	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	19.744	19.744	0	0.978	6631	2191	17	42			
305.8987	19.744	19.744	0	0.978	14229	4101	50	125		0.47(0.65-0.89)	
	Empc Correction				9233	2990	50	125	0		
37Cl4-2,3,7,8-TCDD											
327.8847	21.598	21.597	0	1.020	1737681	234431	72	180	3256		
13C-2,3,7,8-TCDD											
331.9368	21.572	21.629	-3	1.019	1393779	185684	507	1267	366		
333.9338	21.572	21.629	-3	1.019	1754498	223655	806	2015	277	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.581	21.646	-4	1.000	178025	23282	94	235	248		
321.8936	21.598	21.646	-3	1.001	228868	31940	12	30	2662	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.594	20.594	0	0.955	4654	1247	94	235			
	Empc Correction				1710	469	94	235	0		
321.8936	20.594	20.594	0	0.955	2222	611	12	30		2.09(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.189	27.210	-1	1.284	2958233	445444	656	1640	679		
353.8970	27.206	27.210	0	1.285	1854246	275273	443	1107	621	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.214	27.235	-1	1.001	1747489	277556	354	885	784		
341.8567	27.214	27.235	-1	1.001	1099302	172206	248	620	694	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.730	28.743	-1	1.357	4467670	661772	656	1640	1009		
353.8970	28.738	28.743	0	1.358	2779890	395842	443	1107	894	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.746	28.769	-1	1.001	1769964	252019	354	885	712		
341.8567	28.755	28.769	-1	1.001	1110434	161796	248	620	652	1.59(1.32-1.78)	
A F1 PeCDFs											U
339.8597	23.951	24.667	-43	0.881	403	161	1	2	161		
341.8567	23.977	24.667	-41	0.882	139	69	1	2	69	2.90(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.837	28.186	-21	1.024	17257	2694	354	885	8		
341.8567	27.820	28.186	-22	1.023	10456	1488	248	620	6	1.65(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											Ma
367.8949	29.547	29.569	-1	1.396	1654213	243192	177	442	1374		M
369.8919	29.538	29.569	-2	1.395	942130	136095	102	255	1334	1.76(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.572	29.594	-1	1.001	987883	136579	71	177	1924		
357.8516	29.580	29.594	-1	1.001	623696	84321	27	67	3123	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.361						71	177			
357.8516	28.361						27	67			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.897	34.905	0	0.954	2753175	577796	767	1917	753		
385.8610	34.897	34.905	0	0.954	4977210	1064241	1185	2962	898	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.914	34.930	-1	1.000	1796491	381270	599	1497	637		
375.8178	34.914	34.930	-1	1.000	1442775	299422	466	1165	643	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.057	35.073	-1	0.958	1927371	393254	767	1917	513		
385.8610	35.057	35.073	-1	0.958	3543641	688841	1185	2962	581	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.083	35.090	0	1.001	1948141	391260	599	1497	653		
375.8178	35.083	35.090	0	1.001	1528149	303420	466	1165	651	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.891	35.899	0	0.981	1855223	439095	767	1917	572		
385.8610	35.891	35.899	0	0.981	3473324	808620	1185	2962	682	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.908	35.915	0	1.000	1880340	441869	599	1497	738		
375.8178	35.908	35.915	0	1.000	1502279	357273	466	1165	767	1.25(1.05-1.43)	

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.775	36.791	-1	1.005	1772506	421563	767	1917	550		
385.8610	36.775	36.791	-1	1.005	3272403	804566	1185	2962	679	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.792	36.800	0	1.000	1828723	436805	599	1497	729		
375.8178	36.792	36.800	0	1.000	1450990	353539	466	1165	759	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.016						599	1497			
375.8178	35.016						466	1165			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.582	36.589	0		2751325	671001	479	1197	1401		
403.8529	36.582	36.589	0		2174525	528799	363	907	1457	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.102	36.109	0	0.987	2911014	746017	479	1197	1557		
403.8529	36.093	36.109	-1	0.987	2239615	567390	363	907	1563	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.110	36.126	-1	1.000	1087918	283414	176	440	1610		
391.8127	36.110	36.126	-1	1.000	857771	220857	159	397	1389	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.220	36.227	0	0.990	2118637	517433	479	1197	1080		
403.8529	36.211	36.227	-1	0.990	1701875	401382	363	907	1106	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.228	36.235	0	1.000	1199028	280122	176	440	1592		
391.8127	36.228	36.235	0	1.000	934290	219534	159	397	1381	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.599	36.606	0	1.014	1257064	308950	176	440	1755		
391.8127	36.590	36.606	-1	1.014	1003937	252272	159	397	1587	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.382						176	440			
391.8127	35.382						159	397			
1,2,3,4,6,7,8-HpCDF											
407.7817	38.589	38.586	0	1.000	1536760	440452	755	1887	583		
409.7788	38.589	38.586	0	1.000	1442635	432086	750	1875	576	1.07(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.580	38.586	0	1.055	1202377	362534	887	2217	409		
419.8220	38.580	38.586	0	1.055	2444238	730139	1568	3920	466	0.49(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.835	39.824	1	1.000	1369099	441687	755	1887	585		
409.7788	39.835	39.824	1	1.000	1297007	421795	750	1875	562	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.827	39.833	0	1.089	1804303	597315	887	2217	673		
419.8220	39.827	39.833	0	1.089	3874754	1255232	1568	3920	801	0.47(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.205						755	1887			
409.7788	39.205						750	1875			

Report Date: 24-Aug-2020 10:59:09 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.532	39.520	1	1.000	946432	306356	238	595	1287		
425.7737	39.532	39.520	1	1.000	875563	281461	275	687	1023	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.524	39.529	0	1.080	1615013	513539	559	1397	919		
437.8140	39.524	39.529	0	1.080	1496575	483332	418	1045	1156	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.555						238	595			
425.7737	39.555						275	687			
13C-OCDD											
469.7780	41.978	41.991	-1	1.148	2971426	826363	182	455	4540		
471.7750	41.978	41.991	-1	1.148	3179358	885191	373	932	2373	0.93(0.76-1.02)	
OCDF											
441.7428	42.079	42.084	0	1.002	2282329	640764	200	500	3204		
443.7399	42.079	42.084	0	1.002	2437636	698249	263	657	2655	0.94(0.76-1.02)	
OCDD											
457.7377	41.986	41.991	0	1.000	1669633	473904	165	412	2872		
459.7348	41.986	41.991	0	1.000	1856377	521471	149	372	3500	0.90(0.76-1.02)	

QC Flag Legend

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Lims ID: LCS 320-404233/2-A
Client ID:
Inject. Date: 21-Aug-2020 09:01:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 405471 Lims Sample ID: 27

Non-2,3,7,8-sub-TCDF, RT: 19.744

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.131	D 13C-2,3,7,8-TCDF	100.000	5457382	798675

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.131		100.000	5457382	798675

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
20.422	2562	815	6816	1786	0.1519	0.38	RQ
20.422	2562	815	3327	1058			Empc Correction
20.559	1562	538	2409	982	0.0643	0.65	
20.636	1924	592	2740	631	0.0755	0.70	
20.696	583	246	2264	702	0.0461	0.26	RQ
20.696	583	246	757	319			Empc Correction

Compound is Marked ND

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Lims ID:	LCS 320-404233/2-A		
Client ID:			
Inject. Date:	21-Aug-2020 09:01:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	405471	Lims Sample ID:	27

Non-2,3,7,8-sub-TCDD, RT: 20.594

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.185	D 13C-2,3,7,8-TCDD	100.000	3148277	409339

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.185		100.000	3148277	409339

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.873	3127	726	1817	392	0.1325	1.72	RQ
21.873	1399	301	1817	392			Empc Correction
22.010	1527	521	405	219	0.0518	3.77	RQ
22.010	311	168	405	219			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Lims ID: LCS 320-404233/2-A
Client ID:
Inject. Date: 21-Aug-2020 09:01:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 405471 Lims Sample ID: 27

F1 PeCDFs, RT: 24.667

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	4812479	720717
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	7247560	1057614

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	6030019	889165

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.951	403	161	139	69		2.90	R

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Lims ID:	LCS 320-404233/2-A		
Client ID:			
Inject. Date:	21-Aug-2020 09:01:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	405471	Lims Sample ID:	27

Non-2,3,7,8-sub-PeCDF, RT: 28.186

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.106	D 13C-1,2,3,7,8-PeCDF	100.000	4812479	720717
2,3,4,7,8-PeCDF	0.907	D 13C-2,3,4,7,8-PeCDF	100.000	7247560	1057614

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	6030019	889165

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.837	17257	2694	10456	1488	0.4567	1.65	
Signal Totals:							
	17257	2694	10456	1488			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27713	4182				1.65	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4567 = (27713 * 100.000) / (6030019 * 1.006)

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d				
Injection Date:	21-Aug-2020 09:01:00	Instrument ID:	DFS 1		
Lims ID:	LCS 320-404233/2-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	27
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-1,2,3,7,8-PeCDD, CAS: 109719-79-1

Signal: 2

Processing Integration Results

RT:	29.54
Area:	942130
Amount:	84.234666
Amount Units:	pg/ul

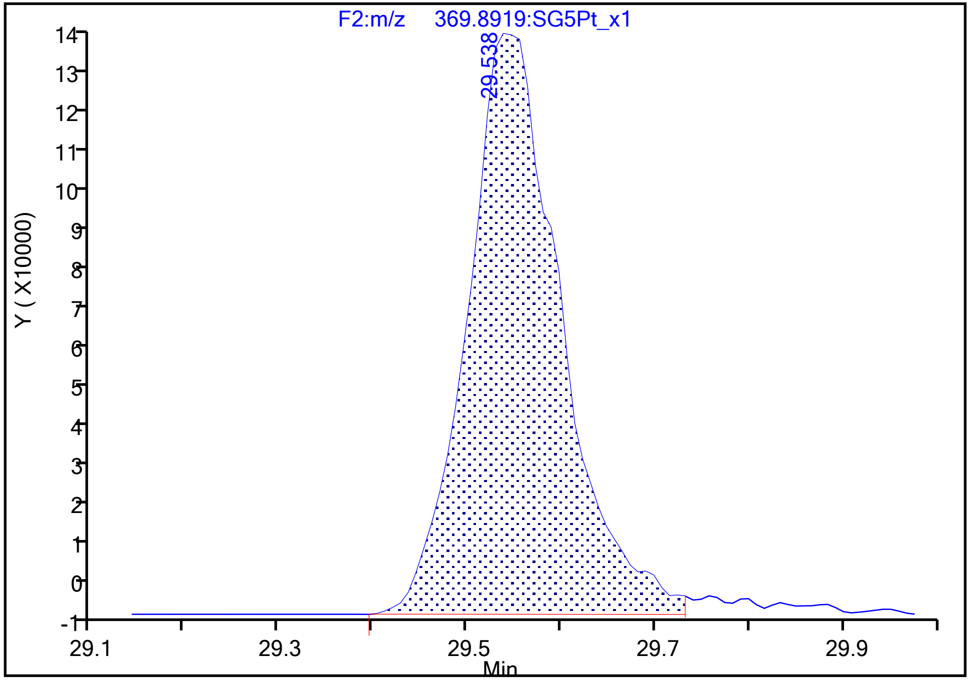

Manual Integration Results

RT:	29.54
Area:	942130
Amount:	83.134022
Amount Units:	pg/ul

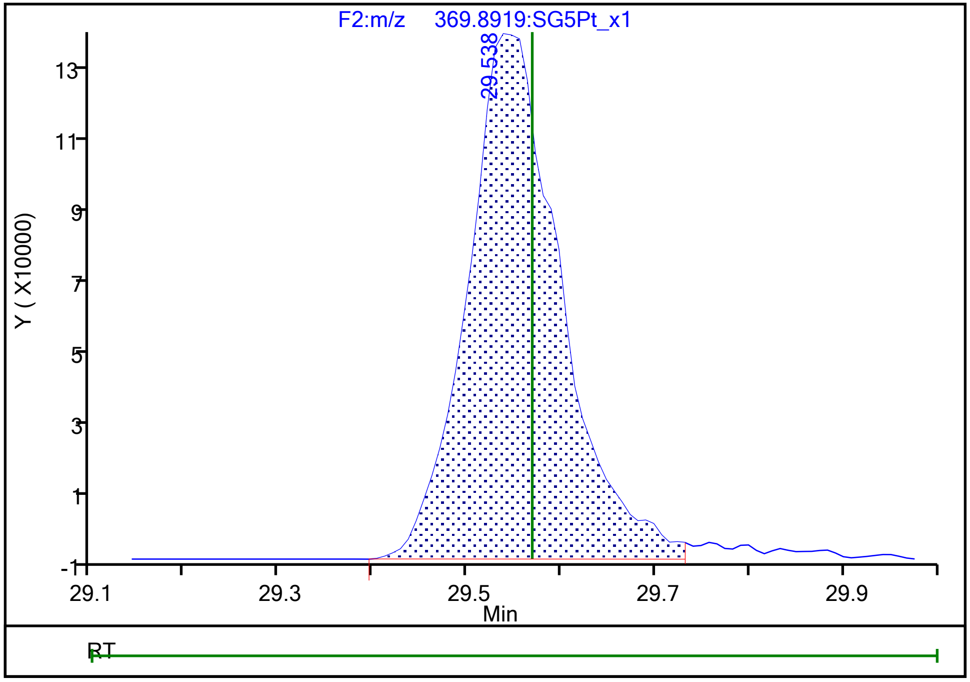

Reviewer: shardaa, 24-Aug-2020 10:58:37

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d				
Injection Date:	21-Aug-2020 09:01:00	Instrument ID:	DFS 1		
Lims ID:	LCS 320-404233/2-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	27
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-1,2,3,7,8-PeCDD, CAS: 109719-79-1

Signal: 3

Processing Integration Results

RT: 29.55
Area: 2630717
Amount: 84.234666
Amount Units: pg/ul

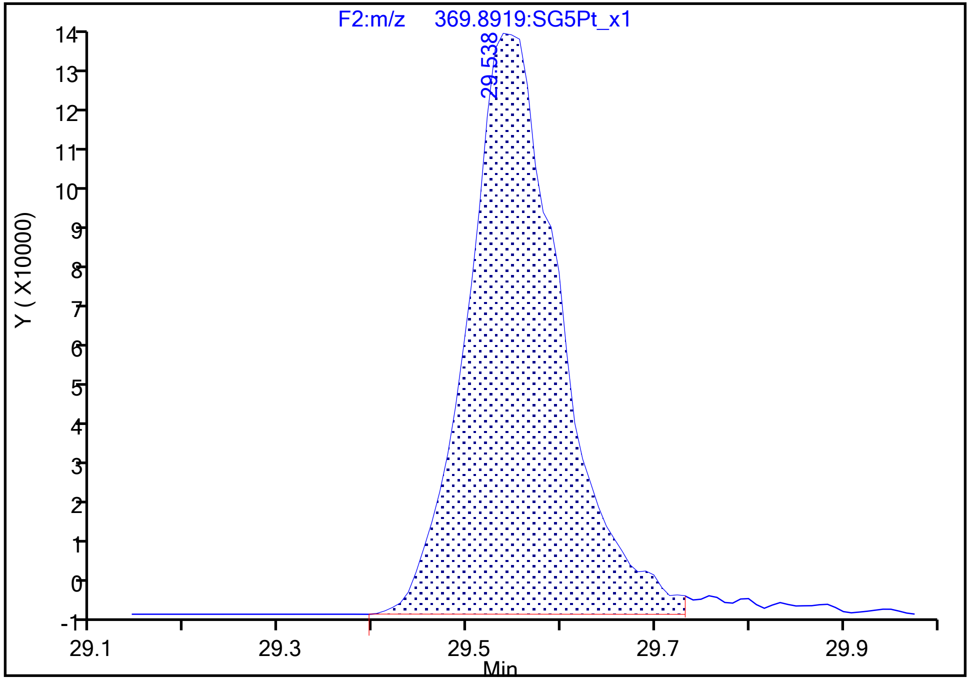

Manual Integration Results

RT: 29.55
Area: 2596343
Amount: 83.134022
Amount Units: pg/ul
Reviewer: shardaa, 24-Aug-2020 10:58:37
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d				
Injection Date:	21-Aug-2020 09:01:00	Instrument ID:	DFS 1		
Lims ID:	LCS 320-404233/2-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	27
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-1,2,3,7,8-PeCDD, CAS: 109719-79-1

Signal: 1

RT:	29.55
Area:	1688587
Amount:	84.234666
Amount Units:	pg/ul

Processing Integration Results

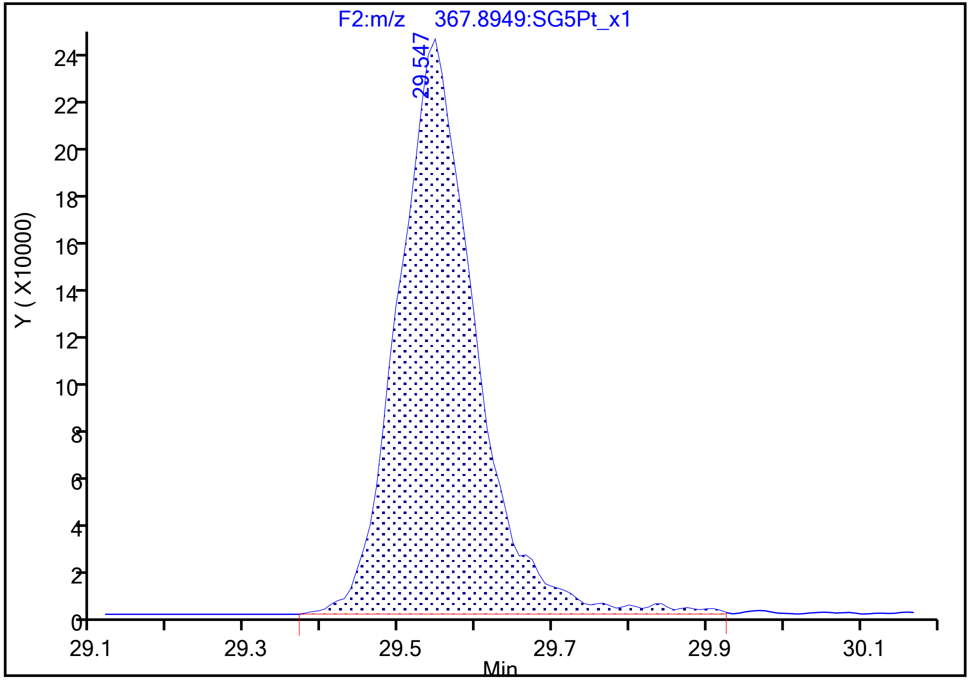

RT:	29.55
Area:	1654213
Amount:	83.134022
Amount Units:	pg/ul

Manual Integration Results

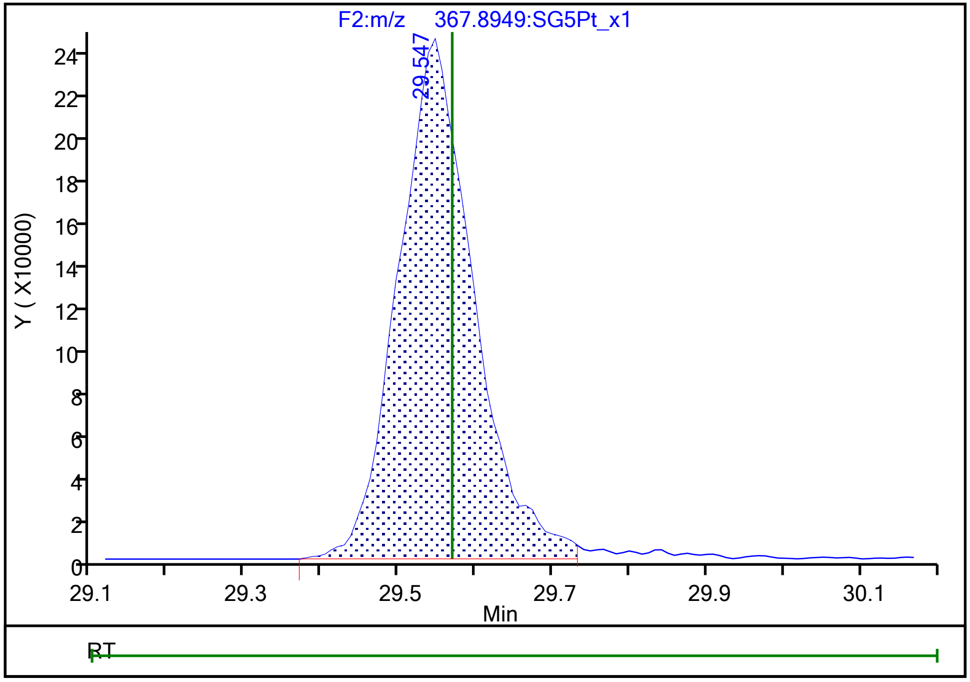

Reviewer: shardaa, 24-Aug-2020 10:58:39

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Peak Tail

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

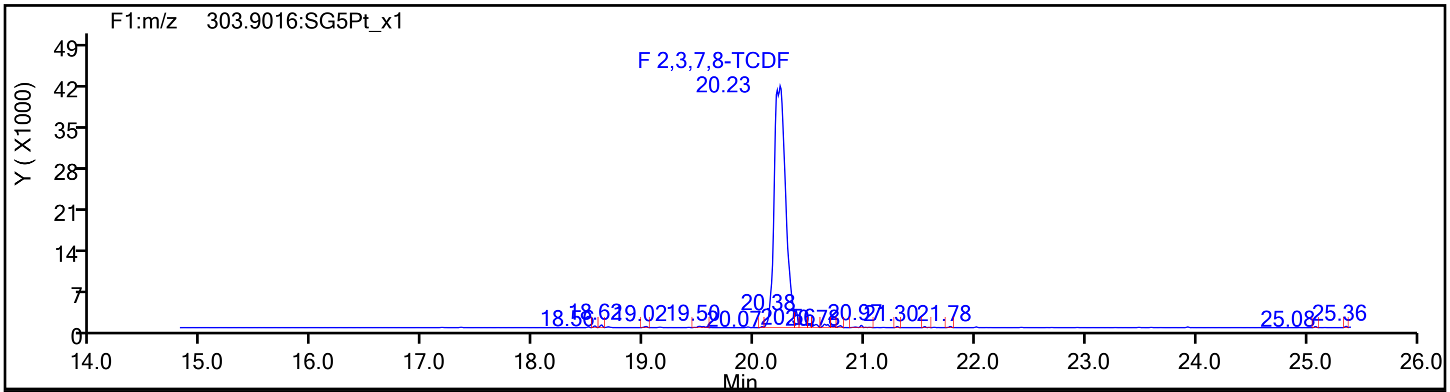

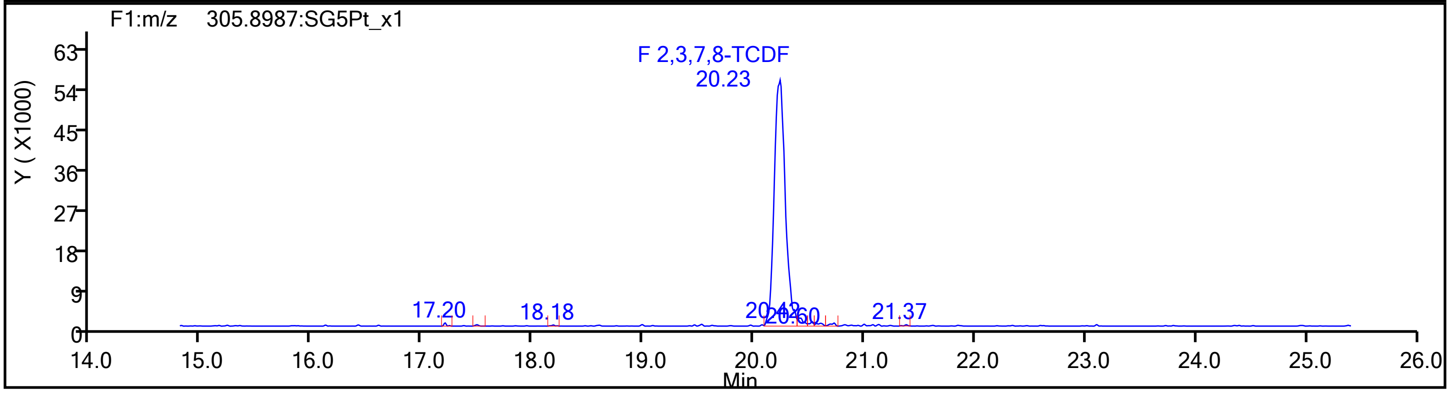

TCDF Standards

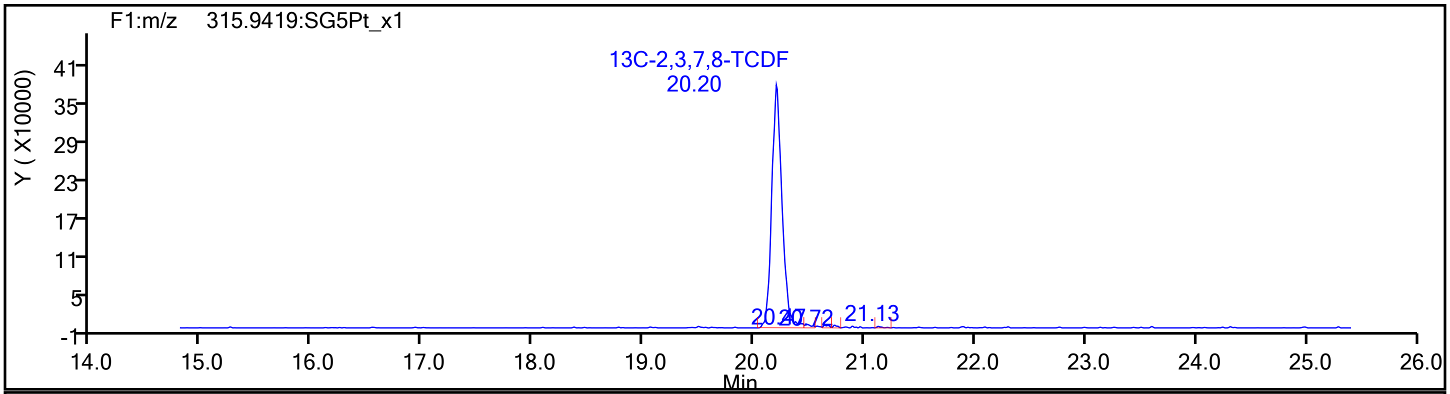

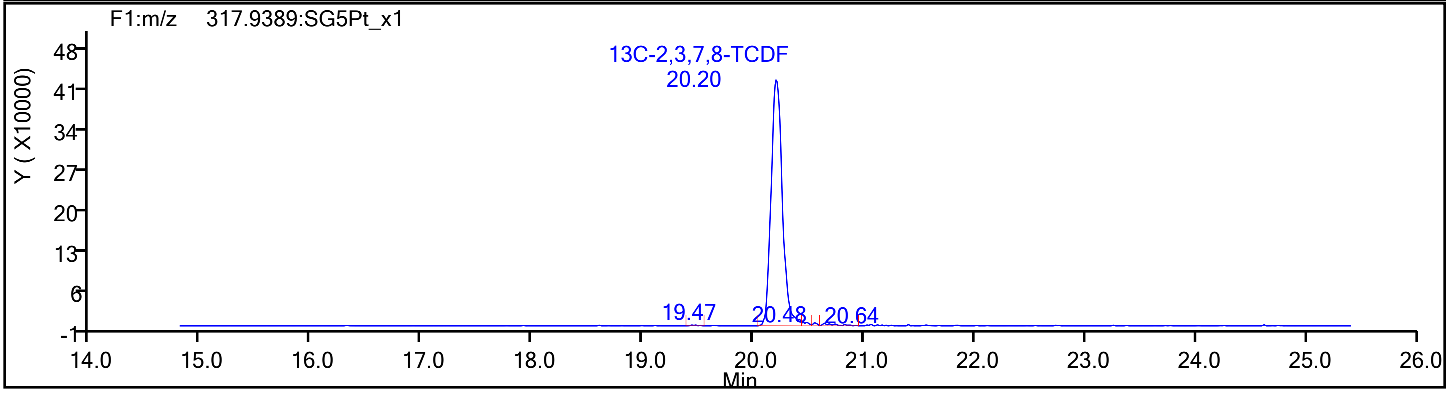

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

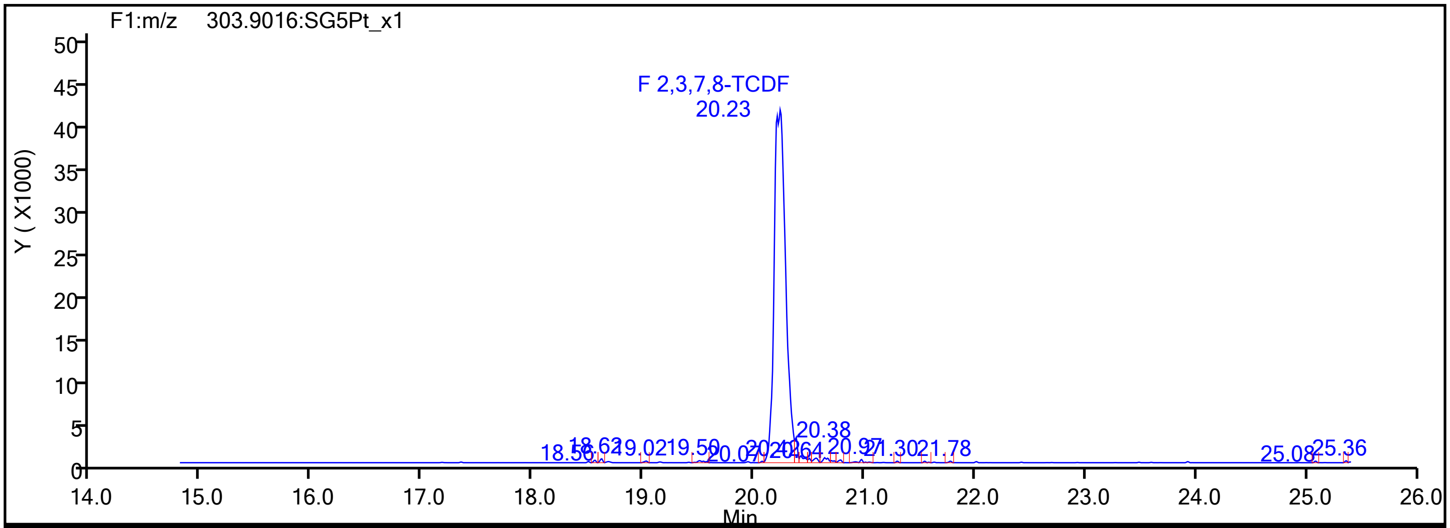

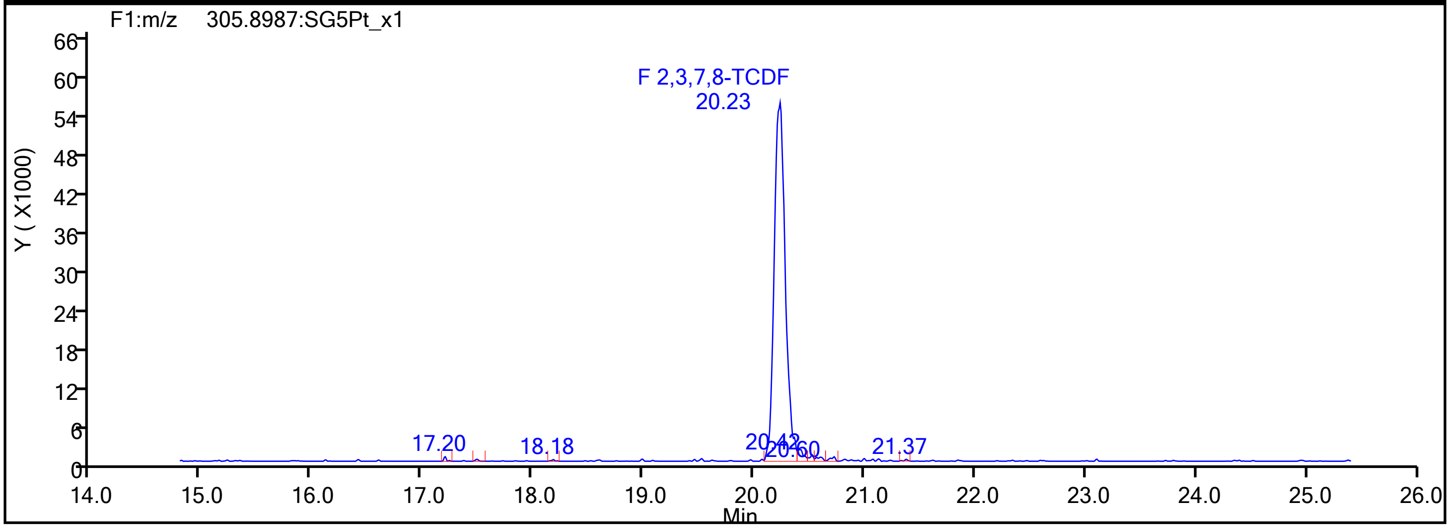

TCDF Interference Mass

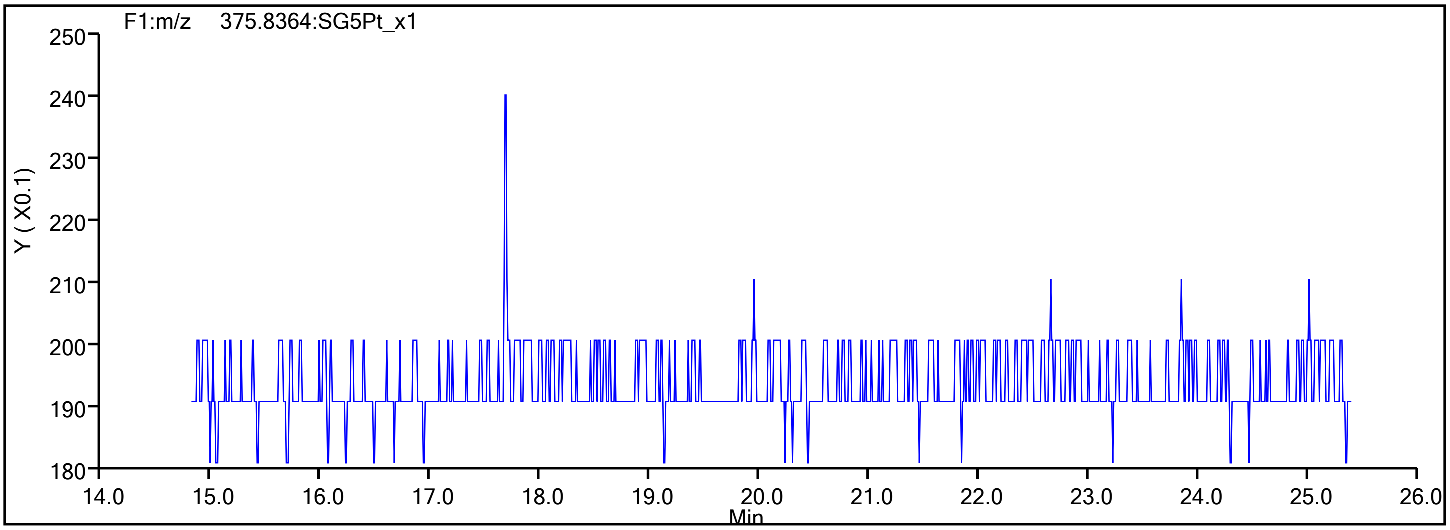

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

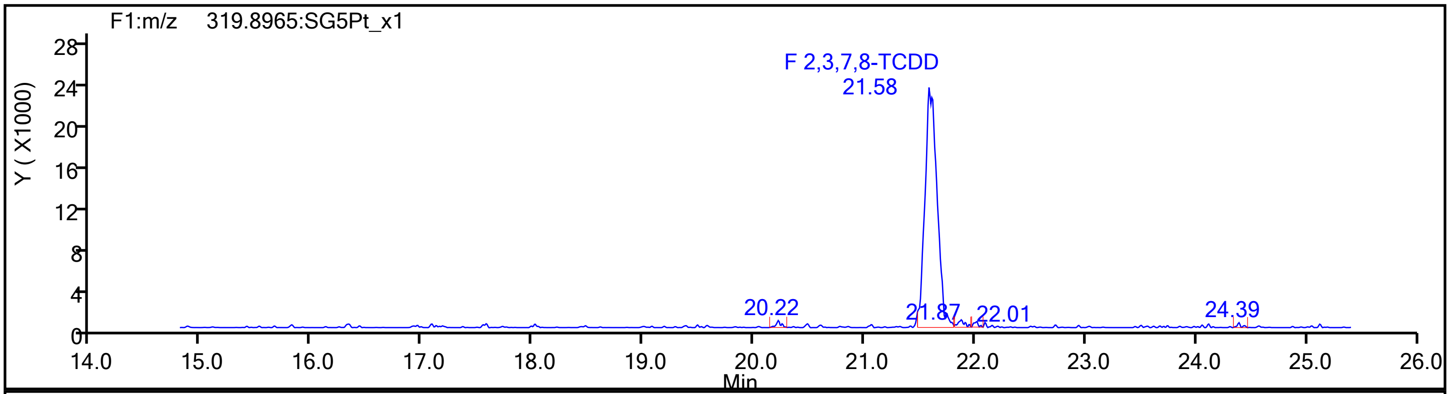

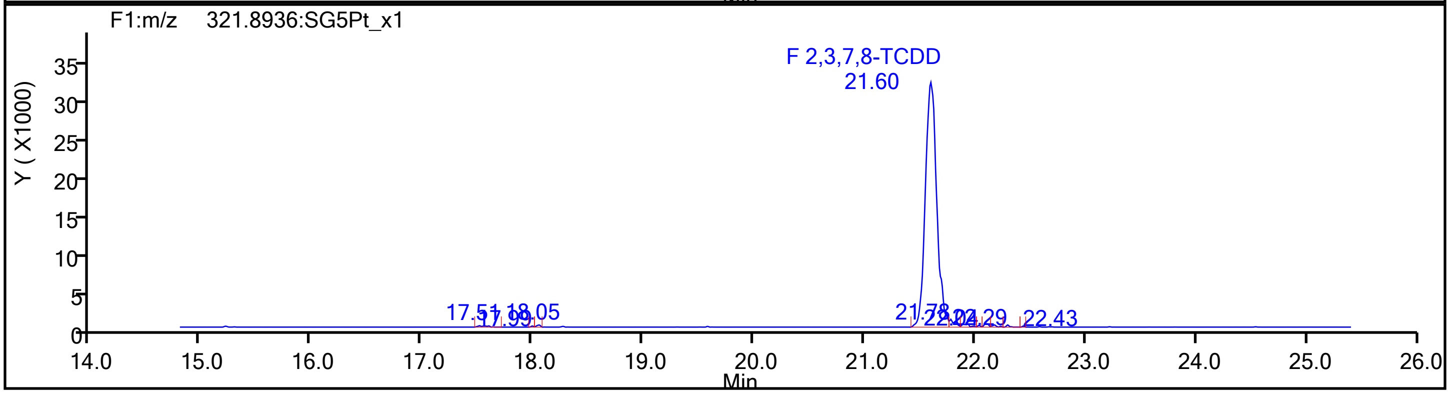

TCDD Standards

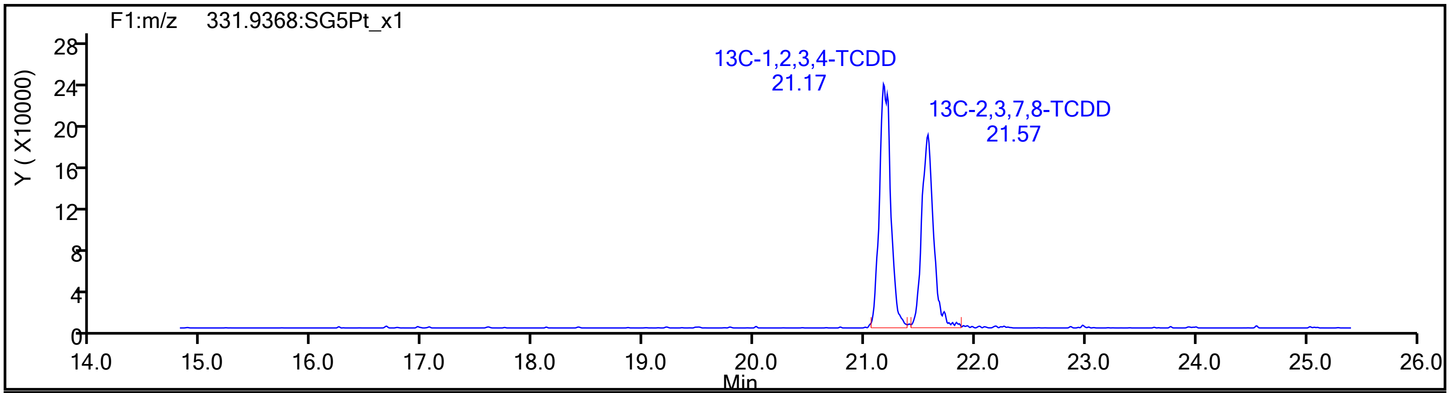

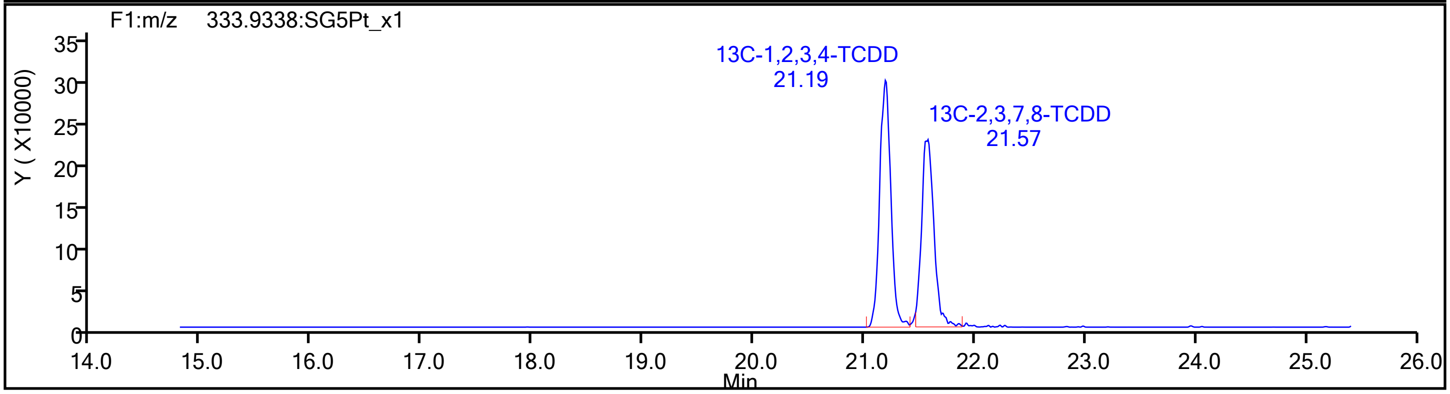

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

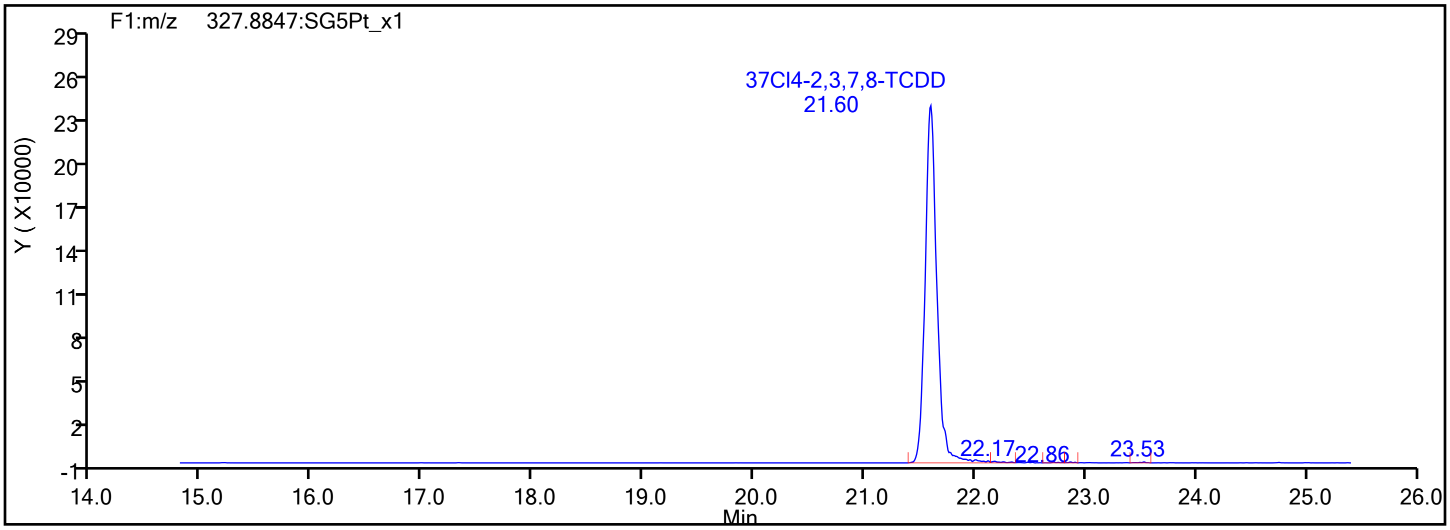

37Cl4-TCDD Standards

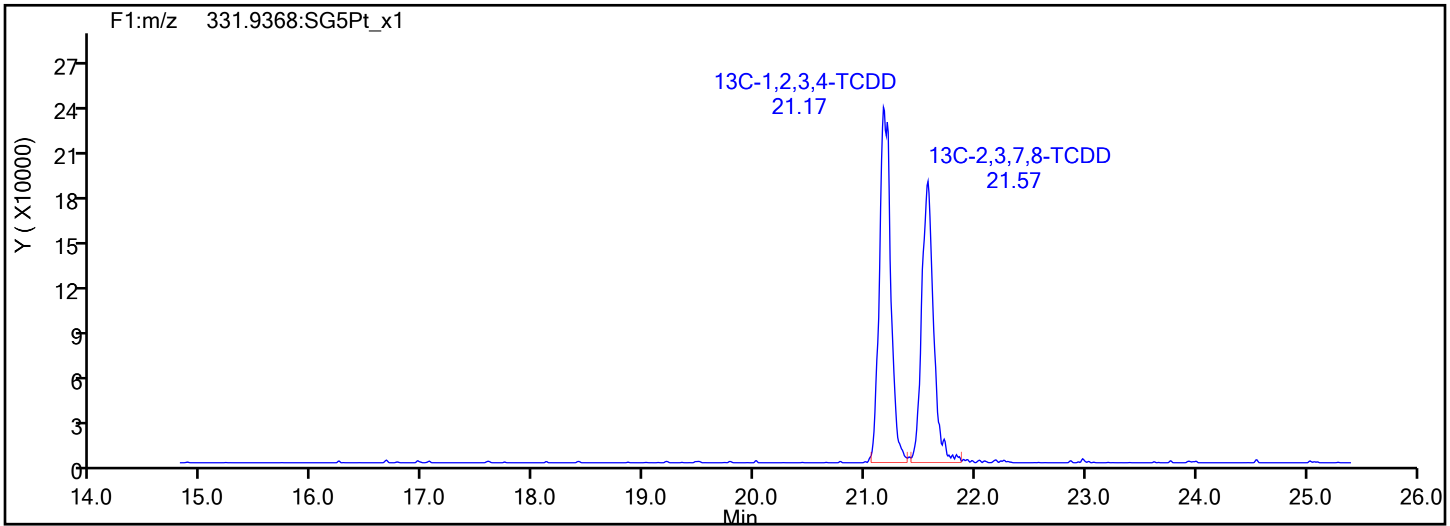

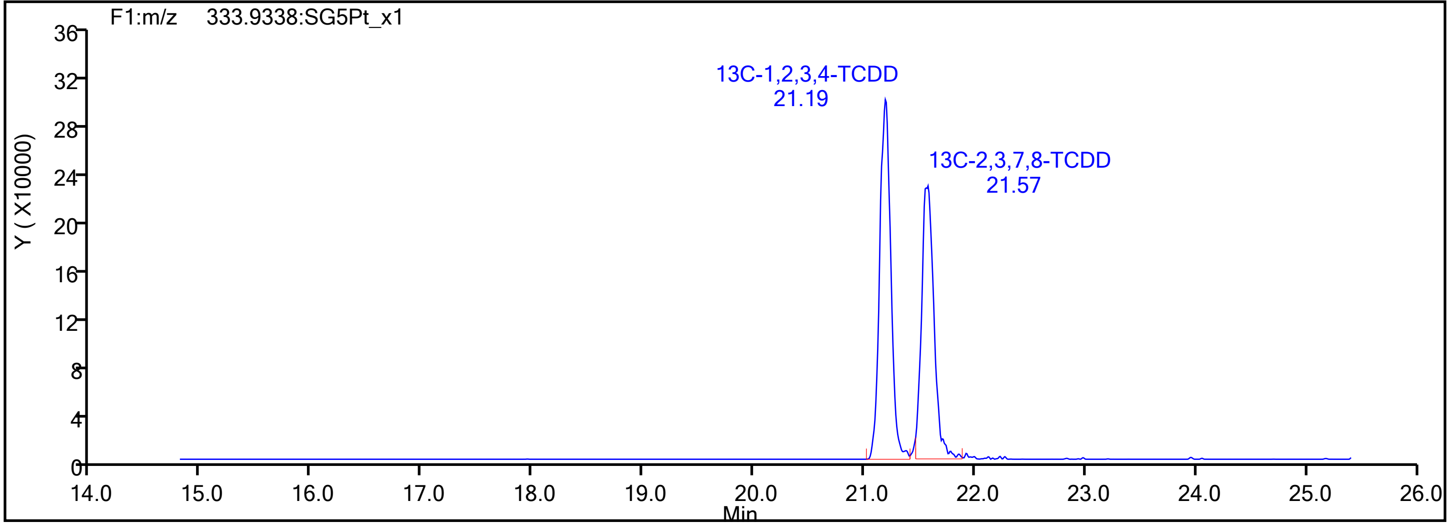

Report Date: 24-Aug-2020 10:59:10
Chrom Revision: 2.3 20-Aug-2020 13:57:12
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Injection Date: 21-Aug-2020 09:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 27
Column Type: DB-5
Column Dia: 0.32 mm
F1 PeCDFs

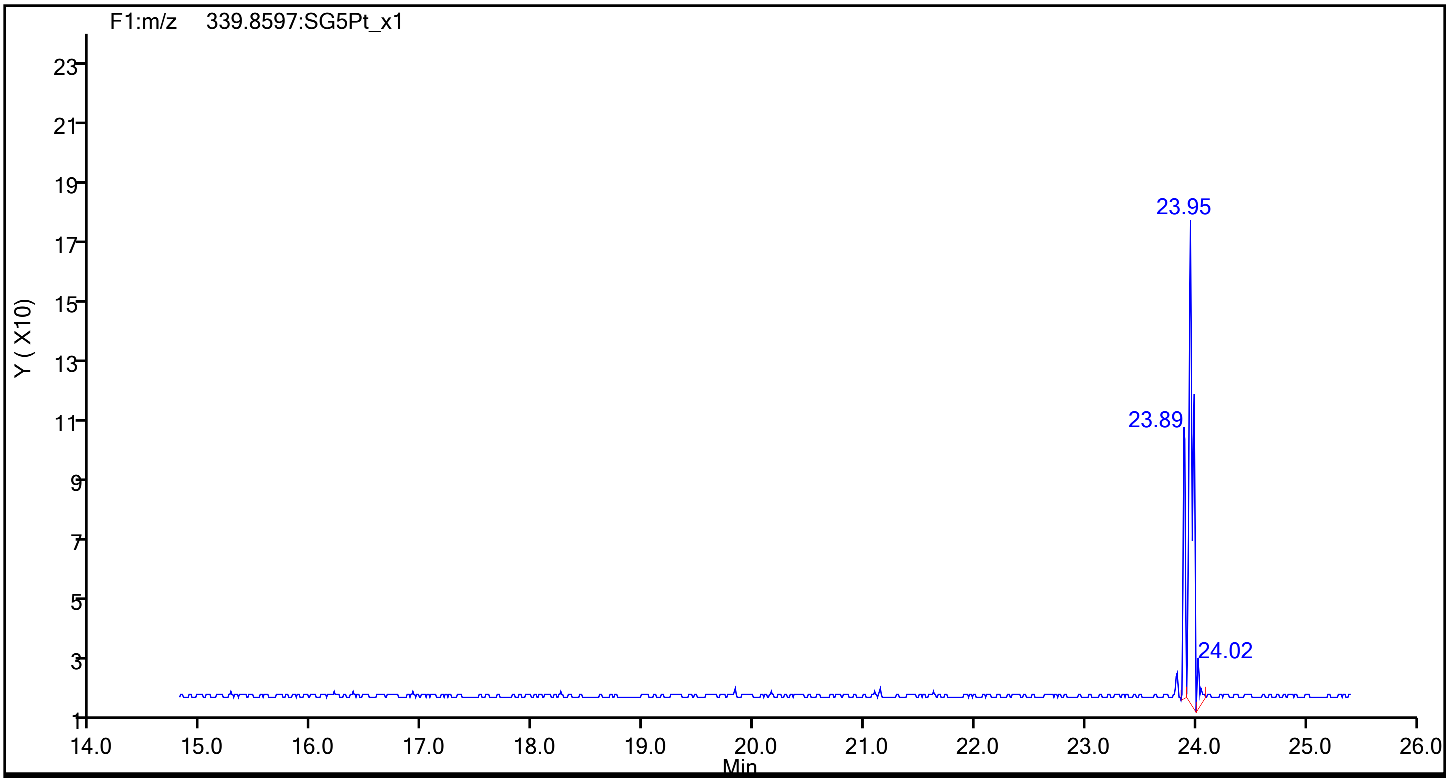

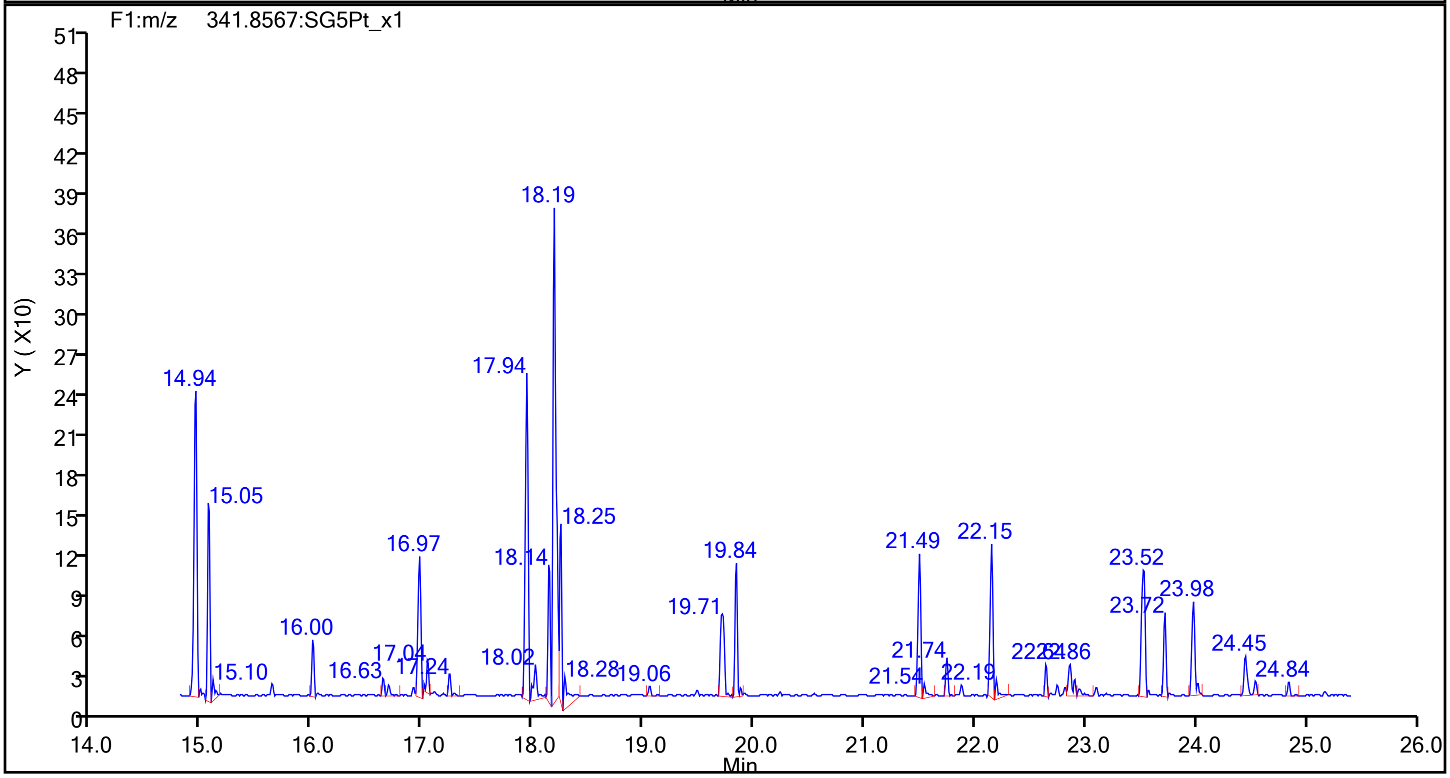

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

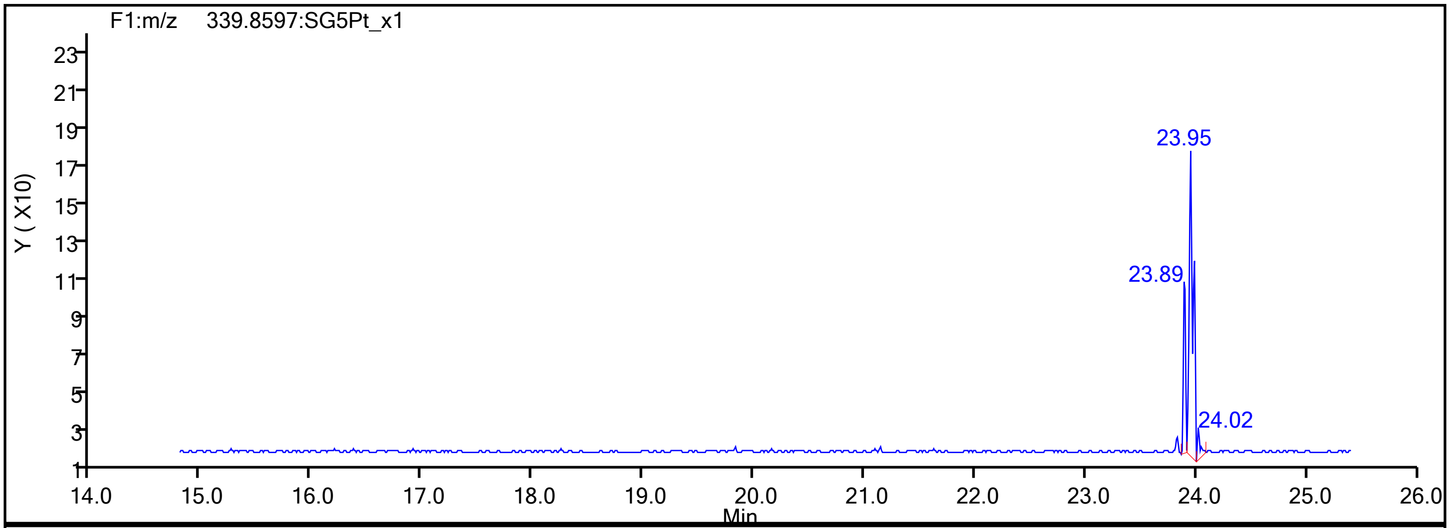

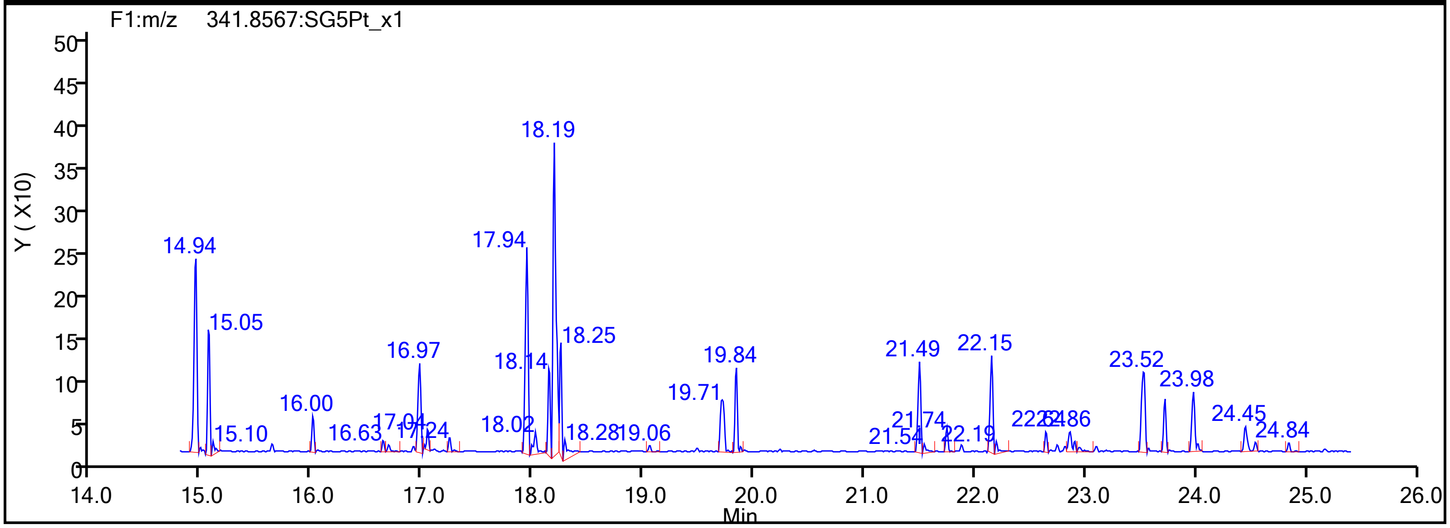

F1 PeCDFs Interference Mass

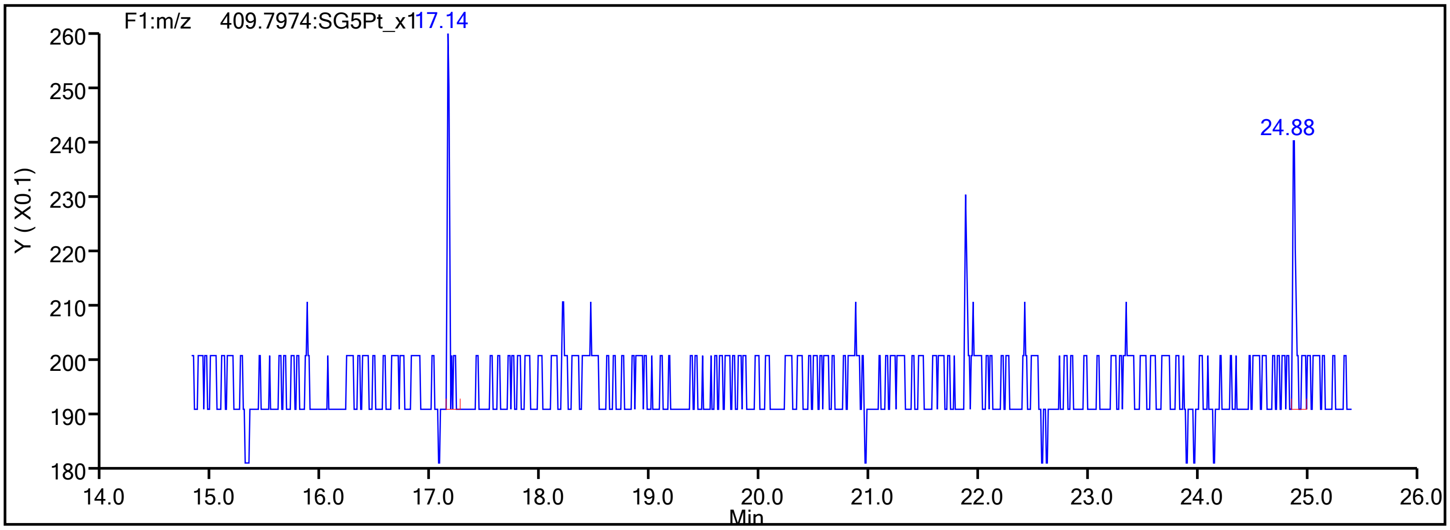

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

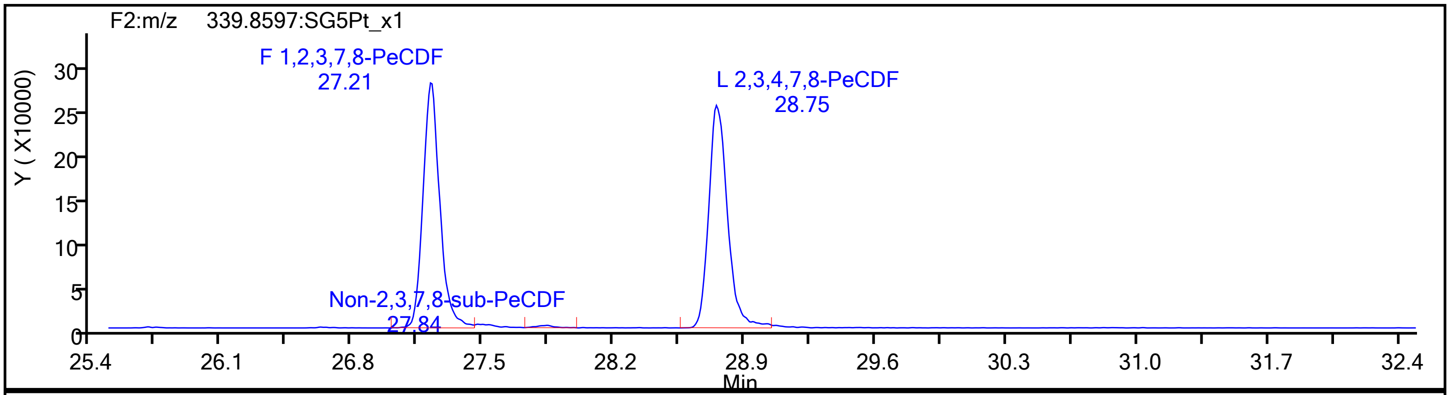

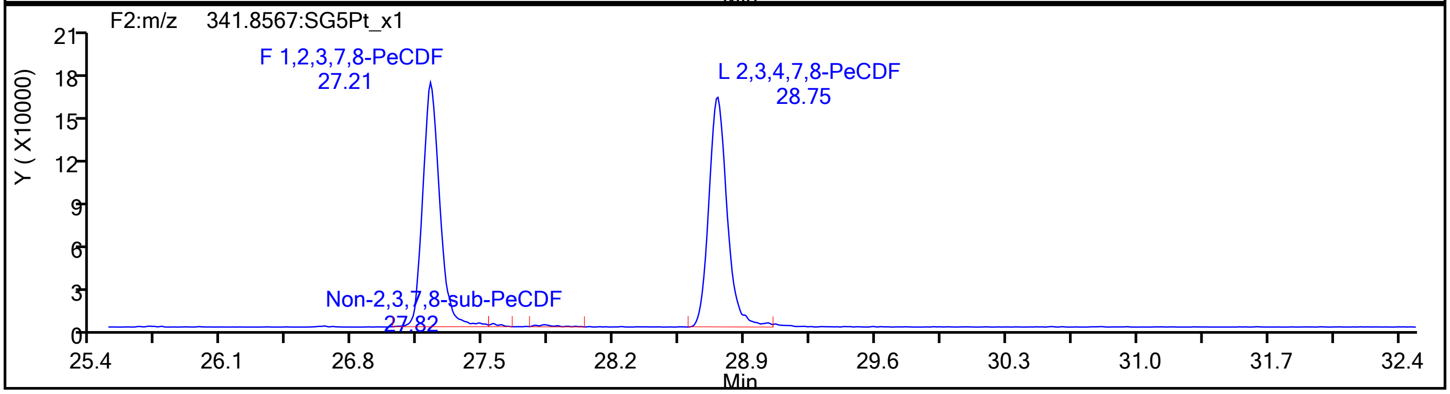

PeCDF Standards

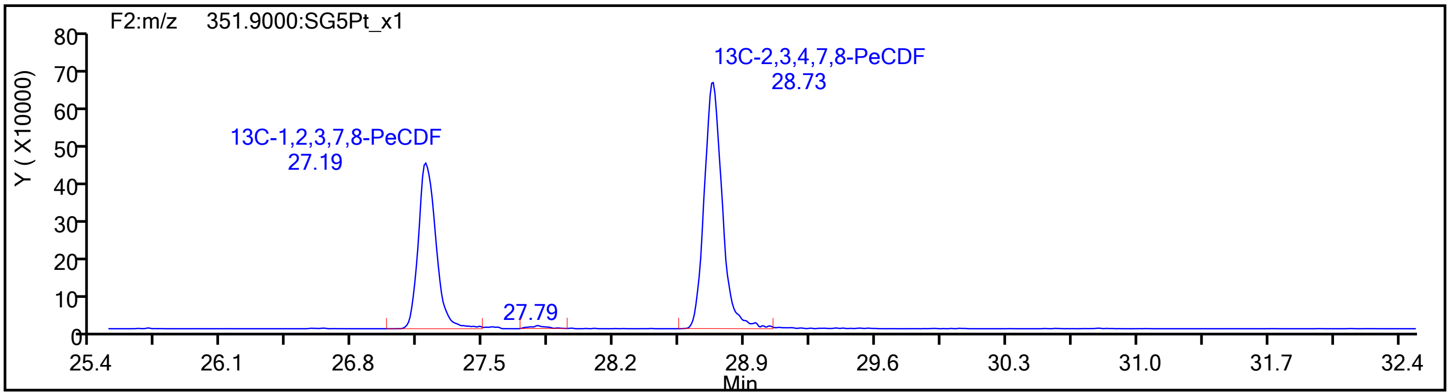

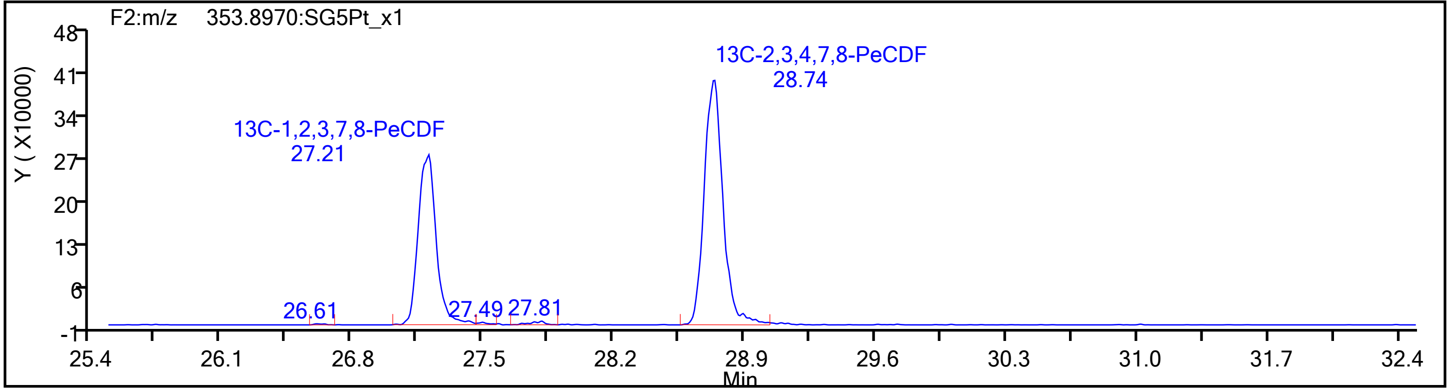

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

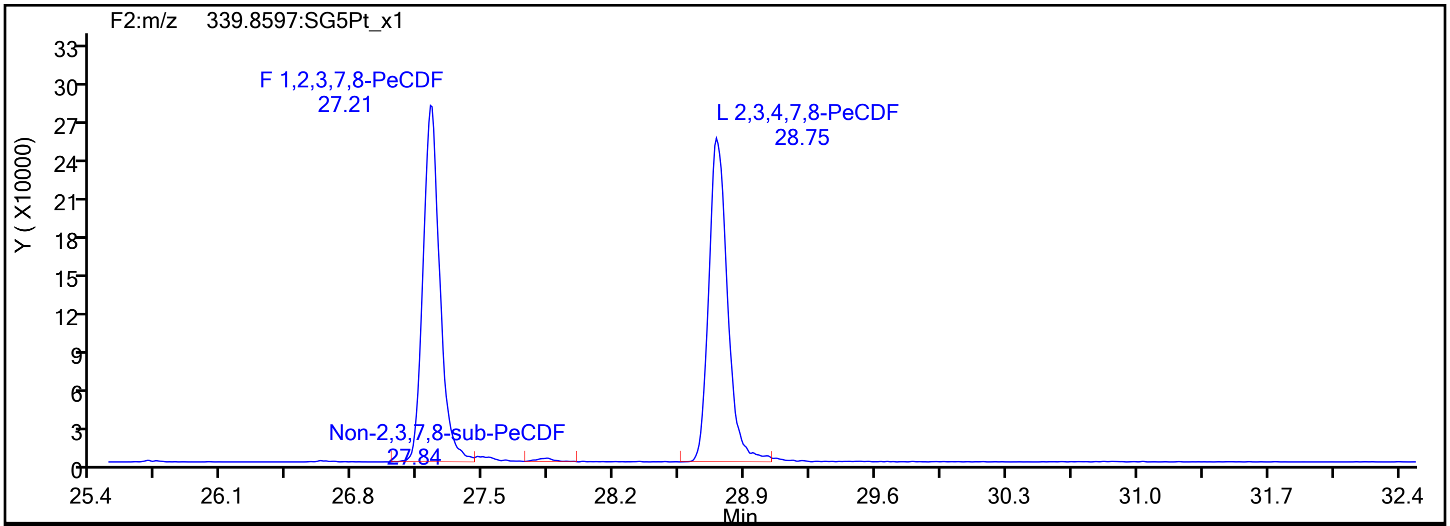

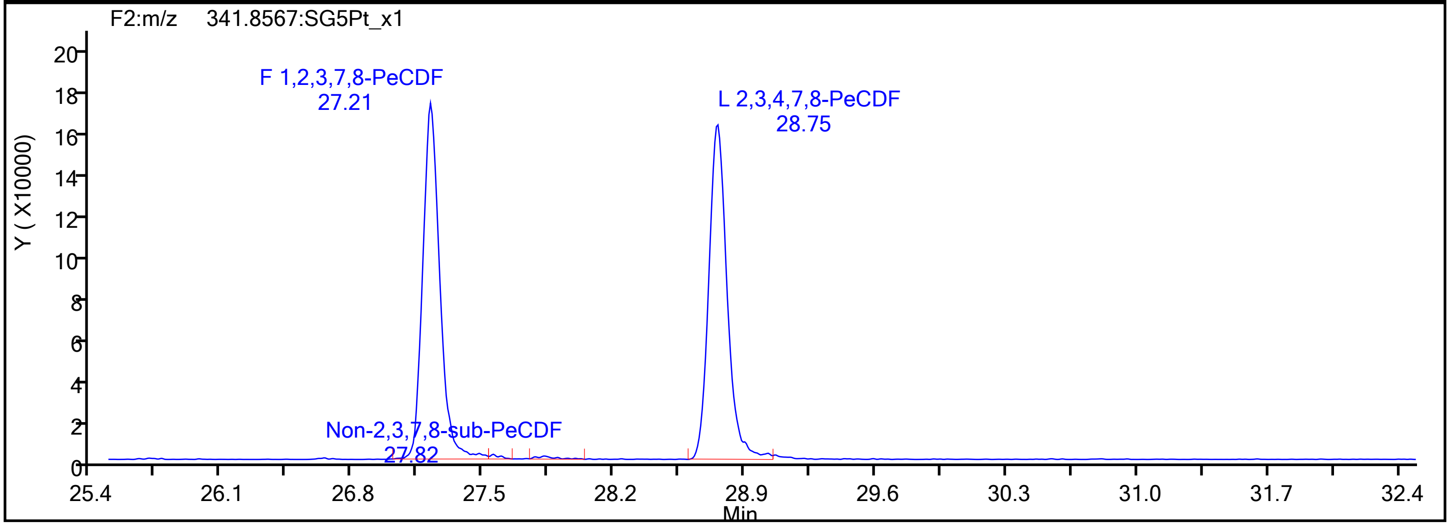

PeCDF Interference Mass

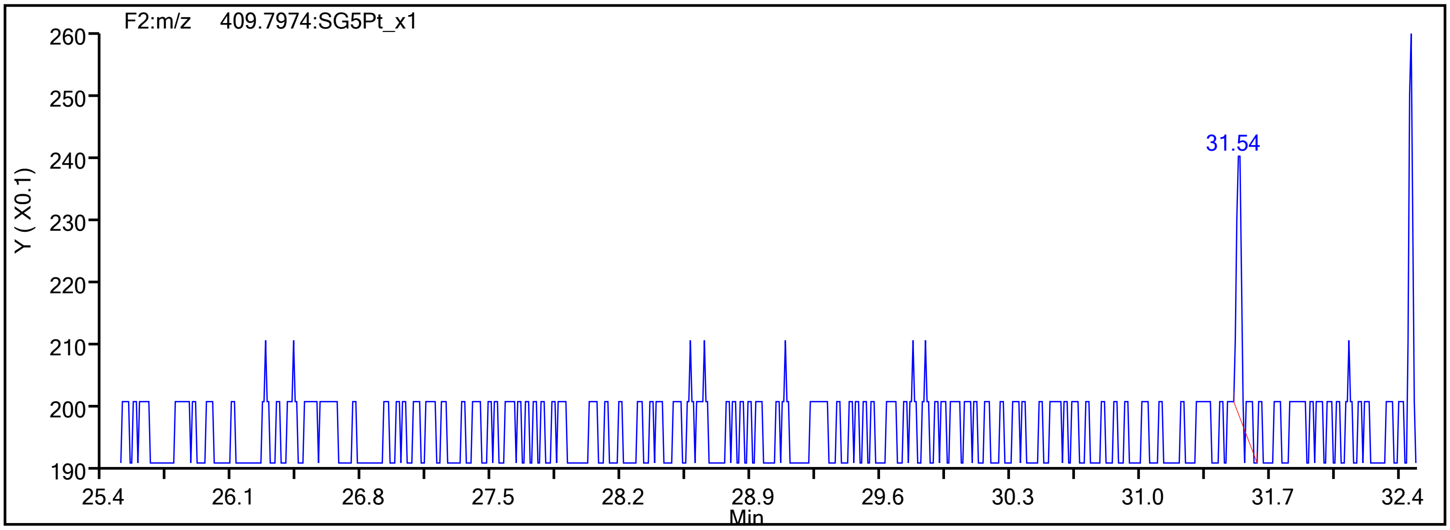

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d

Injection Date: 21-Aug-2020 09:01:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405471 Sample Line#: 27

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

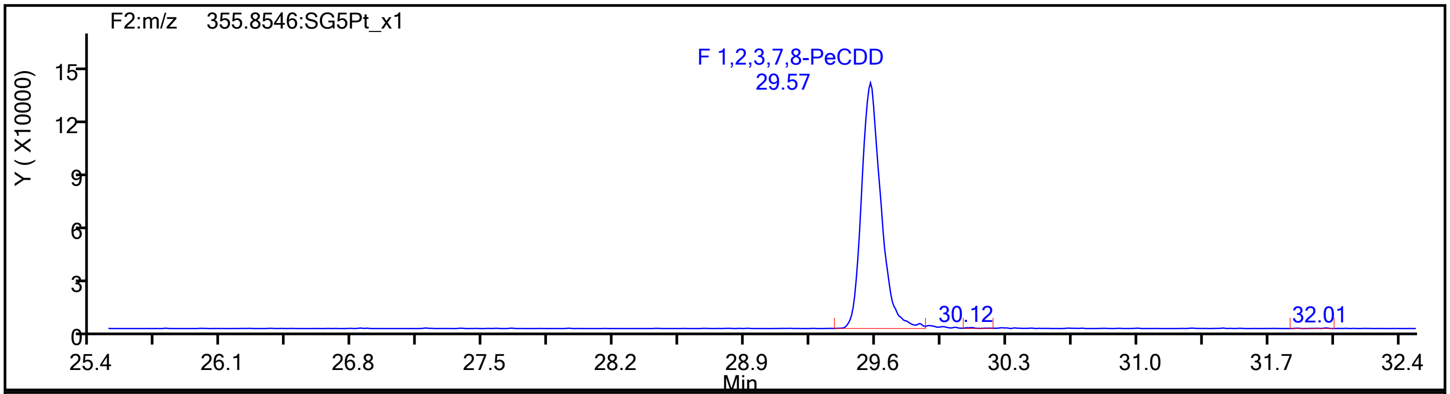

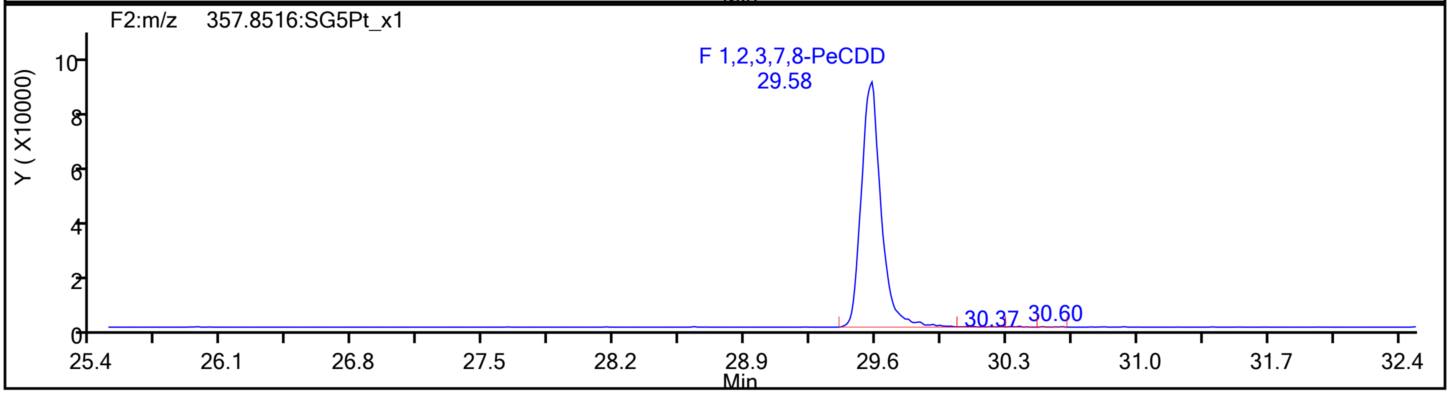

PeCDD Standards

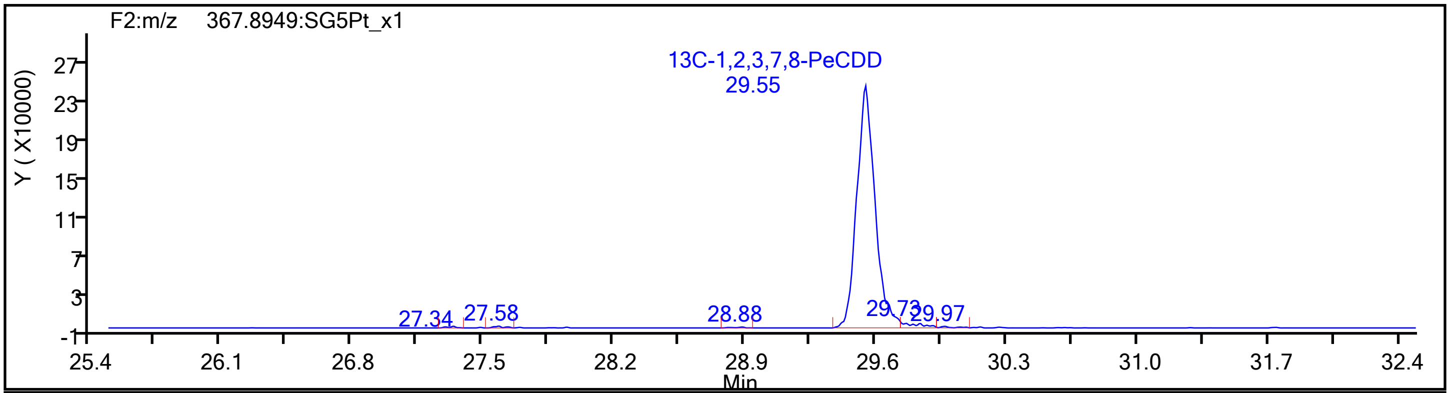

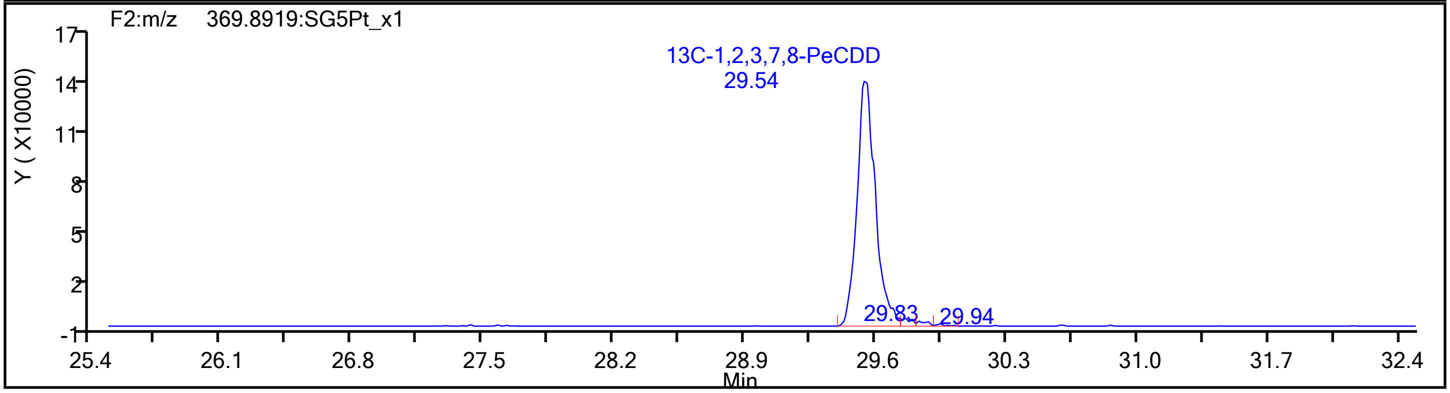

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Injection Date: 21-Aug-2020 09:01:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405471 Sample Line#: 27
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

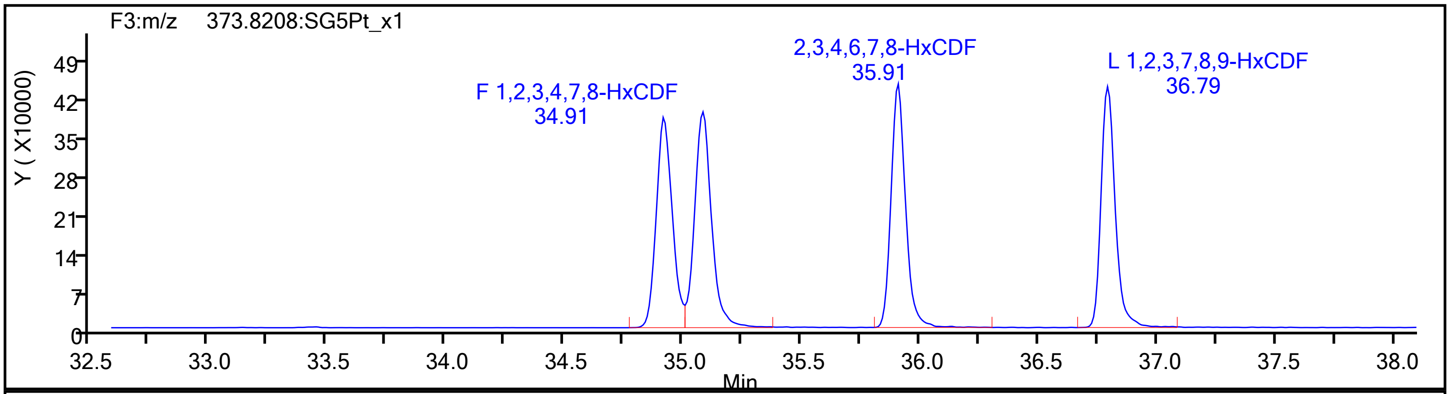

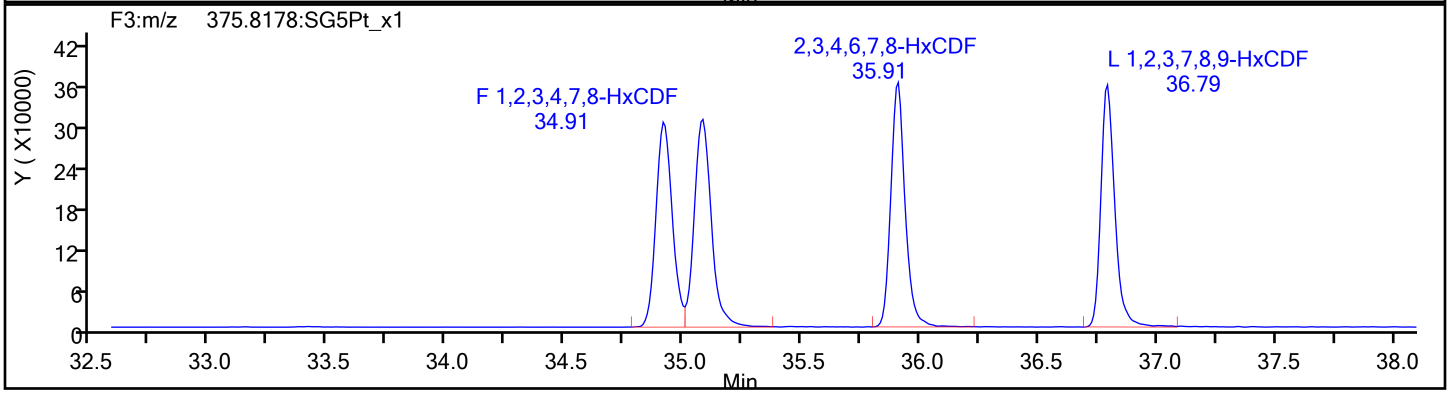

HxCDF Standards

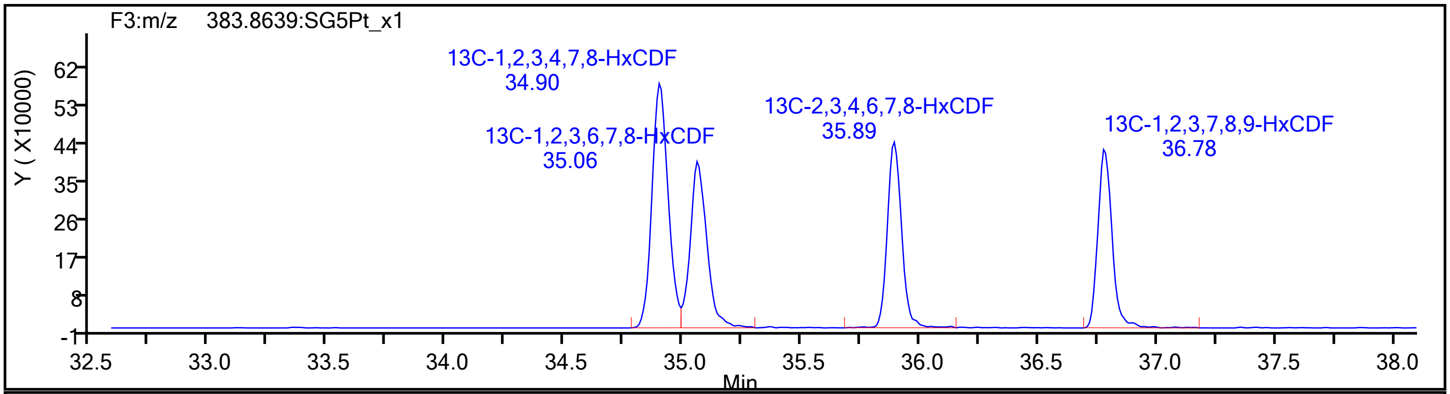

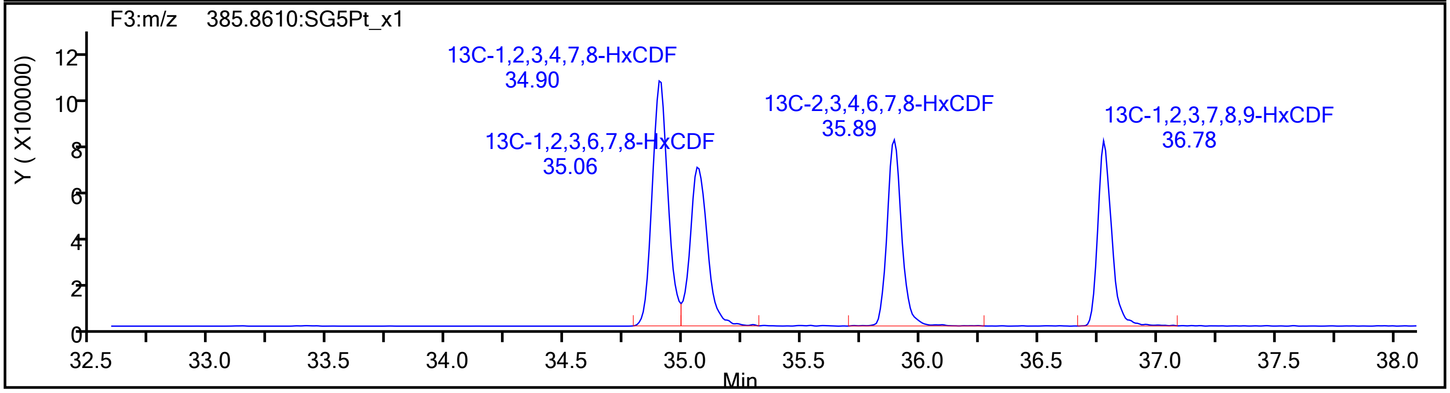

Report Date: 24-Aug-2020 10:59:10 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

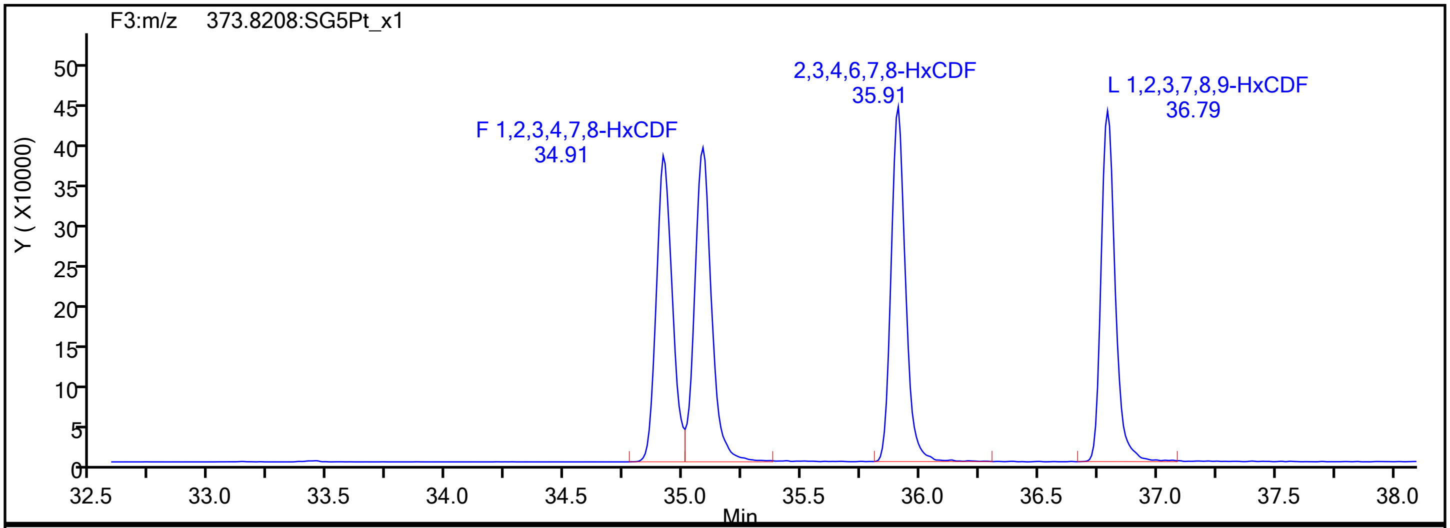

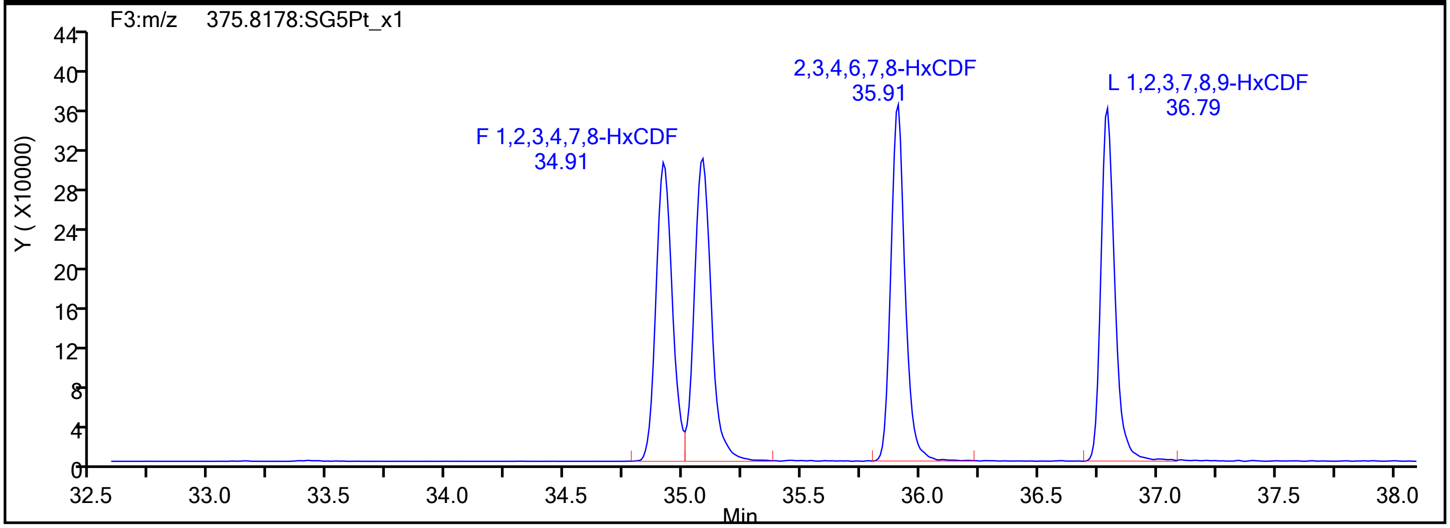

HxCDF Interference Mass

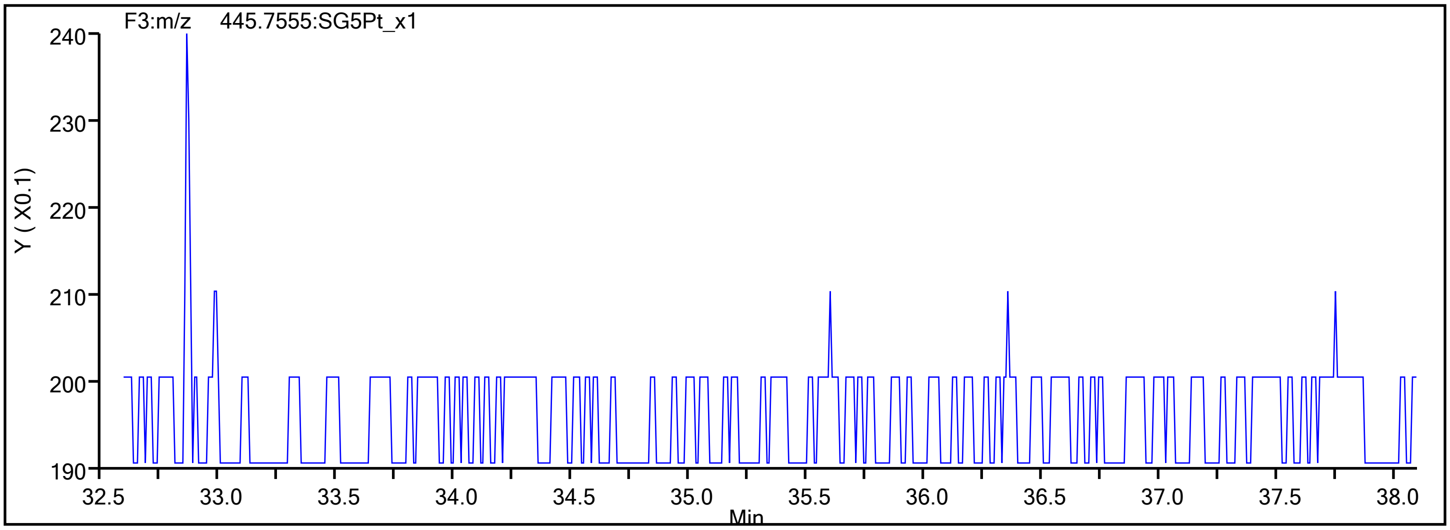

Report Date: 24-Aug-2020 10:59:11 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

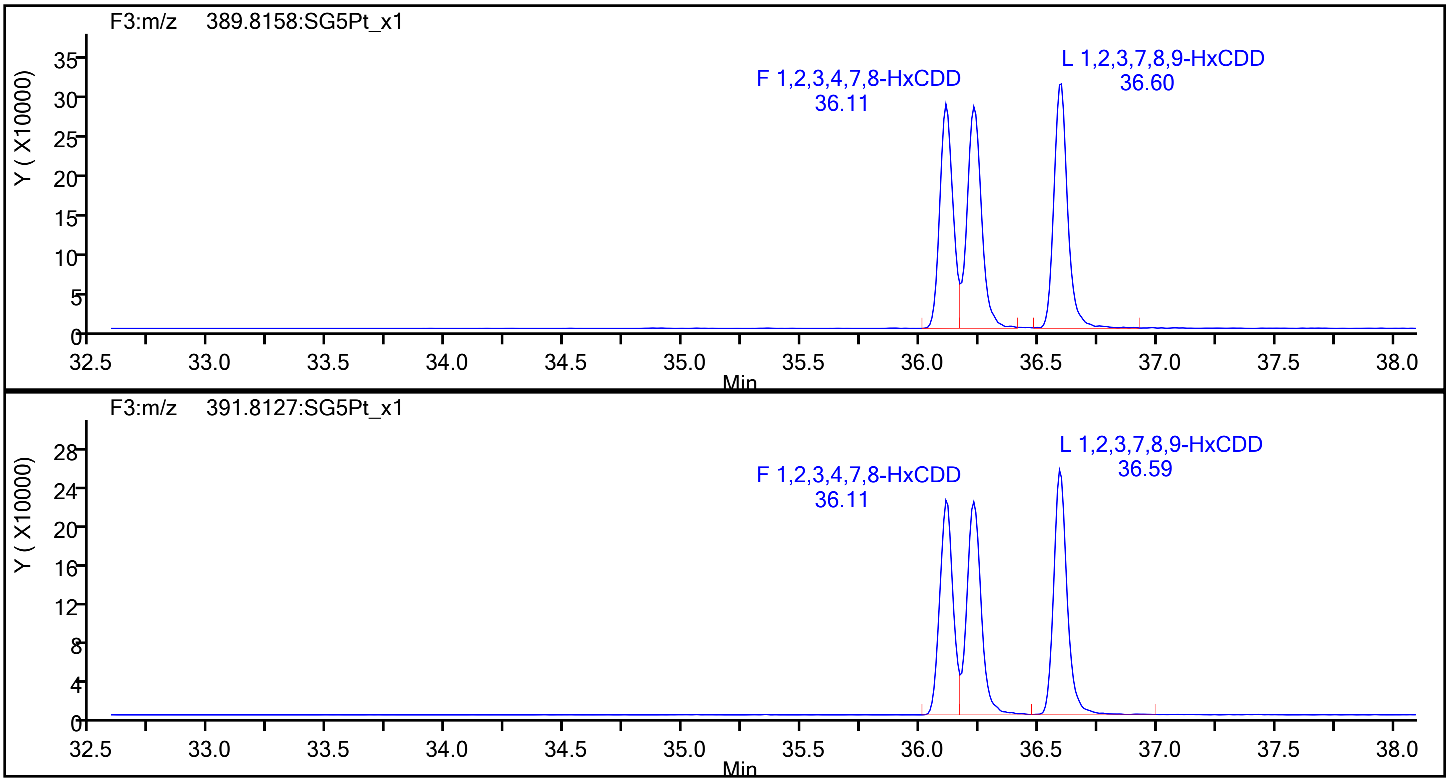

HxCDD Standards

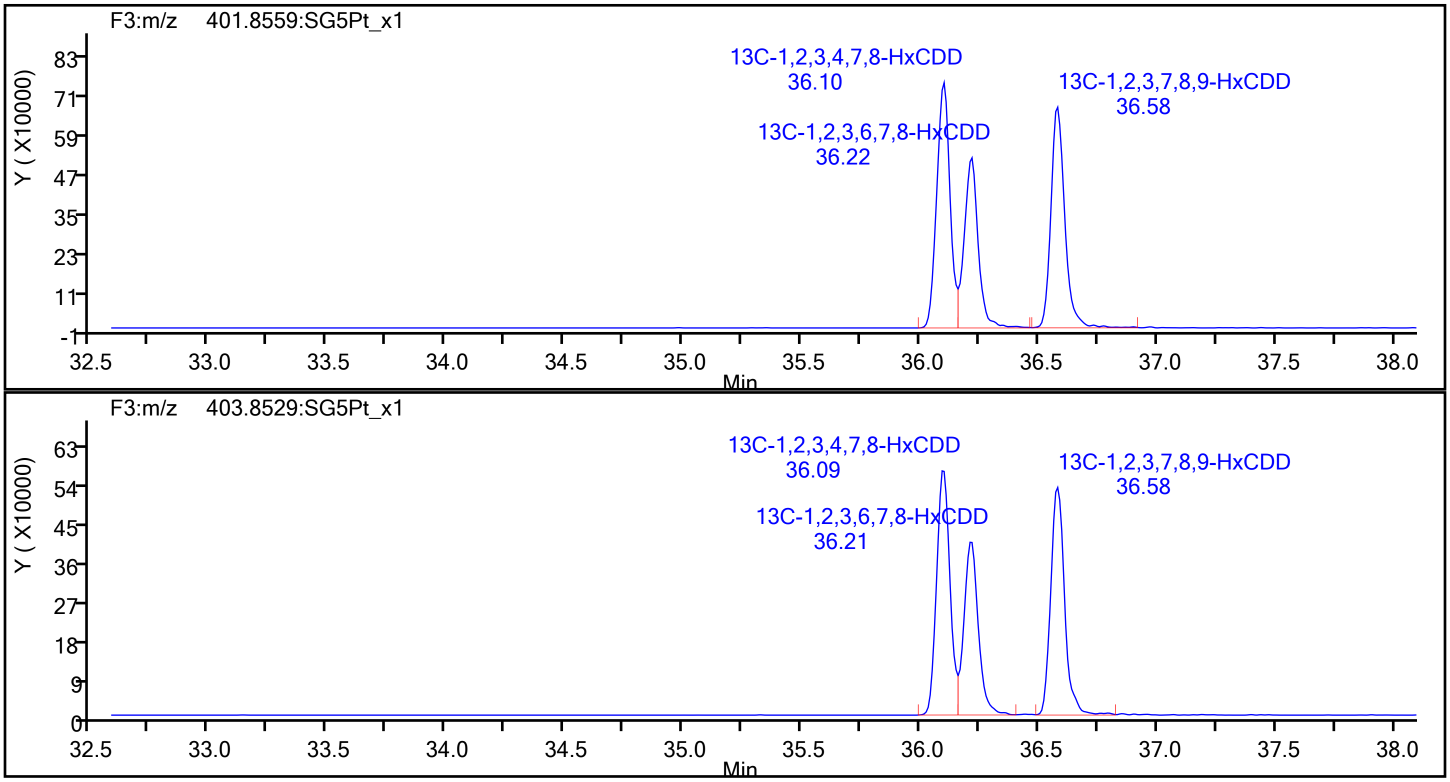

Report Date: 24-Aug-2020 10:59:11 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

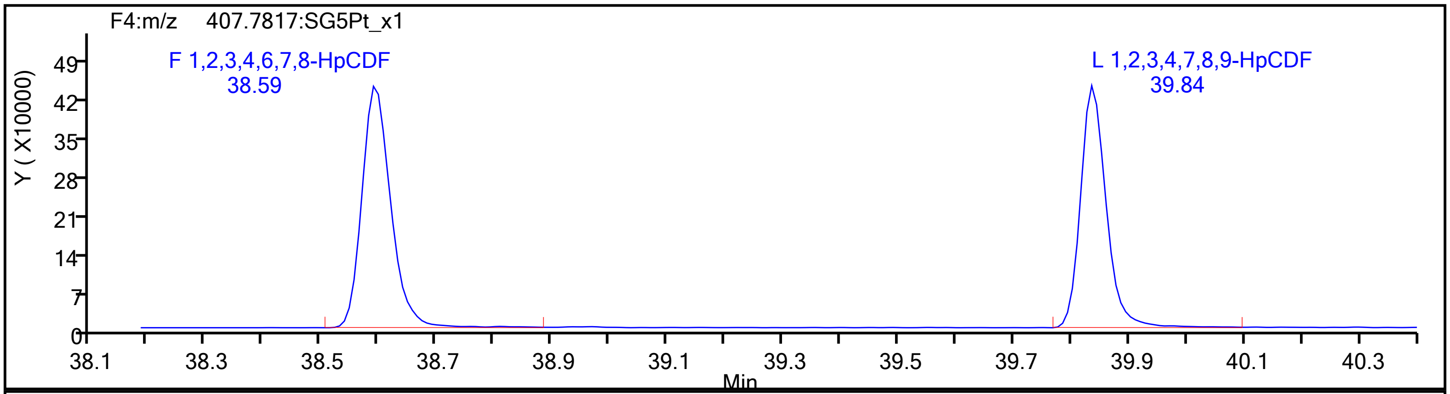

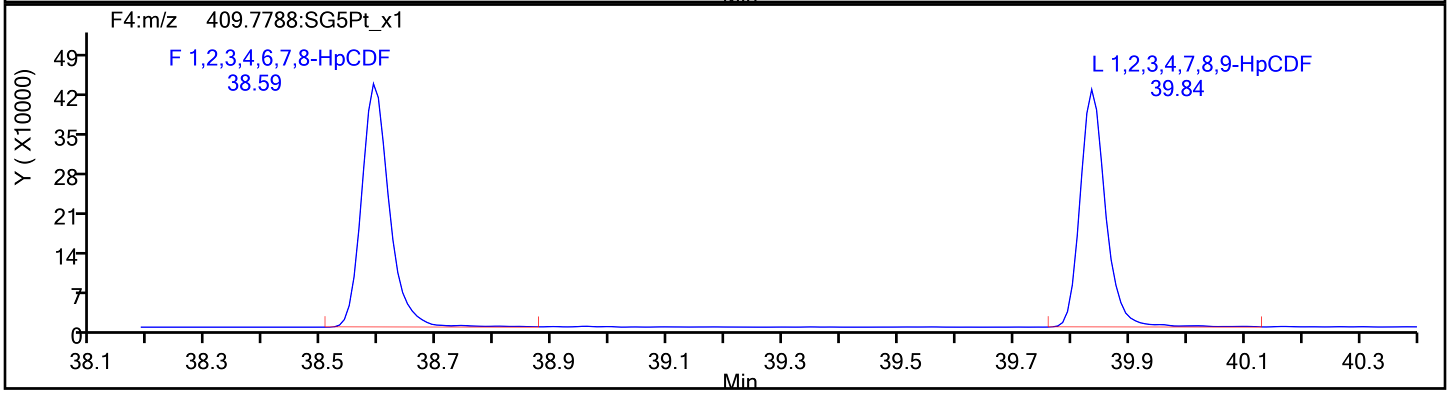

HpCDF Standards

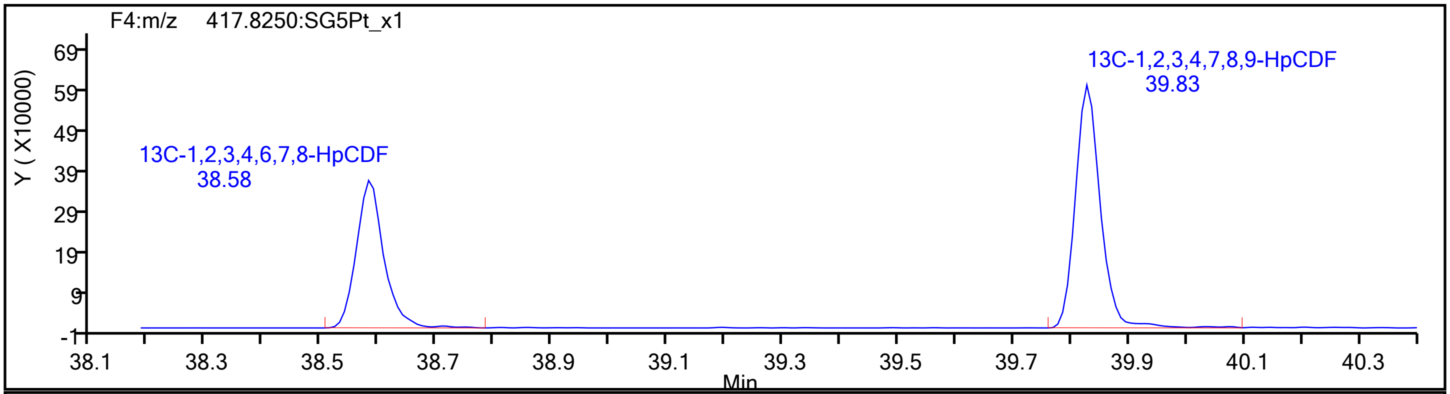

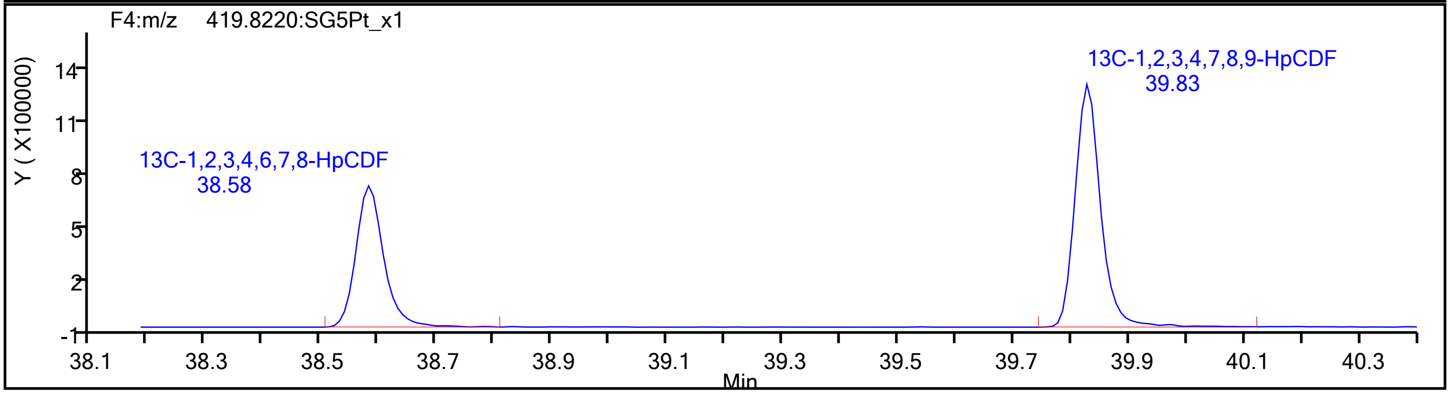

Report Date: 24-Aug-2020 10:59:11 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

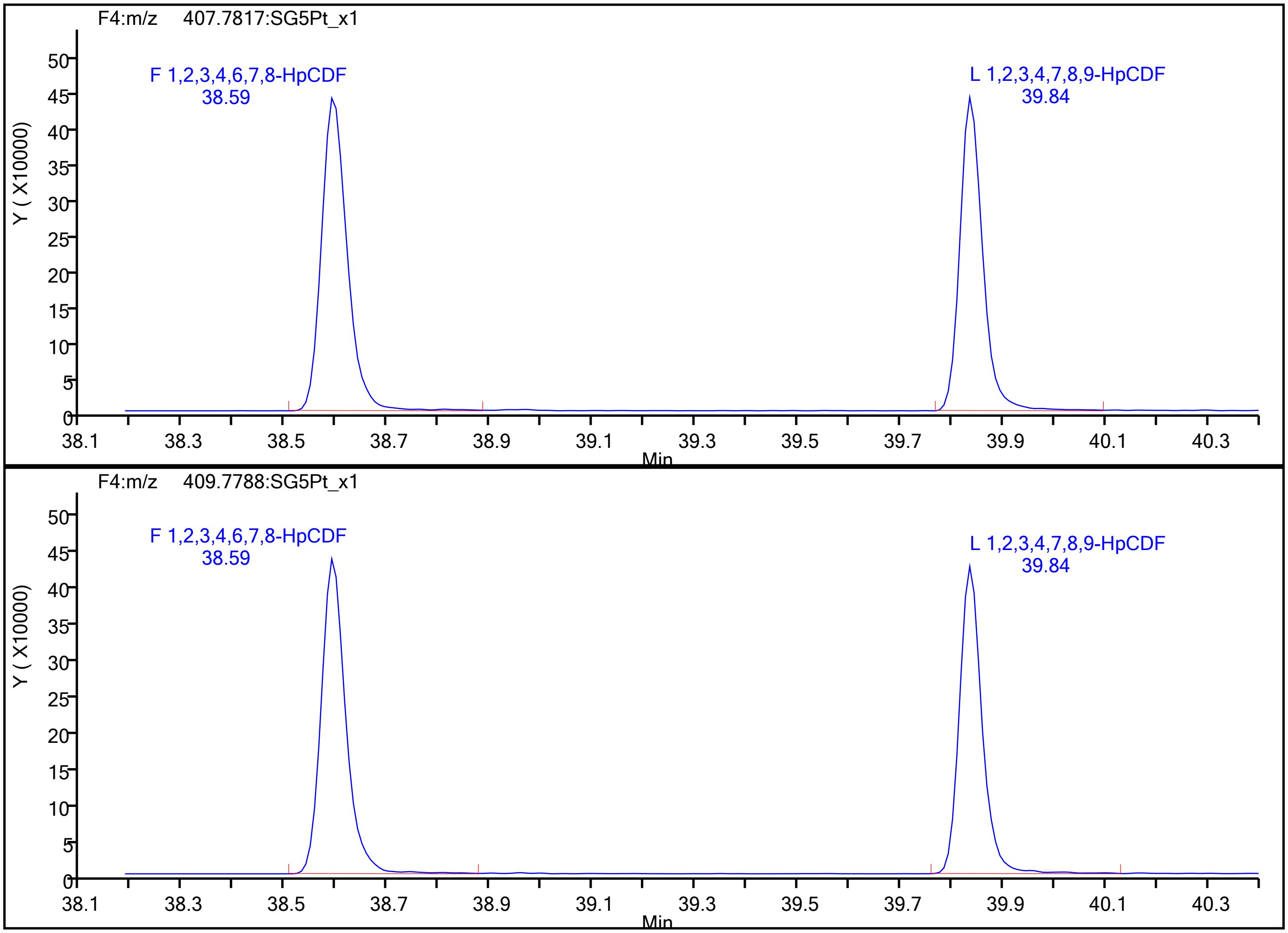

HpCDF Interference Mass

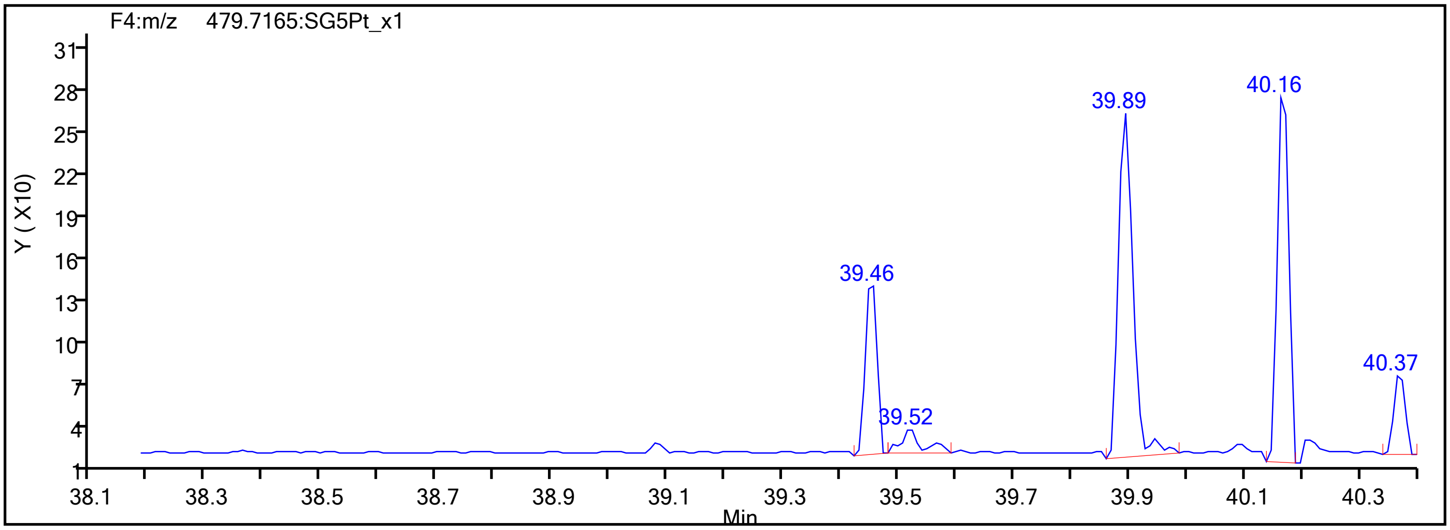

Report Date: 24-Aug-2020 10:59:11 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d
Injection Date: 21-Aug-2020 09:01:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405471
Sample Line#: 27
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

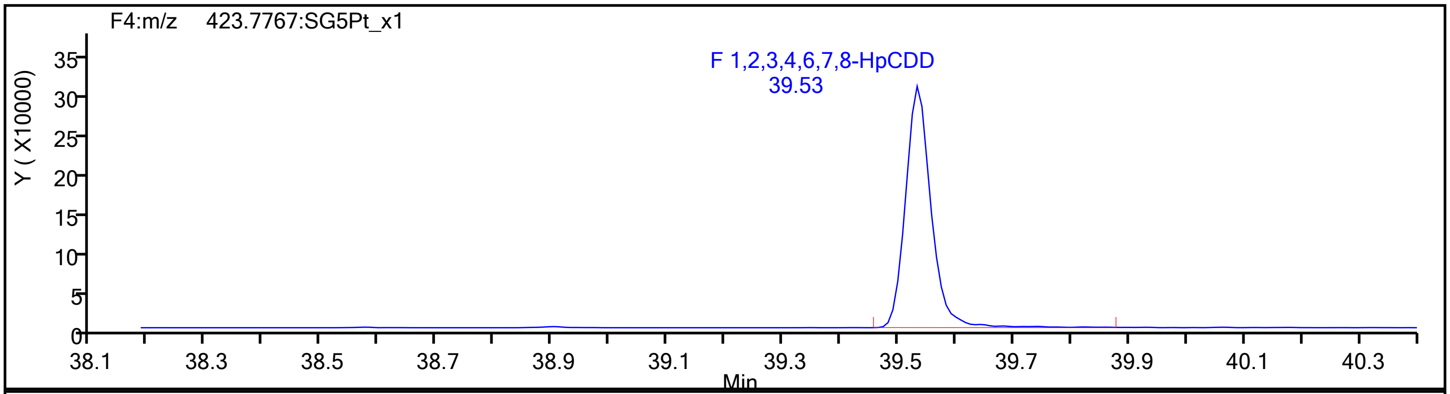

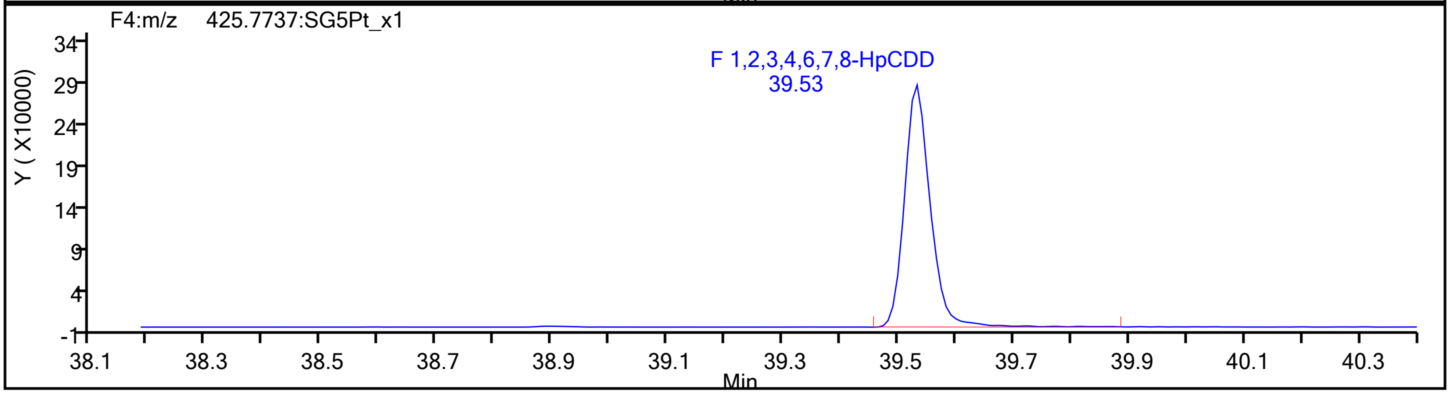

HpCDD Standards

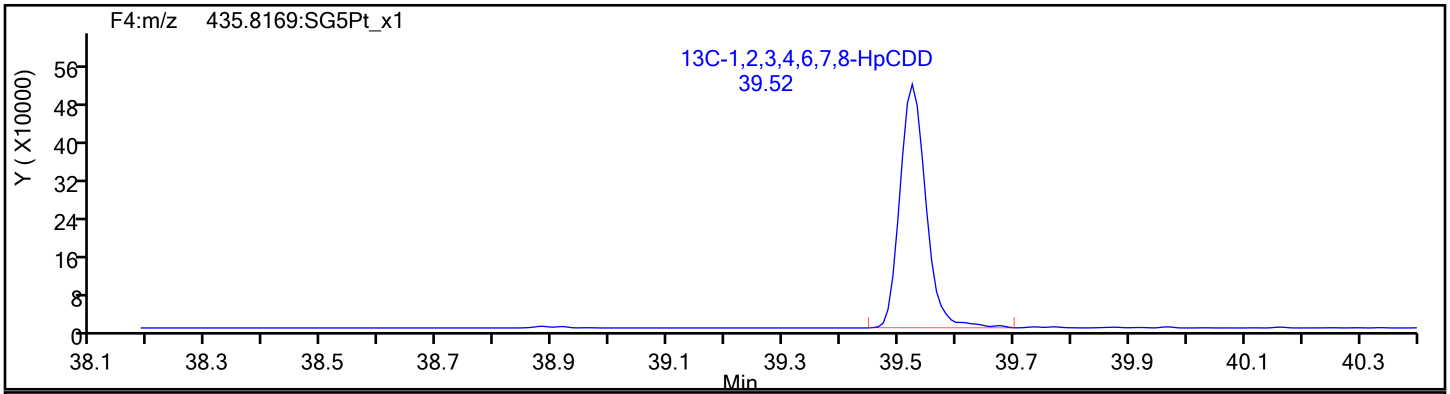

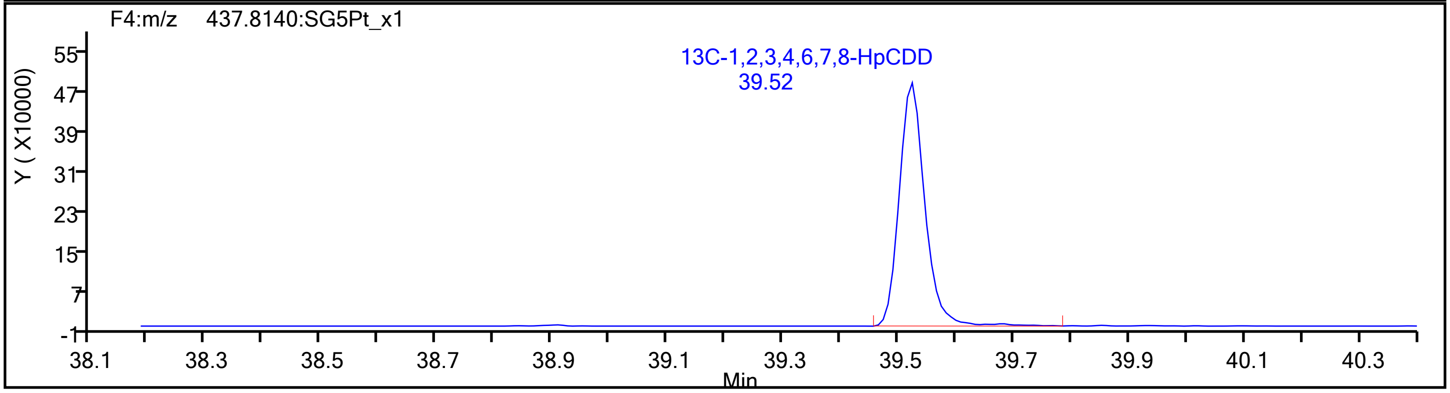

Report Date: 24-Aug-2020 10:59:11 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

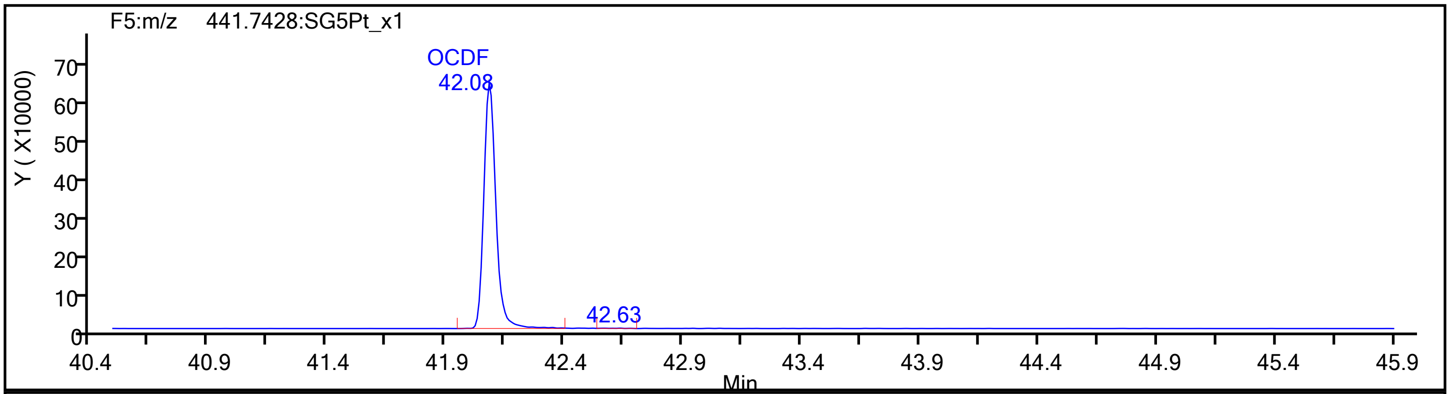

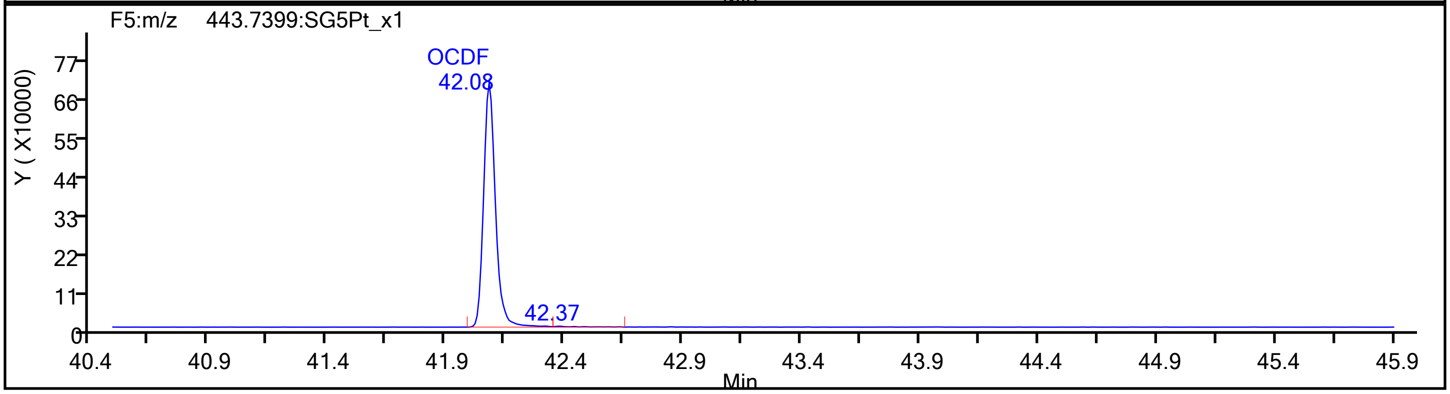

OCDF Standards

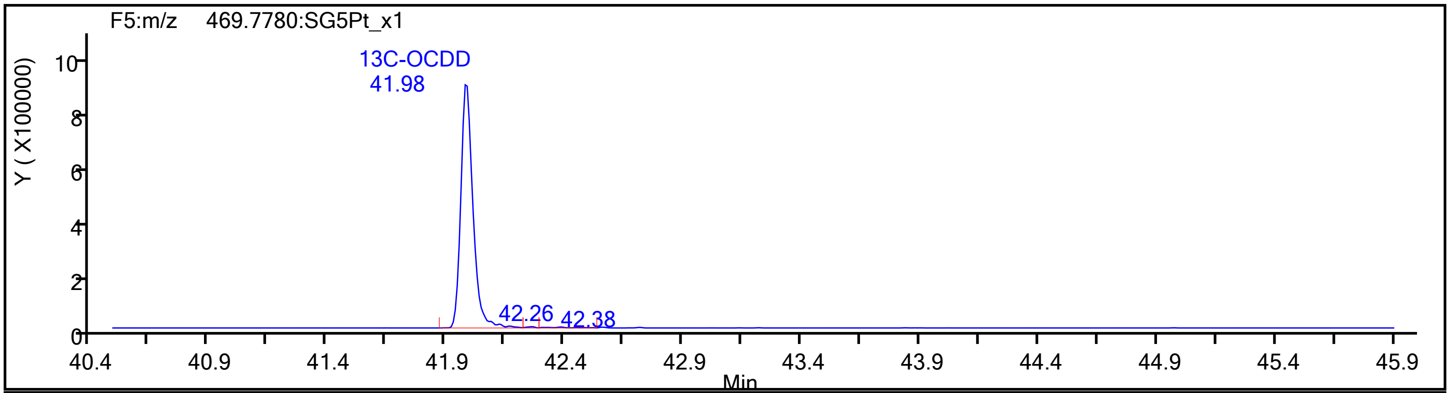

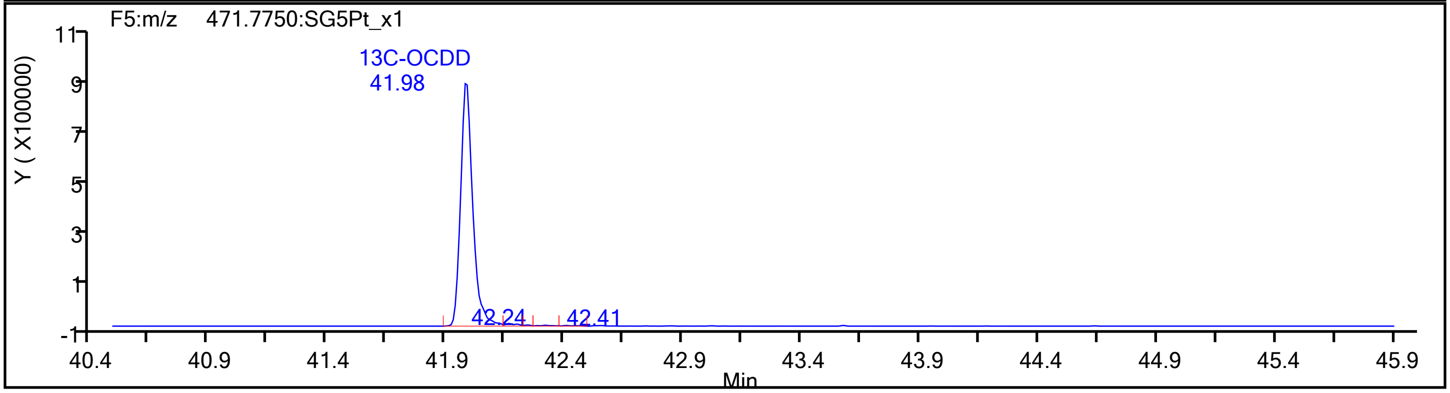

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

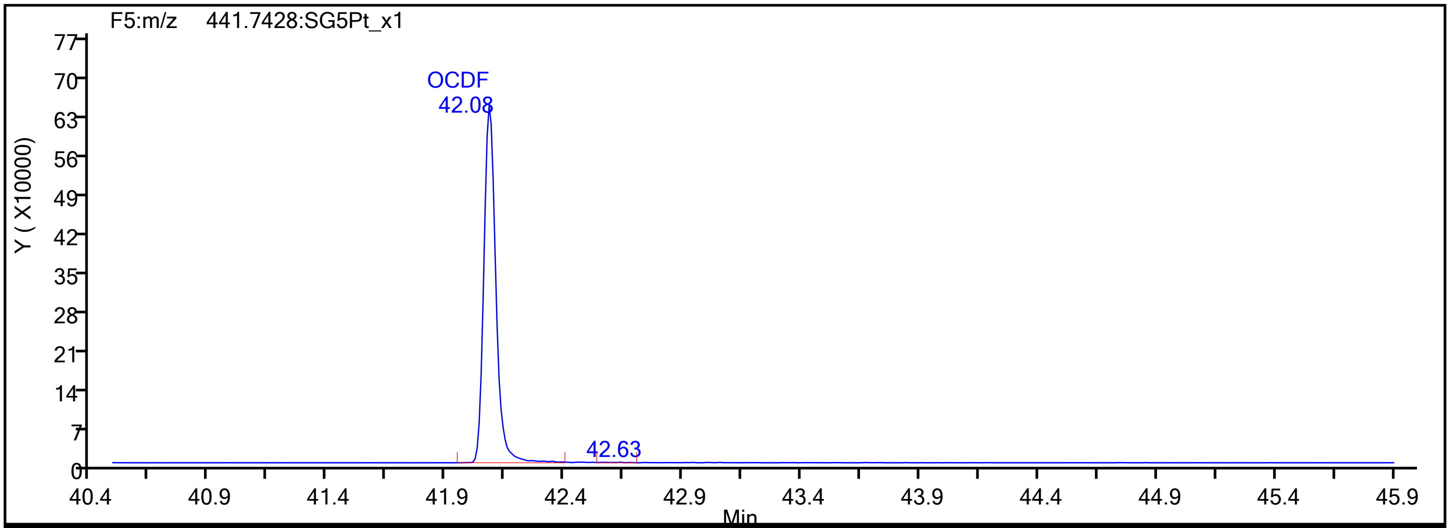

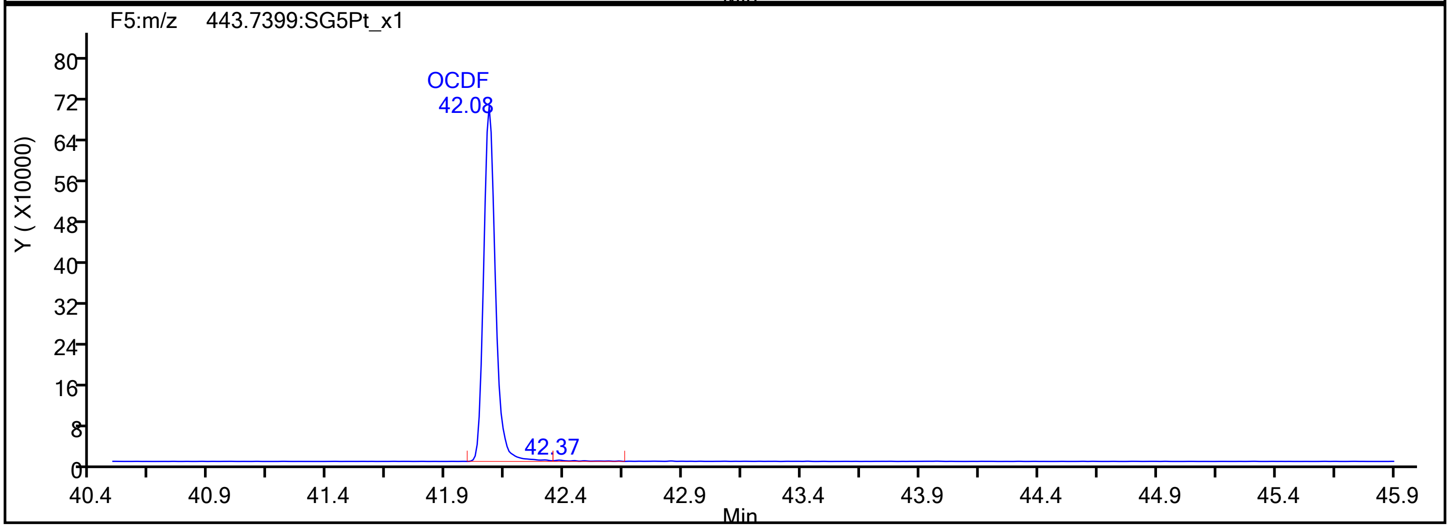

OCDF Interference Mass

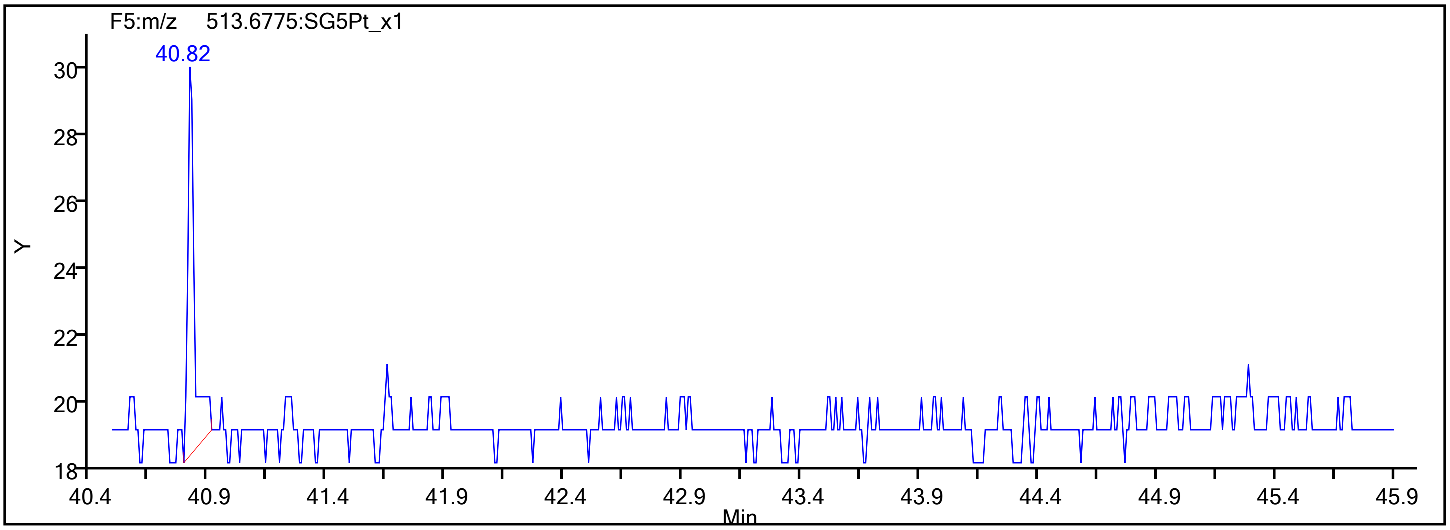

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

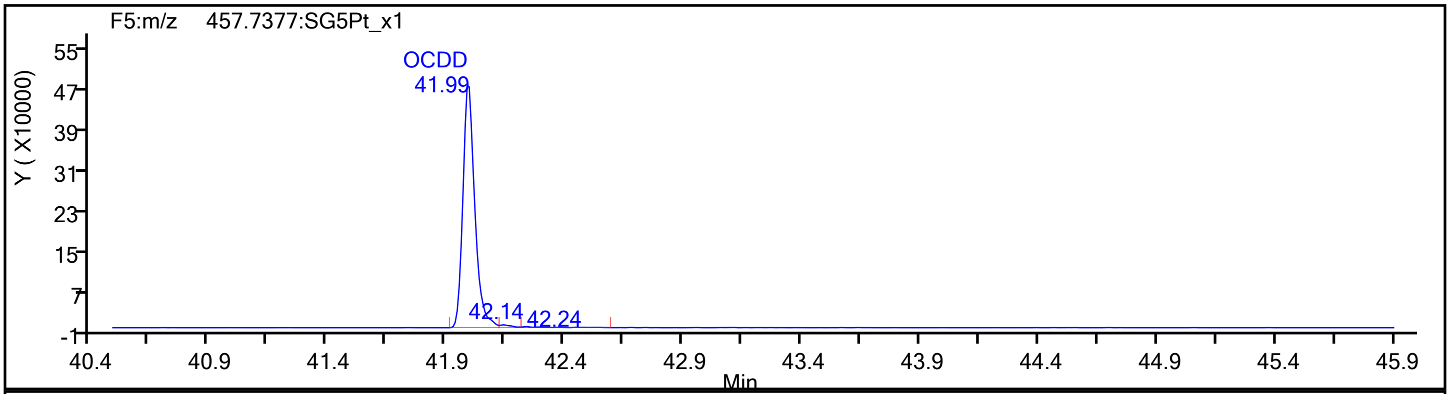

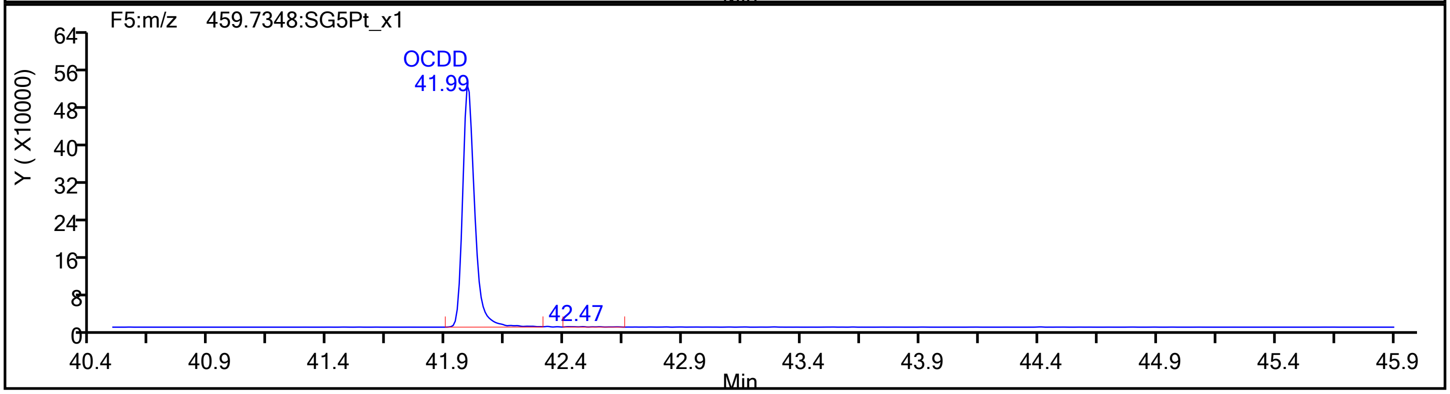

OCDD Standards

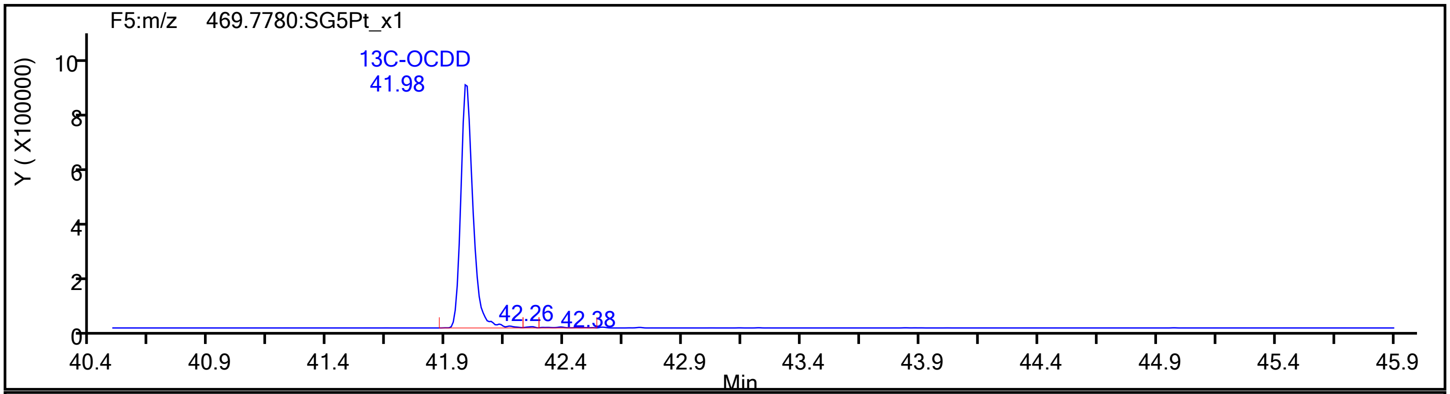

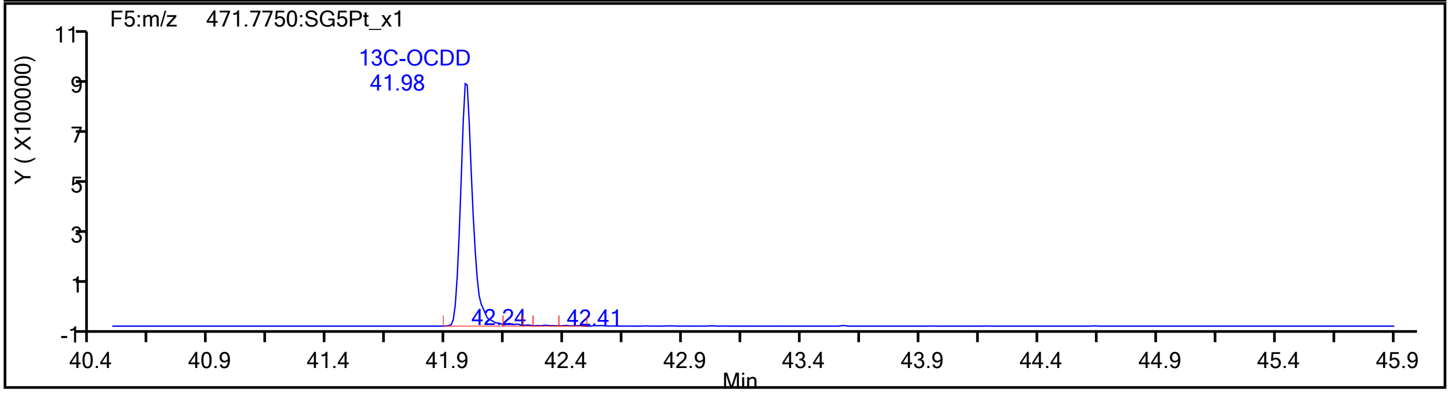

Report Date: 24-Aug-2020 10:59:11 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d

Injection Date: 21-Aug-2020 09:01:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 405471

Sample Line#: 27

Column Type: DB-5

Column Dia: 0.32 mm

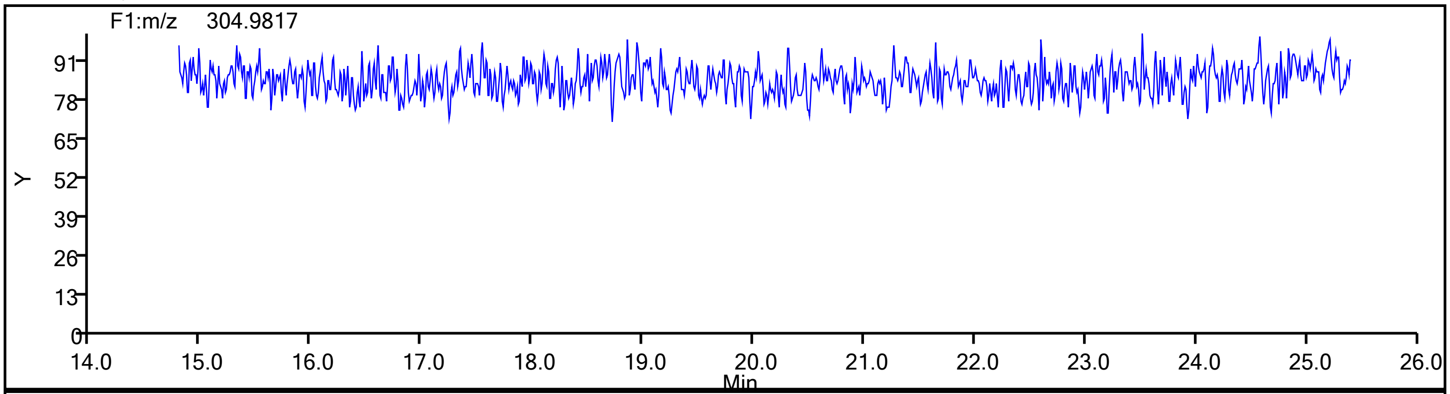

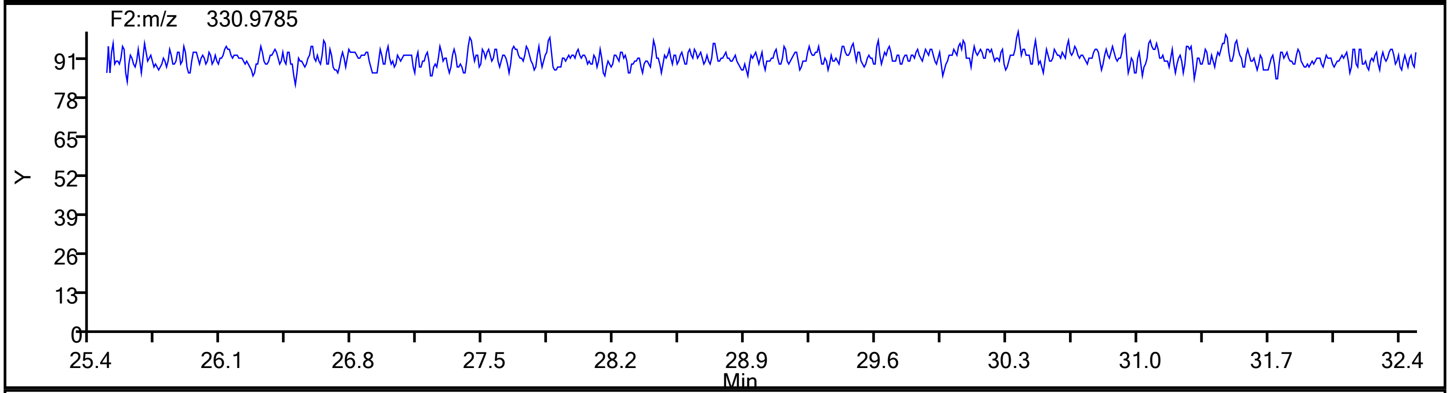

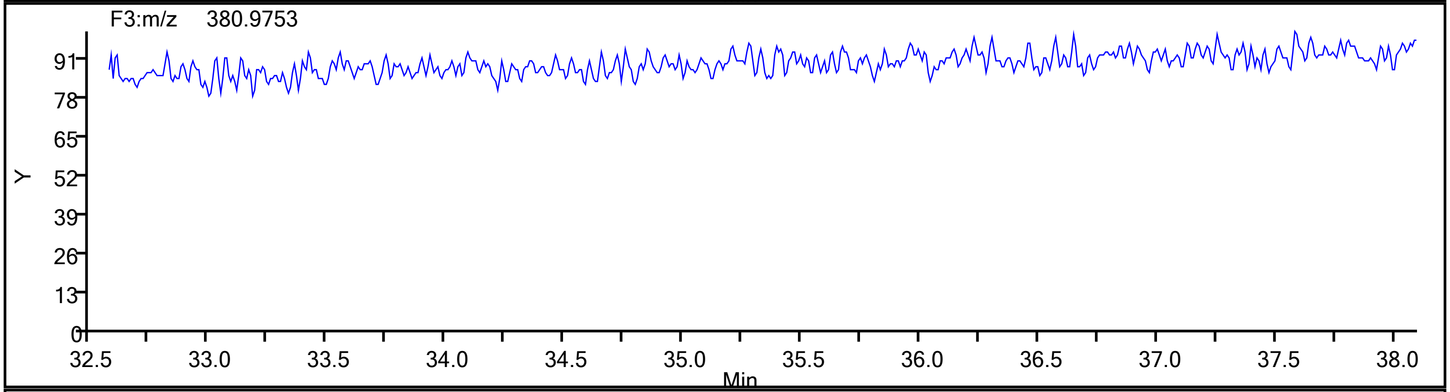

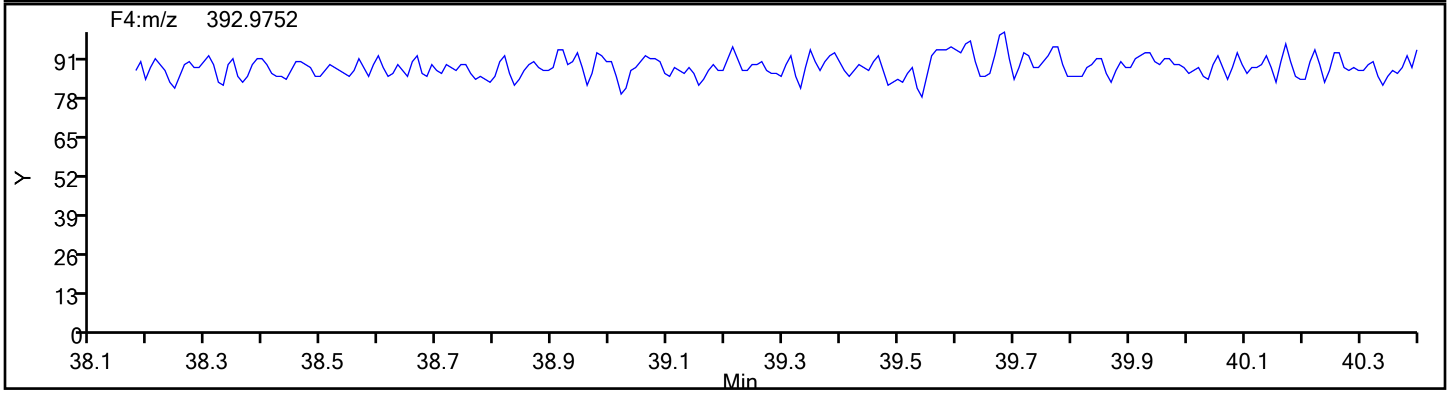

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200820-101819.b\20au20dfs1_30.d		
Injection Date:	21-Aug-2020 09:01:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405471	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

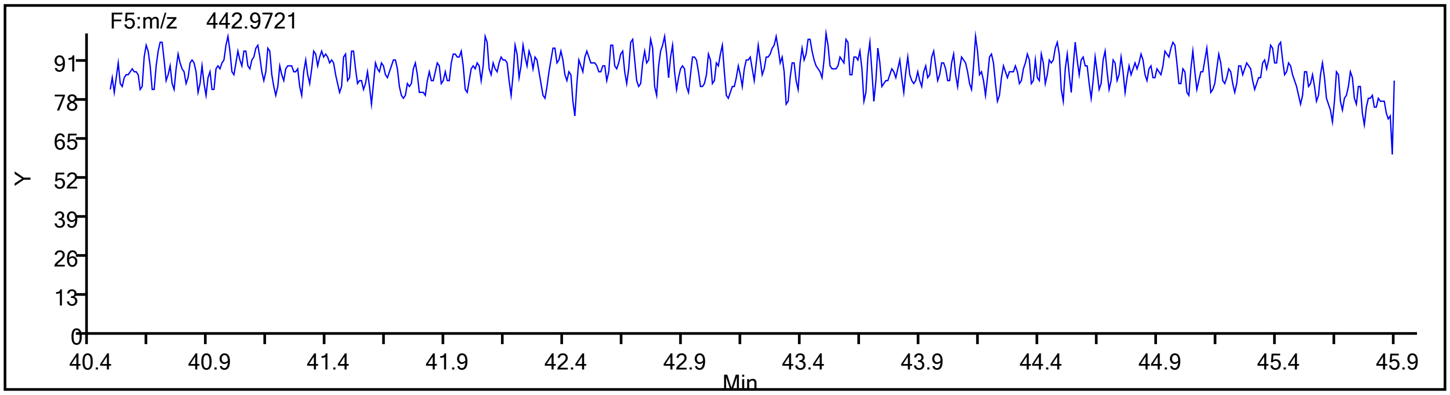

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-404233/3-A

Matrix: Water Lab File ID: 19AU2010D5_17.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1000(mL) Date Analyzed: 08/19/2020 23:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405030 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	199		10	5.8
51207-31-9	2,3,7,8-TCDF	203		10	3.9
40321-76-4	1,2,3,7,8-PeCDD	997		50	8.1
57117-41-6	1,2,3,7,8-PeCDF	1020		50	8.1
57117-31-4	2,3,4,7,8-PeCDF	808		50	6.7
39227-28-6	1,2,3,4,7,8-HxCDD	811		50	6.5
57653-85-7	1,2,3,6,7,8-HxCDD	1020		50	7.8
19408-74-3	1,2,3,7,8,9-HxCDD	925		50	6.2
70648-26-9	1,2,3,4,7,8-HxCDF	828		50	12
57117-44-9	1,2,3,6,7,8-HxCDF	1040		50	13
72918-21-9	1,2,3,7,8,9-HxCDF	1010		50	8.6
60851-34-5	2,3,4,6,7,8-HxCDF	1010		50	8.5
35822-46-9	1,2,3,4,6,7,8-HpCDD	943		50	7.5
67562-39-4	1,2,3,4,6,7,8-HpCDF	1010		50	13
55673-89-7	1,2,3,4,7,8,9-HpCDF	785		50	13
3268-87-9	OCDD	1960		100	7.8
39001-02-0	OCDF	2130		100	12
41903-57-5	Total TCDD	199		10	5.8
30402-14-3	Total TCDF	203		10	3.9
36088-22-9	Total PeCDD	997		50	8.1
30402-15-4	Total PeCDF	1830		50	7.4
34465-46-8	Total HxCDD	2750		50	6.8
55684-94-1	Total HxCDF	3890		50	10
37871-00-4	Total HpCDD	943		50	7.5
38998-75-3	Total HpCDF	1790		50	13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-404233/3-A

Matrix: Water Lab File ID: 19AU2010D5_17.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 08/17/2020 08:45

Sample wt/vol: 1000(mL) Date Analyzed: 08/19/2020 23:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 405030 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	75		20-175
89059-46-1	13C-2,3,7,8-TCDF	83		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	72		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	75		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	96		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	103		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	109		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	83		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	93		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	91		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	93		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	92		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	123		20-186
114423-97-1	13C-OCDD	87		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		31-191

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d
Lims ID: LCSD 320-404233/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 19-Aug-2020 23:48:04 ALS Bottle#: 6 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-404233/3-A LCSD 320-404233/3-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 08:54:45 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1023

First Level Reviewer: dadunj Date: 21-Aug-2020 08:54:45

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.460	4709055	0.77	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.961	5344257	0.73	1.3726	82.7	82.7	0.7942	0.7942	82.68	
2,3,7,8-TCDF	16.976	494443	0.75	0.9104	10.2	10.2	0.1971	0.1971	102	
A Non-2,3,7,8-sub-TCDF	16.689						0.1971	0.1971		
S Total TCDF					10.2	10.2	0.1971	0.1971		
D 13C-2,3,7,8-TCDD	17.642	3595746	0.76	1.0192	74.9	74.9	1.022	1.022	74.92	
2,3,7,8-TCDD	17.657	384874	0.86	1.0745	9.962	9.962	0.2920	0.2920	99.62	
$ 37Cl4-2,3,7,8-TCDD	17.672	1875618		1.0176	39.1	39.1	0.0985	0.0985	97.85	
A Non-2,3,7,8-sub-TCDD	17.135						0.2920	0.2920		
S Total TCDD					9.962	9.962	0.2920	0.2920		
D 13C-1,2,3,7,8-PeCDF	21.838	4025280	1.50	1.1429	74.8	74.8	0.3794	0.3794	74.79	
1,2,3,7,8-PeCDF	21.865	2048396	1.57	0.9938	51.2	51.2	0.4032	0.4032	102	
D 13C-2,3,4,7,8-PeCDF	23.147	6319961	1.51	1.3997	95.9	95.9	0.3098	0.3098	95.88	
2,3,4,7,8-PeCDF	23.174	2073206	1.55	0.8117	40.4	40.4	0.3328	0.3328	80.83	
A F1 PeCDFs	19.555						0.1953	0.1953		
A Non-2,3,7,8-sub-PeCDF	22.583						0.3575	0.3575		
S Total PeCDF					91.6	91.6	0.3680	0.3680		
D 13C-1,2,3,7,8-PeCDD	23.856	2800399	1.63	0.8232	72.2	72.2	0.3349	0.3349	72.24	
1,2,3,7,8-PeCDD	23.883	1421428	1.57	1.0181	49.9	49.9	0.4027	0.4027	99.71	
A Non-2,3,7,8-sub-PeCDD	22.772						0.4027	0.4027		
S Total PeCDD					49.9	49.9	0.4027	0.4027		
D 13C-1,2,3,4,7,8-HxCDF	29.982	4619103	0.52	1.1388	109.2	109.2	0.5701	0.5701	109	
1,2,3,4,7,8-HxCDF	30.022	1542141	1.28	0.8061	41.4	41.4	0.5959	0.5959	82.83	
D 13C-1,2,3,6,7,8-HxCDF	30.222	3337253	0.49	1.0803	83.2	83.2	0.6010	0.6010	83.19	
1,2,3,6,7,8-HxCDF	30.235	1699166	1.26	0.9818	51.9	51.9	0.6277	0.6277	104	
D 13C-2,3,4,6,7,8-HxCDF	31.167	3218383	0.49	0.9494	91.3	91.3	0.6839	0.6839	91.29	
2,3,4,6,7,8-HxCDF	31.193	1689935	1.27	1.0382	50.6	50.6	0.4274	0.4274	101	
D 13C-1,2,3,7,8,9-HxCDF	32.058	3003284	0.49	0.8670	93.3	93.3	0.7488	0.7488	93.28	
1,2,3,7,8,9-HxCDF	32.071	1564597	1.25	1.0321	50.5	50.5	0.4288	0.4288	101	
A Non-2,3,7,8-sub-HxCDF	29.689						0.5047	0.5047		
S Total HxCDF					194.3	194.3	0.5200	0.5200		

Report Date: 21-Aug-2020 08:54:45 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.859	3713340	1.17	3.8E+05	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	31.393	3561797	1.20	0.9356	102.5	102.5	0.5680	0.5680	103	
1,2,3,4,7,8-HxCDD	31.406	1184719	1.18	0.8202	40.6	40.6	0.3235	0.3235	81.10	
D 13C-1,2,3,6,7,8-HxCDD	31.499	2866531	1.19	1.0416	74.1	74.1	0.5102	0.5102	74.11	
1,2,3,6,7,8-HxCDD	31.526	1367413	1.21	0.9367	50.9	50.9	0.3913	0.3913	102	
1,2,3,7,8,9-HxCDD	31.872	1472549	1.28	0.9905	46.3	46.3	0.3108	0.3108	92.51	
A Non-2,3,7,8-sub-HxCDD	30.321						0.3362	0.3362		
S Total HxCDD					137.7	137.7	0.3419	0.3419		
D 13C-1,2,3,4,6,7,8-HpCDF	33.554	2692316	0.41	0.7899	91.8	91.8	2.425	2.425	91.79	
1,2,3,4,6,7,8-HpCDF	33.566	1966300	1.06	1.4527	50.3	50.3	0.6345	0.6345	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.623	4169551	0.41	0.9093	123.5	123.5	2.107	2.107	123	
1,2,3,4,7,8,9-HpCDF	34.636	1731569	1.03	1.0585	39.2	39.2	0.6724	0.6724	78.47	
A Non-2,3,7,8-sub-HpCDF	34.101						0.6397	0.6397		
S Total HpCDF					89.5	89.5	0.6535	0.6535		
D 13C-1,2,3,4,6,7,8-HpCDD	34.344	2636779	1.13	0.7637	93.0	93.0	0.7204	0.7204	92.98	
1,2,3,4,6,7,8-HpCDD	34.356	1310304	1.04	1.0540	47.1	47.1	0.3750	0.3750	94.30	
A Non-2,3,7,8-sub-HpCDD	34.623						0.3750	0.3750		
S Total HpCDD					47.1	47.1	0.3750	0.3750		
D 13C-OCDD	36.650	4143286	0.84	0.6377	175.0	175.0	0.7554	0.7554	87.48	
OCDF	36.746	2856001	0.89	1.2965	106.3	106.3	0.6060	0.6060	106	
OCDD	36.662	2336316	0.87	1.1499	98.1	98.1	0.3910	0.3910	98.07	

QC Flag Legend

Review Flags

a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d
Lims ID: LCSD 320-404233/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 19-Aug-2020 23:48:04 ALS Bottle#: 6 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-404233/3-A LCSD 320-404233/3-A
Misc. Info.: 19AU2010D5
Operator ID: SMA/AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Aug-2020 08:54:45 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1023

First Level Reviewer: dadunj Date: 21-Aug-2020 08:54:45

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.460	17.460	0		2051987	513143	3342	8355	154		
333.9339	17.460	17.460	0		2657068	653851	1521	3802	430	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.961	16.962	0	0.971	2256015	529588	3540	8850	150		
317.9389	16.961	16.962	0	0.971	3088242	759008	1549	3872	490	0.73(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.976	16.976	0	1.001	212061	46729	309	772	151		
305.8987	16.976	16.976	0	1.001	282382	67174	616	1540	109	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.689						309	772			
305.8987	16.689						616	1540			
13C-2,3,7,8-TCDD											
331.9368	17.642	17.642	0	1.010	1547210	355330	3342	8355	106		
333.9339	17.642	17.642	0	1.010	2048536	475644	1521	3802	313	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.657	17.657	0	1.001	177523	33810	672	1680	50		
321.8936	17.672	17.657	1	1.002	207351	46132	371	927	124	0.86(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.672	17.657	1	1.012	1875618	433768	468	1170	927		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.135						672	1680			
321.8936	17.135						371	927			
13C-1,2,3,7,8-PeCDF											
351.9000	21.838	21.797	2	1.251	2412070	419019	1179	2947	355		
353.8970	21.838	21.797	2	1.251	1613210	285226	845	2112	338	1.50(1.32-1.78)	

Report Date: 21-Aug-2020 08:54:45 Chrom Revision: 2.3 17-Aug-2020 20:42:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.865	21.811	3	1.001	1252399	220386	559	1397	394		
341.8567	21.865	21.811	3	1.001	795997	141744	570	1425	249	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.147	23.093	3	1.326	3803289	619791	1179	2947	526		
353.8970	23.147	23.093	3	1.326	2516672	424889	845	2112	503	1.51(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.174	23.106	4	1.001	1259955	206248	559	1397	369		
341.8567	23.174	23.106	4	1.001	813251	129988	570	1425	228	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.555						190	475			
341.8567	19.555						427	1067			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.583						559	1397			
341.8567	22.583						570	1425			
13C-1,2,3,7,8-PeCDD											
367.8949	23.856	23.774	5	1.366	1734107	267735	664	1660	403		
369.8919	23.856	23.774	5	1.366	1066292	155423	623	1557	249	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.883	23.816	4	1.001	868182	135214	443	1107	305		
357.8516	23.883	23.816	4	1.001	553246	79492	251	627	317	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.772						443	1107			
357.8516	22.772						251	627			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.982	29.916	4	0.941	1578773	236102	860	2150	275		
385.8610	29.995	29.916	5	0.942	3040330	460233	1543	3857	298	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.022	29.942	5	1.001	866531	129756	690	1725	188		
375.8178	30.008	29.942	4	1.001	675610	100992	648	1620	156	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.222	30.155	4	0.949	1095940	169363	860	2150	197		
385.8610	30.222	30.155	4	0.949	2241313	373389	1543	3857	242	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.235	30.182	3	1.000	947613	146008	690	1725	212		
375.8178	30.235	30.182	3	1.000	751553	118614	648	1620	183	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.167	31.127	2	0.978	1056825	236713	860	2150	275		
385.8610	31.180	31.127	3	0.979	2161558	517056	1543	3857	335	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.193	31.153	2	1.001	944100	218270	690	1725	316		
375.8178	31.193	31.153	2	1.001	745835	163825	648	1620	253	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.058	32.019	2	1.006	989798	239374	860	2150	278		
385.8610	32.045	32.019	2	1.006	2013486	516447	1543	3857	335	0.49(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.071	32.032	2	1.000	867799	204887	690	1725	297		
375.8178	32.058	32.032	2	1.000	696798	171508	648	1620	265	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.689						690	1725			
375.8178	29.689						648	1620			
13C-1,2,3,7,8,9-HxCDD											a
401.8559	31.859	31.832	2		2000372	493325	1186	2965	416		a
403.8529	31.859	31.832	2		1712968	431884	781	1952	553	1.17(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.393	31.353	2	0.985	1945477	504880	1186	2965	426		
403.8529	31.393	31.353	2	0.985	1616320	420209	781	1952	538	1.20(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.406	31.366	2	1.000	641822	174537	479	1197	364		
391.8127	31.406	31.366	2	1.000	542897	140168	503	1257	279	1.18(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.499	31.473	2	0.989	1555084	366508	1186	2965	309		
403.8529	31.499	31.473	2	0.989	1311447	303258	781	1952	388	1.19(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.526	31.486	2	1.001	748144	172272	479	1197	360		
391.8127	31.526	31.486	2	1.001	619269	140722	503	1257	280	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.872	31.846	2	1.015	826361	208274	479	1197	435		
391.8127	31.872	31.846	2	1.015	646188	159433	503	1257	317	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.321						479	1197			
391.8127	30.321						503	1257			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.554	33.530	1	1.053	788073	274462	1969	4922	139		
419.8220	33.554	33.530	1	1.053	1904243	691104	5121	12802	135	0.41(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.566	33.542	1	1.000	1013265	345329	2404	6010	144		
409.7789	33.566	33.542	1	1.000	953035	324540	1156	2890	281	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.623	34.599	1	1.087	1216122	368956	1969	4922	187		
419.8220	34.623	34.599	1	1.087	2953429	881412	5121	12802	172	0.41(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.636	34.611	1	1.000	879228	269921	2404	6010	112		
409.7789	34.636	34.611	1	1.000	852341	254342	1156	2890	220	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.101						2404	6010			
409.7789	34.101						1156	2890			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.344	34.320	1	1.078	1398096	427866	1196	2990	358		
437.8140	34.344	34.320	1	1.078	1238683	380496	840	2100	453	1.13(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.356	34.332	1	1.000	668340	199277	556	1390	358		
425.7737	34.356	34.332	1	1.000	641964	188854	722	1805	262	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.623						556	1390			
425.7737	34.623						722	1805			
13C-OCDD											
469.7779	36.650	36.626	1	1.150	1892828	491303	941	2352	522		
471.7750	36.650	36.626	1	1.150	2250458	583016	842	2105	692	0.84(0.76-1.02)	
OCDF											
441.7428	36.746	36.722	1	1.003	1346441	366624	1067	2667	344		
443.7399	36.746	36.722	1	1.003	1509560	398271	621	1552	641	0.89(0.76-1.02)	
OCDD											
457.7377	36.662	36.638	1	1.000	1087216	273224	378	945	723		
459.7348	36.650	36.638	1	1.000	1249100	315156	588	1470	536	0.87(0.76-1.02)	

QC Flag Legend

Review Flags

a - User Assigned ID

Report Date: 21-Aug-2020 08:54:45
Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d
Injection Date: 19-Aug-2020 23:48:04
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA/AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030
Sample Line#: 27
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

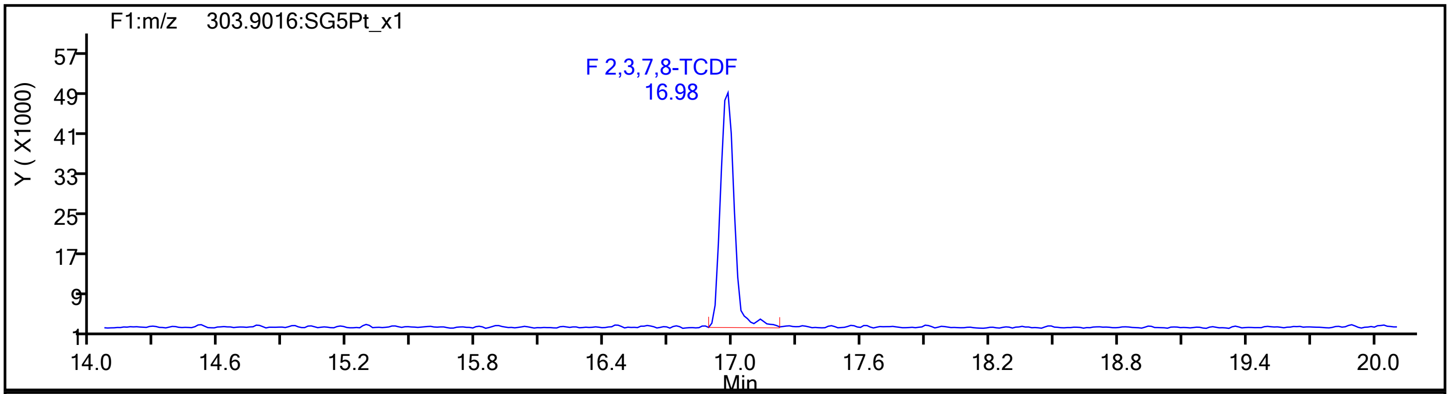

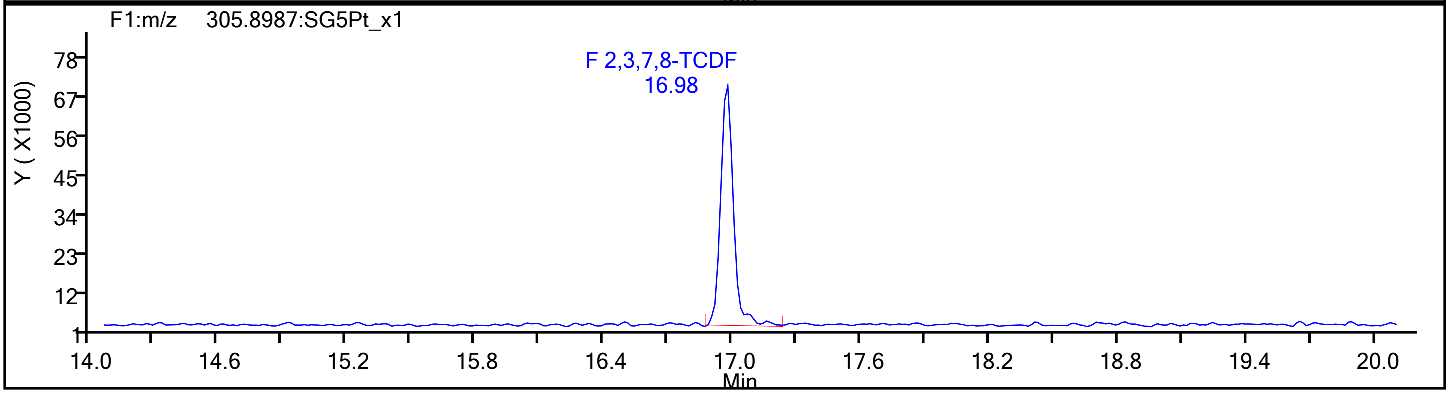

TCDF Standards

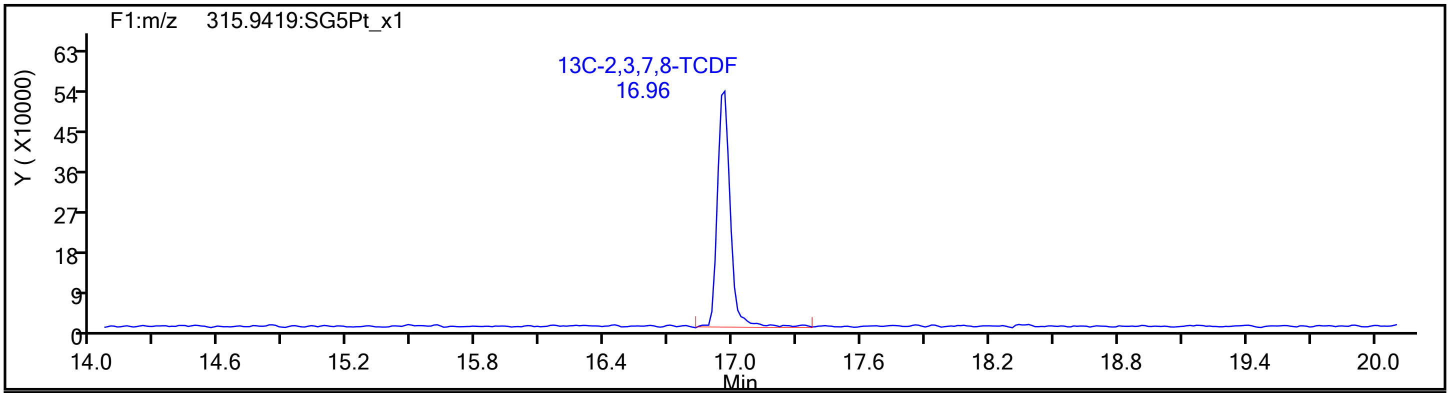

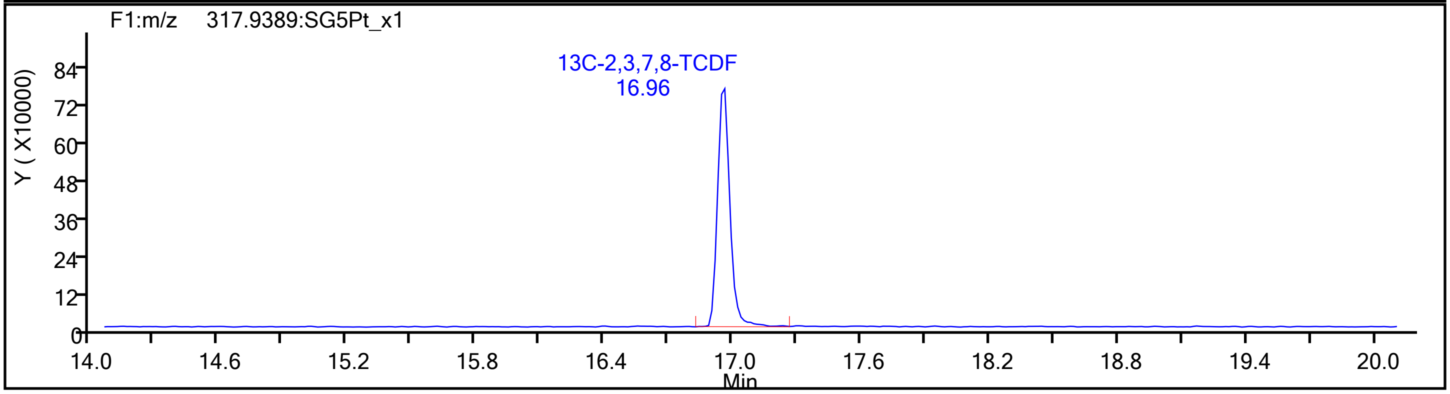

Report Date: 21-Aug-2020 08:54:45 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d		
Injection Date:	19-Aug-2020 23:48:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

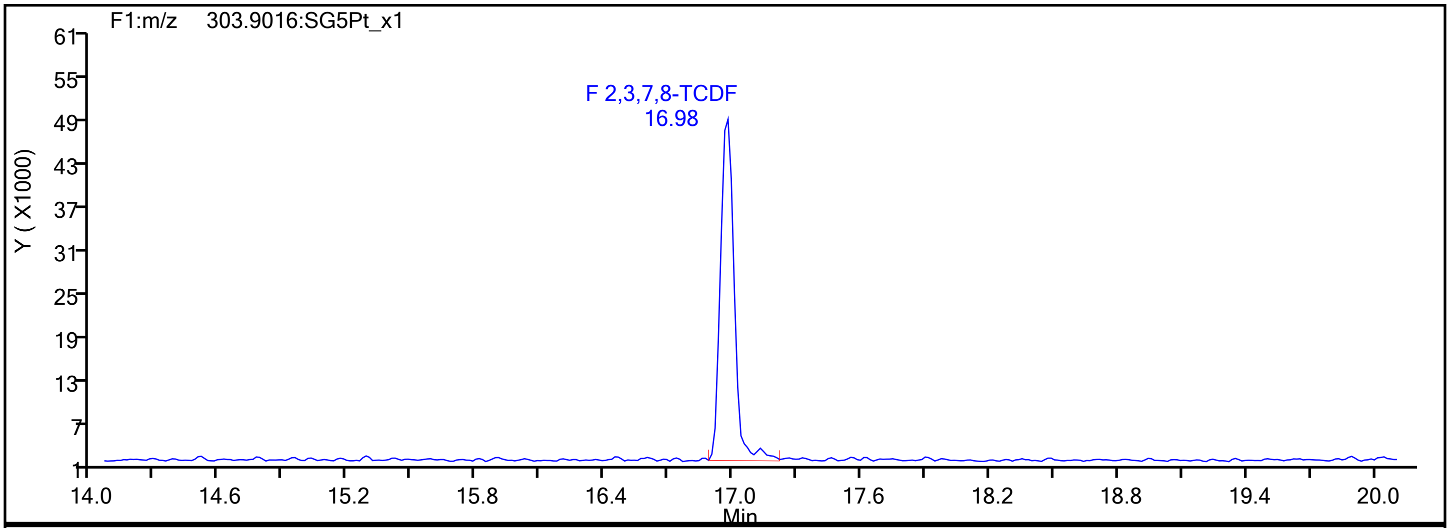

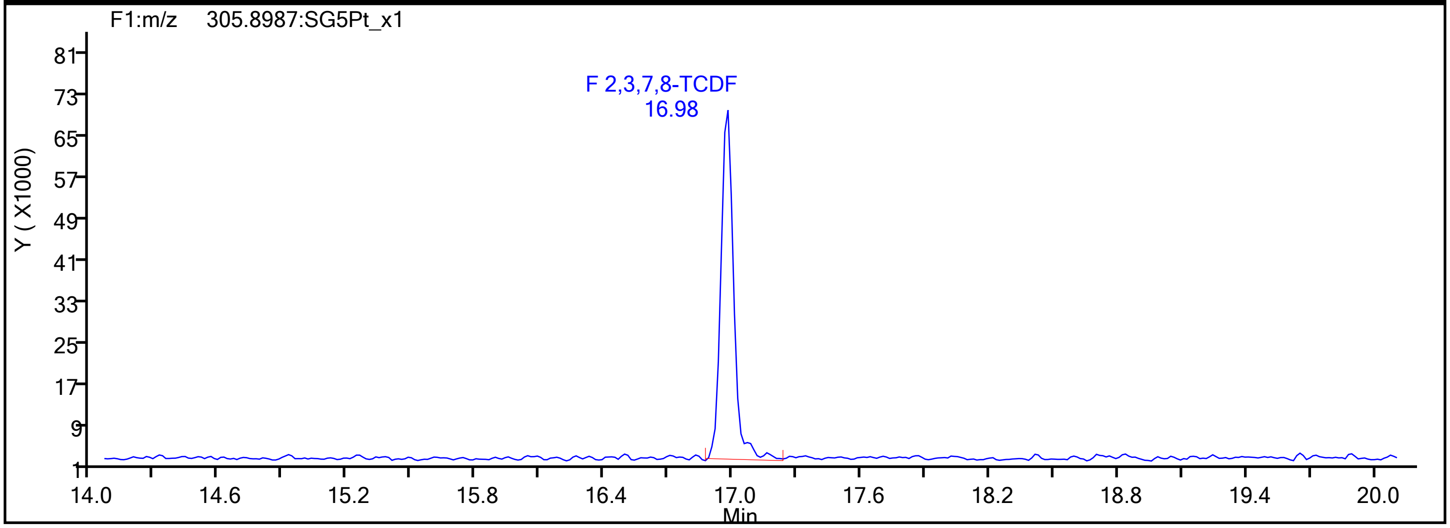

TCDF Interference Mass

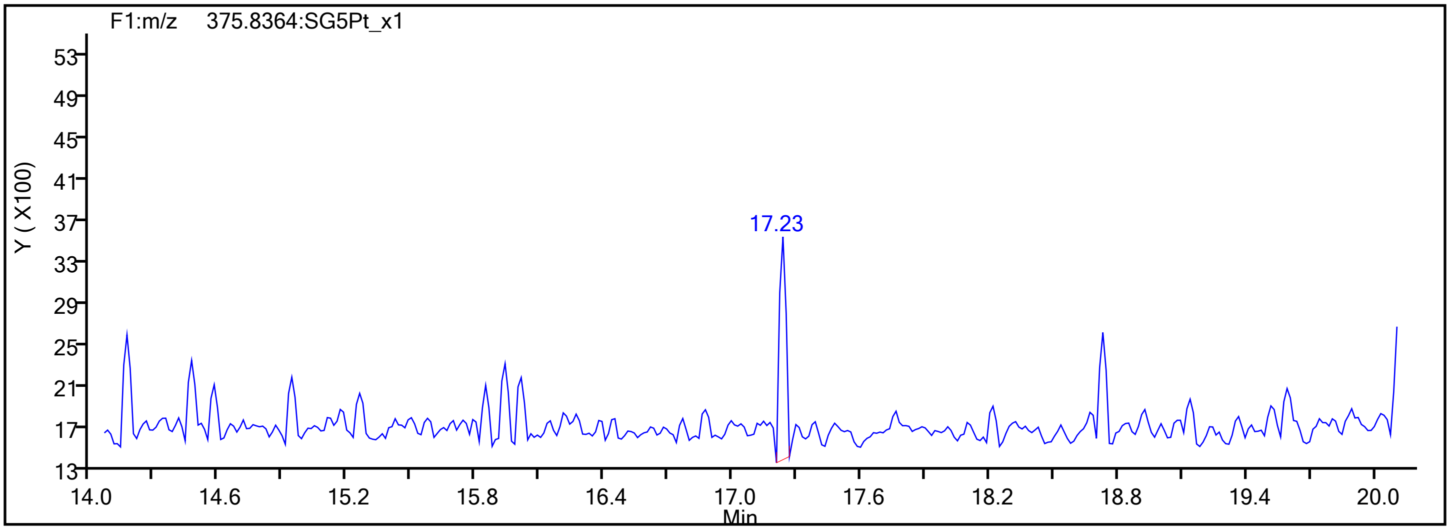

Report Date: 21-Aug-2020 08:54:45 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d		
Injection Date:	19-Aug-2020 23:48:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

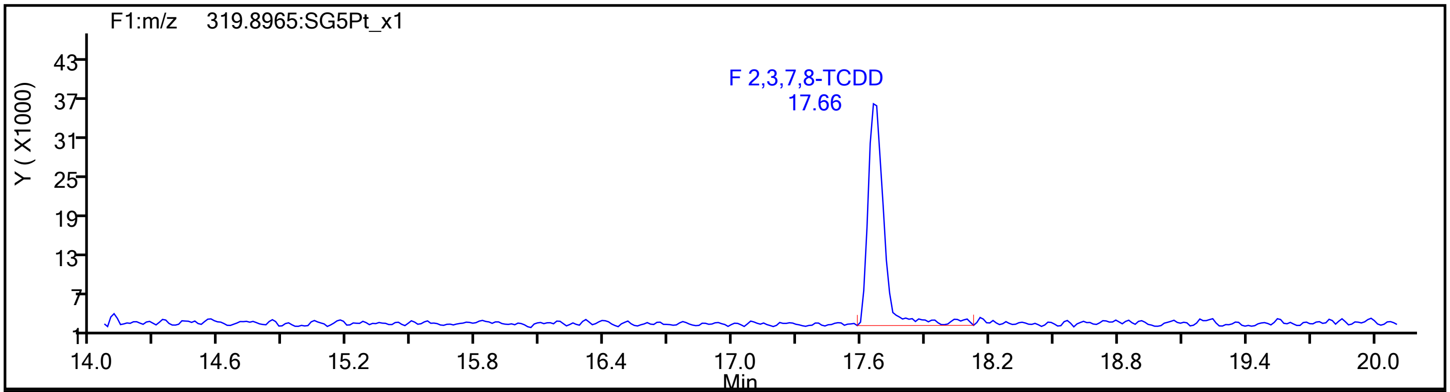

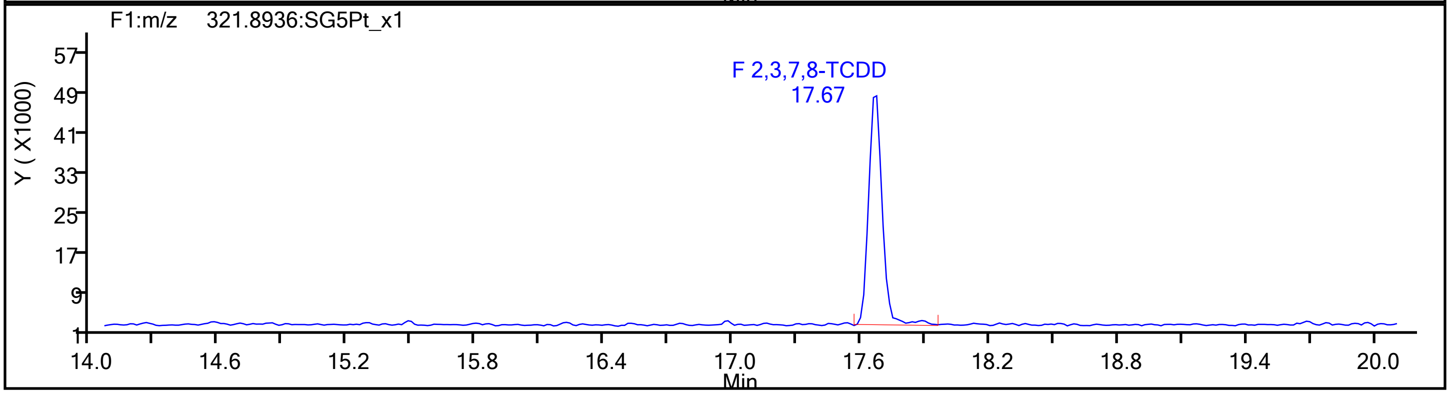

TCDD Standards

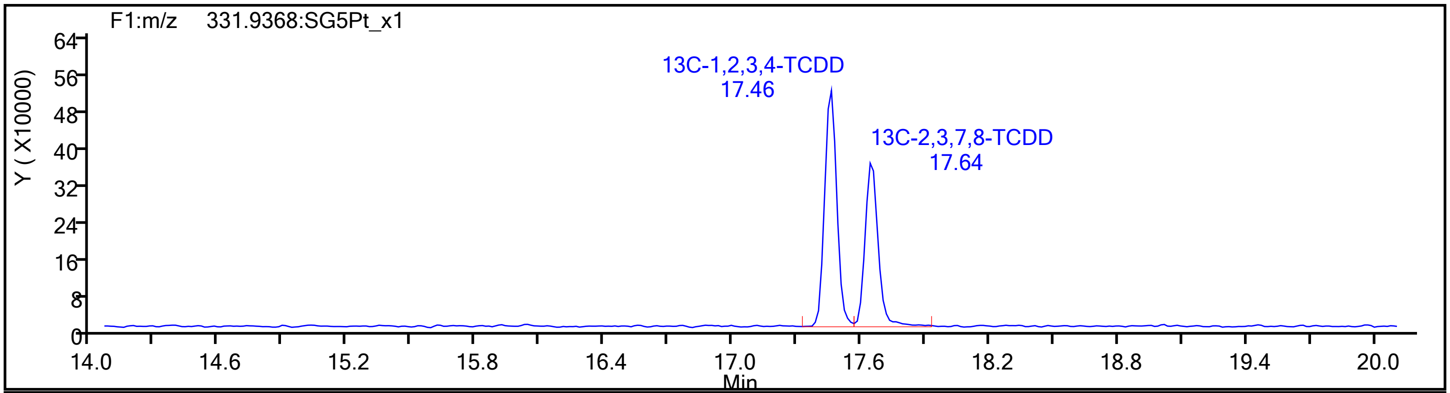

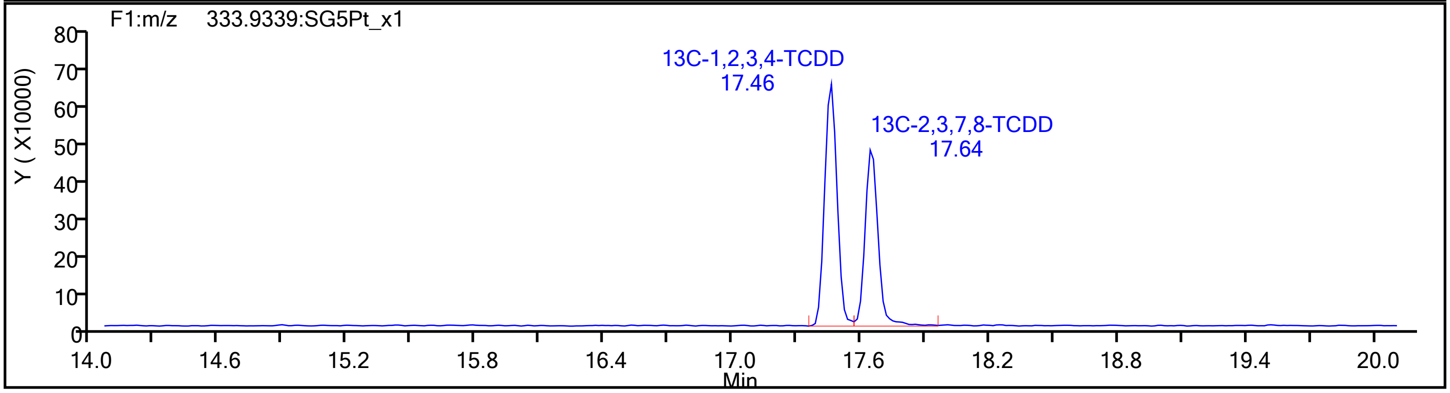

Report Date: 21-Aug-2020 08:54:45 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

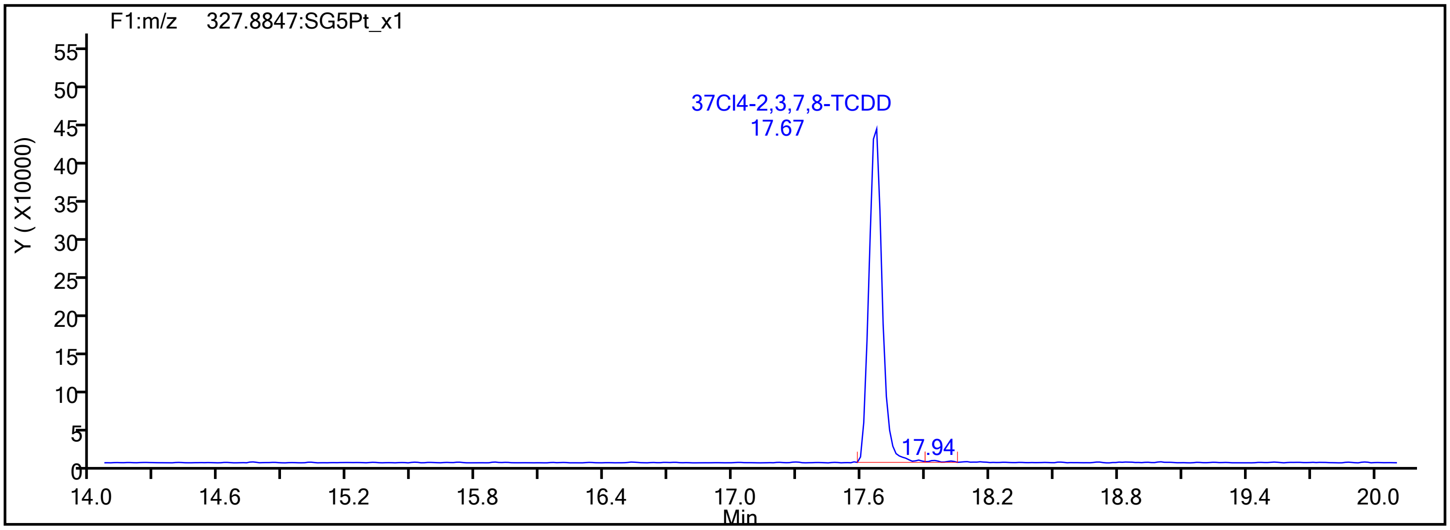

37Cl4-TCDD Standards

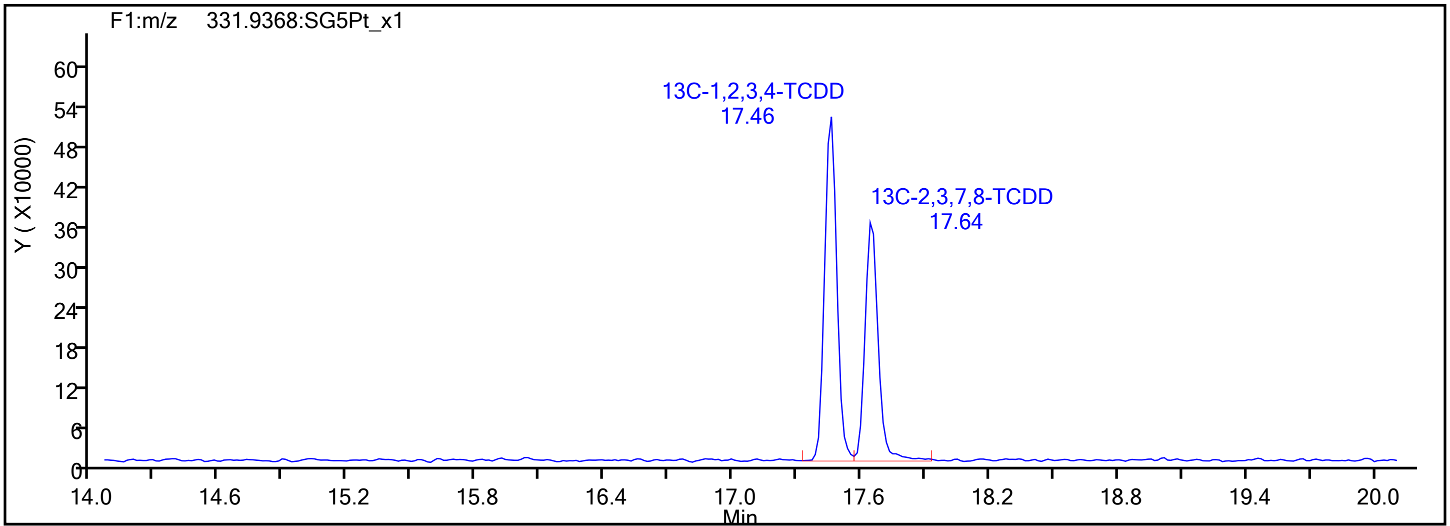

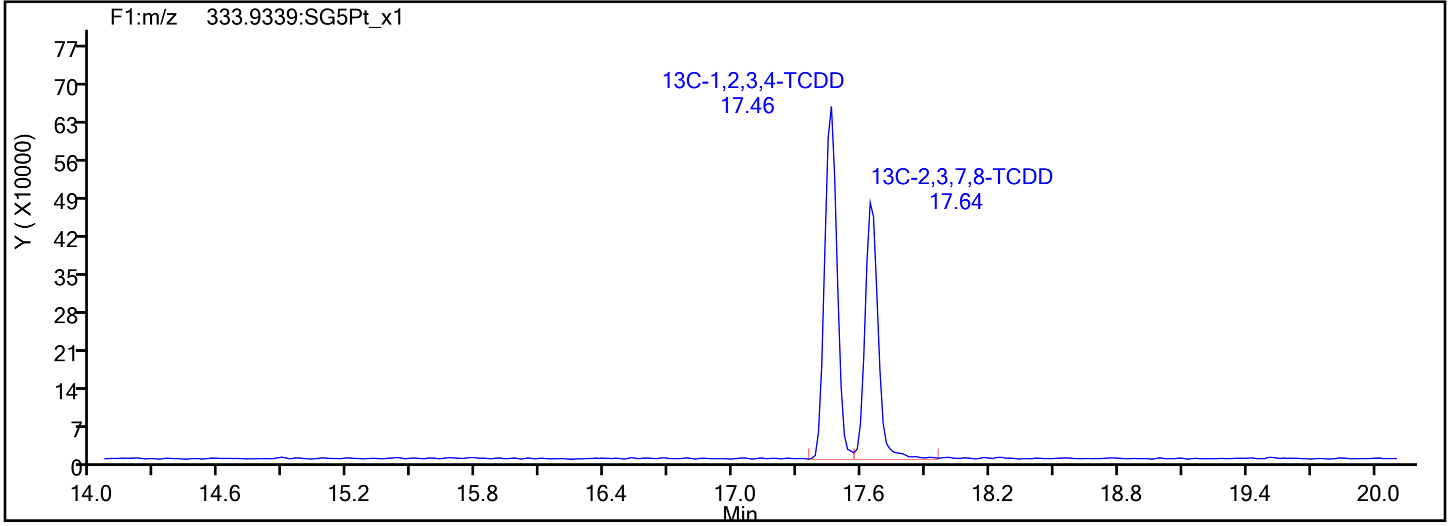

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F1 PeCDFs

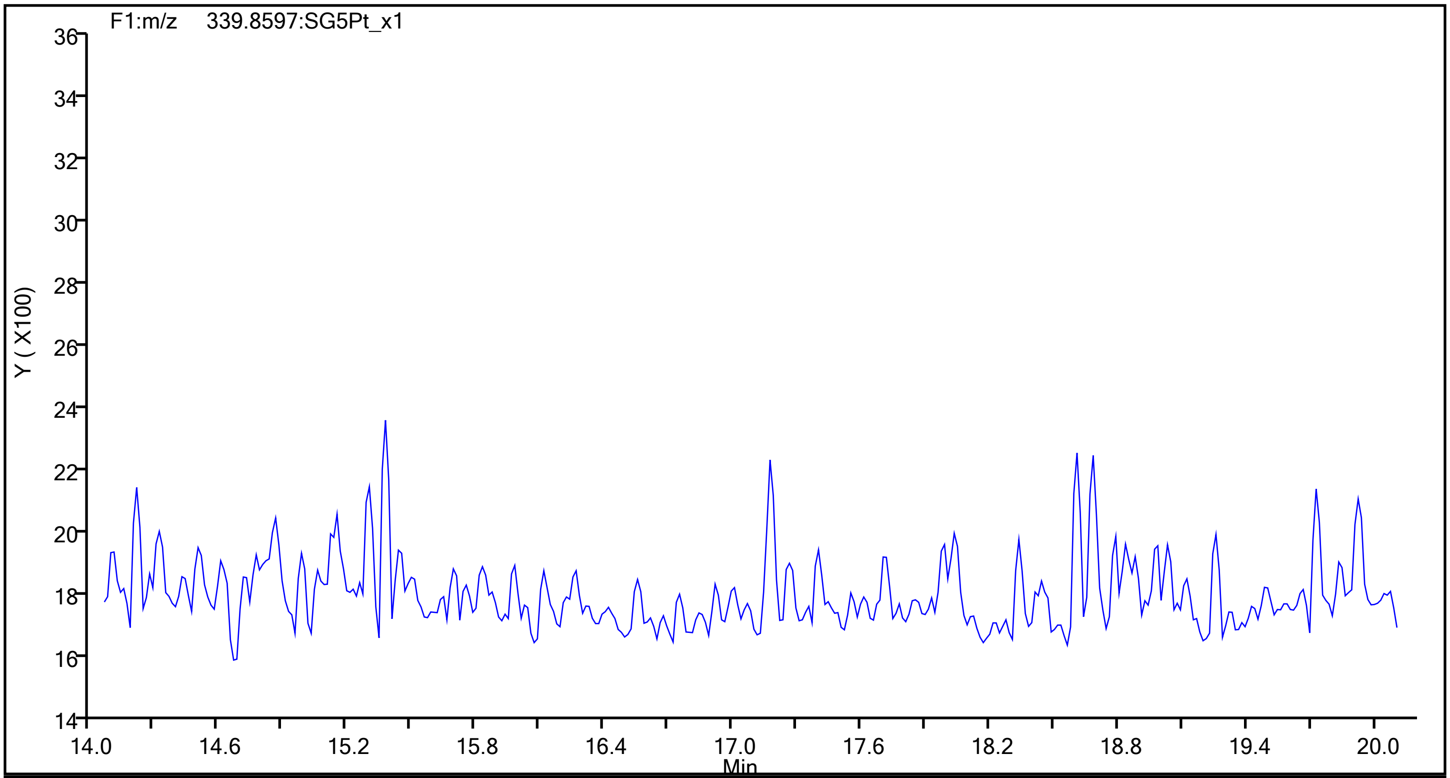

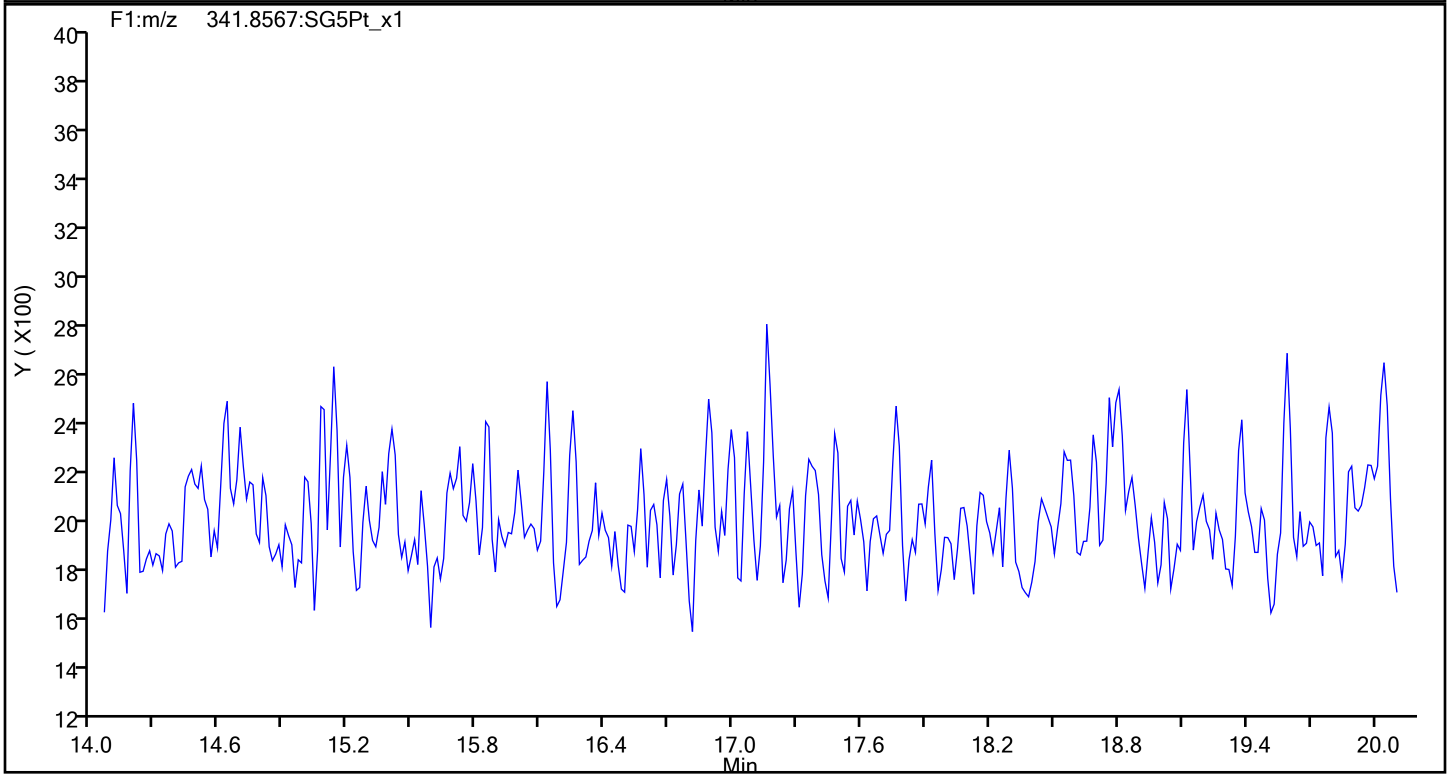

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Eurofins TestAmerica, Sacramento

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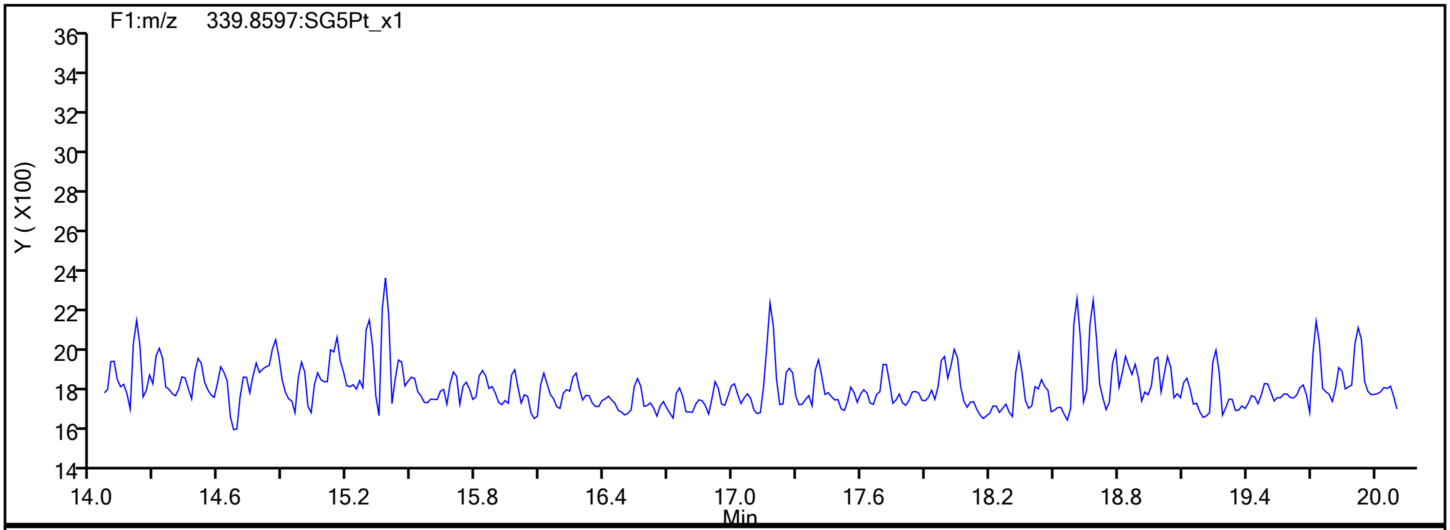

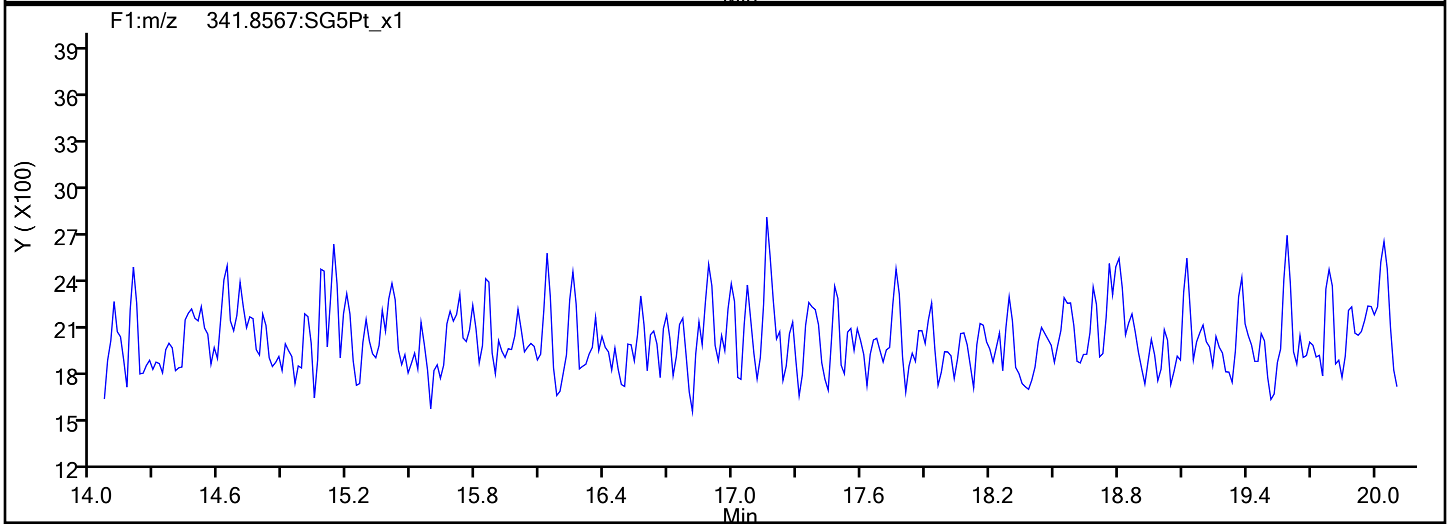

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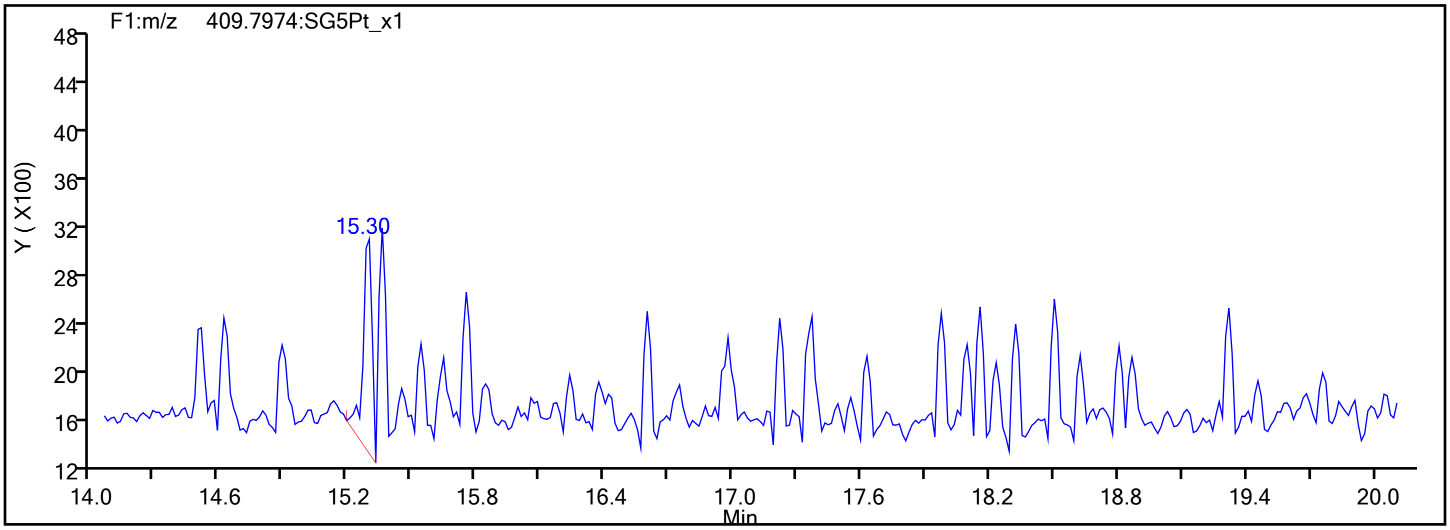

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Chrom Revision: 2.3 17-Aug-2020 20:42:08

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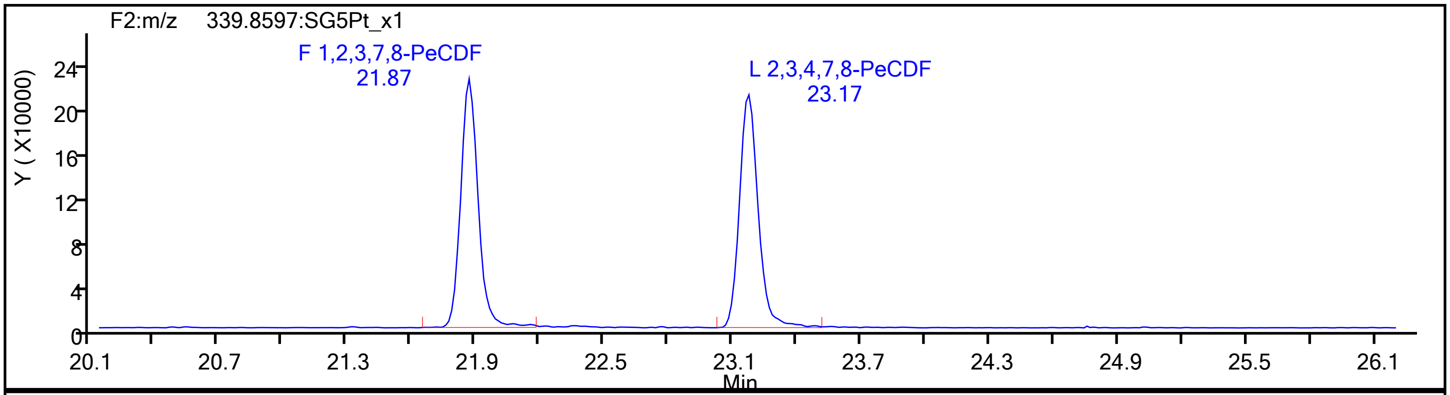

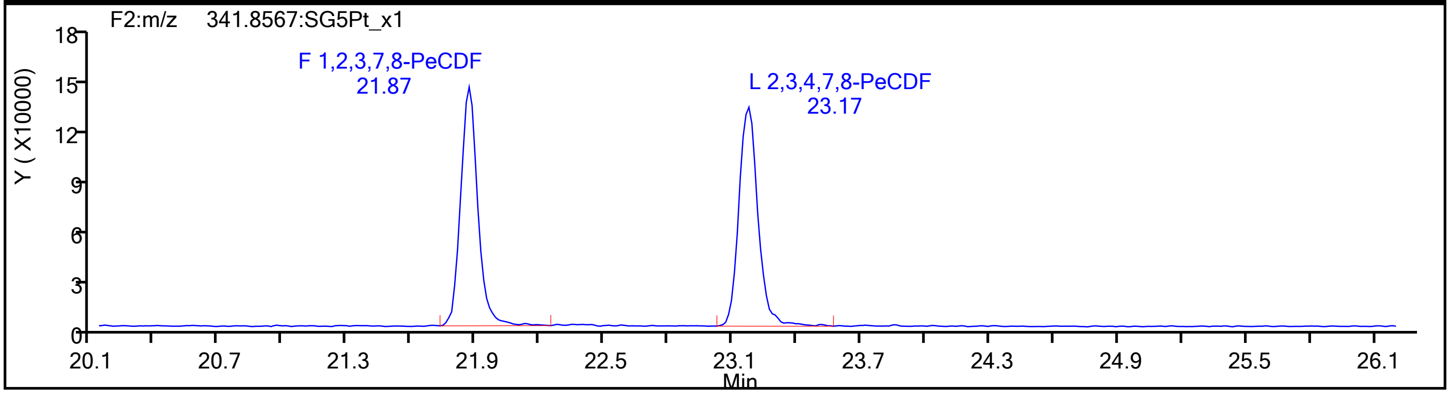

PeCDF Standards

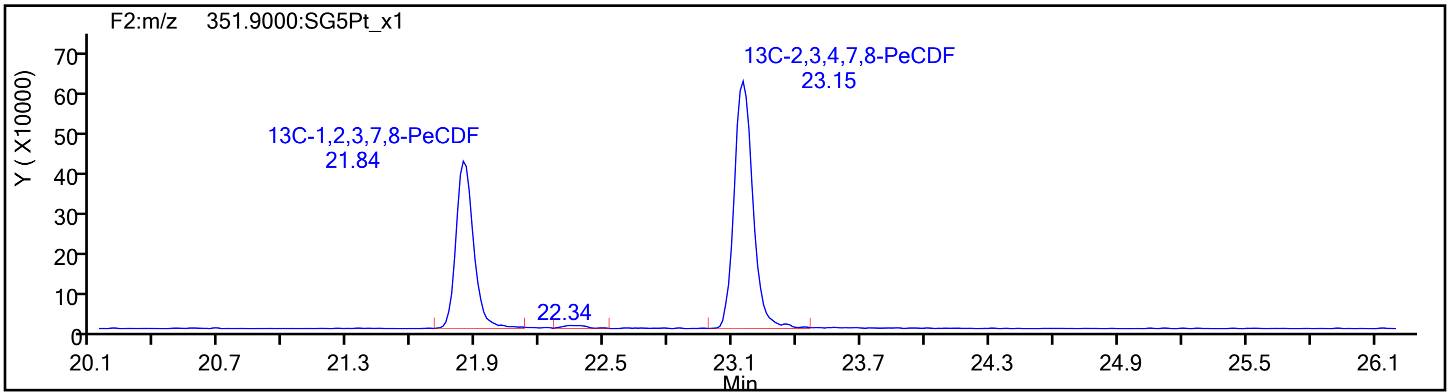

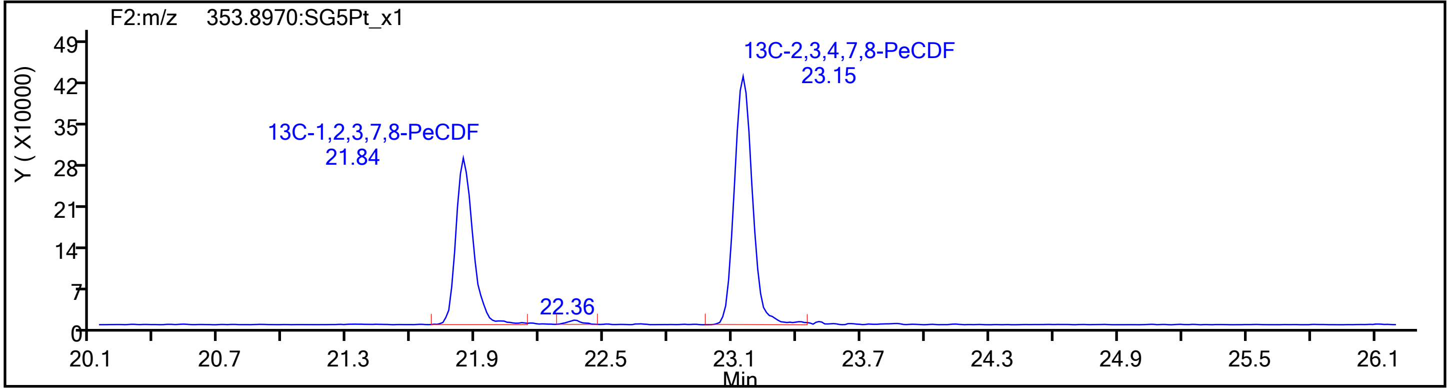

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Eurofins TestAmerica, Sacramento

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Client ID:

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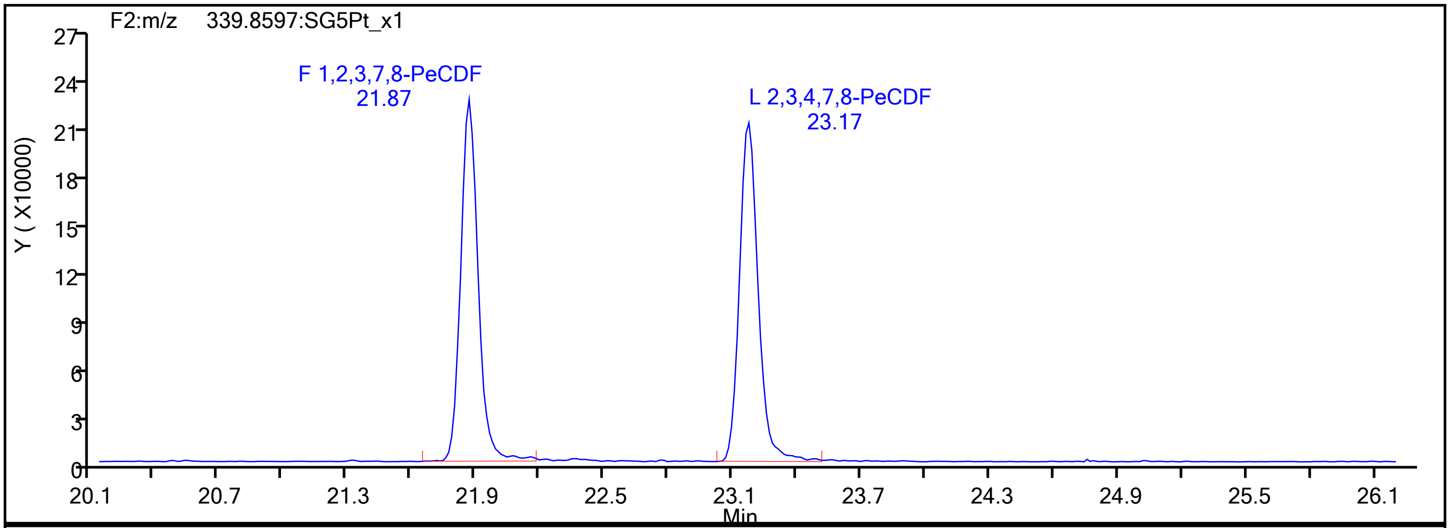

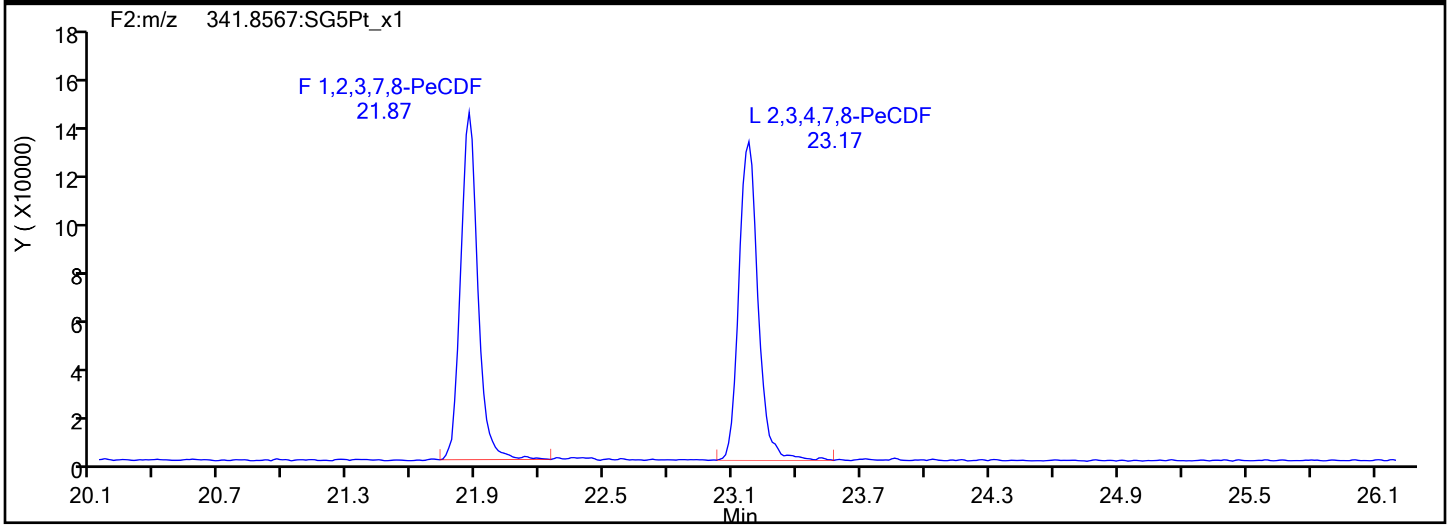

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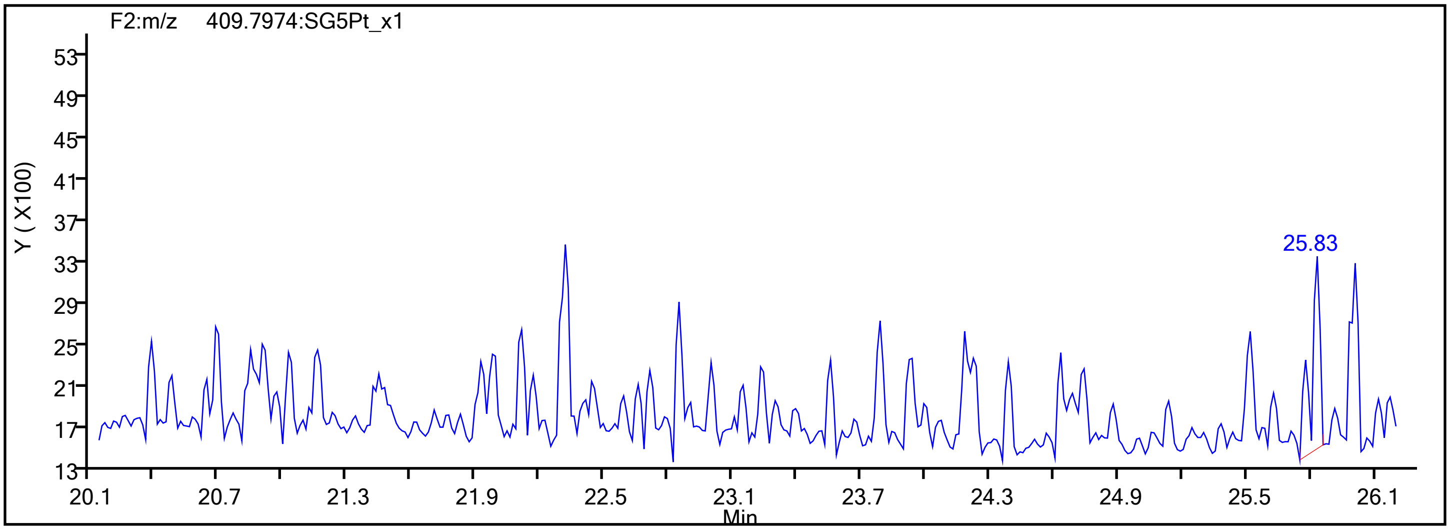

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Eurofins TestAmerica, Sacramento

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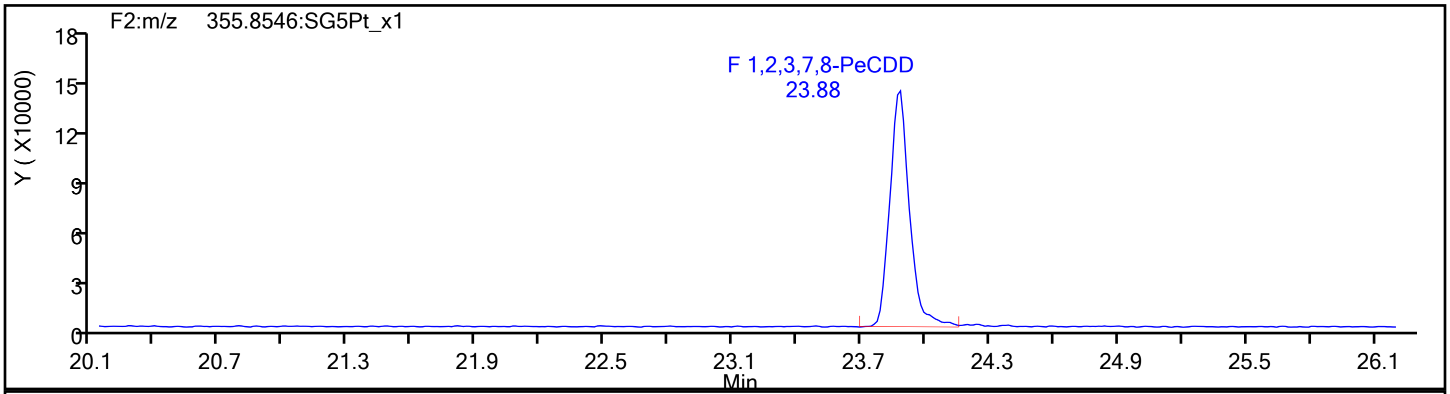

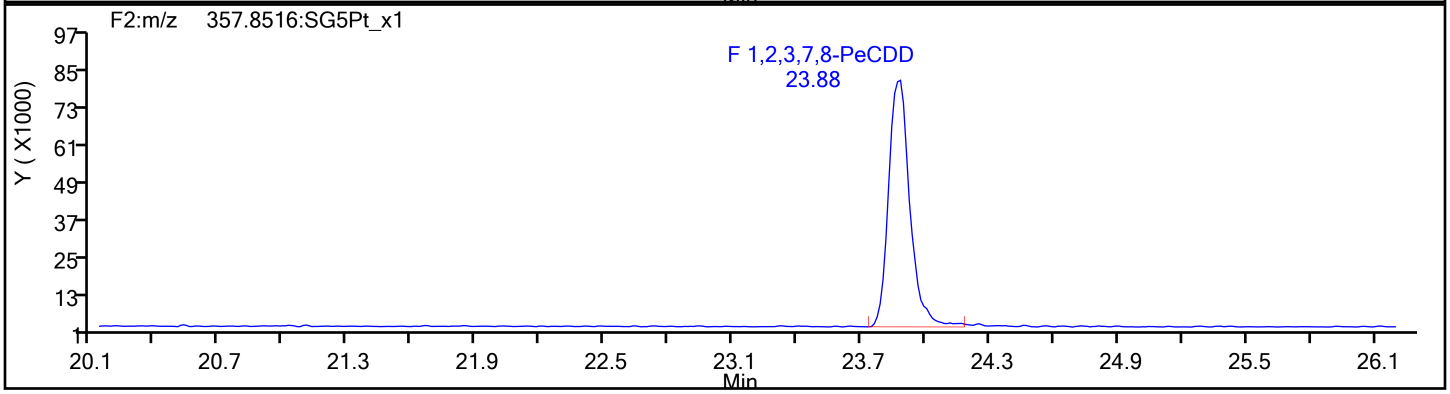

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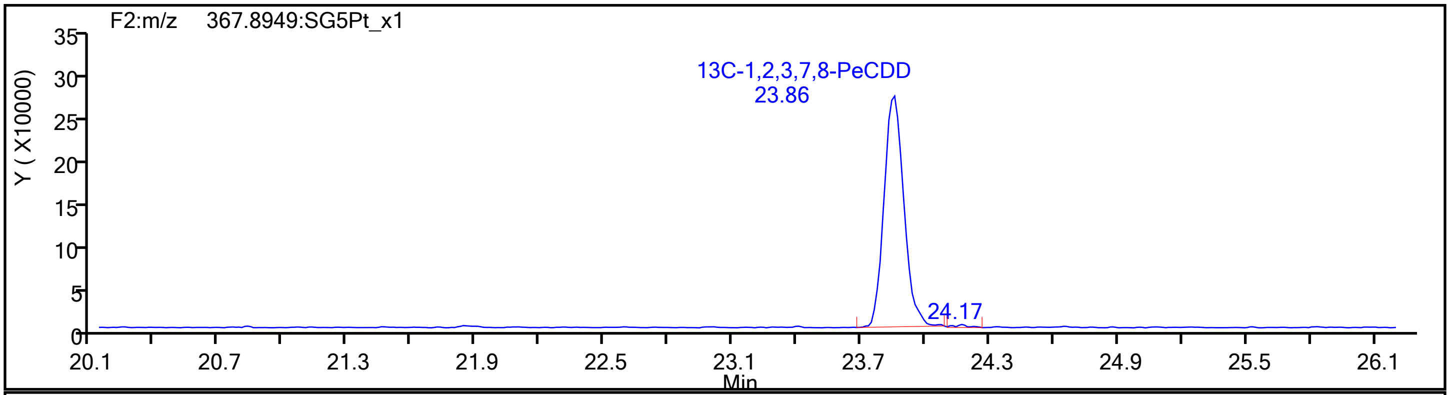

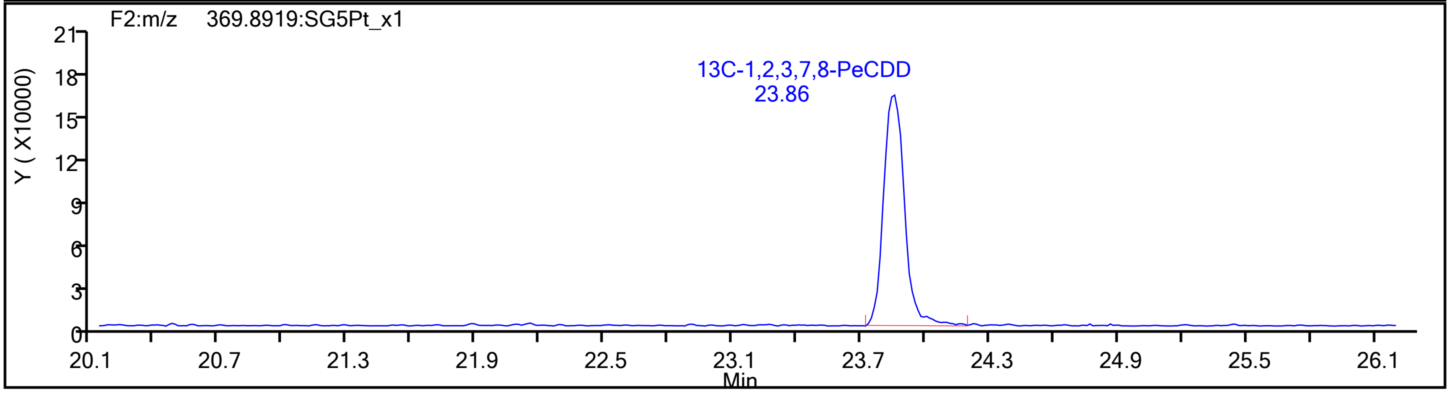

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Eurofins TestAmerica, Sacramento

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HxCDF

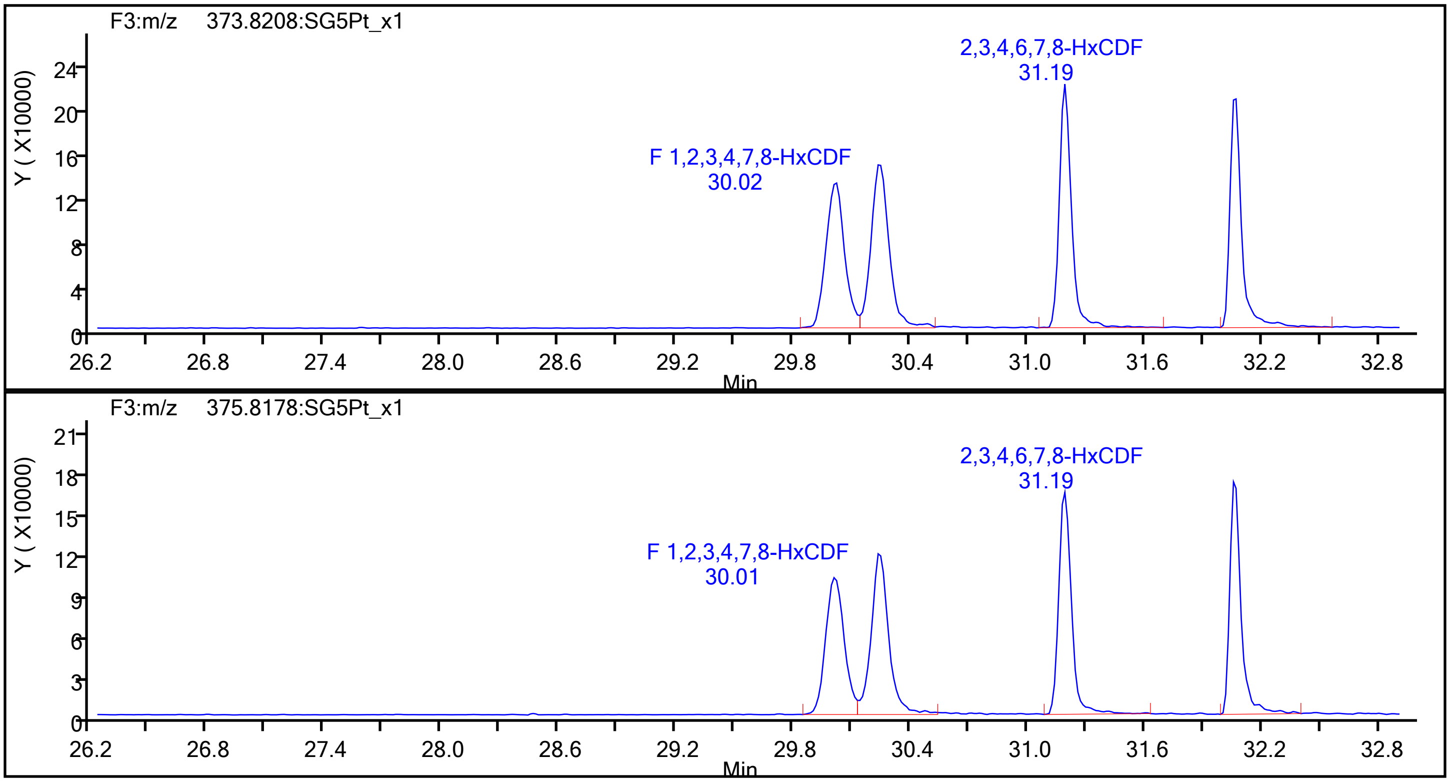

HxCDF Standards

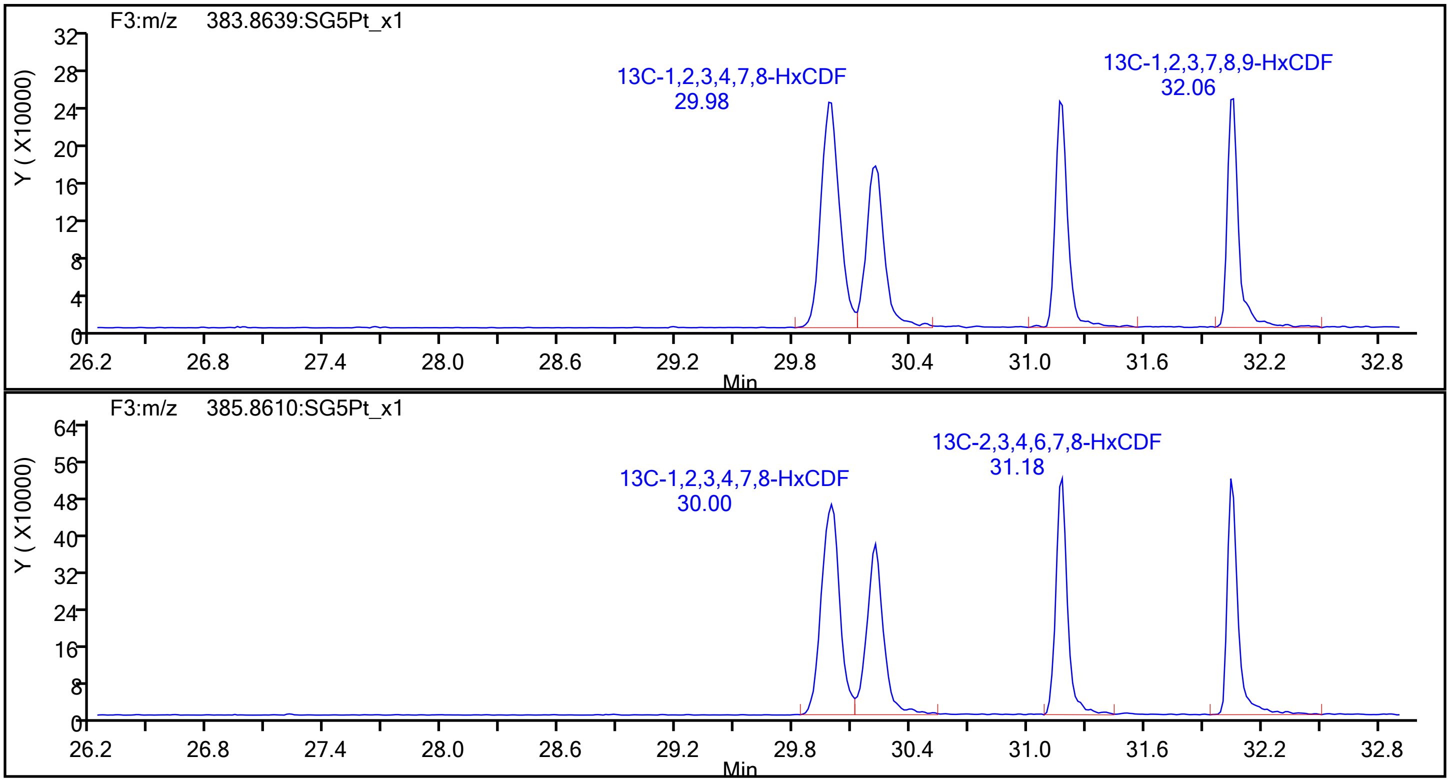

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Eurofins TestAmerica, Sacramento

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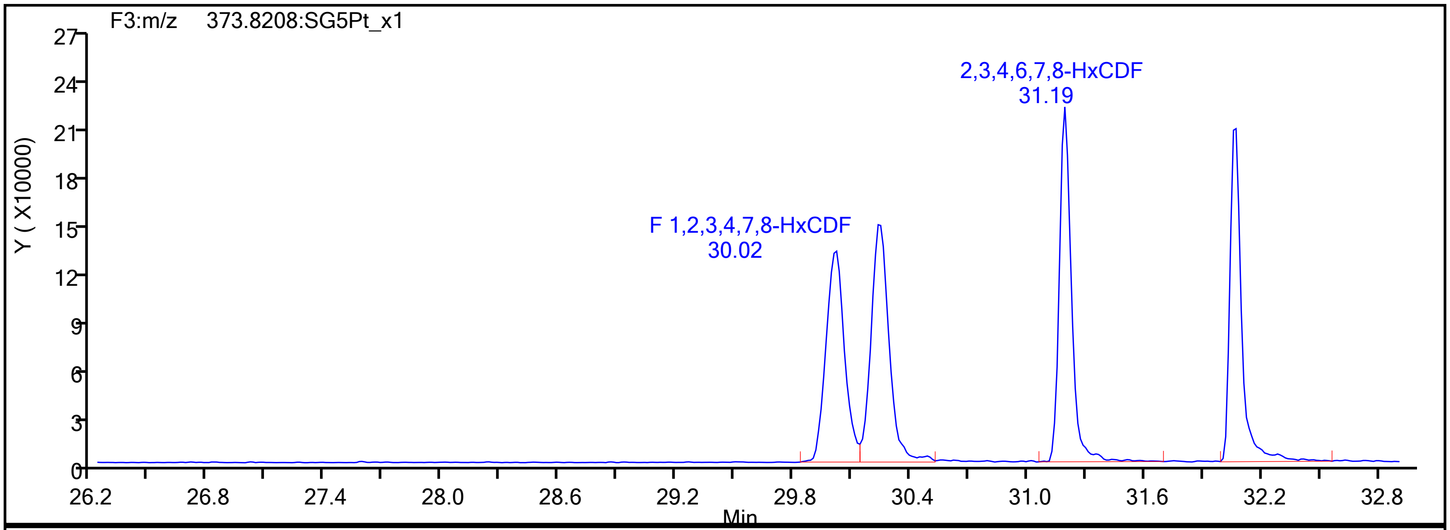

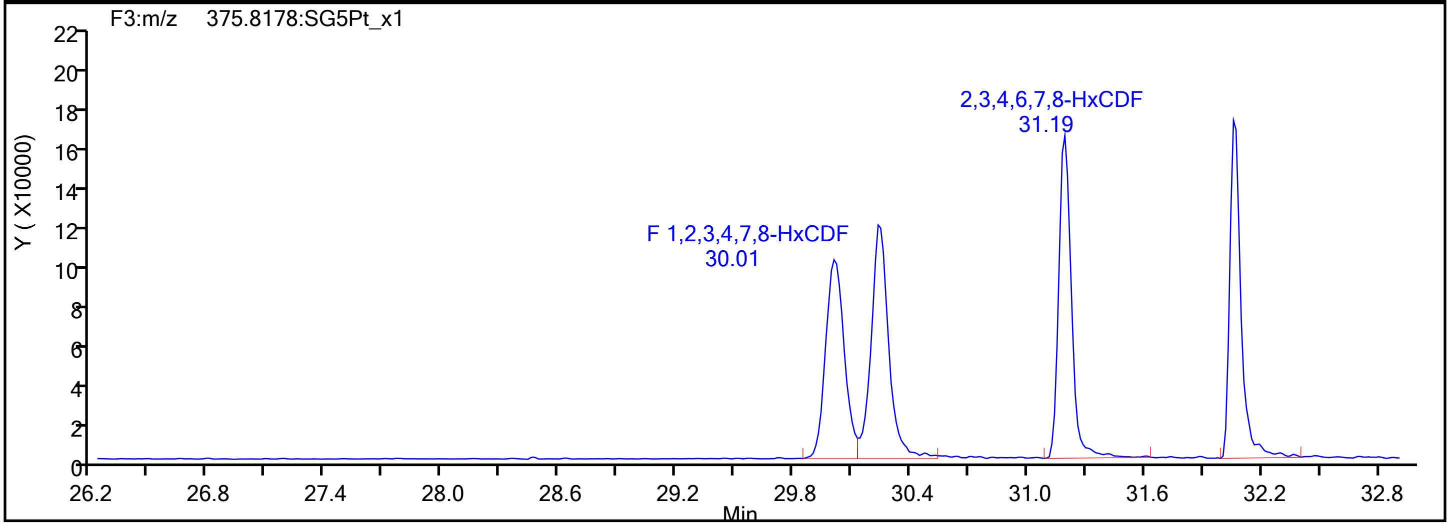

HxCDF Interference Mass

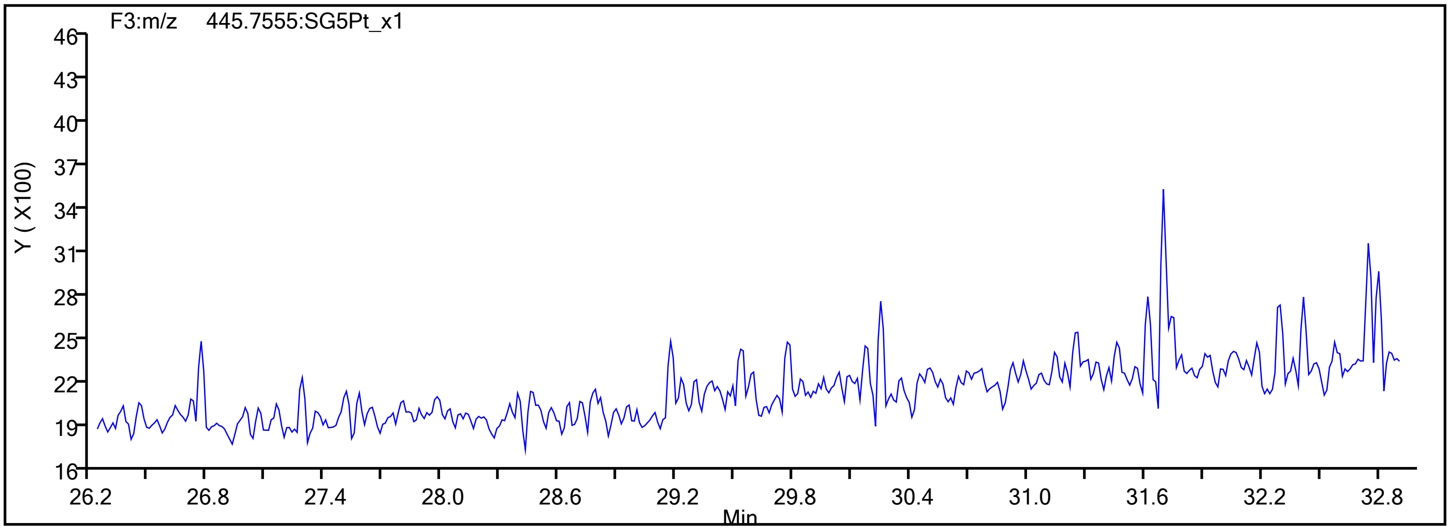

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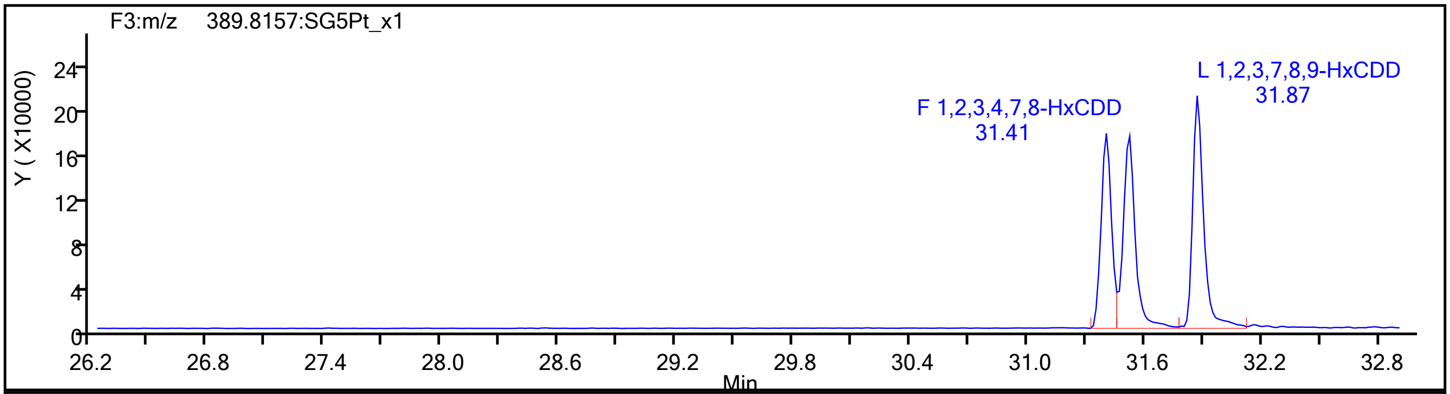

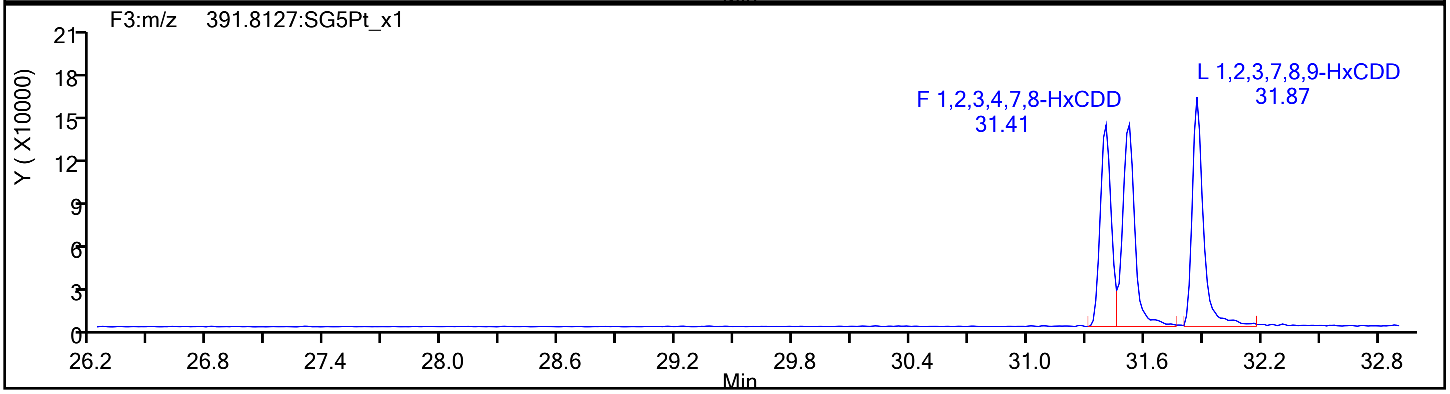

HxCDD Standards

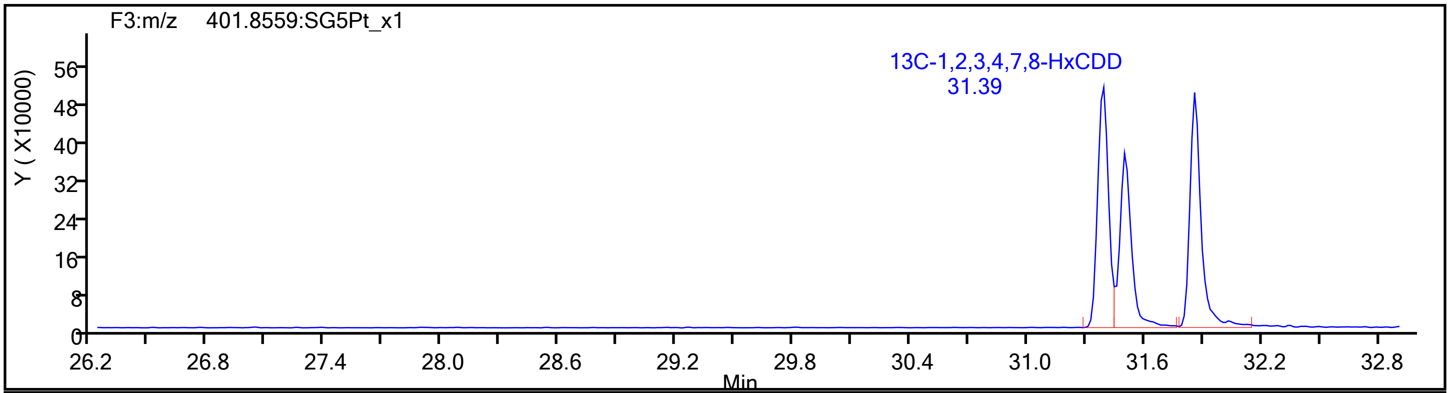

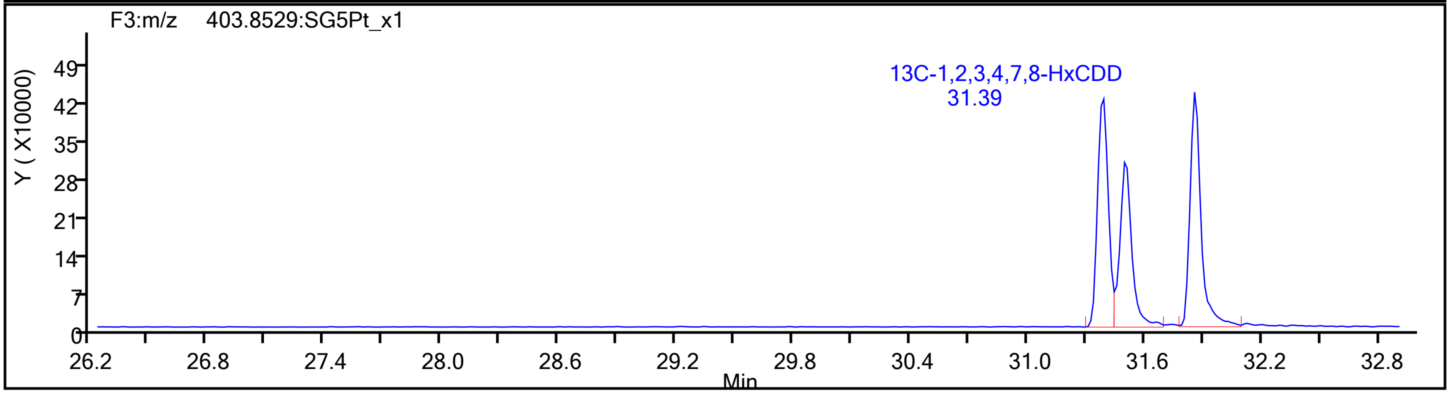

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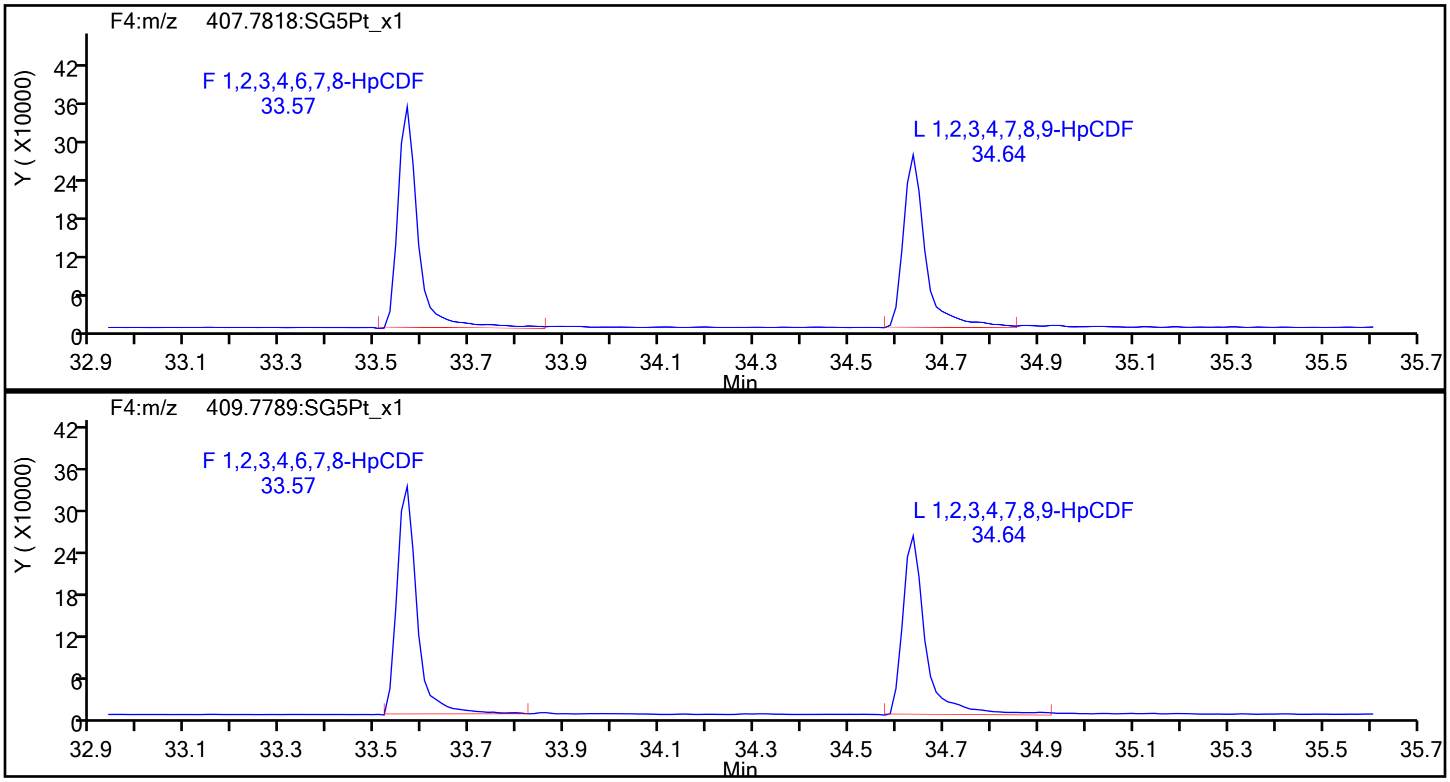

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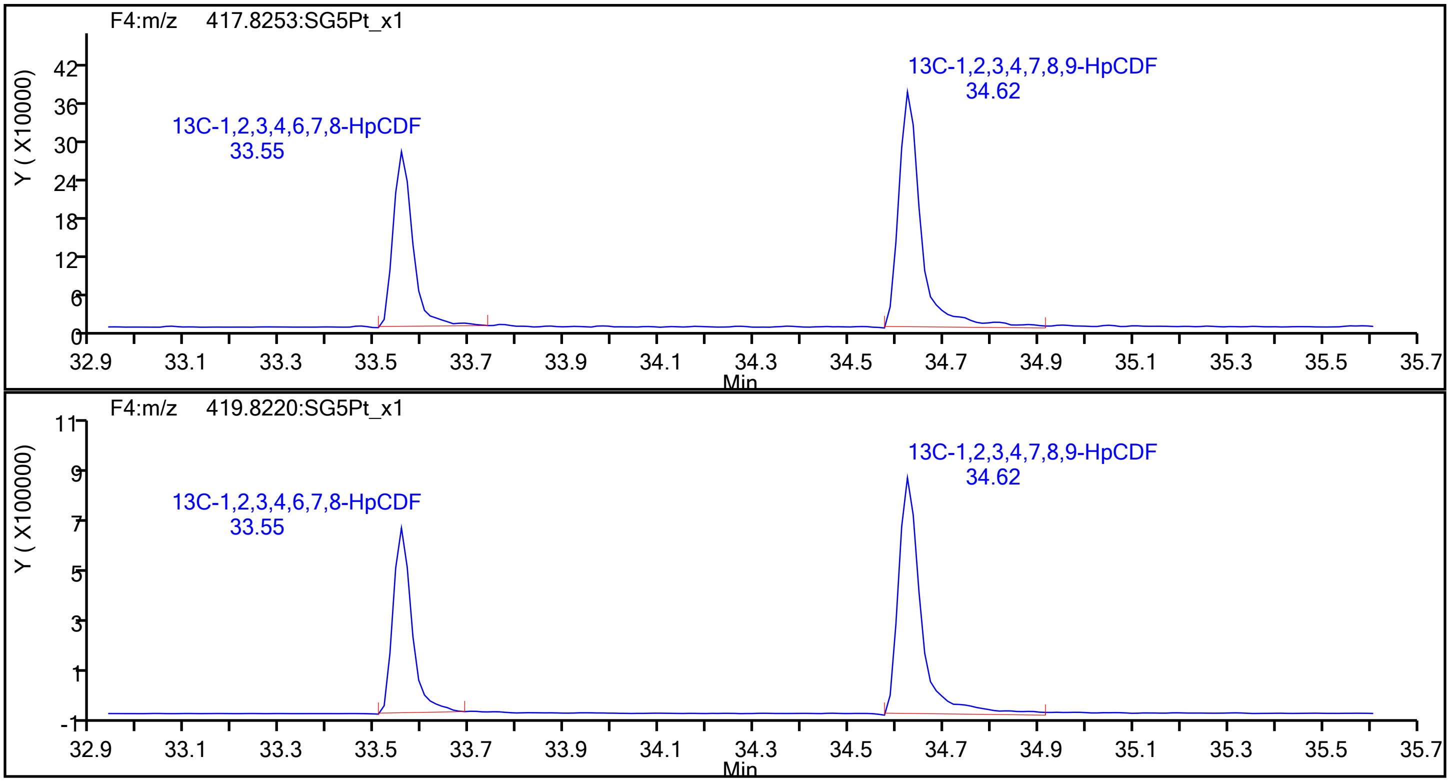

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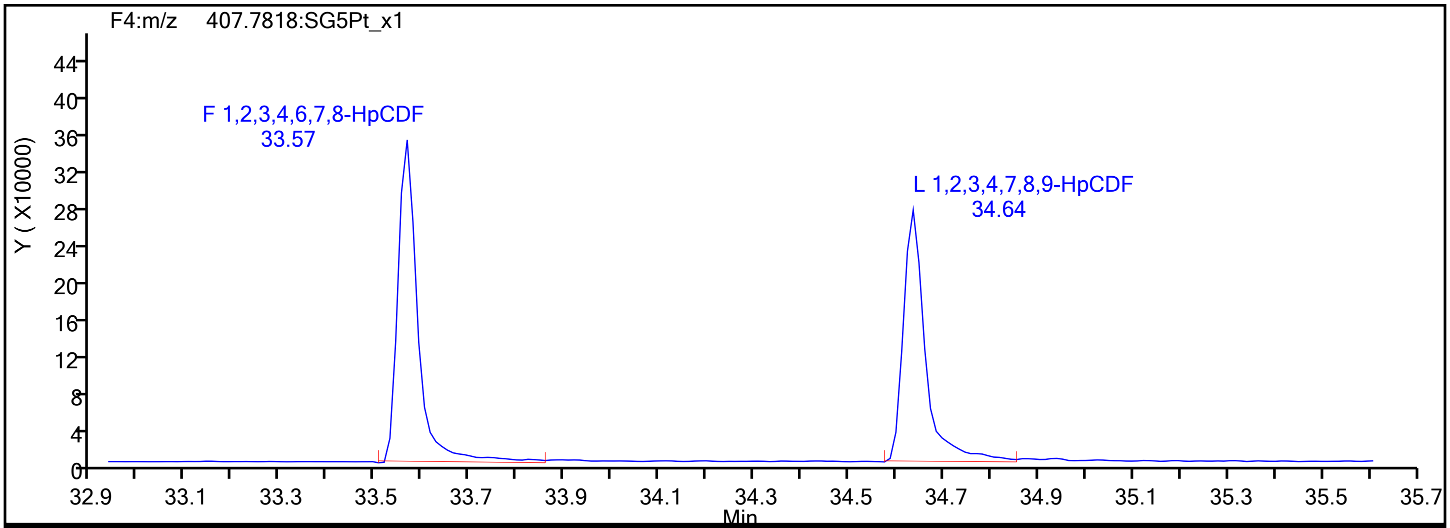

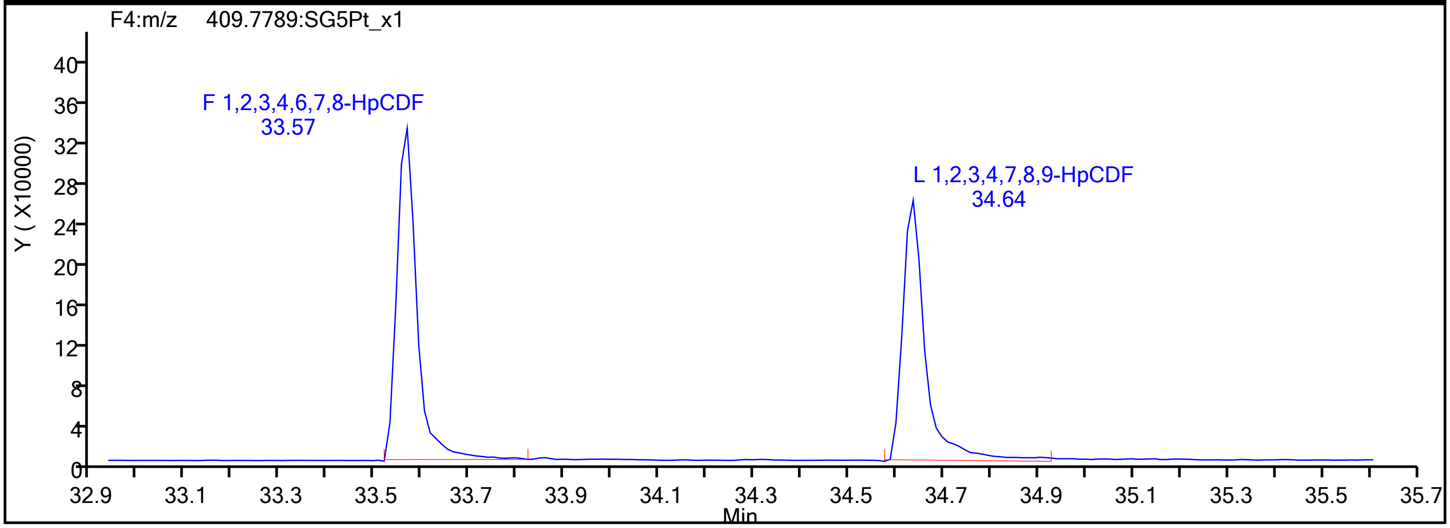

HpCDF Interference Mass

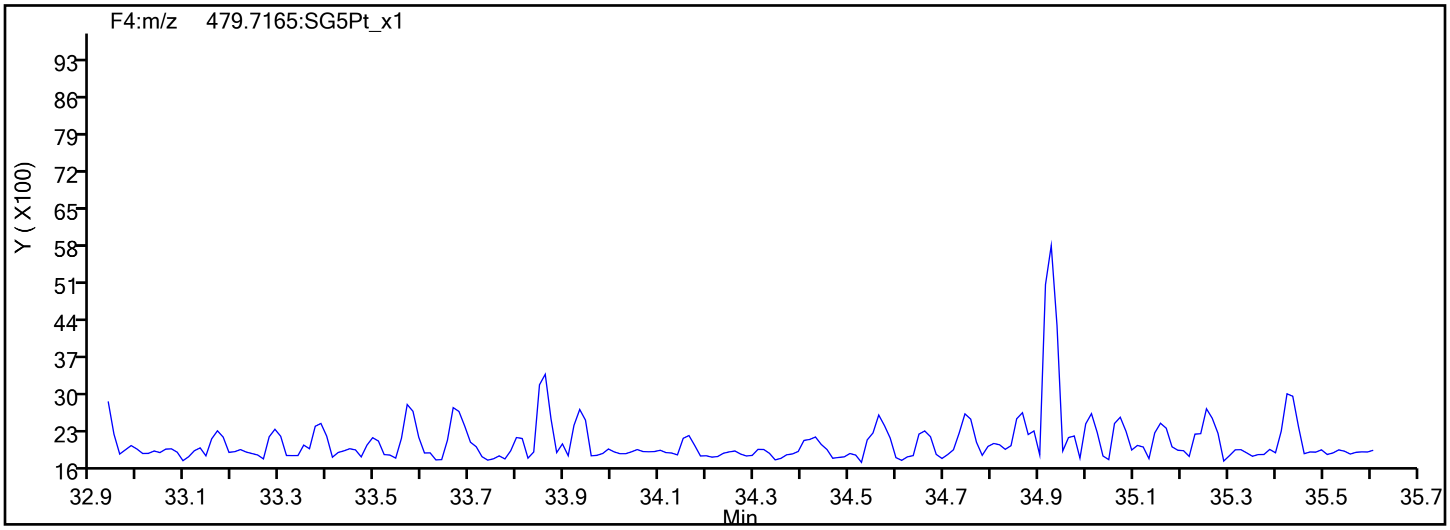

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HpCDD

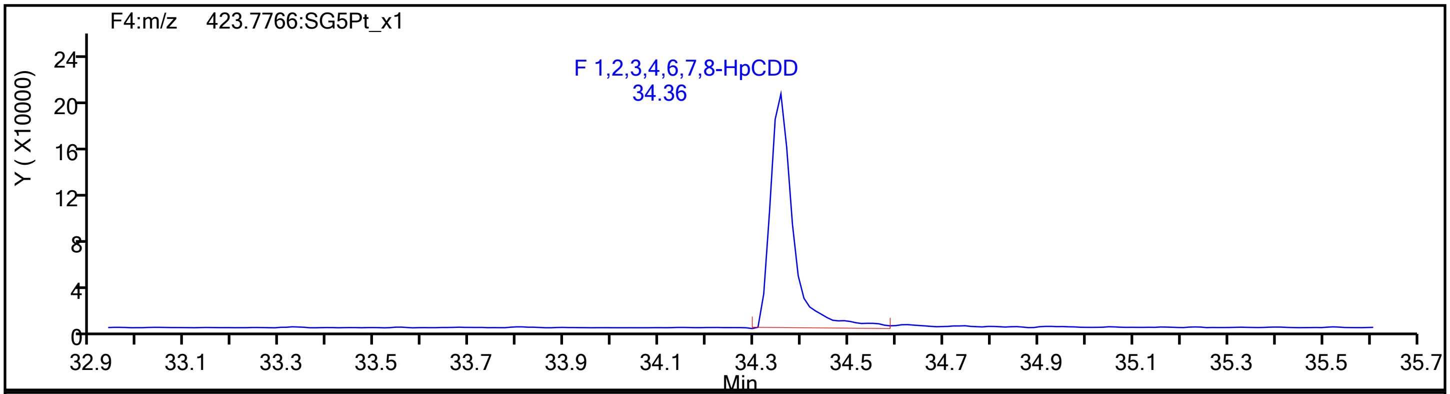

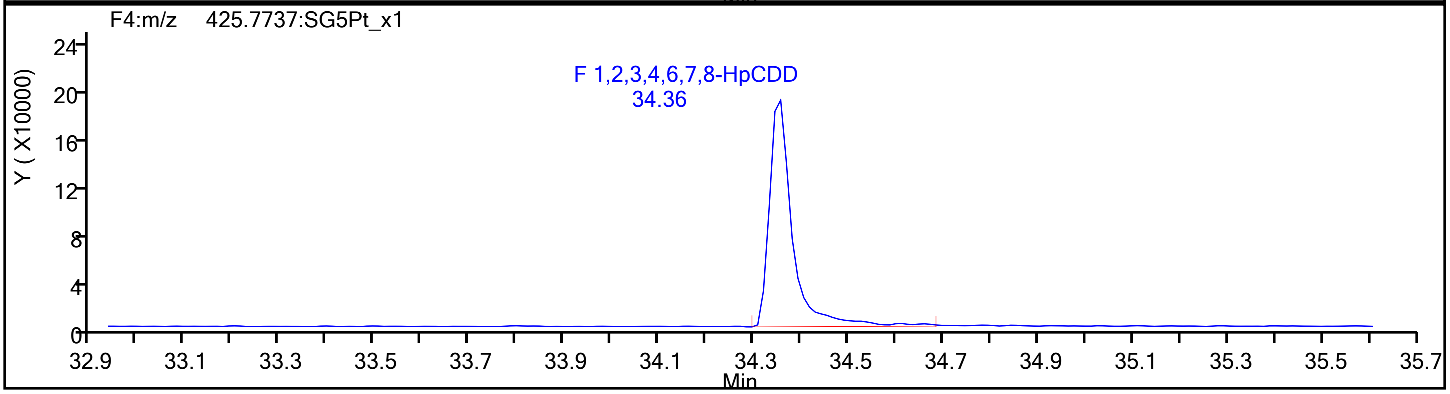

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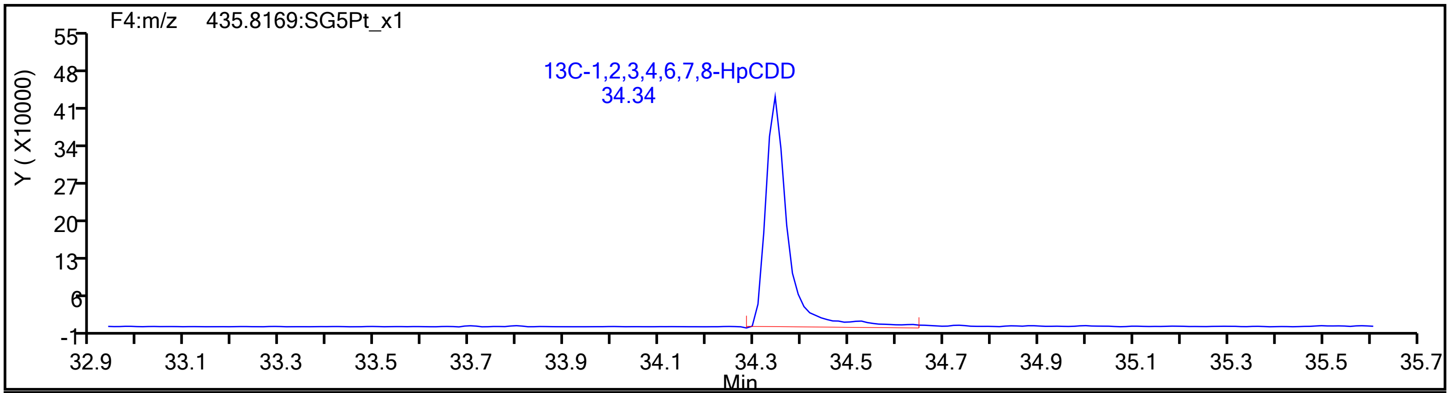

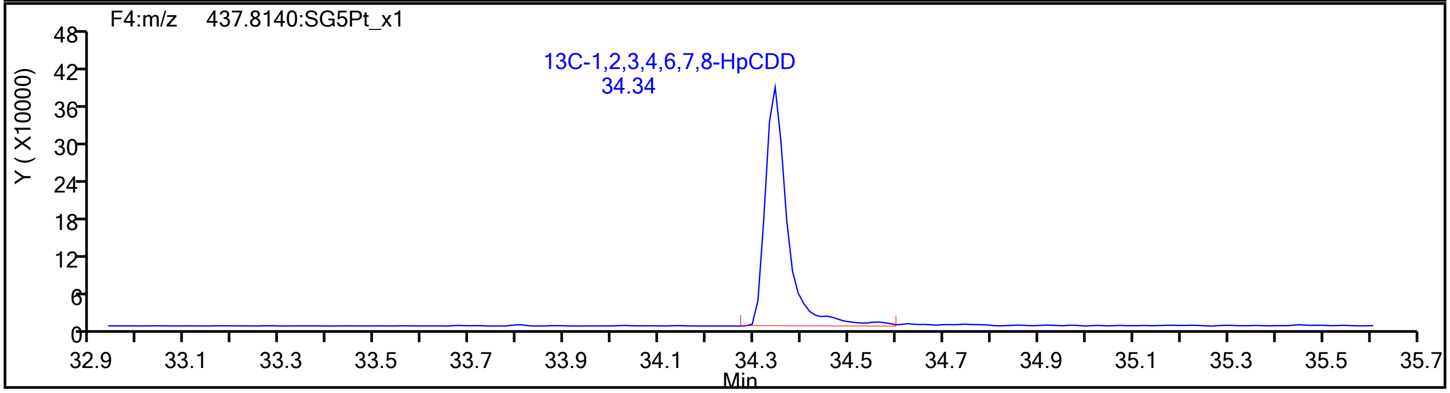

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Eurofins TestAmerica, Sacramento

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OCDF

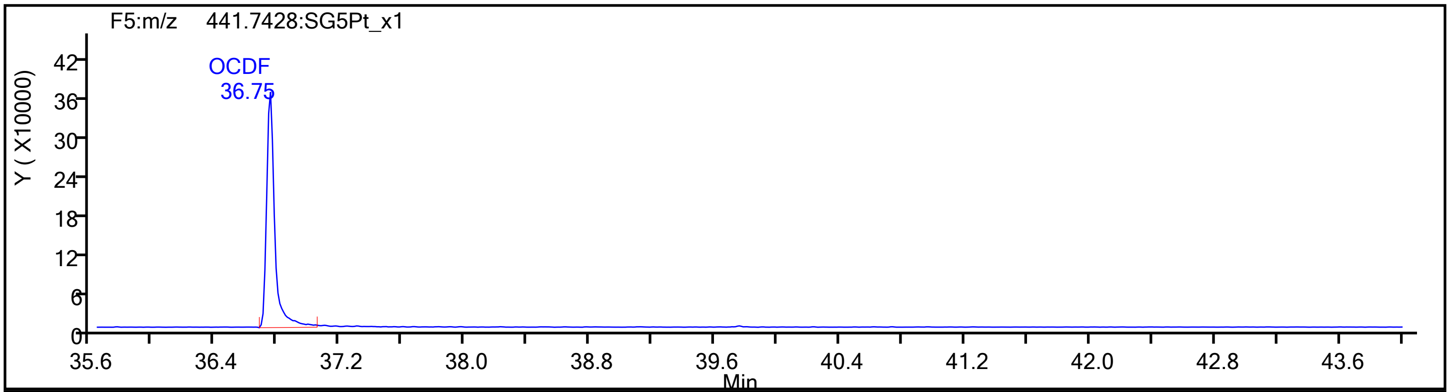

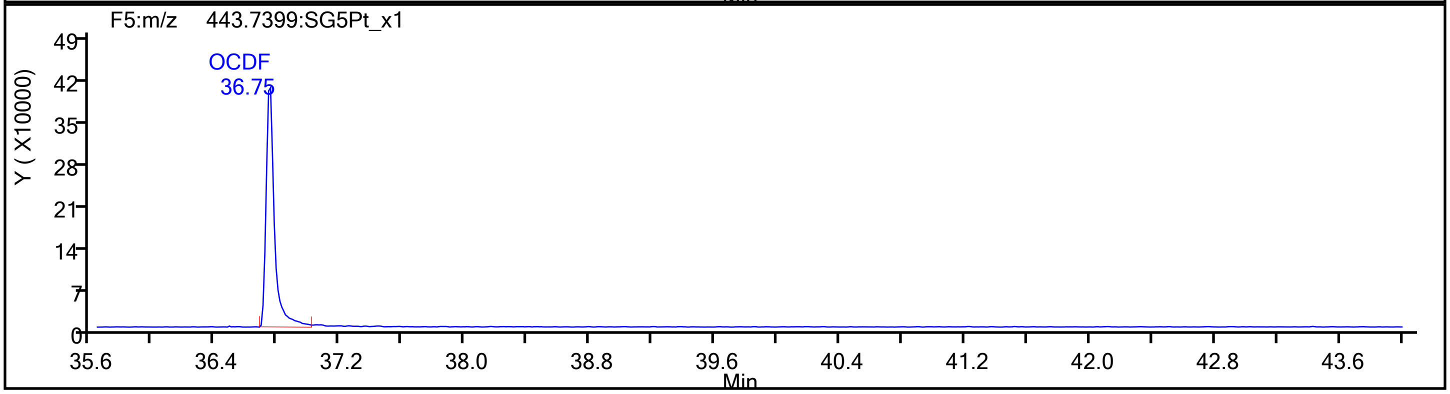

OCDF Standards

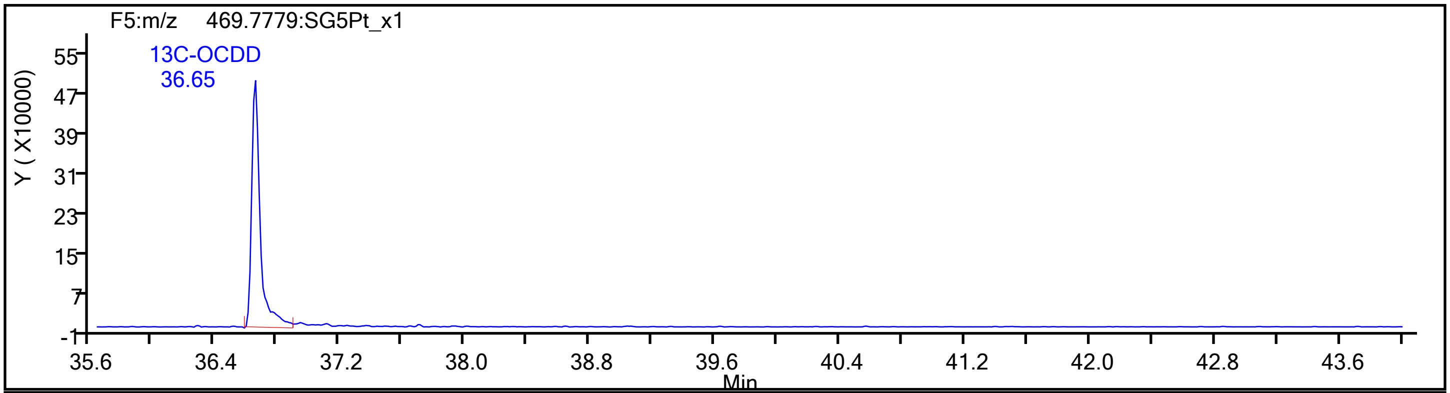

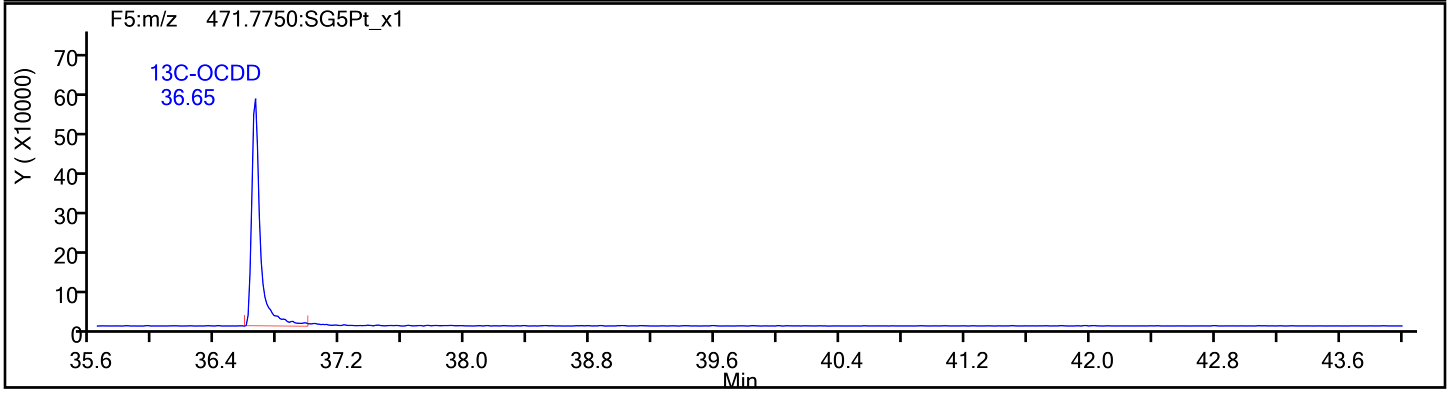

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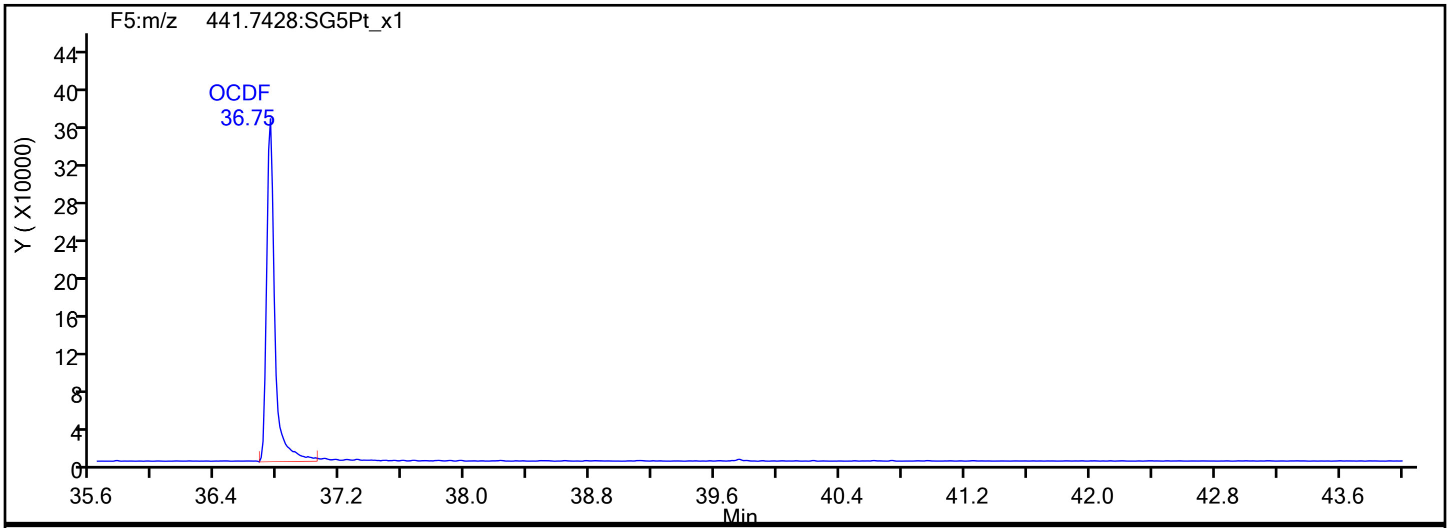

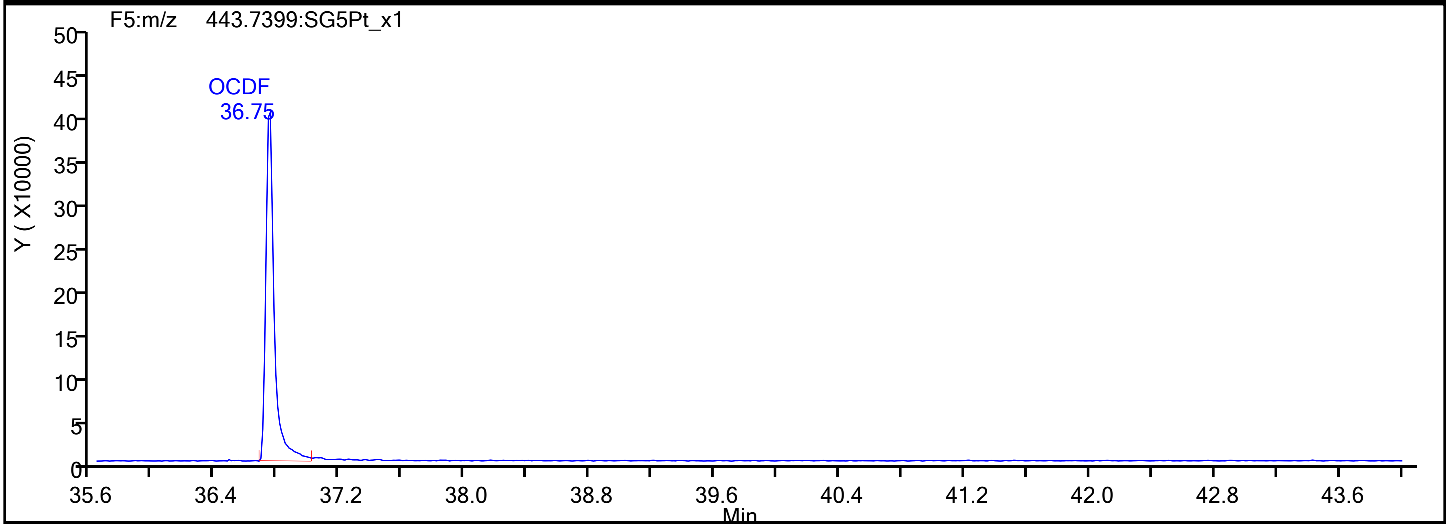

OCDF Interference Mass

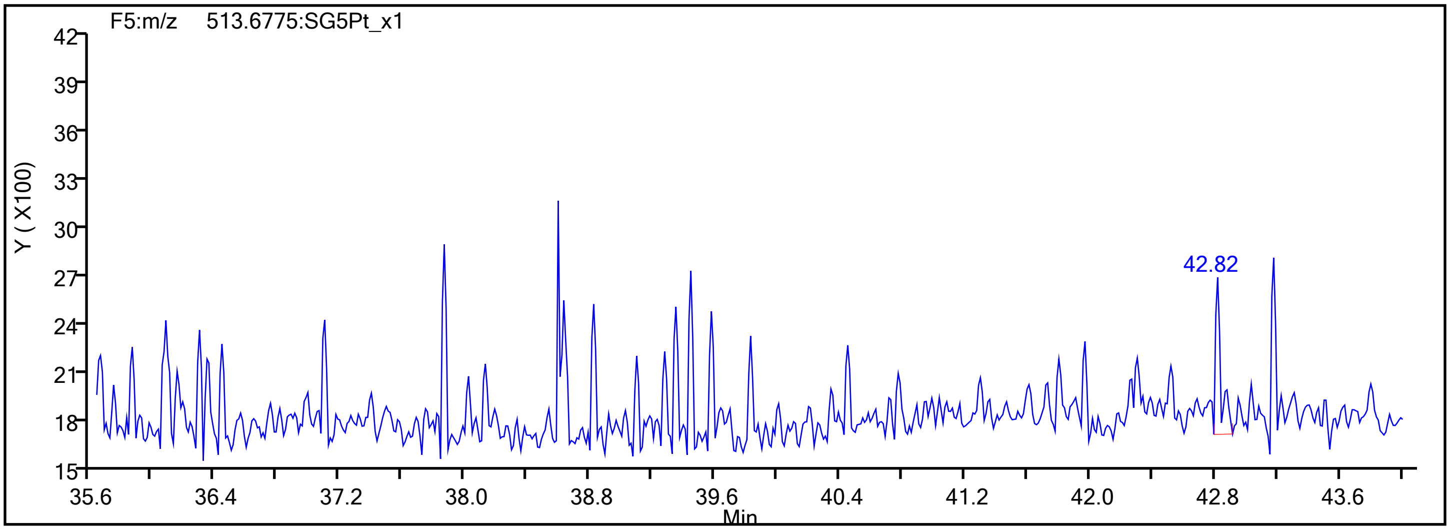

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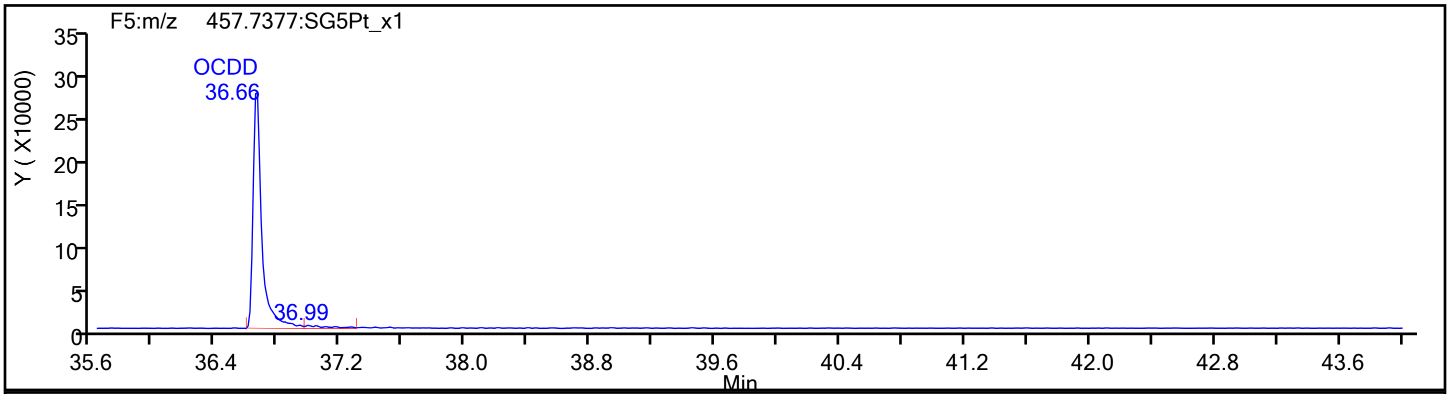

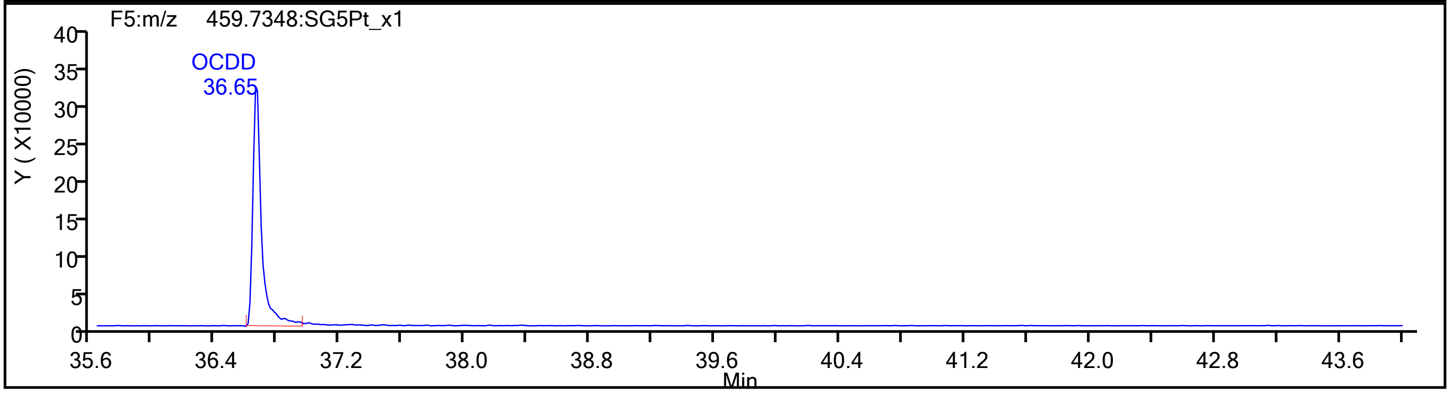

OCDD Standards

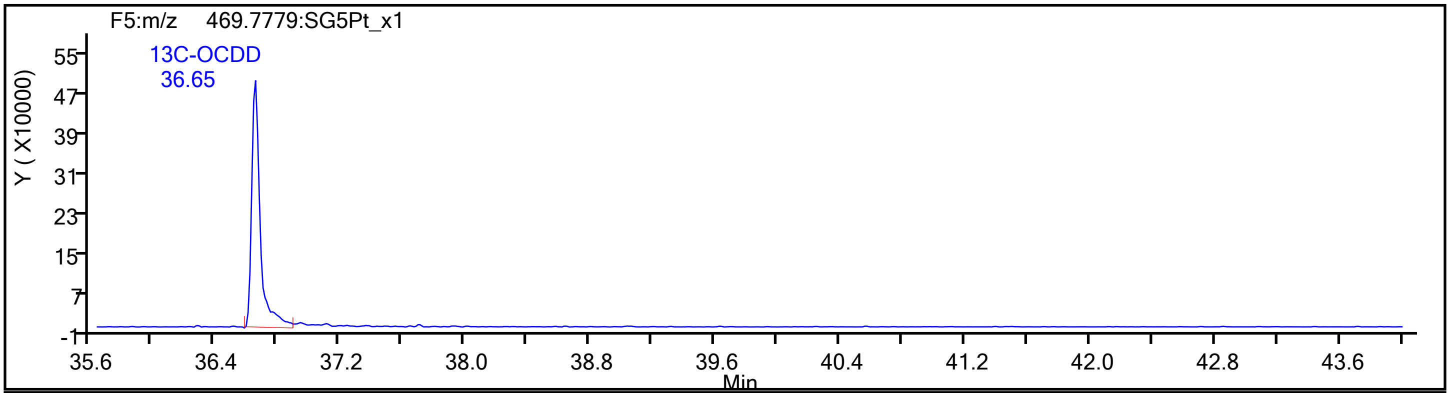

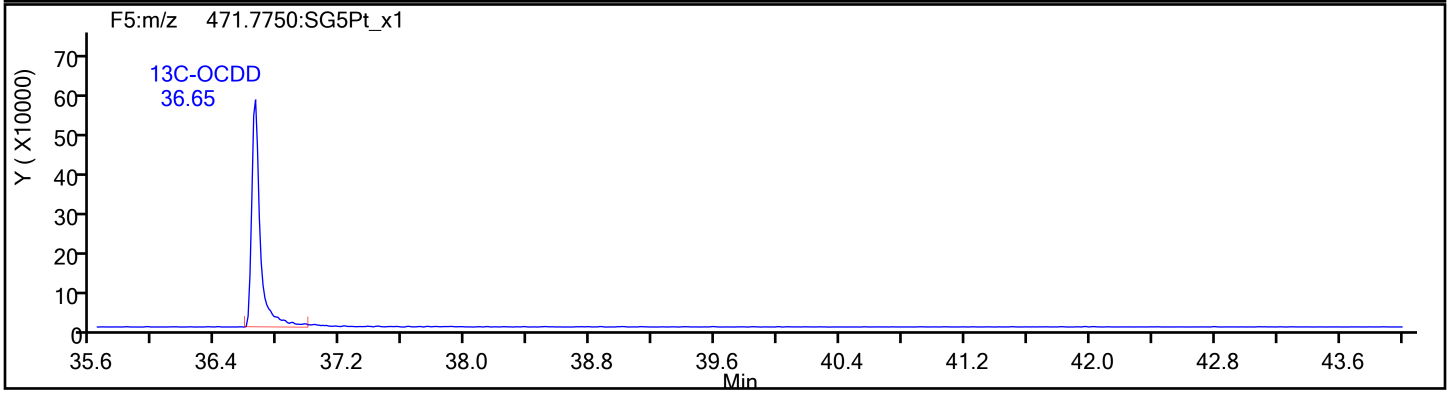

Report Date: 21-Aug-2020 08:54:46 Chrom Revision: 2.3 17-Aug-2020 20:42:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d
Injection Date: 19-Aug-2020 23:48:04 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA/AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 405030 Sample Line#: 27
Column Type: DB-5 Column Dia: 0.32 mm

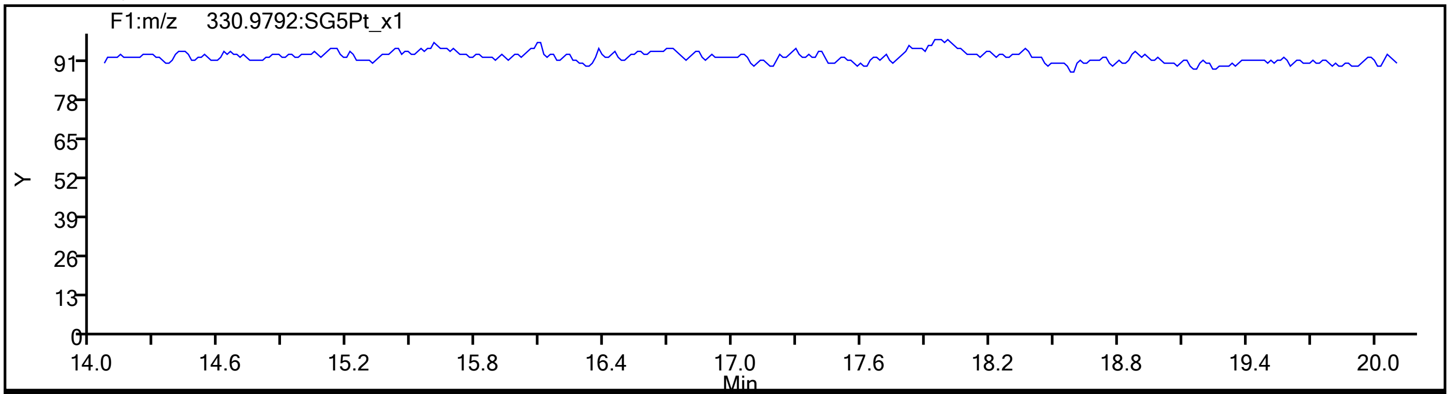

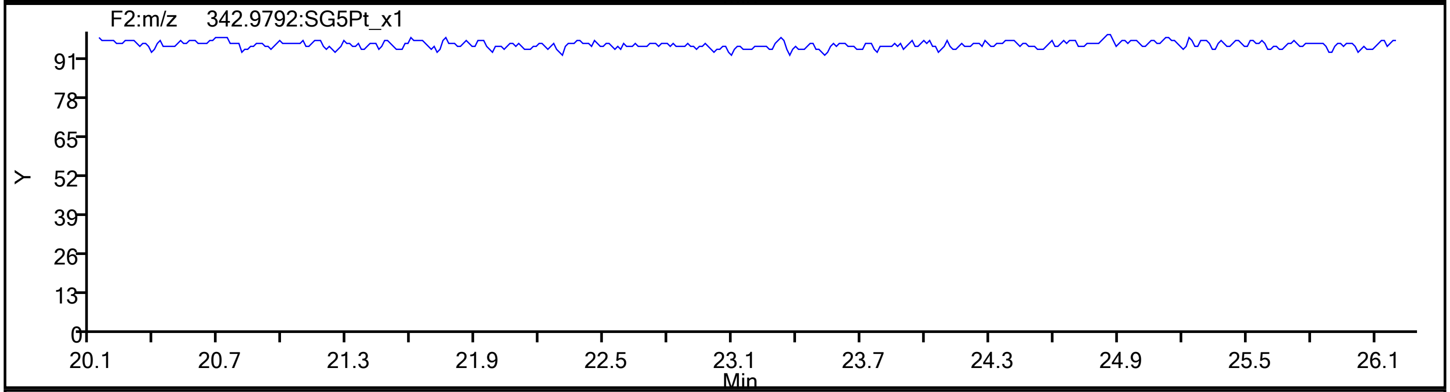

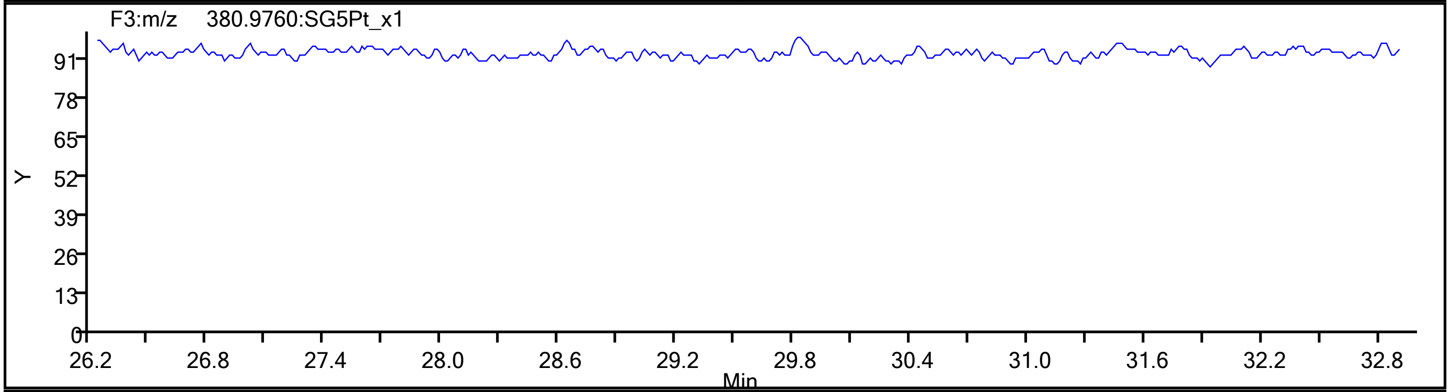

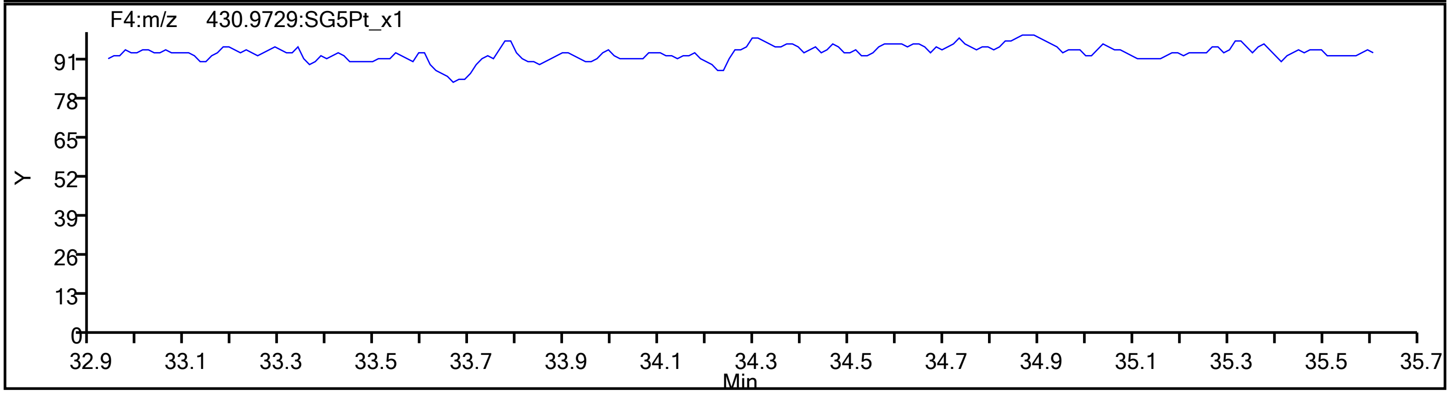

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200819-101746.b\19AU2010D5_17.d		
Injection Date:	19-Aug-2020 23:48:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA/AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	405030	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

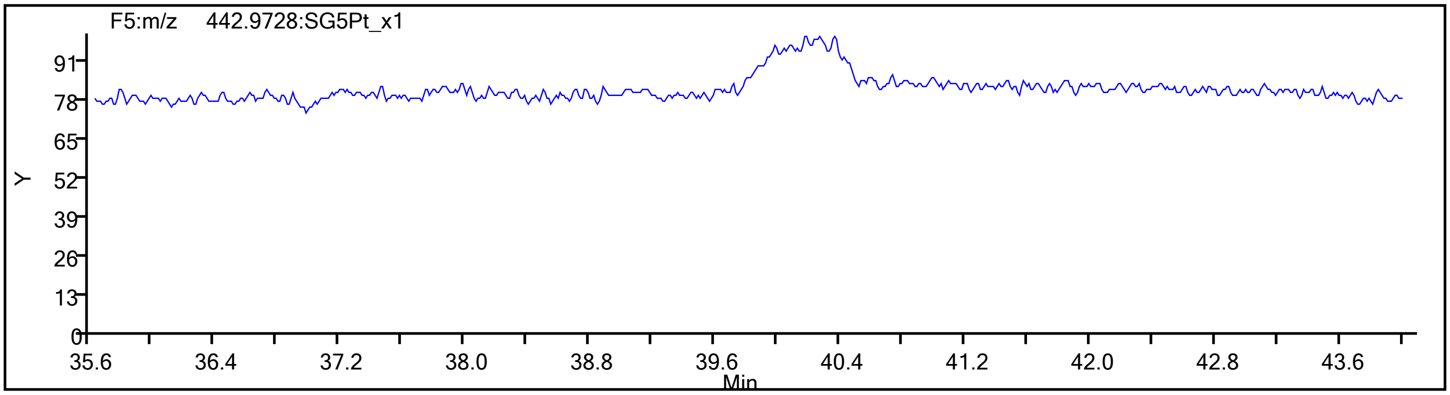

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: DFS 1 Start Date: 06/03/2020 12:28

Analysis Batch Number: 383168 End Date: 06/03/2020 20:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-383168/1		06/03/2020 12:28	1	03jn20dfs1_2.d	DB-5 0.32(mm)
IC 320-383168/3		06/03/2020 14:05	1	03jn20dfs1_4.d	DB-5 0.32(mm)
IC 320-383168/4		06/03/2020 14:53	1	03jn20dfs1_5.d	DB-5 0.32(mm)
IC 320-383168/5		06/03/2020 15:42	1	03jn20dfs1_6.d	DB-5 0.32(mm)
IC 320-383168/6		06/03/2020 16:30	1	03jn20dfs1_7.d	DB-5 0.32(mm)
IC 320-383168/7		06/03/2020 17:18	1	03jn20dfs1_8.d	DB-5 0.32(mm)
IC 320-383168/8		06/03/2020 18:06	1	03jn20dfs1_9.d	DB-5 0.32(mm)
ICV 320-383168/10		06/03/2020 20:01	1	03jn20dfs1_12.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: 10D5 Start Date: 06/27/2020 13:12

Analysis Batch Number: 390253 End Date: 06/27/2020 19:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-390253/1		06/27/2020 13:12	1	27JN20A10D5_1.d	DB-5 0.32(mm)
IC 320-390253/3		06/27/2020 14:42	1	27JN20A10D5_3.d	DB-5 0.32(mm)
IC 320-390253/4		06/27/2020 15:28	1	27JN20A10D5_4.d	DB-5 0.32(mm)
IC 320-390253/5		06/27/2020 16:13	1	27JN20A10D5_5.d	DB-5 0.32(mm)
IC 320-390253/6		06/27/2020 16:58	1	27JN20A10D5_6.d	DB-5 0.32(mm)
IC 320-390253/7		06/27/2020 17:43	1	27JN20A10D5_7.d	DB-5 0.32(mm)
ICV 320-390253/9		06/27/2020 19:24	1	27JN20A10D5_9.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-63525-1

SDG No.:

Instrument ID: 10D5
Start Date: 08/19/2020 10:20

Analysis Batch Number: 405028
End Date: 08/19/2020 18:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-405028/1		08/19/2020 10:20	1	19AU2010D5_1.d	DB-5 0.32(mm)
CCV 320-405028/2		08/19/2020 11:27	1	19AU2010D5_2.d	DB-5 0.32(mm)
MB 320-404233/1-A		08/19/2020 12:57	1	19AU2010D5_4.d	DB-5 0.32(mm)
ZZZZZ		08/19/2020 13:42	1		DB-5 0.32(mm)
ZZZZZ		08/19/2020 14:27	1		DB-5 0.32(mm)
320-63525-1	11215702-Treatment-3	08/19/2020 15:12	1	19AU2010D5_7.d	DB-5 0.32(mm)
320-63525-2	11215702-Treatment-4	08/19/2020 15:57	1	19AU2010D5_8.d	DB-5 0.32(mm)
ZZZZZ		08/19/2020 18:12	1		DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: 10D5 Start Date: 08/19/2020 21:23

Analysis Batch Number: 405030 End Date: 08/20/2020 03:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-405030/14		08/19/2020 21:23	1	19AU2010D5_14.d	DB-5 0.32(mm)
WDM 320-405030/15		08/19/2020 22:17	1	19AU2010D5_15.d	DB-5 0.32(mm)
LCSD 320-404233/3-A		08/19/2020 23:48	1	19AU2010D5_17.d	DB-5 0.32(mm)
ZZZZZ		08/20/2020 00:33	1		DB-5 0.32(mm)
ZZZZZ		08/20/2020 01:17	1		DB-5 0.32(mm)
ZZZZZ		08/20/2020 02:02	1		DB-5 0.32(mm)
ZZZZZ		08/20/2020 02:47	1		DB-5 0.32(mm)
ZZZZZ		08/20/2020 03:32	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: 4D2 Start Date: 08/20/2020 01:30

Analysis Batch Number: 405198 End Date: 08/20/2020 06:33

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-405198/1		08/20/2020 01:30	1	20AU204D2_003.d	DB-225 0.32(mm)
IC 320-405198/3		08/20/2020 02:46	1	20AU204D2_005.d	DB-225 0.32(mm)
IC 320-405198/4		08/20/2020 03:24	1	20AU204D2_006.d	DB-225 0.32(mm)
IC 320-405198/5		08/20/2020 04:01	1	20AU204D2_007.d	DB-225 0.32(mm)
IC 320-405198/6		08/20/2020 04:39	1	20AU204D2_008.d	DB-225 0.32(mm)
IC 320-405198/7		08/20/2020 05:17	1	20AU204D2_009.d	DB-225 0.32(mm)
ICV 320-405198/9		08/20/2020 06:33	1	20AU204D2_011.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: DFS 1 Start Date: 08/20/2020 21:48

Analysis Batch Number: 405471 End Date: 08/21/2020 09:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-405471/14		08/20/2020 21:48	1	20au20dfs1_16.d	DB-5 0.32(mm)
WDM 320-405471/15		08/20/2020 23:09	1	20au20dfs1_18.d	DB-5 0.32(mm)
LCS 320-404233/2-A		08/21/2020 09:01	1	20au20dfs1_30.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: 4D2 Start Date: 08/20/2020 16:57

Analysis Batch Number: 405652 End Date: 08/20/2020 21:22

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-405652/2		08/20/2020 16:57	1	20AU20D4D2_002.d	DB-225 0.32(mm)
CCV 320-405652/3		08/20/2020 17:35	1	20AU20D4D2_003.d	DB-225 0.32(mm)
320-63525-1 RA	11215702-Treatment-3 RA	08/20/2020 20:44	1	20AU20D4D2_008.d	DB-225 0.32(mm)
320-63525-2 RA	11215702-Treatment-4 RA	08/20/2020 21:22	1	20AU20D4D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-63525-1

SDG No.:

Batch Number: 404233 Batch Start Date: 08/17/20 08:45 Batch Analyst: Rafieefar, Sina

Batch Method: 1613B Batch End Date: 08/18/20 13:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-404233/1		1613B, 1613B				1000 mL	20 uL	SS1-1	4
LCS 320-404233/2		1613B, 1613B				1000 mL	20 uL	SS1-2	6
LCSD 320-404233/3		1613B, 1613B				1000 mL	20 uL	SS1-3	4
320-63525-A-1	11215702-Treatment-3	1613B, 1613B	T	1566.3 g	519.71 g	1046.6 mL	20 uL	SS1-4	6
320-63525-A-2	11215702-Treatment-4	1613B, 1613B	T	1566.4 g	514.94 g	1051.5 mL	20 uL	SS1-5	4

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00432	HRDXNIS 00129	HRDXNSU 00240	HRDXNTA 00121		
MB 320-404233/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-404233/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-404233/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-63525-A-1	11215702-Treatment-3	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-63525-A-2	11215702-Treatment-4	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-63525-1

SDG No.:

Batch Number: 404233 Batch Start Date: 08/17/20 08:45 Batch Analyst: Rafieefar, Sina

Batch Method: 1613B Batch End Date: 08/18/20 13:00

Batch Notes	
20% DCM:Hexane ID	2049187 mL
65% DCM:Hexane ID	2075833 mL
Acid Silica Gel ID	2114254
Acid Alumina ID	2103836
Balance ID	QA-070
C14 ID	1983670
Hexane ID	2114332 mL
IFB Clean Up	TGL 08/18/20
MeCL2 ID	2091360 mL
Na2SO4 ID	2059763
Analyst ID - IDA Reagent Drop	SR 08/17/20 HD05018 B-3/4 HRDXNIDA_00432 1.0 mL
Analyst ID - IDA Reagent Drop Witness	FC 08/17/20
Analyst ID - IS Reagent Drop	TGL 08/18/20 CN15436 HRDXNIS_00129 B 1/4 20.0 uL
Analyst ID - IS Reagent Drop Witness	FC 08/18/20
Analyst ID - SU Reagent Drop	TGL 08/18/20 HD05018 HRDXNSU_00240 B 3/4 1.0 mL
Analyst ID - SU Reagent Drop Witness	GLB 08/18/20
Analyst ID - TA Reagent Drop	SR 08/17/20 CN15436 B-8/10 HRDXNTA_00121 50 uL
Analyst ID - TA Reagent Drop Witness	FC 08/17/20
Silica Gel ID	2106994
Soxhlet/Soxtherm End	14:20 08/17/20
Soxhlet/Soxtherm Start	11:20 08/17/20
Storage Box ID	DXN-175
Toluene ID	2108382 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job Number: 320-63525-1

SDG No.:

Project: San Jacinto River Waste Pits Superfund

Client Sample ID	Lab Sample ID
11215702-Treatment-3	320-63525-1
11215702-Treatment-4	320-63525-2

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: 11215702-Treatment-3

Lab Sample ID: 320-63525-1

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-63525-1

SDG ID.:

Matrix: Water

Date Sampled: 08/07/2020 12:30

Reporting Basis: WET

Date Received: 08/08/2020 12:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	0.0012	0.0050	0.00084	mg/L	J	B	1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.11	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	0.00042	0.0020	0.00030	mg/L	J		1	6010C
7440-42-8	Boron	0.17	0.10	0.021	mg/L		B	1	6010C
7440-70-2	Calcium	100	0.50	0.050	mg/L			1	6010C
7440-43-9	Cadmium	0.00060	0.0020	0.00050	mg/L	J		1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.0089	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	0.26	0.10	0.020	mg/L			1	6010C
7440-09-7	Potassium	89	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	180	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.016	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0043	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	2400	10	2.5	mg/L			10	6010C
7440-02-0	Nickel	0.0038	0.0050	0.0024	mg/L	J		1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	0.0046	0.0050	0.0019	mg/L	J		1	6010C
7440-66-6	Zinc	0.036	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	0.0028	0.010	0.0021	mg/L	J		1	6010C
7440-24-6	Strontium	0.19	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: 11215702-Treatment-4

Lab Sample ID: 320-63525-2

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-63525-1

SDG ID.:

Matrix: Water

Date Sampled: 08/07/2020 13:00

Reporting Basis: WET

Date Received: 08/08/2020 12:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.11	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	0.00033	0.0020	0.00030	mg/L	J		1	6010C
7440-42-8	Boron	0.16	0.10	0.021	mg/L		B	1	6010C
7440-70-2	Calcium	100	0.50	0.050	mg/L			1	6010C
7440-43-9	Cadmium	0.00062	0.0020	0.00050	mg/L	J		1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.0062	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	0.11	0.10	0.020	mg/L			1	6010C
7440-09-7	Potassium	86	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	180	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.035	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0037	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	2400	10	2.5	mg/L			10	6010C
7440-02-0	Nickel	0.0031	0.0050	0.0024	mg/L	J		1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	0.0027	0.0050	0.0025	mg/L	J		1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	0.0032	0.0050	0.0019	mg/L	J		1	6010C
7440-66-6	Zinc	0.041	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.20	0.050	0.0050	mg/L			1	6010C

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICV Source: MT6010ICV_00053 Concentration Units: mg/L

CCV Source: MT6010CCV_00099

Analyte	ICV 320-403493/9 08/13/2020 09:09				CCV 320-403493/21 08/13/2020 09:57				CCV 320-403493/33 08/13/2020 10:43			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.976		1.00	98	0.533		0.498	107	0.533		0.498	107
Arsenic	0.989		1.00	99	0.516		0.500	103	0.511		0.500	102
Barium	1.05		1.00	105	2.62		2.50	105	2.64		2.50	105
Beryllium	1.04		1.00	104	0.515		0.498	103	0.512		0.498	103
Boron	0.539		0.501	108	1.06		1.00	105	1.06		1.00	106
Cadmium	1.06		1.00	106	0.529		0.500	106	0.528		0.500	106
Calcium	10.5		10.0	105	26.0		25.0	104	25.9		25.0	104
Chromium	1.06		1.00	106	2.64		2.51	105	2.63		2.51	105
Cobalt	1.08		1.00	108	2.64		2.49	106	2.64		2.49	106
Copper	1.08		1.00	108	2.62		2.48	106	2.58		2.48	104
Iron	10.7		10.0	107	26.6		25.0	107	26.9		25.0	107
Lead	1.09		1.00	109	0.536		0.505	106	0.538		0.505	107
Magnesium	10.5		10.0	105	25.9		25.0	104	25.6		25.0	102
Manganese	1.09		1.00	109	2.71		2.50	108	2.73		2.50	109
Molybdenum	1.06		1.00	106	1.05		0.999	105	1.05		0.999	105
Nickel	1.09		1.00	109	2.68		2.51	107	2.69		2.51	107
Phosphorus	2.06		2.00	103	2.67		2.51	107	2.67		2.51	106
Potassium	10.1		10.0	101	25.6		25.0	102	25.6		25.0	103
Selenium	1.06		1.00	106	0.531		0.502	106	0.535		0.502	107
Silver	0.256		0.251	102	0.525		0.498	105	0.517		0.498	104
Strontium	1.05		1.00	105	2.58		2.49	104	2.58		2.49	103
Thallium	1.08		1.00	108	0.529		0.501	106	0.523		0.501	104
Tin	1.07		1.00	107	2.62		2.50	105	2.61		2.50	105
Vanadium	1.06		1.00	106	2.61		2.51	104	2.61		2.51	104
Zinc	1.01		1.00	101	2.60		2.51	104	2.59		2.51	103
Aluminum	10.2		10.0	102	25.7		25.0	103	25.6		25.0	102
Sodium	10.2		10.0	102	25.8		25.0	103	25.8		25.0	103
Titanium	1.05		1.00	105	1.04		0.998	104	1.05		0.998	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICV Source: MT6010ICV_00053 Concentration Units: mg/L

CCV Source: MT6010CCV_00099

Analyte	CCV 320-403493/57 08/13/2020 12:18				CCV 320-403493/69 08/13/2020 13:04				CCV 320-403493/73 08/13/2020 13:20			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.526		0.498	106	0.525		0.498	105	0.526		0.498	106
Arsenic	0.513		0.500	103	0.509		0.500	102	0.515		0.500	103
Barium	2.60		2.50	104	2.61		2.50	104	2.59		2.50	103
Beryllium	0.511		0.498	103	0.506		0.498	102	0.507		0.498	102
Boron	1.04		1.00	104	1.06		1.00	106	1.05		1.00	105
Cadmium	0.526		0.500	105	0.524		0.500	105	0.522		0.500	104
Calcium	25.7		25.0	103	25.6		25.0	103	25.6		25.0	102
Chromium	2.64		2.51	105	2.63		2.51	105	2.65		2.51	106
Cobalt	2.62		2.49	105	2.61		2.49	105	2.61		2.49	105
Copper	2.55		2.48	103	2.54		2.48	102	2.55		2.48	103
Iron	26.3		25.0	105	26.3		25.0	105	25.9		25.0	104
Lead	0.532		0.505	105	0.532		0.505	105	0.531		0.505	105
Magnesium	25.8		25.0	103	25.7		25.0	103	26.0		25.0	104
Manganese	2.70		2.50	108	2.69		2.50	107	2.65		2.50	106
Molybdenum	1.05		0.999	105	1.04		0.999	104	1.03		0.999	104
Nickel	2.66		2.51	106	2.65		2.51	106	2.63		2.51	105
Phosphorus	2.65		2.51	106	2.65		2.51	106	2.65		2.51	106
Potassium	25.5		25.0	102	25.7		25.0	103	25.4		25.0	102
Selenium	0.524		0.502	104	0.519		0.502	103	0.524		0.502	104
Silver	0.519		0.498	104	0.516		0.498	104	0.525		0.498	105
Strontium	2.57		2.49	103	2.56		2.49	103	2.57		2.49	103
Thallium	0.528		0.501	105	0.520		0.501	104	0.526		0.501	105
Tin	2.61		2.50	105	2.60		2.50	104	2.61		2.50	104
Vanadium	2.61		2.51	104	2.60		2.51	104	2.61		2.51	104
Zinc	2.60		2.51	104	2.58		2.51	103	2.61		2.51	104
Aluminum	25.6		25.0	103	25.6		25.0	102	25.5		25.0	102
Sodium	25.8		25.0	103	26.2		25.0	105	26.0		25.0	104
Titanium	1.04		0.998	104	1.03		0.998	103	1.03		0.998	103

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICV Source: MT6010ICV_00053 Concentration Units: mg/L

CCV Source: MT6010CRI_QSM_00064

Analyte	ICV 320-403493/9 08/13/2020 09:09				CCVL 320-403493/75 08/13/2020 13:28							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.976		1.00	98	0.0326		0.0300	109				
Arsenic	0.989		1.00	99	0.0361		0.0400	90				
Barium	1.05		1.00	105	0.0202		0.0200	101				
Beryllium	1.04		1.00	104	0.00319		0.00300	106				
Boron	0.539		0.501	108	0.207		0.200	104				
Cadmium	1.06		1.00	106	0.00316		0.00300	105				
Calcium	10.5		10.0	105	0.524		0.500	105				
Chromium	1.06		1.00	106	0.0103		0.0100	103				
Cobalt	1.08		1.00	108	0.0103		0.0100	103				
Copper	1.08		1.00	108	0.0160		0.0150	107				
Iron	10.7		10.0	107	0.0980	J	0.100	98				
Lead	1.09		1.00	109	0.0128		0.0100	128				
Magnesium	10.5		10.0	105	0.530		0.500	106				
Manganese	1.09		1.00	109	0.0110		0.0100	110				
Molybdenum	1.06		1.00	106	0.0218		0.0200	109				
Nickel	1.09		1.00	109	0.0105		0.0100	105				
Phosphorus	2.06		2.00	103	0.524		0.500	105				
Potassium	10.1		10.0	101	1.00		1.00	100				
Selenium	1.06		1.00	106	0.0426		0.0400	107				
Silver	0.256		0.251	102	0.00513		0.00500	103				
Strontium	1.05		1.00	105	0.0520		0.0500	104				
Thallium	1.08		1.00	108	0.0309		0.0300	103				
Tin	1.07		1.00	107	0.0228		0.0200	114				
Vanadium	1.06		1.00	106	0.0201		0.0200	101				
Zinc	1.01		1.00	101	0.0211		0.0200	105				
Aluminum	10.2		10.0	102	0.196	J	0.200	98				
Titanium	1.05		1.00	105	0.0106		0.0100	106				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICV Source: MT6010ICV_00054 Concentration Units: mg/L

CCV Source: MT6010CCV_00099

Analyte	ICV 320-405044/9 08/19/2020 10:39				CCV 320-405044/21 08/19/2020 11:26				CCV 320-405044/33 08/19/2020 12:14			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	10.1		10.0	101	25.8		25.0	103	25.8		25.0	103
Titanium	1.03		1.00	103	1.03		0.998	103	1.02		0.998	102
Aluminum	10.1		10.0	101	25.7		25.0	103	25.4		25.0	102
Antimony	0.997		1.00	100	0.521		0.498	105	0.518		0.498	104
Arsenic	0.973		1.00	97	0.515		0.500	103	0.516		0.500	103
Barium	1.03		1.00	103	2.62		2.50	105	2.59		2.50	104
Beryllium	1.03		1.00	103	0.520		0.498	104	0.512		0.498	103
Boron	0.526		0.501	105	1.04		1.00	104	1.05		1.00	105
Cadmium	1.04		1.00	104	0.526		0.500	105	0.523		0.500	105
Calcium	10.4		10.0	104	26.6		25.0	106	26.2		25.0	105
Chromium	1.03		1.00	103	2.60		2.51	104	2.58		2.51	103
Cobalt	1.06		1.00	106	2.63		2.49	106	2.61		2.49	105
Copper	1.07		1.00	107	2.59		2.48	105	2.57		2.48	104
Iron	10.6		10.0	106	26.6		25.0	106	26.2		25.0	105
Lead	1.06		1.00	106	0.531		0.505	105	0.527		0.505	105
Magnesium	10.4		10.0	104	26.0		25.0	104	25.8		25.0	103
Manganese	1.05		1.00	105	2.65		2.50	106	2.63		2.50	105
Molybdenum	1.04		1.00	104	1.05		0.999	105	1.04		0.999	104
Nickel	1.06		1.00	106	2.64		2.51	105	2.63		2.51	105
Phosphorus	1.99		2.00	99	2.62		2.51	105	2.61		2.51	104
Potassium	10.0		10.0	100	25.7		25.0	103	25.5		25.0	102
Selenium	1.05		1.00	105	0.526		0.502	105	0.528		0.502	105
Silver	0.250		0.251	100	0.511		0.498	103	0.513		0.498	103
Strontium	1.04		1.00	104	2.59		2.49	104	2.57		2.49	103
Thallium	1.08		1.00	108	0.534		0.501	107	0.527		0.501	105
Tin	1.05		1.00	105	2.61		2.50	105	2.61		2.50	104
Vanadium	1.03		1.00	103	2.58		2.51	103	2.57		2.51	102
Zinc	0.994		1.00	99	2.62		2.51	104	2.60		2.51	103

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICV Source: MT6010ICV_00054 Concentration Units: mg/L

CCV Source: MT6010CCV_00099

Analyte	CCV 320-405044/45 08/19/2020 13:02											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Sodium	25.7		25.0	103								
Titanium	1.02		0.998	102								
Aluminum	25.5		25.0	102								
Antimony	0.513		0.498	103								
Arsenic	0.514		0.500	103								
Barium	2.60		2.50	104								
Beryllium	0.515		0.498	103								
Boron	1.03		1.00	103								
Cadmium	0.522		0.500	104								
Calcium	26.3		25.0	105								
Chromium	2.58		2.51	103								
Cobalt	2.61		2.49	105								
Copper	2.57		2.48	104								
Iron	26.5		25.0	106								
Lead	0.527		0.505	104								
Magnesium	25.8		25.0	103								
Manganese	2.62		2.50	105								
Molybdenum	1.03		0.999	103								
Nickel	2.63		2.51	105								
Phosphorus	2.61		2.51	104								
Potassium	25.6		25.0	102								
Selenium	0.520		0.502	104								
Silver	0.511		0.498	103								
Strontium	2.58		2.49	104								
Thallium	0.525		0.501	105								
Tin	2.60		2.50	104								
Vanadium	2.56		2.51	102								
Zinc	2.60		2.51	104								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Method: 6010C Instrument ID: T01

Lab Sample ID: CRI 320-403493/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00041

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Silver	0.00500	0.00596		119	70-130
Arsenic	0.0200	0.0181	J	91	70-130
Barium	0.00500	0.00465	J	93	70-130
Beryllium	0.00200	0.00205		103	70-130
Boron	0.100	0.102		102	70-130
Calcium	0.500	0.503		101	70-130
Cadmium	0.00200	0.00201		101	70-130
Cobalt	0.00499	0.00532		107	70-130
Chromium	0.00501	0.00401	J	80	70-130
Copper	0.0100	0.00951	J	95	70-130
Iron	0.100	0.107		107	70-130
Potassium	0.999	0.930	J	93	70-130
Magnesium	0.500	0.501		100	70-130
Manganese	0.00500	0.00539		108	70-130
Molybdenum	0.0200	0.0240		120	70-130
Sodium	0.500	0.499	J	100	70-130
Nickel	0.00500	0.00435	J	87	70-130
Phosphorus	0.500	0.499	J	100	70-130
Lead	0.00500	0.00572		114	70-130
Selenium	0.0200	0.0189	J	94	70-130
Vanadium	0.00500	0.00460	J	92	70-130
Zinc	0.0100	0.0105		105	70-130
Antimony	0.0200	0.0179	J	89	70-130
Thallium	0.0200	0.0210		105	70-130
Tin	0.0200	0.0209		105	70-130
Strontium	0.0500	0.0492	J	98	70-130

Lab Sample ID: CRI 320-405044/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00041

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Silver	0.00500	0.00505		101	70-130
Arsenic	0.0200	0.0172	J	86	70-130
Barium	0.00500	0.00440	J	88	70-130
Beryllium	0.00200	0.00205		103	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Method: 6010C Instrument ID: T01

Lab Sample ID: CRI 320-405044/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00041

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Boron	0.100	0.101		101	70-130
Calcium	0.500	0.502		101	70-130
Cadmium	0.00200	0.00201		101	70-130
Cobalt	0.00499	0.00545		109	70-130
Chromium	0.00501	0.00533	J	106	70-130
Copper	0.0100	0.0119		119	70-130
Iron	0.100	0.100		100	70-130
Potassium	0.999	0.946	J	95	70-130
Magnesium	0.500	0.503		101	70-130
Manganese	0.00500	0.00539		108	70-130
Molybdenum	0.0200	0.0243		122	70-130
Sodium	0.500	0.483	J	97	70-130
Nickel	0.00500	0.00634		127	70-130
Phosphorus	0.500	0.495	J	99	70-130
Lead	0.00500	0.00367	J	73	70-130
Selenium	0.0200	0.0214		107	70-130
Vanadium	0.00500	0.00550		110	70-130
Zinc	0.0100	0.0106		106	70-130
Antimony	0.0200	0.0197	J	99	70-130
Thallium	0.0200	0.0223		111	70-130
Tin	0.0200	0.0217		108	70-130
Titanium	0.0100	0.0124		124	70-130
Strontium	0.0500	0.0498	J	99	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Concentration Units: mg/L

		ICBIS 320-403493/10 08/13/2020 09:13		CCB 320-403493/22 08/13/2020 10:00		CCB 320-403493/34 08/13/2020 10:47		CCB 320-403493/58 08/13/2020 12:21	
Analyte	RL	Found	C	Found	C	Found	C	Found	C
Antimony	0.020	ND		ND		ND		ND	
Arsenic	0.020	ND		ND		ND		ND	
Barium	0.0050	ND		ND		ND		ND	
Beryllium	0.0020	0.000520	J	ND		ND		ND	
Boron	0.10	ND		ND		ND		ND	
Cadmium	0.0020	ND		ND		ND		ND	
Calcium	0.50	ND		ND		ND		ND	
Chromium	0.0080	ND		ND		ND		ND	
Cobalt	0.0050	ND		ND		ND		ND	
Copper	0.010	0.00217	J	ND		0.00439	J	0.00404	J
Iron	0.10	0.0475	J	0.0569	J	0.0561	J	0.0429	J
Lead	0.0050	0.00419	J	ND		ND		ND	
Magnesium	0.50	ND		ND		ND		ND	
Manganese	0.0050	ND		ND		ND		ND	
Molybdenum	0.020	0.0100	J	0.00815	J	0.00853	J	0.00837	J
Nickel	0.0050	ND		ND		ND		ND	
Phosphorus	0.50	ND		ND		ND		ND	
Potassium	1.0	ND		ND		ND		ND	
Selenium	0.020	ND		ND		ND		ND	
Silver	0.0050	ND		0.00111	J	0.000920	J	0.000840	J
Strontium	0.050	ND		ND		ND		ND	
Thallium	0.020	ND		ND		ND		ND	
Tin	0.020	ND		ND		ND		ND	
Vanadium	0.0050	ND		ND		ND		ND	
Zinc	0.010	ND		ND		ND		ND	
Aluminum	0.20	ND		ND		ND		ND	
Sodium	1.0	ND		ND		ND		ND	
Titanium	0.010	0.00417	J	0.00329	J	0.00414	J	0.00318	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	CCB 320-403493/70 08/13/2020 13:08		CCB 320-403493/74 08/13/2020 13:24					
		Found	C	Found	C	Found	C	Found	C
Antimony	0.020	ND		ND					
Arsenic	0.020	ND		ND					
Barium	0.0050	ND		ND					
Beryllium	0.0020	0.000670	J	ND					
Boron	0.10	ND		ND					
Cadmium	0.0020	ND		ND					
Calcium	0.50	0.146	J	ND					
Chromium	0.0080	ND		ND					
Cobalt	0.0050	ND		ND					
Copper	0.010	0.00447	J	0.00219	J				
Iron	0.10	0.0825	J	0.0355	J				
Lead	0.0050	ND		0.00250	J				
Magnesium	0.50	0.103	J	ND					
Manganese	0.0050	ND		ND					
Molybdenum	0.020	0.0103	J	0.0104	J				
Nickel	0.0050	ND		ND					
Phosphorus	0.50	ND		ND					
Potassium	1.0	0.145	J	ND					
Selenium	0.020	ND		ND					
Silver	0.0050	ND		0.000890	J				
Strontium	0.050	ND		ND					
Thallium	0.020	ND		ND					
Tin	0.020	ND		ND					
Vanadium	0.0050	ND		ND					
Zinc	0.010	0.00304	J	ND					
Aluminum	0.20	ND		ND					
Sodium	1.0			0.431	J				
Titanium	0.010	0.00493	J	0.00373	J				

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICBIS 320-405044/10 08/19/2020 10:42		CCB 320-405044/22 08/19/2020 11:30		CCB 320-405044/34 08/19/2020 12:18		CCB 320-405044/46 08/19/2020 13:05	
		Found	C	Found	C	Found	C	Found	C
Sodium	1.0	ND		ND		0.363	J	ND	
Titanium	0.010	0.00446	J	0.00362	J	0.00358	J	0.00293	J
Aluminum	0.20	ND		ND		ND		ND	
Antimony	0.020	ND		ND		ND		ND	
Arsenic	0.020	ND		ND		ND		ND	
Barium	0.0050	ND		ND		ND		ND	
Beryllium	0.0020	ND		ND		0.000310	J	ND	
Boron	0.10	ND		ND		ND		ND	
Cadmium	0.0020	ND		ND		ND		ND	
Calcium	0.50	ND		ND		ND		ND	
Chromium	0.0080	ND		ND		ND		ND	
Cobalt	0.0050	ND		ND		ND		ND	
Copper	0.010	ND		ND		ND		ND	
Iron	0.10	0.0256	J	0.0544	J	0.0405	J	0.0419	J
Lead	0.0050	ND		ND		ND		ND	
Magnesium	0.50	ND		ND		ND		ND	
Manganese	0.0050	ND		ND		ND		ND	
Molybdenum	0.020	0.0137	J	0.0115	J	0.0130	J	0.0132	J
Nickel	0.0050	ND		ND		ND		ND	
Phosphorus	0.50	ND		ND		ND		ND	
Potassium	1.0	0.122	J	ND		ND		ND	
Selenium	0.020	ND		ND		ND		ND	
Silver	0.0050	ND		ND		ND		ND	
Strontium	0.050	ND		ND		ND		ND	
Thallium	0.020	ND		ND		ND		ND	
Tin	0.020	ND		ND		ND		ND	
Vanadium	0.0050	ND		ND		ND		ND	
Zinc	0.010	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Concentration Units: mg/L   Lab Sample ID: MB 320-403145/1-A

Instrument Code: T01   Batch No.: 403493

CAS No.	Analyte	Concentration	C	Q	Method
7440-22-4	Silver	0.00101	J		6010C
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	0.0261	J		6010C
7440-70-2	Calcium	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7440-09-7	Potassium	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7439-92-1	Lead	ND			6010C
7782-49-2	Selenium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-66-6	Zinc	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-31-5	Tin	ND			6010C
7440-24-6	Strontium	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento　Job No.: 320-63525-1

SDG No.:

Concentration Units: mg/L　Lab Sample ID: MB 320-403145/1-A

Instrument Code: T01　Batch No.: 405044

CAS No.	Analyte	Concentration	C	Q	Method
7440-23-5	Sodium	ND			6010C
7440-32-6	Titanium	ND			6010C

FORM III-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICSA 320-403493/13 Instrument ID: T01

Lab File ID: 08132020.asc ICS Source: MT6010ICSA_00058

Concentration Units: mg/L

Analyte	True	Found	
	Solution A	Solution A	Percent Recovery
Antimony		**0.0041**	
Arsenic		**-0.0066**	
Barium		**0.0002**	
Beryllium		**-0.0004**	
Boron		**0.0073**	
Cadmium		**-0.0006**	
Calcium	**500**	**482**	**96**
Chromium		**-0.0022**	
Cobalt		**-0.0005**	
Copper		**0.0027**	
Iron	**200**	**192**	**96**
Lead		**-0.0043**	
Magnesium	**500**	**495**	**99**
Manganese		**0.0016**	
Molybdenum		**0.0001**	
Nickel		**-0.0013**	
Phosphorus		**0.0156**	
Potassium		**-0.122**	
Selenium		**-0.0004**	
Silver		**0.0013**	
Strontium		**0.0055**	
Thallium		**0.0006**	
Tin		**-0.0056**	
Vanadium		**0.0013**	
Zinc		**-0.0021**	
Aluminum	*500*	*503*	*101*
Silicon		*-0.0074*	
Sodium		*0.0947*	
Sulfur		*-0.0129*	
Titanium		*-0.0003*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICSAB 320-403493/14   Instrument ID: T01

Lab File ID: 08132020.asc   ICS Source: MT6010ICSAB_00042

Concentration Units: mg/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Antimony		**0.0054**	
Arsenic	**1.00**	**0.958**	**96**
Barium	**1.00**	**1.02**	**102**
Beryllium	**0.500**	**0.491**	**98**
Boron	**10.0**	**9.43**	**94**
Cadmium	**1.00**	**0.948**	**95**
Calcium	**500**	**484**	**97**
Chromium	**1.00**	**1.01**	**101**
Cobalt	**1.00**	**0.916**	**92**
Copper	**1.00**	**1.01**	**101**
Iron	**200**	**194**	**97**
Lead	**1.00**	**0.941**	**94**
Magnesium	**500**	**494**	**99**
Manganese	**1.00**	**1.03**	**103**
Molybdenum		**0.0000**	
Nickel	**1.00**	**0.900**	**90**
Phosphorus	**10.0**	**10.2**	**102**
Potassium	**10.0**	**10.4**	**104**
Selenium	**1.00**	**0.990**	**99**
Silver	**1.00**	**1.09**	**109**
Strontium	**1.00**	**1.01**	**101**
Thallium	**1.00**	**0.868**	**87**
Tin		**-0.0037**	
Vanadium	**1.00**	**1.04**	**104**
Zinc	**1.00**	**0.932**	**93**
Aluminum	*500*	*505*	*101*
Silicon		*0.0637*	
Sodium	*10.0*	*10.5*	*105*
Sulfur		*-0.0130*	
Titanium		*0.0003*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament

Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICSA 320-405044/13

Instrument ID: T01

Lab File ID: 08192020.asc

ICS Source: MT6010ICSA_00059

Concentration Units: mg/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Sodium		**0.0861**	
Titanium		**-0.0005**	
Aluminum	*500*	*498*	*100*
Antimony		*0.0020*	
Arsenic		*-0.0031*	
Barium		*0.0013*	
Beryllium		*-0.0007*	
Boron		*0.0059*	
Cadmium		*-0.0006*	
Calcium	*500*	*483*	*97*
Chromium		*-0.0024*	
Cobalt		*-0.0006*	
Copper		*-0.0025*	
Iron	*200*	*192*	*96*
Lead		*-0.0027*	
Magnesium	*500*	*498*	*100*
Manganese		*0.0015*	
Molybdenum		*0.0008*	
Nickel		*-0.0020*	
Phosphorus		*0.0170*	
Potassium		*-0.0940*	
Selenium		*0.0059*	
Silicon		*-0.0287*	
Silver		*0.0011*	
Strontium		*0.0054*	
Sulfur		*-0.0200*	
Thallium		*-0.0005*	
Tin		*-0.0046*	
Vanadium		*0.0001*	
Zinc		*-0.0049*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job No.: 320-63525-1

SDG No.:

Lab Sample ID: ICSAB 320-405044/14 Instrument ID: T01

Lab File ID: 08192020.asc ICS Source: MT6010ICSAB_00042

Concentration Units: mg/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Sodium	**10.0**	**10.4**	**104**
Titanium		**-0.0017**	
Aluminum	*500*	*502*	*100*
Antimony		*0.0064*	
Arsenic	*1.00*	*0.958*	*96*
Barium	*1.00*	*0.998*	*100*
Beryllium	*0.500*	*0.489*	*98*
Boron	*10.0*	*9.30*	*93*
Cadmium	*1.00*	*0.932*	*93*
Calcium	*500*	*485*	*97*
Chromium	*1.00*	*0.995*	*99*
Cobalt	*1.00*	*0.904*	*90*
Copper	*1.00*	*0.996*	*99*
Iron	*200*	*195*	*98*
Lead	*1.00*	*0.925*	*93*
Magnesium	*500*	*499*	*100*
Manganese	*1.00*	*0.995*	*99*
Molybdenum		*0.0003*	
Nickel	*1.00*	*0.884*	*88*
Phosphorus	*10.0*	*9.99*	*100*
Potassium	*10.0*	*10.2*	*102*
Selenium	*1.00*	*0.976*	*98*
Silicon		*-0.0584*	
Silver	*1.00*	*1.08*	*108*
Strontium	*1.00*	*1.01*	*101*
Sulfur		*-0.0131*	
Thallium	*1.00*	*0.872*	*87*
Tin		*-0.0051*	
Vanadium	*1.00*	*1.02*	*102*
Zinc	*1.00*	*0.928*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: 11215702-Treatment-3 MS

Lab ID: 320-63525-1 MS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-63525-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.0511		0.0012	J	0.0498	100	75-125		6010C
Arsenic	0.486		ND		0.500	97	75-125		6010C
Barium	0.603		0.11		0.500	98	75-125		6010C
Beryllium	0.237		0.00042	J	0.250	95	75-125		6010C
Boron	4.30		0.17		4.98	83	75-125		6010C
Calcium	126		100		25.0	104	75-125		6010C
Cadmium	0.237		0.00060	J	0.250	95	75-125		6010C
Cobalt	0.234		ND		0.250	94	75-125		6010C
Chromium	0.249		ND		0.250	100	75-125		6010C
Copper	0.251		0.0089	J	0.250	97	75-125		6010C
Iron	5.12		0.26		5.00	97	75-125		6010C
Potassium	117		89		25.0	113	75-125		6010C
Magnesium	208		180		25.0	113	75-125	4	6010C
Manganese	0.271		0.016		0.250	102	75-125		6010C
Molybdenum	0.252		0.0043	J	0.250	99	75-125		6010C
Sodium	2470		2400		25.0	370	75-125	4	6010C
Nickel	0.235		0.0038	J	0.250	93	75-125		6010C
Phosphorus	5.58		ND		4.98	112	75-125		6010C
Lead	0.224		ND		0.250	90	75-125		6010C
Selenium	0.482		ND		0.500	96	75-125		6010C
Vanadium	0.261		0.0046	J	0.250	102	75-125		6010C
Zinc	0.548		0.036		0.500	102	75-125		6010C
Antimony	0.441		ND		0.498	88	75-125		6010C
Thallium	0.400		ND		0.500	80	75-125		6010C
Tin	0.477		ND		0.500	95	75-125		6010C
Titanium	0.260		0.0028	J	0.250	103	75-125		6010C
Strontium	0.439		0.19		0.250	98	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: 11215702-Treatment-3 MSD   Lab ID: 320-63525-1 MSD

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Matrix: Water   Concentration Units: mg/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Silver	0.0511		0.0498	100	75-125	0	20		6010C
Arsenic	0.499		0.500	100	75-125	3	20		6010C
Barium	0.613		0.500	100	75-125	2	20		6010C
Beryllium	0.240		0.250	96	75-125	1	20		6010C
Boron	4.38		4.98	84	75-125	2	20		6010C
Calcium	127		25.0	111	75-125	1	20		6010C
Cadmium	0.241		0.250	96	75-125	2	20		6010C
Cobalt	0.238		0.250	95	75-125	2	20		6010C
Chromium	0.255		0.250	102	75-125	2	20		6010C
Copper	0.255		0.250	98	75-125	2	20		6010C
Iron	5.17		5.00	98	75-125	1	20		6010C
Potassium	119		25.0	119	75-125	1	20		6010C
Magnesium	212		25.0	127	75-125	2	20	4	6010C
Manganese	0.275		0.250	104	75-125	2	20		6010C
Molybdenum	0.255		0.250	100	75-125	1	20		6010C
Sodium	2440		25.0	254	75-125	1	20	4	6010C
Nickel	0.240		0.250	94	75-125	2	20		6010C
Phosphorus	5.69		4.98	114	75-125	2	20		6010C
Lead	0.229		0.250	92	75-125	2	20		6010C
Selenium	0.490		0.500	98	75-125	2	20		6010C
Vanadium	0.267		0.250	105	75-125	2	20		6010C
Zinc	0.560		0.500	105	75-125	2	20		6010C
Antimony	0.448		0.498	90	75-125	2	20		6010C
Thallium	0.404		0.500	81	75-125	1	20		6010C
Tin	0.486		0.500	97	75-125	2	20		6010C
Titanium	0.261		0.250	103	75-125	1	20		6010C
Strontium	0.445		0.250	101	75-125	1	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: 11215702-Treatment-3 PDS

Lab ID: 320-63525-1 PDS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-63525-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.105		0.0012	J	0.100	104	75-125		6010C
Arsenic	0.0987		ND		0.100	99	75-125		6010C
Barium	0.206		0.11		0.100	95	75-125		6010C
Beryllium	0.0485		0.00042	J	0.0500	96	75-125		6010C
Boron	0.998		0.17		1.00	82	75-125		6010C
Calcium	106		100		10.0	58	75-125	W	6010C
Cadmium	0.0972		0.00060	J	0.100	97	75-125		6010C
Cobalt	0.0956		ND		0.100	96	75-125		6010C
Chromium	0.102		ND		0.100	102	75-125		6010C
Copper	0.104		0.0089	J	0.100	95	75-125		6010C
Iron	4.01		0.26		4.00	94	75-125		6010C
Potassium	95.7		89		9.97	68	75-125	W	6010C
Magnesium	183		180		10.0	NC	75-125		6010C
Manganese	0.120		0.016		0.100	104	75-125		6010C
Molybdenum	0.102		0.0043	J	0.100	97	75-125		6010C
Sodium	2490		2400		101	NC	75-125		6010C
Nickel	0.0992		0.0038	J	0.100	95	75-125		6010C
Phosphorus	1.15		ND		1.00	115	75-125		6010C
Lead	0.0947		ND		0.100	95	75-125		6010C
Selenium	0.102		ND		0.100	102	75-125		6010C
Vanadium	0.110		0.0046	J	0.100	105	75-125		6010C
Zinc	0.141		0.036		0.100	105	75-125		6010C
Antimony	0.0885		ND		0.100	89	75-125		6010C
Thallium	0.0876		ND		0.100	88	75-125		6010C
Tin	0.0957		ND		0.100	96	75-125		6010C
Titanium	0.106		0.0028	J	0.100	103	75-125		6010C
Strontium	0.284		0.19		0.100	91	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-403145/2-A

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

Sample Matrix: Water LCS Source: MT6010LCS3_00040

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Silver	0.0498	0.0505		101	80	120		6010C
Arsenic	0.500	0.451		90	80	120		6010C
Barium	0.500	0.498		100	80	120		6010C
Beryllium	0.250	0.243		97	80	120		6010C
Boron	4.98	4.68		94	80	120		6010C
Calcium	25.0	24.9		99	80	120		6010C
Cadmium	0.250	0.243		97	80	120		6010C
Cobalt	0.250	0.243		97	80	120		6010C
Chromium	0.250	0.248		99	80	120		6010C
Copper	0.250	0.245		98	80	120		6010C
Iron	5.00	5.10		102	80	120		6010C
Potassium	25.0	24.3		97	80	120		6010C
Magnesium	25.0	24.4		98	80	120		6010C
Manganese	0.250	0.258		103	80	120		6010C
Molybdenum	0.250	0.253		101	80	120		6010C
Nickel	0.250	0.243		97	80	120		6010C
Phosphorus	4.98	5.11		103	80	120		6010C
Lead	0.250	0.252		101	80	120		6010C
Selenium	0.500	0.464		93	80	120		6010C
Vanadium	0.250	0.249		100	80	120		6010C
Zinc	0.500	0.484		97	80	120		6010C
Antimony	0.498	0.443		89	80	120		6010C
Thallium	0.500	0.474		95	80	120		6010C
Tin	0.500	0.507		101	80	120		6010C
Strontium	0.250	0.245		98	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-403145/2-A

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

Sample Matrix: Water   LCS Source: MT6010LCS2_00017

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Sodium	25.0	25.4		101	80	120		6010C
Titanium	0.250	0.251		100	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 320-63525-1

SDG No:

Lab Name: Eurofins TestAmerica, Sacramento   Job No: 320-63525-1

Matrix: Water   Concentration Units: mg/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Silver	0.0012	J	0.0112	J	NC		6010C
Arsenic	ND		ND		NC		6010C
Barium	0.11		0.149		NC		6010C
Beryllium	0.00042	J	0.00765	J	NC		6010C
Boron	0.17		0.232	J	NC		6010C
Calcium	100		105		5.5		6010C
Cadmium	0.00060	J	ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Chromium	ND		0.00600	J	NC		6010C
Copper	0.0089	J	0.0231	J	NC		6010C
Iron	0.26		6.09		NC		6010C
Potassium	89		86.4		2.8		6010C
Magnesium	180		178		0.93		6010C
Manganese	0.016		0.0560		NC		6010C
Molybdenum	0.0043	J	ND		NC		6010C
Sodium	2400		2450		3.2		6010C
Nickel	0.0038	J	ND		NC		6010C
Phosphorus	ND		ND		NC		6010C
Lead	ND		ND		NC		6010C
Selenium	ND		ND		NC		6010C
Vanadium	0.0046	J	ND		NC		6010C
Zinc	0.036		0.0734		NC		6010C
Antimony	ND		ND		NC		6010C
Thallium	ND		ND		NC		6010C
Tin	ND		ND		NC		6010C
Titanium	ND		ND		NC		6010C
Strontium	0.19		0.214	J	NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Sacrament　　Job Number: 320-63525-1

SDG Number:

Matrix: Water　　Instrument ID: T01

Method: 6010C　　MDL Date: 01/01/2013 18:18

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Sacrament

Job Number: 320-63525-1

SDG Number:

Matrix: Water

Instrument ID: T01

Method: 6010C

XMDL Date: 01/01/2013 18:04

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 09/19/2019

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	-0.000009		0.000005		0.017200		0.000061	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.000043			0.000800				
Barium	455.403														
Beryllium	313.042			-0.000000											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000000	0.000001	-0.000006				0.000028	0.000002						
Calcium	317.938														
Chromium	267.716	0.000008		-0.000000				0.000005	0.000001					0.000021	
Cobalt	228.616		0.000020					0.000024			-0.000484		0.000090		
Copper	324.754	0.000004						-0.000089			0.000680				
Iron	259.940														
Lead	220.353	-0.000108		-0.000002	-0.000200		0.000280	0.000031	0.000002		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610			0.000001				-0.000008	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	-0.000003			0.000200			0.000023			-0.000150				-0.000100
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000006		0.000005				-0.000155	0.000004	0.000468	0.000140				
Silicon	288.158	0.000013				-0.003000					-0.001890				
Silver	328.068	-0.000001		-0.000000				-0.000060	-0.000002		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		-0.00100				0.002061	0.000100	0.005840	-0.003350				
Thallium	190.856	0.000000		0.000005	0.002300	0.000241		-0.000014	-0.000003	0.000500	-0.000136				
Tin	189.989	0.000014													
Titanium	334.904					0.000169			-0.000003		0.000449				
Vanadium	292.402					-0.005500		-0.000037		-0.000570	-0.000200				
Zinc	206.200	0.000002		0.000001		0.000420		-0.0000043	-0.000002		-0.000200				

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 09/19/2019

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000087		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 12/17/2019

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum											0.040000				
Antimony		-0.000004		0.000002		0.009800		-0.000039	-0.000004		-0.004000		-0.000160		
Arsenic		-0.000002				-0.005350		-0.000026			-0.000300				
Barium															
Beryllium															
Boron								-0.000016			0.054500				
Cadmium		-0.000002						0.000024							
Calcium															
Chromium		0.000001		0.000001				-0.000007	0.000001					0.000021	
Cobalt			-0.000070					0.000001			-0.001084		0.000090		
Copper		0.000004						0.000008			0.000700				
Iron															
Lead		-0.000131		-0.000004			-0.000280	0.000035	0.000003		-0.001900		0.000180		
Magnesium								-0.000300			-0.012500				
Manganese								0.000009	0.000001						
Molybdenum								-0.000006							
Nickel					-0.000130			0.000011			-0.000150				-0.000100
Phosphorus															
Potassium		-0.000031		-0.000099				-0.000379	-0.000058						
Selenium		-0.000024		0.000003				-0.000001	0.000001	0.000468	0.000140				
Silicon						-0.004000					-0.001890				
Silver								-0.000001			-0.000008				
Sodium															
Strontium				0.000008											
Sulfur										0.005840	-0.003350				
Thallium		0.000029		0.000007	0.005300	0.000241		-0.000014	-0.000000	0.000500	-0.000136				
Tin															
Titanium						0.000169			0.000010		0.000449				
Vanadium						-0.006370		0.000010		-0.000470	-0.000200				
Zinc				0.000004		-0.000920		0.000010	0.000002		-0.000200				

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 12/17/2019

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum															
Antimony					0.000170										
Arsenic			-0.000036				0.000000								
Barium															
Beryllium					-0.000313		0.000300								
Boron			0.000016												
Cadmium															
Calcium															
Chromium															
Cobalt			-0.000012		0.002450										
Copper					-0.000250		-0.000270								
Iron															
Lead		0.000013	0.000047		-0.000725		-0.000100								
Magnesium															
Manganese															
Molybdenum															
Nickel						0.000270									
Phosphorus															
Potassium															
Selenium			0.000020												
Silicon				0.002050	0.010000		0.007750								
Silver															
Sodium															
Strontium															
Sulfur															
Thallium					-0.000408		0.003000								
Tin					-0.003150										
Titanium			0.000007												
Vanadium					0.000750										
Zinc															

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 08/13/2020

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	-0.000008		0.000005		0.0079700		0.000064	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.0000100			-0.003700				
Barium	455.403														
Beryllium	313.042	0.000009		-0.000003											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000001	0.000001	0.000000				0.000020	0.000000						
Calcium	317.938														
Chromium	267.716	0.000014		-0.000002				-0.000001	0.000001					0.000021	
Cobalt	228.616		-0.000034					0.000003			-0.000484		0.000090		
Copper	324.754	-0.000005		0.000000	-0.00142			-0.000107	0.0000001		0.000680				
Iron	259.940														
Lead	220.353	-0.000069		-0.000002	-0.000200	-0.0008	0.000280	0.0000004	-0.0000000		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610	0.000007		0.000002				-0.000087	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	0.000001		0.000001	0.000200			0.0000024	-0.000000		-0.000150				-0.0000700
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000001		0.000001	-0.00039			-0.000228	0.000004	0.000468	0.000140				
Silicon	288.158	0.000062		0.000071		-0.003000		0.000044			-0.001890				
Silver	328.068	-0.000000		0.000001				-0.0000007	-0.000001		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		0.00014				150.0000	0.000085	0.005840	-0.003350				
Thallium	190.856	0.000013		0.000005	0.002300	0.000241		-0.000006	-0.000003	0.000500	-0.000136				
Tin	189.989	-0.000013													
Titanium	334.904	-0.000004				0.000169			-0.000003		0.000449				
Vanadium	292.402	0.000008				-0.005500		0.000016		-0.000570	-0.0025800				
Zinc	206.200	0.000005		0.000001		0.000420		-0.000016	0.000005		-0.000200				

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01   Date: 08/13/2020

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000050		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 08/19/2020

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	-0.000008		0.000005		0.0079700		0.000064	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.0000100			-0.003700				
Barium	455.403														
Beryllium	313.042	0.000009		-0.000003											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000001	0.000001	0.000000				0.000020	0.000000						
Calcium	317.938														
Chromium	267.716	0.000014		-0.000002				-0.000001	0.000001					0.000021	
Cobalt	228.616		-0.000034					0.000003			-0.000484		0.000090		
Copper	324.754	0.000006		0.000000	-0.00142			-0.000121	0.0000001		0.000680				
Iron	259.940														
Lead	220.353	-0.000070		0.000003	-0.000200	-0.0008	0.000280	0.0000028	-0.0000000		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610	0.000007		0.000002				-0.000087	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	0.000001		0.000001	0.000200			0.0000010	-0.000000		-0.000150				-0.0000700
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000001		0.000001	-0.00039			-0.000228	0.000004	0.000468	0.000140				
Silicon	288.158	0.000044		-0.000022		-0.003000		0.000003			-0.001890				
Silver	328.068	-0.000000		-0.000002				-0.0000000	-0.000001		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		0.00014				150.0000	0.000085	0.005840	-0.003350				
Thallium	190.856	0.000013		0.000005	0.002300	0.000241		-0.000006	-0.000003	0.000500	-0.000136				
Tin	189.989	-0.000013													
Titanium	334.904	-0.000004				0.000169			-0.000003		0.000449				
Vanadium	292.402	0.000008				-0.005500		0.000016		-0.000570	-0.0025800				
Zinc	206.200	0.000005		0.000001		0.000420		0.000002	0.000011		-0.000200				

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-63525-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 08/19/2020

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000050		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Sacramen Job No: 320-63525-1

SDG No.:

Instrument ID: T01 Date: 09/06/2018 17:40

Analyte	Integ. Time (Sec.)	Concentration (ug/mL)	Method
Silver		2.0	6010C
Arsenic		75	6010C
Barium		100	6010C
Beryllium		25	6010C
Boron		100	6010C
Calcium		2500	6010C
Cadmium		40	6010C
Cobalt		100	6010C
Chromium		100	6010C
Copper		75	6010C
Iron		1000	6010C
Potassium		1000	6010C
Magnesium		2500	6010C
Manganese		30	6010C
Molybdenum		40	6010C
Sodium		500	6010C
Nickel		100	6010C
Phosphorus		100	6010C
Lead		50	6010C
Selenium		100	6010C
Vanadium		100	6010C
Zinc		60	6010C
Antimony		100	6010C
Thallium		5.0	6010C
Tin		100	6010C
Titanium		100	6010C
Strontium		25	6010C

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 320-403145/1-A	08/12/2020 13:33	403145		50	50
LCS 320-403145/2-A	08/12/2020 13:33	403145		50	50
320-63525-1	08/12/2020 13:33	403145		50	50
320-63525-1 MS	08/12/2020 13:33	403145		50	50
320-63525-1 MSD	08/12/2020 13:33	403145		50	50
320-63525-2	08/12/2020 13:33	403145		50	50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 08/13/2020 08:37 End Date: 08/13/2020 13:28

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Ni	P	Pb	Sb	Se	Sn	Sr	Tl	V	Zn	
RINSE 320-403493/1			08:37																										
RINSE 320-403493/2			08:41																										
RINSE 320-403493/3			08:45																										
CALSTD0 320-403493/4 IC			08:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CALSTD1 320-403493/5 IC			08:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CALSTD2 320-403493/6 IC			08:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
LRA 320-403493/7			09:01																										
RINSE 320-403493/8			09:05																										
ICV 320-403493/9	1		09:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ICBIS 320-403493/10	1		09:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CRI 320-403493/11			09:17																										
CRI 320-403493/12	1		09:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ICSA 320-403493/13	1		09:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ICSAB 320-403493/14	1		09:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ZZZZZZ			09:33																										
ZZZZZZ			09:37																										
ZZZZZZ			09:41																										
ZZZZZZ			09:45																										
ZZZZZZ			09:49																										
ZZZZZZ			09:53																										
CCV 320-403493/21	1		09:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCB 320-403493/22	1		10:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ZZZZZZ			10:04																										
ZZZZZZ			10:08																										
ZZZZZZ			10:12																										
ZZZZZZ			10:16																										
ZZZZZZ			10:20																										
ZZZZZZ			10:24																										
ZZZZZZ			10:28																										
MB 320-403145/1-A	1	T	10:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
LCS 320-403145/2-A	1	T	10:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ZZZZZZ			10:40																										
CCV 320-403493/33	1		10:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCB 320-403493/34	1		10:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ZZZZZZ			10:51																										
ZZZZZZ			10:55																										
ZZZZZZ			10:59																										
ZZZZZZ			11:03																										
ZZZZZZ			11:06																										
ZZZZZZ			11:10																										
ZZZZZZ			11:14																										
ZZZZZZ			11:18																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 08/13/2020 08:37 End Date: 08/13/2020 13:28

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Ni	P	Pb	Sb	Se	Sn	Sr	Tl	V	Zn	
ZZZZZZ			11:22																										
ZZZZZZ			11:26																										
CCV 320-403493/45			11:30																										
CCB 320-403493/46			11:34																										
ZZZZZZ			11:38																										
ZZZZZZ			11:42																										
ZZZZZZ			11:46																										
ZZZZZZ			11:50																										
ZZZZZZ			11:54																										
ZZZZZZ			11:58																										
ZZZZZZ			12:02																										
ZZZZZZ			12:06																										
ZZZZZZ			12:10																										
ZZZZZZ			12:14																										
CCV 320-403493/57	1		12:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCB 320-403493/58	1		12:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ZZZZZZ			12:25																										
ZZZZZZ			12:29																										
ZZZZZZ			12:33																										
ZZZZZZ			12:37																										
ZZZZZZ			12:41																										
320-63525-1	1	T	12:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
320-63525-1 SD	5	T	12:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
320-63525-1 PDS	1	T	12:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
320-63525-1 MS	1	T	12:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
320-63525-1 MSD	1	T	13:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCV 320-403493/69	1		13:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCB 320-403493/70	1		13:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
320-63525-2	1	T	13:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
ZZZZZZ			13:16																										
CCV 320-403493/73	1		13:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCB 320-403493/74	1		13:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CCVL 320-403493/75	1		13:28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-63525-1

SDG No.:

Instrument ID: T01   Analysis Method: 6010C

Start Date: 08/19/2020 10:07   End Date: 08/19/2020 14:12

				Analytes	
Lab Sample Id	D/F	Type	Time	Na	Ti
RINSE 320-405044/1			10:07		
RINSE 320-405044/2			10:11		
RINSE 320-405044/3			10:15		
CALSTD0 320-405044/4 IC			10:19	X	X
CALSTD1 320-405044/5 IC			10:23	X	X
CALSTD2 320-405044/6 IC			10:27	X	X
LRA 320-405044/7			10:31		
RINSE 320-405044/8			10:35		
ICV 320-405044/9	1		10:39	X	X
ICBIS 320-405044/10	1		10:42	X	X
CRI 320-405044/11			10:46		
CRI 320-405044/12	1		10:50	X	X
ICSA 320-405044/13	1		10:55	X	X
ICSAB 320-405044/14	1		10:59	X	X
ZZZZZZ			11:02		
ZZZZZZ			11:06		
ZZZZZZ			11:10		
ZZZZZZ			11:14		
ZZZZZZ			11:18		
ZZZZZZ			11:22		
CCV 320-405044/21	1		11:26	X	X
CCB 320-405044/22	1		11:30	X	X
MB 320-403145/1-A	1	T	11:34	X	X
LCS 320-403145/2-A	1	T	11:38	X	X
ZZZZZZ			11:42		
ZZZZZZ			11:46		
320-63525-1	1	T	11:50		X
320-63525-1 SD	5	T	11:54		X
320-63525-1 PDS	1	T	11:58		X
320-63525-1 MS	1	T	12:02		X
320-63525-1 MSD	1	T	12:06		X
ZZZZZZ			12:10		
CCV 320-405044/33	1		12:14	X	X
CCB 320-405044/34	1		12:18	X	X
320-63525-2	1	T	12:22		X
ZZZZZZ			12:26		
320-63525-1	10	T	12:30	X	
320-63525-1 SD	50	T	12:34	X	
320-63525-1 PDS	10	T	12:38	X	
320-63525-1 MS	10	T	12:42	X	
320-63525-1 MSD	10	T	12:46	X	
320-63525-2	10	T	12:50	X	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 08/19/2020 10:07 End Date: 08/19/2020 14:12

Lab Sample Id	D/F	Type	Time	Analytes																									
				Na	Ti																								
ZZZZZZ			12:54																										
ZZZZZZ			12:58																										
CCV 320-405044/45	1		13:02	X	X																								
CCB 320-405044/46	1		13:05	X	X																								
CCVL 320-405044/47	1		13:10	X	X																								
ZZZZZZ			13:14																										
ZZZZZZ			13:17																										
ZZZZZZ			13:21																										
ZZZZZZ			13:25																										
ZZZZZZ			13:29																										
ZZZZZZ			13:33																										
ZZZZZZ			13:37																										
ZZZZZZ			13:41																										
ZZZZZZ			13:45																										
CCV 320-405044/57			13:49																										
CCB 320-405044/58			13:52																										
ZZZZZZ			13:57																										
CCV 320-405044/60			14:01																										
CCB 320-405044/61			14:04																										
CCVL 320-405044/62			14:08																										
RINSE 320-405044/63			14:12																										

Prep Types:
T = Total/NA

FORM XIII-IN

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICP Instrument ID: T01 Start Date: 08/13/2020 End Date: 08/13/2020

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICV 320-403493/9	09:09										
ICBIS 320-403493/10	09:13										
CRI 320-403493/12	09:21	103		104		104					
ICSA 320-403493/13	09:25	88		87		99					
ICSAB 320-403493/14	09:29	88		87		98					
CCV 320-403493/21	09:57	97		97		101					
CCB 320-403493/22	10:00	101		101		104					
MB 320-403145/1-A	10:32	100		102		102					
LCS 320-403145/2-A	10:36	97		97		100					
CCV 320-403493/33	10:43	98		98		102					
CCB 320-403493/34	10:47	100		102		103					
CCV 320-403493/57	12:18	97		97		101					
CCB 320-403493/58	12:21	99		100		102					
320-63525-1	12:45	85		82		97					
320-63525-1 SD	12:49	95		94		101					
320-63525-1 PDS	12:53	86		83		97					
320-63525-1 MS	12:57	86		83		98					
320-63525-1 MSD	13:01	86		83		97					
CCV 320-403493/69	13:04	98		99		101					
CCB 320-403493/70	13:08	100		100		101					
320-63525-2	13:12	85		82		96					
CCV 320-403493/73	13:20	98		97		101					
CCB 320-403493/74	13:24	100		100		100					
CCVL 320-403493/75	13:28	99		100		99					

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-63525-1

SDG No.:

ICP Instrument ID: T01 Start Date: 08/19/2020 End Date: 08/19/2020

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICV 320-405044/9	10:39										
ICBIS 320-405044/10	10:42										
CRI 320-405044/12	10:50	100		101		101					
ICSA 320-405044/13	10:55	87		85		98					
ICSAB 320-405044/14	10:59	86		85		97					
CCV 320-405044/21	11:26	95		94		97					
CCB 320-405044/22	11:30	96		97		97					
MB 320-403145/1-A	11:34	98		99		98					
LCS 320-403145/2-A	11:38	95		96		97					
320-63525-1	11:50	82		80		93					
320-63525-1 SD	11:54	92		89		95					
320-63525-1 PDS	11:58	83		81		94					
320-63525-1 MS	12:02	83		80		94					
320-63525-1 MSD	12:06	83		81		94					
CCV 320-405044/33	12:14	96		96		99					
CCB 320-405044/34	12:18	99		100		99					
320-63525-2	12:22	83		80		93					
320-63525-1	12:30	94		93		97					
320-63525-1 SD	12:34	96		97		97					
320-63525-1 PDS	12:38	93		92		97					
320-63525-1 MS	12:42	93		92		97					
320-63525-1 MSD	12:46	94		93		97					
320-63525-2	12:50	94		93		97					
CCV 320-405044/45	13:02	95		95		98					
CCB 320-405044/46	13:05	98		99		98					
CCVL 320-405044/47	13:10	98		99		97					

FORM XV - IN

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-63525-1

SDG No.:

Batch Number: 403145 Batch Start Date: 08/12/20 13:33 Batch Analyst: Panec, Jacob T

Batch Method: 3010A Batch End Date: 08/12/20 17:17

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MT6010LCS1 00017	MT6010LCS2 00017	MT6010LCS3 00040
MB 320-403145/1		3010A, 6010C		<2 SU	50 mL	50 mL			
LCS 320-403145/2		3010A, 6010C		<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
320-63525-B-1	11215702-Treatment-3	3010A, 6010C	T	<2 SU	50 mL	50 mL			
320-63525-B-1 MS	11215702-Treatment-3	3010A, 6010C	T	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
320-63525-B-1 MSD	11215702-Treatment-3	3010A, 6010C	T	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
320-63525-B-2	11215702-Treatment-4	3010A, 6010C	T	<2 SU	50 mL	50 mL			

Batch Notes	
Batch Comment	HB cell 3 E
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	08/12/2020 17:17
Digestion Start Time	08/12/2020 13:33
Digestion Unit ID	5
Hydrochloric Acid ID	2102666
Nitric Acid ID	2109395
pH Indicator ID	1119
Pipette/Syringe/Dispenser ID	M39512G
Analyst ID - Spike Analyst	JP
Analyst ID - Spike Witness Analyst	GH
Thermometer ID	BT-12
Digestion Tube/Cup ID	2001329

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Test America-West Sacramento methods 6010b and 200.7

Author: SP

Published: 8/13/2020 1:51:00PM

Notes:

RINSE BLANK

Acquire Date: 8/13/2020 8:37:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00059100	ppm	0.00066600	112.87	.00000	Abs	Pass	
Al3961		-0.022216	ppm	0.0026310	11.843	.00000	Abs	Pass	
As1890		-0.00030900	ppm	0.00067800	219.83	.00000	Abs	Pass	
B_2089		0.0019580	ppm	0.00074600	38.076	.00000	Abs	Pass	
Ba4554	**W**	**0.0052970**	**ppm**	**0.00083100**	**15.678**	**.00000**	**Abs**	**Warn High**	**0.00500**
Be3130		0.00027900	ppm	0.00065600	234.65	.00000	Abs	Pass	
Ca3179		0.074826	ppm	0.0031930	4.2677	.00000	Abs	Pass	
Cd2144		0.00015600	ppm	0.000018000	11.678	.00000	Abs	Pass	
Co2286		0.00010400	ppm	0.000029000	27.865	.00000	Abs	Pass	
Cr2677		-0.00069600	ppm	0.00037700	54.119	.00000	Abs	Pass	
Cu3247	**W**	**-0.013223**	**ppm**	**0.00066700**	**5.0462**	**.00000**	**Abs**	**Warn Low**	**-.01000**
Fe2599	**W**	**0.053459**	**ppm**	**0.012797**	**23.938**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.014407	ppm	0.033374	231.65	.00000	Abs	Pass	
Mg2790		0.014664	ppm	0.0063670	43.423	.00000	Abs	Pass	
Mn2576		0.0013810	ppm	0.00027800	20.116	.00000	Abs	Pass	
Mo2020		0.00025400	ppm	0.00039400	155.10	.00000	Abs	Pass	
Na5895		-0.043596	ppm	0.00090000	2.0636	.00000	Abs	Pass	
Ni2316		0.000090000	ppm	0.00075100	838.53	.00000	Abs	Pass	
P_1782		-0.0034830	ppm	0.0016170	46.424	.00000	Abs	Pass	
Pb2203		0.0022910	ppm	0.0047410	206.92	.00000	Abs	Pass	
S_1820		0.00094300	ppm	0.0030290	321.16	.00000	Abs	Pass	
Sb2068		0.0026930	ppm	0.0024650	91.560	.00000	Abs	Pass	
Se1960		0.0012620	ppm	0.0017980	142.47	.00000	Abs	Pass	
Si2881		0.093709	ppm	0.035767	38.168	.00000	Abs	Pass	
Sn1899		-0.00052400	ppm	0.000085000	16.279	.00000	Abs	Pass	
Sr4077		0.00076900	ppm	0.00035200	45.745	.00000	Abs	Pass	
Ti3349		0.00050700	ppm	0.00050600	99.778	.00000	Abs	Pass	
Tl1908		0.0025310	ppm	0.00078000	30.836	.00000	Abs	Pass	
V_2924		0.00056900	ppm	0.00027000	47.478	.00000	Abs	Pass	
Zn2062	**F**	**0.043956**	**ppm**	**0.012797**	**29.114**	**.00000**	**Abs**	**Fail High**	**.02000**
Y_2243		7,672.0	Cts/S	12.574	0.16390				
Y_3600		67,997	Cts/S	61.964	0.091127				
Y_3774		3,288.4	Cts/S	5.0529	0.15366				

RINSE BLANK

Acquire Date: 8/13/2020 8:41:42AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00094300	ppm	0.000027000	2.8246	.00000	Abs	Pass	
Al3961		-0.0089980	ppm	0.061041	678.36	.00000	Abs	Pass	
As1890		-0.0022050	ppm	0.00034700	15.716	.00000	Abs	Pass	
B_2089		0.0016540	ppm	0.00051500	31.122	.00000	Abs	Pass	
Ba4554		0.00011900	ppm	0.00055300	466.23	.00000	Abs	Pass	

RINSE BLANK

Acquire Date: 8/13/2020 8:41:42AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Be3130		0.00069500	ppm	0.00017500	25.193	.00000	Abs	Pass	
Ca3179		-0.0044560	ppm	0.0079000	177.28	.00000	Abs	Pass	
Cd2144		0.000016000	ppm	0.000081000	520.25	.00000	Abs	Pass	
Co2286		.0000060000	ppm	0.00030100	4,811.7	.00000	Abs	Pass	
Cr2677		-0.00031000	ppm	0.0013990	450.87	.00000	Abs	Pass	
Cu3247	**W**	**-0.013125**	**ppm**	**0.00083100**	**6.3292**	**.00000**	**Abs**	**Warn Low**	**-.01000**
Fe2599		0.00071500	ppm	0.0058070	811.63	.00000	Abs	Pass	
K_7664		-0.0084120	ppm	0.0083010	98.677	.00000	Abs	Pass	
Mg2790		0.0075930	ppm	0.0035080	46.205	.00000	Abs	Pass	
Mn2576		-0.00032800	ppm	0.000017000	5.2173	.00000	Abs	Pass	
Mo2020		0.00037800	ppm	0.00033900	89.723	.00000	Abs	Pass	
Na5895		-0.039381	ppm	0.0091370	23.201	.00000	Abs	Pass	
Ni2316		-0.0022260	ppm	0.00098500	44.254	.00000	Abs	Pass	
P_1782		-0.0042750	ppm	0.00031700	7.4120	.00000	Abs	Pass	
Pb2203		-0.00025800	ppm	0.0052710	2,042.4	.00000	Abs	Pass	
S_1820		0.0031730	ppm	0.0011300	35.629	.00000	Abs	Pass	
Sb2068		0.00067700	ppm	0.0053380	788.22	.00000	Abs	Pass	
Se1960		-0.00087200	ppm	0.0019660	225.57	.00000	Abs	Pass	
Si2881		0.022745	ppm	0.11058	486.18	.00000	Abs	Pass	
Sn1899		-0.00096400	ppm	0.00031100	32.199	.00000	Abs	Pass	
Sr4077		0.00048900	ppm	0.00023800	48.719	.00000	Abs	Pass	
Ti3349		0.000069000	ppm	0.00054500	787.45	.00000	Abs	Pass	
Tl1908		0.0015550	ppm	0.00055000	35.353	.00000	Abs	Pass	
V_2924		0.00048300	ppm	0.00077400	160.33	.00000	Abs	Pass	
Zn2062		0.0010180	ppm	0.000062000	6.0666	.00000	Abs	Pass	
Y_2243		7,630.5	Cts/S	3.8418	0.050348				
Y_3600		67,411	Cts/S	187.63	0.27835				
Y_3774		3,301.2	Cts/S	7.4597	0.22597				

RINSE BLANK

Acquire Date: 8/13/2020 8:45:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00081900	ppm	0.0010620	129.71	.00000	Abs	Pass	
Al3961		-0.023463	ppm	0.029128	124.14	.00000	Abs	Pass	
As1890		-0.0010650	ppm	0.0041150	386.49	.00000	Abs	Pass	
B_2089		0.00072800	ppm	0.00054500	74.863	.00000	Abs	Pass	
Ba4554		0.000063000	ppm	0.00078700	1,254.4	.00000	Abs	Pass	
Be3130		0.00068600	ppm	0.00021300	31.066	.00000	Abs	Pass	
Ca3179		-0.0052660	ppm	0.0024960	47.398	.00000	Abs	Pass	
Cd2144		0.000049000	ppm	0.000040000	82.930	.00000	Abs	Pass	
Co2286		-0.00022700	ppm	0.00025600	112.44	.00000	Abs	Pass	
Cr2677		0.000046000	ppm	0.00014300	310.02	.00000	Abs	Pass	
Cu3247	**W**	**-0.013677**	**ppm**	**0.00032100**	**2.3490**	**.00000**	**Abs**	**Warn Low**	**-.01000**
Fe2599		-0.022404	ppm	0.00087300	3.8957	.00000	Abs	Pass	
K_7664		-0.0098020	ppm	0.043078	439.50	.00000	Abs	Pass	
Mg2790		0.0013660	ppm	0.0025720	188.29	.00000	Abs	Pass	
Mn2576		-0.00025400	ppm	0.00016700	65.577	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

RINSE BLANK

Acquire Date: 8/13/2020 8:45:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Mo2020		0.00026900	ppm	0.00076000	282.62	.00000	Abs	Pass	
Na5895		-0.044875	ppm	0.022652	50.479	.00000	Abs	Pass	
Ni2316		-0.00072700	ppm	0.00050500	69.382	.00000	Abs	Pass	
P_1782		-0.0055510	ppm	0.0018840	33.945	.00000	Abs	Pass	
Pb2203		-0.00042100	ppm	0.0028070	666.74	.00000	Abs	Pass	
S_1820		0.0033780	ppm	0.00099400	29.428	.00000	Abs	Pass	
Sb2068		0.000039000	ppm	0.0014450	3,723.7	.00000	Abs	Pass	
Se1960		0.0010810	ppm	0.00073700	68.237	.00000	Abs	Pass	
Si2881		0.098572	ppm	0.037616	38.161	.00000	Abs	Pass	
Sn1899		-0.00017000	ppm	0.00063500	373.51	.00000	Abs	Pass	
Sr4077		0.00027300	ppm	0.00042800	156.45	.00000	Abs	Pass	
Ti3349		-0.00033200	ppm	0.00021200	64.039	.00000	Abs	Pass	
Tl1908		0.0025030	ppm	0.0032750	130.84	.00000	Abs	Pass	
V_2924		0.00048700	ppm	0.00048200	98.981	.00000	Abs	Pass	
Zn2062		0.00012600	ppm	0.00066500	528.77	.00000	Abs	Pass	
Y_2243		7,539.9	Cts/S	16.806	0.22290				
Y_3600		66,639	Cts/S	123.58	0.18545				
Y_3774		3,281.4	Cts/S	3.7232	0.11346				

CALSTD0 2110462

Acquire Date: 8/13/2020 8:49:46AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000063000	Cts/S	0.000019000	30.174
Al3961		0.0015280	Cts/S	0.00057900	37.890
As1890		-0.00010400	Cts/S	0.000027000	26.386
B_2089		0.00040300	Cts/S	0.000064000	15.877
Ba4554		0.019107	Cts/S	0.00031500	1.6495
Be3130		-0.00044400	Cts/S	0.00058400	131.62
Ca3179		0.0043400	Cts/S	0.00046400	10.682
Cd2144		0.000029000	Cts/S	0.00010400	359.03
Co2286		-0.00018600	Cts/S	0.000046000	24.605
Cr2677		0.000058000	Cts/S	0.000019000	32.911
Cu3247		0.0025910	Cts/S	0.000071000	2.7287
Fe2599		0.00076900	Cts/S	0.00013200	17.155
K_7664		0.0011930	Cts/S	0.00099600	83.538
Mg2790		.0000070000	Cts/S	0.000033000	496.47
Mn2576		0.000088000	Cts/S	0.000058000	65.545
Mo2020		0.000088000	Cts/S	0.0000080000	8.9342
Na5895		-0.0080590	Cts/S	0.00053900	6.6926
Ni2316		0.00082700	Cts/S	0.000052000	6.3229
P_1782		0.000089000	Cts/S	0.0000090000	9.7823
Pb2203		-0.00011600	Cts/S	0.000097000	84.063
S_1820		0.00014300	Cts/S	0.00000	0.26284
Sb2068		0.000077000	Cts/S	0.0000020000	1.9598
Se1960		0.00011000	Cts/S	0.00018300	167.09
Si2881		-0.00033200	Cts/S	0.00037900	114.21
Sn1899		0.00027800	Cts/S	0.000069000	24.788

CALSTD0 2110462

Acquire Date: 8/13/2020 8:49:46AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Sr4077		-0.0032660	Cts/S	0.00053500	16.387
Ti3349		0.00010800	Cts/S	0.000014000	13.376
Tl1908		0.000072000	Cts/S	0.000051000	70.302
V_2924		0.000077000	Cts/S	0.0000080000	9.9471
Zn2062		0.000051000	Cts/S	0.00000	0.81036
Y_2243		7,642.6	Cts/S	8.6442	0.11311
Y_3600		67,623	Cts/S	497.36	0.73549
Y_3774		3,351.5	Cts/S	10.406	0.31048

CALSTD1 2090819

Acquire Date: 8/13/2020 8:53:47AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.060008	Cts/S	0.000023000	0.038392
Al3961		1.8654	Cts/S	0.00027400	0.014672
As1890		0.041649	Cts/S	0.000026000	0.063592
B_2089		0.29239	Cts/S	0.00047400	0.16197
Ba4554		18.002	Cts/S	0.023860	0.13254
Be3130		1.1533	Cts/S	0.0041690	0.36148
Ca3179		2.1595	Cts/S	0.0036100	0.16718
Cd2144		1.4037	Cts/S	0.0027690	0.19727
Co2286		1.9383	Cts/S	0.0053620	0.27665
Cr2677		0.31704	Cts/S	0.0017290	0.54521
Cu3247		0.40567	Cts/S	0.0020290	0.50011
Fe2599		1.1096	Cts/S	0.00052600	0.047396
K_7664		3.0236	Cts/S	0.012888	0.42625
Mg2790		0.30858	Cts/S	0.0019150	0.62052
Mn2576		2.0101	Cts/S	0.012165	0.60520
Mo2020		0.49618	Cts/S	0.0029260	0.58978
Na5895		9.8519	Cts/S	0.047310	0.48021
Ni2316		0.55400	Cts/S	0.0014370	0.25936
P_1782		0.090936	Cts/S	0.00015600	0.17163
Pb2203		0.091304	Cts/S	0.00027400	0.30007
S_1820		0.077784	Cts/S	0.000018000	0.022578
Sb2068		0.039835	Cts/S	0.000015000	0.037853
Se1960		0.026687	Cts/S	0.000012000	0.046197
Si2881		0.030976	Cts/S	0.0010120	3.2675
Sn1899		0.75075	Cts/S	0.0019410	0.25852
Sr4077		16.296	Cts/S	0.038864	0.23848
Ti3349		0.22452	Cts/S	0.0014320	0.63774
Tl1908		0.023829	Cts/S	0.00011700	0.48995
V_2924		0.49498	Cts/S	0.0025690	0.51900
Zn2062		0.29786	Cts/S	0.0017690	0.59392
Y_2243		7,243.1	Cts/S	7.2473	0.10006
Y_3600		63,172	Cts/S	87.482	0.13848
Y_3774		3,336.9	Cts/S	5.1169	0.15334

CALSTD2 2096854

Acquire Date: 8/13/2020 8:57:32AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Al3961		9.4033	Cts/S	0.040038	0.42578
Ca3179		10.531	Cts/S	0.057198	0.54313
Fe2599		5.3488	Cts/S	0.028465	0.53218
K_7664		15.233	Cts/S	0.12242	0.80363
Mg2790		1.5279	Cts/S	0.0070720	0.46284
Na5895		49.278	Cts/S	0.29479	0.59821
P_1782		0.89183	Cts/S	0.0033790	0.37884
S_1820		3.8771	Cts/S	0.0055570	0.14332
Y_2243		6,840.8	Cts/S	32.735	0.47853
Y_3600		58,738	Cts/S	51.578	0.087812
Y_3774		3,320.0	Cts/S	0.94825	0.028561

LRA 2097417

Acquire Date: 8/13/2020 9:01:35AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.9745	ppm	0.0032970	0.16698	2.0000	Rel(%)	Pass	
Al3961		98.566	ppm	0.81811	0.83001	100.00	Rel(%)	Pass	
As1890		2.0098	ppm	0.0036770	0.18293	2.0000	Rel(%)	Pass	
B_2089		3.9231	ppm	0.0040610	0.10352	4.0000	Rel(%)	Pass	
Ba4554		10.053	ppm	0.089150	0.88683	10.000	Rel(%)	Pass	
Be3130		1.9681	ppm	0.017293	0.87865	2.0000	Rel(%)	Pass	
Ca3179		99.968	ppm	0.80732	0.80758	100.00	Rel(%)	Pass	
Cd2144		1.9677	ppm	0.0022360	0.11362	2.0000	Rel(%)	Pass	
Co2286		9.7477	ppm	0.014344	0.14715	10.000	Rel(%)	Pass	
Cr2677		9.9683	ppm	0.026275	0.26359	10.000	Rel(%)	Pass	
Cu3247		9.8535	ppm	0.057084	0.57932	10.000	Rel(%)	Pass	
Fe2599		101.22	ppm	0.84655	0.83635	100.00	Rel(%)	Pass	
K_7664		99.410	ppm	1.2203	1.2275	100.00	Rel(%)	Pass	
Mg2790		99.693	ppm	0.39427	0.39549	100.00	Rel(%)	Pass	
Mn2576		9.7823	ppm	0.080466	0.82257	10.000	Rel(%)	Pass	
Mo2020		3.9838	ppm	0.015498	0.38901	4.0000	Rel(%)	Pass	
Na5895		99.577	ppm	1.1350	1.1398	100.00	Rel(%)	Pass	
Ni2316		9.8380	ppm	0.020587	0.20926	10.000	Rel(%)	Pass	
P_1782		10.268	ppm	0.0042850	0.041732	10.000	Rel(%)	Pass	
Pb2203		1.9787	ppm	0.0058050	0.29336	2.0000	Rel(%)	Pass	
S_1820		10.096	ppm	0.0096740	0.095816	10.000	Rel(%)	Pass	
Sb2068		2.0080	ppm	0.0045180	0.22499	2.0000	Rel(%)	Pass	
Se1960		1.9763	ppm	0.00084300	0.042680	2.0000	Rel(%)	Pass	
Si2881		9.6212	ppm	0.11179	1.1619	10.000	Rel(%)	Pass	
Sn1899		9.7781	ppm	0.0094140	0.096278	10.000	Rel(%)	Pass	
Sr4077		9.8984	ppm	0.080103	0.80925	10.000	Rel(%)	Pass	
Ti3349		4.0239	ppm	0.017881	0.44436	4.0000	Rel(%)	Pass	
Tl1908		1.9070	ppm	0.011999	0.62923	2.0000	Rel(%)	Pass	
V_2924		10.068	ppm	0.035227	0.34989	10.000	Rel(%)	Pass	
Zn2062		9.7266	ppm	0.019080	0.19617	10.000	Rel(%)	Pass	

LRA 2097417

Acquire Date: 8/13/2020 9:01:35AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,017.1	Cts/S	19.439	0.27702				
Y_3600		61,477	Cts/S	23.388	0.038043				
Y_3774		3,368.2	Cts/S	20.838	0.61867				

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Acquire Date: 8/13/2020 9:05:24AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0016510	ppm	0.00043400	26.309	.00000	Abs	Pass	
Al3961		-0.024653	ppm	0.0010910	4.4272	.00000	Abs	Pass	
As1890		0.0014480	ppm	0.0019550	135.00	.00000	Abs	Pass	
B_2089		0.016505	ppm	0.0016640	10.082	.00000	Abs	Pass	
Ba4554		0.000092000	ppm	0.00011500	125.43	.00000	Abs	Pass	
Be3130		0.00063300	ppm	0.000092000	14.467	.00000	Abs	Pass	
Ca3179		-0.00067000	ppm	0.0026350	393.45	.00000	Abs	Pass	
Cd2144		0.000037000	ppm	0.000015000	41.545	.00000	Abs	Pass	
Co2286		0.00089700	ppm	0.0000090000	1.0573	.00000	Abs	Pass	
Cr2677		0.00078500	ppm	0.000053000	6.7637	.00000	Abs	Pass	
Cu3247	**F**	**0.015810**	**ppm**	**0.00056800**	**3.5917**	**.00000**	**Abs**	**Fail High**	**.01500**
Fe2599	**F**	**0.10659**	**ppm**	**0.0025320**	**2.3760**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.14240	ppm	0.043816	30.770	.00000	Abs	Pass	
Mg2790		0.0057940	ppm	0.0046830	80.831	.00000	Abs	Pass	
Mn2576		0.00086600	ppm	0.00026100	30.183	.00000	Abs	Pass	
Mo2020	**F**	**0.038577**	**ppm**	**0.0043460**	**11.265**	**.00000**	**Abs**	**Fail High**	**.02000**
Na5895		0.065236	ppm	0.017197	26.362	.00000	Abs	Pass	
Ni2316		0.00092600	ppm	0.00000	0.025600	.00000	Abs	Pass	
P_1782		0.0034160	ppm	0.0010180	29.811	.00000	Abs	Pass	
Pb2203		0.0045080	ppm	0.00034300	7.6044	.00000	Abs	Pass	
S_1820		-0.00077600	ppm	0.0032000	412.55	.00000	Abs	Pass	
Sb2068		0.0046380	ppm	0.00012800	2.7680	.00000	Abs	Pass	
Se1960		0.0037120	ppm	0.00086200	23.216	.00000	Abs	Pass	
Si2881	**W**	**0.13488**	**ppm**	**0.068156**	**50.532**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0057500	ppm	0.00029000	5.0514	.00000	Abs	Pass	
Sr4077		0.00083800	ppm	0.000033000	3.9207	.00000	Abs	Pass	
Ti3349		0.0098060	ppm	0.0010780	10.997	.00000	Abs	Pass	
Tl1908		0.0075950	ppm	0.0046530	61.261	.00000	Abs	Pass	
V_2924		0.00042600	ppm	0.000017000	3.9930	.00000	Abs	Pass	
Zn2062	**W**	**0.0061250**	**ppm**	**0.00050400**	**8.2261**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		7,562.8	Cts/S	12.989	0.17175				
Y_3600		66,487	Cts/S	46.061	0.069277				
Y_3774		3,352.4	Cts/S	33.045	0.98572				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

ICV 2087653

Acquire Date: 8/13/2020 9:09:25AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.25559	ppm	0.0025240	0.98761	.25000	Rel(%)	Pass	
Al3961		10.244	ppm	0.14238	1.3898	10.000	Rel(%)	Pass	
As1890		0.98861	ppm	0.0042610	0.43106	1.0000	Rel(%)	Pass	
B_2089	**W**	**0.53930**	**ppm**	**0.0020880**	**0.38708**	**.50000**	**Rel(%)**	**Warn High**	**5.0000**
Ba4554	**W**	**1.0533**	**ppm**	**0.0093660**	**0.88915**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Be3130		1.0393	ppm	0.010622	1.0220	1.0000	Rel(%)	Pass	
Ca3179	**W**	**10.513**	**ppm**	**0.10376**	**0.98703**	**10.000**	**Rel(%)**	**Warn High**	**5.0000**
Cd2144	**W**	**1.0631**	**ppm**	**0.0040840**	**0.38412**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Co2286	**W**	**1.0776**	**ppm**	**0.0040450**	**0.37539**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Cr2677	**W**	**1.0604**	**ppm**	**0.00034900**	**0.032902**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Cu3247	**W**	**1.0847**	**ppm**	**0.0053930**	**0.49719**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Fe2599	**W**	**10.729**	**ppm**	**0.081789**	**0.76233**	**10.000**	**Rel(%)**	**Warn High**	**5.0000**
K_7664		10.133	ppm	0.074150	0.73174	10.000	Rel(%)	Pass	
Mg2790	**W**	**10.539**	**ppm**	**0.021526**	**0.20424**	**10.000**	**Rel(%)**	**Warn High**	**5.0000**
Mn2576	**W**	**1.0879**	**ppm**	**0.0043180**	**0.39693**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Mo2020	**W**	**1.0582**	**ppm**	**0.0070440**	**0.66564**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Na5895		10.246	ppm	0.12616	1.2313	10.000	Rel(%)	Pass	
Ni2316	**W**	**1.0873**	**ppm**	**0.00078100**	**0.071798**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
P_1782		2.0562	ppm	0.0041370	0.20121	2.0000	Rel(%)	Pass	
Pb2203	**W**	**1.0857**	**ppm**	**0.00087200**	**0.080343**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
S_1820		2.0728	ppm	0.011678	0.56339	2.0000	Rel(%)	Pass	
Sb2068		0.97570	ppm	0.0013720	0.14060	1.0000	Rel(%)	Pass	
Se1960	**W**	**1.0602**	**ppm**	**0.0067040**	**0.63232**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Si2881		10.126	ppm	0.025602	0.25285	10.000	Rel(%)	Pass	
Sn1899	**W**	**1.0676**	**ppm**	**0.0057970**	**0.54295**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Sr4077		1.0481	ppm	0.010746	1.0253	1.0000	Rel(%)	Pass	
Ti3349	**W**	**1.0518**	**ppm**	**0.0024720**	**0.23500**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Tl1908	**W**	**1.0827**	**ppm**	**0.0077800**	**0.71863**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
V_2924	**W**	**1.0550**	**ppm**	**0.0040130**	**0.38038**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Zn2062		1.0073	ppm	0.0011940	0.11851	1.0000	Rel(%)	Pass	
Y_2243		7,459.7	Cts/S	17.008	0.22800				
Y_3600		65,755	Cts/S	310.48	0.47217				
Y_3774		3,411.3	Cts/S	26.887	0.78817				

ICBIS 2110462

Acquire Date: 8/13/2020 9:13:12AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00043300	ppm	0.00087500	202.05	.00000	Abs	Pass	
Al3961		-0.013863	ppm	0.019429	140.15	.00000	Abs	Pass	
As1890		0.00019000	ppm	0.0015900	837.51	.00000	Abs	Pass	
B_2089		0.0075070	ppm	0.00017800	2.3666	.00000	Abs	Pass	
Ba4554		-0.00038700	ppm	0.000088000	22.733	.00000	Abs	Pass	
Be3130		0.00052200	ppm	0.00022600	43.335	.00000	Abs	Pass	
Ca3179		0.011771	ppm	0.0026090	22.164	.00000	Abs	Pass	
Cd2144		0.000034000	ppm	0.000070000	206.63	.00000	Abs	Pass	
Co2286		-0.00025100	ppm	0.00027900	111.17	.00000	Abs	Pass	
Cr2677		0.00056400	ppm	0.0010780	191.06	.00000	Abs	Pass	

ICBIS 2110462

Acquire Date: 8/13/2020 9:13:12AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0021670	ppm	0.00061200	28.223	.00000	Abs	Pass	
Fe2599		0.047507	ppm	0.013360	28.122	.00000	Abs	Pass	
K_7664		0.018239	ppm	0.058958	323.26	.00000	Abs	Pass	
Mg2790		0.0014340	ppm	0.0055110	384.18	.00000	Abs	Pass	
Mn2576		0.00041600	ppm	0.00015200	36.430	.00000	Abs	Pass	
Mo2020	**W**	**0.010022**	**ppm**	**0.00065700**	**6.5570**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.038715	ppm	0.012099	31.251	.00000	Abs	Pass	
Ni2316		0.00011400	ppm	0.00011200	97.579	.00000	Abs	Pass	
P_1782		0.0030740	ppm	0.0023040	74.945	.00000	Abs	Pass	
Pb2203		0.0041870	ppm	0.0010500	25.073	.00000	Abs	Pass	
S_1820		0.0054000	ppm	0.0040980	75.879	.00000	Abs	Pass	
Sb2068		0.0046190	ppm	0.0031460	68.101	.00000	Abs	Pass	
Se1960		0.0048260	ppm	0.0017950	37.188	.00000	Abs	Pass	
Si2881		0.074215	ppm	0.036254	48.851	.00000	Abs	Pass	
Sn1899		0.0017120	ppm	0.0000070000	0.42332	.00000	Abs	Pass	
Sr4077		0.00042300	ppm	0.00013300	31.360	.00000	Abs	Pass	
Ti3349		0.0041680	ppm	0.00018800	4.5057	.00000	Abs	Pass	
Tl1908		0.0039630	ppm	0.0011700	29.514	.00000	Abs	Pass	
V_2924		-0.00024000	ppm	0.00017400	72.755	.00000	Abs	Pass	
Zn2062		0.0022320	ppm	0.000047000	2.0864	.00000	Abs	Pass	
Y_2243		7,450.7	Cts/S	33.454	0.44900				
Y_3600		65,026	Cts/S	21.350	0.032833				
Y_3774		3,317.5	Cts/S	14.408	0.43430				

CRI 2104173

Acquire Date: 8/13/2020 9:17:14AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280	**W**	**0.0067320**	**ppm**	**0.00077700**	**11.537**	**.00500**	**Rel(%)**	**Warn High**	**20.000**
Al3961	**W**	**0.15530**	**ppm**	**0.029753**	**19.158**	**.20000**	**Rel(%)**	**Warn Low**	**-20.000**
As1890		0.036995	ppm	0.0012460	3.3684	.04000	Rel(%)	Pass	
B_2089		0.20173	ppm	0.0013360	0.66224	.20000	Rel(%)	Pass	
Ba4554		0.019861	ppm	0.0000030000	0.015257	.02000	Rel(%)	Pass	
Be3130		0.0032410	ppm	0.0000090000	0.27864	.00300	Rel(%)	Pass	
Ca3179		0.50218	ppm	0.0029530	0.58807	.50000	Rel(%)	Pass	
Cd2144		0.0030220	ppm	0.0000010000	0.037494	.00300	Rel(%)	Pass	
Co2286		0.010598	ppm	0.00048700	4.5999	.01000	Rel(%)	Pass	
Cr2677		0.0091990	ppm	0.00064000	6.9547	.01000	Rel(%)	Pass	
Cu3247		0.015401	ppm	0.0019110	12.410	.01500	Rel(%)	Pass	
Fe2599		0.099378	ppm	0.015841	15.940	.10000	Rel(%)	Pass	
K_7664		0.97176	ppm	0.0075260	0.77444	1.0000	Rel(%)	Pass	
Mg2790		0.50381	ppm	0.0038240	0.75909	.50000	Rel(%)	Pass	
Mn2576		0.010528	ppm	0.00016900	1.6093	.01000	Rel(%)	Pass	
Mo2020		0.021762	ppm	0.00020200	0.92944	.02000	Rel(%)	Pass	
Na5895		0.47221	ppm	0.012179	2.5791	.50000	Rel(%)	Pass	
Ni2316		0.0098570	ppm	0.00041800	4.2395	.01000	Rel(%)	Pass	
P_1782		0.49660	ppm	0.0012880	0.25930	.50000	Rel(%)	Pass	
Pb2203		0.010402	ppm	0.0025990	24.985	.01000	Rel(%)	Pass	

CRI 2104173

Acquire Date: 8/13/2020 9:17:14AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.48242	ppm	0.0051160	1.0605	.50000	Rel(%)	Pass	
Sb2068		0.031685	ppm	0.00071600	2.2600	.03000	Rel(%)	Pass	
Se1960		0.042356	ppm	0.0063980	15.106	.04000	Rel(%)	Pass	
Si2881		0.54960	ppm	0.0052470	0.95466	.50000	Rel(%)	Pass	
Sn1899		0.021474	ppm	0.00025100	1.1668	.02000	Rel(%)	Pass	
Sr4077		0.050103	ppm	0.00028700	0.57220	.05000	Rel(%)	Pass	
Ti3349		0.010481	ppm	0.00016600	1.5800	.01000	Rel(%)	Pass	
Tl1908		0.030319	ppm	0.00017200	0.56759	.03000	Rel(%)	Pass	
V_2924		0.019066	ppm	0.00060900	3.1956	.02000	Rel(%)	Pass	
Zn2062		0.019838	ppm	0.000061000	0.30737	.02000	Rel(%)	Pass	
Y_2243		7,770.9	Cts/S	12.611	0.16229				
Y_3600		68,043	Cts/S	15.803	0.023226				
Y_3774		3,478.1	Cts/S	10.515	0.30233				

CRI 2077613

Acquire Date: 8/13/2020 9:21:14AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0059600	ppm	0.0011770	19.745	.00500	Rel(%)	Pass	
Al3961		0.20557	ppm	0.020631	10.036	.20000	Rel(%)	Pass	
As1890		0.018108	ppm	0.00080600	4.4484	.02000	Rel(%)	Pass	
B_2089		0.10236	ppm	0.00041100	0.40106	.10000	Rel(%)	Pass	
Ba4554		0.0046490	ppm	0.000048000	1.0380	.00500	Rel(%)	Pass	
Be3130		0.0020490	ppm	0.000014000	0.67001	.00200	Rel(%)	Pass	
Ca3179		0.50255	ppm	0.0086730	1.7258	.50000	Rel(%)	Pass	
Cd2144		0.0020090	ppm	0.000037000	1.8487	.00200	Rel(%)	Pass	
Co2286		0.0053200	ppm	0.00031000	5.8335	.00500	Rel(%)	Pass	
Cr2677		0.0040050	ppm	0.00073600	18.367	.00500	Rel(%)	Pass	
Cu3247		0.0095070	ppm	0.0017510	18.413	.01000	Rel(%)	Pass	
Fe2599		0.10729	ppm	0.0011010	1.0259	.10000	Rel(%)	Pass	
K_7664		0.93012	ppm	0.016565	1.7810	1.0000	Rel(%)	Pass	
Mg2790		0.50127	ppm	0.0045720	0.91217	.50000	Rel(%)	Pass	
Mn2576		0.0053870	ppm	0.000088000	1.6251	.00500	Rel(%)	Pass	
Mo2020		0.023983	ppm	0.00039000	1.6253	.02000	Rel(%)	Pass	
Na5895		0.49855	ppm	0.0034350	0.68898	.50000	Rel(%)	Pass	
Ni2316		0.0043500	ppm	0.00076200	17.516	.00500	Rel(%)	Pass	
P_1782		0.49908	ppm	0.0015810	0.31686	.50000	Rel(%)	Pass	
Pb2203		0.0057170	ppm	0.00076500	13.379	.00500	Rel(%)	Pass	
S_1820		0.47516	ppm	0.0011560	0.24333	.50000	Rel(%)	Pass	
Sb2068		0.017864	ppm	0.0011170	6.2517	.02000	Rel(%)	Pass	
Se1960		0.018850	ppm	0.00060900	3.2320	.02000	Rel(%)	Pass	
Si2881		0.57043	ppm	0.036517	6.4018	.50000	Rel(%)	Pass	
Sn1899		0.020899	ppm	0.00016100	0.77137	.02000	Rel(%)	Pass	
Sr4077		0.049236	ppm	0.00073100	1.4854	.05000	Rel(%)	Pass	
Ti3349	**W**	**0.013095**	**ppm**	**0.00011100**	**0.84393**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
Tl1908		0.021021	ppm	0.0042990	20.451	.02000	Rel(%)	Pass	
V_2924		0.0045960	ppm	0.000099000	2.1460	.00500	Rel(%)	Pass	
Zn2062		0.010498	ppm	0.00016400	1.5631	.01000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CRI 2077613

Acquire Date: 8/13/2020 9:21:14AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,646.9	Cts/S	10.067	0.13164				
Y_3600		67,441	Cts/S	65.049	0.096453				
Y_3774		3,451.8	Cts/S	25.710	0.74482				

ICSA 2085772

Acquire Date: 8/13/2020 9:25:15AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0012650	ppm	0.00076800	60.692	.00000	Abs	Pass	
Al3961		502.75	ppm	3.0190	0.60051	500.00	Abs	Pass	
As1890		-0.0066060	ppm	0.00010400	1.5810	.00000	Abs	Pass	
B_2089		0.0073300	ppm	0.000089000	1.2106	.00000	Abs	Pass	
Ba4554		0.00016500	ppm	0.000014000	8.6819	.00000	Abs	Pass	
Be3130		-0.00038300	ppm	0.00045400	118.38	.00000	Abs	Pass	
Ca3179		482.47	ppm	3.0737	0.63708	500.00	Abs	Pass	
Cd2144		-0.00060400	ppm	0.00010100	16.673	.00000	Abs	Pass	
Co2286		-0.00047900	ppm	0.000093000	19.374	.00000	Abs	Pass	
Cr2677		-0.0022290	ppm	0.00011600	5.1938	.00000	Abs	Pass	
Cu3247		0.0026720	ppm	0.000050000	1.8589	.00000	Abs	Pass	
Fe2599		191.79	ppm	0.87350	0.45544	200.00	Abs	Pass	
K_7664		-0.12217	ppm	0.035956	29.431	.00000	Abs	Pass	
Mg2790		494.68	ppm	2.0312	0.41062	500.00	Abs	Pass	
Mn2576		0.0015590	ppm	0.000084000	5.3885	.00000	Abs	Pass	
Mo2020		0.000059000	ppm	0.000076000	130.11	.00000	Abs	Pass	
Na5895		0.094660	ppm	0.016188	17.101	.00000	Abs	Pass	
Ni2316		-0.0013100	ppm	0.00072100	55.062	.00000	Abs	Pass	
P_1782		0.015619	ppm	0.0033960	21.743	.00000	Abs	Pass	
Pb2203		-0.0042820	ppm	0.0017040	39.785	.00000	Abs	Pass	
S_1820		-0.012922	ppm	0.010690	82.723	.00000	Abs	Pass	
Sb2068		0.0041110	ppm	0.010129	246.41	.00000	Abs	Pass	
Se1960		-0.00040500	ppm	0.0072930	1,799.7	.00000	Abs	Pass	
Si2881		-0.0074020	ppm	0.015829	213.85	.00000	Abs	Pass	
Sn1899		-0.0055950	ppm	0.0012940	23.134	.00000	Abs	Pass	
Sr4077		0.0055040	ppm	0.000035000	0.63069	.00000	Abs	Pass	
Ti3349		-0.00028300	ppm	0.000017000	6.1720	.00000	Abs	Pass	
Tl1908		0.00055600	ppm	0.0017590	316.11	.00000	Abs	Pass	
V_2924		0.0012900	ppm	0.00059400	46.064	.00000	Abs	Pass	
Zn2062		-0.0020590	ppm	0.00049000	23.793	.00000	Abs	Pass	
Y_2243		6,591.8	Cts/S	24.071	0.36516				
Y_3600		56,465	Cts/S	99.866	0.17686				
Y_3774		3,294.9	Cts/S	0.56560	0.017166				

ICSAB 2107147

Acquire Date: 8/13/2020 9:29:18AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.0881	ppm	0.010347	0.95099	1.0000	Rel(%)	Pass	
Al3961		505.26	ppm	2.0438	0.40450	500.00	Rel(%)	Pass	
As1890		0.95803	ppm	0.00025600	0.026682				
B_2089		9.4290	ppm	0.028575	0.30306				
Ba4554		1.0161	ppm	0.0043710	0.43015	1.0000	Rel(%)	Pass	
Be3130		0.49122	ppm	0.0011640	0.23697	.50000	Rel(%)	Pass	
Ca3179		484.22	ppm	2.0855	0.43069	500.00	Rel(%)	Pass	
Cd2144		0.94760	ppm	0.0021890	0.23098	1.0000	Rel(%)	Pass	
Co2286		0.91588	ppm	0.0027970	0.30539	1.0000	Rel(%)	Pass	
Cr2677		1.0105	ppm	0.0026330	0.26051	1.0000	Rel(%)	Pass	
Cu3247		1.0109	ppm	0.013026	1.2886	1.0000	Rel(%)	Pass	
Fe2599		193.84	ppm	0.45455	0.23450	200.00	Rel(%)	Pass	
K_7664		10.351	ppm	0.0011440	0.011049				
Mg2790		494.34	ppm	2.1625	0.43744	500.00	Rel(%)	Pass	
Mn2576		1.0348	ppm	0.0035030	0.33856	1.0000	Rel(%)	Pass	
Mo2020		.0000090000	ppm	0.00022600	2,456.2				
Na5895		10.499	ppm	0.076408	0.72776				
Ni2316		0.89996	ppm	0.0069980	0.77755	1.0000	Rel(%)	Pass	
P_1782		10.229	ppm	0.037778	0.36932				
Pb2203		0.94091	ppm	0.0032510	0.34555	1.0000	Rel(%)	Pass	
S_1820		-0.012997	ppm	0.0026160	20.129				
Sb2068		0.0054110	ppm	0.0036650	67.729				
Se1960		0.98965	ppm	0.0014240	0.14387				
Si2881		0.063680	ppm	0.030936	48.581				
Sn1899		-0.0037430	ppm	0.000050000	1.3388				
Sr4077		1.0119	ppm	0.0050610	0.50017				
Ti3349		0.00026200	ppm	0.00051800	197.33				
Tl1908		0.86821	ppm	0.0039420	0.45399				
V_2924		1.0379	ppm	0.0045190	0.43538	1.0000	Rel(%)	Pass	
Zn2062		0.93216	ppm	0.0036440	0.39096	1.0000	Rel(%)	Pass	
Y_2243		6,557.4	Cts/S	4.5383	0.069209				
Y_3600		56,366	Cts/S	399.75	0.70921				
Y_3774		3,255.5	Cts/S	1.8850	0.057902				

AI 2110458

Acquire Date: 8/13/2020 9:33:10AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0013460	ppm	0.00012100	9.0013	.00000	Abs	Pass	
Al3961		980.45	ppm	3.0248	0.30851				
As1890		-0.0065100	ppm	0.0046790	71.868	.00000	Abs	Pass	
B_2089		0.034639	ppm	0.0037230	10.749	.00000	Abs	Pass	
Ba4554		0.00047300	ppm	0.000017000	3.6906	.00000	Abs	Pass	
Be3130		0.00028000	ppm	0.00042500	151.50	.00000	Abs	Pass	
Ca3179		0.13450	ppm	0.027538	20.474				
Cd2144		-0.0015700	ppm	0.000012000	0.77920	.00000	Abs	Pass	
Co2286		0.000085000	ppm	0.00026500	312.13	.00000	Abs	Pass	
Cr2677		-0.00013700	ppm	0.00011700	85.424	.00000	Abs	Pass	

Al 2110458

Acquire Date: 8/13/2020 9:33:10AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0085550	ppm	0.0013610	15.909	.00000	Abs	Pass	
Fe2599		0.28549	ppm	0.019901	6.9711				
K_7664		-0.093023	ppm	0.019993	21.493	.00000	Abs	Pass	
Mg2790		0.070813	ppm	0.023390	33.030				
Mn2576		0.00052800	ppm	0.00035500	67.293	.00000	Abs	Pass	
Mo2020		-0.00049200	ppm	0.00046200	93.950	.00000	Abs	Pass	
Na5895		0.42460	ppm	0.019553	4.6049	.00000	Abs	Pass	
Ni2316		-0.0019320	ppm	0.000074000	3.8093	.00000	Abs	Pass	
P_1782		0.013028	ppm	0.00099100	7.6079	.00000	Abs	Pass	
Pb2203		-0.0015580	ppm	0.00033800	21.714	.00000	Abs	Pass	
S_1820		0.015215	ppm	0.0029860	19.622	.00000	Abs	Pass	
Sb2068		0.0046260	ppm	0.0050090	108.27	.00000	Abs	Pass	
Se1960		0.0053980	ppm	0.0011420	21.158	.00000	Abs	Pass	
Si2881		0.056686	ppm	0.013001	22.934	.00000	Abs	Pass	
Sn1899		-0.0064100	ppm	0.00034700	5.4209	.00000	Abs	Pass	
Sr4077		0.00056900	ppm	0.000052000	9.1616	.00000	Abs	Pass	
Ti3349		0.0024280	ppm	0.00016000	6.5952	.00000	Abs	Pass	
Tl1908		0.00071400	ppm	0.0047130	659.79	.00000	Abs	Pass	
V_2924		-0.00047200	ppm	0.00046100	97.625	.00000	Abs	Pass	
Zn2062		0.00026000	ppm	0.00075500	290.48	.00000	Abs	Pass	
Y_2243		7,138.8	Cts/S	15.148	0.21219				
Y_3600		58,623	Cts/S	36.359	0.062021				
Y_3774		3,439.8	Cts/S	3.5551	0.10335				

Ca 2098145

Acquire Date: 8/13/2020 9:37:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00032700	ppm	0.00069300	212.27	.00000	Abs	Pass	
Al3961		0.27848	ppm	0.024898	8.9408				
As1890		-0.0025910	ppm	0.0015280	58.983	.00000	Abs	Pass	
B_2089		0.014425	ppm	0.0011560	8.0117	.00000	Abs	Pass	
Ba4554		0.00021400	ppm	0.00010300	48.022	.00000	Abs	Pass	
Be3130		-0.00072700	ppm	0.000037000	5.0248	.00000	Abs	Pass	
Ca3179		970.03	ppm	4.3856	0.45211				
Cd2144		0.000068000	ppm	0.000079000	116.96	.00000	Abs	Pass	
Co2286		0.00028600	ppm	0.00057800	201.68	.00000	Abs	Pass	
Cr2677		0.0025720	ppm	0.00032200	12.518	.00000	Abs	Pass	
Cu3247		0.0030200	ppm	0.000016000	0.54165	.00000	Abs	Pass	
Fe2599		-0.00067800	ppm	0.0043480	641.62				
K_7664		-0.039041	ppm	0.020424	52.314	.00000	Abs	Pass	
Mg2790		0.040311	ppm	0.0021030	5.2178				
Mn2576		-0.00080800	ppm	0.00011500	14.208	.00000	Abs	Pass	
Mo2020		0.000077000	ppm	0.00026100	340.40	.00000	Abs	Pass	
Na5895		0.088755	ppm	0.0084430	9.5124	.00000	Abs	Pass	
Ni2316		0.00074900	ppm	0.00010000	13.388	.00000	Abs	Pass	
P_1782		0.014748	ppm	0.00035100	2.3816	.00000	Abs	Pass	
Pb2203		0.0014980	ppm	0.00072400	48.317	.00000	Abs	Pass	

Ca 2098145

Acquire Date: 8/13/2020 9:37:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.032549	ppm	0.0050380	15.480	.00000	Abs	Pass	
Sb2068		-0.0068090	ppm	0.00066600	9.7861	.00000	Abs	Pass	
Se1960		0.0030070	ppm	0.0030390	101.07	.00000	Abs	Pass	
Si2881		0.092103	ppm	0.052197	56.673	.00000	Abs	Pass	
Sn1899		0.0040890	ppm	0.00084500	20.654	.00000	Abs	Pass	
Sr4077		-0.0025440	ppm	0.00028900	11.374	.00000	Abs	Pass	
Ti3349		-0.0022440	ppm	0.00024800	11.054	.00000	Abs	Pass	
Tl1908		-0.0042910	ppm	0.0035210	82.050	.00000	Abs	Pass	
V_2924		0.000087000	ppm	0.00024400	279.50	.00000	Abs	Pass	
Zn2062		0.00048800	ppm	0.00044700	91.447	.00000	Abs	Pass	
Y_2243		6,707.5	Cts/S	6.4230	0.095758				
Y_3600		57,971	Cts/S	294.66	0.50828				
Y_3774		3,260.7	Cts/S	5.8574	0.17964				

Fe 2096787

Acquire Date: 8/13/2020 9:41:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00043000	ppm	0.00056700	131.95	.00000	Abs	Pass	
Al3961		-0.054761	ppm	0.0096960	17.707				
As1890		-0.012441	ppm	0.0013000	10.449	.00000	Abs	Pass	
B_2089		0.022378	ppm	0.00052200	2.3309	.00000	Abs	Pass	
Ba4554		-0.00086200	ppm	0.00017600	20.448	.00000	Abs	Pass	
Be3130		.0000050000	ppm	0.00000	6.6963	.00000	Abs	Pass	
Ca3179		0.045794	ppm	0.0073110	15.964				
Cd2144		0.000037000	ppm	0.00013000	354.57	.00000	Abs	Pass	
Co2286		-0.0012750	ppm	0.000039000	3.0598	.00000	Abs	Pass	
Cr2677		-0.00089700	ppm	0.00084800	94.478	.00000	Abs	Pass	
Cu3247		-0.00014400	ppm	0.00070900	491.90	.00000	Abs	Pass	
Fe2599		946.81	ppm	3.7418	0.39520				
K_7664		-0.096370	ppm	0.048800	50.638	.00000	Abs	Pass	
Mg2790		0.17449	ppm	0.0042180	2.4175				
Mn2576		0.0031560	ppm	0.00010600	3.3463	.00000	Abs	Pass	
Mo2020		0.0021450	ppm	0.00024500	11.410	.00000	Abs	Pass	
Na5895		0.027920	ppm	0.0033450	11.980	.00000	Abs	Pass	
Ni2316		-0.00037000	ppm	0.00073900	199.48	.00000	Abs	Pass	
P_1782		0.0082140	ppm	0.0013530	16.470	.00000	Abs	Pass	
Pb2203	**W**	**-0.0086880**	**ppm**	**0.0020090**	**23.122**	**.00000**	**Abs**	**Warn Low**	**-.00500**
S_1820		-0.0056340	ppm	0.0011930	21.183	.00000	Abs	Pass	
Sb2068		0.0059640	ppm	0.0041940	70.322	.00000	Abs	Pass	
Se1960		-0.0026080	ppm	0.0066800	256.10	.00000	Abs	Pass	
Si2881		0.052578	ppm	0.048080	91.444	.00000	Abs	Pass	
Sn1899		0.0073320	ppm	0.00034200	4.6685	.00000	Abs	Pass	
Sr4077		0.00021000	ppm	0.000026000	12.181	.00000	Abs	Pass	
Ti3349		.0000010000	ppm	0.00031400	21,563	.00000	Abs	Pass	
Tl1908		-0.0032550	ppm	0.00074300	22.817	.00000	Abs	Pass	
V_2924		0.0016870	ppm	0.00030500	18.077	.00000	Abs	Pass	
Zn2062		0.00090100	ppm	0.00049500	54.880	.00000	Abs	Pass	

Fe 2096787

Acquire Date: 8/13/2020 9:41:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,200.7	Cts/S	9.1945	0.12769				
Y_3600		62,819	Cts/S	124.97	0.19893				
Y_3774		3,348.4	Cts/S	6.8009	0.20311				

Mg 2110460

Acquire Date: 8/13/2020 9:45:04AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00048300	ppm	0.0017420	360.89	.00000	Abs	Pass	
Al3961		-0.019777	ppm	0.025647	129.68				
As1890		-0.0016110	ppm	0.00037900	23.509	.00000	Abs	Pass	
B_2089		0.0092770	ppm	0.000045000	0.48321	.00000	Abs	Pass	
Ba4554		0.00045500	ppm	0.00060600	133.19	.00000	Abs	Pass	
Be3130		0.00032300	ppm	0.00022200	68.637	.00000	Abs	Pass	
Ca3179		0.14572	ppm	0.0056910	3.9055				
Cd2144		0.00097500	ppm	0.00017200	17.678	.00000	Abs	Pass	
Co2286		0.00061600	ppm	0.000084000	13.636	.00000	Abs	Pass	
Cr2677		-0.00030200	ppm	0.0011210	371.58	.00000	Abs	Pass	
Cu3247		-0.00046700	ppm	0.0011800	252.86	.00000	Abs	Pass	
Fe2599		0.22633	ppm	0.0011430	0.50519				
K_7664		-0.053002	ppm	0.0032410	6.1139	.00000	Abs	Pass	
Mg2790		1,007.3	ppm	11.443	1.1360				
Mn2576		0.0036700	ppm	0.000053000	1.4564	.00000	Abs	Pass	
Mo2020		0.00069000	ppm	0.00067100	97.205	.00000	Abs	Pass	
Na5895		0.070546	ppm	0.015817	22.421	.00000	Abs	Pass	
Ni2316		-0.00031400	ppm	0.0016130	513.46	.00000	Abs	Pass	
P_1782		-0.0023410	ppm	0.0056260	240.33	.00000	Abs	Pass	
Pb2203		-0.00031000	ppm	0.0011660	375.77	.00000	Abs	Pass	
S_1820		-0.0013880	ppm	0.00030000	21.644	.00000	Abs	Pass	
Sb2068		0.0077640	ppm	0.0014690	18.927	.00000	Abs	Pass	
Se1960		-0.0091380	ppm	0.0020830	22.794	.00000	Abs	Pass	
Si2881		0.098716	ppm	0.033196	33.628	.00000	Abs	Pass	
Sn1899		0.000075000	ppm	0.00063600	851.16	.00000	Abs	Pass	
Sr4077		0.00073600	ppm	0.00022300	30.232	.00000	Abs	Pass	
Ti3349		0.0023630	ppm	0.00025200	10.682	.00000	Abs	Pass	
Tl1908		0.0078360	ppm	0.0012150	15.499	.00000	Abs	Pass	
V_2924		0.000087000	ppm	0.00011800	136.62	.00000	Abs	Pass	
Zn2062		0.0036440	ppm	0.000076000	2.0857	.00000	Abs	Pass	
Y_2243		6,713.4	Cts/S	6.4040	0.095391				
Y_3600		58,266	Cts/S	27.183	0.046653				
Y_3774		3,255.1	Cts/S	21.763	0.66858				

rinse1

Acquire Date: 8/13/2020 9:49:08AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00091700	ppm	0.00015600	17.014
Al3961		-0.032017	ppm	0.024942	77.902
As1890		-0.0018420	ppm	0.00055100	29.909
B_2089		0.0046660	ppm	0.00068400	14.653
Ba4554		-0.00053300	ppm	0.000029000	5.4310
Be3130		0.00049000	ppm	0.00021600	44.046
Ca3179		0.0070640	ppm	0.027549	390.01
Cd2144		0.000021000	ppm	0.000090000	433.34
Co2286		0.000090000	ppm	0.000051000	57.293
Cr2677		-0.00019700	ppm	0.00079100	401.51
Cu3247		0.0017420	ppm	0.00061600	35.341
Fe2599		0.017766	ppm	0.0077830	43.807
K_7664		-0.080239	ppm	0.0090890	11.327
Mg2790		0.026256	ppm	0.0055380	21.093
Mn2576		-0.00011700	ppm	0.00017600	150.26
Mo2020		0.00050100	ppm	0.00012700	25.320
Na5895		0.080212	ppm	0.010613	13.231
Ni2316		-0.0010370	ppm	0.00020500	19.764
P_1782		0.0011930	ppm	0.00069400	58.113
Pb2203		0.0017490	ppm	0.0014450	82.612
S_1820		-0.0013440	ppm	0.0022000	163.71
Sb2068		-0.0018740	ppm	0.0013560	72.365
Se1960		-0.0014050	ppm	0.0038940	277.25
Si2881		0.056533	ppm	0.085571	151.36
Sn1899		-0.00046600	ppm	0.00054100	115.97
Sr4077		0.00057100	ppm	0.00023300	40.837
Ti3349		-0.00023600	ppm	0.00018100	76.619
Tl1908		0.0020330	ppm	0.0020760	102.15
V_2924		-0.00060900	ppm	0.00068300	112.03
Zn2062		-0.00027300	ppm	0.00052600	192.67
Y_2243		7,412.4	Cts/S	13.003	0.17543
Y_3600		65,298	Cts/S	273.43	0.41874
Y_3774		3,356.7	Cts/S	12.103	0.36057

rinse2

Acquire Date: 8/13/2020 9:53:07AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0018390	ppm	0.00080600	43.826
Al3961		-0.034924	ppm	0.0044800	12.829
As1890		-0.00039100	ppm	0.00094700	242.28
B_2089		0.0038230	ppm	0.00060600	15.856
Ba4554		-0.00040600	ppm	0.000065000	15.881
Be3130		0.00037800	ppm	0.000041000	10.850
Ca3179		0.0038560	ppm	0.017379	450.76
Cd2144		0.000018000	ppm	0.00015200	834.73
Co2286		0.00024600	ppm	0.00027200	110.72

rinse2

Acquire Date: 8/13/2020 9:53:07AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00045500	ppm	0.0014710	323.60
Cu3247		0.0018030	ppm	0.00039600	21.949
Fe2599		0.0064030	ppm	0.0095480	149.12
K_7664		0.020482	ppm	0.029178	142.46
Mg2790		0.0045880	ppm	0.000087000	1.9015
Mn2576		-0.00023500	ppm	0.000072000	30.522
Mo2020		0.000094000	ppm	0.00016600	177.16
Na5895		0.055151	ppm	0.0060830	11.030
Ni2316		-0.0010080	ppm	0.00088600	87.941
P_1782		-0.0027460	ppm	0.000091000	3.3289
Pb2203		0.00049600	ppm	0.00011500	23.238
S_1820		-0.00046600	ppm	0.0026910	577.80
Sb2068		0.0032370	ppm	0.00057700	17.823
Se1960		-0.00036600	ppm	0.0049370	1,348.2
Si2881		0.053369	ppm	0.033195	62.200
Sn1899		-0.00043000	ppm	0.00048000	111.57
Sr4077		0.00028800	ppm	0.0000080000	2.8023
Ti3349		-0.00097200	ppm	0.00027100	27.818
Tl1908		0.0015630	ppm	0.0016660	106.62
V_2924		-0.00063300	ppm	0.00038700	61.187
Zn2062		0.000043000	ppm	0.00021000	490.63
Y_2243		7,417.8	Cts/S	9.4938	0.12799
Y_3600		65,144	Cts/S	52.751	0.080975
Y_3774		3,326.1	Cts/S	14.694	0.44177

CCV 2103404

Acquire Date: 8/13/2020 9:57:07AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52537	ppm	0.0045770	0.87115	.50000	Rel(%)	Pass	
Al3961		25.708	ppm	0.14457	0.56236	25.000	Rel(%)	Pass	
As1890		0.51564	ppm	0.0038530	0.74714	.50000	Rel(%)	Pass	
B_2089		1.0556	ppm	0.0042420	0.40189	1.0000	Rel(%)	Pass	
Ba4554		2.6215	ppm	0.025242	0.96289	2.5000	Rel(%)	Pass	
Be3130		0.51494	ppm	0.0034860	0.67702	.50000	Rel(%)	Pass	
Ca3179		25.995	ppm	0.13717	0.52769	25.000	Rel(%)	Pass	
Cd2144		0.52889	ppm	0.0019140	0.36184	.50000	Rel(%)	Pass	
Co2286		2.6428	ppm	0.0094850	0.35890	2.5000	Rel(%)	Pass	
Cr2677		2.6366	ppm	0.0068110	0.25831	2.5000	Rel(%)	Pass	
Cu3247		2.6235	ppm	0.011394	0.43429	2.5000	Rel(%)	Pass	
Fe2599		26.627	ppm	0.12399	0.46564	25.000	Rel(%)	Pass	
K_7664		25.569	ppm	0.19353	0.75689	25.000	Rel(%)	Pass	
Mg2790		25.916	ppm	0.080883	0.31210	25.000	Rel(%)	Pass	
Mn2576		2.7086	ppm	0.011452	0.42282	2.5000	Rel(%)	Pass	
Mo2020		1.0510	ppm	0.0073150	0.69602	1.0000	Rel(%)	Pass	
Na5895		25.823	ppm	0.30019	1.1625	25.000	Rel(%)	Pass	
Ni2316		2.6835	ppm	0.0094990	0.35396	2.5000	Rel(%)	Pass	
P_1782		2.6698	ppm	0.010617	0.39766	2.5000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/13/2020 9:57:07AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.53631	ppm	0.0014670	0.27357	.50000	Rel(%)	Pass	
S_1820		2.5731	ppm	0.0026530	0.10310	2.5000	Rel(%)	Pass	
Sb2068		0.53274	ppm	0.0057950	1.0877	.50000	Rel(%)	Pass	
Se1960		0.53067	ppm	0.0033530	0.63189	.50000	Rel(%)	Pass	
Si2881		2.6140	ppm	0.0075290	0.28801	2.5000	Rel(%)	Pass	
Sn1899		2.6179	ppm	0.010667	0.40747	2.5000	Rel(%)	Pass	
Sr4077		2.5796	ppm	0.023120	0.89627	2.5000	Rel(%)	Pass	
Ti3349		1.0380	ppm	0.0037680	0.36305	1.0000	Rel(%)	Pass	
Tl1908		0.52863	ppm	0.0046210	0.87411	.50000	Rel(%)	Pass	
V_2924		2.6132	ppm	0.010903	0.41723	2.5000	Rel(%)	Pass	
Zn2062		2.6017	ppm	0.0023430	0.090057	2.5000	Rel(%)	Pass	
Y_2243		7,197.5	Cts/S	1.2915	0.017944				
Y_3600		63,283	Cts/S	158.75	0.25085				
Y_3774		3,365.1	Cts/S	10.704	0.31809				

CCB 2110462

Acquire Date: 8/13/2020 10:00:53AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0011110	ppm	0.0013330	119.95	.00000	Abs	Pass	
Al3961		-0.028672	ppm	0.0023700	8.2647	.00000	Abs	Pass	
As1890		-0.00065600	ppm	0.0027970	426.02	.00000	Abs	Pass	
B_2089		0.0071130	ppm	0.00036800	5.1708	.00000	Abs	Pass	
Ba4554		-0.00084300	ppm	0.00046600	55.328	.00000	Abs	Pass	
Be3130		0.000021000	ppm	0.00039200	1,910.4	.00000	Abs	Pass	
Ca3179		0.0052490	ppm	0.0082260	156.72	.00000	Abs	Pass	
Cd2144		0.000046000	ppm	0.0000080000	16.886	.00000	Abs	Pass	
Co2286		0.00021800	ppm	0.00017700	81.501	.00000	Abs	Pass	
Cr2677		-0.0010670	ppm	0.00044200	41.381	.00000	Abs	Pass	
Cu3247		0.0020330	ppm	0.000055000	2.7012	.00000	Abs	Pass	
Fe2599	**W**	**0.056887**	**ppm**	**0.0021610**	**3.7980**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		-0.0017590	ppm	0.039445	2,241.9	.00000	Abs	Pass	
Mg2790		0.0041510	ppm	0.0027310	65.777	.00000	Abs	Pass	
Mn2576		0.00010000	ppm	0.000047000	47.102	.00000	Abs	Pass	
Mo2020		0.0081540	ppm	0.00085800	10.516	.00000	Abs	Pass	
Na5895		0.041013	ppm	0.015440	37.647	.00000	Abs	Pass	
Ni2316		-0.00072600	ppm	0.00045900	63.148	.00000	Abs	Pass	
P_1782		0.0019110	ppm	0.00040000	20.941	.00000	Abs	Pass	
Pb2203		0.0021650	ppm	0.0015900	73.435	.00000	Abs	Pass	
S_1820		-0.0012250	ppm	0.0032050	261.58	.00000	Abs	Pass	
Sb2068		0.0029940	ppm	0.00066600	22.247	.00000	Abs	Pass	
Se1960		0.0017320	ppm	0.0022170	128.02	.00000	Abs	Pass	
Si2881		0.069740	ppm	0.061952	88.832	.00000	Abs	Pass	
Sn1899		0.0021110	ppm	0.00015800	7.5074	.00000	Abs	Pass	
Sr4077		0.00051200	ppm	0.00011000	21.428	.00000	Abs	Pass	
Ti3349		0.0032940	ppm	0.00011000	3.3292	.00000	Abs	Pass	
Tl1908		0.0048790	ppm	0.0042170	86.431	.00000	Abs	Pass	
V_2924		0.00014500	ppm	0.00018100	124.30	.00000	Abs	Pass	

CCB 2110462

Acquire Date: 8/13/2020 10:00:53AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0016750	ppm	0.00030200	18.020	.00000	Abs	Pass	
Y_2243		7,491.6	Cts/S	15.049	0.20088				
Y_3600		65,728	Cts/S	105.34	0.16026				
Y_3774		3,455.4	Cts/S	7.5914	0.21970				

MB 320-403110/1-A

Acquire Date: 8/13/2020 10:04:55AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0021050	ppm	0.00044500	21.131
Al3961		-0.014051	ppm	0.015683	111.61
As1890		0.00035600	ppm	0.0012060	338.41
B_2089		0.0055650	ppm	0.00080700	14.498
Ba4554		0.000086000	ppm	0.00059400	693.53
Be3130		0.00052700	ppm	0.00072800	138.12
Ca3179		0.18838	ppm	0.010574	5.6132
Cd2144		0.000018000	ppm	0.000045000	244.96
Co2286		-0.00012300	ppm	0.000018000	14.483
Cr2677		0.00037900	ppm	0.00057600	151.97
Cu3247		0.0018630	ppm	0.00053900	28.962
Fe2599		0.017463	ppm	0.012293	70.396
K_7664		0.045542	ppm	0.076644	168.29
Mg2790		0.058385	ppm	0.00086900	1.4887
Mn2576		0.00050800	ppm	0.000029000	5.7955
Mo2020		0.0013690	ppm	0.00042300	30.929
Na5895		0.095636	ppm	0.0076040	7.9510
Ni2316		-0.00022300	ppm	0.00093700	420.91
P_1782		0.021374	ppm	0.0010590	4.9553
Pb2203		-0.00011800	ppm	0.00078500	663.41
S_1820		0.010259	ppm	0.0014430	14.065
Sb2068		0.0039170	ppm	0.00028100	7.1638
Se1960		0.0063510	ppm	0.0054880	86.416
Si2881		0.091382	ppm	0.059991	65.648
Sn1899	**W**	**0.017500**	**ppm**	**0.00014600**	**0.83427**
Sr4077		0.00078000	ppm	0.00033600	43.030
Ti3349		0.00095500	ppm	0.000036000	3.7352
Tl1908		-0.00056500	ppm	0.0012950	229.35
V_2924		0.000075000	ppm	0.000017000	22.269
Zn2062		0.0018270	ppm	0.00025100	13.735
Y_2243		7,486.2	Cts/S	5.3911	0.072014
Y_3600		65,823	Cts/S	83.251	0.12648
Y_3774		3,379.5	Cts/S	12.117	0.35855

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 8/13/2020 1:51:00PM

LCS 320-403110/2-A

Acquire Date: 8/13/2020 10:08:56AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048821	ppm	0.0014910	3.0536
Al3961		4.7189	ppm	0.0085900	0.18204
As1890	W	0.43361	ppm	0.0051980	1.1987
B_2089		4.3042	ppm	0.015608	0.36263
Ba4554	W	0.47153	ppm	0.0030700	0.65097
Be3130		0.23213	ppm	0.00051200	0.22042
Ca3179		23.936	ppm	0.12943	0.54074
Cd2144	W	0.23032	ppm	0.00099500	0.43185
Co2286		0.23241	ppm	0.0015080	0.64872
Cr2677	W	0.23776	ppm	0.00086800	0.36529
Cu3247		0.23098	ppm	0.00067900	0.29397
Fe2599		4.9344	ppm	0.035521	0.71987
K_7664		23.076	ppm	0.26986	1.1694
Mg2790		23.430	ppm	0.094923	0.40514
Mn2576		0.24335	ppm	0.00036800	0.15117
Mo2020		0.23821	ppm	0.0017220	0.72274
Na5895		23.462	ppm	0.18493	0.78819
Ni2316		0.22993	ppm	0.0013460	0.58557
P_1782		4.8211	ppm	0.020565	0.42656
Pb2203	W	0.23626	ppm	0.0042640	1.8049
S_1820		4.5775	ppm	0.020466	0.44711
Sb2068		0.41498	ppm	0.0015980	0.38505
Se1960	W	0.44331	ppm	0.0041480	0.93578
Si2881	F	3.2135	ppm	0.075407	2.3465
Sn1899		0.50329	ppm	0.0010410	0.20679
Sr4077		0.23474	ppm	0.00052900	0.22527
Ti3349	W	0.23518	ppm	0.000063000	0.026828
Tl1908		0.45110	ppm	0.00052700	0.11677
V_2924		0.23769	ppm	0.0023990	1.0091
Zn2062		0.46288	ppm	0.0026410	0.57048
Y_2243		7,355.1	Cts/S	20.066	0.27282
Y_3600		63,614	Cts/S	181.48	0.28528
Y_3774		3,350.0	Cts/S	22.009	0.65700

MB 320-403111/1-A

Acquire Date: 8/13/2020 10:12:46AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00045800	ppm	0.00013500	29.442
Al3961		-0.016426	ppm	0.026983	164.27
As1890		0.0013610	ppm	0.000052000	3.8273
B_2089		0.018244	ppm	0.0014890	8.1643
Ba4554		0.00078400	ppm	0.00070800	90.271
Be3130		0.00030100	ppm	0.000072000	24.004
Ca3179		0.20861	ppm	0.0034840	1.6700
Cd2144		0.00012800	ppm	0.000055000	43.234
Co2286		0.000082000	ppm	0.00035000	429.67

MB 320-403111/1-A

Acquire Date: 8/13/2020 10:12:46AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00028200	ppm	0.0015700	557.55
Cu3247		0.0010840	ppm	0.00033800	31.173
Fe2599		0.026100	ppm	0.0032850	12.587
K_7664		0.12890	ppm	0.047912	37.172
Mg2790		0.064124	ppm	0.0052830	8.2394
Mn2576		0.00026600	ppm	0.000034000	12.667
Mo2020		0.0018600	ppm	0.00037800	20.324
Na5895		0.092740	ppm	0.017517	18.889
Ni2316		-0.0014930	ppm	0.00069100	46.247
P_1782		0.023989	ppm	0.0033160	13.821
Pb2203		0.0016710	ppm	0.0021220	126.94
S_1820		0.0055300	ppm	0.0026040	47.089
Sb2068		0.0073680	ppm	0.00021300	2.8950
Se1960		-0.00034500	ppm	0.00076900	222.85
Si2881		0.095381	ppm	0.077930	81.703
Sn1899	**W**	**0.017198**	**ppm**	**0.00057500**	**3.3411**
Sr4077		0.00072800	ppm	0.000079000	10.869
Ti3349		0.0014130	ppm	0.00034900	24.716
Tl1908		.0000090000	ppm	0.0013380	15,693
V_2924		-0.00020100	ppm	0.000093000	46.140
Zn2062		0.0012650	ppm	0.00038700	30.564
Y_2243		7,613.3	Cts/S	7.4433	0.097767
Y_3600		67,153	Cts/S	196.08	0.29198
Y_3774		3,413.3	Cts/S	17.559	0.51442

LCS 320-403111/2-A

Acquire Date: 8/13/2020 10:16:47AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047829	ppm	0.00041400	0.86469
Al3961		4.6575	ppm	0.013640	0.29286
As1890	**W**	**0.43106**	**ppm**	**0.0014810**	**0.34353**
B_2089		4.3249	ppm	0.012691	0.29344
Ba4554	**W**	**0.47118**	**ppm**	**0.0038780**	**0.82302**
Be3130		0.23085	ppm	0.00012300	0.053444
Ca3179		23.883	ppm	0.10384	0.43477
Cd2144	**W**	**0.22985**	**ppm**	**0.00045500**	**0.19800**
Co2286		0.23242	ppm	0.00035800	0.15406
Cr2677	**W**	**0.23844**	**ppm**	**0.0016090**	**0.67477**
Cu3247		0.23290	ppm	0.00068900	0.29589
Fe2599		4.8731	ppm	0.033887	0.69539
K_7664		23.107	ppm	0.16234	0.70255
Mg2790		23.394	ppm	0.14988	0.64066
Mn2576		0.24389	ppm	0.0011450	0.46962
Mo2020		0.23708	ppm	0.00055200	0.23305
Na5895		23.509	ppm	0.14918	0.63457
Ni2316		0.22905	ppm	0.00032900	0.14364

LCS 320-403111/2-A

Acquire Date: 8/13/2020 10:16:47AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.8483	ppm	0.0088950	0.18347
Pb2203	**W**	**0.23532**	**ppm**	**0.0033210**	**1.4114**
S_1820		4.5730	ppm	0.00035800	0.0078260
Sb2068		0.41454	ppm	0.0012190	0.29417
Se1960	**W**	**0.44336**	**ppm**	**0.0059770**	**1.3481**
Si2881	**F**	**3.3481**	**ppm**	**0.082095**	**2.4519**
Sn1899		0.50186	ppm	0.00092100	0.18343
Sr4077		0.23391	ppm	0.00076800	0.32844
Ti3349	**W**	**0.23430**	**ppm**	**0.0025110**	**1.0719**
Tl1908		0.45573	ppm	0.00011200	0.024683
V_2924		0.23674	ppm	0.0016520	0.69762
Zn2062		0.46385	ppm	0.0018690	0.40300
Y_2243		7,278.1	Cts/S	15.153	0.20820
Y_3600		63,546	Cts/S	158.50	0.24942
Y_3774		3,351.1	Cts/S	6.8276	0.20374

LCSD 320-403111/3-A

Acquire Date: 8/13/2020 10:20:35AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049627	ppm	0.0014450	2.9114
Al3961		4.6429	ppm	0.049154	1.0587
As1890		0.42603	ppm	0.0016790	0.39403
B_2089		4.3041	ppm	0.0093880	0.21811
Ba4554		0.47131	ppm	0.0022250	0.47212
Be3130		0.22976	ppm	0.00056600	0.24618
Ca3179		23.718	ppm	0.0017420	0.0073440
Cd2144		0.22992	ppm	0.00071200	0.30979
Co2286		0.23258	ppm	0.00050400	0.21659
Cr2677		0.23582	ppm	0.00093200	0.39515
Cu3247		0.23145	ppm	0.0014910	0.64423
Fe2599		4.9059	ppm	0.013042	0.26585
K_7664		23.045	ppm	0.26900	1.1673
Mg2790		23.172	ppm	0.042402	0.18299
Mn2576		0.24400	ppm	0.00088000	0.36055
Mo2020		0.23815	ppm	0.00084200	0.35360
Na5895		23.389	ppm	0.11275	0.48206
Ni2316		0.22973	ppm	0.00064900	0.28257
P_1782		4.8184	ppm	0.0016280	0.033781
Pb2203		0.23818	ppm	0.0022230	0.93324
S_1820		4.5529	ppm	0.0072420	0.15906
Sb2068		0.41896	ppm	0.0026590	0.63460
Se1960		0.44390	ppm	0.0046560	1.0489
Si2881		3.3613	ppm	0.032624	0.97058
Sn1899		0.50292	ppm	0.0024530	0.48766
Sr4077		0.23363	ppm	0.0011010	0.47114
Ti3349		0.23602	ppm	0.00025700	0.10871

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCSD 320-403111/3-A

Acquire Date: 8/13/2020 10:20:35AM　Sample Type: Unknown

Correction Factor: 1.0000　SW: 1.0000　NW: 1.0000　IV: 1.0000　FV: 1.0000　AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1　Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.44948	ppm	0.0039930	0.88846
V_2924		0.23575	ppm	0.00025600	0.10844
Zn2062		0.45969	ppm	0.00055900	0.12159
Y_2243		7,353.3	Cts/S	12.152	0.16526
Y_3600		64,369	Cts/S	81.804	0.12709
Y_3774		3,385.0	Cts/S	2.4248	0.071633

MB 320-403108/1-A

Acquire Date: 8/13/2020 10:24:24AM　Sample Type: Unknown

Correction Factor: 1.0000　SW: 1.0000　NW: 1.0000　IV: 1.0000　FV: 1.0000　AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1　Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00036100	ppm	0.0010350	286.95
Al3961		0.00064900	ppm	0.022033	3,396.4
As1890		0.0014340	ppm	0.00028800	20.069
B_2089		0.027653	ppm	0.0016320	5.9022
Ba4554		-0.00032500	ppm	0.00049200	151.19
Be3130		0.00022000	ppm	0.0000010000	0.34006
Ca3179		0.20014	ppm	0.000089000	0.044323
Cd2144		0.000056000	ppm	0.000022000	38.669
Co2286		0.000067000	ppm	0.00010700	160.95
Cr2677		0.0010320	ppm	0.00017700	17.183
Cu3247		0.0016040	ppm	0.00068700	42.838
Fe2599		0.022444	ppm	0.0065730	29.287
K_7664		0.10768	ppm	0.040610	37.714
Mg2790		0.058109	ppm	0.0043090	7.4148
Mn2576		0.00056500	ppm	0.000021000	3.7635
Mo2020		0.0011790	ppm	0.00017200	14.631
Na5895		0.10234	ppm	0.0063730	6.2269
Ni2316		0.00041200	ppm	0.00021500	52.017
P_1782		0.019609	ppm	0.00064900	3.3103
Pb2203		0.00018700	ppm	0.0019870	1,063.7
S_1820		0.0085190	ppm	0.0010550	12.380
Sb2068		0.0075580	ppm	0.0050270	66.510
Se1960		-0.00051300	ppm	0.0013350	260.22
Si2881		0.094265	ppm	0.030433	32.284
Sn1899	**W**	**0.017857**	**ppm**	**0.00019400**	**1.0867**
Sr4077		0.00073900	ppm	0.00028200	38.109
Ti3349		0.0016660	ppm	0.000087000	5.1994
Tl1908		0.0046840	ppm	0.0060350	128.86
V_2924		-0.00042500	ppm	0.00029900	70.328
Zn2062		0.0020760	ppm	0.00012300	5.9199
Y_2243		7,564.4	Cts/S	27.877	0.36853
Y_3600		66,753	Cts/S	234.16	0.35078
Y_3774		3,431.5	Cts/S	1.2931	0.037683

Color Legend　Pass/Unchecked　Internal Standard　Check Fail　Check Warn

Published: 8/13/2020 1:51:00PM

LCS 320-403108/2-A

Acquire Date: 8/13/2020 10:28:25AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047104	ppm	0.000013000	0.026912
Al3961		4.6665	ppm	0.036292	0.77771
As1890	**W**	**0.42888**	**ppm**	**0.00073000**	**0.17013**
B_2089		4.2907	ppm	0.0061750	0.14393
Ba4554	**W**	**0.47254**	**ppm**	**0.0043230**	**0.91476**
Be3130		0.22959	ppm	0.0019550	0.85149
Ca3179		23.727	ppm	0.16743	0.70565
Cd2144	**W**	**0.22979**	**ppm**	**0.00040500**	**0.17631**
Co2286		0.23236	ppm	0.00074300	0.31986
Cr2677	**W**	**0.23670**	**ppm**	**0.00021400**	**0.090368**
Cu3247		0.23070	ppm	0.00034100	0.14795
Fe2599		4.8565	ppm	0.035626	0.73357
K_7664		23.075	ppm	0.28293	1.2261
Mg2790		23.069	ppm	0.043825	0.18997
Mn2576		0.24510	ppm	0.00023900	0.097608
Mo2020		0.23724	ppm	0.000078000	0.032995
Na5895		23.368	ppm	0.21285	0.91086
Ni2316		0.23074	ppm	0.0010490	0.45482
P_1782		4.8292	ppm	0.0010940	0.022656
Pb2203	**W**	**0.23805**	**ppm**	**0.00080900**	**0.33967**
S_1820		4.5780	ppm	0.0046710	0.10203
Sb2068		0.41496	ppm	0.0011340	0.27340
Se1960	**W**	**0.44178**	**ppm**	**0.00047200**	**0.10687**
Si2881	**F**	**3.1834**	**ppm**	**0.060004**	**1.8849**
Sn1899		0.50016	ppm	0.00050300	0.10061
Sr4077		0.23281	ppm	0.0021240	0.91230
Ti3349	**W**	**0.23478**	**ppm**	**0.00049400**	**0.21026**
Tl1908		0.44883	ppm	0.0062510	1.3926
V_2924		0.23594	ppm	0.00027600	0.11715
Zn2062		0.46014	ppm	0.0020910	0.45448
Y_2243		7,437.3	Cts/S	12.516	0.16829
Y_3600		64,803	Cts/S	55.026	0.084913
Y_3774		3,435.8	Cts/S	8.3744	0.24374

MB 320-403145/1-A

Acquire Date: 8/13/2020 10:32:13AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010060	ppm	0.0023640	234.85
Al3961		-0.0036820	ppm	0.010988	298.41
As1890		0.0011310	ppm	0.00090100	79.673
B_2089		0.026142	ppm	0.0025030	9.5749
Ba4554		-0.00088800	ppm	0.00036800	41.450
Be3130		0.00016700	ppm	0.000045000	27.167
Ca3179		0.0065140	ppm	0.014035	215.45
Cd2144		0.000031000	ppm	0.0000090000	30.138
Co2286		-0.00021900	ppm	0.000038000	17.176

MB 320-403145/1-A

Acquire Date: 8/13/2020 10:32:13AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		.0000030000	ppm	0.0000010000	39.132
Cu3247		0.0017370	ppm	0.000032000	1.8261
Fe2599		0.0048000	ppm	0.012735	265.32
K_7664		0.030539	ppm	0.12173	398.61
Mg2790		0.012077	ppm	0.0031310	25.927
Mn2576		0.000050000	ppm	0.000097000	194.33
Mo2020		0.0011730	ppm	0.00068000	57.968
Na5895		0.042590	ppm	0.0096350	22.622
Ni2316		-0.00066700	ppm	0.00051800	77.734
P_1782		0.0028270	ppm	0.0030510	107.92
Pb2203		0.00092000	ppm	0.0024430	265.39
S_1820		0.0060130	ppm	0.0038070	63.322
Sb2068		0.0047780	ppm	0.0063140	132.14
Se1960		-0.00011400	ppm	0.00057300	502.02
Si2881		0.052769	ppm	0.042693	80.905
Sn1899		0.00092000	ppm	0.00053500	58.228
Sr4077		0.00038700	ppm	0.00013900	35.781
Ti3349		0.0016360	ppm	0.00027600	16.894
Tl1908		0.0058780	ppm	0.00055800	9.4853
V_2924		0.00024700	ppm	0.00042800	173.50
Zn2062		0.0014770	ppm	0.00013000	8.7811
Y_2243		7,465.0	Cts/S	14.671	0.19653
Y_3600		66,298	Cts/S	33.100	0.049926
Y_3774		3,395.0	Cts/S	10.368	0.30538

LCS 320-403145/2-A

Acquire Date: 8/13/2020 10:36:15AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.050482	ppm	0.0015630	3.0958
Al3961		4.8788	ppm	0.00018000	0.0036950
As1890	**W**	**0.45123**	**ppm**	**0.00056500**	**0.12513**
B_2089		4.6780	ppm	0.0094160	0.20129
Ba4554	**W**	**0.49822**	**ppm**	**0.00026500**	**0.053235**
Be3130		0.24272	ppm	0.0000030000	0.0011320
Ca3179		24.850	ppm	0.047754	0.19217
Cd2144	**W**	**0.24306**	**ppm**	**0.00056300**	**0.23168**
Co2286		0.24347	ppm	0.00038500	0.15827
Cr2677	**W**	**0.24783**	**ppm**	**0.00037000**	**0.14927**
Cu3247		0.24485	ppm	0.0025900	1.0578
Fe2599		5.1011	ppm	0.025926	0.50825
K_7664		24.343	ppm	0.0079400	0.032619
Mg2790		24.393	ppm	0.11099	0.45500
Mn2576		0.25826	ppm	0.00090900	0.35208
Mo2020		0.25319	ppm	0.0012540	0.49509
Na5895		24.711	ppm	0.086059	0.34826
Ni2316		0.24273	ppm	0.00018800	0.077509

LCS 320-403145/2-A

Acquire Date: 8/13/2020 10:36:15AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.1125	ppm	0.012311	0.24080
Pb2203	W	0.25240	ppm	0.0036400	1.4422
S_1820		4.8145	ppm	0.0047580	0.098832
Sb2068		0.44325	ppm	0.0026420	0.59613
Se1960	W	0.46428	ppm	0.0034340	0.73954
Si2881	W	4.9239	ppm	0.017183	0.34897
Sn1899		0.50727	ppm	0.0010870	0.21426
Sr4077		0.24510	ppm	0.00015400	0.062913
Ti3349	W	0.24653	ppm	0.0011460	0.46489
Tl1908		0.47435	ppm	0.0075110	1.5833
V_2924		0.24883	ppm	0.0016650	0.66922
Zn2062		0.48359	ppm	0.0023720	0.49055
Y_2243		7,258.1	Cts/S	78.377	1.0799
Y_3600		63,152	Cts/S	152.57	0.24159
Y_3774		3,329.6	Cts/S	8.0916	0.24302

720-99486-A-1-A

Acquire Date: 8/13/2020 10:40:02AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0019780	ppm	0.0010710	54.131
Al3961		248.43	ppm	1.2687	0.51067
As1890		0.0018800	ppm	0.0021490	114.32
B_2089		0.050675	ppm	0.0026360	5.2010
Ba4554		0.51597	ppm	0.0036820	0.71369
Be3130		0.00093900	ppm	0.00020000	21.343
Ca3179		389.42	ppm	2.6746	0.68682
Cd2144		0.00055100	ppm	0.000038000	6.8059
Co2286		0.081578	ppm	0.00023100	0.28326
Cr2677		0.20328	ppm	0.00088500	0.43549
Cu3247		0.79165	ppm	0.0034150	0.43132
Fe2599		184.36	ppm	0.96843	0.52530
K_7664		8.2786	ppm	0.079169	0.95631
Mg2790		66.896	ppm	0.31762	0.47480
Mn2576		2.5963	ppm	0.012028	0.46325
Mo2020		0.0068140	ppm	0.00017600	2.5780
Na5895		32.437	ppm	0.29419	0.90695
Ni2316		0.13864	ppm	0.00039500	0.28494
P_1782		2.8905	ppm	0.0050710	0.17545
Pb2203		0.57980	ppm	0.000052000	0.0089880
S_1820		18.298	ppm	0.030792	0.16828
Sb2068		-0.018122	ppm	0.0022850	12.611
Se1960		0.0050600	ppm	0.0067380	133.15
Si2881		1.5563	ppm	0.029660	1.9057
Sn1899		0.019283	ppm	0.00068800	3.5694
Sr4077		0.55949	ppm	0.0022710	0.40589
Ti3349		4.0044	ppm	0.016439	0.41053

720-99486-A-1-A

Acquire Date: 8/13/2020 10:40:02AM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0054170	ppm	0.0027860	51.425
V_2924		0.77837	ppm	0.0024570	0.31572
Zn2062		0.45569	ppm	0.00064500	0.14158
Y_2243		7,106.1	Cts/S	1.4879	0.020939
Y_3600		61,006	Cts/S	1.1509	0.0018870
Y_3774		3,512.4	Cts/S	15.302	0.43564

CCV 2103404

Acquire Date: 8/13/2020 10:43:54AM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51726	ppm	0.00076000	0.14689	.50000	Rel(%)	Pass	
Al3961		25.619	ppm	0.17148	0.66937	25.000	Rel(%)	Pass	
As1890		0.51083	ppm	0.0016820	0.32922	.50000	Rel(%)	Pass	
B_2089		1.0591	ppm	0.0000040000	0.00036900	1.0000	Rel(%)	Pass	
Ba4554		2.6367	ppm	0.026343	0.99909	2.5000	Rel(%)	Pass	
Be3130		0.51241	ppm	0.0038580	0.75288	.50000	Rel(%)	Pass	
Ca3179		25.902	ppm	0.18232	0.70390	25.000	Rel(%)	Pass	
Cd2144		0.52818	ppm	0.0016660	0.31547	.50000	Rel(%)	Pass	
Co2286		2.6356	ppm	0.0069850	0.26503	2.5000	Rel(%)	Pass	
Cr2677		2.6262	ppm	0.012566	0.47848	2.5000	Rel(%)	Pass	
Cu3247		2.5844	ppm	0.0092140	0.35651	2.5000	Rel(%)	Pass	
Fe2599		26.864	ppm	0.17473	0.65042	25.000	Rel(%)	Pass	
K_7664		25.639	ppm	0.36709	1.4318	25.000	Rel(%)	Pass	
Mg2790		25.621	ppm	0.12583	0.49111	25.000	Rel(%)	Pass	
Mn2576		2.7347	ppm	0.012637	0.46210	2.5000	Rel(%)	Pass	
Mo2020		1.0512	ppm	0.0057170	0.54387	1.0000	Rel(%)	Pass	
Na5895		25.834	ppm	0.31333	1.2129	25.000	Rel(%)	Pass	
Ni2316		2.6913	ppm	0.0045500	0.16905	2.5000	Rel(%)	Pass	
P_1782		2.6674	ppm	0.0066340	0.24870	2.5000	Rel(%)	Pass	
Pb2203		0.53777	ppm	0.00092000	0.17108	.50000	Rel(%)	Pass	
S_1820		2.5573	ppm	0.0046870	0.18327	2.5000	Rel(%)	Pass	
Sb2068		0.53328	ppm	0.0017730	0.33247	.50000	Rel(%)	Pass	
Se1960		0.53505	ppm	0.0069780	1.3043	.50000	Rel(%)	Pass	
Si2881		2.6391	ppm	0.0045690	0.17313	2.5000	Rel(%)	Pass	
Sn1899		2.6103	ppm	0.010492	0.40194	2.5000	Rel(%)	Pass	
Sr4077		2.5754	ppm	0.026396	1.0249	2.5000	Rel(%)	Pass	
Ti3349		1.0515	ppm	0.0058730	0.55855	1.0000	Rel(%)	Pass	
Tl1908		0.52274	ppm	0.0038380	0.73425	.50000	Rel(%)	Pass	
V_2924		2.6082	ppm	0.012211	0.46817	2.5000	Rel(%)	Pass	
Zn2062		2.5883	ppm	0.017153	0.66271	2.5000	Rel(%)	Pass	
Y_2243		7,300.5	Cts/S	1.2516	0.017145				
Y_3600		63,699	Cts/S	176.15	0.27654				
Y_3774		3,388.5	Cts/S	5.0868	0.15012				

CCB 2110462

Acquire Date: 8/13/2020 10:47:41AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00091600	ppm	0.00065200	71.179	.00000	Abs	Pass	
Al3961		-0.017941	ppm	0.016454	91.714	.00000	Abs	Pass	
As1890		0.0015000	ppm	0.00061800	41.236	.00000	Abs	Pass	
B_2089		0.014206	ppm	0.00062200	4.3799	.00000	Abs	Pass	
Ba4554		-0.00037700	ppm	0.00011400	30.325	.00000	Abs	Pass	
Be3130		0.00010900	ppm	0.00047800	436.81	.00000	Abs	Pass	
Ca3179		0.0085320	ppm	0.0073990	86.715	.00000	Abs	Pass	
Cd2144		0.000032000	ppm	0.000055000	168.78	.00000	Abs	Pass	
Co2286		0.00031300	ppm	0.00050700	162.06	.00000	Abs	Pass	
Cr2677		0.000059000	ppm	0.00017400	296.17	.00000	Abs	Pass	
Cu3247		0.0043890	ppm	0.00061300	13.957	.00000	Abs	Pass	
Fe2599	**W**	**0.056132**	**ppm**	**0.0093770**	**16.705**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.048523	ppm	0.053774	110.82	.00000	Abs	Pass	
Mg2790		0.0078780	ppm	0.0066600	84.543	.00000	Abs	Pass	
Mn2576		0.00042500	ppm	0.000016000	3.7370	.00000	Abs	Pass	
Mo2020		0.0085270	ppm	0.00096700	11.340	.00000	Abs	Pass	
Na5895		0.019353	ppm	0.0026070	13.470	.00000	Abs	Pass	
Ni2316		0.00051000	ppm	0.00085600	167.94	.00000	Abs	Pass	
P_1782		-0.00071400	ppm	0.0011680	163.59	.00000	Abs	Pass	
Pb2203		0.0012150	ppm	0.00092300	75.939	.00000	Abs	Pass	
S_1820		0.0059980	ppm	0.000098000	1.6408	.00000	Abs	Pass	
Sb2068		0.0031750	ppm	0.0014400	45.368	.00000	Abs	Pass	
Se1960		0.0046780	ppm	0.0016480	35.230	.00000	Abs	Pass	
Si2881		0.049609	ppm	0.028401	57.249	.00000	Abs	Pass	
Sn1899		0.0020900	ppm	0.00031300	14.991	.00000	Abs	Pass	
Sr4077		0.00095600	ppm	0.00031200	32.679	.00000	Abs	Pass	
Ti3349		0.0041390	ppm	0.00017200	4.1505	.00000	Abs	Pass	
Tl1908		0.0040830	ppm	0.0012940	31.698	.00000	Abs	Pass	
V_2924		0.000053000	ppm	0.00081200	1,531.0	.00000	Abs	Pass	
Zn2062		0.0026980	ppm	0.00034600	12.807	.00000	Abs	Pass	
Y_2243		7,454.1	Cts/S	19.734	0.26474				
Y_3600		66,002	Cts/S	651.63	0.98729				
Y_3774		3,422.1	Cts/S	10.412	0.30425				

sd 720-99486-A-1-A@5

Acquire Date: 8/13/2020 10:51:41AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00014300	ppm	0.00010200	71.267
Al3961		50.192	ppm	0.10784	0.21486
As1890		0.00030800	ppm	0.00044600	145.12
B_2089		0.015024	ppm	0.00095500	6.3562
Ba4554		0.10411	ppm	0.00082200	0.78914
Be3130		0.00018000	ppm	0.00019800	110.03
Ca3179		80.577	ppm	0.33624	0.41729
Cd2144		0.000074000	ppm	0.000033000	44.173
Co2286		0.017537	ppm	0.00019700	1.1246
Cr2677		0.041138	ppm	0.00043500	1.0577

sd 720-99486-A-1-A@5

Acquire Date: 8/13/2020 10:51:41AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.16459	ppm	0.00081800	0.49688
Fe2599		38.558	ppm	0.030793	0.079862
K_7664		1.6420	ppm	0.052045	3.1696
Mg2790		13.986	ppm	0.038368	0.27433
Mn2576		0.53117	ppm	0.0021000	0.39542
Mo2020		0.0018180	ppm	0.00012800	7.0157
Na5895		6.5021	ppm	0.011197	0.17220
Ni2316		0.029109	ppm	0.000039000	0.13450
P_1782		0.58432	ppm	0.0011450	0.19598
Pb2203		0.12445	ppm	0.0020050	1.6113
S_1820		3.6782	ppm	0.0014720	0.040030
Sb2068		-0.00096900	ppm	0.0050750	523.43
Se1960		0.0014580	ppm	0.0046520	319.05
Si2881		0.36814	ppm	0.013469	3.6586
Sn1899		0.0035690	ppm	0.00047200	13.234
Sr4077		0.11446	ppm	0.00047100	0.41115
Ti3349		0.80249	ppm	0.0032750	0.40805
Tl1908		-0.0010340	ppm	0.00014800	14.358
V_2924		0.15510	ppm	0.0015930	1.0274
Zn2062		0.095289	ppm	0.00013100	0.13704
Y_2243		7,406.9	Cts/S	15.542	0.20983
Y_3600		63,924	Cts/S	165.38	0.25871
Y_3774		3,460.5	Cts/S	2.4248	0.070071

pds 720-99486-A-1-A

Acquire Date: 8/13/2020 10:55:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10179	ppm	0.0016260	1.5973
Al3961		244.82	ppm	0.080577	0.032912
As1890		0.092195	ppm	0.00016600	0.17970
B_2089		0.95266	ppm	0.0078340	0.82235
Ba4554		0.58659	ppm	0.0037470	0.63875
Be3130		0.048640	ppm	0.00078500	1.6130
Ca3179		377.37	ppm	0.39879	0.10568
Cd2144		0.095047	ppm	0.00054800	0.57645
Co2286		0.17077	ppm	0.00056600	0.33132
Cr2677		0.29146	ppm	0.00091300	0.31318
Cu3247		0.85674	ppm	0.0022690	0.26480
Fe2599		177.60	ppm	0.13677	0.077006
K_7664		17.943	ppm	0.060123	0.33509
Mg2790		73.297	ppm	0.089365	0.12192
Mn2576		2.5539	ppm	0.0032340	0.12663
Mo2020		0.10260	ppm	0.00046200	0.45016
Na5895		40.816	ppm	0.13813	0.33842
Ni2316		0.22395	ppm	0.0017950	0.80166
P_1782		3.7602	ppm	0.019385	0.51553

pds 720-99486-A-1-A

Acquire Date: 8/13/2020 10:55:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.64558	ppm	0.0033080	0.51241
S_1820		19.489	ppm	0.067084	0.34422
Sb2068		0.075373	ppm	0.00062700	0.83123
Se1960		0.10078	ppm	0.0032990	3.2736
Si2881		2.4388	ppm	0.11573	4.7452
Sn1899		0.11545	ppm	0.0012700	1.1002
Sr4077		0.62794	ppm	0.0032990	0.52536
Ti3349		3.9041	ppm	0.013387	0.34290
Tl1908		0.095926	ppm	0.0030660	3.1958
V_2924		0.83705	ppm	0.0028540	0.34098
Zn2062		0.52539	ppm	0.00084900	0.16151
Y_2243		7,123.1	Cts/S	22.154	0.31101
Y_3600		60,221	Cts/S	432.84	0.71875
Y_3774		3,440.1	Cts/S	13.485	0.39200

720-99486-A-1-B MS

Acquire Date: 8/13/2020 10:59:25AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.045889	ppm	0.00063000	1.3722
Al3961		284.79	ppm	1.3930	0.48912
As1890		0.43450	ppm	0.0012250	0.28184
B_2089		3.9066	ppm	0.011745	0.30064
Ba4554		0.94971	ppm	0.0054920	0.57824
Be3130		0.22682	ppm	0.0010500	0.46303
Ca3179		427.80	ppm	2.7671	0.64681
Cd2144		0.22147	ppm	0.00093300	0.42128
Co2286		0.30548	ppm	0.0017790	0.58239
Cr2677		0.48309	ppm	0.00028800	0.059622
Cu3247		0.83257	ppm	0.0038730	0.46517
Fe2599		204.00	ppm	1.4464	0.70902
K_7664		31.261	ppm	0.26114	0.83534
Mg2790		97.001	ppm	0.40738	0.41997
Mn2576		3.1090	ppm	0.013868	0.44606
Mo2020		0.23290	ppm	0.0022760	0.97737
Na5895		59.808	ppm	0.40995	0.68544
Ni2316		0.35430	ppm	0.0014330	0.40432
P_1782		7.8017	ppm	0.035607	0.45640
Pb2203		1.0048	ppm	0.0066360	0.66040
S_1820		22.021	ppm	0.048082	0.21835
Sb2068		0.082220	ppm	0.0011410	1.3872
Se1960		0.45314	ppm	0.0085860	1.8949
Si2881		2.3203	ppm	0.020305	0.87510
Sn1899		0.43249	ppm	0.0044420	1.0272
Sr4077		0.83224	ppm	0.0046170	0.55481
Ti3349	**W**	**5.1982**	**ppm**	**0.015397**	**0.29620**
Tl1908		0.39678	ppm	0.0059710	1.5048

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99486-A-1-B MS

Acquire Date: 8/13/2020 10:59:25AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		1.0996	ppm	0.0073170	0.66541
Zn2062		0.93064	ppm	0.0047030	0.50531
Y_2243		7,038.6	Cts/S	14.382	0.20433
Y_3600		60,776	Cts/S	101.86	0.16761
Y_3774		3,526.0	Cts/S	9.8990	0.28074

720-99486-A-1-C MSD

Acquire Date: 8/13/2020 11:03:10AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047458	ppm	0.00090300	1.9024
Al3961		272.50	ppm	2.2676	0.83214
As1890		0.43990	ppm	0.00016500	0.037554
B_2089		3.9416	ppm	0.016802	0.42626
Ba4554		0.93075	ppm	0.0086750	0.93208
Be3130		0.22611	ppm	0.0010630	0.46998
Ca3179		447.11	ppm	3.9113	0.87480
Cd2144		0.22053	ppm	0.00089000	0.40341
Co2286		0.29911	ppm	0.0017990	0.60152
Cr2677		0.43494	ppm	0.00033400	0.076859
Cu3247		0.95801	ppm	0.00018000	0.018769
Fe2599		188.03	ppm	1.3854	0.73684
K_7664		31.049	ppm	0.31358	1.0100
Mg2790		91.924	ppm	0.13097	0.14248
Mn2576		2.9401	ppm	0.0033940	0.11542
Mo2020		0.23054	ppm	0.0011850	0.51385
Na5895		59.100	ppm	0.56227	0.95138
Ni2316		0.35178	ppm	0.00033700	0.095779
P_1782		7.5717	ppm	0.049716	0.65660
Pb2203		0.81306	ppm	0.0039080	0.48069
S_1820		21.797	ppm	0.058159	0.26682
Sb2068		0.081996	ppm	0.0043880	5.3509
Se1960		0.45295	ppm	0.0031090	0.68643
Si2881		2.4734	ppm	0.046378	1.8751
Sn1899		0.43200	ppm	0.0015330	0.35490
Sr4077		0.84787	ppm	0.0062070	0.73207
Ti3349		4.9277	ppm	0.012072	0.24498
Tl1908		0.39699	ppm	0.00060500	0.15244
V_2924		1.0399	ppm	0.0034480	0.33152
Zn2062		0.90658	ppm	0.0022260	0.24549
Y_2243		6,979.1	Cts/S	11.397	0.16331
Y_3600		59,879	Cts/S	121.85	0.20349
Y_3774		3,477.7	Cts/S	30.403	0.87422

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99486-A-2-A

Acquire Date: 8/13/2020 11:06:55AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0019150	ppm	0.00079400	41.455
Al3961		250.01	ppm	1.1773	0.47090
As1890		0.00095800	ppm	0.0016690	174.33
B_2089		0.047312	ppm	0.0027670	5.8480
Ba4554		0.48472	ppm	0.0017900	0.36938
Be3130		0.00093300	ppm	0.00036400	38.999
Ca3179		426.97	ppm	2.3842	0.55839
Cd2144		0.00060900	ppm	0.00017600	28.918
Co2286		0.077428	ppm	0.00017200	0.22253
Cr2677		0.25659	ppm	0.0010900	0.42464
Cu3247		0.80344	ppm	0.0029650	0.36904
Fe2599		177.63	ppm	0.64027	0.36045
K_7664		7.5742	ppm	0.13394	1.7684
Mg2790		65.952	ppm	0.41122	0.62352
Mn2576		2.5062	ppm	0.013147	0.52458
Mo2020		0.0057870	ppm	0.0011000	19.005
Na5895		33.494	ppm	0.17175	0.51277
Ni2316		0.13848	ppm	0.00063900	0.46137
P_1782		2.8879	ppm	0.00059400	0.020562
Pb2203		0.82636	ppm	0.0097510	1.1801
S_1820		21.105	ppm	0.028904	0.13695
Sb2068		-0.013928	ppm	0.000085000	0.61133
Se1960		0.0049760	ppm	0.0015750	31.663
Si2881		1.4349	ppm	0.10906	7.6003
Sn1899		0.018551	ppm	0.00032100	1.7309
Sr4077		0.55825	ppm	0.0027960	0.50090
Ti3349		3.9840	ppm	0.019891	0.49927
Tl1908		0.0019970	ppm	0.0030230	151.37
V_2924		0.78519	ppm	0.0045490	0.57933
Zn2062		0.54038	ppm	0.0036390	0.67345
Y_2243		7,067.8	Cts/S	16.979	0.24023
Y_3600		60,897	Cts/S	105.37	0.17303
Y_3774		3,485.3	Cts/S	21.632	0.62066

720-99486-A-3-A

Acquire Date: 8/13/2020 11:10:45AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0026260	ppm	0.00032700	12.453
Al3961		241.83	ppm	1.8753	0.77547
As1890		0.0027610	ppm	0.00025100	9.1071
B_2089		0.036974	ppm	0.00021400	0.57771
Ba4554		0.46797	ppm	0.0038720	0.82735
Be3130		0.00064100	ppm	0.000059000	9.2144
Ca3179		428.67	ppm	3.3266	0.77603
Cd2144		0.00053600	ppm	0.000052000	9.7214
Co2286		0.084357	ppm	0.00015200	0.18053

720-99486-A-3-A

Acquire Date: 8/13/2020 11:10:45AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.22963	ppm	0.0010010	0.43577
Cu3247		0.76838	ppm	0.0033150	0.43149
Fe2599		174.63	ppm	1.1688	0.66929
K_7664		7.2822	ppm	0.14499	1.9911
Mg2790		65.156	ppm	0.13828	0.21223
Mn2576		2.4887	ppm	0.0076950	0.30920
Mo2020		0.0043430	ppm	0.00092000	21.189
Na5895		31.858	ppm	0.35018	1.0992
Ni2316		0.13137	ppm	0.0017870	1.3604
P_1782		2.9769	ppm	0.0036200	0.12161
Pb2203		0.73766	ppm	0.000071000	0.0096450
S_1820		18.274	ppm	0.014954	0.081832
Sb2068		-0.017650	ppm	0.0018780	10.641
Se1960		-0.00028900	ppm	0.0024070	831.78
Si2881		1.4288	ppm	0.068028	4.7613
Sn1899		0.017140	ppm	0.0010810	6.3079
Sr4077		0.56965	ppm	0.0039880	0.70002
Ti3349		3.9661	ppm	0.0099000	0.24960
Tl1908		0.00012800	ppm	0.0030210	2,354.5
V_2924		0.76724	ppm	0.0024710	0.32203
Zn2062		0.45117	ppm	0.00080300	0.17788
Y_2243		7,153.8	Cts/S	2.8053	0.039214
Y_3600		61,495	Cts/S	49.019	0.079713
Y_3774		3,550.9	Cts/S	16.695	0.47017

720-99486-A-4-A

Acquire Date: 8/13/2020 11:14:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0015710	ppm	0.00021200	13.470
Al3961		240.74	ppm	1.4630	0.60769
As1890		0.0041650	ppm	0.0058340	140.07
B_2089		0.028768	ppm	0.0025020	8.6957
Ba4554		0.44212	ppm	0.0026110	0.59047
Be3130		0.00035000	ppm	0.000019000	5.5735
Ca3179		437.62	ppm	3.3166	0.75789
Cd2144		0.00046200	ppm	0.000021000	4.5116
Co2286		0.077834	ppm	0.00039300	0.50458
Cr2677		0.26041	ppm	0.00085700	0.32897
Cu3247		0.51757	ppm	0.0049950	0.96514
Fe2599		167.10	ppm	1.3931	0.83370
K_7664		7.4571	ppm	0.032364	0.43400
Mg2790		63.024	ppm	0.19434	0.30836
Mn2576		2.3913	ppm	0.012560	0.52521
Mo2020		0.0051530	ppm	0.00037400	7.2508
Na5895		31.232	ppm	0.25325	0.81088
Ni2316		0.12821	ppm	0.0015320	1.1946

720-99486-A-4-A

Acquire Date: 8/13/2020 11:14:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		2.7159	ppm	0.014420	0.53095
Pb2203		0.88815	ppm	0.0011980	0.13490
S_1820		18.090	ppm	0.018498	0.10225
Sb2068		-0.012763	ppm	0.00057300	4.4901
Se1960		0.0023530	ppm	0.000088000	3.7493
Si2881		1.4844	ppm	0.0020960	0.14120
Sn1899		0.017672	ppm	0.00059400	3.3601
Sr4077		0.58590	ppm	0.0044250	0.75525
Ti3349		3.7144	ppm	0.014550	0.39173
Tl1908		0.0049950	ppm	0.0018540	37.122
V_2924		0.74194	ppm	0.0034830	0.46948
Zn2062		0.42584	ppm	0.0044260	1.0393
Y_2243		7,112.4	Cts/S	8.6191	0.12119
Y_3600		60,705	Cts/S	196.57	0.32382
Y_3774		3,523.5	Cts/S	15.496	0.43979

720-99480-B-1-A

Acquire Date: 8/13/2020 11:18:28AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0020120	ppm	0.00077200	38.391
Al3961		0.57122	ppm	0.030174	5.2824
As1890		0.0025930	ppm	0.0038330	147.82
B_2089		0.081168	ppm	0.0012990	1.6005
Ba4554		0.10231	ppm	0.00016000	0.15654
Be3130		-0.00017100	ppm	0.00058900	344.41
Ca3179		3.9510	ppm	0.062433	1.5802
Cd2144		0.000036000	ppm	0.000030000	82.746
Co2286		0.016855	ppm	0.00016400	0.97046
Cr2677		0.0054420	ppm	0.00010000	1.8354
Cu3247		0.014698	ppm	0.00061000	4.1477
Fe2599		40.096	ppm	0.30795	0.76803
K_7664		0.21132	ppm	0.059187	28.008
Mg2790		1.2672	ppm	0.037402	2.9515
Mn2576		0.80749	ppm	0.0021200	0.26258
Mo2020		0.0094350	ppm	0.00032900	3.4874
Na5895		7.0711	ppm	0.044306	0.62658
Ni2316		0.013253	ppm	0.00021500	1.6195
P_1782		0.33922	ppm	0.0072530	2.1382
Pb2203		0.0013210	ppm	0.0033470	253.41
S_1820		4.9942	ppm	0.00092700	0.018563
Sb2068		0.0079050	ppm	0.00022800	2.8781
Se1960		0.0028580	ppm	0.00016600	5.8022
Si2881		1.8003	ppm	0.016209	0.90033
Sn1899		0.10338	ppm	0.00014600	0.14141
Sr4077		0.022616	ppm	0.00040500	1.7898
Ti3349		0.030445	ppm	0.0036120	11.865

720-99480-B-1-A

Acquire Date: 8/13/2020 11:18:28AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00014800	ppm	0.00089200	601.55
V_2924		0.0066920	ppm	0.00035600	5.3128
Zn2062		0.048169	ppm	0.000045000	0.094297
Y_2243		7,466.7	Cts/S	9.2268	0.12357
Y_3600		65,947	Cts/S	103.62	0.15713
Y_3774		3,421.5	Cts/S	10.988	0.32114

sd 720-99480-B-1-A@5

Acquire Date: 8/13/2020 11:22:27AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00084100	ppm	0.00029500	35.096
Al3961		0.10729	ppm	0.012769	11.902
As1890		0.0016420	ppm	0.0010270	62.568
B_2089		0.022220	ppm	0.00045800	2.0596
Ba4554		0.019785	ppm	0.00029200	1.4771
Be3130		0.000054000	ppm	0.000077000	141.34
Ca3179		0.78404	ppm	0.0035480	0.45253
Cd2144		0.000049000	ppm	0.000094000	192.59
Co2286		0.0034180	ppm	0.00018700	5.4752
Cr2677		0.00059200	ppm	0.00014300	24.081
Cu3247		0.0054590	ppm	0.00015800	2.8952
Fe2599		8.0258	ppm	0.036418	0.45376
K_7664		0.093006	ppm	0.011174	12.014
Mg2790		0.27148	ppm	0.022272	8.2039
Mn2576		0.16691	ppm	0.0014480	0.86727
Mo2020		0.0014310	ppm	0.00041000	28.641
Na5895		1.4085	ppm	0.020333	1.4436
Ni2316		0.0021070	ppm	0.00056600	26.877
P_1782		0.072218	ppm	0.0010960	1.5174
Pb2203		0.0017300	ppm	0.0048370	279.58
S_1820		1.0395	ppm	0.0023010	0.22137
Sb2068		0.0041260	ppm	0.0025190	61.066
Se1960		0.0015620	ppm	0.0029180	186.78
Si2881		0.42894	ppm	0.022247	5.1865
Sn1899		0.021137	ppm	0.000083000	0.39205
Sr4077		0.0044800	ppm	0.000033000	0.73197
Ti3349		0.0049760	ppm	0.00050300	10.111
Tl1908		0.00078500	ppm	0.00092300	117.52
V_2924		0.00069800	ppm	0.00088700	127.00
Zn2062		0.012262	ppm	0.00068800	5.6081
Y_2243		7,583.0	Cts/S	3.1373	0.041373
Y_3600		66,793	Cts/S	168.35	0.25204
Y_3774		3,471.7	Cts/S	6.2145	0.17900

pds 720-99480-B-1-A

Acquire Date: 8/13/2020 11:26:27AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.099215	ppm	0.00012000	0.12134
Al3961		10.312	ppm	0.13743	1.3327
As1890		0.089376	ppm	0.0036490	4.0825
B_2089		1.0137	ppm	0.0073330	0.72336
Ba4554		0.19866	ppm	0.0011570	0.58227
Be3130		0.048871	ppm	0.00086100	1.7611
Ca3179		13.643	ppm	0.14767	1.0824
Cd2144		0.098683	ppm	0.00059400	0.60210
Co2286		0.11979	ppm	0.00054300	0.45359
Cr2677		0.10671	ppm	0.00020600	0.19276
Cu3247		0.12020	ppm	0.000035000	0.029483
Fe2599		42.305	ppm	0.33392	0.78931
K_7664		9.9007	ppm	0.11373	1.1487
Mg2790		10.802	ppm	0.037092	0.34339
Mn2576		0.87960	ppm	0.0031290	0.35577
Mo2020		0.10897	ppm	0.00085500	0.78491
Na5895		16.848	ppm	0.086231	0.51182
Ni2316		0.11451	ppm	0.00058800	0.51334
P_1782		1.3042	ppm	0.0012960	0.099337
Pb2203		0.10557	ppm	0.0024110	2.2835
S_1820		6.7228	ppm	0.010830	0.16110
Sb2068		0.091170	ppm	0.00086000	0.94377
Se1960		0.092556	ppm	0.0031620	3.4167
Si2881		2.7140	ppm	0.076564	2.8211
Sn1899		0.19809	ppm	0.00073000	0.36828
Sr4077		0.12096	ppm	0.00053200	0.44005
Ti3349		0.11644	ppm	0.0016340	1.4034
Tl1908		0.099199	ppm	0.0019490	1.9644
V_2924		0.10760	ppm	0.00011100	0.10309
Zn2062		0.14077	ppm	0.00029700	0.21097
Y_2243		7,336.1	Cts/S	4.3893	0.059831
Y_3600		65,111	Cts/S	137.38	0.21099
Y_3774		3,423.3	Cts/S	3.4329	0.10028

CCV 2103404

Acquire Date: 8/13/2020 11:30:19AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52166	ppm	0.0025980	0.49805	.50000	Rel(%)	Pass	
Al3961		25.653	ppm	0.24099	0.93941	25.000	Rel(%)	Pass	
As1890		0.51090	ppm	0.0020360	0.39844	.50000	Rel(%)	Pass	
B_2089		1.0489	ppm	0.0014140	0.13486	1.0000	Rel(%)	Pass	
Ba4554		2.6121	ppm	0.018069	0.69175	2.5000	Rel(%)	Pass	
Be3130		0.51019	ppm	0.0057870	1.1343	.50000	Rel(%)	Pass	
Ca3179		25.703	ppm	0.19778	0.76949	25.000	Rel(%)	Pass	
Cd2144		0.52624	ppm	0.0015340	0.29144	.50000	Rel(%)	Pass	
Co2286		2.6276	ppm	0.0062200	0.23671	2.5000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/13/2020 11:30:19AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.6452	ppm	0.0063600	0.24045	2.5000	Rel(%)	Pass	
Cu3247		2.5713	ppm	0.0070240	0.27316	2.5000	Rel(%)	Pass	
Fe2599		26.385	ppm	0.23669	0.89706	25.000	Rel(%)	Pass	
K_7664		25.511	ppm	0.26910	1.0549	25.000	Rel(%)	Pass	
Mg2790		25.757	ppm	0.075789	0.29425	25.000	Rel(%)	Pass	
Mn2576		2.7091	ppm	0.0090140	0.33273	2.5000	Rel(%)	Pass	
Mo2020		1.0480	ppm	0.0052230	0.49834	1.0000	Rel(%)	Pass	
Na5895		25.895	ppm	0.21524	0.83119	25.000	Rel(%)	Pass	
Ni2316		2.6706	ppm	0.0077470	0.29007	2.5000	Rel(%)	Pass	
P_1782		2.6653	ppm	0.0080220	0.30098	2.5000	Rel(%)	Pass	
Pb2203		0.53487	ppm	0.0049770	0.93056	.50000	Rel(%)	Pass	
S_1820		2.5424	ppm	0.0044850	0.17639	2.5000	Rel(%)	Pass	
Sb2068		0.52585	ppm	0.0025250	0.48024	.50000	Rel(%)	Pass	
Se1960		0.52339	ppm	0.00074700	0.14275	.50000	Rel(%)	Pass	
Si2881		2.5533	ppm	0.0024850	0.097342	2.5000	Rel(%)	Pass	
Sn1899		2.6087	ppm	0.0072590	0.27826	2.5000	Rel(%)	Pass	
Sr4077		2.5704	ppm	0.017549	0.68272	2.5000	Rel(%)	Pass	
Ti3349		1.0391	ppm	0.0031840	0.30644	1.0000	Rel(%)	Pass	
Tl1908		0.52335	ppm	0.0055260	1.0560	.50000	Rel(%)	Pass	
V_2924		2.6137	ppm	0.0074790	0.28615	2.5000	Rel(%)	Pass	
Zn2062		2.6016	ppm	0.0096030	0.36913	2.5000	Rel(%)	Pass	
Y_2243		7,276.6	Cts/S	9.6487	0.13260				
Y_3600		63,608	Cts/S	45.315	0.071241				
Y_3774		3,368.8	Cts/S	5.5129	0.16364				

CCB 2110462

Acquire Date: 8/13/2020 11:34:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0011510	ppm	0.000055000	4.7369	.00000	Abs	Pass	
Al3961		-0.025287	ppm	0.00025700	1.0161	.00000	Abs	Pass	
As1890		0.0024220	ppm	0.00039700	16.396	.00000	Abs	Pass	
B_2089		0.0086980	ppm	0.00080000	9.1983	.00000	Abs	Pass	
Ba4554		-0.00010200	ppm	0.00038500	375.90	.00000	Abs	Pass	
Be3130		0.00039500	ppm	0.00016700	42.247	.00000	Abs	Pass	
Ca3179		0.000065000	ppm	0.0042760	6,617.0	.00000	Abs	Pass	
Cd2144		0.000065000	ppm	0.000020000	31.058	.00000	Abs	Pass	
Co2286		0.00023800	ppm	0.000078000	32.700	.00000	Abs	Pass	
Cr2677		0.00017900	ppm	0.0012890	719.20	.00000	Abs	Pass	
Cu3247		0.0039920	ppm	0.00012900	3.2432	.00000	Abs	Pass	
Fe2599	**W**	**0.063555**	**ppm**	**0.0026970**	**4.2434**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.064330	ppm	0.040071	62.289	.00000	Abs	Pass	
Mg2790		-0.00061200	ppm	0.0099190	1,621.6	.00000	Abs	Pass	
Mn2576		0.00029700	ppm	0.000041000	13.868	.00000	Abs	Pass	
Mo2020		0.0079940	ppm	0.00065500	8.1879	.00000	Abs	Pass	
Na5895		-0.0017100	ppm	0.0029050	169.88	.00000	Abs	Pass	
Ni2316		-0.00038300	ppm	0.0016390	428.15	.00000	Abs	Pass	
P_1782		0.00051300	ppm	0.0045570	888.17	.00000	Abs	Pass	

CCB 2110462

Acquire Date: 8/13/2020 11:34:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		-0.0021820	ppm	0.00089400	40.942	.00000	Abs	Pass	
S_1820		0.0037690	ppm	0.0052810	140.12	.00000	Abs	Pass	
Sb2068		0.0019080	ppm	0.0023420	122.71	.00000	Abs	Pass	
Se1960		0.00073900	ppm	0.0021610	292.48	.00000	Abs	Pass	
Si2881	**W**	**0.11433**	**ppm**	**0.037870**	**33.122**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0017280	ppm	0.00027800	16.072	.00000	Abs	Pass	
Sr4077		0.00047800	ppm	0.000079000	16.486	.00000	Abs	Pass	
Ti3349		0.0034410	ppm	0.00051700	15.014	.00000	Abs	Pass	
Tl1908		0.0075340	ppm	0.00092300	12.249	.00000	Abs	Pass	
V_2924		-0.00022200	ppm	0.00050600	227.81	.00000	Abs	Pass	
Zn2062		0.0023720	ppm	0.00023800	10.051	.00000	Abs	Pass	
Y_2243		7,425.8	Cts/S	15.436	0.20787				
Y_3600		65,183	Cts/S	205.86	0.31582				
Y_3774		3,378.4	Cts/S	11.655	0.34500				

720-99480-B-2-A

Acquire Date: 8/13/2020 11:38:08AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010000	ppm	0.00050200	50.206
Al3961		0.15202	ppm	0.010075	6.6274
As1890		-0.00059800	ppm	0.0027720	463.80
B_2089		0.041201	ppm	0.00096800	2.3489
Ba4554		0.0074300	ppm	0.00043200	5.8168
Be3130		0.000050000	ppm	0.00047900	948.04
Ca3179		1.6485	ppm	0.025210	1.5293
Cd2144		0.000018000	ppm	0.00010500	568.55
Co2286		0.0010170	ppm	0.000018000	1.7295
Cr2677		0.00034600	ppm	0.000044000	12.798
Cu3247		0.0037170	ppm	0.00036400	9.7865
Fe2599		1.6019	ppm	0.00027200	0.016969
K_7664		0.029387	ppm	0.0080770	27.484
Mg2790		0.20765	ppm	0.012170	5.8610
Mn2576		0.015631	ppm	0.000074000	0.47268
Mo2020		0.0015980	ppm	0.00021300	13.348
Na5895		2.5281	ppm	0.027070	1.0707
Ni2316		0.00075300	ppm	0.00078200	103.95
P_1782		0.077316	ppm	0.000067000	0.086478
Pb2203		0.0013800	ppm	0.0019060	138.16
S_1820		0.31427	ppm	0.0033950	1.0801
Sb2068		0.0052690	ppm	0.0017580	33.366
Se1960		0.0042390	ppm	0.0032100	75.735
Si2881		1.0119	ppm	0.039886	3.9417
Sn1899		0.074832	ppm	0.00075800	1.0130
Sr4077		0.0076400	ppm	0.000053000	0.69727
Ti3349		0.0058800	ppm	0.00032600	5.5517
Tl1908		0.0012590	ppm	0.00090000	71.506

720-99480-B-2-A

Acquire Date: 8/13/2020 11:38:08AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.00071900	ppm	0.000094000	13.135
Zn2062		0.010102	ppm	0.000058000	0.57589
Y_2243		7,380.3	Cts/S	27.970	0.37898
Y_3600		65,147	Cts/S	108.53	0.16659
Y_3774		3,364.7	Cts/S	40.379	1.2001

720-99480-F-3-A

Acquire Date: 8/13/2020 11:42:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00088200	ppm	0.00023900	27.134
Al3961		0.22746	ppm	0.011264	4.9523
As1890		0.00077500	ppm	0.00049300	63.587
B_2089		0.059247	ppm	0.00049200	0.82995
Ba4554		0.0058480	ppm	0.0012640	21.611
Be3130		0.00035400	ppm	0.00014900	42.010
Ca3179		1.6819	ppm	0.015721	0.93468
Cd2144		0.000055000	ppm	0.00014000	256.04
Co2286		0.0036930	ppm	0.00046000	12.444
Cr2677		0.00090500	ppm	0.00035400	39.132
Cu3247		0.0041680	ppm	0.0010670	25.597
Fe2599		1.4935	ppm	0.022004	1.4733
K_7664		0.080508	ppm	0.033011	41.003
Mg2790		0.18413	ppm	0.00082100	0.44583
Mn2576		0.028377	ppm	0.00025600	0.90272
Mo2020		0.00055900	ppm	0.00016200	28.979
Na5895		2.1185	ppm	0.012076	0.57004
Ni2316		0.00054200	ppm	0.00089600	165.32
P_1782		0.072615	ppm	0.0011200	1.5429
Pb2203		0.0011420	ppm	0.00046900	41.095
S_1820		0.17315	ppm	0.0050190	2.8989
Sb2068		0.0065340	ppm	0.00029400	4.4923
Se1960		0.0021070	ppm	0.0013280	63.053
Si2881		0.91878	ppm	0.028925	3.1482
Sn1899		0.077228	ppm	0.00062800	0.81364
Sr4077		0.0076480	ppm	0.00025600	3.3431
Ti3349		0.0062980	ppm	0.00068500	10.878
Tl1908		-0.0014260	ppm	0.0013630	95.559
V_2924		0.00022800	ppm	0.000013000	5.6730
Zn2062		0.0067480	ppm	0.0000050000	0.076208
Y_2243		7,466.7	Cts/S	3.4872	0.046703
Y_3600		66,254	Cts/S	312.26	0.47130
Y_3774		3,410.3	Cts/S	21.708	0.63655

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99480-E-4-A

Acquire Date: 8/13/2020 11:46:10AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0014430	ppm	0.00044200	30.618
Al3961		0.039636	ppm	0.047748	120.47
As1890		0.00017900	ppm	0.0035720	1,997.1
B_2089		0.017214	ppm	0.00031100	1.8080
Ba4554		0.0045930	ppm	0.000043000	0.94608
Be3130		0.00034700	ppm	0.000045000	12.884
Ca3179		1.1832	ppm	0.018334	1.5495
Cd2144		0.00014300	ppm	0.00021200	148.22
Co2286		0.00071000	ppm	0.00080100	112.82
Cr2677		-0.00023000	ppm	0.00084600	367.78
Cu3247		0.0033130	ppm	0.00018100	5.4574
Fe2599		2.6805	ppm	0.011927	0.44497
K_7664		0.034415	ppm	0.036673	106.56
Mg2790		0.19636	ppm	0.00068500	0.34904
Mn2576		0.035990	ppm	0.00017500	0.48493
Mo2020		0.0011330	ppm	0.00010500	9.2596
Na5895		2.5193	ppm	0.023903	0.94880
Ni2316		0.00050300	ppm	0.0021360	425.09
P_1782		0.080350	ppm	0.00026400	0.32806
Pb2203		0.0013240	ppm	0.0029240	220.88
S_1820		0.094341	ppm	0.0044190	4.6840
Sb2068		0.0029940	ppm	0.0049660	165.88
Se1960		0.00084200	ppm	0.0018320	217.57
Si2881		0.72417	ppm	0.032284	4.4581
Sn1899		0.039024	ppm	0.00059400	1.5210
Sr4077		0.0039120	ppm	0.00016900	4.3143
Ti3349		0.0016960	ppm	0.00017300	10.173
Tl1908		-0.0022030	ppm	0.00021900	9.9491
V_2924		0.00084800	ppm	0.00039500	46.628
Zn2062		0.0075640	ppm	0.00036400	4.8088
Y_2243		7,502.2	Cts/S	75.691	1.0089
Y_3600		66,097	Cts/S	314.98	0.47655
Y_3774		3,368.9	Cts/S	10.295	0.30559

720-99480-C-5-A

Acquire Date: 8/13/2020 11:50:10AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00067400	ppm	0.0017370	257.68
Al3961		0.034224	ppm	0.045076	131.71
As1890		0.0016490	ppm	0.00041600	25.208
B_2089		0.013440	ppm	0.00020300	1.5129
Ba4554		0.0053090	ppm	0.00023800	4.4831
Be3130		0.00024600	ppm	0.00049000	199.73
Ca3179		1.1605	ppm	0.012574	1.0835
Cd2144		0.000087000	ppm	0.000055000	63.072
Co2286		0.00047700	ppm	0.000031000	6.4482

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99480-C-5-A

Acquire Date: 8/13/2020 11:50:10AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0010280	ppm	0.00046000	44.727
Cu3247		0.0065990	ppm	0.0017280	26.180
Fe2599		4.4445	ppm	0.031726	0.71382
K_7664		0.072090	ppm	0.019495	27.043
Mg2790		0.19737	ppm	0.0086730	4.3941
Mn2576		0.11234	ppm	0.00024000	0.21396
Mo2020		0.00016500	ppm	0.000086000	52.110
Na5895		2.4873	ppm	0.026203	1.0535
Ni2316		0.0012170	ppm	0.00023400	19.238
P_1782		0.076868	ppm	0.0049940	6.4973
Pb2203		0.00059800	ppm	0.0036740	614.55
S_1820		0.10055	ppm	0.0012850	1.2779
Sb2068		0.0019980	ppm	0.0031300	156.62
Se1960		0.0040740	ppm	0.0014870	36.488
Si2881		0.62421	ppm	0.0089750	1.4378
Sn1899		0.030038	ppm	0.00037800	1.2568
Sr4077		0.0039790	ppm	0.0000010000	0.015991
Ti3349		0.00072100	ppm	0.000020000	2.7044
Tl1908		0.000083000	ppm	0.0012520	1,507.1
V_2924		0.00061900	ppm	0.00025400	40.971
Zn2062		0.0066850	ppm	0.00012700	1.9059
Y_2243		7,593.5	Cts/S	6.7691	0.089143
Y_3600		67,125	Cts/S	160.43	0.23901
Y_3774		3,447.5	Cts/S	20.907	0.60646

720-99480-F-6-A

Acquire Date: 8/13/2020 11:54:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00027800	ppm	0.0010210	367.08
Al3961		0.031659	ppm	0.016170	51.075
As1890		-0.00095700	ppm	0.0014970	156.43
B_2089		0.012967	ppm	0.00011400	0.88008
Ba4554		0.0054440	ppm	0.00014800	2.7221
Be3130		0.00045900	ppm	0.0000070000	1.4650
Ca3179		1.2183	ppm	0.00053800	0.044189
Cd2144		0.000056000	ppm	0.00011200	201.47
Co2286		0.00025500	ppm	0.00047100	184.81
Cr2677		0.00094300	ppm	0.0012310	130.52
Cu3247		0.0032040	ppm	0.000059000	1.8331
Fe2599		4.4382	ppm	0.029204	0.65801
K_7664		0.067955	ppm	0.062468	91.925
Mg2790		0.19780	ppm	0.0065470	3.3100
Mn2576		0.063715	ppm	0.00064800	1.0166
Mo2020		0.00037300	ppm	0.00061300	164.19
Na5895		2.5981	ppm	0.035176	1.3539
Ni2316		0.00015000	ppm	0.00095900	639.18

720-99480-F-6-A

Acquire Date: 8/13/2020 11:54:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.095034	ppm	0.0027120	2.8535
Pb2203		-0.0022960	ppm	0.0029710	129.40
S_1820		0.15603	ppm	0.00070200	0.45011
Sb2068		0.0049510	ppm	0.0014840	29.973
Se1960		0.00063800	ppm	0.00030200	47.404
Si2881		0.65893	ppm	0.020237	3.0712
Sn1899		0.032454	ppm	0.00088600	2.7289
Sr4077		0.0041250	ppm	0.00012600	3.0621
Ti3349		0.00092900	ppm	0.00034900	37.570
Tl1908		-0.00095700	ppm	0.0020230	211.35
V_2924		0.00032700	ppm	0.00028300	86.492
Zn2062		0.0083360	ppm	0.00014000	1.6847
Y_2243		7,544.9	Cts/S	16.578	0.21972
Y_3600		66,998	Cts/S	5.2761	0.0078750
Y_3774		3,429.6	Cts/S	5.7395	0.16736

720-99480-C-7-A

Acquire Date: 8/13/2020 11:58:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00074700	ppm	0.0012920	173.05
Al3961		0.032029	ppm	0.058787	183.54
As1890		-0.0024130	ppm	0.00044900	18.604
B_2089		0.012416	ppm	0.00018400	1.4844
Ba4554		0.0038000	ppm	0.000034000	0.88898
Be3130		0.000097000	ppm	0.000029000	29.862
Ca3179		1.0780	ppm	0.020174	1.8715
Cd2144		0.000034000	ppm	0.000039000	113.27
Co2286		0.00042000	ppm	0.00025400	60.480
Cr2677		0.00073800	ppm	0.00028100	38.062
Cu3247		0.0025530	ppm	0.0013560	53.096
Fe2599		2.8452	ppm	0.028361	0.99681
K_7664		0.090409	ppm	0.029792	32.953
Mg2790		0.17551	ppm	0.0010440	0.59471
Mn2576		0.037053	ppm	0.00017500	0.47268
Mo2020		.0000090000	ppm	0.0000020000	18.701
Na5895		2.3228	ppm	0.032125	1.3830
Ni2316		0.00066400	ppm	0.00052900	79.562
P_1782		0.070187	ppm	0.0042820	6.1010
Pb2203		0.0021310	ppm	0.0019450	91.267
S_1820		0.099787	ppm	0.0013210	1.3237
Sb2068		0.0049770	ppm	0.0023250	46.720
Se1960		0.0021130	ppm	0.0027110	128.32
Si2881		0.67849	ppm	0.029930	4.4112
Sn1899		0.068321	ppm	0.00080900	1.1848
Sr4077		0.0035020	ppm	0.00021300	6.0902
Ti3349		0.00023400	ppm	0.00032400	138.80

720-99480-C-7-A

Acquire Date: 8/13/2020 11:58:09AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0040880	ppm	0.0018480	45.199
V_2924		0.00028500	ppm	0.00049100	172.01
Zn2062		0.0069720	ppm	0.00026700	3.8352
Y_2243		7,554.2	Cts/S	8.6102	0.11398
Y_3600		66,713	Cts/S	147.64	0.22130
Y_3774		3,423.7	Cts/S	4.1602	0.12151

720-99480-E-8-A

Acquire Date: 8/13/2020 12:02:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000026000	ppm	0.0010070	3,950.1
Al3961		0.16233	ppm	0.042905	26.432
As1890		0.00030600	ppm	0.0014520	474.81
B_2089		0.017750	ppm	0.000021000	0.12061
Ba4554		0.014792	ppm	0.000081000	0.54523
Be3130		0.00011900	ppm	0.00014200	118.93
Ca3179		1.3228	ppm	0.0066750	0.50462
Cd2144		0.000035000	ppm	0.000023000	65.585
Co2286		0.00034500	ppm	0.000074000	21.428
Cr2677		0.00095300	ppm	0.00056600	59.431
Cu3247		0.0048050	ppm	0.00044500	9.2603
Fe2599		5.9489	ppm	0.077264	1.2988
K_7664		0.13624	ppm	0.046067	33.815
Mg2790		0.23904	ppm	0.0012000	0.50196
Mn2576		0.055353	ppm	0.00046000	0.83188
Mo2020		0.0040140	ppm	0.000088000	2.1908
Na5895		2.5463	ppm	0.035280	1.3855
Ni2316		0.00036400	ppm	0.00052800	145.24
P_1782		0.10995	ppm	0.00039800	0.36180
Pb2203		-0.00026000	ppm	0.0010390	400.14
S_1820		0.34188	ppm	0.0023360	0.68322
Sb2068		0.0052930	ppm	0.00028300	5.3452
Se1960		0.0012820	ppm	0.0013500	105.29
Si2881		0.71529	ppm	0.047390	6.6253
Sn1899		0.020517	ppm	0.00082300	4.0126
Sr4077		0.0049200	ppm	0.000065000	1.3247
Ti3349		0.0073340	ppm	0.00017100	2.3289
Tl1908		0.0030820	ppm	0.0053470	173.49
V_2924		0.0010800	ppm	0.00033000	30.505
Zn2062		0.011636	ppm	0.00035000	3.0089
Y_2243		7,533.5	Cts/S	11.099	0.14732
Y_3600		66,738	Cts/S	242.45	0.36329
Y_3774		3,427.5	Cts/S	7.1480	0.20855

720-99480-C-9-A

Acquire Date: 8/13/2020 12:06:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00090400	ppm	0.00085800	94.928
Al3961		0.48856	ppm	0.020893	4.2765
As1890		-0.0019400	ppm	0.00038200	19.690
B_2089		0.059316	ppm	0.00097600	1.6460
Ba4554		0.018824	ppm	0.00017800	0.94559
Be3130		0.000084000	ppm	0.00019200	227.70
Ca3179		2.3778	ppm	0.033942	1.4275
Cd2144		0.000058000	ppm	0.00013000	223.51
Co2286		0.0013300	ppm	0.00020900	15.675
Cr2677		0.0015280	ppm	0.00013300	8.7373
Cu3247		0.0042070	ppm	0.000090000	2.1365
Fe2599		6.2362	ppm	0.0067370	0.10803
K_7664		0.13581	ppm	0.049944	36.776
Mg2790		0.28175	ppm	0.00028200	0.10026
Mn2576		0.080379	ppm	0.00062400	0.77622
Mo2020		0.0021610	ppm	0.000020000	0.91331
Na5895		2.3985	ppm	0.0015510	0.064650
Ni2316		0.0011490	ppm	0.00095300	82.929
P_1782		0.094813	ppm	0.00074200	0.78297
Pb2203		0.0023490	ppm	0.0029620	126.07
S_1820		0.33405	ppm	0.00076800	0.23003
Sb2068		0.0080280	ppm	0.0032860	40.932
Se1960		0.0016690	ppm	0.00053200	31.888
Si2881		1.0548	ppm	0.017966	1.7033
Sn1899		0.067795	ppm	0.00055100	0.81226
Sr4077		0.0096130	ppm	0.000029000	0.30414
Ti3349		0.015882	ppm	0.00014600	0.91957
Tl1908		0.000098000	ppm	0.0027500	2,818.4
V_2924		0.0011820	ppm	0.00011500	9.7556
Zn2062		0.012486	ppm	0.00030000	2.4029
Y_2243		7,510.8	Cts/S	10.321	0.13741
Y_3600		66,341	Cts/S	21.347	0.032178
Y_3774		3,422.8	Cts/S	0.29102	0.0085020

720-99480-C-10-A

Acquire Date: 8/13/2020 12:10:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00079300	ppm	0.00061800	77.914
Al3961		0.022407	ppm	0.012826	57.244
As1890		0.00080400	ppm	0.00066100	82.239
B_2089		0.018111	ppm	0.00069800	3.8521
Ba4554		0.0045200	ppm	0.00010500	2.3309
Be3130		0.00049500	ppm	0.000042000	8.4518
Ca3179		1.3078	ppm	0.028930	2.2122
Cd2144		0.000017000	ppm	0.00012600	756.08
Co2286		0.00021100	ppm	0.00029600	140.58

720-99480-C-10-A

Acquire Date: 8/13/2020 12:10:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00058900	ppm	0.00084000	142.79
Cu3247		0.0066150	ppm	0.00015100	2.2850
Fe2599		1.5534	ppm	0.0014350	0.092372
K_7664		0.099790	ppm	0.046192	46.289
Mg2790		0.18750	ppm	0.0041320	2.2036
Mn2576		0.056931	ppm	0.00039400	0.69280
Mo2020		0.00054000	ppm	0.00048000	88.875
Na5895		2.7367	ppm	0.014886	0.54393
Ni2316		-0.00046800	ppm	0.0012250	261.77
P_1782		0.071418	ppm	0.0036990	5.1793
Pb2203		-0.0025850	ppm	0.0020520	79.375
S_1820		0.15580	ppm	0.0064840	4.1616
Sb2068		0.0018700	ppm	0.0018610	99.509
Se1960		-0.0019270	ppm	0.00058100	30.142
Si2881		0.78066	ppm	0.011504	1.4736
Sn1899		0.022584	ppm	0.00015700	0.69651
Sr4077		0.0045060	ppm	0.000080000	1.7660
Ti3349		0.00092500	ppm	0.00010500	11.384
Tl1908		-0.0024300	ppm	0.00051300	21.098
V_2924		0.000031000	ppm	0.00074700	2,418.0
Zn2062		0.0074650	ppm	0.000048000	0.64149
Y_2243		7,490.2	Cts/S	27.440	0.36635
Y_3600		66,466	Cts/S	66.567	0.10015
Y_3774		3,385.2	Cts/S	17.350	0.51253

720-99480-B-11-A

Acquire Date: 8/13/2020 12:14:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0019980	ppm	0.00046400	23.231
Al3961		0.16508	ppm	0.057517	34.843
As1890		-0.00096600	ppm	0.0025610	265.02
B_2089		0.018612	ppm	0.00061900	3.3236
Ba4554		0.0077290	ppm	0.00021400	2.7636
Be3130		0.00020100	ppm	0.0000010000	0.39967
Ca3179		1.2881	ppm	0.010716	0.83189
Cd2144		0.000023000	ppm	0.00010000	438.60
Co2286		0.00051300	ppm	0.000053000	10.395
Cr2677		0.0030870	ppm	0.00097500	31.592
Cu3247		0.0053660	ppm	0.00020200	3.7561
Fe2599		16.989	ppm	0.10082	0.59340
K_7664		0.068617	ppm	0.026108	38.049
Mg2790		0.24143	ppm	0.0063110	2.6142
Mn2576		0.18647	ppm	0.00011700	0.062783
Mo2020		0.013901	ppm	0.00019400	1.3951
Na5895		2.3936	ppm	0.014514	0.60635
Ni2316		0.00031900	ppm	0.00049400	154.77

720-99480-B-11-A

Acquire Date: 8/13/2020 12:14:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.12332	ppm	0.0018530	1.5026
Pb2203		0.0011110	ppm	0.00042500	38.258
S_1820		0.29586	ppm	0.0011090	0.37469
Sb2068		0.0043450	ppm	0.0061030	140.45
Se1960		0.0021850	ppm	0.0045740	209.35
Si2881		0.66068	ppm	0.011770	1.7815
Sn1899		0.021309	ppm	0.00040900	1.9171
Sr4077		0.0047080	ppm	0.00021900	4.6418
Ti3349		0.0047350	ppm	0.000015000	0.31716
Tl1908		-0.00012700	ppm	0.0012630	994.57
V_2924		0.0013800	ppm	0.00011800	8.5278
Zn2062		0.015966	ppm	0.000016000	0.10020
Y_2243		7,455.1	Cts/S	19.311	0.25903
Y_3600		66,523	Cts/S	202.92	0.30504
Y_3774		3,402.5	Cts/S	3.2306	0.094946

CCV 2103404

Acquire Date: 8/13/2020 12:18:09PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51937	ppm	0.00031100	0.059846	.50000	Rel(%)	Pass	
Al3961		25.632	ppm	0.12169	0.47476	25.000	Rel(%)	Pass	
As1890		0.51310	ppm	0.00060800	0.11857	.50000	Rel(%)	Pass	
B_2089		1.0399	ppm	0.0032650	0.31398	1.0000	Rel(%)	Pass	
Ba4554		2.6015	ppm	0.018098	0.69568	2.5000	Rel(%)	Pass	
Be3130		0.51065	ppm	0.0014610	0.28610	.50000	Rel(%)	Pass	
Ca3179		25.742	ppm	0.16774	0.65164	25.000	Rel(%)	Pass	
Cd2144		0.52649	ppm	0.0021240	0.40335	.50000	Rel(%)	Pass	
Co2286		2.6248	ppm	0.010249	0.39048	2.5000	Rel(%)	Pass	
Cr2677		2.6425	ppm	0.0073240	0.27716	2.5000	Rel(%)	Pass	
Cu3247		2.5492	ppm	0.0090200	0.35383	2.5000	Rel(%)	Pass	
Fe2599		26.314	ppm	0.076853	0.29206	25.000	Rel(%)	Pass	
K_7664		25.477	ppm	0.26194	1.0281	25.000	Rel(%)	Pass	
Mg2790		25.811	ppm	0.10079	0.39048	25.000	Rel(%)	Pass	
Mn2576		2.6971	ppm	0.0098420	0.36492	2.5000	Rel(%)	Pass	
Mo2020		1.0467	ppm	0.0086780	0.82912	1.0000	Rel(%)	Pass	
Na5895		25.834	ppm	0.18412	0.71269	25.000	Rel(%)	Pass	
Ni2316		2.6639	ppm	0.0097300	0.36527	2.5000	Rel(%)	Pass	
P_1782		2.6492	ppm	0.017974	0.67846	2.5000	Rel(%)	Pass	
Pb2203		0.53174	ppm	0.0031950	0.60078	.50000	Rel(%)	Pass	
S_1820		2.5317	ppm	0.0013950	0.055088	2.5000	Rel(%)	Pass	
Sb2068		0.52649	ppm	0.0041190	0.78234	.50000	Rel(%)	Pass	
Se1960		0.52387	ppm	0.000017000	0.0033350	.50000	Rel(%)	Pass	
Si2881		2.5899	ppm	0.00038900	0.015007	2.5000	Rel(%)	Pass	
Sn1899		2.6106	ppm	0.0064600	0.24747	2.5000	Rel(%)	Pass	
Sr4077		2.5663	ppm	0.016428	0.64014	2.5000	Rel(%)	Pass	
Ti3349		1.0359	ppm	0.0057420	0.55435	1.0000	Rel(%)	Pass	
Tl1908		0.52795	ppm	0.00059300	0.11226	.50000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/13/2020 12:18:09PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.6126	ppm	0.0089530	0.34269	2.5000	Rel(%)	Pass	
Zn2062		2.6034	ppm	0.0077670	0.29833	2.5000	Rel(%)	Pass	
Y_2243		7,246.2	Cts/S	1.4486	0.019991				
Y_3600		63,371	Cts/S	75.727	0.11950				
Y_3774		3,342.8	Cts/S	10.293	0.30792				

CCB 2110462

Acquire Date: 8/13/2020 12:21:55PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00084300	ppm	0.00028200	33.458	.00000	Abs	Pass	
Al3961		-0.035500	ppm	0.0023030	6.4863	.00000	Abs	Pass	
As1890		0.00049300	ppm	0.00082800	167.90	.00000	Abs	Pass	
B_2089		0.0045480	ppm	0.00080100	17.614	.00000	Abs	Pass	
Ba4554		-0.00078100	ppm	0.00014200	18.122	.00000	Abs	Pass	
Be3130		0.00027600	ppm	0.000035000	12.723	.00000	Abs	Pass	
Ca3179		-0.0033270	ppm	0.0086590	260.25	.00000	Abs	Pass	
Cd2144		0.00012100	ppm	0.000040000	33.348	.00000	Abs	Pass	
Co2286		0.00011300	ppm	0.000025000	21.867	.00000	Abs	Pass	
Cr2677		-0.00023500	ppm	0.00030800	131.20	.00000	Abs	Pass	
Cu3247		0.0040420	ppm	0.00051800	12.822	.00000	Abs	Pass	
Fe2599		0.042866	ppm	0.016513	38.522	.00000	Abs	Pass	
K_7664		0.028317	ppm	0.012947	45.721	.00000	Abs	Pass	
Mg2790		0.0062760	ppm	0.0016660	26.537	.00000	Abs	Pass	
Mn2576		0.000090000	ppm	0.000026000	29.127	.00000	Abs	Pass	
Mo2020		0.0083690	ppm	0.0013840	16.534	.00000	Abs	Pass	
Na5895		0.0052620	ppm	0.014900	283.15	.00000	Abs	Pass	
Ni2316		0.00021900	ppm	0.00053200	243.26	.00000	Abs	Pass	
P_1782		-0.00016100	ppm	0.0040470	2,510.7	.00000	Abs	Pass	
Pb2203		-0.00021300	ppm	0.0017850	839.85	.00000	Abs	Pass	
S_1820		0.0049850	ppm	0.0028820	57.822	.00000	Abs	Pass	
Sb2068		0.0060280	ppm	0.00019400	3.2198	.00000	Abs	Pass	
Se1960		0.0032000	ppm	0.0036990	115.61	.00000	Abs	Pass	
Si2881		0.067192	ppm	0.077187	114.87	.00000	Abs	Pass	
Sn1899		0.0024010	ppm	0.00060600	25.256	.00000	Abs	Pass	
Sr4077		0.00059200	ppm	0.00019500	32.899	.00000	Abs	Pass	
Ti3349		0.0031780	ppm	0.00061300	19.287	.00000	Abs	Pass	
Tl1908		0.0037800	ppm	0.00034000	9.0065	.00000	Abs	Pass	
V_2924		-0.00052100	ppm	0.00010700	20.466	.00000	Abs	Pass	
Zn2062		0.0019480	ppm	0.000073000	3.7722	.00000	Abs	Pass	
Y_2243		7,400.0	Cts/S	18.470	0.24959				
Y_3600		65,194	Cts/S	22.416	0.034383				
Y_3774		3,370.8	Cts/S	17.253	0.51182				

320-63523-D-5-B

Acquire Date: 8/13/2020 12:25:56PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00083500	ppm	0.00068200	81.593
Al3961		114.24	ppm	0.51307	0.44911
As1890		0.067791	ppm	0.0026100	3.8502
B_2089		0.34740	ppm	0.0024200	0.69651
Ba4554		1.1281	ppm	0.0077000	0.68261
Be3130		0.0044950	ppm	0.000025000	0.55495
Ca3179		78.492	ppm	0.37379	0.47622
Cd2144		0.0040990	ppm	0.000053000	1.2838
Co2286		0.089433	ppm	0.00059800	0.66840
Cr2677		0.17764	ppm	0.0015430	0.86833
Cu3247		0.26881	ppm	0.00088300	0.32863
Fe2599		205.01	ppm	0.70399	0.34340
K_7664		8.2312	ppm	0.057229	0.69527
Mg2790		47.076	ppm	0.25594	0.54368
Mn2576		3.3094	ppm	0.012415	0.37513
Mo2020		0.0086550	ppm	0.00035100	4.0511
Na5895		6.7873	ppm	0.096394	1.4202
Ni2316		0.17999	ppm	0.0012020	0.66766
P_1782		3.8591	ppm	0.018142	0.47010
Pb2203		0.27288	ppm	0.0060800	2.2280
S_1820		2.8164	ppm	0.0063070	0.22395
Sb2068		-0.0050310	ppm	0.00088100	17.502
Se1960		0.0029400	ppm	0.0013980	47.538
Si2881		2.3462	ppm	0.015637	0.66647
Sn1899		0.034718	ppm	0.0013040	3.7552
Sr4077		0.58532	ppm	0.0044450	0.75950
Ti3349		4.8438	ppm	0.025962	0.53599
Tl1908		0.0048860	ppm	0.0043490	89.002
V_2924		0.49958	ppm	0.0020750	0.41536
Zn2062		1.3073	ppm	0.0062290	0.47648
Y_2243		7,428.6	Cts/S	3.9897	0.053707
Y_3600		64,556	Cts/S	175.94	0.27253
Y_3774		3,474.6	Cts/S	15.950	0.45906

sd 320-63523-D-5-B@5

Acquire Date: 8/13/2020 12:29:48PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0012840	ppm	0.00077300	60.220
Al3961		23.638	ppm	0.12304	0.52054
As1890		0.014822	ppm	0.0013690	9.2380
B_2089		0.077499	ppm	0.0025500	3.2907
Ba4554		0.23314	ppm	0.0013940	0.59803
Be3130		0.00096100	ppm	0.00052100	54.243
Ca3179		16.440	ppm	0.12776	0.77712
Cd2144		0.00095200	ppm	0.000034000	3.5177
Co2286		0.019349	ppm	0.00060600	3.1338

sd 320-63523-D-5-B@5

Acquire Date: 8/13/2020 12:29:48PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.037810	ppm	0.00039200	1.0355
Cu3247		0.059464	ppm	0.00066900	1.1257
Fe2599		43.506	ppm	0.27021	0.62110
K_7664		1.6767	ppm	0.032672	1.9486
Mg2790		10.025	ppm	0.038737	0.38642
Mn2576		0.70232	ppm	0.0031470	0.44808
Mo2020		0.0021110	ppm	0.00018800	8.9275
Na5895		1.3848	ppm	0.0030960	0.22357
Ni2316		0.038007	ppm	0.00054600	1.4366
P_1782		0.81351	ppm	0.0019940	0.24517
Pb2203		0.058577	ppm	0.0021460	3.6642
S_1820		0.59170	ppm	0.0021240	0.35889
Sb2068		-0.0013480	ppm	0.0022130	164.15
Se1960		0.0034510	ppm	0.0016930	49.056
Si2881		0.53571	ppm	0.028414	5.3039
Sn1899		0.0074420	ppm	0.00060200	8.0949
Sr4077		0.12120	ppm	0.00018600	0.15327
Ti3349		1.0126	ppm	0.0048310	0.47709
Tl1908		0.0018680	ppm	0.0025690	137.51
V_2924		0.10346	ppm	0.0012730	1.2304
Zn2062		0.28422	ppm	0.0013940	0.49037
Y_2243		7,426.4	Cts/S	13.225	0.17808
Y_3600		64,633	Cts/S	8.8934	0.013760
Y_3774		3,399.6	Cts/S	10.582	0.31127

pds 320-63523-D5B

Acquire Date: 8/13/2020 12:33:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10027	ppm	0.000055000	0.054548
Al3961		119.88	ppm	0.48808	0.40714
As1890		0.15373	ppm	0.0017370	1.1298
B_2089		1.2300	ppm	0.0048160	0.39151
Ba4554		1.1838	ppm	0.0050130	0.42349
Be3130		0.051258	ppm	0.00050300	0.98185
Ca3179		85.134	ppm	0.39045	0.45863
Cd2144		0.098723	ppm	0.00018700	0.18990
Co2286		0.18192	ppm	0.000069000	0.037891
Cr2677		0.27081	ppm	0.00015600	0.057708
Cu3247		0.35900	ppm	0.0021480	0.59822
Fe2599		201.41	ppm	0.85765	0.42583
K_7664		17.728	ppm	0.15536	0.87631
Mg2790		55.009	ppm	0.21341	0.38795
Mn2576		3.2889	ppm	0.014648	0.44540
Mo2020		0.10211	ppm	0.00074700	0.73135
Na5895		16.400	ppm	0.095775	0.58399
Ni2316		0.26929	ppm	0.00057200	0.21244

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 320-63523-D5B

Acquire Date: 8/13/2020 12:33:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.7135	ppm	0.016747	0.35529
Pb2203		0.36229	ppm	0.0039650	1.0946
S_1820		4.5944	ppm	0.00062000	0.013491
Sb2068		0.079209	ppm	0.0020290	2.5619
Se1960		0.10325	ppm	0.0020270	1.9629
Si2881		3.2908	ppm	0.059563	1.8100
Sn1899		0.13136	ppm	0.00033100	0.25191
Sr4077		0.66103	ppm	0.0050770	0.76811
Ti3349		4.7977	ppm	0.014093	0.29374
Tl1908		0.093539	ppm	0.00028500	0.30422
V_2924		0.58055	ppm	0.00047800	0.082320
Zn2062		1.3559	ppm	0.0076800	0.56645
Y_2243		7,376.8	Cts/S	0.26403	0.0035790
Y_3600		64,050	Cts/S	211.32	0.32993
Y_3774		3,436.0	Cts/S	0.45764	0.013319

320-63523-D-5-C MS

Acquire Date: 8/13/2020 12:37:32PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046530	ppm	0.0028840	6.1990
Al3961		170.17	ppm	1.0390	0.61056
As1890		0.46217	ppm	0.00044700	0.096702
B_2089		4.5125	ppm	0.013979	0.30977
Ba4554		1.4342	ppm	0.0068630	0.47848
Be3130		0.22501	ppm	0.0015740	0.69951
Ca3179		127.06	ppm	0.79397	0.62488
Cd2144		0.22326	ppm	0.00040000	0.17937
Co2286		0.32042	ppm	0.00099200	0.30968
Cr2677		0.46267	ppm	0.000018000	0.0038170
Cu3247		0.61204	ppm	0.0031350	0.51221
Fe2599		253.75	ppm	1.4178	0.55875
K_7664		30.994	ppm	0.27619	0.89111
Mg2790		83.263	ppm	0.21694	0.26055
Mn2576		4.2382	ppm	0.010794	0.25469
Mo2020		0.22034	ppm	0.0015330	0.69570
Na5895		36.808	ppm	0.25761	0.69987
Ni2316		0.40922	ppm	0.00019500	0.047547
P_1782		8.1258	ppm	0.039234	0.48284
Pb2203		0.43677	ppm	0.0027880	0.63822
S_1820		7.1329	ppm	0.015279	0.21421
Sb2068		0.15532	ppm	0.00013600	0.087293
Se1960		0.41602	ppm	0.0018050	0.43392
Si2881		8.1675	ppm	0.064902	0.79464
Sn1899		0.47696	ppm	0.0017300	0.36262
Sr4077		0.87679	ppm	0.0054500	0.62154
Ti3349	**W**	**10.838**	**ppm**	**0.028822**	**0.26595**

320-63523-D-5-C MS

Acquire Date: 8/13/2020 12:37:32PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.41740	ppm	0.000026000	0.0062660
V_2924		0.92307	ppm	0.0034670	0.37561
Zn2062		1.8523	ppm	0.0031040	0.16756
Y_2243		7,253.1	Cts/S	7.2854	0.10045
Y_3600		62,812	Cts/S	383.60	0.61072
Y_3774		3,438.4	Cts/S	11.815	0.34362

320-63523-D-5-D MSD

Acquire Date: 8/13/2020 12:41:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046383	ppm	0.00056100	1.2088
Al3961		160.35	ppm	0.29048	0.18115
As1890		0.47161	ppm	0.0027970	0.59300
B_2089		4.2965	ppm	0.014569	0.33910
Ba4554		1.7011	ppm	0.0043320	0.25465
Be3130		0.22853	ppm	0.00069200	0.30291
Ca3179		115.49	ppm	0.30922	0.26775
Cd2144		0.22569	ppm	0.00073300	0.32478
Co2286		0.34708	ppm	0.0011420	0.32907
Cr2677		0.47632	ppm	0.0033790	0.70938
Cu3247		0.47351	ppm	0.0029660	0.62640
Fe2599		217.83	ppm	0.40075	0.18397
K_7664		32.061	ppm	0.16545	0.51603
Mg2790		71.202	ppm	0.26811	0.37654
Mn2576		5.0492	ppm	0.015979	0.31647
Mo2020		0.22739	ppm	0.0015070	0.66252
Na5895		30.105	ppm	0.10443	0.34688
Ni2316		0.41211	ppm	0.0011440	0.27754
P_1782		8.2180	ppm	0.010617	0.12919
Pb2203		0.46658	ppm	0.0043730	0.93720
S_1820		6.6771	ppm	0.033371	0.49979
Sb2068		0.16714	ppm	0.0035320	2.1131
Se1960		0.43282	ppm	0.0024340	0.56226
Si2881		7.0638	ppm	0.042064	0.59548
Sn1899		0.46558	ppm	0.00030900	0.066401
Sr4077		0.86677	ppm	0.00060900	0.070289
Ti3349	**W**	**6.3208**	**ppm**	**0.028807**	**0.45575**
Tl1908		0.42614	ppm	0.0030160	0.70778
V_2924		0.78015	ppm	0.0047670	0.61108
Zn2062		1.3205	ppm	0.0044360	0.33592
Y_2243		7,251.0	Cts/S	4.9785	0.068659
Y_3600		62,611	Cts/S	127.15	0.20308
Y_3774		3,433.3	Cts/S	4.6785	0.13627

320-63525-B-1-A

Acquire Date: 8/13/2020 12:45:03PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0012390	ppm	0.00077500	62.582
Al3961		0.60028	ppm	0.012718	2.1186
As1890		0.0017160	ppm	0.00072100	42.045
B_2089		0.17475	ppm	0.00035900	0.20529
Ba4554		0.11127	ppm	0.0011330	1.0183
Be3130		0.00042200	ppm	0.00061300	145.23
Ca3179		99.799	ppm	0.95045	0.95236
Cd2144		0.00060000	ppm	0.000016000	2.6922
Co2286		0.00049300	ppm	0.00023700	48.184
Cr2677		0.00000	ppm	0.00023200	184,070
Cu3247		0.0089320	ppm	0.00031300	3.5017
Fe2599		0.25545	ppm	0.00094800	0.37108
K_7664		88.918	ppm	1.1453	1.2881
Mg2790		180.16	ppm	0.48808	0.27092
Mn2576		0.016349	ppm	0.00040400	2.4697
Mo2020		0.0042470	ppm	0.00028500	6.7020
Na5895	**F**	**1,990.8**	**ppm**	**4.4541**	**0.22373**
Ni2316		0.0038200	ppm	0.00070800	18.528
P_1782		0.047644	ppm	0.0035650	7.4829
Pb2203		0.00073400	ppm	0.0020570	280.20
S_1820		175.72	ppm	0.32350	0.18411
Sb2068		0.0015540	ppm	0.0010840	69.751
Se1960		0.0047940	ppm	0.0034510	71.990
Si2881		2.4391	ppm	0.041821	1.7146
Sn1899		-0.00029600	ppm	0.00026400	89.094
Sr4077		0.19284	ppm	0.0022540	1.1688
Ti3349		0.016069	ppm	0.00060900	3.7874
Tl1908		0.0050970	ppm	0.0054450	106.84
V_2924		0.0045910	ppm	0.00029600	6.4573
Zn2062		0.036125	ppm	0.00038300	1.0603
Y_2243		6,359.2	Cts/S	11.931	0.18761
Y_3600	**W**	**53,629**	**Cts/S**	**20.074**	**0.037431**
Y_3774		3,207.2	Cts/S	7.3844	0.23025

sd 320-63525-B-1-A@5

Acquire Date: 8/13/2020 12:49:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0022400	ppm	0.00026600	11.872
Al3961		0.92813	ppm	0.58930	63.493
As1890		0.00024800	ppm	0.00051200	206.26
B_2089		0.046390	ppm	0.00066500	1.4329
Ba4554		0.029709	ppm	0.0054340	18.290
Be3130		0.0015290	ppm	0.00083200	54.390
Ca3179		21.053	ppm	0.25812	1.2260
Cd2144		0.00029600	ppm	0.000080000	27.126
Co2286		.0000040000	ppm	0.0000030000	71.773

sd 320-63525-B-1-A@5

Acquire Date: 8/13/2020 12:49:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0012010	ppm	0.00043200	35.927
Cu3247		0.0046080	ppm	0.00057200	12.421
Fe2599		1.2170	ppm	0.92629	76.114
K_7664		17.286	ppm	0.15313	0.88591
Mg2790		35.698	ppm	0.066476	0.18622
Mn2576		0.011192	ppm	0.0017200	15.372
Mo2020		0.00048300	ppm	0.0000020000	0.33122
Na5895	**W**	**438.49**	**ppm**	**13.516**	**3.0823**
Ni2316		0.00060200	ppm	0.00096700	160.55
P_1782		0.010948	ppm	0.0085730	78.309
Pb2203		0.0021140	ppm	0.0032640	154.37
S_1820		34.258	ppm	0.16387	0.47836
Sb2068		0.0040170	ppm	0.0062750	156.23
Se1960		0.00093300	ppm	0.0053760	576.30
Si2881		0.61793	ppm	0.024991	4.0444
Sn1899		-0.00053700	ppm	0.00090300	168.12
Sr4077		0.042876	ppm	0.0032620	7.6071
Ti3349		0.014892	ppm	0.0031600	21.221
Tl1908		0.0039870	ppm	0.00065600	16.462
V_2924		0.0018100	ppm	0.00059500	32.868
Zn2062		0.014677	ppm	0.00097700	6.6578
Y_2243		7,049.8	Cts/S	11.204	0.15892
Y_3600		60,888	Cts/S	9.6007	0.015768
Y_3774		3,364.6	Cts/S	15.288	0.45438

pds 320-63525-B-1-A

Acquire Date: 8/13/2020 12:53:10PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10528	ppm	0.00068500	0.65050
Al3961		10.379	ppm	0.11179	1.0770
As1890		0.098692	ppm	0.0028050	2.8421
B_2089		0.99764	ppm	0.0015580	0.15613
Ba4554		0.20635	ppm	0.0012350	0.59866
Be3130		0.048450	ppm	0.0000080000	0.016006
Ca3179		105.59	ppm	0.95155	0.90120
Cd2144		0.097240	ppm	0.00014600	0.14981
Co2286		0.095635	ppm	0.00017500	0.18349
Cr2677		0.10196	ppm	0.00071900	0.70499
Cu3247		0.10421	ppm	0.00017600	0.16879
Fe2599		4.0094	ppm	0.010283	0.25648
K_7664		95.732	ppm	1.0025	1.0472
Mg2790		182.50	ppm	1.0207	0.55927
Mn2576		0.11987	ppm	0.00081200	0.67748
Mo2020		0.10152	ppm	0.000082000	0.081055
Na5895	**F**	**1,884.5**	**ppm**	**15.341**	**0.81404**
Ni2316		0.099206	ppm	0.00031800	0.32047

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 320-63525-B-1-A

Acquire Date: 8/13/2020 12:53:10PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		1.1516	ppm	0.0070060	0.60840
Pb2203		0.094661	ppm	0.00038600	0.40800
S_1820		169.57	ppm	0.092814	0.054734
Sb2068		0.088509	ppm	0.00070600	0.79777
Se1960		0.10179	ppm	0.000067000	0.066229
Si2881		3.3692	ppm	0.035145	1.0431
Sn1899		0.095743	ppm	0.00032500	0.33930
Sr4077		0.28431	ppm	0.0026820	0.94323
Ti3349		0.10229	ppm	0.00069800	0.68241
Tl1908		0.087629	ppm	0.0012580	1.4359
V_2924		0.10964	ppm	0.00063700	0.58129
Zn2062		0.14072	ppm	0.00061900	0.44007
Y_2243		6,433.9	Cts/S	1.7762	0.027606
Y_3600	**W**	**53,980**	**Cts/S**	**161.64**	**0.29945**
Y_3774		3,229.0	Cts/S	8.5215	0.26391

320-63525-B-1-B MS

Acquire Date: 8/13/2020 12:57:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.051120	ppm	0.0010490	2.0525
Al3961		5.6836	ppm	0.0064440	0.11339
As1890		0.48611	ppm	0.0018900	0.38891
B_2089		4.2963	ppm	0.010266	0.23896
Ba4554		0.60270	ppm	0.0037420	0.62079
Be3130		0.23722	ppm	0.00078300	0.33017
Ca3179		125.80	ppm	0.69310	0.55097
Cd2144		0.23736	ppm	0.00082400	0.34724
Co2286		0.23402	ppm	0.00077400	0.33083
Cr2677		0.24922	ppm	0.0010350	0.41546
Cu3247		0.25069	ppm	0.0023810	0.94967
Fe2599		5.1192	ppm	0.0029290	0.057221
K_7664		117.16	ppm	0.77225	0.65914
Mg2790		208.33	ppm	0.88070	0.42275
Mn2576		0.27061	ppm	0.0019150	0.70763
Mo2020		0.25196	ppm	0.00027700	0.10976
Na5895	**F**	**1,949.0**	**ppm**	**32.918**	**1.6890**
Ni2316		0.23523	ppm	0.00040800	0.17337
P_1782		5.5818	ppm	0.011134	0.19947
Pb2203		0.22391	ppm	0.0041160	1.8383
S_1820		184.11	ppm	0.11493	0.062422
Sb2068		0.44068	ppm	0.0044830	1.0174
Se1960		0.48228	ppm	0.0017140	0.35539
Si2881		7.6368	ppm	0.058666	0.76820
Sn1899		0.47671	ppm	0.0015620	0.32775
Sr4077		0.43891	ppm	0.0015350	0.34982
Ti3349		0.25178	ppm	0.0018350	0.72893

320-63525-B-1-B MS

Acquire Date: 8/13/2020 12:57:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.40011	ppm	0.0028930	0.72295
V_2924		0.26075	ppm	0.00034500	0.13240
Zn2062		0.54820	ppm	0.0030890	0.56340
Y_2243		6,386.3	Cts/S	17.165	0.26878
Y_3600		54,212	Cts/S	325.20	0.59987
Y_3774		3,265.1	Cts/S	2.8764	0.088097

320-63525-B-1-C MSD

Acquire Date: 8/13/2020 1:01:01PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.051045	ppm	0.00040500	0.79400
Al3961		5.8385	ppm	0.071382	1.2226
As1890		0.49889	ppm	0.00031100	0.062253
B_2089		4.3833	ppm	0.0058360	0.13314
Ba4554		0.61270	ppm	0.0034840	0.56869
Be3130		0.24040	ppm	0.0011420	0.47508
Ca3179		127.45	ppm	1.0355	0.81249
Cd2144		0.24130	ppm	0.00059000	0.24449
Co2286		0.23802	ppm	0.000040000	0.016933
Cr2677		0.25450	ppm	0.00039500	0.15537
Cu3247		0.25471	ppm	0.0011990	0.47079
Fe2599		5.1748	ppm	0.051314	0.99160
K_7664		118.69	ppm	1.4663	1.2354
Mg2790		211.82	ppm	0.46033	0.21732
Mn2576		0.27544	ppm	0.0010150	0.36862
Mo2020		0.25518	ppm	0.0013850	0.54282
Na5895	**F**	**1,949.4**	**ppm**	**11.321**	**0.58073**
Ni2316		0.23970	ppm	0.0023120	0.96467
P_1782		5.6853	ppm	0.023940	0.42109
Pb2203		0.22930	ppm	0.0022080	0.96282
S_1820		186.39	ppm	0.10547	0.056584
Sb2068		0.44839	ppm	0.0060160	1.3417
Se1960		0.48976	ppm	0.0029070	0.59347
Si2881		7.8047	ppm	0.18400	2.3576
Sn1899		0.48572	ppm	0.0018550	0.38196
Sr4077		0.44518	ppm	0.0032340	0.72646
Ti3349		0.25706	ppm	0.0011080	0.43105
Tl1908		0.40421	ppm	0.0078160	1.9338
V_2924		0.26707	ppm	0.0011990	0.44908
Zn2062		0.55974	ppm	0.0025110	0.44866
Y_2243		6,386.4	Cts/S	2.3886	0.037401
Y_3600	**W**	**53,771**	**Cts/S**	**82.509**	**0.15345**
Y_3774		3,232.9	Cts/S	1.9459	0.060193

CCV 2103404

Acquire Date: 8/13/2020 1:04:55PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51642	ppm	0.000041000	0.0078600	.50000	Rel(%)	Pass	
Al3961		25.574	ppm	0.19396	0.75844	25.000	Rel(%)	Pass	
As1890		0.50864	ppm	0.0029490	0.57977	.50000	Rel(%)	Pass	
B_2089		1.0593	ppm	0.0016760	0.15821	1.0000	Rel(%)	Pass	
Ba4554		2.6097	ppm	0.014994	0.57454	2.5000	Rel(%)	Pass	
Be3130		0.50606	ppm	0.0034170	0.67515	.50000	Rel(%)	Pass	
Ca3179		25.631	ppm	0.19237	0.75054	25.000	Rel(%)	Pass	
Cd2144		0.52389	ppm	0.0020020	0.38214	.50000	Rel(%)	Pass	
Co2286		2.6103	ppm	0.0096360	0.36915	2.5000	Rel(%)	Pass	
Cr2677		2.6269	ppm	0.0041670	0.15862	2.5000	Rel(%)	Pass	
Cu3247		2.5390	ppm	0.011707	0.46107	2.5000	Rel(%)	Pass	
Fe2599		26.307	ppm	0.19184	0.72924	25.000	Rel(%)	Pass	
K_7664		25.721	ppm	0.24897	0.96796	25.000	Rel(%)	Pass	
Mg2790		25.659	ppm	0.10466	0.40791	25.000	Rel(%)	Pass	
Mn2576		2.6885	ppm	0.010291	0.38279	2.5000	Rel(%)	Pass	
Mo2020		1.0400	ppm	0.0093590	0.89987	1.0000	Rel(%)	Pass	
Na5895		26.236	ppm	0.15652	0.59658	25.000	Rel(%)	Pass	
Ni2316		2.6512	ppm	0.0064160	0.24200	2.5000	Rel(%)	Pass	
P_1782		2.6469	ppm	0.018259	0.68982	2.5000	Rel(%)	Pass	
Pb2203		0.53186	ppm	0.0018820	0.35392	.50000	Rel(%)	Pass	
S_1820		2.5311	ppm	0.013814	0.54577	2.5000	Rel(%)	Pass	
Sb2068		0.52512	ppm	0.0010650	0.20285	.50000	Rel(%)	Pass	
Se1960		0.51894	ppm	0.0037200	0.71688	.50000	Rel(%)	Pass	
Si2881		2.5702	ppm	0.063297	2.4627	2.5000	Rel(%)	Pass	
Sn1899		2.5961	ppm	0.011219	0.43216	2.5000	Rel(%)	Pass	
Sr4077		2.5625	ppm	0.015849	0.61851	2.5000	Rel(%)	Pass	
Ti3349		1.0306	ppm	0.0048910	0.47457	1.0000	Rel(%)	Pass	
Tl1908		0.51954	ppm	0.0084660	1.6294	.50000	Rel(%)	Pass	
V_2924		2.5976	ppm	0.012251	0.47164	2.5000	Rel(%)	Pass	
Zn2062		2.5834	ppm	0.0094760	0.36682	2.5000	Rel(%)	Pass	
Y_2243		7,311.7	Cts/S	20.971	0.28682				
Y_3600		64,060	Cts/S	205.14	0.32023				
Y_3774		3,341.4	Cts/S	5.8025	0.17365				

CCB 2110462

Acquire Date: 8/13/2020 1:08:42PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00029800	ppm	0.0010740	360.15	.00000	Abs	Pass	
Al3961		0.0043160	ppm	0.0033400	77.388	.00000	Abs	Pass	
As1890		0.00016800	ppm	0.00078100	463.50	.00000	Abs	Pass	
B_2089		0.017515	ppm	0.0019580	11.177	.00000	Abs	Pass	
Ba4554		0.00053400	ppm	0.00050500	94.582	.00000	Abs	Pass	
Be3130		0.00067300	ppm	0.000039000	5.7570	.00000	Abs	Pass	
Ca3179		0.14567	ppm	0.034633	23.775	.00000	Abs	Pass	
Cd2144		0.000047000	ppm	0.000020000	41.361	.00000	Abs	Pass	
Co2286		0.000057000	ppm	0.00027300	482.70	.00000	Abs	Pass	
Cr2677		0.00054400	ppm	0.00041200	75.668	.00000	Abs	Pass	

CCB 2110462

Acquire Date: 8/13/2020 1:08:42PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0044650	ppm	0.00020900	4.6800	.00000	Abs	Pass	
Fe2599	**W**	**0.082522**	**ppm**	**0.0071390**	**8.6511**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.14493	ppm	0.026144	18.040	.00000	Abs	Pass	
Mg2790		0.10341	ppm	0.032654	31.579	.00000	Abs	Pass	
Mn2576		0.00070100	ppm	0.00036300	51.862	.00000	Abs	Pass	
Mo2020	**W**	**0.010263**	**ppm**	**0.00090600**	**8.8297**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895	**F**	**2.7350**	**ppm**	**0.48265**	**17.647**	**.00000**	**Abs**	**Fail High**	**1.0000**
Ni2316		0.00015500	ppm	0.0013160	850.96	.00000	Abs	Pass	
P_1782		-0.0010930	ppm	0.0033990	311.07	.00000	Abs	Pass	
Pb2203		0.0020940	ppm	0.0017630	84.178	.00000	Abs	Pass	
S_1820		0.019194	ppm	0.0034270	17.855	.00000	Abs	Pass	
Sb2068		0.0013110	ppm	0.00024700	18.871	.00000	Abs	Pass	
Se1960		-0.00064900	ppm	0.00068700	105.90	.00000	Abs	Pass	
Si2881	**W**	**0.10091**	**ppm**	**0.047783**	**47.350**	**.00000**	**Abs**	**Warn High**	**0.10000**
Sn1899		0.0031510	ppm	0.00058900	18.702	.00000	Abs	Pass	
Sr4077		0.0018110	ppm	0.00054500	30.112	.00000	Abs	Pass	
Ti3349		0.0049270	ppm	0.00047100	9.5621	.00000	Abs	Pass	
Tl1908		0.0062960	ppm	0.00035300	5.5992	.00000	Abs	Pass	
V_2924		0.00046200	ppm	0.0000090000	1.8506	.00000	Abs	Pass	
Zn2062		0.0030350	ppm	0.00019000	6.2534	.00000	Abs	Pass	
Y_2243		7,478.7	Cts/S	7.8499	0.10496				
Y_3600		65,278	Cts/S	173.16	0.26527				
Y_3774		3,337.1	Cts/S	8.6541	0.25933				

320-63525-B-2-A

Acquire Date: 8/13/2020 1:12:43PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00041800	ppm	0.0018310	438.39
Al3961		0.57929	ppm	0.054079	9.3354
As1890		-0.00071900	ppm	0.0010740	149.25
B_2089		0.15979	ppm	0.0015020	0.94010
Ba4554		0.11325	ppm	0.00049600	0.43794
Be3130		0.00033200	ppm	0.00087100	261.92
Ca3179		101.80	ppm	0.51924	0.51004
Cd2144		0.00061600	ppm	0.000059000	9.6308
Co2286		0.000024000	ppm	0.000029000	118.28
Cr2677		0.00070000	ppm	0.00021200	30.318
Cu3247		0.0062140	ppm	0.00021300	3.4346
Fe2599		0.10577	ppm	0.022424	21.200
K_7664		86.166	ppm	0.83483	0.96886
Mg2790		176.61	ppm	0.87830	0.49731
Mn2576		0.035212	ppm	0.00018000	0.51166
Mo2020		0.0037440	ppm	0.00075300	20.105
Na5895	**F**	**1,886.7**	**ppm**	**1.1992**	**0.063563**
Ni2316		0.0031230	ppm	0.00017800	5.7020
P_1782		0.027966	ppm	0.00053400	1.9081
Pb2203		0.0026640	ppm	0.0038970	146.26

320-63525-B-2-A

Acquire Date: 8/13/2020 1:12:43PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		171.43	ppm	0.30522	0.17804
Sb2068		0.0016520	ppm	0.00087100	52.726
Se1960		0.0068750	ppm	0.0043730	63.613
Si2881		2.2212	ppm	0.014902	0.67091
Sn1899		0.00022900	ppm	0.00022700	98.926
Sr4077		0.20017	ppm	0.00010600	0.053027
Ti3349		0.0010680	ppm	0.00034500	32.319
Tl1908		0.0026340	ppm	0.00071000	26.950
V_2924		0.0031680	ppm	0.00051100	16.118
Zn2062		0.041468	ppm	0.00034900	0.84232
Y_2243		6,332.8	Cts/S	12.683	0.20028
Y_3600	**W**	**53,246**	**Cts/S**	**113.87**	**0.21385**
Y_3774		3,190.6	Cts/S	4.6088	0.14445

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Acquire Date: 8/13/2020 1:16:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00088700	ppm	0.00069700	78.594
Al3961		0.027845	ppm	0.028660	102.93
As1890		-0.0013150	ppm	0.00075000	57.034
B_2089		0.0091150	ppm	0.00021800	2.3914
Ba4554		-0.00051700	ppm	0.00026300	50.927
Be3130		0.000054000	ppm	0.00013700	252.27
Ca3179		0.0045760	ppm	0.0024880	54.383
Cd2144		0.000035000	ppm	0.000022000	62.760
Co2286		0.000043000	ppm	0.00018200	422.58
Cr2677		-0.00013400	ppm	0.00030400	227.80
Cu3247		0.0020990	ppm	0.0000060000	0.27717
Fe2599		-0.0036480	ppm	0.0036810	100.91
K_7664		0.14892	ppm	0.081236	54.551
Mg2790		0.010319	ppm	0.0027540	26.684
Mn2576		0.000059000	ppm	0.000036000	60.682
Mo2020		0.00025500	ppm	0.00031800	124.53
Na5895		0.97348	ppm	0.091100	9.3582
Ni2316		0.00021200	ppm	0.00012900	60.933
P_1782		0.0020500	ppm	0.00051700	25.222
Pb2203		-0.0011230	ppm	0.0014850	132.25
S_1820		0.010473	ppm	0.0016700	15.943
Sb2068		0.0027950	ppm	0.0026130	93.474
Se1960		-0.0013170	ppm	0.00097700	74.165
Si2881		0.076191	ppm	0.014685	19.274
Sn1899		-0.00052100	ppm	0.00063500	121.87
Sr4077		0.00045600	ppm	0.000050000	10.969
Ti3349		-0.00060300	ppm	0.00033200	55.060
Tl1908		0.00058300	ppm	0.0014480	248.60
V_2924		-0.00013500	ppm	0.00014100	104.33

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Acquire Date: 8/13/2020 1:16:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		0.00075300	ppm	0.000079000	10.482
Y_2243		7,495.7	Cts/S	0.71071	0.0094810
Y_3600		65,838	Cts/S	118.38	0.17980
Y_3774		3,355.4	Cts/S	24.028	0.71610

CCV 2103404

Acquire Date: 8/13/2020 1:20:48PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52520	ppm	0.0011930	0.22710	.50000	Rel(%)	Pass	
Al3961		25.504	ppm	0.23914	0.93765	25.000	Rel(%)	Pass	
As1890		0.51478	ppm	0.0036360	0.70626	.50000	Rel(%)	Pass	
B_2089		1.0475	ppm	0.0031510	0.30080	1.0000	Rel(%)	Pass	
Ba4554		2.5863	ppm	0.021073	0.81480	2.5000	Rel(%)	Pass	
Be3130		0.50719	ppm	0.0040160	0.79187	.50000	Rel(%)	Pass	
Ca3179		25.589	ppm	0.20169	0.78816	25.000	Rel(%)	Pass	
Cd2144		0.52230	ppm	0.0016230	0.31073	.50000	Rel(%)	Pass	
Co2286		2.6118	ppm	0.0078480	0.30046	2.5000	Rel(%)	Pass	
Cr2677		2.6483	ppm	0.011073	0.41811	2.5000	Rel(%)	Pass	
Cu3247		2.5466	ppm	0.0051350	0.20165	2.5000	Rel(%)	Pass	
Fe2599		25.888	ppm	0.19291	0.74520	25.000	Rel(%)	Pass	
K_7664		25.403	ppm	0.20788	0.81833	25.000	Rel(%)	Pass	
Mg2790		25.980	ppm	0.091714	0.35302	25.000	Rel(%)	Pass	
Mn2576		2.6459	ppm	0.010468	0.39564	2.5000	Rel(%)	Pass	
Mo2020		1.0340	ppm	0.0082840	0.80120	1.0000	Rel(%)	Pass	
Na5895		25.957	ppm	0.21322	0.82145	25.000	Rel(%)	Pass	
Ni2316		2.6327	ppm	0.0095930	0.36437	2.5000	Rel(%)	Pass	
P_1782		2.6543	ppm	0.013112	0.49399	2.5000	Rel(%)	Pass	
Pb2203		0.53051	ppm	0.000046000	0.0087090	.50000	Rel(%)	Pass	
S_1820		2.5567	ppm	0.0070880	0.27722	2.5000	Rel(%)	Pass	
Sb2068		0.52578	ppm	0.0065800	1.2514	.50000	Rel(%)	Pass	
Se1960		0.52415	ppm	0.0013510	0.25774	.50000	Rel(%)	Pass	
Si2881		2.5472	ppm	0.13080	5.1351	2.5000	Rel(%)	Pass	
Sn1899		2.6055	ppm	0.0083110	0.31898	2.5000	Rel(%)	Pass	
Sr4077		2.5696	ppm	0.016994	0.66134	2.5000	Rel(%)	Pass	
Ti3349		1.0302	ppm	0.0049800	0.48341	1.0000	Rel(%)	Pass	
Tl1908		0.52632	ppm	0.0060850	1.1561	.50000	Rel(%)	Pass	
V_2924		2.6108	ppm	0.013928	0.53348	2.5000	Rel(%)	Pass	
Zn2062		2.6076	ppm	0.012545	0.48108	2.5000	Rel(%)	Pass	
Y_2243		7,266.2	Cts/S	26.759	0.36827				
Y_3600		63,199	Cts/S	337.28	0.53368				
Y_3774		3,340.4	Cts/S	1.0650	0.031881				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 2110462

Acquire Date: 8/13/2020 1:24:34PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00089000	ppm	0.00068500	76.916	.00000	Abs	Pass	
Al3961		-0.022775	ppm	0.015874	69.696	.00000	Abs	Pass	
As1890		0.0015210	ppm	0.00059700	39.263	.00000	Abs	Pass	
B_2089		0.0090200	ppm	0.00082700	9.1685	.00000	Abs	Pass	
Ba4554		0.000011000	ppm	0.00062500	5,500.4	.00000	Abs	Pass	
Be3130		0.000063000	ppm	0.000087000	138.14	.00000	Abs	Pass	
Ca3179		0.012810	ppm	0.0060840	47.496	.00000	Abs	Pass	
Cd2144		0.000072000	ppm	0.000047000	65.376	.00000	Abs	Pass	
Co2286		0.00019600	ppm	0.000098000	50.333	.00000	Abs	Pass	
Cr2677		0.00024600	ppm	0.00090400	367.75	.00000	Abs	Pass	
Cu3247		0.0021860	ppm	0.00046300	21.199	.00000	Abs	Pass	
Fe2599		0.035528	ppm	0.028222	79.436	.00000	Abs	Pass	
K_7664		0.020184	ppm	0.025125	124.48	.00000	Abs	Pass	
Mg2790		0.013985	ppm	0.0043120	30.833	.00000	Abs	Pass	
Mn2576		0.00011600	ppm	0.000080000	68.718	.00000	Abs	Pass	
Mo2020	**W**	**0.010413**	**ppm**	**0.0014190**	**13.626**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.43065	ppm	0.036781	8.5410	.00000	Abs	Pass	
Ni2316		0.00057400	ppm	0.00080700	140.53	.00000	Abs	Pass	
P_1782		0.0034550	ppm	0.00061000	17.660	.00000	Abs	Pass	
Pb2203		0.0024970	ppm	0.00052300	20.950	.00000	Abs	Pass	
S_1820		0.010100	ppm	0.0035090	34.745	.00000	Abs	Pass	
Sb2068		0.0011680	ppm	0.0022520	192.72	.00000	Abs	Pass	
Se1960		0.0049470	ppm	0.0028200	56.999	.00000	Abs	Pass	
Si2881		0.081224	ppm	0.018531	22.815	.00000	Abs	Pass	
Sn1899		0.0025460	ppm	0.00031500	12.362	.00000	Abs	Pass	
Sr4077		0.00074600	ppm	0.00022200	29.710	.00000	Abs	Pass	
Ti3349		0.0037250	ppm	0.00034700	9.3259	.00000	Abs	Pass	
Tl1908		-0.00052400	ppm	0.0025290	483.06	.00000	Abs	Pass	
V_2924		0.00059700	ppm	0.00011600	19.456	.00000	Abs	Pass	
Zn2062		0.0023330	ppm	0.000038000	1.6206	.00000	Abs	Pass	
Y_2243		7,430.5	Cts/S	8.2155	0.11057				
Y_3600		65,168	Cts/S	240.46	0.36899				
Y_3774		3,309.3	Cts/S	1.7265	0.052172				

CCVL 2062513

Acquire Date: 8/13/2020 1:28:36PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0051330	ppm	0.0012250	23.861	.00500	Rel(%)	Pass	
Al3961		0.19624	ppm	0.0012650	0.64446	.20000	Rel(%)	Pass	
As1890		0.036100	ppm	0.0012390	3.4319	.04000	Rel(%)	Pass	
B_2089		0.20727	ppm	0.0010870	0.52432	.20000	Rel(%)	Pass	
Ba4554		0.020193	ppm	0.00053100	2.6291	.02000	Rel(%)	Pass	
Be3130		0.0031870	ppm	0.00014700	4.6238	.00300	Rel(%)	Pass	
Ca3179		0.52393	ppm	0.014180	2.7065	.50000	Rel(%)	Pass	
Cd2144		0.0031560	ppm	0.000083000	2.6417	.00300	Rel(%)	Pass	
Co2286		0.010309	ppm	0.00010100	0.97612	.01000	Rel(%)	Pass	
Cr2677		0.010312	ppm	0.00065300	6.3310	.01000	Rel(%)	Pass	

CCVL 2062513

Acquire Date: 8/13/2020 1:28:36PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 899

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.016044	ppm	0.0013510	8.4233	.01500	Rel(%)	Pass	
Fe2599		0.097990	ppm	0.023453	23.934	.10000	Rel(%)	Pass	
K_7664		1.0026	ppm	0.055897	5.5752	1.0000	Rel(%)	Pass	
Mg2790		0.53034	ppm	0.0046720	0.88098	.50000	Rel(%)	Pass	
Mn2576		0.010991	ppm	0.000048000	0.43940	.01000	Rel(%)	Pass	
Mo2020		0.021775	ppm	0.00047400	2.1750	.02000	Rel(%)	Pass	
Na5895	**F**	**0.77285**	**ppm**	**0.0067070**	**0.86785**	**.50000**	**Rel(%)**	**Fail High**	**30.000**
Ni2316		0.010529	ppm	0.00063900	6.0725	.01000	Rel(%)	Pass	
P_1782		0.52434	ppm	0.0024880	0.47457	.50000	Rel(%)	Pass	
Pb2203		0.012822	ppm	0.00044200	3.4446	.01000	Rel(%)	Pass	
S_1820		0.49894	ppm	0.0065240	1.3076	.50000	Rel(%)	Pass	
Sb2068		0.032622	ppm	0.00011200	0.34216	.03000	Rel(%)	Pass	
Se1960		0.042621	ppm	0.00081700	1.9159	.04000	Rel(%)	Pass	
Si2881		0.53979	ppm	0.0028850	0.53444	.50000	Rel(%)	Pass	
Sn1899		0.022752	ppm	0.0010680	4.6962	.02000	Rel(%)	Pass	
Sr4077		0.052011	ppm	0.00031100	0.59714	.05000	Rel(%)	Pass	
Ti3349		0.010576	ppm	0.0017330	16.384	.01000	Rel(%)	Pass	
Tl1908		0.030915	ppm	0.0012850	4.1581	.03000	Rel(%)	Pass	
V_2924		0.020139	ppm	0.00048800	2.4223	.02000	Rel(%)	Pass	
Zn2062		0.021056	ppm	0.00032000	1.5175	.02000	Rel(%)	Pass	
Y_2243		7,409.7	Cts/S	6.7801	0.091503				
Y_3600		64,940	Cts/S	32.277	0.049703				
Y_3774		3,286.5	Cts/S	0.95990	0.029208				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 8/13/2020 1:51:00PM

Test America-West Sacramento methods 6010b and 200.7

Author: SP

Published: 8/19/2020 2:22:19PM

Notes:

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Acquire Date: 8/19/2020 10:07:29AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00037100	ppm	0.0011900	320.67	.00000	Abs	Pass	
Al3961		-0.021779	ppm	0.0073060	33.545	.00000	Abs	Pass	
As1890		-0.0021140	ppm	0.000028000	1.3010	.00000	Abs	Pass	
B_2089		0.0061700	ppm	0.00074500	12.074	.00000	Abs	Pass	
Ba4554		0.00017800	ppm	0.00012900	72.274	.00000	Abs	Pass	
Be3130		0.00013200	ppm	0.00016700	126.98	.00000	Abs	Pass	
Ca3179		-0.0085720	ppm	0.0040550	47.298	.00000	Abs	Pass	
Cd2144		0.000020000	ppm	0.000022000	110.77	.00000	Abs	Pass	
Co2286		0.000044000	ppm	0.00022200	502.12	.00000	Abs	Pass	
Cr2677		0.0011040	ppm	0.00045300	41.030	.00000	Abs	Pass	
Cu3247		0.0026820	ppm	0.00084700	31.564	.00000	Abs	Pass	
Fe2599	**W**	**0.070601**	**ppm**	**0.033916**	**48.039**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.042501	ppm	0.029402	69.180	.00000	Abs	Pass	
Mg2790		-0.00072800	ppm	0.0012130	166.67	.00000	Abs	Pass	
Mn2576		0.00054400	ppm	0.000053000	9.7893	.00000	Abs	Pass	
Mo2020	**W**	**0.015762**	**ppm**	**0.00091200**	**5.7859**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.053105	ppm	0.0025680	4.8358	.00000	Abs	Pass	
Ni2316		-0.00032300	ppm	0.00029200	90.519	.00000	Abs	Pass	
P_1782		0.0011160	ppm	0.0024210	217.02	.00000	Abs	Pass	
Pb2203		0.0017620	ppm	0.0020400	115.80	.00000	Abs	Pass	
S_1820		-0.00094300	ppm	0.0017070	180.91	.00000	Abs	Pass	
Sb2068		0.0023000	ppm	0.0045490	197.81	.00000	Abs	Pass	
Se1960		0.0044670	ppm	0.0018060	40.442	.00000	Abs	Pass	
Si2881		0.059488	ppm	0.026758	44.980	.00000	Abs	Pass	
Sn1899		0.0030000	ppm	0.00036200	12.051	.00000	Abs	Pass	
Sr4077		0.000031000	ppm	0.000063000	203.00	.00000	Abs	Pass	
Ti3349		0.0051040	ppm	0.00039600	7.7504	.00000	Abs	Pass	
Tl1908		-0.0016140	ppm	0.00094600	58.614	.00000	Abs	Pass	
V_2924		-0.00030600	ppm	0.00060600	198.37	.00000	Abs	Pass	
Zn2062		0.0022250	ppm	0.00012600	5.6740	.00000	Abs	Pass	
Y_2243		6,275.3	Cts/S	56.227	0.89600				
Y_3600		55,592	Cts/S	193.78	0.34857				
Y_3774		2,786.3	Cts/S	3.1310	0.11237				

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Acquire Date: 8/19/2020 10:11:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00075300	ppm	0.000068000	8.9960	.00000	Abs	Pass	
Al3961		-0.025550	ppm	0.0081410	31.864	.00000	Abs	Pass	
As1890		-0.0032280	ppm	0.00094700	29.327	.00000	Abs	Pass	
B_2089		0.0032590	ppm	0.000053000	1.6366	.00000	Abs	Pass	
Ba4554		0.000055000	ppm	0.000036000	65.420	.00000	Abs	Pass	

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Acquire Date: 8/19/2020 10:11:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Be3130		-0.00015000	ppm	0.00033400	221.72	.00000	Abs	Pass	
Ca3179		-0.0097170	ppm	0.0034710	35.717	.00000	Abs	Pass	
Cd2144		0.000052000	ppm	0.000043000	81.972	.00000	Abs	Pass	
Co2286		0.000094000	ppm	0.00047900	509.69	.00000	Abs	Pass	
Cr2677		0.0016760	ppm	0.00049900	29.751	.00000	Abs	Pass	
Cu3247		0.0017910	ppm	0.0014910	83.267	.00000	Abs	Pass	
Fe2599		0.0082800	ppm	0.0090130	108.86	.00000	Abs	Pass	
K_7664		0.0090050	ppm	0.041464	460.47	.00000	Abs	Pass	
Mg2790		-0.0070540	ppm	0.0015920	22.564	.00000	Abs	Pass	
Mn2576		0.00016900	ppm	0.000045000	26.392	.00000	Abs	Pass	
Mo2020		0.0028160	ppm	0.00018600	6.5898	.00000	Abs	Pass	
Na5895		0.027366	ppm	0.0092860	33.935	.00000	Abs	Pass	
Ni2316		0.000035000	ppm	0.000049000	142.17	.00000	Abs	Pass	
P_1782		0.0018310	ppm	0.0036120	197.28	.00000	Abs	Pass	
Pb2203		0.0035710	ppm	0.00061700	17.273	.00000	Abs	Pass	
S_1820		-0.00068100	ppm	0.0018070	265.44	.00000	Abs	Pass	
Sb2068		0.0061170	ppm	0.0032820	53.659	.00000	Abs	Pass	
Se1960		0.0055880	ppm	0.00049000	8.7759	.00000	Abs	Pass	
Si2881		-0.0085810	ppm	0.019821	231.00	.00000	Abs	Pass	
Sn1899		0.0012160	ppm	0.0011290	92.872	.00000	Abs	Pass	
Sr4077		-0.00012100	ppm	0.000022000	18.013	.00000	Abs	Pass	
Ti3349		0.00066800	ppm	0.0012260	183.54	.00000	Abs	Pass	
Tl1908		0.0014350	ppm	0.0015090	105.15	.00000	Abs	Pass	
V_2924		0.000081000	ppm	0.00022200	275.71	.00000	Abs	Pass	
Zn2062		0.00085700	ppm	0.000060000	7.0277	.00000	Abs	Pass	
Y_2243		6,370.7	Cts/S	13.305	0.20885				
Y_3600		56,132	Cts/S	32.388	0.057699				
Y_3774		2,787.0	Cts/S	2.4071	0.086368				

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Acquire Date: 8/19/2020 10:15:32AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00093900	ppm	0.000091000	9.7267	.00000	Abs	Pass	
Al3961		-0.034477	ppm	0.0051240	14.862	.00000	Abs	Pass	
As1890		-0.0026200	ppm	0.00054500	20.812	.00000	Abs	Pass	
B_2089		0.0015140	ppm	0.00034800	22.958	.00000	Abs	Pass	
Ba4554		-0.00017700	ppm	0.00057400	324.15	.00000	Abs	Pass	
Be3130		-0.00030000	ppm	0.00012700	42.446	.00000	Abs	Pass	
Ca3179		-0.0030860	ppm	0.00078000	25.275	.00000	Abs	Pass	
Cd2144		0.000011000	ppm	0.000073000	676.00	.00000	Abs	Pass	
Co2286		0.00031300	ppm	0.000028000	8.9704	.00000	Abs	Pass	
Cr2677		0.00080400	ppm	0.00038000	47.241	.00000	Abs	Pass	
Cu3247		0.0016380	ppm	0.00090200	55.056	.00000	Abs	Pass	
Fe2599		-0.010808	ppm	0.0052980	49.021	.00000	Abs	Pass	
K_7664		-0.013104	ppm	0.016841	128.51	.00000	Abs	Pass	
Mg2790		-0.0027540	ppm	0.013884	504.08	.00000	Abs	Pass	
Mn2576		0.000092000	ppm	0.000061000	65.971	.00000	Abs	Pass	

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Acquire Date: 8/19/2020 10:15:32AM　Sample Type: QC

Correction Factor: 1.0000　SW: 1.0000　NW: 1.0000　IV: 1.0000　FV: 1.0000　AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1　Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Mo2020		0.0014320	ppm	0.00021200	14.829	.00000	Abs	Pass	
Na5895		0.021542	ppm	0.037043	171.96	.00000	Abs	Pass	
Ni2316		-0.0012120	ppm	0.00029500	24.338	.00000	Abs	Pass	
P_1782		-0.00047300	ppm	0.00029800	62.978	.00000	Abs	Pass	
Pb2203		0.0031720	ppm	0.0030330	95.623	.00000	Abs	Pass	
S_1820		-0.0027780	ppm	0.0023640	85.101	.00000	Abs	Pass	
Sb2068		0.0034850	ppm	0.000085000	2.4417	.00000	Abs	Pass	
Se1960		0.0045270	ppm	0.0014020	30.973	.00000	Abs	Pass	
Si2881		0.053530	ppm	0.090941	169.89	.00000	Abs	Pass	
Sn1899		0.0010680	ppm	0.00011300	10.550	.00000	Abs	Pass	
Sr4077		-0.00027200	ppm	0.00010100	37.025	.00000	Abs	Pass	
Ti3349		0.00023800	ppm	0.00061400	257.67	.00000	Abs	Pass	
Tl1908		-0.0019550	ppm	0.000062000	3.1512	.00000	Abs	Pass	
V_2924		-0.00037200	ppm	0.00010400	27.885	.00000	Abs	Pass	
Zn2062		0.00035500	ppm	0.000074000	20.701	.00000	Abs	Pass	
Y_2243		6,318.1	Cts/S	7.8700	0.12456				
Y_3600		55,289	Cts/S	46.264	0.083677				
Y_3774		2,769.6	Cts/S	0.51855	0.018723				

CALSTD0 2110462

Acquire Date: 8/19/2020 10:19:35AM　Sample Type: Standard

Correction Factor: 1.0000　SW: 1.0000　NW: 1.0000　IV: 1.0000　FV: 1.0000　AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1　Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		.0000030000	Cts/S	0.000047000	1,593.9
Al3961		-0.00036300	Cts/S	0.00041400	114.24
As1890		-0.00011600	Cts/S	0.000023000	19.361
B_2089		0.00092400	Cts/S	0.00043300	46.802
Ba4554		0.019323	Cts/S	0.0010150	5.2512
Be3130		-0.00017500	Cts/S	0.00050500	289.06
Ca3179		0.0044700	Cts/S	0.00043900	9.8158
Cd2144		0.00010600	Cts/S	0.000012000	11.682
Co2286		-0.00024000	Cts/S	0.000058000	24.000
Cr2677		0.000059000	Cts/S	0.000013000	21.694
Cu3247		0.0048330	Cts/S	0.000049000	1.0160
Fe2599		0.00029900	Cts/S	0.000096000	32.241
K_7664		0.0023640	Cts/S	0.0047510	201.01
Mg2790		.0000090000	Cts/S	0.000031000	351.52
Mn2576		0.000024000	Cts/S	0.000063000	260.19
Mo2020		0.000037000	Cts/S	0.000034000	92.890
Na5895		0.0061730	Cts/S	0.0026870	43.522
Ni2316		0.00037400	Cts/S	0.00014500	38.636
P_1782		0.000074000	Cts/S	0.000011000	14.545
Pb2203		0.00030500	Cts/S	0.000020000	6.6432
S_1820		0.00014700	Cts/S	0.00010100	68.645
Sb2068		0.00012400	Cts/S	0.00010300	82.646
Se1960		0.000078000	Cts/S	0.00012800	164.73
Si2881		0.00019800	Cts/S	0.00014800	74.525
Sn1899		0.00038700	Cts/S	0.0000070000	1.6797

CALSTD0 2110462

Acquire Date: 8/19/2020 10:19:35AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Sr4077		-0.0024700	Cts/S	0.00087200	35.308
Ti3349		0.000070000	Cts/S	0.000077000	109.81
Tl1908		0.000066000	Cts/S	0.000018000	26.683
V_2924		0.00012000	Cts/S	0.000077000	64.402
Zn2062		0.000072000	Cts/S	0.0000060000	7.6287
Y_2243		6,283.8	Cts/S	12.980	0.20656
Y_3600		54,747	Cts/S	291.60	0.53264
Y_3774		2,747.8	Cts/S	18.962	0.69008

CALSTD1 2090819

Acquire Date: 8/19/2020 10:23:36AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.074008	Cts/S	0.00028400	0.38435
Al3961		2.3259	Cts/S	0.0051460	0.22124
As1890		0.050246	Cts/S	0.00034300	0.68177
B_2089		0.36462	Cts/S	0.00022600	0.061912
Ba4554		23.400	Cts/S	0.14747	0.63023
Be3130		1.3778	Cts/S	0.0091440	0.66366
Ca3179		2.5733	Cts/S	0.014697	0.57113
Cd2144		1.7647	Cts/S	0.0018760	0.10632
Co2286		2.4165	Cts/S	0.0047250	0.19555
Cr2677		0.40076	Cts/S	0.0012540	0.31300
Cu3247		0.44686	Cts/S	0.0014280	0.31961
Fe2599		1.1265	Cts/S	0.0051150	0.45406
K_7664		3.8743	Cts/S	0.029749	0.76786
Mg2790		0.37207	Cts/S	0.00052800	0.14179
Mn2576		2.6798	Cts/S	0.010556	0.39393
Mo2020		0.62434	Cts/S	0.0033970	0.54413
Na5895		12.550	Cts/S	0.078512	0.62562
Ni2316		0.75424	Cts/S	0.0016850	0.22338
P_1782		0.11585	Cts/S	0.00015500	0.13384
Pb2203		0.11805	Cts/S	0.00014100	0.11920
S_1820		0.096514	Cts/S	0.00016100	0.16718
Sb2068		0.047399	Cts/S	0.00037500	0.79065
Se1960		0.033859	Cts/S	0.000057000	0.16713
Si2881		0.037745	Cts/S	0.00057400	1.5217
Sn1899		0.92187	Cts/S	0.00090900	0.098566
Sr4077		20.319	Cts/S	0.13218	0.65053
Ti3349		0.18627	Cts/S	0.0010290	0.55224
Tl1908		0.028603	Cts/S	0.00013100	0.45815
V_2924		0.62315	Cts/S	0.0017610	0.28254
Zn2062		0.36895	Cts/S	0.0010070	0.27291
Y_2243		6,023.2	Cts/S	7.9666	0.13227
Y_3600		52,095	Cts/S	72.145	0.13849
Y_3774		2,748.4	Cts/S	13.523	0.49203

CALSTD2 2116242

Acquire Date: 8/19/2020 10:27:21AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Al3961		11.749	Cts/S	0.084064	0.71548
Ca3179		12.628	Cts/S	0.095003	0.75231
Fe2599		5.4334	Cts/S	0.024842	0.45720
K_7664		19.601	Cts/S	0.16934	0.86394
Mg2790		1.8472	Cts/S	0.0047190	0.25547
Na5895		62.916	Cts/S	0.52760	0.83858
P_1782		1.1393	Cts/S	0.0030690	0.26936
S_1820		4.7902	Cts/S	0.0094810	0.19791
Y_2243		5,590.0	Cts/S	8.4621	0.15138
Y_3600		47,517	Cts/S	164.06	0.34526
Y_3774		2,664.8	Cts/S	13.705	0.51429

LRA 2097417

Acquire Date: 8/19/2020 10:31:18AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.9921	ppm	0.0075030	0.37666	2.0000	Rel(%)	Pass	
Al3961		99.453	ppm	0.64615	0.64970	100.00	Rel(%)	Pass	
As1890		2.0245	ppm	0.0029010	0.14327	2.0000	Rel(%)	Pass	
B_2089		3.9339	ppm	0.0088990	0.22621	4.0000	Rel(%)	Pass	
Ba4554		10.113	ppm	0.066556	0.65810	10.000	Rel(%)	Pass	
Be3130		1.9813	ppm	0.012859	0.64901	2.0000	Rel(%)	Pass	
Ca3179		101.12	ppm	0.77769	0.76908	100.00	Rel(%)	Pass	
Cd2144		1.9772	ppm	0.0052340	0.26473	2.0000	Rel(%)	Pass	
Co2286		9.8563	ppm	0.023548	0.23891	10.000	Rel(%)	Pass	
Cr2677		9.9547	ppm	0.037280	0.37449	10.000	Rel(%)	Pass	
Cu3247		9.9433	ppm	0.036167	0.36373	10.000	Rel(%)	Pass	
Fe2599		101.51	ppm	0.84386	0.83134	100.00	Rel(%)	Pass	
K_7664		100.29	ppm	0.89483	0.89226	100.00	Rel(%)	Pass	
Mg2790		100.63	ppm	0.39181	0.38934	100.00	Rel(%)	Pass	
Mn2576		9.8411	ppm	0.18546	1.8846	10.000	Rel(%)	Pass	
Mo2020		4.0130	ppm	0.027069	0.67453	4.0000	Rel(%)	Pass	
Na5895		99.292	ppm	0.78840	0.79402	100.00	Rel(%)	Pass	
Ni2316		9.8193	ppm	0.020863	0.21247	10.000	Rel(%)	Pass	
P_1782		10.289	ppm	0.019884	0.19326	10.000	Rel(%)	Pass	
Pb2203		1.9835	ppm	0.0043630	0.21996	2.0000	Rel(%)	Pass	
S_1820		10.213	ppm	0.0037630	0.036844	10.000	Rel(%)	Pass	
Sb2068		2.0174	ppm	0.0042020	0.20828	2.0000	Rel(%)	Pass	
Se1960		2.0048	ppm	0.0035910	0.17914	2.0000	Rel(%)	Pass	
Si2881		9.9314	ppm	0.023558	0.23721	10.000	Rel(%)	Pass	
Sn1899		9.8485	ppm	0.025221	0.25609	10.000	Rel(%)	Pass	
Sr4077		9.9915	ppm	0.072098	0.72159	10.000	Rel(%)	Pass	
Ti3349		4.0113	ppm	0.017906	0.44640	4.0000	Rel(%)	Pass	
Tl1908		1.9423	ppm	0.0057620	0.29667	2.0000	Rel(%)	Pass	
V_2924		10.057	ppm	0.038800	0.38582	10.000	Rel(%)	Pass	
Zn2062		9.7444	ppm	0.030848	0.31657	10.000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LRA 2097417

Acquire Date: 8/19/2020 10:31:18AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,747.0	Cts/S	9.5830	0.16675				
Y_3600		49,893	Cts/S	1.5886	0.0031840				
Y_3774		2,692.9	Cts/S	32.023	1.1892				

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Acquire Date: 8/19/2020 10:35:07AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00061100	ppm	0.00027200	44.521	.00000	Abs	Pass	
Al3961		0.048550	ppm	0.019005	39.145	.00000	Abs	Pass	
As1890		0.0013910	ppm	0.0018320	131.62	.00000	Abs	Pass	
B_2089		0.012998	ppm	0.0016610	12.775	.00000	Abs	Pass	
Ba4554		0.0012380	ppm	0.00063700	51.425	.00000	Abs	Pass	
Be3130		0.00048600	ppm	0.00047100	96.973	.00000	Abs	Pass	
Ca3179		0.023708	ppm	0.0092190	38.883	.00000	Abs	Pass	
Cd2144		0.000031000	ppm	0.000051000	165.15	.00000	Abs	Pass	
Co2286		0.0011130	ppm	0.00042400	38.087	.00000	Abs	Pass	
Cr2677		0.0017750	ppm	0.00013100	7.3722	.00000	Abs	Pass	
Cu3247	**F**	**0.017880**	**ppm**	**0.00041200**	**2.3048**	**.00000**	**Abs**	**Fail High**	**.01500**
Fe2599	**F**	**0.10949**	**ppm**	**0.021222**	**19.383**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.10118	ppm	0.054835	54.196	.00000	Abs	Pass	
Mg2790		0.017870	ppm	0.0044360	24.822	.00000	Abs	Pass	
Mn2576		0.0016110	ppm	0.00015100	9.3889	.00000	Abs	Pass	
Mo2020	**F**	**0.049319**	**ppm**	**0.0047460**	**9.6233**	**.00000**	**Abs**	**Fail High**	**.02000**
Na5895		0.11795	ppm	0.0033130	2.8090	.00000	Abs	Pass	
Ni2316		0.0015240	ppm	0.00045400	29.768	.00000	Abs	Pass	
P_1782		0.0085210	ppm	0.0018540	21.763	.00000	Abs	Pass	
Pb2203		-0.00067000	ppm	0.0022610	337.32	.00000	Abs	Pass	
S_1820		0.014247	ppm	0.0016650	11.688	.00000	Abs	Pass	
Sb2068		0.0021560	ppm	0.00078400	36.379	.00000	Abs	Pass	
Se1960		0.0052110	ppm	0.0068100	130.67	.00000	Abs	Pass	
Si2881		0.062751	ppm	0.015691	25.006	.00000	Abs	Pass	
Sn1899		0.0095060	ppm	0.00034300	3.6062	.00000	Abs	Pass	
Sr4077		0.0015120	ppm	0.00020300	13.420	.00000	Abs	Pass	
Ti3349		0.0089910	ppm	0.00046500	5.1766	.00000	Abs	Pass	
Tl1908		0.0081060	ppm	0.00057100	7.0472	.00000	Abs	Pass	
V_2924		0.0016040	ppm	0.00033700	21.026	.00000	Abs	Pass	
Zn2062	**W**	**0.0057700**	**ppm**	**0.00048200**	**8.3589**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		6,237.0	Cts/S	6.8982	0.11060				
Y_3600		54,928	Cts/S	269.16	0.49002				
Y_3774		2,720.7	Cts/S	1.6054	0.059007				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

ICV 2112927

Acquire Date: 8/19/2020 10:39:08AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.24973	ppm	0.00082900	0.33194	.25000	Rel(%)	Pass	
Al3961		10.119	ppm	0.054533	0.53892	10.000	Rel(%)	Pass	
As1890		0.97266	ppm	0.00076200	0.078369	1.0000	Rel(%)	Pass	
B_2089	**W**	**0.52574**	**ppm**	**0.0020050**	**0.38144**	**.50000**	**Rel(%)**	**Warn High**	**5.0000**
Ba4554		1.0347	ppm	0.0078910	0.76264	1.0000	Rel(%)	Pass	
Be3130		1.0309	ppm	0.010582	1.0264	1.0000	Rel(%)	Pass	
Ca3179		10.416	ppm	0.10746	1.0317	10.000	Rel(%)	Pass	
Cd2144		1.0420	ppm	0.0021140	0.20289	1.0000	Rel(%)	Pass	
Co2286	**W**	**1.0567**	**ppm**	**0.0027730**	**0.26242**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Cr2677		1.0331	ppm	0.0021910	0.21210	1.0000	Rel(%)	Pass	
Cu3247	**W**	**1.0722**	**ppm**	**0.00011300**	**0.010565**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Fe2599	**W**	**10.628**	**ppm**	**0.10780**	**1.0143**	**10.000**	**Rel(%)**	**Warn High**	**5.0000**
K_7664		10.034	ppm	0.15001	1.4950	10.000	Rel(%)	Pass	
Mg2790		10.375	ppm	0.014409	0.13888	10.000	Rel(%)	Pass	
Mn2576	**W**	**1.0521**	**ppm**	**0.0052290**	**0.49699**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
Mo2020		1.0411	ppm	0.0061670	0.59237	1.0000	Rel(%)	Pass	
Na5895		10.135	ppm	0.061534	0.60712	10.000	Rel(%)	Pass	
Ni2316	**W**	**1.0634**	**ppm**	**0.0027430**	**0.25793**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
P_1782		1.9884	ppm	0.012969	0.65227	2.0000	Rel(%)	Pass	
Pb2203	**W**	**1.0566**	**ppm**	**0.00060600**	**0.057393**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
S_1820		2.0218	ppm	0.0079550	0.39348	2.0000	Rel(%)	Pass	
Sb2068		0.99740	ppm	0.0051530	0.51668	1.0000	Rel(%)	Pass	
Se1960		1.0466	ppm	0.0065900	0.62964	1.0000	Rel(%)	Pass	
Si2881		10.126	ppm	0.093865	0.92697	10.000	Rel(%)	Pass	
Sn1899		1.0484	ppm	0.0012810	0.12222	1.0000	Rel(%)	Pass	
Sr4077		1.0372	ppm	0.0087250	0.84122	1.0000	Rel(%)	Pass	
Ti3349		1.0328	ppm	0.0038080	0.36871	1.0000	Rel(%)	Pass	
Tl1908	**W**	**1.0803**	**ppm**	**0.0028740**	**0.26608**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
V_2924		1.0299	ppm	0.00098500	0.095594	1.0000	Rel(%)	Pass	
Zn2062		0.99408	ppm	0.0042900	0.43153	1.0000	Rel(%)	Pass	
Y_2243		6,291.0	Cts/S	2.3775	0.037791				
Y_3600		54,456	Cts/S	79.347	0.14571				
Y_3774		2,777.7	Cts/S	1.6171	0.058217				

ICBIS 2110462

Acquire Date: 8/19/2020 10:42:56AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00071800	ppm	0.00067300	93.721	.00000	Abs	Pass	
Al3961		0.014795	ppm	0.0081230	54.908	.00000	Abs	Pass	
As1890		0.00044900	ppm	0.00084700	188.59	.00000	Abs	Pass	
B_2089		0.0048090	ppm	0.00045200	9.3991	.00000	Abs	Pass	
Ba4554		-0.00030700	ppm	0.00098300	320.54	.00000	Abs	Pass	
Be3130		-0.00013900	ppm	0.00015800	113.54	.00000	Abs	Pass	
Ca3179		-0.0061940	ppm	0.0056070	90.519	.00000	Abs	Pass	
Cd2144		0.000066000	ppm	0.000072000	110.24	.00000	Abs	Pass	
Co2286		0.00042700	ppm	0.00025600	59.989	.00000	Abs	Pass	
Cr2677		0.000057000	ppm	0.00058700	1,024.5	.00000	Abs	Pass	

ICBIS 2110462

Acquire Date: 8/19/2020 10:42:56AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0020550	ppm	0.00054400	26.454	.00000	Abs	Pass	
Fe2599		0.025629	ppm	0.011773	45.934	.00000	Abs	Pass	
K_7664		0.12226	ppm	0.060743	49.684	.00000	Abs	Pass	
Mg2790		0.0041950	ppm	0.0036120	86.109	.00000	Abs	Pass	
Mn2576		0.00044500	ppm	0.000024000	5.4191	.00000	Abs	Pass	
Mo2020	**W**	**0.013715**	**ppm**	**0.00021700**	**1.5846**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.019995	ppm	0.013257	66.299	.00000	Abs	Pass	
Ni2316		0.0015090	ppm	0.00021000	13.921	.00000	Abs	Pass	
P_1782		0.0025220	ppm	0.00099900	39.613	.00000	Abs	Pass	
Pb2203		0.00081900	ppm	0.00018400	22.467	.00000	Abs	Pass	
S_1820		0.0055740	ppm	0.00047800	8.5746	.00000	Abs	Pass	
Sb2068		0.0061870	ppm	0.00078100	12.617	.00000	Abs	Pass	
Se1960		0.0034530	ppm	0.0017430	50.468	.00000	Abs	Pass	
Si2881		-0.044725	ppm	0.040243	89.978	.00000	Abs	Pass	
Sn1899		0.0018750	ppm	0.000084000	4.4718	.00000	Abs	Pass	
Sr4077		0.00045400	ppm	0.000059000	13.056	.00000	Abs	Pass	
Ti3349		0.0044650	ppm	0.00077100	17.261	.00000	Abs	Pass	
Tl1908		0.0010520	ppm	0.0027320	259.60	.00000	Abs	Pass	
V_2924		0.000069000	ppm	0.00011000	158.47	.00000	Abs	Pass	
Zn2062		0.0015620	ppm	0.00035700	22.833	.00000	Abs	Pass	
Y_2243		6,338.4	Cts/S	6.9903	0.11029				
Y_3600		55,002	Cts/S	76.364	0.13884				
Y_3774		2,740.3	Cts/S	1.3485	0.049210				

CRI 2112932

Acquire Date: 8/19/2020 10:46:57AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0042910	ppm	0.0016350	38.095	.00500	Rel(%)	Pass	
Al3961		0.21664	ppm	0.013013	6.0066	.20000	Rel(%)	Pass	
As1890		0.037390	ppm	0.0019430	5.1956	.04000	Rel(%)	Pass	
B_2089		0.19855	ppm	0.00036500	0.18390	.20000	Rel(%)	Pass	
Ba4554		0.019634	ppm	0.00048000	2.4472	.02000	Rel(%)	Pass	
Be3130		0.0029940	ppm	0.00019200	6.4191	.00300	Rel(%)	Pass	
Ca3179		0.53788	ppm	0.0013230	0.24604	.50000	Rel(%)	Pass	
Cd2144		0.0030010	ppm	0.0000090000	0.28930	.00300	Rel(%)	Pass	
Co2286		0.010941	ppm	0.00014300	1.3100	.01000	Rel(%)	Pass	
Cr2677		0.010458	ppm	0.00018200	1.7378	.01000	Rel(%)	Pass	
Cu3247		0.015533	ppm	0.000082000	0.53101	.01500	Rel(%)	Pass	
Fe2599		0.10657	ppm	0.0046840	4.3951	.10000	Rel(%)	Pass	
K_7664		1.0681	ppm	0.031501	2.9494	1.0000	Rel(%)	Pass	
Mg2790		0.51427	ppm	0.0023620	0.45923	.50000	Rel(%)	Pass	
Mn2576		0.010775	ppm	0.000036000	0.33637	.01000	Rel(%)	Pass	
Mo2020		0.022798	ppm	0.00023800	1.0461	.02000	Rel(%)	Pass	
Na5895		0.48887	ppm	0.0041420	0.84734	.50000	Rel(%)	Pass	
Ni2316	**W**	**0.013220**	**ppm**	**0.00078700**	**5.9570**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
P_1782		0.49781	ppm	0.0022630	0.45453	.50000	Rel(%)	Pass	
Pb2203		0.010429	ppm	0.0048720	46.716	.01000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CRI 2112932

Acquire Date: 8/19/2020 10:46:57AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.48756	ppm	0.000031000	0.0063190	.50000	Rel(%)	Pass	
Sb2068		0.028241	ppm	0.0025980	9.1986	.03000	Rel(%)	Pass	
Se1960		0.045347	ppm	0.0014050	3.0993	.04000	Rel(%)	Pass	
Si2881		0.44542	ppm	0.0080780	1.8136	.50000	Rel(%)	Pass	
Sn1899		0.023004	ppm	0.00022500	0.97906	.02000	Rel(%)	Pass	
Sr4077		0.050282	ppm	0.00018700	0.37179	.05000	Rel(%)	Pass	
Ti3349		0.0096960	ppm	0.00054300	5.5961	.01000	Rel(%)	Pass	
Tl1908		0.030330	ppm	0.000042000	0.13965	.03000	Rel(%)	Pass	
V_2924		0.019718	ppm	0.00019700	0.99800	.02000	Rel(%)	Pass	
Zn2062		0.020690	ppm	0.00045700	2.2102	.02000	Rel(%)	Pass	
Y_2243		6,300.6	Cts/S	5.1425	0.081620				
Y_3600		55,133	Cts/S	23.621	0.042843				
Y_3774		2,738.2	Cts/S	10.185	0.37194				

CRI 2077613

Acquire Date: 8/19/2020 10:50:56AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0050530	ppm	0.00030600	6.0510	.00500	Rel(%)	Pass	
Al3961		0.21271	ppm	0.036588	17.201	.20000	Rel(%)	Pass	
As1890		0.017207	ppm	0.0020280	11.788	.02000	Rel(%)	Pass	
B_2089		0.10071	ppm	0.00079100	0.78536	.10000	Rel(%)	Pass	
Ba4554		0.0043980	ppm	0.00032300	7.3389	.00500	Rel(%)	Pass	
Be3130		0.0020510	ppm	0.00016300	7.9591	.00200	Rel(%)	Pass	
Ca3179		0.50248	ppm	0.0064000	1.2737	.50000	Rel(%)	Pass	
Cd2144		0.0020070	ppm	0.000028000	1.3733	.00200	Rel(%)	Pass	
Co2286		0.0054480	ppm	0.000014000	0.25759	.00500	Rel(%)	Pass	
Cr2677		0.0053340	ppm	0.00045200	8.4651	.00500	Rel(%)	Pass	
Cu3247		0.011856	ppm	0.00074700	6.2964	.01000	Rel(%)	Pass	
Fe2599		0.10032	ppm	0.0099960	9.9642	.10000	Rel(%)	Pass	
K_7664		0.94555	ppm	0.054834	5.7992	1.0000	Rel(%)	Pass	
Mg2790		0.50324	ppm	0.00019900	0.039488	.50000	Rel(%)	Pass	
Mn2576		0.0053910	ppm	0.00013500	2.5007	.00500	Rel(%)	Pass	
Mo2020	**W**	**0.024327**	**ppm**	**0.00040700**	**1.6747**	**.02000**	**Rel(%)**	**Warn High**	**20.000**
Na5895		0.48280	ppm	0.0013980	0.28947	.50000	Rel(%)	Pass	
Ni2316	**W**	**0.0063350**	**ppm**	**0.00011200**	**1.7748**	**.00500**	**Rel(%)**	**Warn High**	**20.000**
P_1782		0.49515	ppm	0.0015390	0.31072	.50000	Rel(%)	Pass	
Pb2203	**W**	**0.0036700**	**ppm**	**0.00048100**	**13.116**	**.00500**	**Rel(%)**	**Warn Low**	**-20.000**
S_1820		0.48581	ppm	0.00090400	0.18609	.50000	Rel(%)	Pass	
Sb2068		0.019705	ppm	0.0013230	6.7118	.02000	Rel(%)	Pass	
Se1960		0.021435	ppm	0.0033820	15.778	.02000	Rel(%)	Pass	
Si2881		0.44858	ppm	0.015290	3.4085	.50000	Rel(%)	Pass	
Sn1899		0.021658	ppm	0.00080800	3.7301	.02000	Rel(%)	Pass	
Sr4077		0.049777	ppm	0.00063400	1.2728	.05000	Rel(%)	Pass	
Ti3349	**W**	**0.012355**	**ppm**	**0.00023100**	**1.8731**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
Tl1908		0.022309	ppm	0.0015420	6.9137	.02000	Rel(%)	Pass	
V_2924		0.0054980	ppm	0.00000	0.0064410	.00500	Rel(%)	Pass	
Zn2062		0.010554	ppm	0.00014100	1.3334	.01000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CRI 2077613

Acquire Date: 8/19/2020 10:50:56AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		6,332.9	Cts/S	16.187	0.25560				
Y_3600		55,537	Cts/S	341.89	0.61560				
Y_3774		2,779.2	Cts/S	2.5303	0.091043				

ICSA 2116186

Acquire Date: 8/19/2020 10:55:04AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0010960	ppm	0.000023000	2.0916	.00000	Abs	Pass	
Al3961		498.29	ppm	1.3807	0.27708	500.00	Abs	Pass	
As1890		-0.0031000	ppm	0.0022630	73.012	.00000	Abs	Pass	
B_2089		0.0058750	ppm	0.0024210	41.218	.00000	Abs	Pass	
Ba4554		0.0012610	ppm	0.00094900	75.221	.00000	Abs	Pass	
Be3130		-0.00069200	ppm	0.00037700	54.507	.00000	Abs	Pass	
Ca3179		482.83	ppm	1.3780	0.28539	500.00	Abs	Pass	
Cd2144		-0.00061600	ppm	0.00019900	32.260	.00000	Abs	Pass	
Co2286		-0.00061800	ppm	0.00020000	32.400	.00000	Abs	Pass	
Cr2677		-0.0024250	ppm	0.00054000	22.282	.00000	Abs	Pass	
Cu3247		-0.0024920	ppm	0.00020100	8.0696	.00000	Abs	Pass	
Fe2599		192.34	ppm	0.73904	0.38423	200.00	Abs	Pass	
K_7664		-0.093948	ppm	0.019564	20.825	.00000	Abs	Pass	
Mg2790		497.50	ppm	5.3368	1.0727	500.00	Abs	Pass	
Mn2576		0.0015220	ppm	0.000021000	1.3936	.00000	Abs	Pass	
Mo2020		0.00083200	ppm	0.00012300	14.788	.00000	Abs	Pass	
Na5895		0.086052	ppm	0.0066500	7.7275	.00000	Abs	Pass	
Ni2316		-0.0019690	ppm	0.000099000	5.0224	.00000	Abs	Pass	
P_1782		0.016951	ppm	0.00044100	2.6036	.00000	Abs	Pass	
Pb2203		-0.0026920	ppm	0.0039370	146.27	.00000	Abs	Pass	
S_1820		-0.019977	ppm	0.00088100	4.4091	.00000	Abs	Pass	
Sb2068		0.0020300	ppm	0.0048840	240.58	.00000	Abs	Pass	
Se1960		0.0058800	ppm	0.011455	194.80	.00000	Abs	Pass	
Si2881		-0.028658	ppm	0.0060140	20.987	.00000	Abs	Pass	
Sn1899		-0.0045600	ppm	0.000060000	1.3111	.00000	Abs	Pass	
Sr4077		0.0053500	ppm	0.000041000	0.77155	.00000	Abs	Pass	
Ti3349		-0.00049700	ppm	0.00047500	95.453	.00000	Abs	Pass	
Tl1908		-0.00050200	ppm	0.0033330	664.28	.00000	Abs	Pass	
V_2924		0.00011400	ppm	0.0018940	1,662.5	.00000	Abs	Pass	
Zn2062		-0.0049170	ppm	0.000041000	0.84247	.00000	Abs	Pass	
Y_2243		5,509.6	Cts/S	14.336	0.26020				
Y_3600		47,017	Cts/S	315.87	0.67182				
Y_3774		2,680.2	Cts/S	10.656	0.39761				

ICSAB 2107147

Acquire Date: 8/19/2020 10:59:06AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.0783	ppm	0.0069950	0.64878	1.0000	Rel(%)	Pass	
Al3961		501.51	ppm	1.9502	0.38887	500.00	Rel(%)	Pass	
As1890		0.95770	ppm	0.0063730	0.66550				
B_2089		9.2957	ppm	0.015726	0.16917				
Ba4554		0.99799	ppm	0.0042900	0.42984	1.0000	Rel(%)	Pass	
Be3130		0.48924	ppm	0.0023060	0.47130	.50000	Rel(%)	Pass	
Ca3179		485.34	ppm	2.3504	0.48427	500.00	Rel(%)	Pass	
Cd2144		0.93241	ppm	0.0028850	0.30938	1.0000	Rel(%)	Pass	
Co2286		0.90441	ppm	0.0014330	0.15849	1.0000	Rel(%)	Pass	
Cr2677		0.99459	ppm	0.0023990	0.24123	1.0000	Rel(%)	Pass	
Cu3247		0.99592	ppm	0.0051590	0.51805	1.0000	Rel(%)	Pass	
Fe2599		195.17	ppm	0.63113	0.32338	200.00	Rel(%)	Pass	
K_7664		10.244	ppm	0.11074	1.0811				
Mg2790		499.41	ppm	0.38075	0.076239	500.00	Rel(%)	Pass	
Mn2576		0.99459	ppm	0.0032180	0.32359	1.0000	Rel(%)	Pass	
Mo2020		0.00031700	ppm	0.00010900	34.270				
Na5895		10.417	ppm	0.083551	0.80210				
Ni2316		0.88443	ppm	0.0052240	0.59062	1.0000	Rel(%)	Pass	
P_1782		9.9929	ppm	0.012478	0.12487				
Pb2203		0.92527	ppm	0.0021610	0.23359	1.0000	Rel(%)	Pass	
S_1820		-0.013051	ppm	0.0013990	10.723				
Sb2068		0.0063490	ppm	0.0043840	69.050				
Se1960		0.97575	ppm	0.0060520	0.62028				
Si2881		-0.058364	ppm	0.075302	129.02				
Sn1899		-0.0051050	ppm	0.00031700	6.2123				
Sr4077		1.0105	ppm	0.0054500	0.53931				
Ti3349		-0.0016460	ppm	0.00023700	14.393				
Tl1908		0.87171	ppm	0.0028910	0.33166				
V_2924		1.0213	ppm	0.0032310	0.31640	1.0000	Rel(%)	Pass	
Zn2062		0.92834	ppm	0.0030600	0.32961	1.0000	Rel(%)	Pass	
Y_2243		5,477.1	Cts/S	12.895	0.23544				
Y_3600		46,498	Cts/S	63.158	0.13583				
Y_3774		2,648.5	Cts/S	8.2488	0.31146				

AI 2110458

Acquire Date: 8/19/2020 11:02:58AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012630	ppm	0.00036700	29.031	.00000	Abs	Pass	
Al3961		985.27	ppm	6.5287	0.66263				
As1890		-0.0064000	ppm	0.0035460	55.411	.00000	Abs	Pass	
B_2089		0.029660	ppm	0.0015270	5.1495	.00000	Abs	Pass	
Ba4554		0.00064900	ppm	0.00037400	57.564	.00000	Abs	Pass	
Be3130		0.00011000	ppm	0.00023400	212.05	.00000	Abs	Pass	
Ca3179		0.053476	ppm	0.0094660	17.701				
Cd2144		-0.0015890	ppm	0.000067000	4.1993	.00000	Abs	Pass	
Co2286		-0.00042200	ppm	0.00020600	48.876	.00000	Abs	Pass	
Cr2677		0.00040600	ppm	0.00041800	103.02	.00000	Abs	Pass	

Al 2110458

Acquire Date: 8/19/2020 11:02:58AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		-0.0018810	ppm	0.0015330	81.514	.00000	Abs	Pass	
Fe2599		0.24360	ppm	0.0036270	1.4890				
K_7664		-0.055968	ppm	0.012762	22.802	.00000	Abs	Pass	
Mg2790		0.017002	ppm	0.0019580	11.518				
Mn2576		0.00032000	ppm	0.00015000	46.833	.00000	Abs	Pass	
Mo2020		0.00036500	ppm	0.00047600	130.40	.00000	Abs	Pass	
Na5895		0.36340	ppm	0.0053900	1.4832	.00000	Abs	Pass	
Ni2316		-0.0012440	ppm	0.00074000	59.505	.00000	Abs	Pass	
P_1782		0.014855	ppm	0.0056230	37.856	.00000	Abs	Pass	
Pb2203		0.0036420	ppm	0.0031500	86.485	.00000	Abs	Pass	
S_1820		0.0097020	ppm	0.0045460	46.858	.00000	Abs	Pass	
Sb2068		0.0012330	ppm	0.0025910	210.12	.00000	Abs	Pass	
Se1960		0.017798	ppm	0.0059250	33.290	.00000	Abs	Pass	
Si2881		0.057928	ppm	0.0023600	4.0742	.00000	Abs	Pass	
Sn1899		-0.0053520	ppm	0.00023100	4.3170	.00000	Abs	Pass	
Sr4077		0.00043300	ppm	0.000072000	16.718	.00000	Abs	Pass	
Ti3349		0.0013200	ppm	0.0012280	93.019	.00000	Abs	Pass	
Tl1908		0.0023230	ppm	0.00022500	9.6879	.00000	Abs	Pass	
V_2924		-0.00084700	ppm	0.00027400	32.332	.00000	Abs	Pass	
Zn2062		-0.00053000	ppm	0.00059600	112.48	.00000	Abs	Pass	
Y_2243		5,903.8	Cts/S	1.8310	0.031014				
Y_3600		48,041	Cts/S	41.153	0.085661				
Y_3774		2,742.2	Cts/S	11.661	0.42526				

Ca 2116127

Acquire Date: 8/19/2020 11:06:54AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0011000	ppm	0.00073400	66.715	.00000	Abs	Pass	
Al3961		0.19437	ppm	0.018224	9.3757				
As1890		0.0014760	ppm	0.00077700	52.652	.00000	Abs	Pass	
B_2089		0.012399	ppm	0.00084600	6.8207	.00000	Abs	Pass	
Ba4554		0.0012320	ppm	0.00036700	29.827	.00000	Abs	Pass	
Be3130		-0.00087000	ppm	0.00023600	27.169	.00000	Abs	Pass	
Ca3179		1,008.3	ppm	7.0073	0.69494				
Cd2144		0.000075000	ppm	0.00012700	169.50	.00000	Abs	Pass	
Co2286		0.00014200	ppm	0.00040200	283.46	.00000	Abs	Pass	
Cr2677		0.0018000	ppm	0.00026500	14.692	.00000	Abs	Pass	
Cu3247		0.0029770	ppm	0.0014590	48.991	.00000	Abs	Pass	
Fe2599		0.047950	ppm	0.0036490	7.6097				
K_7664		0.00098200	ppm	0.019618	1,997.2	.00000	Abs	Pass	
Mg2790		0.10173	ppm	0.00059600	0.58563				
Mn2576		-0.0010730	ppm	0.000067000	6.2488	.00000	Abs	Pass	
Mo2020		0.000030000	ppm	0.000040000	133.10	.00000	Abs	Pass	
Na5895		0.059270	ppm	0.0023230	3.9185	.00000	Abs	Pass	
Ni2316		0.0010530	ppm	0.00031400	29.769	.00000	Abs	Pass	
P_1782		0.017112	ppm	0.0037450	21.884	.00000	Abs	Pass	
Pb2203		-0.0028340	ppm	0.0025450	89.792	.00000	Abs	Pass	

Ca 2116127

Acquire Date: 8/19/2020 11:06:54AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.030484	ppm	0.0021480	7.0455	.00000	Abs	Pass	
Sb2068		-0.0096800	ppm	0.0011360	11.737	.00000	Abs	Pass	
Se1960		0.0013890	ppm	0.0012940	93.127	.00000	Abs	Pass	
Si2881		0.014368	ppm	0.020613	143.46	.00000	Abs	Pass	
Sn1899		0.00015900	ppm	0.00049600	312.25	.00000	Abs	Pass	
Sr4077		-0.0032750	ppm	0.00016200	4.9503	.00000	Abs	Pass	
Ti3349		-0.0041200	ppm	0.00040300	9.7869	.00000	Abs	Pass	
Tl1908		0.00055500	ppm	0.0029500	531.76	.00000	Abs	Pass	
V_2924		0.00064200	ppm	0.00024900	38.720	.00000	Abs	Pass	
Zn2062		0.00036000	ppm	0.00016600	46.173	.00000	Abs	Pass	
Y_2243		5,570.9	Cts/S	35.976	0.64579				
Y_3600		48,745	Cts/S	45.788	0.093934				
Y_3774		2,657.5	Cts/S	10.961	0.41247				

Fe 2096787

Acquire Date: 8/19/2020 11:10:53AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00093000	ppm	0.0010340	111.19	.00000	Abs	Pass	
Al3961		0.034925	ppm	0.011424	32.709				
As1890		-0.013093	ppm	0.0016820	12.845	.00000	Abs	Pass	
B_2089		0.018601	ppm	0.00028900	1.5517	.00000	Abs	Pass	
Ba4554		-0.00032500	ppm	0.00042600	130.99	.00000	Abs	Pass	
Be3130		-0.00019000	ppm	0.00029900	157.00	.00000	Abs	Pass	
Ca3179		0.13210	ppm	0.026443	20.017				
Cd2144		0.00033500	ppm	0.00015800	47.141	.00000	Abs	Pass	
Co2286		-0.00099700	ppm	0.000078000	7.7845	.00000	Abs	Pass	
Cr2677		0.00029200	ppm	0.00078500	268.76	.00000	Abs	Pass	
Cu3247	**W**	**-0.013837**	**ppm**	**0.00043100**	**3.1139**	**.00000**	**Abs**	**Warn Low**	**-.01000**
Fe2599		966.34	ppm	2.5620	0.26512				
K_7664		-0.090471	ppm	0.068861	76.113	.00000	Abs	Pass	
Mg2790		0.19531	ppm	0.0047860	2.4506				
Mn2576		0.0034600	ppm	0.000061000	1.7489	.00000	Abs	Pass	
Mo2020		0.0022970	ppm	0.00034400	14.991	.00000	Abs	Pass	
Na5895		0.012733	ppm	0.0028390	22.300	.00000	Abs	Pass	
Ni2316	**F**	**-0.013211**	**ppm**	**0.0016250**	**12.298**	**.00000**	**Abs**	**Fail Low**	**-.01000**
P_1782		0.010656	ppm	0.000031000	0.29503	.00000	Abs	Pass	
Pb2203	**W**	**-0.0094810**	**ppm**	**0.0018170**	**19.168**	**.00000**	**Abs**	**Warn Low**	**-.00500**
S_1820		-0.00067800	ppm	0.0027990	412.96	.00000	Abs	Pass	
Sb2068		-0.00062400	ppm	0.0058230	932.55	.00000	Abs	Pass	
Se1960	**W**	**0.020666**	**ppm**	**0.0020980**	**10.152**	**.00000**	**Abs**	**Warn High**	**0.02000**
Si2881		-0.029133	ppm	0.032175	110.44	.00000	Abs	Pass	
Sn1899		0.0079110	ppm	0.00041600	5.2619	.00000	Abs	Pass	
Sr4077		0.00011700	ppm	0.000019000	15.902	.00000	Abs	Pass	
Ti3349		-0.0015850	ppm	0.00078600	49.598	.00000	Abs	Pass	
Tl1908		0.00078800	ppm	0.0019710	250.09	.00000	Abs	Pass	
V_2924		-0.00085100	ppm	0.000071000	8.3623	.00000	Abs	Pass	
Zn2062		0.0026090	ppm	0.000083000	3.1739	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Fe 2096787

Acquire Date: 8/19/2020 11:10:53AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		5,963.4	Cts/S	14.284	0.23953				
Y_3600		51,965	Cts/S	77.361	0.14887				
Y_3774		2,709.9	Cts/S	6.7708	0.24985				

Mg 2110460

Acquire Date: 8/19/2020 11:14:52AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0017290	ppm	0.00054800	31.679	.00000	Abs	Pass	
Al3961		0.021825	ppm	0.034138	156.42				
As1890		-0.00060400	ppm	0.00089500	148.27	.00000	Abs	Pass	
B_2089		0.0069020	ppm	0.000054000	0.77797	.00000	Abs	Pass	
Ba4554		0.0013820	ppm	0.00041000	29.644	.00000	Abs	Pass	
Be3130		.0000090000	ppm	0.00018600	1,962.3	.00000	Abs	Pass	
Ca3179		0.20737	ppm	0.029133	14.049				
Cd2144		0.0010170	ppm	0.000021000	2.1136	.00000	Abs	Pass	
Co2286		0.00052200	ppm	0.00022700	43.509	.00000	Abs	Pass	
Cr2677		-0.00048100	ppm	0.00047500	98.734	.00000	Abs	Pass	
Cu3247		0.0023780	ppm	0.0012170	51.180	.00000	Abs	Pass	
Fe2599		0.44079	ppm	0.068621	15.568				
K_7664		-0.10886	ppm	0.030939	28.420	.00000	Abs	Pass	
Mg2790		1,023.8	ppm	2.4599	0.24027				
Mn2576		0.0039580	ppm	0.00010100	2.5528	.00000	Abs	Pass	
Mo2020		0.00056700	ppm	0.00037600	66.202	.00000	Abs	Pass	
Na5895		0.056682	ppm	0.037877	66.825	.00000	Abs	Pass	
Ni2316		0.0016970	ppm	0.000072000	4.2210	.00000	Abs	Pass	
P_1782		0.0025850	ppm	0.0047140	182.35	.00000	Abs	Pass	
Pb2203		0.0019540	ppm	0.0015680	80.281	.00000	Abs	Pass	
S_1820		0.011293	ppm	0.0078620	69.620	.00000	Abs	Pass	
Sb2068		0.0057910	ppm	0.00035500	6.1277	.00000	Abs	Pass	
Se1960		-0.0013290	ppm	0.0053910	405.62	.00000	Abs	Pass	
Si2881		-0.020080	ppm	0.036799	183.26	.00000	Abs	Pass	
Sn1899		-0.00047700	ppm	0.00018000	37.792	.00000	Abs	Pass	
Sr4077		0.00015700	ppm	0.000057000	36.489	.00000	Abs	Pass	
Ti3349		0.0035270	ppm	0.00014700	4.1630	.00000	Abs	Pass	
Tl1908		0.0061420	ppm	0.0028860	46.978	.00000	Abs	Pass	
V_2924		-0.00011800	ppm	0.00017600	149.50	.00000	Abs	Pass	
Zn2062		-0.00030400	ppm	0.00039100	128.33	.00000	Abs	Pass	
Y_2243		5,590.5	Cts/S	6.1176	0.10943				
Y_3600		48,438	Cts/S	194.16	0.40084				
Y_3774		2,631.5	Cts/S	16.558	0.62923				

rinse1

Acquire Date: 8/19/2020 11:18:56AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00058400	ppm	0.00067000	114.61
Al3961		0.012212	ppm	0.0098190	80.406
As1890		0.000070000	ppm	0.0015140	2,157.5
B_2089		0.0023840	ppm	0.00029200	12.265
Ba4554		0.00053800	ppm	0.00042400	78.729
Be3130		0.000033000	ppm	0.00016300	496.63
Ca3179		-0.0070140	ppm	0.0077700	110.77
Cd2144		0.000028000	ppm	0.000044000	156.58
Co2286		0.00029300	ppm	0.000031000	10.649
Cr2677		0.00022500	ppm	0.00068000	302.29
Cu3247		0.00010500	ppm	0.00019300	183.11
Fe2599		0.035521	ppm	0.0083130	23.402
K_7664		-0.054260	ppm	0.027252	50.225
Mg2790		0.015312	ppm	0.0079200	51.726
Mn2576		-0.00013000	ppm	0.00015300	117.95
Mo2020		-0.00033300	ppm	0.00030800	92.415
Na5895		-0.017182	ppm	0.010371	60.361
Ni2316		-0.00026400	ppm	0.00062300	235.74
P_1782		-0.00052400	ppm	0.00025400	48.494
Pb2203		-0.0026850	ppm	0.00060600	22.573
S_1820		0.0053650	ppm	0.00059300	11.056
Sb2068		0.0010200	ppm	0.0029260	286.82
Se1960		0.0014430	ppm	0.0023940	165.90
Si2881		-0.012828	ppm	0.062551	487.60
Sn1899		-0.00044100	ppm	0.00023300	52.759
Sr4077		-0.00011600	ppm	0.00027000	232.84
Ti3349		-0.0010320	ppm	0.0012120	117.47
Tl1908		0.0027250	ppm	0.0044180	162.15
V_2924		0.000020000	ppm	0.000054000	270.21
Zn2062		-0.00028400	ppm	0.00017300	61.125
Y_2243		6,197.8	Cts/S	14.104	0.22756
Y_3600		54,170	Cts/S	156.42	0.28875
Y_3774		2,692.8	Cts/S	13.066	0.48522

rinse2

Acquire Date: 8/19/2020 11:22:55AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00018400	ppm	0.00077600	420.87
Al3961		0.024235	ppm	0.014896	61.467
As1890		0.00021800	ppm	0.0018860	864.64
B_2089		0.0021570	ppm	0.00052500	24.352
Ba4554		0.000078000	ppm	0.00060600	777.96
Be3130		-0.00011500	ppm	0.00026200	227.45
Ca3179		-0.0025360	ppm	0.0043000	169.56
Cd2144		-0.00011600	ppm	0.000021000	17.749
Co2286		0.00021300	ppm	0.00010800	50.555

rinse2

Acquire Date: 8/19/2020 11:22:55AM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.000092000	ppm	0.0010290	1,118.4
Cu3247		0.00026700	ppm	0.00084300	315.57
Fe2599		0.024835	ppm	0.012074	48.617
K_7664		-0.11100	ppm	0.0098490	8.8728
Mg2790		-0.0032920	ppm	0.0074870	227.41
Mn2576		0.000081000	ppm	0.000081000	100.71
Mo2020		-0.00036100	ppm	0.000023000	6.3079
Na5895		-0.011767	ppm	0.0025590	21.750
Ni2316		0.000037000	ppm	0.00081700	2,221.5
P_1782		0.0034290	ppm	0.0012750	37.193
Pb2203		0.0015850	ppm	0.00066900	42.205
S_1820		0.0011950	ppm	0.010016	838.09
Sb2068		0.0010840	ppm	0.0020250	186.84
Se1960		0.0050070	ppm	0.0038980	77.865
Si2881		-0.056520	ppm	0.076752	135.80
Sn1899		-0.00098000	ppm	0.00016600	16.950
Sr4077		0.000032000	ppm	0.00051000	1,615.0
Ti3349		-0.00075000	ppm	0.0000090000	1.1541
Tl1908		0.0015960	ppm	0.0040080	251.15
V_2924		-0.00051700	ppm	0.00019200	37.071
Zn2062		-0.00056800	ppm	0.00052800	92.986
Y_2243		6,171.4	Cts/S	10.807	0.17512
Y_3600		54,142	Cts/S	100.68	0.18595
Y_3774		2,700.1	Cts/S	23.988	0.88839

CCV 2103404

Acquire Date: 8/19/2020 11:26:56AM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51076	ppm	0.0028990	0.56753	.50000	Rel(%)	Pass	
Al3961		25.730	ppm	0.25526	0.99208	25.000	Rel(%)	Pass	
As1890		0.51493	ppm	0.0061990	1.2038	.50000	Rel(%)	Pass	
B_2089		1.0438	ppm	0.0035560	0.34063	1.0000	Rel(%)	Pass	
Ba4554		2.6173	ppm	0.025447	0.97227	2.5000	Rel(%)	Pass	
Be3130		0.51971	ppm	0.0044060	0.84775	.50000	Rel(%)	Pass	
Ca3179		26.561	ppm	0.24091	0.90702	25.000	Rel(%)	Pass	
Cd2144		0.52608	ppm	0.0012190	0.23169	.50000	Rel(%)	Pass	
Co2286		2.6341	ppm	0.0068670	0.26072	2.5000	Rel(%)	Pass	
Cr2677		2.5968	ppm	0.0035950	0.13843	2.5000	Rel(%)	Pass	
Cu3247		2.5905	ppm	0.011069	0.42729	2.5000	Rel(%)	Pass	
Fe2599		26.572	ppm	0.23644	0.88982	25.000	Rel(%)	Pass	
K_7664		25.717	ppm	0.30122	1.1713	25.000	Rel(%)	Pass	
Mg2790		25.957	ppm	0.098141	0.37810	25.000	Rel(%)	Pass	
Mn2576		2.6522	ppm	0.013721	0.51732	2.5000	Rel(%)	Pass	
Mo2020		1.0457	ppm	0.0048090	0.45991	1.0000	Rel(%)	Pass	
Na5895		25.813	ppm	0.25636	0.99313	25.000	Rel(%)	Pass	
Ni2316		2.6413	ppm	0.0074690	0.28277	2.5000	Rel(%)	Pass	
P_1782		2.6224	ppm	0.011321	0.43172	2.5000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/19/2020 11:26:56AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.53121	ppm	0.00017500	0.033023	.50000	Rel(%)	Pass	
S_1820		2.5540	ppm	0.013993	0.54786	2.5000	Rel(%)	Pass	
Sb2068		0.52131	ppm	0.0053200	1.0204	.50000	Rel(%)	Pass	
Se1960		0.52641	ppm	0.0011020	0.20942	.50000	Rel(%)	Pass	
Si2881		2.6062	ppm	0.052251	2.0048	2.5000	Rel(%)	Pass	
Sn1899		2.6137	ppm	0.0067820	0.25949	2.5000	Rel(%)	Pass	
Sr4077		2.5927	ppm	0.023986	0.92515	2.5000	Rel(%)	Pass	
Ti3349		1.0277	ppm	0.0038230	0.37201	1.0000	Rel(%)	Pass	
Tl1908		0.53419	ppm	0.0026920	0.50385	.50000	Rel(%)	Pass	
V_2924		2.5811	ppm	0.012250	0.47458	2.5000	Rel(%)	Pass	
Zn2062		2.6159	ppm	0.014281	0.54593	2.5000	Rel(%)	Pass	
Y_2243		5,994.1	Cts/S	16.170	0.26977				
Y_3600		51,802	Cts/S	123.95	0.23928				
Y_3774		2,658.9	Cts/S	15.346	0.57718				

CCB 2110462

Acquire Date: 8/19/2020 11:30:43AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00095800	ppm	0.00056400	58.856	.00000	Abs	Pass	
Al3961		0.012240	ppm	0.00092700	7.5770	.00000	Abs	Pass	
As1890		0.0020390	ppm	0.0010030	49.183	.00000	Abs	Pass	
B_2089		0.0046000	ppm	0.000070000	1.5272	.00000	Abs	Pass	
Ba4554		0.00016700	ppm	0.0000090000	5.6567	.00000	Abs	Pass	
Be3130		0.000036000	ppm	0.00067100	1,860.1	.00000	Abs	Pass	
Ca3179		0.0087910	ppm	0.0088590	100.78	.00000	Abs	Pass	
Cd2144		-0.00015900	ppm	0.000034000	21.542	.00000	Abs	Pass	
Co2286		-0.00018400	ppm	0.00033800	184.38	.00000	Abs	Pass	
Cr2677		0.00010100	ppm	0.00059800	590.62	.00000	Abs	Pass	
Cu3247		-0.00038100	ppm	0.0012150	319.23	.00000	Abs	Pass	
Fe2599	**W**	**0.054393**	**ppm**	**0.0025820**	**4.7470**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.011998	ppm	0.035121	292.72	.00000	Abs	Pass	
Mg2790		-0.0045850	ppm	0.0043290	94.424	.00000	Abs	Pass	
Mn2576		0.00013000	ppm	0.00010100	77.196	.00000	Abs	Pass	
Mo2020	**W**	**0.011493**	**ppm**	**0.00091700**	**7.9815**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		-0.0054140	ppm	0.015486	286.04	.00000	Abs	Pass	
Ni2316		0.00048900	ppm	0.00020500	41.911	.00000	Abs	Pass	
P_1782		0.000053000	ppm	0.00038700	734.45	.00000	Abs	Pass	
Pb2203		0.000027000	ppm	0.00041400	1,549.4	.00000	Abs	Pass	
S_1820		-0.00044700	ppm	0.0019680	440.36	.00000	Abs	Pass	
Sb2068		-0.00013000	ppm	0.0011700	900.50	.00000	Abs	Pass	
Se1960		0.0022560	ppm	0.00029400	13.040	.00000	Abs	Pass	
Si2881		0.029622	ppm	0.056140	189.52	.00000	Abs	Pass	
Sn1899		0.0015210	ppm	0.00095100	62.552	.00000	Abs	Pass	
Sr4077		0.00037200	ppm	0.00016100	43.318	.00000	Abs	Pass	
Ti3349		0.0036240	ppm	0.00048300	13.325	.00000	Abs	Pass	
Tl1908		0.0067710	ppm	0.00017900	2.6435	.00000	Abs	Pass	
V_2924		0.00048400	ppm	0.00039100	80.695	.00000	Abs	Pass	

CCB 2110462

Acquire Date: 8/19/2020 11:30:43AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0014210	ppm	0.00030300	21.331	.00000	Abs	Pass	
Y_2243		6,093.7	Cts/S	40.788	0.66935				
Y_3600		53,598	Cts/S	75.861	0.14154				
Y_3774		2,650.6	Cts/S	7.3704	0.27806				

MB 320-403145/1-A

Acquire Date: 8/19/2020 11:34:44AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00033000	ppm	0.0010240	310.76
Al3961		0.0069730	ppm	0.00012800	1.8328
As1890		-0.0019710	ppm	0.00091900	46.619
B_2089		0.0025070	ppm	0.00015100	6.0144
Ba4554		.0000010000	ppm	0.00075700	61,036
Be3130		-0.00019400	ppm	0.00014200	73.014
Ca3179		-0.0048330	ppm	0.017359	359.15
Cd2144		0.000053000	ppm	0.000020000	37.267
Co2286		-0.00013000	ppm	0.00036200	279.51
Cr2677		-0.00013500	ppm	0.00030700	226.91
Cu3247		-0.00021800	ppm	0.00092600	423.93
Fe2599		0.014240	ppm	0.030844	216.60
K_7664		-0.037127	ppm	0.025326	68.216
Mg2790		-0.0030850	ppm	0.0062420	202.34
Mn2576		0.00014800	ppm	0.000058000	39.183
Mo2020		0.0013790	ppm	0.00055900	40.554
Na5895		-0.0019870	ppm	0.015752	792.60
Ni2316		0.0011710	ppm	0.00087300	74.595
P_1782		0.0026950	ppm	0.0011030	40.925
Pb2203		-0.00089600	ppm	0.00078500	87.577
S_1820		0.019305	ppm	0.0034730	17.992
Sb2068		-0.00026600	ppm	0.0015510	582.57
Se1960		0.0017530	ppm	0.00093500	53.336
Si2881		0.050755	ppm	0.071858	141.58
Sn1899		0.00061700	ppm	0.0000030000	0.50352
Sr4077		-0.00038700	ppm	0.00028900	74.889
Ti3349		0.00044800	ppm	0.00025500	56.838
Tl1908		0.000056000	ppm	0.0023510	4,163.6
V_2924		-0.00028200	ppm	0.00057400	203.46
Zn2062		0.00049800	ppm	0.00028200	56.709
Y_2243		6,210.6	Cts/S	5.1026	0.082159
Y_3600		54,622	Cts/S	8.1627	0.014944
Y_3774		2,694.7	Cts/S	22.145	0.82182

LCS 320-403145/2-A

Acquire Date: 8/19/2020 11:38:48AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046521	ppm	0.0026170	5.6260
Al3961		5.0789	ppm	0.0042410	0.083500
As1890	**W**	**0.46865**	**ppm**	**0.00041300**	**0.088031**
B_2089		4.7513	ppm	0.012802	0.26945
Ba4554	**W**	**0.51068**	**ppm**	**0.0022030**	**0.43144**
Be3130		0.25316	ppm	0.00078300	0.30949
Ca3179		26.291	ppm	0.11225	0.42696
Cd2144	**W**	**0.24805**	**ppm**	**0.00083600**	**0.33692**
Co2286		0.25031	ppm	0.0015790	0.63083
Cr2677	**W**	**0.25147**	**ppm**	**0.0016740**	**0.66557**
Cu3247		0.24902	ppm	0.00057400	0.23031
Fe2599		5.2897	ppm	0.11830	2.2365
K_7664		25.220	ppm	0.12194	0.48348
Mg2790		25.209	ppm	0.10792	0.42808
Mn2576		0.25669	ppm	0.0011710	0.45605
Mo2020		0.26074	ppm	0.00079900	0.30624
Na5895		25.355	ppm	0.15997	0.63094
Ni2316		0.24599	ppm	0.0017660	0.71778
P_1782		5.1445	ppm	0.010763	0.20922
Pb2203	**W**	**0.25078**	**ppm**	**0.0055040**	**2.1949**
S_1820		4.9540	ppm	0.016382	0.33067
Sb2068		0.47572	ppm	0.0022020	0.46290
Se1960	**W**	**0.47560**	**ppm**	**0.00030900**	**0.064937**
Si2881	**W**	**5.0489**	**ppm**	**0.044468**	**0.88076**
Sn1899		0.52231	ppm	0.00051600	0.098779
Sr4077		0.25346	ppm	0.00057600	0.22742
Ti3349	**W**	**0.25120**	**ppm**	**0.00086200**	**0.34309**
Tl1908		0.49056	ppm	0.0029400	0.59933
V_2924		0.25245	ppm	0.00099900	0.39561
Zn2062		0.49711	ppm	0.0015450	0.31071
Y_2243		6,014.9	Cts/S	10.226	0.17000
Y_3600		52,660	Cts/S	161.26	0.30623
Y_3774		2,669.6	Cts/S	0.90808	0.034016

xMB 320-404814/1-A

Acquire Date: 8/19/2020 11:42:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00052000	ppm	0.00074400	143.06
Al3961		0.025483	ppm	0.037170	145.86
As1890		-0.0010870	ppm	0.00020400	18.771
B_2089		0.017633	ppm	0.0015920	9.0274
Ba4554		0.0012490	ppm	0.00068100	54.499
Be3130		0.000025000	ppm	0.000086000	338.88
Ca3179	**W**	**0.30921**	**ppm**	**0.0090600**	**2.9302**
Cd2144		0.000042000	ppm	0.00012300	291.60
Co2286		0.00062900	ppm	0.00013200	21.029

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

xMB 320-404814/1-A

Acquire Date: 8/19/2020 11:42:37AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677	**F**	**0.021499**	**ppm**	**0.00097000**	**4.5098**
Cu3247		0.0043530	ppm	0.00029700	6.8275
Fe2599	**F**	**0.15426**	**ppm**	**0.0030450**	**1.9741**
K_7664		-0.0045450	ppm	0.054462	1,198.3
Mg2790		0.060925	ppm	0.0063410	10.408
Mn2576		0.0027750	ppm	0.000086000	3.1022
Mo2020		0.0042260	ppm	0.00045500	10.766
Na5895		0.23536	ppm	0.0029510	1.2538
Ni2316	**F**	**0.016110**	**ppm**	**0.00027400**	**1.7033**
P_1782		0.0069080	ppm	0.0013430	19.441
Pb2203		0.000029000	ppm	0.0010170	3,450.8
S_1820		0.051272	ppm	0.0037830	7.3774
Sb2068		-0.00048500	ppm	0.0000090000	1.8229
Se1960		0.0034490	ppm	0.0014650	42.460
Si2881		0.026858	ppm	0.029785	110.90
Sn1899	**F**	**0.043192**	**ppm**	**0.00081200**	**1.8810**
Sr4077		0.0010360	ppm	0.00020400	19.728
Ti3349		0.00069000	ppm	0.00014900	21.626
Tl1908		0.0039490	ppm	0.00022400	5.6645
V_2924		0.00017000	ppm	0.00047100	277.25
Zn2062		0.0083280	ppm	0.000054000	0.65110
Y_2243		6,151.4	Cts/S	5.4990	0.089394
Y_3600		54,109	Cts/S	66.738	0.12334
Y_3774		2,647.7	Cts/S	9.6944	0.36615

LCS 320-404814/2-A

Acquire Date: 8/19/2020 11:46:40AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046177	ppm	0.0014220	3.0799
Al3961		4.7325	ppm	0.036450	0.77022
As1890	**W**	**0.44330**	**ppm**	**0.00087500**	**0.19745**
B_2089		4.5568	ppm	0.011930	0.26179
Ba4554	**W**	**0.47843**	**ppm**	**0.0012450**	**0.26027**
Be3130		0.23750	ppm	0.0013410	0.56445
Ca3179		24.828	ppm	0.074806	0.30130
Cd2144	**W**	**0.23344**	**ppm**	**0.00045800**	**0.19621**
Co2286		0.23514	ppm	0.00092700	0.39444
Cr2677	**W**	**0.23593**	**ppm**	**0.00064200**	**0.27196**
Cu3247		0.23941	ppm	0.0017230	0.71950
Fe2599		4.9915	ppm	0.020121	0.40310
K_7664		23.576	ppm	0.075214	0.31903
Mg2790		23.798	ppm	0.10090	0.42396
Mn2576		0.24071	ppm	0.0013570	0.56373
Mo2020		0.24370	ppm	0.0015530	0.63733
Na5895		23.925	ppm	0.092783	0.38781
Ni2316		0.23227	ppm	0.00047400	0.20406

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-404814/2-A

Acquire Date: 8/19/2020 11:46:40AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.8759	ppm	0.025274	0.51836
Pb2203	**W**	**0.23726**	**ppm**	**0.0014930**	**0.62930**
S_1820		4.7283	ppm	0.0018370	0.038856
Sb2068		0.45117	ppm	0.0010320	0.22866
Se1960	**W**	**0.45178**	**ppm**	**0.00068000**	**0.15045**
Si2881	**W**	**4.7983**	**ppm**	**0.0066980**	**0.13959**
Sn1899		0.48842	ppm	0.0023340	0.47794
Sr4077		0.23898	ppm	0.000038000	0.016065
Ti3349	**W**	**0.23643**	**ppm**	**0.0013740**	**0.58124**
Tl1908		0.46837	ppm	0.00050700	0.10820
V_2924		0.23666	ppm	0.0010070	0.42541
Zn2062		0.47194	ppm	0.0015300	0.32414
Y_2243		6,144.5	Cts/S	5.6034	0.091194
Y_3600		53,537	Cts/S	14.220	0.026562
Y_3774		2,750.8	Cts/S	2.1290	0.077396

320-63525-B-1-A

Acquire Date: 8/19/2020 11:50:28AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00037700	ppm	0.0013980	371.09
Al3961		0.64792	ppm	0.010835	1.6723
As1890		-0.00089900	ppm	0.0025910	288.29
B_2089		0.17525	ppm	0.0018370	1.0484
Ba4554		0.11560	ppm	0.0010680	0.92382
Be3130		0.00032700	ppm	0.00030700	93.738
Ca3179		107.64	ppm	0.85672	0.79593
Cd2144		0.00050600	ppm	0.000087000	17.130
Co2286		0.000058000	ppm	0.00050600	869.71
Cr2677		0.00062000	ppm	0.00041100	66.281
Cu3247		0.0093640	ppm	0.000076000	0.80902
Fe2599		0.16567	ppm	0.0056970	3.4387
K_7664		92.538	ppm	1.0067	1.0879
Mg2790		191.23	ppm	0.53576	0.28017
Mn2576		0.016528	ppm	0.000060000	0.36488
Mo2020		0.0035530	ppm	0.00014800	4.1548
Na5895	**F**	**2,093.1**	**ppm**	**7.9136**	**0.37808**
Ni2316		0.0042650	ppm	0.00063200	14.821
P_1782		0.048212	ppm	0.0013680	2.8373
Pb2203		-0.0012680	ppm	0.00084300	66.498
S_1820		183.40	ppm	0.14105	0.076908
Sb2068		0.0027200	ppm	0.0058400	214.71
Se1960		0.0047940	ppm	0.0012120	25.278
Si2881		2.5996	ppm	0.041384	1.5919
Sn1899		-0.00036200	ppm	0.00018900	52.382
Sr4077		0.20295	ppm	0.0015780	0.77746
Ti3349		0.0028020	ppm	0.00063500	22.653

320-63525-B-1-A

Acquire Date: 8/19/2020 11:50:28AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0049740	ppm	0.0023900	48.047
V_2924		0.0044020	ppm	0.00076200	17.311
Zn2062		0.023537	ppm	0.000090000	0.38118
Y_2243		5,218.8	Cts/S	0.17644	0.0033810
Y_3600		43,923	Cts/S	143.82	0.32744
Y_3774		2,556.2	Cts/S	5.0294	0.19676

sd 320-63525-B-1-A@5

Acquire Date: 8/19/2020 11:54:33AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0019370	ppm	0.000066000	3.4014
Al3961		0.17921	ppm	0.0064120	3.5778
As1890		-0.00039800	ppm	0.00057700	145.00
B_2089		0.043174	ppm	0.00086900	2.0139
Ba4554		0.024639	ppm	0.00057400	2.3277
Be3130		-0.00011200	ppm	0.000027000	24.029
Ca3179		22.731	ppm	0.13932	0.61288
Cd2144		0.00012400	ppm	0.000010000	8.3928
Co2286		-0.00012200	ppm	0.00037500	307.89
Cr2677		0.00022600	ppm	0.00061400	271.94
Cu3247		0.0045330	ppm	0.0012160	26.832
Fe2599		0.021035	ppm	0.0019860	9.4413
K_7664		18.378	ppm	0.13528	0.73613
Mg2790		39.205	ppm	0.0096950	0.024730
Mn2576		0.0034410	ppm	0.00016700	4.8644
Mo2020		0.00069300	ppm	0.00020800	29.993
Na5895	**W**	**476.38**	**ppm**	**5.7764**	**1.2126**
Ni2316		0.0020190	ppm	0.00091800	45.468
P_1782		0.0064340	ppm	0.0030770	47.831
Pb2203		0.00030300	ppm	0.0024100	796.18
S_1820		37.051	ppm	0.19418	0.52409
Sb2068		-0.0024710	ppm	0.0013670	55.304
Se1960		0.0016160	ppm	0.0042350	262.04
Si2881		0.55163	ppm	0.094923	17.208
Sn1899		-0.00038700	ppm	0.00023300	60.256
Sr4077		0.041759	ppm	0.00034800	0.83274
Ti3349		0.00058100	ppm	0.00016900	29.166
Tl1908		0.0061350	ppm	0.0039230	63.942
V_2924		0.00024600	ppm	0.00042100	171.07
Zn2062		0.0046460	ppm	0.00013800	2.9648
Y_2243		5,800.6	Cts/S	50.333	0.86772
Y_3600		48,978	Cts/S	342.98	0.70027
Y_3774		2,615.4	Cts/S	43.478	1.6623

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 320-63525-B1A

Acquire Date: 8/19/2020 11:58:39AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10321	ppm	0.00075100	0.72808
Al3961		10.623	ppm	0.083998	0.79075
As1890		0.10231	ppm	0.0015490	1.5140
B_2089		1.0069	ppm	0.0014700	0.14601
Ba4554		0.21182	ppm	0.0010730	0.50662
Be3130		0.049803	ppm	0.000099000	0.19842
Ca3179		112.14	ppm	0.63034	0.56210
Cd2144		0.098368	ppm	0.00030700	0.31216
Co2286		0.097336	ppm	0.00021900	0.22456
Cr2677		0.10190	ppm	0.00085000	0.83398
Cu3247		0.11062	ppm	0.00068600	0.61973
Fe2599		4.1523	ppm	0.046224	1.1132
K_7664		98.367	ppm	0.80177	0.81509
Mg2790		191.85	ppm	0.78506	0.40921
Mn2576		0.11989	ppm	0.00044500	0.37093
Mo2020		0.10307	ppm	0.00035700	0.34619
Na5895	**F**	**1,955.5**	**ppm**	**0.59209**	**0.030278**
Ni2316		0.099279	ppm	0.00067600	0.68091
P_1782		1.1519	ppm	0.0096780	0.84014
Pb2203		0.091763	ppm	0.0010010	1.0913
S_1820		176.33	ppm	0.035866	0.020341
Sb2068		0.090258	ppm	0.0047800	5.2956
Se1960		0.10262	ppm	0.0052490	5.1151
Si2881		3.6141	ppm	0.029265	0.80974
Sn1899		0.097141	ppm	0.00031800	0.32715
Sr4077		0.29479	ppm	0.0017970	0.60964
Ti3349		0.10581	ppm	0.00093500	0.88343
Tl1908		0.085699	ppm	0.0034500	4.0253
V_2924		0.11009	ppm	0.00088600	0.80482
Zn2062		0.12599	ppm	0.00035800	0.28415
Y_2243		5,280.8	Cts/S	18.974	0.35931
Y_3600		44,390	Cts/S	34.208	0.077062
Y_3774		2,589.2	Cts/S	11.047	0.42667

320-63525-B-1-B MS

Acquire Date: 8/19/2020 12:02:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.051006	ppm	0.00040600	0.79595
Al3961		5.9778	ppm	0.022378	0.37435
As1890		0.51168	ppm	0.0028490	0.55672
B_2089		4.4492	ppm	0.011388	0.25596
Ba4554		0.62564	ppm	0.0041920	0.67011
Be3130		0.24872	ppm	0.0014200	0.57099
Ca3179		134.21	ppm	0.90601	0.67508
Cd2144		0.24573	ppm	0.00057200	0.23277
Co2286		0.24306	ppm	0.00095700	0.39369

320-63525-B-1-B MS

Acquire Date: 8/19/2020 12:02:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.25422	ppm	0.00039500	0.15544
Cu3247		0.26308	ppm	0.00050100	0.19062
Fe2599		5.3652	ppm	0.045279	0.84395
K_7664		121.36	ppm	0.93457	0.77008
Mg2790		218.88	ppm	0.68557	0.31322
Mn2576		0.27586	ppm	0.00092500	0.33538
Mo2020		0.26080	ppm	0.00051200	0.19644
Na5895	**F**	**1,997.9**	**ppm**	**3.4167**	**0.17101**
Ni2316		0.24308	ppm	0.00013500	0.055414
P_1782		5.7208	ppm	0.0052350	0.091512
Pb2203		0.23057	ppm	0.0035700	1.5485
S_1820		192.33	ppm	0.51308	0.26677
Sb2068		0.48165	ppm	0.0033800	0.70172
Se1960		0.50515	ppm	0.0042080	0.83293
Si2881		8.2157	ppm	0.11870	1.4447
Sn1899		0.49711	ppm	0.00060100	0.12100
Sr4077		0.45765	ppm	0.0025480	0.55671
Ti3349		0.25959	ppm	0.00055300	0.21285
Tl1908		0.42246	ppm	0.0014640	0.34651
V_2924		0.26755	ppm	0.00052200	0.19504
Zn2062		0.55260	ppm	0.00052100	0.094239
Y_2243		5,260.1	Cts/S	14.248	0.27087
Y_3600		44,087	Cts/S	13.675	0.031018
Y_3774		2,584.2	Cts/S	10.206	0.39496

320-63525-B-1-C MSD

Acquire Date: 8/19/2020 12:06:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.051433	ppm	0.00017700	0.34317
Al3961		6.0221	ppm	0.068669	1.1403
As1890		0.51138	ppm	0.0013500	0.26407
B_2089		4.4419	ppm	0.011433	0.25739
Ba4554		0.62493	ppm	0.0036790	0.58874
Be3130		0.24933	ppm	0.0011770	0.47199
Ca3179		133.61	ppm	0.70382	0.52676
Cd2144		0.24465	ppm	0.00058400	0.23884
Co2286		0.24285	ppm	0.00075900	0.31257
Cr2677		0.25533	ppm	0.00076500	0.29949
Cu3247		0.26272	ppm	0.0010270	0.39088
Fe2599		5.3509	ppm	0.036522	0.68254
K_7664		120.16	ppm	1.1261	0.93711
Mg2790		217.59	ppm	0.75263	0.34589
Mn2576		0.27471	ppm	0.00086200	0.31381
Mo2020		0.26084	ppm	0.00090100	0.34534
Na5895	**F**	**1,979.2**	**ppm**	**29.990**	**1.5153**
Ni2316		0.24133	ppm	0.0010300	0.42671

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-63525-B-1-C MSD

Acquire Date: 8/19/2020 12:06:31PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.7016	ppm	0.0053680	0.094142
Pb2203		0.23057	ppm	0.00024800	0.10737
S_1820		190.40	ppm	0.32785	0.17219
Sb2068		0.48241	ppm	0.00022300	0.046264
Se1960		0.49606	ppm	0.0051870	1.0456
Si2881		8.1574	ppm	0.074278	0.91056
Sn1899		0.49472	ppm	0.0015190	0.30705
Sr4077		0.45732	ppm	0.0028680	0.62720
Ti3349		0.26101	ppm	0.00089300	0.34209
Tl1908		0.41548	ppm	0.0057220	1.3772
V_2924		0.26838	ppm	0.00097100	0.36165
Zn2062		0.55265	ppm	0.0018310	0.33124
Y_2243		5,286.5	Cts/S	1.1734	0.022197
Y_3600		44,386	Cts/S	36.614	0.082490
Y_3774		2,585.8	Cts/S	2.6684	0.10319

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Acquire Date: 8/19/2020 12:10:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00061700	ppm	0.00076800	124.49
Al3961		0.038799	ppm	0.0034090	8.7861
As1890		0.0018680	ppm	0.0027070	144.90
B_2089		0.022180	ppm	0.0029410	13.262
Ba4554		-0.00054100	ppm	0.00038100	70.445
Be3130		0.000052000	ppm	0.000013000	24.700
Ca3179		0.033378	ppm	0.0011280	3.3784
Cd2144		.0000080000	ppm	0.000038000	482.68
Co2286		0.00038300	ppm	0.00026200	68.349
Cr2677		0.00024100	ppm	0.00097500	405.16
Cu3247		-0.00061500	ppm	0.00028100	45.725
Fe2599		0.029132	ppm	0.0093920	32.241
K_7664		0.19245	ppm	0.027696	14.391
Mg2790		0.045917	ppm	0.0086370	18.809
Mn2576		0.00012000	ppm	0.000059000	49.328
Mo2020		0.0014130	ppm	0.00011300	7.9785
Na5895		1.7527	ppm	0.11494	6.5579
Ni2316		0.00086400	ppm	0.00033100	38.367
P_1782		0.0036290	ppm	0.00058600	16.145
Pb2203		-0.0034790	ppm	0.0010610	30.496
S_1820		0.042587	ppm	0.0044720	10.502
Sb2068		-0.0017600	ppm	0.0030520	173.43
Se1960		0.0029740	ppm	0.0010730	36.067
Si2881		0.0055610	ppm	0.031664	569.35
Sn1899		-0.00030300	ppm	0.00023500	77.505
Sr4077		0.00020900	ppm	0.000026000	12.618
Ti3349		0.0014570	ppm	0.00051500	35.339

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Acquire Date: 8/19/2020 12:10:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0040020	ppm	0.0063130	157.72
V_2924		-0.00044600	ppm	0.00026500	59.496
Zn2062		0.00055100	ppm	0.000055000	9.9786
Y_2243		6,245.1	Cts/S	24.455	0.39159
Y_3600		54,298	Cts/S	91.534	0.16858
Y_3774		2,667.7	Cts/S	3.3593	0.12593

CCV 2103404

Acquire Date: 8/19/2020 12:14:27PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51313	ppm	0.00042800	0.083408	.50000	Rel(%)	Pass	
Al3961		25.390	ppm	0.046342	0.18252	25.000	Rel(%)	Pass	
As1890		0.51595	ppm	0.0023170	0.44904	.50000	Rel(%)	Pass	
B_2089		1.0516	ppm	0.0046680	0.44395	1.0000	Rel(%)	Pass	
Ba4554		2.5891	ppm	0.0020400	0.078781	2.5000	Rel(%)	Pass	
Be3130		0.51235	ppm	0.00032900	0.064167	.50000	Rel(%)	Pass	
Ca3179		26.202	ppm	0.092584	0.35334	25.000	Rel(%)	Pass	
Cd2144		0.52263	ppm	0.0015720	0.30086	.50000	Rel(%)	Pass	
Co2286		2.6145	ppm	0.0094500	0.36144	2.5000	Rel(%)	Pass	
Cr2677		2.5814	ppm	0.0046490	0.18011	2.5000	Rel(%)	Pass	
Cu3247		2.5749	ppm	0.0042410	0.16469	2.5000	Rel(%)	Pass	
Fe2599		26.167	ppm	0.050032	0.19121	25.000	Rel(%)	Pass	
K_7664		25.497	ppm	0.060078	0.23563	25.000	Rel(%)	Pass	
Mg2790		25.806	ppm	0.083967	0.32538	25.000	Rel(%)	Pass	
Mn2576		2.6255	ppm	0.0095560	0.36396	2.5000	Rel(%)	Pass	
Mo2020		1.0371	ppm	0.010300	0.99318	1.0000	Rel(%)	Pass	
Na5895		25.799	ppm	0.013944	0.054049	25.000	Rel(%)	Pass	
Ni2316		2.6265	ppm	0.0075840	0.28873	2.5000	Rel(%)	Pass	
P_1782		2.6088	ppm	0.021490	0.82375	2.5000	Rel(%)	Pass	
Pb2203		0.52732	ppm	0.00034300	0.065112	.50000	Rel(%)	Pass	
S_1820		2.5682	ppm	0.0037660	0.14665	2.5000	Rel(%)	Pass	
Sb2068		0.51777	ppm	0.0032640	0.63046	.50000	Rel(%)	Pass	
Se1960		0.52847	ppm	0.0018000	0.34067	.50000	Rel(%)	Pass	
Si2881		2.5168	ppm	0.048607	1.9313	2.5000	Rel(%)	Pass	
Sn1899		2.6071	ppm	0.013818	0.53000	2.5000	Rel(%)	Pass	
Sr4077		2.5691	ppm	0.0019750	0.076871	2.5000	Rel(%)	Pass	
Ti3349		1.0221	ppm	0.0011690	0.11434	1.0000	Rel(%)	Pass	
Tl1908		0.52746	ppm	0.0075120	1.4241	.50000	Rel(%)	Pass	
V_2924		2.5651	ppm	0.0078420	0.30572	2.5000	Rel(%)	Pass	
Zn2062		2.5970	ppm	0.011279	0.43431	2.5000	Rel(%)	Pass	
Y_2243		6,101.3	Cts/S	1.2717	0.020843				
Y_3600		52,901	Cts/S	4.4059	0.0083290				
Y_3774		2,713.7	Cts/S	11.230	0.41382				

CCB 2110462

Acquire Date: 8/19/2020 12:18:15PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00089000	ppm	0.00012500	14.017	.00000	Abs	Pass	
Al3961		0.010440	ppm	0.011870	113.70	.00000	Abs	Pass	
As1890		0.00013400	ppm	0.0010150	759.04	.00000	Abs	Pass	
B_2089		0.011132	ppm	0.0012290	11.039	.00000	Abs	Pass	
Ba4554		-0.00029200	ppm	0.00040300	137.86	.00000	Abs	Pass	
Be3130		0.00031000	ppm	0.00037500	120.98	.00000	Abs	Pass	
Ca3179		0.0081600	ppm	0.0037500	45.957	.00000	Abs	Pass	
Cd2144		0.000085000	ppm	0.000016000	19.309	.00000	Abs	Pass	
Co2286		0.00027300	ppm	0.00043500	159.21	.00000	Abs	Pass	
Cr2677		-0.00032600	ppm	0.00068400	209.45	.00000	Abs	Pass	
Cu3247		0.00051700	ppm	0.00093200	180.36	.00000	Abs	Pass	
Fe2599		0.040512	ppm	0.0076170	18.801	.00000	Abs	Pass	
K_7664		0.061288	ppm	0.054743	89.321	.00000	Abs	Pass	
Mg2790		0.0045790	ppm	0.010324	225.46	.00000	Abs	Pass	
Mn2576		0.000070000	ppm	0.000055000	77.654	.00000	Abs	Pass	
Mo2020	**W**	**0.012986**	**ppm**	**0.0014680**	**11.307**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.36335	ppm	0.021932	6.0359	.00000	Abs	Pass	
Ni2316		0.0015180	ppm	0.00070700	46.611	.00000	Abs	Pass	
P_1782		0.0025360	ppm	0.00045800	18.049	.00000	Abs	Pass	
Pb2203		-0.0012070	ppm	0.0018850	156.15	.00000	Abs	Pass	
S_1820		0.0068820	ppm	0.0055470	80.610	.00000	Abs	Pass	
Sb2068		-0.0038730	ppm	0.0049640	128.18	.00000	Abs	Pass	
Se1960		0.00029200	ppm	0.0016700	572.18	.00000	Abs	Pass	
Si2881		0.038388	ppm	0.020531	53.484	.00000	Abs	Pass	
Sn1899		0.0021970	ppm	0.00018200	8.2854	.00000	Abs	Pass	
Sr4077		0.00021900	ppm	0.00046800	213.72	.00000	Abs	Pass	
Ti3349		0.0035790	ppm	0.00066500	18.589	.00000	Abs	Pass	
Tl1908		0.0066270	ppm	0.0020970	31.638	.00000	Abs	Pass	
V_2924		0.00029900	ppm	0.000021000	6.9683	.00000	Abs	Pass	
Zn2062		0.00099200	ppm	0.00024500	24.695	.00000	Abs	Pass	
Y_2243		6,271.2	Cts/S	2.6582	0.042387				
Y_3600		54,914	Cts/S	162.86	0.29658				
Y_3774		2,712.4	Cts/S	4.1048	0.15133				

320-63525-B-2-A

Acquire Date: 8/19/2020 12:22:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011640	ppm	0.00020300	17.480
Al3961		0.62814	ppm	0.0028400	0.45209
As1890		0.00057800	ppm	0.0042380	733.47
B_2089		0.16490	ppm	0.00025300	0.15315
Ba4554		0.12197	ppm	0.0017180	1.4085
Be3130		0.000010000	ppm	0.000013000	131.84
Ca3179		112.44	ppm	1.1522	1.0246
Cd2144		0.00056900	ppm	0.000015000	2.6967
Co2286		0.000051000	ppm	0.00030800	605.44
Cr2677		0.00084200	ppm	0.000015000	1.7600

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-63525-B-2-A

Acquire Date: 8/19/2020 12:22:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.0082800	ppm	0.00097500	11.772
Fe2599		0.10874	ppm	0.011078	10.188
K_7664		92.809	ppm	1.0685	1.1513
Mg2790		189.97	ppm	0.54098	0.28477
Mn2576		0.037136	ppm	0.000081000	0.21700
Mo2020		0.0041770	ppm	0.00016500	3.9505
Na5895	**F**	**2,042.6**	**ppm**	**19.519**	**0.95558**
Ni2316		0.0030270	ppm	0.0010850	35.849
P_1782		0.033319	ppm	0.00097100	2.9151
Pb2203		-0.0014540	ppm	0.0013070	89.869
S_1820		183.97	ppm	0.10229	0.055602
Sb2068		-0.0022150	ppm	0.0049980	225.58
Se1960		0.0017160	ppm	0.0030160	175.80
Si2881		2.3986	ppm	0.017073	0.71177
Sn1899		0.000059000	ppm	0.00021400	359.99
Sr4077		0.21530	ppm	0.0025200	1.1705
Ti3349		0.0013610	ppm	0.000015000	1.1302
Tl1908		-0.0016770	ppm	0.0040100	239.18
V_2924		0.0036550	ppm	0.00060300	16.486
Zn2062		0.029093	ppm	0.00025000	0.86043
Y_2243		5,253.5	Cts/S	7.9814	0.15193
Y_3600		43,921	Cts/S	240.43	0.54741
Y_3774		2,547.6	Cts/S	20.115	0.78957

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Acquire Date: 8/19/2020 12:26:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0020580	ppm	0.00059900	29.120
Al3961		0.0091670	ppm	0.062185	678.37
As1890		0.000035000	ppm	0.00072000	2,086.8
B_2089		0.0046350	ppm	0.00011300	2.4350
Ba4554		-0.00085000	ppm	0.00068000	80.004
Be3130		-0.00022300	ppm	0.00026900	120.55
Ca3179		0.0054260	ppm	0.0035720	65.843
Cd2144		0.000048000	ppm	0.0000010000	1.3554
Co2286		0.00011900	ppm	0.00020000	169.13
Cr2677		-0.00014000	ppm	0.00047600	340.12
Cu3247		0.00012300	ppm	0.00085200	692.18
Fe2599		-0.0025500	ppm	0.0026250	102.95
K_7664		0.15962	ppm	0.00052900	0.33155
Mg2790		0.014951	ppm	0.0020020	13.387
Mn2576		0.00030000	ppm	0.000055000	18.309
Mo2020		0.00020300	ppm	0.000048000	23.509
Na5895		1.1533	ppm	0.12808	11.105
Ni2316		0.0013070	ppm	0.00035700	27.344
P_1782		0.00017700	ppm	0.0012410	700.75

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 8/19/2020 12:26:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		-0.0016130	ppm	0.0022810	141.43
S_1820		0.022354	ppm	0.00038700	1.7328
Sb2068		-0.0017650	ppm	0.00039800	22.556
Se1960		0.000035000	ppm	0.0072690	20,798
Si2881		-0.016334	ppm	0.013234	81.020
Sn1899		-0.00038000	ppm	0.000057000	14.980
Sr4077		0.00013600	ppm	0.00036400	268.17
Ti3349		0.00037100	ppm	0.00013700	36.893
Tl1908		0.0028990	ppm	0.0052650	181.61
V_2924		0.000086000	ppm	0.0012080	1,407.6
Zn2062		0.00097900	ppm	0.00024700	25.211
Y_2243		6,259.1	Cts/S	13.196	0.21082
Y_3600		54,836	Cts/S	80.787	0.14733
Y_3774		2,702.5	Cts/S	14.844	0.54927

320-63525-B-1-A@10

Acquire Date: 8/19/2020 12:30:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00023200	ppm	0.00048200	207.68
Al3961		0.069225	ppm	0.015725	22.716
As1890		0.000032000	ppm	0.0023010	7,106.4
B_2089		0.020518	ppm	0.00038700	1.8867
Ba4554		0.011660	ppm	0.00048600	4.1688
Be3130		0.000080000	ppm	0.00029300	364.45
Ca3179		11.124	ppm	0.10686	0.96064
Cd2144		0.000016000	ppm	0.000070000	431.14
Co2286		0.000016000	ppm	0.00043900	2,742.5
Cr2677		0.000091000	ppm	0.00022200	243.94
Cu3247		0.0015700	ppm	0.0018190	115.84
Fe2599		0.0045420	ppm	0.0092930	204.60
K_7664		8.7851	ppm	0.089557	1.0194
Mg2790		19.001	ppm	0.042541	0.22389
Mn2576		0.0016810	ppm	0.000037000	2.2171
Mo2020		0.000092000	ppm	0.00030300	329.86
Na5895		237.63	ppm	2.0398	0.85838
Ni2316		0.0010880	ppm	0.00077900	71.651
P_1782		0.0046090	ppm	0.0027340	59.323
Pb2203		0.0012060	ppm	0.0011990	99.364
S_1820		17.995	ppm	0.040705	0.22620
Sb2068		-0.0017350	ppm	0.00070900	40.869
Se1960		0.0035240	ppm	0.0017000	48.243
Si2881		0.31169	ppm	0.011209	3.5964
Sn1899		-0.00026800	ppm	0.00033300	124.41
Sr4077		0.020336	ppm	0.00015600	0.76819
Ti3349		0.00042900	ppm	0.00019400	45.113
Tl1908		0.0034130	ppm	0.0010610	31.078

320-63525-B-1-A@10

Acquire Date: 8/19/2020 12:30:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		-0.00049600	ppm	0.000086000	17.333
Zn2062		0.0023900	ppm	0.00021200	8.8697
Y_2243		5,949.2	Cts/S	7.0634	0.11873
Y_3600		50,924	Cts/S	384.65	0.75535
Y_3774		2,647.3	Cts/S	5.3187	0.20091

sd 320-63525-B1A@50

Acquire Date: 8/19/2020 12:34:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00022000	ppm	0.00014100	64.328
Al3961		0.027867	ppm	0.010299	36.956
As1890		-0.00042400	ppm	0.00074400	175.54
B_2089		0.0064310	ppm	0.00018000	2.7972
Ba4554		0.0021130	ppm	0.00020200	9.5398
Be3130		0.00024300	ppm	0.00020000	82.309
Ca3179		2.2691	ppm	0.027645	1.2183
Cd2144		0.000019000	ppm	0.00014600	785.66
Co2286		0.00021400	ppm	0.00026600	124.35
Cr2677		-0.00055700	ppm	0.00033400	59.964
Cu3247		0.00040800	ppm	0.00045900	112.38
Fe2599		0.0038900	ppm	0.0078250	201.16
K_7664		1.7667	ppm	0.042062	2.3808
Mg2790		3.9017	ppm	0.0080360	0.20597
Mn2576		0.00039600	ppm	0.0000040000	1.0802
Mo2020		-0.00010100	ppm	0.000098000	96.867
Na5895		49.035	ppm	0.35724	0.72854
Ni2316		0.0014730	ppm	0.00047900	32.540
P_1782		0.0013740	ppm	0.0020920	152.30
Pb2203		-0.00052200	ppm	0.0023830	456.52
S_1820		3.5778	ppm	0.0081020	0.22644
Sb2068		-0.0024250	ppm	0.0017470	72.044
Se1960		0.0013180	ppm	0.00066100	50.150
Si2881		0.084238	ppm	0.11769	139.71
Sn1899		-0.00067700	ppm	0.00018200	26.907
Sr4077		0.0041150	ppm	0.000047000	1.1315
Ti3349		-0.0012650	ppm	0.00021800	17.218
Tl1908		0.0028190	ppm	0.00055300	19.606
V_2924		0.000067000	ppm	0.000069000	102.43
Zn2062		0.00046800	ppm	0.00053200	113.52
Y_2243		6,108.1	Cts/S	16.402	0.26853
Y_3600		53,163	Cts/S	113.38	0.21326
Y_3774		2,667.4	Cts/S	8.6812	0.32545

pds 320-63525-B1A@10

Acquire Date: 8/19/2020 12:38:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10061	ppm	0.00063500	0.63162
Al3961		10.134	ppm	0.092680	0.91457
As1890		0.098502	ppm	0.00023700	0.24025
B_2089		0.96274	ppm	0.0015840	0.16449
Ba4554		0.11434	ppm	0.00067300	0.58861
Be3130		0.050771	ppm	0.00060100	1.1828
Ca3179		21.529	ppm	0.16967	0.78811
Cd2144		0.10227	ppm	0.00026700	0.26122
Co2286		0.10248	ppm	0.00088600	0.86444
Cr2677		0.10165	ppm	0.0011120	1.0940
Cu3247		0.10568	ppm	0.00061600	0.58285
Fe2599		4.1313	ppm	0.050660	1.2262
K_7664		19.150	ppm	0.31164	1.6274
Mg2790		29.250	ppm	0.15158	0.51822
Mn2576		0.10658	ppm	0.00046200	0.43358
Mo2020		0.10179	ppm	0.00057900	0.56850
Na5895		248.93	ppm	2.2780	0.91511
Ni2316		0.10244	ppm	0.0011800	1.1516
P_1782		1.0702	ppm	0.0022930	0.21428
Pb2203		0.098747	ppm	0.0018490	1.8724
S_1820		20.134	ppm	0.021487	0.10672
Sb2068		0.094768	ppm	0.0014090	1.4869
Se1960		0.10560	ppm	0.00080500	0.76235
Si2881		1.2779	ppm	0.0078790	0.61655
Sn1899		0.10155	ppm	0.0019570	1.9275
Sr4077		0.12329	ppm	0.0010720	0.86967
Ti3349		0.10086	ppm	0.00051800	0.51354
Tl1908		0.096619	ppm	0.0012010	1.2432
V_2924		0.10348	ppm	0.0015030	1.4523
Zn2062		0.10484	ppm	0.00077900	0.74282
Y_2243		5,916.6	Cts/S	1.9855	0.033559
Y_3600		50,539	Cts/S	180.69	0.35752
Y_3774		2,664.1	Cts/S	6.6397	0.24923

320-63525-B-1-BMS@10

Acquire Date: 8/19/2020 12:42:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0037840	ppm	0.0010720	28.329
Al3961		0.63547	ppm	0.0042390	0.66710
As1890		0.051169	ppm	0.00042000	0.82018
B_2089		0.48925	ppm	0.00016500	0.033806
Ba4554		0.063823	ppm	0.00045000	0.70451
Be3130		0.025607	ppm	0.00051600	2.0161
Ca3179		14.014	ppm	0.099892	0.71278
Cd2144		0.025714	ppm	0.00010400	0.40287
Co2286		0.026068	ppm	0.00023100	0.88587

320-63525-B-1-BMS@10

Acquire Date: 8/19/2020 12:42:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.025571	ppm	0.00095500	3.7353
Cu3247		0.030191	ppm	0.00096000	3.1787
Fe2599		0.57595	ppm	0.0096400	1.6738
K_7664		11.670	ppm	0.12218	1.0470
Mg2790		22.197	ppm	0.076735	0.34570
Mn2576		0.028200	ppm	0.000084000	0.29665
Mo2020		0.027011	ppm	0.00023100	0.85446
Na5895		246.88	ppm	1.7500	0.70886
Ni2316		0.027288	ppm	0.00040100	1.4685
P_1782		0.55593	ppm	0.0070010	1.2593
Pb2203		0.021386	ppm	0.0020080	9.3915
S_1820		19.003	ppm	0.058888	0.30988
Sb2068		0.047486	ppm	0.00089100	1.8769
Se1960		0.052014	ppm	0.0012420	2.3876
Si2881		0.79079	ppm	0.045924	5.8074
Sn1899		0.051229	ppm	0.0014680	2.8648
Sr4077		0.046439	ppm	0.00013500	0.28976
Ti3349		0.025754	ppm	0.000089000	0.34407
Tl1908		0.049053	ppm	0.0036240	7.3879
V_2924		0.027439	ppm	0.00016500	0.60131
Zn2062		0.056147	ppm	0.00010000	0.17861
Y_2243		5,910.2	Cts/S	5.2950	0.089592
Y_3600		50,757	Cts/S	19.482	0.038384
Y_3774		2,648.2	Cts/S	4.8594	0.18350

320-63525-B-1CMSD@10

Acquire Date: 8/19/2020 12:46:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0047200	ppm	0.0016300	34.542
Al3961		0.60566	ppm	0.013187	2.1773
As1890		0.050785	ppm	0.0012510	2.4643
B_2089		0.48308	ppm	0.0014120	0.29221
Ba4554		0.063196	ppm	0.00063100	0.99832
Be3130		0.025348	ppm	0.000065000	0.25692
Ca3179		13.874	ppm	0.13769	0.99239
Cd2144		0.025659	ppm	0.00017300	0.67415
Co2286		0.025362	ppm	0.00016400	0.64532
Cr2677		0.025385	ppm	0.00054600	2.1507
Cu3247		0.028757	ppm	0.00047600	1.6540
Fe2599		0.54330	ppm	0.0035490	0.65330
K_7664		11.495	ppm	0.12672	1.1023
Mg2790		21.841	ppm	0.093746	0.42922
Mn2576		0.027630	ppm	0.00012300	0.44506
Mo2020		0.026387	ppm	0.000021000	0.078404
Na5895		243.97	ppm	2.8100	1.1518
Ni2316		0.027931	ppm	0.00022000	0.78602

320-63525-B-1CMSD@10

Acquire Date: 8/19/2020 12:46:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.55040	ppm	0.0024850	0.45142
Pb2203		0.023856	ppm	0.0017320	7.2593
S_1820		18.722	ppm	0.048877	0.26107
Sb2068		0.047296	ppm	0.00081800	1.7301
Se1960		0.053077	ppm	0.0026760	5.0416
Si2881		0.79906	ppm	0.023499	2.9408
Sn1899		0.050301	ppm	0.000063000	0.12478
Sr4077		0.046033	ppm	0.00059800	1.2982
Ti3349		0.025730	ppm	0.00010400	0.40250
Tl1908		0.051127	ppm	0.00054700	1.0697
V_2924		0.025714	ppm	0.00077400	3.0088
Zn2062		0.055387	ppm	0.00073400	1.3245
Y_2243		5,949.1	Cts/S	4.0275	0.067699
Y_3600		50,998	Cts/S	142.09	0.27862
Y_3774		2,656.6	Cts/S	19.499	0.73400

320-63525-B-2-A@10

Acquire Date: 8/19/2020 12:50:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00054900	ppm	0.00025400	46.317
Al3961		0.10290	ppm	0.013828	13.438
As1890		0.0011230	ppm	0.00081000	72.146
B_2089		0.020213	ppm	0.00067500	3.3372
Ba4554		0.012089	ppm	0.00083200	6.8804
Be3130		0.00041600	ppm	0.000099000	23.824
Ca3179		11.707	ppm	0.088071	0.75227
Cd2144		0.000051000	ppm	0.000026000	51.608
Co2286		.0000090000	ppm	0.00040800	4,571.1
Cr2677		-0.00042600	ppm	0.000011000	2.5628
Cu3247		0.0015500	ppm	0.0014370	92.733
Fe2599		0.020227	ppm	0.010503	51.924
K_7664		8.7552	ppm	0.071888	0.82109
Mg2790		19.171	ppm	0.064380	0.33582
Mn2576		0.0037790	ppm	0.0000030000	0.068409
Mo2020		0.00047600	ppm	0.00024700	52.019
Na5895		239.60	ppm	2.3504	0.98096
Ni2316		0.0015710	ppm	0.0013020	82.867
P_1782		0.0026980	ppm	0.00032900	12.193
Pb2203		-0.0017150	ppm	0.0010470	61.070
S_1820		18.104	ppm	0.062919	0.34755
Sb2068		-0.0024700	ppm	0.00038200	15.445
Se1960		0.0024380	ppm	0.0044720	183.38
Si2881		0.22291	ppm	0.076731	34.423
Sn1899		-0.0010840	ppm	0.00015400	14.245
Sr4077		0.021716	ppm	0.00029000	1.3354
Ti3349		0.000090000	ppm	0.000089000	99.316

320-63525-B-2-A@10

Acquire Date: 8/19/2020 12:50:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0072330	ppm	0.0034060	47.089
V_2924		0.00068900	ppm	0.000019000	2.7696
Zn2062		0.0022310	ppm	0.00014600	6.5346
Y_2243		5,939.6	Cts/S	1.9333	0.032548
Y_3600		51,008	Cts/S	7.1023	0.013924
Y_3774		2,660.2	Cts/S	5.5805	0.20978

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Acquire Date: 8/19/2020 12:54:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00096700	ppm	0.0000080000	0.86316
Al3961		0.0022270	ppm	0.023205	1,041.9
As1890		0.00057100	ppm	0.0015690	274.81
B_2089		0.00091300	ppm	0.000028000	3.0962
Ba4554		0.00029100	ppm	0.000022000	7.4767
Be3130		0.000098000	ppm	0.00023500	238.89
Ca3179		-0.0069230	ppm	0.021460	309.96
Cd2144		.0000040000	ppm	0.000016000	390.43
Co2286		-0.00016500	ppm	0.00014000	85.120
Cr2677		-0.00061400	ppm	0.00063500	103.40
Cu3247		-0.0012900	ppm	0.0020460	158.55
Fe2599		-0.012607	ppm	0.00090100	7.1446
K_7664		0.065654	ppm	0.071098	108.29
Mg2790		0.00057200	ppm	0.0083850	1,466.4
Mn2576		0.000096000	ppm	0.00019800	205.39
Mo2020		0.00020600	ppm	0.000035000	16.951
Na5895		0.32224	ppm	0.037912	11.765
Ni2316		0.00037200	ppm	0.00041100	110.58
P_1782		-0.0012440	ppm	0.0035050	281.72
Pb2203		-0.0013530	ppm	0.0024330	179.90
S_1820		0.0093090	ppm	0.0021430	23.024
Sb2068		-0.00085400	ppm	0.00078200	91.542
Se1960		0.0023400	ppm	0.00035900	15.341
Si2881		-0.017038	ppm	0.019264	113.06
Sn1899		-0.00055800	ppm	0.00041100	73.731
Sr4077		0.000081000	ppm	0.00022900	281.14
Ti3349		-0.00028700	ppm	0.00096000	334.67
Tl1908		0.0023060	ppm	0.0029360	127.33
V_2924		0.000074000	ppm	0.00040000	539.00
Zn2062		-0.00049600	ppm	0.00038900	78.386
Y_2243		6,231.3	Cts/S	9.9251	0.15928
Y_3600		54,319	Cts/S	16.771	0.030875
Y_3774		2,678.7	Cts/S	5.6486	0.21088

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Acquire Date: 8/19/2020 12:58:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00071000	ppm	0.0016370	230.62
Al3961		0.013435	ppm	0.030218	224.92
As1890		-0.0010010	ppm	0.00043600	43.537
B_2089		0.0011680	ppm	0.00041900	35.831
Ba4554		-0.00020500	ppm	0.00067000	327.22
Be3130		0.00027200	ppm	0.00021400	78.571
Ca3179		0.013199	ppm	0.0042840	32.457
Cd2144		0.000033000	ppm	0.000045000	139.52
Co2286		-0.00029400	ppm	0.00011500	38.996
Cr2677		-0.00045100	ppm	0.00029000	64.164
Cu3247		0.00072500	ppm	0.000024000	3.3380
Fe2599		0.0052600	ppm	0.0066470	126.36
K_7664		0.026152	ppm	0.022596	86.403
Mg2790		0.00013400	ppm	0.0041510	3,108.9
Mn2576		0.00053700	ppm	0.000060000	11.141
Mo2020		-0.00044000	ppm	0.00011500	26.210
Na5895		0.21842	ppm	0.021831	9.9951
Ni2316		0.0020280	ppm	0.00050100	24.716
P_1782		0.00093400	ppm	0.0014970	160.24
Pb2203		-0.0020080	ppm	0.00021600	10.745
S_1820		0.013884	ppm	0.0016450	11.845
Sb2068		-0.0024660	ppm	0.0019620	79.588
Se1960		0.0010820	ppm	0.0030540	282.12
Si2881		0.030411	ppm	0.063776	209.72
Sn1899		0.00011700	ppm	0.00066800	569.18
Sr4077		0.00044700	ppm	0.000029000	6.5567
Ti3349		-0.00060300	ppm	0.00044800	74.291
Tl1908		0.00085600	ppm	0.0015800	184.51
V_2924		-0.00033400	ppm	0.00071500	214.01
Zn2062		0.0028980	ppm	0.00036700	12.667
Y_2243		6,184.9	Cts/S	9.1954	0.14868
Y_3600		53,911	Cts/S	17.570	0.032591
Y_3774		2,677.5	Cts/S	0.48290	0.018035

CCV 2103404

Acquire Date: 8/19/2020 1:02:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51121	ppm	0.0035560	0.69553	.50000	Rel(%)	Pass	
Al3961		25.541	ppm	0.10791	0.42251	25.000	Rel(%)	Pass	
As1890		0.51389	ppm	0.0020420	0.39742	.50000	Rel(%)	Pass	
B_2089		1.0341	ppm	0.0037820	0.36577	1.0000	Rel(%)	Pass	
Ba4554		2.5988	ppm	0.013497	0.51937	2.5000	Rel(%)	Pass	
Be3130		0.51532	ppm	0.0027760	0.53870	.50000	Rel(%)	Pass	
Ca3179		26.331	ppm	0.17277	0.65615	25.000	Rel(%)	Pass	
Cd2144		0.52192	ppm	0.0019440	0.37252	.50000	Rel(%)	Pass	
Co2286		2.6103	ppm	0.0066830	0.25602	2.5000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/19/2020 1:02:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.5776	ppm	0.0090750	0.35206	2.5000	Rel(%)	Pass	
Cu3247		2.5653	ppm	0.0041430	0.16150	2.5000	Rel(%)	Pass	
Fe2599		26.489	ppm	0.13989	0.52809	25.000	Rel(%)	Pass	
K_7664		25.586	ppm	0.18496	0.72289	25.000	Rel(%)	Pass	
Mg2790		25.775	ppm	0.14919	0.57882	25.000	Rel(%)	Pass	
Mn2576		2.6188	ppm	0.010629	0.40590	2.5000	Rel(%)	Pass	
Mo2020		1.0325	ppm	0.0082620	0.80023	1.0000	Rel(%)	Pass	
Na5895		25.718	ppm	0.14451	0.56191	25.000	Rel(%)	Pass	
Ni2316		2.6251	ppm	0.0083840	0.31939	2.5000	Rel(%)	Pass	
P_1782		2.6076	ppm	0.012896	0.49457	2.5000	Rel(%)	Pass	
Pb2203		0.52712	ppm	0.0040590	0.77004	.50000	Rel(%)	Pass	
S_1820		2.5440	ppm	0.0046800	0.18397	2.5000	Rel(%)	Pass	
Sb2068		0.51327	ppm	0.0039650	0.77250	.50000	Rel(%)	Pass	
Se1960		0.51995	ppm	0.0062580	1.2036	.50000	Rel(%)	Pass	
Si2881		2.5289	ppm	0.075485	2.9849	2.5000	Rel(%)	Pass	
Sn1899		2.6003	ppm	0.0093120	0.35810	2.5000	Rel(%)	Pass	
Sr4077		2.5781	ppm	0.014538	0.56390	2.5000	Rel(%)	Pass	
Ti3349		1.0223	ppm	0.0051900	0.50767	1.0000	Rel(%)	Pass	
Tl1908		0.52484	ppm	0.0057520	1.0959	.50000	Rel(%)	Pass	
V_2924		2.5627	ppm	0.0090150	0.35179	2.5000	Rel(%)	Pass	
Zn2062		2.6026	ppm	0.010151	0.39006	2.5000	Rel(%)	Pass	
Y_2243		6,041.3	Cts/S	3.4375	0.056900				
Y_3600		52,385	Cts/S	41.074	0.078408				
Y_3774		2,685.2	Cts/S	4.5842	0.17072				

CCB 2110462

Acquire Date: 8/19/2020 1:05:59PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0012990	ppm	0.00094900	73.074	.00000	Abs	Pass	
Al3961		0.012914	ppm	0.0056580	43.811	.00000	Abs	Pass	
As1890		0.0014990	ppm	0.00015500	10.346	.00000	Abs	Pass	
B_2089		0.0037990	ppm	0.00018100	4.7760	.00000	Abs	Pass	
Ba4554		0.00040500	ppm	0.000028000	7.0372	.00000	Abs	Pass	
Be3130		0.000032000	ppm	0.00025100	782.61	.00000	Abs	Pass	
Ca3179		-0.0069550	ppm	0.0067960	97.715	.00000	Abs	Pass	
Cd2144		.0000050000	ppm	0.0000080000	162.52	.00000	Abs	Pass	
Co2286		0.000080000	ppm	0.000070000	87.799	.00000	Abs	Pass	
Cr2677		0.00068400	ppm	0.00037900	55.446	.00000	Abs	Pass	
Cu3247		0.0020160	ppm	0.00052600	26.094	.00000	Abs	Pass	
Fe2599		0.041845	ppm	0.0048890	11.683	.00000	Abs	Pass	
K_7664		-0.020193	ppm	0.0072390	35.851	.00000	Abs	Pass	
Mg2790		0.0055330	ppm	0.0056580	102.25	.00000	Abs	Pass	
Mn2576		0.00029500	ppm	0.000042000	14.056	.00000	Abs	Pass	
Mo2020	**W**	**0.013167**	**ppm**	**0.00085300**	**6.4766**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.16268	ppm	0.010722	6.5908	.00000	Abs	Pass	
Ni2316		0.0019140	ppm	0.000089000	4.6338	.00000	Abs	Pass	
P_1782		-0.00059400	ppm	0.0024580	414.06	.00000	Abs	Pass	

CCB 2110462

Acquire Date: 8/19/2020 1:05:59PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		-0.0028670	ppm	0.0019740	68.824	.00000	Abs	Pass	
S_1820		0.0093840	ppm	0.0018980	20.223	.00000	Abs	Pass	
Sb2068		-0.00033600	ppm	0.00067800	201.51	.00000	Abs	Pass	
Se1960		0.00049900	ppm	0.00033900	68.029	.00000	Abs	Pass	
Si2881		0.022845	ppm	0.078541	343.80	.00000	Abs	Pass	
Sn1899		0.0021470	ppm	0.00094500	43.998	.00000	Abs	Pass	
Sr4077		0.00026000	ppm	0.00029600	113.75	.00000	Abs	Pass	
Ti3349		0.0029260	ppm	0.0016680	57.001	.00000	Abs	Pass	
Tl1908		0.0047360	ppm	0.0028510	60.199	.00000	Abs	Pass	
V_2924		0.00028800	ppm	0.00069100	239.52	.00000	Abs	Pass	
Zn2062		0.0016480	ppm	0.00027500	16.701	.00000	Abs	Pass	
Y_2243		6,220.1	Cts/S	15.348	0.24675				
Y_3600		54,413	Cts/S	61.494	0.11301				
Y_3774		2,672.4	Cts/S	0.12021	0.0044980				

CCVL

Acquire Date: 8/19/2020 1:10:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0047110	ppm	0.000029000	0.61130
Al3961		0.22179	ppm	0.0086820	3.9145
As1890		0.037632	ppm	0.0014550	3.8676
B_2089		0.19914	ppm	0.00020500	0.10296
Ba4554		0.020033	ppm	0.00072300	3.6103
Be3130		0.0029250	ppm	0.000087000	2.9809
Ca3179		0.50910	ppm	0.022218	4.3642
Cd2144		0.0030380	ppm	0.000029000	0.96844
Co2286		0.010642	ppm	0.00030000	2.8149
Cr2677		0.010807	ppm	0.00022300	2.0656
Cu3247		0.013982	ppm	0.00034400	2.4615
Fe2599		0.088719	ppm	0.00090600	1.0216
K_7664		0.96985	ppm	0.031539	3.2519
Mg2790		0.51239	ppm	0.0097670	1.9061
Mn2576		0.010554	ppm	0.000029000	0.27623
Mo2020		0.021414	ppm	0.00021000	0.98027
Na5895		0.61165	ppm	0.0019090	0.31209
Ni2316		0.011425	ppm	0.00023500	2.0609
P_1782		0.50451	ppm	0.0026770	0.53070
Pb2203		0.010099	ppm	0.00075000	7.4250
S_1820		0.49077	ppm	0.0050530	1.0296
Sb2068		0.030313	ppm	0.00012600	0.41718
Se1960		0.043957	ppm	0.000063000	0.14306
Si2881		0.44658	ppm	0.0066200	1.4825
Sn1899		0.022363	ppm	0.00035100	1.5699
Sr4077		0.051033	ppm	0.00079800	1.5635
Ti3349		0.0096200	ppm	0.00010500	1.0960
Tl1908		0.031509	ppm	0.0018780	5.9614

CCVL

Acquire Date: 8/19/2020 1:10:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.019706	ppm	0.00021700	1.1014
Zn2062		0.020261	ppm	0.00039700	1.9592
Y_2243		6,201.2	Cts/S	32.234	0.51980
Y_3600		54,324	Cts/S	282.43	0.51990
Y_3774		2,656.3	Cts/S	25.840	0.97279

720-99552-J-1-A

Acquire Date: 8/19/2020 1:14:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00073100	ppm	0.0019690	269.14
Al3961		11.714	ppm	0.10857	0.92689
As1890		0.011270	ppm	0.0010440	9.2616
B_2089		0.14475	ppm	0.00012700	0.087612
Ba4554		0.13577	ppm	0.0010460	0.77055
Be3130		0.00057000	ppm	0.00010500	18.471
Ca3179		18.371	ppm	0.10582	0.57601
Cd2144		0.00013000	ppm	0.0000020000	1.2251
Co2286		0.0051020	ppm	0.00028300	5.5509
Cr2677		0.031716	ppm	0.0012520	3.9477
Cu3247		0.018140	ppm	0.00073900	4.0728
Fe2599		155.74	ppm	1.7358	1.1146
K_7664		2.4024	ppm	0.029903	1.2447
Mg2790		11.353	ppm	0.062278	0.54854
Mn2576		0.27918	ppm	0.00025500	0.091276
Mo2020		0.0020880	ppm	0.00043700	20.923
Na5895		17.361	ppm	0.15684	0.90341
Ni2316		0.036969	ppm	0.00079300	2.1463
P_1782		0.23127	ppm	0.0019440	0.84048
Pb2203		0.0030160	ppm	0.00052800	17.520
S_1820		1.8078	ppm	0.0090980	0.50326
Sb2068		0.0020900	ppm	0.0045920	219.76
Se1960		0.0050760	ppm	0.0013980	27.541
Si2881	**W**	**27.142**	**ppm**	**0.24354**	**0.89726**
Sn1899		0.0010210	ppm	0.00033300	32.640
Sr4077		0.13765	ppm	0.0010500	0.76281
Ti3349		0.19869	ppm	0.00064400	0.32390
Tl1908		0.0028980	ppm	0.0072430	249.91
V_2924		0.027051	ppm	0.00022200	0.82119
Zn2062		0.072572	ppm	0.00020900	0.28779
Y_2243		6,156.2	Cts/S	23.250	0.37768
Y_3600		53,327	Cts/S	132.23	0.24797
Y_3774		2,717.8	Cts/S	1.7025	0.062643

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

sd 720-99552-J-1-A@5

Acquire Date: 8/19/2020 1:17:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00047700	ppm	0.00025400	53.358
Al3961		3.2813	ppm	0.056981	1.7365
As1890		0.0011330	ppm	0.00020000	17.620
B_2089		0.037394	ppm	0.00028000	0.74867
Ba4554		0.036246	ppm	0.000024000	0.064849
Be3130		0.00013100	ppm	0.00052300	400.57
Ca3179		4.9872	ppm	0.036417	0.73021
Cd2144		0.000061000	ppm	0.000063000	103.75
Co2286		0.0013380	ppm	0.00011200	8.3650
Cr2677		0.0086040	ppm	0.00013000	1.5132
Cu3247		0.0051480	ppm	0.00066200	12.864
Fe2599		44.265	ppm	0.33719	0.76176
K_7664		0.59885	ppm	0.0050180	0.83797
Mg2790		3.1574	ppm	0.0083670	0.26499
Mn2576		0.076667	ppm	0.000041000	0.053960
Mo2020		0.000098000	ppm	0.00013200	134.21
Na5895		4.5423	ppm	0.0048940	0.10775
Ni2316		0.010452	ppm	0.00030000	2.8682
P_1782		0.062334	ppm	0.0011260	1.8067
Pb2203		0.00080500	ppm	0.0016360	203.30
S_1820		0.45349	ppm	0.0048820	1.0765
Sb2068		-0.00021300	ppm	0.0013230	620.06
Se1960		0.0022870	ppm	0.000040000	1.7606
Si2881		7.1950	ppm	0.056613	0.78685
Sn1899		-0.00065400	ppm	0.000029000	4.4739
Sr4077		0.037421	ppm	0.00024900	0.66491
Ti3349		0.054410	ppm	0.0012260	2.2542
Tl1908		0.0019960	ppm	0.0013850	69.362
V_2924		0.0074220	ppm	0.00014000	1.8860
Zn2062		0.020054	ppm	0.00017600	0.87874
Y_2243		6,267.2	Cts/S	3.4659	0.055302
Y_3600		54,653	Cts/S	29.267	0.053551
Y_3774		2,718.1	Cts/S	16.820	0.61881

pds 720-99552-J-1-A

Acquire Date: 8/19/2020 1:21:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.10062	ppm	0.0015020	1.4923
Al3961		27.164	ppm	0.18179	0.66923
As1890		0.10699	ppm	0.0031720	2.9644
B_2089		1.1558	ppm	0.0012160	0.10525
Ba4554		0.29451	ppm	0.0016170	0.54897
Be3130		0.050924	ppm	0.00049500	0.97141
Ca3179		36.243	ppm	0.19623	0.54143
Cd2144		0.10139	ppm	0.000032000	0.031321
Co2286		0.11021	ppm	0.00027900	0.25278

pds 720-99552-J-1-A

Acquire Date: 8/19/2020 1:21:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.14445	ppm	0.00062400	0.43227
Cu3247		0.12843	ppm	0.00020200	0.15749
Fe2599		229.18	ppm	0.69634	0.30383
K_7664		13.367	ppm	0.091189	0.68218
Mg2790		25.929	ppm	0.11204	0.43211
Mn2576		0.49483	ppm	0.0025100	0.50731
Mo2020		0.10258	ppm	0.00016600	0.16135
Na5895		33.670	ppm	0.21796	0.64732
Ni2316		0.15300	ppm	0.00042400	0.27739
P_1782		1.3034	ppm	0.0055690	0.42731
Pb2203		0.10674	ppm	0.0013660	1.2794
S_1820		4.2539	ppm	0.010208	0.23997
Sb2068		0.095004	ppm	0.0063690	6.7043
Se1960		0.10806	ppm	0.0041280	3.8202
Si2881	**W**	**38.782**	**ppm**	**0.0093610**	**0.024138**
Sn1899		0.10371	ppm	0.0014560	1.4039
Sr4077		0.29765	ppm	0.0016700	0.56108
Ti3349		0.38898	ppm	0.00045900	0.11800
Tl1908		0.10264	ppm	0.00090500	0.88192
V_2924		0.13810	ppm	0.00015900	0.11503
Zn2062		0.20100	ppm	0.0015640	0.77834
Y_2243		6,102.9	Cts/S	18.567	0.30423
Y_3600		53,256	Cts/S	165.86	0.31143
Y_3774		2,702.5	Cts/S	8.0211	0.29681

720-99552-J-1-B MS

Acquire Date: 8/19/2020 1:25:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.042242	ppm	0.00055800	1.3221
Al3961		35.251	ppm	0.13093	0.37143
As1890		0.39115	ppm	0.0038040	0.97244
B_2089		4.0426	ppm	0.0036040	0.089157
Ba4554		0.64498	ppm	0.00020600	0.031941
Be3130		0.20015	ppm	0.00055900	0.27928
Ca3179		52.153	ppm	0.11178	0.21434
Cd2144		0.20144	ppm	0.000057000	0.028076
Co2286		0.21042	ppm	0.00087400	0.41531
Cr2677		0.26518	ppm	0.0019390	0.73127
Cu3247		0.24169	ppm	0.0011430	0.47287
Fe2599		272.52	ppm	0.60362	0.22149
K_7664		24.636	ppm	0.028682	0.11643
Mg2790		40.064	ppm	0.12645	0.31562
Mn2576		0.68193	ppm	0.0012470	0.18282
Mo2020		0.20140	ppm	0.00046800	0.23225
Na5895		49.712	ppm	0.015410	0.030998
Ni2316		0.26474	ppm	0.00043700	0.16510

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-99552-J-1-B MS

Acquire Date: 8/19/2020 1:25:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.4187	ppm	0.00064100	0.014505
Pb2203		0.20730	ppm	0.0021040	1.0151
S_1820		6.8694	ppm	0.016252	0.23659
Sb2068		0.31603	ppm	0.0022500	0.71200
Se1960		0.32620	ppm	0.00026700	0.081790
Si2881	**W**	**45.215**	**ppm**	**0.68349**	**1.5116**
Sn1899		0.39204	ppm	0.0012750	0.32520
Sr4077		0.44081	ppm	0.0012700	0.28810
Ti3349		0.67365	ppm	0.00049400	0.073355
Tl1908		0.38889	ppm	0.00050600	0.13019
V_2924		0.25770	ppm	0.00061900	0.24036
Zn2062		0.53746	ppm	0.0033530	0.62392
Y_2243		5,980.0	Cts/S	10.392	0.17378
Y_3600		51,387	Cts/S	268.13	0.52178
Y_3774		2,683.9	Cts/S	20.736	0.77259

720-99552-J-1-C MSD

Acquire Date: 8/19/2020 1:29:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046521	ppm	0.00046900	1.0078
Al3961		42.508	ppm	0.25779	0.60646
As1890		0.46350	ppm	0.00032100	0.069226
B_2089		4.7139	ppm	0.0066060	0.14014
Ba4554		0.76758	ppm	0.0053060	0.69126
Be3130		0.23903	ppm	0.0021560	0.90220
Ca3179		61.919	ppm	0.43495	0.70245
Cd2144		0.23502	ppm	0.00051300	0.21827
Co2286		0.25086	ppm	0.0010410	0.41485
Cr2677		0.31789	ppm	0.000038000	0.011912
Cu3247		0.28954	ppm	0.0011300	0.39040
Fe2599		328.03	ppm	2.6428	0.80567
K_7664		29.243	ppm	0.20638	0.70573
Mg2790		47.762	ppm	0.15289	0.32010
Mn2576		0.80823	ppm	0.0022140	0.27394
Mo2020		0.24021	ppm	0.0027270	1.1352
Na5895		58.877	ppm	0.45527	0.77326
Ni2316		0.31590	ppm	0.0027940	0.88443
P_1782		5.2125	ppm	0.020626	0.39570
Pb2203		0.24635	ppm	0.0027910	1.1328
S_1820		7.9714	ppm	0.0094260	0.11825
Sb2068		0.37165	ppm	0.0031310	0.84253
Se1960		0.38666	ppm	0.012191	3.1529
Si2881	**W**	**55.352**	**ppm**	**0.14252**	**0.25748**
Sn1899		0.46401	ppm	0.000027000	0.0057580
Sr4077		0.52665	ppm	0.0027830	0.52837
Ti3349		0.82661	ppm	0.0023520	0.28456

720-99552-J-1-C MSD

Acquire Date: 8/19/2020 1:29:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.45211	ppm	0.0011990	0.26516
V_2924		0.30888	ppm	0.0000060000	0.0020940
Zn2062		0.63397	ppm	0.0011180	0.17636
Y_2243		5,986.7	Cts/S	15.751	0.26310
Y_3600		51,896	Cts/S	13.020	0.025088
Y_3774		2,729.2	Cts/S	16.586	0.60773

320-63491-A-3-O@20

Acquire Date: 8/19/2020 1:33:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0028460	ppm	0.00073800	25.931
Al3961		7.7887	ppm	0.059942	0.76960
As1890		0.026465	ppm	0.0020860	7.8812
B_2089		0.054182	ppm	0.00088200	1.6287
Ba4554		0.60364	ppm	0.0050420	0.83525
Be3130		0.00030400	ppm	0.00026700	87.969
Ca3179		173.30	ppm	1.3392	0.77275
Cd2144		0.0055910	ppm	0.00011300	2.0281
Co2286		0.011871	ppm	0.000061000	0.51309
Cr2677		0.037063	ppm	0.00095800	2.5848
Cu3247		2.1843	ppm	0.0089920	0.41165
Fe2599		59.414	ppm	0.30954	0.52098
K_7664		0.76526	ppm	0.043312	5.6597
Mg2790		12.062	ppm	0.040899	0.33906
Mn2576		1.1531	ppm	0.0026980	0.23401
Mo2020		0.0018040	ppm	0.00013200	7.3300
Na5895		3.5403	ppm	0.037801	1.0677
Ni2316		0.073153	ppm	0.00048100	0.65786
P_1782		0.63814	ppm	0.0060120	0.94205
Pb2203		10.715	ppm	0.011229	0.10480
S_1820		1.5799	ppm	0.0020640	0.13065
Sb2068		0.019813	ppm	0.0024070	12.151
Se1960		0.0024080	ppm	0.0024040	99.844
Si2881		0.49148	ppm	0.032115	6.5344
Sn1899		0.30373	ppm	0.0011570	0.38105
Sr4077		3.1092	ppm	0.025076	0.80649
Ti3349		0.93141	ppm	0.0023220	0.24929
Tl1908		0.0039370	ppm	0.0015760	40.033
V_2924		0.036073	ppm	0.00058000	1.6078
Zn2062		3.6334	ppm	0.0079840	0.21973
Y_2243		6,041.4	Cts/S	3.5658	0.059022
Y_3600		52,556	Cts/S	127.43	0.24246
Y_3774		2,688.6	Cts/S	2.0425	0.075970

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-63491-A-3-O@10

Acquire Date: 8/19/2020 1:37:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0044360	ppm	0.000058000	1.3134
Al3961		15.317	ppm	0.079569	0.51948
As1890		0.056647	ppm	0.0037330	6.5907
B_2089		0.075673	ppm	0.0014330	1.8932
Ba4554		1.1866	ppm	0.0056780	0.47848
Be3130		0.00041200	ppm	0.00015500	37.678
Ca3179		338.65	ppm	1.8616	0.54969
Cd2144		0.010953	ppm	0.000041000	0.37388
Co2286		0.023057	ppm	0.00019500	0.84561
Cr2677		0.072397	ppm	0.00023700	0.32801
Cu3247		4.3051	ppm	0.013211	0.30687
Fe2599		115.52	ppm	0.34761	0.30091
K_7664		1.5481	ppm	0.0093480	0.60382
Mg2790		23.483	ppm	0.039494	0.16819
Mn2576		2.2431	ppm	0.0044020	0.19626
Mo2020		0.0021620	ppm	0.00034500	15.967
Na5895		6.9299	ppm	0.050832	0.73352
Ni2316		0.13999	ppm	0.00082900	0.59200
P_1782		1.2661	ppm	0.00095100	0.075118
Pb2203	**W**	**21.037**	**ppm**	**0.037917**	**0.18024**
S_1820		3.1444	ppm	0.0039130	0.12443
Sb2068		0.033594	ppm	0.0011700	3.4823
Se1960		0.0073760	ppm	0.0053680	72.774
Si2881		0.27083	ppm	0.0073470	2.7129
Sn1899		0.59322	ppm	0.0013510	0.22777
Sr4077	**W**	**6.1576**	**ppm**	**0.030383**	**0.49343**
Ti3349		1.8466	ppm	0.0022730	0.12307
Tl1908		0.0034390	ppm	0.00077600	22.567
V_2924		0.070620	ppm	0.00090800	1.2864
Zn2062		7.0424	ppm	0.0027040	0.038400
Y_2243		5,934.4	Cts/S	7.8847	0.13287
Y_3600		51,524	Cts/S	71.883	0.13951
Y_3774		2,712.8	Cts/S	11.027	0.40647

320-63303-A-2-W@2

Acquire Date: 8/19/2020 1:41:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0044160	ppm	0.00048200	10.927
Al3961		83.508	ppm	0.48041	0.57529
As1890		0.040084	ppm	0.0014970	3.7345
B_2089		0.41495	ppm	0.0011340	0.27321
Ba4554		0.68969	ppm	0.0056620	0.82100
Be3130		0.00054600	ppm	0.00075500	138.22
Ca3179	**W**	**2,482.1**	**ppm**	**25.452**	**1.0254**
Cd2144		0.00032700	ppm	0.0000030000	1.0663
Co2286		0.065287	ppm	0.00059900	0.91770

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-63303-A-2-W@2

Acquire Date: 8/19/2020 1:41:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.26169	ppm	0.00050800	0.19419
Cu3247		0.15251	ppm	0.0018650	1.2230
Fe2599		138.04	ppm	0.73898	0.53532
K_7664		12.851	ppm	0.16575	1.2898
Mg2790		151.38	ppm	0.21638	0.14294
Mn2576		1.9106	ppm	0.0034910	0.18273
Mo2020		0.010803	ppm	0.000072000	0.66691
Na5895		66.554	ppm	0.56876	0.85458
Ni2316		0.29269	ppm	0.0010770	0.36811
P_1782		7.7906	ppm	0.042054	0.53981
Pb2203		0.16547	ppm	0.00089000	0.53774
S_1820		20.768	ppm	0.0065010	0.031303
Sb2068		-0.014891	ppm	0.0039540	26.552
Se1960		0.0037390	ppm	0.0041680	111.48
Si2881		0.80424	ppm	0.015438	1.9196
Sn1899		0.023175	ppm	0.00059600	2.5697
Sr4077	**F**	**47.052**	**ppm**	**0.069524**	**0.14776**
Ti3349	**W**	**13.270**	**ppm**	**0.047628**	**0.35893**
Tl1908		-0.00015200	ppm	0.0033260	2,183.9
V_2924		0.36378	ppm	0.00040800	0.11228
Zn2062		0.36813	ppm	0.0015450	0.41981
Y_2243		5,217.8	Cts/S	7.2837	0.13959
Y_3600		44,765	Cts/S	238.55	0.53288
Y_3774		2,600.0	Cts/S	5.8778	0.22607

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Acquire Date: 8/19/2020 1:45:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0014550	ppm	0.00018100	12.410
Al3961		0.042466	ppm	0.0058400	13.751
As1890		.000068000	ppm	0.0018850	2,763.4
B_2089		0.0050620	ppm	0.00034100	6.7337
Ba4554		.000044000	ppm	0.00068300	1,551.9
Be3130		0.00010900	ppm	0.000089000	81.187
Ca3179		0.13728	ppm	0.011259	8.2017
Cd2144		.000079000	ppm	0.0000010000	1.3493
Co2286		0.00015800	ppm	0.00014900	94.425
Cr2677		-0.00019400	ppm	0.00046300	239.31
Cu3247		0.0047570	ppm	0.000013000	0.28159
Fe2599		0.12630	ppm	0.0054750	4.3346
K_7664		-0.0033240	ppm	0.011446	344.31
Mg2790		0.0018320	ppm	0.0018410	100.46
Mn2576		0.00030600	ppm	0.00017000	55.571
Mo2020		-0.00062600	ppm	0.00021000	33.593
Na5895		0.10682	ppm	0.0085270	7.9826
Ni2316		0.00067100	ppm	0.00020200	30.034

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Acquire Date: 8/19/2020 1:45:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.0065450	ppm	0.0010950	16.731
Pb2203		0.0010590	ppm	0.00068600	64.722
S_1820		0.0034580	ppm	0.00097200	28.094
Sb2068		0.00048900	ppm	0.00034100	69.647
Se1960		0.0047300	ppm	0.0067650	143.02
Si2881		0.075540	ppm	0.088267	116.85
Sn1899		-0.00020700	ppm	0.000082000	39.606
Sr4077		0.0024110	ppm	0.00086200	35.760
Ti3349		0.022316	ppm	0.000085000	0.37892
Tl1908		0.0029440	ppm	0.00011200	3.7917
V_2924		-0.00032300	ppm	0.00012100	37.498
Zn2062		0.010287	ppm	0.00021300	2.0737
Y_2243		6,247.9	Cts/S	33.638	0.53839
Y_3600		54,464	Cts/S	8.3821	0.015390
Y_3774		2,703.3	Cts/S	19.255	0.71227

CCV 2103404

Acquire Date: 8/19/2020 1:49:11PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52282	ppm	0.0030250	0.57864	.50000	Rel(%)	Pass	
Al3961		25.435	ppm	0.12769	0.50201	25.000	Rel(%)	Pass	
As1890		0.52525	ppm	0.0016760	0.31911	.50000	Rel(%)	Pass	
B_2089		1.0396	ppm	0.0014170	0.13632	1.0000	Rel(%)	Pass	
Ba4554		2.5327	ppm	0.019341	0.76363	2.5000	Rel(%)	Pass	
Be3130		0.51327	ppm	0.0036590	0.71286	.50000	Rel(%)	Pass	
Ca3179		26.065	ppm	0.22231	0.85290	25.000	Rel(%)	Pass	
Cd2144		0.51442	ppm	0.0012180	0.23671	.50000	Rel(%)	Pass	
Co2286		2.5886	ppm	0.0076260	0.29462	2.5000	Rel(%)	Pass	
Cr2677		2.5963	ppm	0.0056820	0.21886	2.5000	Rel(%)	Pass	
Cu3247		2.6145	ppm	0.000048000	0.0018270	2.5000	Rel(%)	Pass	
Fe2599		27.235	ppm	0.11606	0.42616	25.000	Rel(%)	Pass	
K_7664		25.306	ppm	0.082379	0.32554	25.000	Rel(%)	Pass	
Mg2790		26.261	ppm	0.042395	0.16143	25.000	Rel(%)	Pass	
Mn2576		2.5139	ppm	0.0084730	0.33703	2.5000	Rel(%)	Pass	
Mo2020		1.0260	ppm	0.0065420	0.63761	1.0000	Rel(%)	Pass	
Na5895		25.692	ppm	0.20424	0.79494	25.000	Rel(%)	Pass	
Ni2316		2.6289	ppm	0.0058000	0.22064	2.5000	Rel(%)	Pass	
P_1782		2.5852	ppm	0.0097410	0.37681	2.5000	Rel(%)	Pass	
Pb2203		0.51887	ppm	0.00026900	0.051775	.50000	Rel(%)	Pass	
S_1820		2.5577	ppm	0.0086000	0.33624	2.5000	Rel(%)	Pass	
Sb2068		0.50678	ppm	0.0017770	0.35064	.50000	Rel(%)	Pass	
Se1960		0.51357	ppm	0.000065000	0.012657	.50000	Rel(%)	Pass	
Si2881		2.6116	ppm	0.038149	1.4608	2.5000	Rel(%)	Pass	
Sn1899		2.6106	ppm	0.0054840	0.21008	2.5000	Rel(%)	Pass	
Sr4077		2.5747	ppm	0.018132	0.70424	2.5000	Rel(%)	Pass	
Ti3349		1.0465	ppm	0.0017460	0.16687	1.0000	Rel(%)	Pass	
Tl1908		0.53554	ppm	0.0055390	1.0343	.50000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/19/2020 1:49:11PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5707	ppm	0.0044510	0.17314	2.5000	Rel(%)	Pass	
Zn2062		2.6289	ppm	0.00083500	0.031780	2.5000	Rel(%)	Pass	
Y_2243		6,082.5	Cts/S	13.218	0.21731				
Y_3600		52,811	Cts/S	40.575	0.076830				
Y_3774		2,692.2	Cts/S	1.7596	0.065360				

CCB 2110462

Acquire Date: 8/19/2020 1:52:58PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00047700	ppm	0.0016100	337.49	.00000	Abs	Pass	
Al3961	**W**	**0.051632**	**ppm**	**0.0014230**	**2.7552**	**.00000**	**Abs**	**Warn High**	**0.05000**
As1890		-0.00037500	ppm	0.00078600	209.82	.00000	Abs	Pass	
B_2089		0.0058880	ppm	0.00030400	5.1683	.00000	Abs	Pass	
Ba4554		0.00063300	ppm	0.00010500	16.648	.00000	Abs	Pass	
Be3130		-0.00014600	ppm	0.00042200	289.77	.00000	Abs	Pass	
Ca3179		0.019202	ppm	0.0072550	37.784	.00000	Abs	Pass	
Cd2144		0.000038000	ppm	0.00010400	275.86	.00000	Abs	Pass	
Co2286		0.000019000	ppm	0.000068000	359.47	.00000	Abs	Pass	
Cr2677		0.00078800	ppm	0.00046000	58.461	.00000	Abs	Pass	
Cu3247		0.0035660	ppm	0.0024180	67.815	.00000	Abs	Pass	
Fe2599	**W**	**0.056912**	**ppm**	**0.018449**	**32.417**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.020629	ppm	0.028272	137.05	.00000	Abs	Pass	
Mg2790		0.0043400	ppm	0.00081000	18.665	.00000	Abs	Pass	
Mn2576		0.00044400	ppm	0.000074000	16.654	.00000	Abs	Pass	
Mo2020	**W**	**0.011947**	**ppm**	**0.00092100**	**7.7092**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.065330	ppm	0.0077470	11.858	.00000	Abs	Pass	
Ni2316		0.0014350	ppm	0.00018800	13.112	.00000	Abs	Pass	
P_1782		0.0034650	ppm	0.0010080	29.075	.00000	Abs	Pass	
Pb2203		0.00085800	ppm	0.00093800	109.32	.00000	Abs	Pass	
S_1820		0.0042050	ppm	0.0012990	30.899	.00000	Abs	Pass	
Sb2068		0.0017390	ppm	0.00062800	36.110	.00000	Abs	Pass	
Se1960		0.0053410	ppm	0.0019620	36.737	.00000	Abs	Pass	
Si2881		-0.011891	ppm	0.095502	803.14	.00000	Abs	Pass	
Sn1899		0.0024960	ppm	0.00031100	12.454	.00000	Abs	Pass	
Sr4077		0.00084700	ppm	0.00019700	23.328	.00000	Abs	Pass	
Ti3349		0.0040860	ppm	0.00014200	3.4653	.00000	Abs	Pass	
Tl1908		0.0059550	ppm	0.00027800	4.6699	.00000	Abs	Pass	
V_2924		0.00044100	ppm	0.0012050	273.29	.00000	Abs	Pass	
Zn2062		0.0038340	ppm	0.00013900	3.6318	.00000	Abs	Pass	
Y_2243		6,183.5	Cts/S	11.242	0.18181				
Y_3600		53,656	Cts/S	74.477	0.13881				
Y_3774		2,695.6	Cts/S	0.085442	0.0031700				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-404814/1-A

Acquire Date: 8/19/2020 1:57:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00071800	ppm	0.0010250	142.77
Al3961		-0.0071730	ppm	0.031860	444.15
As1890		0.0016730	ppm	0.00039400	23.528
B_2089		0.0032360	ppm	0.00014300	4.4320
Ba4554		-0.00032500	ppm	0.00040100	123.56
Be3130		0.00010200	ppm	0.000083000	81.542
Ca3179		0.027110	ppm	0.0036760	13.561
Cd2144		0.000089000	ppm	0.000023000	25.326
Co2286		0.000034000	ppm	0.00021900	634.88
Cr2677		-0.00034100	ppm	0.00052000	152.42
Cu3247		0.0031150	ppm	0.00072800	23.359
Fe2599		0.027539	ppm	0.016030	58.209
K_7664		-0.046798	ppm	0.092271	197.17
Mg2790		-0.00024400	ppm	0.00016300	66.819
Mn2576		0.000089000	ppm	0.000067000	75.169
Mo2020		0.0016400	ppm	0.000089000	5.4270
Na5895		0.059396	ppm	0.031127	52.407
Ni2316		0.0011000	ppm	0.00033200	30.219
P_1782		0.0031620	ppm	0.00011500	3.6230
Pb2203		0.00020300	ppm	0.00020100	98.949
S_1820		0.0068840	ppm	0.0032520	47.246
Sb2068		-0.0035320	ppm	0.0029130	82.457
Se1960		0.0055430	ppm	0.000088000	1.5954
Si2881		0.10067	ppm	0.048426	48.102
Sn1899		0.00031000	ppm	0.00095500	308.52
Sr4077		0.00051800	ppm	0.00011100	21.427
Ti3349		0.0013810	ppm	0.00040400	29.290
Tl1908		-0.0016530	ppm	0.0030510	184.60
V_2924		0.000042000	ppm	0.00046200	1,105.6
Zn2062		0.0014680	ppm	0.00015800	10.741
Y_2243		6,285.1	Cts/S	14.644	0.23300
Y_3600		54,812	Cts/S	116.48	0.21250
Y_3774		2,685.7	Cts/S	7.8804	0.29342

CCV 2103404

Acquire Date: 8/19/2020 2:01:03PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52518	ppm	0.00062900	0.11972	.50000	Rel(%)	Pass	
Al3961		25.479	ppm	0.19717	0.77386	25.000	Rel(%)	Pass	
As1890		0.52230	ppm	0.00022700	0.043512	.50000	Rel(%)	Pass	
B_2089		1.0355	ppm	0.0019110	0.18455	1.0000	Rel(%)	Pass	
Ba4554		2.5217	ppm	0.022598	0.89613	2.5000	Rel(%)	Pass	
Be3130		0.51242	ppm	0.0042710	0.83343	.50000	Rel(%)	Pass	
Ca3179		26.081	ppm	0.20230	0.77564	25.000	Rel(%)	Pass	
Cd2144		0.51325	ppm	0.0016690	0.32510	.50000	Rel(%)	Pass	
Co2286		2.5861	ppm	0.0050720	0.19611	2.5000	Rel(%)	Pass	

CCV 2103404

Acquire Date: 8/19/2020 2:01:03PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.6050	ppm	0.0092880	0.35657	2.5000	Rel(%)	Pass	
Cu3247		2.6208	ppm	0.018622	0.71053	2.5000	Rel(%)	Pass	
Fe2599		27.187	ppm	0.29815	1.0967	25.000	Rel(%)	Pass	
K_7664		25.283	ppm	0.29249	1.1569	25.000	Rel(%)	Pass	
Mg2790		26.413	ppm	0.10814	0.40942	25.000	Rel(%)	Pass	
Mn2576		2.4967	ppm	0.011342	0.45426	2.5000	Rel(%)	Pass	
Mo2020		1.0229	ppm	0.0057670	0.56374	1.0000	Rel(%)	Pass	
Na5895		25.728	ppm	0.25712	0.99935	25.000	Rel(%)	Pass	
Ni2316		2.6351	ppm	0.0065830	0.24982	2.5000	Rel(%)	Pass	
P_1782		2.5694	ppm	0.00059900	0.023316	2.5000	Rel(%)	Pass	
Pb2203		0.51685	ppm	0.0040900	0.79127	.50000	Rel(%)	Pass	
S_1820		2.5490	ppm	0.0029690	0.11647	2.5000	Rel(%)	Pass	
Sb2068		0.50689	ppm	0.0039340	0.77619	.50000	Rel(%)	Pass	
Se1960		0.51491	ppm	0.0026460	0.51396	.50000	Rel(%)	Pass	
Si2881		2.5537	ppm	0.0093180	0.36487	2.5000	Rel(%)	Pass	
Sn1899		2.6118	ppm	0.0023010	0.088082	2.5000	Rel(%)	Pass	
Sr4077		2.5714	ppm	0.024616	0.95728	2.5000	Rel(%)	Pass	
Ti3349		1.0432	ppm	0.0054310	0.52064	1.0000	Rel(%)	Pass	
Tl1908		0.53965	ppm	0.0036080	0.66861	.50000	Rel(%)	Pass	
V_2924		2.5729	ppm	0.011766	0.45730	2.5000	Rel(%)	Pass	
Zn2062		2.6323	ppm	0.0069280	0.26320	2.5000	Rel(%)	Pass	
Y_2243		6,098.6	Cts/S	17.795	0.29179				
Y_3600		52,785	Cts/S	4.5570	0.0086330				
Y_3774		2,705.6	Cts/S	17.986	0.66477				

CCB 2110462

Acquire Date: 8/19/2020 2:04:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000038000	ppm	0.00031300	820.78	.00000	Abs	Pass	
Al3961		0.0011660	ppm	0.024709	2,119.2	.00000	Abs	Pass	
As1890		0.0011320	ppm	0.00020700	18.329	.00000	Abs	Pass	
B_2089		0.0039460	ppm	0.000039000	0.98915	.00000	Abs	Pass	
Ba4554		0.00086500	ppm	0.00032100	37.116	.00000	Abs	Pass	
Be3130		0.00011400	ppm	0.00037500	329.02	.00000	Abs	Pass	
Ca3179		0.018087	ppm	0.017732	98.036	.00000	Abs	Pass	
Cd2144		0.000095000	ppm	0.00011500	120.92	.00000	Abs	Pass	
Co2286		0.00057400	ppm	0.00011500	20.077	.00000	Abs	Pass	
Cr2677		0.00065500	ppm	0.00038600	58.920	.00000	Abs	Pass	
Cu3247		0.0028580	ppm	0.00050200	17.582	.00000	Abs	Pass	
Fe2599	**W**	**0.058612**	**ppm**	**0.020916**	**35.685**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		-0.030369	ppm	0.041359	136.19	.00000	Abs	Pass	
Mg2790		0.0016050	ppm	0.0038980	242.90	.00000	Abs	Pass	
Mn2576		0.00063600	ppm	0.000016000	2.5154	.00000	Abs	Pass	
Mo2020	**W**	**0.012431**	**ppm**	**0.0010300**	**8.2891**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.059440	ppm	0.0017560	2.9537	.00000	Abs	Pass	
Ni2316		0.0013210	ppm	0.00068400	51.754	.00000	Abs	Pass	
P_1782		0.0012050	ppm	0.0020550	170.47	.00000	Abs	Pass	

CCB 2110462

Acquire Date: 8/19/2020 2:04:51PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.00076400	ppm	0.0022020	288.45	.00000	Abs	Pass	
S_1820		0.0013970	ppm	0.0098370	704.39	.00000	Abs	Pass	
Sb2068		-0.0040100	ppm	0.00065300	16.286	.00000	Abs	Pass	
Se1960		0.0029950	ppm	0.0037810	126.24	.00000	Abs	Pass	
Si2881		0.022067	ppm	0.023201	105.14	.00000	Abs	Pass	
Sn1899		0.0030620	ppm	0.00033400	10.914	.00000	Abs	Pass	
Sr4077		0.0012230	ppm	0.000058000	4.7321	.00000	Abs	Pass	
Ti3349		0.0035850	ppm	0.00072600	20.254	.00000	Abs	Pass	
Tl1908		0.0074030	ppm	0.00093100	12.575	.00000	Abs	Pass	
V_2924		0.00012800	ppm	0.00020600	160.71	.00000	Abs	Pass	
Zn2062		0.0034580	ppm	0.0000030000	0.083638	.00000	Abs	Pass	
Y_2243		6,275.7	Cts/S	7.3523	0.11716				
Y_3600		54,767	Cts/S	175.00	0.31954				
Y_3774		2,690.9	Cts/S	14.061	0.52255				

CCVL 2062513

Acquire Date: 8/19/2020 2:08:53PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0049330	ppm	0.00056800	11.507	.00500	Rel(%)	Pass	
Al3961		0.20366	ppm	0.015421	7.5722	.20000	Rel(%)	Pass	
As1890		0.037315	ppm	0.0019930	5.3403	.04000	Rel(%)	Pass	
B_2089		0.19981	ppm	0.00023000	0.11504	.20000	Rel(%)	Pass	
Ba4554		0.020434	ppm	0.00026400	1.2898	.02000	Rel(%)	Pass	
Be3130		0.0029150	ppm	0.00042500	14.573	.00300	Rel(%)	Pass	
Ca3179		0.52594	ppm	0.0092430	1.7573	.50000	Rel(%)	Pass	
Cd2144		0.0030840	ppm	0.00013700	4.4472	.00300	Rel(%)	Pass	
Co2286		0.010875	ppm	0.00030200	2.7741	.01000	Rel(%)	Pass	
Cr2677		0.010111	ppm	0.00068500	6.7760	.01000	Rel(%)	Pass	
Cu3247		0.019404	ppm	0.00048500	2.4987	.01500	Rel(%)	Pass	
Fe2599		0.12305	ppm	0.016835	13.681	.10000	Rel(%)	Pass	
K_7664		0.96475	ppm	0.031266	3.2408	1.0000	Rel(%)	Pass	
Mg2790		0.52697	ppm	0.012568	2.3850	.50000	Rel(%)	Pass	
Mn2576		0.010484	ppm	0.000052000	0.50005	.01000	Rel(%)	Pass	
Mo2020		0.020895	ppm	0.00055300	2.6488	.02000	Rel(%)	Pass	
Na5895		0.54753	ppm	0.00071100	0.12988	.50000	Rel(%)	Pass	
Ni2316		0.011788	ppm	0.00056700	4.8083	.01000	Rel(%)	Pass	
P_1782		0.50353	ppm	0.00071500	0.14192	.50000	Rel(%)	Pass	
Pb2203		0.0084790	ppm	0.0018090	21.338	.01000	Rel(%)	Pass	
S_1820		0.48858	ppm	0.0013930	0.28515	.50000	Rel(%)	Pass	
Sb2068		0.030139	ppm	0.0014800	4.9104	.03000	Rel(%)	Pass	
Se1960		0.041180	ppm	0.0043520	10.568	.04000	Rel(%)	Pass	
Si2881		0.48960	ppm	0.0063950	1.3062	.50000	Rel(%)	Pass	
Sn1899		0.023722	ppm	0.0000040000	0.014911	.02000	Rel(%)	Pass	
Sr4077		0.051348	ppm	0.00021400	0.41772	.05000	Rel(%)	Pass	
Ti3349		0.010837	ppm	0.00027600	2.5483	.01000	Rel(%)	Pass	
Tl1908		0.032397	ppm	0.000079000	0.24536	.03000	Rel(%)	Pass	
V_2924		0.020493	ppm	0.00045800	2.2328	.02000	Rel(%)	Pass	

CCVL 2062513

Acquire Date: 8/19/2020 2:08:53PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.021923	ppm	0.00012500	0.57169	.02000	Rel(%)	Pass	
Y_2243		6,331.0	Cts/S	20.280	0.32033				
Y_3600		54,525	Cts/S	58.730	0.10771				
Y_3774		2,696.3	Cts/S	0.15733	0.0058350				

RINSE BLANK

Acquire Date: 8/19/2020 2:12:55PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 908

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00059700	ppm	0.00010700	17.848	.00000	Abs	Pass	
Al3961		0.021526	ppm	0.015145	70.357	.00000	Abs	Pass	
As1890		0.0013270	ppm	0.00051700	39.003	.00000	Abs	Pass	
B_2089		0.0022980	ppm	0.00059000	25.658	.00000	Abs	Pass	
Ba4554		.0000080000	ppm	0.000079000	1,026.7	.00000	Abs	Pass	
Be3130		0.000013000	ppm	0.000041000	311.10	.00000	Abs	Pass	
Ca3179		-0.0020010	ppm	0.0054150	270.70	.00000	Abs	Pass	
Cd2144		0.000044000	ppm	0.000052000	117.03	.00000	Abs	Pass	
Co2286		0.00030600	ppm	0.00028900	94.262	.00000	Abs	Pass	
Cr2677		-0.00018000	ppm	0.00066000	367.49	.00000	Abs	Pass	
Cu3247		0.0022630	ppm	0.00055300	24.432	.00000	Abs	Pass	
Fe2599		-0.019521	ppm	0.024551	125.77	.00000	Abs	Pass	
K_7664		0.071983	ppm	0.043202	60.017	.00000	Abs	Pass	
Mg2790		-0.0032860	ppm	0.0016910	51.452	.00000	Abs	Pass	
Mn2576		0.00011800	ppm	0.000067000	56.822	.00000	Abs	Pass	
Mo2020		0.00015400	ppm	0.00029800	193.52	.00000	Abs	Pass	
Na5895		0.059988	ppm	0.013200	22.005	.00000	Abs	Pass	
Ni2316		0.00081400	ppm	0.0010720	131.60	.00000	Abs	Pass	
P_1782		0.0020860	ppm	0.0014210	68.141	.00000	Abs	Pass	
Pb2203		-0.0021900	ppm	0.00019400	8.8700	.00000	Abs	Pass	
S_1820		0.0022080	ppm	0.00073900	33.470	.00000	Abs	Pass	
Sb2068		-0.00022200	ppm	0.00087200	393.27	.00000	Abs	Pass	
Se1960		0.0013940	ppm	0.0042360	303.84	.00000	Abs	Pass	
Si2881		-0.010222	ppm	0.016756	163.92	.00000	Abs	Pass	
Sn1899		-0.00051400	ppm	0.00045600	88.708	.00000	Abs	Pass	
Sr4077		0.000027000	ppm	0.000039000	147.12	.00000	Abs	Pass	
Ti3349		-0.00075900	ppm	0.00055500	73.078	.00000	Abs	Pass	
Tl1908		-0.00038800	ppm	0.0017480	450.81	.00000	Abs	Pass	
V_2924		-0.00043200	ppm	0.00027400	63.298	.00000	Abs	Pass	
Zn2062		0.00078000	ppm	0.000035000	4.5300	.00000	Abs	Pass	
Y_2243		6,331.6	Cts/S	17.094	0.26997				
Y_3600		54,841	Cts/S	121.36	0.22129				
Y_3774		2,730.7	Cts/S	14.859	0.54414				

Shipping and Receiving Documents

GHD

CHAIN OF CUSTODY RECORD

COC NO.: 59845

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702-NI0402

Laboratory Name: Eurofins / Test America

Lab Location: Sacramento

SSOW ID: 11187072-2019-002

Project Name: San Jacinto

Lab Contact: Carrie Gamber / Beth Hitt

Cooler No:

Project Location: Texas

Carrier:

GHD Chemistry Contact: Debbie Brennan

Airbill No:

Sampler(s): Don Pope

Total # of Containers: 4

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins/Furans	Total Metals											Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)																				
1	11215702-Treatment-3	8/7/20	12:30	WG			X	X											2		Attn to: Carrie Gamber
2	11215702-Treatment-4	8/7/20	13:00	WG			X	X											2		412-963-2428
3																					
4																					* Total Metals samples
5																					are preserved w/ HNO3
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ANALYSIS REQUESTED (See Back of COC for Definitions)

SAMPLE TYPE

320-63525 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☒1 Week ☐2 Week Other:

Notes/ Special Requirements:

obs Corr
4.2, 4.5

	RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1.	Don Pope	GHD	8/7/20	13:15		ETA	8/8/20	9:15
2.								
3.								

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

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TestAmerica

Sacramento
Sample Receiving Notes

320-63525 Field Sheet

Job:

Tracking # : 4576 5886 5466

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: AK7 Corr. Factor: ([✓ +] / -) 0.3 °C

Ice x Wet x Gel Other

Cooler Custody Seal: -

Cooler ID: -

Temp Observed: 4.2 °C Corrected: 4.5 °C

From: Temp Blank ☐ Sample ☒

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☒	☐
Cooler Temperature is acceptable?	☒	☐	☐

Initials: DH Date: 8/8/20

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☒	☐	☐
Samples compromised/tampered with?	☐	☒	☐
Sample containers have legible labels?	☒	☐	☐
Sample custody seal?	☐	☐	☒
Containers are not broken or leaking?	☒	☐	☐
Sample date/times are provided?	☒	☐	☐
Appropriate containers are used?	☒	☐	☐
Sample bottles are completely filled?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒
Samples w/o discrepancies?	☒	☐	☐
Zero headspace?*	☐	☐	☒
Alkalinity has no headspace?	☐	☐	☒
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☒
Multiphasic samples are not present?	☒	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: ST Date: 8/8/20

Notes:

Trizma Lot #(s):

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☐	☐	☐
Samples received within hold time?	☐	☐	☐
NCM Filed?	☐	☐	☐
Log Release checked in TALS?	☐	☐	☐

Initials: Date:

ORIGIN ID:APVA (714) 895-5494
SAMPLE CONTROL
CALSCIENCE ENVIRONMENTAL LAB
7440 LINCOLN WAY

GARDEN GROVE, CA 92841
UNITED STATES US

SHIP DATE: 07AUG20
ACTWGT: 16.00 LB
CAD: 1533735/INET4280

BILL SENDER

TO KARLA BUECHLER
EUROFINS TESTAMERICA-W.SAC
880 RIVERSIDE PARKWAY

WEST SACRAMENTO CA 95605
(916) 373-5600 REF: TC/34688
INV:
PO: DEPT:

56BJ2/7709/B766

FedEx Express

E

J202020071401uv

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7712 0586 0978

W0 BLUA

95605
CA-US SMF

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-63525-1

Login Number: 63525

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Thompson, Sarah W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins

Environment Testing
America

ANALYTICAL REPORT

Job Number: 320-64049-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
9/25/2020 3:53 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
09/25/2020

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

Table of Contents

Table of Contents

Qualifiers

Dioxin

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-64049-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/27/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 8.9 C.

The following samples was received at the laboratory outside the required temperature criteria at a verified temperature of observed 8.4 degrees C and corrected 8.9 degrees C: 11215702-GW-Tank#1 (320-64049-1), 11215702-GW-Tank#2 (320-64049-2), 11215702-Soil-Tank#1 (320-64049-3) and 11215702-Soil-Tank#2 (320-64049-4). The client was contacted and the lab was instructed to proceed.

Note: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD13C associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Soil-Tank#1 (320-64049-3), 11215702-Soil-Tank#2 (320-64049-4) and (CCV 320-415167/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and/or 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 10D5 exceeded this criteria: 11215702-GW-Tank#1 (320-64049-1), 11215702-GW-Tank#2 (320-64049-2), (CCV 320-408767/2) and (MB 320-407683/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 320-407683 and analytical batch 320-408767 recovered outside control limits for 1,2,3,4,7,8-HxCDF. The analyte was biased high in the LCS and LCSD but not detected in the associated samples above the reporting limit (RL); therefore, the data have been reported.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Soil-Tank#1 (320-64049-3), 11215702-Soil-Tank#2 (320-64049-4) and (CCV 320-414465/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Re-extraction note, 1 gram was used for extraction for the following samples: 11215702-Soil-Tank#1 (320-64049-3) and 11215702-Soil-Tank#2 (320-64049-4). The reporting limits (RLs) have been adjusted proportionately.

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 11215702-Soil-Tank#1 (320-64049-3) and 11215702-Soil-Tank#2 (320-64049-4) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

The following samples were diluted to bring the concentration of target analytes within the calibration range: 11215702-Soil-Tank#1

(320-64049-3) and 11215702-Soil-Tank#2 (320-64049-4). Elevated reporting limits (RLs) are provided.

Several analytes were detected in method blank MB 320-412959/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

OCDD and Total TCDD was detected in method blank MB 320-407683/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

1,2,3,4,7,8-HxCDF failed the recovery criteria high for LCS 320-407683/2-A. 1,2,3,4,7,8-HxCDF failed the recovery criteria high for LCSD 320-407683/3-A.

PERCENT SOLIDS

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc. Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-GW-Tank#1 Lab Sample ID: 320-64049-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.4	J q	48	1.0	pg/L	1		1613B	Total/NA
Total TCDD	1.2	J q B	9.7	0.80	pg/L	1		1613B	Total/NA
Total HxCDD	2.4	J q	48	0.83	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-GW-Tank#2 Lab Sample ID: 320-64049-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.89	J	49	0.48	pg/L	1		1613B	Total/NA
OCDD	2.7	J B	98	0.63	pg/L	1		1613B	Total/NA
Total TCDD	3.1	J q B	9.8	0.60	pg/L	1		1613B	Total/NA
Total HpCDD	0.89	J	49	0.48	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Soil-Tank#1 Lab Sample ID: 320-64049-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	100		61	2.0	pg/g	1	☼	1613B	Total/NA
1,2,3,7,8-PeCDF	1200		61	8.1	pg/g	1	☼	1613B	Total/NA
2,3,4,7,8-PeCDF	730		61	8.4	pg/g	1	☼	1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.8	J B	61	0.71	pg/g	1	☼	1613B	Total/NA
1,2,3,6,7,8-HxCDD	15	J B	61	0.73	pg/g	1	☼	1613B	Total/NA
1,2,3,7,8,9-HxCDD	5.8	J	61	0.66	pg/g	1	☼	1613B	Total/NA
1,2,3,4,7,8-HxCDF	1900		61	3.7	pg/g	1	☼	1613B	Total/NA
1,2,3,6,7,8-HxCDF	460		61	3.5	pg/g	1	☼	1613B	Total/NA
1,2,3,7,8,9-HxCDF	32	J	61	3.1	pg/g	1	☼	1613B	Total/NA
2,3,4,6,7,8-HxCDF	55	J	61	3.0	pg/g	1	☼	1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	500	B	61	1.9	pg/g	1	☼	1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	550	B	61	2.3	pg/g	1	☼	1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	190	B	61	2.3	pg/g	1	☼	1613B	Total/NA
OCDD	6400	B	120	4.7	pg/g	1	☼	1613B	Total/NA
OCDF	320	B	120	0.86	pg/g	1	☼	1613B	Total/NA
Total TCDD	13000	G	29	29	pg/g	1	☼	1613B	Total/NA
Total TCDF	63000	G	150	150	pg/g	1	☼	1613B	Total/NA
Total PeCDD	120	q	61	2.0	pg/g	1	☼	1613B	Total/NA
Total PeCDF	3000		61	8.3	pg/g	1	☼	1613B	Total/NA
Total HxCDD	98	B	61	0.70	pg/g	1	☼	1613B	Total/NA
Total HxCDF	2700		61	3.3	pg/g	1	☼	1613B	Total/NA
Total HpCDD	940	B	61	1.9	pg/g	1	☼	1613B	Total/NA
Total HpCDF	960	B	61	2.3	pg/g	1	☼	1613B	Total/NA
2,3,7,8-TCDD - DL	11000		120	44	pg/g	10	☼	1613B	Total/NA
2,3,7,8-TCDF - RADL	32000		120	39	pg/g	10	☼	1613B	Total/NA

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	160		68	2.0	pg/g	1	☼	1613B	Total/NA
1,2,3,7,8-PeCDF	1900		68	12	pg/g	1	☼	1613B	Total/NA
2,3,4,7,8-PeCDF	1100		68	12	pg/g	1	☼	1613B	Total/NA
1,2,3,4,7,8-HxCDD	5.1	J B	68	0.74	pg/g	1	☼	1613B	Total/NA
1,2,3,6,7,8-HxCDD	19	J B	68	0.79	pg/g	1	☼	1613B	Total/NA
1,2,3,7,8,9-HxCDD	7.6	J	68	0.70	pg/g	1	☼	1613B	Total/NA
1,2,3,4,7,8-HxCDF	3000		68	6.3	pg/g	1	☼	1613B	Total/NA
1,2,3,6,7,8-HxCDF	740		68	6.0	pg/g	1	☼	1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Soil-Tank#2 (Continued) Lab Sample ID: 320-64049-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8,9-HxCDF	48	J	68	5.2	pg/g	1	☼	1613B	Total/NA
2,3,4,6,7,8-HxCDF	85		68	5.6	pg/g	1	☼	1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	590	B	68	2.3	pg/g	1	☼	1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	930	B	68	3.0	pg/g	1	☼	1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	310	B	68	3.0	pg/g	1	☼	1613B	Total/NA
OCDD	7900	B	140	5.6	pg/g	1	☼	1613B	Total/NA
OCDF	510	B	140	1.0	pg/g	1	☼	1613B	Total/NA
Total TCDD	20000	G	38	38	pg/g	1	☼	1613B	Total/NA
Total TCDF	100000	q G	170	170	pg/g	1	☼	1613B	Total/NA
Total PeCDD	180		68	2.0	pg/g	1	☼	1613B	Total/NA
Total PeCDF	4800	q	68	12	pg/g	1	☼	1613B	Total/NA
Total HxCDD	130	B q	68	0.74	pg/g	1	☼	1613B	Total/NA
Total HxCDF	4300		68	5.8	pg/g	1	☼	1613B	Total/NA
Total HpCDD	1100	B	68	2.3	pg/g	1	☼	1613B	Total/NA
Total HpCDF	1500	B	68	3.0	pg/g	1	☼	1613B	Total/NA
2,3,7,8-TCDD - DL	17000		270	98	pg/g	20	☼	1613B	Total/NA
2,3,7,8-TCDF - RADL	47000		270	51	pg/g	20	☼	1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-GW-Tank#1 Lab Sample ID: 320-64049-1

Date Collected: 08/26/20 13:00 **Matrix: Water**
Date Received: 08/27/20 10:00

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.7	0.80	pg/L		08/28/20 14:44	09/02/20 04:34	1
2,3,7,8-TCDF	ND		9.7	0.49	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,7,8-PeCDD	ND		48	1.2	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,7,8-PeCDF	ND		48	0.75	pg/L		08/28/20 14:44	09/02/20 04:34	1
2,3,4,7,8-PeCDF	ND		48	1.1	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,4,7,8-HxCDD	**2.4**	**J q**	48	1.0	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,6,7,8-HxCDD	ND		48	0.74	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,7,8,9-HxCDD	ND		48	0.76	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,4,7,8-HxCDF	ND	*	48	0.92	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,6,7,8-HxCDF	ND		48	0.66	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,7,8,9-HxCDF	ND		48	0.53	pg/L		08/28/20 14:44	09/02/20 04:34	1
2,3,4,6,7,8-HxCDF	ND		48	0.50	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,4,6,7,8-HpCDD	ND		48	0.55	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,4,6,7,8-HpCDF	ND		48	0.56	pg/L		08/28/20 14:44	09/02/20 04:34	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.91	pg/L		08/28/20 14:44	09/02/20 04:34	1
OCDD	ND		97	0.79	pg/L		08/28/20 14:44	09/02/20 04:34	1
OCDF	ND		97	0.74	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total TCDD	**1.2**	**J q B**	9.7	0.80	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total TCDF	ND		9.7	0.49	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total PeCDD	ND		48	1.2	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total PeCDF	ND		48	1.4	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total HxCDD	**2.4**	**J q**	48	0.83	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total HxCDF	ND		48	0.92	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total HpCDD	ND		48	0.55	pg/L		08/28/20 14:44	09/02/20 04:34	1
Total HpCDF	ND		48	0.91	pg/L		08/28/20 14:44	09/02/20 04:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*25 - 164*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-2,3,7,8-TCDF	*87*		*24 - 169*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,7,8-PeCDD	*68*		*25 - 181*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,4,7,8-HxCDD	*67*		*32 - 141*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,6,7,8-HxCDD	*77*		*28 - 130*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,6,7,8-HxCDF	*81*		*26 - 123*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,7,8,9-HxCDF	*93*		*29 - 147*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-2,3,4,6,7,8-HxCDF	*93*		*28 - 136*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*126*		*23 - 140*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*115*		*28 - 143*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*94*		*26 - 138*	*08/28/20 14:44*	*09/02/20 04:34*	*1*
13C-OCDD	*127*		*17 - 157*	*08/28/20 14:44*	*09/02/20 04:34*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*08/28/20 14:44*	*09/02/20 04:34*	*1*

Client Sample Results

Client Sample ID: 11215702-GW-Tank#2

Lab Sample ID: 320-64049-2

Date Collected: 08/26/20 14:00
Date Received: 08/27/20 10:00
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.60	pg/L		08/28/20 14:44	09/02/20 05:19	1
2,3,7,8-TCDF	ND		9.8	0.44	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,7,8-PeCDD	ND		49	0.84	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,7,8-PeCDF	ND		49	0.66	pg/L		08/28/20 14:44	09/02/20 05:19	1
2,3,4,7,8-PeCDF	ND		49	0.88	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,4,7,8-HxCDD	ND		49	0.62	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,6,7,8-HxCDD	ND		49	0.48	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,7,8,9-HxCDD	ND		49	0.48	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,4,7,8-HxCDF	ND	*	49	0.89	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,6,7,8-HxCDF	ND		49	0.64	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,7,8,9-HxCDF	ND		49	0.53	pg/L		08/28/20 14:44	09/02/20 05:19	1
2,3,4,6,7,8-HxCDF	ND		49	0.48	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,4,6,7,8-HpCDD	**0.89**	**J**	49	0.48	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,4,6,7,8-HpCDF	ND		49	0.46	pg/L		08/28/20 14:44	09/02/20 05:19	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.79	pg/L		08/28/20 14:44	09/02/20 05:19	1
OCDD	**2.7**	**J B**	98	0.63	pg/L		08/28/20 14:44	09/02/20 05:19	1
OCDF	ND		98	0.61	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total TCDD	**3.1**	**J q B**	9.8	0.60	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total TCDF	ND		9.8	0.44	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total PeCDD	ND		49	0.84	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total PeCDF	ND		49	1.1	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total HxCDD	ND		49	1.8	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total HxCDF	ND		49	0.89	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total HpCDD	**0.89**	**J**	49	0.48	pg/L		08/28/20 14:44	09/02/20 05:19	1
Total HpCDF	ND		49	0.79	pg/L		08/28/20 14:44	09/02/20 05:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*25 - 164*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-2,3,7,8-TCDF	*85*		*24 - 169*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,4,7,8-HxCDD	*69*		*32 - 141*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,4,7,8-HxCDF	*71*		*26 - 152*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,6,7,8-HxCDF	*84*		*26 - 123*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,7,8,9-HxCDF	*96*		*29 - 147*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-2,3,4,6,7,8-HxCDF	*95*		*28 - 136*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*128*		*23 - 140*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*118*		*28 - 143*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*96*		*26 - 138*	*08/28/20 14:44*	*09/02/20 05:19*	*1*
13C-OCDD	*131*		*17 - 157*	*08/28/20 14:44*	*09/02/20 05:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*08/28/20 14:44*	*09/02/20 05:19*	*1*

Client Sample ID: 11215702-Soil-Tank#1

Lab Sample ID: 320-64049-3
Date Collected: 08/26/20 13:00
Matrix: Sediment
Date Received: 08/27/20 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**28.9**		0.1	0.1	%			08/31/20 16:59	1
Percent Solids	**71.1**		0.1	0.1	%			08/31/20 16:59	1

Client Sample ID: 11215702-Soil-Tank#1

Lab Sample ID: 320-64049-3
Date Collected: 08/26/20 13:00
Matrix: Sediment
Date Received: 08/27/20 10:00
Percent Solids: 71.1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**100**		61	2.0	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,7,8-PeCDF	**1200**		61	8.1	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
2,3,4,7,8-PeCDF	**730**		61	8.4	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,4,7,8-HxCDD	**3.8**	**J B**	61	0.71	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,6,7,8-HxCDD	**15**	**J B**	61	0.73	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,7,8,9-HxCDD	**5.8**	**J**	61	0.66	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,4,7,8-HxCDF	**1900**		61	3.7	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,6,7,8-HxCDF	**460**		61	3.5	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,7,8,9-HxCDF	**32**	**J**	61	3.1	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
2,3,4,6,7,8-HxCDF	**55**	**J**	61	3.0	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,4,6,7,8-HpCDD	**500**	**B**	61	1.9	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,4,6,7,8-HpCDF	**550**	**B**	61	2.3	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
1,2,3,4,7,8,9-HpCDF	**190**	**B**	61	2.3	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
OCDD	**6400**	**B**	120	4.7	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
OCDF	**320**	**B**	120	0.86	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total TCDD	**13000**	**G**	29	29	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total TCDF	**63000**	**G**	150	150	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total PeCDD	**120**	**q**	61	2.0	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total PeCDF	**3000**		61	8.3	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total HxCDD	**98**	**B**	61	0.70	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total HxCDF	**2700**		61	3.3	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total HpCDD	**940**	**B**	61	1.9	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1
Total HpCDF	**960**	**B**	61	2.3	pg/g	☼	09/17/20 05:13	09/20/20 12:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*25 - 164*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*24 - 185*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,6,7,8-HxCDD	*76*		*28 - 130*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,4,7,8-HxCDF	*77*		*26 - 152*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,6,7,8-HxCDF	*73*		*26 - 123*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,7,8,9-HxCDF	*73*		*29 - 147*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-2,3,4,6,7,8-HxCDF	*74*		*28 - 136*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*74*		*28 - 143*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*26 - 138*	*09/17/20 05:13*	*09/20/20 12:00*	*1*
13C-OCDD	*82*		*17 - 157*	*09/17/20 05:13*	*09/20/20 12:00*	*1*

Client Sample ID: 11215702-Soil-Tank#1 Lab Sample ID: 320-64049-3

Date Collected: 08/26/20 13:00 **Matrix: Sediment**

Date Received: 08/27/20 10:00 **Percent Solids: 71.1**

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*	*09/17/20 05:13*	*09/20/20 12:00*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**11000**		120	44	pg/g	☼	09/17/20 05:13	09/24/20 04:52	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*25 - 164*	*09/17/20 05:13*	*09/24/20 04:52*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*09/17/20 05:13*	*09/24/20 04:52*	*10*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**32000**		120	39	pg/g	☼	09/17/20 05:13	09/23/20 20:20	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*79*		*24 - 169*	*09/17/20 05:13*	*09/23/20 20:20*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*105*		*35 - 197*	*09/17/20 05:13*	*09/23/20 20:20*	*10*

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

Date Collected: 08/26/20 14:00 **Matrix: Sediment**

Date Received: 08/27/20 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**41.5**		0.1	0.1	%			08/31/20 16:59	1
Percent Solids	**58.5**		0.1	0.1	%			08/31/20 16:59	1

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

Date Collected: 08/26/20 14:00 **Matrix: Sediment**

Date Received: 08/27/20 10:00 **Percent Solids: 58.5**

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**160**		68	2.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,7,8-PeCDF	**1900**		68	12	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
2,3,4,7,8-PeCDF	**1100**		68	12	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,4,7,8-HxCDD	**5.1**	**J B**	68	0.74	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,6,7,8-HxCDD	**19**	**J B**	68	0.79	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,7,8,9-HxCDD	**7.6**	**J**	68	0.70	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,4,7,8-HxCDF	**3000**		68	6.3	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,6,7,8-HxCDF	**740**		68	6.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,7,8,9-HxCDF	**48**	**J**	68	5.2	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
2,3,4,6,7,8-HxCDF	**85**		68	5.6	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,4,6,7,8-HpCDD	**590**	**B**	68	2.3	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,4,6,7,8-HpCDF	**930**	**B**	68	3.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
1,2,3,4,7,8,9-HpCDF	**310**	**B**	68	3.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
OCDD	**7900**	**B**	140	5.6	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
OCDF	**510**	**B**	140	1.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total TCDD	**20000**	**G**	38	38	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1

Client Sample ID: 11215702-Soil-Tank#2

Lab Sample ID: 320-64049-4

Date Collected: 08/26/20 14:00
Matrix: Sediment
Date Received: 08/27/20 10:00
Percent Solids: 58.5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	**100000**	**q G**	170	170	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total PeCDD	**180**		68	2.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total PeCDF	**4800**	**q**	68	12	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total HxCDD	**130**	**B q**	68	0.74	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total HxCDF	**4300**		68	5.8	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total HpCDD	**1100**	**B**	68	2.3	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1
Total HpCDF	**1500**	**B**	68	3.0	pg/g	☼	09/17/20 05:13	09/20/20 12:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*24 - 185*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-2,3,4,7,8-PeCDF	*79*		*21 - 178*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*28 - 130*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,4,7,8-HxCDF	*86*		*26 - 152*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*29 - 147*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-2,3,4,6,7,8-HxCDF	*79*		*28 - 136*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*23 - 140*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*82*		*26 - 138*	*09/17/20 05:13*	*09/20/20 12:49*	*1*
13C-OCDD	*89*		*17 - 157*	*09/17/20 05:13*	*09/20/20 12:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*104*		*35 - 197*	*09/17/20 05:13*	*09/20/20 12:49*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**17000**		270	98	pg/g	☼	09/17/20 05:13	09/24/20 05:41	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*09/17/20 05:13*	*09/24/20 05:41*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*09/17/20 05:13*	*09/24/20 05:41*	*20*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**47000**		270	51	pg/g	☼	09/17/20 05:13	09/23/20 20:58	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*109*		*24 - 169*	*09/17/20 05:13*	*09/23/20 20:58*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*103*		*35 - 197*	*09/17/20 05:13*	*09/23/20 20:58*	*20*

Toxicity Summary

Client: GHD Services Inc.
Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-GW-Tank#1
Lab Sample ID: 320-64049-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		9.7	0.80	pg/L	1	0.40	1613B
2,3,7,8-TCDF	ND		9.7	0.49	pg/L	0.1	0.025	1613B
1,2,3,7,8-PeCDD	ND		48	1.2	pg/L	1	0.60	1613B
1,2,3,7,8-PeCDF	ND		48	0.75	pg/L	0.03	0.011	1613B
2,3,4,7,8-PeCDF	ND		48	1.1	pg/L	0.3	0.17	1613B
1,2,3,4,7,8-HxCDD	**2.4**	**J q**	48	1.0	pg/L	0.1	**0.24**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.74	pg/L	0.1	0.037	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.76	pg/L	0.1	0.038	1613B
1,2,3,4,7,8-HxCDF	ND	*	48	0.92	pg/L	0.1	0.046	1613B
1,2,3,6,7,8-HxCDF	ND		48	0.66	pg/L	0.1	0.033	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.53	pg/L	0.1	0.027	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.50	pg/L	0.1	0.025	1613B
1,2,3,4,6,7,8-HpCDD	ND		48	0.55	pg/L	0.01	0.0028	1613B
1,2,3,4,6,7,8-HpCDF	ND		48	0.56	pg/L	0.01	0.0028	1613B
1,2,3,4,7,8,9-HpCDF	ND		48	0.91	pg/L	0.01	0.0046	1613B
OCDD	ND		97	0.79	pg/L	0.0003	0.00012	1613B
OCDF	ND		97	0.74	pg/L	0.0003	0.00011	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1.7	TEQ

Client Sample ID: 11215702-GW-Tank#2
Lab Sample ID: 320-64049-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		9.8	0.60	pg/L	1	0.30	1613B
2,3,7,8-TCDF	ND		9.8	0.44	pg/L	0.1	0.022	1613B
1,2,3,7,8-PeCDD	ND		49	0.84	pg/L	1	0.42	1613B
1,2,3,7,8-PeCDF	ND		49	0.66	pg/L	0.03	0.0099	1613B
2,3,4,7,8-PeCDF	ND		49	0.88	pg/L	0.3	0.13	1613B
1,2,3,4,7,8-HxCDD	ND		49	0.62	pg/L	0.1	0.031	1613B
1,2,3,6,7,8-HxCDD	ND		49	0.48	pg/L	0.1	0.024	1613B
1,2,3,7,8,9-HxCDD	ND		49	0.48	pg/L	0.1	0.024	1613B
1,2,3,4,7,8-HxCDF	ND	*	49	0.89	pg/L	0.1	0.045	1613B
1,2,3,6,7,8-HxCDF	ND		49	0.64	pg/L	0.1	0.032	1613B
1,2,3,7,8,9-HxCDF	ND		49	0.53	pg/L	0.1	0.027	1613B
2,3,4,6,7,8-HxCDF	ND		49	0.48	pg/L	0.1	0.024	1613B
1,2,3,4,6,7,8-HpCDD	**0.89**	**J**	49	0.48	pg/L	0.01	**0.0089**	1613B
1,2,3,4,6,7,8-HpCDF	ND		49	0.46	pg/L	0.01	0.0023	1613B
1,2,3,4,7,8,9-HpCDF	ND		49	0.79	pg/L	0.01	0.0040	1613B
OCDD	**2.7**	**J B**	98	0.63	pg/L	0.0003	**0.00081**	1613B
OCDF	ND		98	0.61	pg/L	0.0003	0.000092	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client Sample ID: 11215702-GW-Tank#2 (Continued) Lab Sample ID: 320-64049-2

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		1.1	TEQ

Client Sample ID: 11215702-Soil-Tank#1 Lab Sample ID: 320-64049-3

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,7,8-PeCDD	**100**		61	2.0	pg/g	1	**100**	1613B
1,2,3,7,8-PeCDF	**1200**		61	8.1	pg/g	0.03	**36**	1613B
2,3,4,7,8-PeCDF	**730**		61	8.4	pg/g	0.3	**220**	1613B
1,2,3,4,7,8-HxCDD	**3.8**	**J B**	61	0.71	pg/g	0.1	**0.38**	1613B
1,2,3,6,7,8-HxCDD	**15**	**J B**	61	0.73	pg/g	0.1	**1.5**	1613B
1,2,3,7,8,9-HxCDD	**5.8**	**J**	61	0.66	pg/g	0.1	**0.58**	1613B
1,2,3,4,7,8-HxCDF	**1900**		61	3.7	pg/g	0.1	**190**	1613B
1,2,3,6,7,8-HxCDF	**460**		61	3.5	pg/g	0.1	**46**	1613B
1,2,3,7,8,9-HxCDF	**32**	**J**	61	3.1	pg/g	0.1	**3.2**	1613B
2,3,4,6,7,8-HxCDF	**55**	**J**	61	3.0	pg/g	0.1	**5.5**	1613B
1,2,3,4,6,7,8-HpCDD	**500**	**B**	61	1.9	pg/g	0.01	**5.0**	1613B
1,2,3,4,6,7,8-HpCDF	**550**	**B**	61	2.3	pg/g	0.01	**5.5**	1613B
1,2,3,4,7,8,9-HpCDF	**190**	**B**	61	2.3	pg/g	0.01	**1.9**	1613B
OCDD	**6400**	**B**	120	4.7	pg/g	0.0003	**1.9**	1613B
OCDF	**320**	**B**	120	0.86	pg/g	0.0003	**0.096**	1613B
2,3,7,8-TCDD - DL	**11000**		120	44	pg/g	1	**11000**	1613B
2,3,7,8-TCDF - RADL	**32000**		120	39	pg/g	0.1	**3200**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/g		15000	TEQ

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,7,8-PeCDD	**160**		68	2.0	pg/g	1	**160**	1613B
1,2,3,7,8-PeCDF	**1900**		68	12	pg/g	0.03	**57**	1613B
2,3,4,7,8-PeCDF	**1100**		68	12	pg/g	0.3	**330**	1613B
1,2,3,4,7,8-HxCDD	**5.1**	**J B**	68	0.74	pg/g	0.1	**0.51**	1613B
1,2,3,6,7,8-HxCDD	**19**	**J B**	68	0.79	pg/g	0.1	**1.9**	1613B
1,2,3,7,8,9-HxCDD	**7.6**	**J**	68	0.70	pg/g	0.1	**0.76**	1613B
1,2,3,4,7,8-HxCDF	**3000**		68	6.3	pg/g	0.1	**300**	1613B
1,2,3,6,7,8-HxCDF	**740**		68	6.0	pg/g	0.1	**74**	1613B
1,2,3,7,8,9-HxCDF	**48**	**J**	68	5.2	pg/g	0.1	**4.8**	1613B
2,3,4,6,7,8-HxCDF	**85**		68	5.6	pg/g	0.1	**8.5**	1613B
1,2,3,4,6,7,8-HpCDD	**590**	**B**	68	2.3	pg/g	0.01	**5.9**	1613B
1,2,3,4,6,7,8-HpCDF	**930**	**B**	68	3.0	pg/g	0.01	**9.3**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Soil-Tank#2 (Continued)

Lab Sample ID: 320-64049-4

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,7,8,9-HpCDF	**310**	**B**	68	3.0	pg/g	0.01	**3.1**	1613B
OCDD	**7900**	**B**	140	5.6	pg/g	0.0003	**2.4**	1613B
OCDF	**510**	**B**	140	1.0	pg/g	0.0003	**0.15**	1613B
2,3,7,8-TCDD - DL	**17000**		270	98	pg/g	1	**17000**	1613B
2,3,7,8-TCDF - RADL	**47000**		270	51	pg/g	0.1	**4700**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/g		23000	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: HRMS-Sox

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	5.0		pg/g
1,2,3,4,6,7,8-HpCDF	5.0		pg/g
1,2,3,4,7,8,9-HpCDF	5.0		pg/g
1,2,3,4,7,8-HxCDD	5.0		pg/g
1,2,3,4,7,8-HxCDF	5.0		pg/g
1,2,3,6,7,8-HxCDD	5.0		pg/g
1,2,3,6,7,8-HxCDF	5.0		pg/g
1,2,3,7,8,9-HxCDD	5.0		pg/g
1,2,3,7,8,9-HxCDF	5.0		pg/g
1,2,3,7,8-PeCDD	5.0		pg/g
1,2,3,7,8-PeCDF	5.0		pg/g
2,3,4,6,7,8-HxCDF	5.0		pg/g
2,3,4,7,8-PeCDF	5.0		pg/g
2,3,7,8-TCDD	1.0		pg/g
2,3,7,8-TCDF	1.0		pg/g
OCDD	10		pg/g
OCDF	10		pg/g
Total HpCDD	5.0		pg/g
Total HpCDF	5.0		pg/g
Total HxCDD	5.0		pg/g
Total HxCDF	5.0		pg/g
Total PeCDD	5.0		pg/g

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Prep: HRMS-Sox

Analyte	RL		Units
Total PeCDF	5.0		pg/g
Total TCDD	1.0		pg/g
Total TCDF	1.0		pg/g

General Chemistry

Analyte	RL	MDL	Units
Percent Moisture	0.1	0.1	%
Percent Solids	0.1	0.1	%

Surrogate Summary

Client: GHD Services Inc.
Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Sediment
Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-64049-3	11215702-Soil-Tank#1	99
320-64049-3 - RADL	11215702-Soil-Tank#1	105
320-64049-3 - DL	11215702-Soil-Tank#1	93
320-64049-4	11215702-Soil-Tank#2	104
320-64049-4 - RADL	11215702-Soil-Tank#2	103
320-64049-4 - DL	11215702-Soil-Tank#2	100
MB 320-412959/1-A	Method Blank	90

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Sediment
Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-412959/2-A	Lab Control Sample	94
LCSD 320-412959/3-A	Lab Control Sample Dup	96

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-64049-1	11215702-GW-Tank#1	100
320-64049-2	11215702-GW-Tank#2	100
MB 320-407683/1-A	Method Blank	102

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-407683/2-A	Lab Control Sample	98
LCSD 320-407683/3-A	Lab Control Sample Dup	98

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc. Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Sediment **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	**Client Sample ID**	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
320-64049-3	11215702-Soil-Tank#1	73	76	74	73	73	77	76	77
320-64049-3 - RADL	11215702-Soil-Tank#1		79						
320-64049-3 - DL	11215702-Soil-Tank#1	73							
320-64049-4	11215702-Soil-Tank#2	79	82	80	79	79	84	81	86
320-64049-4 - RADL	11215702-Soil-Tank#2		109						
320-64049-4 - DL	11215702-Soil-Tank#2	79							
MB 320-412959/1-A	Method Blank	70	66	71	68	68	74	74	70

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	**Client Sample ID**	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)
320-64049-3	11215702-Soil-Tank#1	73	73	74	76	74	77	82
320-64049-3 - RADL	11215702-Soil-Tank#1							
320-64049-3 - DL	11215702-Soil-Tank#1							
320-64049-4	11215702-Soil-Tank#2	80	80	79	81	80	82	89
320-64049-4 - RADL	11215702-Soil-Tank#2							
320-64049-4 - DL	11215702-Soil-Tank#2							
MB 320-412959/1-A	Method Blank	69	70	71	76	73	74	74

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Sediment **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	**Client Sample ID**	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-412959/2-A	Lab Control Sample	73	75	71	73	72	77	78	78
LCSD 320-412959/3-A	Lab Control Sample Dup	74	73	74	74	74	78	76	75

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	**Client Sample ID**	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)
LCS 320-412959/2-A	Lab Control Sample	77	77	78	79	78	79	81
LCSD 320-412959/3-A	Lab Control Sample Dup	75	74	75	78	76	76	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
320-64049-1	11215702-GW-Tank#1	82	87	68	71	55	67	77	68
320-64049-2	11215702-GW-Tank#2	81	85	67	70	55	69	78	71
MB 320-407683/1-A	Method Blank	77	81	69	69	54	61	76	68

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-64049-1	11215702-GW-Tank#1	81	93	93	126	115	94	127
320-64049-2	11215702-GW-Tank#2	84	96	95	128	118	96	131
MB 320-407683/1-A	Method Blank	80	88	92	95	93	70	89

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-407683/2-A	Lab Control Sample	80	83	75	73	57	64	75	68
LCSD 320-407683/3-A	Lab Control Sample Dup	77	82	71	72	54	64	75	69

Isotope Dilution Summary

Client: GHD Services Inc.
Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)
LCS 320-407683/2-A	Lab Control Sample	79	88	89	98	94	72	96
LCSD 320-407683/3-A	Lab Control Sample Dup	80	89	90	101	97	73	94

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

QC Sample Results

Client: GHD Services Inc. Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-407683/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 408767 **Prep Batch: 407683**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	1.2	pg/L		08/28/20 14:44	09/01/20 21:39	1
2,3,7,8-TCDF	ND		10	0.96	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,7,8-PeCDD	ND		50	1.5	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,7,8-PeCDF	ND		50	1.2	pg/L		08/28/20 14:44	09/01/20 21:39	1
2,3,4,7,8-PeCDF	ND		50	1.6	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,4,7,8-HxCDD	ND		50	1.7	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,6,7,8-HxCDD	ND		50	1.3	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,7,8,9-HxCDD	ND		50	1.3	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,4,7,8-HxCDF	ND		50	1.3	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,6,7,8-HxCDF	ND		50	1.0	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,7,8,9-HxCDF	ND		50	0.84	pg/L		08/28/20 14:44	09/01/20 21:39	1
2,3,4,6,7,8-HxCDF	ND		50	0.74	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,4,6,7,8-HpCDD	ND		50	0.85	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,4,6,7,8-HpCDF	ND		50	0.59	pg/L		08/28/20 14:44	09/01/20 21:39	1
1,2,3,4,7,8,9-HpCDF	ND		50	1.0	pg/L		08/28/20 14:44	09/01/20 21:39	1
OCDD	4.03	J	100	1.1	pg/L		08/28/20 14:44	09/01/20 21:39	1
OCDF	ND		100	1.5	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total TCDD	3.26	J q	10	1.2	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total TCDF	ND		10	0.96	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total PeCDD	ND		50	1.5	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total PeCDF	ND		50	1.6	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total HxCDD	ND		50	1.7	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total HxCDF	ND		50	1.3	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total HpCDD	ND		50	0.85	pg/L		08/28/20 14:44	09/01/20 21:39	1
Total HpCDF	ND		50	1.0	pg/L		08/28/20 14:44	09/01/20 21:39	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-2,3,7,8-TCDF	*81*		*24 - 169*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,7,8-PeCDD	*69*		*25 - 181*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-2,3,4,7,8-PeCDF	*54*		*21 - 178*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,4,7,8-HxCDD	*61*		*32 - 141*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,6,7,8-HxCDD	*76*		*28 - 130*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,7,8,9-HxCDF	*88*		*29 - 147*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-2,3,4,6,7,8-HxCDF	*92*		*28 - 136*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*95*		*23 - 140*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*93*		*28 - 143*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*70*		*26 - 138*	*08/28/20 14:44*	*09/01/20 21:39*	*1*
13C-OCDD	*89*		*17 - 157*	*08/28/20 14:44*	*09/01/20 21:39*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*08/28/20 14:44*	*09/01/20 21:39*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-407683/2-A **Client Sample ID: Lab Control Sample**

Matrix: Water **Prep Type: Total/NA**

Analysis Batch: 408767 **Prep Batch: 407683**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	197		pg/L		99	67 - 158
2,3,7,8-TCDF	200	207		pg/L		103	75 - 158
1,2,3,7,8-PeCDD	1000	987		pg/L		99	70 - 142
1,2,3,7,8-PeCDF	1000	1060		pg/L		106	80 - 134
2,3,4,7,8-PeCDF	1000	1360		pg/L		136	68 - 160
1,2,3,4,7,8-HxCDD	1000	1390		pg/L		139	70 - 164
1,2,3,6,7,8-HxCDD	1000	1070		pg/L		107	76 - 134
1,2,3,7,8,9-HxCDD	1000	1210		pg/L		121	64 - 162
1,2,3,4,7,8-HxCDF	1000	1370	*	pg/L		137	72 - 134
1,2,3,6,7,8-HxCDF	1000	1120		pg/L		112	84 - 130
1,2,3,7,8,9-HxCDF	1000	1080		pg/L		108	78 - 130
2,3,4,6,7,8-HxCDF	1000	1070		pg/L		107	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	955		pg/L		95	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	1000		pg/L		100	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	1350		pg/L		135	78 - 138
OCDD	2000	1940		pg/L		97	78 - 144
OCDF	2000	2080		pg/L		104	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*80*		*20 - 175*
13C-2,3,7,8-TCDF	*83*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*75*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*73*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*57*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*64*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*75*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*68*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*79*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*88*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*89*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*98*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*94*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*72*		*20 - 186*
13C-OCDD	*96*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*98*		*31 - 191*

Lab Sample ID: LCSD 320-407683/3-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Water **Prep Type: Total/NA**

Analysis Batch: 408767 **Prep Batch: 407683**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	206		pg/L		103	67 - 158	4	50
2,3,7,8-TCDF	200	212		pg/L		106	75 - 158	2	50
1,2,3,7,8-PeCDD	1000	1000		pg/L		100	70 - 142	1	50
1,2,3,7,8-PeCDF	1000	1070		pg/L		107	80 - 134	1	50
2,3,4,7,8-PeCDF	1000	1380		pg/L		138	68 - 160	2	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-407683/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 408767 **Prep Batch: 407683**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	1400		pg/L		140	70 - 164	1	50
1,2,3,6,7,8-HxCDD	1000	1100		pg/L		110	76 - 134	3	50
1,2,3,7,8,9-HxCDD	1000	1230		pg/L		123	64 - 162	1	50
1,2,3,4,7,8-HxCDF	1000	1390	*	pg/L		139	72 - 134	1	50
1,2,3,6,7,8-HxCDF	1000	1130		pg/L		113	84 - 130	1	50
1,2,3,7,8,9-HxCDF	1000	1090		pg/L		109	78 - 130	1	50
2,3,4,6,7,8-HxCDF	1000	1080		pg/L		108	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD	1000	950		pg/L		95	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF	1000	1020		pg/L		102	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF	1000	1340		pg/L		134	78 - 138	1	50
OCDD	2000	2010		pg/L		101	78 - 144	4	50
OCDF	2000	2130		pg/L		106	63 - 170	2	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*77*		*20 - 175*
13C-2,3,7,8-TCDF	*82*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*71*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*72*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*54*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*64*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*75*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*69*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*80*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*89*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*90*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*101*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*97*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*20 - 186*
13C-OCDD	*94*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*98*		*31 - 191*

Lab Sample ID: MB 320-412959/1-A **Client Sample ID: Method Blank**
Matrix: Sediment **Prep Type: Total/NA**
Analysis Batch: 414413 **Prep Batch: 412959**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		1.0	0.14	pg/g		09/17/20 05:13	09/21/20 14:13	1
2,3,7,8-TCDF	ND		1.0	0.061	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,7,8-PeCDD	ND		5.0	0.10	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,7,8-PeCDF	ND		5.0	0.048	pg/g		09/17/20 05:13	09/21/20 14:13	1
2,3,4,7,8-PeCDF	ND		5.0	0.052	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,4,7,8-HxCDD	0.182	J q	5.0	0.029	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,6,7,8-HxCDD	0.103	J	5.0	0.029	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,7,8,9-HxCDD	ND		5.0	0.027	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,4,7,8-HxCDF	ND		5.0	0.036	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,6,7,8-HxCDF	ND		5.0	0.033	pg/g		09/17/20 05:13	09/21/20 14:13	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-412959/1-A **Client Sample ID: Method Blank**

Matrix: Sediment **Prep Type: Total/NA**

Analysis Batch: 414413 **Prep Batch: 412959**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDF	ND		5.0	0.028	pg/g		09/17/20 05:13	09/21/20 14:13	1
2,3,4,6,7,8-HxCDF	ND		5.0	0.028	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,4,6,7,8-HpCDD	0.274	J	5.0	0.026	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,4,6,7,8-HpCDF	0.226	J	5.0	0.021	pg/g		09/17/20 05:13	09/21/20 14:13	1
1,2,3,4,7,8,9-HpCDF	0.177	J	5.0	0.021	pg/g		09/17/20 05:13	09/21/20 14:13	1
OCDD	1.55	J	10	0.036	pg/g		09/17/20 05:13	09/21/20 14:13	1
OCDF	0.688	J	10	0.078	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total TCDD	ND		1.0	0.14	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total TCDF	ND		1.0	0.061	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total PeCDD	ND		5.0	0.10	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total PeCDF	ND		5.0	0.052	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total HxCDD	0.285	J q	5.0	0.028	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total HxCDF	ND		5.0	0.036	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total HpCDD	0.444	J q	5.0	0.026	pg/g		09/17/20 05:13	09/21/20 14:13	1
Total HpCDF	0.403	J	5.0	0.021	pg/g		09/17/20 05:13	09/21/20 14:13	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,7,8-PeCDD	*71*		*25 - 181*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*74*		*32 - 141*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*74*		*28 - 130*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*70*		*26 - 152*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*70*		*29 - 147*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*71*		*28 - 136*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*73*		*28 - 143*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*26 - 138*	*09/17/20 05:13*	*09/21/20 14:13*	*1*
13C-OCDD	*74*		*17 - 157*	*09/17/20 05:13*	*09/21/20 14:13*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*09/17/20 05:13*	*09/21/20 14:13*	*1*

Lab Sample ID: LCS 320-412959/2-A **Client Sample ID: Lab Control Sample**

Matrix: Sediment **Prep Type: Total/NA**

Analysis Batch: 413816 **Prep Batch: 412959**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	20.0	20.8		pg/g		104	67 - 158
2,3,7,8-TCDF	20.0	20.5		pg/g		102	75 - 158
1,2,3,7,8-PeCDD	100	102		pg/g		102	70 - 142
1,2,3,7,8-PeCDF	100	100		pg/g		100	80 - 134
2,3,4,7,8-PeCDF	100	98.9		pg/g		99	68 - 160
1,2,3,4,7,8-HxCDD	100	98.3	B	pg/g		98	70 - 164
1,2,3,6,7,8-HxCDD	100	99.5	B	pg/g		99	76 - 134

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-412959/2-A
Matrix: Sediment
Analysis Batch: 413816

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 412959

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8,9-HxCDD	100	101		pg/g		101	64 - 162
1,2,3,4,7,8-HxCDF	100	99.3		pg/g		99	72 - 134
1,2,3,6,7,8-HxCDF	100	100		pg/g		100	84 - 130
1,2,3,7,8,9-HxCDF	100	98.7		pg/g		99	78 - 130
2,3,4,6,7,8-HxCDF	100	99.2		pg/g		99	70 - 156
1,2,3,4,6,7,8-HpCDD	100	99.5	B	pg/g		100	70 - 140
1,2,3,4,6,7,8-HpCDF	100	99.0	B	pg/g		99	82 - 122
1,2,3,4,7,8,9-HpCDF	100	97.7	B	pg/g		98	78 - 138
OCDD	200	199	B	pg/g		99	78 - 144
OCDF	200	198	B	pg/g		99	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*73*		*20 - 175*
13C-2,3,7,8-TCDF	*75*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*71*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*73*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*72*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*77*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*78*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*78*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*77*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*77*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*78*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*79*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*20 - 186*
13C-OCDD	*81*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*94*		*31 - 191*

Lab Sample ID: LCSD 320-412959/3-A
Matrix: Sediment
Analysis Batch: 413816

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 412959

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	20.0	20.3		pg/g		101	67 - 158	2	50
2,3,7,8-TCDF	20.0	20.6		pg/g		103	75 - 158	1	50
1,2,3,7,8-PeCDD	100	101		pg/g		101	70 - 142	1	50
1,2,3,7,8-PeCDF	100	101		pg/g		101	80 - 134	1	50
2,3,4,7,8-PeCDF	100	98.9		pg/g		99	68 - 160	0	50
1,2,3,4,7,8-HxCDD	100	99.2	B	pg/g		99	70 - 164	1	50
1,2,3,6,7,8-HxCDD	100	101	B	pg/g		101	76 - 134	1	50
1,2,3,7,8,9-HxCDD	100	100		pg/g		100	64 - 162	0	50
1,2,3,4,7,8-HxCDF	100	100		pg/g		100	72 - 134	1	50
1,2,3,6,7,8-HxCDF	100	102		pg/g		102	84 - 130	2	50
1,2,3,7,8,9-HxCDF	100	101		pg/g		101	78 - 130	2	50
2,3,4,6,7,8-HxCDF	100	102		pg/g		102	70 - 156	2	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-412959/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Sediment **Prep Type: Total/NA**
Analysis Batch: 413816 **Prep Batch: 412959**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD			100	100	B	pg/g		100	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			100	99.9	B	pg/g		100	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			100	98.6	B	pg/g		99	78 - 138	1	50
OCDD			200	204	B	pg/g		102	78 - 144	2	50
OCDF			200	200	B	pg/g		100	63 - 170	1	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*74*		*20 - 175*
13C-2,3,7,8-TCDF	*73*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*74*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*74*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*74*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*78*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*76*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*75*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*75*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*74*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*75*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*78*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*20 - 186*
13C-OCDD	*79*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*96*		*31 - 191*

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-64049-4 DU **Client Sample ID: 11215702-Soil-Tank#2**
Matrix: Sediment **Prep Type: Total/NA**
Analysis Batch: 408264

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	41.5			45.5		%				9	20
Percent Solids	58.5			54.5		%				7	20

Specialty Organics

Prep Batch: 407683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-1	11215702-GW-Tank#1	Total/NA	Water	1613B	
320-64049-2	11215702-GW-Tank#2	Total/NA	Water	1613B	
MB 320-407683/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-407683/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-407683/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 408767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-1	11215702-GW-Tank#1	Total/NA	Water	1613B	407683
320-64049-2	11215702-GW-Tank#2	Total/NA	Water	1613B	407683
MB 320-407683/1-A	Method Blank	Total/NA	Water	1613B	407683
LCS 320-407683/2-A	Lab Control Sample	Total/NA	Water	1613B	407683
LCSD 320-407683/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	407683

Prep Batch: 412959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-3 - RADL	11215702-Soil-Tank#1	Total/NA	Sediment	HRMS-Sox	
320-64049-3 - DL	11215702-Soil-Tank#1	Total/NA	Sediment	HRMS-Sox	
320-64049-3	11215702-Soil-Tank#1	Total/NA	Sediment	HRMS-Sox	
320-64049-4 - RADL	11215702-Soil-Tank#2	Total/NA	Sediment	HRMS-Sox	
320-64049-4 - DL	11215702-Soil-Tank#2	Total/NA	Sediment	HRMS-Sox	
320-64049-4	11215702-Soil-Tank#2	Total/NA	Sediment	HRMS-Sox	
MB 320-412959/1-A	Method Blank	Total/NA	Sediment	HRMS-Sox	
LCS 320-412959/2-A	Lab Control Sample	Total/NA	Sediment	HRMS-Sox	
LCSD 320-412959/3-A	Lab Control Sample Dup	Total/NA	Sediment	HRMS-Sox	

Analysis Batch: 413813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-3	11215702-Soil-Tank#1	Total/NA	Sediment	1613B	412959
320-64049-4	11215702-Soil-Tank#2	Total/NA	Sediment	1613B	412959

Analysis Batch: 413816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-412959/2-A	Lab Control Sample	Total/NA	Sediment	1613B	412959
LCSD 320-412959/3-A	Lab Control Sample Dup	Total/NA	Sediment	1613B	412959

Analysis Batch: 414413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-412959/1-A	Method Blank	Total/NA	Sediment	1613B	412959

Analysis Batch: 415167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-3 - RADL	11215702-Soil-Tank#1	Total/NA	Sediment	1613B	412959
320-64049-4 - RADL	11215702-Soil-Tank#2	Total/NA	Sediment	1613B	412959

Analysis Batch: 415261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-3 - DL	11215702-Soil-Tank#1	Total/NA	Sediment	1613B	412959
320-64049-4 - DL	11215702-Soil-Tank#2	Total/NA	Sediment	1613B	412959

General Chemistry

Analysis Batch: 408264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-64049-3	11215702-Soil-Tank#1	Total/NA	Sediment	D 2216	
320-64049-4	11215702-Soil-Tank#2	Total/NA	Sediment	D 2216	
320-64049-4 DU	11215702-Soil-Tank#2	Total/NA	Sediment	D 2216	

Client Sample ID: 11215702-GW-Tank#1 Lab Sample ID: 320-64049-1

Date Collected: 08/26/20 13:00 **Matrix: Water**
Date Received: 08/27/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			407683	08/28/20 14:44	RDR	TAL SAC
Total/NA	Analysis	1613B		1	408767	09/02/20 04:34	AS	TAL SAC

Client Sample ID: 11215702-GW-Tank#2 Lab Sample ID: 320-64049-2

Date Collected: 08/26/20 14:00 **Matrix: Water**
Date Received: 08/27/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			407683	08/28/20 14:44	RDR	TAL SAC
Total/NA	Analysis	1613B		1	408767	09/02/20 05:19	AS	TAL SAC

Client Sample ID: 11215702-Soil-Tank#1 Lab Sample ID: 320-64049-3

Date Collected: 08/26/20 13:00 **Matrix: Sediment**
Date Received: 08/27/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	408264	08/31/20 16:59	KDB	TAL SAC

Client Sample ID: 11215702-Soil-Tank#1 Lab Sample ID: 320-64049-3

Date Collected: 08/26/20 13:00 **Matrix: Sediment**
Date Received: 08/27/20 10:00 **Percent Solids: 71.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	RADL		412959	09/17/20 05:13	FC	TAL SAC
Total/NA	Analysis	1613B	RADL	10	415167	09/23/20 20:20	AS	TAL SAC
Total/NA	Prep	HRMS-Sox			412959	09/17/20 05:13	FC	TAL SAC
Total/NA	Analysis	1613B		1	413813	09/20/20 12:00	AS	TAL SAC
Total/NA	Prep	HRMS-Sox	DL		412959	09/17/20 05:13	FC	TAL SAC
Total/NA	Analysis	1613B	DL	10	415261	09/24/20 04:52	AS	TAL SAC

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

Date Collected: 08/26/20 14:00 **Matrix: Sediment**
Date Received: 08/27/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	408264	08/31/20 16:59	KDB	TAL SAC

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

Date Collected: 08/26/20 14:00 **Matrix: Sediment**
Date Received: 08/27/20 10:00 **Percent Solids: 58.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	RADL		412959	09/17/20 05:13	FC	TAL SAC
Total/NA	Analysis	1613B	RADL	20	415167	09/23/20 20:58	AS	TAL SAC
Total/NA	Prep	HRMS-Sox			412959	09/17/20 05:13	FC	TAL SAC
Total/NA	Analysis	1613B		1	413813	09/20/20 12:49	AS	TAL SAC

Lab Chronicle

Client: GHD Services Inc.
Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Soil-Tank#2
Lab Sample ID: 320-64049-4
Date Collected: 08/26/20 14:00
Matrix: Sediment
Date Received: 08/27/20 10:00
Percent Solids: 58.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox	DL		412959	09/17/20 05:13	FC	TAL SAC
Total/NA	Analysis	1613B	DL	20	415261	09/24/20 05:41	AS	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-64049-1

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1613B	HRMS-Sox	Sediment	1,2,3,4,6,7,8-HpCDD
1613B	HRMS-Sox	Sediment	1,2,3,4,6,7,8-HpCDF
1613B	HRMS-Sox	Sediment	1,2,3,4,7,8,9-HpCDF
1613B	HRMS-Sox	Sediment	1,2,3,4,7,8-HxCDD
1613B	HRMS-Sox	Sediment	1,2,3,4,7,8-HxCDF
1613B	HRMS-Sox	Sediment	1,2,3,6,7,8-HxCDD
1613B	HRMS-Sox	Sediment	1,2,3,6,7,8-HxCDF
1613B	HRMS-Sox	Sediment	1,2,3,7,8,9-HxCDD
1613B	HRMS-Sox	Sediment	1,2,3,7,8,9-HxCDF
1613B	HRMS-Sox	Sediment	1,2,3,7,8-PeCDD
1613B	HRMS-Sox	Sediment	1,2,3,7,8-PeCDF
1613B	HRMS-Sox	Sediment	2,3,4,6,7,8-HxCDF
1613B	HRMS-Sox	Sediment	2,3,4,7,8-PeCDF
1613B	HRMS-Sox	Sediment	2,3,7,8-TCDD
1613B	HRMS-Sox	Sediment	2,3,7,8-TCDF
1613B	HRMS-Sox	Sediment	OCDD
1613B	HRMS-Sox	Sediment	OCDF
1613B	HRMS-Sox	Sediment	Total HpCDD
1613B	HRMS-Sox	Sediment	Total HpCDF
1613B	HRMS-Sox	Sediment	Total HxCDD
1613B	HRMS-Sox	Sediment	Total HxCDF
1613B	HRMS-Sox	Sediment	Total PeCDD
1613B	HRMS-Sox	Sediment	Total PeCDF
1613B	HRMS-Sox	Sediment	Total TCDD
1613B	HRMS-Sox	Sediment	Total TCDF
D 2216		Sediment	Percent Moisture
D 2216		Sediment	Percent Solids
TEQ		Sediment	Total Dioxin/Furan TEQ
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc.
Job ID: 320-64049-1
Project/Site: San Jacinto River Waste Pits Superfund

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC
HRMS-Sox	Soxhlet Extraction	EPA	TAL SAC

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-64049-1	11215702-GW-Tank#1	Water	08/26/20 13:00	08/27/20 10:00	
320-64049-2	11215702-GW-Tank#2	Water	08/26/20 14:00	08/27/20 10:00	
320-64049-3	11215702-Soil-Tank#1	Sediment	08/26/20 13:00	08/27/20 10:00	
320-64049-4	11215702-Soil-Tank#2	Sediment	08/26/20 14:00	08/27/20 10:00	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 390253

Lab Sample ID: IC 320-390253/3 Client Sample ID:

Date Analyzed: 06/27/20 14:42 Lab File ID: 27JN20A10D5_3.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	17.22	Invalid Compound ID	shardaa	06/28/20 13:06

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 408767

Lab Sample ID: MB 320-407683/1-A Client Sample ID:

Date Analyzed: 09/01/20 21:39 Lab File ID: 01SE2010D5_3.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
OCDD	37.01	Baseline	dadunj	09/03/20 08:45

Lab Sample ID: 320-64049-1 Client Sample ID: 11215702-GW-Tank#1

Date Analyzed: 09/02/20 04:34 Lab File ID: 01SE2010D5_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	09/03/20 09:04
OCDD		Invalid Compound ID	dadunj	09/03/20 09:04
1,2,3,4,7,8-HxCDD	31.91	Split Peak	dadunj	09/03/20 09:04

Lab Sample ID: 320-64049-2 Client Sample ID: 11215702-GW-Tank#2

Date Analyzed: 09/02/20 05:19 Lab File ID: 01SE2010D5_13.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDD		Invalid Compound ID	dadunj	09/03/20 09:06
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	09/03/20 09:06
1,2,3,4,6,7,8-HpCDD	34.69	Split Peak	dadunj	09/03/20 09:06
OCDD	37.03	Split Peak	dadunj	09/03/20 09:07

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 415167

Lab Sample ID: CPS 320-415167/1 Client Sample ID:

Date Analyzed: 09/23/20 12:02 Lab File ID: 23SE20A11D2_001.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,7,8-TCDD	14.35	Peak assignment corrected	messecara	09/24/20 02:31
2,3,7,8-TCDD	14.38	Peak assignment corrected	messecara	09/24/20 02:32

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 413255

Lab Sample ID: IC 320-413255/3 Client Sample ID:

Date Analyzed: 09/17/20 13:16 Lab File ID: 17se20dfs1_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	19.23	Poor chromatography	shardaa	09/17/20 18:30
2,3,7,8-TCDD	20.51	Peak Tail	shardaa	09/17/20 18:29

Lab Sample ID: IC 320-413255/4 Client Sample ID:

Date Analyzed: 09/17/20 14:04 Lab File ID: 17se20dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	20.54	Incomplete Integration	shardaa	09/17/20 18:36

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 413813

Lab Sample ID: 320-64049-3 Client Sample ID: 11215702-Soil-Tank#1

Date Analyzed: 09/20/20 12:00 Lab File ID: 18se20dfs1_63.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	26.32	Split Peak	dadunj	09/22/20 10:35
1,2,3,4,6,7,8-HpCDF	38.13	Split Peak	dadunj	09/22/20 10:37

Lab Sample ID: 320-64049-4 Client Sample ID: 11215702-Soil-Tank#2

Date Analyzed: 09/20/20 12:49 Lab File ID: 18se20dfs1_64.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,6,7,8-HxCDF	35.25	Split Peak	dadunj	09/22/20 10:42
1,2,3,4,7,8-HxCDD	35.48	Poor chromatography	shardaa	09/21/20 11:21
1,2,3,6,7,8-HxCDD	35.62	Poor chromatography	shardaa	09/21/20 11:21

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 414413

Lab Sample ID: MB 320-412959/1-A Client Sample ID:

Date Analyzed: 09/21/20 14:13 Lab File ID: 21se20dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDD	35.50	Baseline	ruangyotsakuld	09/23/20 08:27
1,2,3,4,6,7,8-HpCDF	38.12	Baseline	ruangyotsakuld	09/23/20 08:28
1,2,3,4,7,8,9-HpCDF	39.43	Baseline	ruangyotsakuld	09/23/20 08:28
OCDF	41.65	Baseline	ruangyotsakuld	09/23/20 08:28

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 415261

Lab Sample ID: 320-64049-4 DL Client Sample ID: 11215702-Soil-Tank#2 DL

Date Analyzed: 09/24/20 05:41 Lab File ID: 23se20dfs1_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,7,8-TCDD	20.39	Baseline	dadunj	09/25/20 11:24
2,3,7,8-TCDD	20.41	Split Peak	dadunj	09/25/20 11:21

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00379	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIC_00046	01/31/21	09/11/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25	Wellington Labs, Lot 13PAR0418			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00437	01/31/21	08/25/20	Acetone, Lot 0000236884	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIDA_00438	01/31/21	09/14/20	Acetone, Lot 0000234648	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL2_00030	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00122	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00379	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00028	01/31/21	09/11/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00122	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00093	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00379	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00095	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDF	4 ug/mL
HRDXNL5_00031	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00379	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNL6_00027	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00121	06/02/21	06/02/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 kss

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Cerilliant
Analytical Reference Standards
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Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

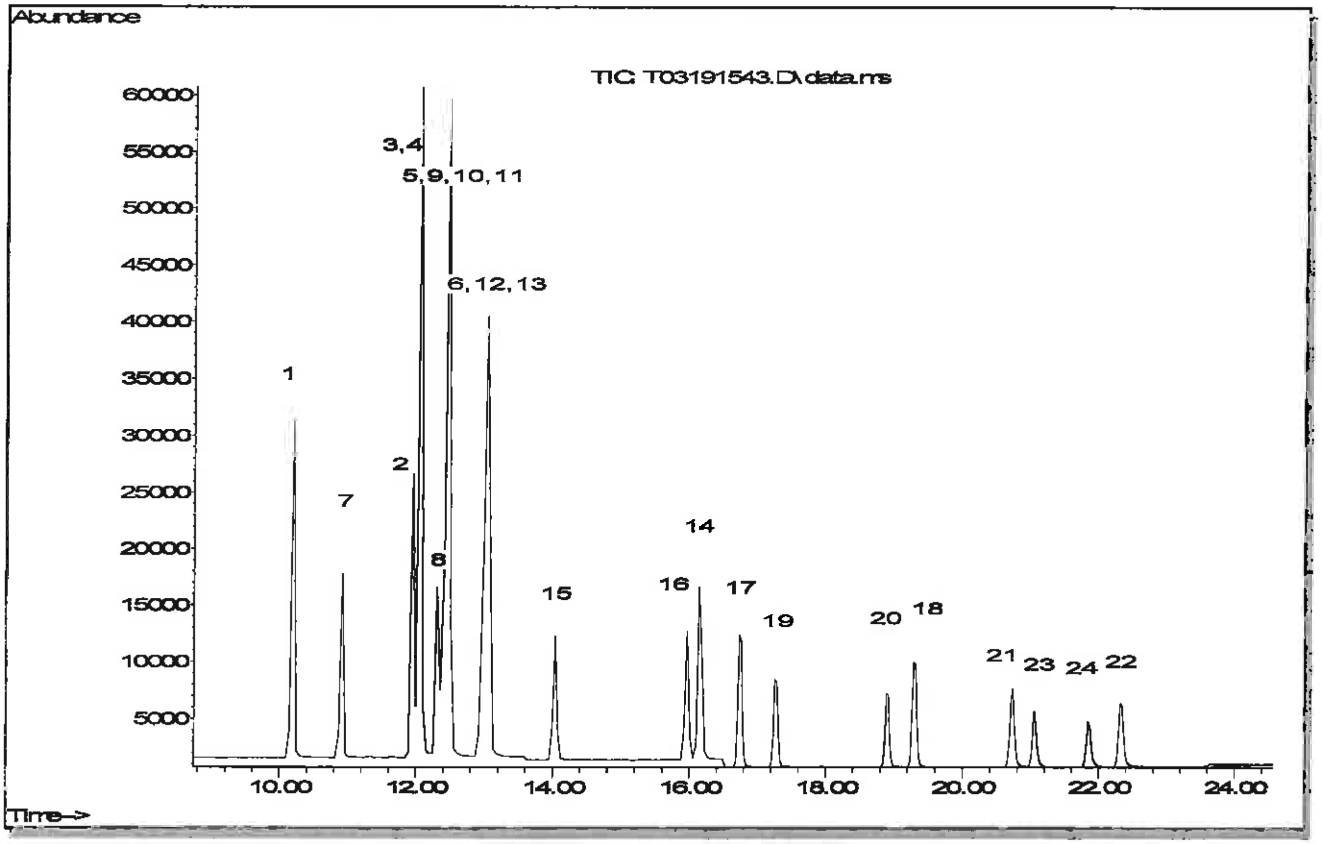

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNCP_00041

rec 7/29/20 skv

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
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Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

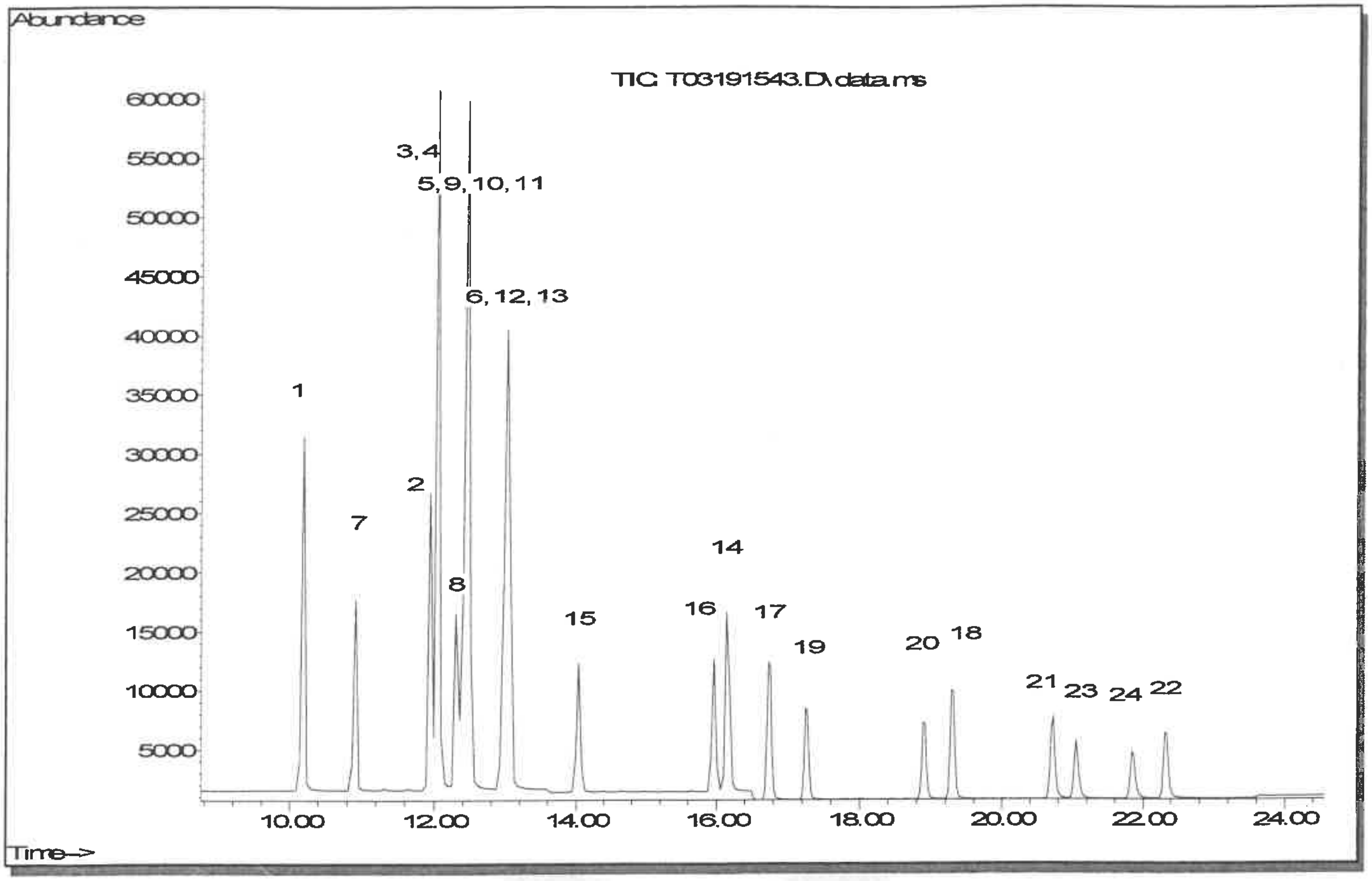

1	1,3,6,8-Tetrachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5	1,2,3,9-Tetrachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin
13	1,3,4,6,8-Pentachlorodibenzofuran
14	1,2,3,8,9-Pentachlorodibenzofuran
15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17	1,2,3,4,6,8-Hexachlorodibenzofuran
18	1,2,3,4,8,9-Hexachlorodibenzofuran
19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00375

r: 4/8/19 BW

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

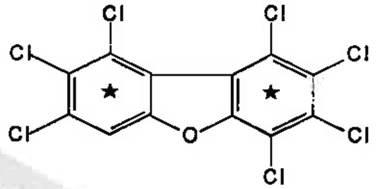

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data (cont.)

GC/FID

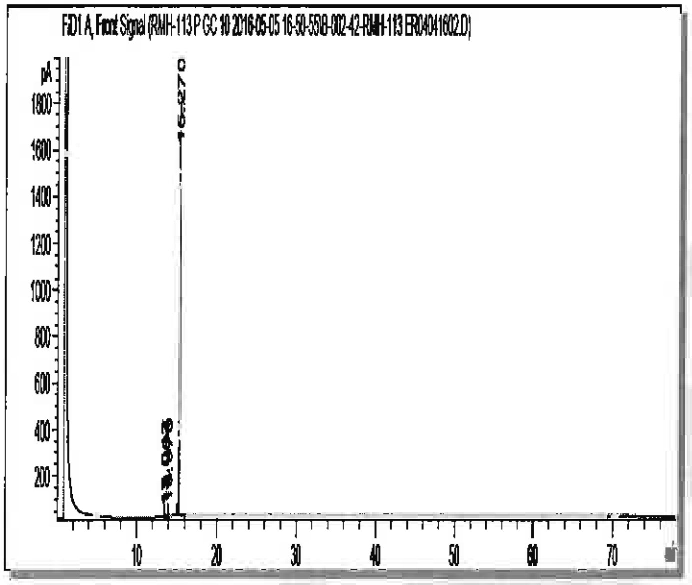

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

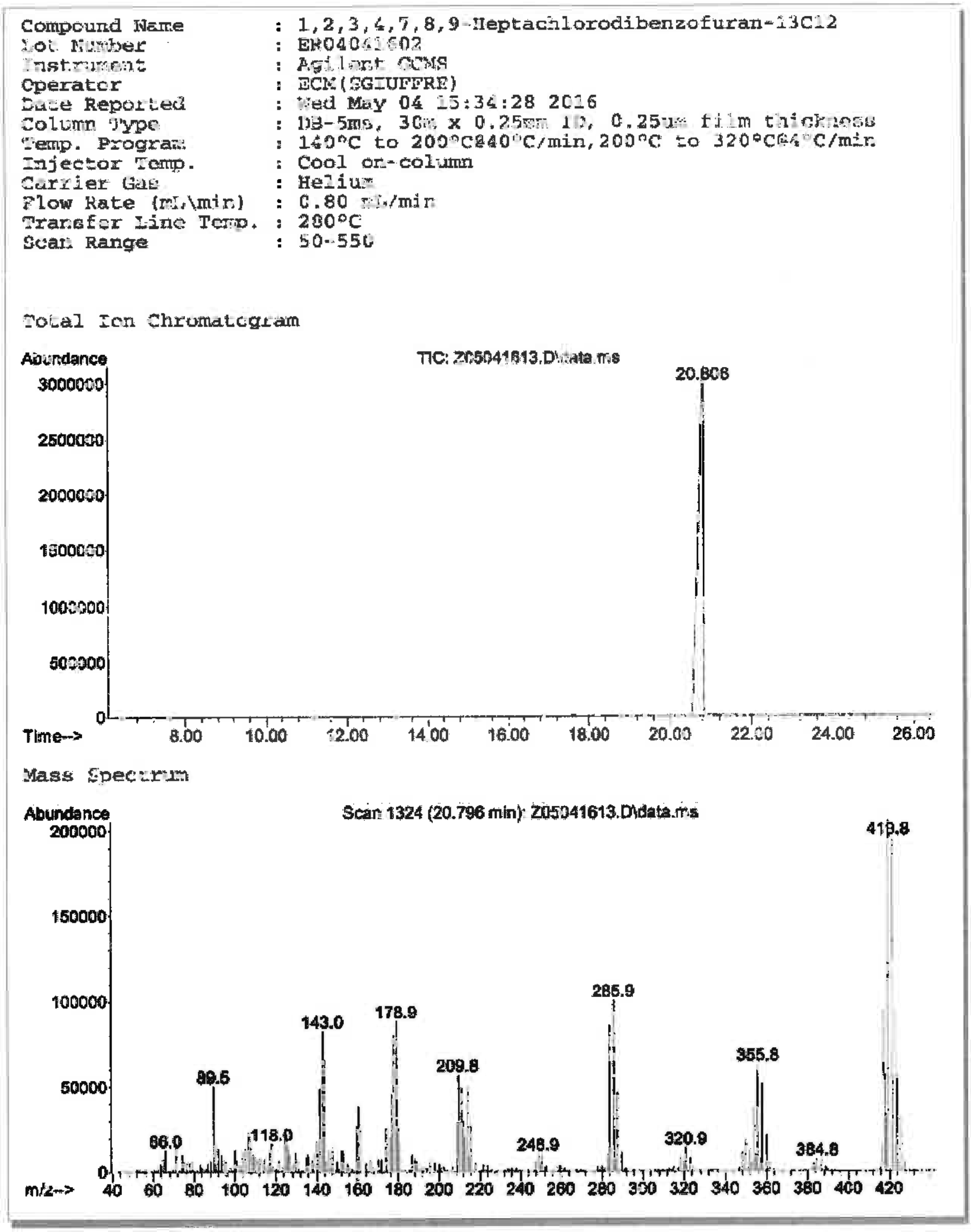

```
Compound Name          : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number             : ER04041602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Wed May 04 15:34:28 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00376

R: 4/8/19 SW

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

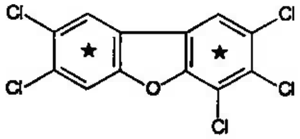

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (μg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB
ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		**98.33%**

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

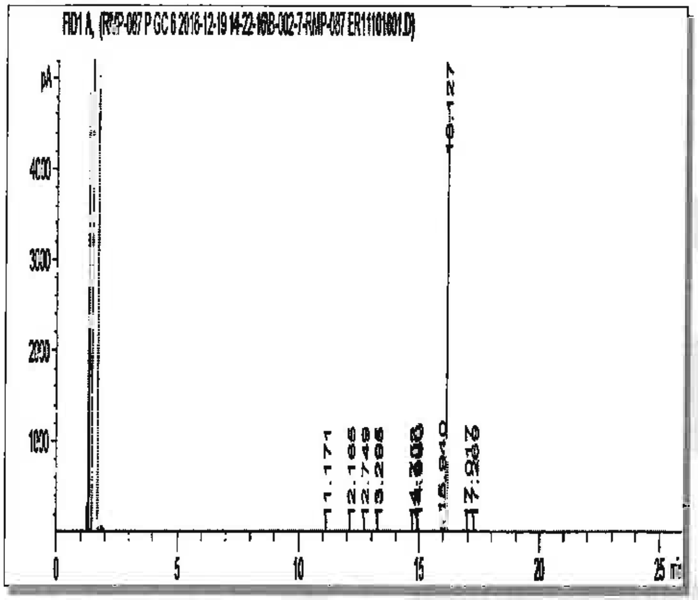

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

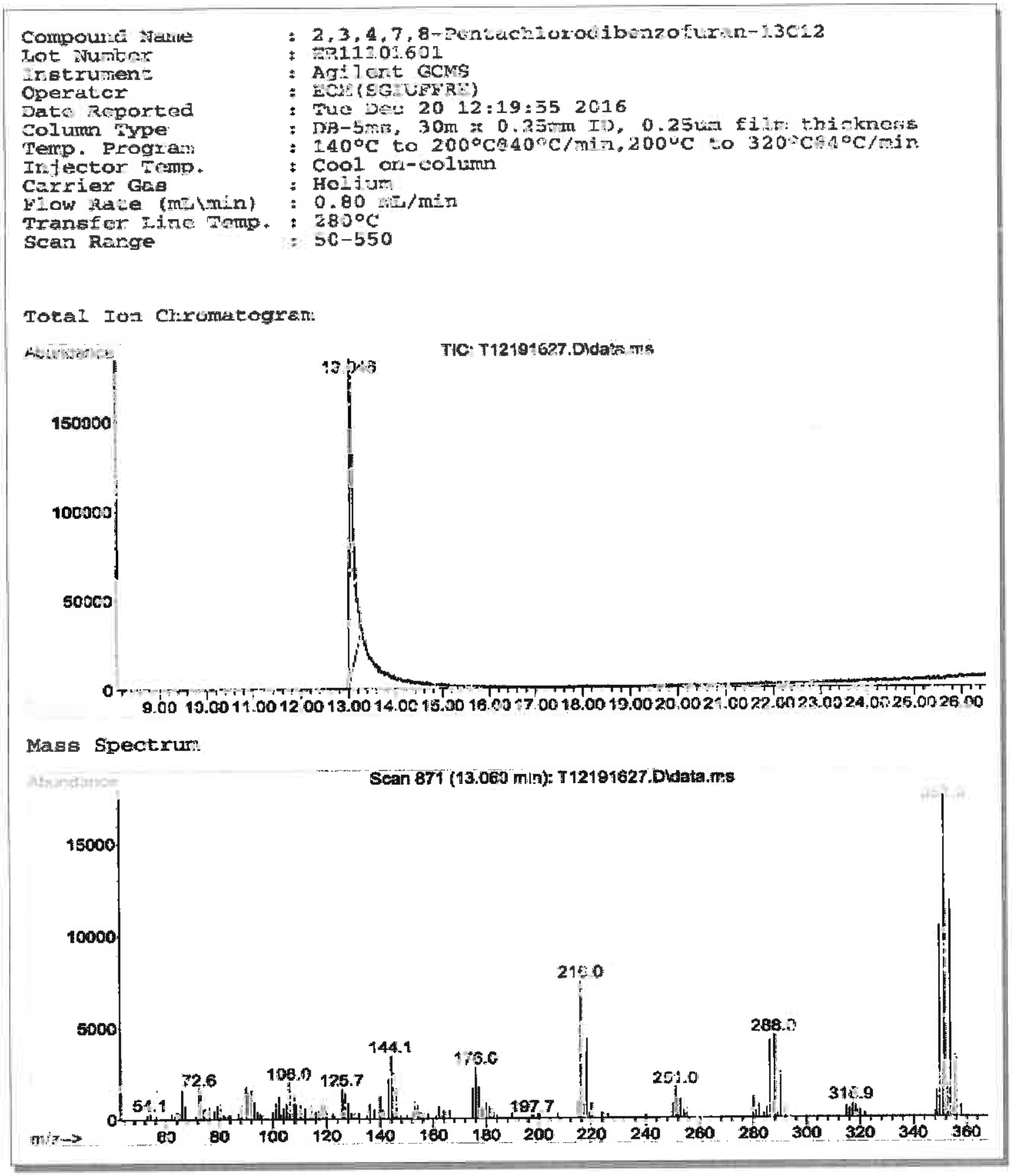

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00377

r: 4/8/19 SKJ

Cerilliant
Analytical Reference Standards
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Revision 00
Page 1 of 4

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

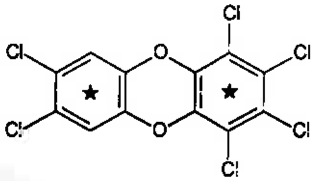

Catalog Number: ED-946
Solution Lot: ER04211601
Expiration Date: June 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER011008-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-80-4
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

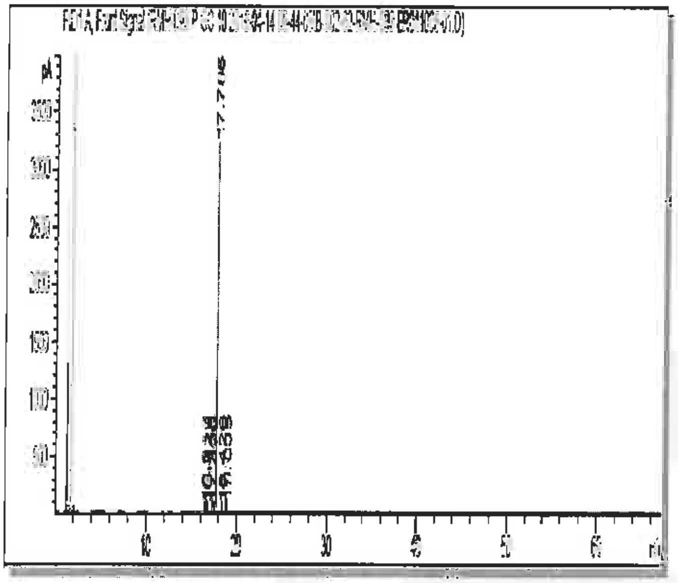

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 50 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument:	GC#10
Sample Name:	ER011008-01
Acquired:	April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

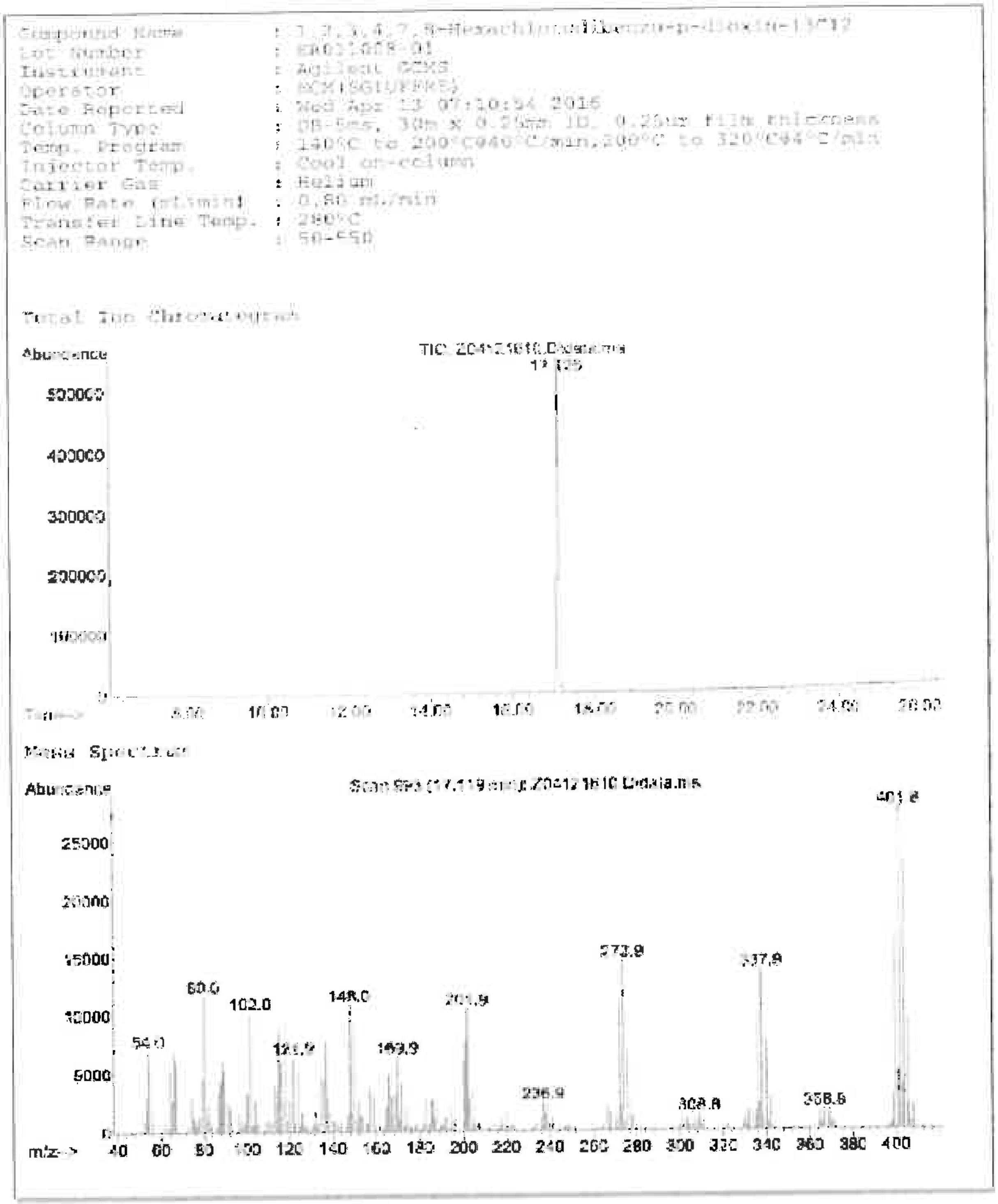

```
Compound Name          : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number             : ER021618-01
Instrument             : Agilent GCMS
Operator               : ACX(SGIUPRK5)
Date Reported          : Wed Apr 13 07:10:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL/min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00378

r: 4/8/19 SKJ

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

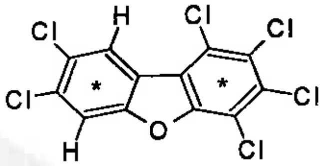

Catalog Number: EF-963
Solution Lot: ER04211701
Expiration Date: July 2027
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11281601

Chemical Formula: $^{13}C_{12}Cl_6H_2O$
CAS Number: 114423-98-2
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

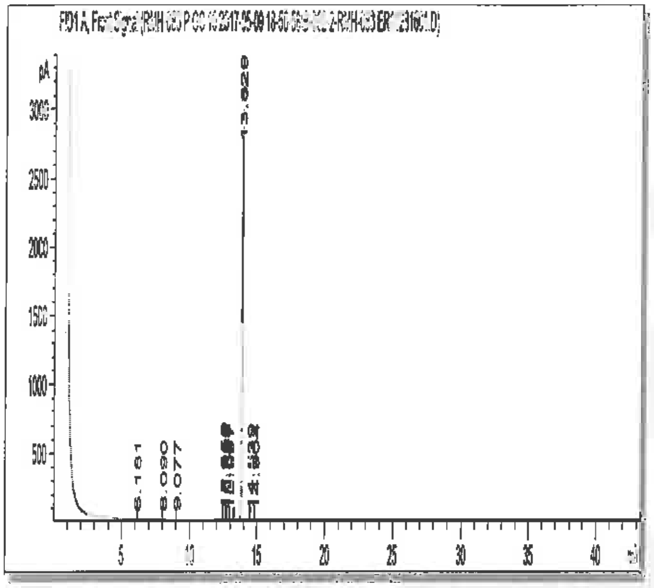

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2 00	0.70	0.02
3	9 08	1.17	0.48	0.01
4	12 55	14.76	7.25	0.16
5	12 73	32.67	11.32	0.36
6	12 84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

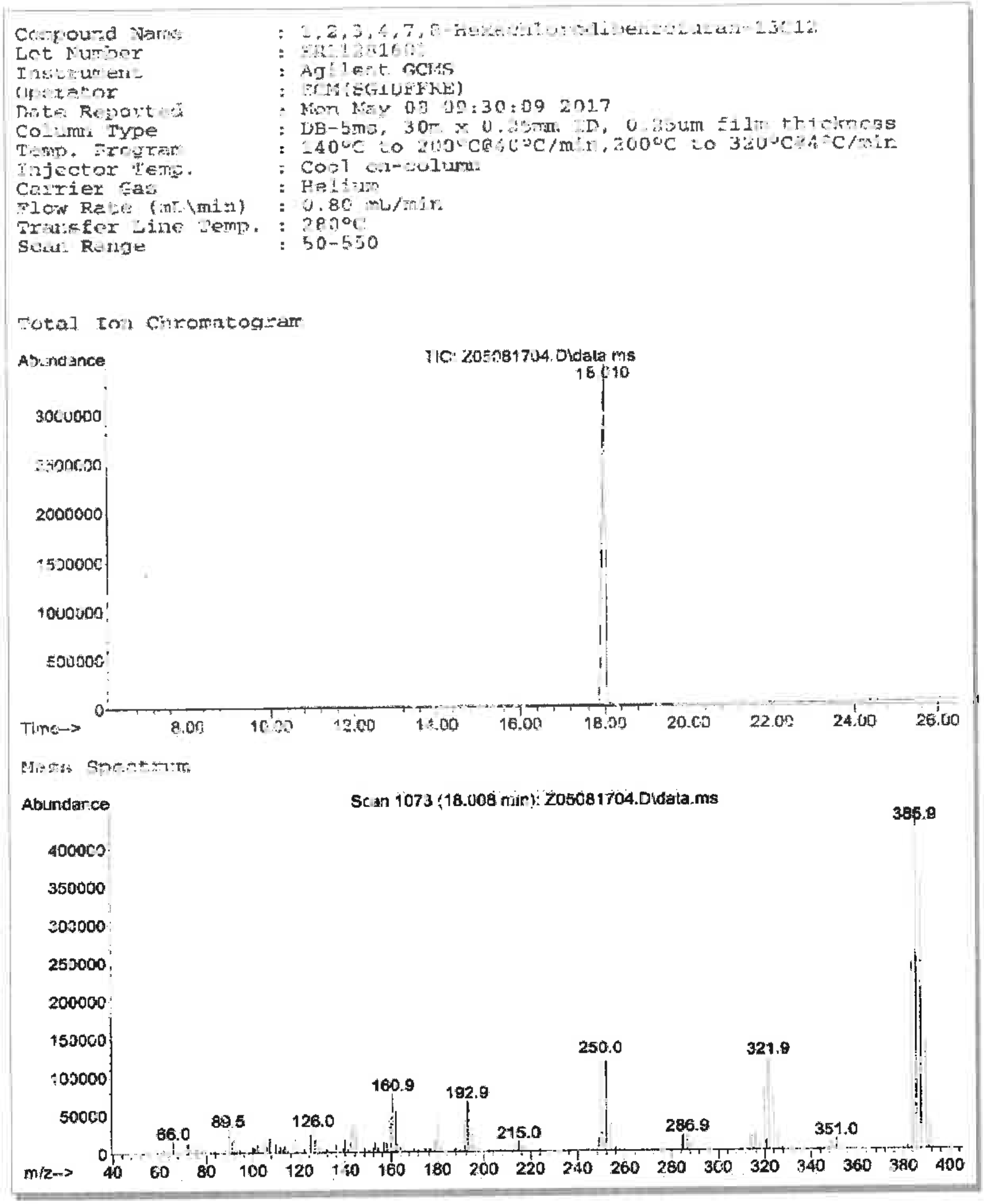

```
Compound Name          : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : FR11281602
Instrument             : Agilent GCMS
Operator               : ECM(SG1DFFRE)
Date Reported          : Mon May 08 09:30:09 2017
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00398

9280 I#24
Received 11-14-19
GWS

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Revision 00
Page 1 of 4

Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

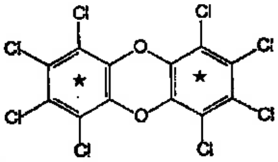

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of $k = 2$ and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 70°C to 200°C at 40°C/min
200°C to 280°C at 10°C/min hold 15 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 3
Linearity (r): 0.997

Neat Material Data

Compound Name: Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER04041601

Chemical Formula: $^{13}C_{12}Cl_8O_2$
CAS Number: 114423-97-1
Molecular Weight: 471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$ 0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

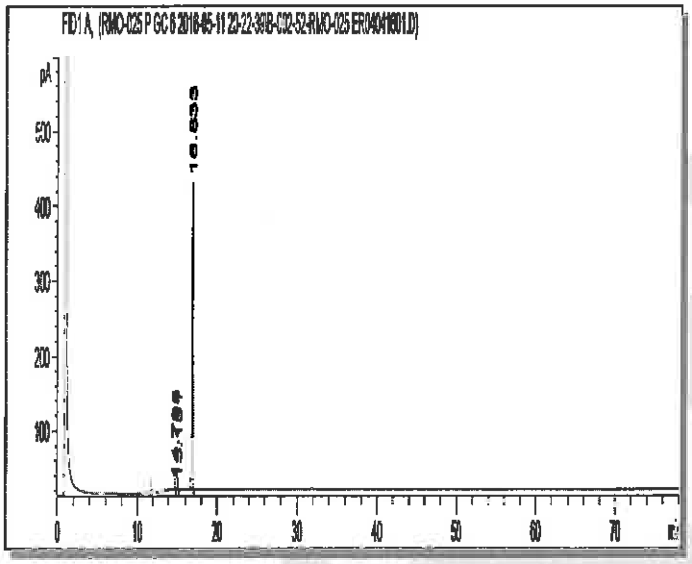

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.80	12.12	3.62	0.61
2	15.15	4.72	1.32	0.24
3	16.83	1980.56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name            : Octachlorodibenzo-p-dioxin-13C12
Lot Number               : ER04041601
Instrument               : Agilent GCMS
Operator                 : ECM(SCIUFFRE)
Date Reported            : Wed May 04 13:45:40 2016
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (mL\min)       : 0.80 mL/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

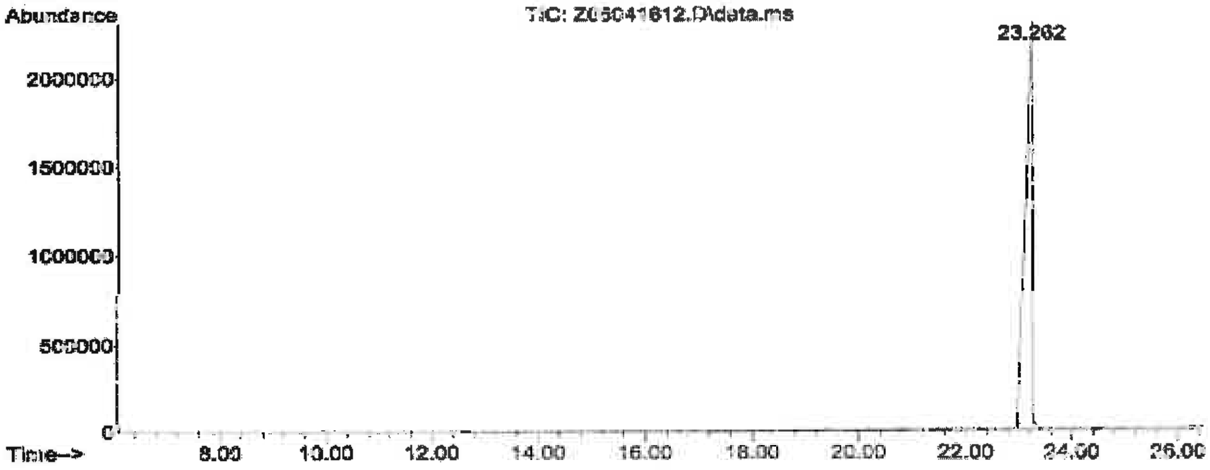

Mass Spectrum

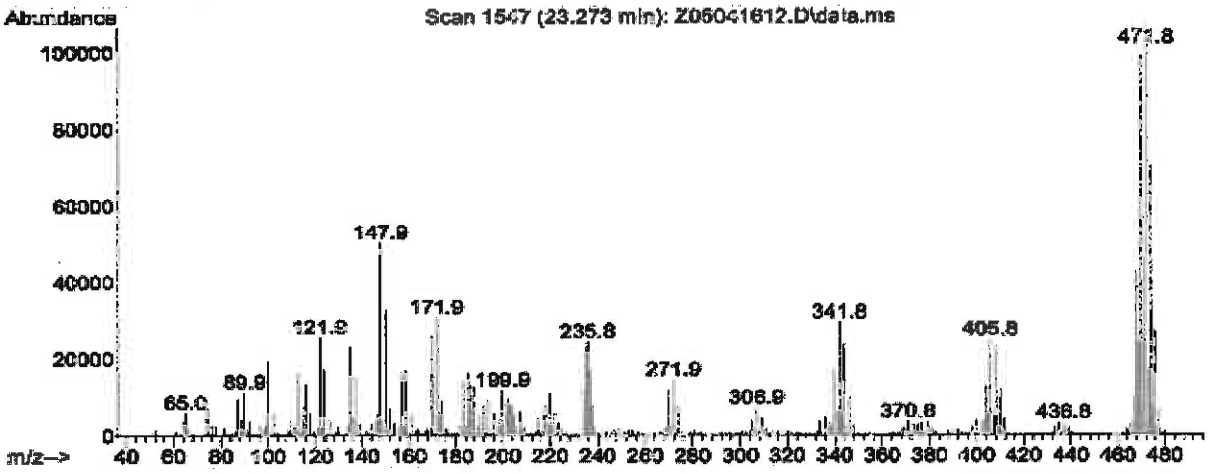

Reagent

HRDXNIDA_00407

Recd 11-26-19

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Revision 00
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

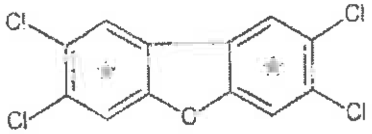

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

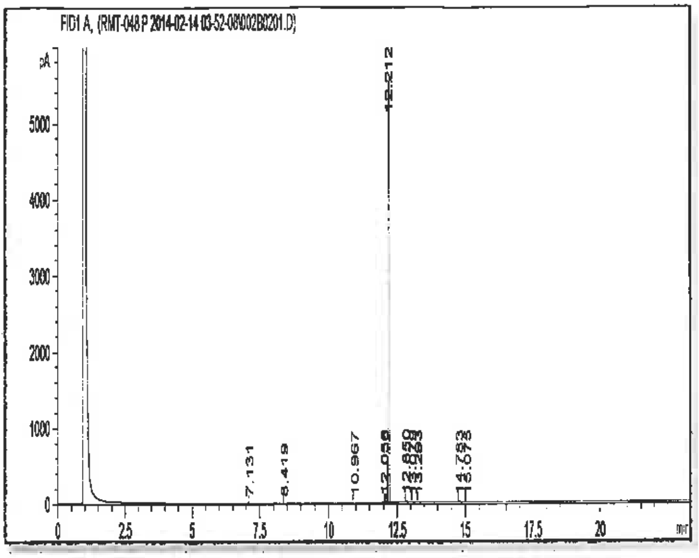

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

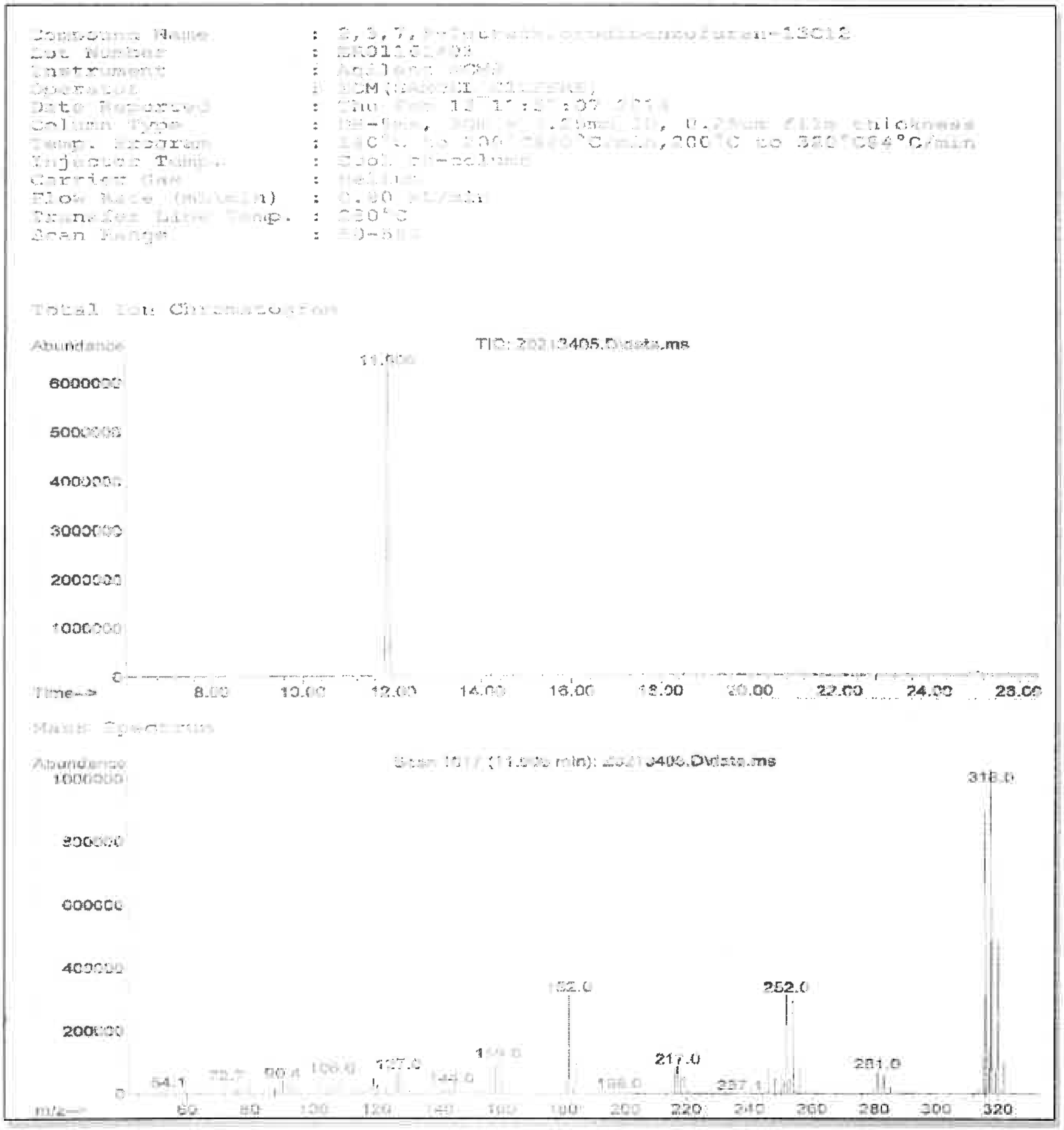

```
Compound Name            : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number               : ER0110[illegible]
Instrument               : Agilent [illegible]
Operator                 : BCM([illegible])
Date Reported            : Thu [illegible] 13 11:57:07 [illegible]
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 1[illegible]0°C to 200°C@[illegible]0°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (mL/min)       : 0.80 mL/min
Transfer Line Temp.      : [illegible]0°C
Scan Range               : [illegible]
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-19

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Revision 01
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

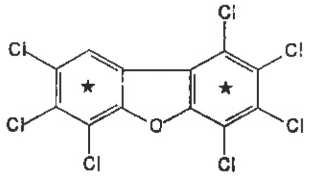

Catalog Number:	EF-974
Solution Lot:	ER08101404
Expiration Date:	November 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER020507-02
Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-84-8
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

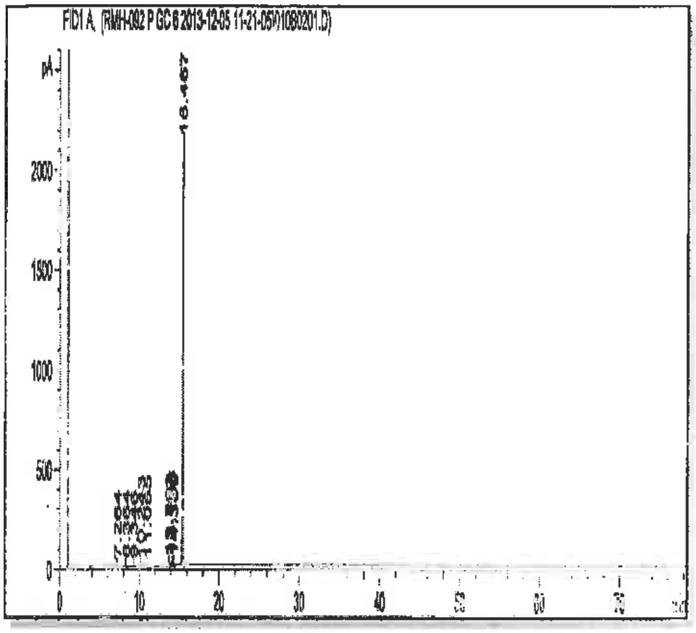

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

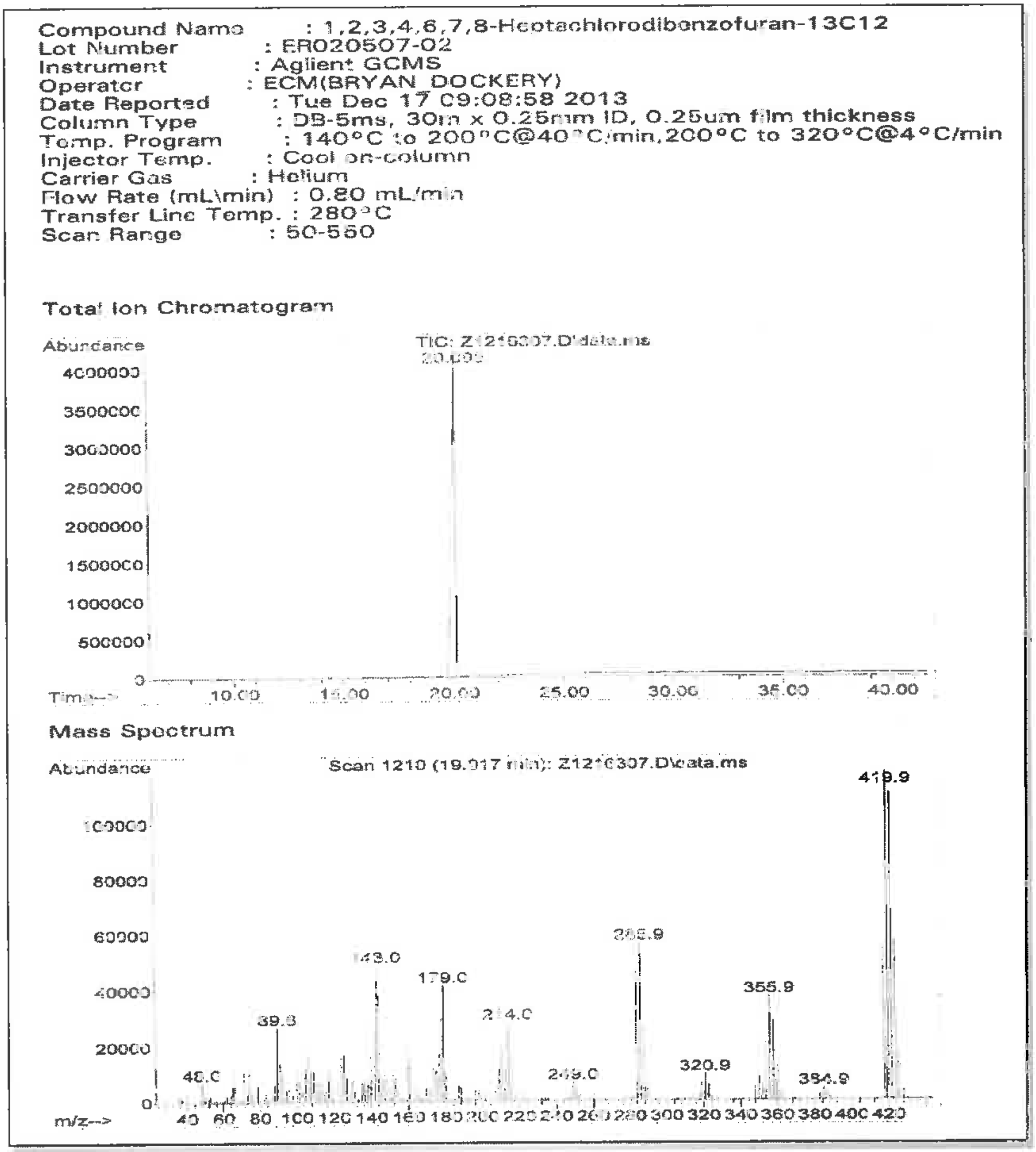

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-26-18

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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

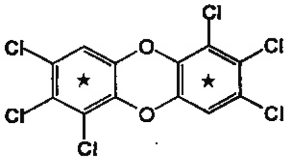

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

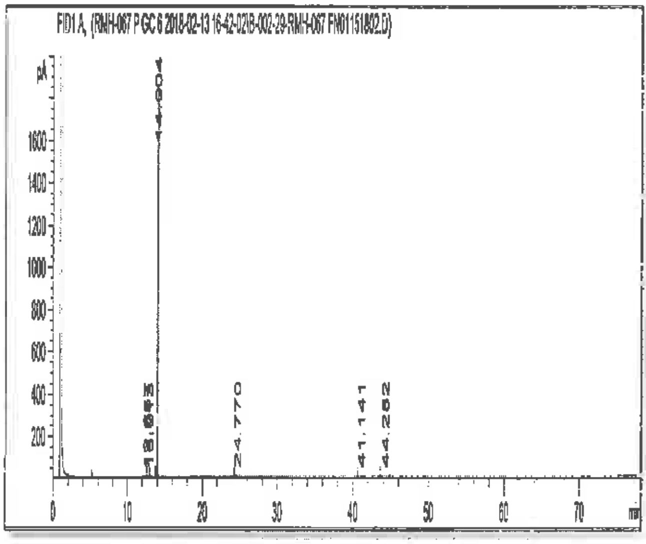

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

GC/MS

```
Compound Name          : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number             : [illegible]
Instrument             : Agilent GCMS
Operator               : ECM(SCHUPPER)
Date Reported          : Mon Mar 05 10:17:31 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.90 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

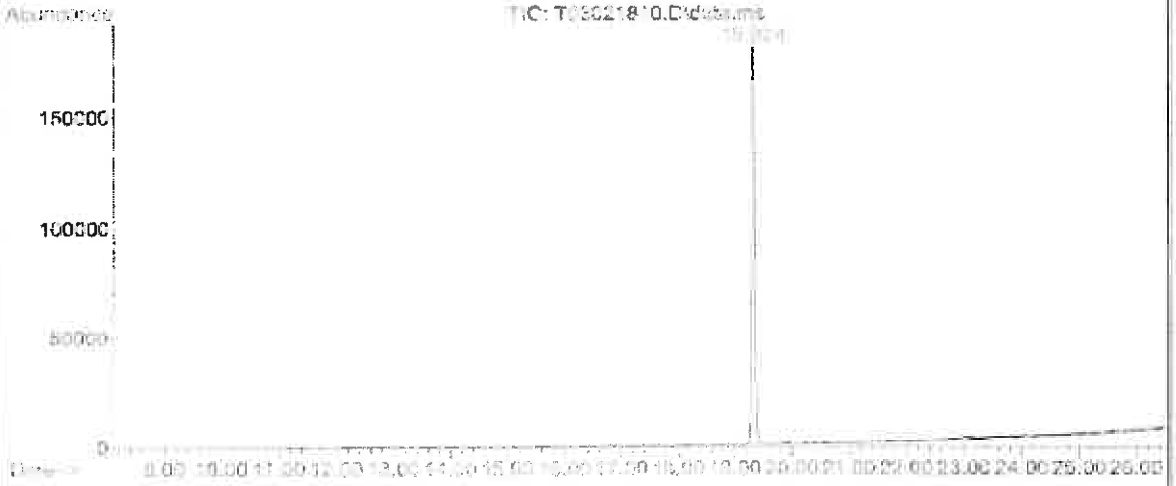

Mass Spectrum

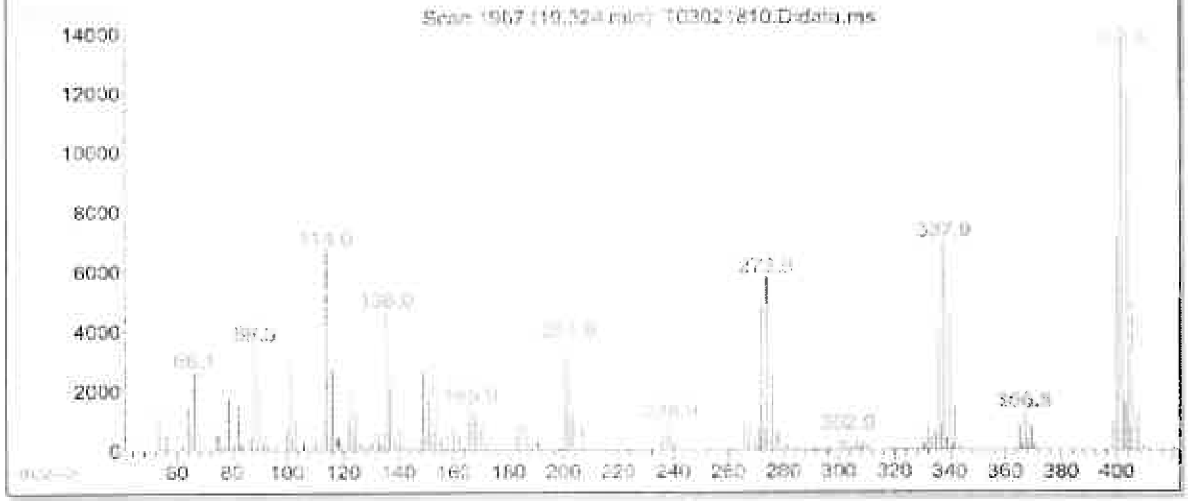

Reagent

HRDXNIDA_00410

Rec'd 11·21-16

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Revision 0
Page 1 of 4

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

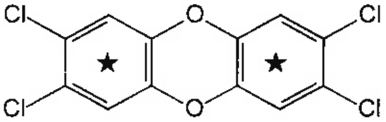

Catalog Number: ED-900
Solution Lot: ER03031601
Expiration Date: March 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER01201405

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 76523-40-5
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

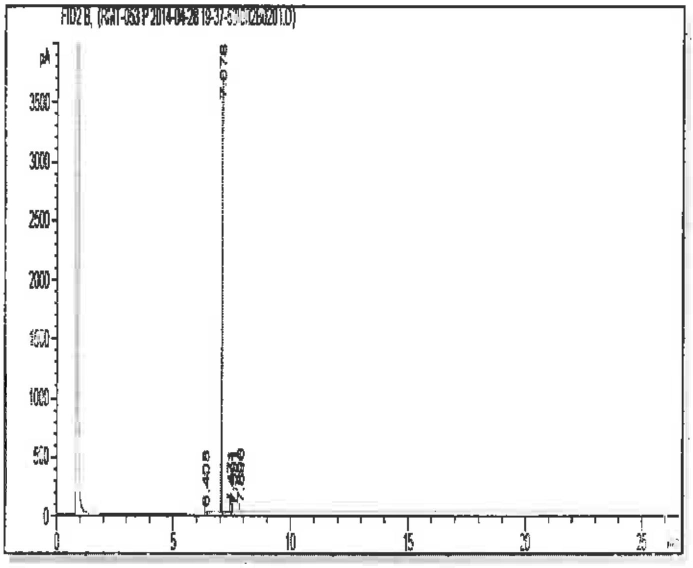

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

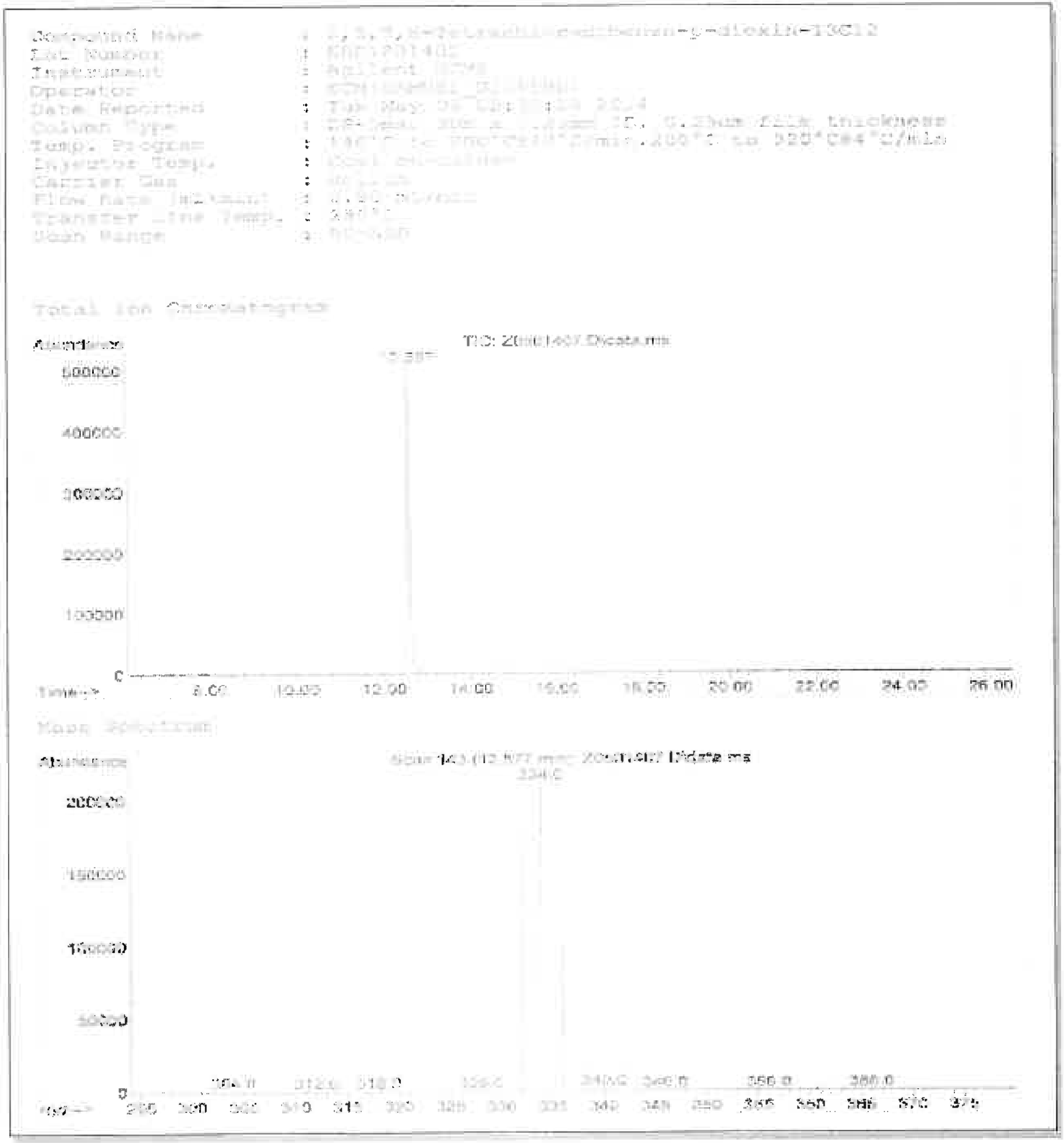

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent [illegible]
Operator : [illegible]
Date Reported : Tue May [illegible] 2014
Column Type : DB-5MS, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@10°C/min, 200°C to 320°C@4°C/min
Injector Temp. : [illegible]
Carrier Gas : [illegible]
Flow Rate (Helium) : [illegible]
Transfer Line Temp. : [illegible]
Scan Range : [illegible]

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00417

r. 3/30/20

Cerilliant
Analytical Reference Standards
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CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

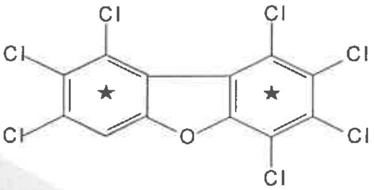

Catalog Number: EF-988
Solution Lot: ER04251601
Expiration Date: May 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER04041602

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-94-0
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

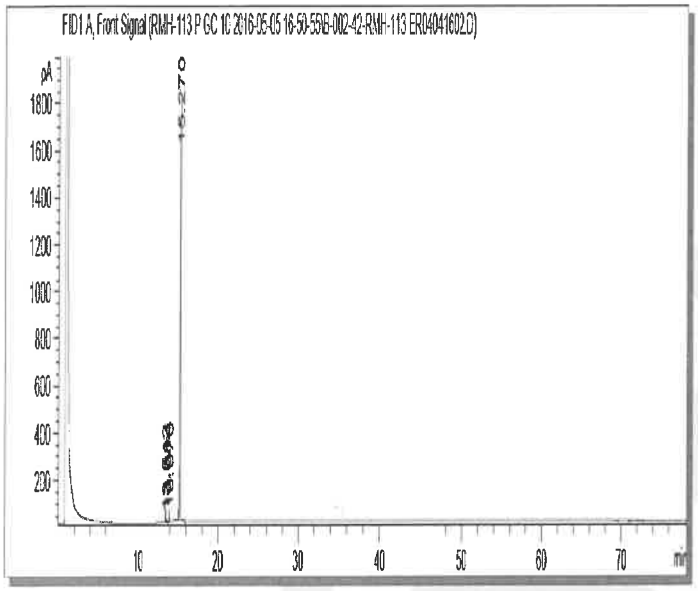

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument:	GC#10
Sample Name:	ER04041602
Acquired:	May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

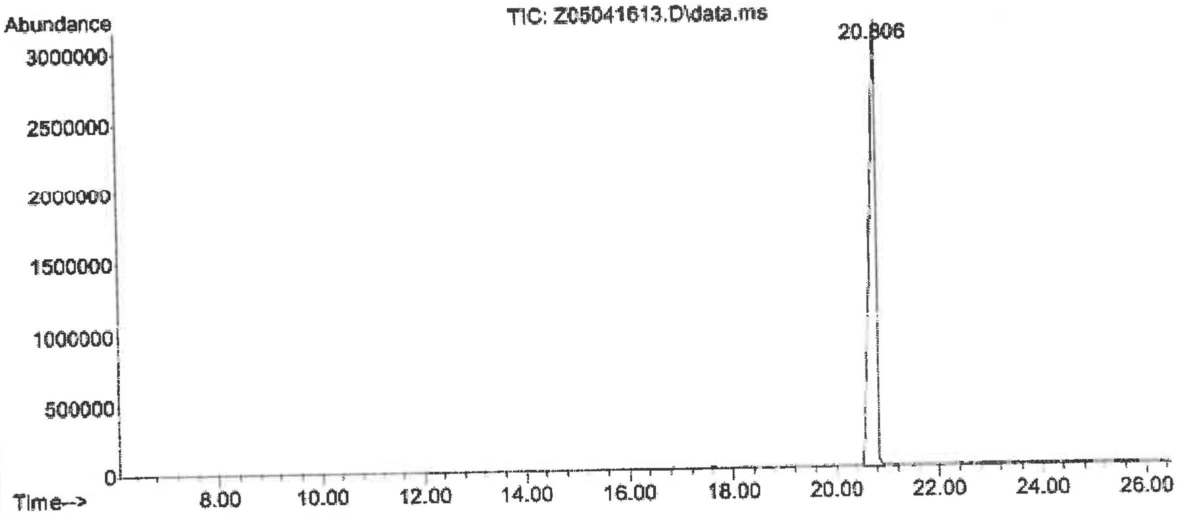

Mass Spectrum

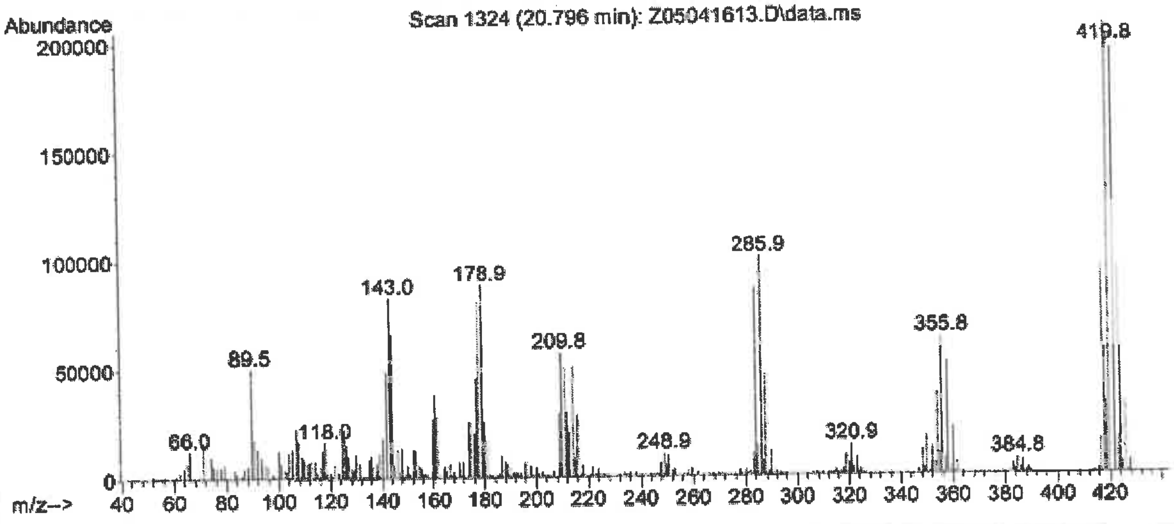

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/20/20 SAD

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Revision 00
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

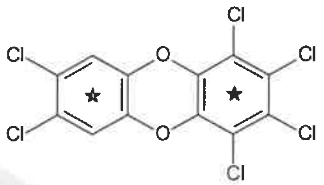

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER011008-01

Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-80-4
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

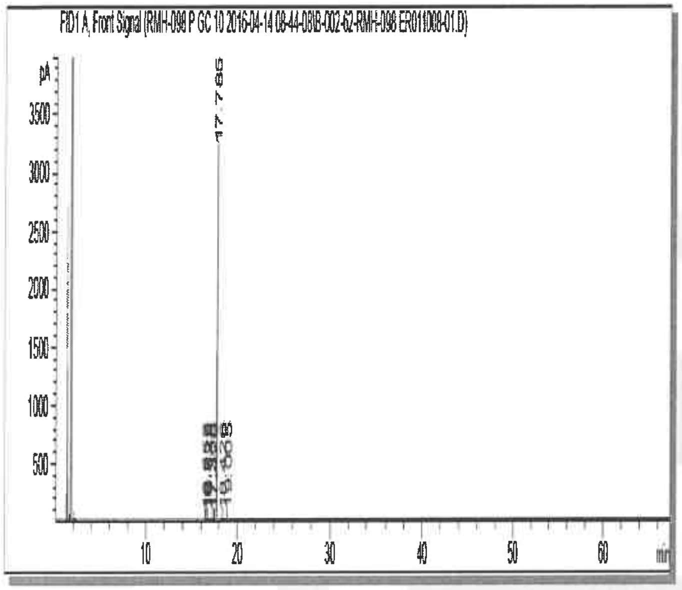

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

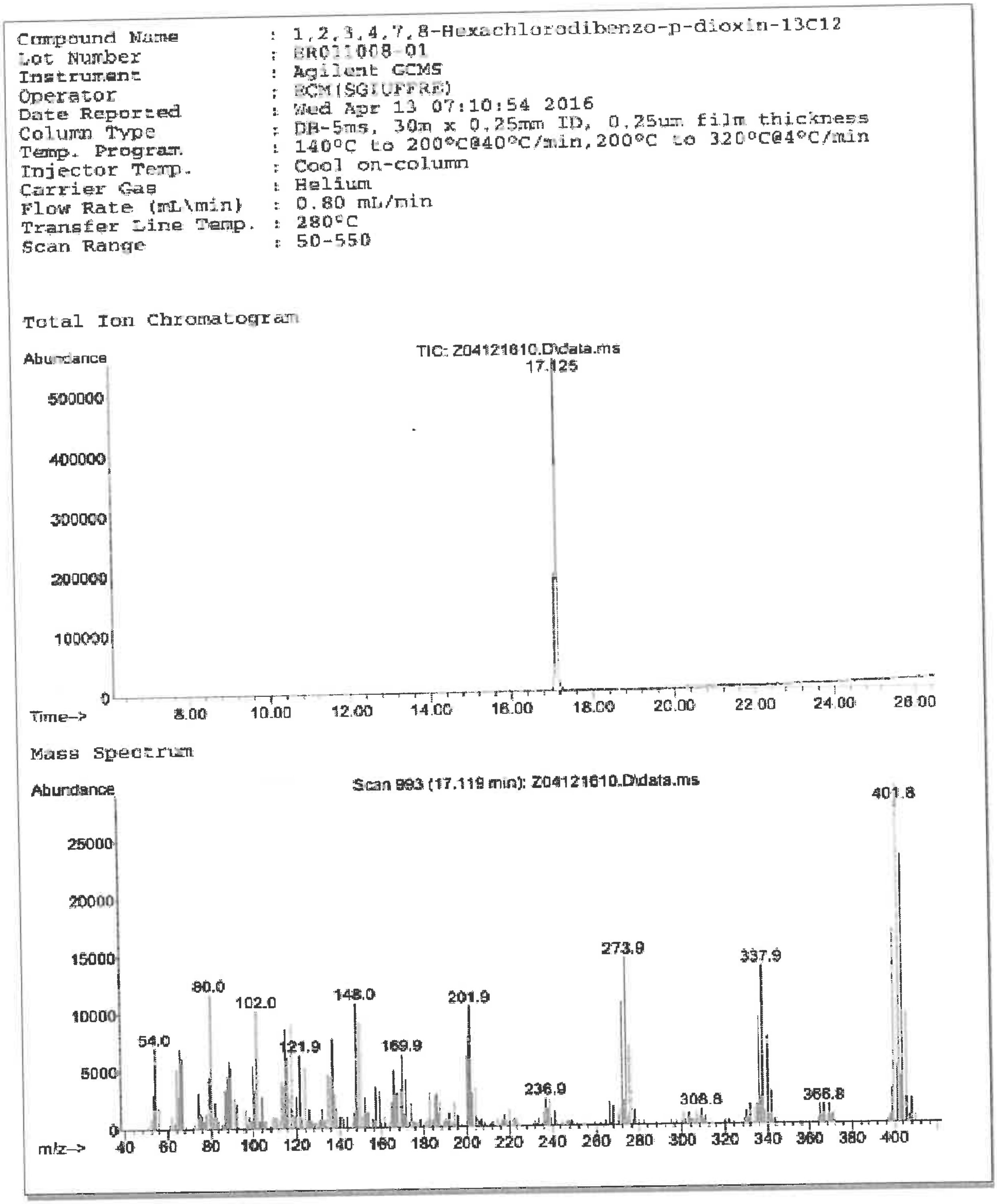

```
Compound Name             : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number                : BR011008-01
Instrument                : Agilent GCMS
Operator                  : RCM(SGIUFFRE)
Date Reported             : Wed Apr 13 07:10:54 2016
Column Type               : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program             : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.            : Cool on-column
Carrier Gas               : Helium
Flow Rate (mL\min)        : 0.80 mL/min
Transfer Line Temp.       : 280°C
Scan Range                : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SK✓

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Revision 00
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

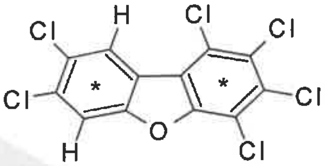

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601
Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

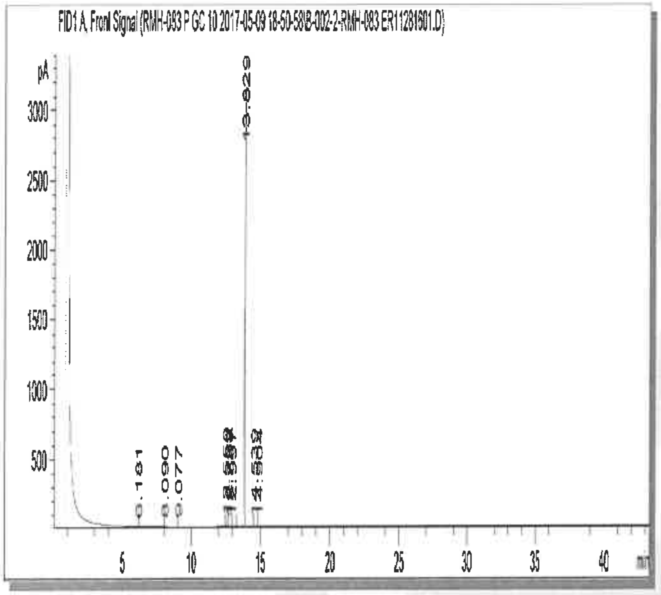

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

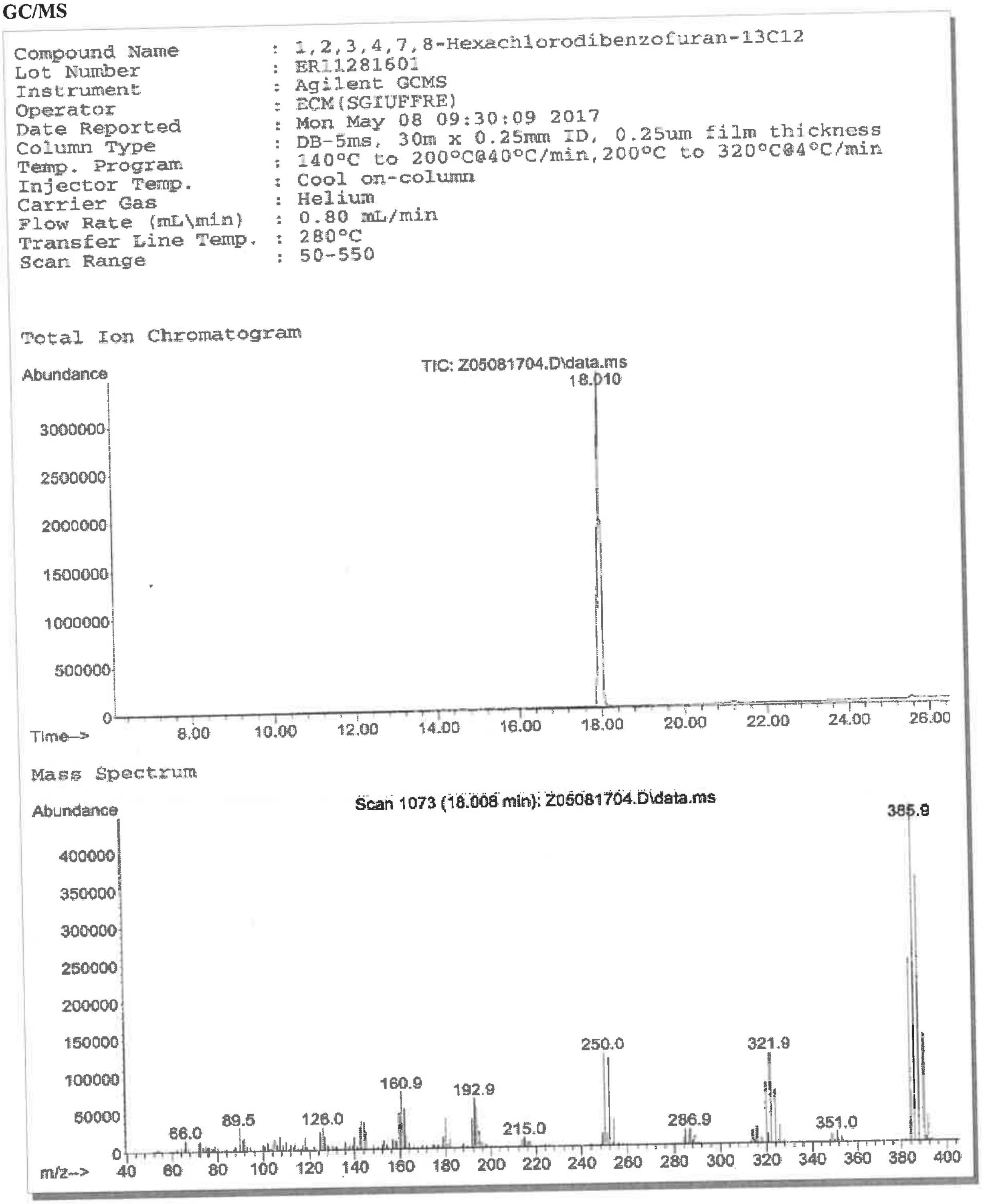

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00420

r: 3|20|20 SKV

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Certificate of Analysis

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

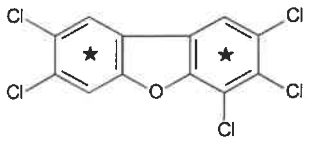

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

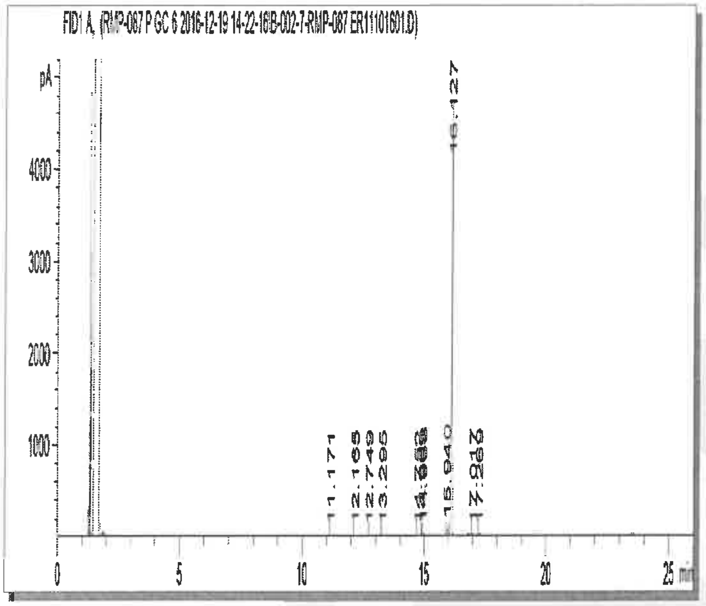

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

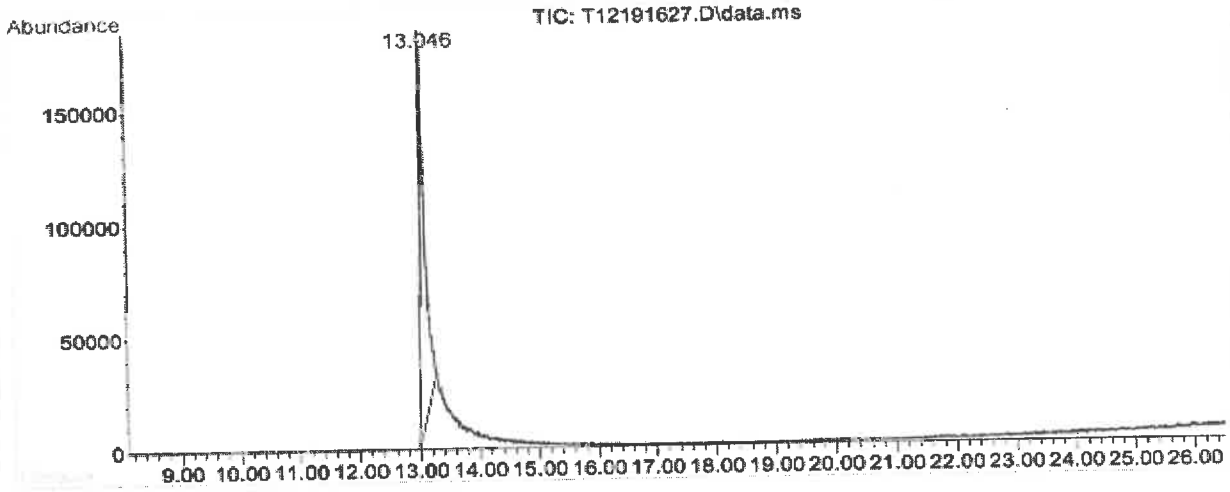

Mass Spectrum

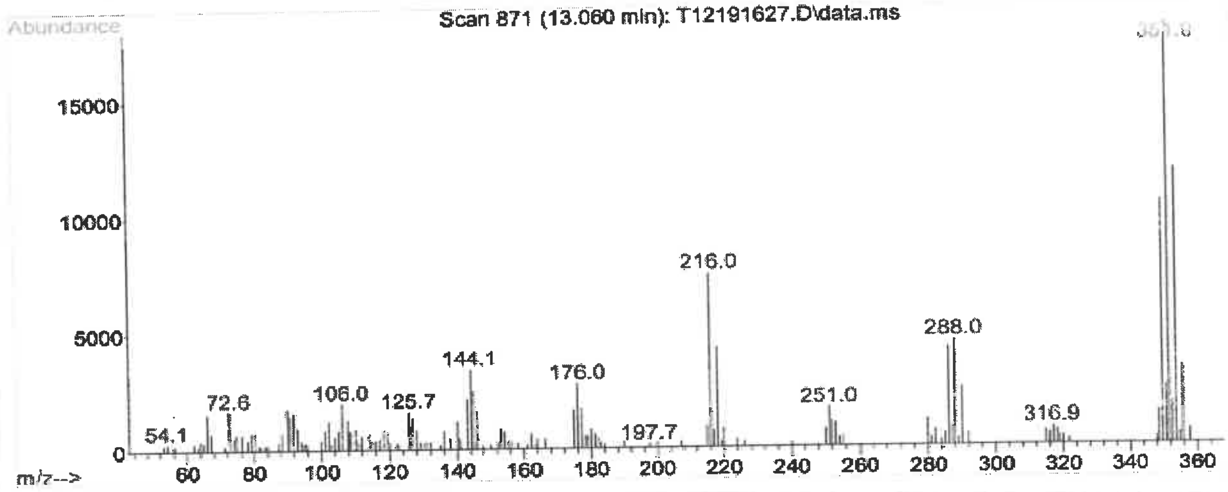

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

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Analytical Reference Standards
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Revision 02
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Cerilliant Quality
ISO GUIDE 34
CERTIFICATE AR1353
ISO/IEC 17025
CERTIFICATE AT1352
ISO 9001:2008
CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-952
Solution Lot: ER012111-01
Expiration Date: January 2021
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

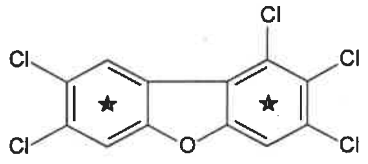

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3OCl_5$
CAS Number: 109719-77-9
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

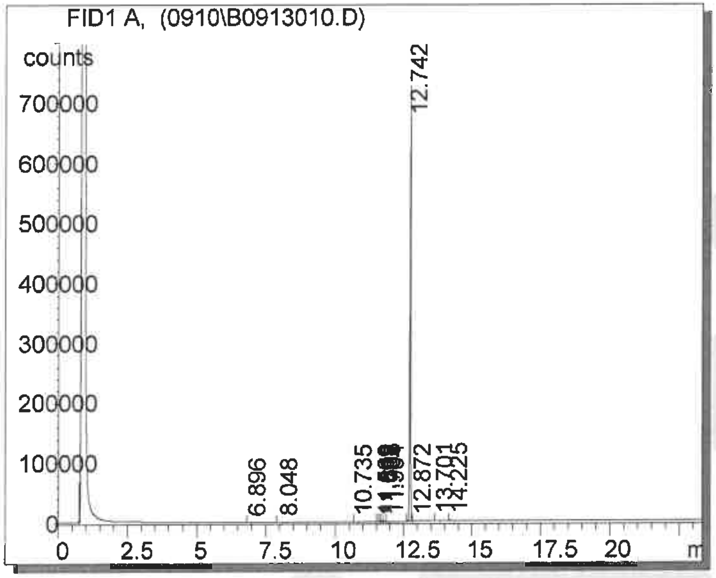

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number             : ER090110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Tue Sep 14 11:05:33 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

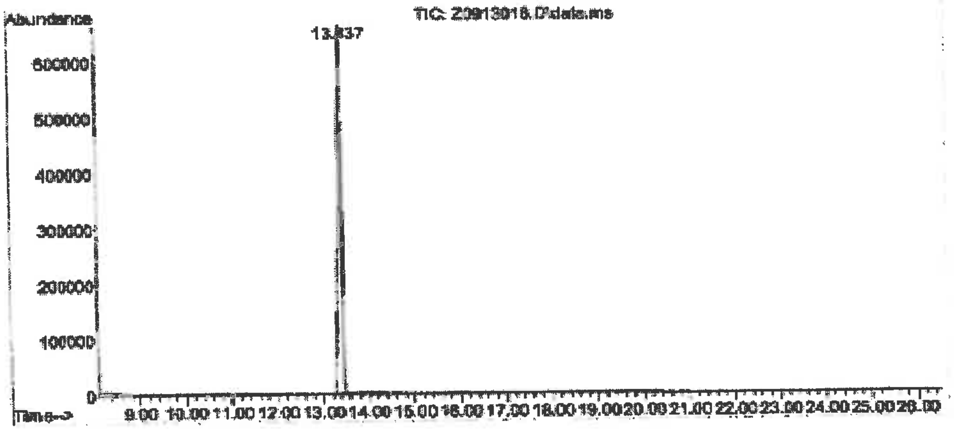

Mass Spectrum

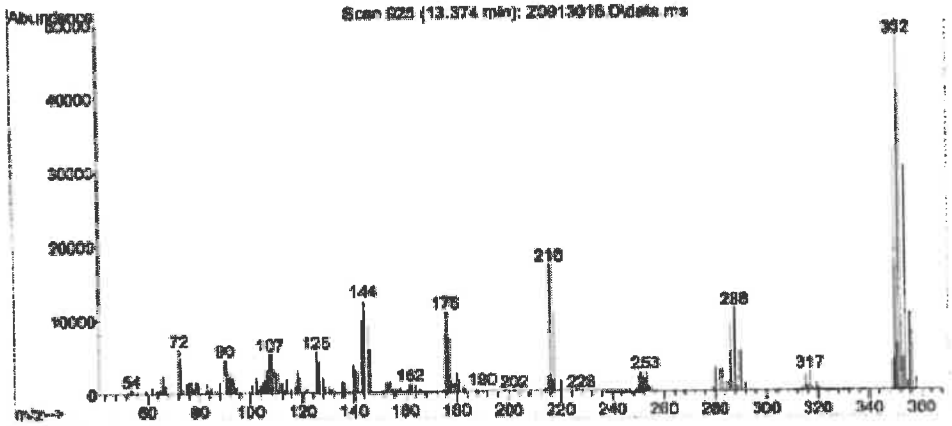

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

Cerilliant
Analytical Reference Standards
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Revision 01
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

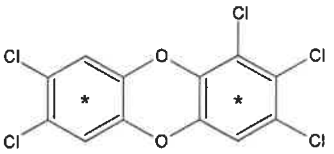

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

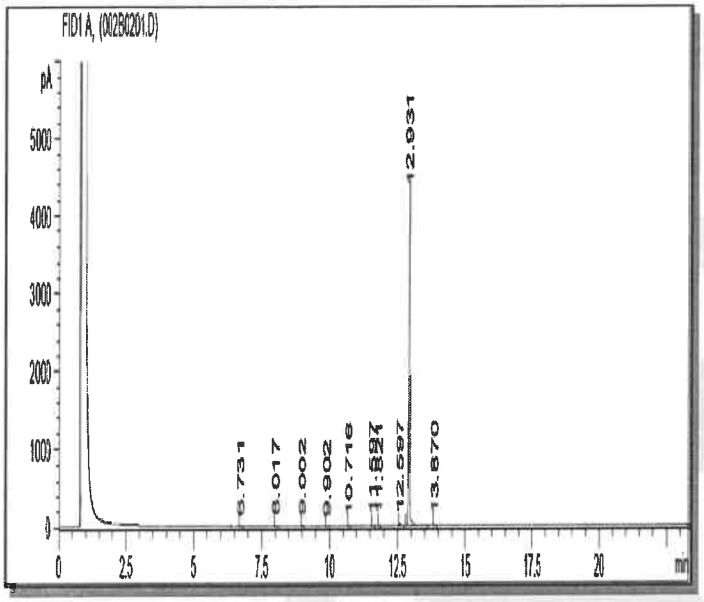

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

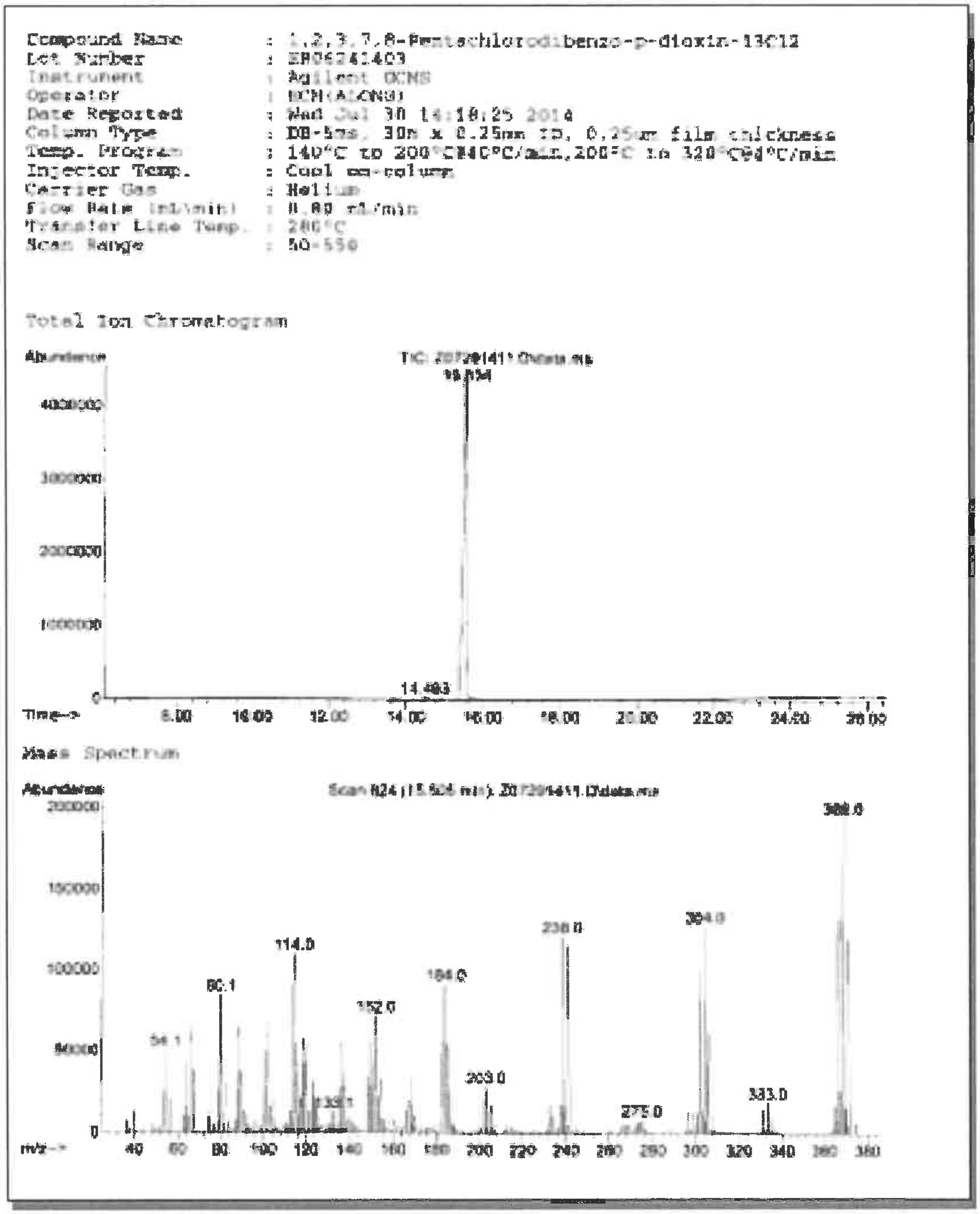

Compound Name : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number : ER06241403
Instrument : Agilent GCMS
Operator : RCM(ALONG)
Date Reported : Wed Jul 30 14:10:25 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

Cerilliant
Analytical Reference Standards
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Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

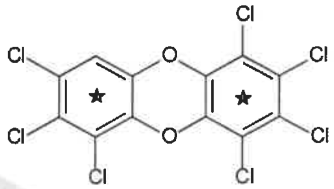

Catalog Number:	ED-972
Solution Lot:	ER09271601
Expiration Date:	October 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

October 26, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	0.999

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER100110-01

Chemical Formula:	$^{13}C_{12}HCl_7O_2$
CAS Number:	109719-83-7
Molecular Weight:	437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

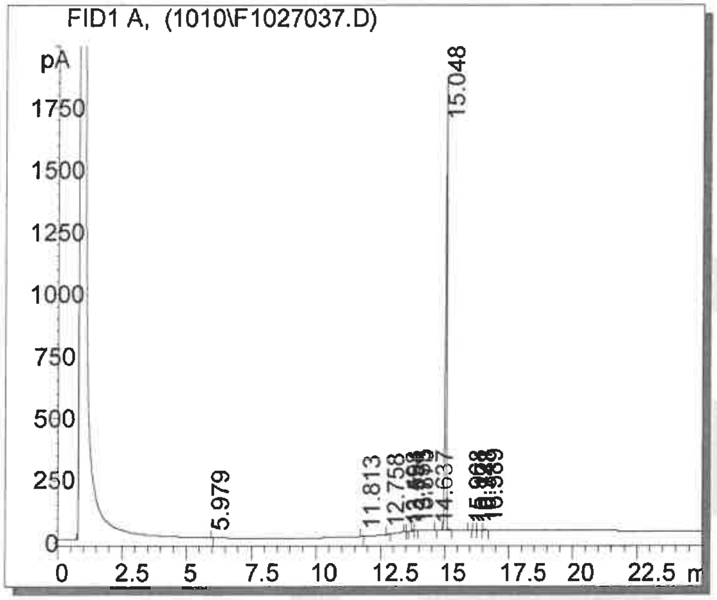

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

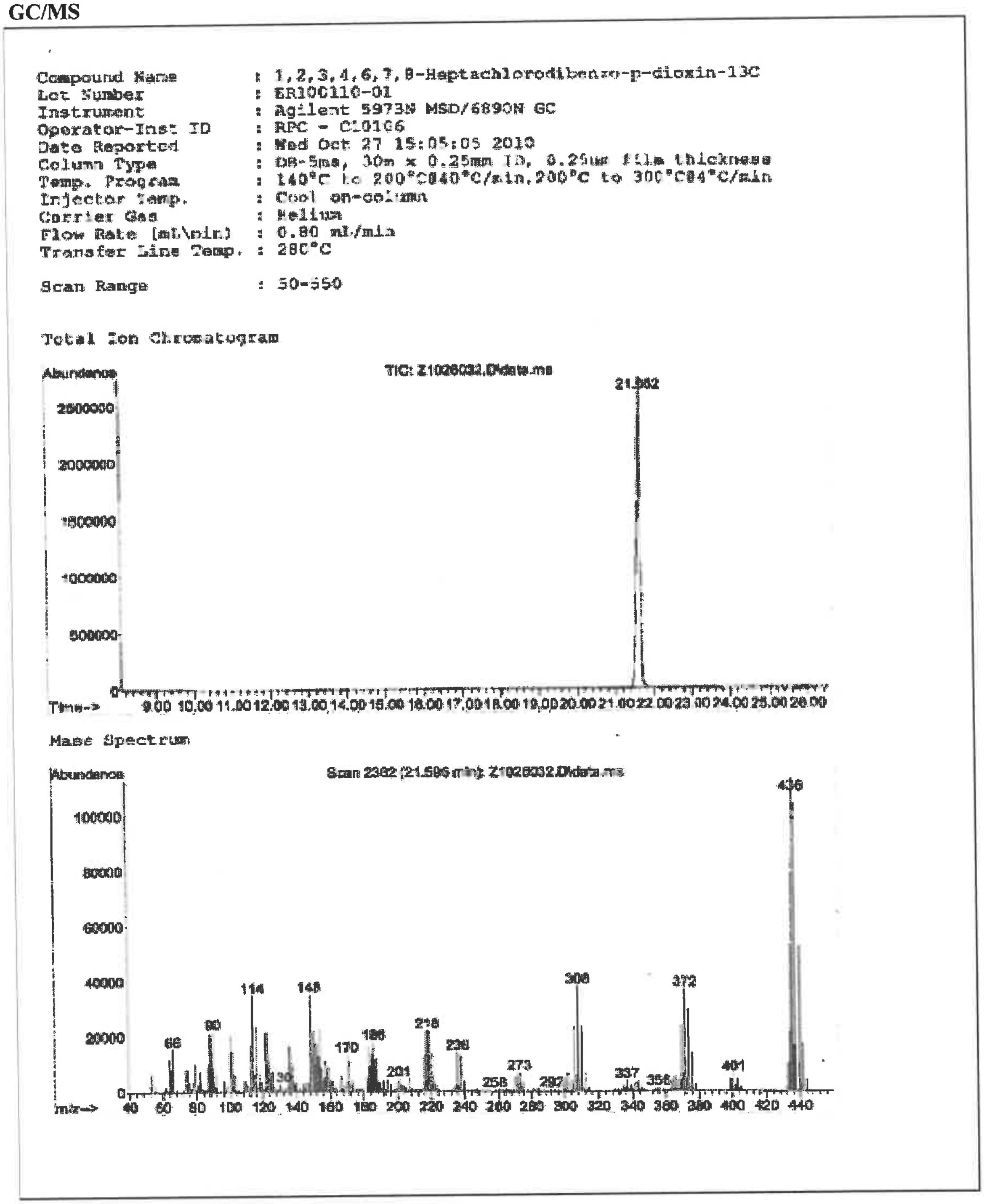

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number : ER10C110-01
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst ID : RPC - C10106
Date Reported : Wed Oct 27 15:05:05 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C

Scan Range : 50-550

Total Ion Chromatogram

TIC: Z1026032.D\data.ms

Mass Spectrum

Scan 2362 (21.596 min): Z1026032.D\data.ms

Reagent

HRDXNIDA_00424

r: 4/21/20 SW

Cerilliant®
Analytical Reference Standards
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

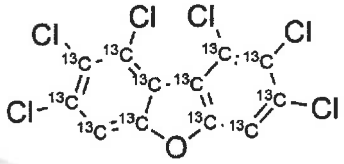

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER080108-03
Chemical Formula:	$^{13}C_{12}H_2OCl_6$
CAS Number:	116843-04-0
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

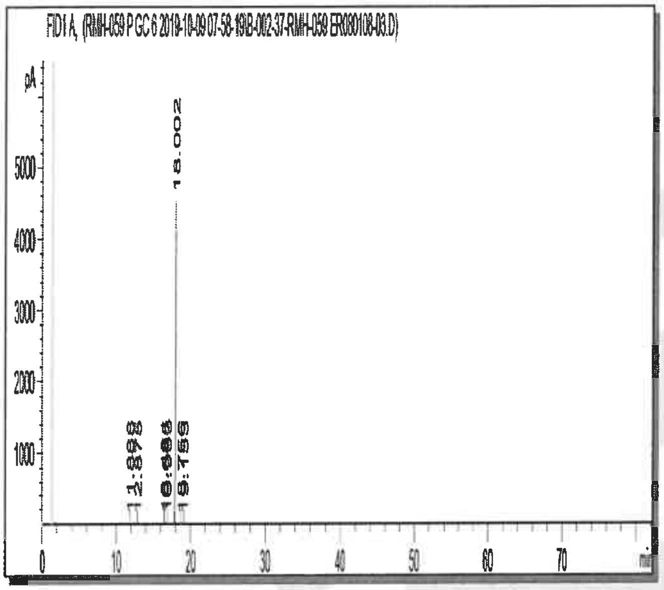

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER080108-03
Acquired:	October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name           : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number              : ER080108-03
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Tue Oct 08 10:54:22 2019
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

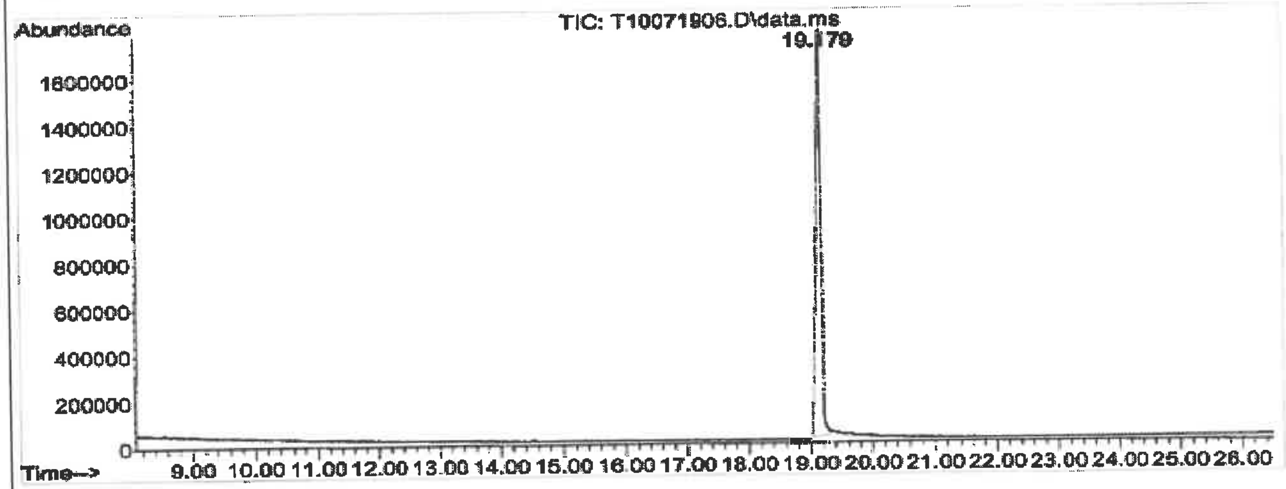

Mass Spectrum

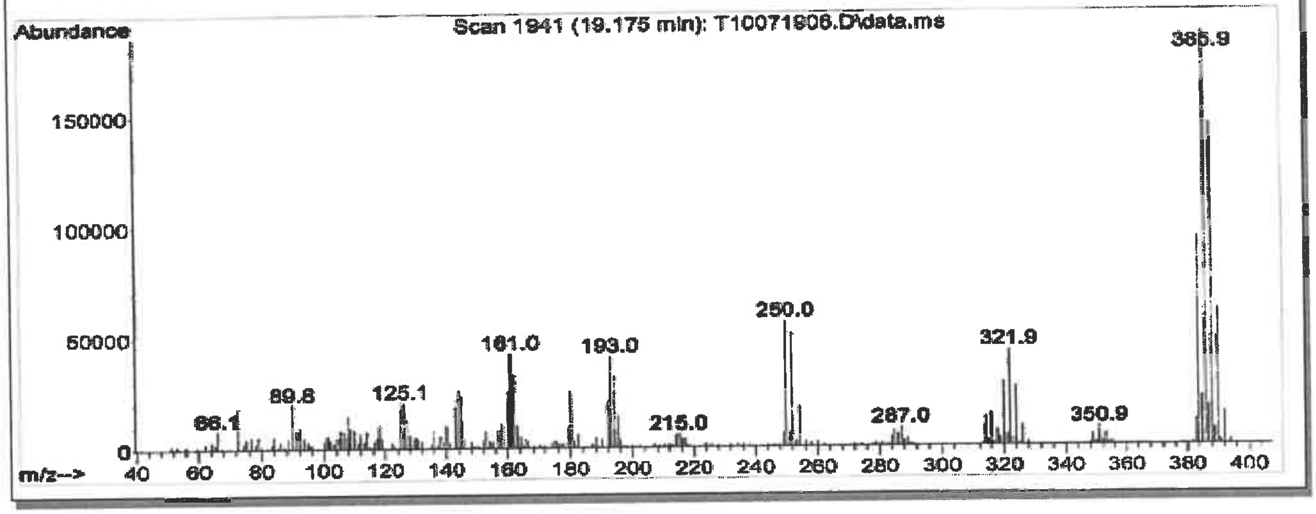

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skw

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Analytical Reference Standards
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Revision 0
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

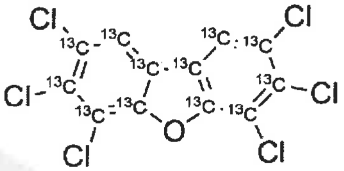

Catalog Number: EF-987
Solution Lot: ER01062015
Expiration Date: January 2030
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER09051801

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-05-1
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

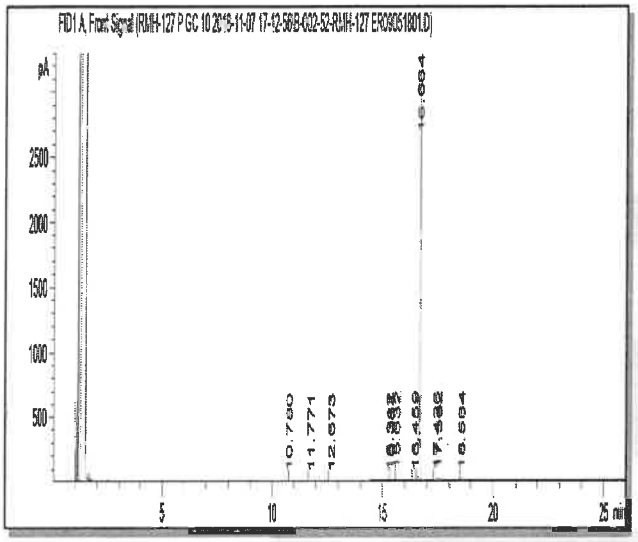

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

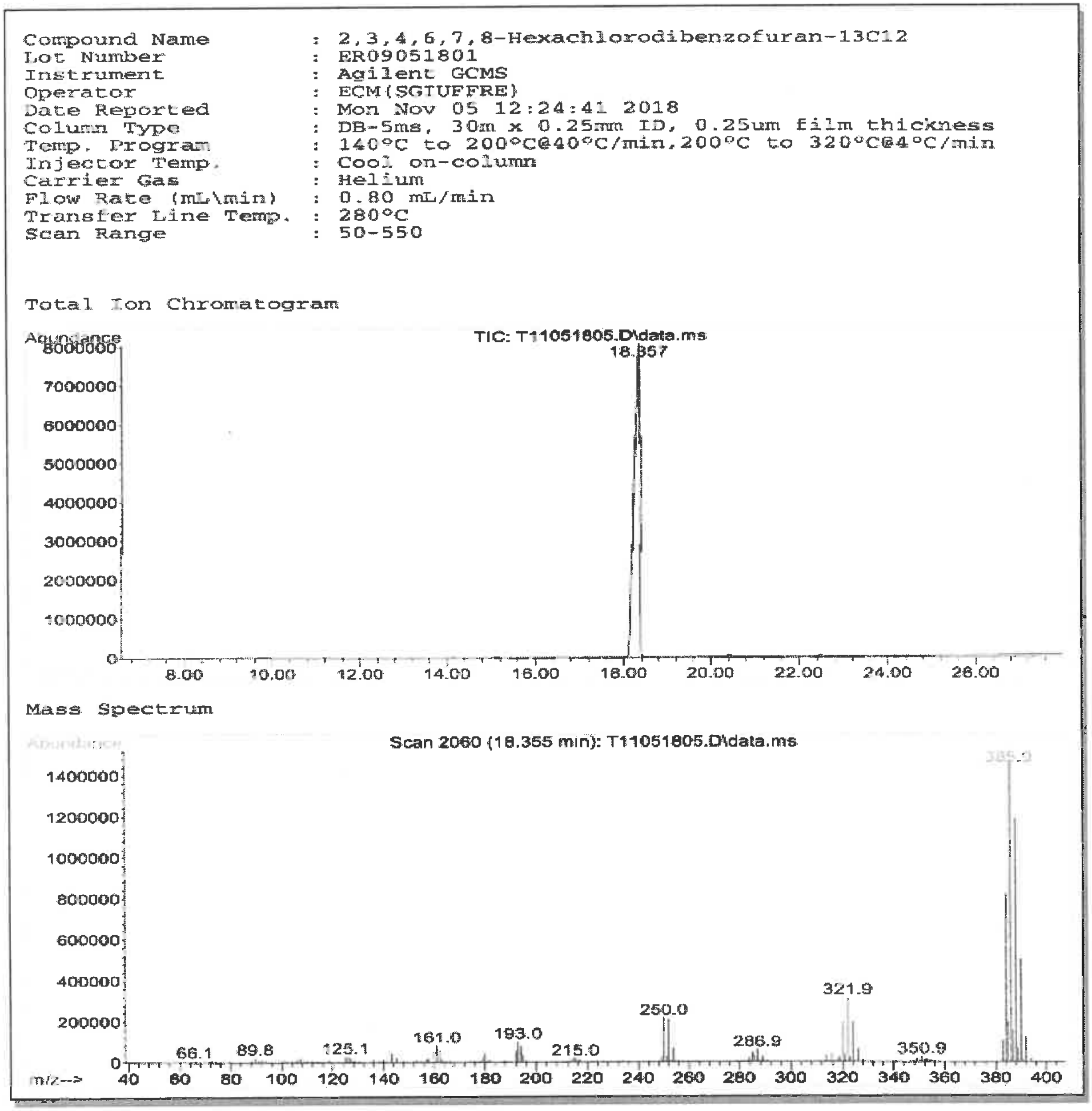

```
Compound Name          : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER09051801
Instrument             : Agilent GCMS
Operator               : ECM(SGTUFFRE)
Date Reported          : Mon Nov 05 12:24:41 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20

Cerilliant Analytical Reference Standards
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Revision 0
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

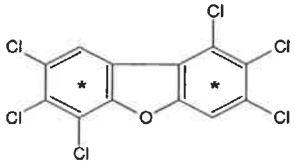

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (μg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER051607-01

Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-03-9
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

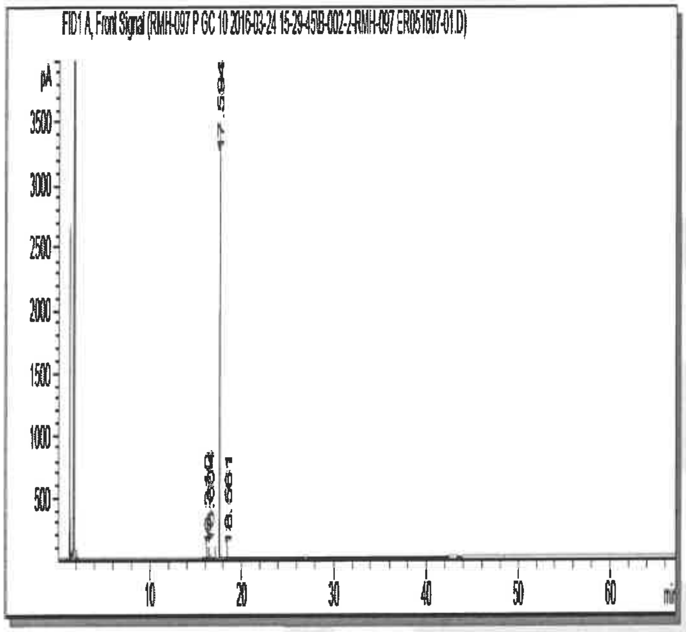

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

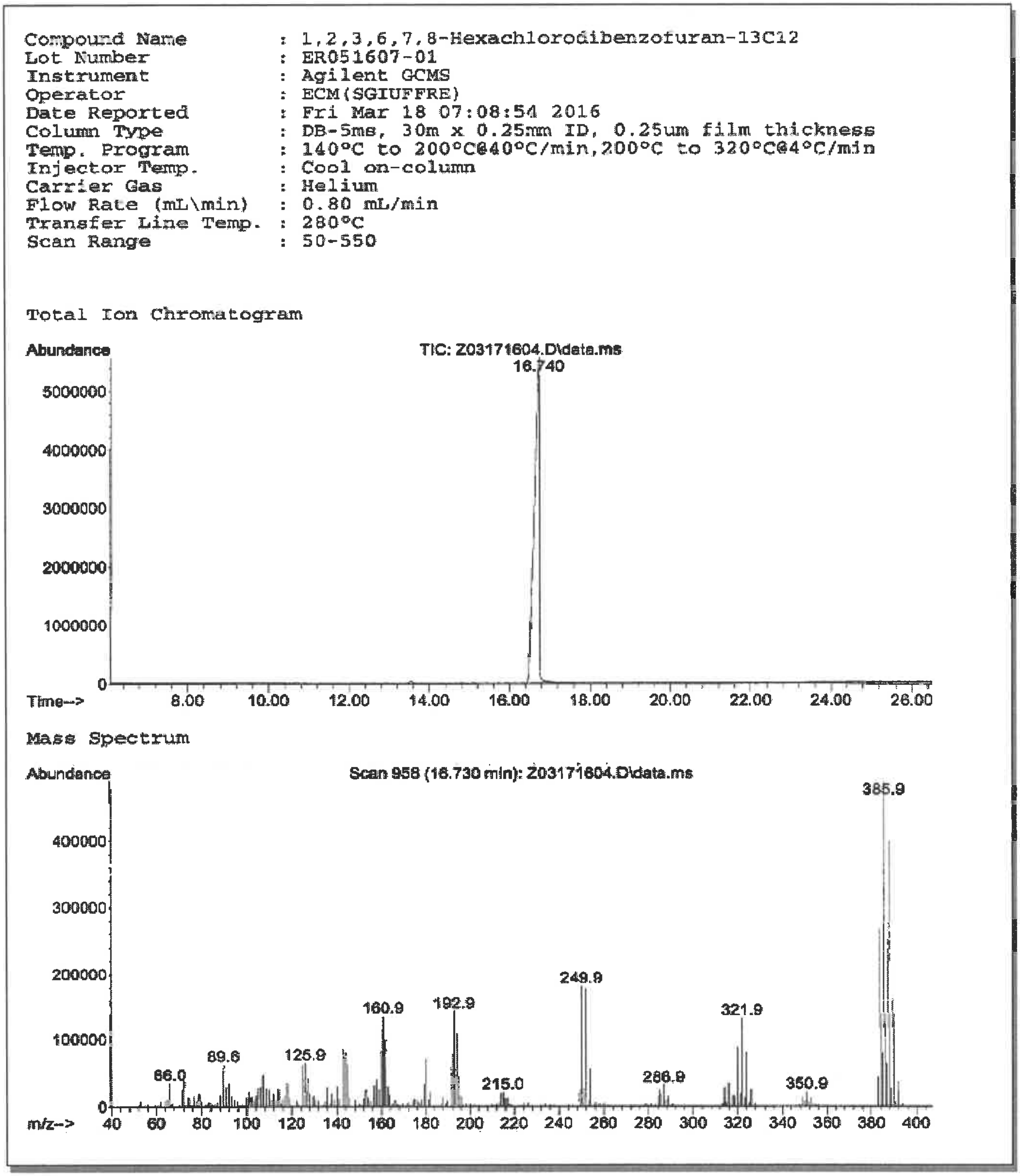

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER051607-01
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Mar 18 07:08:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

Rec'd. 3/26/20 sw

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

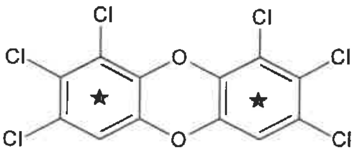

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER110510-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-82-6
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

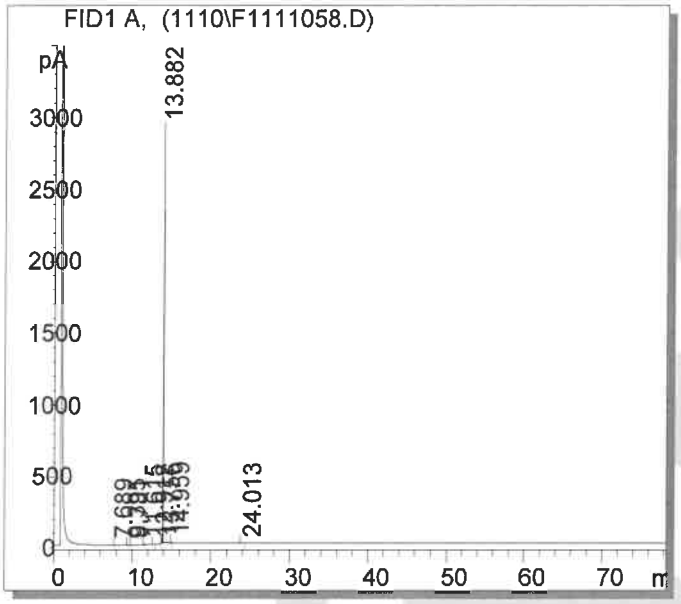

Column:	DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-column
Detector Temp:	325°C
Data File Name:	S:\GC\GC6\2010\1110\F1111058.D
Instrument:	GC#6
Sample Name:	ER110510-01
Acquired:	November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

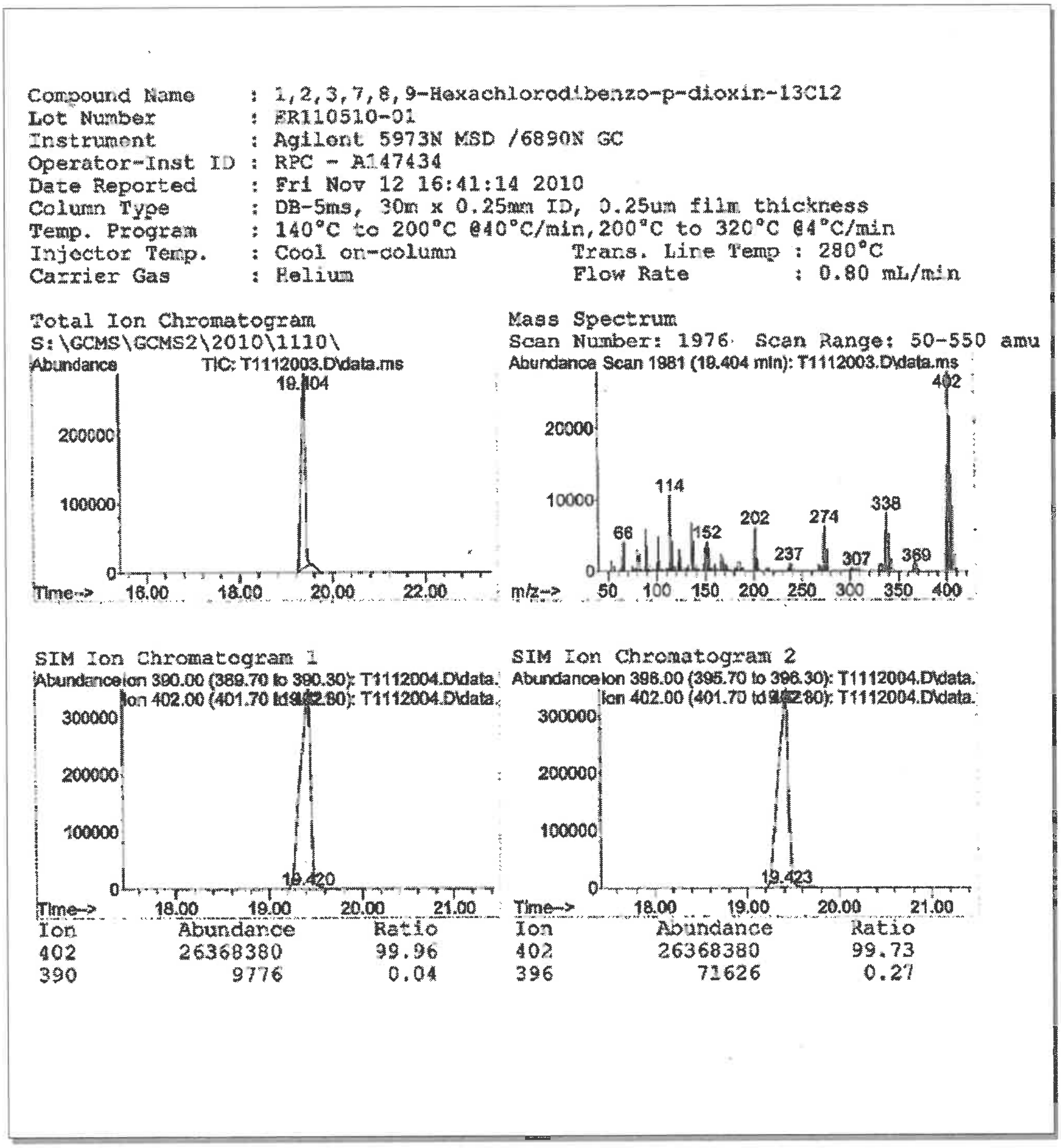

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER110510-01
Instrument : Agilent 5973N MSD /6890N GC
Operator-Inst ID : RPC - A147434
Date Reported : Fri Nov 12 16:41:14 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp. : Cool on-column Trans. Line Temp : 280°C
Carrier Gas : Helium Flow Rate : 0.80 mL/min

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKV

Cerilliant
Analytical Reference Standards
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Revision 00
Page 1 of 4

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

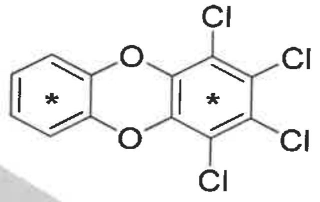

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER02021602
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	114423-99-3
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

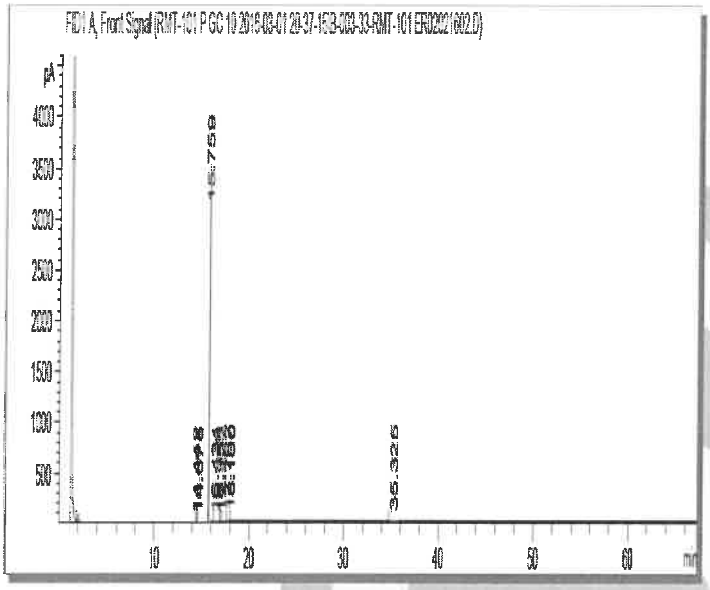

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

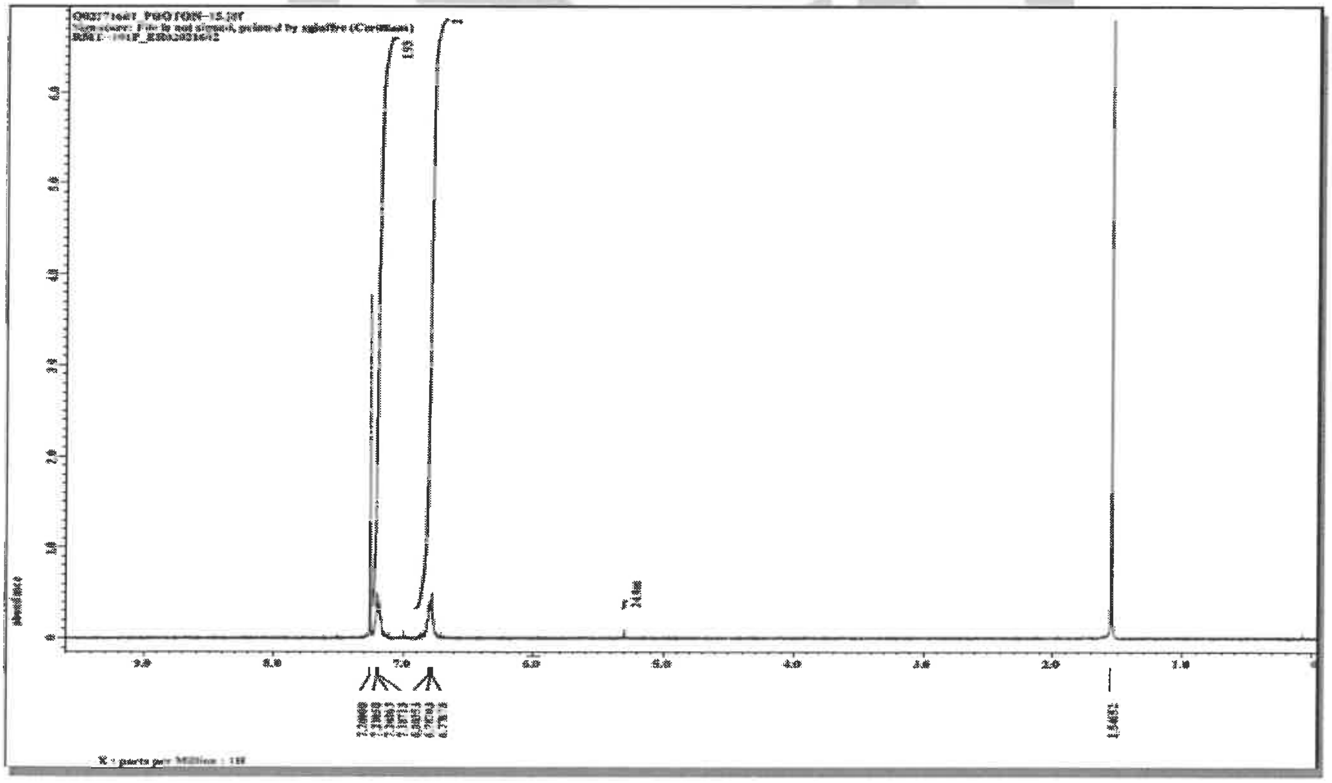

Spectral and Physical Data (cont.)

GC/MS

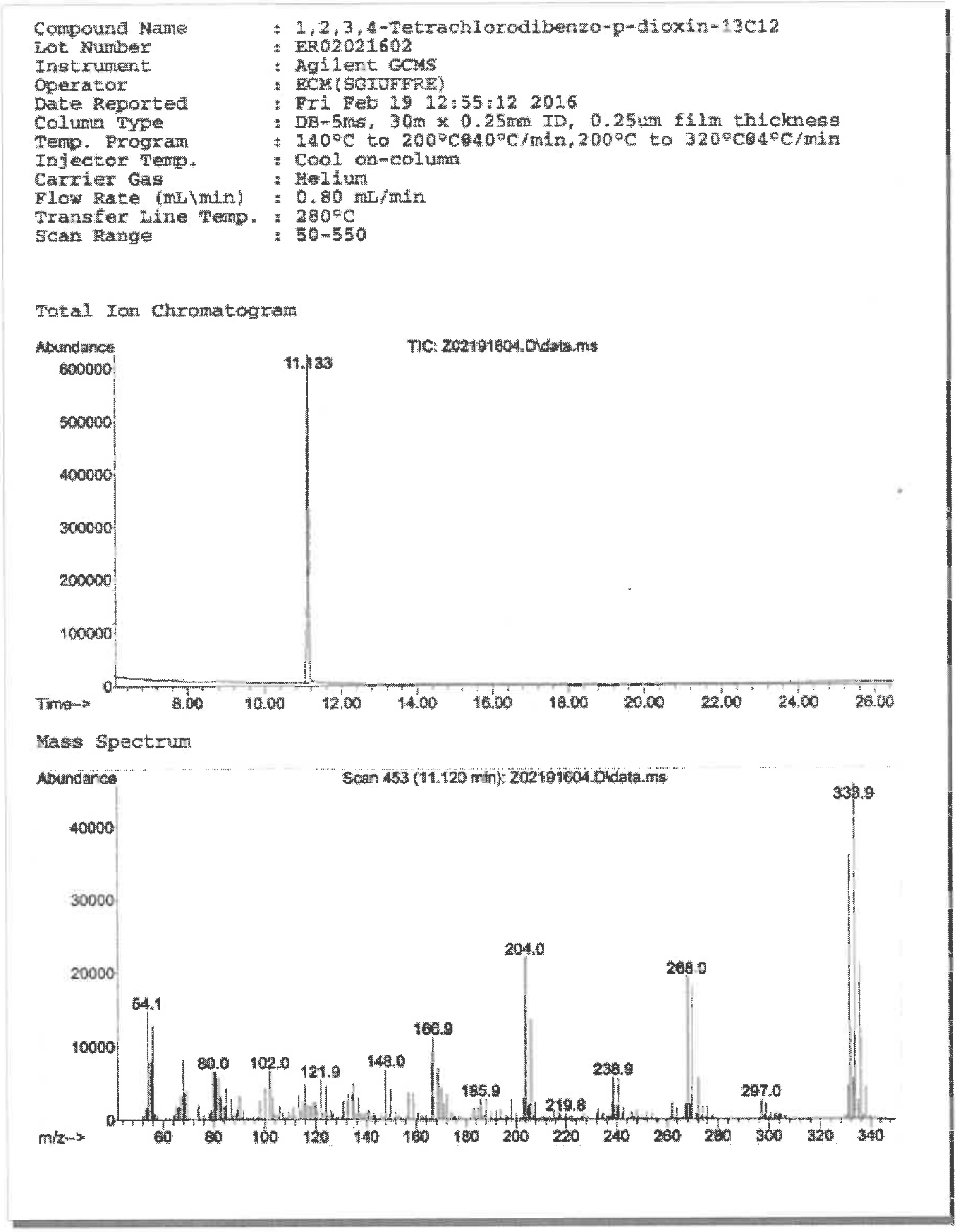

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

② P: 4/2/19 SKJ

WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

**U.S. EPA Method 1613 Native PCDD/PCDF
Precision and Recovery Stock Solution**

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, ... x_n$ on which it depends is:

$$u_c(y(x_1, x_2, ... x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ______________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

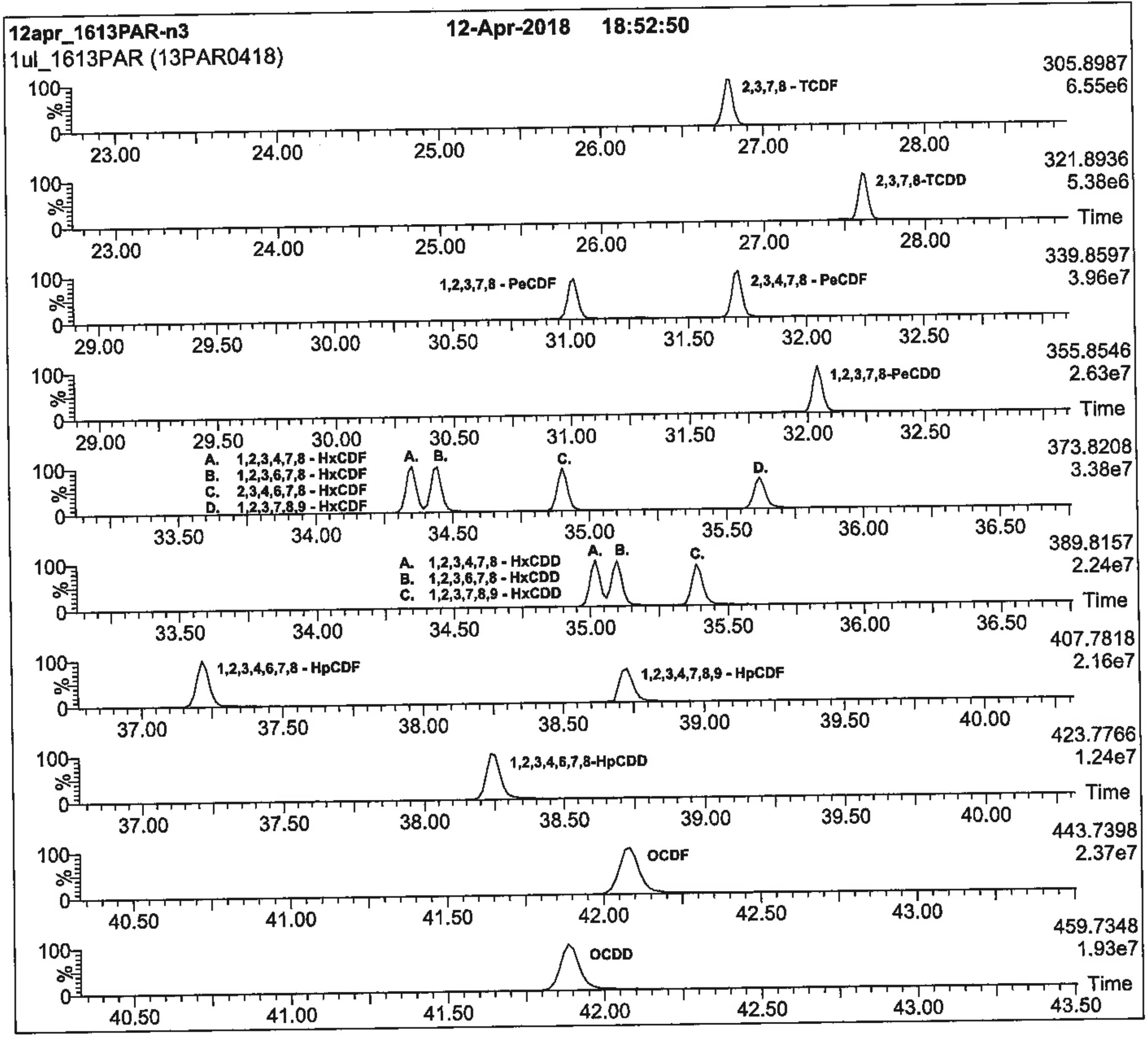

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 μm film thickness) Agilent J&W
Flow:	Constant at 1 ml/min
Injector:	280 °C (Splitless Injection)
Ionization:	EI+
Detector:	280 °C SIR at 10,000 mass resolving power

Oven:	150 °C (1 min) 12 °C/min to 200 °C 3 °C/min to 235 °C 235 °C (8 min) 8 °C/min to 310 °C 310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

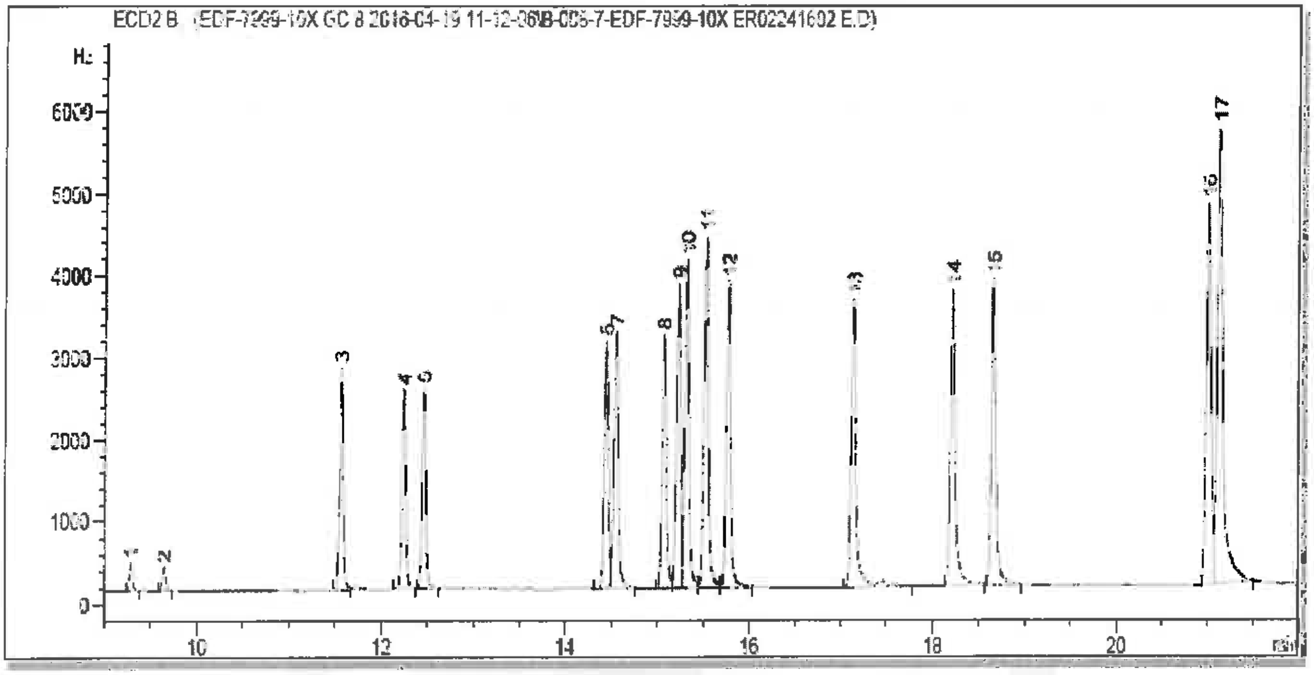

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

R: 4/30/15 SKV

Cerilliant
Analytical Reference Standards
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Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

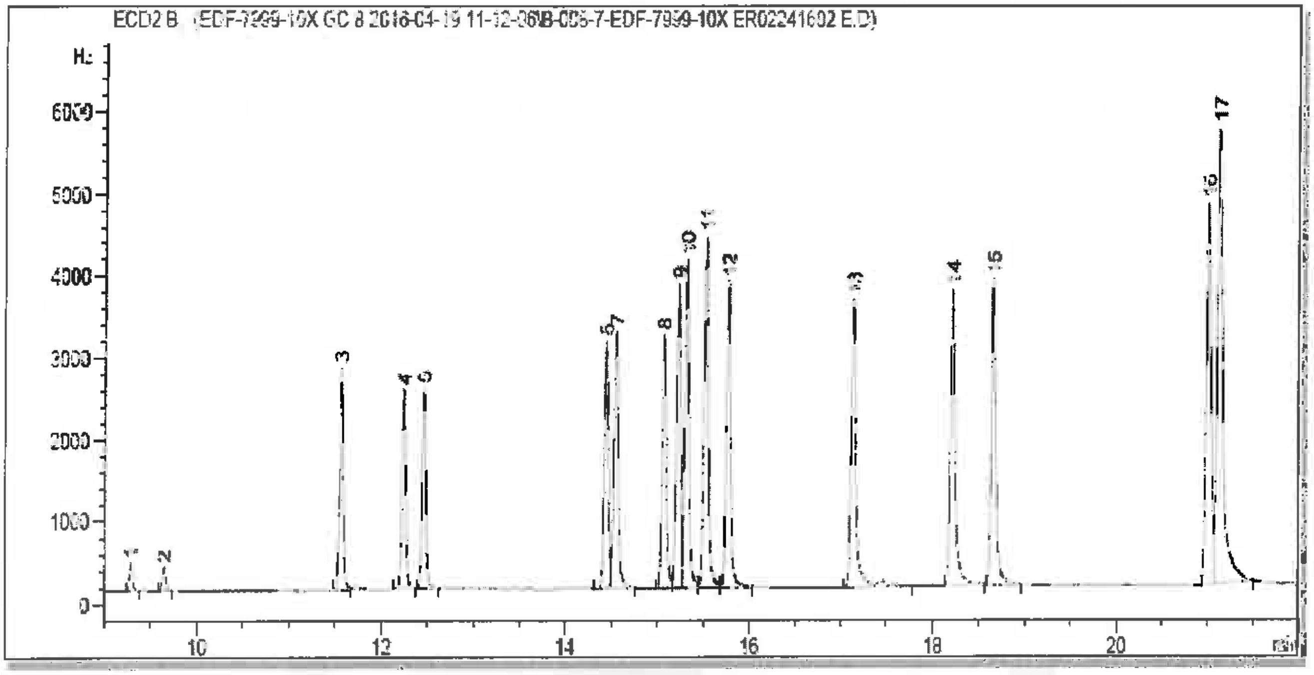

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	**Date**	**Reason for Revision**
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Sediment Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDD #	37TCDD #
11215702-Soil-Tank #1 DL	320-64049-3 DL	73	93
11215702-Soil-Tank #2 DL	320-64049-4 DL	79	100

	QC LIMITS
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Matrix: Sediment   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-412959/2-A	75	73	94	73	72	71	78	77
	LCSD 320-412959/3-A	73	74	96	74	74	74	75	75

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Sediment Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-412959/2-A	78	77	78	77	78	79	79	81
	LCSD 320-412959/3-A	75	78	76	74	76	78	76	79

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Sediment Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Soil-Tank #1 RADL	320-64049-3 RADL	79	105
11215702-Soil-Tank #2 RADL	320-64049-4 RADL	109	103

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Sediment Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Soil-Tank #1	320-64049-3	76	73	99	73	73	74	77	73
11215702-Soil-Tank #2	320-64049-4	82	79	104	79	79	80	86	80
	MB 320-412959/1-A	66	70	90	68	68	71	70	69

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Sediment Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Soil-Tank #1	320-64049-3	74	77	76	73	74	76	77	82
11215702-Soil-Tank #2	320-64049-4	79	84	81	80	80	81	82	89
	MB 320-412959/1-A	71	74	74	70	73	76	74	74

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-407683/2-A	83	80	98	73	57	75	68	79
	LCSD 320-407683/3-A	82	77	98	72	54	71	69	80

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-407683/2-A	89	64	75	88	94	98	72	96
	LCSD 320-407683/3-A	90	64	75	89	97	101	73	94

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-GW-Tank#1	320-64049-1	87	82	100	71	55	68	68	81
11215702-GW-Tank#2	320-64049-2	85	81	100	70	55	67	71	84
	MB 320-407683/1-A	81	77	102	69	54	69	68	80

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-GW-Tank#1	320-64049-1	93	67	77	93	115	126	94	127
11215702-GW-Tank#2	320-64049-2	95	69	78	96	118	128	96	131
	MB 320-407683/1-A	92	61	76	88	93	95	70	89

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Matrix: Water   Level: Low   Lab File ID: 01SE2010D5_4.d

Lab ID: LCS 320-407683/2-A   Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	197	99	67-158	
2,3,7,8-TCDF	200	207	103	75-158	
1,2,3,7,8-PeCDD	1000	987	99	70-142	
1,2,3,7,8-PeCDF	1000	1060	106	80-134	
2,3,4,7,8-PeCDF	1000	1360	136	68-160	
1,2,3,4,7,8-HxCDD	1000	1390	139	70-164	
1,2,3,6,7,8-HxCDD	1000	1070	107	76-134	
1,2,3,7,8,9-HxCDD	1000	1210	121	64-162	
1,2,3,4,7,8-HxCDF	1000	1370	137	72-134	*
1,2,3,6,7,8-HxCDF	1000	1120	112	84-130	
1,2,3,7,8,9-HxCDF	1000	1080	108	78-130	
2,3,4,6,7,8-HxCDF	1000	1070	107	70-156	
1,2,3,4,6,7,8-HpCDD	1000	955	95	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1000	100	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1350	135	78-138	
OCDD	2000	1940	97	78-144	
OCDF	2000	2080	104	63-170	
13C-2,3,7,8-TCDD	2000	1600	80	20-175	
13C-2,3,7,8-TCDF	2000	1660	83	22-152	
13C-1,2,3,7,8-PeCDD	2000	1500	75	21-227	
13C-1,2,3,7,8-PeCDF	2000	1470	73	21-192	
13C-2,3,4,7,8-PeCDF	2000	1150	57	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1290	64	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1500	75	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1360	68	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1590	79	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1770	88	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1780	89	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1960	98	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1870	94	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1440	72	20-186	
13C-OCDD	4000	3830	96	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Matrix: Sediment   Level: Low   Lab File ID: 18se20dfs1_72.d

Lab ID: LCS 320-412959/2-A   Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	20.8	104	67-158	
2,3,7,8-TCDF	20.0	20.5	102	75-158	
1,2,3,7,8-PeCDD	100	102	102	70-142	
1,2,3,7,8-PeCDF	100	100	100	80-134	
2,3,4,7,8-PeCDF	100	98.9	99	68-160	
1,2,3,4,7,8-HxCDD	100	98.3	98	70-164	
1,2,3,6,7,8-HxCDD	100	99.5	99	76-134	
1,2,3,7,8,9-HxCDD	100	101	101	64-162	
1,2,3,4,7,8-HxCDF	100	99.3	99	72-134	
1,2,3,6,7,8-HxCDF	100	100	100	84-130	
1,2,3,7,8,9-HxCDF	100	98.7	99	78-130	
2,3,4,6,7,8-HxCDF	100	99.2	99	70-156	
1,2,3,4,6,7,8-HpCDD	100	99.5	100	70-140	
1,2,3,4,6,7,8-HpCDF	100	99.0	99	82-122	
1,2,3,4,7,8,9-HpCDF	100	97.7	98	78-138	
OCDD	200	199	99	78-144	
OCDF	200	198	99	63-170	
13C-2,3,7,8-TCDD	200	147	73	20-175	
13C-2,3,7,8-TCDF	200	149	75	22-152	
13C-1,2,3,7,8-PeCDD	200	143	71	21-227	
13C-1,2,3,7,8-PeCDF	200	145	73	21-192	
13C-2,3,4,7,8-PeCDF	200	144	72	13-328	
13C-1,2,3,4,7,8-HxCDD	200	155	77	21-193	
13C-1,2,3,6,7,8-HxCDD	200	156	78	25-163	
13C-1,2,3,4,7,8-HxCDF	200	155	78	19-202	
13C-1,2,3,6,7,8-HxCDF	200	154	77	21-159	
13C-1,2,3,7,8,9-HxCDF	200	155	77	17-205	
13C-2,3,4,6,7,8-HxCDF	200	157	78	22-176	
13C-1,2,3,4,6,7,8-HpCDD	200	158	79	26-166	
13C-1,2,3,4,6,7,8-HpCDF	200	156	78	21-158	
13C-1,2,3,4,7,8,9-HpCDF	200	157	79	20-186	
13C-OCDD	400	325	81	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Matrix: Water   Level: Low   Lab File ID: 01SE2010D5_5.d

Lab ID: LCSD 320-407683/3-A   Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	206	103	4	50	67-158	
2,3,7,8-TCDF	200	212	106	2	50	75-158	
1,2,3,7,8-PeCDD	1000	1000	100	1	50	70-142	
1,2,3,7,8-PeCDF	1000	1070	107	1	50	80-134	
2,3,4,7,8-PeCDF	1000	1380	138	2	50	68-160	
1,2,3,4,7,8-HxCDD	1000	1400	140	1	50	70-164	
1,2,3,6,7,8-HxCDD	1000	1100	110	3	50	76-134	
1,2,3,7,8,9-HxCDD	1000	1230	123	1	50	64-162	
1,2,3,4,7,8-HxCDF	1000	1390	139	1	50	72-134	*
1,2,3,6,7,8-HxCDF	1000	1130	113	1	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1090	109	1	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1080	108	1	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	950	95	1	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1020	102	2	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1340	134	1	50	78-138	
OCDD	2000	2010	101	4	50	78-144	
OCDF	2000	2130	106	2	50	63-170	
13C-2,3,7,8-TCDD	2000	1550	77			20-175	
13C-2,3,7,8-TCDF	2000	1640	82			22-152	
13C-1,2,3,7,8-PeCDD	2000	1420	71			21-227	
13C-1,2,3,7,8-PeCDF	2000	1430	72			21-192	
13C-2,3,4,7,8-PeCDF	2000	1090	54			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1290	64			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1500	75			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1370	69			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1600	80			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1790	89			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1810	90			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	2010	101			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1930	97			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1460	73			20-186	
13C-OCDD	4000	3780	94			13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Matrix: Sediment Level: Low Lab File ID: 18se20dfs1_73.d

Lab ID: LCSD 320-412959/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCSD CONCENTRATION (pg/g)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	20.0	20.3	101	2	50	67-158	
2,3,7,8-TCDF	20.0	20.6	103	1	50	75-158	
1,2,3,7,8-PeCDD	100	101	101	1	50	70-142	
1,2,3,7,8-PeCDF	100	101	101	1	50	80-134	
2,3,4,7,8-PeCDF	100	98.9	99	0	50	68-160	
1,2,3,4,7,8-HxCDD	100	99.2	99	1	50	70-164	
1,2,3,6,7,8-HxCDD	100	101	101	1	50	76-134	
1,2,3,7,8,9-HxCDD	100	100	100	0	50	64-162	
1,2,3,4,7,8-HxCDF	100	100	100	1	50	72-134	
1,2,3,6,7,8-HxCDF	100	102	102	2	50	84-130	
1,2,3,7,8,9-HxCDF	100	101	101	2	50	78-130	
2,3,4,6,7,8-HxCDF	100	102	102	2	50	70-156	
1,2,3,4,6,7,8-HpCDD	100	100	100	1	50	70-140	
1,2,3,4,6,7,8-HpCDF	100	99.9	100	1	50	82-122	
1,2,3,4,7,8,9-HpCDF	100	98.6	99	1	50	78-138	
OCDD	200	204	102	2	50	78-144	
OCDF	200	200	100	1	50	63-170	
13C-2,3,7,8-TCDD	200	149	74			20-175	
13C-2,3,7,8-TCDF	200	147	73			22-152	
13C-1,2,3,7,8-PeCDD	200	147	74			21-227	
13C-1,2,3,7,8-PeCDF	200	147	74			21-192	
13C-2,3,4,7,8-PeCDF	200	148	74			13-328	
13C-1,2,3,4,7,8-HxCDD	200	156	78			21-193	
13C-1,2,3,6,7,8-HxCDD	200	152	76			25-163	
13C-1,2,3,4,7,8-HxCDF	200	151	75			19-202	
13C-1,2,3,6,7,8-HxCDF	200	151	75			21-159	
13C-1,2,3,7,8,9-HxCDF	200	149	74			17-205	
13C-2,3,4,6,7,8-HxCDF	200	151	75			22-176	
13C-1,2,3,4,6,7,8-HpCDD	200	155	78			26-166	
13C-1,2,3,4,6,7,8-HpCDF	200	152	76			21-158	
13C-1,2,3,4,7,8,9-HpCDF	200	153	76			20-186	
13C-OCDD	400	314	79			13-199	

Column to be used to flag recovery and RPD values

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-64049-1

SDG No.:

Lab File ID: 01SE2010D5_3.d

Lab Sample ID: MB 320-407683/1-A

Matrix: Water

Date Extracted: 08/28/2020 14:44

Instrument ID: 10D5

Date Analyzed: 09/01/2020 21:39

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-407683/2-A	01SE2010D5_4.d	09/01/2020 22:24
	LCSD 320-407683/3-A	01SE2010D5_5.d	09/01/2020 23:09
11215702-GW-Tank#1	320-64049-1	01SE2010D5_12.d	09/02/2020 04:34
11215702-GW-Tank#2	320-64049-2	01SE2010D5_13.d	09/02/2020 05:19

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab File ID: 21se20dfs1_5.d Lab Sample ID: MB 320-412959/1-A

Matrix: Sediment Date Extracted: 09/17/2020 05:13

Instrument ID: DFS 1 Date Analyzed: 09/21/2020 14:13

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Soil-Tank#1	320-64049-3	18se20dfs1_63.d	09/20/2020 12:00
11215702-Soil-Tank#2	320-64049-4	18se20dfs1_64.d	09/20/2020 12:49
	LCS 320-412959/2-A	18se20dfs1_72.d	09/20/2020 18:18
	LCSD 320-412959/3-A	18se20dfs1_73.d	09/20/2020 19:07
11215702-Soil-Tank#1 RADL	320-64049-3 RADL	23SE20A11D2_014.d	09/23/2020 20:20
11215702-Soil-Tank#2 RADL	320-64049-4 RADL	23SE20A11D2_015.d	09/23/2020 20:58
11215702-Soil-Tank#1 DL	320-64049-3 DL	23se20dfs1_11.d	09/24/2020 04:52
11215702-Soil-Tank#2 DL	320-64049-4 DL	23se20dfs1_12.d	09/24/2020 05:41

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID: 11215702-GW-Tank#1	Lab Sample ID: 320-64049-1
Matrix: Water	Lab File ID: 01SE2010D5_12.d
Analysis Method: 1613B	Date Collected: 08/26/2020 13:00
Extract. Method: 1613B	Date Extracted: 08/28/2020 14:44
Sample wt/vol: 1034.9(mL)	Date Analyzed: 09/02/2020 04:34
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 408767	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.7	0.80
51207-31-9	2,3,7,8-TCDF	ND		9.7	0.49
40321-76-4	1,2,3,7,8-PeCDD	ND		48	1.2
57117-41-6	1,2,3,7,8-PeCDF	ND		48	0.75
57117-31-4	2,3,4,7,8-PeCDF	ND		48	1.1
39227-28-6	1,2,3,4,7,8-HxCDD	2.4	J q	48	1.0
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.74
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.76
70648-26-9	1,2,3,4,7,8-HxCDF	ND	*	48	0.92
57117-44-9	1,2,3,6,7,8-HxCDF	ND		48	0.66
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.53
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.50
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		48	0.55
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		48	0.56
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.91
3268-87-9	OCDD	ND		97	0.79
39001-02-0	OCDF	ND		97	0.74
41903-57-5	Total TCDD	1.2	J q B	9.7	0.80
30402-14-3	Total TCDF	ND		9.7	0.49
36088-22-9	Total PeCDD	ND		48	1.2
30402-15-4	Total PeCDF	ND		48	1.4
34465-46-8	Total HxCDD	2.4	J q	48	0.83
55684-94-1	Total HxCDF	ND		48	0.92
37871-00-4	Total HpCDD	ND		48	0.55
38998-75-3	Total HpCDF	ND		48	0.91

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID: 11215702-GW-Tank#1	Lab Sample ID: 320-64049-1
Matrix: Water	Lab File ID: 01SE2010D5_12.d
Analysis Method: 1613B	Date Collected: 08/26/2020 13:00
Extract. Method: 1613B	Date Extracted: 08/28/2020 14:44
Sample wt/vol: 1034.9(mL)	Date Analyzed: 09/02/2020 04:34
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 408767	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		25-164
89059-46-1	13C-2,3,7,8-TCDF	87		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	68		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	71		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	55		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	67		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	68		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	81		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	93		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	93		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	126		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	115		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	94		26-138
114423-97-1	13C-OCDD	127		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d
Lims ID: 320-64049-A-1-A
Client ID: 11215702-GW-Tank#1
Sample Type: Client
Inject. Date: 02-Sep-2020 04:34:11 ALS Bottle#: 15 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-64049-A-1-A 320-64049-A-1-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 09:05:29 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 09:05:29

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.050	15218508	0.78	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.521	18164464	0.77	1.3726	87.0	87.0	0.1433	0.1433	86.96	
2,3,7,8-TCDF	17.551						0.0255	0.0255		
A Non-2,3,7,8-sub-TCDF	17.234						0.0255	0.0255		
S Total TCDF							0.0255	0.0255		
D 13C-2,3,7,8-TCDD	18.247	12657790	0.78	1.0192	81.6	81.6	0.1580	0.1580	81.61	
2,3,7,8-TCDD	18.277						0.0414	0.0414		
$ 37Cl4-2,3,7,8-TCDD	18.262	6218539		1.0176	40.2	40.2	0.0383	0.0383	100	
A Non-2,3,7,8-sub-TCDD	17.695	8665	0.77	1.0745	0.0798	0.0637	0.0414	0.0637		RQM
S Total TCDD					0.0798	0.0637	0.0414	0.0414		RQ
D 13C-1,2,3,7,8-PeCDF	22.683	12294830	1.60	1.1429	70.7	70.7	0.1487	0.1487	70.69	
1,2,3,7,8-PeCDF	22.710						0.0387	0.0387		
D 13C-2,3,4,7,8-PeCDF	24.060	11610386	1.56	1.3997	54.5	54.5	0.1214	0.1214	54.51	
2,3,4,7,8-PeCDF	24.101						0.0547	0.0547		
A F1 PeCDFs	20.091						0.0703	0.0703		
A Non-2,3,7,8-sub-PeCDF	23.332						0.0457	0.0457		
S Total PeCDF							0.0703	0.0703		
D 13C-1,2,3,7,8-PeCDD	24.796	8525784	1.56	0.8232	68.1	68.1	0.0947	0.0947	68.06	
1,2,3,7,8-PeCDD	24.837						0.0620	0.0620		
A Non-2,3,7,8-sub-PeCDD	23.699						0.0620	0.0620		RQU
S Total PeCDD							0.0620	0.0620		
D 13C-1,2,3,4,7,8-HxCDF	30.809	7663405	0.50	1.1388	67.6	67.6	0.4216	0.4216	67.64	
1,2,3,4,7,8-HxCDF	30.835						0.0475	0.0475		
D 13C-1,2,3,6,7,8-HxCDF	30.968	8691923	0.50	1.0803	80.9	80.9	0.4444	0.4444	80.88	
1,2,3,6,7,8-HxCDF	30.995						0.0339	0.0339		
D 13C-2,3,4,6,7,8-HxCDF	31.727	8817594	0.51	0.9494	93.4	93.4	0.5057	0.5057	93.36	
2,3,4,6,7,8-HxCDF	31.753						0.0256	0.0256		
D 13C-1,2,3,7,8,9-HxCDF	32.486	8060056	0.49	0.8670	93.4	93.4	0.5537	0.5537	93.45	
1,2,3,7,8,9-HxCDF	32.512						0.0273	0.0273		
A Non-2,3,7,8-sub-HxCDF	30.522						0.0321	0.0321		
S Total HxCDF							0.0475	0.0475		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.313	9947999	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.900	6241902	1.25	0.9356	67.1	67.1	0.3705	0.3705	67.06	
1,2,3,4,7,8-HxCDD	31.913	6395	1.24	0.8202	0.1368	0.1249	0.0519	0.0519		RQM
D 13C-1,2,3,6,7,8-HxCDD	32.006	7998141	1.23	1.0416	77.2	77.2	0.3328	0.3328	77.19	
1,2,3,6,7,8-HxCDD	31.913						0.0382	0.0382		RQMU
1,2,3,7,8,9-HxCDD	32.339						0.0392	0.0392		
A Non-2,3,7,8-sub-HxCDD	31.201						0.0424	0.1497		RQU
S Total HxCDD					0.1368	0.1249	0.0431	0.0431		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.873	9071583	0.42	0.7899	115.4	115.4	1.324	1.324	115	
1,2,3,4,6,7,8-HpCDF	33.885						0.0290	0.0290		
D 13C-1,2,3,4,7,8,9-HpCDF	34.942	8525850	0.42	0.9093	94.3	94.3	1.151	1.151	94.26	
1,2,3,4,7,8,9-HpCDF	34.966						0.0473	0.0473		
A Non-2,3,7,8-sub-HpCDF	34.425						0.0364	0.0364		
S Total HpCDF							0.0473	0.0473		
D 13C-1,2,3,4,6,7,8-HpCDD	34.662	9539338	1.04	0.7637	125.6	125.6	0.8312	0.8312	126	
1,2,3,4,6,7,8-HpCDD	34.674						0.0287	0.0287		
A Non-2,3,7,8-sub-HpCDD	35.325						0.0287	0.0287		
S Total HpCDD							0.0287	0.0287		
D 13C-OCDD	36.994	16072254	0.91	0.6377	253.3	253.3	0.4022	0.4022	127	
OCDF	37.113						0.0381	0.0381		
OCDD	37.006						0.0408	0.0408		RQU

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d
Lims ID: 320-64049-A-1-A
Client ID: 11215702-GW-Tank#1
Sample Type: Client
Inject. Date: 02-Sep-2020 04:34:11 ALS Bottle#: 15 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-64049-A-1-A 320-64049-A-1-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 09:05:29 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 09:05:29

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.050	18.065	-1		6654465	1628100	1405	3512	1159		
333.9339	18.050	18.065	-1		8564043	2087376	989	2472	2111	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.521	17.536	-1	0.971	7912980	1964091	1837	4592	1069		
317.9389	17.521	17.536	-1	0.971	10251484	2547782	1087	2717	2344	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.551						176	440			
305.8987	17.551						243	607			
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						176	440			
305.8987	17.234						243	607			
13C-2,3,7,8-TCDD											
331.9368	18.247	18.262	-1	1.011	5532237	1300746	1405	3512	926		
333.9339	18.247	18.262	-1	1.011	7125553	1670072	989	2472	1689	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.277						314	785			
321.8936	18.277						215	537			
37Cl4-2,3,7,8-TCDD											
327.8847	18.262	18.277	-1	1.012	6218539	1464426	579	1447	2529		
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	15.979	17.695	-103	0.876	5957	2201	314	785	7		M
	Empc Correction				3769	1147	314	785	4		
321.8936	15.979	17.695	-103	0.876	4896	1490	215	537	7	1.22(0.65-0.89)	M

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.683	22.696	-1	1.257	7568604	1296219	1443	3607	898		
353.8970	22.683	22.696	-1	1.257	4726226	833492	1083	2707	770	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.710						145	362			
341.8567	22.710						183	457			
13C-2,3,4,7,8-PeCDF											
351.9000	24.060	24.074	-1	1.333	7069922	1136057	1443	3607	787		
353.8970	24.074	24.074	0	1.334	4540464	710207	1083	2707	656	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	24.101						145	362			
341.8567	24.101						183	457			
A F1 PeCDFs											
339.8597	20.091						224	560			
341.8567	20.091						281	702			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.332						145	362			
341.8567	23.332						183	457			
13C-1,2,3,7,8-PeCDD											
367.8949	24.796	24.810	-1	1.374	5198454	756826	684	1710	1106		
369.8919	24.796	24.810	-1	1.374	3327330	487427	474	1185	1028	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.837						176	440			
357.8516	24.837						138	345			
A Non-2,3,7,8-sub-PeCDD											U
355.8546	22.696	23.699	-60	0.915	6023	1045	176	440	6		
	Empc Correction				2931	633	176	440	4		
357.8516	22.669	23.699	-62	0.914	1891	409	138	345	3	3.19(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.809	30.809	0	0.953	2551473	540110	2612	6530	207		
385.8610	30.809	30.809	0	0.953	5111932	1057346	2577	6442	410	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.835						109	272			
375.8178	30.835						136	340			
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.968	30.982	-1	0.958	2908329	606880	2612	6530	232		
385.8610	30.968	30.982	-1	0.958	5783594	1231153	2577	6442	478	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.995						109	272			
375.8178	30.995						136	340			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.727	31.740	-1	0.982	2994808	797375	2612	6530	305		
385.8610	31.727	31.740	-1	0.982	5822786	1502947	2577	6442	583	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.753						109	272			
375.8178	31.753						136	340			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.486	32.499	-1	1.005	2646042	722127	2612	6530	276		
385.8610	32.486	32.499	-1	1.005	5414014	1451442	2577	6442	563	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.512						109	272			
375.8178	32.512						136	340			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						109	272			
375.8178	30.522						136	340			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.313	32.326	-1		5572720	1520777	1972	4930	771		
403.8529	32.313	32.326	-1		4375279	1181143	1775	4437	665	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.900	31.913	-1	0.987	3464955	1024247	1972	4930	519		
403.8529	31.900	31.913	-1	0.987	2776947	807717	1775	4437	455	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8157	31.913	31.927	-1	1.000	4151	995	165	412	6		
	Empc Correction				3540	1151	165	412	7		
391.8127	31.913	31.927	-1	1.000	2855	929	147	367	6	1.45(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	32.006	32.006	0	0.991	4409883	1194811	1972	4930	606		
403.8529	32.006	32.006	0	0.991	3588258	986375	1775	4437	556	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMU
389.8157	32.020						165	412			
391.8127	32.020						147	367			
1,2,3,7,8,9-HxCDD											
389.8157	32.339						165	412			
391.8127	32.339						147	367			
A Non-2,3,7,8-sub-HxCDD											U
389.8157	31.201	31.201	0	0.975	6719	1908	165	412			
	Empc Correction				5405	2178	165	412	0		
391.8127	31.201	31.201	0	0.975	4359	1757	147	367		1.54(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.873	33.873	0	1.048	2665561	920975	3415	8537	270		
419.8220	33.873	33.873	0	1.048	6406022	2032844	7891	19727	258	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.885						355	887			
409.7789	33.885						143	357			
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.942	34.954	-1	1.081	2542577	739324	3415	8537	216		
419.8220	34.942	34.954	-1	1.081	5983273	1749868	7891	19727	222	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.966						355	887			
409.7789	34.966						143	357			
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						355	887			
409.7789	34.425						143	357			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.662	34.662	0	1.073	4856606	1448763	2657	6642	545		
437.8140	34.650	34.662	-1	1.072	4682732	1401751	4204	10510	333	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.674						199	497			
425.7737	34.674						146	365			
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.325						199	497			
425.7737	35.325						146	365			
13C-OCDD											
469.7779	36.994	37.006	-1	1.145	7638618	1957445	1466	3665	1335		
471.7750	36.994	37.006	-1	1.145	8433636	2109191	1306	3265	1615	0.91(0.76-1.02)	
OCDF											
441.7428	37.113						198	495			
443.7399	37.113						204	510			
OCDD											RQU
457.7377	37.018						199	497			
459.7348	37.018						183	457			

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Lims ID:	320-64049-A-1-A		
Client ID:	11215702-GW-Tank#1		
Inject. Date:	02-Sep-2020 04:34:11	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDD, RT: 17.695

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.074	D 13C-2,3,7,8-TCDD	100.000	12657790	2970818

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.074		100.000	12657790	2970818

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.979	5957	2201	4896	1490	0.0798	1.22	RQM
15.979	3769	1147	4896	1490	0.0637		Empc Correction
Signal Totals:							
	3769	1147	4896	1490			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10853	3691				1.22	RQM
	8665	2637					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0798 = (10853 * 100.000) / (12657790 * 1.074)
Empc Amount: 0.0637 = (8665 * 100.000) / (12657790 * 1.074)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Lims ID:	320-64049-A-1-A		
Client ID:	11215702-GW-Tank#1		
Inject. Date:	02-Sep-2020 04:34:11	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDD, RT: 23.699

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.018	D 13C-1,2,3,7,8-PeCDD	100.000	8525784	1244253

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.018		100.000	8525784	1244253

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
22.696	6023	1045	1891	409	0.0912	3.19	RQ
22.696	2931	633	1891	409	0.0556		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Lims ID:	320-64049-A-1-A		
Client ID:	11215702-GW-Tank#1		
Inject. Date:	02-Sep-2020 04:34:11	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 31.201

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.820	D 13C-1,2,3,4,7,8-HxCDD	100.000	6241902	1831964
1,2,3,6,7,8-HxCDD	0.937	D 13C-1,2,3,6,7,8-HxCDD	100.000	7998141	2181186
1,2,3,7,8,9-HxCDD	0.990				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.916		100.000	7120021	2006575

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.512	6719	1908	4359	1757	0.1699	1.54	RQ
32.512	5405	2178	4359	1757	0.1497		Empc Correction

Compound is Marked ND

Report Date: 03-Sep-2020 09:05:29

Chrom Revision: 2.3 20-Aug-2020 13:57:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d				
Injection Date:	02-Sep-2020 04:34:11	Instrument ID:	10D5		
Lims ID:	320-64049-A-1-A	Lab Sample ID:	320-64049-1		
Client ID:	11215702-GW-Tank#1				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.95- 19.44)

Signal: 1

Processing Integration Results

RT = 15.979 Area = 7826

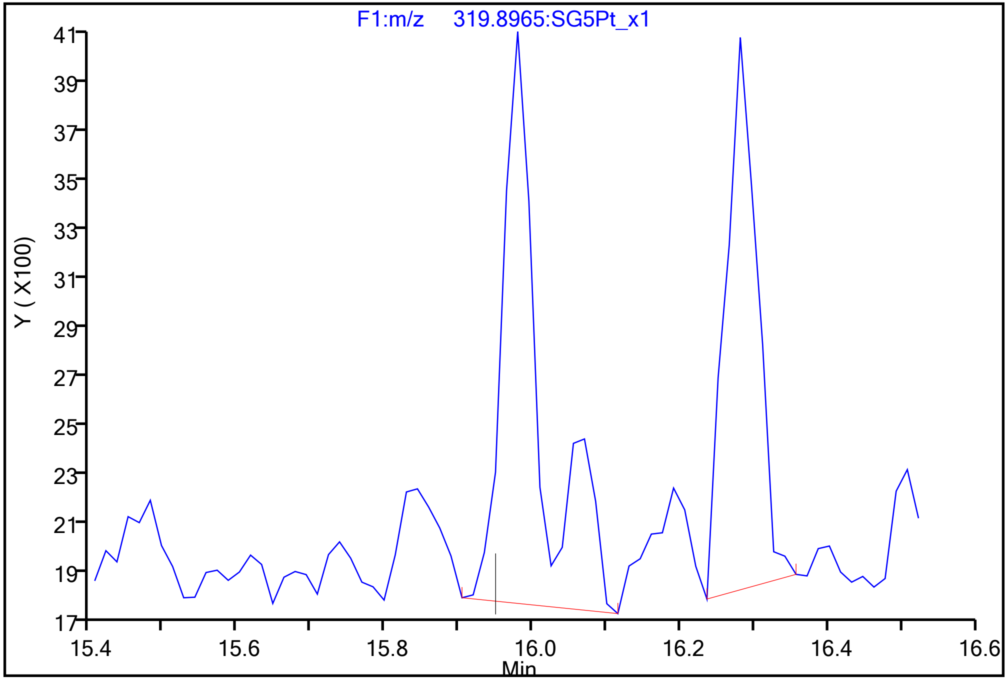

Manual Integration Results

RT = 15.979 Area = 5957 M

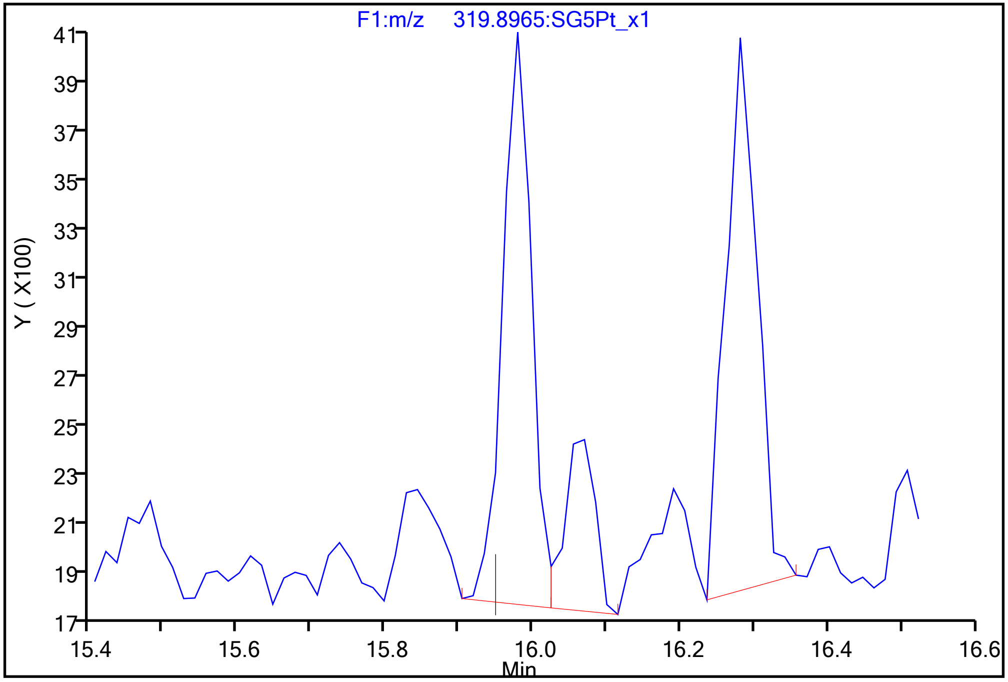

Reviewer: dadunj, 03-Sep-2020 09:03:44

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d				
Injection Date:	02-Sep-2020 04:34:11	Instrument ID:	10D5		
Lims ID:	320-64049-A-1-A	Lab Sample ID:	320-64049-1		
Client ID:	11215702-GW-Tank#1				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (15.95- 19.44)

Signal: 2

RT = 15.979 Area = 5677

Processing Integration Results

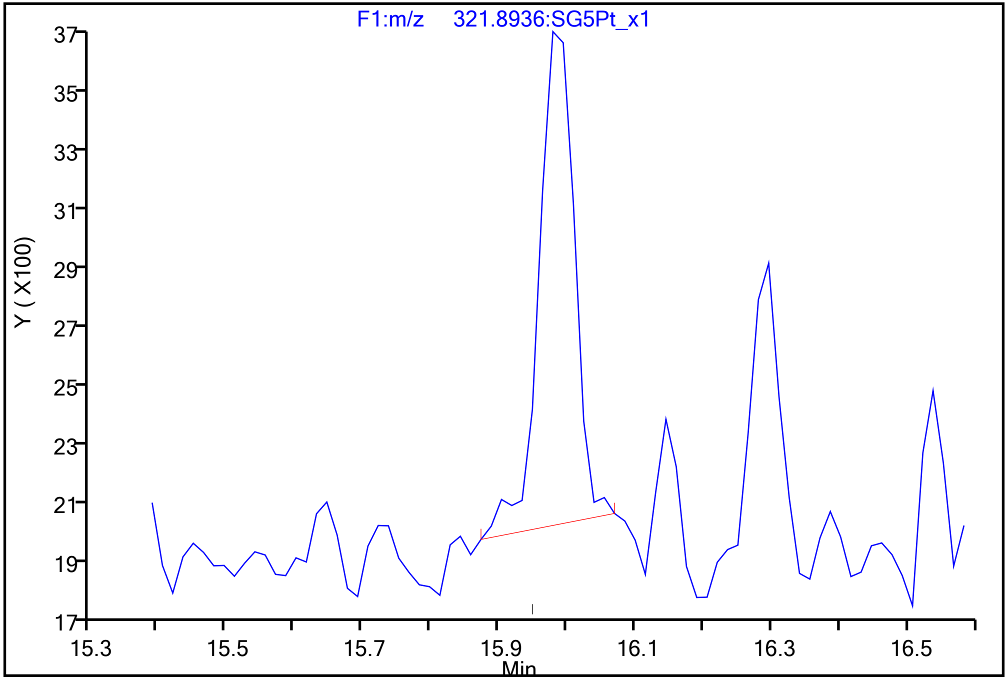

RT = 15.979 Area = 4896 M

Manual Integration Results

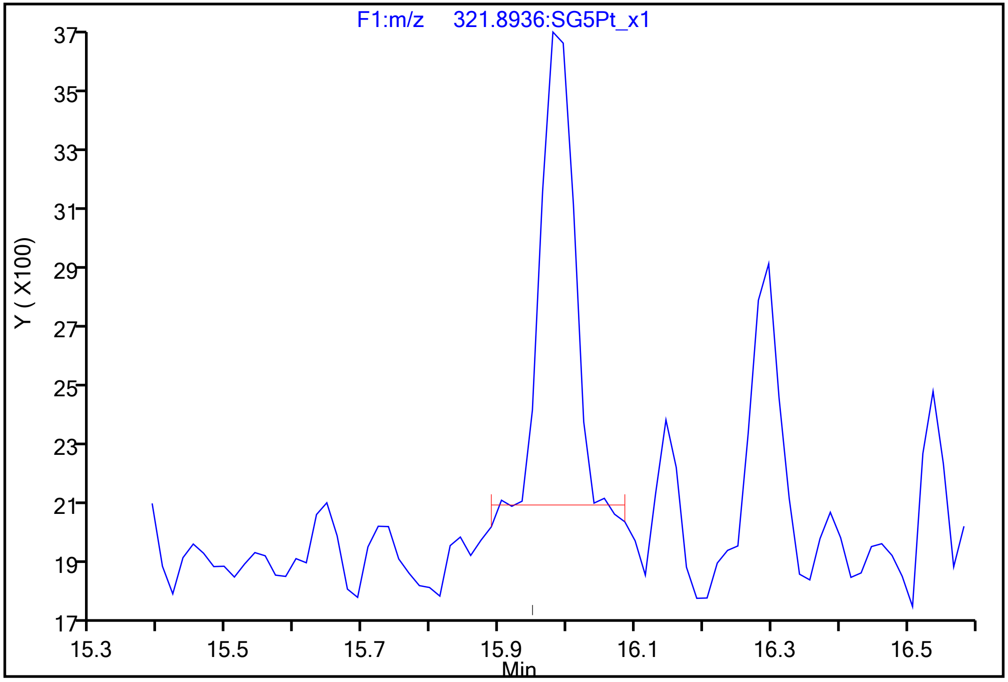

Reviewer: dadunj, 03-Sep-2020 09:03:51

Audit Action: Manually Integrated Audit Reason: Split Peak

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d

Injection Date:	02-Sep-2020 04:34:11	Instrument ID:	10D5		
Lims ID:	320-64049-A-1-A	Lab Sample ID:	320-64049-1		
Client ID:	11215702-GW-Tank#1				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	31.91
Area:	3689
Amount:	0.153131
Amount Units:	pg/ul

Processing Integration Results

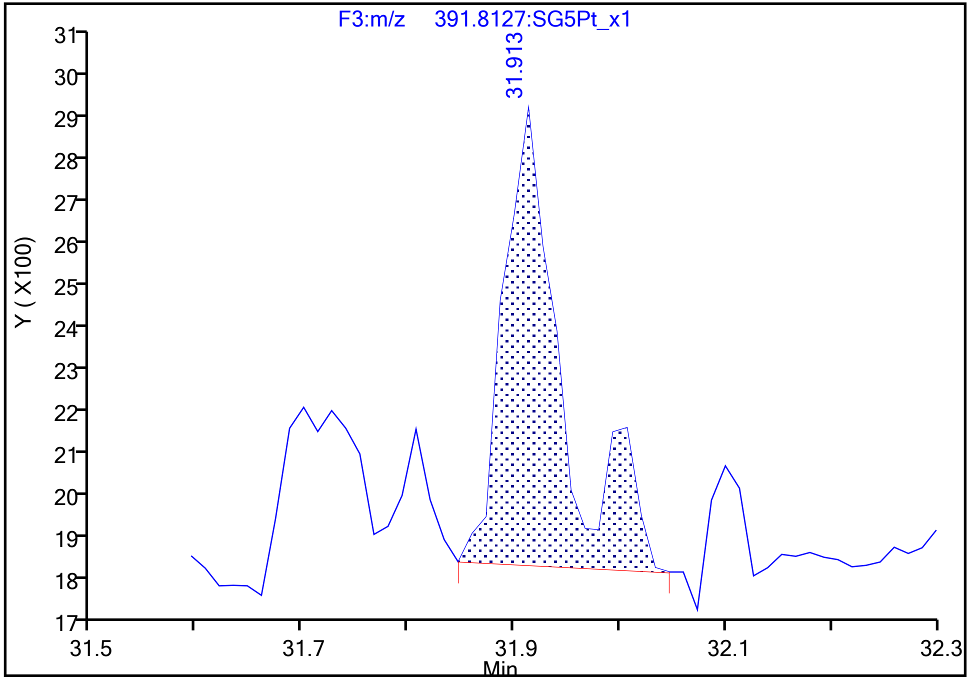

RT:	31.91
Area:	2855
Amount:	0.136841
Amount Units:	pg/ul

Manual Integration Results

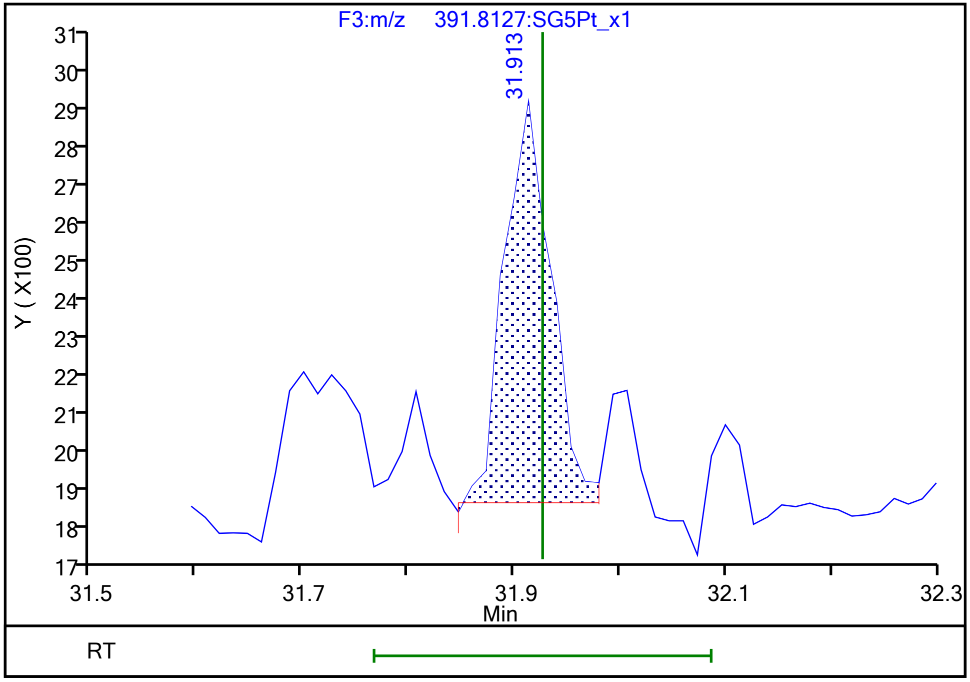

Reviewer: dadunj, 03-Sep-2020 09:04:26

Audit Action: Manually Integrated Audit Reason: Split Peak

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d
Injection Date: 02-Sep-2020 04:34:11 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-GW-Tank#1
Worklist#: 408767 Sample Line#: 12
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

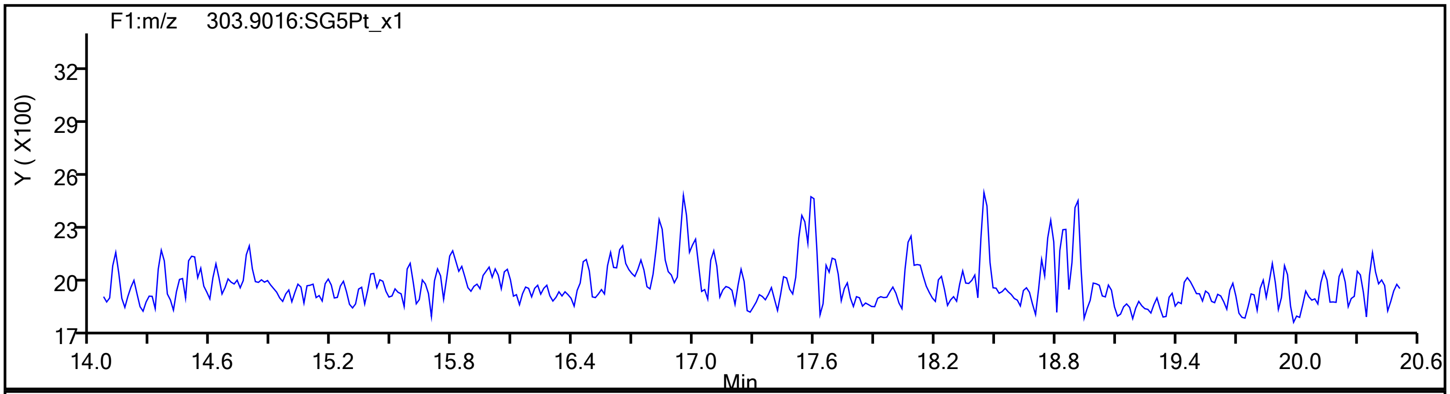

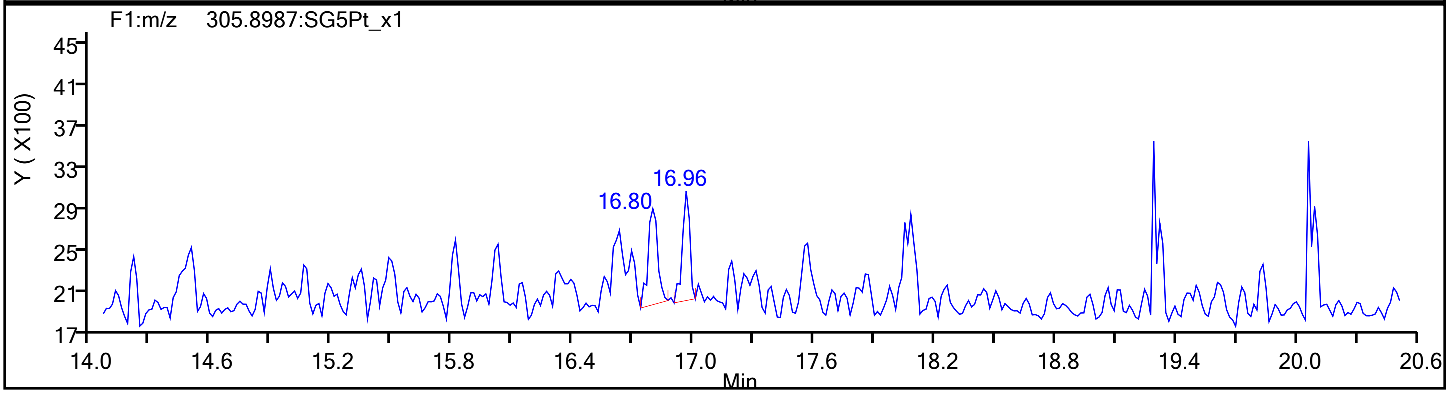

TCDF Standards

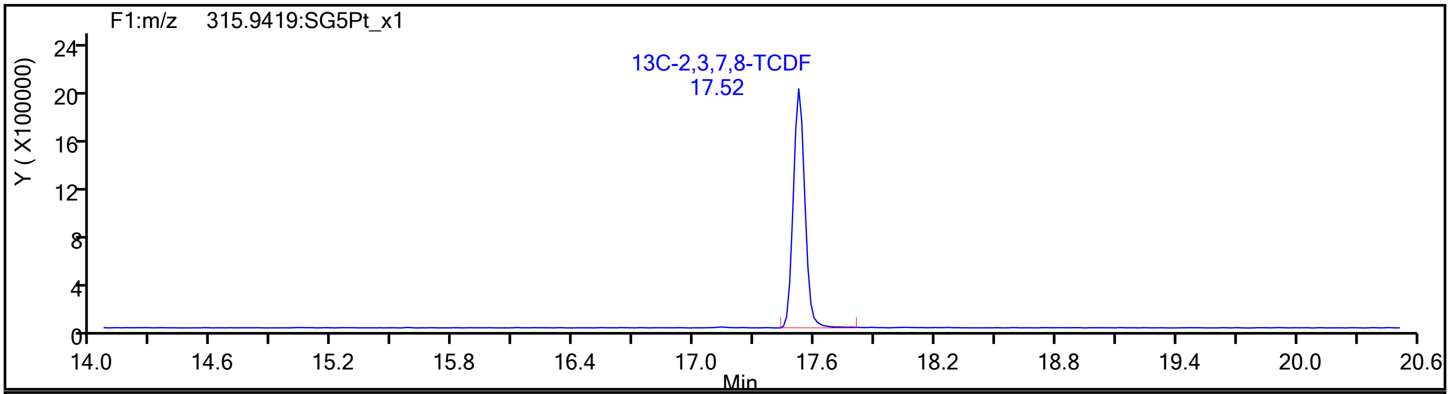

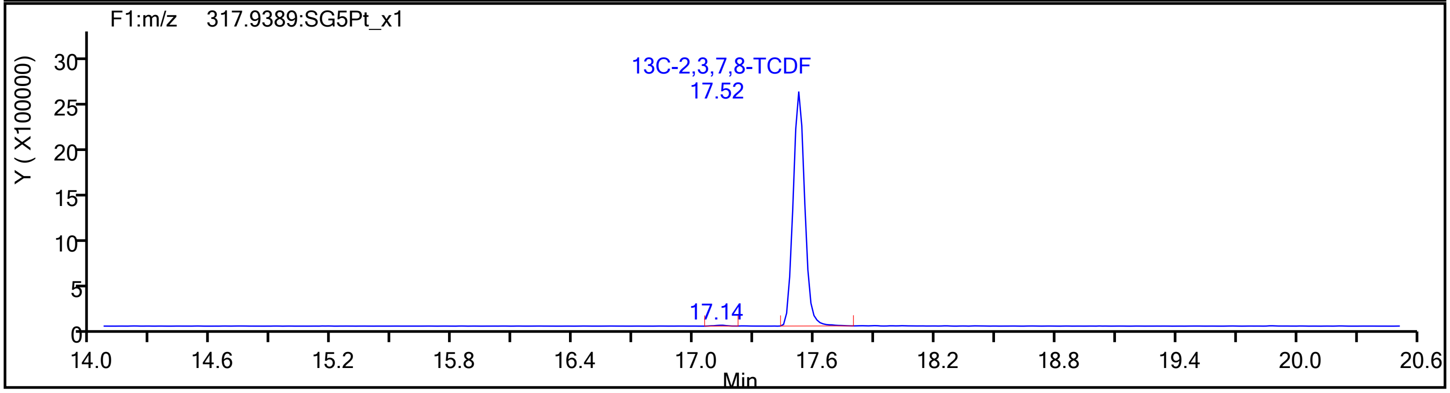

Report Date: 03-Sep-2020 09:05:29　　Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-GW-Tank#1
Worklist#: 408767
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

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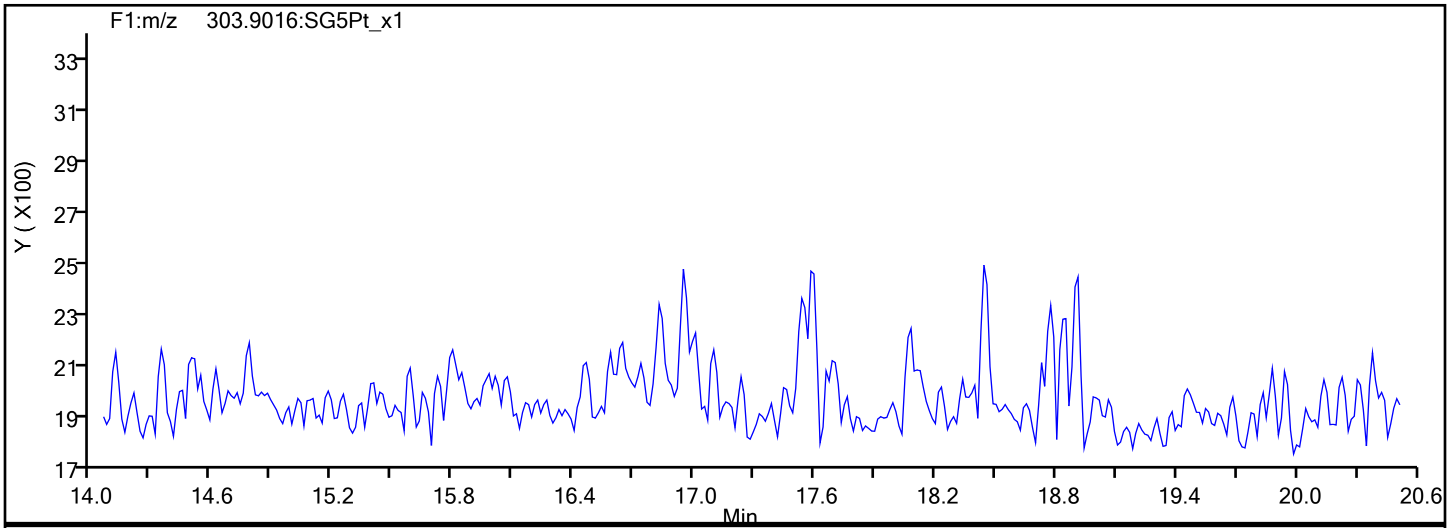

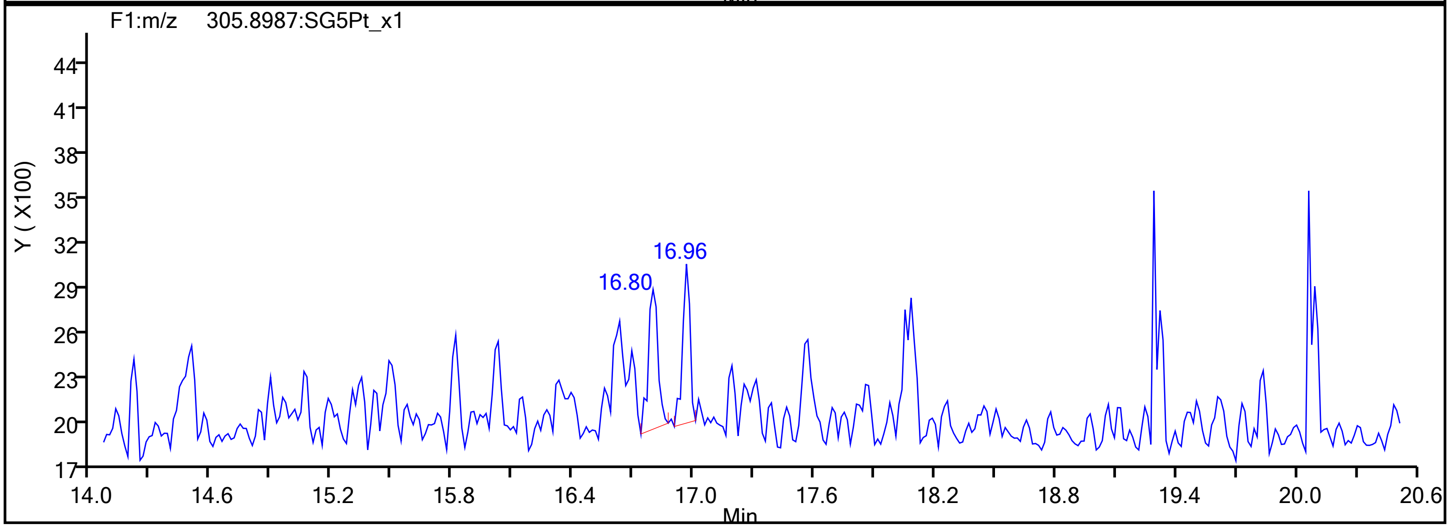

TCDF Interference Mass

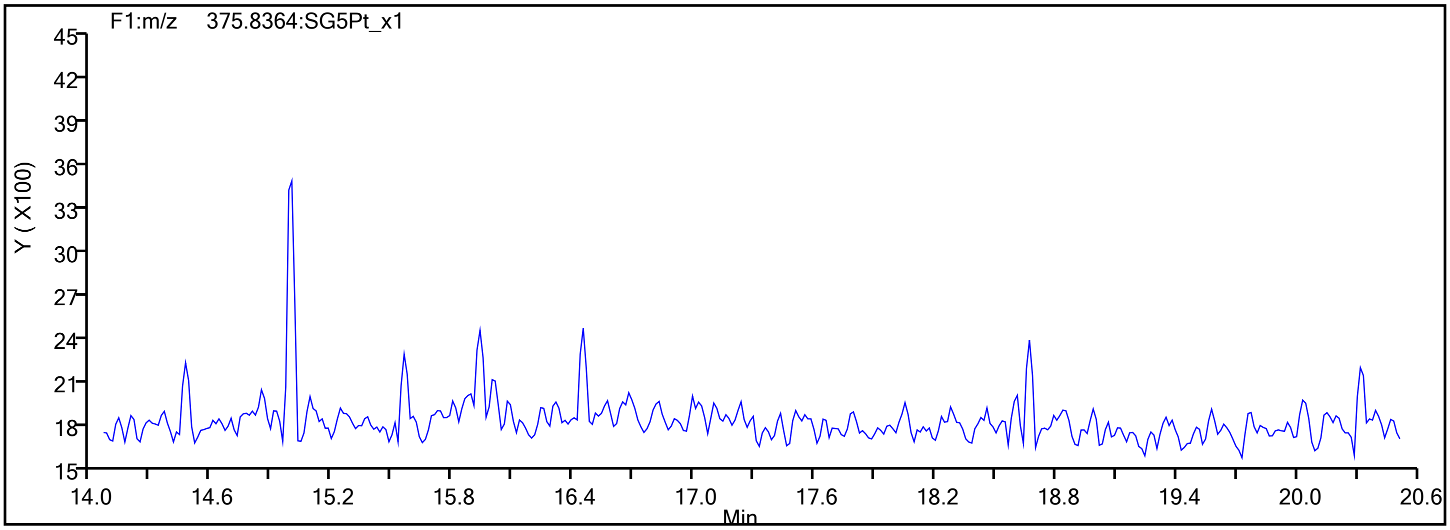

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
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TCDD

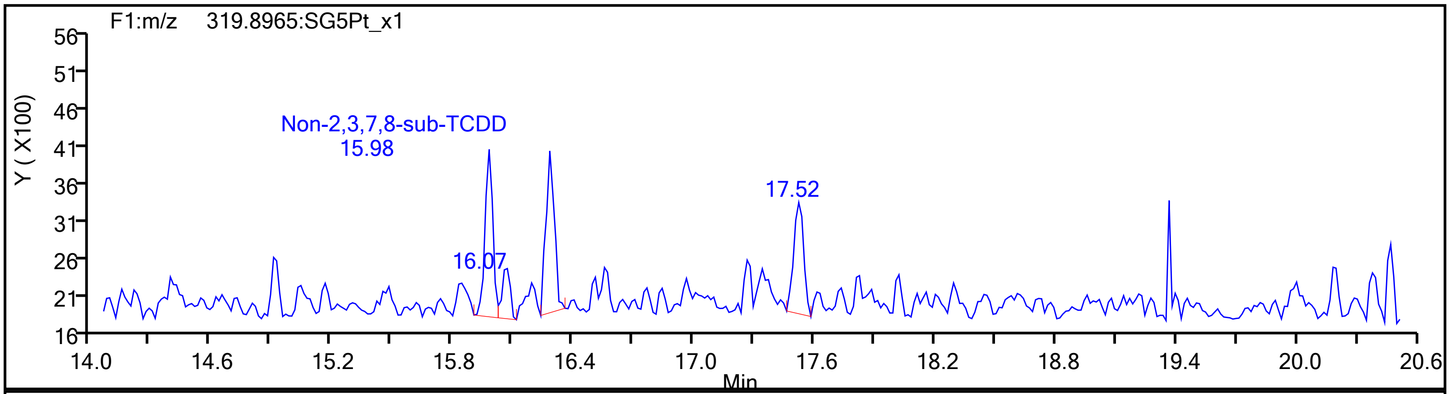

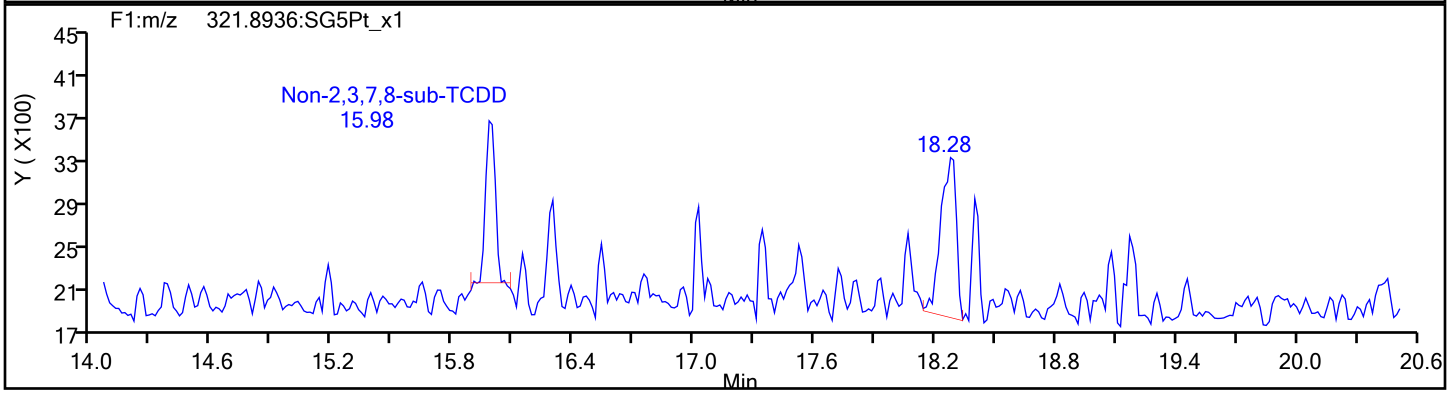

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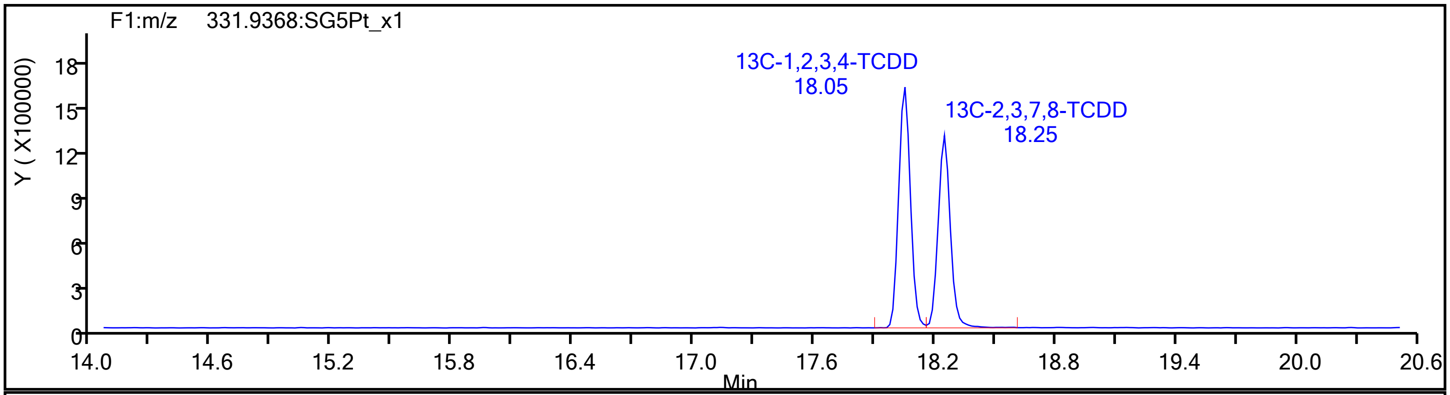

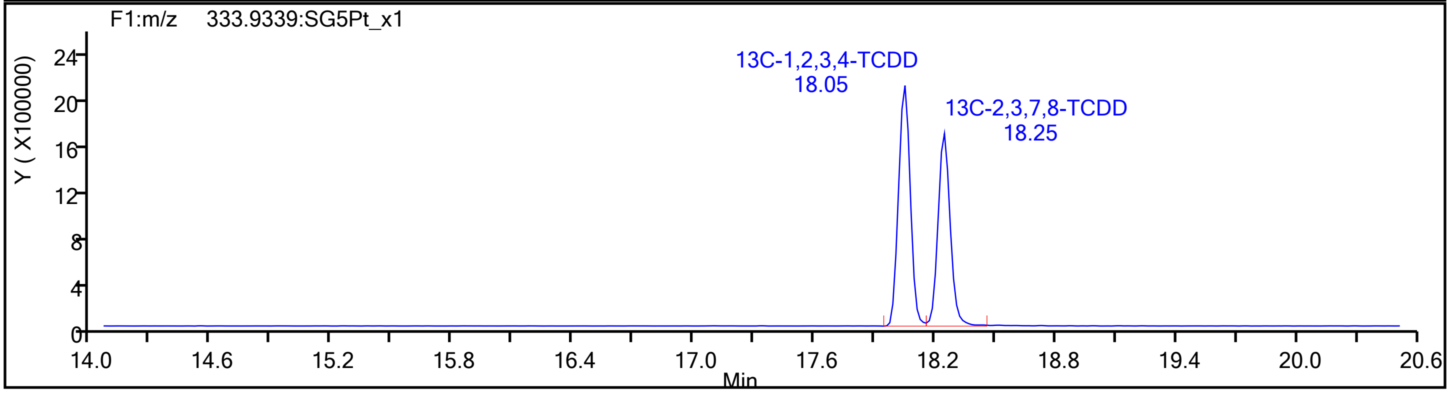

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

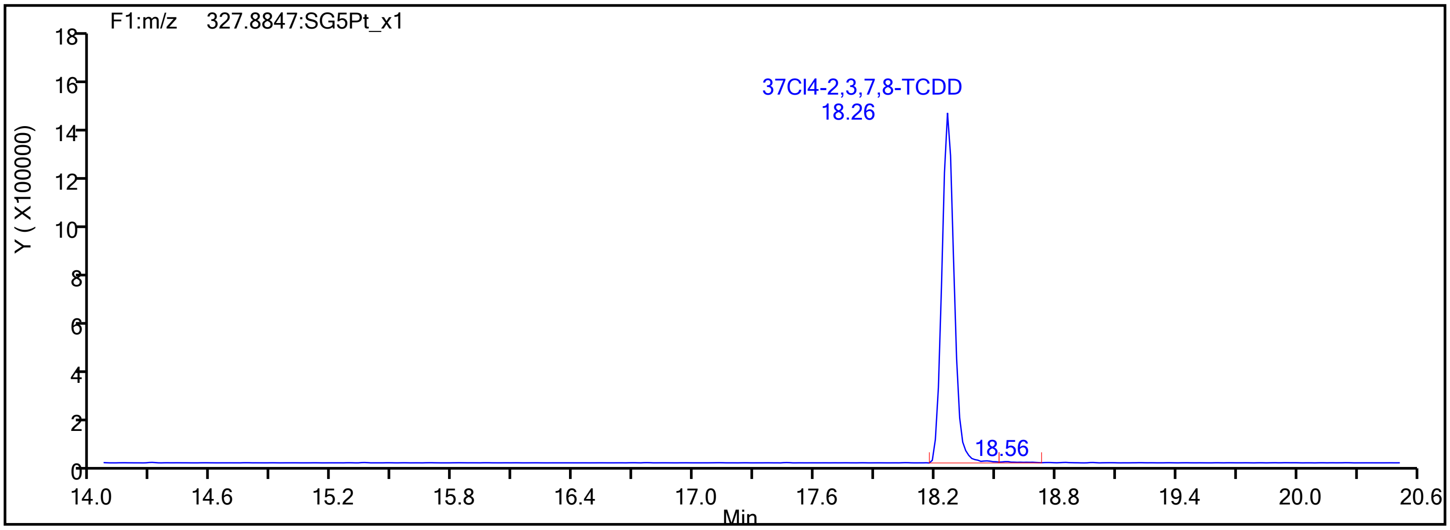

37Cl4-TCDD Standards

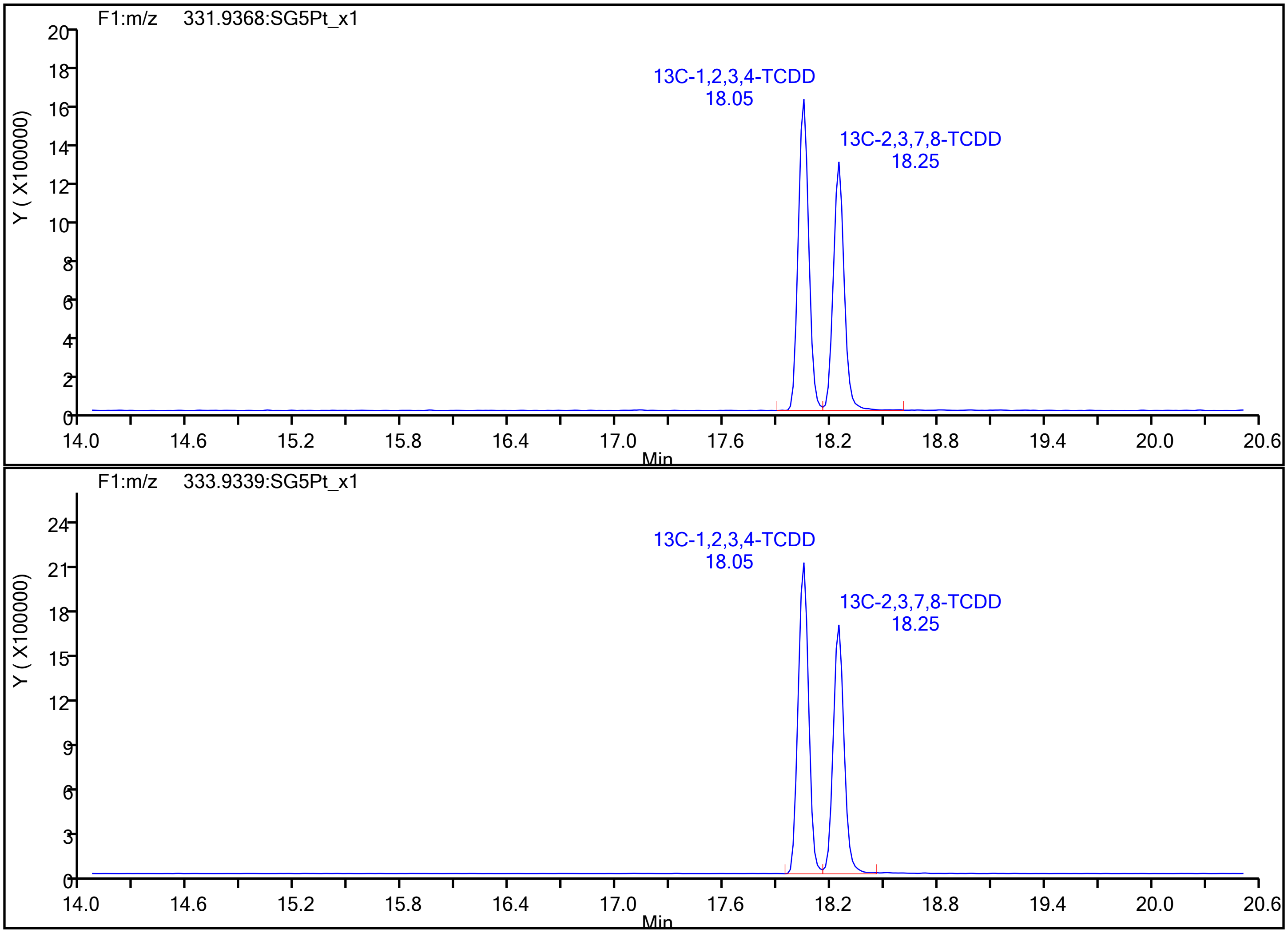

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

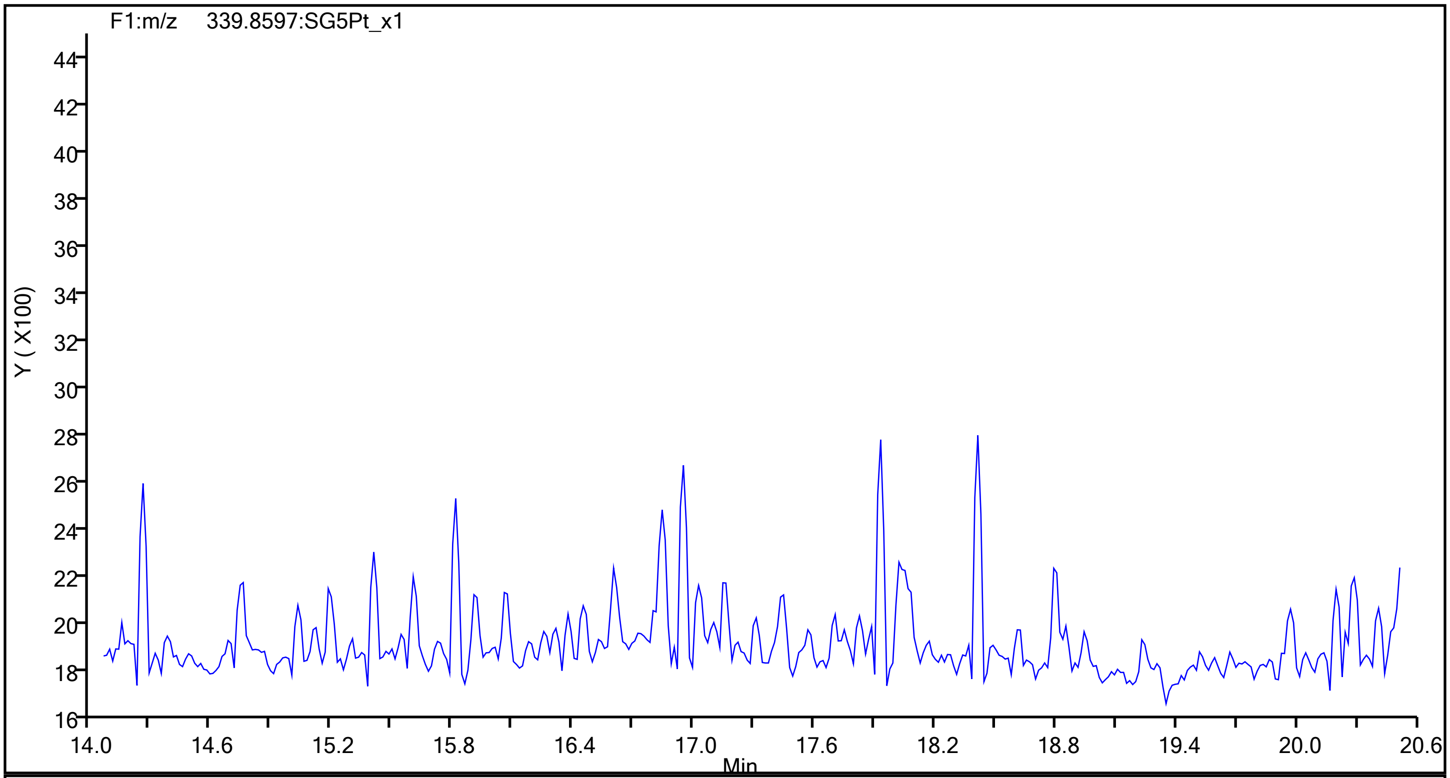

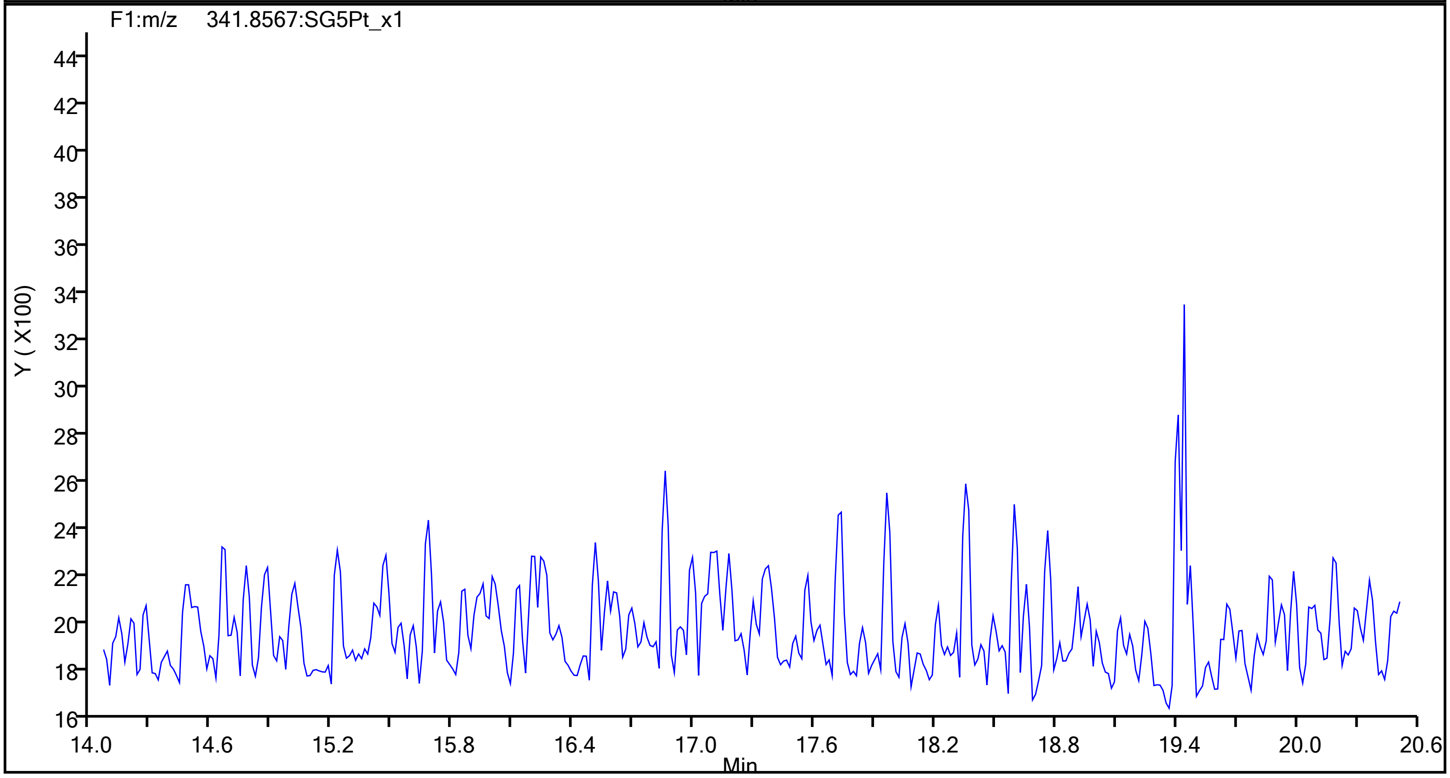

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Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-GW-Tank#1

Worklist#: 408767 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

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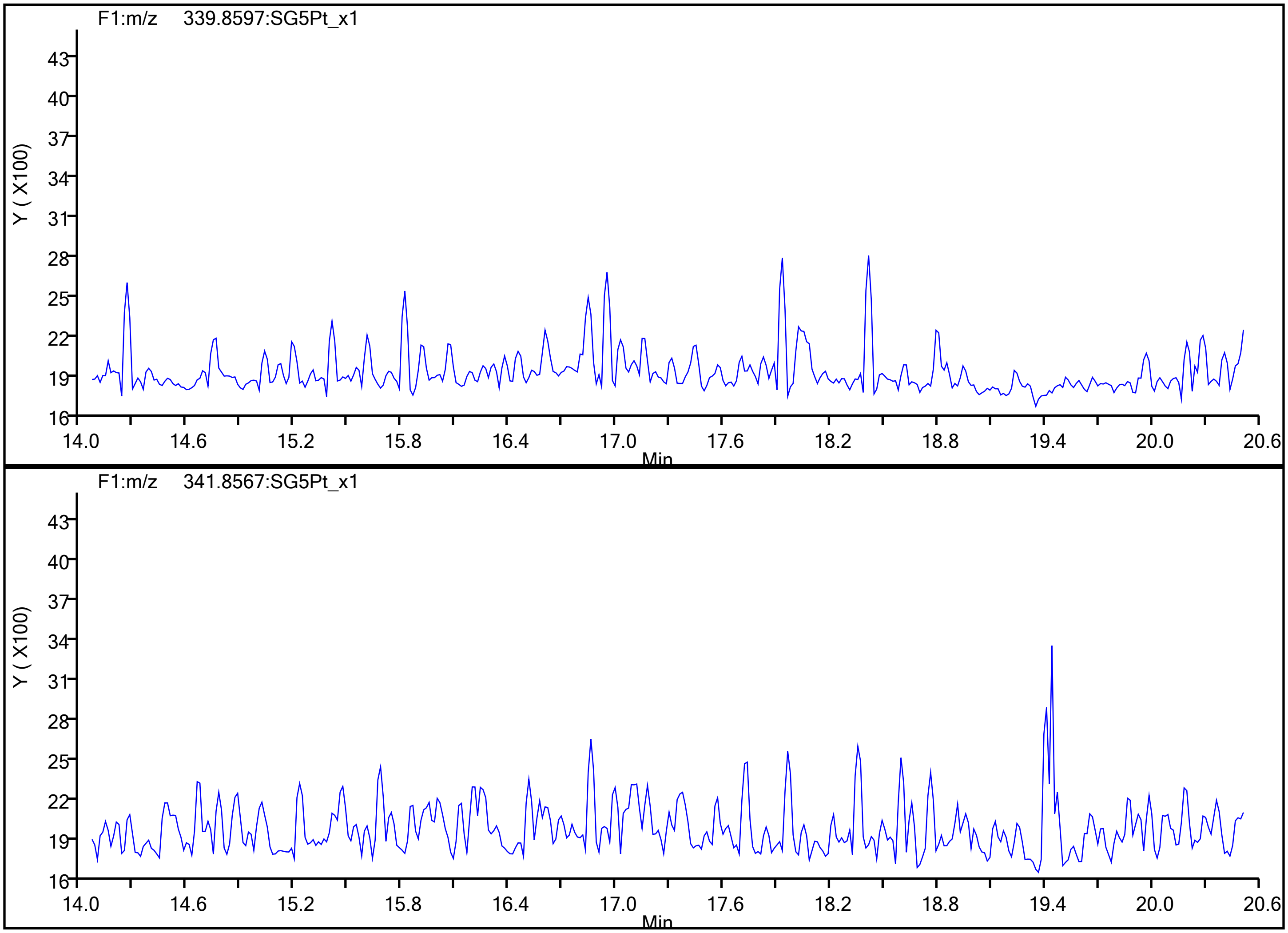

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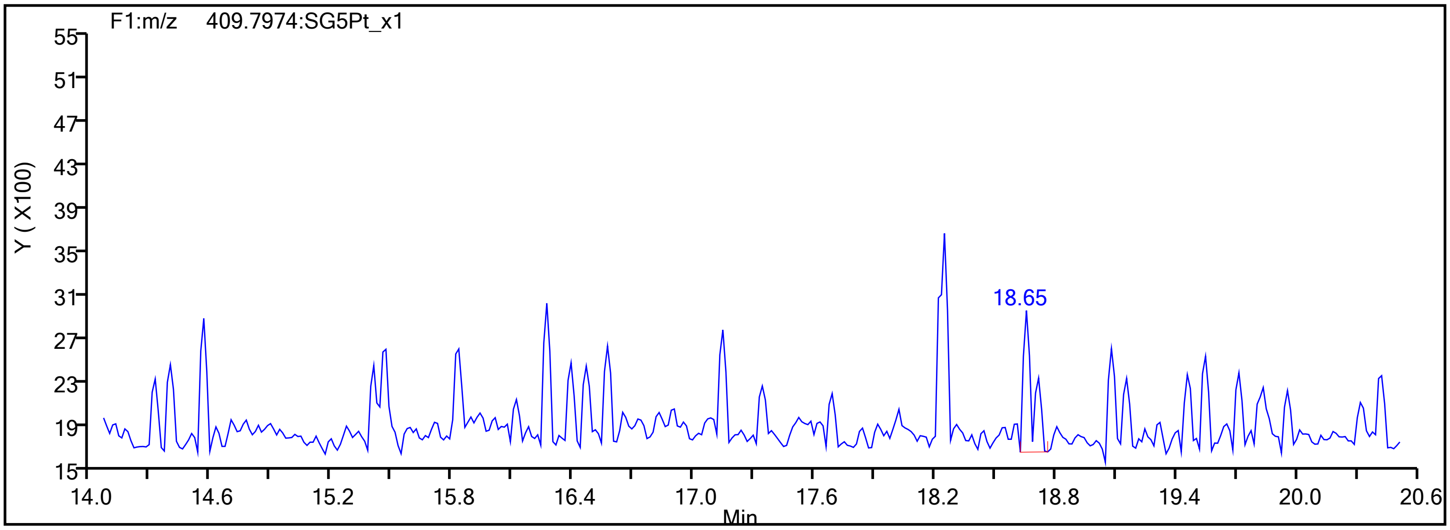

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

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Worklist#: 408767 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

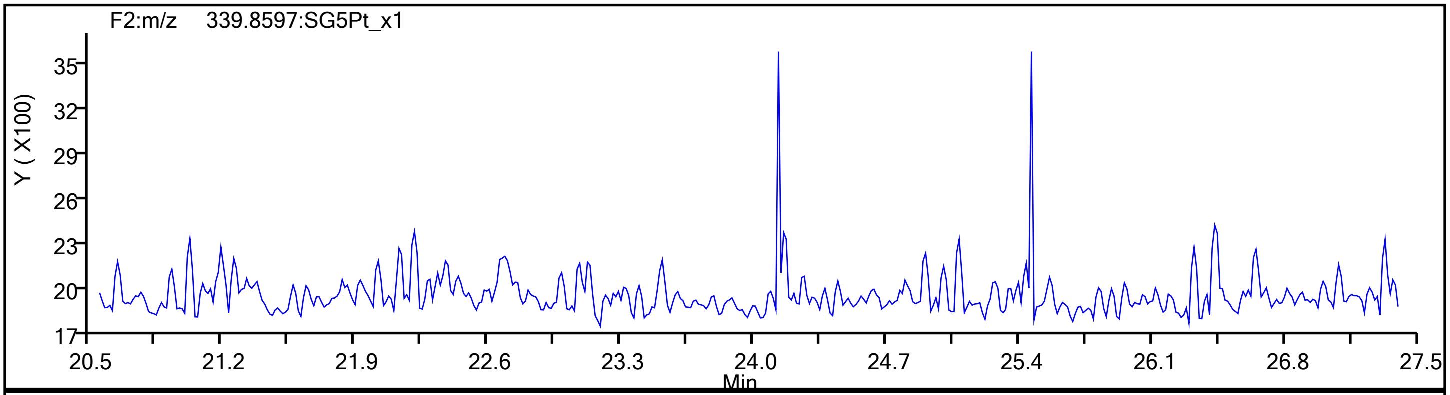

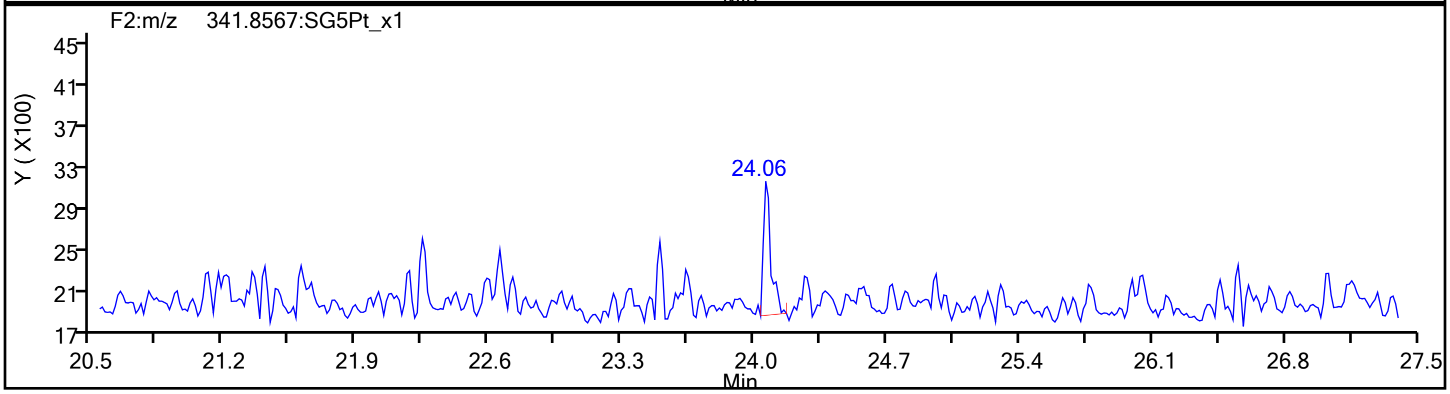

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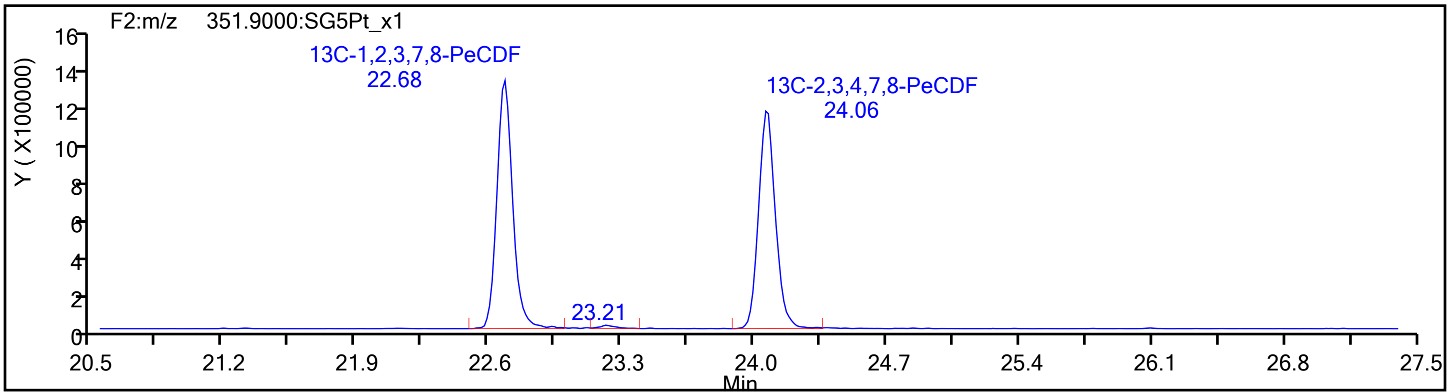

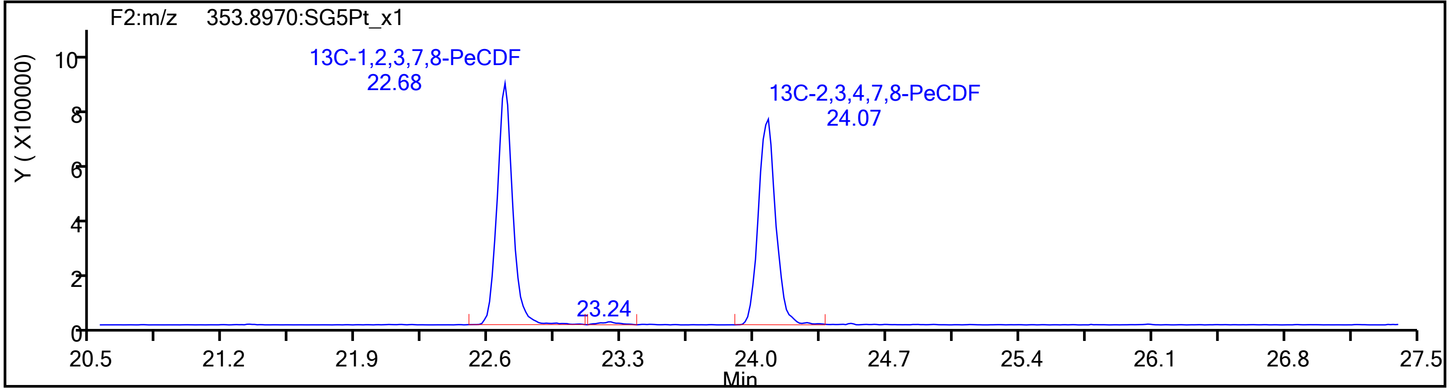

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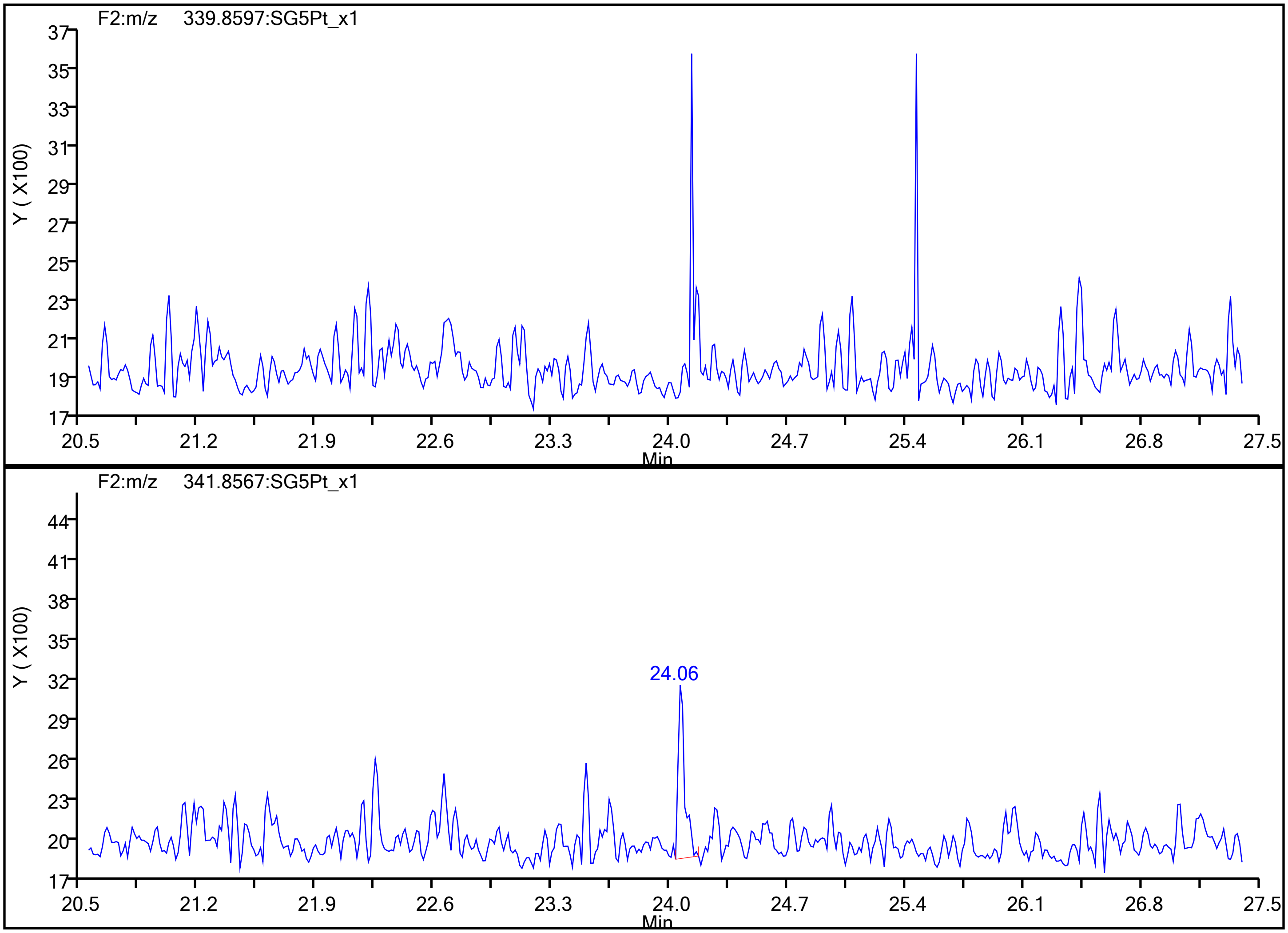

PeCDF Interference Mass

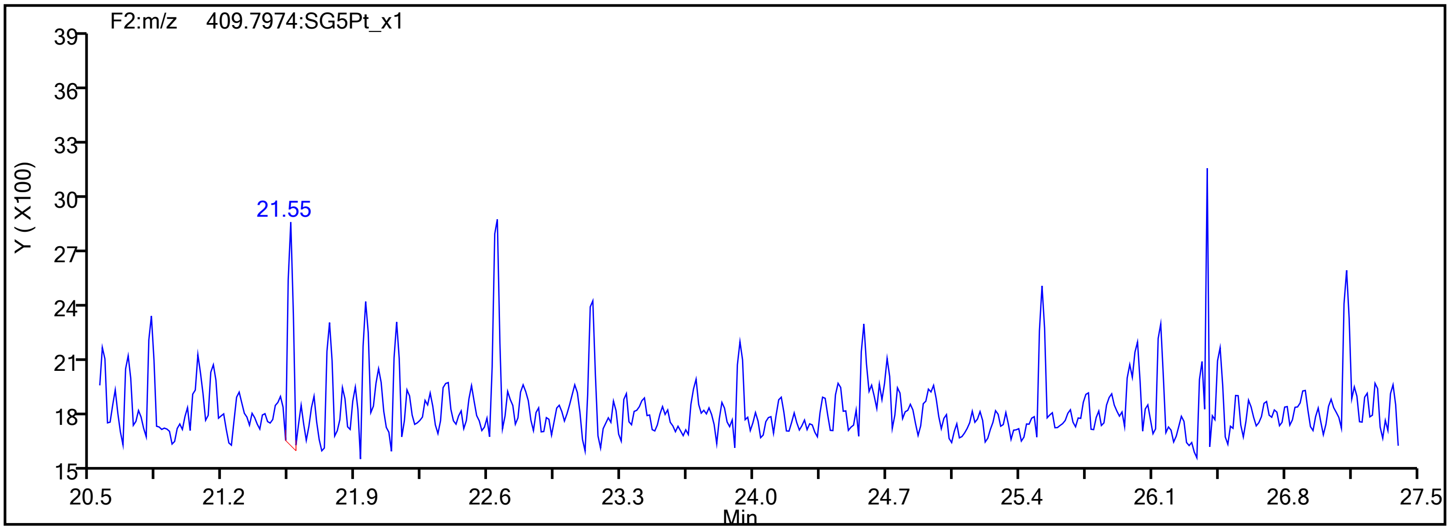

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

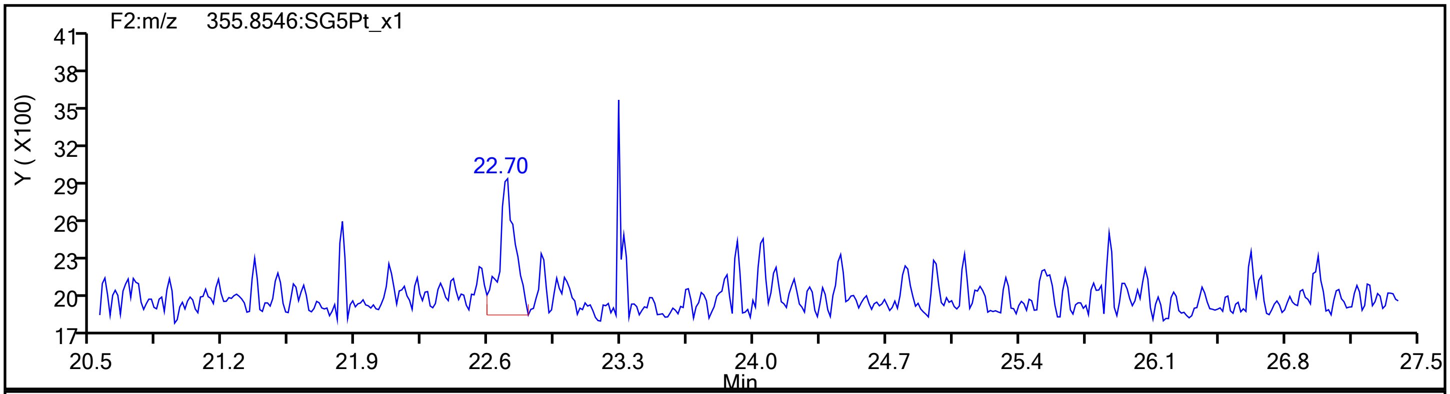

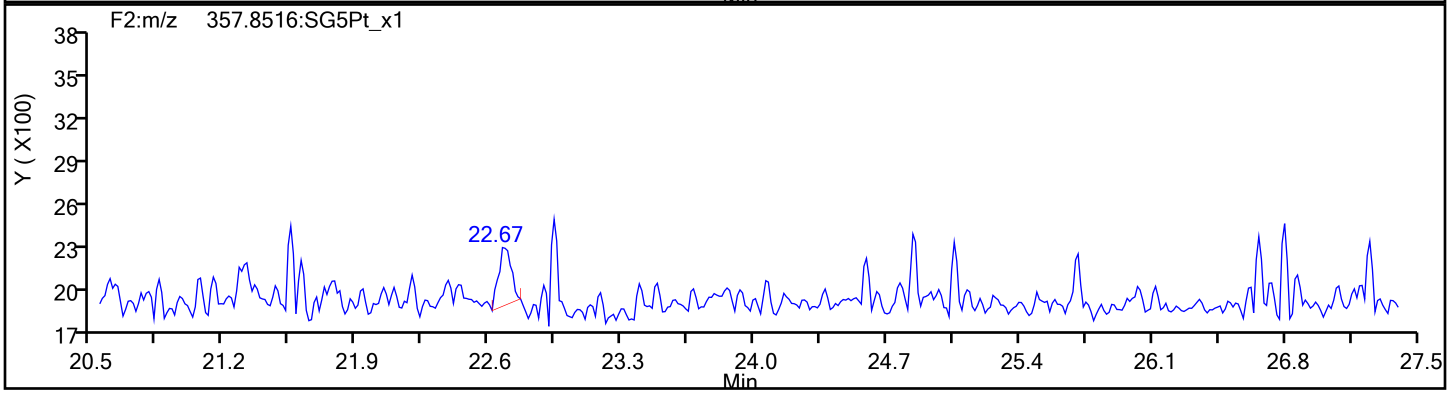

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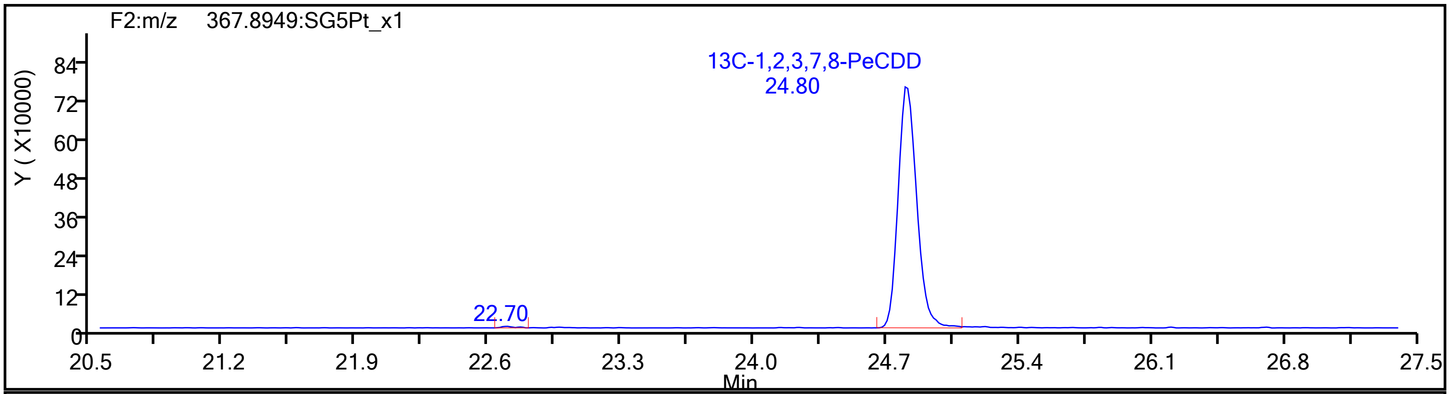

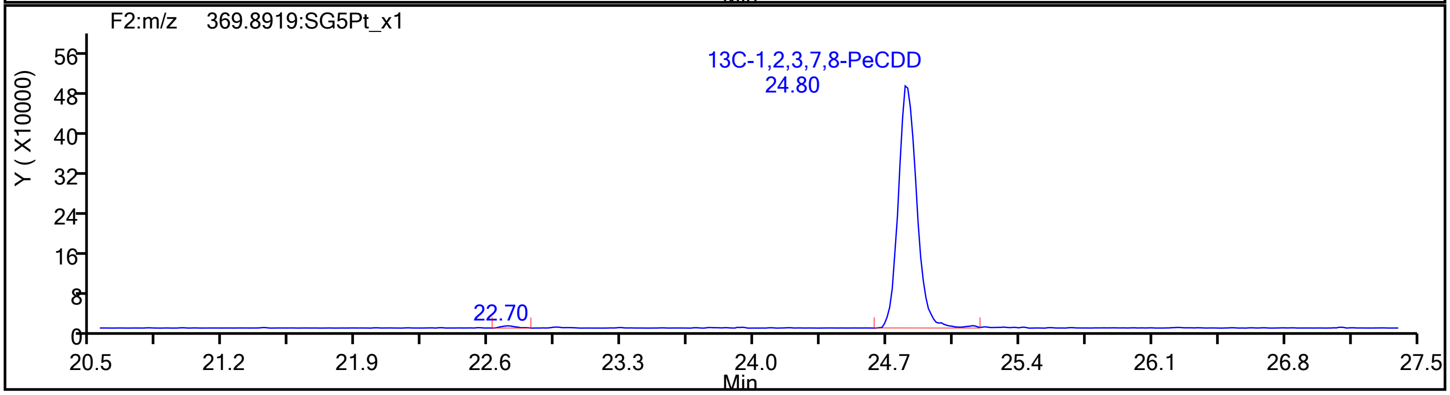

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Eurofins TestAmerica, Sacramento

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HxCDF

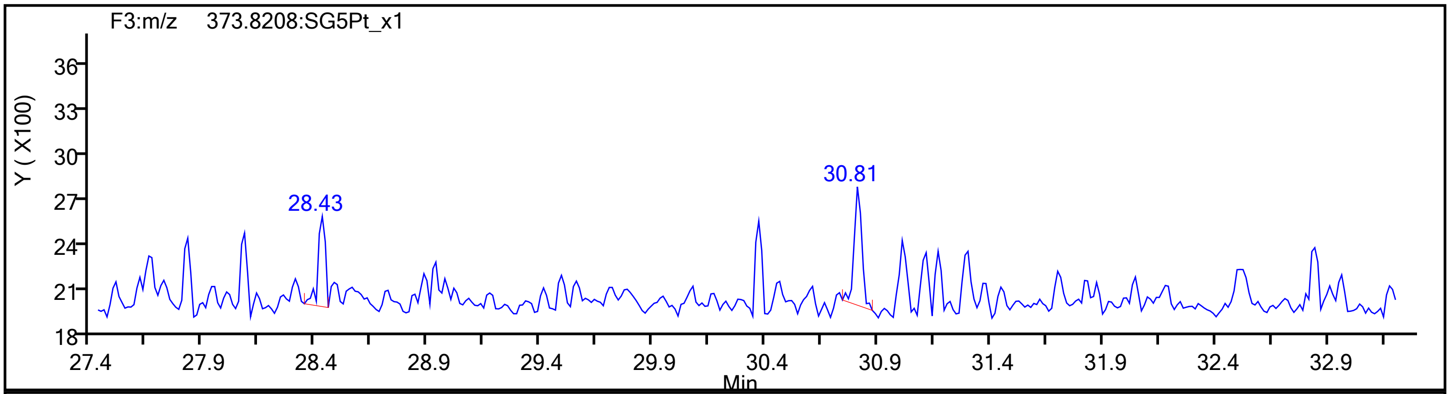

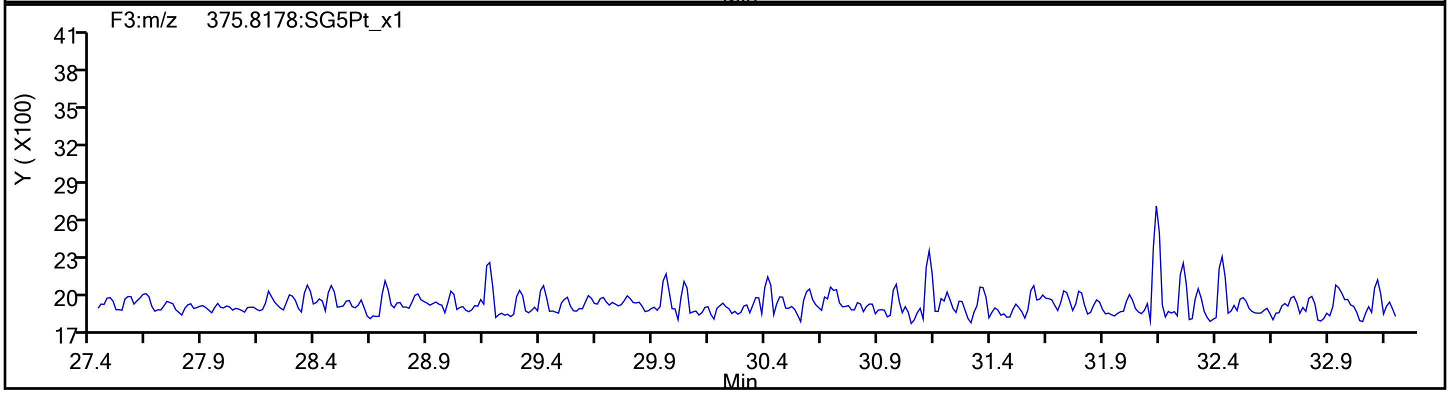

HxCDF Standards

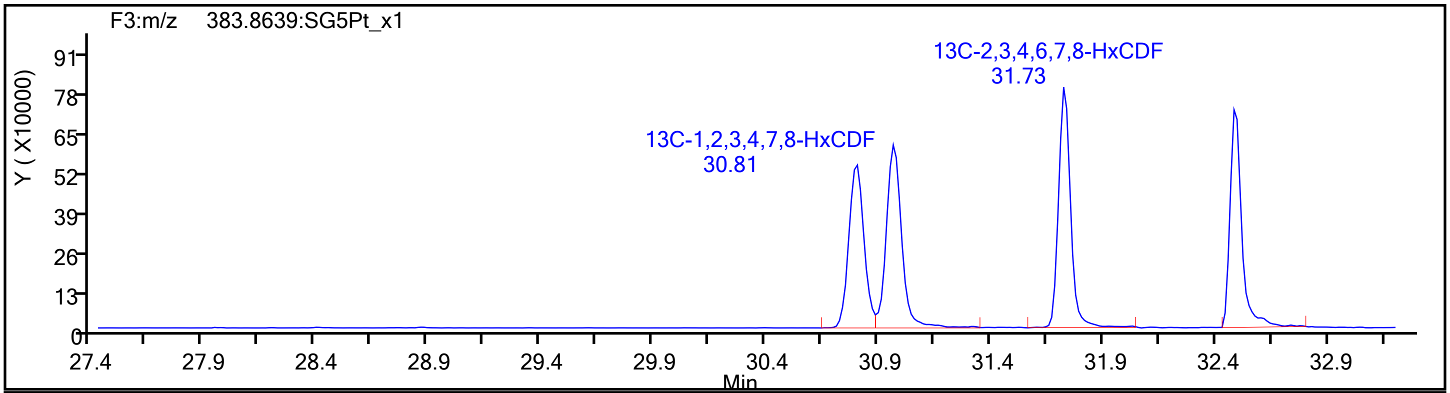

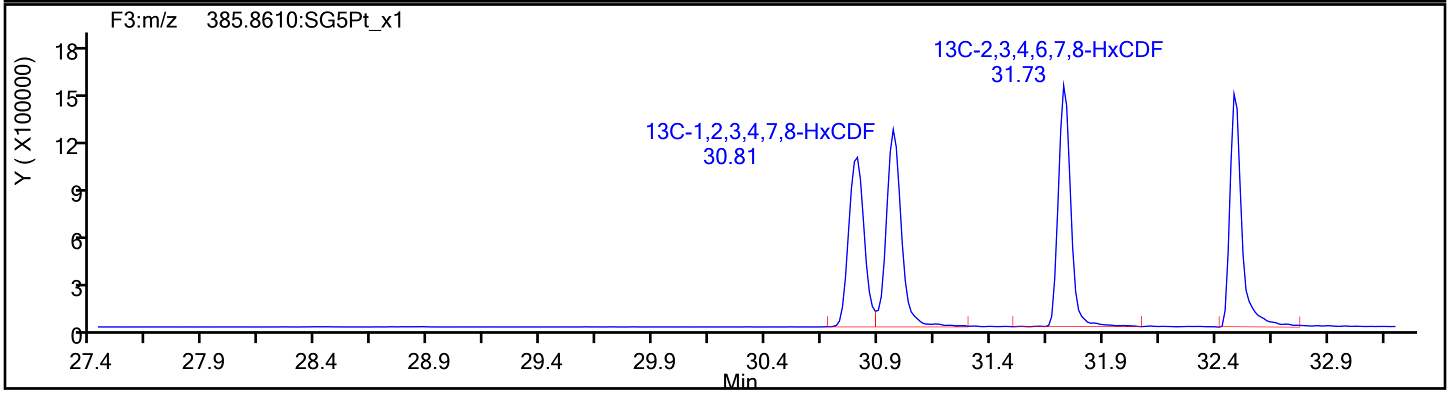

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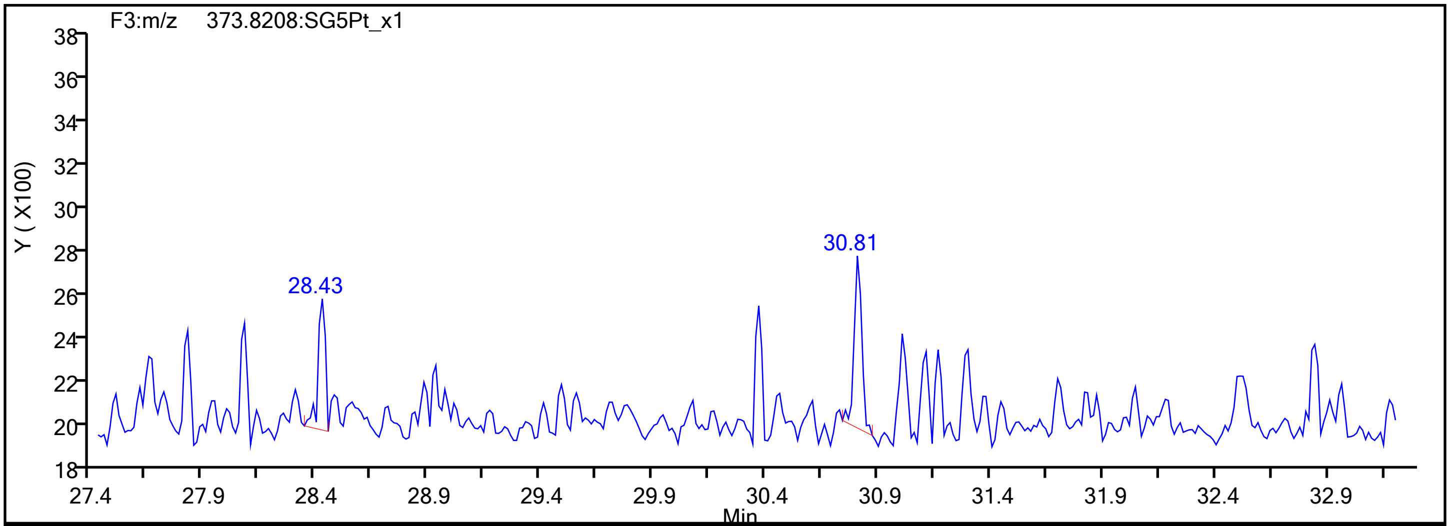

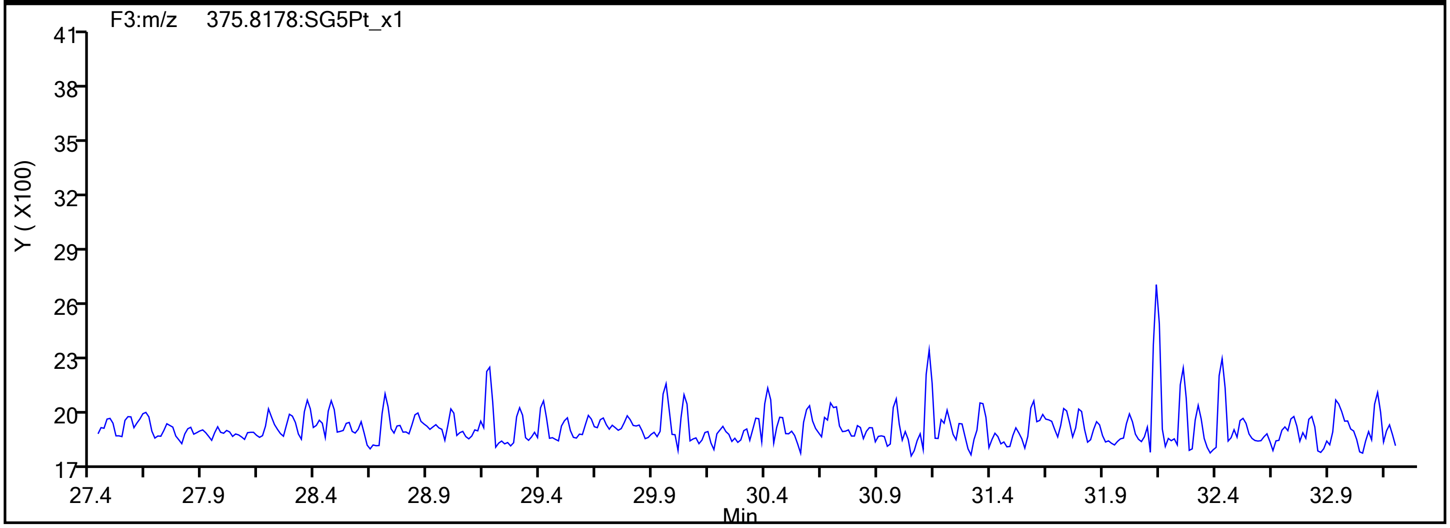

HxCDF Interference Mass

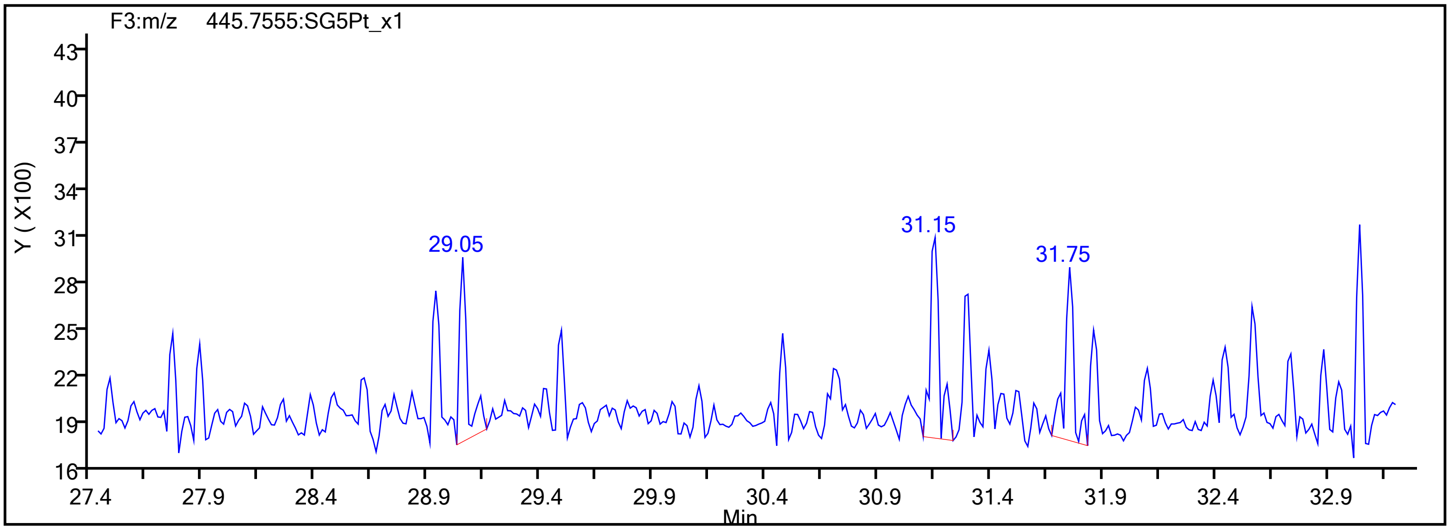

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Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-GW-Tank#1

Worklist#: 408767 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

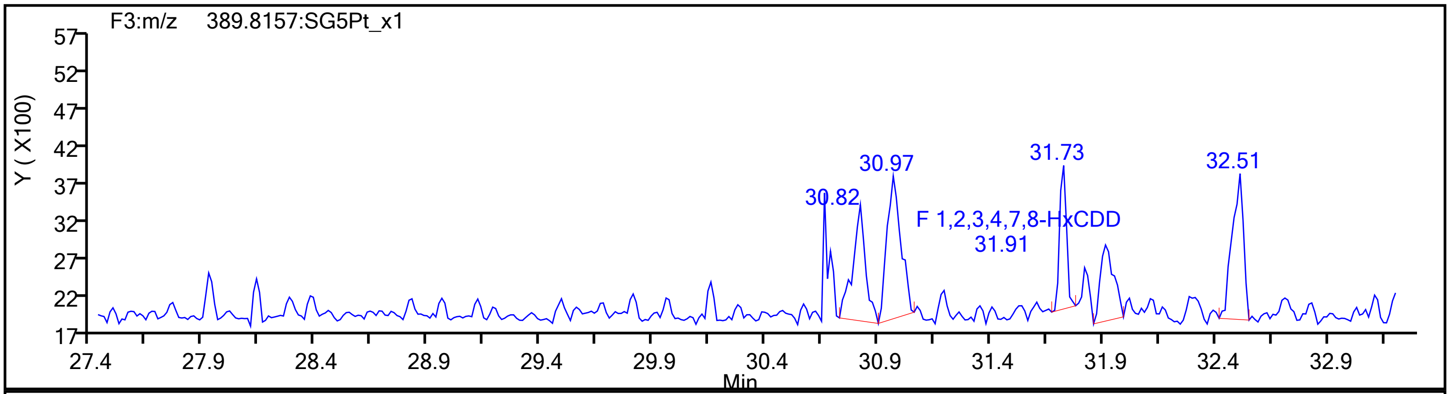

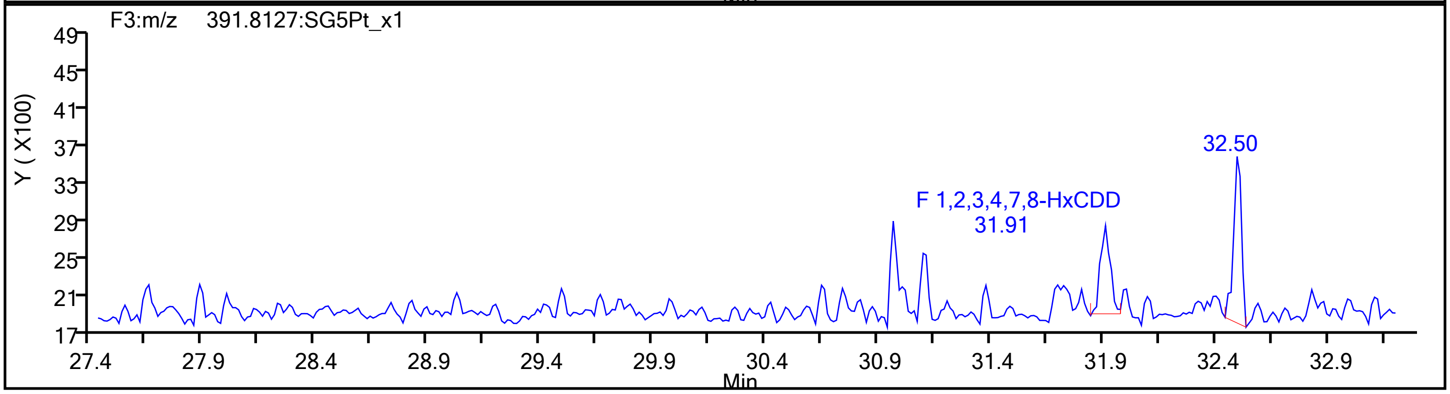

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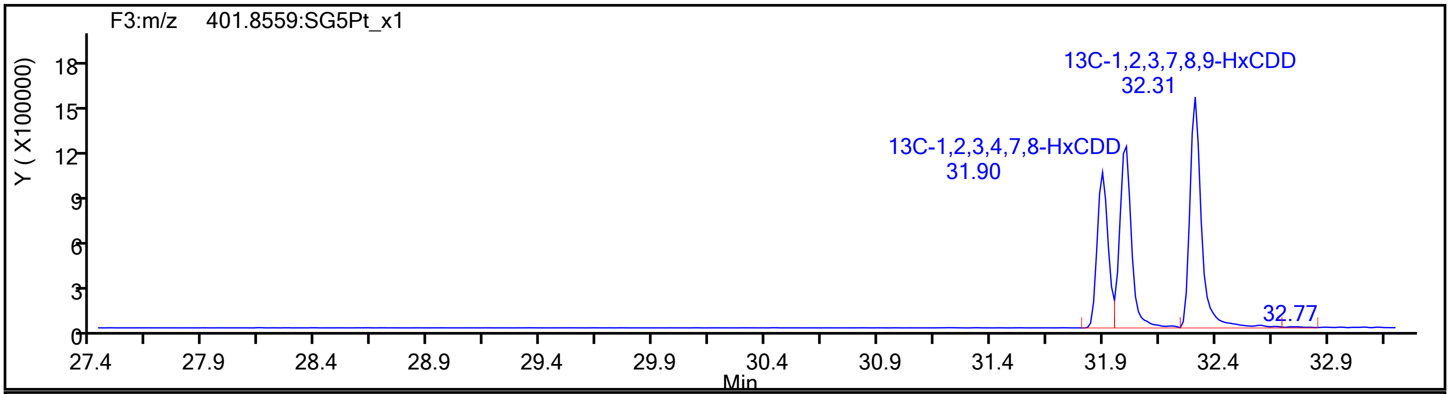

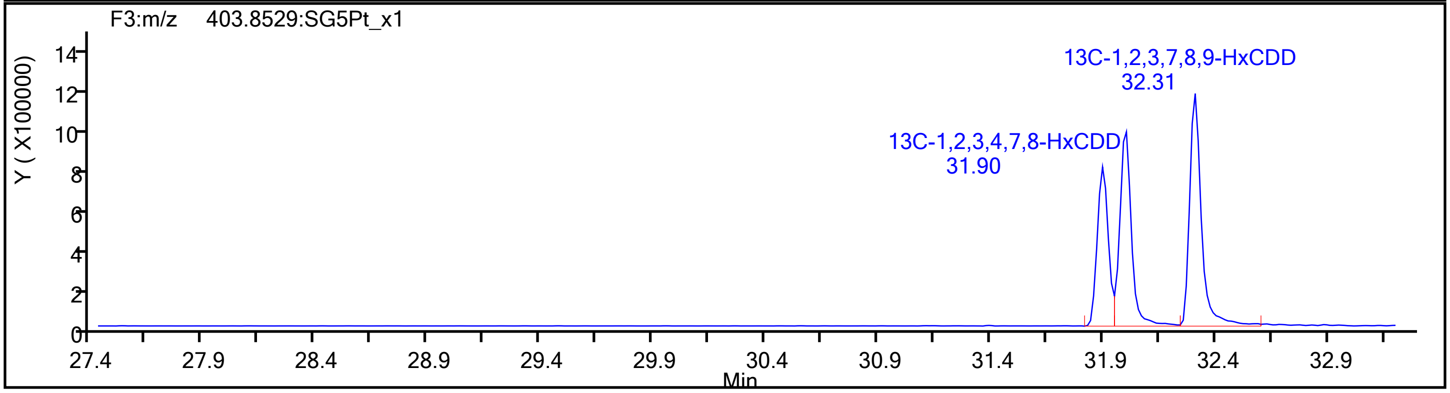

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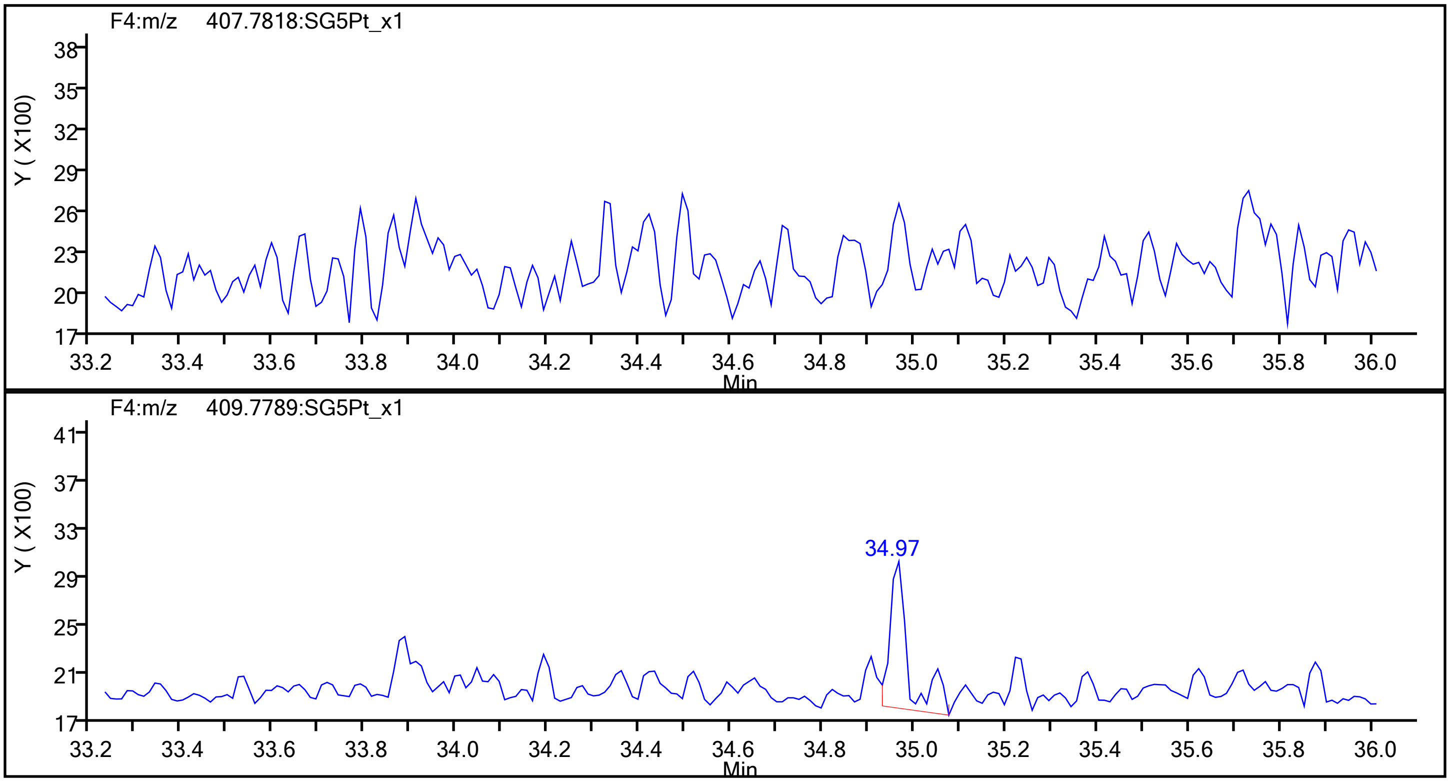

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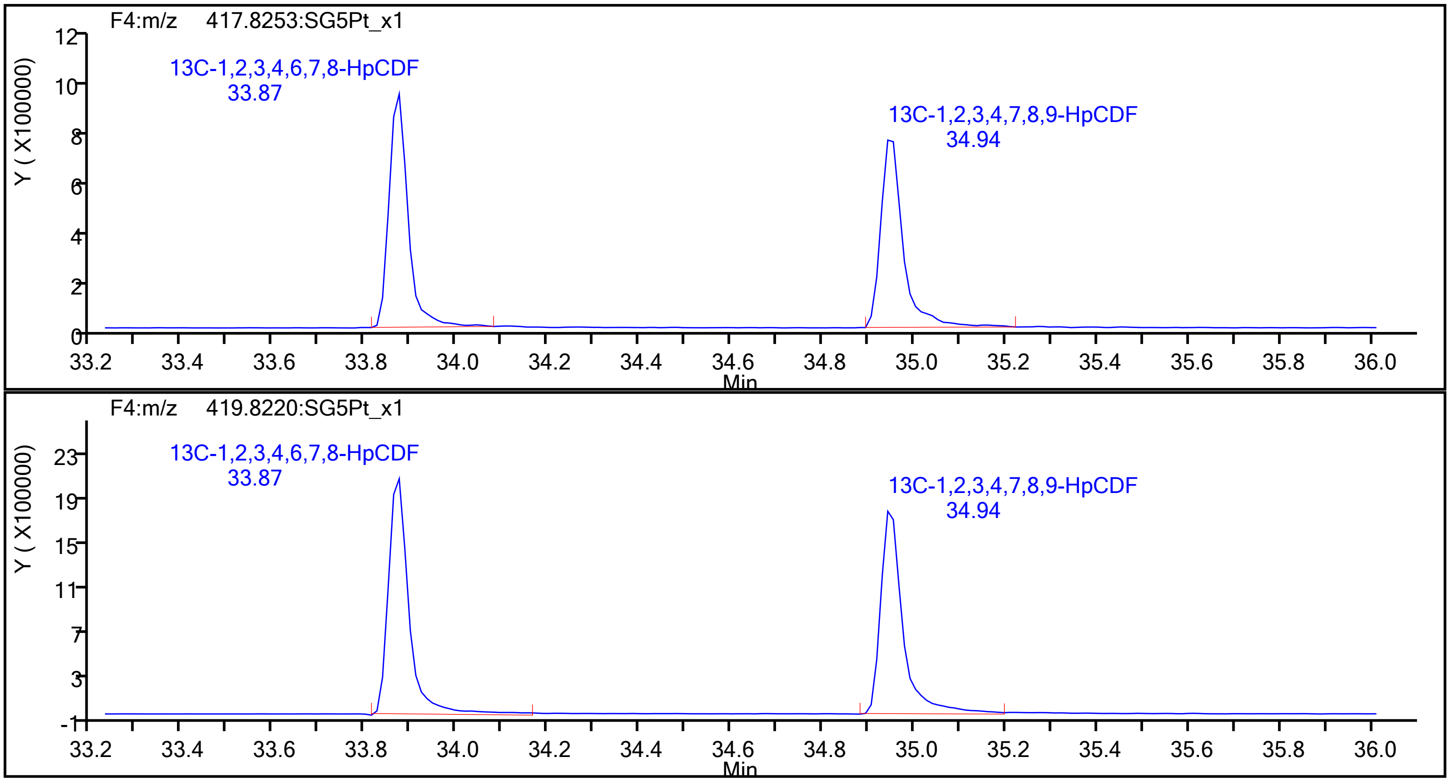

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Worklist#: 408767
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HpCDF

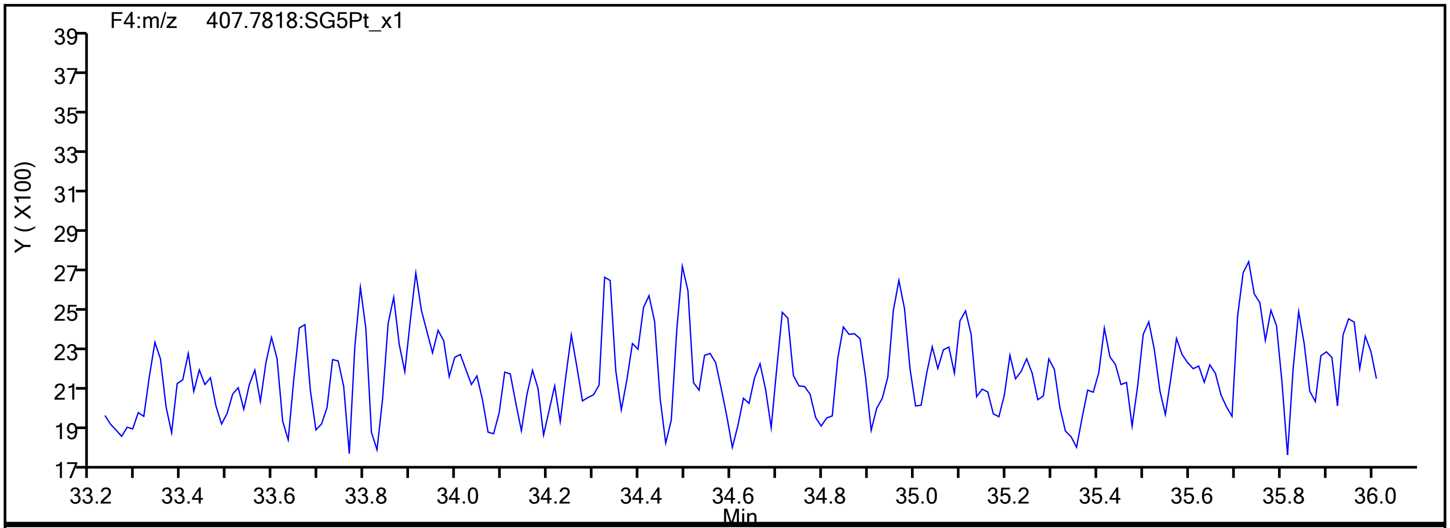

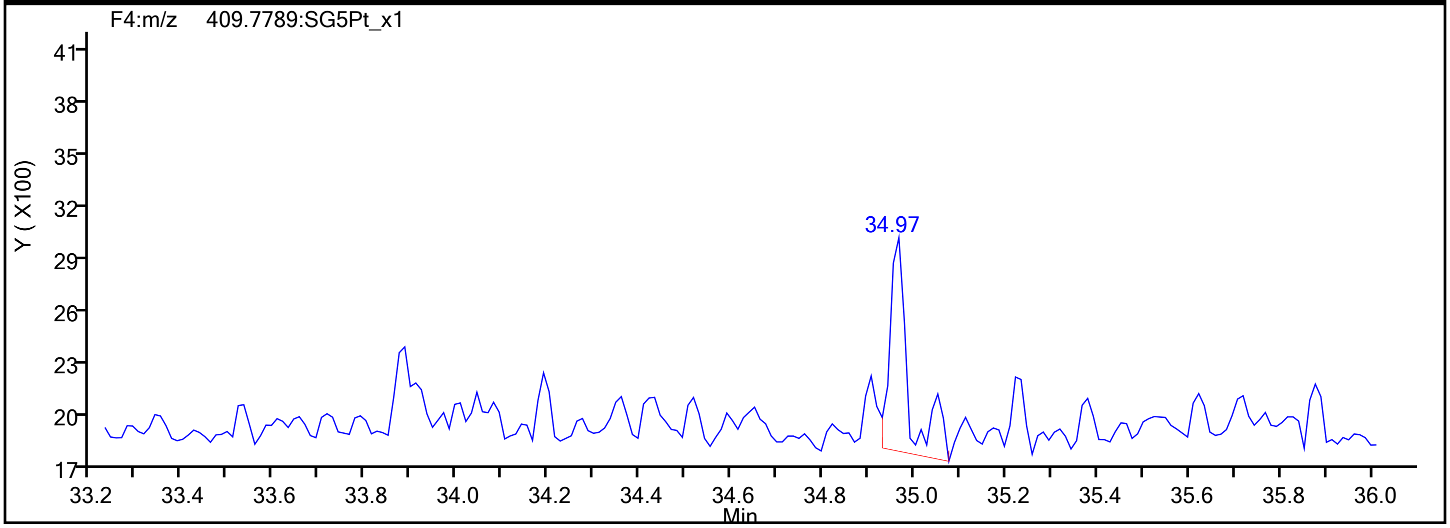

HpCDF Interference Mass

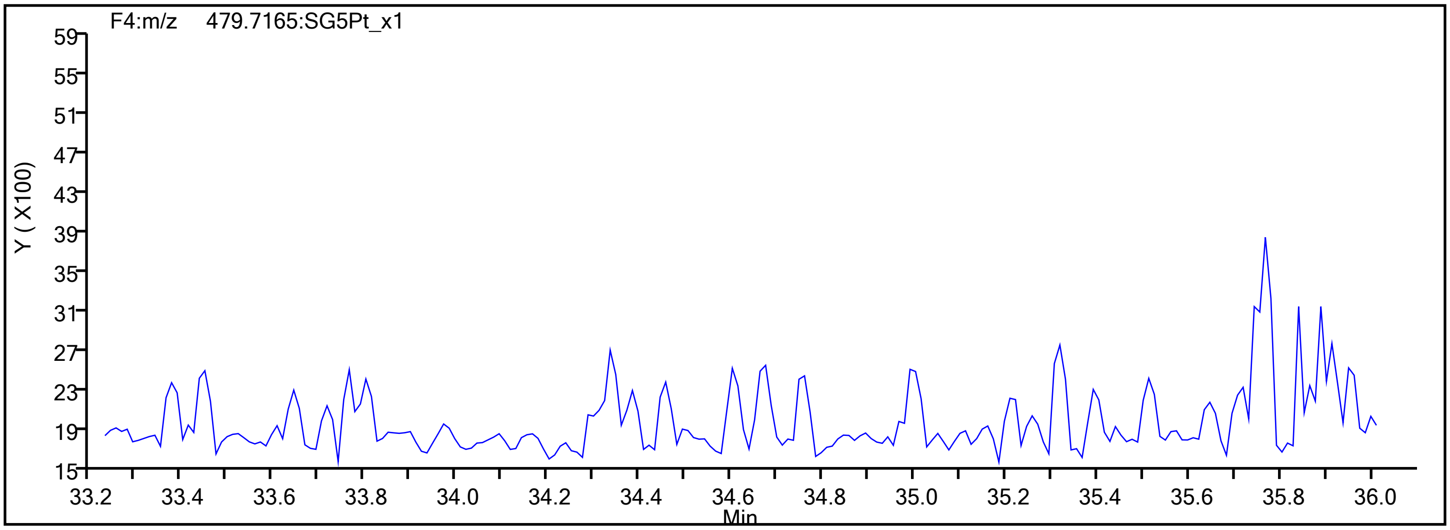

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HpCDD

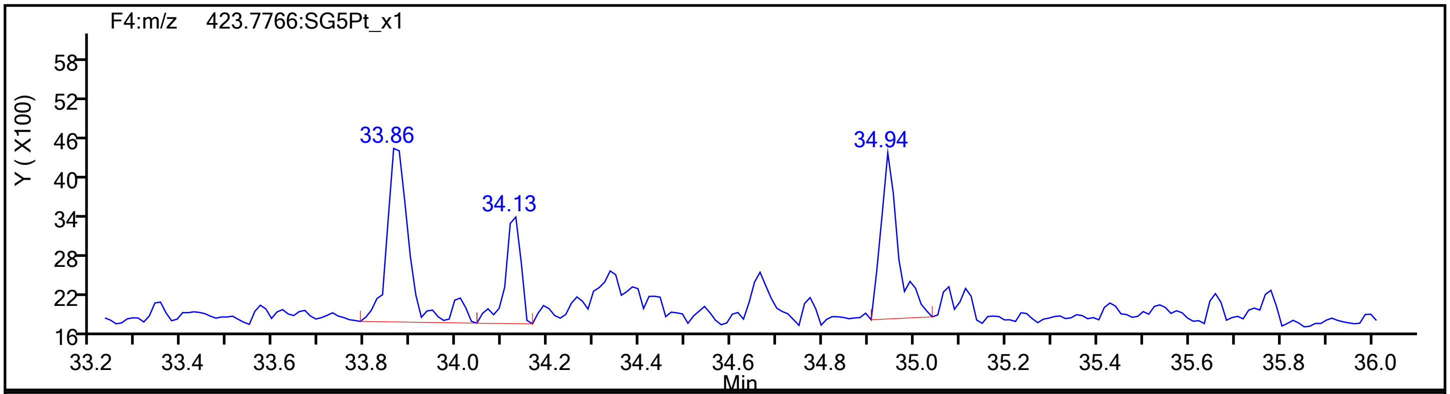

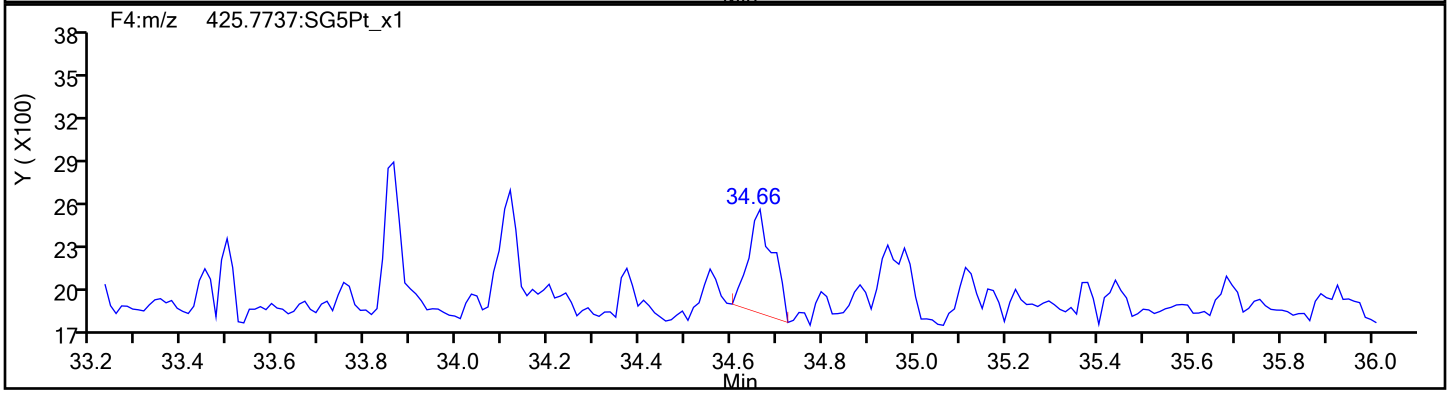

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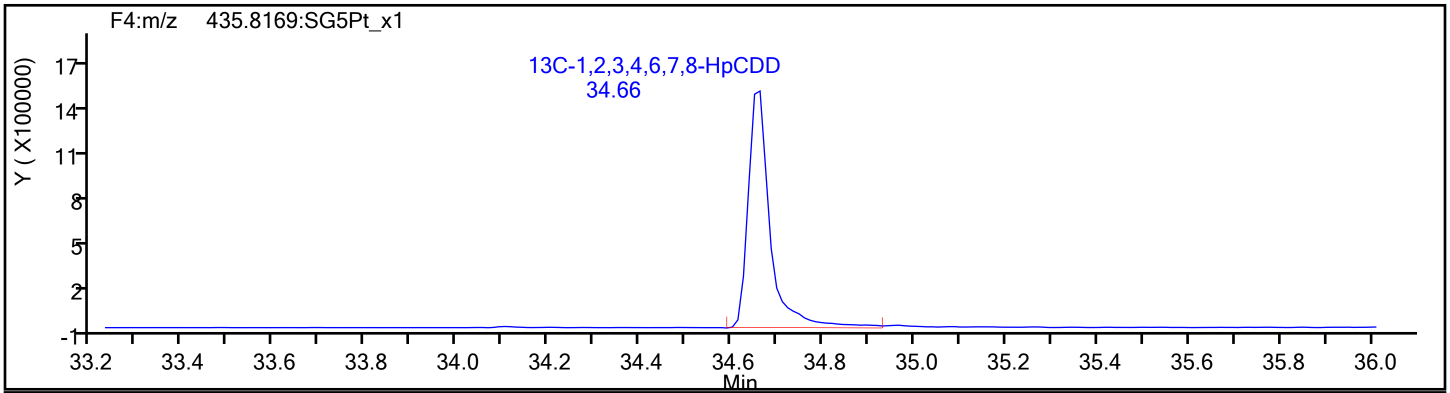

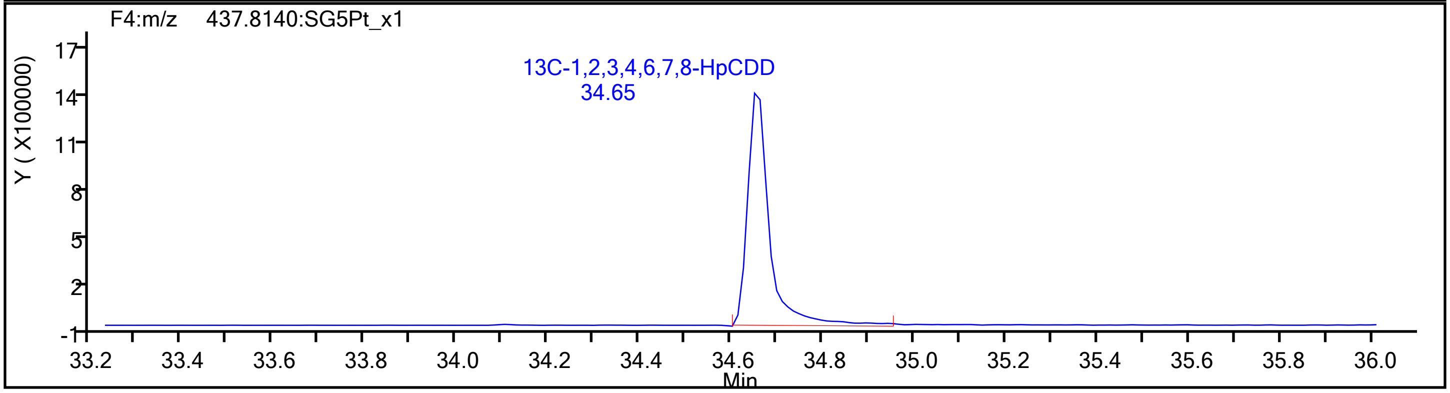

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OCDF

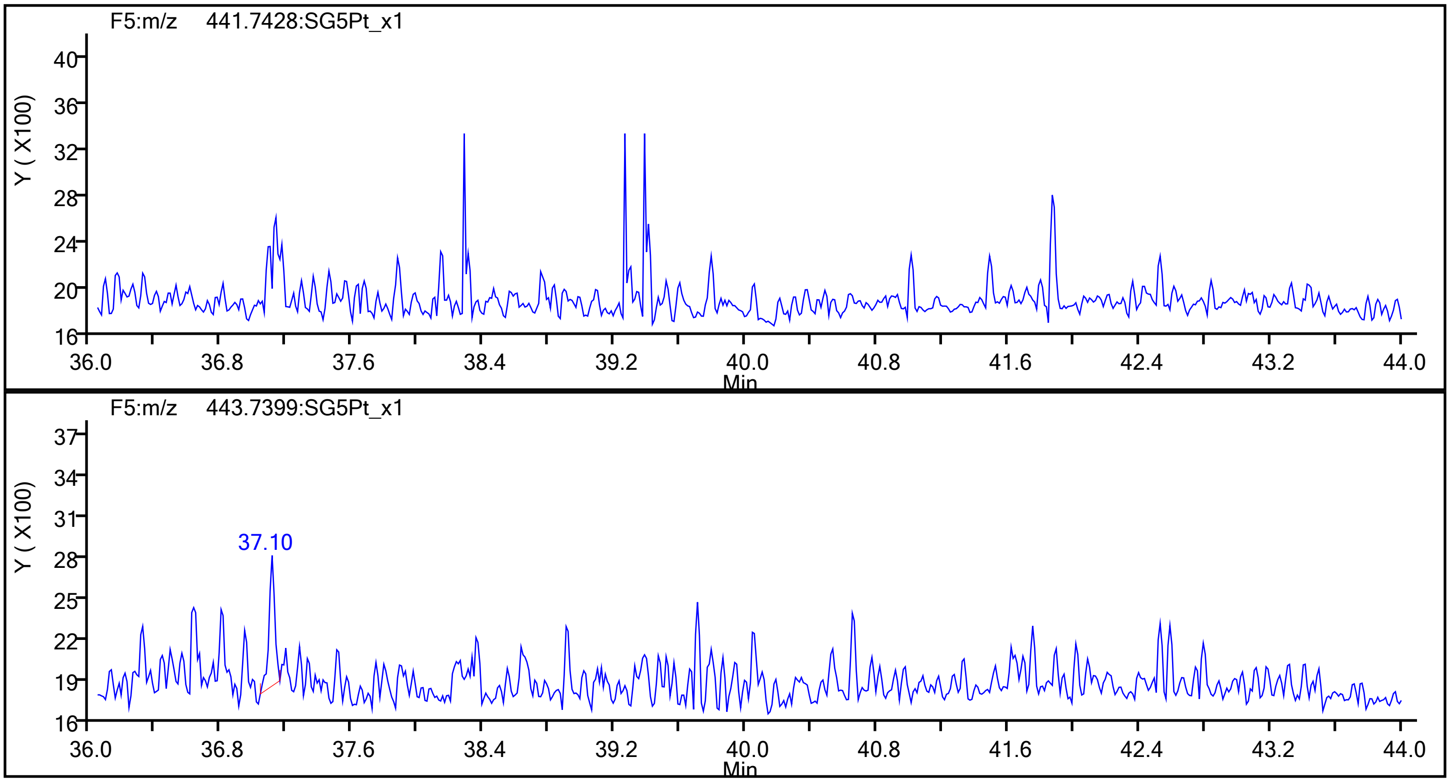

OCDF Standards

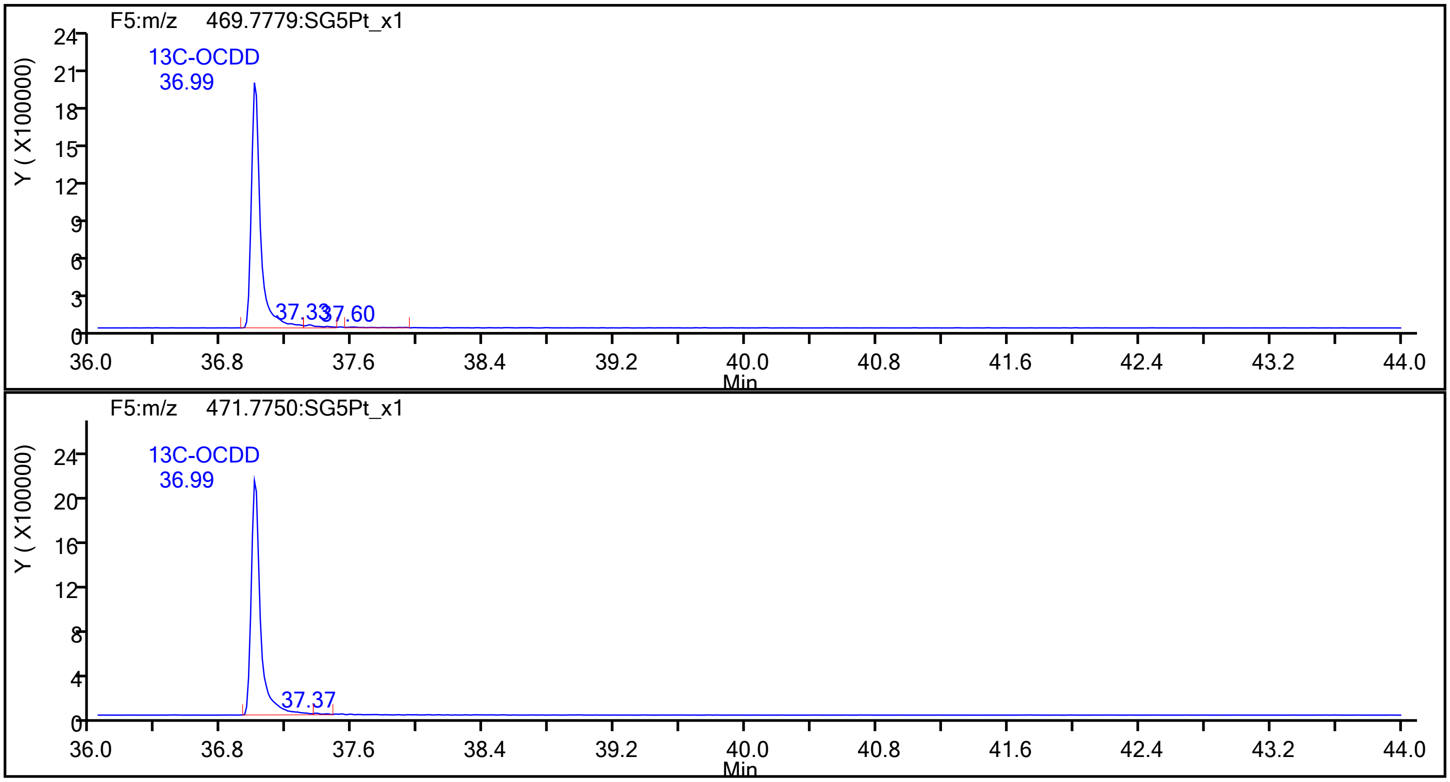

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Injection Date:	02-Sep-2020 04:34:11	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#1		
Worklist#:	408767	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

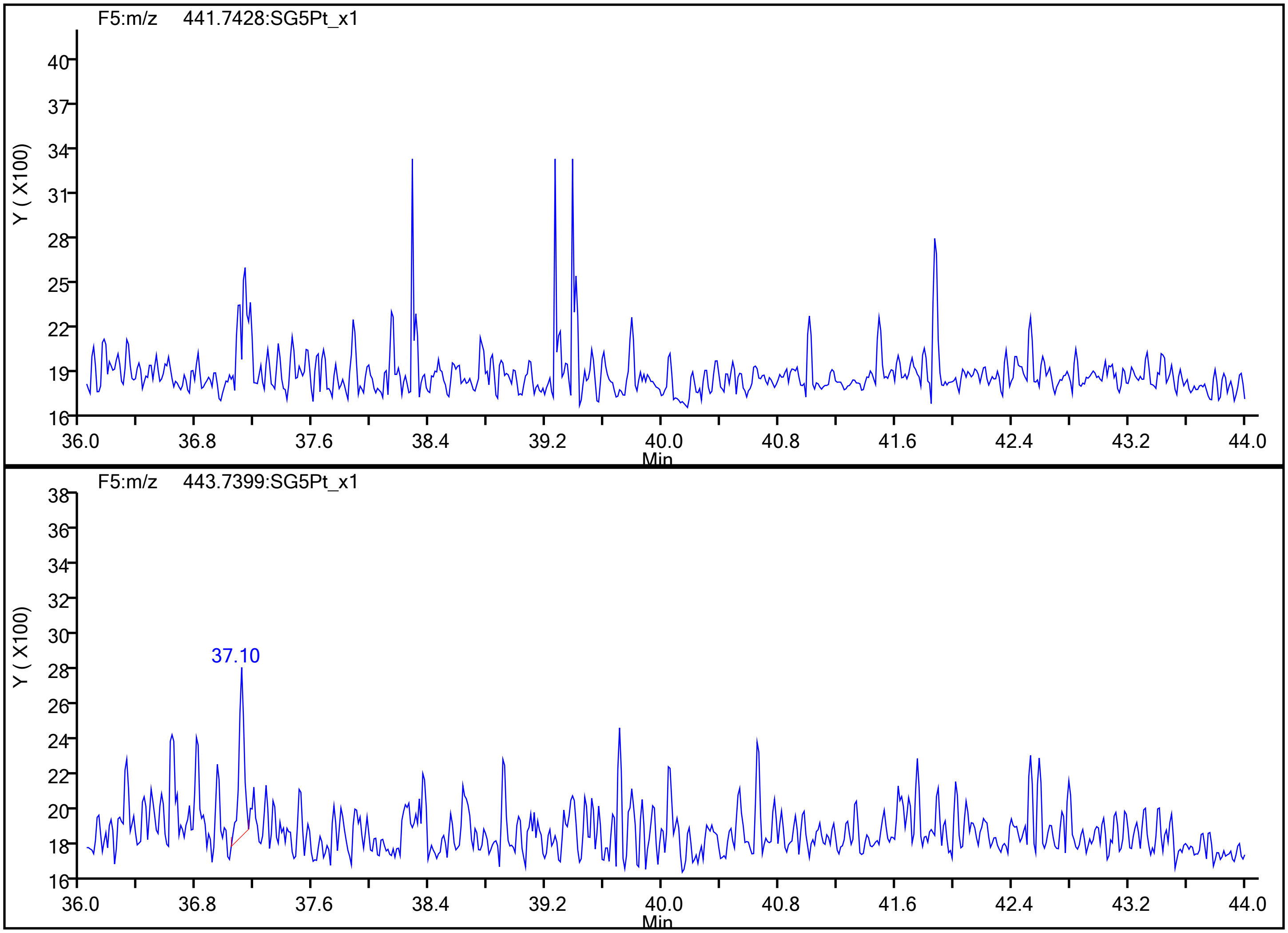

OCDF Interference Mass

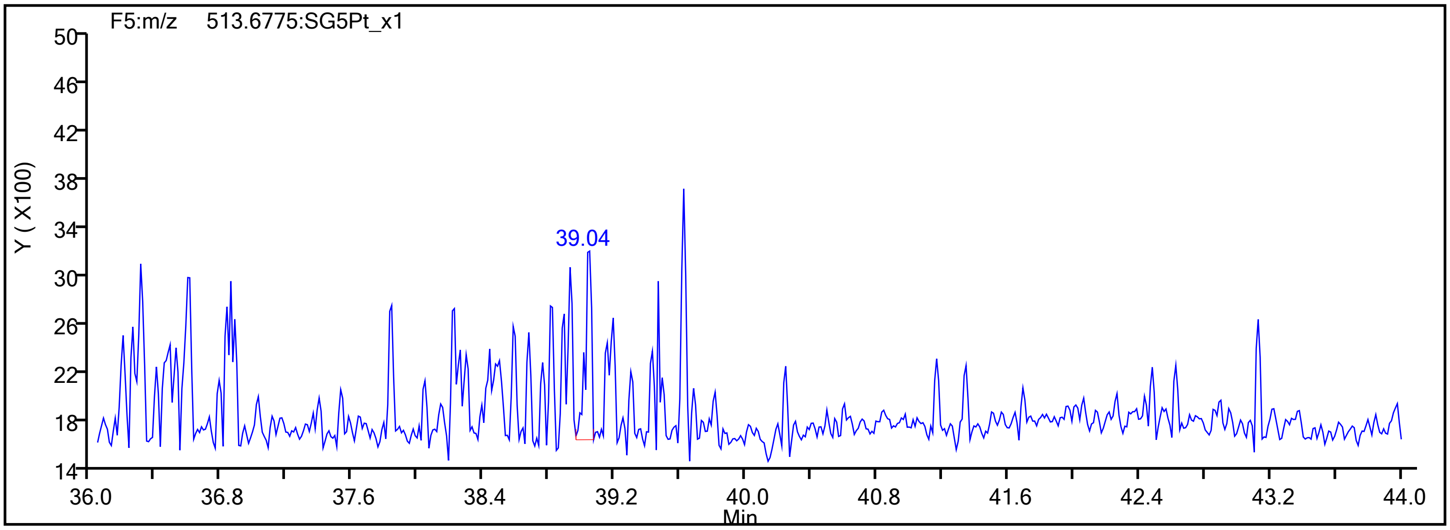

Report Date: 03-Sep-2020 09:05:29 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Injection Date:	02-Sep-2020 04:34:11	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#1		
Worklist#:	408767	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

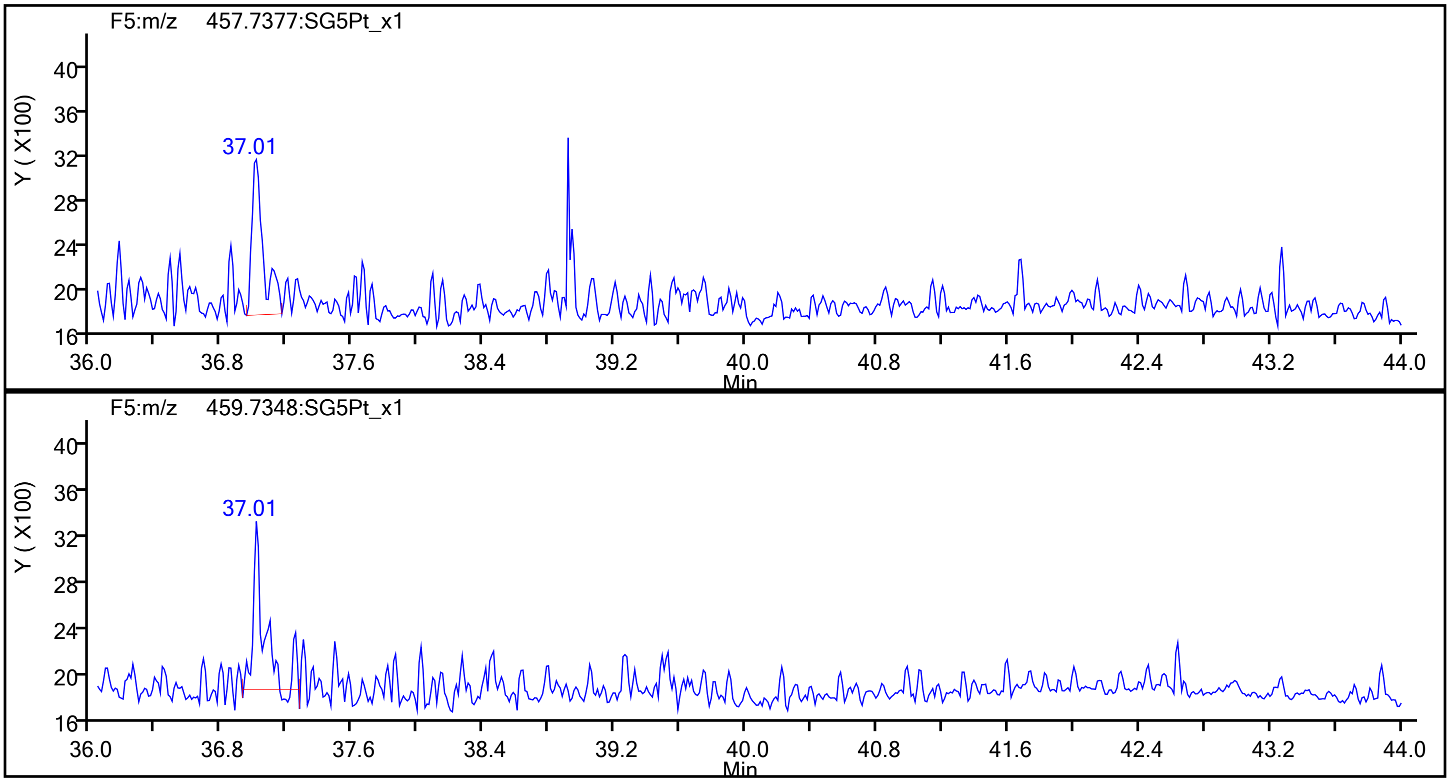

OCDD Standards

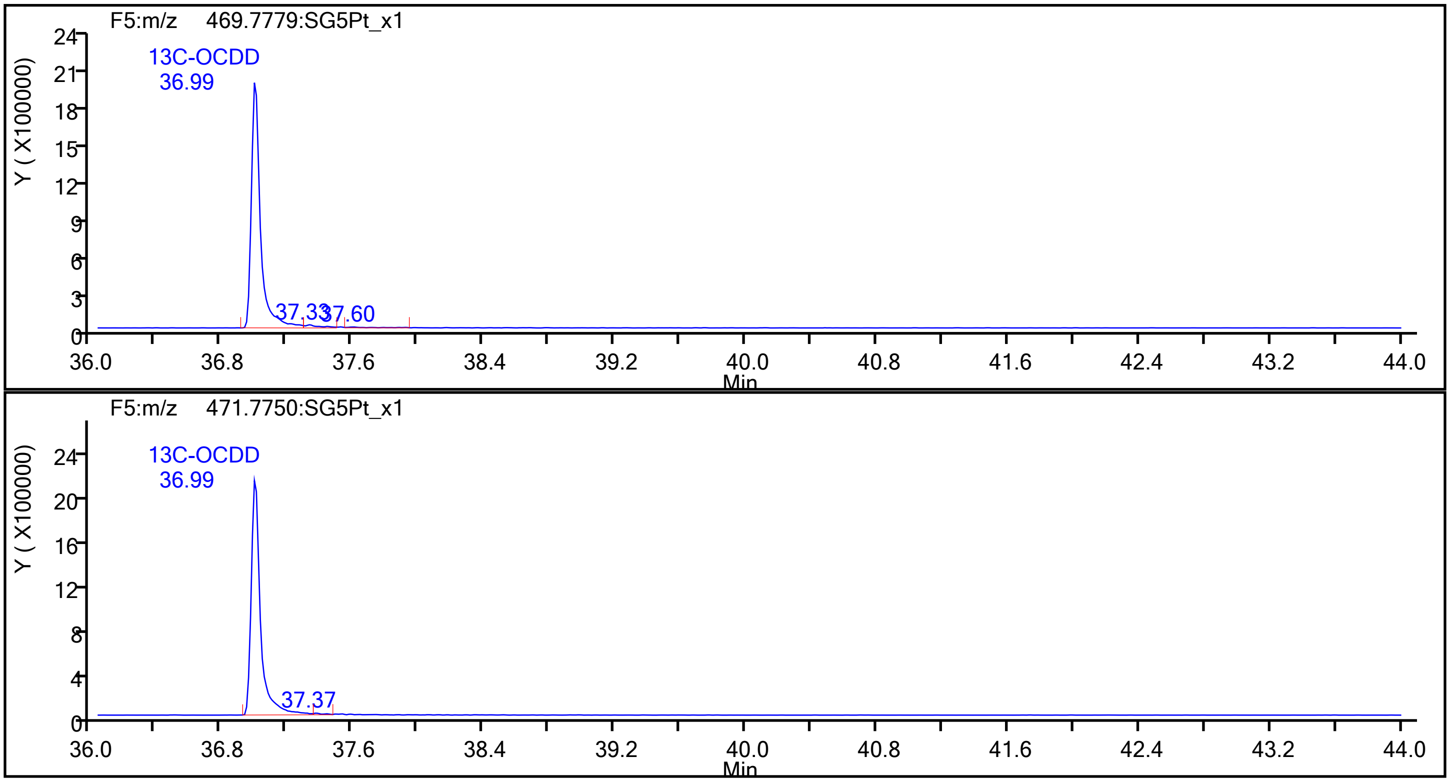

Report Date: 03-Sep-2020 09:05:30 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Injection Date:	02-Sep-2020 04:34:11	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#1		
Worklist#:	408767	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

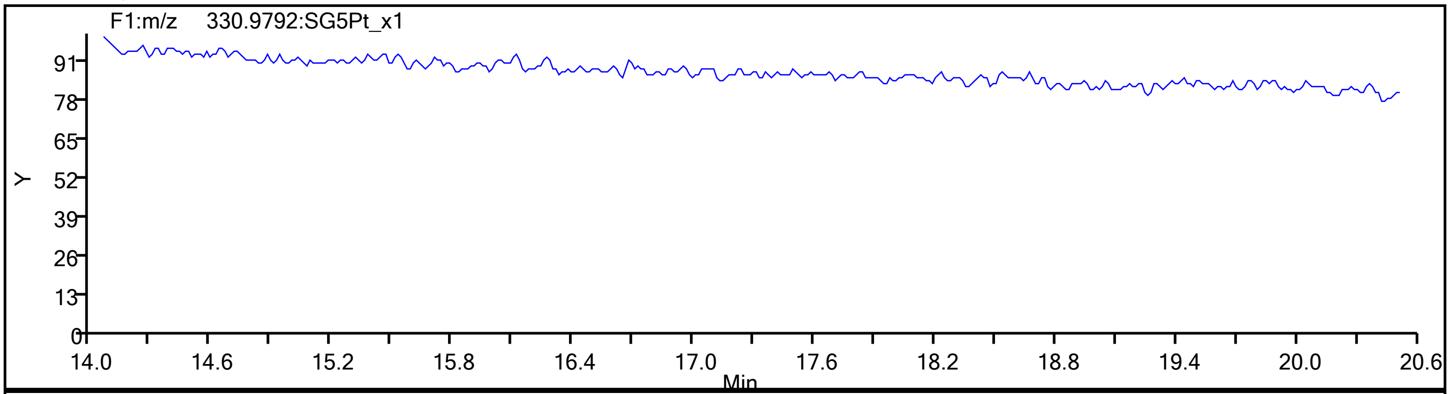

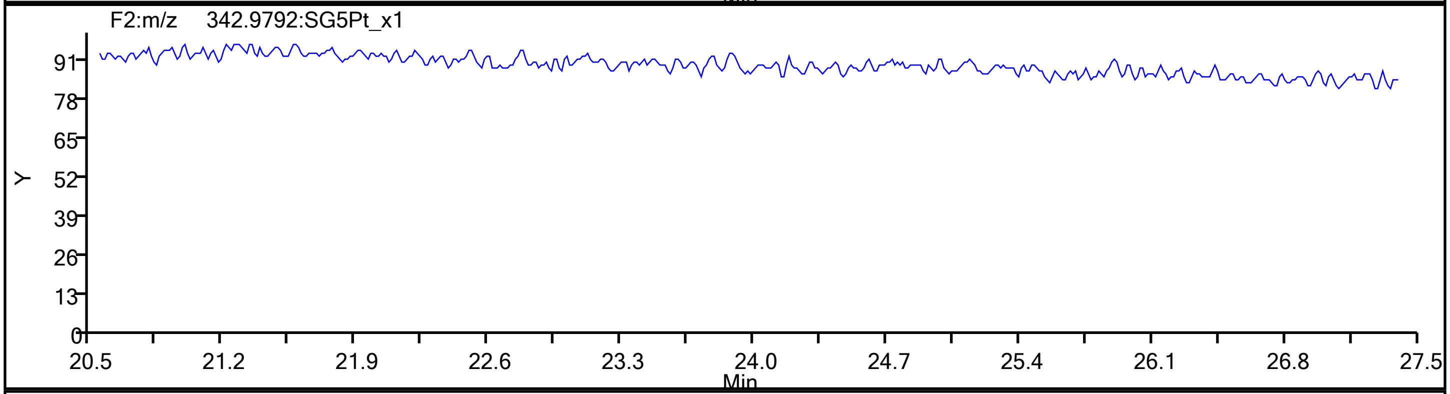

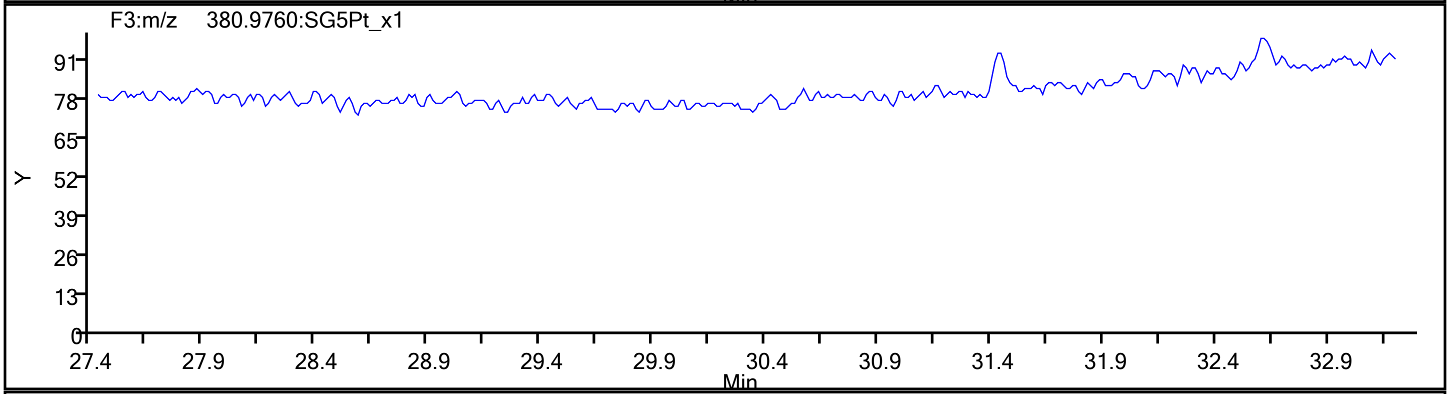

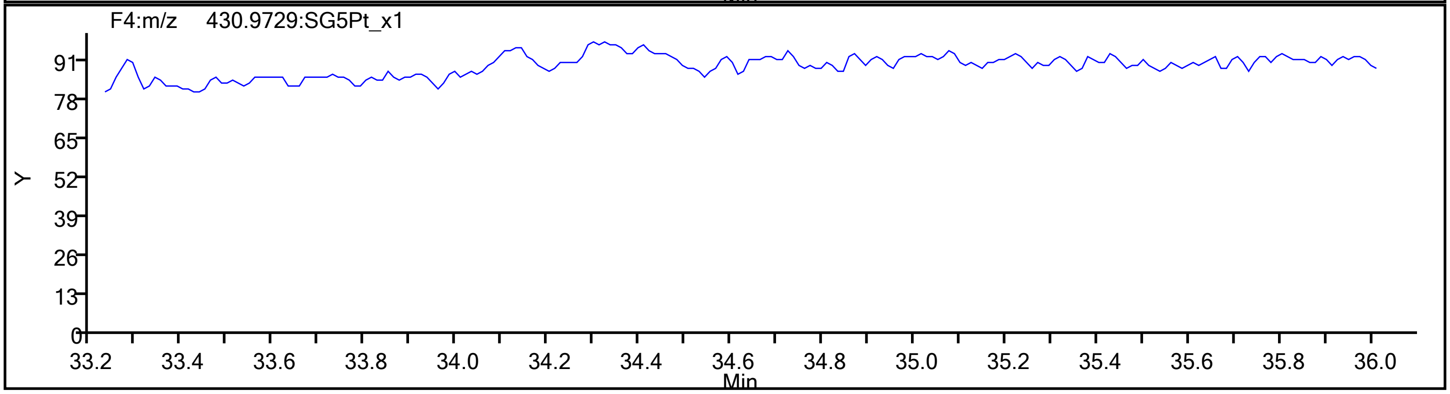

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_12.d		
Injection Date:	02-Sep-2020 04:34:11	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#1		
Worklist#:	408767	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

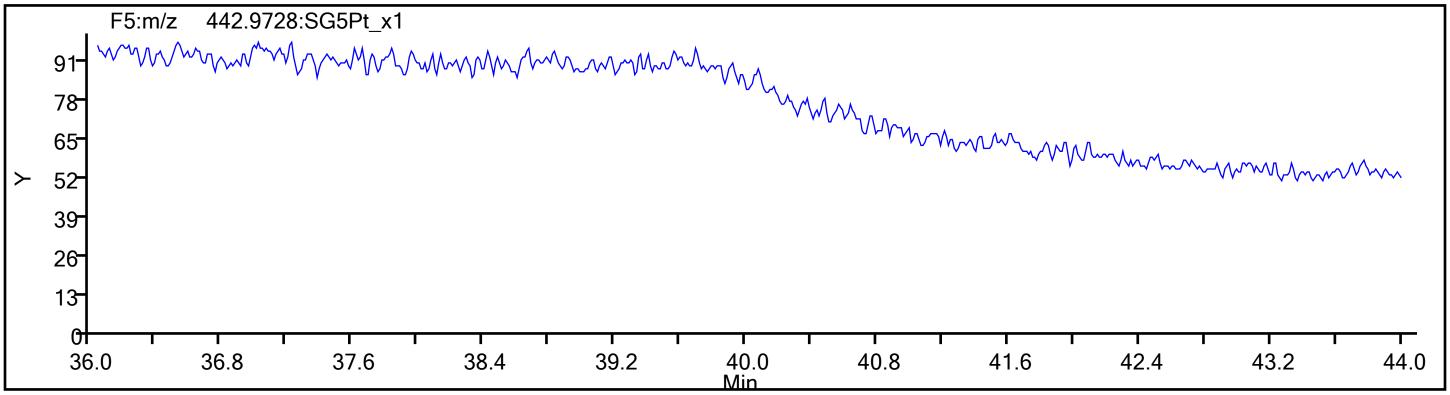

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: 11215702-GW-Tank#2 Lab Sample ID: 320-64049-2

Matrix: Water Lab File ID: 01SE2010D5_13.d

Analysis Method: 1613B Date Collected: 08/26/2020 14:00

Extract. Method: 1613B Date Extracted: 08/28/2020 14:44

Sample wt/vol: 1018(mL) Date Analyzed: 09/02/2020 05:19

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 408767 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.8	0.60
51207-31-9	2,3,7,8-TCDF	ND		9.8	0.44
40321-76-4	1,2,3,7,8-PeCDD	ND		49	0.84
57117-41-6	1,2,3,7,8-PeCDF	ND		49	0.66
57117-31-4	2,3,4,7,8-PeCDF	ND		49	0.88
39227-28-6	1,2,3,4,7,8-HxCDD	ND		49	0.62
57653-85-7	1,2,3,6,7,8-HxCDD	ND		49	0.48
19408-74-3	1,2,3,7,8,9-HxCDD	ND		49	0.48
70648-26-9	1,2,3,4,7,8-HxCDF	ND	*	49	0.89
57117-44-9	1,2,3,6,7,8-HxCDF	ND		49	0.64
72918-21-9	1,2,3,7,8,9-HxCDF	ND		49	0.53
60851-34-5	2,3,4,6,7,8-HxCDF	ND		49	0.48
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.89	J	49	0.48
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		49	0.46
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		49	0.79
3268-87-9	OCDD	2.7	J B	98	0.63
39001-02-0	OCDF	ND		98	0.61
41903-57-5	Total TCDD	3.1	J q B	9.8	0.60
30402-14-3	Total TCDF	ND		9.8	0.44
36088-22-9	Total PeCDD	ND		49	0.84
30402-15-4	Total PeCDF	ND		49	1.1
34465-46-8	Total HxCDD	ND		49	1.8
55684-94-1	Total HxCDF	ND		49	0.89
37871-00-4	Total HpCDD	0.89	J	49	0.48
38998-75-3	Total HpCDF	ND		49	0.79

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1
SDG No.:
Client Sample ID: 11215702-GW-Tank#2
Lab Sample ID: 320-64049-2
Matrix: Water
Lab File ID: 01SE2010D5_13.d
Analysis Method: 1613B
Date Collected: 08/26/2020 14:00
Extract. Method: 1613B
Date Extracted: 08/28/2020 14:44
Sample wt/vol: 1018(mL)
Date Analyzed: 09/02/2020 05:19
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 408767
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		25-164
89059-46-1	13C-2,3,7,8-TCDF	85		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	67		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	70		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	55		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	69		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	84		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	96		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	95		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	128		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	118		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	96		26-138
114423-97-1	13C-OCDD	131		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

Report Date: 03-Sep-2020 09:07:39 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d
Lims ID: 320-64049-A-2-A
Client ID: 11215702-GW-Tank#2
Sample Type: Client
Inject. Date: 02-Sep-2020 05:19:10 ALS Bottle#: 16 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-64049-A-2-A 320-64049-A-2-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 09:07:39 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 09:07:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.065	17863794	0.78	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.536	20876399	0.78	1.3726	85.1	85.1	0.1210	0.1210	85.14	
2,3,7,8-TCDF	17.551						0.0224	0.0224		
A Non-2,3,7,8-sub-TCDF	17.234						0.0224	0.0224		
S Total TCDF							0.0224	0.0224		
D 13C-2,3,7,8-TCDD	18.262	14659416	0.78	1.0192	80.5	80.5	0.1405	0.1405	80.52	
2,3,7,8-TCDD	18.277						0.0303	0.0303		
$ 37Cl4-2,3,7,8-TCDD	18.277	7279209		1.0176	40.0	40.0	0.0634	0.0634	100	
A Non-2,3,7,8-sub-TCDD	17.695	25075	0.77	1.0745	0.1860	0.1592	0.0303	0.0846		RQM
S Total TCDD					0.1860	0.1592	0.0303	0.0303		RQ
D 13C-1,2,3,7,8-PeCDF	22.696	14223159	1.62	1.1429	69.7	69.7	0.1375	0.1375	69.67	
1,2,3,7,8-PeCDF	22.710						0.0334	0.0334		
D 13C-2,3,4,7,8-PeCDF	24.074	13731313	1.60	1.3997	54.9	54.9	0.1122	0.1122	54.92	
2,3,4,7,8-PeCDF	24.101						0.0446	0.0446		
A F1 PeCDFs	20.091						0.0537	0.0537		
A Non-2,3,7,8-sub-PeCDF	23.332						0.0384	0.0384		
S Total PeCDF							0.0537	0.0537		
D 13C-1,2,3,7,8-PeCDD	24.810	9853330	1.58	0.8232	67.0	67.0	0.1128	0.1128	67.01	
1,2,3,7,8-PeCDD	24.837						0.0428	0.0428		
A Non-2,3,7,8-sub-PeCDD	23.699						0.0428	0.0428		
S Total PeCDD							0.0428	0.0428		
D 13C-1,2,3,4,7,8-HxCDF	30.822	9108534	0.52	1.1388	71.2	71.2	0.3546	0.3546	71.22	
1,2,3,4,7,8-HxCDF	30.835						0.0452	0.0452		
D 13C-1,2,3,6,7,8-HxCDF	30.981	10143740	0.50	1.0803	83.6	83.6	0.3738	0.3738	83.61	
1,2,3,6,7,8-HxCDF	30.995						0.0328	0.0328		
D 13C-2,3,4,6,7,8-HxCDF	31.740	10170988	0.50	0.9494	95.4	95.4	0.4253	0.4253	95.40	
2,3,4,6,7,8-HxCDF	31.753						0.0243	0.0243		
D 13C-1,2,3,7,8,9-HxCDF	32.499	9357343	0.52	0.8670	96.1	96.1	0.4657	0.4657	96.11	
1,2,3,7,8,9-HxCDF	32.512						0.0268	0.0268		
A Non-2,3,7,8-sub-HxCDF	30.522						0.0309	0.0309		
S Total HxCDF							0.0452	0.0452		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.326	11229961	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.913	7210155	1.33	0.9356	68.6	68.6	0.2896	0.2896	68.62	
1,2,3,4,7,8-HxCDD	31.940						0.0316	0.0316		RQU
D 13C-1,2,3,6,7,8-HxCDD	32.020	9140038	1.29	1.0416	78.1	78.1	0.2601	0.2601	78.14	
1,2,3,6,7,8-HxCDD	31.940						0.0242	0.0242		RQU
1,2,3,7,8,9-HxCDD	32.339						0.0244	0.0244		
A Non-2,3,7,8-sub-HxCDD	31.201						0.0264	0.0941		RQU
S Total HxCDD							0.0941	0.0941		
D 13C-1,2,3,4,6,7,8-HpCDF	33.885	10446061	0.44	0.7899	117.8	117.8	1.126	1.126	118	
1,2,3,4,6,7,8-HpCDF	33.885						0.0234	0.0234		
D 13C-1,2,3,4,7,8,9-HpCDF	34.966	9853392	0.44	0.9093	96.5	96.5	0.9779	0.9779	96.50	
1,2,3,4,7,8,9-HpCDF	34.966						0.0403	0.0403		
A Non-2,3,7,8-sub-HpCDF	34.425						0.0301	0.0301		
S Total HpCDF							0.0403	0.0403		
D 13C-1,2,3,4,6,7,8-HpCDD	34.674	11019392	1.04	0.7637	128.5	128.5	0.7354	0.7354	128	
1,2,3,4,6,7,8-HpCDD	34.687	5290	1.02	1.0540	0.0455	0.0455	0.0245	0.0245		M
A Non-2,3,7,8-sub-HpCDD	35.325						0.0245	0.0814		RQU
S Total HpCDD					0.0455	0.0455	0.0245	0.0245		
D 13C-OCDD	37.018	18778363	0.88	0.6377	262.2	262.2	0.4340	0.4340	131	
OCDF	37.113						0.0310	0.0310		
OCDD	37.029	14581	0.80	1.1499	0.1351	0.1351	0.0323	0.0323		M

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected

Report Date: 03-Sep-2020 09:07:39 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d
Lims ID: 320-64049-A-2-A
Client ID: 11215702-GW-Tank#2
Sample Type: Client
Inject. Date: 02-Sep-2020 05:19:10 ALS Bottle#: 16 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-64049-A-2-A 320-64049-A-2-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 09:07:39 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 09:07:39

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.065	18.065	0		7816646	1942909	1638	4095	1186		
333.9339	18.065	18.065	0		10047148	2541466	930	2325	2733	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.536	17.536	0	0.971	9123512	2267821	1502	3755	1510		
317.9389	17.536	17.536	0	0.971	11752887	2909881	1476	3690	1971	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.551						156	390			
305.8987	17.551						266	665			
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						156	390			
305.8987	17.234						266	665			
13C-2,3,7,8-TCDD											
331.9368	18.262	18.262	0	1.011	6438674	1514376	1638	4095	925		
333.9339	18.262	18.262	0	1.011	8220742	1909039	930	2325	2053	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.277						256	640			
321.8936	18.277						190	475			
37Cl4-2,3,7,8-TCDD											
327.8847	18.277	18.277	0	1.012	7279209	1706760	1158	2895	1474		
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	16.009	17.695	-101	0.877	8336	1763	256	640	7		
	Empc Correction				5114	1278	256	640	5		
321.8936	16.009	17.695	-101	0.877	6642	1660	190	475	9	1.26(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	16.311	17.695	-83	0.893	6797	2019	256	640	8		M
	Empc Correction				5794	1389	256	640	5		
321.8936	16.311	17.695	-83	0.893	7525	1804	190	475	9	0.90(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.696	22.696	0	1.256	8786128	1493062	1587	3967	941		
353.8970	22.696	22.696	0	1.256	5437031	935666	1231	3077	760	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.710						115	287			
341.8567	22.710						208	520			
13C-2,3,4,7,8-PeCDF											
351.9000	24.074	24.074	0	1.333	8448818	1368885	1587	3967	863		
353.8970	24.074	24.074	0	1.333	5282495	861798	1231	3077	700	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	24.101						115	287			
341.8567	24.101						208	520			
A F1 PeCDFs											
339.8597	20.091						162	405			
341.8567	20.091						290	725			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.332						115	287			
341.8567	23.332						208	520			
13C-1,2,3,7,8-PeCDD											
367.8949	24.810	24.810	0	1.373	6028725	897434	872	2180	1029		
369.8919	24.810	24.810	0	1.373	3824605	587695	794	1985	740	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.837						151	377			
357.8516	24.837						108	270			
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.699						151	377			
357.8516	23.699						108	270			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.822	30.809	1	0.953	3119938	663791	1838	4595	361		
385.8610	30.822	30.809	1	0.953	5988596	1250747	3281	8202	381	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.835						147	367			
375.8178	30.835						132	330			
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.981	30.982	0	0.958	3398249	715277	1838	4595	389		
385.8610	30.981	30.982	0	0.958	6745491	1451385	3281	8202	442	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.995						147	367			
375.8178	30.995						132	330			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.740	31.740	0	0.982	3396135	941676	1838	4595	512		
385.8610	31.740	31.740	0	0.982	6774853	1816523	3281	8202	554	0.50(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	31.753						147	367			
375.8178	31.753						132	330			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.499	32.499	0	1.005	3217448	836681	1838	4595	455		
385.8610	32.499	32.499	0	1.005	6139895	1686107	3281	8202	514	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.512						147	367			
375.8178	32.512						132	330			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						147	367			
375.8178	30.522						132	330			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.326	32.326	0		6281728	1769784	1964	4910	901		
403.8529	32.326	32.326	0		4948233	1399593	1471	3677	951	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.913	31.913	0	0.987	4111571	1235105	1964	4910	629		
403.8529	31.913	31.913	0	0.987	3098584	951416	1471	3677	647	1.33(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQU
389.8157	31.927						116	290			
391.8127	31.927						111	277			
13C-1,2,3,6,7,8-HxCDD											
401.8559	32.020	32.006	1	0.991	5141779	1420751	1964	4910	723		
403.8529	32.020	32.006	1	0.991	3998259	1082627	1471	3677	736	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQU
389.8157	32.020						116	290			
391.8127	32.020						111	277			
1,2,3,7,8,9-HxCDD											
389.8157	32.339						116	290			
391.8127	32.339						111	277			
A Non-2,3,7,8-sub-HxCDD											U
389.8157	30.795	31.201	-24	0.962	4049	1106	116	290	10		
391.8127	30.808	31.201	-24	0.962	2997	643	111	277	6	1.35(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.885	33.873	1	1.048	3180363	1140315	3628	9070	314		
419.8220	33.885	33.873	1	1.048	7265698	2527064	7644	19110	331	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.885						326	815			
409.7789	33.885						172	430			
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.966	34.954	1	1.082	2999558	887341	3628	9070	245		
419.8220	34.966	34.954	1	1.082	6853834	2030423	7644	19110	266	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.966						326	815			
409.7789	34.966						172	430			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						326	815			
409.7789	34.425						172	430			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.674	34.662	1	1.073	5614599	1763733	4275	10687	413		
437.8140	34.674	34.662	1	1.073	5404793	1639526	2845	7112	576	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.687	34.674	1	1.000	2669	819	206	515	4		
425.7737	34.687	34.674	1	1.000	2621	1054	146	365	7	1.02(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											U
423.7766	34.954	35.325	-22	1.008	12232	2936	206	515	14		
	Empc Correction				4817	1880	206	515	9		
425.7737	34.966	35.325	-22	1.008	4632	1808	146	365	12	2.64(0.88-1.20)	
13C-OCDD											
469.7779	37.018	37.006	1	1.145	8816299	2220467	2003	5007	1109		
471.7750	37.018	37.006	1	1.145	9962064	2505935	1506	3765	1664	0.88(0.76-1.02)	
OCDF											
441.7428	37.113						183	457			
443.7399	37.113						197	492			
OCDD											M
457.7377	37.029	37.018	1	1.000	6494	2018	162	405	12		M
459.7348	37.042	37.018	1	1.001	8087	2170	189	472	11	0.80(0.76-1.02)	M

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d
Lims ID: 320-64049-A-2-A
Client ID: 11215702-GW-Tank#2
Inject. Date: 02-Sep-2020 05:19:10
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: ALM
Lims Batch ID: 408767
Lims Sample ID: 13

Non-2,3,7,8-sub-TCDD, RT: 17.695

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.074	D 13C-2,3,7,8-TCDD	100.000	14659416	3423415

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.074		100.000	14659416	3423415

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.009	8336	1763	6642	1660	0.0951	1.26	RQ
16.009	5114	1278	6642	1660	0.0746		Empc Correction
16.311	6797	2019	7525	1804	0.0909	0.90	RQM
16.311	5794	1389	7525	1804	0.0846		Empc Correction
Signal Totals:							
	10908	2667	14167	3464			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	29300	7246				1.07	RQM
	25075	6131					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1860 = (29300 * 100.000) / (14659416 * 1.074)
Empc Amount: 0.1592 = (25075 * 100.000) / (14659416 * 1.074)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d		
Lims ID:	320-64049-A-2-A		
Client ID:	11215702-GW-Tank#2		
Inject. Date:	02-Sep-2020 05:19:10	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDD, RT: 31.201

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.820	D 13C-1,2,3,4,7,8-HxCDD	100.000	7210155	2186521
1,2,3,6,7,8-HxCDD	0.937	D 13C-1,2,3,6,7,8-HxCDD	100.000	9140038	2503378
1,2,3,7,8,9-HxCDD	0.990				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.916		100.000	8175096	2344949

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.795	4049	1106	2997	643	0.0941	1.35	
31.740	9380	2221	2202	878	0.1547	4.26	RQ
31.740	2730	1088	2202	878	0.0659		Empc Correction
32.499	6507	1387	2280	626	0.1174	2.85	RQ
32.499	2827	776	2280	626	0.0682		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d
Lims ID: 320-64049-A-2-A
Client ID: 11215702-GW-Tank#2
Inject. Date: 02-Sep-2020 05:19:10 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 408767 Lims Sample ID: 13

Non-2,3,7,8-sub-HpCDD, RT: 35.325

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.054	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	11019392	3403259

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.054		100.000	11019392	3403259

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
34.954	12232	2936	4632	1808	0.1452	2.64	RQ
34.954	4817	1880	4632	1808	0.0814		Empc Correction

Compound is Marked ND

Report Date: 03-Sep-2020 09:07:39

Chrom Revision: 2.3 20-Aug-2020 13:57:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d				
Injection Date:	02-Sep-2020 05:19:10	Instrument ID:	10D5		
Lims ID:	320-64049-A-2-A	Lab Sample ID:	320-64049-2		
Client ID:	11215702-GW-Tank#2				
Operator ID:	ALM	ALS Bottle#:	16	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.95- 19.44)

Signal: 1

Processing Integration Results

RT = 16.311 Area = 8836

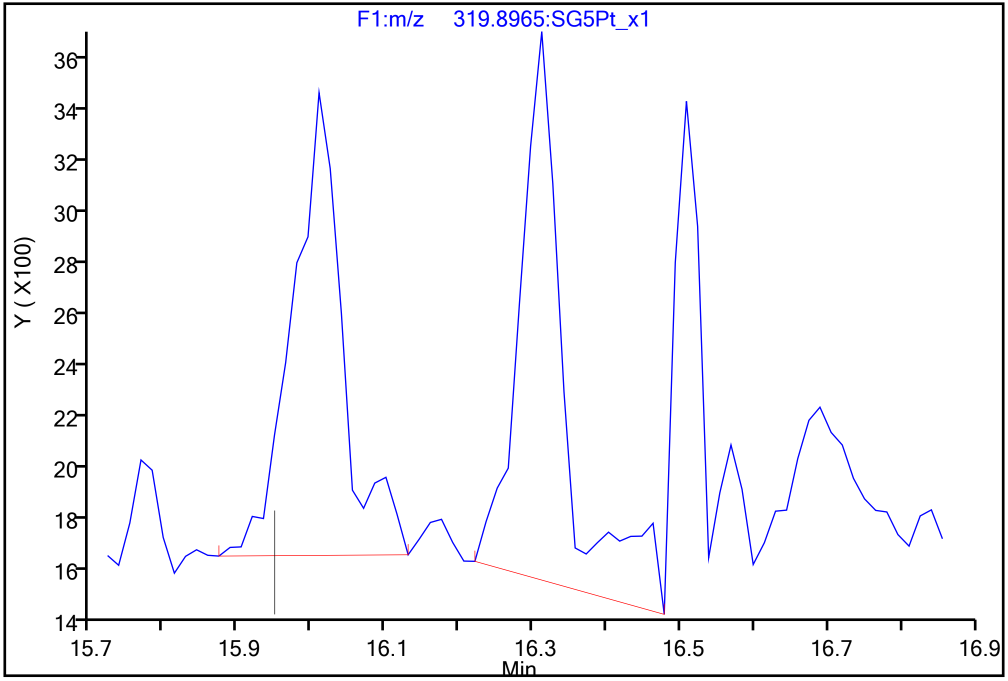

Manual Integration Results

RT = 16.311 Area = 6797 M

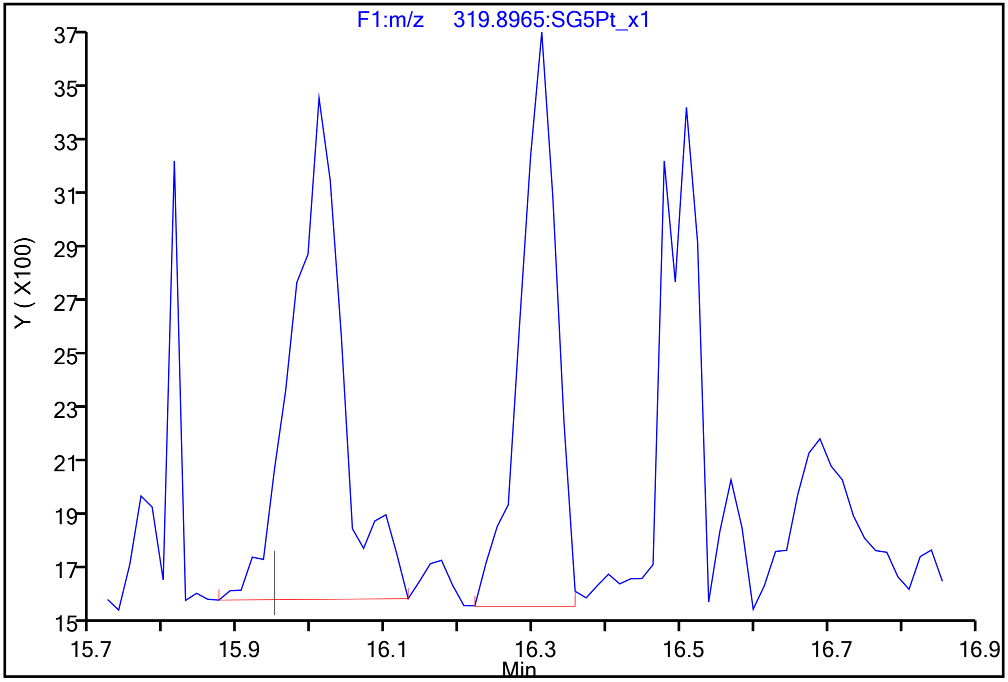

Reviewer: dadunj, 03-Sep-2020 09:06:07

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d				
Injection Date:	02-Sep-2020 05:19:10	Instrument ID:	10D5		
Lims ID:	320-64049-A-2-A	Lab Sample ID:	320-64049-2		
Client ID:	11215702-GW-Tank#2				
Operator ID:	ALM	ALS Bottle#:	16	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 34.69
Area: 2340
Amount: 0.043129
Amount Units: pg/ul

Processing Integration Results

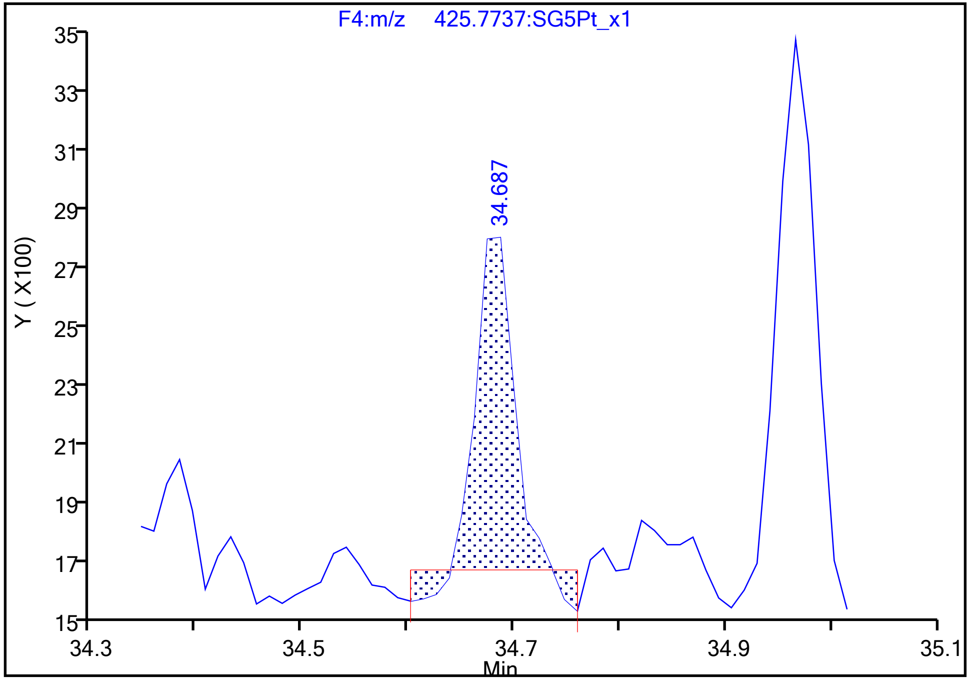

RT: 34.69
Area: 2621
Amount: 0.045549
Amount Units: pg/ul

Manual Integration Results

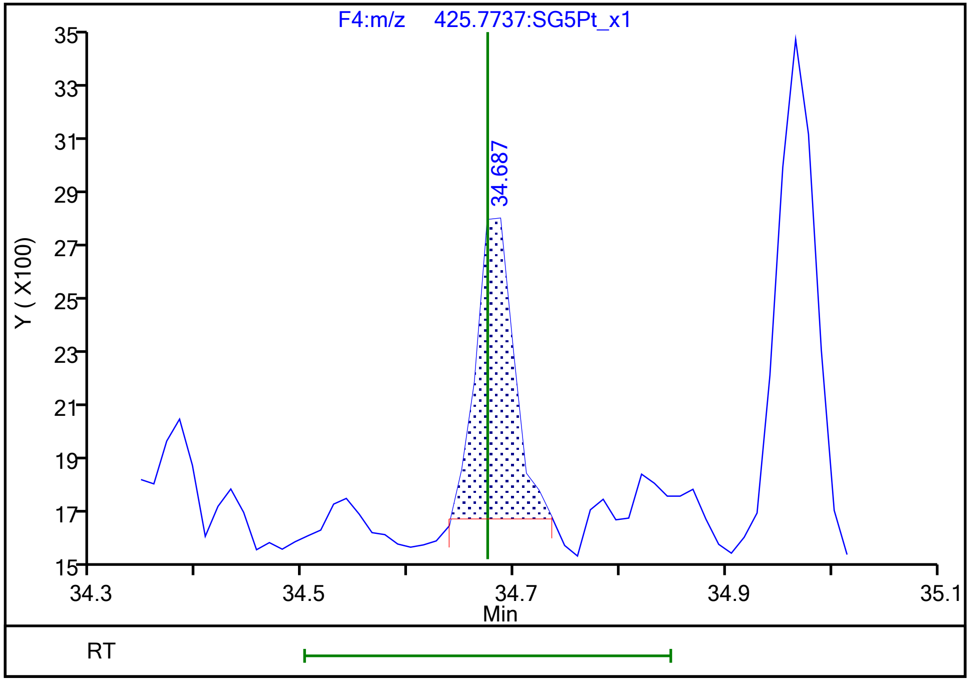

Reviewer: dadunj, 03-Sep-2020 09:06:54

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 03-Sep-2020 09:07:39 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d		
Injection Date:	02-Sep-2020 05:19:10	Instrument ID:	10D5
Lims ID:	320-64049-A-2-A	Lab Sample ID:	320-64049-2
Client ID:	11215702-GW-Tank#2		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT: 37.03
Area: 8236
Amount: 0.162014
Amount Units: pg/ul

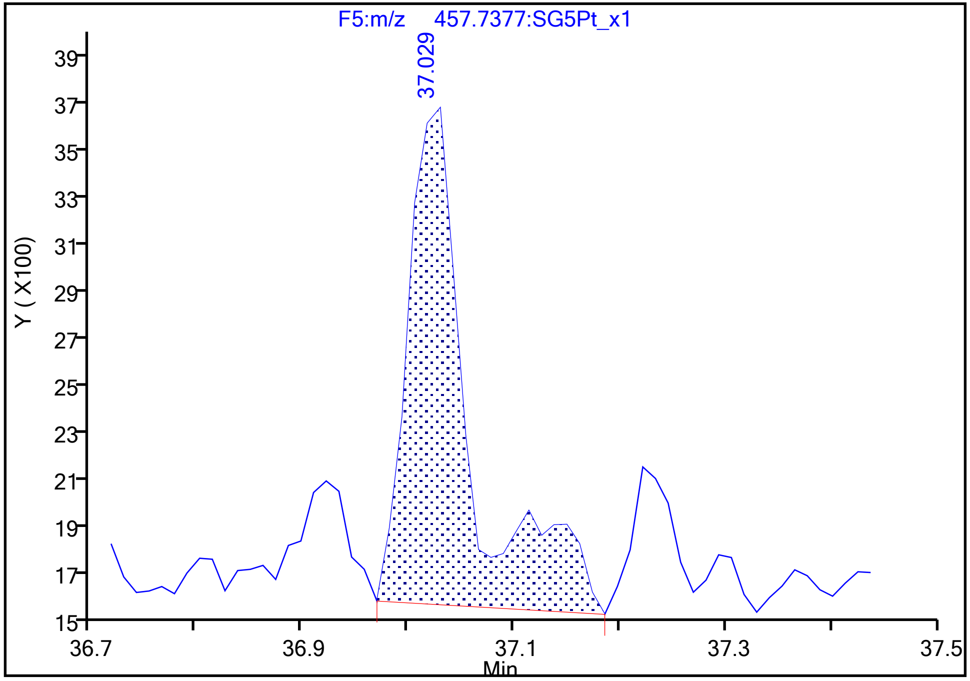

Manual Integration Results

RT: 37.03
Area: 6494
Amount: 0.135051
Amount Units: pg/ul

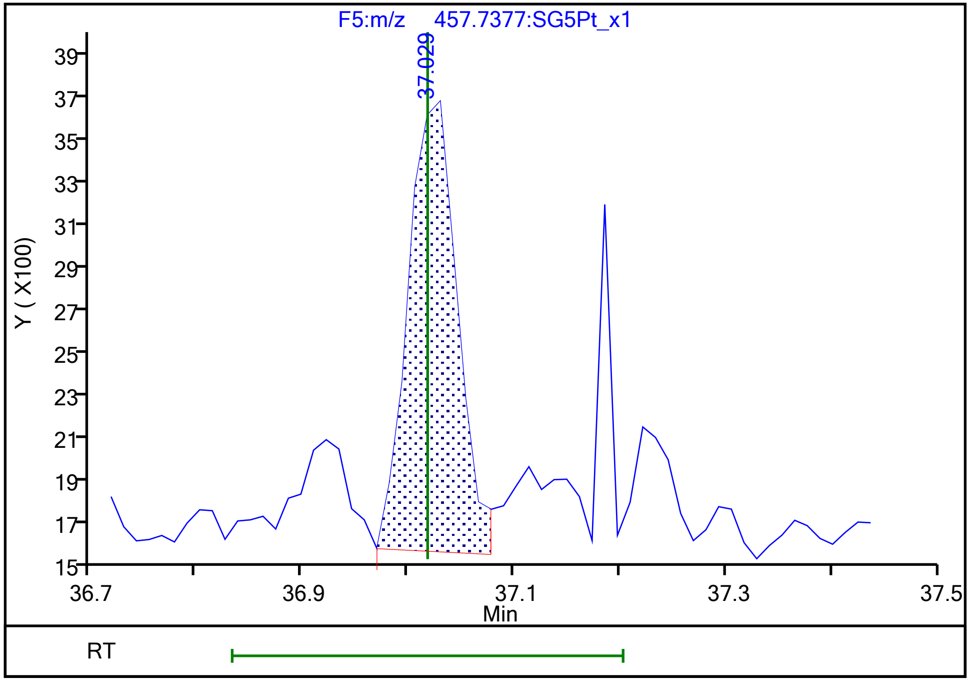

Reviewer: dadunj, 03-Sep-2020 09:07:01

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d
Injection Date: 02-Sep-2020 05:19:10
Instrument ID: 10D5
Lims ID: 320-64049-A-2-A
Lab Sample ID: 320-64049-2
Client ID: 11215702-GW-Tank#2
Operator ID: ALM
ALS Bottle#: 16
Worklist Smp#: 13
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5:HRSIR

OCDD, CAS: 3268-87-9

Signal: 2

RT: 37.04
Area: 9256
Amount: 0.162014
Amount Units: pg/ul

Processing Integration Results

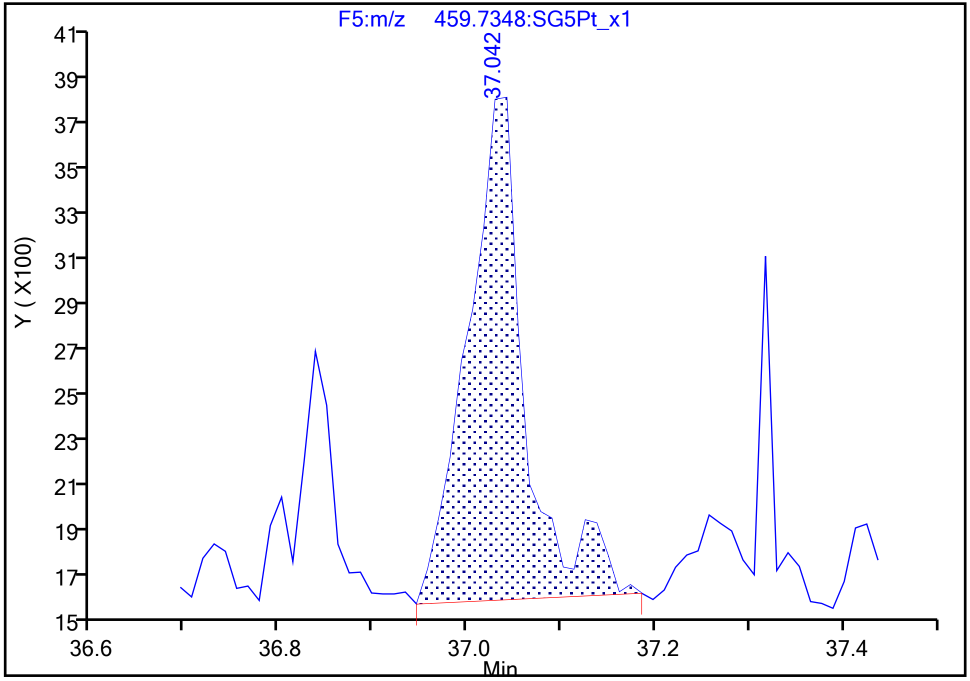

RT: 37.04
Area: 8087
Amount: 0.135051
Amount Units: pg/ul

Manual Integration Results

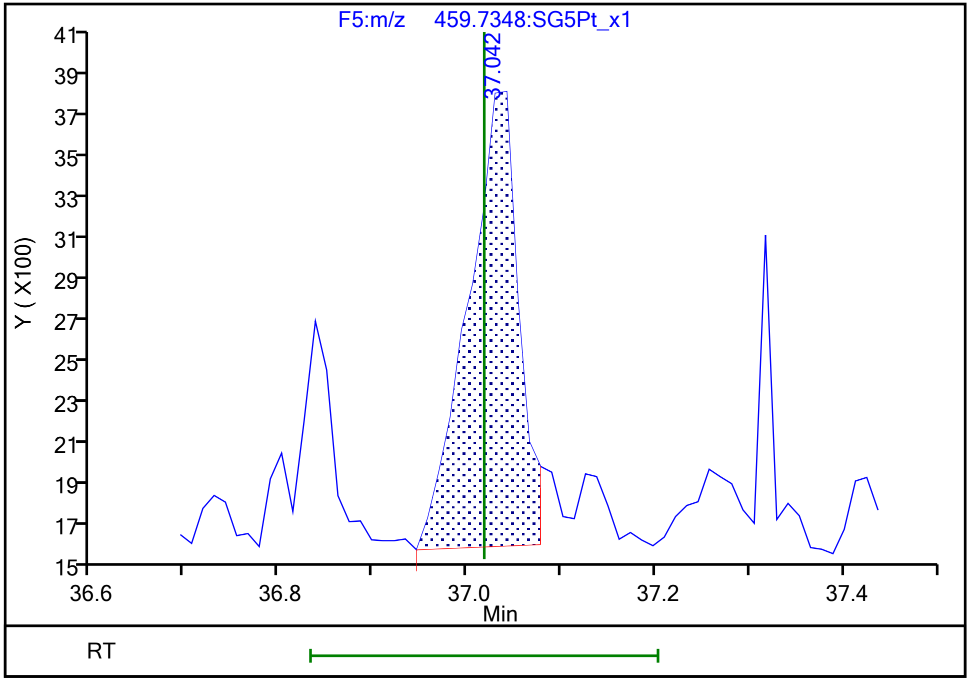

Reviewer: dadunj, 03-Sep-2020 09:07:03
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 03-Sep-2020 09:07:39 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d		
Injection Date:	02-Sep-2020 05:19:10	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#2		
Worklist#:	408767	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

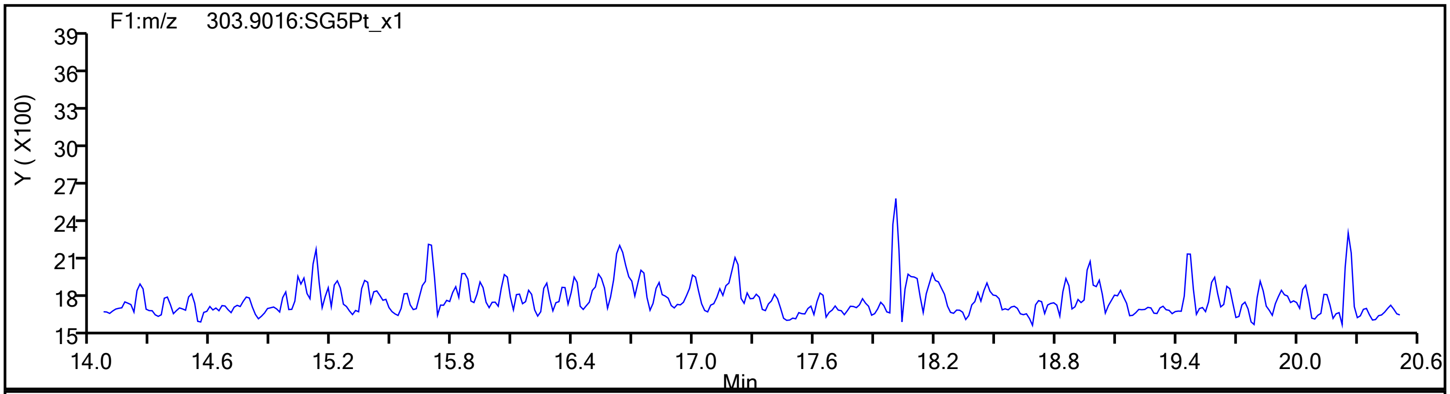

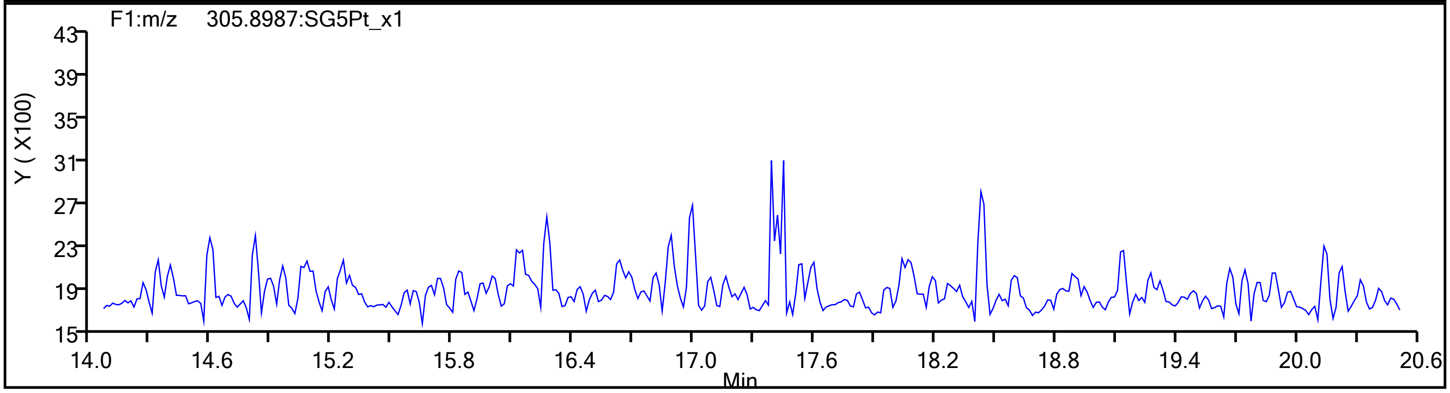

TCDF Standards

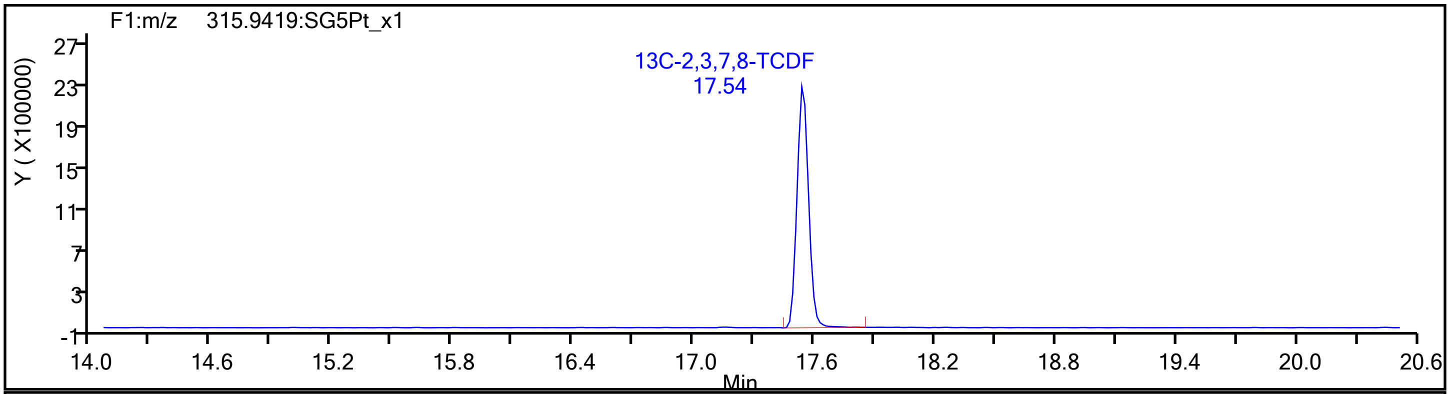

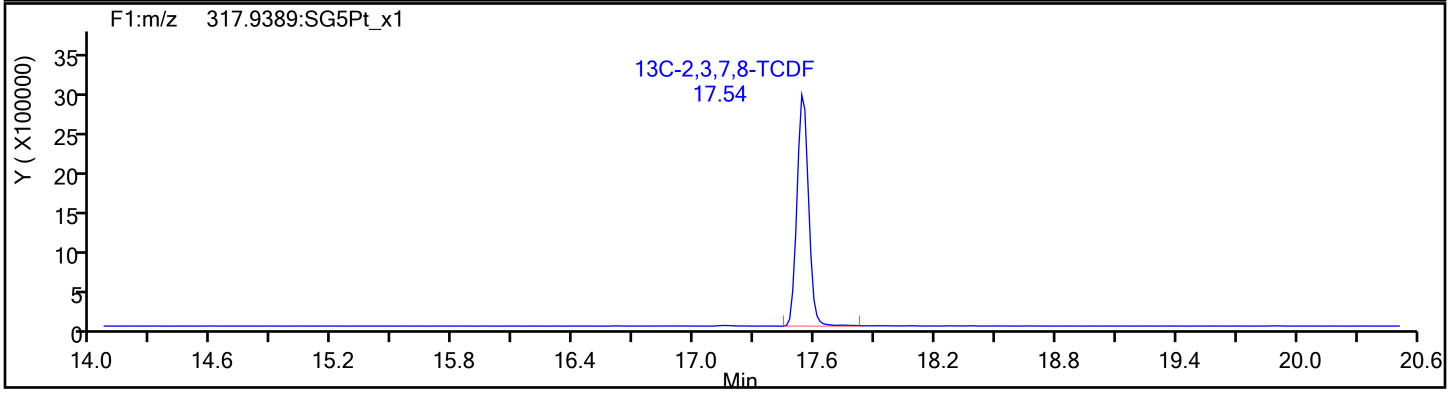

Report Date: 03-Sep-2020 09:07:39

Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d		
Injection Date:	02-Sep-2020 05:19:10	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#2		
Worklist#:	408767	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

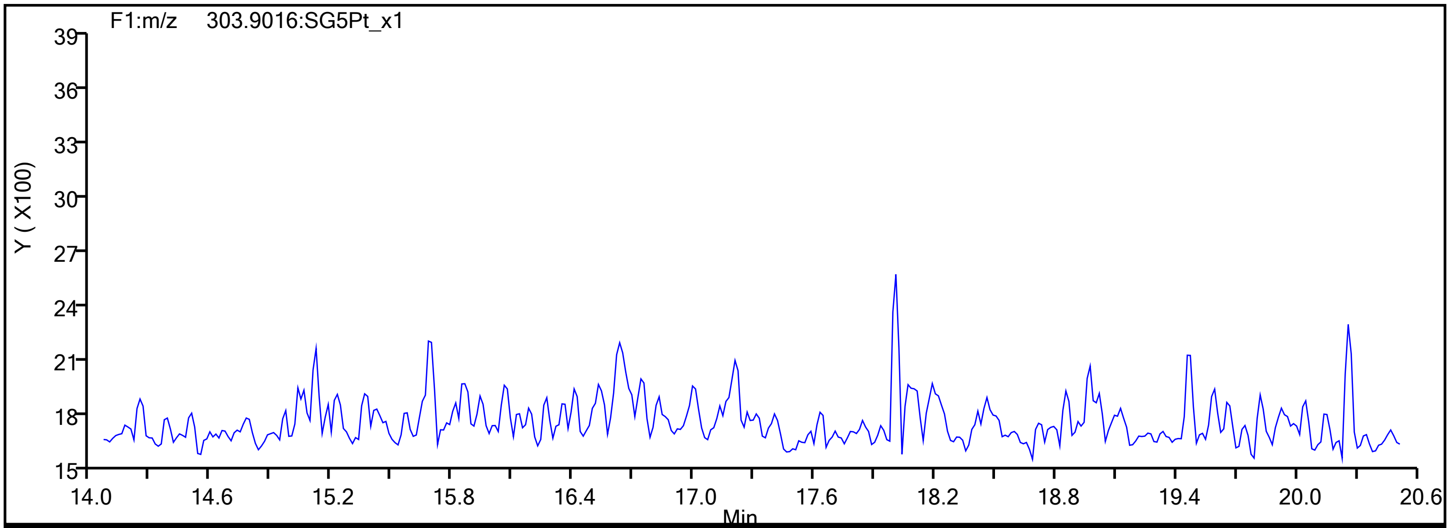

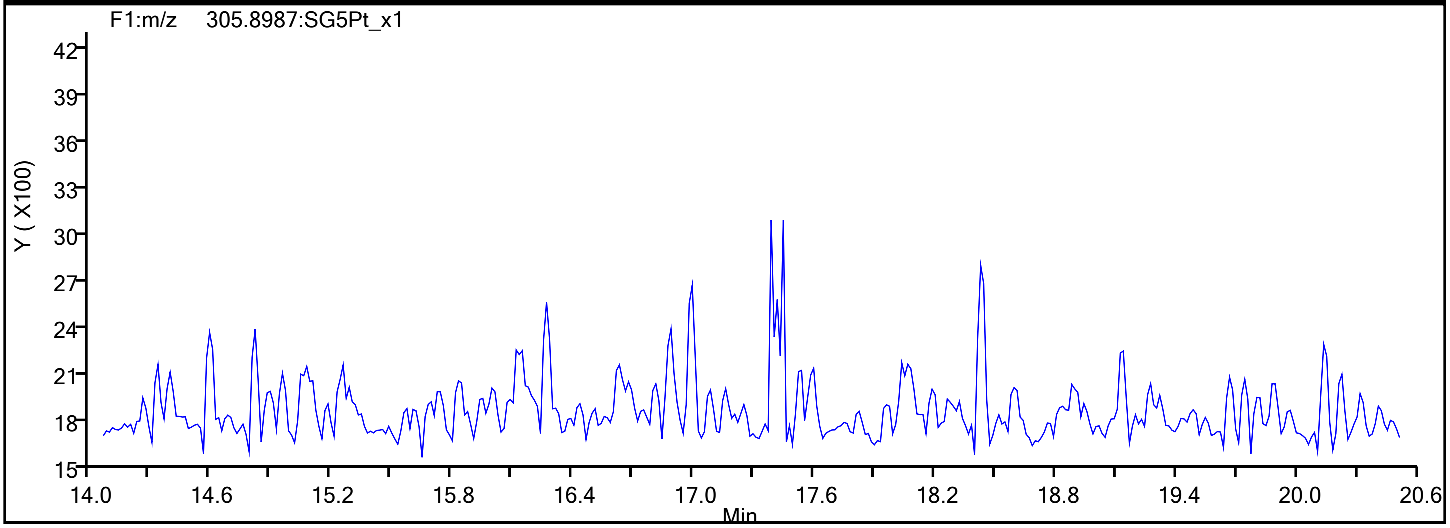

TCDF Interference Mass

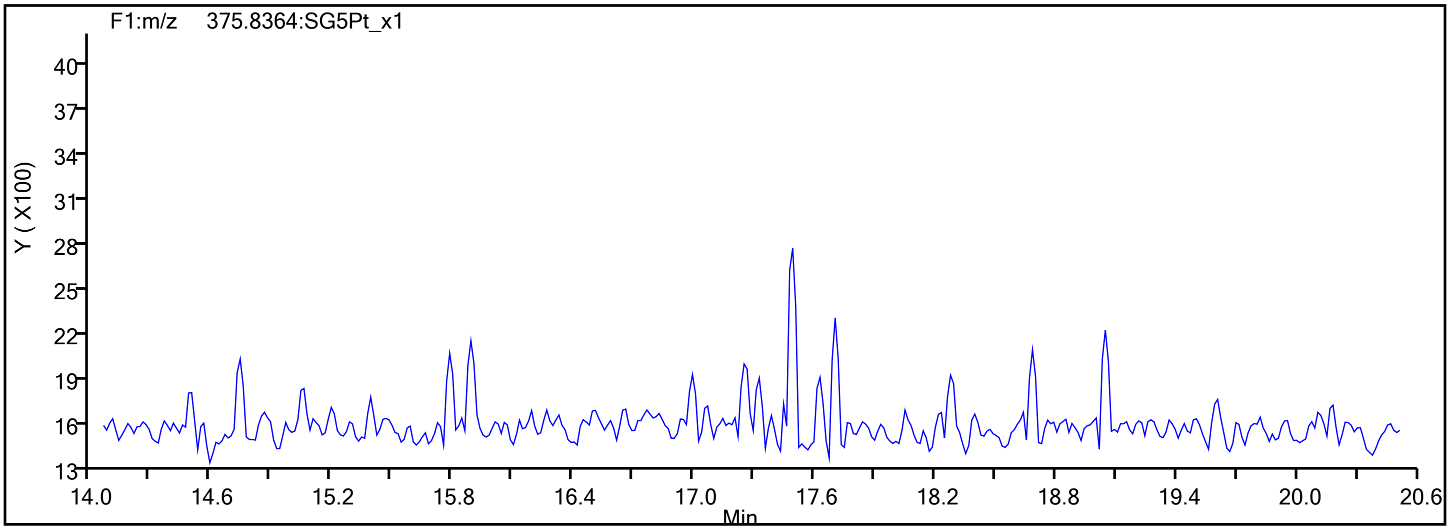

Report Date: 03-Sep-2020 09:07:39 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d		
Injection Date:	02-Sep-2020 05:19:10	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#2		
Worklist#:	408767	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

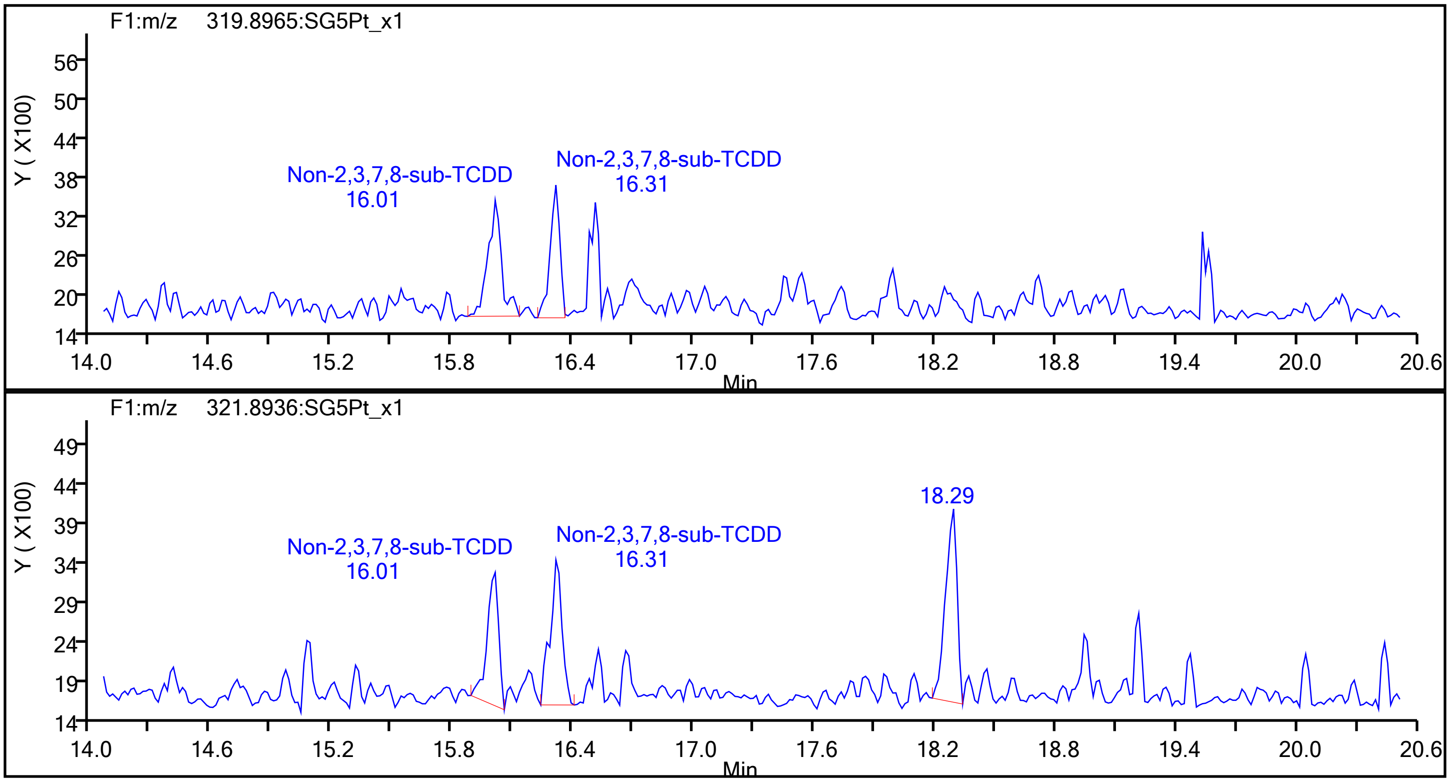

TCDD Standards

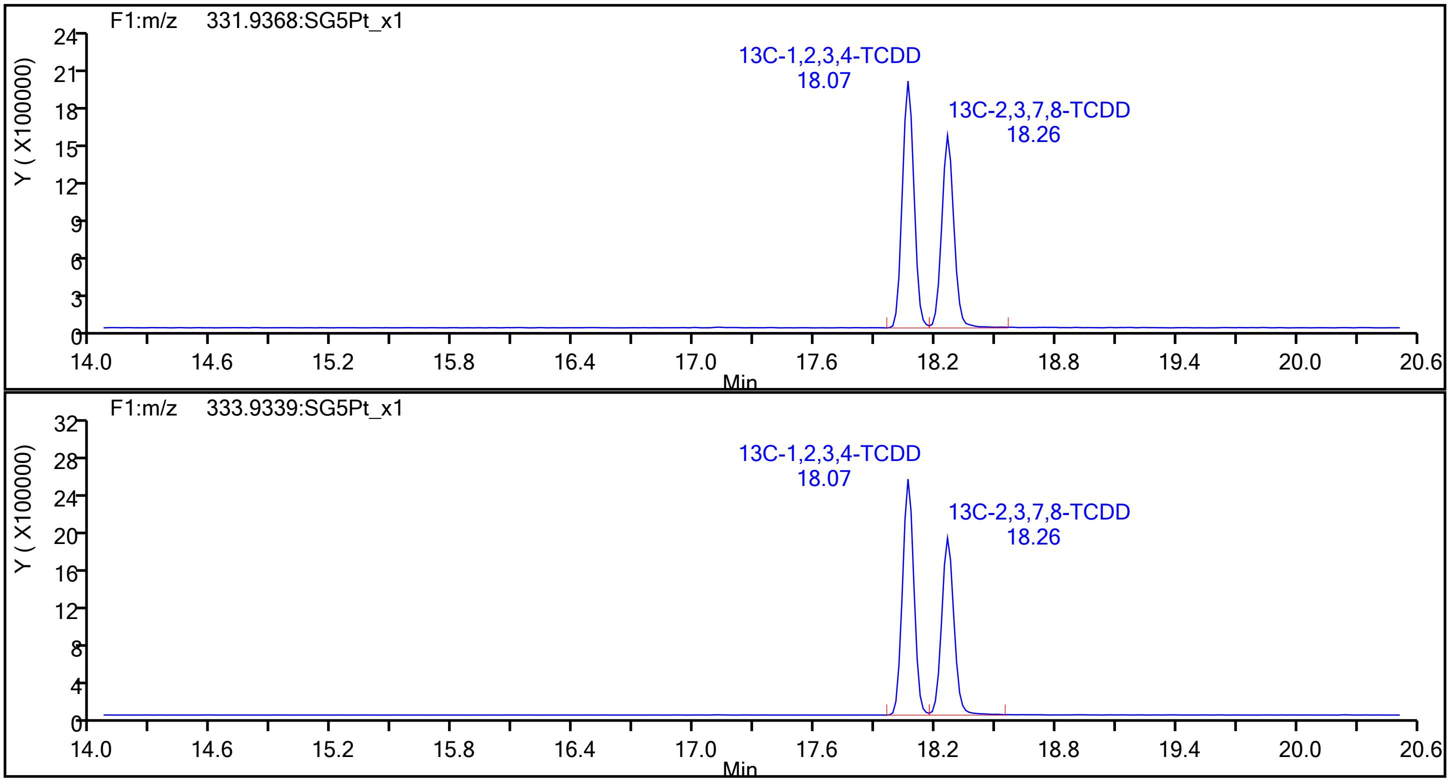

Report Date: 03-Sep-2020 09:07:39 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

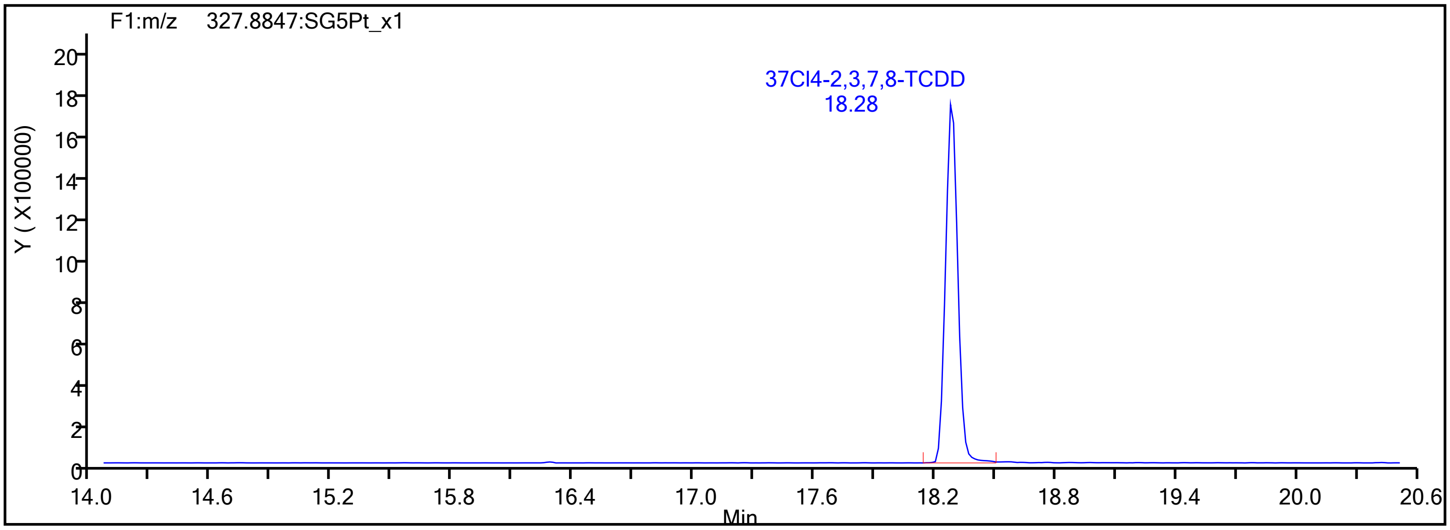

37Cl4-TCDD Standards

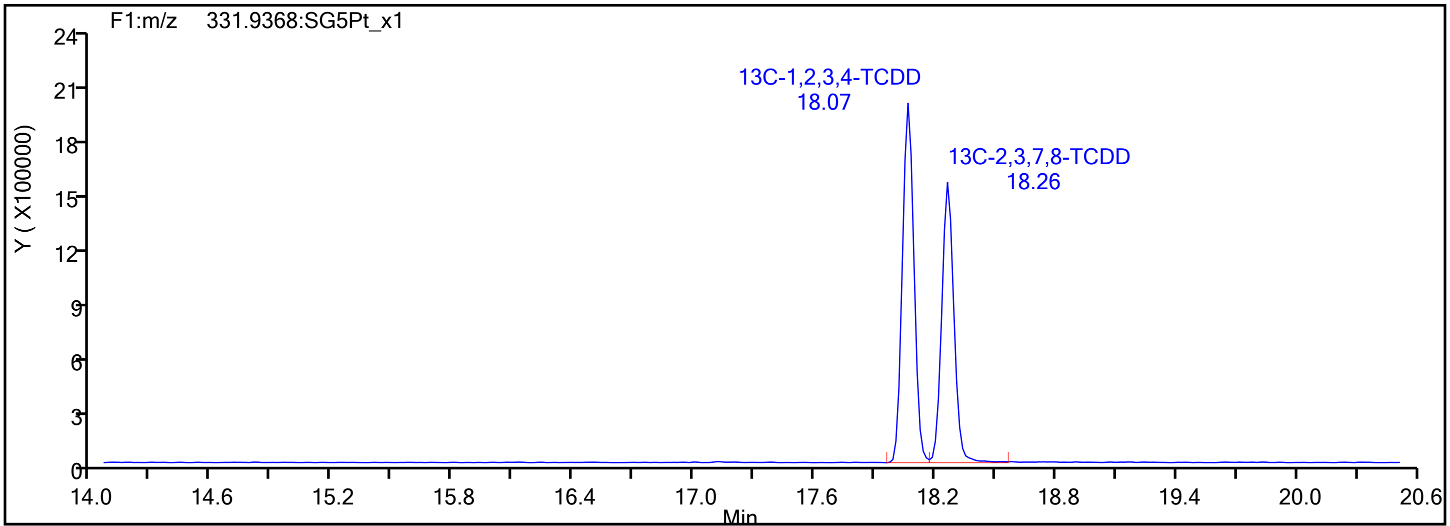

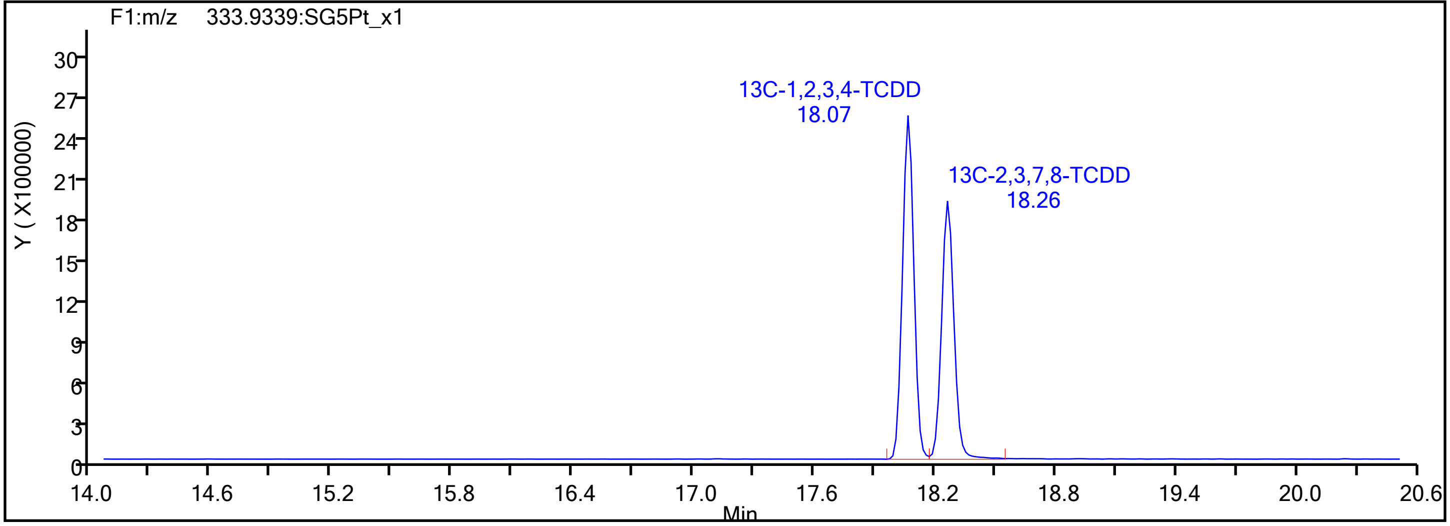

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F1 PeCDFs

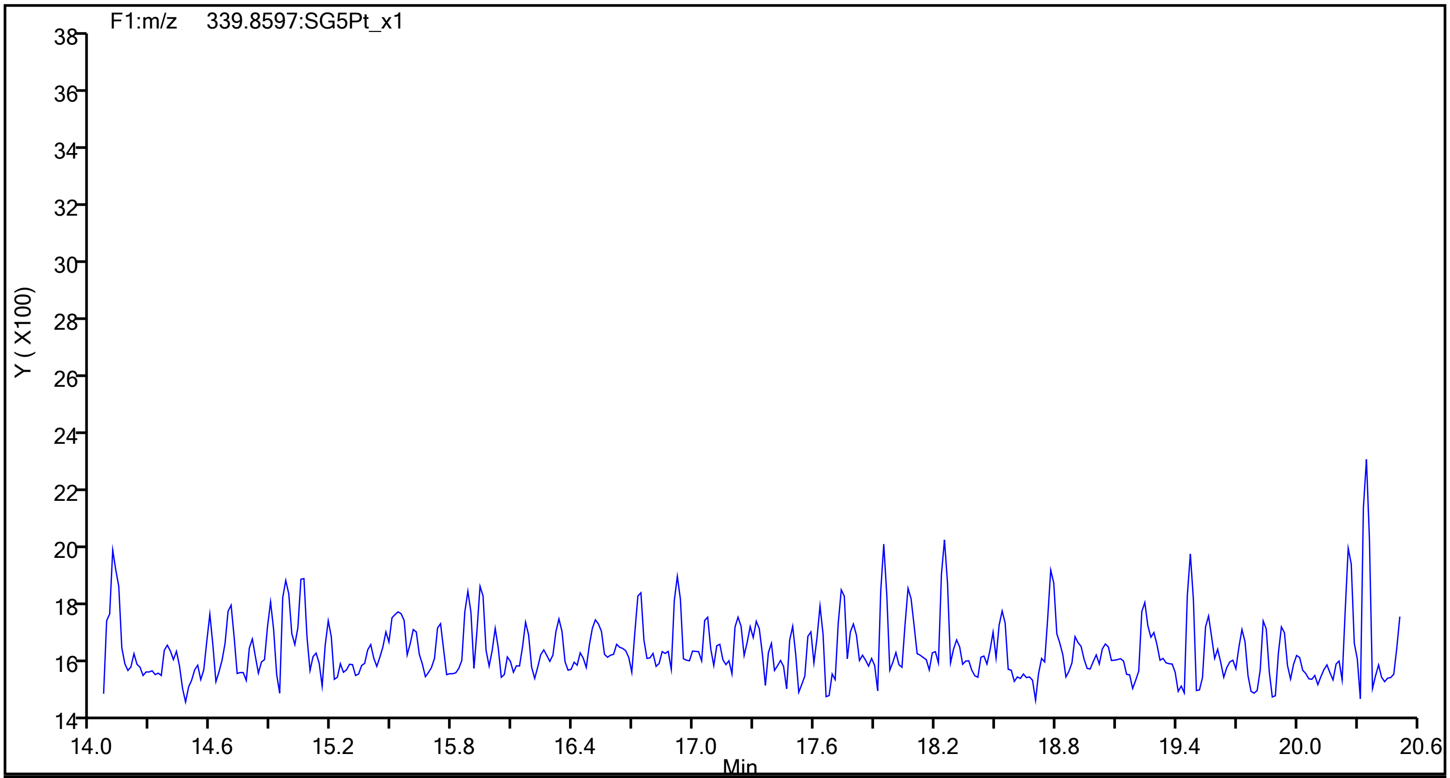

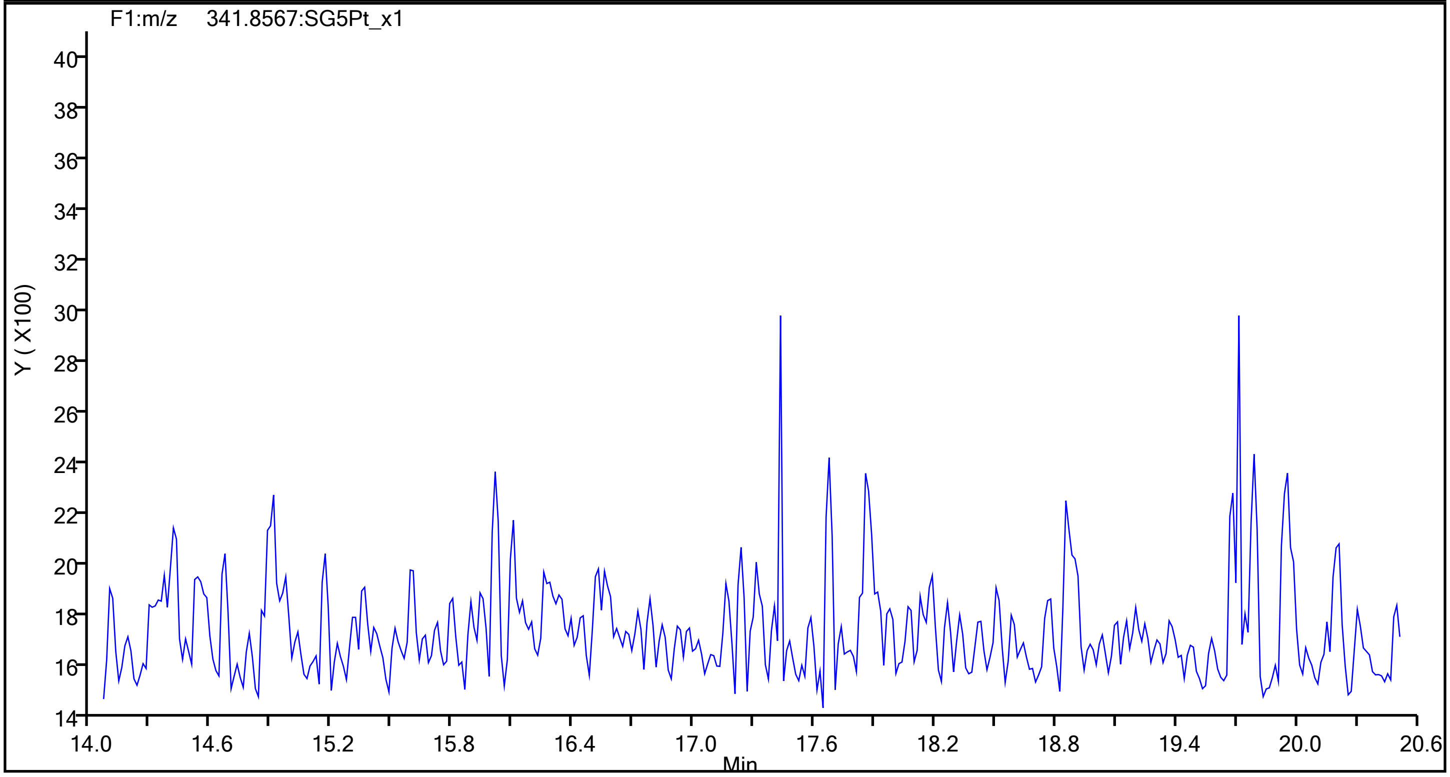

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Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

F1 PeCDFs

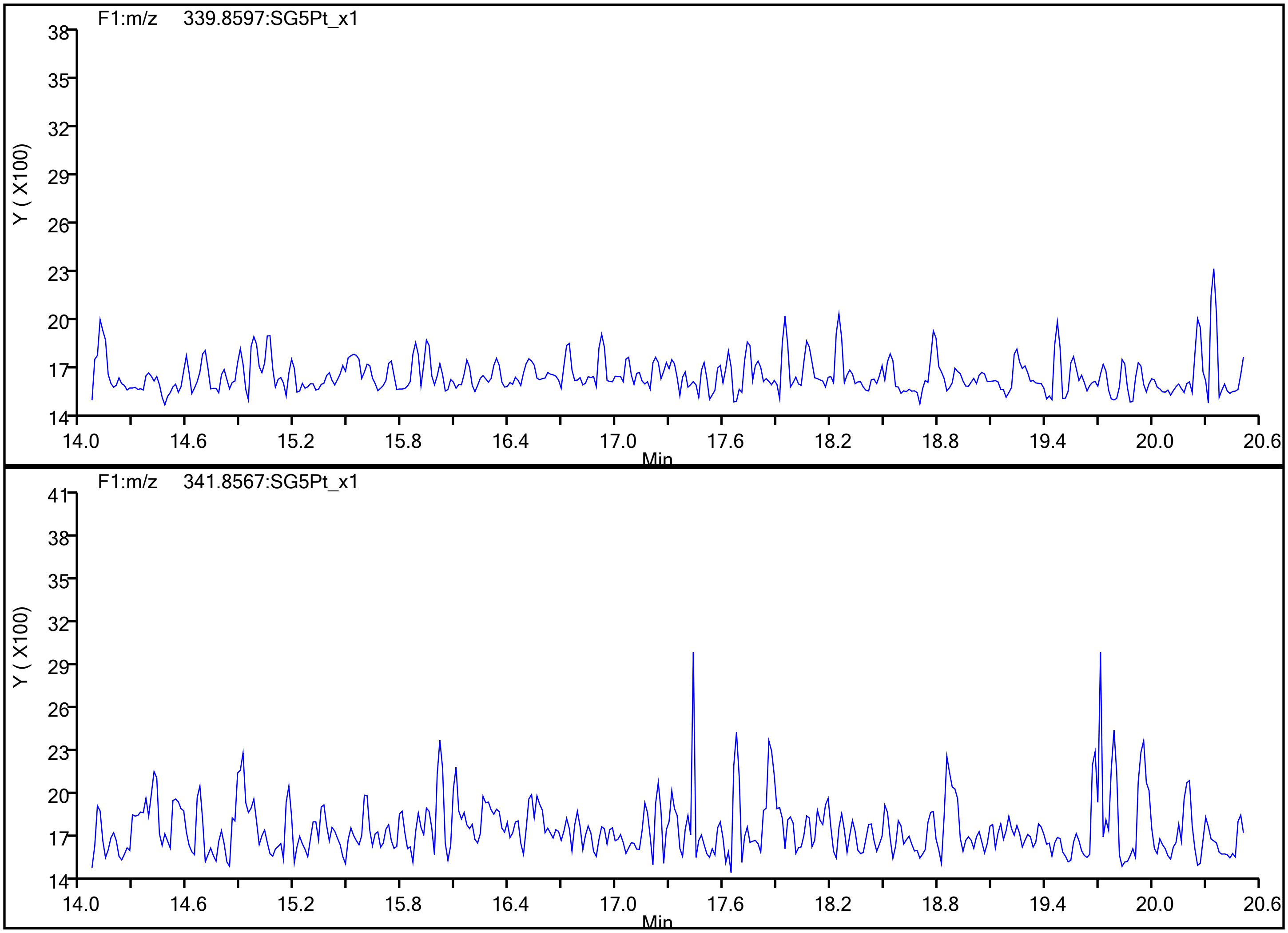

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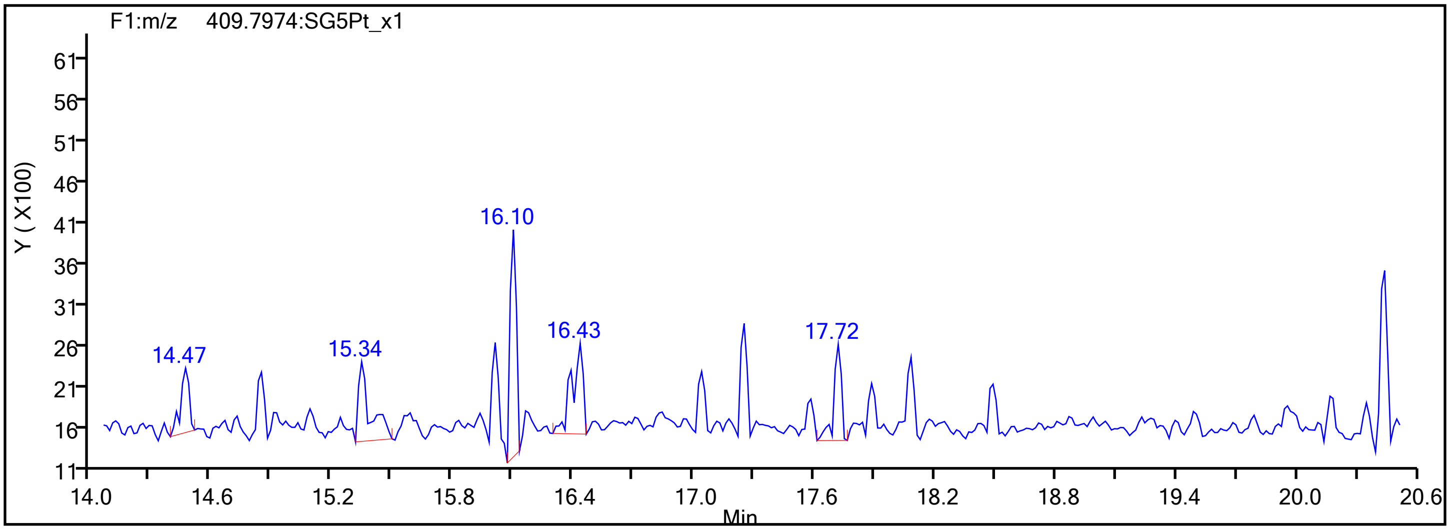

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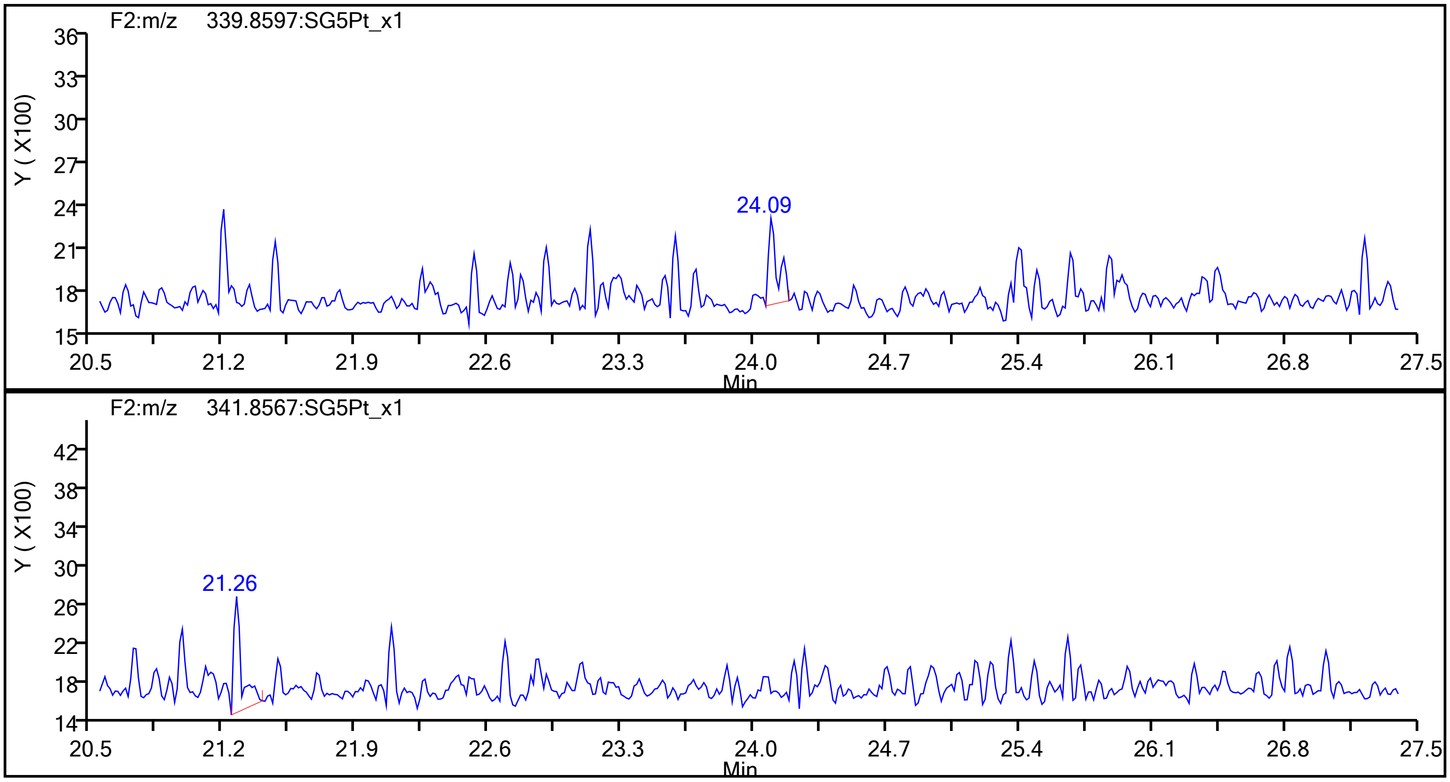

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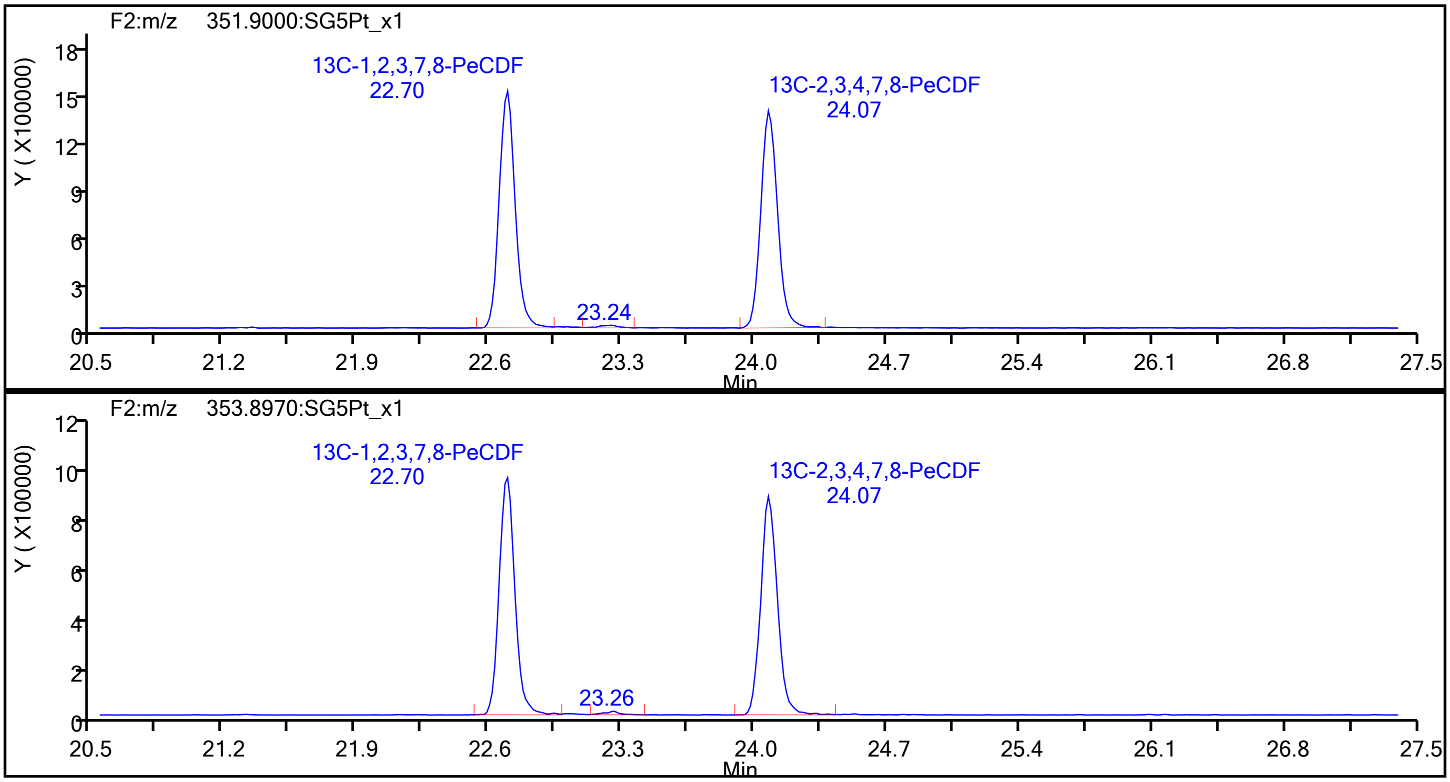

Eurofins TestAmerica, Sacramento

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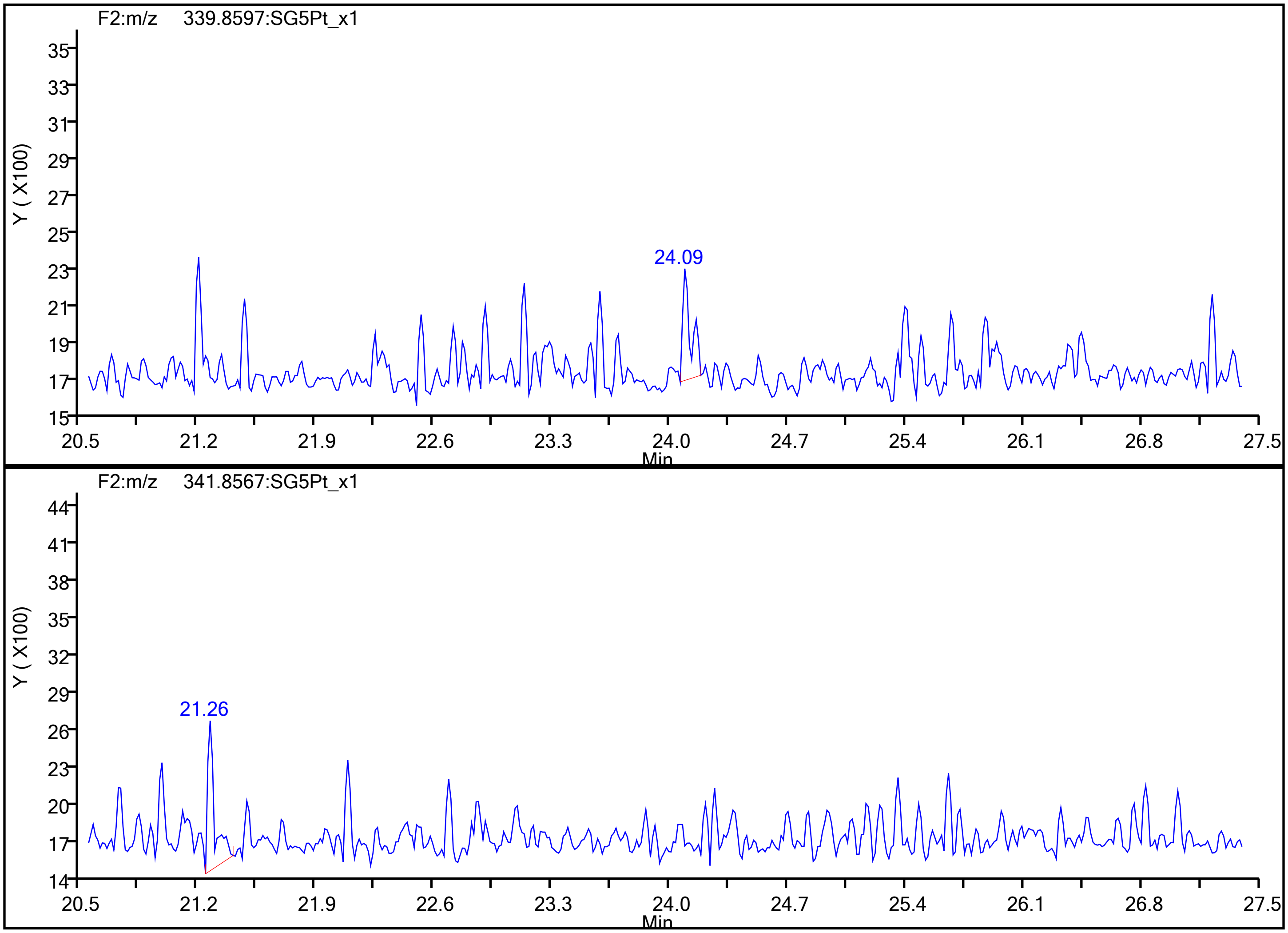

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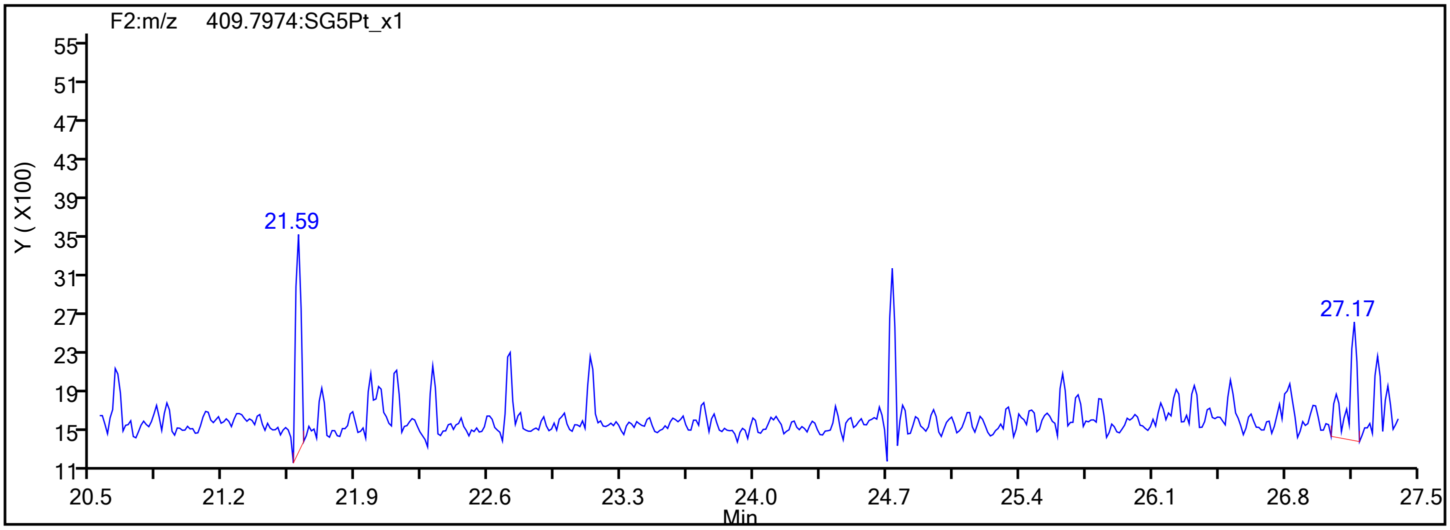

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Eurofins TestAmerica, Sacramento

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PeCDD

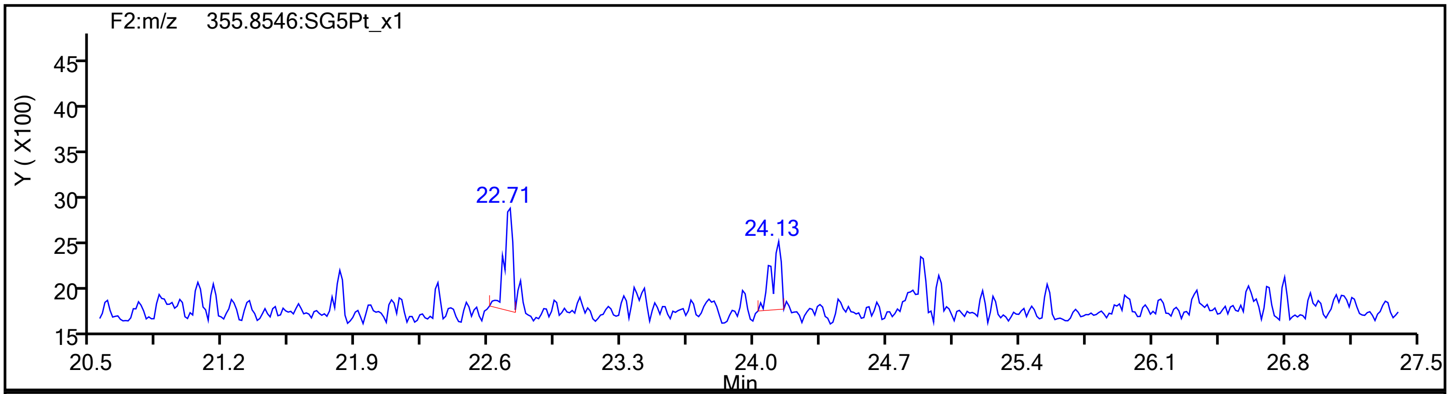

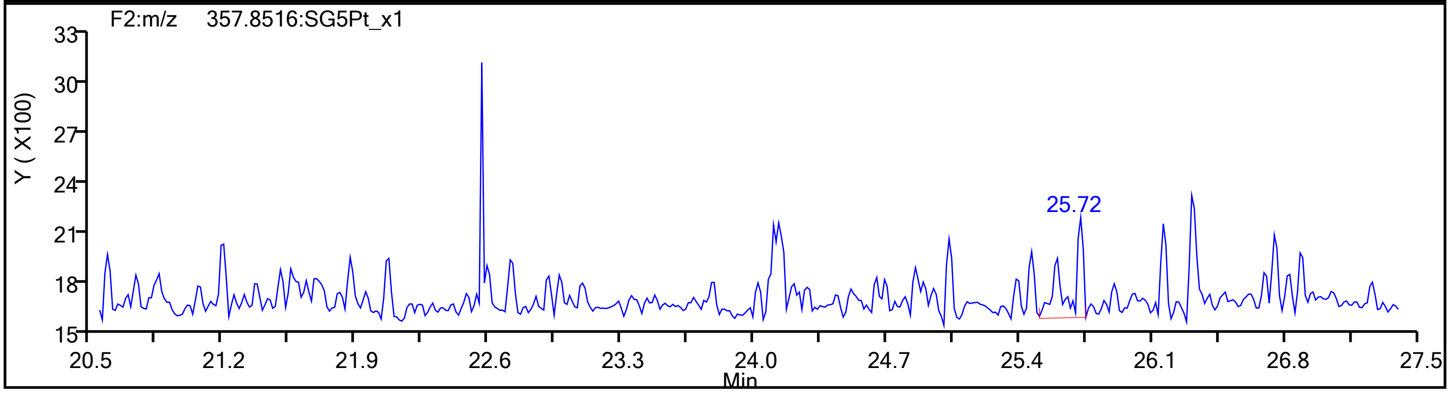

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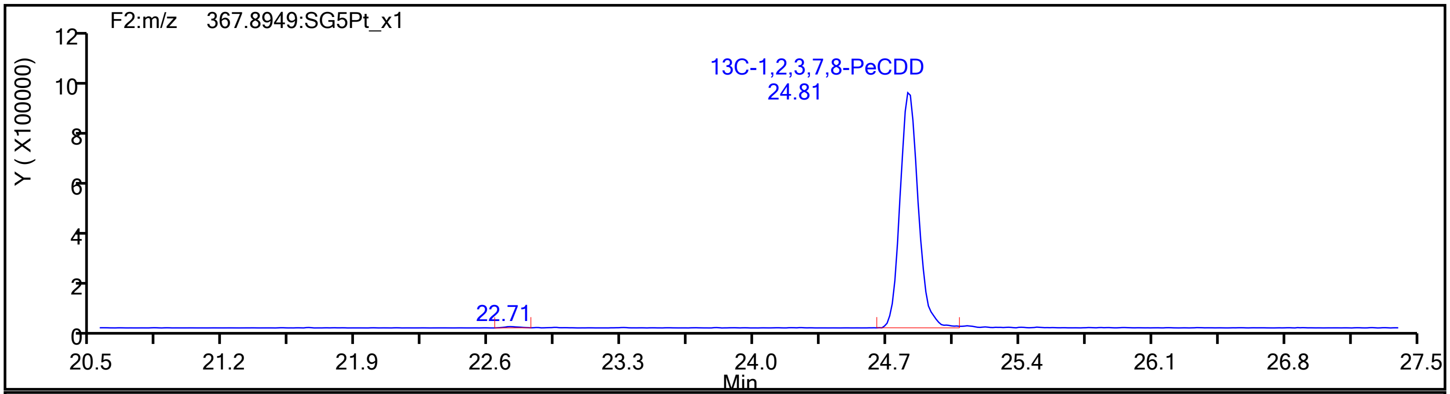

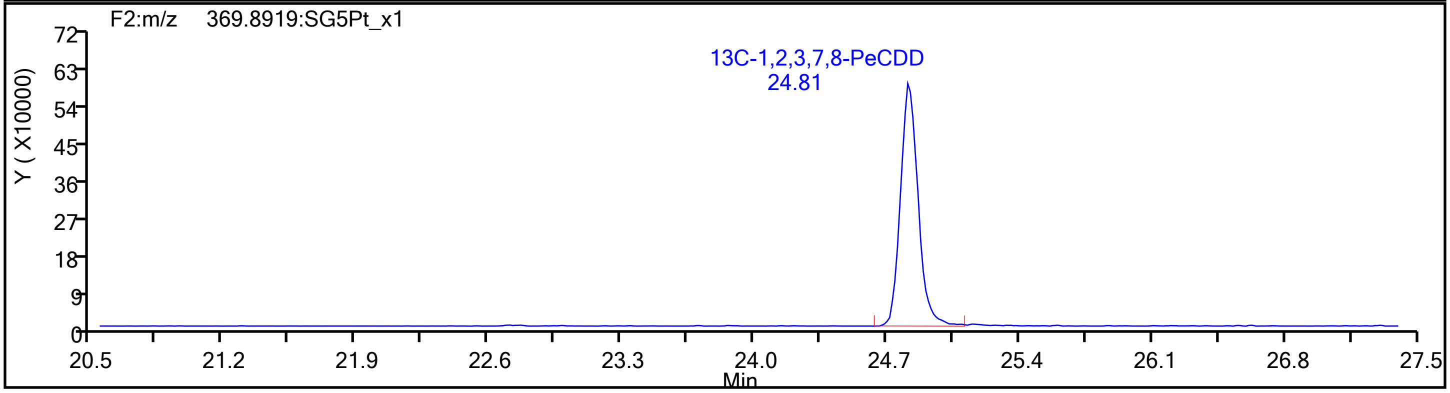

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Eurofins TestAmerica, Sacramento

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Injection Date: 02-Sep-2020 05:19:10 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-GW-Tank#2

Worklist#: 408767 Sample Line#: 13

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HxCDF

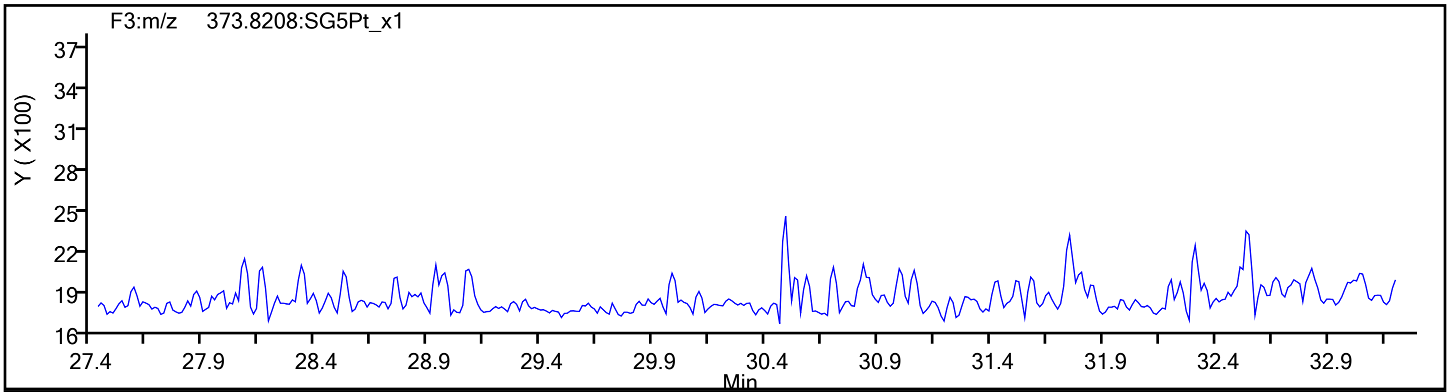

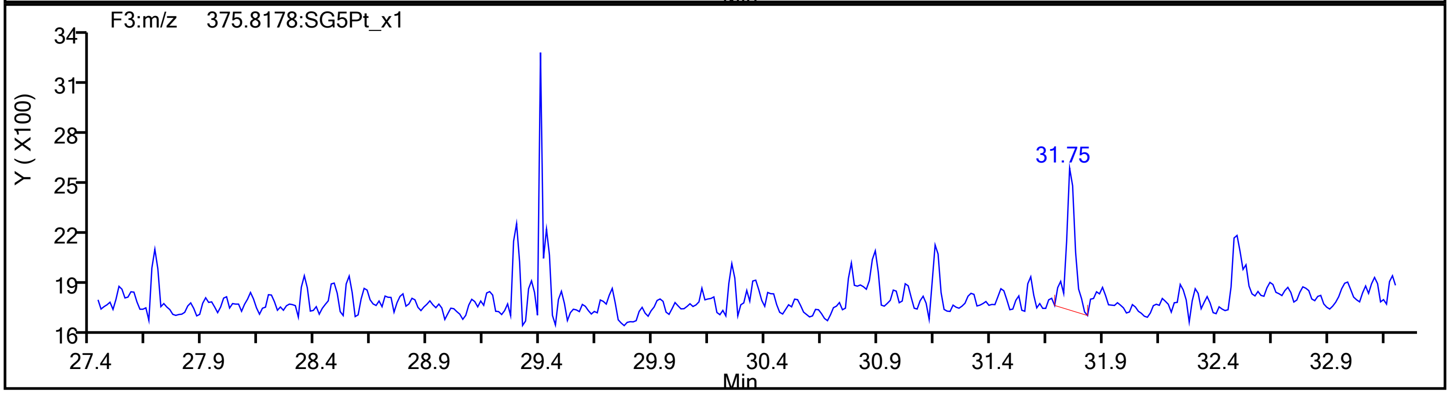

HxCDF Standards

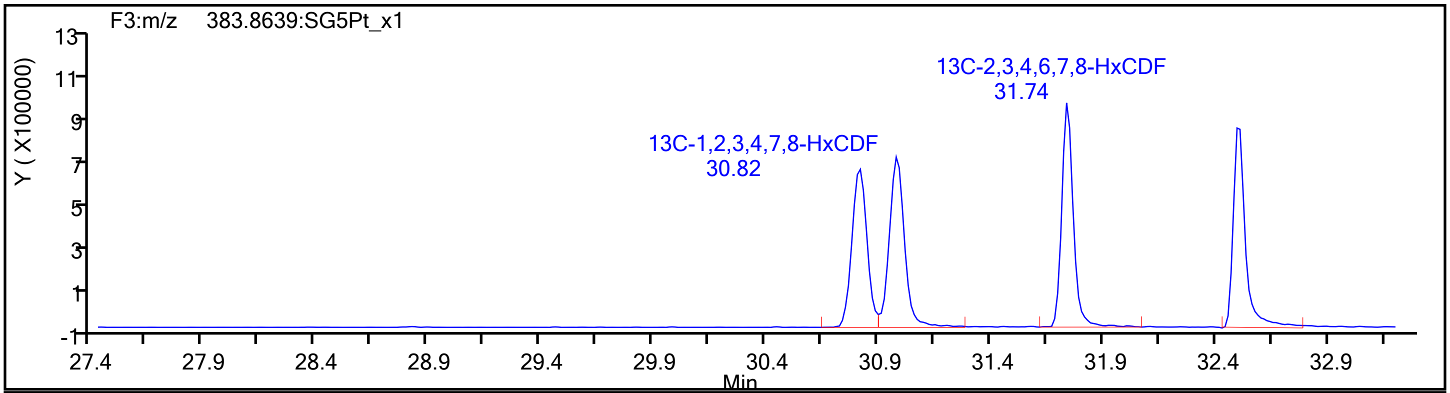

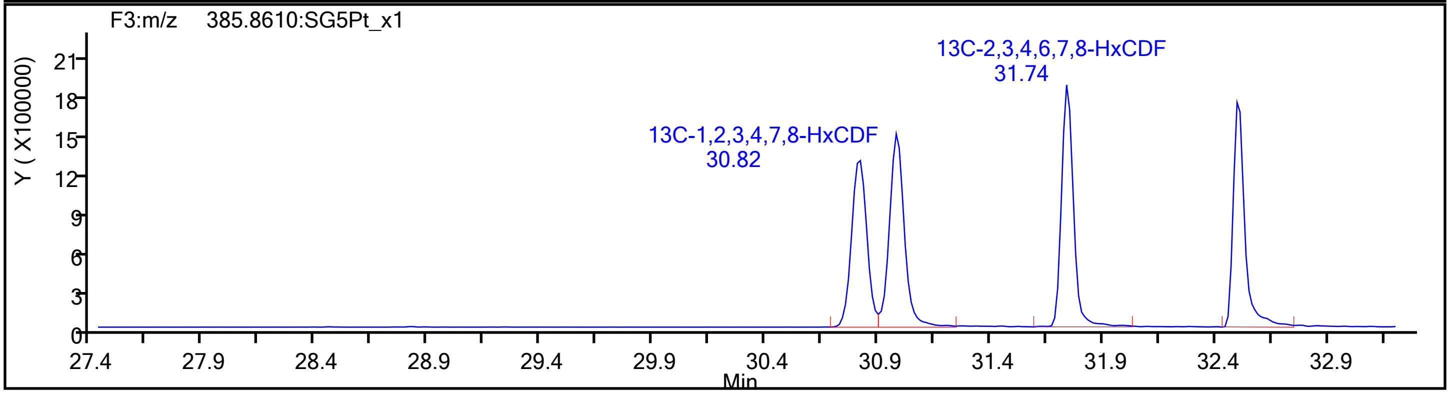

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Eurofins TestAmerica, Sacramento

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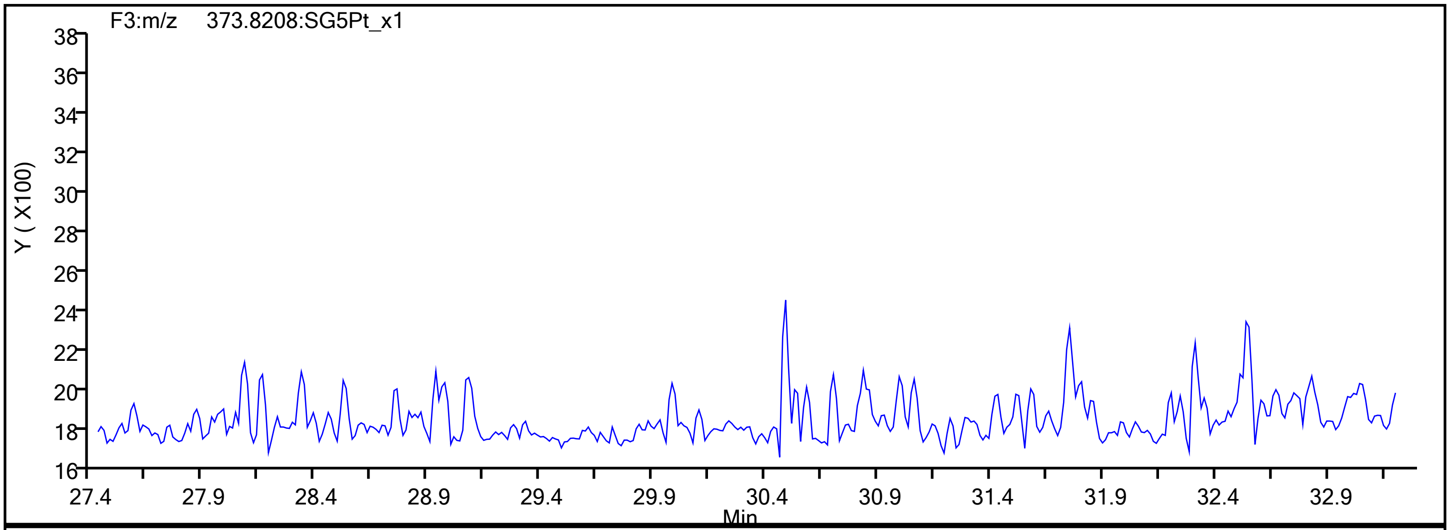

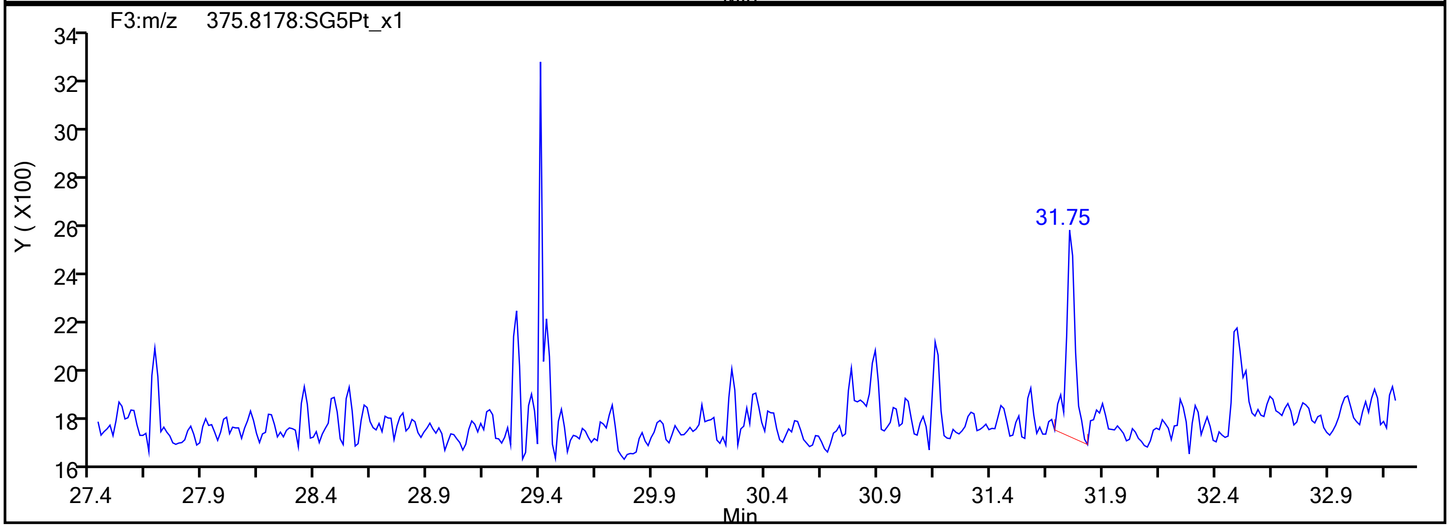

HxCDF Interference Mass

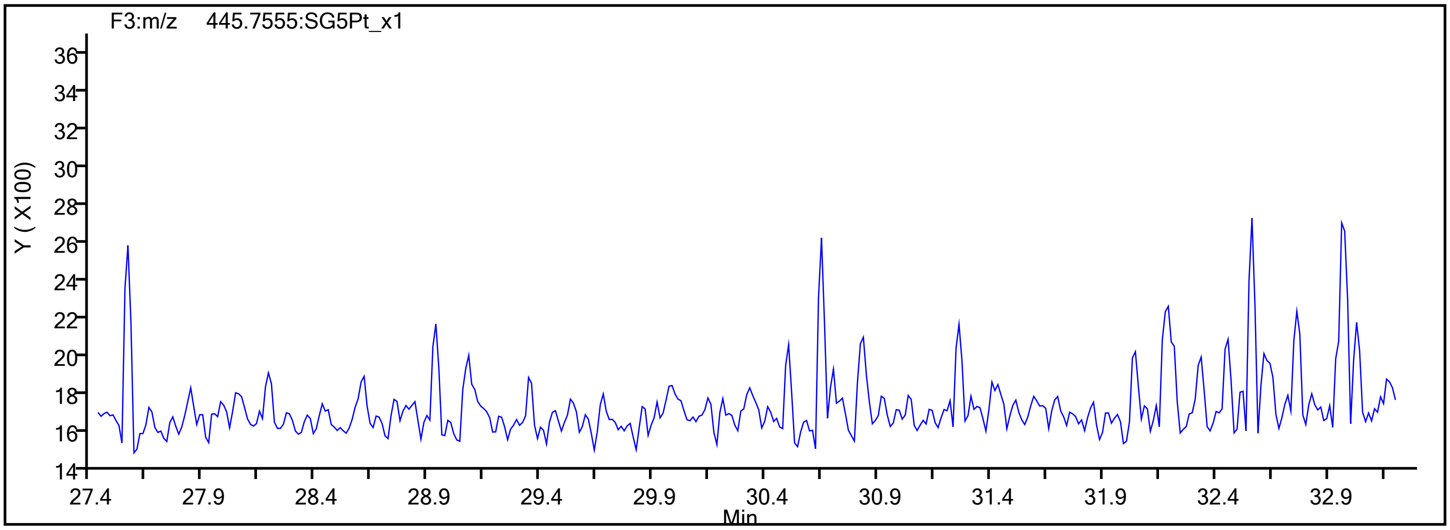

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HxCDD

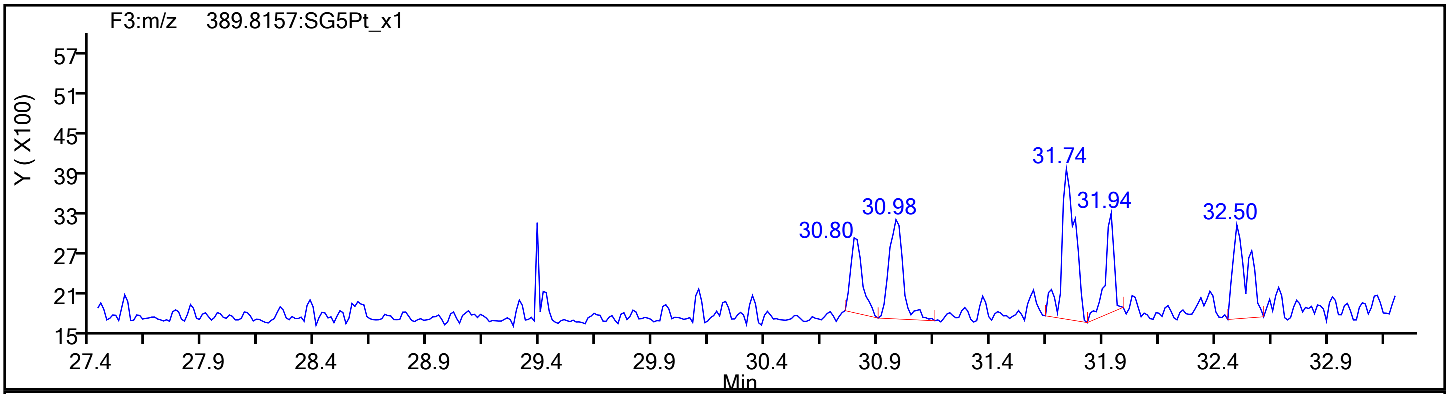

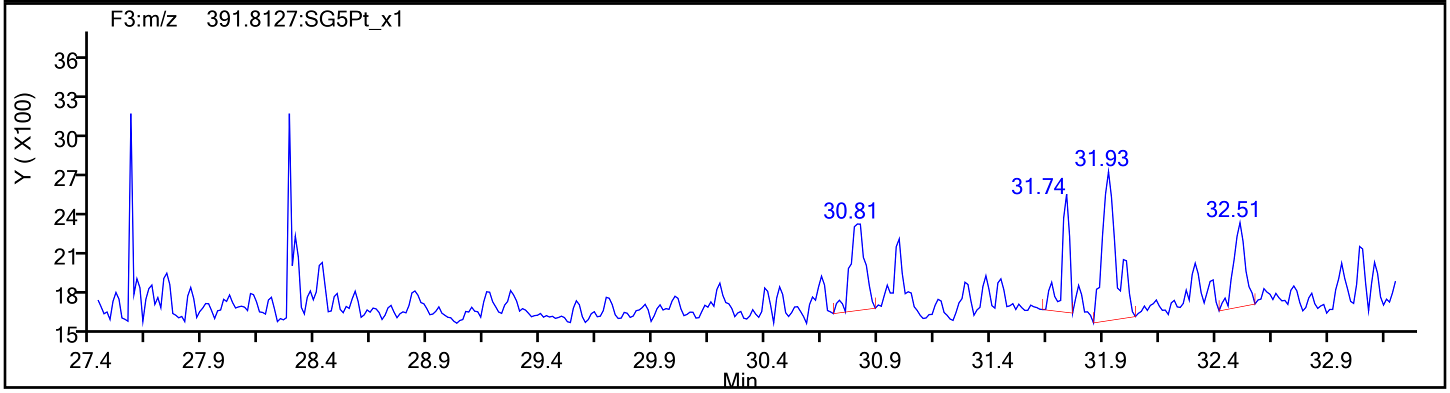

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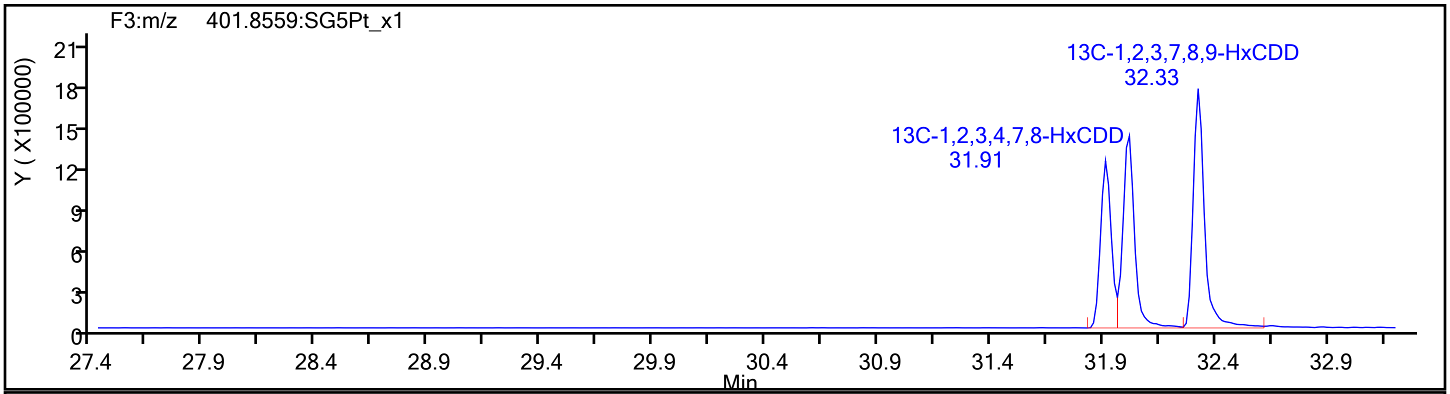

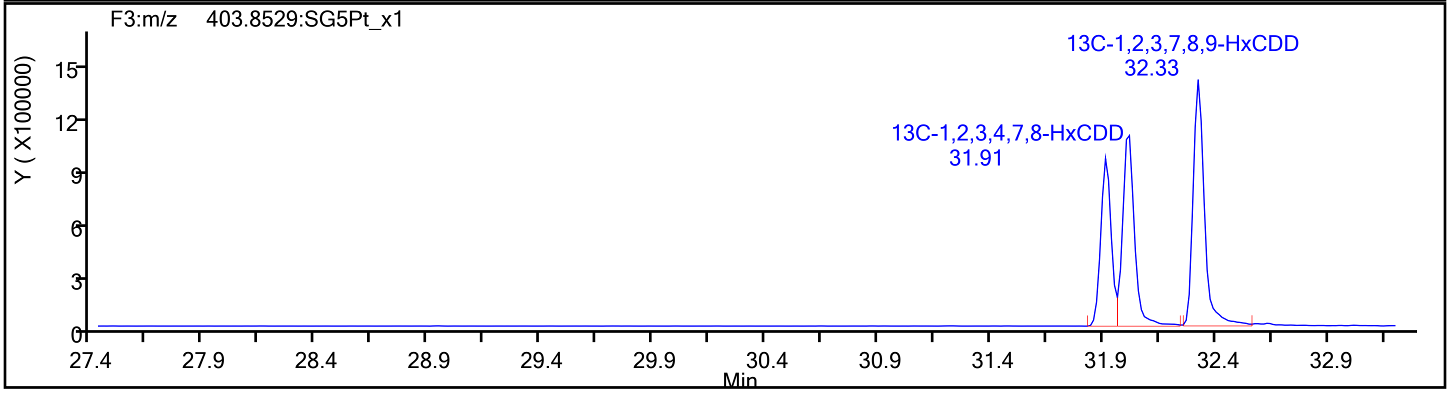

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Eurofins TestAmerica, Sacramento

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HpCDF

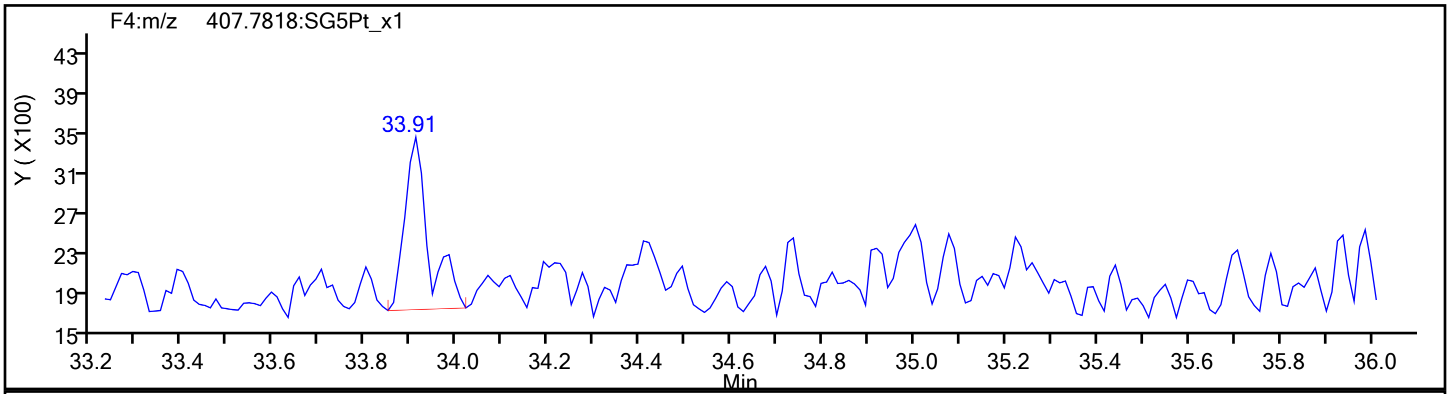

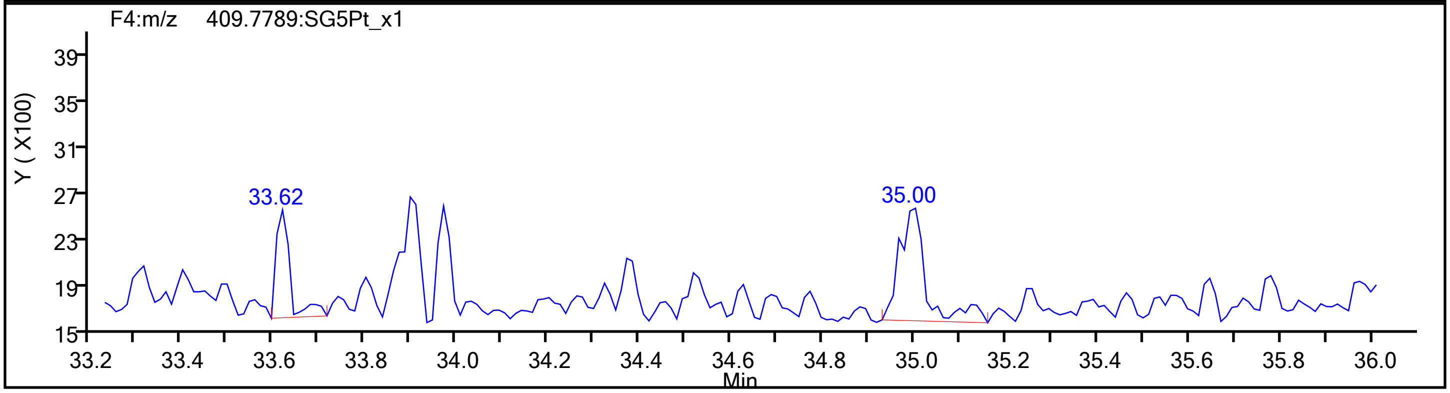

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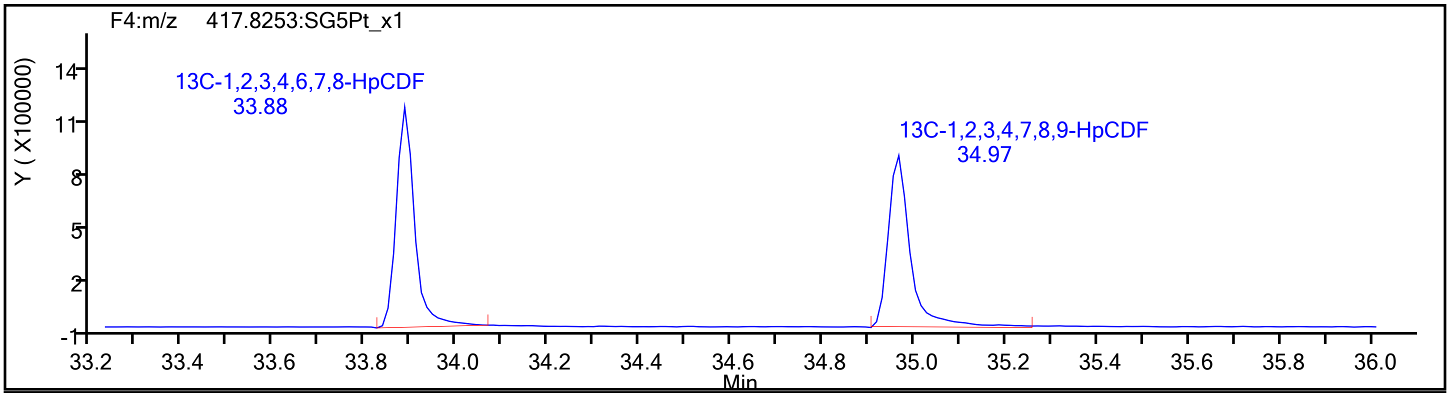

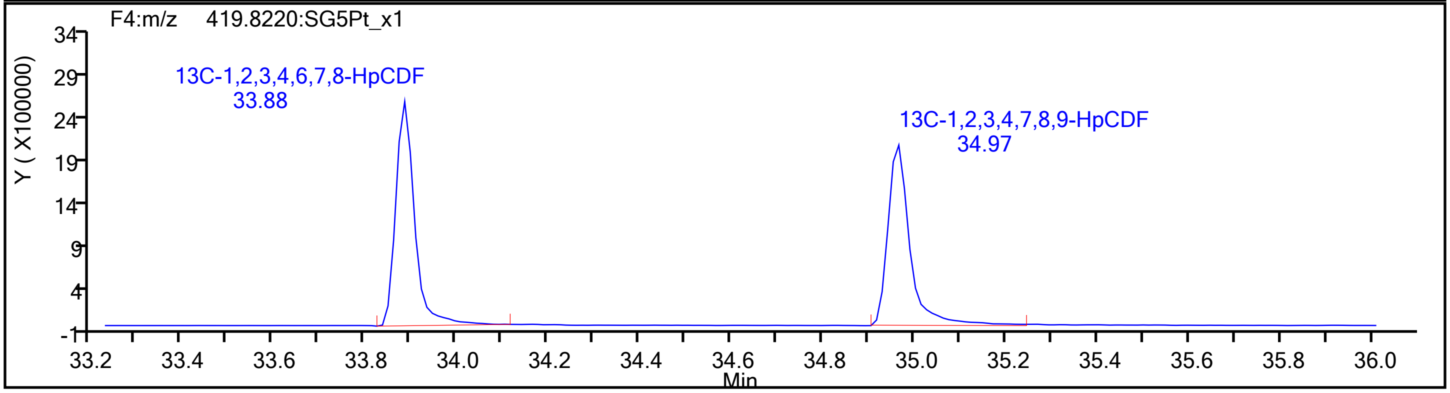

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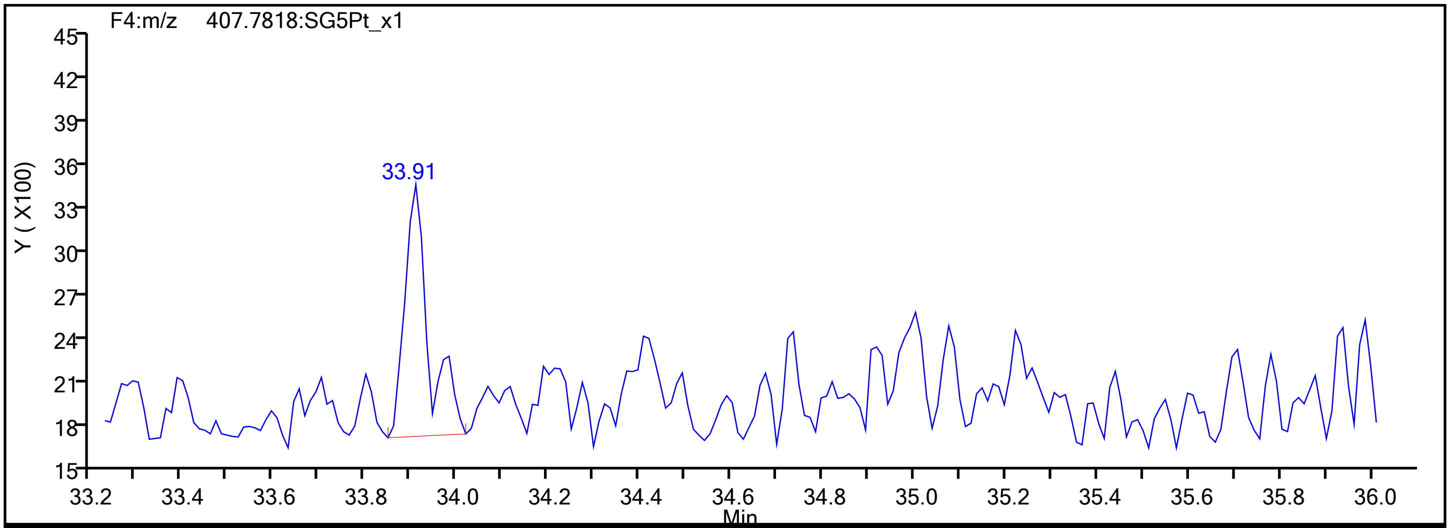

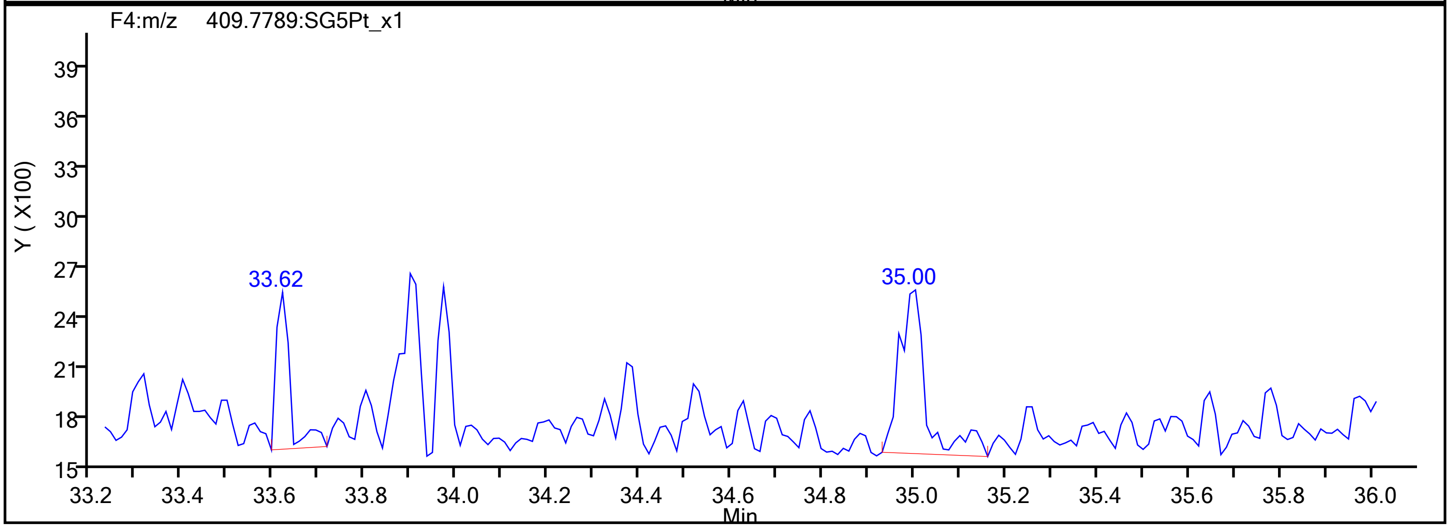

HpCDF Interference Mass

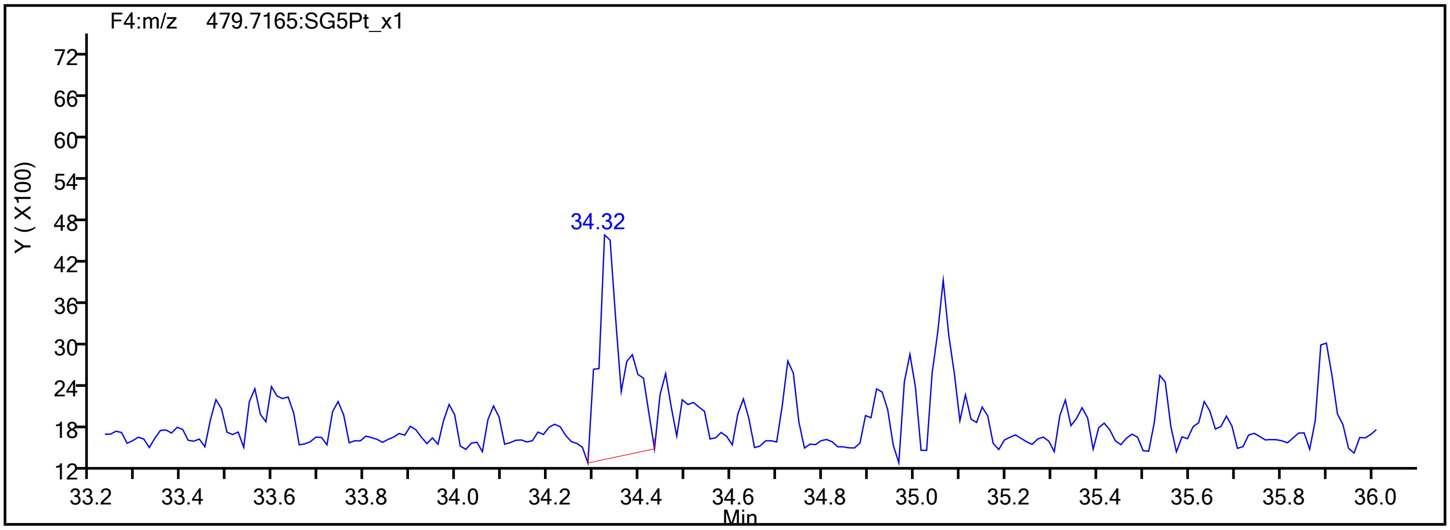

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HpCDD

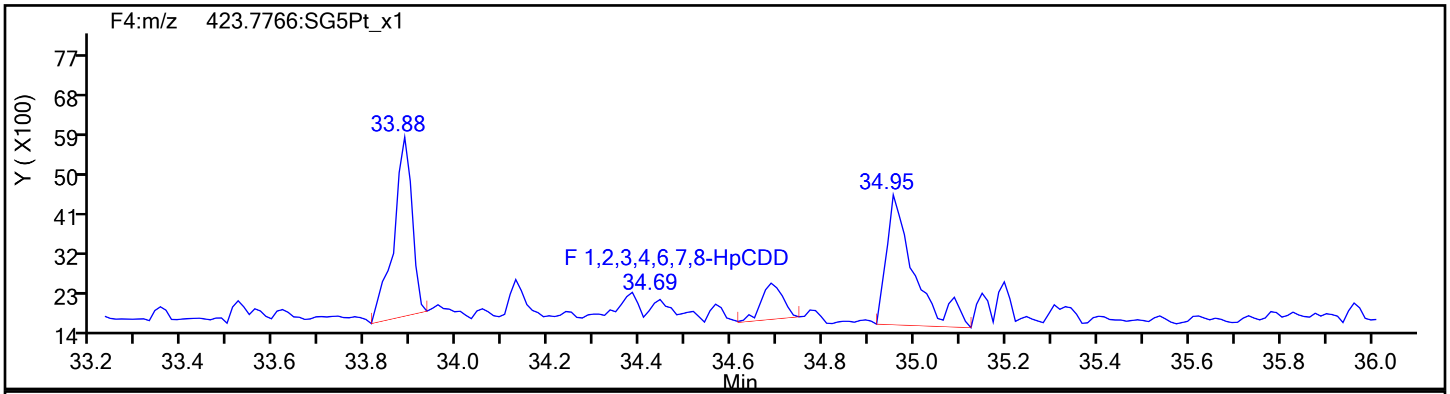

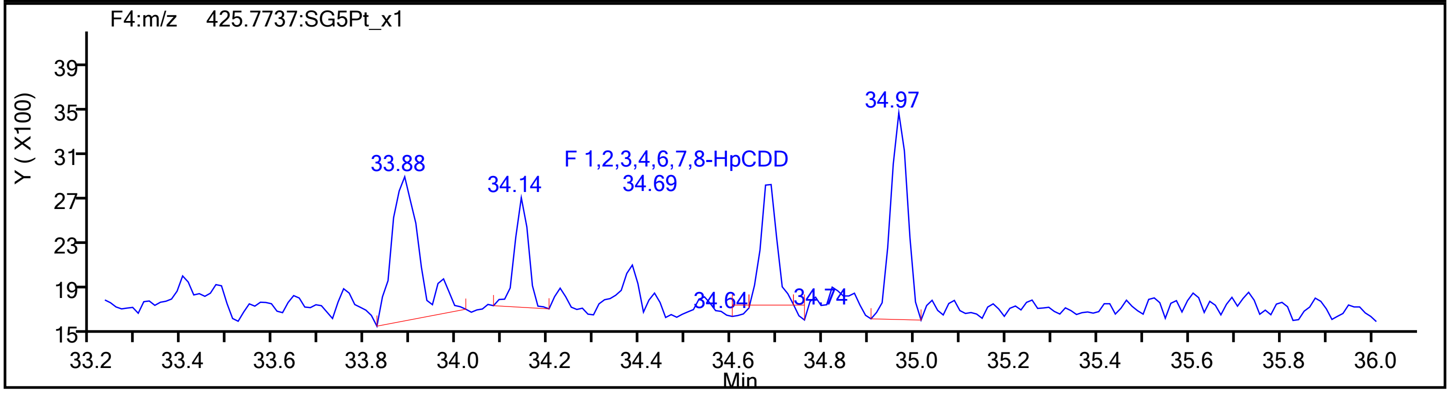

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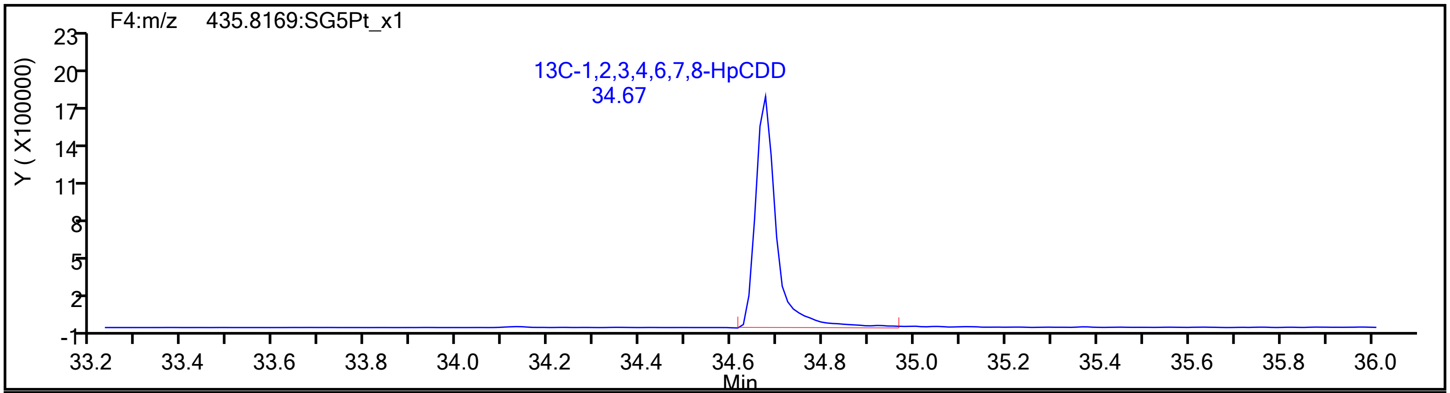

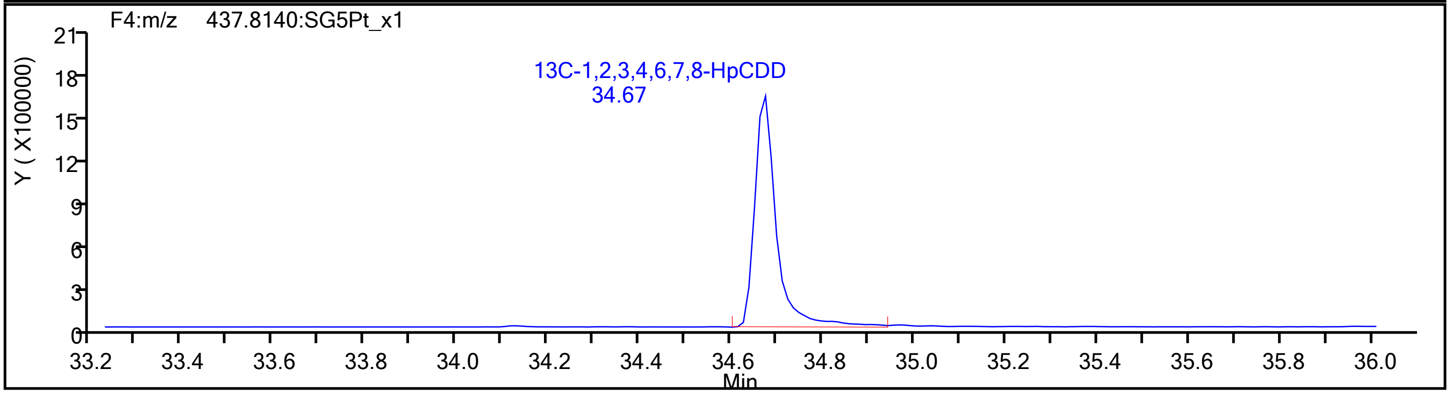

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Column Dia: 0.32 mm

OCDF

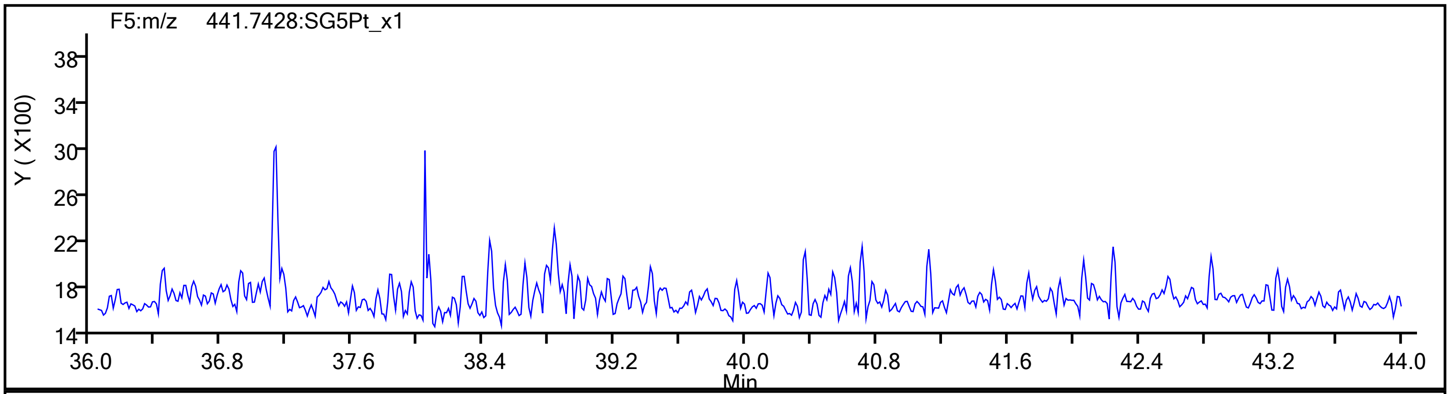

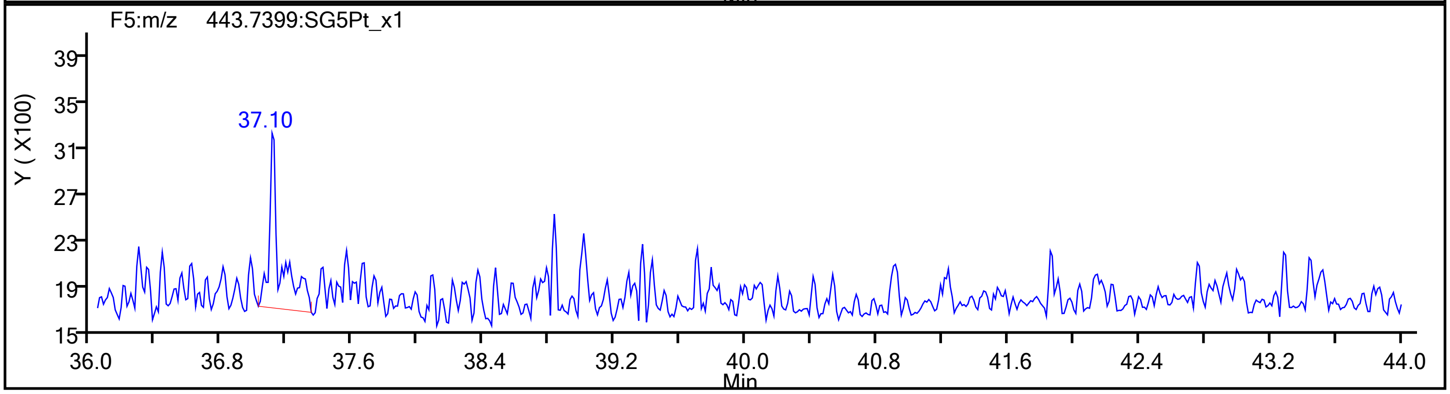

OCDF Standards

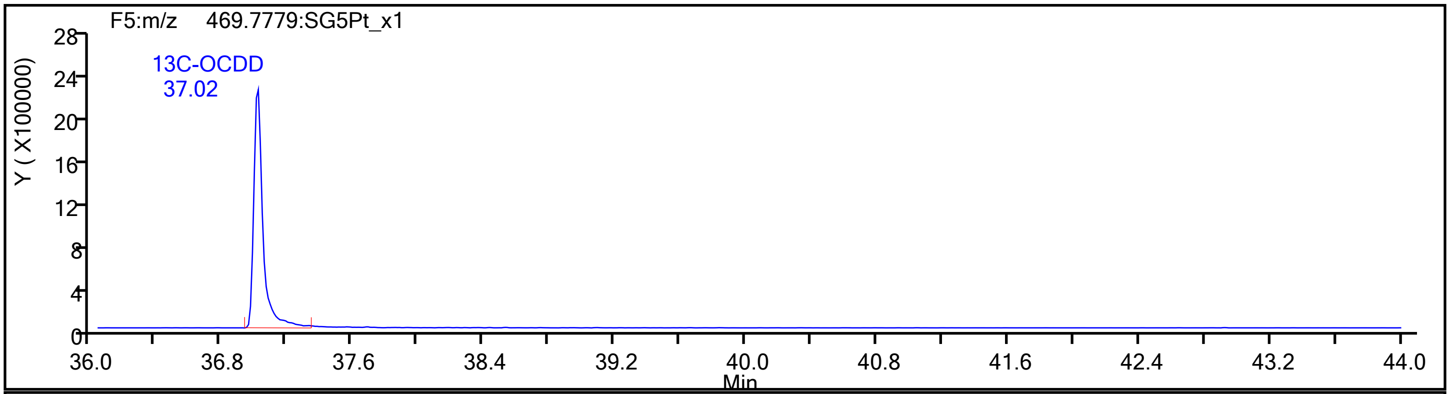

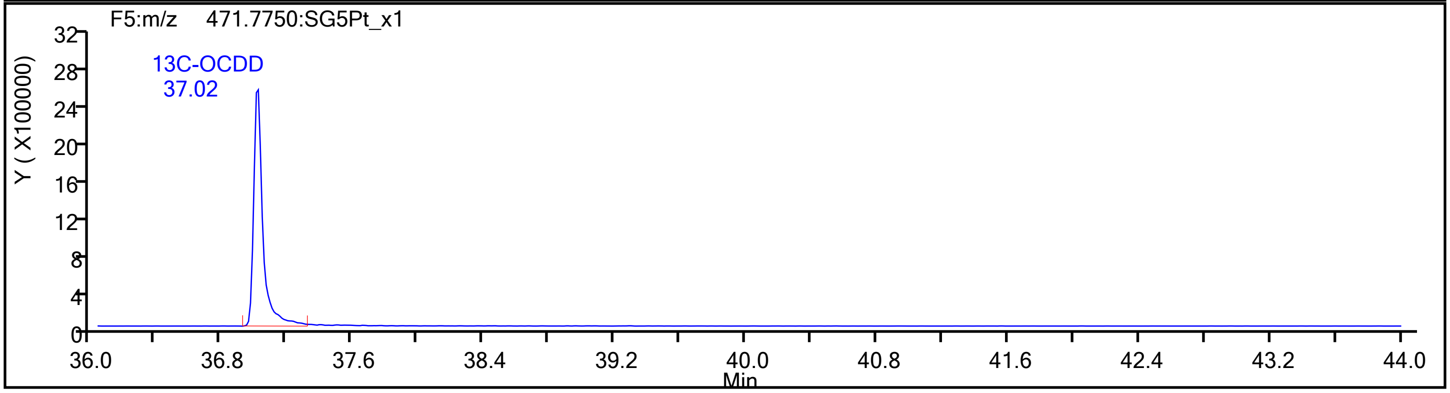

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Injection Date: 02-Sep-2020 05:19:10

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-GW-Tank#2

Worklist#: 408767

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

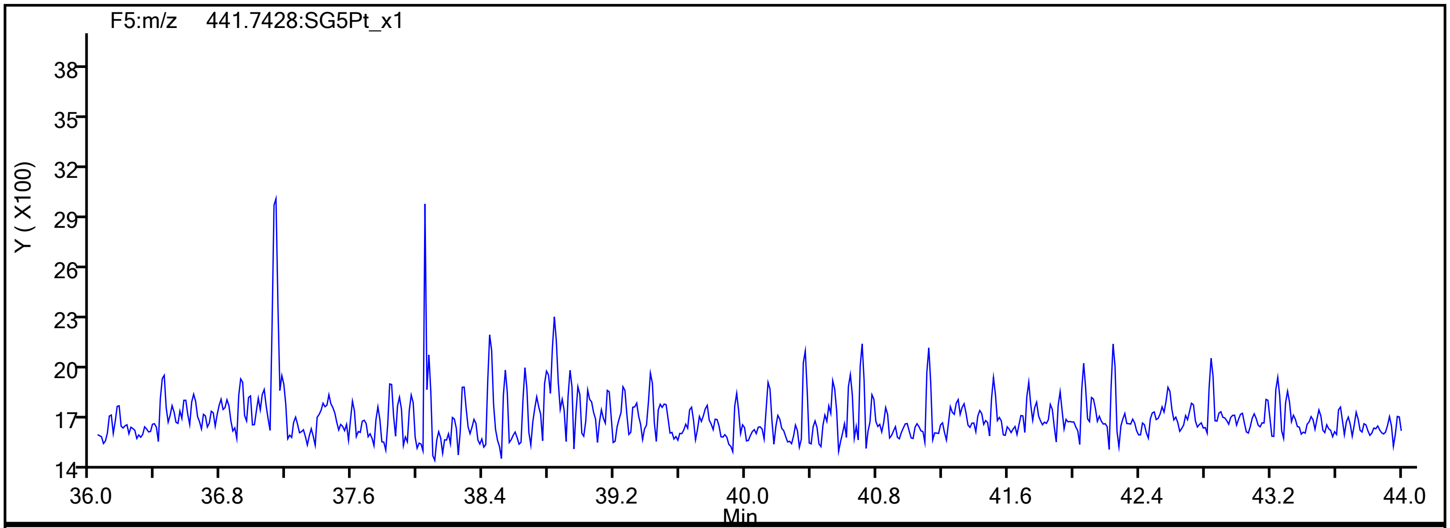

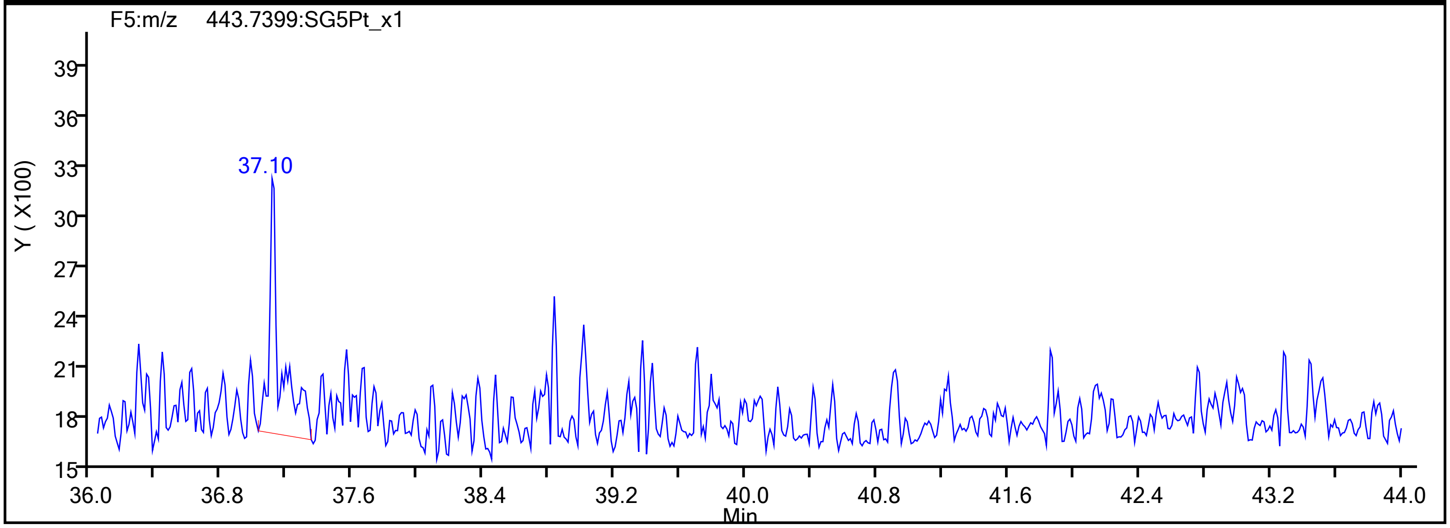

OCDF Interference Mass

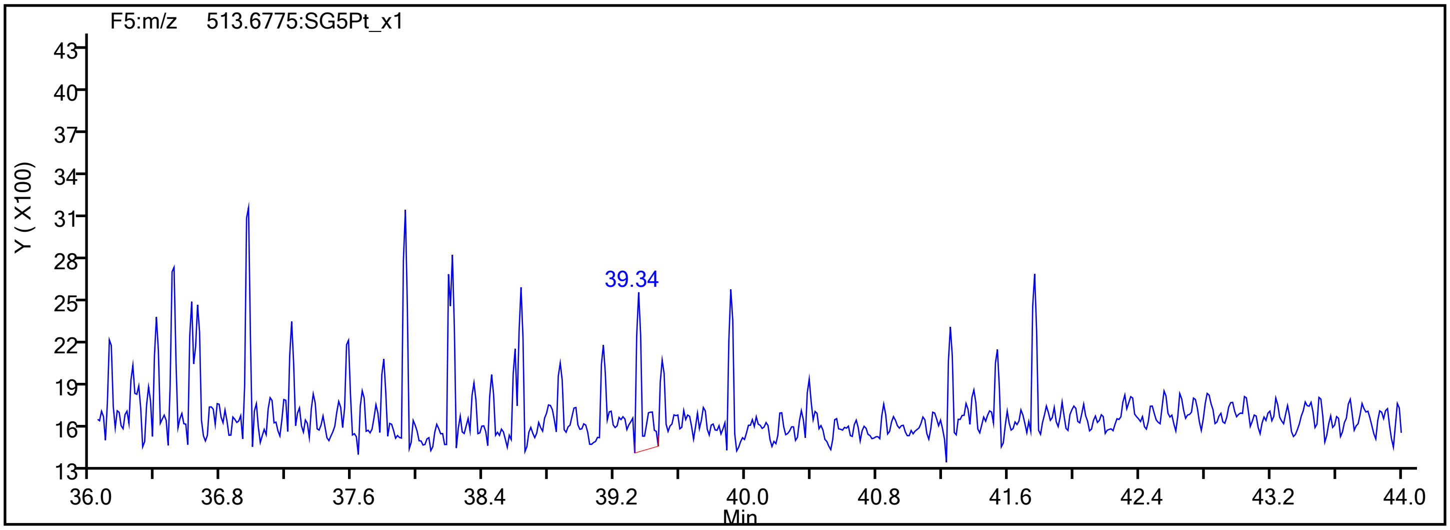

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OCDD

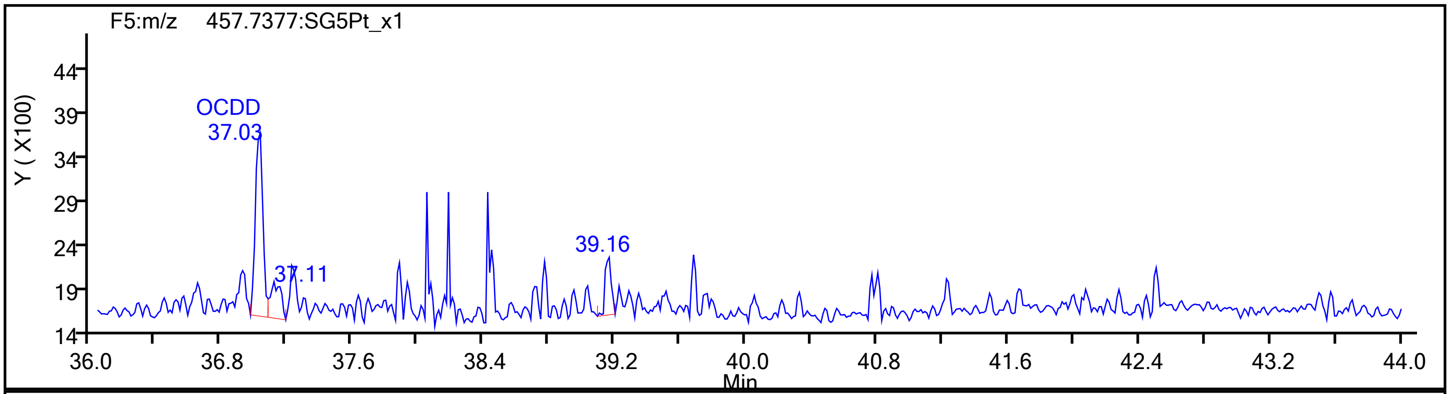

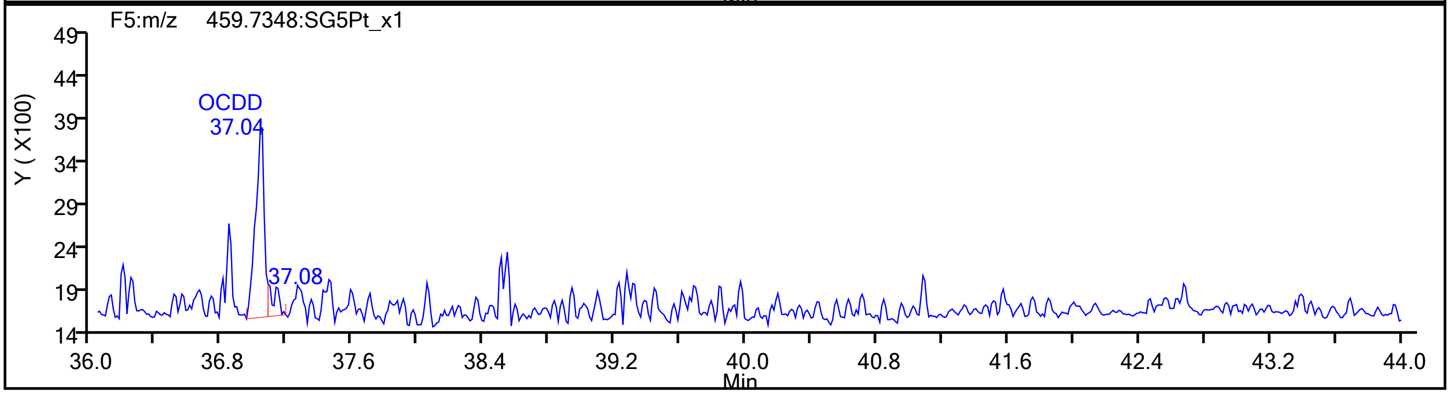

OCDD Standards

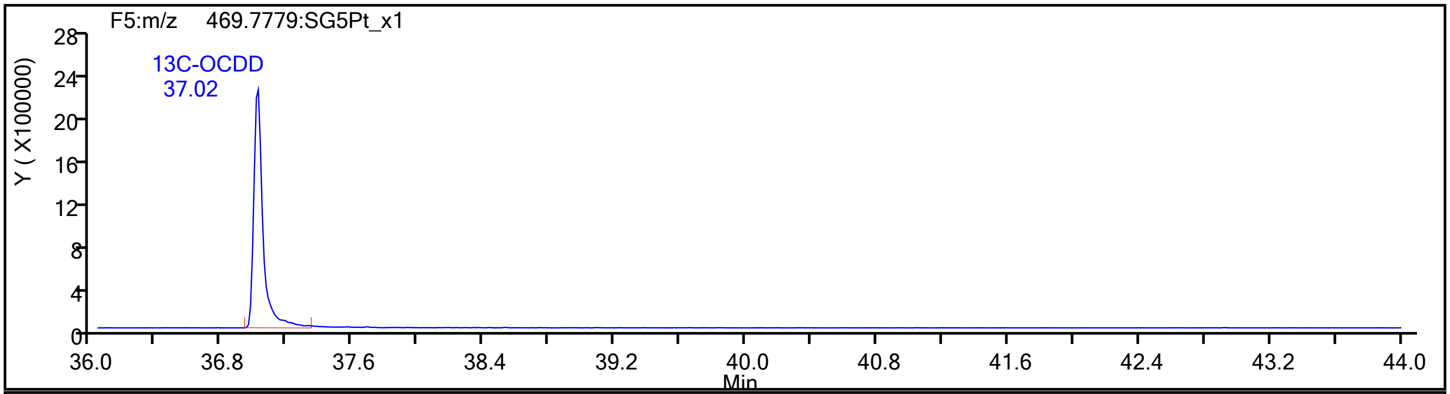

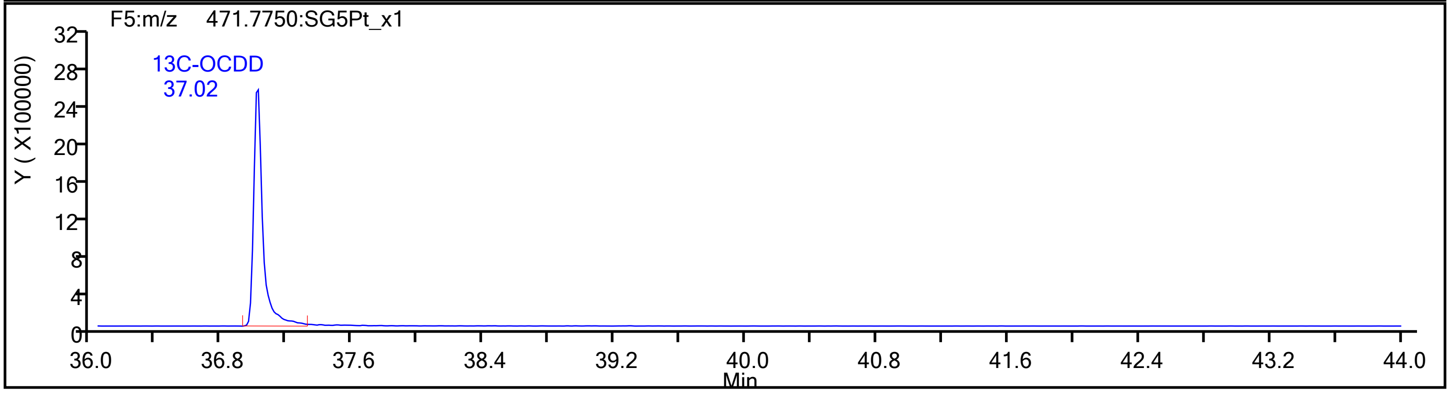

Report Date: 03-Sep-2020 09:07:40 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d		
Injection Date:	02-Sep-2020 05:19:10	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-GW-Tank#2		
Worklist#:	408767	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

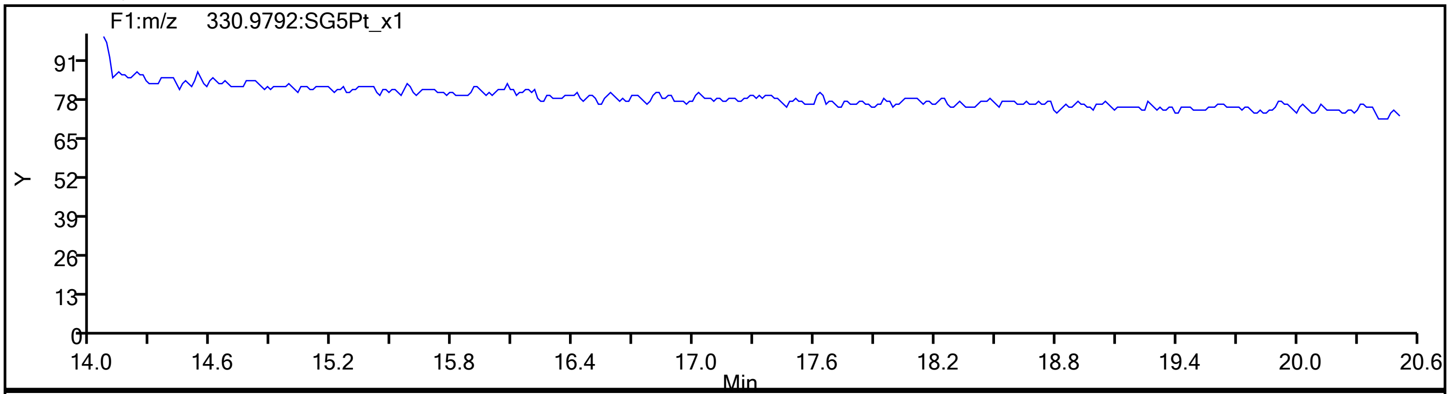

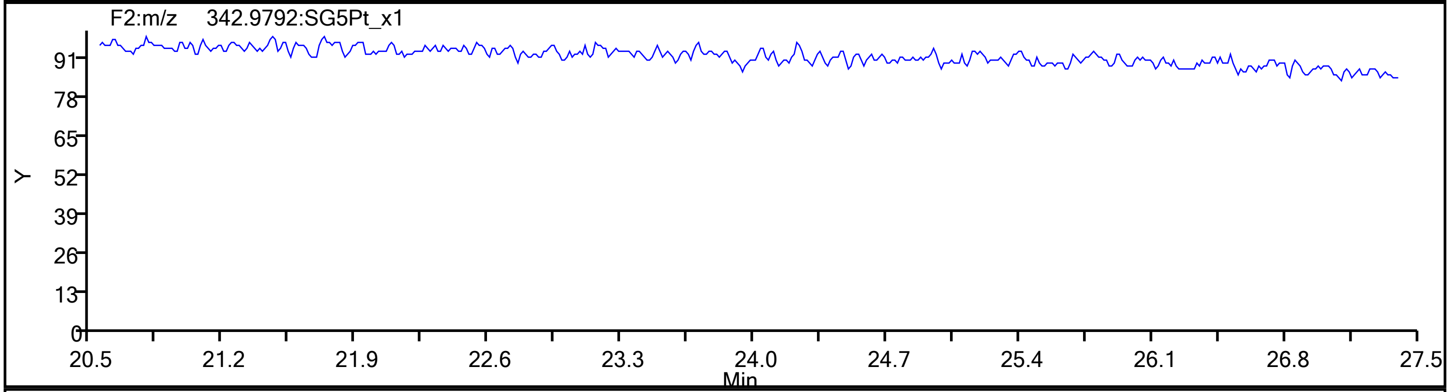

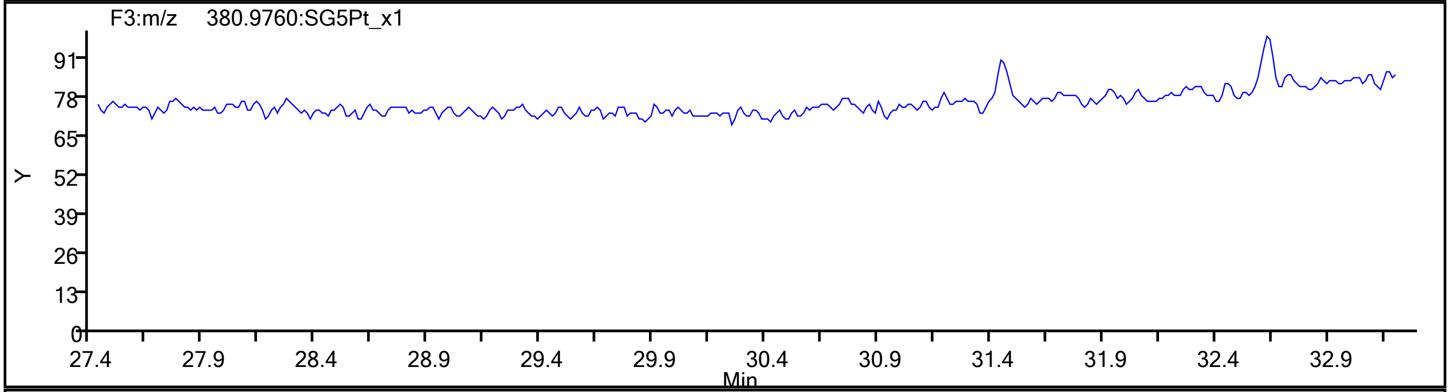

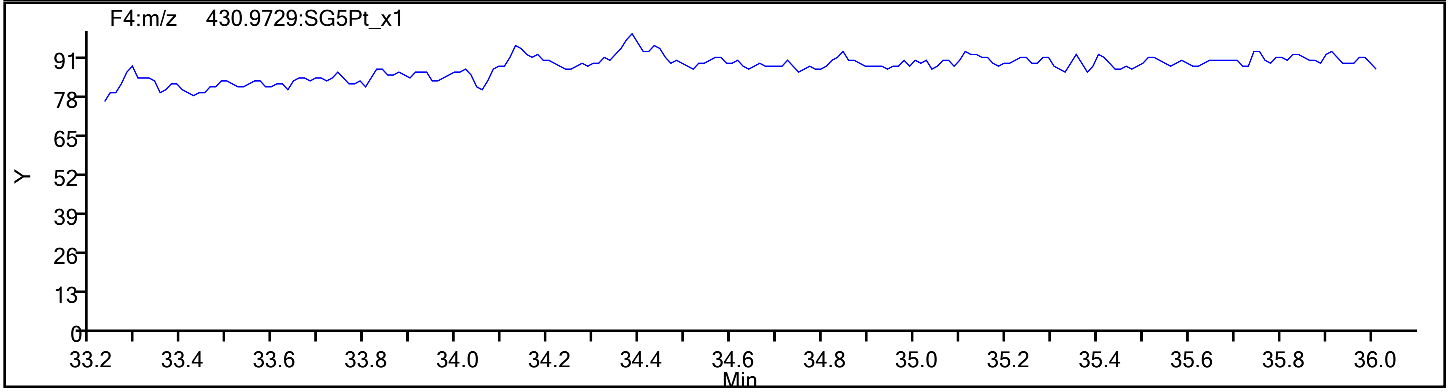

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_13.d
Injection Date: 02-Sep-2020 05:19:10
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-GW-Tank#2
Worklist#: 408767
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

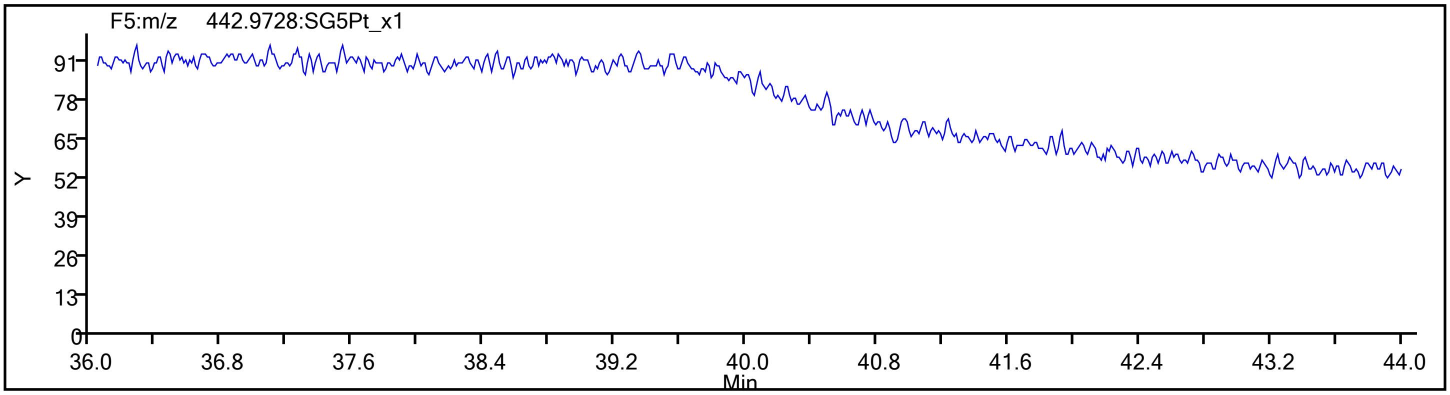

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID: 11215702-Soil-Tank#1	Lab Sample ID: 320-64049-3
Matrix: Sediment	Lab File ID: 18se20dfs1_63.d
Analysis Method: 1613B	Date Collected: 08/26/2020 13:00
Extract. Method: HRMS-Sox	Date Extracted: 09/17/2020 05:13
Sample wt/vol: 1.16(g)	Date Analyzed: 09/20/2020 12:00
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture: 28.9	GPC Cleanup:(Y/N) N
Analysis Batch No.: 413813	Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	100		61	2.0
57117-41-6	1,2,3,7,8-PeCDF	1200		61	8.1
57117-31-4	2,3,4,7,8-PeCDF	730		61	8.4
39227-28-6	1,2,3,4,7,8-HxCDD	3.8	J B	61	0.71
57653-85-7	1,2,3,6,7,8-HxCDD	15	J B	61	0.73
19408-74-3	1,2,3,7,8,9-HxCDD	5.8	J	61	0.66
70648-26-9	1,2,3,4,7,8-HxCDF	1900		61	3.7
57117-44-9	1,2,3,6,7,8-HxCDF	460		61	3.5
72918-21-9	1,2,3,7,8,9-HxCDF	32	J	61	3.1
60851-34-5	2,3,4,6,7,8-HxCDF	55	J	61	3.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	500	B	61	1.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	550	B	61	2.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	190	B	61	2.3
3268-87-9	OCDD	6400	B	120	4.7
39001-02-0	OCDF	320	B	120	0.86
41903-57-5	Total TCDD	13000	G	29	29
30402-14-3	Total TCDF	63000	G	150	150
36088-22-9	Total PeCDD	120	q	61	2.0
30402-15-4	Total PeCDF	3000		61	8.3
34465-46-8	Total HxCDD	98	B	61	0.70
55684-94-1	Total HxCDF	2700		61	3.3
37871-00-4	Total HpCDD	940	B	61	1.9
38998-75-3	Total HpCDF	960	B	61	2.3

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-64049-1

SDG No.:

Client Sample ID: 11215702-Soil-Tank#1

Lab Sample ID: 320-64049-3

Matrix: Sediment

Lab File ID: 18se20dfs1_63.d

Analysis Method: 1613B

Date Collected: 08/26/2020 13:00

Extract. Method: HRMS-Sox

Date Extracted: 09/17/2020 05:13

Sample wt/vol: 1.16(g)

Date Analyzed: 09/20/2020 12:00

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture: 28.9

GPC Cleanup:(Y/N) N

Analysis Batch No.: 413813

Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	73		25-164
89059-46-1	13C-2,3,7,8-TCDF	76		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	74		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	73		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	73		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	77		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	76		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	73		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	73		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	74		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	77		26-138
114423-97-1	13C-OCDD	82		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	99		35-197

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d				
Lims ID:	320-64049-A-3-B				
Client ID:	11215702-Soil-Tank#1				
Sample Type:	Client				
Inject. Date:	20-Sep-2020 12:00:00	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-64049-A-3-B				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	22-Sep-2020 10:39:31	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1059				

First Level Reviewer: shardaa Date: 21-Sep-2020 11:21:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.146	4263134	0.80	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.225	5138864	0.80	1.5883	75.9	75.9	0.5236	0.5236	75.89	
2,3,7,8-TCDF	19.251	82842765	0.78	1.0857	1484.9	1484.9	6.093	6.093		E
A Non-2,3,7,8-sub-TCDF	18.816	61286706	0.79	1.0857	1098.5	1098.5	6.093	636.7		Ma
S Total TCDF					2583.4	2583.4	6.093	6.093		
D 13C-2,3,7,8-TCDD	20.507	3505334	0.78	1.1194	73.5	73.5	0.4079	0.4079	73.45	
2,3,7,8-TCDD	20.541	17781641	0.79	1.0810	469.3	469.3	1.185	1.185		E
$ 37Cl4-2,3,7,8-TCDD	20.541	1934373		1.1468	39.6	39.6	0.1266	0.1266	98.92	
A Non-2,3,7,8-sub-TCDD	19.624	1806511	0.75	1.0810	47.7	47.7	1.185	42.1		
S Total TCDD					517.0	517.0	1.185	1.185		
D 13C-1,2,3,7,8-PeCDF	26.298	4574019	1.58	1.4782	72.6	72.6	0.2195	0.2195	72.58	
1,2,3,7,8-PeCDF	26.323	2338681	1.57	1.0547	48.5	48.5	0.3324	0.3324		M
D 13C-2,3,4,7,8-PeCDF	27.746	4343779	1.58	1.3912	73.2	73.2	0.2333	0.2333	73.24	
2,3,4,7,8-PeCDF	27.771	1442889	1.57	1.1035	30.1	30.1	0.3483	0.3483		
A F1 PeCDFs	23.607	20808	1.70	1.0791	0.4325	0.4325	0.0169	0.4325		Ma
A Non-2,3,7,8-sub-PeCDF	26.996	2176749	1.58	1.0791	45.2	45.2	0.3398	18.7		Ma
S Total PeCDF					124.3	124.3	0.3403	0.3403		
D 13C-1,2,3,7,8-PeCDD	28.521	2958022	1.60	0.9415	73.7	73.7	0.1190	0.1190	73.70	
1,2,3,7,8-PeCDD	28.538	130329	1.64	1.0680	4.125	4.125	0.0831	0.0831		
A Non-2,3,7,8-sub-PeCDD	27.361	20353	1.55	1.0680	2.779	0.6442	0.0831	0.4149		RQ
S Total PeCDD					6.904	4.770	0.0831	0.0831		RQ
D 13C-1,2,3,4,7,8-HxCDF	34.166	3665546	0.54	1.1378	77.5	77.5	0.2176	0.2176	77.46	
1,2,3,4,7,8-HxCDF	34.183	3570250	1.25	1.2643	77.0	77.0	0.1516	0.1516		
D 13C-1,2,3,6,7,8-HxCDF	34.352	4009129	0.53	1.3173	73.2	73.2	0.1879	0.1879	73.18	
1,2,3,6,7,8-HxCDF	34.368	927017	1.26	1.2230	18.9	18.9	0.1449	0.1449		
D 13C-2,3,4,6,7,8-HxCDF	35.253	3828610	0.53	1.2457	73.9	73.9	0.1987	0.1987	73.90	
2,3,4,6,7,8-HxCDF	35.270	108530	1.27	1.2464	2.274	2.274	0.1255	0.1255		
D 13C-1,2,3,7,8,9-HxCDF	36.213	3606069	0.53	1.1840	73.2	73.2	0.2091	0.2091	73.23	
1,2,3,7,8,9-HxCDF	36.222	59281	1.30	1.2638	1.301	1.301	0.1265	0.1265		
A Non-2,3,7,8-sub-HxCDF	34.215	586311	1.27	1.2494	12.4	12.4	0.1362	4.989		
S Total HxCDF					111.9	111.9	0.1371	0.1371		

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.003	4158902	1.27	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.489	2730846	1.29	0.8477	77.5	77.5	0.1515	0.1515	77.46	
1,2,3,4,7,8-HxCDD	35.497	4981	1.15	1.1561	0.1578	0.1578	0.0291	0.0291		
D 13C-1,2,3,6,7,8-HxCDD	35.615	3163334	1.27	0.9979	76.2	76.2	0.1287	0.1287	76.23	
1,2,3,6,7,8-HxCDD	35.624	19583	1.29	1.0284	0.6020	0.6020	0.0301	0.0301		
1,2,3,7,8,9-HxCDD	36.011	8261	1.20	1.1789	0.2378	0.2378	0.0273	0.0273		
A Non-2,3,7,8-sub-HxCDD	34.670	100015	1.19	1.1211	3.027	3.027	0.0287	1.447		M
S Total HxCDD					4.025	4.025	0.0288	0.0288		
D 13C-1,2,3,4,6,7,8-HpCDF	38.119	3044450	0.46	0.9884	74.1	74.1	0.2899	0.2899	74.06	
1,2,3,4,6,7,8-HpCDF	38.127	1037672	1.05	1.5064	22.6	22.6	0.0939	0.0939		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.417	2929343	0.45	0.9203	76.5	76.5	0.3114	0.3114	76.54	
1,2,3,4,7,8,9-HpCDF	39.425	332992	1.05	1.4548	7.814	7.814	0.0930	0.0930		
A Non-2,3,7,8-sub-HpCDF	38.760	404264	1.07	1.4806	9.141	9.141	0.0934	9.141		
S Total HpCDF					39.6	39.6	0.0934	0.0934		
D 13C-1,2,3,4,6,7,8-HpCDD	39.105	3007310	1.06	0.9556	75.7	75.7	0.1699	0.1699	75.67	
1,2,3,4,6,7,8-HpCDD	39.114	663594	1.05	1.0640	20.7	20.7	0.0793	0.0793		
A Non-2,3,7,8-sub-HpCDD	38.875	575301	1.07	1.0640	18.0	18.0	0.0793	18.0		
S Total HpCDD					38.7	38.7	0.0793	0.0793		
D 13C-OCDD	41.566	5033737	0.91	0.7420	163.1	163.1	0.1800	0.1800	81.56	
OCDF	41.650	475846	0.89	1.4296	13.2	13.2	0.0354	0.0354		
OCDD	41.574	7486317	0.89	1.1293	263.4	263.4	0.1951	0.1951		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Sample Type: Client
Inject. Date: 20-Sep-2020 12:00:00 ALS Bottle#: 0 Worklist Smp#: 55
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-64049-A-3-B
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 22-Sep-2020 10:39:31 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1059

First Level Reviewer: shardaa Date: 21-Sep-2020 11:21:20

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.146	20.128	1		1892101	269873	620	1550	435		
333.9338	20.154	20.128	2		2371033	343324	500	1250	687	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.225	19.208	1	0.954	2291717	384785	1031	2577	373		
317.9389	19.225	19.208	1	0.954	2847147	477232	1009	2522	473	0.80(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	19.251	19.225	2	1.001	36393073	5979728	10125	25312	591		
305.8987	19.251	19.225	2	1.001	46449692	7648928	12684	31710	603	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											Ma
303.9016	16.402	18.816	-145	0.853	202442	40454	10125	25312	4		M
305.8987	16.393	18.816	-145	0.853	248939	50130	12684	31710	4	0.81(0.65-0.89)	M
303.9016	16.841	18.816	-118	0.876	867874	162243	10125	25312	16		
305.8987	16.833	18.816	-119	0.876	1107764	206318	12684	31710	16	0.78(0.65-0.89)	
303.9016	17.306	18.816	-90	0.900	1342731	191064	10125	25312	19		
305.8987	17.306	18.816	-90	0.900	1692646	240588	12684	31710	19	0.79(0.65-0.89)	
303.9016	17.719	18.816	-66	0.922	1155635	169790	10125	25312	17		
305.8987	17.710	18.816	-66	0.921	1461371	212787	12684	31710	17	0.79(0.65-0.89)	
303.9016	18.072	18.816	-45	0.940	1678097	258565	10125	25312	26		
305.8987	18.072	18.816	-45	0.940	2101565	331892	12684	31710	26	0.80(0.65-0.89)	
303.9016	18.554	18.816	-16	0.965	15692484	2565920	10125	25312	253		
305.8987	18.554	18.816	-16	0.965	19829404	3251852	12684	31710	256	0.79(0.65-0.89)	
303.9016	18.950	18.816	8	0.986	641383	100370	10125	25312	10		
305.8987	18.950	18.816	8	0.986	821889	128425	12684	31710	10	0.78(0.65-0.89)	
303.9016	20.008	18.816	71	1.041	2424776	379210	10125	25312	37		
305.8987	20.008	18.816	71	1.041	3065565	490002	12684	31710	39	0.79(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	20.429	18.816	97	1.063	475072	73845	10125	25312	7		M
305.8987	20.429	18.816	97	1.063	610147	91602	12684	31710	7	0.78(0.65-0.89)	
303.9016	22.443	18.816	217	1.167	2601404	384242	10125	25312	38		
305.8987	22.443	18.816	217	1.167	3265518	480380	12684	31710	38	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.507	20.489	1	1.018	1539411	228784	620	1550	369		
333.9338	20.507	20.489	1	1.018	1965923	292213	500	1250	584	0.78(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	20.541	20.515	2	1.002	7843800	1178657	1615	4037	730		
321.8936	20.541	20.515	2	1.002	9937841	1480293	1054	2635	1404	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.541	20.515	2	1.020	1934373	293975	356	890	826		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.361	19.624	44	0.993	83660	15941	1615	4037	10		
321.8936	20.361	19.624	44	0.993	126046	22095	1054	2635	21	0.66(0.65-0.89)	
319.8965	21.179	19.624	93	1.033	692230	96943	1615	4037	60		
321.8936	21.179	19.624	93	1.033	904575	125969	1054	2635	120	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.298	26.266	2	1.305	2804388	481211	482	1205	998		
353.8970	26.298	26.266	2	1.305	1769631	302292	314	785	963	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	26.323	26.283	2	1.001	1427033	240463	740	1850	325		
341.8567	26.323	26.283	2	1.001	911648	154554	359	897	431	1.57(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.746	27.723	1	1.377	2658012	437056	482	1205	907		
353.8970	27.746	27.723	1	1.377	1685767	277730	314	785	884	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.771	27.740	2	1.001	881361	145124	740	1850	196		
341.8567	27.771	27.740	2	1.001	561528	94005	359	897	262	1.57(1.32-1.78)	
A F1 PeCDFs											Ma
339.8597	23.088	23.607	-31	0.878	13088	1886	21	52	90		M
341.8567	23.088	23.607	-31	0.878	7720	1040	34	85	31	1.70(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											Ma
339.8597	24.899	26.996	-126	0.947	547817	104658	740	1850	141		
341.8567	24.899	26.996	-126	0.947	349897	68071	359	897	190	1.57(1.32-1.78)	
339.8597	25.775	26.996	-73	0.980	49439	8263	740	1850	11		
341.8567	25.775	26.996	-73	0.980	33835	5483	359	897	15	1.46(1.32-1.78)	
339.8597	26.188	26.996	-48	0.996	90849	22633	740	1850	31		M
341.8567	26.188	26.996	-48	0.996	54679	13714	359	897	38	1.66(1.32-1.78)	
339.8597	26.879	26.996	-7	1.022	370922	65680	740	1850	89		
341.8567	26.879	26.996	-7	1.022	236170	42404	359	897	118	1.57(1.32-1.78)	
339.8597	28.091	26.996	66	1.068	222687	34203	740	1850	46		
341.8567	28.091	26.996	66	1.068	136695	21482	359	897	60	1.63(1.32-1.78)	
339.8597	29.716	26.996	163	1.130	49982	7988	740	1850	11		
341.8567	29.716	26.996	163	1.130	33777	5073	359	897	14	1.48(1.32-1.78)	

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	28.521	28.498	1	1.416	1822346	280696	164	410	1712		
369.8919	28.521	28.498	1	1.416	1135676	177969	111	277	1603	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.538	28.523	1	1.001	81034	12144	82	205	148		
357.8516	28.555	28.523	2	1.001	49295	7642	81	202	94	1.64(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	25.161	27.361	-132	0.882	4405	890	82	205	11		
357.8516	25.245	27.361	-127	0.885	70279	12700	81	202	157	0.06(1.32-1.78)	
	Empc Correction				2841	574	81	202	7		
355.8546	26.441	27.361	-55	0.927	7918	1655	82	205	20		
357.8516	26.449	27.361	-55	0.927	5189	1122	81	202	14	1.53(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.166	34.135	2	0.949	1277580	259879	365	912	712		
385.8610	34.166	34.135	2	0.949	2387966	487461	684	1710	713	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.183	34.160	1	1.000	1984368	398777	255	637	1564		
375.8178	34.183	34.160	1	1.000	1585882	320932	318	795	1009	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.352	34.329	1	0.954	1390659	279430	365	912	766		
385.8610	34.352	34.329	1	0.954	2618470	528343	684	1710	772	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.368	34.345	1	1.000	516021	103956	255	637	408		
375.8178	34.368	34.345	1	1.000	410996	83515	318	795	263	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.253	35.229	1	0.979	1319602	310768	365	912	851		
385.8610	35.253	35.229	1	0.979	2509008	604455	684	1710	884	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.270	35.246	1	1.000	60700	14437	255	637	57		
375.8178	35.270	35.246	1	1.000	47830	11330	318	795	36	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.213	36.181	2	1.006	1251523	310791	365	912	851		
385.8610	36.205	36.181	1	1.006	2354546	584973	684	1710	855	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.222	36.198	1	1.000	33451	9156	255	637	36		
375.8178	36.222	36.198	1	1.000	25830	6977	318	795	22	1.30(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	32.465	34.215	-105	0.950	130521	20393	255	637	80		
375.8178	32.457	34.215	-105	0.950	104911	16361	318	795	51	1.24(1.05-1.43)	
373.8208	33.467	34.215	-45	0.980	78980	15207	255	637	60		
375.8178	33.476	34.215	-44	0.980	61394	11817	318	795	37	1.29(1.05-1.43)	
373.8208	36.340	34.215	127	1.064	118233	31135	255	637	122		
375.8178	36.340	34.215	127	1.064	92272	24587	318	795	77	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.003	35.979	1		2326010	592201	304	760	1948		
403.8529	36.003	35.979	1		1832892	466965	240	600	1946	1.27(1.05-1.43)	

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.489	35.457	2	0.986	1538591	389308	304	760	1281		
403.8529	35.489	35.457	2	0.986	1192255	300216	240	600	1251	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.497	35.474	1	1.000	2665	751	44	110	17		
391.8127	35.506	35.474	2	1.000	2316	661	49	122	13	1.15(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.615	35.583	2	0.989	1771765	422352	304	760	1389		
403.8529	35.615	35.583	2	0.989	1391569	328264	240	600	1368	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.624	35.600	1	1.000	11013	2748	44	110	62		
391.8127	35.632	35.600	2	1.000	8570	2046	49	122	42	1.29(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.011	35.988	1	1.015	4513	982	44	110	22		
391.8127	36.020	35.988	2	1.015	3748	790	49	122	16	1.20(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											M
389.8158	33.392	34.670	-77	0.938	23902	4442	44	110	101		
391.8127	33.383	34.670	-77	0.937	20539	3869	49	122	79	1.16(1.05-1.43)	
389.8158	34.267	34.670	-24	0.962	4476	818	44	110	19		M
391.8127	34.267	34.670	-24	0.962	3285	689	49	122	14	1.36(1.05-1.43)	
389.8158	34.655	34.670	-1	0.973	26072	5112	44	110	116		M
391.8127	34.655	34.670	-1	0.973	21741	4355	49	122	89	1.20(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.119	38.085	2	1.059	954891	308185	426	1065	723		
419.8220	38.119	38.085	2	1.059	2089559	672457	788	1970	853	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.127	38.102	2	1.000	531472	170203	292	730	583		M
409.7788	38.127	38.102	2	1.000	506200	163282	263	657	621	1.05(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.417	39.382	2	1.095	913237	318527	426	1065	748		
419.8220	39.417	39.382	2	1.095	2016106	706837	788	1970	897	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.425	39.399	2	1.000	170216	59891	292	730	205		
409.7788	39.425	39.399	2	1.000	162776	57036	263	657	217	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.506	38.760	-15	1.010	209061	67949	292	730	233		
409.7788	38.506	38.760	-15	1.010	195203	65302	263	657	248	1.07(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.105	39.079	2	1.086	1549350	545158	370	925	1473		
437.8140	39.105	39.079	2	1.086	1457960	515925	318	795	1622	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.114	39.088	2	1.000	339327	119460	188	470	635		
425.7737	39.114	39.088	2	1.000	324267	112539	170	425	662	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.456	38.875	-25	0.983	297039	96718	188	470	514		
425.7737	38.448	38.875	-26	0.983	278262	93747	170	425	551	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-OCDD											
469.7780	41.566	41.533	2	1.155	2401801	781708	270	675	2895		
471.7750	41.566	41.533	2	1.155	2631936	858495	296	740	2900	0.91(0.76-1.02)	
OCDF											
441.7428	41.650	41.625	1	1.002	223992	71610	66	165	1085		
443.7399	41.650	41.625	1	1.002	251854	81103	100	250	811	0.89(0.76-1.02)	
OCDD											
457.7377	41.574	41.541	2	1.000	3530228	1139235	345	862	3302		
459.7348	41.566	41.541	1	1.000	3956089	1276293	378	945	3376	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Inject. Date: 20-Sep-2020 12:00:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 413813
Lims Sample ID: 55

Non-2,3,7,8-sub-TCDF, RT: 18.816

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	5138864	862017

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	5138864	862017

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.402	202442	40454	248939	50130	8.09	0.81	M
16.841	867874	162243	1107764	206318	35.4	0.78	
17.306	1342731	191064	1692646	240588	54.4	0.79	
17.719	1155635	169790	1461371	212787	46.9	0.79	
18.072	1678097	258565	2101565	331892	67.7	0.80	
18.554	15692484	2565920	19829404	3251852	636.7	0.79	
18.950	641383	100370	821889	128425	26.2	0.78	
20.008	2424776	379210	3065565	490002	98.4	0.79	
20.429	475072	73845	610147	91602	19.5	0.78	Ma
22.443	2601404	384242	3265518	480380	105.2	0.80	
Signal Totals:							
	27081898	4325703	34204808	5483976			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	61286706	9809679				0.79	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1098.5 = (61286706 * 100.000) / (5138864 * 1.086)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	20-Sep-2020 12:00:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	55

Non-2,3,7,8-sub-TCDD, RT: 19.624

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	3505334	520997

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	3505334	520997

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.361	83660	15941	126046	22095	5.53	0.66	
21.179	692230	96943	904575	125969	42.1	0.77	
Signal Totals:							
	775890	112884	1030621	148064			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1806511	260948				0.75	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 47.676 = (1806511 * 100.000) / (3505334 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	20-Sep-2020 12:00:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	55

F1 PeCDFs, RT: 23.607

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	4574019	783503
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	4343779	714786

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	4458899	749144

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.088	13088	1886	7720	1040	0.4325	1.70	Ma
Signal Totals:							
	13088	1886	7720	1040			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	20808	2926				1.70	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4325 = (20808 * 100.000) / (4458899 * 1.079)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	20-Sep-2020 12:00:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	55

Non-2,3,7,8-sub-PeCDF, RT: 26.996

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	4574019	783503
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	4343779	714786

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	4458899	749144

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.899	547817	104658	349897	68071	18.7	1.57	
25.775	49439	8263	33835	5483	1.73	1.46	
26.188	90849	22633	54679	13714	3.02	1.66	Ma
26.879	370922	65680	236170	42404	12.6	1.57	
28.091	222687	34203	136695	21482	7.47	1.63	
29.716	49982	7988	33777	5073	1.74	1.48	
Signal Totals:							
	1331696	243425	845053	156227			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2176749	399652				1.58	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 45.240 = (2176749 * 100.000) / (4458899 * 1.079)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	20-Sep-2020 12:00:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	55

Non-2,3,7,8-sub-PeCDD, RT: 27.361

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	2958022	458665

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		100.000	2958022	458665

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
25.161	4405	890	70279	12700	2.36	0.06	RQ
25.161	4405	890	2841	574	0.2294		Empc Correction
26.441	7918	1655	5189	1122	0.4149	1.53	
Signal Totals:							
	12323	2545	8030	1696			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	87791	16367				0.16	RQ
	20353	4241					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.779 = (87791 * 100.000) / (2958022 * 1.068)
Empc Amount: 0.6442 = (20353 * 100.000) / (2958022 * 1.068)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Inject. Date: 20-Sep-2020 12:00:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413813 Lims Sample ID: 55

Non-2,3,7,8-sub-HxCDF, RT: 34.215

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	3665546	747340
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	4009129	807773
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	3828610	915223
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	3606069	895764

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	3777338	841525

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
32.465	130521	20393	104911	16361	4.99	1.24	
33.467	78980	15207	61394	11817	2.97	1.29	
36.340	118233	31135	92272	24587	4.46	1.28	
Signal Totals:							
	327734	66735	258577	52765			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	586311	119500				1.27	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.424 = (586311 * 100.000) / (3777338 * 1.249)

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	20-Sep-2020 12:00:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	55

Non-2,3,7,8-sub-HxCDD, RT: 34.670

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	2730846	689524
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	3163334	750616
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2947090	720070

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.392	23902	4442	20539	3869	1.35	1.16	
34.267	4476	818	3285	689	0.2349	1.36	M
34.655	26072	5112	21741	4355	1.45	1.20	M
Signal Totals:							
	54450	10372	45565	8913			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	100015	19285				1.19	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.027 = (100015 * 100.000) / (2947090 * 1.121)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Inject. Date: 20-Sep-2020 12:00:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 413813
Lims Sample ID: 55

Non-2,3,7,8-sub-HpCDF, RT: 38.760

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	3044450	980642
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2929343	1025364

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	2986896	1003003

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.506	209061	67949	195203	65302	9.14	1.07	
Signal Totals:							
	209061	67949	195203	65302			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	404264	133251				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 9.141 = (404264 * 100.000) / (2986896 * 1.481)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	20-Sep-2020 12:00:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	55

Non-2,3,7,8-sub-HpCDD, RT: 38.875

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	3007310	1061083

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	3007310	1061083

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.456	297039	96718	278262	93747	18.0	1.07	
Signal Totals:							
	297039	96718	278262	93747			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	575301	190465				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 17.979 = (575301 * 100.000) / (3007310 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3		
Client ID:	11215702-Soil-Tank#1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.15- 22.48)

Signal: 1

Processing Integration Results

Not Detected
RT: 15.15- 22.48

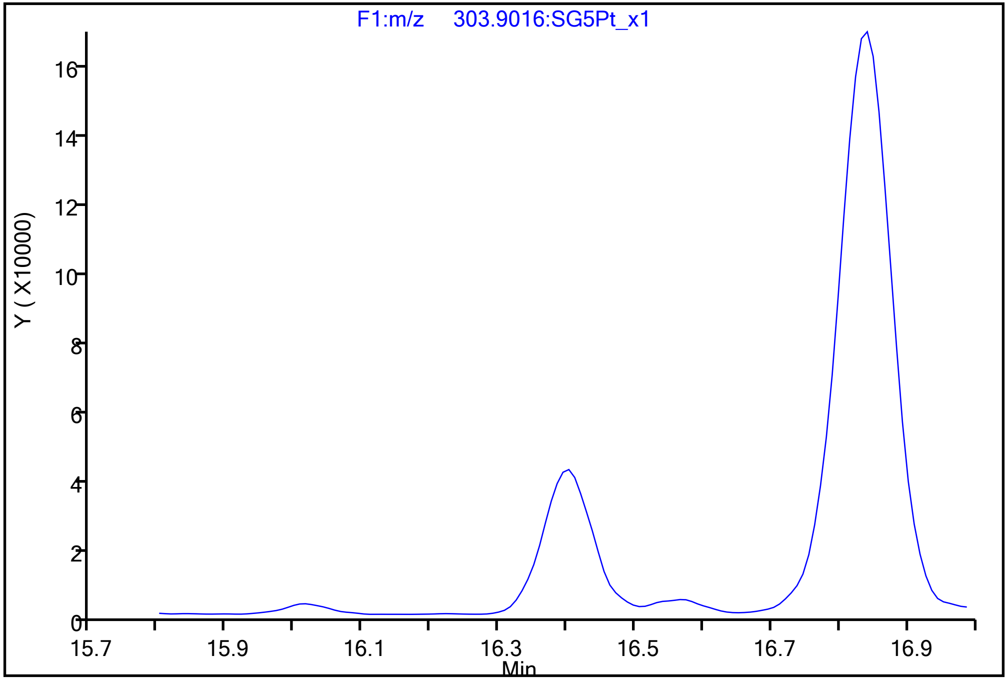

Manual Integration Results

RT = 16.402 Area = 202442 M

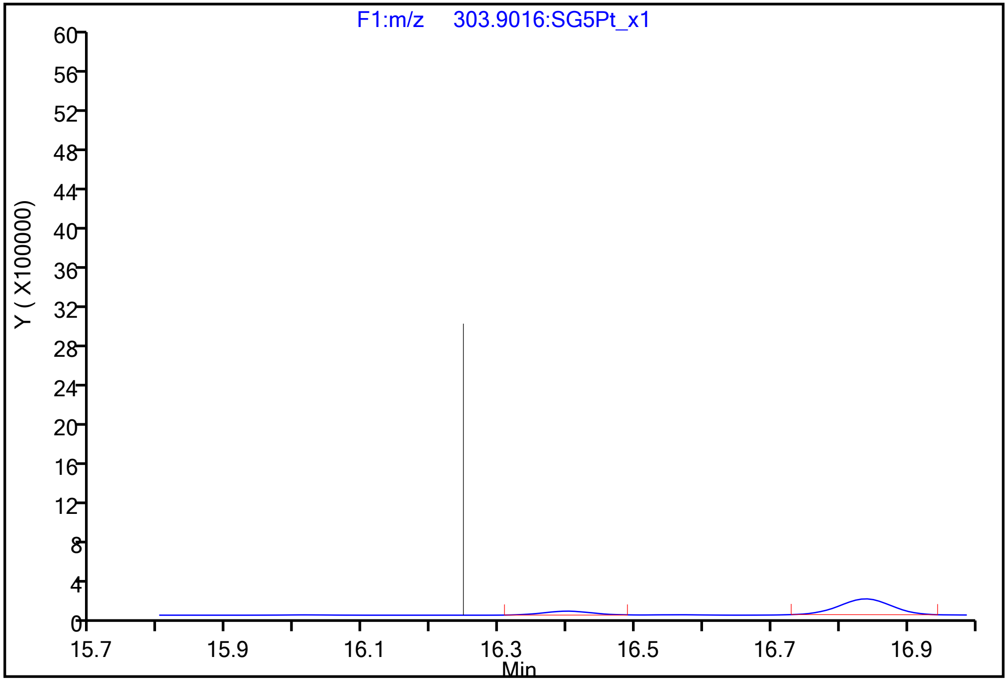

Reviewer: dadunj, 22-Sep-2020 10:34:52

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d				
Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3		
Client ID:	11215702-Soil-Tank#1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (15.15- 22.48)

Signal: 2

Processing Integration Results

Not Detected
RT: 15.15- 22.48

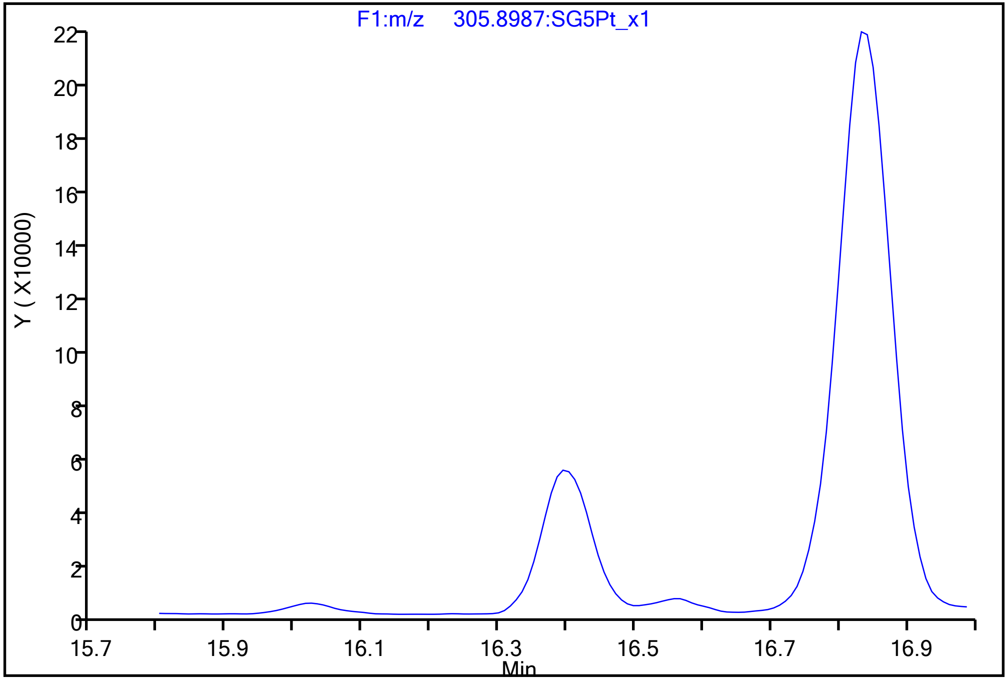

Manual Integration Results

RT = 16.393 Area = 248939 M

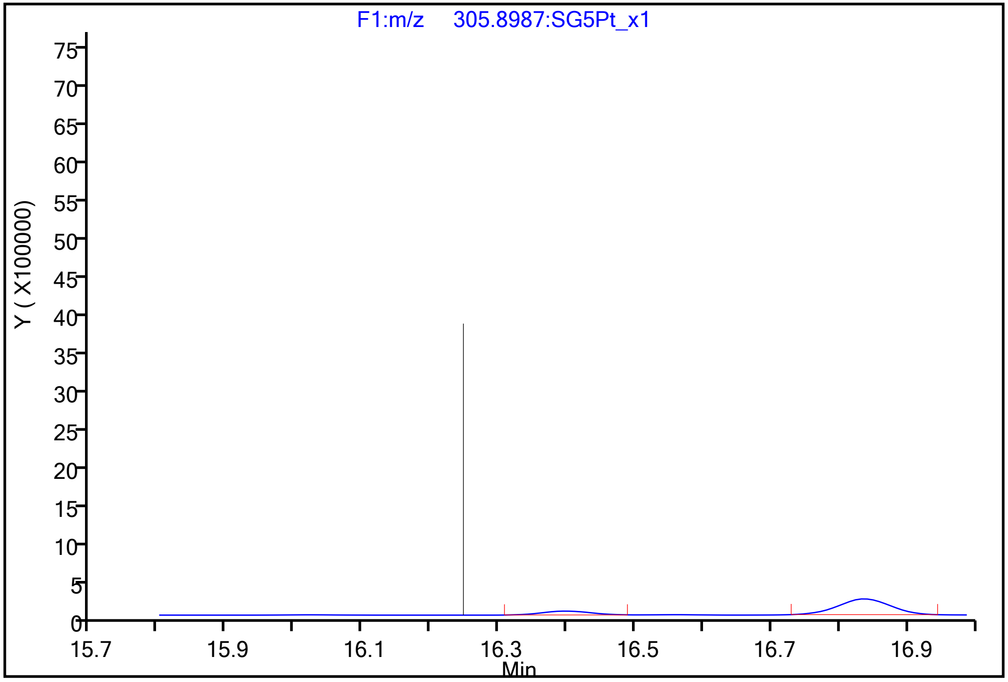

Reviewer: dadunj, 22-Sep-2020 10:34:33

Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3		
Client ID:	11215702-Soil-Tank#1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.15- 22.48)

Signal: 1

Processing Integration Results

Not Detected

RT: 15.15- 22.48

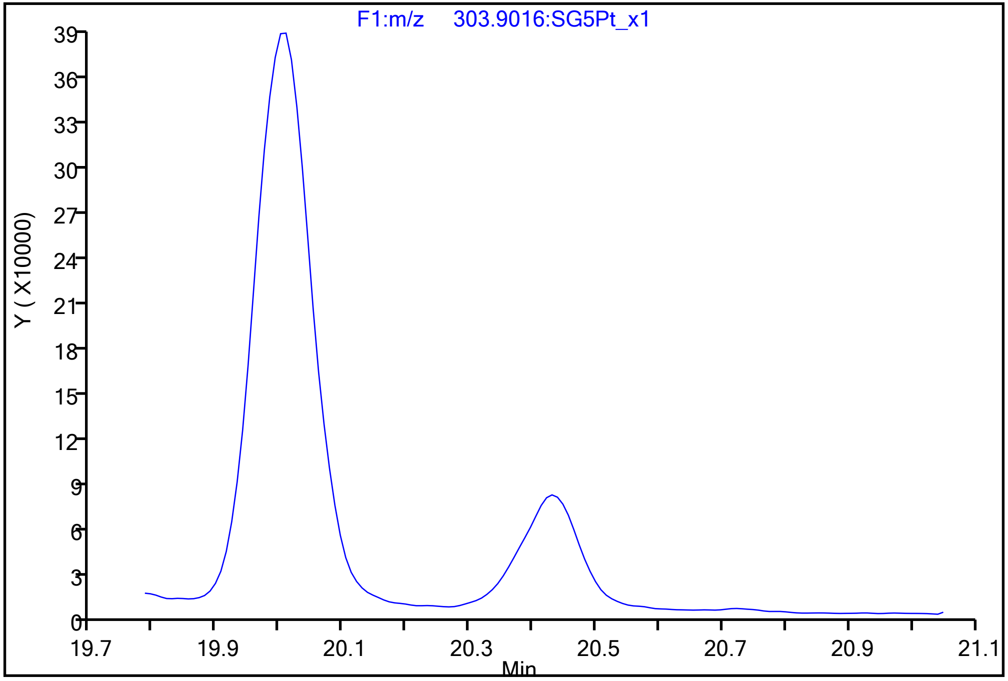

Manual Integration Results

RT = 20.429 Area = 475072 M

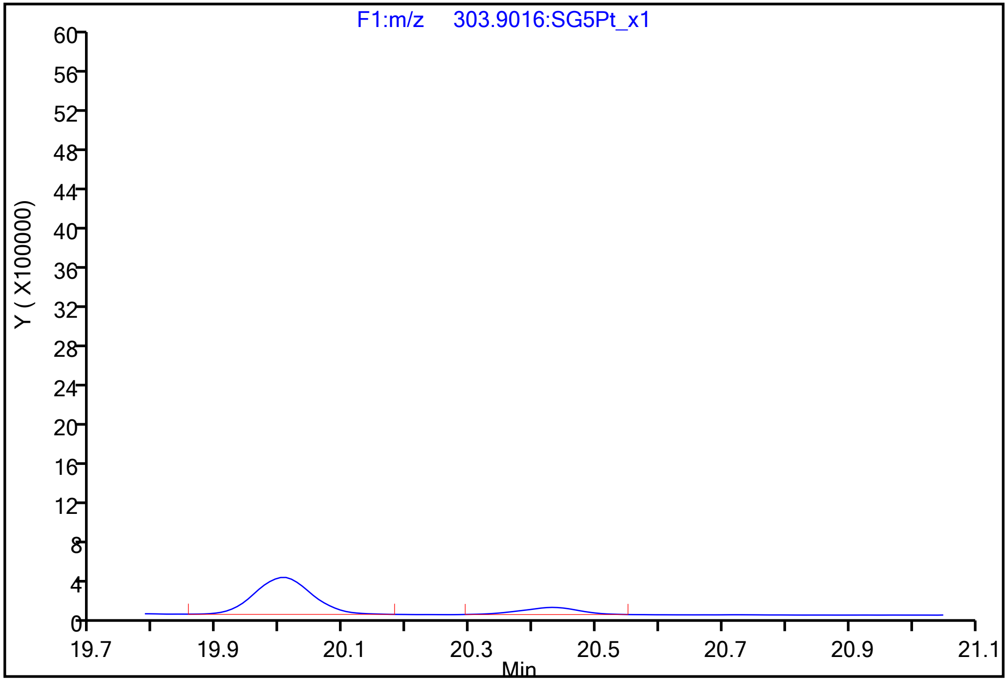

Reviewer: dadunj, 22-Sep-2020 10:34:52

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d				
Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3		
Client ID:	11215702-Soil-Tank#1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	26.32
Area:	953705
Amount:	49.352047
Amount Units:	pg/ul

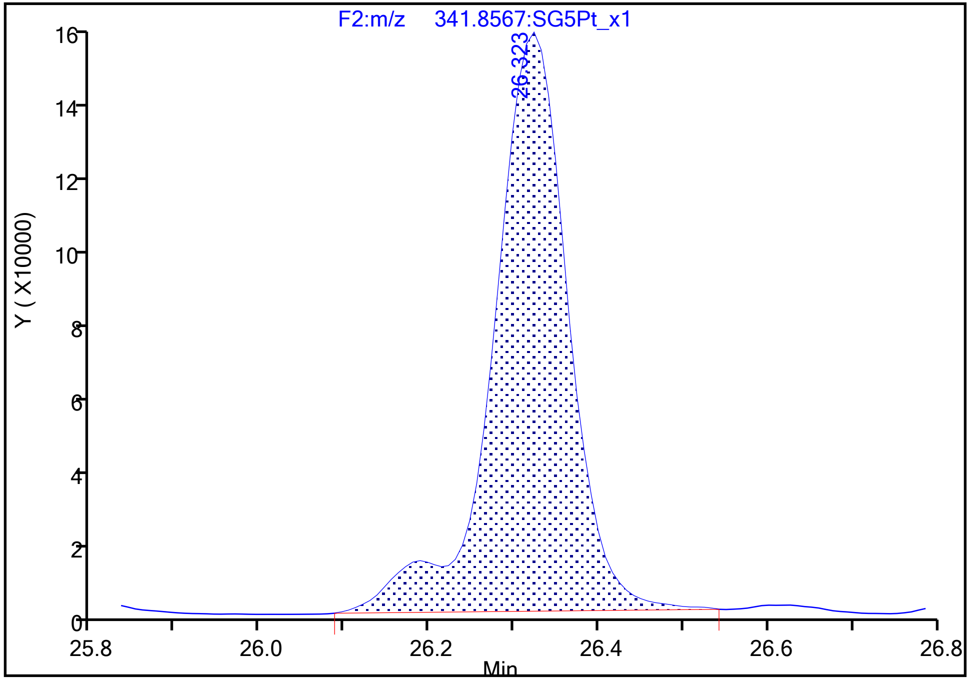

Manual Integration Results

RT:	26.32
Area:	911648
Amount:	48.480217
Amount Units:	pg/ul

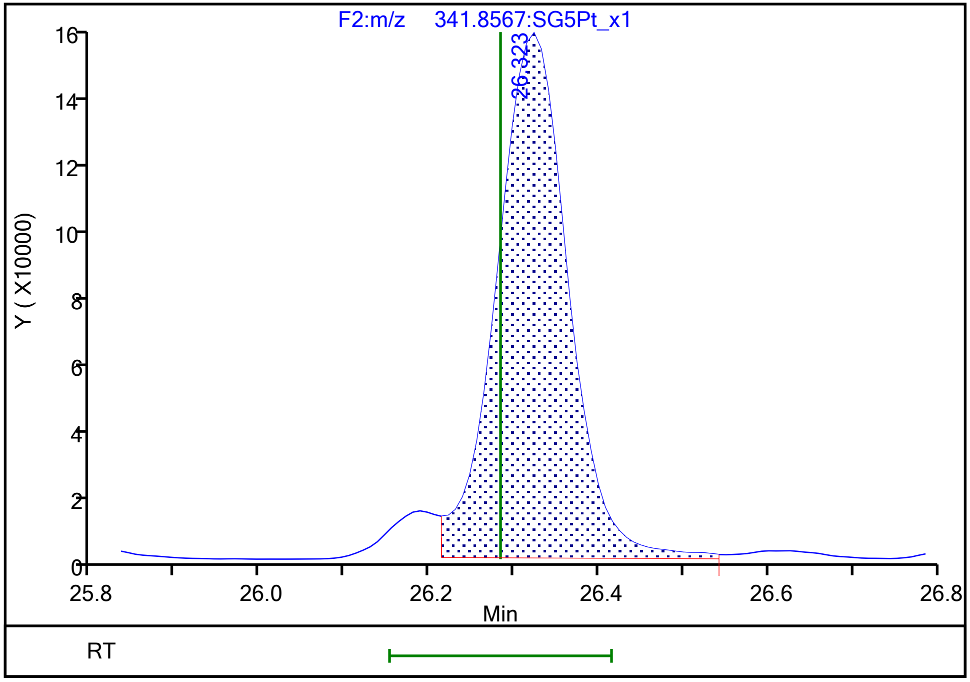

Reviewer: dadunj, 22-Sep-2020 10:35:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3
Client ID:	11215702-Soil-Tank#1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (23.02- 24.19)

Signal: 1

Processing Integration Results

RT = 23.088 Area = 13088

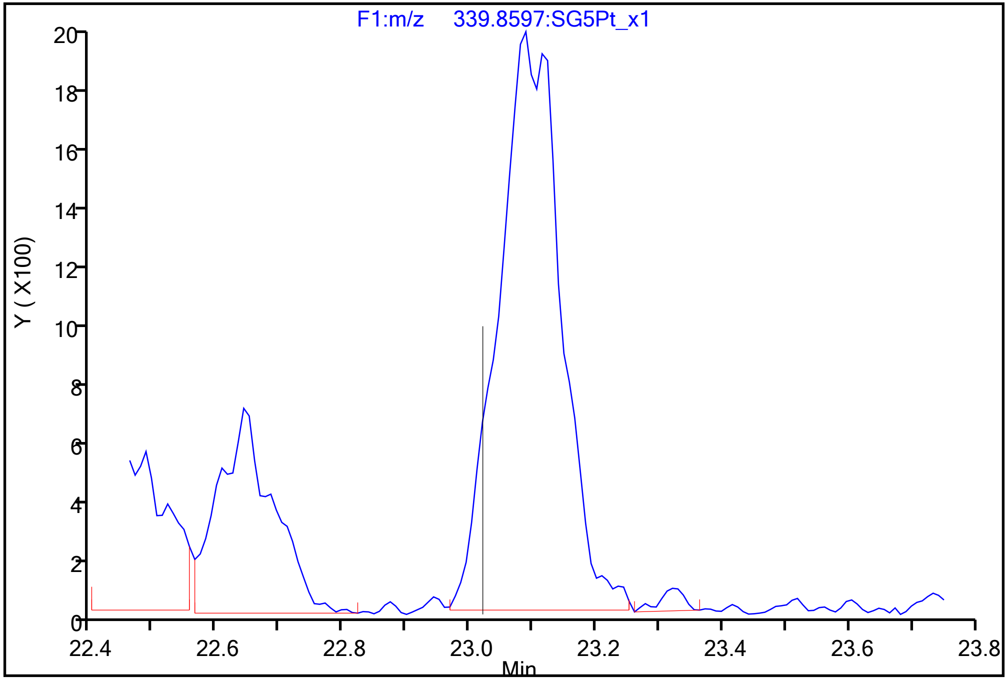

Manual Integration Results

RT = 23.088 Area = 13088

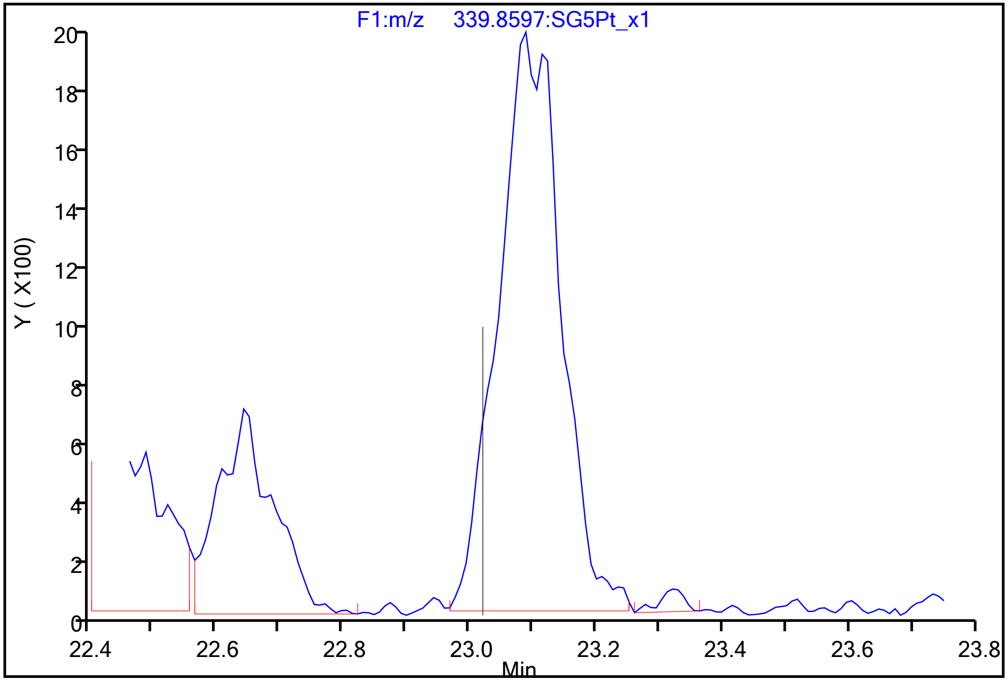

Reviewer: dadunj, 22-Sep-2020 10:36:10

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3		
Client ID:	11215702-Soil-Tank#1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (24.23- 29.76)

Signal: 1

Processing Integration Results

RT = 26.188 Area = 90849

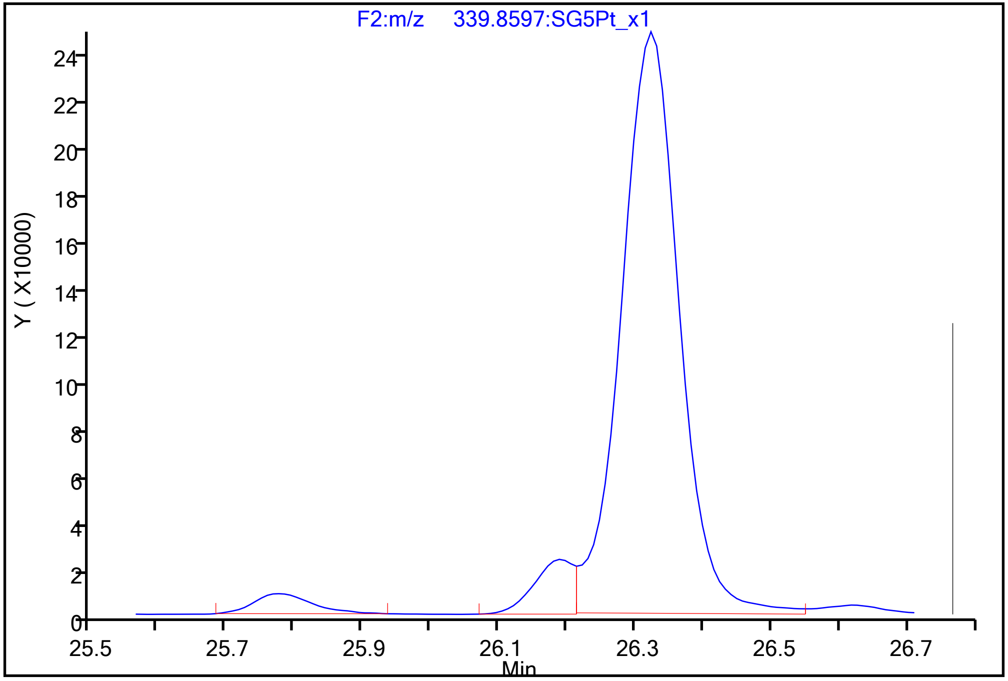

Manual Integration Results

RT = 26.188 Area = 90849

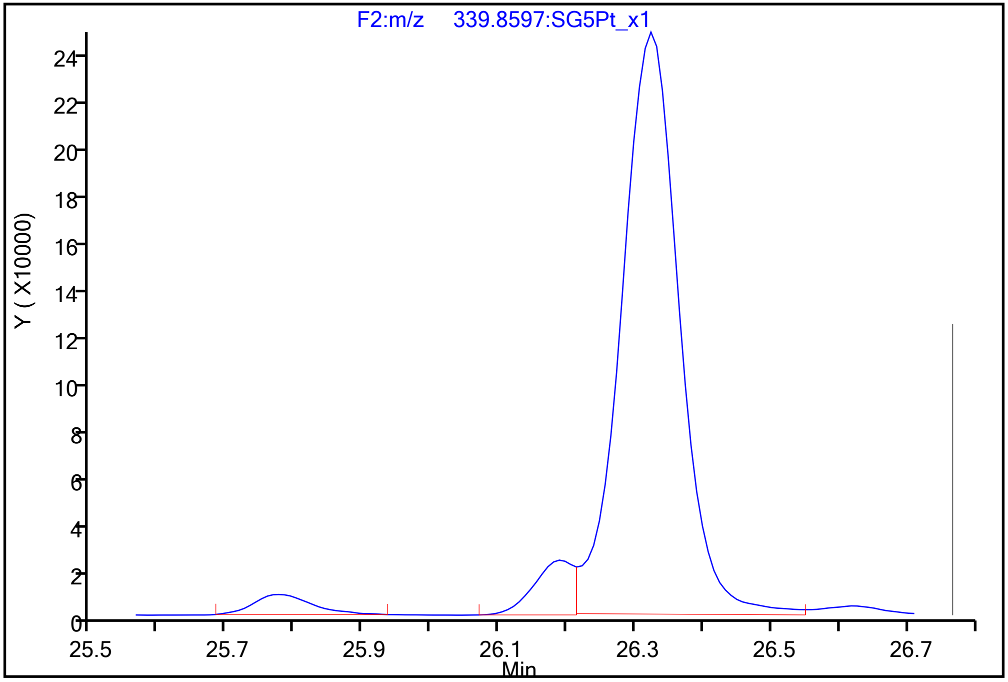

Reviewer: dadunj, 22-Sep-2020 10:36:20

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d				
Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3		
Client ID:	11215702-Soil-Tank#1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (33.35- 35.99)

Signal: 1

Processing Integration Results

RT = 34.267 Area = 4817

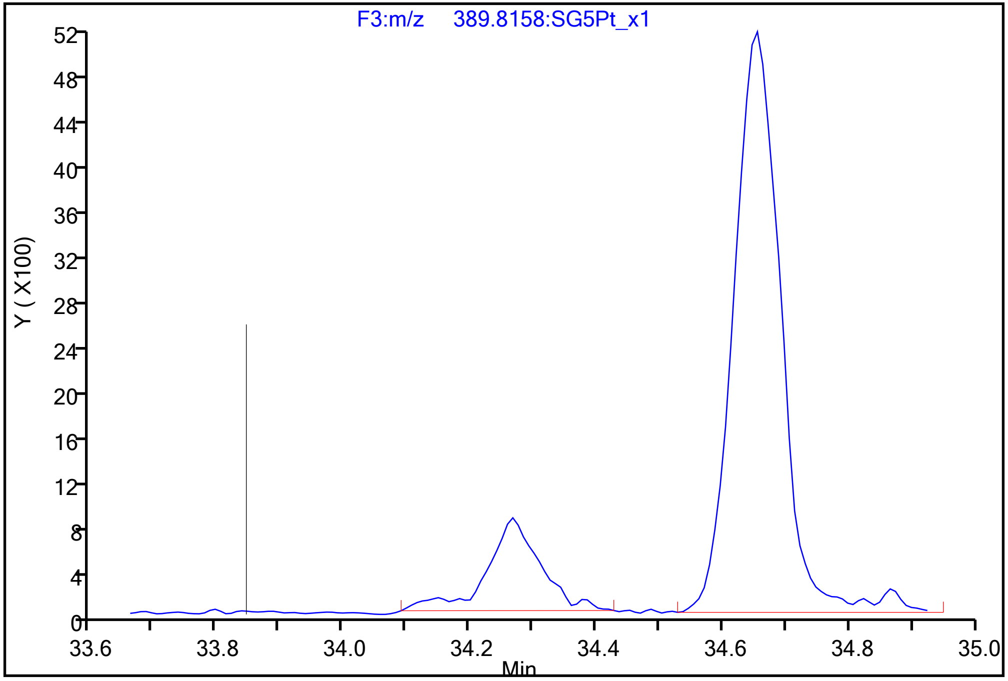

Manual Integration Results

RT = 34.267 Area = 4476 M

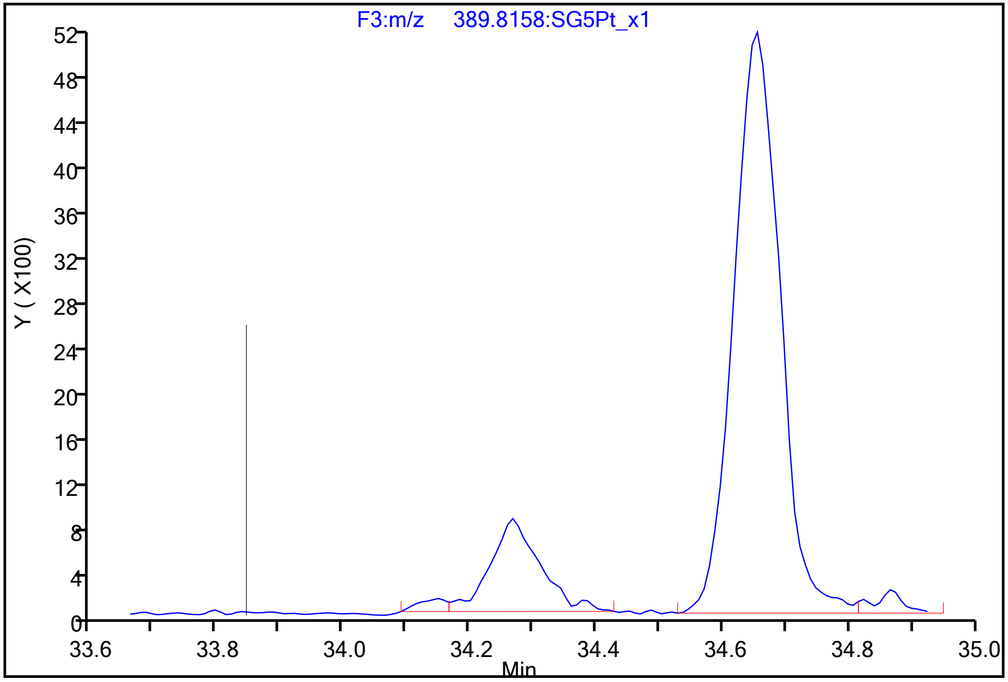

Reviewer: dadunj, 22-Sep-2020 10:37:23

Audit Action: Split an Integrated Peak Audit Reason: Other

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Injection Date: 20-Sep-2020 12:00:00
Instrument ID: DFS 1
Lims ID: 320-64049-A-3-B
Lab Sample ID: 320-64049-3
Client ID: 11215702-Soil-Tank#1
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 55
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (33.35- 35.99)

Signal: 1

Processing Integration Results

RT = 34.655 Area = 26719

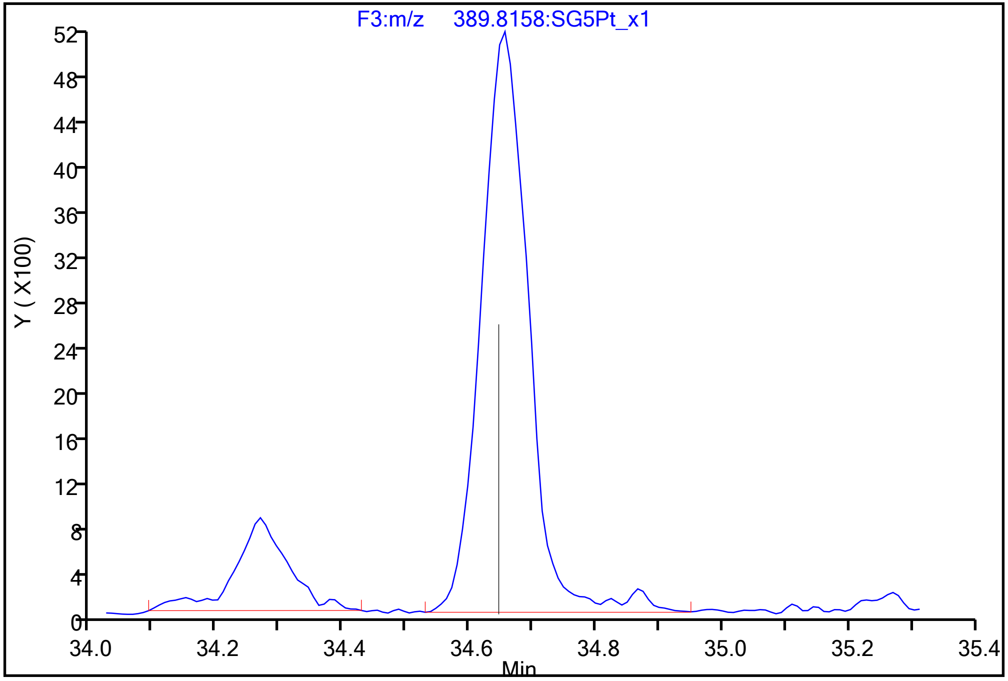

Manual Integration Results

RT = 34.655 Area = 26072 M

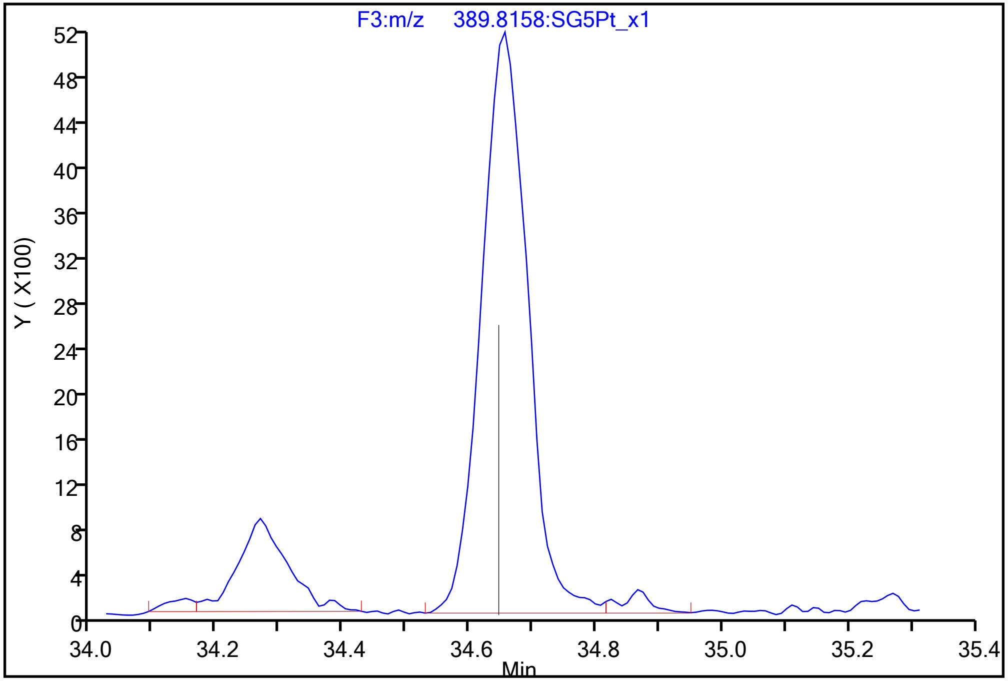

Reviewer: dadunj, 22-Sep-2020 10:37:23
Audit Action: Split an Integrated Peak
Audit Reason: Other

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3
Client ID:	11215702-Soil-Tank#1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT: 38.13
Area: 534294
Amount: 22.848857
Amount Units: pg/ul

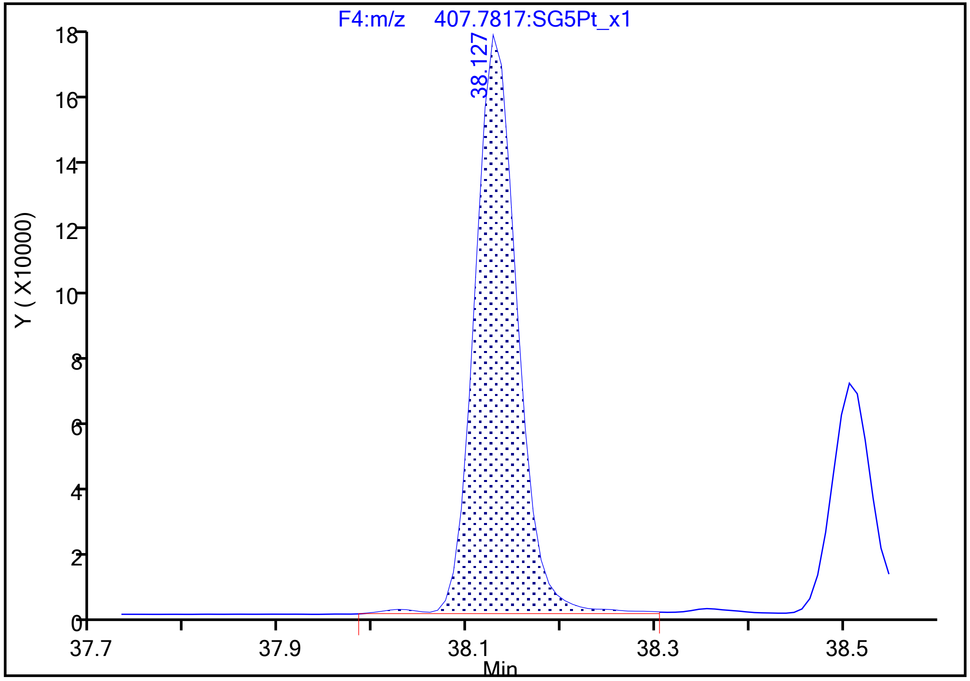

Manual Integration Results

RT: 38.13
Area: 531472
Amount: 22.626295
Amount Units: pg/ul

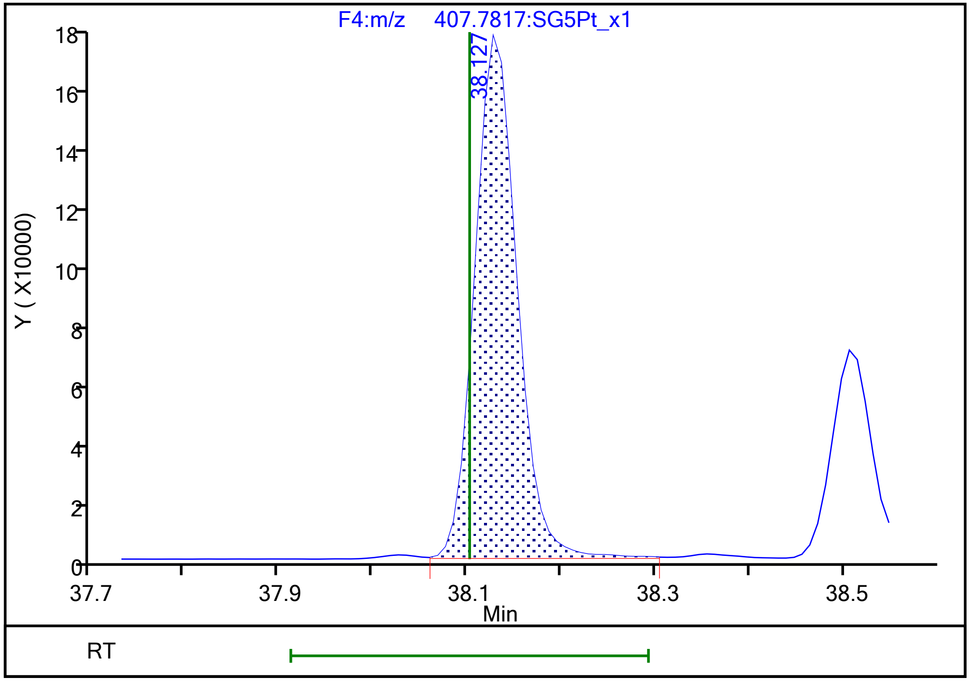

Reviewer: dadunj, 22-Sep-2020 10:37:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Instrument ID:	DFS 1
Lims ID:	320-64049-A-3-B	Lab Sample ID:	320-64049-3
Client ID:	11215702-Soil-Tank#1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 55
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT:	38.13
Area:	513585
Amount:	22.848857
Amount Units:	pg/ul

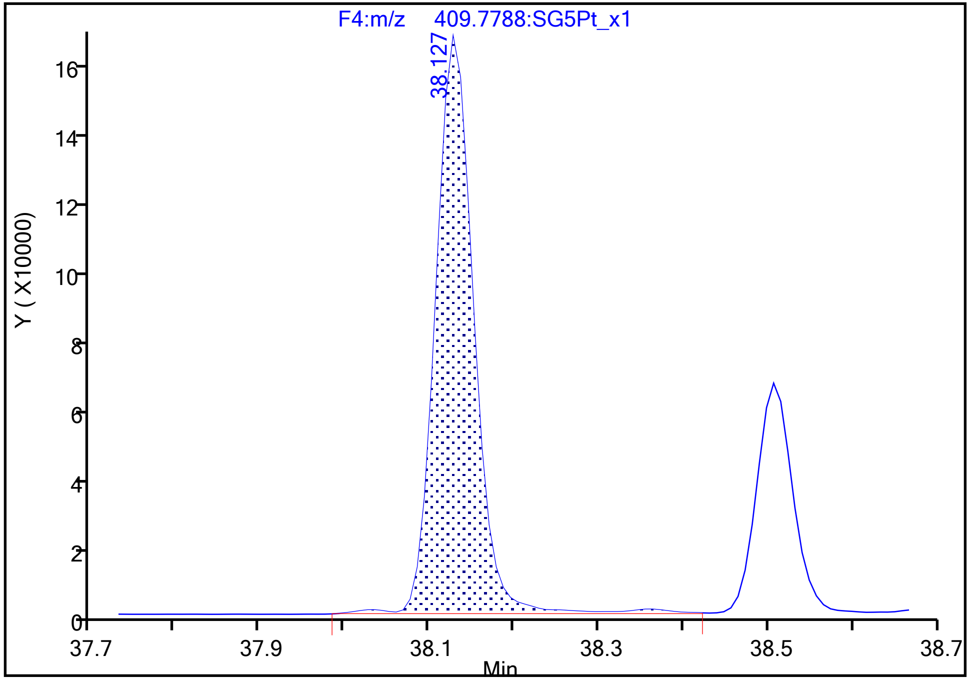

Manual Integration Results

RT:	38.13
Area:	506200
Amount:	22.626295
Amount Units:	pg/ul

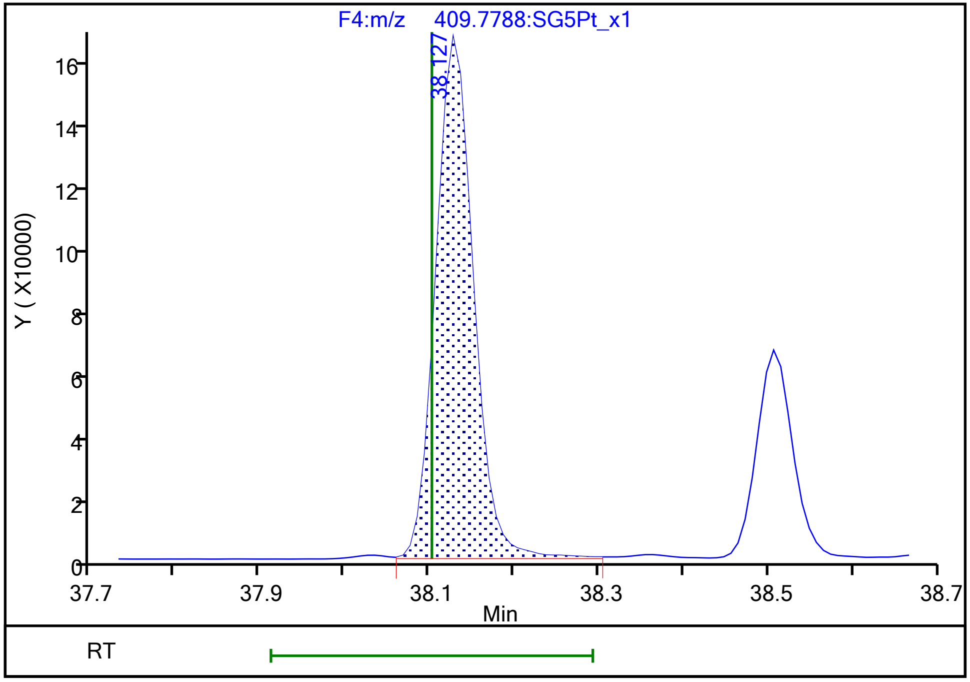

Reviewer: dadunj, 22-Sep-2020 10:37:47

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 22-Sep-2020 10:39:31 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Injection Date: 20-Sep-2020 12:00:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 413813
Sample Line#: 55
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

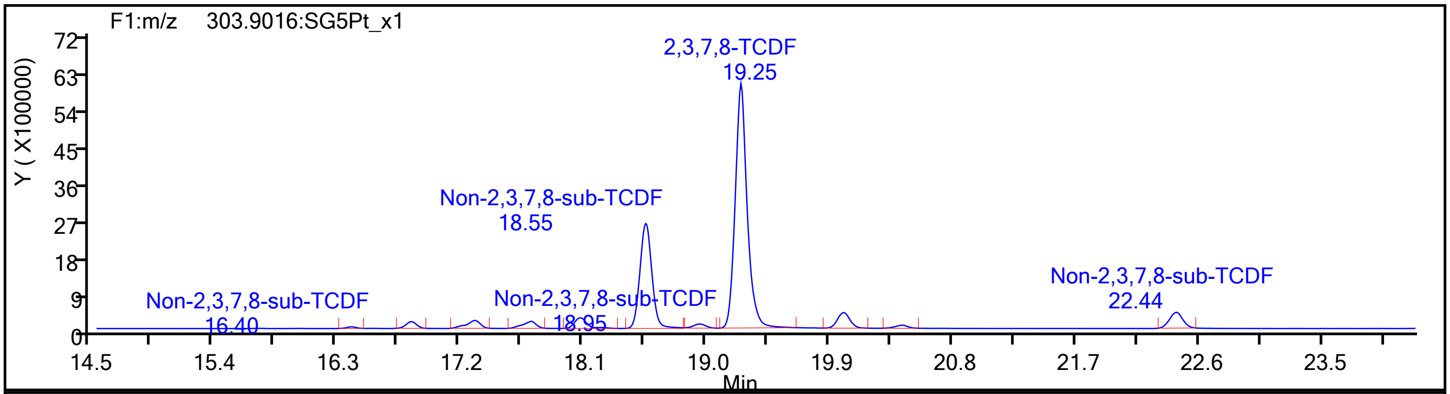

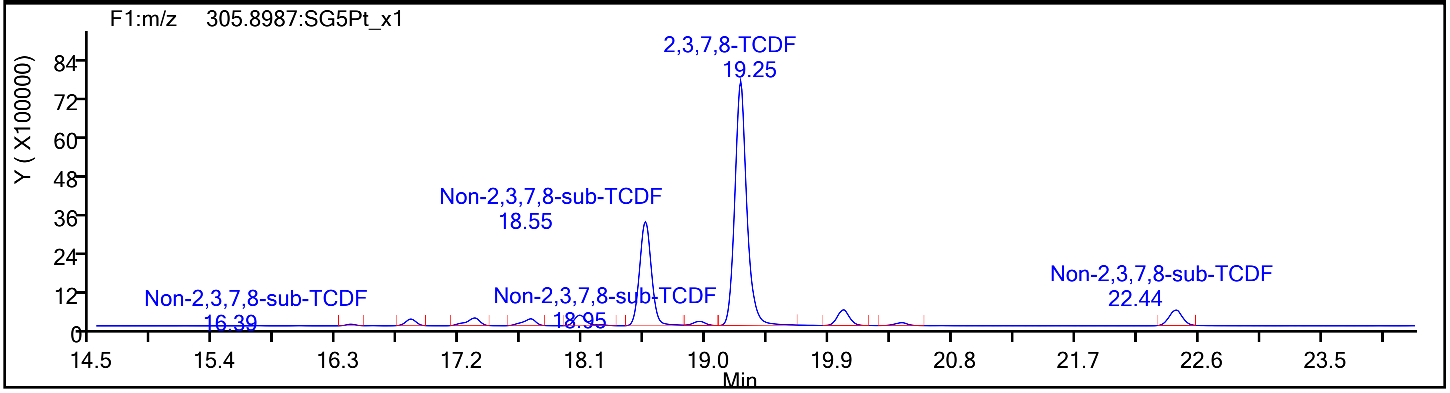

TCDF Standards

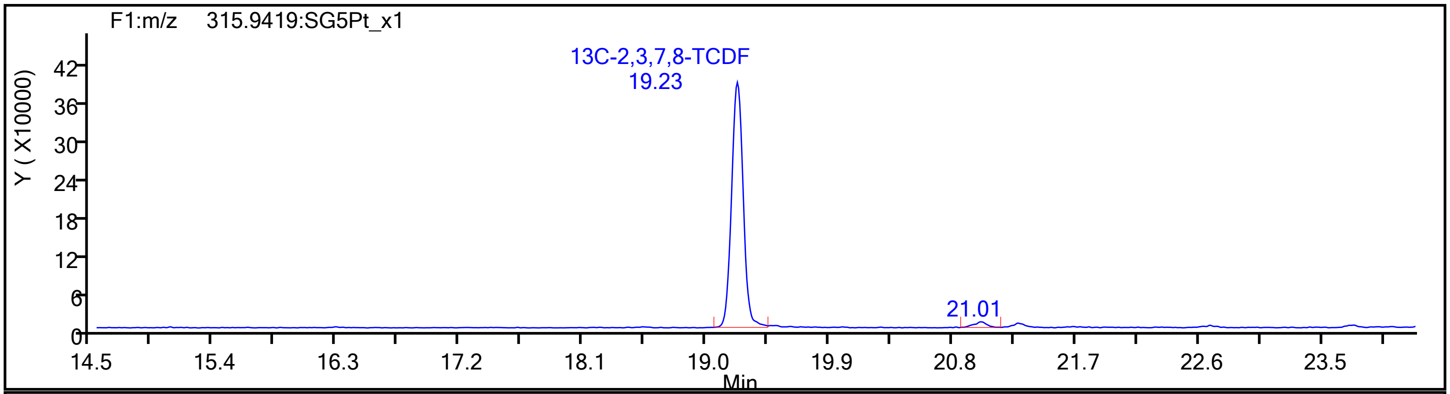

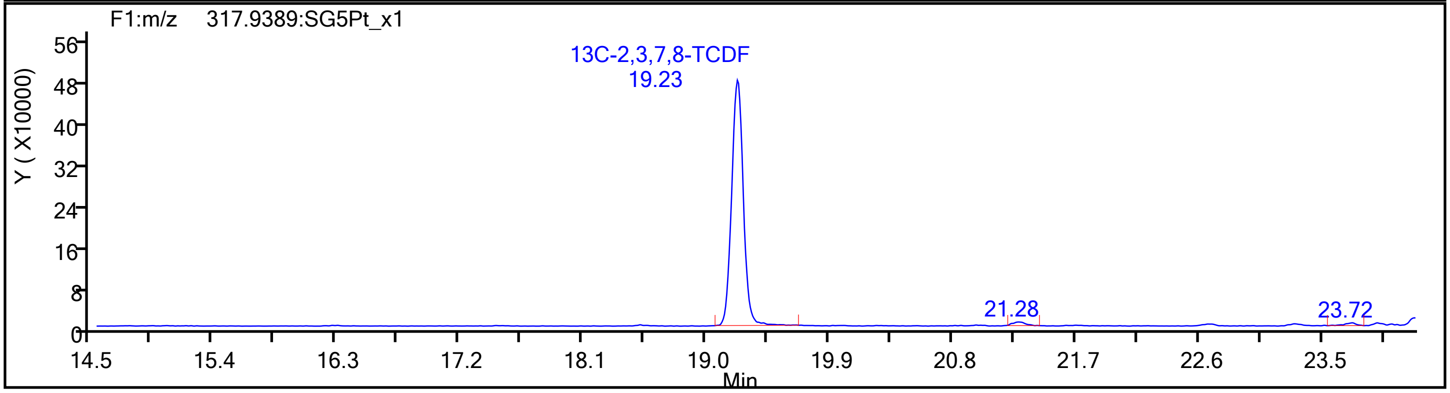

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

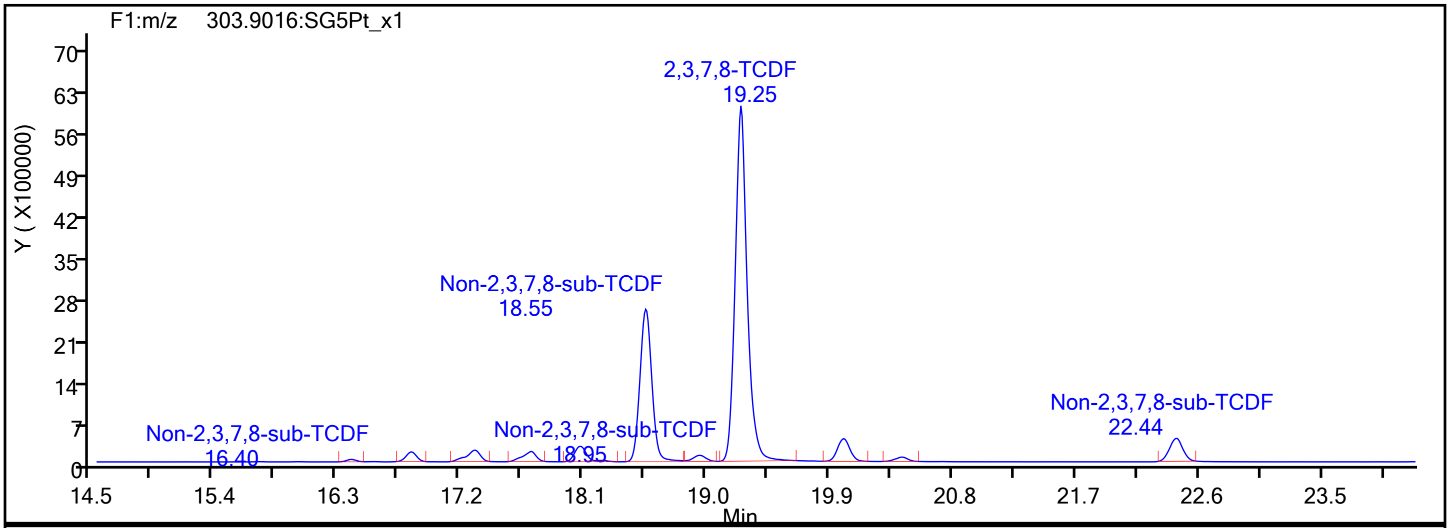

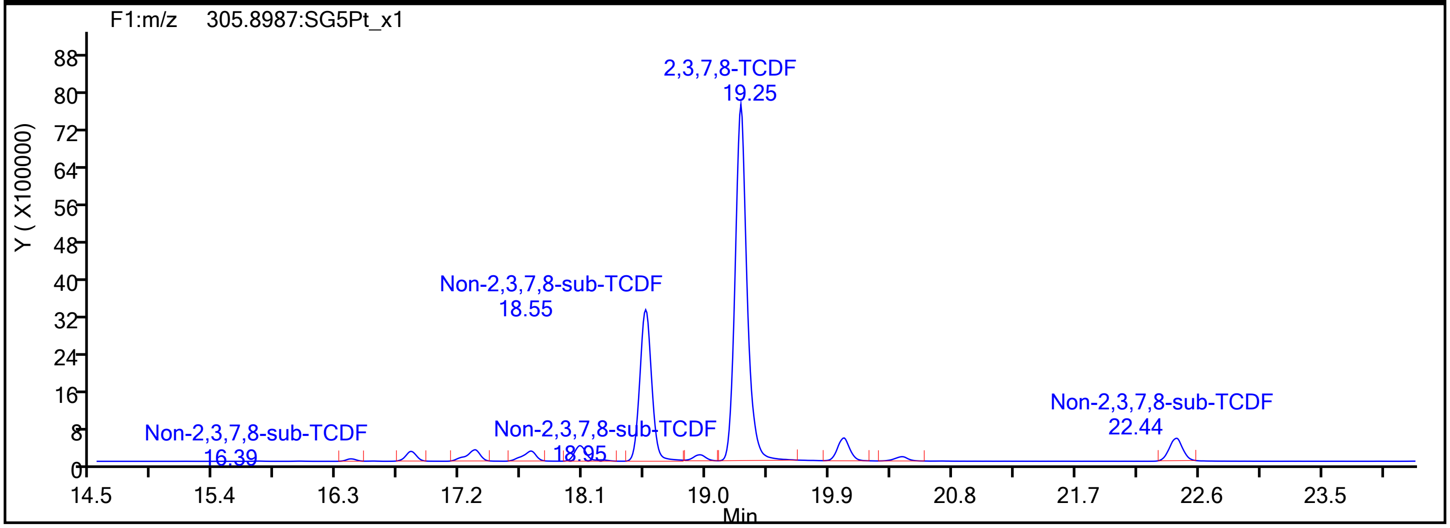

TCDF Interference Mass

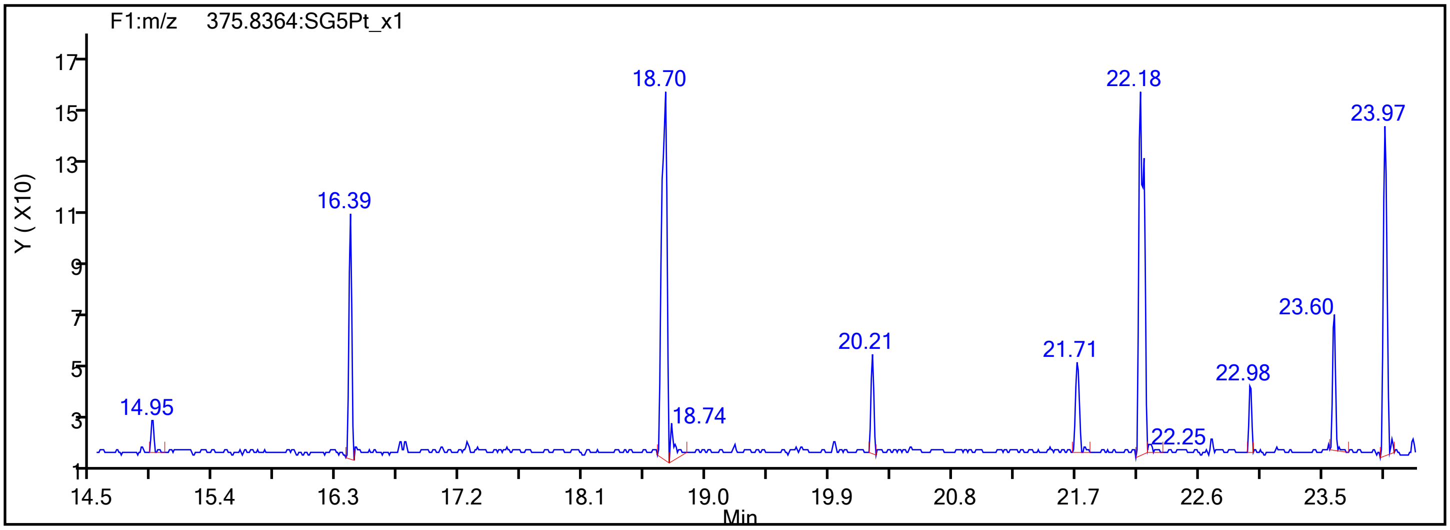

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

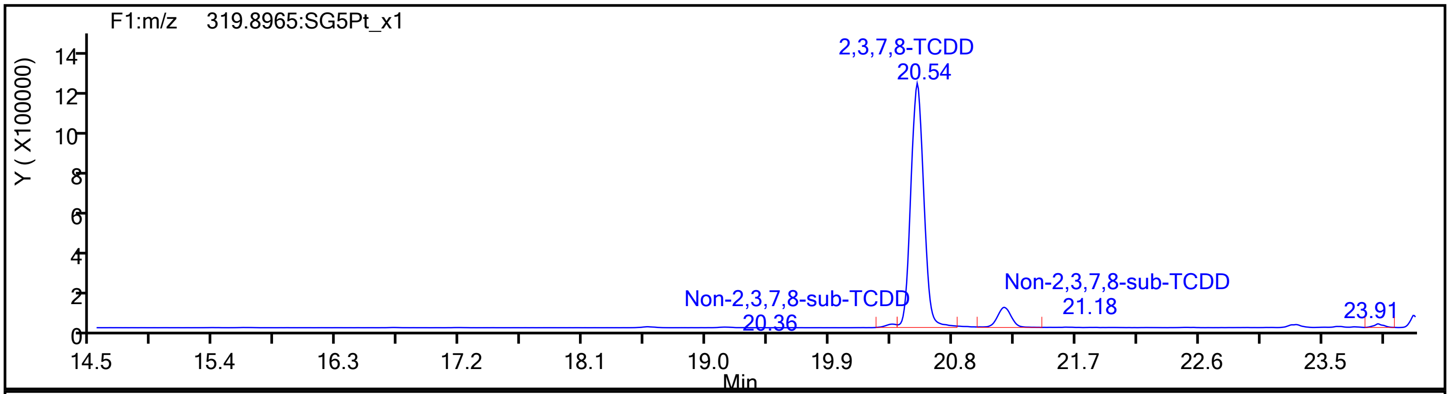

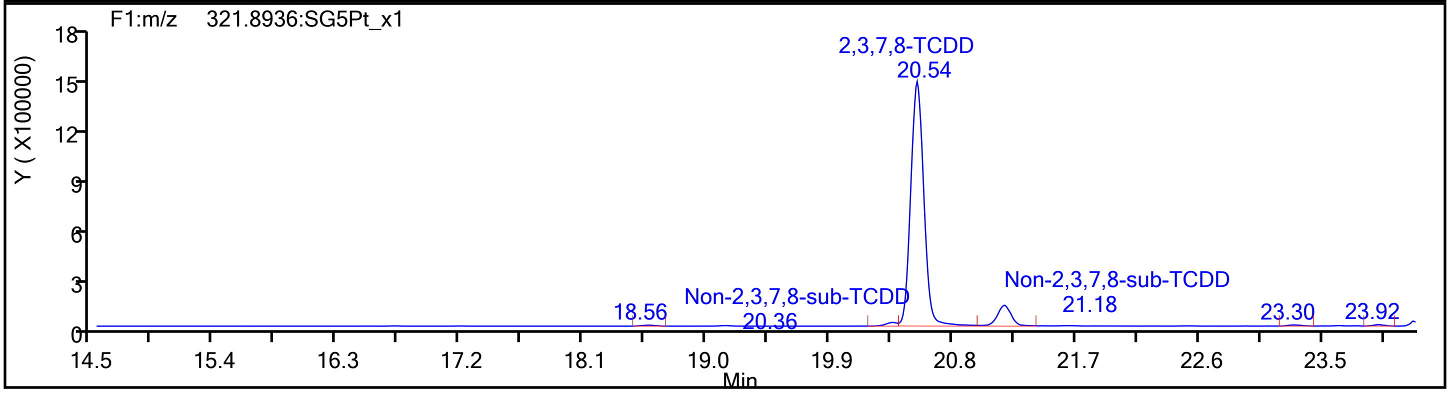

TCDD Standards

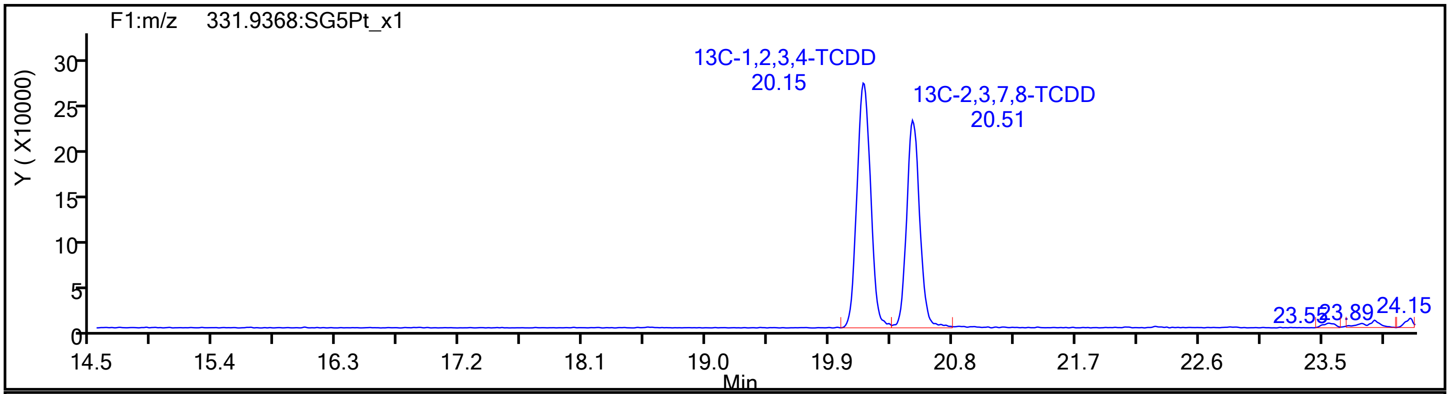

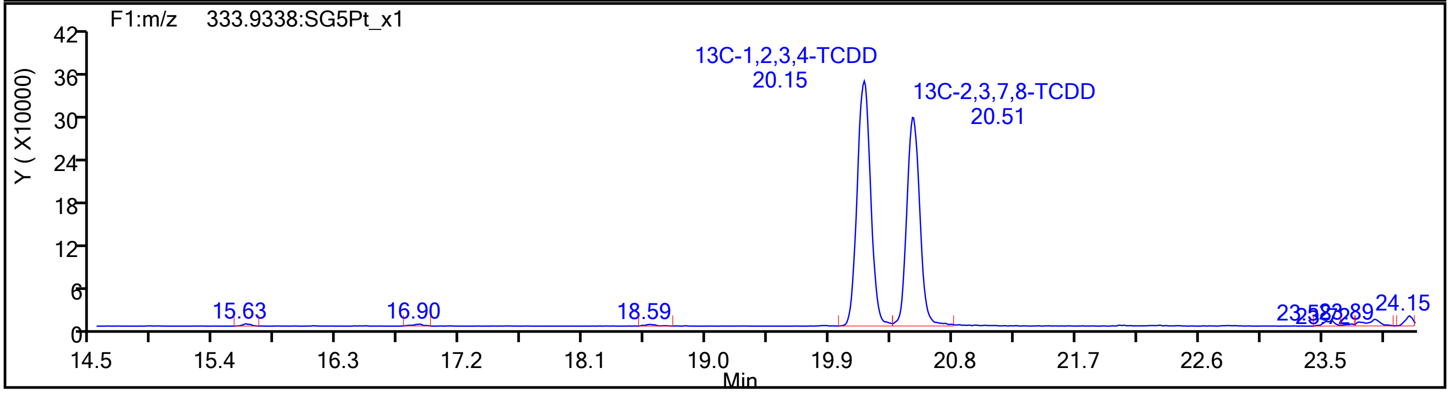

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d

Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

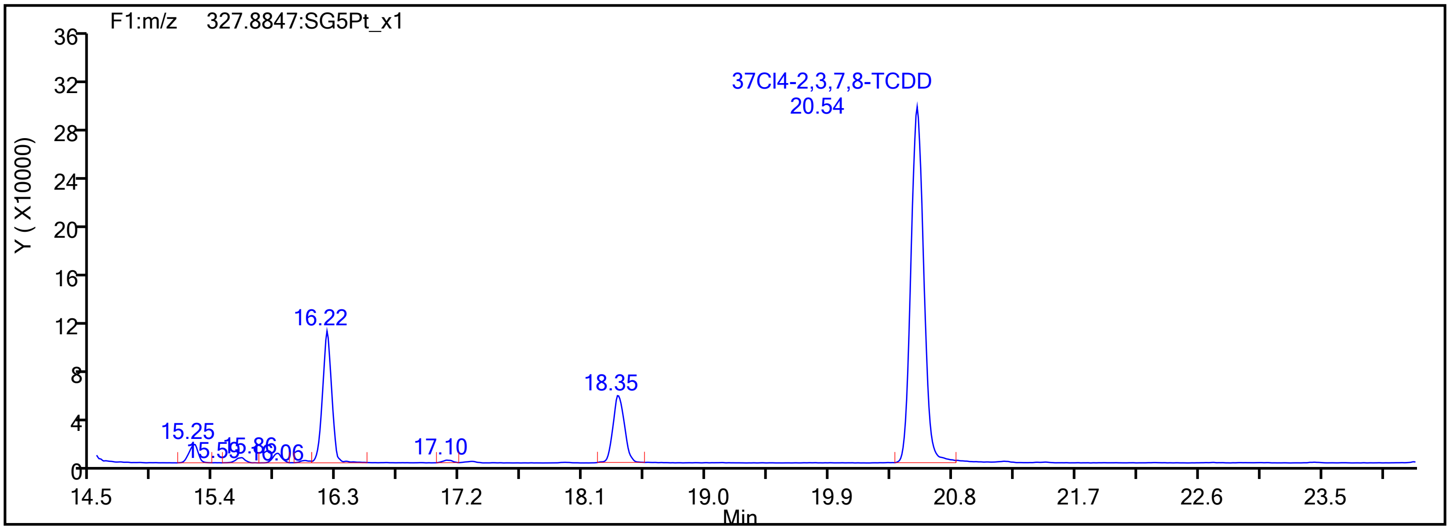

37Cl4-TCDD Standards

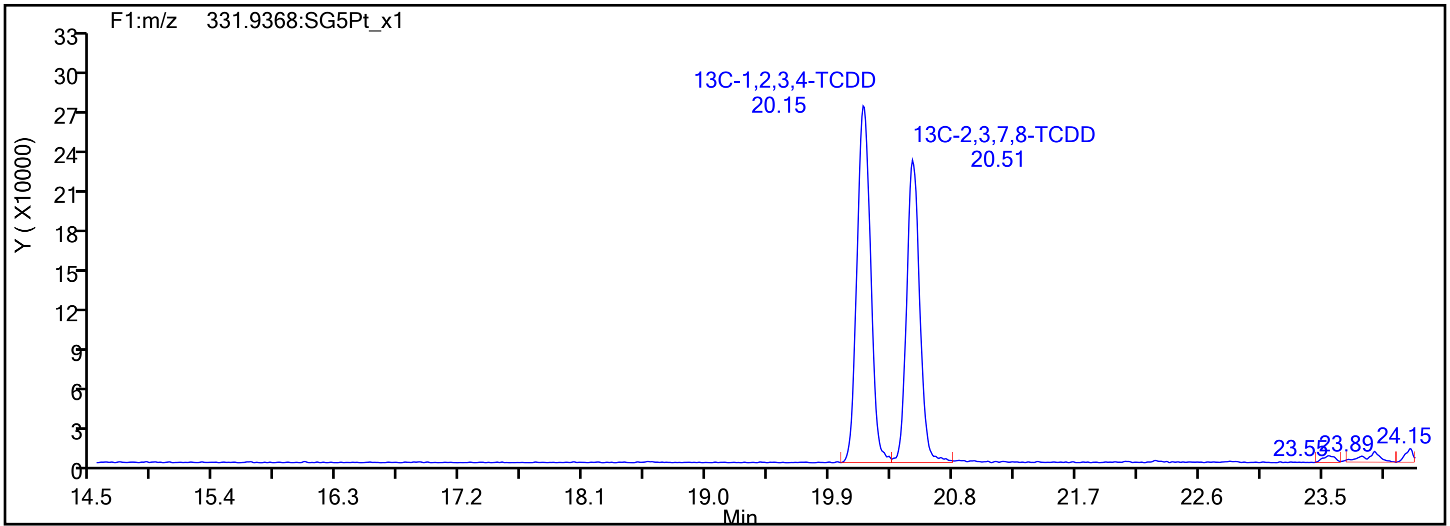

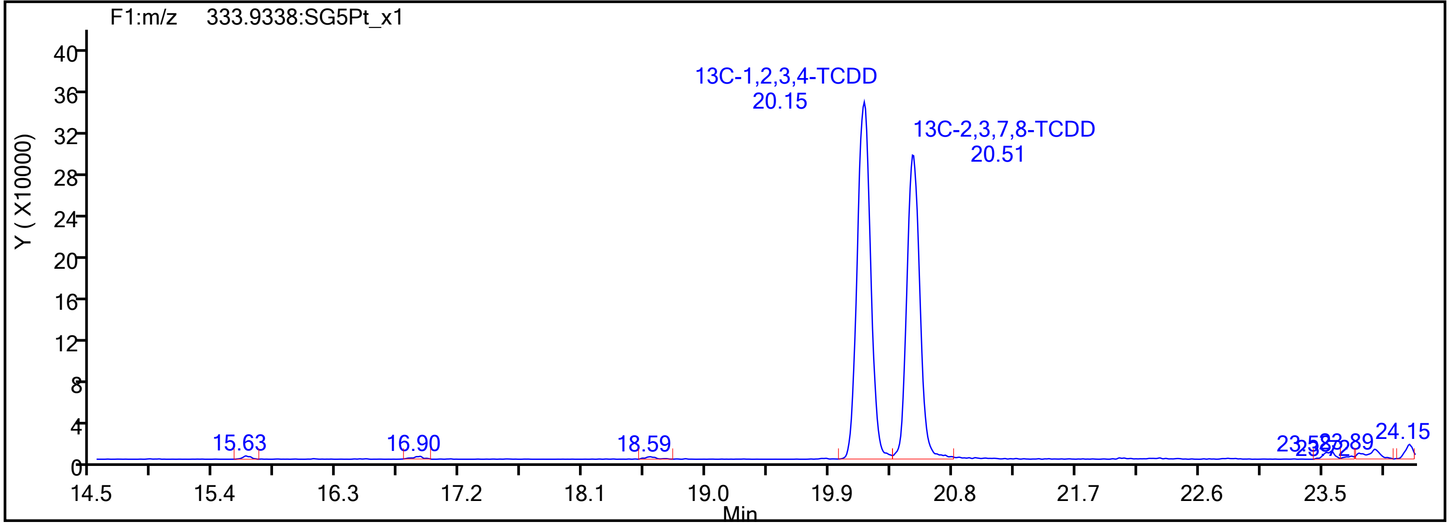

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

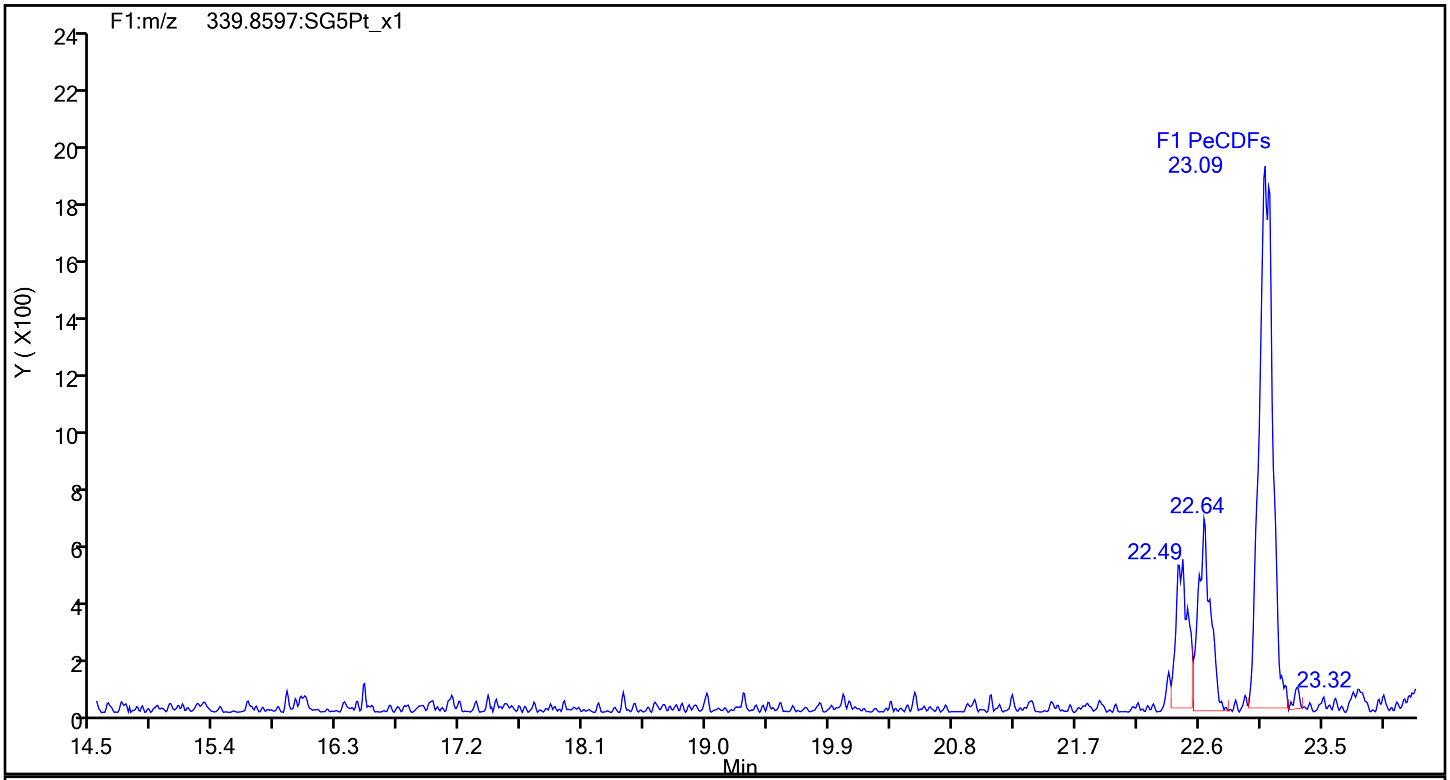

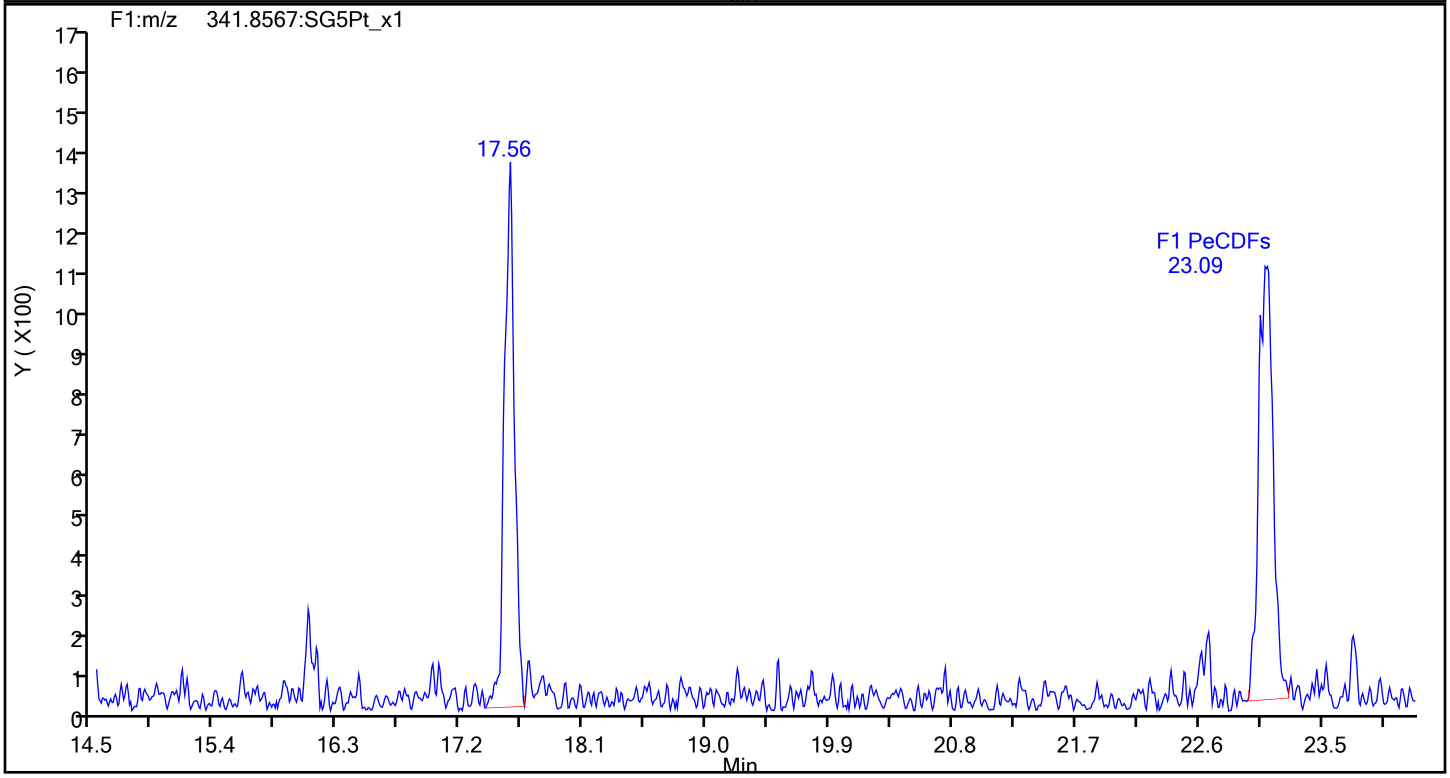

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

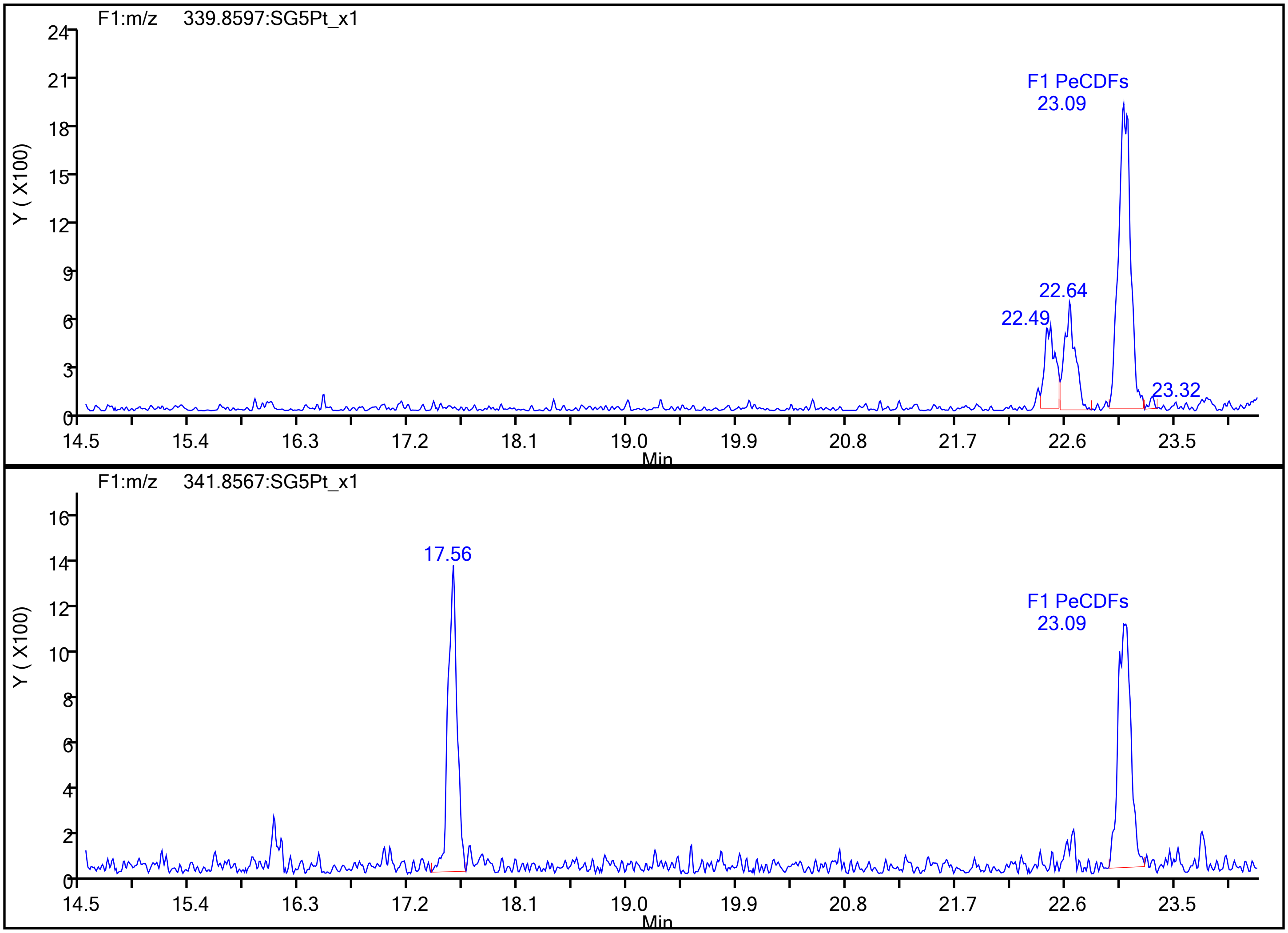

F1 PeCDFs Interference Mass

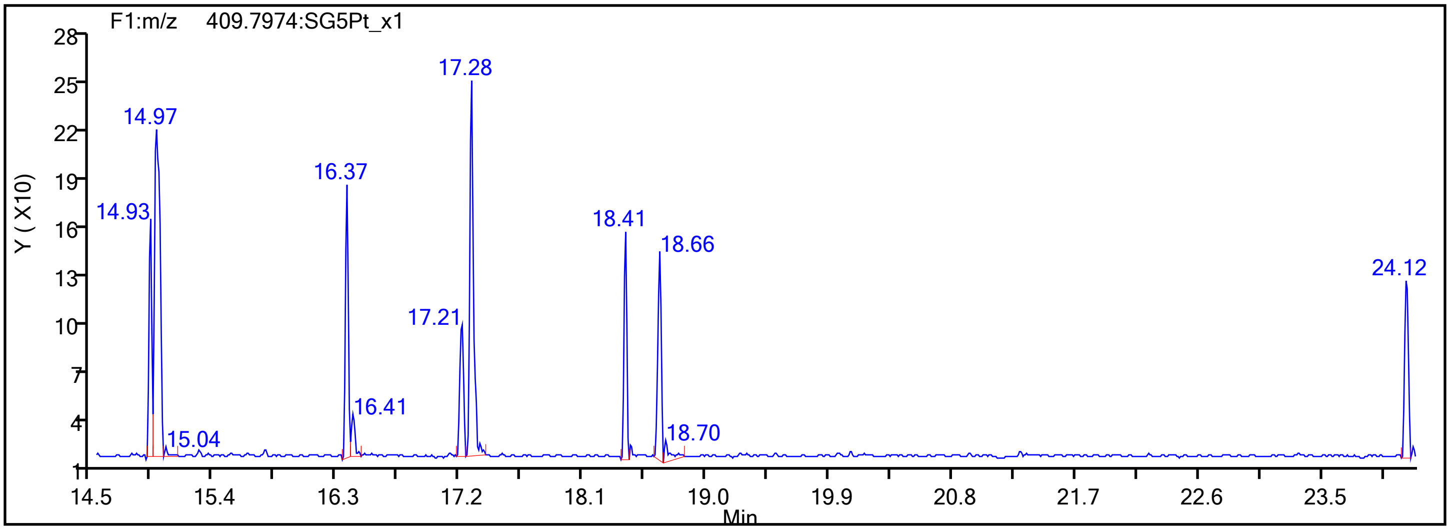

Report Date: 22-Sep-2020 10:39:32
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 12:00:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 413813
Sample Line#: 55
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Column Dia: 0.32 mm

PeCDF

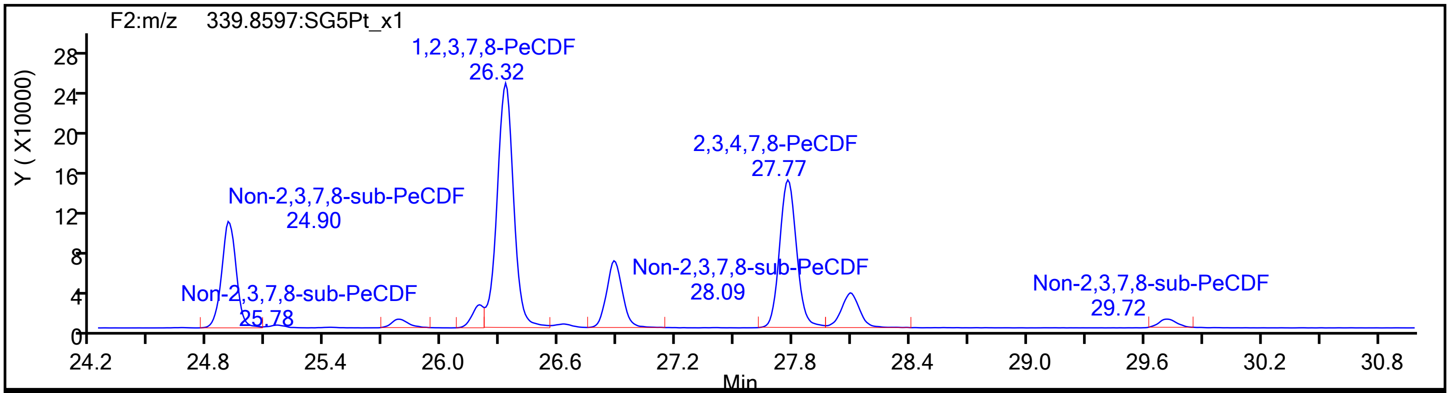

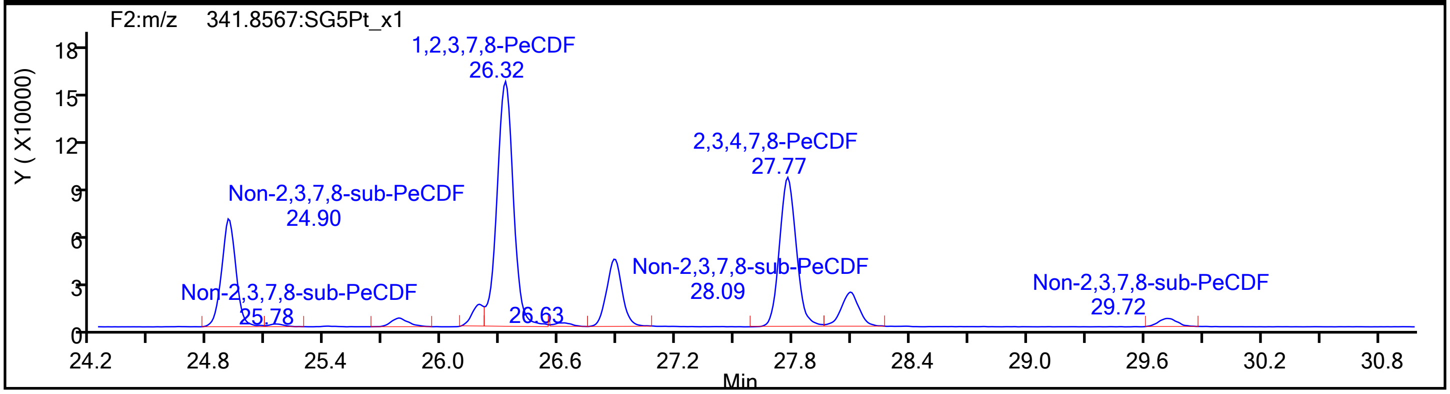

PeCDF Standards

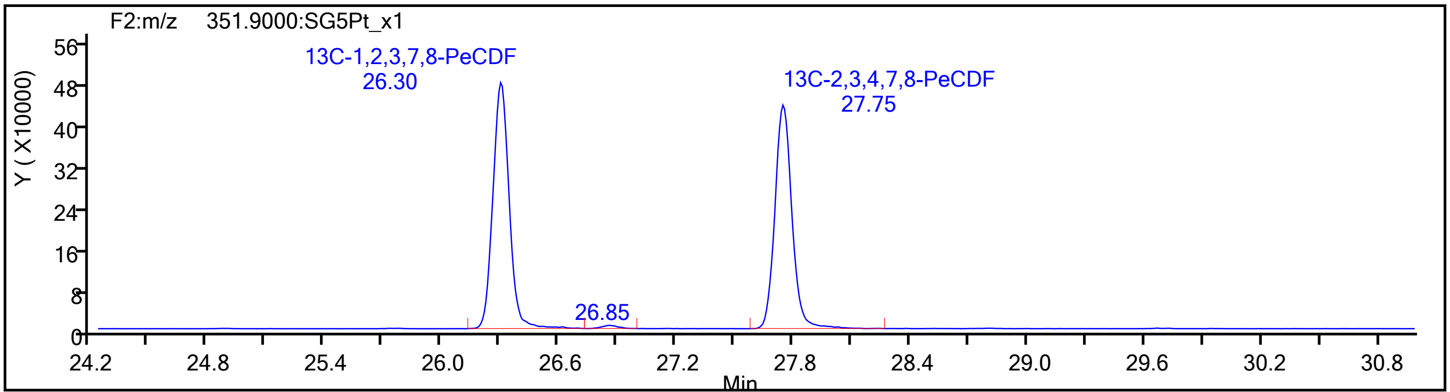

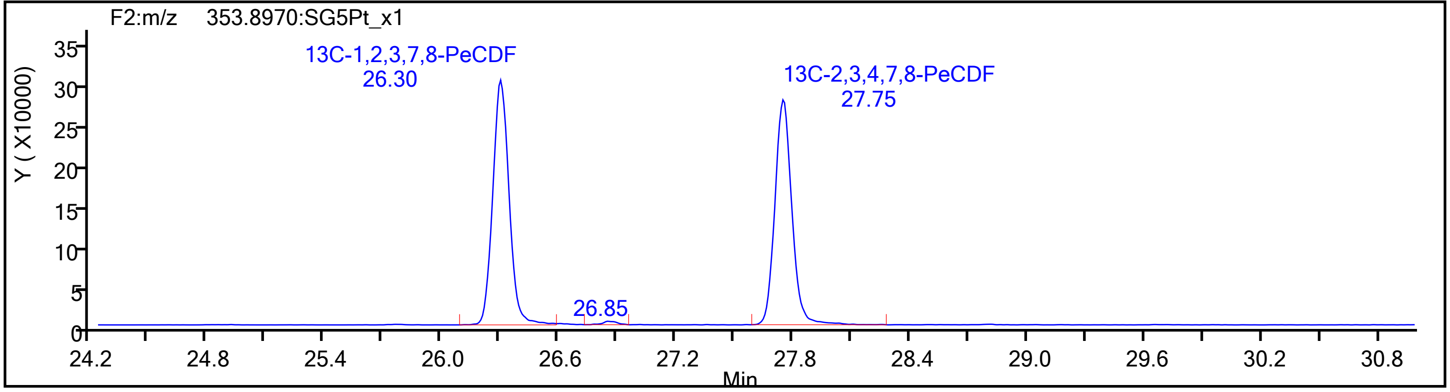

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Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 12:00:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 413813
Sample Line#: 55
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Column Dia: 0.32 mm

PeCDF

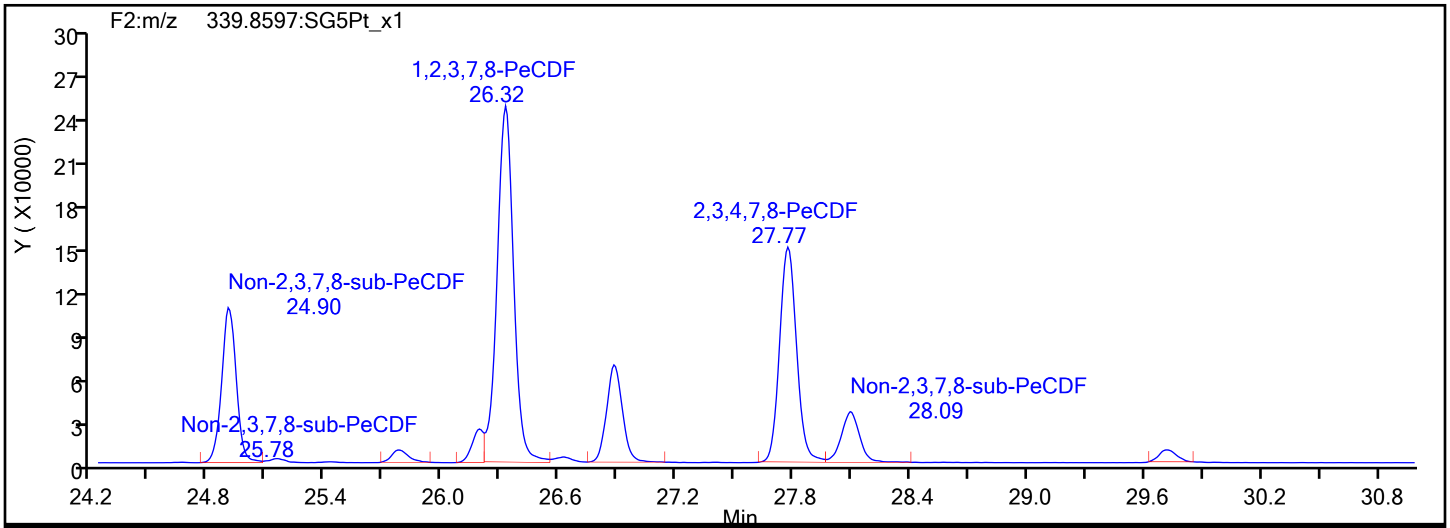

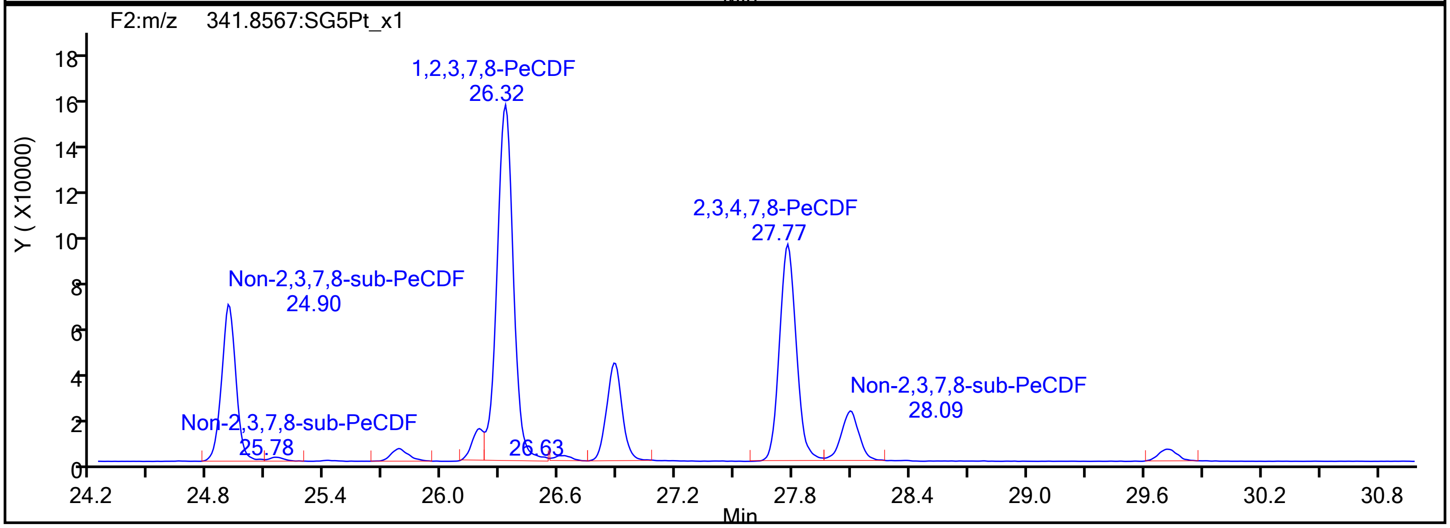

PeCDF Interference Mass

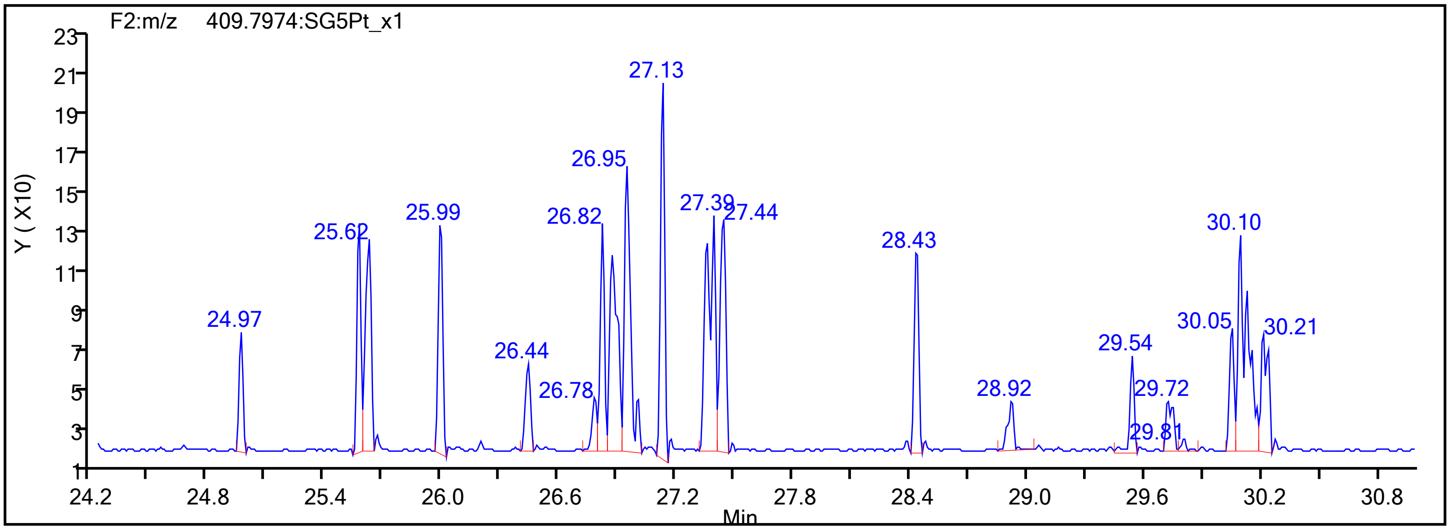

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

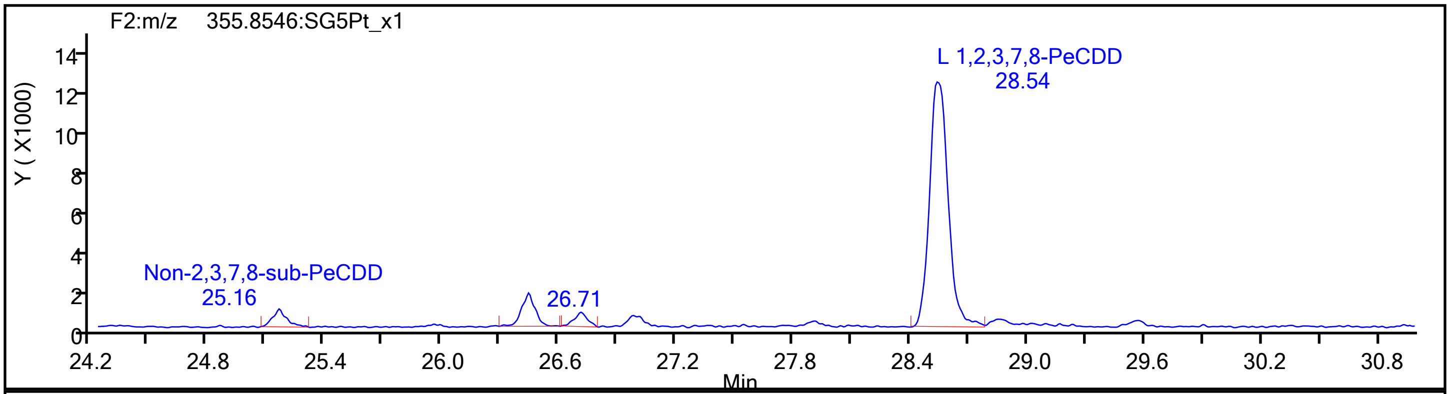

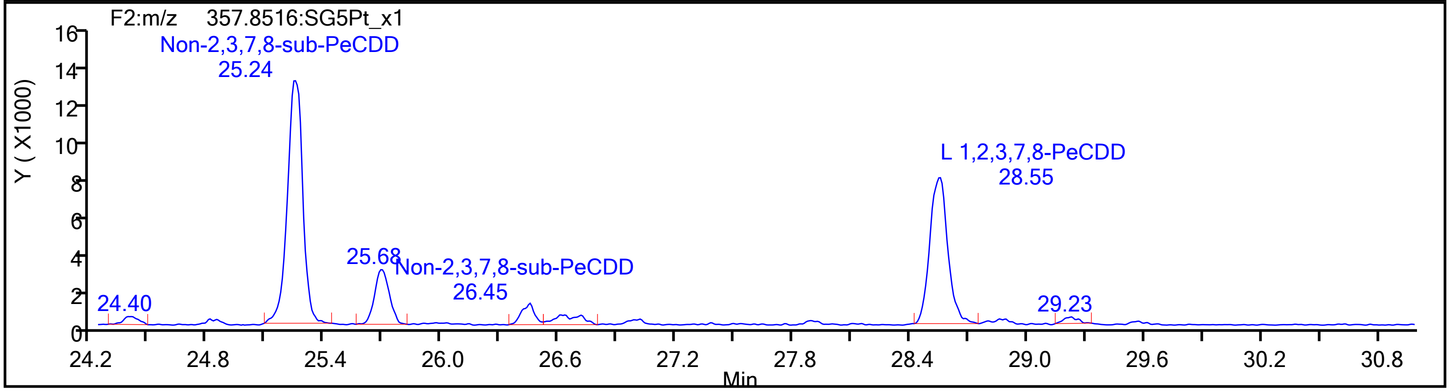

PeCDD Standards

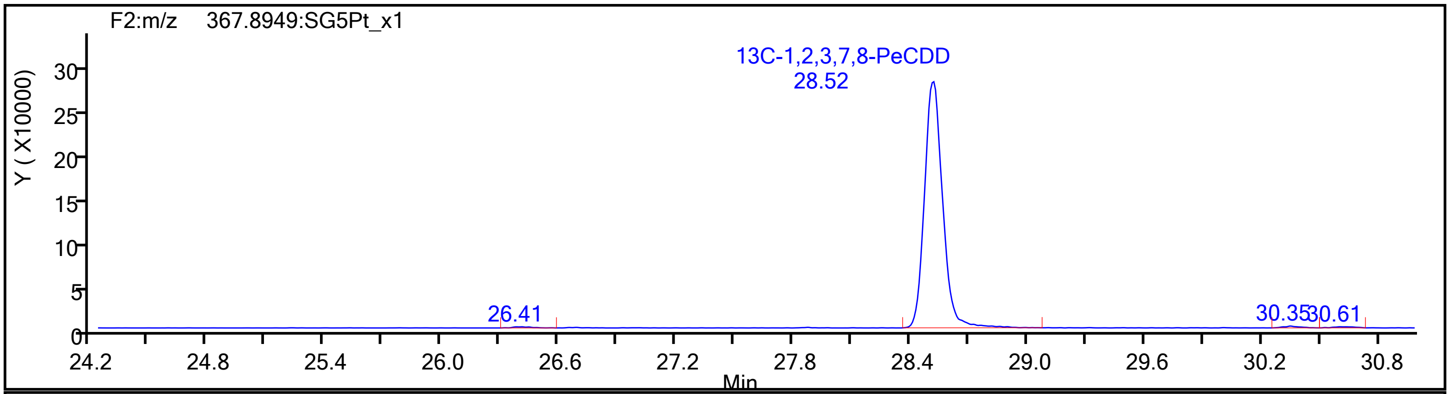

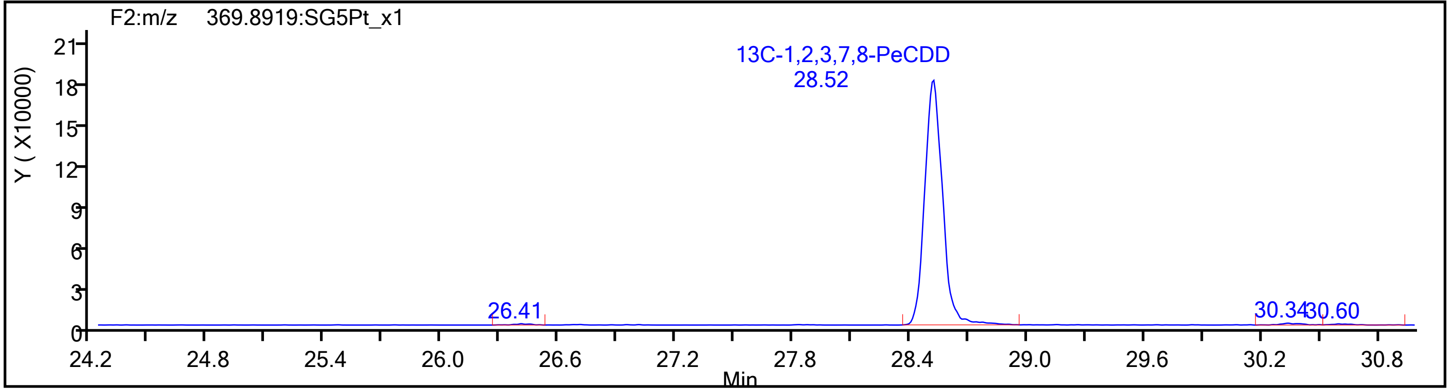

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 12:00:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 413813 Sample Line#: 55
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

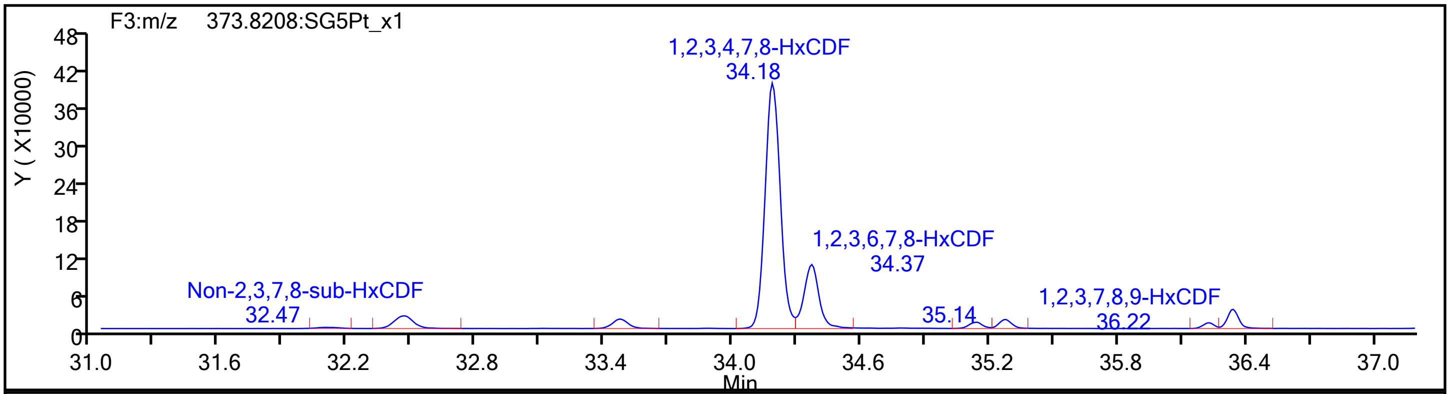

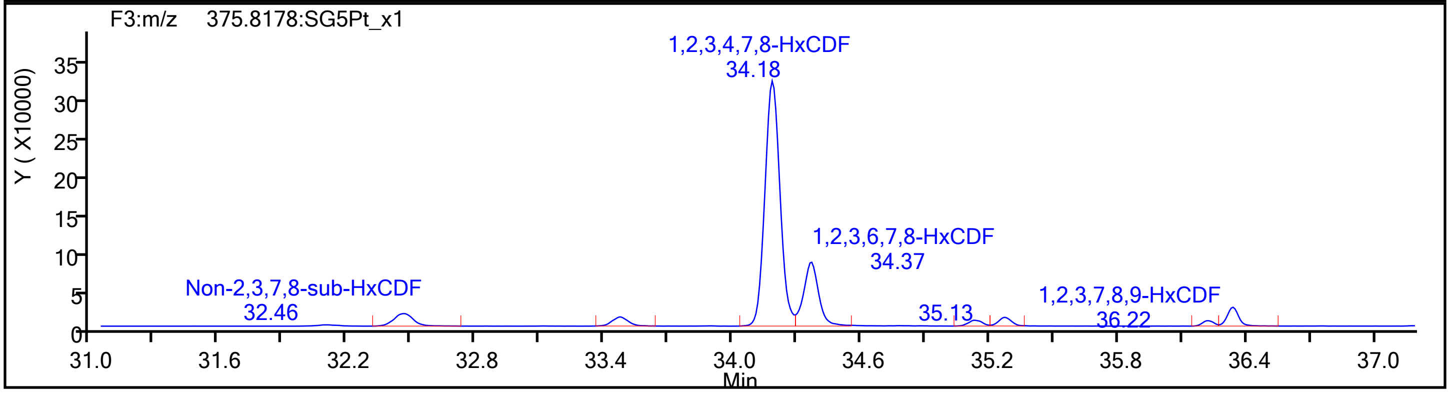

HxCDF Standards

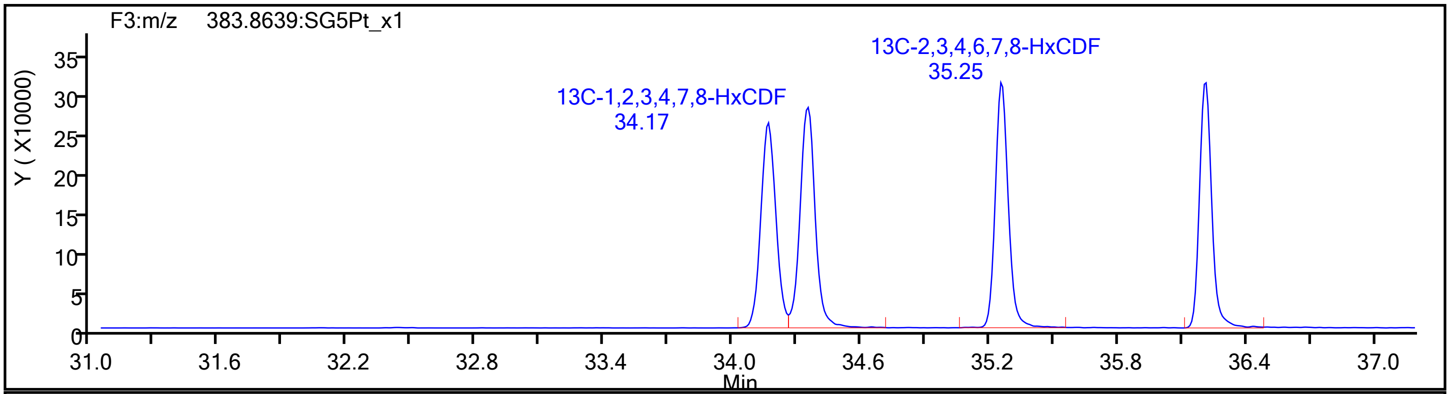

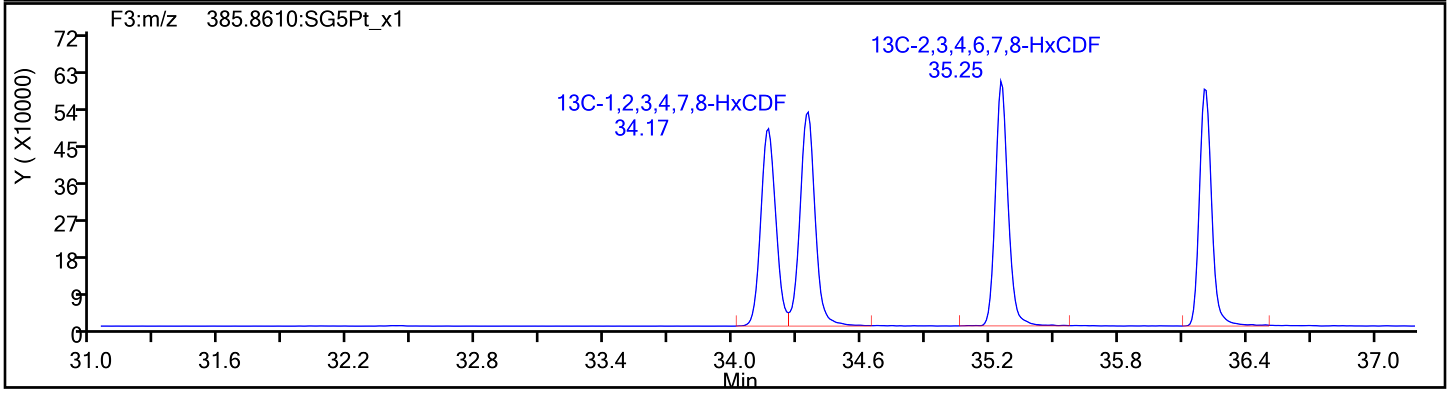

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 12:00:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 413813
Sample Line#: 55
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

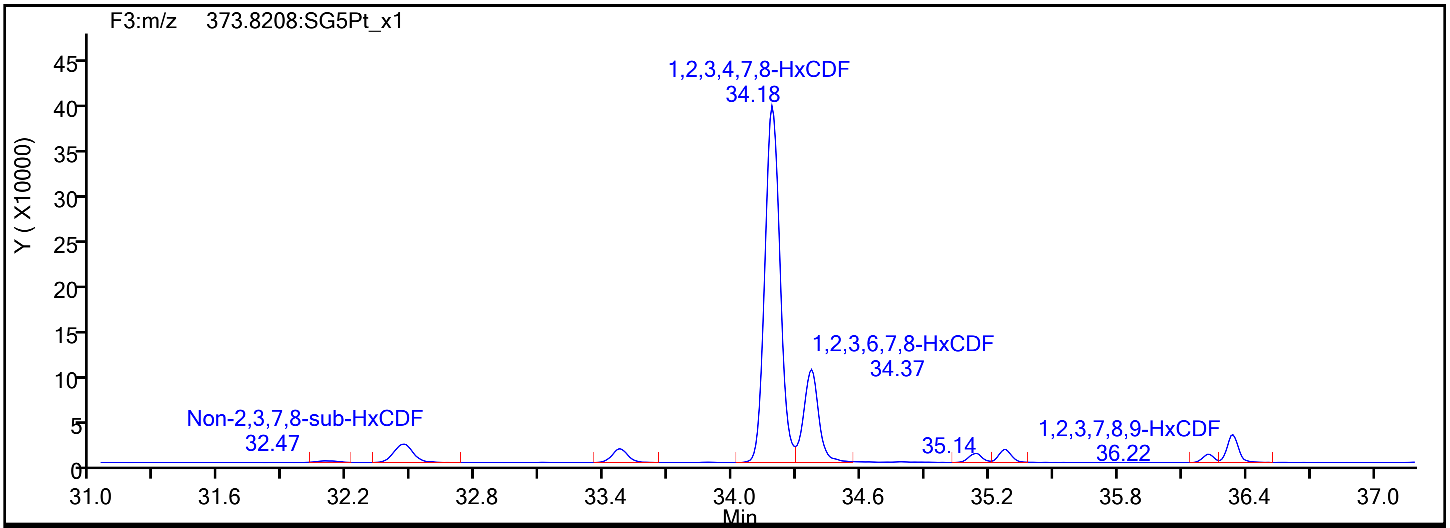

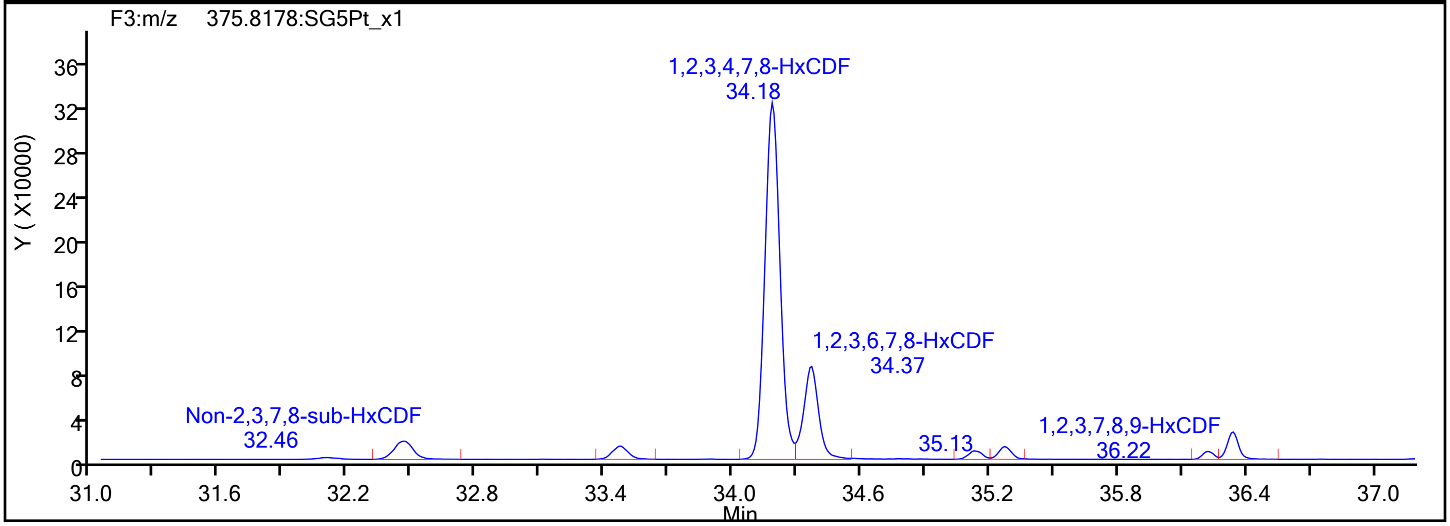

HxCDF Interference Mass

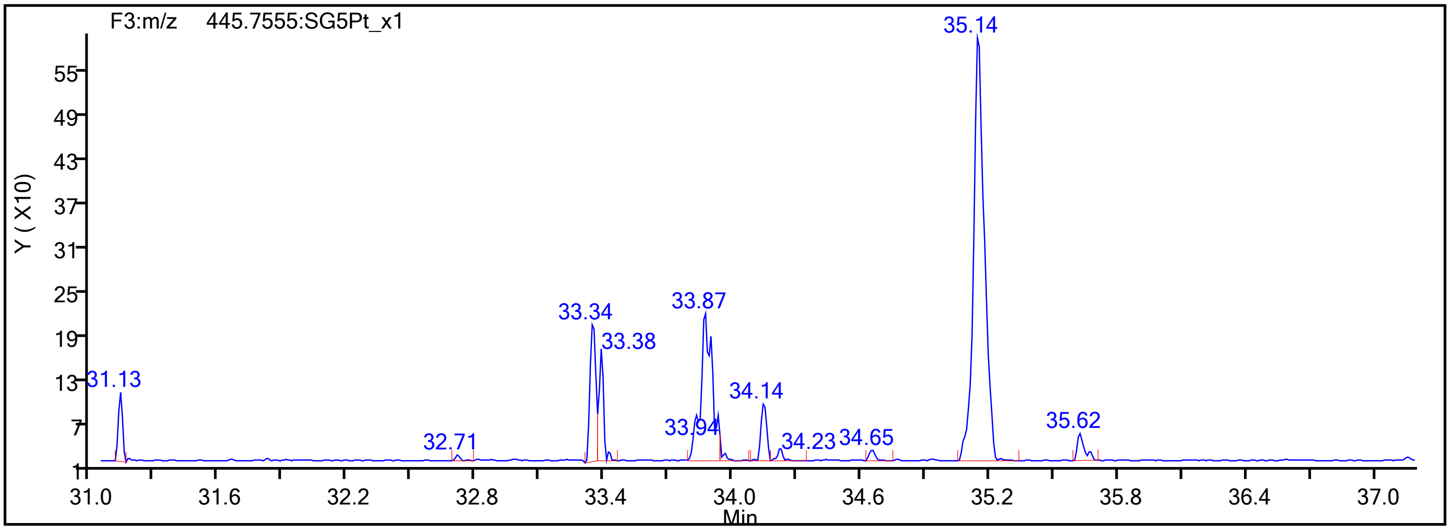

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Injection Date: 20-Sep-2020 12:00:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
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Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

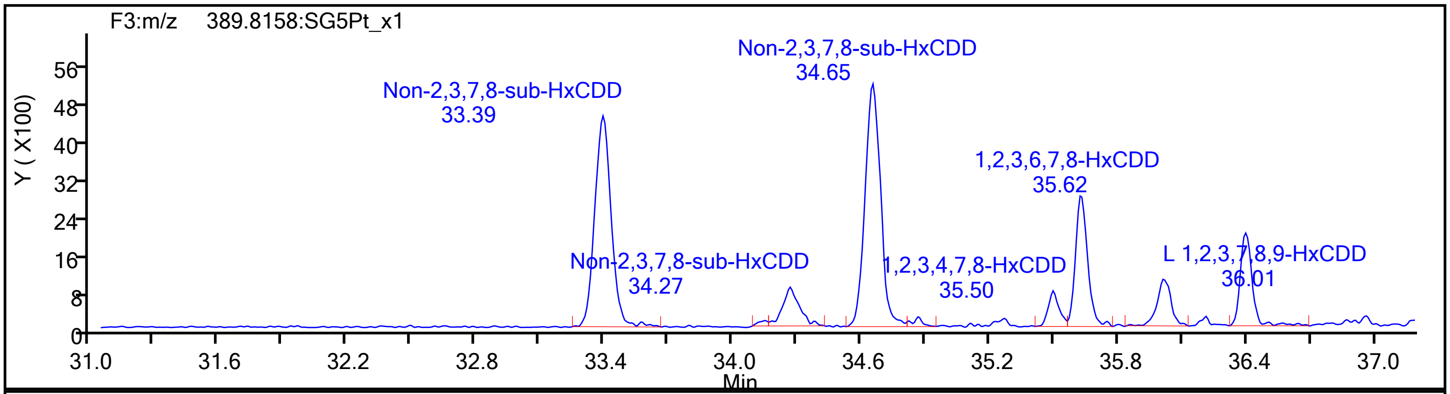

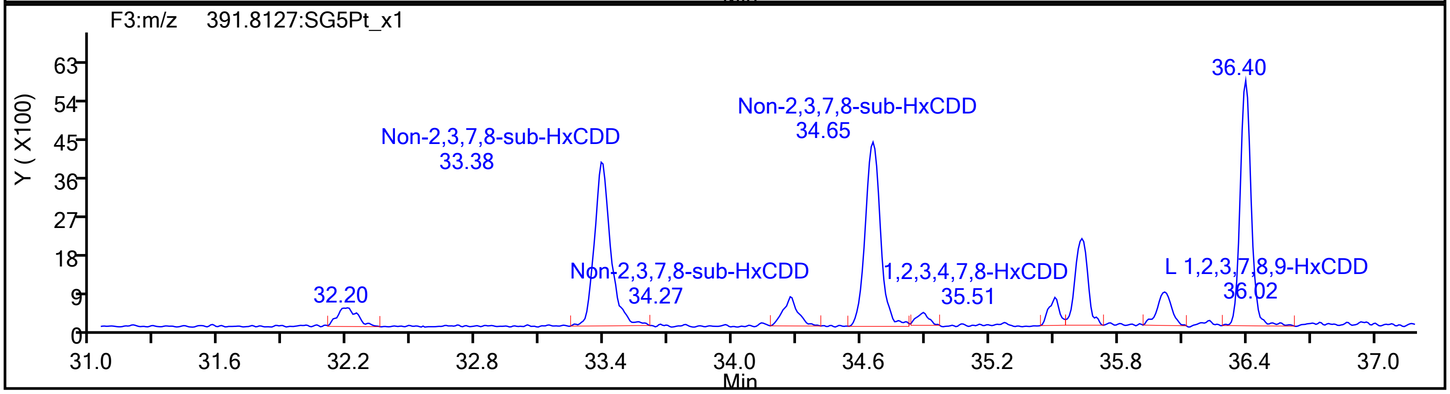

HxCDD Standards

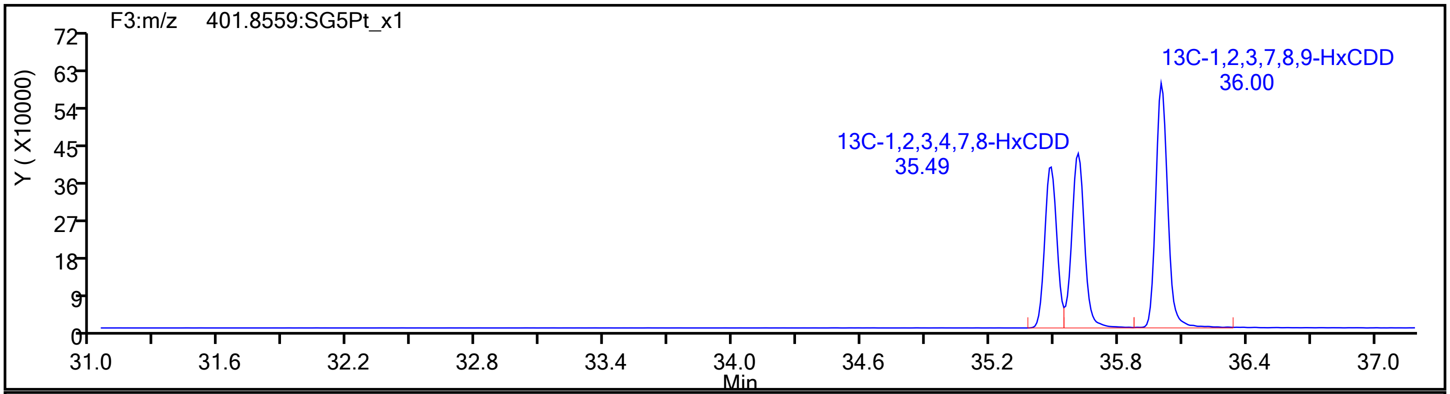

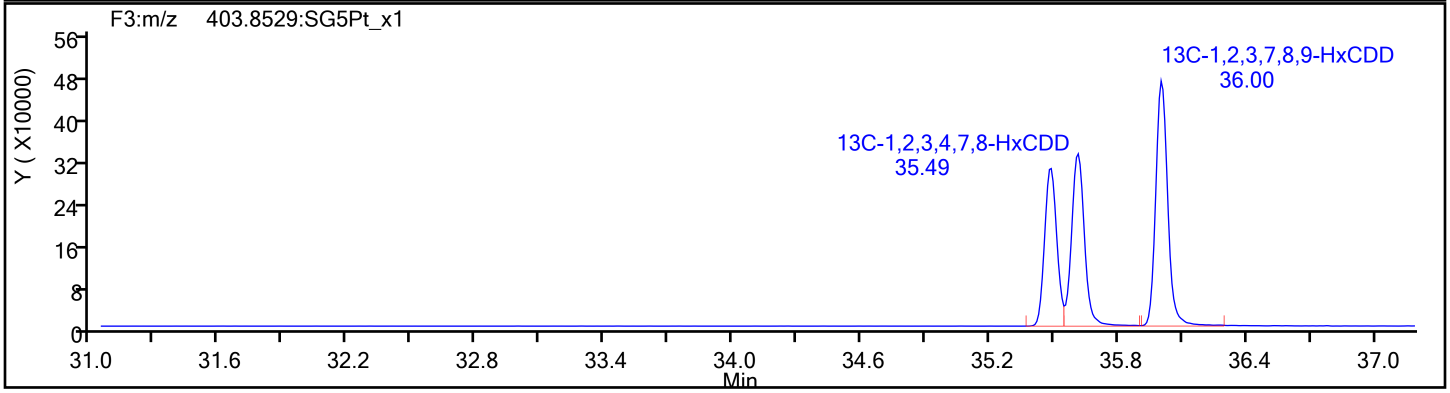

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

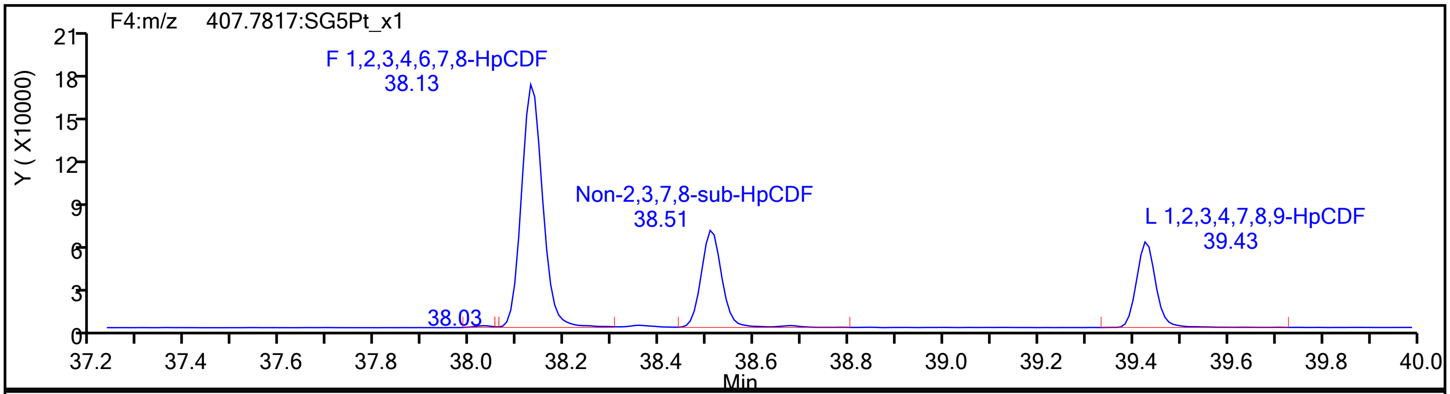

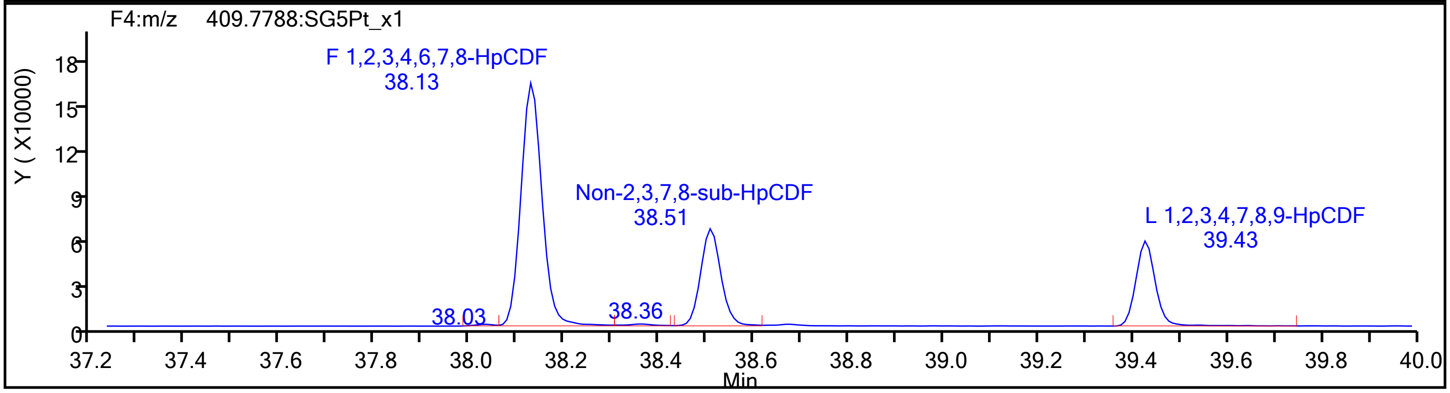

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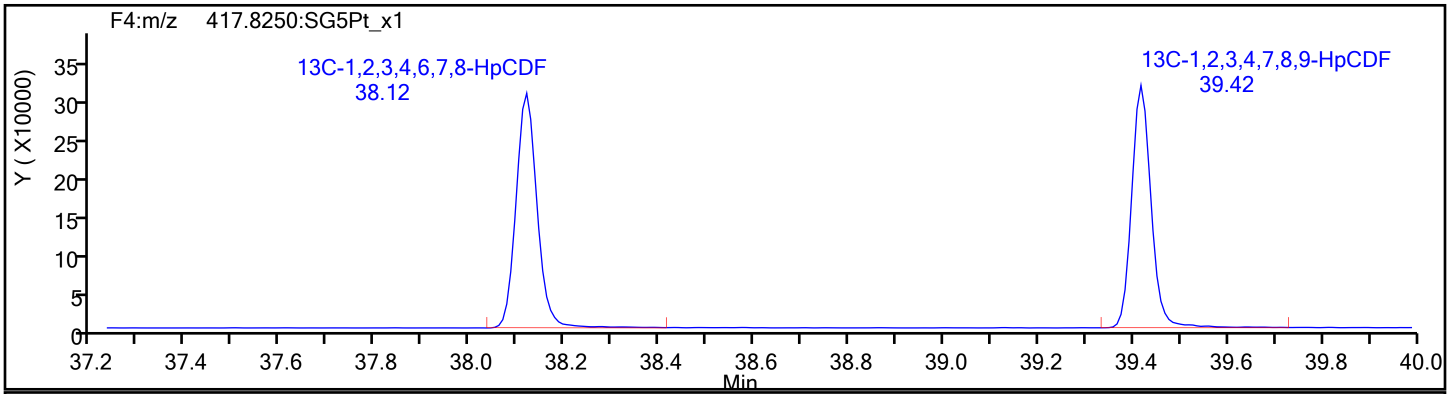

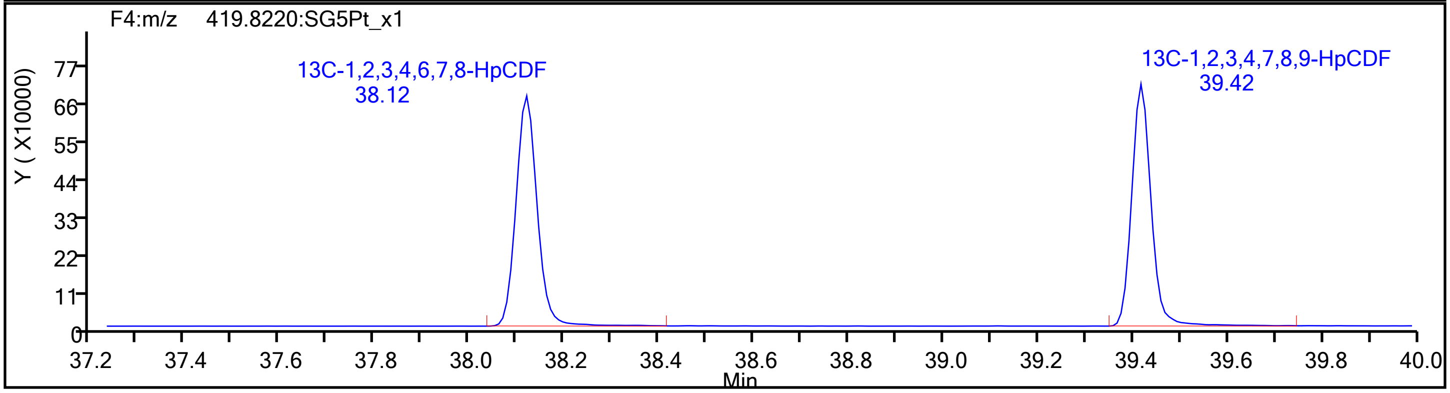

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

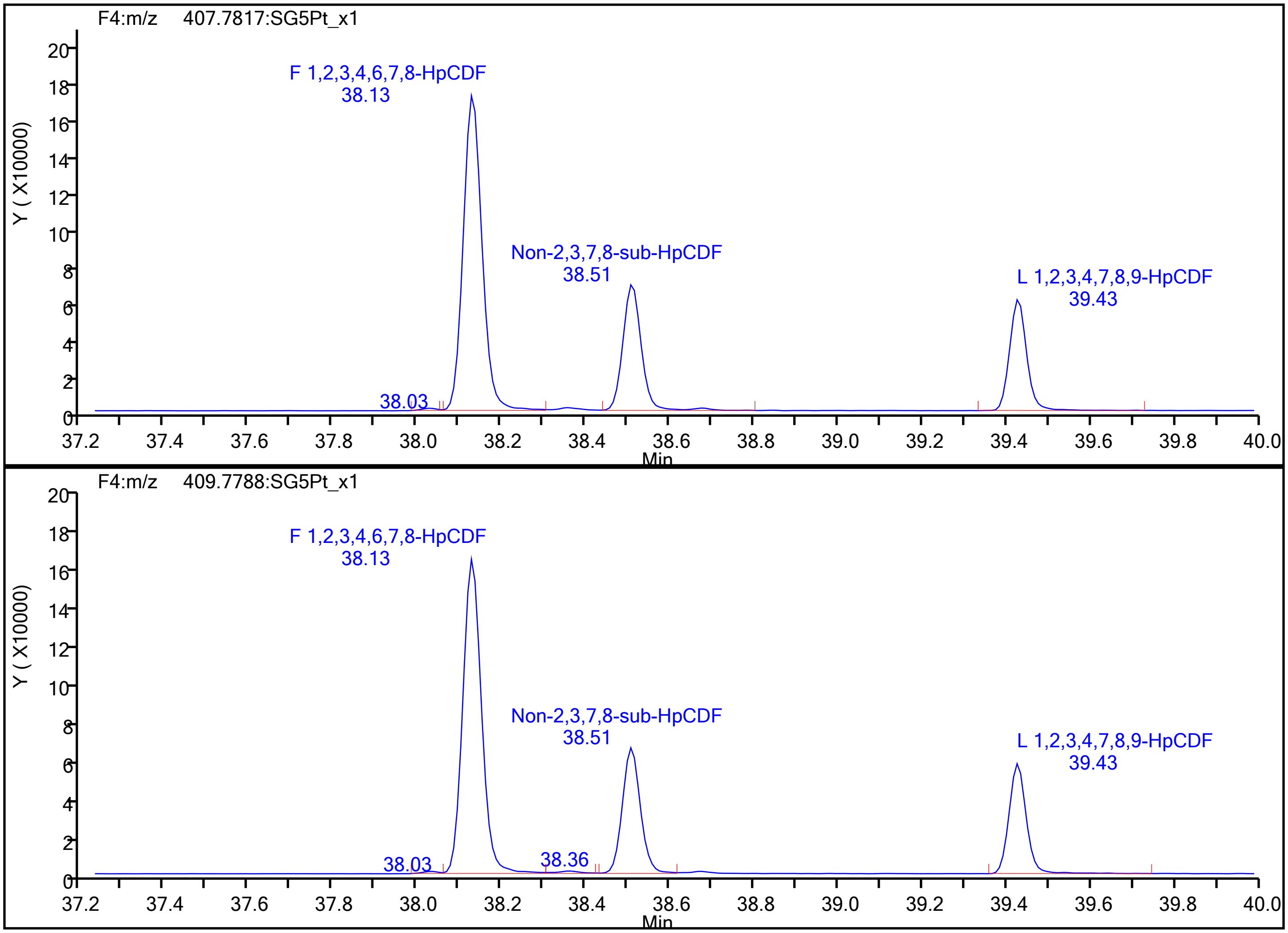

HpCDF Interference Mass

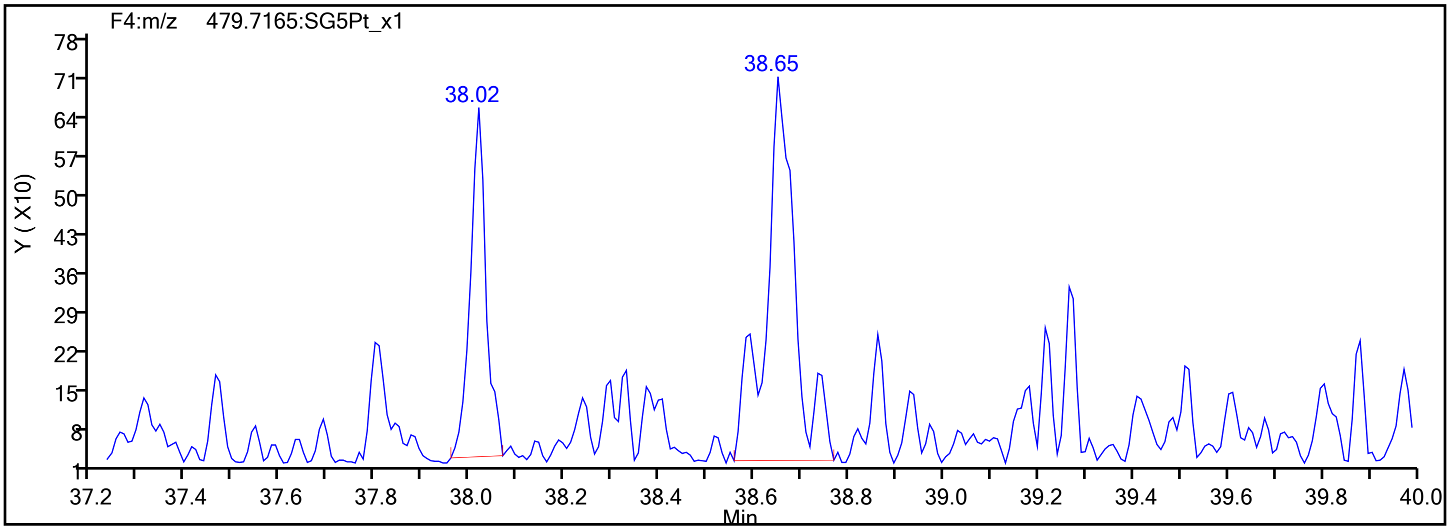

Report Date: 22-Sep-2020 10:39:32
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Injection Date: 20-Sep-2020 12:00:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 413813
Sample Line#: 55
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

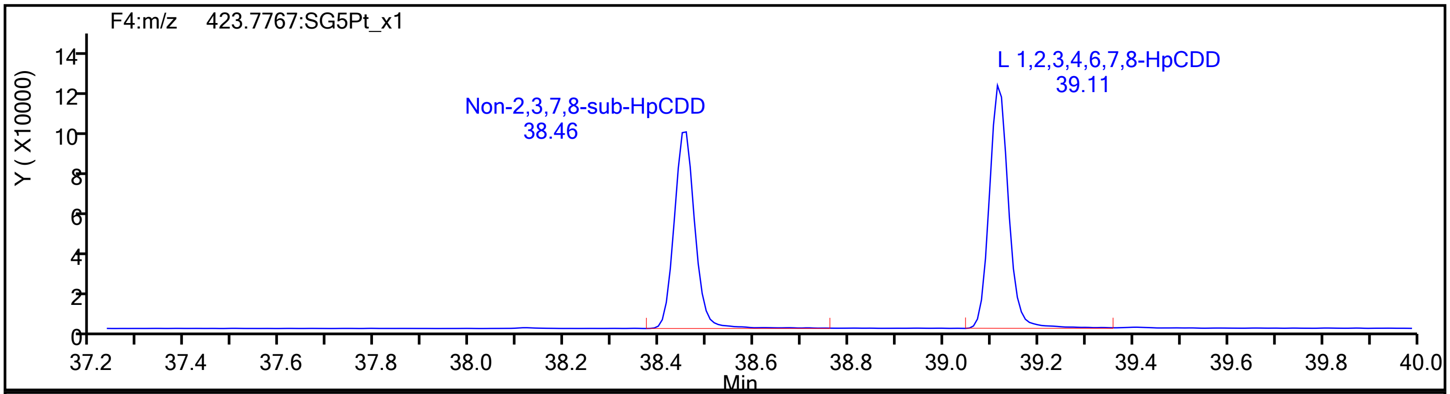

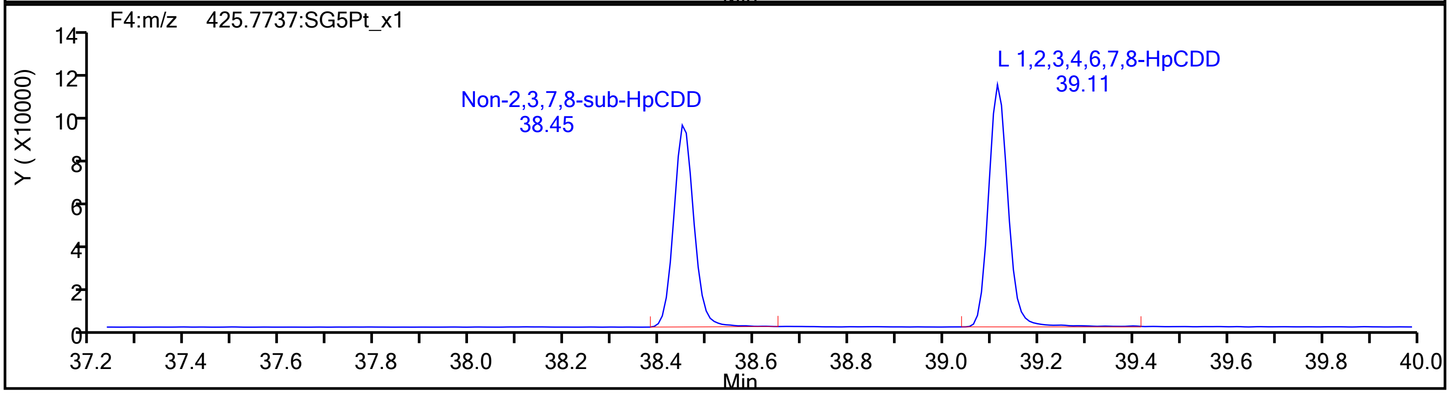

HpCDD Standards

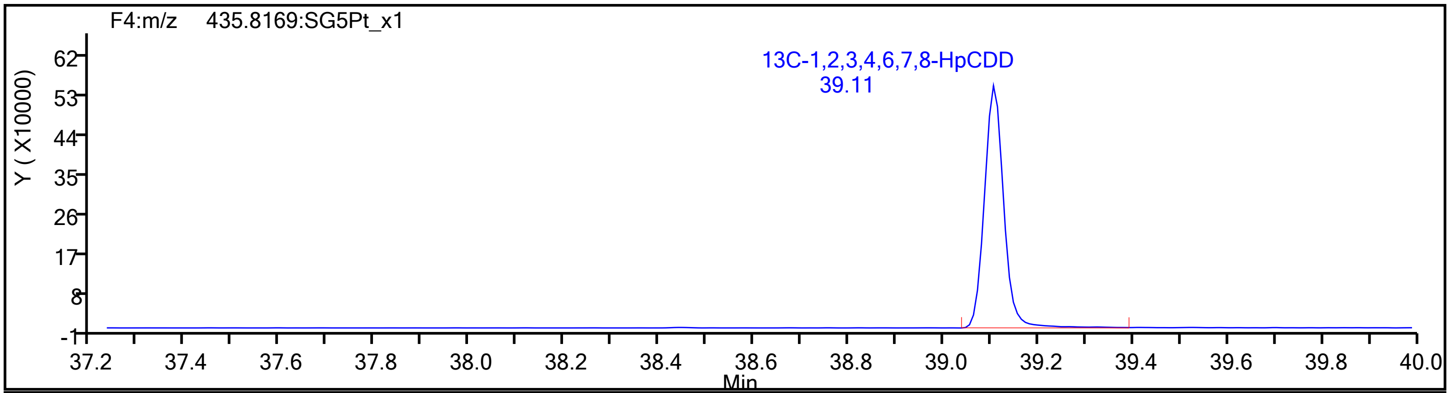

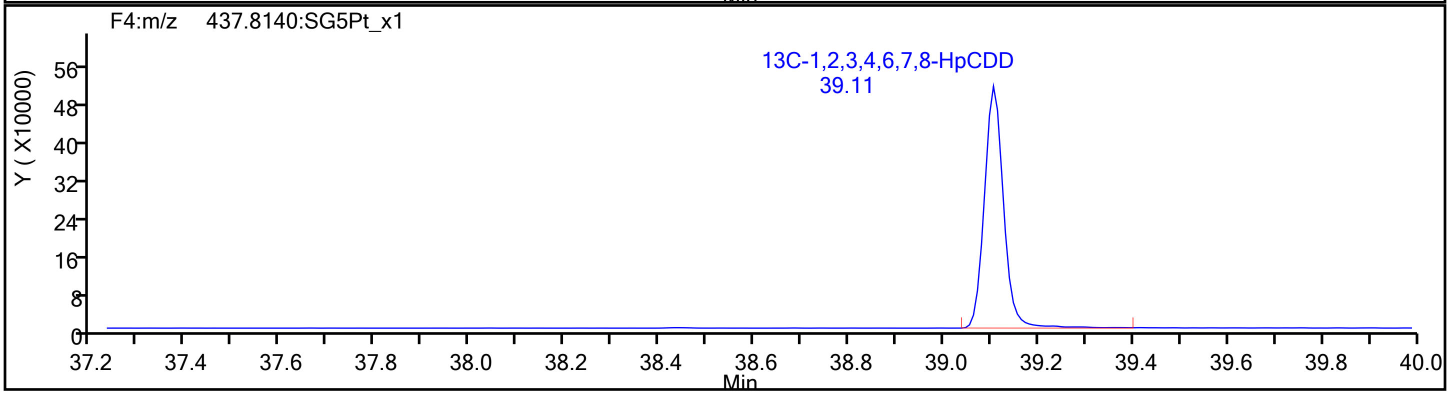

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

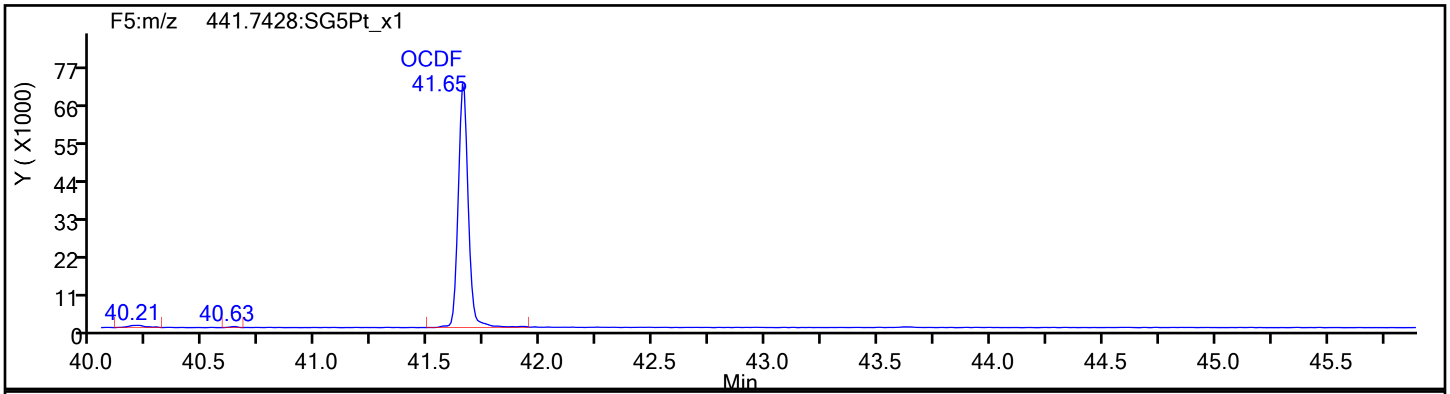

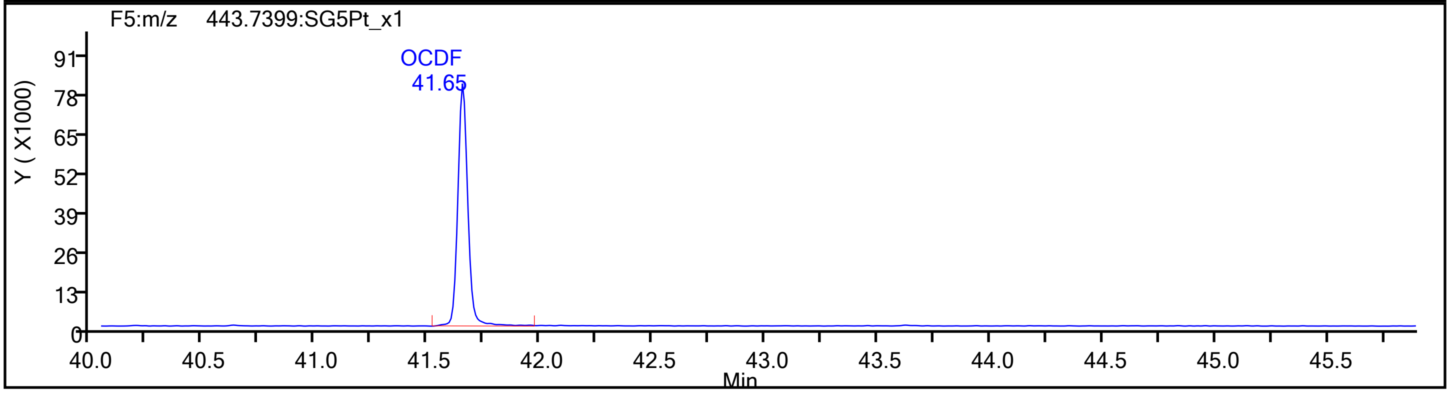

OCDF Standards

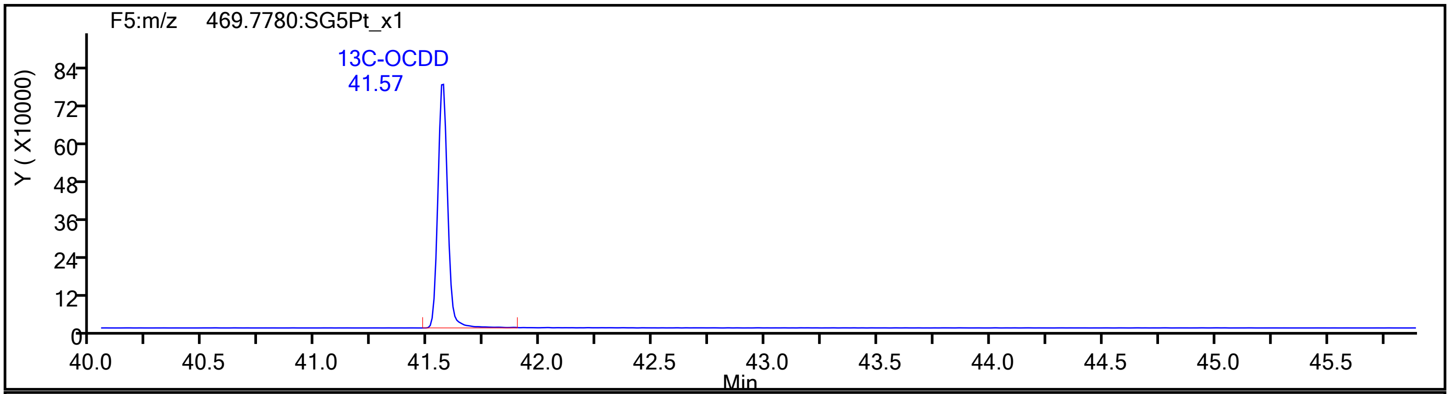

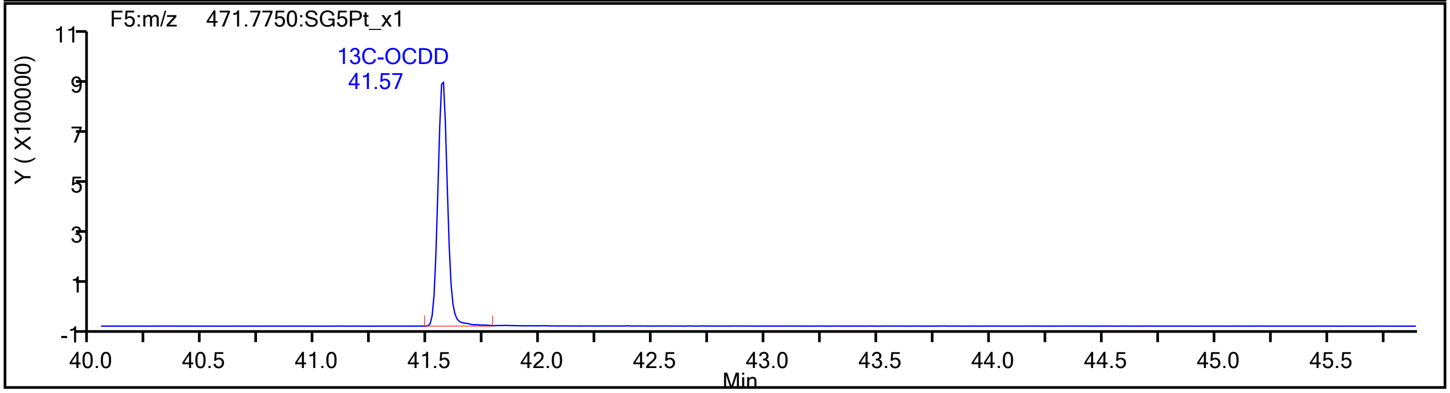

Report Date: 22-Sep-2020 10:39:32
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

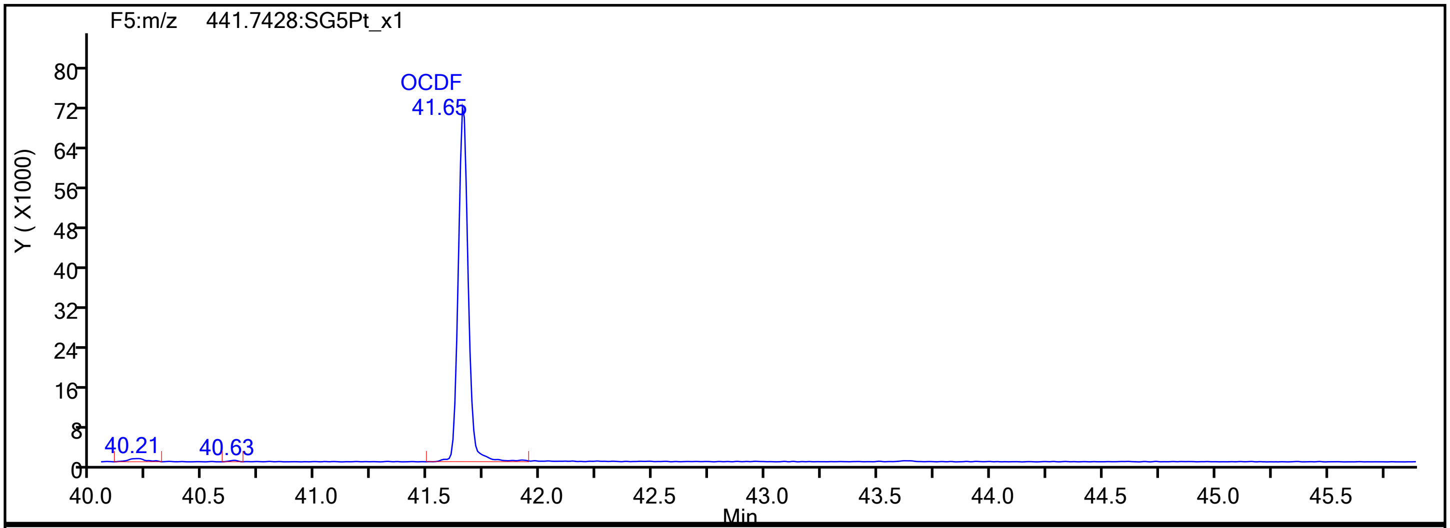

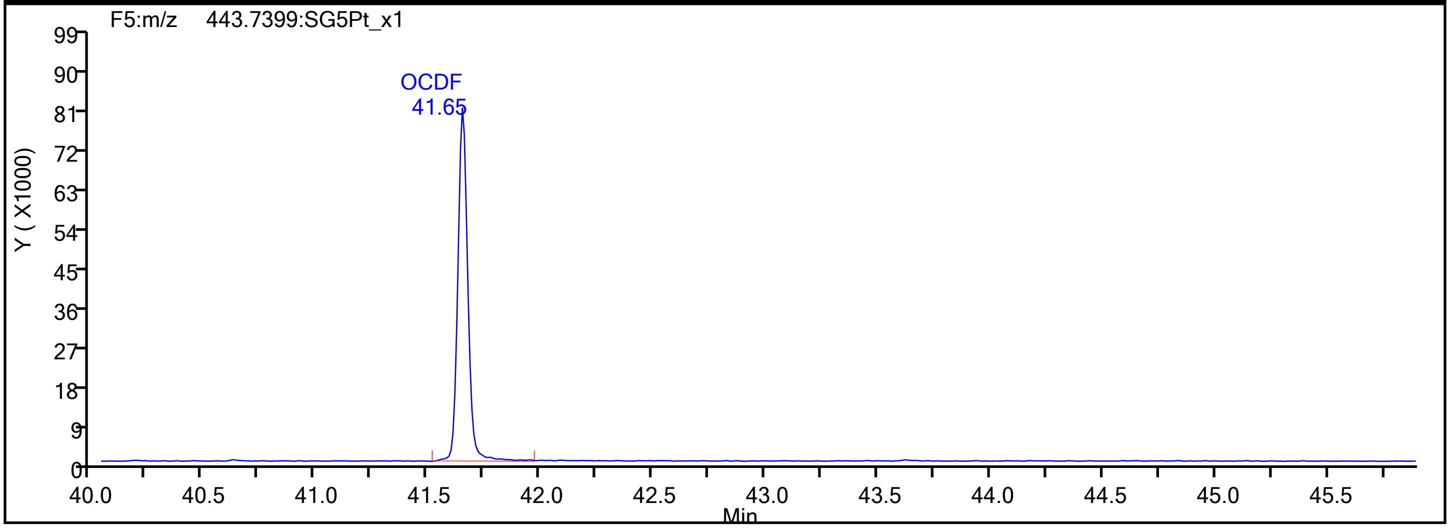

OCDF Interference Mass

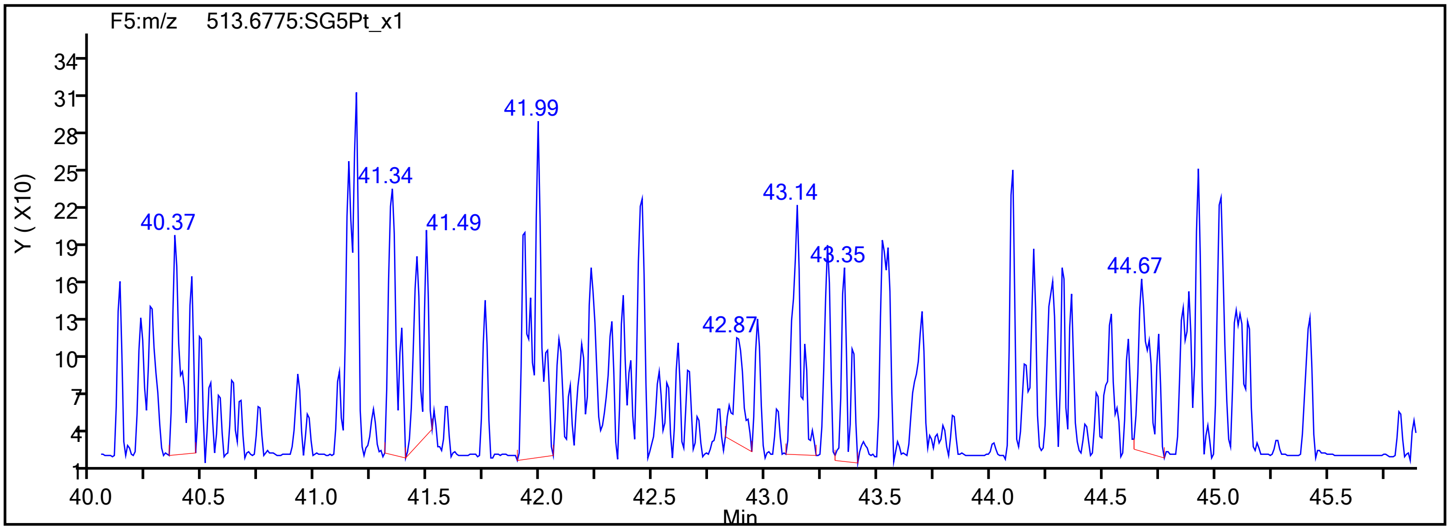

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

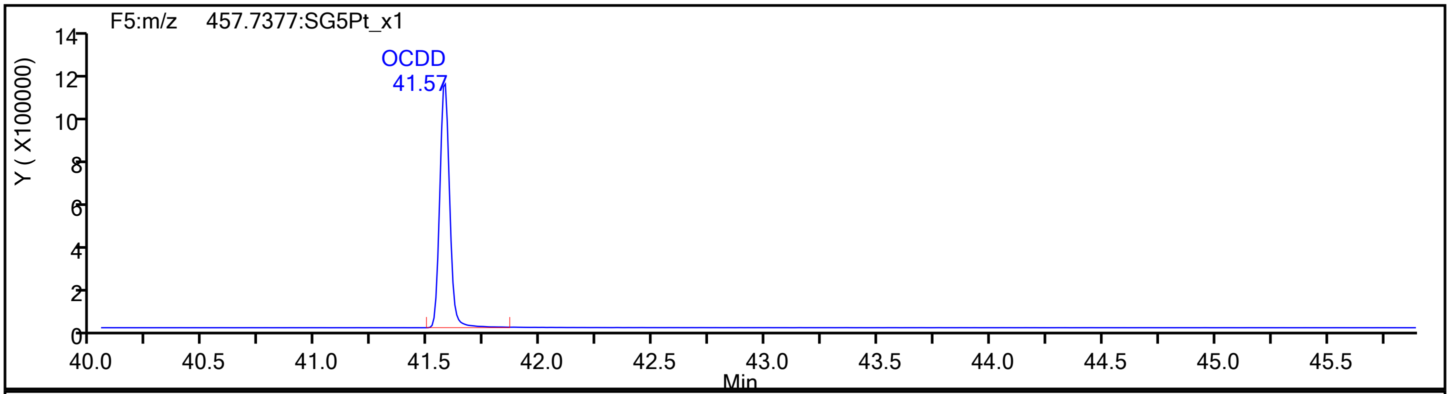

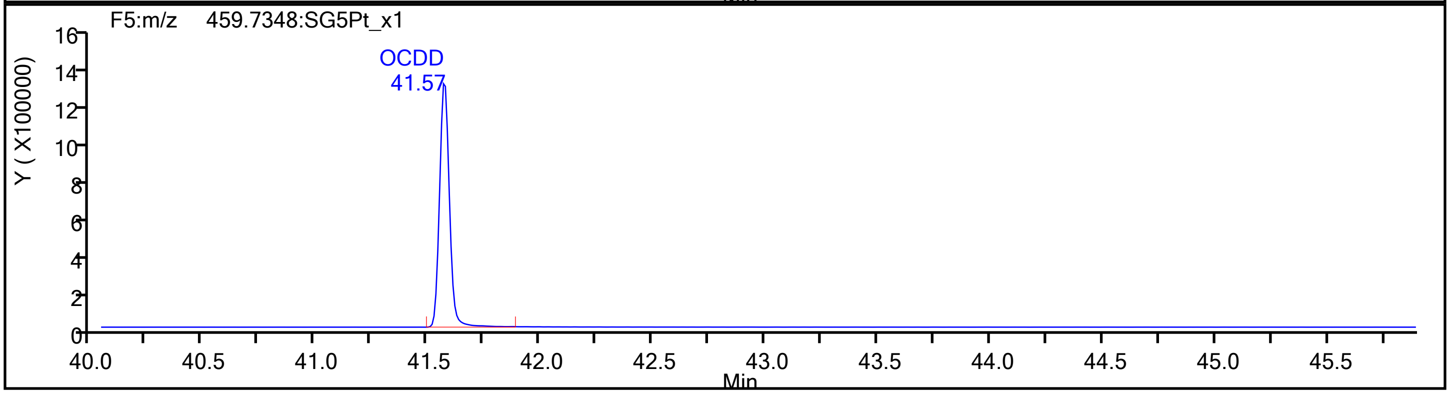

OCDD Standards

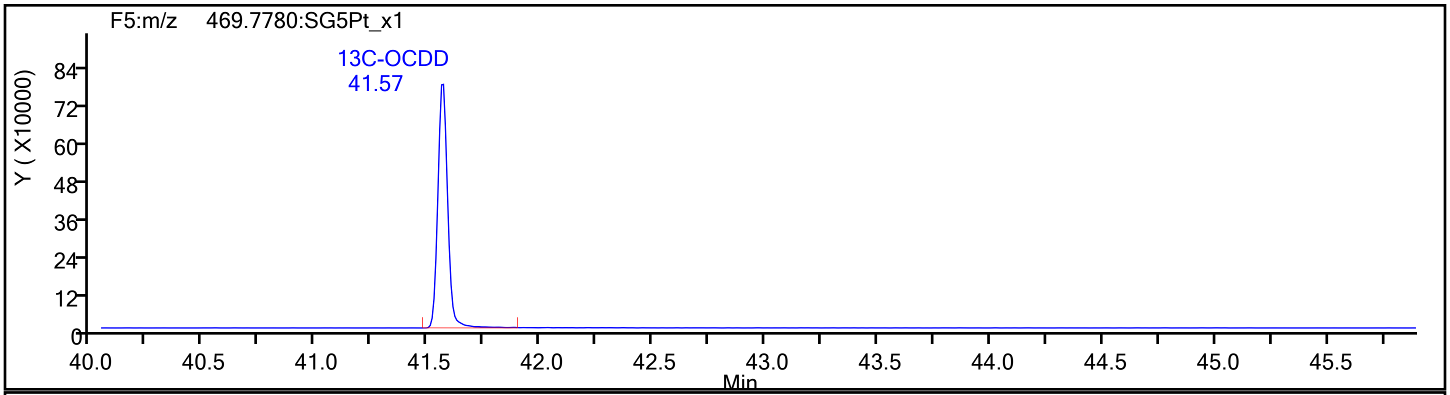

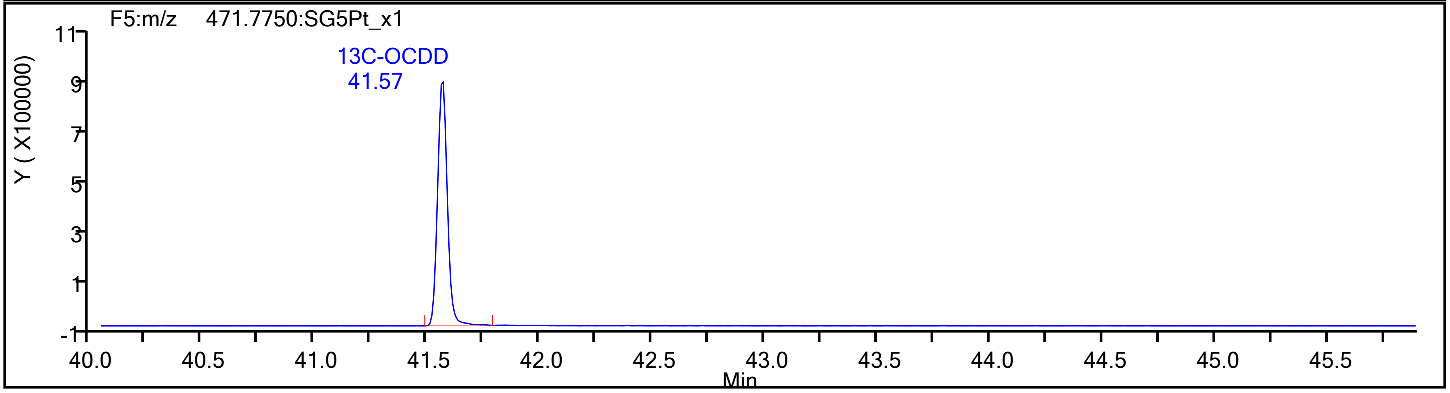

Report Date: 22-Sep-2020 10:39:32 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d		
Injection Date:	20-Sep-2020 12:00:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	413813	Sample Line#:	55
Column Type:	DB-5	Column Dia:	0.32 mm

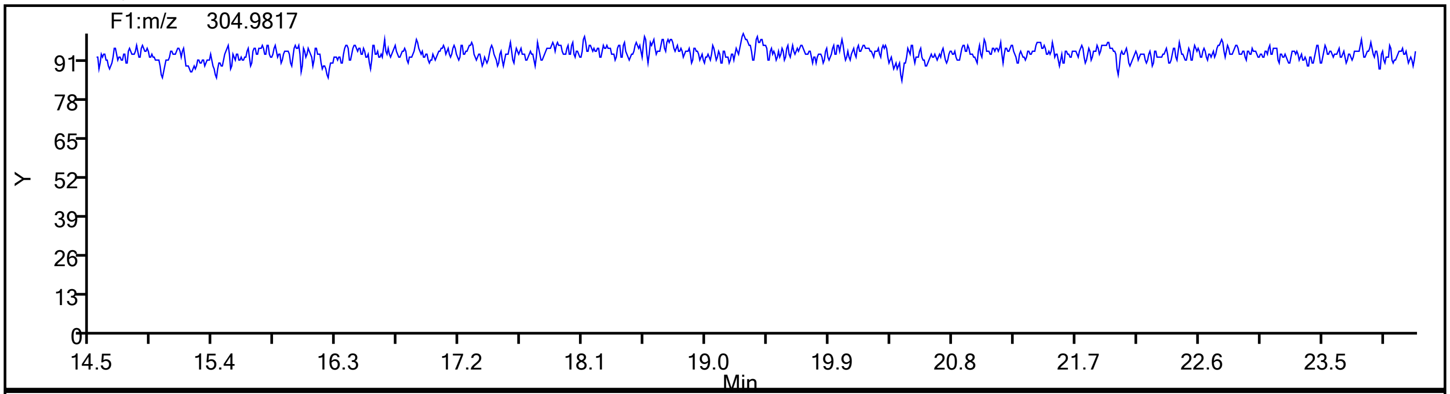

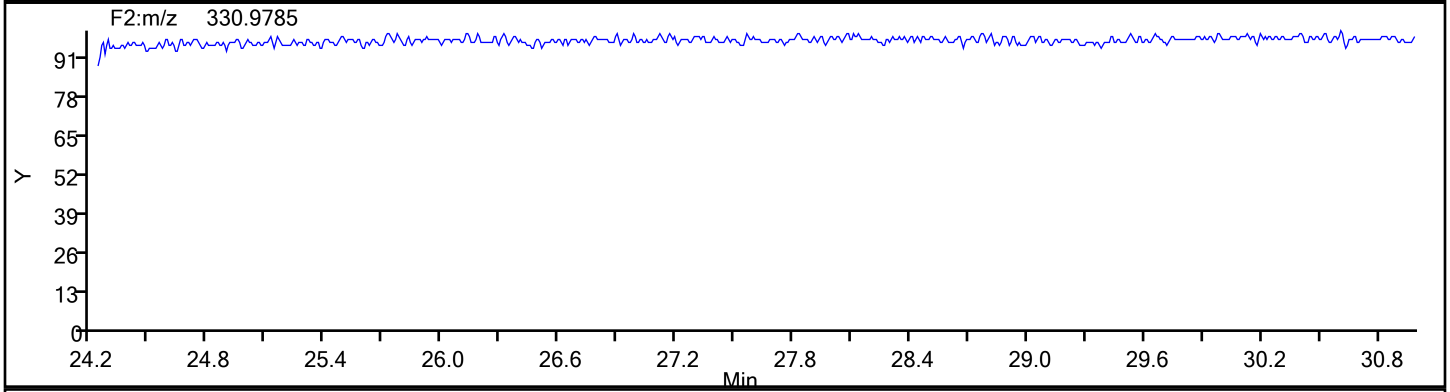

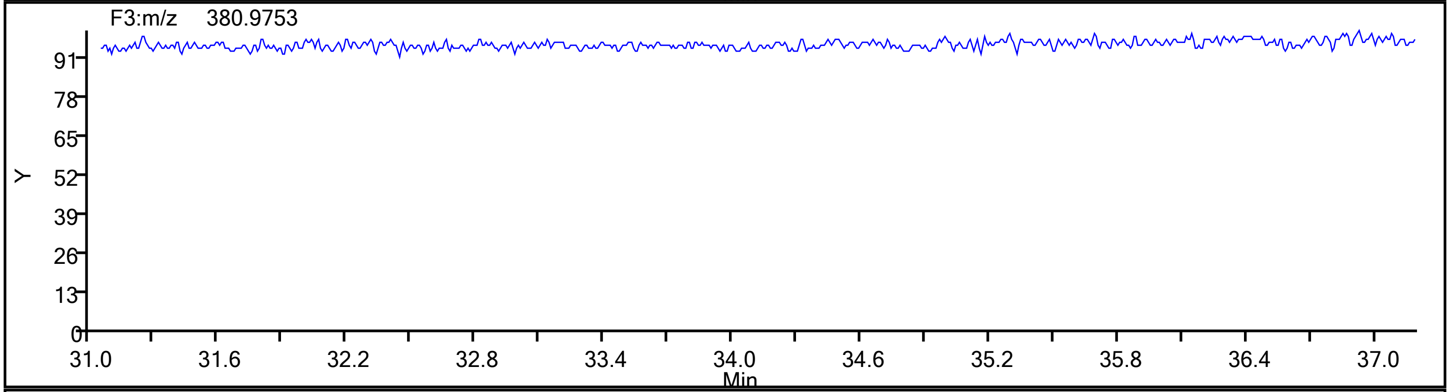

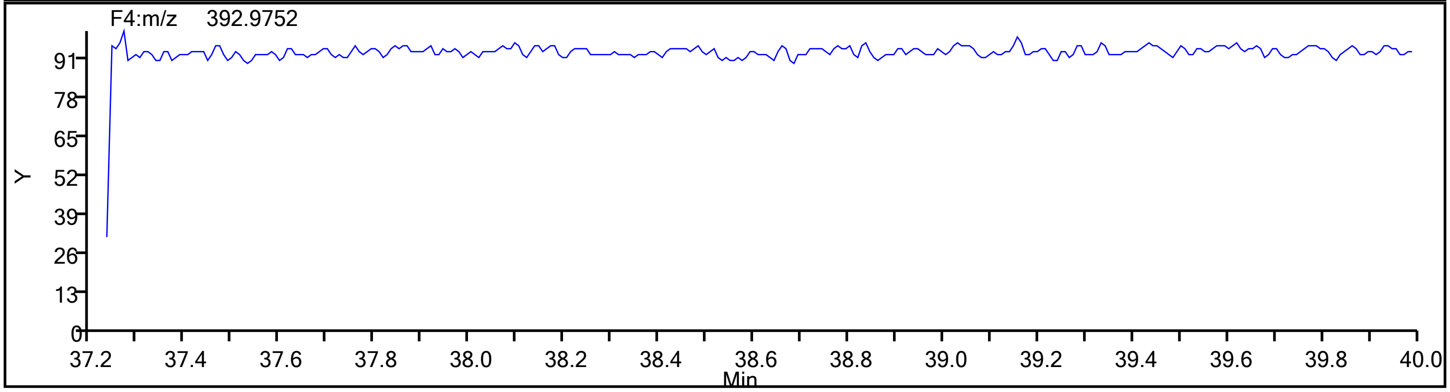

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_63.d
Injection Date: 20-Sep-2020 12:00:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 413813
Sample Line#: 55
Column Type: DB-5
Column Dia: 0.32 mm

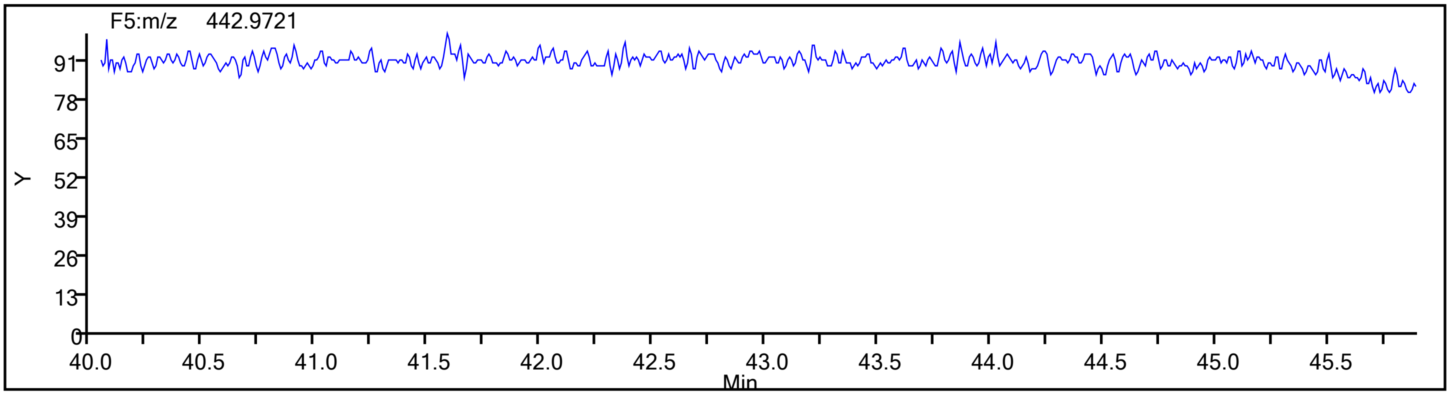

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1
SDG No.:
Client Sample ID: 11215702-Soil-Tank#1 RADL
Lab Sample ID: 320-64049-3 RADL
Matrix: Sediment
Lab File ID: 23SE20A11D2_014.d
Analysis Method: 1613B
Date Collected: 08/26/2020 13:00
Extract. Method: HRMS-Sox
Date Extracted: 09/17/2020 05:13
Sample wt/vol: 1.16(g)
Date Analyzed: 09/23/2020 20:20
Con. Extract Vol.: 20(uL)
Dilution Factor: 10
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture: 28.9
GPC Cleanup:(Y/N) N
Analysis Batch No.: 415167
Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	32000		120	39

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	105		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_014.d				
Lims ID:	320-64049-A-3-B				
Client ID:	11215702-Soil-Tank#1				
Sample Type:	Client				
Inject. Date:	23-Sep-2020 20:20:16	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Sample Info:	320-64049-A-3-B (10X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	24-Sep-2020 15:27:58	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1611				

First Level Reviewer: shardaa Date: 24-Sep-2020 15:19:07

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.638	17777242	0.78	1.2E+06	10.0	10.0				
D 13C-2,3,7,8-TCDF	15.777	22138804	0.73	1.5708	7.928	7.928	0.3350	0.3350	79.28	
2,3,7,8-TCDF	15.790	288417460	0.79	0.9943	131.0	131.0	0.1625	0.1625		
D 13C-2,3,7,8-TCDD	14.391	12714699	0.81	0.9834	7.273	7.273	1.719	1.719	72.73	
2,3,7,8-TCDD	14.419	76558798	0.79	1.2822	47.0	47.0	0.2407	0.2407		
$ 37Cl4-2,3,7,8-TCDD	14.419	7396258		0.9945	4.184	4.184	0.0523	0.0523	105	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 24-Sep-2020 15:28:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_014.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Sample Type: Client
Inject. Date: 23-Sep-2020 20:20:16 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-64049-A-3-B (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 15:27:58 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 15:19:07

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.638	14.633	0		7781609	1888332	118971	297427	16		
333.9339	14.638	14.633	0		9995633	2444956	173995	434987	14	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.777	16.446	1	1.078	9370644	2005014	46759	116897	43		
317.9389	15.777	16.446	1	1.078	12768160	2873011	44446	111115	65	0.73(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.790	15.772	1	1.001	127017858	29052807	13114	32785	2215		
305.8987	15.790	15.772	1	1.001	161399602	36195410	18420	46050	1965	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.391	14.386	0	0.983	5694101	1347082	118971	297427	11		
333.9339	14.405	14.386	1	0.984	7020598	1669422	173995	434987	10	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.419	14.400	1	1.002	33707481	8176192	20392	50980	401		
321.8936	14.419	14.400	1	1.002	42851317	10293020	16850	42125	611	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.419	15.145	1	0.985	7396258	1757937	9008	22520	195		

QC Flag Legend

Processing Flags

Report Date: 24-Sep-2020 15:28:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_014.d		
Injection Date:	23-Sep-2020 20:20:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	415167	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

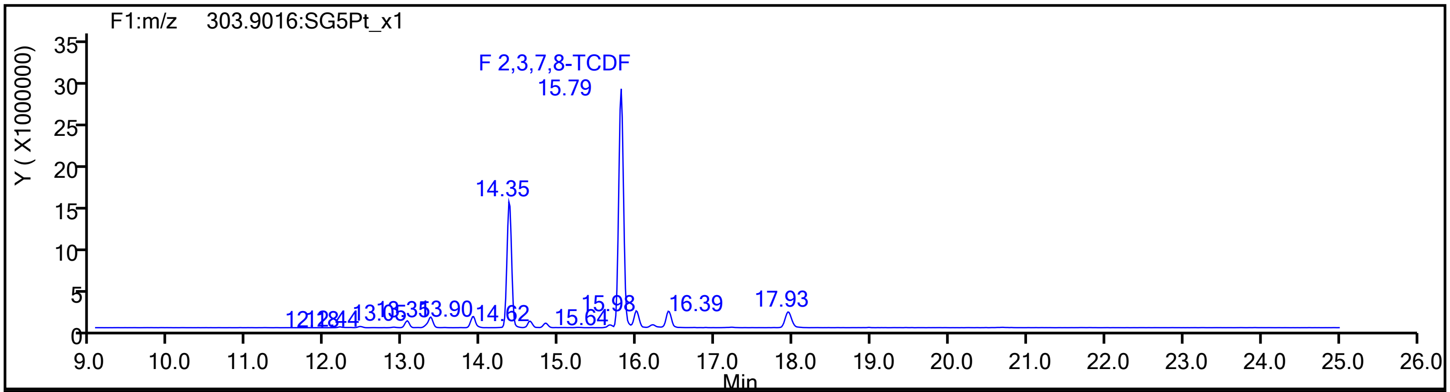

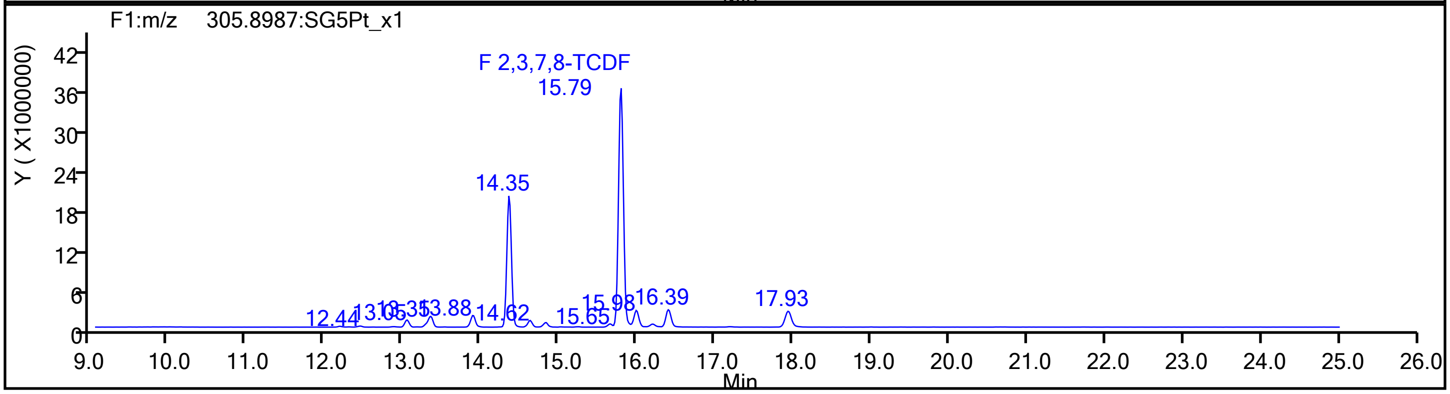

TCDF Standards

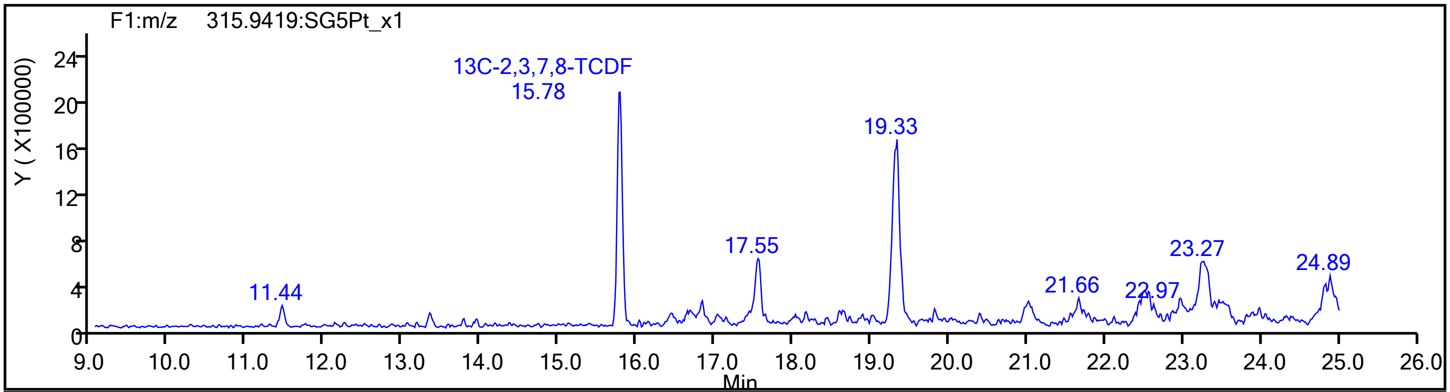

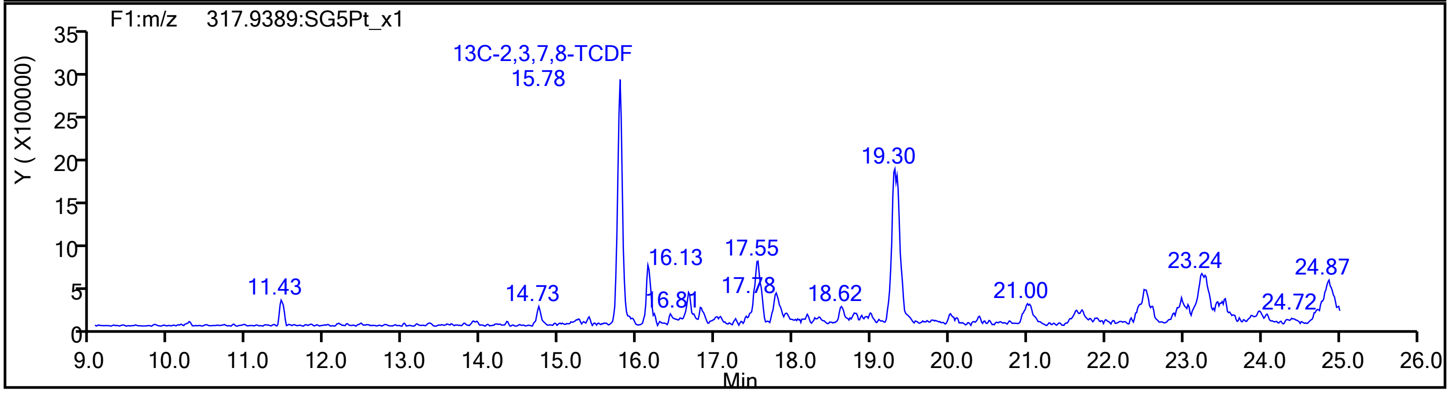

Report Date: 24-Sep-2020 15:28:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_014.d
Injection Date: 23-Sep-2020 20:20:16
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 415167
Sample Line#: 14
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

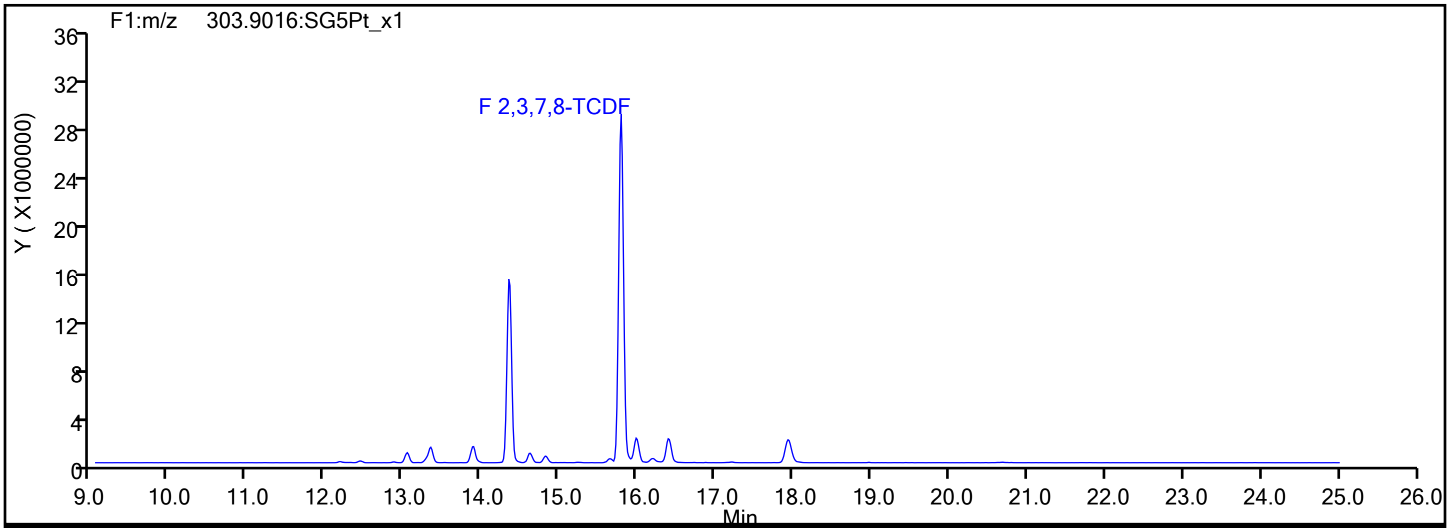

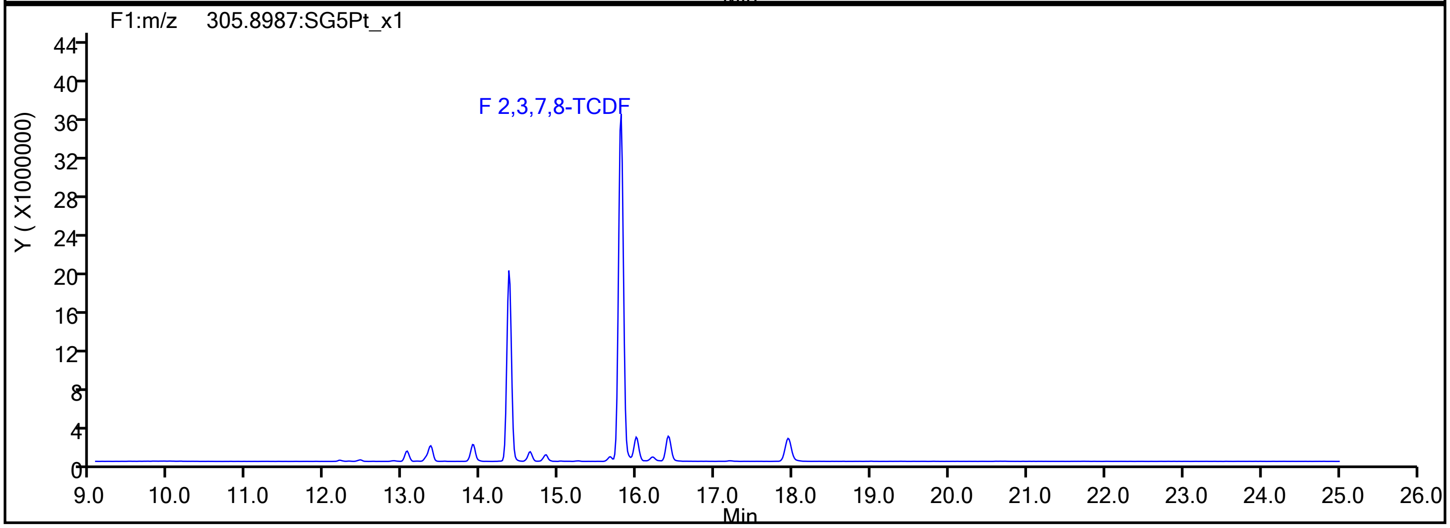

TCDF Interference Mass

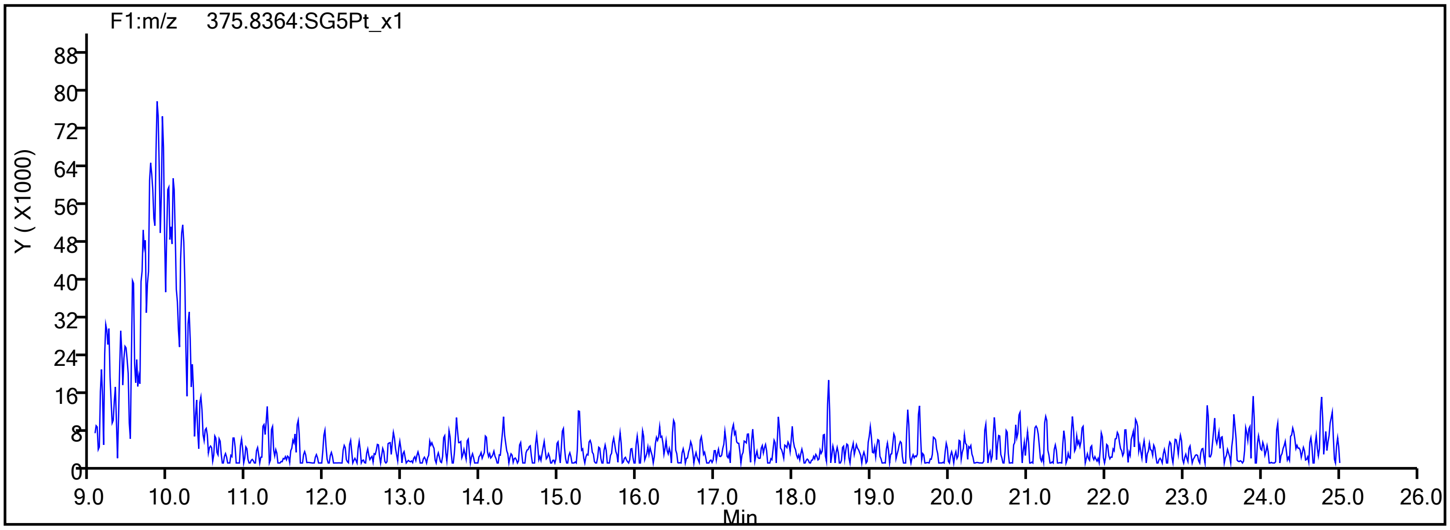

Report Date: 24-Sep-2020 15:28:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_014.d		
Injection Date:	23-Sep-2020 20:20:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	415167	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

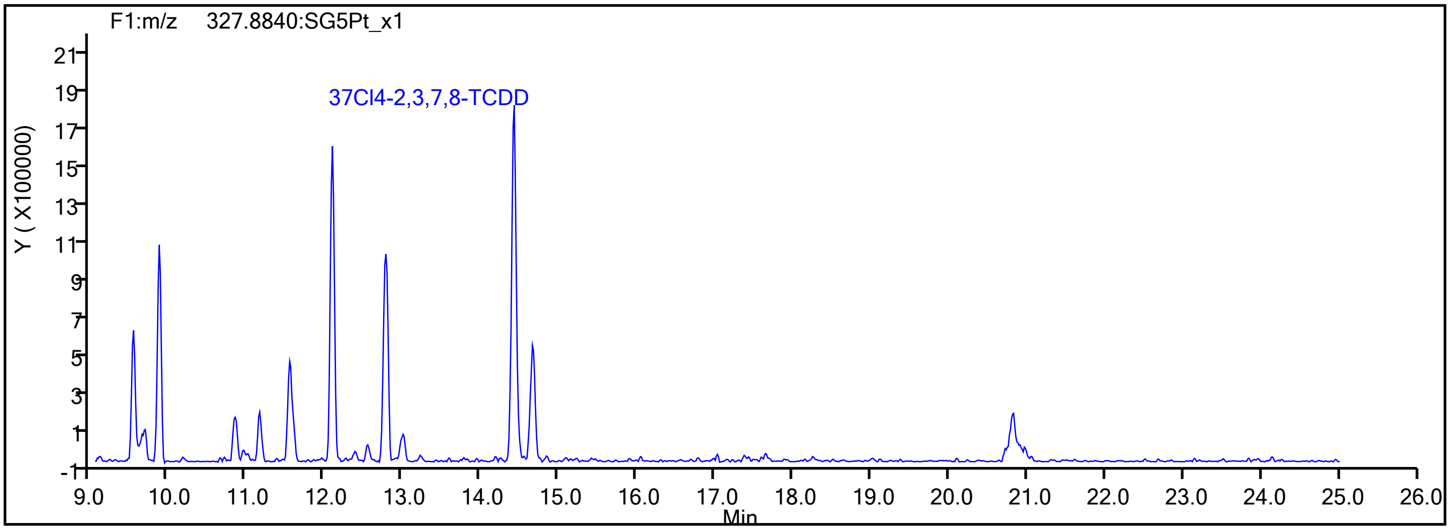

37Cl4-TCDD Standards

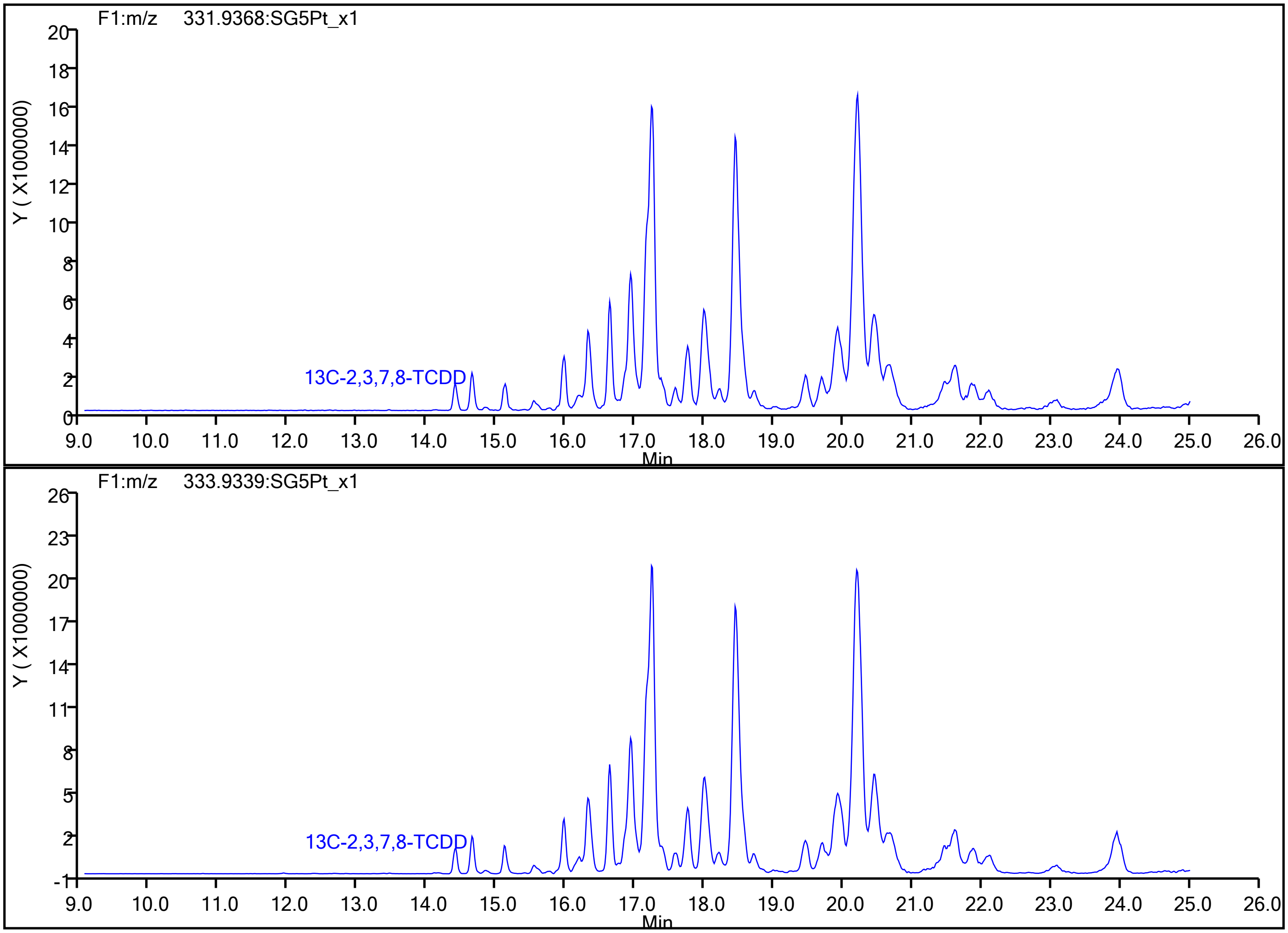

Report Date: 24-Sep-2020 15:28:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_014.d		
Injection Date:	23-Sep-2020 20:20:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	415167	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

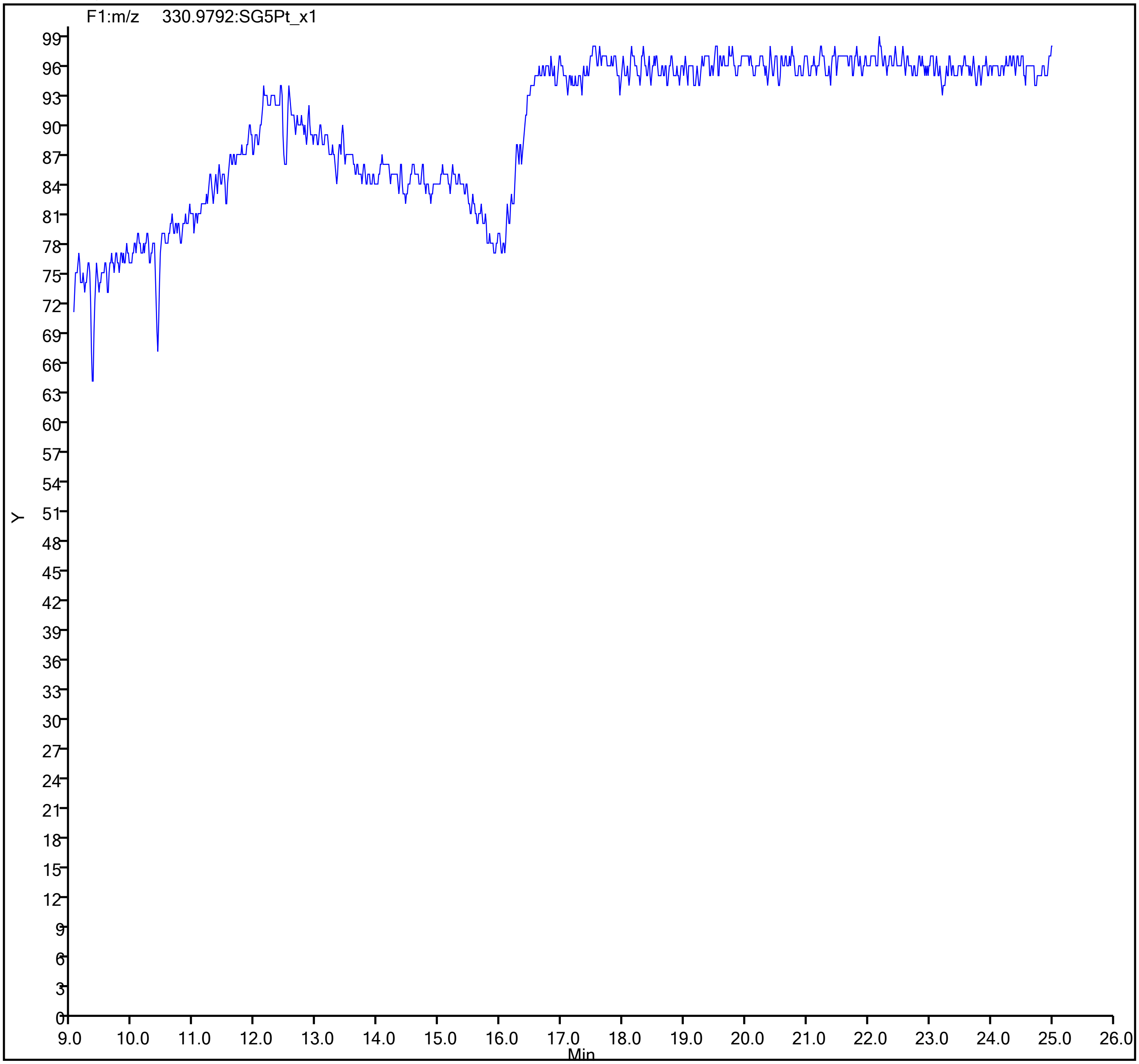

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID: 11215702-Soil-Tank#1 DL	Lab Sample ID: 320-64049-3 DL
Matrix: Sediment	Lab File ID: 23se20dfs1_11.d
Analysis Method: 1613B	Date Collected: 08/26/2020 13:00
Extract. Method: HRMS-Sox	Date Extracted: 09/17/2020 05:13
Sample wt/vol: 1.16(g)	Date Analyzed: 09/24/2020 04:52
Con. Extract Vol.: 20(uL)	Dilution Factor: 10
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture: 28.9	GPC Cleanup:(Y/N) N
Analysis Batch No.: 415261	Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	11000		120	44

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	73		25-164

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d				
Lims ID:	320-64049-A-3-B				
Client ID:	11215702-Soil-Tank#1				
Sample Type:	Client				
Inject. Date:	24-Sep-2020 04:52:00	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Sample Info:	320-64049-A-3-B (10x)				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Sep-2020 11:41:50	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1005				

First Level Reviewer: shardaa Date: 24-Sep-2020 10:46:50

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.034	276045	0.87	2.7E+04	10.0	10.0				
D 13C-2,3,7,8-TCDF	19.114	301300	0.80	1.5883	6.872	6.872	0.3433	0.3433	68.72	
2,3,7,8-TCDF	19.149	4996903	0.81	1.0857	152.8	152.8	0.5957	0.5957		
A Non-2,3,7,8-sub-TCDF	18.740	3545760	0.80	1.0857	108.4	108.4	0.5957	66.8		
S Total TCDF					261.2	261.2	0.5957	0.5957		
D 13C-2,3,7,8-TCDD	20.395	225363	0.76	1.1194	7.293	7.293	0.2796	0.2796	72.93	
2,3,7,8-TCDD	20.430	1074966	0.79	1.0810	44.1	44.1	0.1822	0.1822		
$ 37Cl4-2,3,7,8-TCDD	20.430	118114		1.1468	3.731	3.731	0.0242	0.0242	93.28	
A Non-2,3,7,8-sub-TCDD	19.549	110059	0.79	1.0810	4.518	4.518	0.1822	4.047		
S Total TCDD					48.6	48.6	0.1822	0.1822		
D 13C-1,2,3,7,8-PeCDF	26.218	281588	1.53	1.4782	6.901	6.901	0.0387	0.0387	69.01	
1,2,3,7,8-PeCDF	26.227	139017	1.60	1.0547	4.681	4.681	0.0675	0.0675		
D 13C-2,3,4,7,8-PeCDF	27.659	264271	1.55	1.3912	6.881	6.881	0.0411	0.0411	68.81	a
2,3,4,7,8-PeCDF	27.685	85145	1.54	1.1035	2.920	2.920	0.0748	0.0748		
A F1 PeCDFs	23.567						0.0302	0.0302		
A Non-2,3,7,8-sub-PeCDF	26.955	123591	1.59	1.0791	4.196	4.196	0.0708	1.842		
S Total PeCDF					11.8	11.8	0.0711	0.0711		
D 13C-1,2,3,7,8-PeCDD	28.426	181006	1.49	0.9415	6.965	6.965	0.1021	0.1021	69.65	
1,2,3,7,8-PeCDD	28.443	7191	1.50	1.0680	0.3720	0.3720	0.0676	0.0676		M
A Non-2,3,7,8-sub-PeCDD	27.294						0.0676	0.0676		
S Total PeCDD					0.3720	0.3720	0.0676	0.0676		
D 13C-1,2,3,4,7,8-HxCDF	34.104	208688	0.56	1.1378	7.463	7.463	0.0683	0.0683	74.63	a
1,2,3,4,7,8-HxCDF	34.130	205815	1.29	1.2643	7.801	7.801	0.0507	0.0507		
D 13C-1,2,3,6,7,8-HxCDF	34.281	251044	0.55	1.3173	7.755	7.755	0.0590	0.0590	77.55	
1,2,3,6,7,8-HxCDF	34.315	56587	1.32	1.2230	1.843	1.843	0.0501	0.0501		
D 13C-2,3,4,6,7,8-HxCDF	35.216	234498	0.52	1.2457	7.660	7.660	0.0624	0.0624	76.60	
2,3,4,6,7,8-HxCDF	35.233	6898	1.28	1.2464	0.2360	0.2360	0.0443	0.0443		
D 13C-1,2,3,7,8,9-HxCDF	36.169	209666	0.52	1.1840	7.206	7.206	0.0657	0.0657	72.06	
1,2,3,7,8,9-HxCDF	36.186	3566	1.12	1.2638	0.1346	0.1346	0.0445	0.0445		Ma
A Non-2,3,7,8-sub-HxCDF	34.158	38372	1.24	1.2494	1.378	1.359	0.0472	0.5005		RQMa
S Total HxCDF					11.4	11.4	0.0474	0.0474		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.966	245752	1.23	2.9E+04	10.0	10.0				
D 13C-1,2,3,4,7,8-HxCDD	35.444	165569	1.30	0.8477	7.947	7.947	0.0629	0.0629	79.47	a
1,2,3,4,7,8-HxCDD	35.457						0.0265	0.0265		
D 13C-1,2,3,6,7,8-HxCDD	35.570	192278	1.23	0.9979	7.841	7.841	0.0534	0.0534	78.41	
1,2,3,6,7,8-HxCDD	35.592						0.0281	0.0281		
1,2,3,7,8,9-HxCDD	35.979						0.0252	0.0252		
A Non-2,3,7,8-sub-HxCDD	34.626	6448	1.23	1.1211	0.3214	0.3214	0.0265	0.1746		M
S Total HxCDD					0.3214	0.3214	0.0266	0.0266		
D 13C-1,2,3,4,6,7,8-HpCDF	38.094	187933	0.45	0.9884	7.737	7.737	0.0836	0.0836	77.37	
1,2,3,4,6,7,8-HpCDF	38.102	63984	1.07	1.5064	2.260	2.260	0.0225	0.0225		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.400	179717	0.46	0.9203	7.946	7.946	0.0898	0.0898	79.46	a
1,2,3,4,7,8,9-HpCDF	39.408	20839	1.12	1.4548	0.7971	0.7971	0.0245	0.0245		
A Non-2,3,7,8-sub-HpCDF	38.744	24904	1.08	1.4806	0.9150	0.9150	0.0235	0.9150		
S Total HpCDF					3.972	3.972	0.0235	0.0235		
D 13C-1,2,3,4,6,7,8-HpCDD	39.088	188150	1.05	0.9556	8.012	8.012	0.0563	0.0563	80.12	
1,2,3,4,6,7,8-HpCDD	39.096	42195	1.08	1.0640	2.108	2.108	0.0339	0.0339		M
A Non-2,3,7,8-sub-HpCDD	38.941	39308	1.09	1.0640	1.964	1.964	0.0339	1.964		
S Total HpCDD					4.071	4.071	0.0339	0.0339		
D 13C-OCDD	41.541	284404	0.87	0.7420	15.6	15.6	0.0509	0.0509	77.98	
OCDF	41.634	27149	0.81	1.4296	1.335	1.335	0.0506	0.0506		
OCDD	41.558	403434	0.88	1.1293	25.1	25.1	0.0472	0.0472		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 25-Sep-2020 11:42:43 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Sample Type: Client
Inject. Date: 24-Sep-2020 04:52:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 10.0000
Sample Info: 320-64049-A-3-B (10x)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2020 11:41:50 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1005

First Level Reviewer: shardaa Date: 24-Sep-2020 10:46:50

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.034	20.007	2		128580	19241	449	1122	43		
333.9338	20.034	20.007	2		147465	23954	92	230	260	0.87(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.114	19.095	1	0.954	134224	21915	614	1535	36		
317.9389	19.123	19.095	2	0.955	167076	28031	328	820	85	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.149	19.121	2	1.002	2233486	320659	363	907	883		
305.8987	19.149	19.121	2	1.002	2763417	405589	929	2322	437	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.756	18.740	-119	0.877	55490	9848	363	907	27		
305.8987	16.748	18.740	-119	0.876	63243	11961	929	2322	13	0.88(0.65-0.89)	
303.9016	17.213	18.740	-91	0.901	83476	12258	363	907	34		
305.8987	17.213	18.740	-91	0.901	99648	15158	929	2322	16	0.84(0.65-0.89)	
303.9016	17.626	18.740	-67	0.922	67880	9606	363	907	26		
305.8987	17.617	18.740	-67	0.922	81759	12382	929	2322	13	0.83(0.65-0.89)	
303.9016	17.987	18.740	-45	0.941	100278	15577	363	907	43		
305.8987	17.987	18.740	-45	0.941	121901	19435	929	2322	21	0.82(0.65-0.89)	
303.9016	18.469	18.740	-16	0.966	968128	157562	363	907	434		
305.8987	18.469	18.740	-16	0.966	1216025	197719	929	2322	213	0.80(0.65-0.89)	
303.9016	19.896	18.740	69	1.041	150140	21424	363	907	59		
305.8987	19.896	18.740	69	1.041	183118	27078	929	2322	29	0.82(0.65-0.89)	
303.9016	22.314	18.740	214	1.167	154341	20845	363	907	57		
305.8987	22.314	18.740	214	1.167	200333	26849	929	2322	29	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.395	20.359	2	1.018	97557	14814	449	1122	33		
333.9338	20.395	20.359	2	1.018	127806	18951	92	230	206	0.76(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											
319.8965	20.430	20.394	2	1.002	472921	67486	161	402	419		
321.8936	20.430	20.394	2	1.002	602045	85578	105	262	815	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.430	20.394	2	1.020	118114	16525	48	120	344		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.241	19.549	41	0.992	4771	1051	161	402	7		
321.8936	20.249	19.549	42	0.993	6702	1245	105	262	12	0.71(0.65-0.89)	
319.8965	21.084	19.549	92	1.034	43907	5749	161	402	36		
321.8936	21.066	19.549	91	1.033	54679	7410	105	262	71	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.218	26.181	2	1.309	170197	30554	47	117	650		
353.8970	26.210	26.181	2	1.308	111391	18886	52	130	363	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.227	26.206	1	1.000	85543	14273	68	170	210		
341.8567	26.235	26.206	2	1.001	53474	9145	73	182	125	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	27.659	27.630	2	1.381	160817	25580	47	117	544		a
353.8970	27.659	27.630	2	1.381	103454	17068	52	130	328	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.685	27.655	2	1.001	51594	8216	68	170	121		
341.8567	27.685	27.655	2	1.001	33551	5216	73	182	71	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.567						9	22			
341.8567	23.567						51	127			
A Non-2,3,7,8-sub-PeCDF											
339.8597	24.829	26.955	-127	0.947	33283	6257	68	170	92		
341.8567	24.820	26.955	-128	0.947	20955	4059	73	182	56	1.59(1.32-1.78)	
339.8597	26.100	26.955	-51	0.995	5670	1306	68	170	19		
341.8567	26.117	26.955	-50	0.996	3981	838	73	182	11	1.42(1.32-1.78)	
339.8597	26.791	26.955	-10	1.022	22881	3662	68	170	54		
341.8567	26.791	26.955	-10	1.022	14142	2481	73	182	34	1.62(1.32-1.78)	
339.8597	28.005	26.955	63	1.068	14048	2104	68	170	31		
341.8567	27.997	26.955	62	1.068	8631	1360	73	182	19	1.63(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.426	28.404	1	1.419	108375	16493	99	247	167		
369.8919	28.443	28.404	2	1.420	72631	11207	67	167	167	1.49(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.443	28.430	1	1.001	4315	717	64	160	11		M
357.8516	28.460	28.430	2	1.001	2876	486	16	40	30	1.50(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.294						64	160			
357.8516	27.294						16	40			
13C-1,2,3,4,7,8-HxCDF											a
383.8639	34.104	34.076	2	0.948	75071	16445	51	127	322		a
385.8610	34.113	34.076	2	0.948	133617	28319	140	350	202	0.56(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDF											
373.8208	34.130	34.101	2	1.001	115909	23196	72	180	322		
375.8178	34.121	34.101	1	1.000	89906	17590	43	107	409	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.281	34.261	1	0.953	88831	16605	51	127	326		
385.8610	34.290	34.261	2	0.953	162213	30215	140	350	216	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.315	34.286	2	1.001	32192	5870	72	180	82		
375.8178	34.307	34.286	1	1.001	24395	4700	43	107	109	1.32(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.216	35.179	2	0.979	79839	17770	51	127	348		
385.8610	35.208	35.179	2	0.979	154659	34261	140	350	245	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.233	35.196	2	1.000	3875	935	72	180	13		
375.8178	35.233	35.196	2	1.000	3023	680	43	107	16	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.169	36.149	1	1.006	71583	17405	51	127	341		
385.8610	36.169	36.149	1	1.006	138083	33594	140	350	240	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	36.186	36.157	2	1.000	1881	476	72	180	7		M
375.8178	36.186	36.157	2	1.000	1685	462	43	107	11	1.12(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQMa
373.8208	32.360	34.158	-108	0.949	7639	1155	72	180	16		
375.8178	32.368	34.158	-107	0.949	6491	907	43	107	21	1.18(1.05-1.43)	
373.8208	33.405	34.158	-45	0.979	4355	788	72	180	11		
375.8178	33.405	34.158	-45	0.979	3493	641	43	107	15	1.25(1.05-1.43)	
373.8208	35.082	34.158	55	1.029	2869	589	72	180	8		
	Empc Correction				2343	534	72	180	7		
375.8178	35.090	34.158	56	1.029	1890	431	43	107	10	1.52(1.05-1.43)	
373.8208	36.304	34.158	128	1.064	6696	1739	72	180	24		M
375.8178	36.304	34.158	128	1.064	5465	1306	43	107	30	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.966	35.938	2		135668	33940	69	172	492		
403.8529	35.966	35.938	2		110084	27427	62	155	442	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	35.444	35.416	2	0.985	93615	22513	69	172	326		a
403.8529	35.444	35.416	2	0.985	71954	18282	62	155	295	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.432						15	37			
391.8127	35.432						35	87			
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.570	35.542	2	0.989	106161	23662	69	172	343		
403.8529	35.570	35.542	2	0.989	86117	19618	62	155	316	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.559						15	37			
391.8127	35.559						35	87			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8158	35.955						15	37			
391.8127	35.955						35	87			
A Non-2,3,7,8-sub-HxCDD											M
389.8158	33.312	34.626	-79	0.937	1590	338	15	37	23		M
391.8127	33.312	34.626	-79	0.937	1356	220	35	87	6	1.17(1.05-1.43)	
389.8158	34.593	34.626	-2	0.973	1972	363	15	37	24		M
391.8127	34.602	34.626	-1	0.973	1530	347	35	87	10	1.29(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.094	38.065	2	1.059	58010	17612	103	257	171		
419.8220	38.094	38.065	2	1.059	129923	39903	100	250	399	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.102	38.073	2	1.000	33014	9660	44	110	220		
409.7788	38.102	38.073	2	1.000	30970	8836	34	85	260	1.07(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											a
417.8250	39.400	39.371	2	1.095	56572	16379	103	257	159		a
419.8220	39.400	39.371	2	1.095	123145	38225	100	250	382	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.408	39.379	2	1.000	11015	3561	44	110	81		
409.7788	39.408	39.379	2	1.000	9824	3259	34	85	96	1.12(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.482	38.744	-16	1.010	12941	3819	44	110	87		
409.7788	38.482	38.744	-16	1.010	11963	3736	34	85	110	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.088	39.059	2	1.087	96590	31012	81	202	383		
437.8140	39.088	39.059	2	1.087	91560	29156	51	127	572	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	39.096	39.067	2	1.000	21886	6822	58	145	118		M
425.7737	39.096	39.067	2	1.000	20309	6829	29	72	235	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.431	38.941	-31	0.983	20518	5990	58	145	103		
425.7737	38.423	38.941	-31	0.983	18790	5659	29	72	195	1.09(0.88-1.20)	
13C-OCDD											
469.7780	41.541	41.519	1	1.155	132282	37925	62	155	612		
471.7750	41.541	41.519	1	1.155	152122	42776	31	77	1380	0.87(0.76-1.02)	
OCDF											
441.7428	41.634	41.603	2	1.002	12156	3465	34	85	102		
443.7399	41.634	41.603	2	1.002	14993	4372	83	207	53	0.81(0.76-1.02)	
OCDD											
457.7377	41.558	41.527	2	1.000	189067	51886	46	115	1128		
459.7348	41.550	41.527	1	1.000	214367	59724	40	100	1493	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags
  M - Manually Integrated
  a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	24-Sep-2020 04:52:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDF, RT: 18.740

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	301300	49946

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		10.000	301300	49946

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.756	55490	9848	63243	11961	3.63	0.88	
17.213	83476	12258	99648	15158	5.60	0.84	
17.626	67880	9606	81759	12382	4.57	0.83	
17.987	100278	15577	121901	19435	6.79	0.82	
18.469	968128	157562	1216025	197719	66.8	0.80	
19.896	150140	21424	183118	27078	10.2	0.82	
22.314	154341	20845	200333	26849	10.8	0.77	
Signal Totals:							
	1579733	247120	1966027	310582			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3545760	557702				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 108.398 = (3545760 * 10.000) / (301300 * 1.086)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	24-Sep-2020 04:52:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDD, RT: 19.549

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	225363	33765

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		10.000	225363	33765

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.241	4771	1051	6702	1245	0.4710	0.71	
21.084	43907	5749	54679	7410	4.05	0.80	
Signal Totals:							
	48678	6800	61381	8655			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	110059	15455				0.79	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.518 = (110059 * 10.000) / (225363 * 1.081)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	24-Sep-2020 04:52:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	10

Non-2,3,7,8-sub-PeCDF, RT: 26.955

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	281588	49440
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	264271	42648

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		10.000	272929	46044

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.829	33283	6257	20955	4059	1.84	1.59	
26.100	5670	1306	3981	838	0.3277	1.42	
26.791	22881	3662	14142	2481	1.26	1.62	
28.005	14048	2104	8631	1360	0.7700	1.63	
Signal Totals:							
	75882	13329	47709	8738			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	123591	22067				1.59	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.196 = (123591 * 10.000) / (272929 * 1.079)

Report Date: 25-Sep-2020 11:42:43 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	24-Sep-2020 04:52:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDF, RT: 34.158

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	208688	44764
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	251044	46820
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	234498	52031
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	209666	50999

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		10.000	225974	48653

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
32.360	7639	1155	6491	907	0.5005	1.18	
33.405	4355	788	3493	641	0.2780	1.25	
35.082	2869	589	1890	431	0.1686	1.52	RQ
35.082	2343	534	1890	431	0.1499		Empc Correction
36.304	6696	1739	5465	1306	0.4307	1.23	Ma
Signal Totals:							
	21033	4216	17339	3285			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	38898	7556				1.24	RQMa
	38372	7501					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.378 = (38898 * 10.000) / (225974 * 1.249)
Empc Amount: 1.359 = (38372 * 10.000) / (225974 * 1.249)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 25-Sep-2020 11:42:43 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	24-Sep-2020 04:52:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDD, RT: 34.626

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	165569	40795
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	192278	43280
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		10.000	178923	42037

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.312	1590	338	1356	220	0.1469	1.17	M
34.593	1972	363	1530	347	0.1746	1.29	M
Signal Totals:							
	3562	701	2886	567			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6448	1268				1.23	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3214 = (6448 * 10.000) / (178923 * 1.121)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Lims ID:	320-64049-A-3-B		
Client ID:	11215702-Soil-Tank#1		
Inject. Date:	24-Sep-2020 04:52:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	10

Non-2,3,7,8-sub-HpCDF, RT: 38.744

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	187933	57515
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	179717	54604

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		10.000	183825	56059

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.482	12941	3819	11963	3736	0.9150	1.08	
Signal Totals:							
	12941	3819	11963	3736			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24904	7555				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.9150 = (24904 * 10.000) / (183825 * 1.481)

Report Date: 25-Sep-2020 11:42:43 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d
Lims ID: 320-64049-A-3-B
Client ID: 11215702-Soil-Tank#1
Inject. Date: 24-Sep-2020 04:52:00
Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 415261
Lims Sample ID: 10

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	188150	60168

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		10.000	188150	60168

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.431	20518	5990	18790	5659	1.96	1.09	
Signal Totals:							
	20518	5990	18790	5659			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	39308	11649				1.09	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.964 = (39308 * 10.000) / (188150 * 1.064)

Report Date: 25-Sep-2020 11:42:44   Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d
Injection Date: 24-Sep-2020 04:52:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#1
Worklist#: 415261   Sample Line#: 10
Column Type: DB-5   Column Dia: 0.32 mm

TCDD

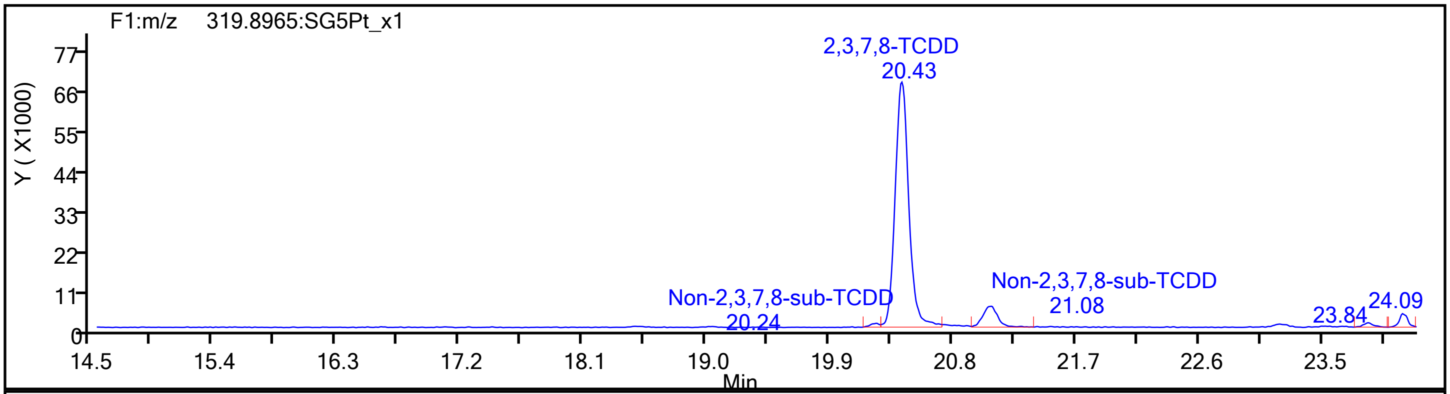

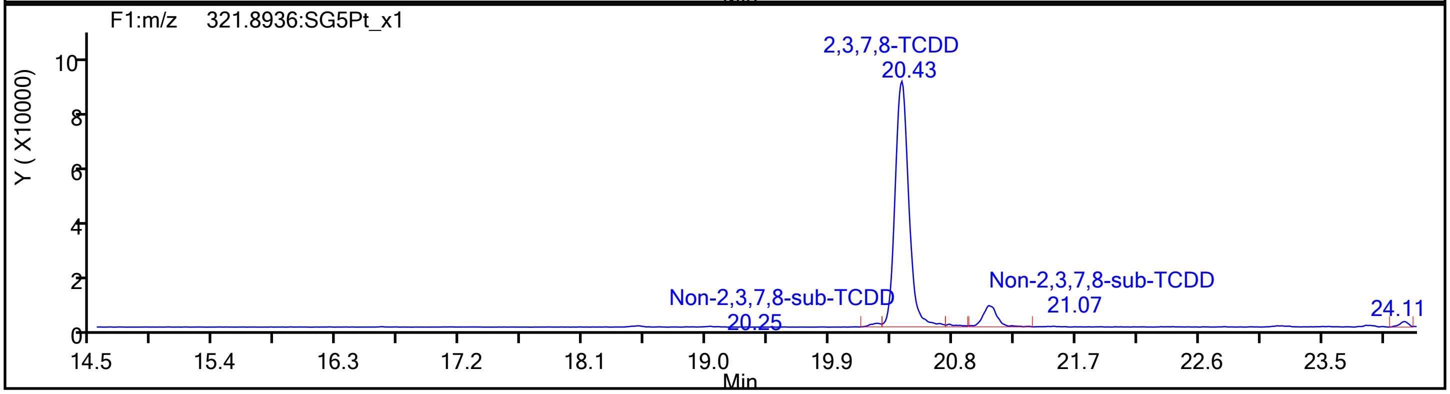

TCDD Standards

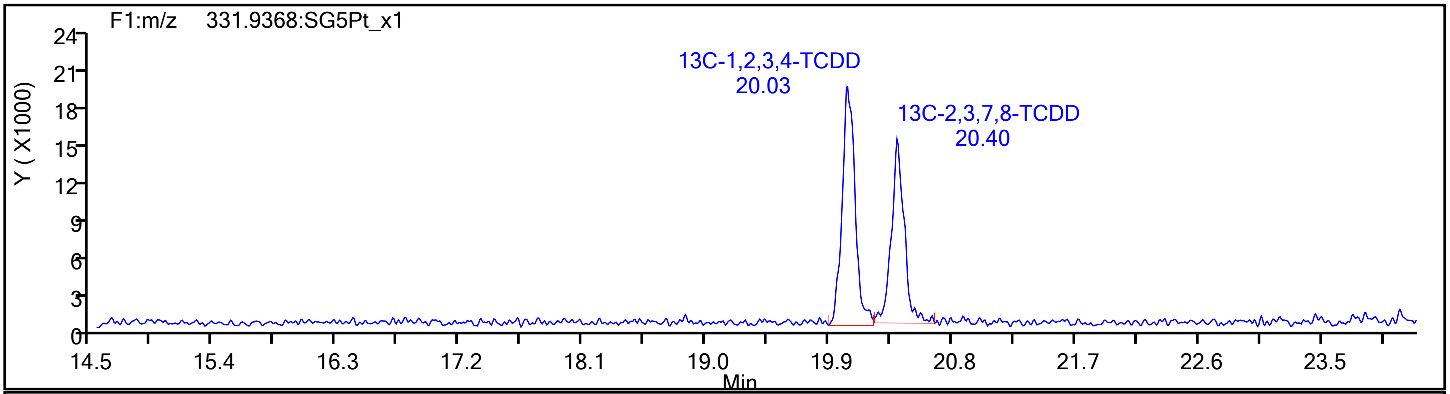

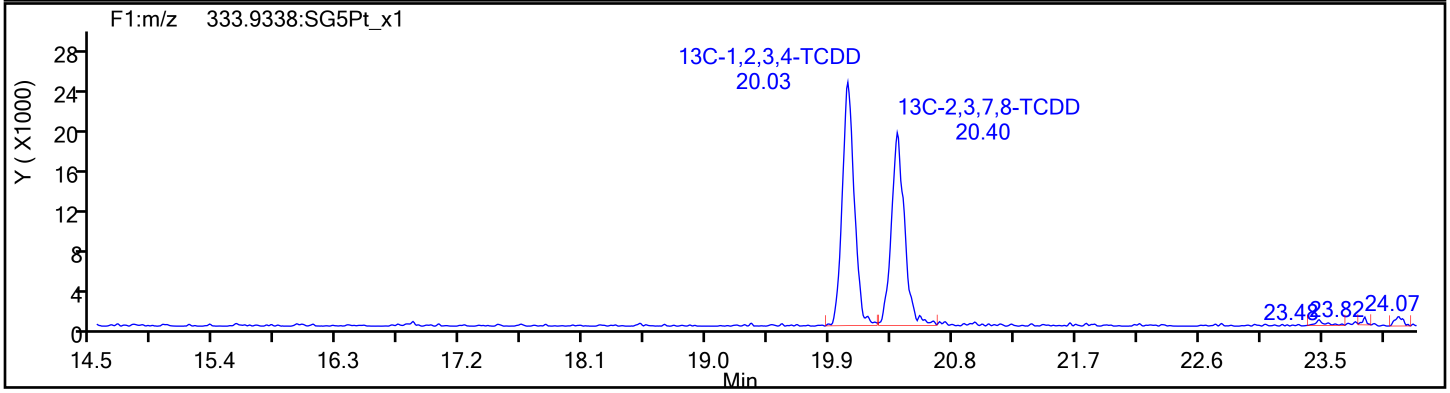

Report Date: 25-Sep-2020 11:42:44 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Injection Date:	24-Sep-2020 04:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	415261	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

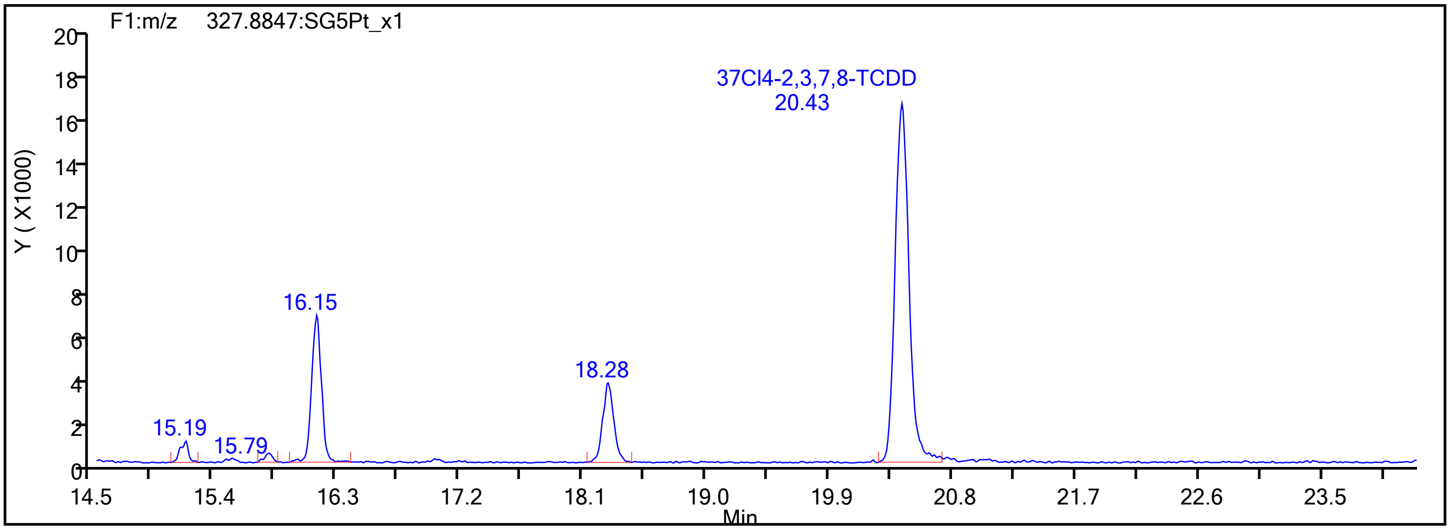

37Cl4-TCDD Standards

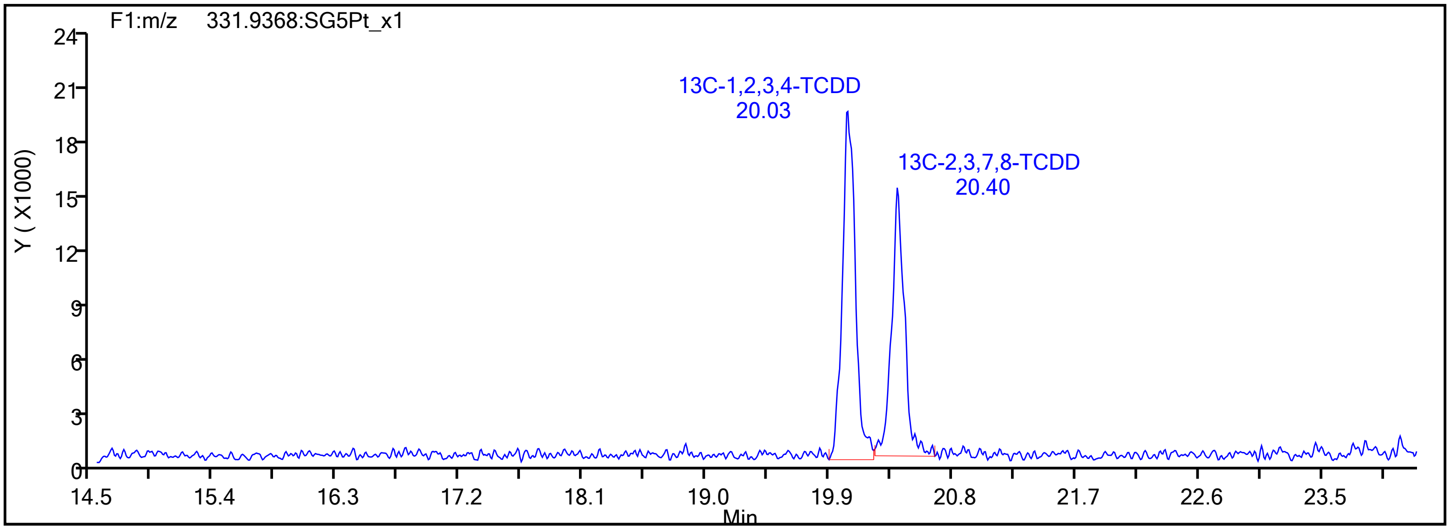

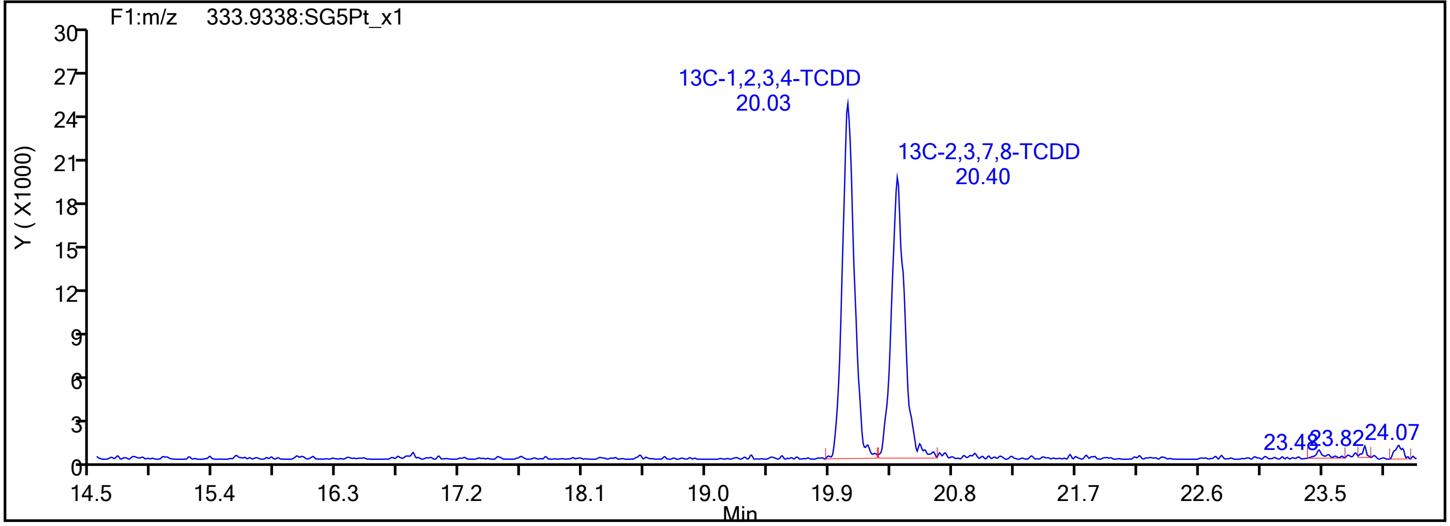

Report Date: 25-Sep-2020 11:42:44 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d

Injection Date:	24-Sep-2020 04:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	415261	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

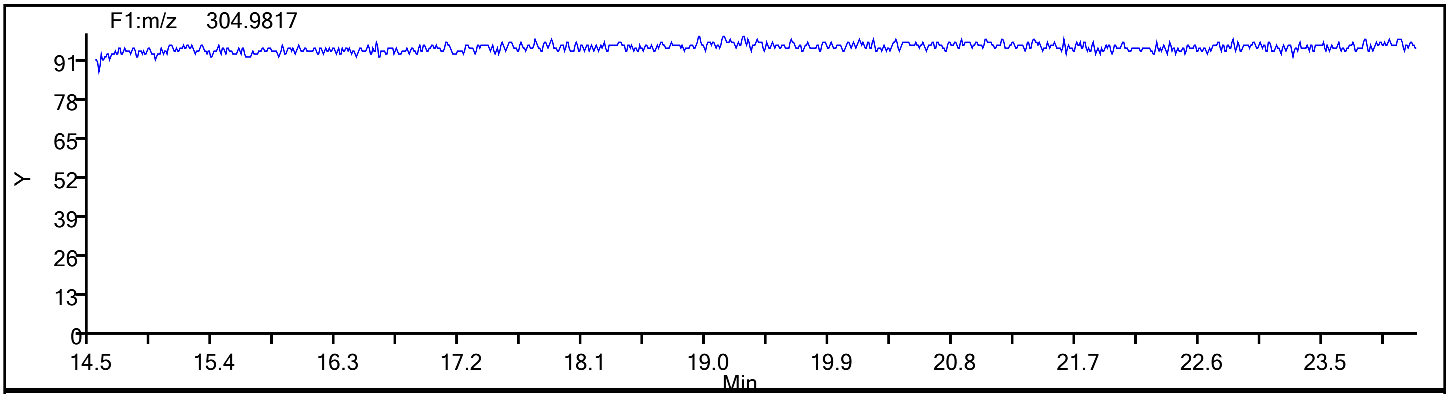

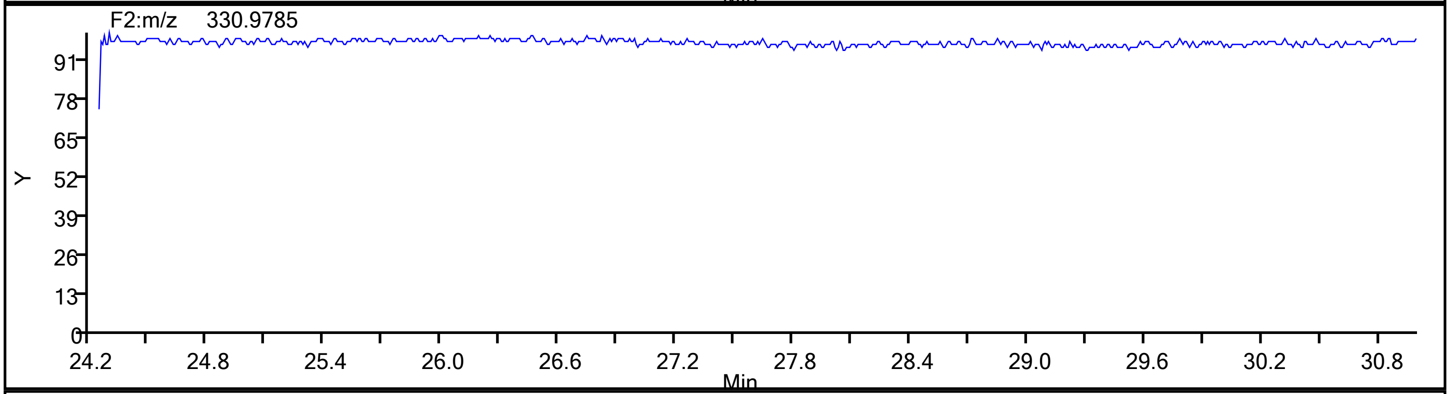

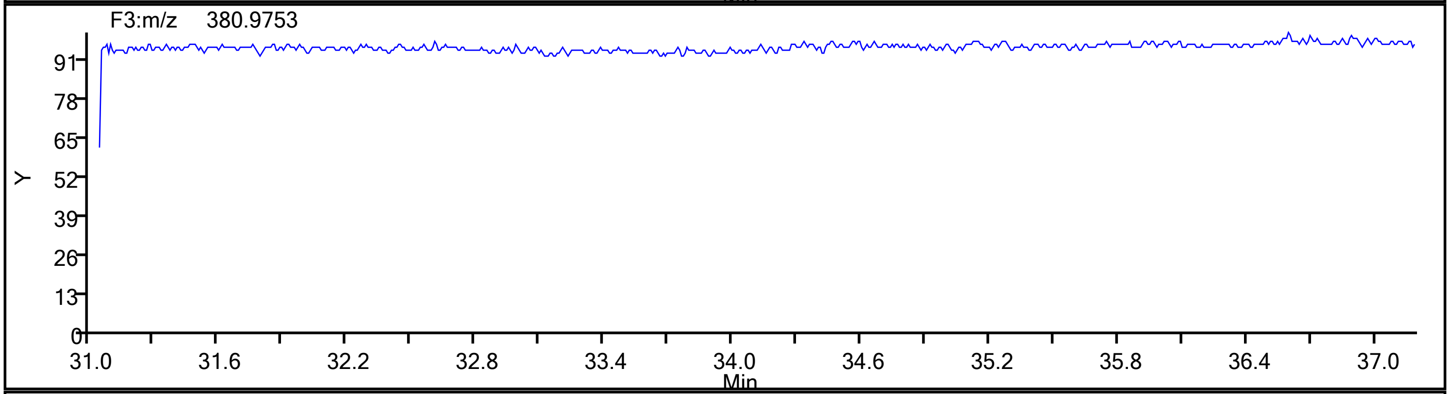

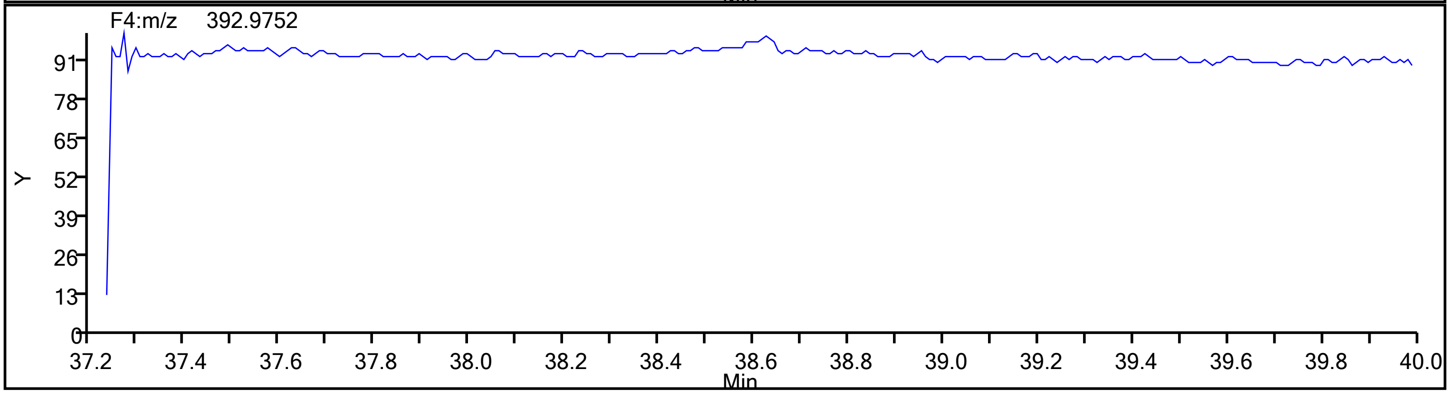

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_11.d		
Injection Date:	24-Sep-2020 04:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#1		
Worklist#:	415261	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

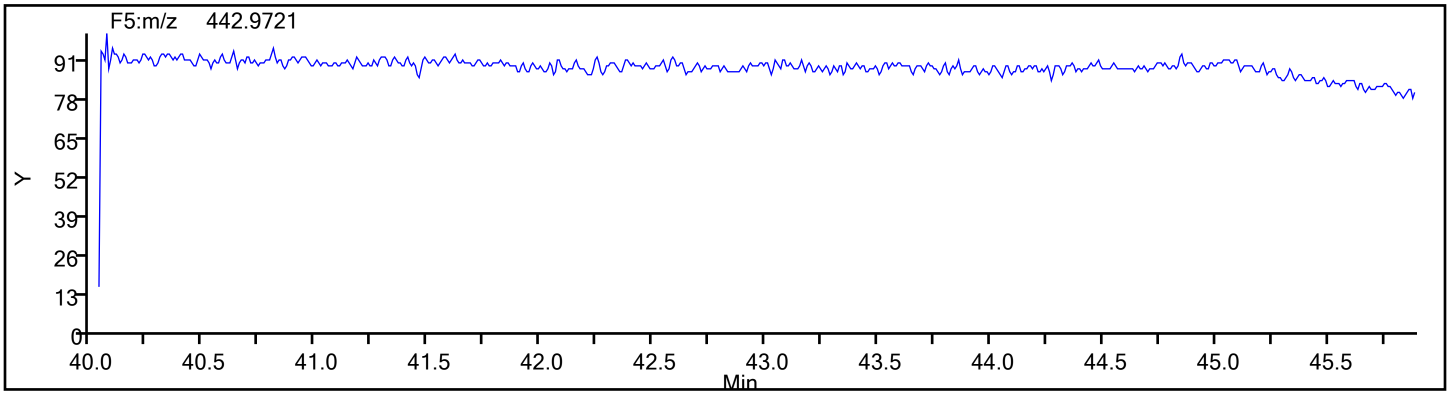

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1
SDG No.:
Client Sample ID: 11215702-Soil-Tank#2
Lab Sample ID: 320-64049-4
Matrix: Sediment
Lab File ID: 18se20dfs1_64.d
Analysis Method: 1613B
Date Collected: 08/26/2020 14:00
Extract. Method: HRMS-Sox
Date Extracted: 09/17/2020 05:13
Sample wt/vol: 1.26(g)
Date Analyzed: 09/20/2020 12:49
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture: 41.5
GPC Cleanup:(Y/N) N
Analysis Batch No.: 413813
Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	160		68	2.0
57117-41-6	1,2,3,7,8-PeCDF	1900		68	12
57117-31-4	2,3,4,7,8-PeCDF	1100		68	12
39227-28-6	1,2,3,4,7,8-HxCDD	5.1	J B	68	0.74
57653-85-7	1,2,3,6,7,8-HxCDD	19	J B	68	0.79
19408-74-3	1,2,3,7,8,9-HxCDD	7.6	J	68	0.70
70648-26-9	1,2,3,4,7,8-HxCDF	3000		68	6.3
57117-44-9	1,2,3,6,7,8-HxCDF	740		68	6.0
72918-21-9	1,2,3,7,8,9-HxCDF	48	J	68	5.2
60851-34-5	2,3,4,6,7,8-HxCDF	85		68	5.6
35822-46-9	1,2,3,4,6,7,8-HpCDD	590	B	68	2.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	930	B	68	3.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	310	B	68	3.0
3268-87-9	OCDD	7900	B	140	5.6
39001-02-0	OCDF	510	B	140	1.0
41903-57-5	Total TCDD	20000	G	38	38
30402-14-3	Total TCDF	100000	q G	170	170
36088-22-9	Total PeCDD	180		68	2.0
30402-15-4	Total PeCDF	4800	q	68	12
34465-46-8	Total HxCDD	130	B q	68	0.74
55684-94-1	Total HxCDF	4300		68	5.8
37871-00-4	Total HpCDD	1100	B	68	2.3
38998-75-3	Total HpCDF	1500	B	68	3.0

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: 11215702-Soil-Tank#2 Lab Sample ID: 320-64049-4

Matrix: Sediment Lab File ID: 18se20dfs1_64.d

Analysis Method: 1613B Date Collected: 08/26/2020 14:00

Extract. Method: HRMS-Sox Date Extracted: 09/17/2020 05:13

Sample wt/vol: 1.26(g) Date Analyzed: 09/20/2020 12:49

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: 41.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 413813 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	79		25-164
89059-46-1	13C-2,3,7,8-TCDF	82		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	80		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	79		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	79		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	84		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	86		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	80		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	79		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	82		26-138
114423-97-1	13C-OCDD	89		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	104		35-197

Report Date: 22-Sep-2020 13:43:54   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d
Lims ID: 320-64049-A-4-B
Client ID: 11215702-Soil-Tank#2
Sample Type: Client
Inject. Date: 20-Sep-2020 12:49:00   ALS Bottle#: 0   Worklist Smp#: 56
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: 320-64049-A-4-B
Operator ID: Xcalibur_System   Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 22-Sep-2020 13:43:54   Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1045

First Level Reviewer: krenns   Date: 22-Sep-2020 13:43:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.161	4446784	0.80	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.232	5803981	0.79	1.5883	82.2	82.2	0.5610	0.5610	82.17	
2,3,7,8-TCDF	19.250	137694866	0.77	1.0857	2185.3	2185.3	6.175	6.175		E
A Non-2,3,7,8-sub-TCDF	18.816	99029619	0.77	1.0857	1582.3	1571.6	6.175	911.4		RQMa
S Total TCDF					3767.5	3756.9	6.175	6.175		RQ
D 13C-2,3,7,8-TCDD	20.522	3955552	0.80	1.1194	79.5	79.5	0.4651	0.4651	79.46	
2,3,7,8-TCDD	20.548	28017066	0.79	1.0810	655.2	655.2	1.398	1.398		E
$ 37Cl4-2,3,7,8-TCDD	20.548	2120607		1.1468	41.6	41.6	0.1007	0.1007	104	
A Non-2,3,7,8-sub-TCDD	19.624	2869241	0.74	1.0810	67.1	67.1	1.398	59.8		
S Total TCDD					722.3	722.3	1.398	1.398		
D 13C-1,2,3,7,8-PeCDF	26.300	5185128	1.59	1.4782	78.9	78.9	0.2382	0.2382	78.88	
1,2,3,7,8-PeCDF	26.325	3815124	1.58	1.0547	69.8	69.8	0.4275	0.4275		
D 13C-2,3,4,7,8-PeCDF	27.740	4882274	1.59	1.3912	78.9	78.9	0.2531	0.2531	78.92	
2,3,4,7,8-PeCDF	27.765	2270650	1.54	1.1035	42.1	42.1	0.4403	0.4403		
A F1 PeCDFs	23.607	34307	1.62	1.0791	0.6316	0.6316	0.0134	0.6316		
A Non-2,3,7,8-sub-PeCDF	26.996	3577148	1.55	1.0791	66.2	65.9	0.4334	27.7		RQM
S Total PeCDF					178.7	178.4	0.4339	0.4339		RQ
D 13C-1,2,3,7,8-PeCDD	28.515	3348514	1.59	0.9415	80.0	80.0	0.1622	0.1622	79.98	
1,2,3,7,8-PeCDD	28.540	215278	1.55	1.0680	6.020	6.020	0.0737	0.0737		
A Non-2,3,7,8-sub-PeCDD	27.361	18205	1.60	1.0680	0.5091	0.5091	0.0737	0.5091		
S Total PeCDD					6.529	6.529	0.0737	0.0737		
D 13C-1,2,3,4,7,8-HxCDF	34.150	4227097	0.54	1.1378	86.2	86.2	0.2375	0.2375	86.20	
1,2,3,4,7,8-HxCDF	34.167	5840388	1.25	1.2643	109.3	109.3	0.2309	0.2309		
D 13C-1,2,3,6,7,8-HxCDF	34.335	4524880	0.52	1.3173	79.7	79.7	0.2052	0.2052	79.70	
1,2,3,6,7,8-HxCDF	34.352	1515580	1.26	1.2230	27.4	27.4	0.2214	0.2214		
D 13C-2,3,4,6,7,8-HxCDF	35.237	4251846	0.53	1.2457	79.2	79.2	0.2169	0.2169	79.20	
2,3,4,6,7,8-HxCDF	35.254	164917	1.26	1.2464	3.112	3.112	0.2059	0.2059		M
D 13C-1,2,3,7,8,9-HxCDF	36.189	4057316	0.53	1.1840	79.5	79.5	0.2282	0.2282	79.51	
1,2,3,7,8,9-HxCDF	36.206	90465	1.35	1.2638	1.764	1.764	0.1911	0.1911		
A Non-2,3,7,8-sub-HxCDF	34.215	918181	1.25	1.2494	17.2	17.2	0.2113	7.552		Ma
S Total HxCDF					158.8	158.8	0.2123	0.2123		

Report Date: 22-Sep-2020 13:43:54 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.987	4309938	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.473	3080216	1.27	0.8477	84.3	84.3	0.1632	0.1632	84.30	
1,2,3,4,7,8-HxCDD	35.481	6685	1.30	1.1561	0.1877	0.1877	0.0272	0.0272		Ma
D 13C-1,2,3,6,7,8-HxCDD	35.591	3504405	1.25	0.9979	81.5	81.5	0.1386	0.1386	81.48	
1,2,3,6,7,8-HxCDD	35.616	25562	1.21	1.0284	0.7093	0.7093	0.0289	0.0289		M
1,2,3,7,8,9-HxCDD	35.995	10844	1.36	1.1789	0.2794	0.2794	0.0259	0.0259		
A Non-2,3,7,8-sub-HxCDD	34.670	133798	1.24	1.1211	3.670	3.625	0.0273	1.838		RQM
S Total HxCDD					4.846	4.801	0.0273	0.0273		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.094	3401926	0.47	0.9884	79.9	79.9	0.3110	0.3110	79.86	
1,2,3,4,6,7,8-HpCDF	38.111	1752102	1.02	1.5064	34.2	34.2	0.1116	0.1116		
D 13C-1,2,3,4,7,8,9-HpCDF	39.392	3251677	0.45	0.9203	82.0	82.0	0.3340	0.3340	81.98	
1,2,3,4,7,8,9-HpCDF	39.401	533988	1.02	1.4548	11.3	11.3	0.1116	0.1116		
A Non-2,3,7,8-sub-HpCDF	38.760	567678	1.04	1.4806	11.5	11.5	0.1116	11.5		
S Total HpCDF					57.0	57.0	0.1116	0.1116		
D 13C-1,2,3,4,6,7,8-HpCDD	39.080	3335581	1.06	0.9556	81.0	81.0	0.1689	0.1689	80.99	
1,2,3,4,6,7,8-HpCDD	39.097	768634	1.04	1.0640	21.7	21.7	0.0861	0.0861		
A Non-2,3,7,8-sub-HpCDD	38.875	722772	1.05	1.0640	20.4	20.4	0.0861	20.4		
S Total HpCDD					42.0	42.0	0.0861	0.0861		
D 13C-OCDD	41.534	5662175	0.90	0.7420	177.0	177.0	0.1792	0.1792	88.52	
OCDF	41.626	765688	0.89	1.4296	18.9	18.9	0.0378	0.0378		
OCDD	41.542	9341941	0.89	1.1293	292.2	292.2	0.2068	0.2068		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d				
Lims ID:	320-64049-A-4-B				
Client ID:	11215702-Soil-Tank#2				
Sample Type:	Client				
Inject. Date:	20-Sep-2020 12:49:00	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-64049-A-4-B				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	22-Sep-2020 13:43:54	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1045				
First Level Reviewer: krenns		Date:	22-Sep-2020 13:43:54		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.161	20.128	2		1981833	286407	648	1620	442		
333.9338	20.152	20.128	1		2464951	345453	668	1670	517	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.232	19.208	1	0.954	2566682	439892	1102	2755	399		
317.9389	19.232	19.208	1	0.954	3237299	562323	1150	2875	489	0.79(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	19.250	19.225	1	1.001	59888712	9938045	16500	41250	602		
305.8987	19.250	19.225	1	1.001	77806154	12991903	10374	25935	1252	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	16.402	18.816	-145	0.853	348045	69814	16500	41250	4		M
305.8987	16.402	18.816	-145	0.853	498509	88416	10374	25935	9	0.70(0.65-0.89)	
303.9016	16.841	18.816	-118	0.876	1475895	276564	16500	41250	17		
305.8987	16.841	18.816	-118	0.876	2007398	362041	10374	25935	35	0.74(0.65-0.89)	
303.9016	17.305	18.816	-90	0.900	2355872	320949	16500	41250	19		
305.8987	17.305	18.816	-90	0.900	3125512	409785	10374	25935	40	0.75(0.65-0.89)	
303.9016	17.718	18.816	-66	0.921	1916569	278995	16500	41250	17		
	Empc Correction				1245593	274602	16500	41250	17		
305.8987	17.710	18.816	-66	0.921	1617654	356627	10374	25935	34	1.18(0.65-0.89)	
303.9016	18.071	18.816	-45	0.940	2716037	431928	16500	41250	26		
305.8987	18.071	18.816	-45	0.940	3460891	544155	10374	25935	52	0.78(0.65-0.89)	
303.9016	18.553	18.816	-16	0.965	25293287	4173986	16500	41250	253		
305.8987	18.553	18.816	-16	0.965	32137336	5326390	10374	25935	513	0.79(0.65-0.89)	
303.9016	18.949	18.816	8	0.985	1095137	173468	16500	41250	11		
305.8987	18.949	18.816	8	0.985	1543624	226004	10374	25935	22	0.71(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	20.006	18.816	71	1.040	3878293	618172	16500	41250	37		
305.8987	20.006	18.816	71	1.040	5084395	784080	10374	25935	76	0.76(0.65-0.89)	
303.9016	20.453	18.816	98	1.063	744325	111634	16500	41250	7		M
305.8987	20.445	18.816	98	1.063	1035687	146067	10374	25935	14	0.72(0.65-0.89)	
303.9016	22.448	18.816	217	1.167	4027538	608375	16500	41250	37		
305.8987	22.448	18.816	217	1.167	5338591	775908	10374	25935	75	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.522	20.489	2	1.018	1752326	275116	648	1620	425		
333.9338	20.522	20.489	2	1.018	2203226	343131	668	1670	514	0.80(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	20.548	20.515	2	1.001	12364196	1855225	2114	5285	878		
321.8936	20.548	20.515	2	1.001	15652870	2326174	1624	4060	1432	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.548	20.515	2	1.019	2120607	320589	292	730	1098		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.376	19.624	45	0.993	133686	23504	2114	5285	11		
321.8936	20.367	19.624	45	0.992	176848	29068	1624	4060	18	0.76(0.65-0.89)	
319.8965	21.184	19.624	93	1.032	1087117	158486	2114	5285	75		
321.8936	21.184	19.624	93	1.032	1471590	201142	1624	4060	124	0.74(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.300	26.266	2	1.305	3180347	540926	523	1307	1034		
353.8970	26.292	26.266	2	1.304	2004781	337387	367	917	919	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.325	26.283	3	1.001	2338044	383837	824	2060	466		
341.8567	26.325	26.283	3	1.001	1477080	247416	760	1900	326	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.740	27.723	1	1.376	2994674	500377	523	1307	957		
353.8970	27.740	27.723	1	1.376	1887600	314700	367	917	857	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.765	27.740	2	1.001	1378307	236429	824	2060	287		
341.8567	27.765	27.740	2	1.001	892343	151216	760	1900	199	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.093	23.607	-31	0.878	21217	3275	16	40	205		
341.8567	23.093	23.607	-31	0.878	13090	2055	33	82	62	1.62(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	24.902	26.996	-125	0.947	920360	177632	824	2060	216		
341.8567	24.902	26.996	-125	0.947	586802	114446	760	1900	151	1.57(1.32-1.78)	M
339.8597	25.769	26.996	-73	0.980	87431	14069	824	2060	17		
	Empc Correction				69576	12835	824	2060	16		
341.8567	25.778	26.996	-73	0.980	44888	8281	760	1900	11	1.95(1.32-1.78)	
339.8597	26.191	26.996	-48	0.996	156760	35991	824	2060	44		
341.8567	26.182	26.996	-49	0.996	104386	23449	760	1900	31	1.50(1.32-1.78)	
339.8597	26.881	26.996	-7	1.022	613353	109570	824	2060	133		
341.8567	26.881	26.996	-7	1.022	396379	71086	760	1900	94	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	28.086	26.996	65	1.068	340363	51325	824	2060	62		
341.8567	28.086	26.996	65	1.068	210550	31820	760	1900	42	1.62(1.32-1.78)	
339.8597	29.720	26.996	163	1.130	83826	12518	824	2060	15		
341.8567	29.711	26.996	163	1.130	49905	8183	760	1900	11	1.68(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.515	28.498	1	1.414	2056201	327586	269	672	1218		
369.8919	28.515	28.498	1	1.414	1292313	206346	117	292	1764	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.540	28.523	1	1.001	130802	20743	101	252	205		
357.8516	28.540	28.523	1	1.001	84476	13564	67	167	202	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.443	27.361	-55	0.927	11205	2312	101	252	23		
357.8516	26.426	27.361	-56	0.927	7000	1189	67	167	18	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.150	34.135	1	0.949	1479077	306262	418	1045	733		
385.8610	34.150	34.135	1	0.949	2748020	580992	799	1997	727	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.167	34.160	0	1.000	3248255	672498	575	1437	1170		
375.8178	34.167	34.160	0	1.000	2592133	542433	461	1152	1177	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.335	34.329	0	0.954	1545302	323743	418	1045	775		
385.8610	34.335	34.329	0	0.954	2979578	632818	799	1997	792	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.352	34.345	0	1.000	843616	175282	575	1437	305		
375.8178	34.352	34.345	0	1.000	671964	141061	461	1152	306	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.237	35.229	0	0.979	1475952	351689	418	1045	841		
385.8610	35.237	35.229	0	0.979	2775894	657327	799	1997	823	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	35.254	35.246	0	1.000	92102	22889	575	1437	40		
375.8178	35.254	35.246	0	1.000	72815	17575	461	1152	38	1.26(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.189	36.181	0	1.006	1402883	373538	418	1045	894		
385.8610	36.189	36.181	0	1.006	2654433	698689	799	1997	874	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.206	36.198	0	1.000	51905	14324	575	1437	25		
375.8178	36.206	36.198	0	1.000	38560	10890	461	1152	24	1.35(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	32.456	34.215	-105	0.950	221063	36215	575	1437	63		
375.8178	32.456	34.215	-105	0.950	181387	29891	461	1152	65	1.22(1.05-1.43)	
373.8208	33.459	34.215	-45	0.980	111238	21817	575	1437	38		
375.8178	33.459	34.215	-45	0.980	86376	17435	461	1152	38	1.29(1.05-1.43)	
373.8208	36.315	34.215	126	1.063	178468	48991	575	1437	85		
375.8178	36.315	34.215	126	1.063	139649	39592	461	1152	86	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.987	35.979	0		2397272	625563	351	877	1782		
403.8529	35.987	35.979	0		1912666	500084	272	680	1839	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.473	35.457	1	0.986	1724904	445490	351	877	1269		
403.8529	35.473	35.457	1	0.986	1355312	349647	272	680	1285	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											Ma
389.8158	35.481	35.474	0	1.000	3777	1071	45	112	24		M
391.8127	35.481	35.474	0	1.000	2908	847	55	137	15	1.30(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.591	35.583	0	0.989	1950283	470137	351	877	1339		
403.8529	35.591	35.583	0	0.989	1554122	370503	272	680	1362	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.616	35.600	1	1.001	13988	3373	45	112	75		
391.8127	35.616	35.600	1	1.001	11574	2882	55	137	52	1.21(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											
389.8158	35.995	35.988	0	1.015	6252	1505	45	112	33		
391.8127	35.995	35.988	0	1.015	4592	1140	55	137	21	1.36(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	33.383	34.670	-77	0.938	31481	5617	45	112	125		
391.8127	33.383	34.670	-77	0.938	24851	4345	55	137	79	1.27(1.05-1.43)	
389.8158	34.259	34.670	-25	0.963	6974	1297	45	112	29		
	Empc Correction				5318	1142	45	112	25		
391.8127	34.251	34.670	-25	0.962	4289	921	55	137	17	1.63(1.05-1.43)	
389.8158	34.630	34.670	-2	0.973	37182	7422	45	112	165		M
391.8127	34.630	34.670	-2	0.973	30677	5999	55	137	109	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.094	38.085	1	1.059	1080259	348496	499	1247	698		
419.8220	38.094	38.085	1	1.059	2321667	734820	885	2212	830	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.111	38.102	1	1.000	885396	285980	382	955	749		
409.7788	38.111	38.102	1	1.000	866706	273801	347	867	789	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.392	39.382	1	1.095	1008604	347505	499	1247	696		
419.8220	39.392	39.382	1	1.095	2243073	774519	885	2212	875	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.401	39.399	0	1.000	270229	91052	382	955	238		
409.7788	39.401	39.399	0	1.000	263759	89998	347	867	259	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.491	38.760	-16	1.010	289023	93135	382	955	244		
409.7788	38.482	38.760	-17	1.010	278655	89231	347	867	257	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.080	39.079	0	1.086	1715501	579035	378	945	1532		
437.8140	39.080	39.079	0	1.086	1620080	547020	349	872	1567	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.097	39.088	1	1.000	392475	132537	218	545	608		
425.7737	39.097	39.088	1	1.000	376159	126428	195	487	648	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.432	38.875	-27	0.983	370748	121980	218	545	560		
425.7737	38.432	38.875	-27	0.983	352024	115622	195	487	593	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.534	41.533	0	1.154	2684528	873257	302	755	2892		
471.7750	41.534	41.533	0	1.154	2977647	959139	297	742	3229	0.90(0.76-1.02)	
OCDF											
441.7428	41.626	41.625	0	1.002	360322	114453	84	210	1363		
443.7399	41.626	41.625	0	1.002	405366	130577	114	285	1145	0.89(0.76-1.02)	
OCDD											
457.7377	41.542	41.541	0	1.000	4406759	1396408	408	1020	3423		
459.7348	41.542	41.541	0	1.000	4935182	1572048	448	1120	3509	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- a - User Assigned ID

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-TCDF, RT: 18.816

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	5803981	1002215

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	5803981	1002215

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.402	348045	69814	498509	88416	13.4	0.70	Ma
16.841	1475895	276564	2007398	362041	55.3	0.74	
17.305	2355872	320949	3125512	409785	87.0	0.75	
17.718	1916569	278995	1617654	356627	56.1	1.18	RQ
17.718	1245593	274602	1617654	356627	45.4		Empc Correction
18.071	2716037	431928	3460891	544155	98.0	0.78	
18.553	25293287	4173986	32137336	5326390	911.4	0.79	
18.949	1095137	173468	1543624	226004	41.9	0.71	
20.006	3878293	618172	5084395	784080	142.2	0.76	
20.453	744325	111634	1035687	146067	28.2	0.72	Ma
22.448	4027538	608375	5338591	775908	148.6	0.75	
Signal Totals:							
	43180022	7059492	55849597	9019473			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	99700595	16083358				0.79	RQMa
	99029619	16078965					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1582.3 = (99700595 * 100.000) / (5803981 * 1.086)

Empc Amount: 1571.6 = (99029619 * 100.000) / (5803981 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-TCDD, RT: 19.624

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	3955552	618247

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	3955552	618247

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.376	133686	23504	176848	29068	7.26	0.76	
21.184	1087117	158486	1471590	201142	59.8	0.74	
Signal Totals:							
	1220803	181990	1648438	230210			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2869241	412200				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 67.103 = (2869241 * 100.000) / (3955552 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d
Lims ID: 320-64049-A-4-B
Client ID: 11215702-Soil-Tank#2
Inject. Date: 20-Sep-2020 12:49:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 413813
Lims Sample ID: 56

F1 PeCDFs, RT: 23.607

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	5185128	878313
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	4882274	815077

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	5033701	846695

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.093	21217	3275	13090	2055	0.6316	1.62	
Signal Totals:							
	21217	3275	13090	2055			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	34307	5330				1.62	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6316 = (34307 * 100.000) / (5033701 * 1.079)

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-PeCDF, RT: 26.996

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	5185128	878313
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	4882274	815077

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	5033701	846695

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.902	920360	177632	586802	114446	27.7	1.57	M
25.769	87431	14069	44888	8281	2.44	1.95	RQ
25.769	69576	12835	44888	8281	2.11		Empc Correction
26.191	156760	35991	104386	23449	4.81	1.50	
26.881	613353	109570	396379	71086	18.6	1.55	
28.086	340363	51325	210550	31820	10.1	1.62	
29.720	83826	12518	49905	8183	2.46	1.68	
Signal Totals:							
	2184238	399871	1392910	257265			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3595003	658370				1.58	RQM
	3577148	657136					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 66.184 = (3595003 * 100.000) / (5033701 * 1.079)
Empc Amount: 65.855 = (3577148 * 100.000) / (5033701 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-PeCDD, RT: 27.361

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	3348514	533932

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		100.000	3348514	533932

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.443	11205	2312	7000	1189	0.5091	1.60	
Signal Totals:							
	11205	2312	7000	1189			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18205	3501				1.60	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5091 = (18205 * 100.000) / (3348514 * 1.068)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-HxCDF, RT: 34.215

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	4227097	887254
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	4524880	956561
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	4251846	1009016
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	4057316	1072227

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	4265284	981264

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
32.456	221063	36215	181387	29891	7.55	1.22	
33.459	111238	21817	86376	17435	3.71	1.29	
36.315	178468	48991	139649	39592	5.97	1.28	
Signal Totals:							
	510769	107023	407412	86918			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	918181	193941				1.25	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 17.230 = (918181 * 100.000) / (4265284 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-HxCDD, RT: 34.670

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	3080216	795137
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	3504405	840640
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	3292310	817888

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.383	31481	5617	24851	4345	1.53	1.27	
34.259	6974	1297	4289	921	0.3051	1.63	RQ
34.259	5318	1142	4289	921	0.2603		Empc Correction
34.630	37182	7422	30677	5999	1.84	1.21	M
Signal Totals:							
	73981	14181	59817	11265			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	135454	25601				1.26	RQM
	133798	25446					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.670 = (135454 * 100.000) / (3292310 * 1.121)
Empc Amount: 3.625 = (133798 * 100.000) / (3292310 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-HpCDF, RT: 38.760

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	3401926	1083316
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	3251677	1122024

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	3326801	1102670

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.491	289023	93135	278655	89231	11.5	1.04	
Signal Totals:							
	289023	93135	278655	89231			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	567678	182366				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 11.525 = (567678 * 100.000) / (3326801 * 1.481)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	20-Sep-2020 12:49:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	56

Non-2,3,7,8-sub-HpCDD, RT: 38.875

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	3335581	1126055

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	3335581	1126055

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.432	370748	121980	352024	115622	20.4	1.05	
Signal Totals:							
	370748	121980	352024	115622			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	722772	237602				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 20.365 = (722772 * 100.000) / (3335581 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d				
Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.15- 22.48)

Signal: 1

Processing Integration Results

Not Detected

RT: 15.15- 22.48

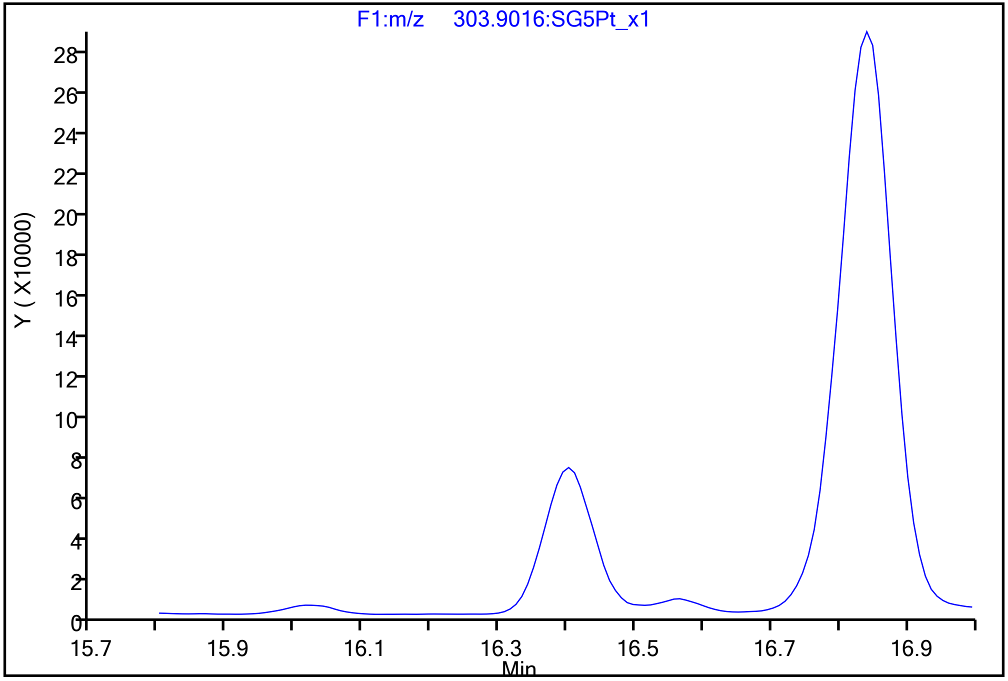

Manual Integration Results

RT = 16.402 Area = 348045 M

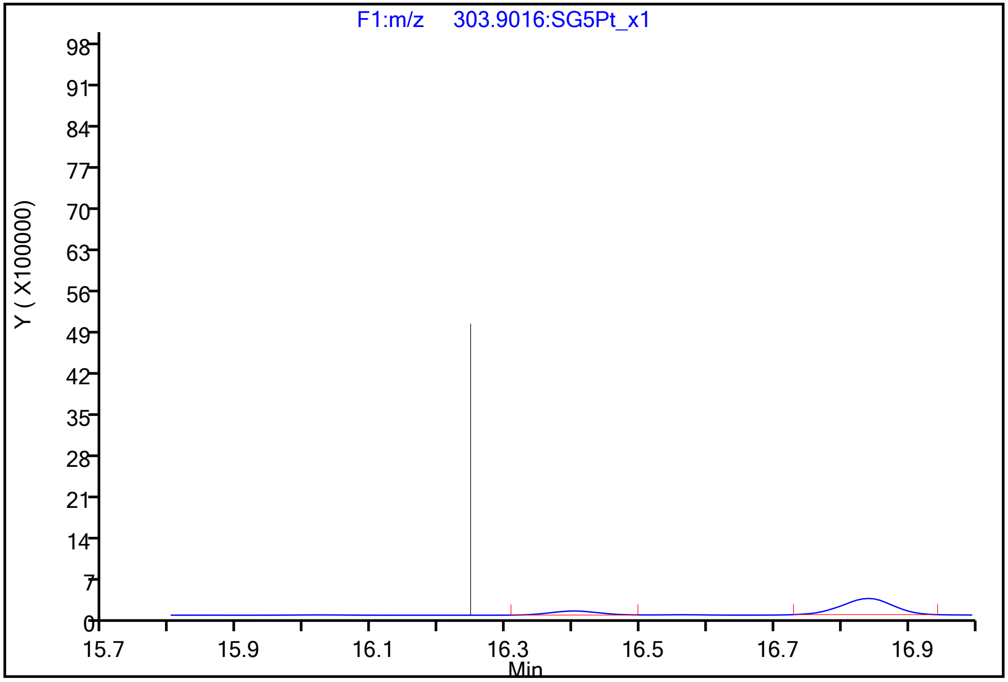

Reviewer: krenns, 22-Sep-2020 13:43:01

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d				
Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.15- 22.48)

Signal: 1

Not Detected

RT: 15.15- 22.48

Processing Integration Results

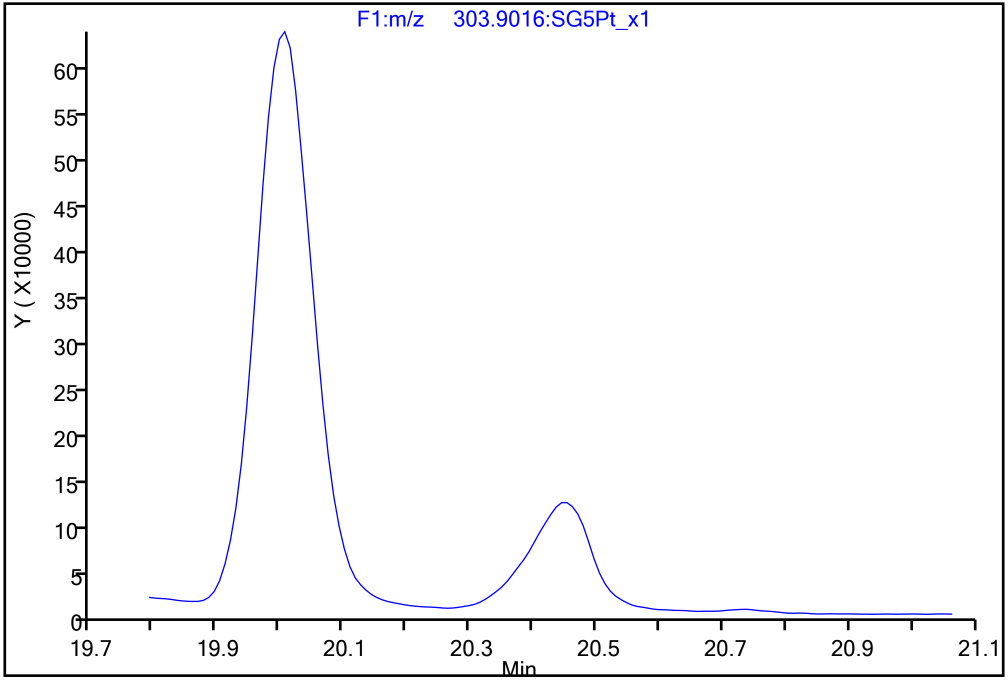

RT = 20.453 Area = 744325 M

Manual Integration Results

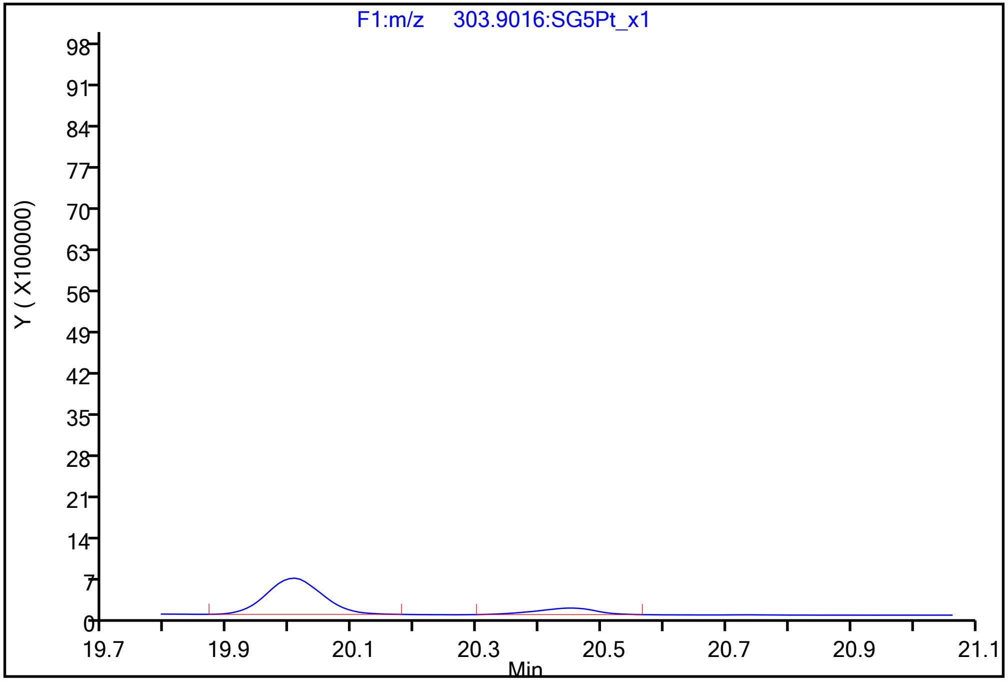

Reviewer: krenns, 22-Sep-2020 13:43:01

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d				
Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (24.23- 29.76)

Signal: 2

Processing Integration Results

RT = 24.902 Area = 601906

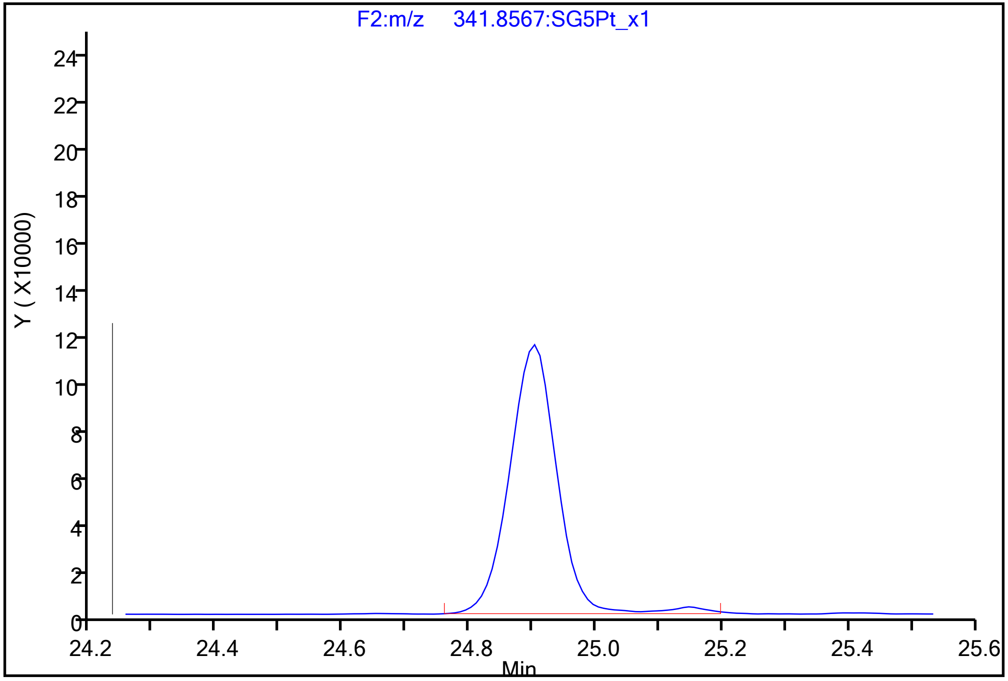

Manual Integration Results

RT = 24.902 Area = 586802 M

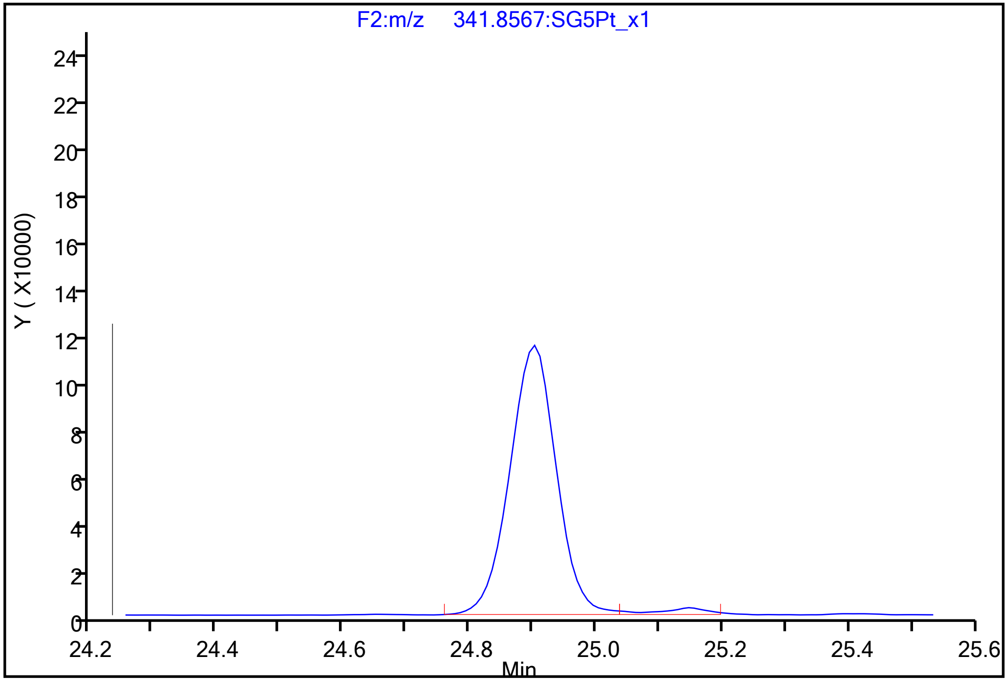

Reviewer: dadunj, 22-Sep-2020 10:42:02

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4
Client ID:	11215702-Soil-Tank#2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT:	35.25
Area:	119230
Amount:	3.987630
Amount Units:	pg/ul

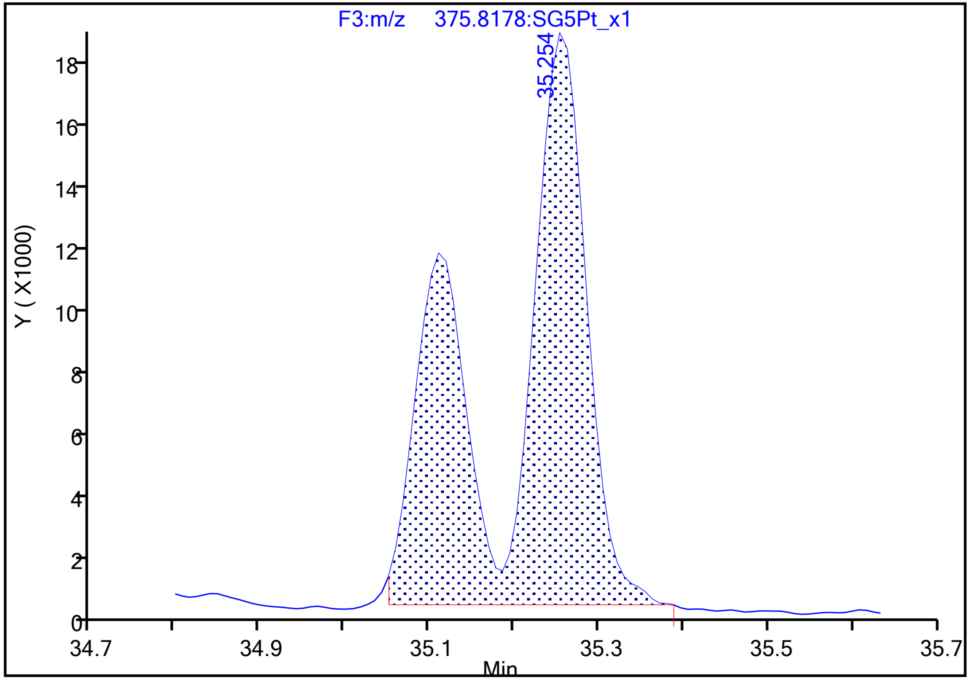

Manual Integration Results

RT:	35.25
Area:	72815
Amount:	3.111824
Amount Units:	pg/ul

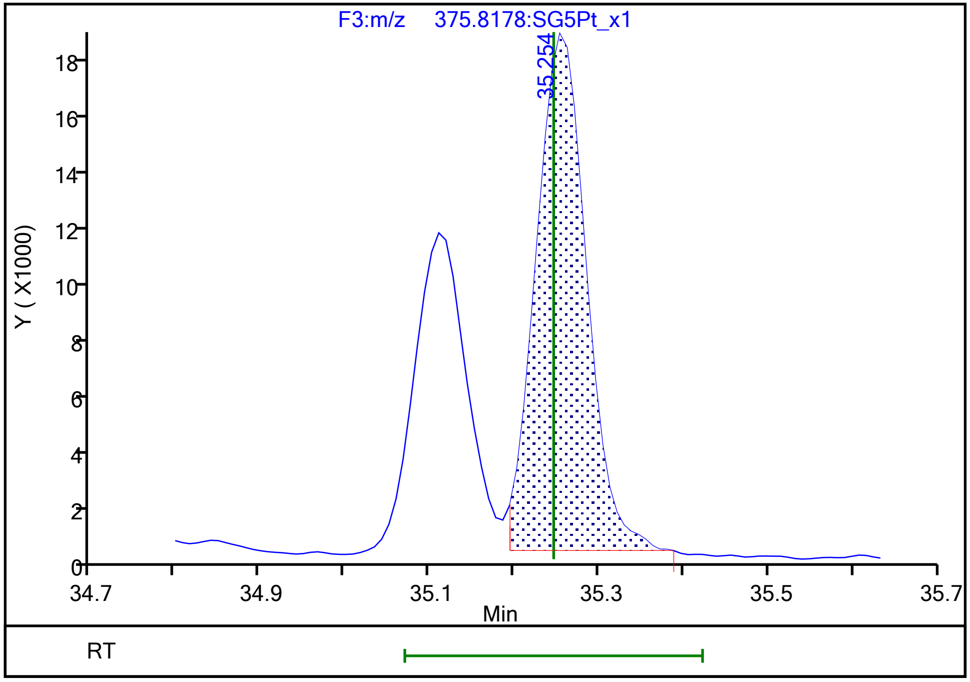

Reviewer: dadunj, 22-Sep-2020 10:42:34

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 22-Sep-2020 13:43:55

Chrom Revision: 2.3 16-Sep-2020 17:17:04
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d

Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	35.62
Area:	14483
Amount:	0.799528
Amount Units:	pg/ul

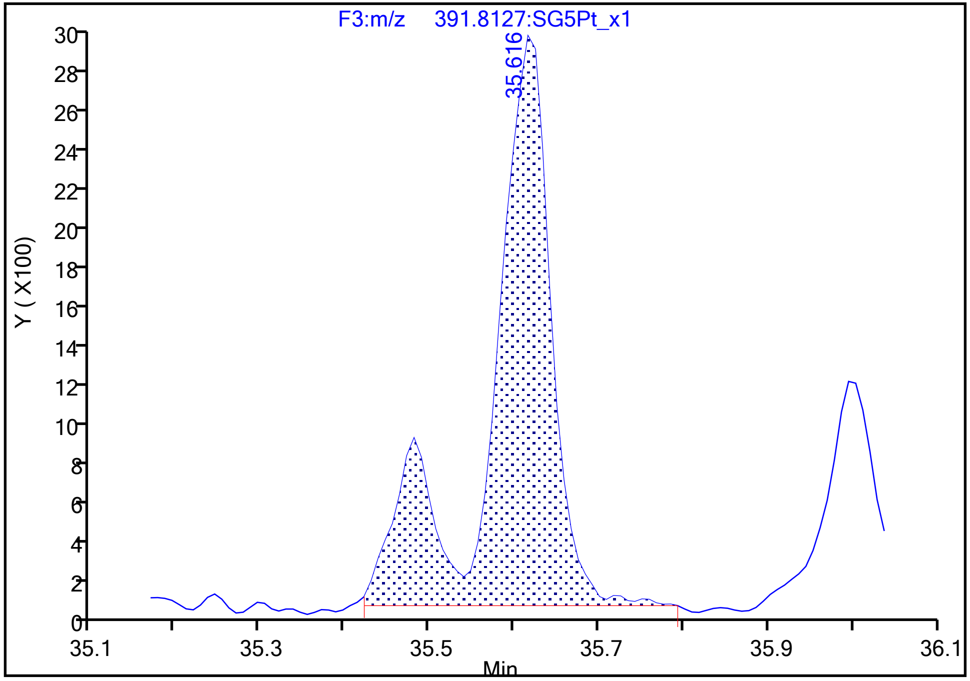

Manual Integration Results

RT:	35.48
Area:	2908
Amount:	0.187729
Amount Units:	pg/ul

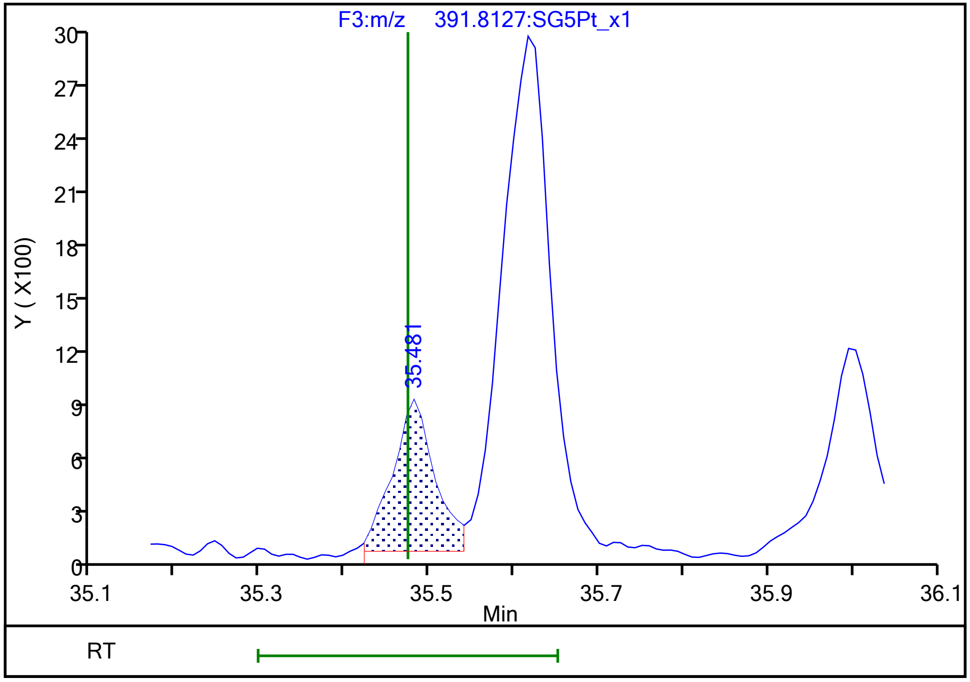

Reviewer: shardaa, 21-Sep-2020 11:21:40

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d
Injection Date: 20-Sep-2020 12:49:00 Instrument ID: DFS 1
Lims ID: 320-64049-A-4-B Lab Sample ID: 320-64049-4
Client ID: 11215702-Soil-Tank#2
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 56
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 35.62
Area: 13988
Amount: 0.799528
Amount Units: pg/ul

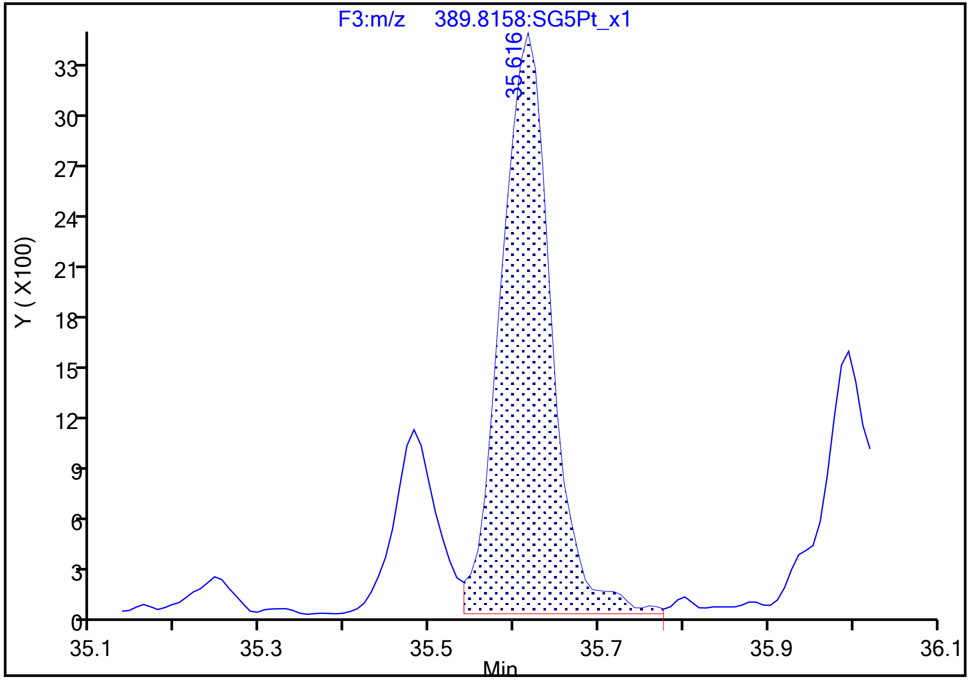

Manual Integration Results

RT: 35.48
Area: 3777
Amount: 0.187729
Amount Units: pg/ul

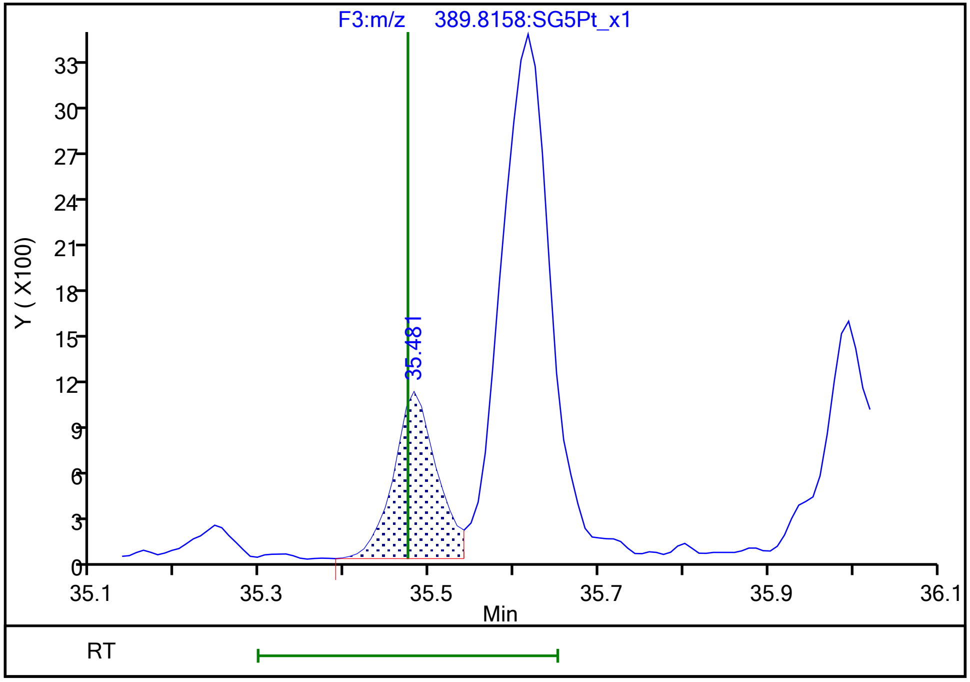

Reviewer: shardaa, 21-Sep-2020 11:21:46
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Poor chromatography

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d				
Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	35.62
Area:	14483
Amount:	0.789996
Amount Units:	pg/ul

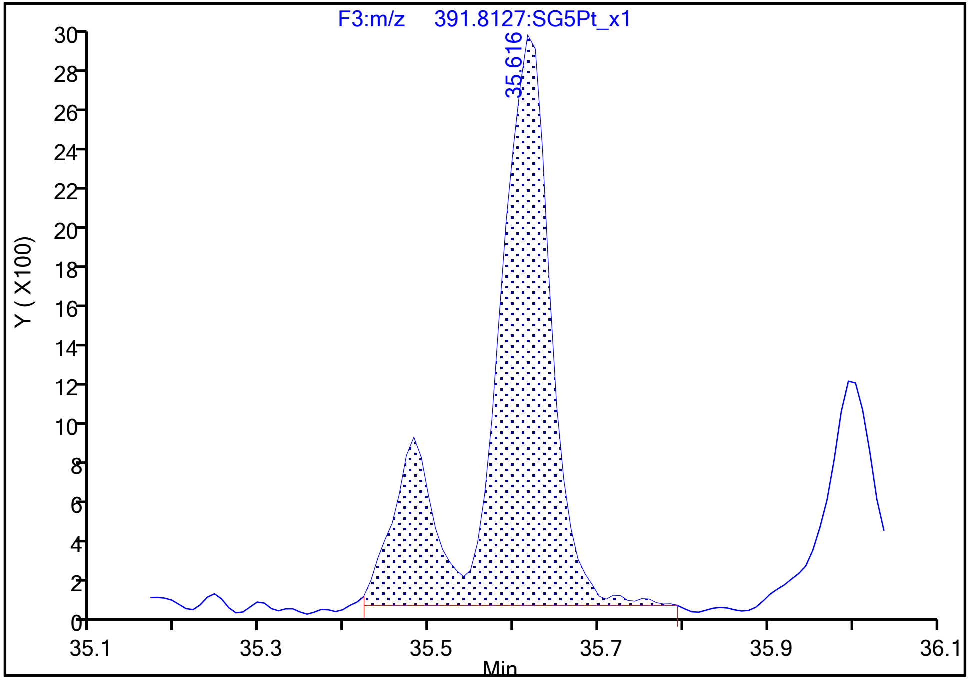

Manual Integration Results

RT:	35.62
Area:	11574
Amount:	0.709279
Amount Units:	pg/ul

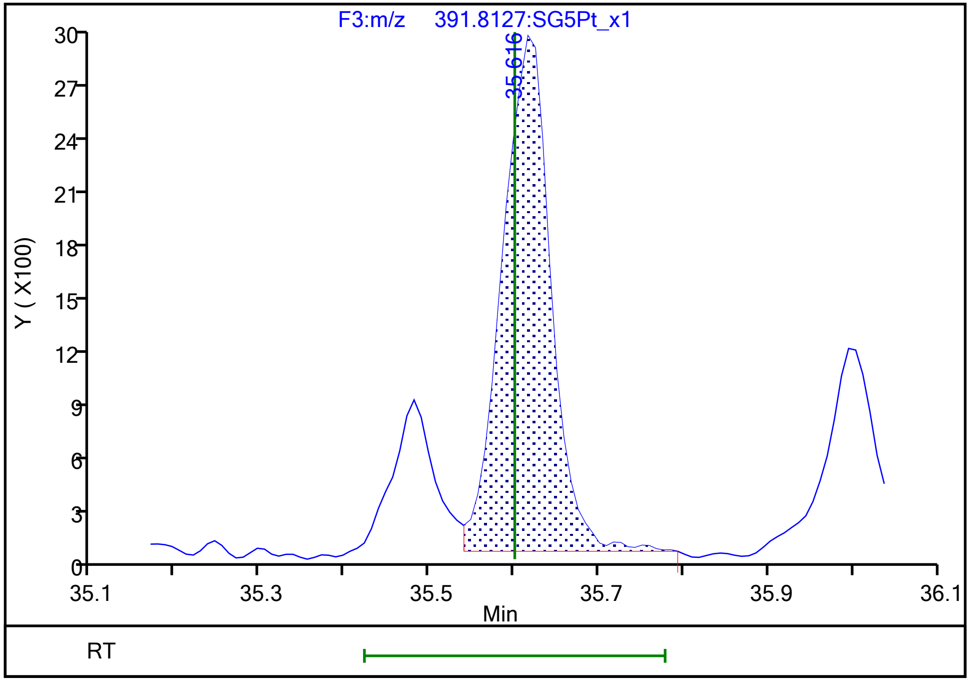

Reviewer: shardaa, 21-Sep-2020 11:21:40

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d				
Injection Date:	20-Sep-2020 12:49:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	56
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (33.35- 35.99)

Signal: 1

Processing Integration Results

RT = 34.630 Area = 38424

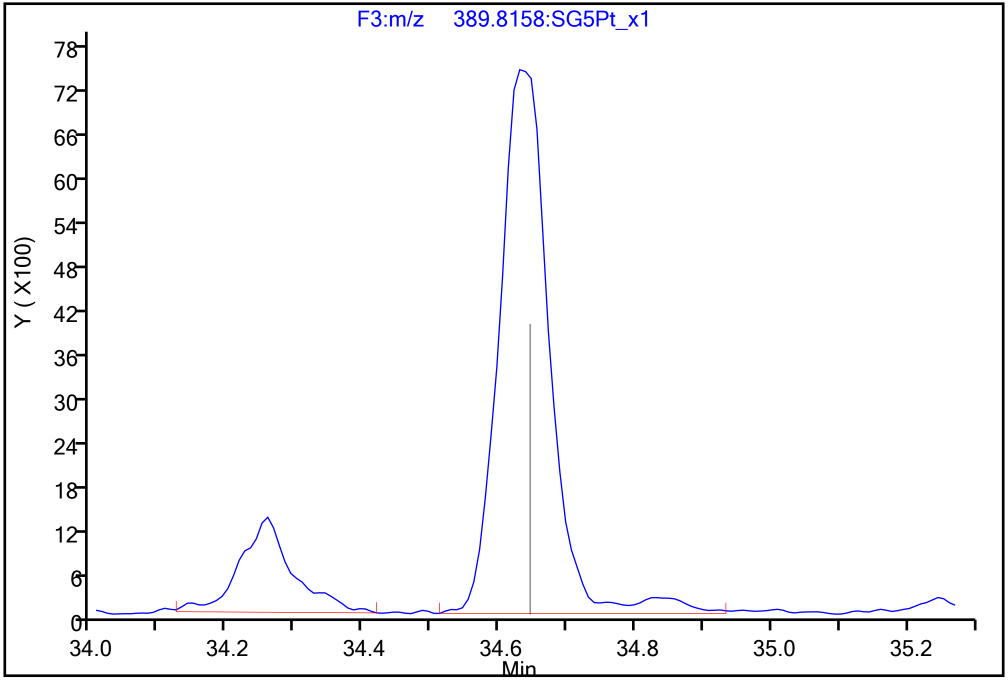

Manual Integration Results

RT = 34.630 Area = 37182 M

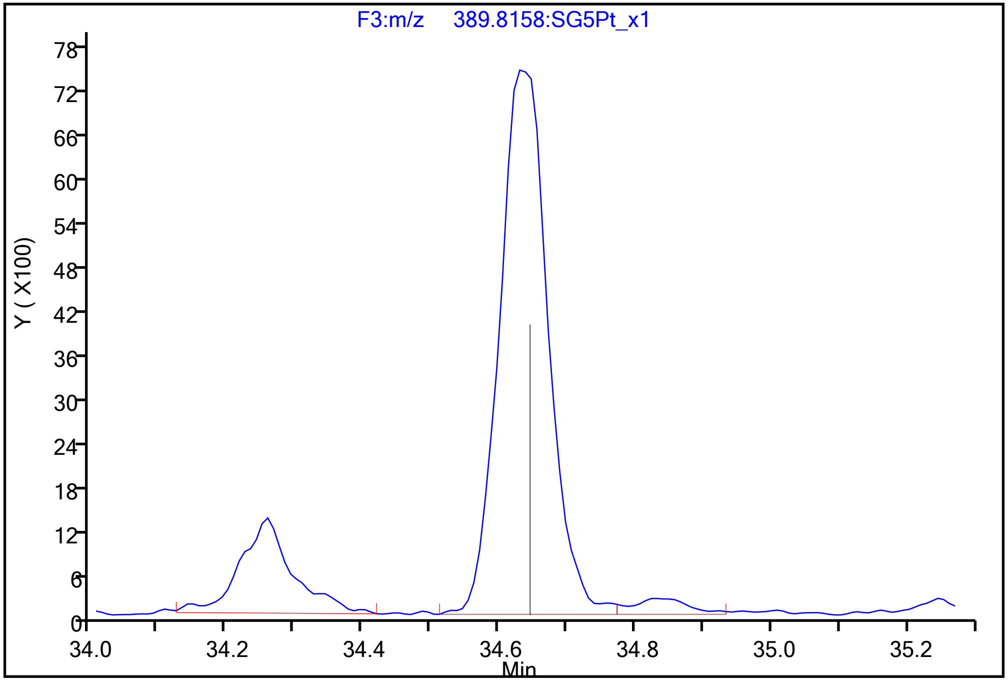

Reviewer: dadunj, 22-Sep-2020 10:43:05

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d

Injection Date: 20-Sep-2020 12:49:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Soil-Tank#2

Worklist#: 413813 Sample Line#: 56

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

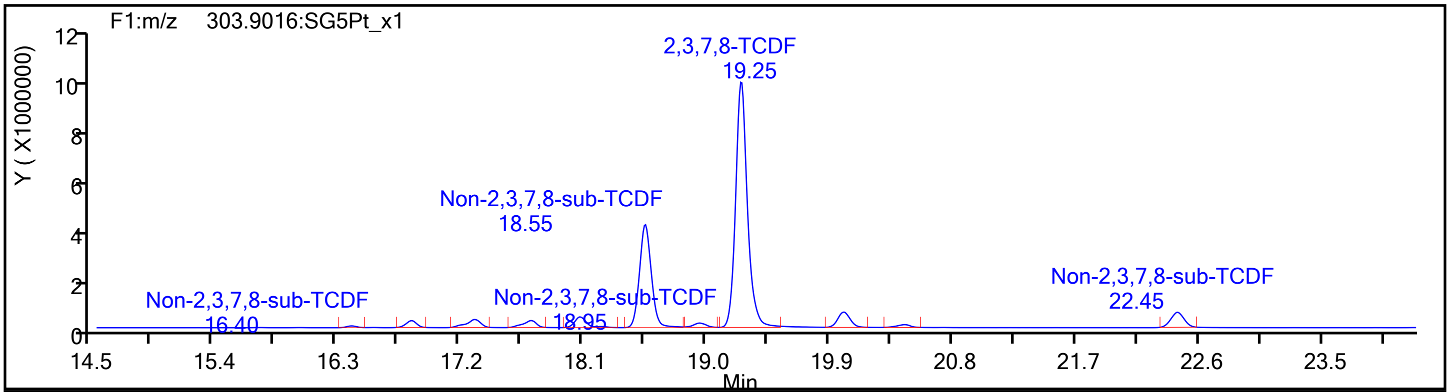

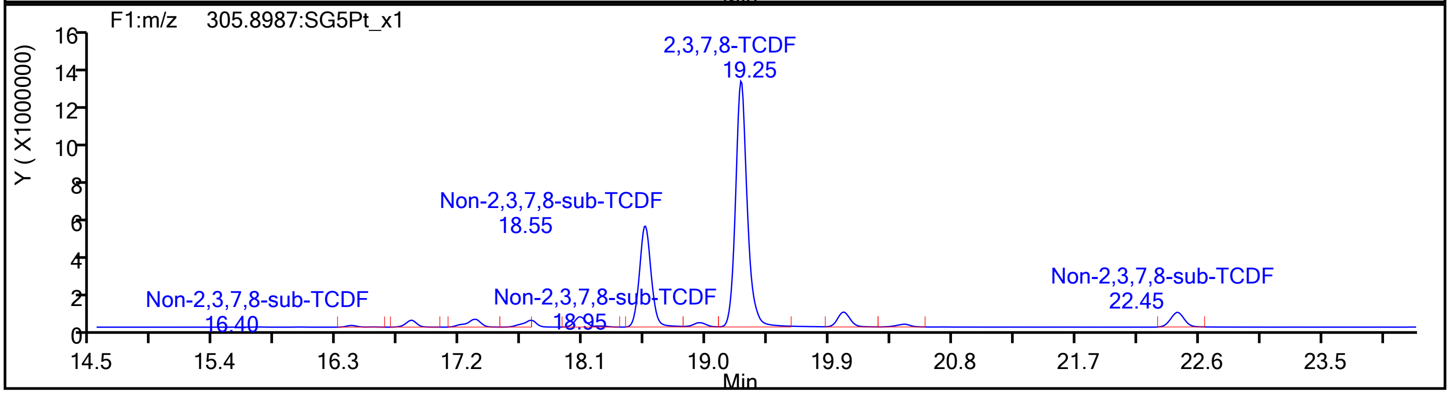

TCDF Standards

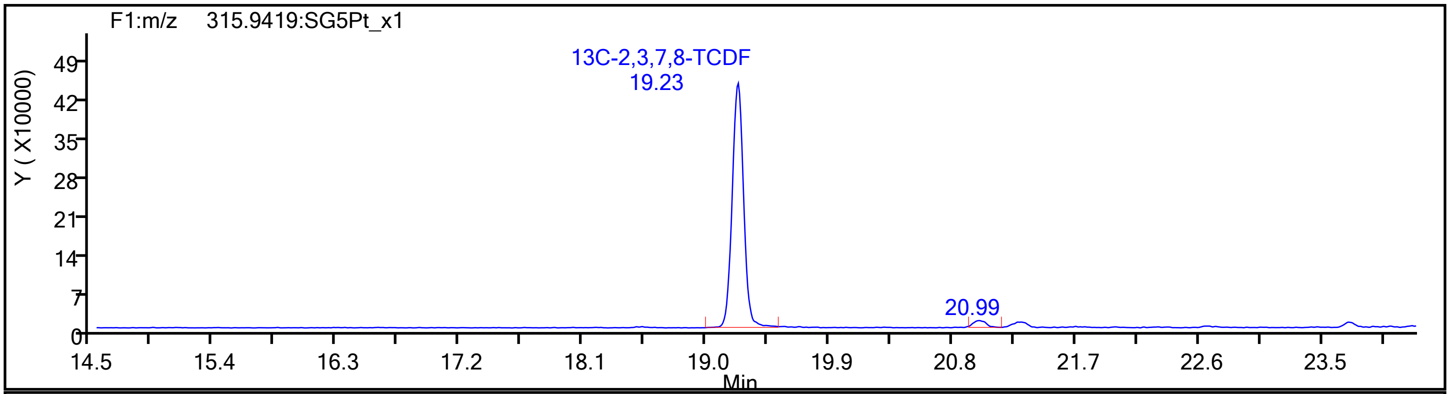

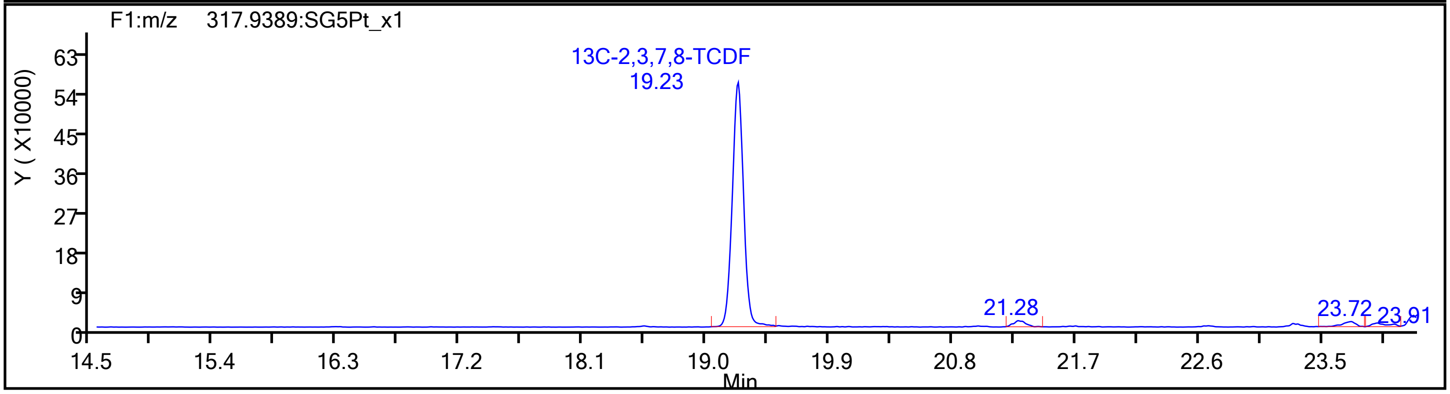

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d

Injection Date: 20-Sep-2020 12:49:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Soil-Tank#2

Worklist#: 413813
Sample Line#: 56

Column Type: DB-5
Column Dia: 0.32 mm

TCDF

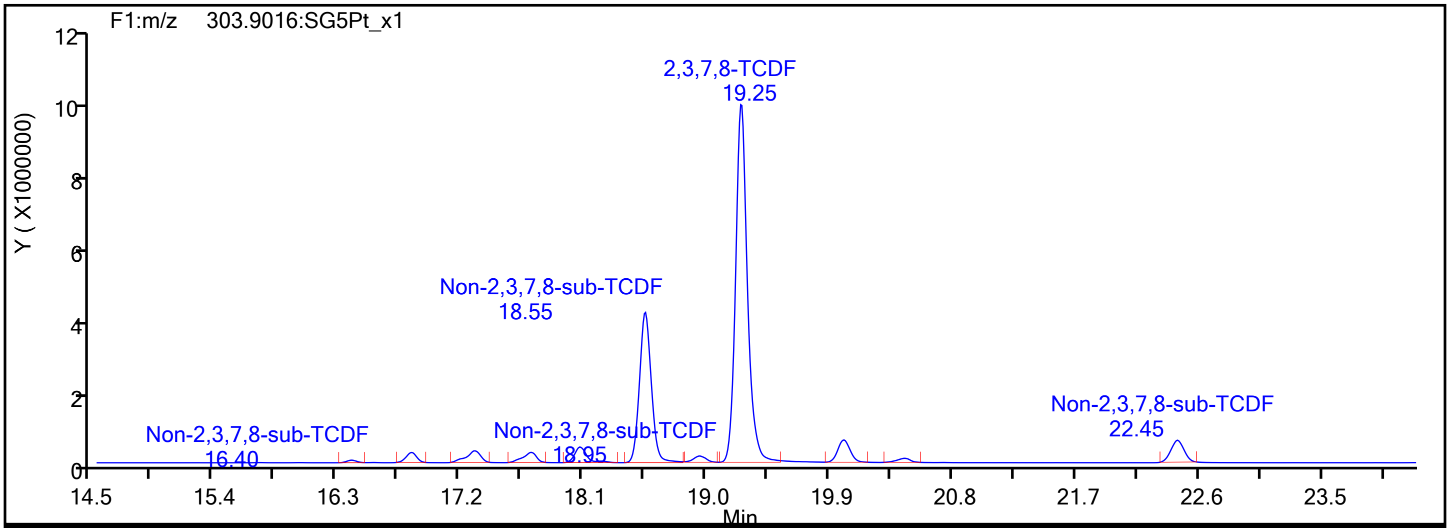

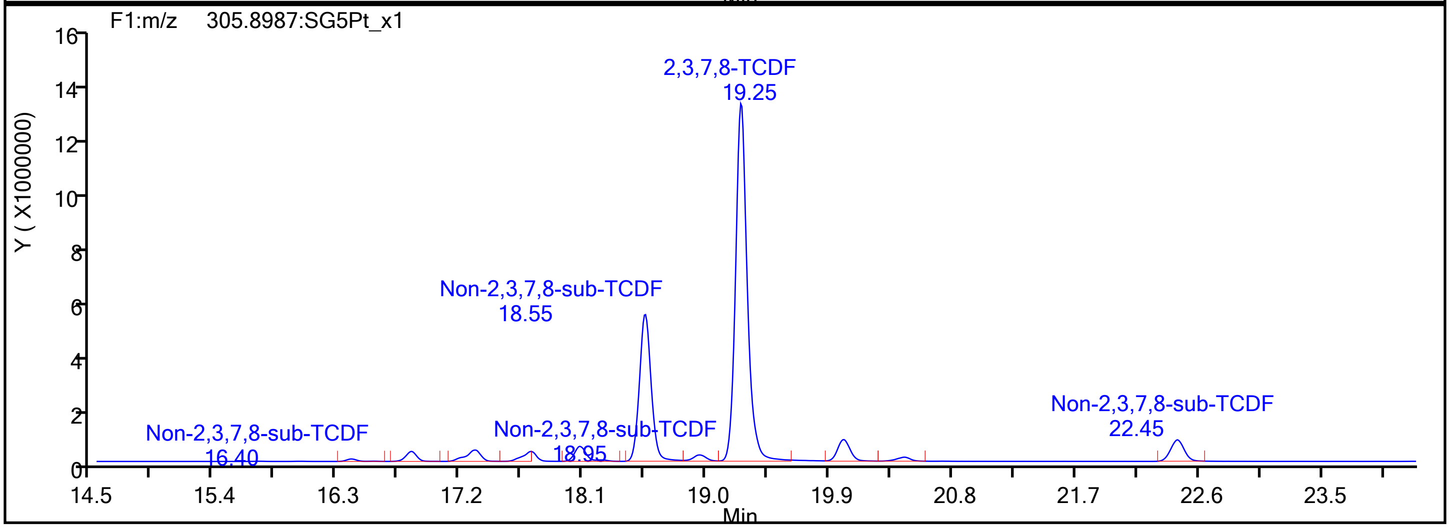

TCDF Interference Mass

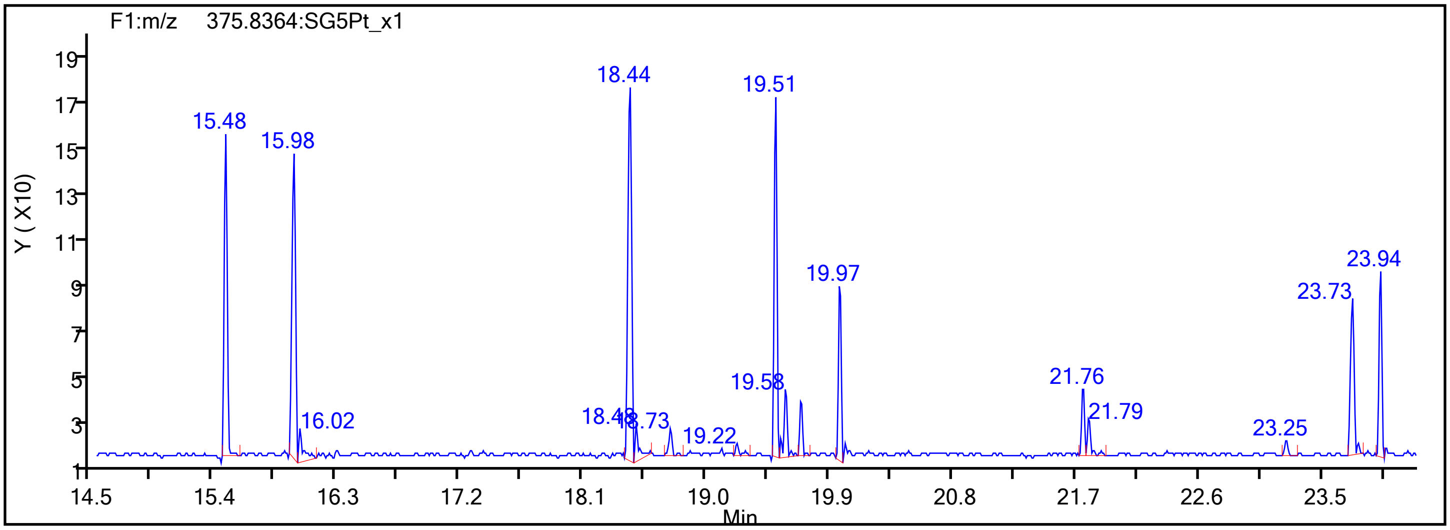

Report Date: 22-Sep-2020 13:43:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d
Injection Date: 20-Sep-2020 12:49:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#2
Worklist#: 413813
Sample Line#: 56
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

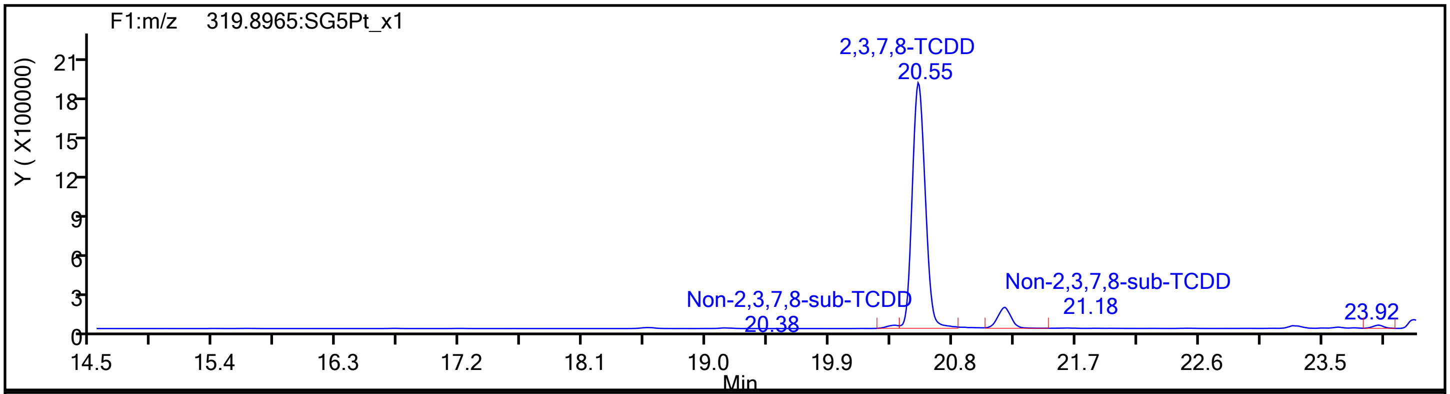

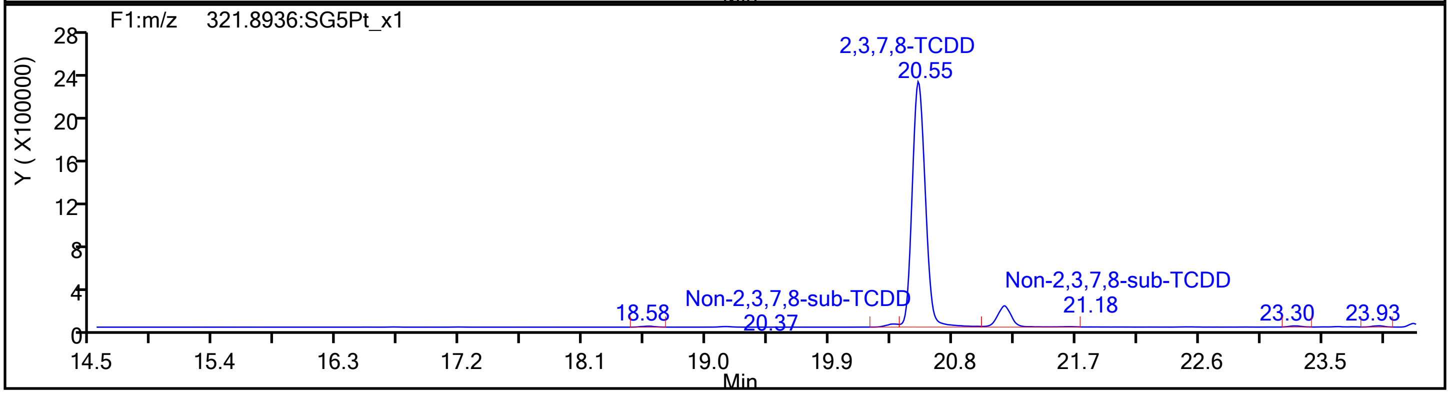

TCDD Standards

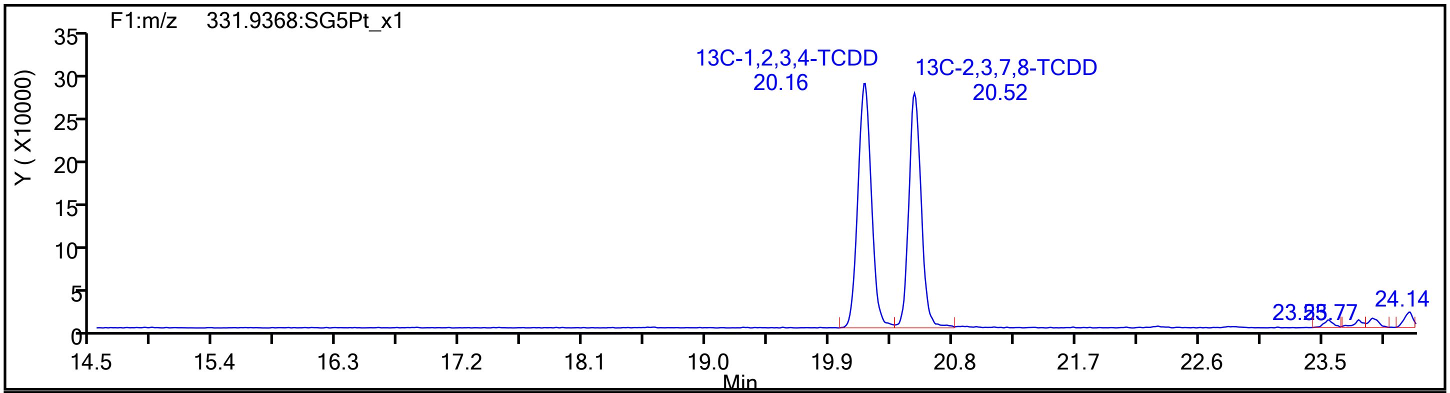

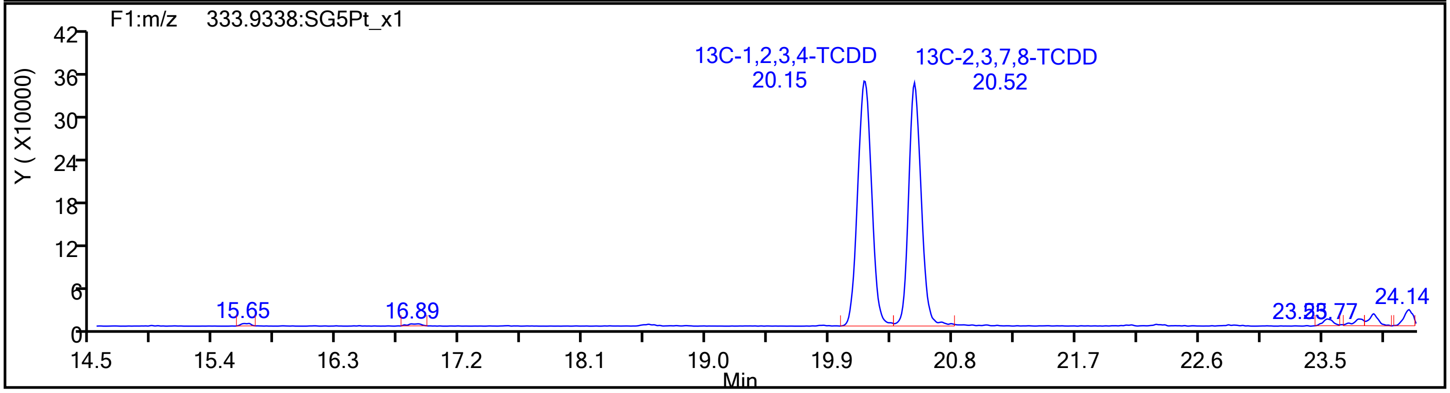

Report Date: 22-Sep-2020 13:43:55　　Chrom Revision: 2.3　16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d

Injection Date: 20-Sep-2020 12:49:00　　Injection Vol: 1.0 ul

Instrument ID: DFS 1　　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Soil-Tank#2

Worklist#: 413813　　Sample Line#: 56

Column Type: DB-5　　Column Dia: 0.32 mm

37Cl4-TCDD

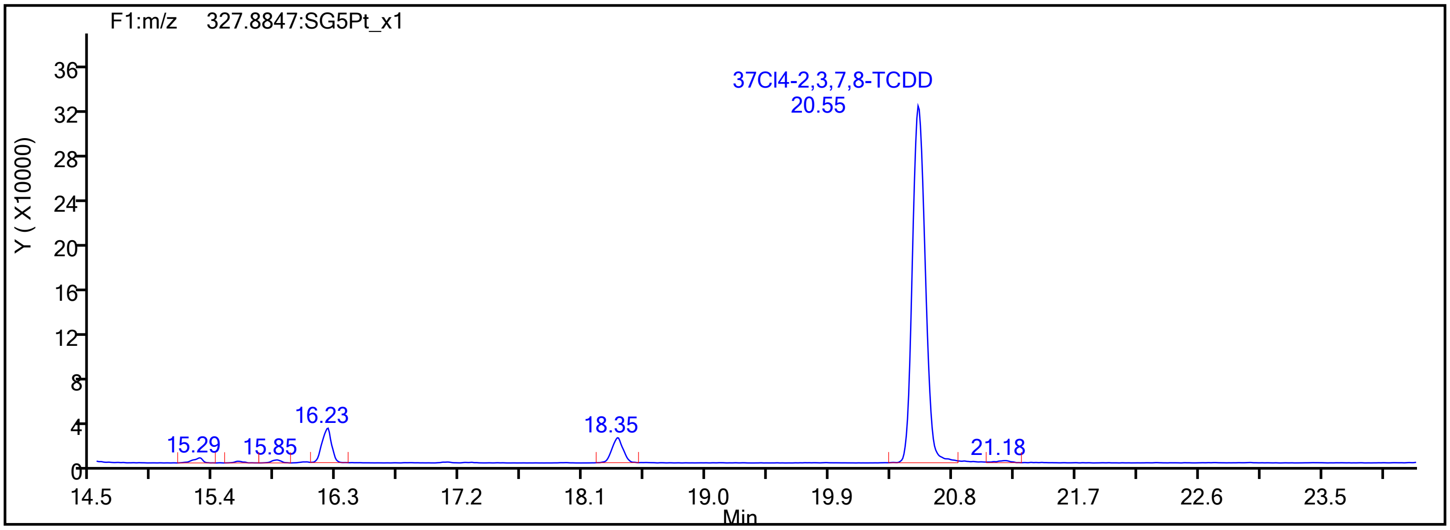

37Cl4-TCDD Standards

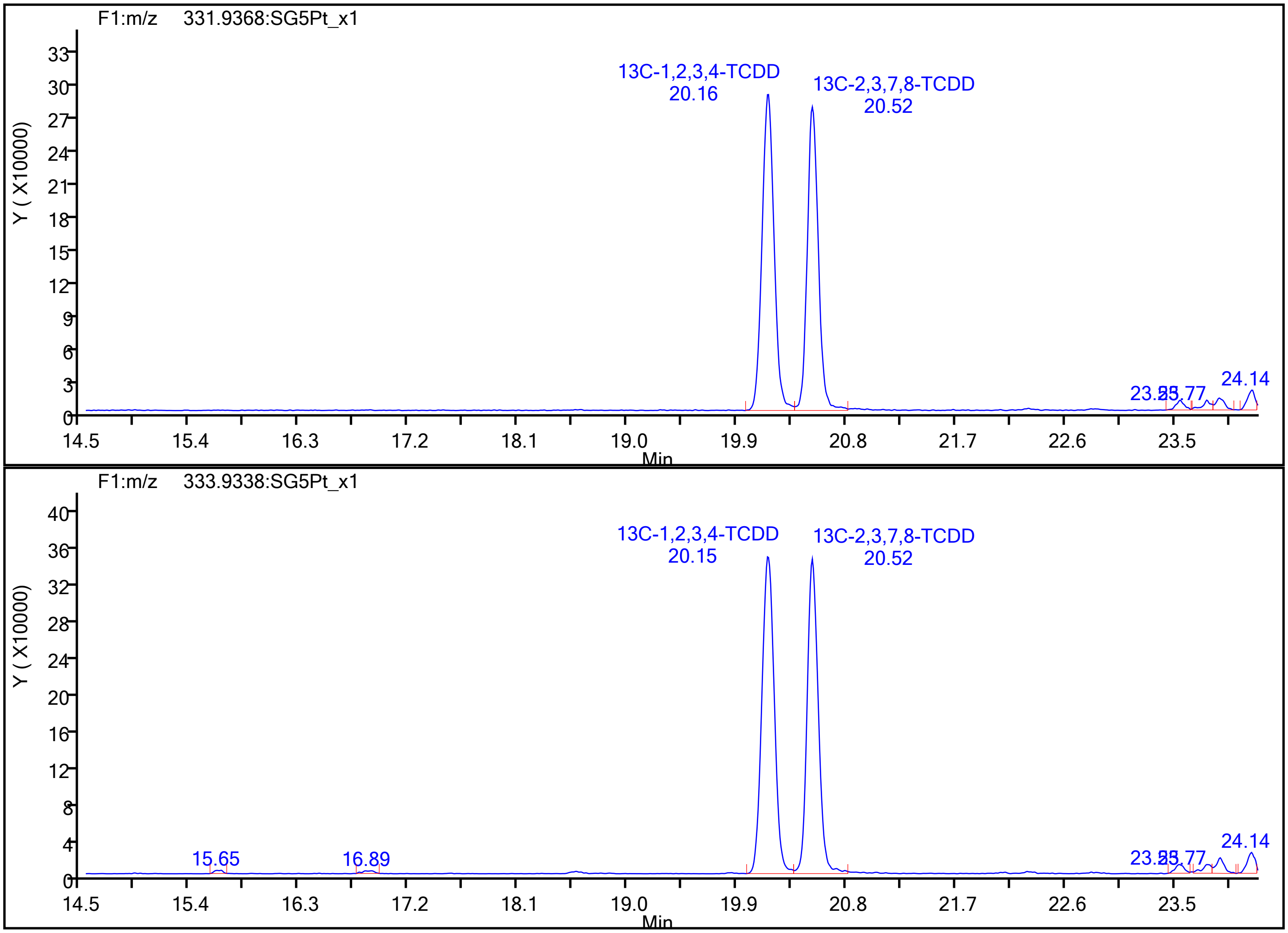

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

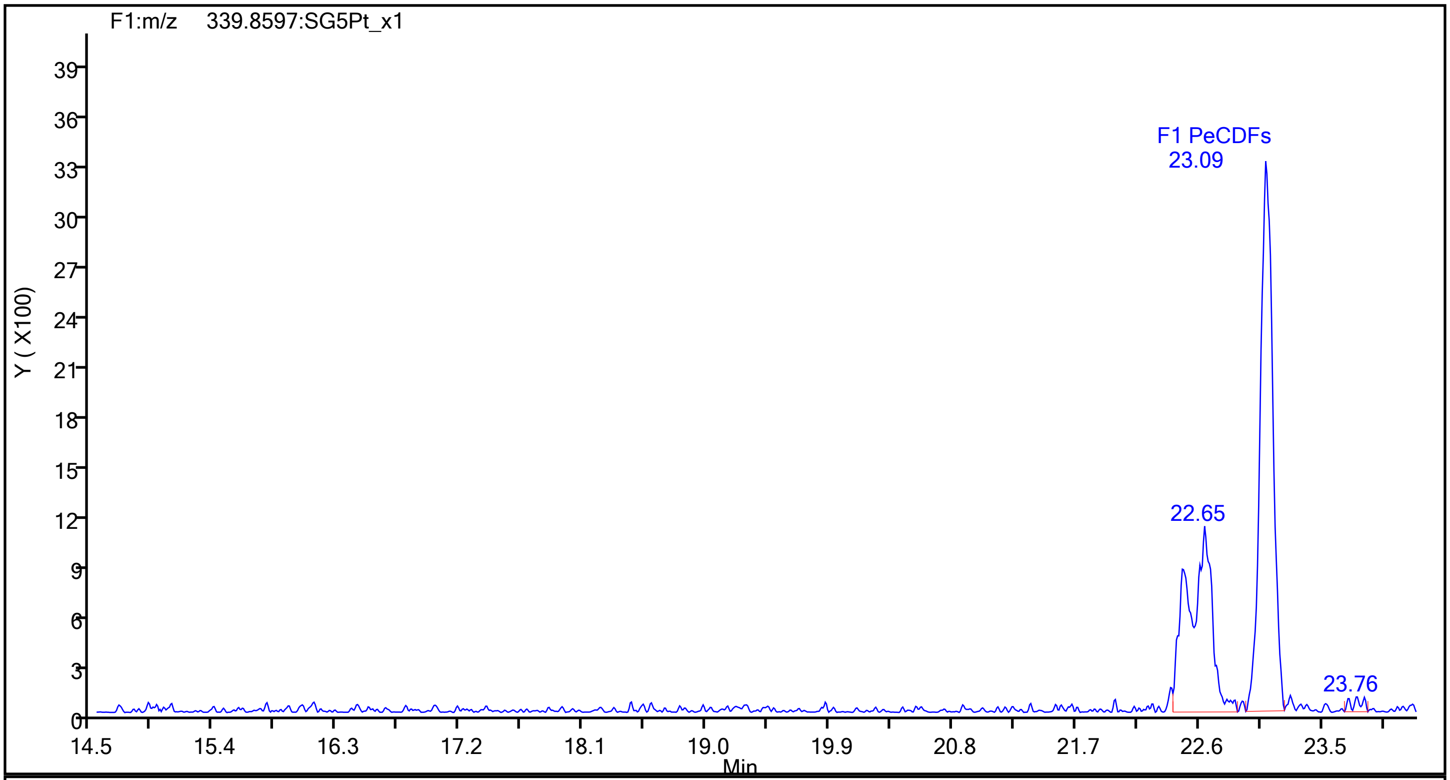

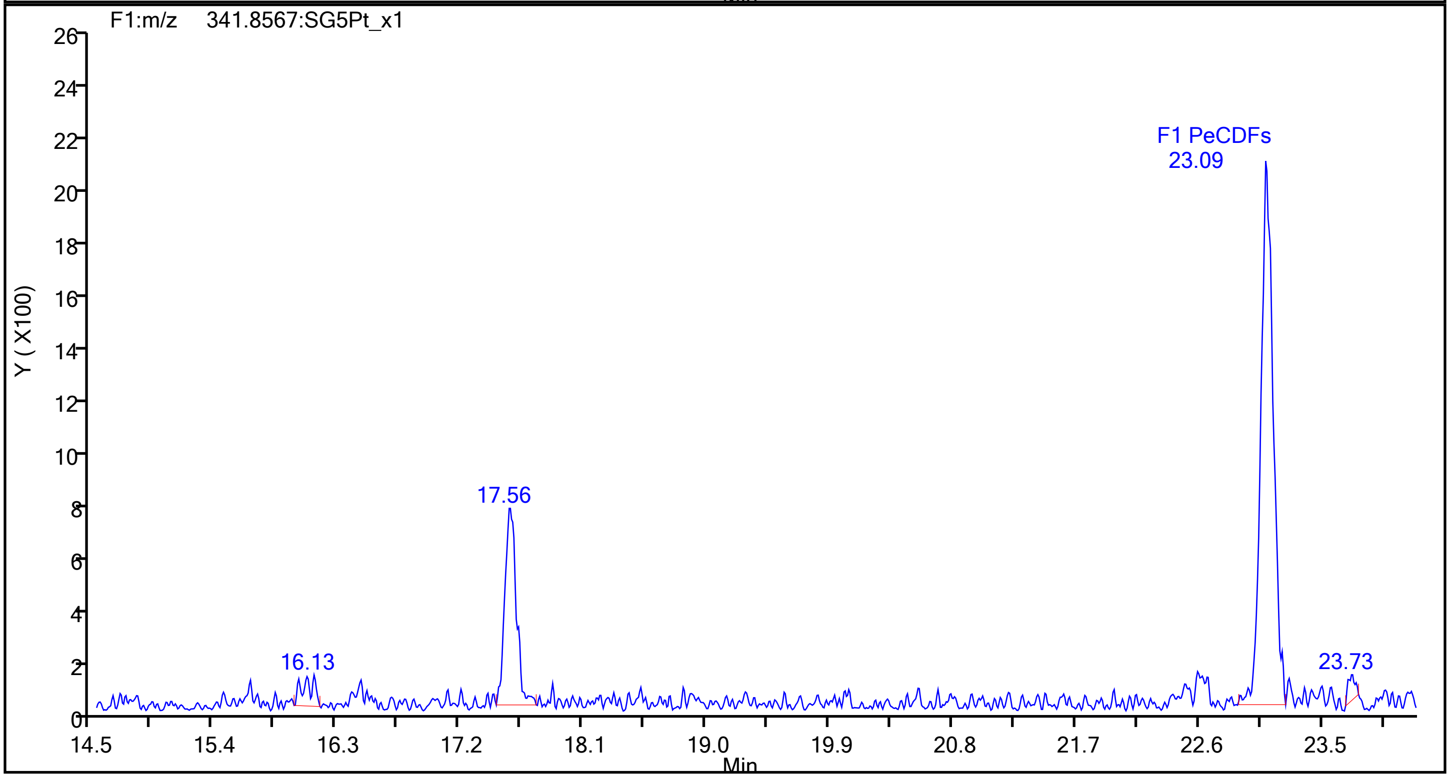

Report Date: 22-Sep-2020 13:43:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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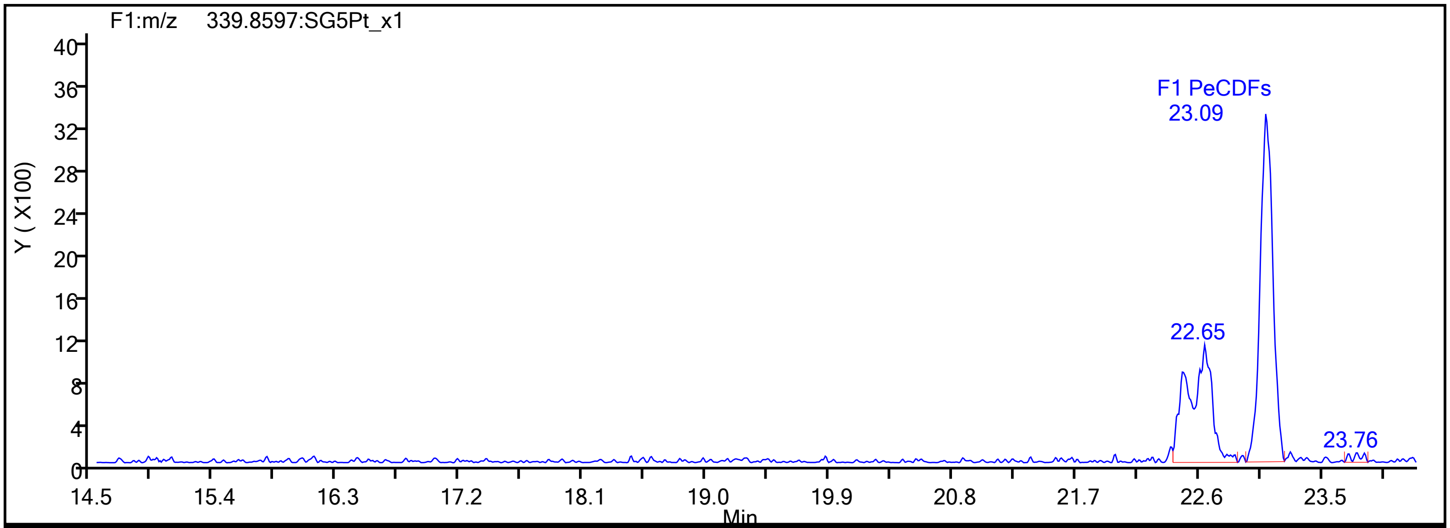

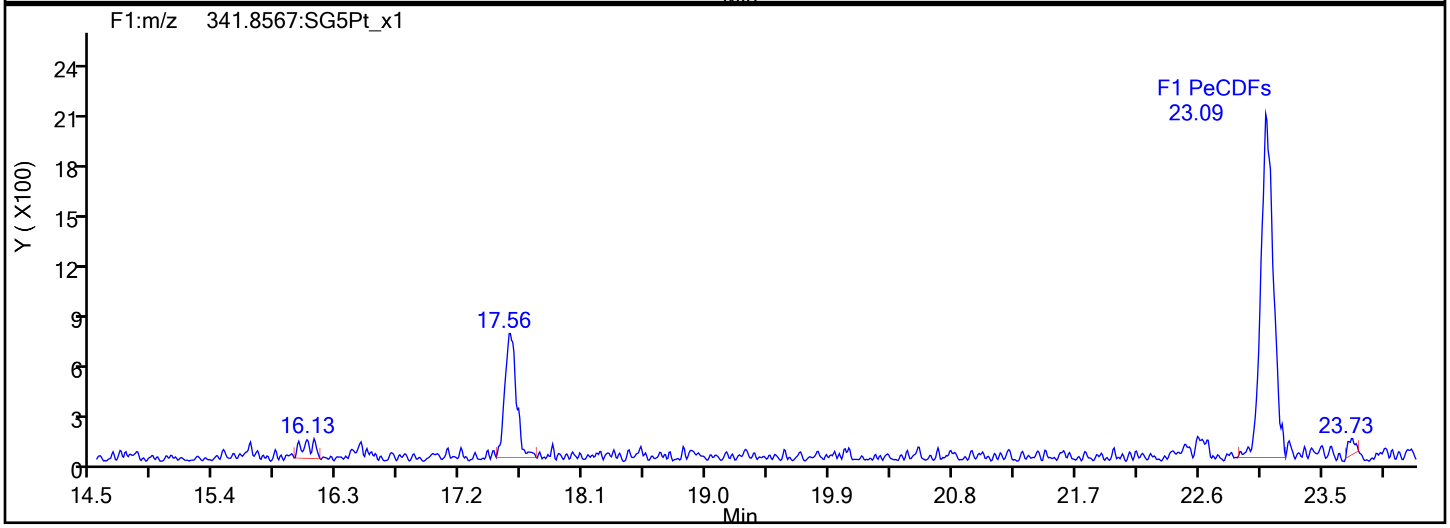

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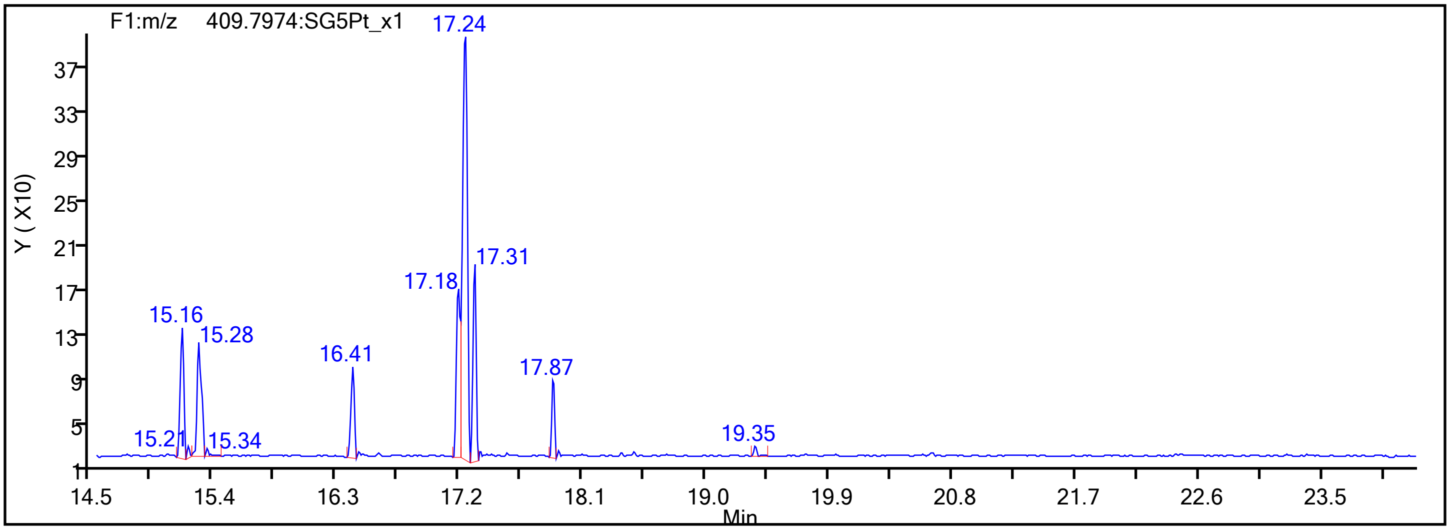

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Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
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PeCDF

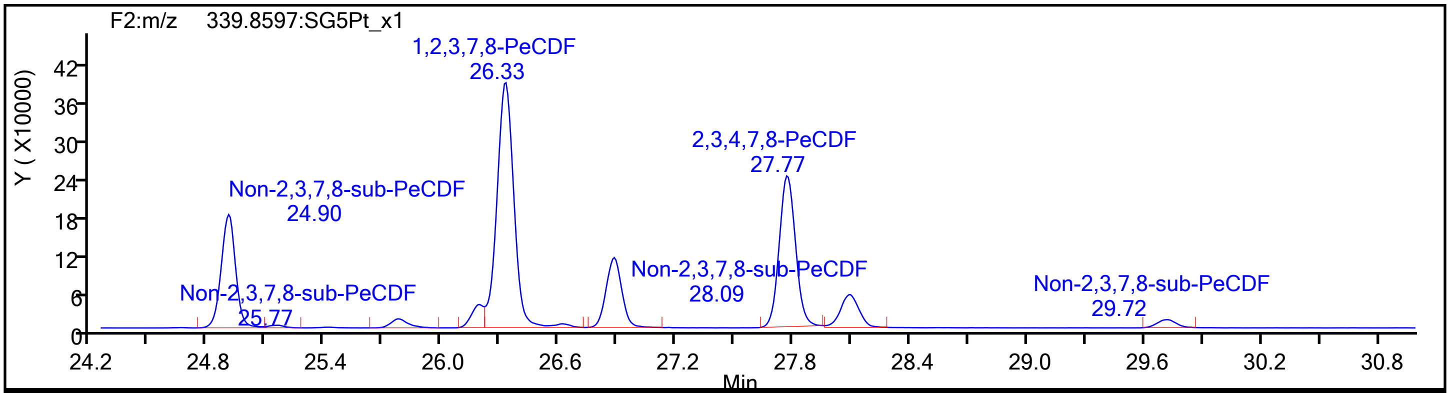

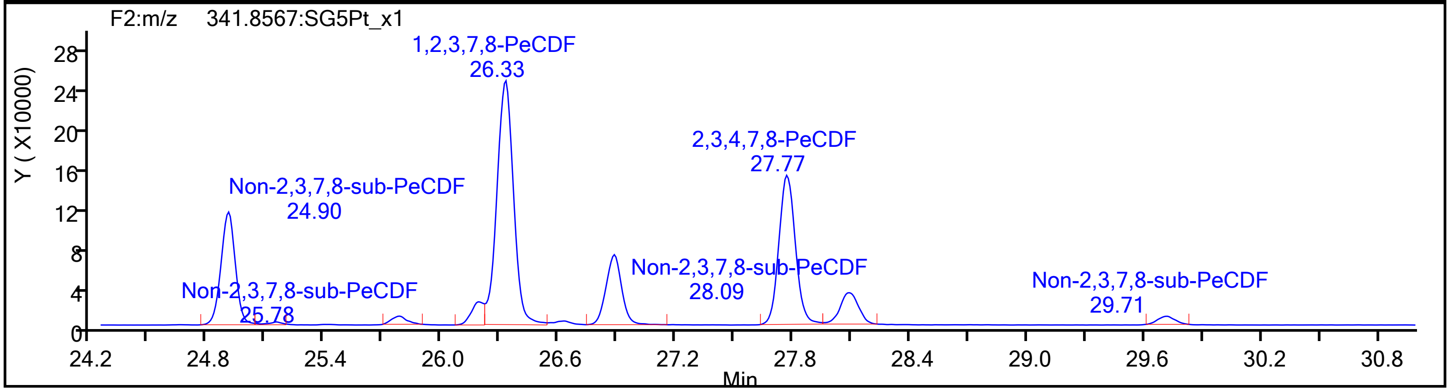

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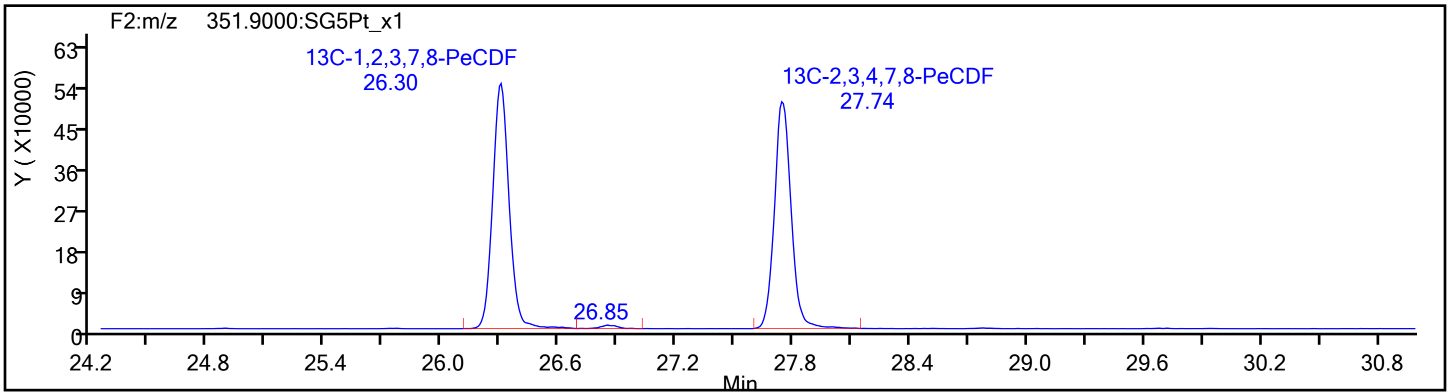

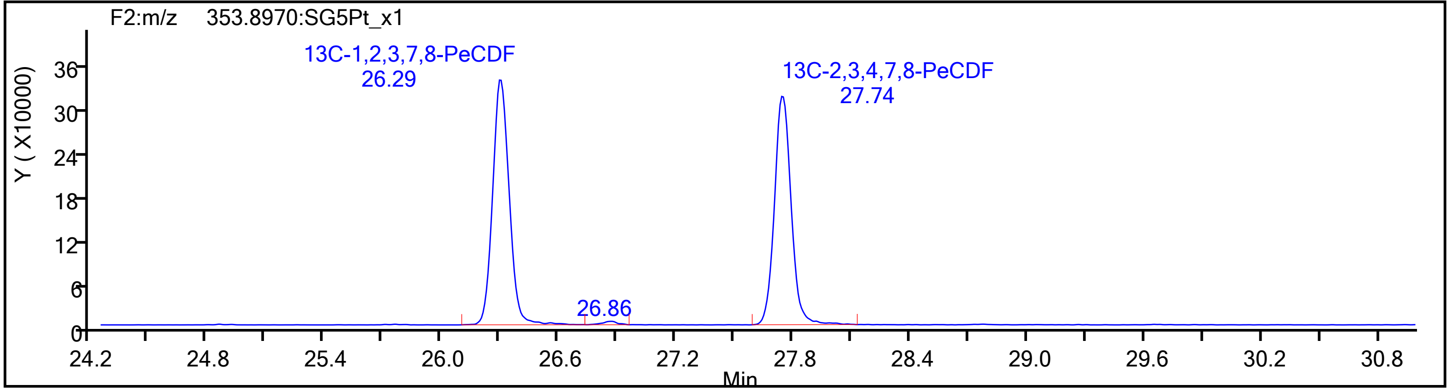

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Eurofins TestAmerica, Sacramento

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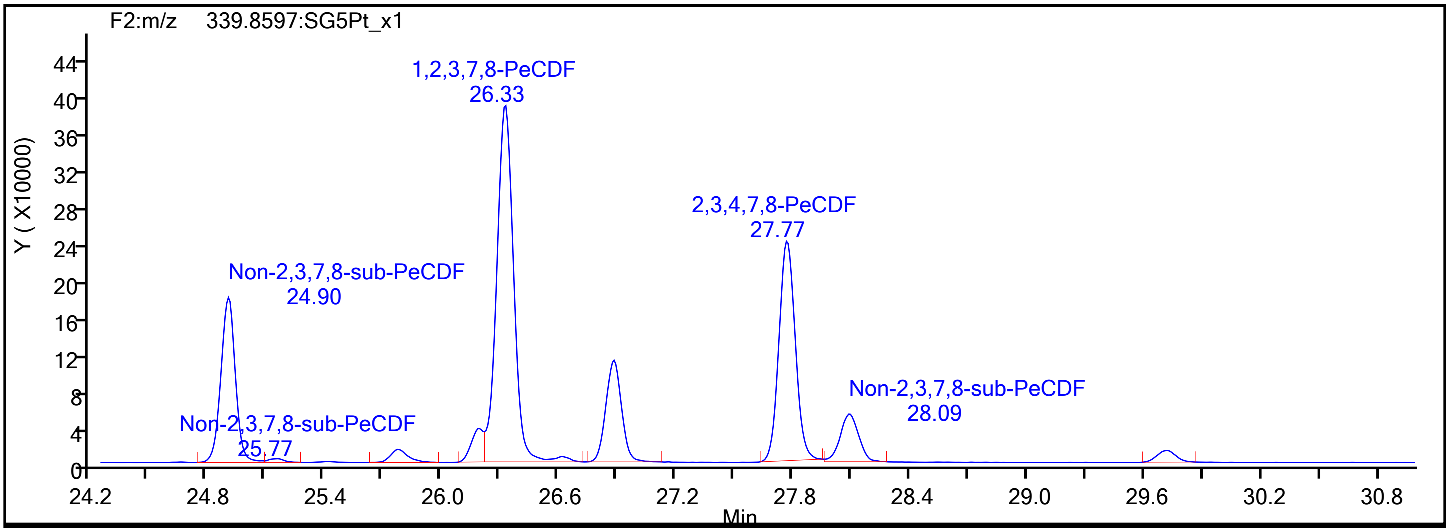

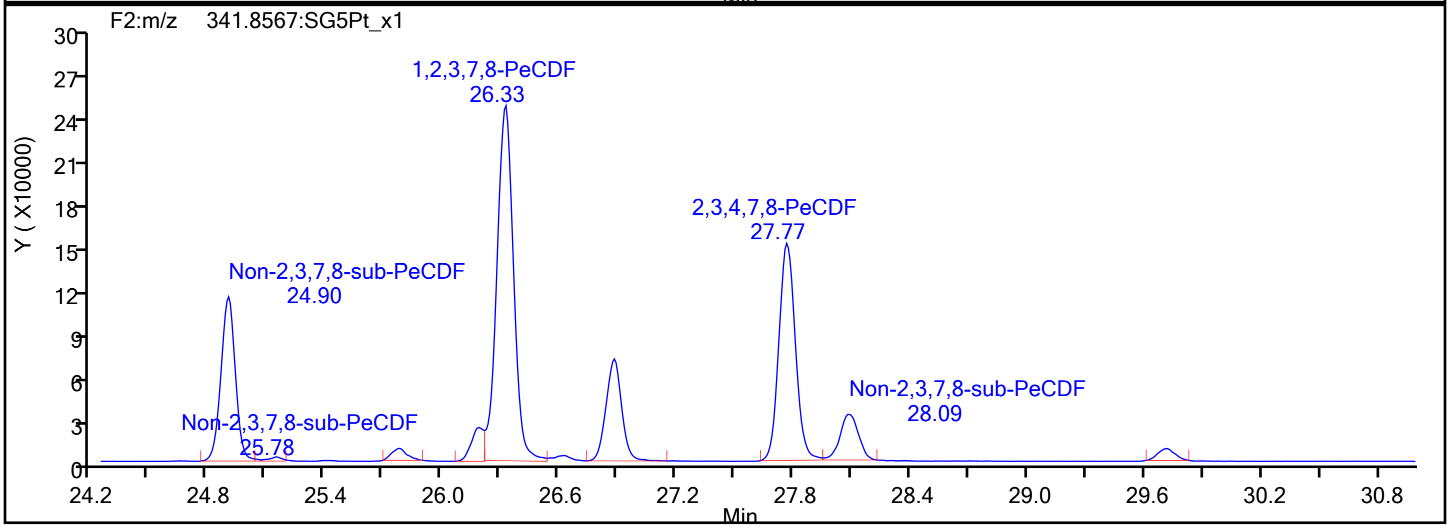

PeCDF Interference Mass

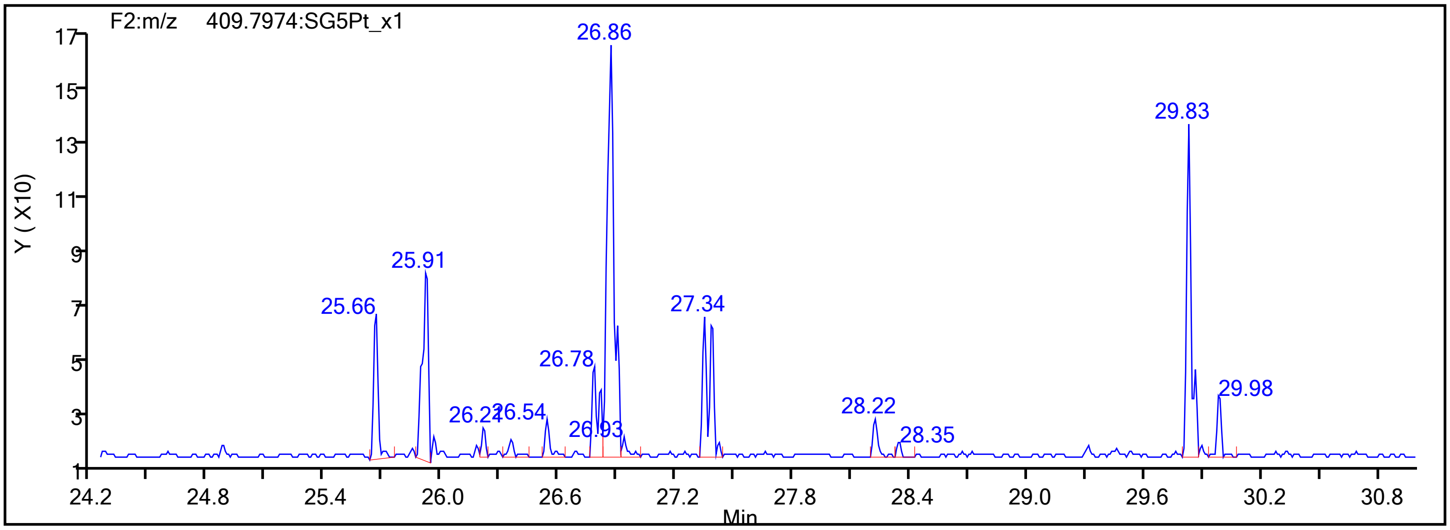

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Eurofins TestAmerica, Sacramento

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PeCDD

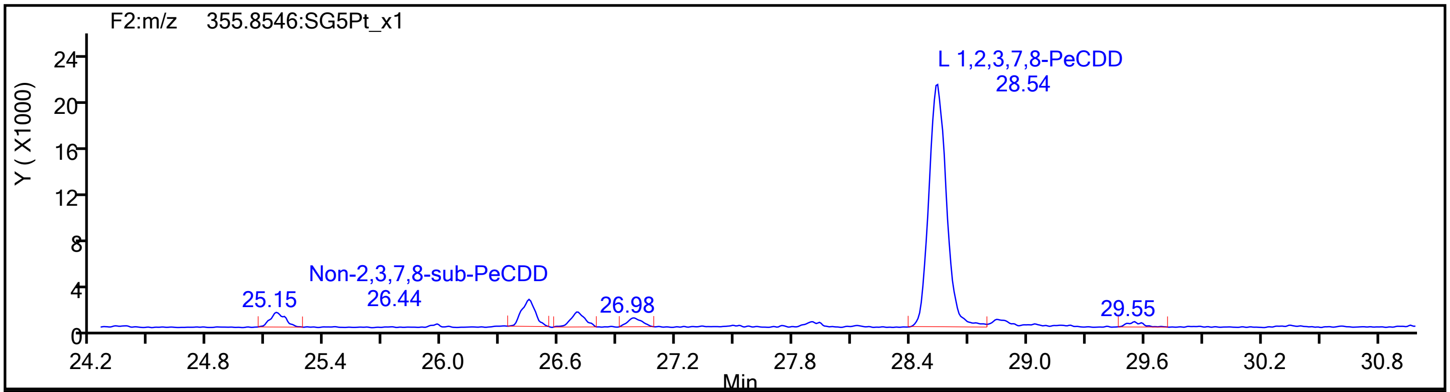

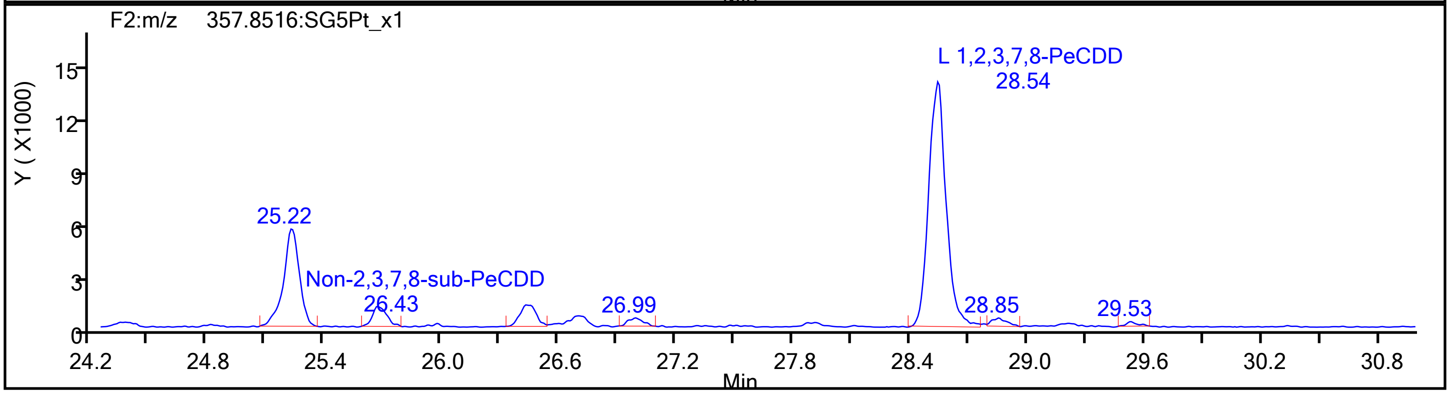

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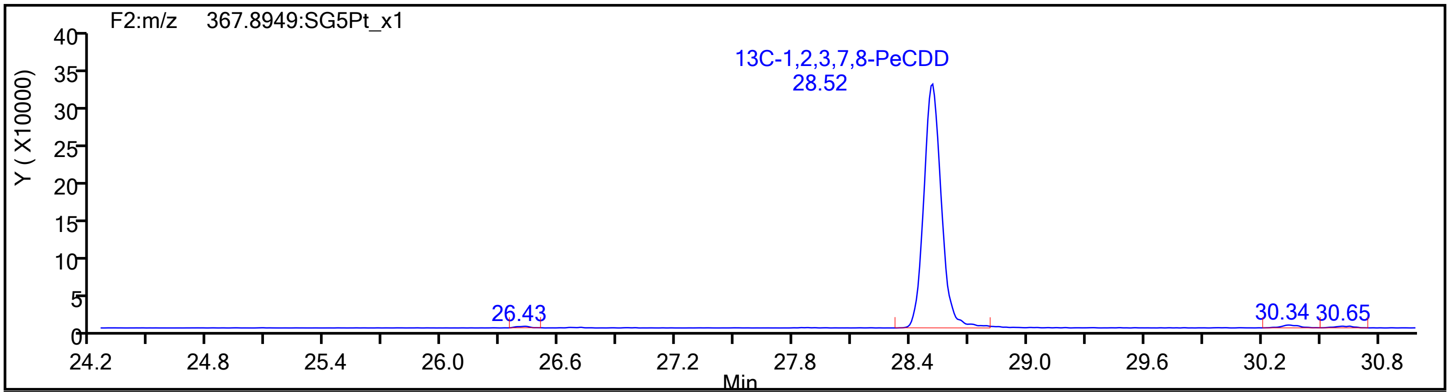

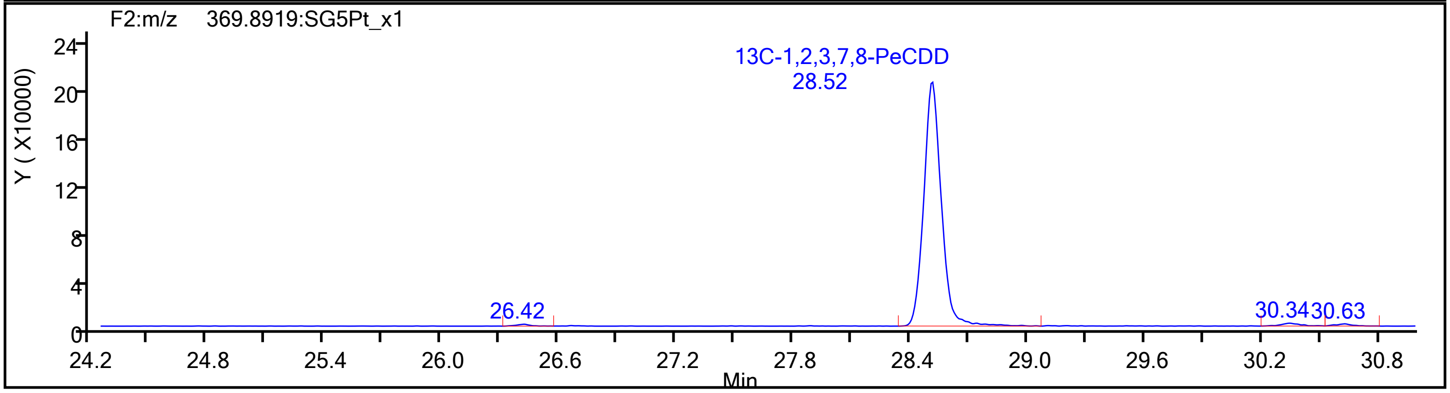

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Eurofins TestAmerica, Sacramento

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HxCDF

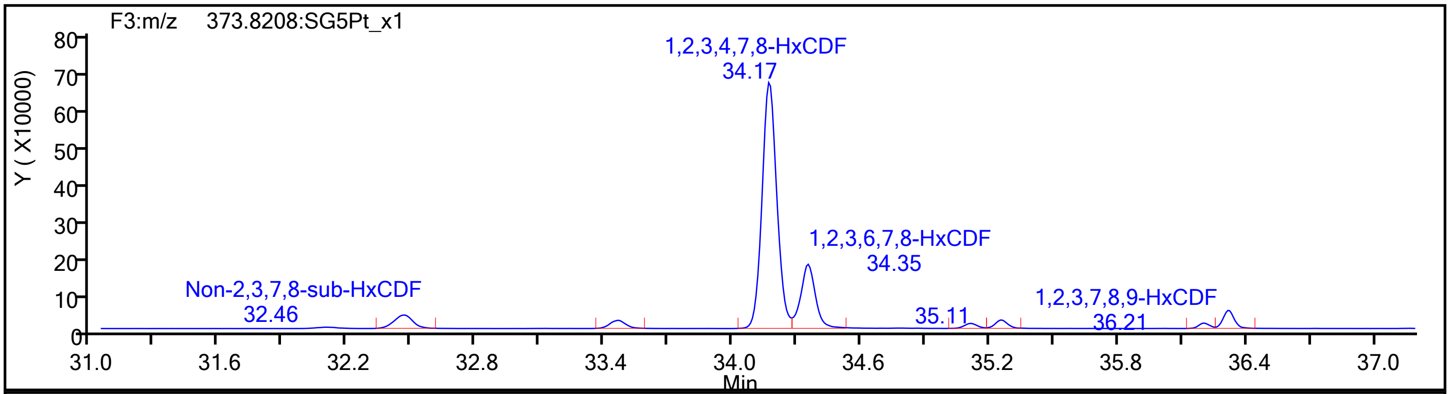

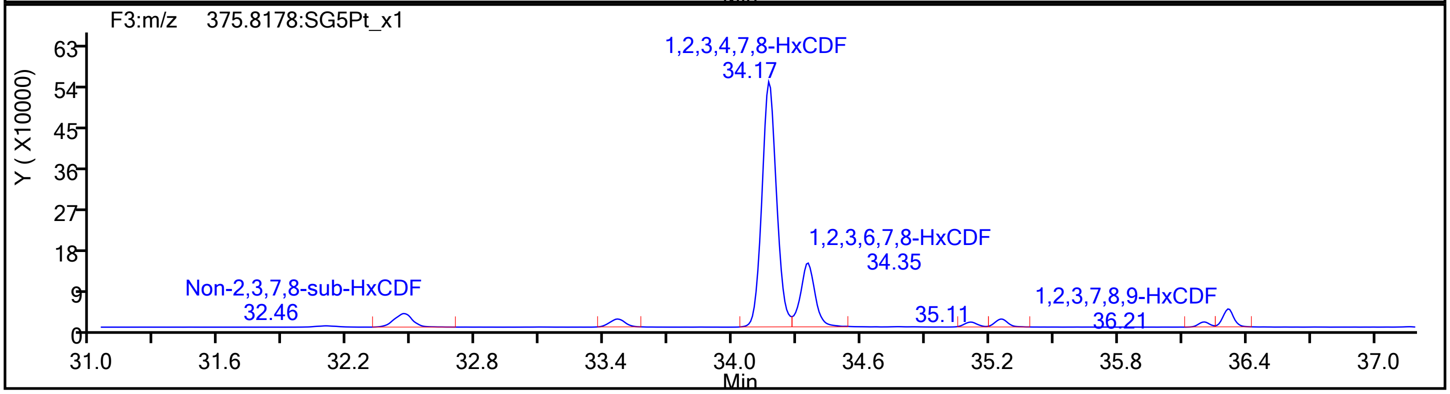

HxCDF Standards

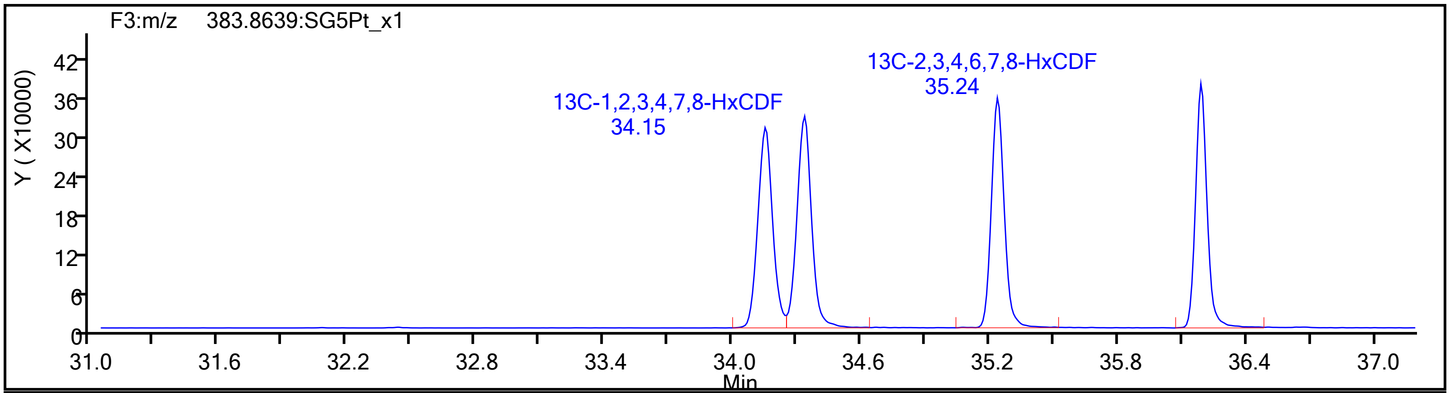

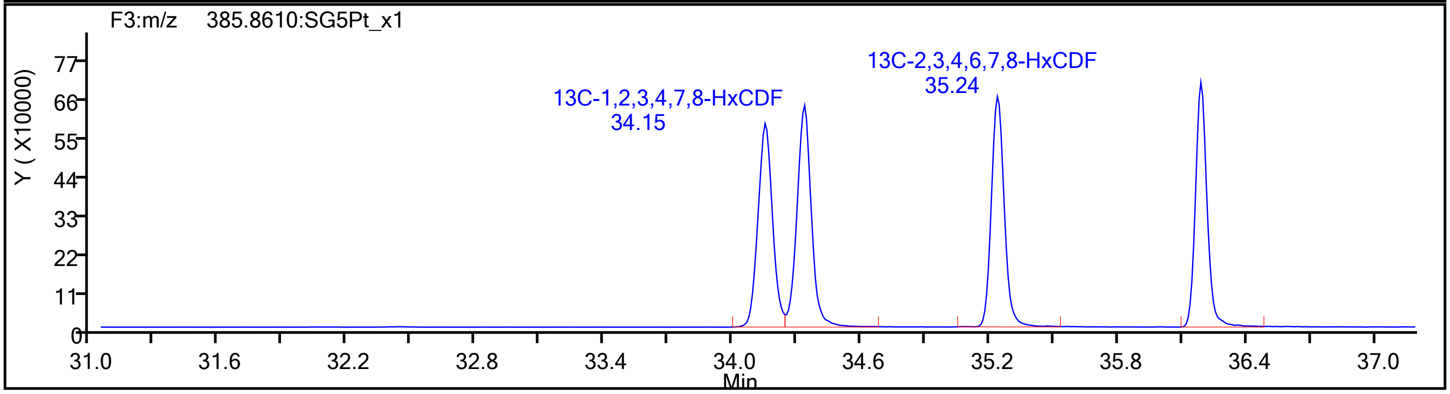

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d

Injection Date: 20-Sep-2020 12:49:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Soil-Tank#2

Worklist#: 413813 Sample Line#: 56

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

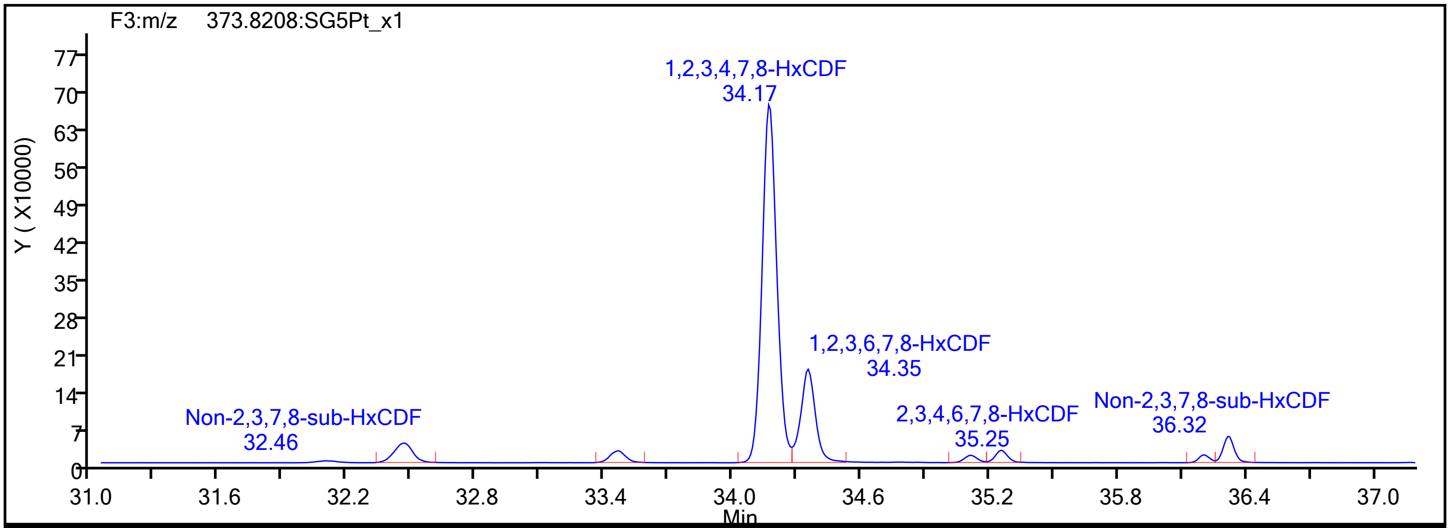

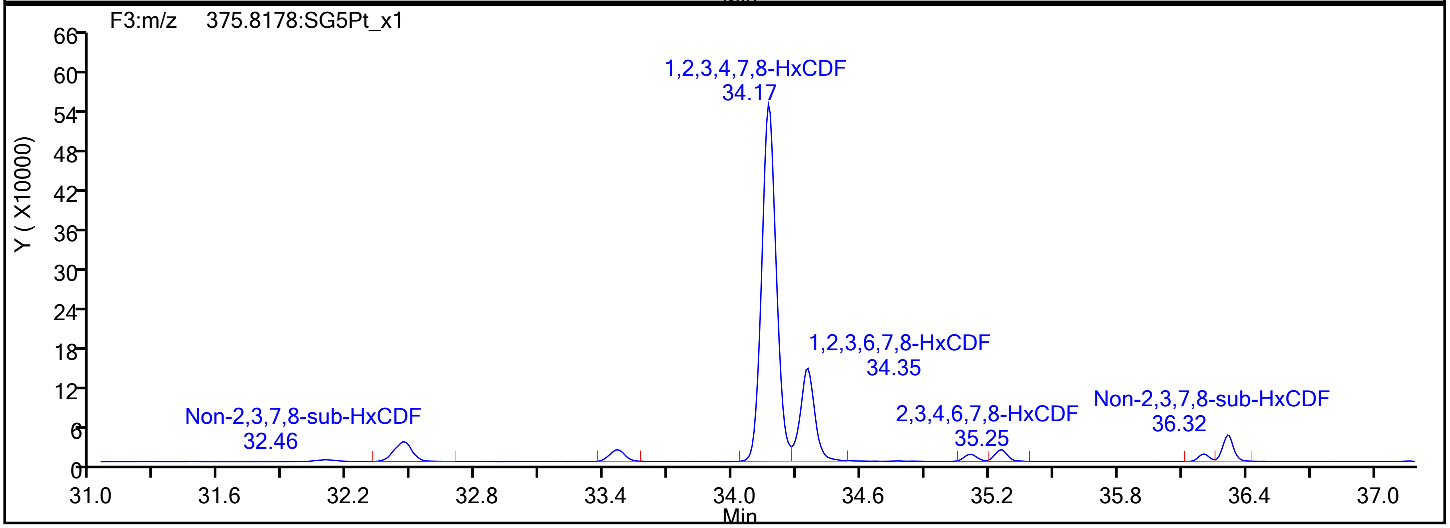

HxCDF Interference Mass

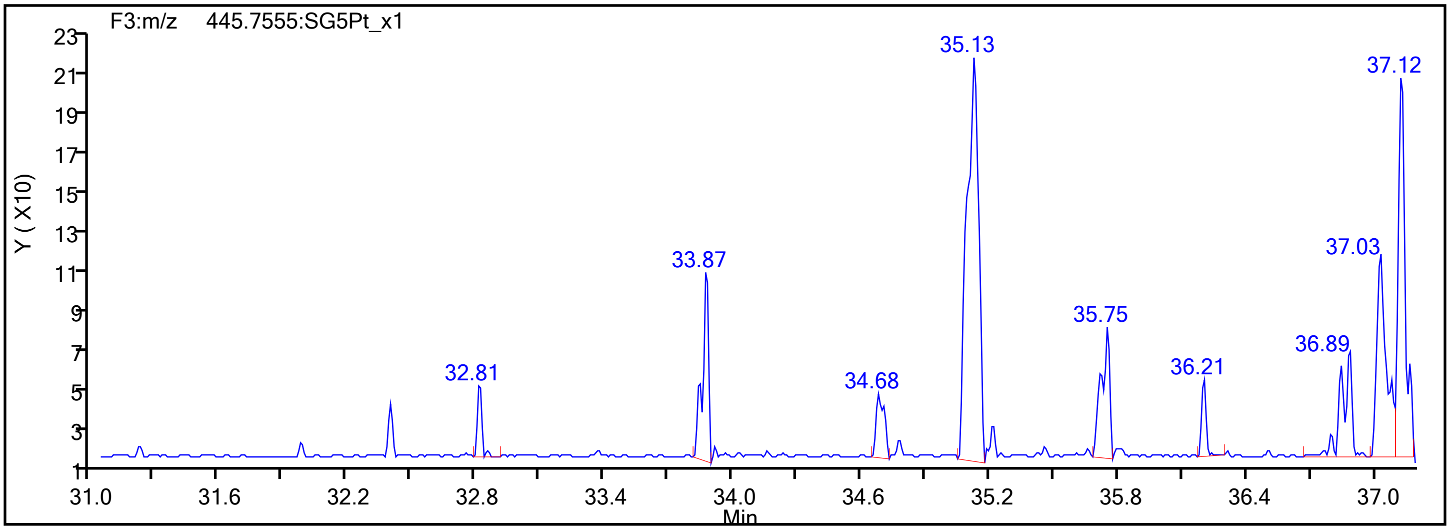

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Eurofins TestAmerica, Sacramento

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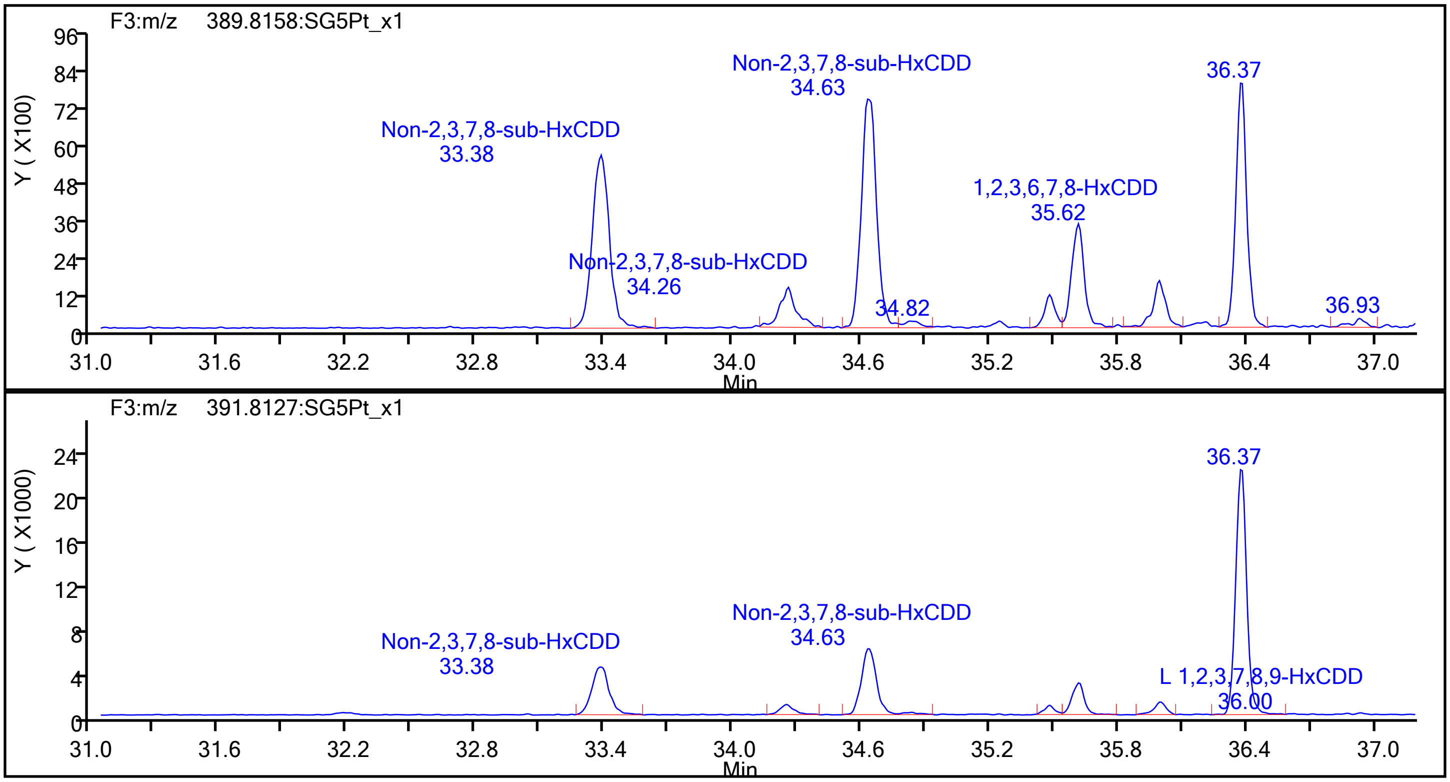

HxCDD Standards

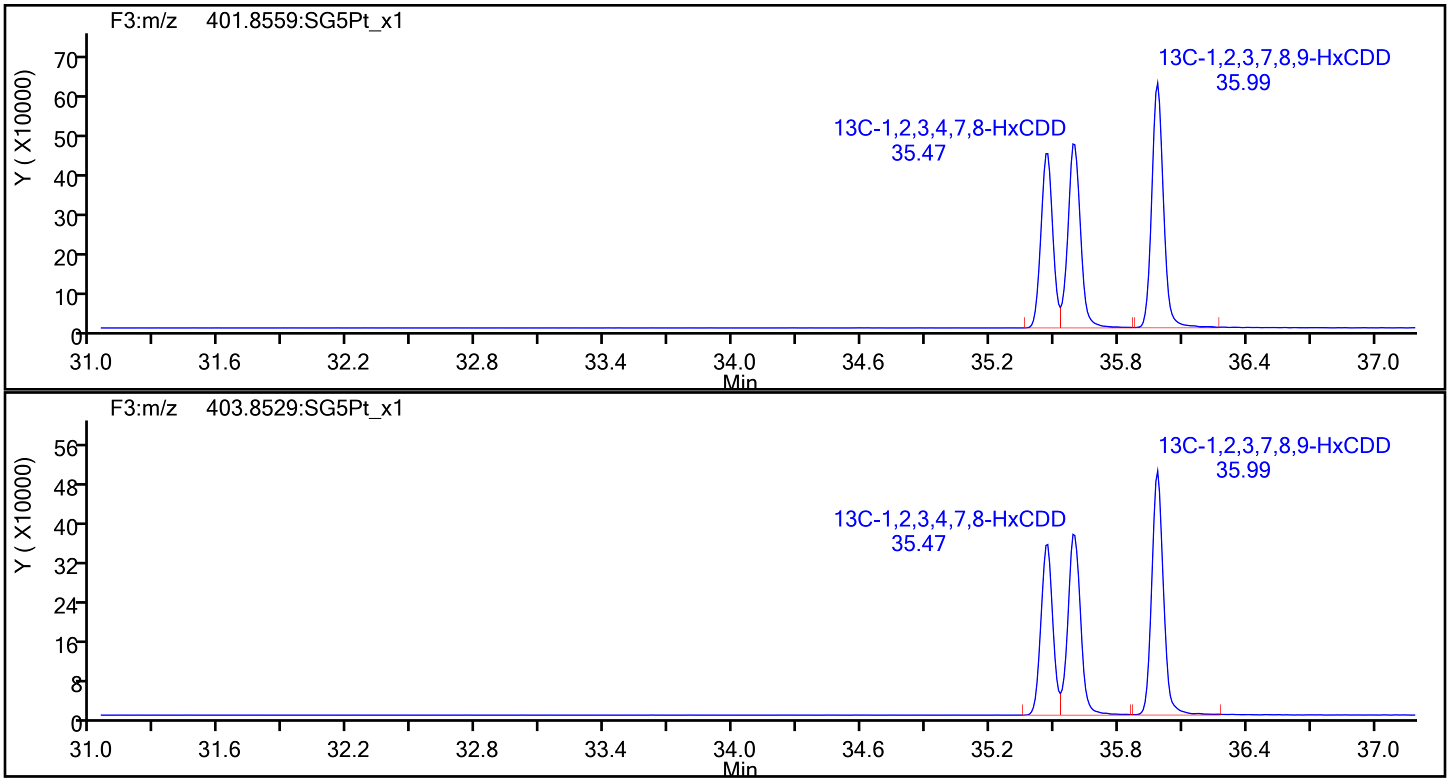

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Eurofins TestAmerica, Sacramento

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HpCDF

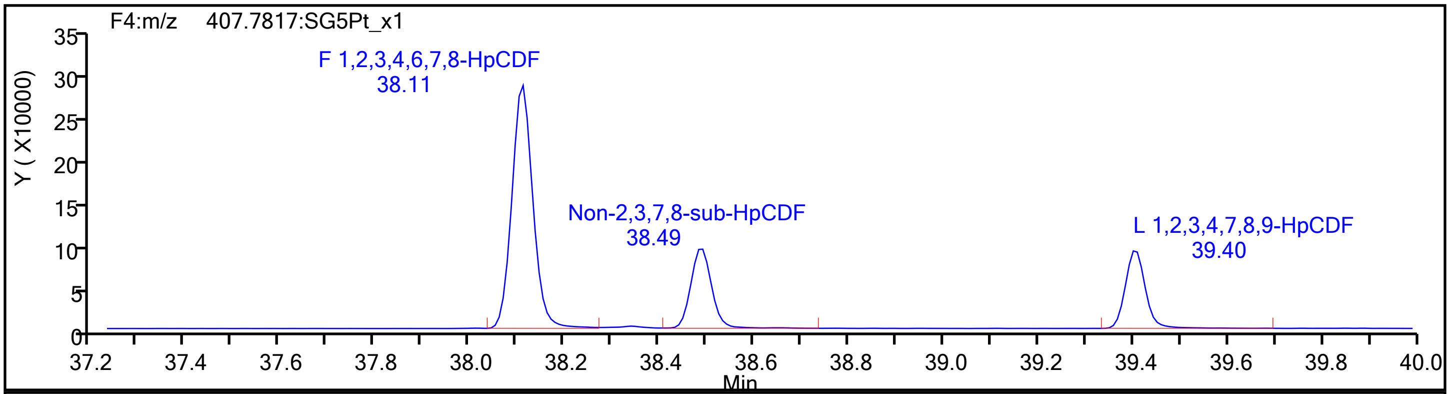

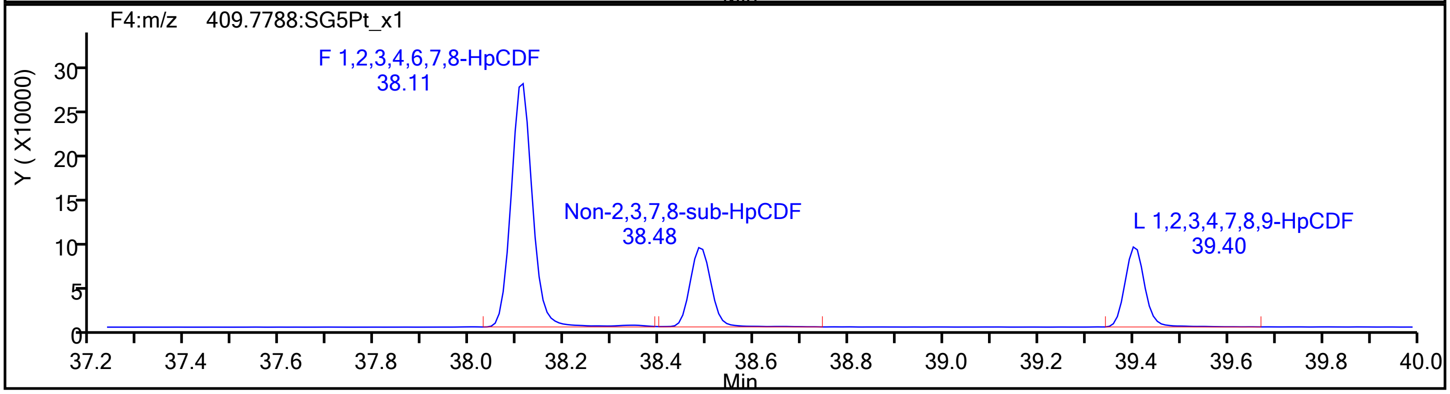

HpCDF Standards

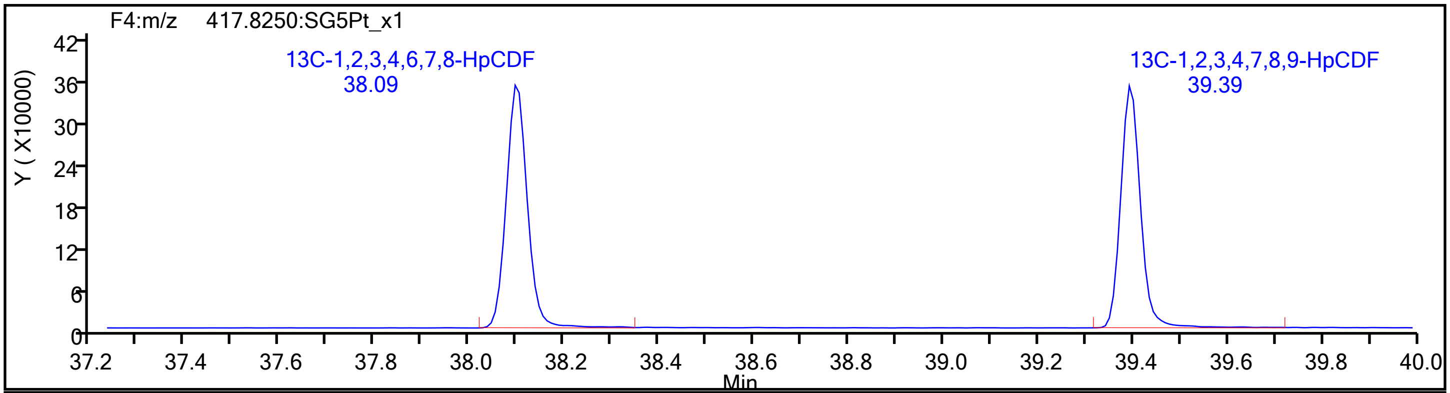

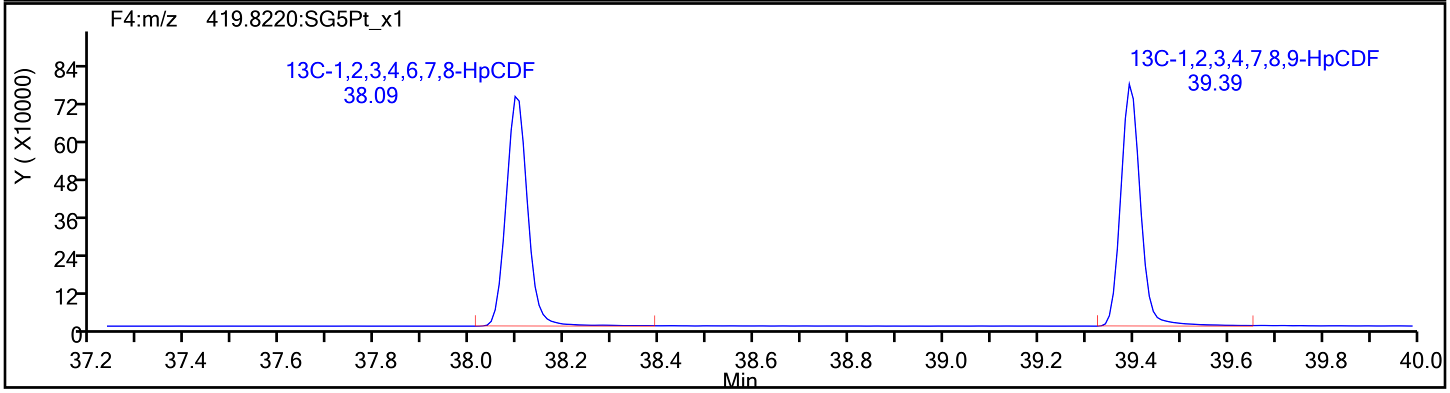

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HpCDF

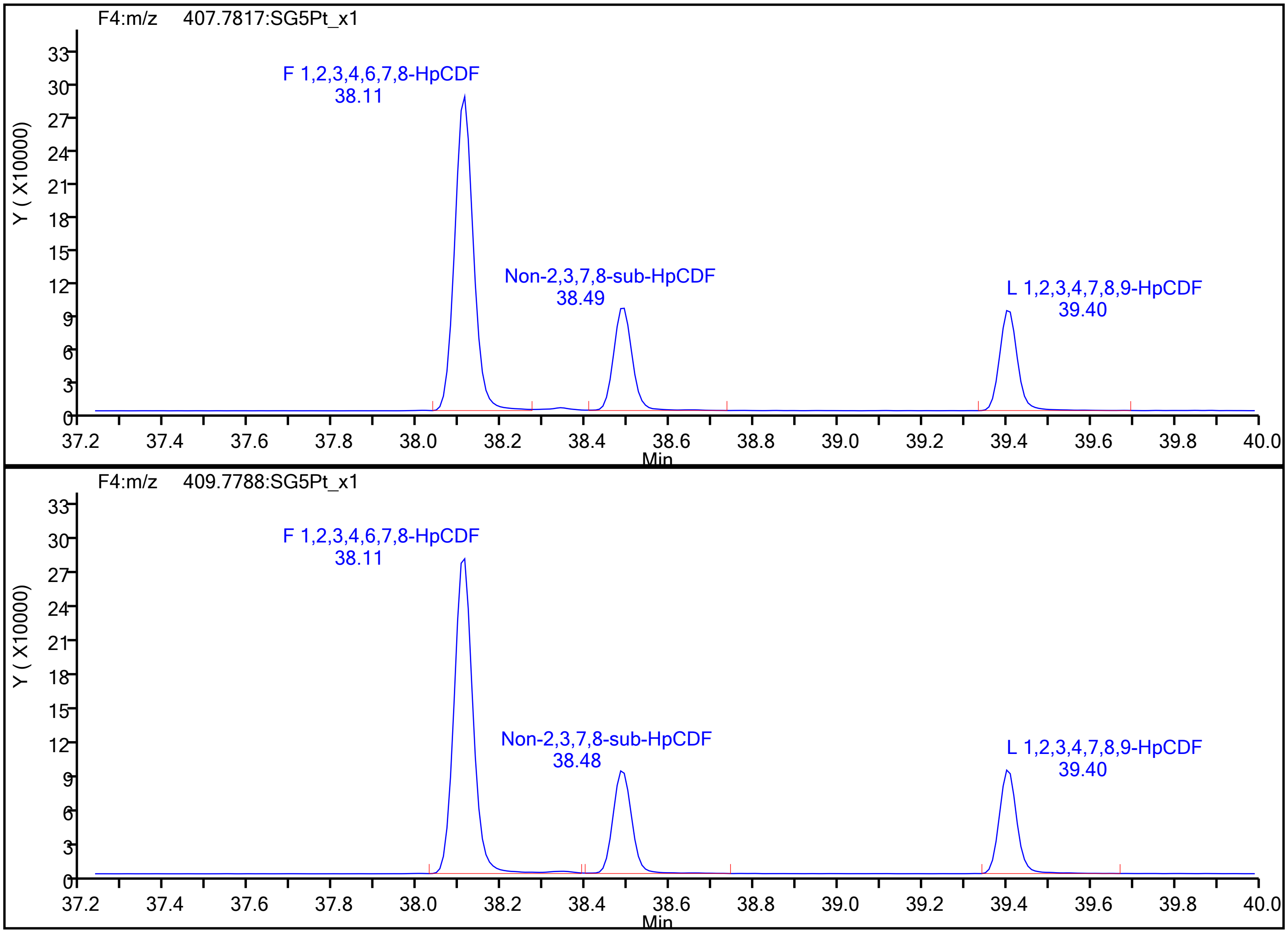

HpCDF Interference Mass

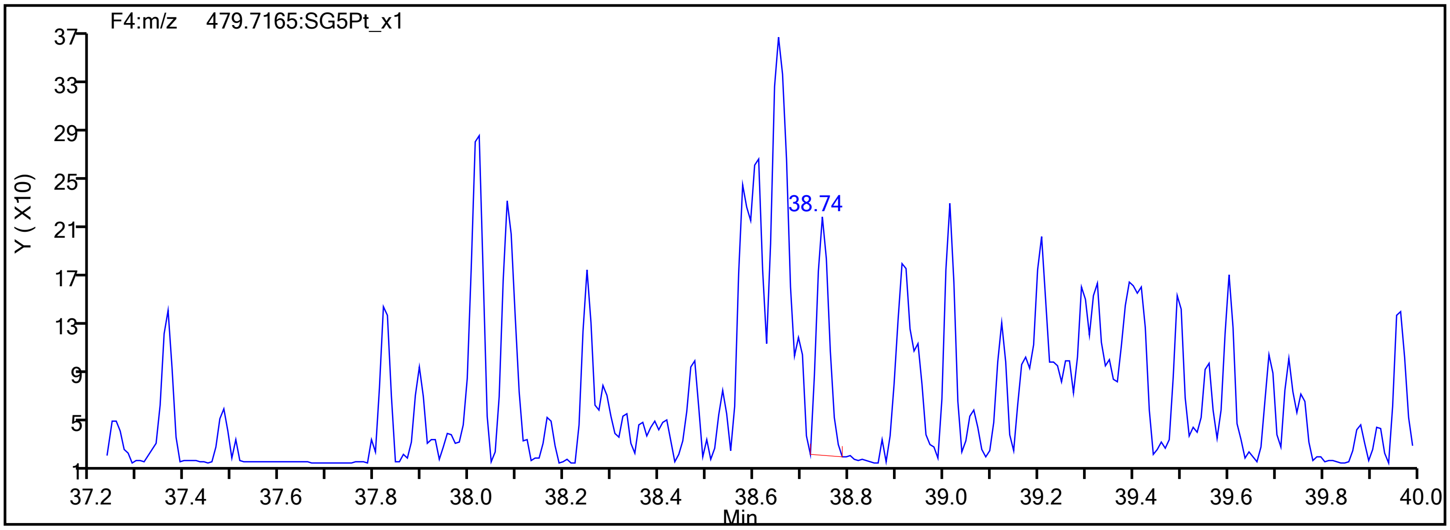

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HpCDD

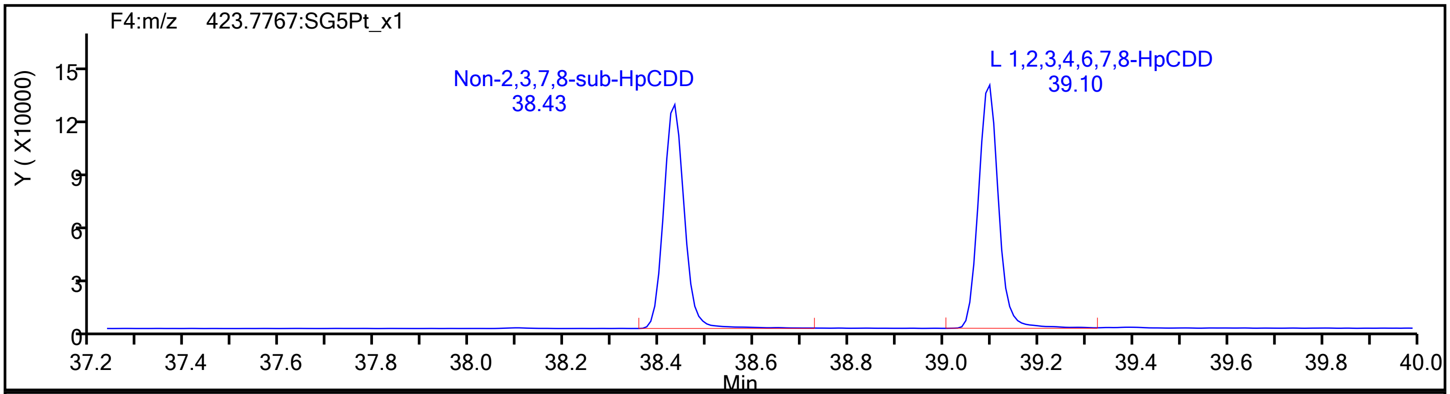

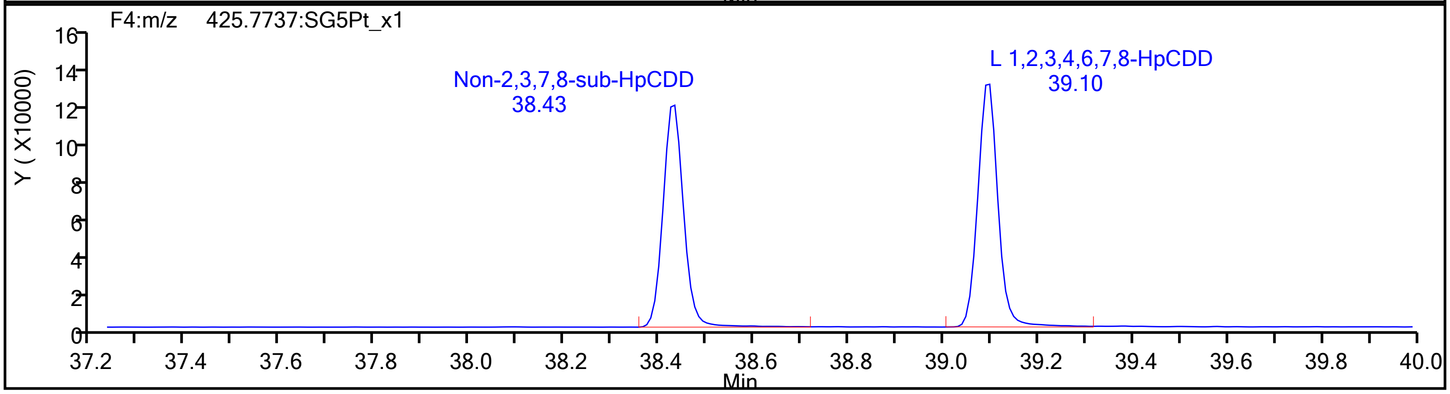

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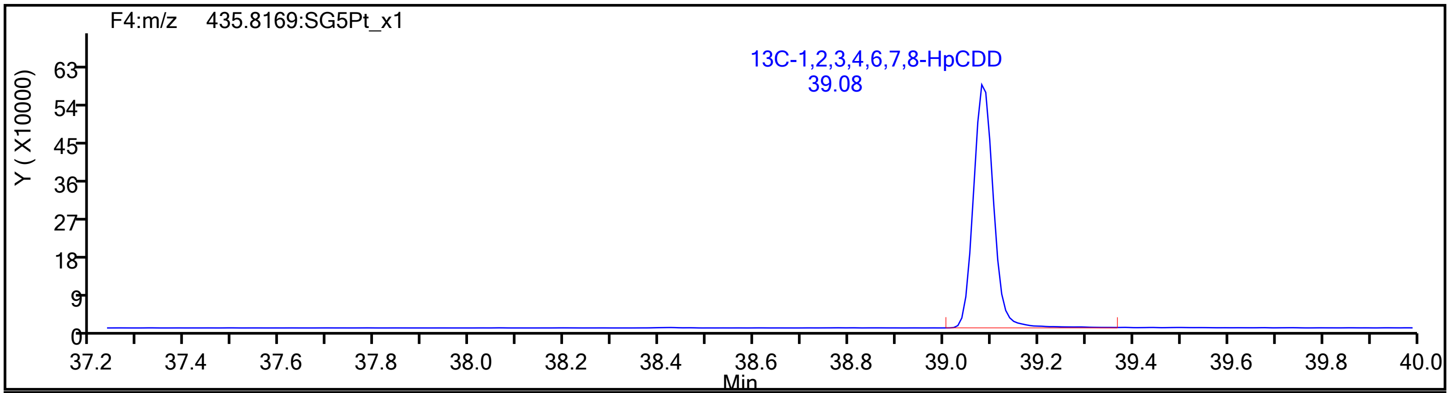

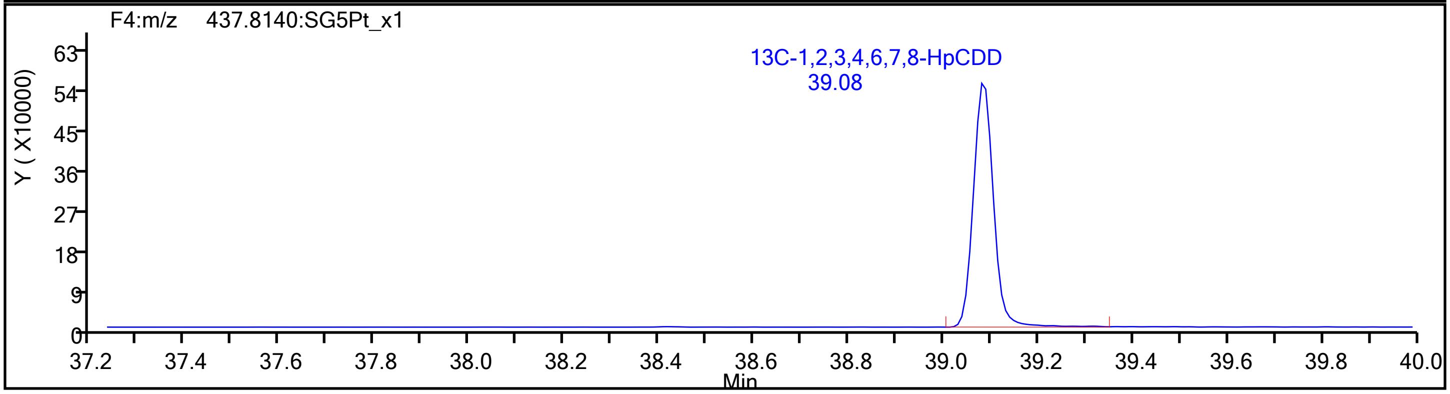

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

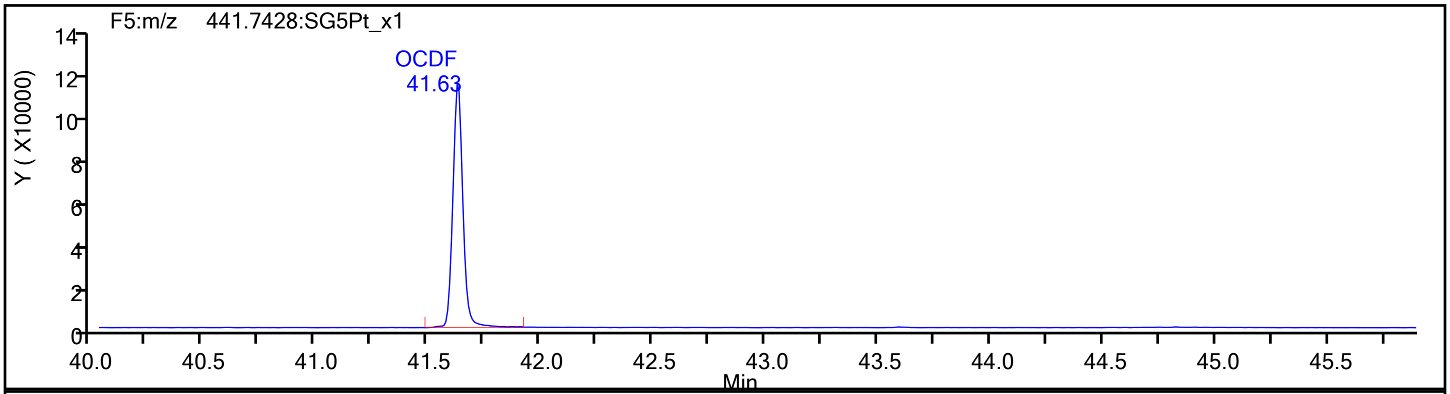

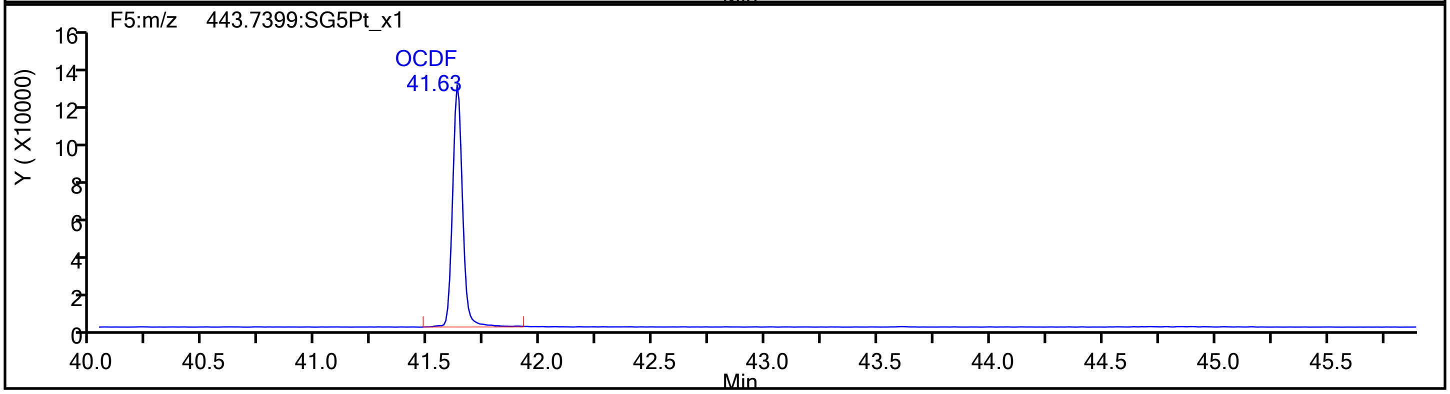

OCDF Standards

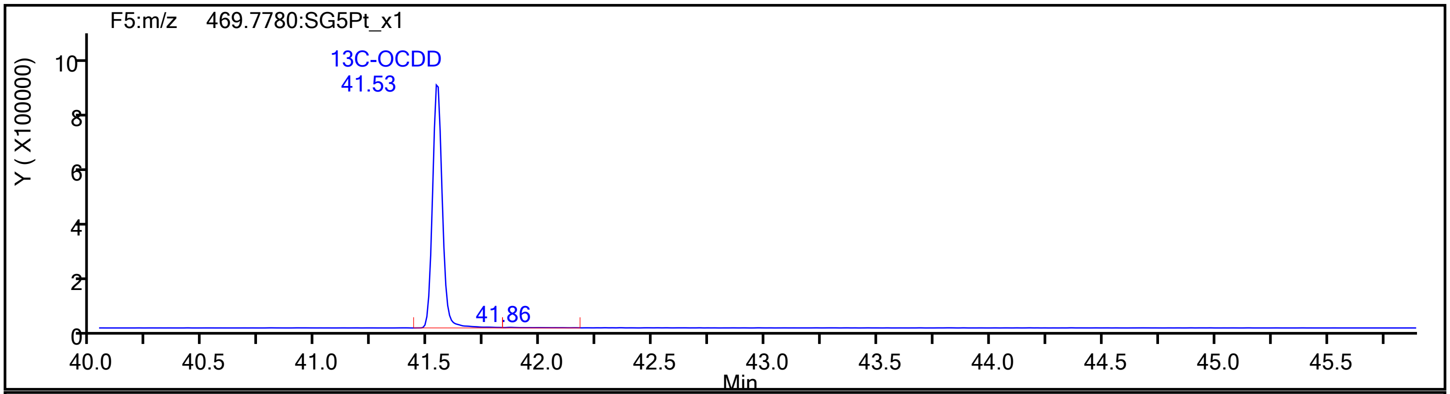

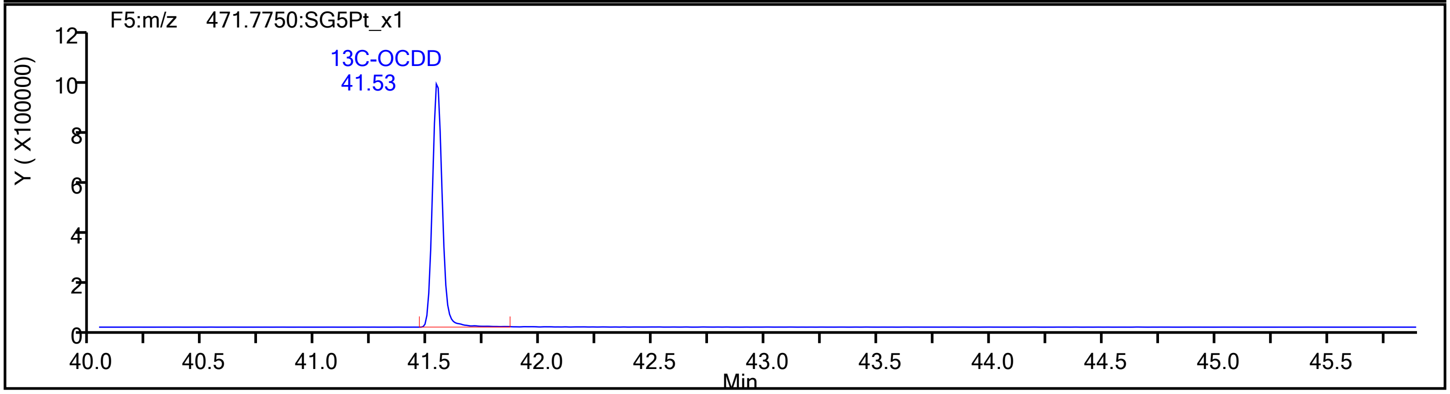

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OCDF

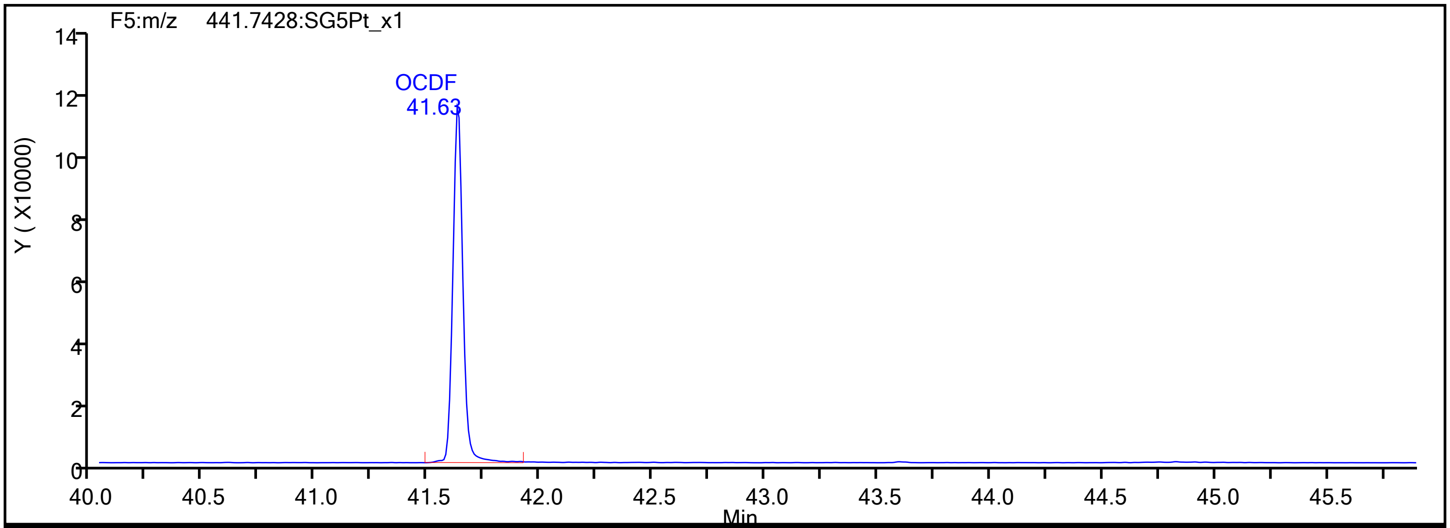

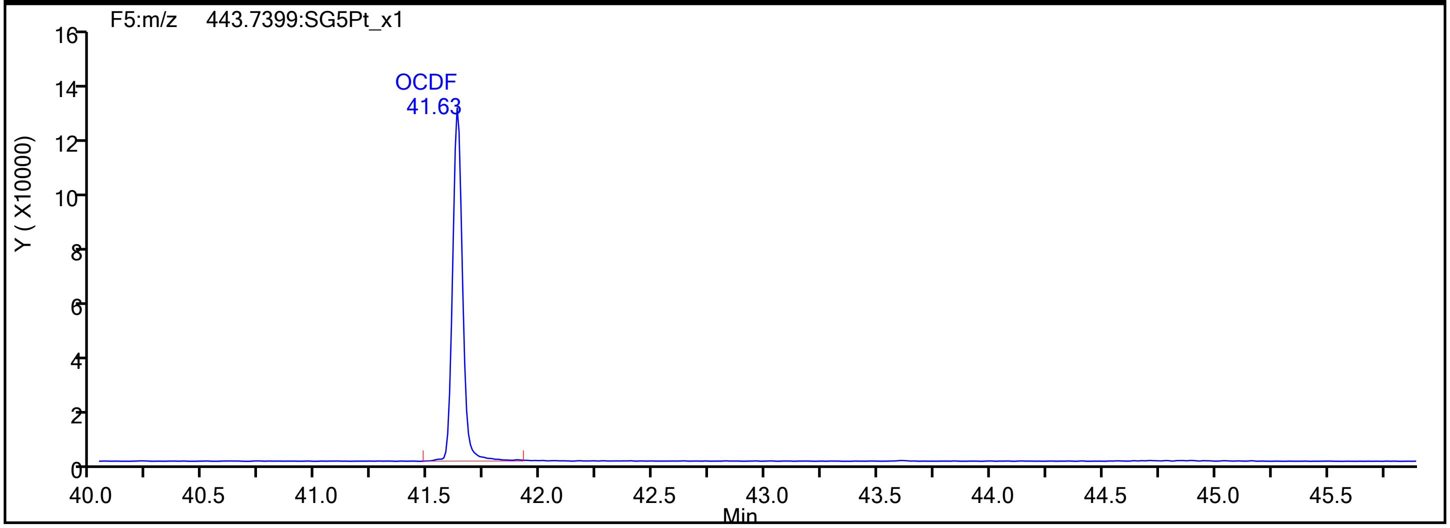

OCDF Interference Mass

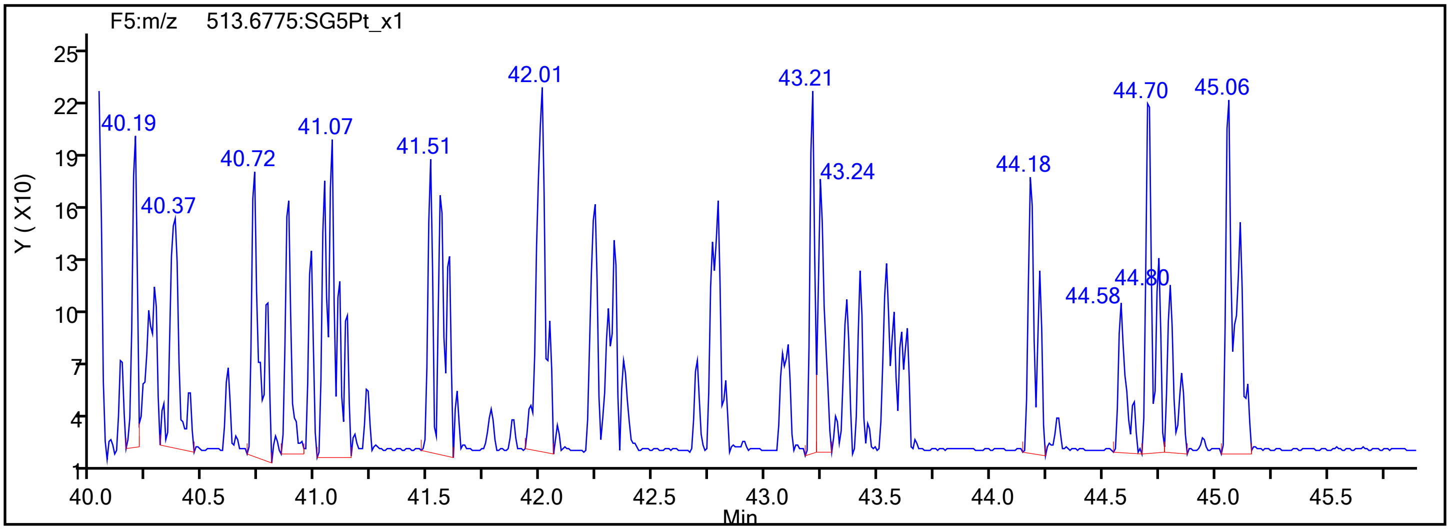

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Eurofins TestAmerica, Sacramento

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OCDD

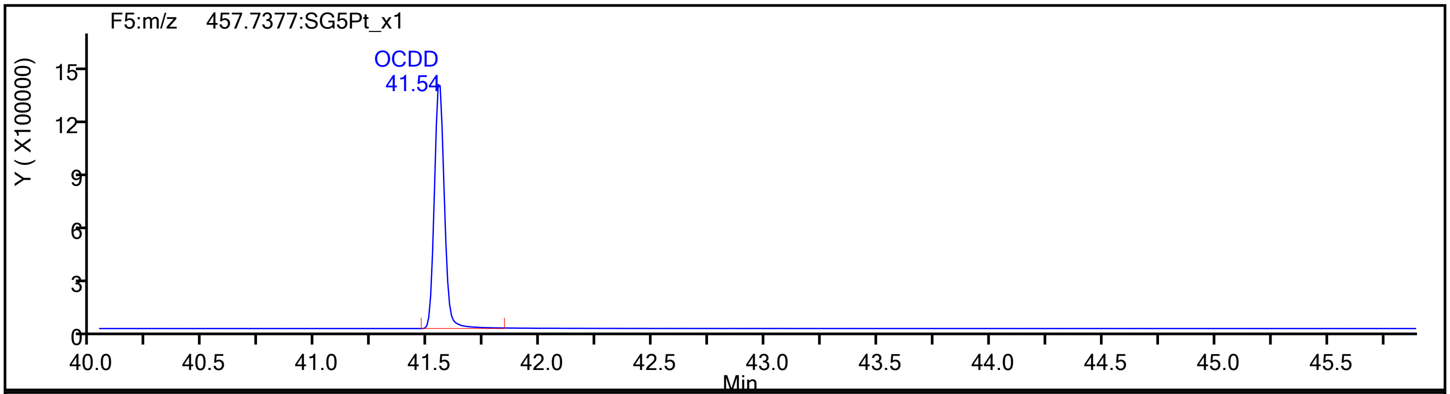

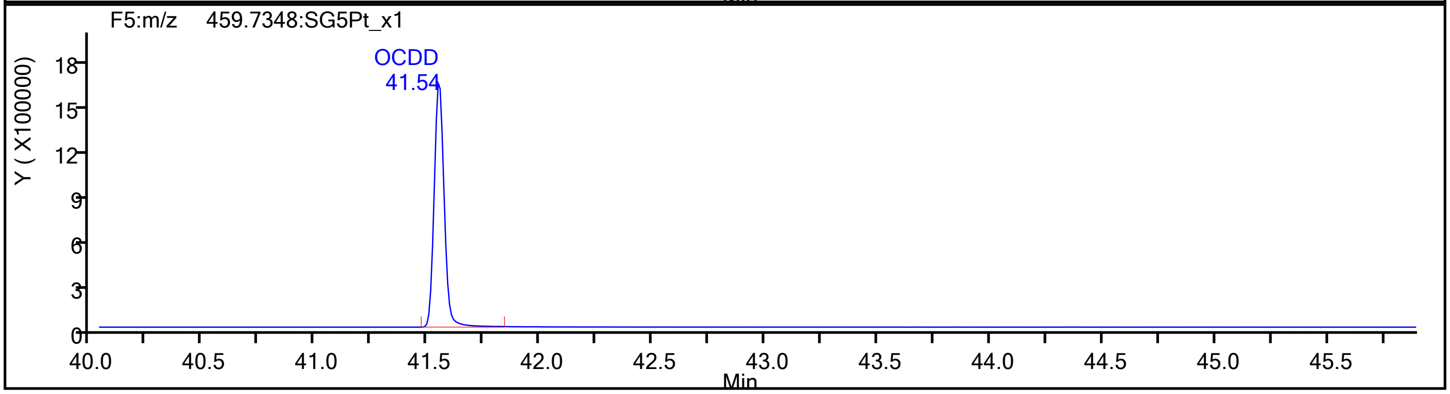

OCDD Standards

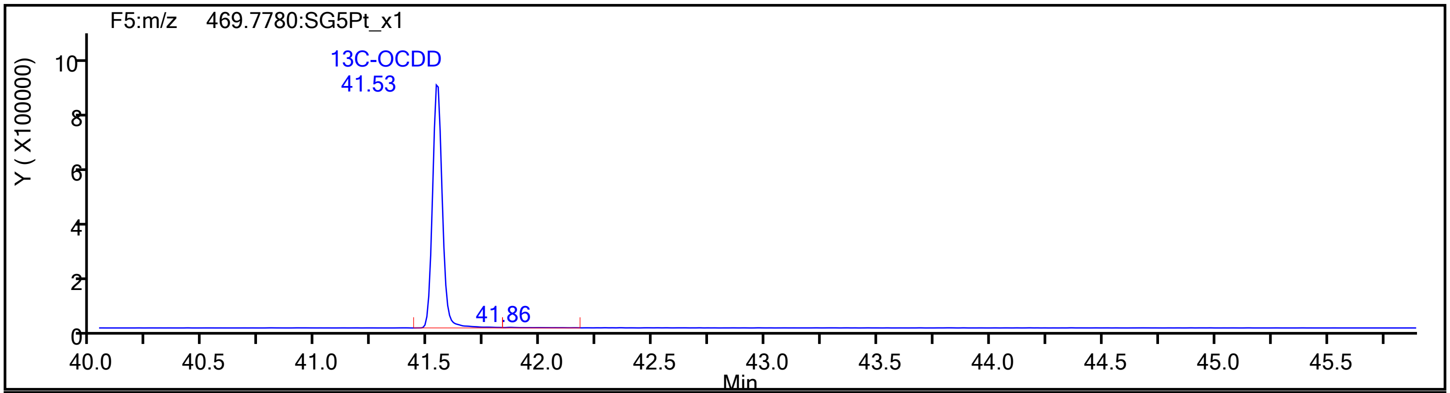

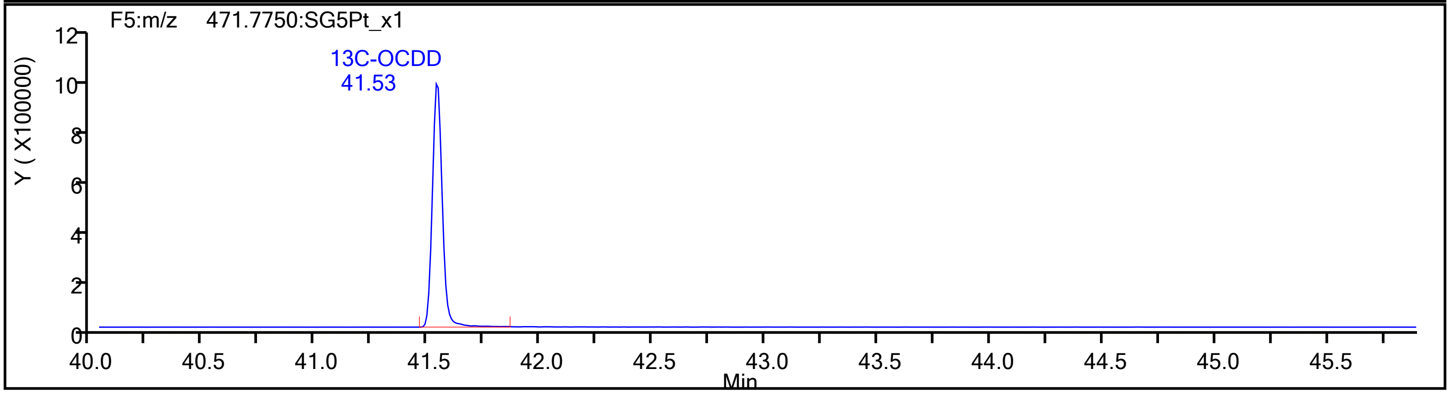

Report Date: 22-Sep-2020 13:43:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d		
Injection Date:	20-Sep-2020 12:49:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#2		
Worklist#:	413813	Sample Line#:	56
Column Type:	DB-5	Column Dia:	0.32 mm

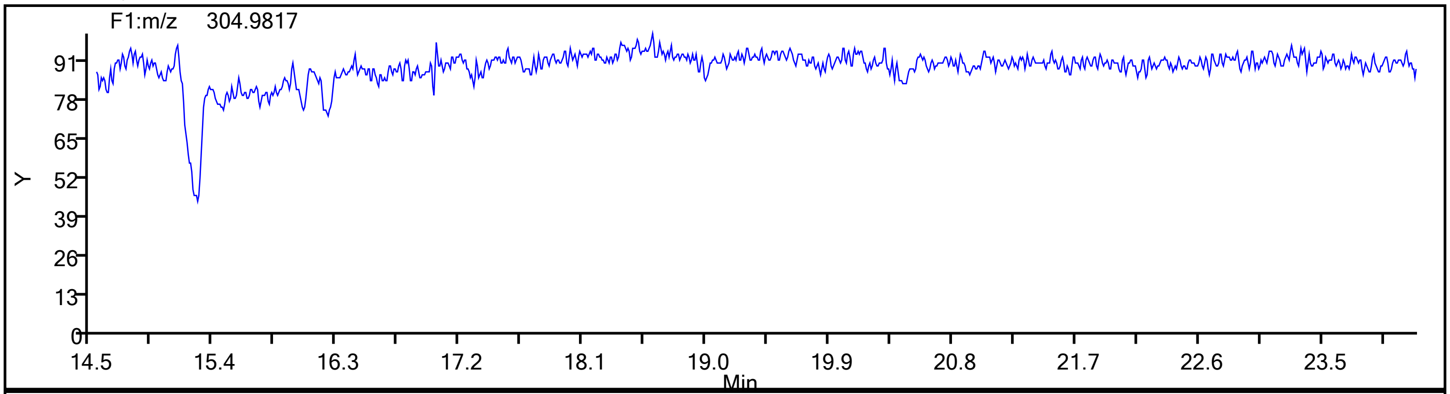

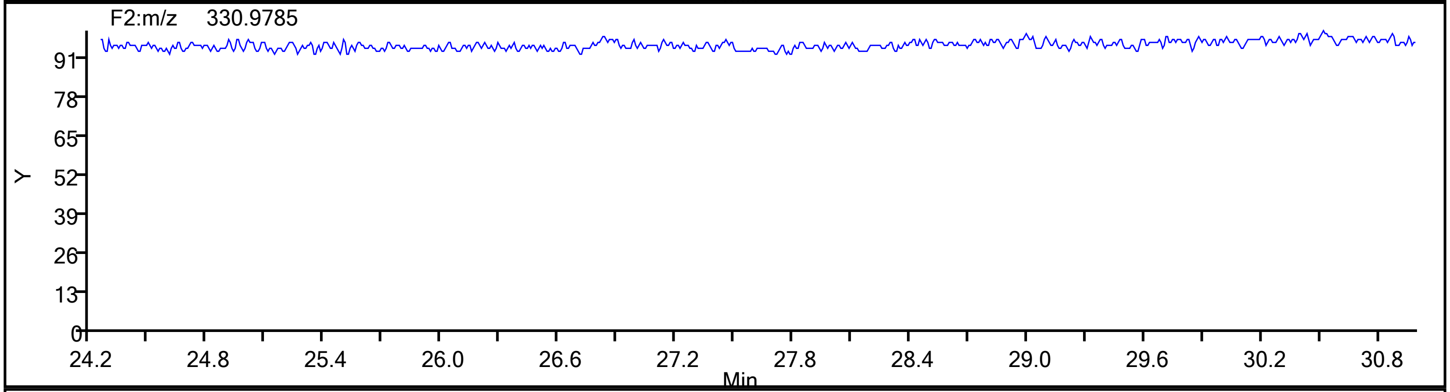

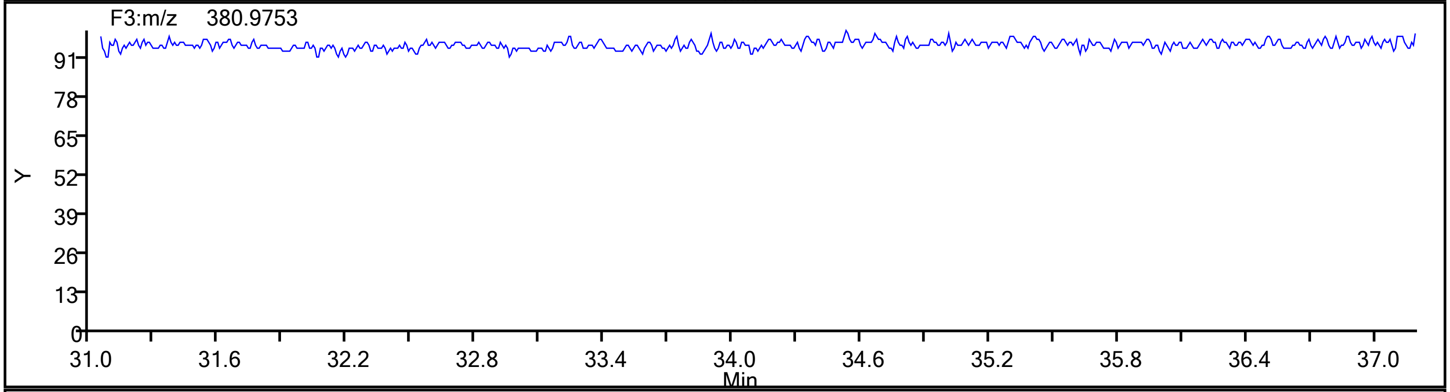

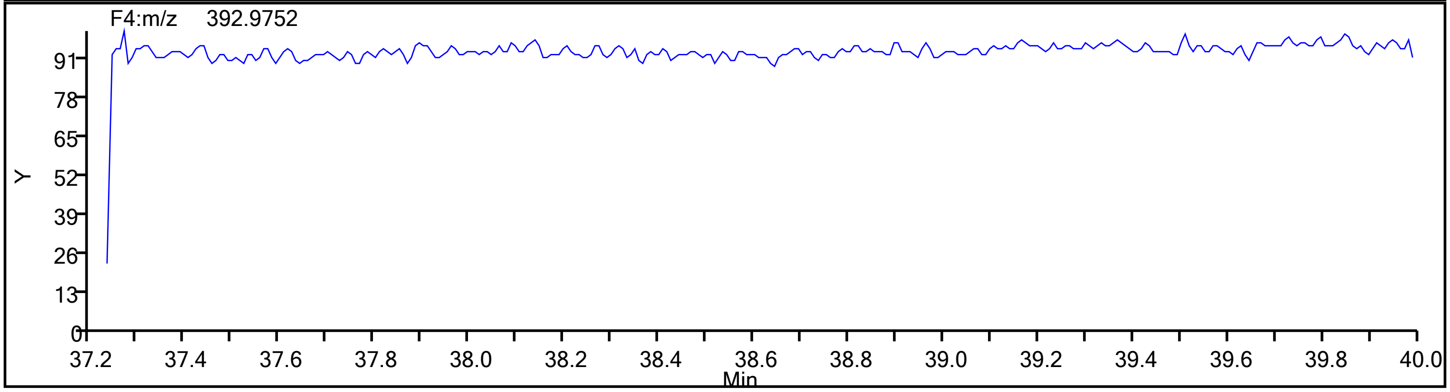

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_64.d
Injection Date: 20-Sep-2020 12:49:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#2
Worklist#: 413813
Sample Line#: 56
Column Type: DB-5
Column Dia: 0.32 mm

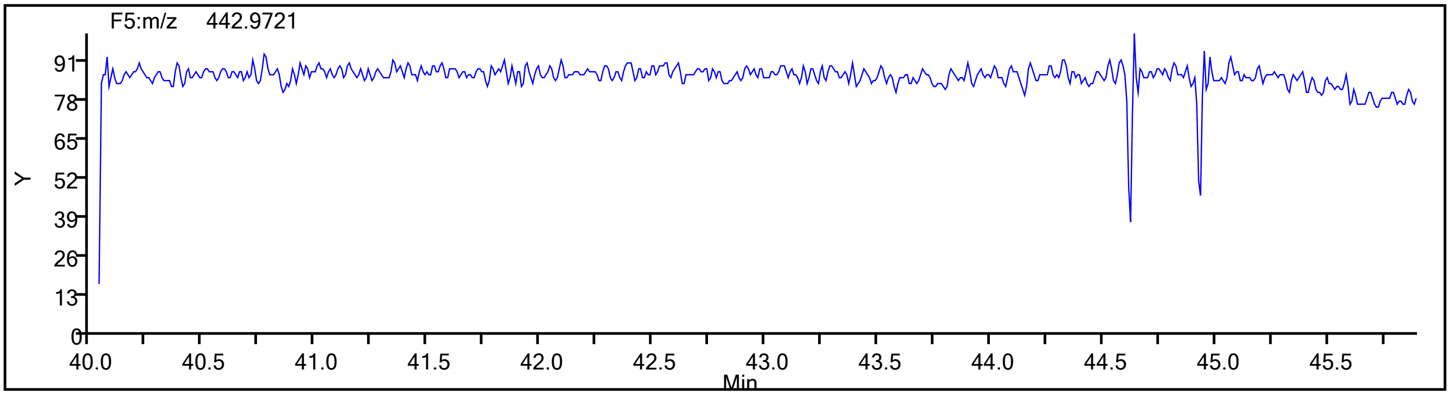

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: 11215702-Soil-Tank#2 RADL Lab Sample ID: 320-64049-4 RADL

Matrix: Sediment Lab File ID: 23SE20A11D2_015.d

Analysis Method: 1613B Date Collected: 08/26/2020 14:00

Extract. Method: HRMS-Sox Date Extracted: 09/17/2020 05:13

Sample wt/vol: 1.26(g) Date Analyzed: 09/23/2020 20:58

Con. Extract Vol.: 20(uL) Dilution Factor: 20

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 41.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 415167 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	47000		270	51

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	109		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	103		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_015.d				
Lims ID:	320-64049-A-4-B				
Client ID:	11215702-Soil-Tank#2				
Sample Type:	Client				
Inject. Date:	23-Sep-2020 20:58:34	ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Sample Info:	320-64049-A-4-B (20X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	24-Sep-2020 15:27:58	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1611				
First Level Reviewer: shardaa		Date:	24-Sep-2020 15:19:15		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.638	11639757	0.74	1.2E+06	5.000	5.000				
D 13C-2,3,7,8-TCDF	15.777	19857375	0.67	1.5708	5.430	5.430	0.2402	0.2402	109	
2,3,7,8-TCDF	15.791	344139697	0.78	0.9943	87.2	87.2	0.0938	0.0938		
D 13C-2,3,7,8-TCDD	14.405	8536936	0.82	0.9834	3.729	3.729	1.614	1.614	74.58	
2,3,7,8-TCDD	14.419	76599475	0.77	1.2822	35.0	35.0	0.1856	0.1856		
$ 37Cl4-2,3,7,8-TCDD	14.419	4749022		0.9945	2.051	2.051	0.0327	0.0327	103	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 24-Sep-2020 15:28:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_015.d
Lims ID: 320-64049-A-4-B
Client ID: 11215702-Soil-Tank#2
Sample Type: Client
Inject. Date: 23-Sep-2020 20:58:34 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-64049-A-4-B (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 15:27:58 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 15:19:15

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.638	14.633	0		4945951	1368927	148211	370527	9		
333.9339	14.638	14.633	0		6693806	1632386	232888	582220	7	0.74(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.777	16.446	1	1.078	7956379	1651707	51337	128342	32		
317.9389	15.777	16.446	1	1.078	11900996	2486691	39249	98122	63	0.67(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.791	15.772	1	1.001	151250673	34656082	13778	34445	2515		
305.8987	15.791	15.772	1	1.001	192889024	44063319	17092	42730	2578	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.405	14.386	1	0.984	3839667	885967	148211	370527	6		
333.9339	14.405	14.386	1	0.984	4697269	1150794	232888	582220	5	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.419	14.400	1	1.001	33225127	8244813	20994	52485	393		
321.8936	14.419	14.400	1	1.001	43374348	10527002	17785	44462	592	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.419	15.145	1	0.985	4749022	1196084	7817	19542	153		

QC Flag Legend

Processing Flags

Report Date: 24-Sep-2020 15:28:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_015.d

Injection Date: 23-Sep-2020 20:58:34 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Soil-Tank#2

Worklist#: 415167 Sample Line#: 15

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

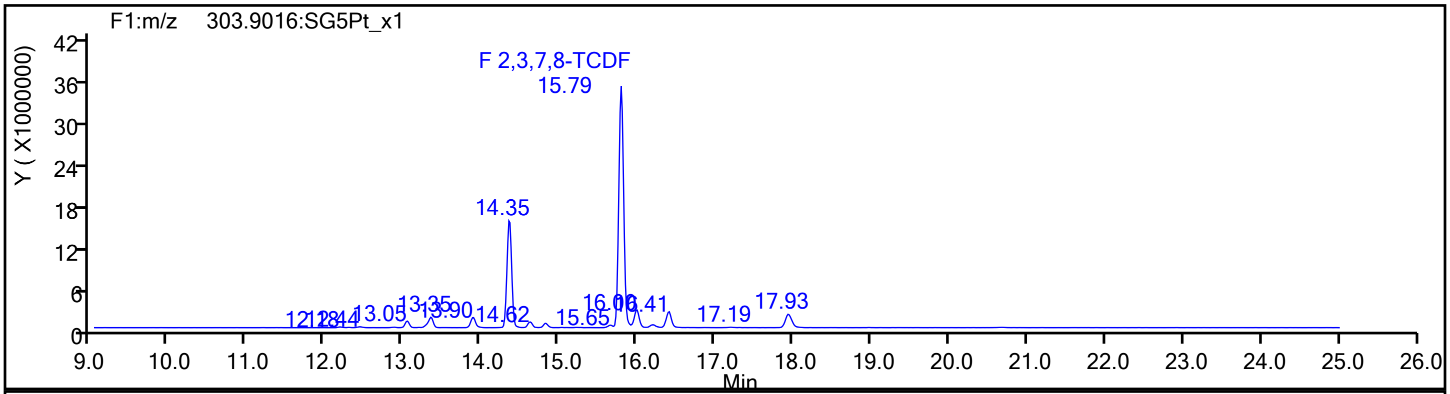

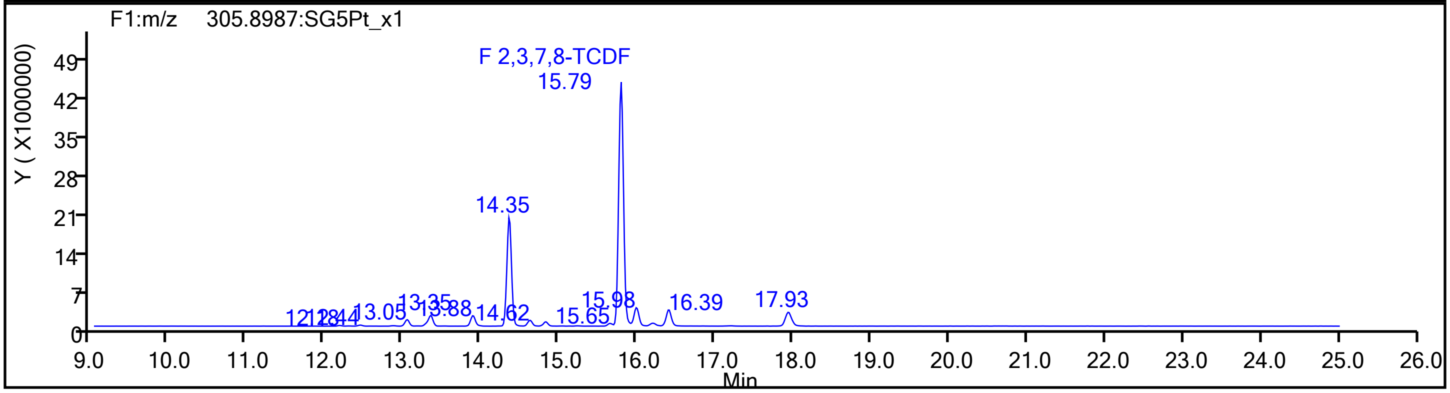

TCDF Standards

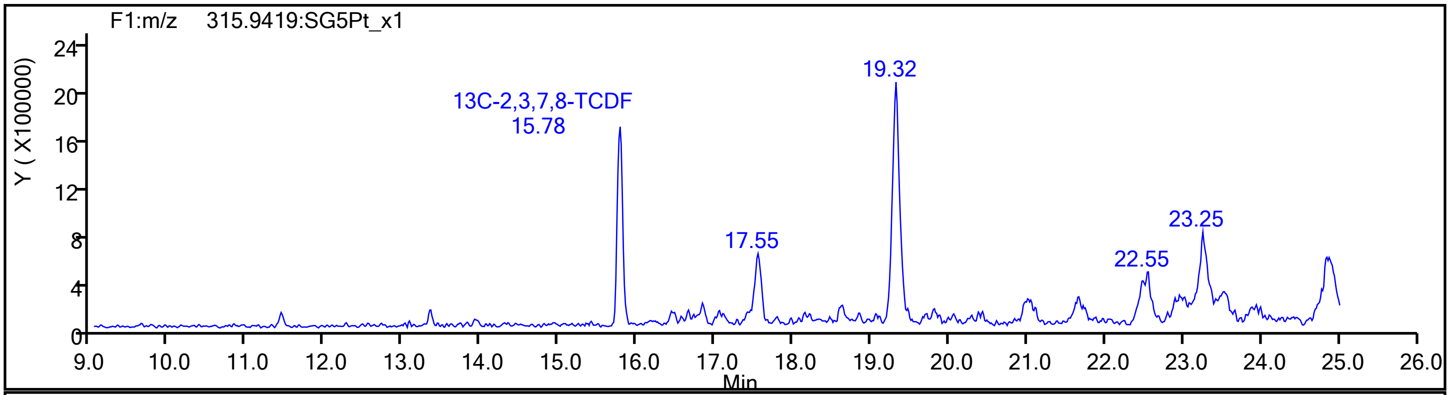

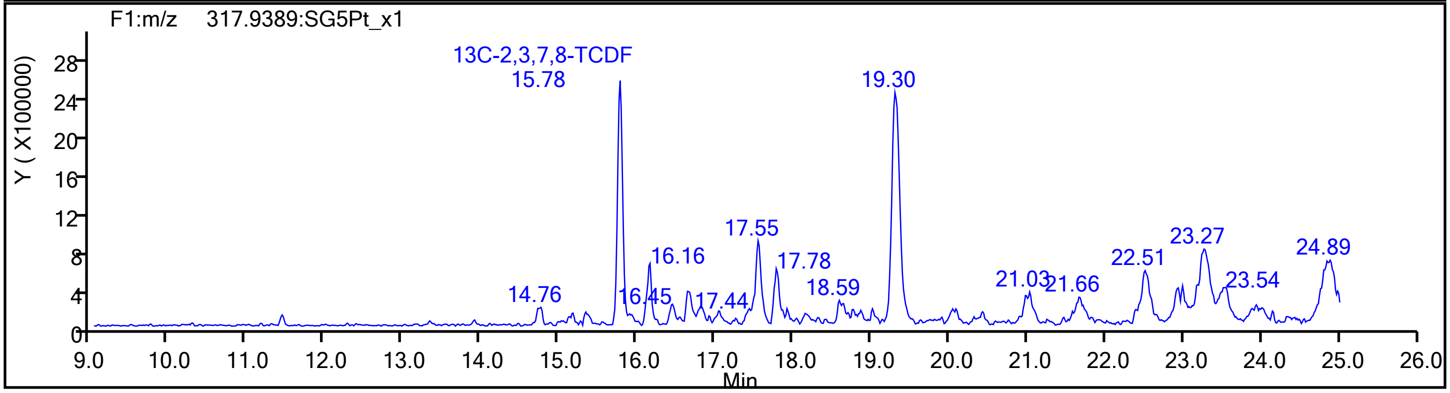

Report Date: 24-Sep-2020 15:28:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_015.d		
Injection Date:	23-Sep-2020 20:58:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#2		
Worklist#:	415167	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

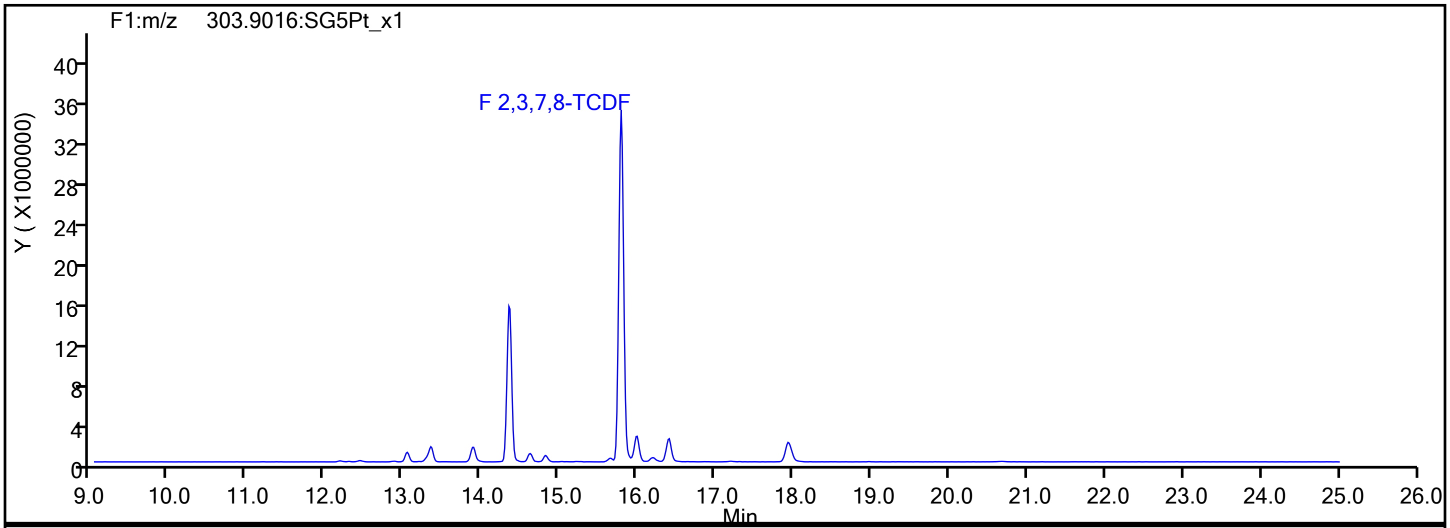

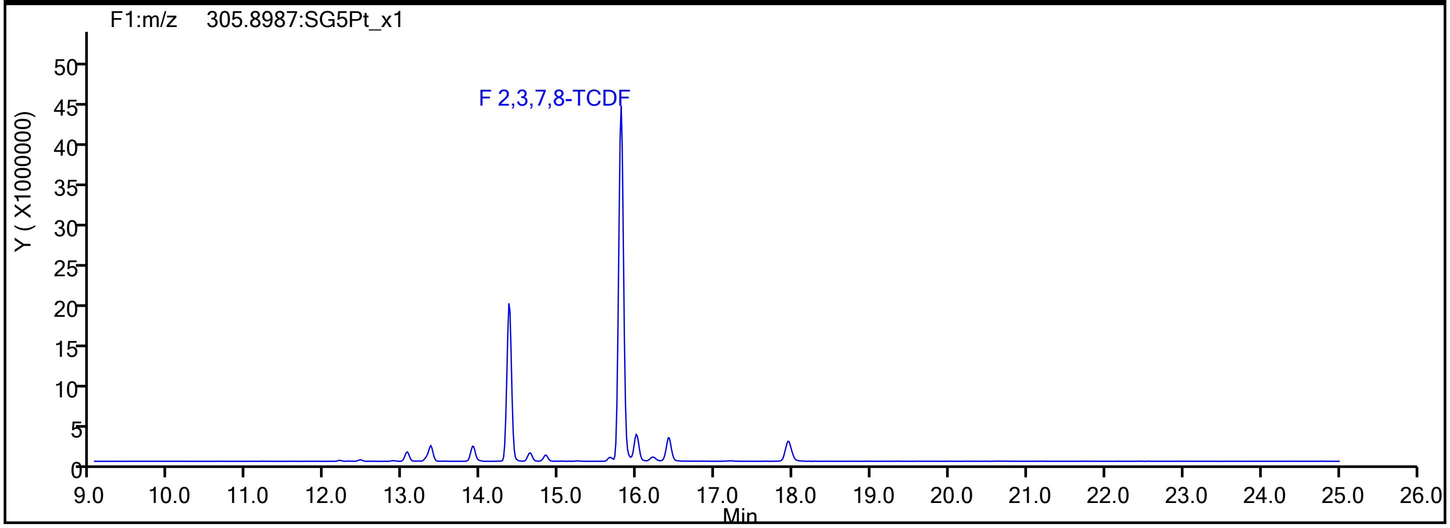

TCDF Interference Mass

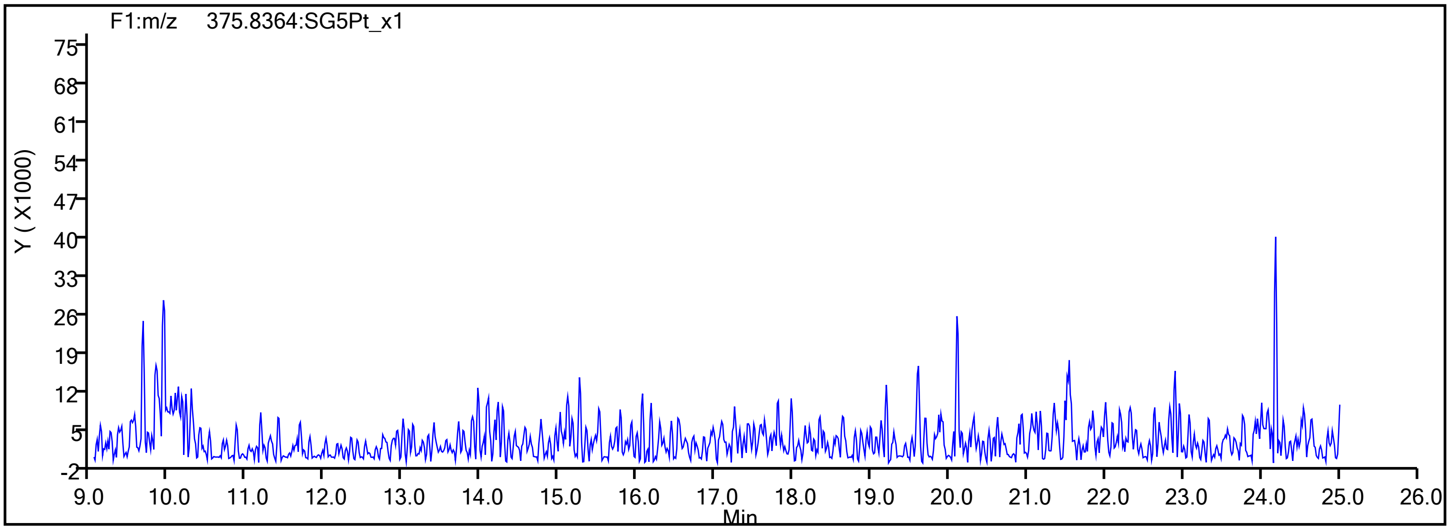

Report Date: 24-Sep-2020 15:28:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_015.d		
Injection Date:	23-Sep-2020 20:58:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#2		
Worklist#:	415167	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

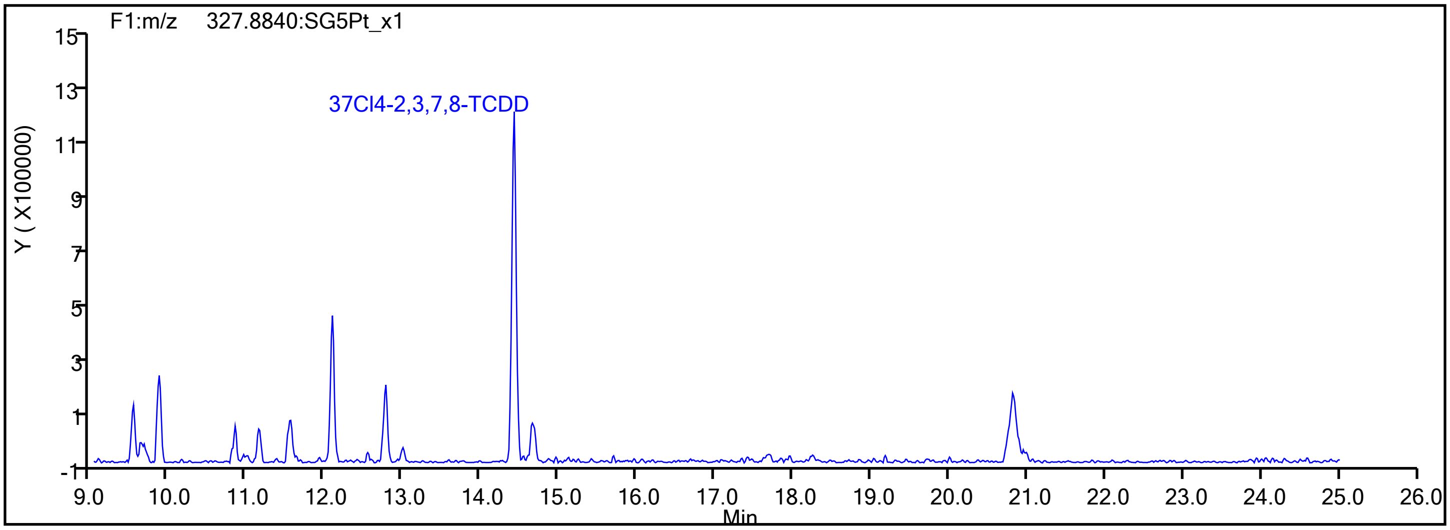

37Cl4-TCDD Standards

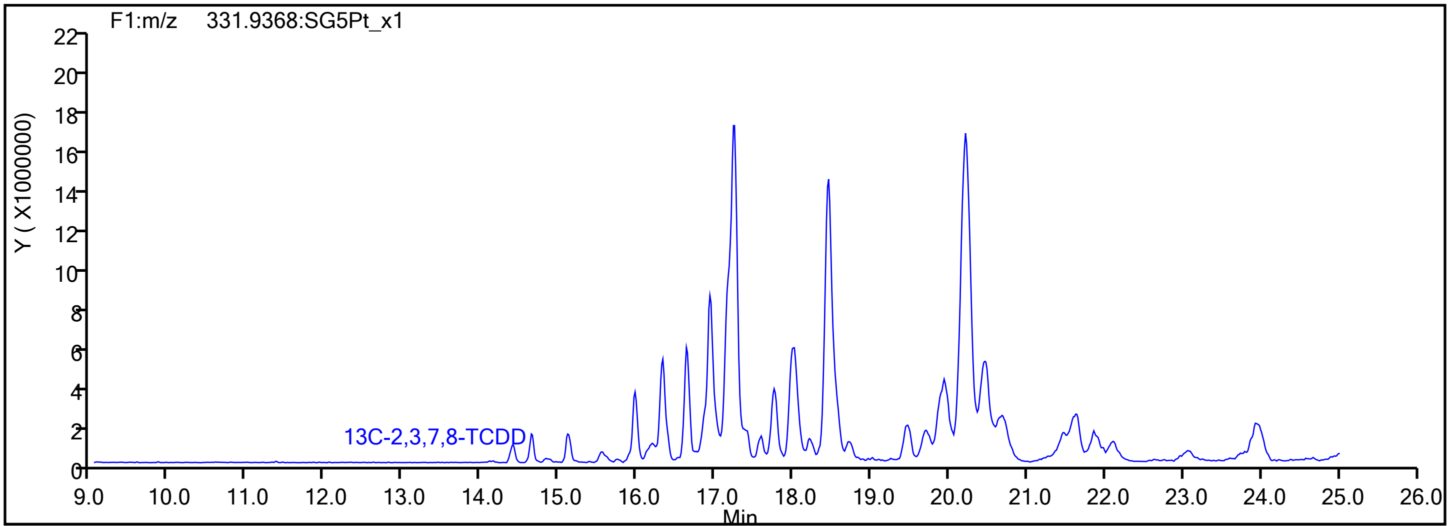

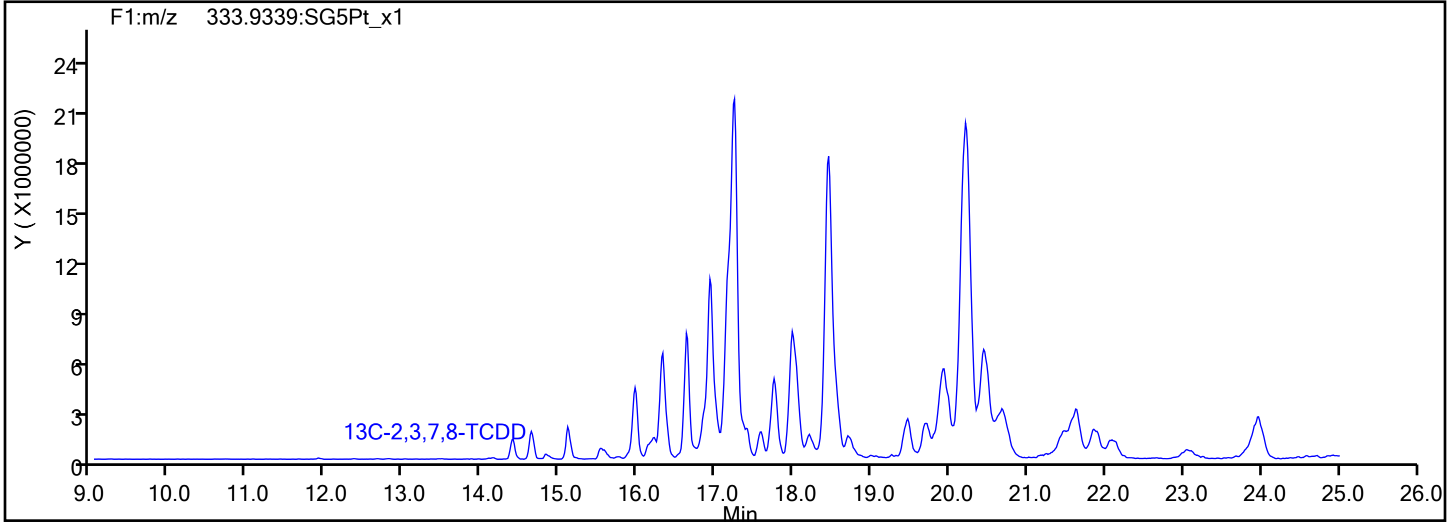

Report Date: 24-Sep-2020 15:28:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_015.d		
Injection Date:	23-Sep-2020 20:58:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#2		
Worklist#:	415167	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

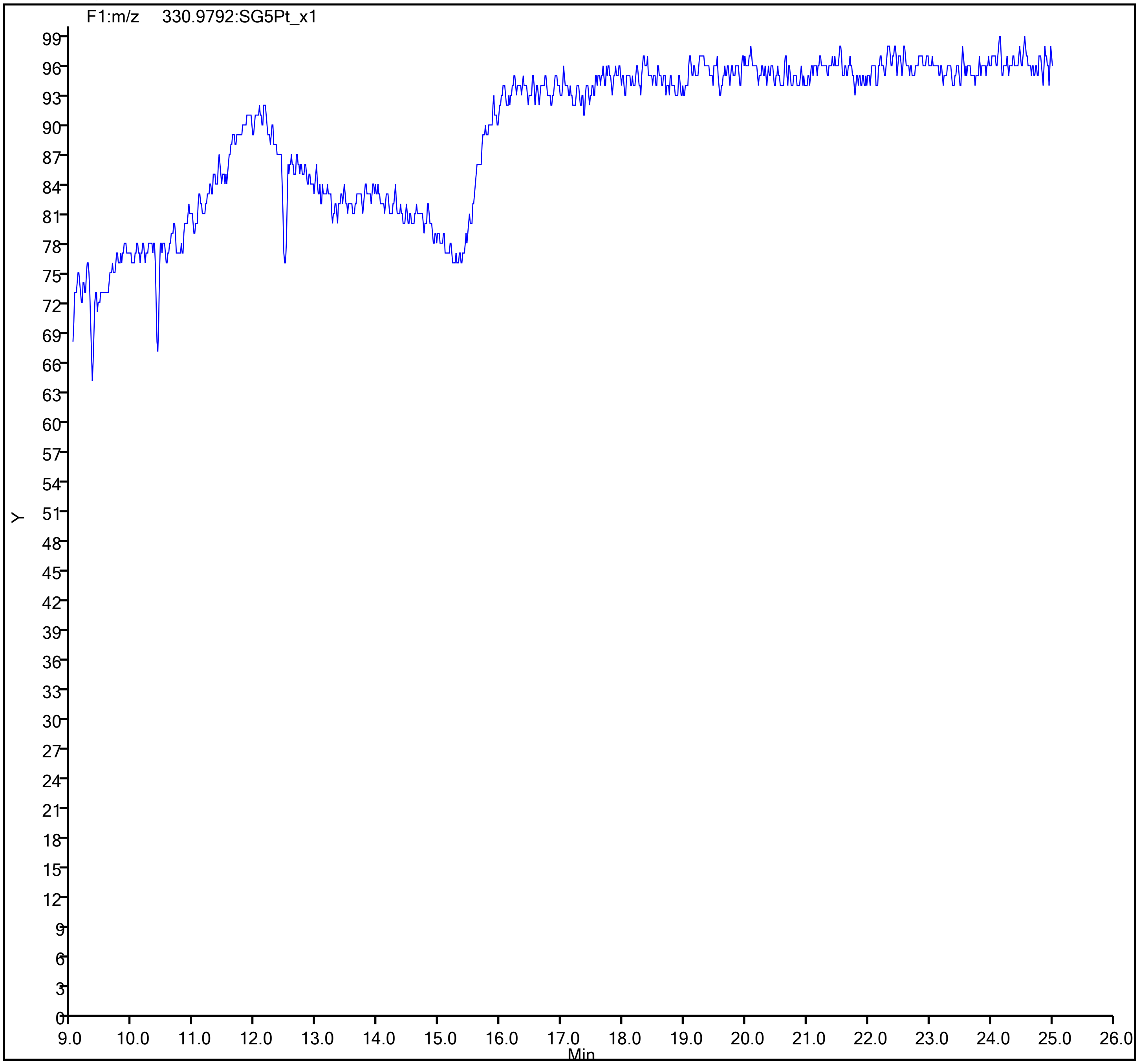

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: 11215702-Soil-Tank#2 DL Lab Sample ID: 320-64049-4 DL

Matrix: Sediment Lab File ID: 23se20dfs1_12.d

Analysis Method: 1613B Date Collected: 08/26/2020 14:00

Extract. Method: HRMS-Sox Date Extracted: 09/17/2020 05:13

Sample wt/vol: 1.26(g) Date Analyzed: 09/24/2020 05:41

Con. Extract Vol.: 20(uL) Dilution Factor: 20

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: 41.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 415261 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	17000		270	98

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	79		25-164

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

Report Date: 25-Sep-2020 11:41:50 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d				
Lims ID:	320-64049-A-4-B				
Client ID:	11215702-Soil-Tank#2				
Sample Type:	Client				
Inject. Date:	24-Sep-2020 05:41:00	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	20.0000		
Sample Info:	320-64049-A-4-B (20x)				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Sep-2020 11:41:50	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1005				

First Level Reviewer: shardaa Date: 24-Sep-2020 10:32:49

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.024	141559	0.77	2.7E+04	5.000	5.000				M
D 13C-2,3,7,8-TCDF	19.095	171791	0.74	1.5883	3.820	3.820	0.2978	0.2978	76.40	M
2,3,7,8-TCDF	19.138	4097248	0.78	1.0857	109.8	109.8	0.3639	0.3639		
A Non-2,3,7,8-sub-TCDF	18.740	3071492	0.77	1.0857	82.6	82.3	0.3639	47.1		RQ
S Total TCDF					192.5	192.2	0.3639	0.3639		RQ
D 13C-2,3,7,8-TCDD	20.394	125831	0.79	1.1194	3.970	3.970	0.2560	0.2560	79.41	M
2,3,7,8-TCDD	20.411	874138	0.78	1.0810	32.1	32.1	0.1799	0.1799		M
$ 37Cl4-2,3,7,8-TCDD	20.411	64953		1.1468	2.001	2.001	0.0169	0.0169	100	
A Non-2,3,7,8-sub-TCDD	19.549	87115	0.77	1.0810	3.236	3.202	0.1799	2.911		RQMa
S Total TCDD					35.4	35.3	0.1799	0.1799		RQ
D 13C-1,2,3,7,8-PeCDF	26.191	151454	1.64	1.4782	3.619	3.619	0.0281	0.0281	72.38	M
1,2,3,7,8-PeCDF	26.217	113606	1.53	1.0547	3.556	3.556	0.0538	0.0538		
D 13C-2,3,4,7,8-PeCDF	27.648	147122	1.64	1.3912	3.735	3.735	0.0298	0.0298	74.71	Ma
2,3,4,7,8-PeCDF	27.673	67303	1.58	1.1035	2.073	2.073	0.0560	0.0560		M
A F1 PeCDFs	23.567						0.0250	0.0250		
A Non-2,3,7,8-sub-PeCDF	26.955	101312	1.59	1.0791	3.144	3.144	0.0548	1.411		
S Total PeCDF					8.773	8.773	0.0549	0.0549		
D 13C-1,2,3,7,8-PeCDD	28.423	109988	1.58	0.9415	4.126	4.126	0.0860	0.0860	82.53	
1,2,3,7,8-PeCDD	28.457	6795	1.68	1.0680	0.2892	0.2892	0.0526	0.0526		M
A Non-2,3,7,8-sub-PeCDD	27.294						0.0526	0.0526		
S Total PeCDD					0.2892	0.2892	0.0526	0.0526		
D 13C-1,2,3,4,7,8-HxCDF	34.093	120725	0.52	1.1378	3.949	3.949	0.0429	0.0429	78.97	a
1,2,3,4,7,8-HxCDF	34.110	161423	1.26	1.2643	5.288	5.288	0.0455	0.0455		
D 13C-1,2,3,6,7,8-HxCDF	34.278	137813	0.48	1.3173	3.893	3.893	0.0371	0.0371	77.86	
1,2,3,6,7,8-HxCDF	34.295	48986	1.28	1.2230	1.453	1.453	0.0422	0.0422		
D 13C-2,3,4,6,7,8-HxCDF	35.188	133452	0.54	1.2457	3.987	3.987	0.0392	0.0392	79.73	
2,3,4,6,7,8-HxCDF	35.222	5794	1.22	1.2464	0.1742	0.1742	0.0367	0.0367		
D 13C-1,2,3,7,8,9-HxCDF	36.157	121234	0.50	1.1840	3.810	3.810	0.0413	0.0413	76.21	
1,2,3,7,8,9-HxCDF	36.182	2890	1.11	1.2638	0.0943	0.0943	0.0369	0.0369		
A Non-2,3,7,8-sub-HxCDF	34.158	31168	1.25	1.2494	0.9722	0.9722	0.0400	0.3578		
S Total HxCDF					7.982	7.982	0.0403	0.0403		

Report Date: 25-Sep-2020 11:41:50 Chrom Revision: 2.3 24-Sep-2020 19:22:38
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.946	134362	1.27	2.9E+04	5.000	5.000				
D 13C-1,2,3,4,7,8-HxCDD	35.416	90887	1.19	0.8477	3.990	3.990	0.0364	0.0364	79.79	a
1,2,3,4,7,8-HxCDD	35.457						0.0227	0.0227		
D 13C-1,2,3,6,7,8-HxCDD	35.551	111080	1.24	0.9979	4.142	4.142	0.0309	0.0309	82.85	
1,2,3,6,7,8-HxCDD	35.592						0.0210	0.0210		
1,2,3,7,8,9-HxCDD	35.979						0.0201	0.0201		
A Non-2,3,7,8-sub-HxCDD	34.626	4432	1.22	1.1211	0.1957	0.1957	0.0211	0.1068		
S Total HxCDD					0.1957	0.1957	0.0213	0.0213		
D 13C-1,2,3,4,6,7,8-HpCDF	38.081	107144	0.50	0.9884	4.034	4.034	0.0596	0.0596	80.68	
1,2,3,4,6,7,8-HpCDF	38.089	53687	1.03	1.5064	1.663	1.663	0.0173	0.0173		
D 13C-1,2,3,4,7,8,9-HpCDF	39.387	100152	0.41	0.9203	4.050	4.050	0.0640	0.0640	80.99	Ma
1,2,3,4,7,8,9-HpCDF	39.387	16940	1.10	1.4548	0.5813	0.5813	0.0181	0.0181		
A Non-2,3,7,8-sub-HpCDF	38.744	18747	0.98	1.4806	0.6108	0.6108	0.0177	0.6108		
S Total HpCDF					2.855	2.855	0.0177	0.0177		
D 13C-1,2,3,4,6,7,8-HpCDD	39.075	106754	1.09	0.9556	4.157	4.157	0.0349	0.0349	83.14	
1,2,3,4,6,7,8-HpCDD	39.084	25716	0.97	1.0640	1.132	1.132	0.0247	0.0247		
A Non-2,3,7,8-sub-HpCDD	38.941	25162	1.07	1.0640	1.108	1.108	0.0247	1.108		
S Total HpCDD					2.240	2.240	0.0247	0.0247		
D 13C-OCDD	41.527	157093	0.95	0.7420	7.878	7.878	0.0369	0.0369	78.78	
OCDF	41.619	22176	0.90	1.4296	0.9874	0.9874	0.0471	0.0471		M
OCDD	41.535	259453	0.88	1.1293	14.6	14.6	0.0396	0.0396		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 25-Sep-2020 11:41:50 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d				
Lims ID:	320-64049-A-4-B				
Client ID:	11215702-Soil-Tank#2				
Sample Type:	Client				
Inject. Date:	24-Sep-2020 05:41:00	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	20.0000		
Sample Info:	320-64049-A-4-B (20x)				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Sep-2020 11:41:50	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1005				

First Level Reviewer: shardaa Date: 24-Sep-2020 10:32:49

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											M
331.9368	20.024	20.007	1		61687	9800	425	1062	23		M
333.9338	20.024	20.007	1		79872	12132	78	195	156	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											M
315.9419	19.095	19.095	0	0.954	73251	11757	545	1362	22		M
317.9389	19.112	19.095	1	0.954	98540	15450	285	712	54	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.138	19.121	1	1.002	1794511	257935	522	1305	494		
305.8987	19.138	19.121	1	1.002	2302737	324406	338	845	960	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.737	18.740	-120	0.877	44924	8475	522	1305	16		
305.8987	16.737	18.740	-120	0.877	61232	10597	338	845	31	0.73(0.65-0.89)	
303.9016	17.202	18.740	-92	0.901	73620	10842	522	1305	21		
305.8987	17.193	18.740	-93	0.900	94292	13302	338	845	39	0.78(0.65-0.89)	
303.9016	17.597	18.740	-68	0.922	56480	8522	522	1305	16		
305.8987	17.597	18.740	-68	0.922	75933	10366	338	845	31	0.74(0.65-0.89)	
303.9016	17.967	18.740	-46	0.941	85335	12127	522	1305	23		
305.8987	17.967	18.740	-46	0.941	103624	15492	338	845	46	0.82(0.65-0.89)	
303.9016	18.450	18.740	-17	0.966	779948	126698	522	1305	243		
305.8987	18.450	18.740	-17	0.966	977467	157791	338	845	467	0.80(0.65-0.89)	
303.9016	18.837	18.740	6	0.986	37478	5817	522	1305	11		
305.8987	18.819	18.740	5	0.986	53279	7523	338	845	22	0.70(0.65-0.89)	
303.9016	19.878	18.740	68	1.041	118633	17606	522	1305	34		
305.8987	19.886	18.740	69	1.041	158435	21711	338	845	64	0.75(0.65-0.89)	
303.9016	20.291	18.740	93	1.063	24612	3453	522	1305	7		
305.8987	20.282	18.740	92	1.062	41857	5194	338	845	15	0.59(0.65-0.89)	
	Empc Correction				31963	4484	338	845	13		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	22.304	18.740	213	1.168	129600	17272	522	1305	33		
305.8987	22.295	18.740	213	1.168	164637	21523	338	845	64	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											M
331.9368	20.394	20.359	2	1.018	55352	7805	425	1062	18		M
333.9338	20.386	20.359	2	1.018	70479	9219	78	195	118	0.79(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	20.411	20.394	1	1.001	383787	53701	172	430	312		M
321.8936	20.411	20.394	1	1.001	490351	68140	93	232	733	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.411	20.394	1	1.019	64953	9928	34	85	292		
A Non-2,3,7,8-sub-TCDD											RQMa
319.8965	20.222	19.549	40	0.992	3448	827	172	430	5		M
321.8936	20.222	19.549	40	0.992	5383	1025	93	232	11	0.64(0.65-0.89)	
	Empc Correction				4477	1074	93	232	12		
319.8965	21.065	19.549	91	1.033	33328	4479	172	430	26		
321.8936	21.065	19.549	91	1.033	45862	5700	93	232	61	0.73(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											M
351.9000	26.191	26.181	1	1.308	94055	15563	28	70	556		M
353.8970	26.183	26.181	0	1.308	57399	9972	45	112	222	1.64(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.217	26.206	1	1.001	68728	11013	52	130	212		
341.8567	26.208	26.206	0	1.001	44878	7507	64	160	117	1.53(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											Ma
351.9000	27.648	27.630	1	1.381	91497	14606	28	70	522		M
353.8970	27.648	27.630	1	1.381	55625	8860	45	112	197	1.64(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	27.673	27.655	1	1.001	41169	6437	52	130	124		
341.8567	27.665	27.655	1	1.001	26134	4277	64	160	67	1.58(1.32-1.78)	M
A F1 PeCDFs											
339.8597	23.567						6	15			
341.8567	23.567						47	117			
A Non-2,3,7,8-sub-PeCDF											
339.8597	24.810	26.955	-128	0.947	28511	5217	52	130	100		
341.8567	24.810	26.955	-128	0.947	16956	3038	64	160	47	1.68(1.32-1.78)	
339.8597	26.090	26.955	-52	0.996	4627	1073	52	130	21		
341.8567	26.099	26.955	-51	0.996	3395	727	64	160	11	1.36(1.32-1.78)	
339.8597	26.781	26.955	-10	1.022	18817	3307	52	130	64		
341.8567	26.772	26.955	-11	1.022	12304	1864	64	160	29	1.53(1.32-1.78)	
339.8597	27.993	26.955	62	1.069	10185	1578	52	130	30		
341.8567	27.985	26.955	62	1.068	6517	1084	64	160	17	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.423	28.404	1	1.419	67398	9934	92	230	108		
369.8919	28.432	28.404	2	1.420	42590	5832	50	125	117	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.457	28.430	2	1.001	4263	642	62	155	10		M
357.8516	28.465	28.430	2	1.001	2532	344	9	22	38	1.68(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.294						62	155			
357.8516	27.294						9	22			
13C-1,2,3,4,7,8-HxCDF											a
383.8639	34.093	34.076	1	0.948	41514	7744	30	75	258		a
385.8610	34.093	34.076	1	0.948	79211	15876	100	250	159	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.110	34.101	1	1.000	90084	17684	72	180	246		
375.8178	34.110	34.101	1	1.000	71339	14196	37	92	384	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.278	34.261	1	0.954	44901	9295	30	75	310		
385.8610	34.270	34.261	1	0.953	92912	17026	100	250	170	0.48(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.295	34.286	1	1.000	27543	4715	72	180	65		
375.8178	34.287	34.286	0	1.000	21443	3606	37	92	97	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.188	35.179	1	0.979	46666	10141	30	75	338		
385.8610	35.188	35.179	1	0.979	86786	19623	100	250	196	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.222	35.196	2	1.001	3183	757	72	180	11		
375.8178	35.213	35.196	1	1.001	2611	504	37	92	14	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.157	36.149	0	1.006	40247	9980	30	75	333		
385.8610	36.157	36.149	0	1.006	80987	19171	100	250	192	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.182	36.157	1	1.001	1519	453	72	180	6		
375.8178	36.165	36.157	0	1.000	1371	369	37	92	10	1.11(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	32.348	34.158	-108	0.949	6177	928	72	180	13		
375.8178	32.357	34.158	-108	0.949	5294	933	37	92	25	1.17(1.05-1.43)	
373.8208	33.393	34.158	-46	0.979	3562	698	72	180	10		
375.8178	33.376	34.158	-47	0.979	2986	532	37	92	14	1.19(1.05-1.43)	
373.8208	35.078	34.158	55	1.029	1872	417	72	180	6		
375.8178	35.070	34.158	55	1.029	1323	294	37	92	8	1.41(1.05-1.43)	
373.8208	36.283	34.158	127	1.064	5691	1437	72	180	20		
375.8178	36.283	34.158	127	1.064	4263	1157	37	92	31	1.33(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.946	35.938	1		75094	18687	37	92	505		
403.8529	35.946	35.938	1		59268	14571	45	112	324	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	35.416	35.416	0	0.985	49357	11735	37	92	317		a
403.8529	35.424	35.416	1	0.985	41530	9604	45	112	213	1.19(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.432						11	27			
391.8127	35.432						34	85			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.551	35.542	1	0.989	61441	14329	37	92	387		
403.8529	35.551	35.542	1	0.989	49639	11607	45	112	258	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.559						11	27			
391.8127	35.559						34	85			
1,2,3,7,8,9-HxCDD											
389.8158	35.955						11	27			
391.8127	35.955						34	85			
A Non-2,3,7,8-sub-HxCDD											
389.8158	33.326	34.626	-78	0.937	1091	178	11	27	16		
391.8127	33.292	34.626	-80	0.936	922	201	34	85	6	1.18(1.05-1.43)	
389.8158	34.573	34.626	-3	0.973	1341	256	11	27	23		
391.8127	34.582	34.626	-3	0.973	1078	260	34	85	8	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.081	38.065	1	1.059	35745	9764	87	217	112		
419.8220	38.081	38.065	1	1.059	71399	22249	70	175	318	0.50(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.089	38.073	1	1.000	27262	7956	38	95	209		
409.7788	38.081	38.073	0	1.000	26425	8049	29	72	278	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											Ma
417.8250	39.387	39.371	1	1.096	28939	9583	87	217	110		M
419.8220	39.378	39.371	0	1.095	71213	22215	70	175	317	0.41(0.37-0.51)	M
1,2,3,4,7,8,9-HpCDF											
407.7817	39.387	39.379	0	1.000	8877	2719	38	95	72		
409.7788	39.387	39.379	0	1.000	8063	2511	29	72	87	1.10(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.469	38.744	-17	1.010	9257	2946	38	95	78		
409.7788	38.469	38.744	-17	1.010	9490	2780	29	72	96	0.98(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.075	39.059	1	1.087	55583	17655	61	152	289		
437.8140	39.067	39.059	0	1.087	51171	15080	28	70	539	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.084	39.067	1	1.000	12631	3780	47	117	80		
425.7737	39.084	39.067	1	1.000	13085	3989	22	55	181	0.97(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.409	38.941	-32	0.983	13006	3738	47	117	80		
425.7737	38.409	38.941	-32	0.983	12156	3494	22	55	159	1.07(0.88-1.20)	
13C-OCDD											
469.7780	41.527	41.519	0	1.155	76662	20697	44	110	470		
471.7750	41.527	41.519	0	1.155	80431	21153	29	72	729	0.95(0.76-1.02)	
OCDF											M
441.7428	41.619	41.603	1	1.002	10487	2997	30	75	100		
443.7399	41.619	41.603	1	1.002	11689	3466	83	207	42	0.90(0.76-1.02)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	41.535	41.527	0	1.000	121181	32131	35	87	918		
459.7348	41.535	41.527	0	1.000	138272	36760	40	100	919	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d
Lims ID: 320-64049-A-4-B
Client ID: 11215702-Soil-Tank#2
Inject. Date: 24-Sep-2020 05:41:00
Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 415261
Lims Sample ID: 11

Non-2,3,7,8-sub-TCDF, RT: 18.740

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	171791	27207

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		5.000	171791	27207

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.737	44924	8475	61232	10597	2.85	0.73	
17.202	73620	10842	94292	13302	4.50	0.78	
17.597	56480	8522	75933	10366	3.55	0.74	
17.967	85335	12127	103624	15492	5.07	0.82	
18.450	779948	126698	977467	157791	47.1	0.80	
18.837	37478	5817	53279	7523	2.43	0.70	
19.878	118633	17606	158435	21711	7.43	0.75	
20.291	24612	3453	41857	5194	1.78	0.59	RQ
20.291	24612	3453	31963	4484	1.52		Empc Correction
22.304	129600	17272	164637	21523	7.89	0.79	
Signal Totals:							
	1350630	210812	1720862	262789			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3081386	474311				0.78	RQ
	3071492	473601					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 82.609 = (3081386 * 5.000) / (171791 * 1.086)
Empc Amount: 82.343 = (3071492 * 5.000) / (171791 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 25-Sep-2020 11:41:50 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	24-Sep-2020 05:41:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDD, RT: 19.549

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	125831	17024

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		5.000	125831	17024

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.222	3448	827	5383	1025	0.3246	0.64	RQMa
20.222	3448	827	4477	1074	0.2913		Empc Correction
21.065	33328	4479	45862	5700	2.91	0.73	
Signal Totals:							
	36776	5306	50339	6774			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	88021	12031				0.72	RQMa
	87115	12080					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.236 = (88021 * 5.000) / (125831 * 1.081)
Empc Amount: 3.202 = (87115 * 5.000) / (125831 * 1.081)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 25-Sep-2020 11:41:50 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d
Lims ID: 320-64049-A-4-B
Client ID: 11215702-Soil-Tank#2
Inject. Date: 24-Sep-2020 05:41:00
Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 415261
Lims Sample ID: 11

Non-2,3,7,8-sub-PeCDF, RT: 26.955

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	151454	25535
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	147122	23466

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		5.000	149288	24500

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.810	28511	5217	16956	3038	1.41	1.68	
26.090	4627	1073	3395	727	0.2490	1.36	
26.781	18817	3307	12304	1864	0.9659	1.53	
27.993	10185	1578	6517	1084	0.5184	1.56	
Signal Totals:							
	62140	11175	39172	6713			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	101312	17888				1.59	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.144 = (101312 * 5.000) / (149288 * 1.079)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	24-Sep-2020 05:41:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDF, RT: 34.158

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	120725	23620
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	137813	26321
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	133452	29764
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	121234	29151

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		5.000	128306	27214

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
32.348	6177	928	5294	933	0.3578	1.17	
33.393	3562	698	2986	532	0.2042	1.19	
35.078	1872	417	1323	294	0.0997	1.41	
36.283	5691	1437	4263	1157	0.3105	1.33	
Signal Totals:							
	17302	3480	13866	2916			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	31168	6396				1.25	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.9722 = (31168 * 5.000) / (128306 * 1.249)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	24-Sep-2020 05:41:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDD, RT: 34.626

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	90887	21339
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	111080	25936
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		5.000	100983	23637

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.326	1091	178	922	201	0.0889	1.18	
34.573	1341	256	1078	260	0.1068	1.24	
Signal Totals:							
	2432	434	2000	461			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4432	895				1.22	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1957 = (4432 * 5.000) / (100983 * 1.121)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	24-Sep-2020 05:41:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDF, RT: 38.744

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	107144	32013
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	100152	31798

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		5.000	103648	31905

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.469	9257	2946	9490	2780	0.6108	0.98	
Signal Totals:							
	9257	2946	9490	2780			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18747	5726				0.98	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6108 = (18747 * 5.000) / (103648 * 1.481)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Lims ID:	320-64049-A-4-B		
Client ID:	11215702-Soil-Tank#2		
Inject. Date:	24-Sep-2020 05:41:00	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	106754	32735

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		5.000	106754	32735

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.409	13006	3738	12156	3494	1.11	1.07	
Signal Totals:							
	13006	3738	12156	3494			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	25162	7232				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.108 = (25162 * 5.000) / (106754 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d				
Injection Date:	24-Sep-2020 05:41:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	20.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-2,3,7,8-TCDD, CAS: 76523-40-5

Signal: 1

Processing Integration Results

RT:	20.39
Area:	54351
Amount:	3.938731
Amount Units:	pg/ul

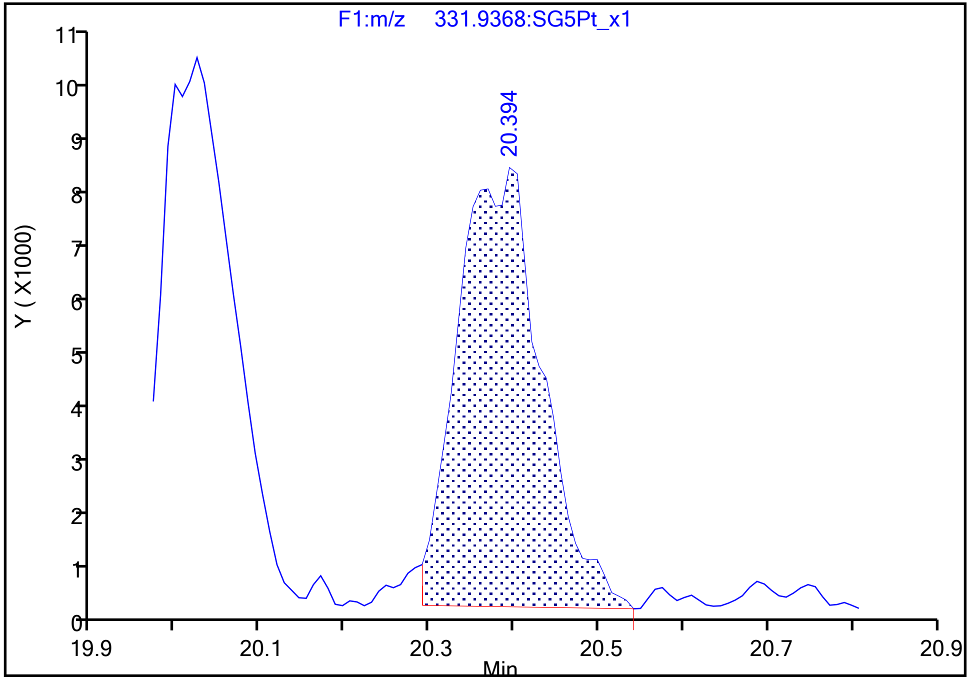

Manual Integration Results

RT:	20.39
Area:	55352
Amount:	3.970315
Amount Units:	pg/ul

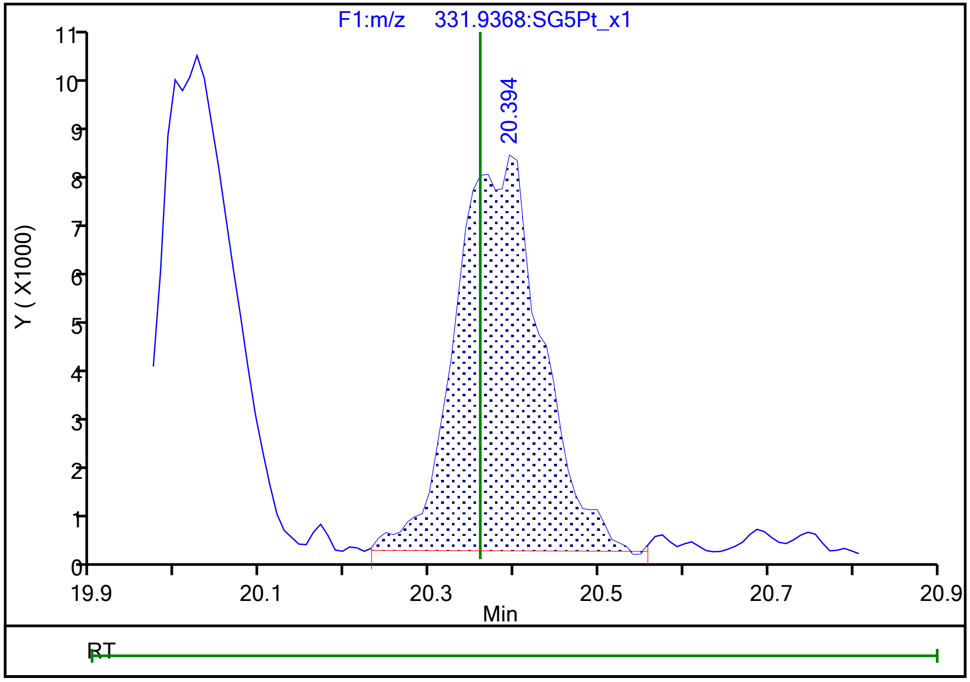

Reviewer: dadunj, 25-Sep-2020 11:24:23

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 25-Sep-2020 11:41:50 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d

Injection Date:	24-Sep-2020 05:41:00	Instrument ID:	DFS 1		
Lims ID:	320-64049-A-4-B	Lab Sample ID:	320-64049-4		
Client ID:	11215702-Soil-Tank#2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	20.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	20.41
Area:	387236
Amount:	32.518190
Amount Units:	pg/ul

Processing Integration Results

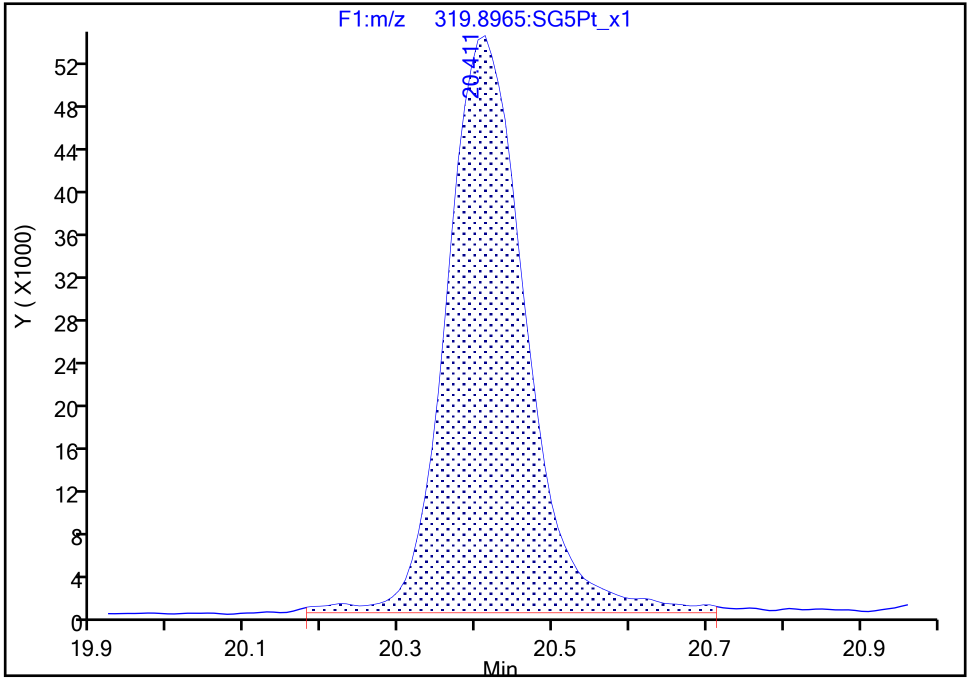

RT:	20.41
Area:	383787
Amount:	32.132721
Amount Units:	pg/ul

Manual Integration Results

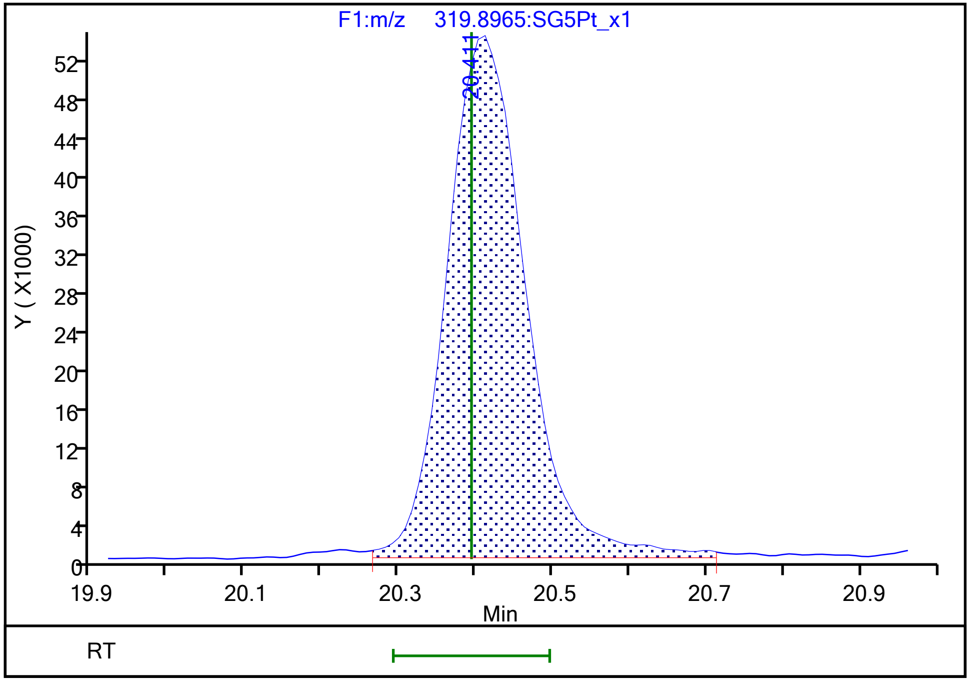

Reviewer: dadunj, 25-Sep-2020 11:21:12

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Injection Date:	24-Sep-2020 05:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#2		
Worklist#:	415261	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

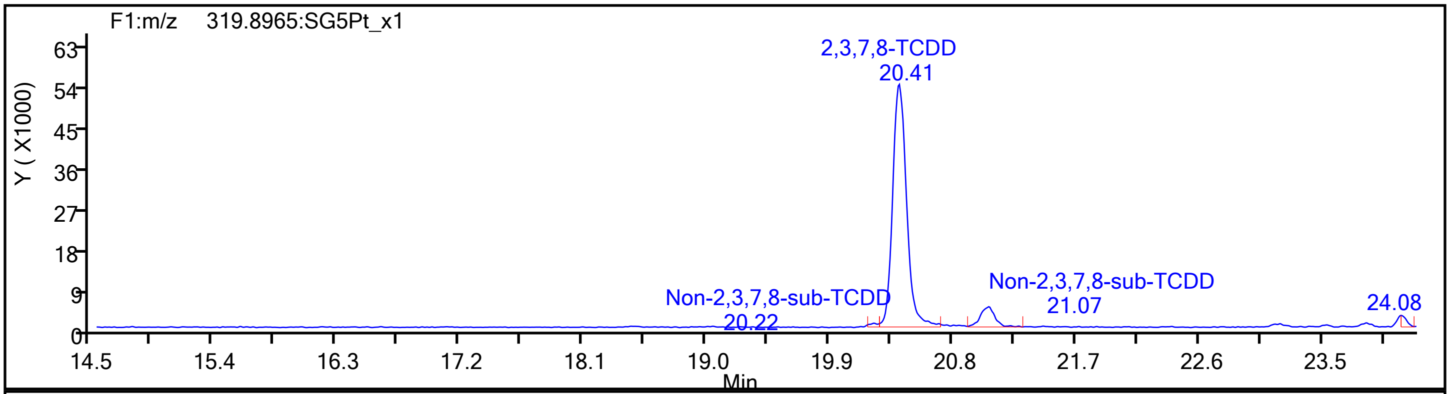

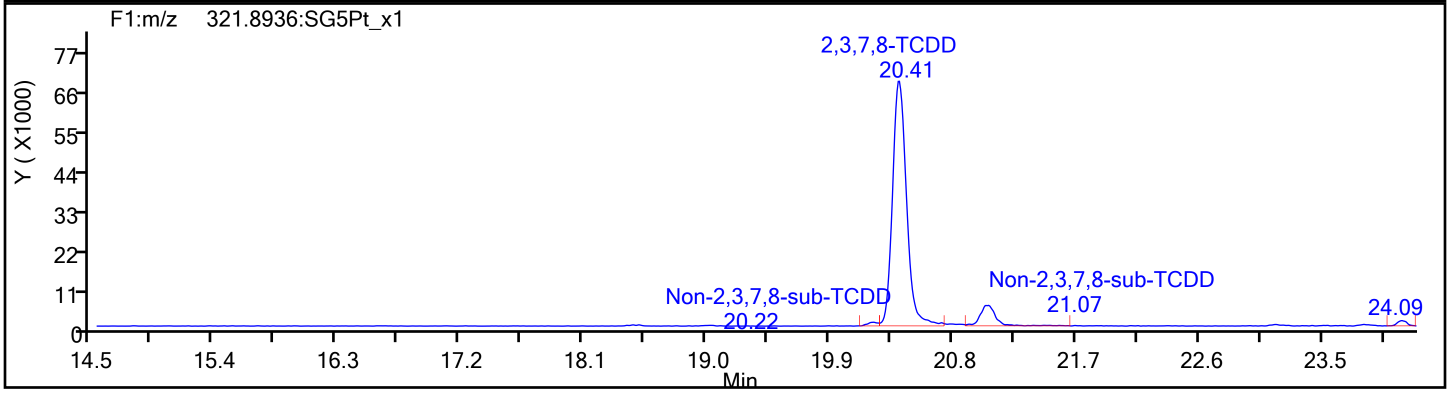

TCDD Standards

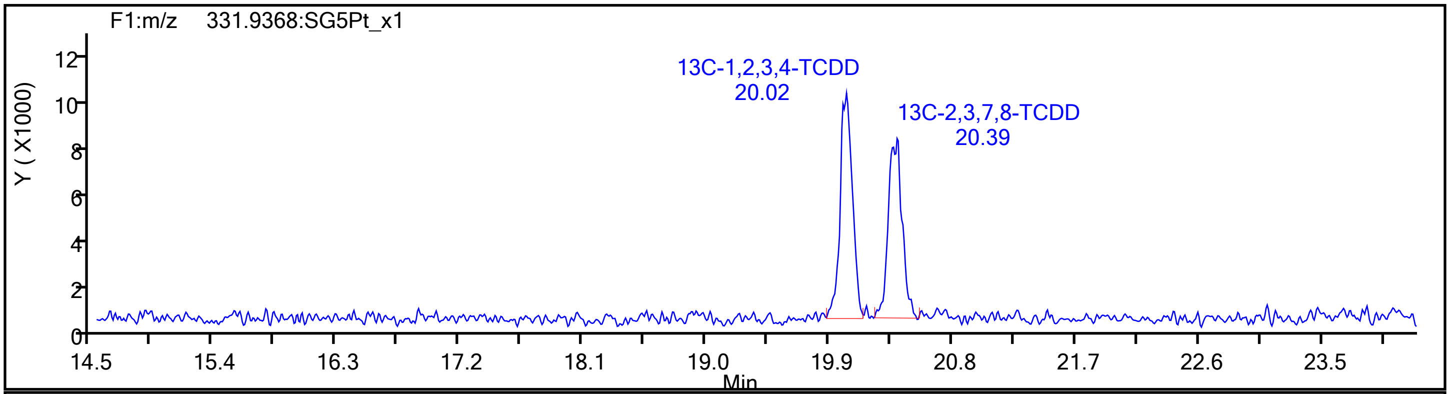

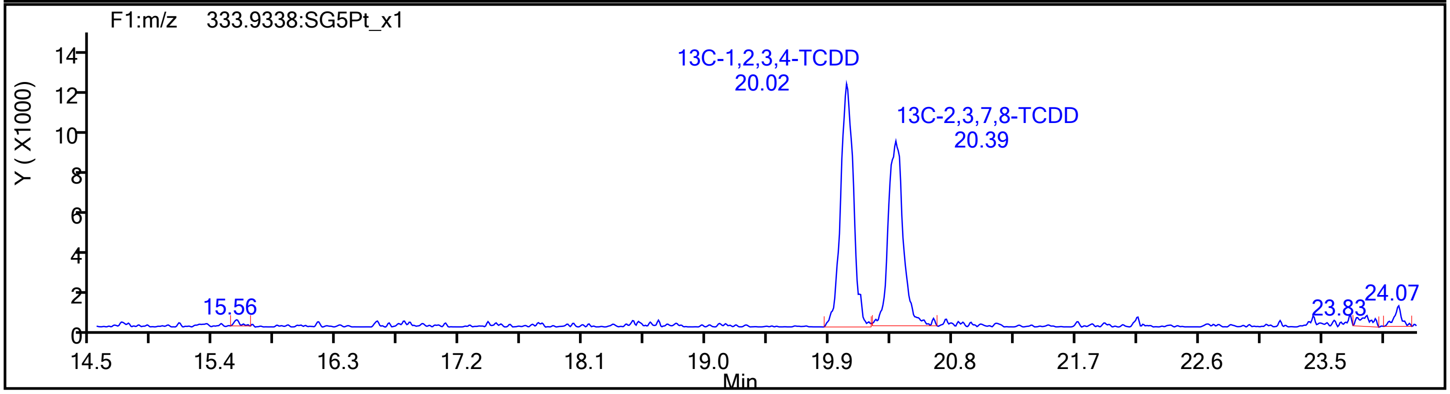

Report Date: 25-Sep-2020 11:41:51 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d

Injection Date: 24-Sep-2020 05:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#2
Worklist#: 415261
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

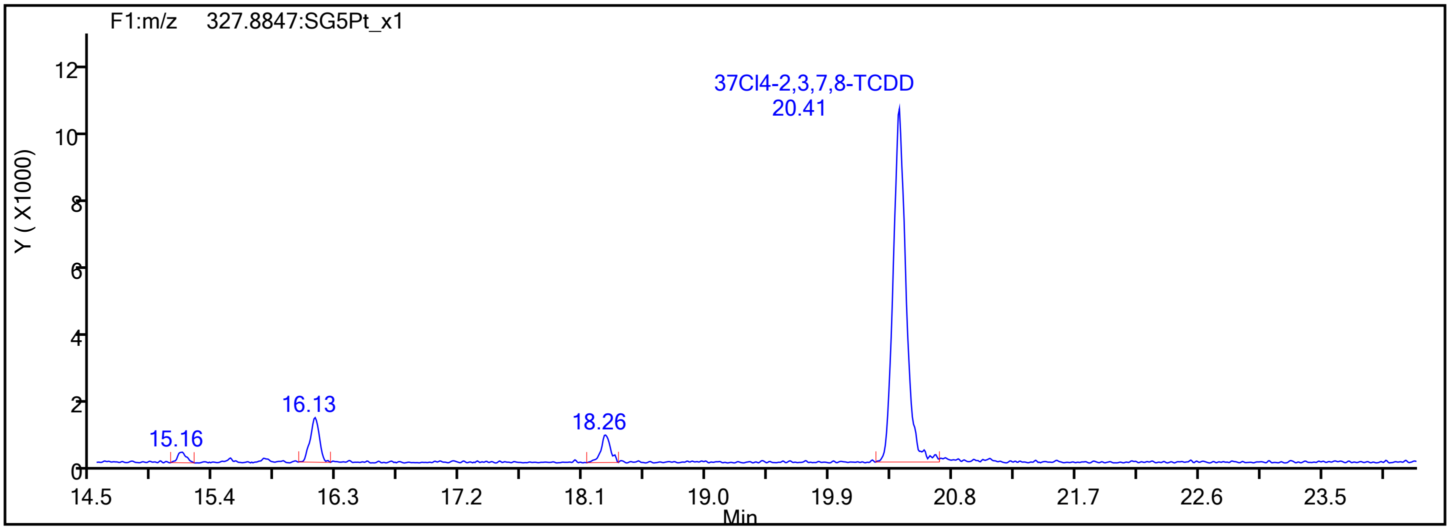

37Cl4-TCDD Standards

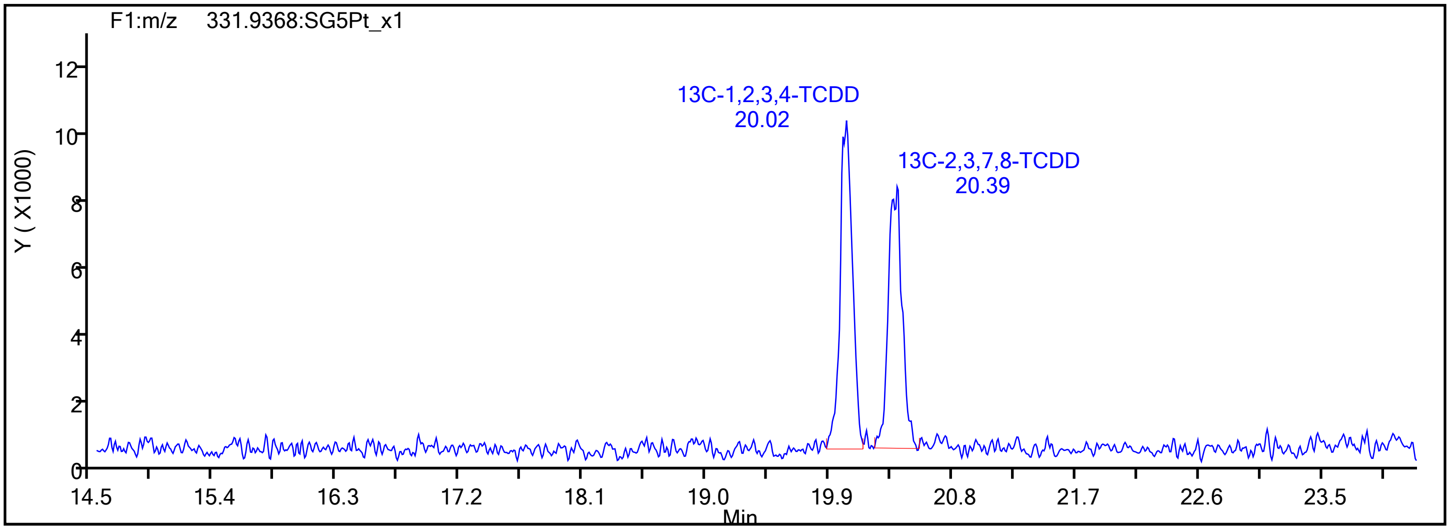

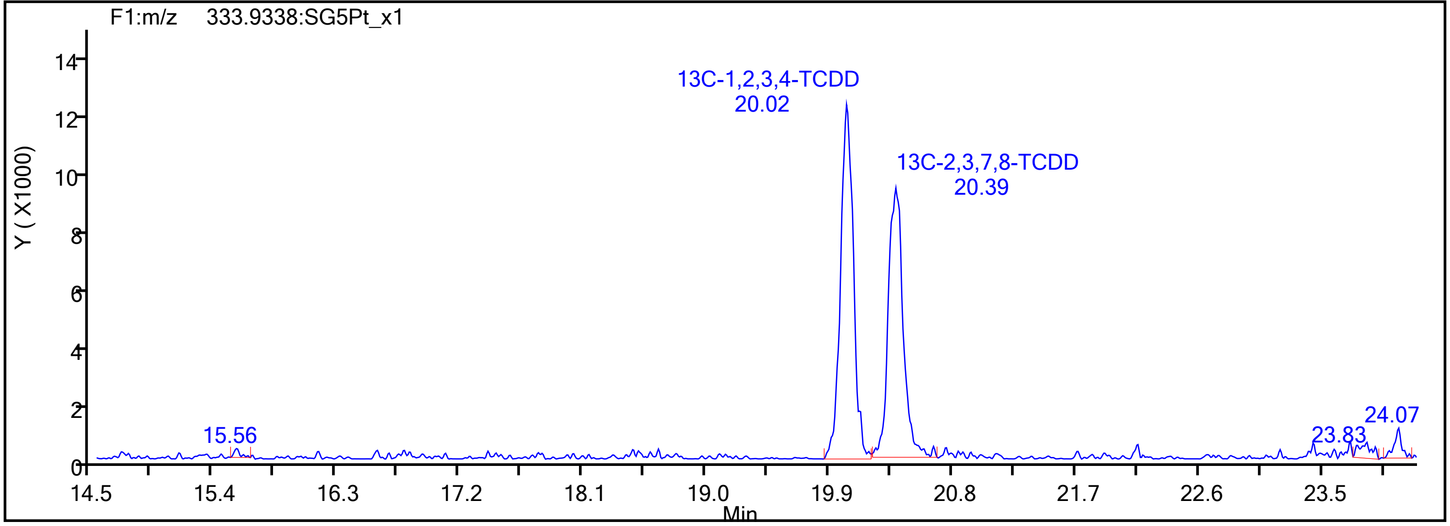

Report Date: 25-Sep-2020 11:41:51 Chrom Revision: 2.3 24-Sep-2020 19:22:38

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d
Injection Date: 24-Sep-2020 05:41:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Soil-Tank#2
Worklist#: 415261 Sample Line#: 11
Column Type: DB-5 Column Dia: 0.32 mm

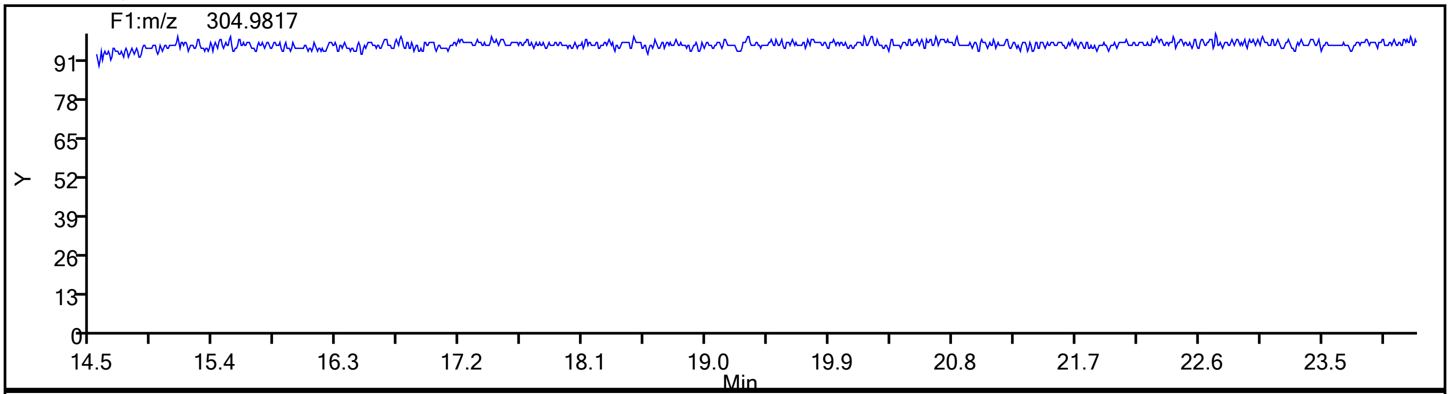

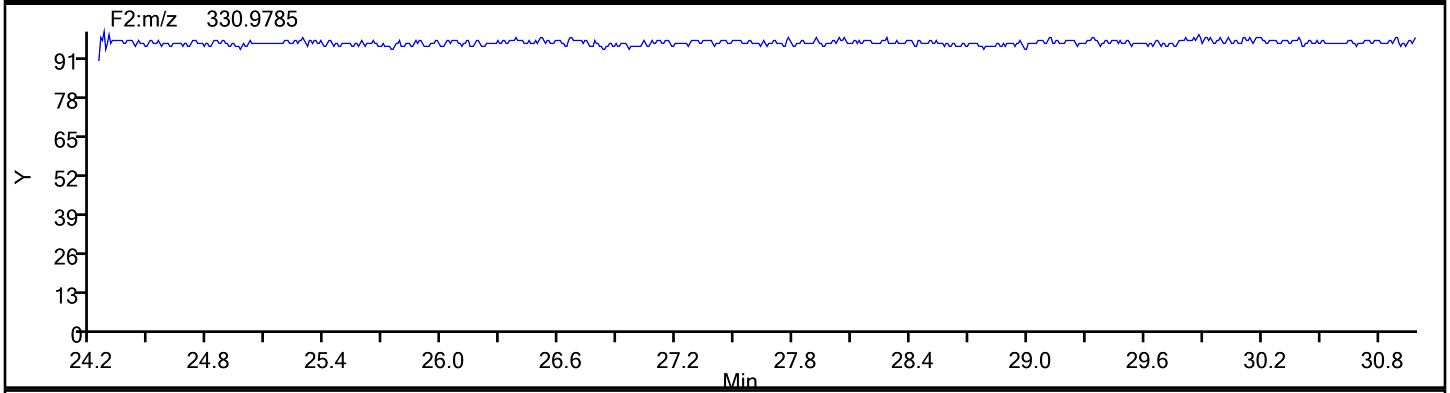

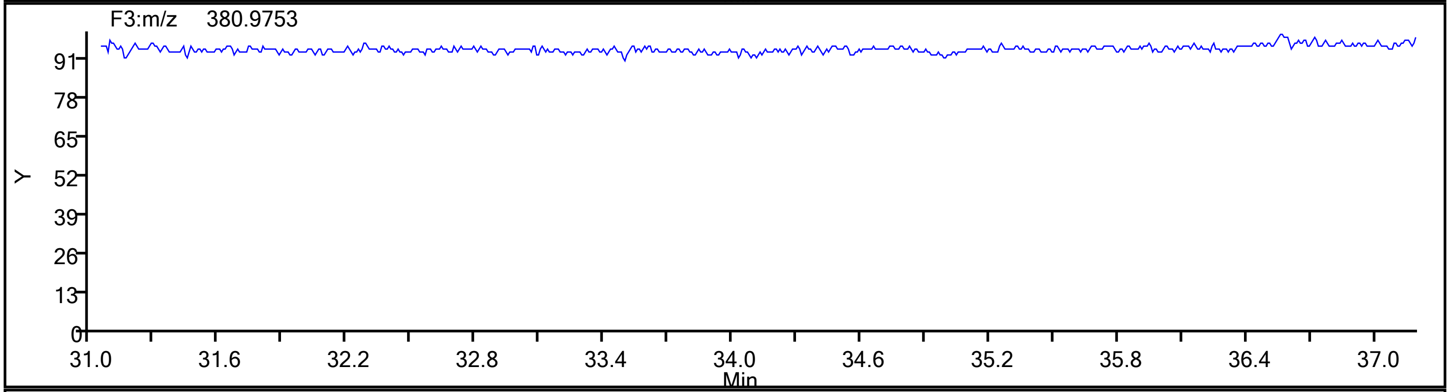

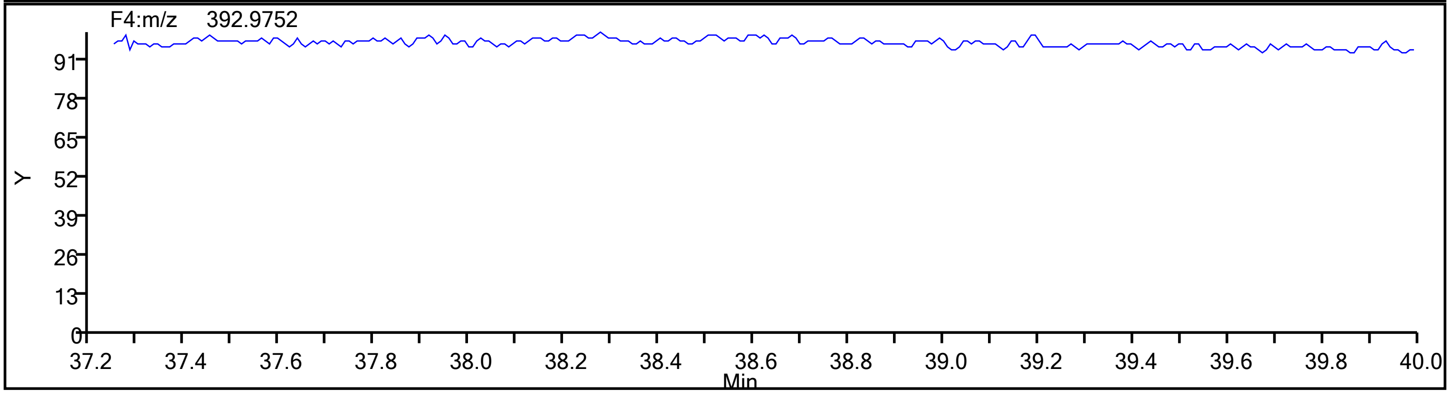

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_12.d		
Injection Date:	24-Sep-2020 05:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Soil-Tank#2		
Worklist#:	415261	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

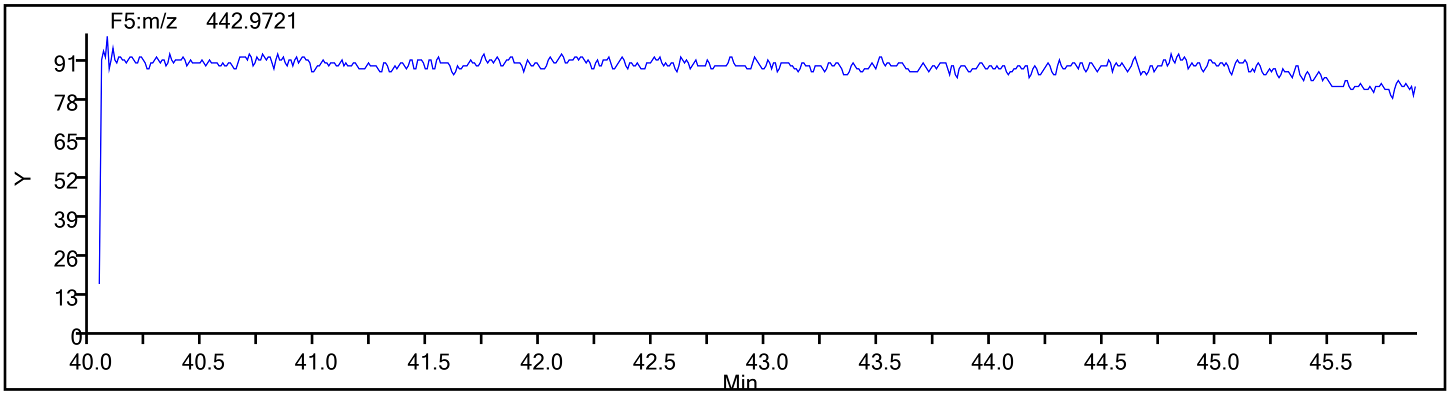

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-390253/3	27JN20A10D5_3.d
Level 2	IC 320-390253/4	27JN20A10D5_4.d
Level 3	IC 320-390253/5	27JN20A10D5_5.d
Level 4	IC 320-390253/6	27JN20A10D5_6.d
Level 5	IC 320-390253/7	27JN20A10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9622	0.8723	0.8878	0.9090	0.9208	AveID		0.9104				3.8		20.0			
2,3,7,8-TCDD	1.1459	1.0637	1.0160	1.0668	1.0799	AveID		1.0745				4.3		20.0			
1,2,3,7,8-PeCDF	1.0178	0.9707	0.9806	1.0060	0.9939	AveID		0.9938				1.9		20.0			
2,3,4,7,8-PeCDF	0.8569	0.7653	0.8088	0.8192	0.8083	AveID		0.8117				4.0		20.0			
1,2,3,7,8-PeCDD	1.0295	0.9968	1.0095	1.0333	1.0215	AveID		1.0181				1.5		20.0			
1,2,3,4,7,8-HxCDF	0.8264	0.7466	0.8017	0.8348	0.8212	AveID		0.8061				4.4		20.0			
1,2,3,6,7,8-HxCDF	0.9926	0.9517	0.9681	1.0060	0.9909	AveID		0.9818				2.2		20.0			
2,3,4,6,7,8-HxCDF	1.0605	1.0168	1.0279	1.0442	1.0418	AveID		1.0382				1.6		20.0			
1,2,3,4,7,8-HxCDD	0.8745	0.7772	0.8099	0.8250	0.8146	AveID		0.8202				4.3		20.0			
1,2,3,6,7,8-HxCDD	0.9535	0.9129	0.9268	0.9521	0.9380	AveID		0.9367				1.8		20.0			
1,2,3,7,8,9-HxCDD	1.0476	0.9676	0.9680	0.9938	0.9754	AveID		0.9905				3.4		20.0			
1,2,3,7,8,9-HxCDF	1.0369	1.0255	1.0226	1.0379	1.0374	AveID		1.0321				0.7		20.0			
1,2,3,4,6,7,8-HpCDF	1.4703	1.4287	1.4421	1.4741	1.4484	AveID		1.4527				1.3		20.0			
1,2,3,4,6,7,8-HpCDD	1.0754	1.0391	1.0348	1.0598	1.0606	AveID		1.0540				1.6		20.0			
1,2,3,4,7,8,9-HpCDF	1.0923	1.0016	1.0565	1.0809	1.0614	AveID		1.0585				3.3		20.0			
OCDD	1.2193	1.1131	1.1275	1.1591	1.1305	AveID		1.1499				3.7		20.0			
OCDF	1.3068	1.2472	1.2865	1.3368	1.3050	AveID		1.2965				2.5		20.0			
13C-2,3,7,8-TCDF	1.3537	1.3541	1.3433	1.4035	1.4082	Ave		1.3726				2.2		35.0			
13C-2,3,7,8-TCDD	0.9956	1.0272	0.9998	1.0288	1.0446	Ave		1.0192				2.0		35.0			
13C-1,2,3,7,8-PeCDF	1.0982	1.1235	1.1049	1.1775	1.2102	Ave		1.1429				4.3		35.0			
13C-2,3,4,7,8-PeCDF	1.3337	1.4224	1.3377	1.4295	1.4751	Ave		1.3997				4.4		35.0			
13C-1,2,3,7,8-PeCDD	0.8085	0.8002	0.7989	0.8395	0.8687	Ave		0.8232				3.7		35.0			
13C-1,2,3,4,7,8-HxCDF	1.0976	1.1590	1.1254	1.1433	1.1688	Ave		1.1388				2.5		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0684	1.0788	1.0866	1.0815	1.0863	Ave		1.0803				0.7		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9398	0.9313	0.9462	0.9645	0.9652	Ave		0.9494				1.6		35.0			
13C-1,2,3,4,7,8-HxCDD	0.9124	0.9506	0.8876	0.9587	0.9689	Ave		0.9356				3.7		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0219	1.0303	1.0727	1.0407	1.0423	Ave		1.0416				1.8		35.0			
13C-1,2,3,7,8,9-HxCDF	0.8661	0.8307	0.8523	0.8846	0.9014	Ave		0.8670				3.2		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.7803	0.7622	0.7899	0.8027	0.8145	Ave		0.7899				2.6		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7481	0.7316	0.7607	0.7823	0.7960	Ave		0.7637				3.4		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.8727	0.9053	0.8888	0.9186	0.9610	Ave		0.9093				3.7		35.0			
13C-OCDD	0.6003	0.5928	0.6267	0.6645	0.7042	Ave		0.6377				7.3		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	0.8685	0.9982	0.9928	1.1004	1.1281	Ave		1.0176				10.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-390253/3	27JN20A10D5_3.d
Level 2	IC 320-390253/4	27JN20A10D5_4.d
Level 3	IC 320-390253/5	27JN20A10D5_5.d
Level 4	IC 320-390253/6	27JN20A10D5_6.d
Level 5	IC 320-390253/7	27JN20A10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	280892	1030887	5357609	24031823	122216235	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	246045	953601	4563232	20673669	106321386	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1205247	4759314	24335887	111571715	566831479	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1232457	4750358	24300949	110300391	561858549	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	897541	3480805	18115123	81703665	418171926	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	816526	3185554	16628712	77185884	405180807	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	954593	3779382	19386425	87985501	454382367	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	897222	3485837	17924922	81444661	424474579	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	718246	2719685	13247984	63965429	333187319	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	877174	3462702	18322759	80138616	412697943	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	912086	3527858	17485889	80351223	414077282	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	808411	3136034	16062640	74251577	394753597	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1032759	4008596	20993366	95697028	498016185	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	724174	2798461	14507917	67048589	356377100	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	858123	3338012	17306428	80293602	430556216	2.50	10.0	50.0	200	1000
OCDD		AveID	1317823	4858093	26045472	124592297	672147206	5.00	20.0	100	400	2000
OCDF		AveID	1412405	5443463	29718751	143689837	775885278	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	58386827	59091712	60344940	66092582	66365053	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	42943807	44824010	44913870	48446018	49229599	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	47366892	49027297	49635229	55450977	57033386	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	57527637	62074161	60093455	67318305	69514353	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	34874204	34921306	35888619	39534333	40938052	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	39521628	42664742	41483076	46230589	49341715	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	38469455	39713843	40051804	43730114	45855303	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	33841250	34283463	34877926	38999309	40745996	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	32853663	34994028	32715286	38766257	40903104	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	36797812	37929467	39539332	42083843	43998213	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	31185646	30581048	31414784	35770919	38052377	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	28095822	28057147	29115881	32459322	34382848	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	26936004	26931716	28040054	31631816	33600359	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	31425221	33325163	32761435	37143667	40565902	100	100	100	100	100
13C-OCDD	13CHx	Ave	43232241	43643747	46201838	53743483	59456751	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	187314	871168	4459695	20727504	106325815	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 390253

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/27/2020 14:42 Calibration End Date: 06/27/2020 17:43 Calibration ID: 50712

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 27-Jun-2020 14:42:53 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720 CS-2 HRDXNL2_00029
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:34:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	43132879	0.80	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	58386827	0.79	1.3726	98.6	98.6	0.2580	0.2580	98.62	
2,3,7,8-TCDF	17.219	280892	0.66	0.9104	0.5284	0.5284	0.0199	0.0199	106	Ma
S Total TCDF					0.5284	0.5284	0.0199	0.0199		
D 13C-2,3,7,8-TCDD	17.884	42943807	0.79	1.0192	97.7	97.7	0.2939	0.2939	97.69	
2,3,7,8-TCDD	17.914	246045	0.88	1.0745	0.5332	0.5332	0.0280	0.0280	107	
$ 37Cl4-2,3,7,8-TCDD	17.899	187314		1.0176	0.4268	0.4268	0.0126	0.0126	85.35	
S Total TCDD					0.5332	0.5332	0.0280	0.0280		
D 13C-1,2,3,7,8-PeCDF	22.143	47366892	1.58	1.1429	96.1	96.1	0.4209	0.4209	96.09	
1,2,3,7,8-PeCDF	22.156	1205247	1.59	0.9938	2.560	2.560	0.0363	0.0363	102	
D 13C-2,3,4,7,8-PeCDF	23.452	57527637	1.59	1.3997	95.3	95.3	0.3437	0.3437	95.29	
2,3,4,7,8-PeCDF	23.493	1232457	1.56	0.8117	2.639	2.639	0.0386	0.0386	106	
S Total PeCDF					5.200	5.200	0.0375	0.0375		
D 13C-1,2,3,7,8-PeCDD	24.174	34874204	1.61	0.8232	98.2	98.2	0.1591	0.1591	98.22	
1,2,3,7,8-PeCDD	24.202	897541	1.63	1.0181	2.528	2.528	0.0365	0.0365	101	
S Total PeCDD					2.528	2.528	0.0365	0.0365		
D 13C-1,2,3,4,7,8-HxCDF	30.292	39521628	0.51	1.1388	96.4	96.4	0.9094	0.9094	96.38	
1,2,3,4,7,8-HxCDF	30.306	816526	1.20	0.8061	2.563	2.563	0.0626	0.0626	103	
D 13C-1,2,3,6,7,8-HxCDF	30.492	38469455	0.50	1.0803	98.9	98.9	0.9586	0.9586	98.89	
1,2,3,6,7,8-HxCDF	30.519	954593	1.09	0.9818	2.527	2.527	0.0575	0.0575	101	
D 13C-2,3,4,6,7,8-HxCDF	31.371	33841250	0.51	0.9494	99.0	99.0	1.091	1.091	98.99	
2,3,4,6,7,8-HxCDF	31.384	897222	1.23	1.0382	2.554	2.554	0.0457	0.0457	102	
D 13C-1,2,3,7,8,9-HxCDF	32.196	31185646	0.49	0.8670	99.9	99.9	1.194	1.194	99.89	
1,2,3,7,8,9-HxCDF	32.209	808411	1.23	1.0321	2.512	2.512	0.0495	0.0495	100	
S Total HxCDF					10.2	10.2	0.0538	0.0538		
* 13C-1,2,3,7,8,9-HxCDD	32.009	36008208	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	32853663	1.27	0.9356	97.5	97.5	0.6036	0.6036	97.52	
1,2,3,4,7,8-HxCDD	31.583	718246	1.25	0.8202	2.665	2.665	0.0349	0.0349	107	
D 13C-1,2,3,6,7,8-HxCDD	31.677	36797812	1.27	1.0416	98.1	98.1	0.5422	0.5422	98.11	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	877174	1.19	0.9367	2.545	2.545	0.0325	0.0325	102	
1,2,3,7,8,9-HxCDD	32.023	912086	1.22	0.9905	2.644	2.644	0.0298	0.0298	106	
S Total HxCDD					7.854	7.854	0.0324	0.0324		
D 13C-1,2,3,4,6,7,8-HpCDF	33.652	28095822	0.43	0.7899	98.8	98.8	3.070	3.070	98.78	
1,2,3,4,6,7,8-HpCDF	33.664	1032759	1.05	1.4527	2.530	2.530	0.0699	0.0699	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	31425221	0.43	0.9093	96.0	96.0	2.667	2.667	95.98	
1,2,3,4,7,8,9-HpCDF	34.734	858123	1.03	1.0585	2.580	2.580	0.1025	0.1025	103	
S Total HpCDF					5.110	5.110	0.0862	0.0862		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	26936004	1.05	0.7637	97.9	97.9	1.321	1.321	97.95	
1,2,3,4,6,7,8-HpCDD	34.454	724174	1.08	1.0540	2.551	2.551	0.0670	0.0670	102	
S Total HpCDD					2.551	2.551	0.0670	0.0670		
D 13C-OCDD	36.773	43232241	0.91	0.6377	188.3	188.3	0.4253	0.4253	94.13	
OCDF	36.869	1412405	0.86	1.2965	5.040	5.040	0.0689	0.0689	101	
OCDD	36.785	1317823	0.86	1.1499	5.302	5.302	0.0610	0.0610	106	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	27-Jun-2020 14:42:53	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 062720 CS-2 HRDXNL2_00029				
Misc. Info.:	27JN2010AD5				
Operator ID:	SMA	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-Jun-2020 13:16:50	Calib Date:	27-Jun-2020 17:43:35		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1062				
First Level Reviewer: messecara		Date:	27-Jun-2020 21:34:00		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		19109142	4469045	6338	15845	705		
333.9339	17.702	17.702	0		24023737	5528682	5643	14107	980	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.197	-1	0.971	25721559	5753463	7943	19857	724		
317.9389	17.188	17.197	-1	0.971	32665268	7314987	6219	15547	1176	0.79(0.65-0.89)	
2,3,7,8-TCDF											Ma
303.9016	17.219	17.215	0	1.002	111638	24949	312	780	80		M
305.8987	17.203	17.215	-1	1.001	169254	40894	635	1587	64	0.66(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.893	-1	1.010	18953285	3868385	6338	15845	610		
333.9339	17.884	17.893	-1	1.010	23990522	4968400	5643	14107	880	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.002	115035	23770	693	1732	34		
321.8936	17.914	17.911	0	1.002	131010	26451	369	922	72	0.88(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.899	17.911	-1	1.011	187314	36128	512	1280	71		
13C-1,2,3,7,8-PeCDF											
351.9000	22.143	22.148	0	1.251	29030690	4595683	11459	28647	401		
353.8970	22.143	22.148	0	1.251	18336202	2843288	7778	19445	366	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.156	22.164	0	1.001	739590	107448	456	1140	236		
341.8567	22.170	22.164	0	1.001	465657	67627	618	1545	109	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.452	23.460	0	1.325	35314398	5246885	11459	28647	458		
353.8970	23.452	23.460	0	1.325	22213239	3319576	7778	19445	427	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.493	23.487	0	1.002	750197	111156	456	1140	244		
341.8567	23.493	23.487	0	1.002	482260	68222	618	1545	110	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.174	24.180	0	1.366	21496254	2944189	2898	7245	1016		
369.8919	24.174	24.180	0	1.366	13377950	1888408	2341	5852	807	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	555750	79954	479	1197	167		
357.8516	24.188	24.204	-1	1.001	341791	46685	239	597	195	1.63(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.292	30.298	0	0.946	13355807	2118405	10331	25827	205		
385.8610	30.292	30.298	0	0.946	26165821	4001081	17560	43900	228	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.306	30.319	-1	1.000	445872	66308	645	1612	103		
375.8178	30.306	30.319	-1	1.000	370654	53531	590	1475	91	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.492	30.497	0	0.953	12817635	1836625	10331	25827	178		
385.8610	30.492	30.497	0	0.953	25651820	3631200	17560	43900	207	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.001	498017	70936	645	1612	110		
375.8178	30.519	30.519	0	1.001	456576	65753	590	1475	111	1.09(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	11403764	2212907	10331	25827	214		
385.8610	31.371	31.370	0	0.980	22437486	4297167	17560	43900	245	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	494081	96160	645	1612	149		
375.8178	31.384	31.384	0	1.000	403141	78650	590	1475	133	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.196	32.201	0	1.006	10310507	2030977	10331	25827	197		
385.8610	32.196	32.201	0	1.006	20875139	4014679	17560	43900	229	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.209	32.214	0	1.000	446374	85051	645	1612	132		
375.8178	32.209	32.214	0	1.000	362037	72332	590	1475	123	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.009	32.015	0		20121515	3760723	8471	21177	444		
403.8529	32.009	32.015	0		15886693	2972275	6740	16850	441	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	18386384	4241209	8471	21177	501		
403.8529	31.570	31.570	0	0.986	14467279	3356259	6740	16850	498	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	399412	92216	440	1100	210		
391.8127	31.583	31.583	0	1.000	318834	73262	431	1077	170	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.990	20561443	3949148	8471	21177	466		
403.8529	31.677	31.677	0	0.990	16236369	3207748	6740	16850	476	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	477373	89817	440	1100	204		
391.8127	31.690	31.693	0	1.000	399801	75642	431	1077	176	1.19(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.023	32.028	0	1.014	501620	91684	440	1100	208		
391.8127	32.023	32.028	0	1.014	410466	76084	431	1077	177	1.22(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.652	33.657	0	1.051	8501168	1992372	19221	48052	104		
419.8220	33.652	33.657	0	1.051	19594654	4545528	46094	115235	99	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.664	33.667	0	1.000	528322	119302	1326	3315	90		
409.7789	33.664	33.667	0	1.000	504437	122801	1331	3327	92	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	9461732	1889893	19221	48052	98		
419.8220	34.734	34.731	0	1.085	21963489	4232025	46094	115235	92	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.734	34.739	0	1.000	435598	82488	1326	3315	62		
409.7789	34.734	34.739	0	1.000	422525	79029	1331	3327	59	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	13800062	2832235	12564	31410	225		
437.8140	34.442	34.444	0	1.076	13135942	2704659	14602	36505	185	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	375597	73166	796	1990	92		
425.7737	34.454	34.457	0	1.000	348577	67236	768	1920	88	1.08(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.149	20628988	2892032	3523	8807	821		
471.7750	36.773	36.775	0	1.149	22603253	3086817	3782	9455	816	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	651620	99585	428	1070	233		
443.7399	36.869	36.871	0	1.003	760785	117628	641	1602	184	0.86(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	607409	86388	370	925	233		
459.7348	36.785	36.787	0	1.000	710414	99249	469	1172	212	0.86(0.76-1.02)	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d
Injection Date: 27-Jun-2020 14:42:53
Instrument ID: 10D5
Lims ID: IC
Client ID:
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 17.20
Area: 180317
Amount: 0.552071
Amount Units: pg/ul

Processing Integration Results

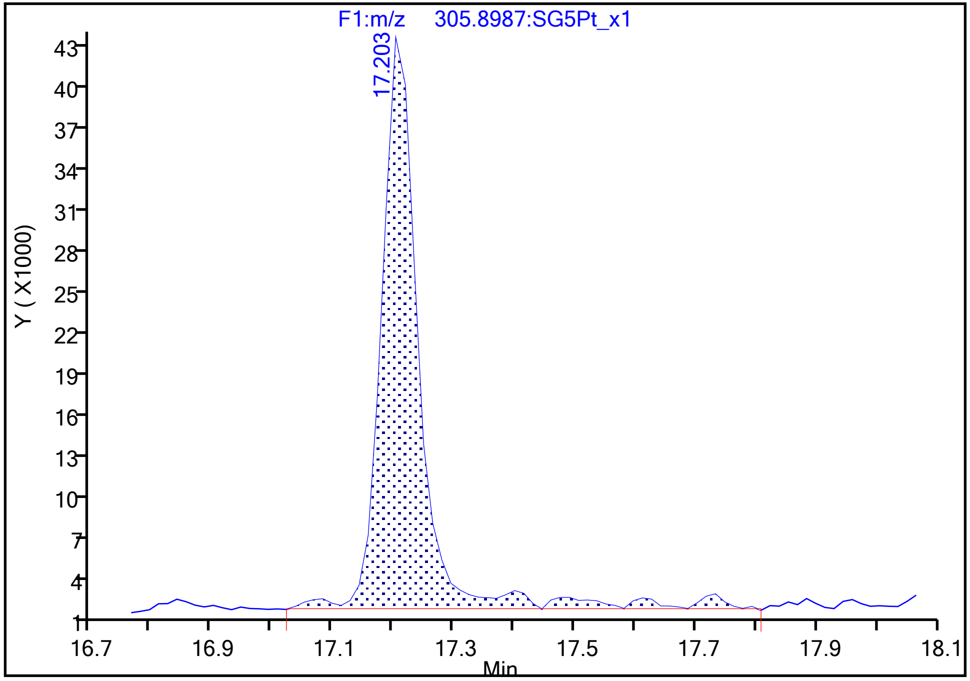

RT: 17.20
Area: 169254
Amount: 0.528425
Amount Units: pg/ul

Manual Integration Results

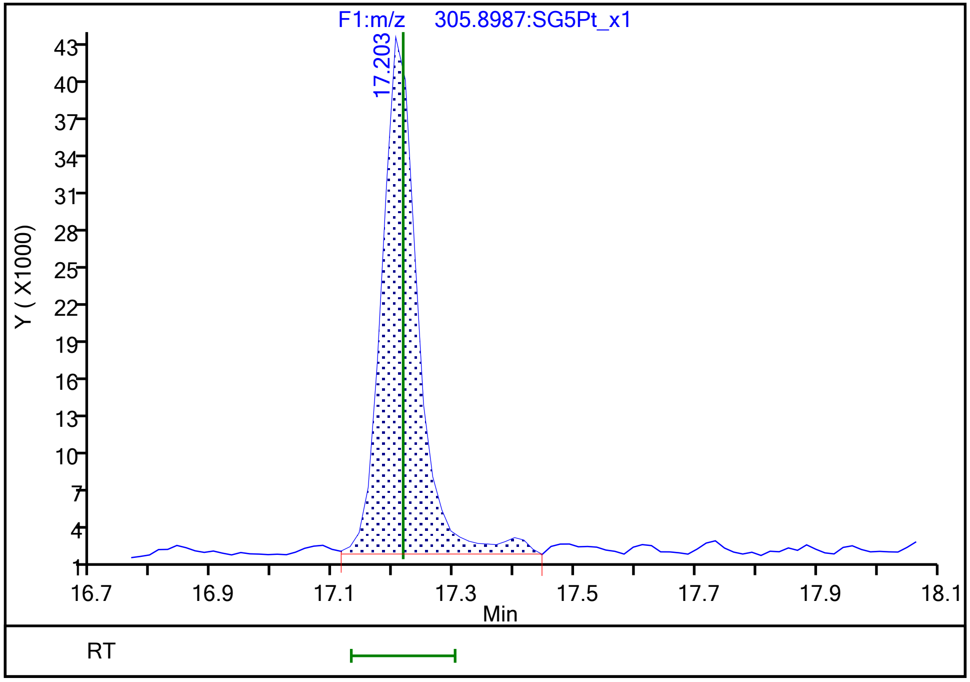

Reviewer: shardaa, 28-Jun-2020 13:06:13

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d				
Injection Date:	27-Jun-2020 14:42:53	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 3

Processing Integration Results

RT:	17.22
Area:	297024
Amount:	0.552071
Amount Units:	pg/ul

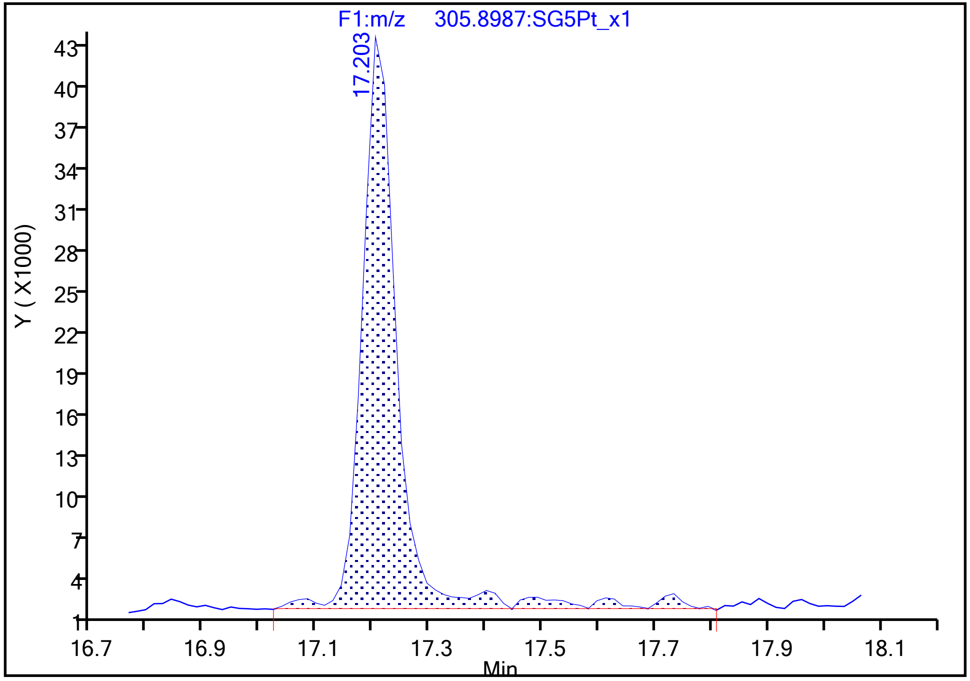

Manual Integration Results

RT:	17.22
Area:	280892
Amount:	0.528425
Amount Units:	pg/ul

Reviewer: shardaa, 28-Jun-2020 13:06:13

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Report Date: 28-Jun-2020 13:16:54

Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d

Injection Date: 27-Jun-2020 14:42:53

Instrument ID: 10D5

Lims ID: IC

Client ID:

Operator ID: SMA

ALS Bottle#: 4

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT: 17.22
Area: 116707
Amount: 0.552071
Amount Units: pg/ul

Processing Integration Results

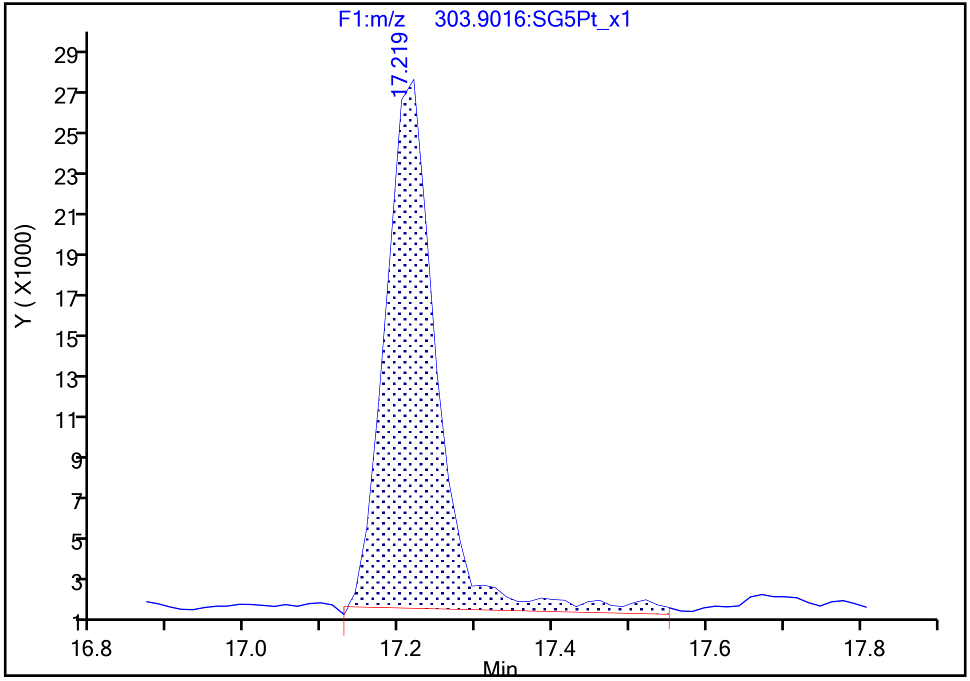

RT: 17.22
Area: 111638
Amount: 0.528425
Amount Units: pg/ul

Manual Integration Results

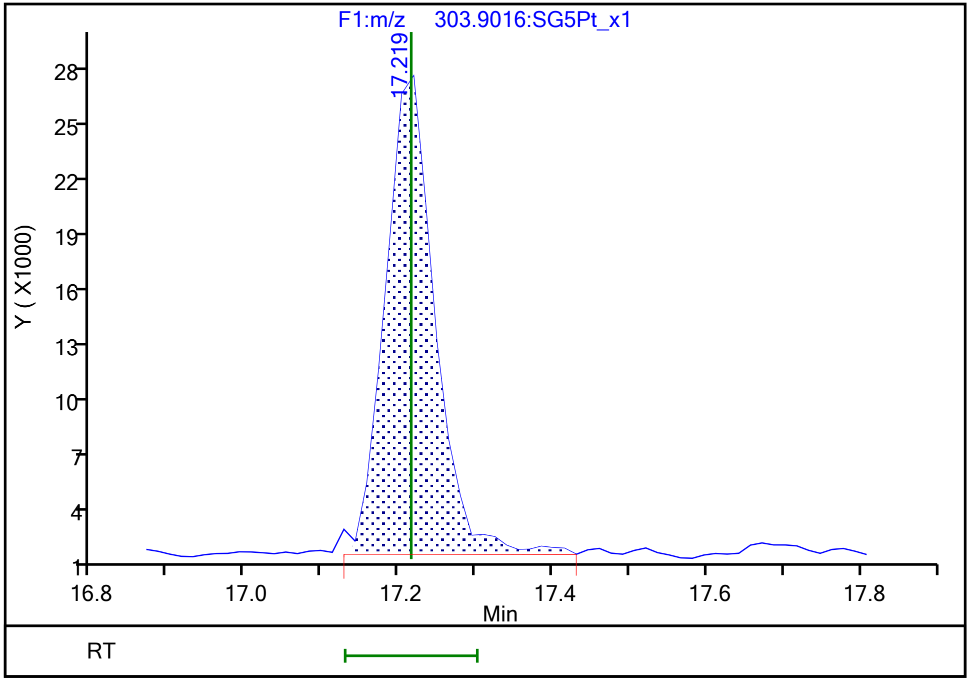

Reviewer: shardaa, 28-Jun-2020 13:06:16

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Poor chromatography

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

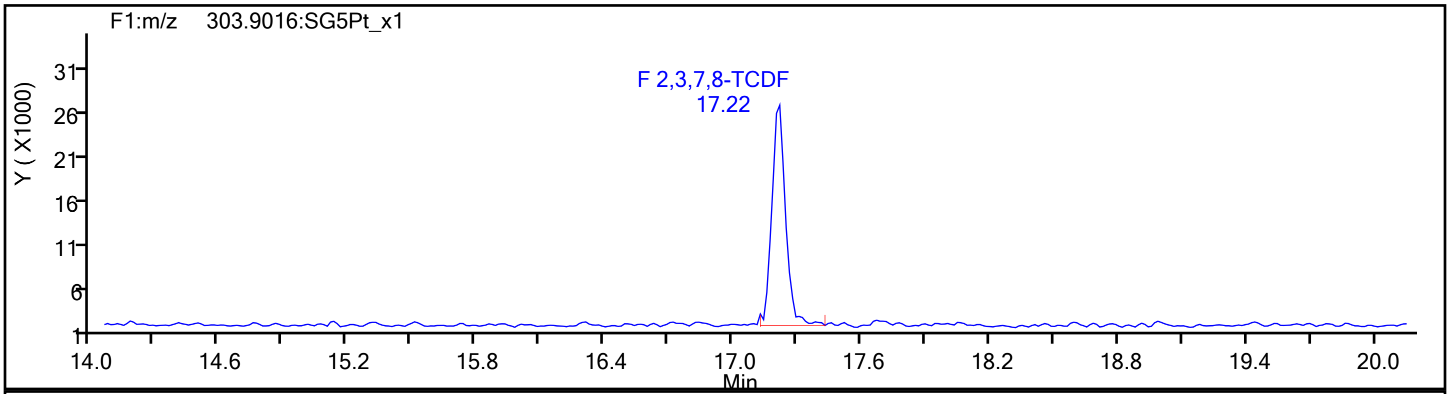

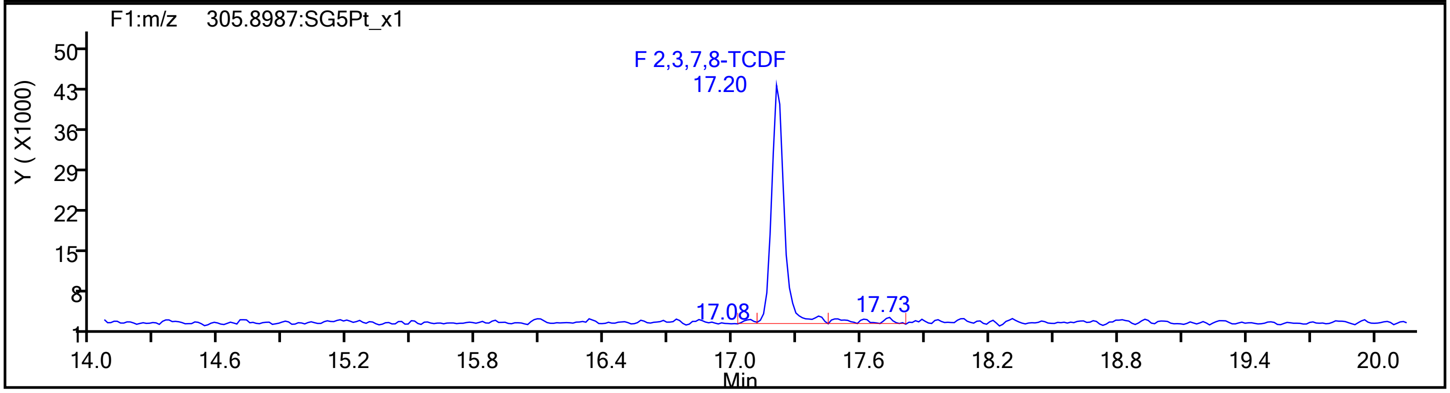

TCDF Standards

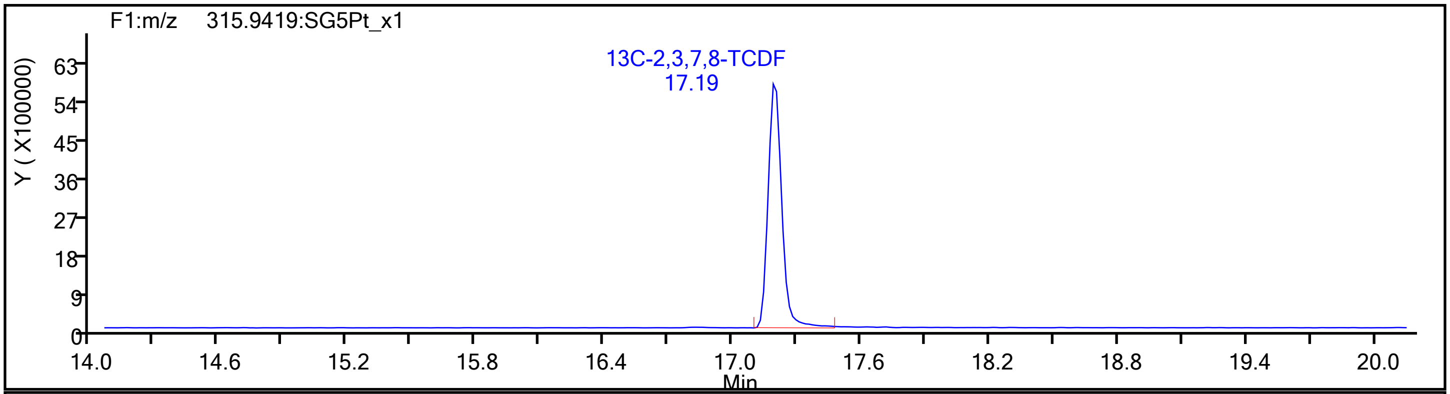

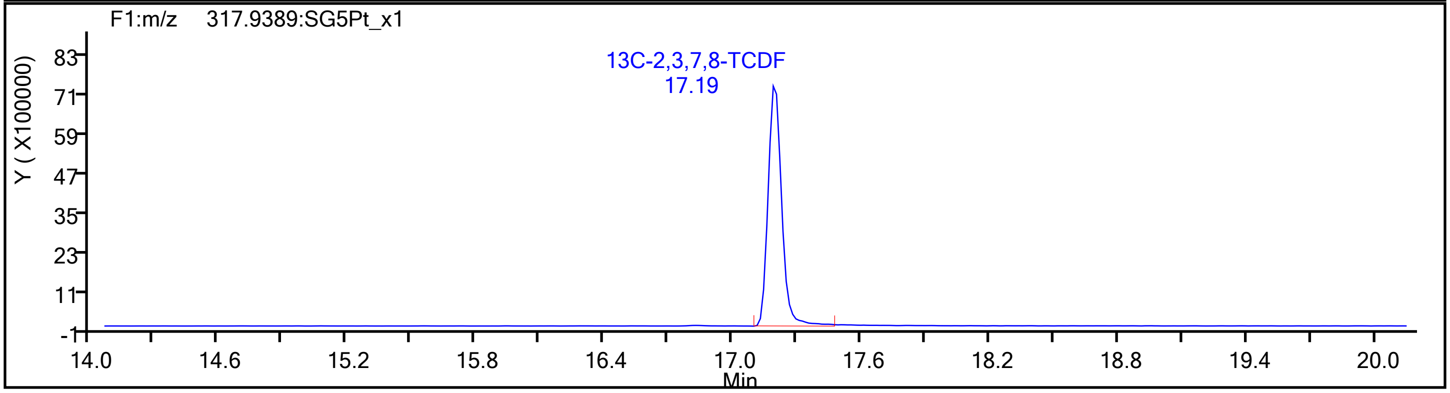

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

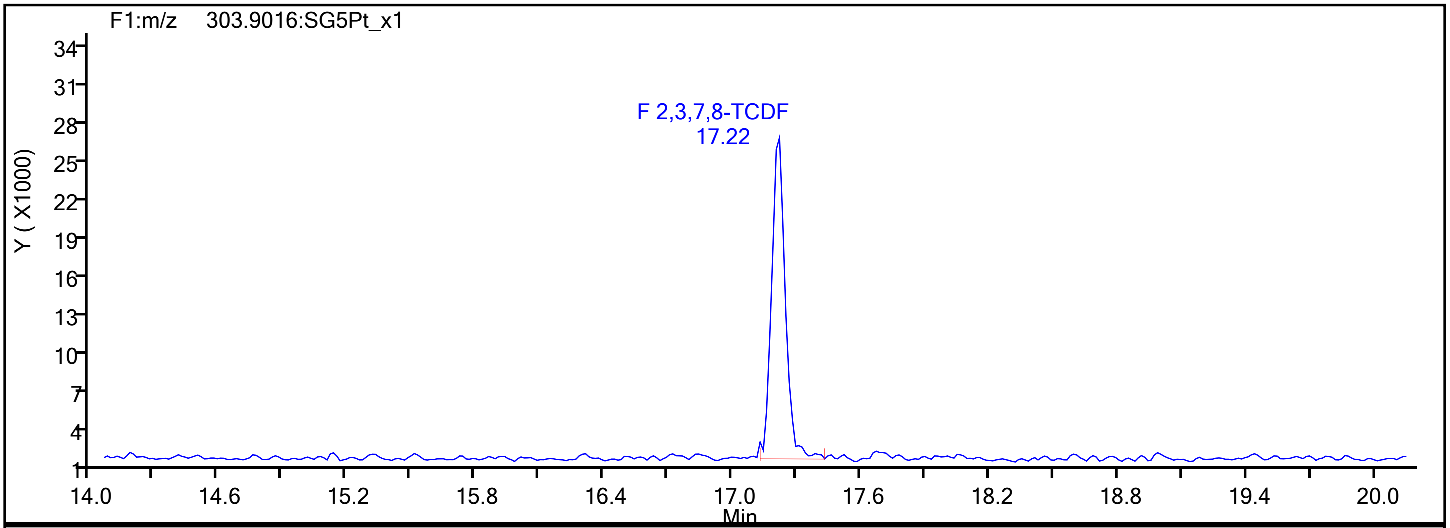

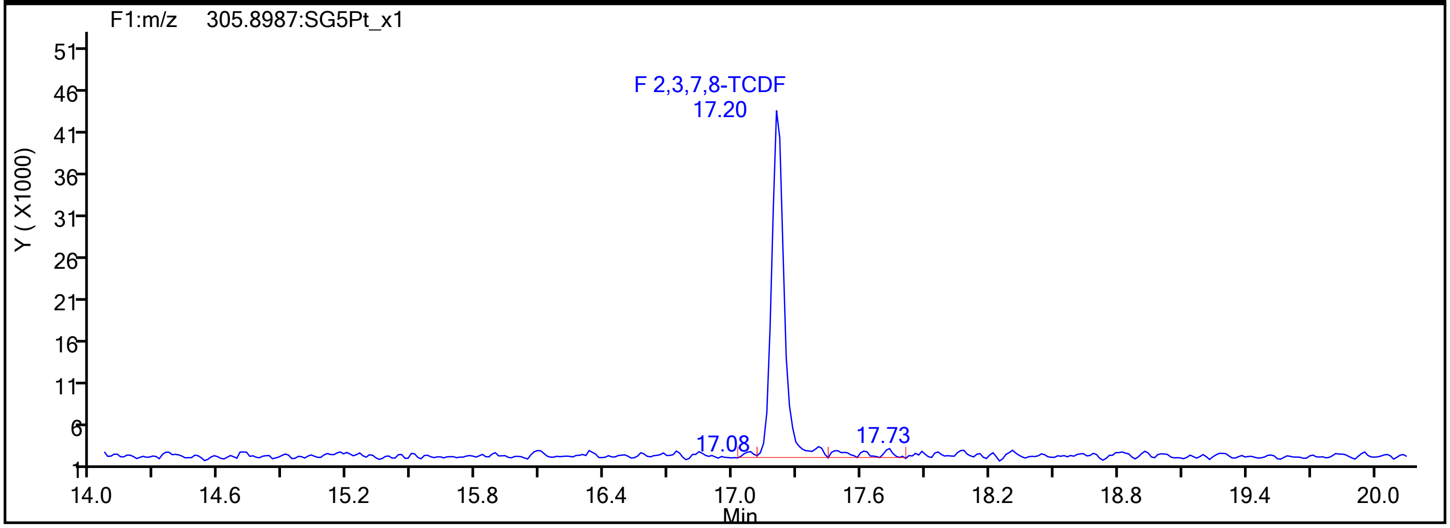

TCDF Interference Mass

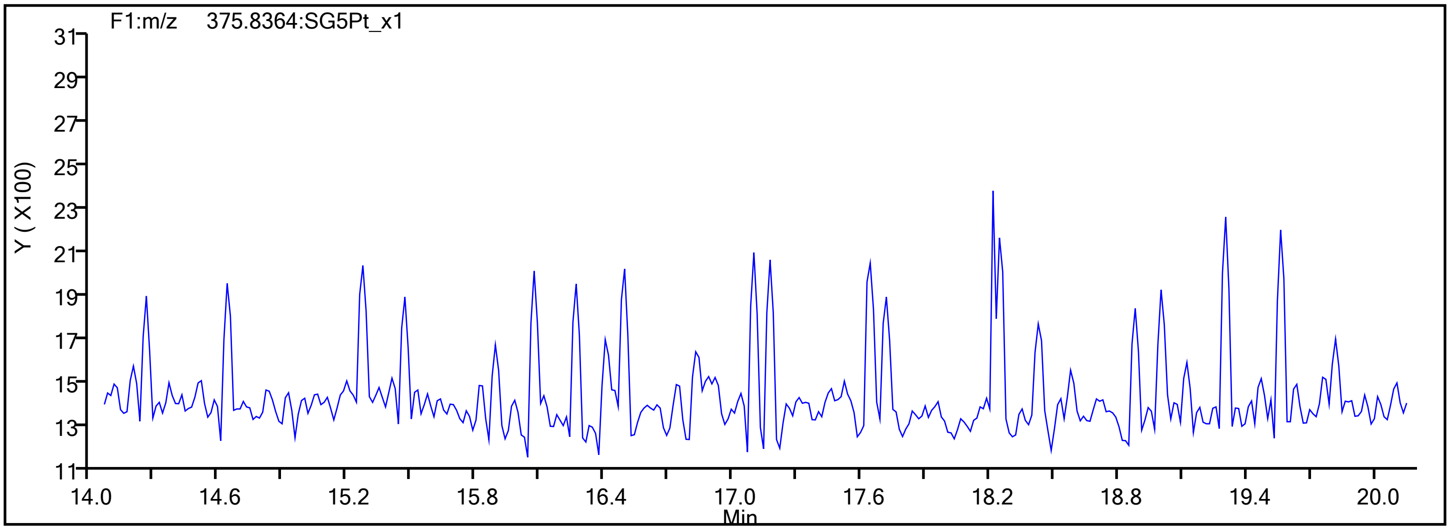

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d
Injection Date: 27-Jun-2020 14:42:53 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

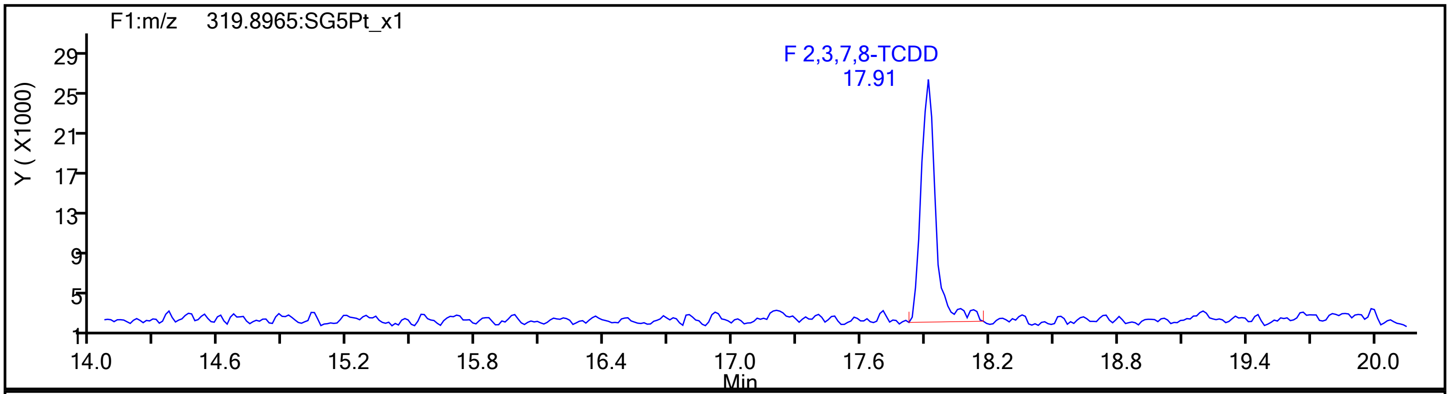

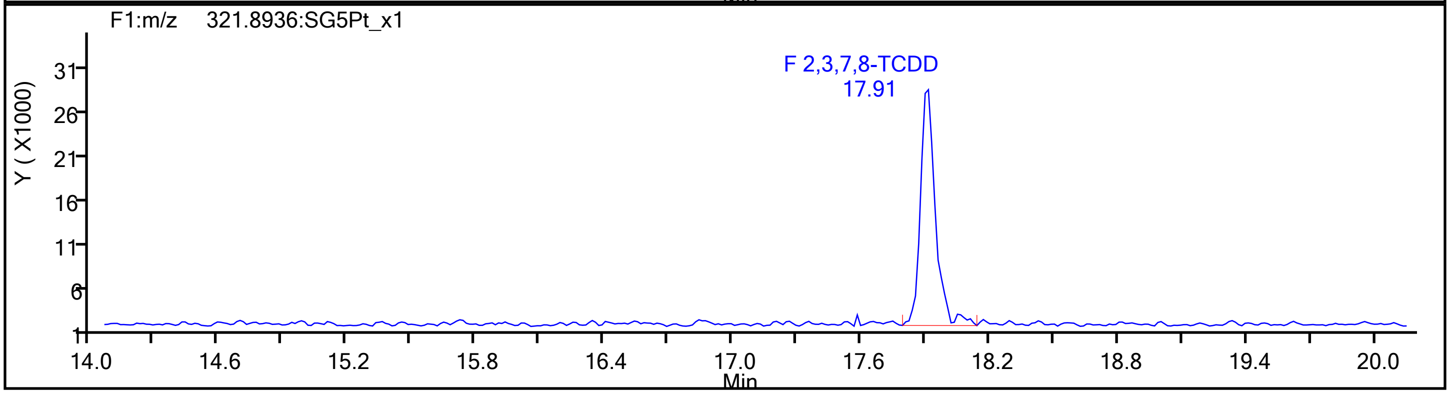

TCDD Standards

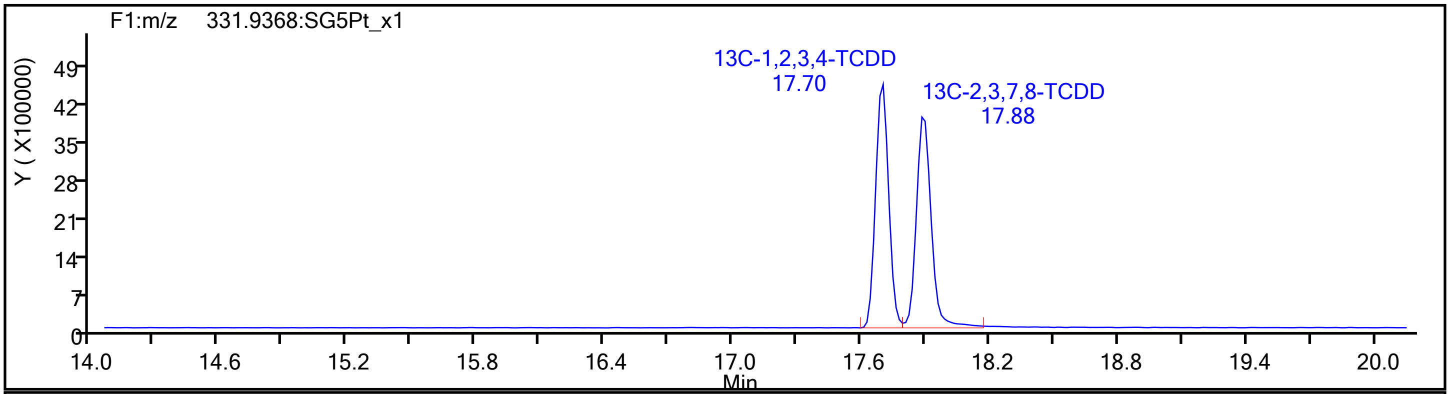

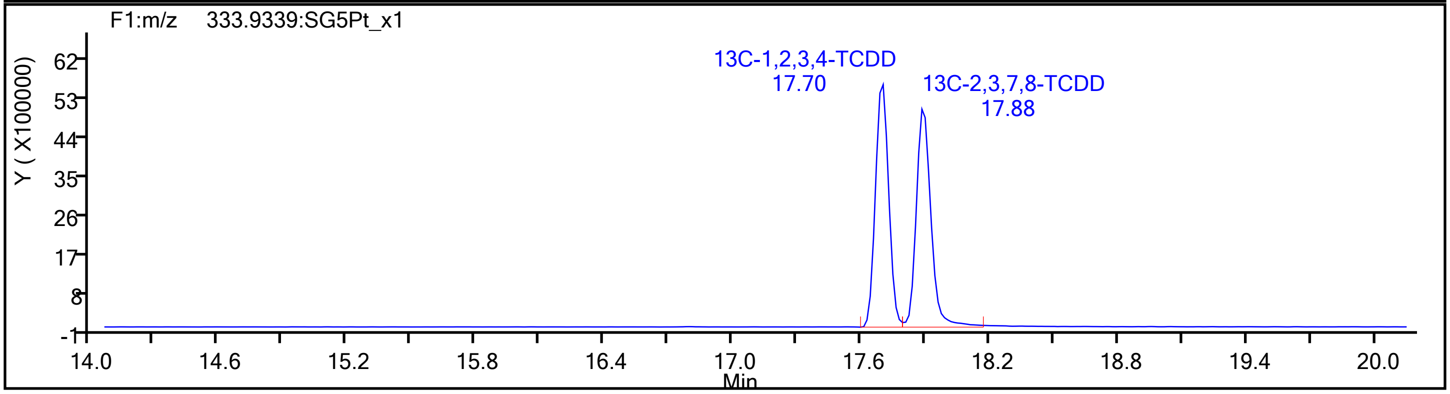

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

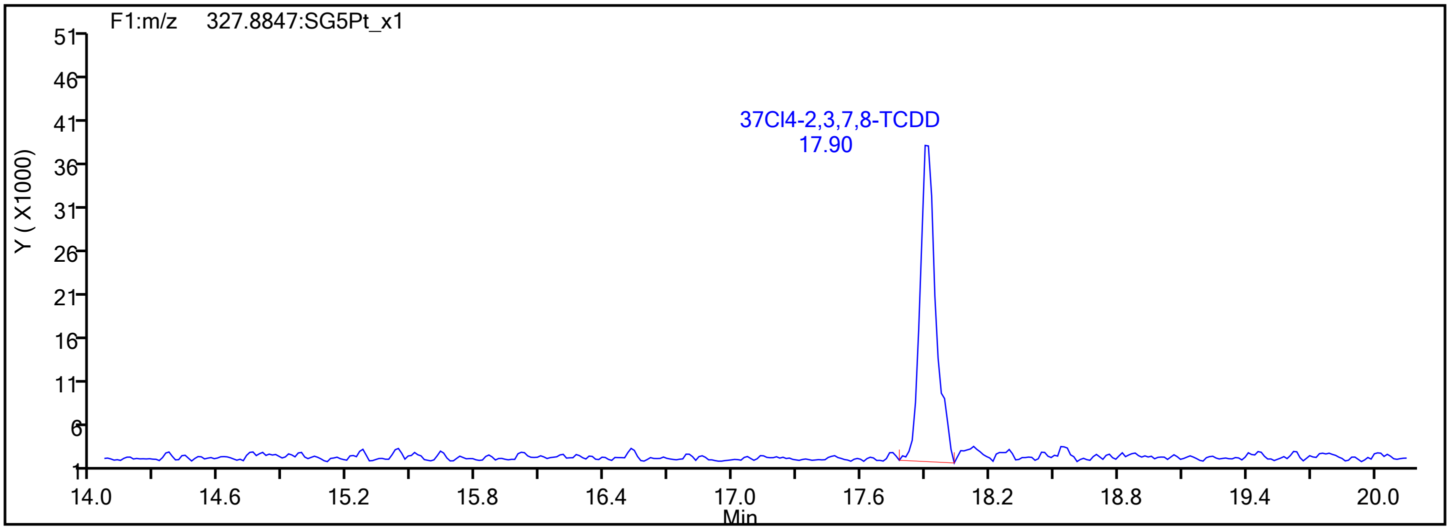

37Cl4-TCDD Standards

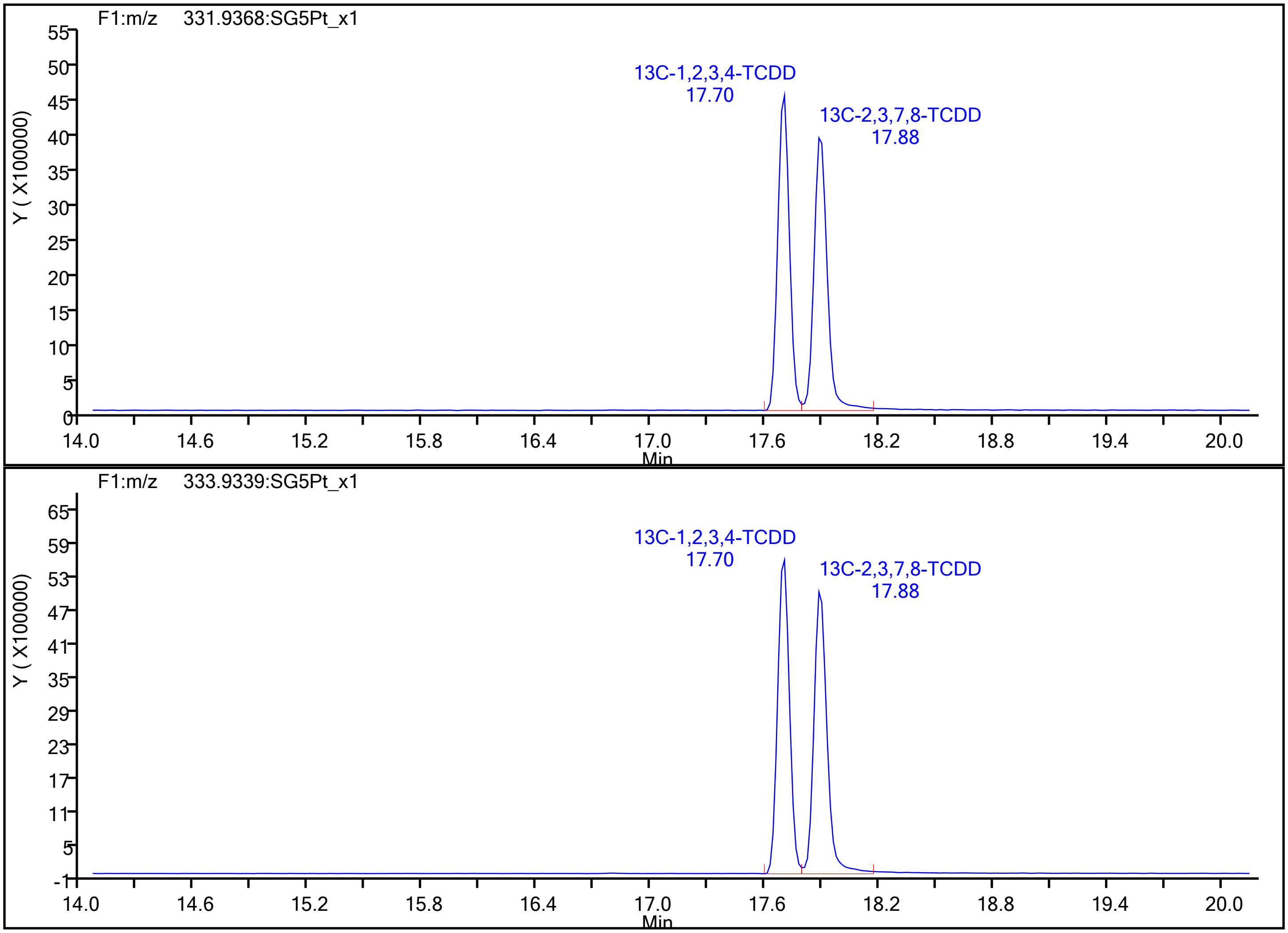

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

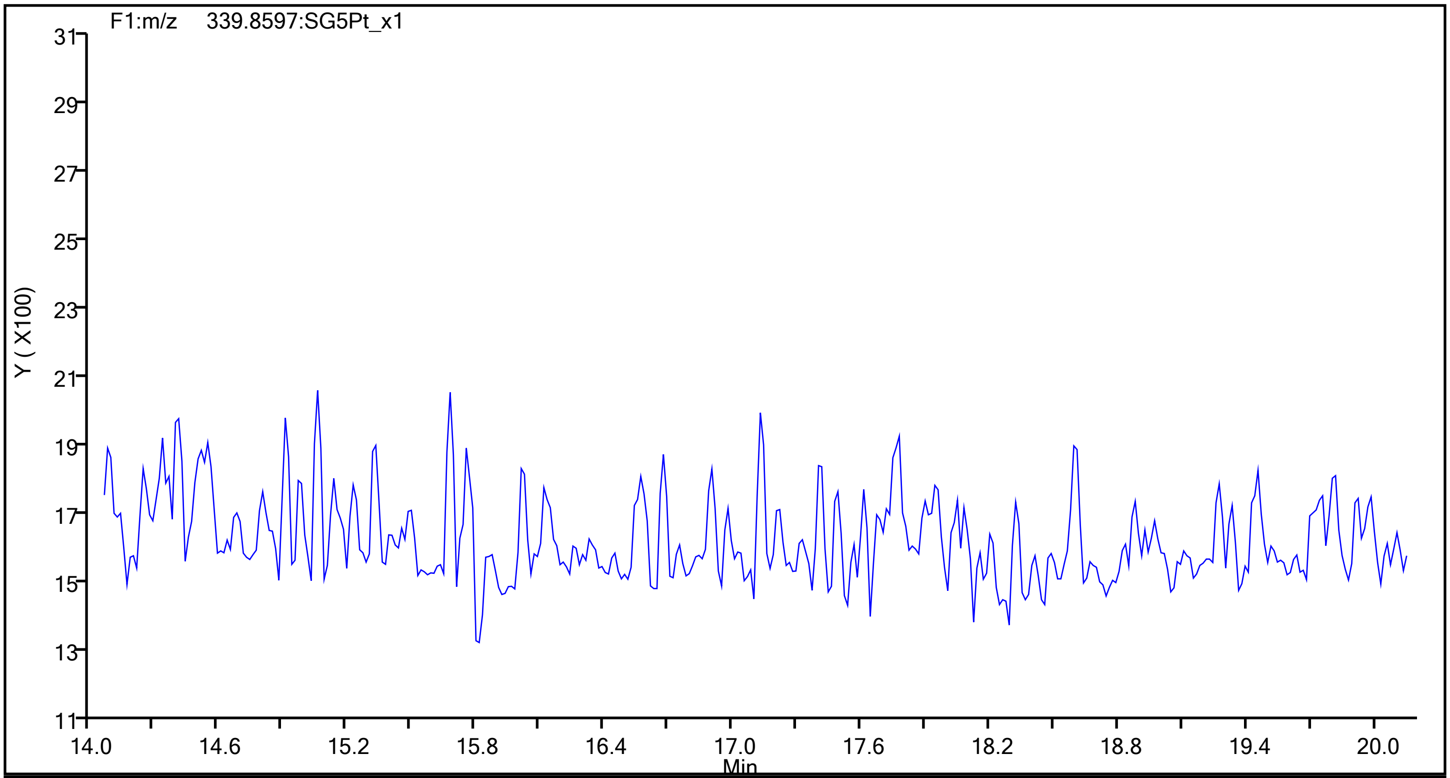

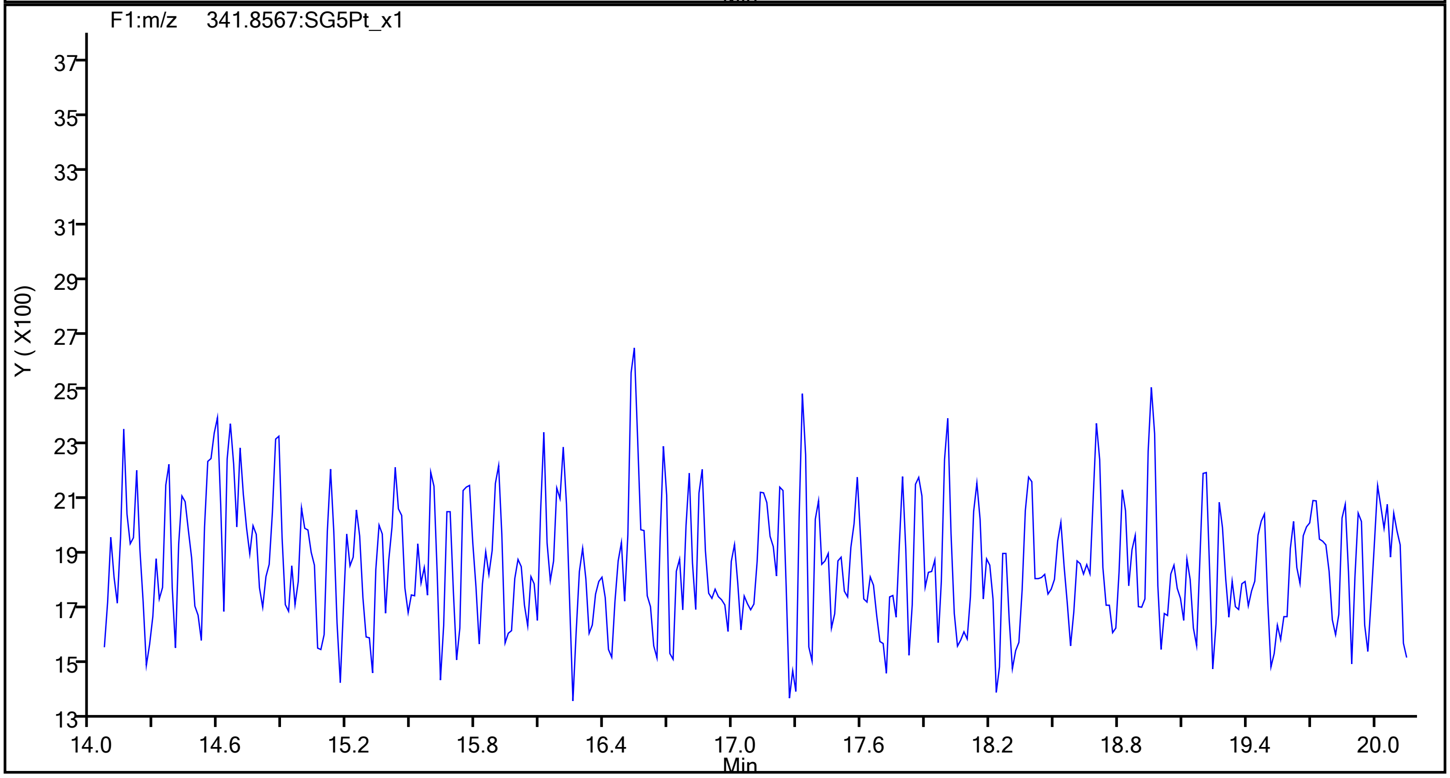

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

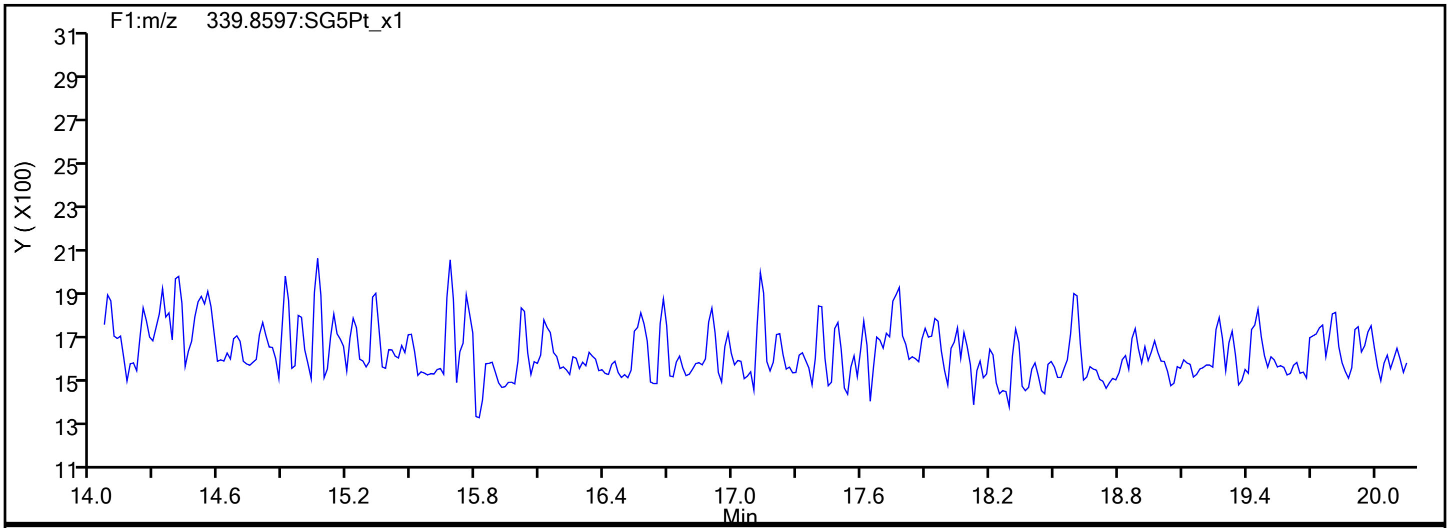

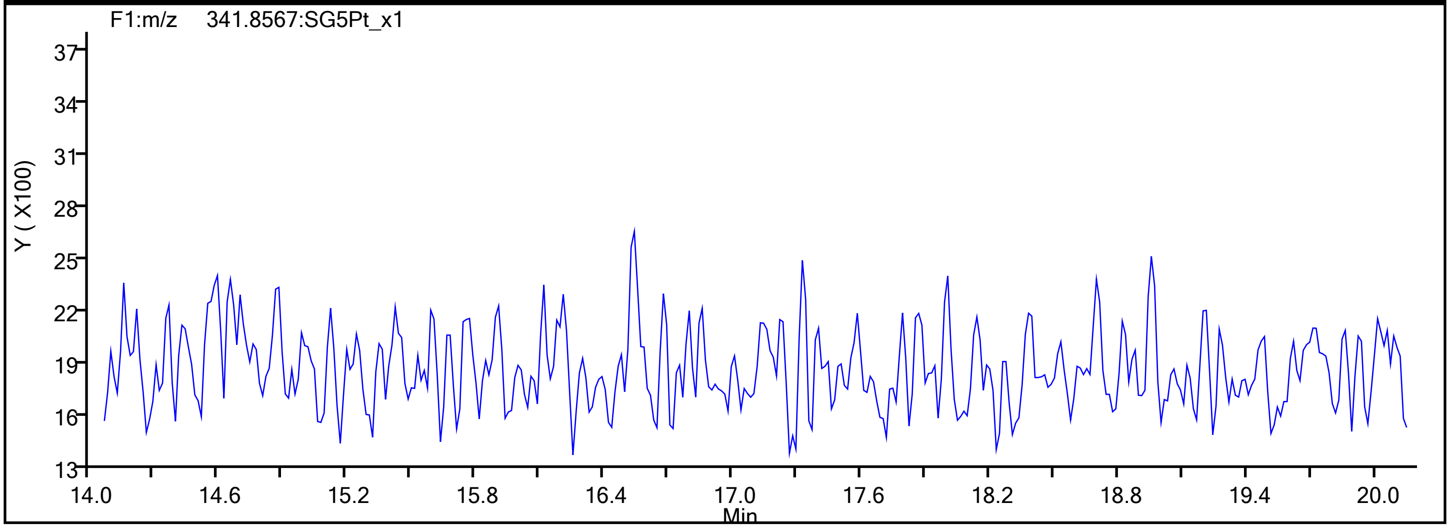

F1 PeCDFs Interference Mass

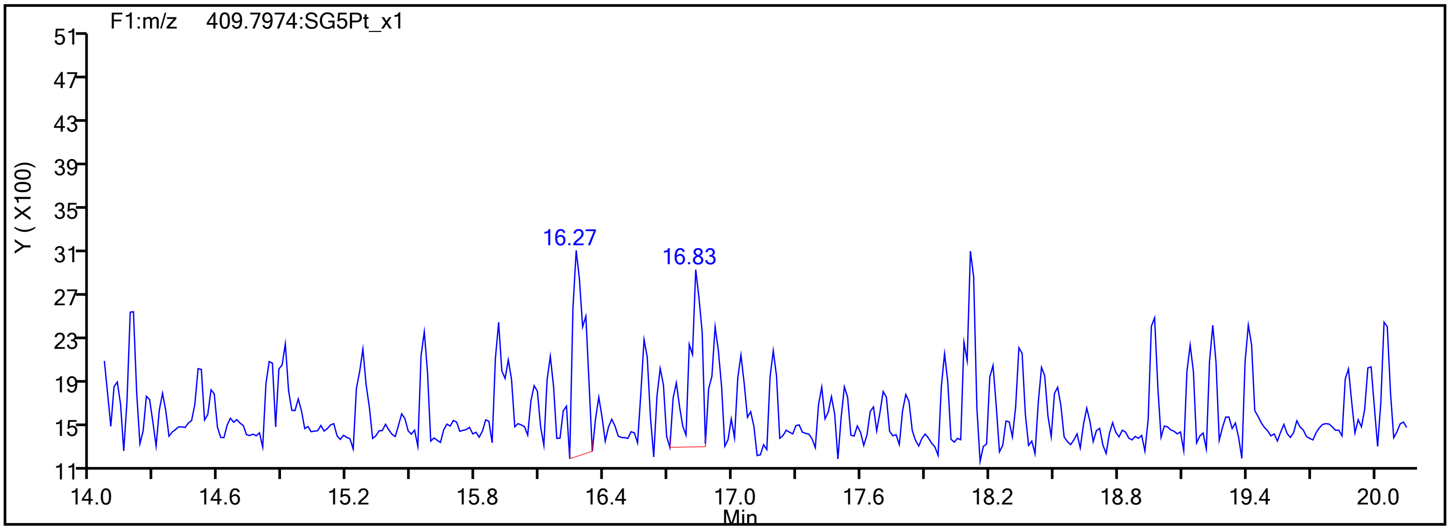

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d
Injection Date: 27-Jun-2020 14:42:53 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

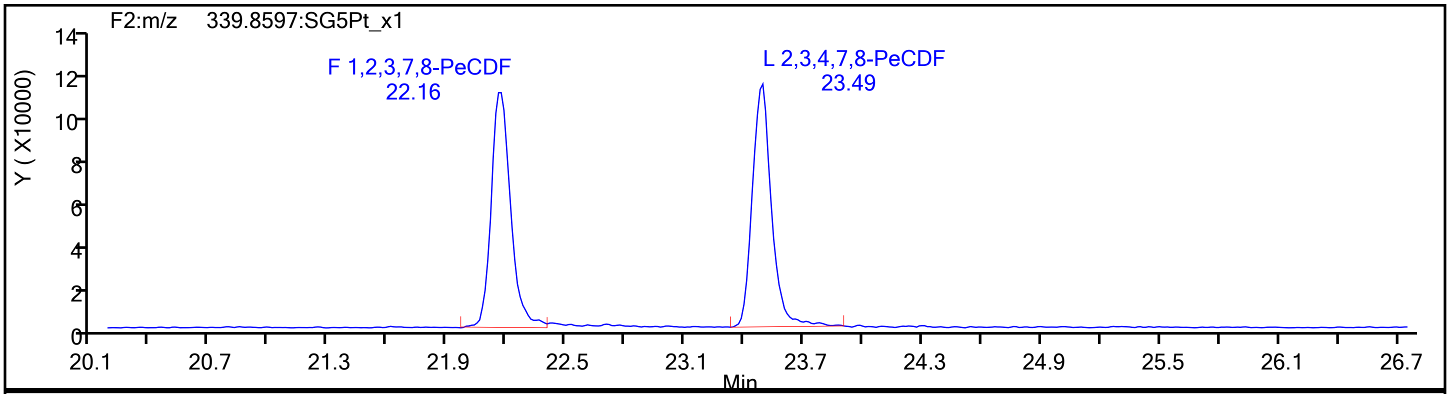

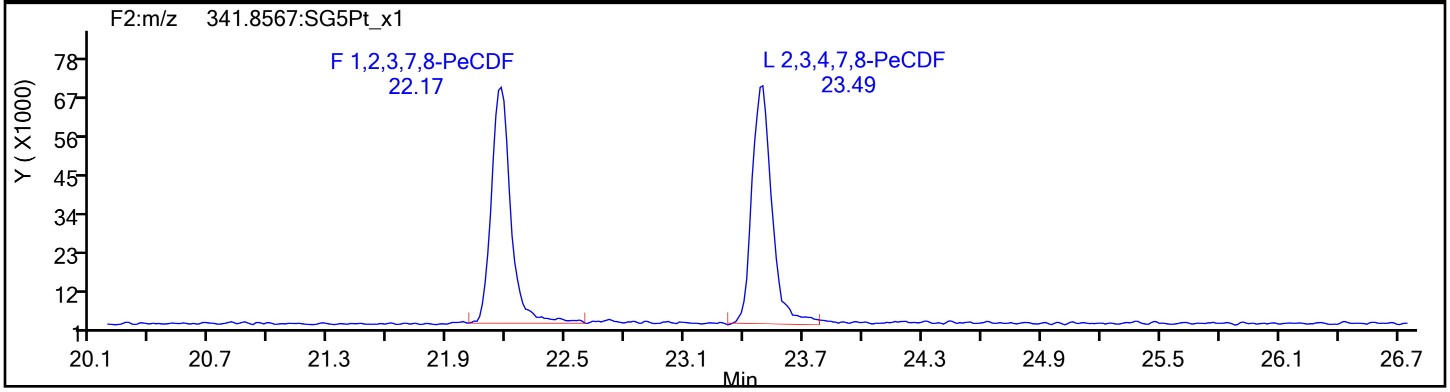

PeCDF Standards

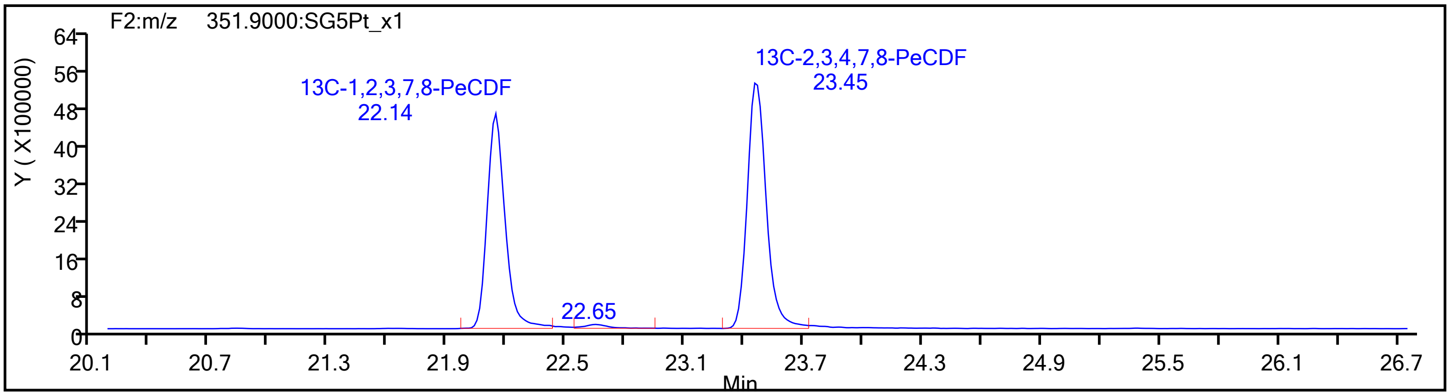

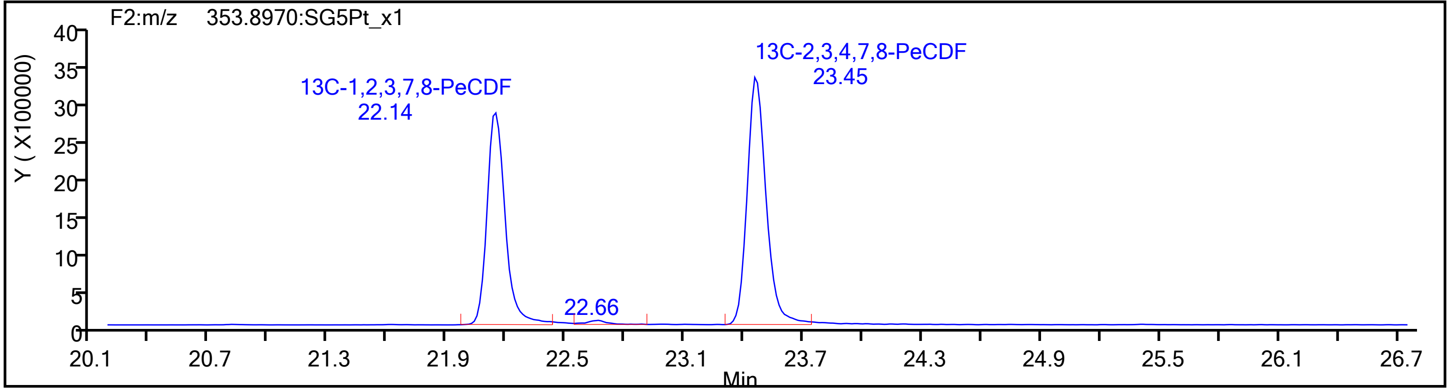

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_3.d		
Injection Date:	27-Jun-2020 14:42:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

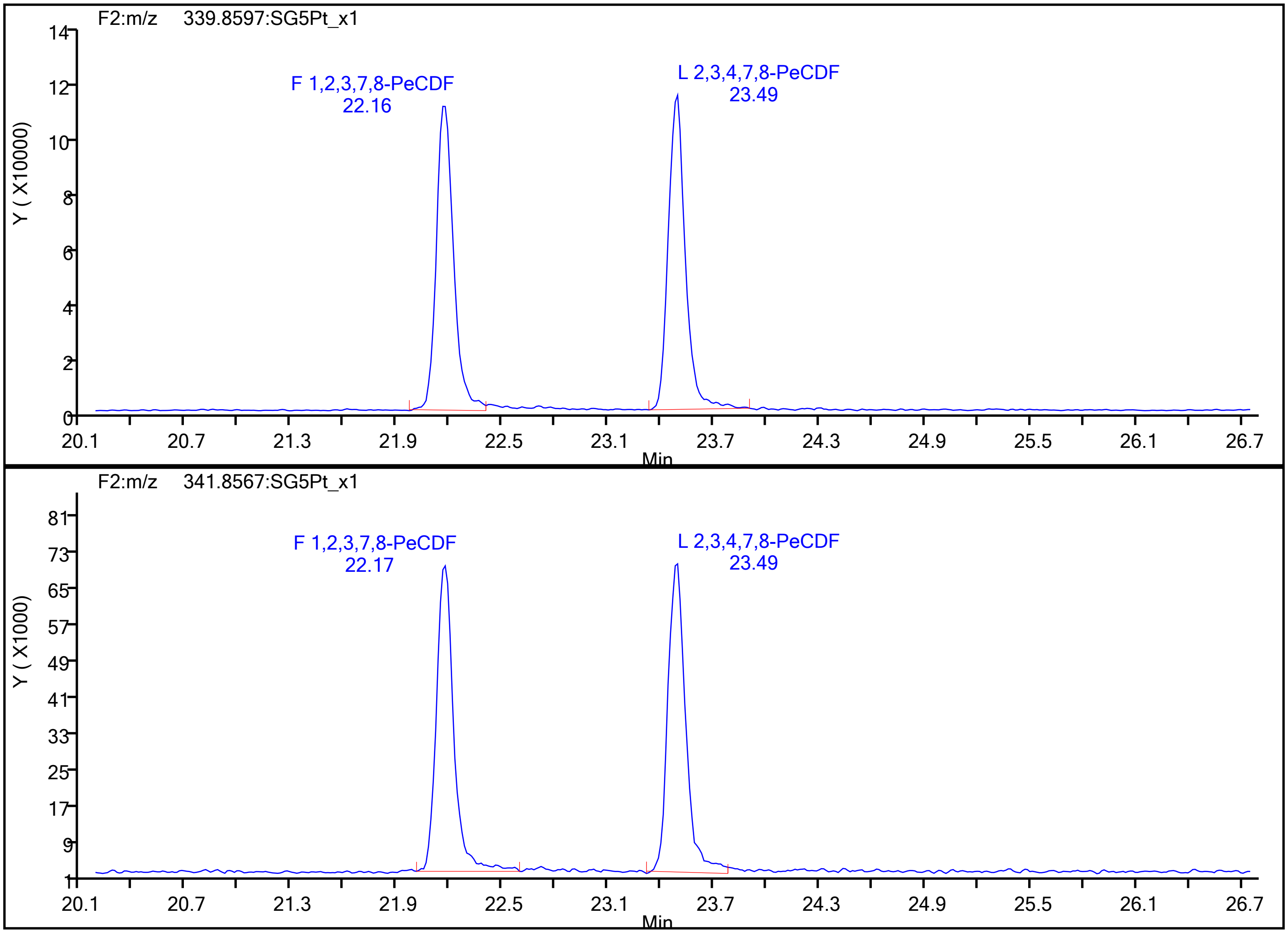

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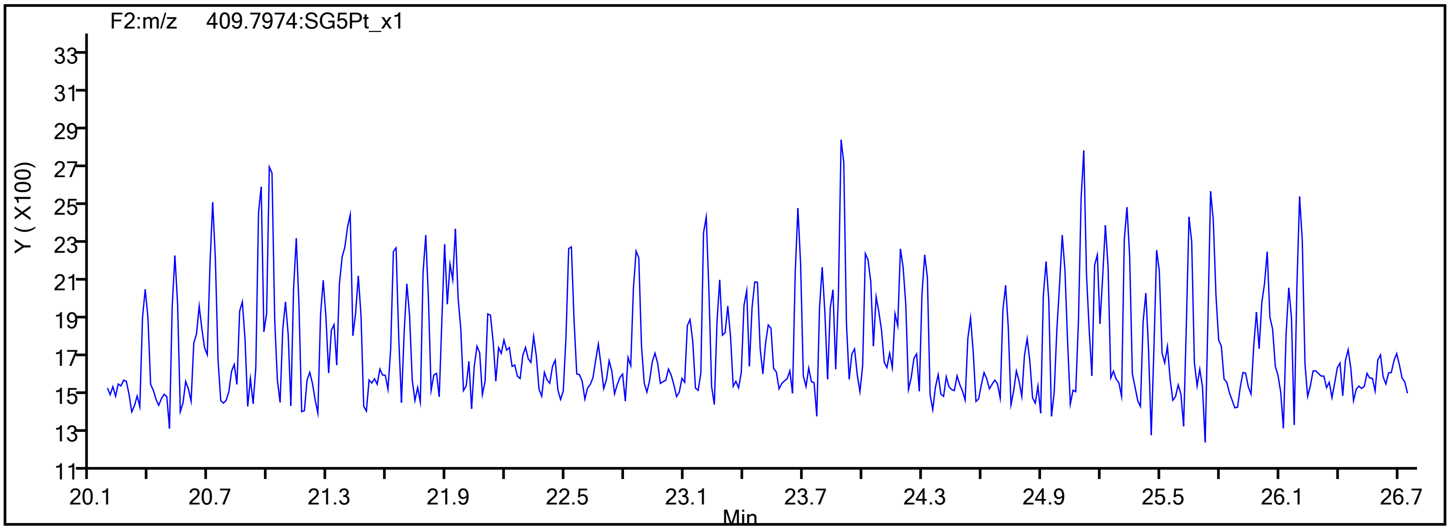

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Client ID:			
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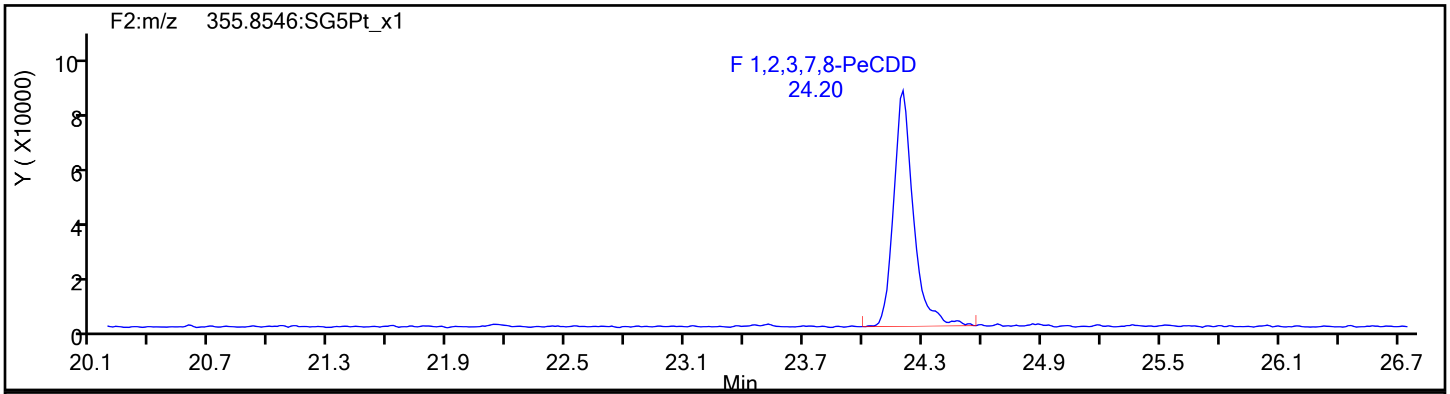

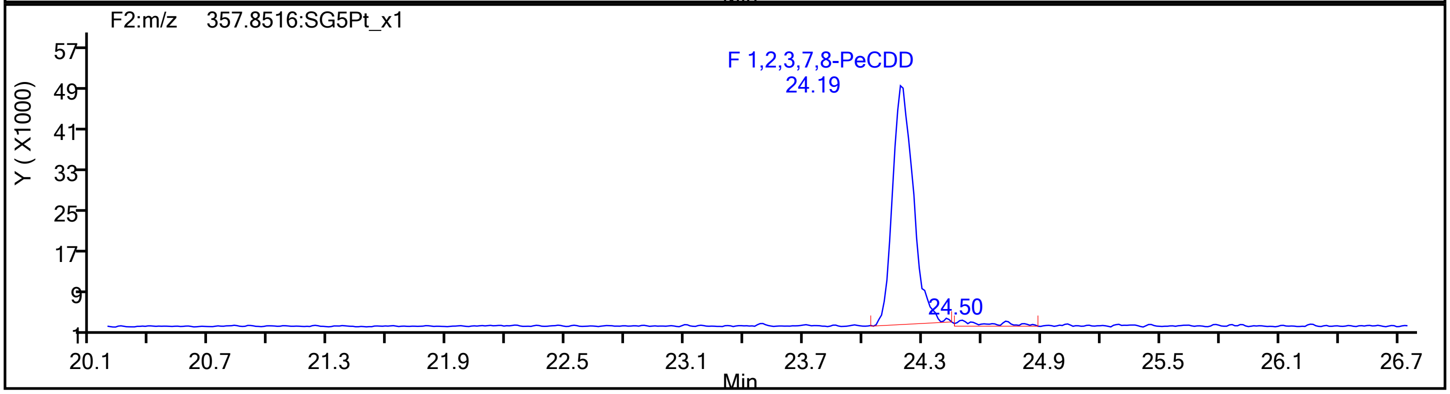

PeCDD Standards

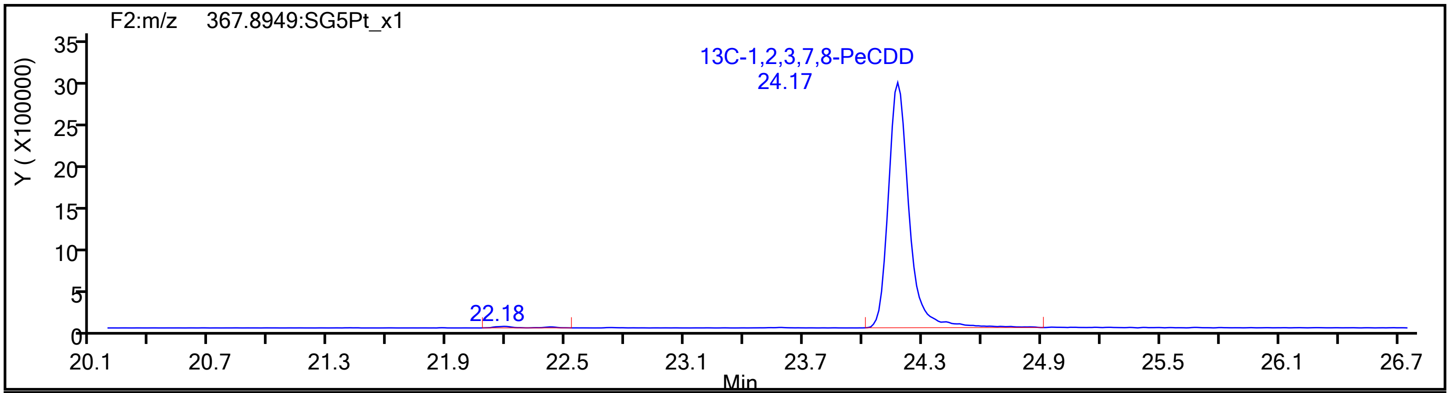

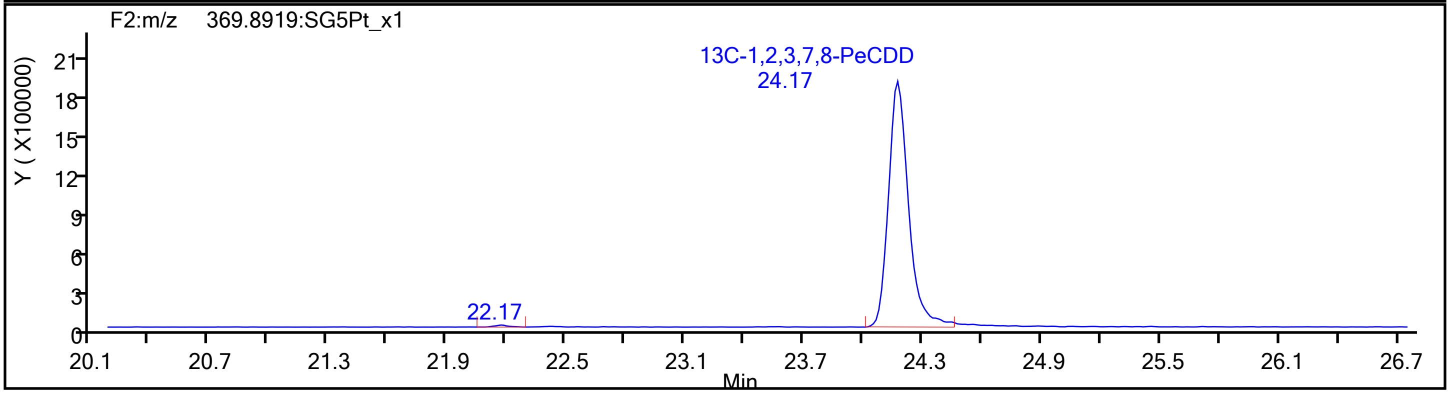

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HxCDF

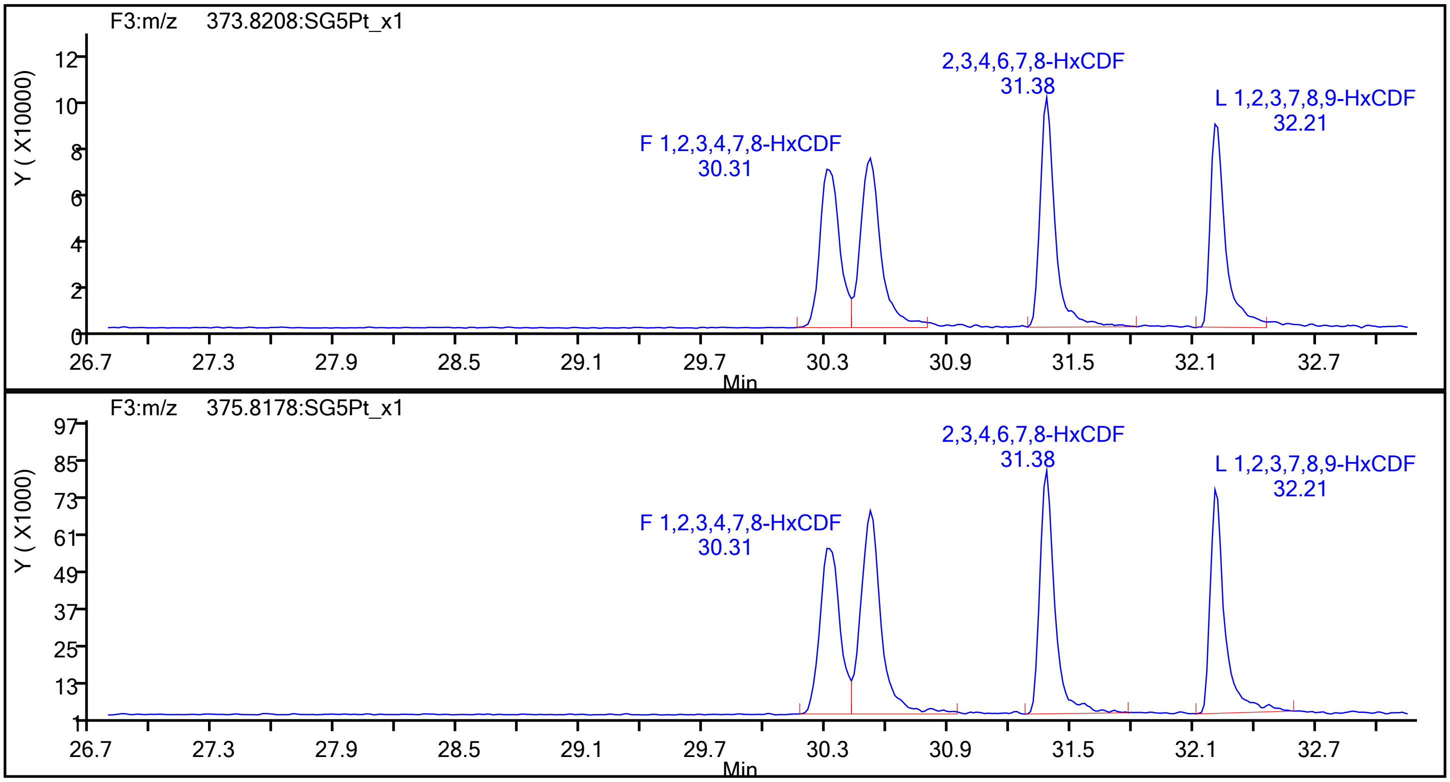

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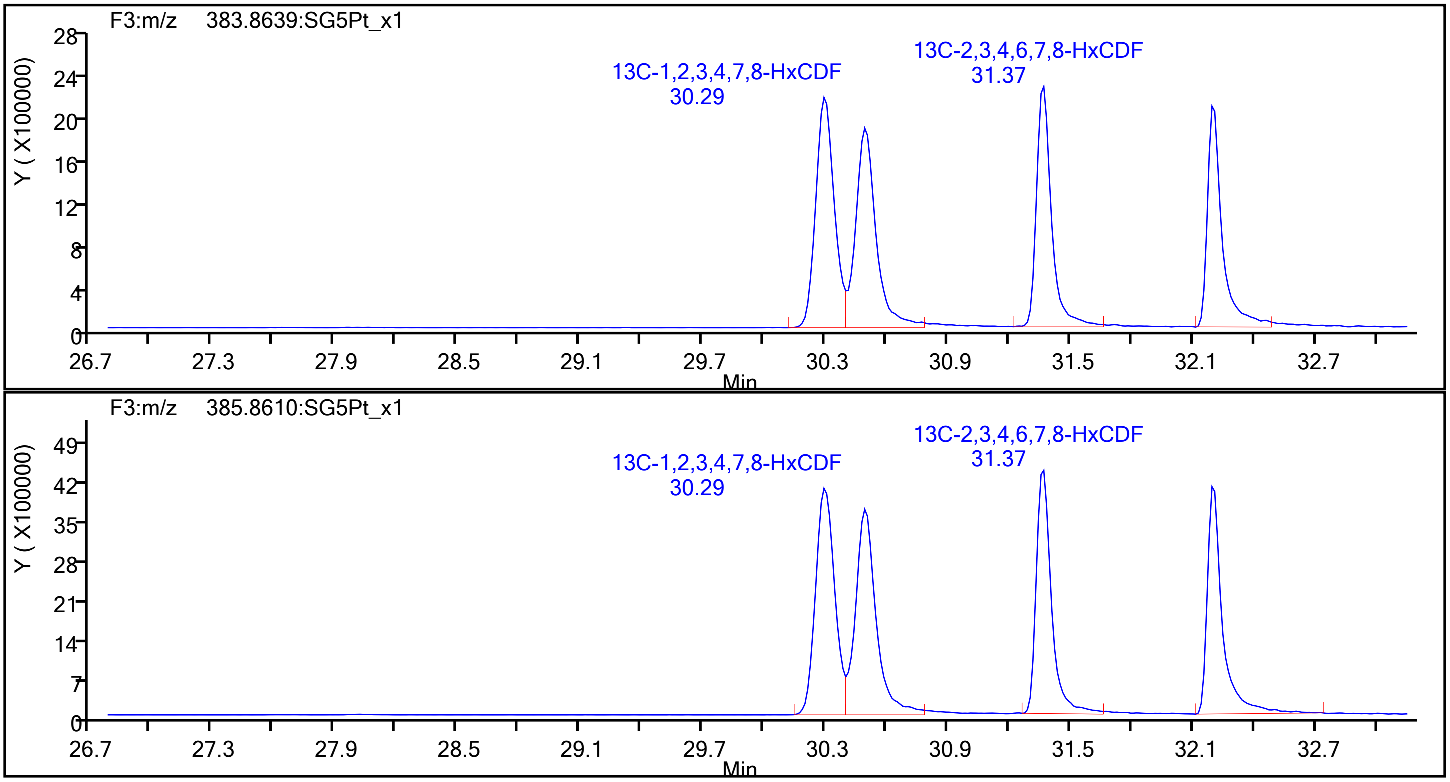

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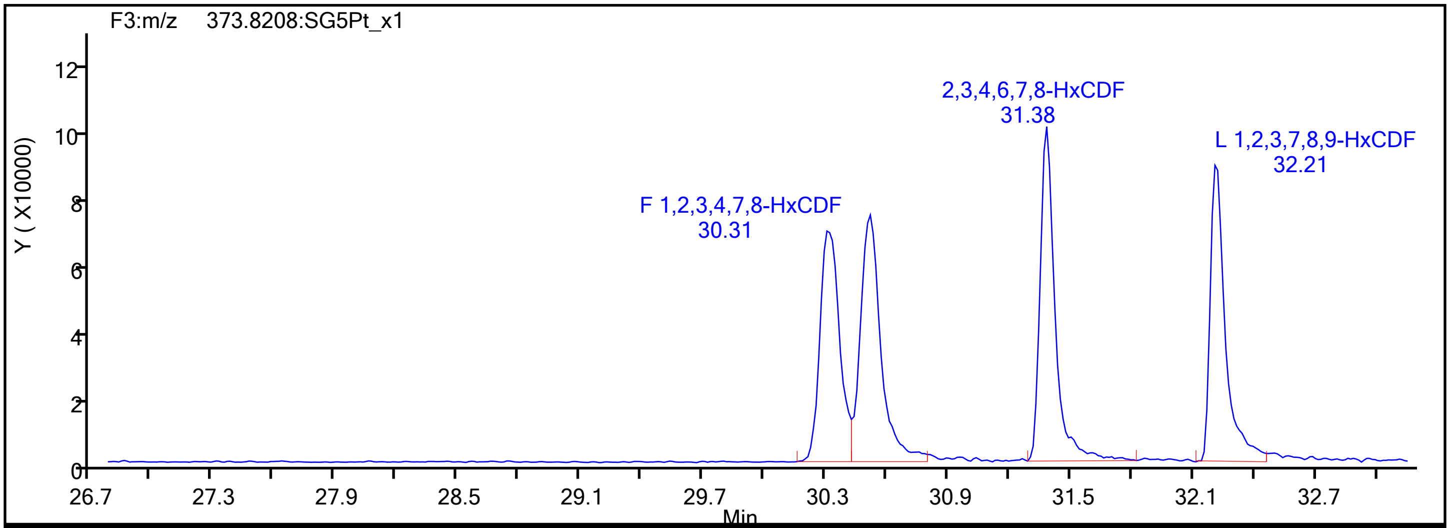

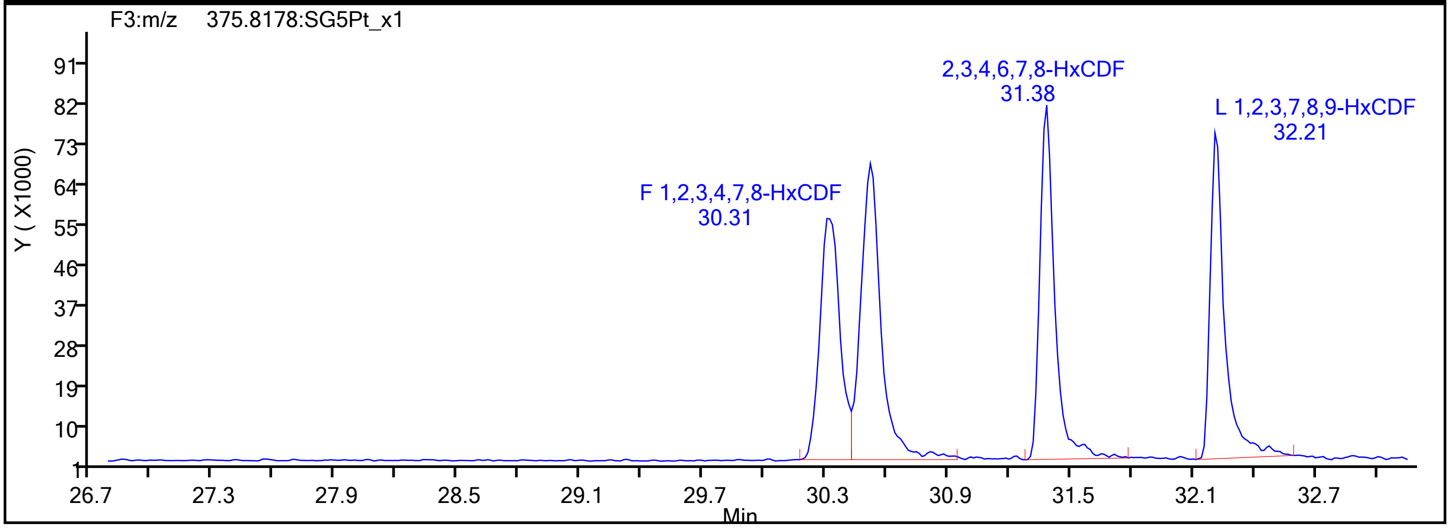

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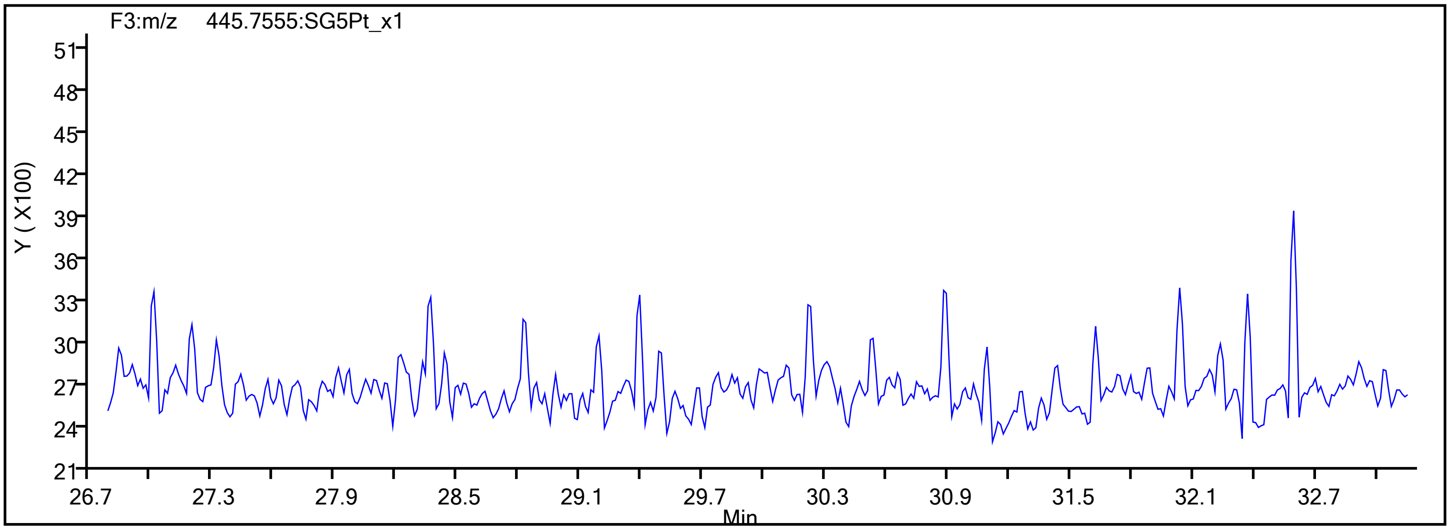

Report Date: 28-Jun-2020 13:16:54 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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HxCDD

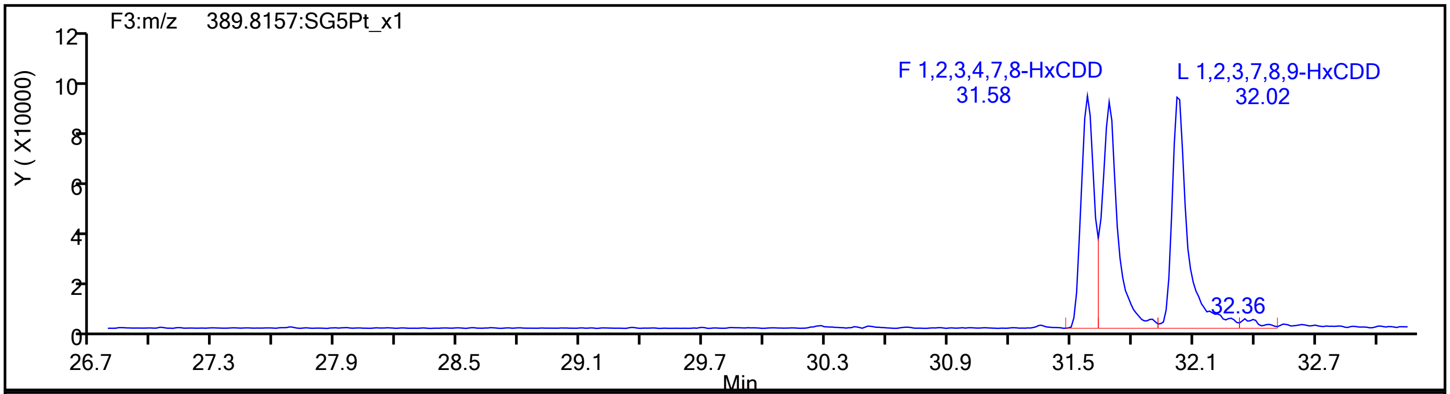

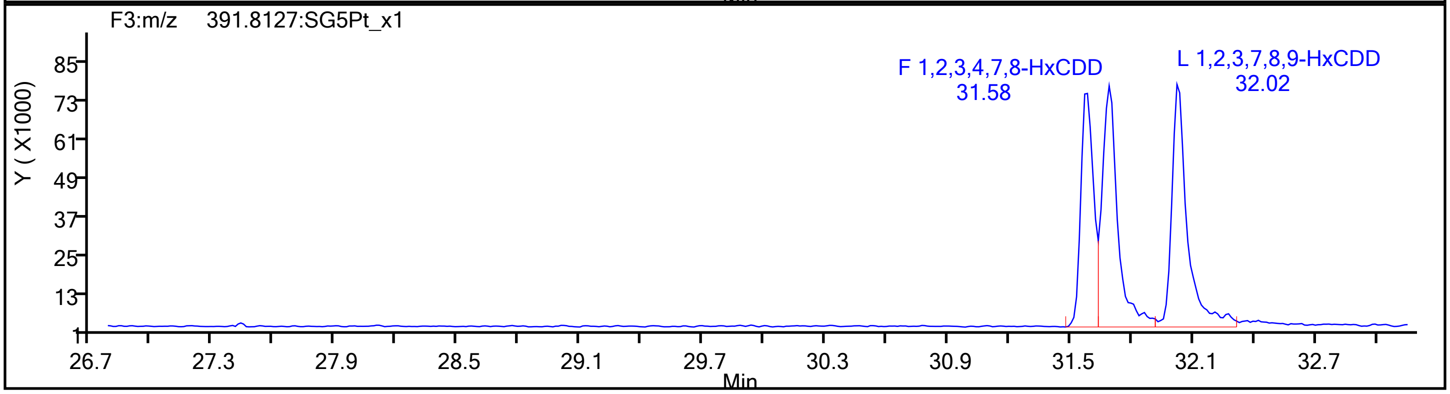

HxCDD Standards

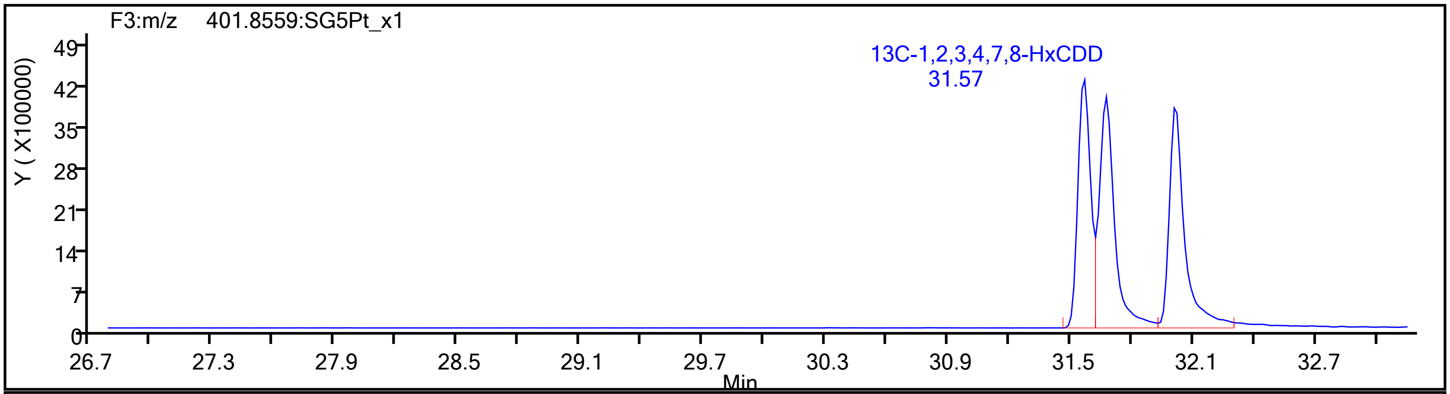

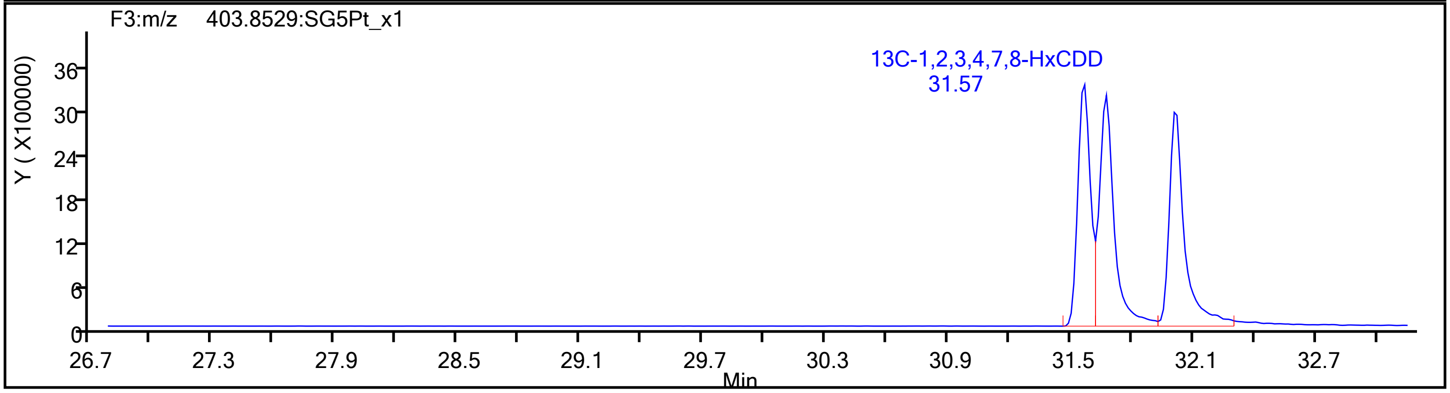

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Eurofins TestAmerica, Sacramento

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HpCDF

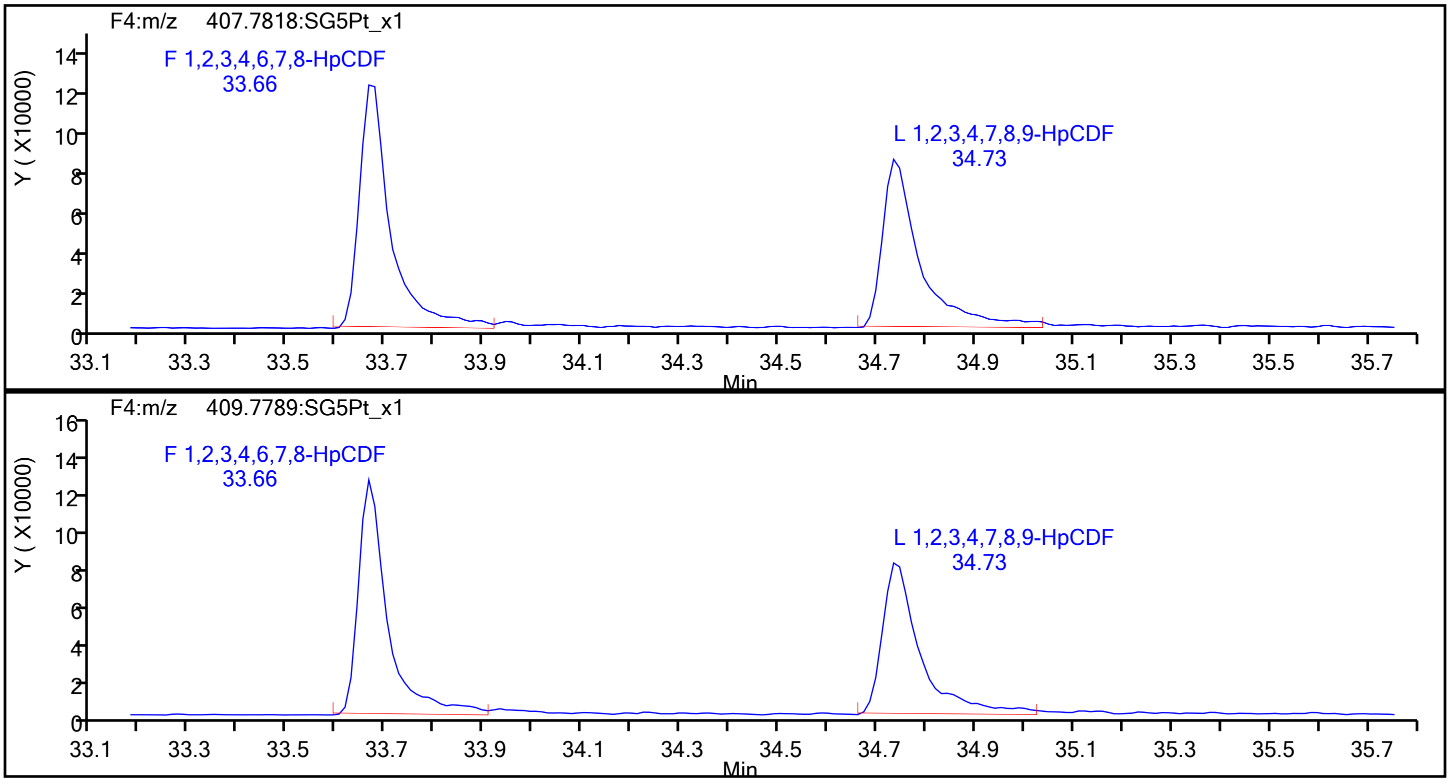

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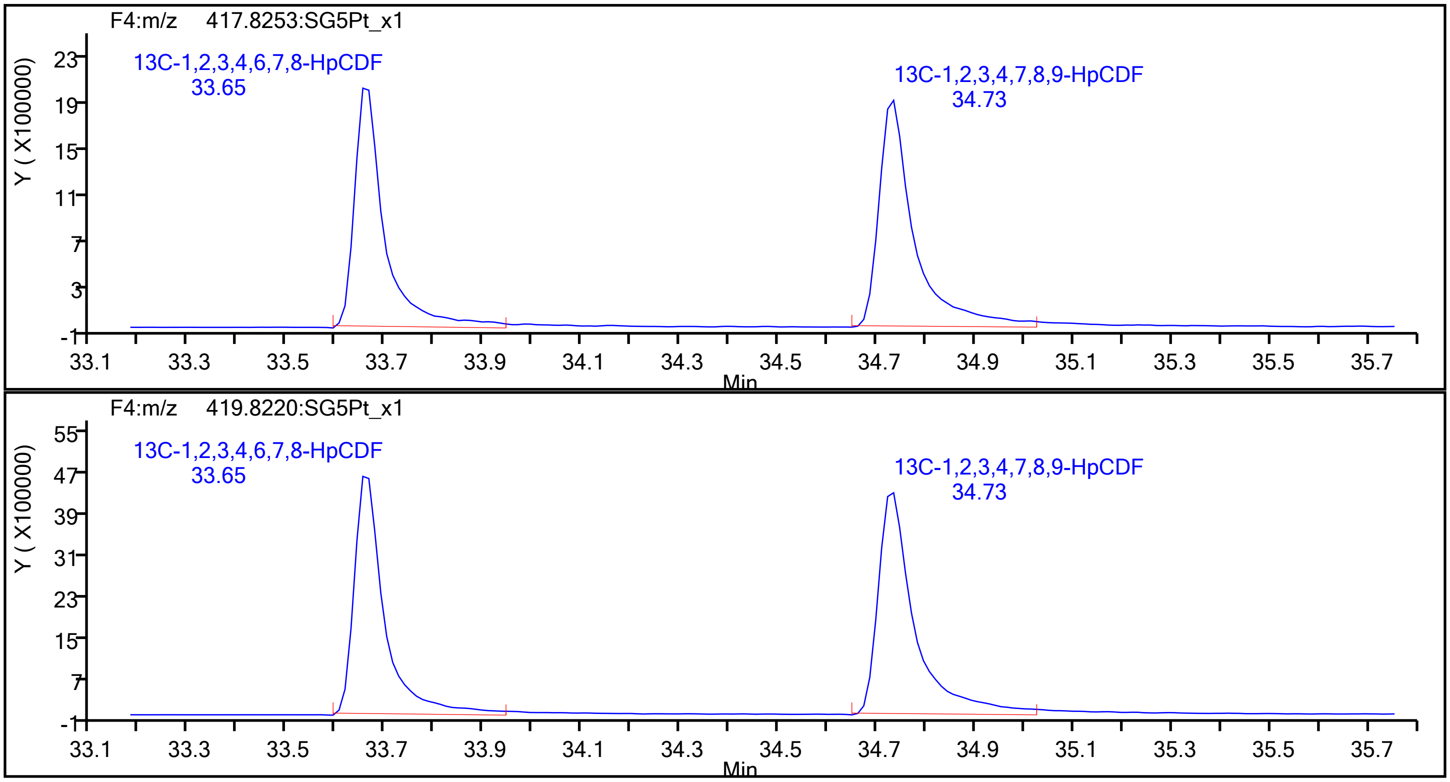

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Eurofins TestAmerica, Sacramento

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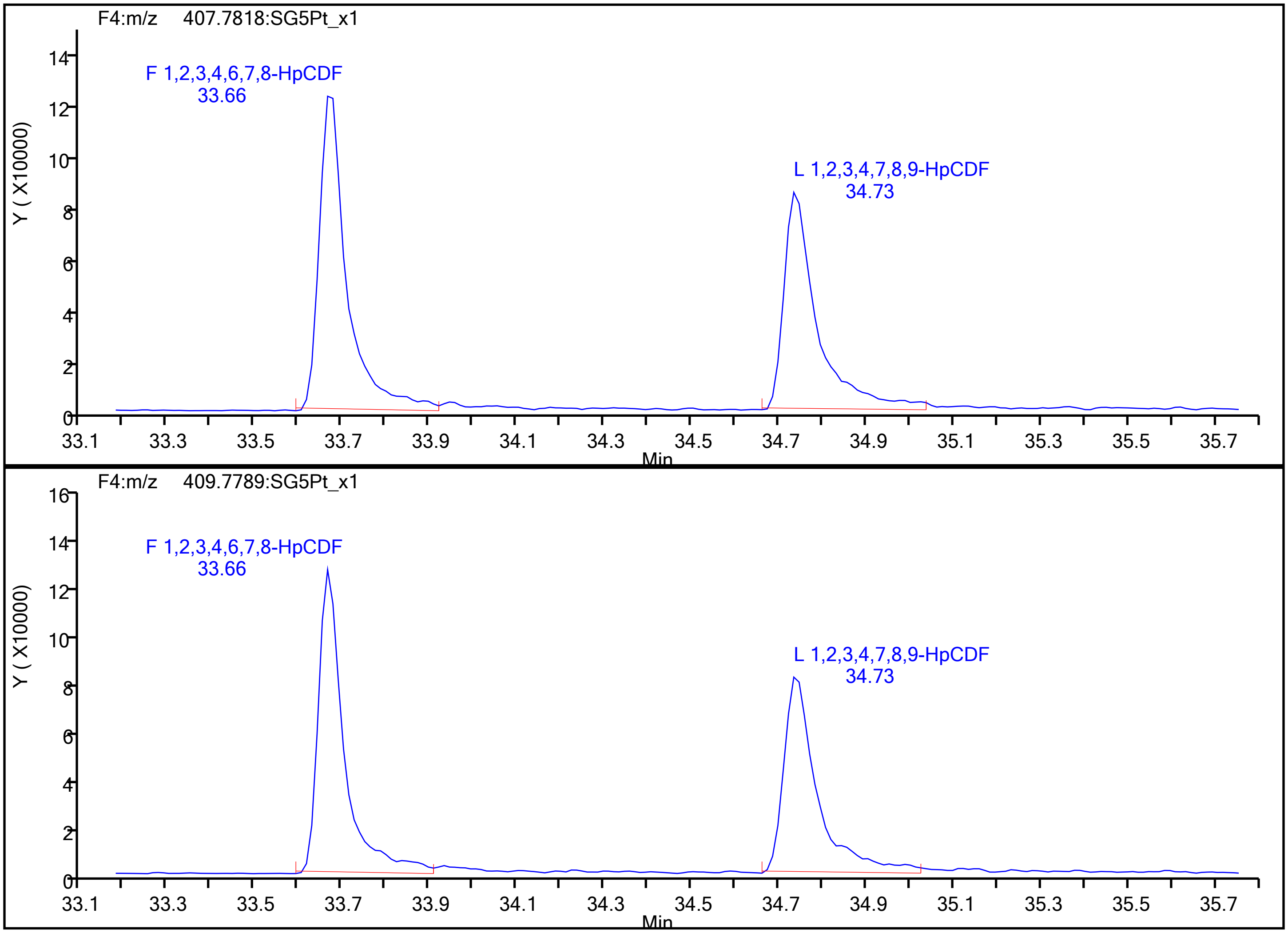

HpCDF Interference Mass

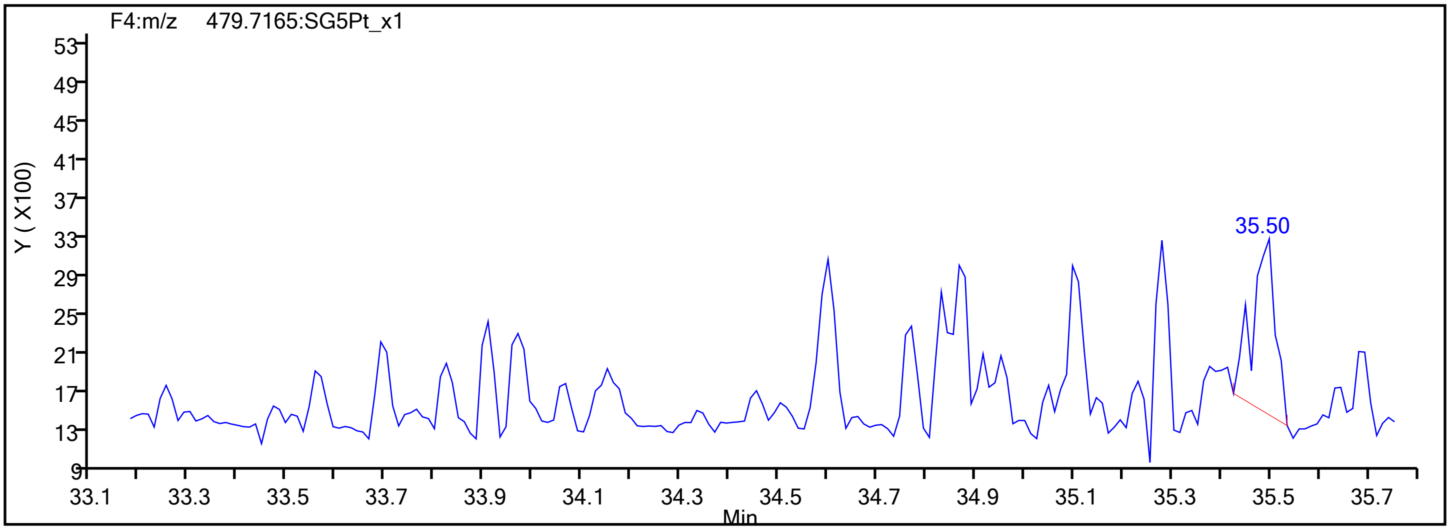

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 14:42:53
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA

Method: Dioxin_10D5
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Client ID:

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Sample Line#: 3

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HpCDD

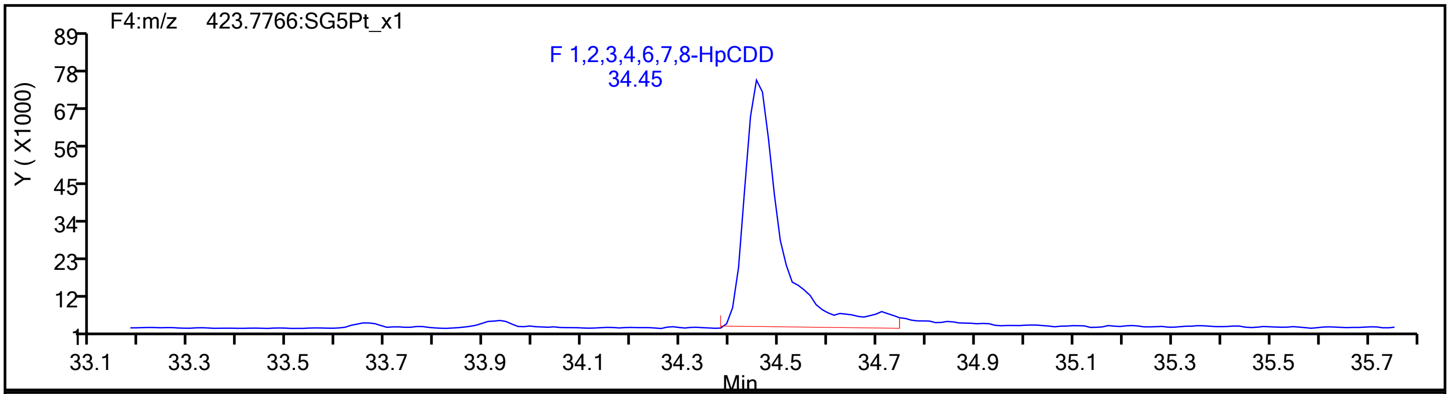

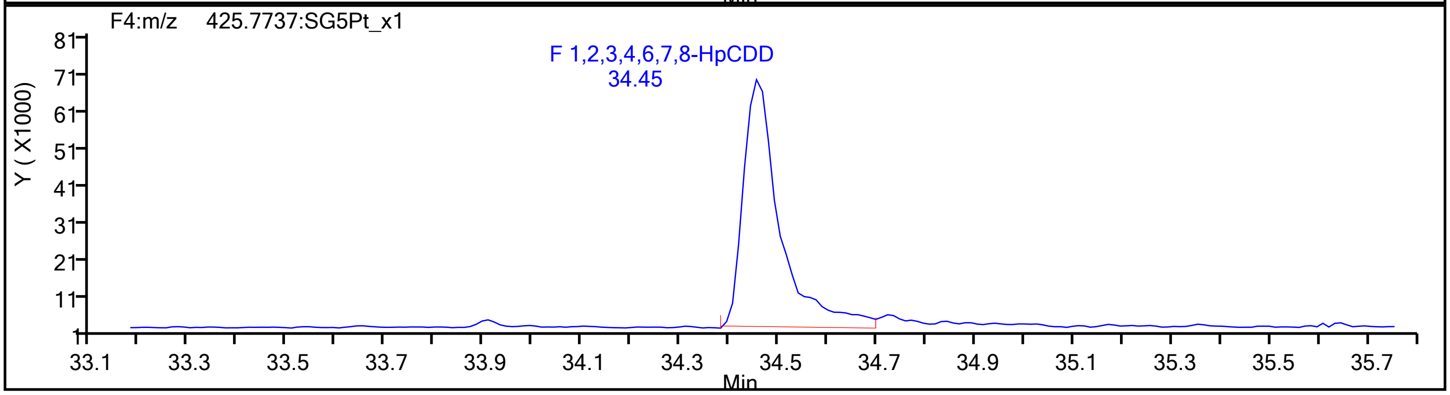

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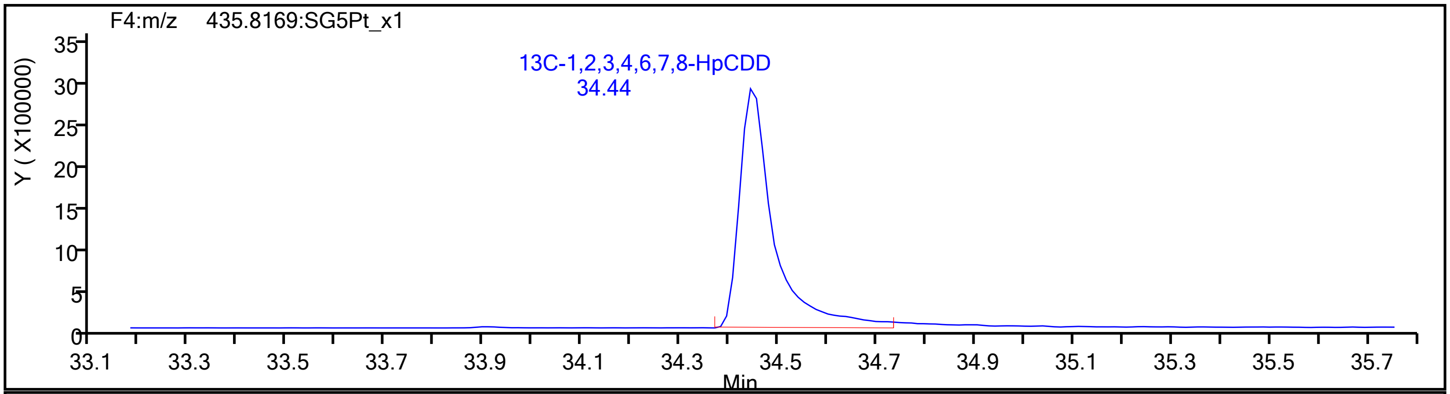

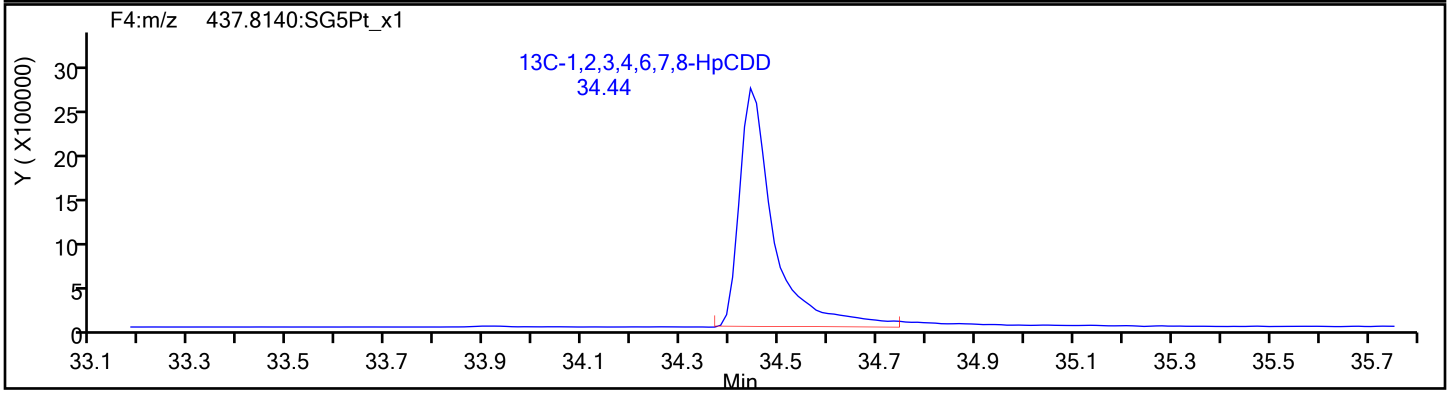

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 14:42:53

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

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Client ID:

Worklist#: 390253

Sample Line#: 3

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Column Dia: 0.32 mm

OCDF

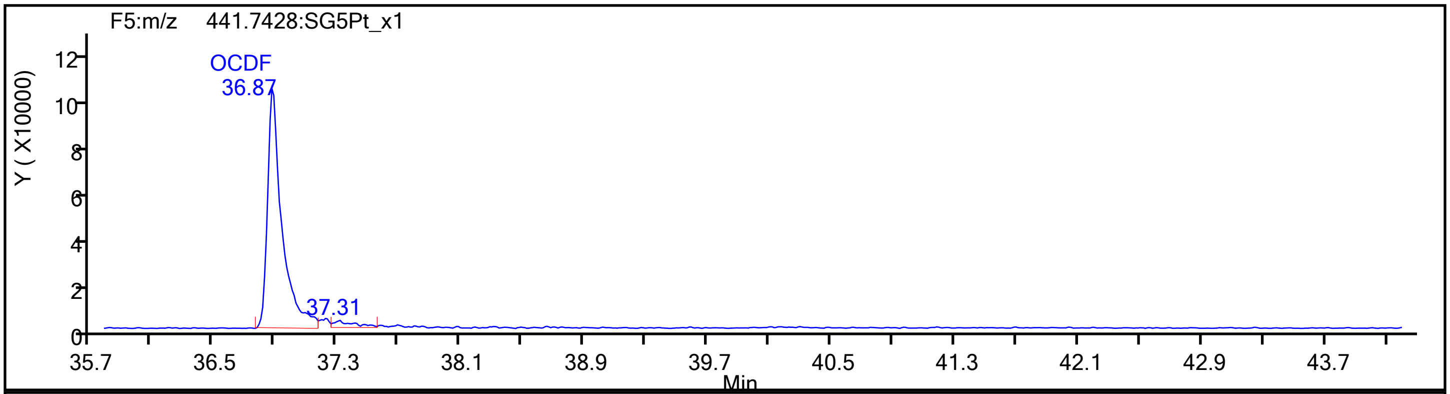

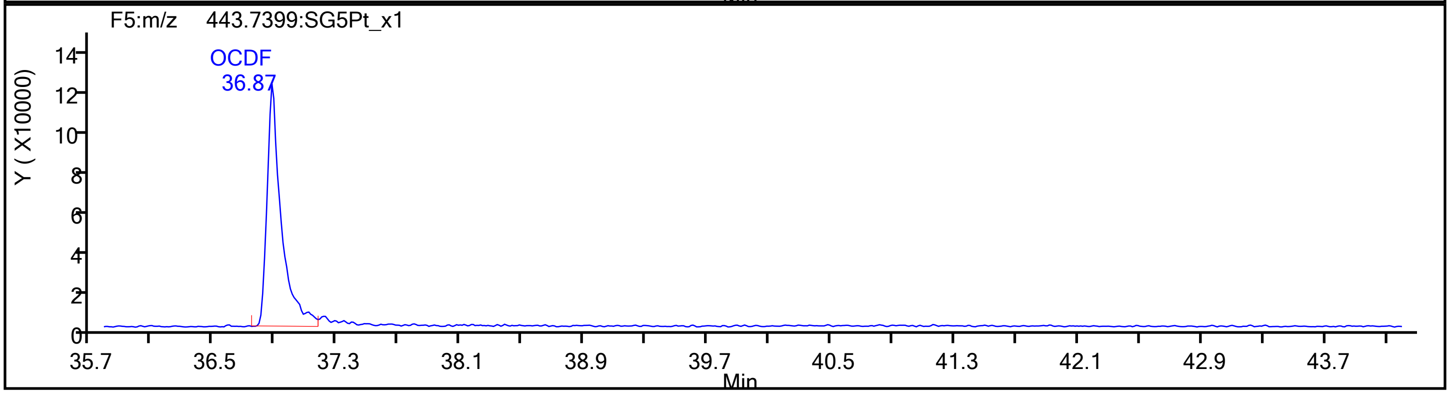

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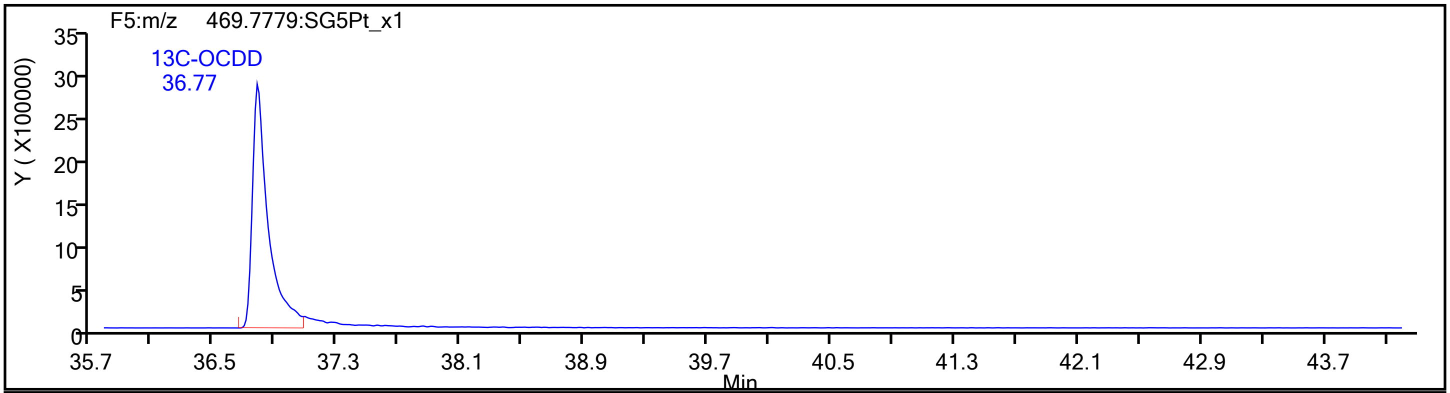

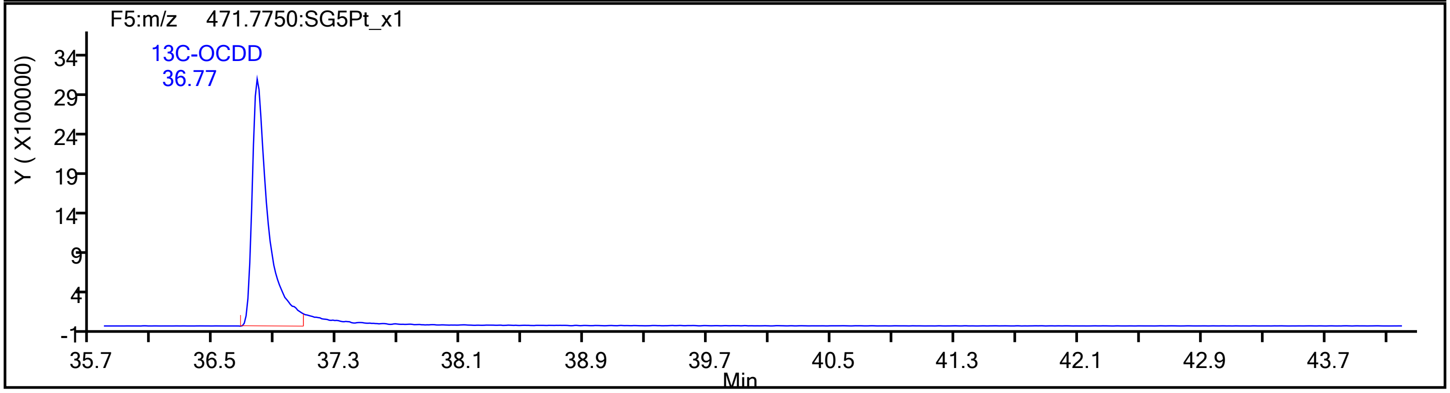

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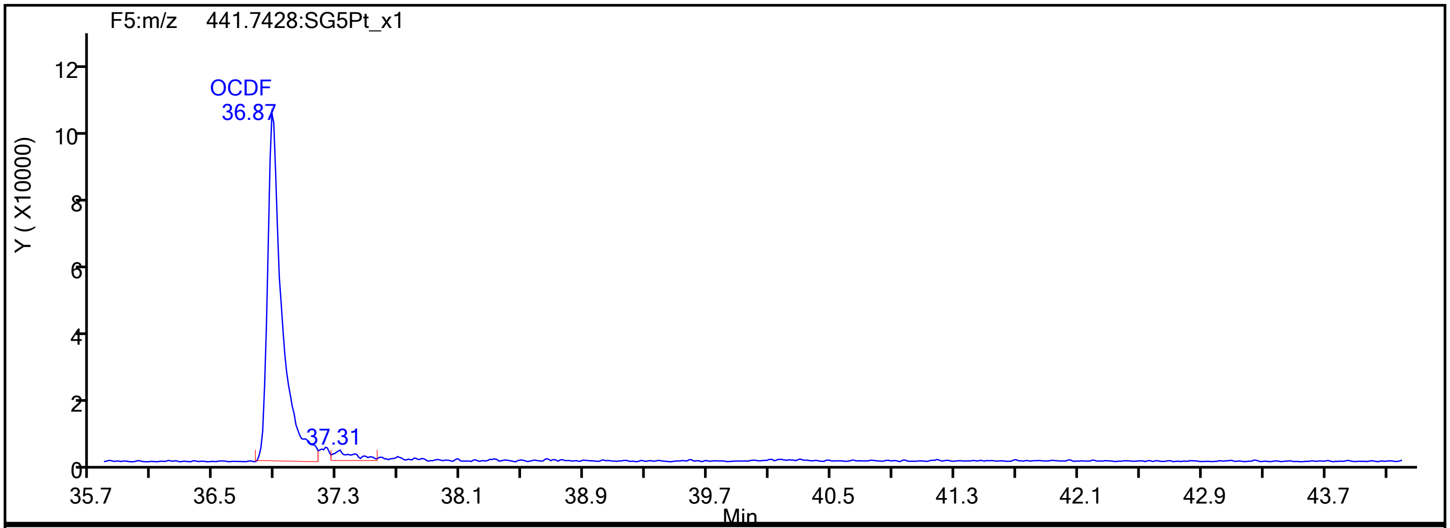

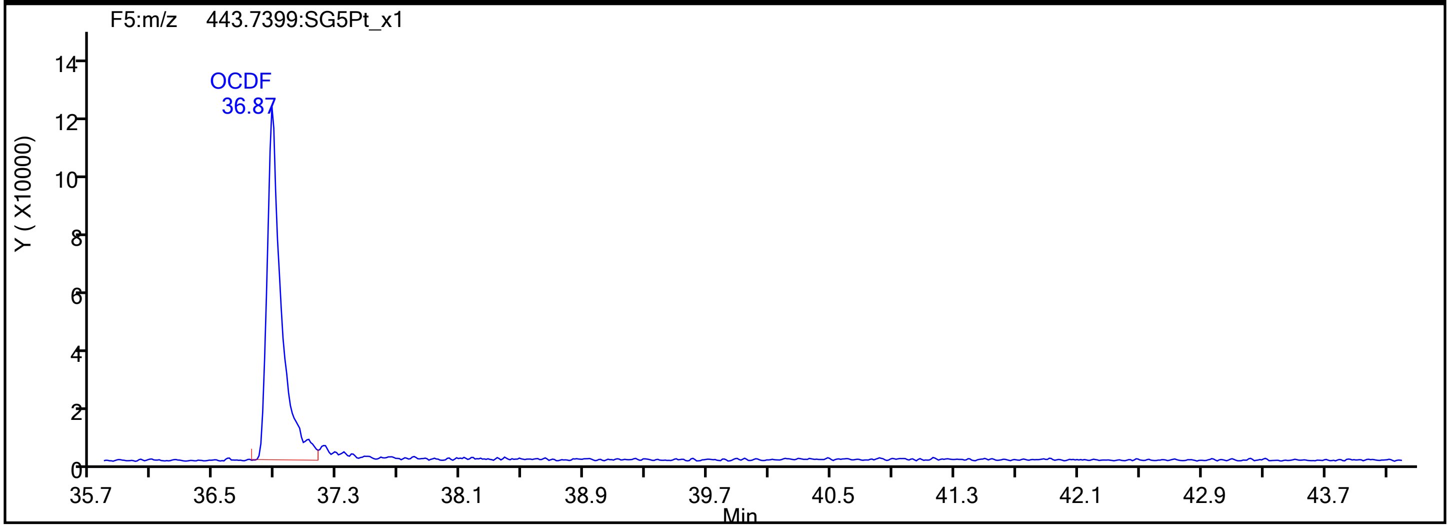

OCDF Interference Mass

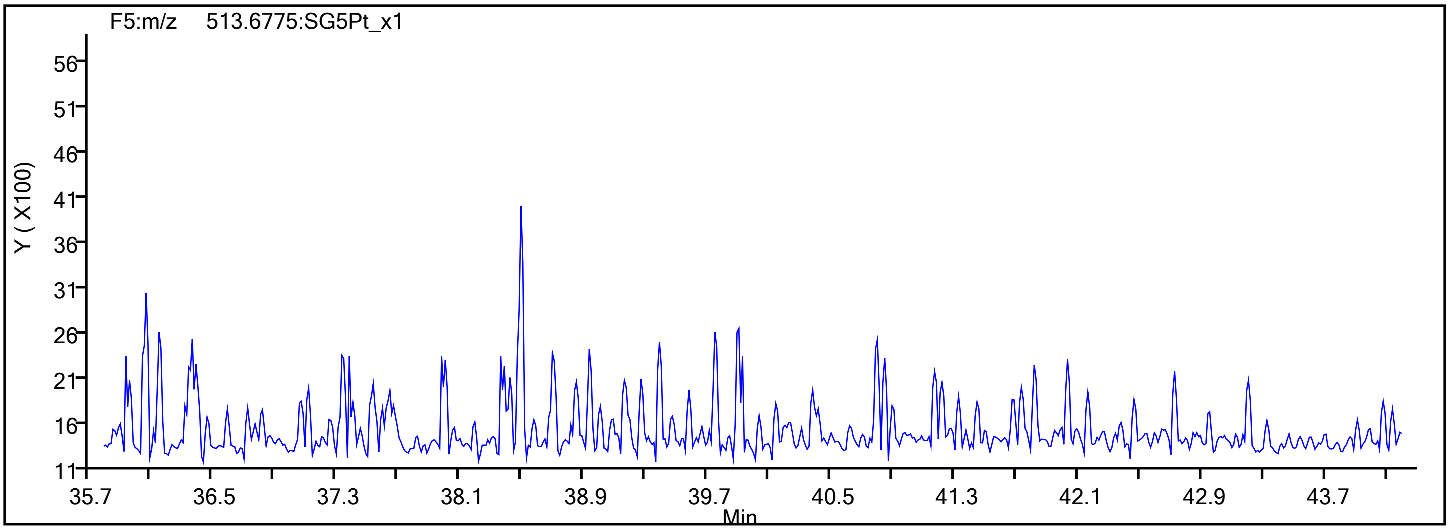

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Eurofins TestAmerica, Sacramento

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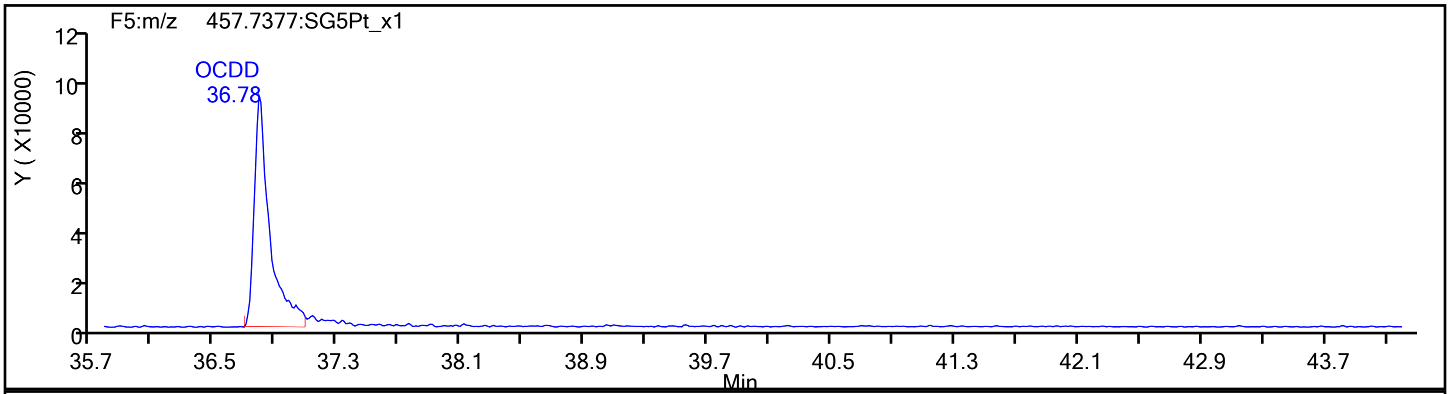

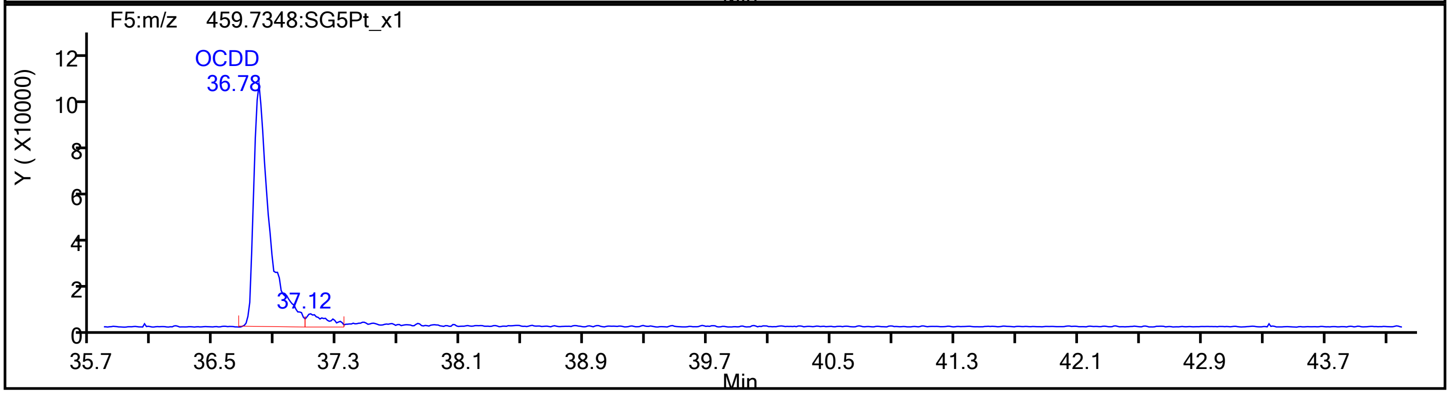

OCDD Standards

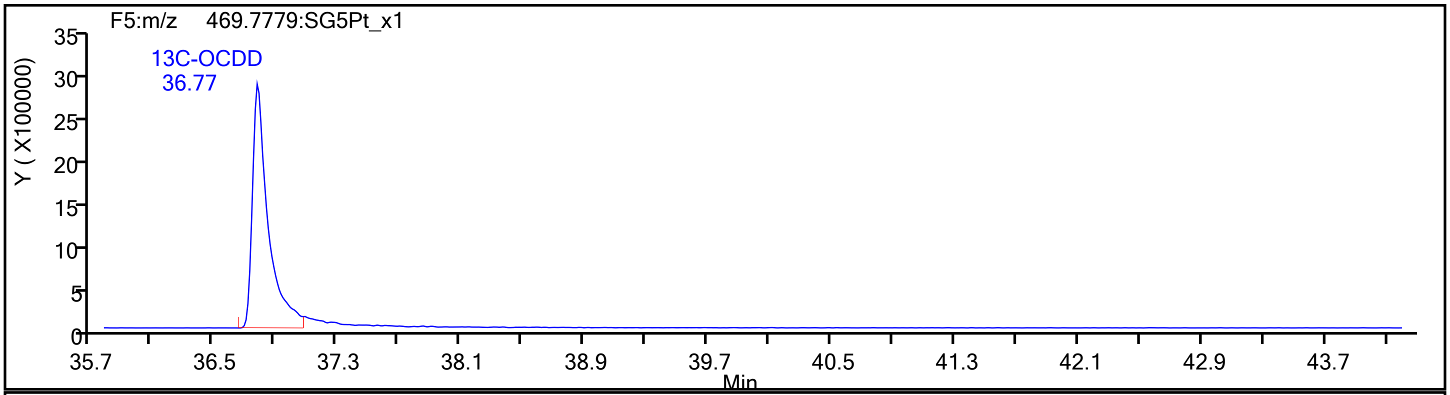

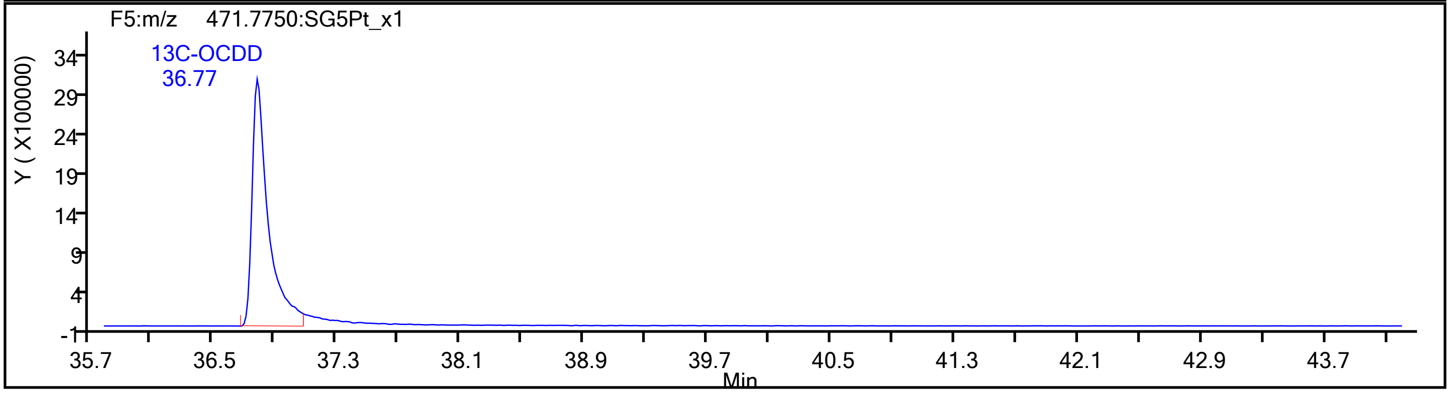

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Eurofins TestAmerica, Sacramento

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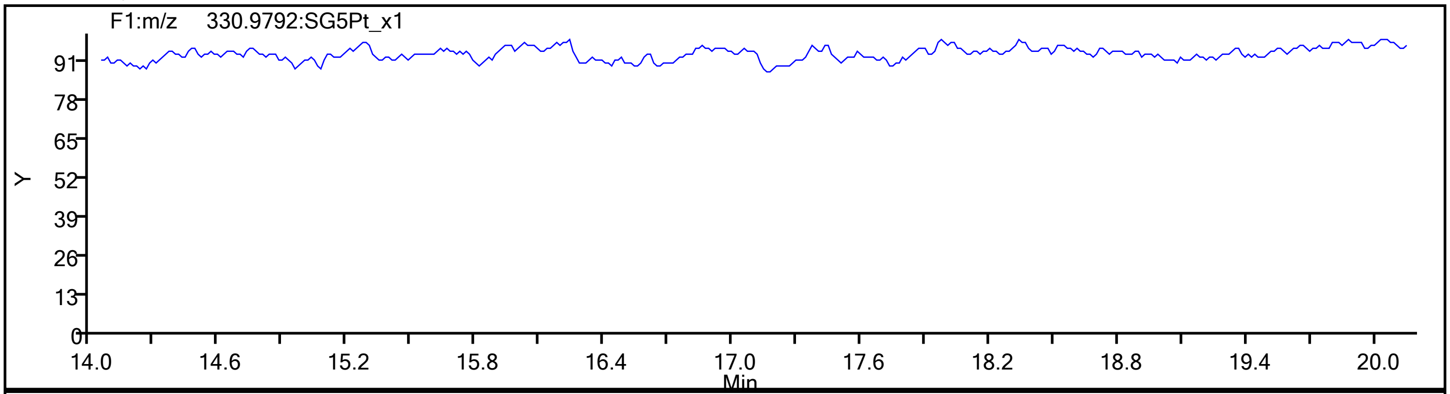

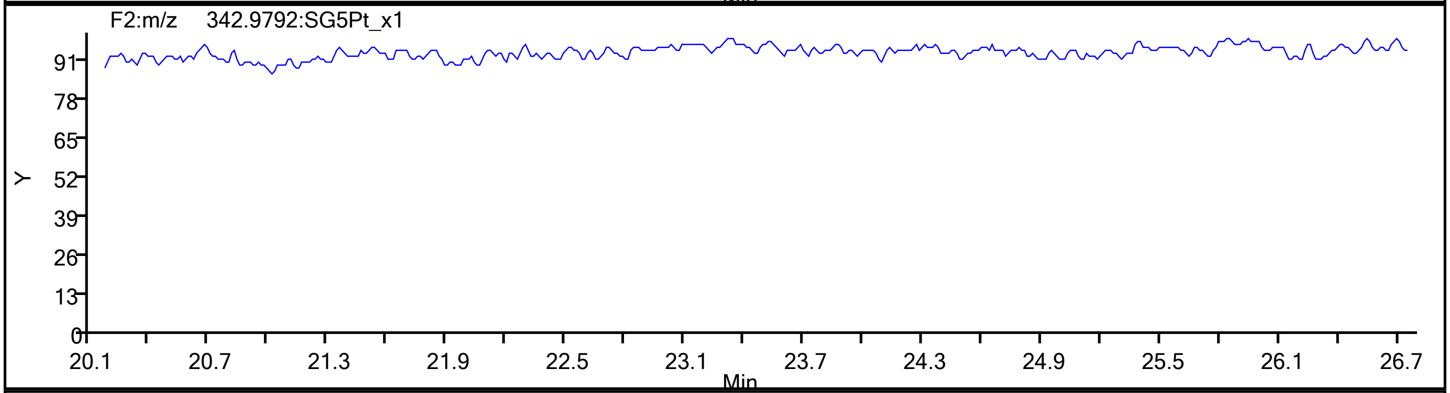

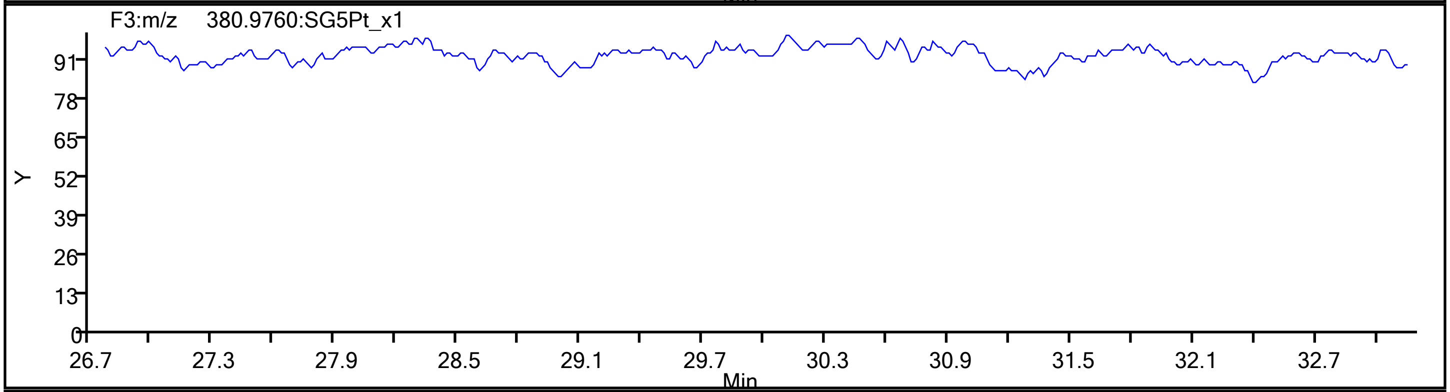

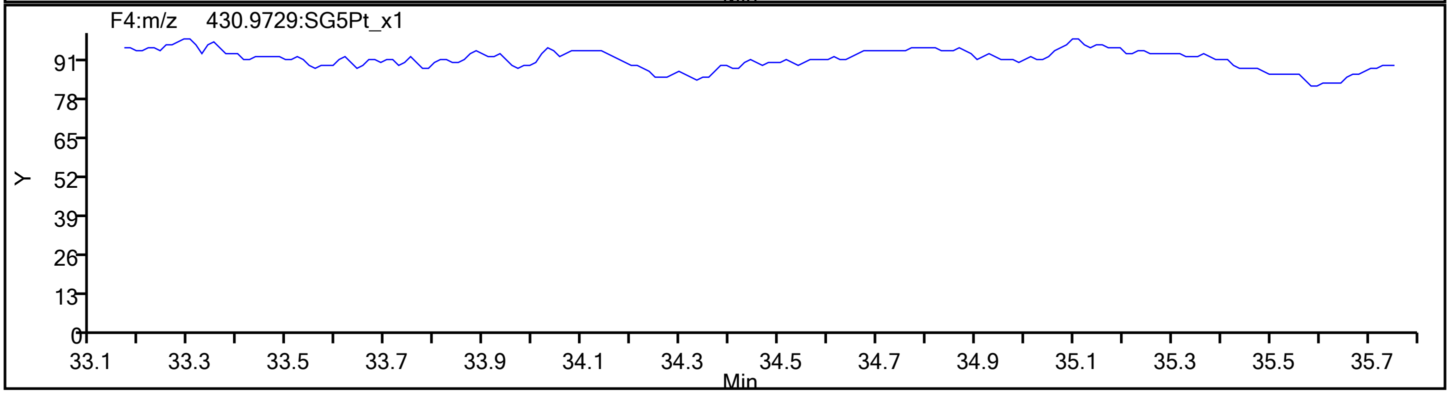

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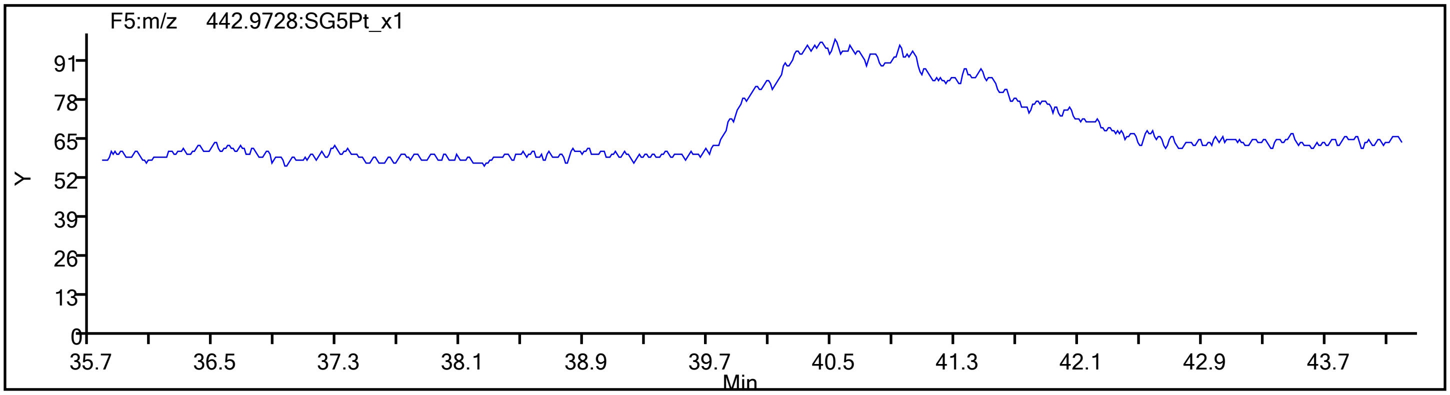

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\27JN2010AD5.SPL

Last Modified: Saturday, June 27, 2020 13:23:30 Pacific Daylight Time

Printed: Saturday, June 27, 2020 13:23:38 Pacific Daylight Time

Page Position (1, 1)

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2	27JN20A10D5_2	Solvent Blank C-14	SB 062720A	Tray01:3	---		SMA	1.000000
3	27JN20A10D5_3	CS-2 HRDXNL2_00029	IC 062720	Tray01:4	Dioxin		SMA	1.000000
4	27JN20A10D5_4	CS-3 HRDXNL3_00027	IC 062720A	Tray01:5	Dioxin		SMA	1.000000
5	27JN20A10D5_5	CS-4 HRDXNL4_00093	IC 062720B	Tray01:2	Dioxin		SMA	1.000000
6	27JN20A10D5_6	CS-5 HRDXNL5_00030	IC 062720C	Tray01:6	Dioxin		SMA	1.000000
7	27JN20A10D5_7	CS-6 HRDXNL6_00026	IC 062720D	Tray01:7	Dioxin		SMA	1.000000
8	27JN20A10D5_8	Solvent Blank C-14	SB 062720A	Tray01:3	---		SMA	1.000000
9	27JN20A10D5_9	ICV HRDXNIC_00045	ICV 062720	Tray01:8	Dioxin		SMA	1.000000

logfile checked
6-27-20 ALM

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

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Printed: Saturday, June 27, 2020 13:08:52 Pacific Daylight Time

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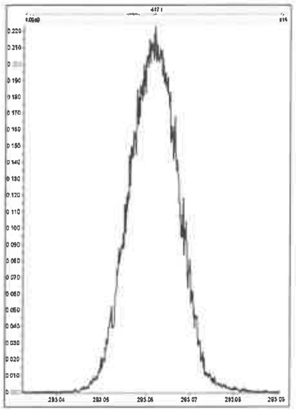

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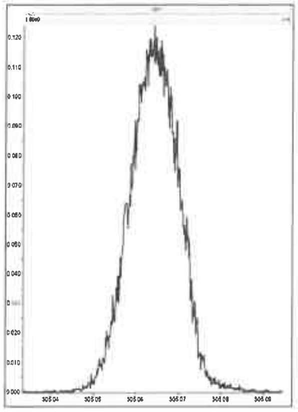

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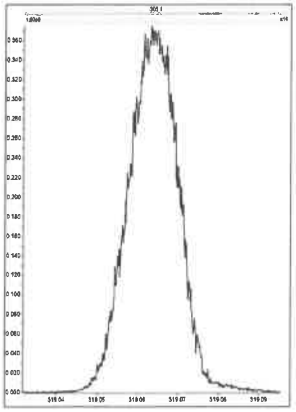

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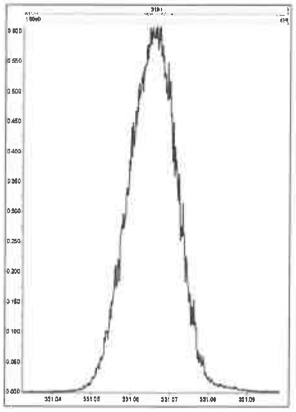

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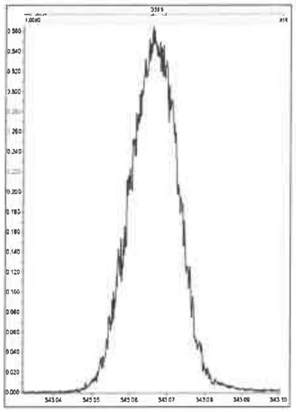

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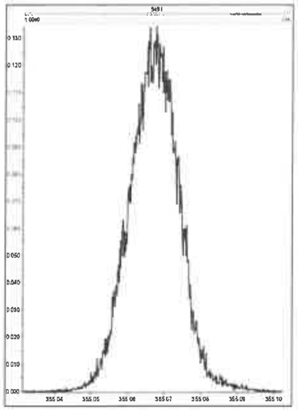

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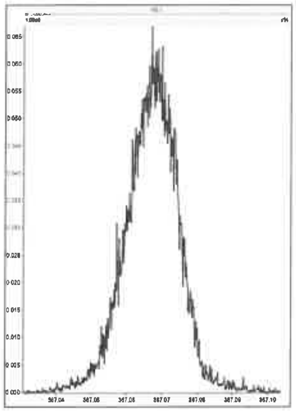

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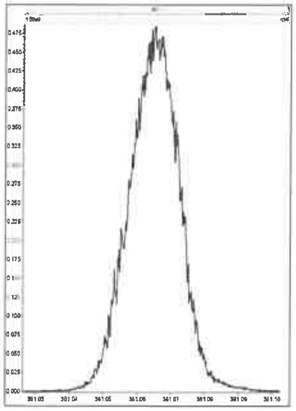

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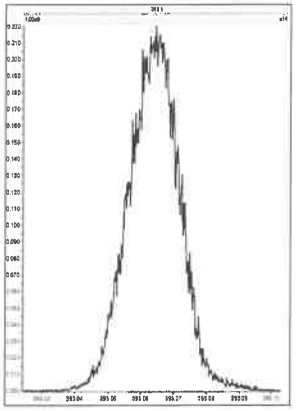

M 404.9760 R 11259

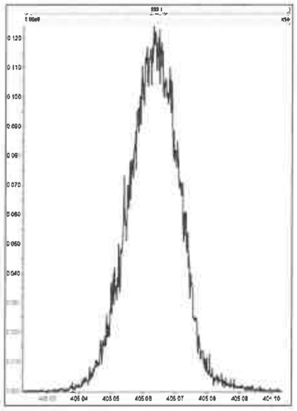

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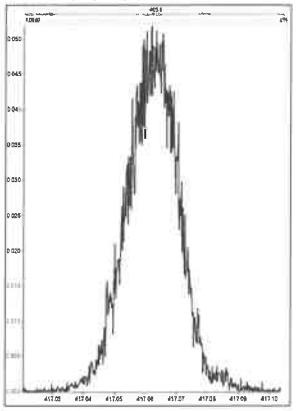

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:09:38 Pacific Daylight Time

M 318.9792 R 12256

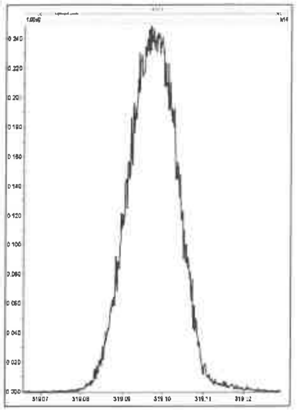

M 330.9792 R 12135

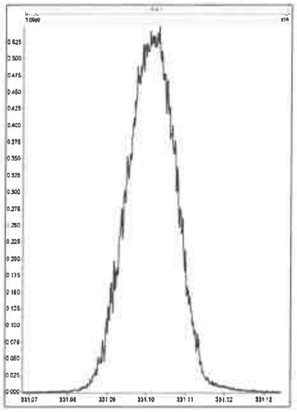

M 342.9792 R 11959

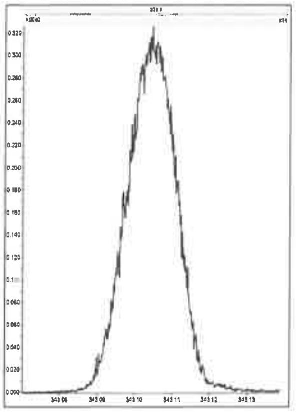

M 354.9792 R 12316

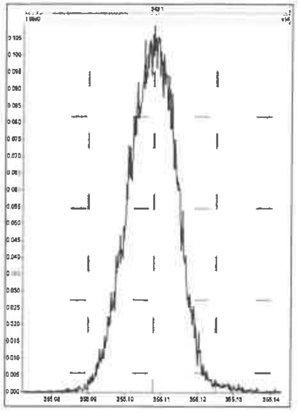

M 366.9792 R 11847

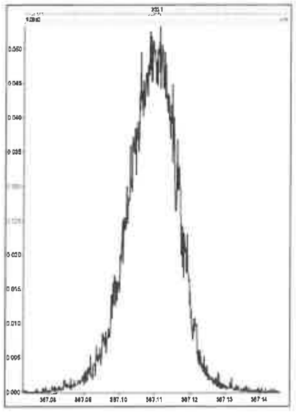

M 380.9760 R 12075

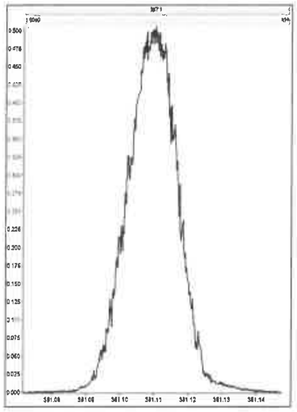

M 392.9760 R 11575

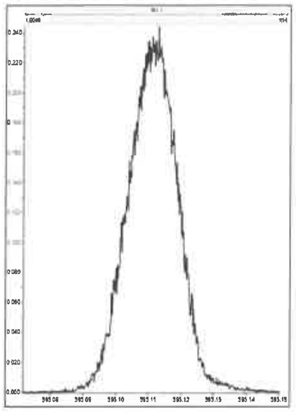

M 404.9760 R 11061

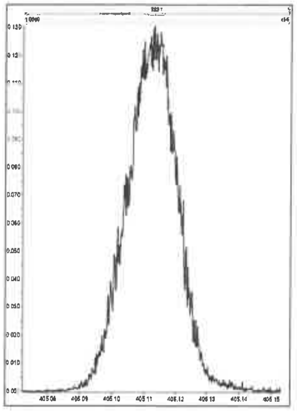

M 416.9760 R 11964

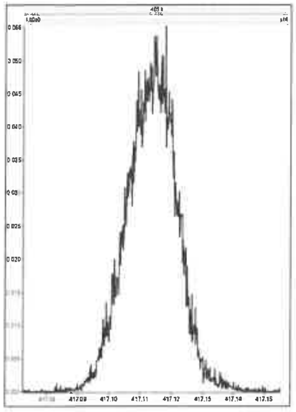

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:10:26 Pacific Daylight Time

M 366.9792 R 11520

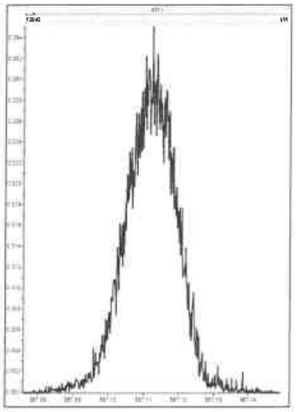

M 380.9760 R 11790

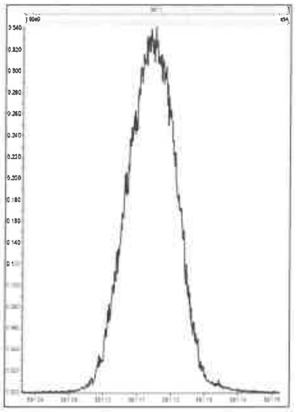

M 392.9760 R 12078

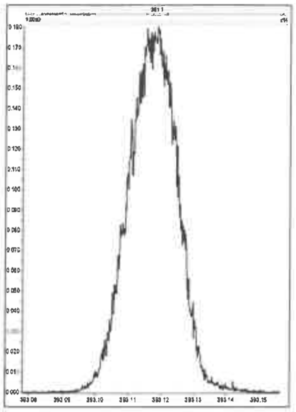

M 404.9760 R 12254

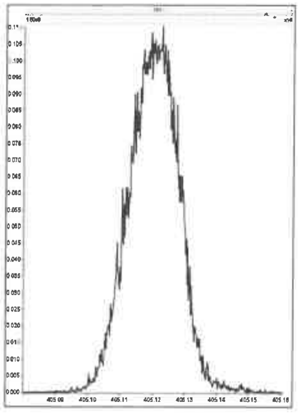

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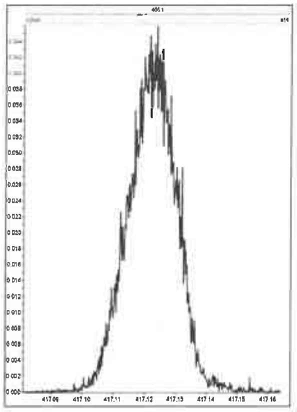

M 430.9728 R 11683

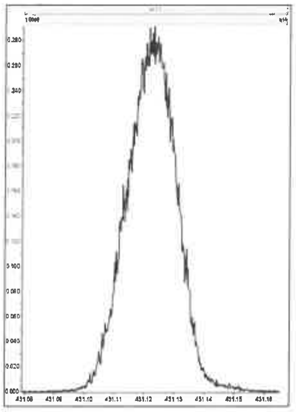

M 442.9728 R 11848

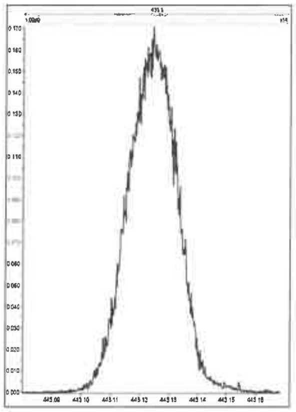

M 454.9728 R 11519

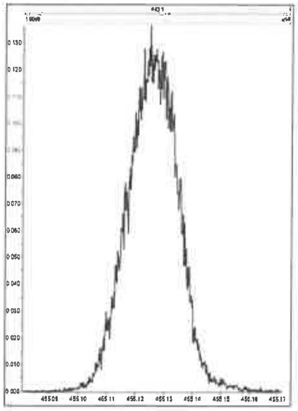

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:10:58 Pacific Daylight Time

M 380.9760 R 11792

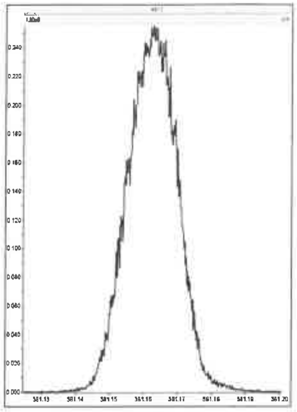

M 392.9760 R 12379

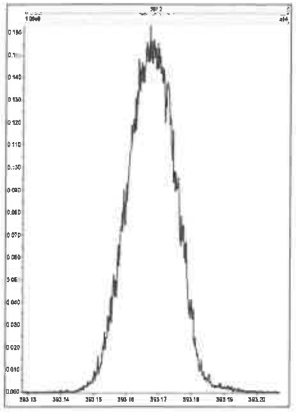

M 404.9760 R 12377

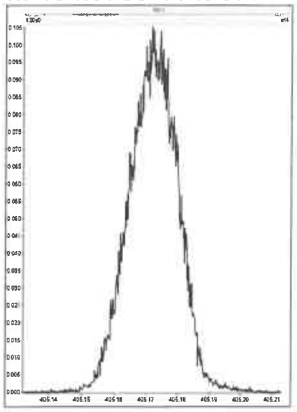

M 416.9760 R 12315

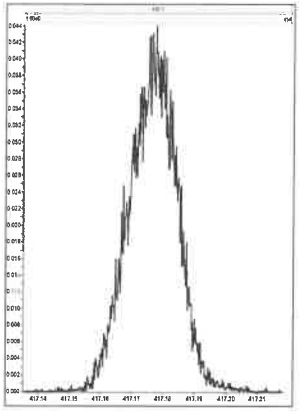

M 430.9728 R 12375

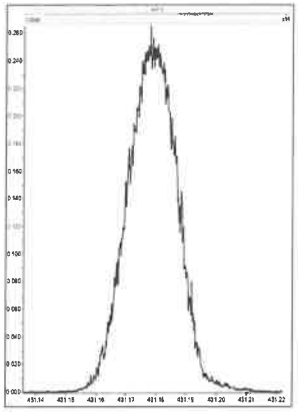

M 442.9728 R 11413

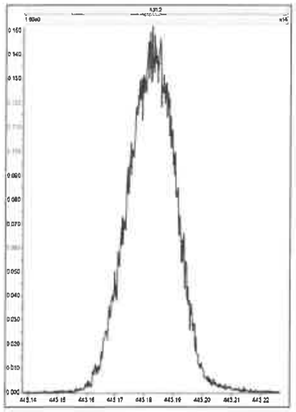

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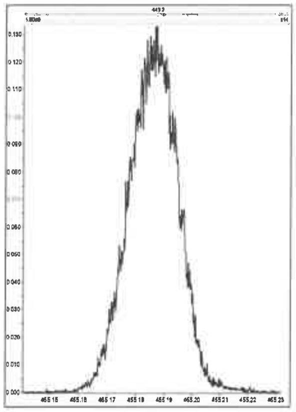

M 466.9728 R 11851

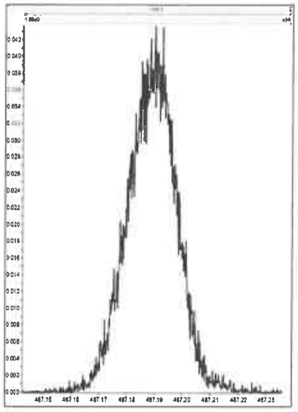

M 480.9696 R 11365

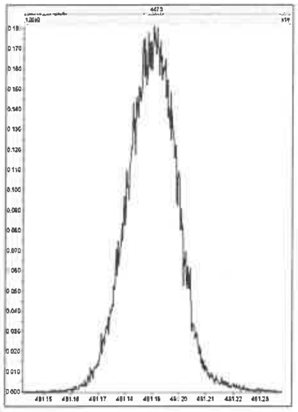

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Saturday, June 27, 2020 13:11:32 Pacific Daylight Time

M 380.9760 R 11792

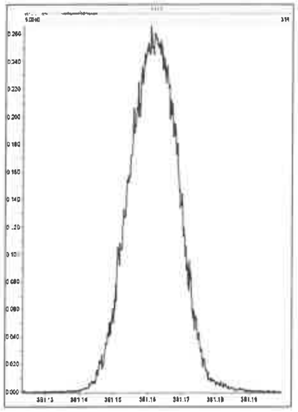

M 392.9760 R 12134

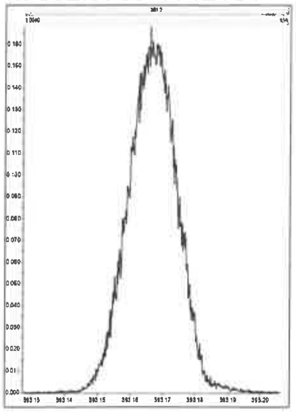

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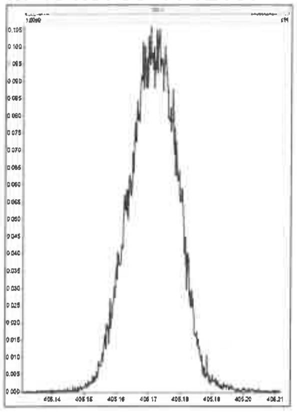

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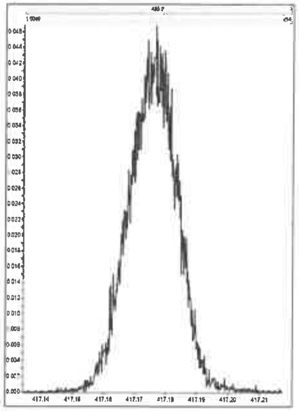

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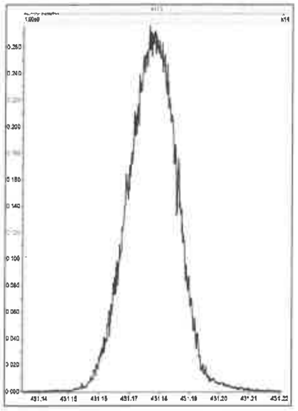

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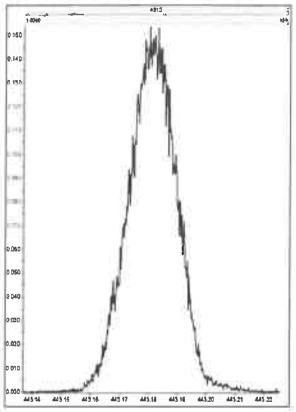

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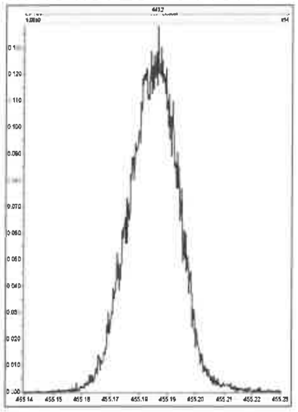

M 466.9728 R 12134

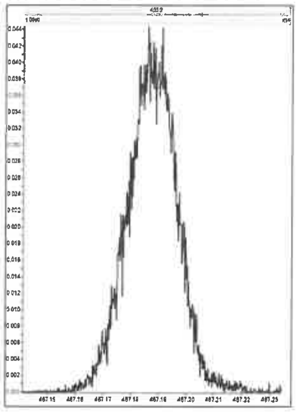

M 480.9696 R 11310

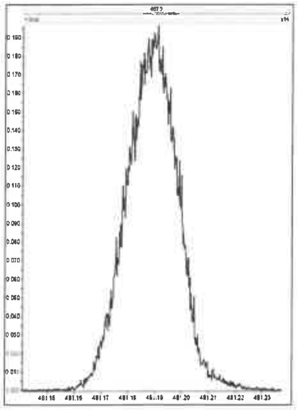

M 492.9696 R 11574

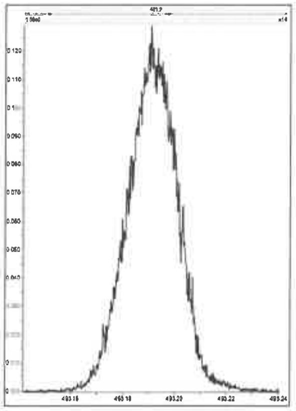

M 504.9696 R 11363

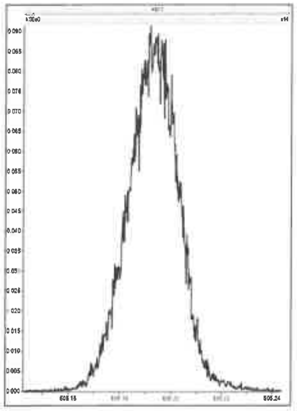

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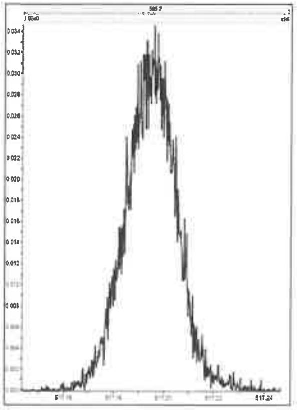

M 292.9824 R 12077

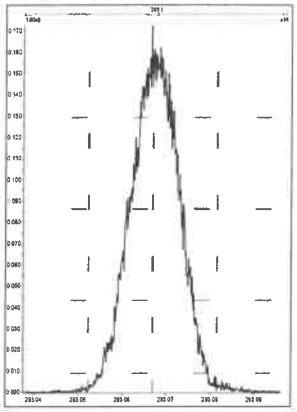

M 304.9824 R 12165

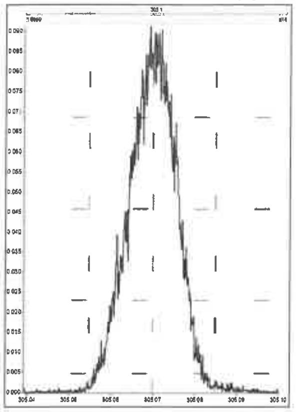

M 318.9792 R 12315

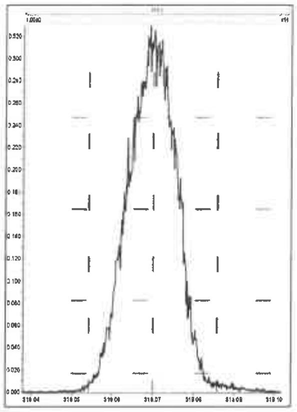

M 330.9792 R 12438

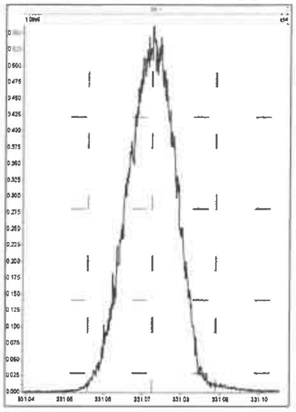

M 342.9792 R 12226

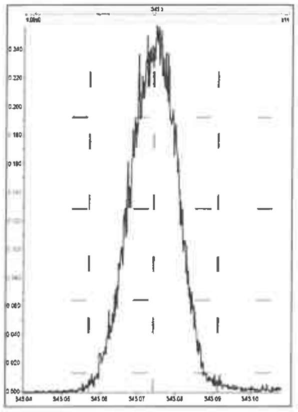

M 354.9792 R 12658

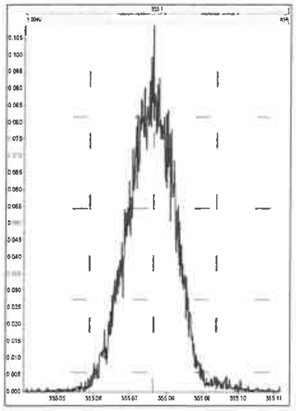

M 366.9792 R 12376

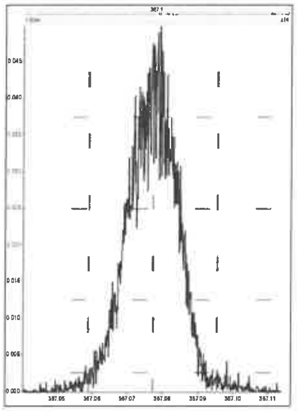

M 380.9760 R 11823

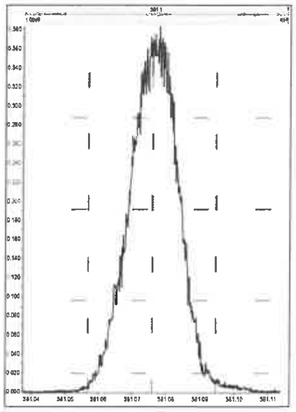

M 392.9760 R 11682

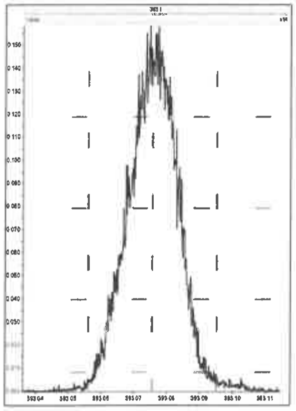

M 404.9760 R 11995

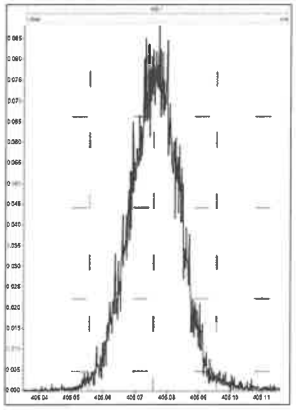

M 416.9760 R 12858

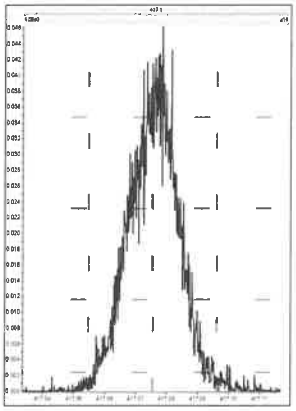

M 318.9792 R 12165

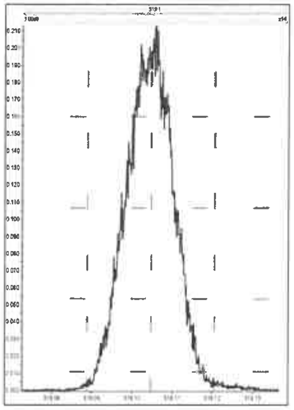

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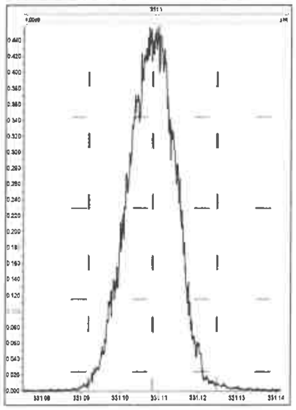

M 342.9792 R 12019

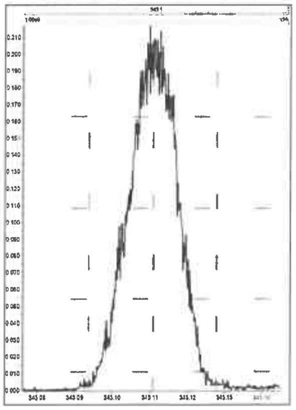

M 354.9792 R 12823

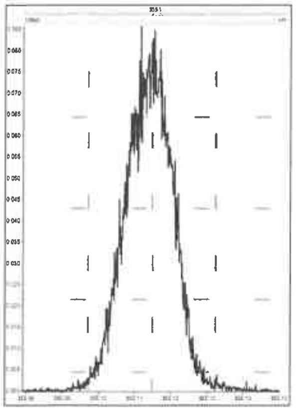

M 366.9792 R 12954

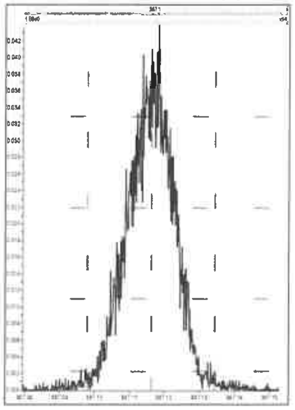

M 380.9760 R 12194

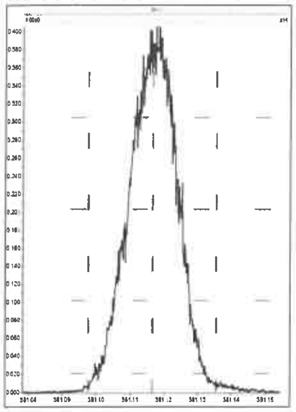

M 392.9760 R 12048

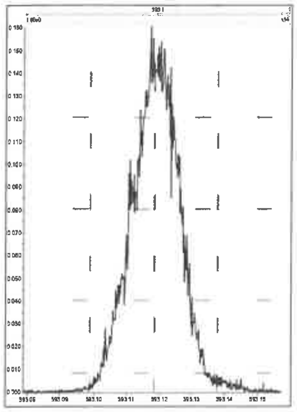

M 404.9760 R 12376

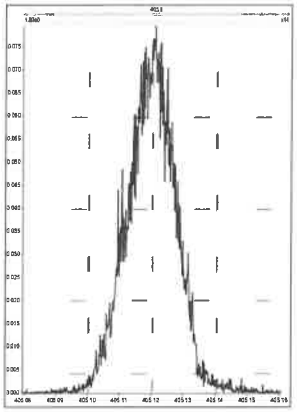

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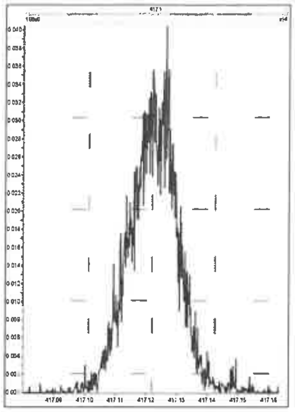

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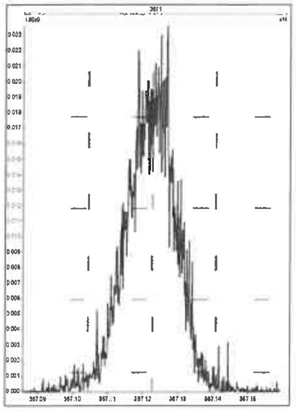

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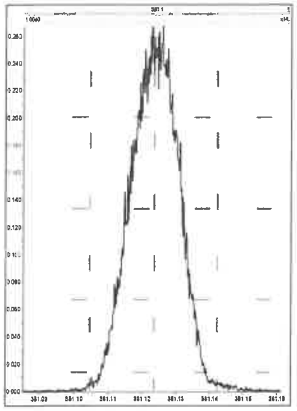

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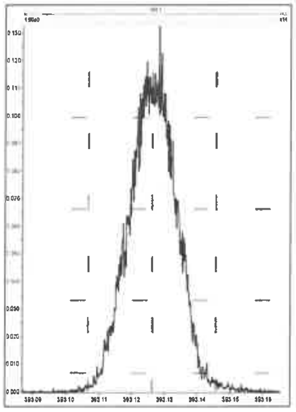

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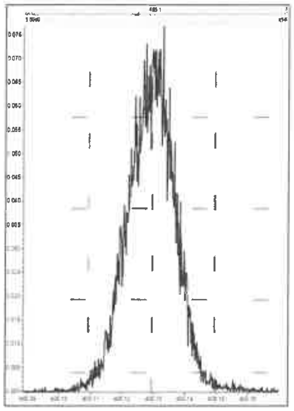

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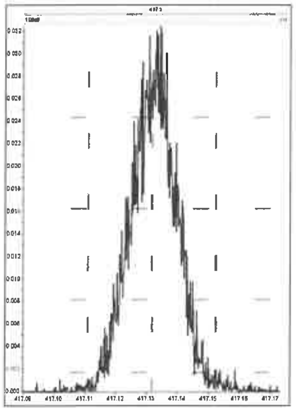

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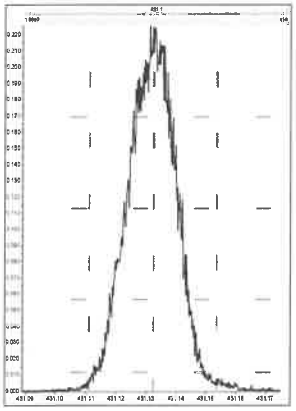

M 442.9728 R 12691

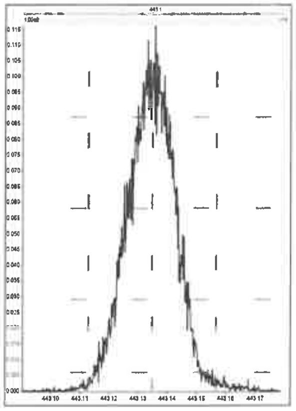

M 454.9728 R 11879

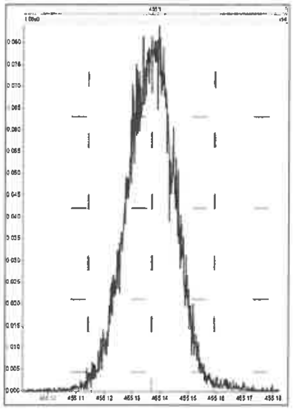

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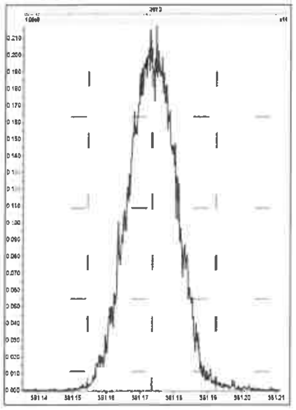

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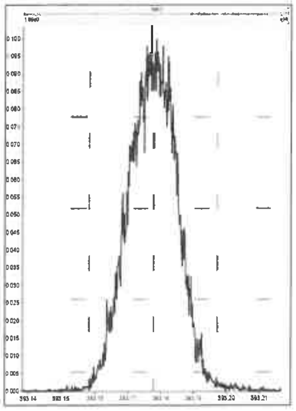

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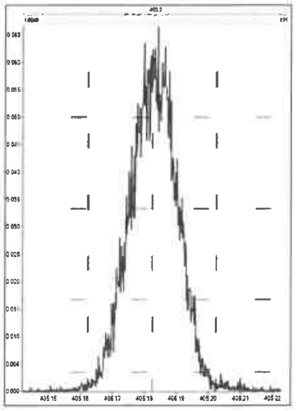

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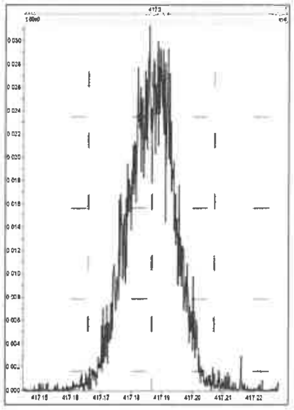

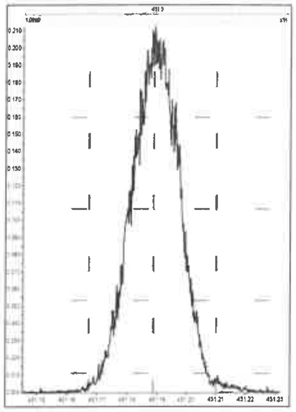
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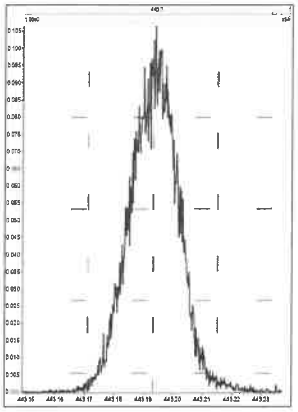
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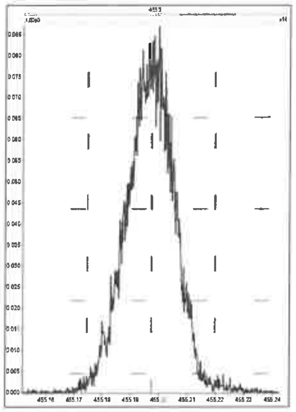
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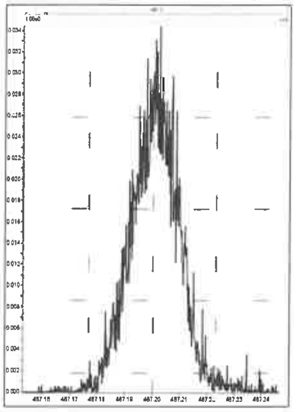
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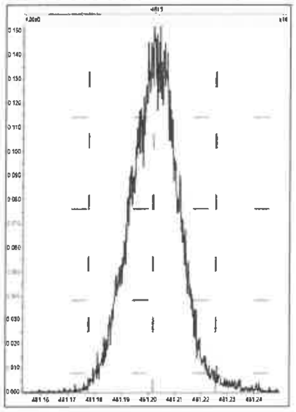
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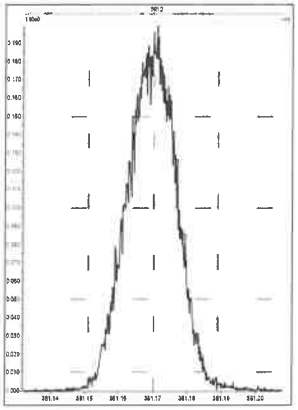
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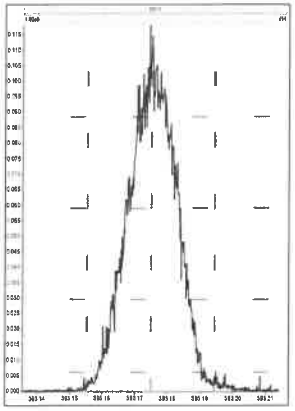
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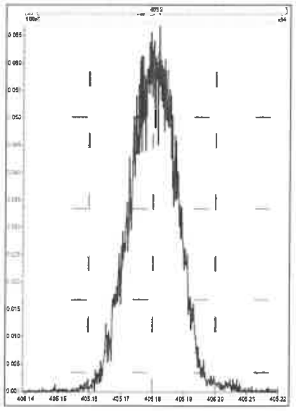
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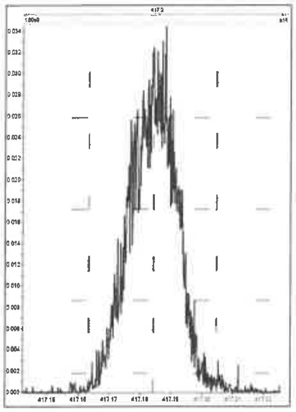
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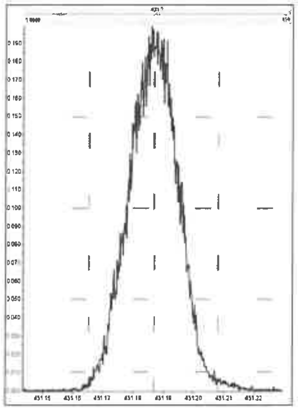
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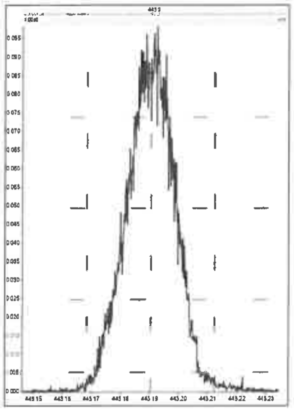
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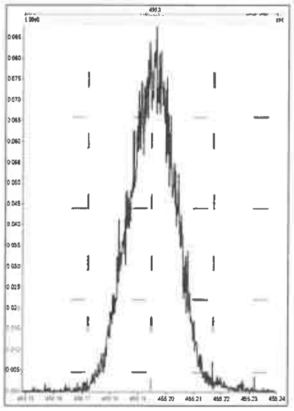
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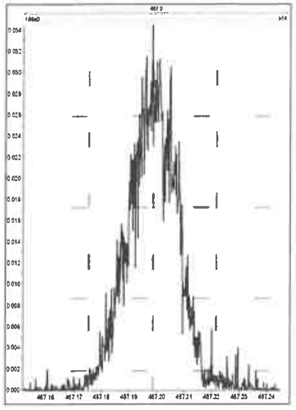
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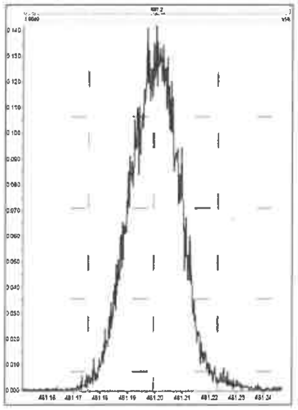
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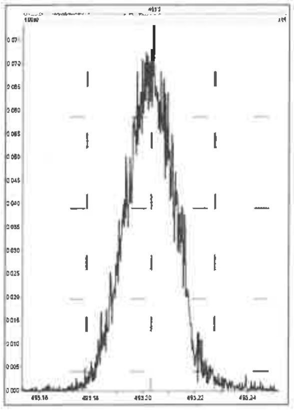
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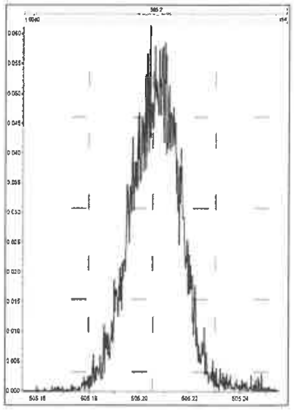
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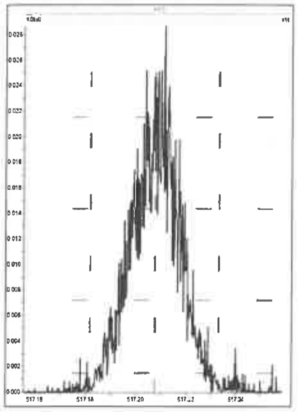

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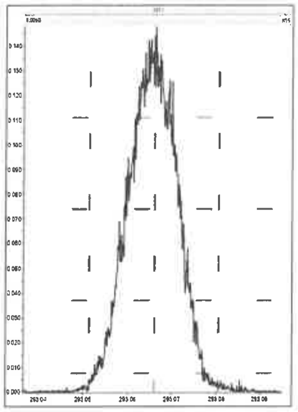

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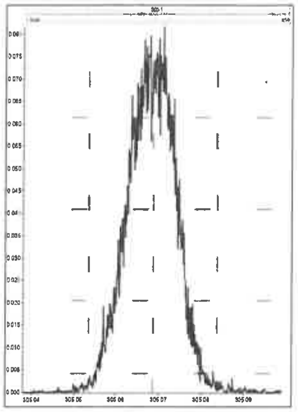

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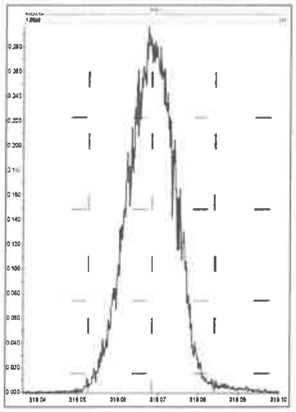

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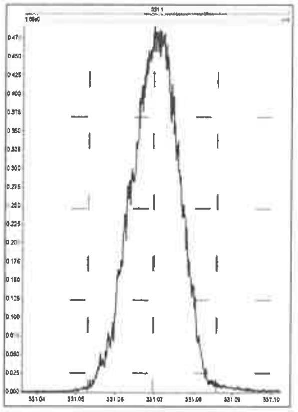

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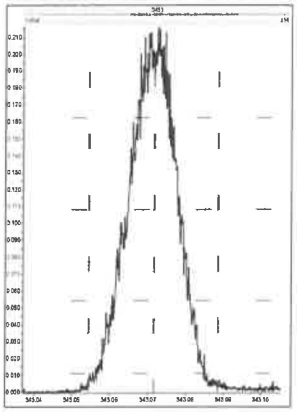

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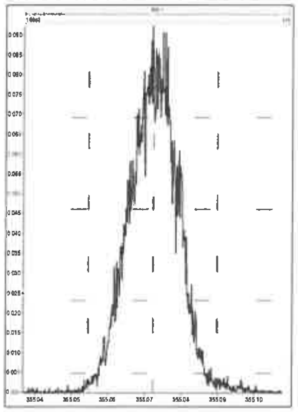

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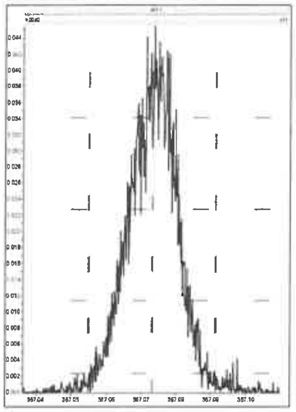

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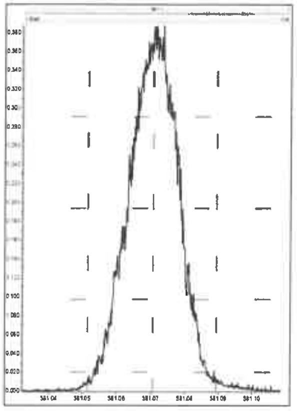

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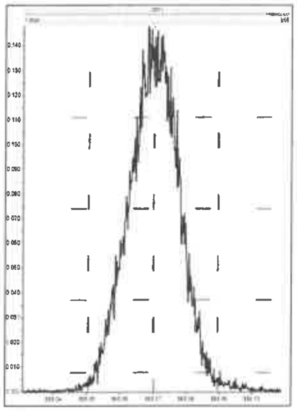

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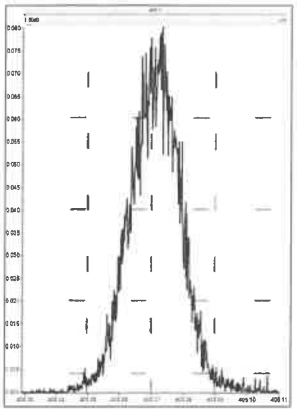

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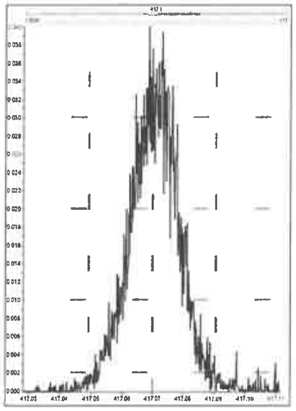

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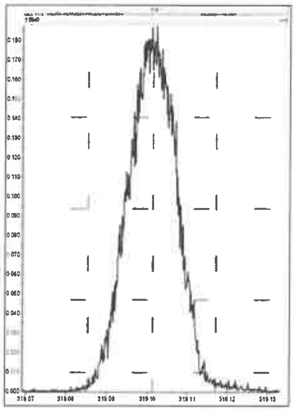

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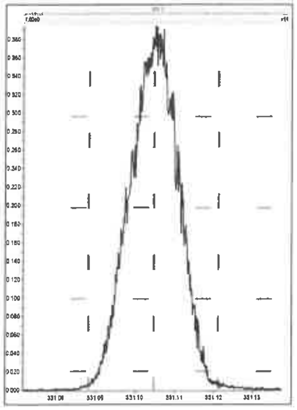

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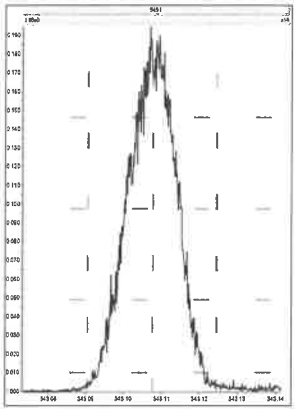

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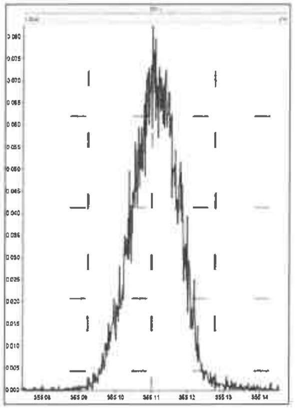

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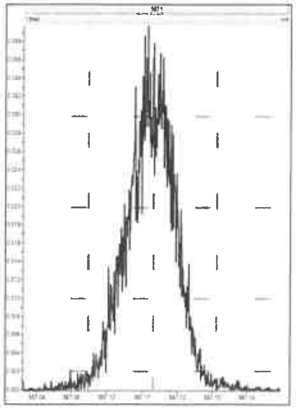

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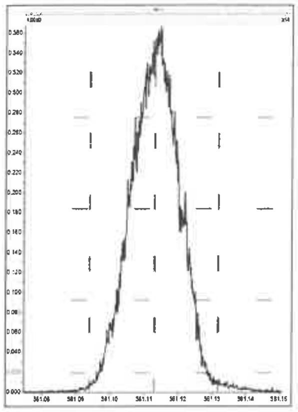

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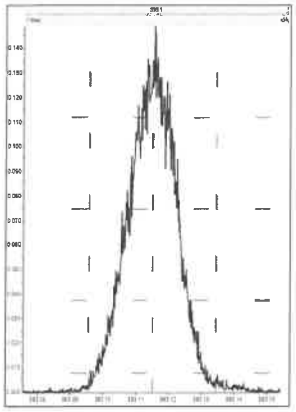

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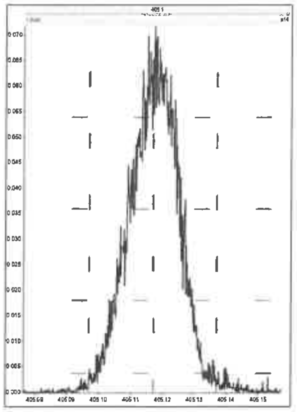

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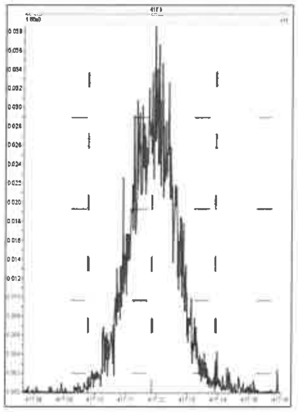

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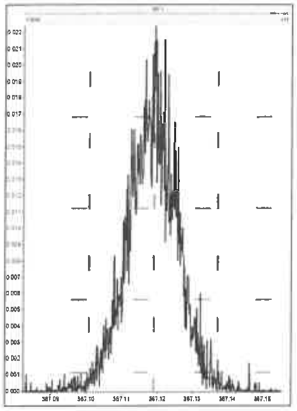

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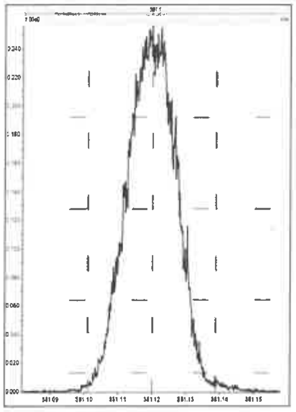

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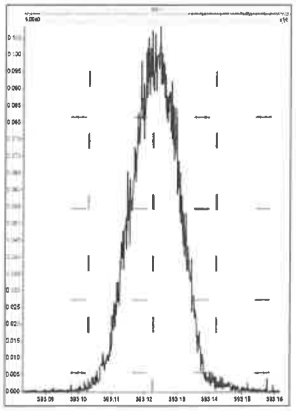

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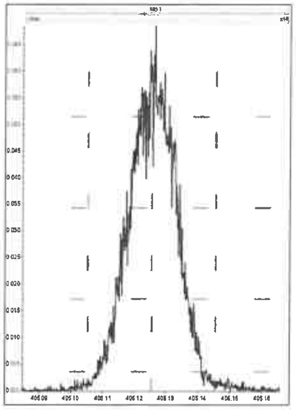

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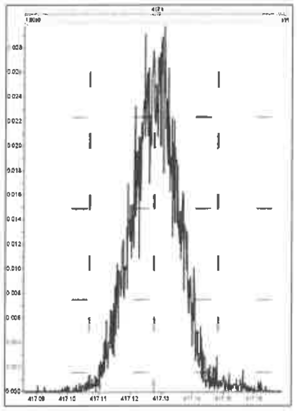

M 430.9728 R 12284

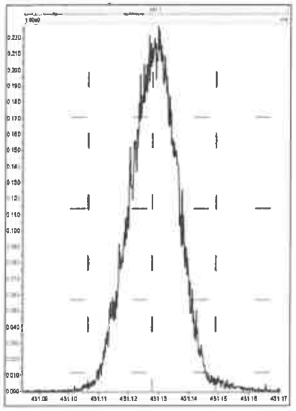

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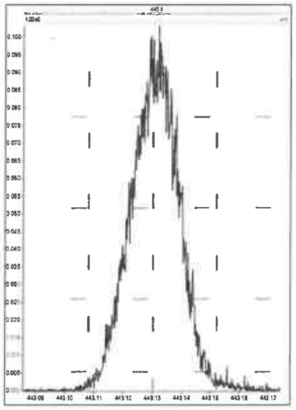

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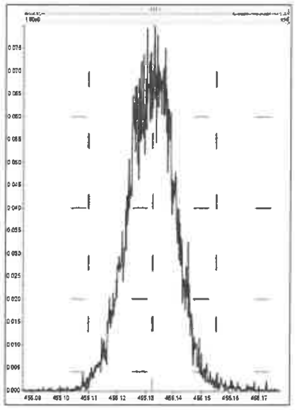

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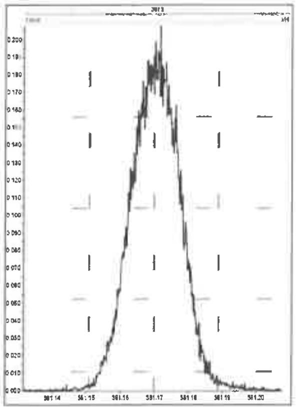

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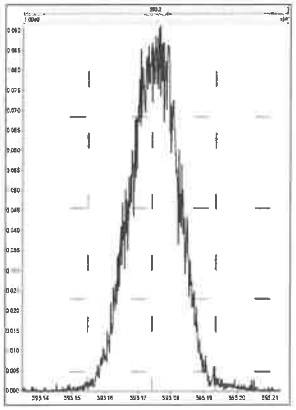

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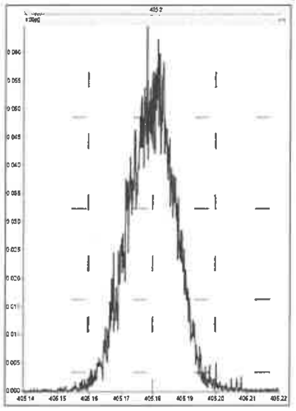

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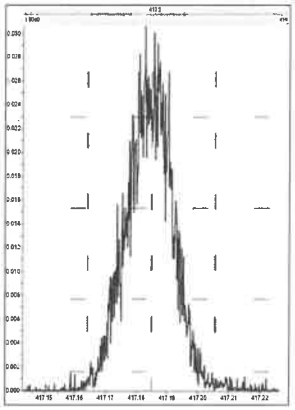

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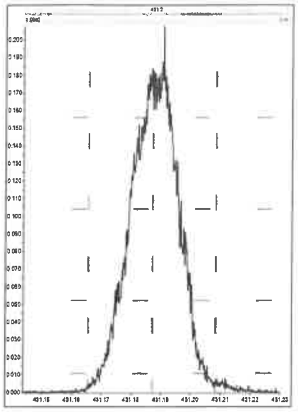

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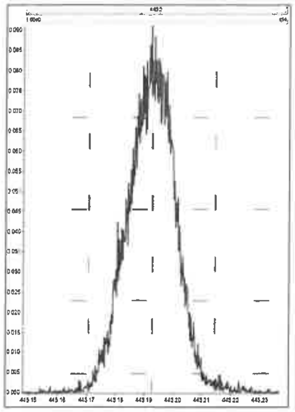

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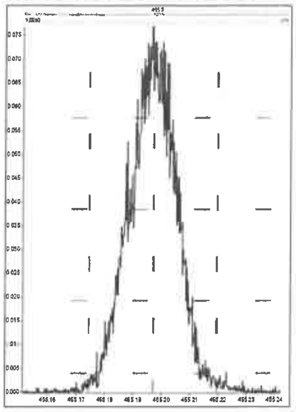

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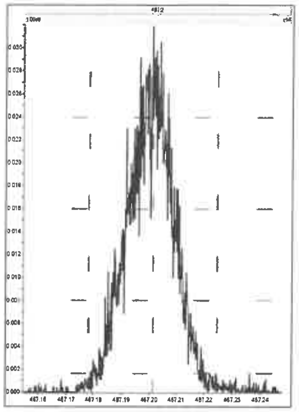

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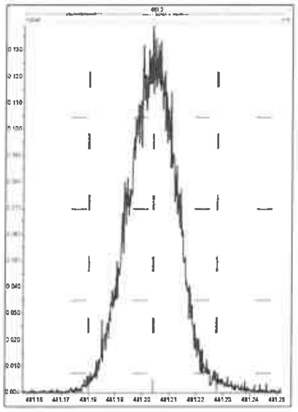

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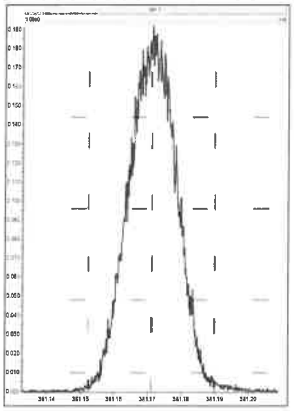

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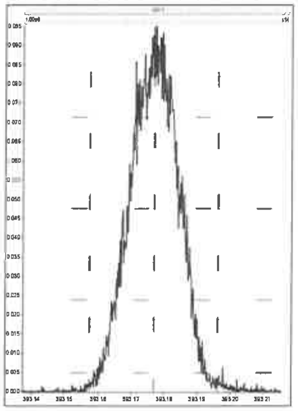

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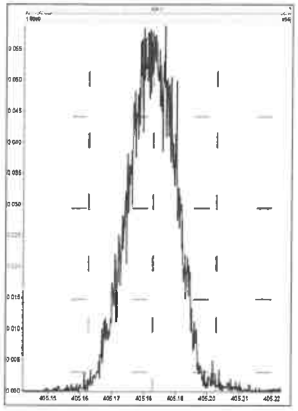

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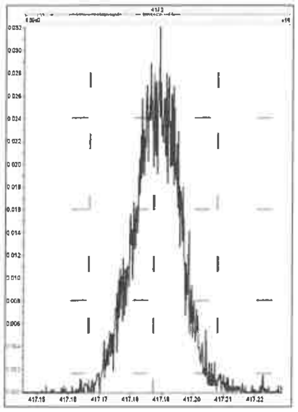

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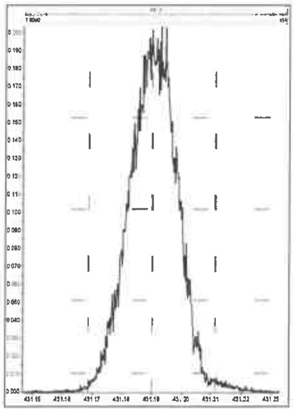

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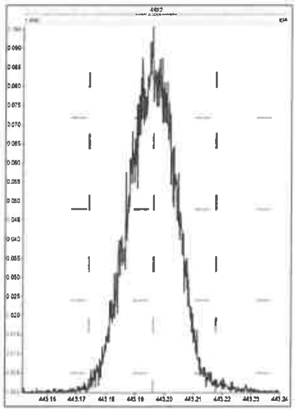

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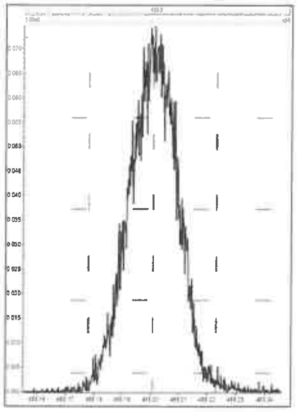

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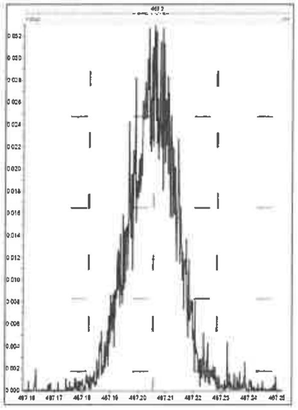

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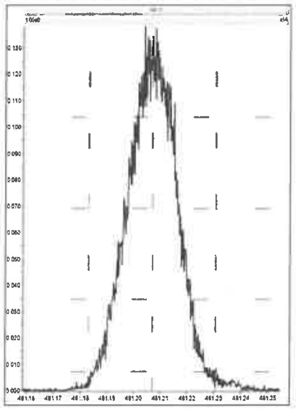

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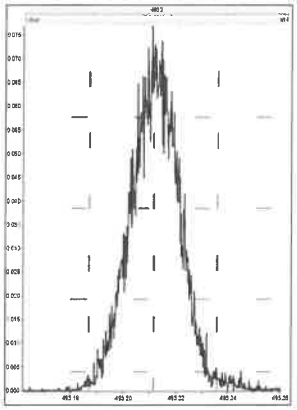

M 504.9696 R 12205

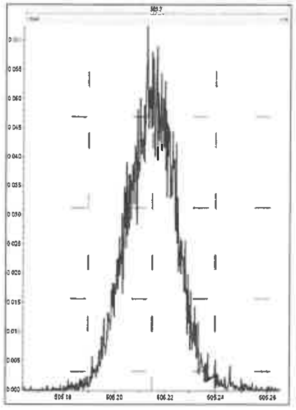

M 516.9697 R 12988

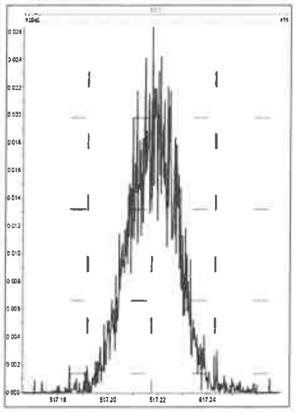

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 27-Jun-2020 15:28:06 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720A CS-3 HRDXNL3_00027
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:57 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:41:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	43639065	0.80	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	59091712	0.79	1.3726	98.7	98.7	0.2460	0.2460	98.65	
2,3,7,8-TCDF	17.203	1030887	0.74	0.9104	1.916	1.916	0.0218	0.0218	95.81	
S Total TCDF					1.916	1.916	0.0218	0.0218		
D 13C-2,3,7,8-TCDD	17.884	44824010	0.78	1.0192	100.8	100.8	0.2603	0.2603	101	
2,3,7,8-TCDD	17.899	953601	0.76	1.0745	1.980	1.980	0.0296	0.0296	99.00	
$ 37Cl4-2,3,7,8-TCDD	17.914	871168		1.0176	1.962	1.962	0.0176	0.0176	98.09	
S Total TCDD					1.980	1.980	0.0296	0.0296		
D 13C-1,2,3,7,8-PeCDF	22.143	49027297	1.59	1.1429	98.3	98.3	0.4200	0.4200	98.30	
1,2,3,7,8-PeCDF	22.156	4759314	1.61	0.9938	9.768	9.768	0.0757	0.0757	97.68	
D 13C-2,3,4,7,8-PeCDF	23.452	62074161	1.60	1.3997	101.6	101.6	0.3429	0.3429	102	
2,3,4,7,8-PeCDF	23.479	4750358	1.56	0.8117	9.428	9.428	0.0783	0.0783	94.28	
S Total PeCDF					19.2	19.2	0.0770	0.0770		
D 13C-1,2,3,7,8-PeCDD	24.174	34921306	1.59	0.8232	97.2	97.2	0.1705	0.1705	97.21	
1,2,3,7,8-PeCDD	24.202	3480805	1.61	1.0181	9.790	9.790	0.0462	0.0462	97.90	
S Total PeCDD					9.790	9.790	0.0462	0.0462		
D 13C-1,2,3,4,7,8-HxCDF	30.292	42664742	0.51	1.1388	101.8	101.8	0.9167	0.9167	102	
1,2,3,4,7,8-HxCDF	30.319	3185554	1.21	0.8061	9.262	9.262	0.1671	0.1671	92.62	
D 13C-1,2,3,6,7,8-HxCDF	30.492	39713843	0.50	1.0803	99.9	99.9	0.9664	0.9664	99.86	
1,2,3,6,7,8-HxCDF	30.519	3779382	1.18	0.9818	9.693	9.693	0.1609	0.1609	96.93	
D 13C-2,3,4,6,7,8-HxCDF	31.371	34283463	0.51	0.9494	98.1	98.1	1.100	1.100	98.09	
2,3,4,6,7,8-HxCDF	31.384	3485837	1.22	1.0382	9.793	9.793	0.1304	0.1304	97.93	
D 13C-1,2,3,7,8,9-HxCDF	32.196	30581048	0.51	0.8670	95.8	95.8	1.204	1.204	95.81	
1,2,3,7,8,9-HxCDF	32.209	3136034	1.16	1.0321	9.936	9.936	0.1463	0.1463	99.36	
S Total HxCDF					38.7	38.7	0.1512	0.1512		
* 13C-1,2,3,7,8,9-HxCDD	32.009	36813113	1.26	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	34994028	1.28	0.9356	101.6	101.6	0.6418	0.6418	102	
1,2,3,4,7,8-HxCDD	31.583	2719685	1.22	0.8202	9.475	9.475	0.0768	0.0768	94.75	
D 13C-1,2,3,6,7,8-HxCDD	31.677	37929467	1.25	1.0416	98.9	98.9	0.5765	0.5765	98.92	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	3462702	1.22	0.9367	9.747	9.747	0.0757	0.0757	97.47	
1,2,3,7,8,9-HxCDD	32.023	3527858	1.21	0.9905	9.768	9.768	0.0673	0.0673	97.68	
S Total HxCDD					29.0	29.0	0.0733	0.0733		
D 13C-1,2,3,4,6,7,8-HpCDF	33.652	28057147	0.43	0.7899	96.5	96.5	3.068	3.068	96.49	
1,2,3,4,6,7,8-HpCDF	33.665	4008596	1.03	1.4527	9.835	9.835	0.2288	0.2288	98.35	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	33325163	0.44	0.9093	99.6	99.6	2.665	2.665	99.56	
1,2,3,4,7,8,9-HpCDF	34.746	3338012	1.02	1.0585	9.463	9.463	0.3001	0.3001	94.63	
S Total HpCDF					19.3	19.3	0.2645	0.2645		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	26931716	1.06	0.7637	95.8	95.8	1.169	1.169	95.79	
1,2,3,4,6,7,8-HpCDD	34.454	2798461	1.03	1.0540	9.859	9.859	0.1238	0.1238	98.59	
S Total HpCDD					9.859	9.859	0.1238	0.1238		
D 13C-OCDD	36.773	43643747	0.91	0.6377	185.9	185.9	0.4565	0.4565	92.95	
OCDF	36.869	5443463	0.89	1.2965	19.2	19.2	0.0902	0.0902	96.20	
OCDD	36.785	4858093	0.91	1.1499	19.4	19.4	0.1098	0.1098	96.80	

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 27-Jun-2020 15:28:06 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720A CS-3 HRDXNL3_00027
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:57 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:41:37

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		19335832	4478790	5881	14702	762		
333.9339	17.687	17.702	-1		24303233	5641669	4860	12150	1161	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.197	-1	0.971	26033749	6005689	7354	18385	817		
317.9389	17.188	17.197	-1	0.971	33057963	7677098	6316	15790	1216	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.215	-1	1.001	438697	101882	341	852	299		
305.8987	17.203	17.215	-1	1.001	592190	135242	747	1867	181	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.893	-1	1.010	19655423	4237387	5881	14702	721		
333.9339	17.884	17.893	-1	1.010	25168587	5391028	4860	12150	1109	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.899	17.911	-1	1.001	410632	85901	787	1967	109		
321.8936	17.899	17.911	-1	1.001	542969	117975	438	1095	269	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	871168	185692	726	1815	256		
13C-1,2,3,7,8-PeCDF											
351.9000	22.143	22.148	0	1.251	30083221	4875061	11777	29442	414		
353.8970	22.143	22.148	0	1.251	18944076	3046537	7653	19132	398	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.156	22.164	0	1.001	2934765	483914	1407	3517	344		
341.8567	22.156	22.164	0	1.001	1824549	285883	977	2442	293	1.61(1.32-1.78)	

Report Date: 28-Jun-2020 13:17:00 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.452	23.460	0	1.325	38243343	5794870	11777	29442	492		
353.8970	23.452	23.460	0	1.325	23830818	3580795	7653	19132	468	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.479	23.487	0	1.001	2895083	433498	1407	3517	308		
341.8567	23.479	23.487	0	1.001	1855275	278806	977	2442	285	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.174	24.180	0	1.366	21421868	3006143	3086	7715	974		
369.8919	24.174	24.180	0	1.366	13499438	1923562	2596	6490	741	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	2149507	297695	497	1242	599		
357.8516	24.202	24.204	0	1.001	1331298	184899	430	1075	430	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.292	30.298	0	0.946	14413502	2286959	9710	24275	236		
385.8610	30.292	30.298	0	0.946	28251240	4480135	19392	48480	231	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.319	30.319	0	1.001	1741543	268361	1906	4765	141		
375.8178	30.319	30.319	0	1.001	1444011	238191	1740	4350	137	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.492	30.497	0	0.953	13281181	1924515	9710	24275	198		
385.8610	30.492	30.497	0	0.953	26432662	3846709	19392	48480	198	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.001	2047646	302977	1906	4765	159		
375.8178	30.519	30.519	0	1.001	1731736	253518	1740	4350	146	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	11566575	2245795	9710	24275	231		
385.8610	31.371	31.370	0	0.980	22716888	4484481	19392	48480	231	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	1916204	383233	1906	4765	201		
375.8178	31.384	31.384	0	1.000	1569633	308423	1740	4350	177	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.196	32.201	0	1.006	10273728	2040405	9710	24275	210		
385.8610	32.196	32.201	0	1.006	20307320	3997598	19392	48480	206	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.209	32.214	0	1.000	1685218	334059	1906	4765	175		
375.8178	32.209	32.214	0	1.000	1450816	278262	1740	4350	160	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.009	32.015	0		20556699	3903279	9082	22705	430		
403.8529	32.009	32.015	0		16256414	3065748	7658	19145	400	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	19641879	4632268	9082	22705	510		
403.8529	31.570	31.570	0	0.986	15352149	3683166	7658	19145	481	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	1496345	361956	1182	2955	306		
391.8127	31.583	31.583	0	1.000	1223340	292290	912	2280	320	1.22(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.990	21105495	4090559	9082	22705	450		
403.8529	31.677	31.677	0	0.990	16823972	3295032	7658	19145	430	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	1901964	389203	1182	2955	329		
391.8127	31.690	31.693	0	1.000	1560738	308754	912	2280	339	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.023	32.028	0	1.014	1932228	364111	1182	2955	308		
391.8127	32.023	32.028	0	1.014	1595630	306605	912	2280	336	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.652	33.657	0	1.051	8459182	1968929	20503	51257	96		
419.8220	33.652	33.657	0	1.051	19597965	4565515	47054	117635	97	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.665	33.667	0	1.000	2029913	478836	4793	11982	100		
409.7789	33.665	33.667	0	1.000	1978683	467806	3895	9737	120	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	10134685	2105791	20503	51257	103		
419.8220	34.734	34.731	0	1.085	23190478	4730712	47054	117635	101	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.746	34.739	0	1.000	1689082	334626	4793	11982	70		
409.7789	34.734	34.739	0	1.000	1648930	328889	3895	9737	84	1.02(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	13831182	2872767	11902	29755	241		
437.8140	34.442	34.444	0	1.076	13100534	2720988	12980	32450	210	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	1422658	305100	1771	4427	172		
425.7737	34.454	34.457	0	1.000	1375803	282143	1148	2870	246	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.149	20838125	2990554	3888	9720	769		
471.7750	36.773	36.775	0	1.149	22805622	3323066	4227	10567	786	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	2560225	396289	608	1520	652		
443.7399	36.869	36.871	0	1.003	2883238	452232	868	2170	521	0.89(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	2319784	329171	729	1822	452		
459.7348	36.785	36.787	0	1.000	2538309	387210	866	2165	447	0.91(0.76-1.02)	

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

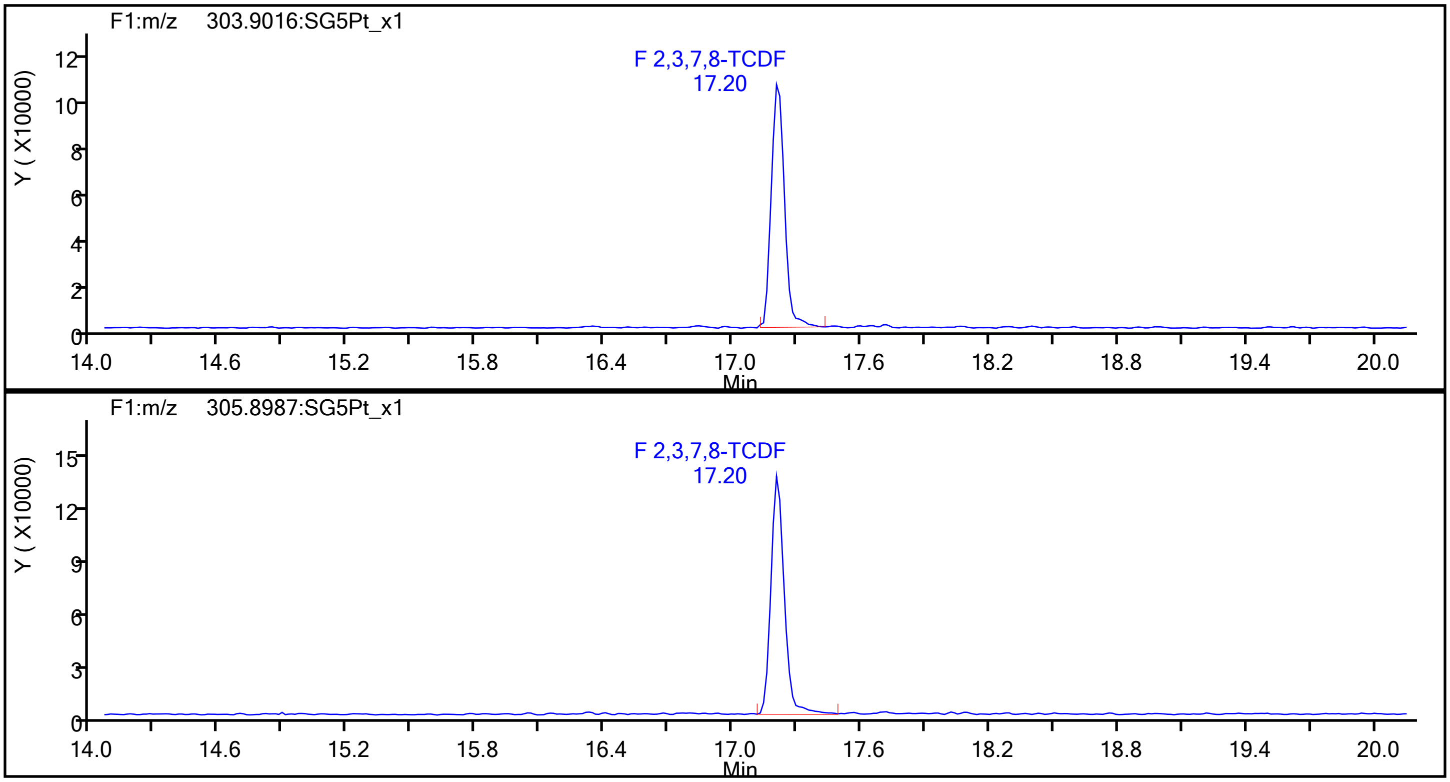

TCDF Standards

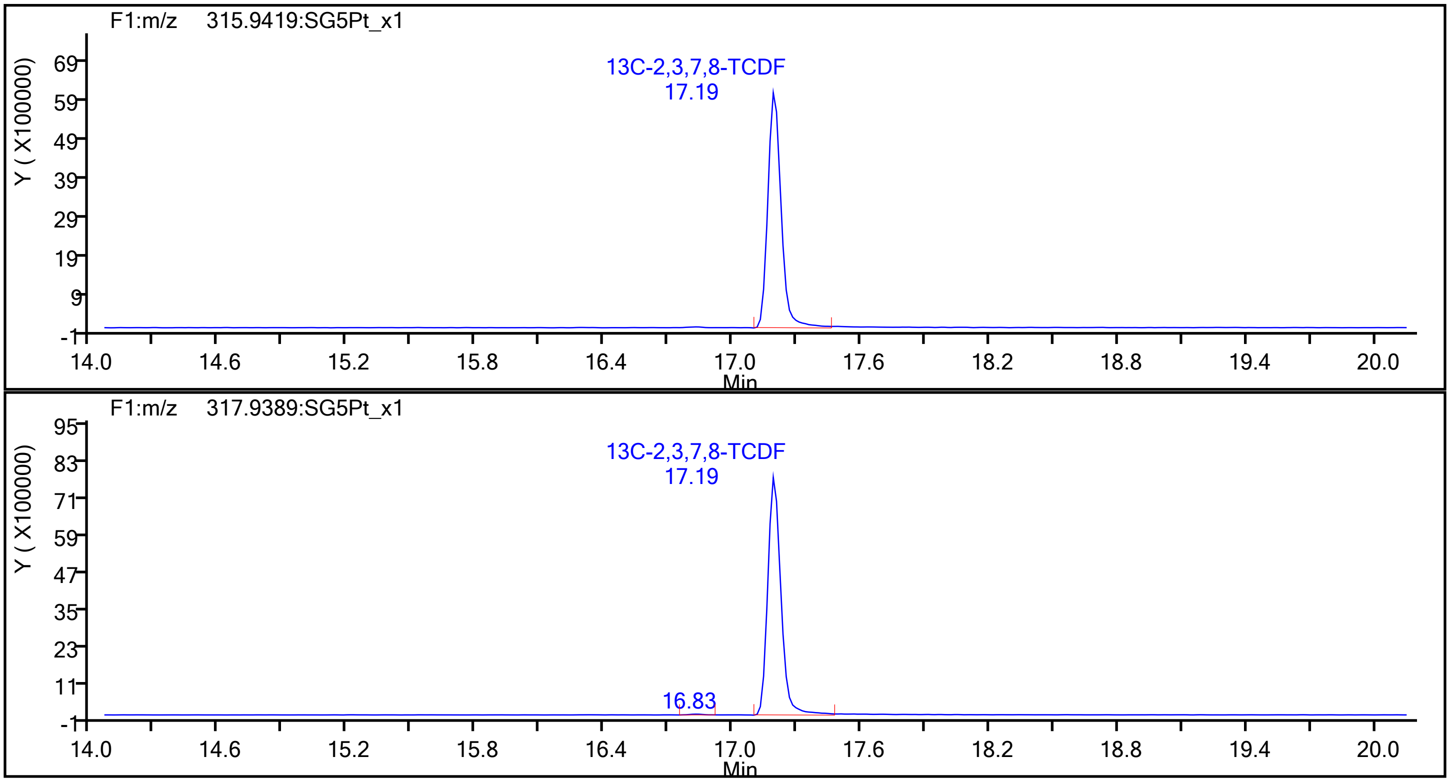

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Injection Date: 27-Jun-2020 15:28:06
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

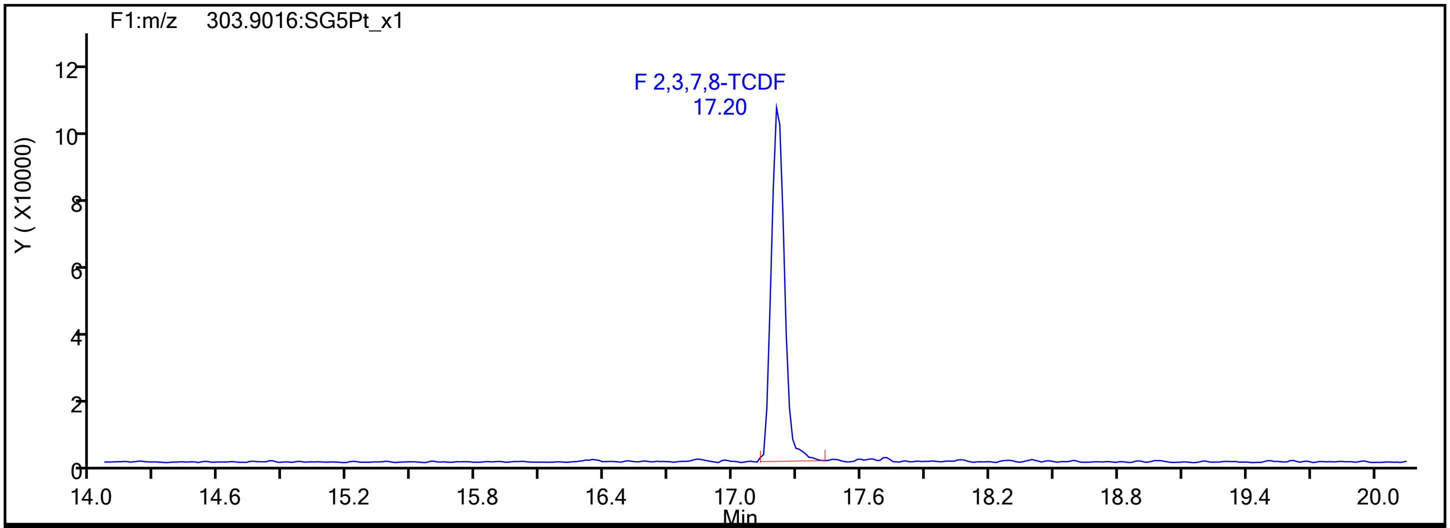

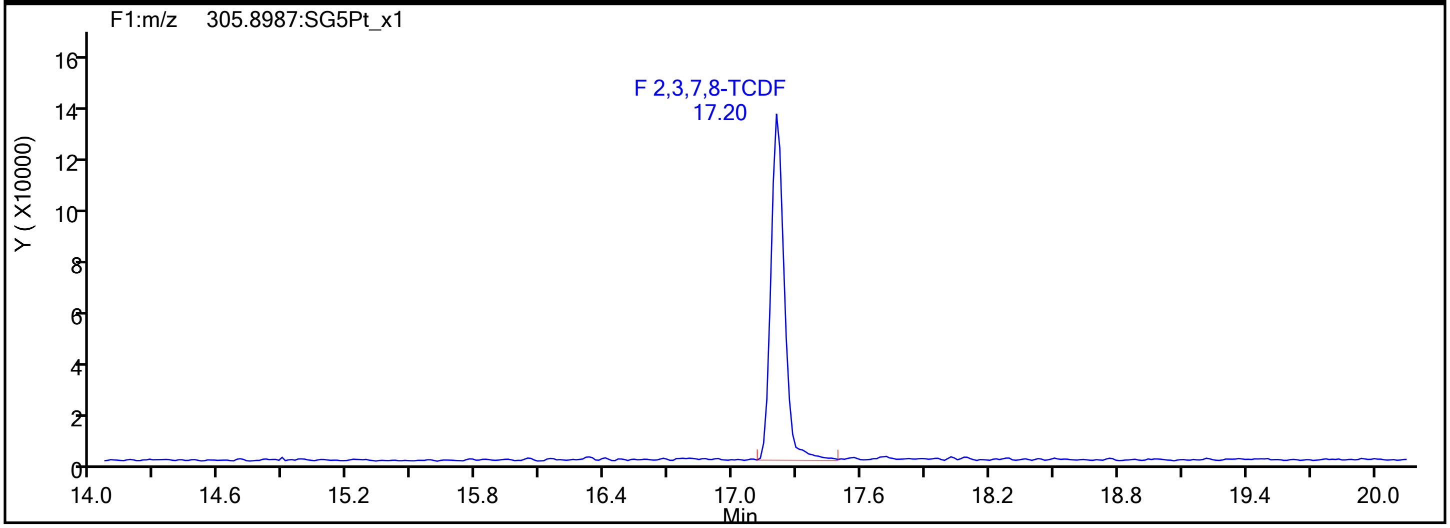

TCDF Interference Mass

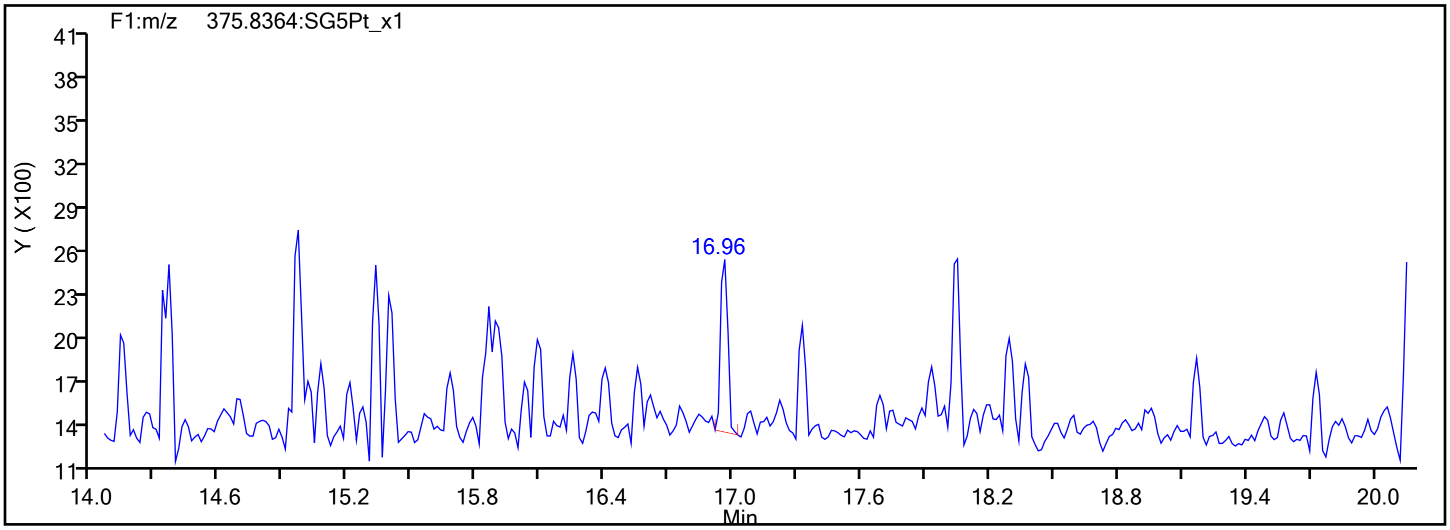

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

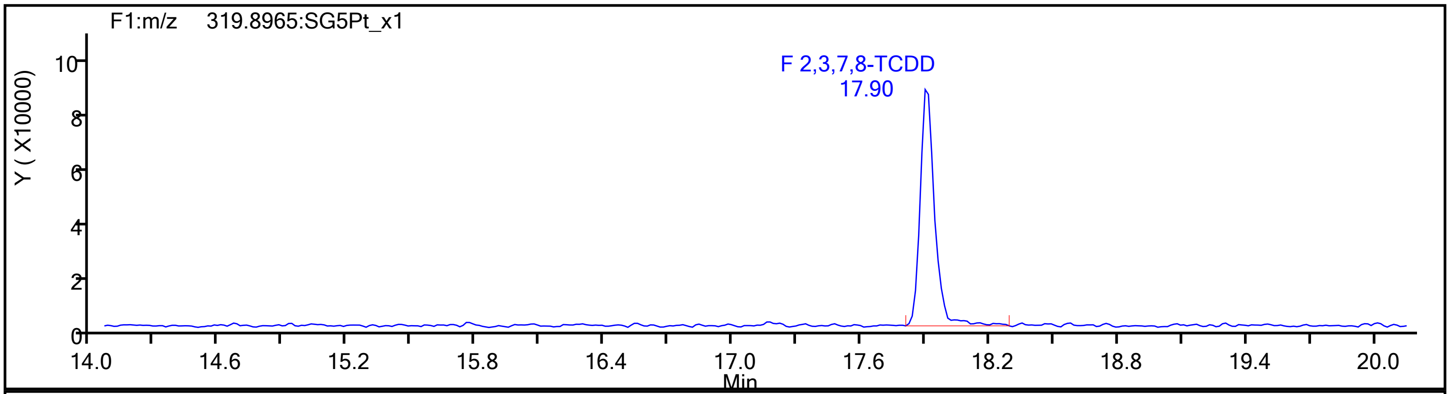

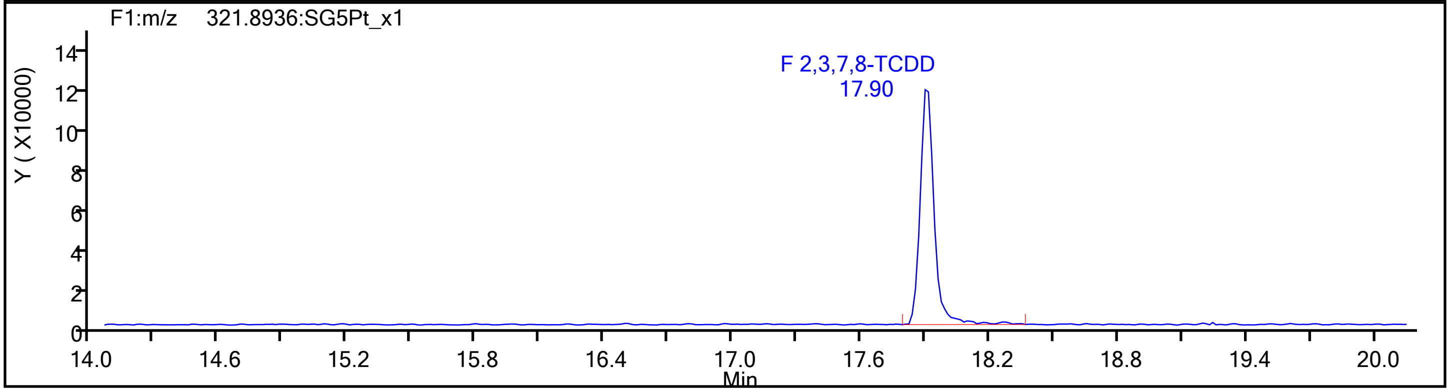

TCDD Standards

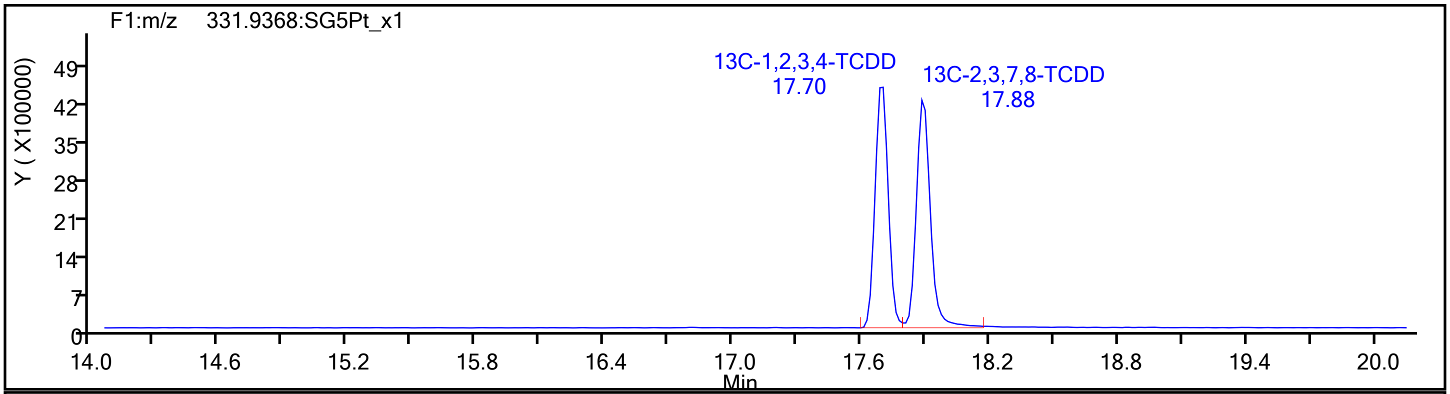

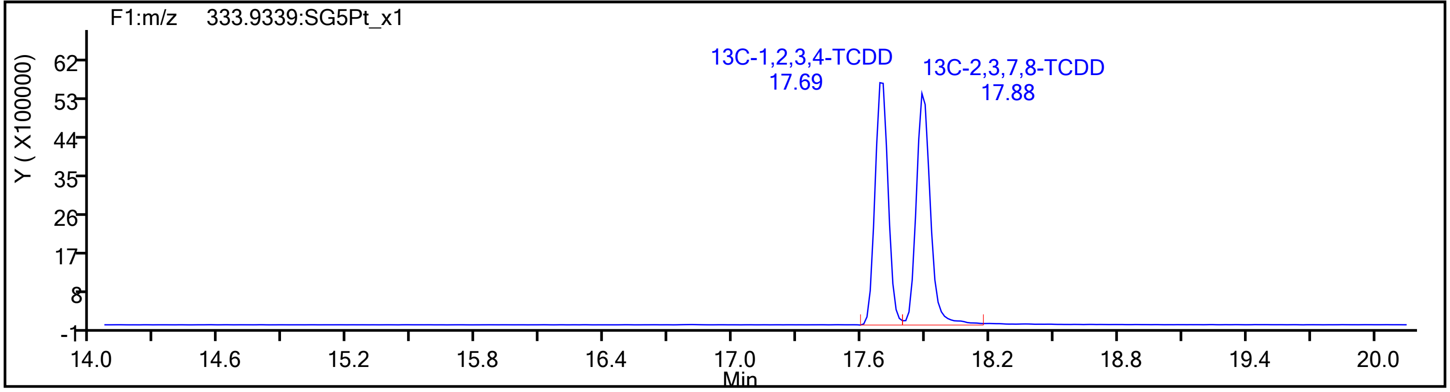

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

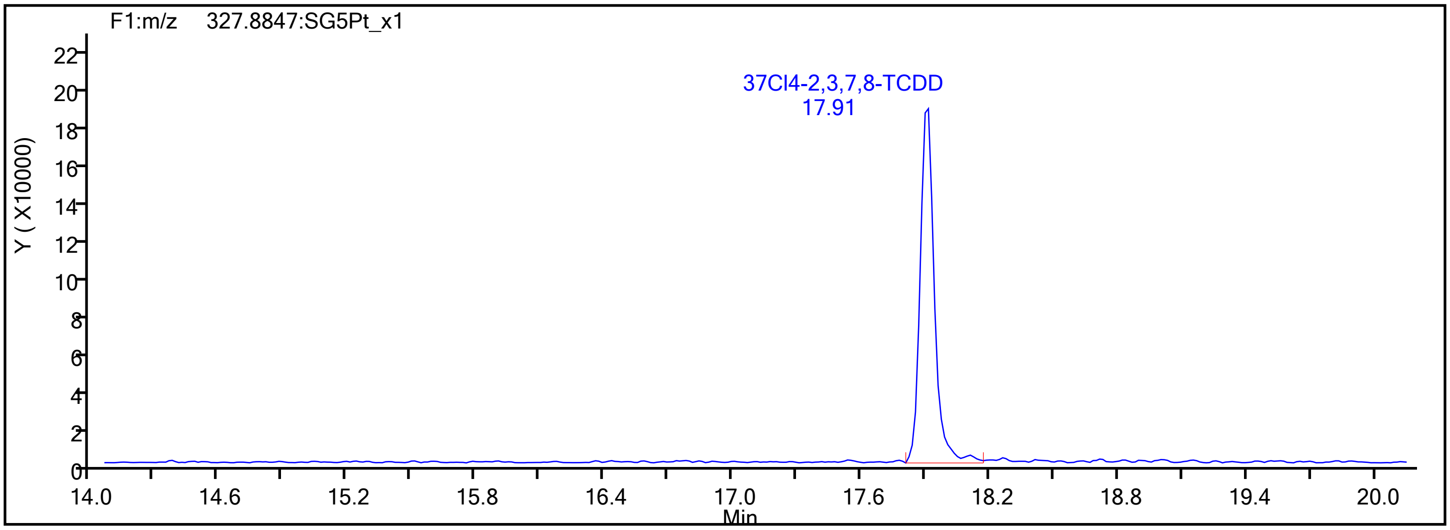

37Cl4-TCDD Standards

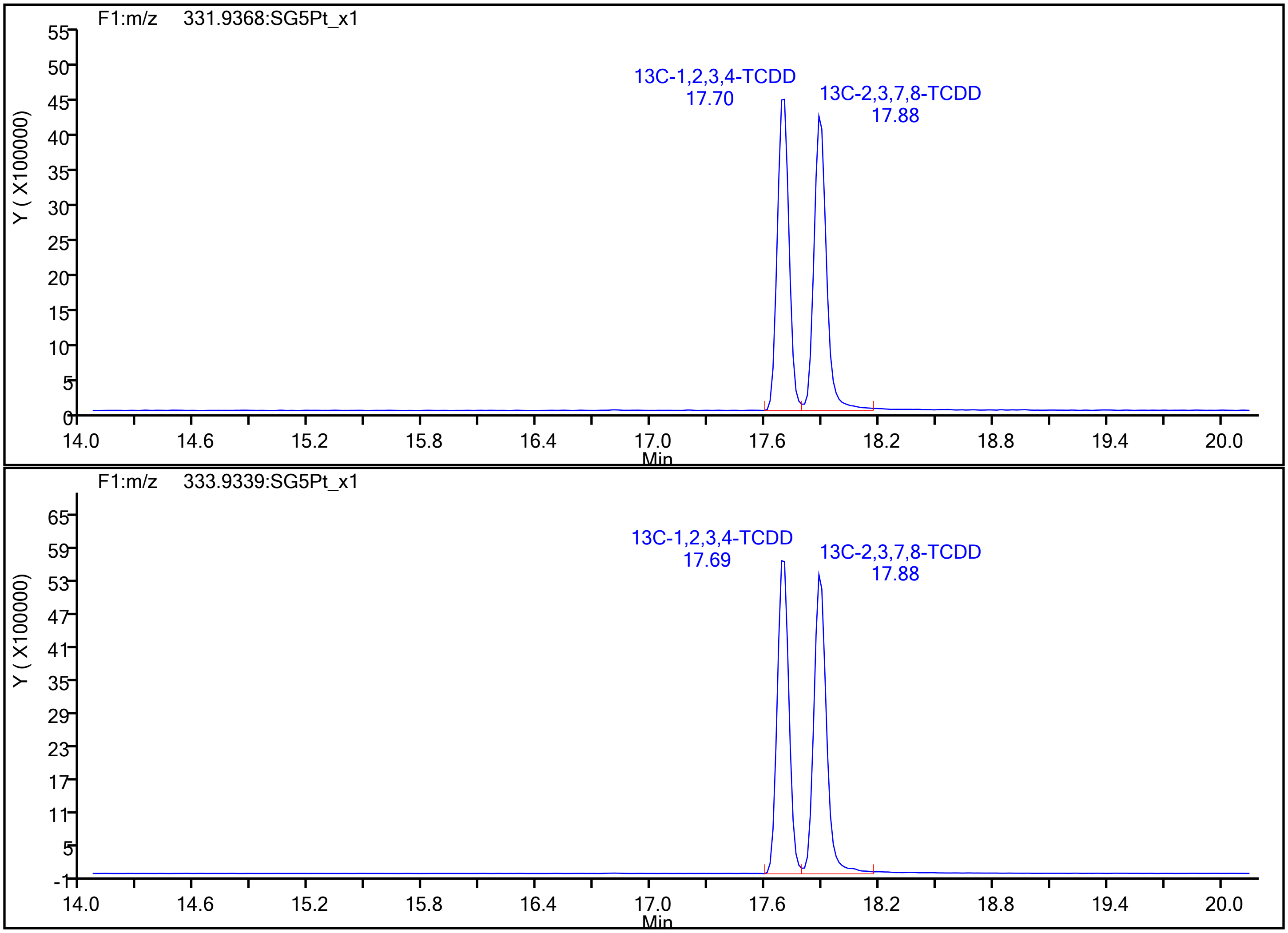

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

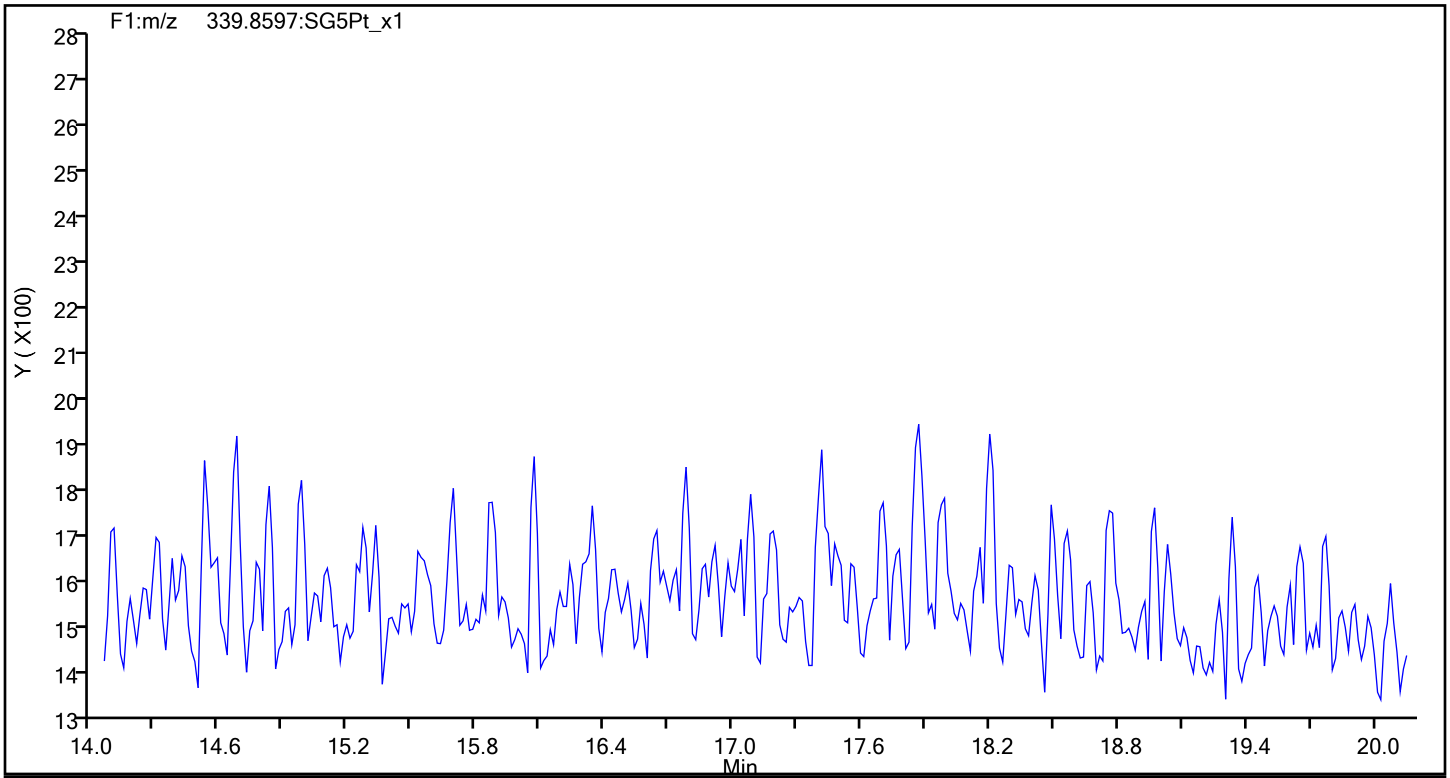

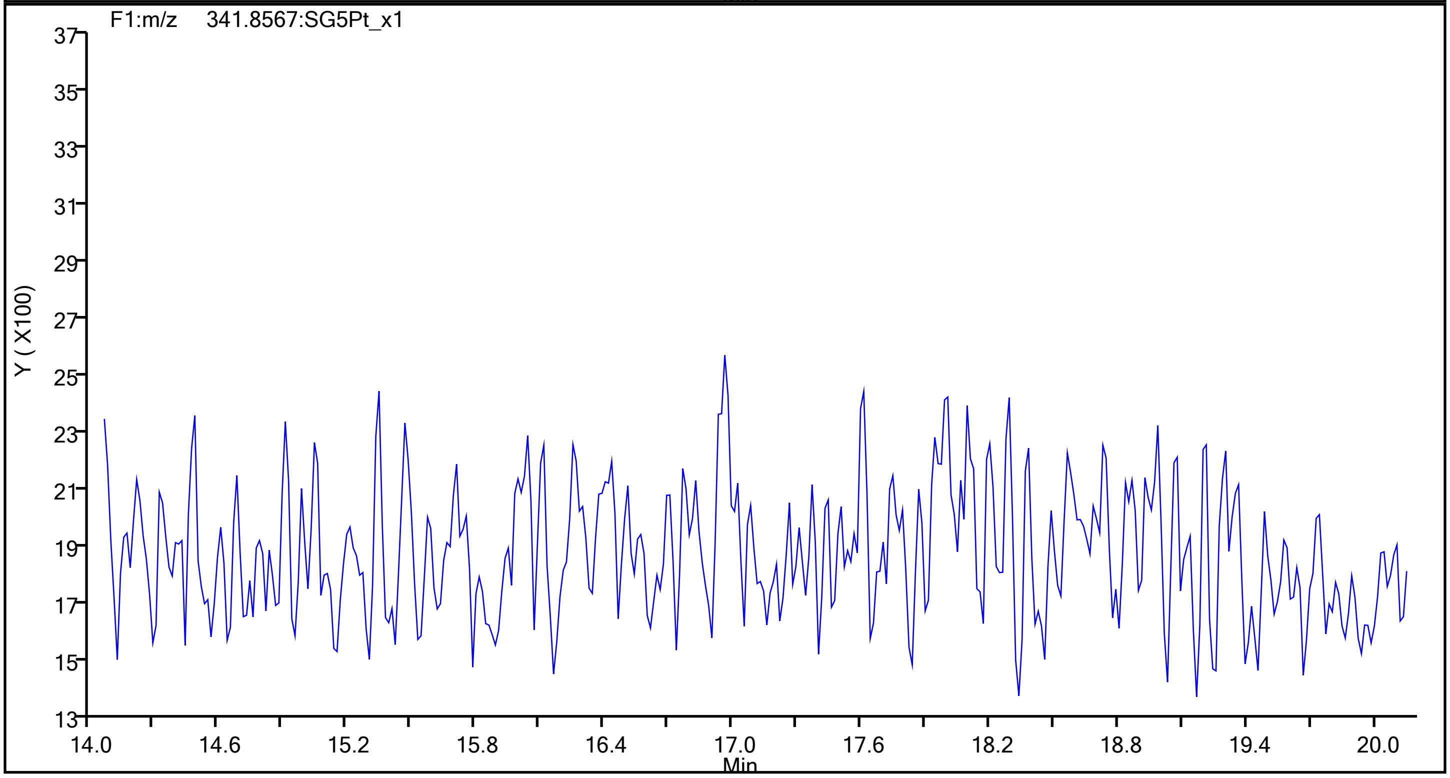

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

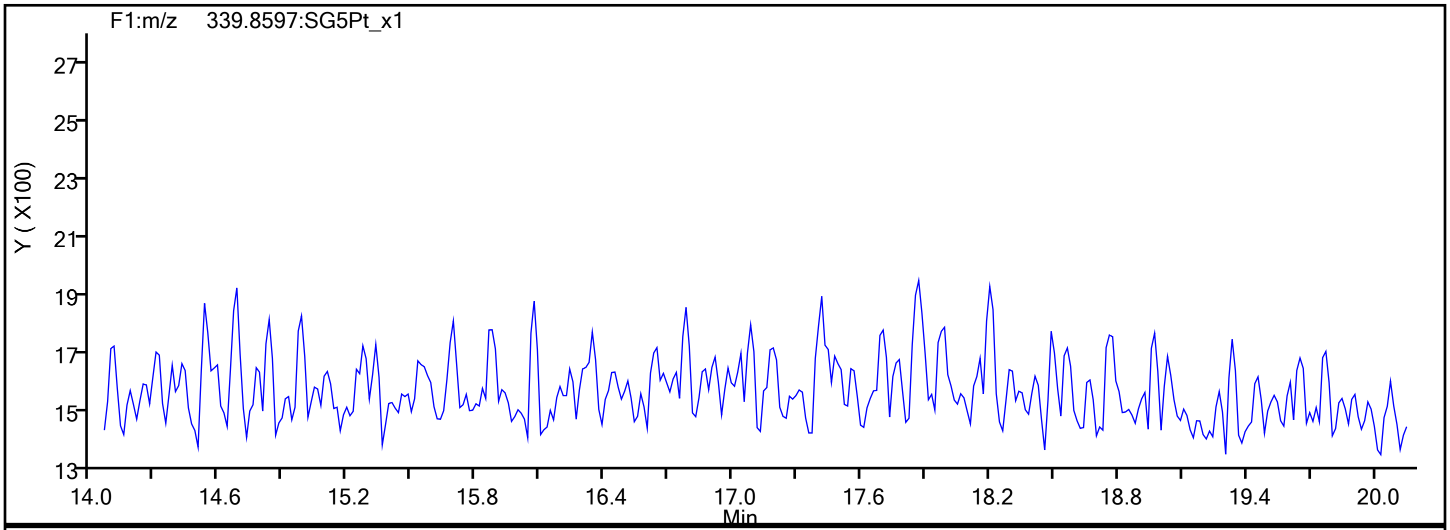

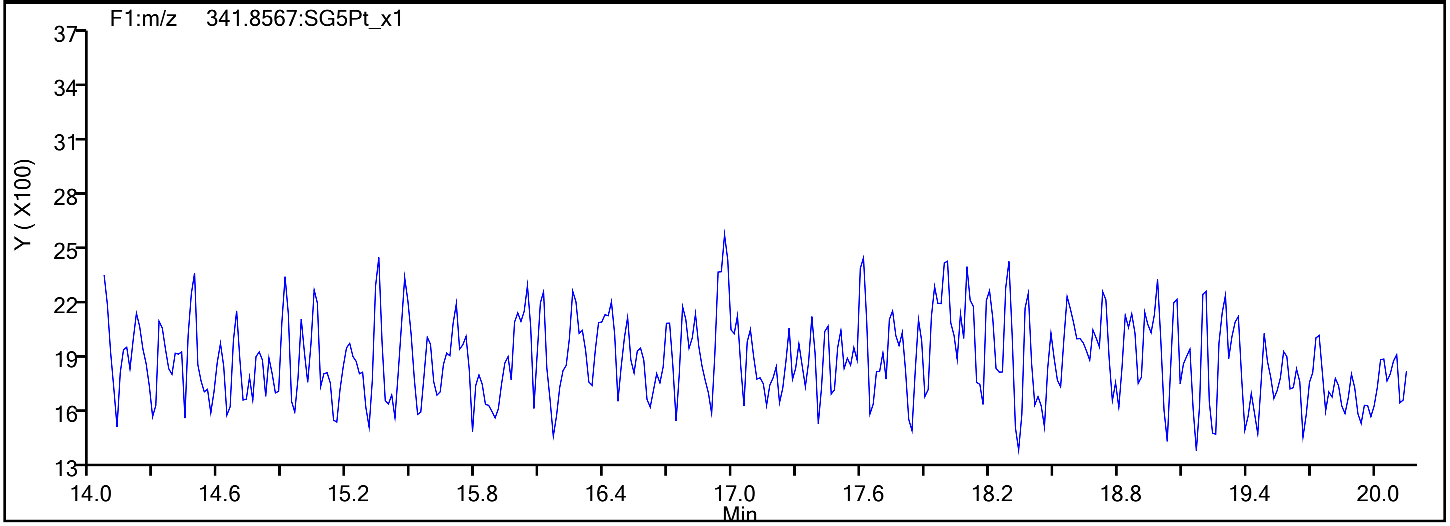

F1 PeCDFs Interference Mass

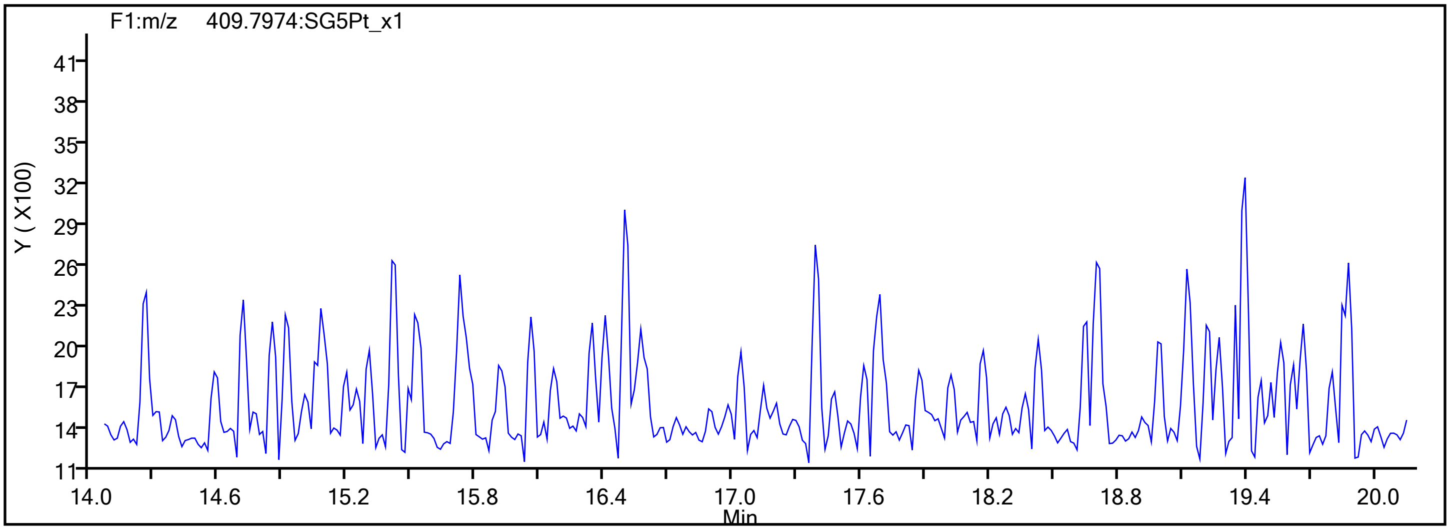

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Eurofins TestAmerica, Sacramento

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PeCDF

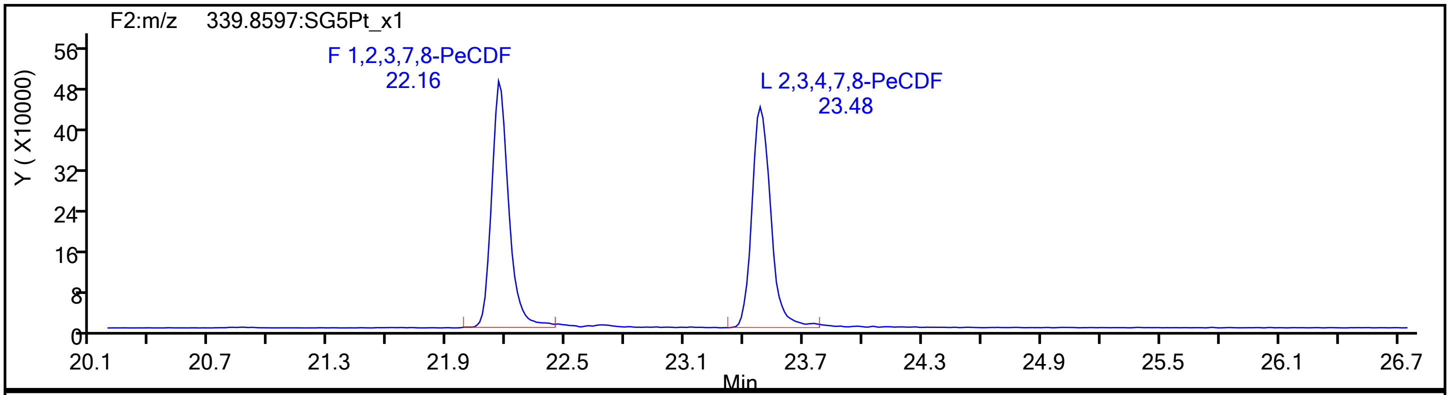

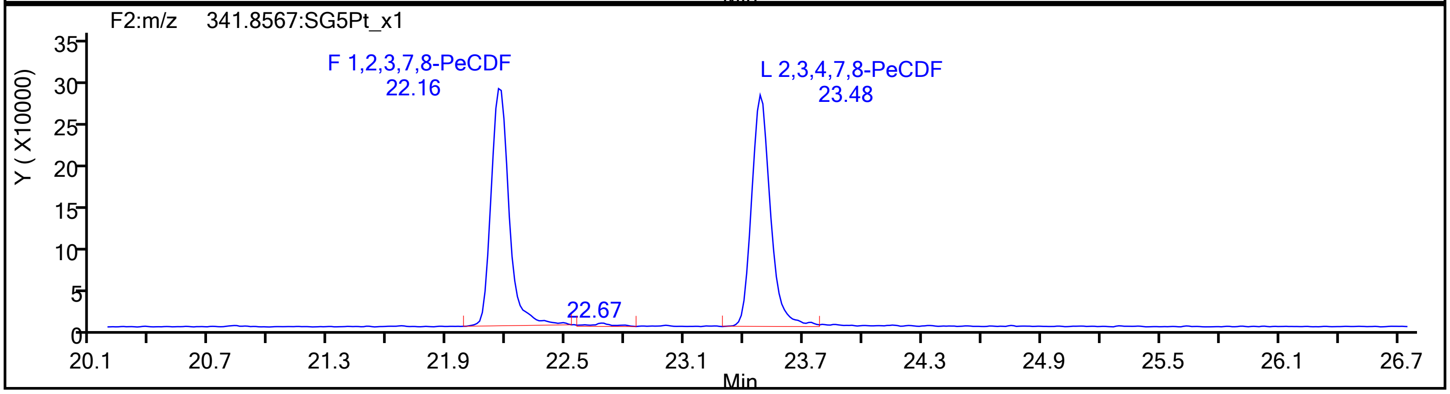

PeCDF Standards

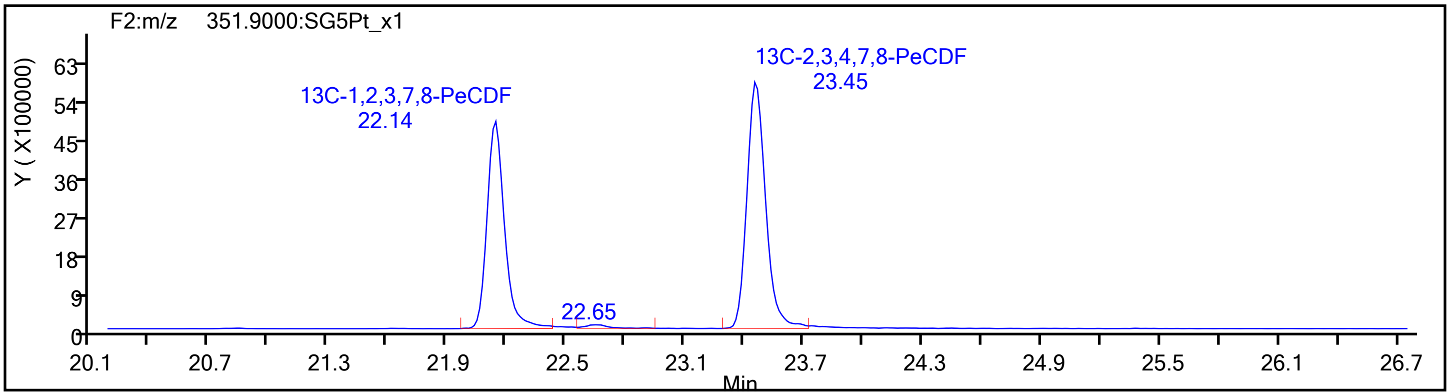

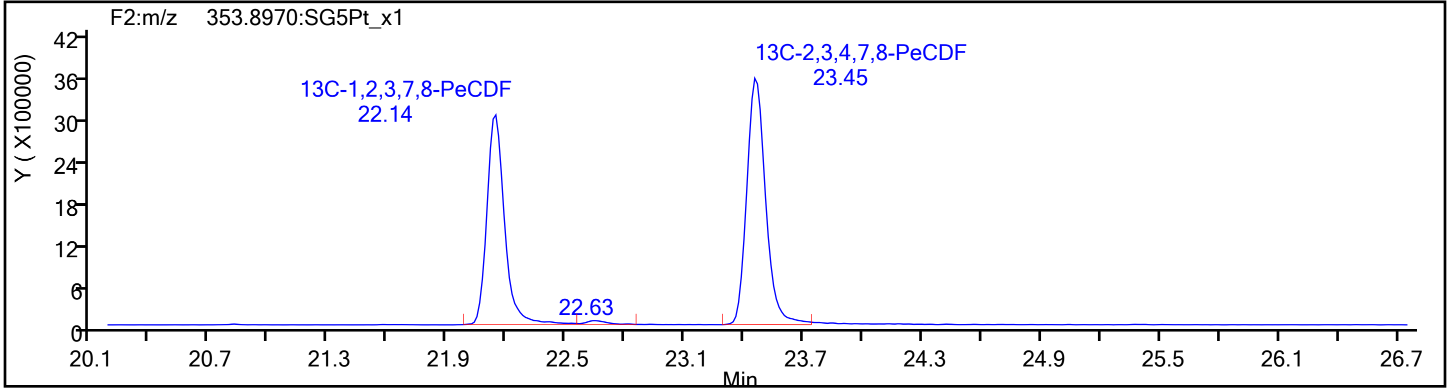

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Eurofins TestAmerica, Sacramento

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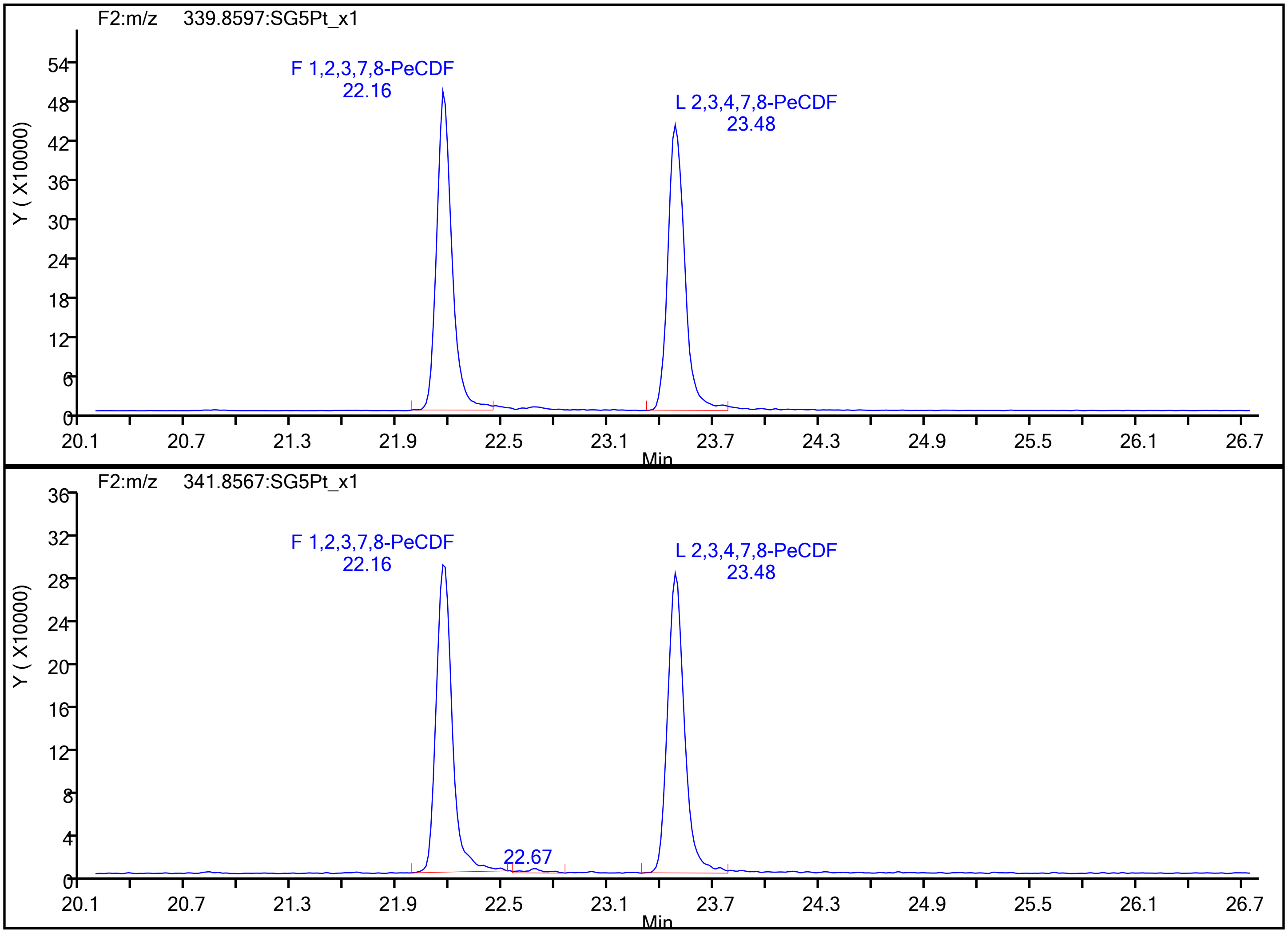

PeCDF Interference Mass

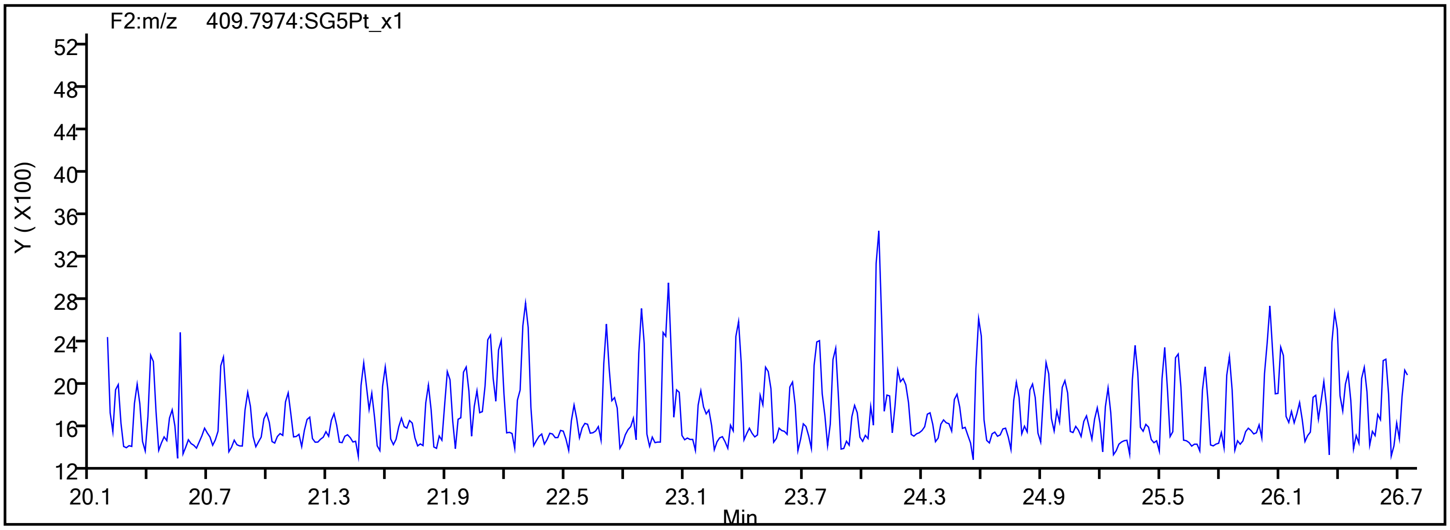

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Eurofins TestAmerica, Sacramento

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PeCDD

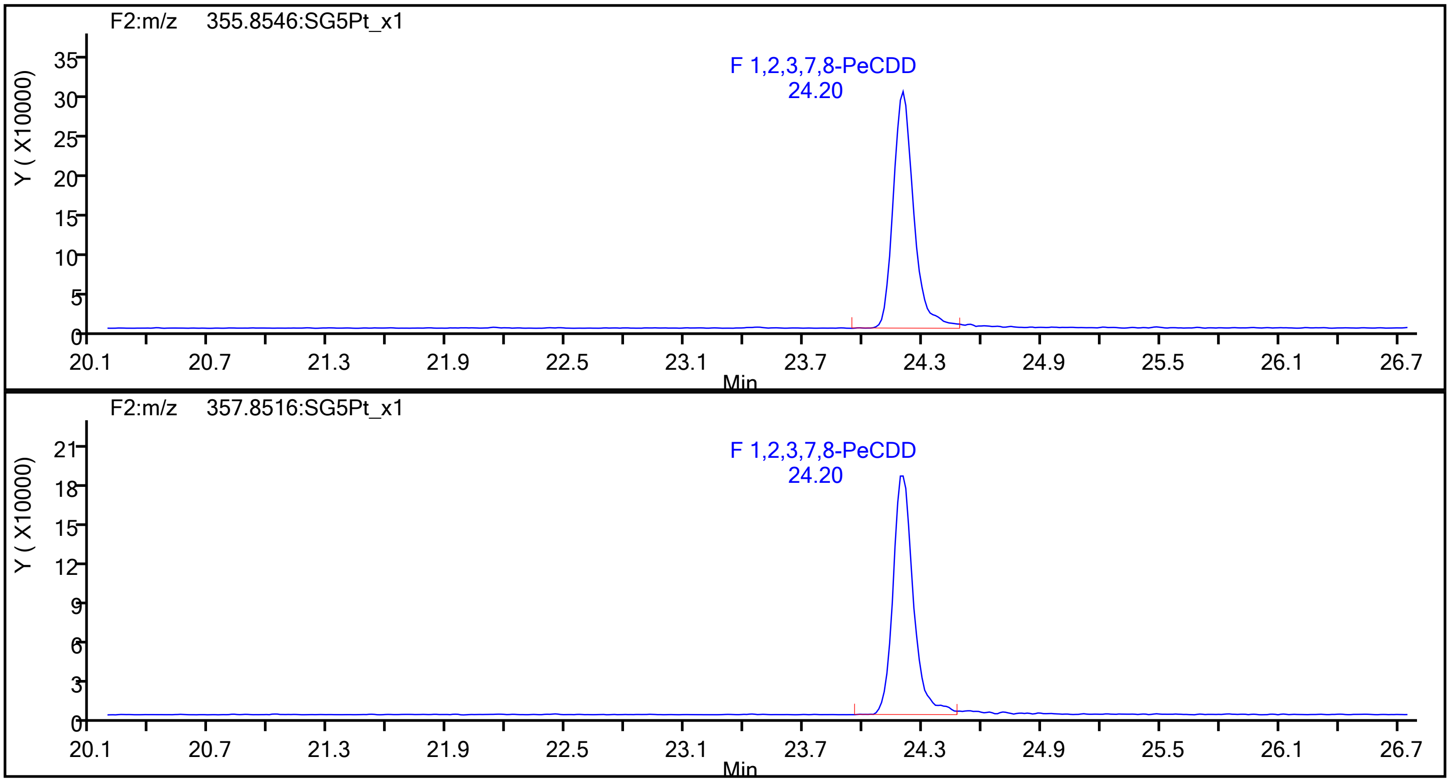

PeCDD Standards

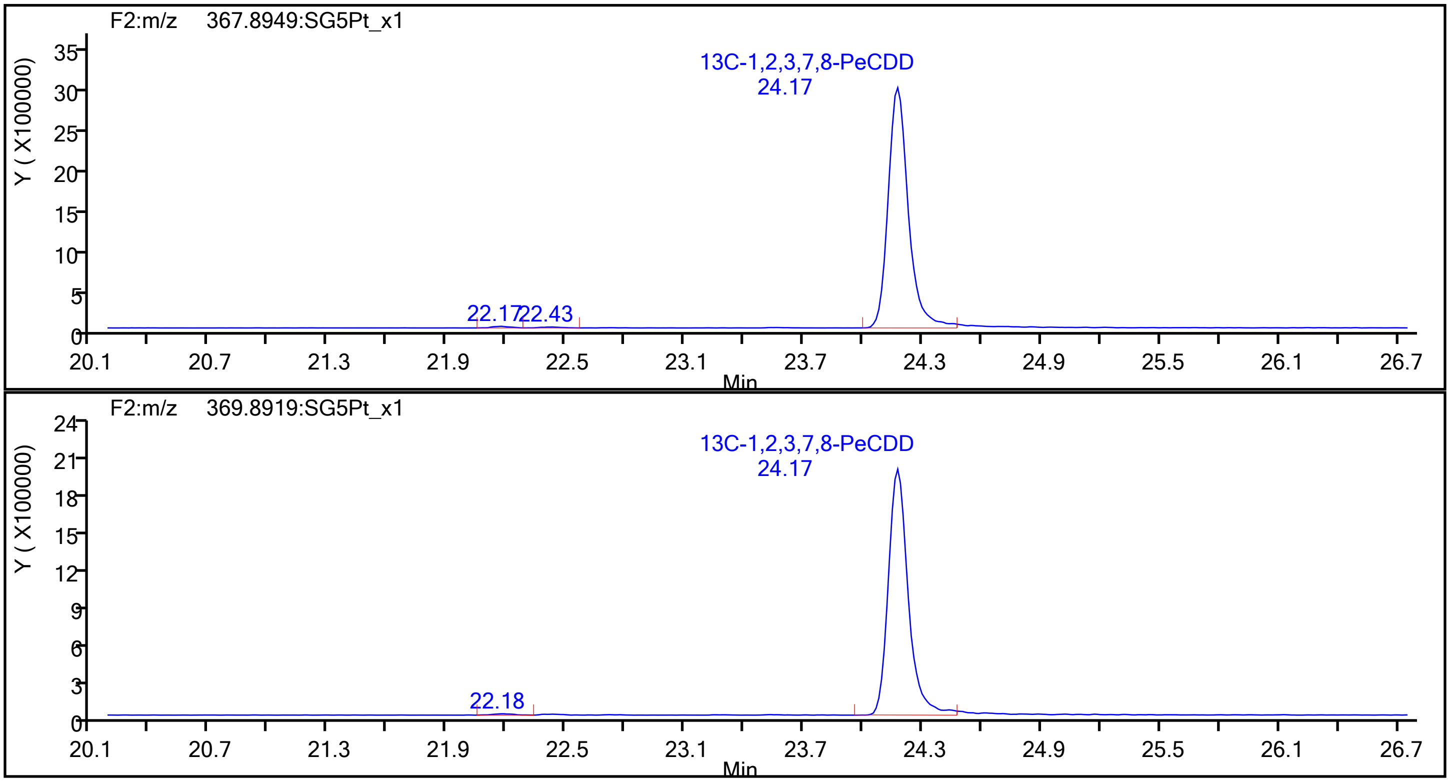

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HxCDF

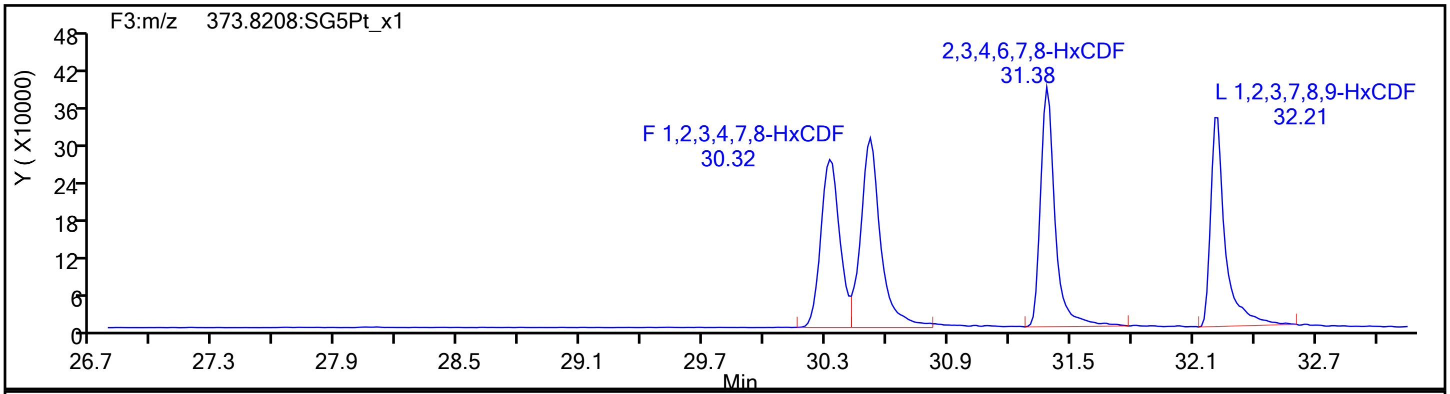

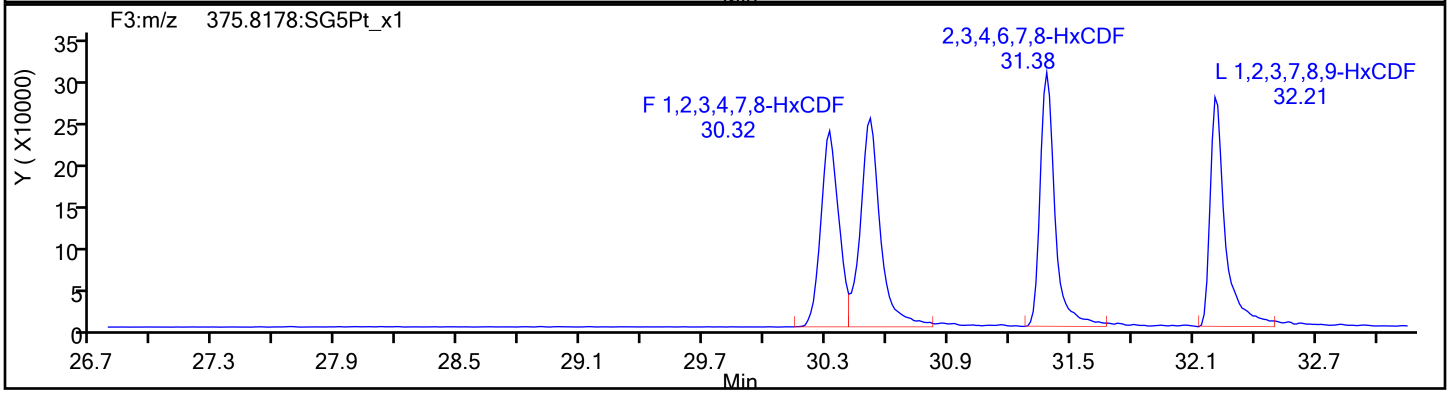

HxCDF Standards

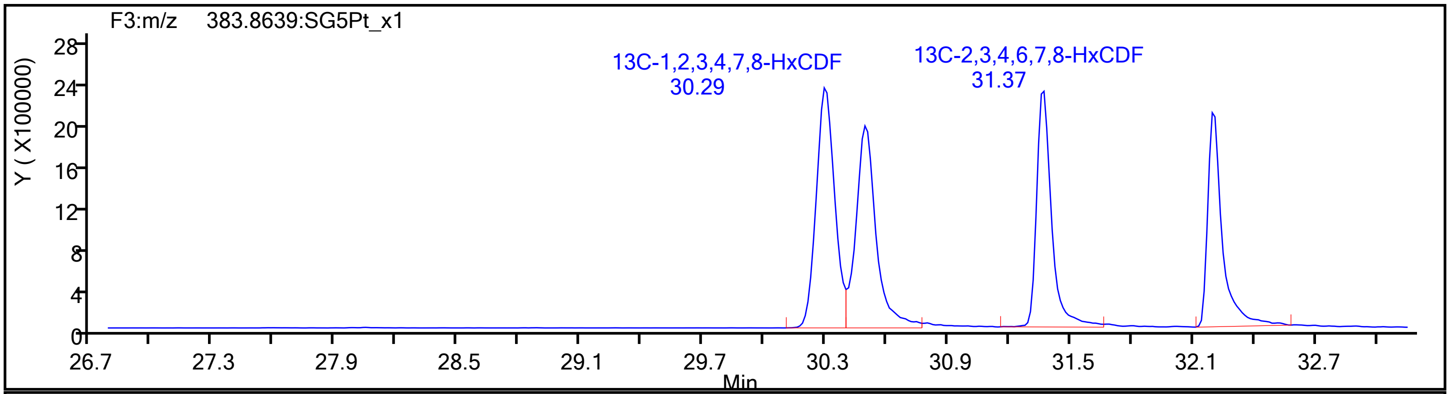

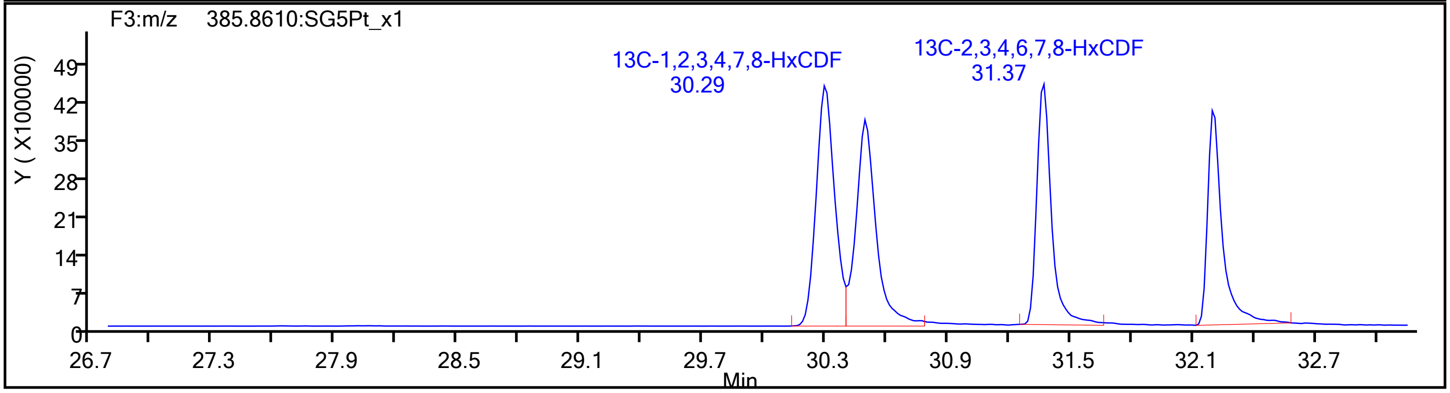

Eurofins TestAmerica, Sacramento

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HxCDF

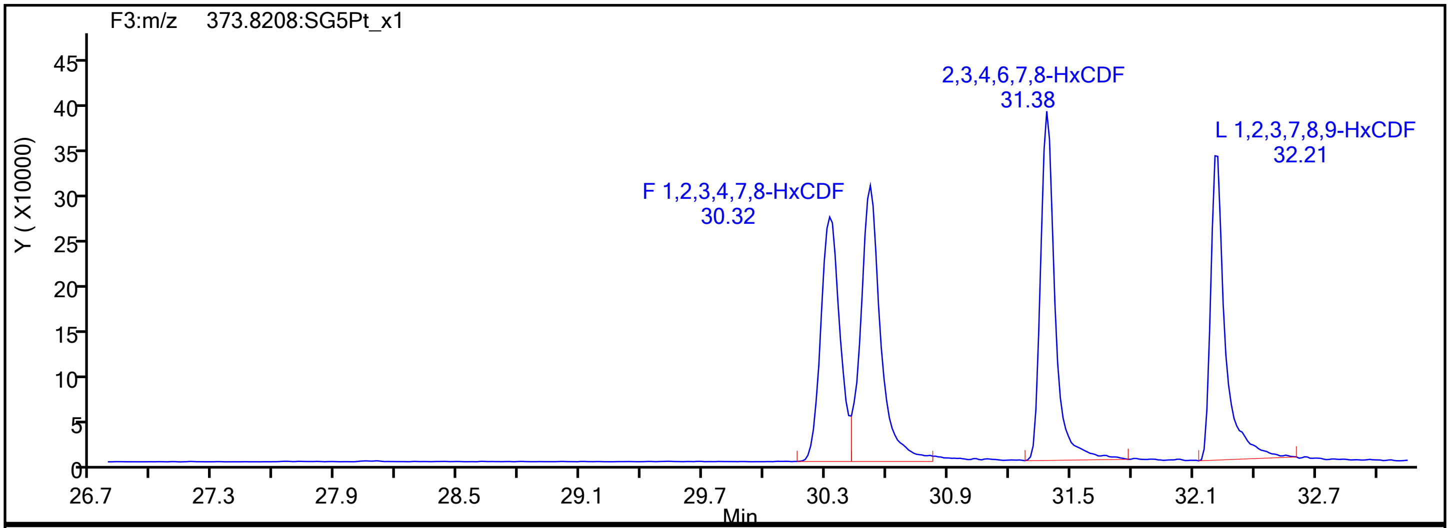

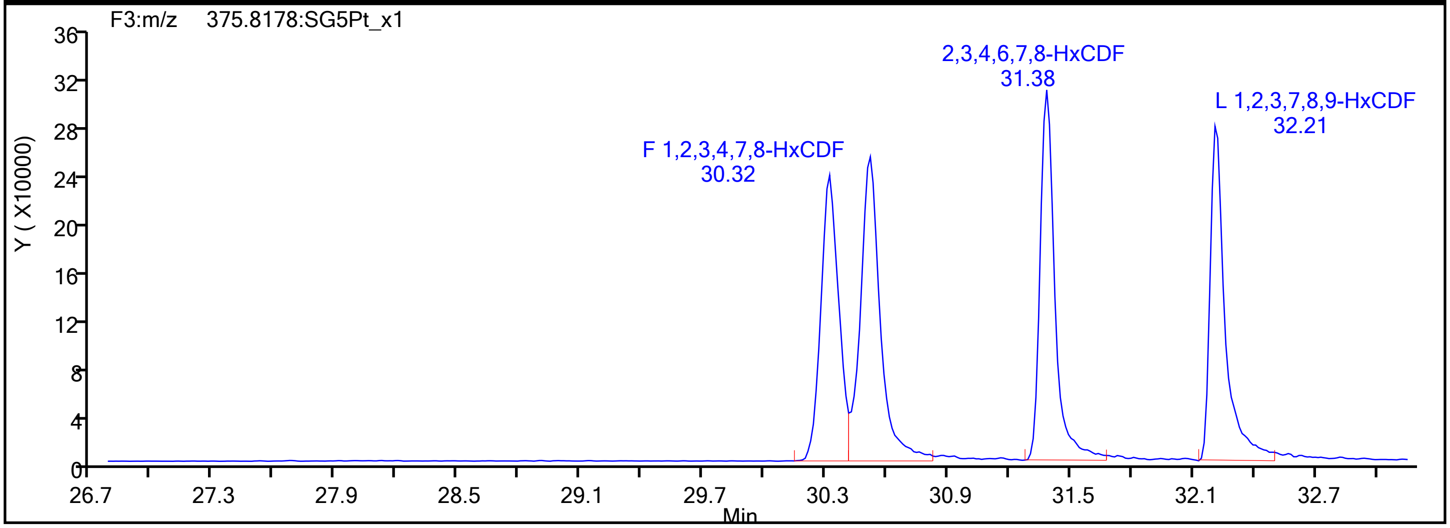

HxCDF Interference Mass

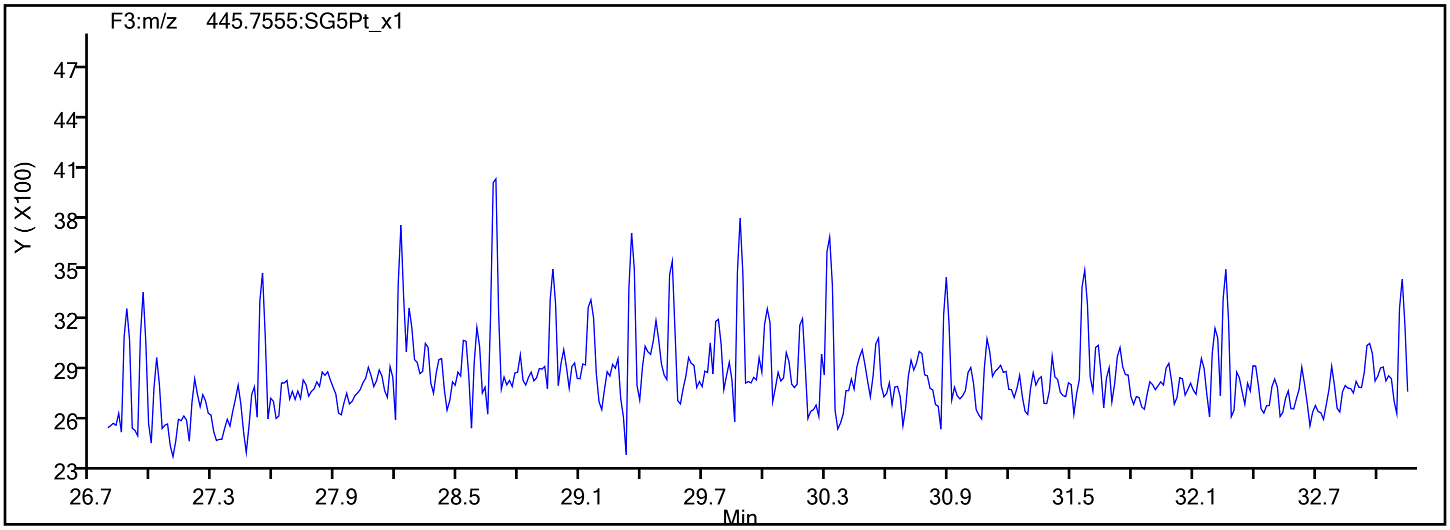

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Client ID:

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HxCDD

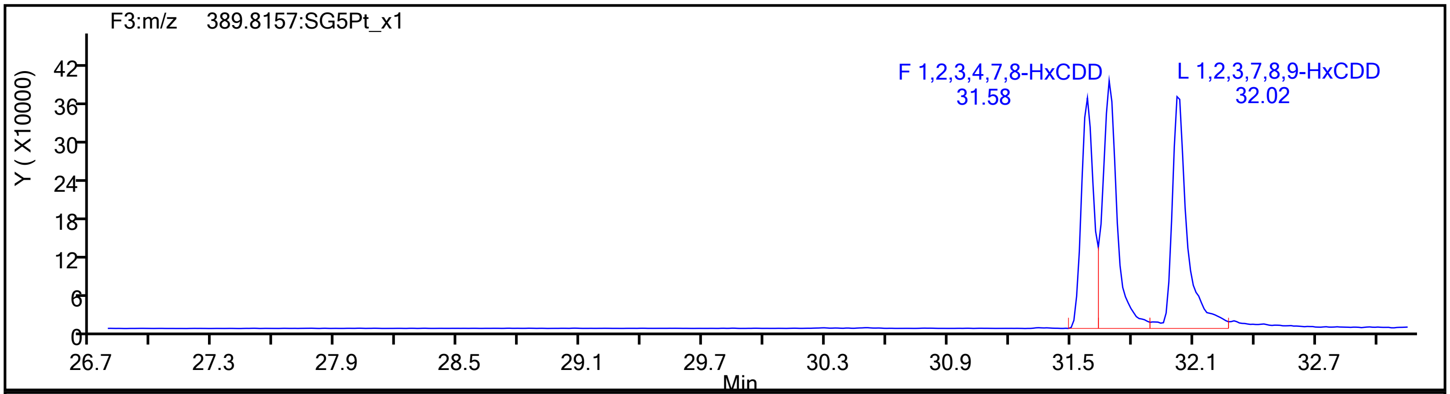

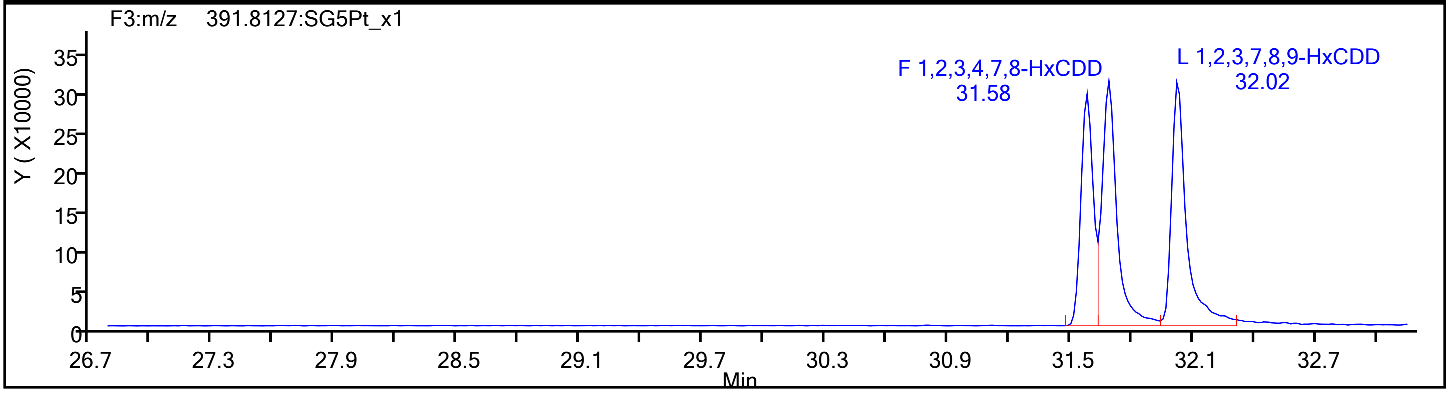

HxCDD Standards

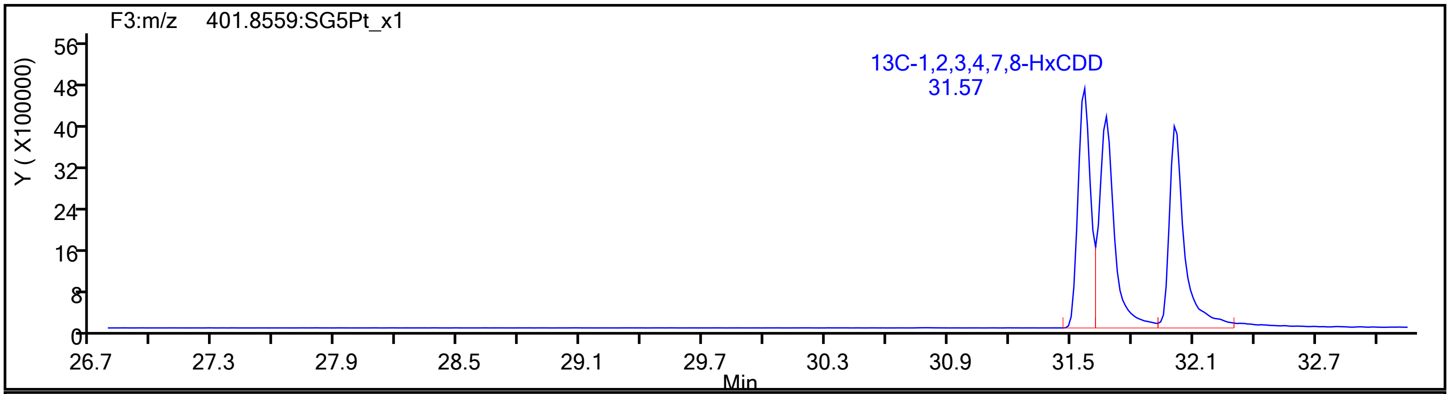

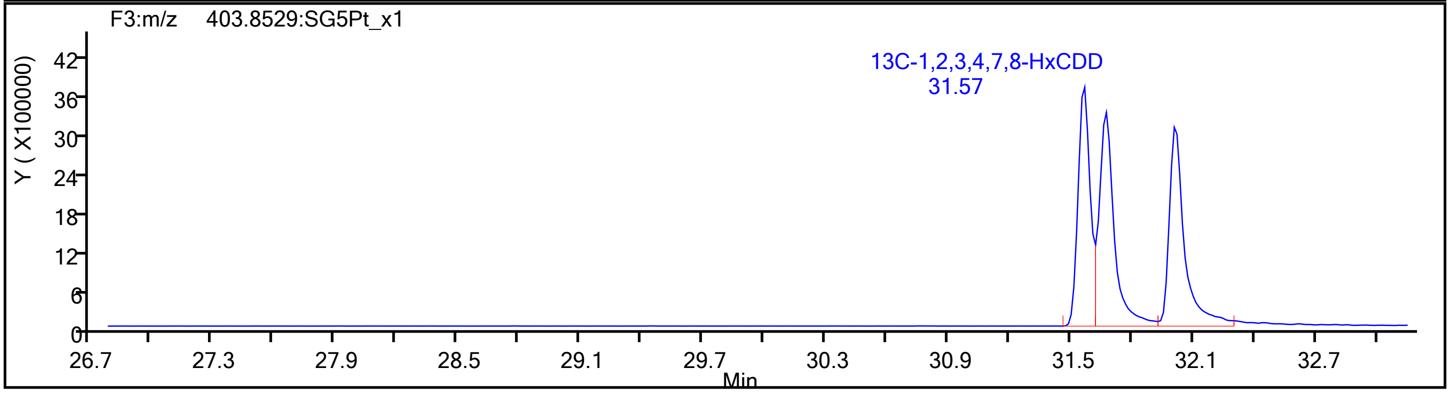

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HpCDF

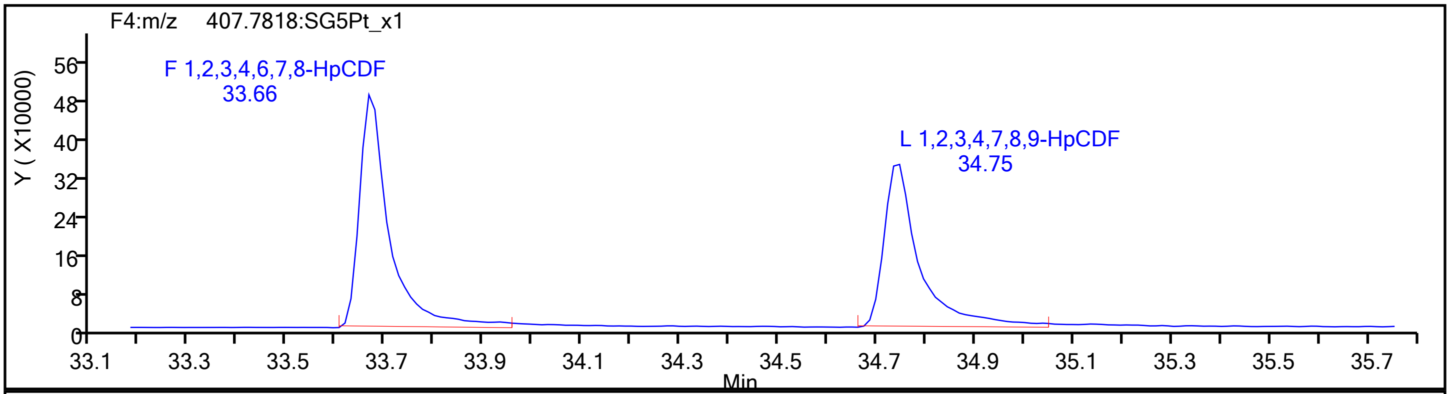

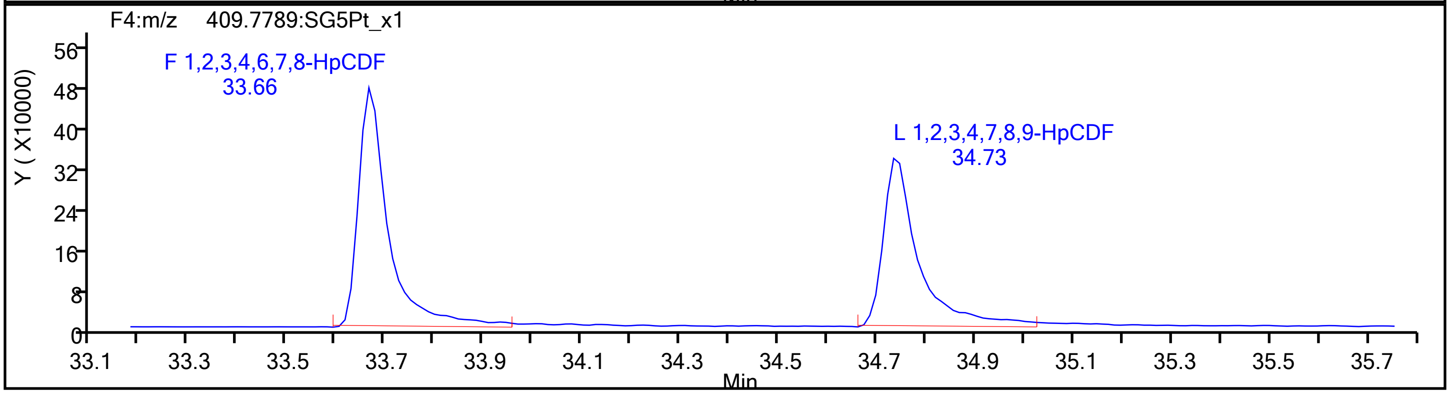

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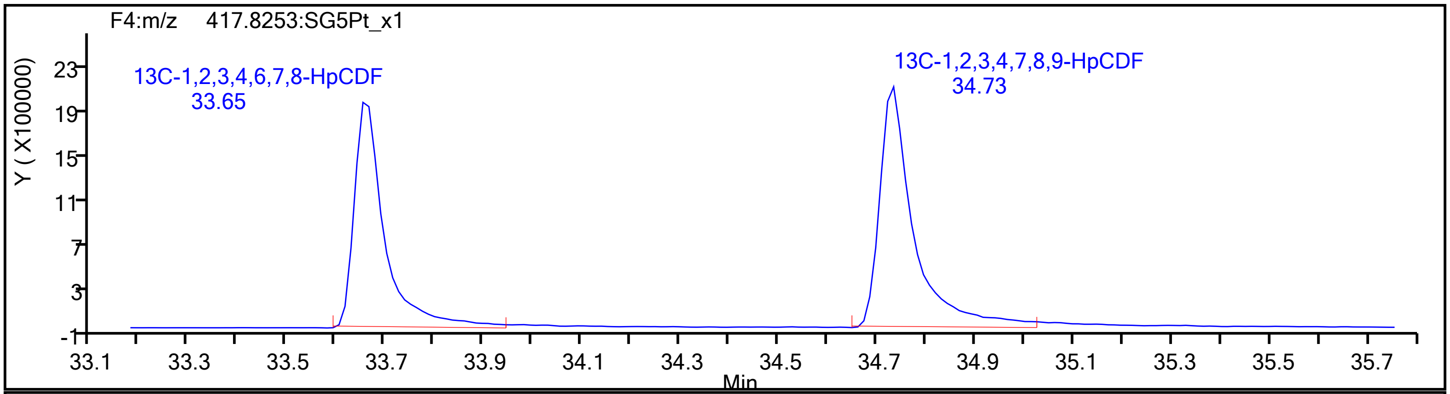

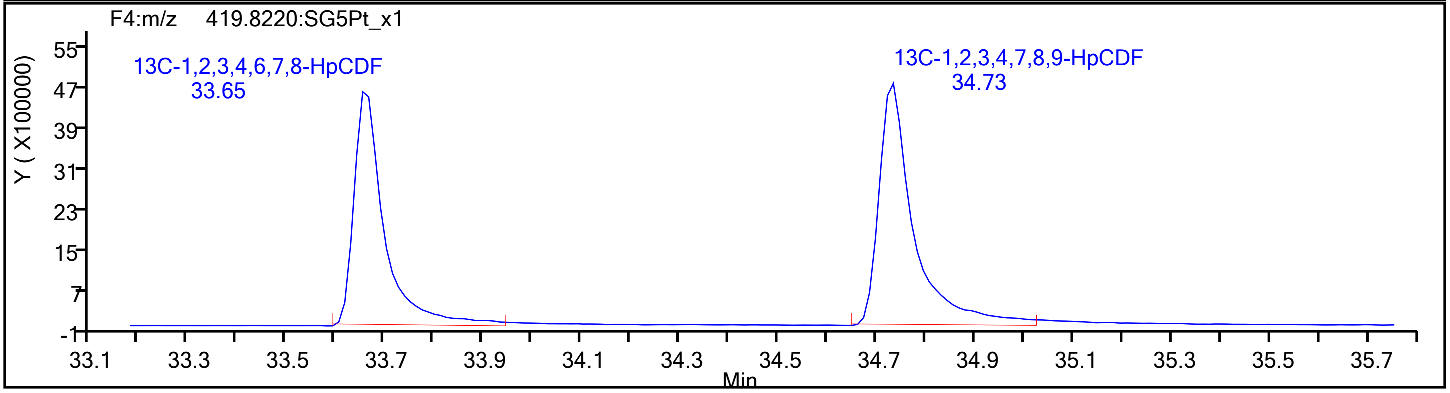

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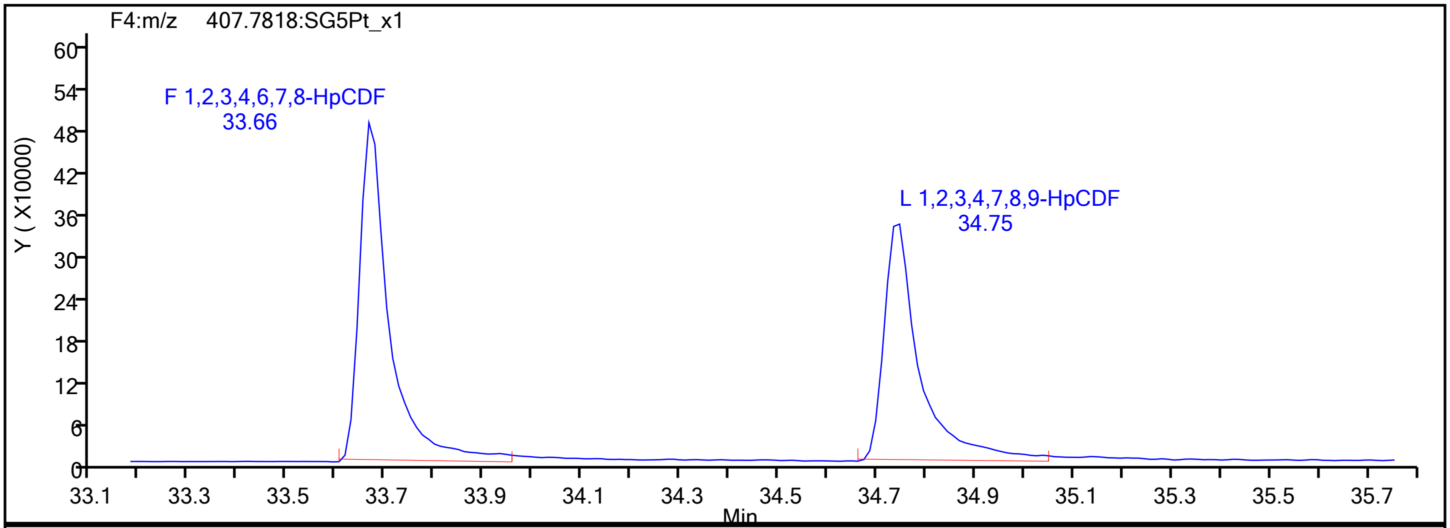

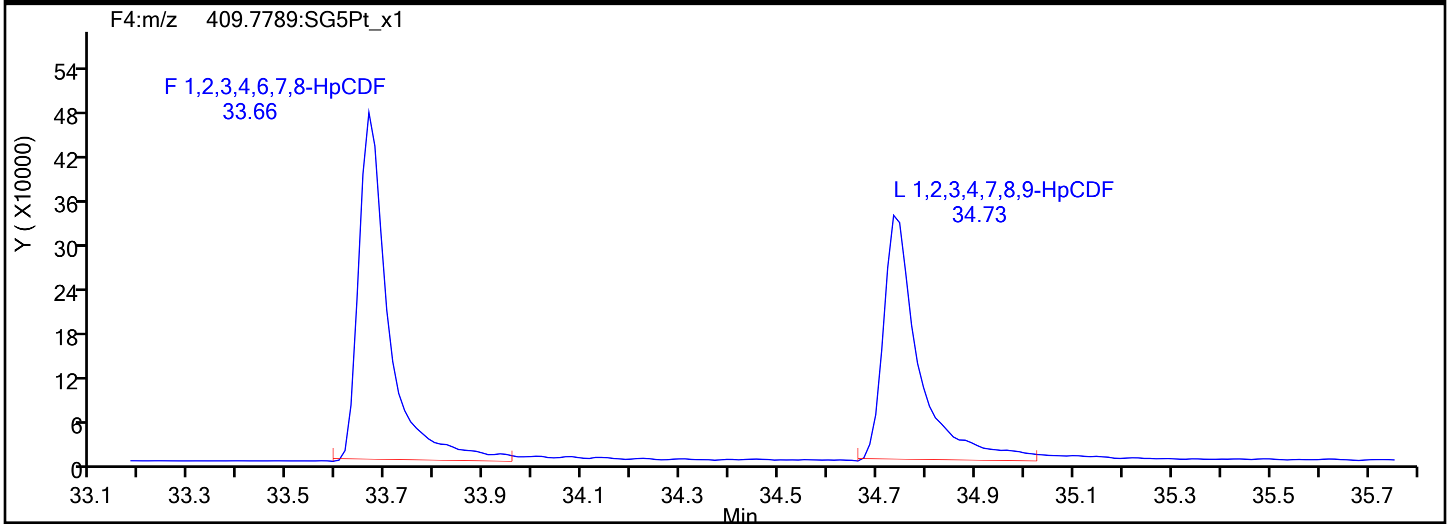

HpCDF Interference Mass

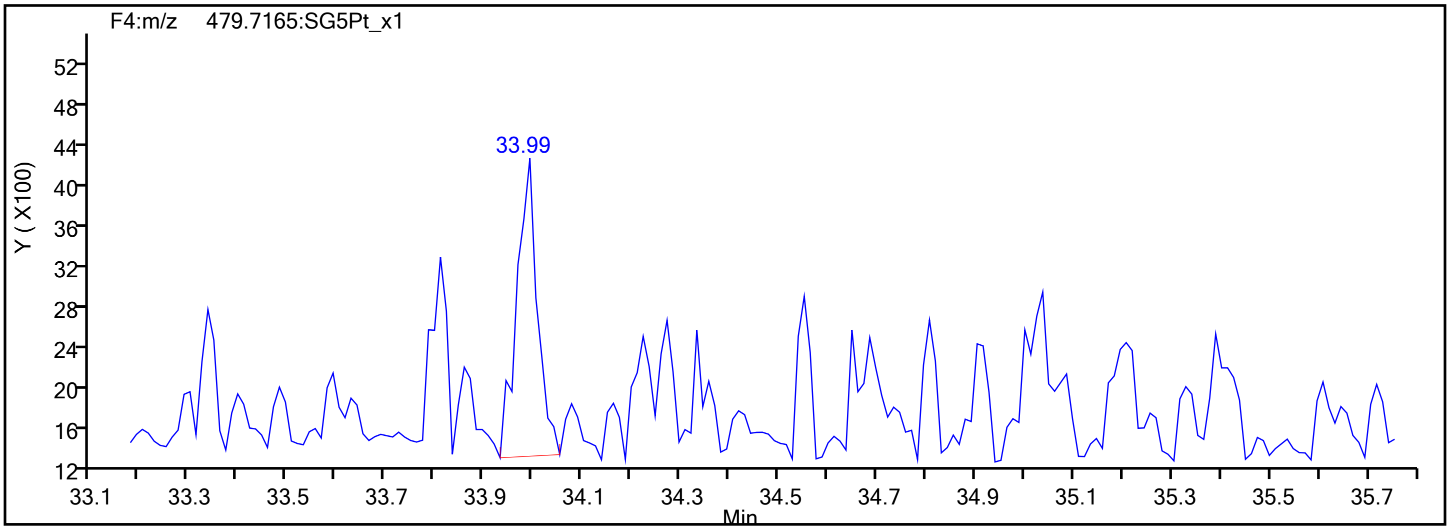

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HpCDD

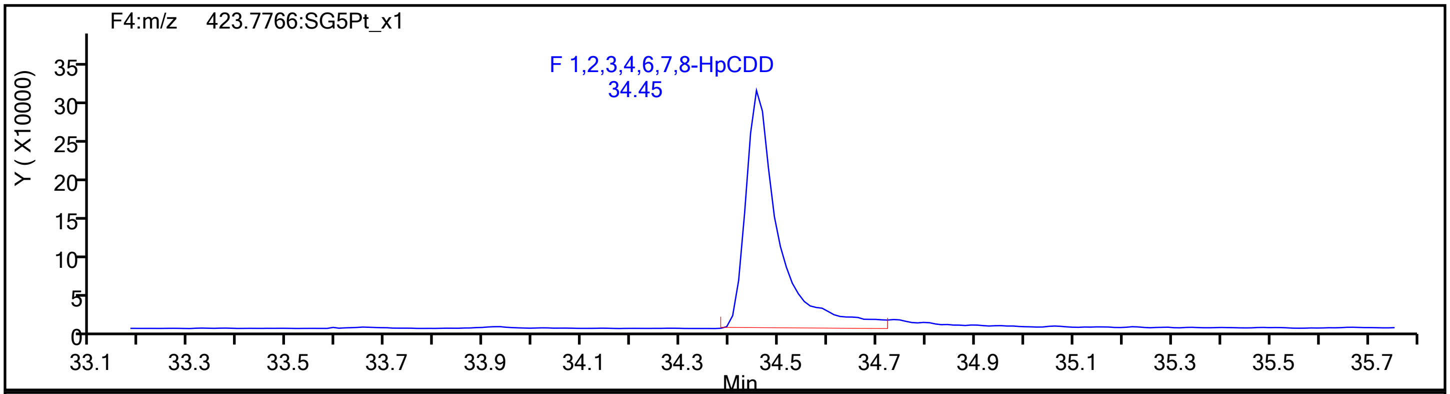

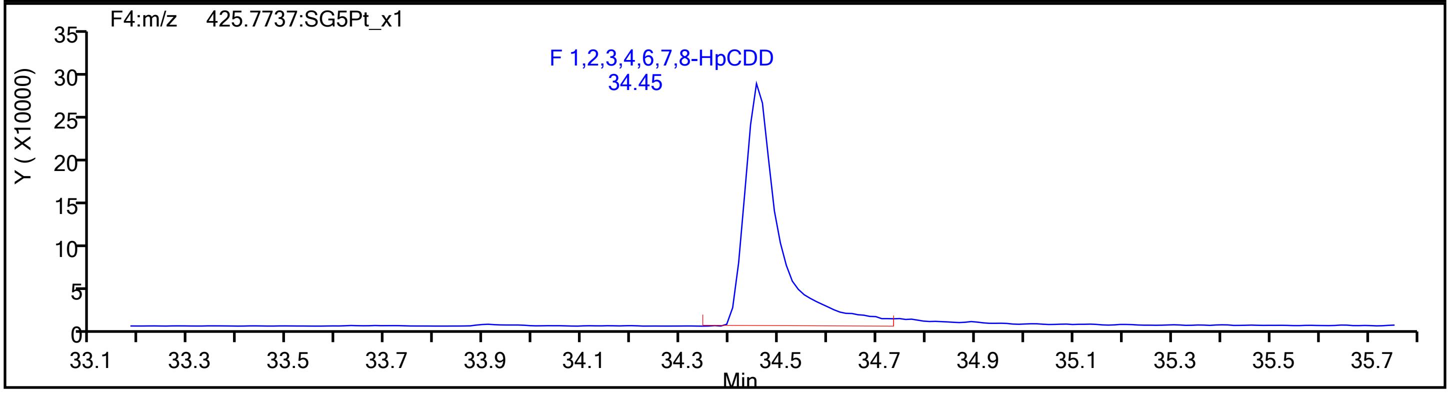

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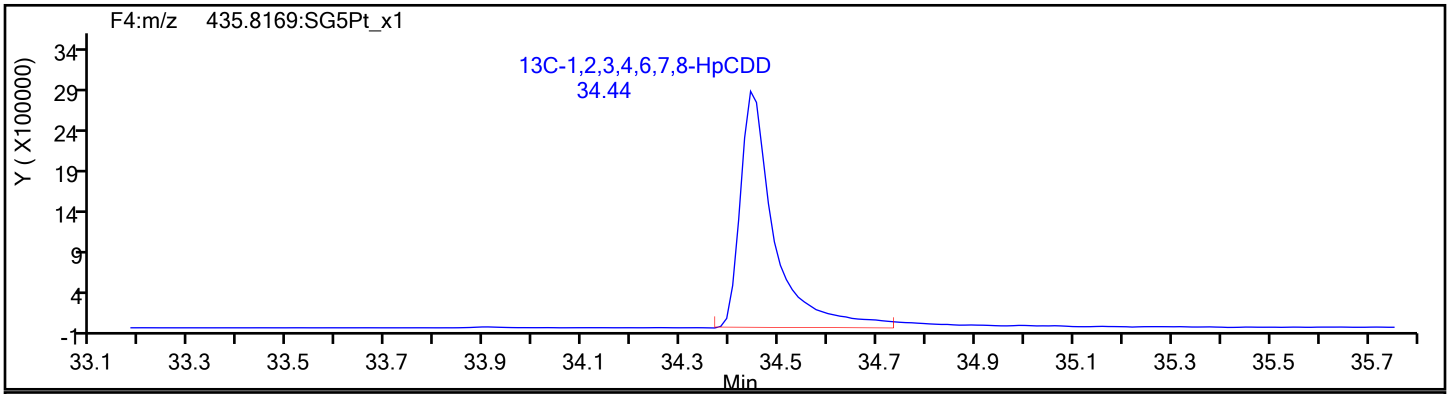

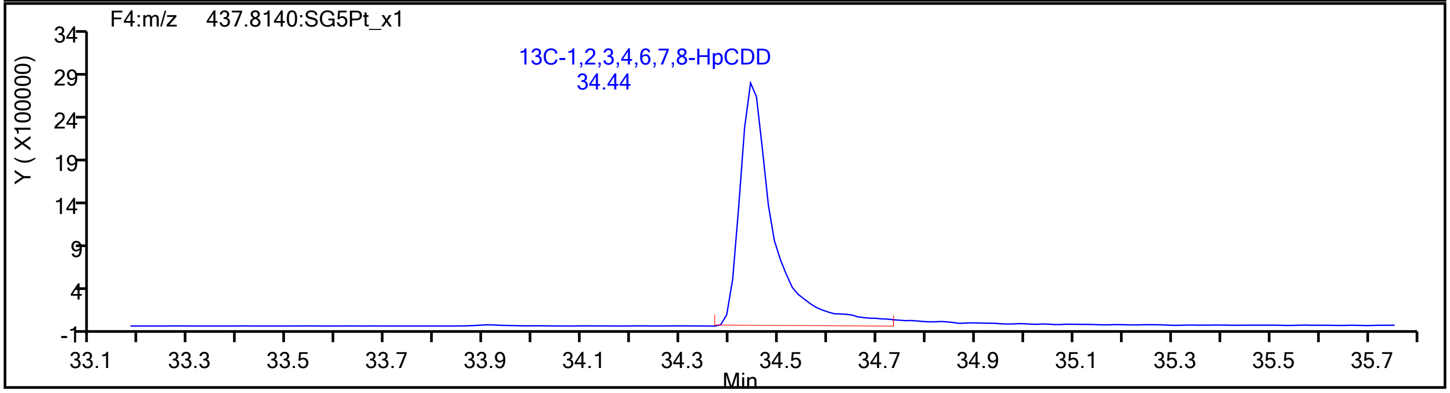

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Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

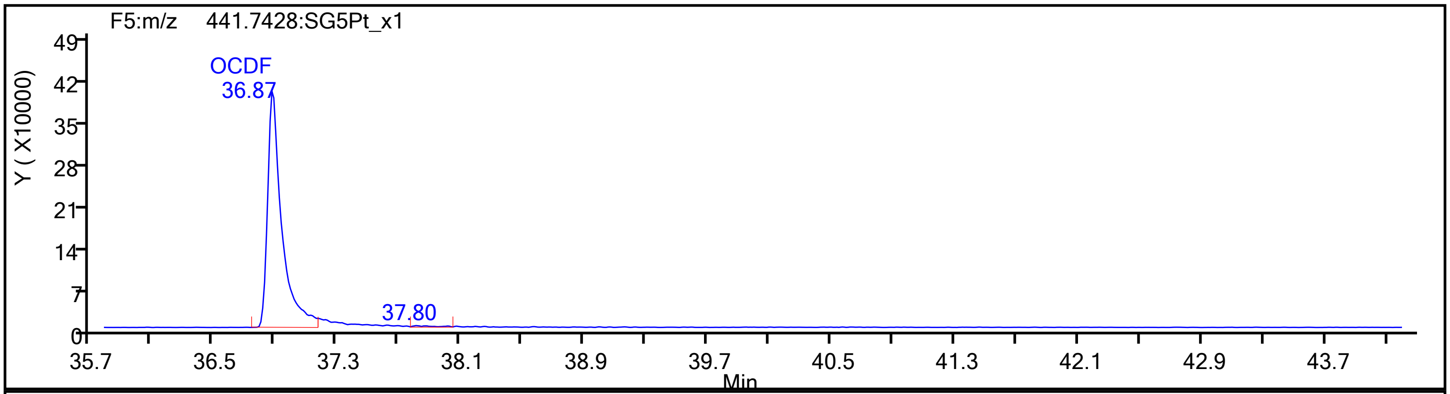

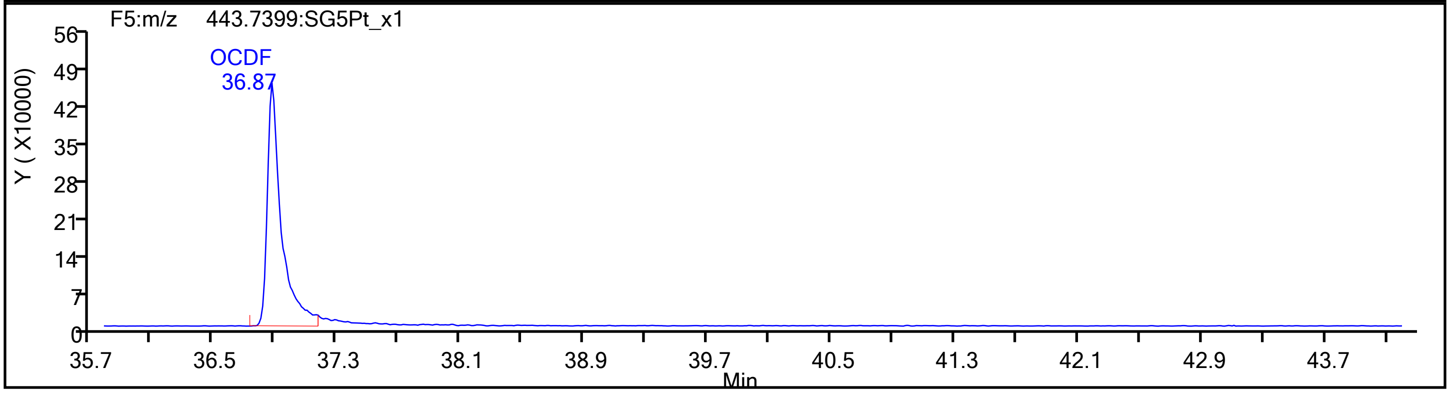

OCDF Standards

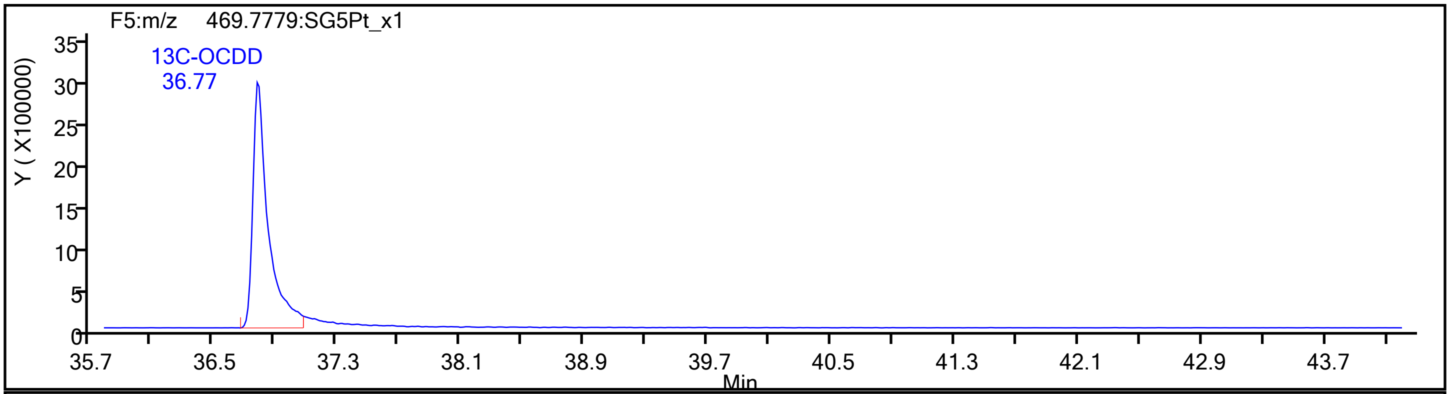

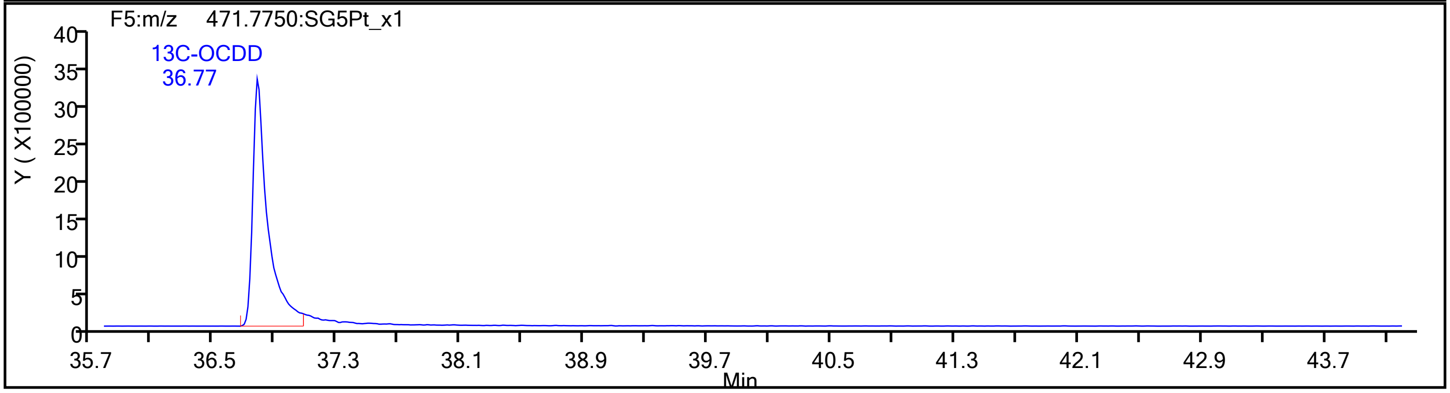

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OCDF

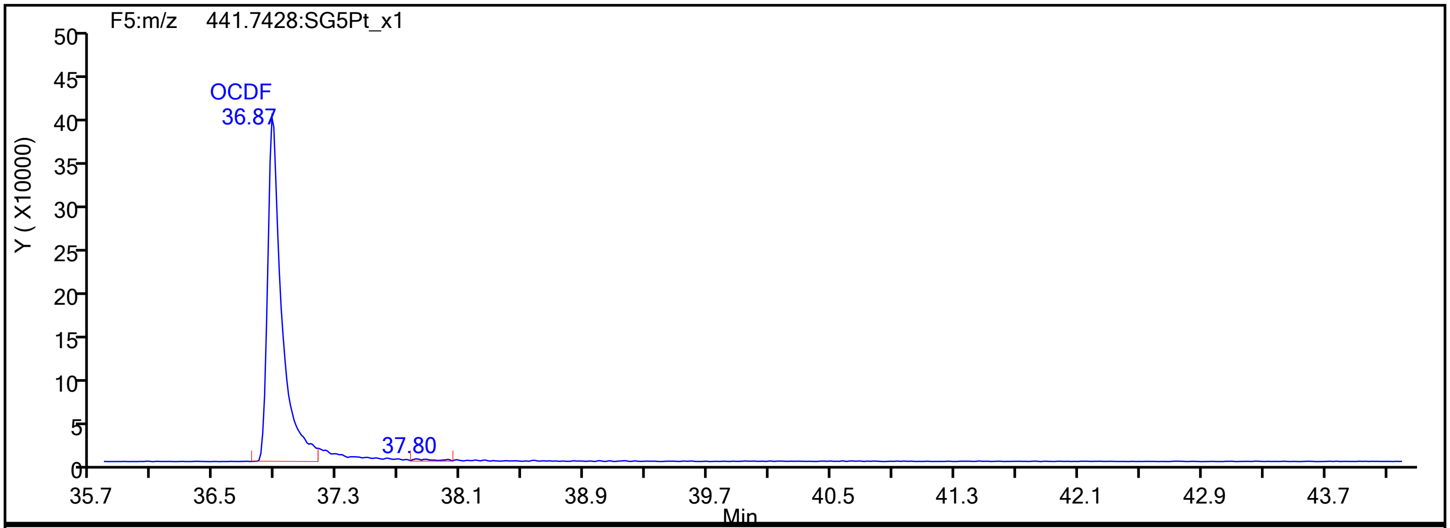

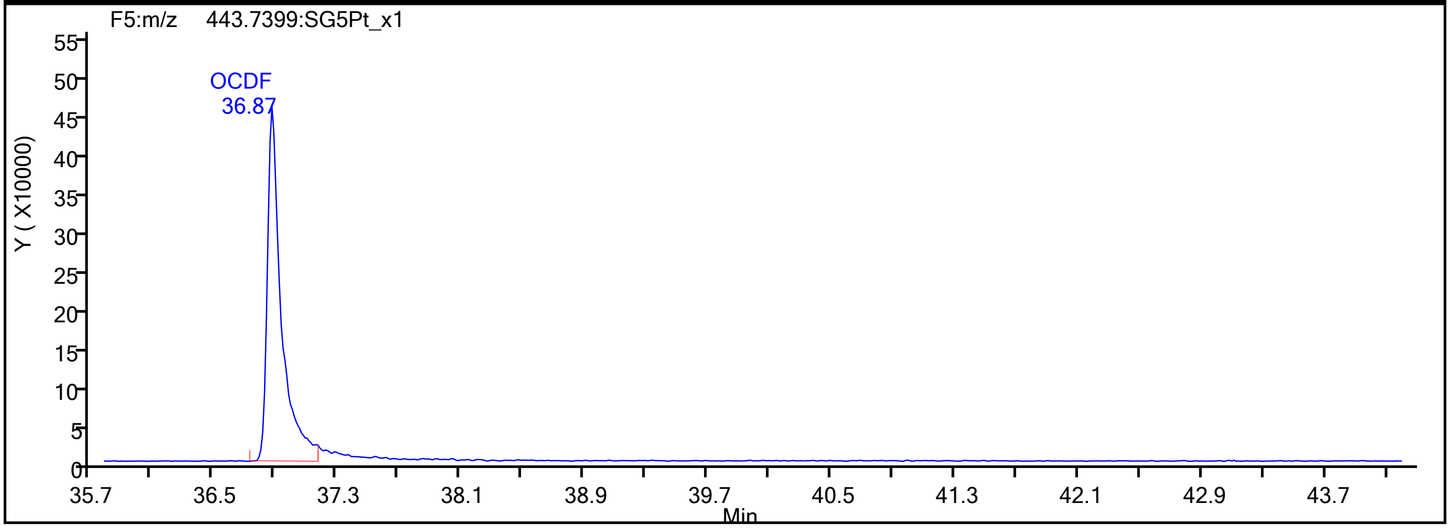

OCDF Interference Mass

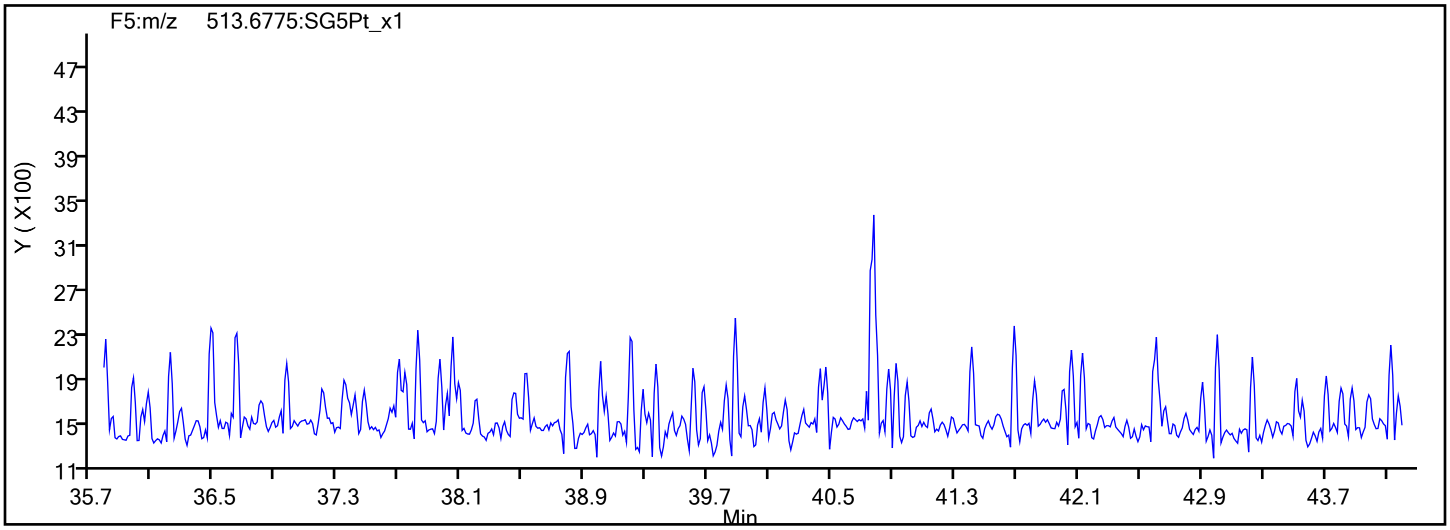

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d		
Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

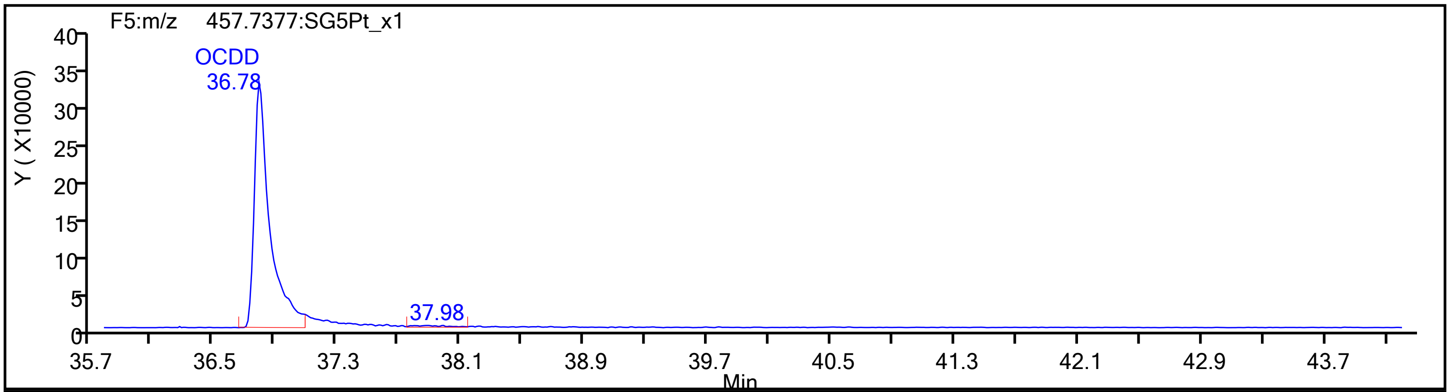

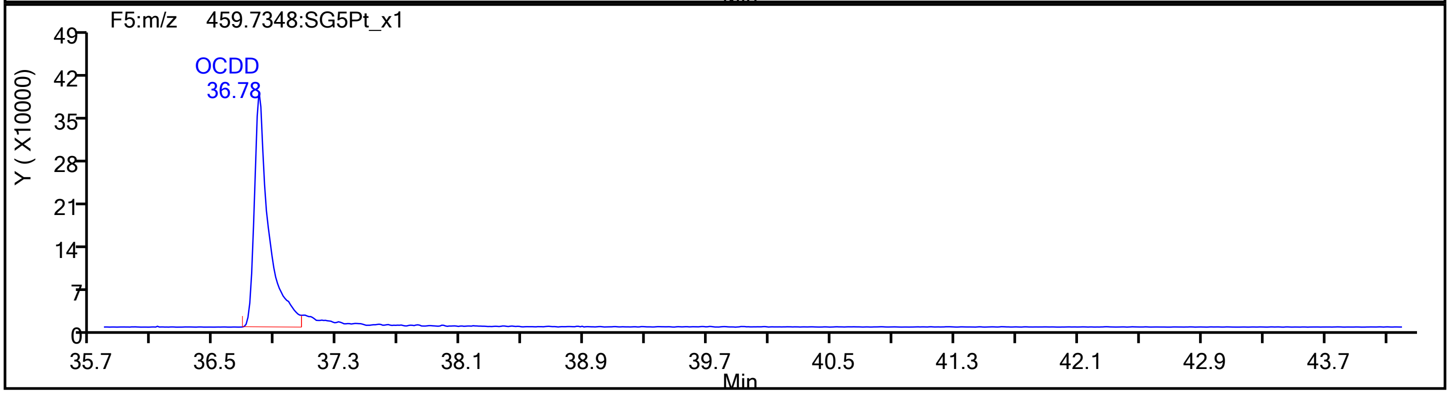

OCDD Standards

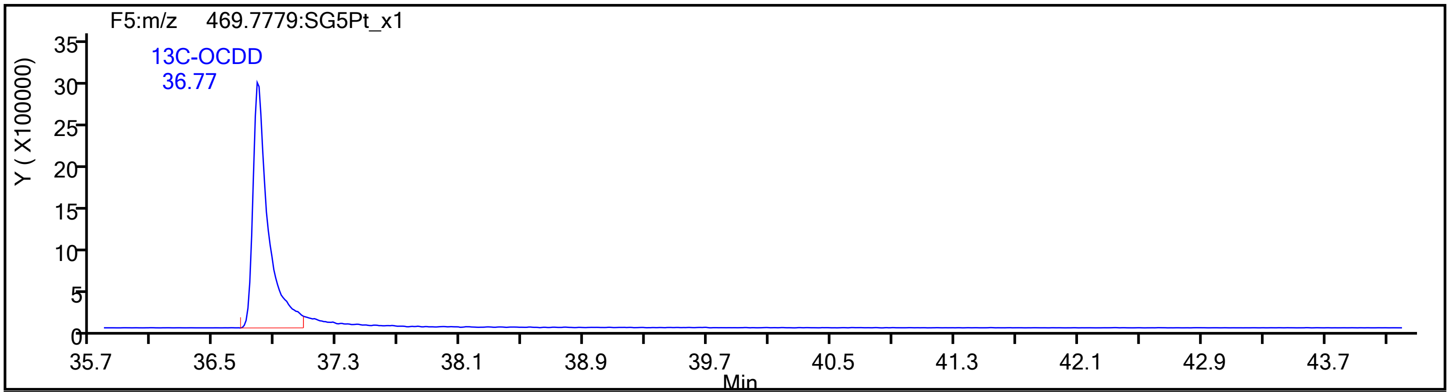

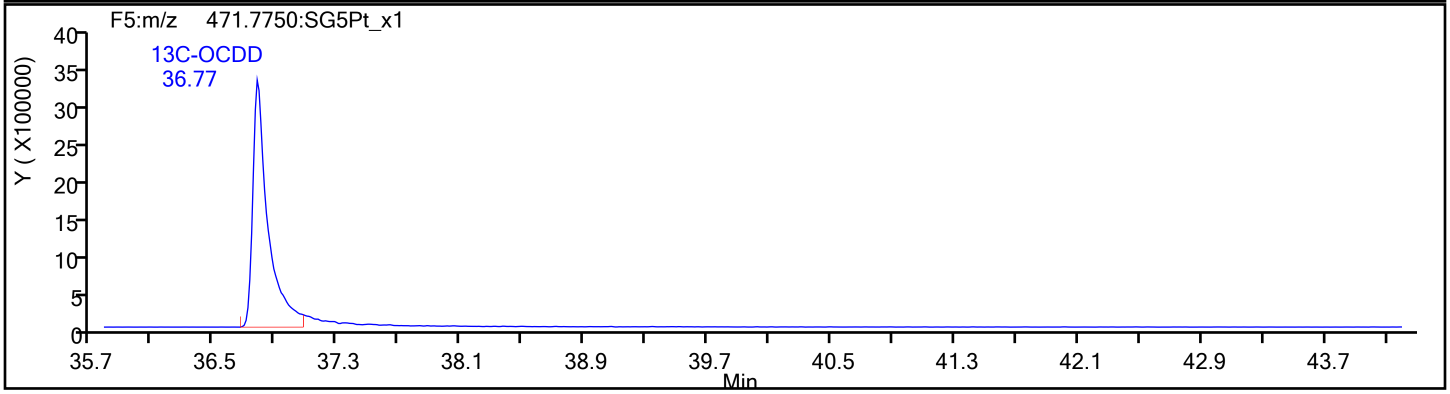

Report Date: 28-Jun-2020 13:17:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d
Injection Date: 27-Jun-2020 15:28:06
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

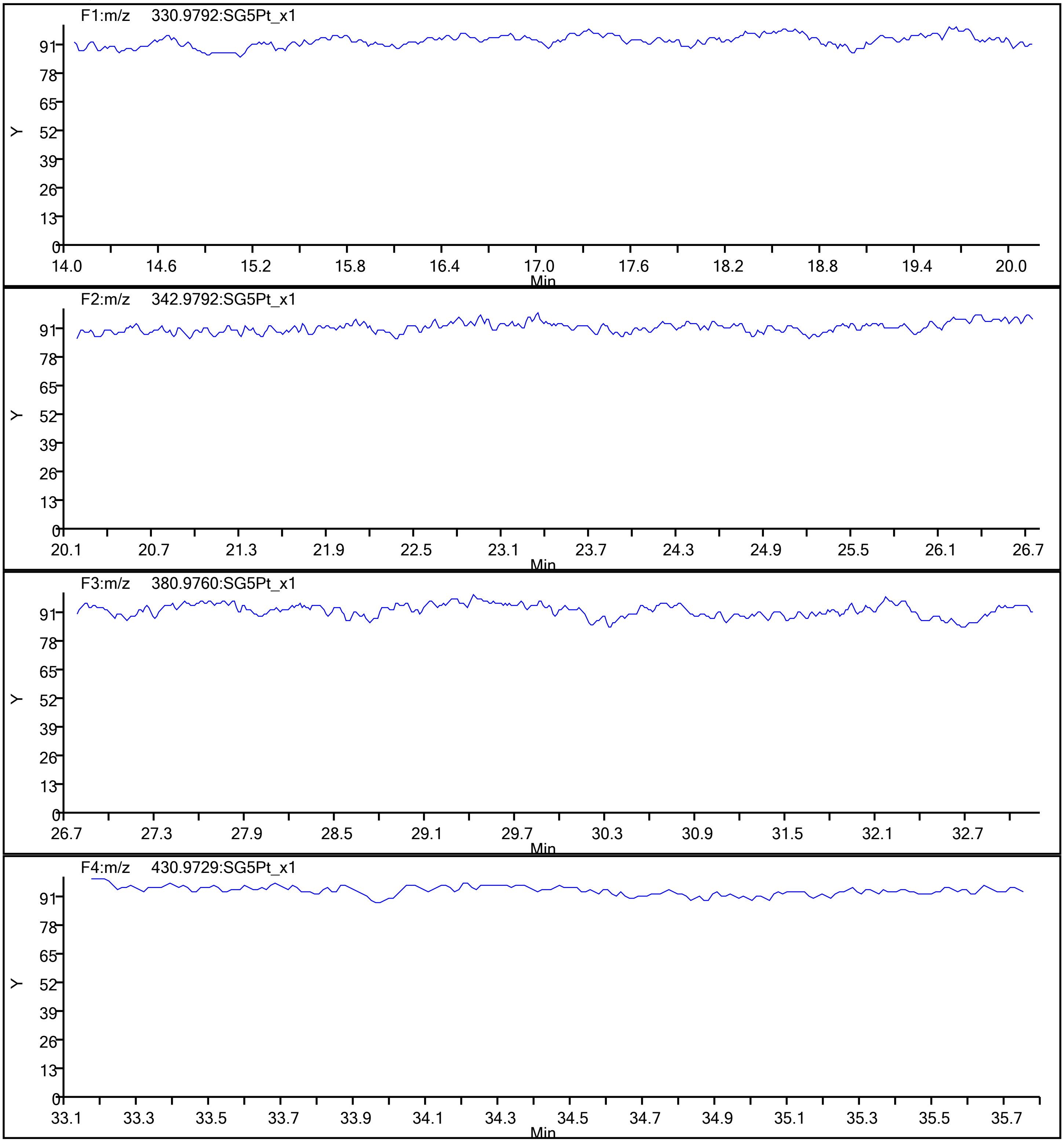

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_4.d

Injection Date:	27-Jun-2020 15:28:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

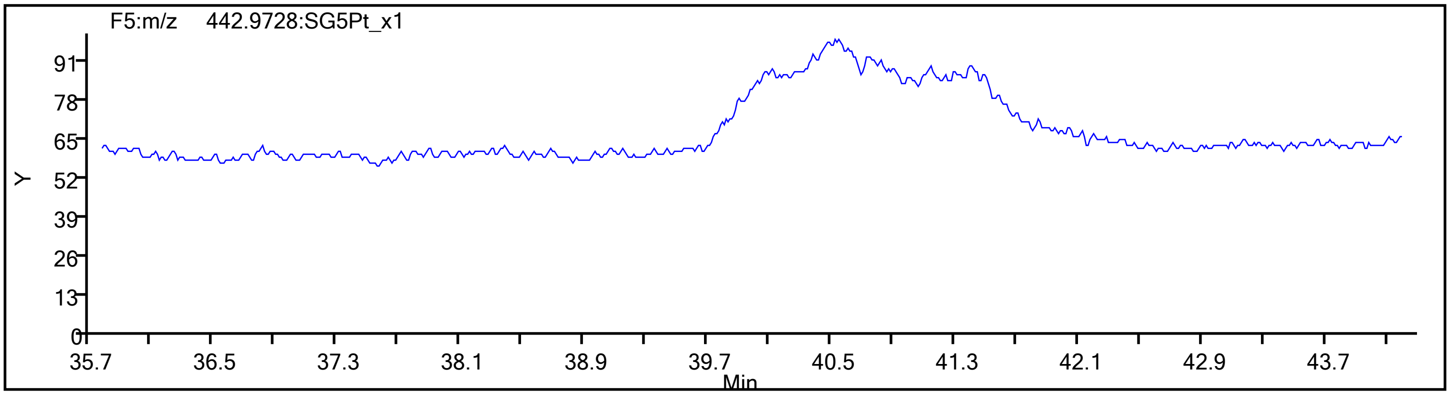

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 27-Jun-2020 16:13:16 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720B CS-4 HRDXNL4_00093
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:04 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:44:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	44921958	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	60344940	0.78	1.3726	97.9	97.9	0.2102	0.2102	97.87	
2,3,7,8-TCDF	17.219	5357609	0.74	0.9104	9.752	9.752	0.0307	0.0307	97.52	
S Total TCDF					9.752	9.752	0.0307	0.0307		
D 13C-2,3,7,8-TCDD	17.899	44913870	0.78	1.0192	98.1	98.1	0.2273	0.2273	98.10	
2,3,7,8-TCDD	17.914	4563232	0.79	1.0745	9.456	9.456	0.0413	0.0413	94.56	
$ 37Cl4-2,3,7,8-TCDD	17.914	4459695		1.0176	9.756	9.756	0.0252	0.0252	97.56	
S Total TCDD					9.456	9.456	0.0413	0.0413		
D 13C-1,2,3,7,8-PeCDF	22.156	49635229	1.59	1.1429	96.7	96.7	0.3817	0.3817	96.68	
1,2,3,7,8-PeCDF	22.170	24335887	1.59	0.9938	49.3	49.3	0.2742	0.2742	98.67	
D 13C-2,3,4,7,8-PeCDF	23.465	60093455	1.59	1.3997	95.6	95.6	0.3116	0.3116	95.57	
2,3,4,7,8-PeCDF	23.493	24300949	1.55	0.8117	49.8	49.8	0.2851	0.2851	99.64	
S Total PeCDF					99.2	99.2	0.2797	0.2797		
D 13C-1,2,3,7,8-PeCDD	24.188	35888619	1.57	0.8232	97.1	97.1	0.1411	0.1411	97.05	
1,2,3,7,8-PeCDD	24.215	18115123	1.60	1.0181	49.6	49.6	0.0983	0.0983	99.16	
S Total PeCDD					49.6	49.6	0.0983	0.0983		
D 13C-1,2,3,4,7,8-HxCDF	30.306	41483076	0.50	1.1388	98.8	98.8	0.9003	0.9003	98.82	
1,2,3,4,7,8-HxCDF	30.332	16628712	1.21	0.8061	49.7	49.7	0.6370	0.6370	99.45	
D 13C-1,2,3,6,7,8-HxCDF	30.505	40051804	0.51	1.0803	100.6	100.6	0.9491	0.9491	101	
1,2,3,6,7,8-HxCDF	30.519	19386425	1.18	0.9818	49.3	49.3	0.5893	0.5893	98.60	
D 13C-2,3,4,6,7,8-HxCDF	31.371	34877926	0.50	0.9494	99.7	99.7	1.080	1.080	99.67	
2,3,4,6,7,8-HxCDF	31.384	17924922	1.19	1.0382	49.5	49.5	0.4739	0.4739	99.00	
D 13C-1,2,3,7,8,9-HxCDF	32.209	31414784	0.50	0.8670	98.3	98.3	1.183	1.183	98.30	
1,2,3,7,8,9-HxCDF	32.222	16062640	1.24	1.0321	49.5	49.5	0.5184	0.5184	99.09	
S Total HxCDF					198.1	198.1	0.5547	0.5547		
* 13C-1,2,3,7,8,9-HxCDD	32.023	36860120	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	32715286	1.27	0.9356	94.9	94.9	0.6229	0.6229	94.86	
1,2,3,4,7,8-HxCDD	31.583	13247984	1.23	0.8202	49.4	49.4	0.2605	0.2605	98.74	
D 13C-1,2,3,6,7,8-HxCDD	31.677	39539332	1.28	1.0416	103.0	103.0	0.5595	0.5595	103	

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.703	18322759	1.24	0.9367	49.5	49.5	0.2491	0.2491	98.95	
1,2,3,7,8,9-HxCDD	32.036	17485889	1.24	0.9905	48.9	48.9	0.2252	0.2252	97.73	
S Total HxCDD					147.7	147.7	0.2450	0.2450		
D 13C-1,2,3,4,6,7,8-HpCDF	33.664	29115881	0.44	0.7899	100.0	100.0	3.021	3.021	100	
1,2,3,4,6,7,8-HpCDF	33.676	20993366	1.03	1.4527	49.6	49.6	1.073	1.073	99.26	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	32761435	0.44	0.9093	97.8	97.8	2.625	2.625	97.75	
1,2,3,4,7,8,9-HpCDF	34.746	17306428	1.04	1.0585	49.9	49.9	1.522	1.522	99.81	
S Total HpCDF					99.5	99.5	1.297	1.297		
D 13C-1,2,3,4,6,7,8-HpCDD	34.454	28040054	1.06	0.7637	99.6	99.6	1.261	1.261	99.61	
1,2,3,4,6,7,8-HpCDD	34.466	14507917	1.06	1.0540	49.1	49.1	0.5597	0.5597	98.18	
S Total HpCDD					49.1	49.1	0.5597	0.5597		
D 13C-OCDD	36.785	46201838	0.91	0.6377	196.6	196.6	0.4506	0.4506	98.28	
OCDF	36.881	29718751	0.90	1.2965	99.2	99.2	0.2809	0.2809	99.23	
OCDD	36.797	26045472	0.89	1.1499	98.0	98.0	0.3016	0.3016	98.05	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 27-Jun-2020 16:13:16 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720B CS-4 HRDXNL4_00093
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:04 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:44:56

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		19799058	4729813	5042	12605	938		
333.9339	17.702	17.702	0		25122900	6066011	4961	12402	1223	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.197	0	0.972	26508867	6087096	7048	17620	864		
317.9389	17.203	17.197	0	0.972	33836073	7851171	5410	13525	1451	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.215	0	1.001	2283110	528103	574	1435	920		
305.8987	17.219	17.215	0	1.001	3074499	709330	985	2462	720	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.893	0	1.011	19630135	4265679	5042	12605	846		
333.9339	17.899	17.893	0	1.011	25283735	5472685	4961	12402	1103	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.001	2009373	437511	1095	2737	400		
321.8936	17.914	17.911	0	1.001	2553859	555666	635	1587	875	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	4459695	1001442	1107	2767	905		
13C-1,2,3,7,8-PeCDF											
351.9000	22.156	22.148	0	1.252	30479570	4831380	11352	28380	426		
353.8970	22.156	22.148	0	1.252	19155659	3034071	7484	18710	405	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.164	0	1.001	14936918	2395906	5104	12760	469		
341.8567	22.170	22.164	0	1.001	9398969	1511785	3469	8672	436	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.465	23.460	0	1.326	36859667	5675954	11352	28380	500		
353.8970	23.465	23.460	0	1.326	23233788	3584304	7484	18710	479	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.493	23.487	0	1.001	14757260	2252859	5104	12760	441		
341.8567	23.493	23.487	0	1.001	9543689	1476787	3469	8672	426	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.188	24.180	0	1.366	21926659	3077561	2905	7262	1059		
369.8919	24.188	24.180	0	1.366	13961960	1938595	2111	5277	918	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.215	24.204	1	1.001	11154150	1579420	1263	3157	1251		
357.8516	24.215	24.204	1	1.001	6960973	989204	745	1862	1328	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.306	30.298	0	0.946	13825528	2235063	9600	24000	233		
385.8610	30.306	30.298	0	0.946	27657548	4396388	19927	49817	221	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.332	30.319	1	1.001	9114897	1427981	7425	18562	192		
375.8178	30.319	30.319	0	1.000	7513815	1208894	6197	15492	195	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.505	30.497	0	0.953	13456617	2008173	9600	24000	209		
385.8610	30.505	30.497	0	0.953	26595187	3877489	19927	49817	195	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.000	10502882	1570362	7425	18562	211		
375.8178	30.519	30.519	0	1.000	8883543	1308821	6197	15492	211	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	11632950	2274598	9600	24000	237		
385.8610	31.371	31.370	0	0.980	23244976	4646298	19927	49817	233	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	9739805	1935315	7425	18562	261		
375.8178	31.384	31.384	0	1.000	8185117	1660546	6197	15492	268	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.209	32.201	0	1.006	10536379	2139022	9600	24000	223		
385.8610	32.209	32.201	0	1.006	20878405	4226341	19927	49817	212	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.222	32.214	0	1.000	8885131	1789789	7425	18562	241		
375.8178	32.222	32.214	0	1.000	7177509	1479352	6197	15492	239	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.023	32.015	0		20618797	4041571	9014	22535	448		
403.8529	32.023	32.015	0		16241323	3157959	7769	19422	406	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	18322524	4557890	9014	22535	506		
403.8529	31.570	31.570	0	0.986	14392762	3569825	7769	19422	459	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	7317019	1809435	3583	8957	505		
391.8127	31.583	31.583	0	1.000	5930965	1487451	3364	8410	442	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.989	22199813	4207203	9014	22535	467		
403.8529	31.677	31.677	0	0.989	17339519	3235344	7769	19422	416	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.703	31.693	1	1.001	10153070	1944774	3583	8957	543		
391.8127	31.690	31.693	0	1.000	8169689	1593052	3364	8410	474	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.036	32.028	0	1.015	9663813	1925825	3583	8957	537		
391.8127	32.036	32.028	0	1.015	7822076	1542427	3364	8410	459	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.664	33.657	0	1.051	8827024	2092314	19913	49782	105		
419.8220	33.664	33.657	0	1.051	20288857	4839663	48818	122045	99	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.676	33.667	1	1.000	10627622	2525930	21333	53332	118		
409.7789	33.676	33.667	1	1.000	10365744	2429034	21879	54697	111	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	9951875	2043546	19913	49782	103		
419.8220	34.734	34.731	0	1.085	22809560	4660822	48818	122045	95	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.746	34.739	0	1.000	8821266	1853425	21333	53332	87		
409.7789	34.746	34.739	0	1.000	8485162	1777455	21879	54697	81	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.454	34.444	1	1.076	14418172	3018342	13508	33770	223		
437.8140	34.454	34.444	1	1.076	13621882	2863669	14231	35577	201	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.466	34.457	1	1.000	7478404	1557360	7171	17927	217		
425.7737	34.454	34.457	0	1.000	7029513	1456384	6709	16772	217	1.06(0.88-1.20)	
13C-OCDD											
469.7779	36.785	36.775	1	1.149	21961855	3163093	4020	10050	787		
471.7750	36.785	36.775	1	1.149	24239983	3457058	4256	10640	812	0.91(0.76-1.02)	
OCDF											
441.7428	36.881	36.871	1	1.003	14065058	2231584	2219	5547	1006		
443.7399	36.869	36.871	0	1.002	15653693	2506871	2603	6507	963	0.90(0.76-1.02)	
OCDD											
457.7377	36.797	36.787	1	1.000	12271293	1770445	1790	4475	989		
459.7348	36.785	36.787	0	1.000	13774179	1983148	2802	7005	708	0.89(0.76-1.02)	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

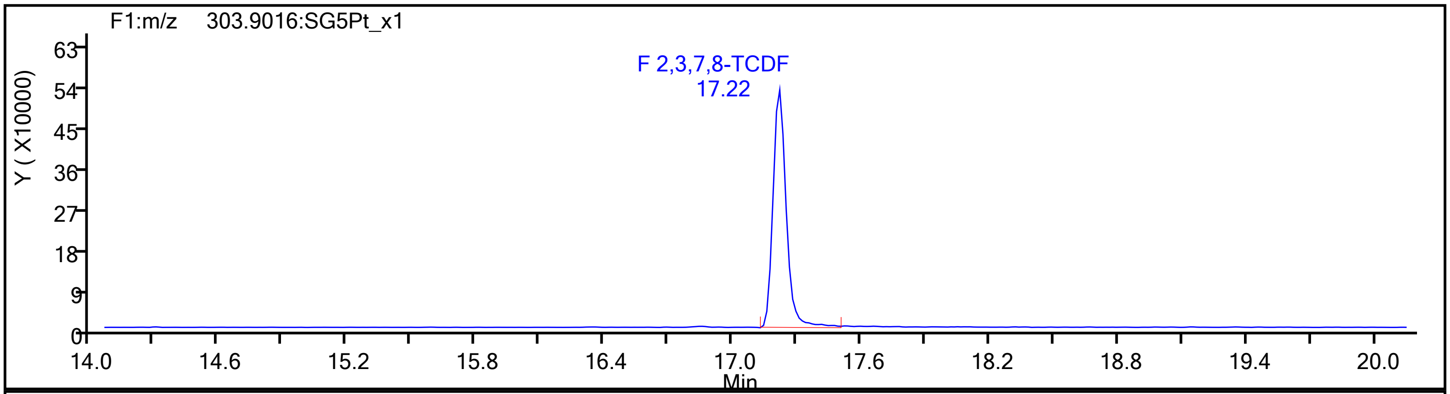

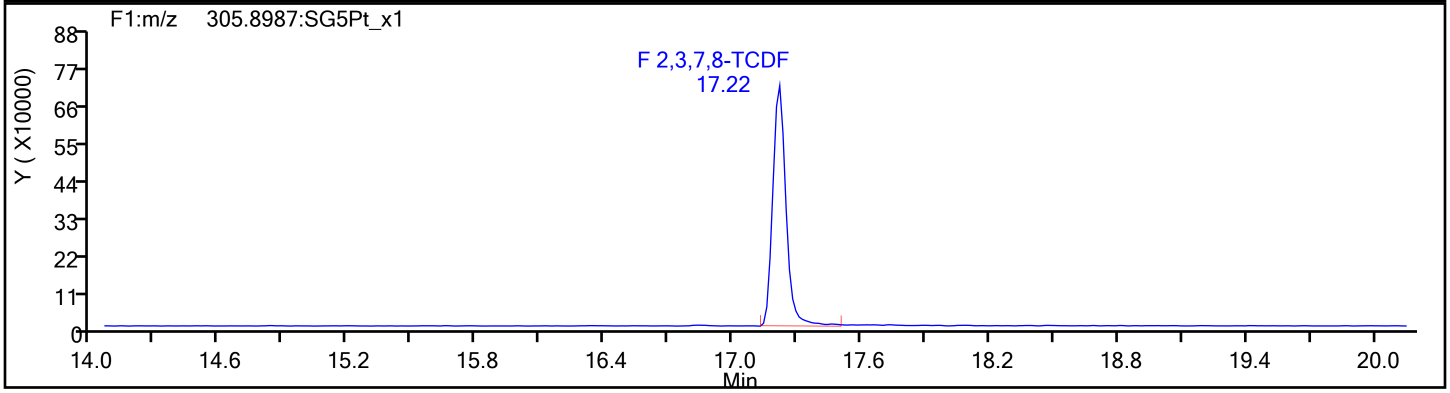

TCDF Standards

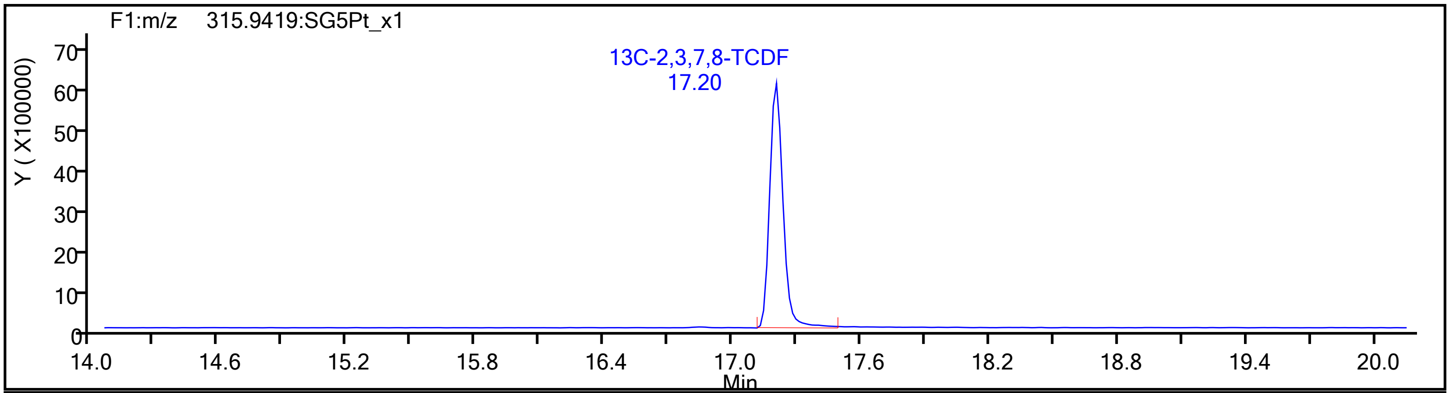

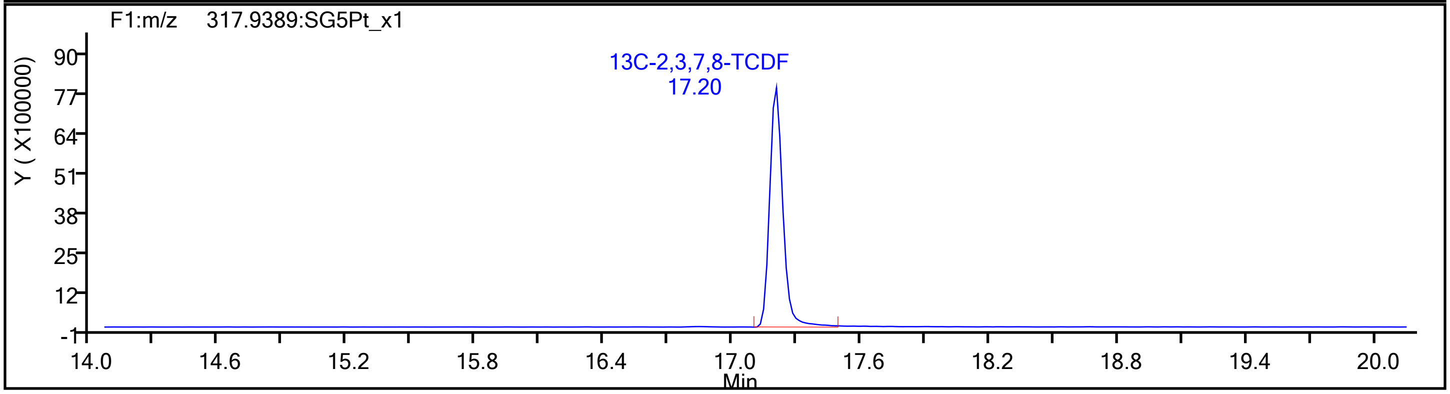

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Eurofins TestAmerica, Sacramento

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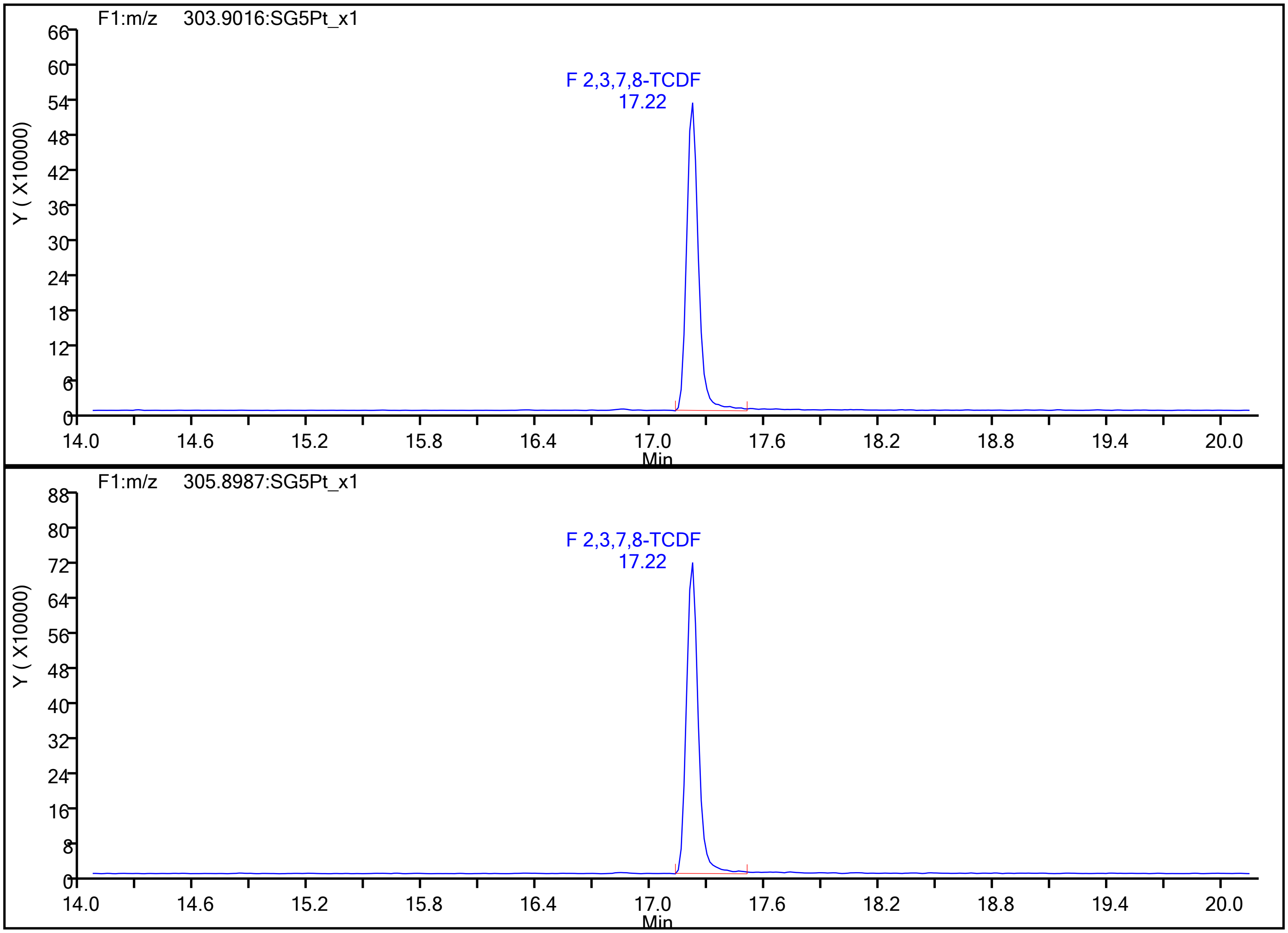

TCDF Interference Mass

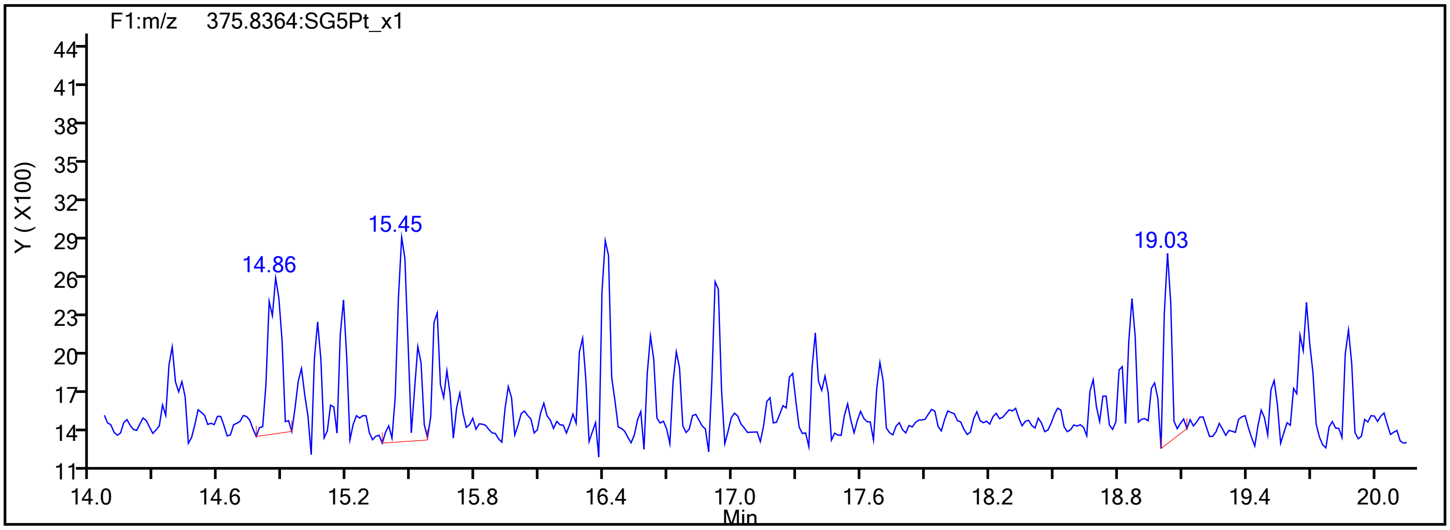

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Eurofins TestAmerica, Sacramento

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TCDD

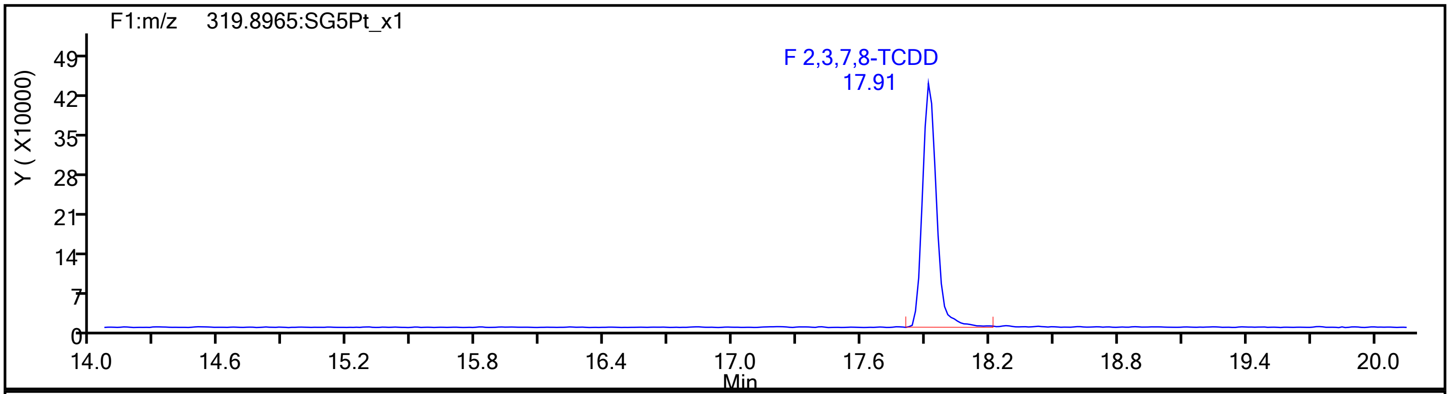

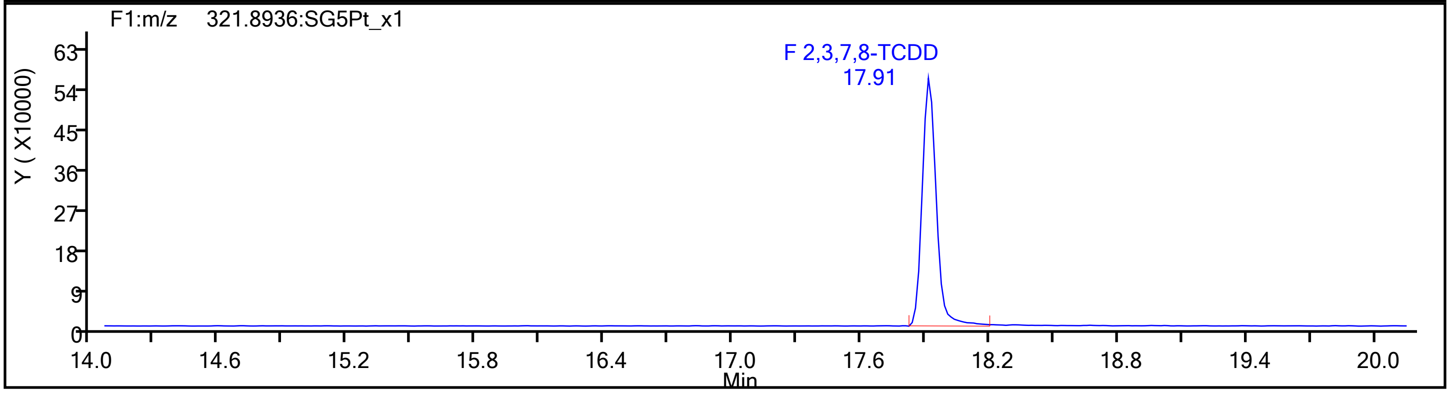

TCDD Standards

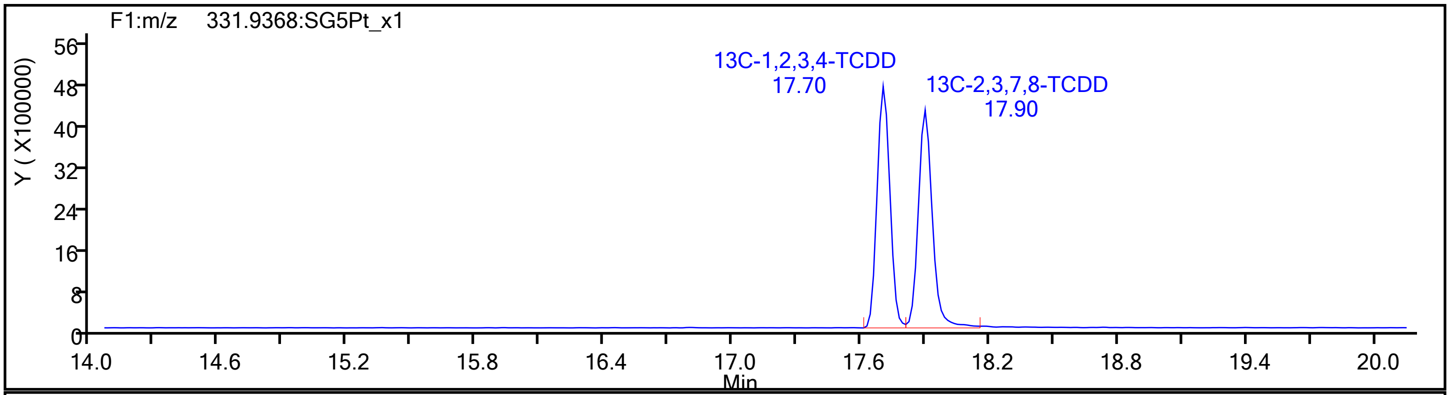

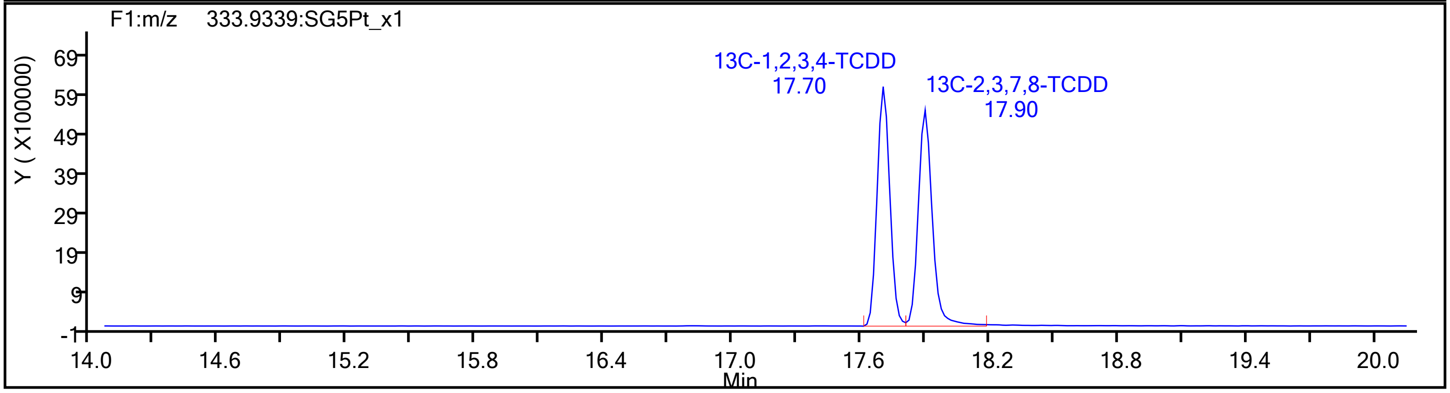

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

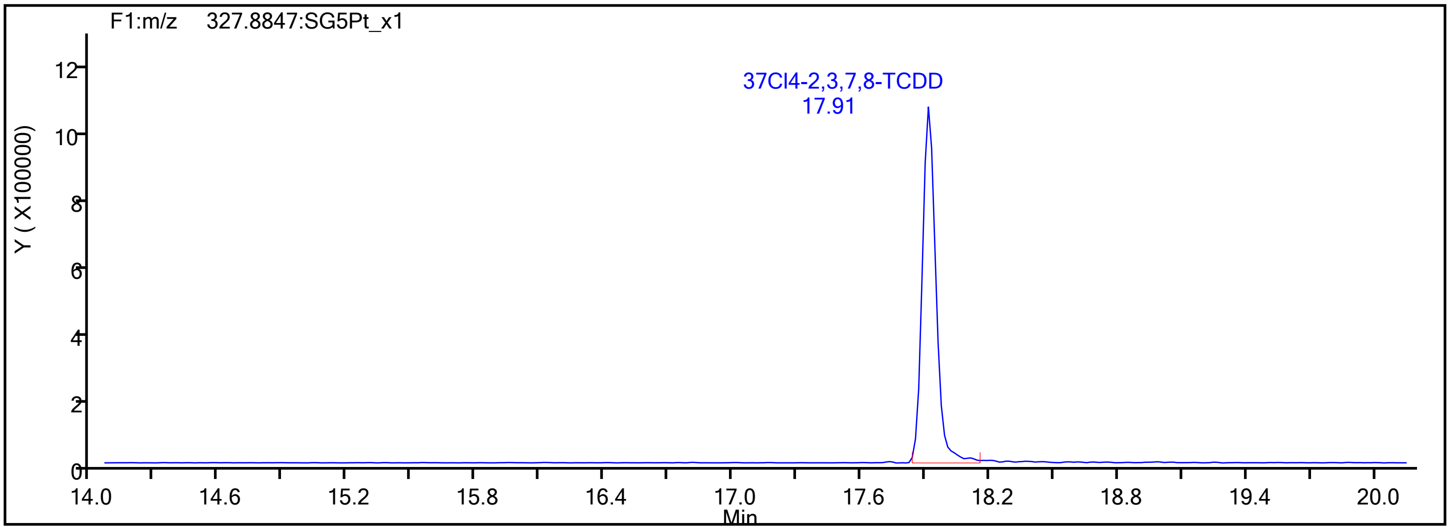

37Cl4-TCDD Standards

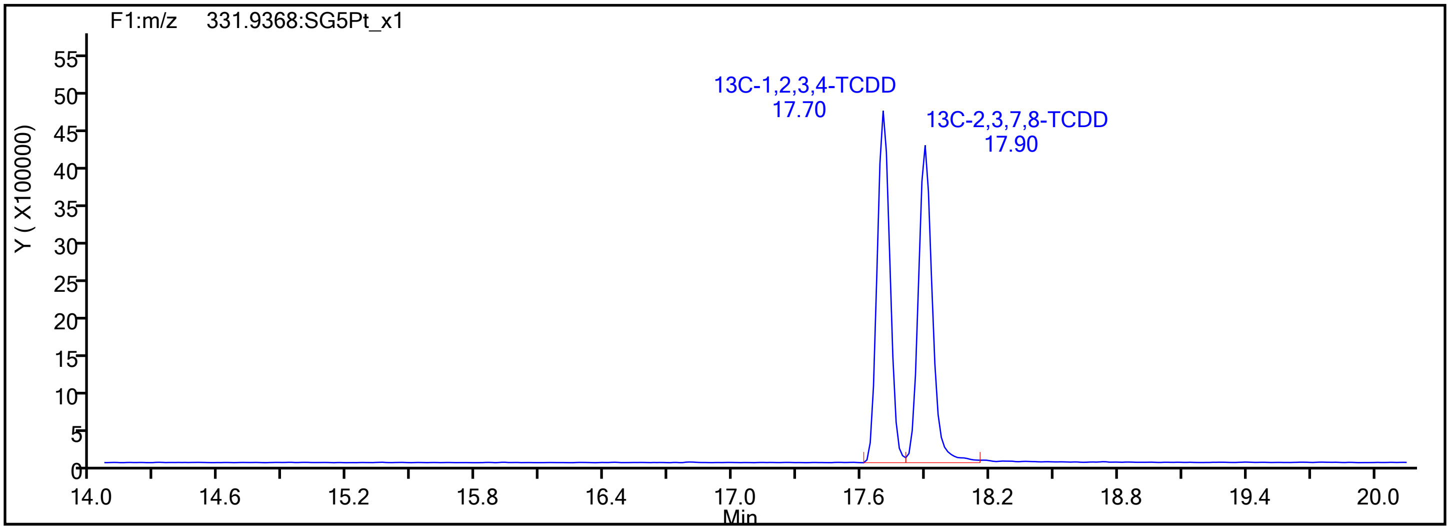

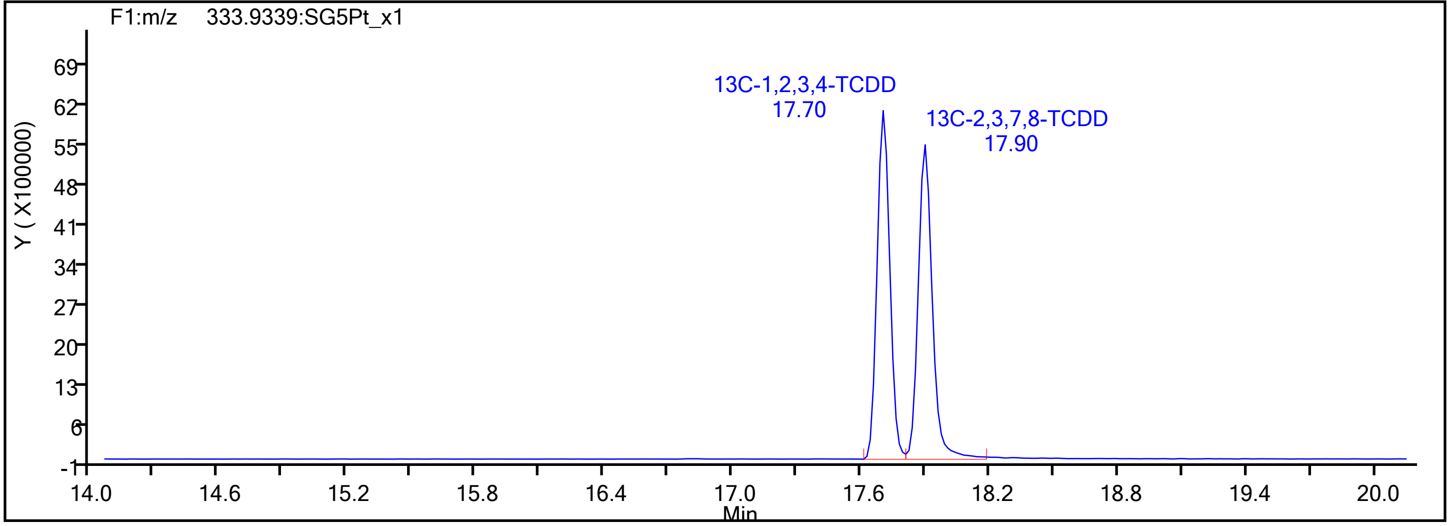

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

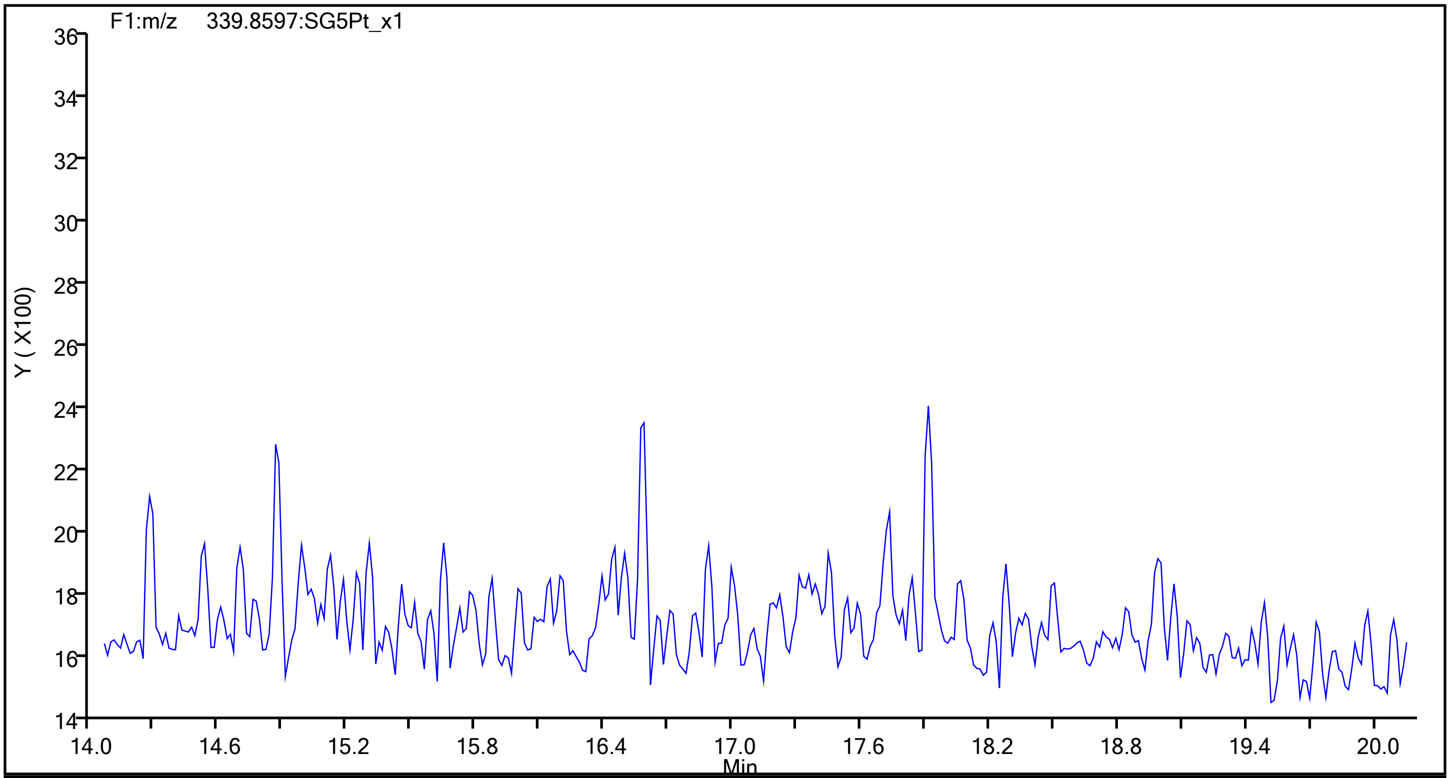

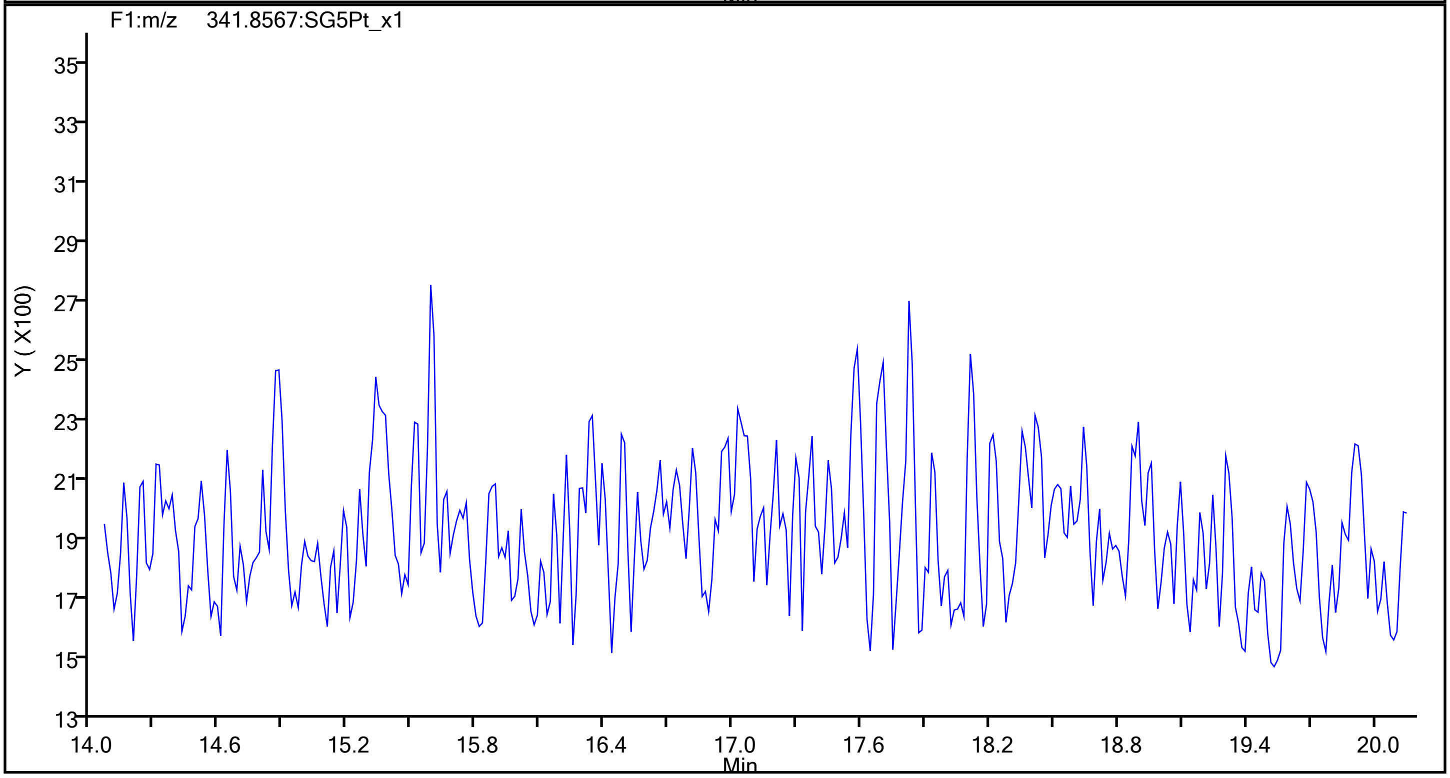

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

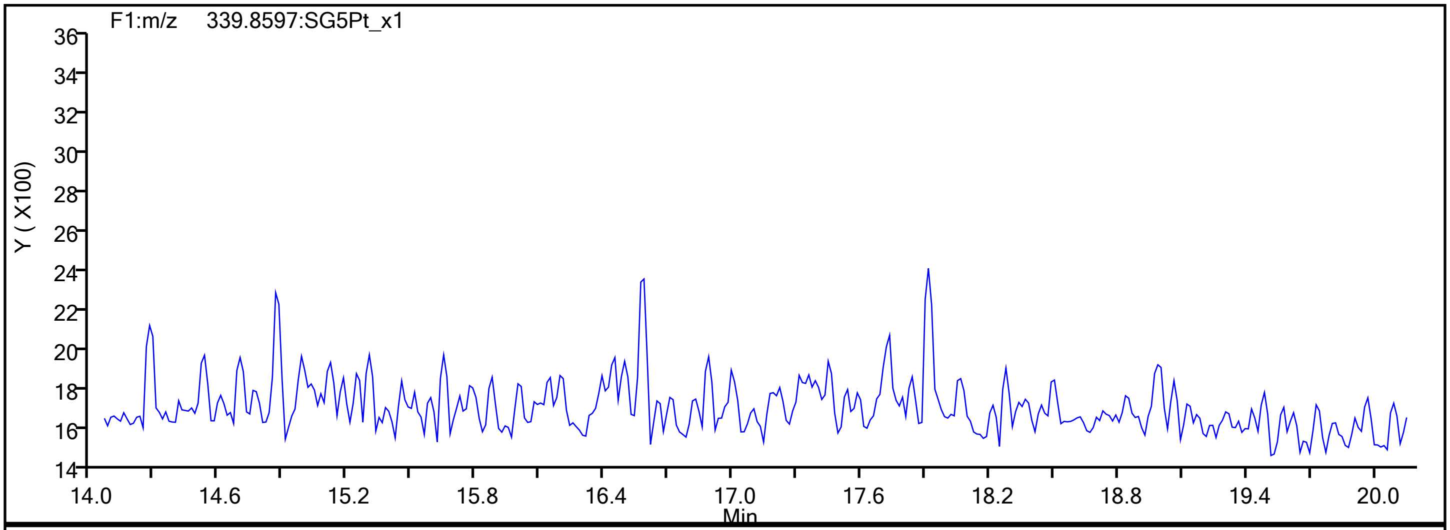

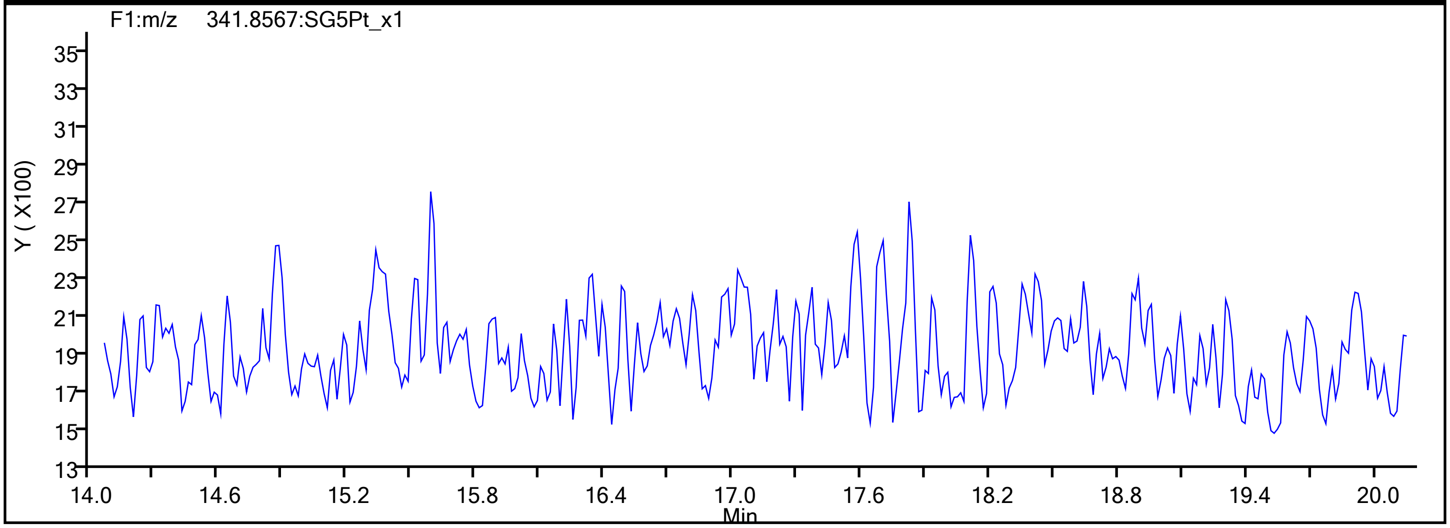

F1 PeCDFs Interference Mass

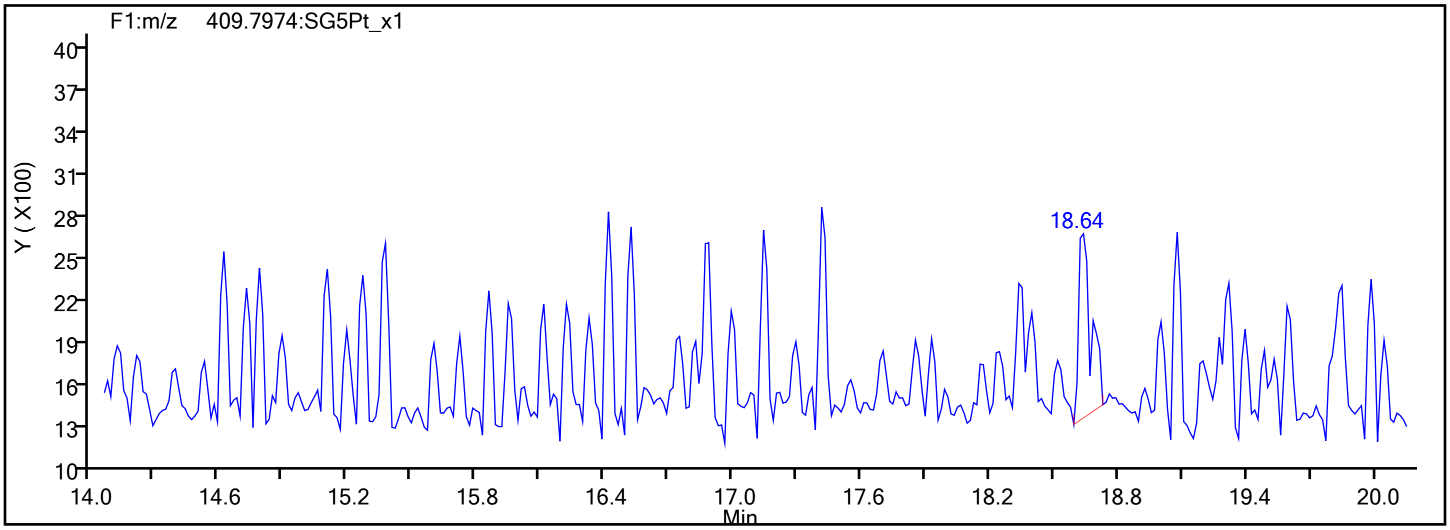

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Eurofins TestAmerica, Sacramento

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PeCDF

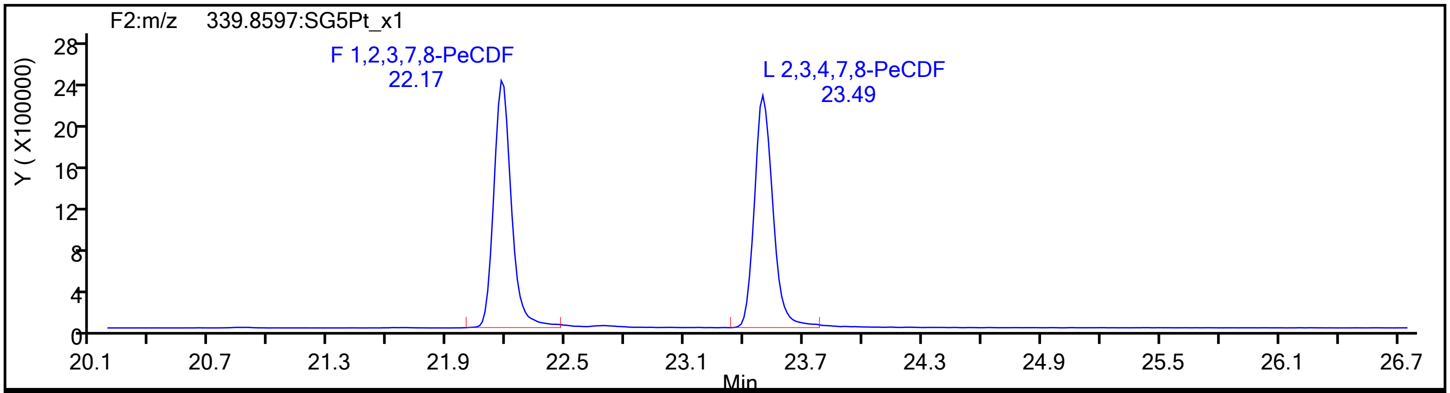

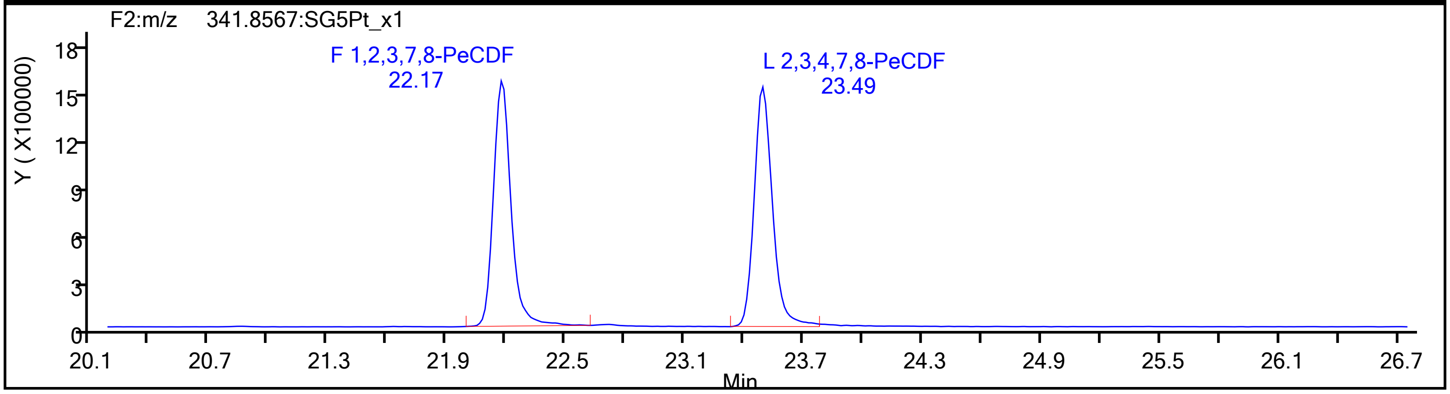

PeCDF Standards

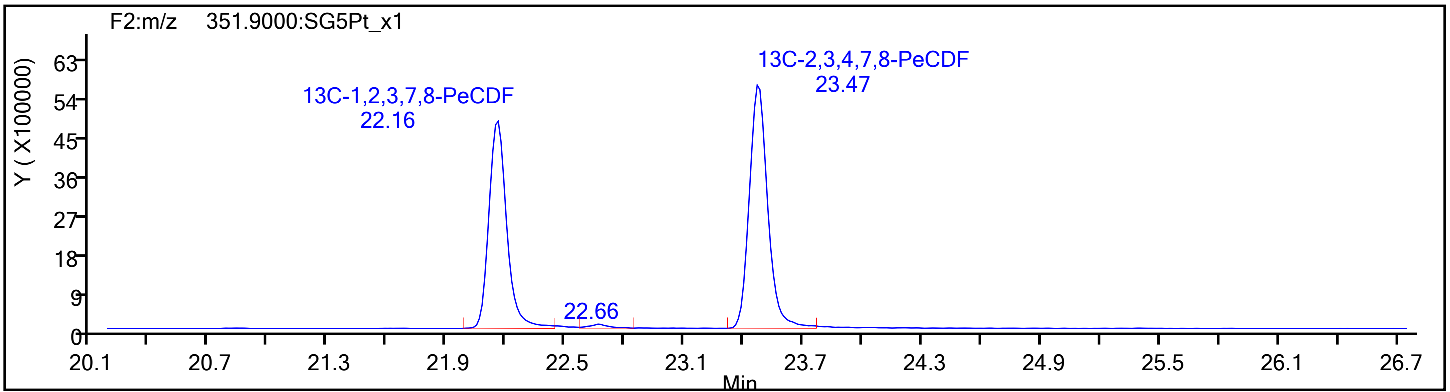

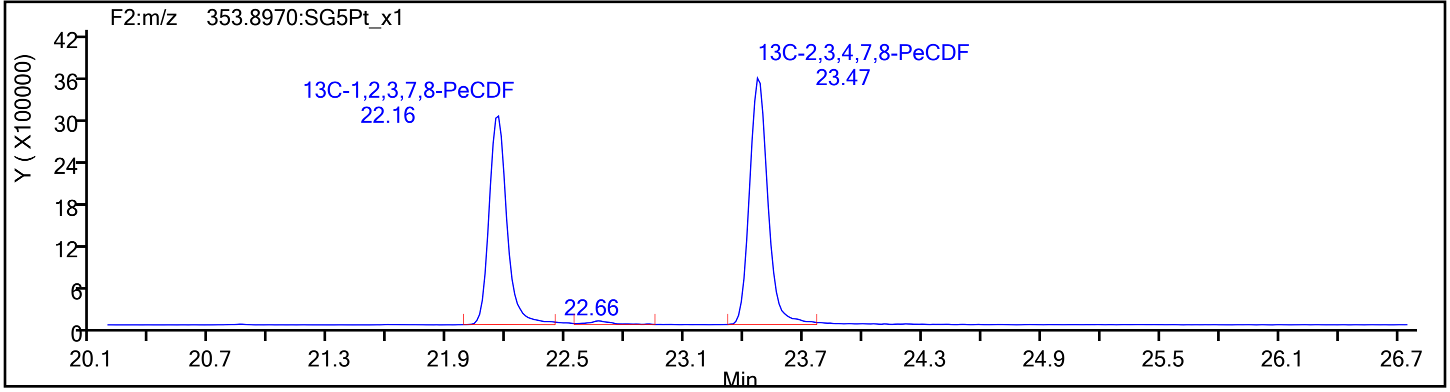

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Eurofins TestAmerica, Sacramento

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PeCDF

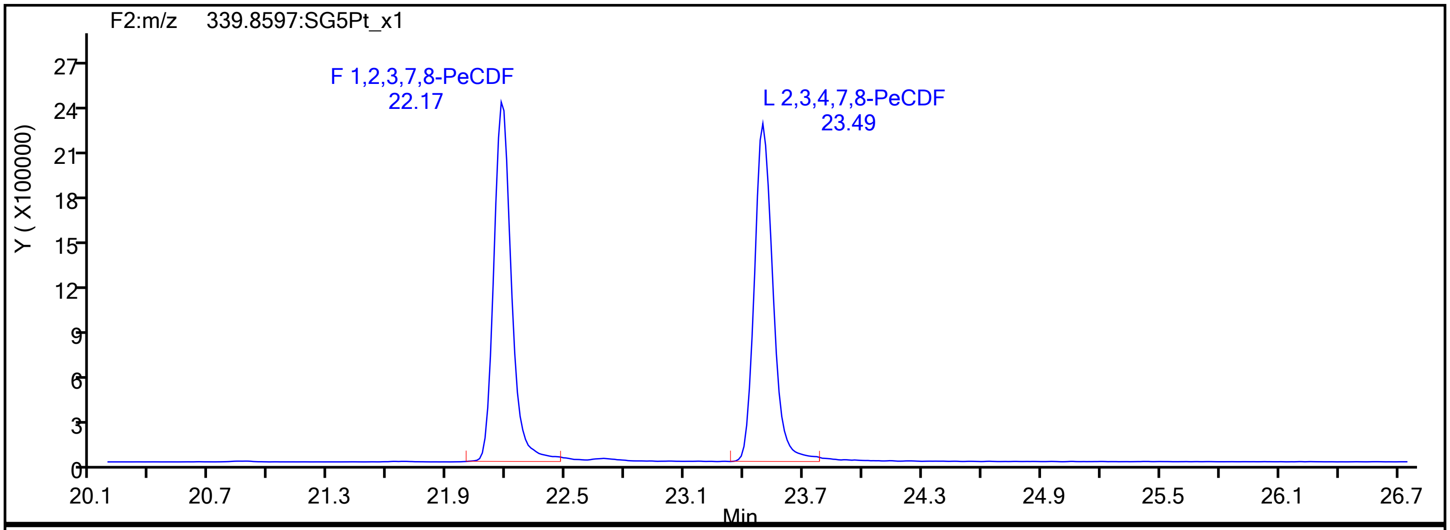

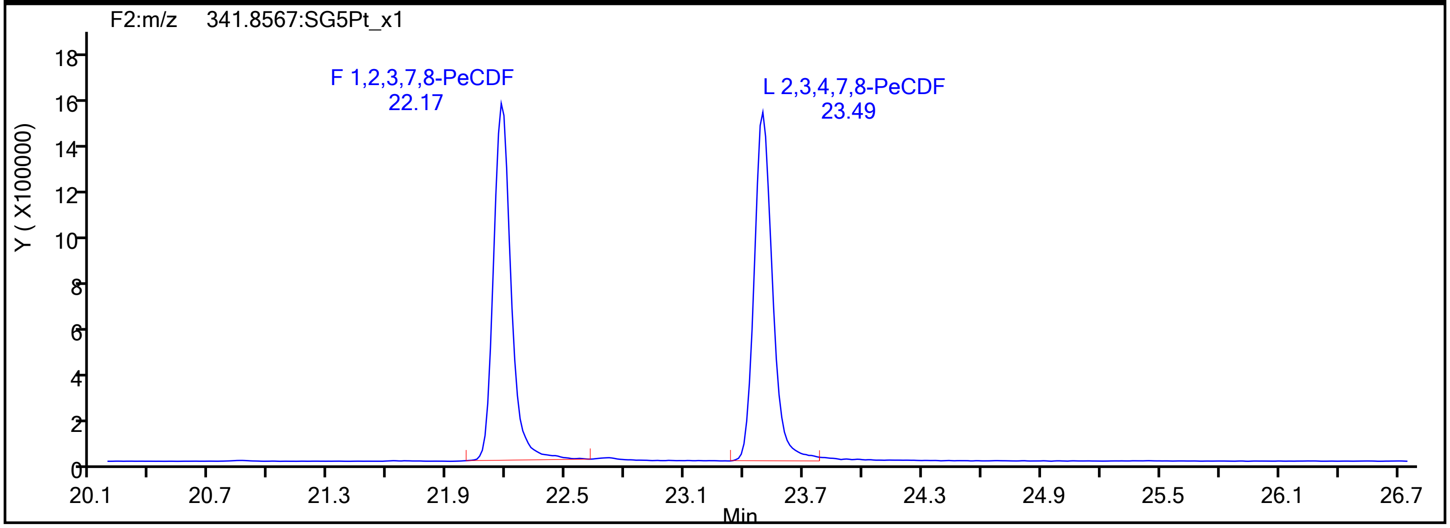

PeCDF Interference Mass

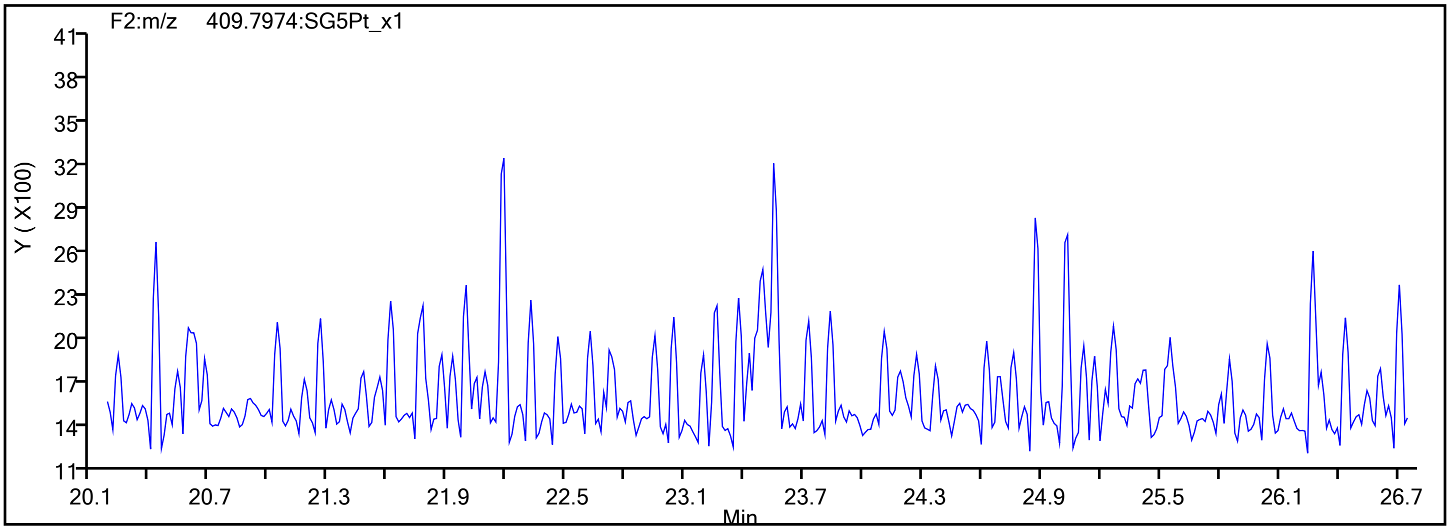

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Eurofins TestAmerica, Sacramento

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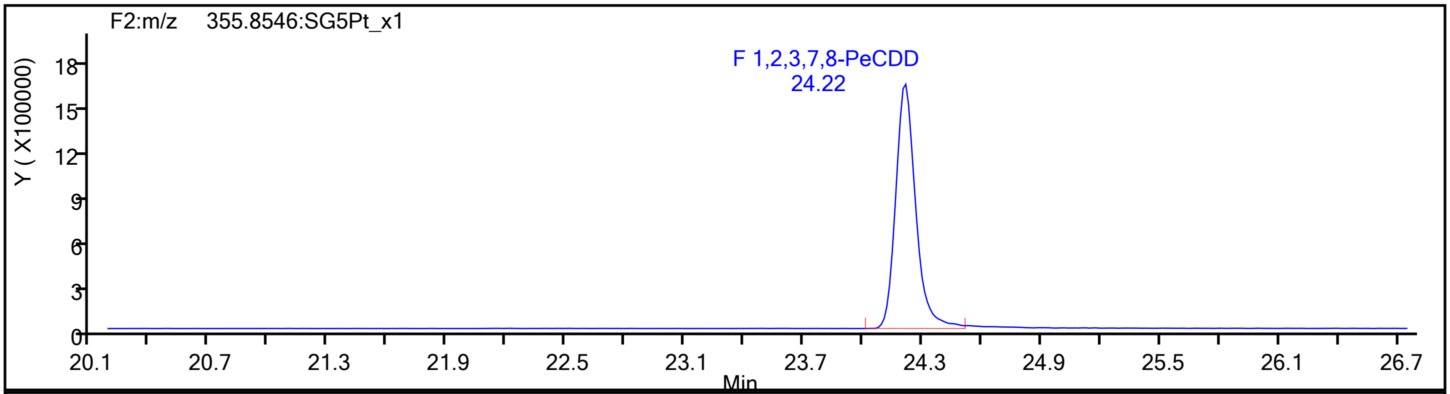

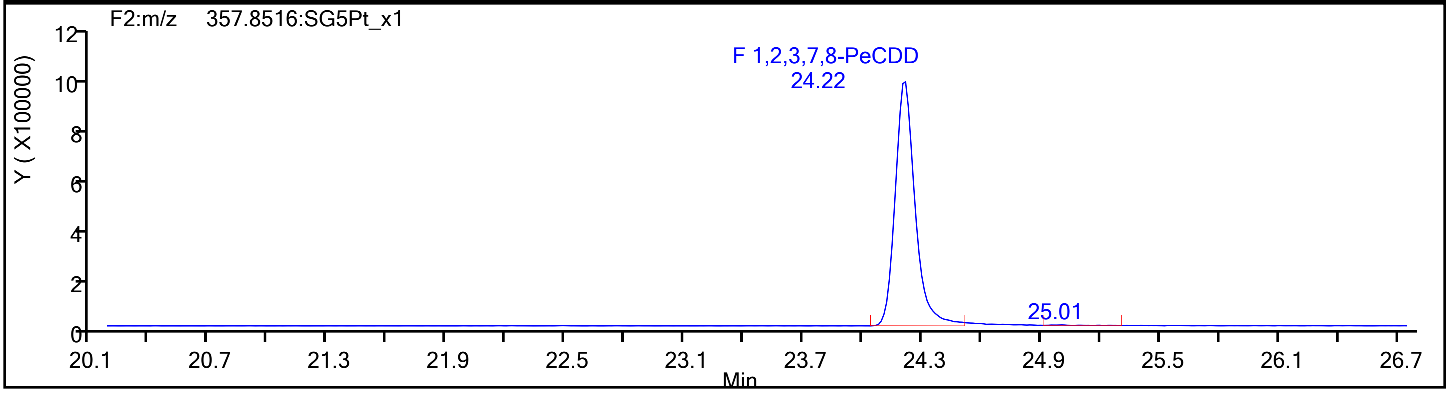

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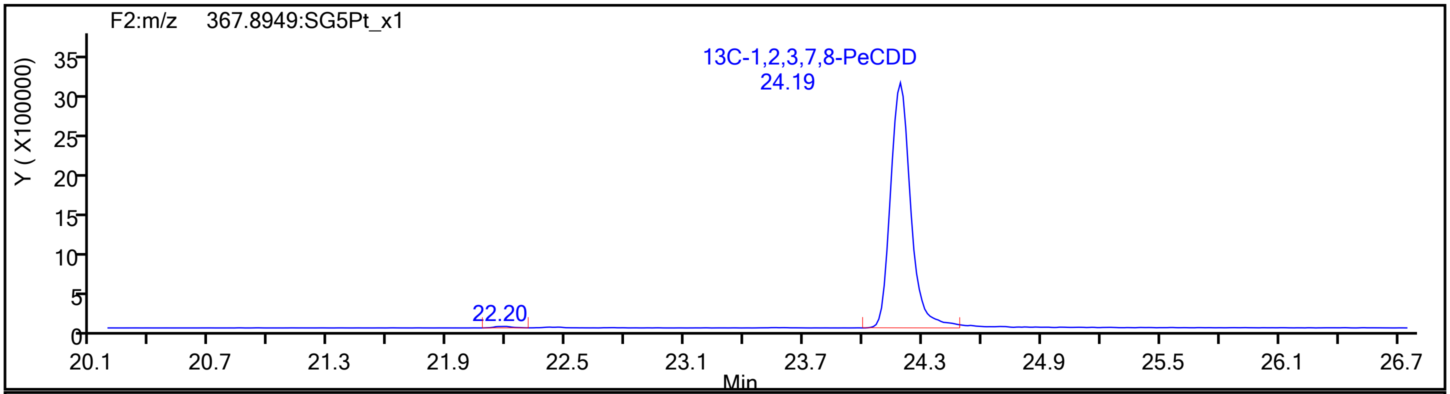

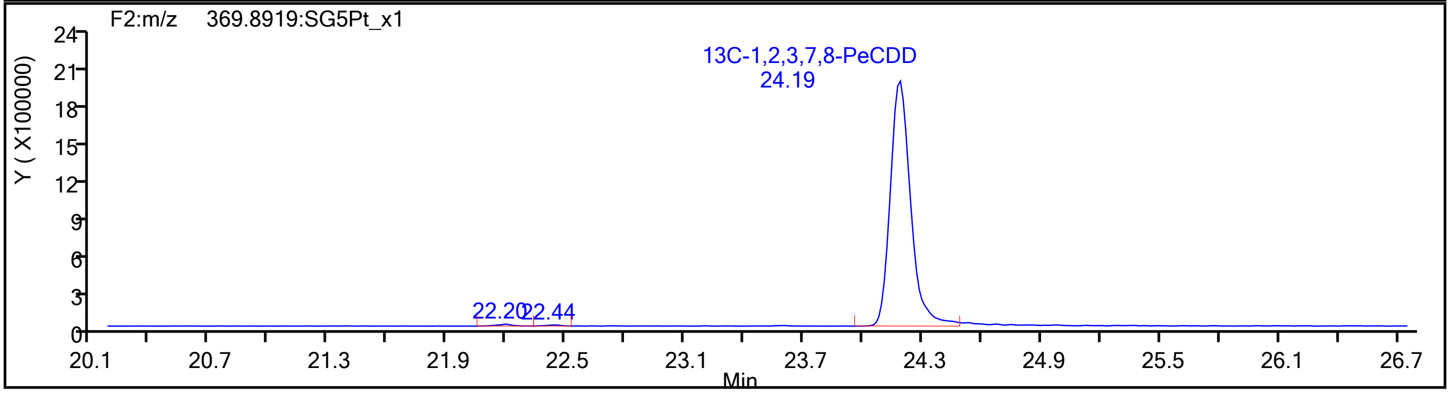

Eurofins TestAmerica, Sacramento

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HxCDF

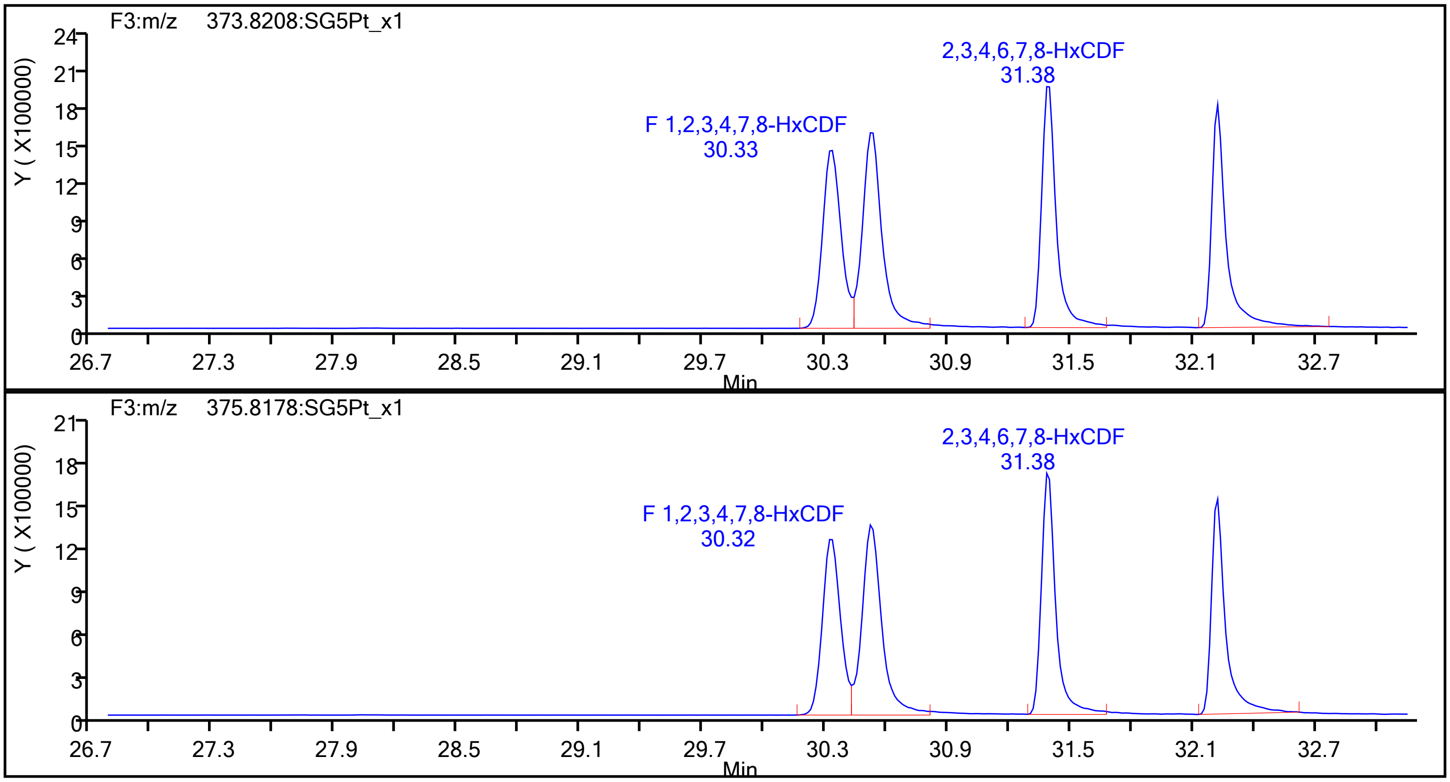

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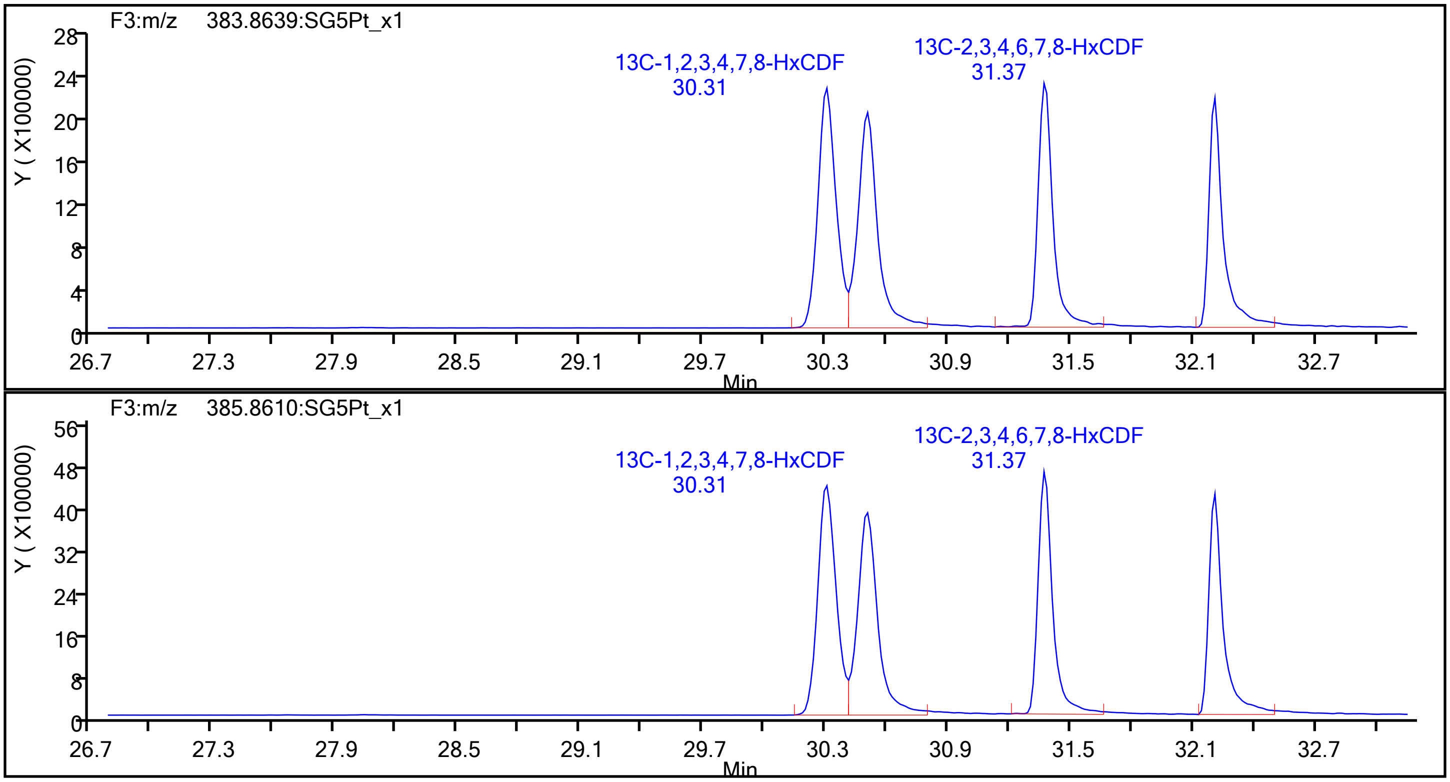

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Eurofins TestAmerica, Sacramento

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HxCDF

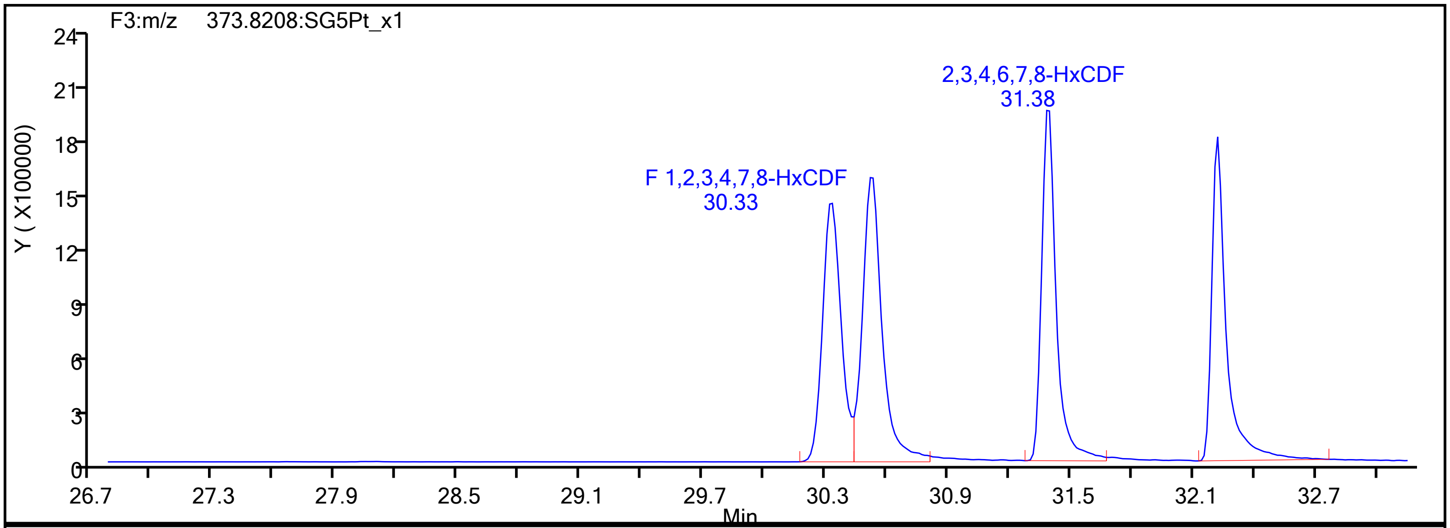

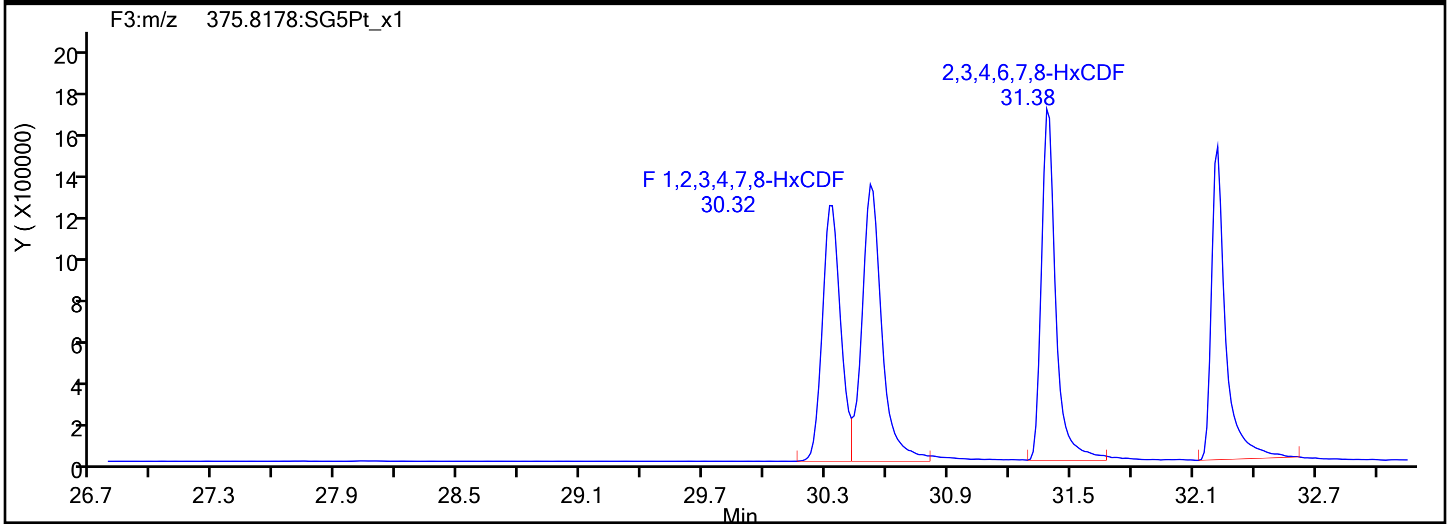

HxCDF Interference Mass

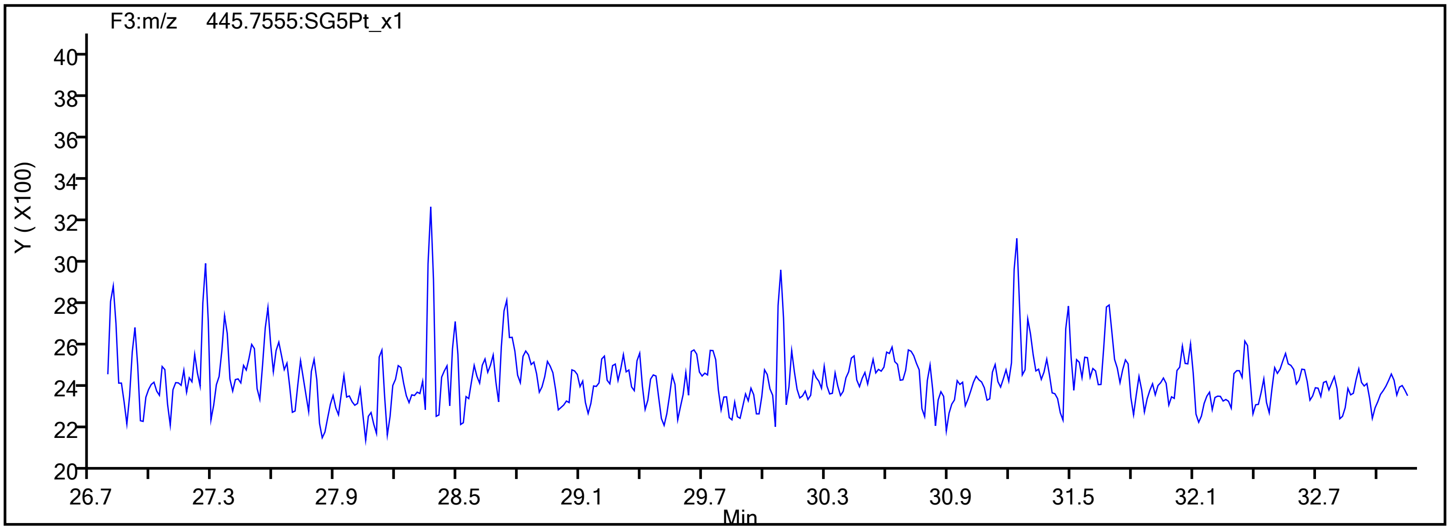

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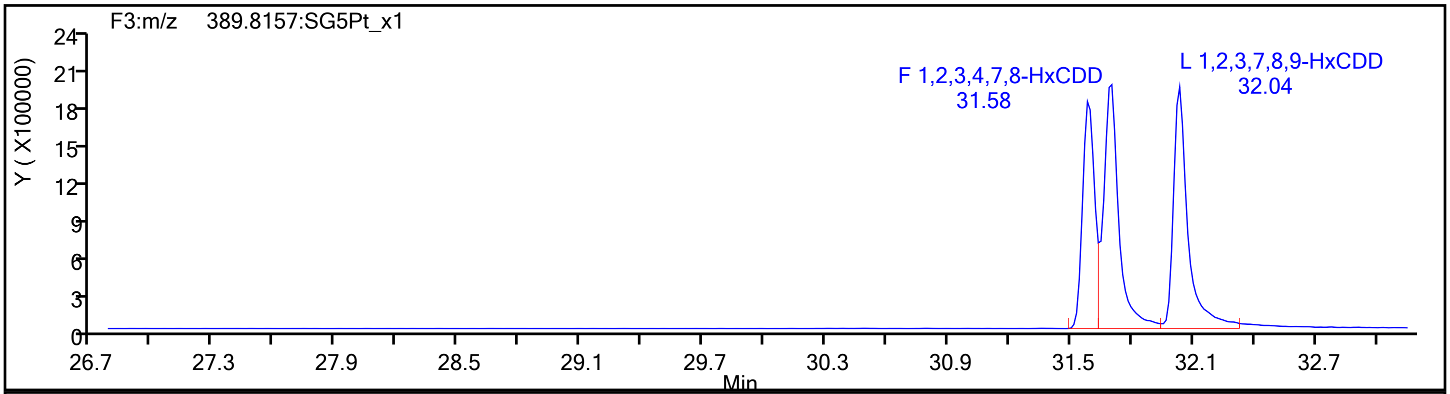

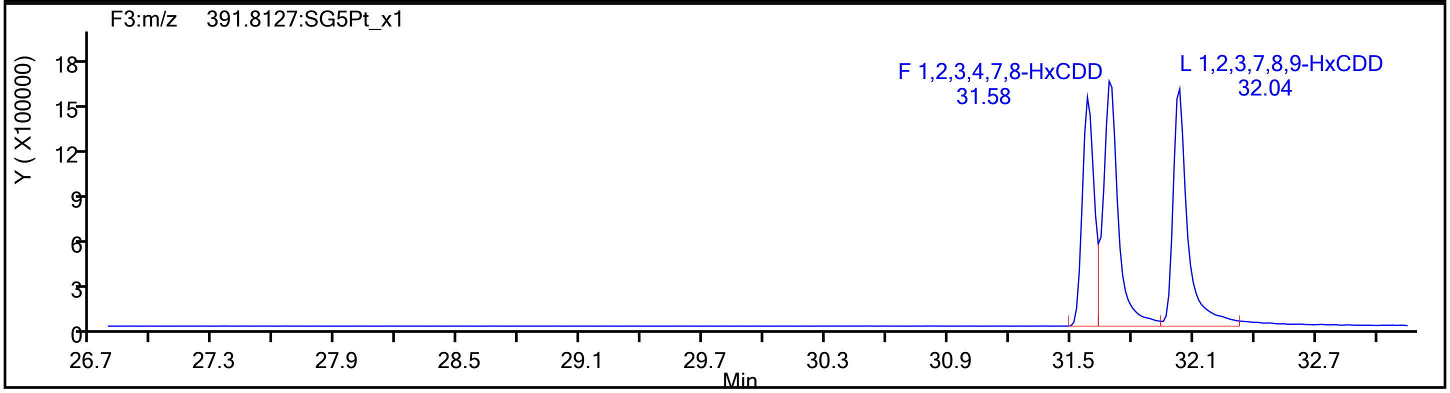

HxCDD Standards

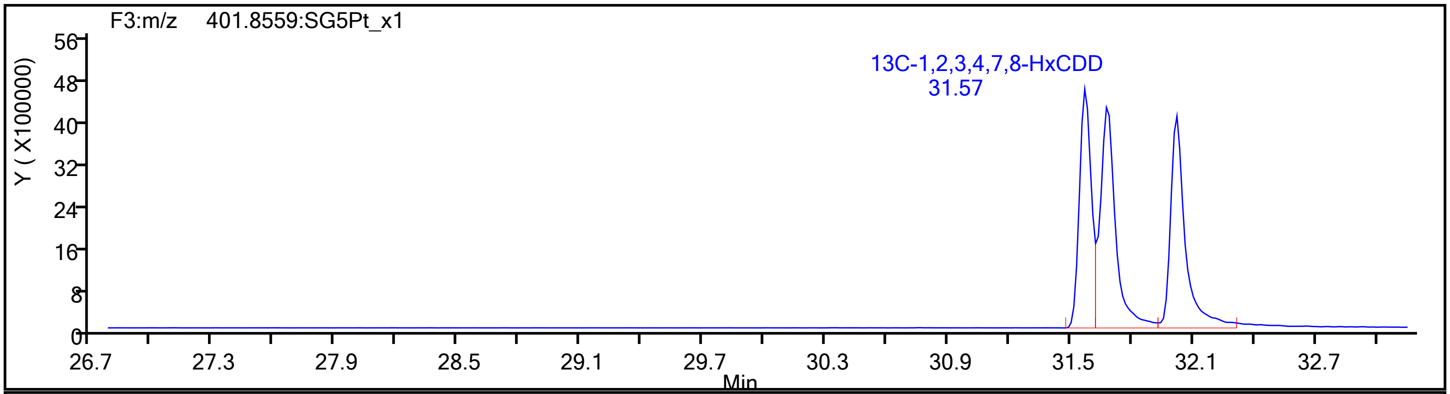

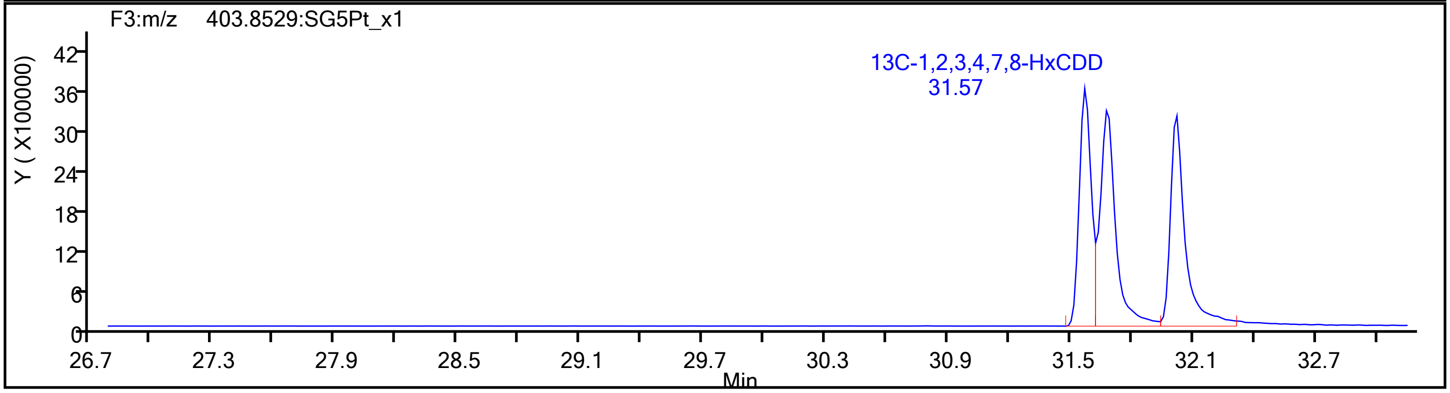

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Eurofins TestAmerica, Sacramento

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HpCDF

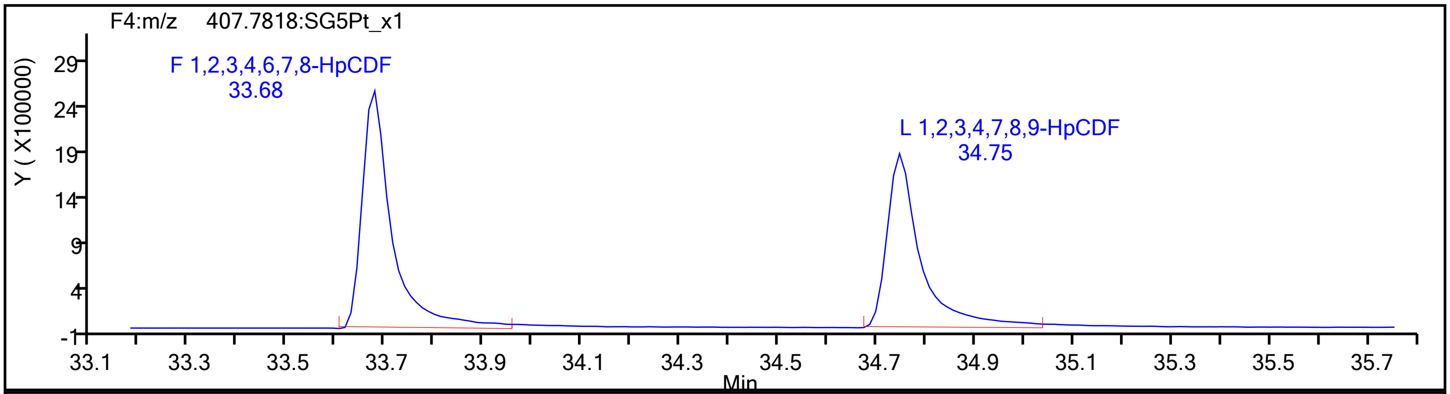

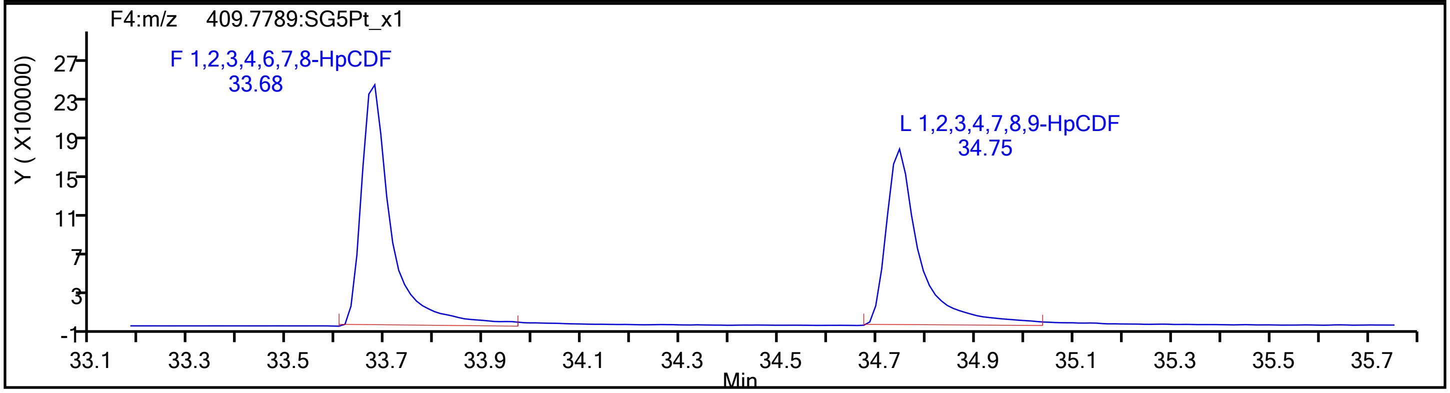

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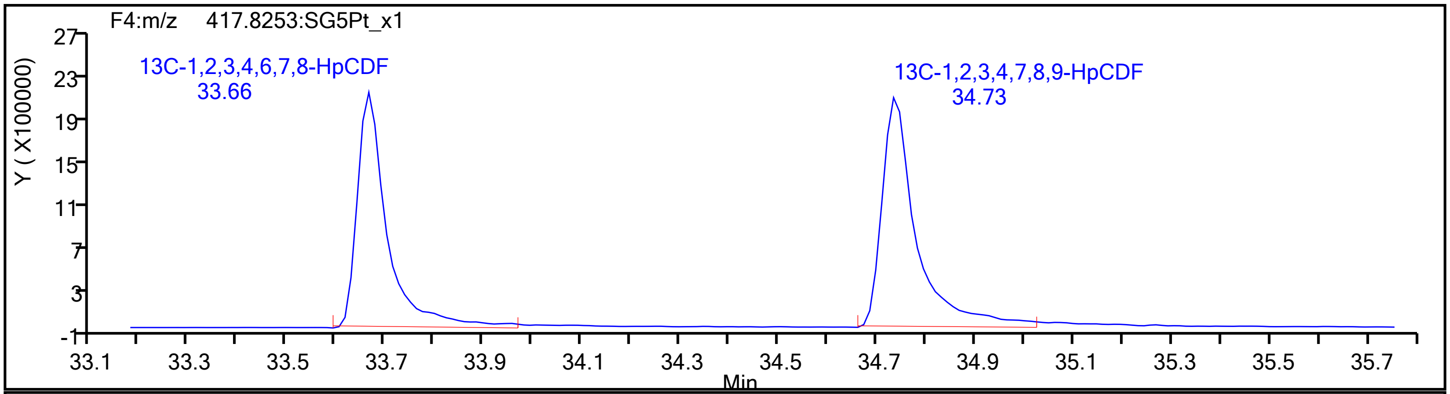

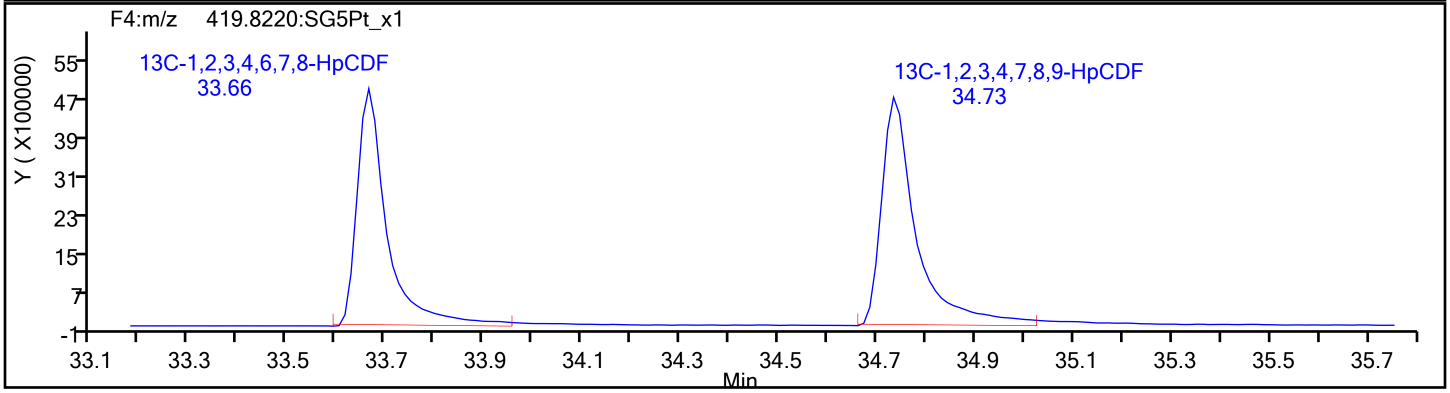

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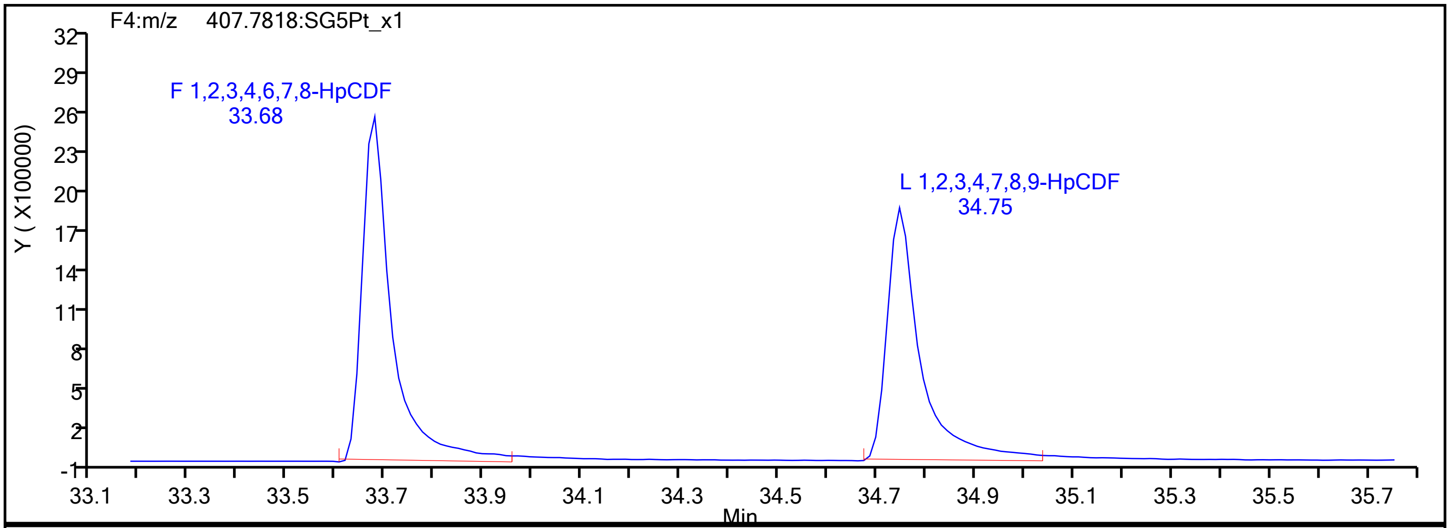

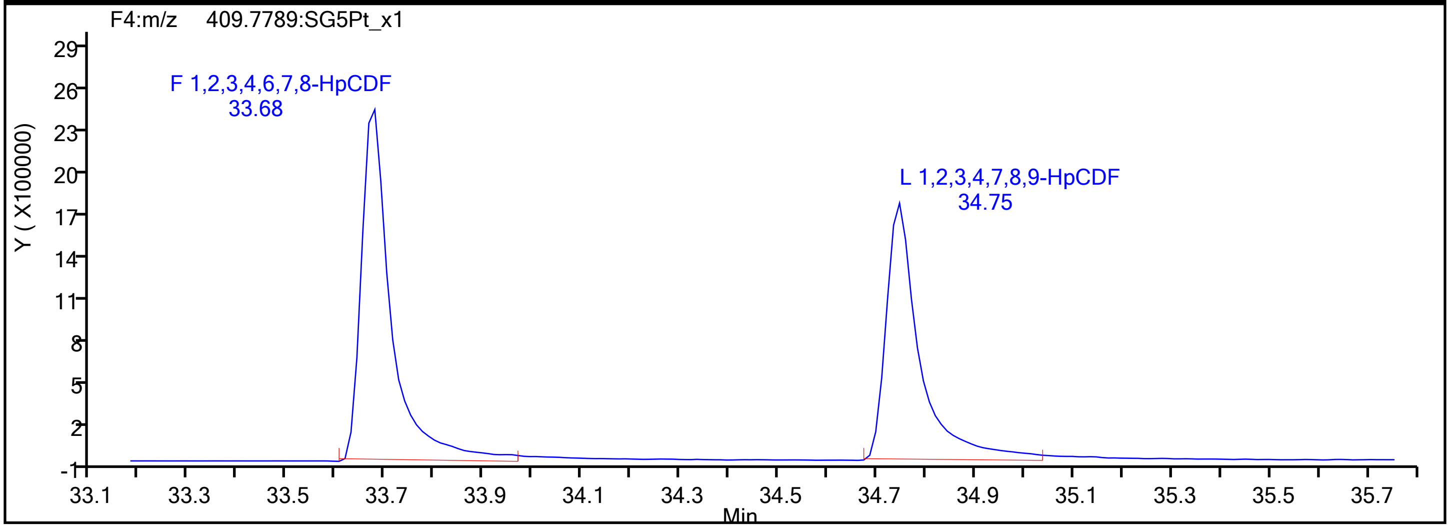

HpCDF Interference Mass

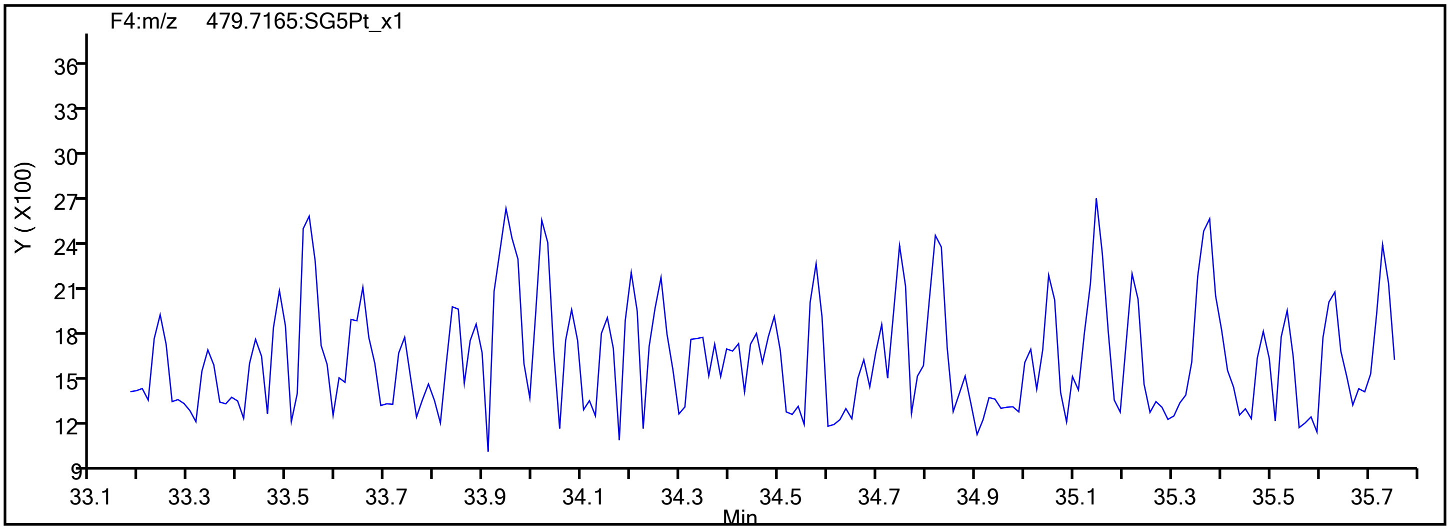

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Injection Date: 27-Jun-2020 16:13:16
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

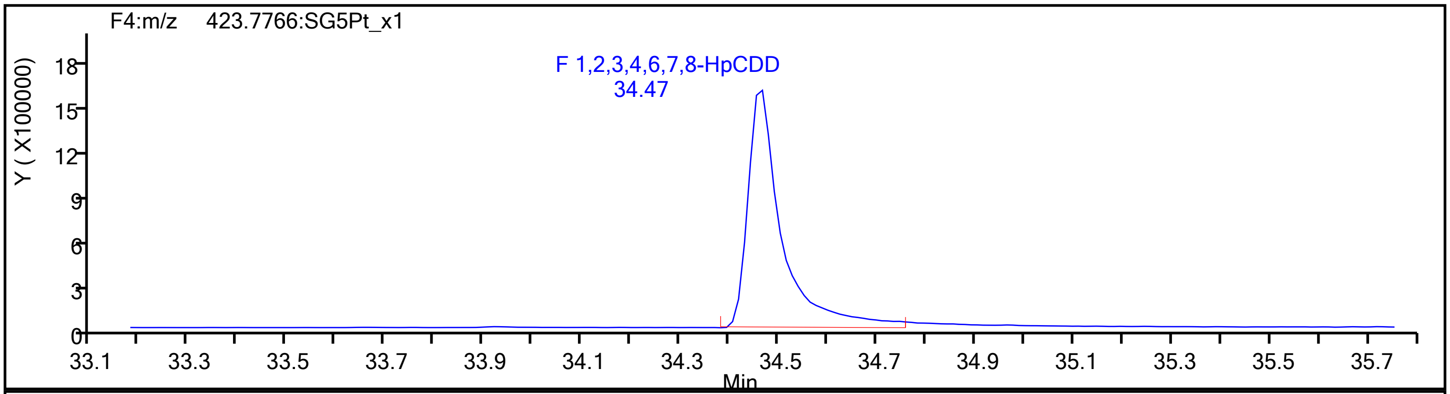

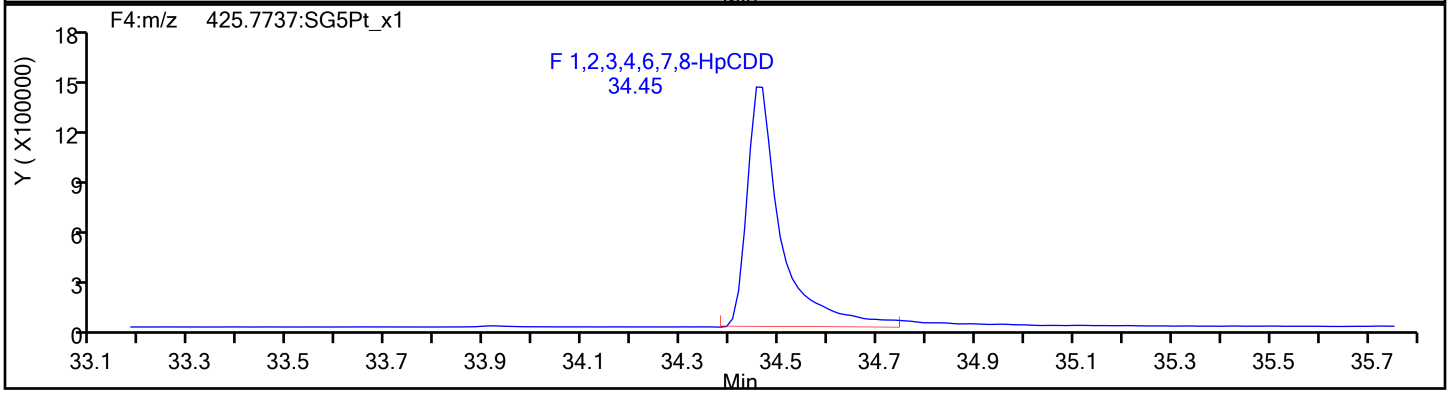

HpCDD Standards

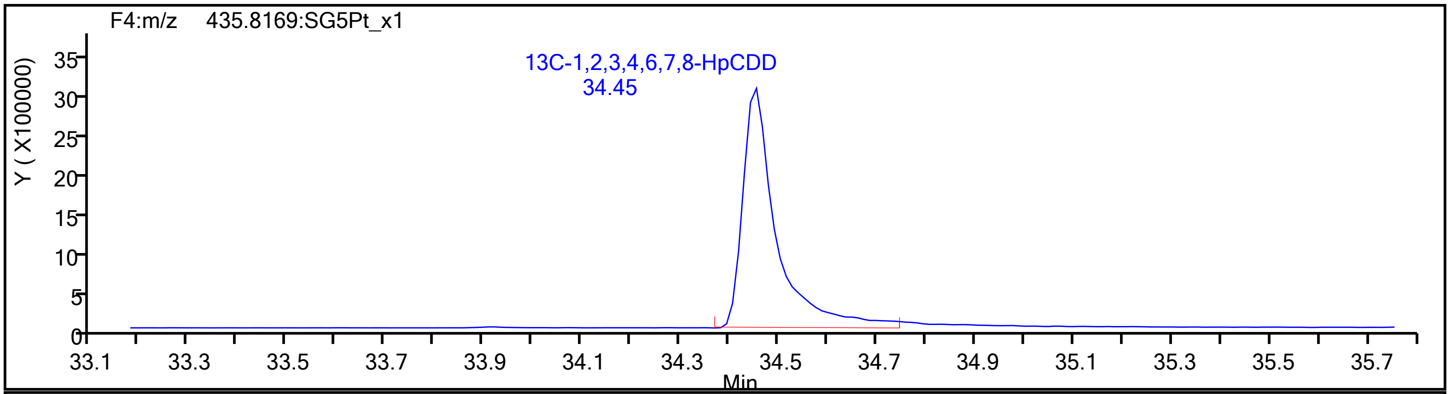

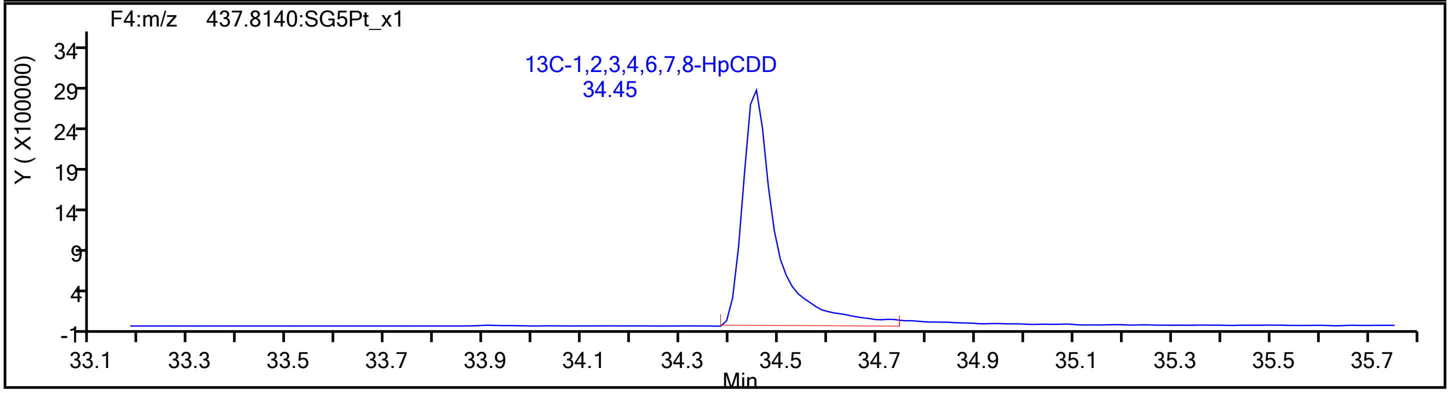

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Injection Date: 27-Jun-2020 16:13:16
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

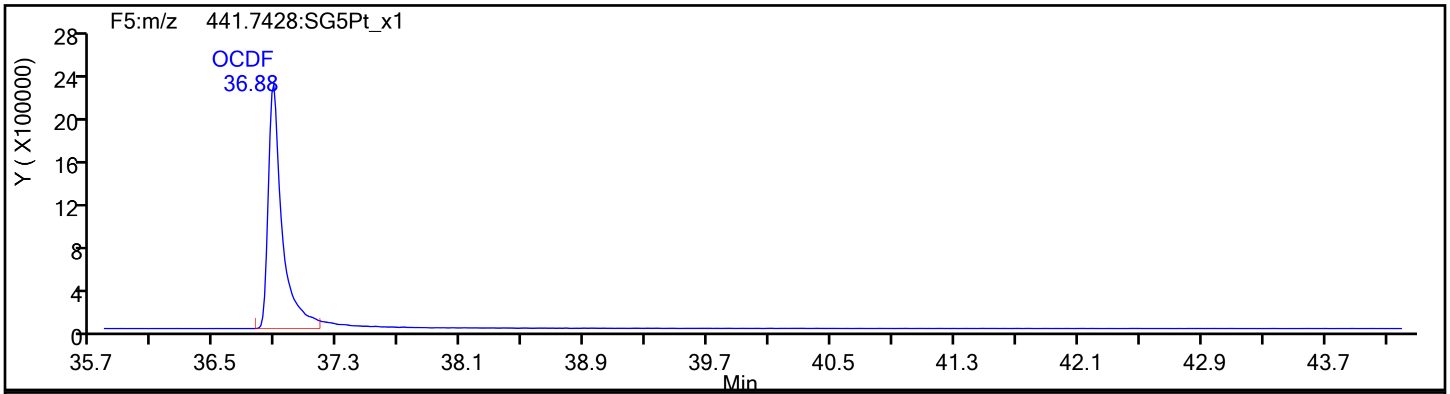

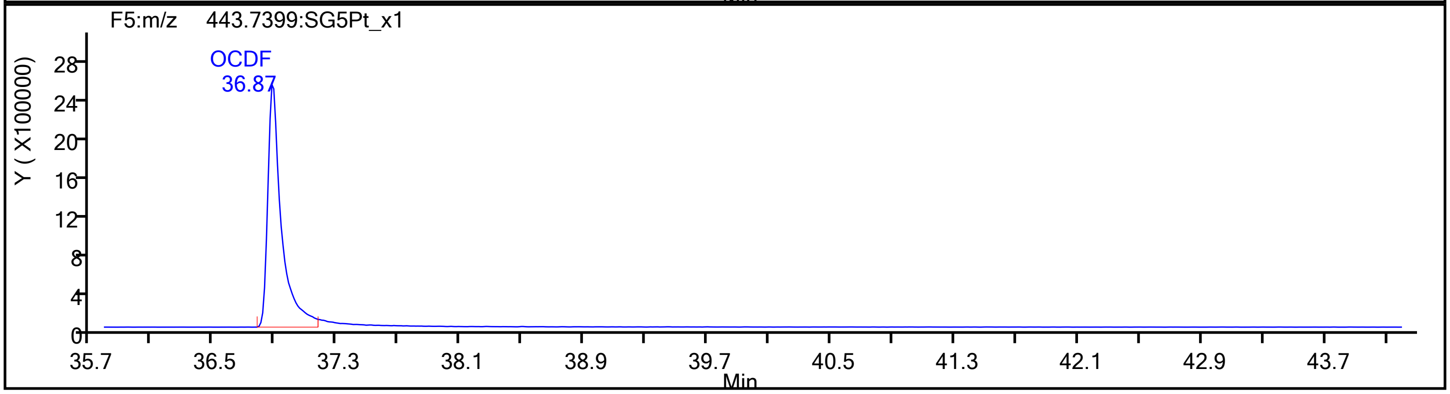

OCDF Standards

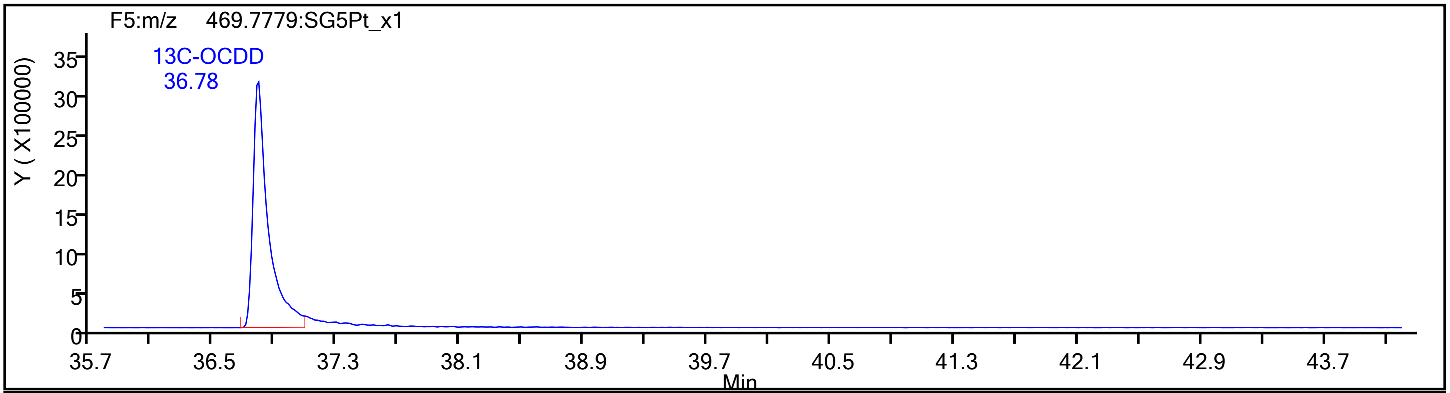

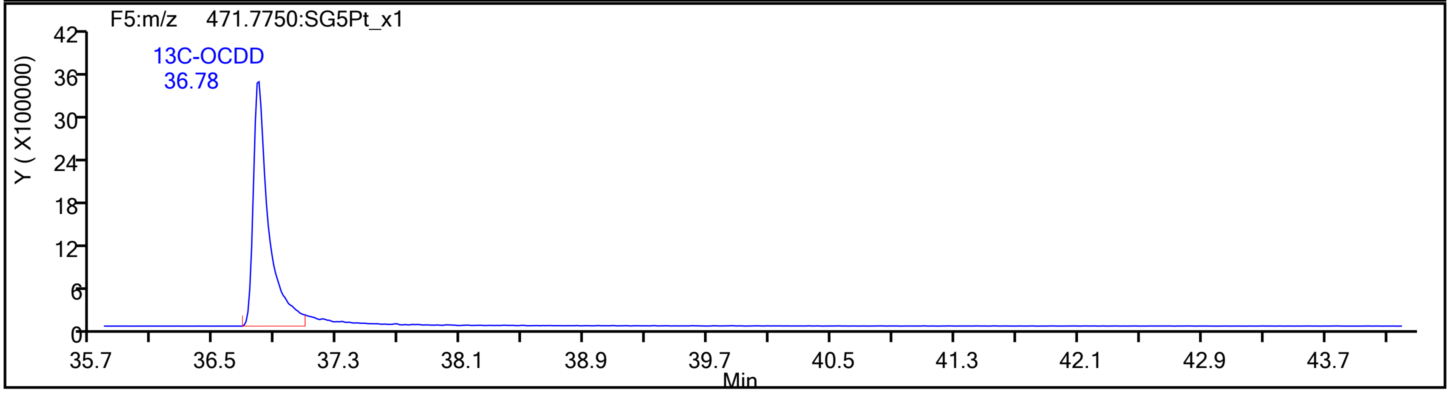

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

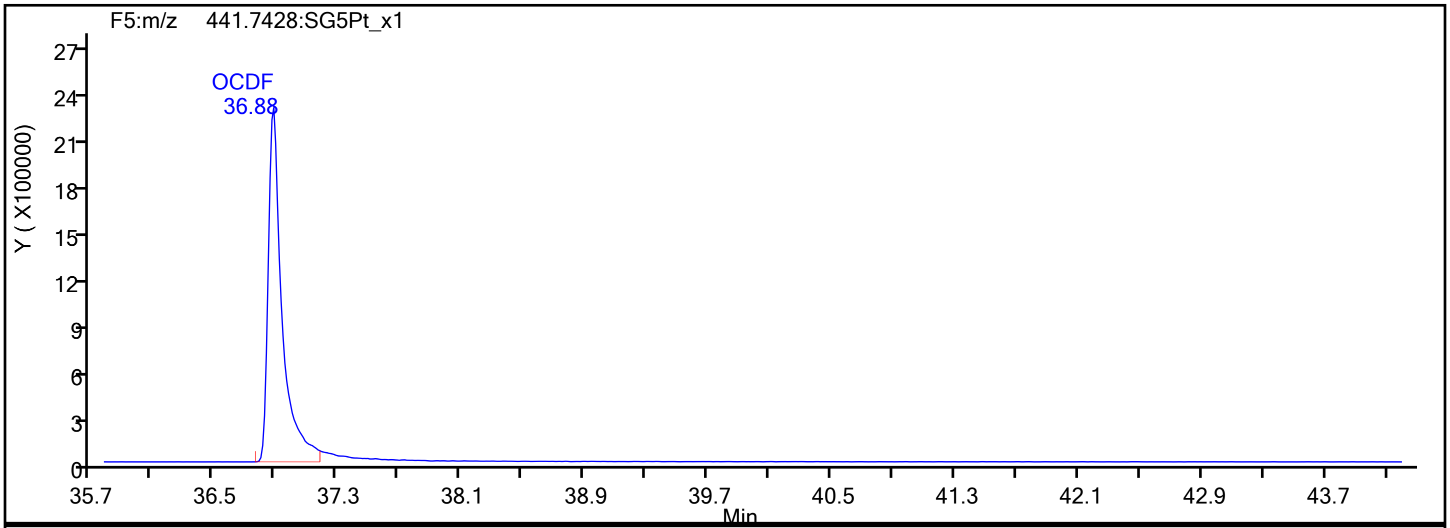

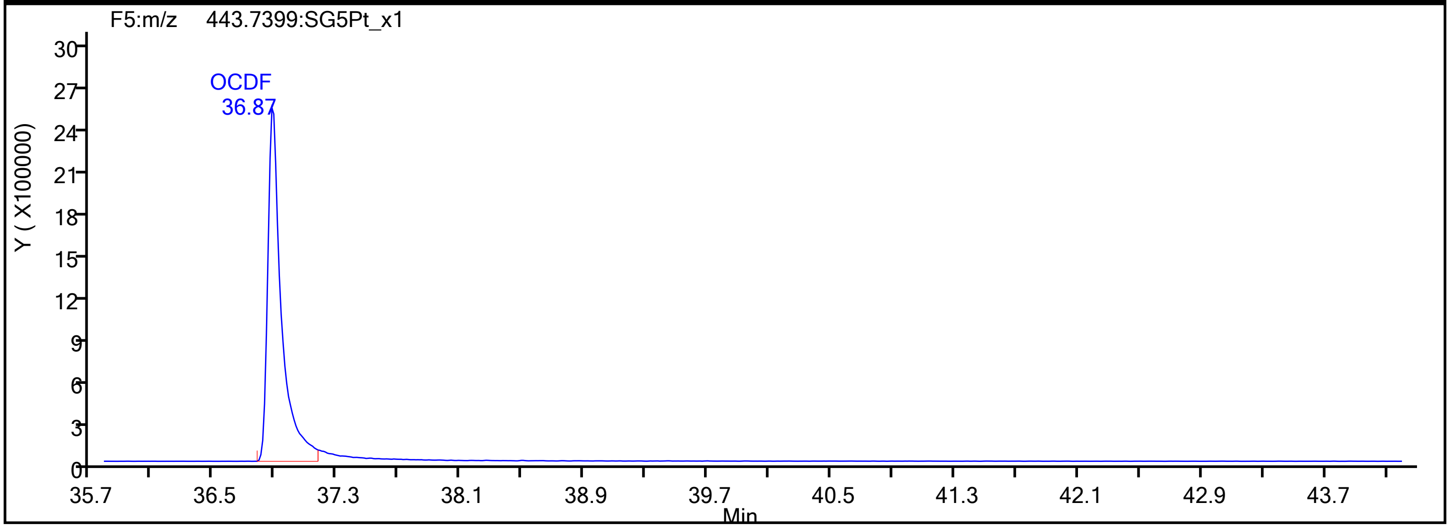

OCDF Interference Mass

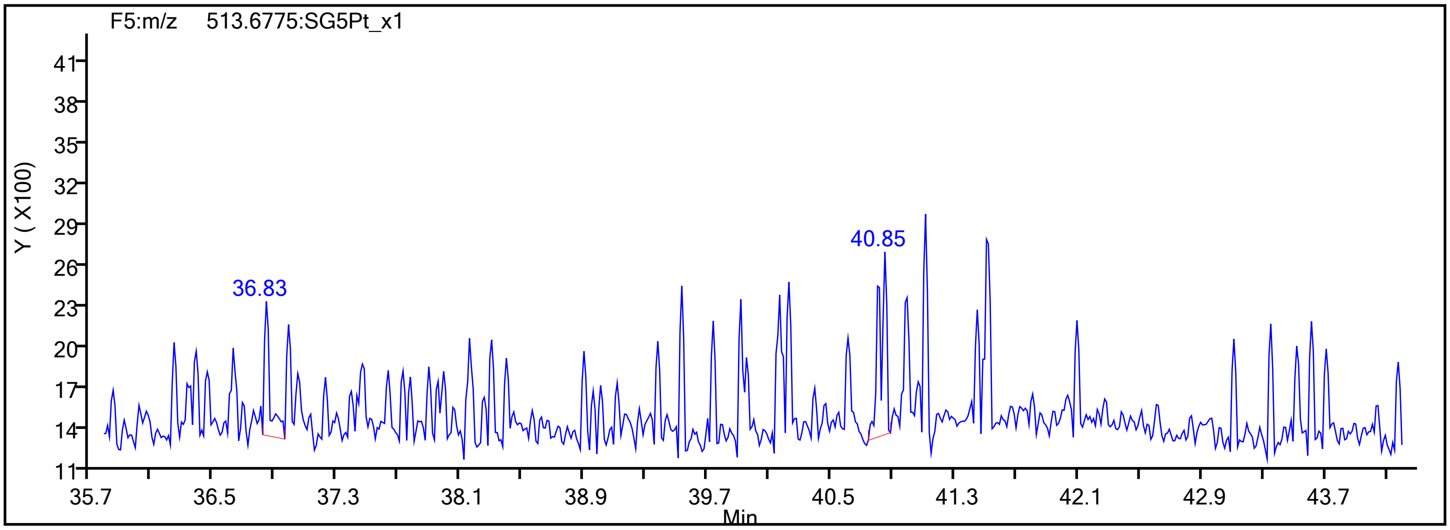

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d
Injection Date: 27-Jun-2020 16:13:16
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

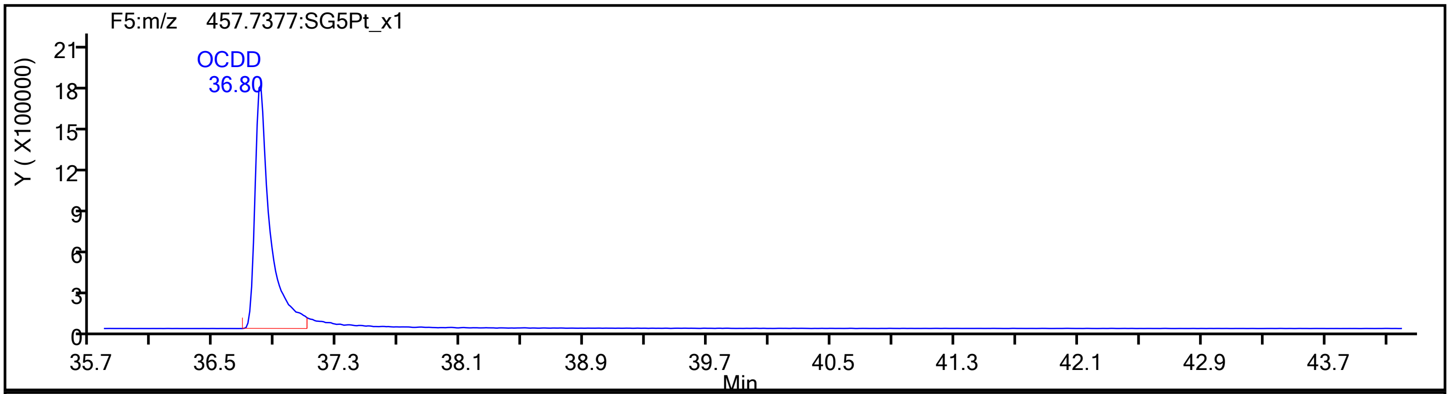

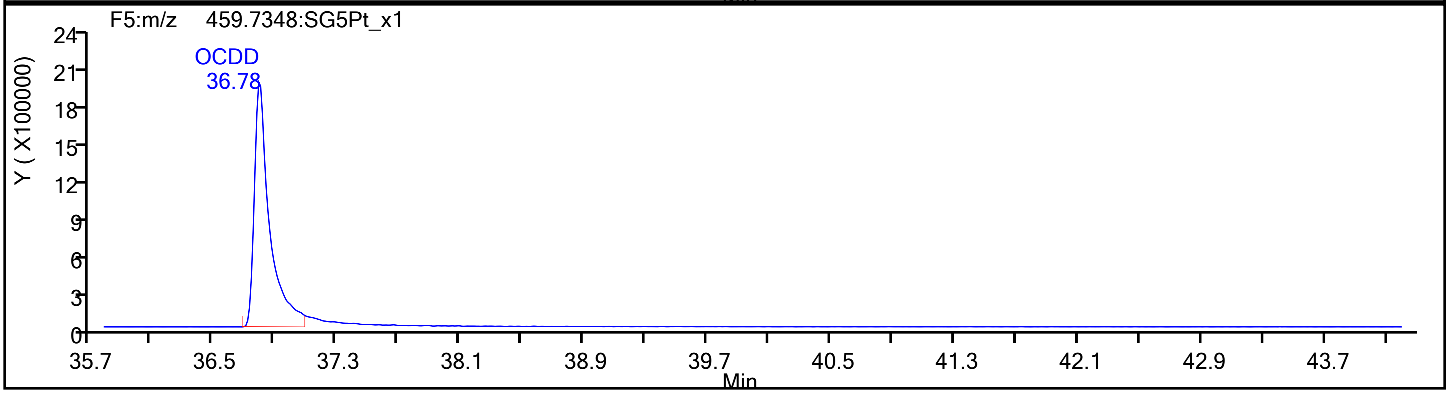

OCDD Standards

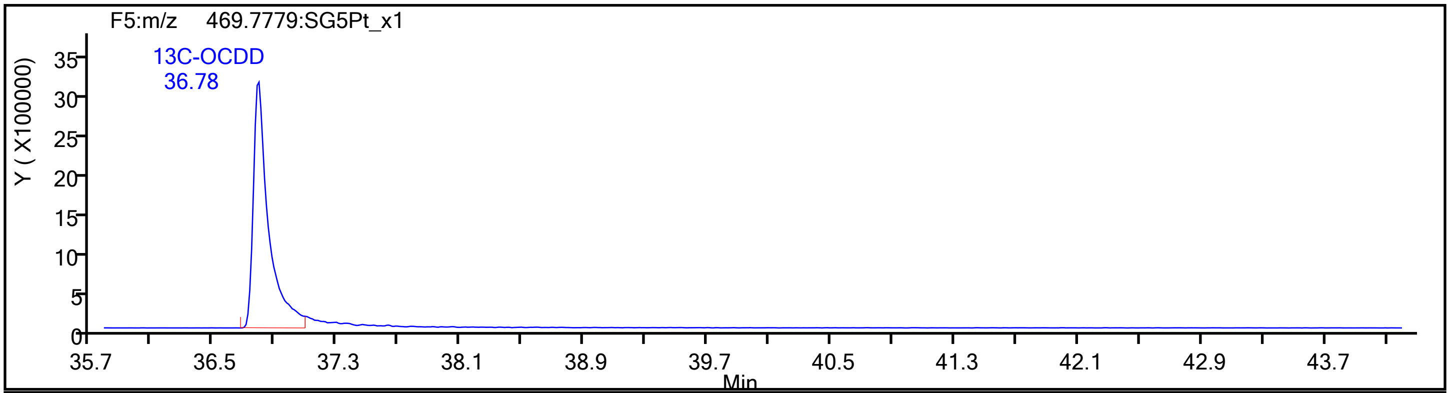

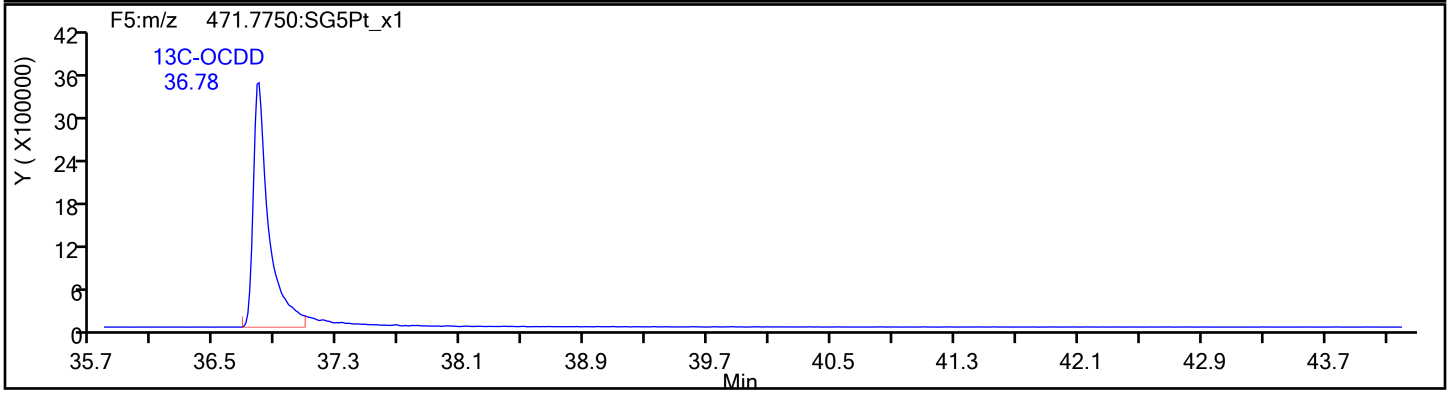

Report Date: 28-Jun-2020 13:17:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

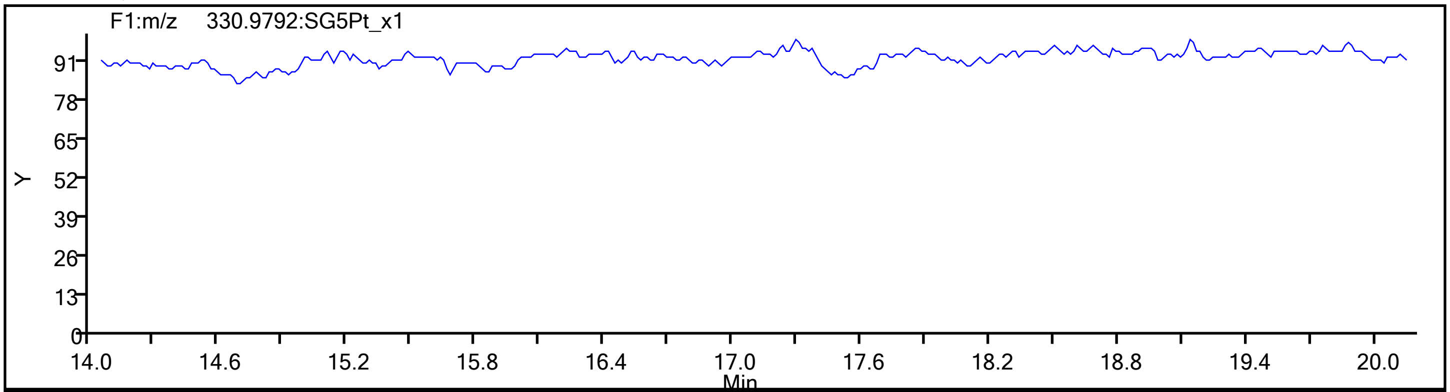
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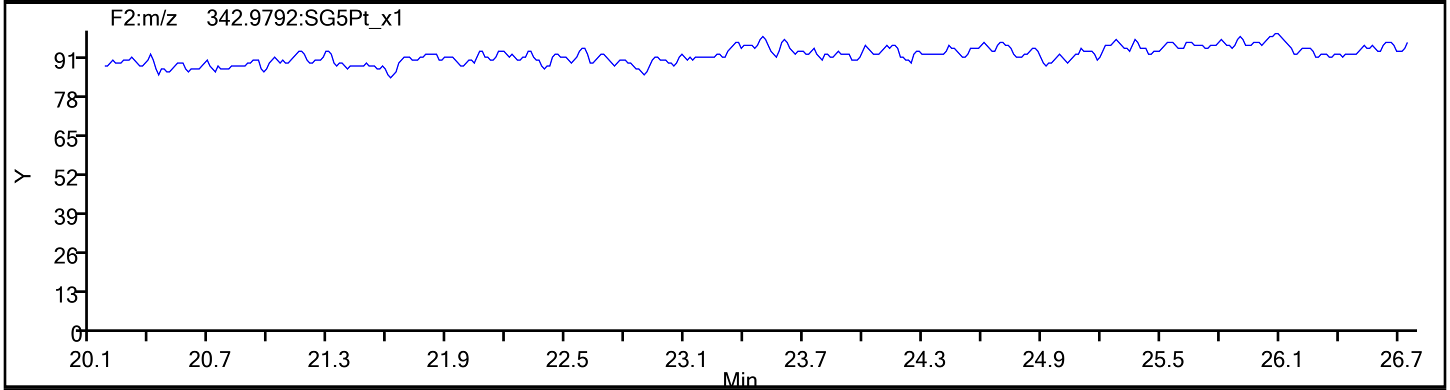
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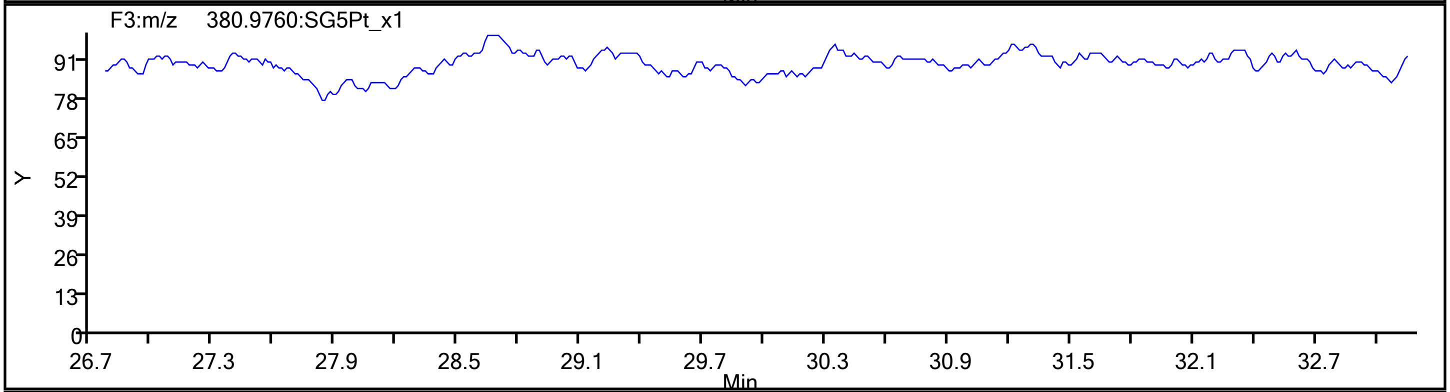
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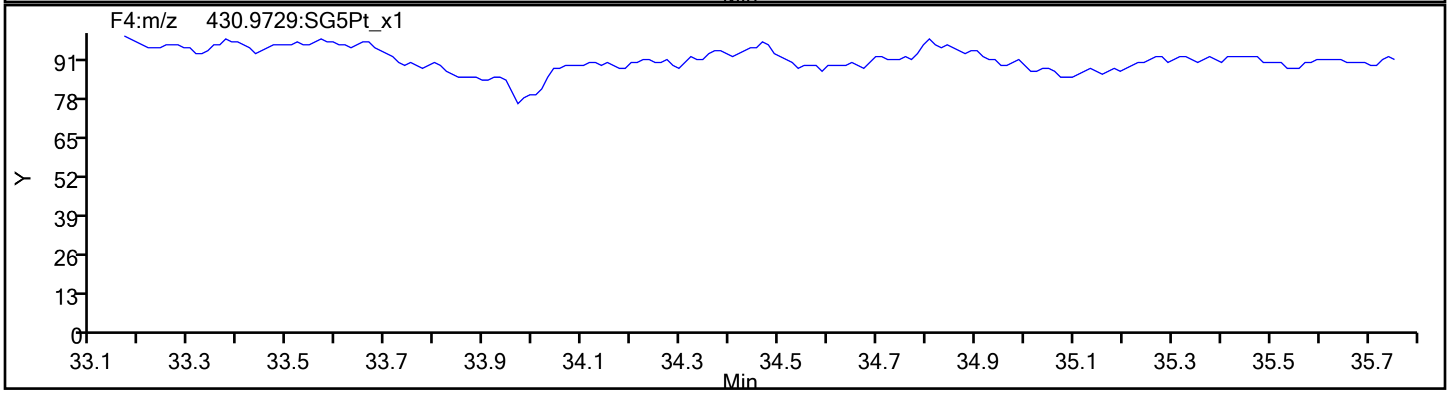
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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_5.d		
Injection Date:	27-Jun-2020 16:13:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

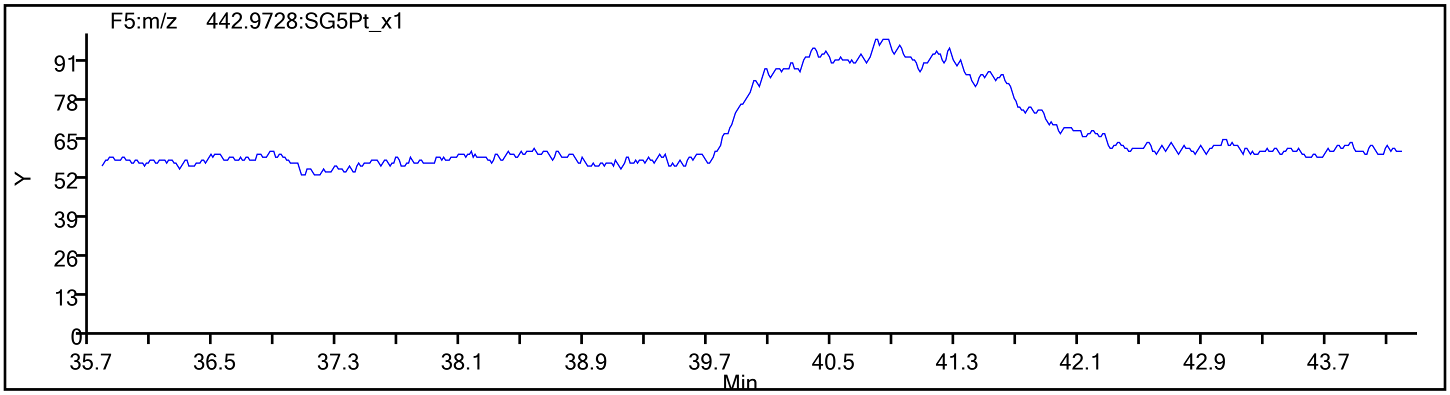

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 27-Jun-2020 16:58:26 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720C CS-5 HRDXNL5_00030
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:11 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	47091167	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	66092582	0.78	1.3726	102.3	102.3	0.2034	0.2034	102	
2,3,7,8-TCDF	17.218	24031823	0.74	0.9104	39.9	39.9	0.0737	0.0737	99.85	
S Total TCDF					39.9	39.9	0.0737	0.0737		
D 13C-2,3,7,8-TCDD	17.899	48446018	0.78	1.0192	100.9	100.9	0.2311	0.2311	101	
2,3,7,8-TCDD	17.914	20673669	0.77	1.0745	39.7	39.7	0.0685	0.0685	99.29	
$ 37Cl4-2,3,7,8-TCDD	17.914	20727504		1.0176	43.3	43.3	0.0494	0.0494	108	
S Total TCDD					39.7	39.7	0.0685	0.0685		
D 13C-1,2,3,7,8-PeCDF	22.142	55450977	1.60	1.1429	103.0	103.0	0.3740	0.3740	103	
1,2,3,7,8-PeCDF	22.170	111571715	1.55	0.9938	202.5	202.5	0.8779	0.8779	101	
D 13C-2,3,4,7,8-PeCDF	23.465	67318305	1.60	1.3997	102.1	102.1	0.3054	0.3054	102	
2,3,4,7,8-PeCDF	23.479	110300391	1.55	0.8117	201.9	201.9	0.9452	0.9452	101	
S Total PeCDF					404.3	404.3	0.9115	0.9115		
D 13C-1,2,3,7,8-PeCDD	24.174	39534333	1.57	0.8232	102.0	102.0	0.1806	0.1806	102	
1,2,3,7,8-PeCDD	24.202	81703665	1.58	1.0181	203.0	203.0	0.3084	0.3084	101	
S Total PeCDD					203.0	203.0	0.3084	0.3084		
D 13C-1,2,3,4,7,8-HxCDF	30.292	46230589	0.51	1.1388	100.4	100.4	0.7962	0.7962	100	
1,2,3,4,7,8-HxCDF	30.319	77185884	1.20	0.8061	207.1	207.1	2.257	2.257	104	
D 13C-1,2,3,6,7,8-HxCDF	30.492	43730114	0.51	1.0803	100.1	100.1	0.8393	0.8393	100	
1,2,3,6,7,8-HxCDF	30.518	87985501	1.20	0.9818	204.9	204.9	2.116	2.116	102	
D 13C-2,3,4,6,7,8-HxCDF	31.370	38999309	0.50	0.9494	101.6	101.6	0.9550	0.9550	102	
2,3,4,6,7,8-HxCDF	31.384	81444661	1.20	1.0382	201.1	201.1	1.658	1.658	101	
D 13C-1,2,3,7,8,9-HxCDF	32.195	35770919	0.50	0.8670	102.0	102.0	1.046	1.046	102	
1,2,3,7,8,9-HxCDF	32.209	74251577	1.21	1.0321	201.1	201.1	1.769	1.769	101	
S Total HxCDF					814.3	814.3	1.950	1.950		
* 13C-1,2,3,7,8,9-HxCDD	32.009	40436362	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	38766257	1.27	0.9356	102.5	102.5	0.5617	0.5617	102	
1,2,3,4,7,8-HxCDD	31.583	63965429	1.22	0.8202	201.2	201.2	1.041	1.041	101	
D 13C-1,2,3,6,7,8-HxCDD	31.677	42083843	1.27	1.0416	99.9	99.9	0.5045	0.5045	99.92	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	80138616	1.25	0.9367	203.3	203.3	0.9845	0.9845	102	
1,2,3,7,8,9-HxCDD	32.022	80351223	1.24	0.9905	200.7	200.7	0.8953	0.8953	100	
S Total HxCDD					605.1	605.1	0.9736	0.9736		
D 13C-1,2,3,4,6,7,8-HpCDF	33.652	32459322	0.44	0.7899	101.6	101.6	2.924	2.924	102	
1,2,3,4,6,7,8-HpCDF	33.664	95697028	1.03	1.4527	202.9	202.9	4.421	4.421	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.721	37143667	0.44	0.9093	101.0	101.0	2.540	2.540	101	
1,2,3,4,7,8,9-HpCDF	34.734	80293602	1.03	1.0585	204.2	204.2	6.090	6.090	102	
S Total HpCDF					407.2	407.2	5.256	5.256		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	31631816	1.07	0.7637	102.4	102.4	1.068	1.068	102	
1,2,3,4,6,7,8-HpCDD	34.454	67048589	1.05	1.0540	201.1	201.1	1.882	1.882	101	
S Total HpCDD					201.1	201.1	1.882	1.882		
D 13C-OCDD	36.773	53743483	0.91	0.6377	208.4	208.4	0.4319	0.4319	104	
OCDF	36.869	143689837	0.89	1.2965	412.4	412.4	0.7723	0.7723	103	
OCDD	36.785	124592297	0.89	1.1499	403.2	403.2	0.9180	0.9180	101	

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 27-Jun-2020 16:58:26 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720C CS-5 HRDXNL5_00030
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:11 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:33

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		20744114	5030304	5431	13577	926		
333.9339	17.702	17.702	0		26347053	6346743	5290	13225	1200	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.197	0	0.972	28997050	6604308	5848	14620	1129		
317.9389	17.203	17.197	0	0.972	37095532	8404092	6858	17145	1225	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.218	17.215	0	1.001	10233422	2325778	1577	3942	1475		
305.8987	17.218	17.215	0	1.001	13798401	3114518	2452	6130	1270	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.893	0	1.011	21290226	4514811	5431	13577	831		
333.9339	17.899	17.893	0	1.011	27155792	5764821	5290	13225	1090	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.001	9004735	1990219	1540	3850	1292		
321.8936	17.914	17.911	0	1.001	11668934	2586156	1486	3715	1740	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	20727504	4526738	2289	5722	1978		
13C-1,2,3,7,8-PeCDF											
351.9000	22.142	22.148	0	1.251	34101952	5568566	11676	29190	477		
353.8970	22.142	22.148	0	1.251	21349025	3536770	7775	19437	455	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.164	0	1.001	67870240	10977307	18889	47222	581		
341.8567	22.170	22.164	0	1.001	43701475	7080026	12886	32215	549	1.55(1.32-1.78)	

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.465	23.460	0	1.326	41421444	6395001	11676	29190	548		
353.8970	23.451	23.460	0	1.325	25896861	3959331	7775	19437	509	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.479	23.487	0	1.001	66994283	10114093	18889	47222	535		
341.8567	23.493	23.487	0	1.001	43306108	6551142	12886	32215	508	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.174	24.180	0	1.366	24127675	3502452	3897	9742	899		
369.8919	24.174	24.180	0	1.366	15406658	2212743	2867	7167	772	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	50045436	7220038	4277	10692	1688		
357.8516	24.202	24.204	0	1.001	31658229	4577726	2900	7250	1579	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.292	30.298	0	0.946	15561006	2492673	10006	25015	249		
385.8610	30.292	30.298	0	0.946	30669583	4958650	19430	48575	255	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.319	30.319	0	1.001	42097722	6728295	29717	74292	226		
375.8178	30.319	30.319	0	1.001	35088162	5562996	24501	61252	227	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.492	30.497	0	0.953	14754136	2189365	10006	25015	219		
385.8610	30.492	30.497	0	0.953	28975978	4334204	19430	48575	223	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.518	30.519	0	1.001	47992478	7313210	29717	74292	246		
375.8178	30.518	30.519	0	1.001	39993023	6069882	24501	61252	248	1.20(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.370	31.370	0	0.980	12959157	2586887	10006	25015	259		
385.8610	31.370	31.370	0	0.980	26040152	5287733	19430	48575	272	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	44371063	9110423	29717	74292	307		
375.8178	31.384	31.384	0	1.000	37073598	7633338	24501	61252	312	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.195	32.201	0	1.006	11860781	2490082	10006	25015	249		
385.8610	32.195	32.201	0	1.006	23910138	4934913	19430	48575	254	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.209	32.214	0	1.000	40688418	8483661	29717	74292	285		
375.8178	32.209	32.214	0	1.000	33563159	7129851	24501	61252	291	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.009	32.015	0		22604268	4479291	9683	24207	463		
403.8529	32.009	32.015	0		17832094	3637016	7378	18445	493	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	21667317	5107064	9683	24207	527		
403.8529	31.570	31.570	0	0.986	17098940	4059677	7378	18445	550	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	35170994	8417198	18100	45250	465		
391.8127	31.583	31.583	0	1.000	28794435	6746086	13213	33032	511	1.22(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.990	23533948	4714323	9683	24207	487		
403.8529	31.677	31.677	0	0.990	18549895	3774597	7378	18445	512	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	44510729	9170037	18100	45250	507		
391.8127	31.690	31.693	0	1.000	35627887	7411916	13213	33032	561	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.022	32.028	0	1.014	44490231	9030618	18100	45250	499		
391.8127	32.022	32.028	0	1.014	35860992	7332793	13213	33032	555	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.652	33.657	0	1.051	9868521	2345962	22556	56390	104		
419.8220	33.652	33.657	0	1.051	22590801	5425904	52421	131052	104	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.664	33.667	0	1.000	48618981	11859818	100431	251077	118		
409.7789	33.664	33.667	0	1.000	47078047	11505537	99223	248057	116	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.721	34.731	-1	1.085	11304509	2375469	22556	56390	105		
419.8220	34.721	34.731	-1	1.085	25839158	5367040	52421	131052	102	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.734	34.739	0	1.000	40787420	8523593	100431	251077	85		
409.7789	34.734	34.739	0	1.000	39506182	8251813	99223	248057	83	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	16332026	3557440	12841	32102	277		
437.8140	34.442	34.444	0	1.076	15299790	3316206	13650	34125	243	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	34340240	7503008	27699	69247	271		
425.7737	34.454	34.457	0	1.000	32708349	7082283	26833	67082	264	1.05(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.149	25591254	3908654	4132	10330	946		
471.7750	36.773	36.775	0	1.149	28152229	4254272	4811	12027	884	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	67792500	11313219	7739	19347	1462		
443.7399	36.869	36.871	0	1.003	75897337	12584603	8607	21517	1462	0.89(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	58628225	8872230	7848	19620	1131		
459.7348	36.785	36.787	0	1.000	65964072	9828799	9385	23462	1047	0.89(0.76-1.02)	

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Injection Date: 27-Jun-2020 16:58:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

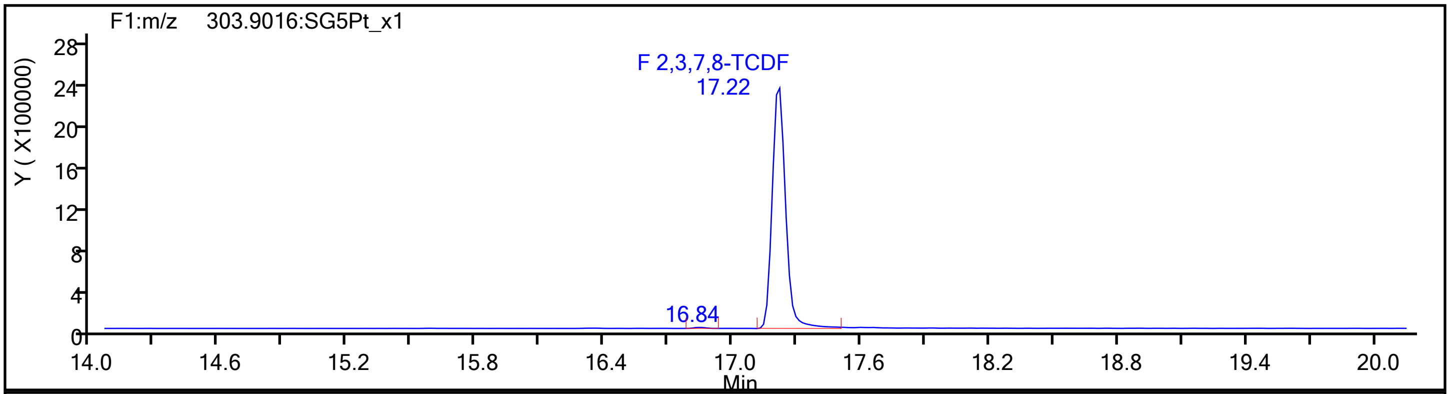

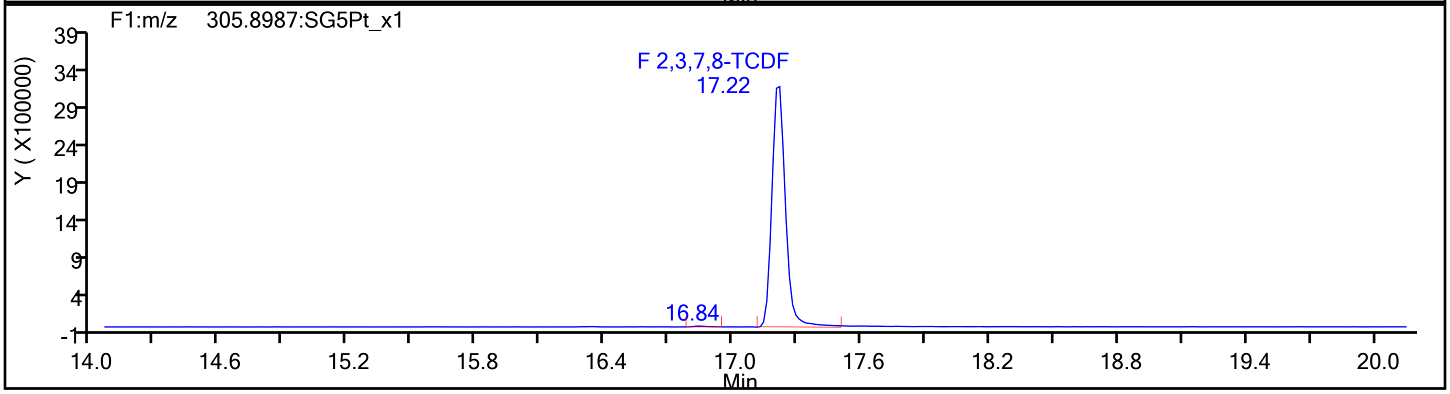

TCDF Standards

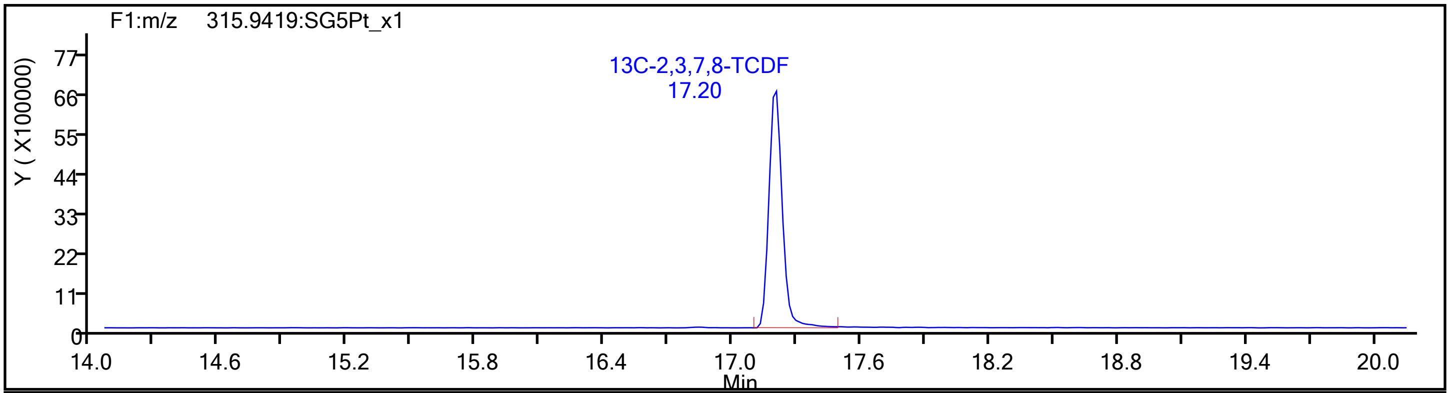

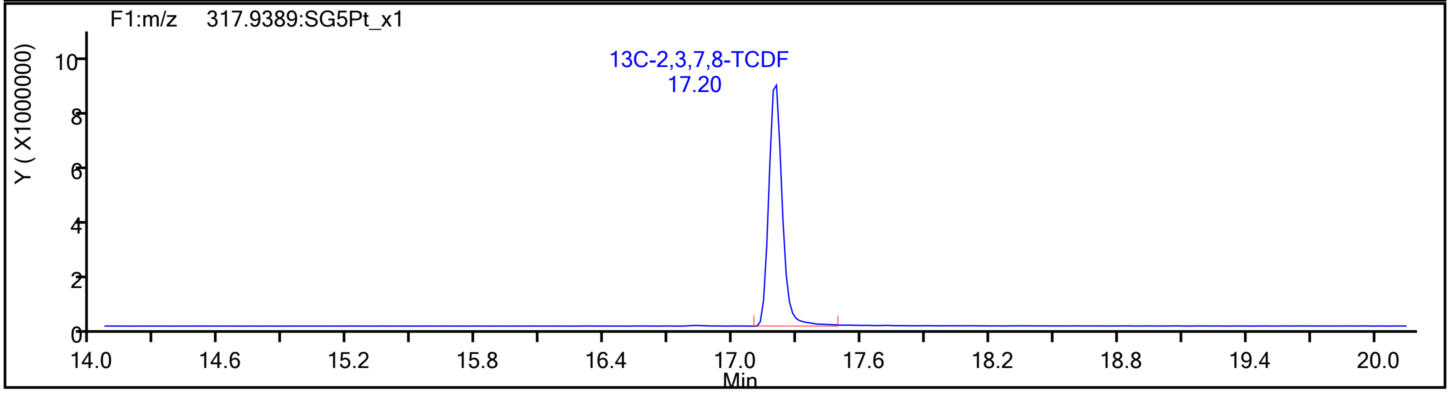

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

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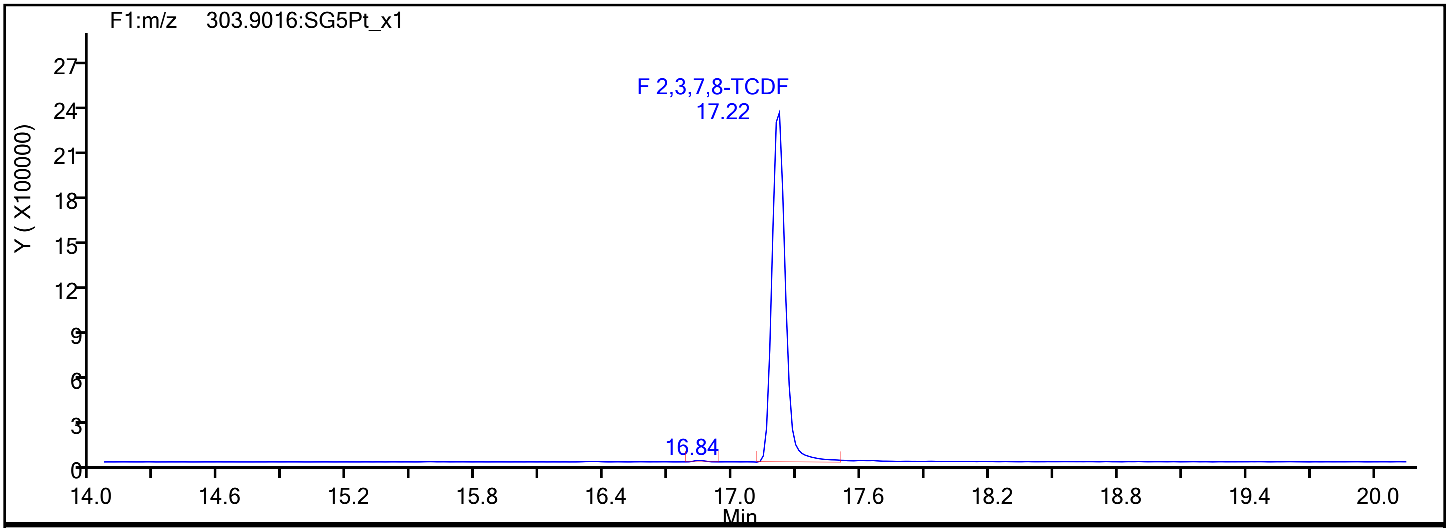

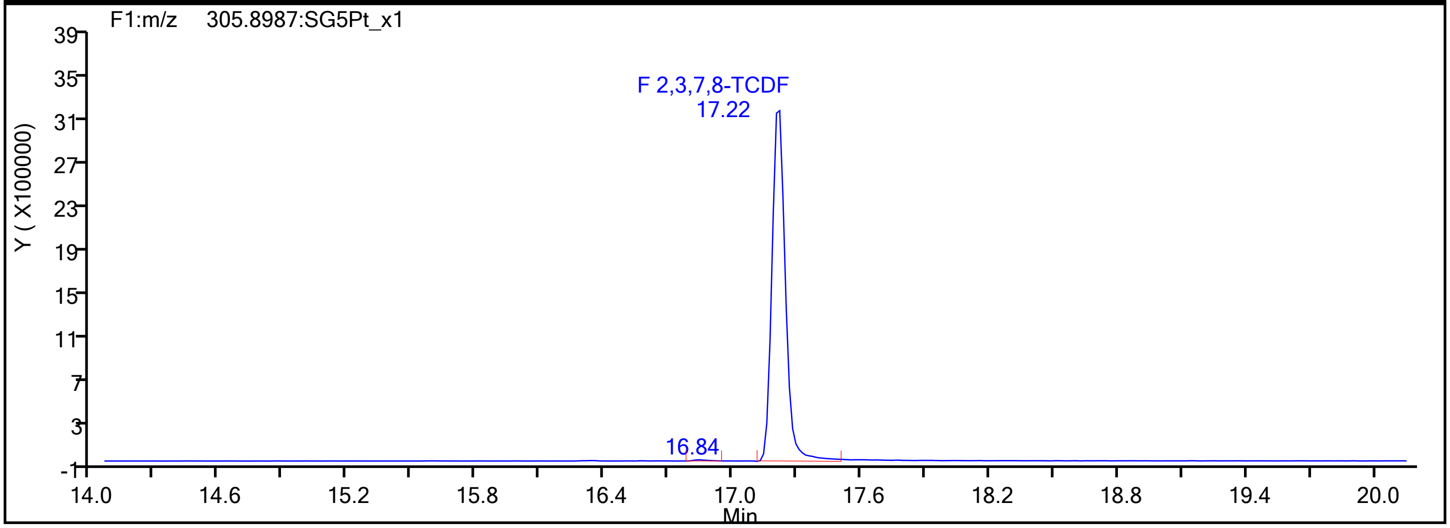

TCDF Interference Mass

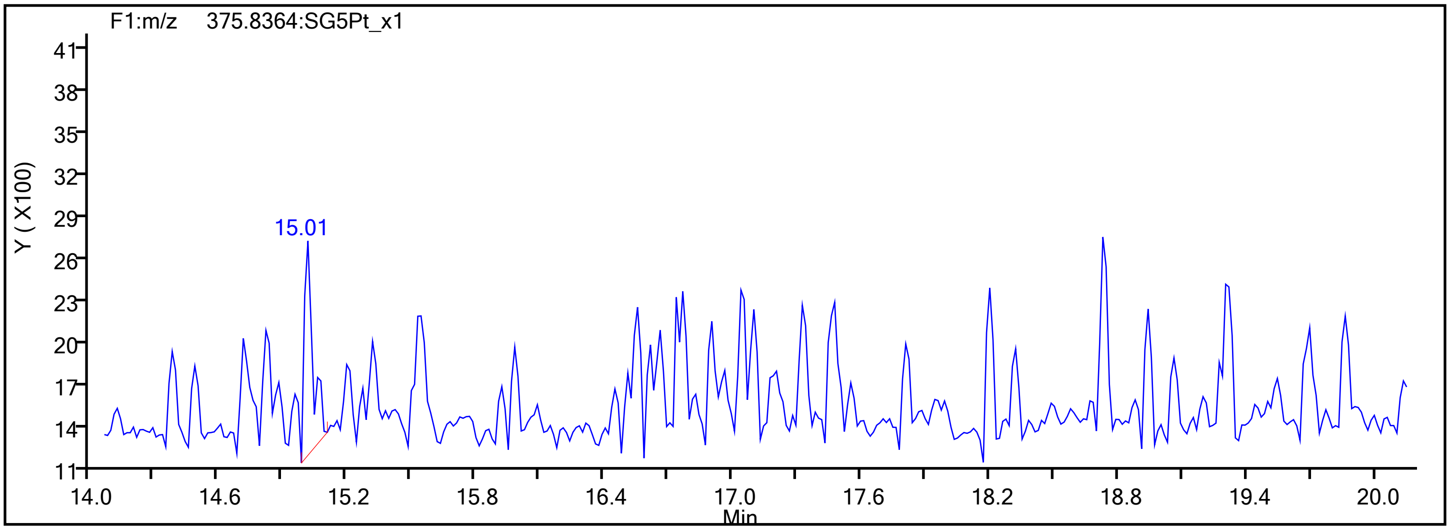

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
Worklist#: 390253
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

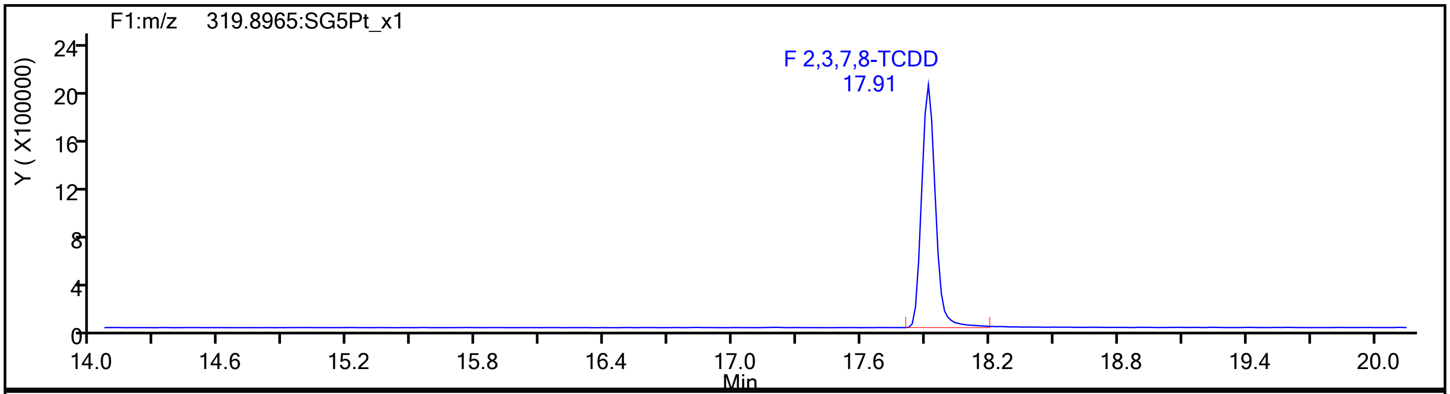

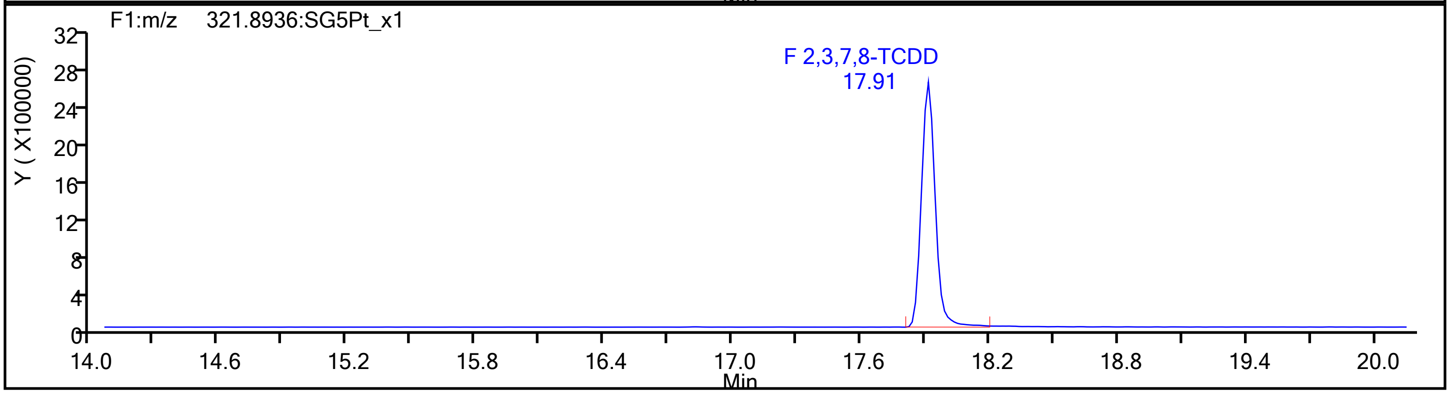

TCDD Standards

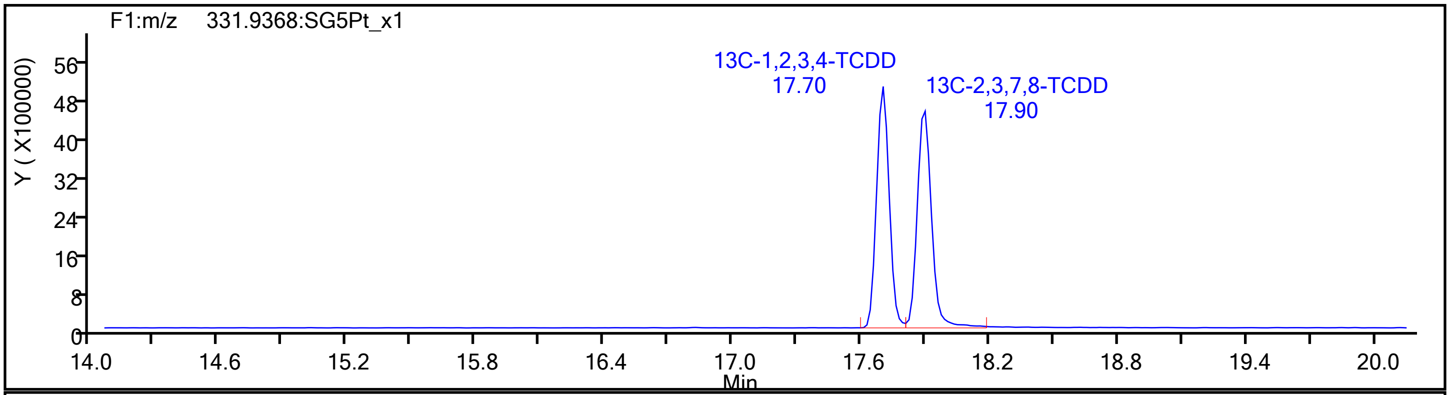

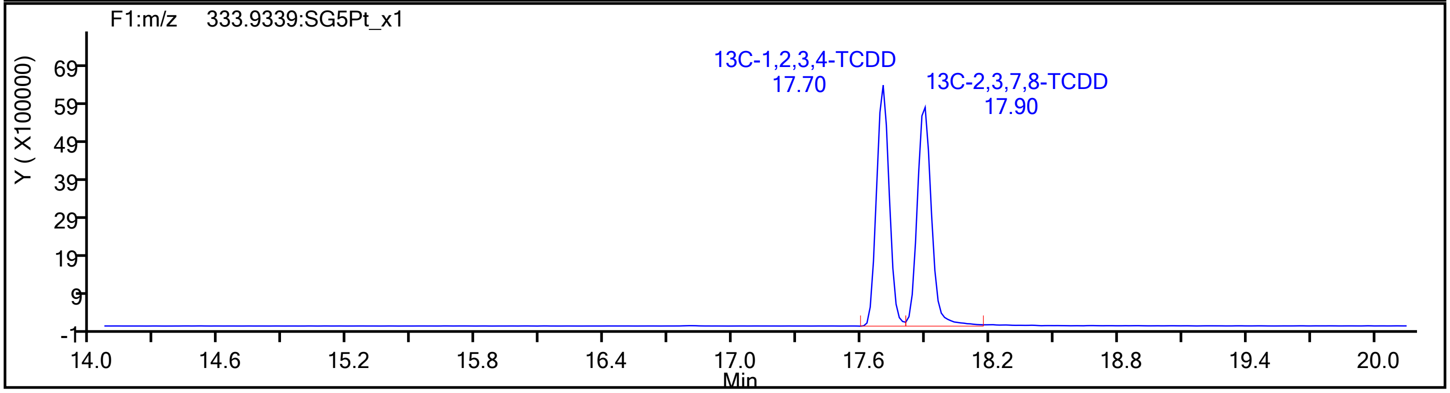

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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37Cl4-TCDD

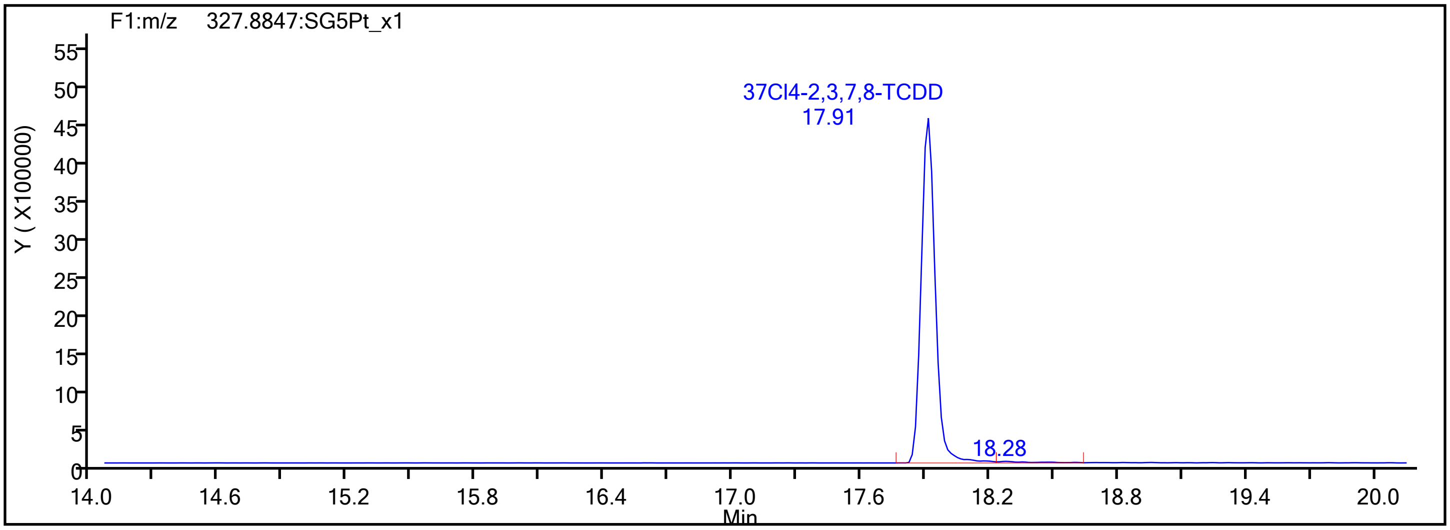

37Cl4-TCDD Standards

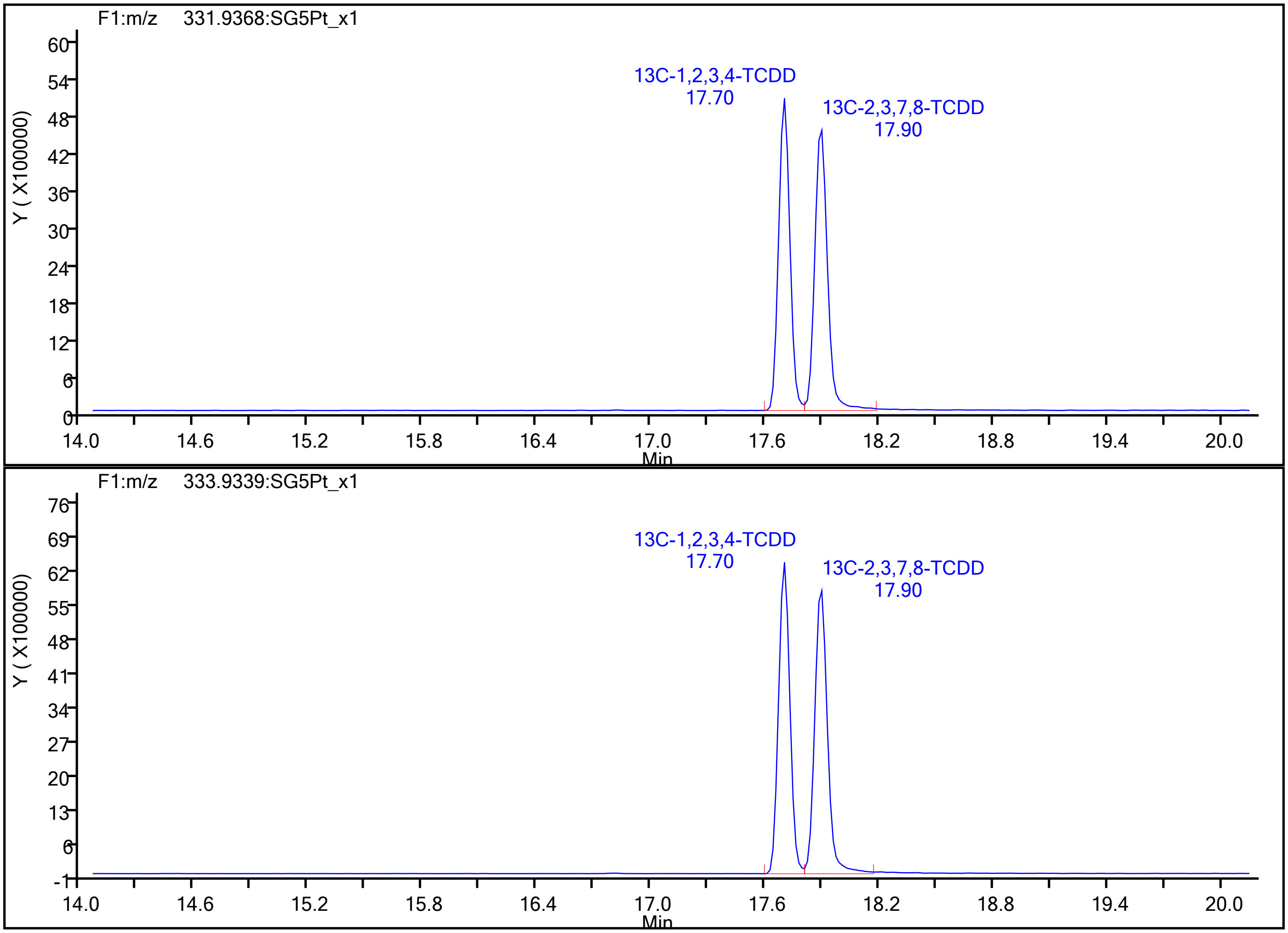

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

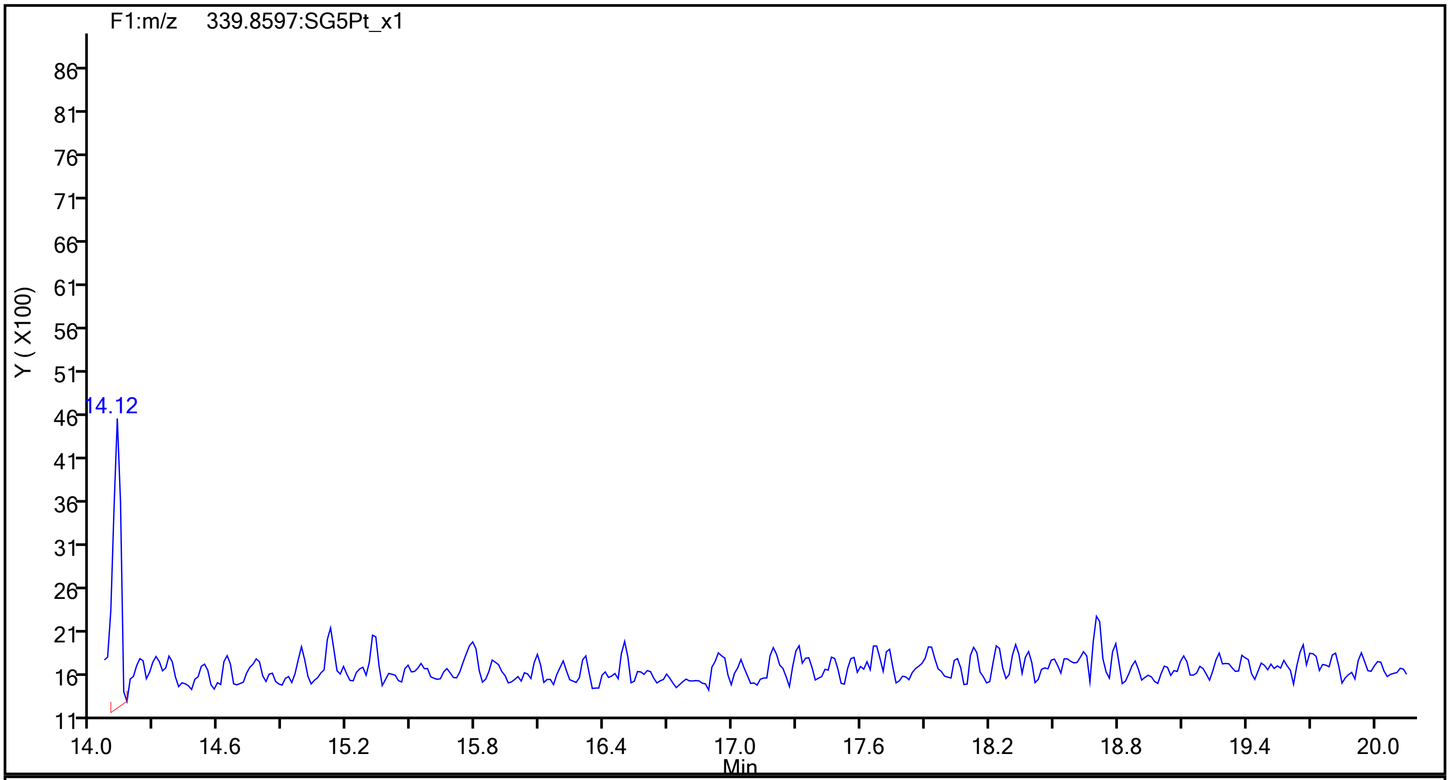

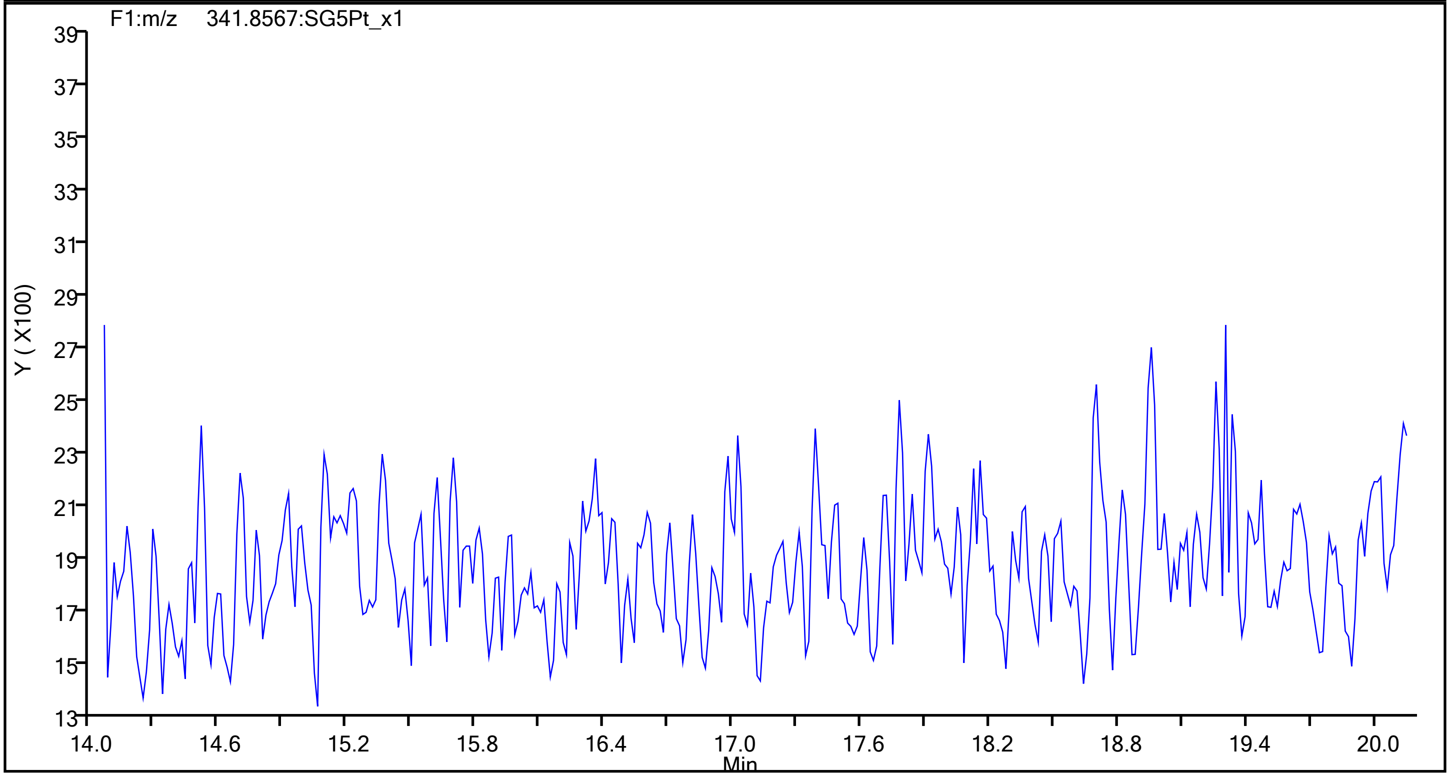

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

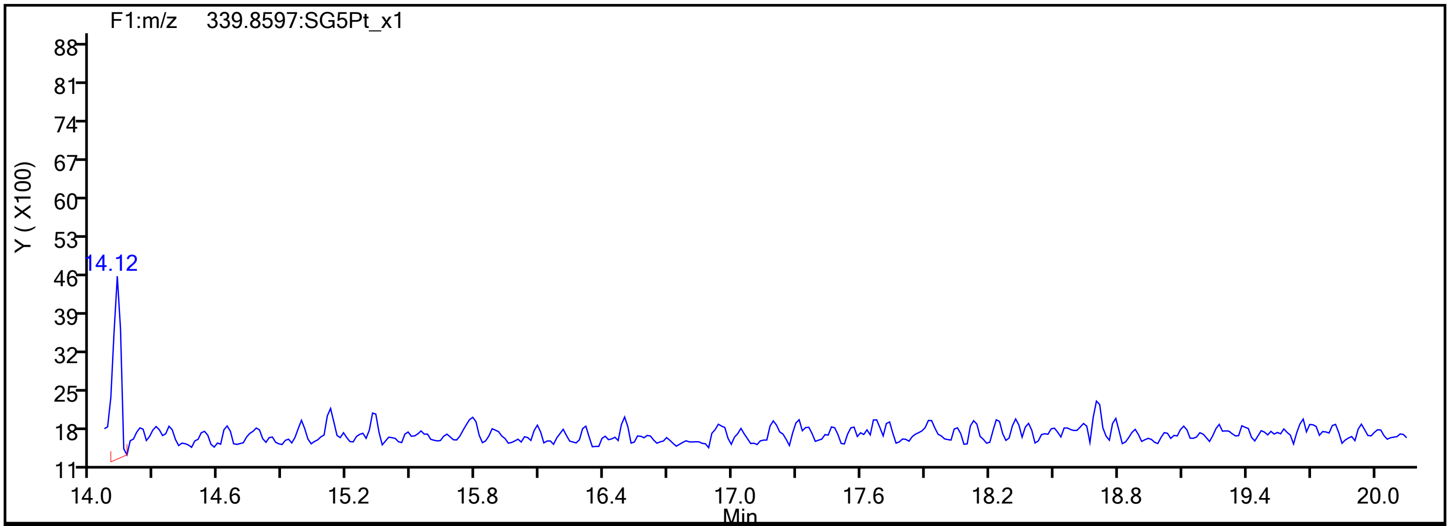

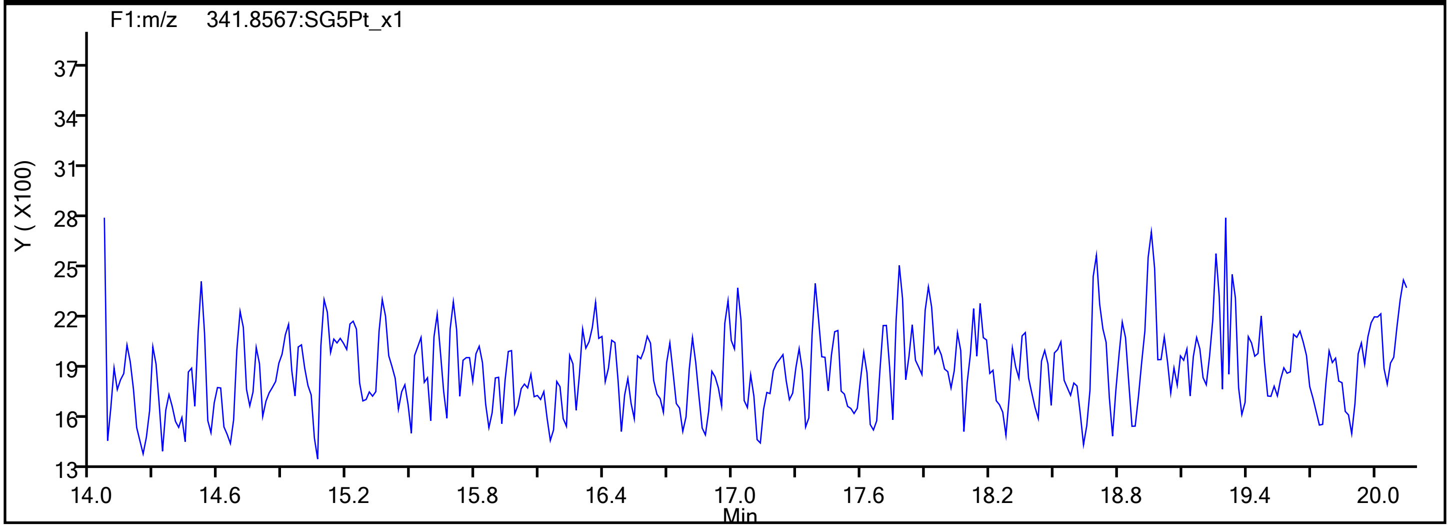

F1 PeCDFs Interference Mass

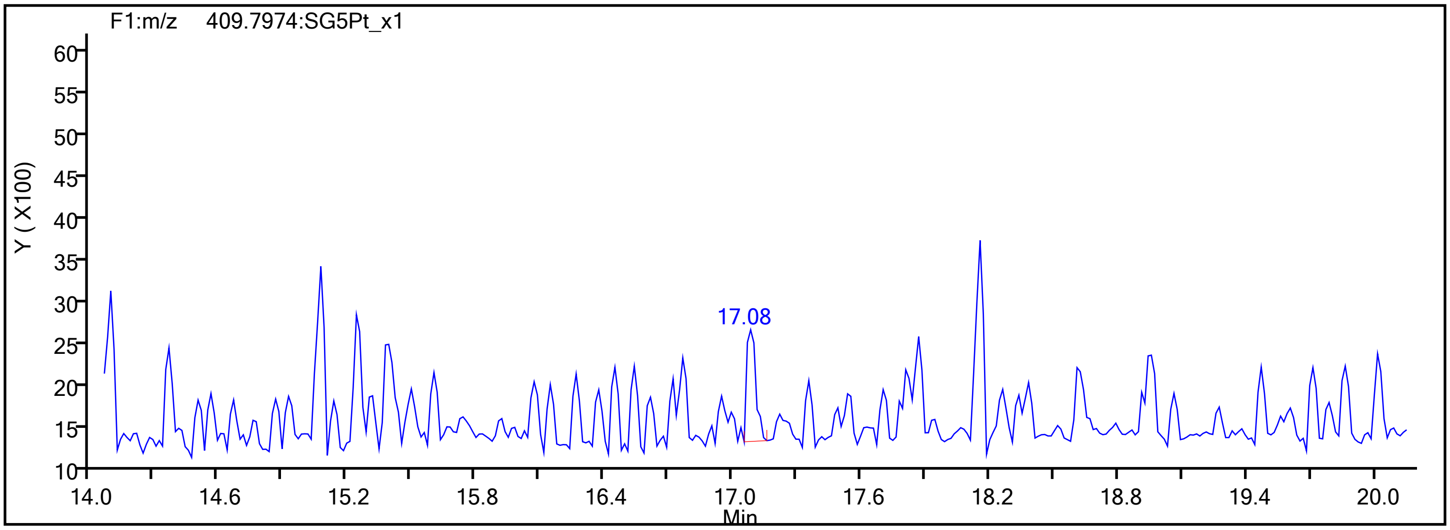

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

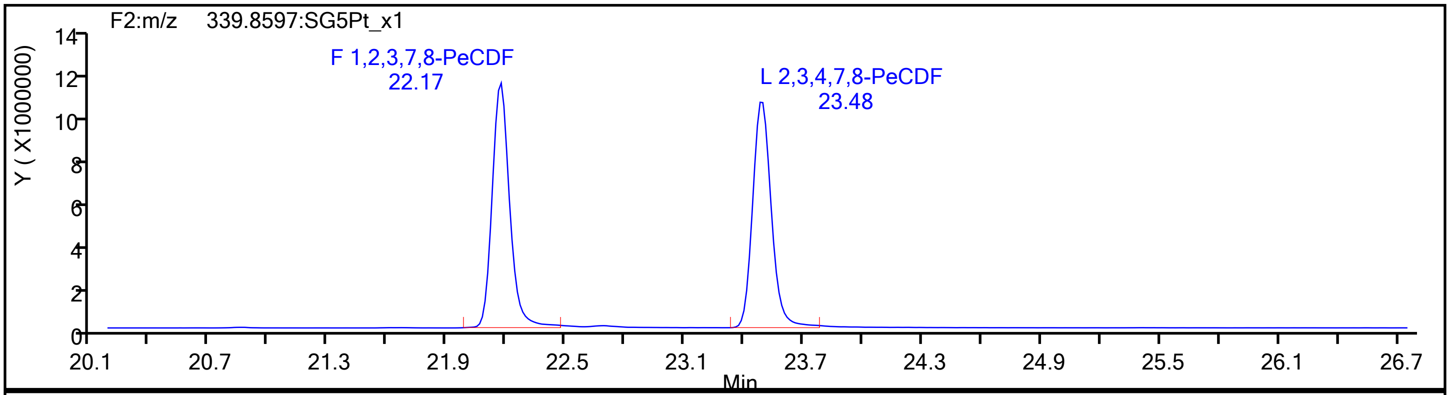

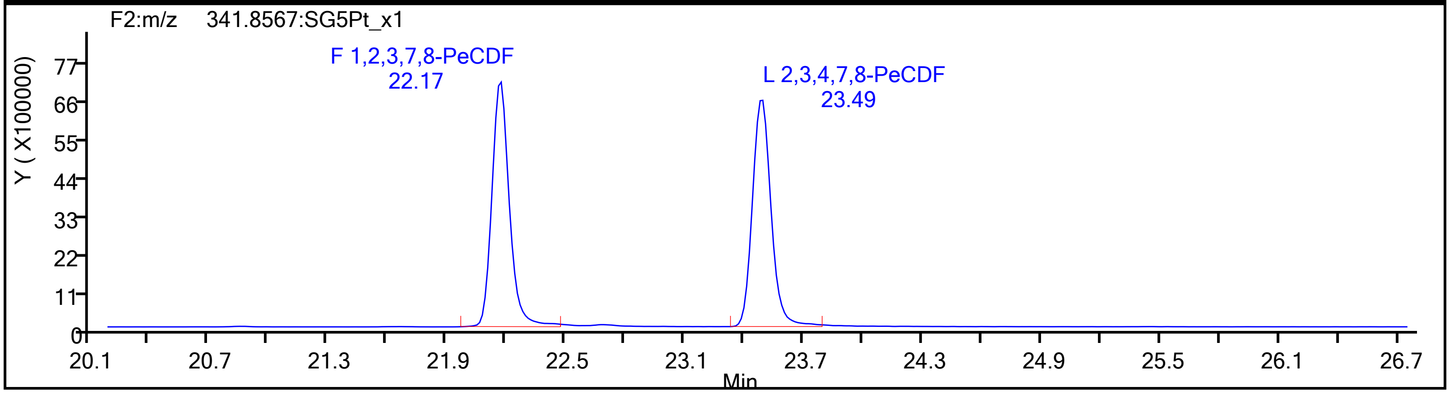

PeCDF Standards

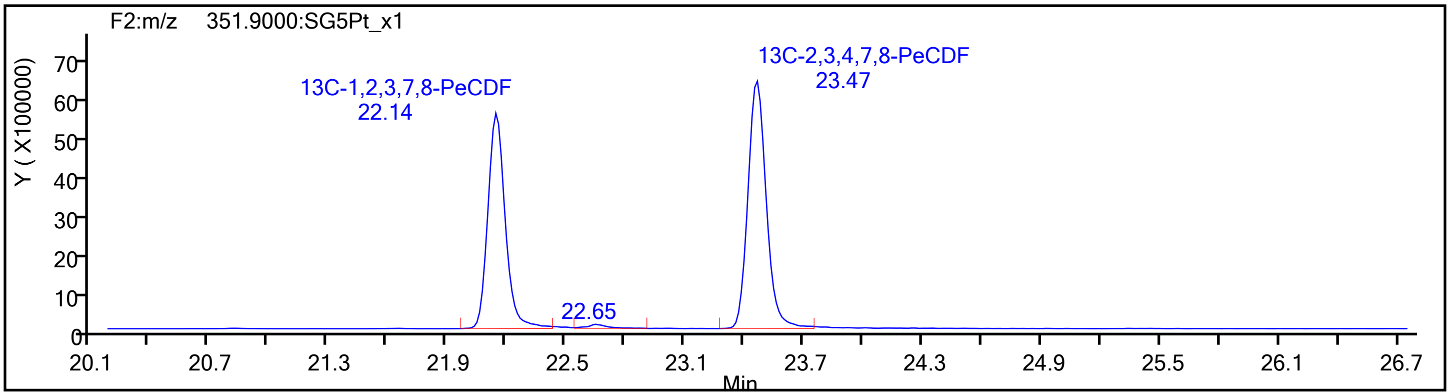

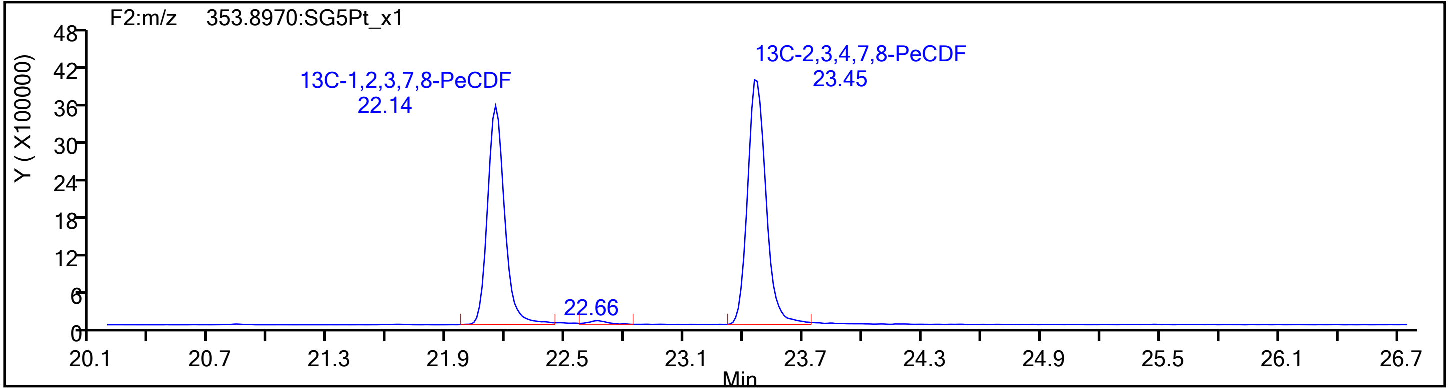

Report Date: 28-Jun-2020 13:17:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: SMA
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Sample Line#: 6
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Column Dia: 0.32 mm

PeCDF

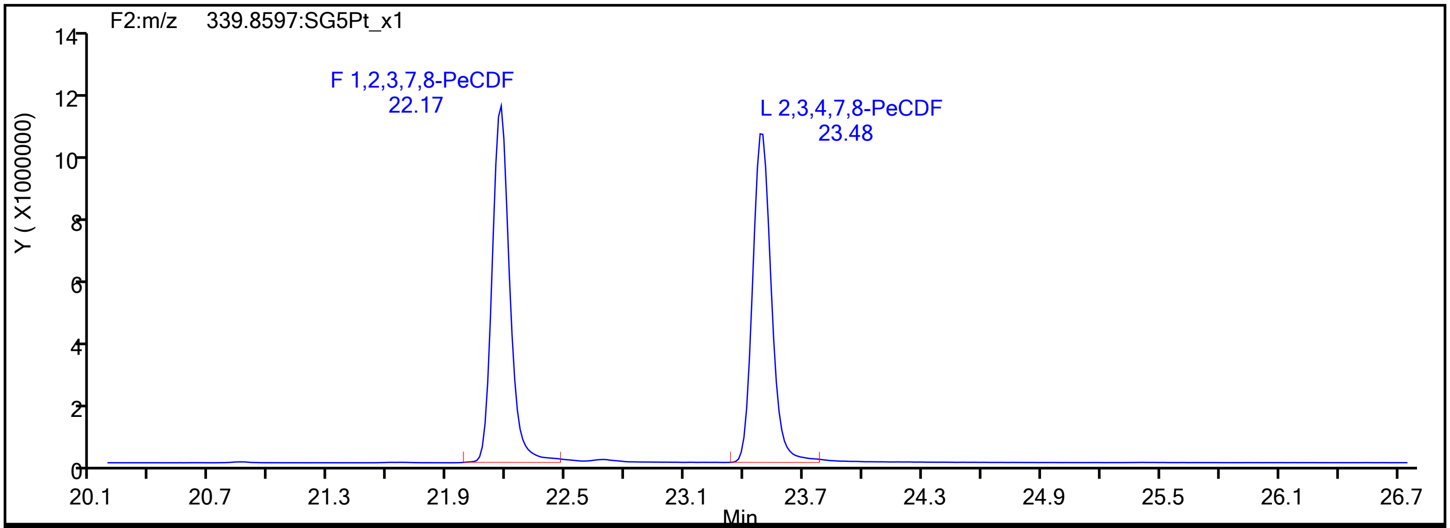

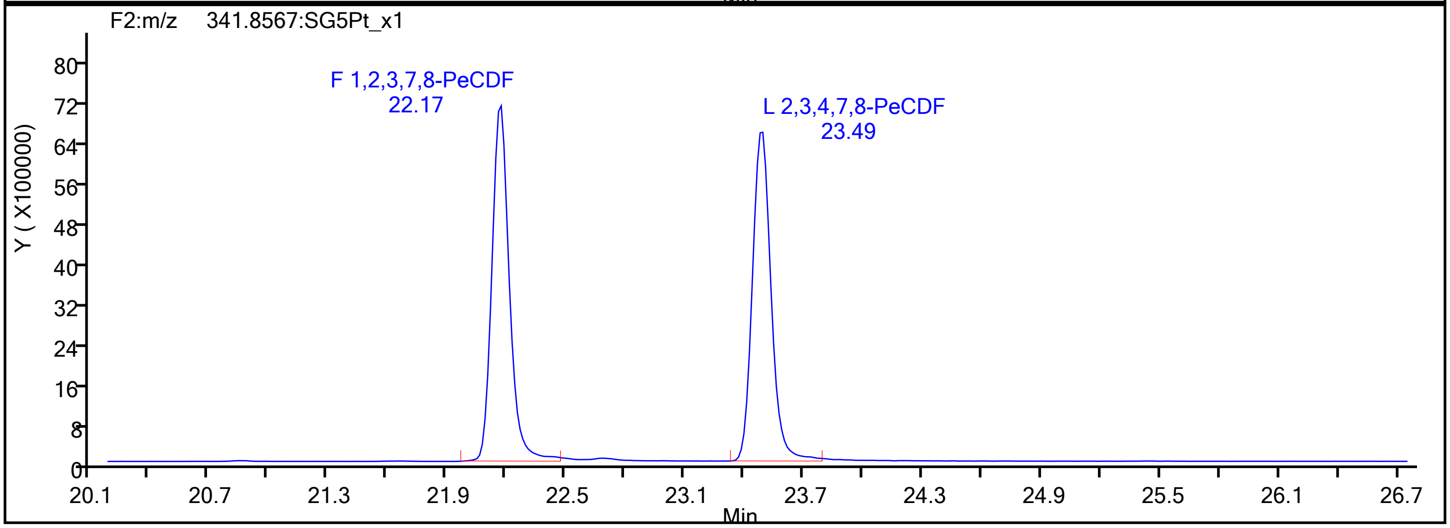

PeCDF Interference Mass

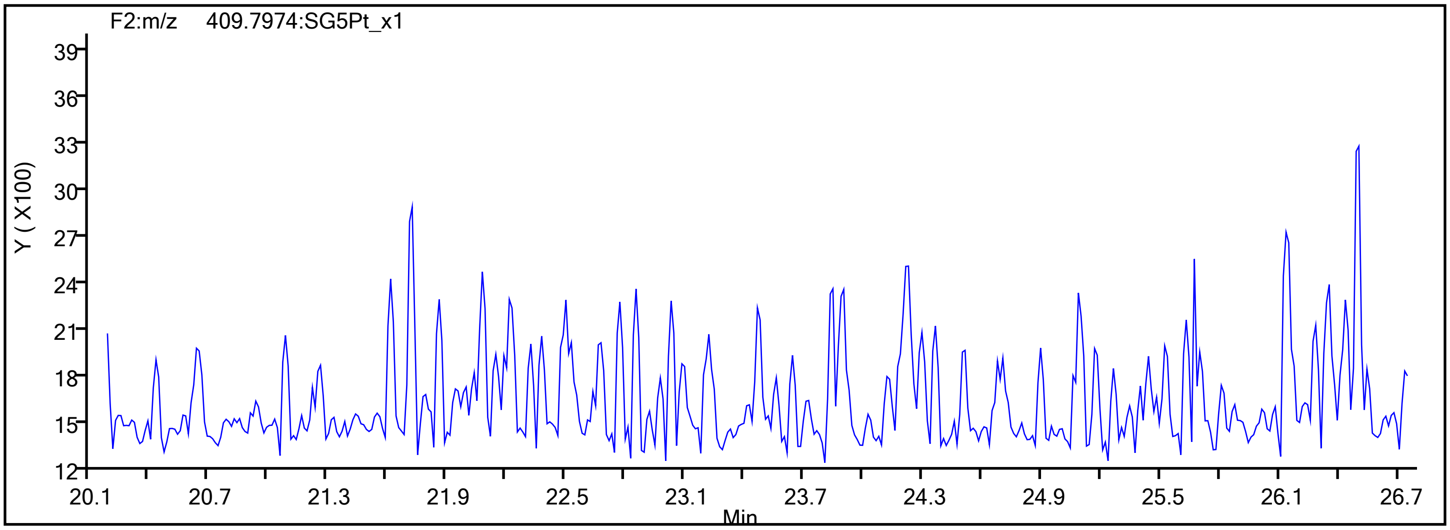

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
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Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

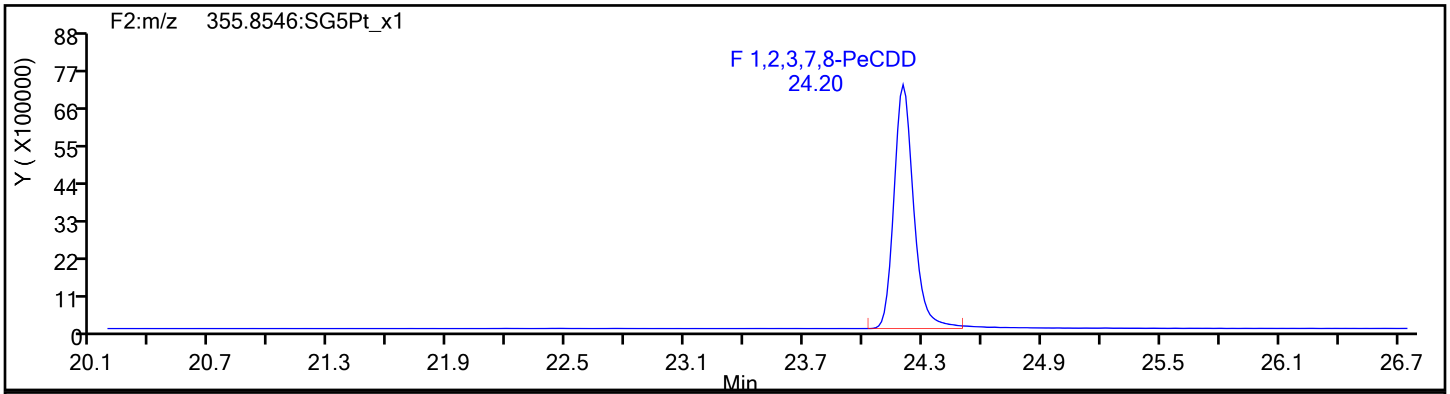

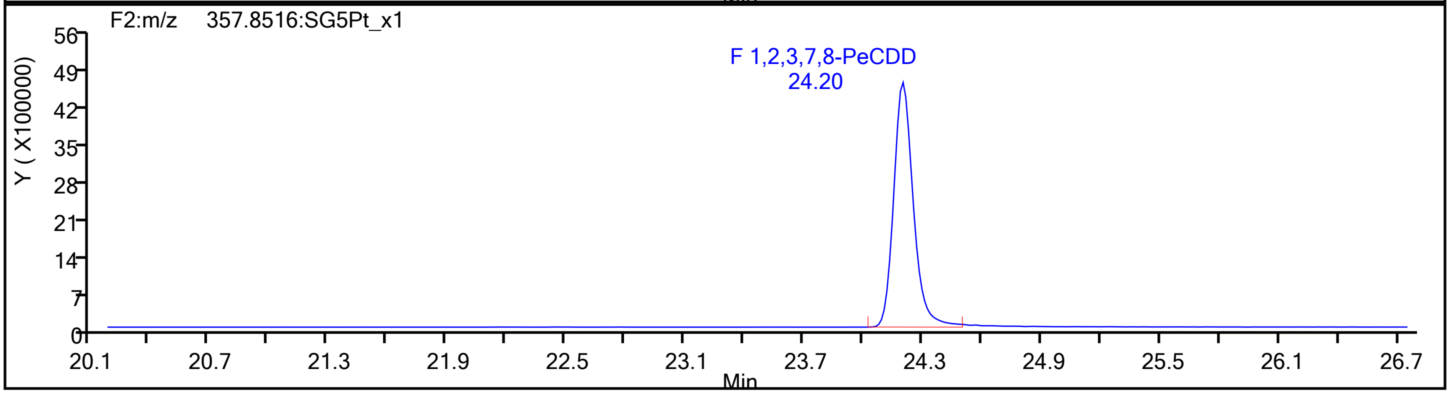

PeCDD Standards

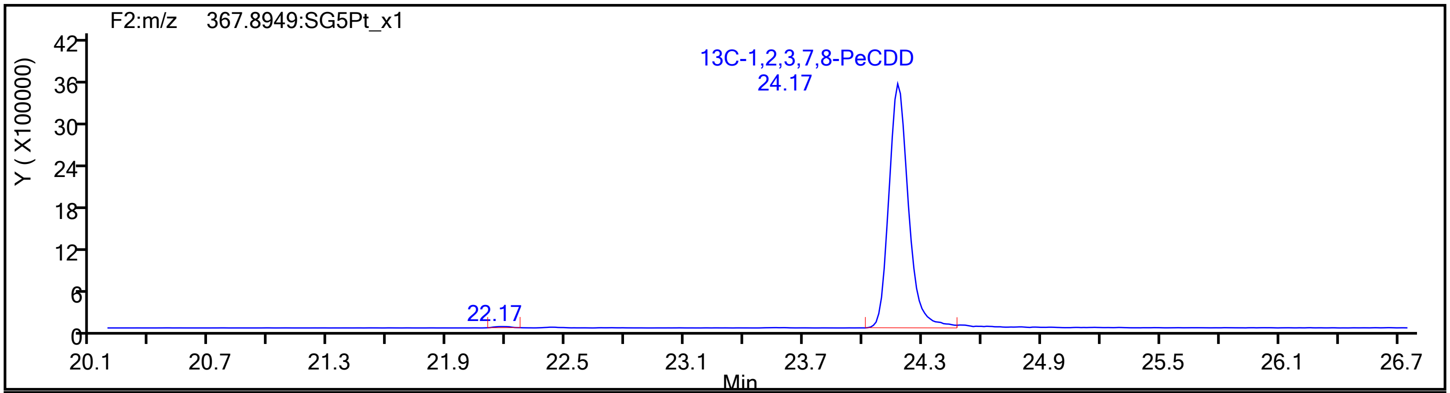

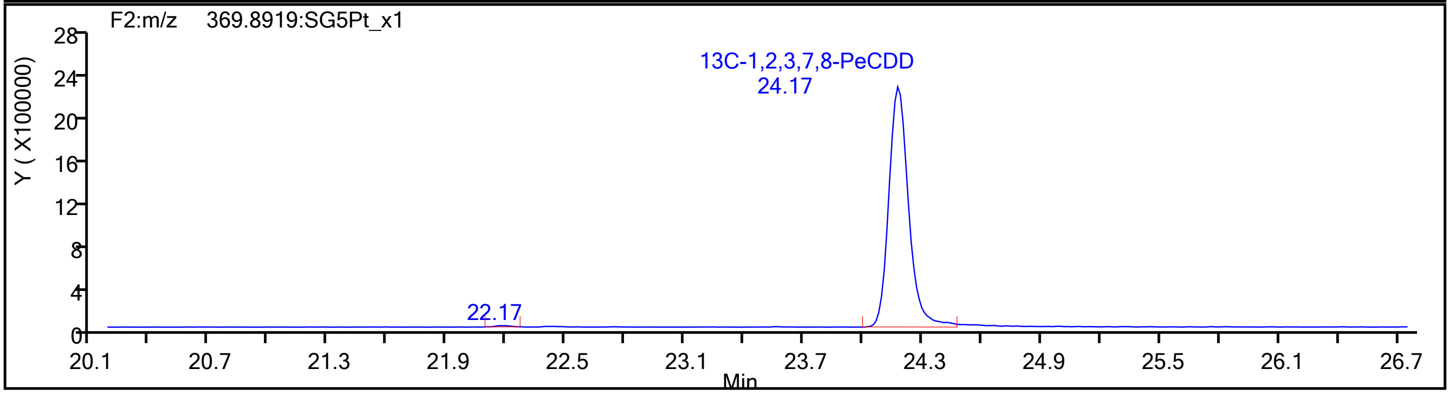

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Injection Date: 27-Jun-2020 16:58:26

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

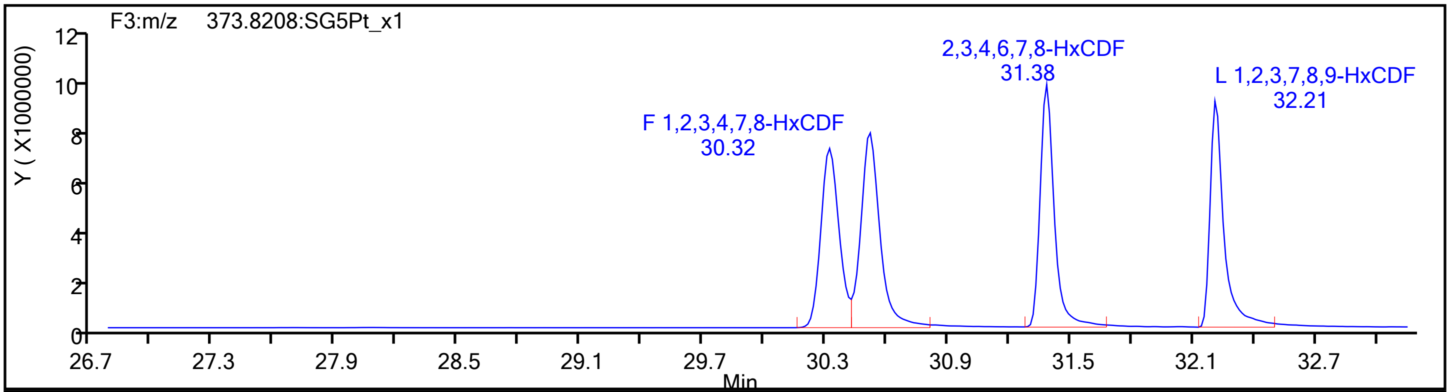

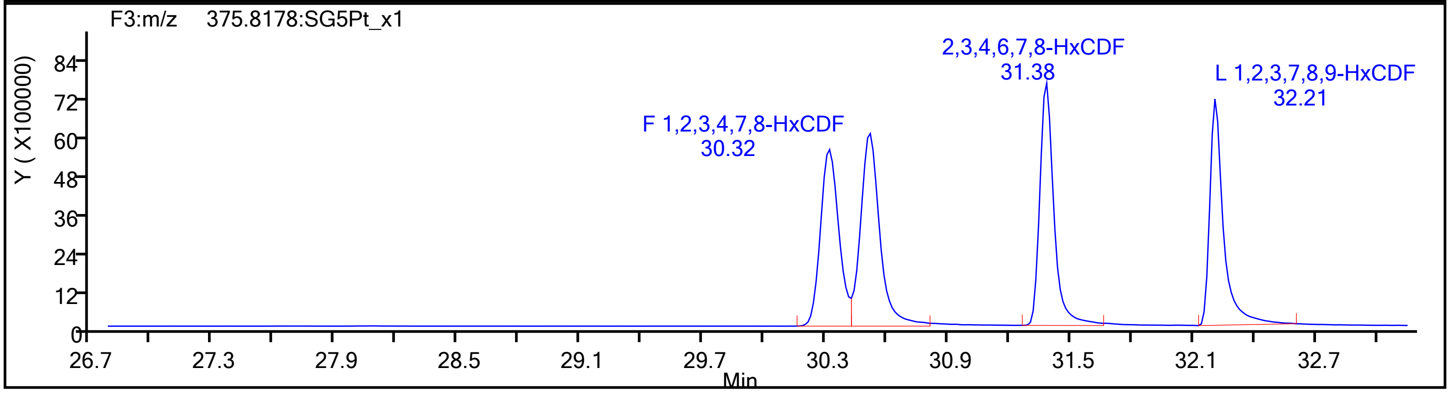

HxCDF Standards

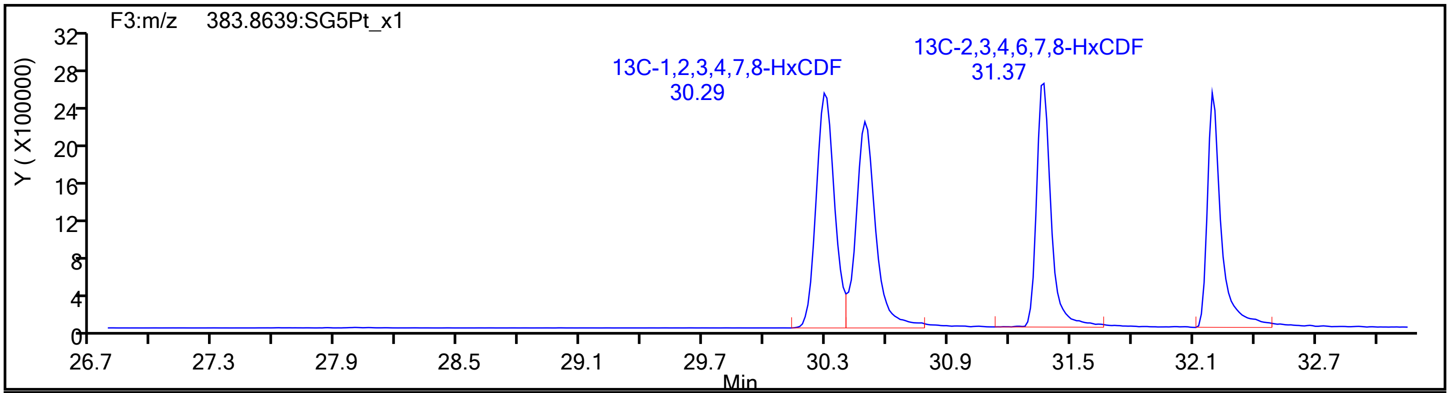

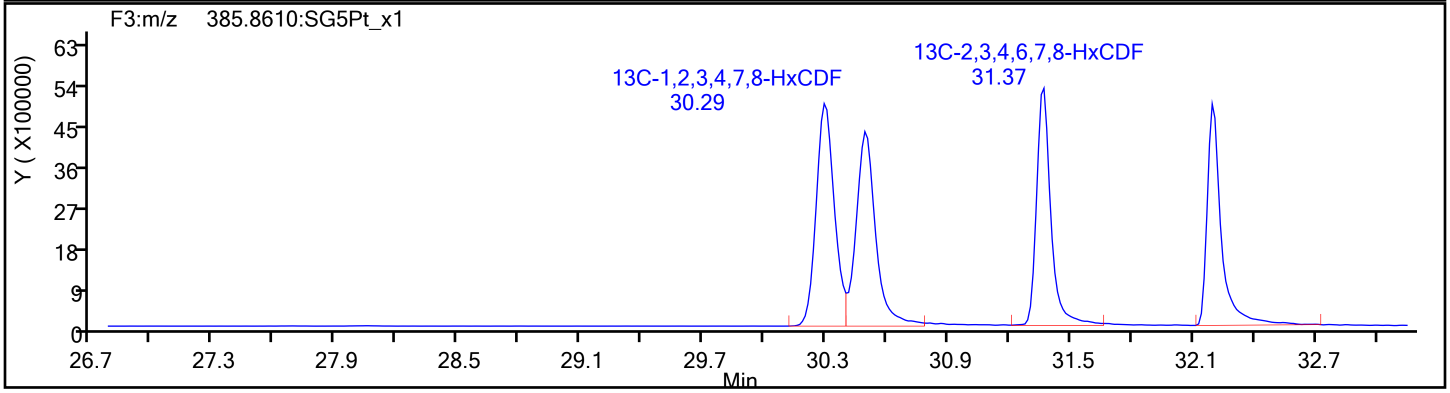

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
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Sample Line#: 6
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Column Dia: 0.32 mm

HxCDF

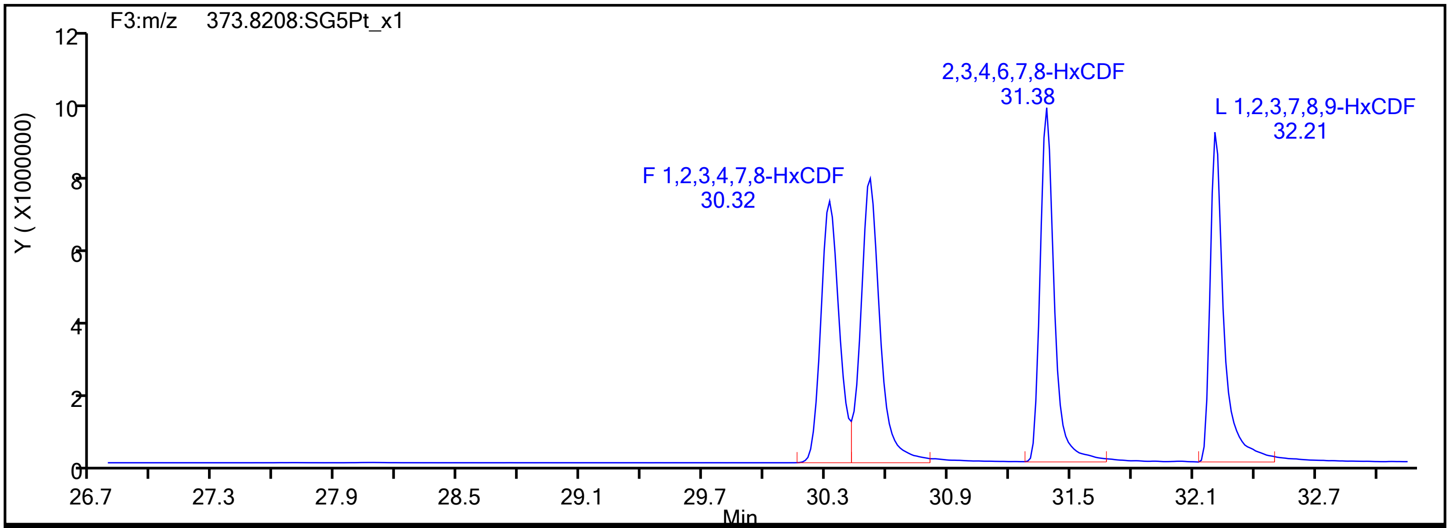

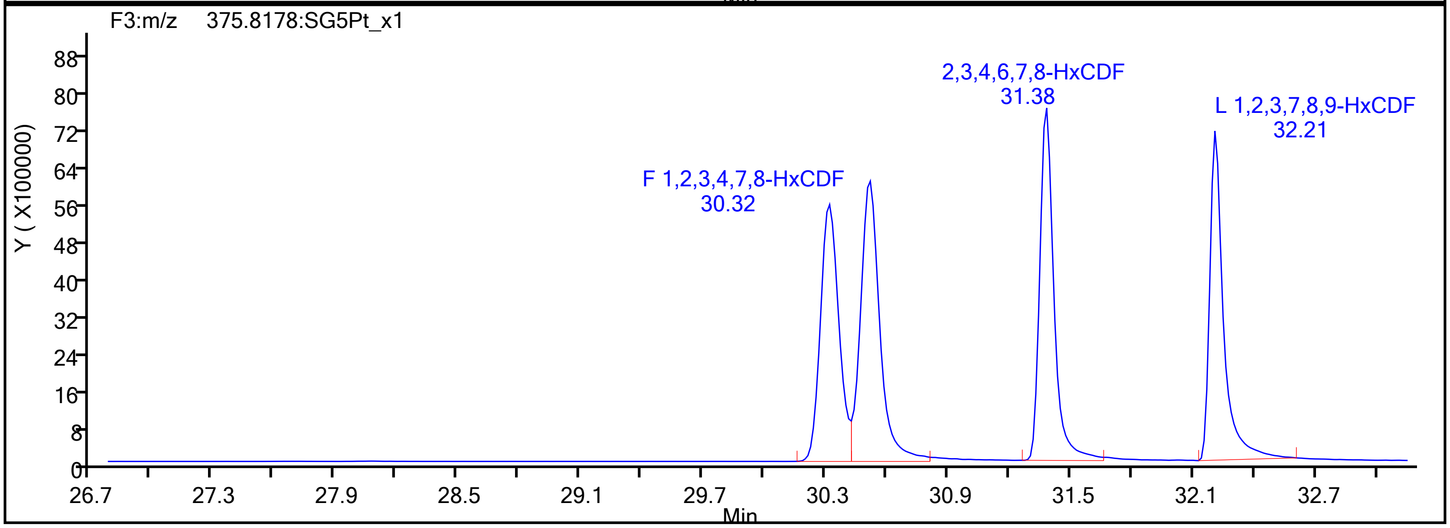

HxCDF Interference Mass

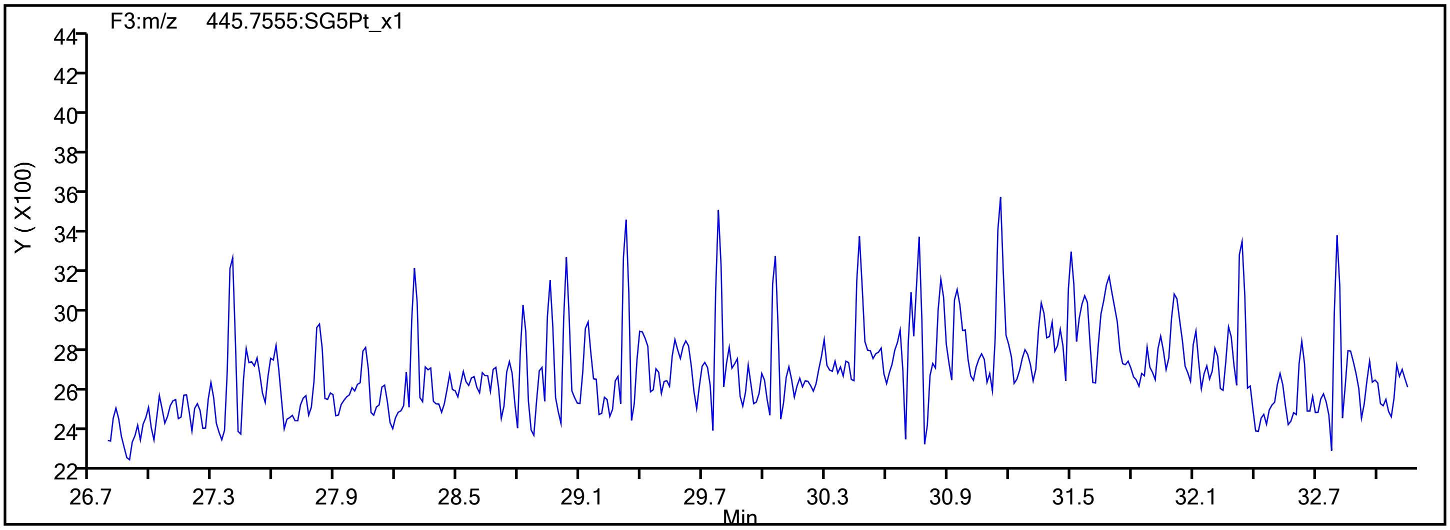

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

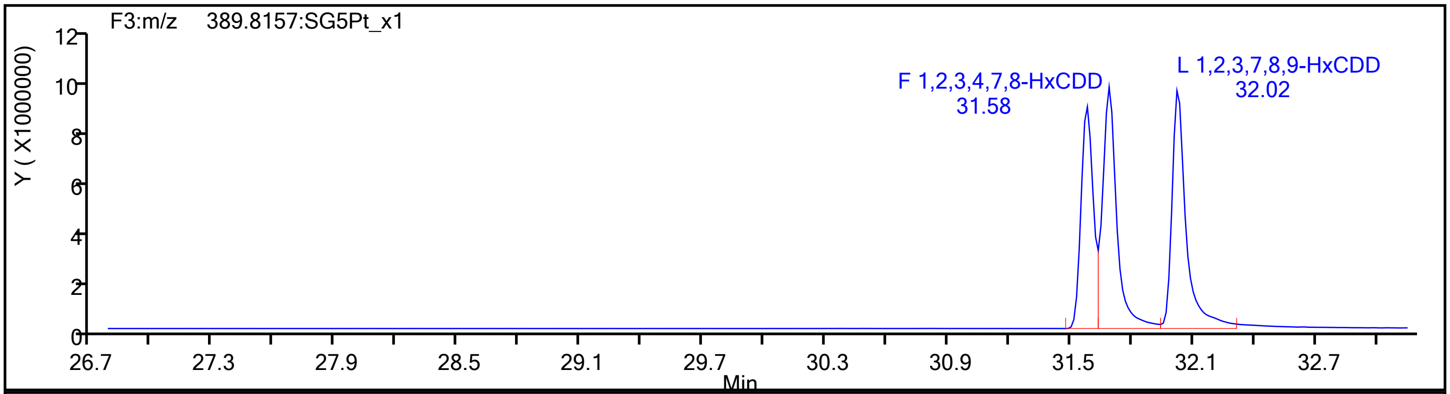

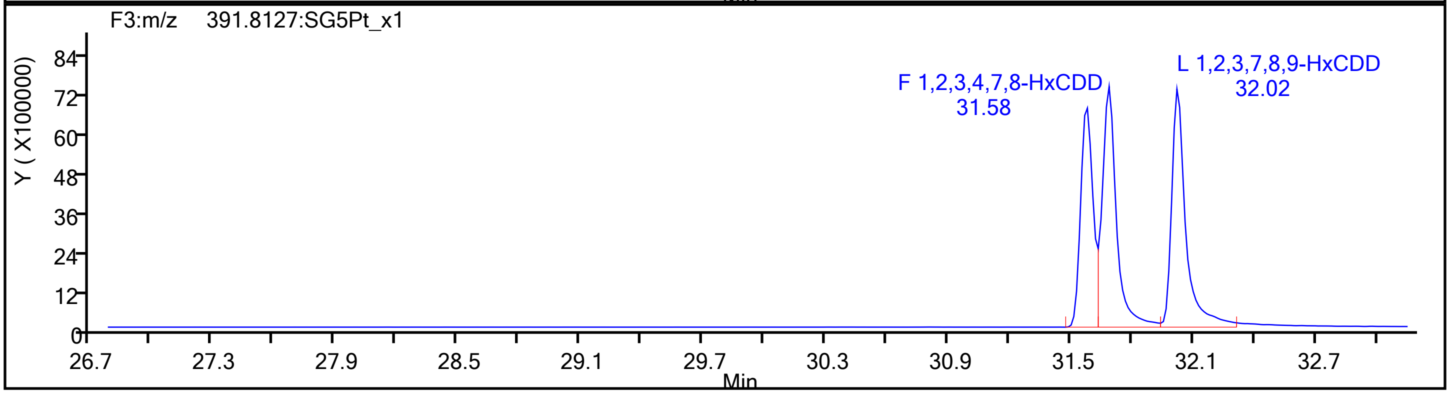

HxCDD Standards

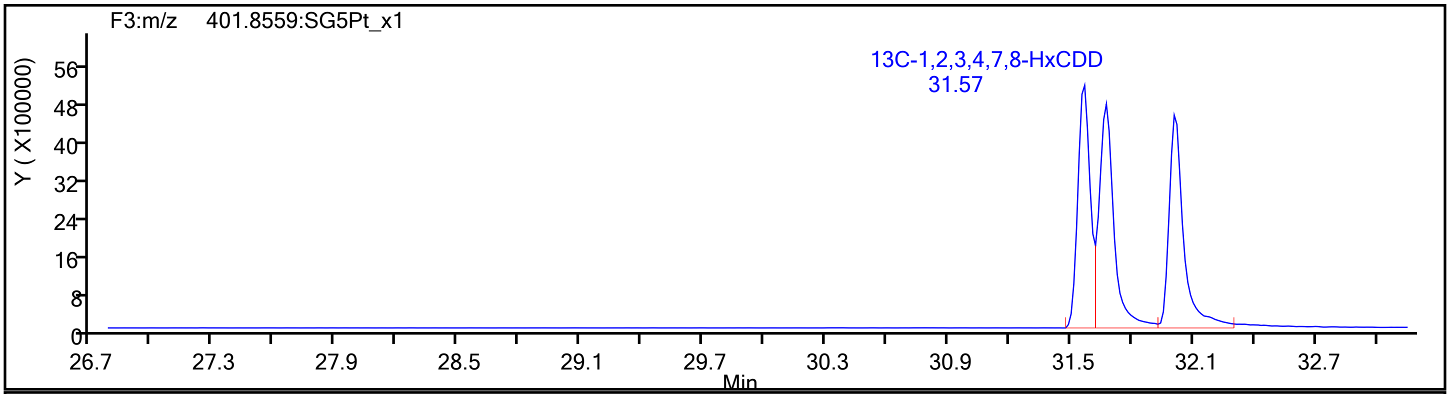

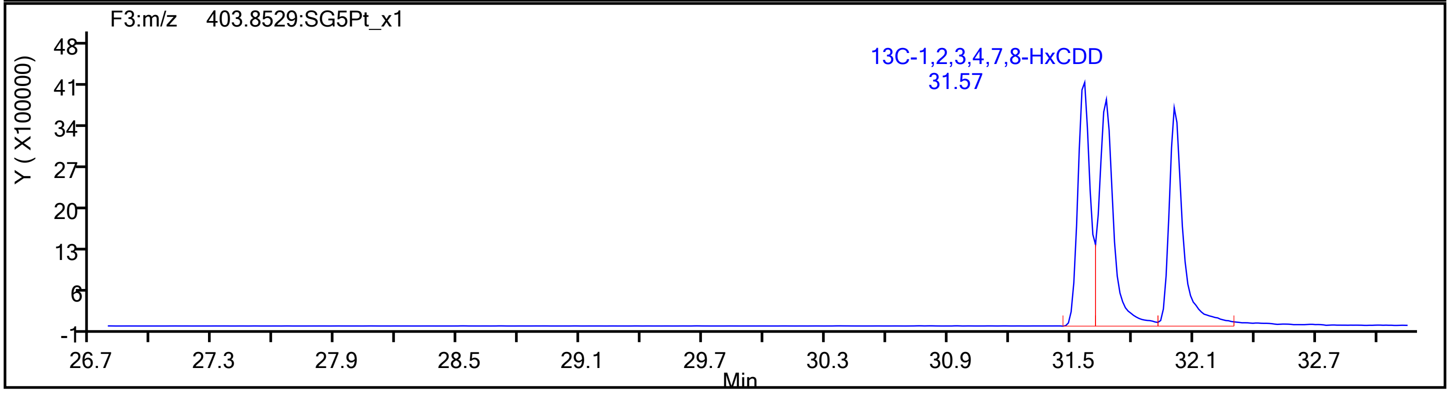

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d
Injection Date: 27-Jun-2020 16:58:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

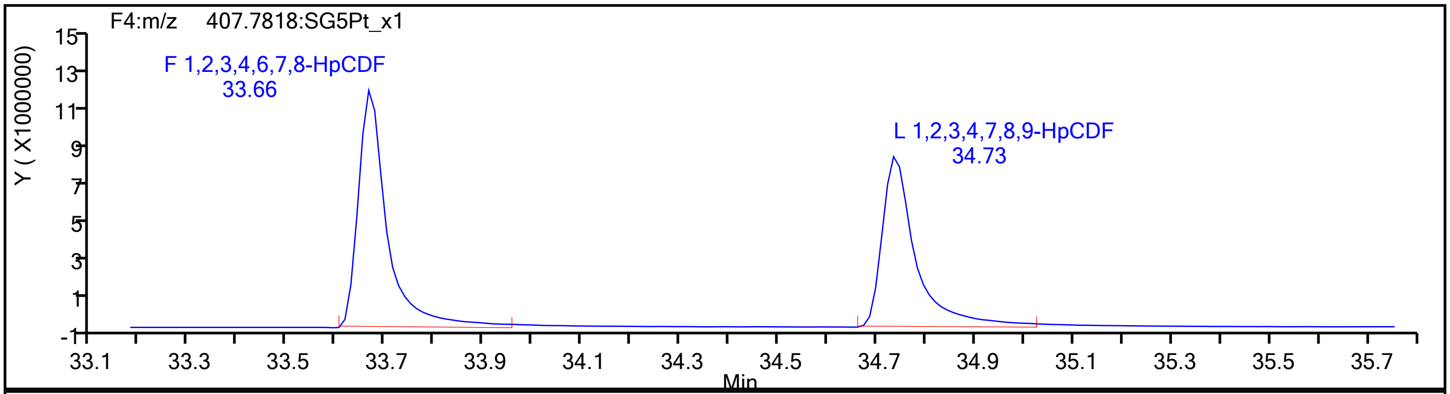

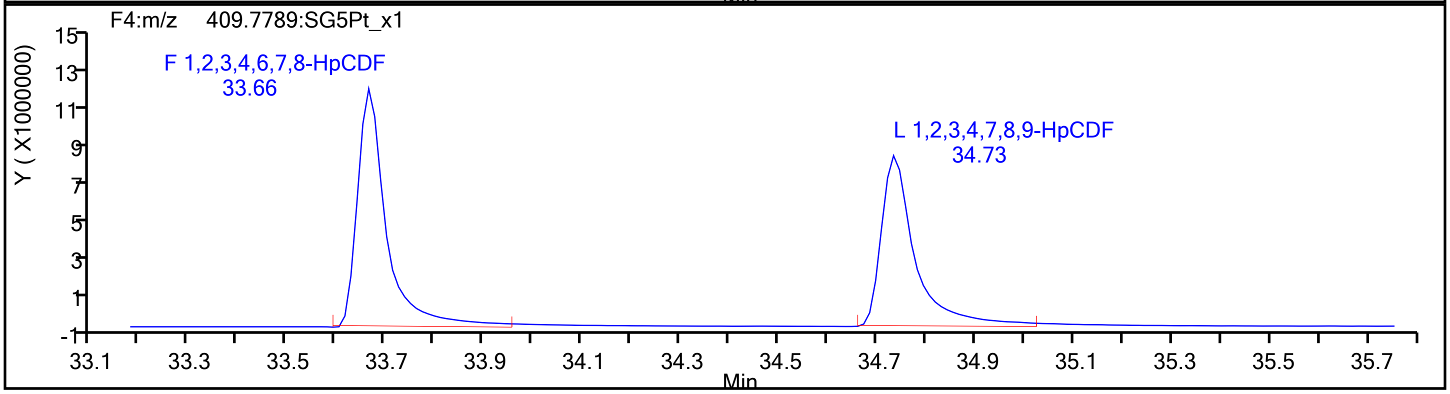

HpCDF Standards

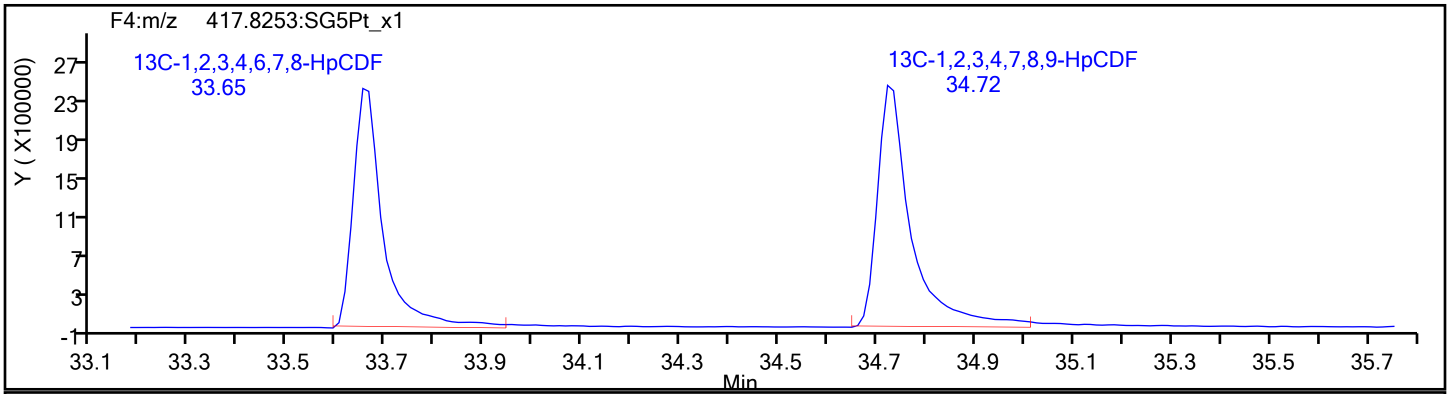

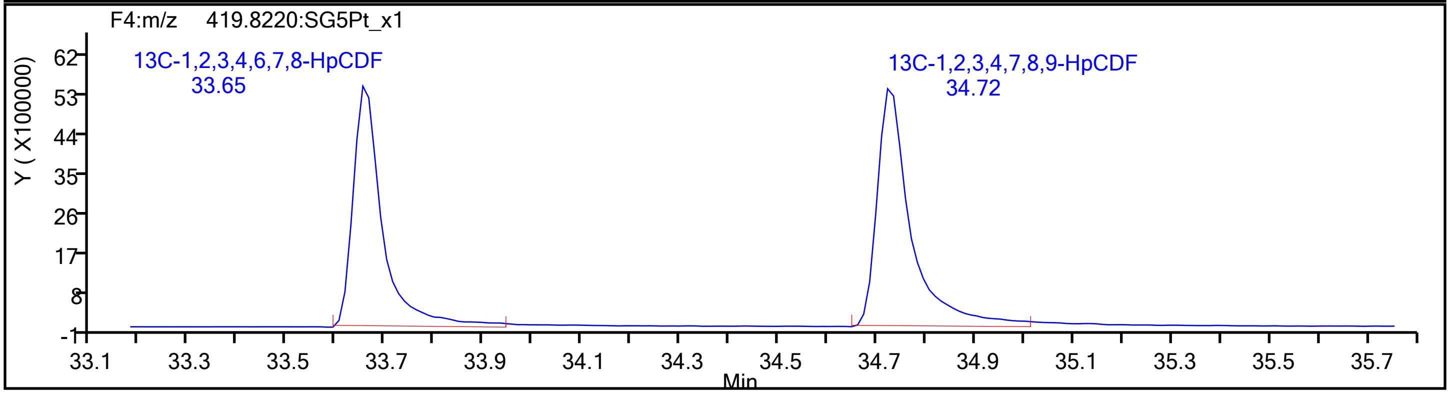

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

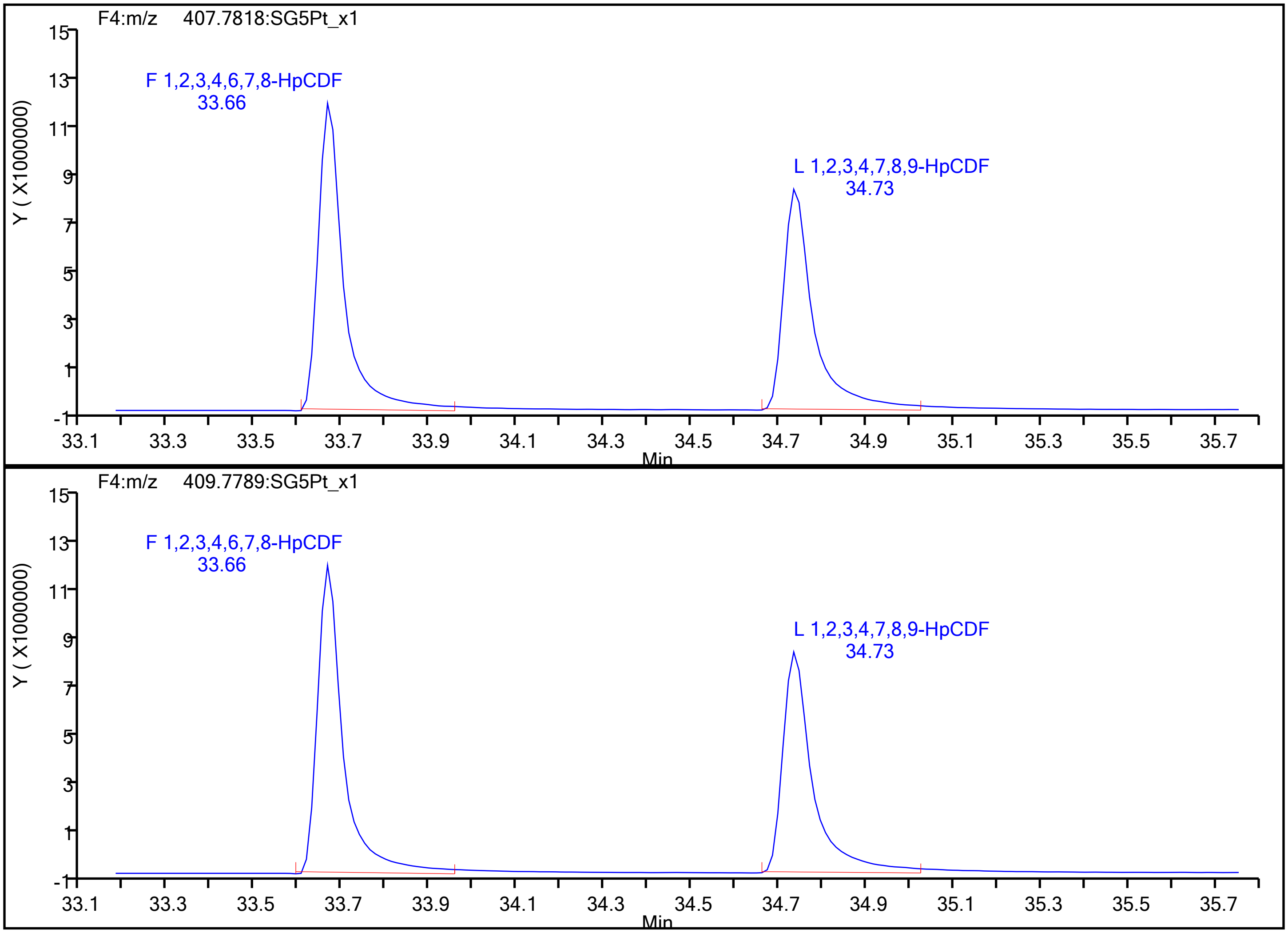

HpCDF Interference Mass

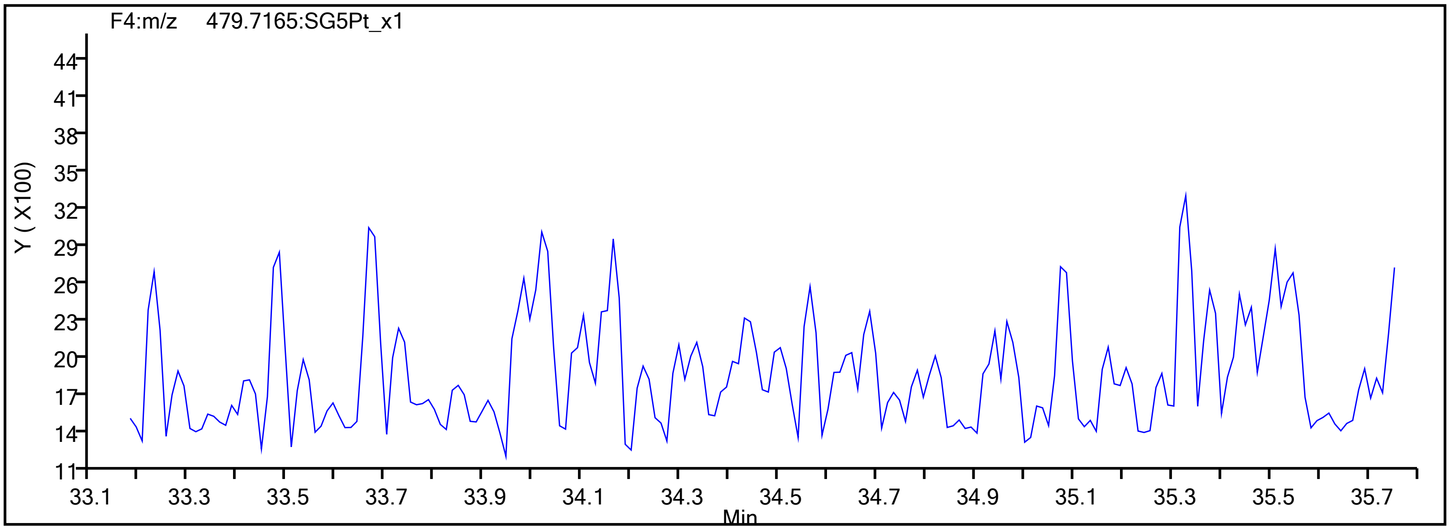

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

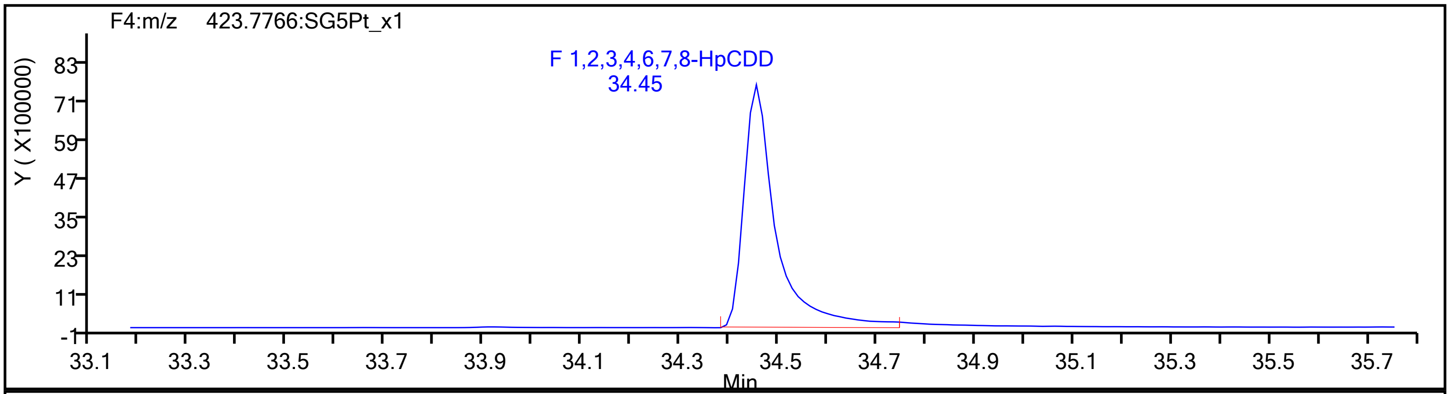

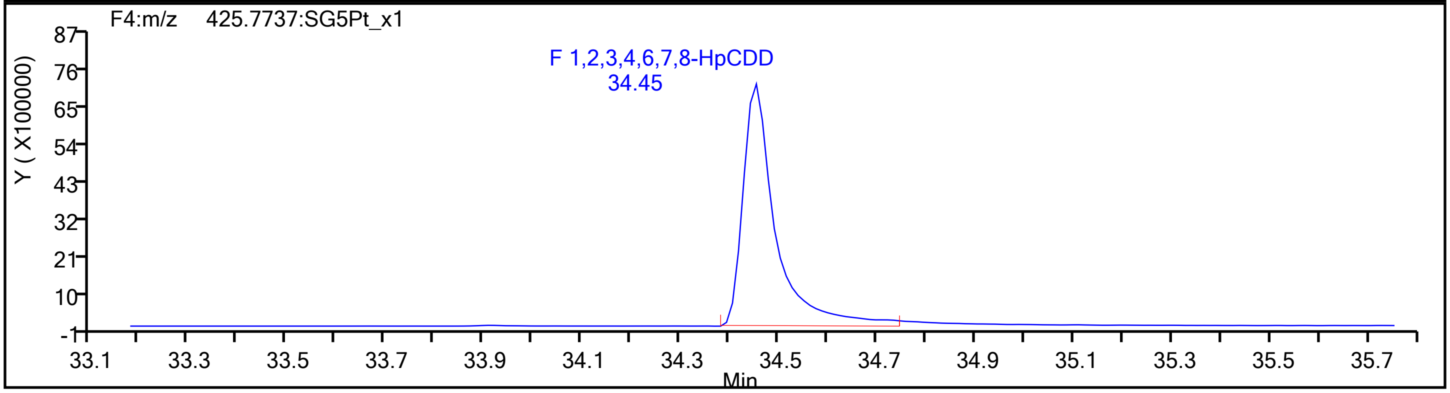

HpCDD Standards

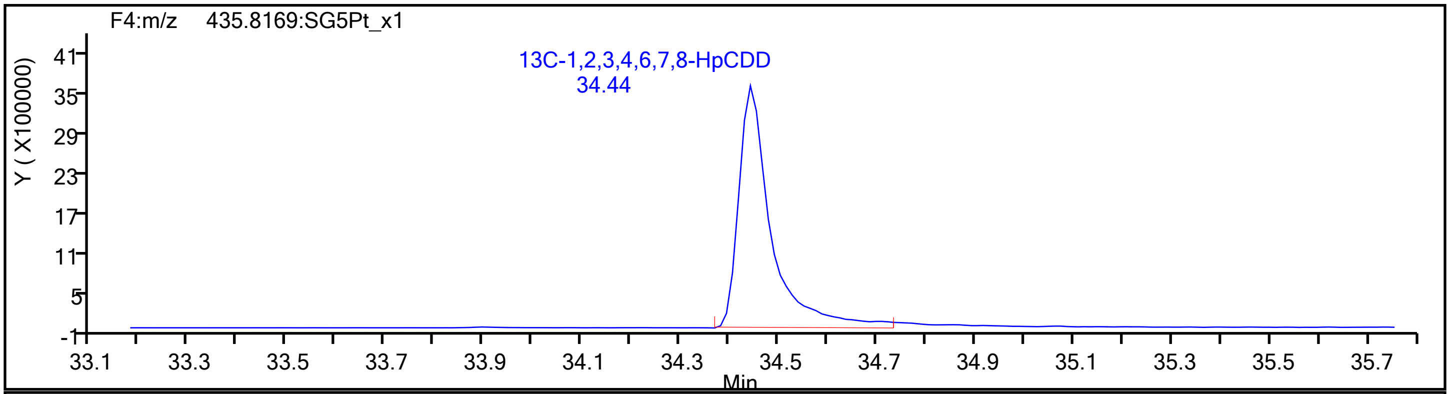

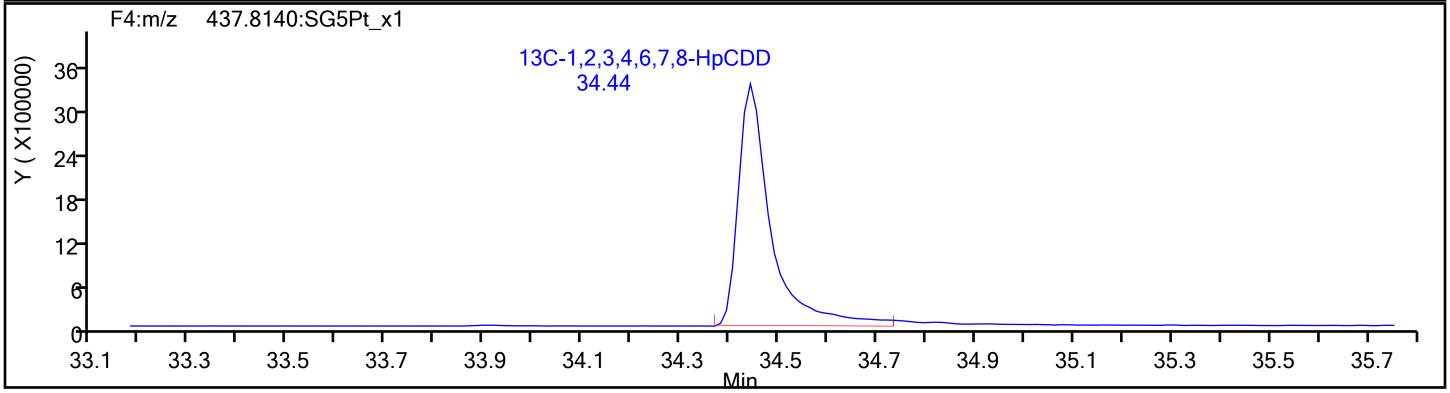

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

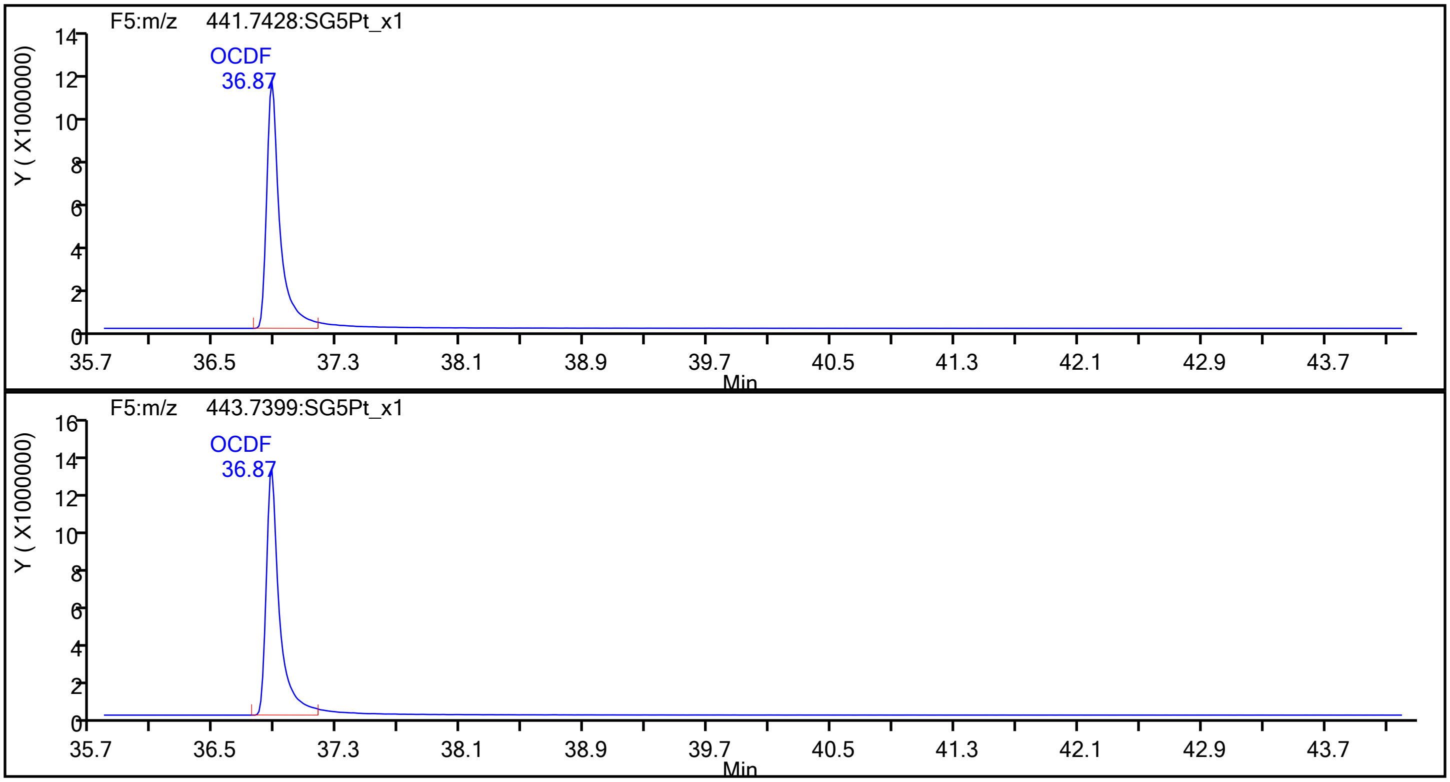

OCDF Standards

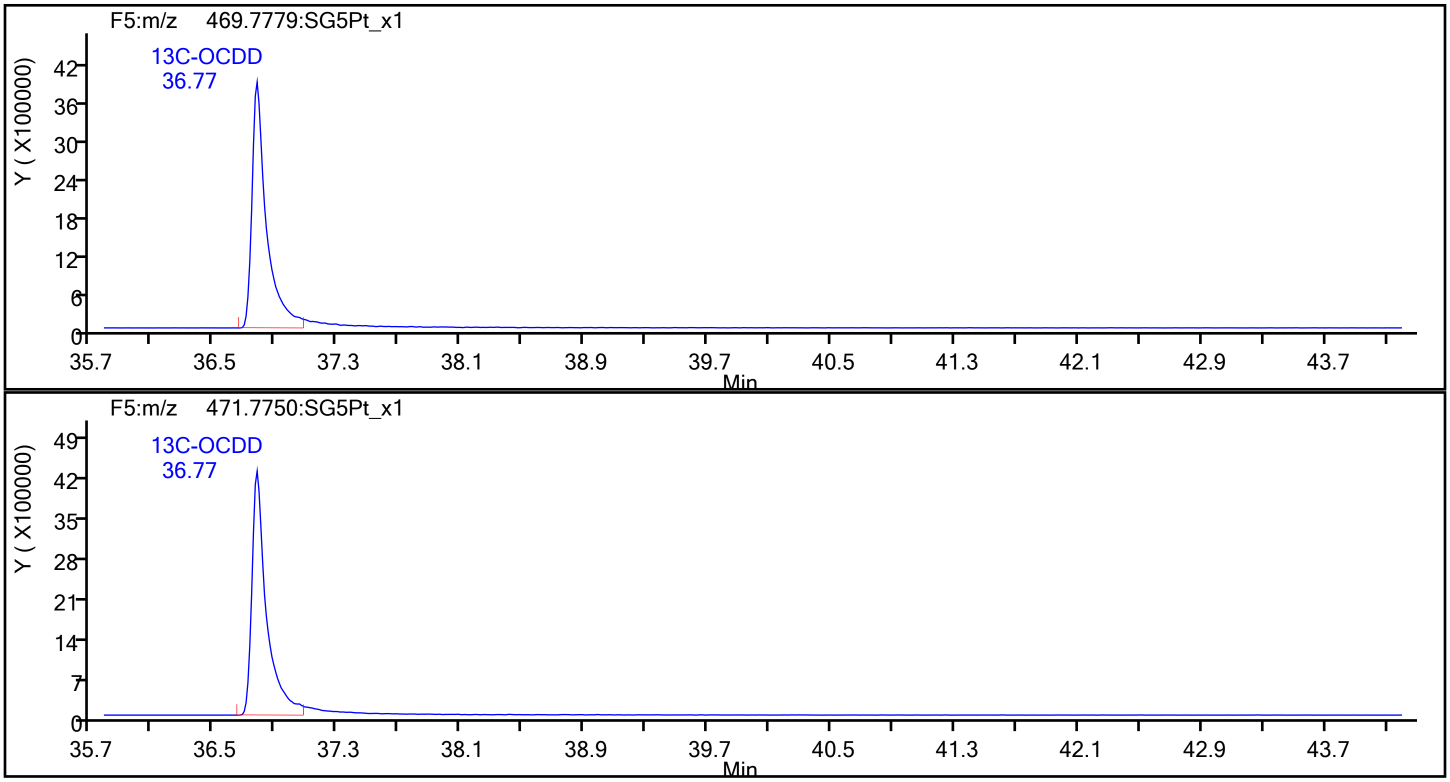

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

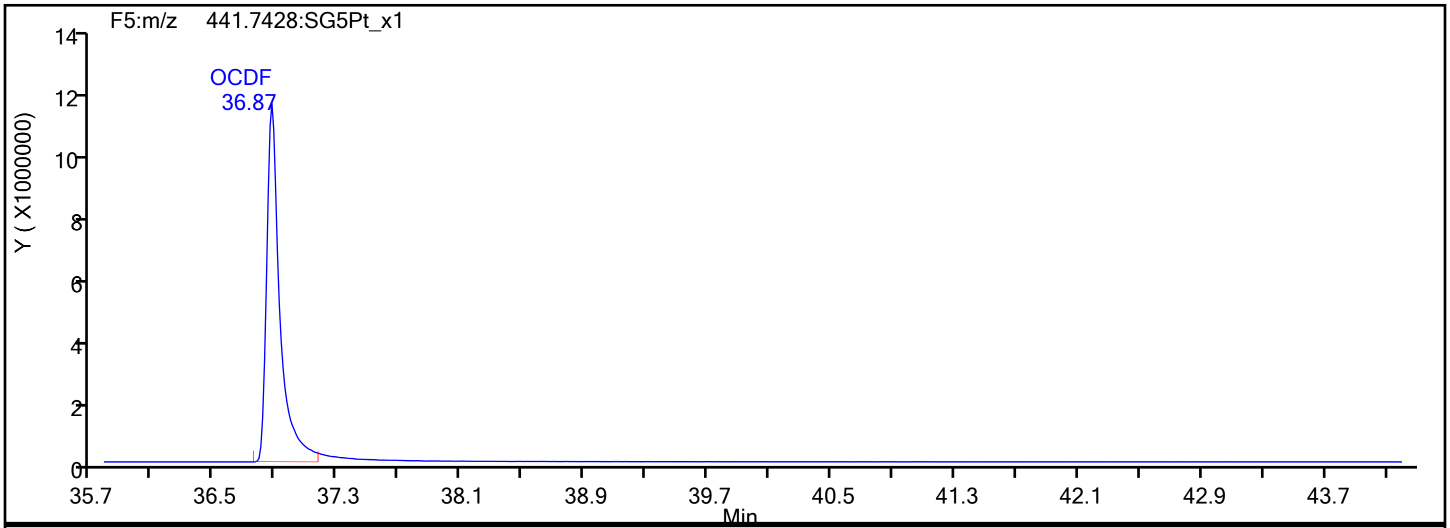

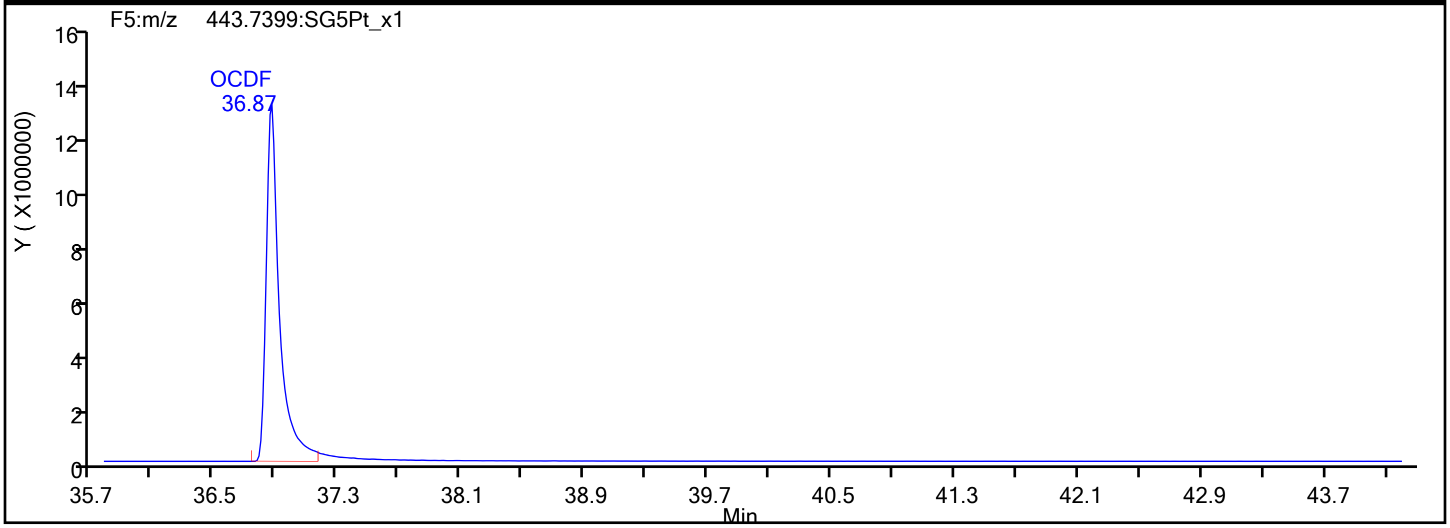

OCDF Interference Mass

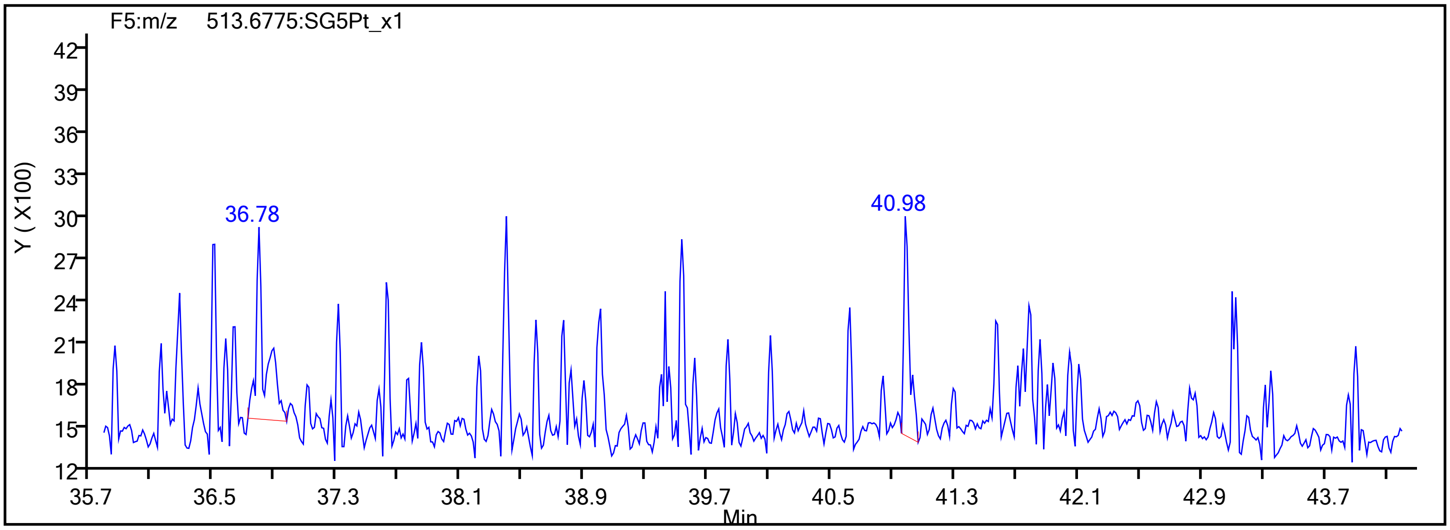

Report Date: 28-Jun-2020 13:17:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d

Injection Date: 27-Jun-2020 16:58:26 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

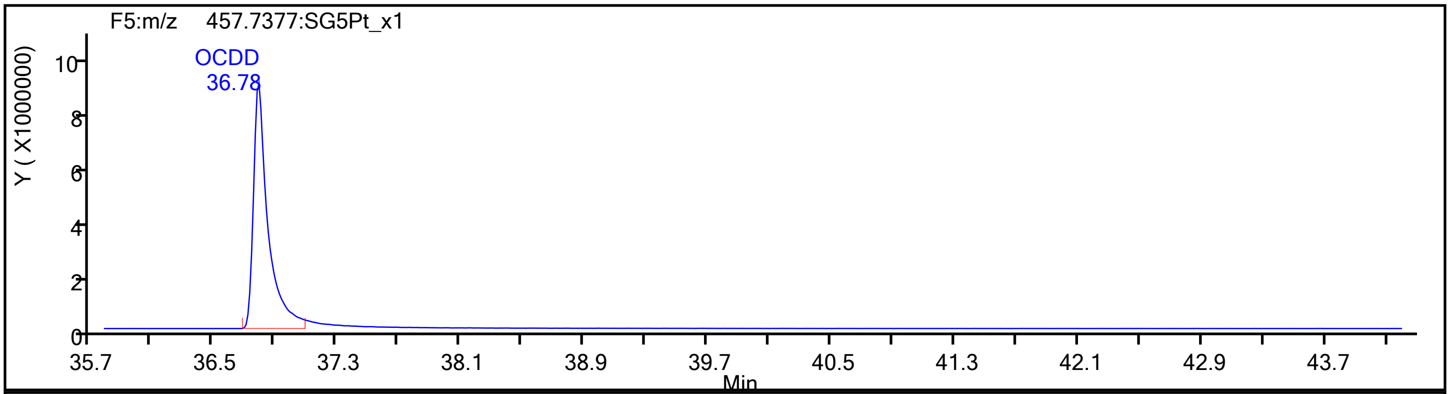

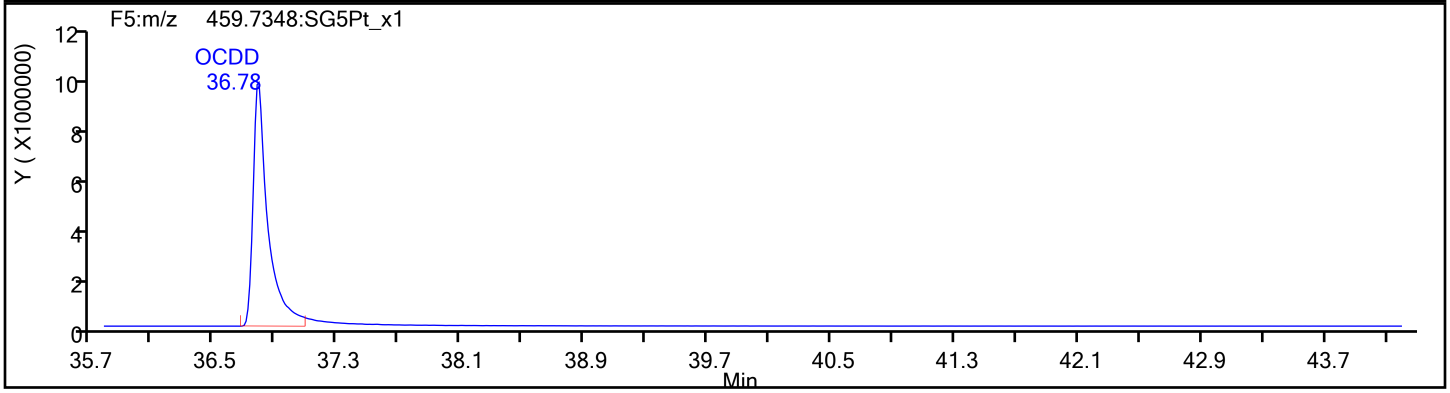

OCDD Standards

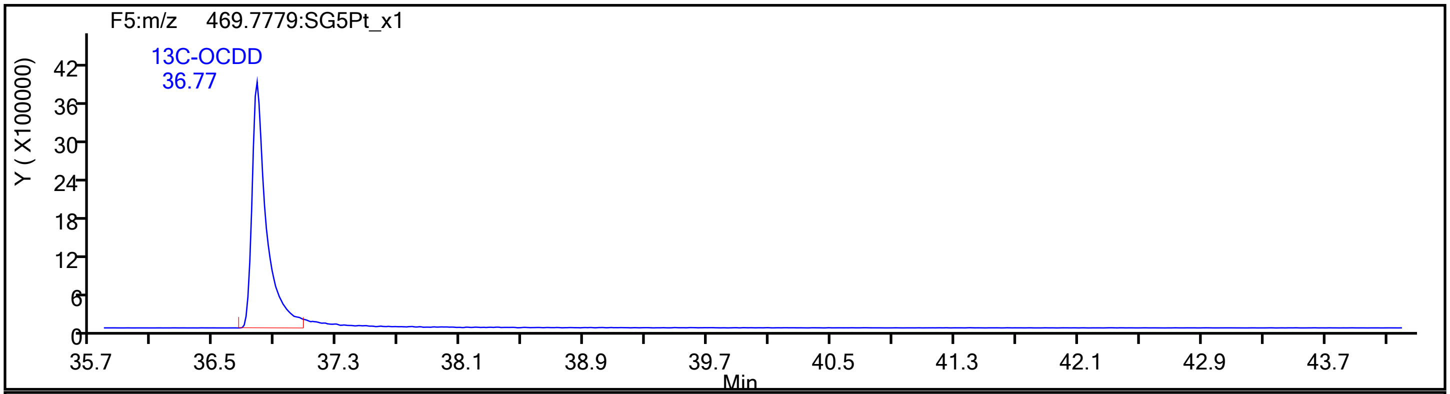

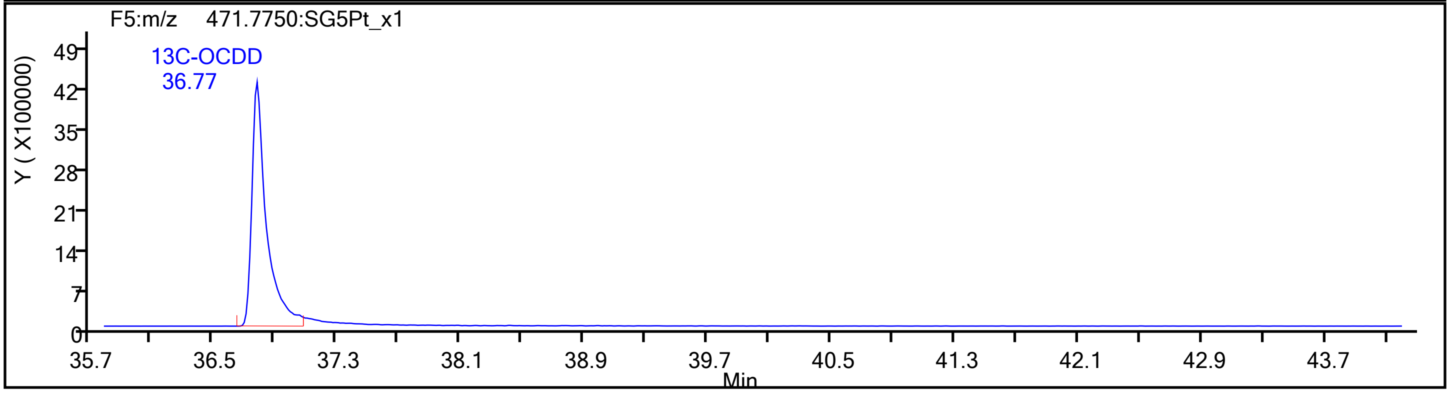

Report Date: 28-Jun-2020 13:17:15
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

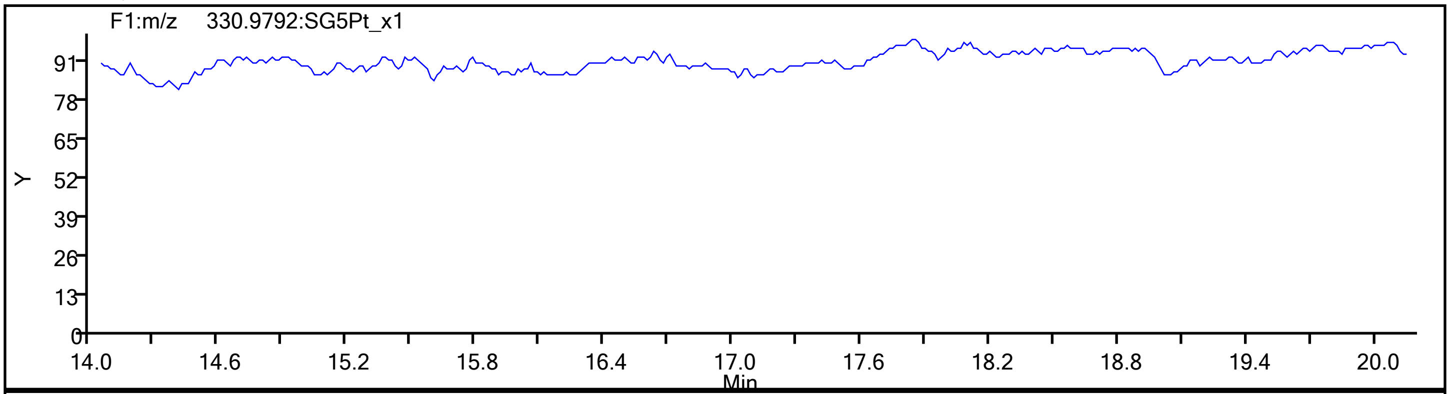

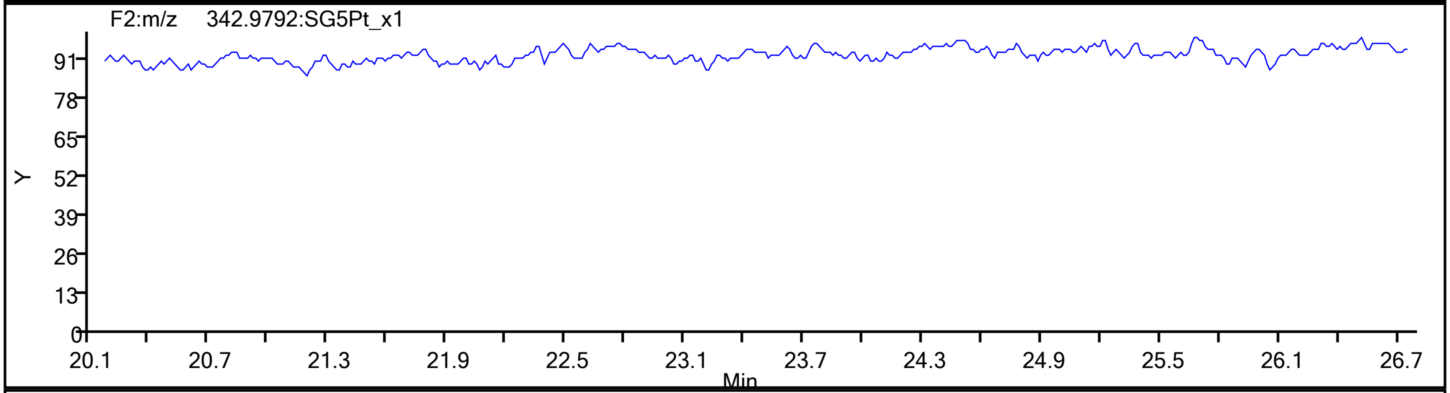

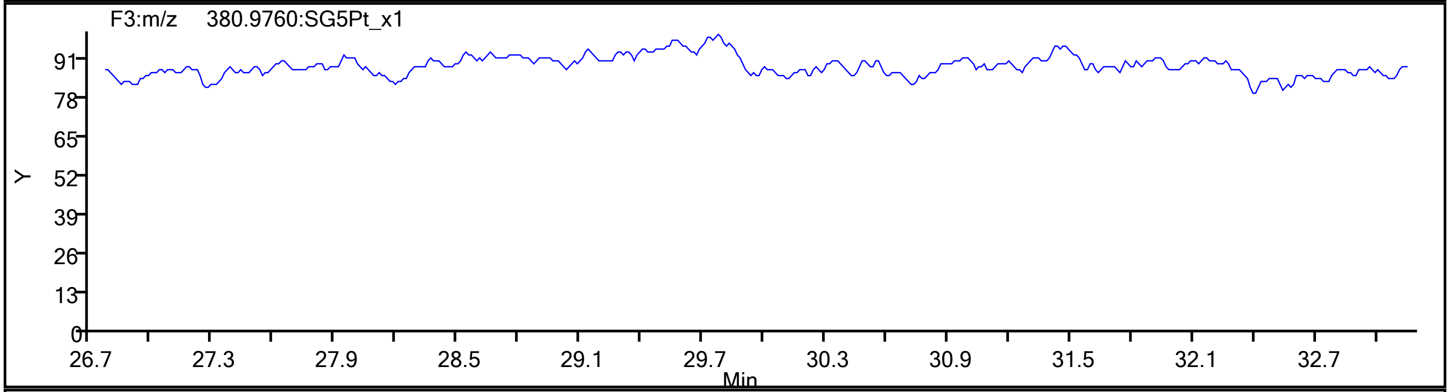

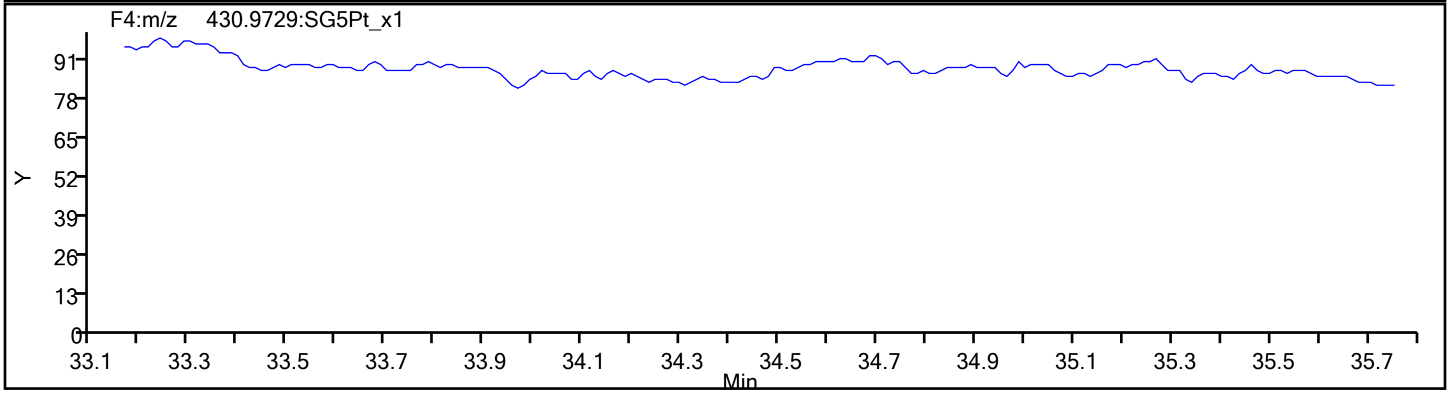

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_6.d		
Injection Date:	27-Jun-2020 16:58:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

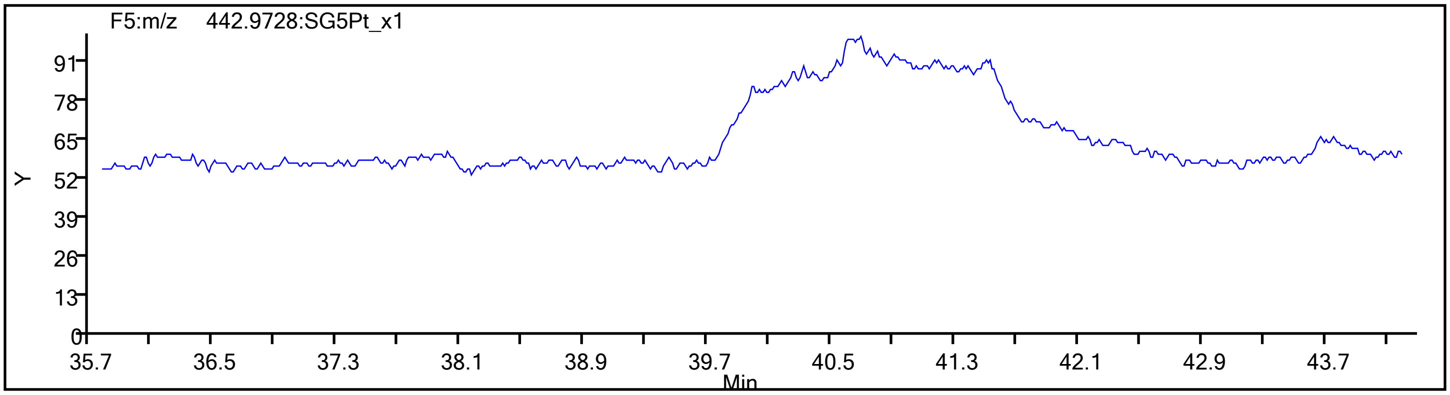

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 27-Jun-2020 17:43:35 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720D CS-6 HRDXNL6_00026
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:18 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	47126018	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	66365053	0.79	1.3726	102.6	102.6	0.2418	0.2418	103	
2,3,7,8-TCDF	17.219	122216235	0.75	0.9104	202.3	202.3	0.4221	0.4221	101	
S Total TCDF					202.3	202.3	0.4221	0.4221		
D 13C-2,3,7,8-TCDD	17.899	49229599	0.78	1.0192	102.5	102.5	0.3319	0.3319	102	
2,3,7,8-TCDD	17.914	106321386	0.77	1.0745	201.0	201.0	0.2286	0.2286	101	
$ 37Cl4-2,3,7,8-TCDD	17.914	106325815		1.0176	221.7	221.7	0.2198	0.2198	111	
S Total TCDD					201.0	201.0	0.2286	0.2286		
D 13C-1,2,3,7,8-PeCDF	22.156	57033386	1.59	1.1429	105.9	105.9	0.3285	0.3285	106	
1,2,3,7,8-PeCDF	22.170	566831479	1.55	0.9938	1000.1	1000.1	3.609	3.609	100	
D 13C-2,3,4,7,8-PeCDF	23.465	69514353	1.58	1.3997	105.4	105.4	0.2682	0.2682	105	
2,3,4,7,8-PeCDF	23.493	561858549	1.54	0.8117	995.8	995.8	3.818	3.818	99.58	
S Total PeCDF					1995.8	1995.8	3.713	3.713		
D 13C-1,2,3,7,8-PeCDD	24.188	40938052	1.56	0.8232	105.5	105.5	0.1358	0.1358	106	
1,2,3,7,8-PeCDD	24.202	418171926	1.57	1.0181	1003.3	1003.3	1.168	1.168	100	
S Total PeCDD					1003.3	1003.3	1.168	1.168		
D 13C-1,2,3,4,7,8-HxCDF	30.306	49341715	0.51	1.1388	102.6	102.6	0.6382	0.6382	103	
1,2,3,4,7,8-HxCDF	30.319	405180807	1.19	0.8061	1018.6	1018.6	9.030	9.030	102	
D 13C-1,2,3,6,7,8-HxCDF	30.505	45855303	0.51	1.0803	100.6	100.6	0.6728	0.6728	101	
1,2,3,6,7,8-HxCDF	30.519	454382367	1.19	0.9818	1009.2	1009.2	8.360	8.360	101	
D 13C-2,3,4,6,7,8-HxCDF	31.371	40745996	0.52	0.9494	101.7	101.7	0.7656	0.7656	102	
2,3,4,6,7,8-HxCDF	31.384	424474579	1.19	1.0382	1003.4	1003.4	6.455	6.455	100	
D 13C-1,2,3,7,8,9-HxCDF	32.209	38052377	0.51	0.8670	104.0	104.0	0.8383	0.8383	104	
1,2,3,7,8,9-HxCDF	32.222	394753597	1.20	1.0321	1005.2	1005.2	6.695	6.695	101	
S Total HxCDF					4036.5	4036.5	7.635	7.635		
* 13C-1,2,3,7,8,9-HxCDD	32.023	42214001	1.28	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.570	40903104	1.27	0.9356	103.6	103.6	0.4496	0.4496	104	
1,2,3,4,7,8-HxCDD	31.583	333187319	1.23	0.8202	993.1	993.1	4.058	4.058	99.31	
D 13C-1,2,3,6,7,8-HxCDD	31.677	43998213	1.24	1.0416	100.1	100.1	0.4039	0.4039	100	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.690	412697943	1.24	0.9367	1001.4	1001.4	3.865	3.865	100	
1,2,3,7,8,9-HxCDD	32.036	414077282	1.24	0.9905	984.8	984.8	3.501	3.501	98.48	
S Total HxCDD					2979.3	2979.3	3.808	3.808		
D 13C-1,2,3,4,6,7,8-HpCDF	33.665	34382848	0.44	0.7899	103.1	103.1	2.089	2.089	103	
1,2,3,4,6,7,8-HpCDF	33.665	498016185	1.03	1.4527	997.0	997.0	15.6	15.6	99.70	
D 13C-1,2,3,4,7,8,9-HpCDF	34.734	40565902	0.44	0.9093	105.7	105.7	1.815	1.815	106	
1,2,3,4,7,8,9-HpCDF	34.734	430556216	1.03	1.0585	1002.7	1002.7	20.9	20.9	100	
S Total HpCDF					1999.7	1999.7	18.3	18.3		
D 13C-1,2,3,4,6,7,8-HpCDD	34.442	33600359	1.07	0.7637	104.2	104.2	0.8754	0.8754	104	
1,2,3,4,6,7,8-HpCDD	34.454	356377100	1.04	1.0540	1006.3	1006.3	7.226	7.226	101	
S Total HpCDD					1006.3	1006.3	7.226	7.226		
D 13C-OCDD	36.773	59456751	0.91	0.6377	220.9	220.9	0.4953	0.4953	110	
OCDF	36.869	775885278	0.89	1.2965	2013.1	2013.1	2.635	2.635	101	
OCDD	36.785	672147206	0.89	1.1499	1966.2	1966.2	3.511	3.511	98.31	

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 27-Jun-2020 17:43:35 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 062720D CS-6 HRDXNL6_00026
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:17:18 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:07:51

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		20738026	4909758	7478	18695	657		
333.9339	17.702	17.702	0		26387992	6284425	7667	19167	820	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.197	0	0.972	29213449	6864431	7794	19485	881		
317.9389	17.203	17.197	0	0.972	37151604	8669208	7067	17667	1227	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.215	0	1.001	52445548	12221829	11086	27715	1102		
305.8987	17.219	17.215	0	1.001	69770687	16212070	12793	31982	1267	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.893	0	1.011	21556193	4697405	7478	18695	628		
333.9339	17.899	17.893	0	1.011	27673406	6082835	7667	19167	793	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.001	46306430	10229009	4270	10675	2396		
321.8936	17.914	17.911	0	1.001	60014956	13412568	6322	15805	2122	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.911	0	1.012	106325815	23667022	10013	25032	2364		
13C-1,2,3,7,8-PeCDF											
351.9000	22.156	22.148	0	1.252	35033156	5726327	9962	24905	575		
353.8970	22.156	22.148	0	1.252	22000230	3654990	6847	17117	534	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.164	0	1.001	344606256	56586528	81401	203502	695		
341.8567	22.170	22.164	0	1.001	222225223	36707217	53183	132957	690	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.465	23.460	0	1.326	42586948	6639664	9962	24905	666		
353.8970	23.465	23.460	0	1.326	26927405	4217024	6847	17117	616	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.493	23.487	0	1.001	340924224	53718326	81401	203502	660		
341.8567	23.493	23.487	0	1.001	220934325	34945873	53183	132957	657	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.188	24.180	0	1.366	24977071	3714121	2704	6760	1374		
369.8919	24.188	24.180	0	1.366	15960981	2365970	2303	5757	1027	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.202	24.204	0	1.001	255495979	37371264	17726	44315	2108		
357.8516	24.202	24.204	0	1.001	162675947	23894684	11192	27980	2135	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.306	30.298	0	0.946	16693946	2797827	8888	22220	315		
385.8610	30.306	30.298	0	0.946	32647769	5329196	17579	43947	303	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.319	30.319	0	1.000	220200810	36204112	129716	324290	279		
375.8178	30.319	30.319	0	1.000	184979997	30500370	106930	267325	285	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.505	30.497	0	0.953	15543750	2456895	8888	22220	276		
385.8610	30.505	30.497	0	0.953	30311553	4750677	17579	43947	270	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.519	30.519	0	1.000	247282657	40149109	129716	324290	310		
375.8178	30.519	30.519	0	1.000	207099710	33852265	106930	267325	317	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.371	31.370	0	0.980	13874771	2980613	8888	22220	335		
385.8610	31.371	31.370	0	0.980	26871225	5846794	17579	43947	333	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.384	31.384	0	1.000	230640761	50044830	129716	324290	386		
375.8178	31.384	31.384	0	1.000	193833818	42230515	106930	267325	395	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.209	32.201	0	1.006	12785730	2907229	8888	22220	327		
385.8610	32.209	32.201	0	1.006	25266647	5654550	17579	43947	322	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.222	32.214	0	1.000	215591083	48116052	129716	324290	371		
375.8178	32.209	32.214	0	1.000	179162514	40158997	106930	267325	376	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.023	32.015	0		23732347	5110646	8378	20945	610		
403.8529	32.023	32.015	0		18481654	3992833	6941	17352	575	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.570	31.570	0	0.986	22872048	5794317	8378	20945	692		
403.8529	31.570	31.570	0	0.986	18031056	4518362	6941	17352	651	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.583	31.583	0	1.000	183755080	46280885	75759	189397	611		
391.8127	31.583	31.583	0	1.000	149432239	37603879	61541	153852	611	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.677	31.677	0	0.989	24375722	5229298	8378	20945	624		
403.8529	31.677	31.677	0	0.989	19622491	4253242	6941	17352	613	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.690	31.693	0	1.000	228838318	49581834	75759	189397	654		
391.8127	31.690	31.693	0	1.000	183859625	40254769	61541	153852	654	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.036	32.028	0	1.015	229440882	50100860	75759	189397	661		
391.8127	32.023	32.028	0	1.014	184636400	40115967	61541	153852	652	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.665	33.657	0	1.051	10566007	2832995	17486	43715	162		
419.8220	33.665	33.657	0	1.051	23816841	6301216	42605	106512	148	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.665	33.667	0	1.000	252674071	66962410	417316	1043290	160		
409.7789	33.665	33.667	0	1.000	245342114	66088076	412134	1030335	160	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.734	34.731	0	1.085	12394885	2900144	17486	43715	166		
419.8220	34.734	34.731	0	1.085	28171017	6453325	42605	106512	151	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.734	34.739	0	1.000	218233205	49757692	417316	1043290	119		
409.7789	34.734	34.739	0	1.000	212323011	49057536	412134	1030335	119	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.442	34.444	0	1.076	17370762	4090039	13000	32500	315		
437.8140	34.442	34.444	0	1.076	16229597	3866490	11345	28362	341	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.454	34.457	0	1.000	182057255	43355616	125897	314742	344		
425.7737	34.454	34.457	0	1.000	174319845	41610770	116471	291177	357	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.773	36.775	0	1.148	28256484	4897646	4236	10590	1156		
471.7750	36.773	36.775	0	1.148	31200267	5399035	7265	18162	743	0.91(0.76-1.02)	
OCDF											
441.7428	36.869	36.871	0	1.003	365589817	70074064	33071	82677	2119		
443.7399	36.869	36.871	0	1.003	410295461	79323533	37271	93177	2128	0.89(0.76-1.02)	
OCDD											
457.7377	36.785	36.787	0	1.000	317017089	55607931	38765	96912	1434		
459.7348	36.785	36.787	0	1.000	355130117	62440680	44388	110970	1407	0.89(0.76-1.02)	

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:17:21 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Client ID:			
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TCDF

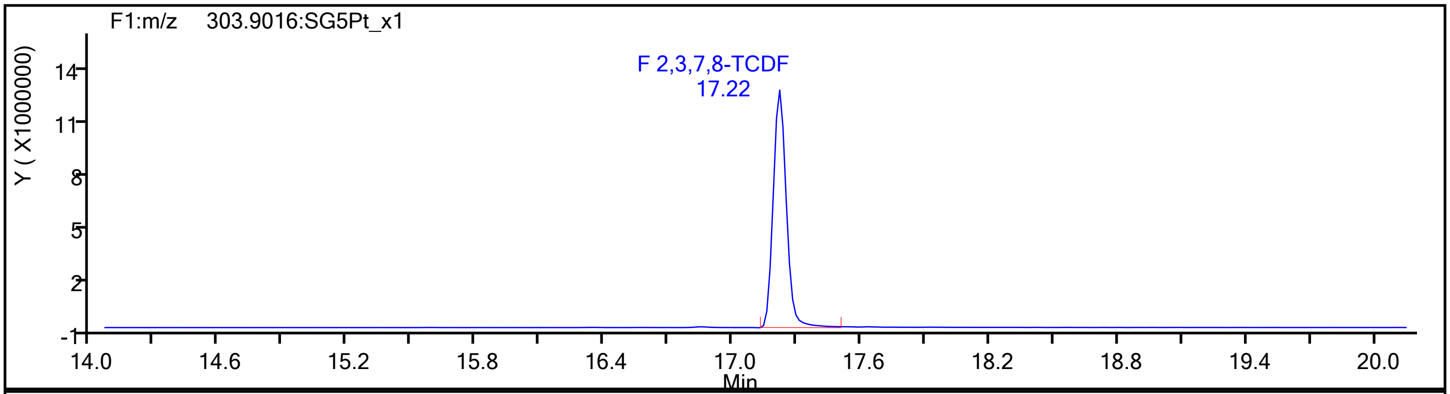

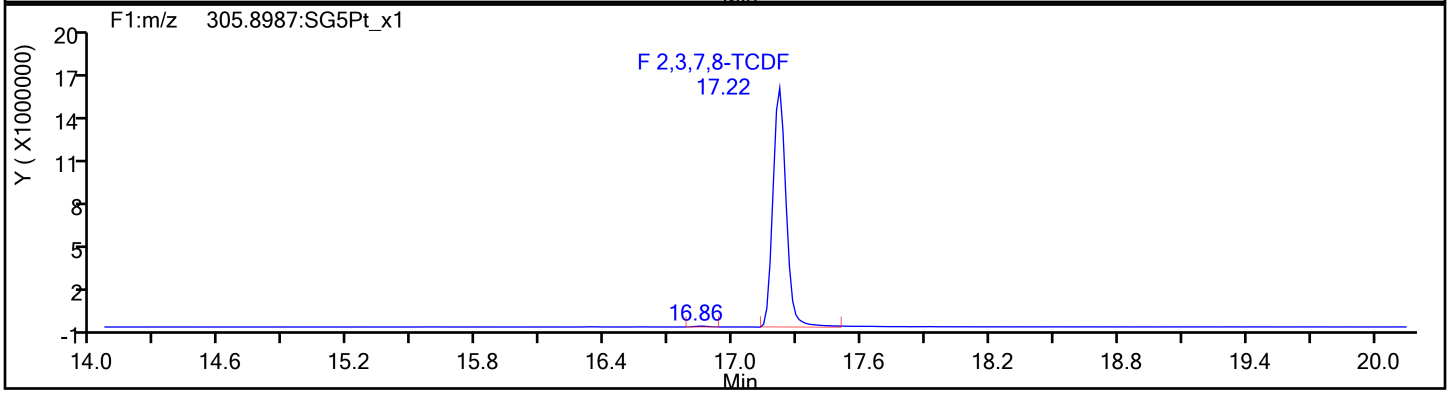

TCDF Standards

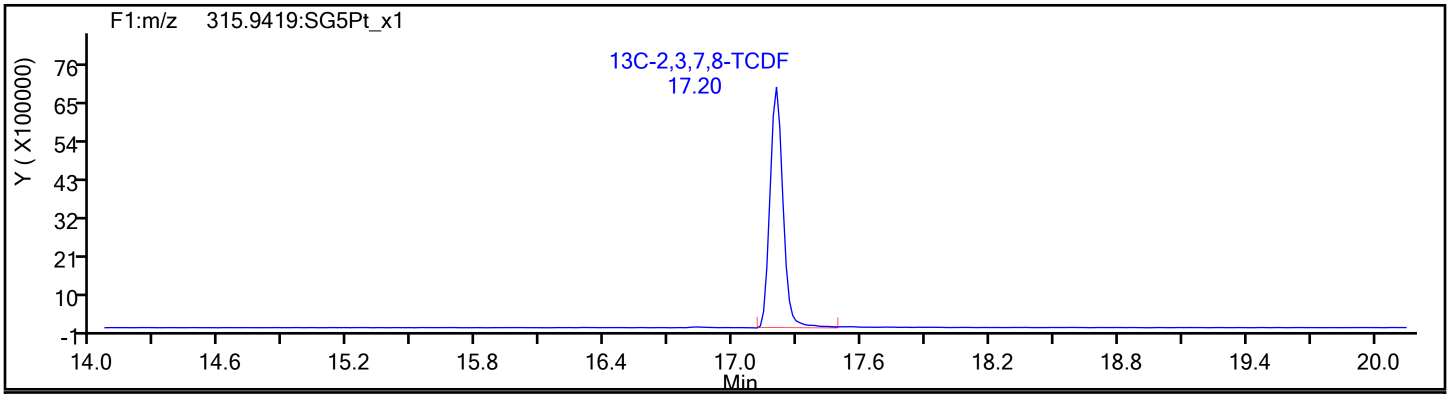

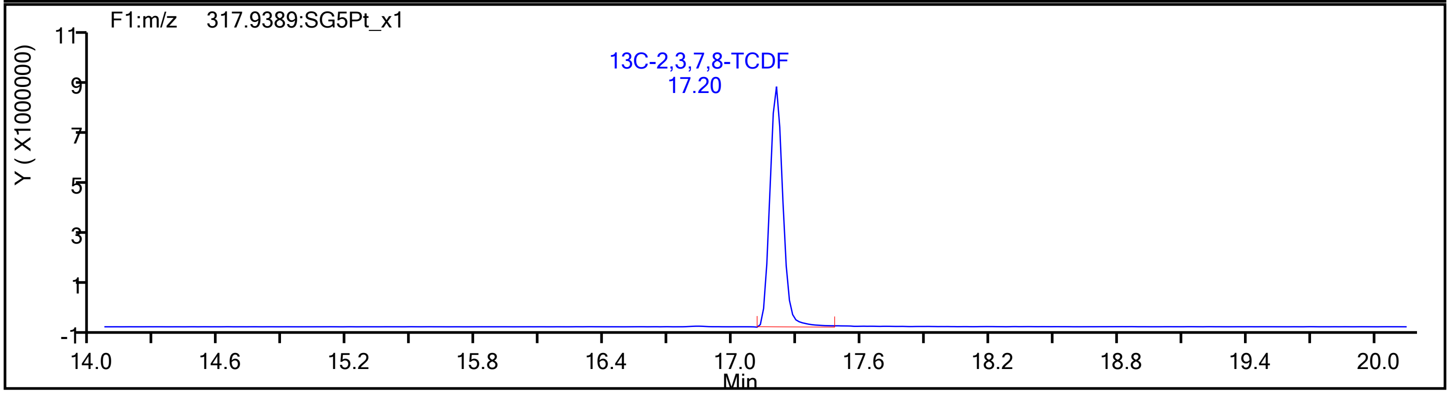

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Eurofins TestAmerica, Sacramento

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TCDF

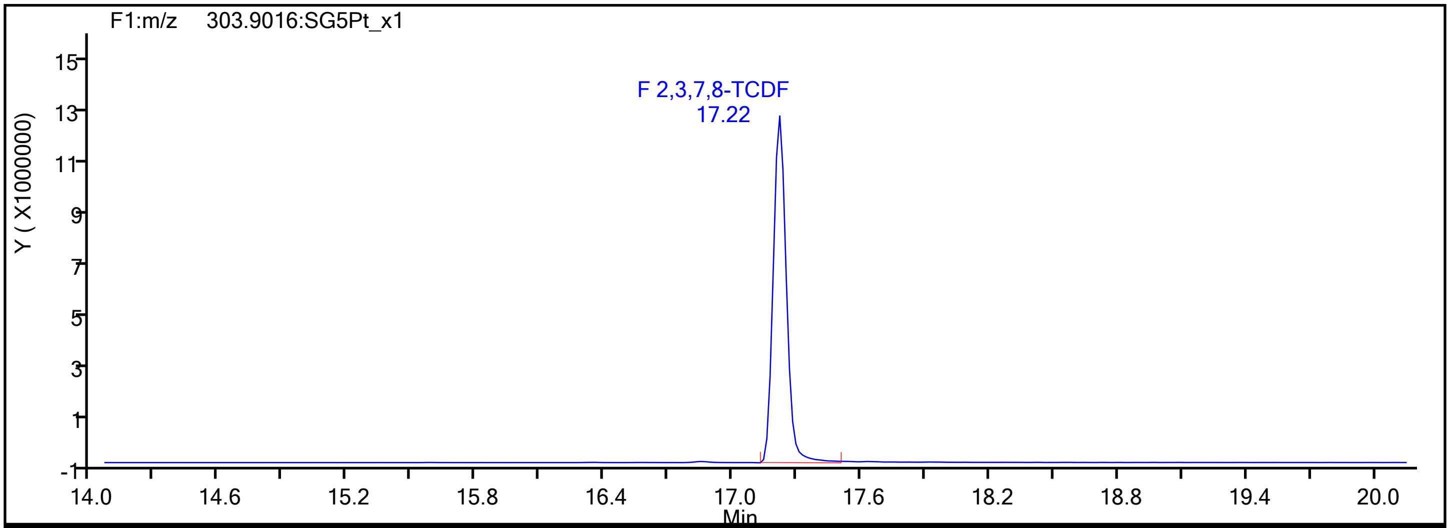

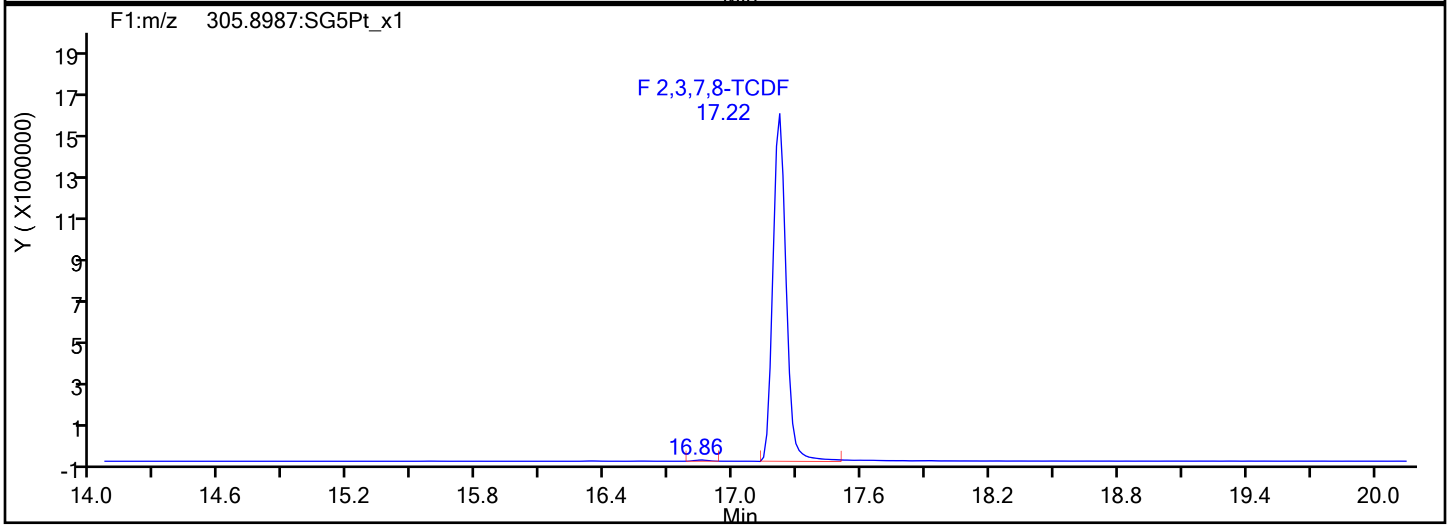

TCDF Interference Mass

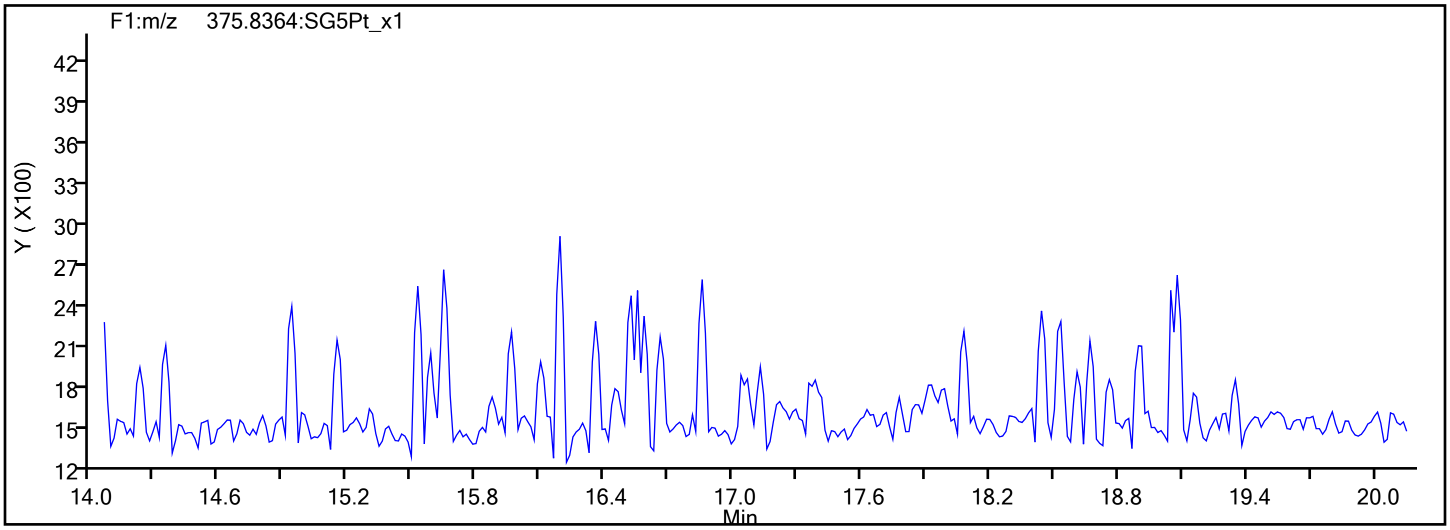

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Eurofins TestAmerica, Sacramento

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TCDD

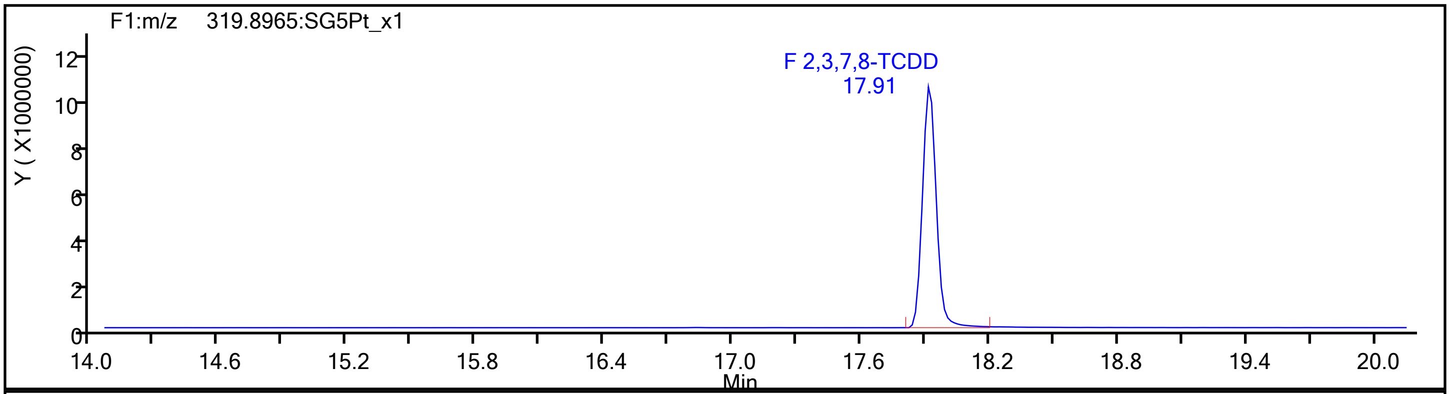

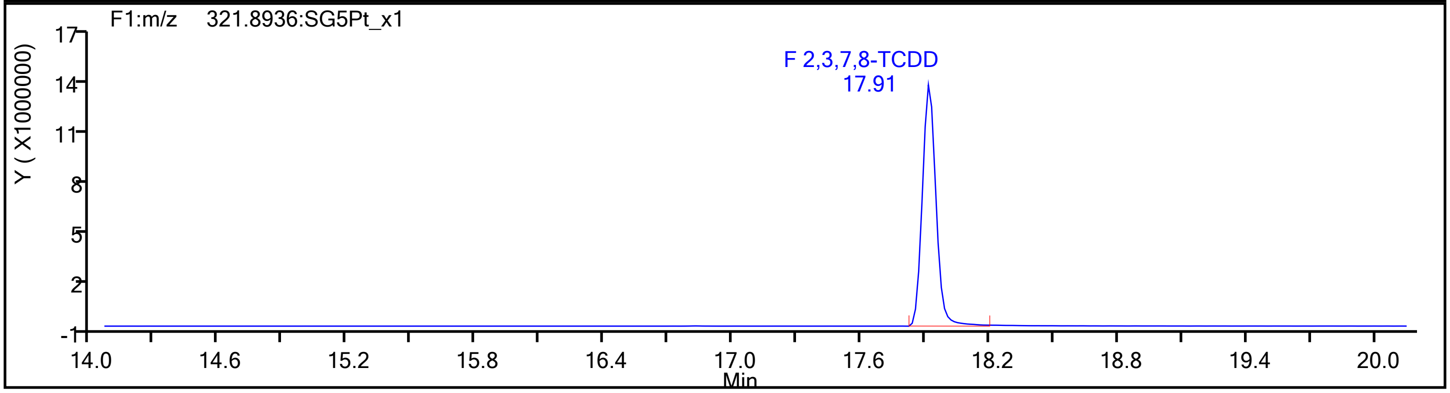

TCDD Standards

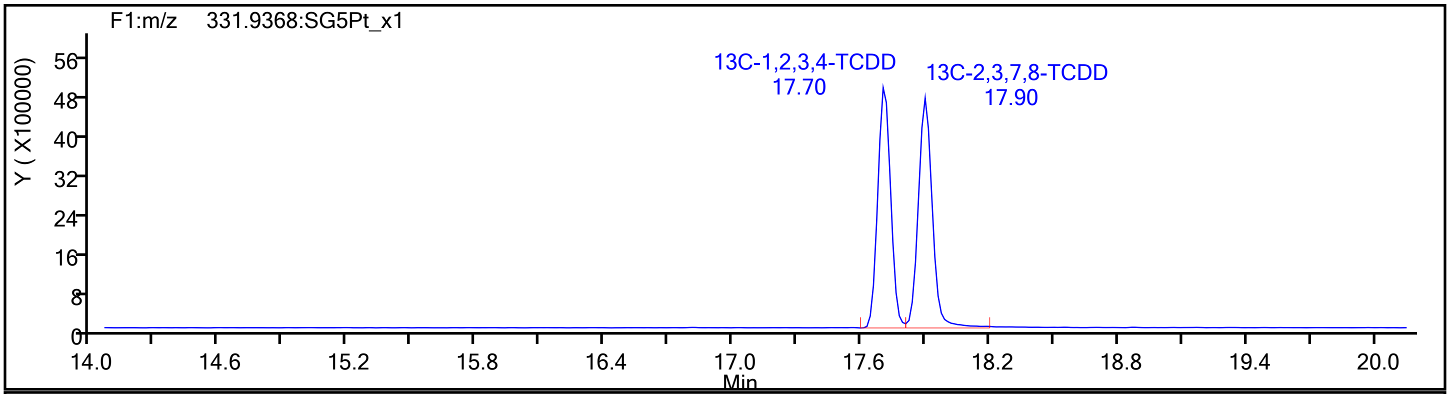

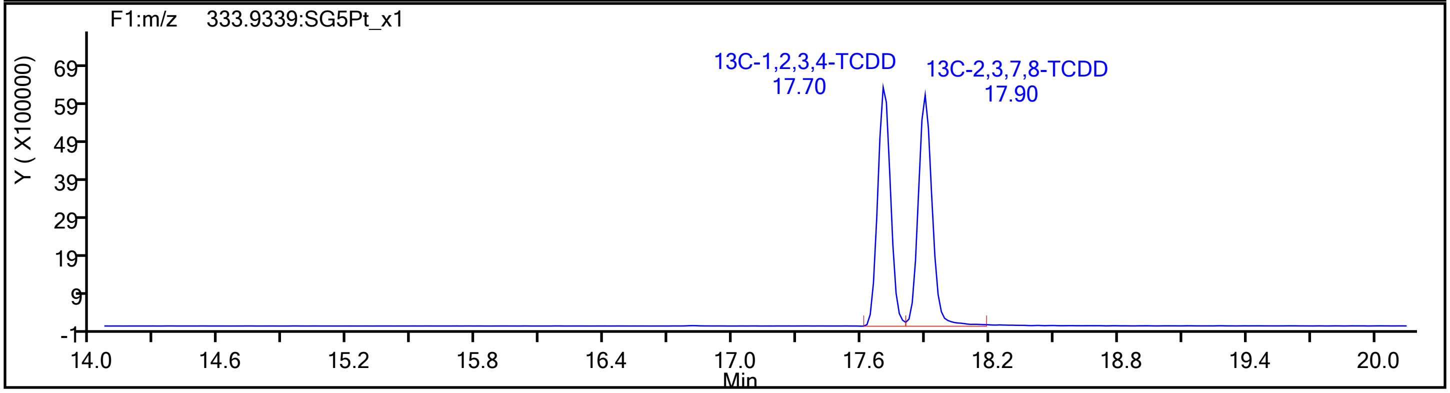

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

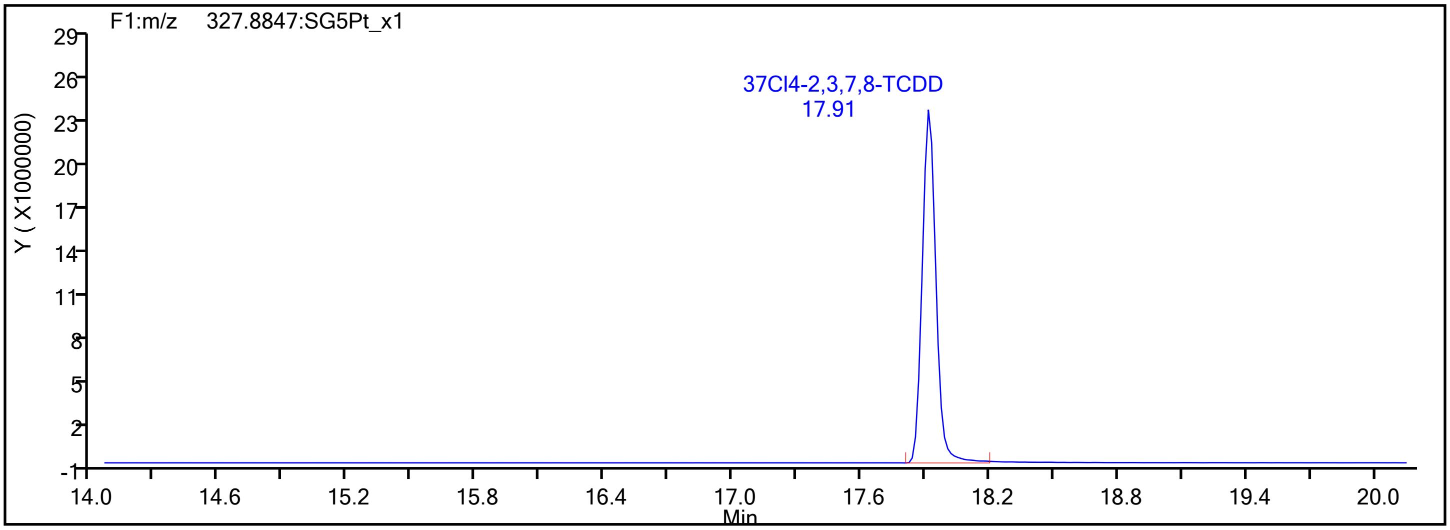

37Cl4-TCDD Standards

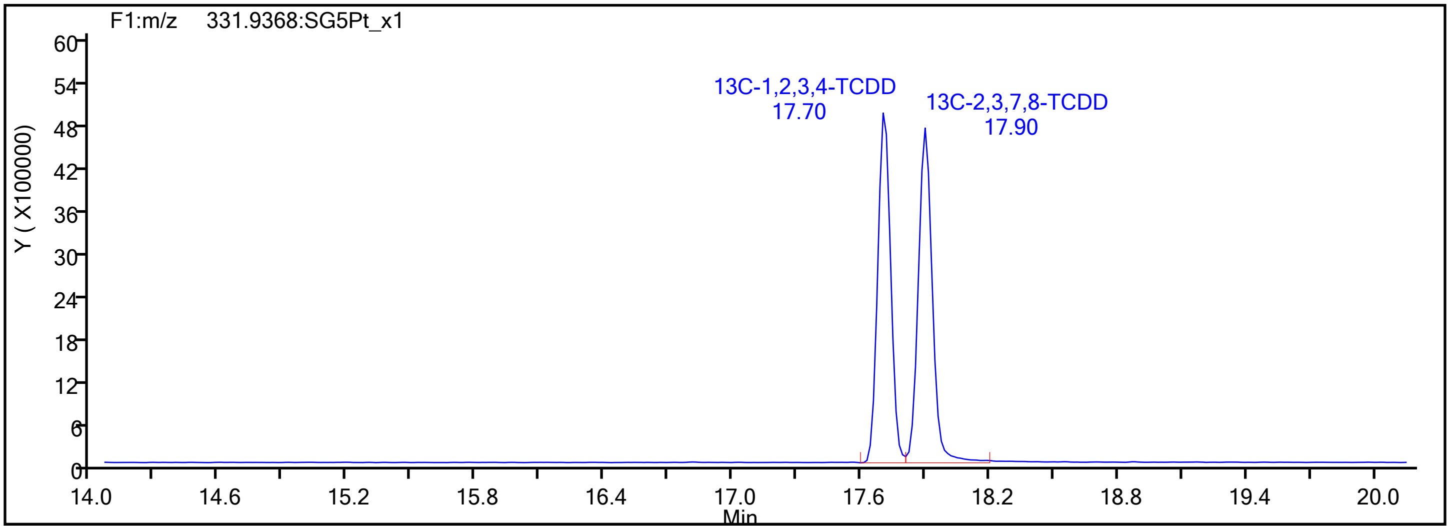

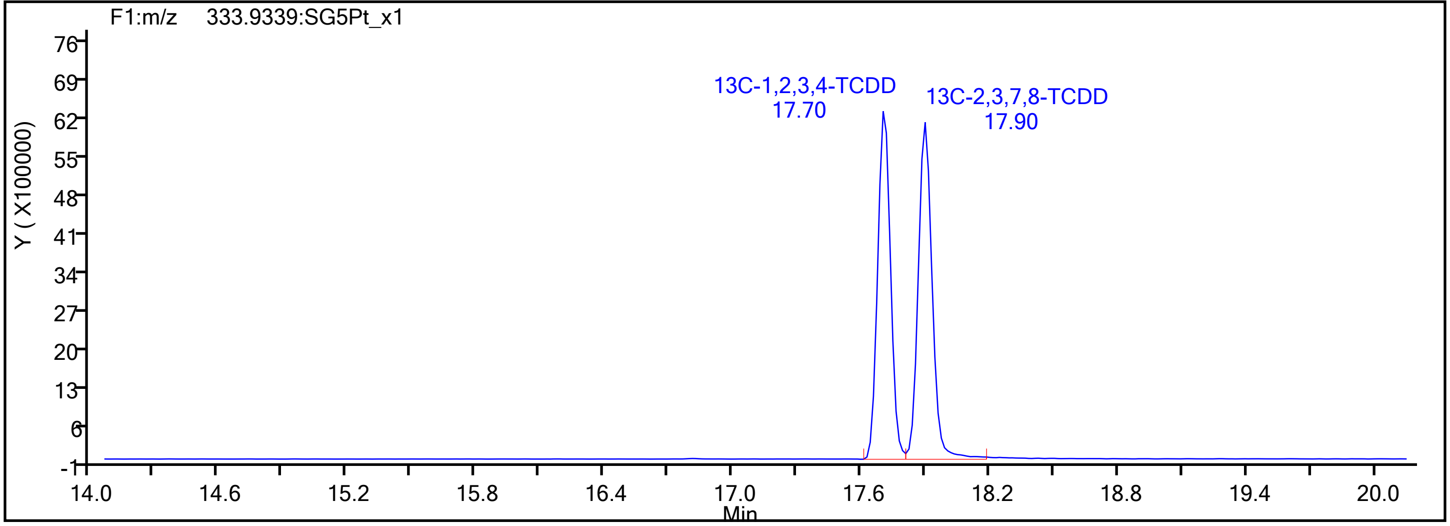

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

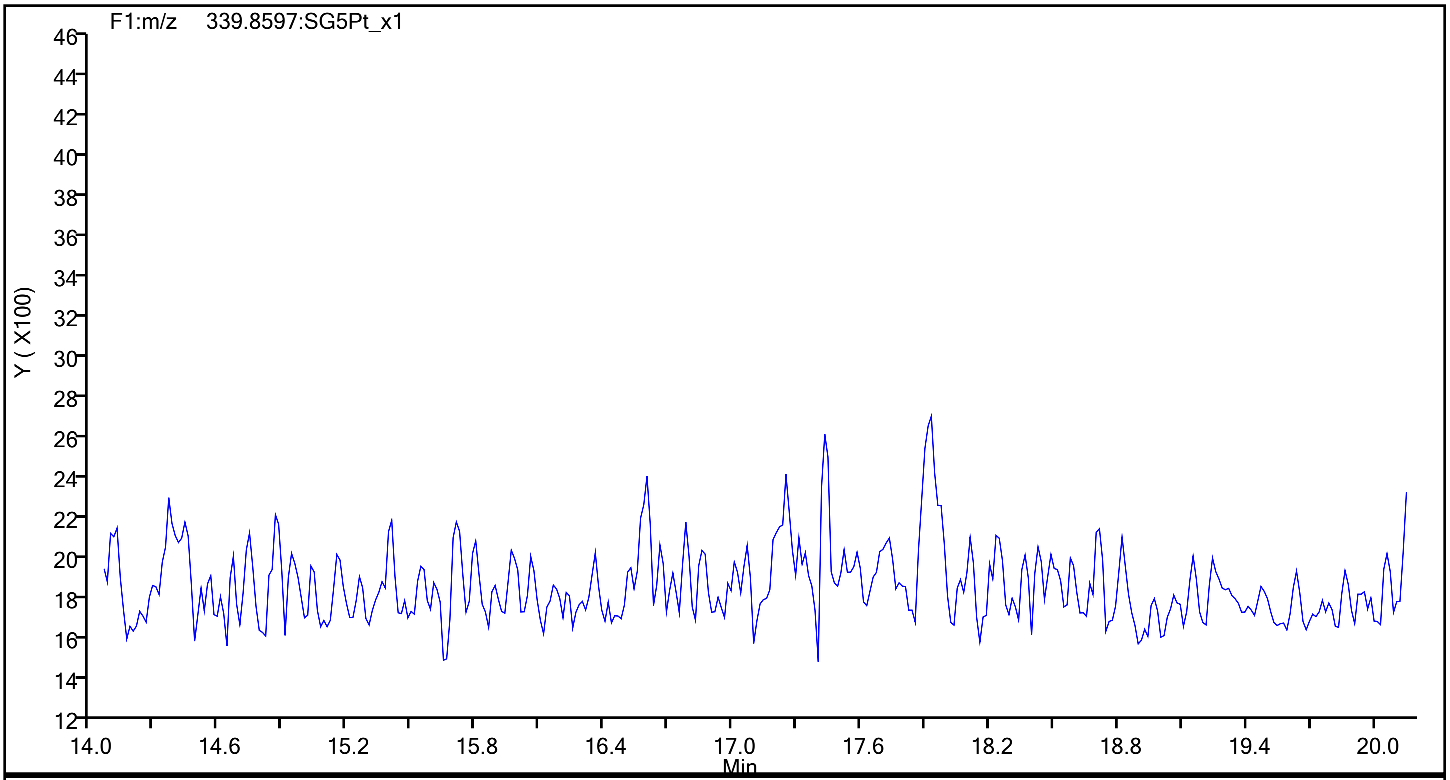

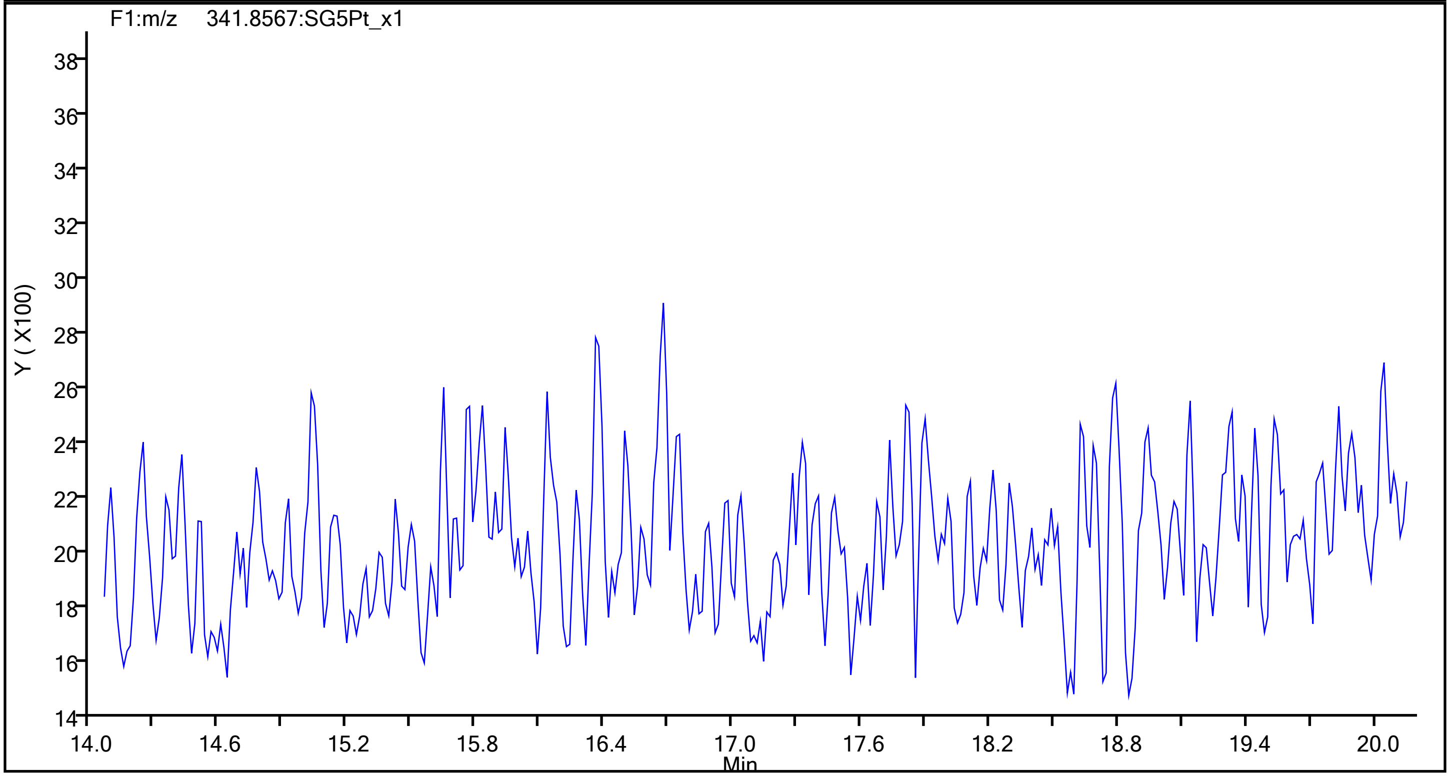

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F1 PeCDFs

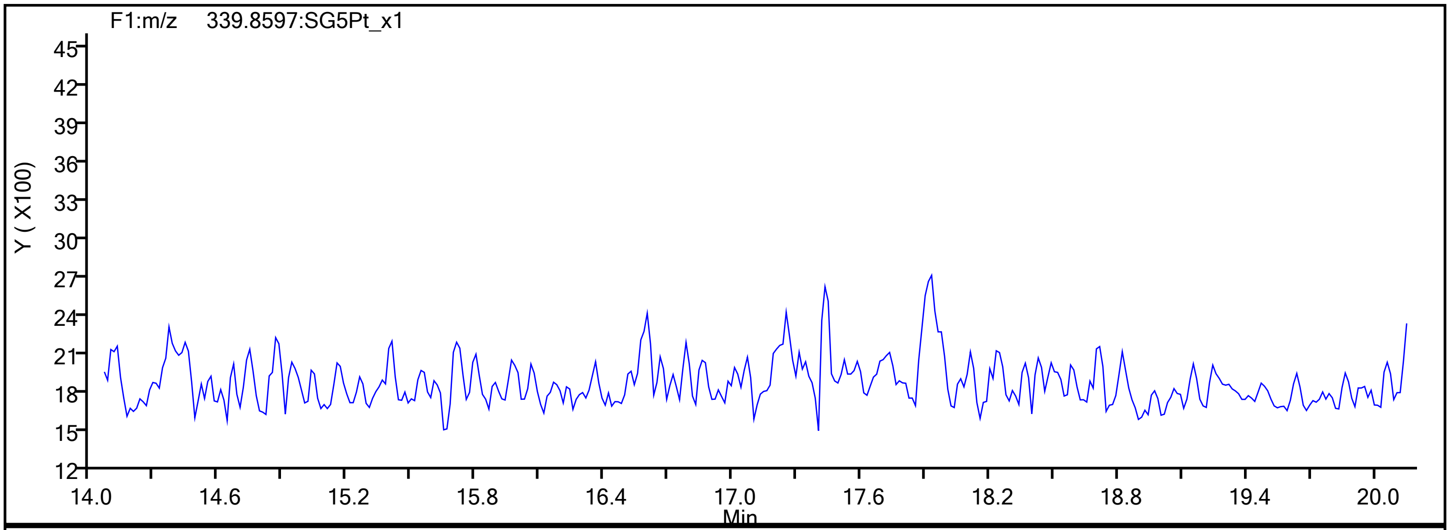

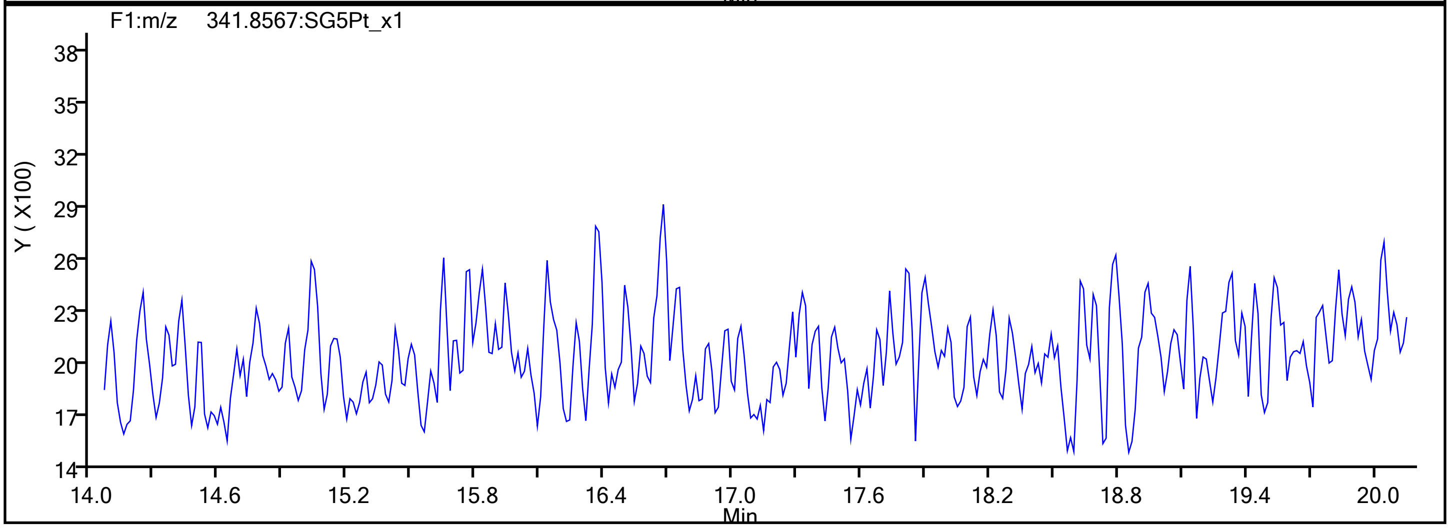

F1 PeCDFs Interference Mass

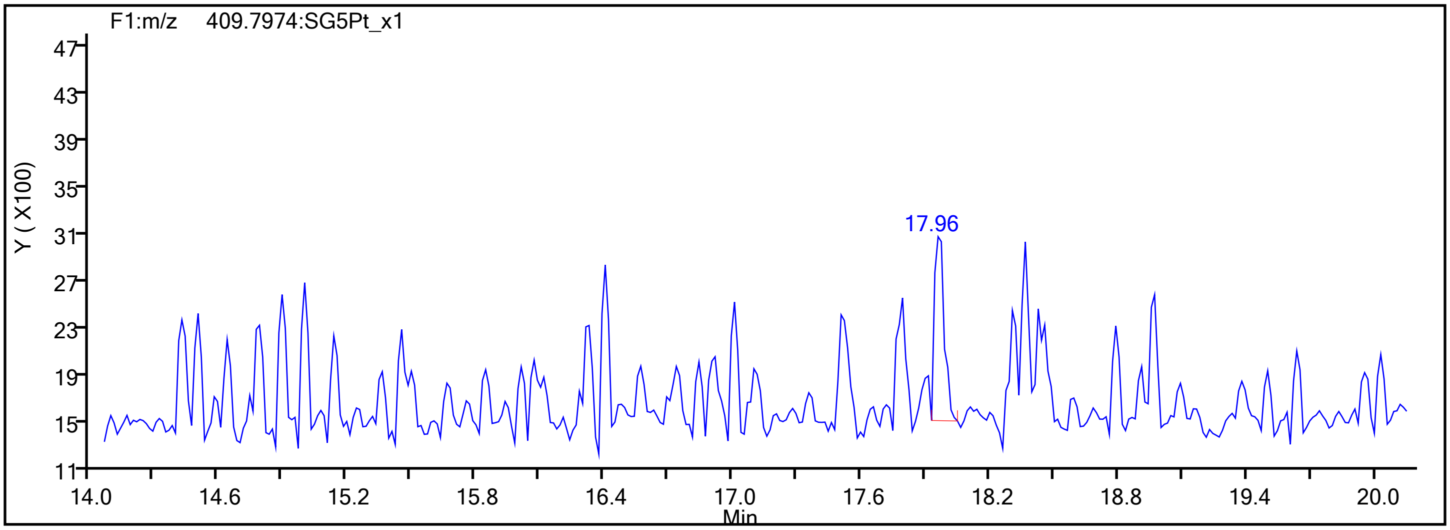

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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PeCDF

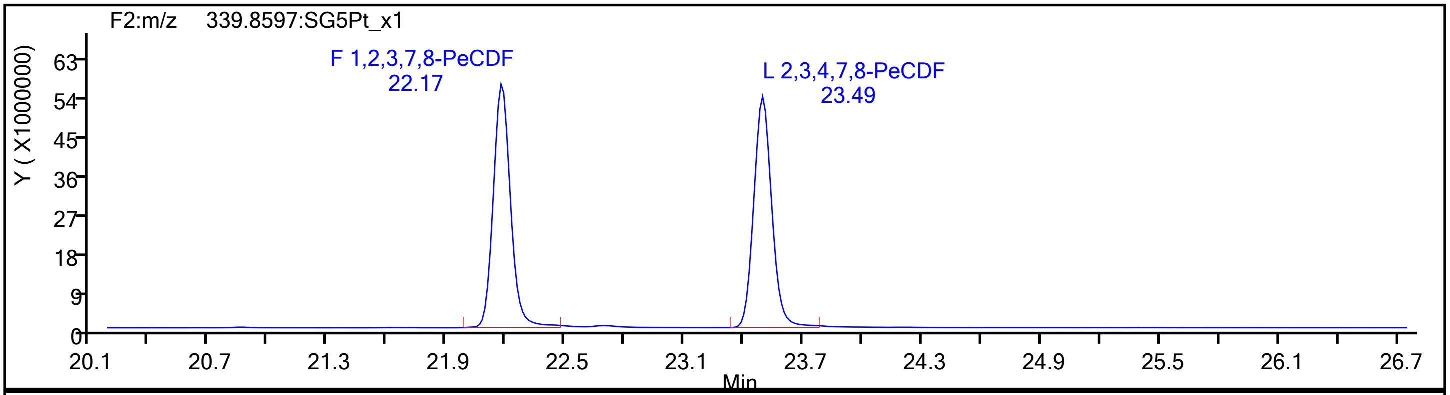

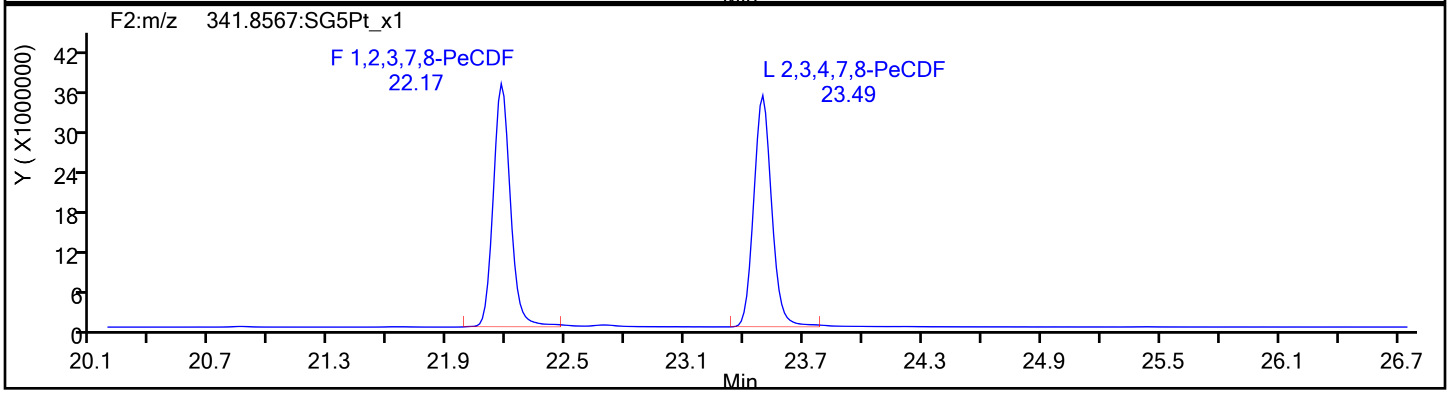

PeCDF Standards

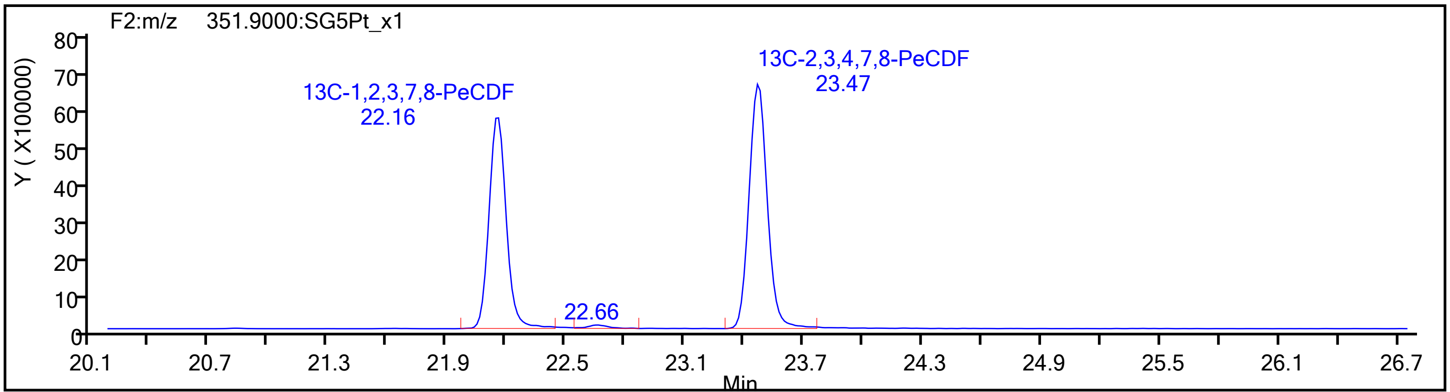

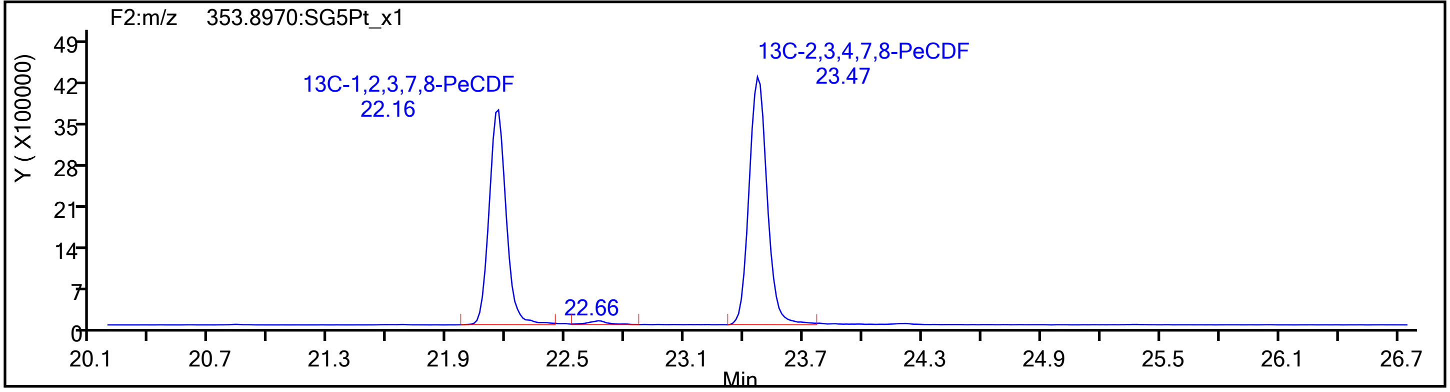

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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PeCDF

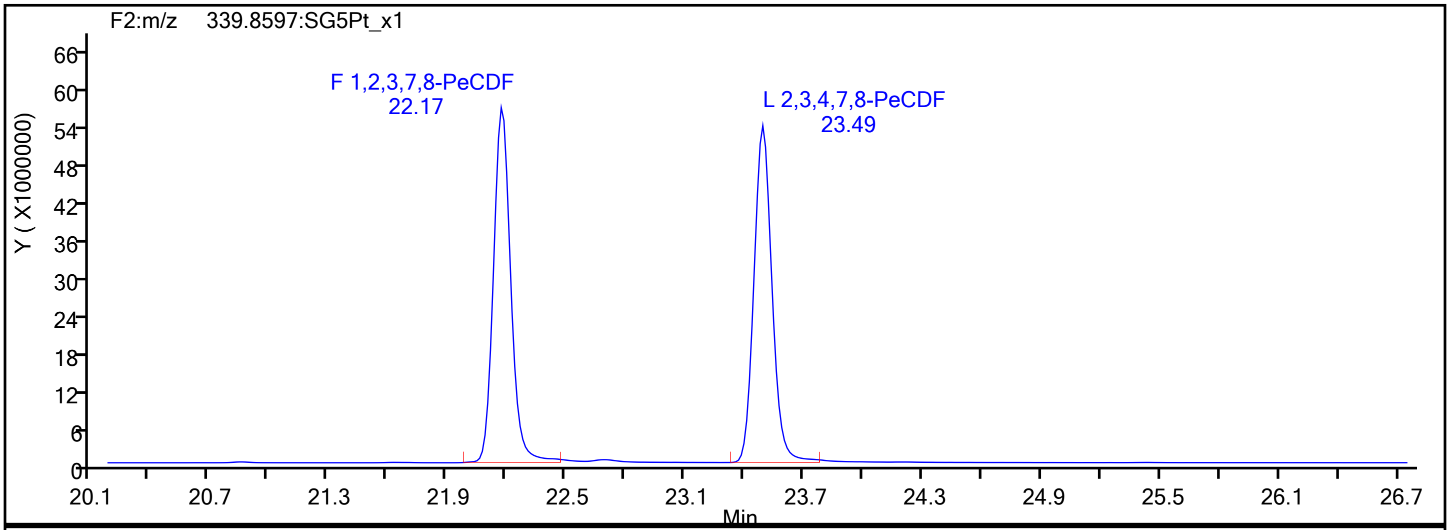

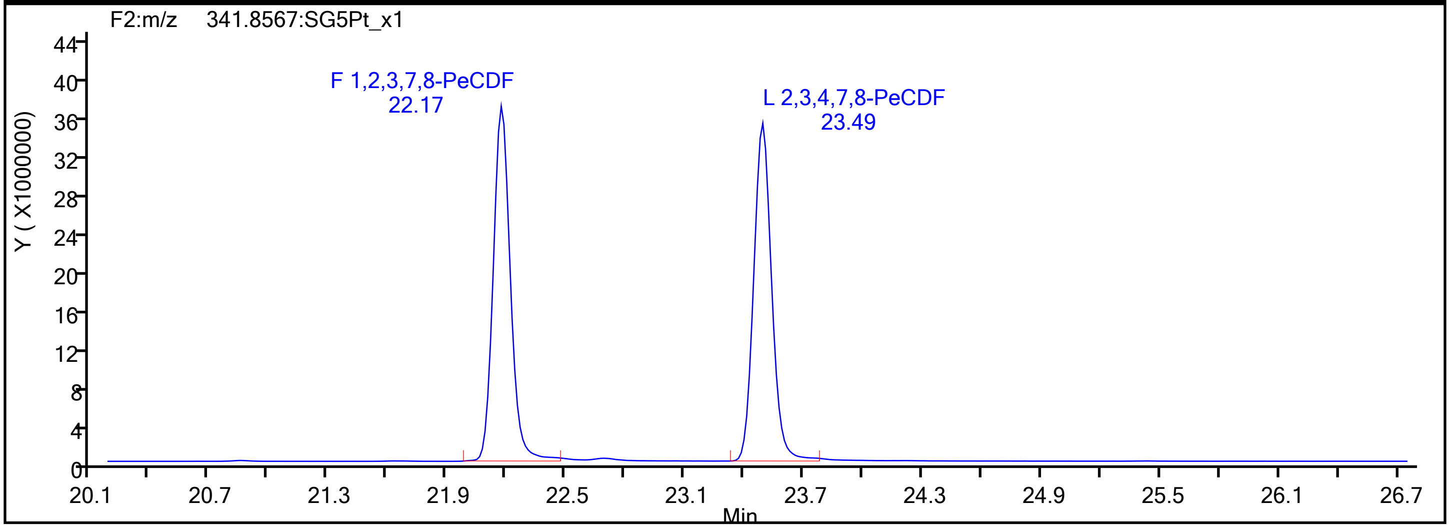

PeCDF Interference Mass

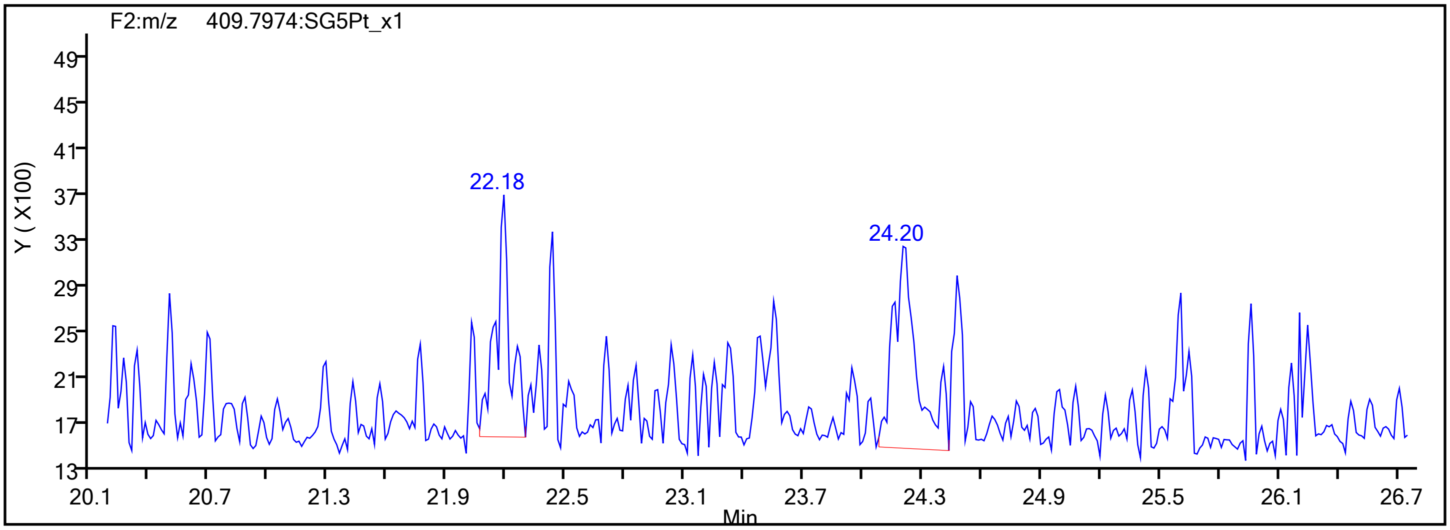

Report Date: 28-Jun-2020 13:17:22 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Injection Date: 27-Jun-2020 17:43:35 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

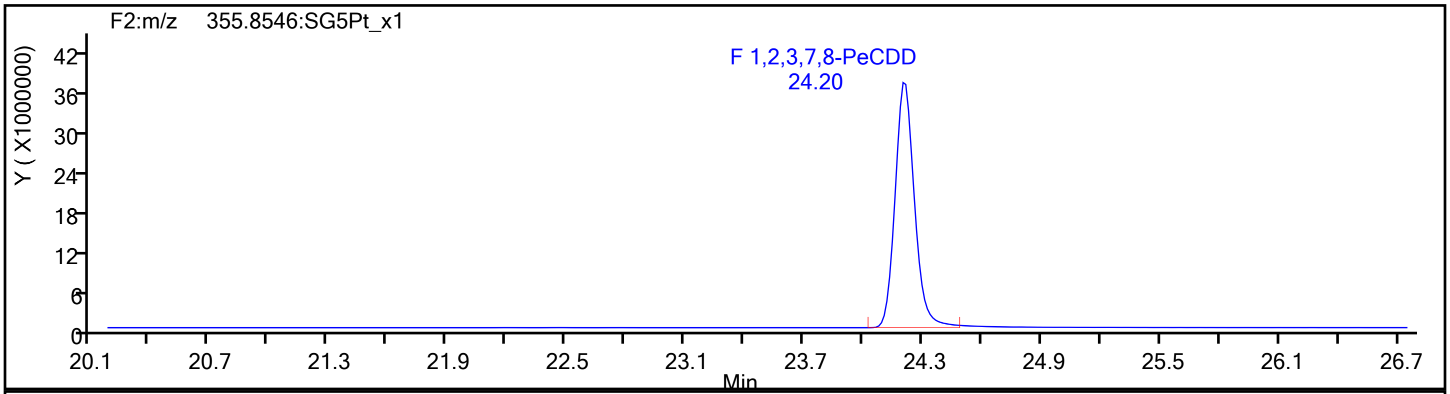

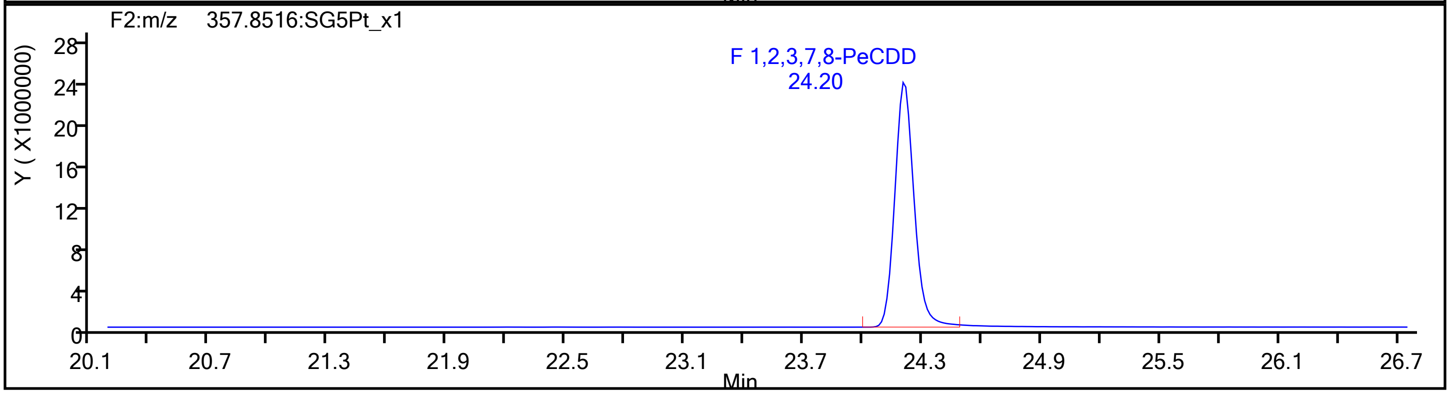

PeCDD Standards

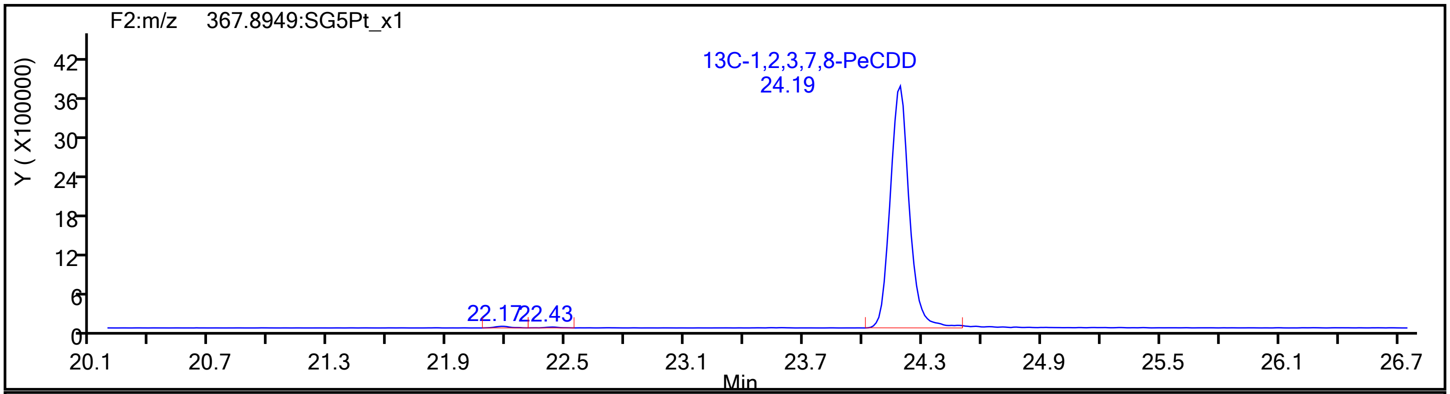

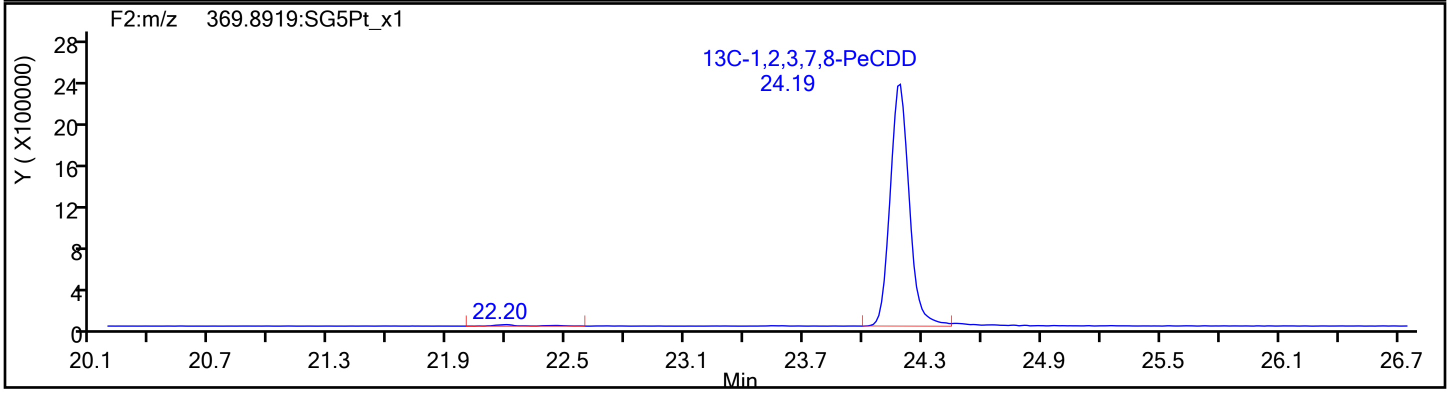

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

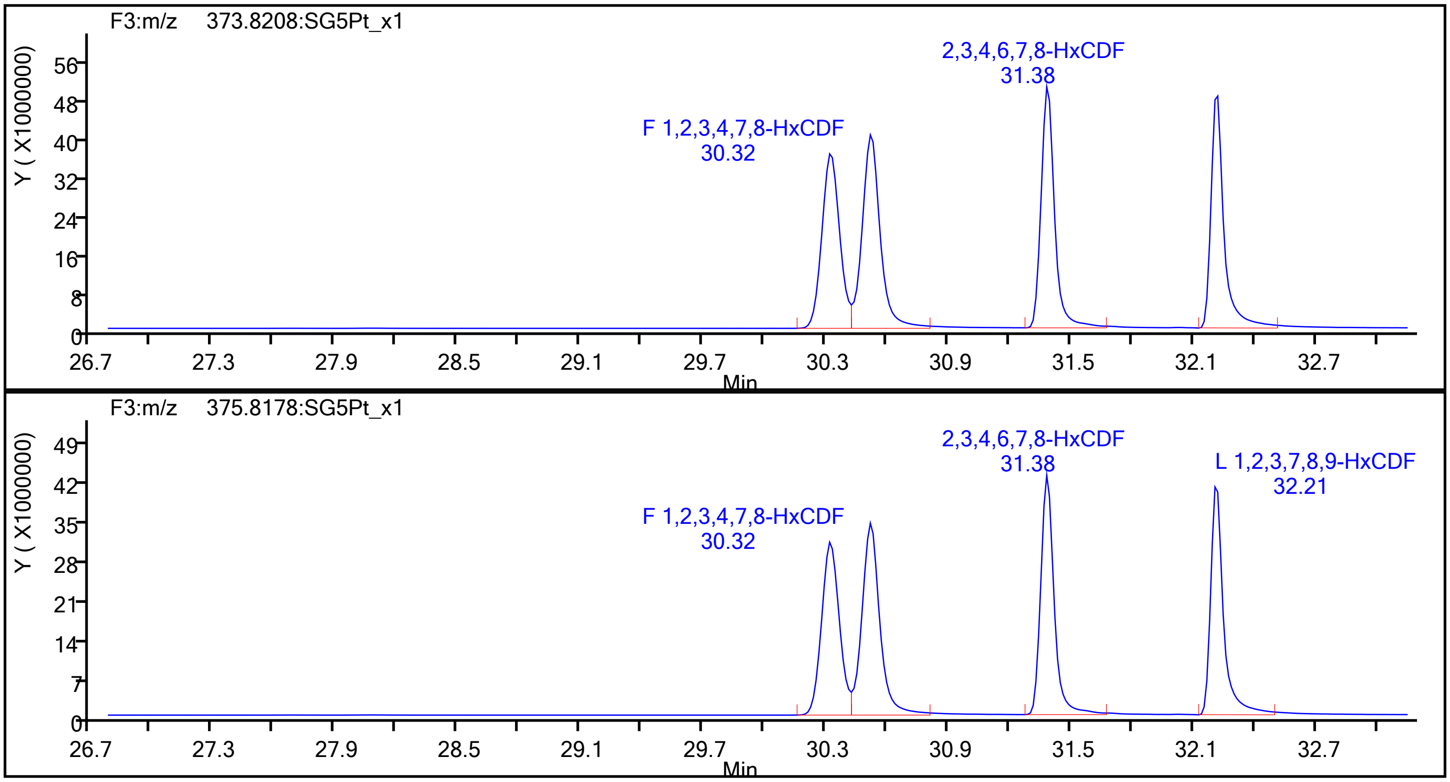

HxCDF Standards

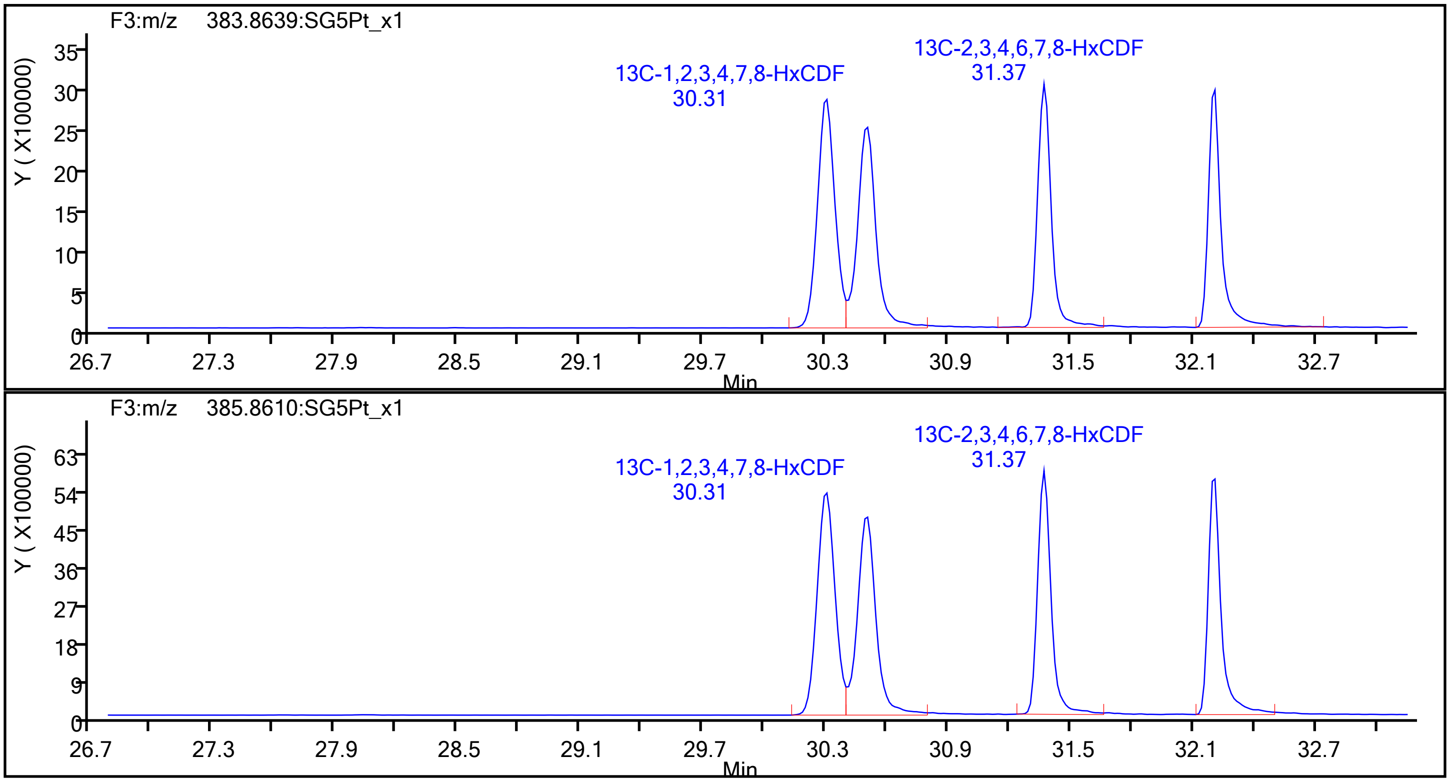

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

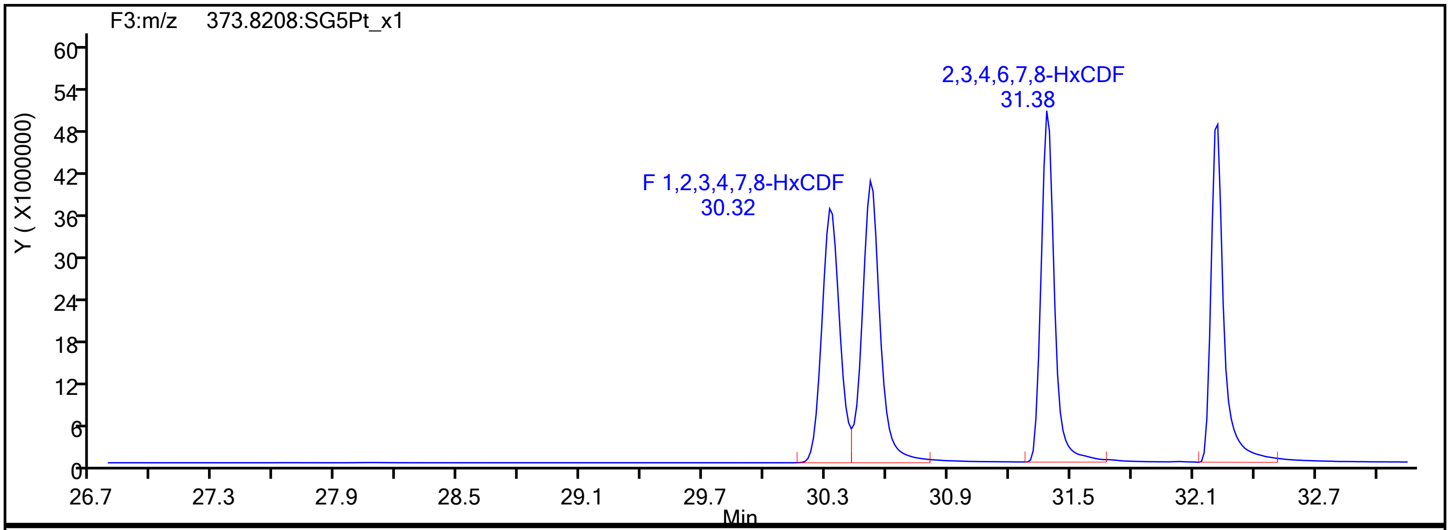

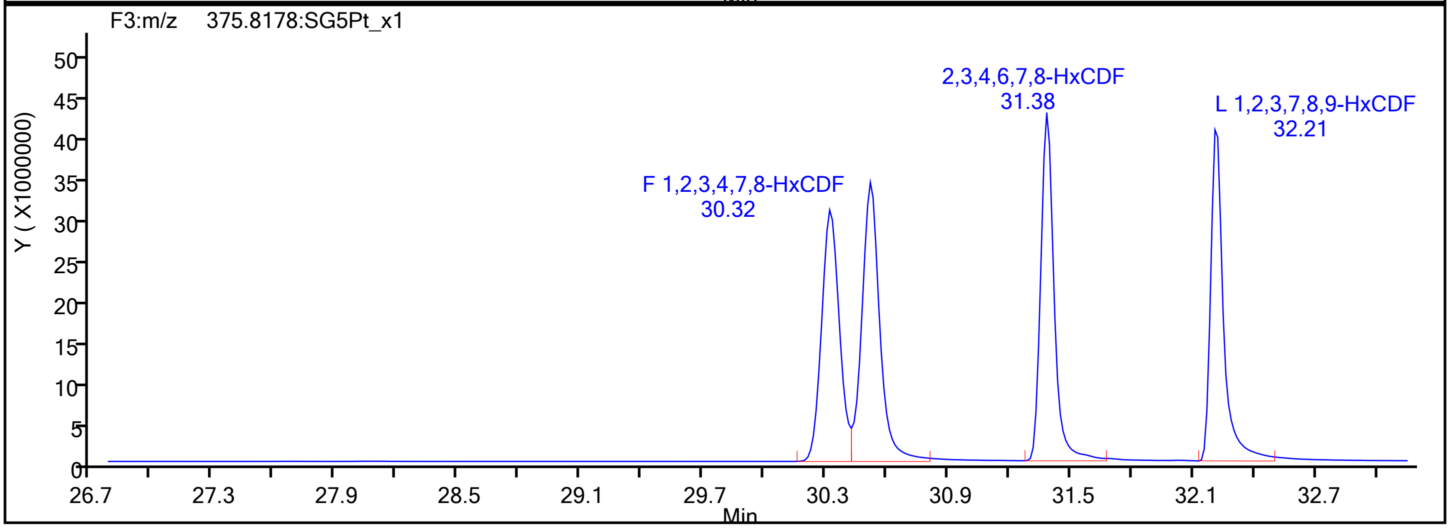

HxCDF Interference Mass

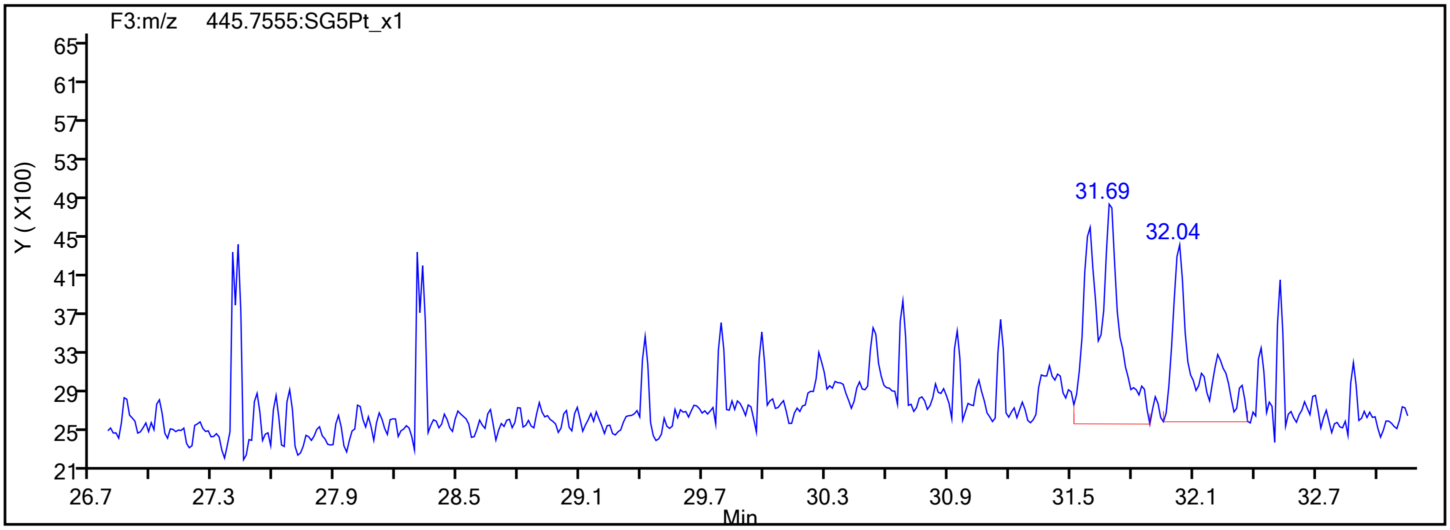

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Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

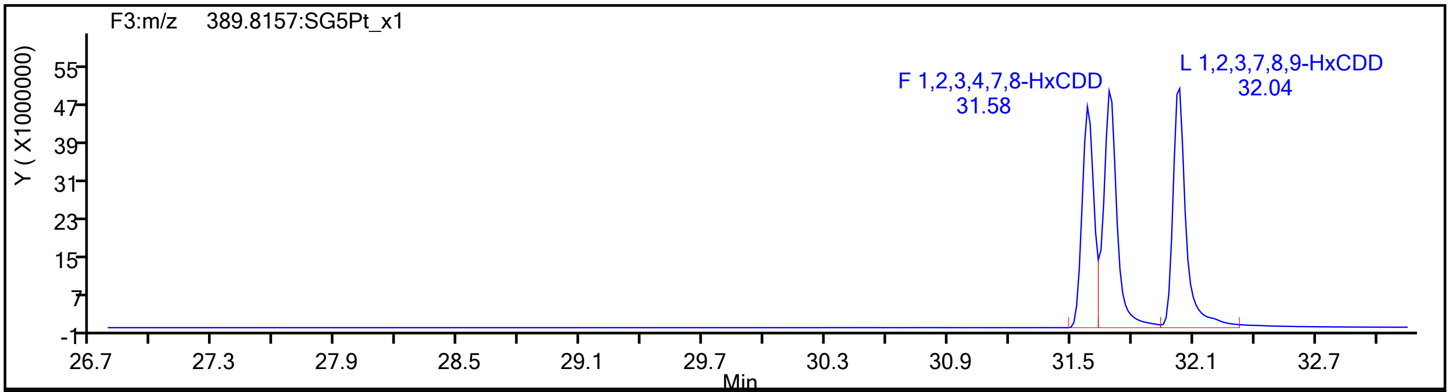

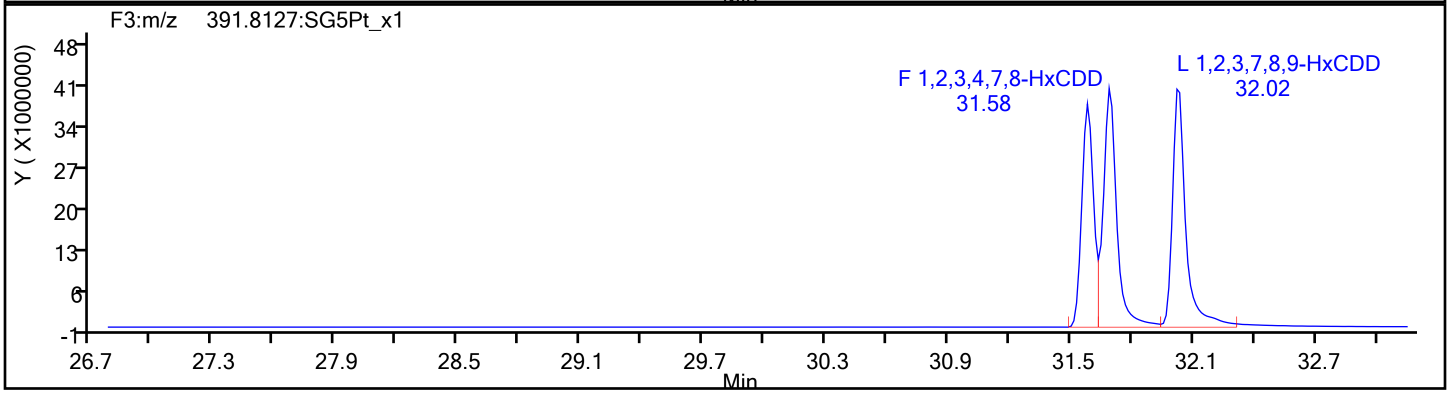

HxCDD Standards

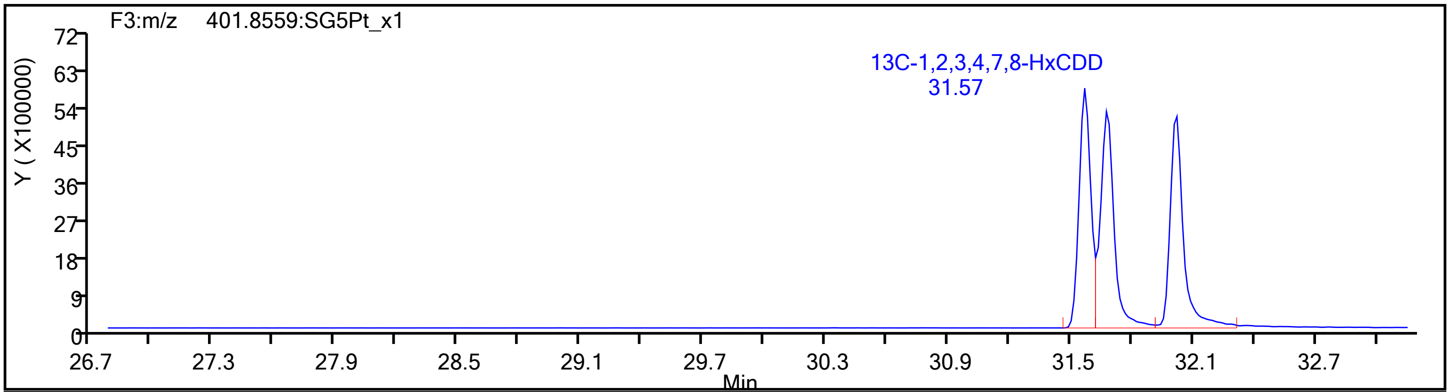

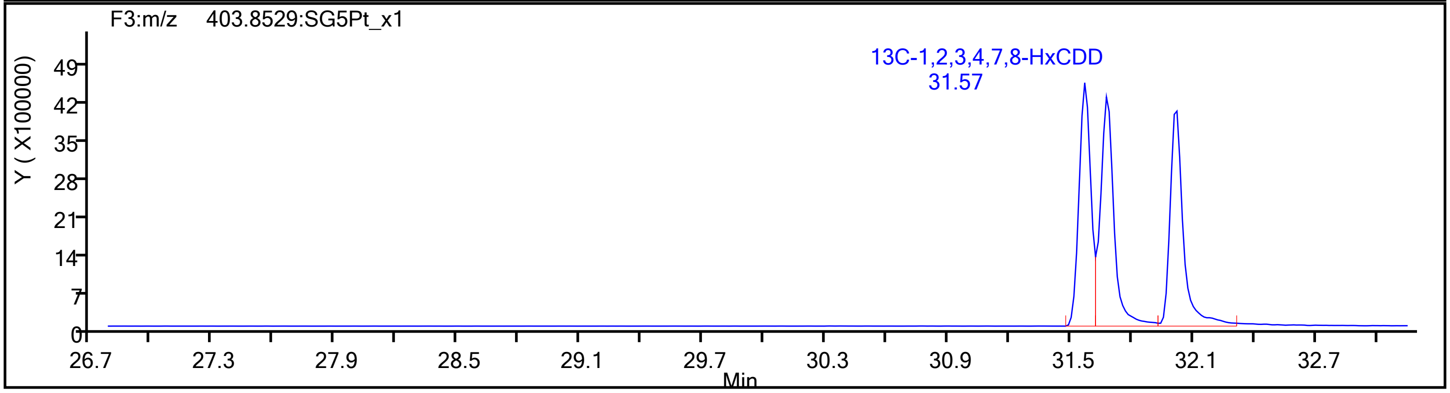

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

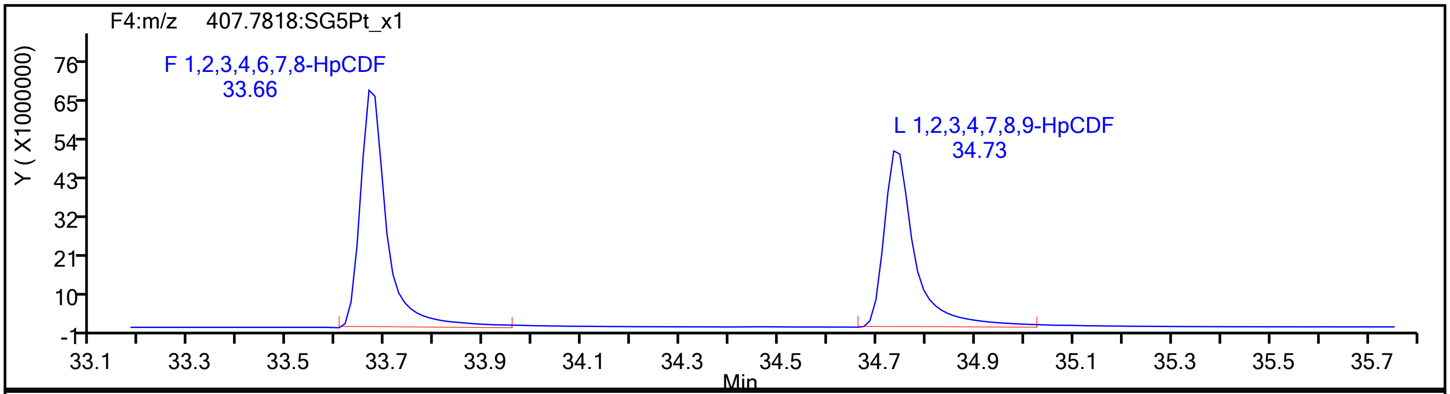

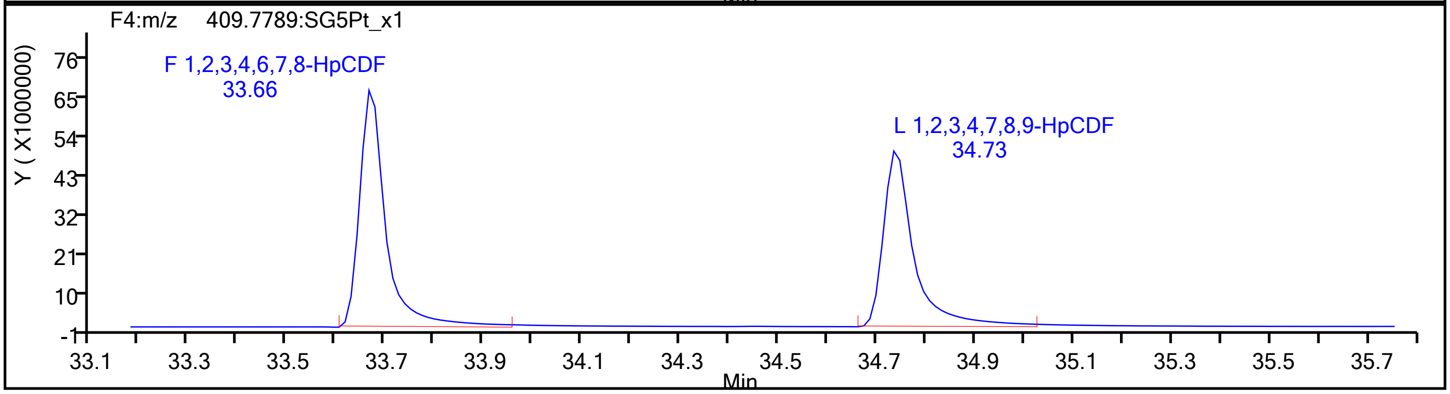

HpCDF Standards

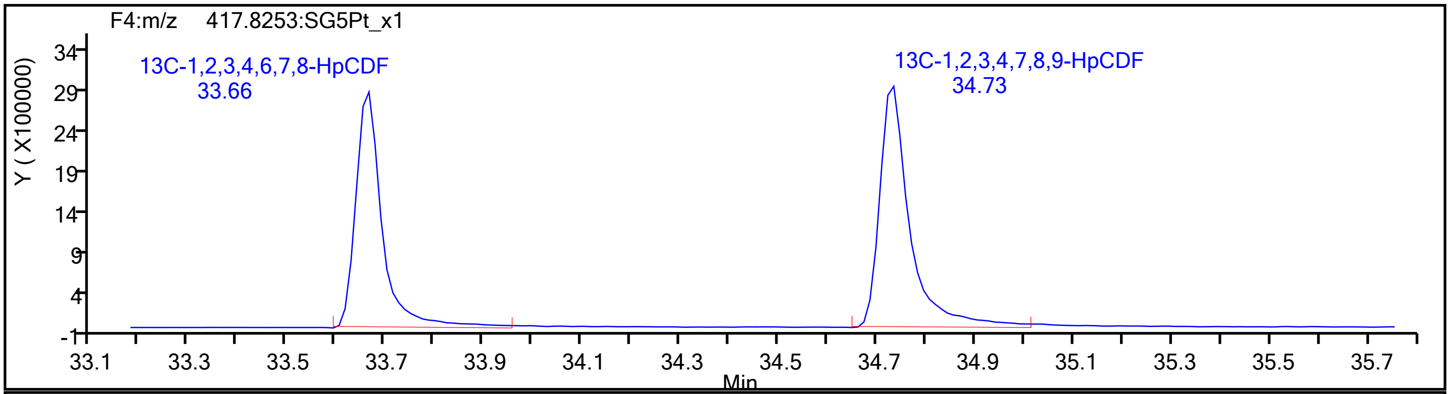

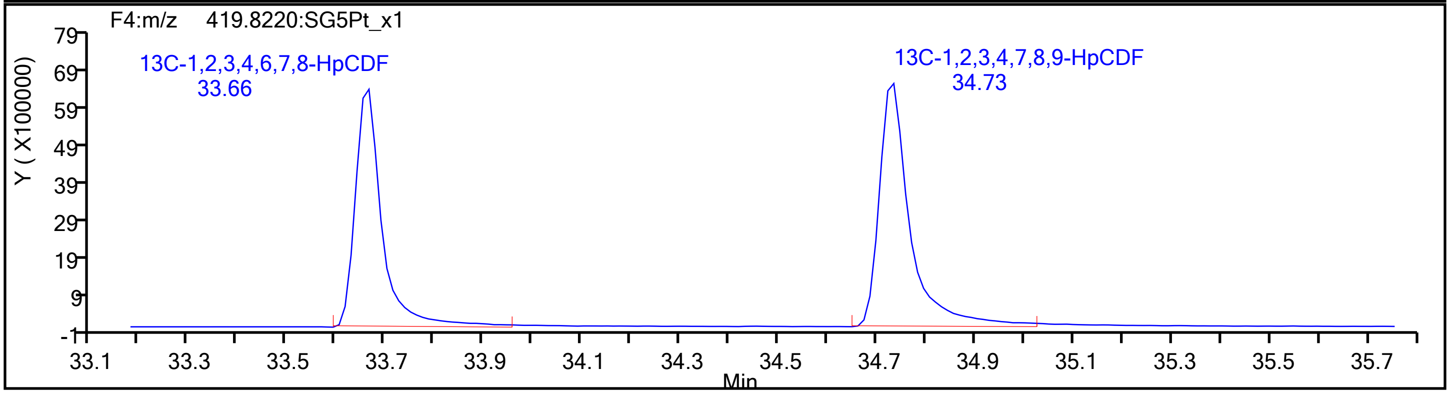

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

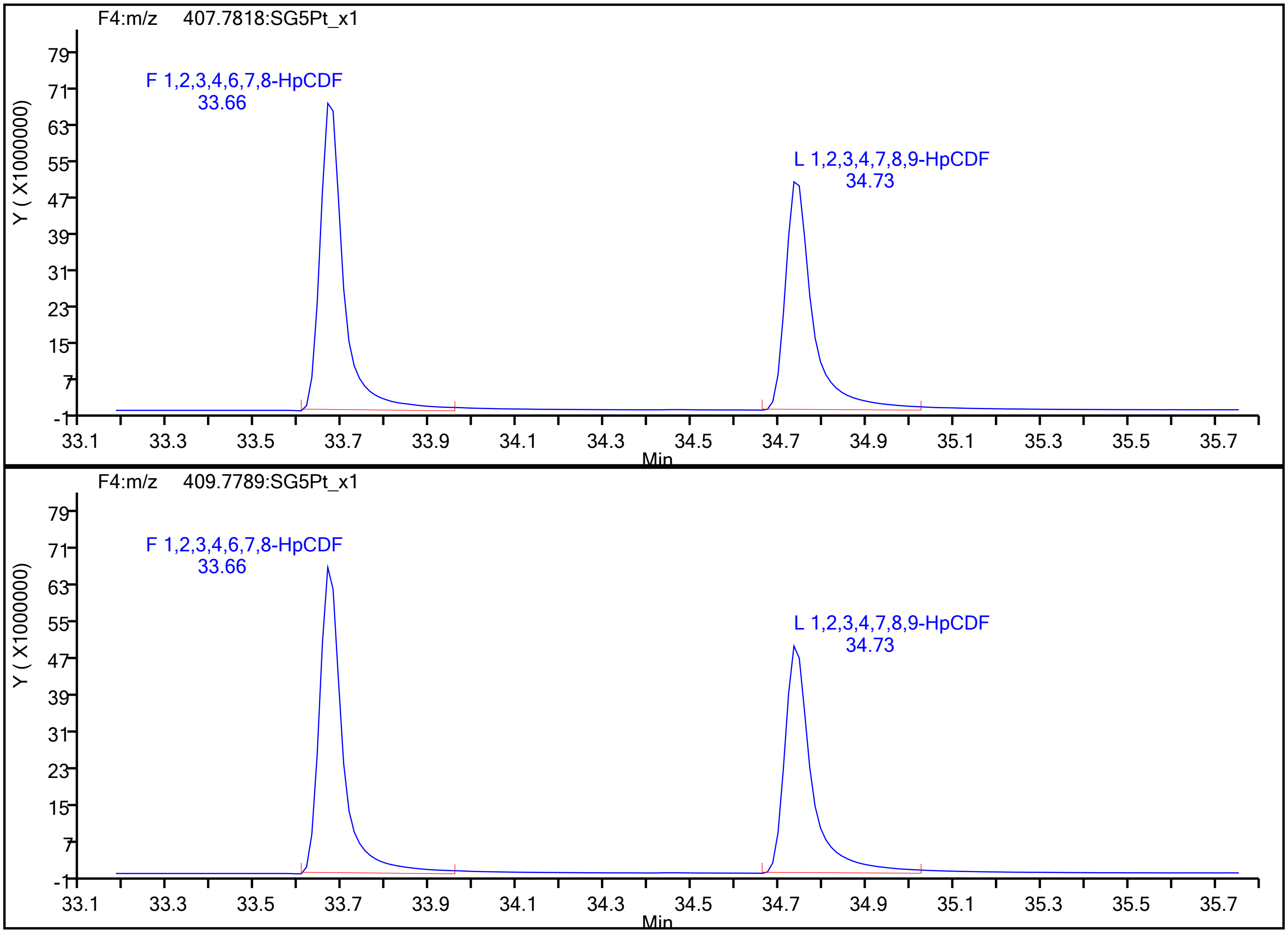

HpCDF Interference Mass

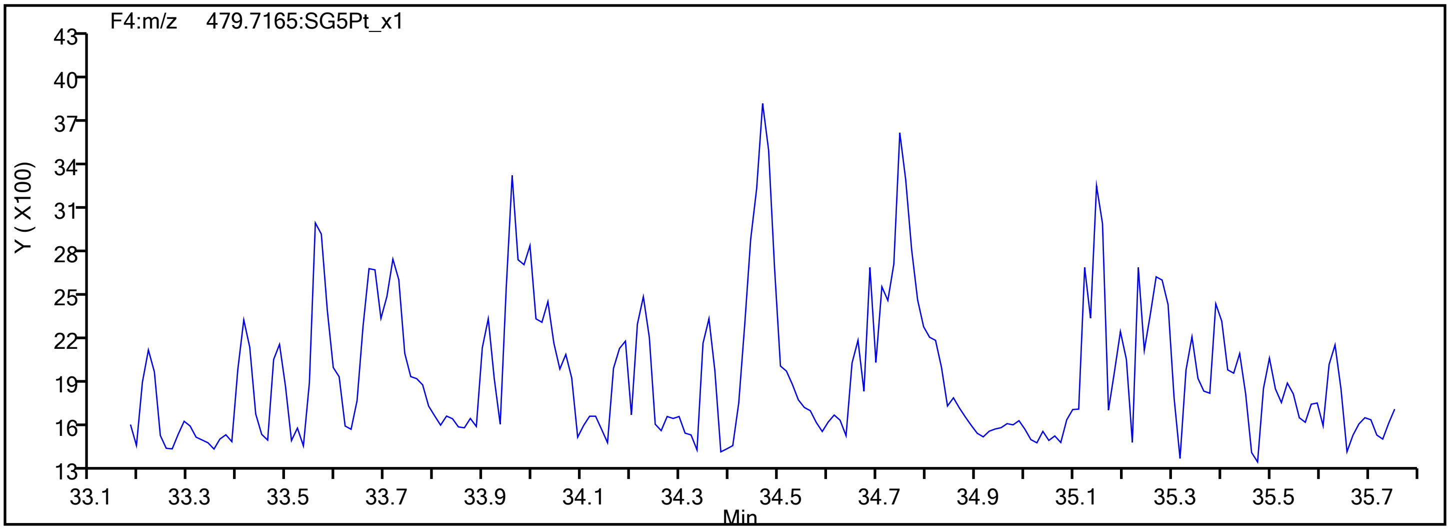

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Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 17:43:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

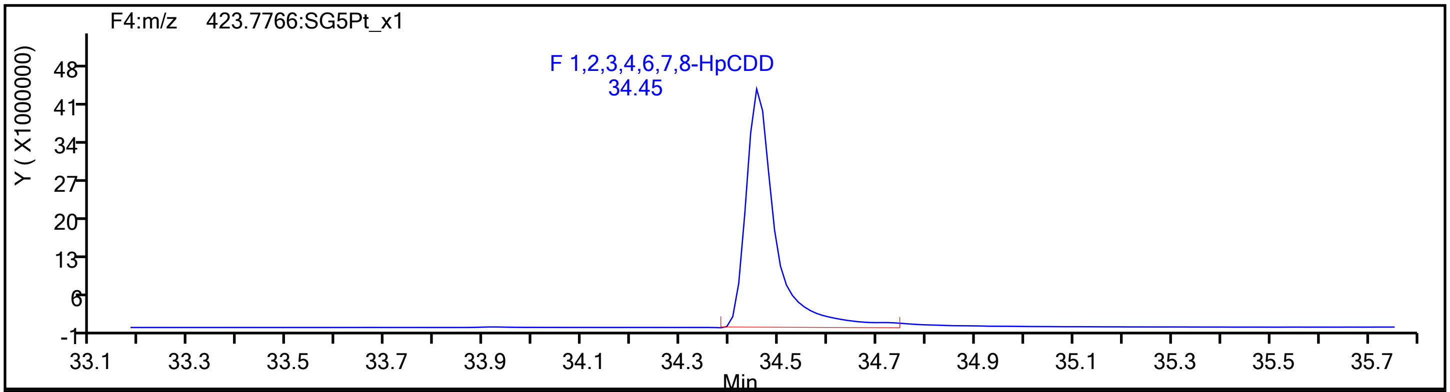

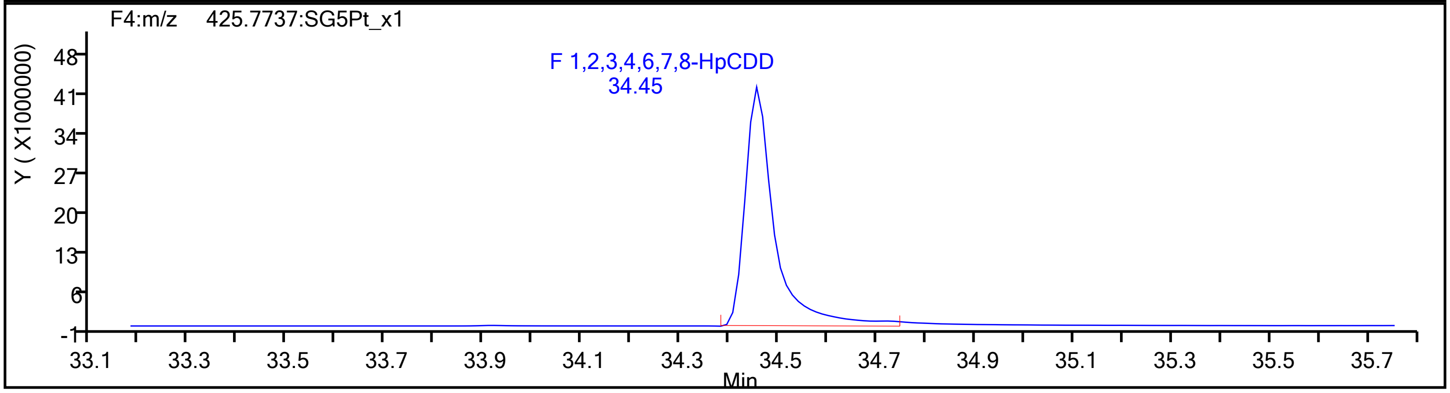

HpCDD Standards

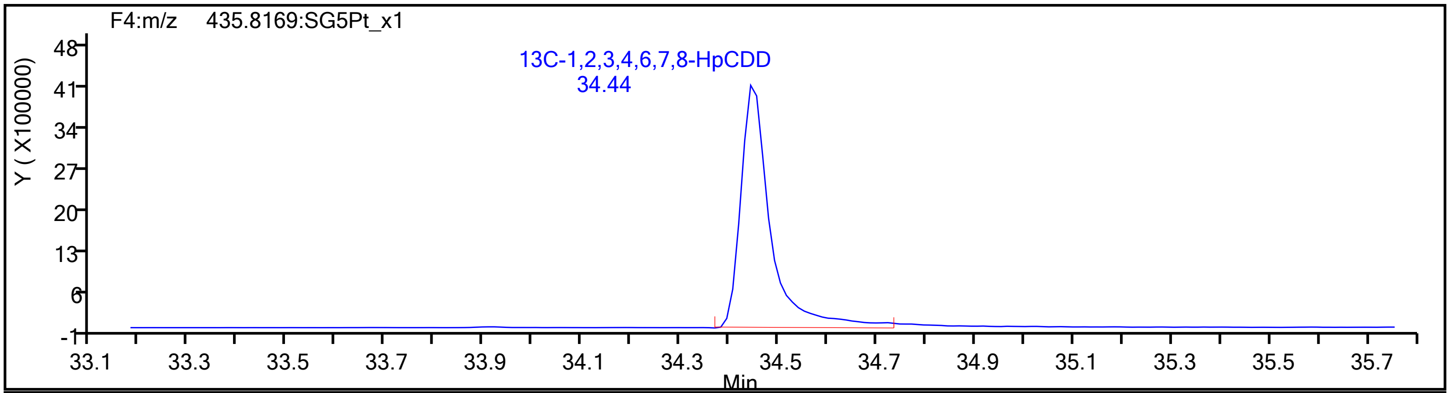

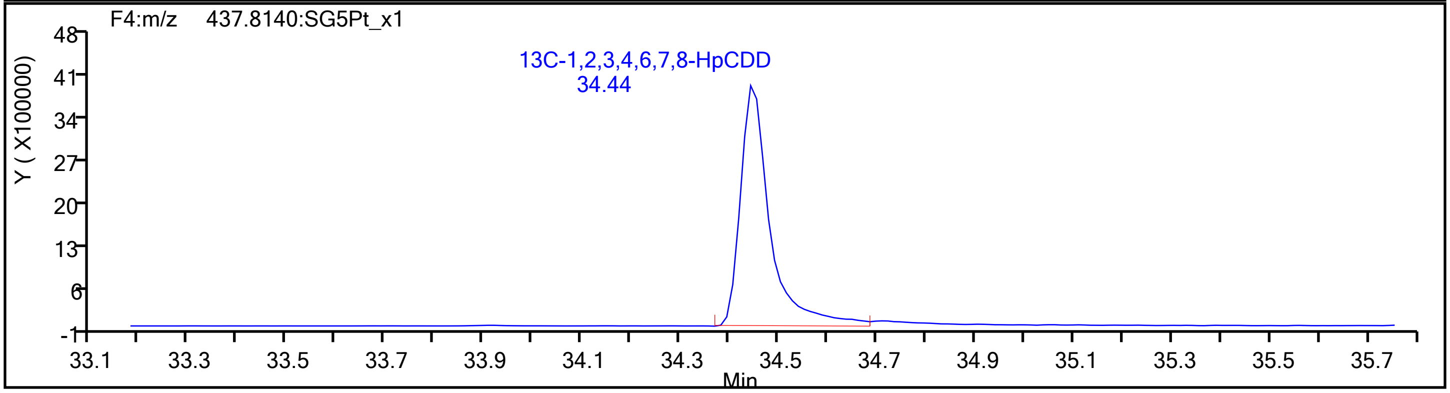

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Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 17:43:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

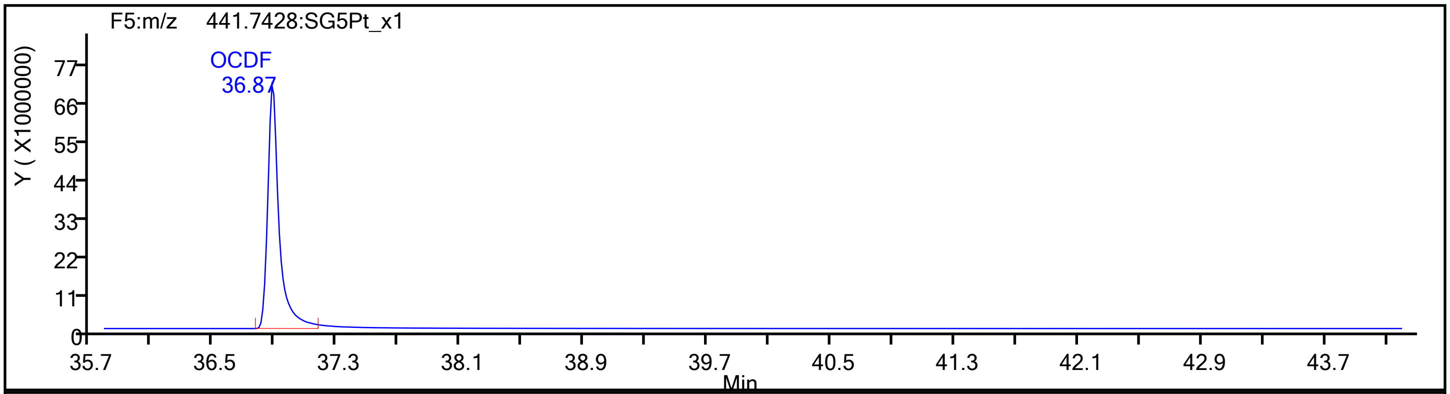

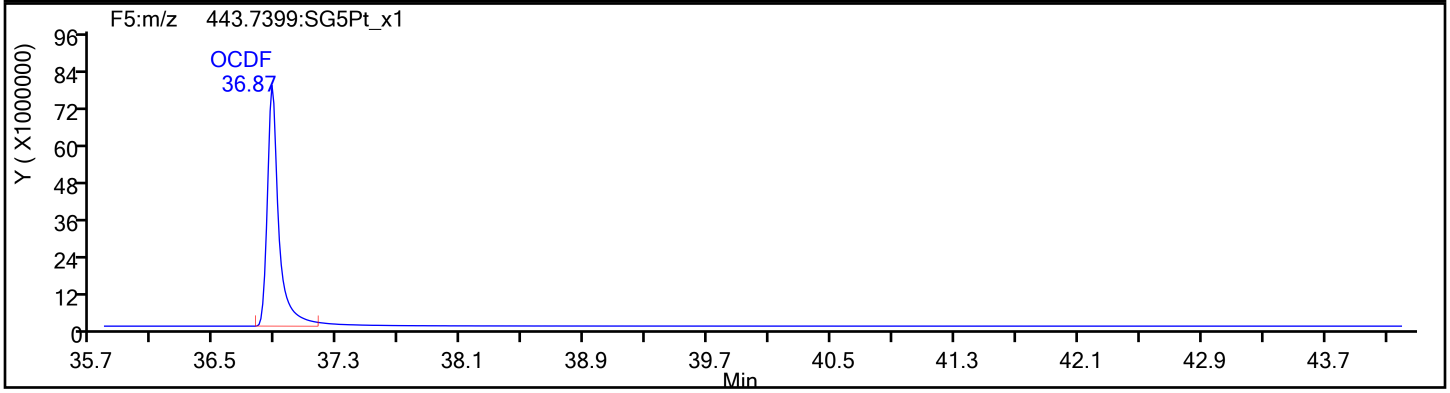

OCDF Standards

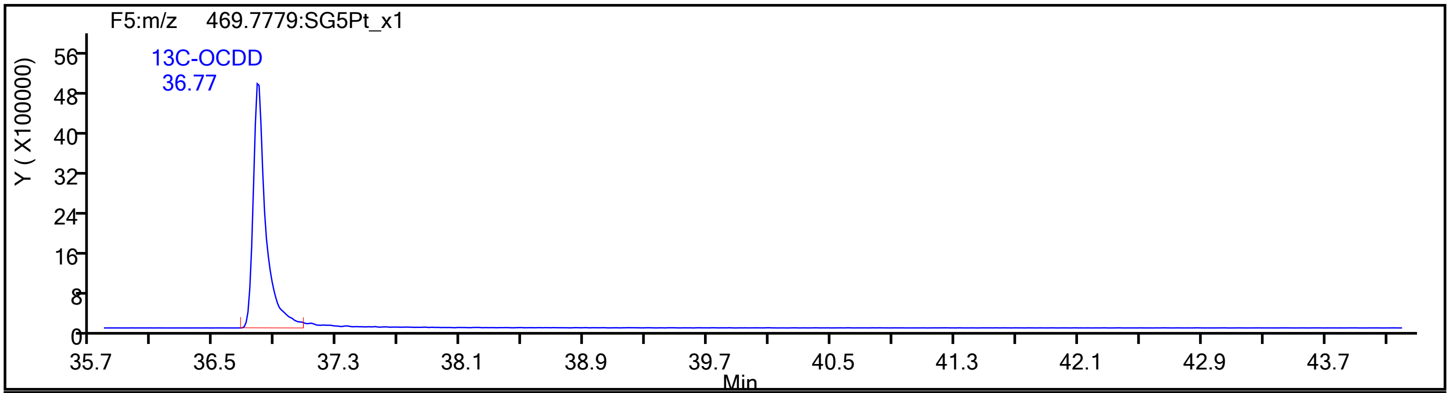

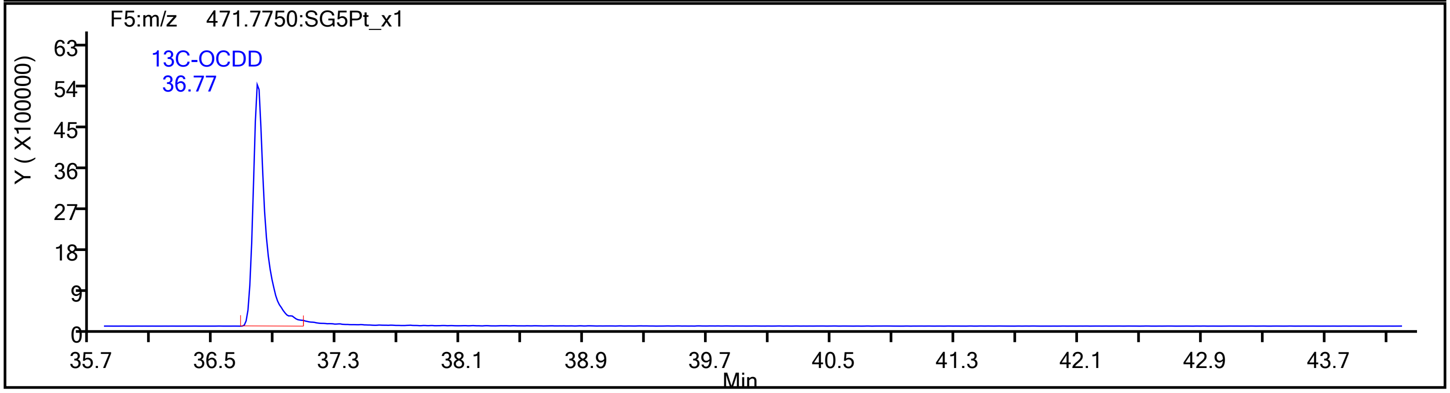

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

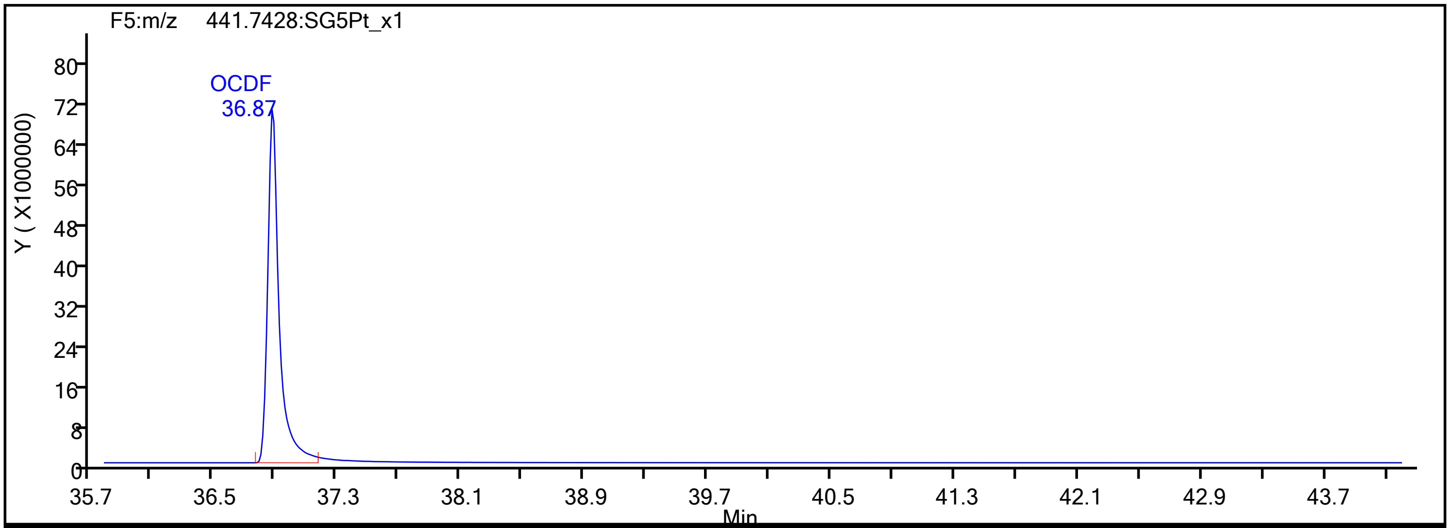

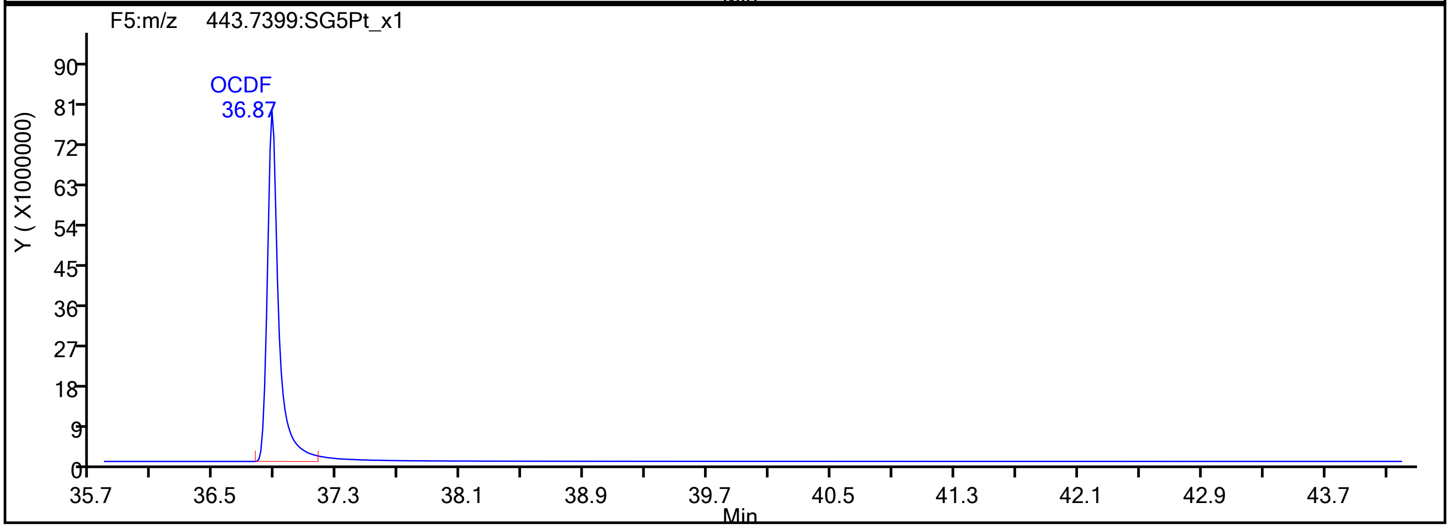

OCDF Interference Mass

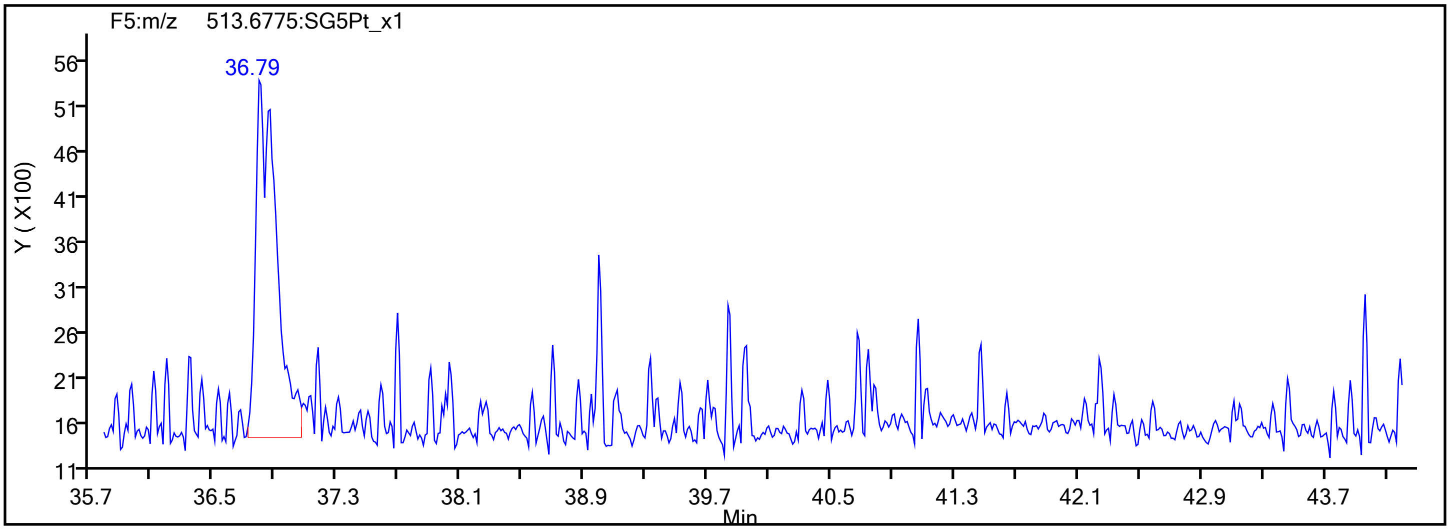

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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OCDD

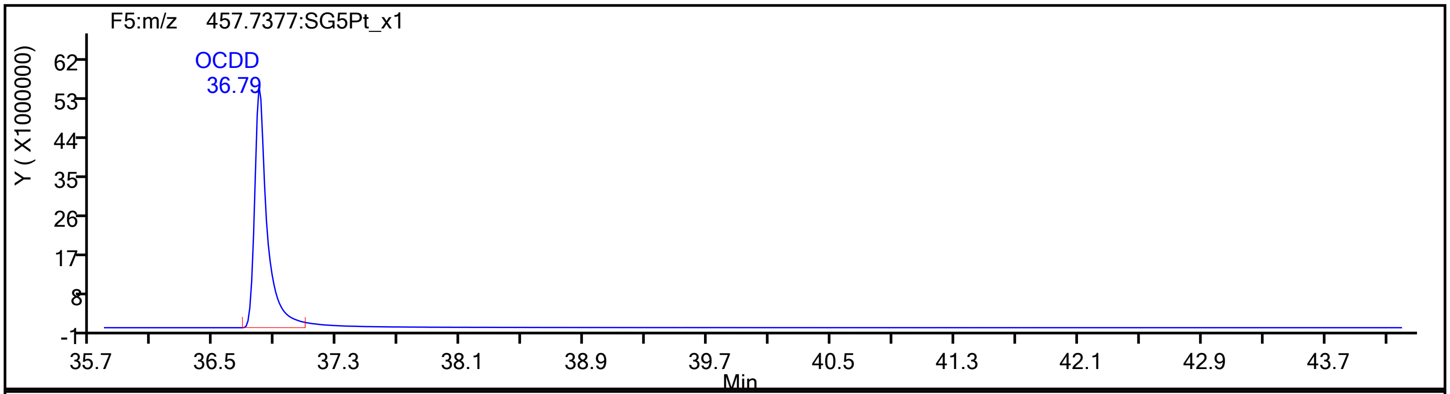

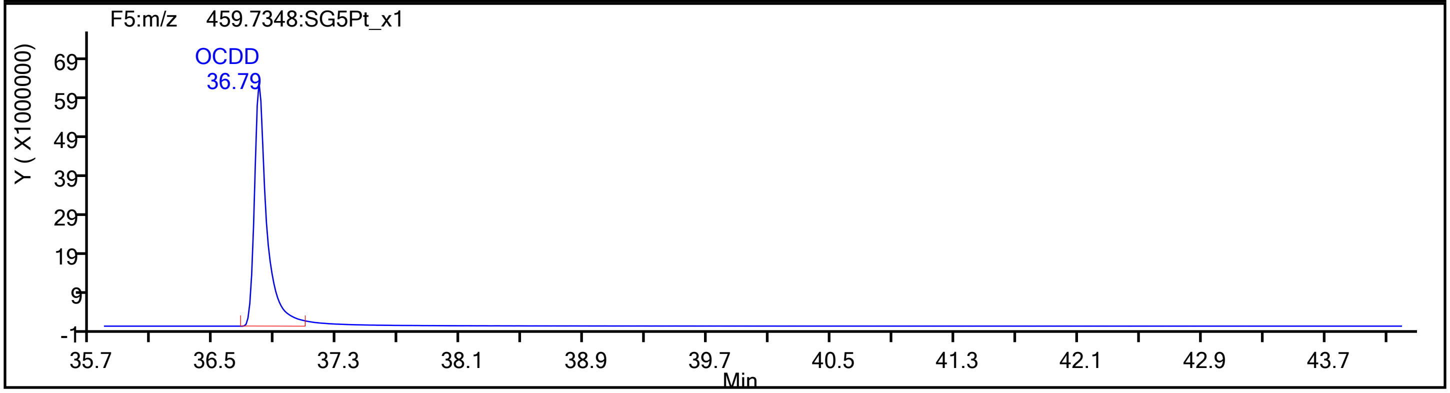

OCDD Standards

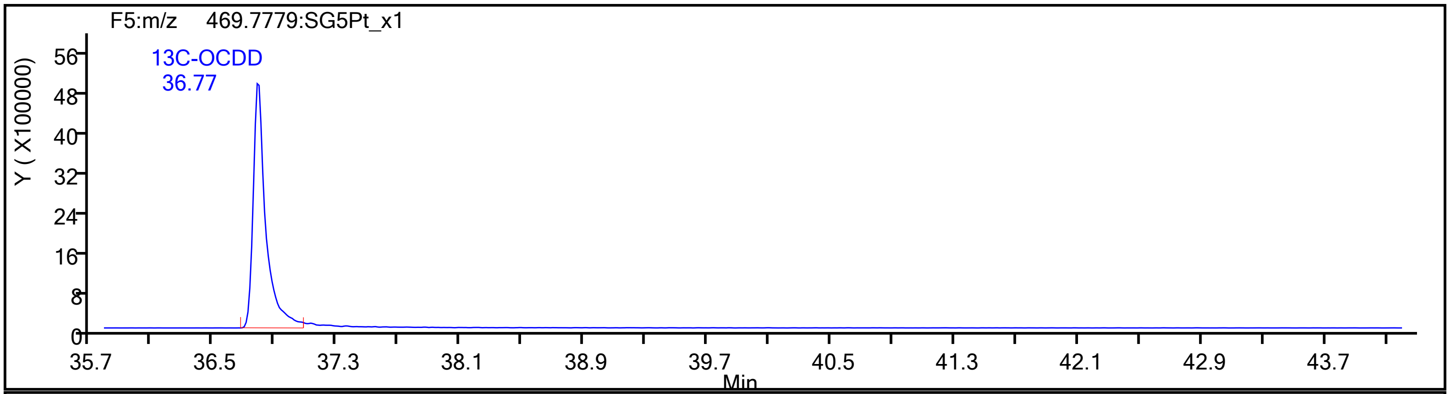

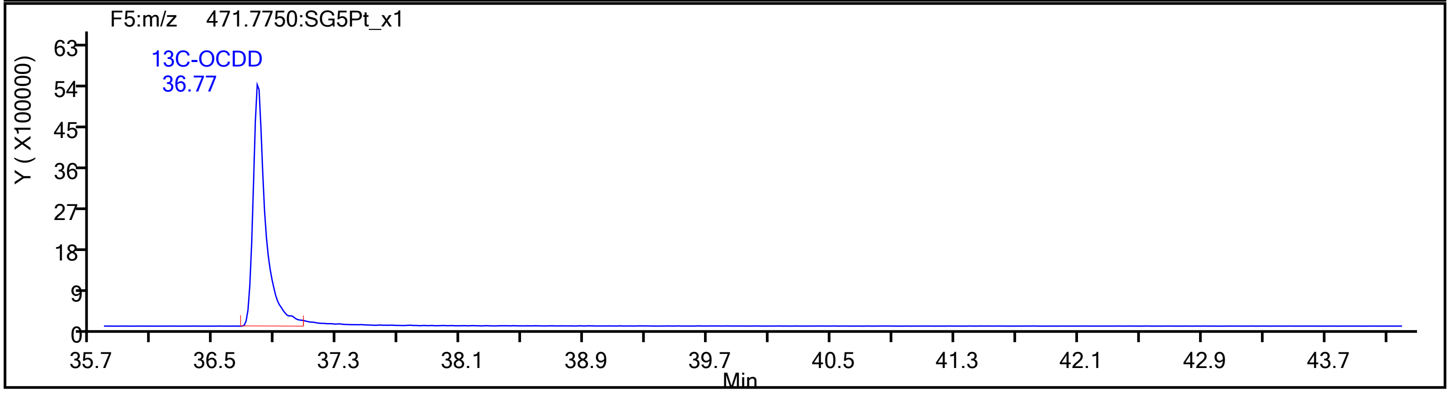

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Eurofins TestAmerica, Sacramento

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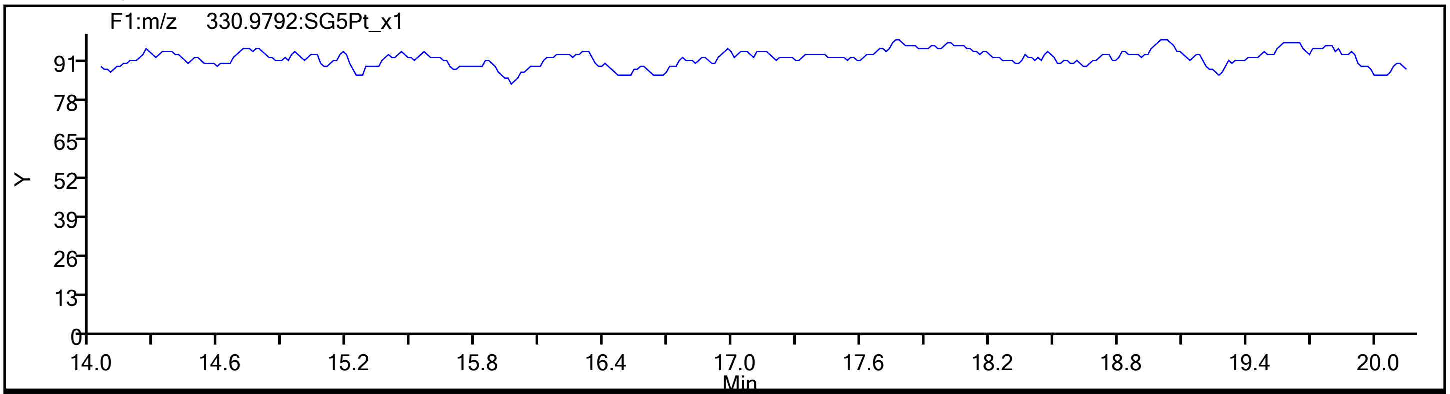

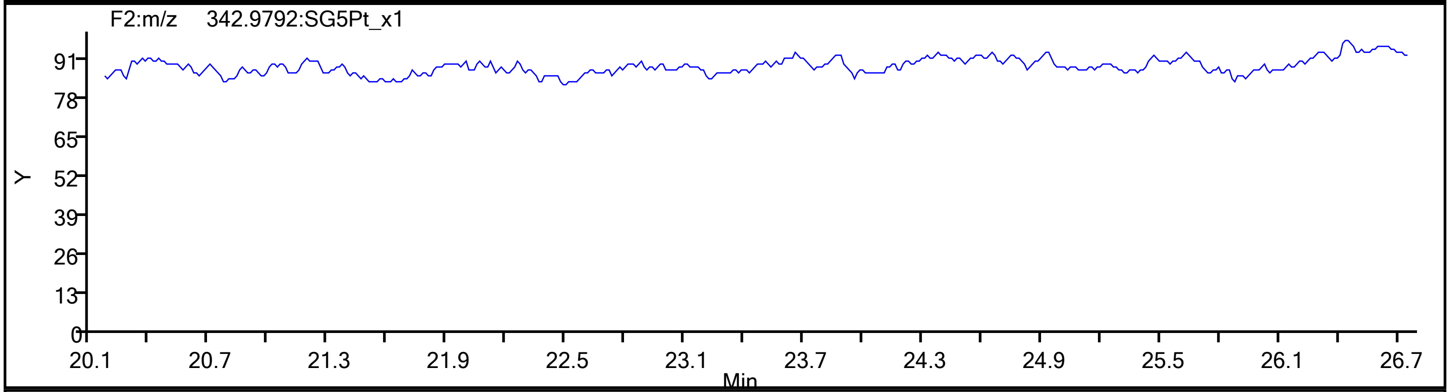

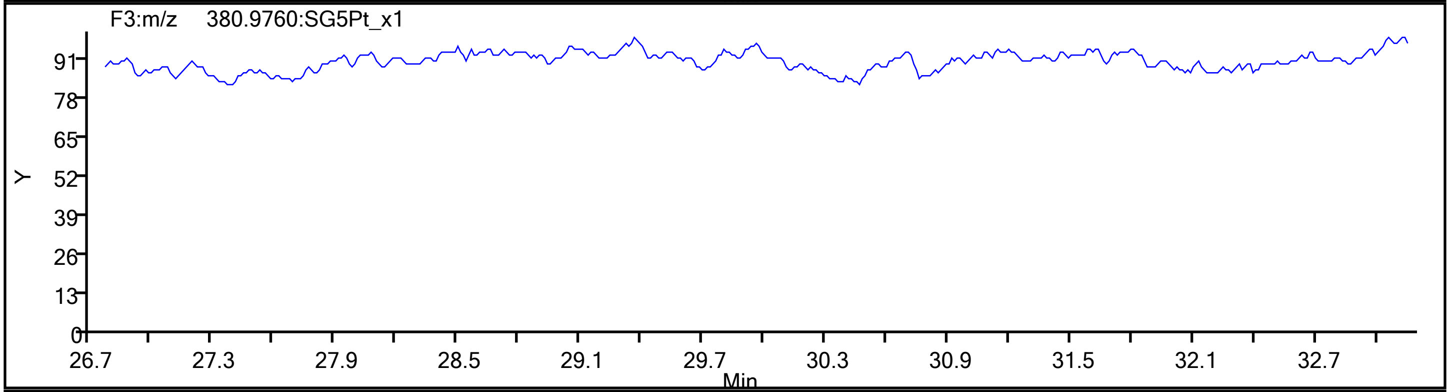

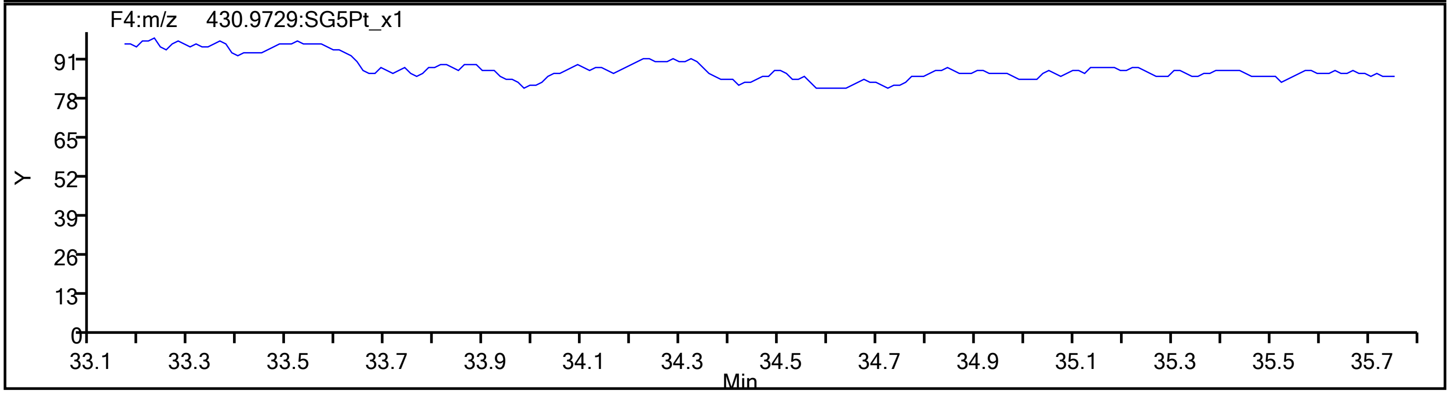

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Eurofins TestAmerica, Sacramento

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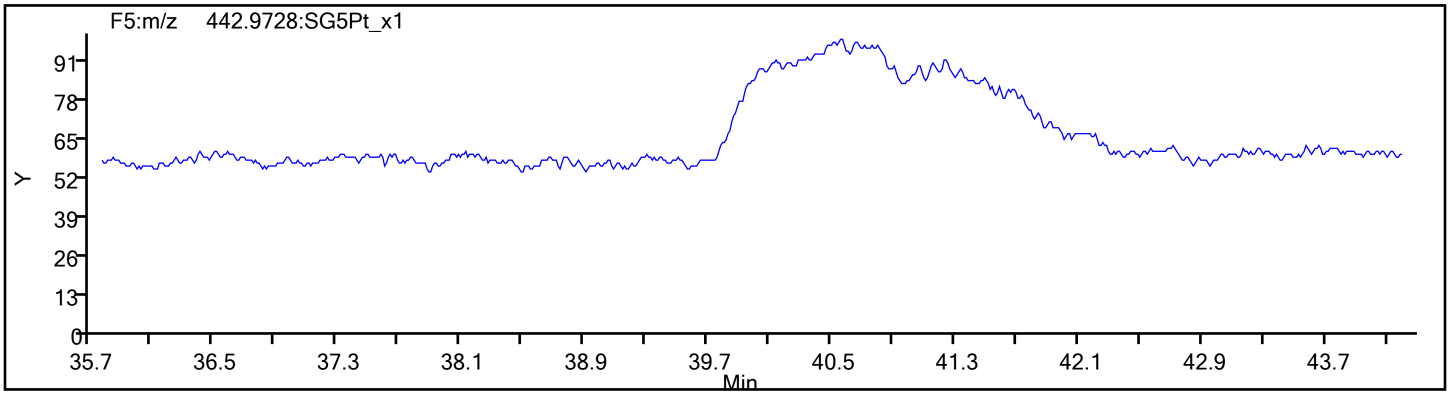

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.054

Error Coefficients

Standard Error:	181000000
Relative Standard Error:	1.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.688498	100.0	26936004.0	1.075399	Y
2	IC 320-390253/4	10.0	10.390949	100.0	26931716.0	1.039095	Y
3	IC 320-390253/5	50.0	51.739975	100.0	28040054.0	1.0348	Y
4	IC 320-390253/6	200.0	211.965665	100.0	31631816.0	1.059828	Y
5	IC 320-390253/7	1000.0	1060.634799	100.0	33600359.0	1.060635	Y

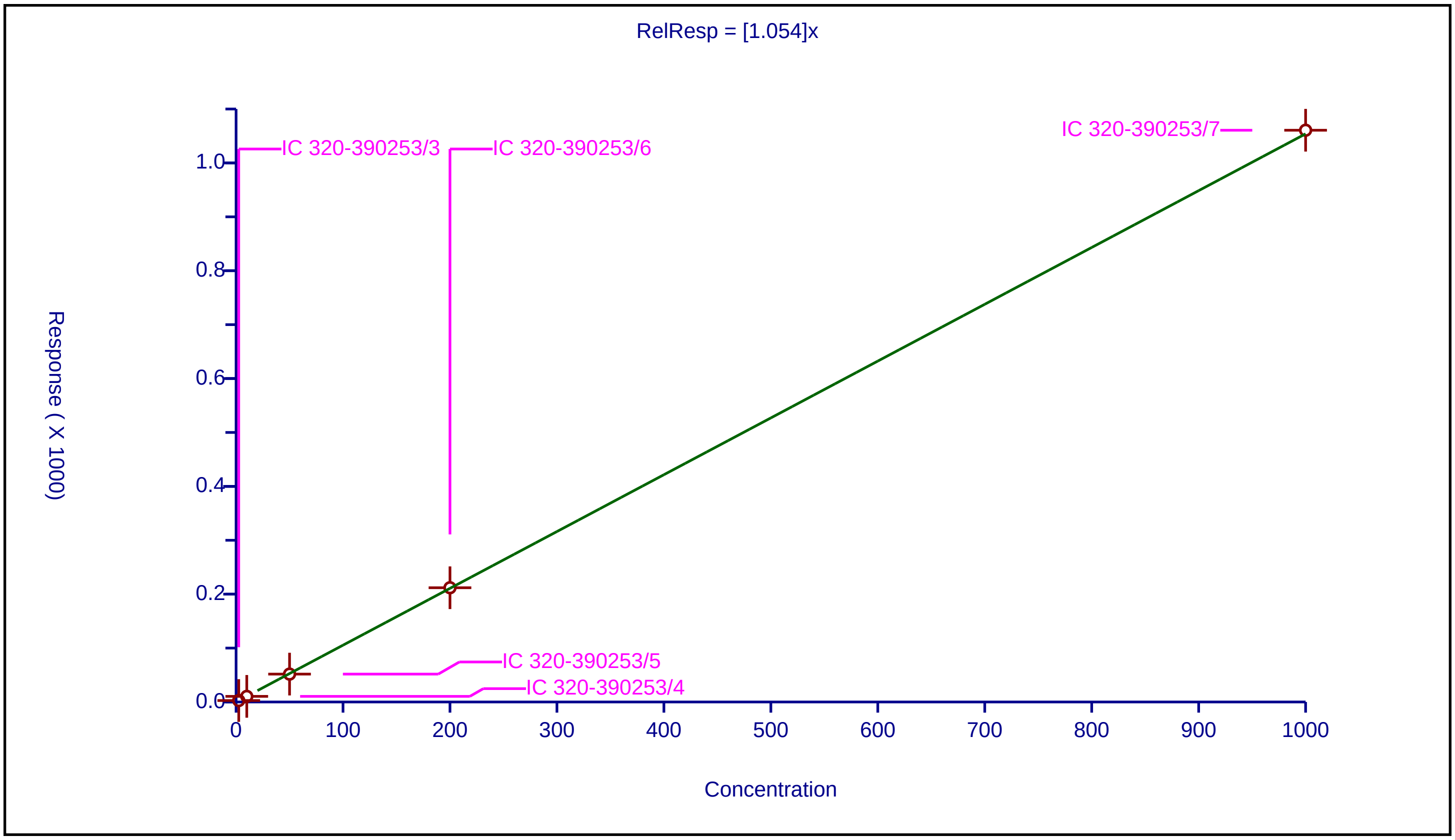

Calibration **/ 1,2,3,4,6,7,8-HpCDF**

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.453

Error Coefficients

Standard Error:	254000000
Relative Standard Error:	1.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	3.675845	100.0	28095822.0	1.470338	Y
2	IC 320-390253/4	10.0	14.287255	100.0	28057147.0	1.428725	Y
3	IC 320-390253/5	50.0	72.102802	100.0	29115881.0	1.442056	Y
4	IC 320-390253/6	200.0	294.821401	100.0	32459322.0	1.474107	Y
5	IC 320-390253/7	1000.0	1448.443669	100.0	34382848.0	1.448444	Y

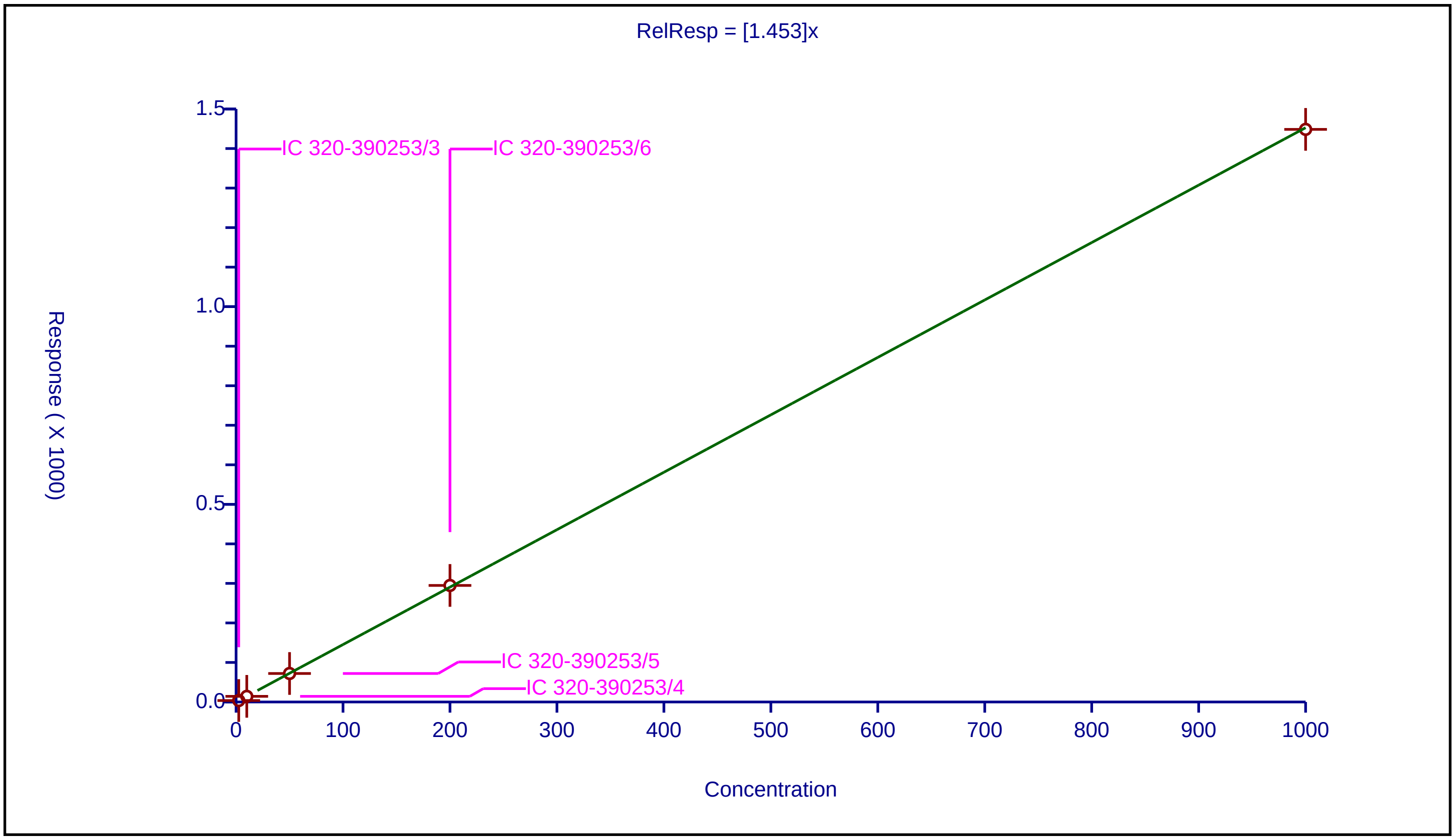

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.059

Error Coefficients

Standard Error:	219000000
Relative Standard Error:	3.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.730682	100.0	31425221.0	1.092273	Y
2	IC 320-390253/4	10.0	10.016491	100.0	33325163.0	1.001649	Y
3	IC 320-390253/5	50.0	52.82561	100.0	32761435.0	1.056512	Y
4	IC 320-390253/6	200.0	216.170369	100.0	37143667.0	1.080852	Y
5	IC 320-390253/7	1000.0	1061.374689	100.0	40565902.0	1.061375	Y

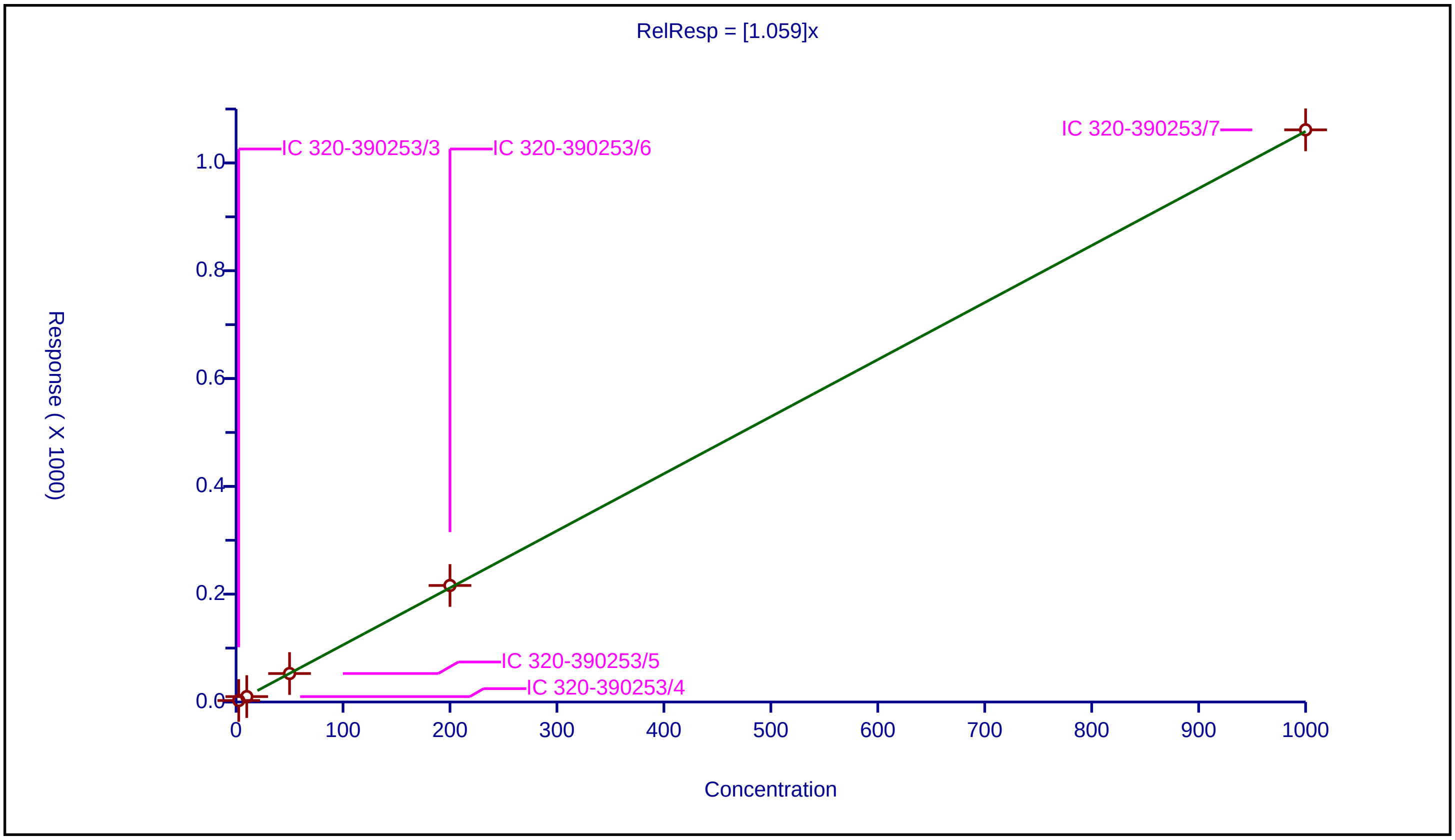

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8202

Error Coefficients

Standard Error:	170000000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.186198	100.0	32853663.0	0.874479	Y
2	IC 320-390253/4	10.0	7.771855	100.0	34994028.0	0.777185	Y
3	IC 320-390253/5	50.0	40.494783	100.0	32715286.0	0.809896	Y
4	IC 320-390253/6	200.0	165.00285	100.0	38766257.0	0.825014	Y
5	IC 320-390253/7	1000.0	814.577102	100.0	40903104.0	0.814577	Y

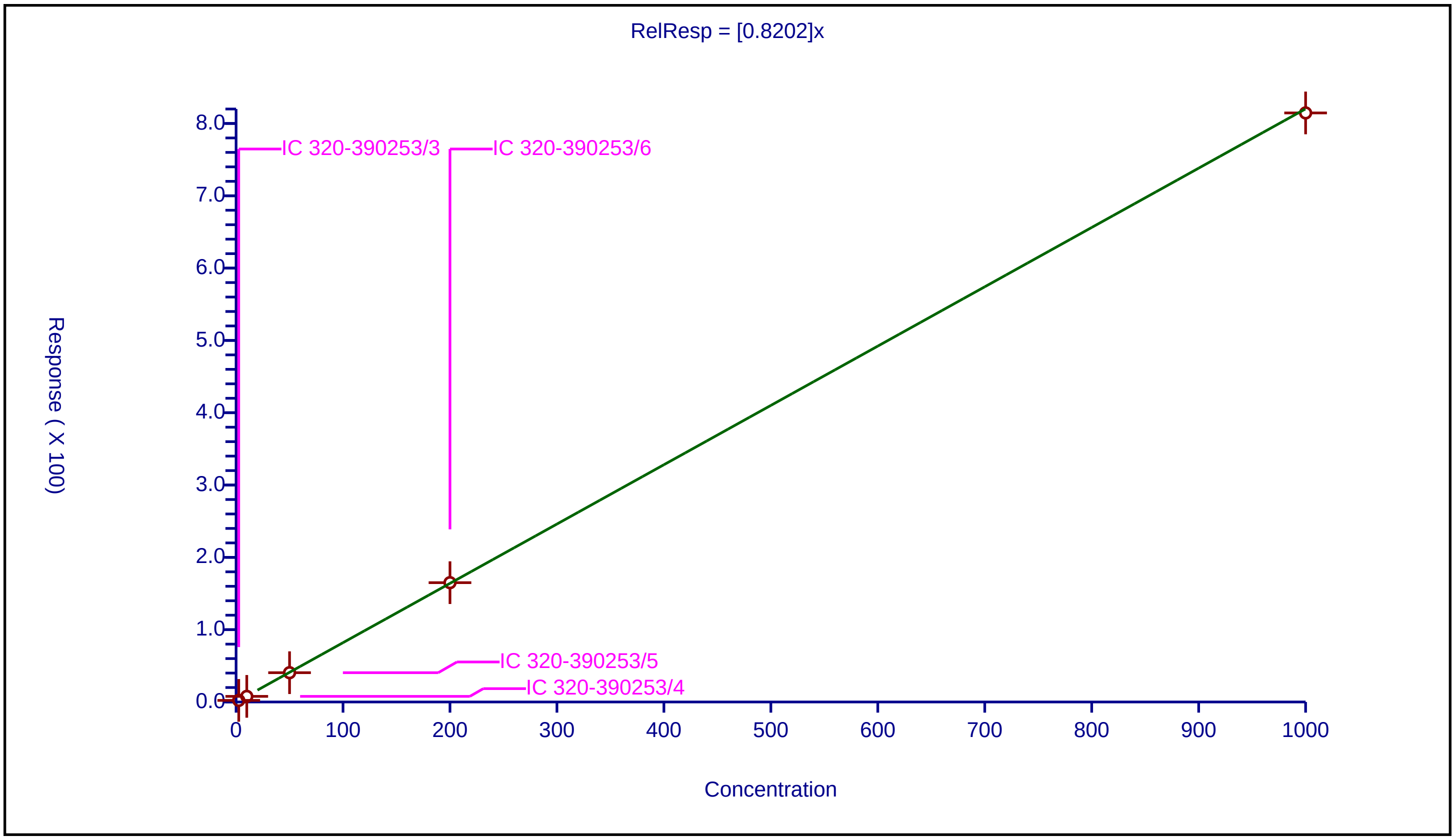

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8061

Error Coefficients

Standard Error:	206000000
Relative Standard Error:	4.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.066023	100.0	39521628.0	0.826409	Y
2	IC 320-390253/4	10.0	7.466479	100.0	42664742.0	0.746648	Y
3	IC 320-390253/5	50.0	40.085533	100.0	41483076.0	0.801711	Y
4	IC 320-390253/6	200.0	166.95847	100.0	46230589.0	0.834792	Y
5	IC 320-390253/7	1000.0	821.17293	100.0	49341715.0	0.821173	Y

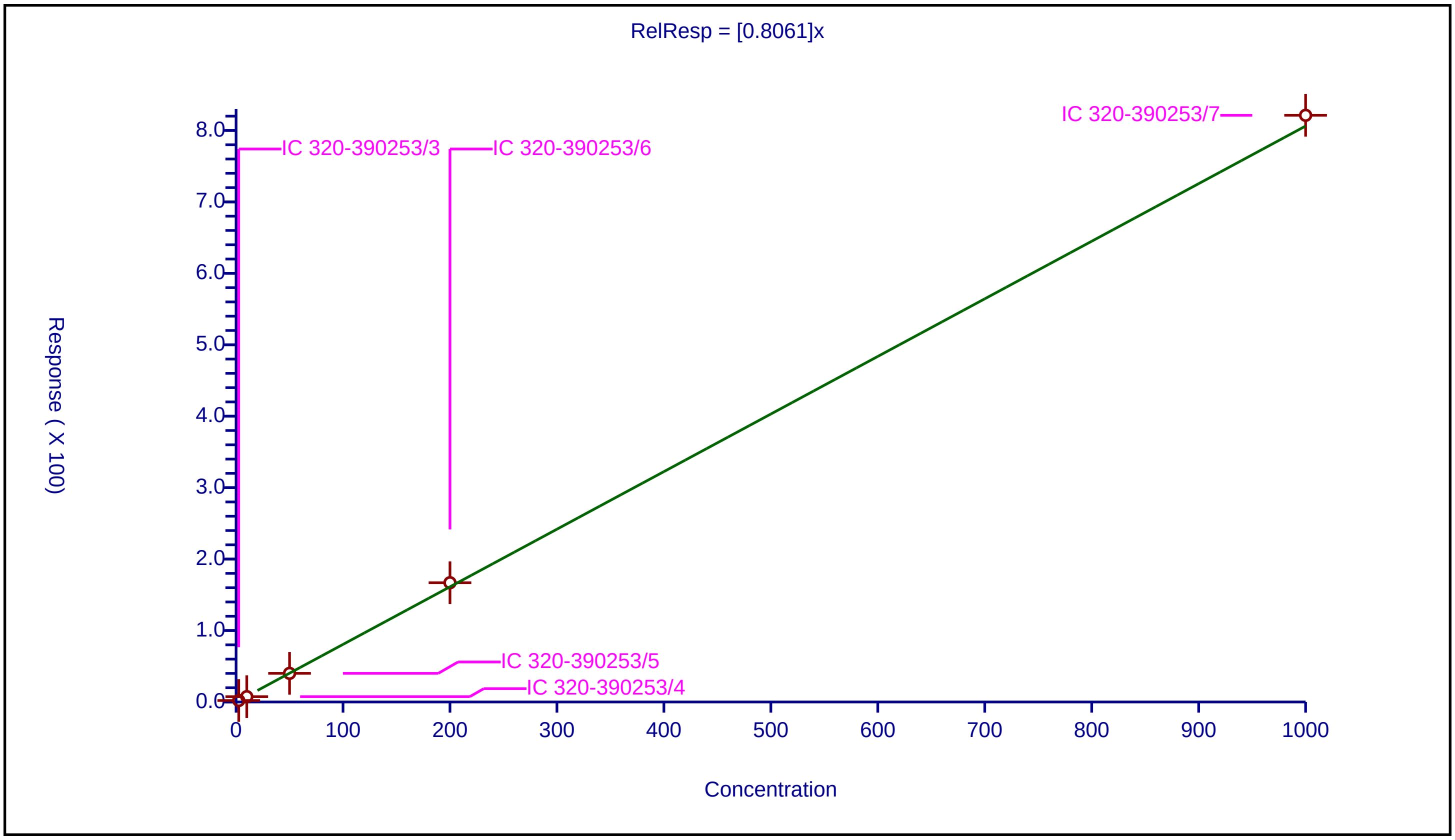

Calibration / 1,2,3,6,7,8-HxCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept: 0
Slope: 0.9367

Error Coefficients

Standard Error: 210000000
Relative Standard Error: 1.8
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.383767	100.0	36797812.0	0.953507	Y
2	IC 320-390253/4	10.0	9.129319	100.0	37929467.0	0.912932	Y
3	IC 320-390253/5	50.0	46.340588	100.0	39539332.0	0.926812	Y
4	IC 320-390253/6	200.0	190.426088	100.0	42083843.0	0.95213	Y
5	IC 320-390253/7	1000.0	937.987966	100.0	43998213.0	0.937988	Y

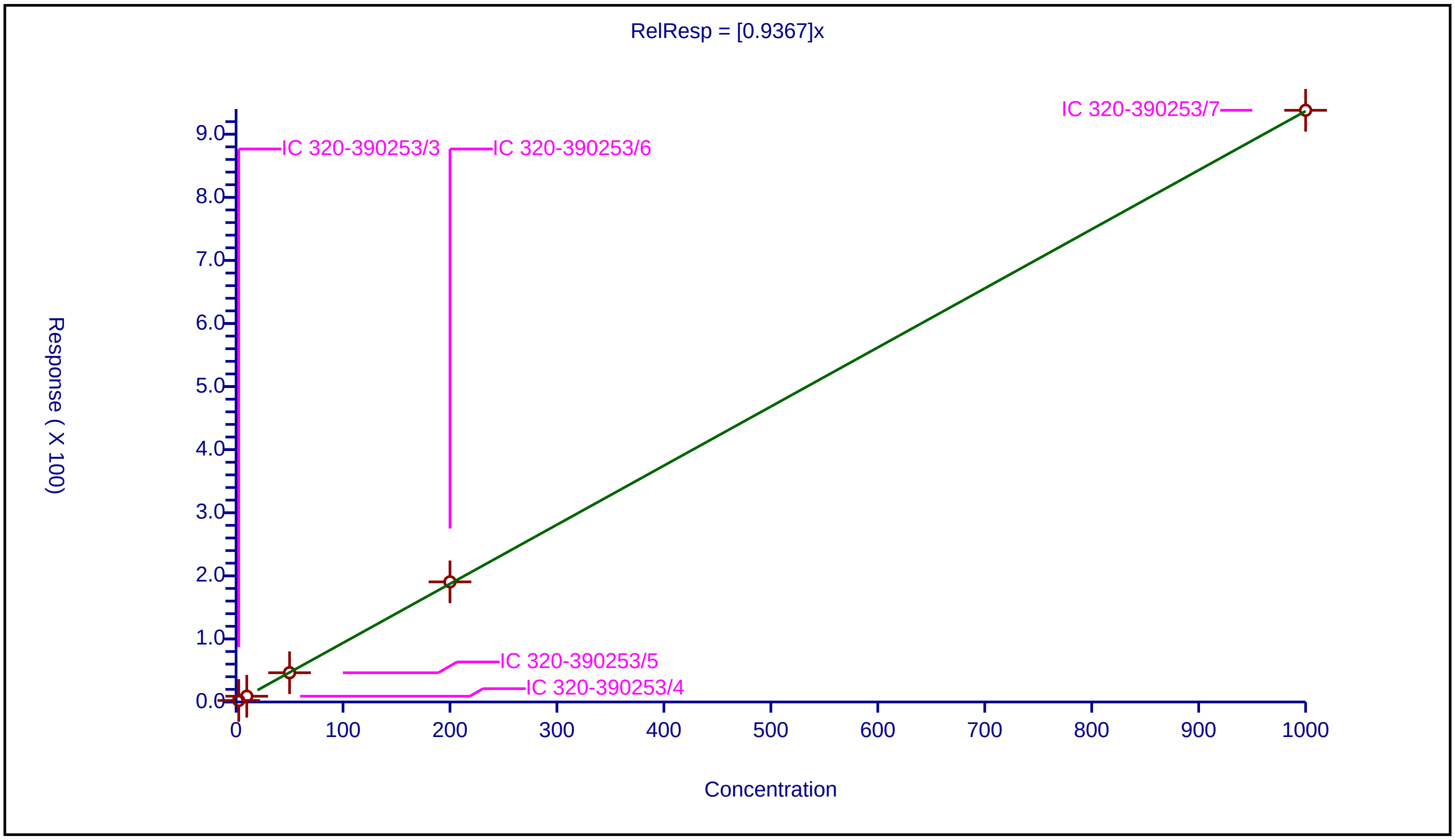

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9818

Error Coefficients

Standard Error:	232000000
Relative Standard Error:	2.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.481431	100.0	38469455.0	0.992572	Y
2	IC 320-390253/4	10.0	9.516536	100.0	39713843.0	0.951654	Y
3	IC 320-390253/5	50.0	48.403375	100.0	40051804.0	0.968068	Y
4	IC 320-390253/6	200.0	201.20117	100.0	43730114.0	1.006006	Y
5	IC 320-390253/7	1000.0	990.904731	100.0	45855303.0	0.990905	Y

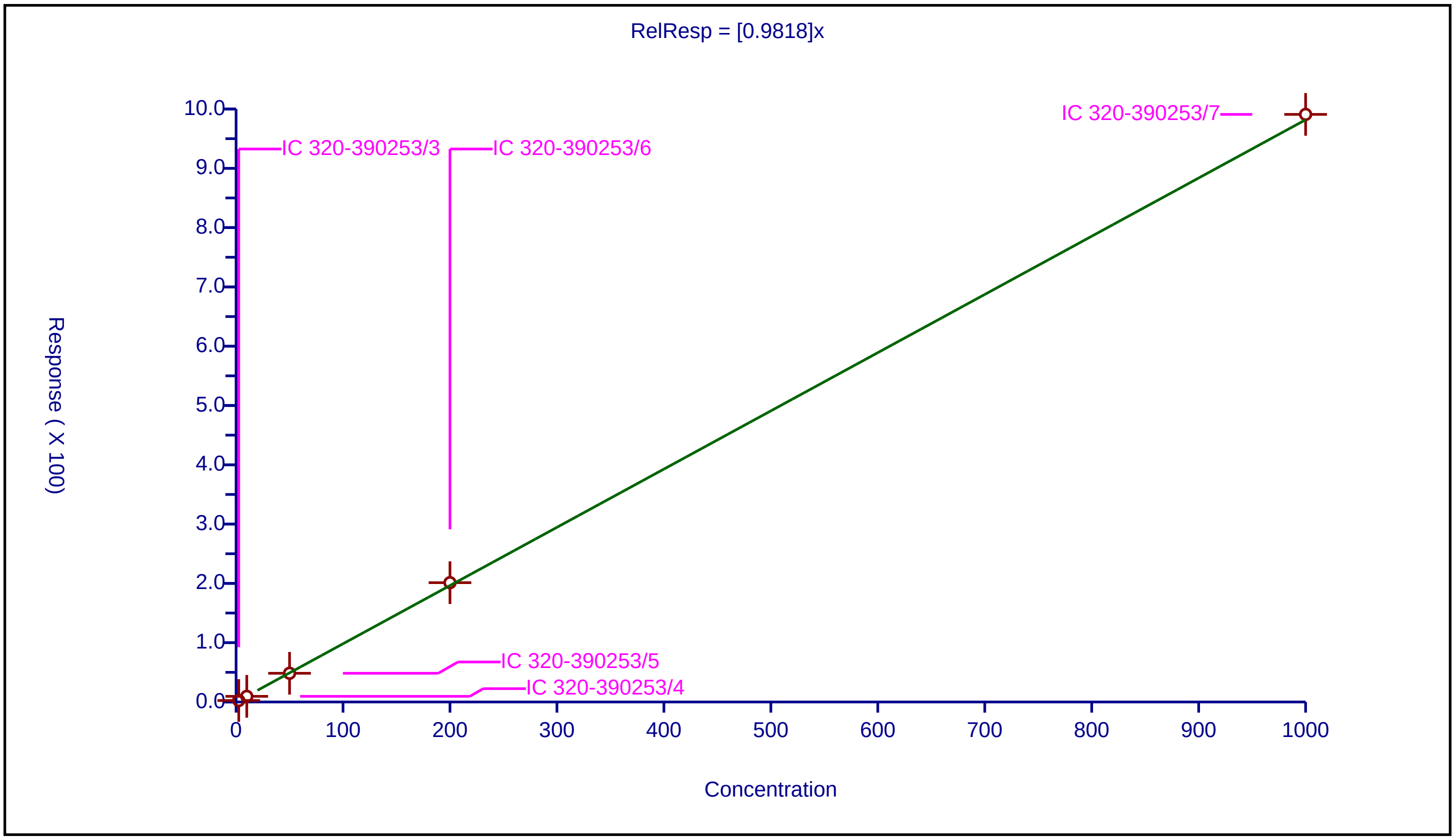

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.047

Error Coefficients

Standard Error:	211000000
Relative Standard Error:	4.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.776208	100.0	32853663.0	1.110483	Y
2	IC 320-390253/4	10.0	10.081314	100.0	34994028.0	1.008131	Y
3	IC 320-390253/5	50.0	53.448681	100.0	32715286.0	1.068974	Y
4	IC 320-390253/6	200.0	207.271037	100.0	38766257.0	1.036355	Y
5	IC 320-390253/7	1000.0	1012.337064	100.0	40903104.0	1.012337	Y

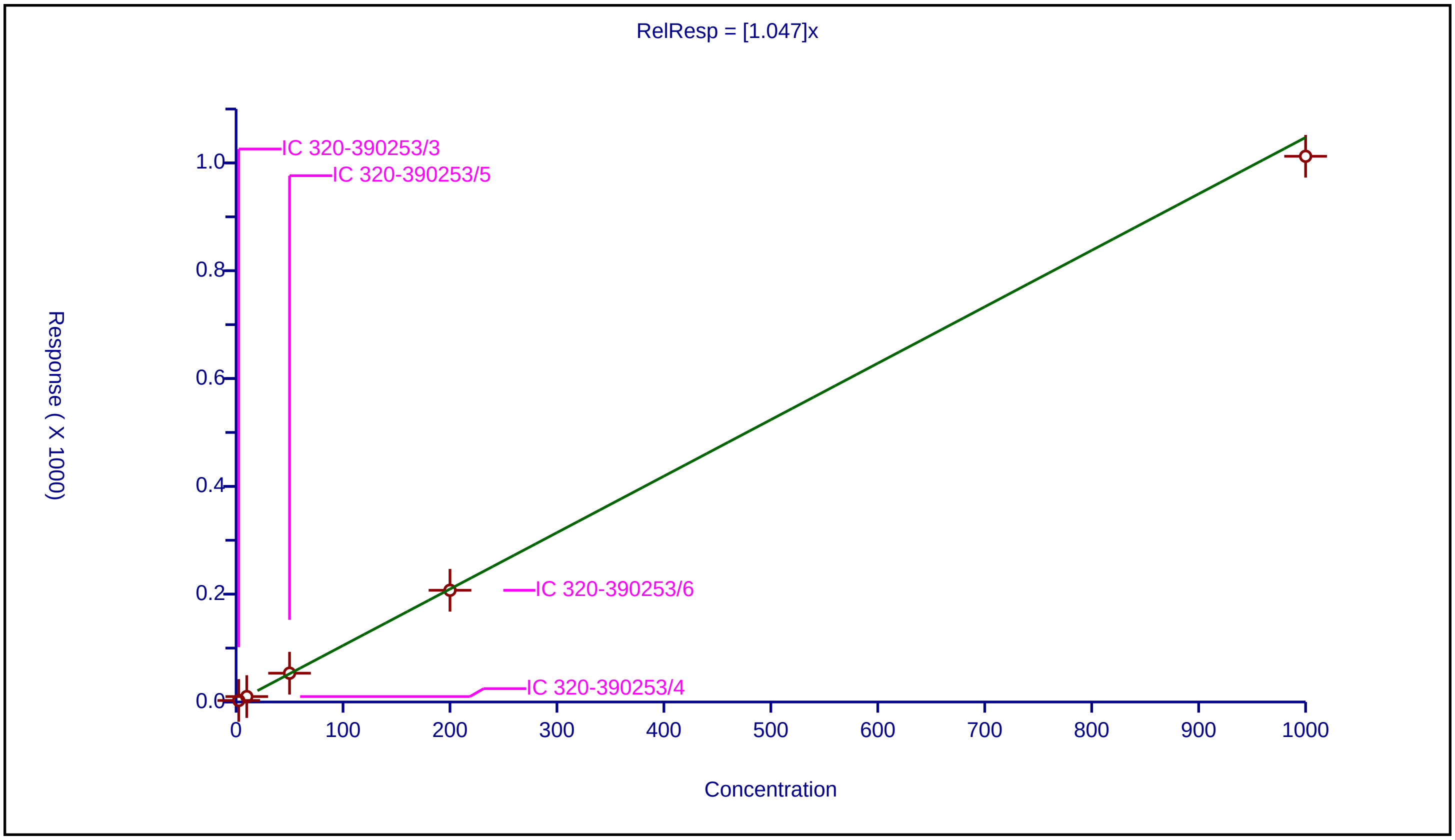

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.032

Error Coefficients

Standard Error:	201000000
Relative Standard Error:	0.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.592254	100.0	31185646.0	1.036901	Y
2	IC 320-390253/4	10.0	10.254828	100.0	30581048.0	1.025483	Y
3	IC 320-390253/5	50.0	51.130831	100.0	31414784.0	1.022617	Y
4	IC 320-390253/6	200.0	207.575257	100.0	35770919.0	1.037876	Y
5	IC 320-390253/7	1000.0	1037.39537	100.0	38052377.0	1.037395	Y

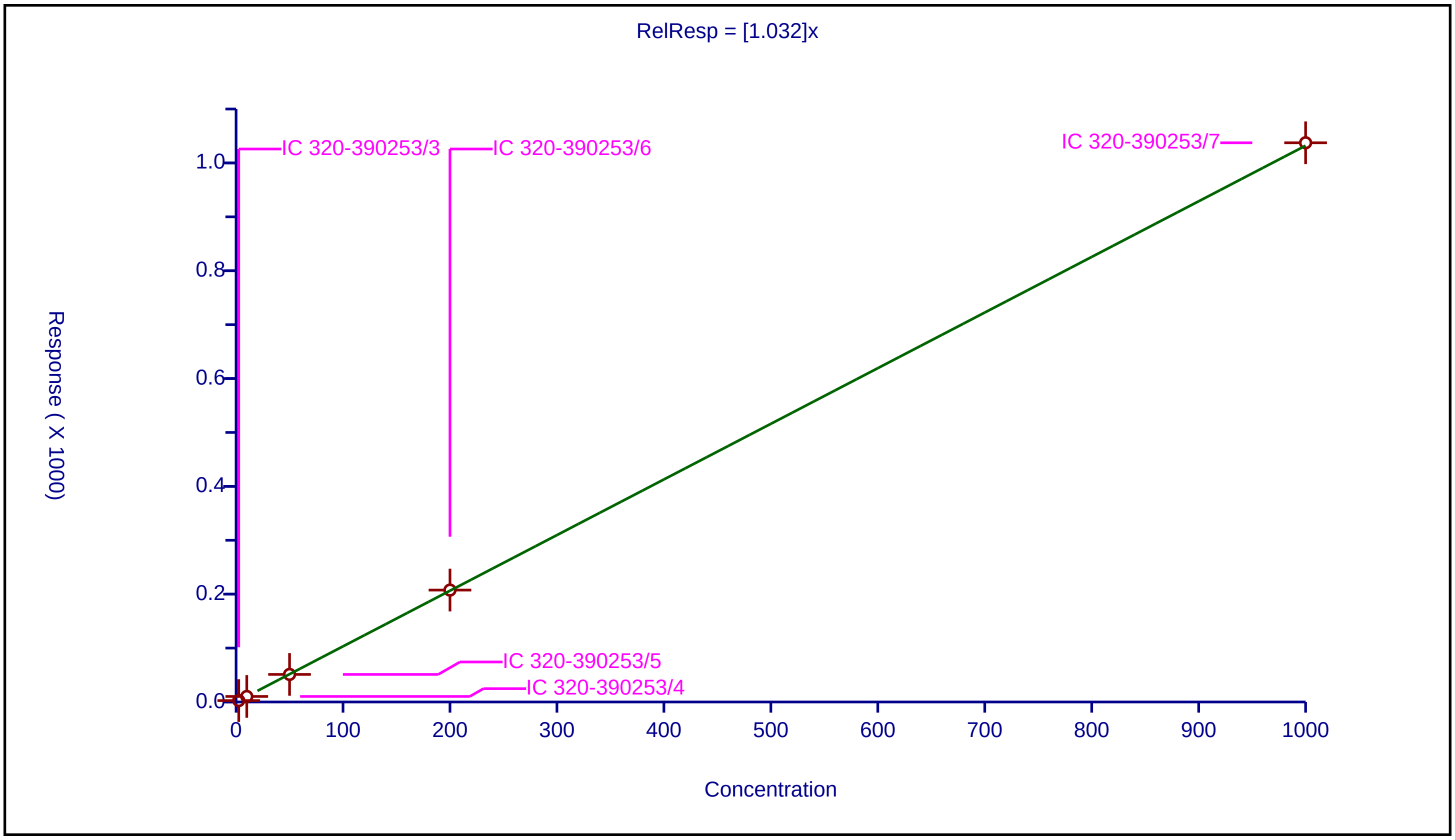

Calibration

/ 1,2,3,7,8-PeCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.018

Error Coefficients

Standard Error:	213000000
Relative Standard Error:	1.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.573653	100.0	34874204.0	1.029461	Y
2	IC 320-390253/4	10.0	9.967568	100.0	34921306.0	0.996757	Y
3	IC 320-390253/5	50.0	50.475955	100.0	35888619.0	1.009519	Y
4	IC 320-390253/6	200.0	206.66509	100.0	39534333.0	1.033325	Y
5	IC 320-390253/7	1000.0	1021.474901	100.0	40938052.0	1.021475	Y

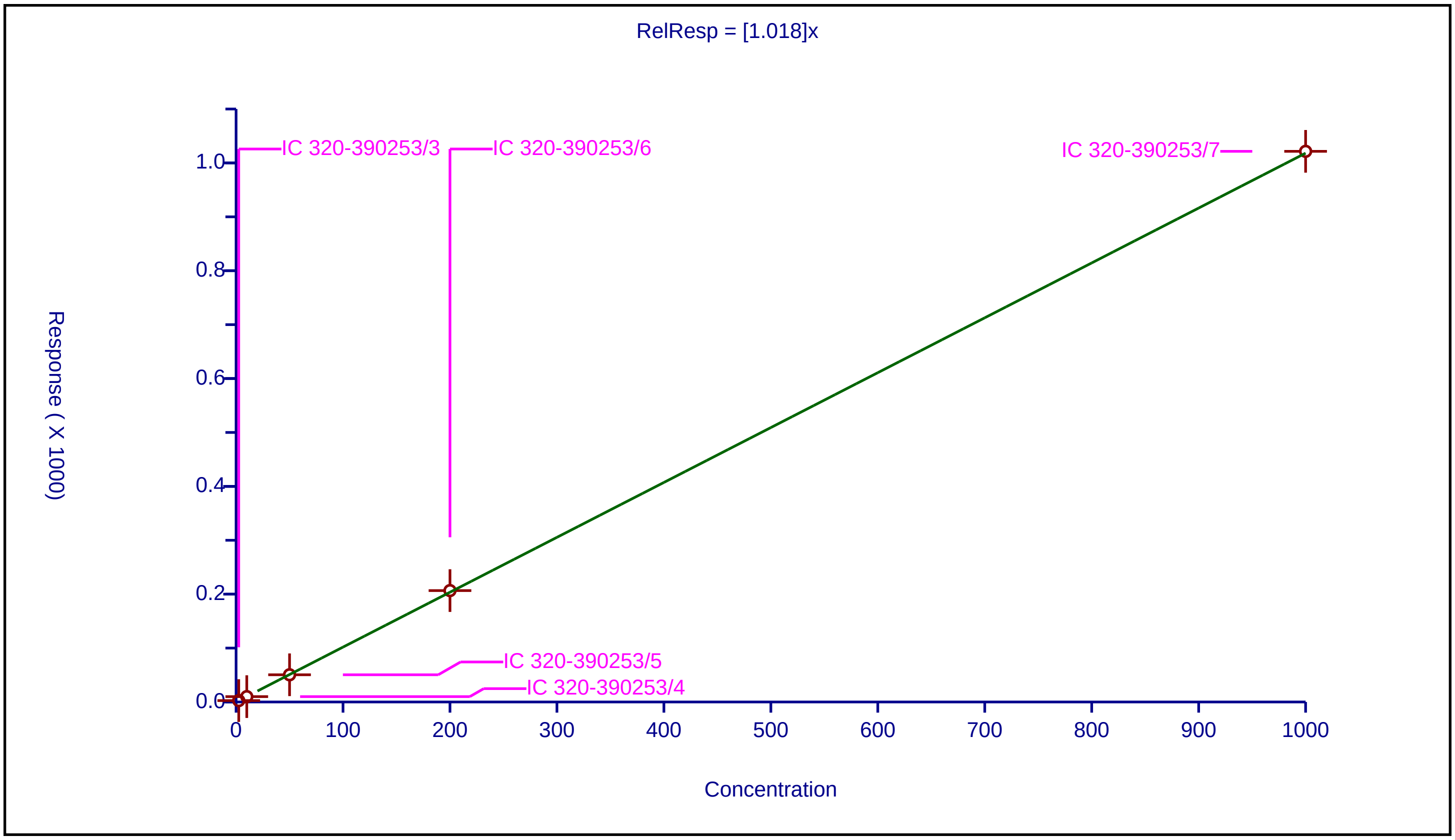

Calibration / 1,2,3,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9938

Error Coefficients

Standard Error:	289000000
Relative Standard Error:	1.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.544492	100.0	47366892.0	1.017797	Y
2	IC 320-390253/4	10.0	9.707478	100.0	49027297.0	0.970748	Y
3	IC 320-390253/5	50.0	49.029465	100.0	49635229.0	0.980589	Y
4	IC 320-390253/6	200.0	201.207843	100.0	55450977.0	1.006039	Y
5	IC 320-390253/7	1000.0	993.859069	100.0	57033386.0	0.993859	Y

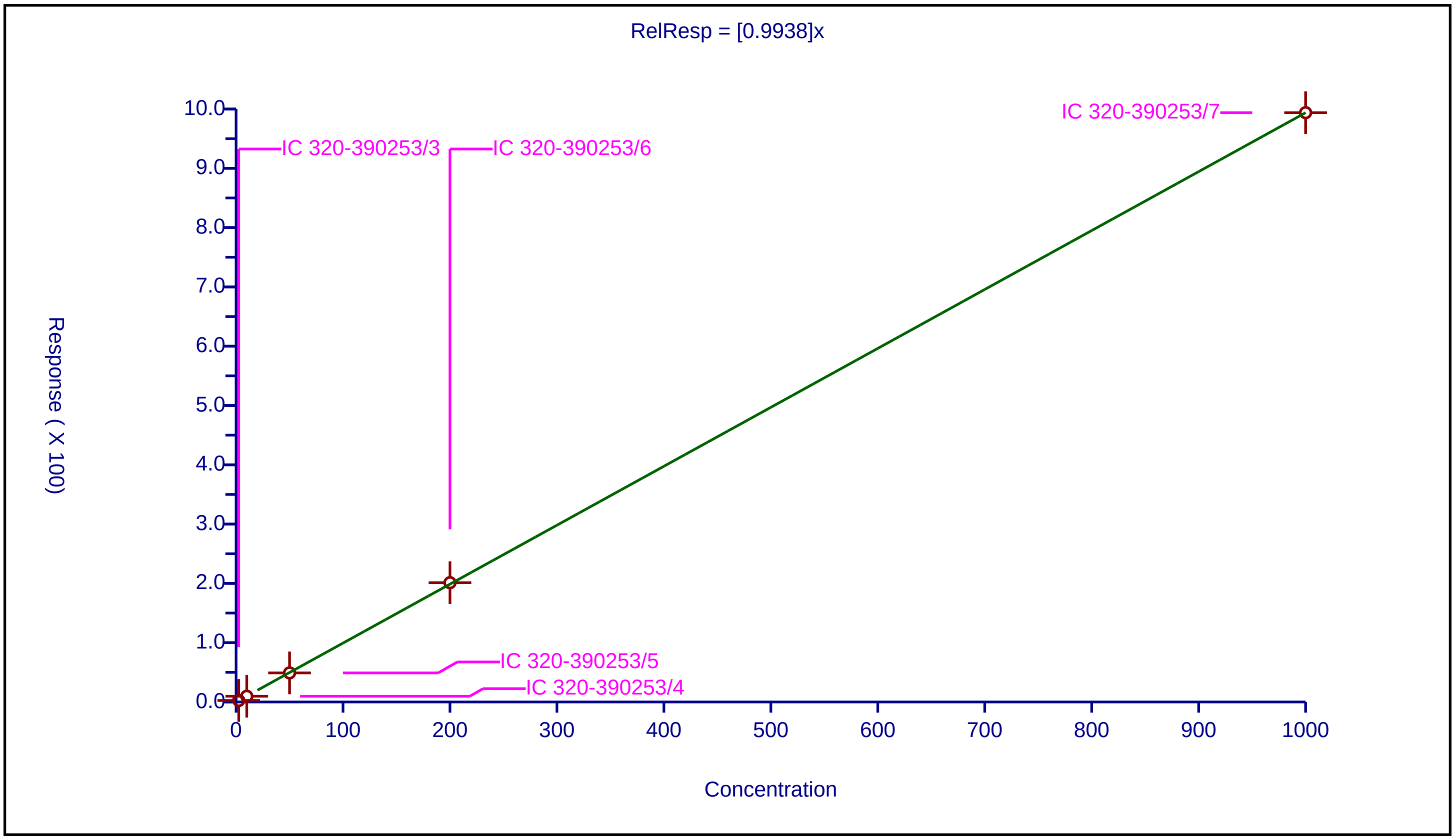

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.038

Error Coefficients

Standard Error:	216000000
Relative Standard Error:	1.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.651267	100.0	33841250.0	1.060507	Y
2	IC 320-390253/4	10.0	10.167692	100.0	34283463.0	1.016769	Y
3	IC 320-390253/5	50.0	51.393314	100.0	34877926.0	1.027866	Y
4	IC 320-390253/6	200.0	208.836164	100.0	38999309.0	1.044181	Y
5	IC 320-390253/7	1000.0	1041.757769	100.0	40745996.0	1.041758	Y

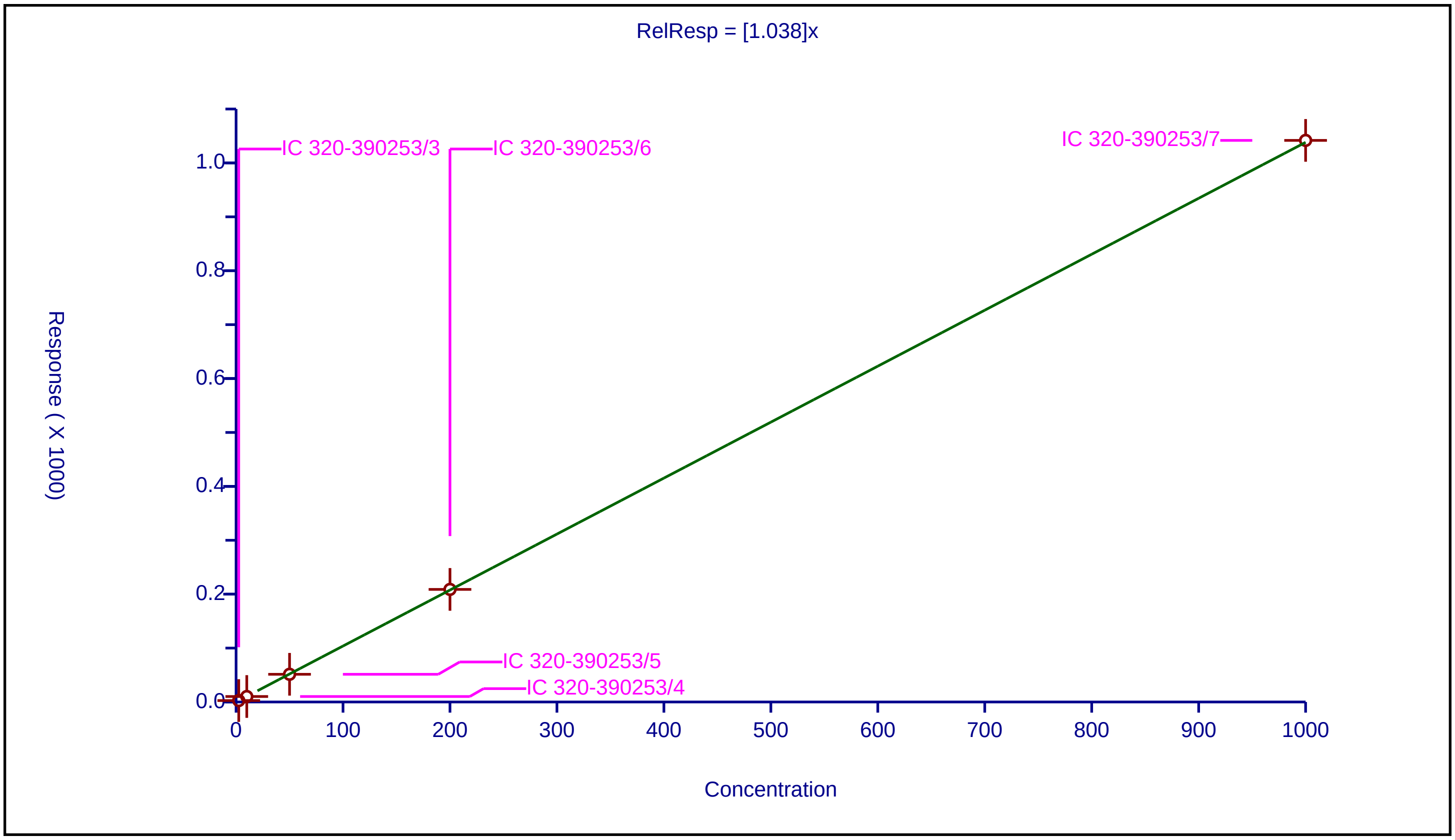

Calibration

/ 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8117

Error Coefficients

Standard Error:	287000000
Relative Standard Error:	4.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	2.5	2.142374	100.0	57527637.0	0.85695	Y
2	IC 320-390253/4	10.0	7.652714	100.0	62074161.0	0.765271	Y
3	IC 320-390253/5	50.0	40.438595	100.0	60093455.0	0.808772	Y
4	IC 320-390253/6	200.0	163.849032	100.0	67318305.0	0.819245	Y
5	IC 320-390253/7	1000.0	808.262646	100.0	69514353.0	0.808263	Y

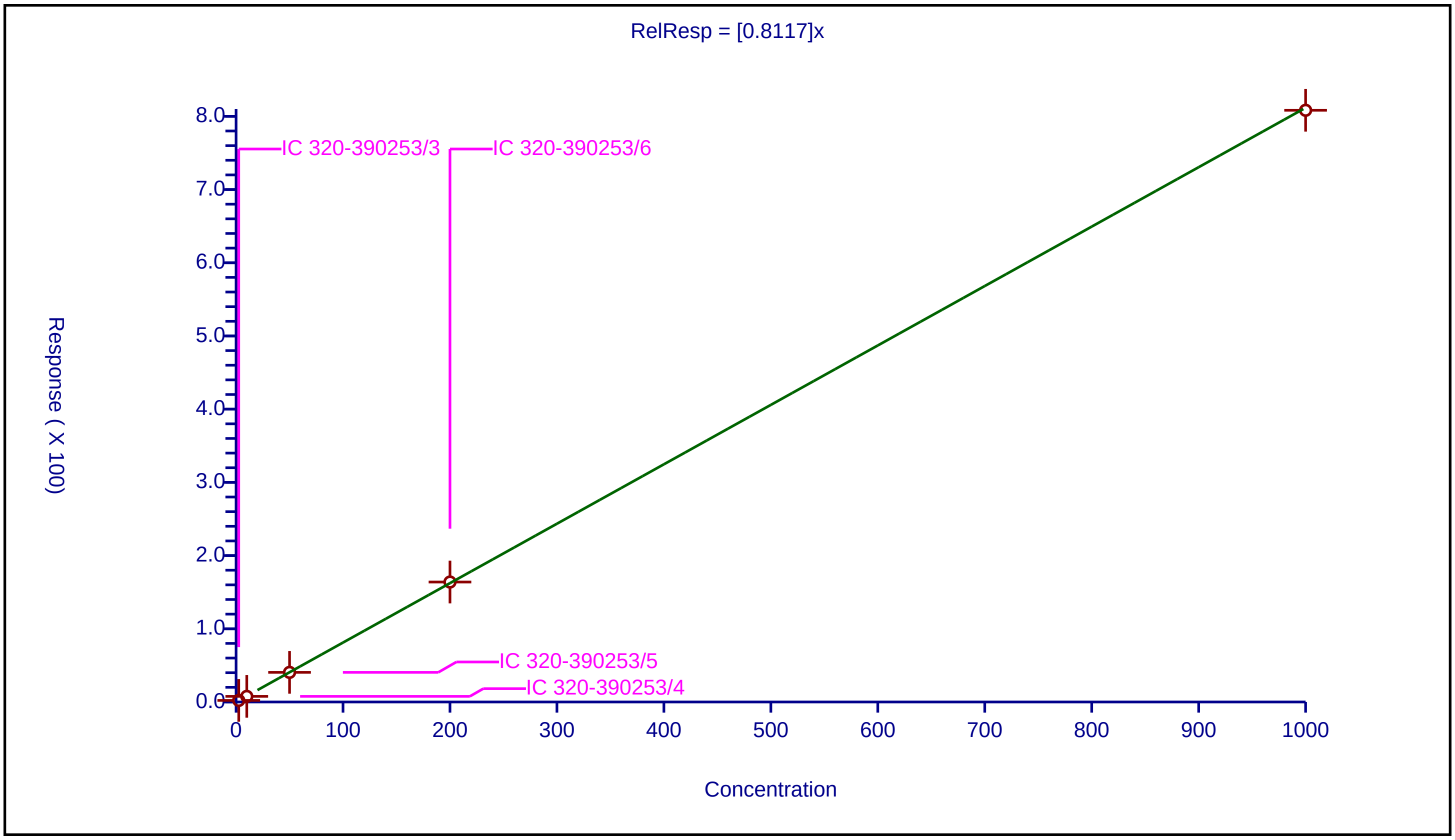

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.074

Error Coefficients

Standard Error:	54200000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	0.5	0.572946	100.0	42943807.0	1.145893	Y
2	IC 320-390253/4	2.0	2.127433	100.0	44824010.0	1.063717	Y
3	IC 320-390253/5	10.0	10.159962	100.0	44913870.0	1.015996	Y
4	IC 320-390253/6	40.0	42.673619	100.0	48446018.0	1.06684	Y
5	IC 320-390253/7	200.0	215.970449	100.0	49229599.0	1.079852	Y

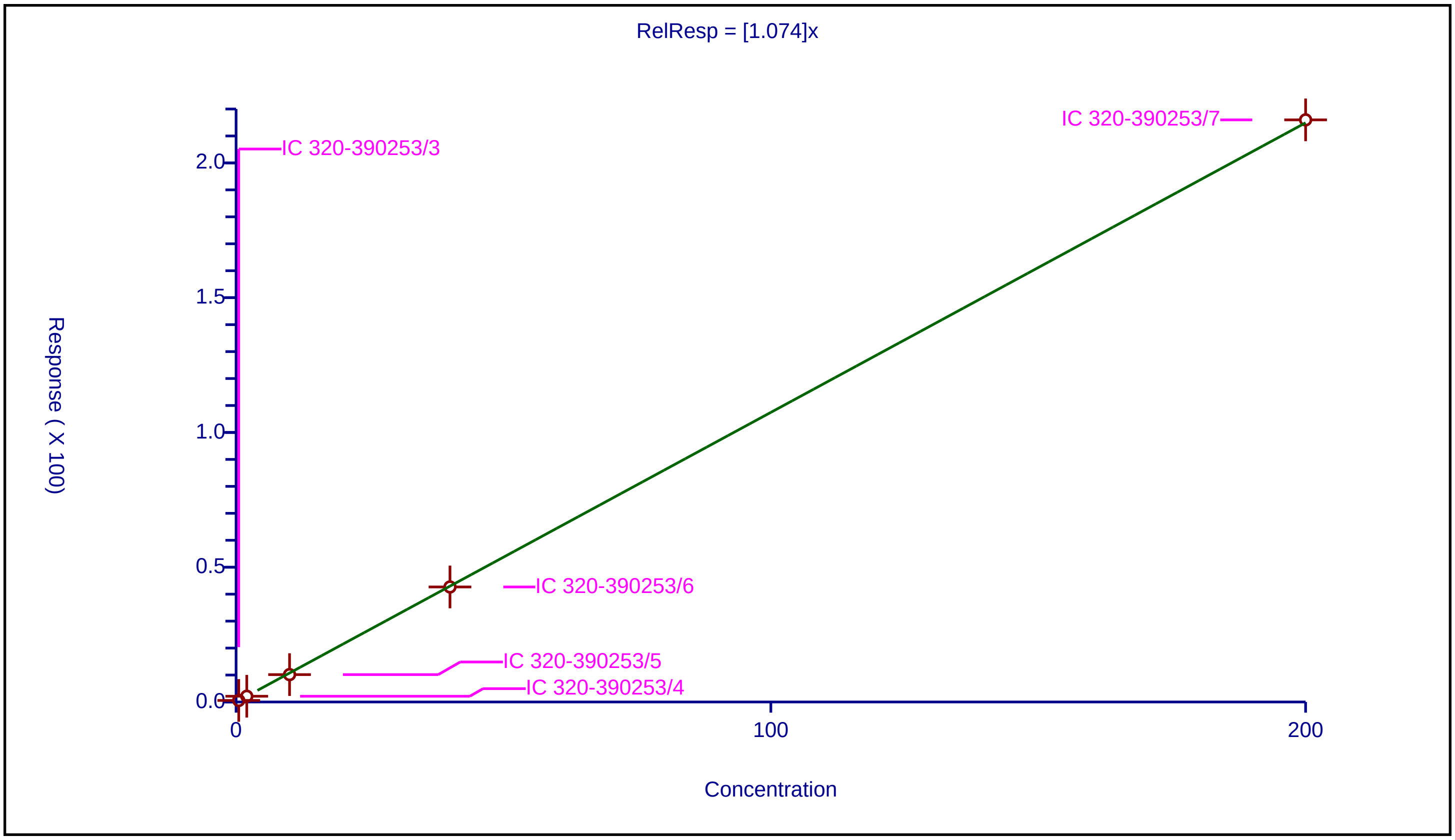

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9104

Error Coefficients

Standard Error:	62300000
Relative Standard Error:	3.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	0.5	0.481088	100.0	58386827.0	0.962176	Y
2	IC 320-390253/4	2.0	1.744554	100.0	59091712.0	0.872277	Y
3	IC 320-390253/5	10.0	8.878307	100.0	60344940.0	0.887831	Y
4	IC 320-390253/6	40.0	36.360848	100.0	66092582.0	0.909021	Y
5	IC 320-390253/7	200.0	184.157519	100.0	66365053.0	0.920788	Y

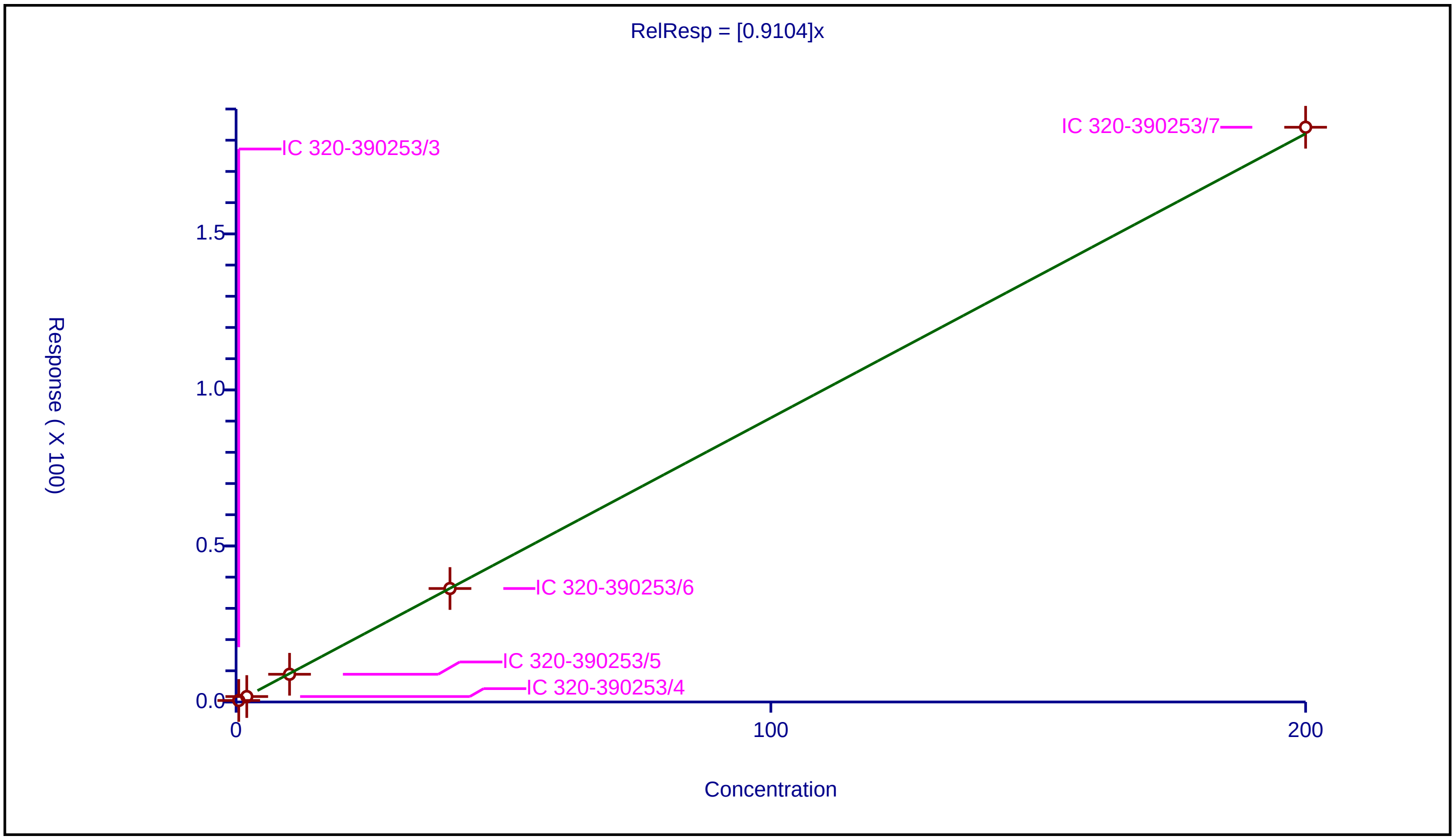

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: ISTD
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept: 0
Slope: 1.018

Error Coefficients

Standard Error: 54200000
Relative Standard Error: 10.1
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	0.5	0.434272	100.0	43132879.0	0.868544	Y
2	IC 320-390253/4	2.0	1.996303	100.0	43639065.0	0.998152	Y
3	IC 320-390253/5	10.0	9.927651	100.0	44921958.0	0.992765	Y
4	IC 320-390253/6	40.0	44.015694	100.0	47091167.0	1.100392	Y
5	IC 320-390253/7	200.0	225.620198	100.0	47126018.0	1.128101	Y

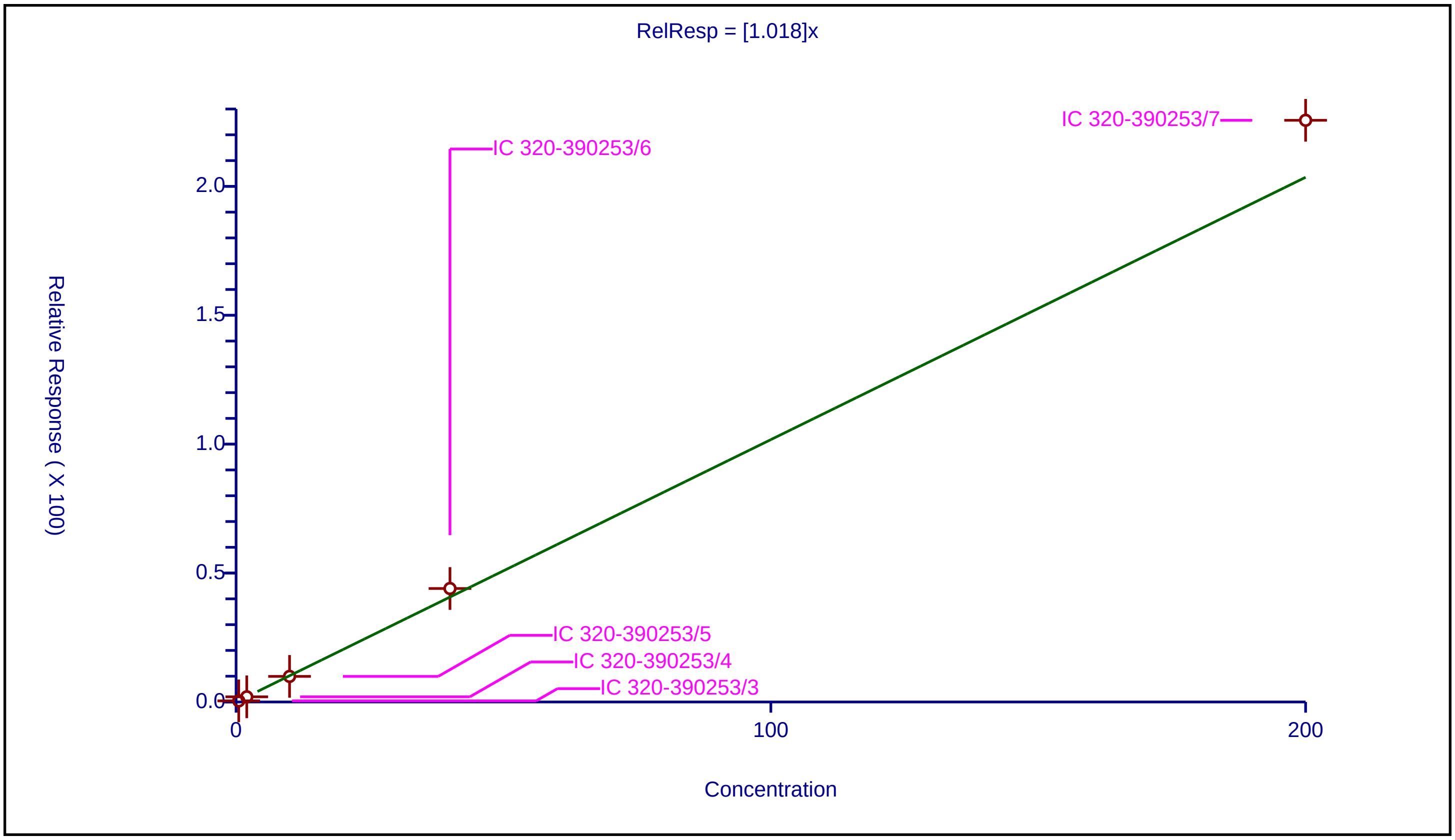

Calibration

/ OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.15

Error Coefficients

Standard Error:	342000000
Relative Standard Error:	3.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	5.0	6.096482	200.0	43232241.0	1.219296	Y
2	IC 320-390253/4	20.0	22.262493	200.0	43643747.0	1.113125	Y
3	IC 320-390253/5	100.0	112.746476	200.0	46201838.0	1.127465	Y
4	IC 320-390253/6	400.0	463.655461	200.0	53743483.0	1.159139	Y
5	IC 320-390253/7	2000.0	2260.961774	200.0	59456751.0	1.130481	Y

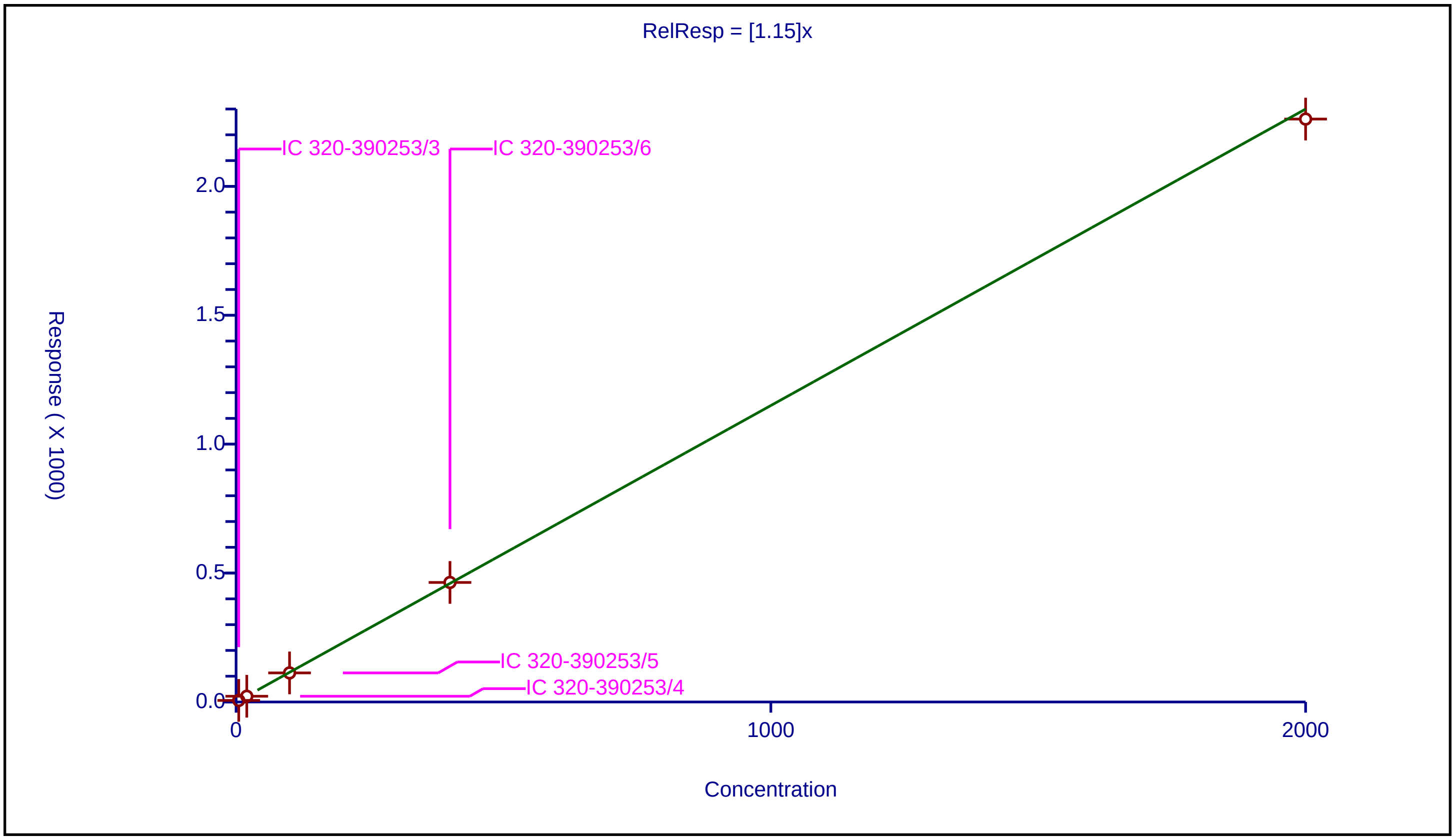

Calibration

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.296

Error Coefficients

Standard Error:	395000000
Relative Standard Error:	2.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-390253/3	5.0	6.534036	200.0	43232241.0	1.306807	Y
2	IC 320-390253/4	20.0	24.944985	200.0	43643747.0	1.247249	Y
3	IC 320-390253/5	100.0	128.647484	200.0	46201838.0	1.286475	Y
4	IC 320-390253/6	400.0	534.724692	200.0	53743483.0	1.336812	Y
5	IC 320-390253/7	2000.0	2609.91482	200.0	59456751.0	1.304957	Y

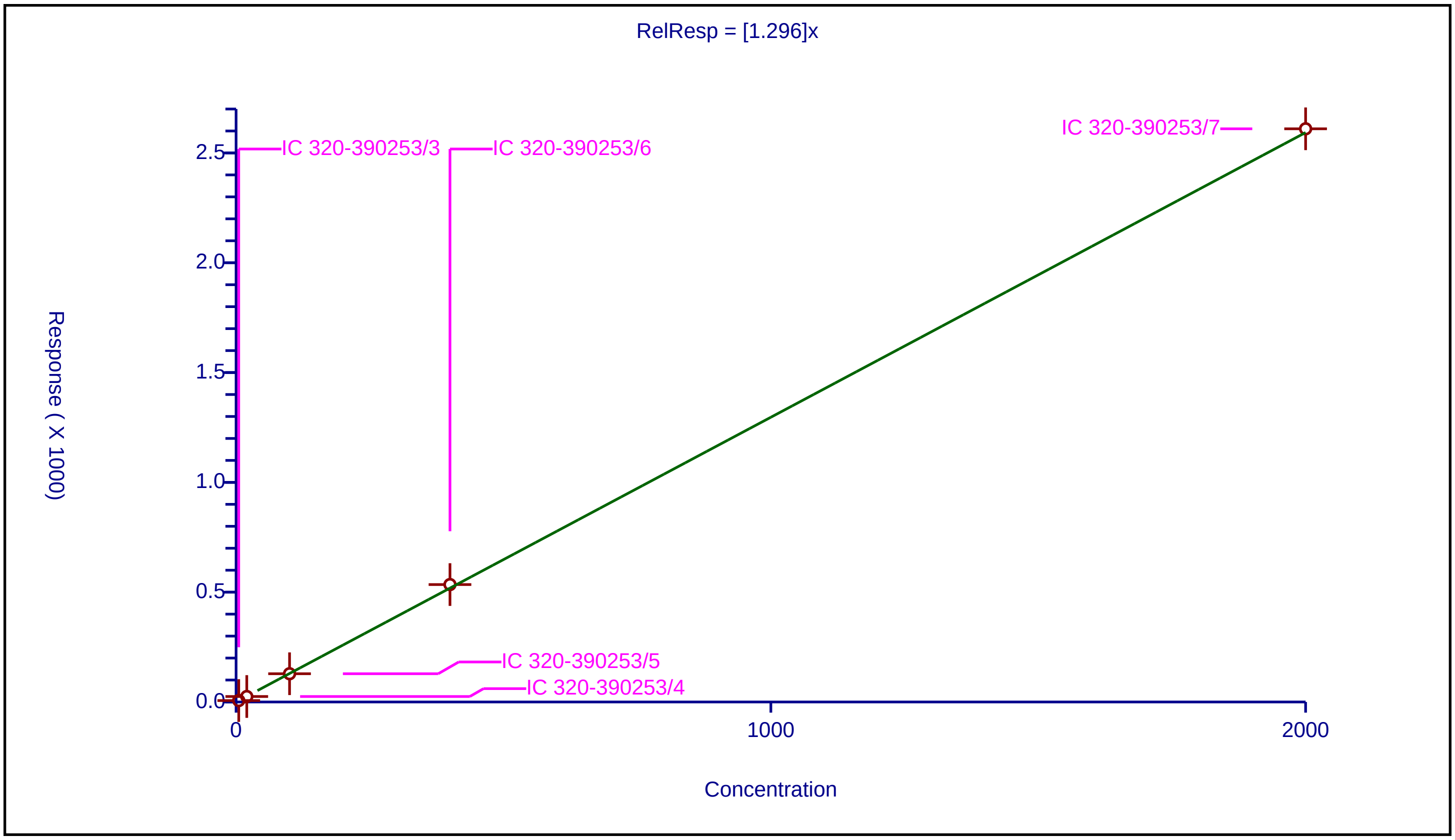

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTC	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTC	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTC	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
24JL2011D2	1	CPS 072420	CPS HRDXNCP_00040		Dioxin		1.00000	
24JL2011D2	2	SB 072420	SB Solvent Blank C-14				1.00000	
24JL2011D2	3	IC 072420	CS-2 HRDXNL2_00029		Dioxin	ICAL	1.00000	
24JL2011D2	4	IC 072420A	CS-3 HRDXNL3_00027		Dioxin		1.00000	
24JL2011D2	5	IC 072420B	CS-4 HRDXNL4_00094		Dioxin		1.00000	
24JL2011D2	6	IC 072420C	CS-5 HRDXNL5_00030		Dioxin		1.00000	
24JL2011D2	7	IC 072420D	CS-6 HRDXNL6_00026		Dioxin		1.00000	
24JL2011D2	8	SB 072420C	SB Solvent Blank C-14				1.00000	
24JL2011D2	9	ICV 072420	ICV HRDXNIC_00045		Dioxin		1.00000	
24JL2011D2	10						1.00000	
24JL2011D2	11						1.00000	
24JL2011D2	12						1.00000	
24JL2011D2	13						1.00000	
24JL2011D2	14						1.00000	
24JL2011D2	15						1.00000	
24JL2011D2	16						1.00000	
24JL2011D2	17						1.00000	
24JL2011D2	18		ALM 07-24-20				1.00000	
24JL2011D2	19						1.00000	

Logfile ✓ id
7/27/20 KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

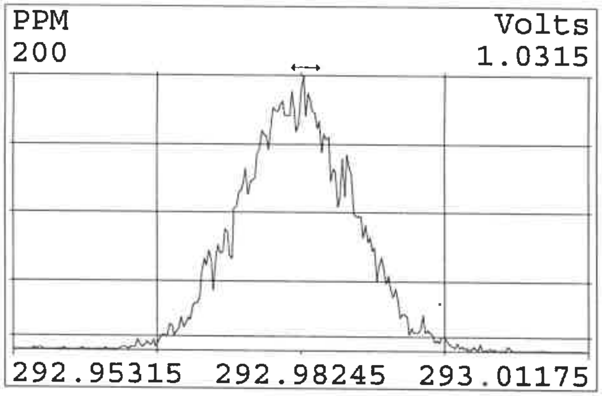

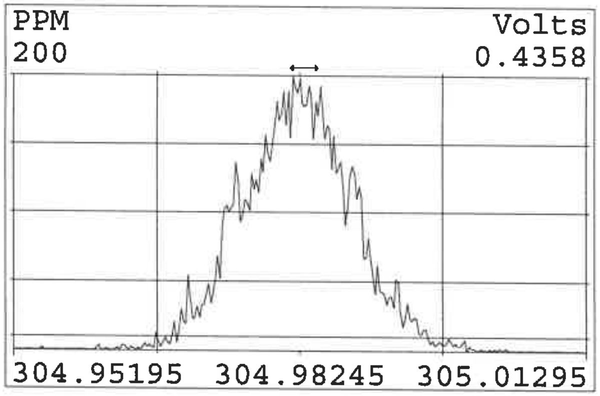

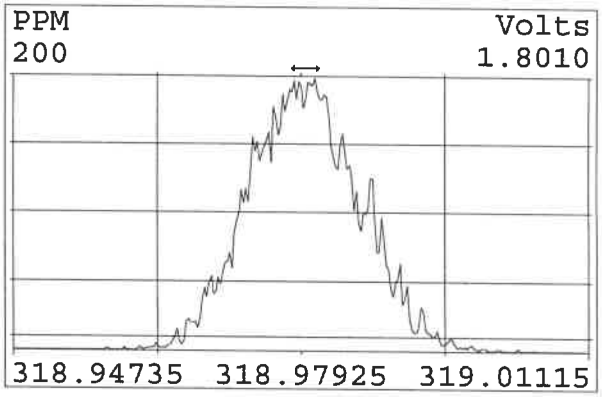

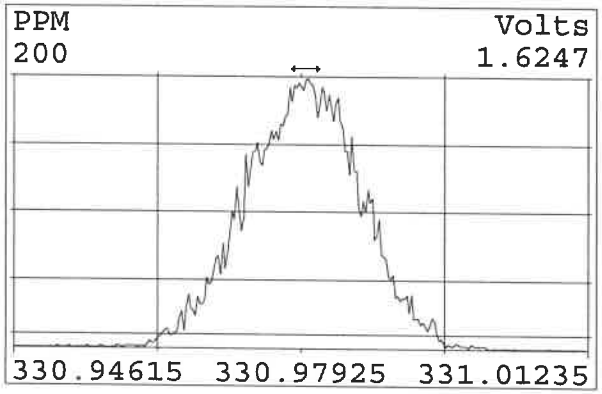

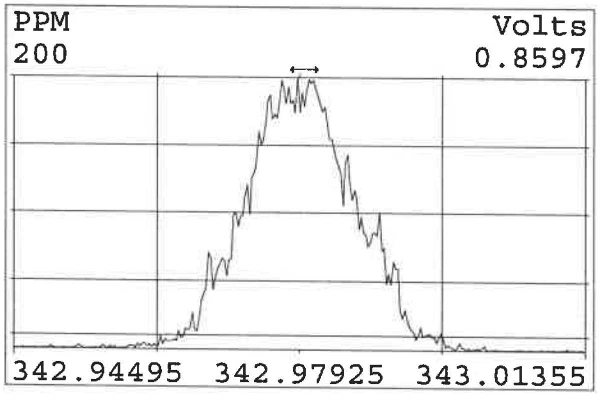

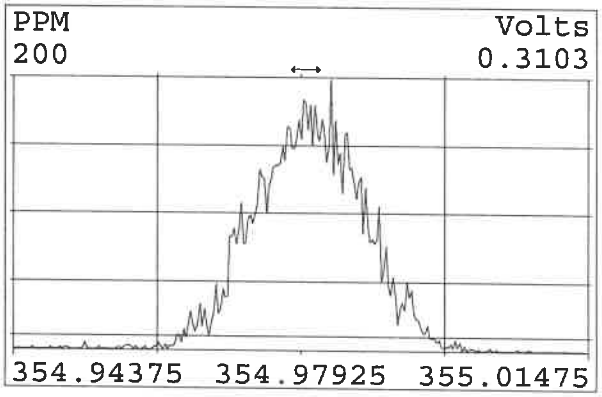

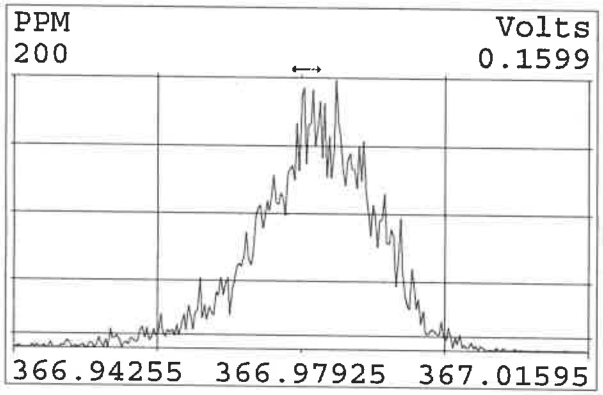

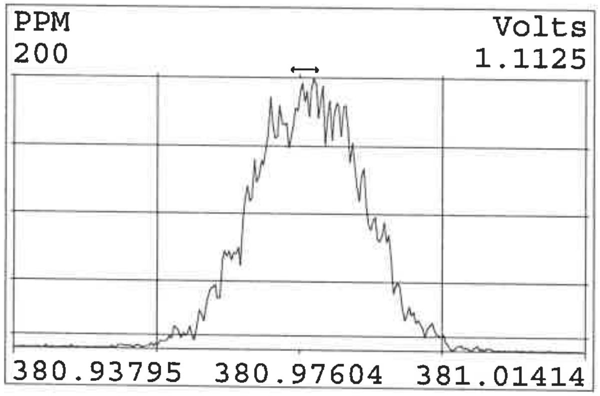

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

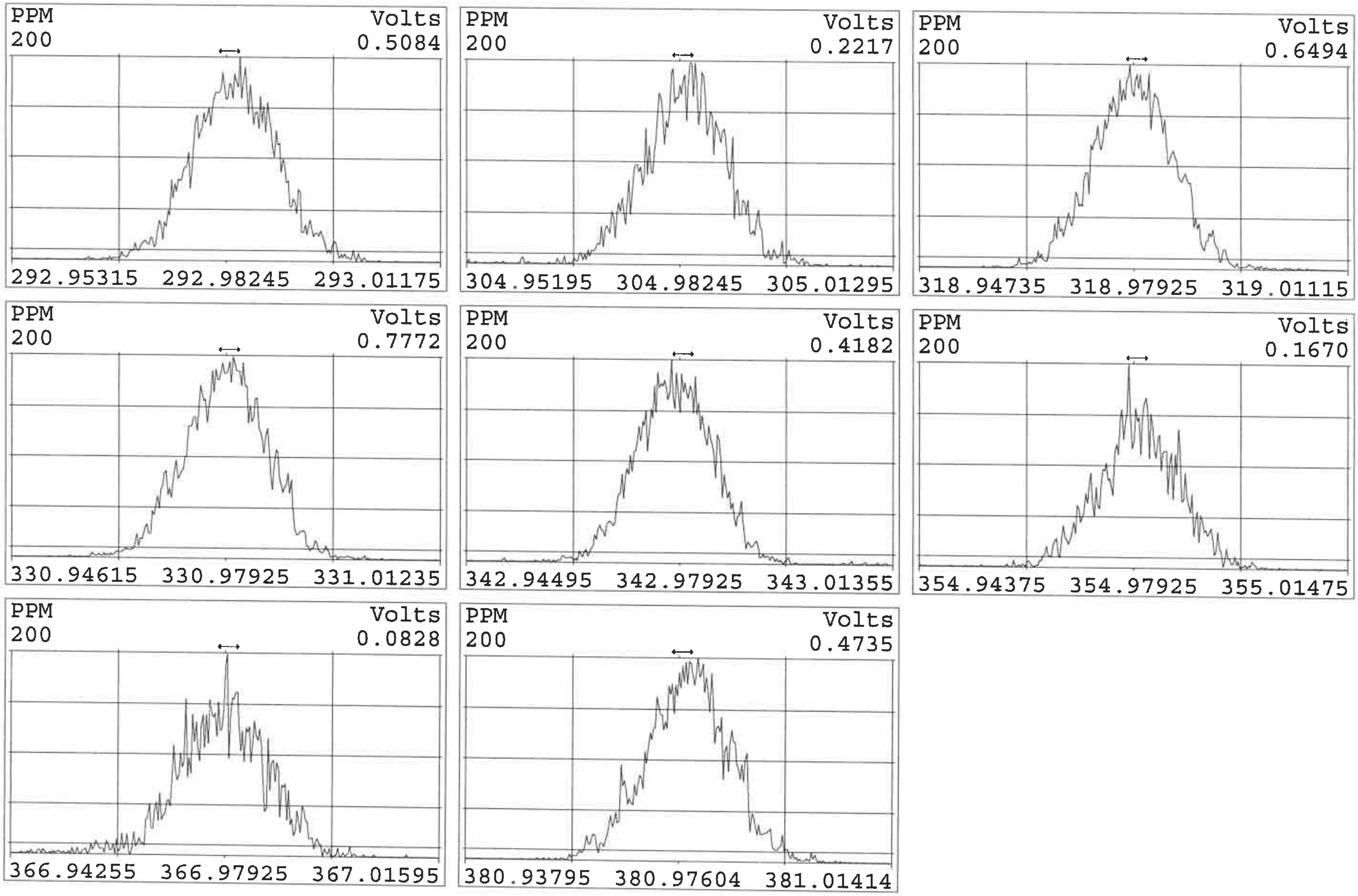

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17   Injection Vol: 2.0 ul
Instrument ID: 11D2   Operator ID:
Method: DXN_DB225_11D2   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641   Sample Line#: 3
Column Type: DB-225   Column Dia: 0.32 mm

TCDF

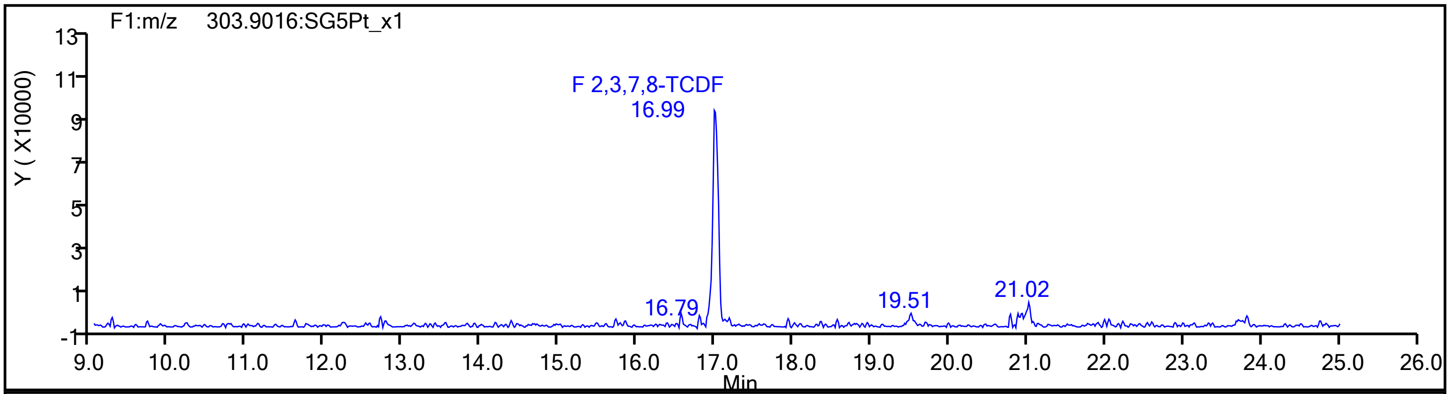

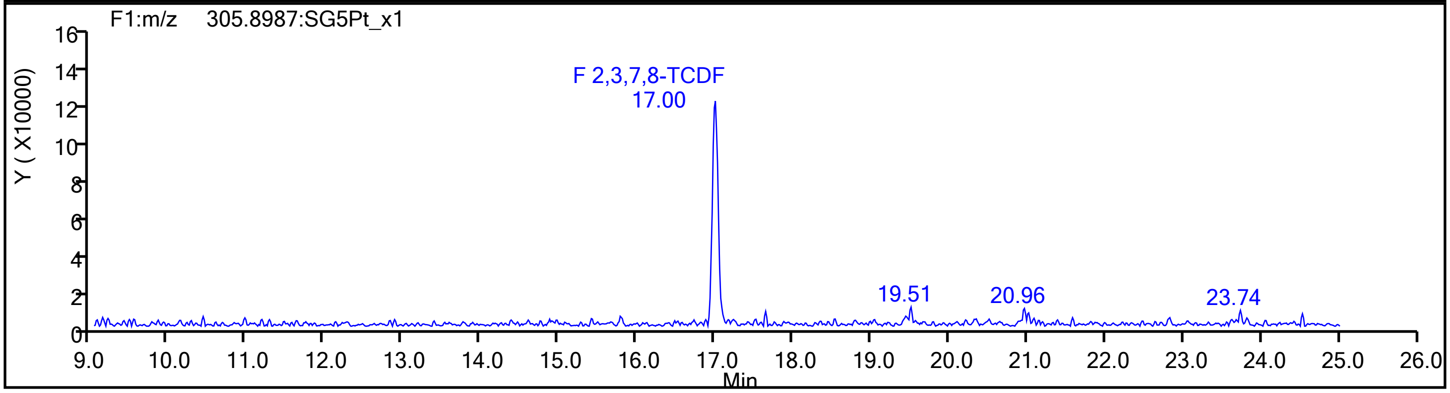

TCDF Standards

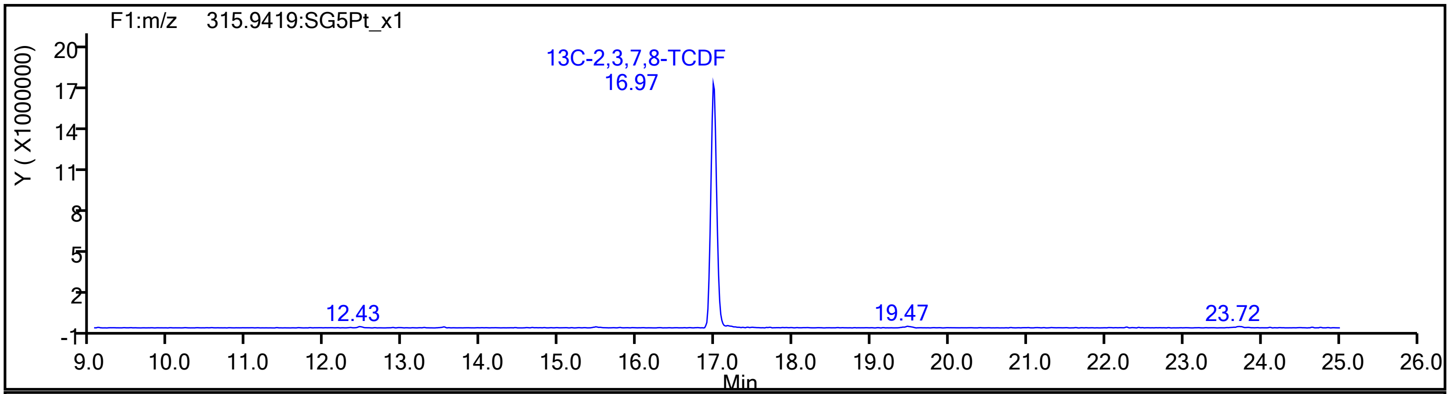

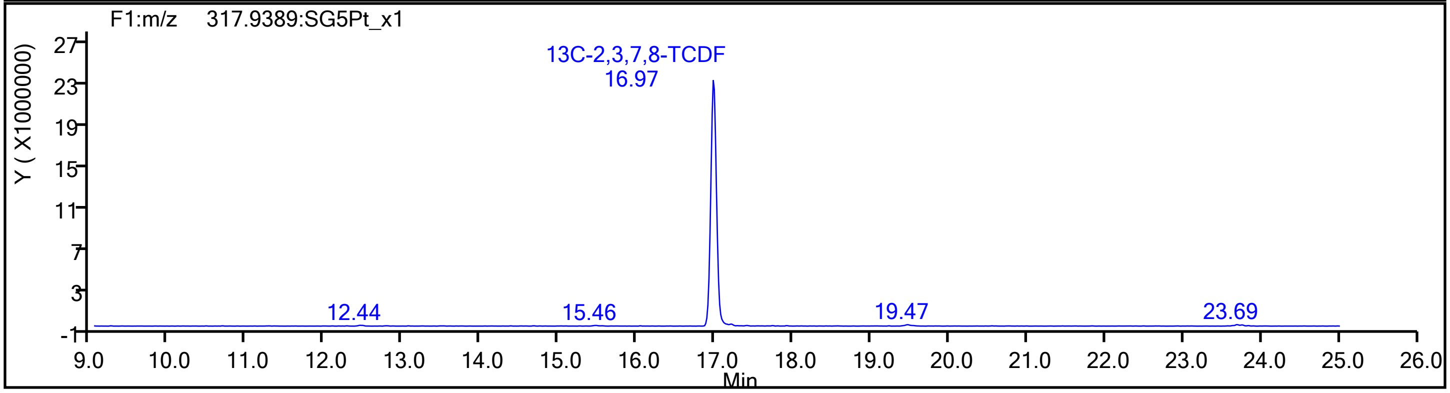

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

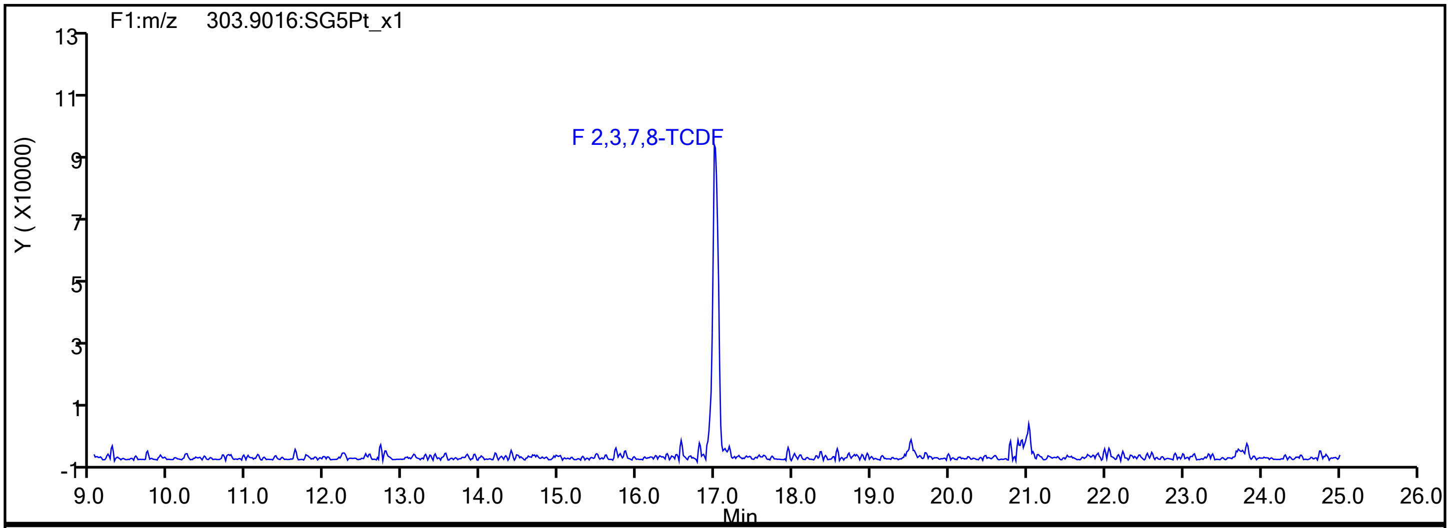

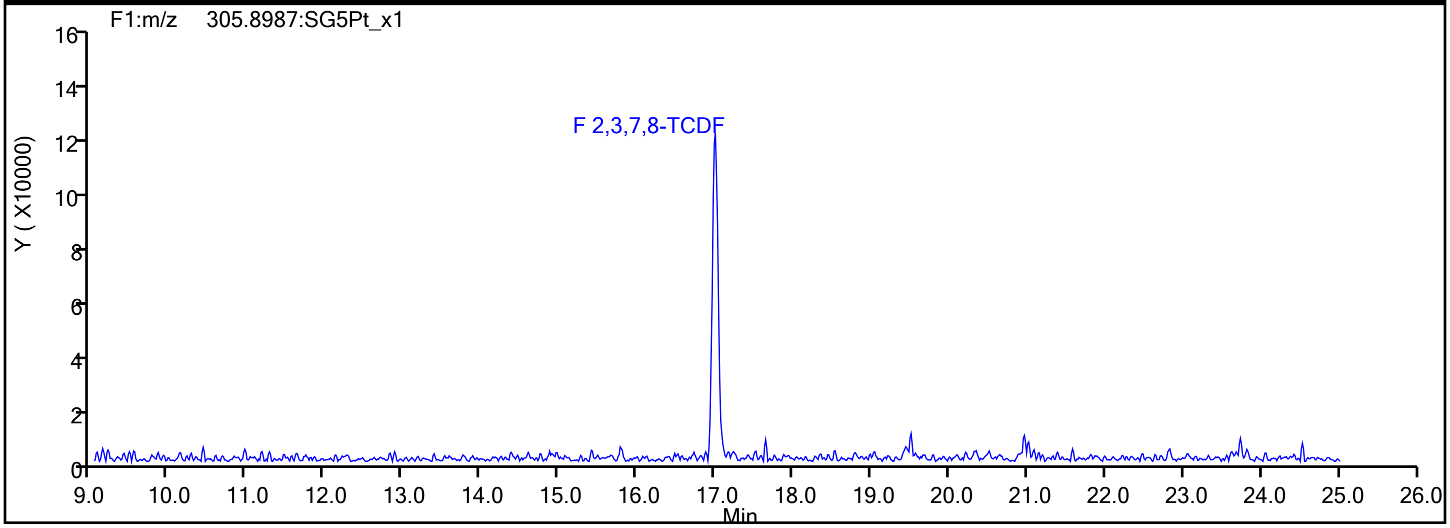

TCDF Interference Mass

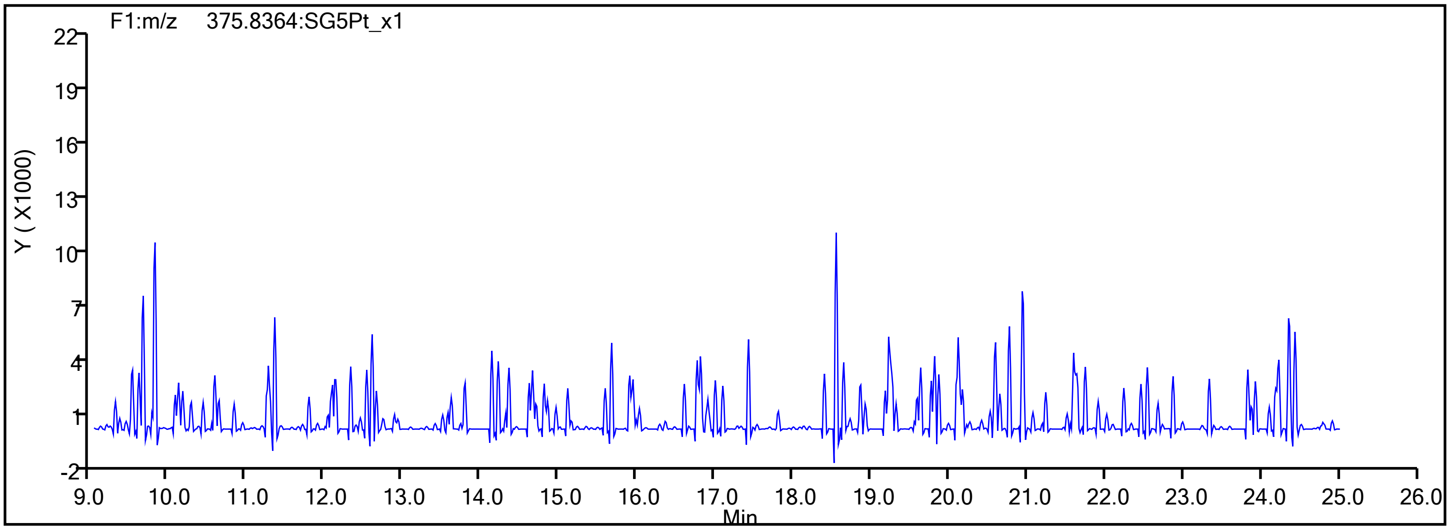

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

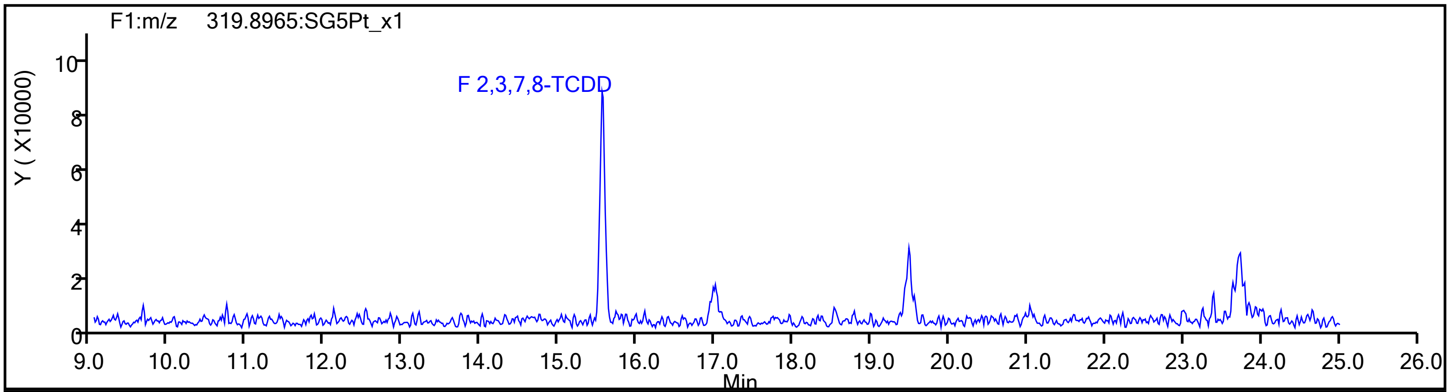

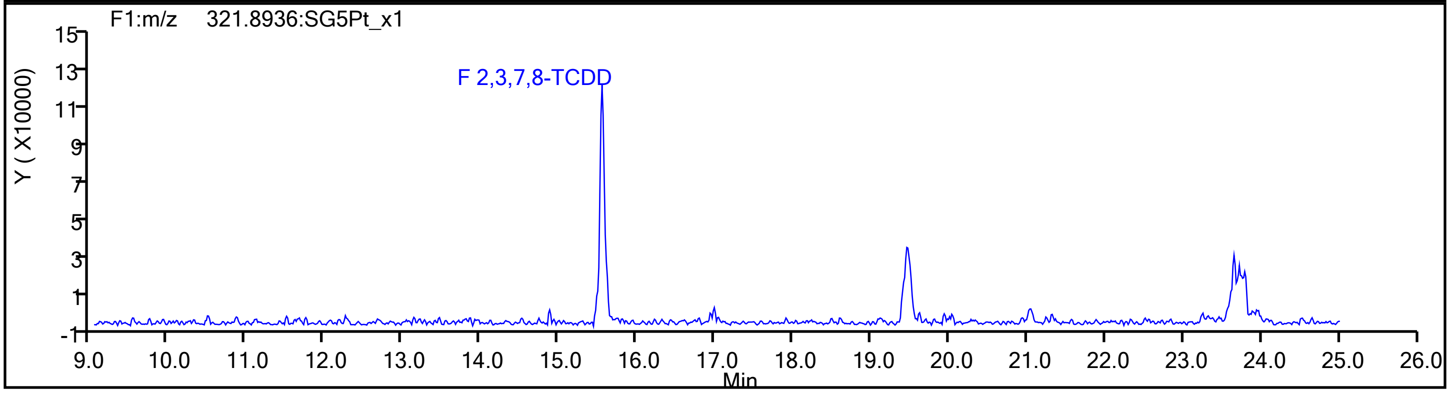

TCDD Standards

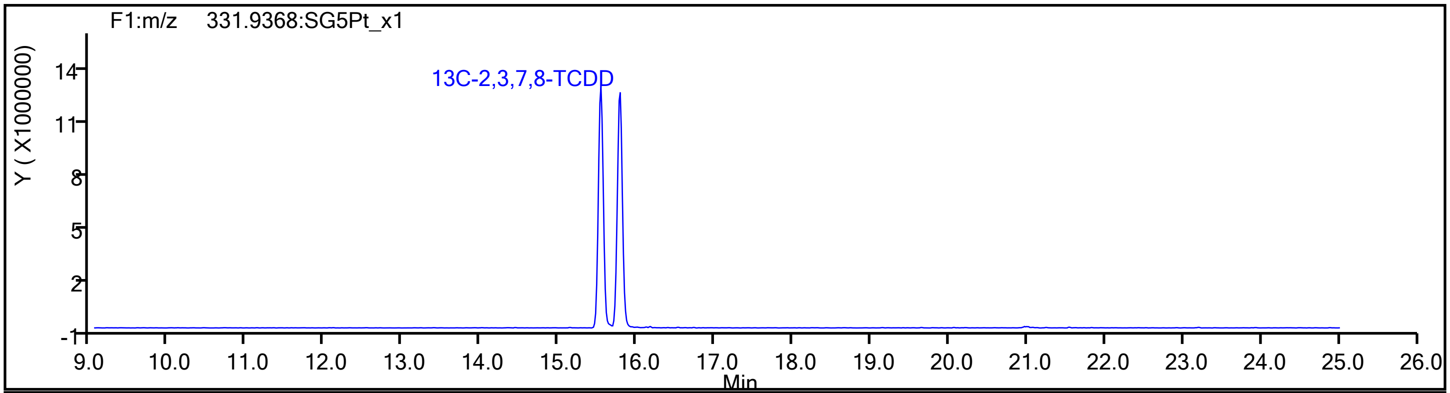

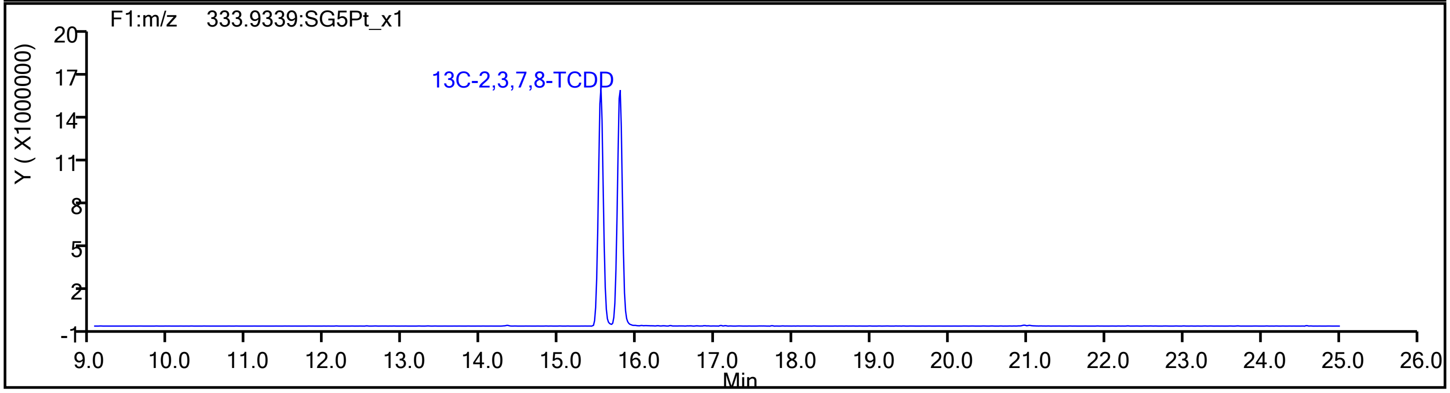

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

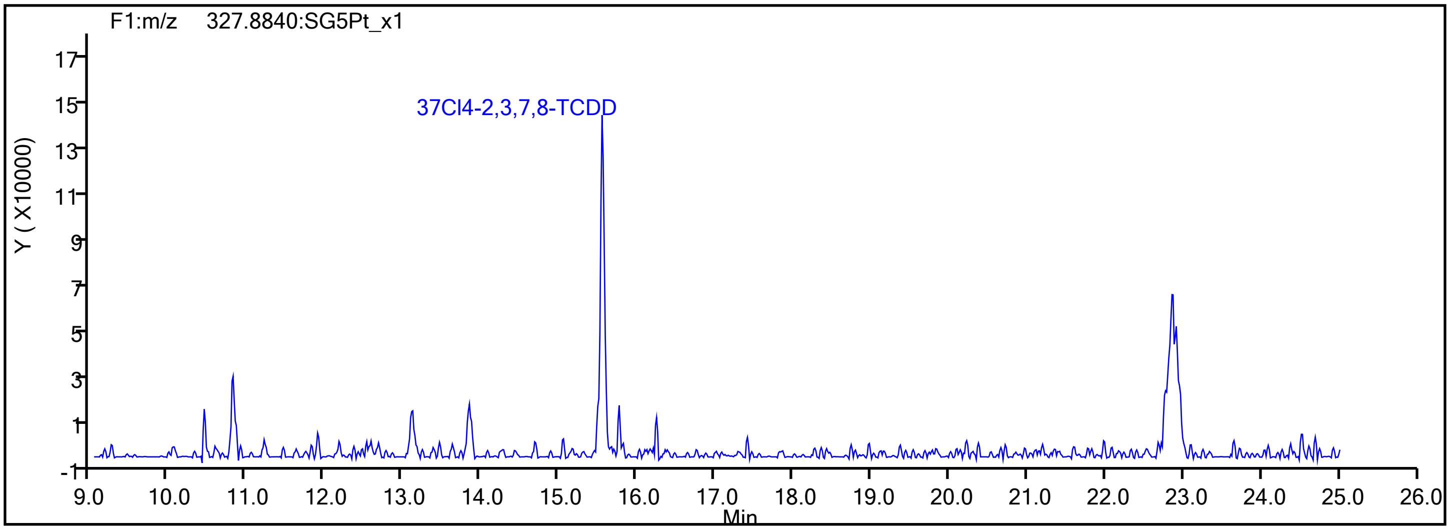

37Cl4-TCDD Standards

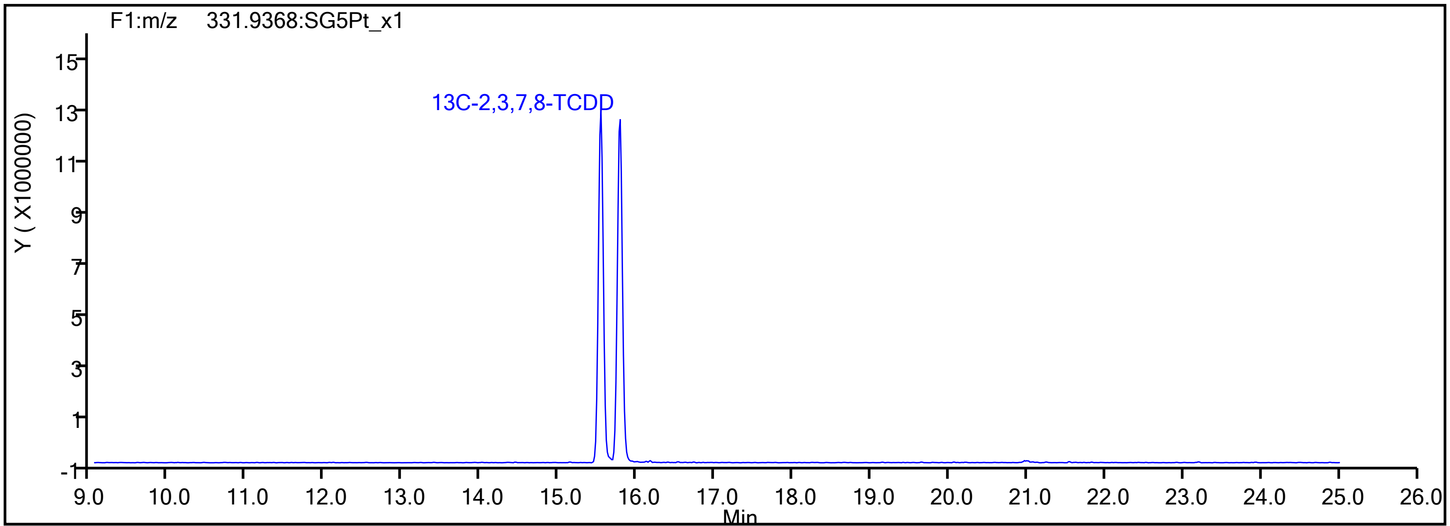

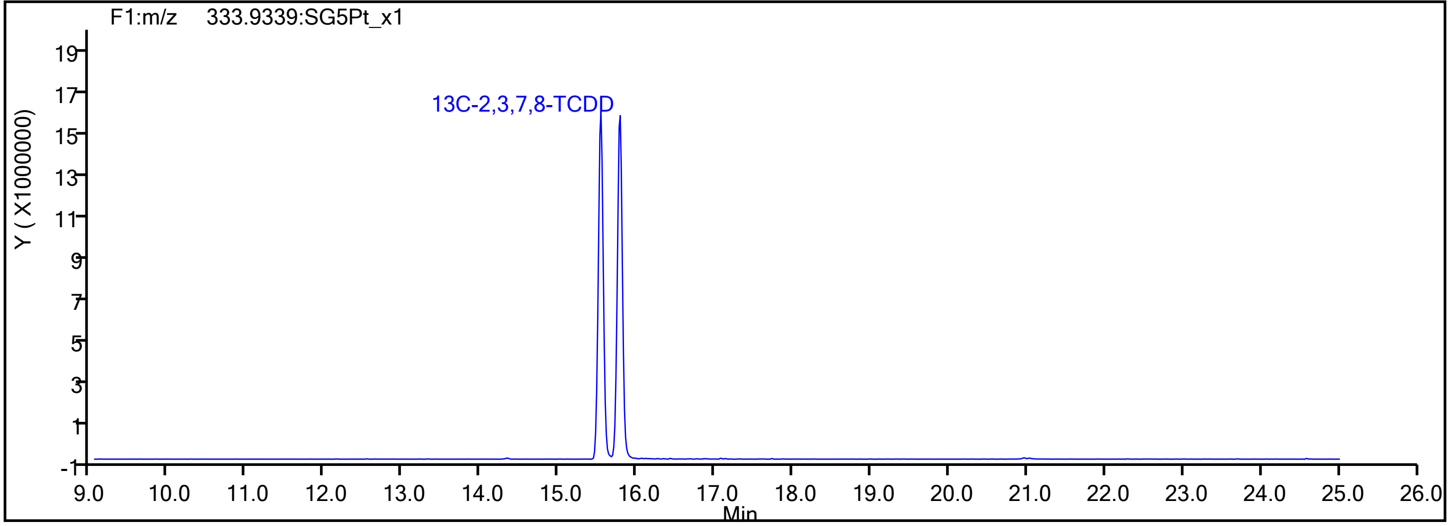

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d

Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

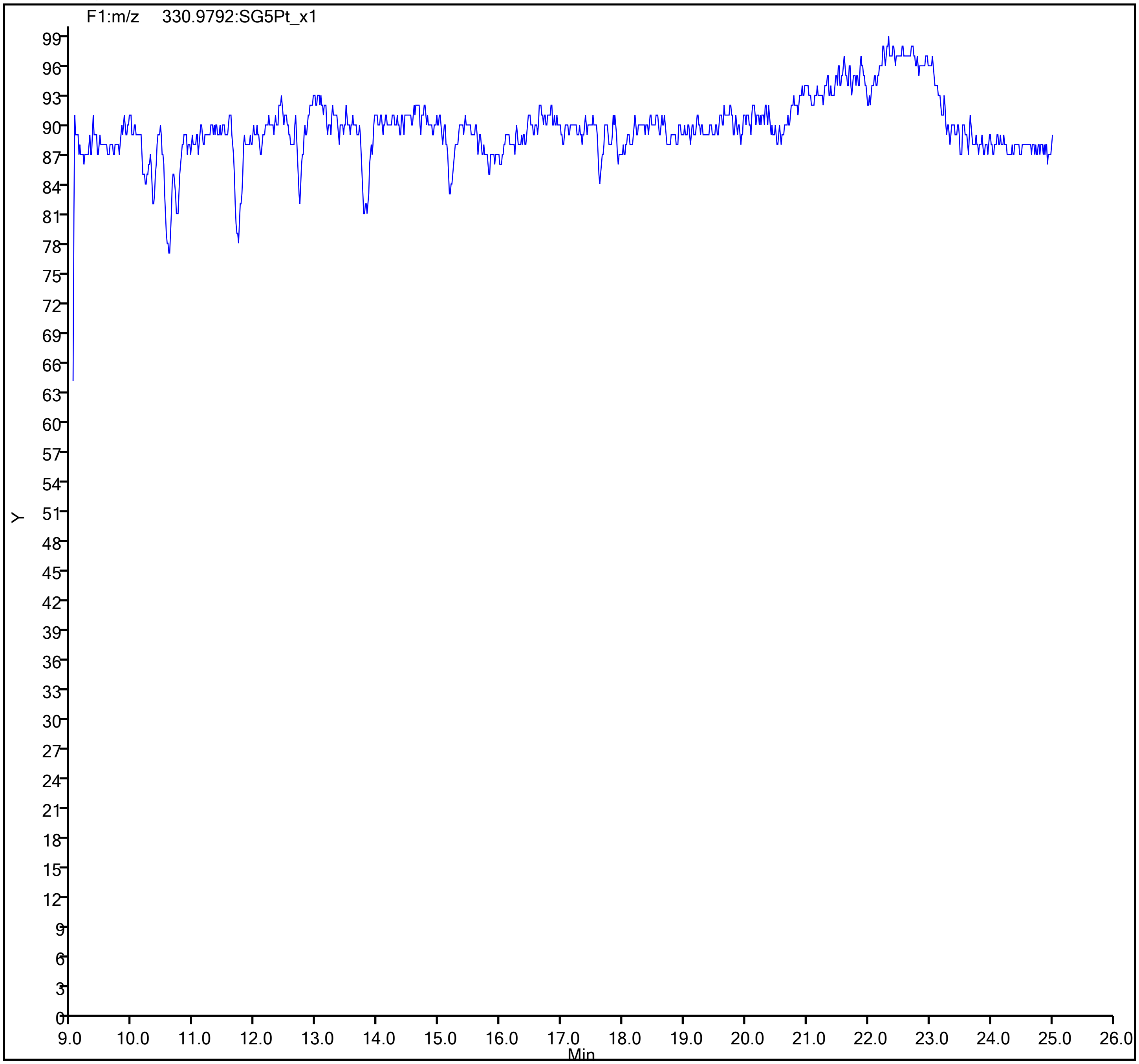

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:47		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

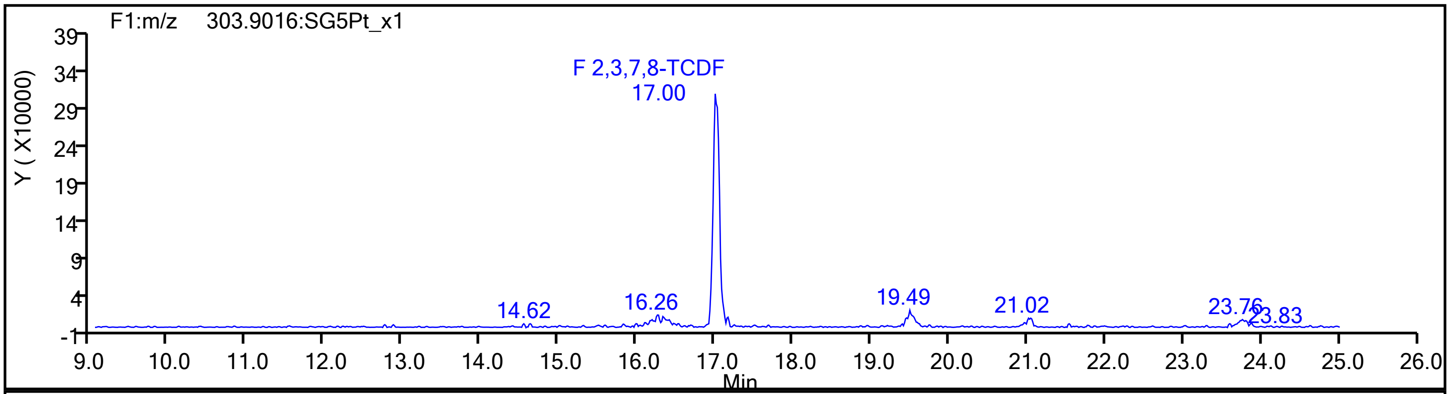

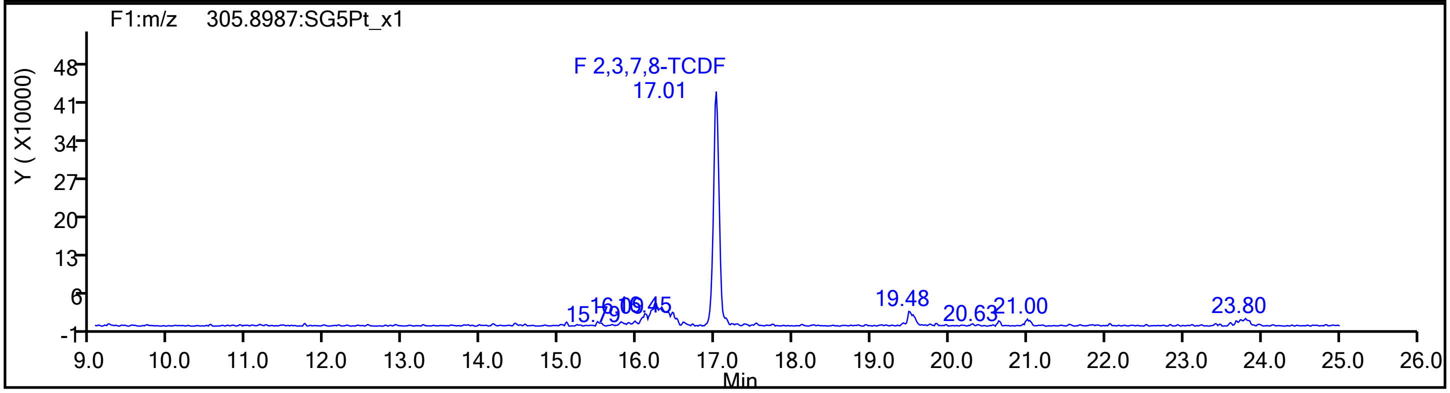

TCDF Standards

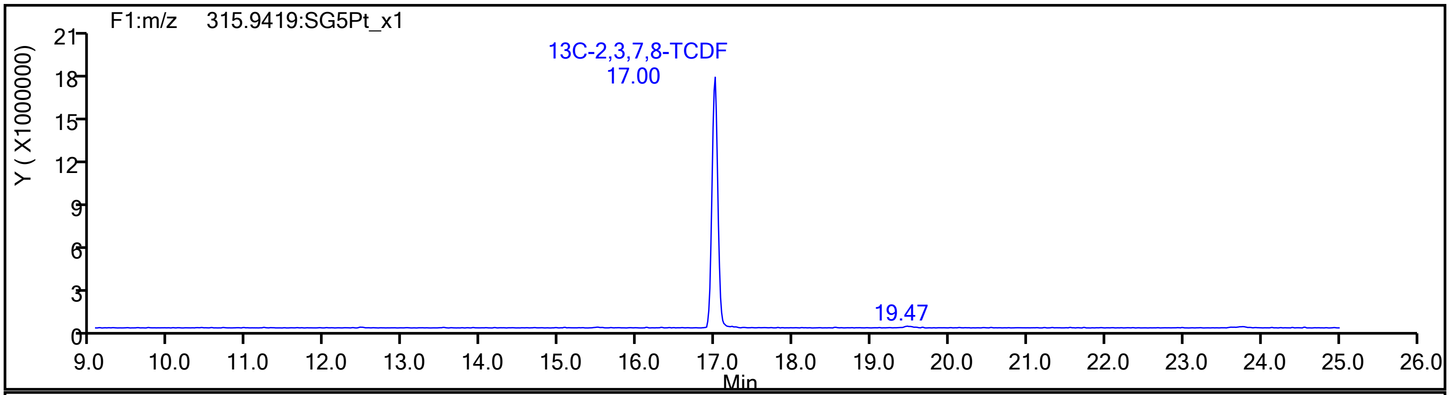

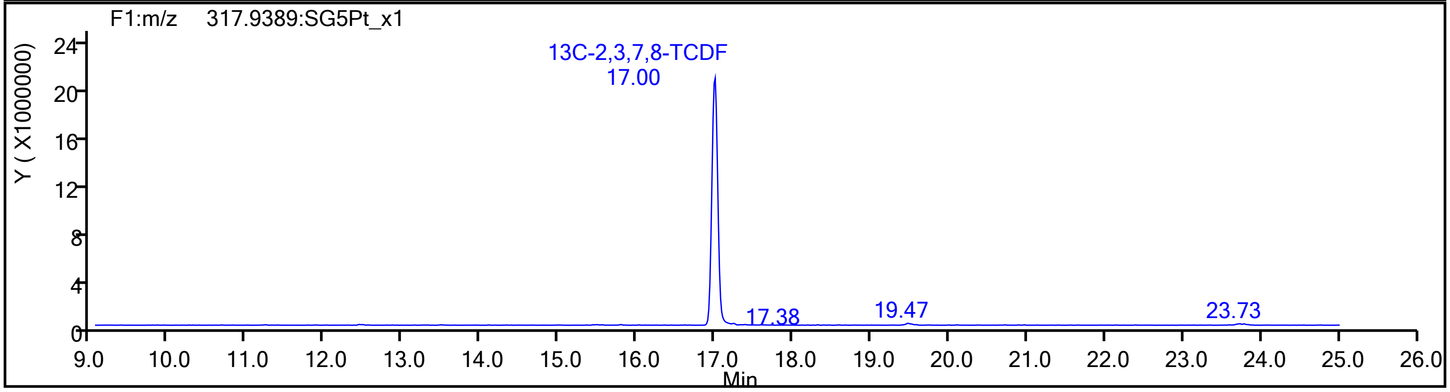

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

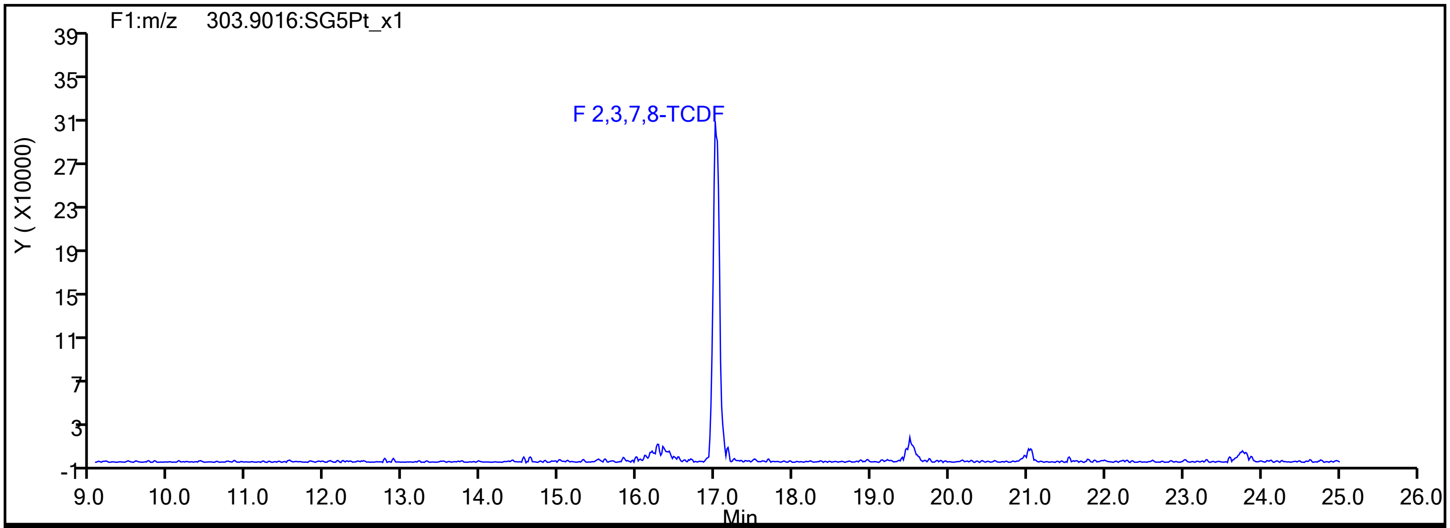

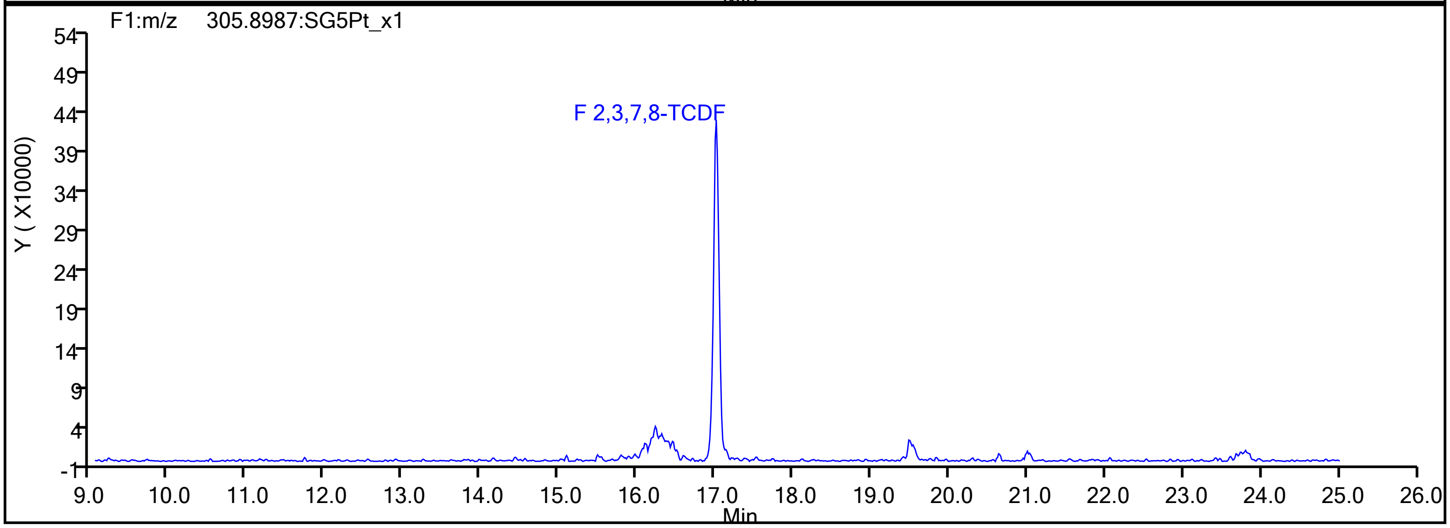

TCDF Interference Mass

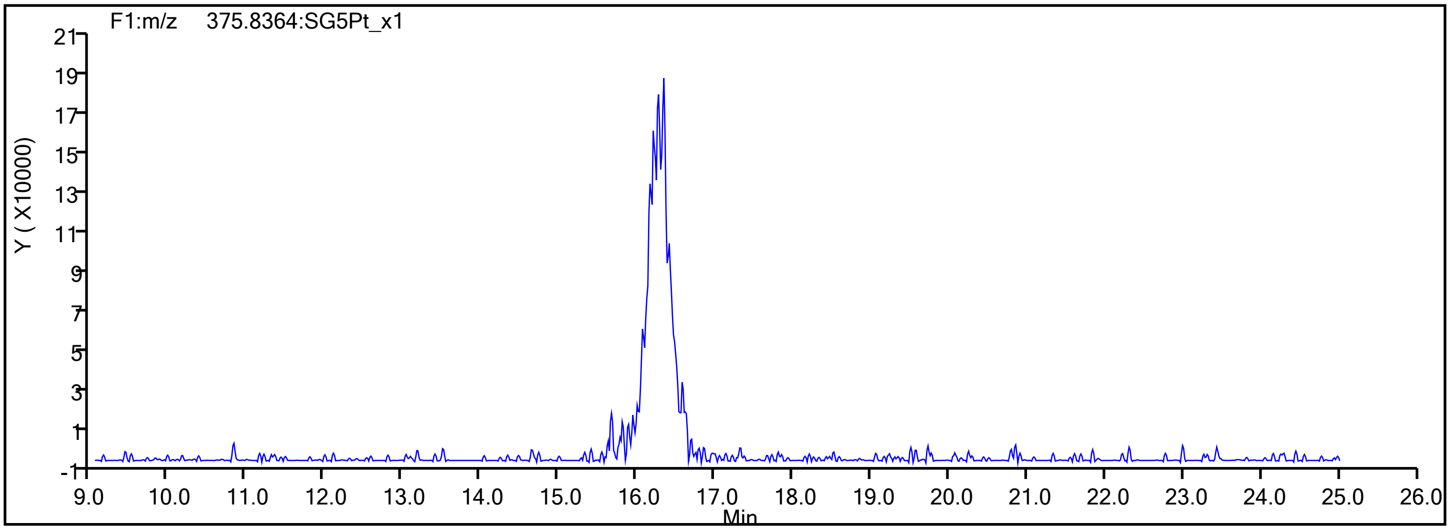

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

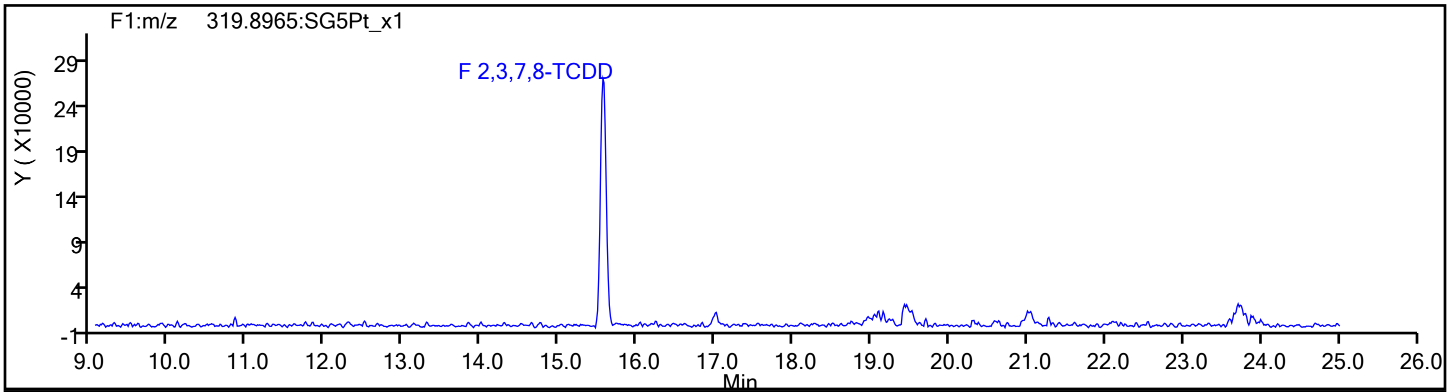

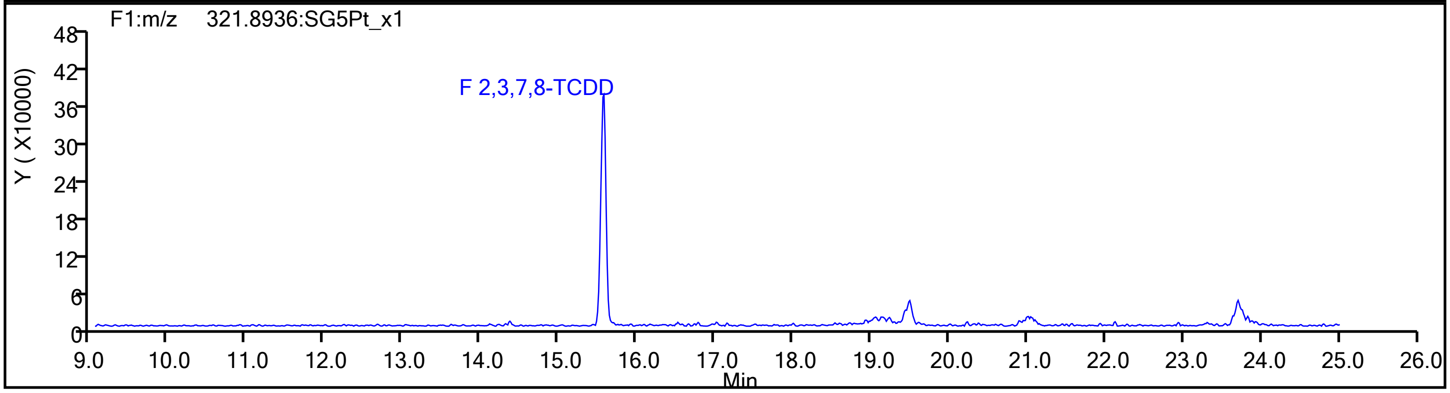

TCDD Standards

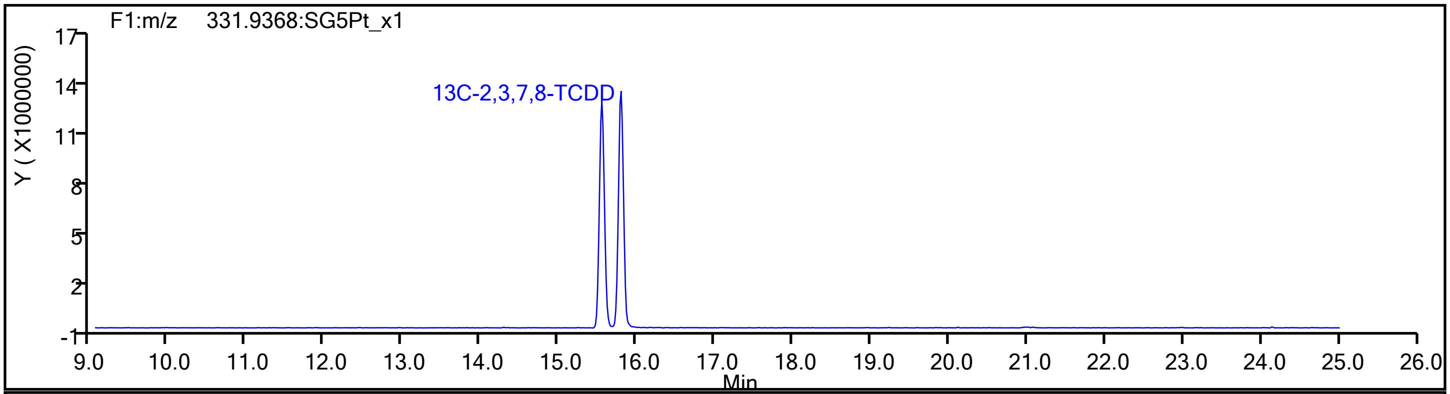

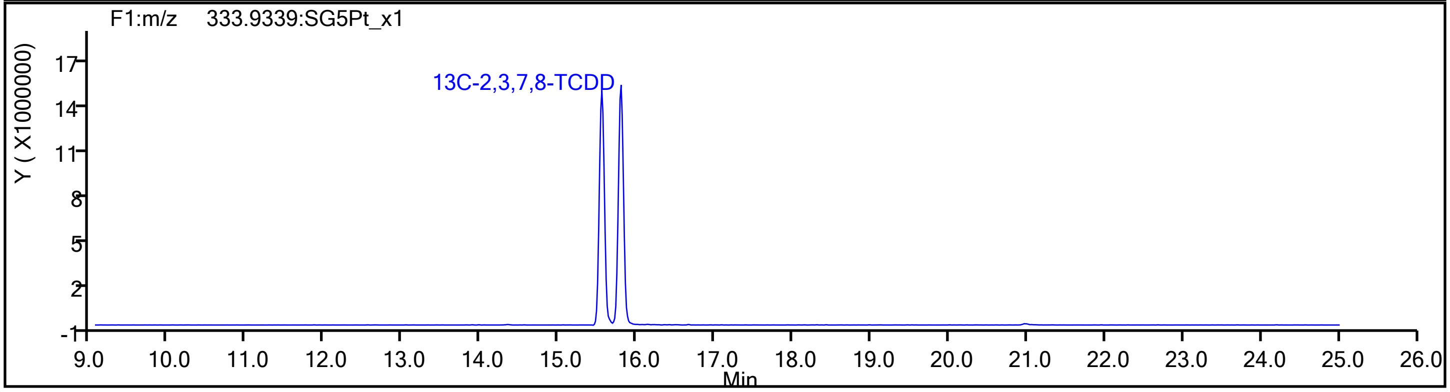

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

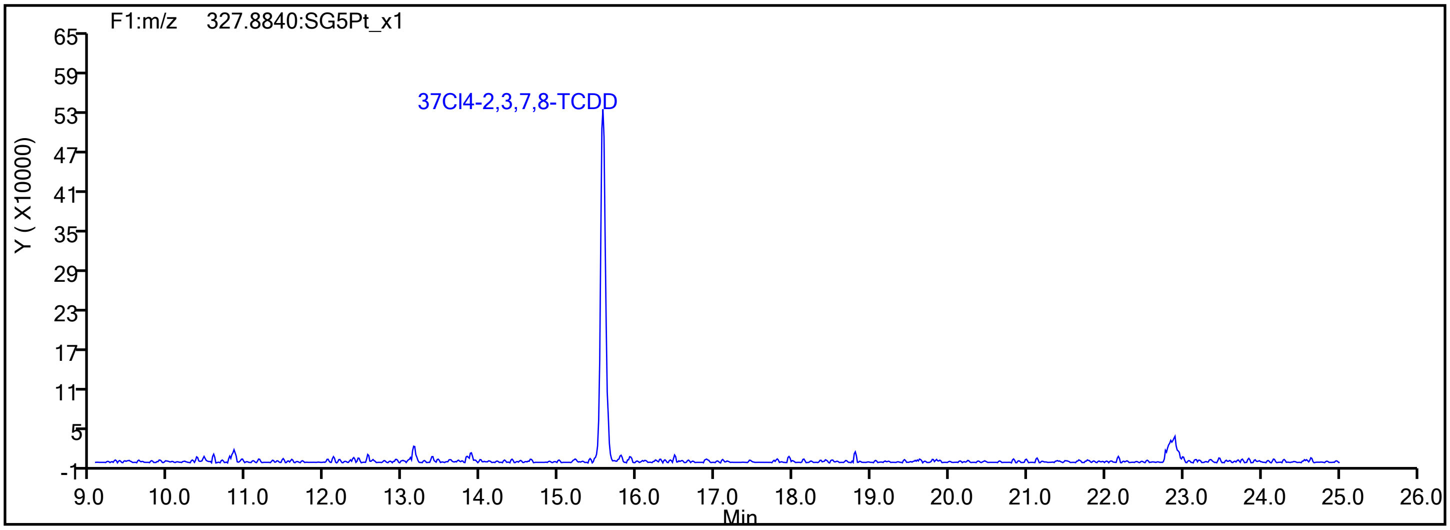

37Cl4-TCDD Standards

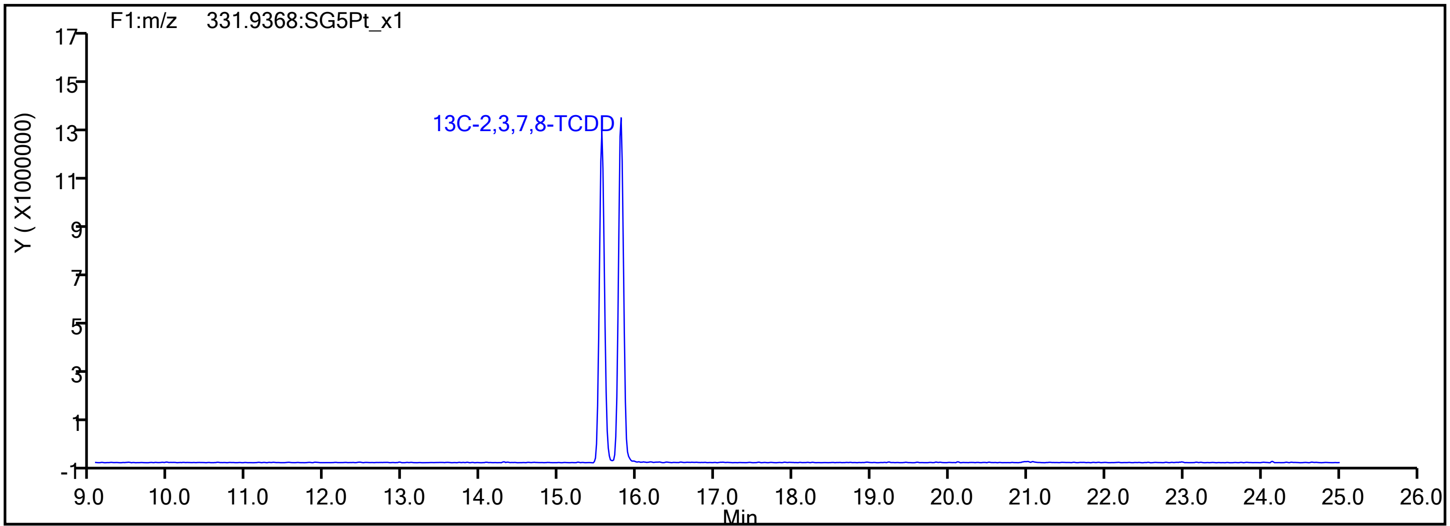

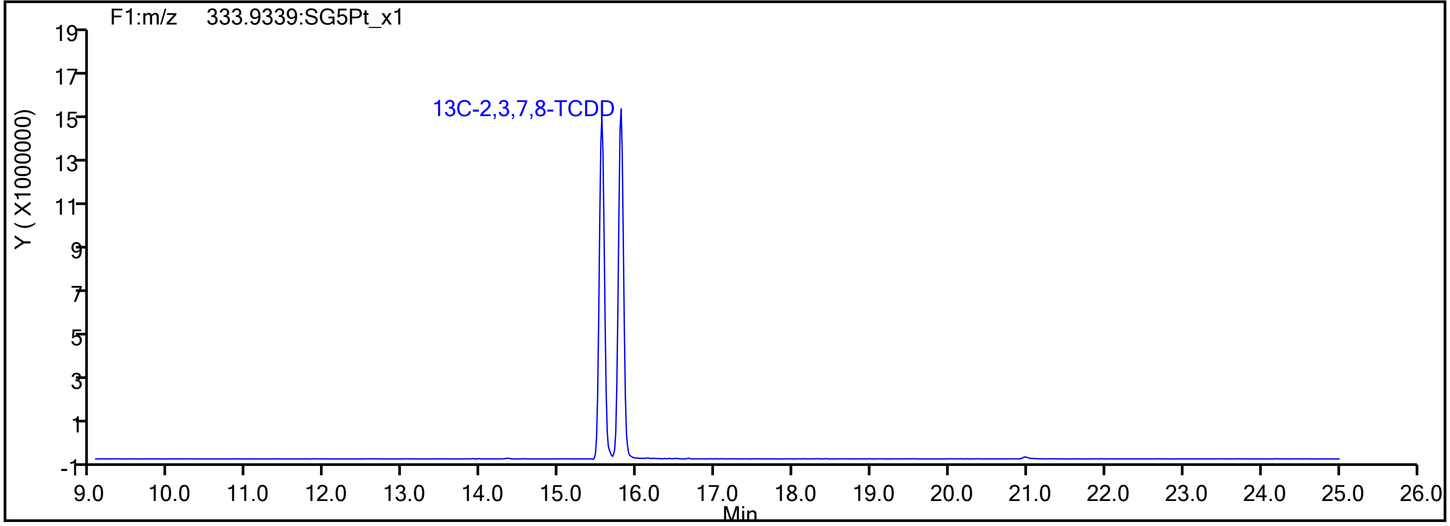

Report Date: 27-Jul-2020 12:42:56 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

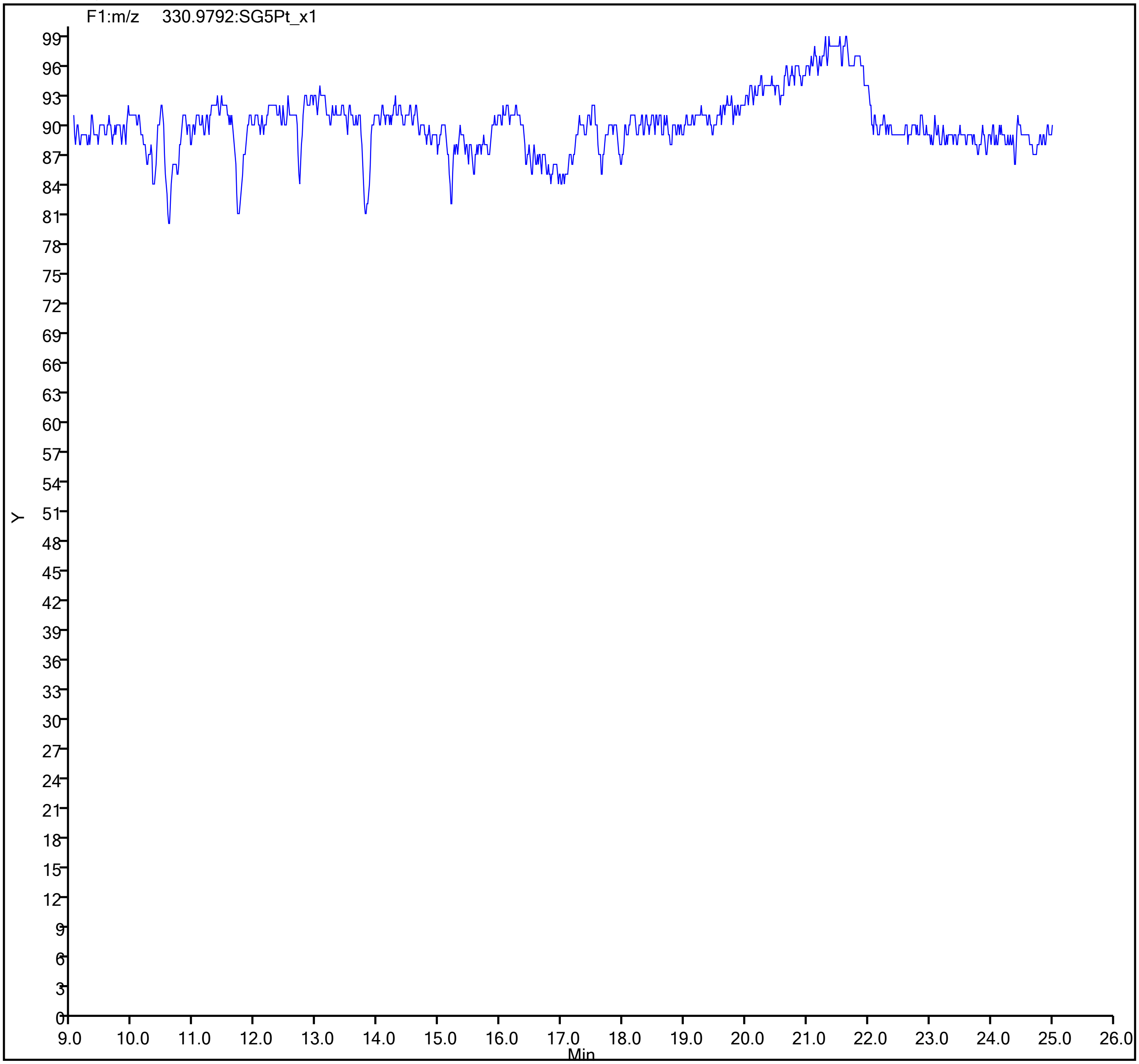

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d

Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

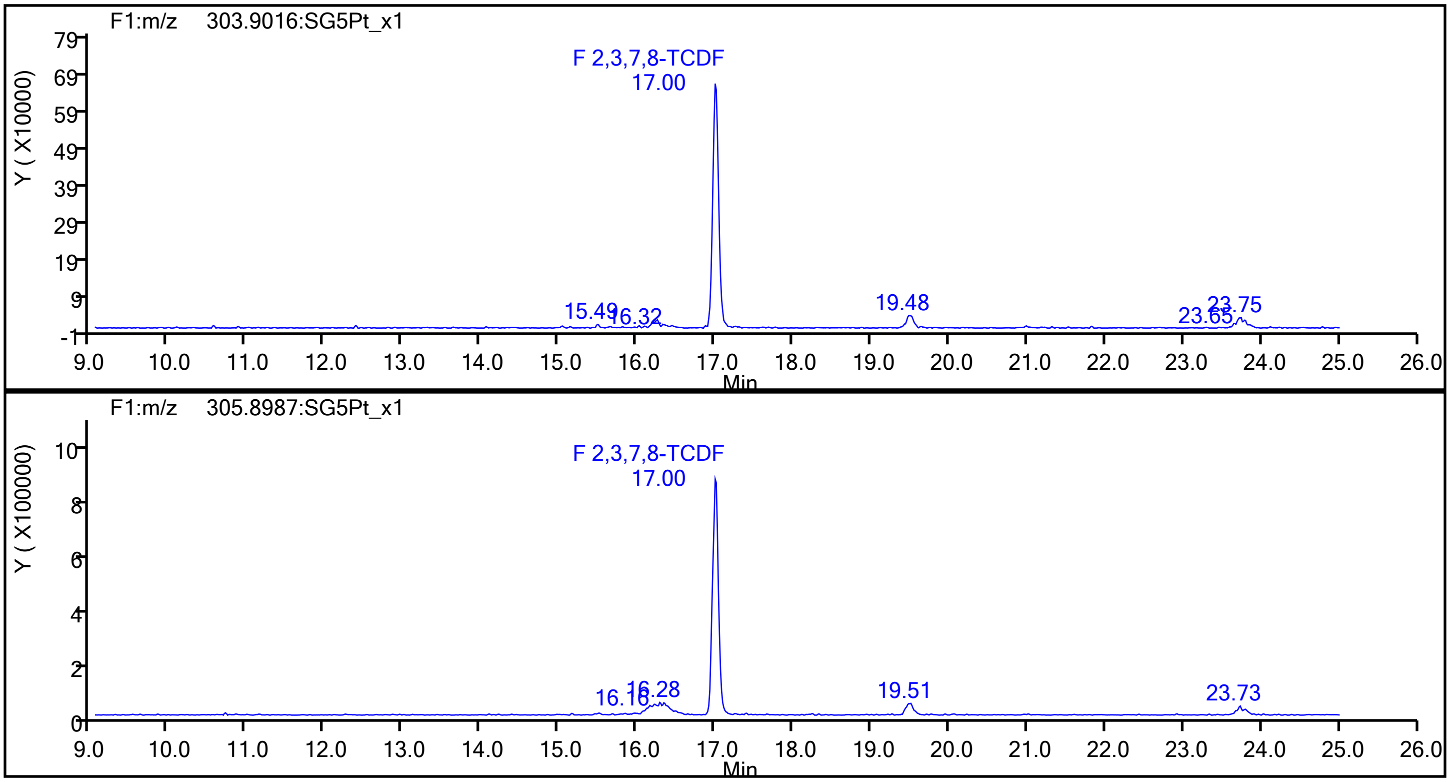

TCDF Standards

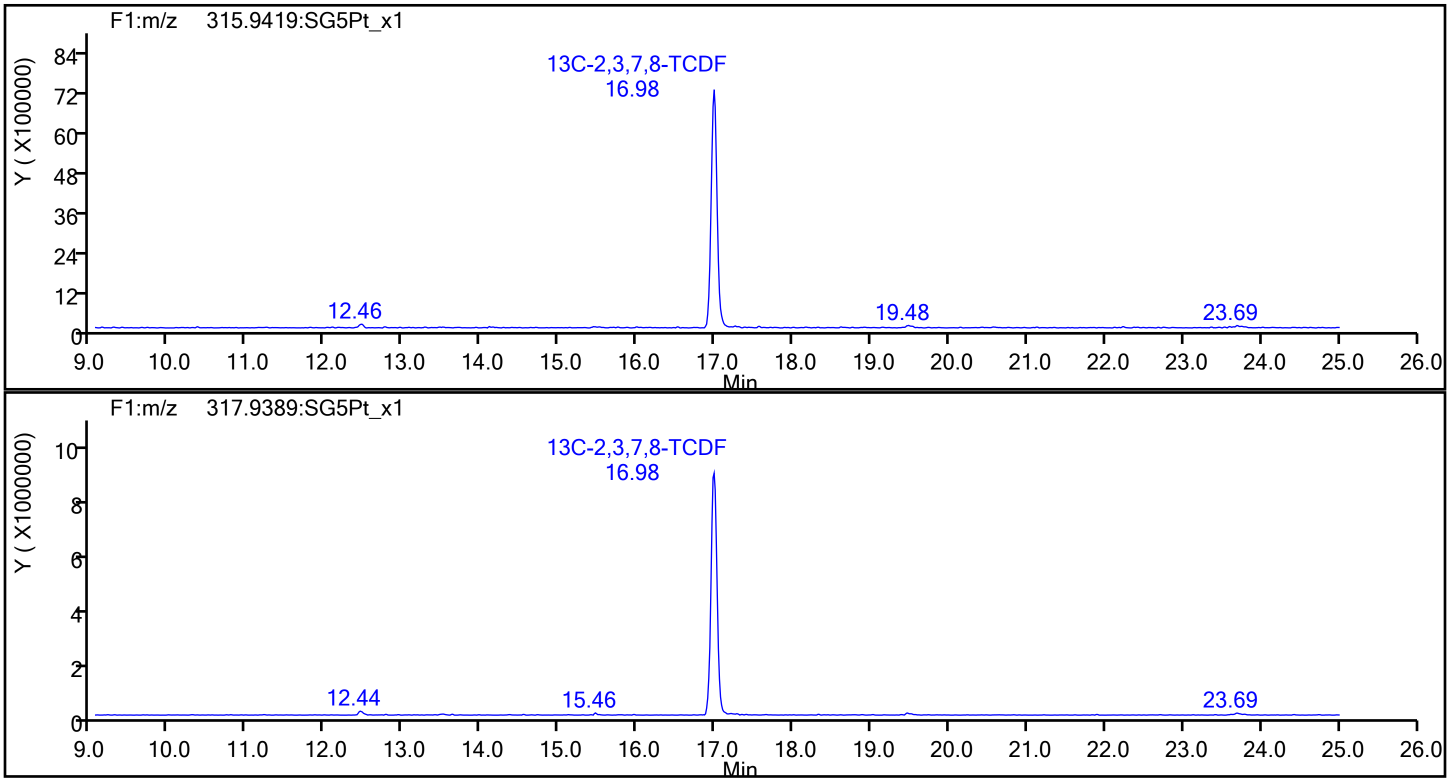

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d

Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

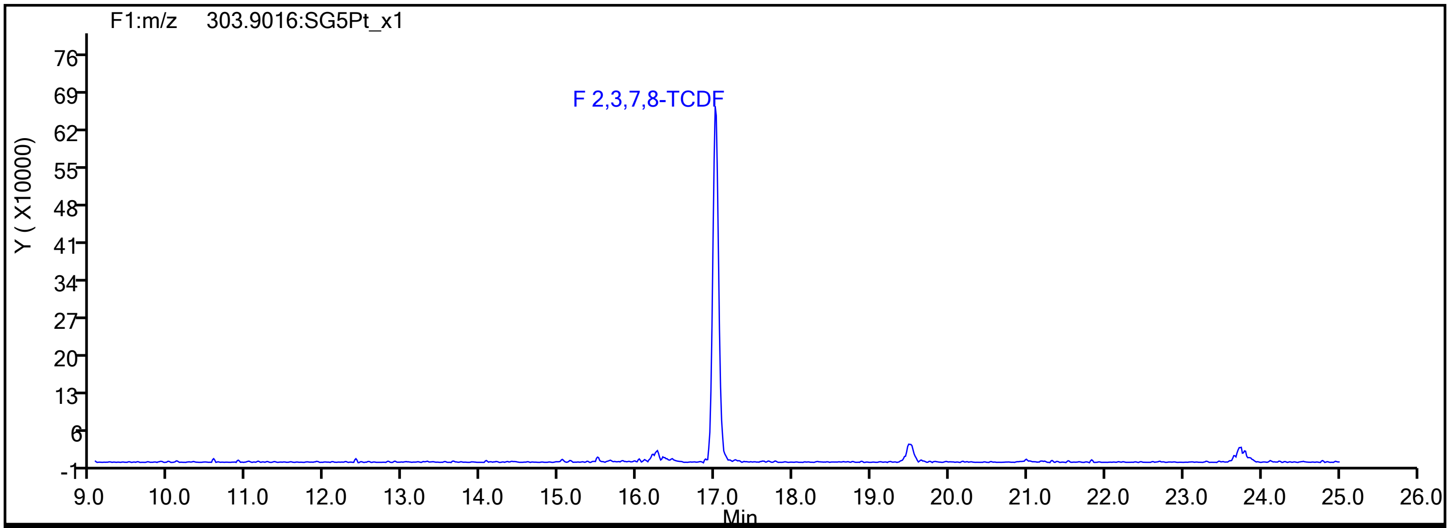

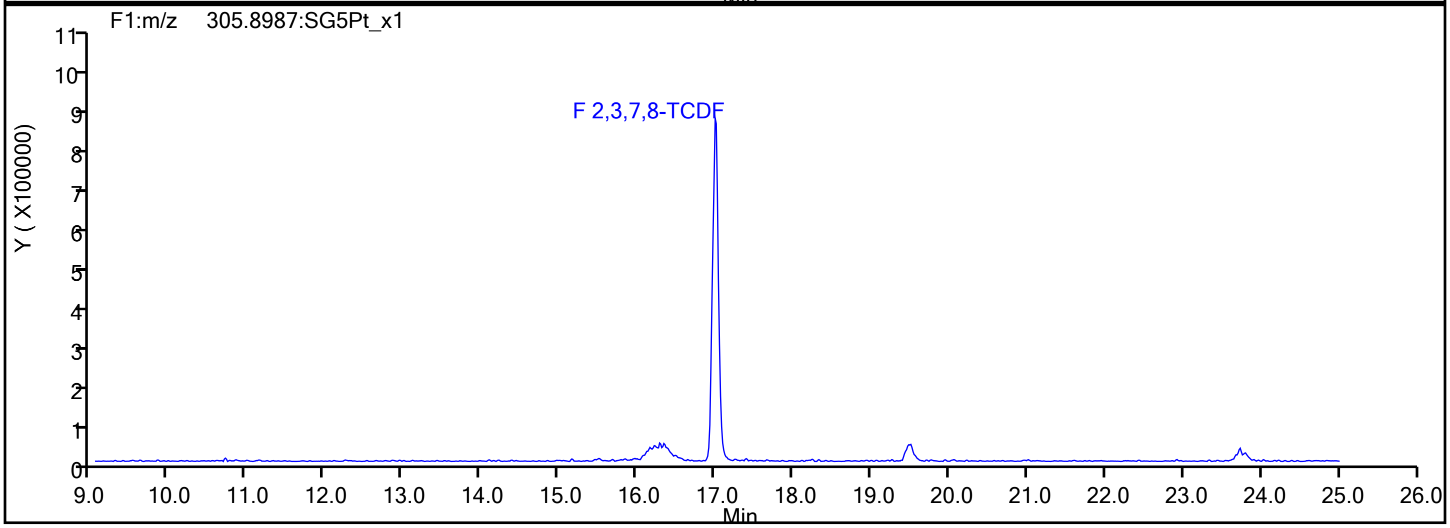

TCDF Interference Mass

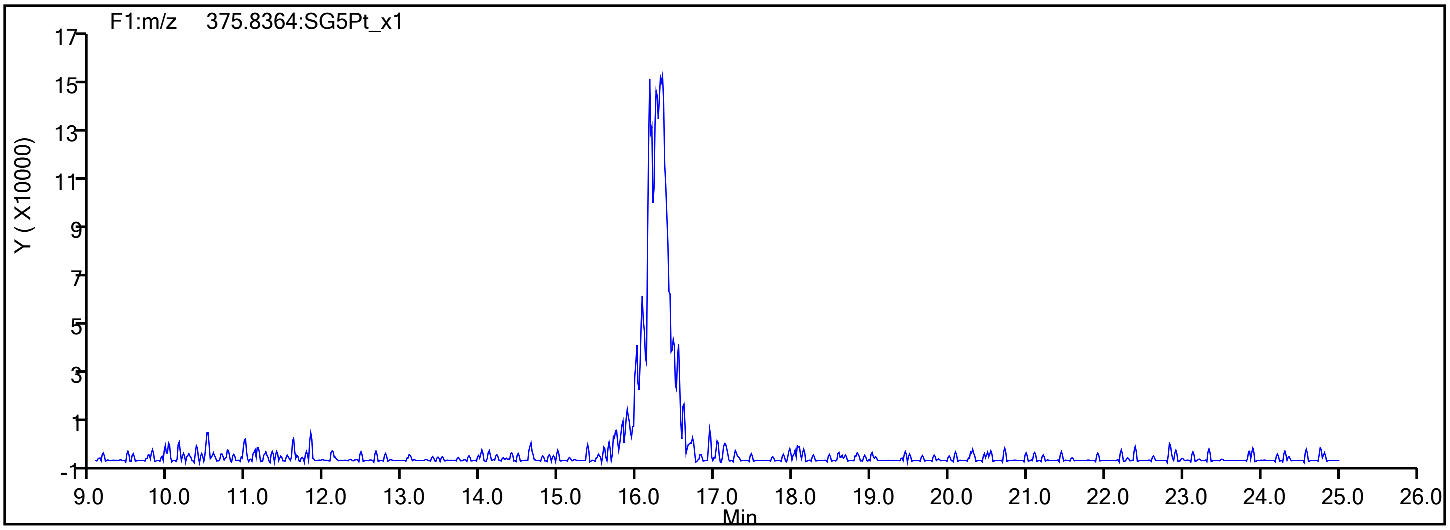

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

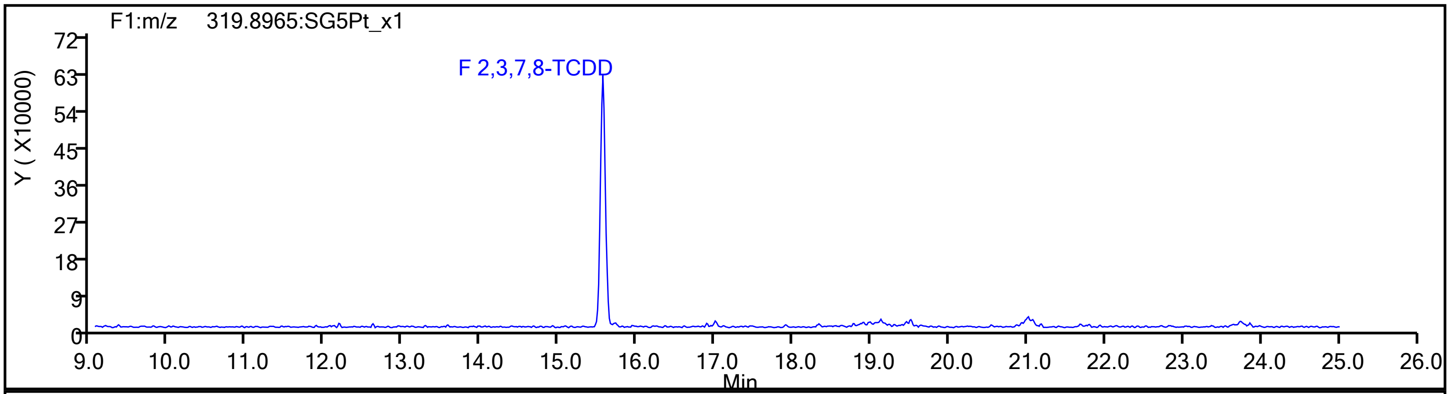

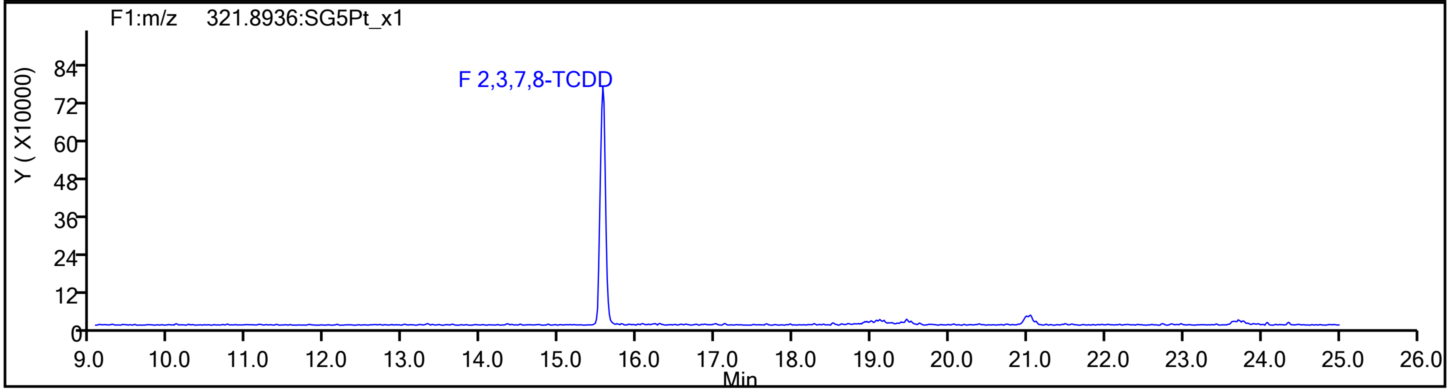

TCDD Standards

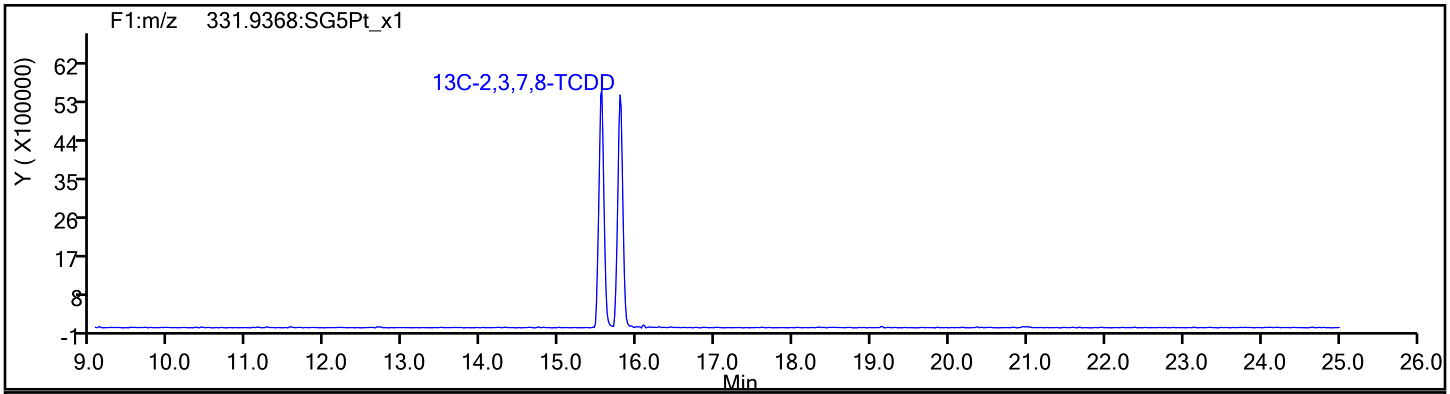

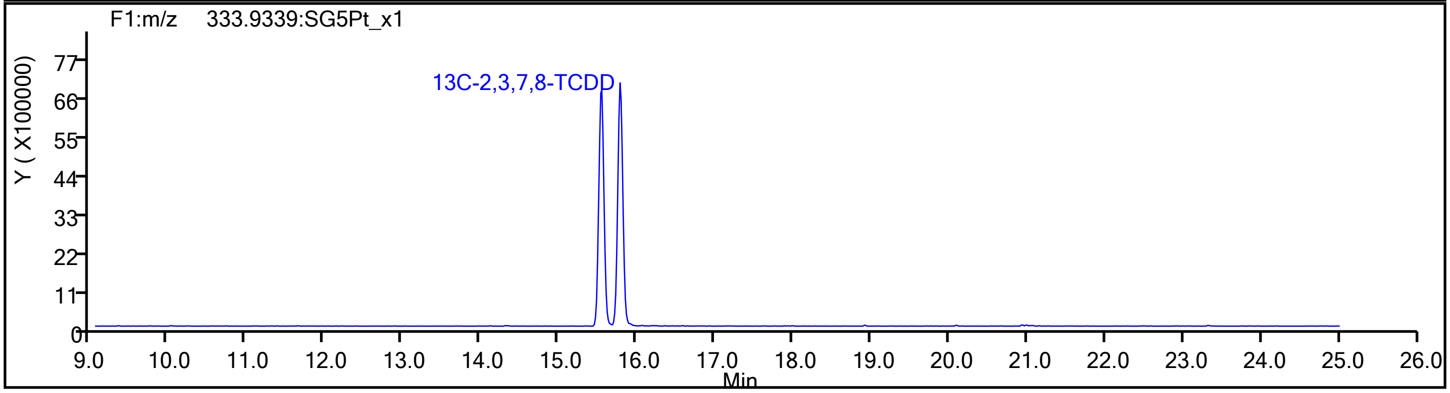

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

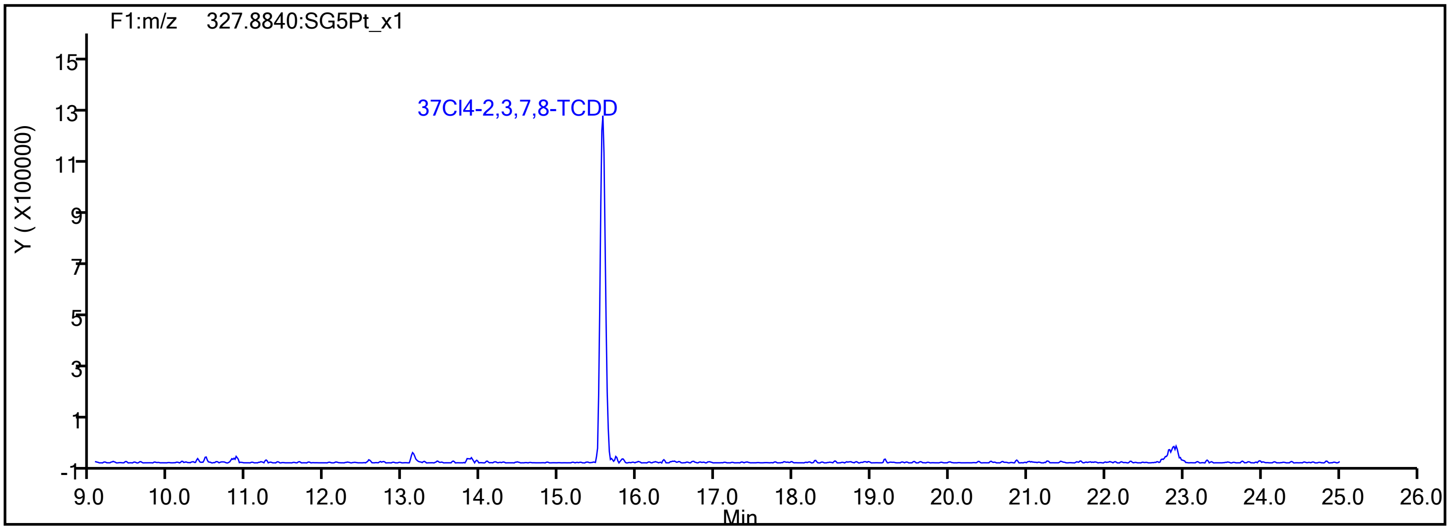

37Cl4-TCDD Standards

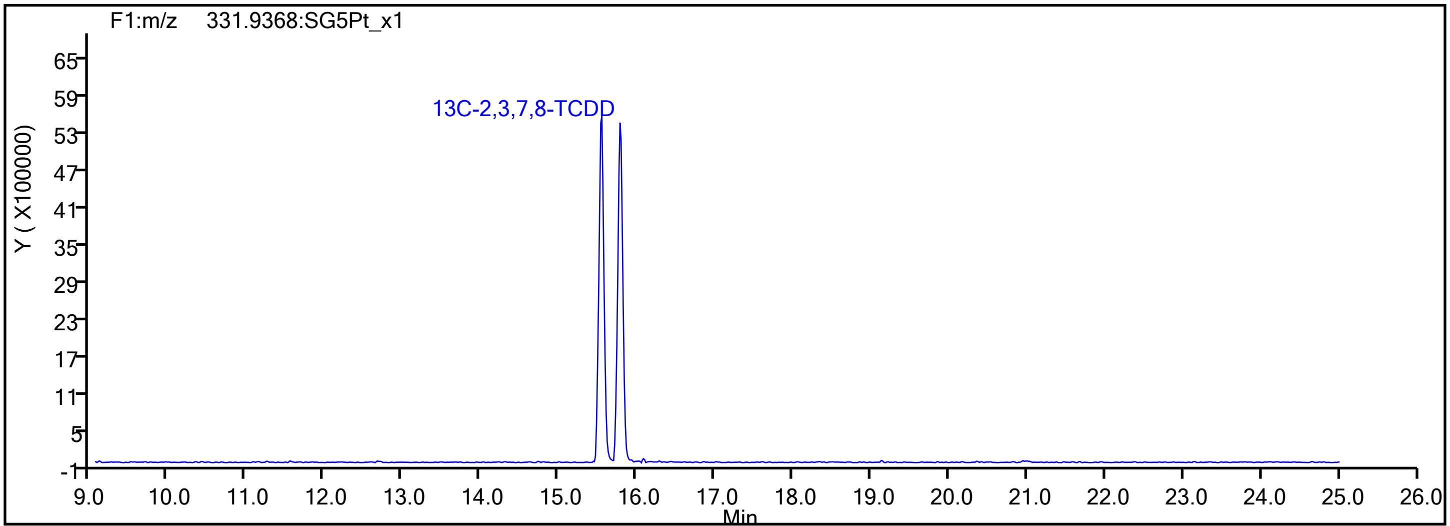

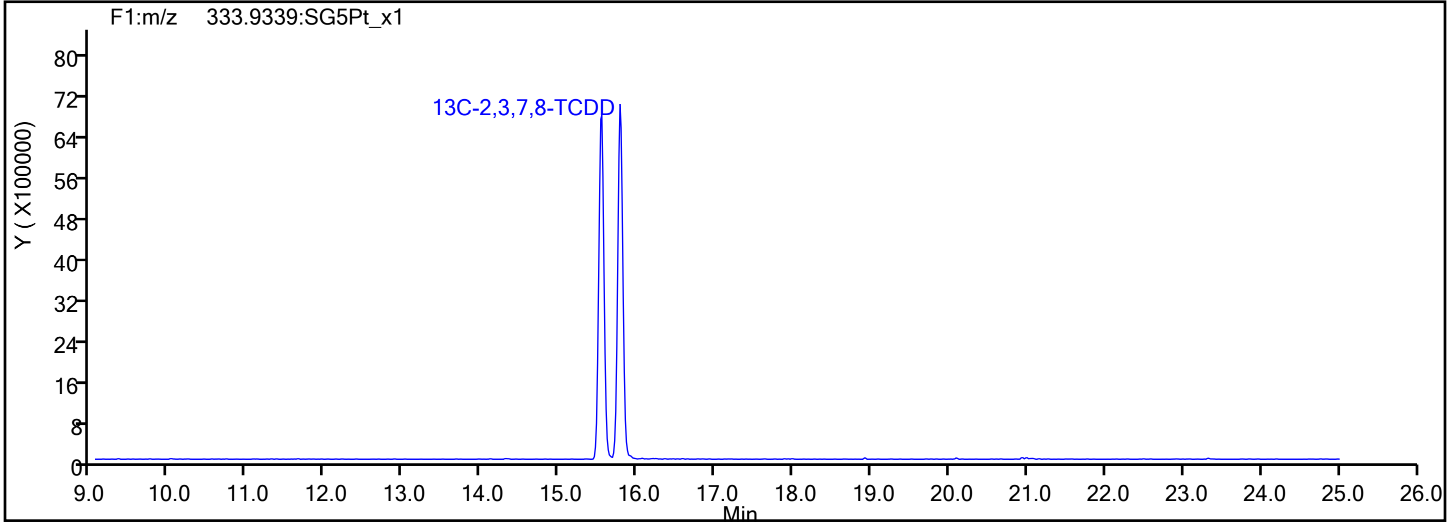

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

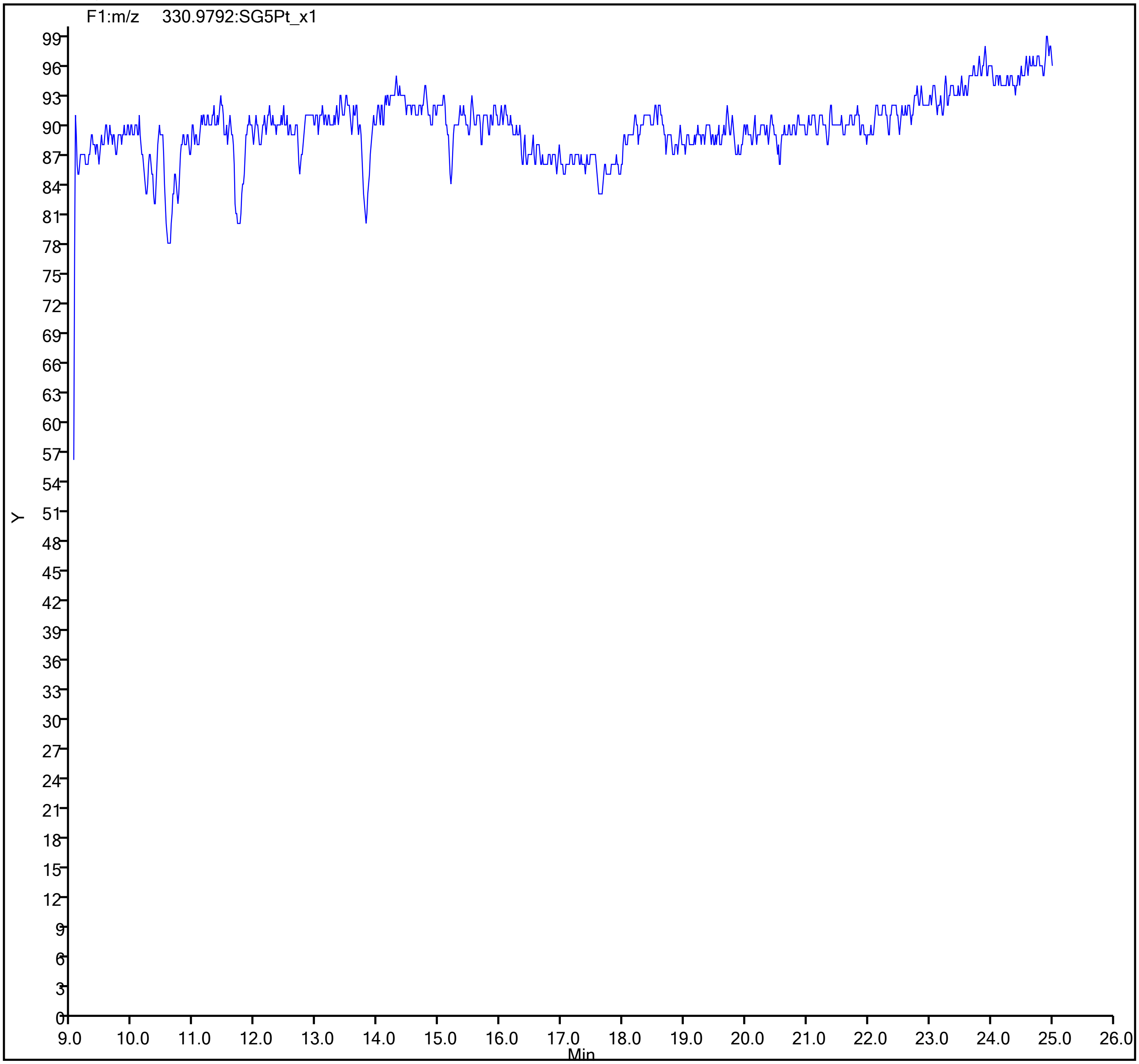

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d						
Lims ID:	IC 5						
Client ID:							
Sample Type:	IC	Calib Level:	5				
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6		
Injection Vol:	2.0 ul	Dil. Factor:	1.0000				
Sample Info:	CS-5 HRDXNL5_00030						
Misc. Info.:	DB225RES						
Operator ID:		Instrument ID:	11D2				
Sublist:	chrom-DXN_DB225_11D2*sub1						
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m						
Limit Group:	HR - 1613B - ICAL						
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46				
Integrator:	Picker						
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration				
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d						
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR				
Process Host:	CTX1056						
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:34:06				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:34:06		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

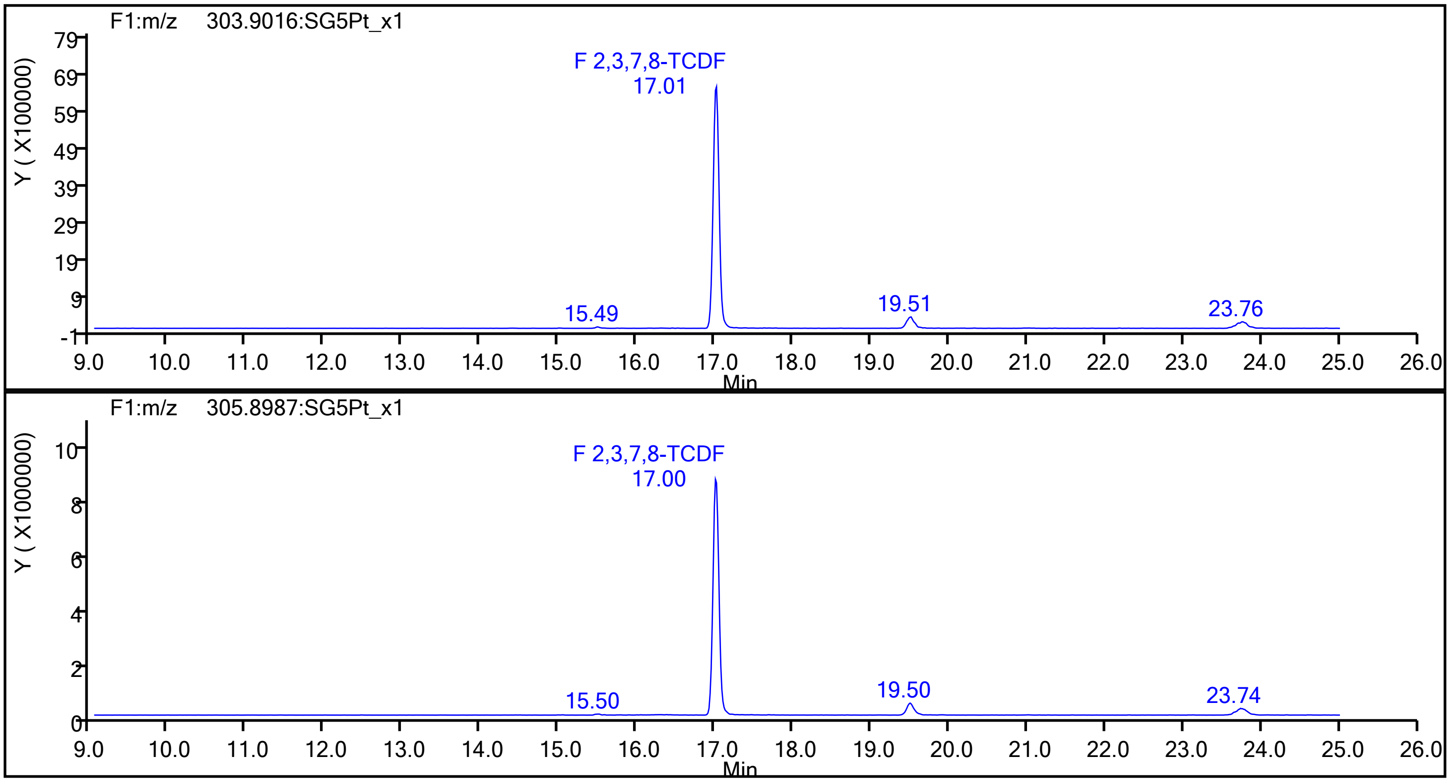

TCDF Standards

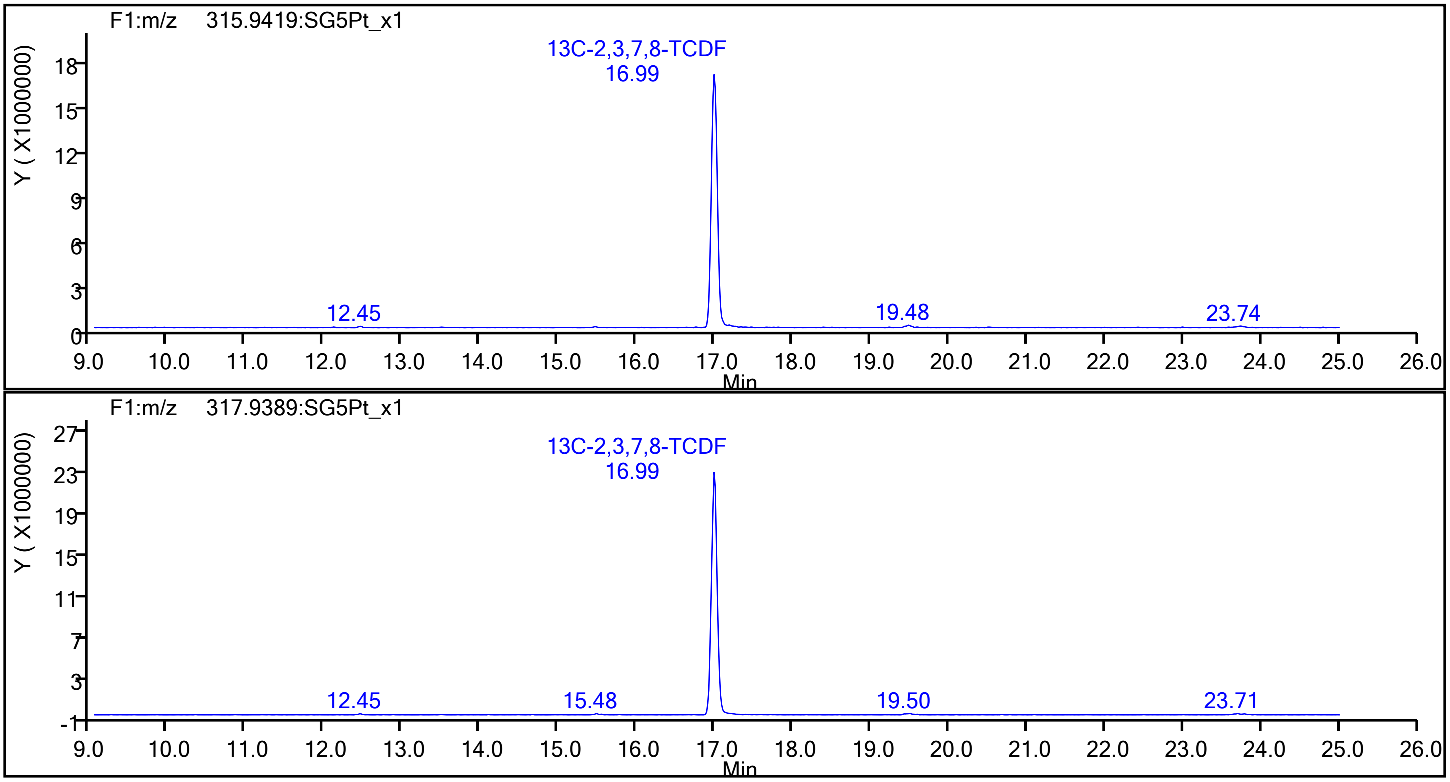

Report Date: 27-Jul-2020 12:43:06　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

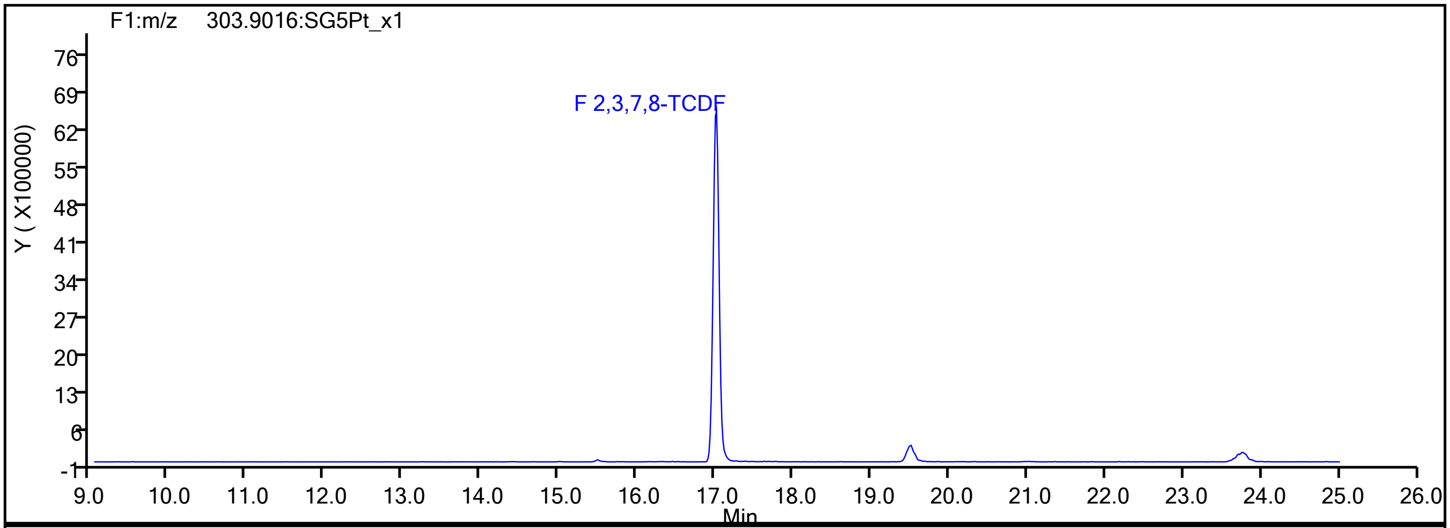

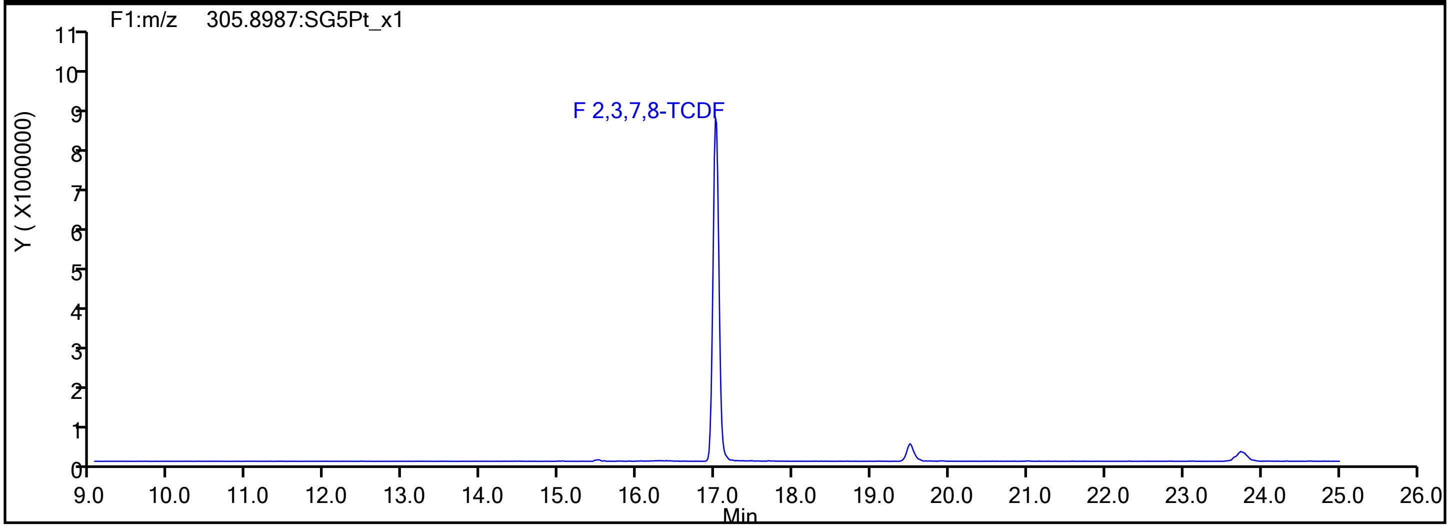

TCDF Interference Mass

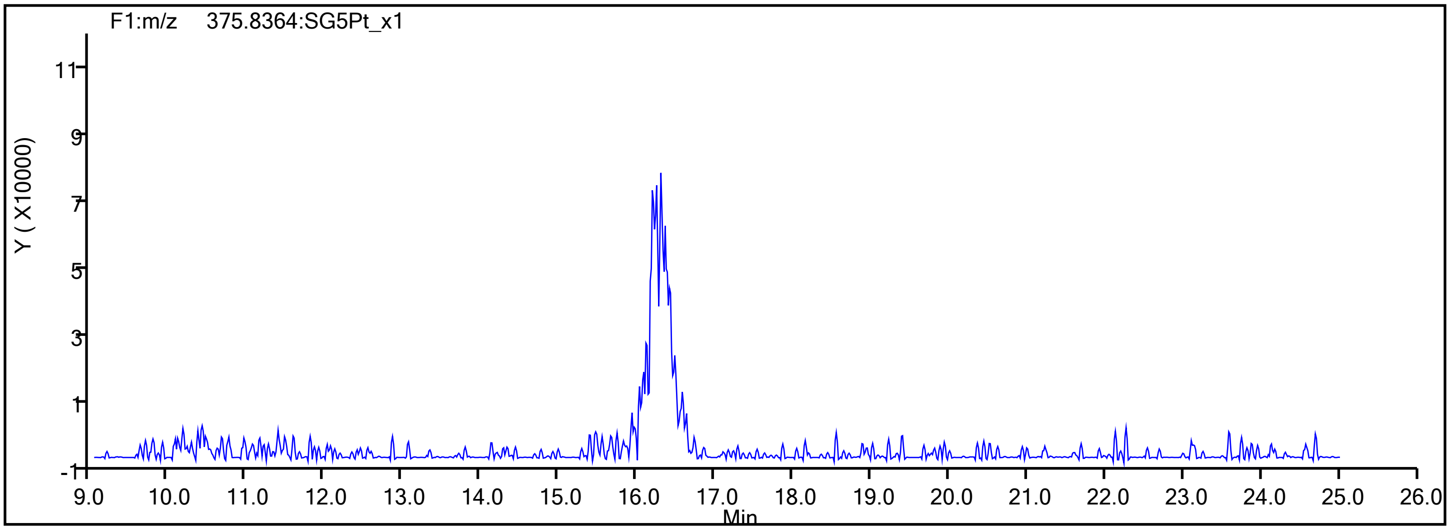

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

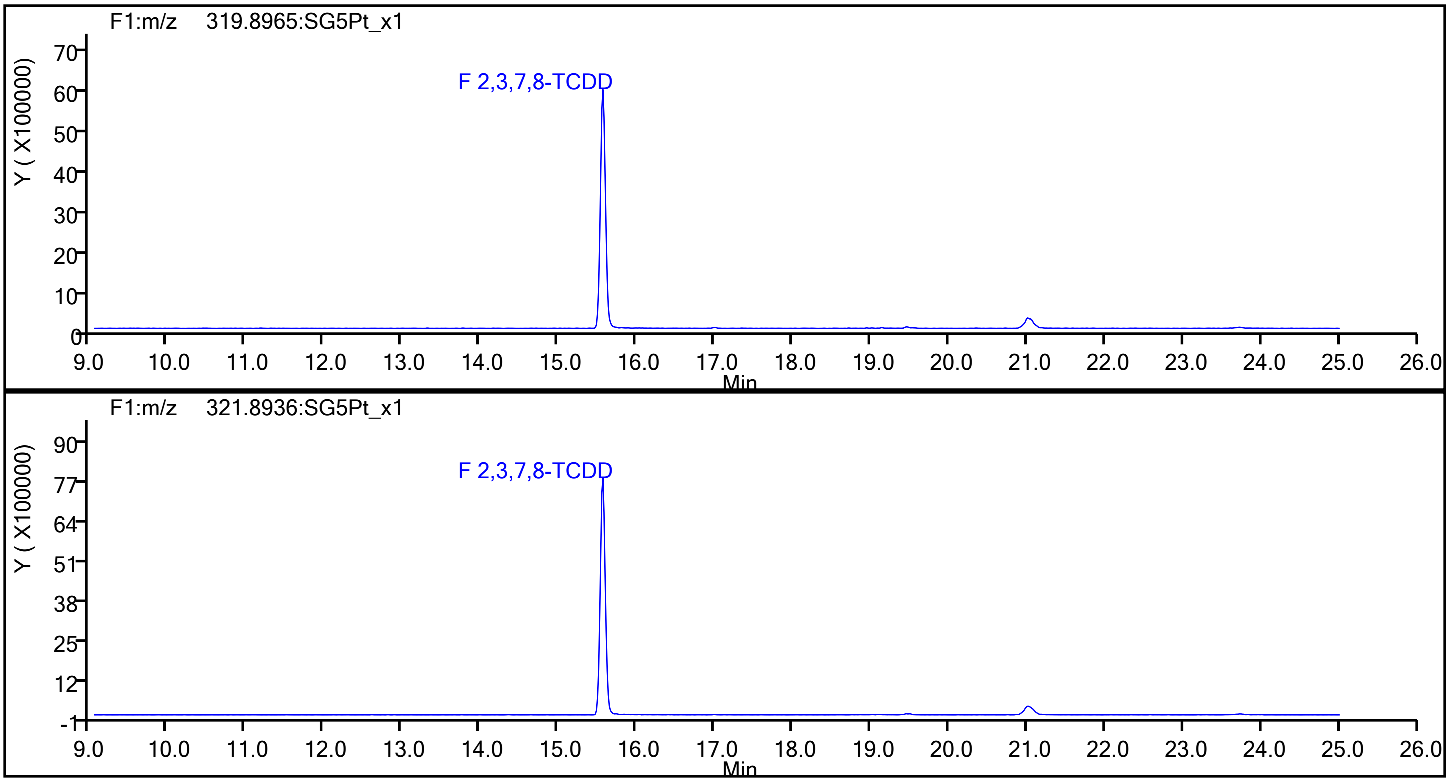

TCDD Standards

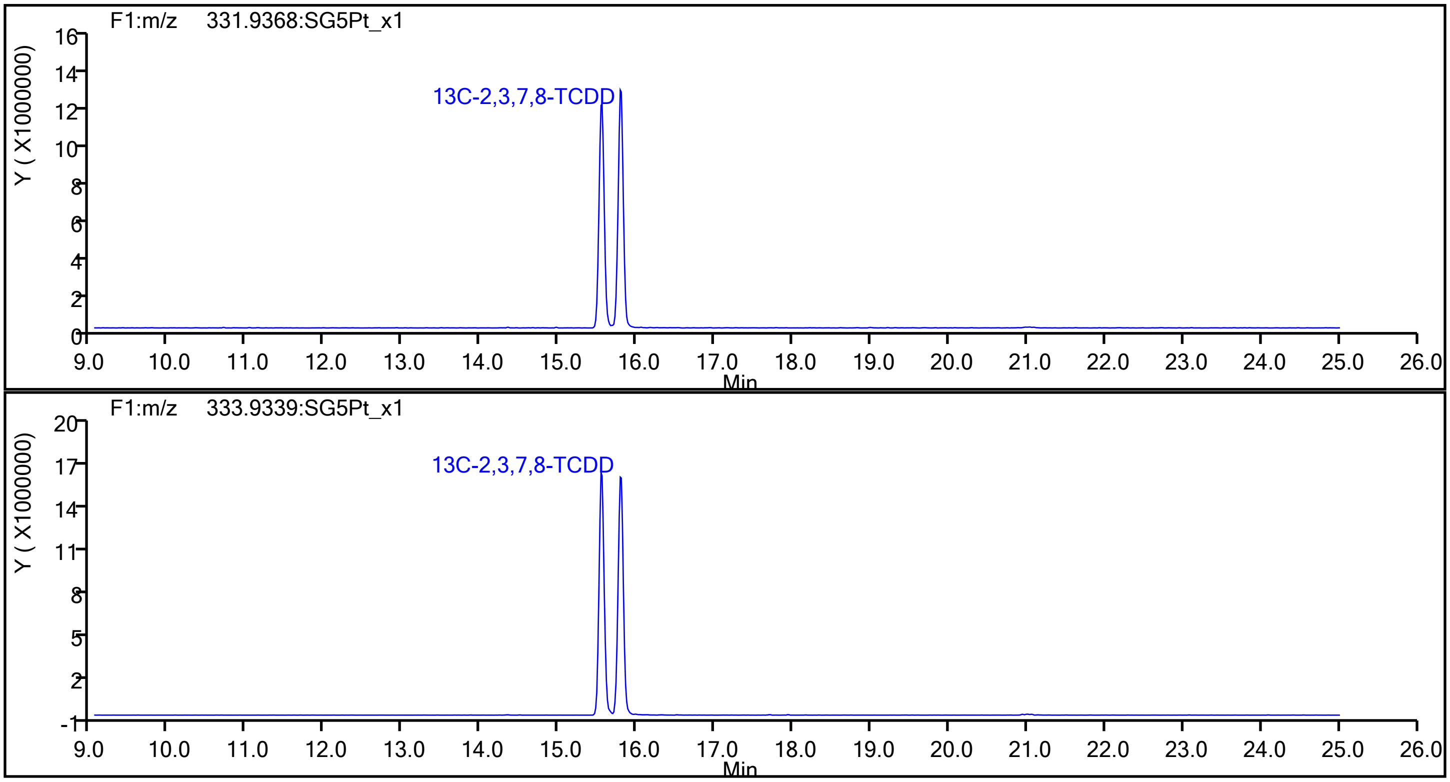

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

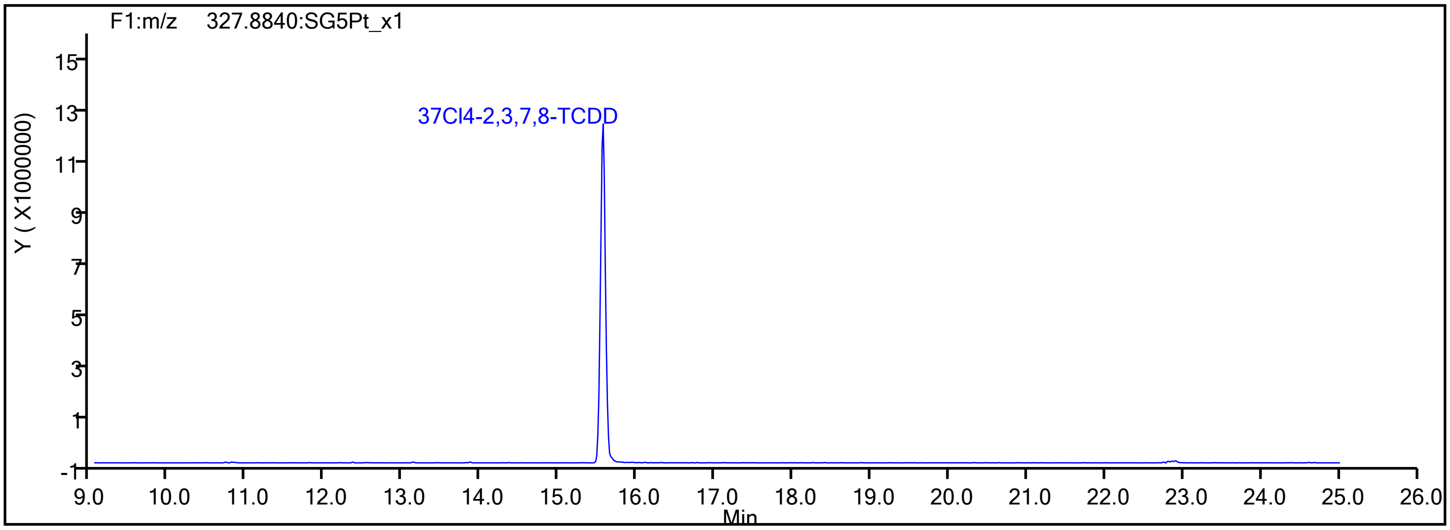

37Cl4-TCDD Standards

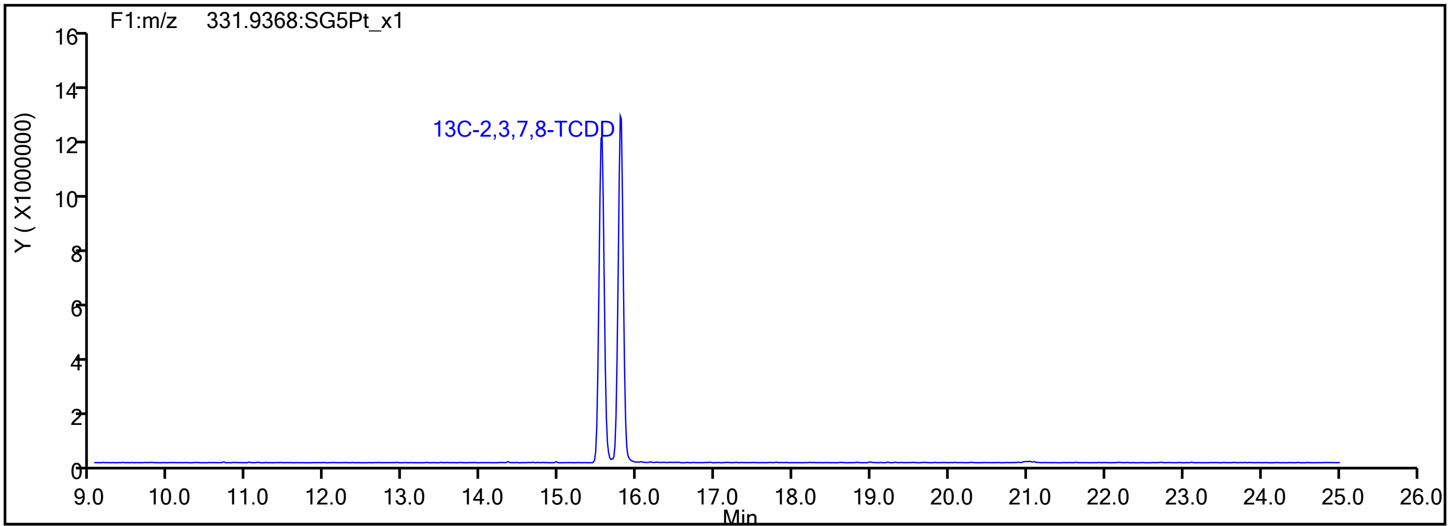

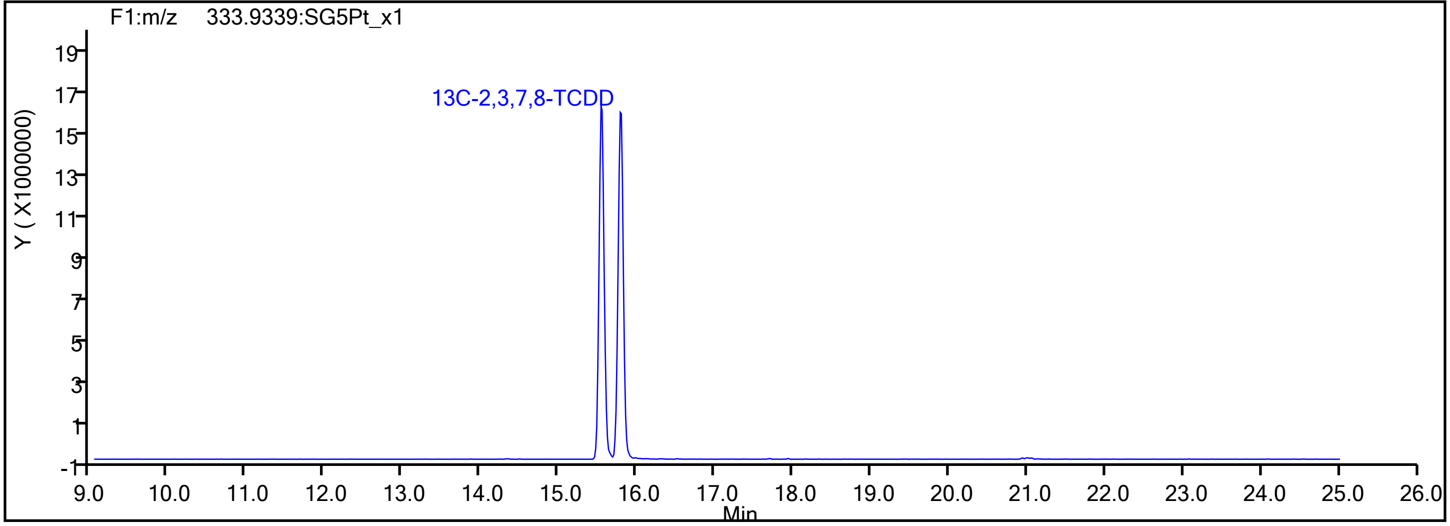

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

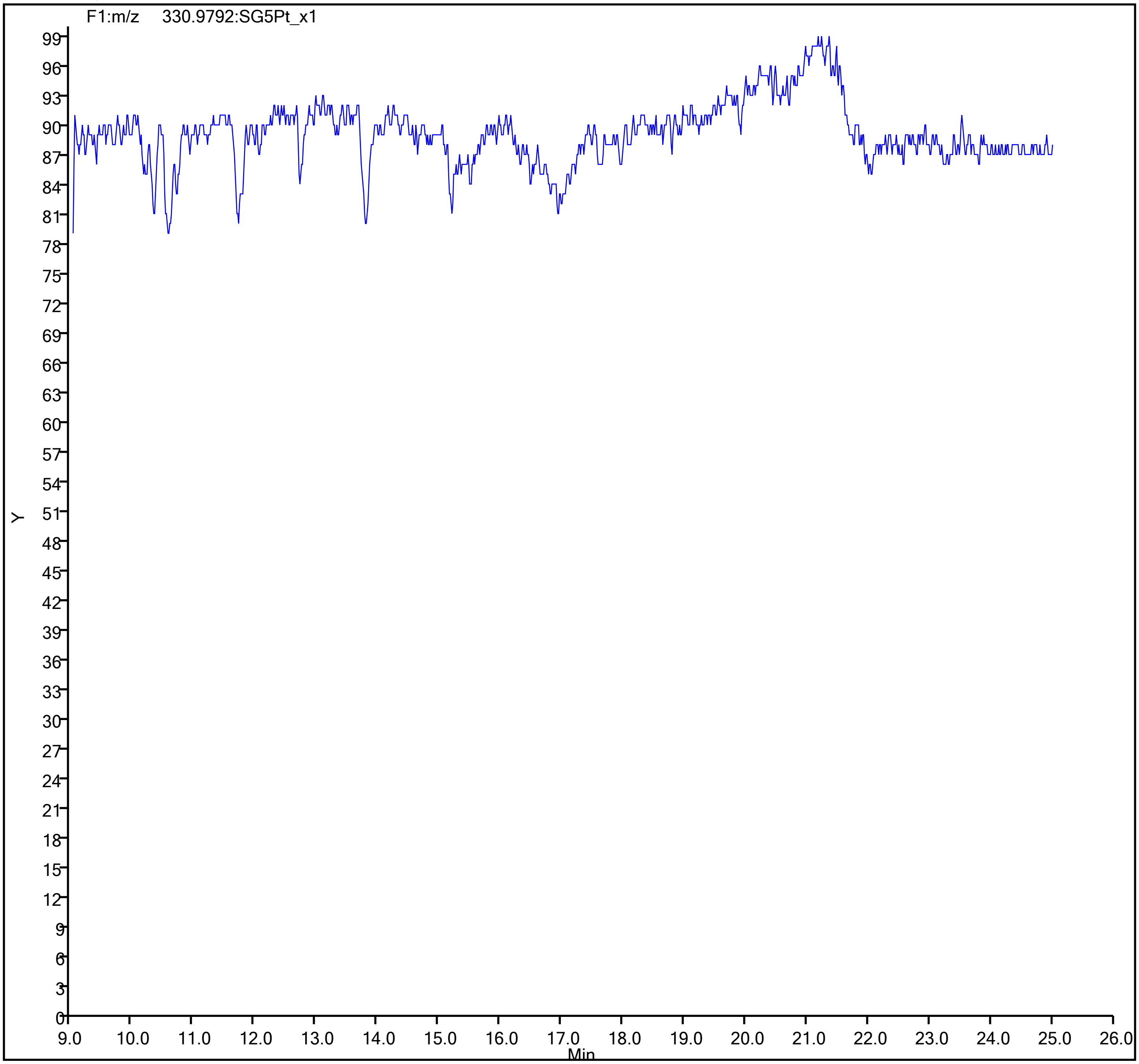

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC
Calib Level: 6
Inject. Date: 25-Jul-2020 02:23:46
ALS Bottle#: 0
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID:
Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:08
Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)
Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa
Date: 27-Jul-2020 12:39:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:39:57		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

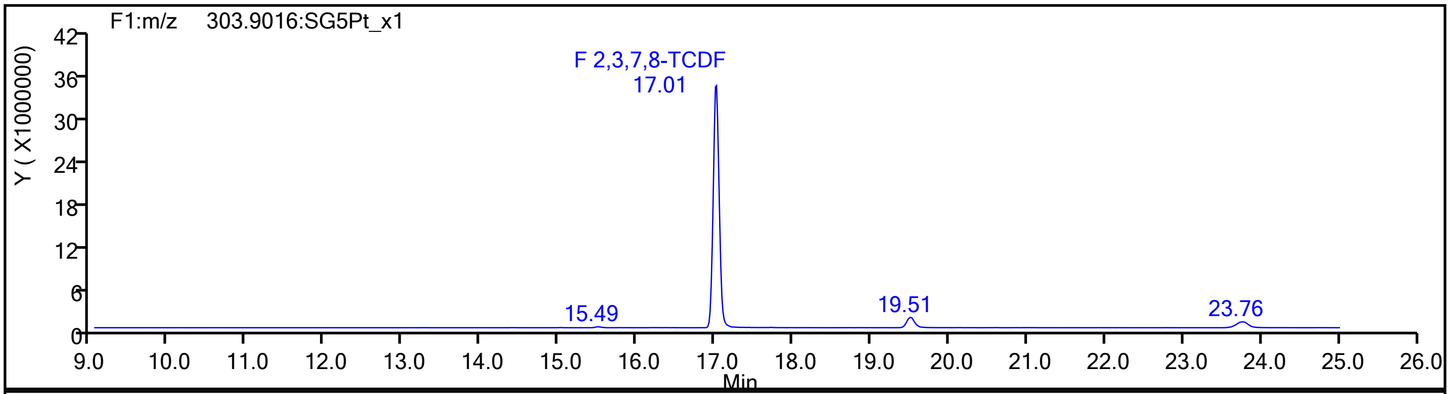

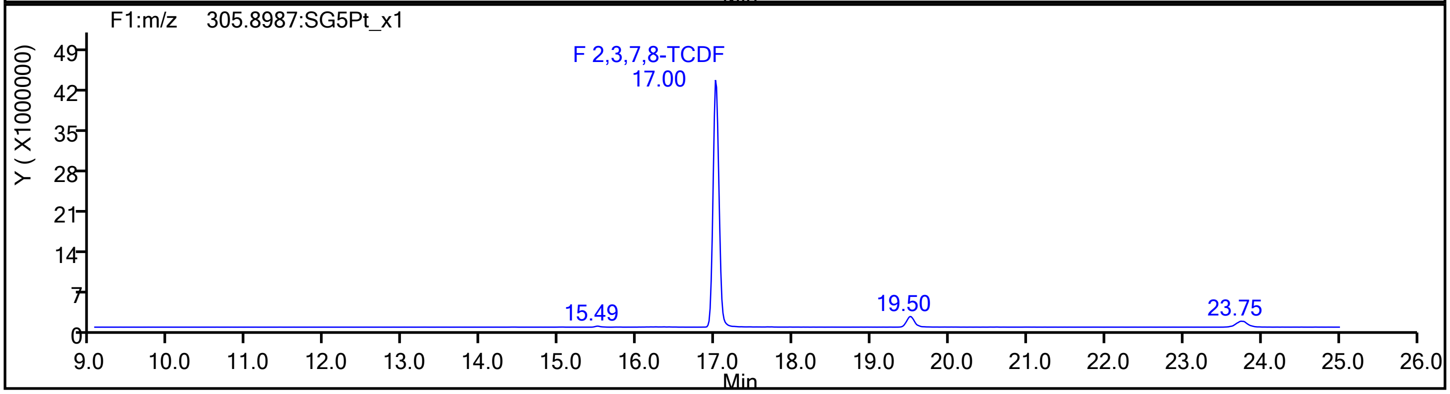

TCDF Standards

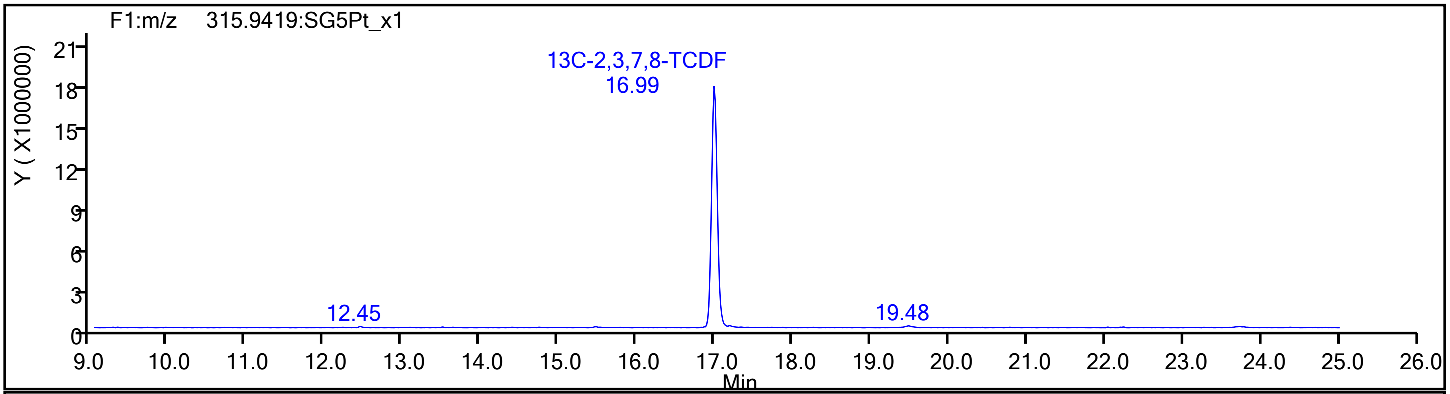

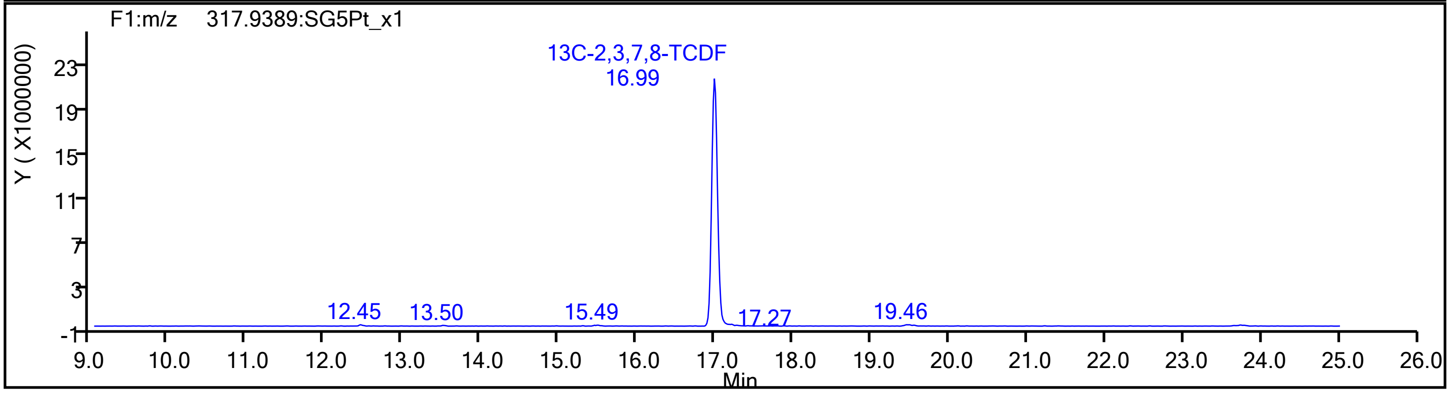

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

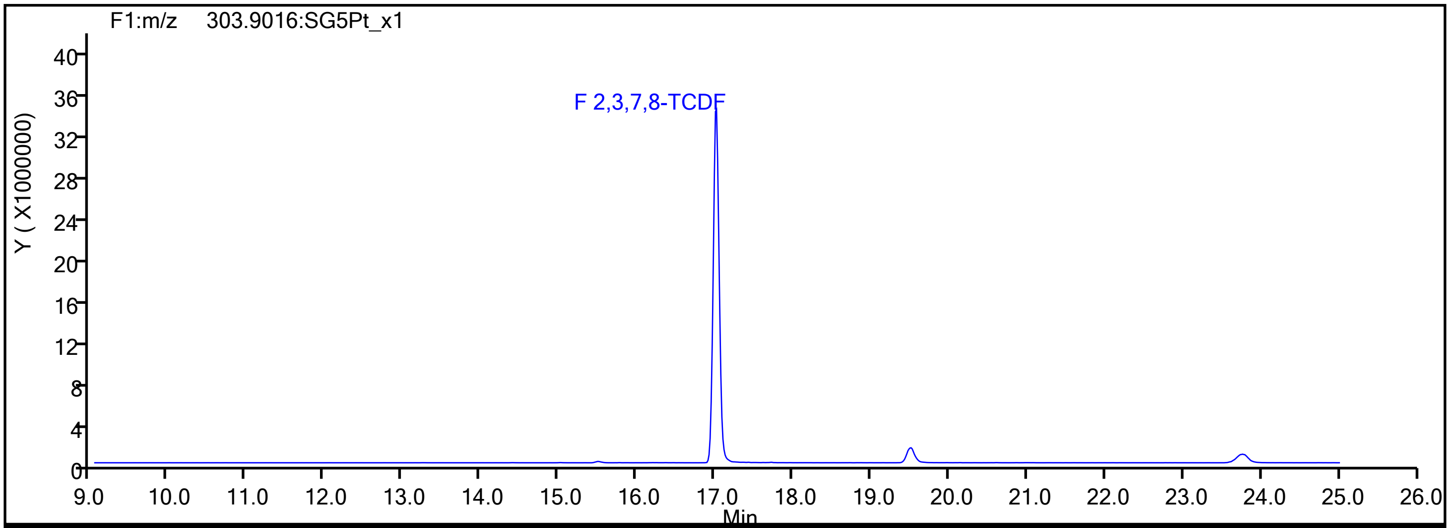

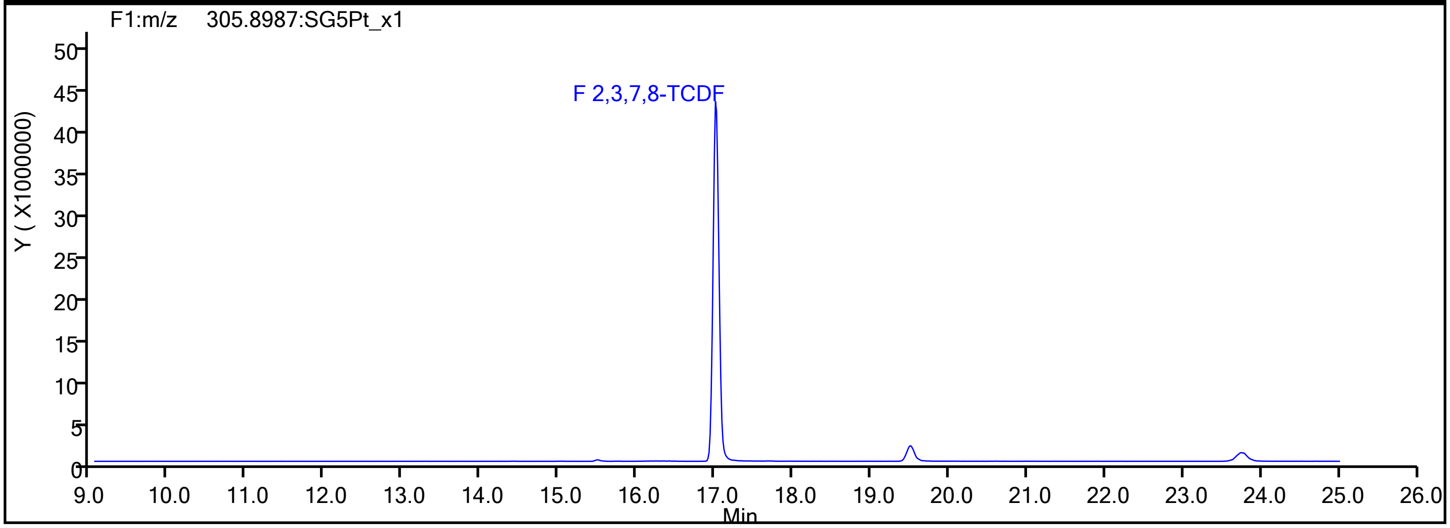

TCDF Interference Mass

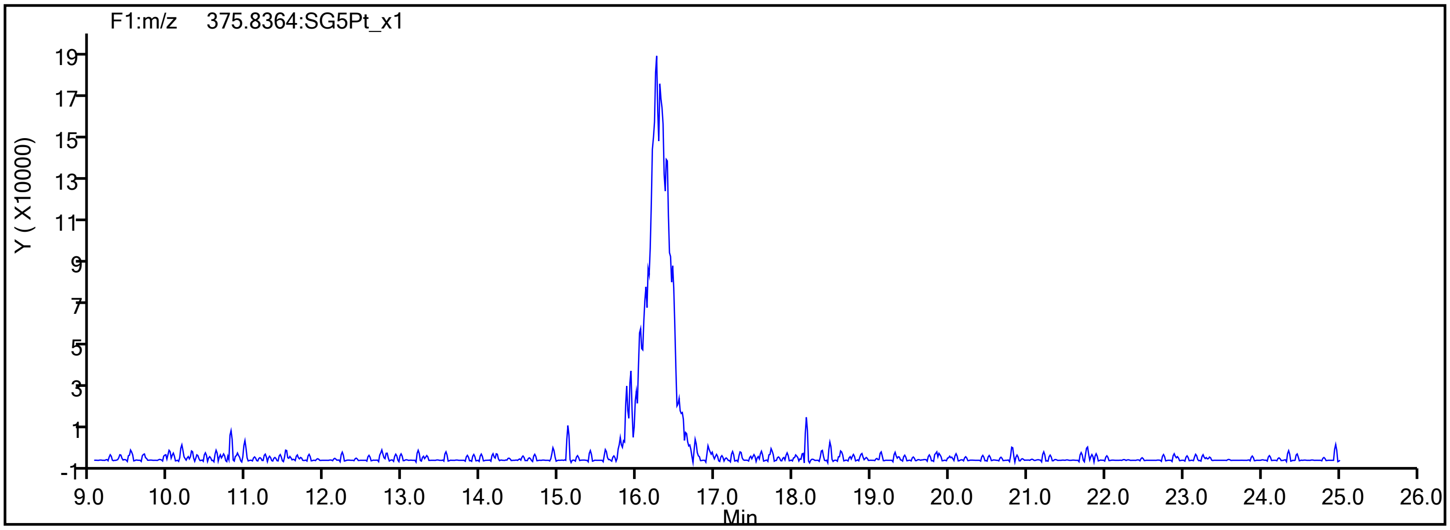

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

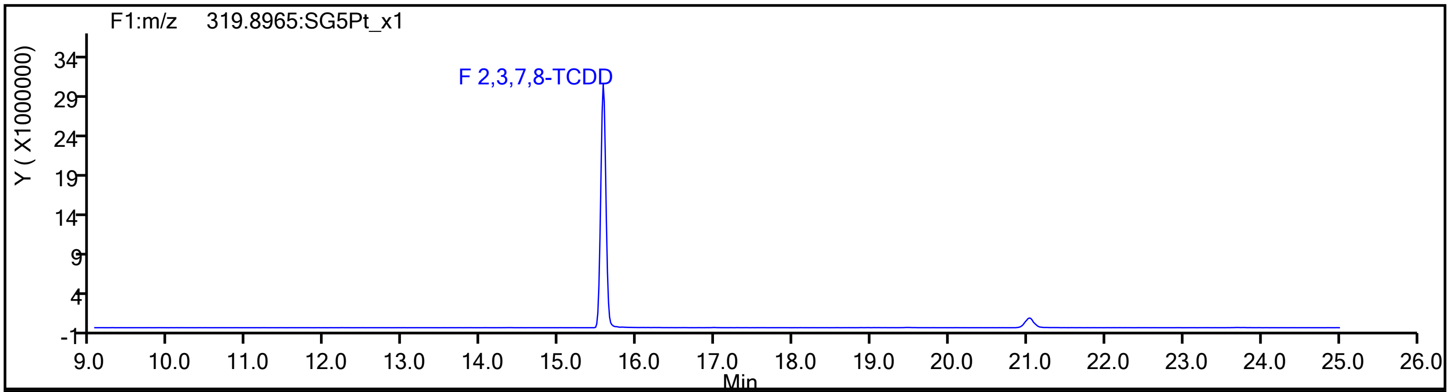

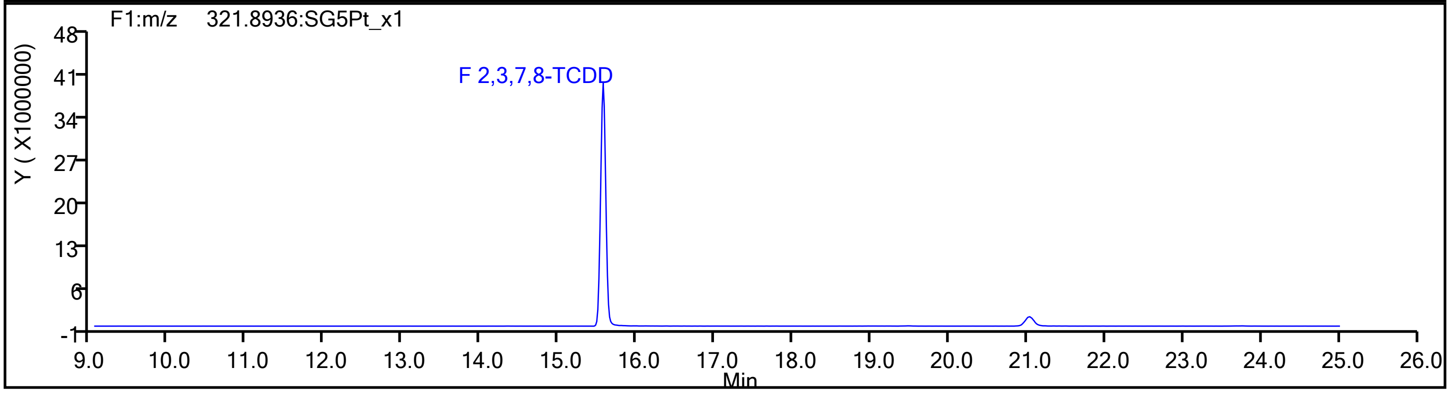

TCDD Standards

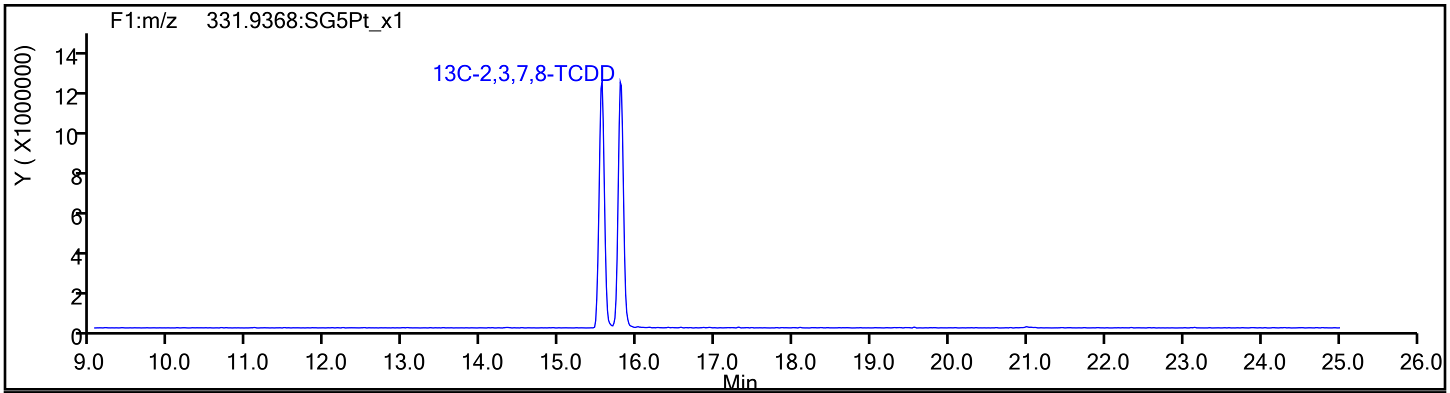

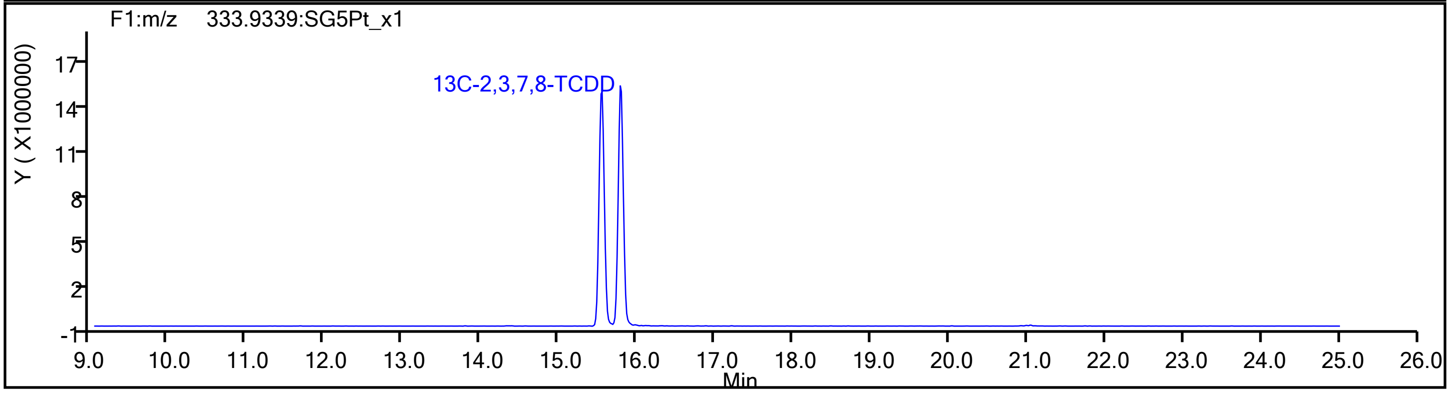

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

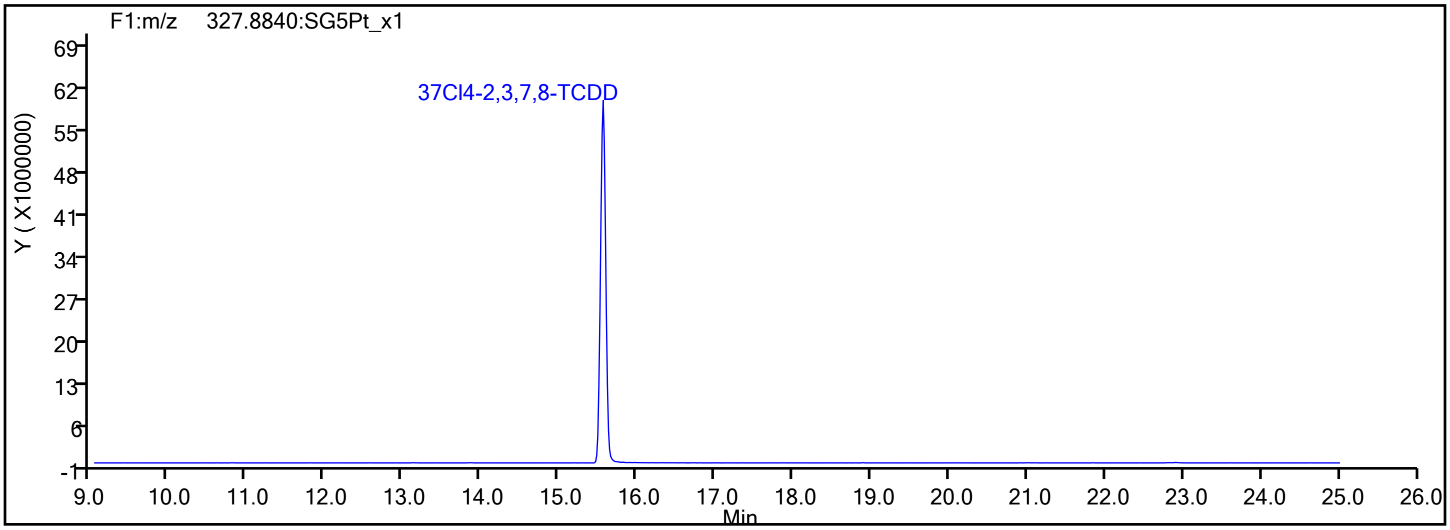

37Cl4-TCDD Standards

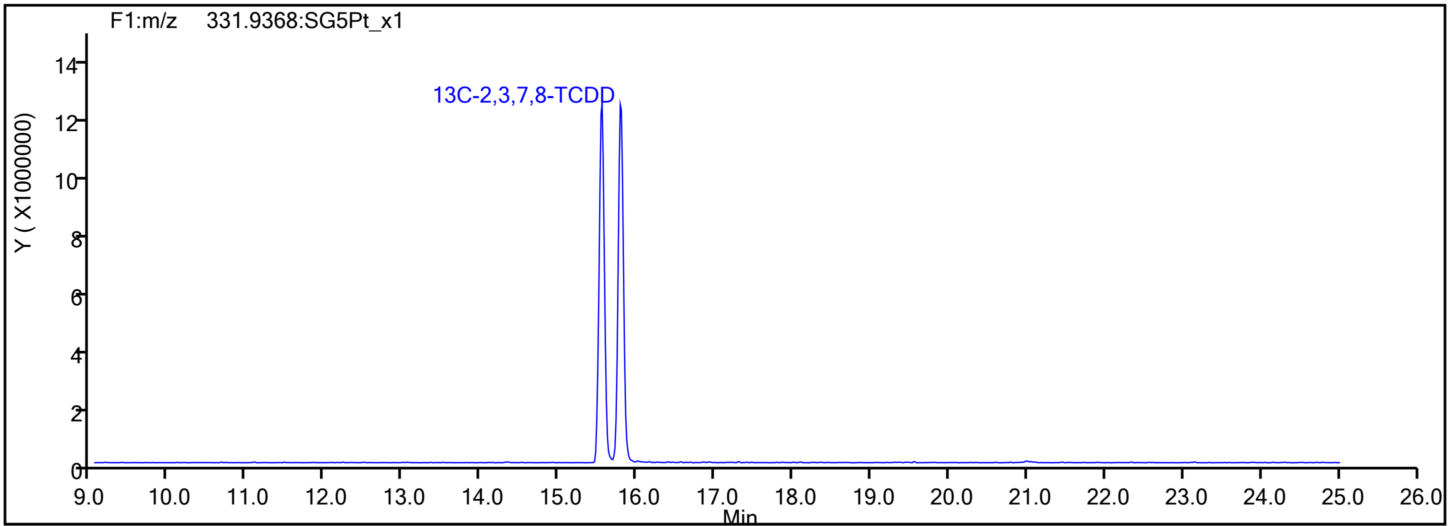

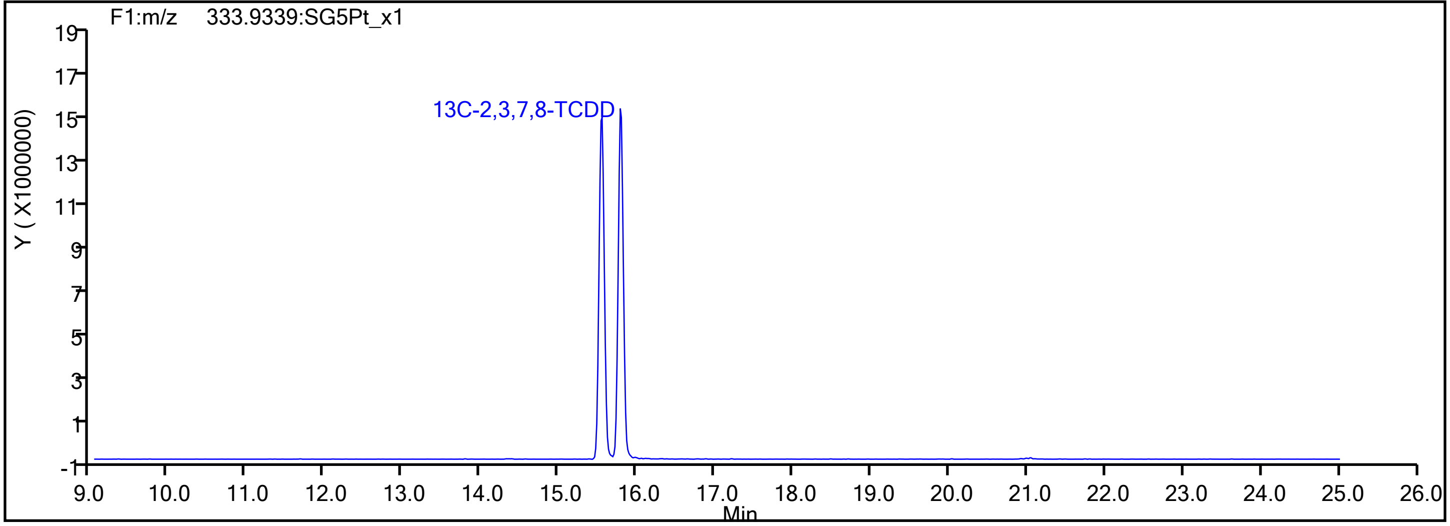

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

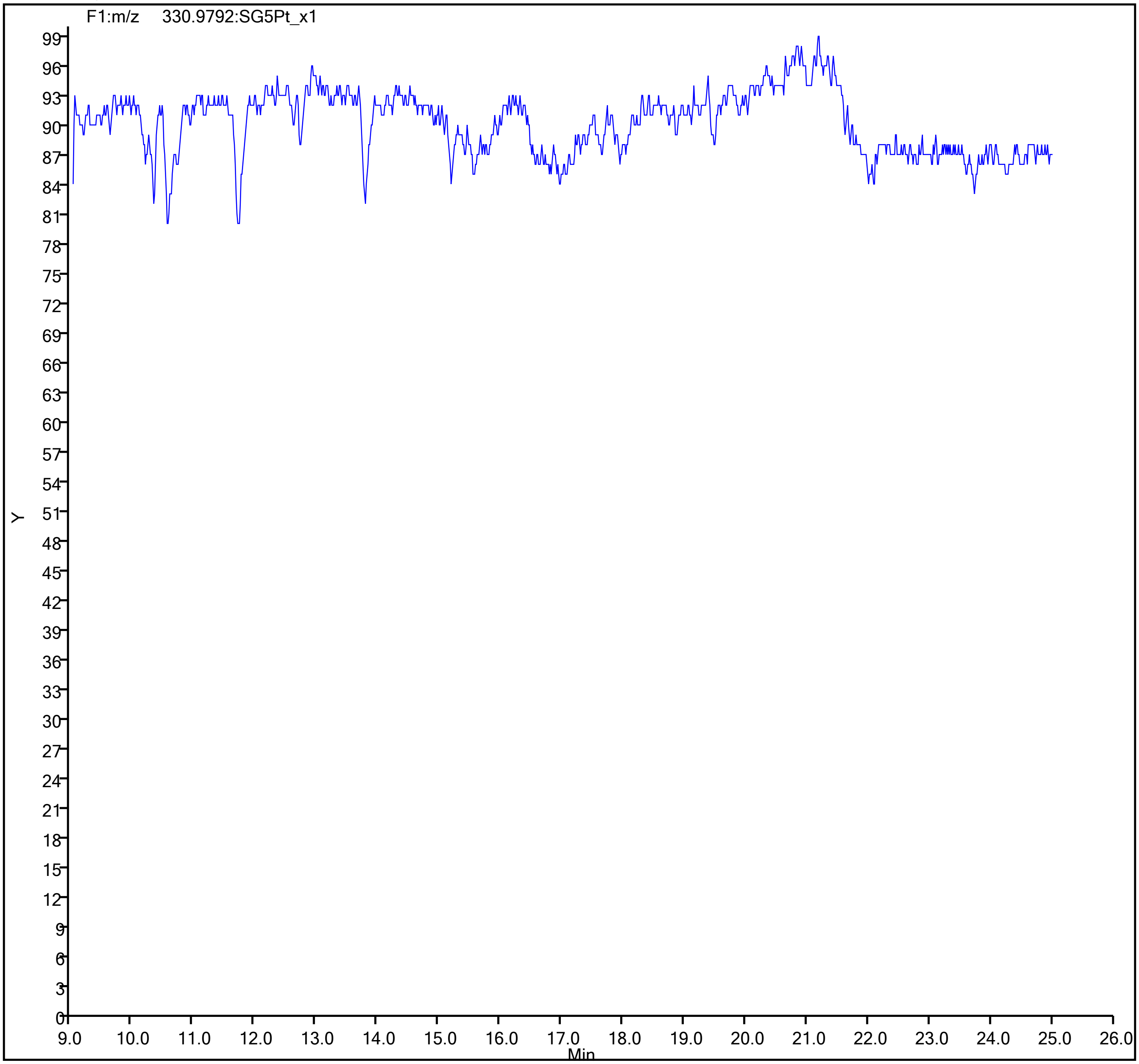

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16 Calibration End Date: 09/17/2020 16:30 Calibration ID: 51923

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413255/3	17se20dfs1_4.d
Level 2	IC 320-413255/4	17se20dfs1_5.d
Level 3	IC 320-413255/5	17se20dfs1_6.d
Level 4	IC 320-413255/6	17se20dfs1_7.d
Level 5	IC 320-413255/7	17se20dfs1_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.1858	1.1360	1.0443	1.0418	1.0204	AveID		1.0857				6.6		20.0			
2,3,7,8-TCDD	1.1871	1.1048	1.0496	1.0306	1.0328	AveID		1.0810				6.2		20.0			
1,2,3,7,8-PeCDF	1.1909	1.0791	1.0295	1.0032	0.9705	AveID		1.0547				8.1		20.0			
2,3,4,7,8-PeCDF	1.2775	1.0981	1.0850	1.0536	1.0036	AveID		1.1035				9.4		20.0			
1,2,3,7,8-PeCDD	1.2031	1.1146	1.0486	1.0121	0.9617	AveID		1.0680				8.8		20.0			
1,2,3,4,7,8-HxCDF	1.4358	1.2703	1.2293	1.2269	1.1592	AveID		1.2643				8.2		20.0			
1,2,3,6,7,8-HxCDF	1.3701	1.2626	1.1868	1.1711	1.1244	AveID		1.2230				7.9		20.0			
2,3,4,6,7,8-HxCDF	1.3957	1.2826	1.2042	1.1879	1.1618	AveID		1.2464				7.6		20.0			
1,2,3,4,7,8-HxCDD	1.3337	1.1740	1.1295	1.1096	1.0336	AveID		1.1561				9.6		20.0			
1,2,3,6,7,8-HxCDD	1.1641	1.0436	1.0095	0.9800	0.9449	AveID		1.0284				8.2		20.0			
1,2,3,7,8,9-HxCDD	1.3458	1.1740	1.1537	1.1375	1.0836	AveID		1.1789				8.4		20.0			
1,2,3,7,8,9-HxCDF	1.4374	1.3105	1.2253	1.1869	1.1586	AveID		1.2638				8.9		20.0			
1,2,3,4,6,7,8-HpCDF	1.7102	1.5209	1.4812	1.4184	1.4013	AveID		1.5064				8.2		20.0			
1,2,3,4,6,7,8-HpCDD	1.2191	1.0870	1.0491	0.9954	0.9694	AveID		1.0640				9.2		20.0			
1,2,3,4,7,8,9-HpCDF	1.6952	1.4441	1.4154	1.3832	1.3362	AveID		1.4548				9.6		20.0			
OCDD	1.2923	1.1759	1.0825	1.0506	1.0452	AveID		1.1293				9.3		20.0			
OCDF	1.5570	1.4324	1.3917	1.3560	1.4110	AveID		1.4296				5.4		20.0			
13C-2,3,7,8-TCDF	1.5688	1.5355	1.6148	1.6392	1.5834	Ave		1.5883				2.5		35.0			
13C-2,3,7,8-TCDD	1.1018	1.0837	1.1094	1.1551	1.1470	Ave		1.1194				2.7		35.0			
13C-1,2,3,7,8-PeCDF	1.3966	1.4019	1.5199	1.5258	1.5468	Ave		1.4782				4.9		35.0			
13C-2,3,4,7,8-PeCDF	1.3040	1.3701	1.4126	1.4058	1.4634	Ave		1.3912				4.2		35.0			
13C-1,2,3,7,8-PeCDD	0.8828	0.9039	0.9533	0.9699	0.9974	Ave		0.9415				5.0		35.0			
13C-1,2,3,4,7,8-HxCDF	1.1131	1.1743	1.1364	1.1154	1.1497	Ave		1.1378				2.2		35.0			
13C-1,2,3,6,7,8-HxCDF	1.3054	1.3359	1.3172	1.3159	1.3119	Ave		1.3173				0.9		35.0			
13C-2,3,4,6,7,8-HxCDF	1.2378	1.2573	1.2465	1.2460	1.2409	Ave		1.2457				0.6		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8355	0.8663	0.8330	0.8453	0.8586	Ave		0.8477				1.7		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9778	1.0192	0.9843	1.0087	0.9992	Ave		0.9979				1.7		35.0			
13C-1,2,3,7,8,9-HxCDF	1.1892	1.1804	1.1596	1.1929	1.1978	Ave		1.1840				1.3		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9928	0.9762	0.9647	0.9956	1.0124	Ave		0.9884				1.9		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.9663	0.9472	0.9319	0.9759	0.9569	Ave		0.9556				1.8		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.9307	0.9201	0.9035	0.9148	0.9325	Ave		0.9203				1.3		35.0			
13C-OCDD	0.7421	0.7174	0.7293	0.7472	0.7742	Ave		0.7420				2.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16 Calibration End Date: 09/17/2020 16:30 Calibration ID: 51923

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.1752	1.1011	1.1353	1.1649	1.1573	Ave		1.1468				2.6					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-64049-1	Analy Batch No.:	413255
SDG No.:					
Instrument ID:	DFS 1	GC Column:	DB-5	ID: 0.32(mm)	Heated Purge: (Y/N) N
Calibration Start Date:	09/17/2020 13:16	Calibration End Date:	09/17/2020 16:30	Calibration ID:	51923

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413255/3	17se20dfs1_4.d
Level 2	IC 320-413255/4	17se20dfs1_5.d
Level 3	IC 320-413255/5	17se20dfs1_6.d
Level 4	IC 320-413255/6	17se20dfs1_7.d
Level 5	IC 320-413255/7	17se20dfs1_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	26671	80239	474391	1665214	10338981	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	18752	55075	327581	1160856	7580962	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	119224	347966	2200993	7463293	48029276	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	119412	346052	2155859	7221609	46990984	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	76134	231718	1406053	4786052	30689802	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	114675	348028	2124449	7193761	48519418	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	128332	393550	2377194	8101410	53706793	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	123959	376227	2282654	7780338	52489543	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	79949	237281	1430853	4930619	32309502	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	81674	248155	1511008	5196501	34375082	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	87547	258219	1594191	5542974	36648130	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	122654	360924	2160700	7442846	50528283	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	121827	346408	2172971	7423570	51654249	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	84526	240224	1486612	5106412	33775862	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	113201	309989	1944648	6651383	45362969	2.50	10.0	50.0	200	1000
OCDD		AveID	137632	393634	2401141	8253790	58924724	5.00	20.0	100	400	2000
OCDF		AveID	165819	479466	3086889	10652820	79546388	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	4498215	3531795	4542653	3996116	5066219	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	3159205	2492630	3120967	2816107	3670066	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	4004528	3224518	4275697	3719700	4948994	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	3738896	3151439	3973993	3427156	4682390	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	2531354	2078935	2681743	2364404	3191360	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	3194678	2739797	3456400	2931726	4185677	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	3746543	3116925	4006041	3458749	4776398	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	3552526	2933370	3791155	3274841	4517864	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	2397843	2021094	2533537	2221816	3126000	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	2806463	2377971	2993576	2651289	3638034	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	3413194	2754056	3526809	3135400	4360996	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	2849439	2277691	2934128	2616915	3686056	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	2773416	2209893	2834170	2565014	3484029	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	2671106	2146658	2747864	2404416	3395006	100	100	100	100	100
13C-OCDD	13CHx	Ave	4259906	3347397	4436272	3927948	5637421	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	16848	50653	319378	1135994	7405818	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1 Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16 Calibration End Date: 09/17/2020 16:30 Calibration ID: 51923

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

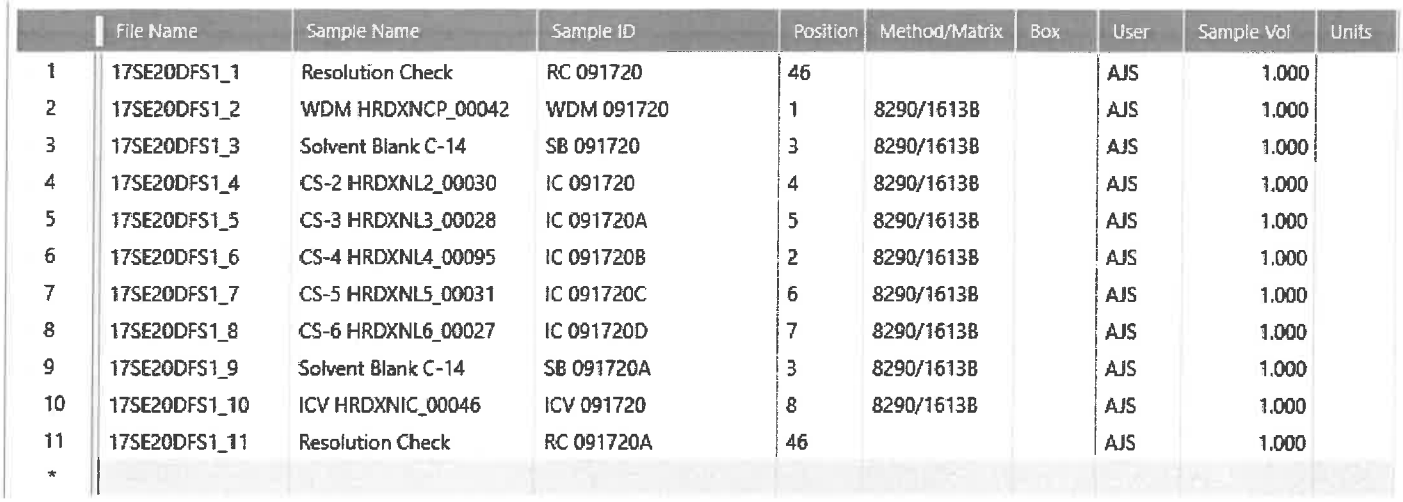

	File Name	Sample Name	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	17SE20DFS1_1	Resolution Check	RC 091720	46			AJS	1.000	
2	17SE20DFS1_2	WDM HRDXNCP_00042	WDM 091720	1	8290/1613B		AJS	1.000	
3	17SE20DFS1_3	Solvent Blank C-14	SB 091720	3	8290/1613B		AJS	1.000	
4	17SE20DFS1_4	CS-2 HRDXNL2_00030	IC 091720	4	8290/1613B		AJS	1.000	
5	17SE20DFS1_5	CS-3 HRDXNL3_00028	IC 091720A	5	8290/1613B		AJS	1.000	
6	17SE20DFS1_6	CS-4 HRDXNL4_00095	IC 091720B	2	8290/1613B		AJS	1.000	
7	17SE20DFS1_7	CS-5 HRDXNL5_00031	IC 091720C	6	8290/1613B		AJS	1.000	
8	17SE20DFS1_8	CS-6 HRDXNL6_00027	IC 091720D	7	8290/1613B		AJS	1.000	
9	17SE20DFS1_9	Solvent Blank C-14	SB 091720A	3	8290/1613B		AJS	1.000	
10	17SE20DFS1_10	ICV HRDXNIC_00046	ICV 091720	8	8290/1613B		AJS	1.000	
11	17SE20DFS1_11	Resolution Check	RC 091720A	46			AJS	1.000	
*									

logfile checked
9-17-20 ALM

Resolution Check Report (DFS SN: 3487)

Date:	17 Sep 2020 10:38
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12132 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11917 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 11943 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11897 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11920 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12004 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11617 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11886 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11858 [5%height]

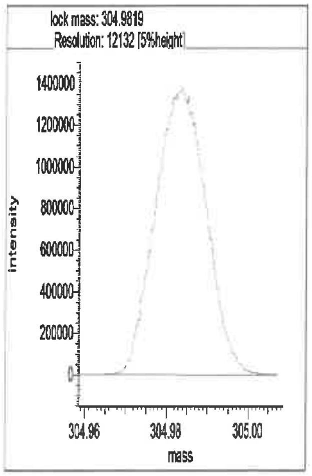

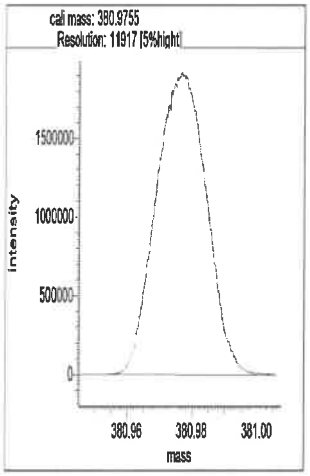

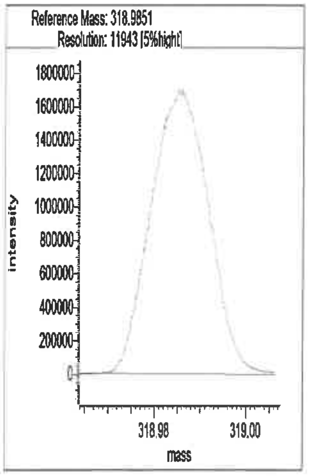

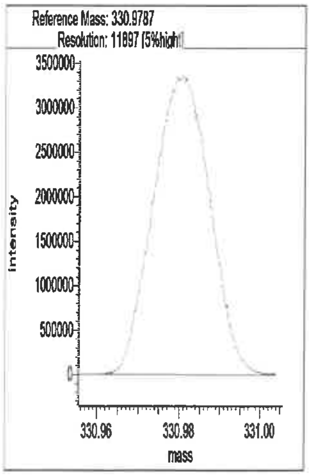

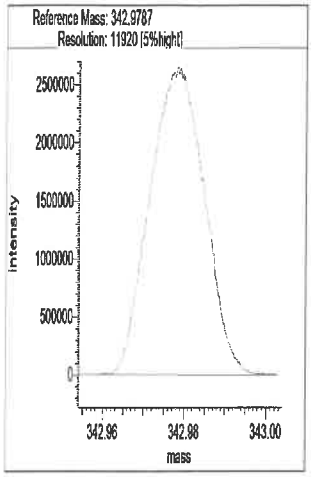

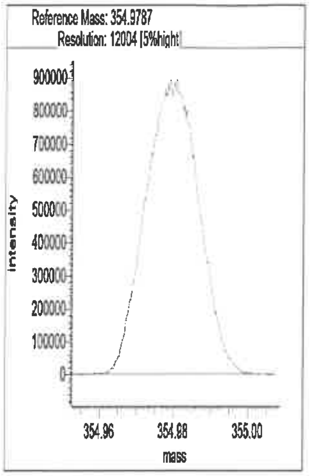

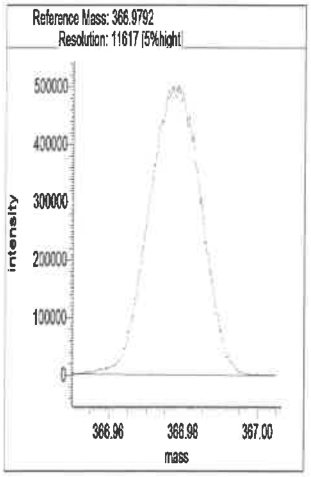

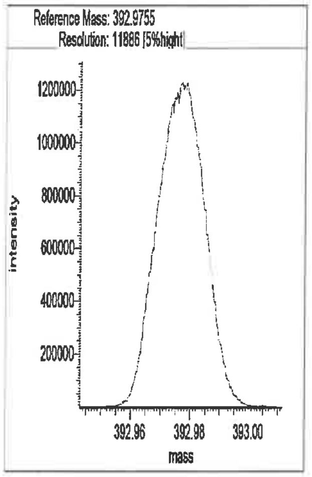

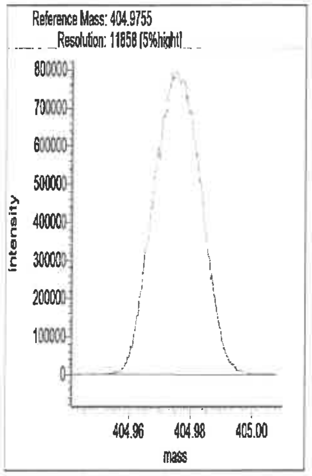

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12310 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12140 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11999 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11991 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11530 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11892 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11886 [5%height]

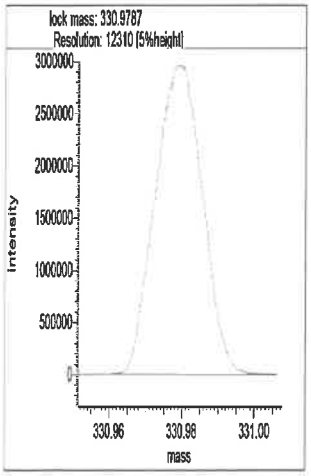

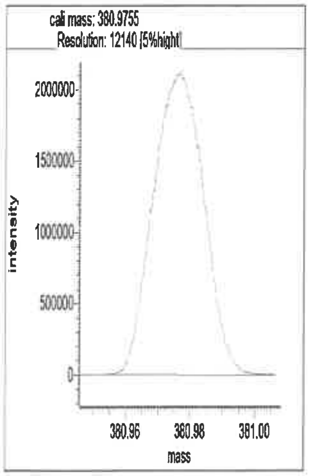

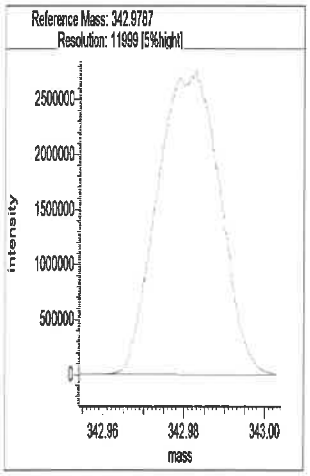

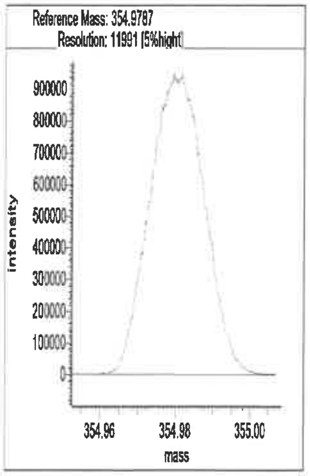

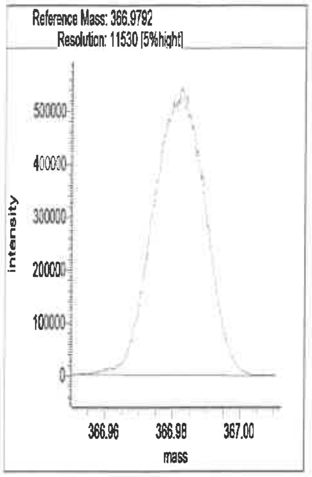

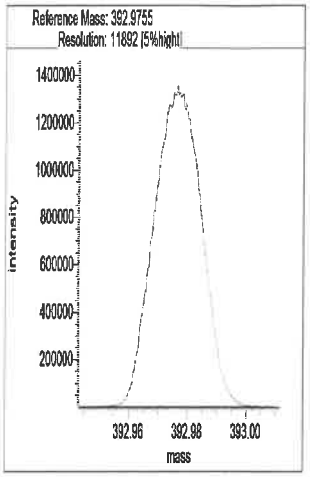

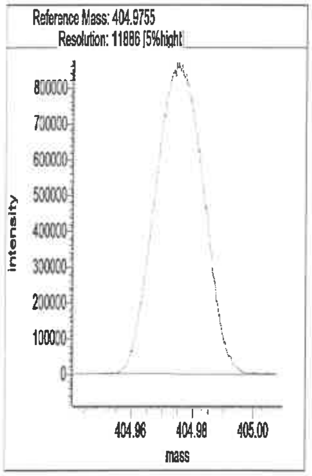

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11934 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11948 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12137 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11923 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12007 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11760 [5%height]

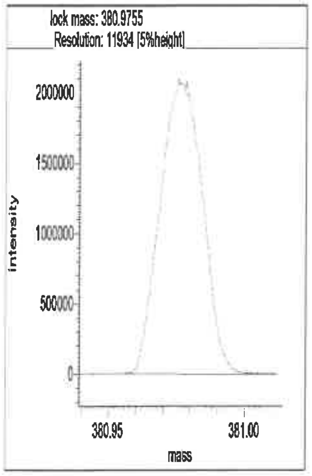

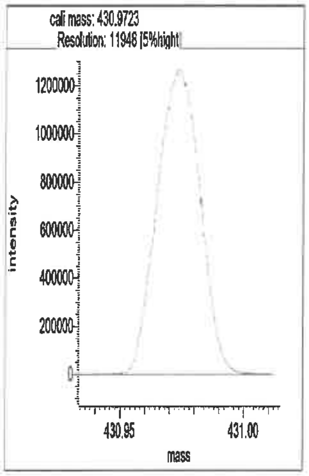

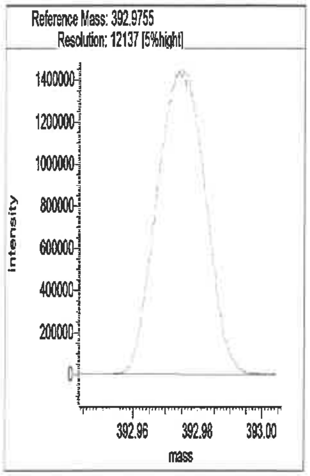

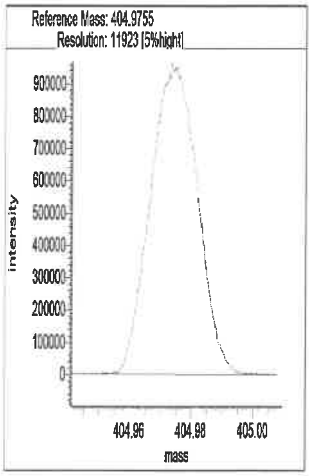

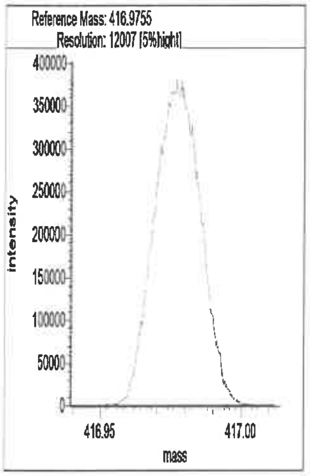

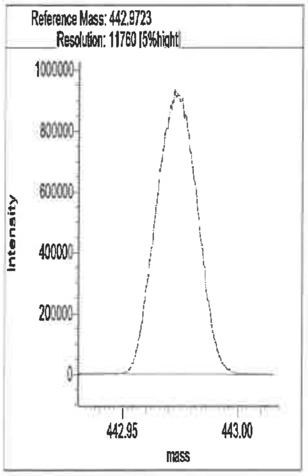

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11988 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11682 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11882 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12046 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11804 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12111 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12009 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11816 [5%height]

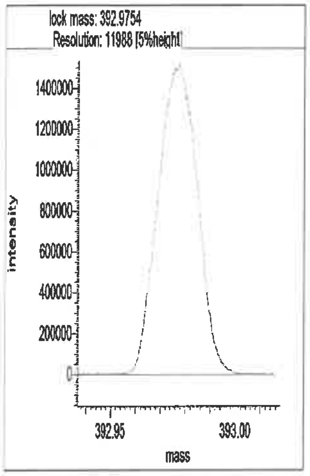

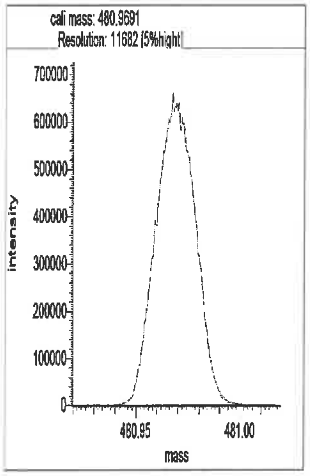

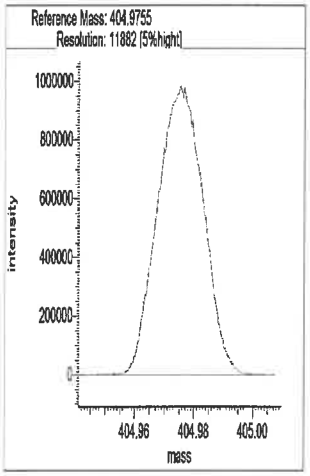

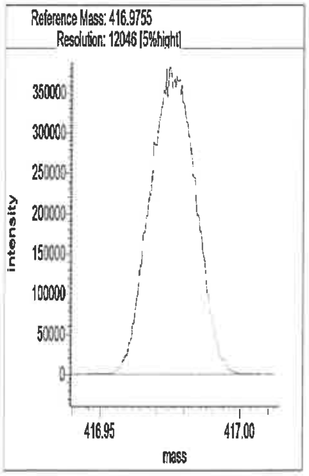

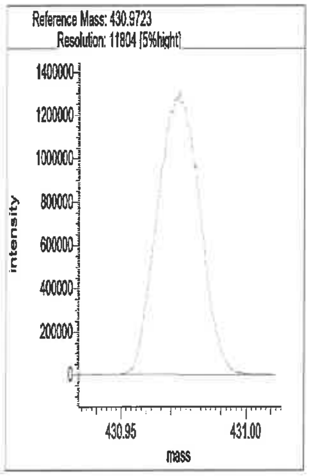

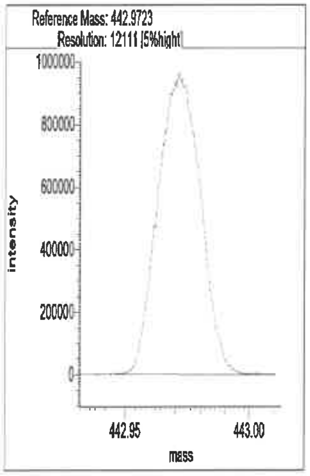

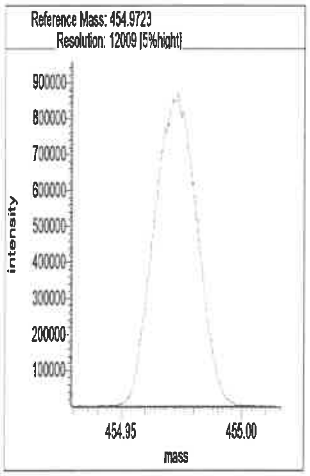

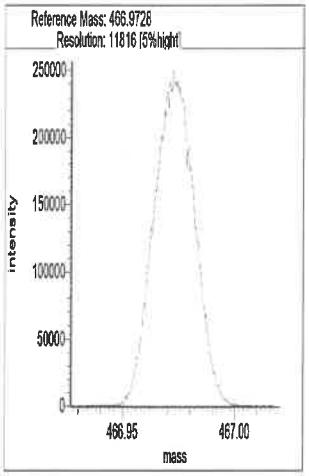

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12191 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11916 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12124 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11903 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11957 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12164 [5%height]

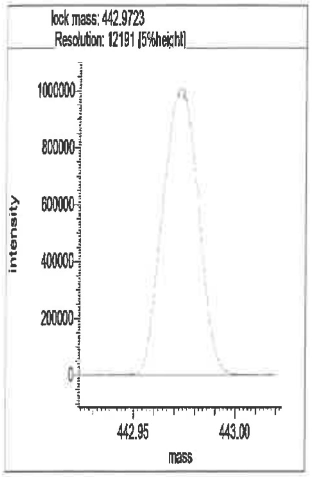
lock mass: 442.9723
Resolution: 12191 [5%height]
intensity
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

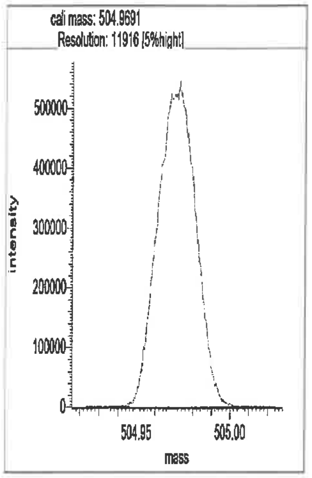
cali mass: 504.9691
Resolution: 11916 [5%hight]
intensity
500000
400000
300000
200000
100000
0
504.95
505.00
mass

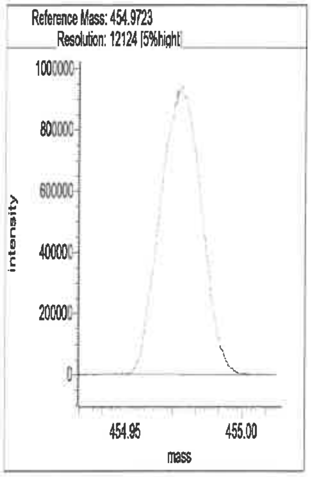
Reference Mass: 454.9723
Resolution: 12124 [5%hight]
intensity
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

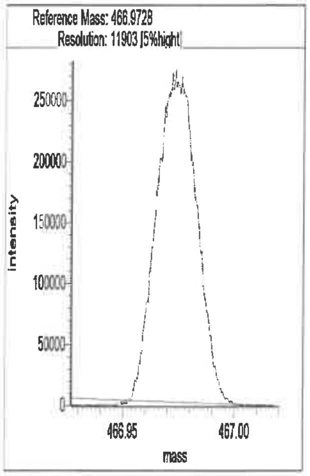
Reference Mass: 466.9728
Resolution: 11903 [5%hight]
intensity
250000
200000
150000
100000
50000
0
466.95
467.00
mass

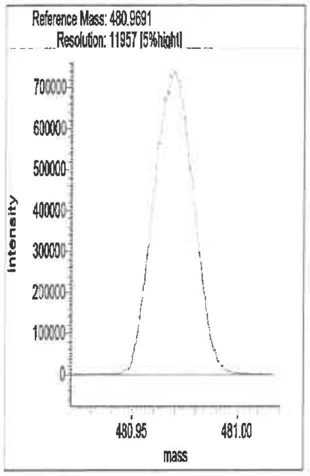
Reference Mass: 480.9691
Resolution: 11957 [5%hight]
intensity
700000
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

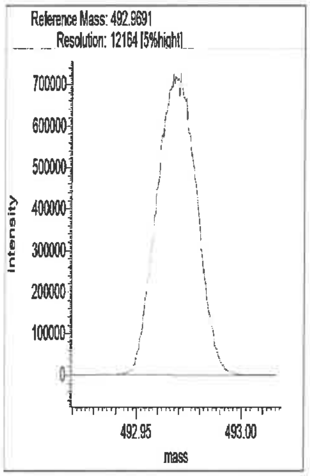
Reference Mass: 492.9691
Resolution: 12164 [5%hight]
intensity
700000
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	17 Sep 2020 18:53
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12067 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11764 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 11865 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11971 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11991 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11991 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11559 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11798 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11984 [5%height]

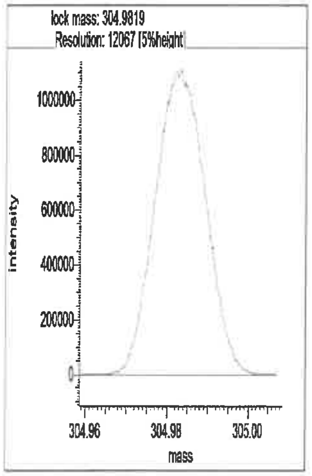

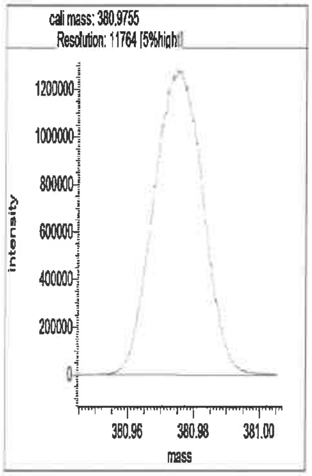

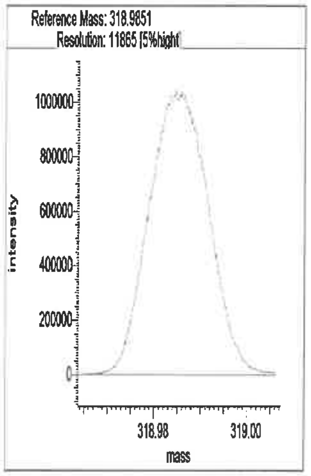

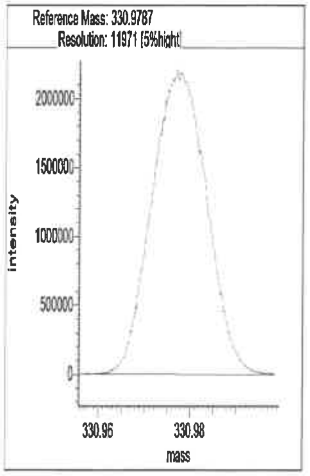

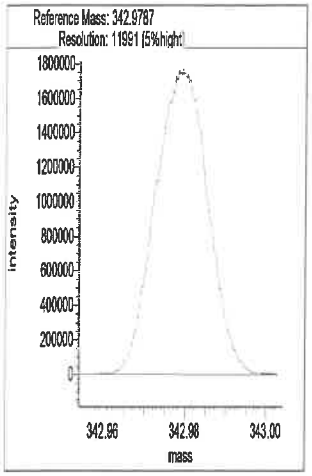

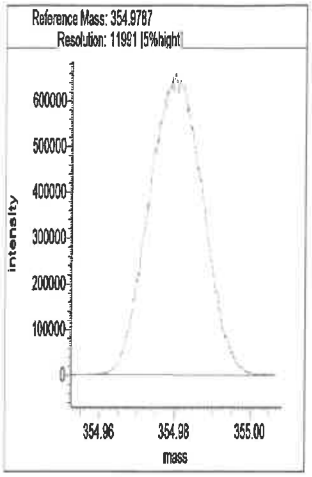

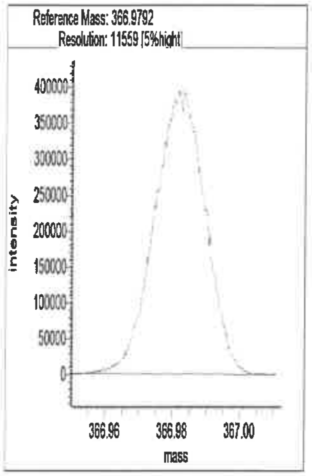

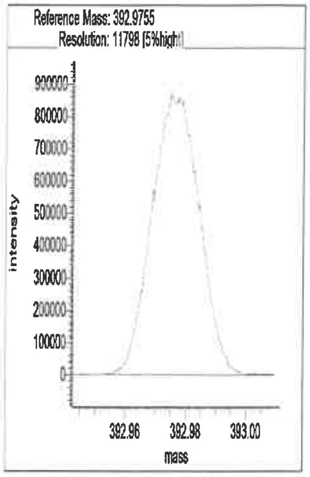

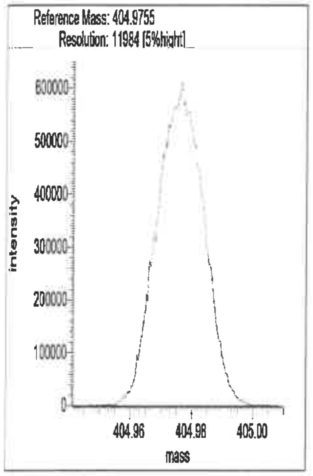

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12019 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12048 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12017 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12028 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11614 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12067 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11912 [5%height]

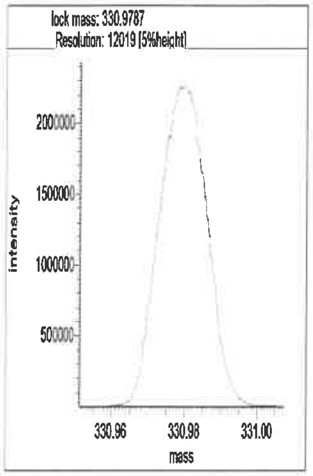

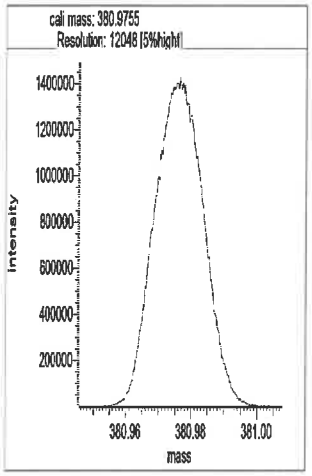

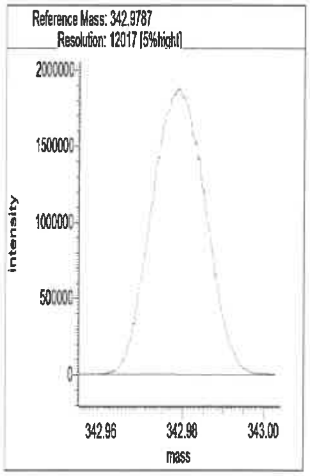

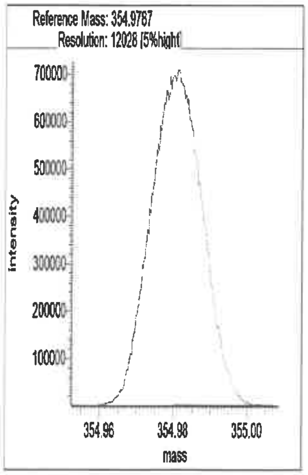

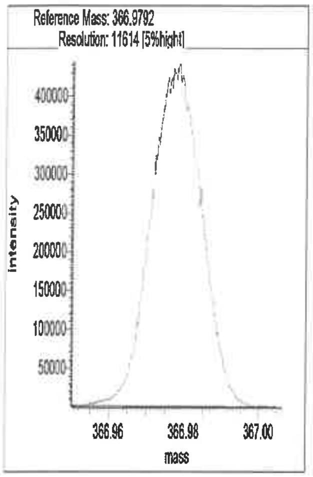

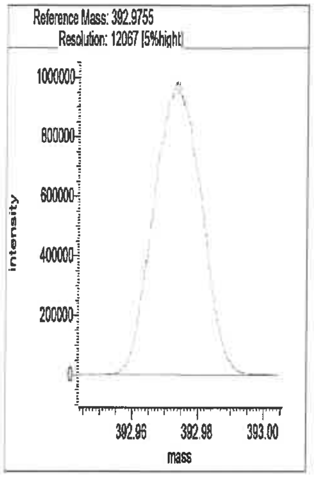

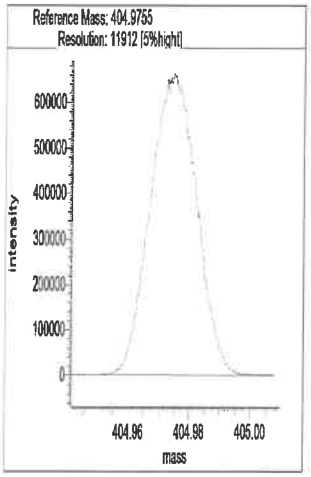

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12306 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12537 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12237 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12336 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12418 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12368 [5%height]

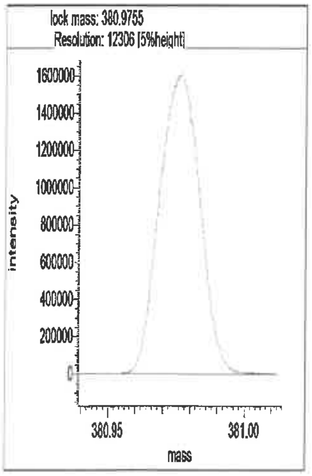

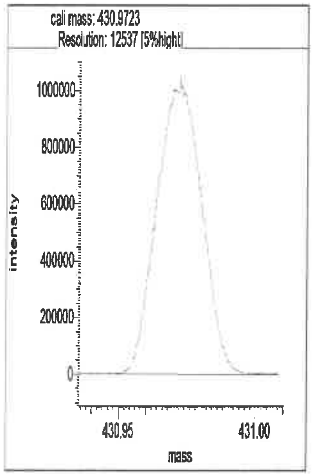

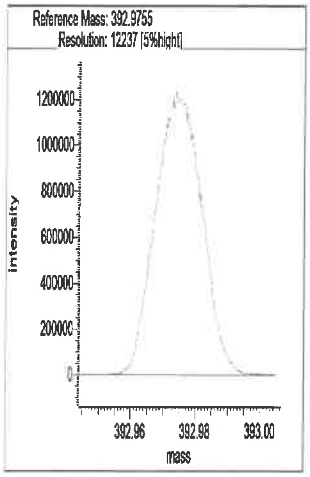

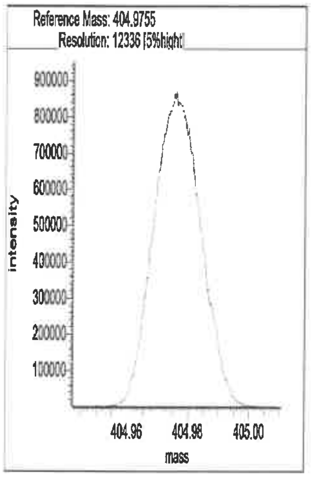

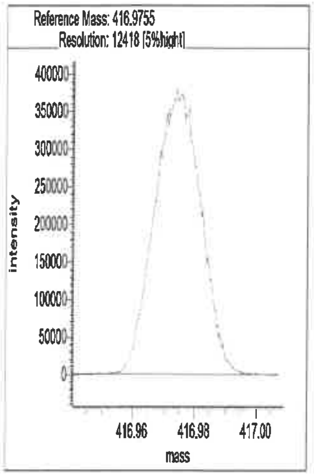

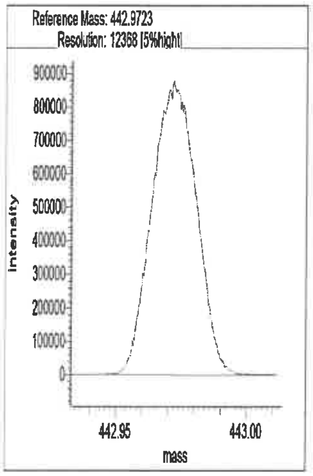

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12474 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12282 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12457 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12365 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12445 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12502 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12392 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12167 [5%height]

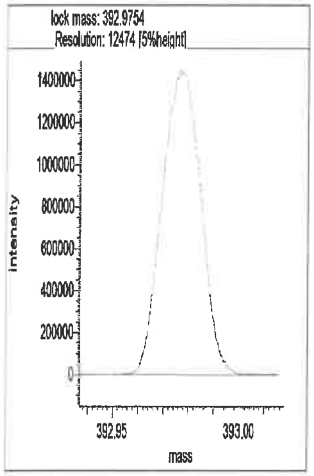

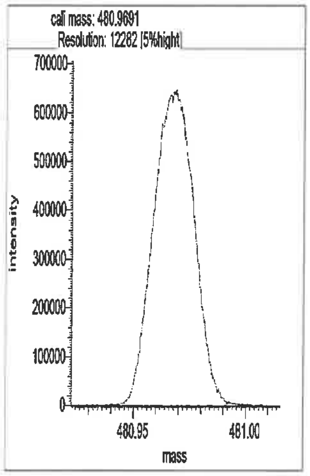

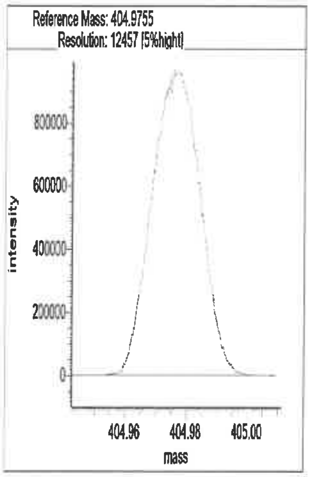

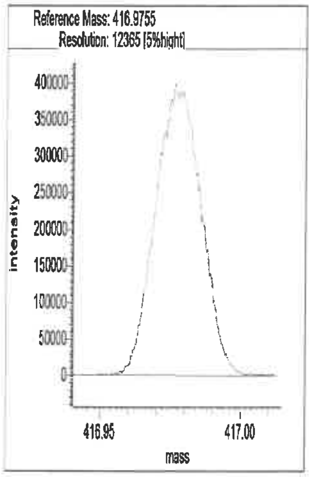

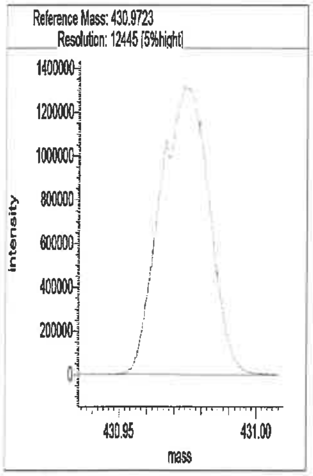

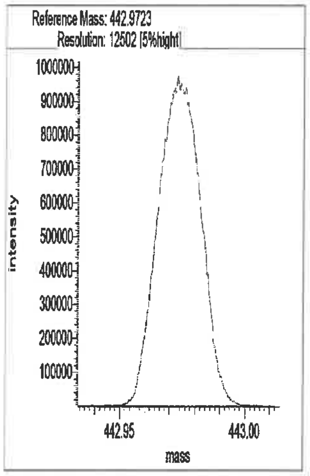

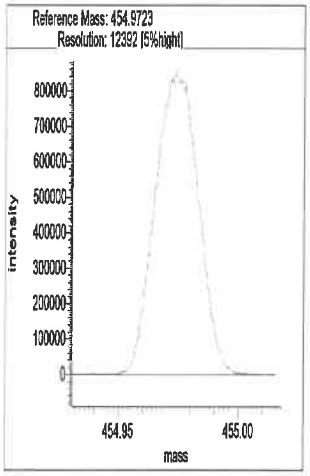

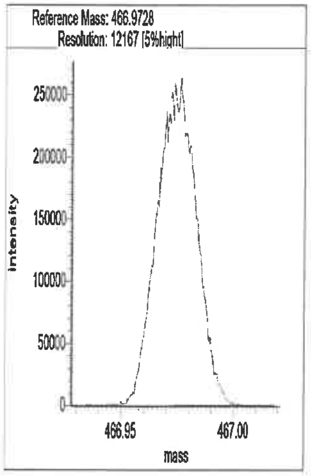

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12570 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12555 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12346 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12232 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12396 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12138 [5%height]

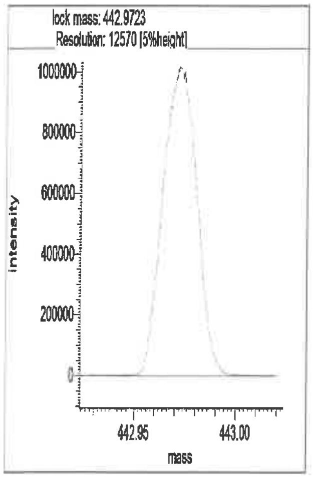
lock mass: 442.9723
Resolution: 12570 [5%height]
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

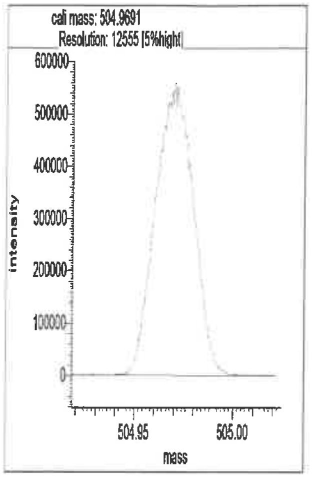
cali mass: 504.9691
Resolution: 12555 [5%hight]
600000
500000
400000
300000
200000
100000
0
intensity
504.95
505.00
mass

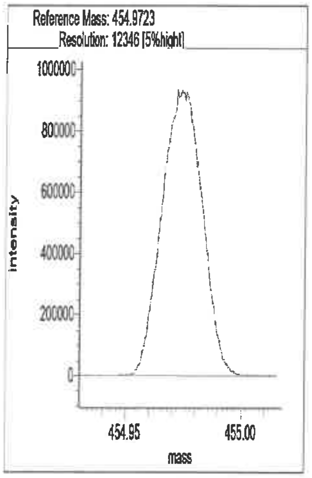
Reference Mass: 454.9723
Resolution: 12346 [5%hight]
1000000
800000
600000
400000
200000
0
intensity
454.95
455.00
mass

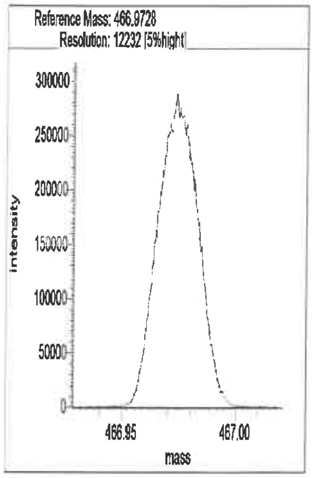
Reference Mass: 466.9728
Resolution: 12232 [5%hight]
300000
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

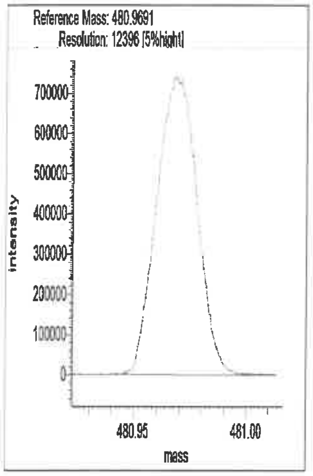
Reference Mass: 480.9691
Resolution: 12396 [5%hight]
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

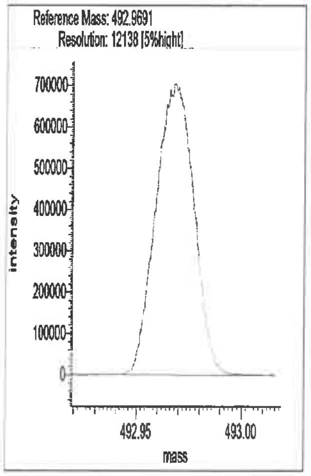
Reference Mass: 492.9691
Resolution: 12138 [5%hight]
700000
600000
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 13:16:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:59:44 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 15:01:18

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.126	2867279	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.206	4498215	0.78	1.5883	98.8	98.8	0.3878	0.3878	98.77	
2,3,7,8-TCDF	19.232	26671	0.78	1.0857	0.5461	0.5461	0.0337	0.0337	109	M
S Total TCDF					0.5461	0.5461	0.0337	0.0337		
D 13C-2,3,7,8-TCDD	20.487	3159205	0.78	1.1194	98.4	98.4	0.3374	0.3374	98.43	
$ 37Cl4-2,3,7,8-TCDD	20.505	16848		1.1468	0.5124	0.5124	0.0136	0.0136	102	
2,3,7,8-TCDD	20.513	18752	0.75	1.0810	0.5491	0.5491	0.0679	0.0679	110	M
S Total TCDD					0.5491	0.5491	0.0679	0.0679		
D 13C-1,2,3,7,8-PeCDF	26.281	4004528	1.57	1.4782	94.5	94.5	0.4694	0.4694	94.48	
1,2,3,7,8-PeCDF	26.298	119224	1.57	1.0547	2.823	2.823	0.0379	0.0379	113	
D 13C-2,3,4,7,8-PeCDF	27.746	3738896	1.59	1.3912	93.7	93.7	0.4988	0.4988	93.73	
2,3,4,7,8-PeCDF	27.771	119412	1.55	1.1035	2.894	2.894	0.0421	0.0421	116	
S Total PeCDF					5.717	5.717	0.0400	0.0400		
D 13C-1,2,3,7,8-PeCDD	28.513	2531354	1.57	0.9415	93.8	93.8	0.2412	0.2412	93.77	
1,2,3,7,8-PeCDD	28.538	76134	1.58	1.0680	2.816	2.816	0.0648	0.0648	113	
S Total PeCDD					2.816	2.816	0.0648	0.0648		
D 13C-1,2,3,4,7,8-HxCDF	34.160	3194678	0.53	1.1378	97.8	97.8	0.4787	0.4787	97.83	
1,2,3,4,7,8-HxCDF	34.177	114675	1.25	1.2643	2.839	2.839	0.0333	0.0333	114	
D 13C-1,2,3,6,7,8-HxCDF	34.345	3746543	0.53	1.3173	99.1	99.1	0.4135	0.4135	99.10	
1,2,3,6,7,8-HxCDF	34.362	128332	1.24	1.2230	2.801	2.801	0.0318	0.0318	112	
D 13C-2,3,4,6,7,8-HxCDF	35.255	3552526	0.53	1.2457	99.4	99.4	0.4372	0.4372	99.37	
2,3,4,6,7,8-HxCDF	35.272	123959	1.26	1.2464	2.799	2.799	0.0275	0.0275	112	
D 13C-1,2,3,7,8,9-HxCDF	36.207	3413194	0.52	1.1840	100.4	100.4	0.4600	0.4600	100	
1,2,3,7,8,9-HxCDF	36.224	122654	1.27	1.2638	2.844	2.844	0.0261	0.0261	114	
S Total HxCDF					11.3	11.3	0.0297	0.0297		
* 13C-1,2,3,7,8,9-HxCDD	36.005	2870058	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.482	2397843	1.27	0.8477	98.6	98.6	0.3192	0.3192	98.55	
1,2,3,4,7,8-HxCDD	35.499	79949	1.22	1.1561	2.884	2.884	0.0287	0.0287	115	
D 13C-1,2,3,6,7,8-HxCDD	35.609	2806463	1.26	0.9979	98.0	98.0	0.2711	0.2711	97.99	
1,2,3,6,7,8-HxCDD	35.626	81674	1.26	1.0284	2.830	2.830	0.0288	0.0288	113	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.013	87547	1.25	1.1789	2.854	2.854	0.0265	0.0265	114	
S Total HxCDD					8.568	8.568	0.0280	0.0280		
D 13C-1,2,3,4,6,7,8-HpCDF	38.111	2849439	0.45	0.9884	100.5	100.5	0.5325	0.5325	100	
1,2,3,4,6,7,8-HpCDF	38.119	121827	1.06	1.5064	2.838	2.838	0.0226	0.0226	114	
D 13C-1,2,3,4,7,8,9-HpCDF	39.408	2671106	0.46	0.9203	101.1	101.1	0.5719	0.5719	101	
1,2,3,4,7,8,9-HpCDF	39.416	113201	1.03	1.4548	2.913	2.913	0.0235	0.0235	117	
S Total HpCDF					5.751	5.751	0.0230	0.0230		
D 13C-1,2,3,4,6,7,8-HpCDD	39.096	2773416	1.06	0.9556	101.1	101.1	0.2945	0.2945	101	
1,2,3,4,6,7,8-HpCDD	39.105	84526	1.06	1.0640	2.864	2.864	0.0232	0.0232	115	
S Total HpCDD					2.864	2.864	0.0232	0.0232		
D 13C-OCDD	41.549	4259906	0.91	0.7420	200.0	200.0	0.2839	0.2839	100	
OCDF	41.642	165819	0.94	1.4296	5.446	5.446	0.0367	0.0367	109	
OCDD	41.558	137632	0.84	1.1293	5.722	5.722	0.0214	0.0214	114	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	17-Sep-2020 13:16:00	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00030				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:59:44	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1070				
First Level Reviewer: shardaa		Date:	17-Sep-2020 15:01:18		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.126	20.145	-1		1283753	191236	461	1152	415		
333.9338	20.126	20.145	-1		1583526	238951	189	472	1264	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.206	19.222	-1	0.954	1970405	288920	722	1805	400		
317.9389	19.206	19.222	-1	0.954	2527810	367161	338	845	1086	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	19.232	19.246	-1	1.001	11715	1954	21	52	93		M
305.8987	19.232	19.246	-1	1.001	14956	2249	75	187	30	0.78(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	20.487	20.507	-1	1.018	1385384	196545	461	1152	426		
333.9338	20.479	20.507	-2	1.018	1773821	246098	189	472	1302	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.505	20.531	-2	1.019	16848	2385	27	67	88		
2,3,7,8-TCDD											M
319.8965	20.513	20.532	-1	1.001	8063	1362	105	262	13		M
321.8936	20.496	20.532	-2	1.000	10689	1465	25	62	59	0.75(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.281	26.301	-1	1.306	2446693	400677	740	1850	541		
353.8970	26.281	26.301	-1	1.306	1557835	263136	454	1135	580	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.298	26.321	-1	1.001	72858	11805	28	70	422		
341.8567	26.306	26.321	-1	1.001	46366	7710	78	195	99	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.746	27.762	-1	1.379	2297047	354078	740	1850	478		
353.8970	27.738	27.762	-1	1.378	1441849	216332	454	1135	477	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.771	27.787	-1	1.001	72650	11536	28	70	412		
341.8567	27.771	27.787	-1	1.001	46762	7260	78	195	93	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.513	28.537	-1	1.417	1545088	229761	258	645	891		
369.8919	28.521	28.537	-1	1.417	986266	145920	133	332	1097	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.538	28.562	-1	1.001	46621	7003	85	212	82		
357.8516	28.547	28.562	-1	1.001	29513	4393	19	47	231	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.160	34.181	-1	0.949	1107600	232468	492	1230	472		
385.8610	34.160	34.181	-1	0.949	2087078	432901	1054	2635	411	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.177	34.200	-1	1.000	63746	13025	68	170	192		
375.8178	34.177	34.200	-1	1.000	50929	10983	44	110	250	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.345	34.365	-1	0.954	1299916	252040	492	1230	512		
385.8610	34.345	34.365	-1	0.954	2446627	467172	1054	2635	443	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.362	34.384	-1	1.000	71098	13884	68	170	204		
375.8178	34.362	34.384	-1	1.000	57234	11346	44	110	258	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.255	35.272	-1	0.979	1232175	280852	492	1230	571		
385.8610	35.246	35.272	-2	0.979	2320351	537346	1054	2635	510	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.272	35.288	-1	1.000	69196	15962	68	170	235		
375.8178	35.272	35.288	-1	1.000	54763	12390	44	110	282	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.207	36.225	-1	1.006	1163249	287326	492	1230	584		
385.8610	36.207	36.225	-1	1.006	2249945	560830	1054	2635	532	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.224	36.240	-1	1.000	68721	16467	68	170	242		
375.8178	36.215	36.240	-1	1.000	53933	12682	44	110	288	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.005	36.021	-1		1610704	398886	452	1130	882		
403.8529	36.005	36.021	-1		1259354	310767	316	790	983	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.482	35.502	-1	0.985	1339435	341191	452	1130	755		
403.8529	35.482	35.502	-1	0.985	1058408	268257	316	790	849	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.499	35.519	-1	1.000	43922	10710	39	97	275		
391.8127	35.491	35.519	-2	1.000	36027	9106	42	105	217	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.609	35.630	-1	0.989	1561924	380416	452	1130	842		
403.8529	35.609	35.630	-1	0.989	1244539	302063	316	790	956	1.26(1.05-1.43)	

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.626	35.646	-1	1.000	45493	10981	39	97	282		
391.8127	35.626	35.646	-1	1.000	36181	8678	42	105	207	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.013	36.033	-1	1.015	48576	12704	39	97	326		
391.8127	36.013	36.033	-1	1.015	38971	9649	42	105	230	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.111	38.132	-1	1.059	890663	282719	496	1240	570		
419.8220	38.111	38.132	-1	1.059	1958776	621025	998	2495	622	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.119	38.141	-1	1.000	62628	19743	73	182	270		
409.7788	38.119	38.141	-1	1.000	59199	17675	50	125	354	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.408	39.428	-1	1.095	835396	277121	496	1240	559		
419.8220	39.408	39.428	-1	1.095	1835710	621401	998	2495	623	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.416	39.438	-1	1.000	57334	18363	73	182	252		
409.7788	39.416	39.438	-1	1.000	55867	17932	50	125	359	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.096	39.118	-1	1.086	1429108	497590	417	1042	1193		
437.8140	39.096	39.118	-1	1.086	1344308	462627	382	955	1211	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.105	39.126	-1	1.000	43457	14088	59	147	239		
425.7737	39.105	39.126	-1	1.000	41069	14247	36	90	396	1.06(0.88-1.20)	
13C-OCDD											
469.7780	41.549	41.572	-1	1.154	2027273	640660	323	807	1983		
471.7750	41.549	41.572	-1	1.154	2232633	702876	275	687	2556	0.91(0.76-1.02)	
OCDF											
441.7428	41.642	41.663	-1	1.002	80266	24941	40	100	624		
443.7399	41.642	41.663	-1	1.002	85553	27321	101	252	271	0.94(0.76-1.02)	
OCDD											
457.7377	41.558	41.580	-1	1.000	62632	20054	28	70	716		
459.7348	41.558	41.580	-1	1.000	75000	23129	37	92	625	0.84(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d

Injection Date: 17-Sep-2020 13:16:00

Instrument ID: DFS 1

Lims ID: IC

Client ID:

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 19.23

Area: 15605

Amount: 0.563268

Amount Units: pg/ul

Processing Integration Results

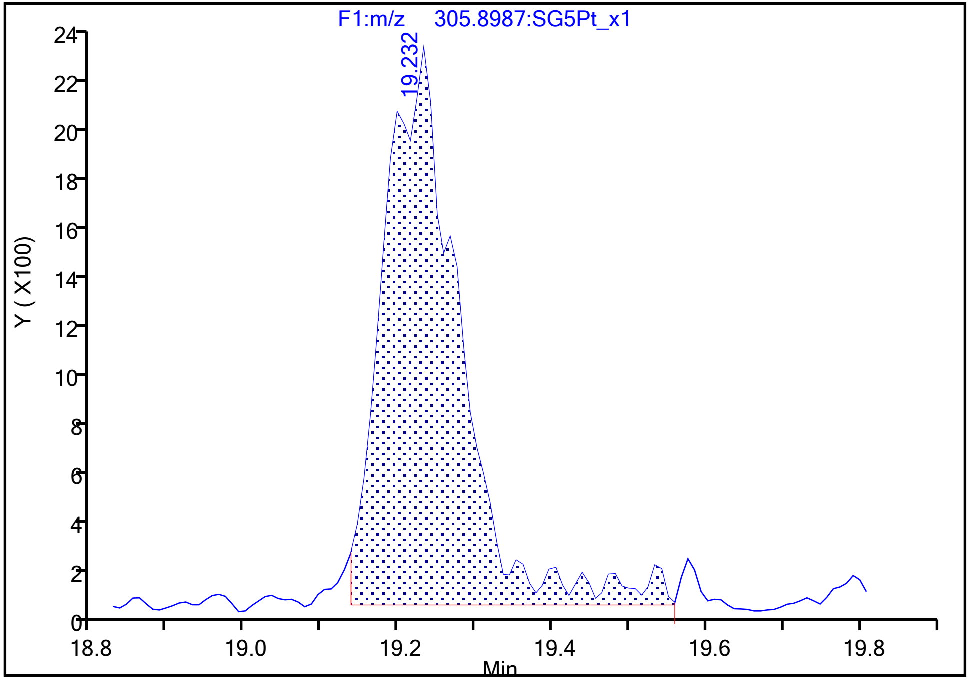

RT: 19.23

Area: 14956

Amount: 0.546146

Amount Units: pg/ul

Manual Integration Results

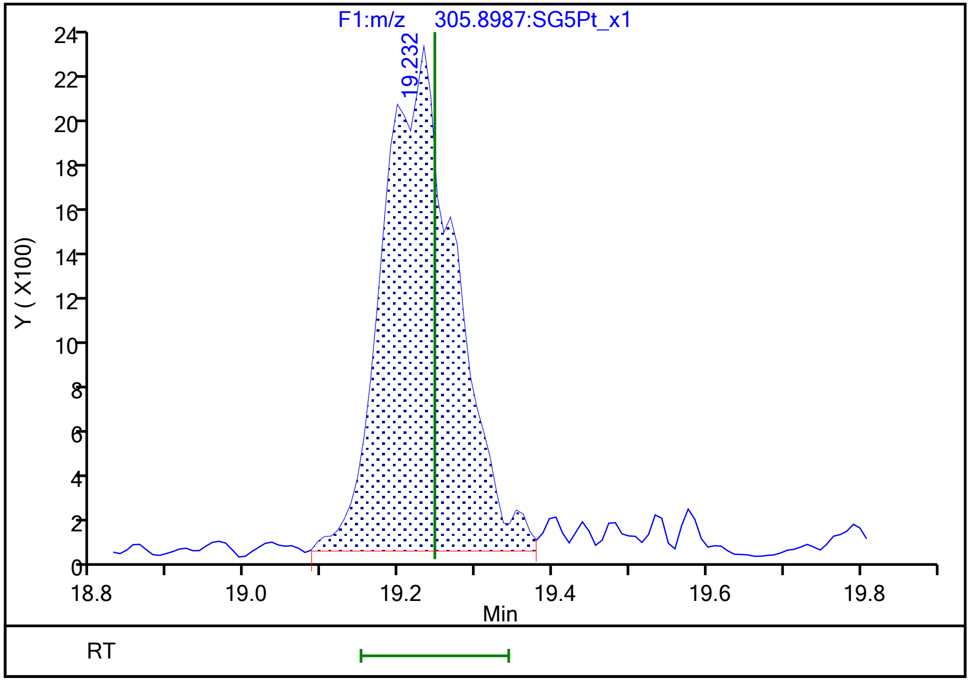

Reviewer: shardaa, 17-Sep-2020 18:30:26

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d
Injection Date: 17-Sep-2020 13:16:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 3
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT: 19.23
Area: 12196
Amount: 0.563268
Amount Units: pg/ul

Processing Integration Results

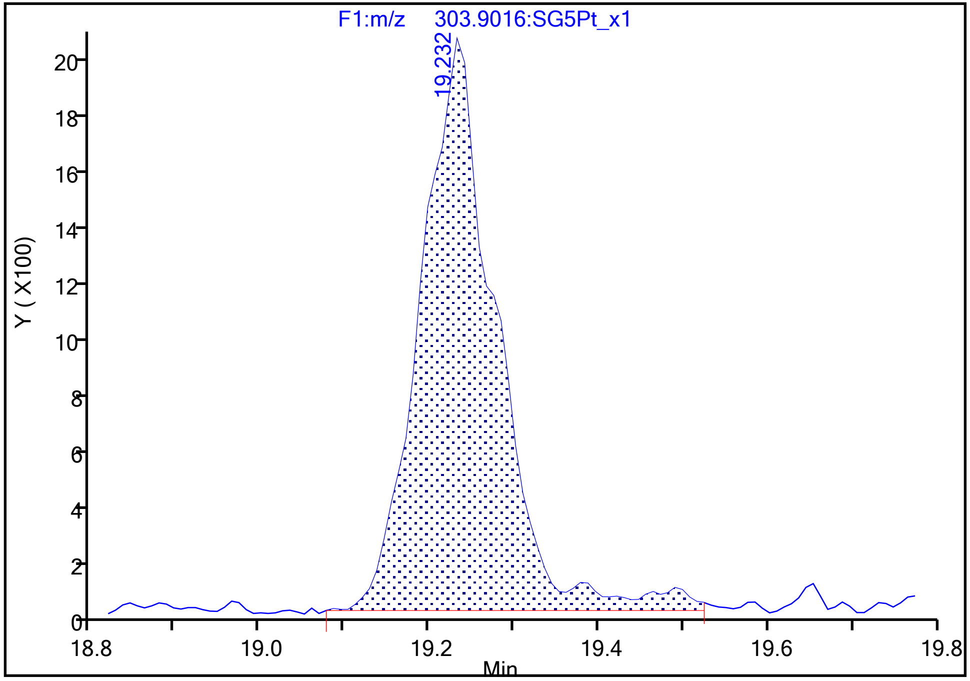

RT: 19.23
Area: 11715
Amount: 0.546146
Amount Units: pg/ul

Manual Integration Results

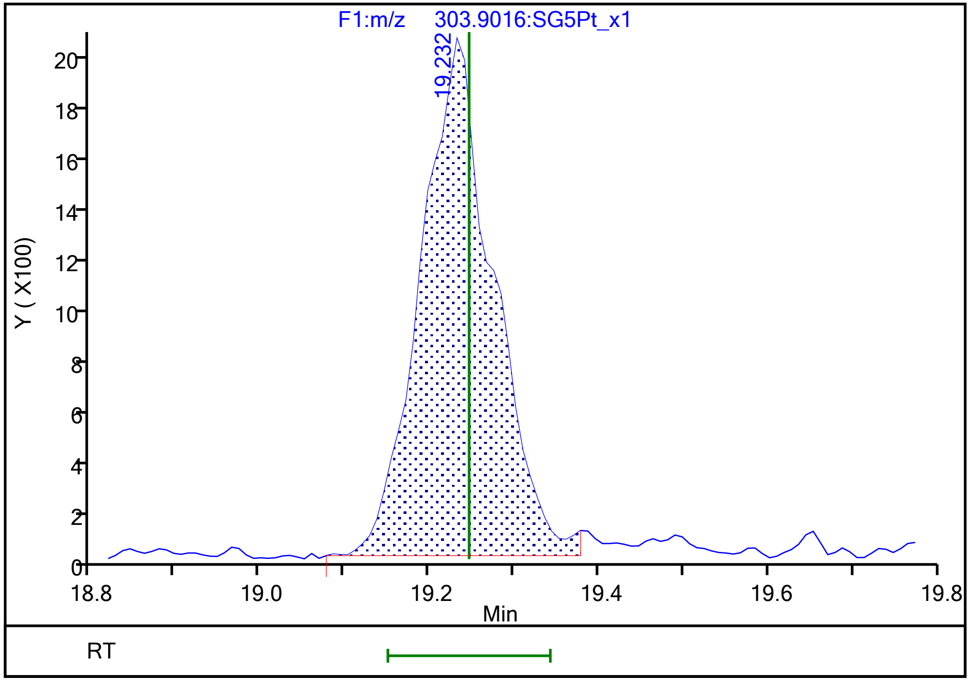

Reviewer: shardaa, 17-Sep-2020 18:30:33
Audit Action: Split an Integrated Peak
Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d				
Injection Date:	17-Sep-2020 13:16:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	20.51
Area:	9265
Amount:	0.574409
Amount Units:	pg/ul

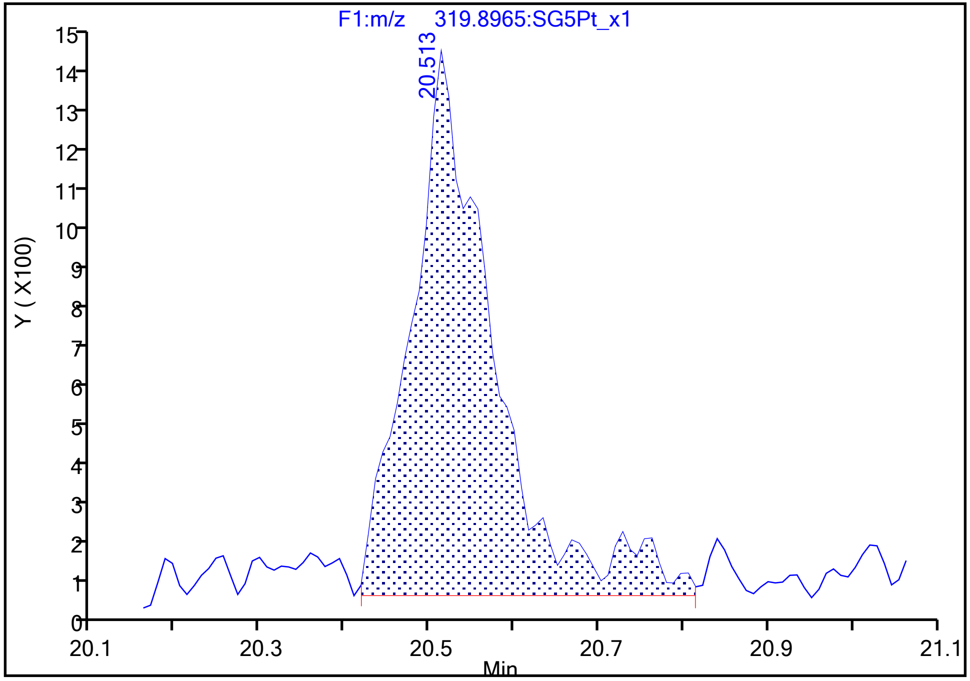

Manual Integration Results

RT:	20.51
Area:	8063
Amount:	0.549104
Amount Units:	pg/ul

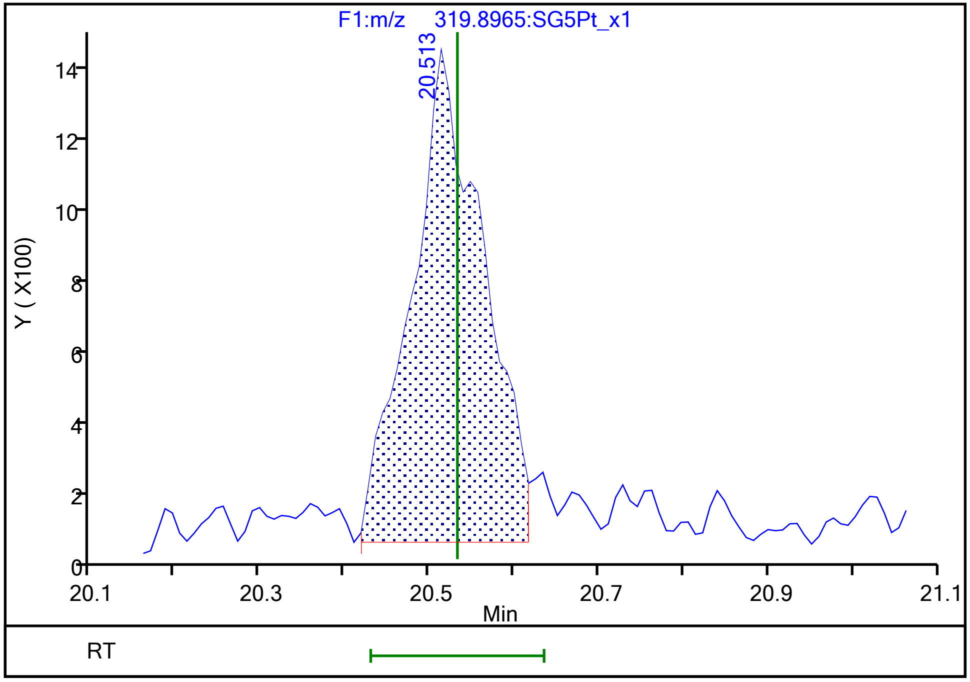

Reviewer: shardaa, 17-Sep-2020 18:29:31

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

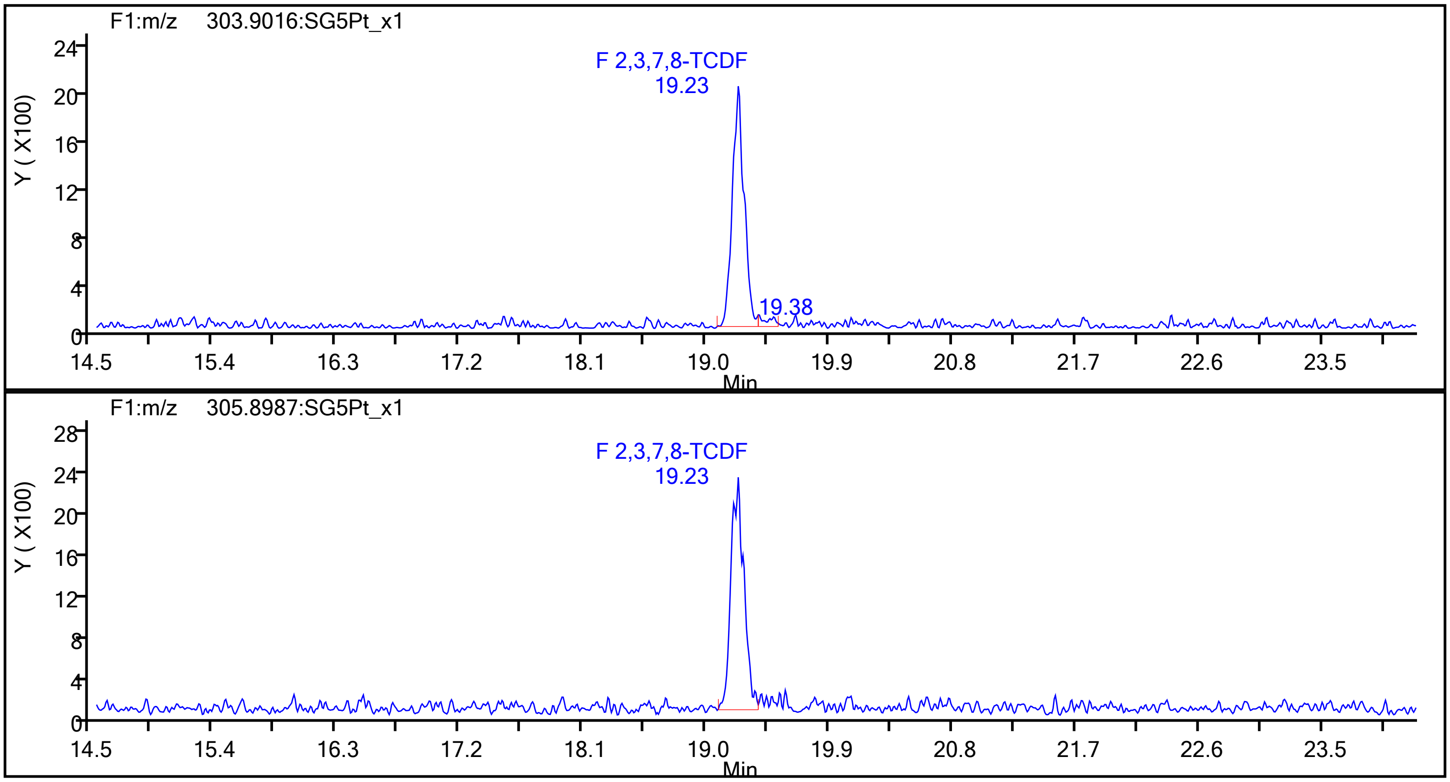

TCDF Standards

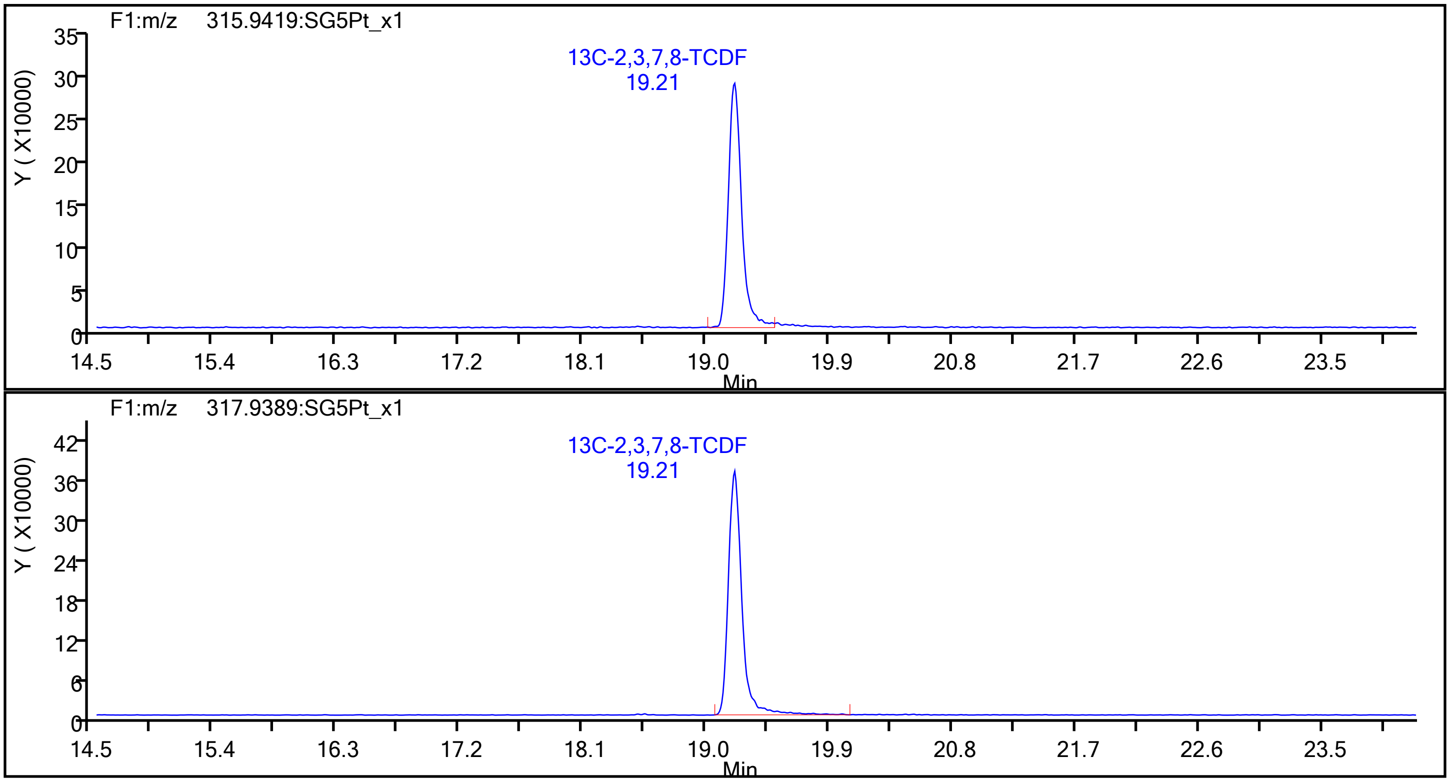

Report Date: 18-Sep-2020 10:59:56   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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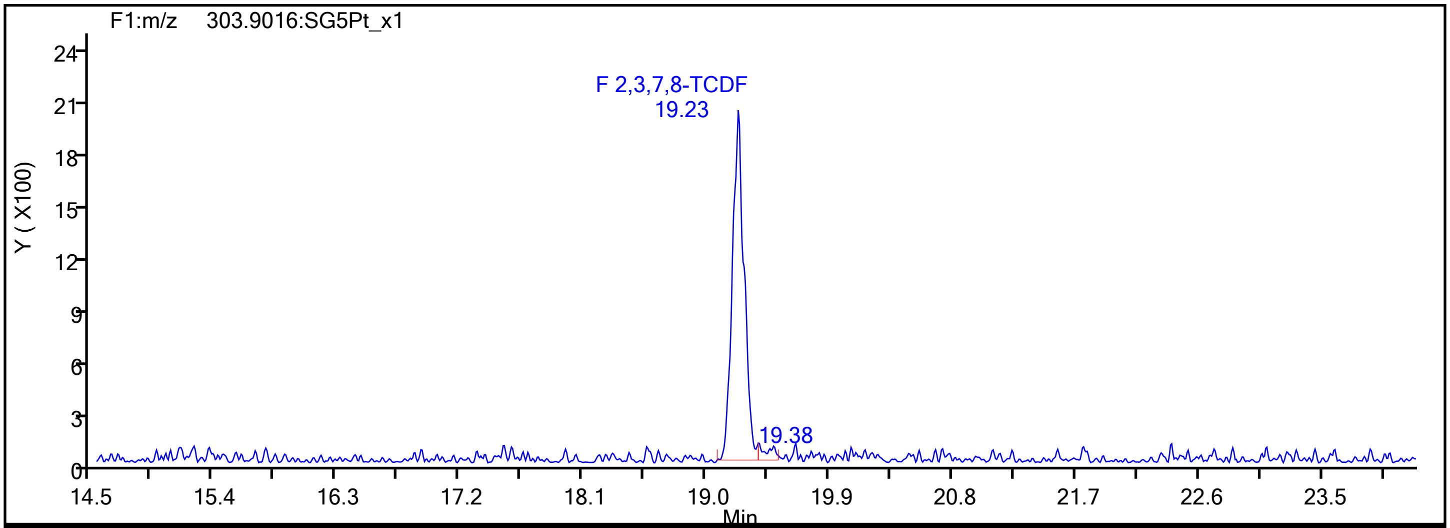

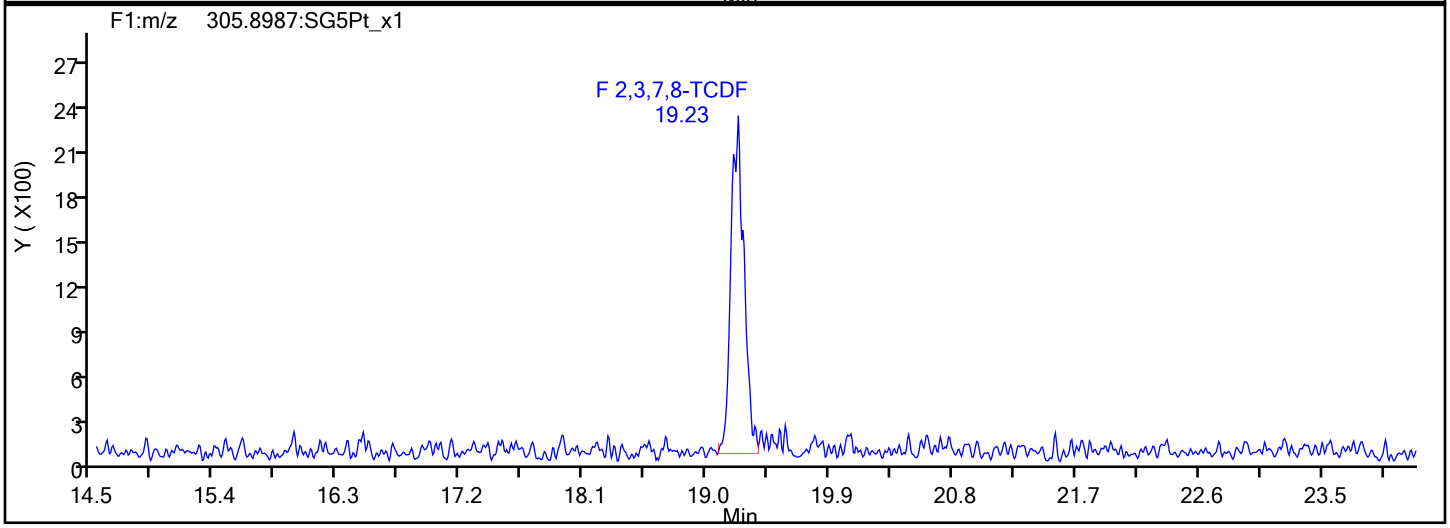

TCDF Interference Mass

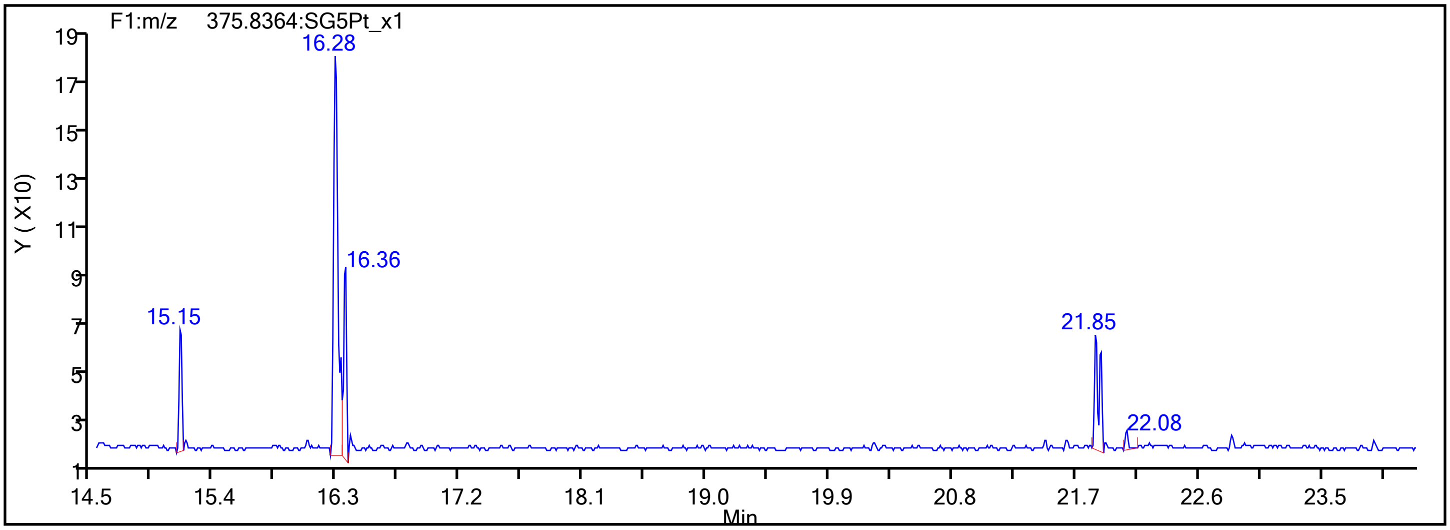

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Eurofins TestAmerica, Sacramento

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TCDD

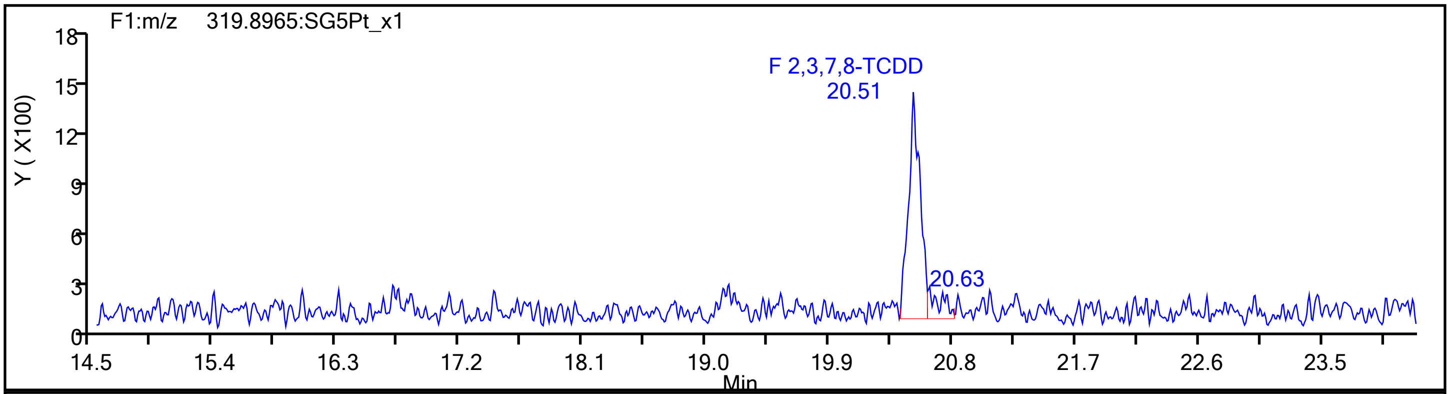

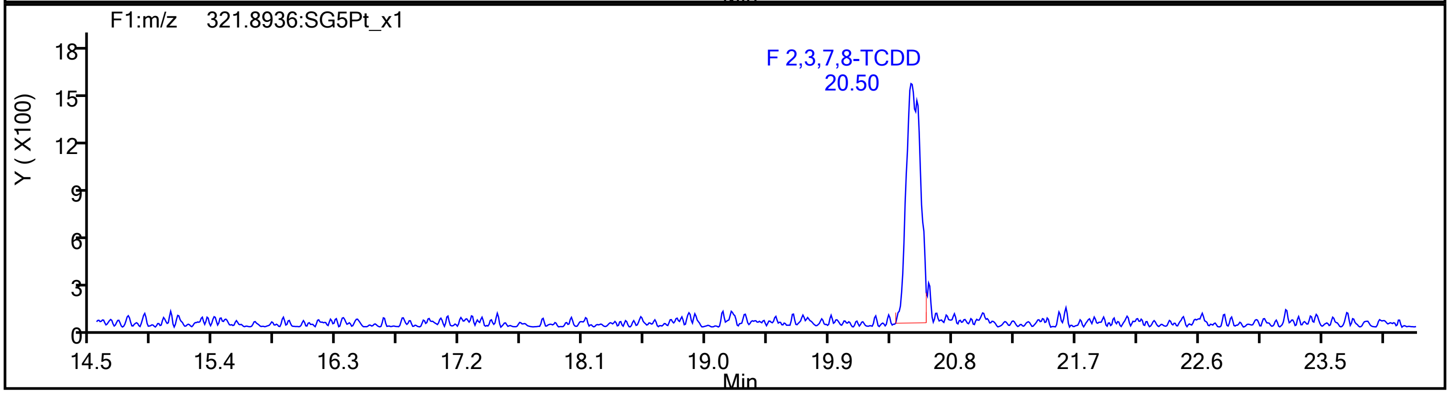

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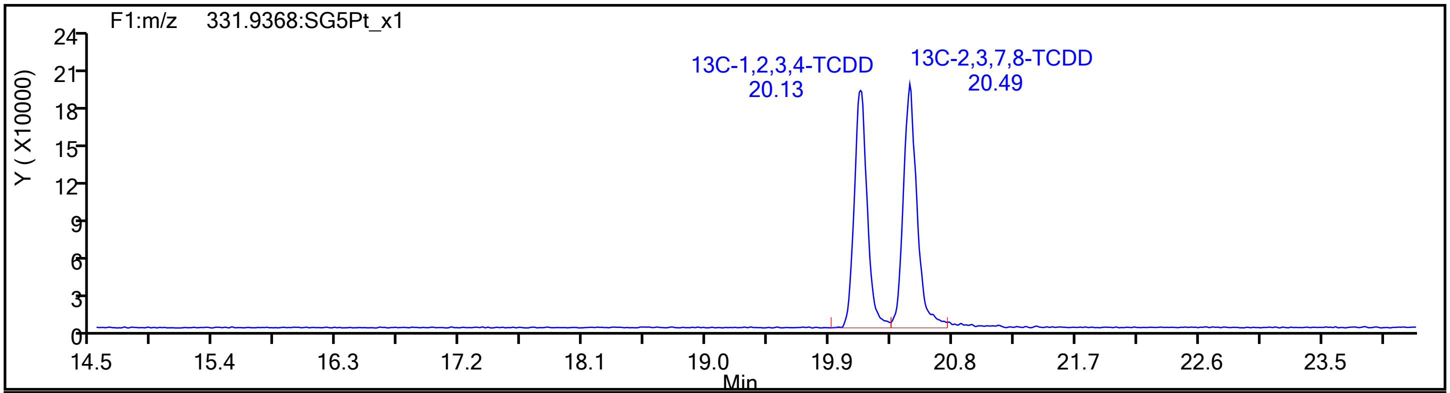

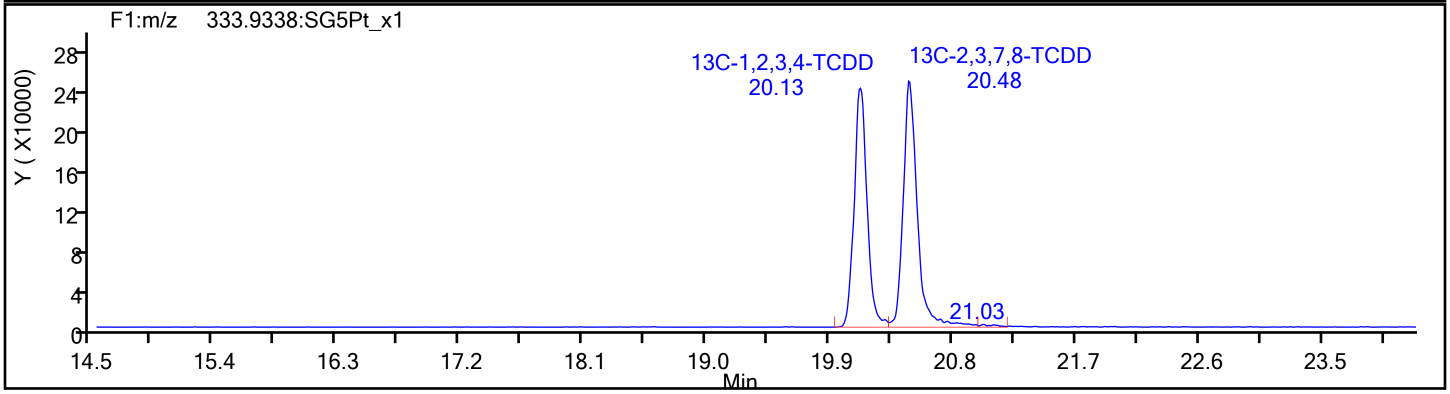

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37Cl4-TCDD

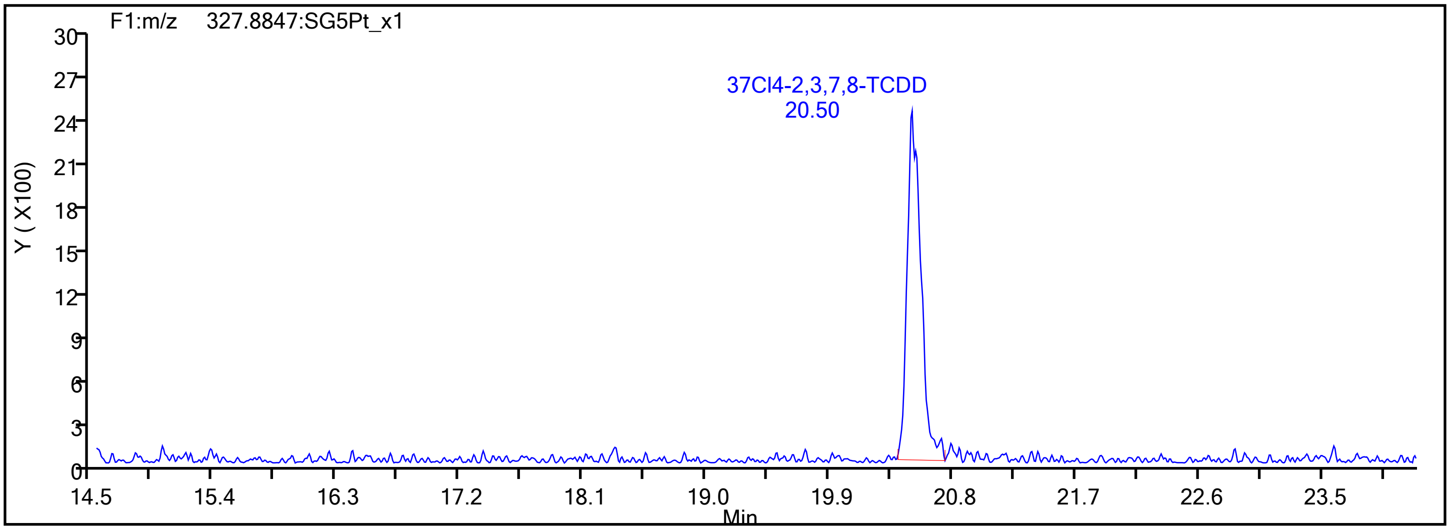

37Cl4-TCDD Standards

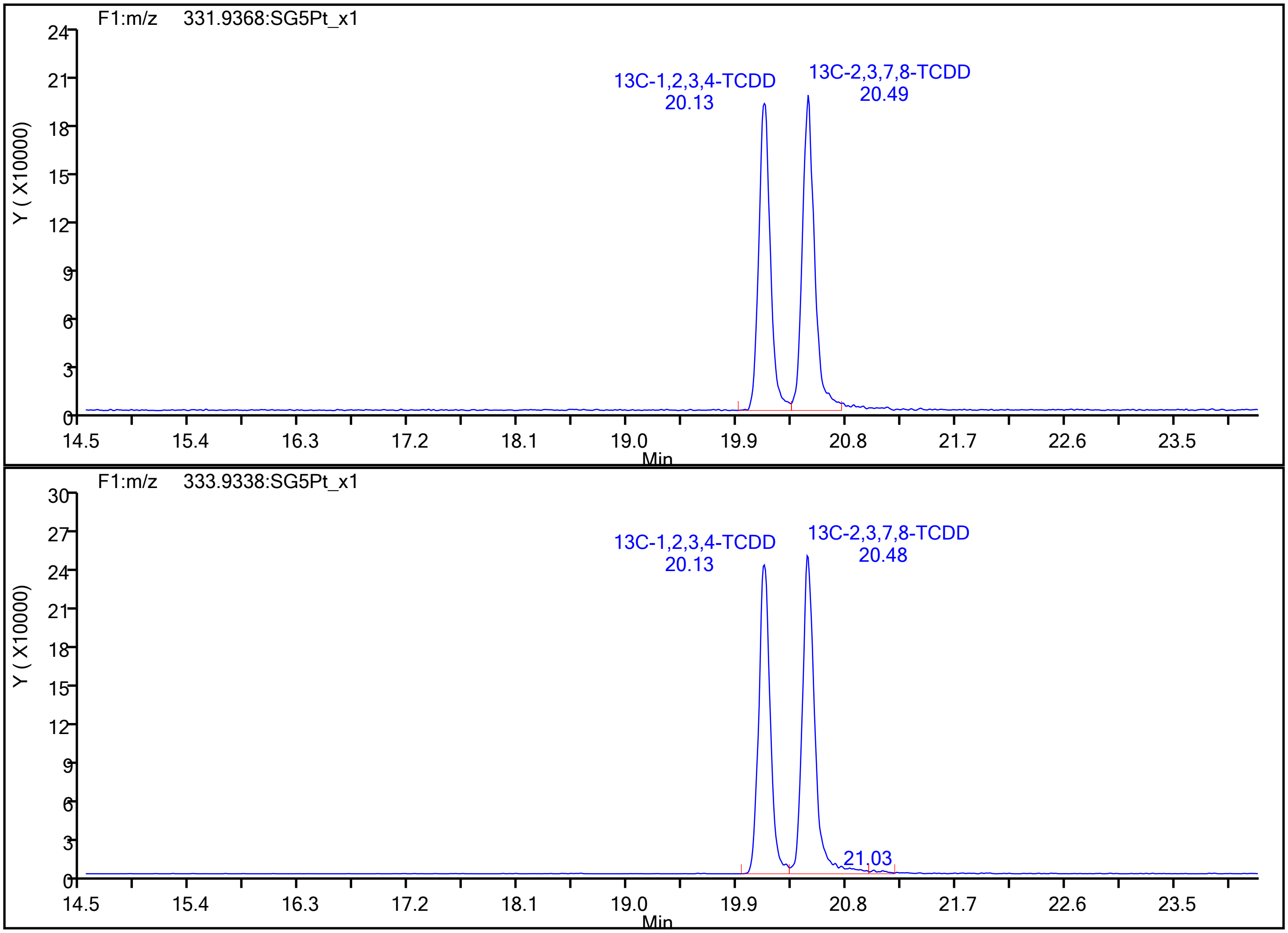

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

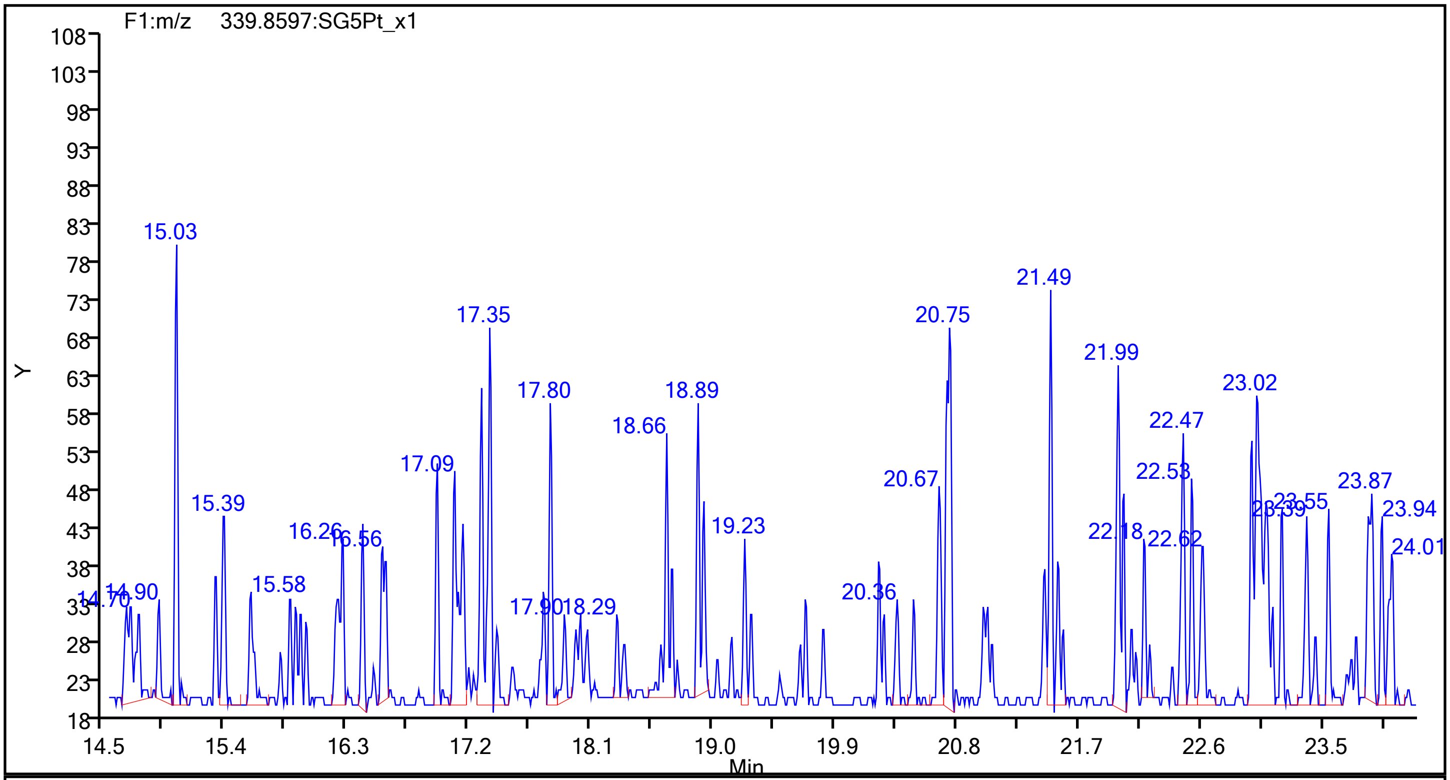

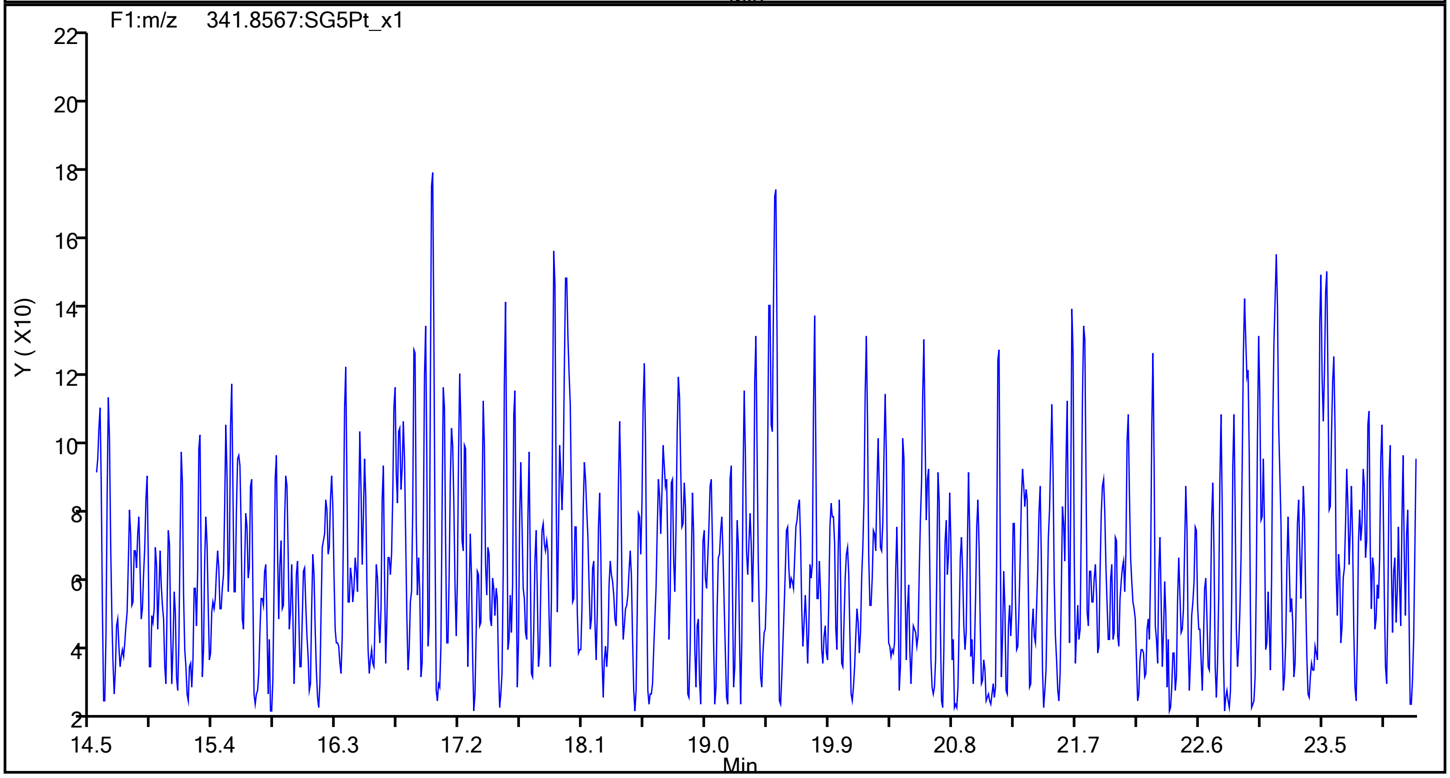

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

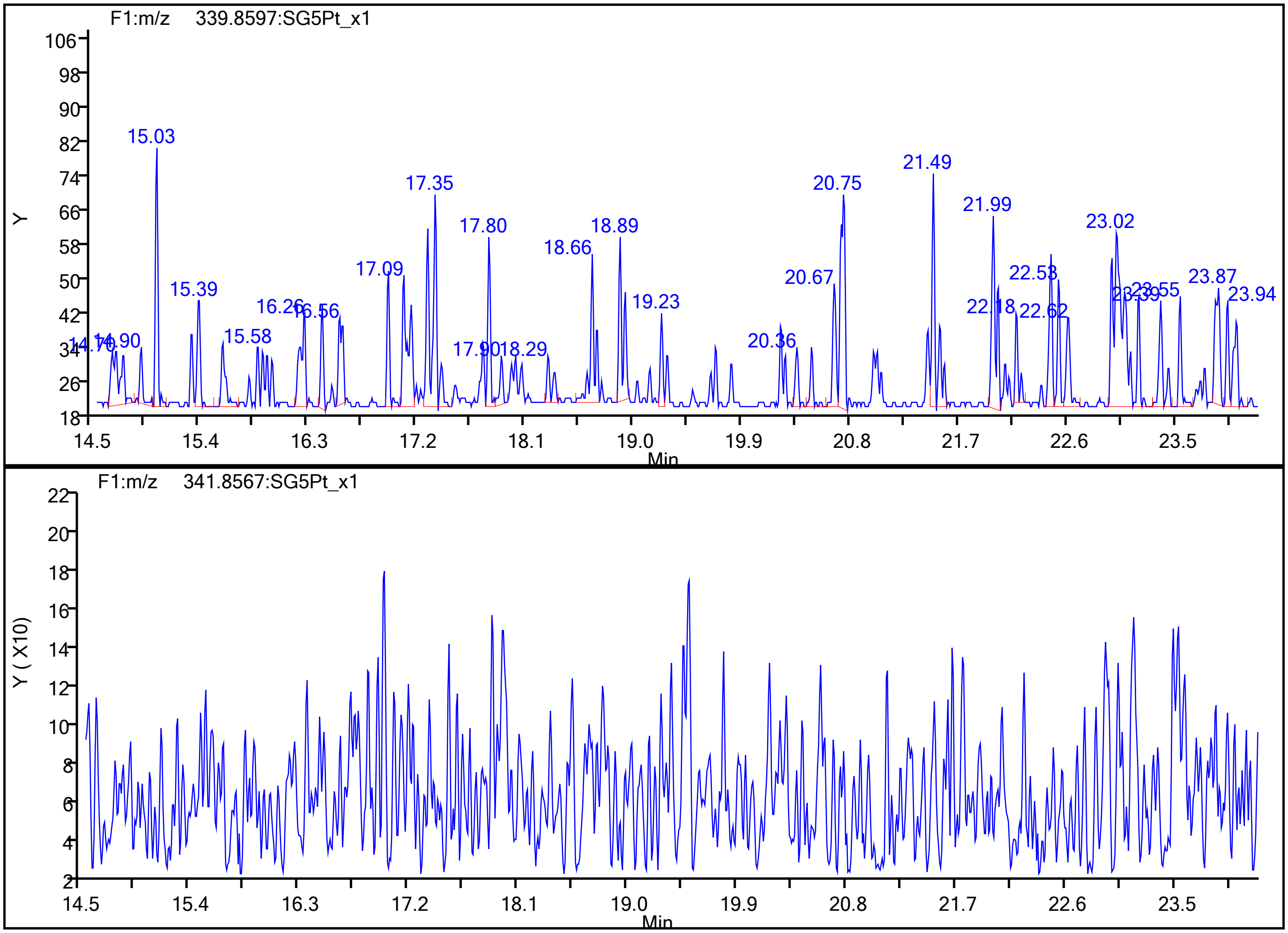

F1 PeCDFs Interference Mass

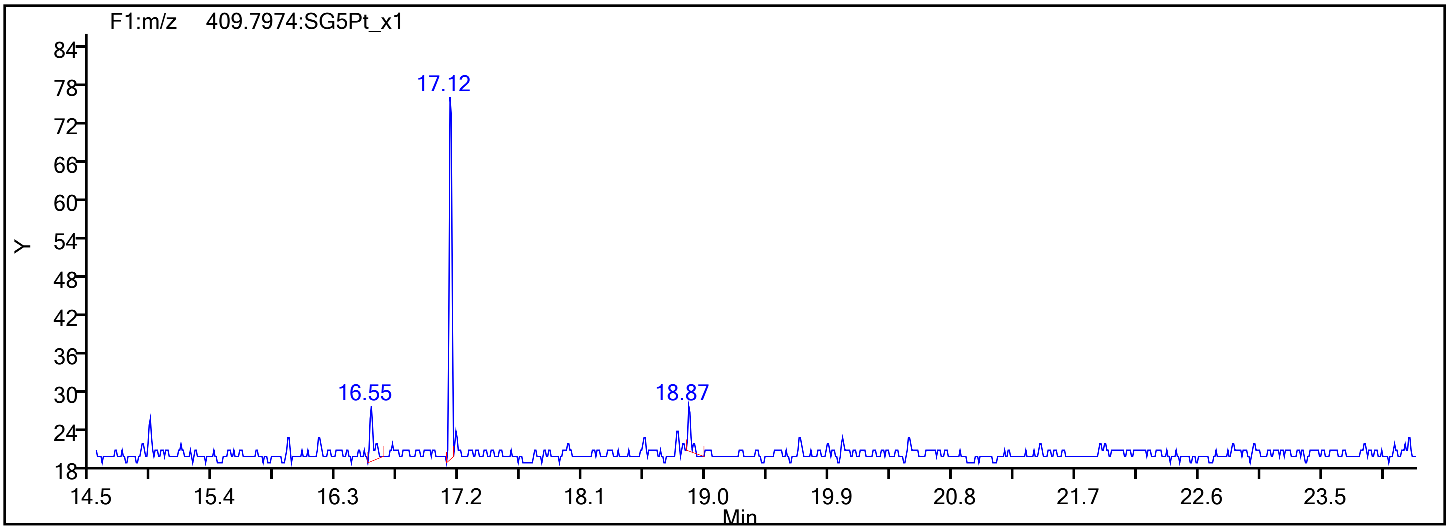

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PeCDF

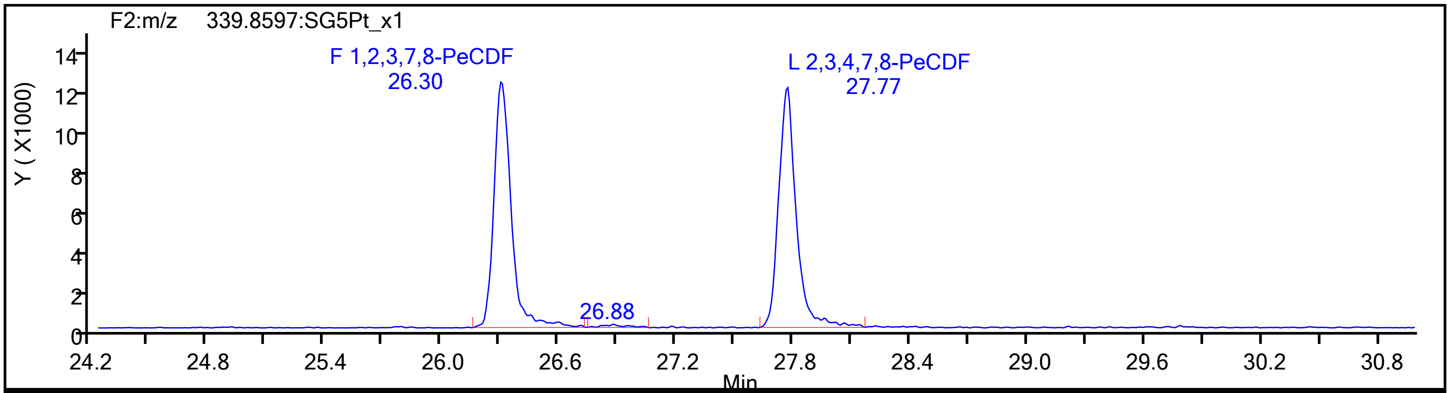

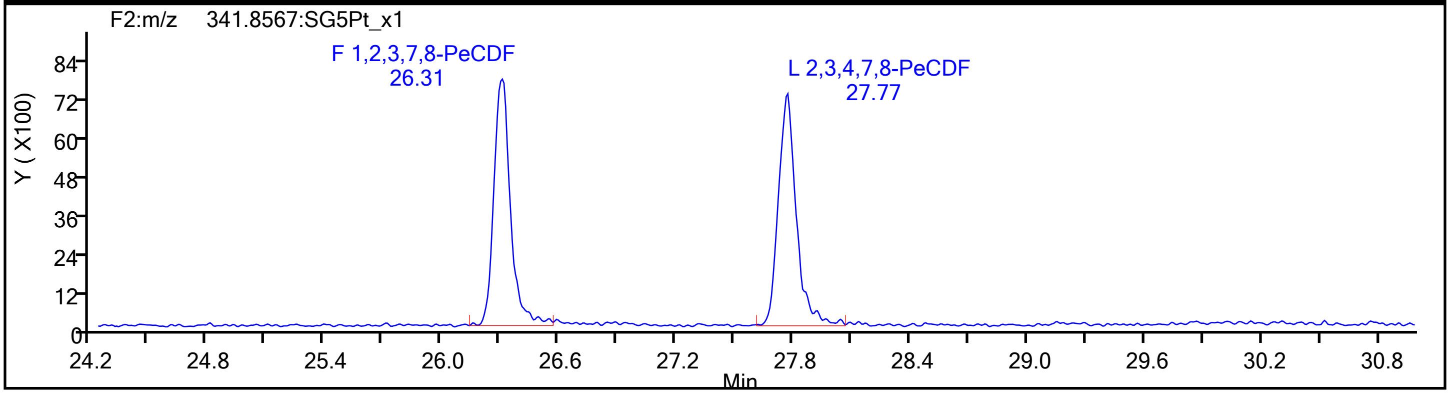

PeCDF Standards

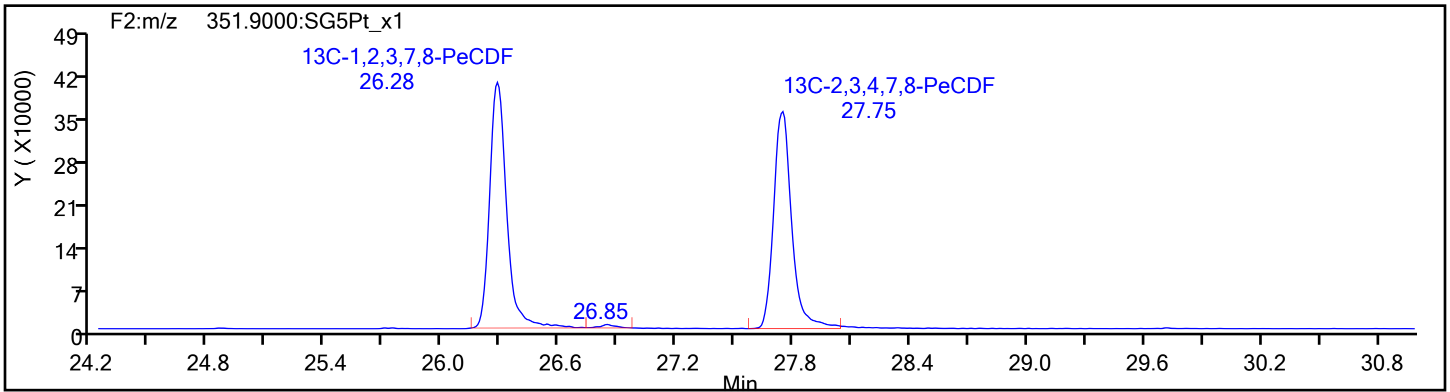

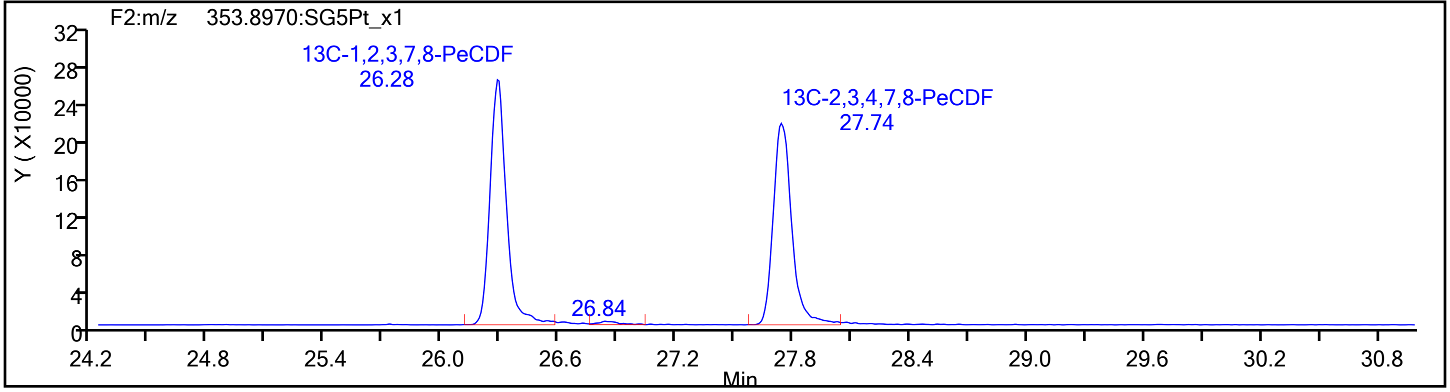

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Eurofins TestAmerica, Sacramento

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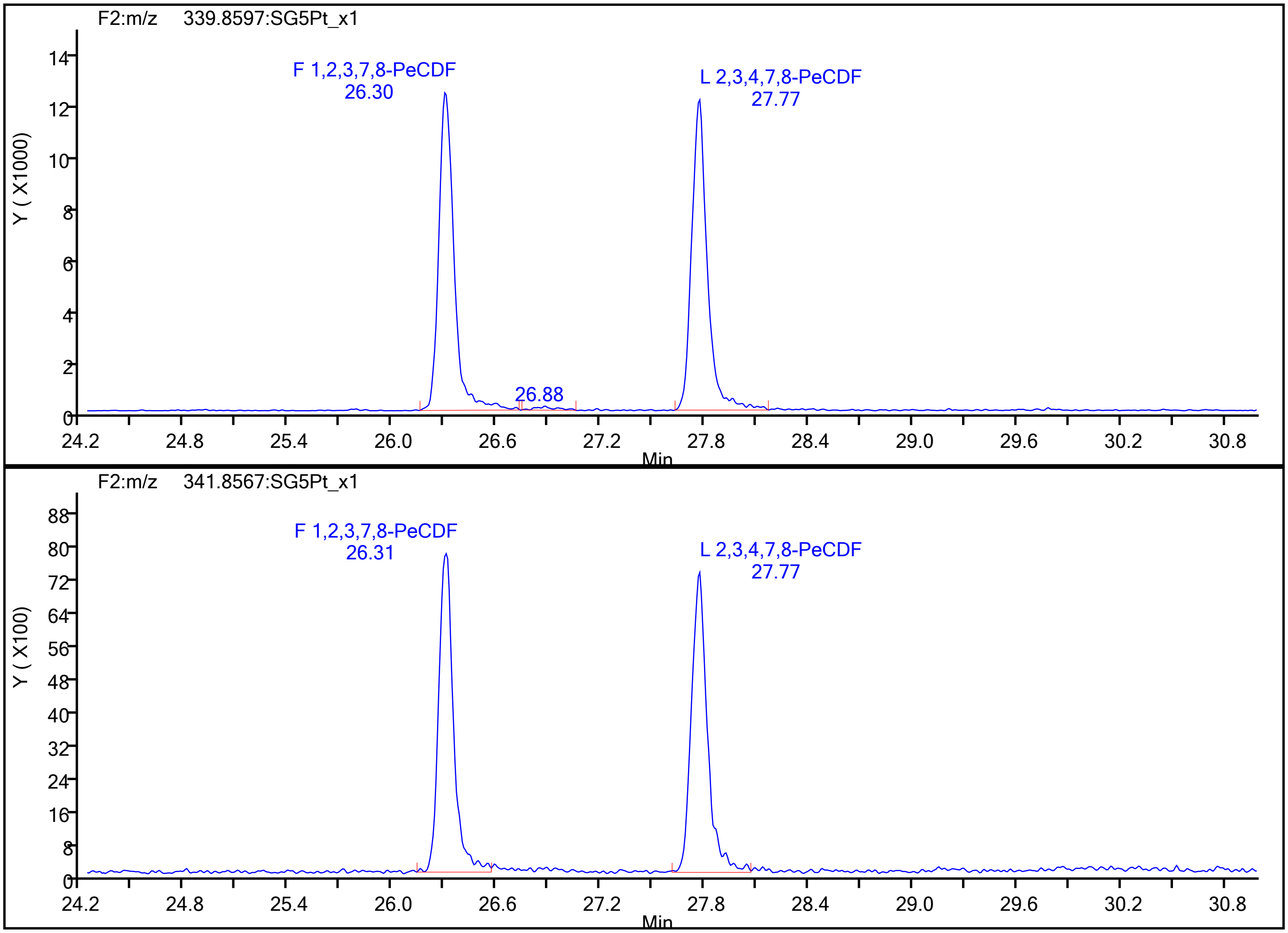

PeCDF Interference Mass

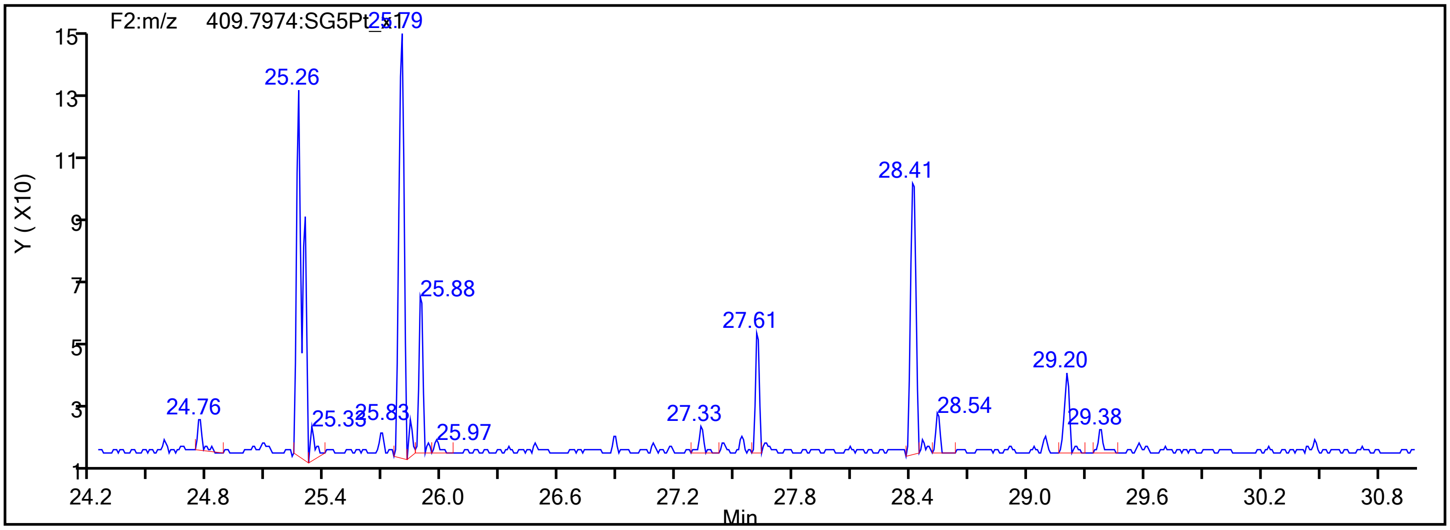

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Eurofins TestAmerica, Sacramento

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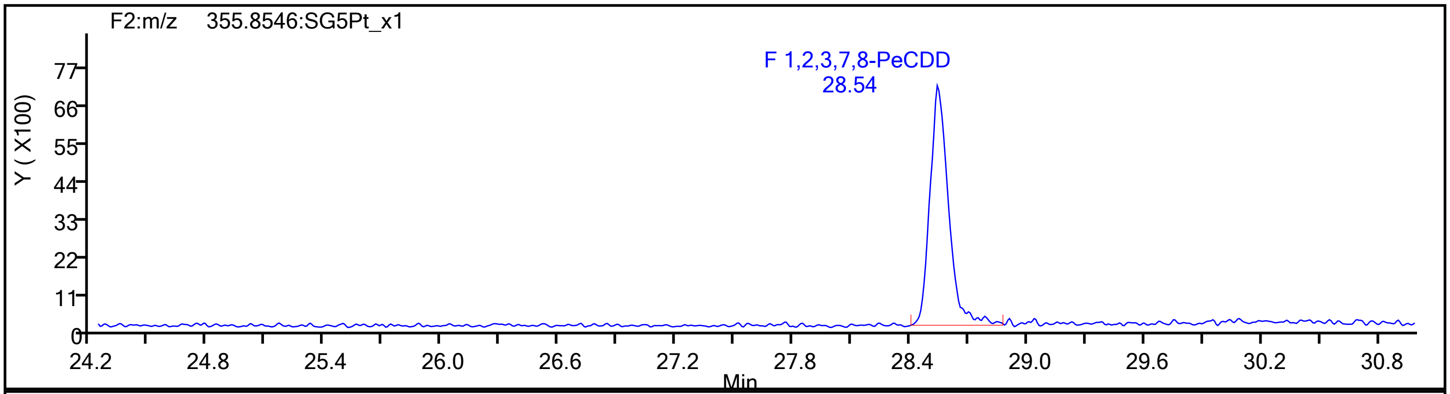

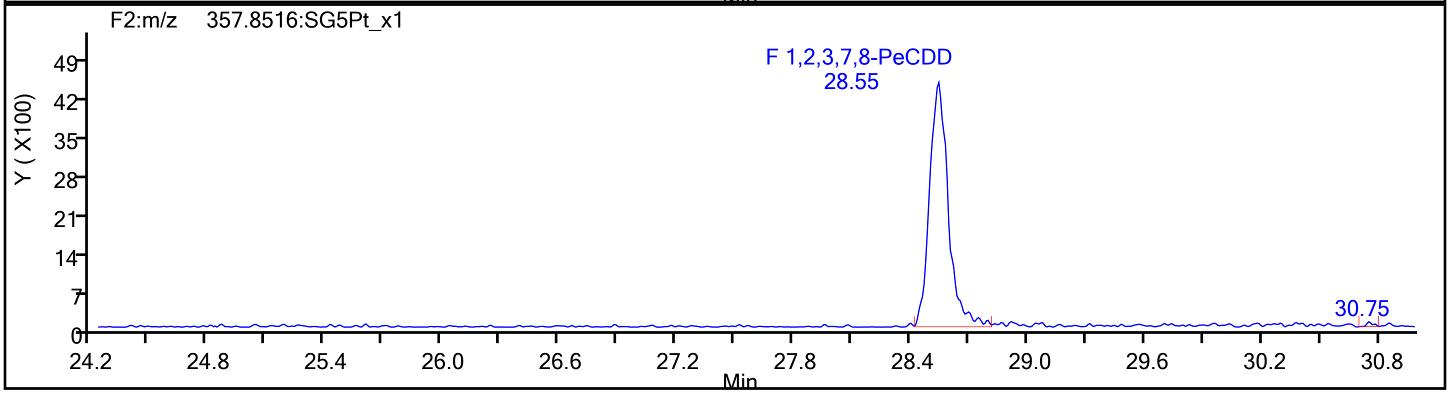

PeCDD Standards

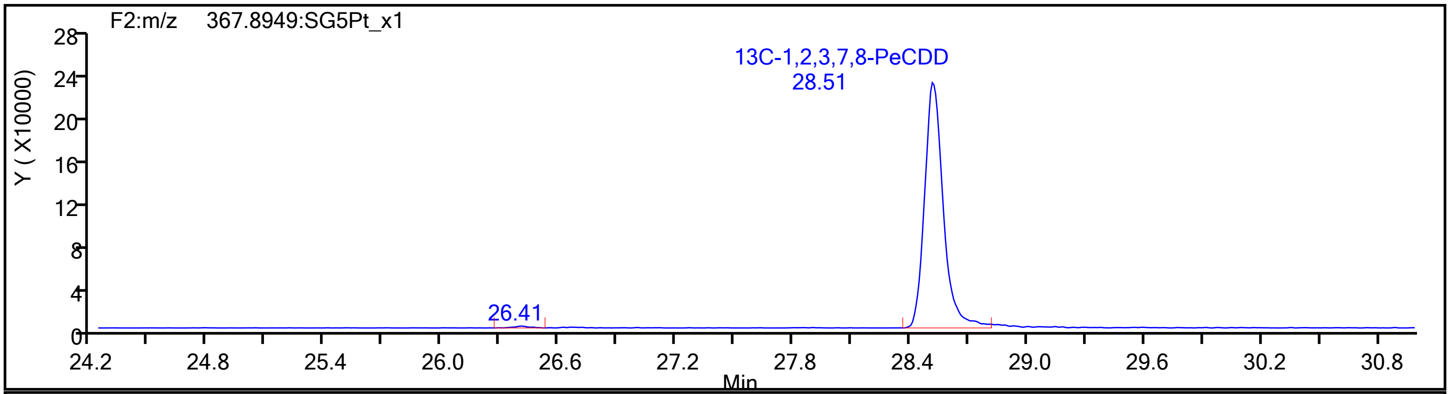

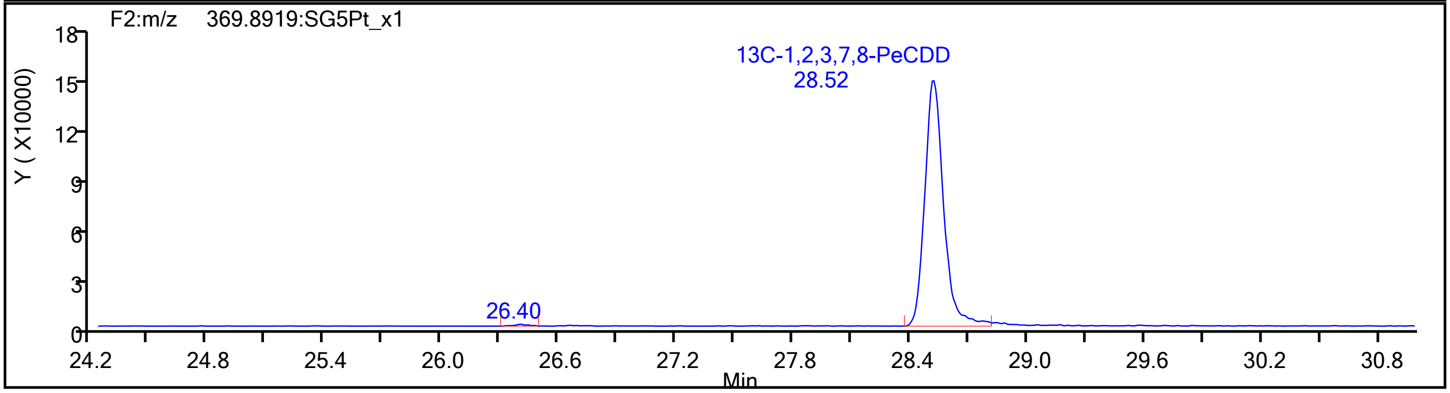

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Eurofins TestAmerica, Sacramento

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HxCDF

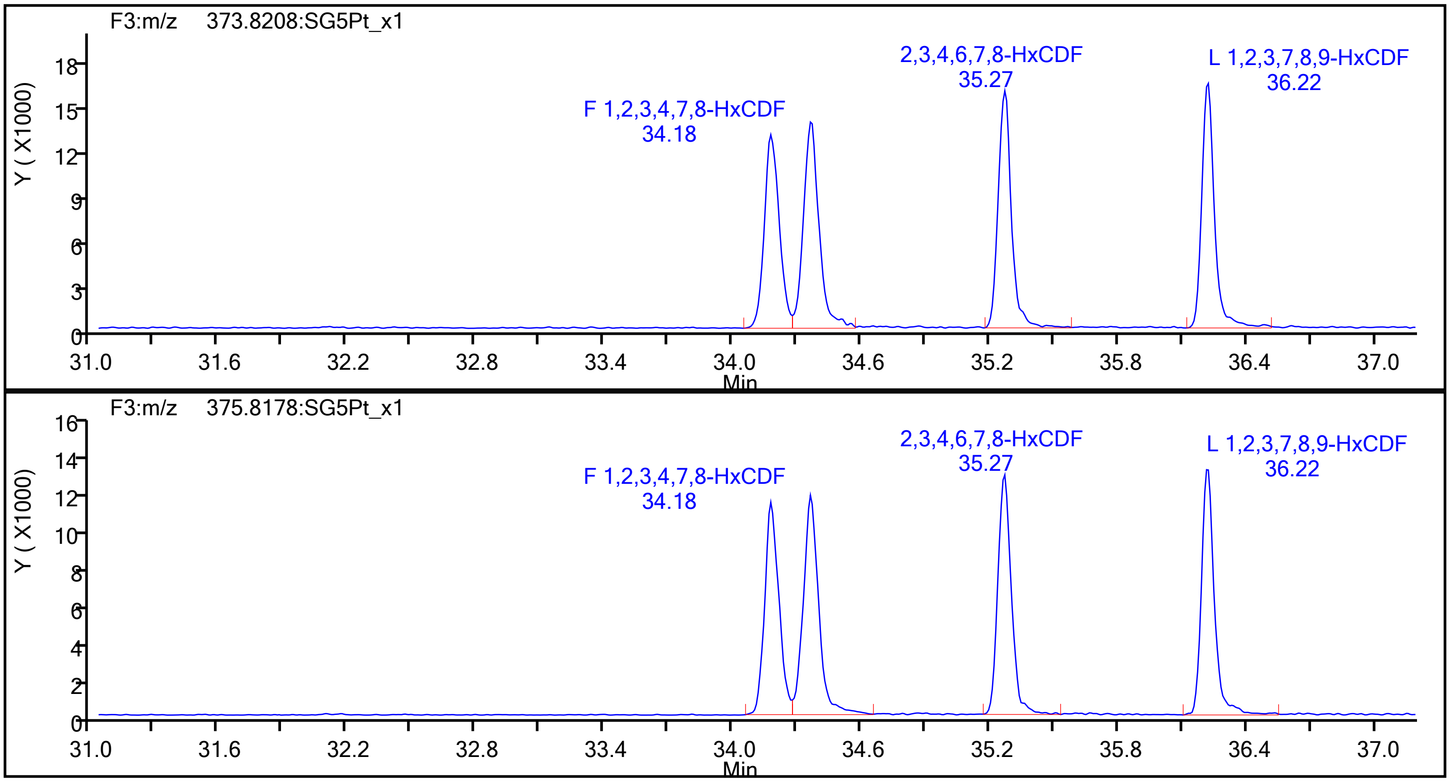

HxCDF Standards

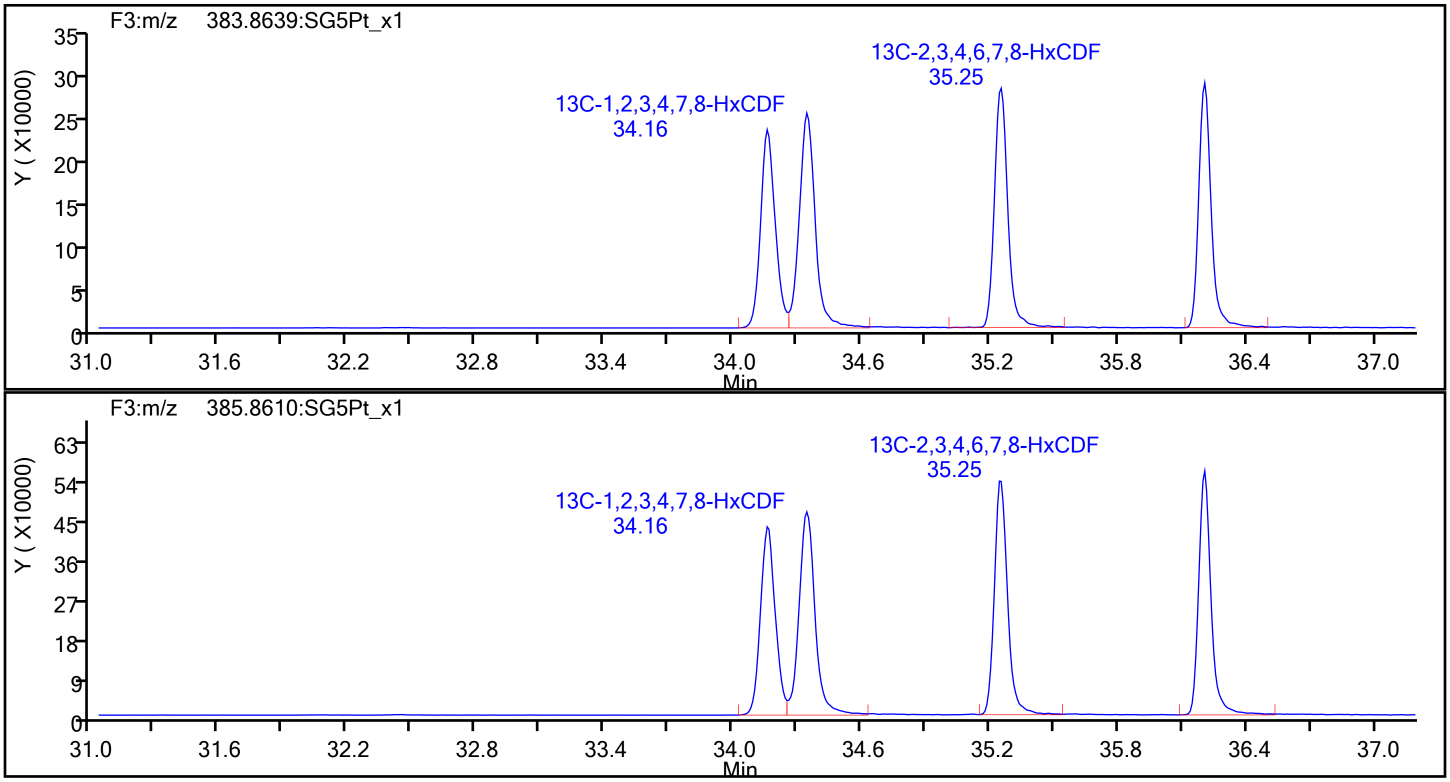

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Eurofins TestAmerica, Sacramento

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HxCDF

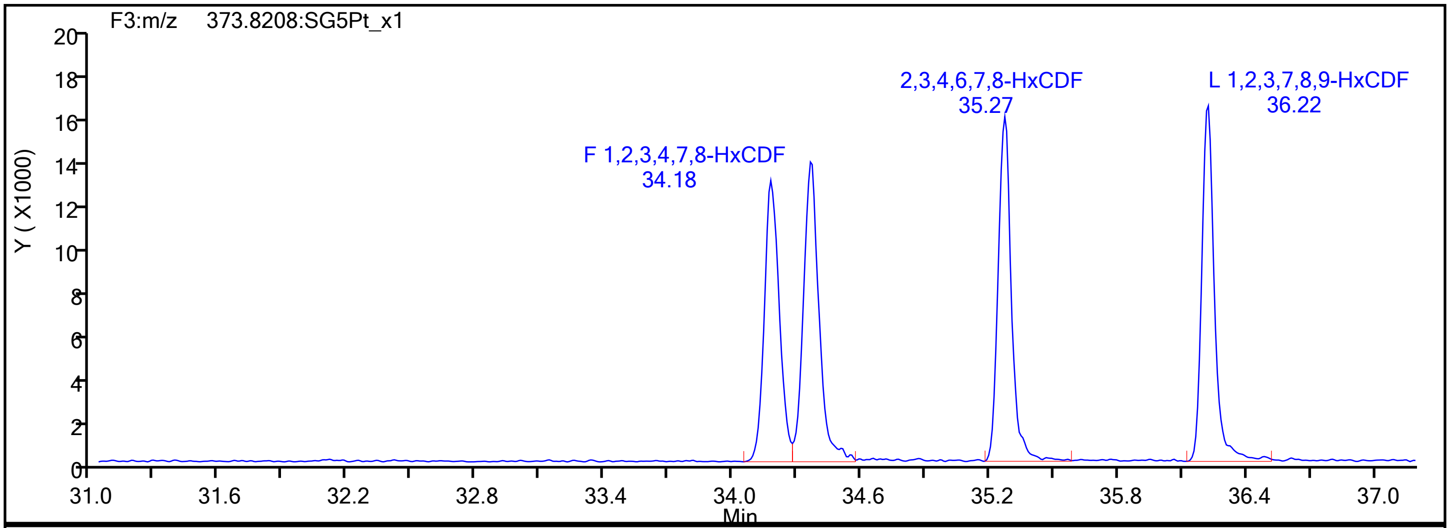

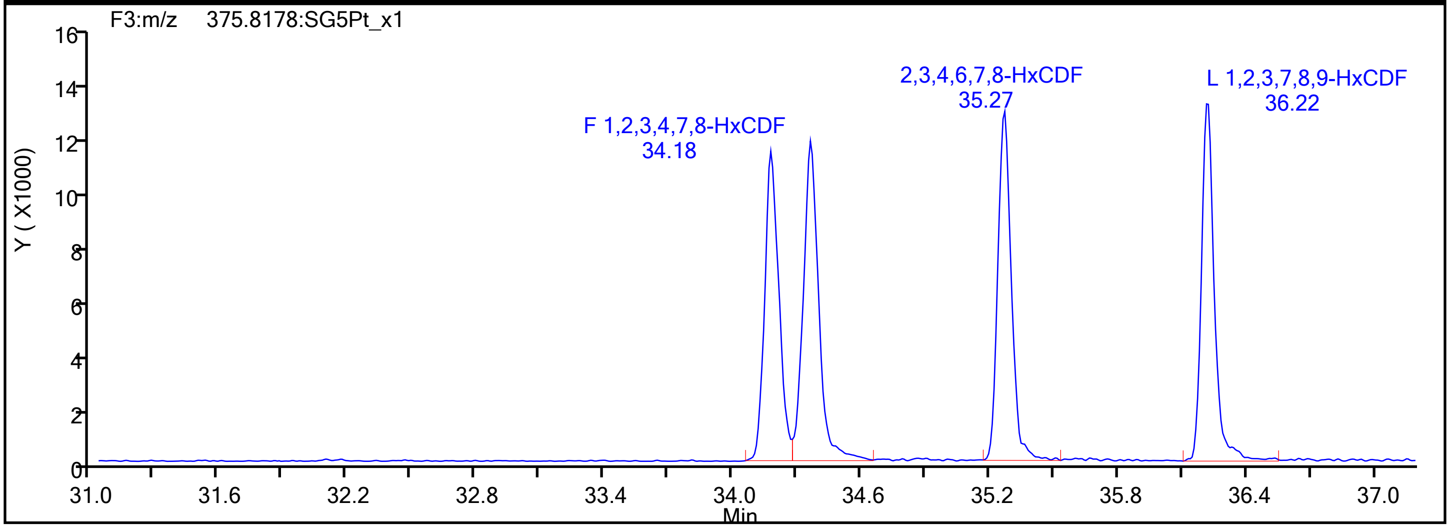

HxCDF Interference Mass

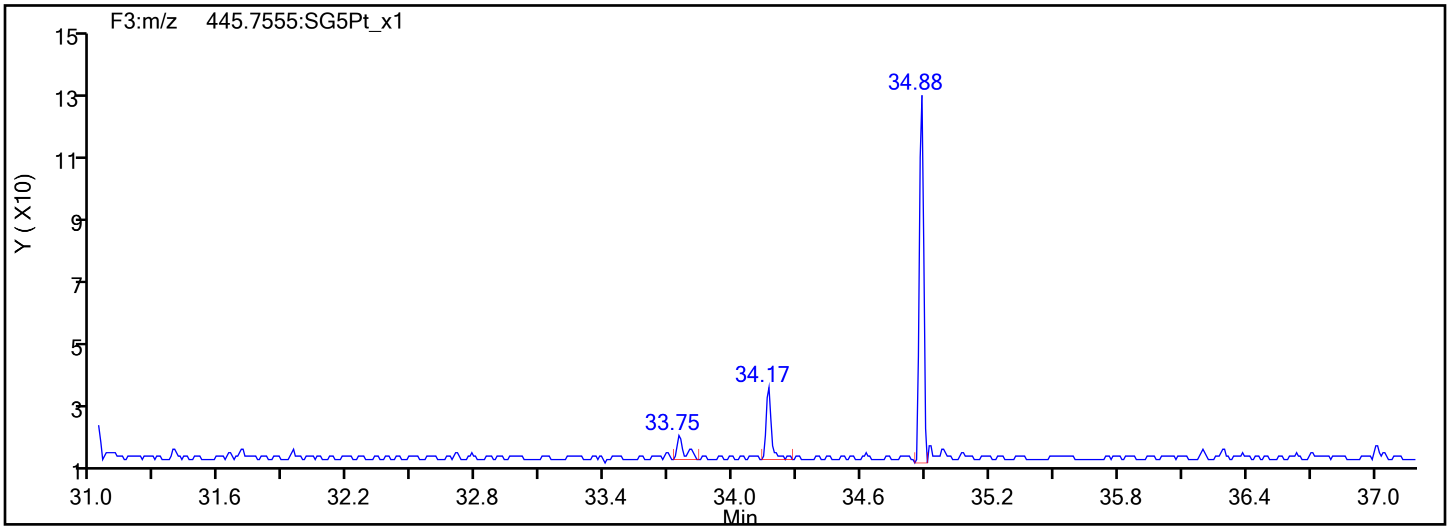

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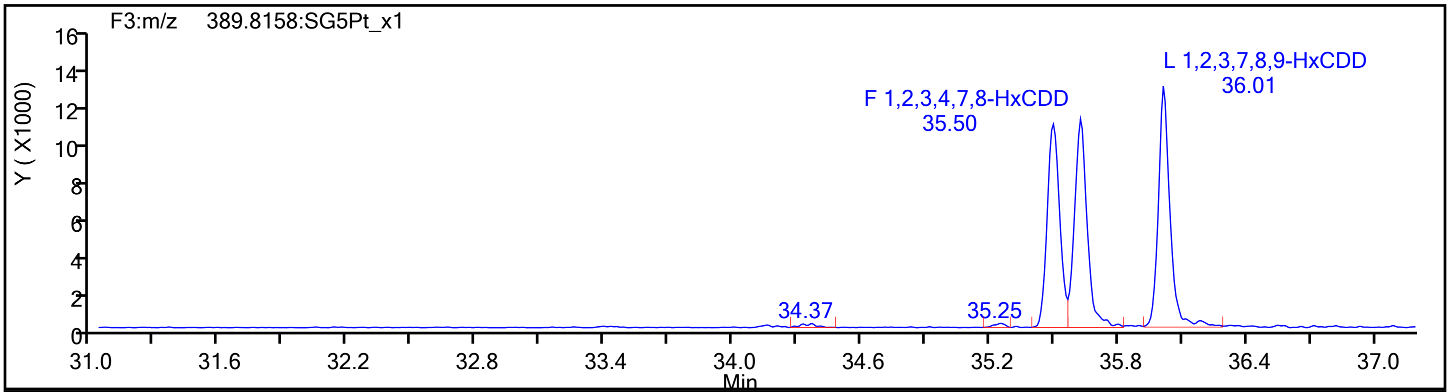

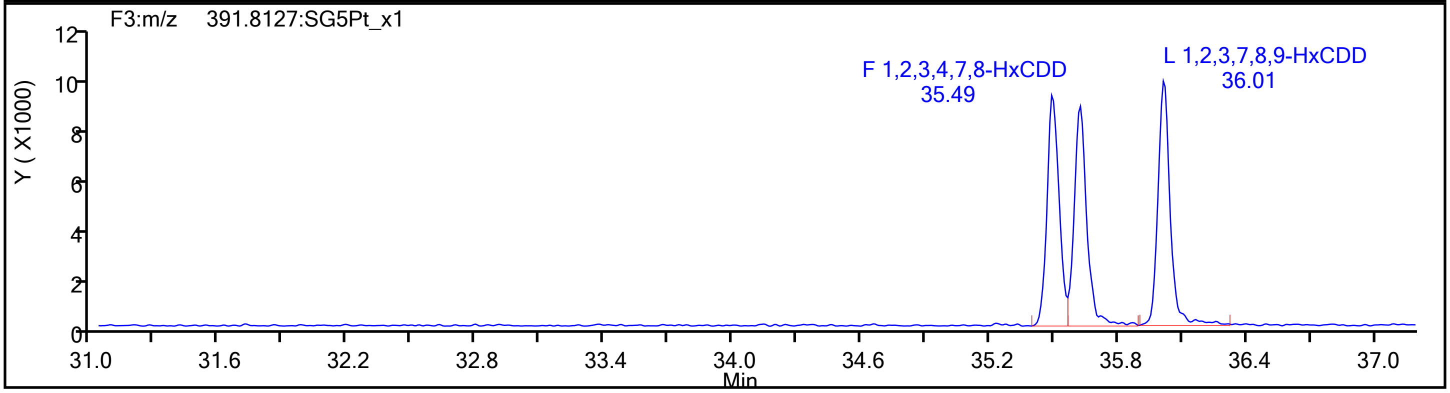

HxCDD Standards

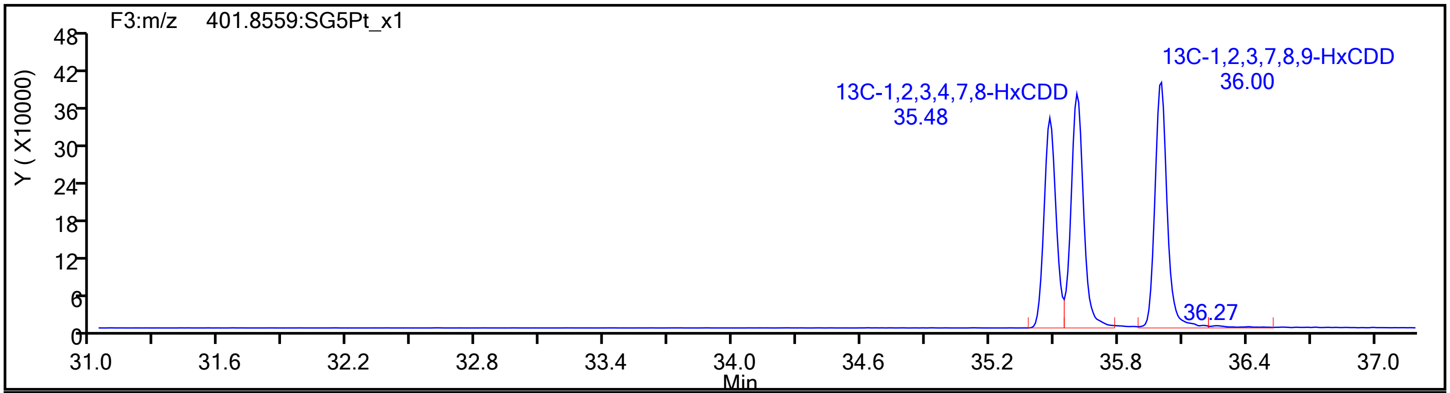

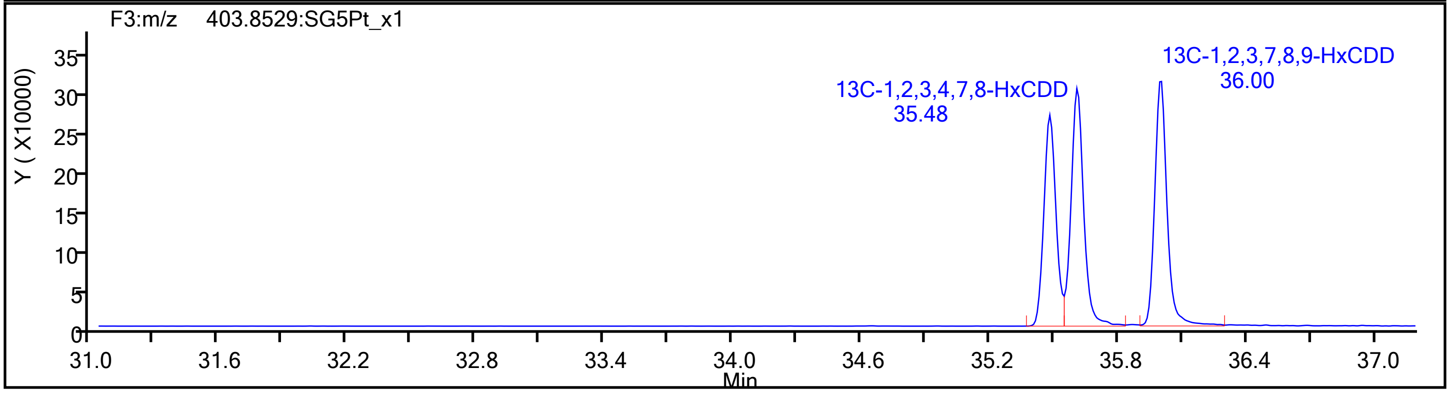

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Eurofins TestAmerica, Sacramento

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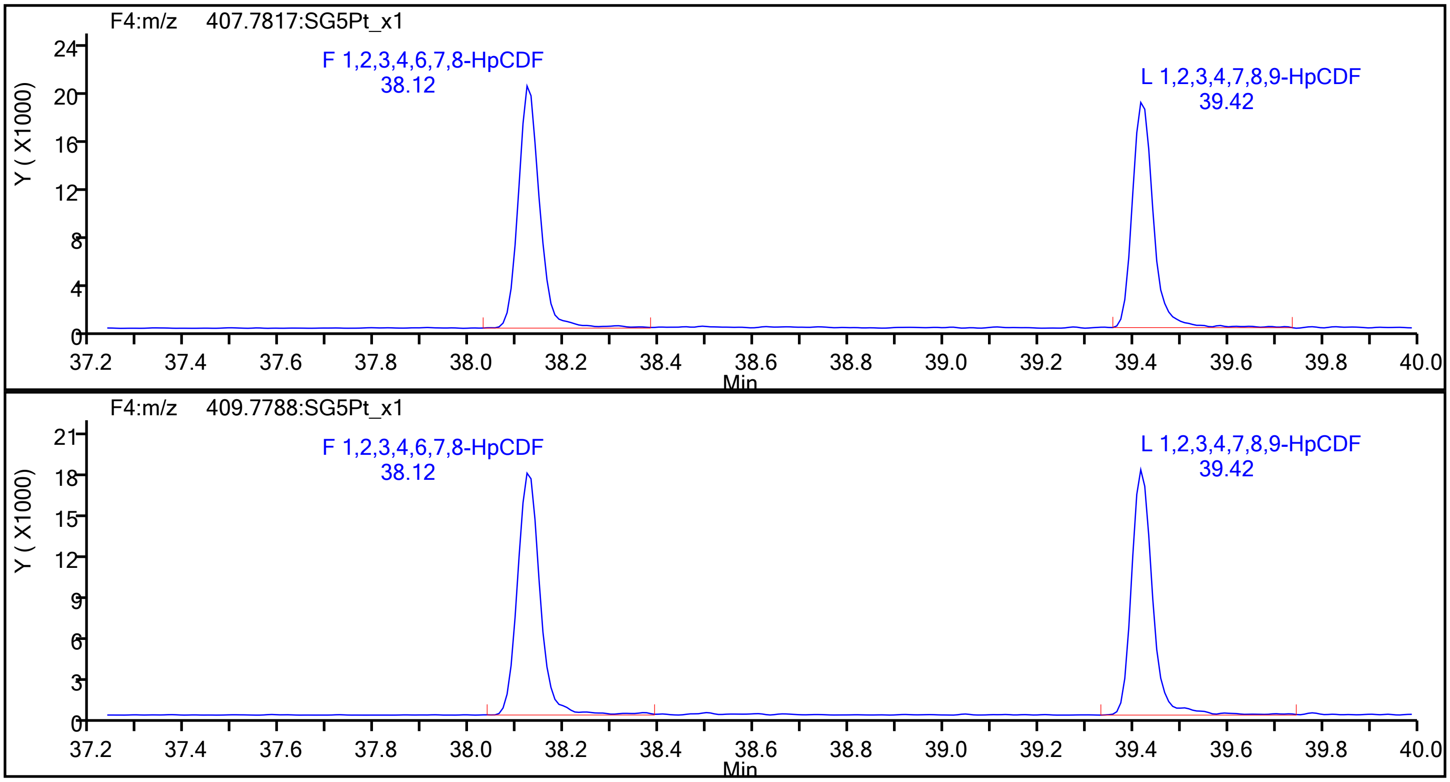

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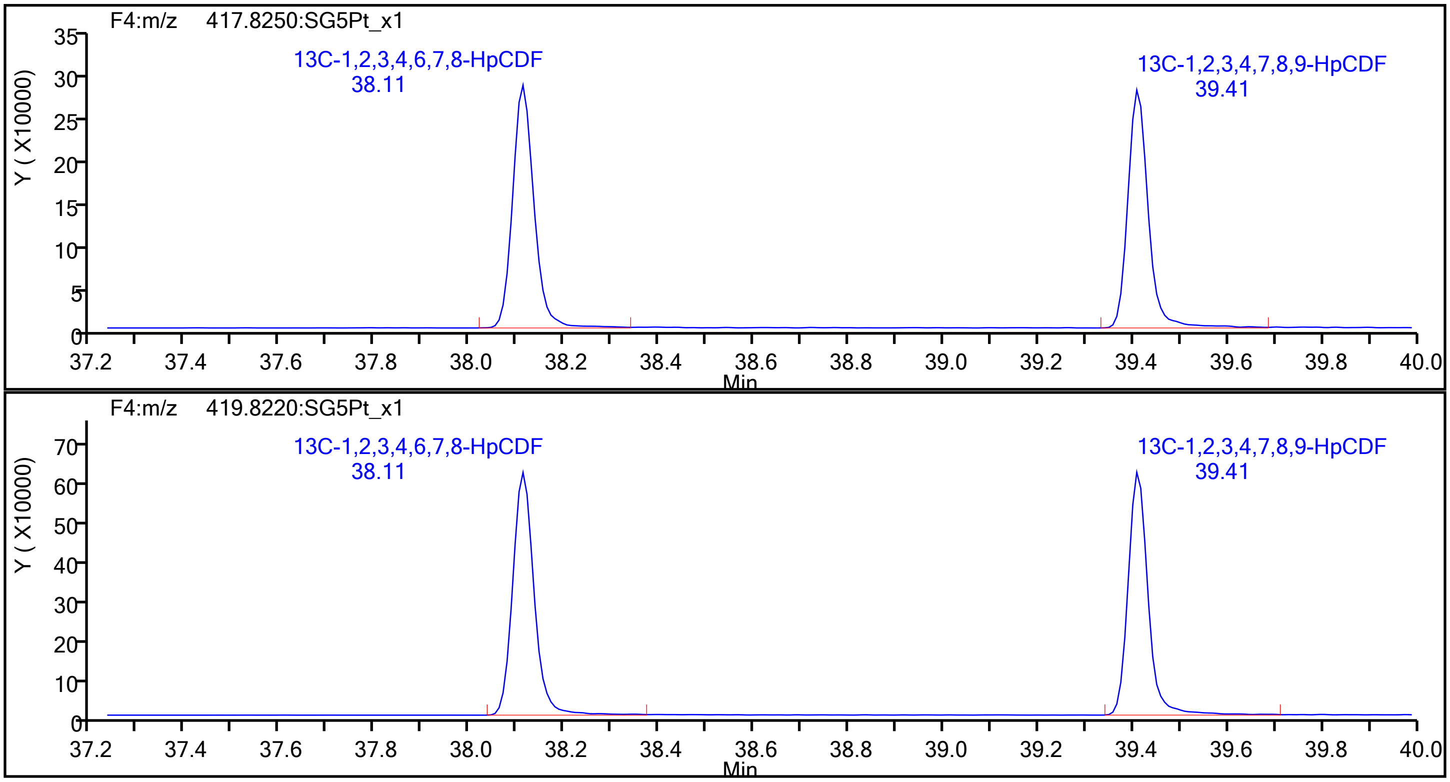

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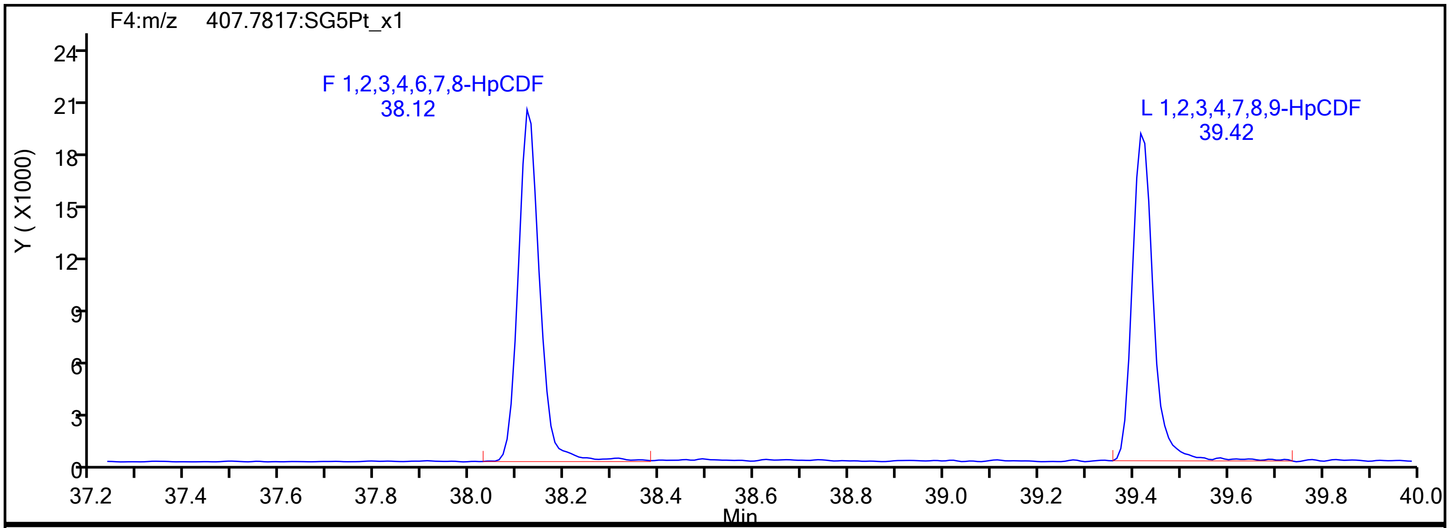

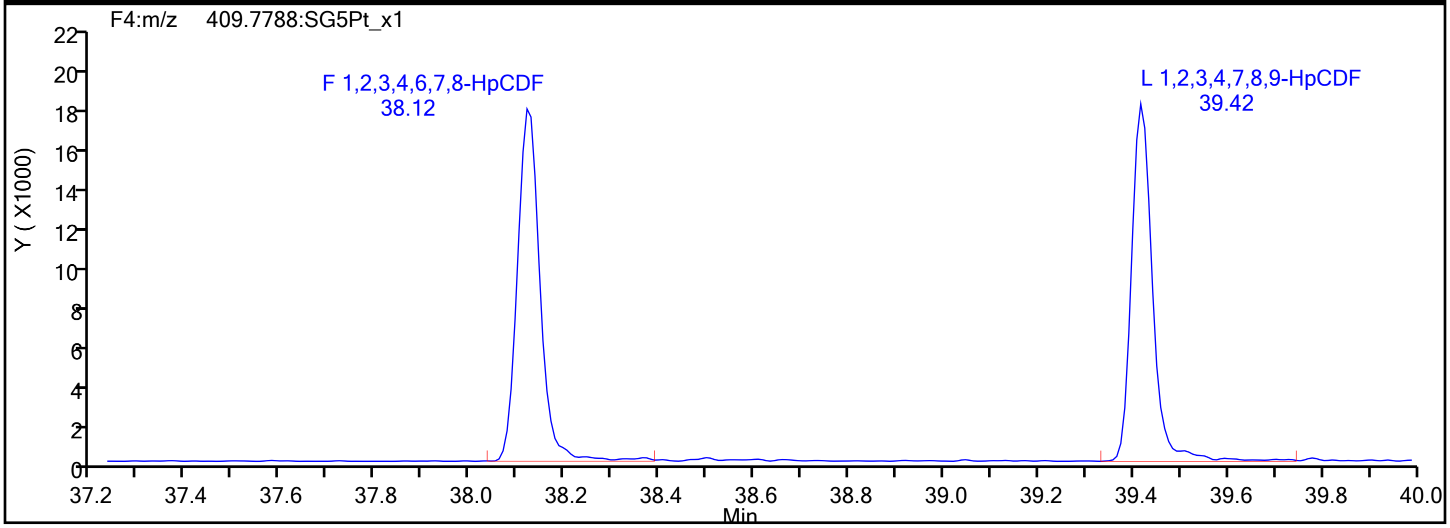

HpCDF Interference Mass

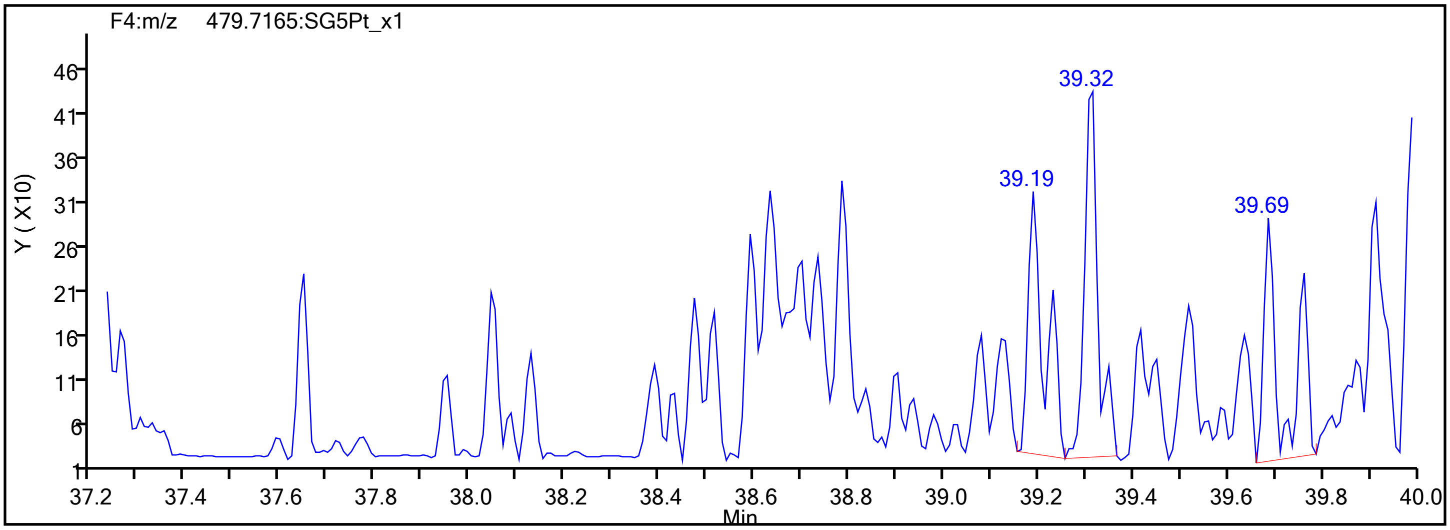

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HpCDD

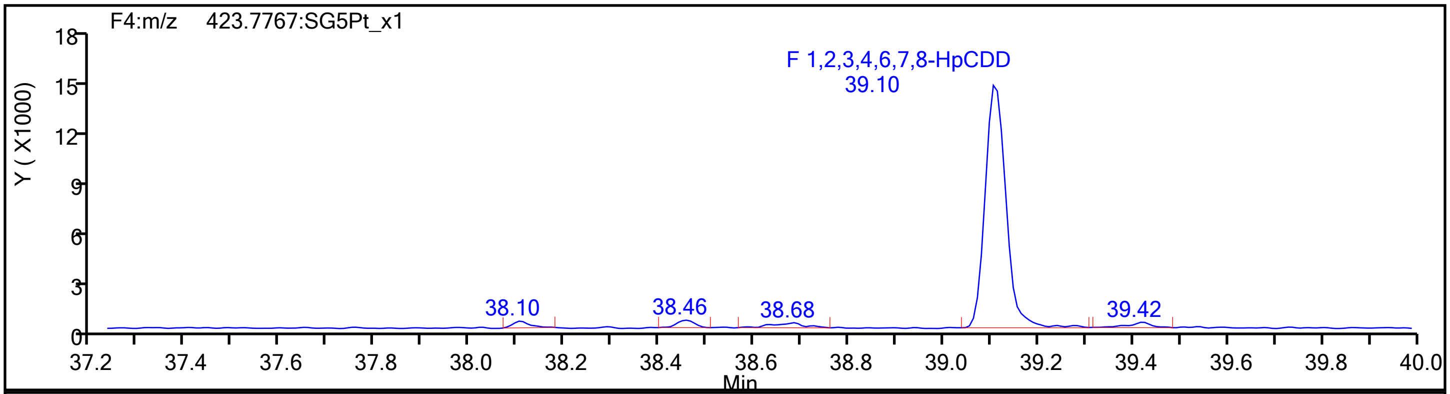

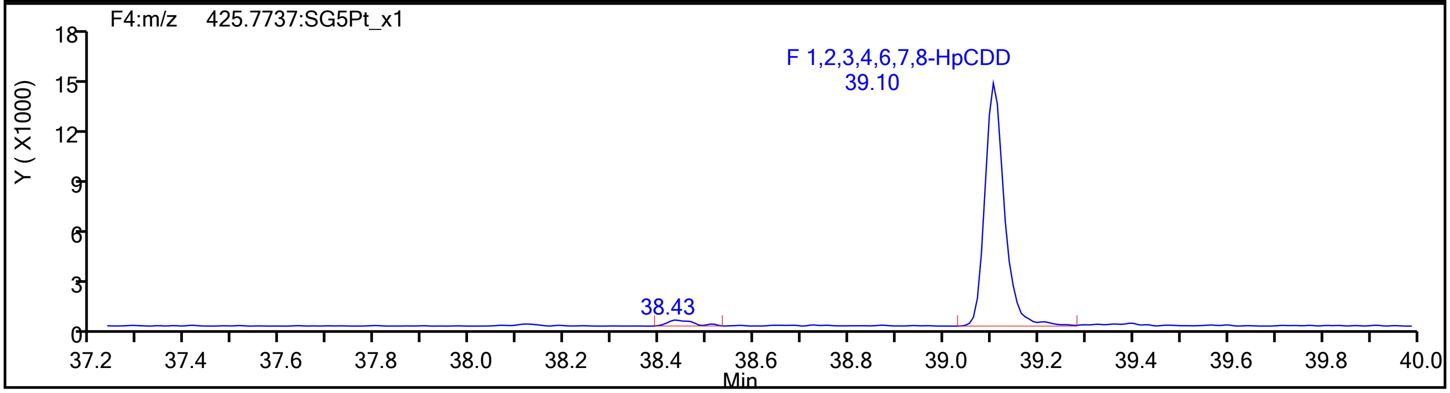

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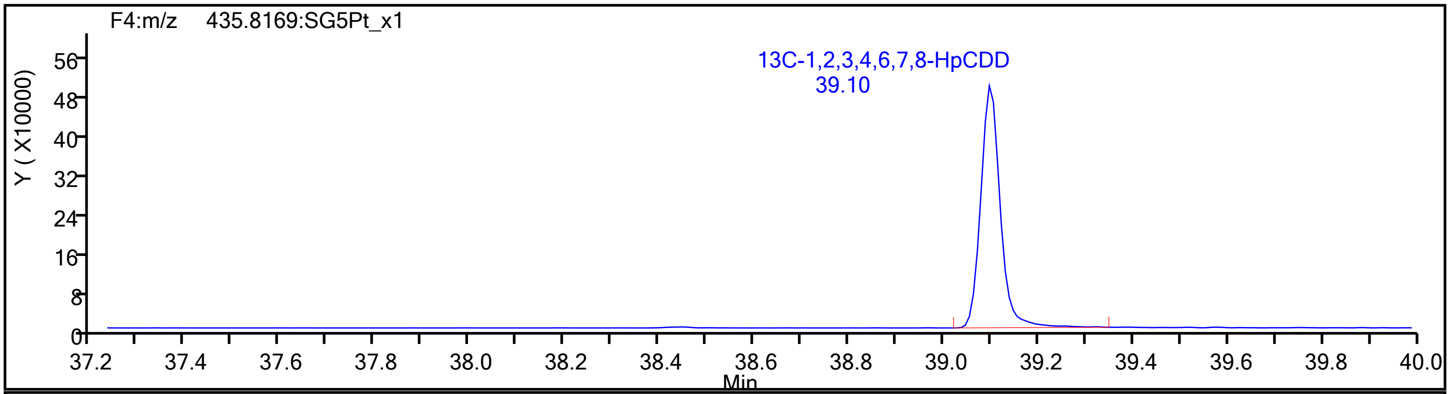

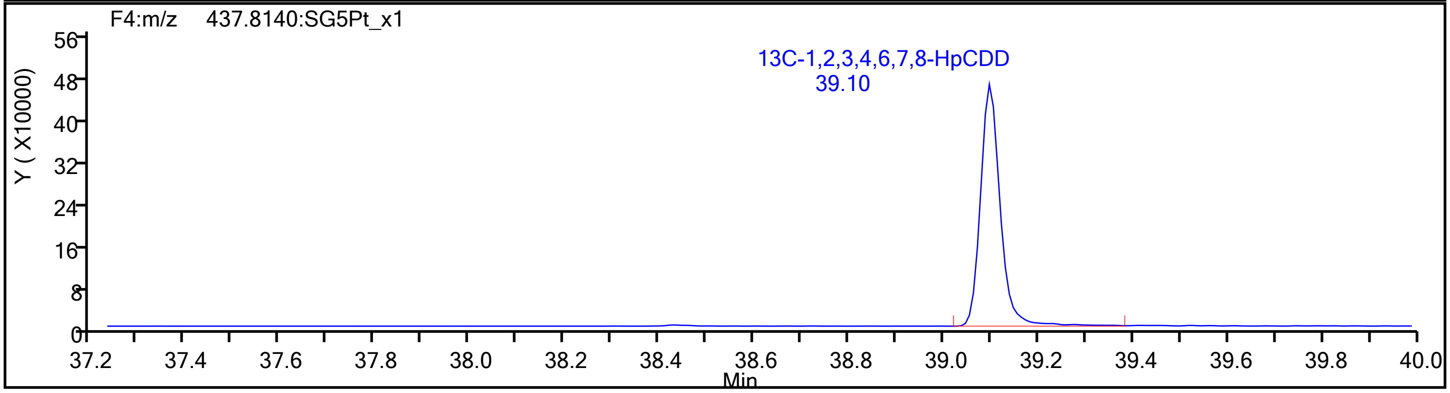

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Eurofins TestAmerica, Sacramento

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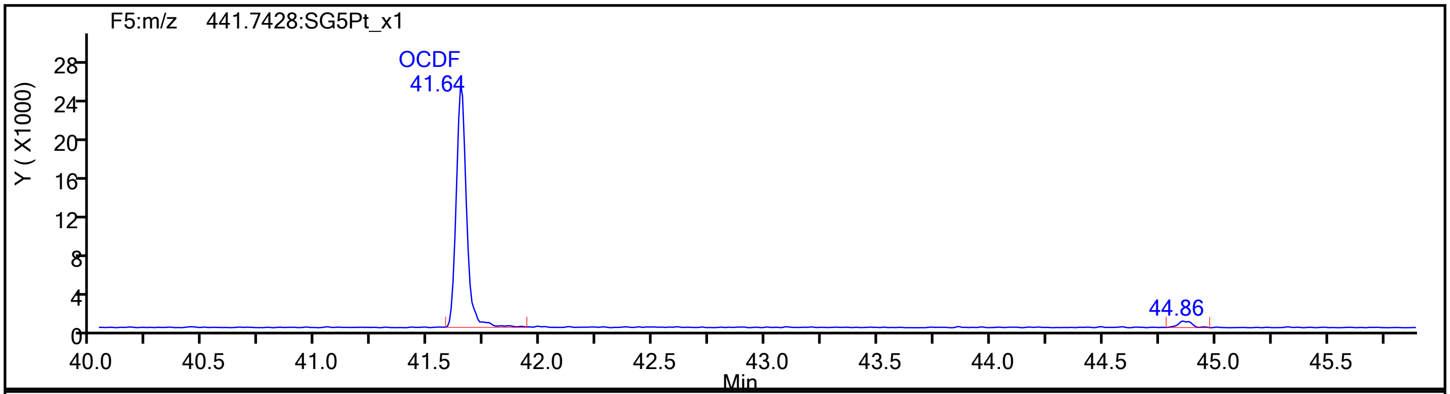

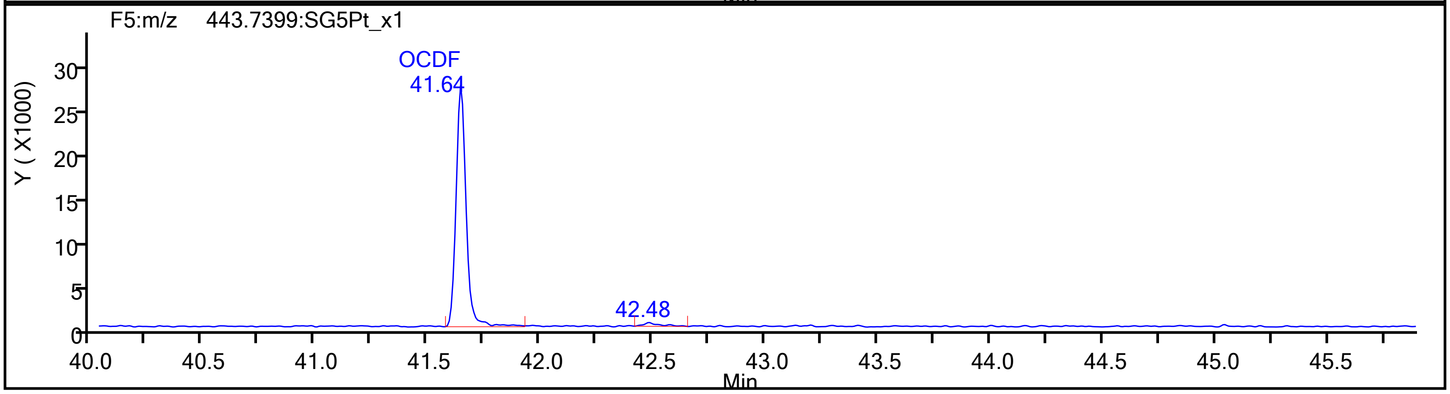

OCDF Standards

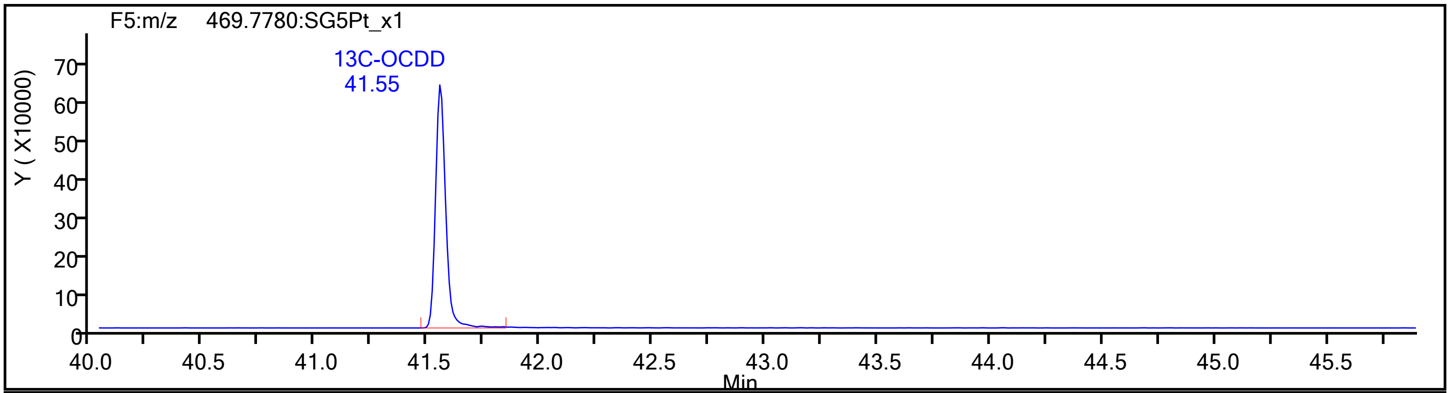

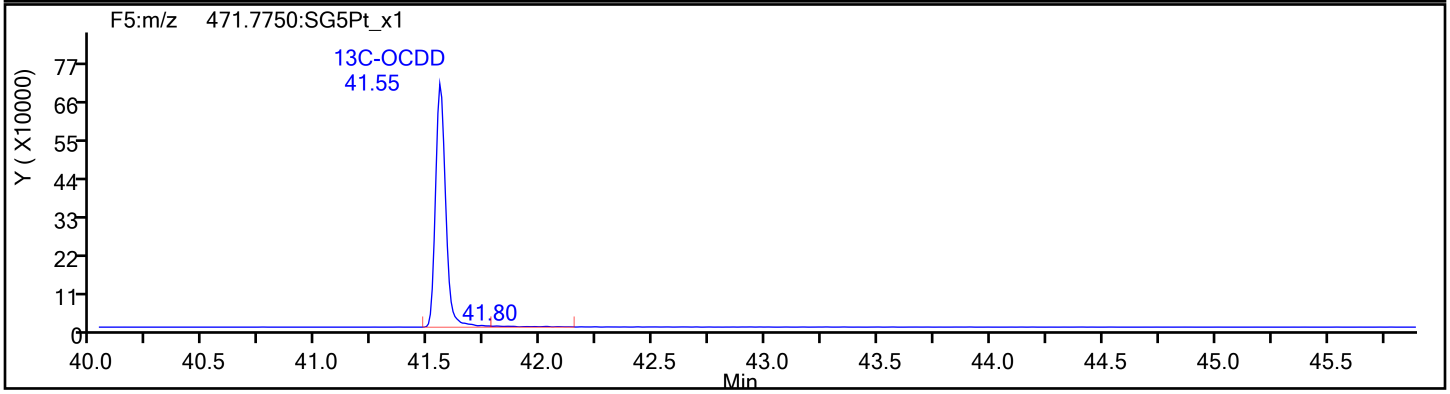

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 13:16:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

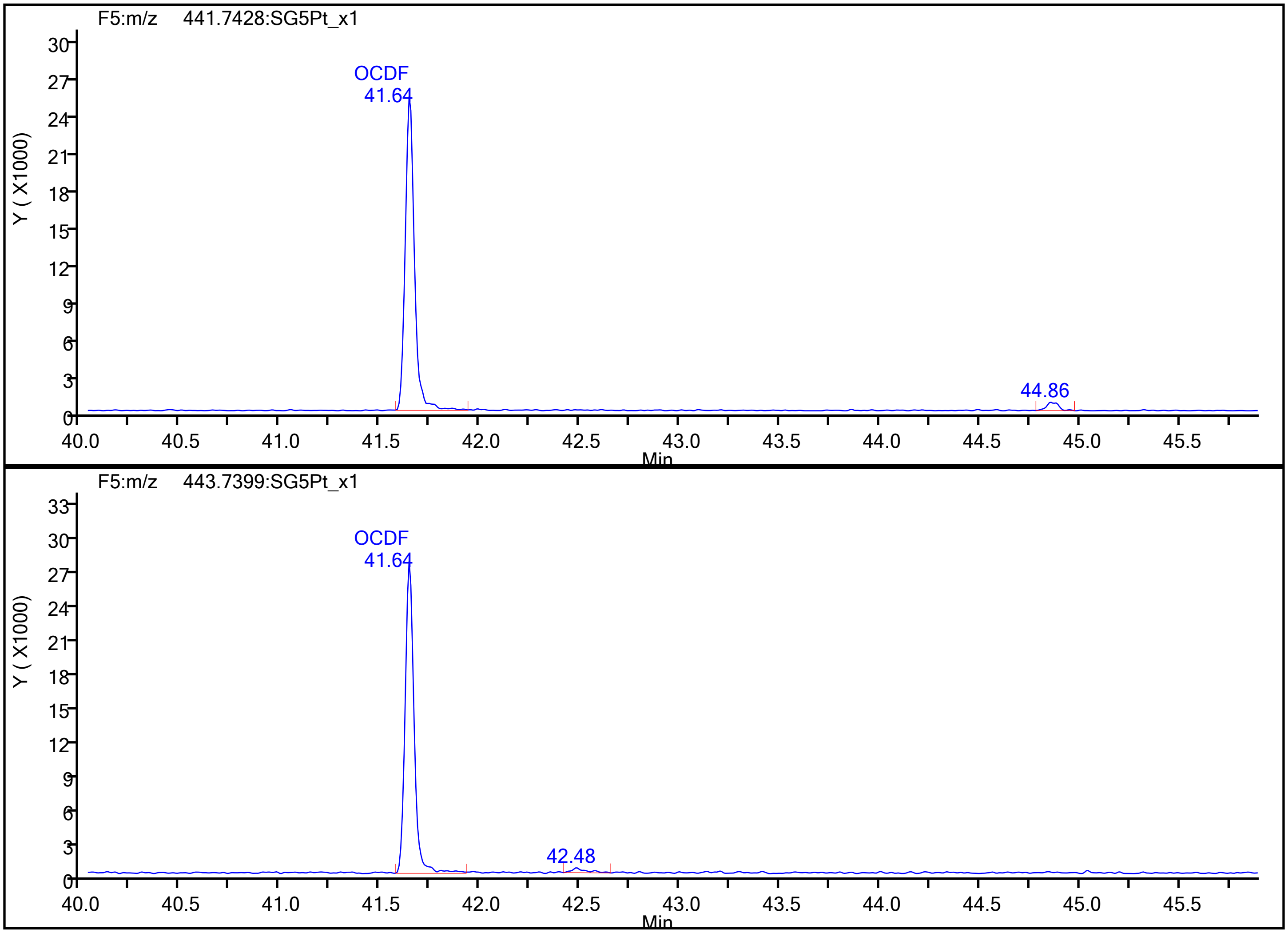

OCDF Interference Mass

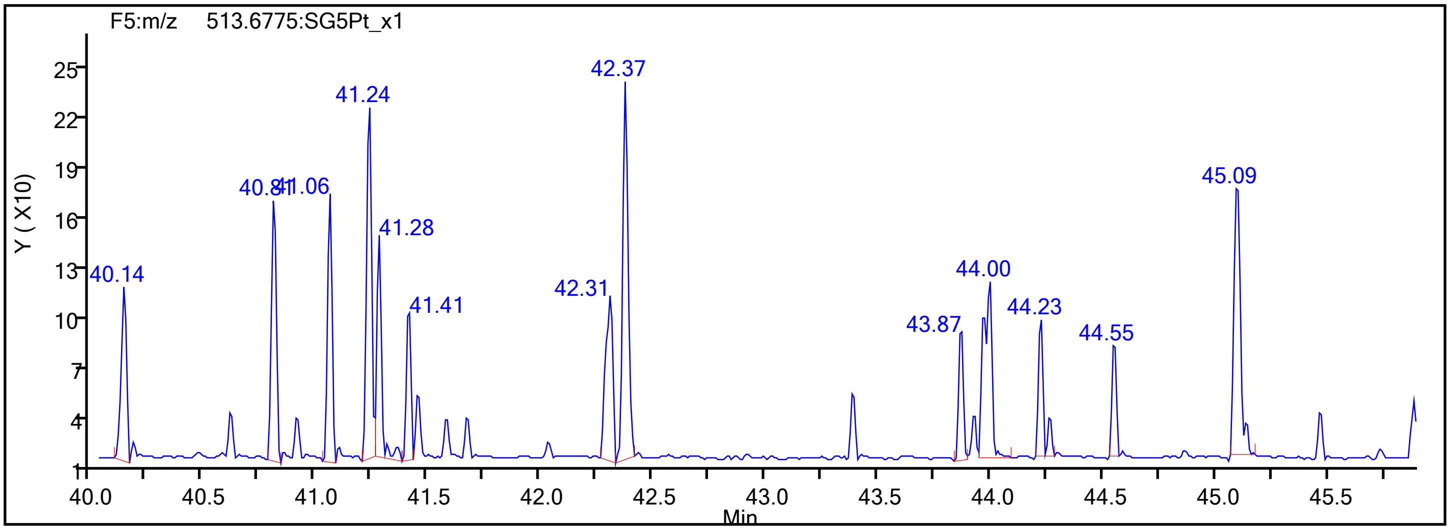

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

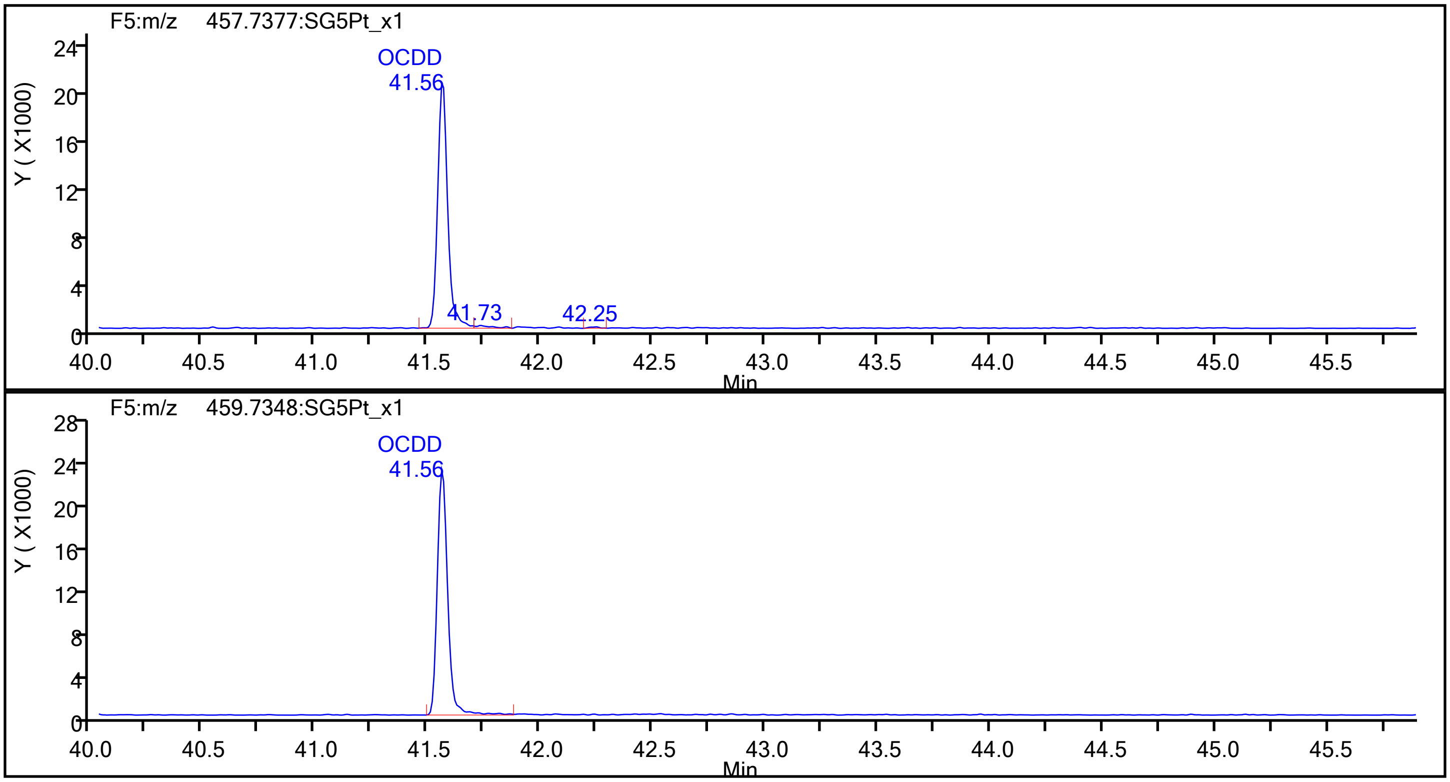

OCDD Standards

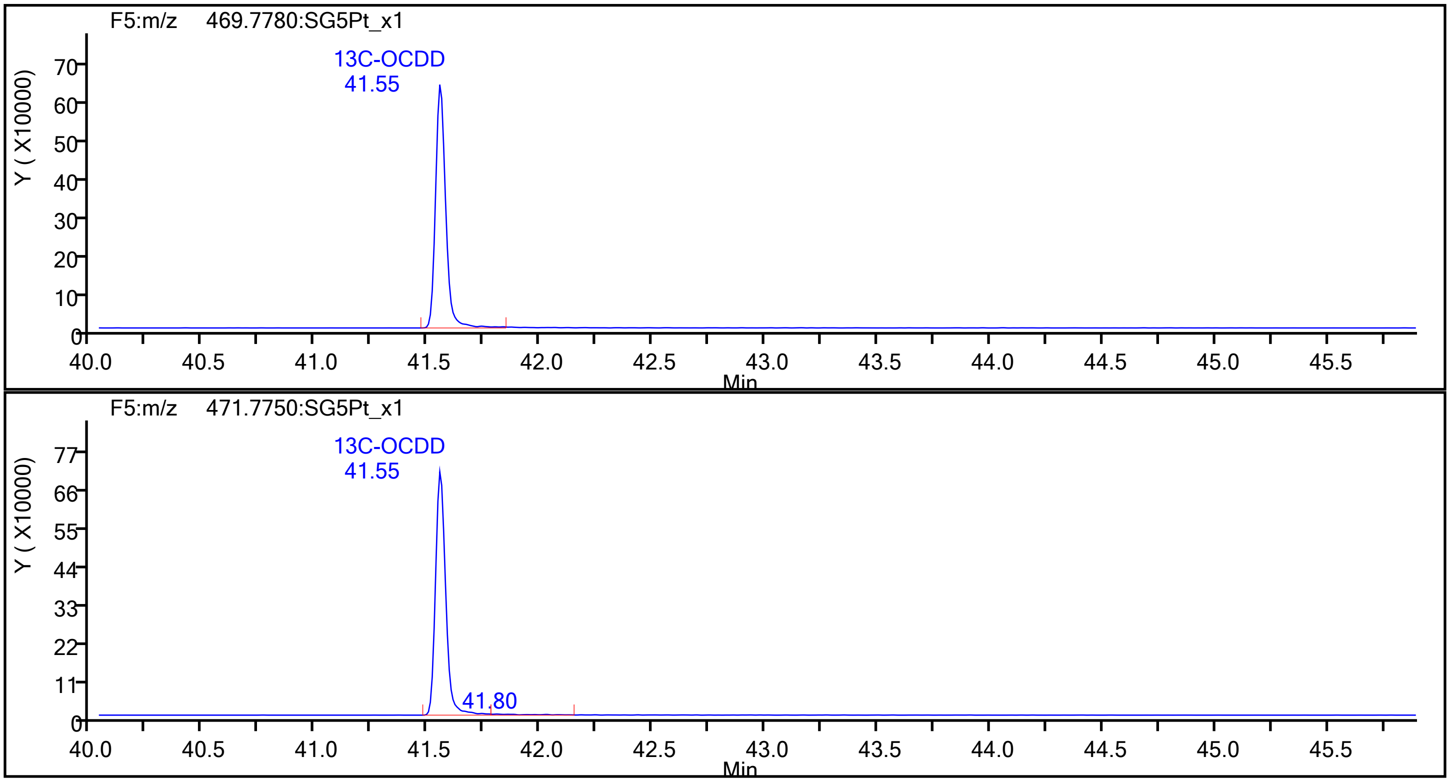

Report Date: 18-Sep-2020 10:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

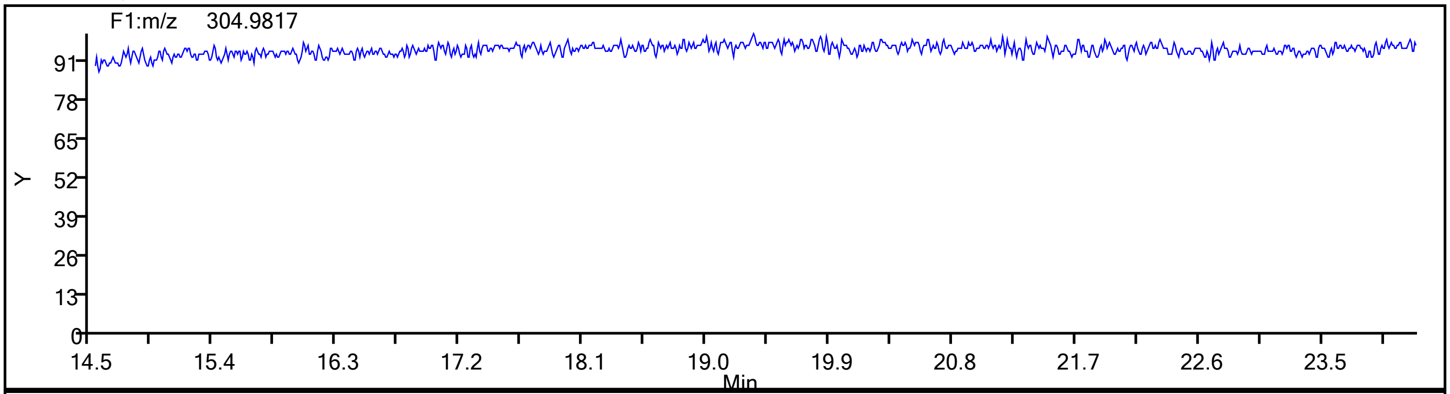

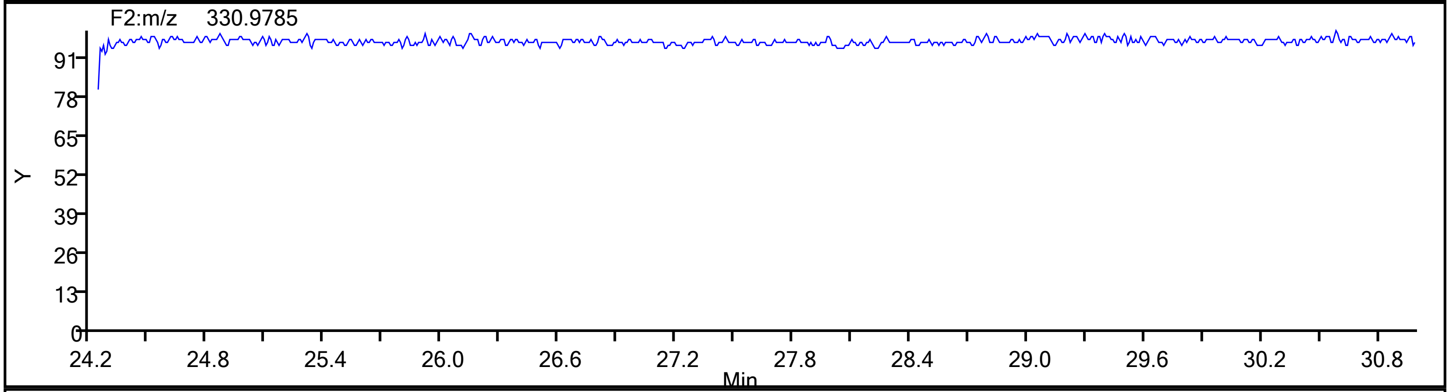

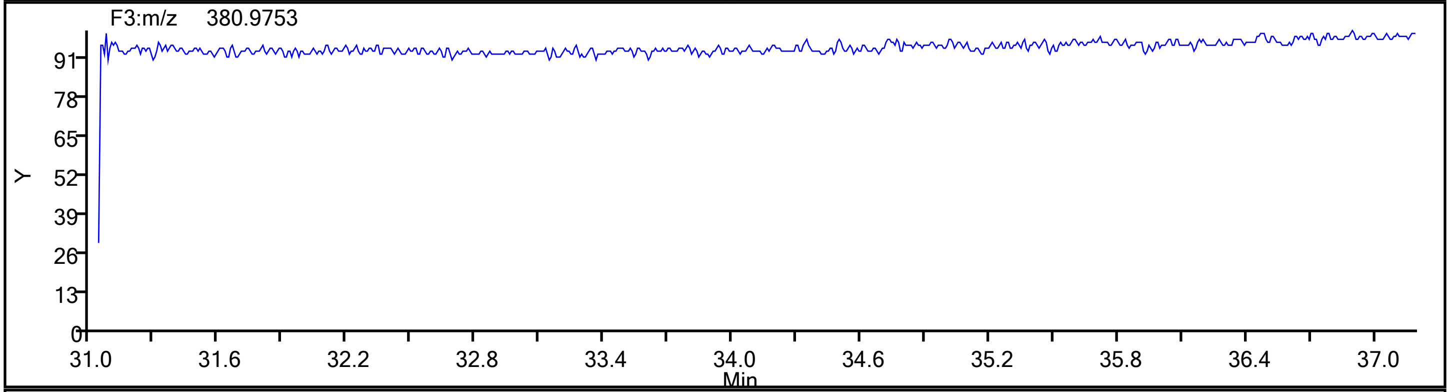

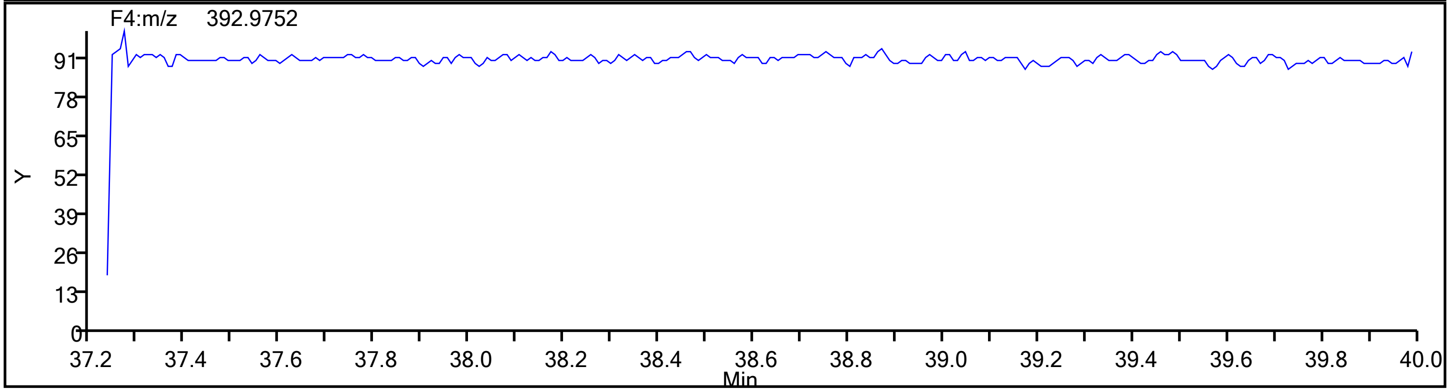

Report Date: 18-Sep-2020 10:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d

Injection Date: 17-Sep-2020 13:16:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

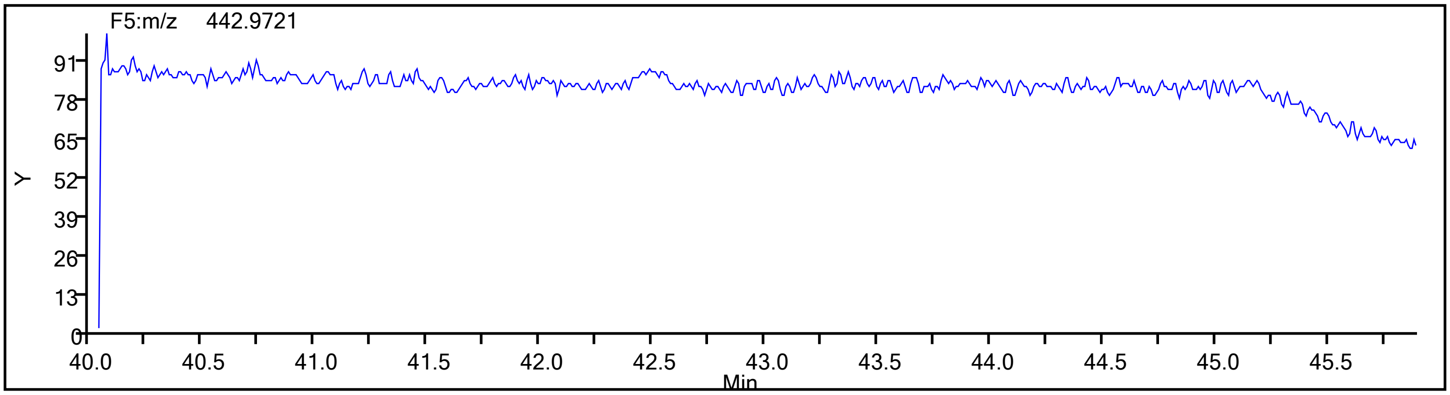

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC
Calib Level: 3
Inject. Date: 17-Sep-2020 14:04:00
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System
Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:00
Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm)
Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa
Date: 17-Sep-2020 18:37:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.154	2300073	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.234	3531795	0.77	1.5883	96.7	96.7	0.4713	0.4713	96.67	
2,3,7,8-TCDF	19.251	80239	0.82	1.0857	2.093	2.093	0.0429	0.0429	105	
S Total TCDF					2.093	2.093	0.0429	0.0429		
D 13C-2,3,7,8-TCDD	20.515	2492630	0.81	1.1194	96.8	96.8	0.4908	0.4908	96.81	
$ 37Cl4-2,3,7,8-TCDD	20.541	50653		1.1468	1.920	1.920	0.0200	0.0200	96.02	
2,3,7,8-TCDD	20.541	55075	0.79	1.0810	2.044	2.044	0.0870	0.0870	102	M
S Total TCDD					2.044	2.044	0.0870	0.0870		
D 13C-1,2,3,7,8-PeCDF	26.307	3224518	1.59	1.4782	94.8	94.8	0.4817	0.4817	94.84	
1,2,3,7,8-PeCDF	26.324	347966	1.59	1.0547	10.2	10.2	0.0659	0.0659	102	
D 13C-2,3,4,7,8-PeCDF	27.772	3151439	1.56	1.3912	98.5	98.5	0.5119	0.5119	98.49	
2,3,4,7,8-PeCDF	27.797	346052	1.55	1.1035	9.950	9.950	0.0717	0.0717	99.50	
S Total PeCDF					20.2	20.2	0.0688	0.0688		
D 13C-1,2,3,7,8-PeCDD	28.547	2078935	1.59	0.9415	96.0	96.0	0.2099	0.2099	96.01	
1,2,3,7,8-PeCDD	28.572	231718	1.60	1.0680	10.4	10.4	0.0724	0.0724	104	
S Total PeCDD					10.4	10.4	0.0724	0.0724		
D 13C-1,2,3,4,7,8-HxCDF	34.193	2739797	0.53	1.1378	103.2	103.2	0.5268	0.5268	103	
1,2,3,4,7,8-HxCDF	34.210	348028	1.28	1.2643	10.0	10.0	0.0715	0.0715	100	
D 13C-1,2,3,6,7,8-HxCDF	34.370	3116925	0.52	1.3173	101.4	101.4	0.4550	0.4550	101	
1,2,3,6,7,8-HxCDF	34.387	393550	1.27	1.2230	10.3	10.3	0.0674	0.0674	103	
D 13C-2,3,4,6,7,8-HxCDF	35.280	2933370	0.53	1.2457	100.9	100.9	0.4812	0.4812	101	
2,3,4,6,7,8-HxCDF	35.297	376227	1.27	1.2464	10.3	10.3	0.0608	0.0608	103	
D 13C-1,2,3,7,8,9-HxCDF	36.231	2754056	0.53	1.1840	99.7	99.7	0.5062	0.5062	99.70	
1,2,3,7,8,9-HxCDF	36.248	360924	1.27	1.2638	10.4	10.4	0.0597	0.0597	104	
S Total HxCDF					41.0	41.0	0.0649	0.0649		
* 13C-1,2,3,7,8,9-HxCDD	36.029	2333146	1.29	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.507	2021094	1.25	0.8477	102.2	102.2	0.2999	0.2999	102	
1,2,3,4,7,8-HxCDD	35.524	237281	1.25	1.1561	10.2	10.2	0.0480	0.0480	102	
D 13C-1,2,3,6,7,8-HxCDD	35.633	2377971	1.25	0.9979	102.1	102.1	0.2548	0.2548	102	
1,2,3,6,7,8-HxCDD	35.650	248155	1.22	1.0284	10.1	10.1	0.0491	0.0491	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.037	258219	1.26	1.1789	9.958	9.958	0.0449	0.0449	99.58	
S Total HxCDD					30.3	30.3	0.0474	0.0474		
D 13C-1,2,3,4,6,7,8-HpCDF	38.139	2277691	0.45	0.9884	98.8	98.8	0.5297	0.5297	98.77	
1,2,3,4,6,7,8-HpCDF	38.148	346408	1.06	1.5064	10.1	10.1	0.0543	0.0543	101	
D 13C-1,2,3,4,7,8,9-HpCDF	39.437	2146658	0.46	0.9203	100.0	100.0	0.5689	0.5689	99.97	
1,2,3,4,7,8,9-HpCDF	39.445	309989	1.06	1.4548	9.926	9.926	0.0550	0.0550	99.26	
S Total HpCDF					20.0	20.0	0.0547	0.0547		
D 13C-1,2,3,4,6,7,8-HpCDD	39.125	2209893	1.09	0.9556	99.1	99.1	0.2520	0.2520	99.11	
1,2,3,4,6,7,8-HpCDD	39.134	240224	1.07	1.0640	10.2	10.2	0.0400	0.0400	102	
S Total HpCDD					10.2	10.2	0.0400	0.0400		
D 13C-OCDD	41.576	3347397	0.90	0.7420	193.3	193.3	0.2650	0.2650	96.67	
OCDF	41.669	479466	0.93	1.4296	20.0	20.0	0.0591	0.0591	100	
OCDD	41.585	393634	0.88	1.1293	20.8	20.8	0.0343	0.0343	104	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:10 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 14:04:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:00 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:37:40

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.154	20.145	0		1016140	145263	559	1397	260		
333.9338	20.162	20.145	1		1283933	189663	177	442	1072	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.234	19.222	1	0.954	1539781	230147	640	1600	360		
317.9389	19.234	19.222	1	0.954	1992014	300273	363	907	827	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.251	19.246	0	1.001	36261	5333	24	60	222		
305.8987	19.268	19.246	1	1.002	43978	6304	75	187	84	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.515	20.507	1	1.018	1115449	151139	559	1397	270		
333.9338	20.515	20.507	1	1.018	1377181	199768	177	442	1129	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.541	20.531	1	1.019	50653	7227	31	77	233		
2,3,7,8-TCDD											M
319.8965	20.541	20.532	1	1.001	24339	3385	102	255	33		M
321.8936	20.549	20.532	1	1.002	30736	4520	30	75	151	0.79(0.65-0.89)	M
13C-1,2,3,7,8-PeCDF											
351.9000	26.307	26.301	0	1.305	1979191	345089	572	1430	603		
353.8970	26.307	26.301	0	1.305	1245327	216080	382	955	566	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.324	26.321	0	1.001	213701	34677	69	172	503		
341.8567	26.332	26.321	1	1.001	134265	22052	87	217	253	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.772	27.762	1	1.378	1922131	301599	572	1430	527		
353.8970	27.763	27.762	0	1.378	1229308	191415	382	955	501	1.56(1.32-1.78)	

Report Date: 18-Sep-2020 11:00:10 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.797	27.787	1	1.001	210345	31416	69	172	455		
341.8567	27.789	27.787	0	1.001	135707	19953	87	217	229	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.547	28.537	1	1.416	1277416	185800	174	435	1068		
369.8919	28.547	28.537	1	1.416	801519	117961	91	227	1296	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.572	28.562	1	1.001	142637	20472	76	190	269		
357.8516	28.572	28.562	1	1.001	89081	13187	18	45	733	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.193	34.181	1	0.949	949878	198530	499	1247	398		
385.8610	34.184	34.181	0	0.949	1789919	371508	930	2325	399	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.210	34.200	1	1.000	195580	40280	121	302	333		
375.8178	34.201	34.200	0	1.000	152448	31931	85	212	376	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.370	34.365	0	0.954	1068514	214589	499	1247	430		
385.8610	34.370	34.365	0	0.954	2048411	410142	930	2325	441	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.387	34.384	0	1.000	219850	43077	121	302	356		
375.8178	34.387	34.384	0	1.000	173700	34745	85	212	409	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.280	35.272	0	0.979	1012916	235761	499	1247	472		
385.8610	35.280	35.272	0	0.979	1920454	443320	930	2325	477	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.297	35.288	0	1.000	210668	48765	121	302	403		
375.8178	35.297	35.288	0	1.000	165559	38892	85	212	458	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.231	36.225	0	1.006	950889	237975	499	1247	477		
385.8610	36.231	36.225	0	1.006	1803167	444154	930	2325	478	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.248	36.240	0	1.000	201587	48890	121	302	404		
375.8178	36.248	36.240	0	1.000	159337	38933	85	212	458	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.029	36.021	0		1313826	333150	337	842	989		
403.8529	36.029	36.021	0		1019320	262796	269	672	977	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.507	35.502	0	0.986	1123546	283688	337	842	842		
403.8529	35.507	35.502	0	0.986	897548	224054	269	672	833	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.524	35.519	0	1.000	131810	33743	54	135	625		
391.8127	35.524	35.519	0	1.000	105471	26874	59	147	455	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.633	35.630	0	0.989	1322755	309717	337	842	919		
403.8529	35.633	35.630	0	0.989	1055216	248448	269	672	924	1.25(1.05-1.43)	

Report Date: 18-Sep-2020 11:00:10 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.650	35.646	0	1.000	136517	31904	54	135	591		
391.8127	35.650	35.646	0	1.000	111638	26358	59	147	447	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.037	36.033	0	1.015	144115	35857	54	135	664		
391.8127	36.037	36.033	0	1.015	114104	28698	59	147	486	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.139	38.132	0	1.059	709234	221375	410	1025	540		
419.8220	38.139	38.132	0	1.059	1568457	493249	838	2095	589	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.148	38.141	0	1.000	177962	55358	126	315	439		
409.7788	38.148	38.141	0	1.000	168446	53085	108	270	492	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.437	39.428	1	1.095	675229	228858	410	1025	558		
419.8220	39.437	39.428	1	1.095	1471429	502724	838	2095	600	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.445	39.438	0	1.000	159273	54053	126	315	429		
409.7788	39.445	39.438	0	1.000	150716	50777	108	270	470	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.125	39.118	0	1.086	1151428	392208	291	727	1348		
437.8140	39.125	39.118	0	1.086	1058465	359309	283	707	1270	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.134	39.126	0	1.000	123974	40994	74	185	554		
425.7737	39.134	39.126	0	1.000	116250	39483	54	135	731	1.07(0.88-1.20)	
13C-OCDD											
469.7780	41.576	41.572	0	1.154	1587471	507610	268	670	1894		
471.7750	41.576	41.572	0	1.154	1759926	551113	201	502	2742	0.90(0.76-1.02)	
OCDF											
441.7428	41.669	41.663	0	1.002	231022	73266	64	160	1145		
443.7399	41.669	41.663	0	1.002	248444	77037	115	287	670	0.93(0.76-1.02)	
OCDD											
457.7377	41.585	41.580	0	1.000	184794	59038	40	100	1476		
459.7348	41.585	41.580	0	1.000	208840	66176	42	105	1576	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:11

Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00 Instrument ID: DFS 1

Lims ID: IC

Client ID:

Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm) Detector F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 20.54
Area: 20980
Amount: 1.953067
Amount Units: pg/ul

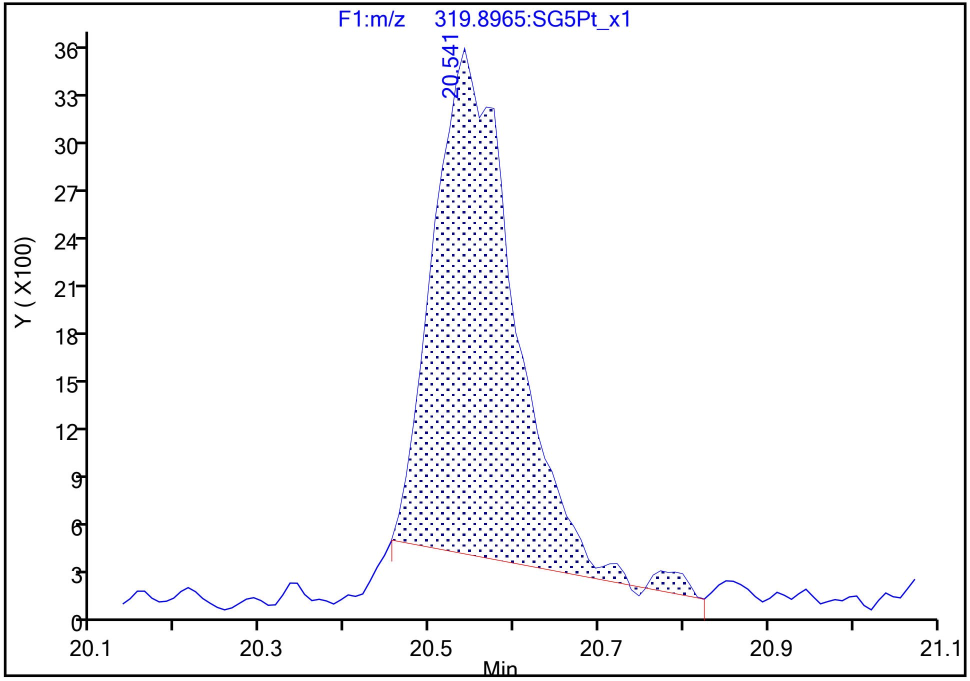

Manual Integration Results

RT: 20.54
Area: 24339
Amount: 2.044004
Amount Units: pg/ul

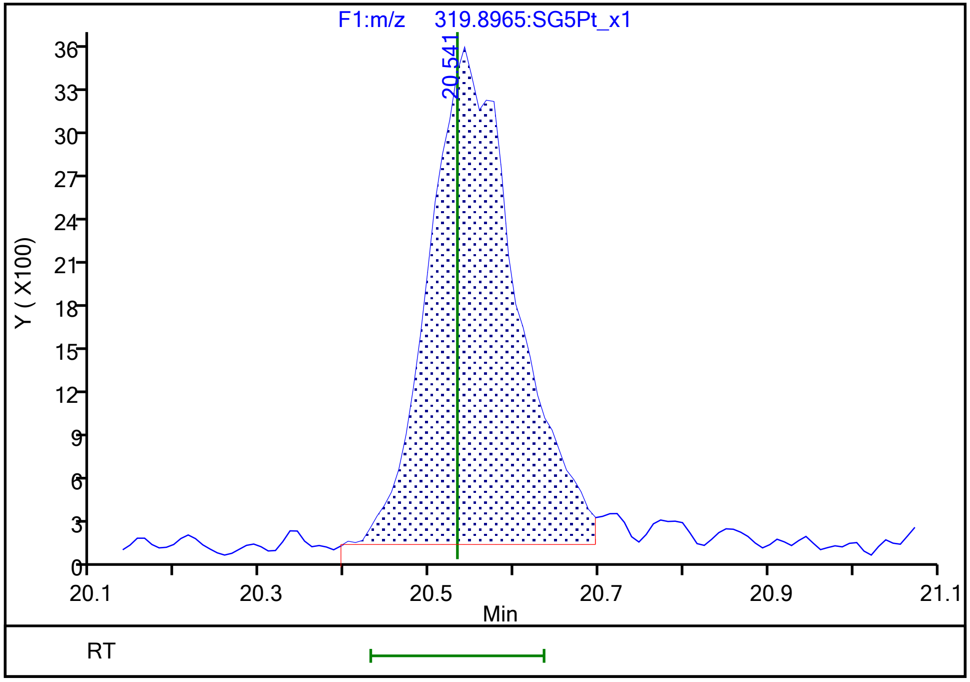

Reviewer: shardaa, 17-Sep-2020 18:36:57

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Injection Date: 17-Sep-2020 14:04:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 20.55
Area: 31050
Amount: 1.953067
Amount Units: pg/ul

Processing Integration Results

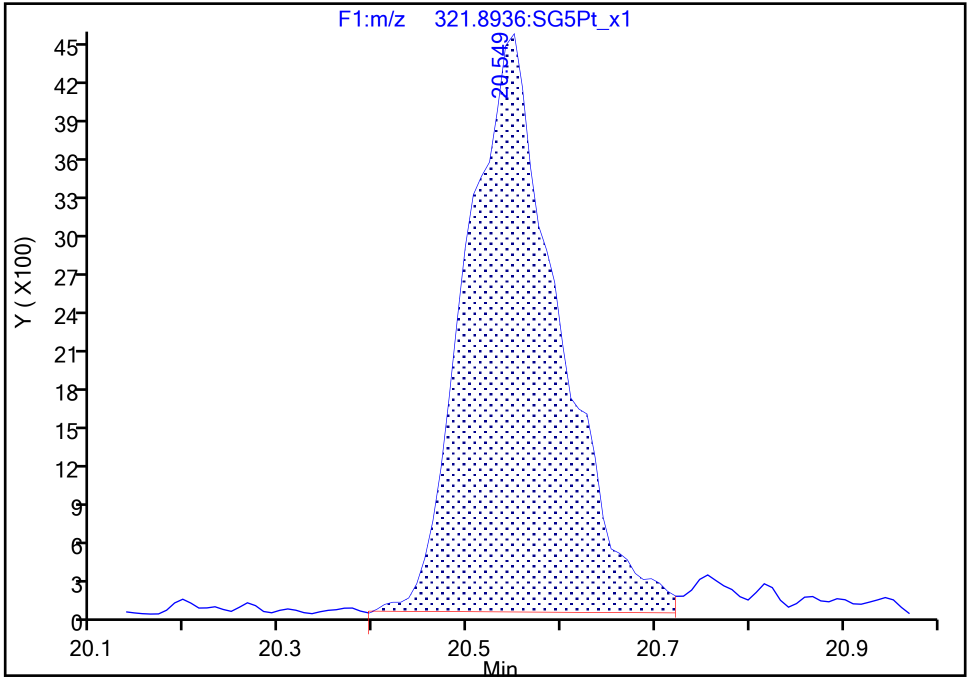

RT: 20.55
Area: 30736
Amount: 2.044004
Amount Units: pg/ul

Manual Integration Results

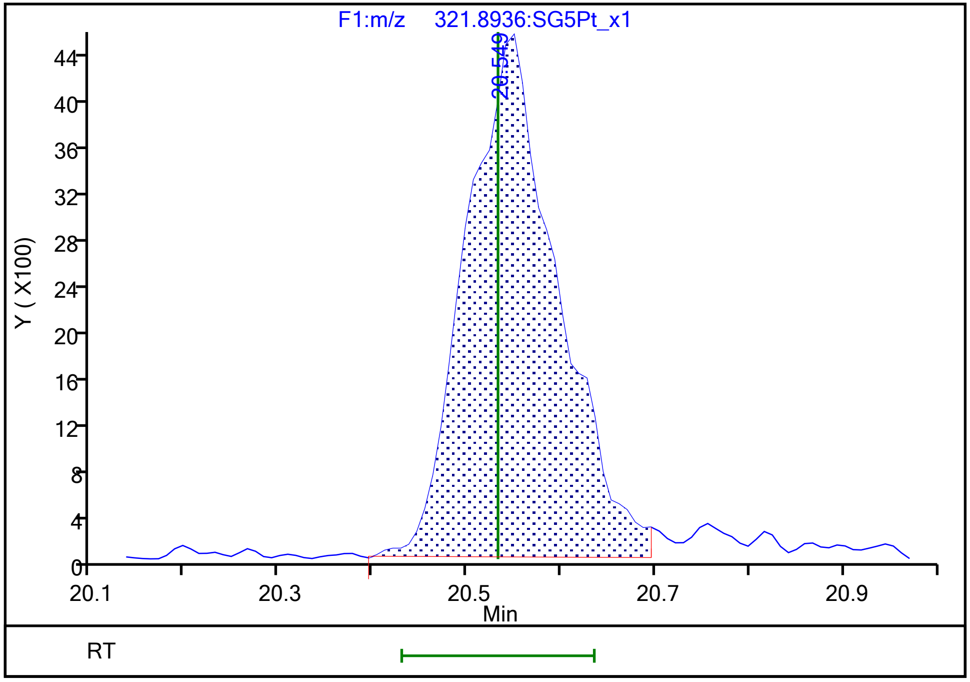

Reviewer: shardaa, 17-Sep-2020 18:37:01
Audit Action: Split an Integrated Peak
Audit Reason: Incomplete Integration

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Injection Date: 17-Sep-2020 14:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

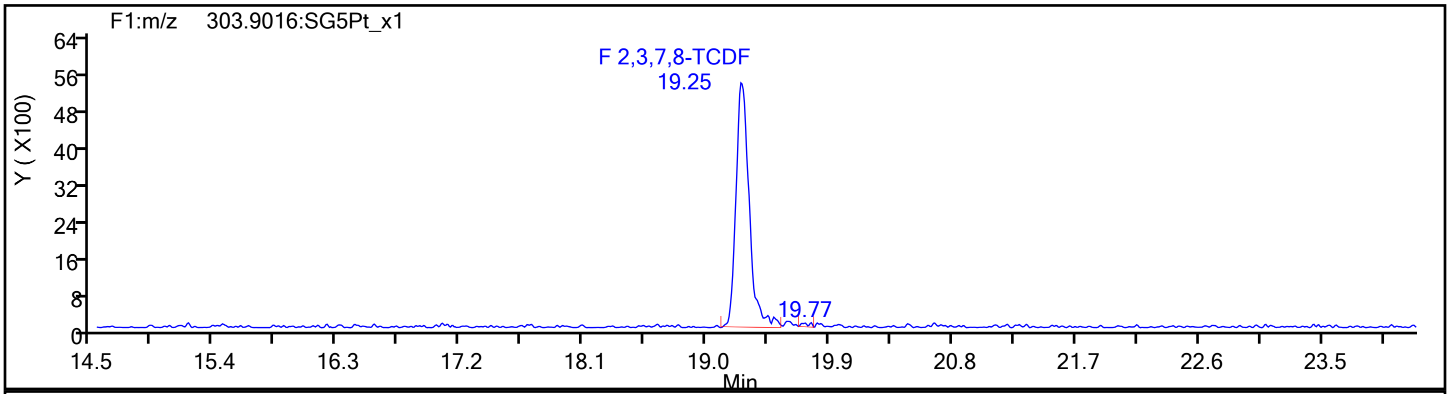

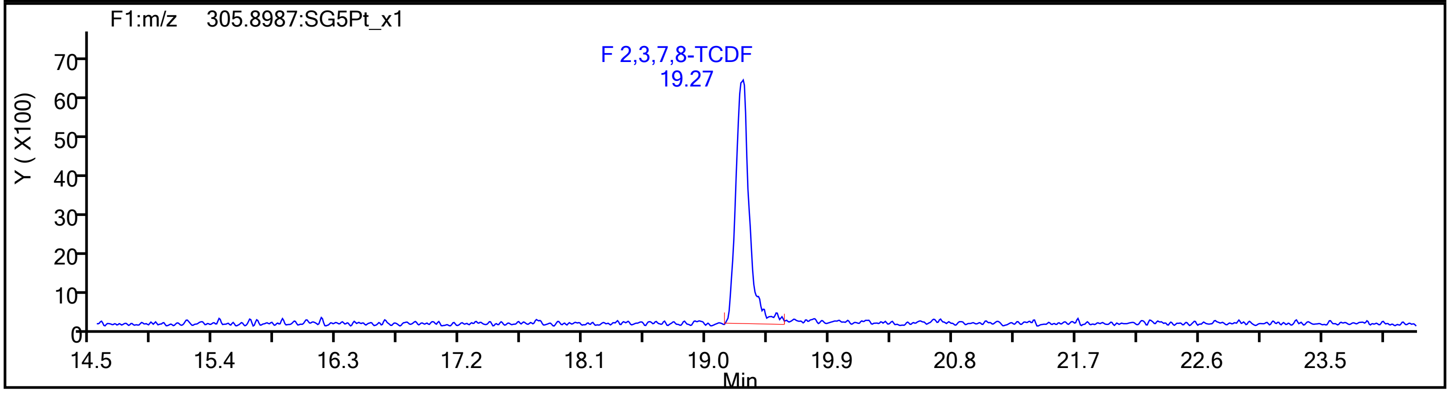

TCDF Standards

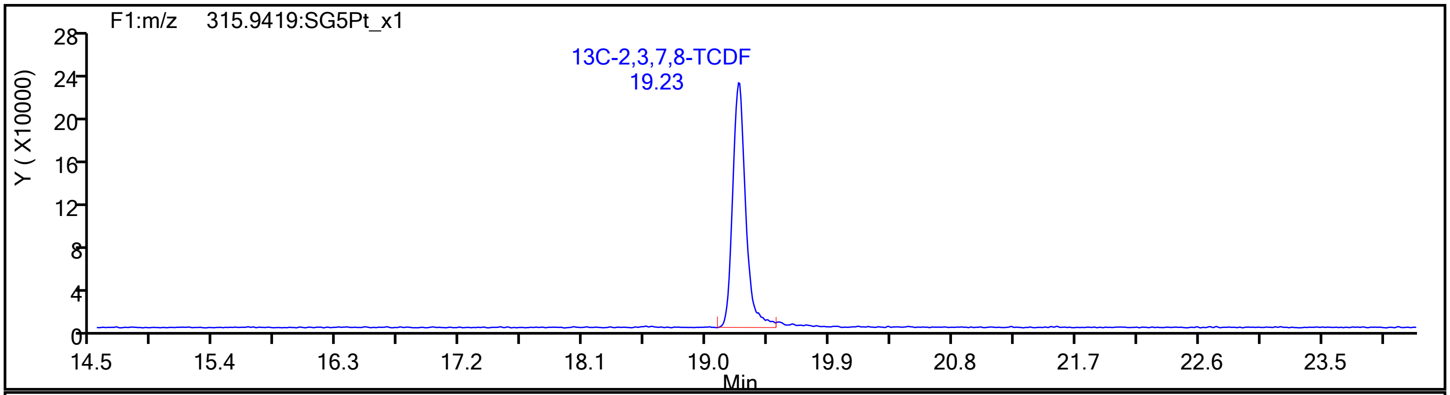

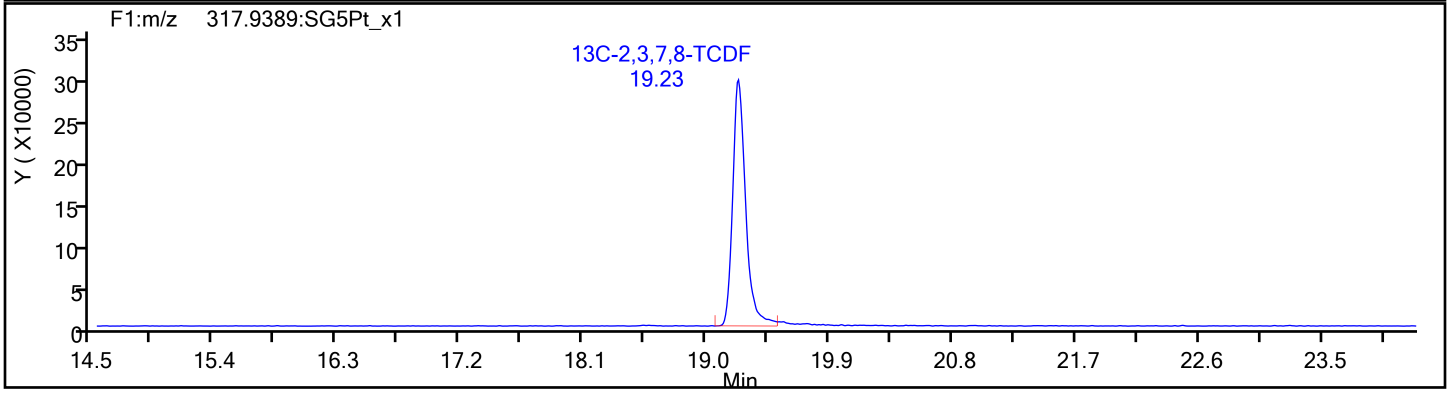

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

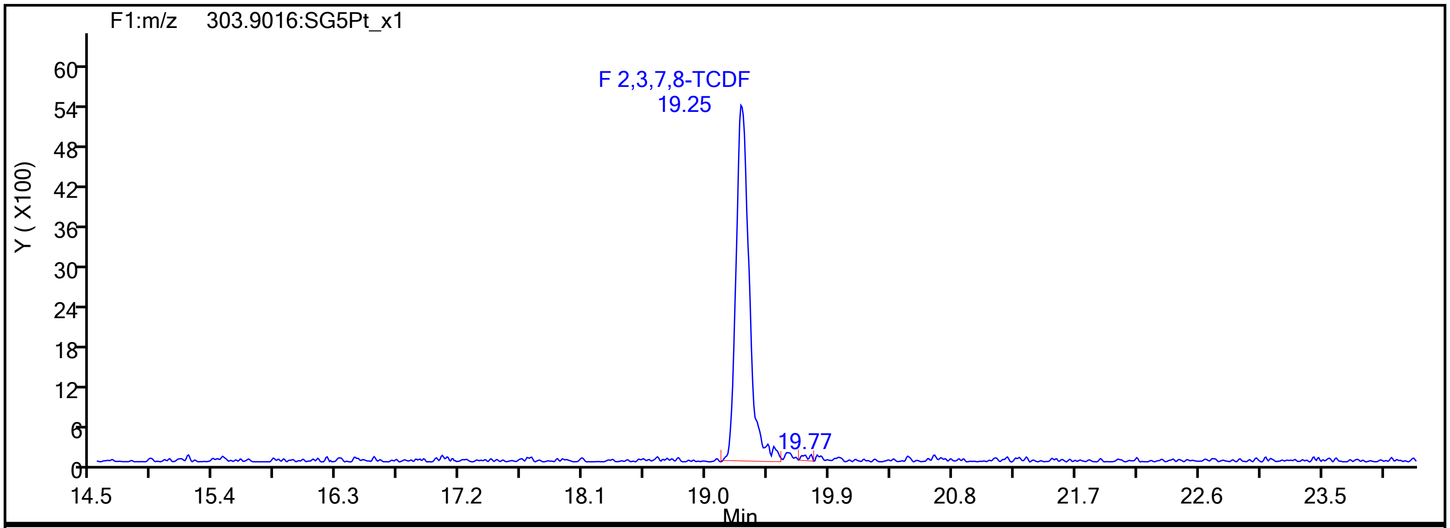

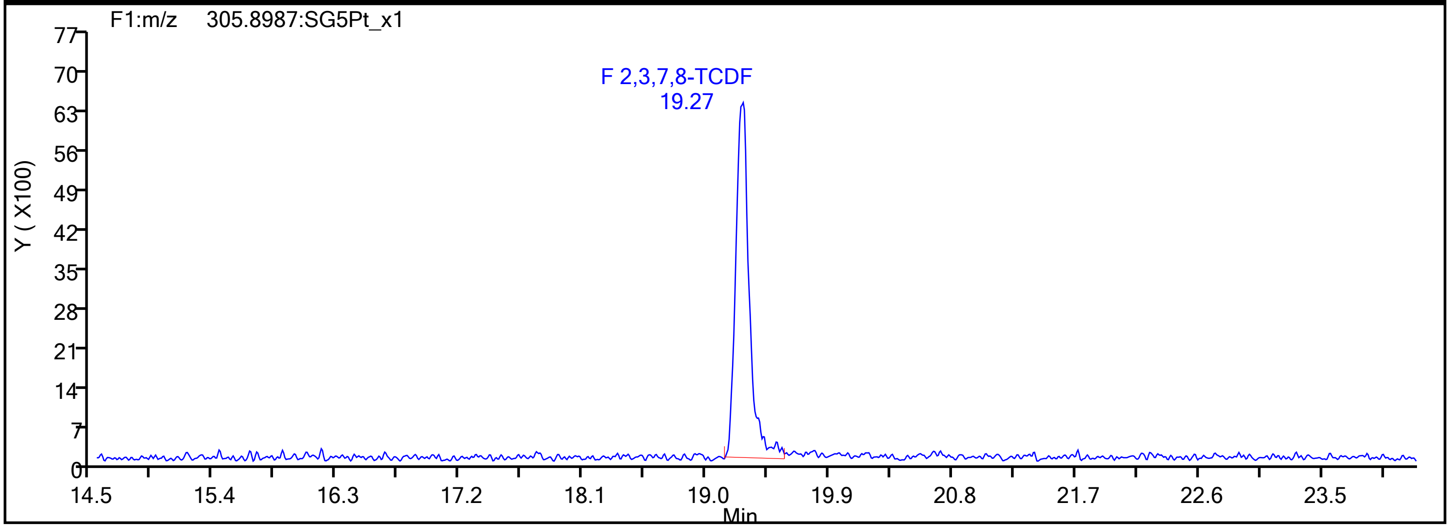

TCDF Interference Mass

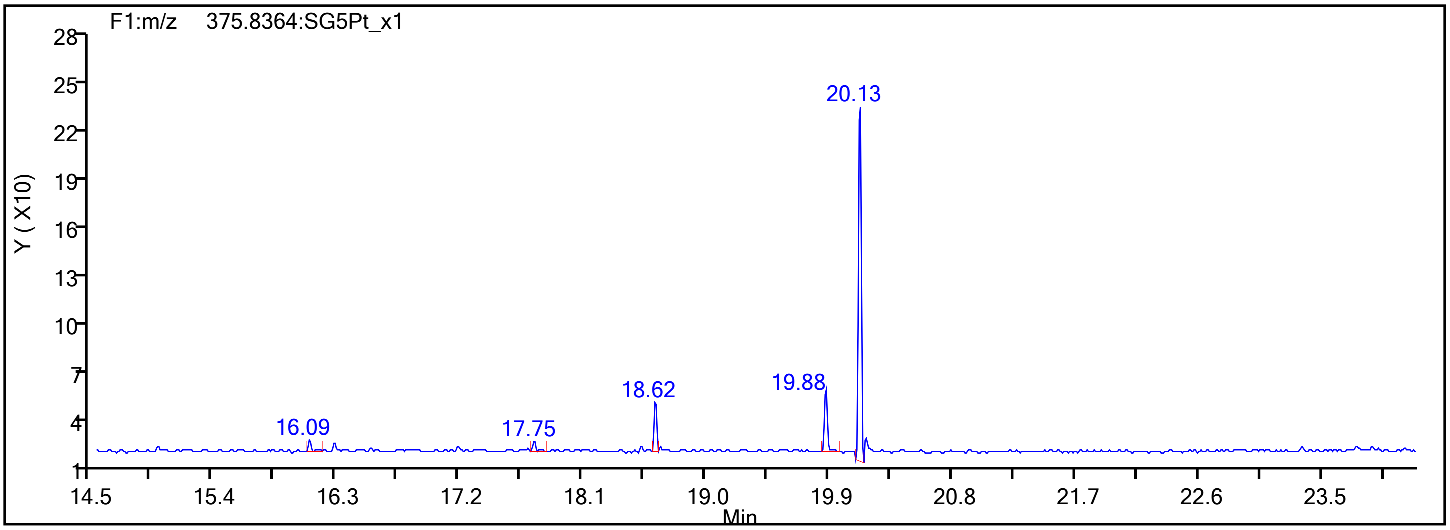

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

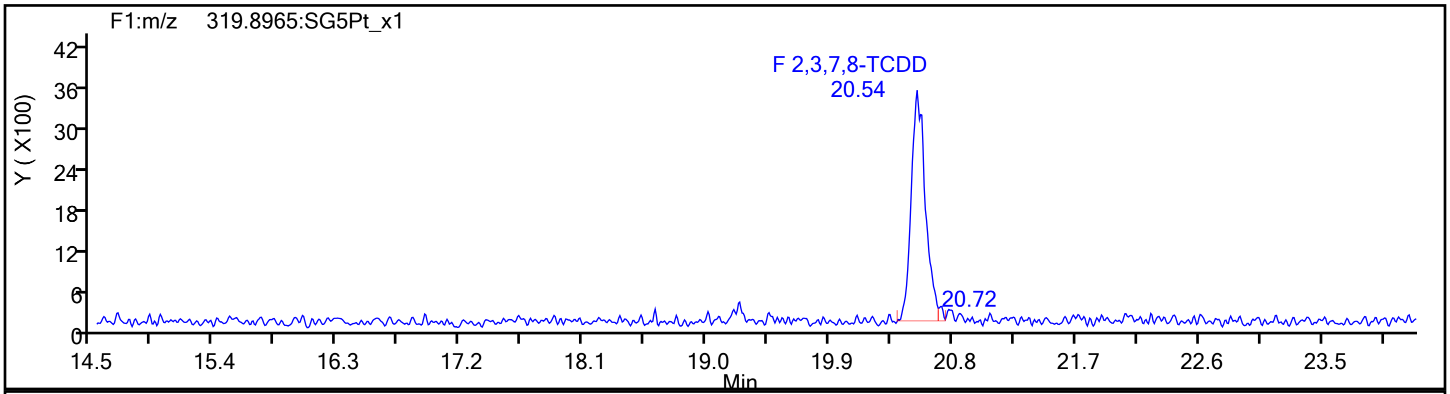

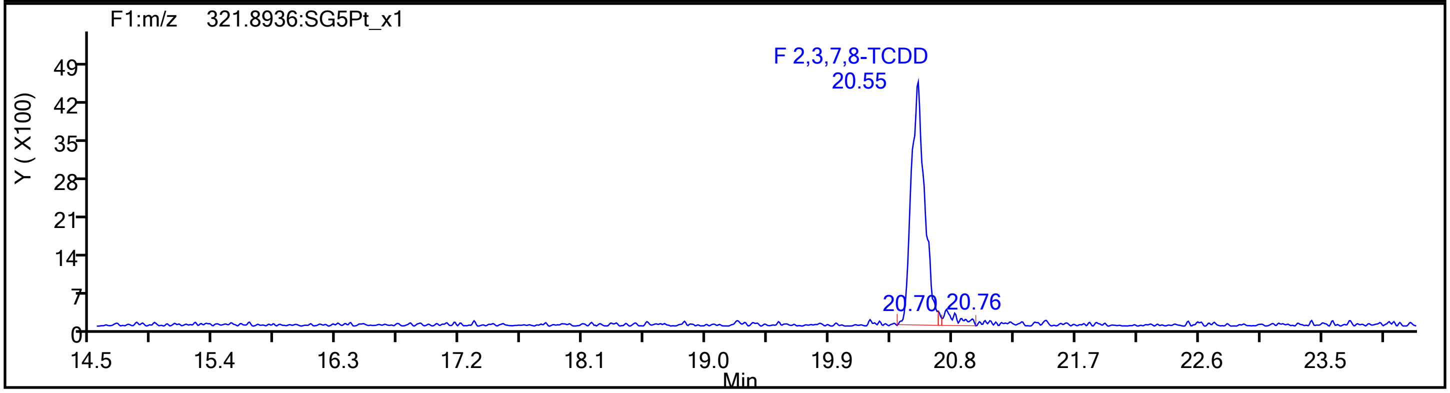

TCDD Standards

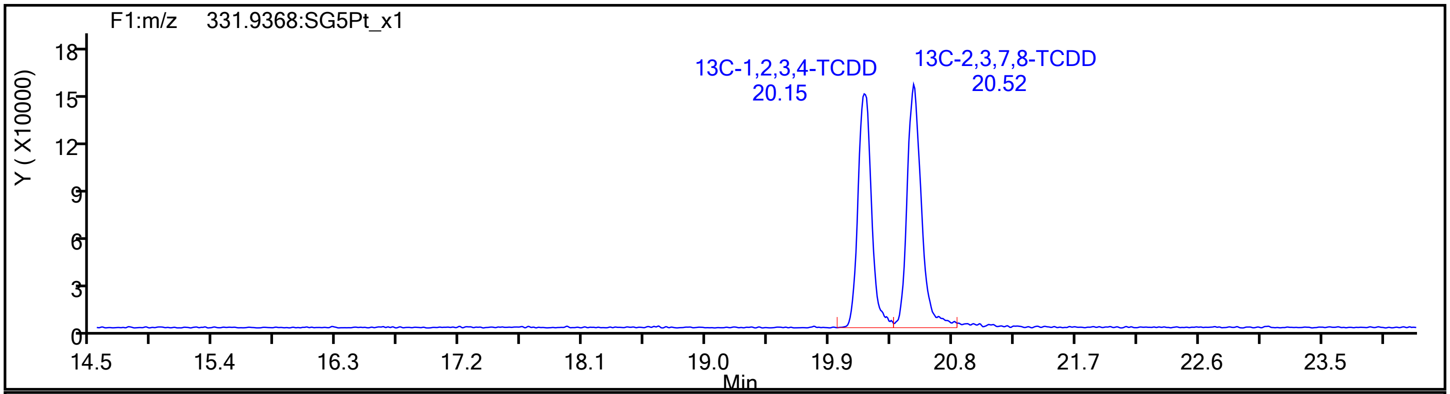

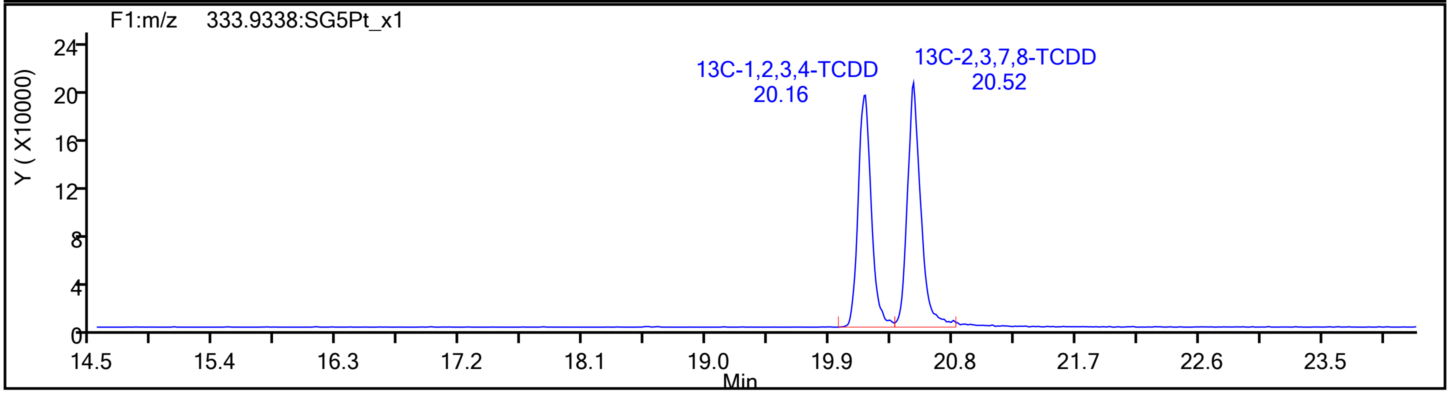

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

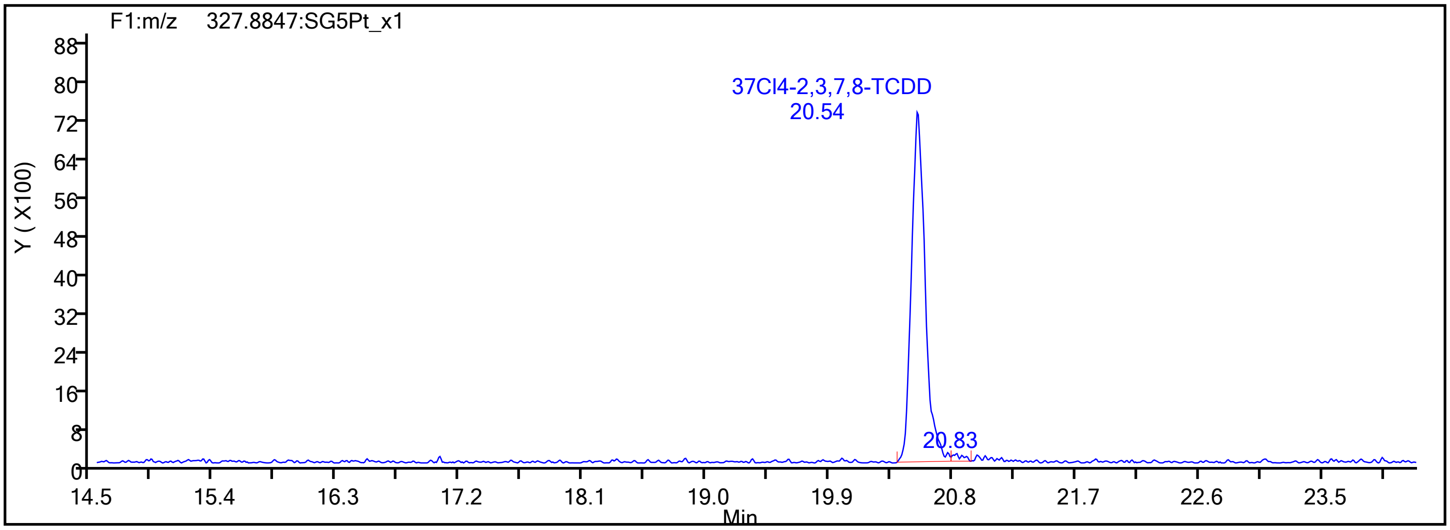

37Cl4-TCDD Standards

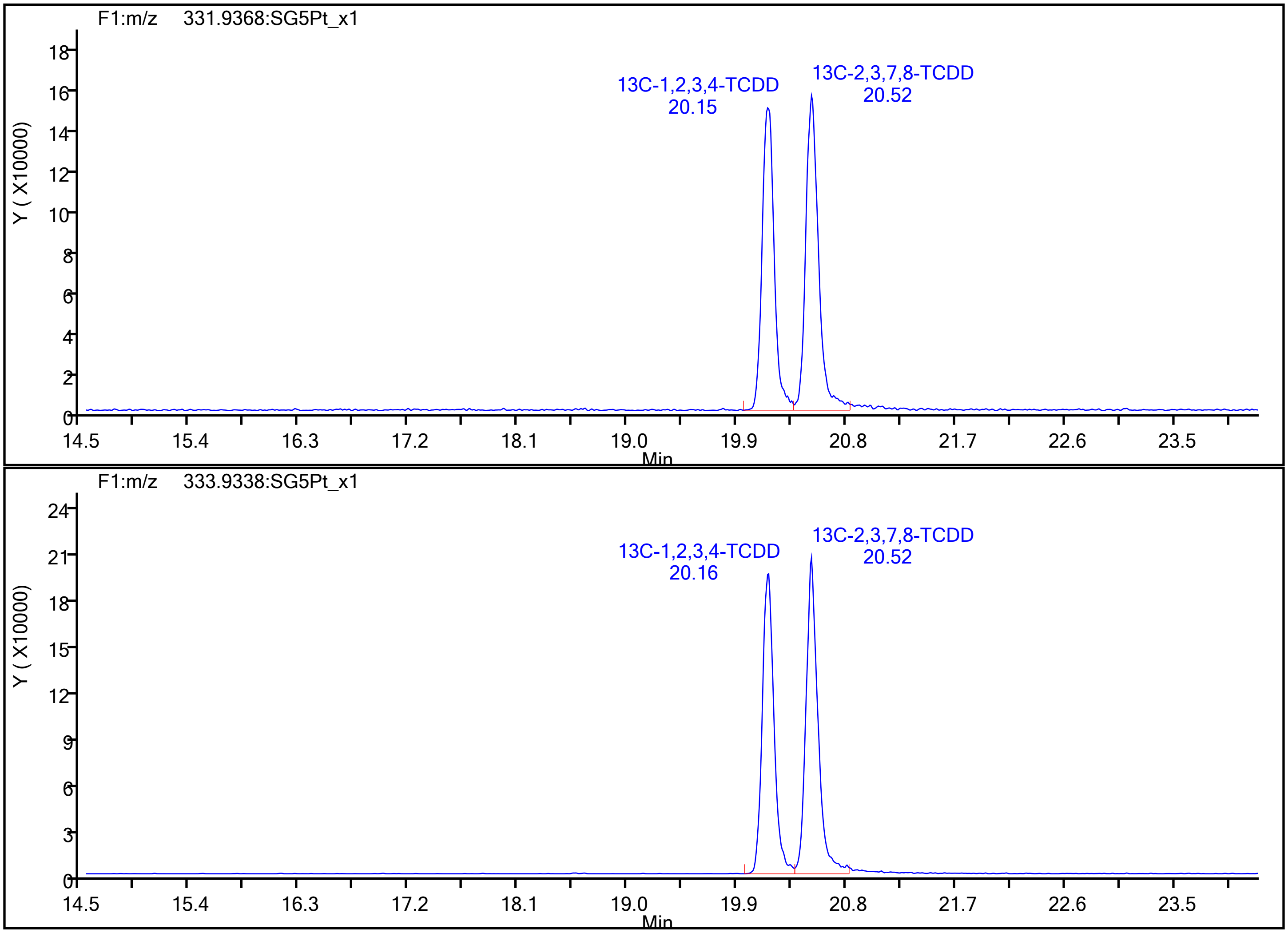

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

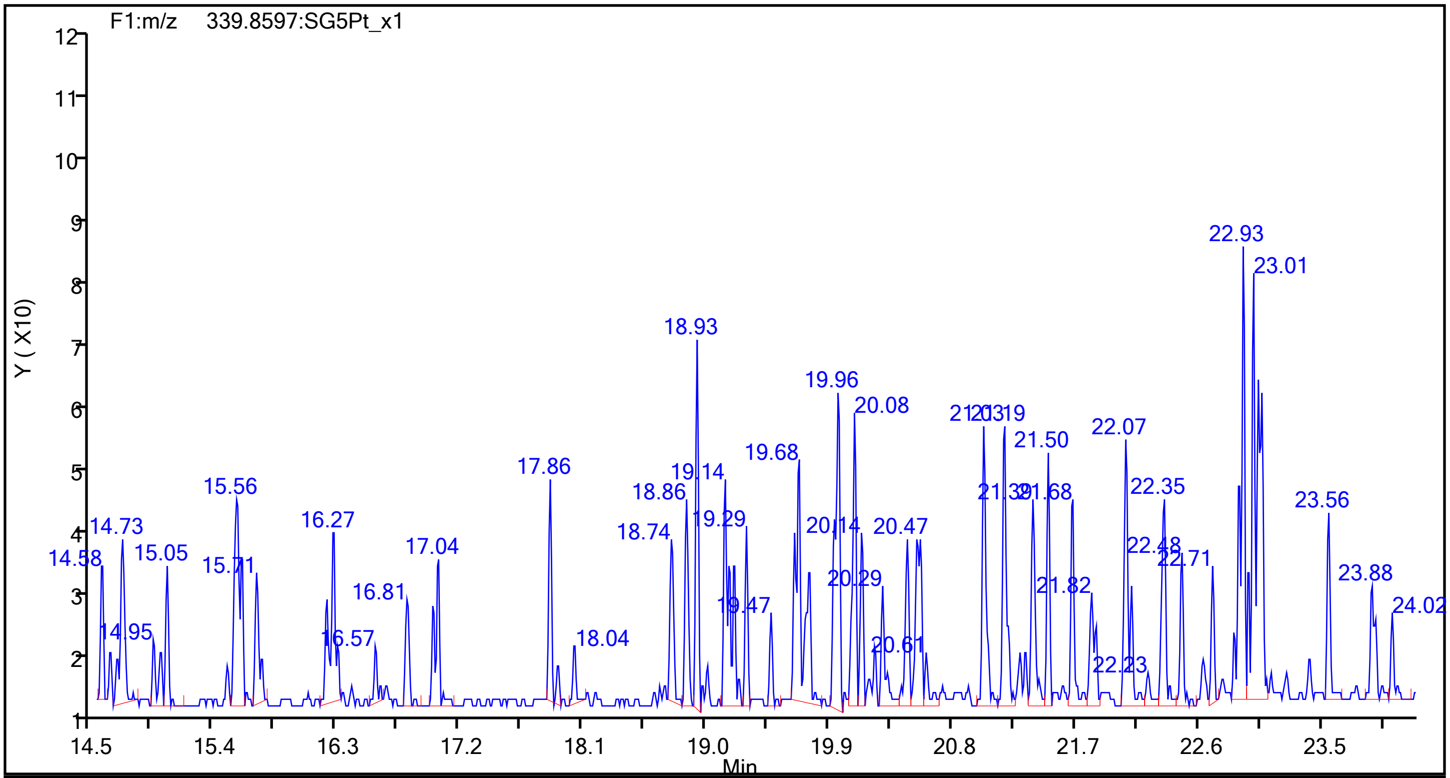

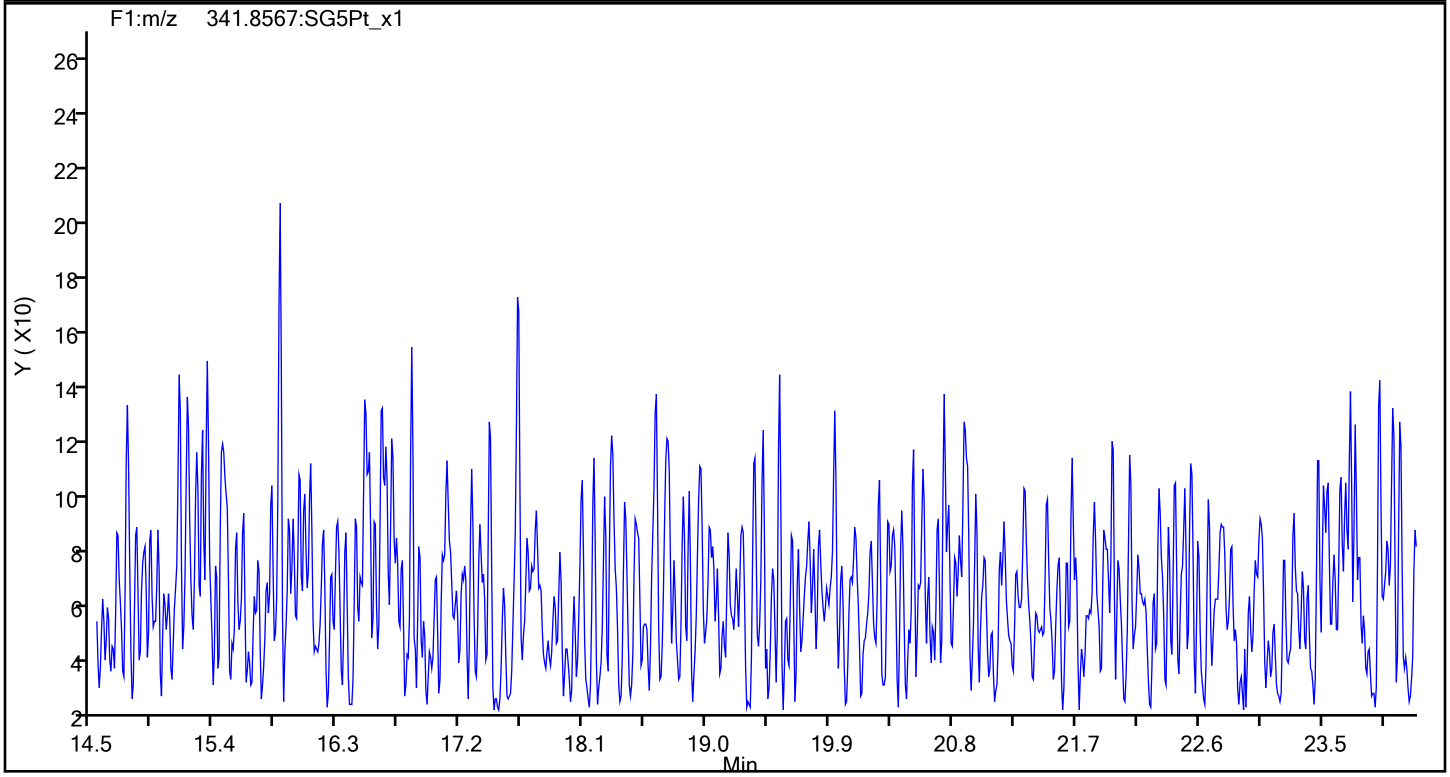

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

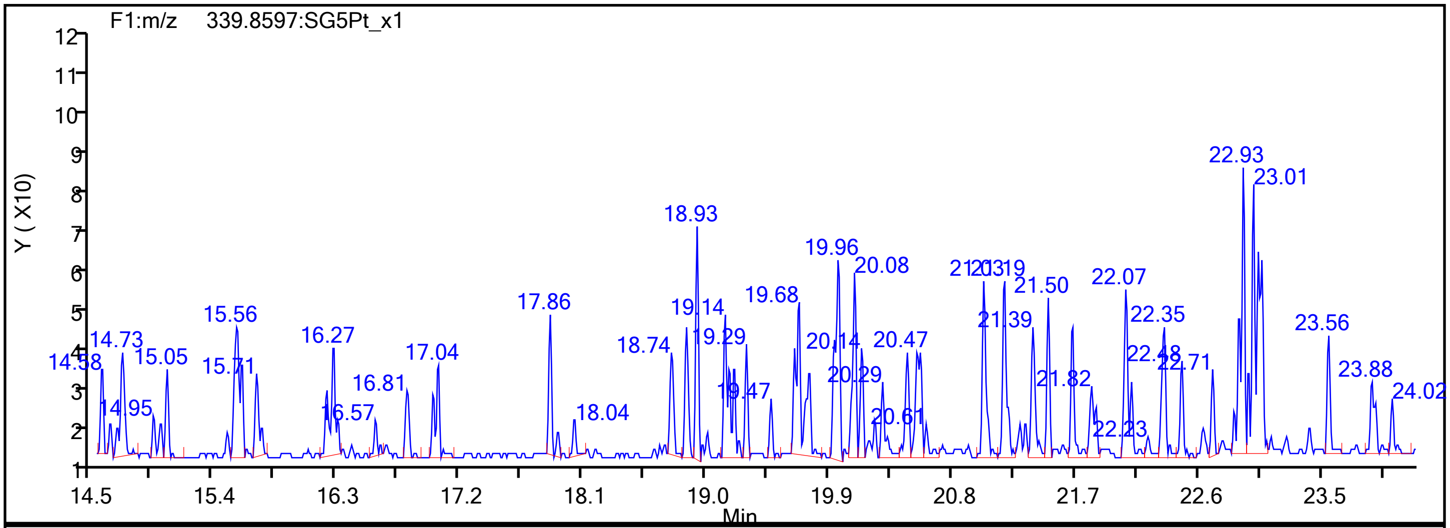

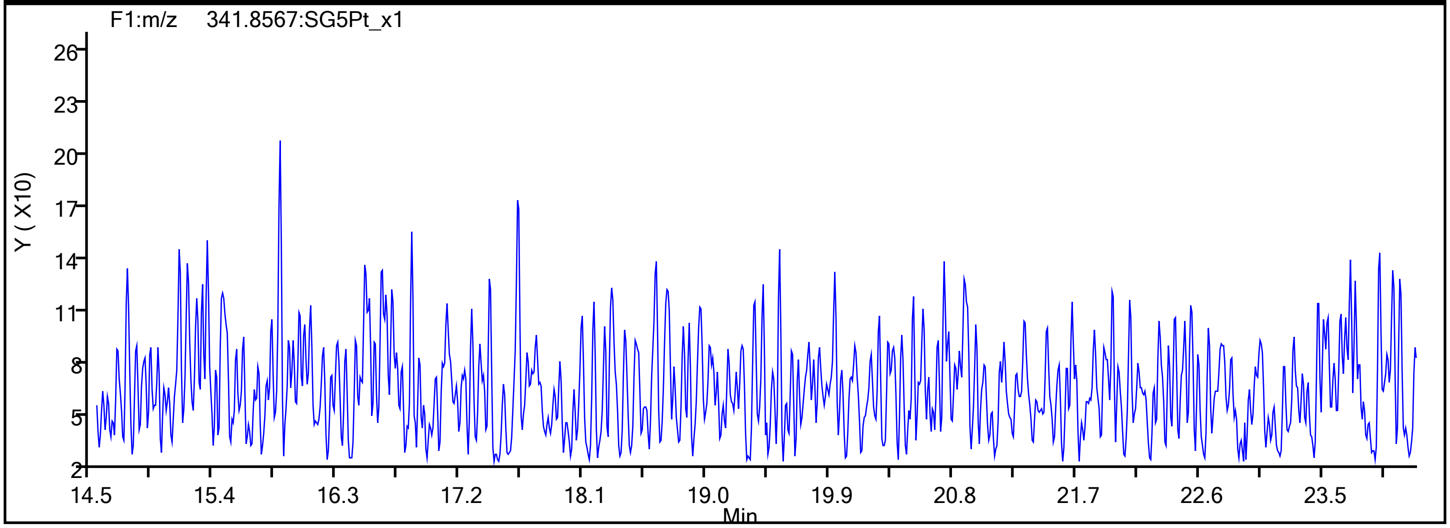

F1 PeCDFs Interference Mass

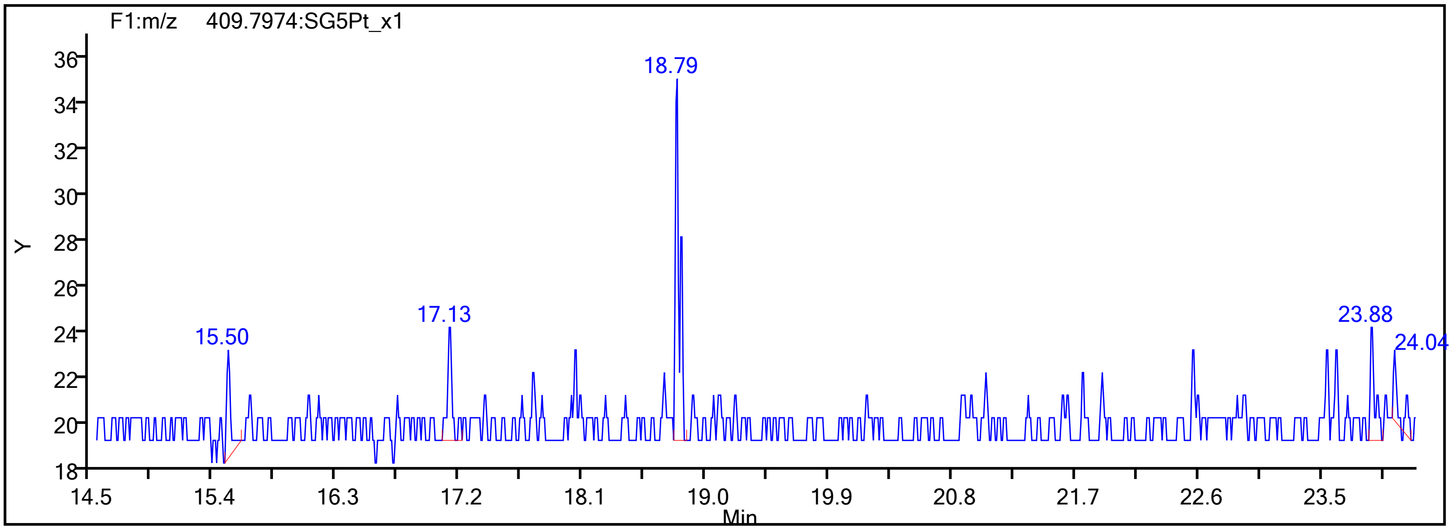

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

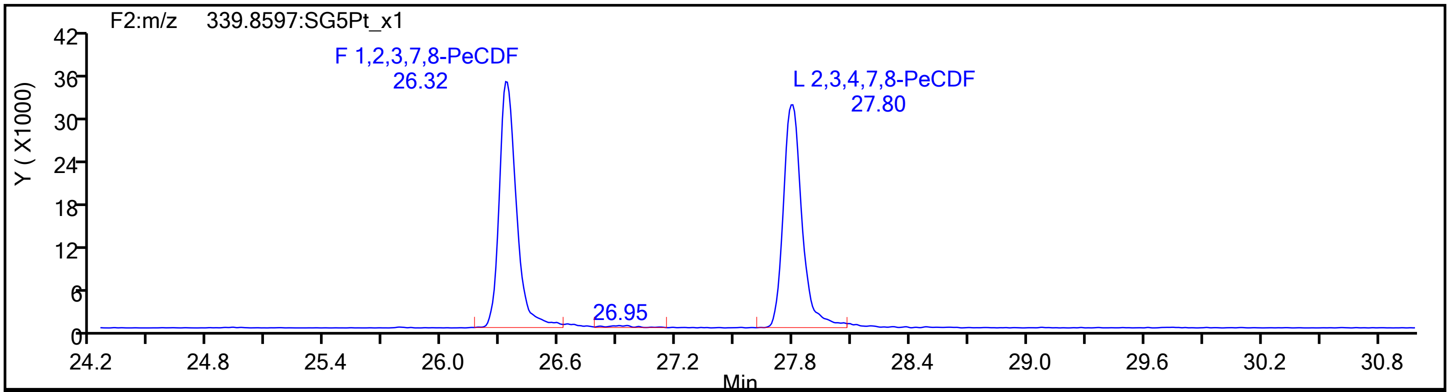

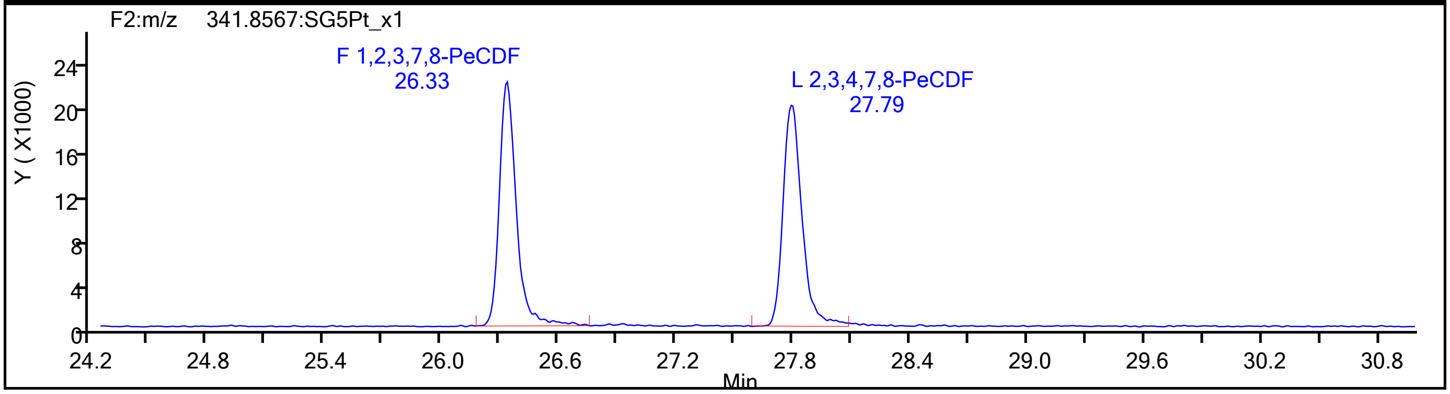

PeCDF Standards

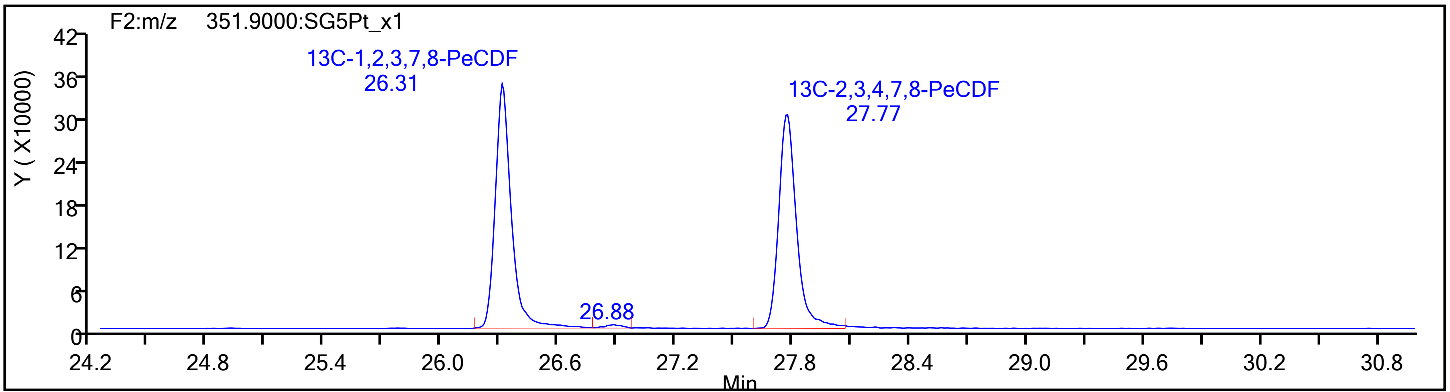

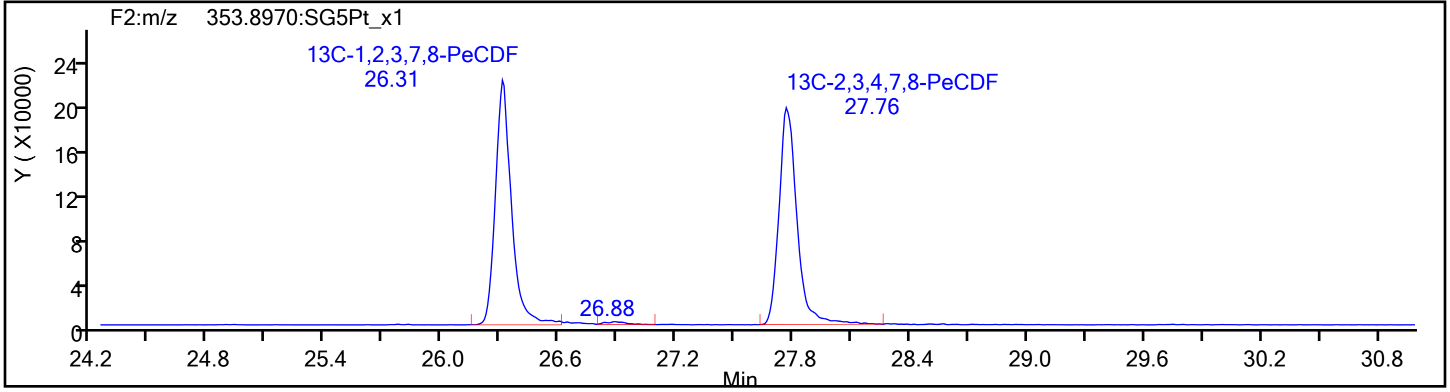

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

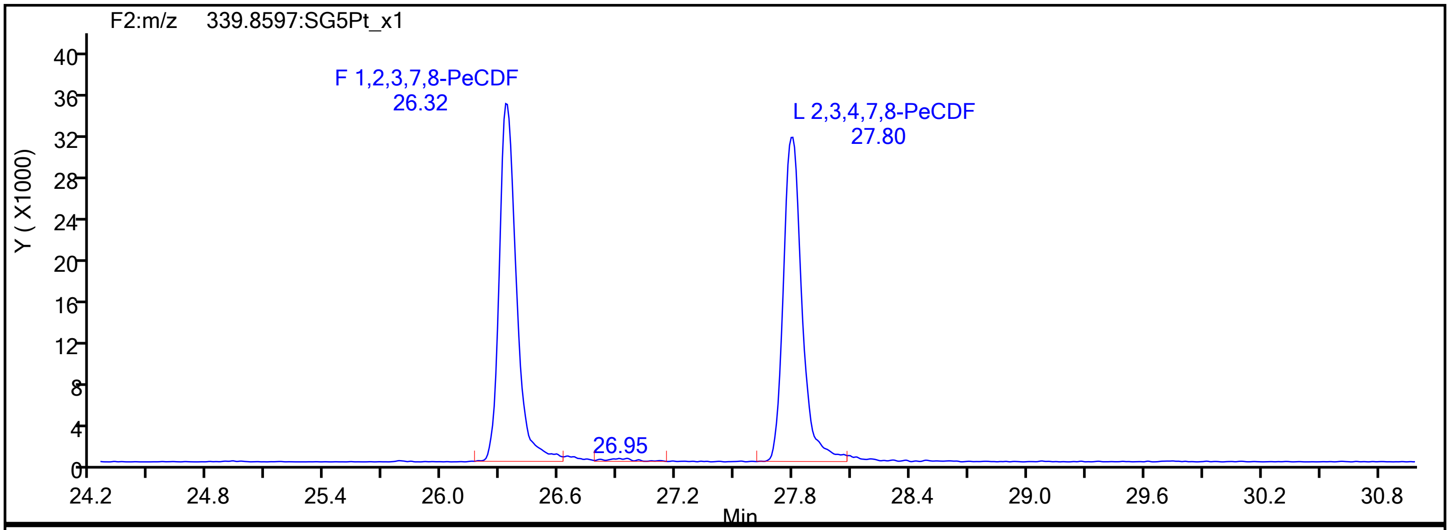

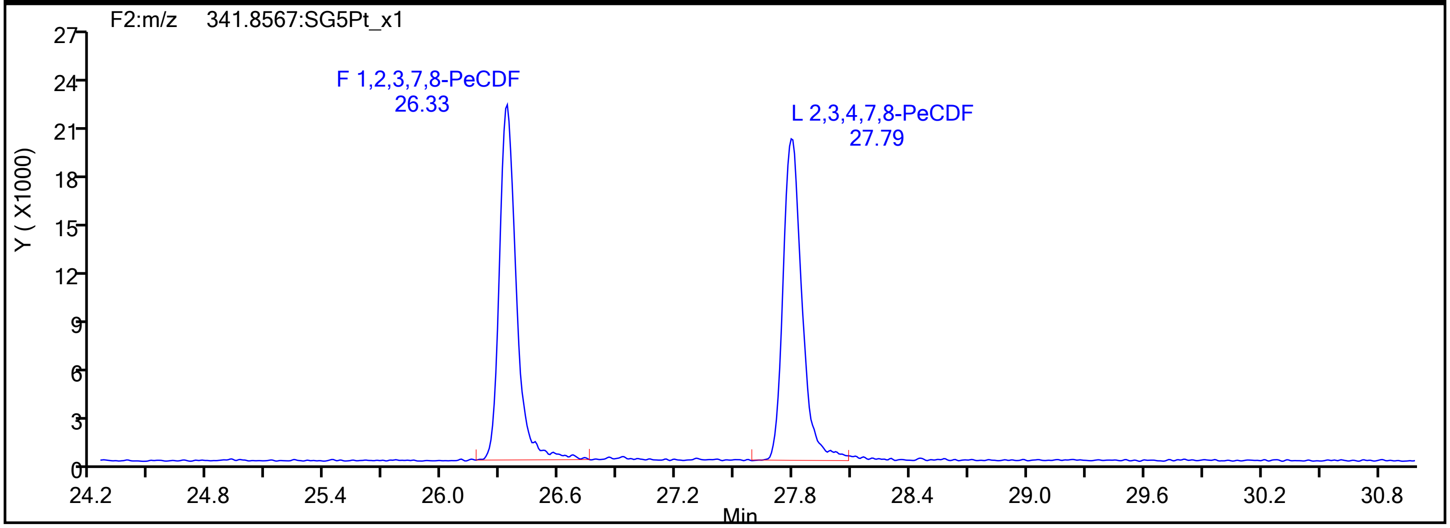

PeCDF Interference Mass

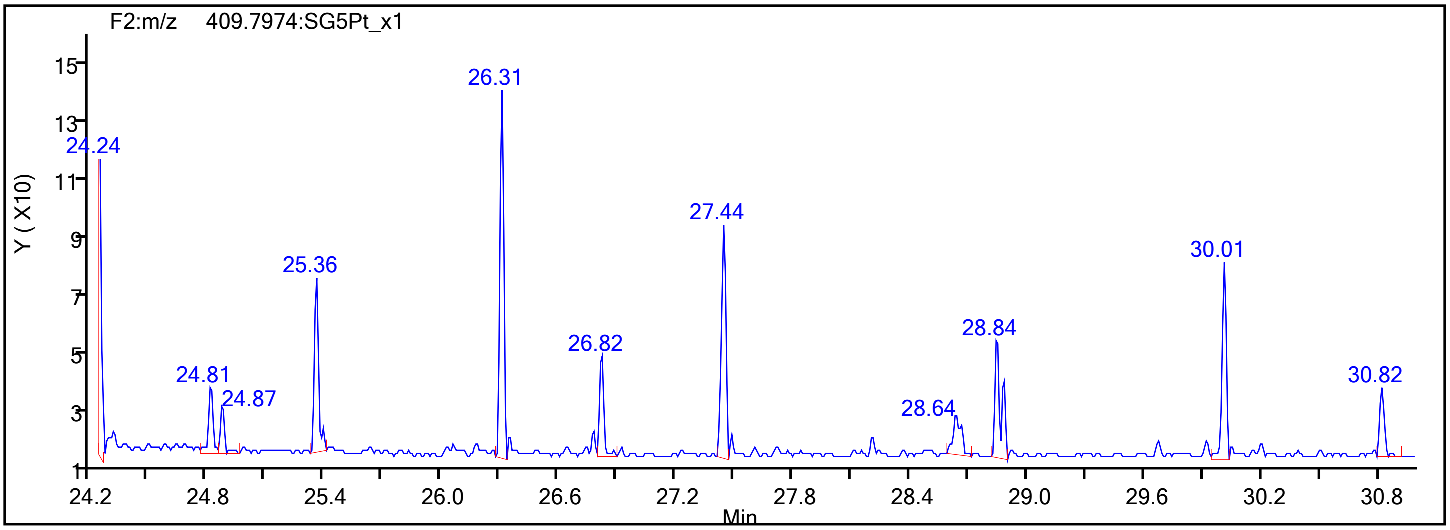

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

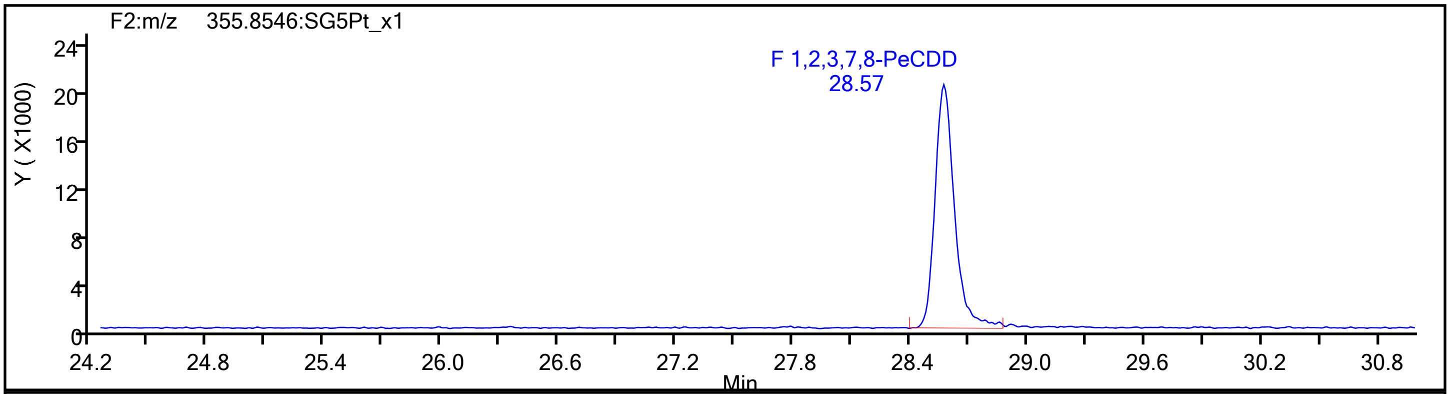

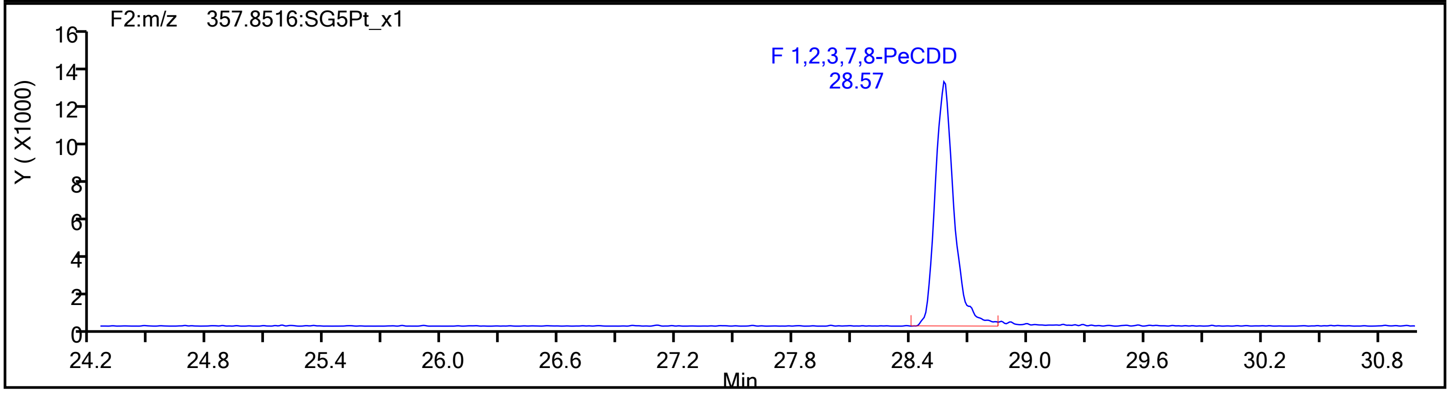

PeCDD Standards

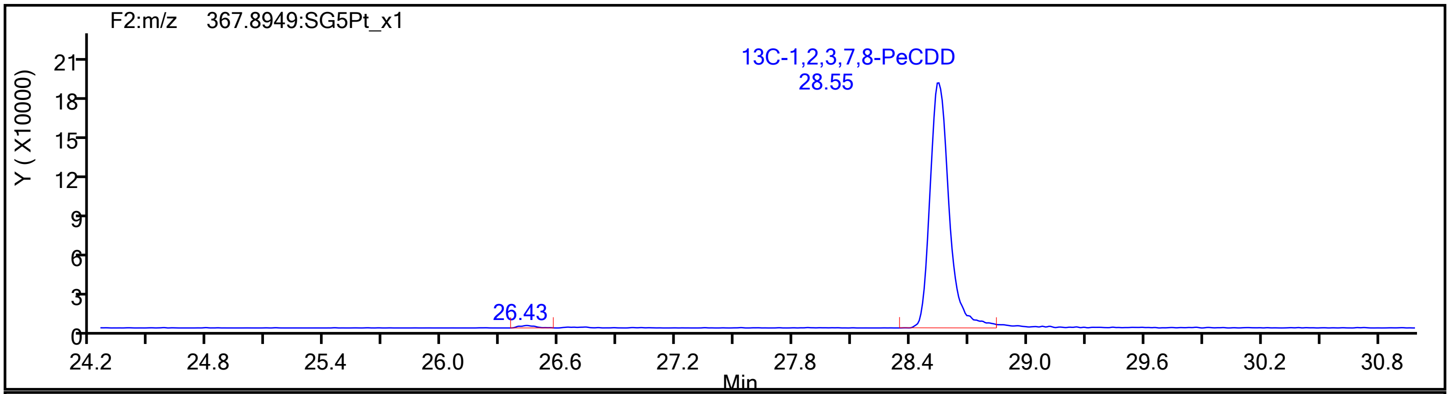

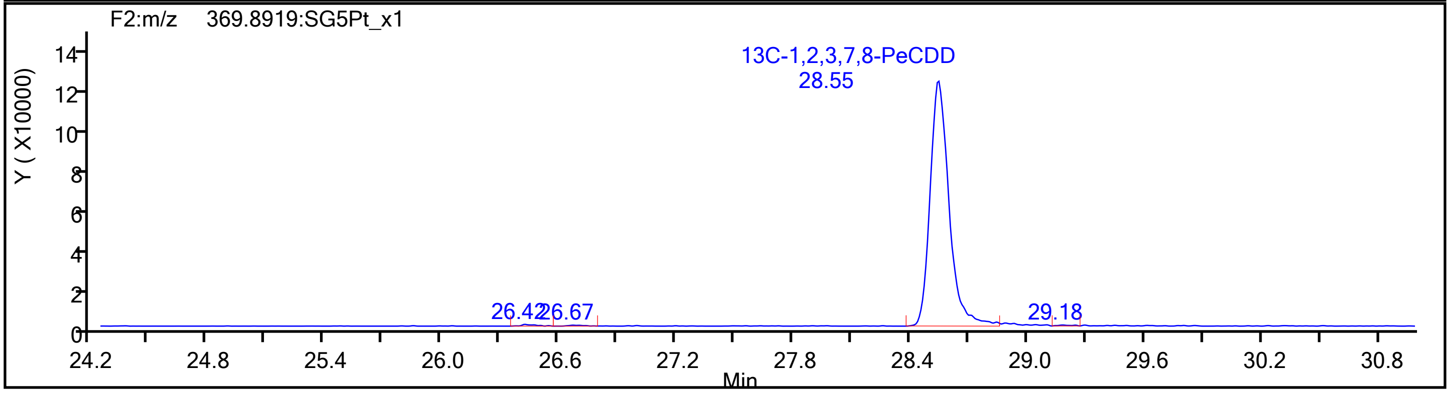

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

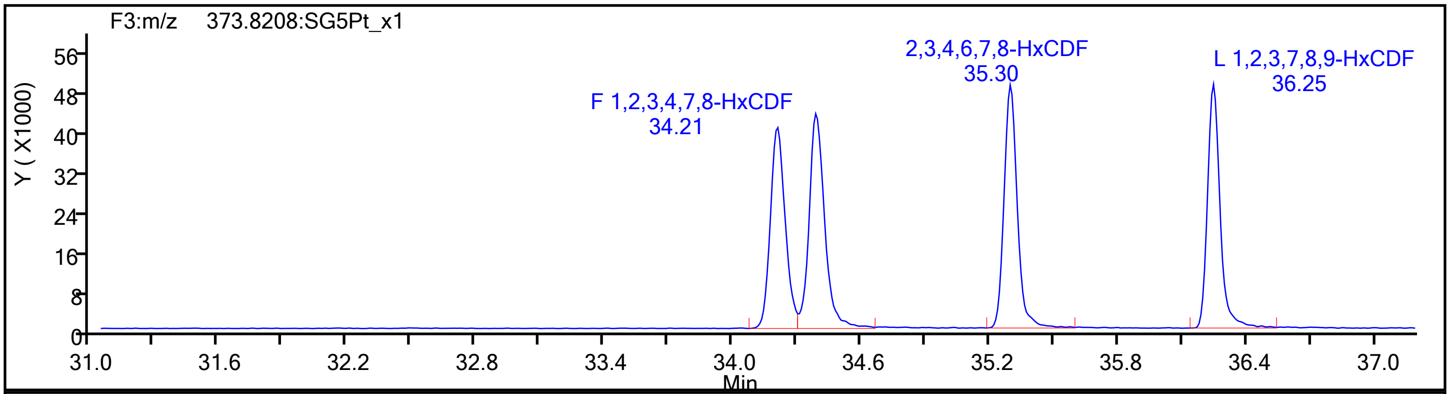

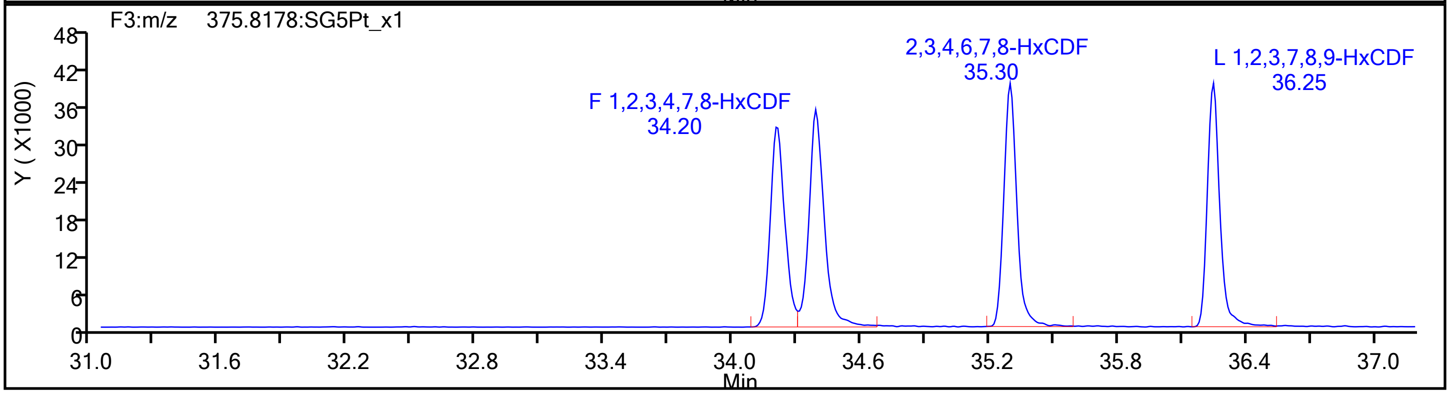

HxCDF Standards

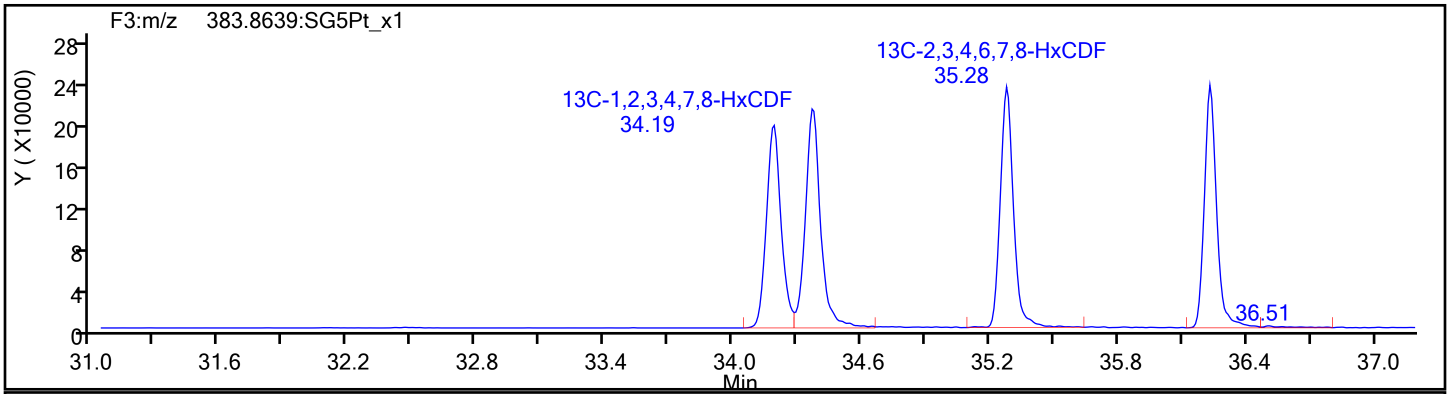

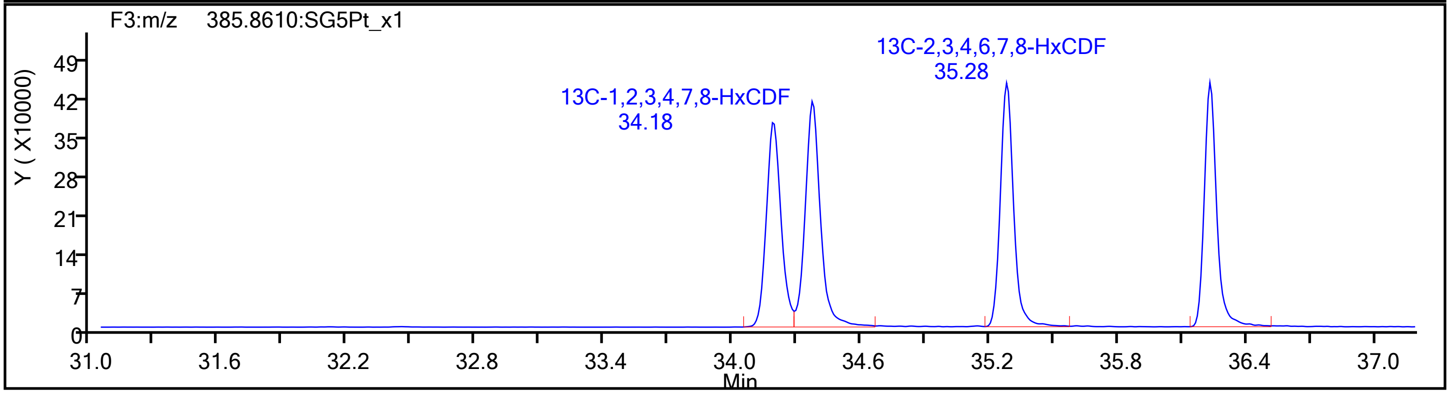

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

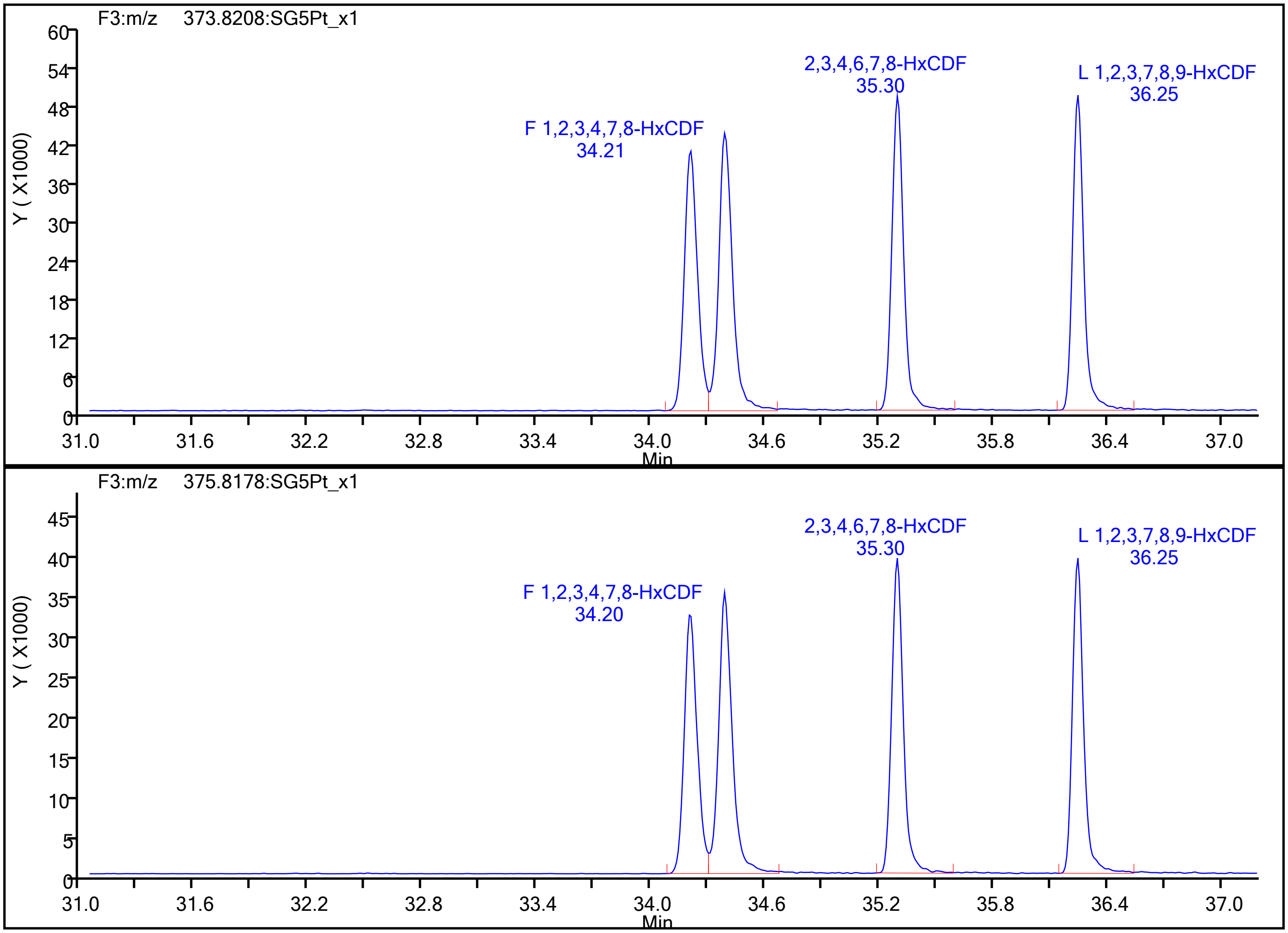

HxCDF Interference Mass

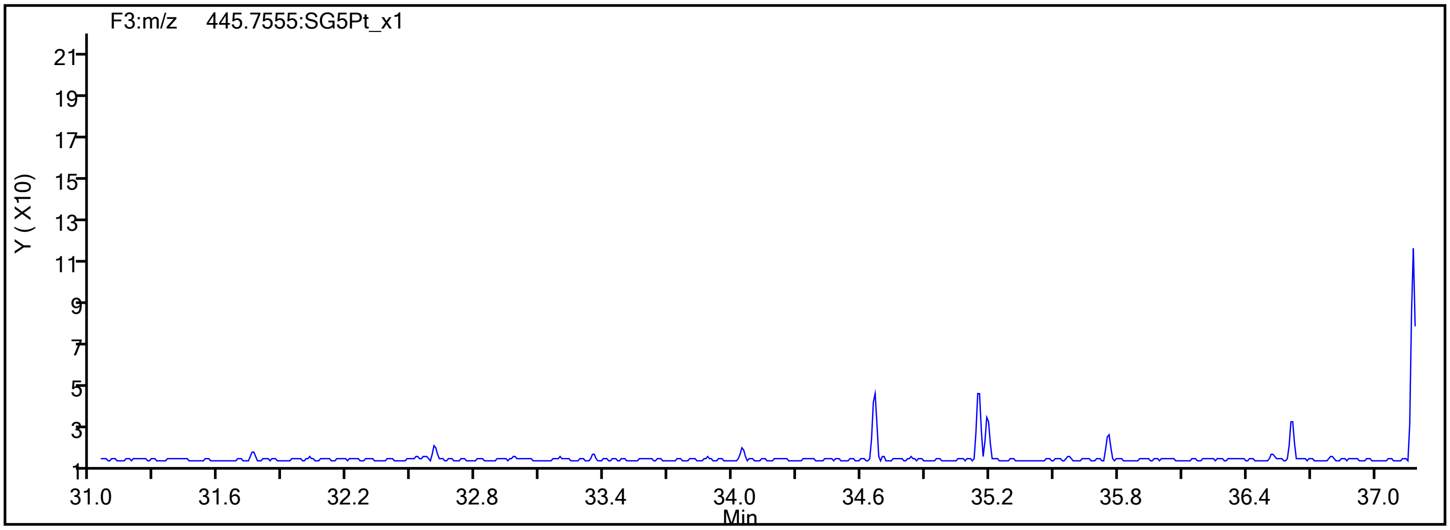

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

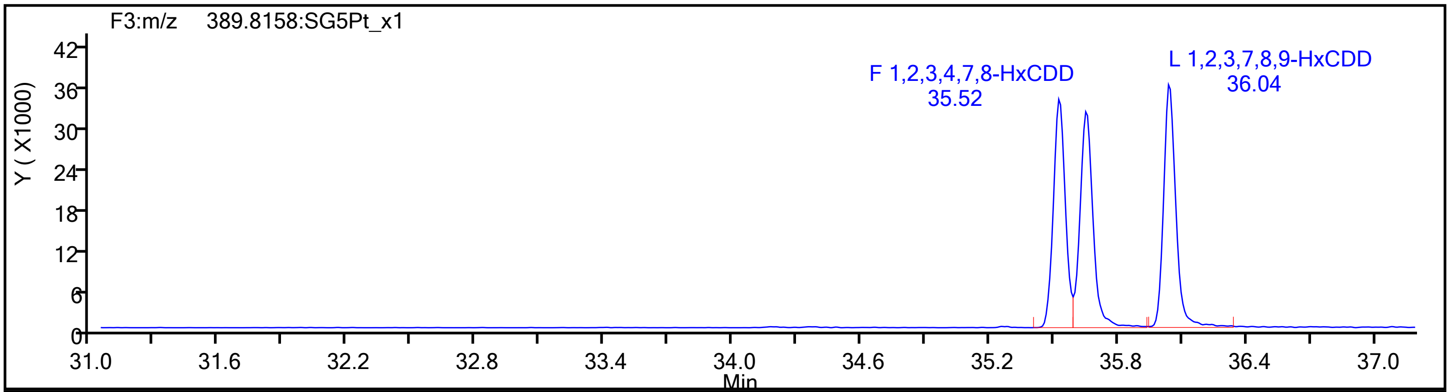

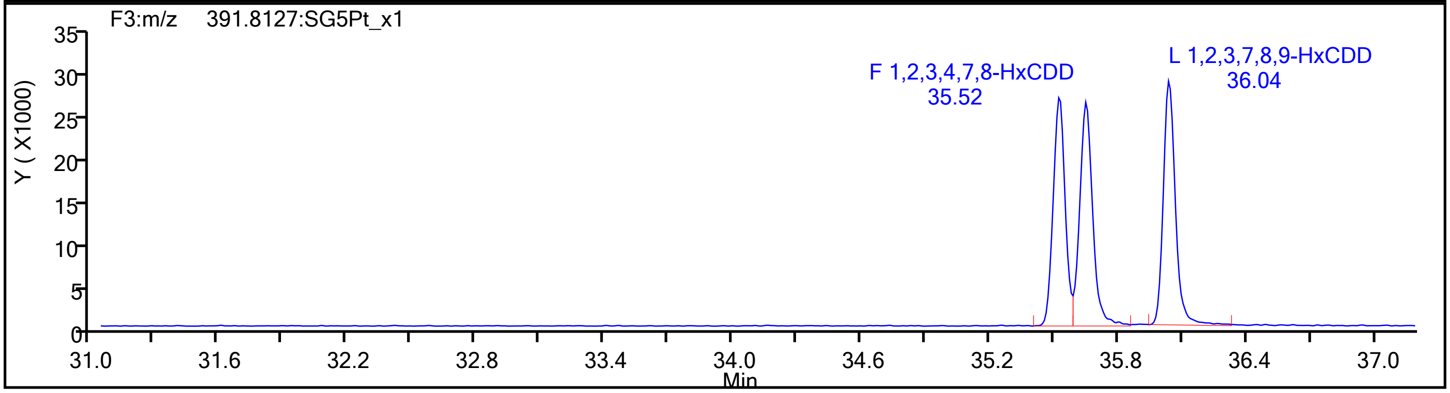

HxCDD Standards

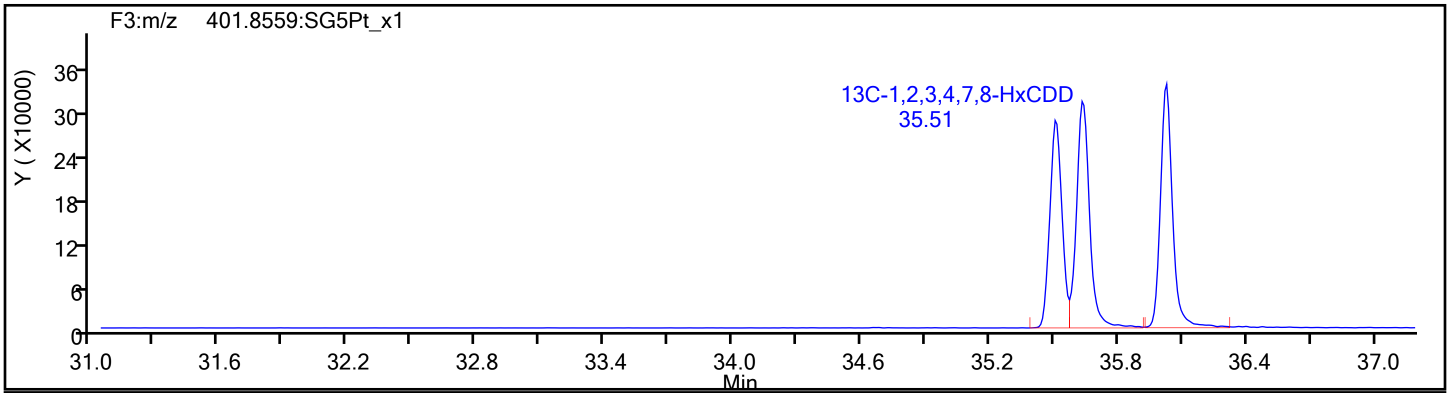

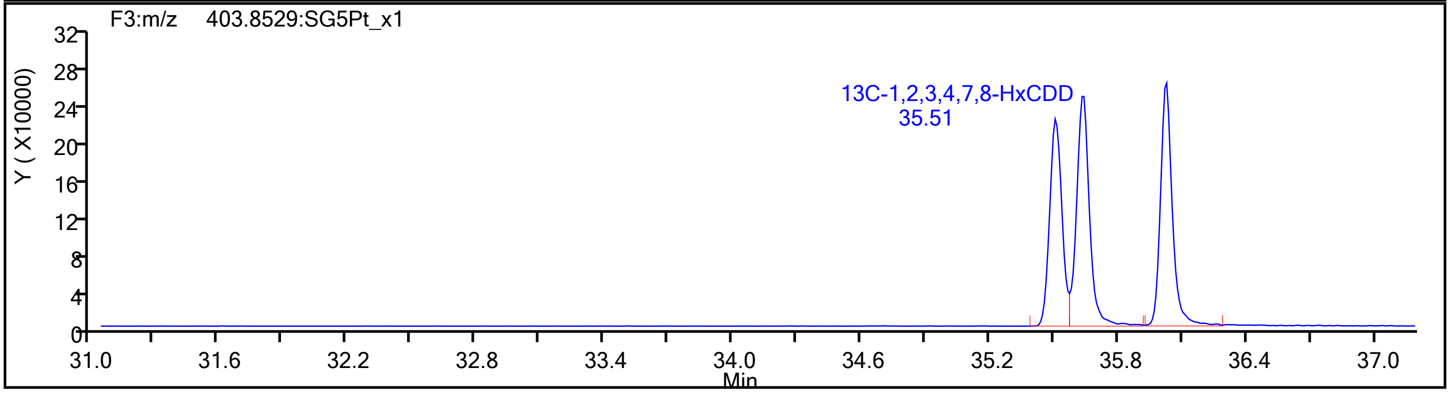

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Injection Date: 17-Sep-2020 14:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

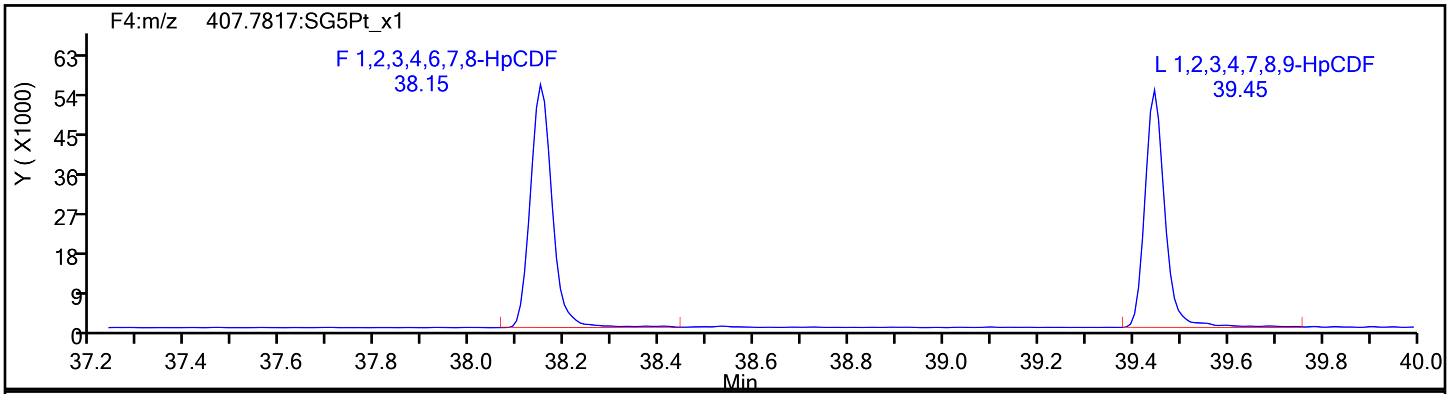

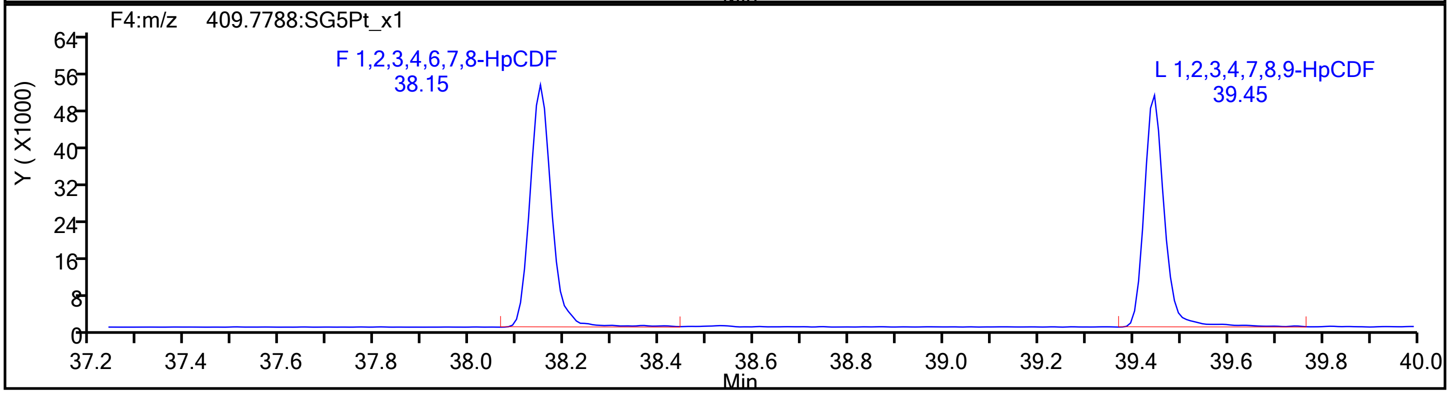

HpCDF Standards

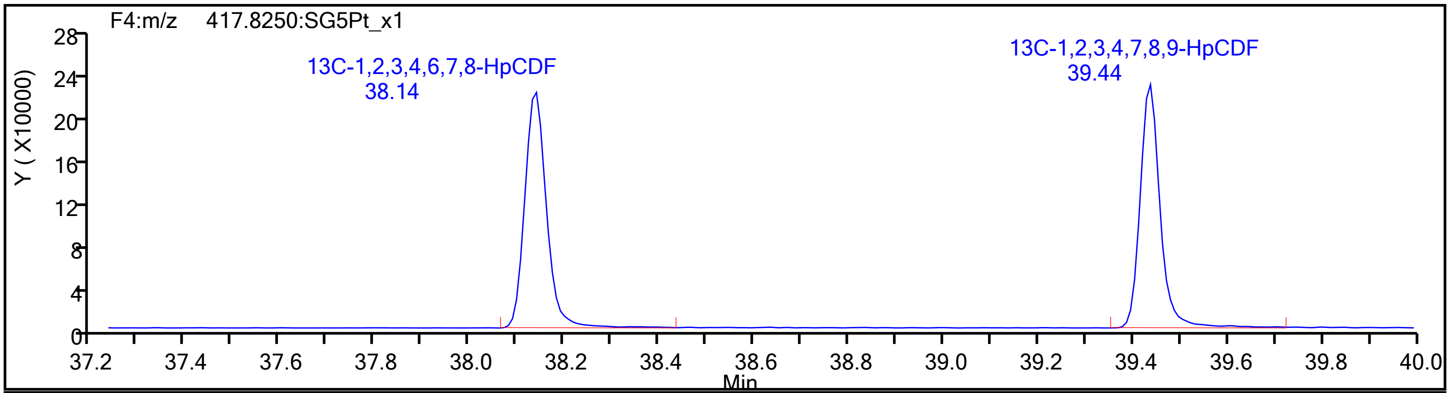

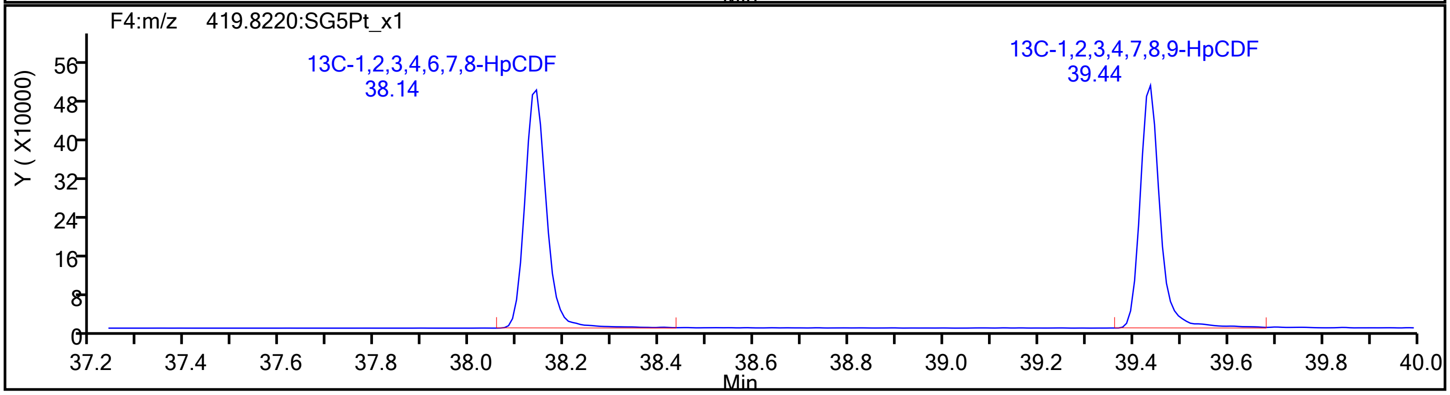

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

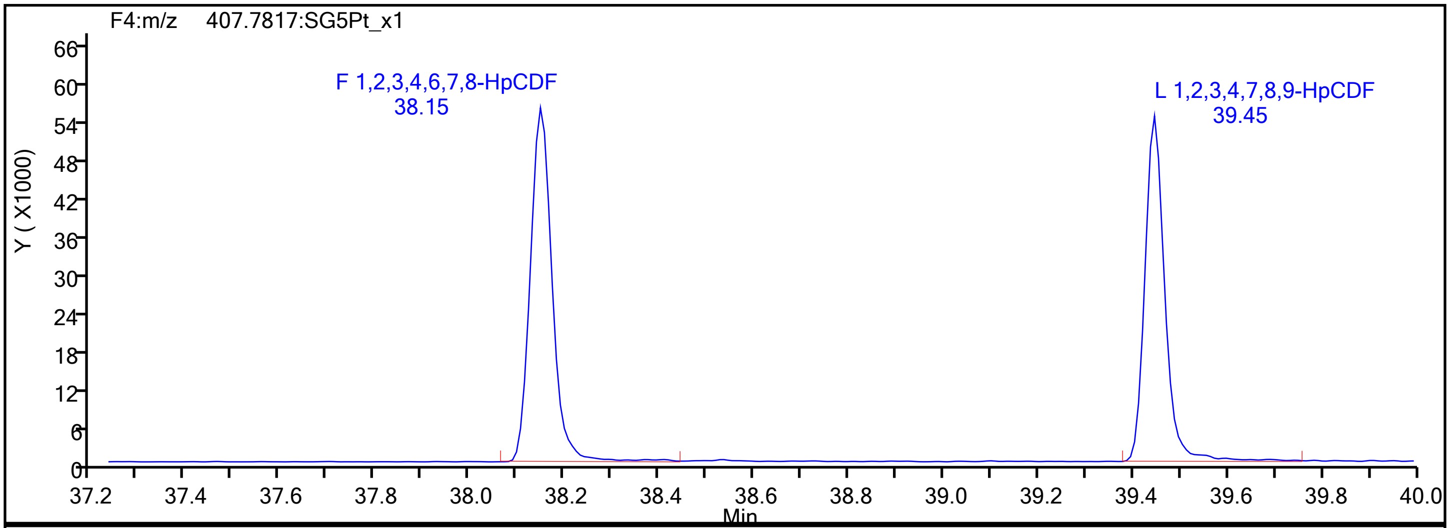

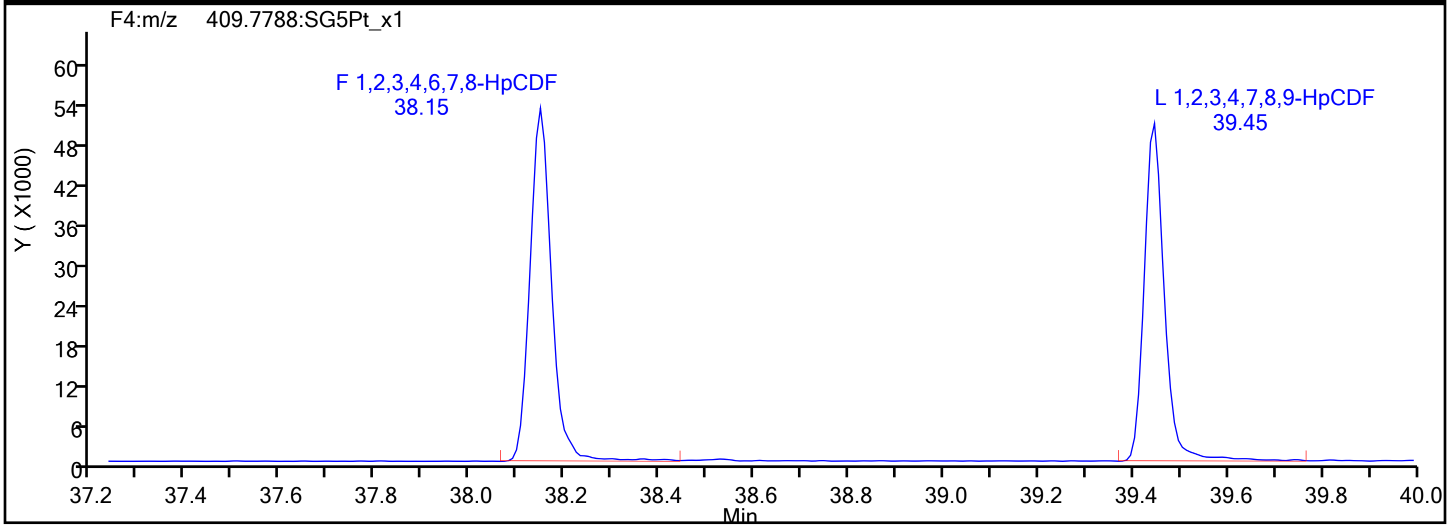

HpCDF Interference Mass

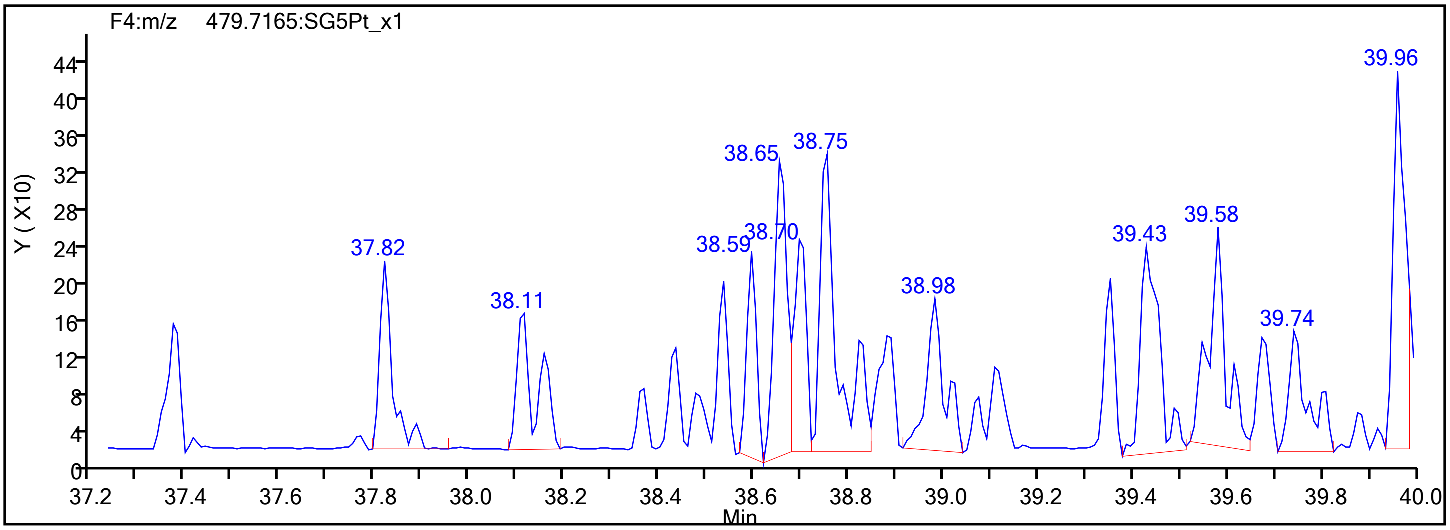

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

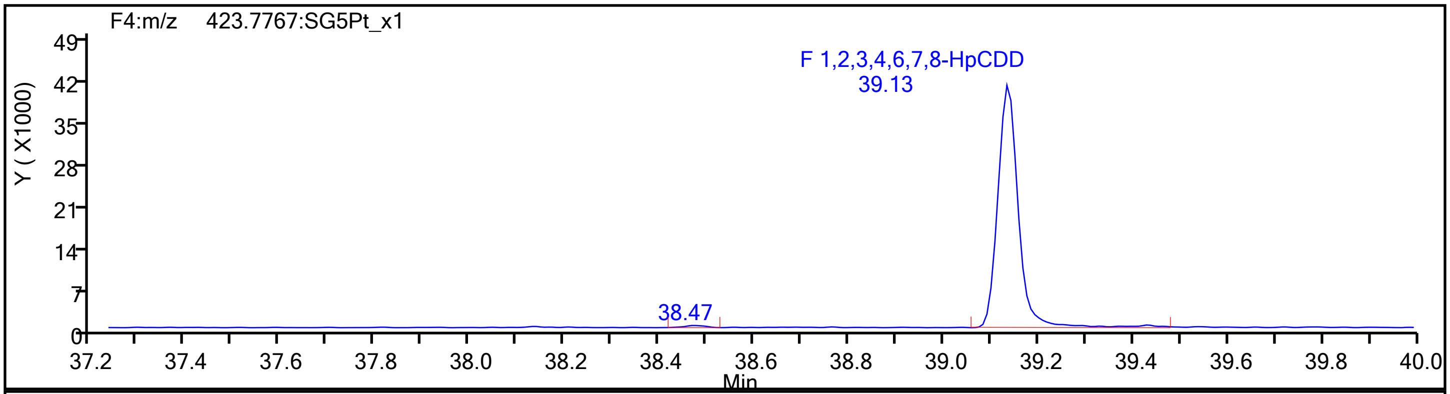

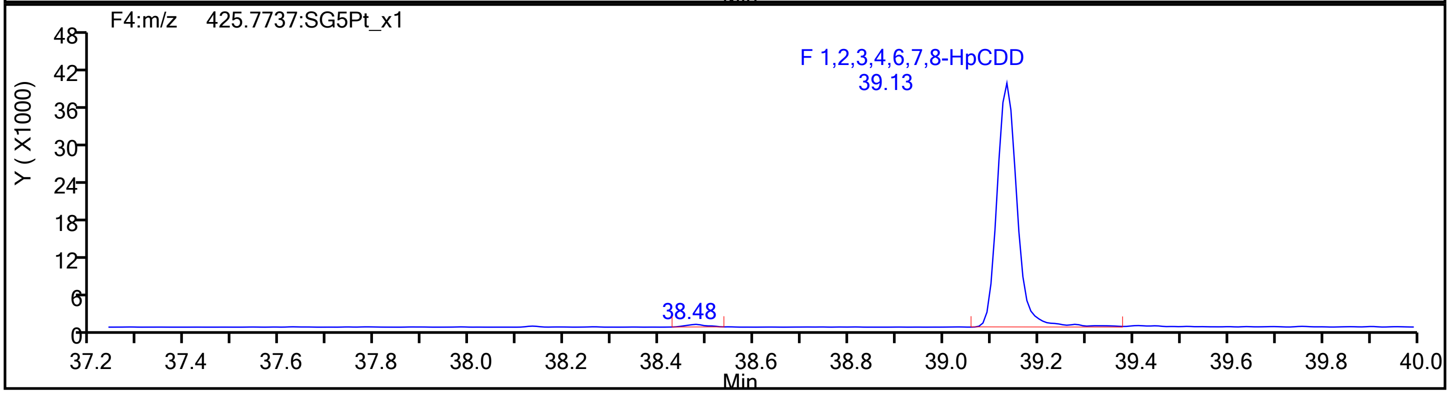

HpCDD Standards

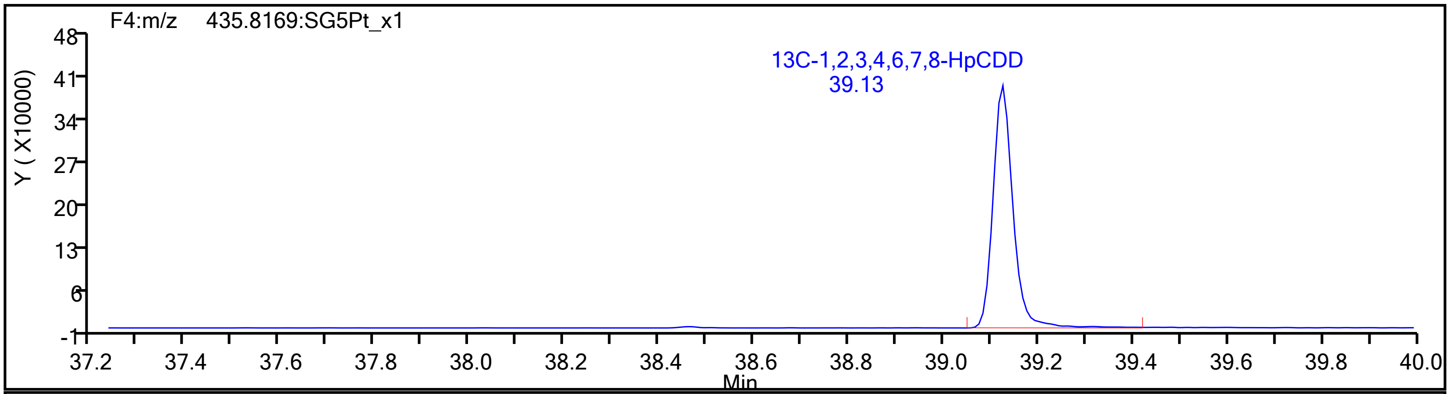

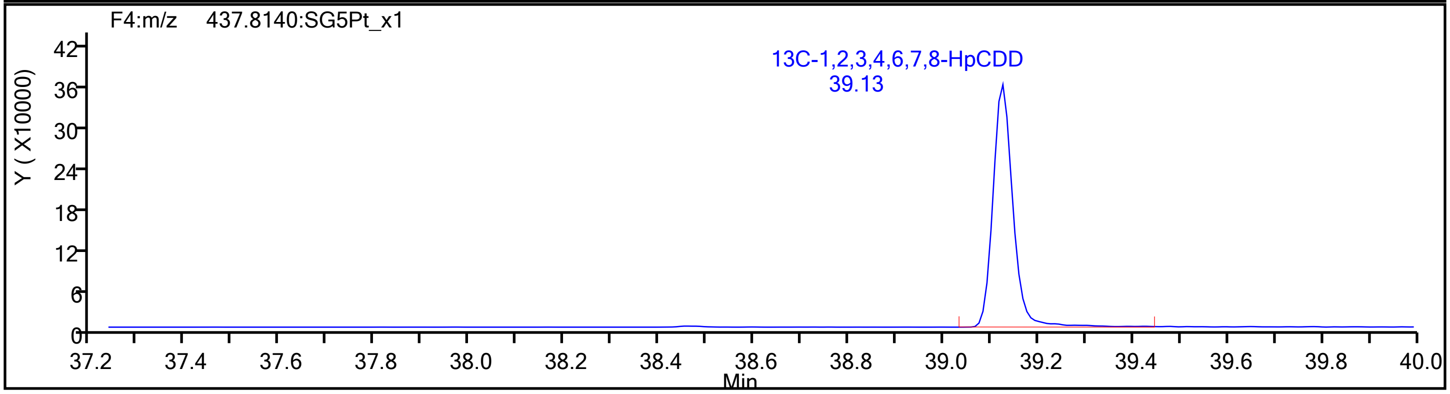

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

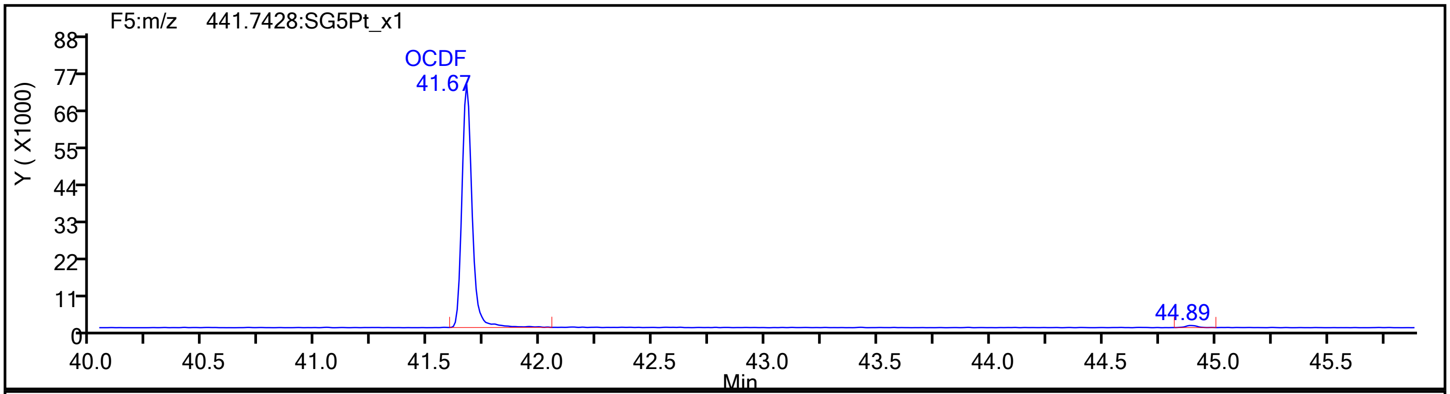

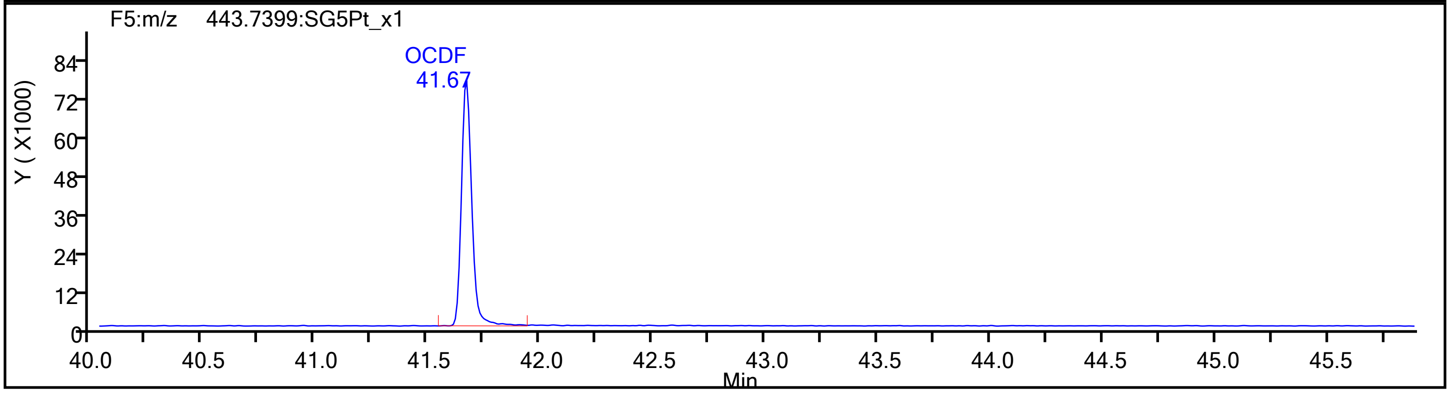

OCDF Standards

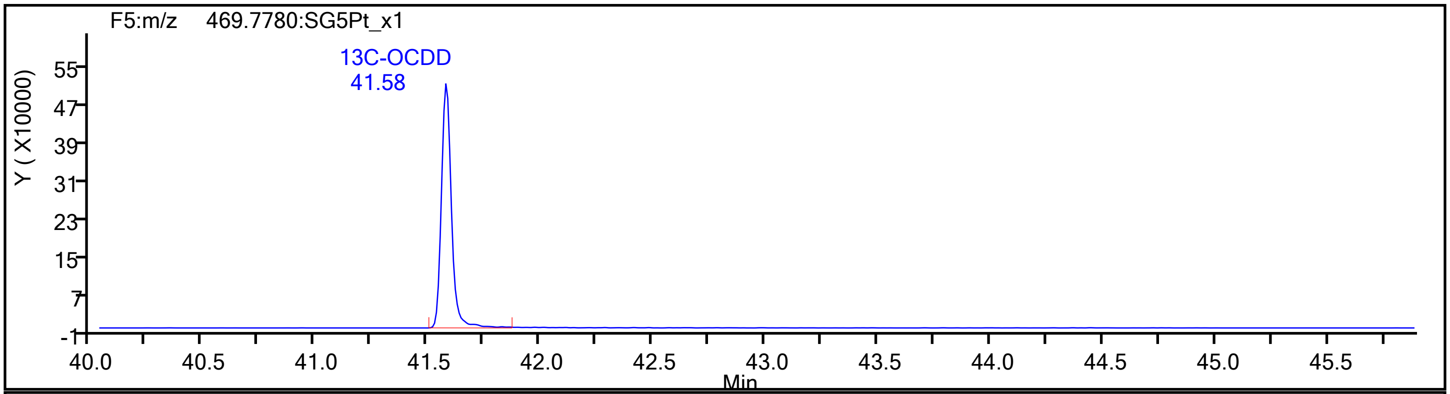

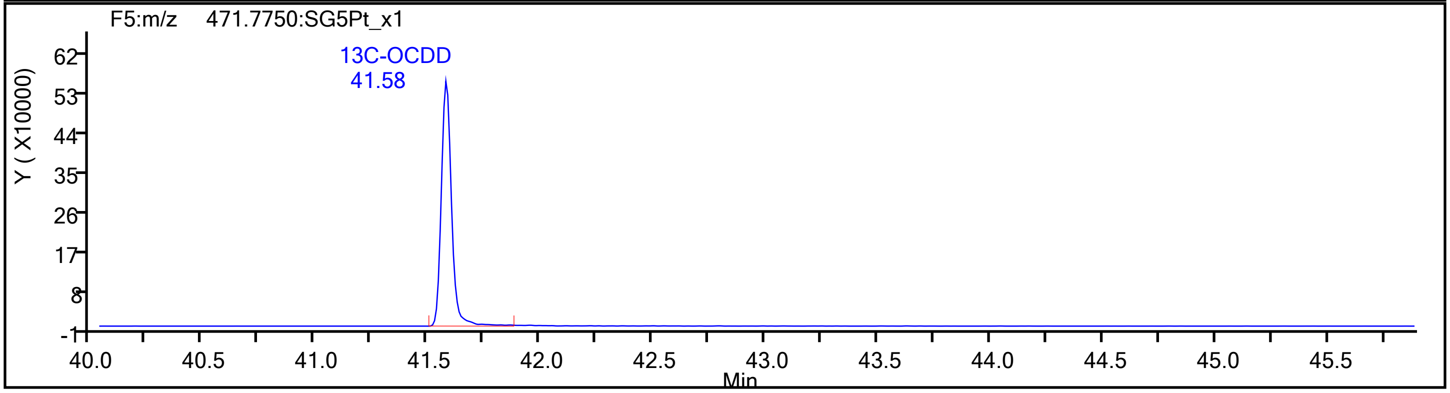

Report Date: 18-Sep-2020 11:00:12 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

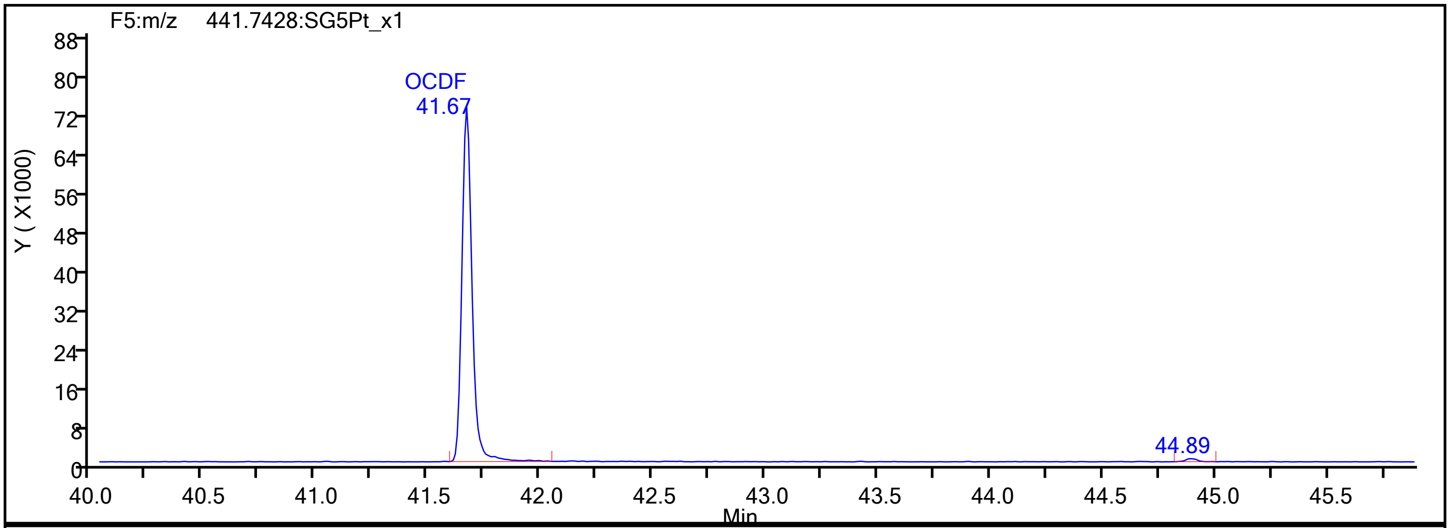

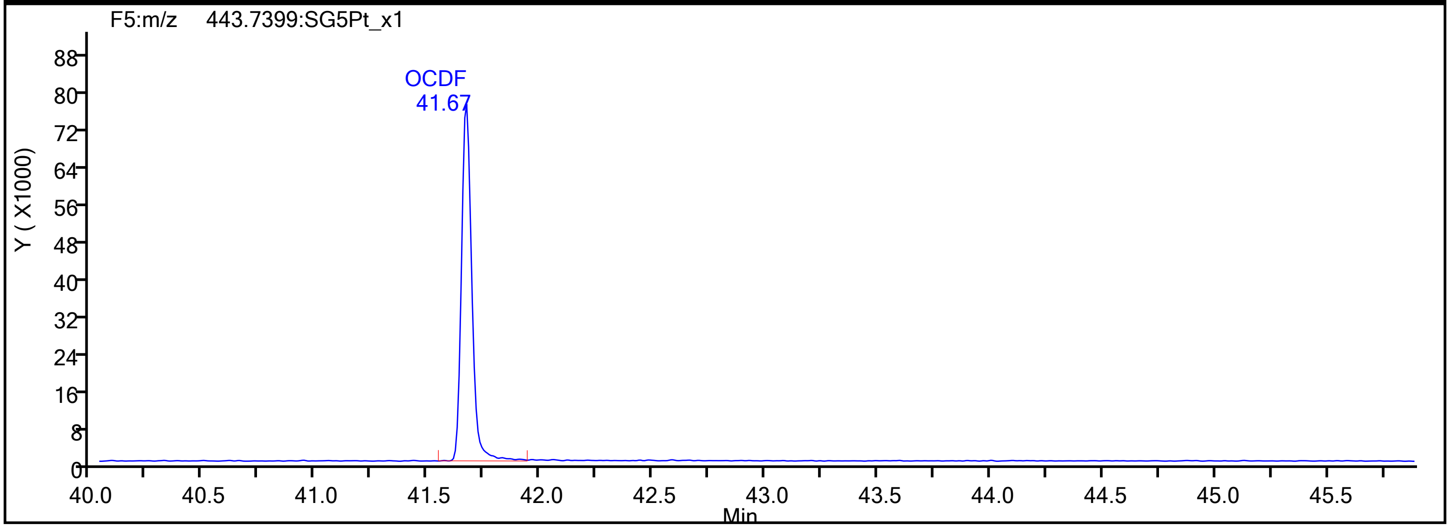

OCDF Interference Mass

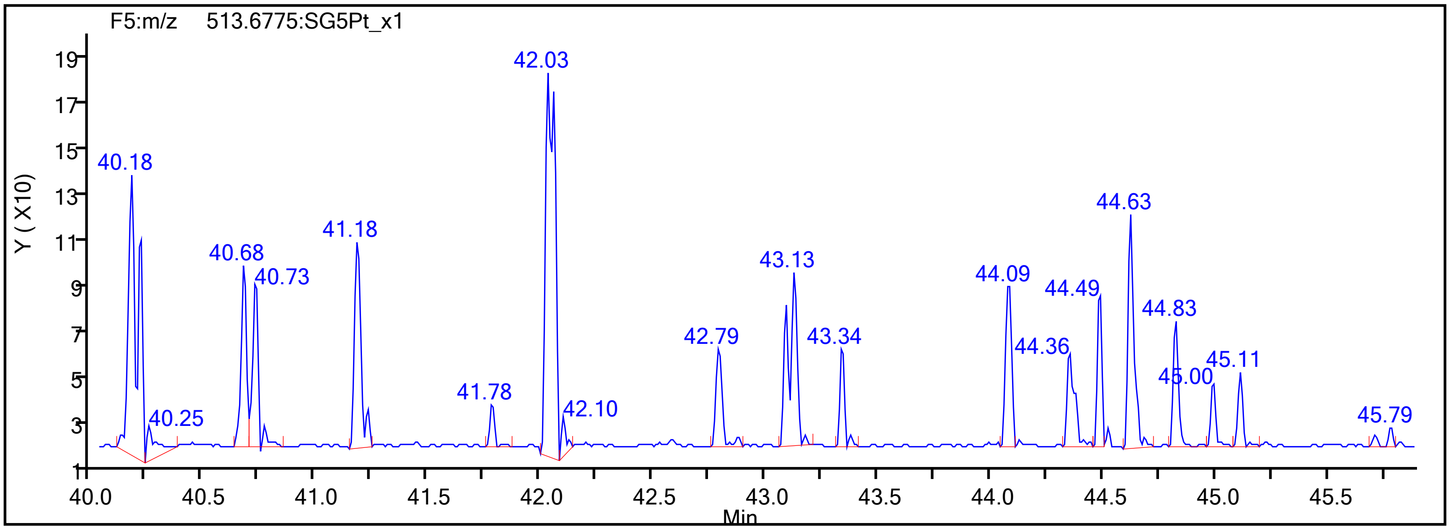

Report Date: 18-Sep-2020 11:00:12 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

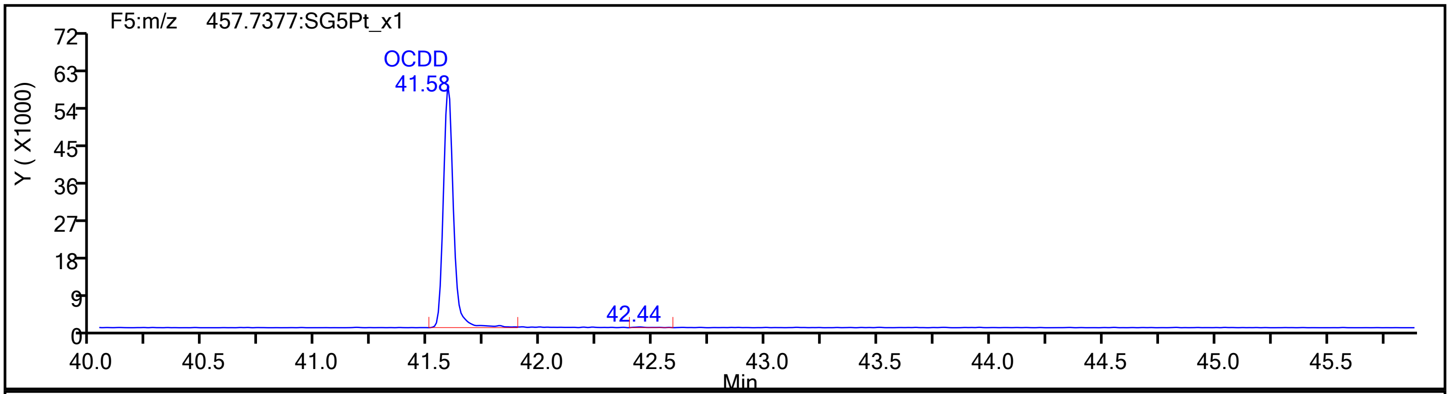

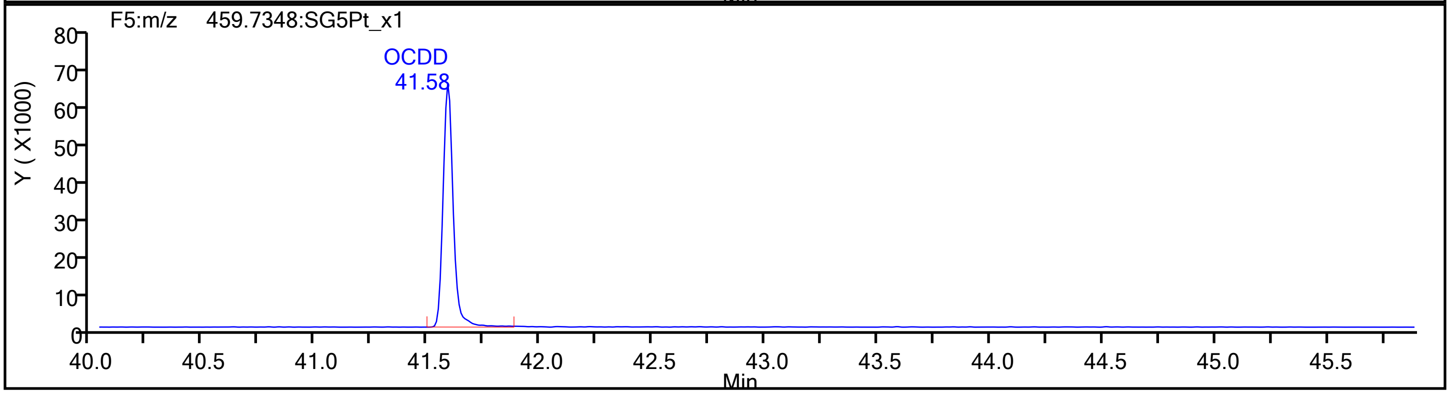

OCDD Standards

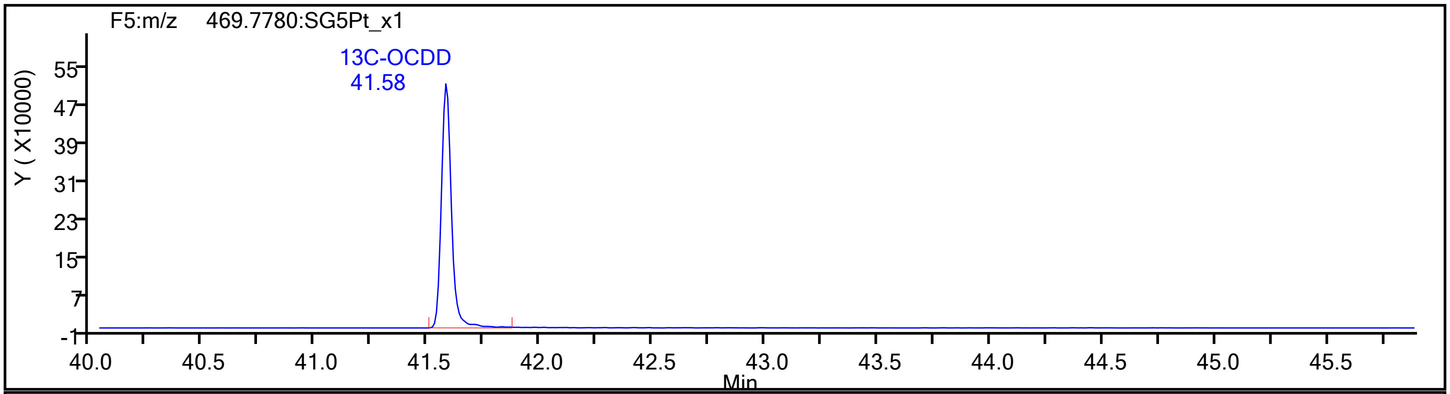

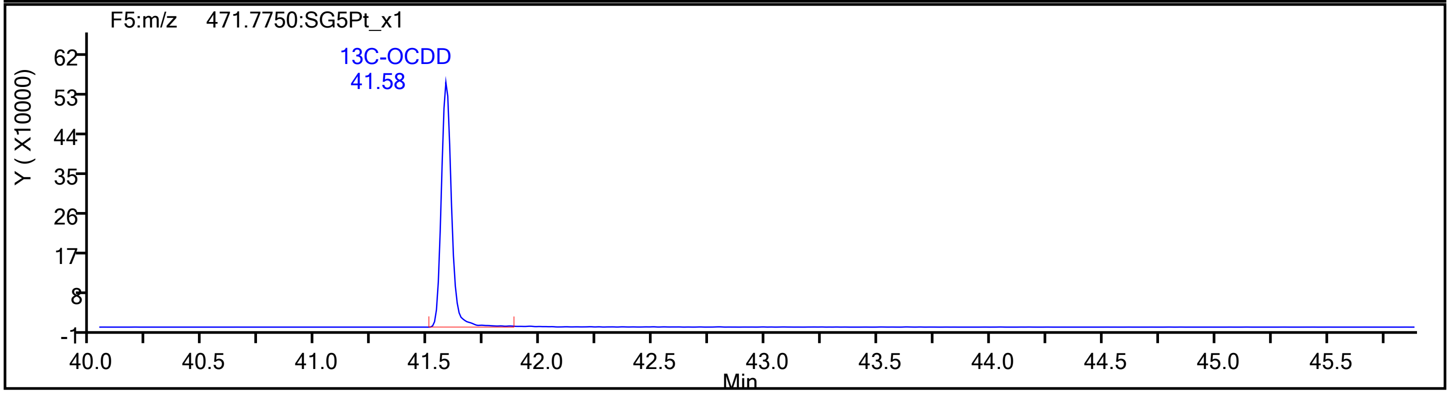

Report Date: 18-Sep-2020 11:00:12 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

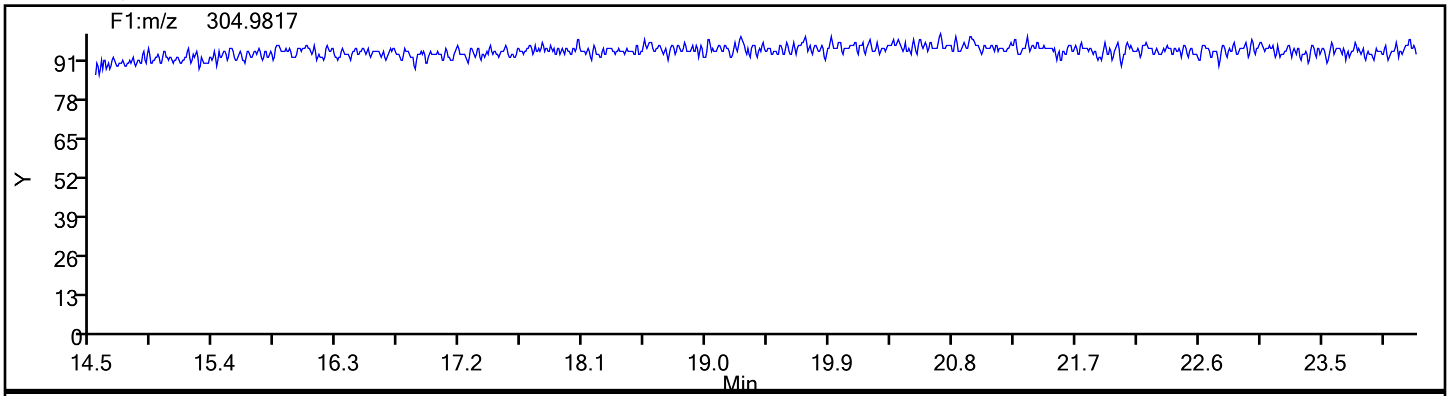

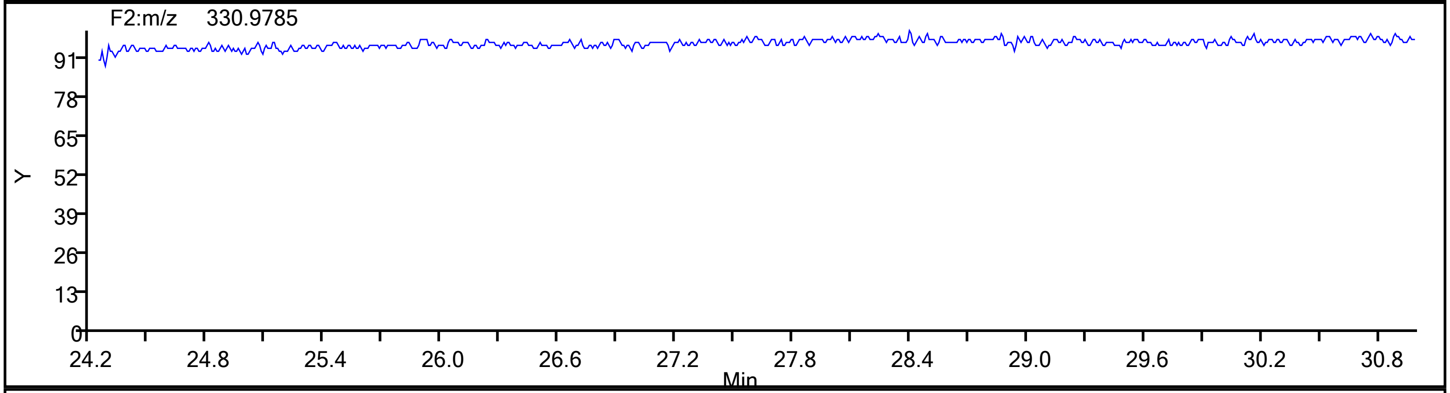

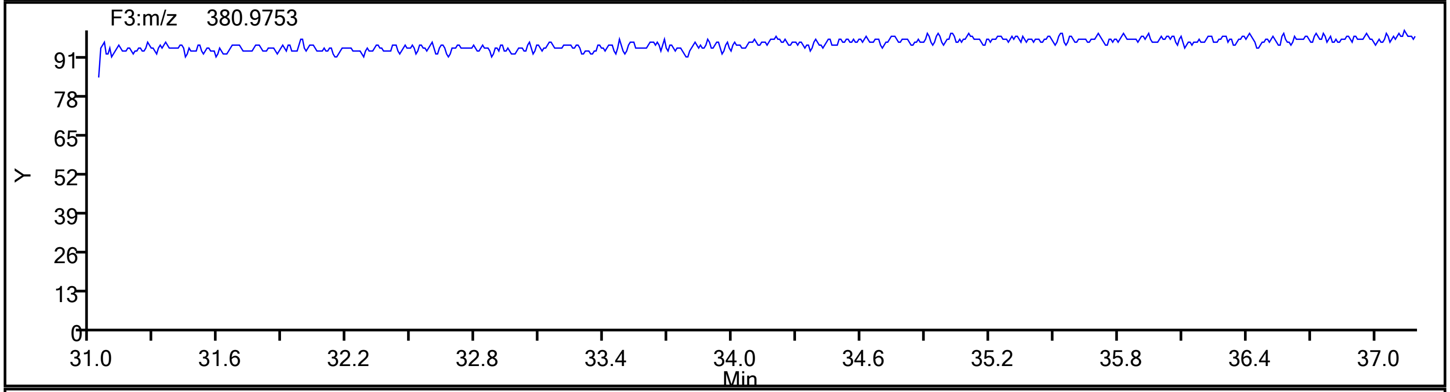

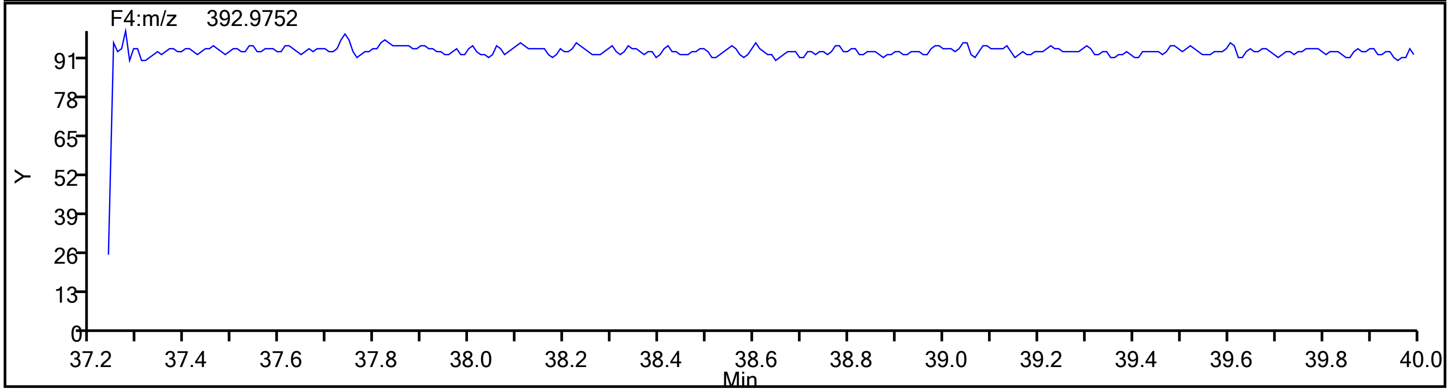

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

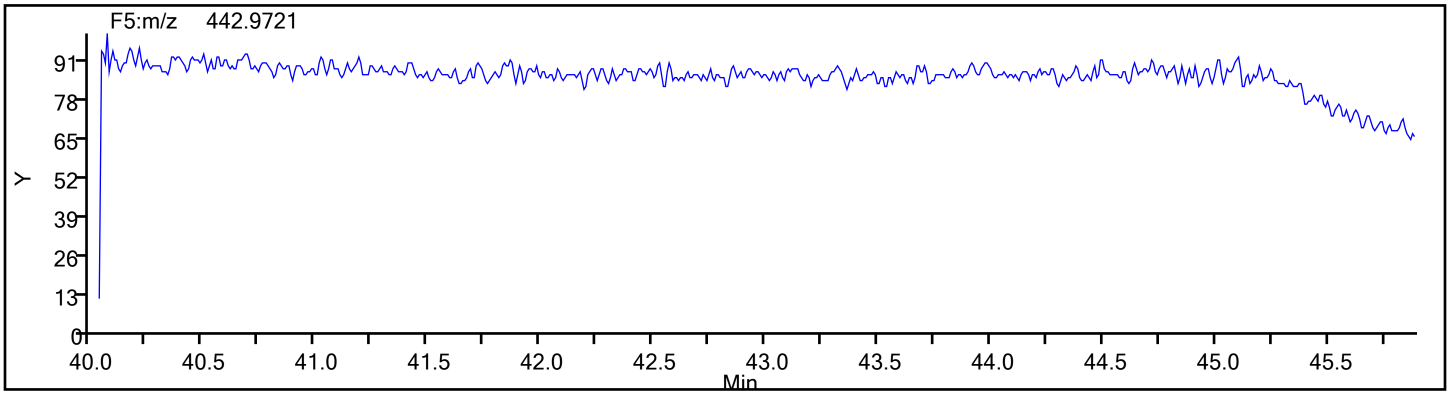

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 14:53:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:15 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:33:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.150	2813179	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.231	4542653	0.78	1.5883	101.7	101.7	0.3844	0.3844	102	
2,3,7,8-TCDF	19.256	474391	0.78	1.0857	9.619	9.619	0.0477	0.0477	96.19	
S Total TCDF					9.619	9.619	0.0477	0.0477		
D 13C-2,3,7,8-TCDD	20.511	3120967	0.83	1.1194	99.1	99.1	0.3561	0.3561	99.11	
$ 37Cl4-2,3,7,8-TCDD	20.537	319378		1.1468	9.900	9.900	0.0185	0.0185	99.00	
2,3,7,8-TCDD	20.537	327581	0.81	1.0810	9.710	9.710	0.0848	0.0848	97.10	
S Total TCDD					9.710	9.710	0.0848	0.0848		
D 13C-1,2,3,7,8-PeCDF	26.305	4275697	1.59	1.4782	102.8	102.8	0.4599	0.4599	103	
1,2,3,7,8-PeCDF	26.331	2200993	1.56	1.0547	48.8	48.8	0.2106	0.2106	97.62	
D 13C-2,3,4,7,8-PeCDF	27.762	3973993	1.60	1.3912	101.5	101.5	0.4887	0.4887	102	
2,3,4,7,8-PeCDF	27.788	2155859	1.55	1.1035	49.2	49.2	0.2324	0.2324	98.32	
S Total PeCDF					98.0	98.0	0.2215	0.2215		
D 13C-1,2,3,7,8-PeCDD	28.538	2681743	1.57	0.9415	101.3	101.3	0.2103	0.2103	101	
1,2,3,7,8-PeCDD	28.563	1406053	1.57	1.0680	49.1	49.1	0.0790	0.0790	98.18	
S Total PeCDD					49.1	49.1	0.0790	0.0790		
D 13C-1,2,3,4,7,8-HxCDF	34.183	3456400	0.54	1.1378	99.9	99.9	0.4632	0.4632	99.88	
1,2,3,4,7,8-HxCDF	34.200	2124449	1.27	1.2643	48.6	48.6	0.2657	0.2657	97.23	
D 13C-1,2,3,6,7,8-HxCDF	34.369	4006041	0.53	1.3173	100.0	100.0	0.4001	0.4001	100	
1,2,3,6,7,8-HxCDF	34.386	2377194	1.26	1.2230	48.5	48.5	0.2490	0.2490	97.04	
D 13C-2,3,4,6,7,8-HxCDF	35.270	3791155	0.53	1.2457	100.1	100.1	0.4231	0.4231	100	
2,3,4,6,7,8-HxCDF	35.287	2282654	1.26	1.2464	48.3	48.3	0.2165	0.2165	96.61	
D 13C-1,2,3,7,8,9-HxCDF	36.230	3526809	0.53	1.1840	97.9	97.9	0.4452	0.4452	97.94	
1,2,3,7,8,9-HxCDF	36.239	2160700	1.25	1.2638	48.5	48.5	0.2143	0.2143	96.96	
S Total HxCDF					193.9	193.9	0.2364	0.2364		
* 13C-1,2,3,7,8,9-HxCDD	36.020	3041432	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.506	2533537	1.27	0.8477	98.3	98.3	0.2643	0.2643	98.26	
1,2,3,4,7,8-HxCDD	35.523	1430853	1.28	1.1561	48.9	48.9	0.1240	0.1240	97.70	
D 13C-1,2,3,6,7,8-HxCDD	35.632	2993576	1.25	0.9979	98.6	98.6	0.2245	0.2245	98.64	
1,2,3,6,7,8-HxCDD	35.649	1511008	1.24	1.0284	49.1	49.1	0.1306	0.1306	98.16	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.036	1594191	1.26	1.1789	48.9	48.9	0.1177	0.1177	97.86	
S Total HxCDD					146.9	146.9	0.1241	0.1241		
D 13C-1,2,3,4,6,7,8-HpCDF	38.135	2934128	0.46	0.9884	97.6	97.6	0.5361	0.5361	97.61	
1,2,3,4,6,7,8-HpCDF	38.143	2172971	1.04	1.5064	49.2	49.2	0.2067	0.2067	98.33	
D 13C-1,2,3,4,7,8,9-HpCDF	39.432	2747864	0.46	0.9203	98.2	98.2	0.5758	0.5758	98.17	
1,2,3,4,7,8,9-HpCDF	39.441	1944648	1.04	1.4548	48.6	48.6	0.2141	0.2141	97.29	
S Total HpCDF					97.8	97.8	0.2104	0.2104		
D 13C-1,2,3,4,6,7,8-HpCDD	39.121	2834170	1.06	0.9556	97.5	97.5	0.2751	0.2751	97.51	
1,2,3,4,6,7,8-HpCDD	39.129	1486612	1.03	1.0640	49.3	49.3	0.1090	0.1090	98.60	
S Total HpCDD					49.3	49.3	0.1090	0.1090		
D 13C-OCDD	41.575	4436272	0.91	0.7420	196.6	196.6	0.2403	0.2403	98.28	
OCDF	41.668	3086889	0.92	1.4296	97.3	97.3	0.1036	0.1036	97.34	
OCDD	41.583	2401141	0.89	1.1293	95.9	95.9	0.0890	0.0890	95.85	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC
Calib Level: 4
Inject. Date: 17-Sep-2020 14:53:00
ALS Bottle#: 0
Worklist Smp#: 5
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System
Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:15
Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm)
Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa
Date: 17-Sep-2020 18:33:56

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.150	20.145	0		1244865	191129	497	1242	385		
333.9338	20.150	20.145	0		1568314	241626	193	482	1252	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.231	19.222	1	0.954	1992448	311865	680	1700	459		
317.9389	19.231	19.222	1	0.954	2550205	382597	377	942	1015	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.256	19.246	1	1.001	208136	31451	46	115	684		
305.8987	19.248	19.246	0	1.001	266255	40190	98	245	410	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.511	20.507	0	1.018	1414296	193812	497	1242	390		
333.9338	20.511	20.507	0	1.018	1706671	236936	193	482	1228	0.83(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.537	20.531	0	1.019	319378	43423	37	92	1174		
2,3,7,8-TCDD											
319.8965	20.537	20.532	0	1.001	147054	20456	114	285	179		
321.8936	20.537	20.532	0	1.001	180527	25138	44	110	571	0.81(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.305	26.301	0	1.305	2623829	444802	704	1760	632		
353.8970	26.297	26.301	0	1.305	1651868	273311	473	1182	578	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.331	26.321	1	1.001	1342756	220836	356	890	620		
341.8567	26.322	26.321	0	1.001	858237	140672	282	705	499	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.762	27.762	0	1.378	2445415	380203	704	1760	540		
353.8970	27.762	27.762	0	1.378	1528578	241799	473	1182	511	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.788	27.787	0	1.001	1311845	208485	356	890	586		
341.8567	27.788	27.787	0	1.001	844014	133442	282	705	473	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.538	28.537	0	1.416	1636983	251263	190	475	1322		
369.8919	28.538	28.537	0	1.416	1044760	163675	153	382	1070	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.563	28.562	0	1.001	859848	127255	104	260	1224		
357.8516	28.563	28.562	0	1.001	546205	80123	36	90	2226	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.183	34.181	0	0.949	1207475	248917	548	1370	454		
385.8610	34.183	34.181	0	0.949	2248925	464023	1080	2700	430	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.200	34.200	0	1.000	1187634	239728	549	1372	437		
375.8178	34.200	34.200	0	1.000	936815	190457	409	1022	466	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.369	34.365	0	0.954	1388484	274132	548	1370	500		
385.8610	34.369	34.365	0	0.954	2617557	512290	1080	2700	474	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.386	34.384	0	1.000	1323099	261151	549	1372	476		
375.8178	34.386	34.384	0	1.000	1054095	207861	409	1022	508	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.270	35.272	0	0.979	1315529	310008	548	1370	566		
385.8610	35.278	35.272	0	0.979	2475626	577644	1080	2700	535	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.287	35.288	0	1.000	1274389	290977	549	1372	530		
375.8178	35.287	35.288	0	1.000	1008265	231717	409	1022	567	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.230	36.225	0	1.006	1216344	302327	548	1370	552		
385.8610	36.230	36.225	0	1.006	2310465	582157	1080	2700	539	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.239	36.240	0	1.000	1201287	296519	549	1372	540		
375.8178	36.239	36.240	0	1.000	959413	235480	409	1022	576	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.020	36.021	0		1706866	427670	388	970	1102		
403.8529	36.020	36.021	0		1334566	344546	304	760	1133	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.506	35.502	0	0.986	1418867	374792	388	970	966		
403.8529	35.506	35.502	0	0.986	1114670	287719	304	760	946	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.523	35.519	0	1.000	803078	206325	210	525	983		
391.8127	35.514	35.519	0	1.000	627775	161743	170	425	951	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.632	35.630	0	0.989	1663439	395009	388	970	1018		
403.8529	35.632	35.630	0	0.989	1330137	312053	304	760	1026	1.25(1.05-1.43)	

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.649	35.646	0	1.000	836675	197335	210	525	940		
391.8127	35.649	35.646	0	1.000	674333	157330	170	425	925	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.036	36.033	0	1.015	888007	223378	210	525	1064		
391.8127	36.036	36.033	0	1.015	706184	176682	170	425	1039	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.135	38.132	0	1.059	928936	296932	503	1257	590		
419.8220	38.135	38.132	0	1.059	2005192	626970	1134	2835	553	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.143	38.141	0	1.000	1107984	348000	607	1517	573		
409.7788	38.143	38.141	0	1.000	1064987	338963	544	1360	623	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.432	39.428	0	1.095	862251	290607	503	1257	578		
419.8220	39.432	39.428	0	1.095	1885613	633030	1134	2835	558	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.441	39.438	0	1.000	991275	330139	607	1517	544		
409.7788	39.441	39.438	0	1.000	953373	320575	544	1360	589	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.121	39.118	0	1.086	1458927	492177	391	977	1259		
437.8140	39.121	39.118	0	1.086	1375243	460410	421	1052	1094	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.129	39.126	0	1.000	755770	252912	234	585	1081		
425.7737	39.129	39.126	0	1.000	730842	245222	208	520	1179	1.03(0.88-1.20)	
13C-OCDD											
469.7780	41.575	41.572	0	1.154	2107885	671427	251	627	2675		
471.7750	41.575	41.572	0	1.154	2328387	745998	300	750	2487	0.91(0.76-1.02)	
OCDF											
441.7428	41.668	41.663	0	1.002	1476941	465032	187	467	2487		
443.7399	41.668	41.663	0	1.002	1609948	501062	233	582	2150	0.92(0.76-1.02)	
OCDD											
457.7377	41.583	41.580	0	1.000	1128694	363983	139	347	2619		
459.7348	41.583	41.580	0	1.000	1272447	406889	146	365	2787	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

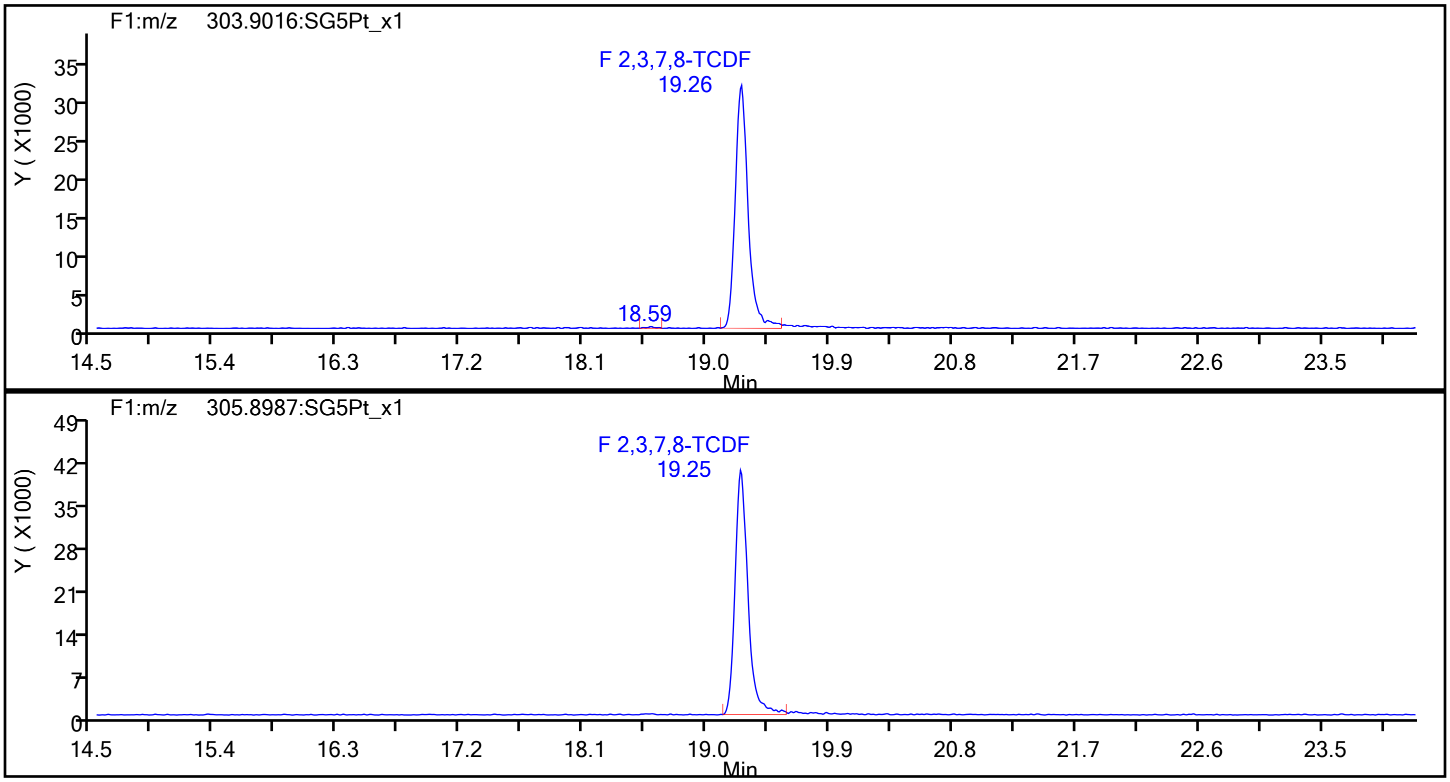

TCDF Standards

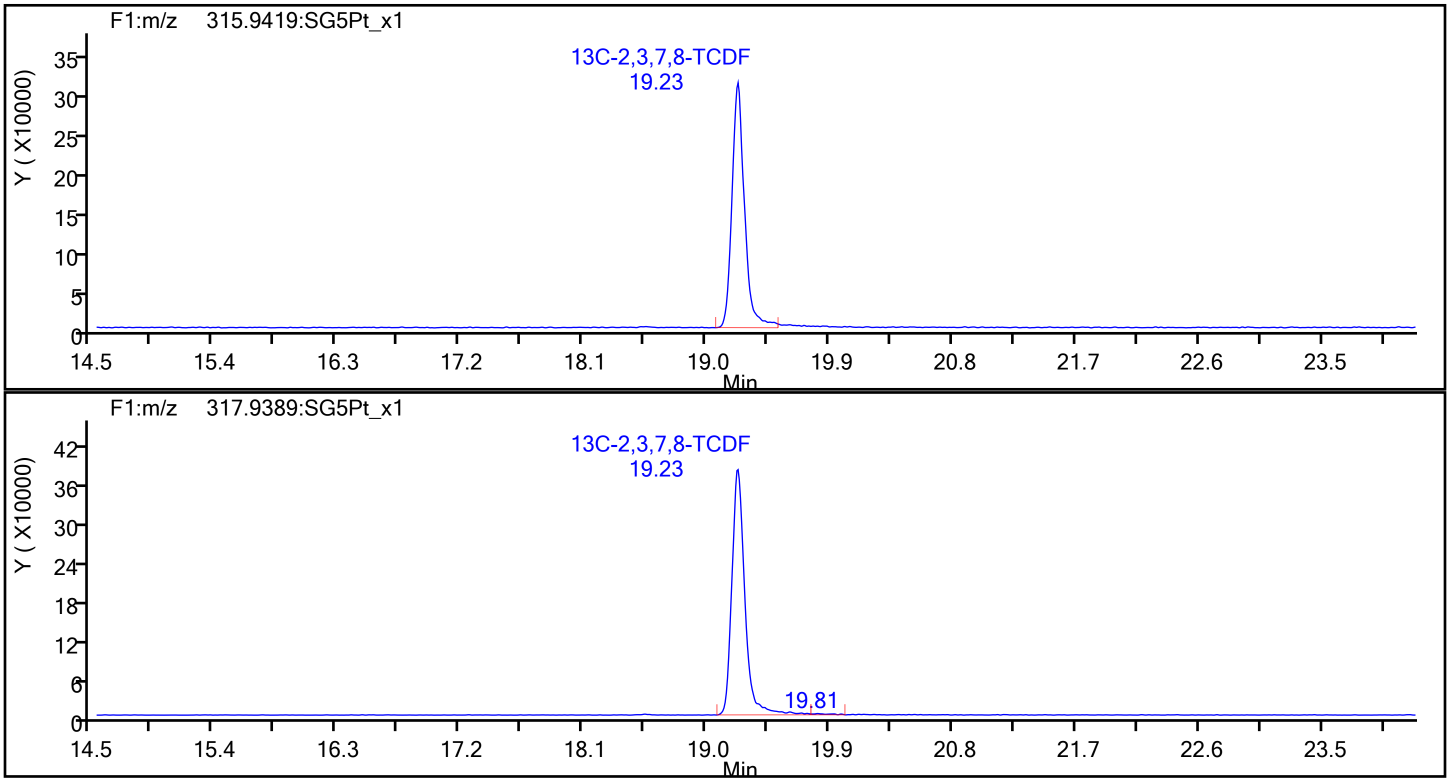

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

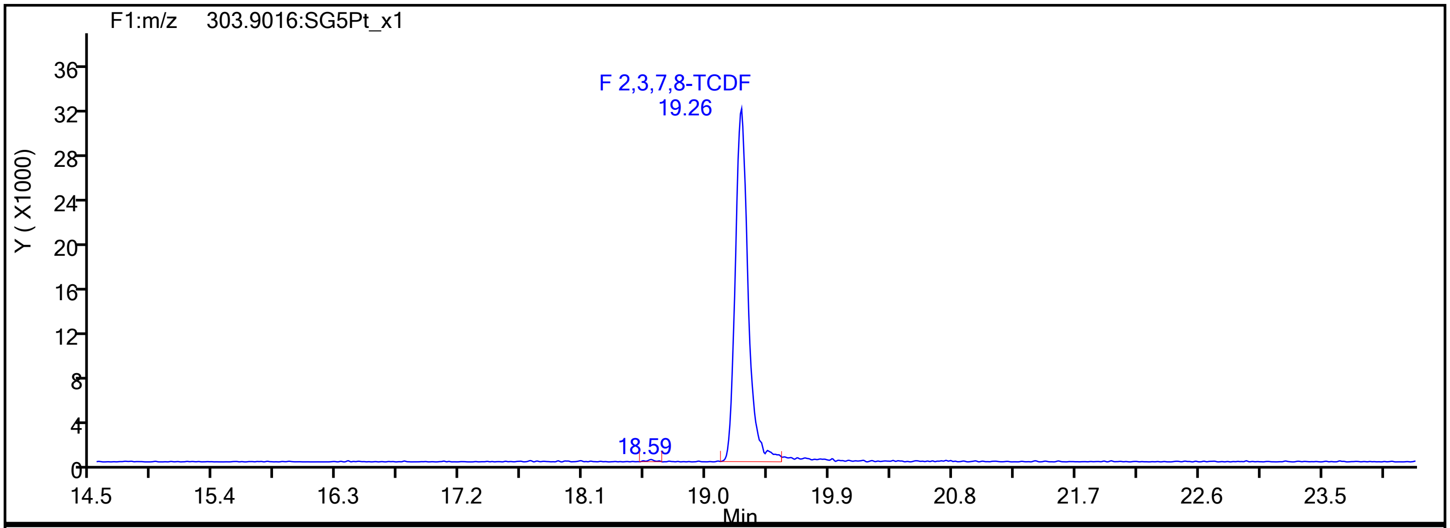

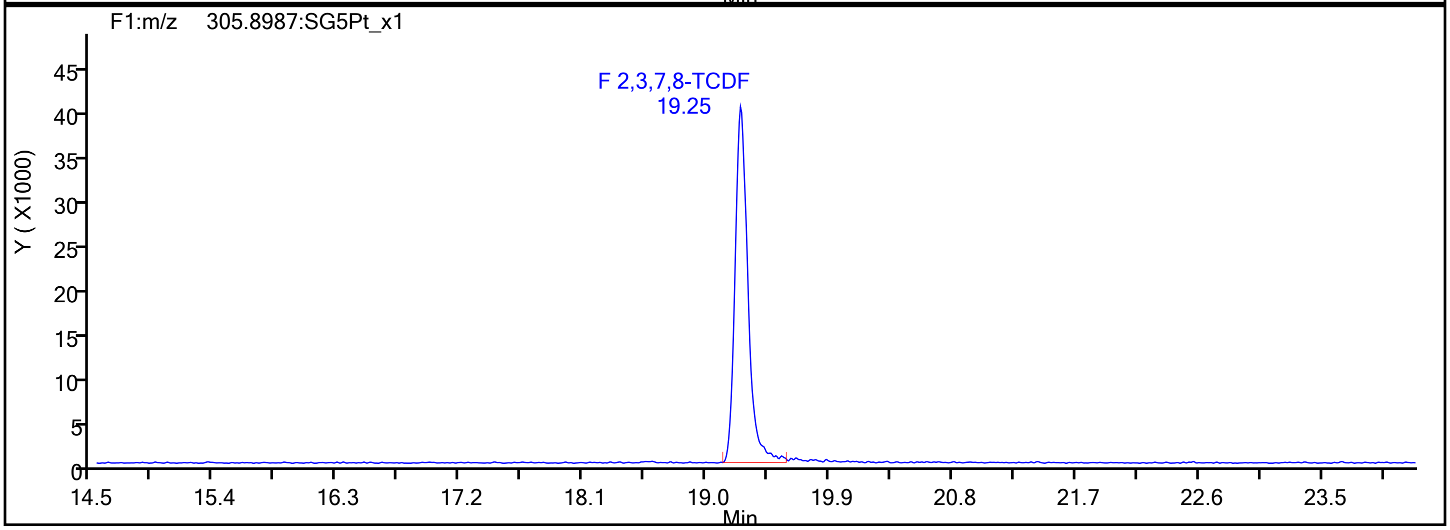

TCDF Interference Mass

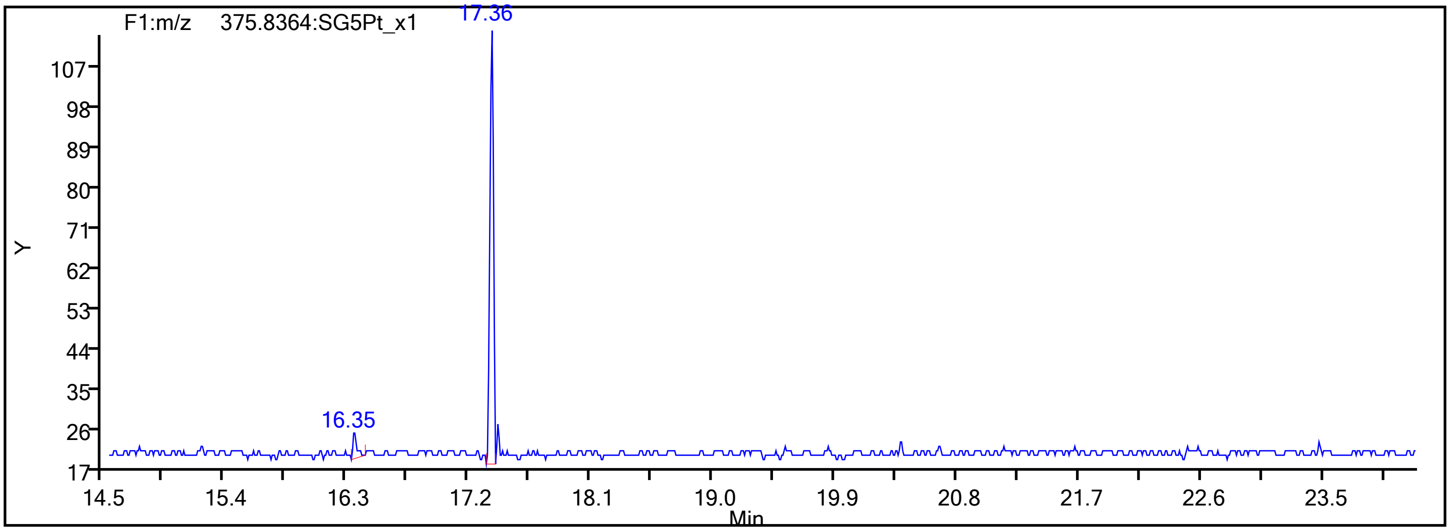

Report Date: 18-Sep-2020 11:00:25
Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

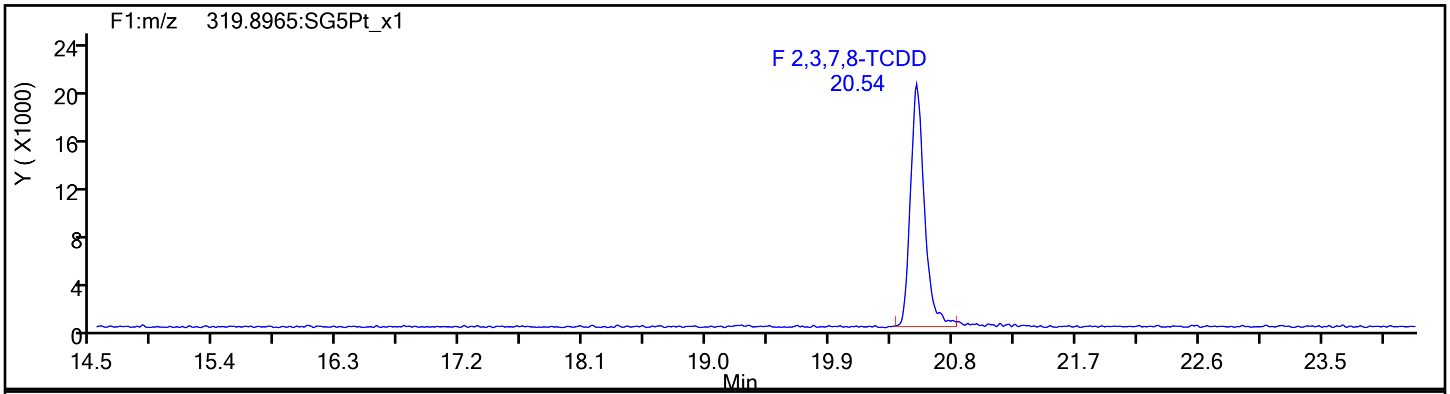

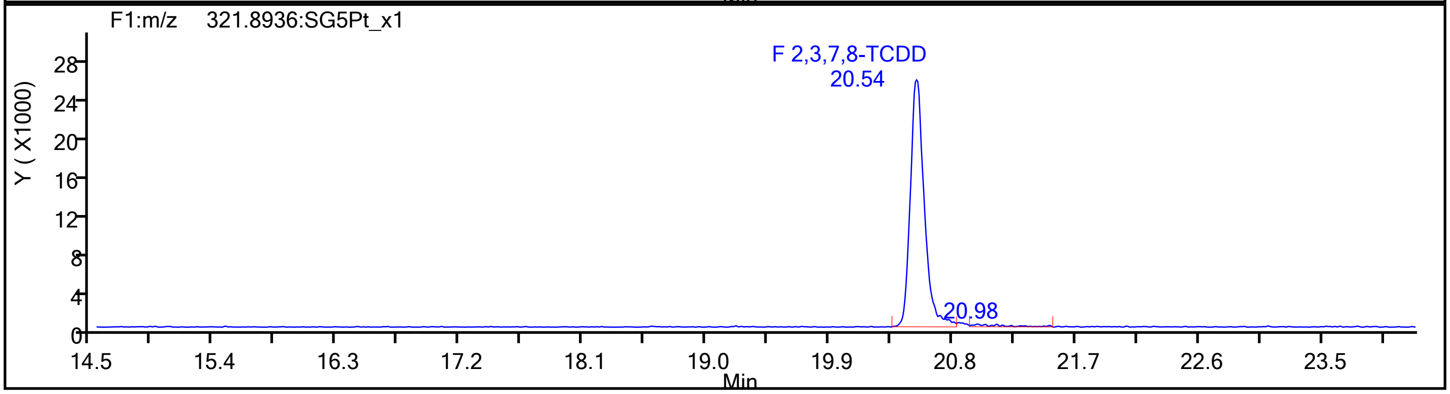

TCDD Standards

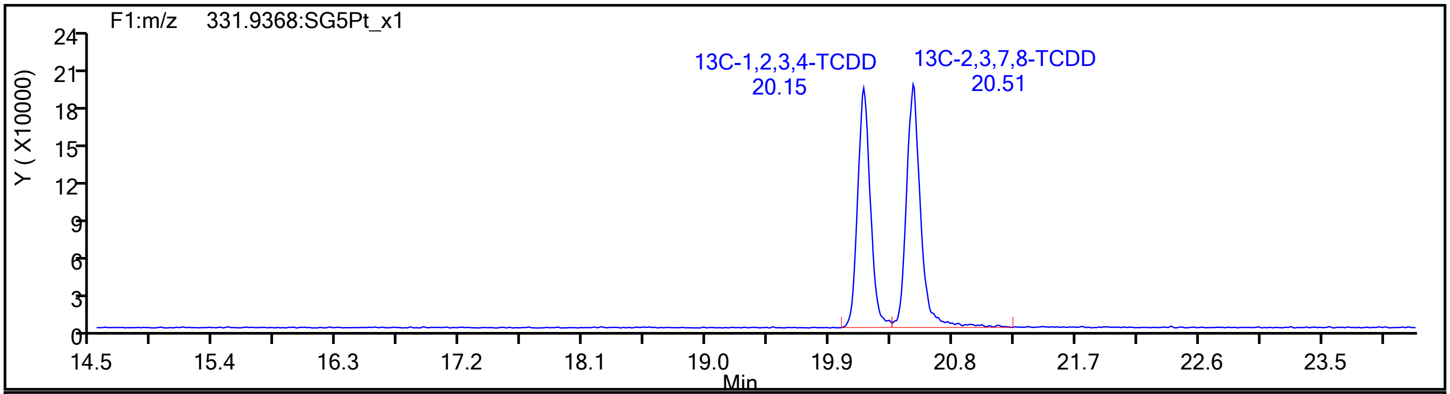

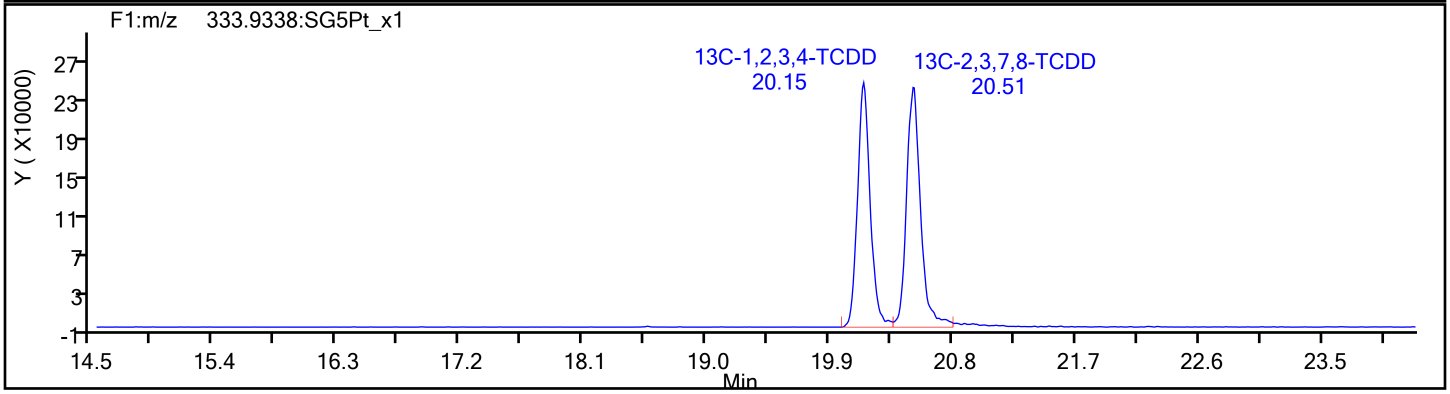

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

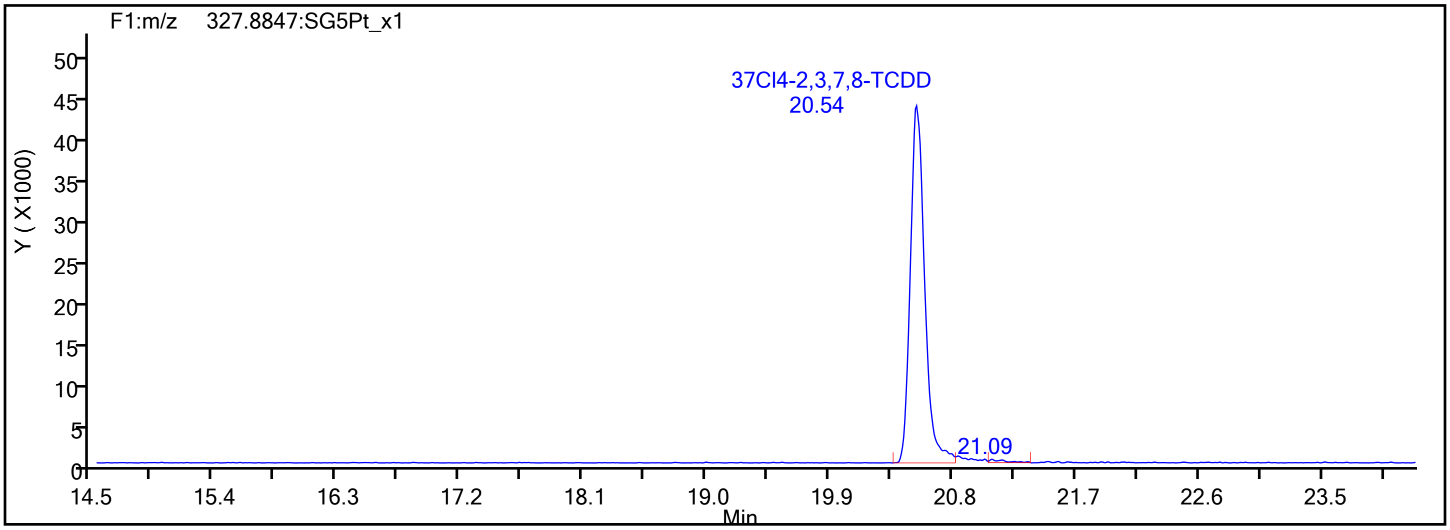

37Cl4-TCDD Standards

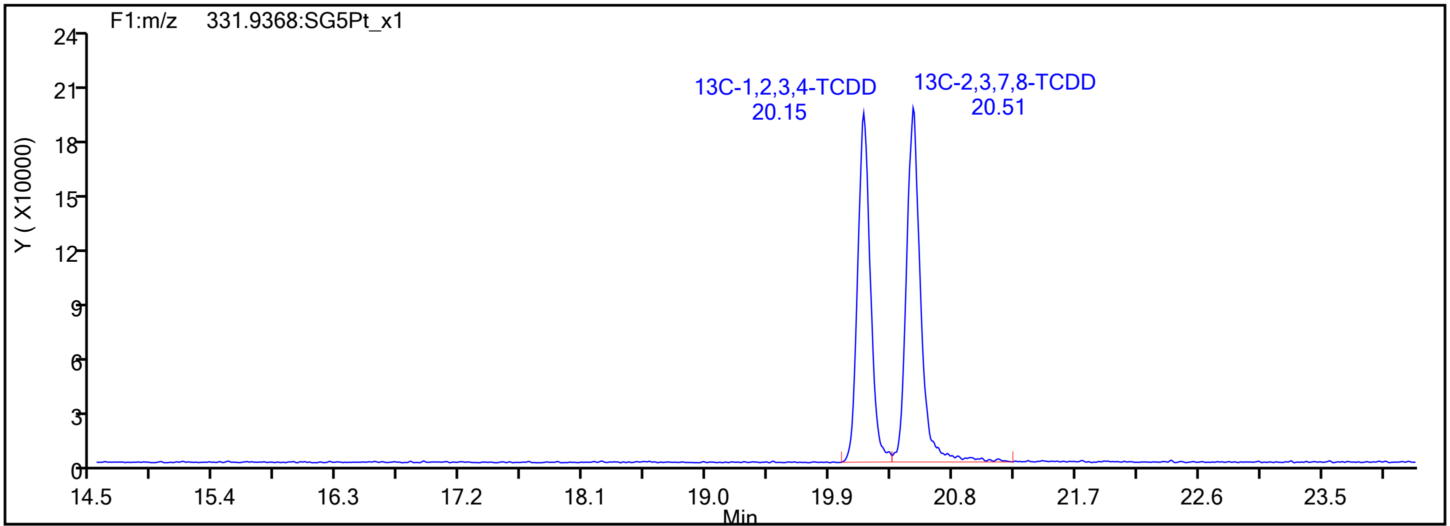

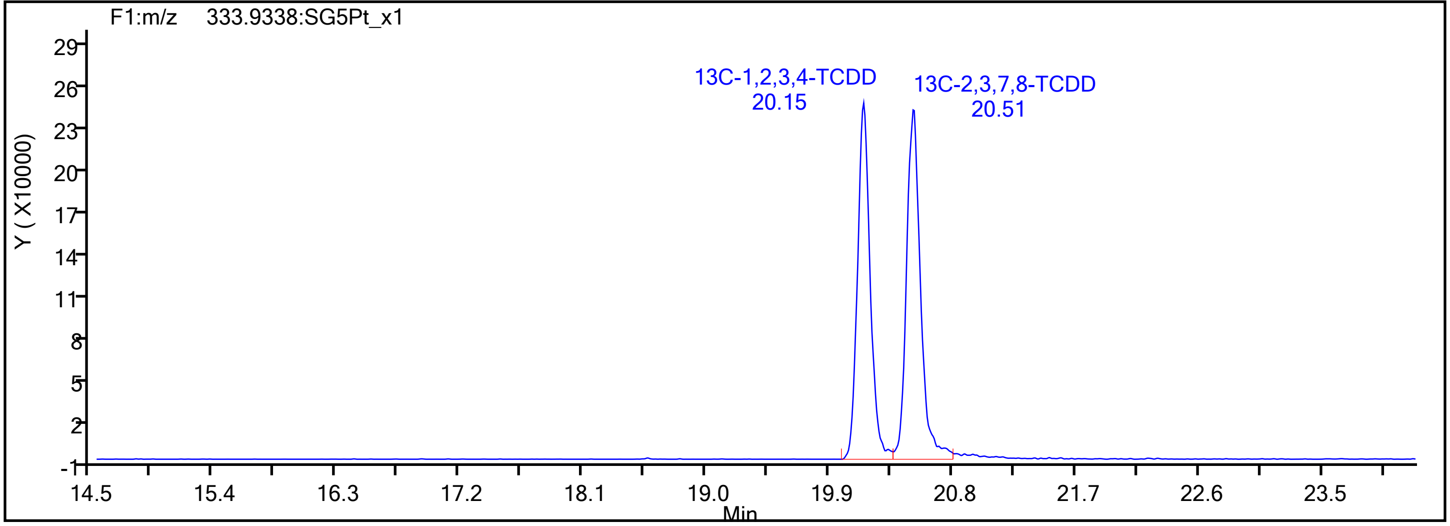

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

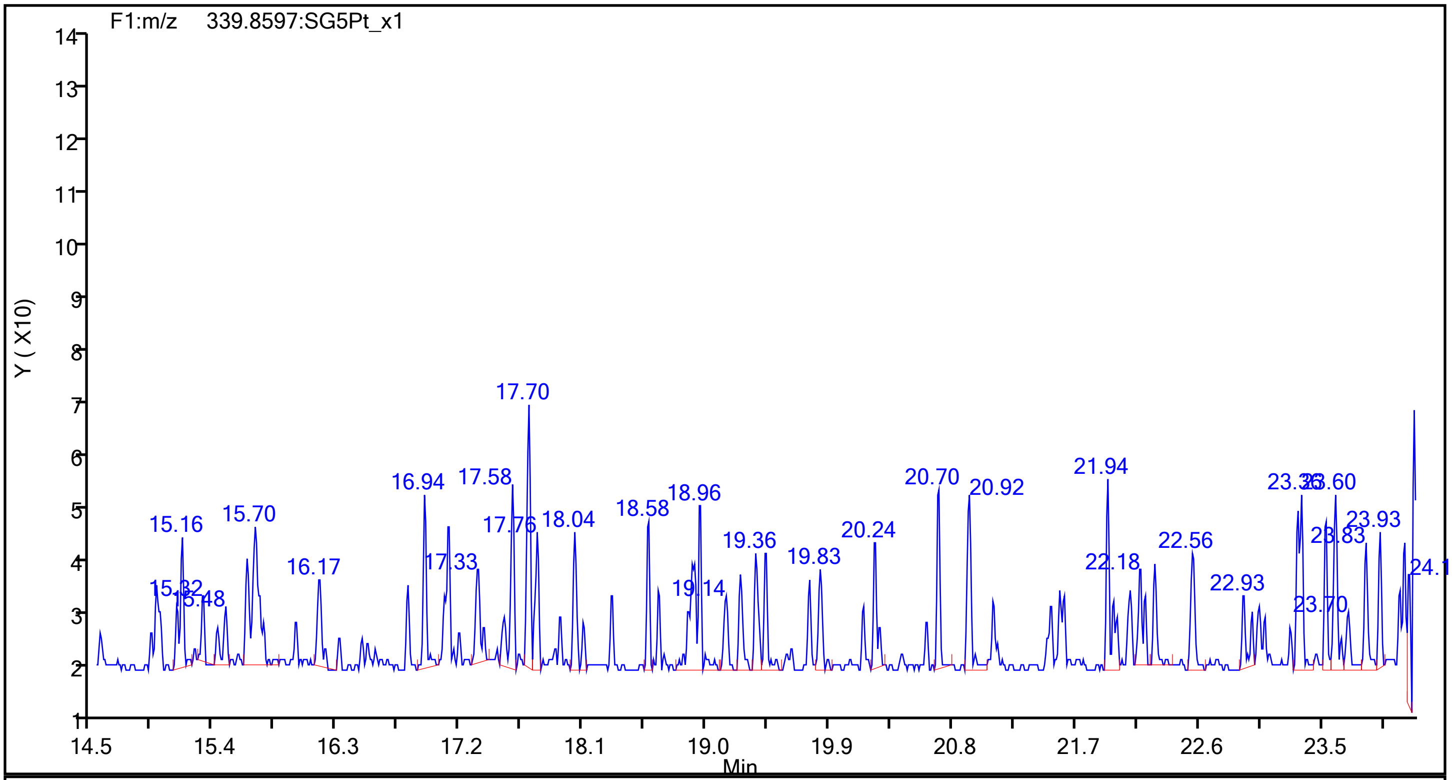

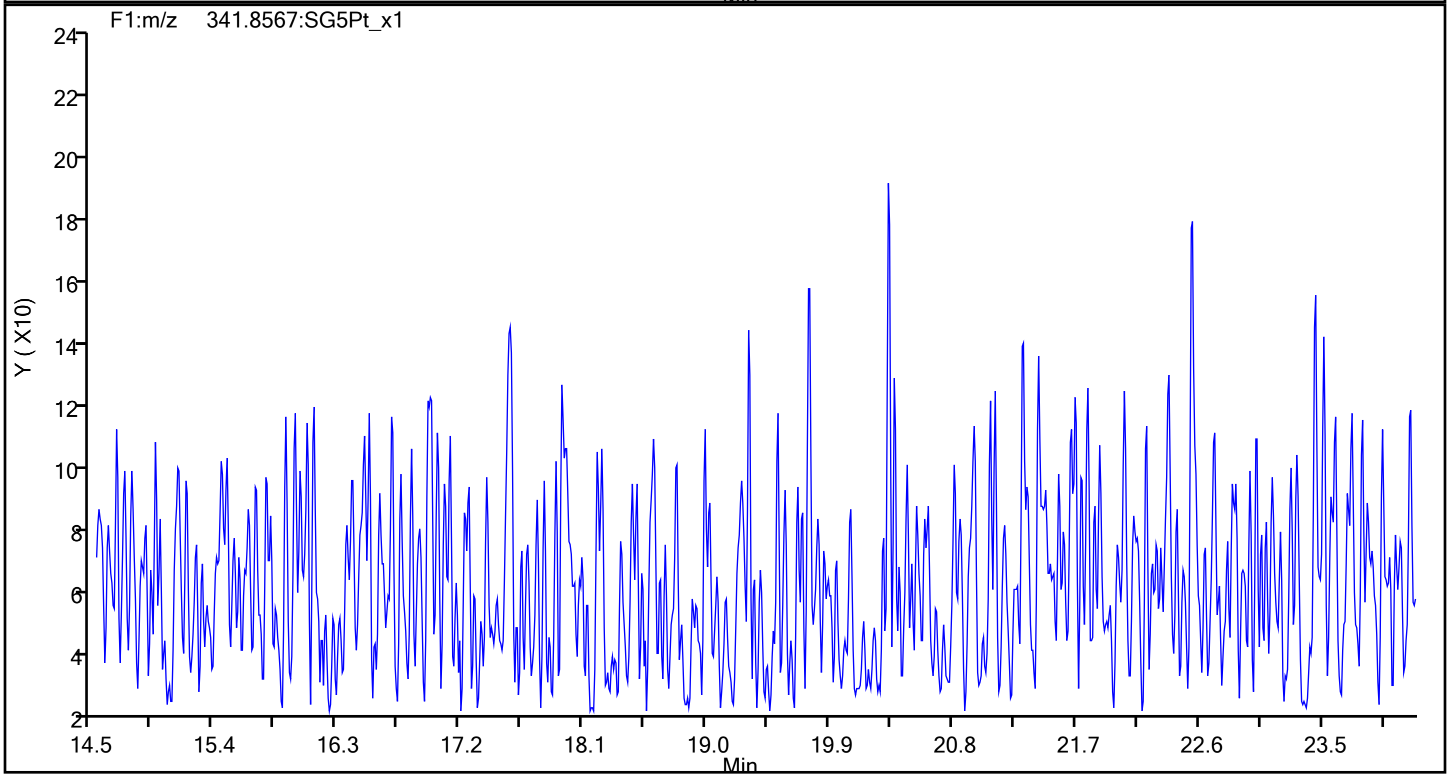

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

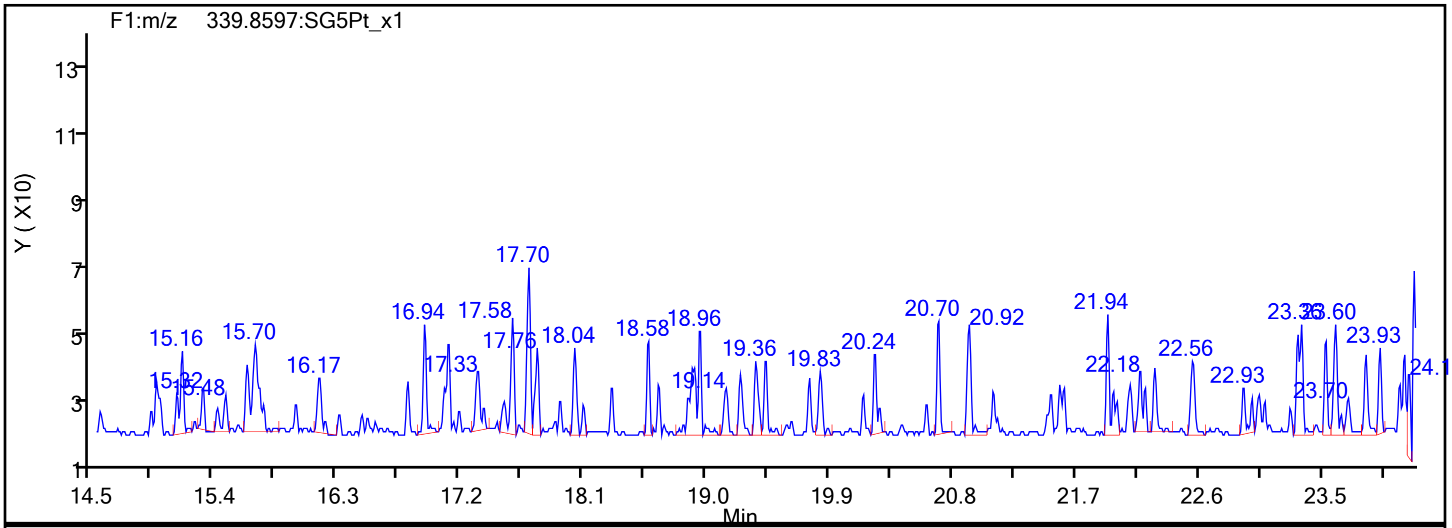

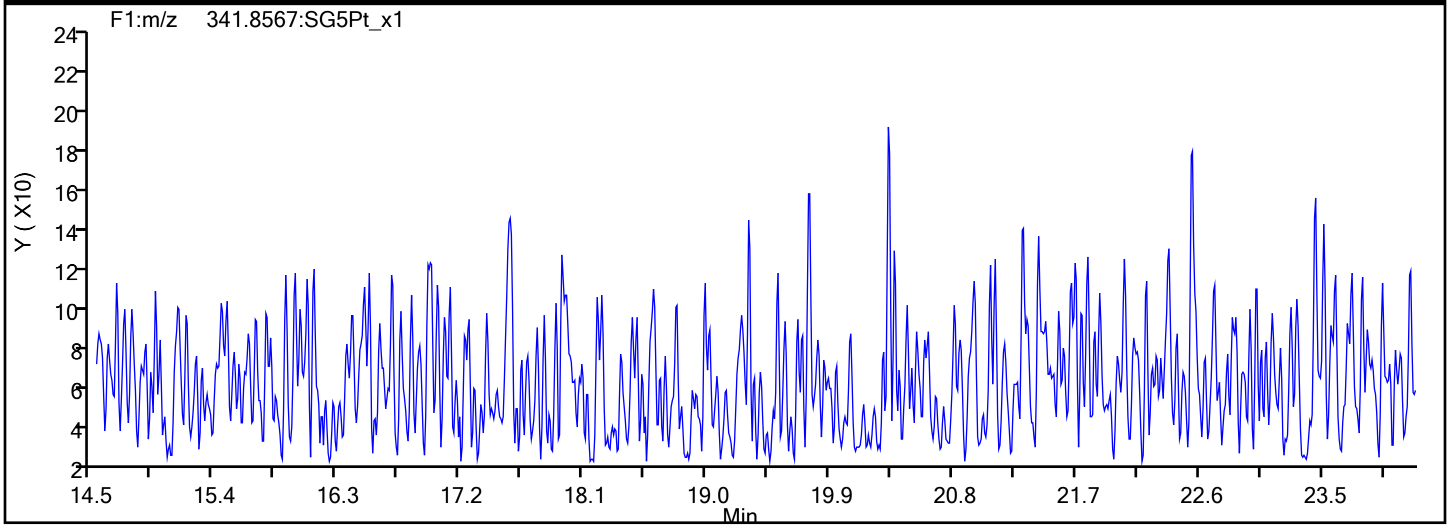

F1 PeCDFs Interference Mass

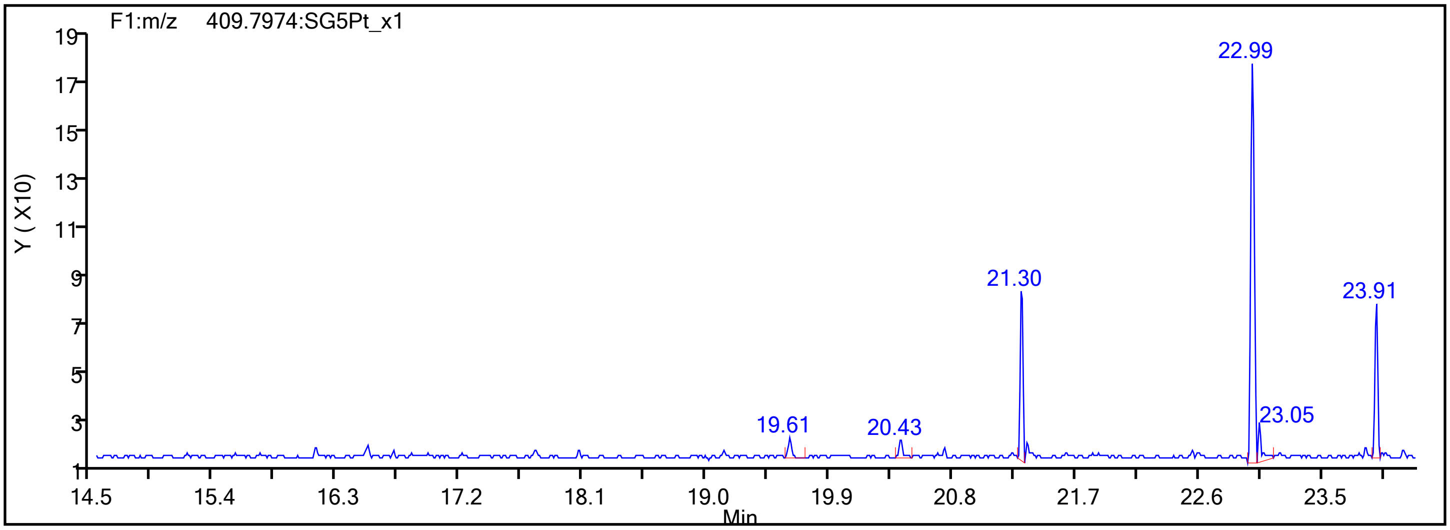

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

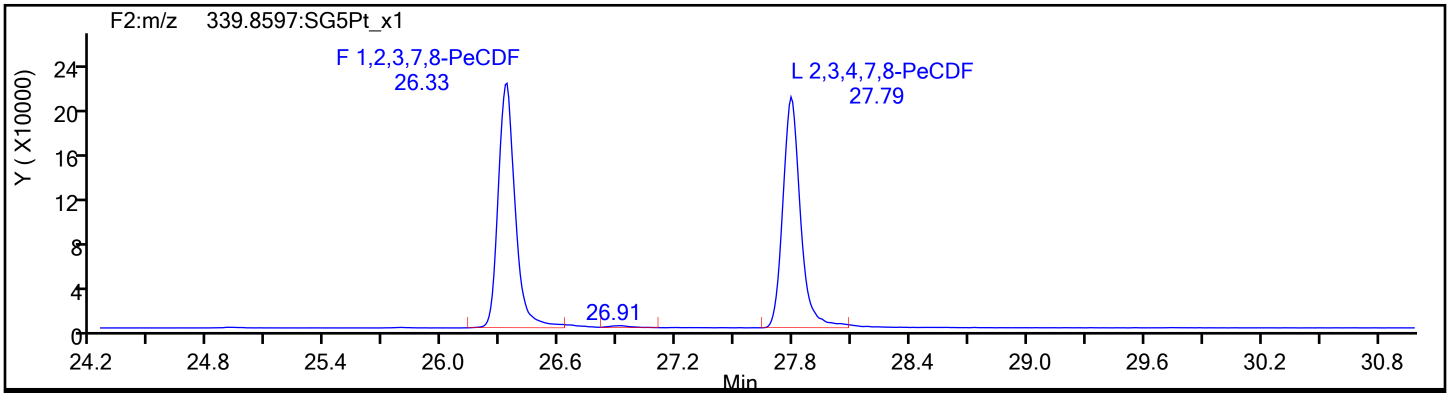

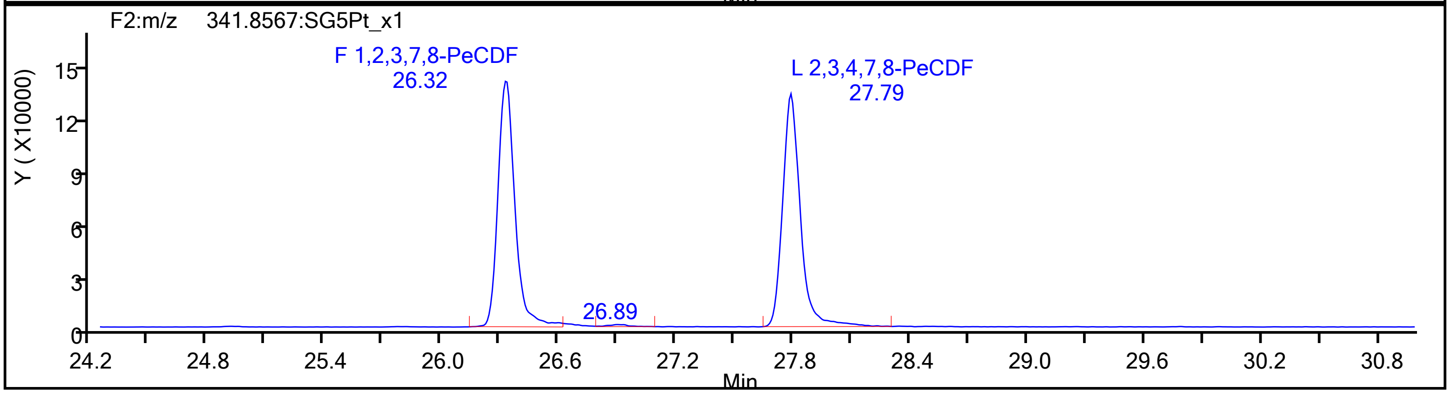

PeCDF Standards

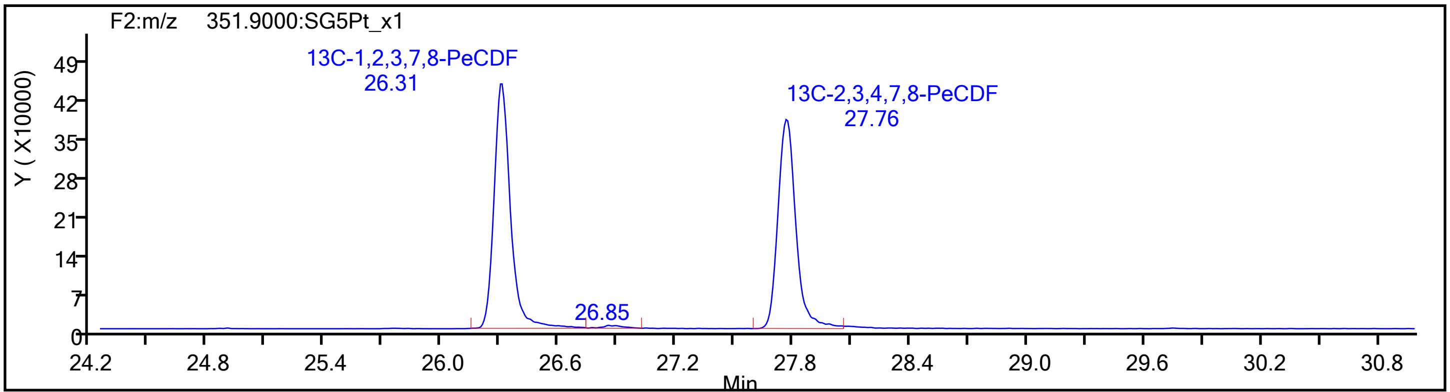

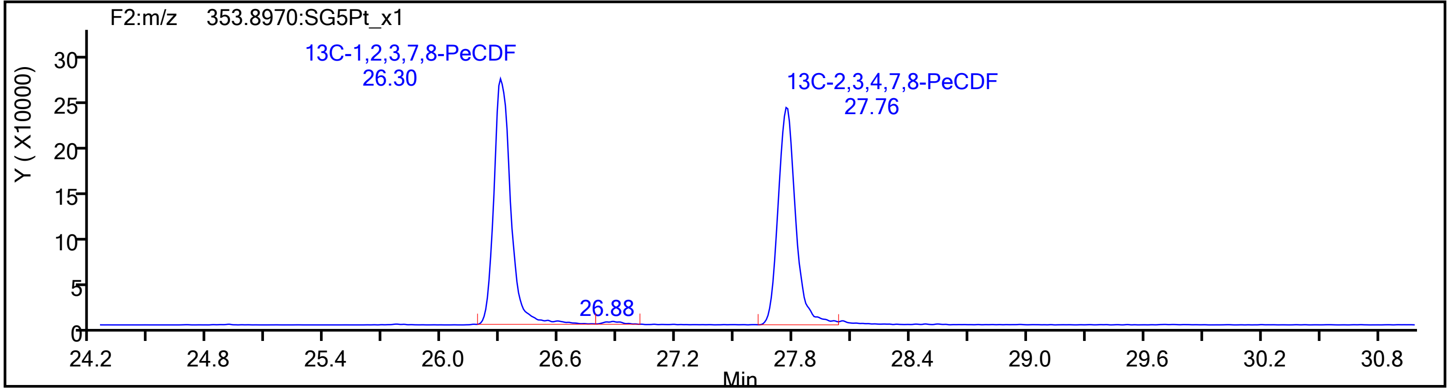

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

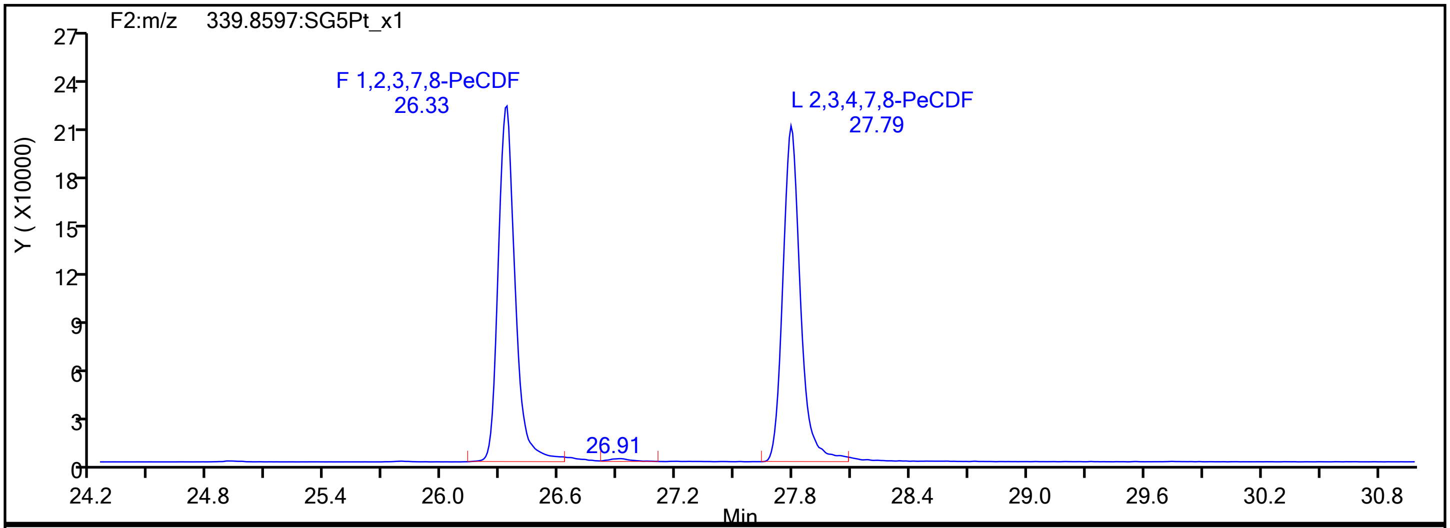

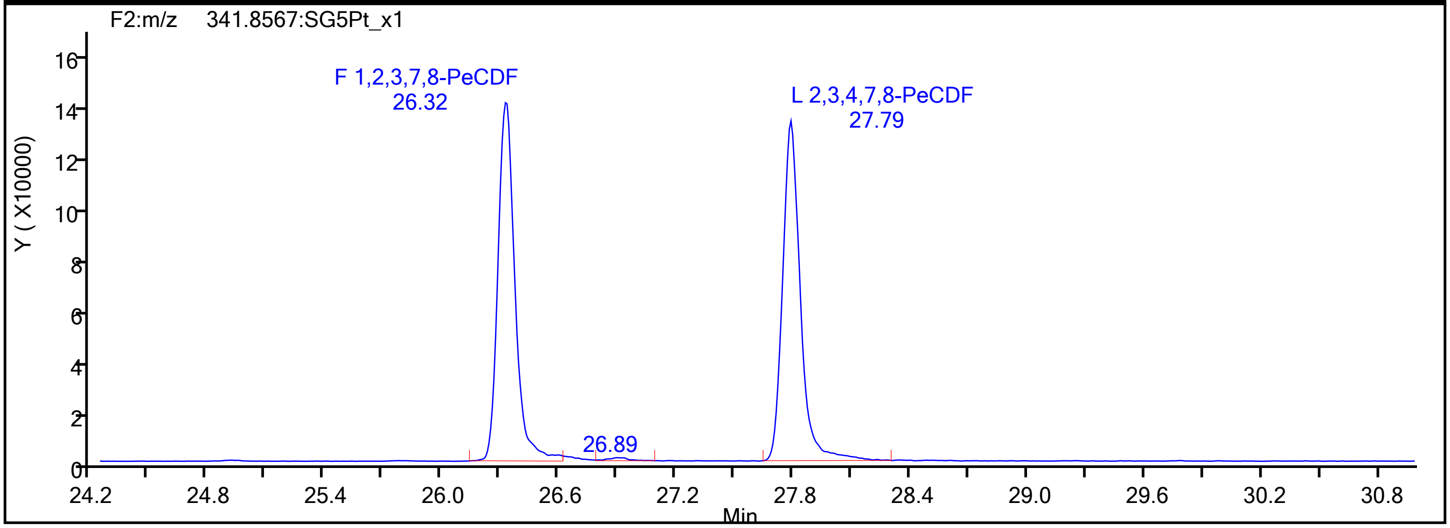

PeCDF Interference Mass

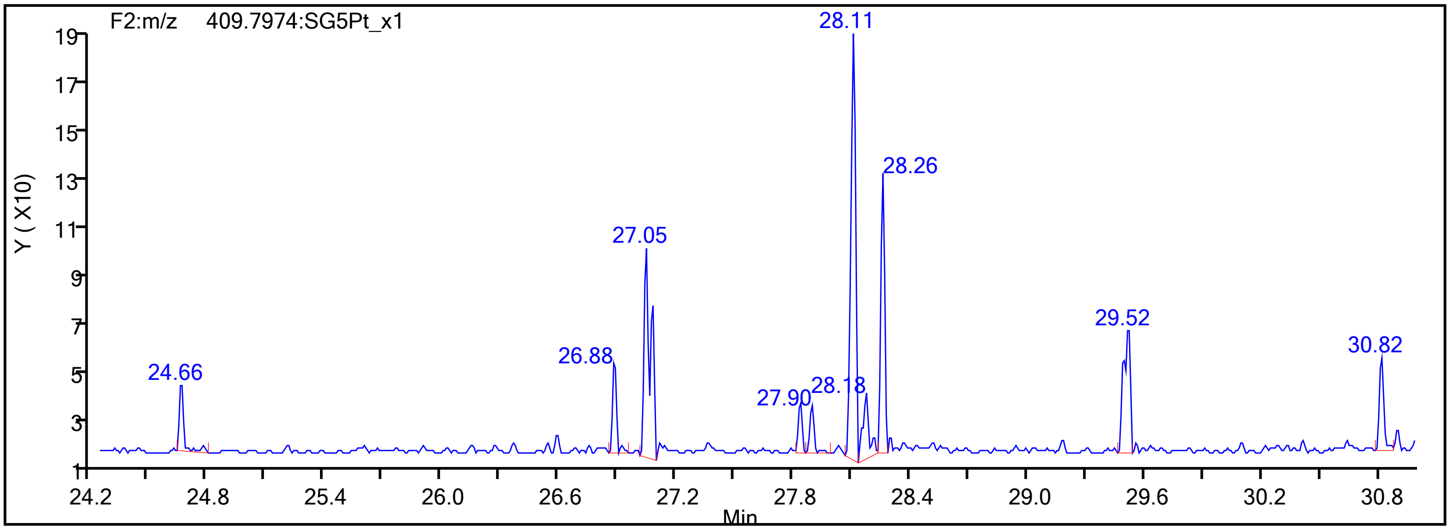

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

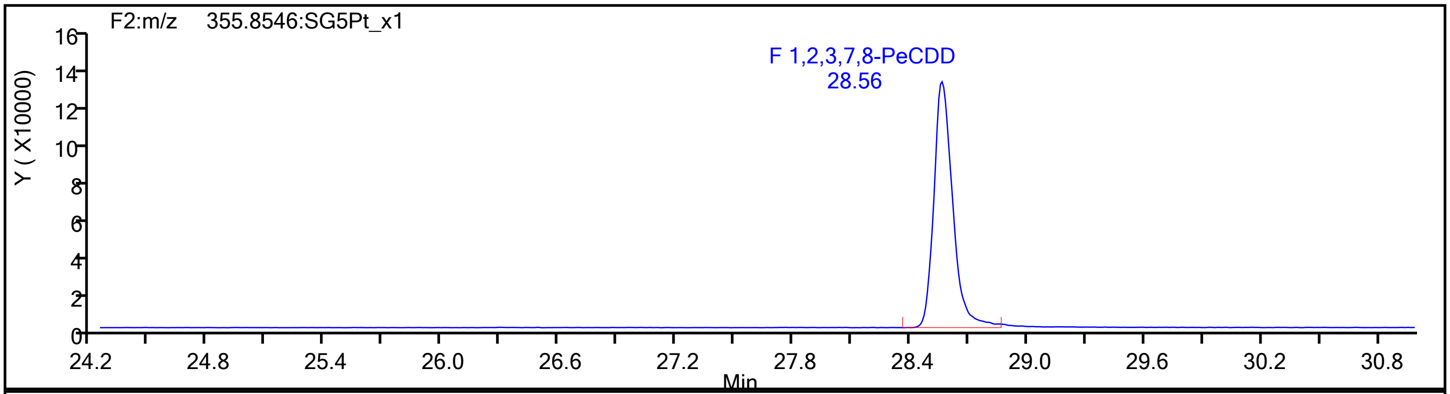

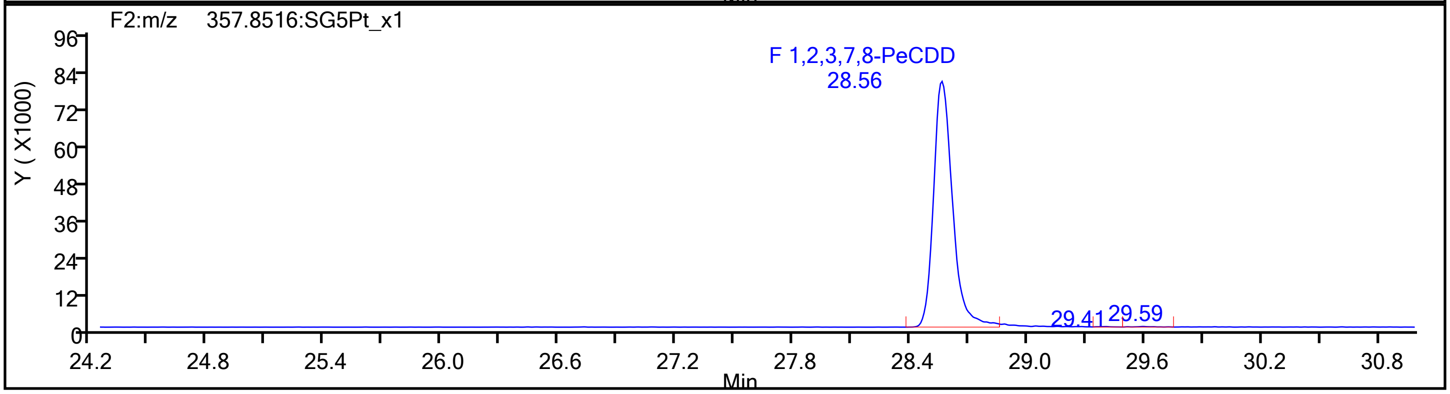

PeCDD Standards

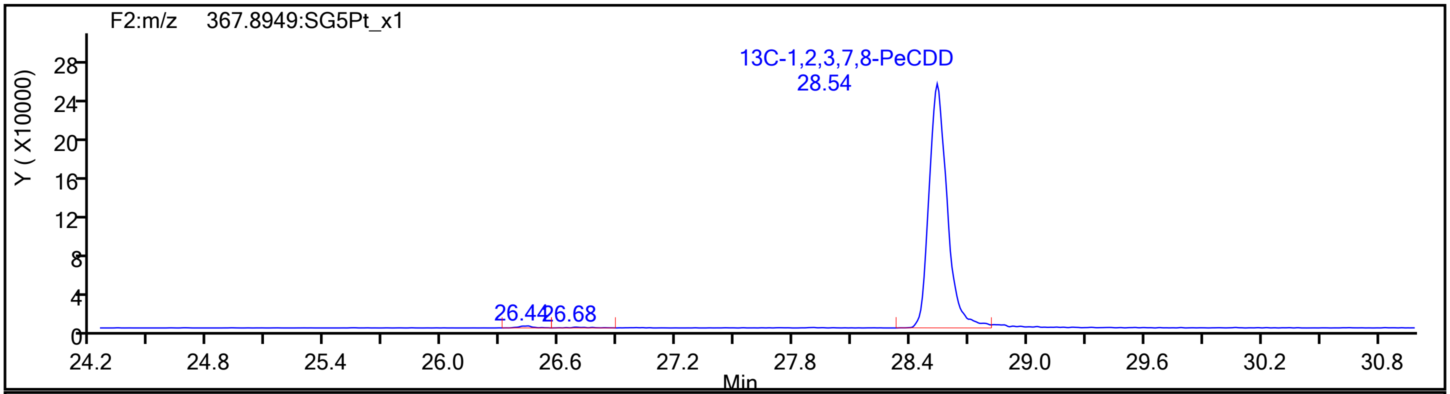

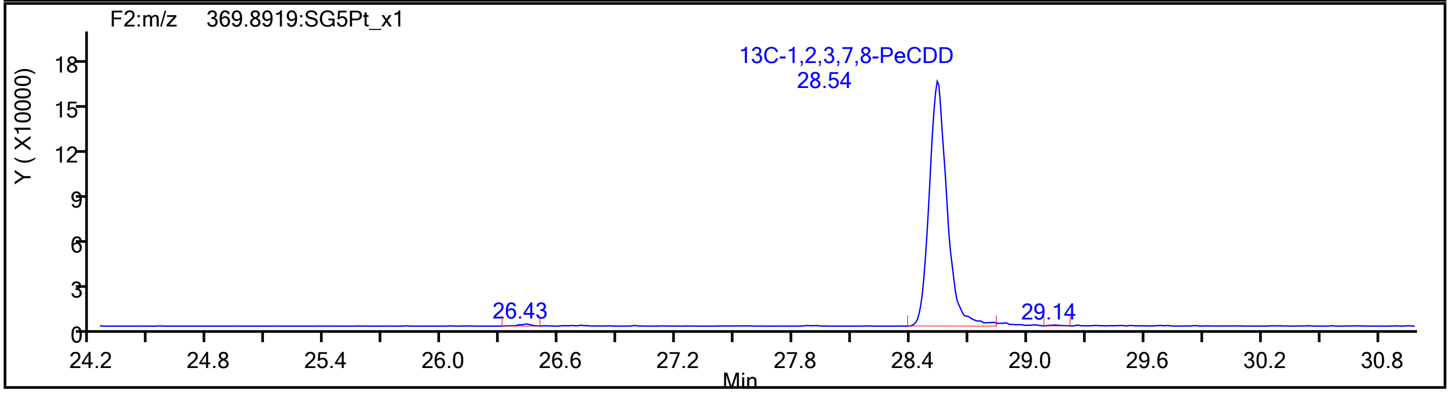

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

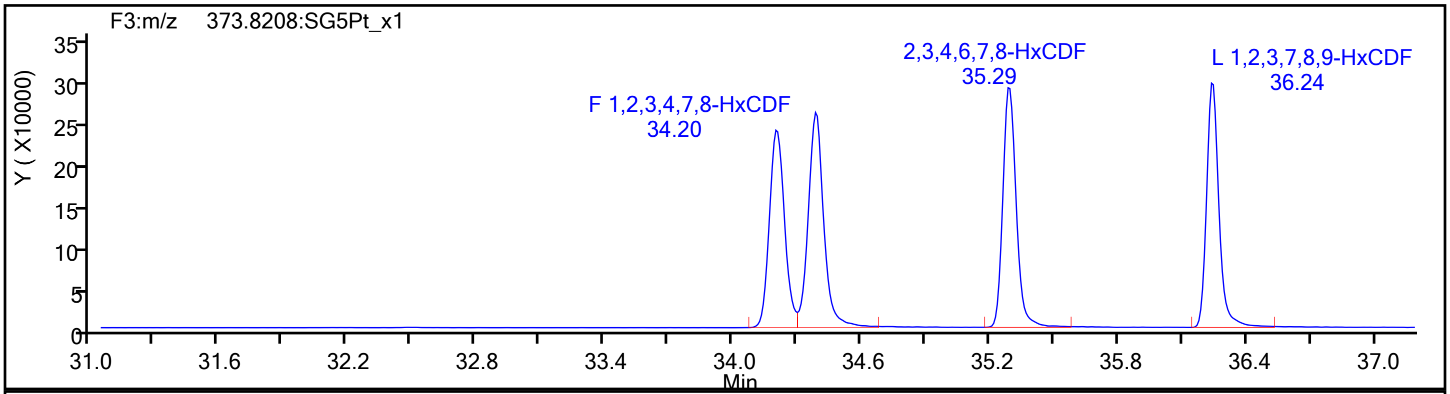

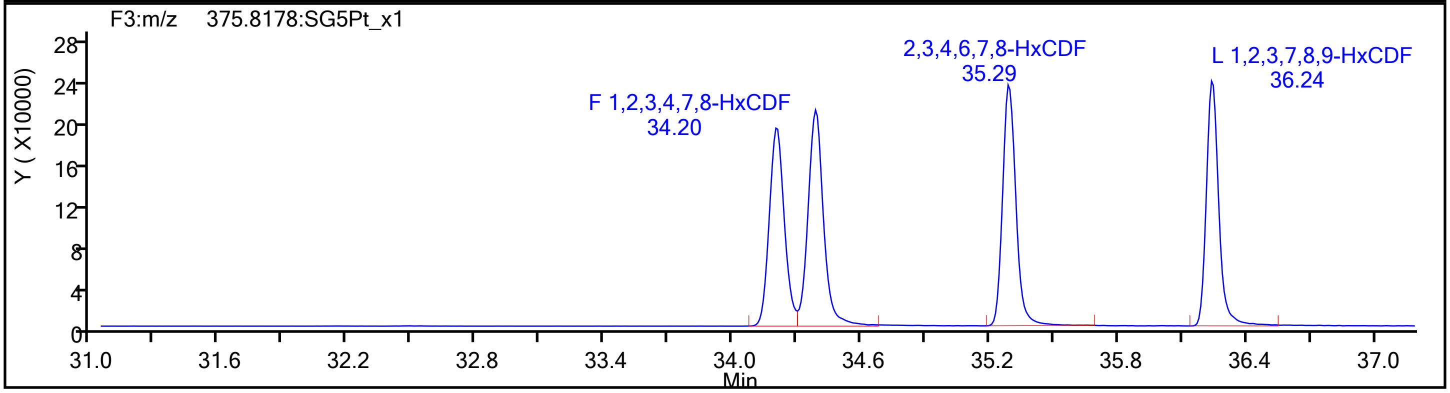

HxCDF Standards

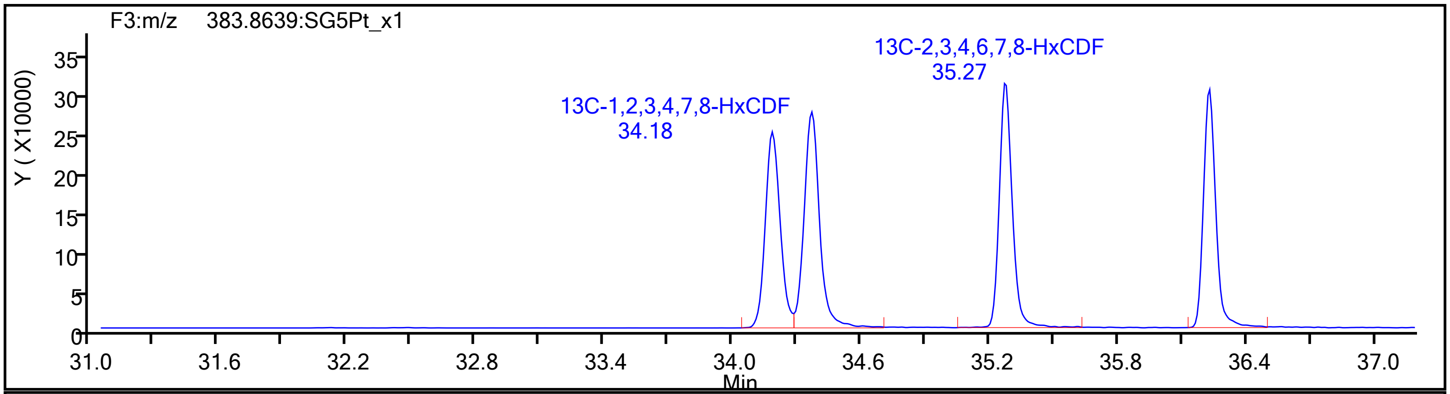

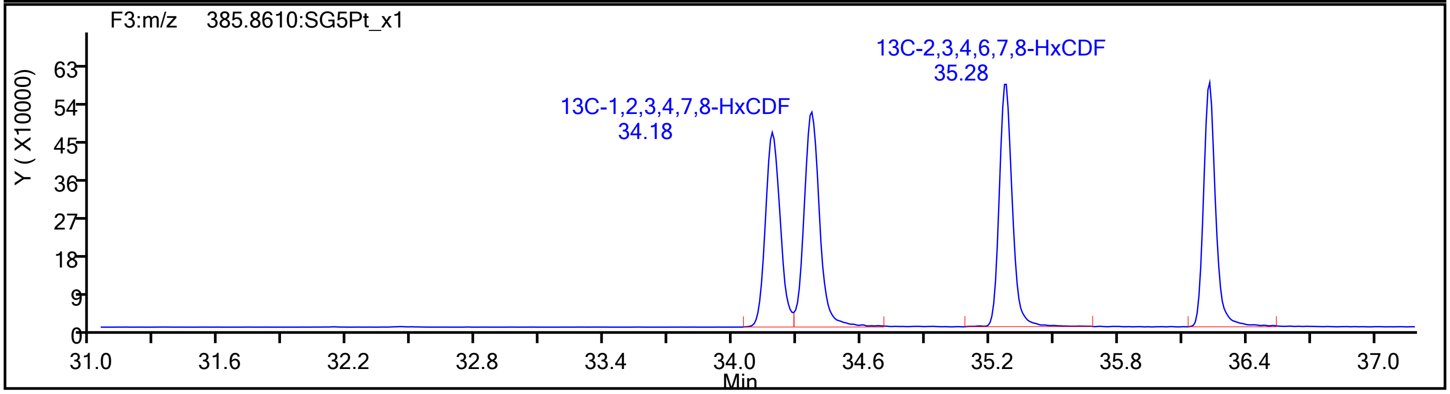

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

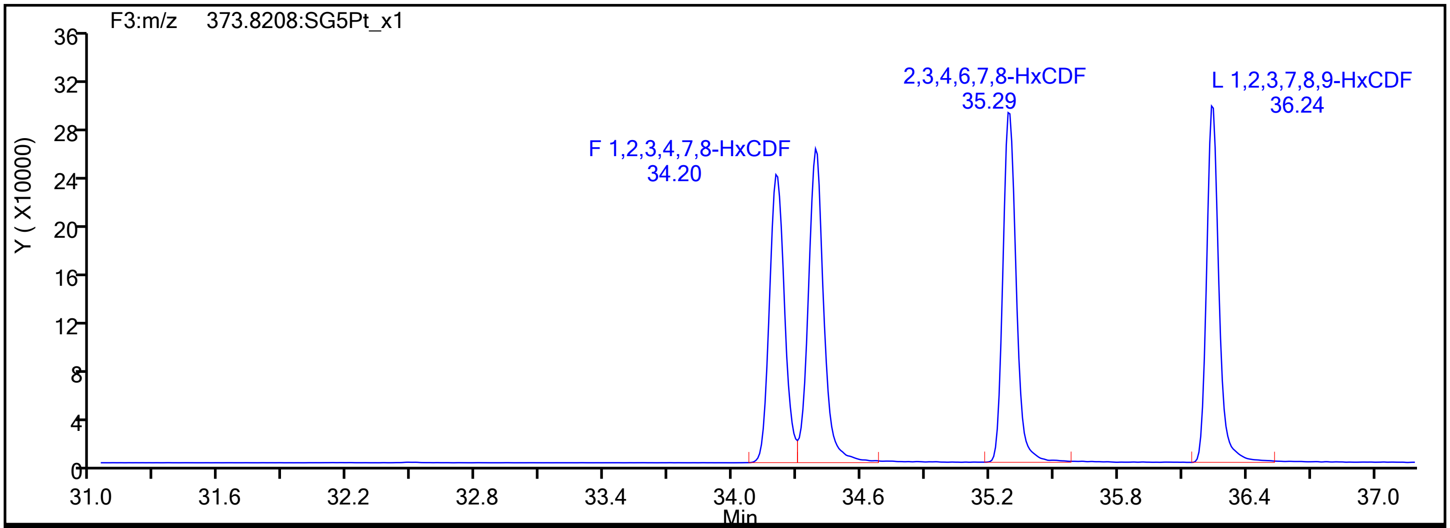

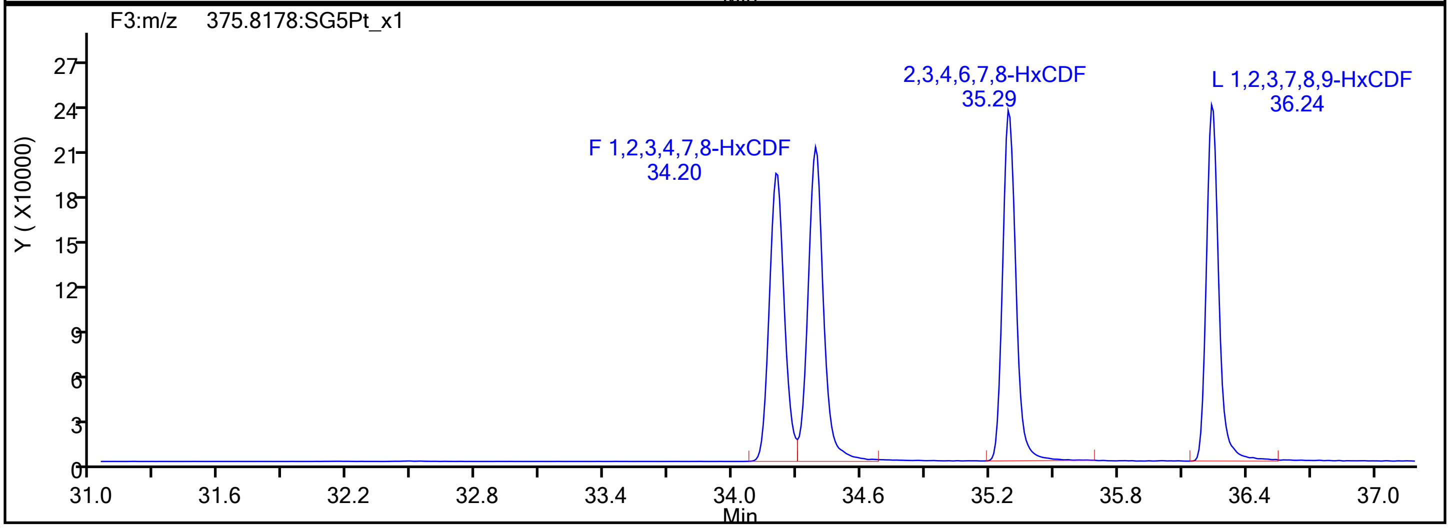

HxCDF Interference Mass

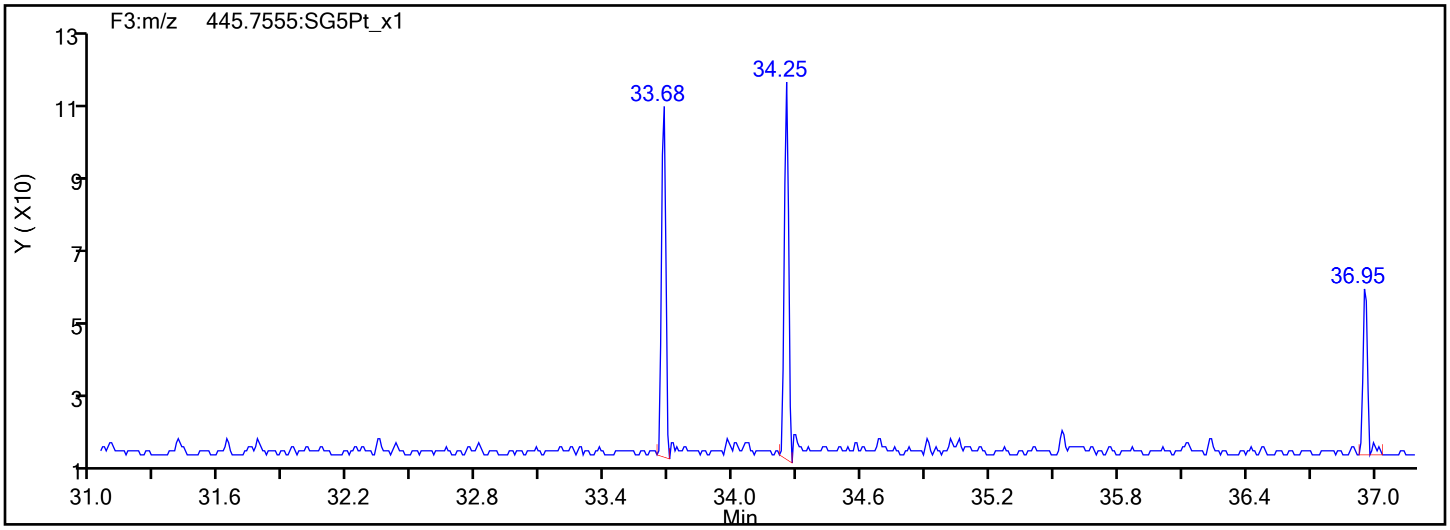

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

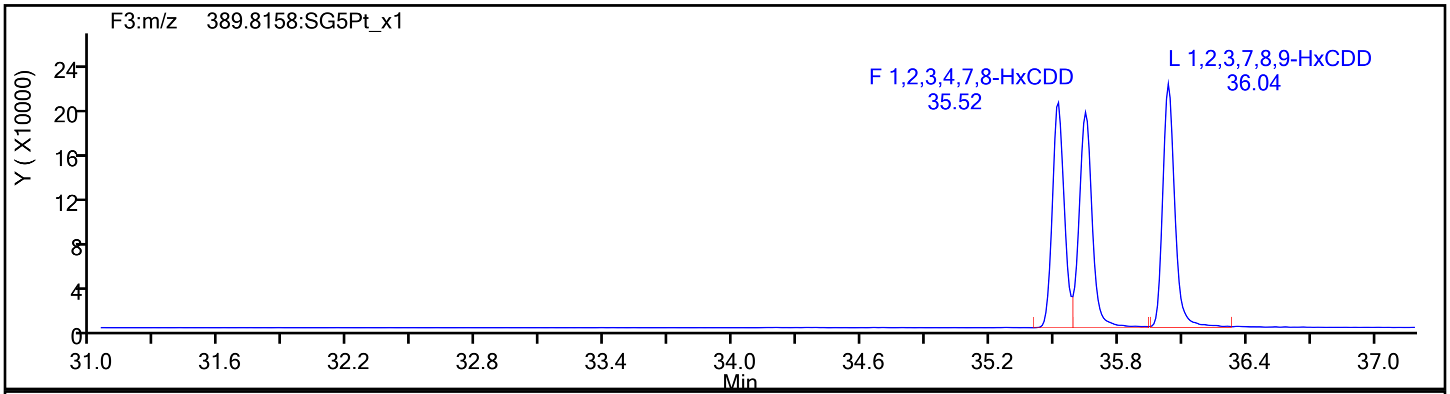

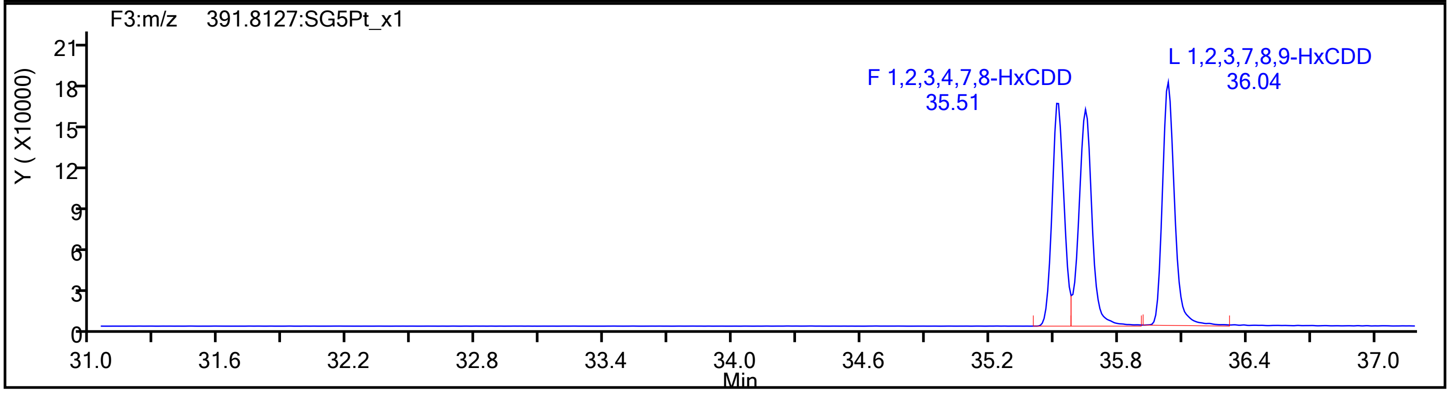

HxCDD Standards

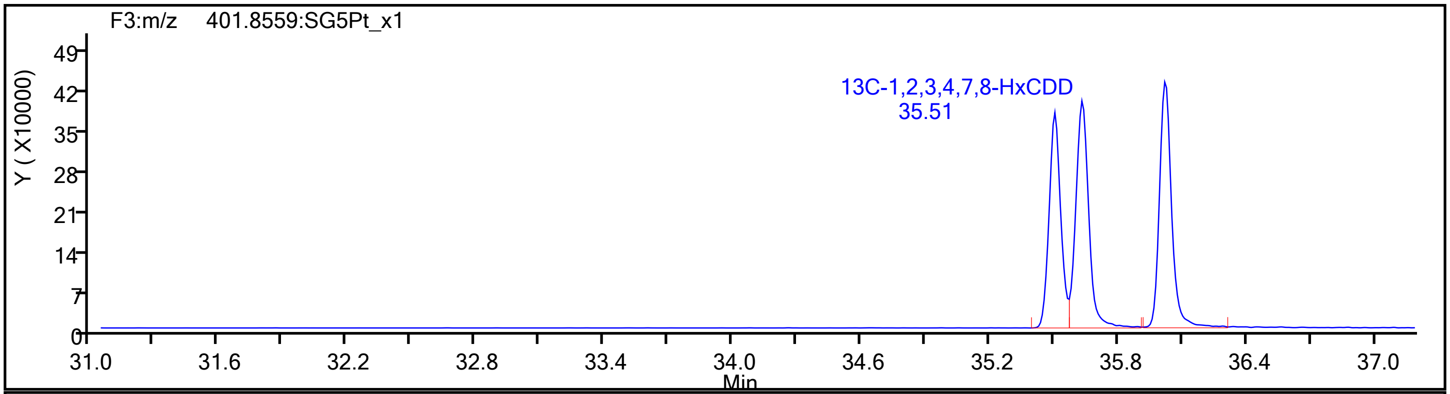

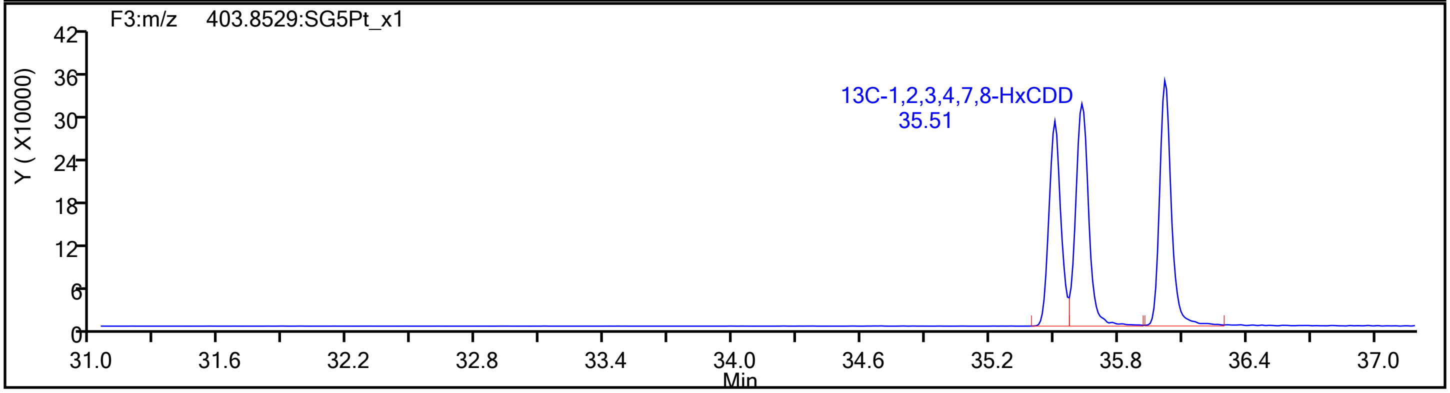

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

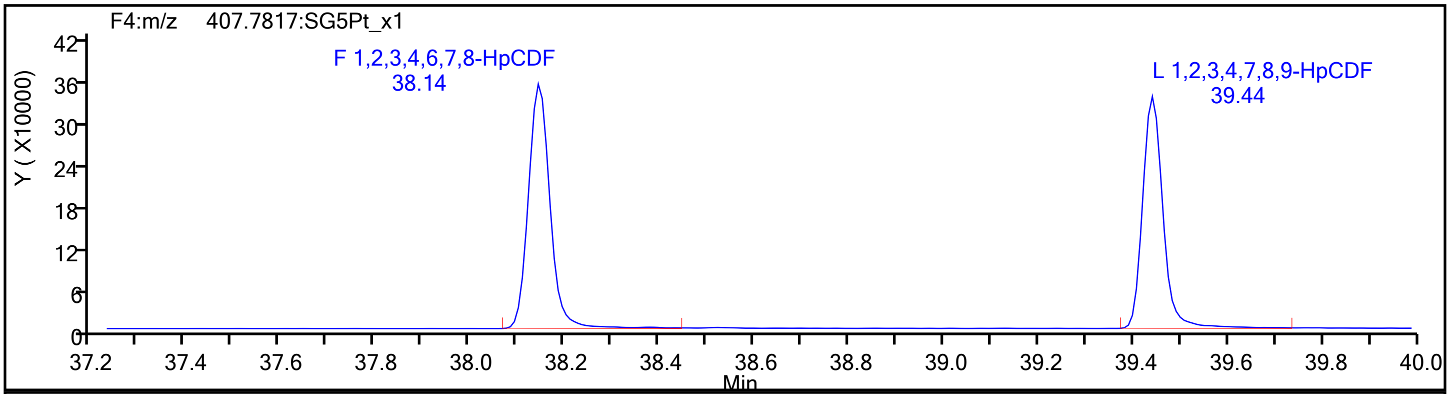

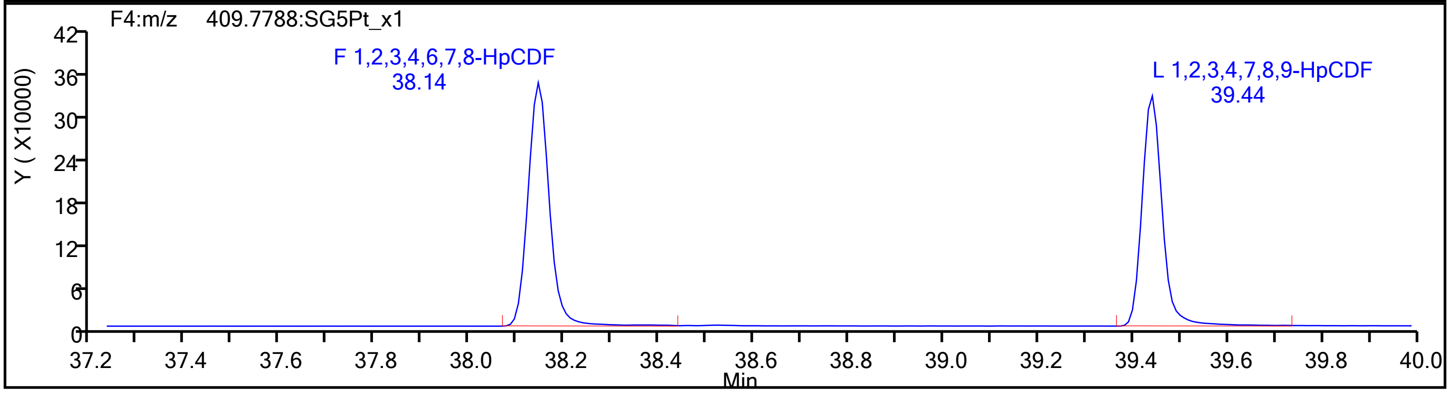

HpCDF Standards

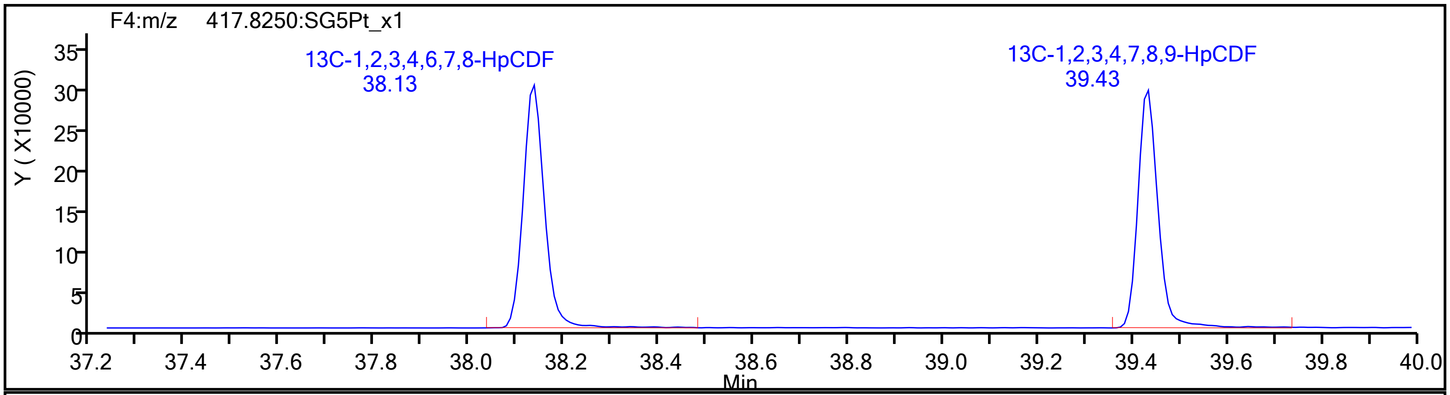

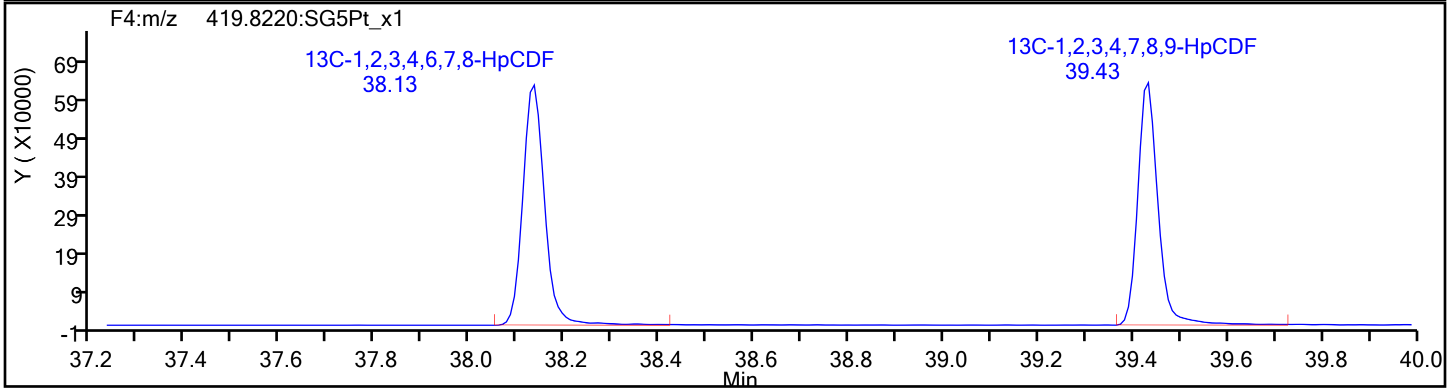

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

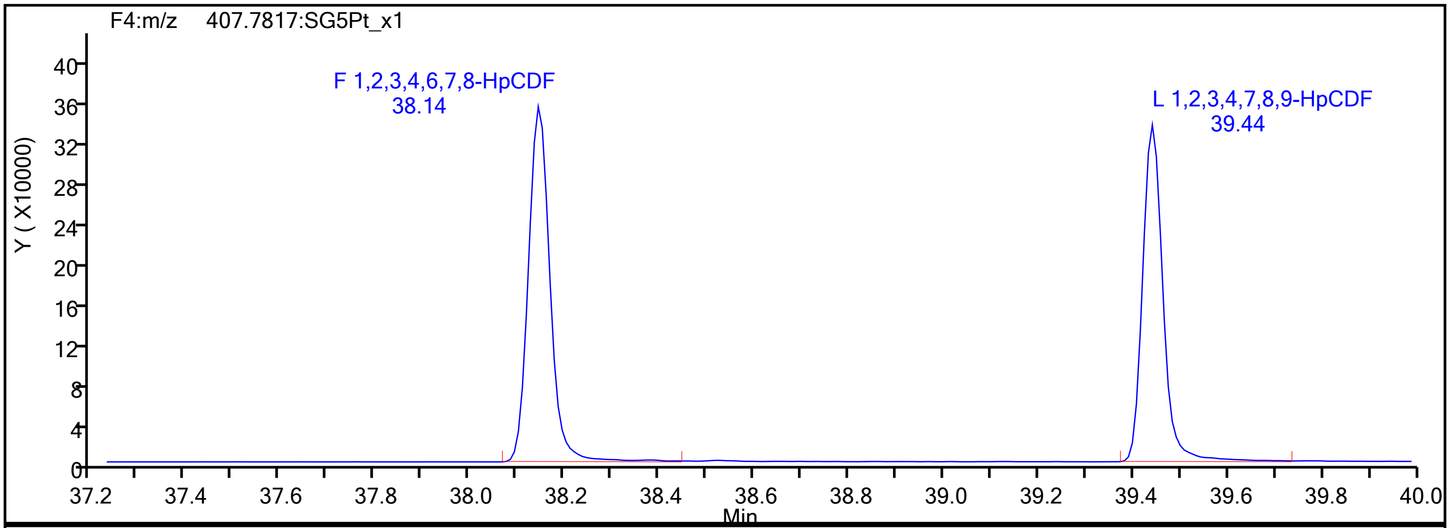

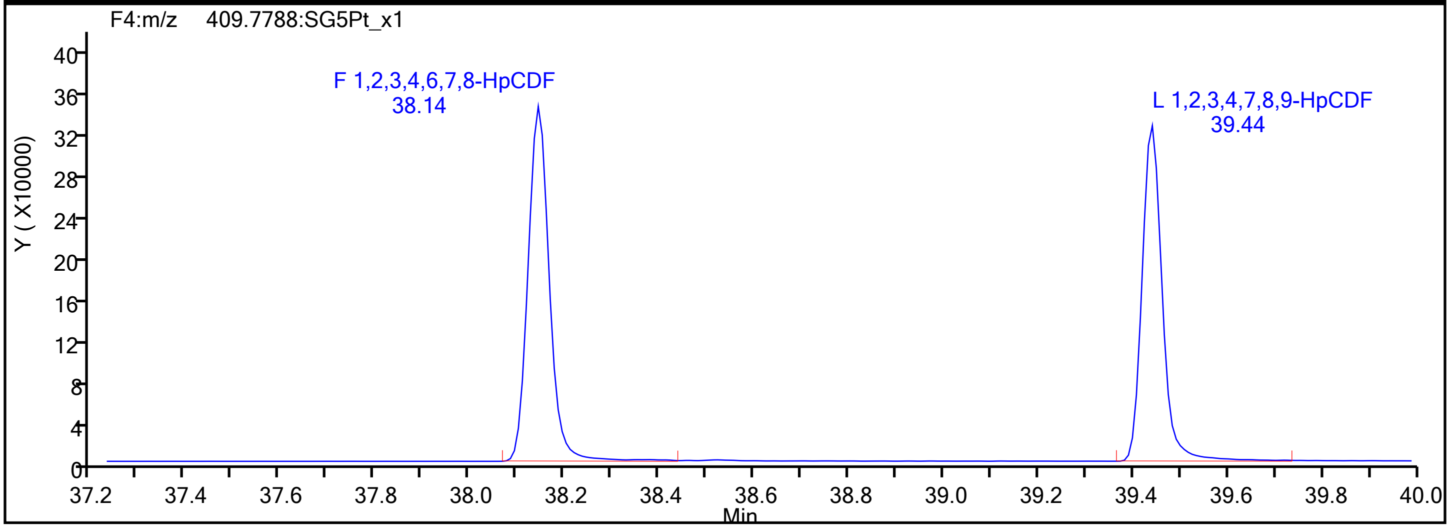

HpCDF Interference Mass

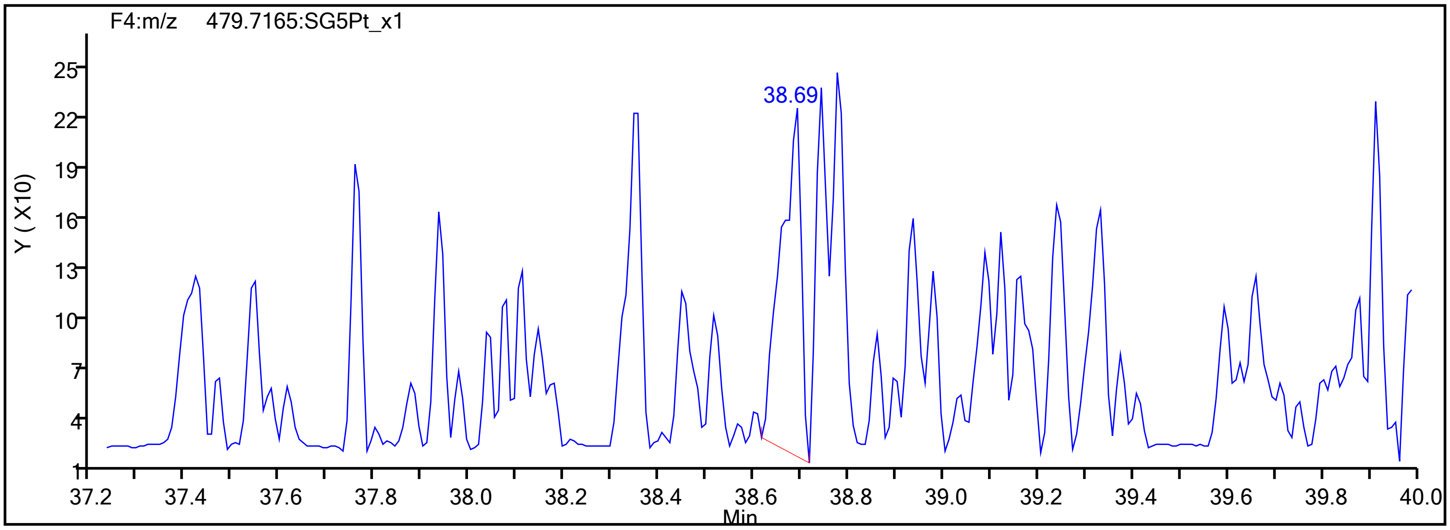

Report Date: 18-Sep-2020 11:00:26　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00　　Injection Vol: 1.0 ul
Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255　　Sample Line#: 5
Column Type: DB-5　　Column Dia: 0.32 mm

HpCDD

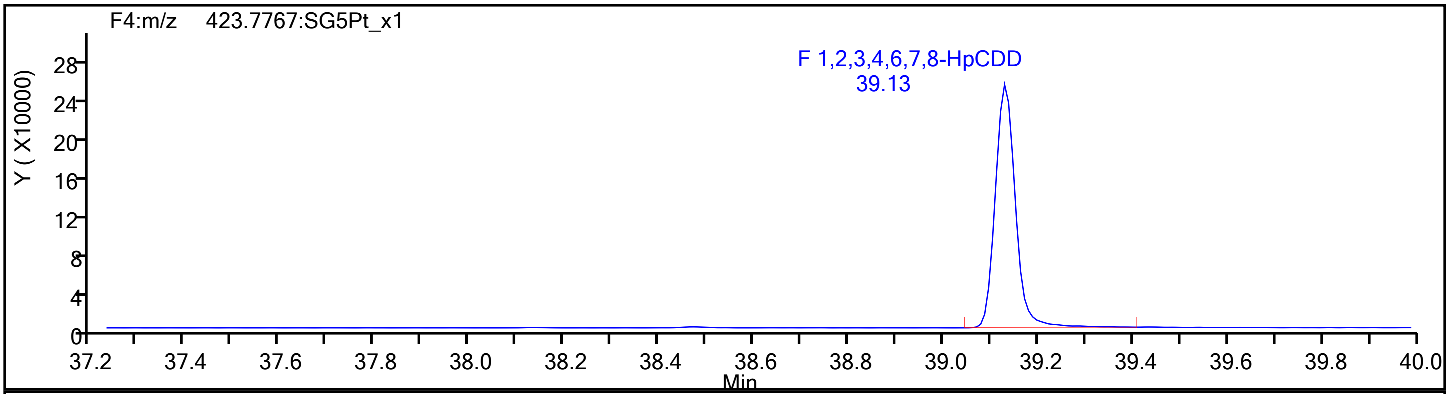

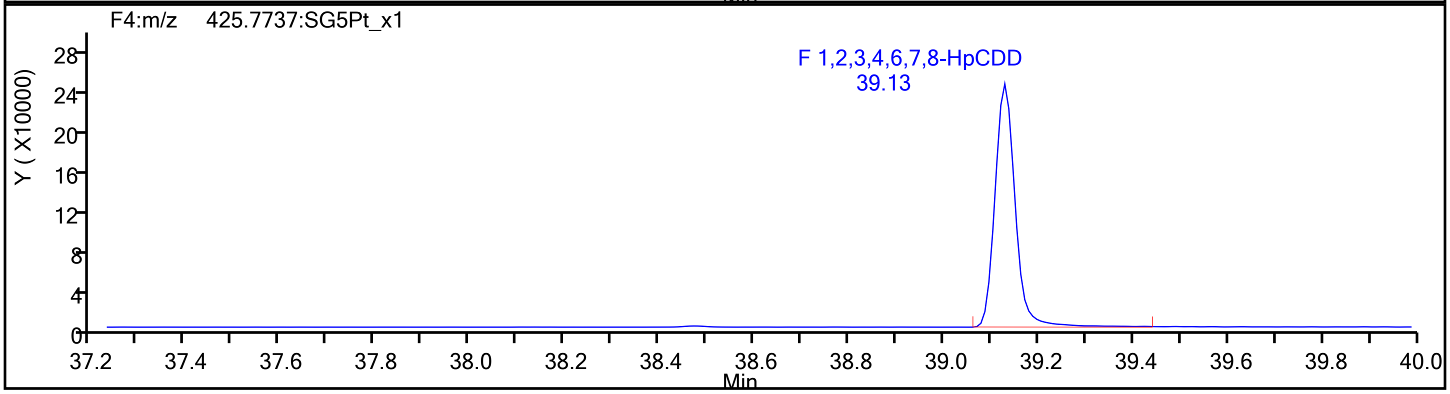

HpCDD Standards

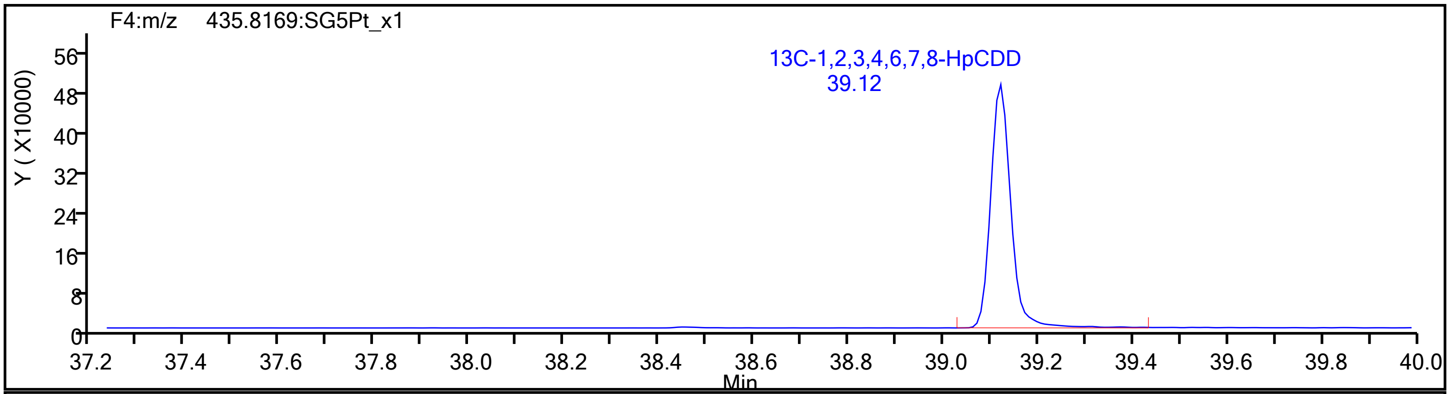

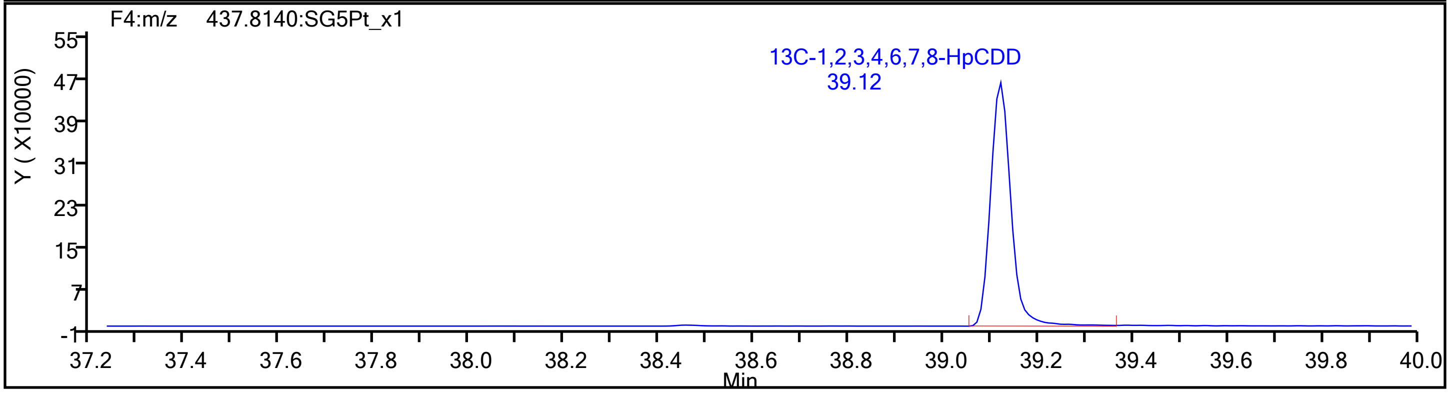

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

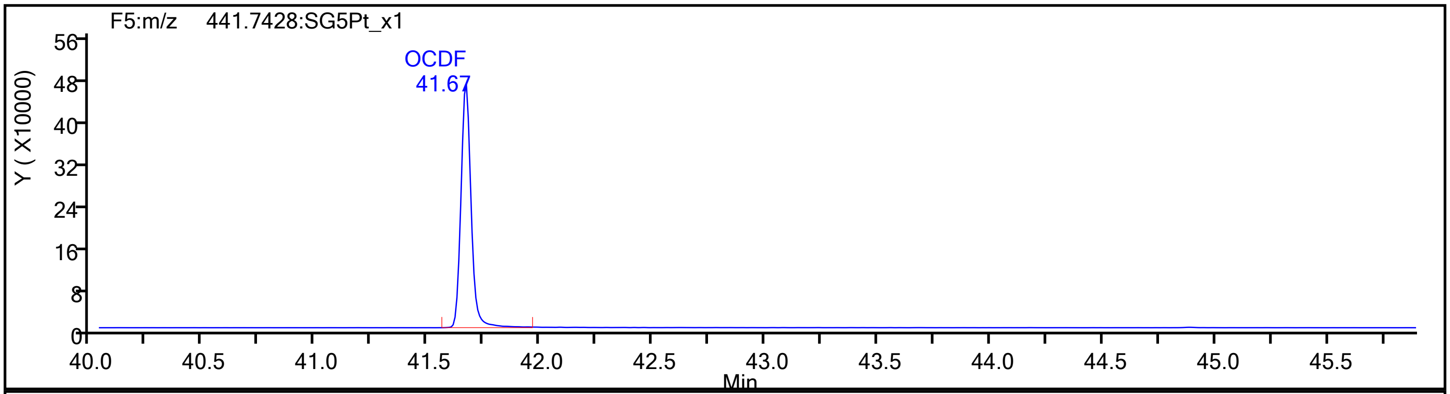

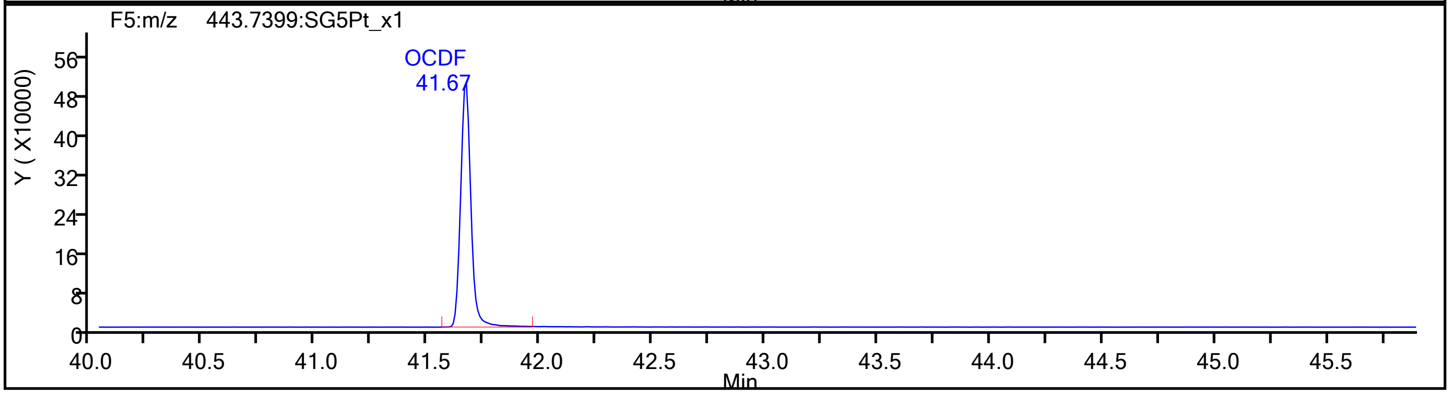

OCDF Standards

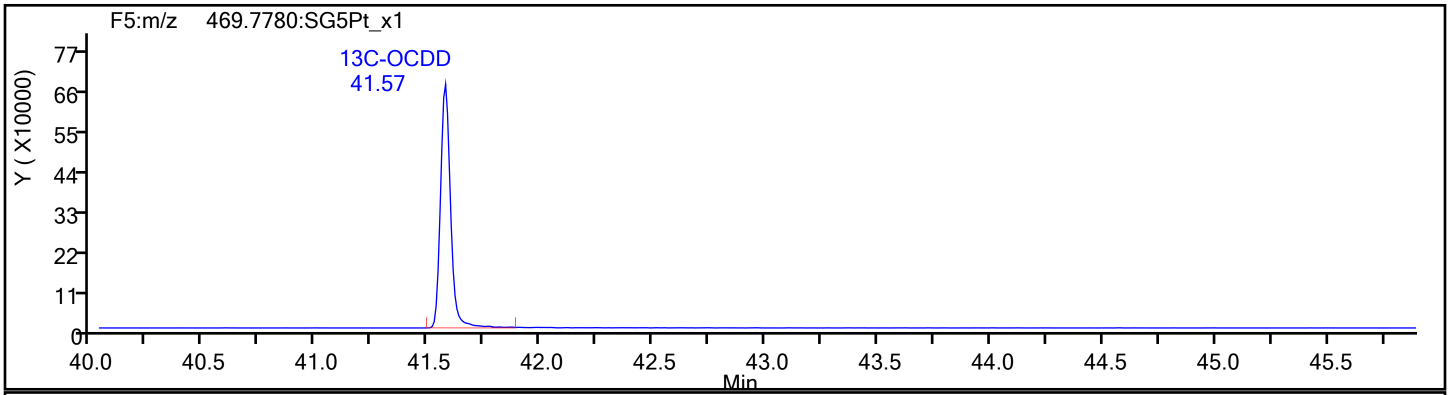

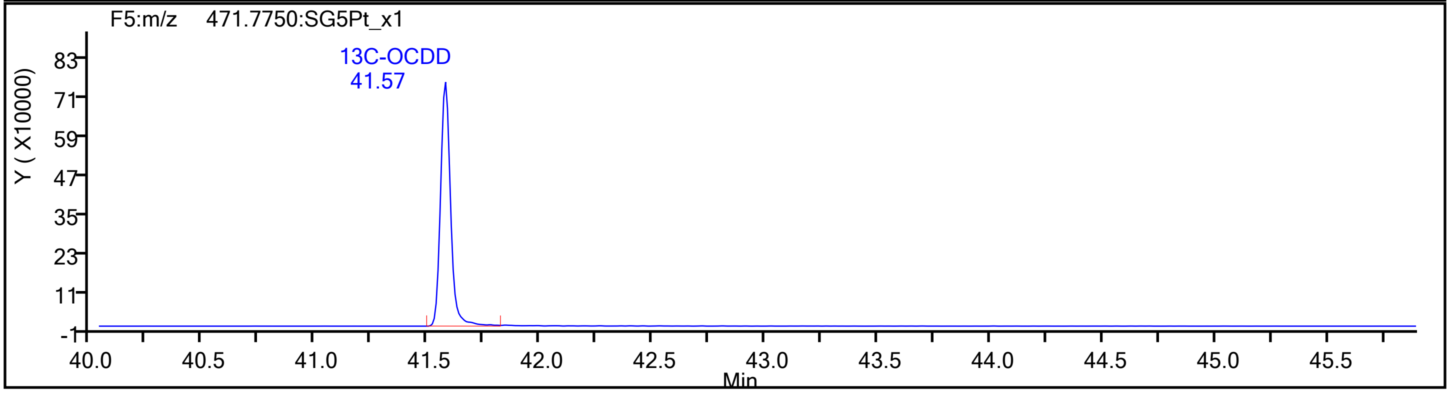

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

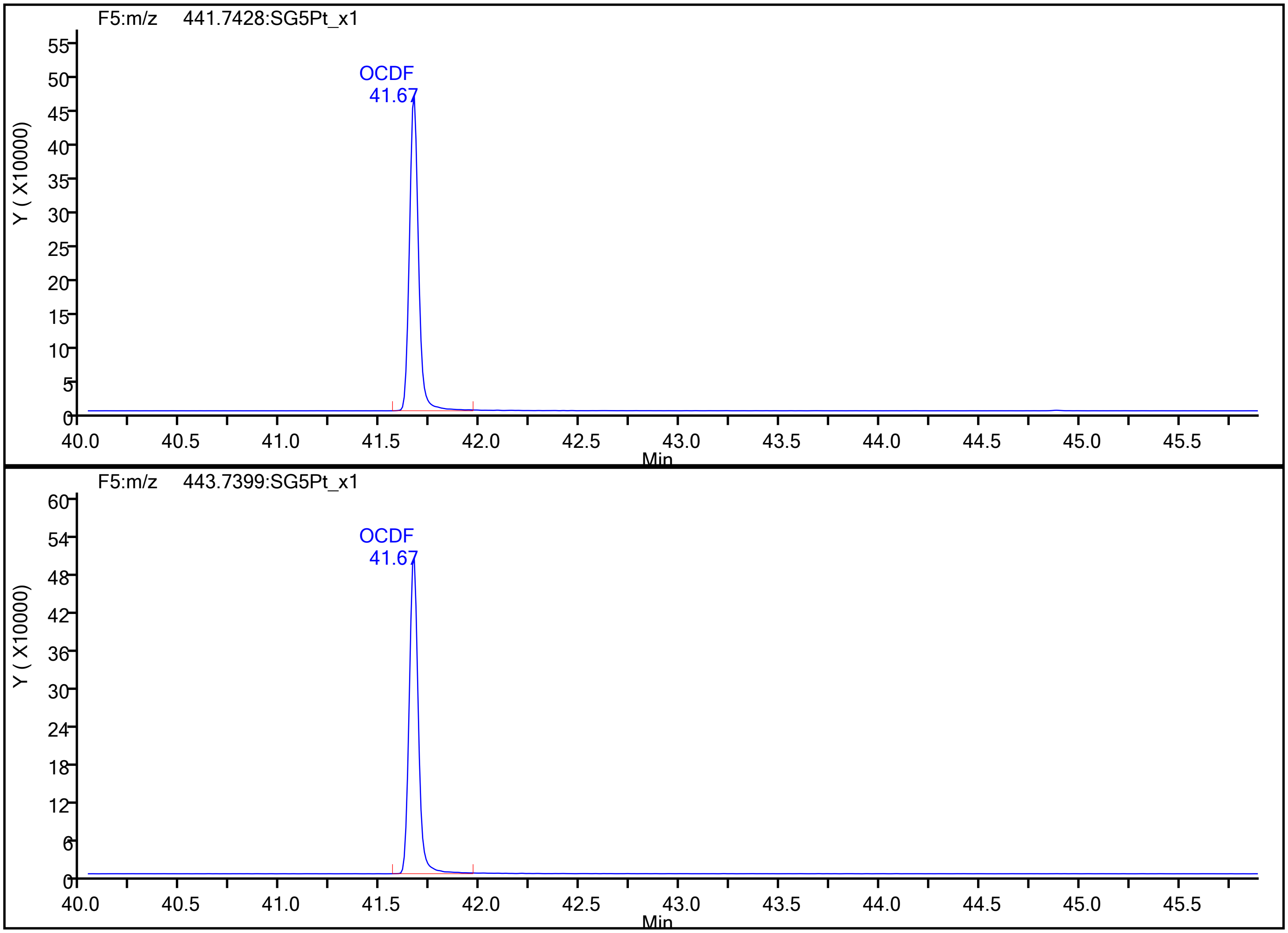

OCDF Interference Mass

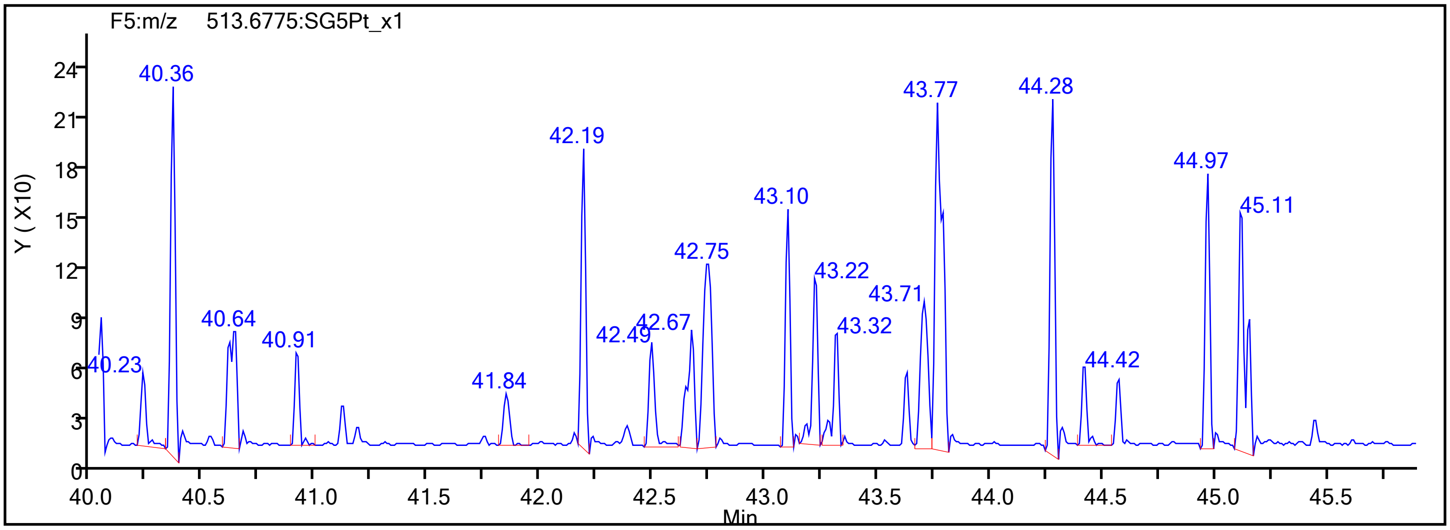

Report Date: 18-Sep-2020 11:00:26　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

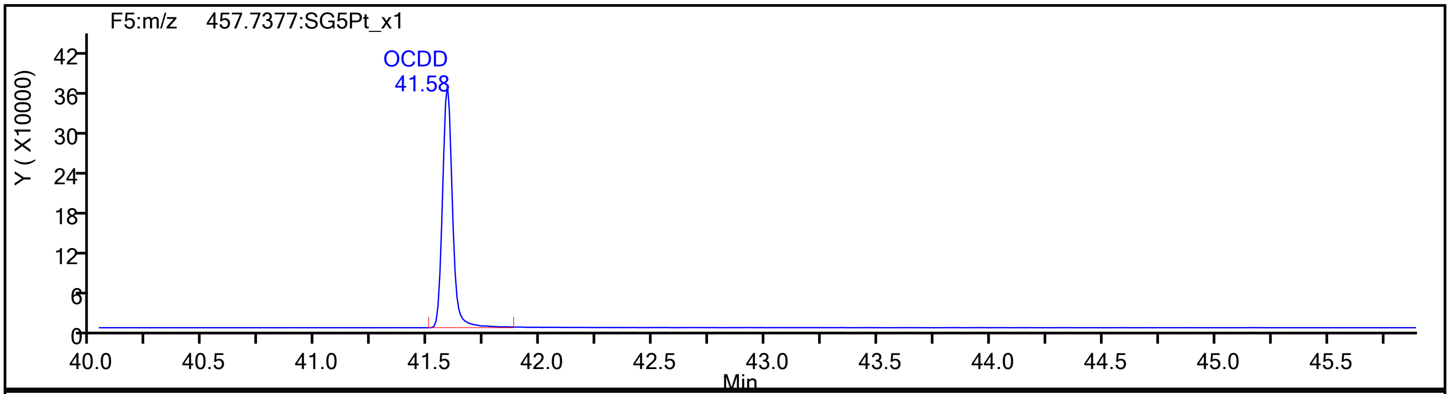

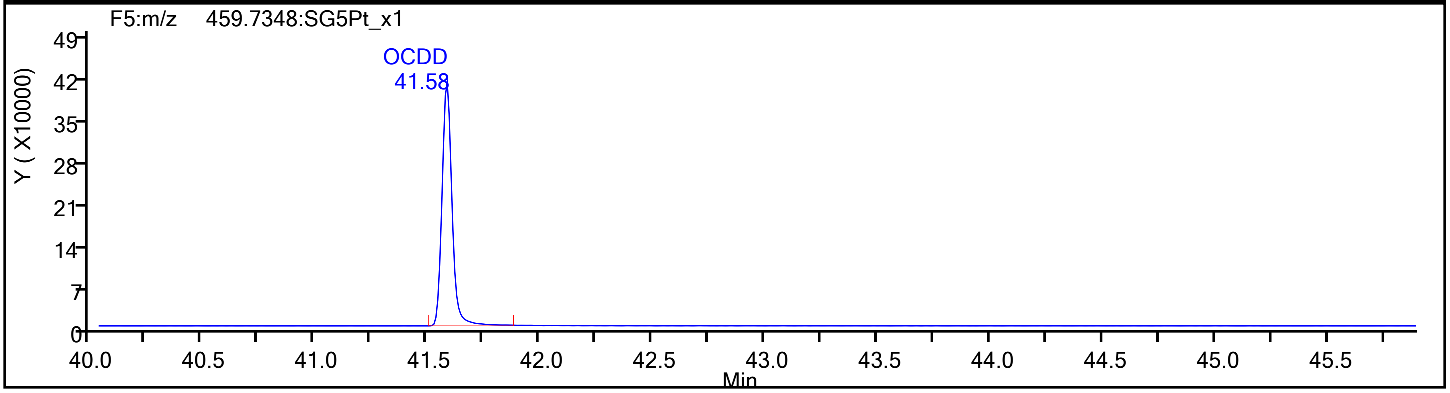

OCDD Standards

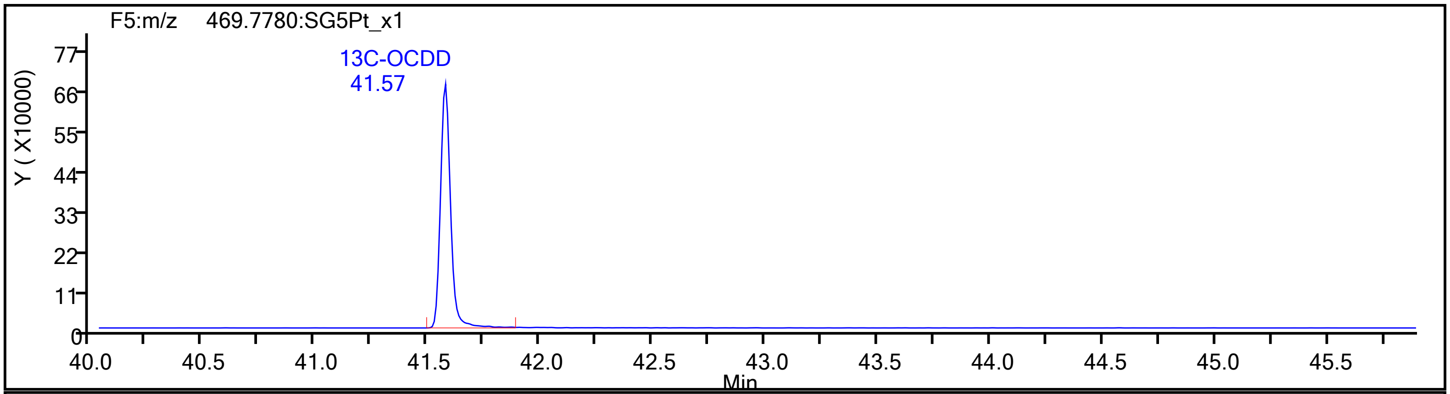

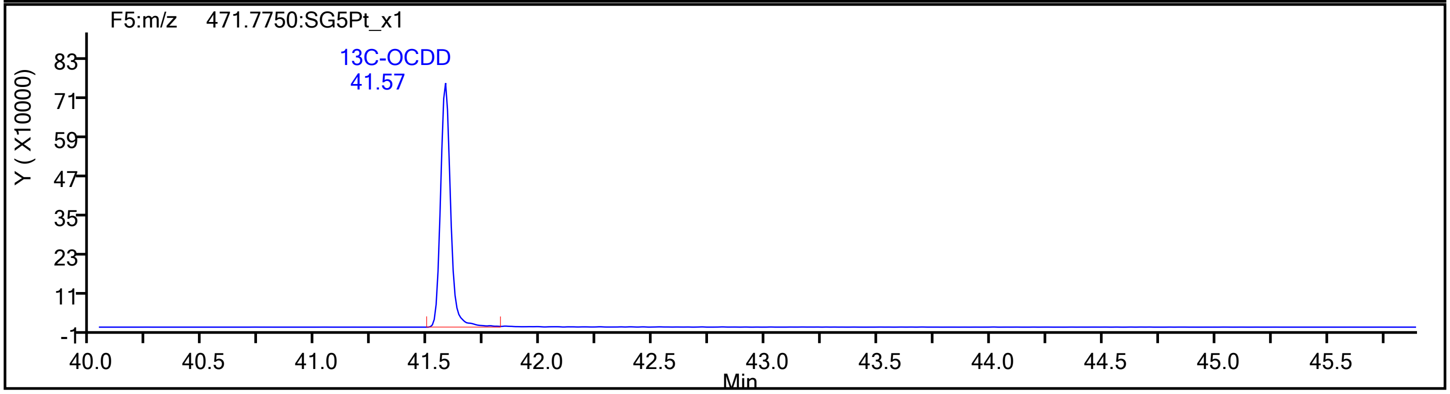

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

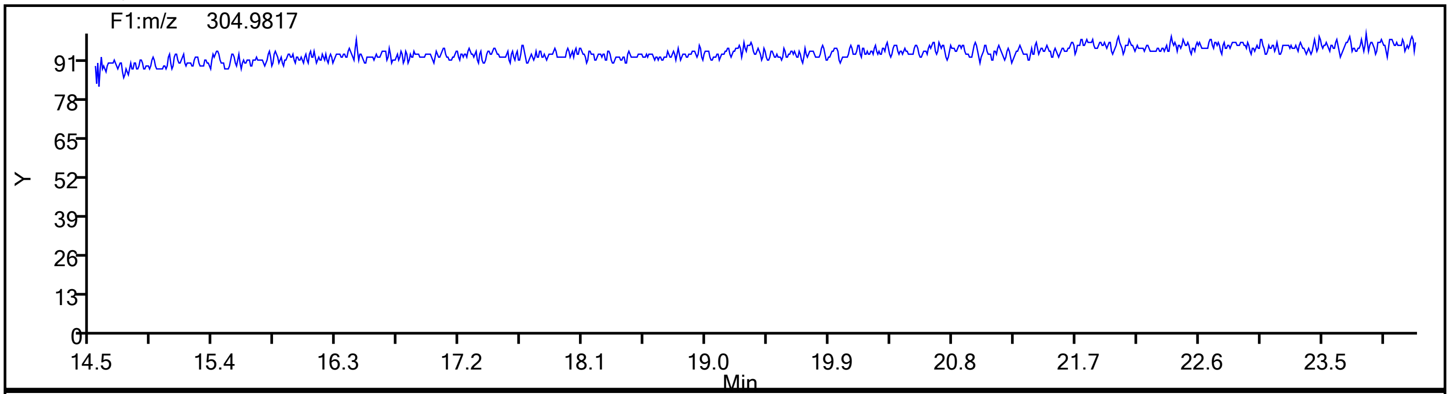

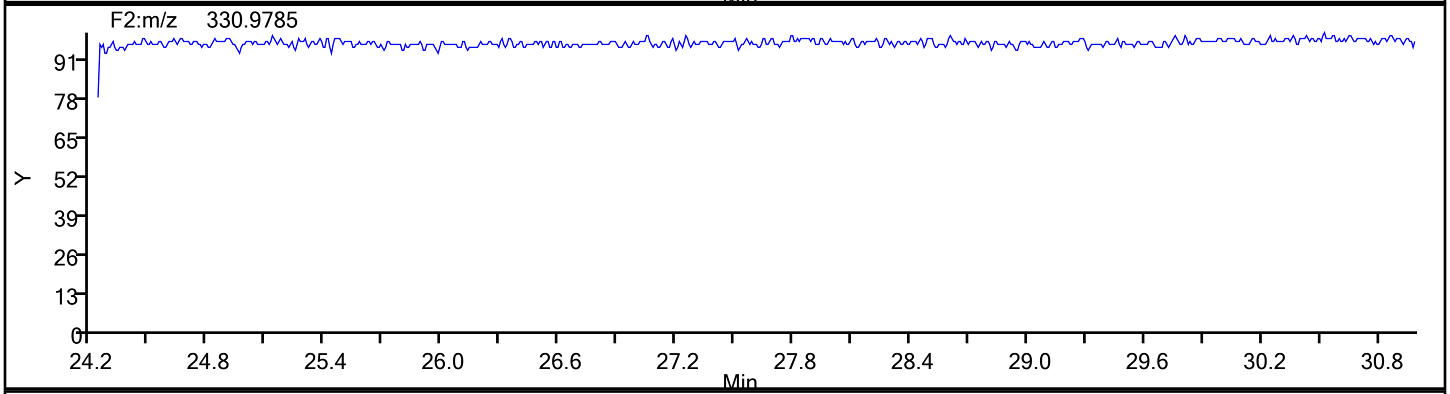

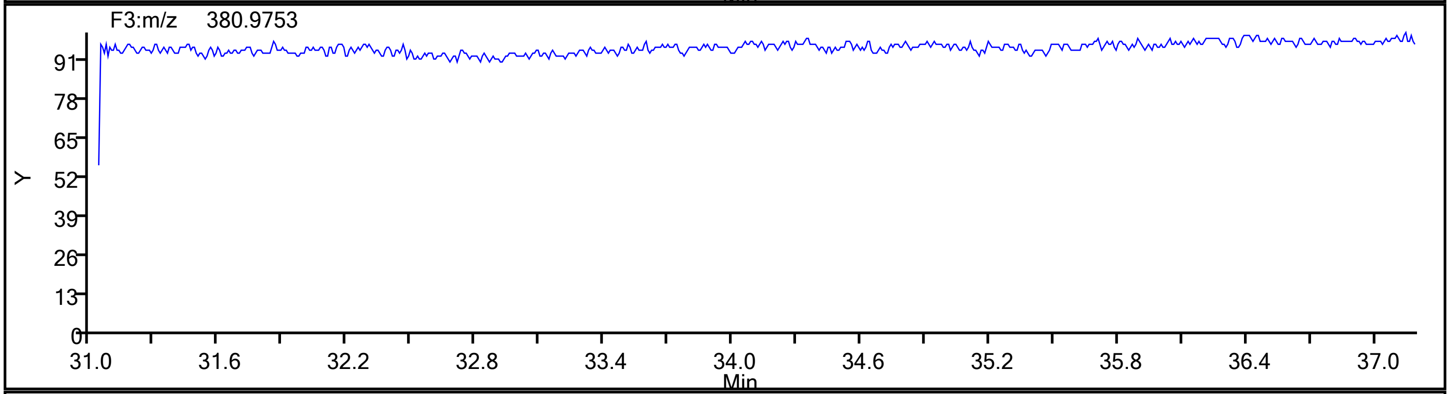

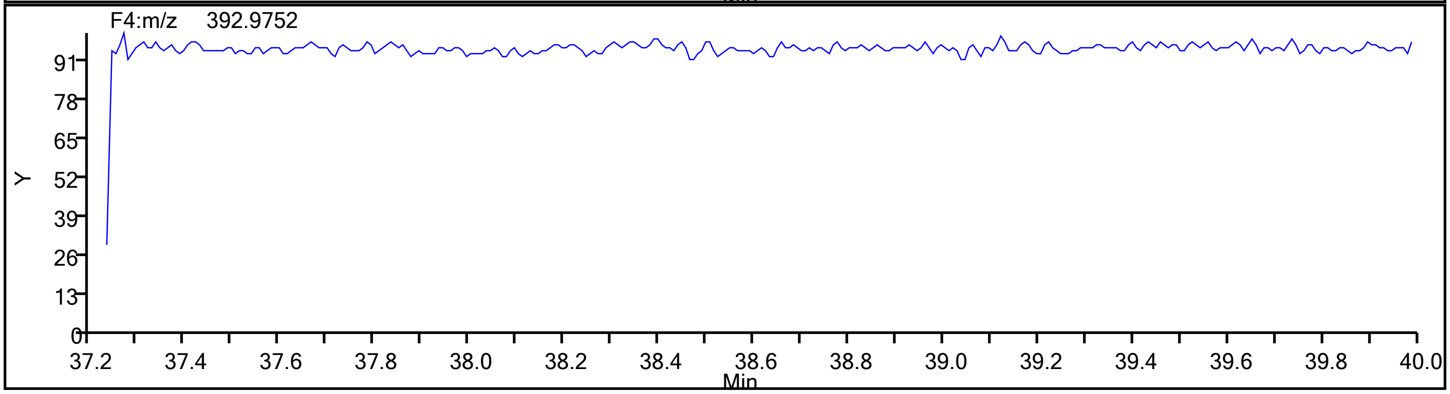

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

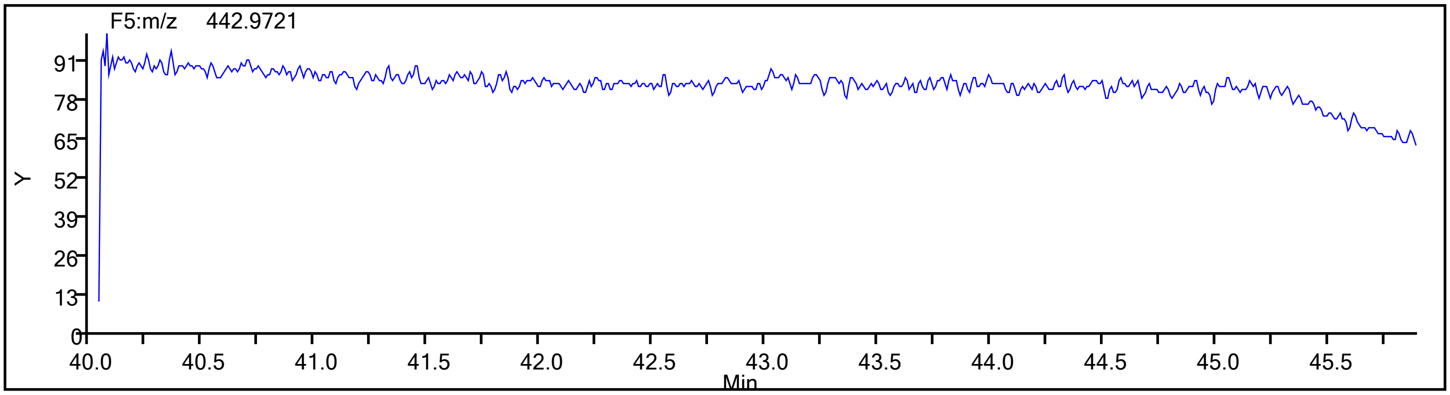

Report Date: 18-Sep-2020 11:00:39 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Sep-2020 15:41:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:30 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:40:07

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.153	2437882	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.224	3996116	0.80	1.5883	103.2	103.2	0.4333	0.4333	103	
2,3,7,8-TCDF	19.250	1665214	0.79	1.0857	38.4	38.4	0.0825	0.0825	95.96	
S Total TCDF					38.4	38.4	0.0825	0.0825		
D 13C-2,3,7,8-TCDD	20.514	2816107	0.80	1.1194	103.2	103.2	0.3645	0.3645	103	
$ 37Cl4-2,3,7,8-TCDD	20.539	1135994		1.1468	40.6	40.6	0.0480	0.0480	102	
2,3,7,8-TCDD	20.539	1160856	0.78	1.0810	38.1	38.1	0.1031	0.1031	95.34	
S Total TCDD					38.1	38.1	0.1031	0.1031		
D 13C-1,2,3,7,8-PeCDF	26.307	3719700	1.58	1.4782	103.2	103.2	0.4442	0.4442	103	
1,2,3,7,8-PeCDF	26.324	7463293	1.59	1.0547	190.2	190.2	0.6913	0.6913	95.12	
D 13C-2,3,4,7,8-PeCDF	27.756	3427156	1.59	1.3912	101.0	101.0	0.4720	0.4720	101	
2,3,4,7,8-PeCDF	27.781	7221609	1.56	1.1035	190.9	190.9	0.7602	0.7602	95.47	
S Total PeCDF					381.2	381.2	0.7257	0.7257		
D 13C-1,2,3,7,8-PeCDD	28.539	2364404	1.55	0.9415	103.0	103.0	0.2243	0.2243	103	
1,2,3,7,8-PeCDD	28.565	4786052	1.56	1.0680	189.5	189.5	0.2069	0.2069	94.77	
S Total PeCDD					189.5	189.5	0.2069	0.2069		
D 13C-1,2,3,4,7,8-HxCDF	34.177	2931726	0.53	1.1378	98.0	98.0	0.4606	0.4606	98.03	
1,2,3,4,7,8-HxCDF	34.203	7193761	1.26	1.2643	194.1	194.1	0.9826	0.9826	97.04	
D 13C-1,2,3,6,7,8-HxCDF	34.363	3458749	0.52	1.3173	99.9	99.9	0.3978	0.3978	99.90	
1,2,3,6,7,8-HxCDF	34.388	8101410	1.26	1.2230	191.5	191.5	0.9049	0.9049	95.76	
D 13C-2,3,4,6,7,8-HxCDF	35.272	3274841	0.53	1.2457	100.0	100.0	0.4207	0.4207	100	
2,3,4,6,7,8-HxCDF	35.289	7780338	1.26	1.2464	190.6	190.6	0.7683	0.7683	95.30	
D 13C-1,2,3,7,8,9-HxCDF	36.225	3135400	0.53	1.1840	100.8	100.8	0.4426	0.4426	101	
1,2,3,7,8,9-HxCDF	36.242	7442846	1.26	1.2638	187.8	187.8	0.7501	0.7501	93.92	
S Total HxCDF					764.0	764.0	0.8515	0.8515		
* 13C-1,2,3,7,8,9-HxCDD	36.023	2628376	1.26	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.500	2221816	1.27	0.8477	99.7	99.7	0.2540	0.2540	99.72	
1,2,3,4,7,8-HxCDD	35.517	4930619	1.24	1.1561	192.0	192.0	0.4408	0.4408	95.98	
D 13C-1,2,3,6,7,8-HxCDD	35.635	2651289	1.26	0.9979	101.1	101.1	0.2158	0.2158	101	
1,2,3,6,7,8-HxCDD	35.643	5196501	1.25	1.0284	190.6	190.6	0.4328	0.4328	95.29	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.031	5542974	1.25	1.1789	193.0	193.0	0.4030	0.4030	96.48	
S Total HxCDD					575.5	575.5	0.4255	0.4255		
D 13C-1,2,3,4,6,7,8-HpCDF	38.129	2616915	0.45	0.9884	100.7	100.7	0.4857	0.4857	101	
1,2,3,4,6,7,8-HpCDF	38.137	7423570	1.04	1.5064	188.3	188.3	0.7385	0.7385	94.16	
D 13C-1,2,3,4,7,8,9-HpCDF	39.426	2404416	0.45	0.9203	99.4	99.4	0.5216	0.5216	99.40	
1,2,3,4,7,8,9-HpCDF	39.434	6651383	1.04	1.4548	190.2	190.2	0.7698	0.7698	95.08	
S Total HpCDF					378.5	378.5	0.7542	0.7542		
D 13C-1,2,3,4,6,7,8-HpCDD	39.114	2565014	1.06	0.9556	102.1	102.1	0.2773	0.2773	102	
1,2,3,4,6,7,8-HpCDD	39.122	5106412	1.04	1.0640	187.1	187.1	0.3397	0.3397	93.55	
S Total HpCDD					187.1	187.1	0.3397	0.3397		
D 13C-OCDD	41.575	3927948	0.89	0.7420	201.4	201.4	0.2324	0.2324	101	
OCDF	41.659	10652820	0.92	1.4296	379.4	379.4	0.3004	0.3004	94.85	
OCDD	41.584	8253790	0.89	1.1293	372.1	372.1	0.3572	0.3572	93.03	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	17-Sep-2020 15:41:00	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00095				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 11:00:30	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1070				

First Level Reviewer: shardaa Date: 17-Sep-2020 18:40:07

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.153	20.145	0		1094659	165867	391	977	424		
333.9338	20.153	20.145	0		1343223	197347	202	505	977	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.224	19.222	0	0.954	1776014	272685	673	1682	405		
317.9389	19.224	19.222	0	0.954	2220102	337758	327	817	1033	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.250	19.246	0	1.001	735939	110364	85	212	1298		
305.8987	19.250	19.246	0	1.001	929275	141060	134	335	1053	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.514	20.507	0	1.018	1252108	174246	391	977	446		
333.9338	20.505	20.507	0	1.017	1563999	222203	202	505	1100	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.539	20.531	1	1.019	1135994	158595	80	200	1982		
2,3,7,8-TCDD											
319.8965	20.539	20.532	0	1.001	510117	70978	116	290	612		
321.8936	20.531	20.532	0	1.001	650739	89192	61	152	1462	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.307	26.301	0	1.305	2278262	391109	573	1432	683		
353.8970	26.307	26.301	0	1.305	1441438	243927	381	952	640	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.324	26.321	0	1.001	4578686	771006	1105	2762	698		
341.8567	26.324	26.321	0	1.001	2884607	490900	747	1867	657	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.756	27.762	0	1.377	2101624	339639	573	1432	593		
353.8970	27.756	27.762	0	1.377	1325532	212281	381	952	557	1.59(1.32-1.78)	

Report Date: 18-Sep-2020 11:00:39 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.781	27.787	0	1.001	4405602	685703	1105	2762	621		
341.8567	27.781	27.787	0	1.001	2816007	440996	747	1867	590	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.539	28.537	0	1.416	1435499	223561	179	447	1249		
369.8919	28.539	28.537	0	1.416	928905	139354	128	320	1089	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.565	28.562	0	1.001	2919697	442166	229	572	1931		
357.8516	28.565	28.562	0	1.001	1866355	285991	92	230	3109	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.177	34.181	0	0.949	1015315	209527	473	1182	443		
385.8610	34.177	34.181	0	0.949	1916411	395595	931	2327	425	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.203	34.200	0	1.001	4005208	814692	1664	4160	490		
375.8178	34.203	34.200	0	1.001	3188553	649795	1343	3357	484	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.363	34.365	0	0.954	1183699	230383	473	1182	487		
385.8610	34.363	34.365	0	0.954	2275050	448862	931	2327	482	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.388	34.384	0	1.001	4514911	881304	1664	4160	530		
375.8178	34.388	34.384	0	1.001	3586499	698690	1343	3357	520	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.272	35.272	0	0.979	1128357	270515	473	1182	572		
385.8610	35.272	35.272	0	0.979	2146484	514425	931	2327	553	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.289	35.288	0	1.000	4331828	1016272	1664	4160	611		
375.8178	35.289	35.288	0	1.000	3448510	810249	1343	3357	603	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.225	36.225	0	1.006	1083331	271624	473	1182	574		
385.8610	36.225	36.225	0	1.006	2052069	521338	931	2327	560	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.242	36.240	0	1.000	4146460	1027471	1664	4160	617		
375.8178	36.233	36.240	0	1.000	3296386	813015	1343	3357	605	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.023	36.021	0		1462810	371556	317	792	1172		
403.8529	36.023	36.021	0		1165566	298210	260	650	1147	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.500	35.502	0	0.985	1244190	311845	317	792	984		
403.8529	35.508	35.502	0	0.986	977626	243469	260	650	936	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.517	35.519	0	1.000	2733184	702210	621	1552	1131		
391.8127	35.517	35.519	0	1.000	2197435	569088	511	1277	1114	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.635	35.630	0	0.989	1477693	354637	317	792	1119		
403.8529	35.626	35.630	0	0.989	1173596	281242	260	650	1082	1.26(1.05-1.43)	

Report Date: 18-Sep-2020 11:00:39 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.643	35.646	0	1.000	2889967	694650	621	1552	1119		
391.8127	35.643	35.646	0	1.000	2306534	559898	511	1277	1096	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.031	36.033	0	1.015	3084616	784726	621	1552	1264		
391.8127	36.031	36.033	0	1.015	2458358	630595	511	1277	1234	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.129	38.132	0	1.058	815692	258941	428	1070	605		
419.8220	38.129	38.132	0	1.058	1801223	573840	858	2145	669	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.137	38.141	0	1.000	3788334	1186981	1904	4760	623		
409.7788	38.137	38.141	0	1.000	3635236	1145501	1802	4505	636	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.426	39.428	0	1.094	747047	254920	428	1070	596		
419.8220	39.426	39.428	0	1.094	1657369	572363	858	2145	667	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.434	39.438	0	1.000	3385310	1140839	1904	4760	599		
409.7788	39.434	39.438	0	1.000	3266073	1114002	1802	4505	618	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.114	39.118	0	1.086	1318527	454501	374	935	1215		
437.8140	39.114	39.118	0	1.086	1246487	430815	336	840	1282	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.122	39.126	0	1.000	2598830	868729	664	1660	1308		
425.7737	39.122	39.126	0	1.000	2507582	845030	616	1540	1372	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.575	41.572	0	1.154	1845338	581259	223	557	2607		
471.7750	41.567	41.572	0	1.154	2082610	643405	239	597	2692	0.89(0.76-1.02)	
OCDF											
441.7428	41.659	41.663	0	1.002	5106237	1615956	489	1222	3305		
443.7399	41.659	41.663	0	1.002	5546583	1773450	563	1407	3150	0.92(0.76-1.02)	
OCDD											
457.7377	41.584	41.580	0	1.000	3892947	1211423	452	1130	2680		
459.7348	41.575	41.580	0	1.000	4360843	1358577	536	1340	2535	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:39 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

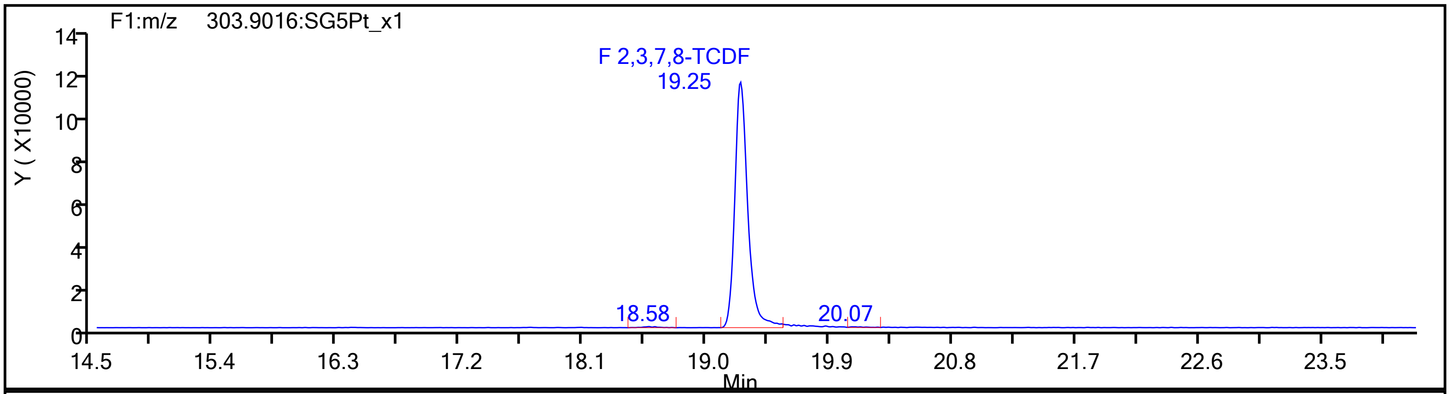

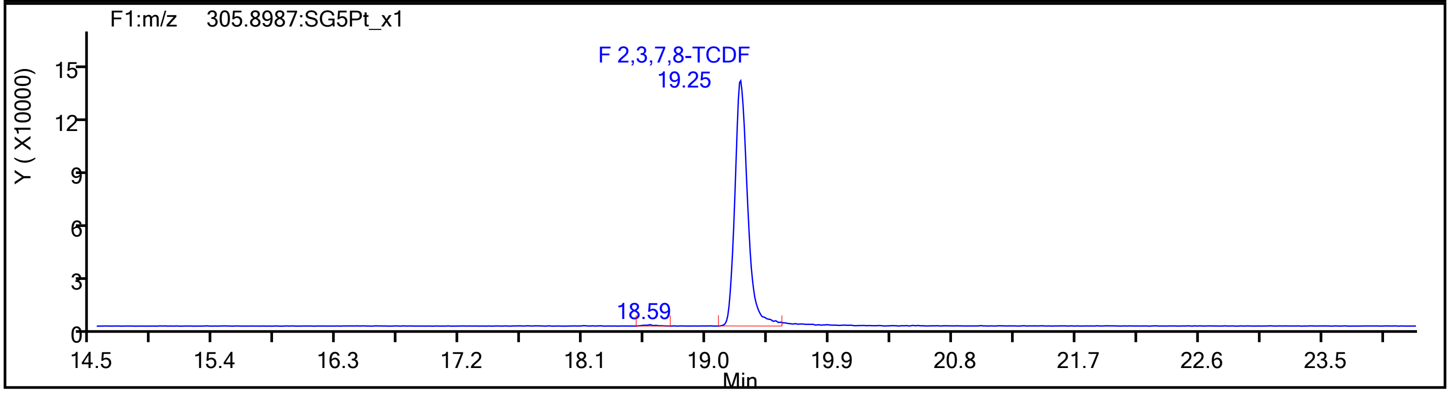

TCDF Standards

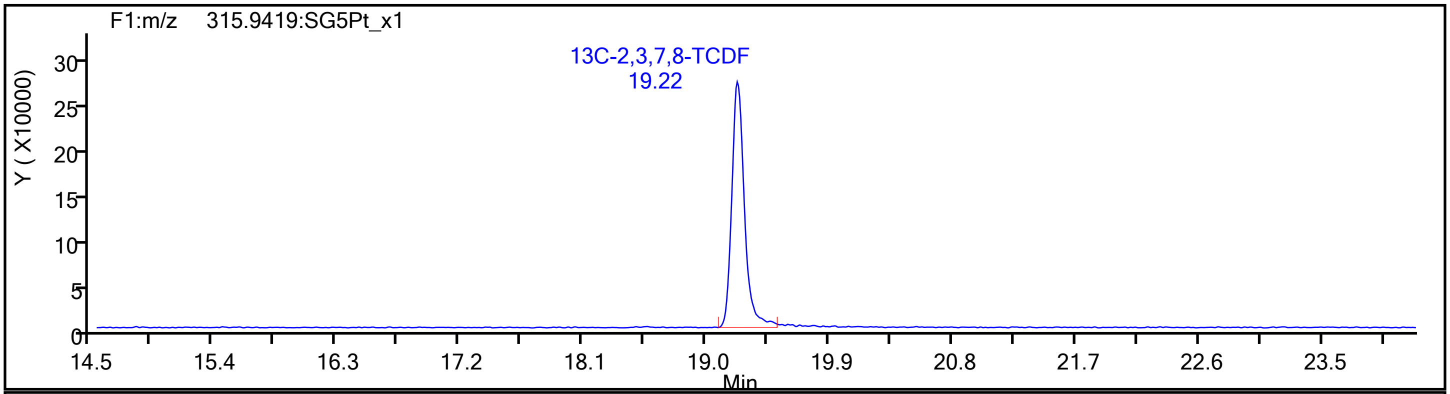

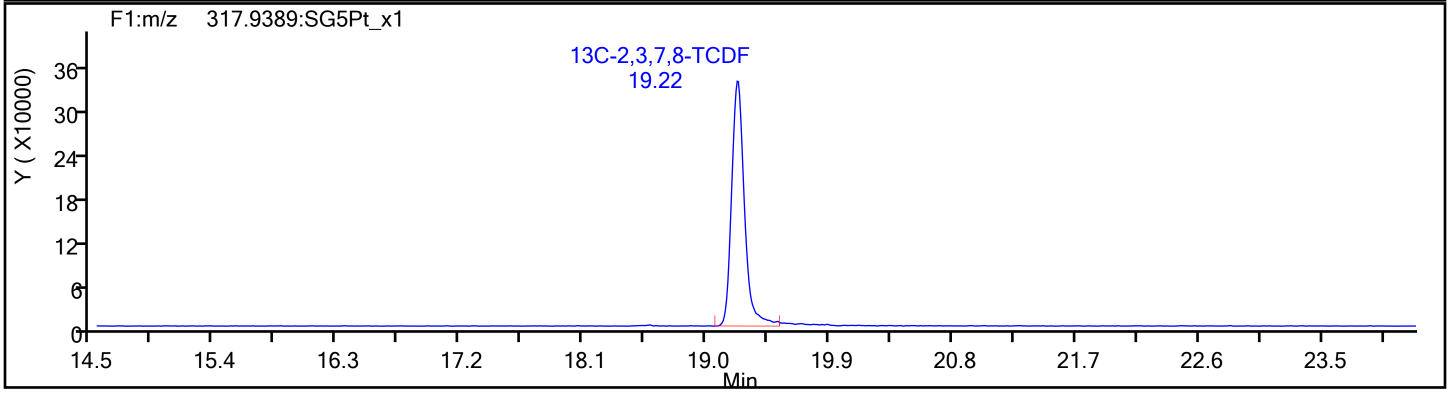

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

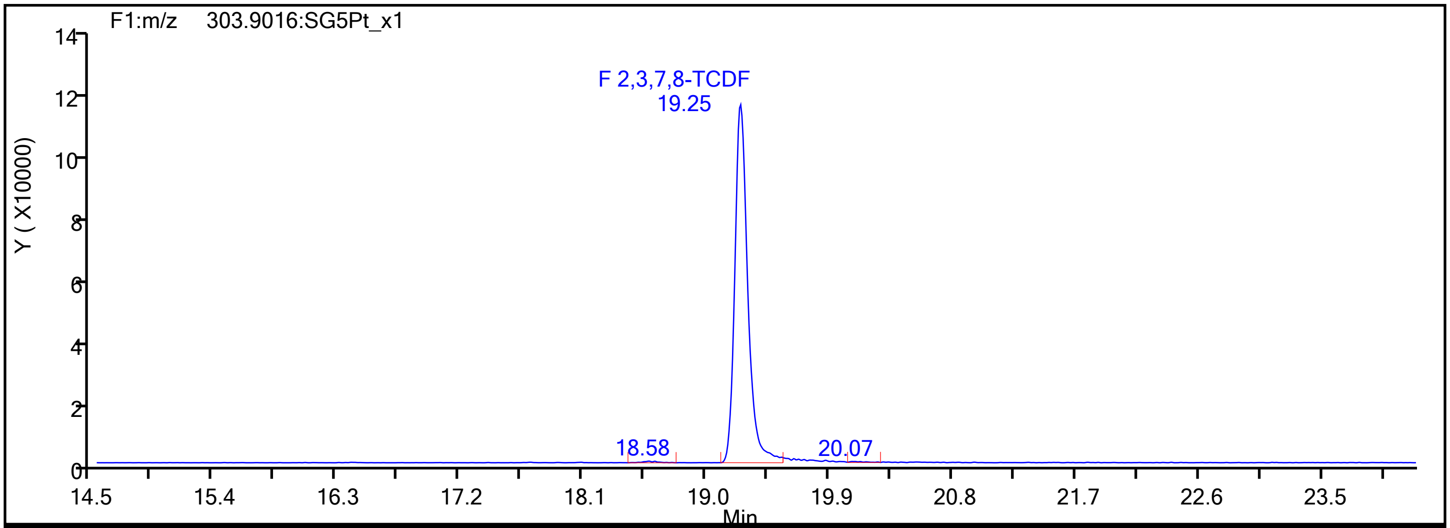

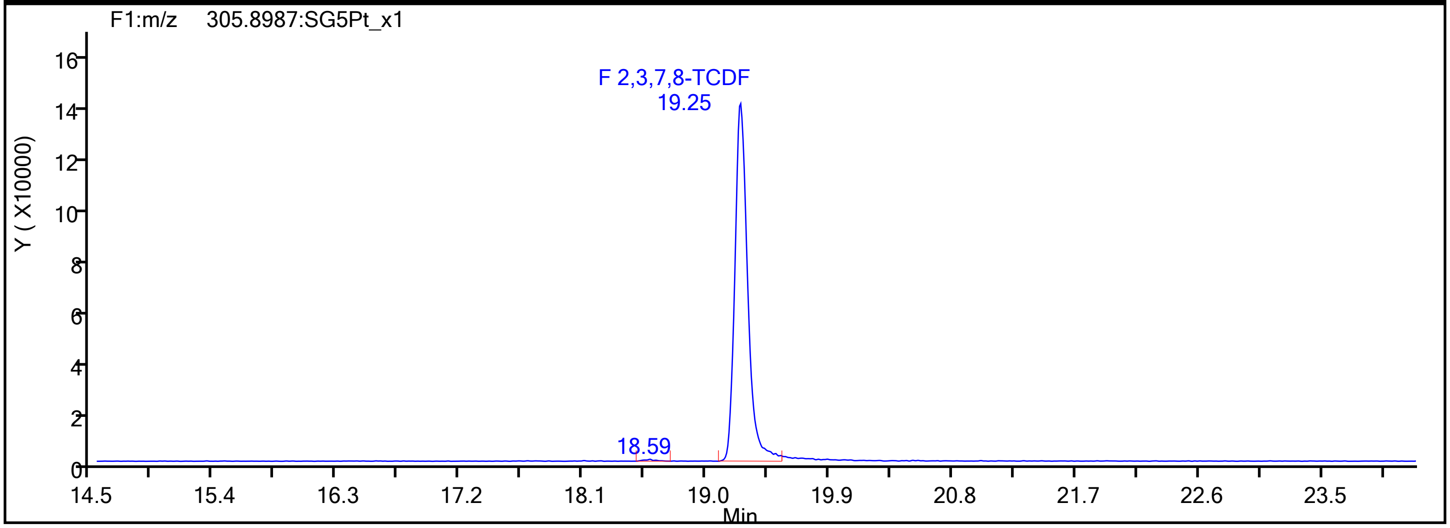

TCDF Interference Mass

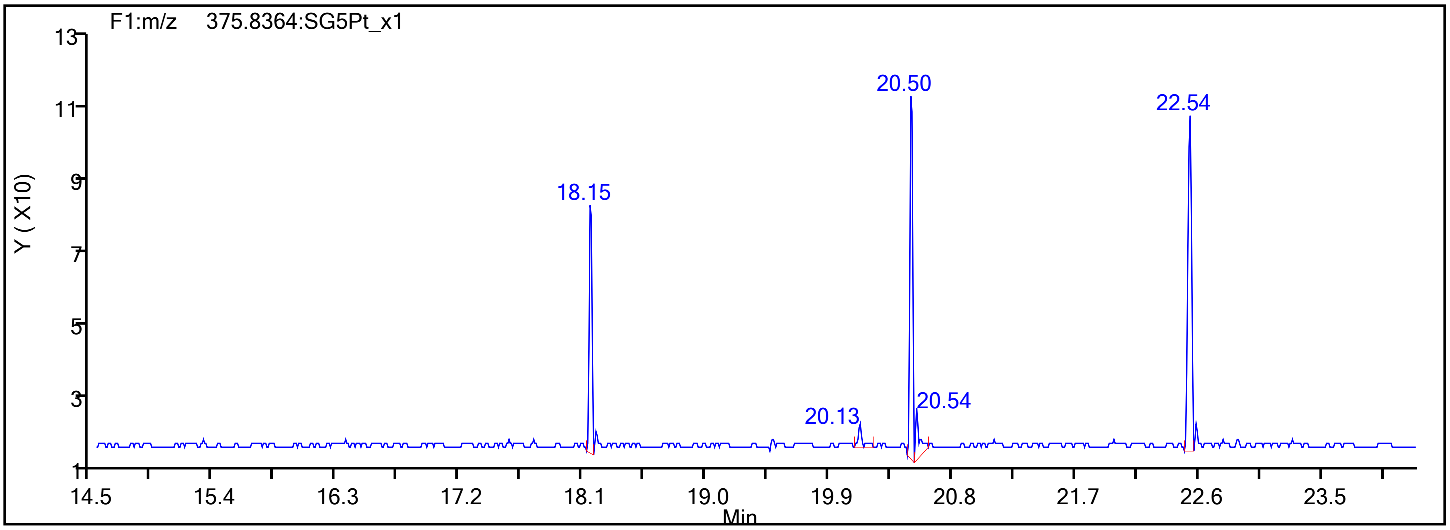

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

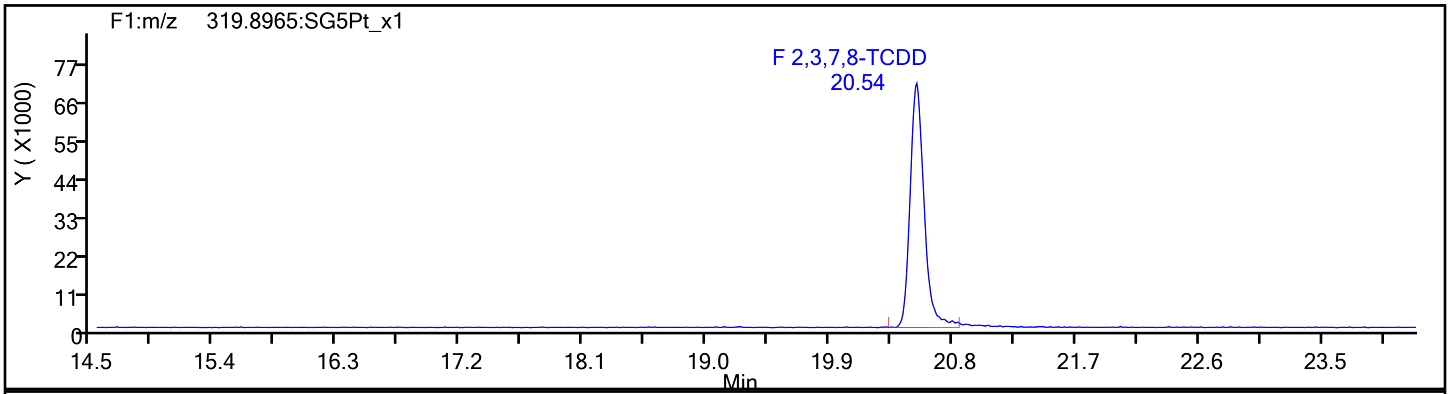

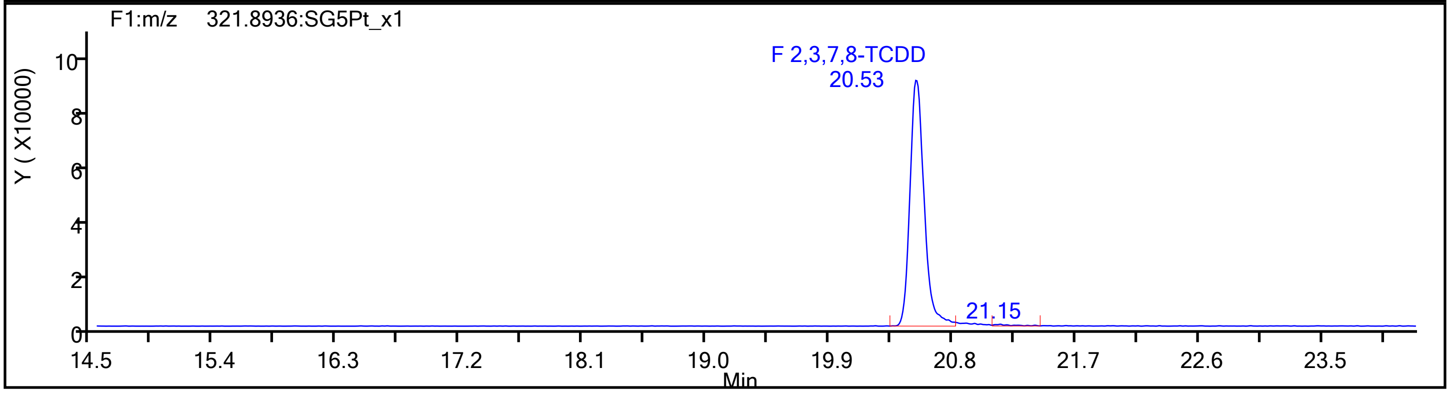

TCDD Standards

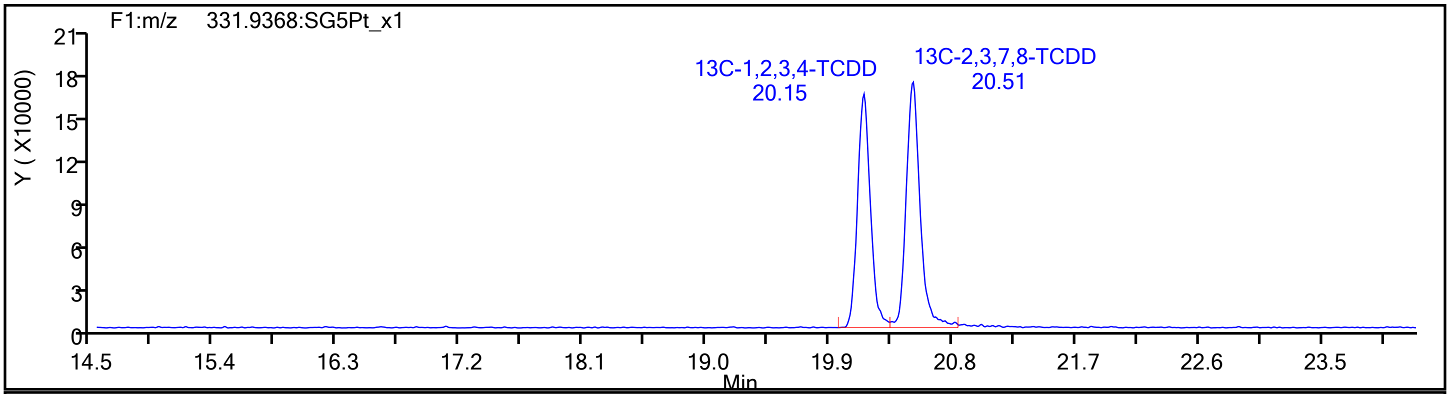

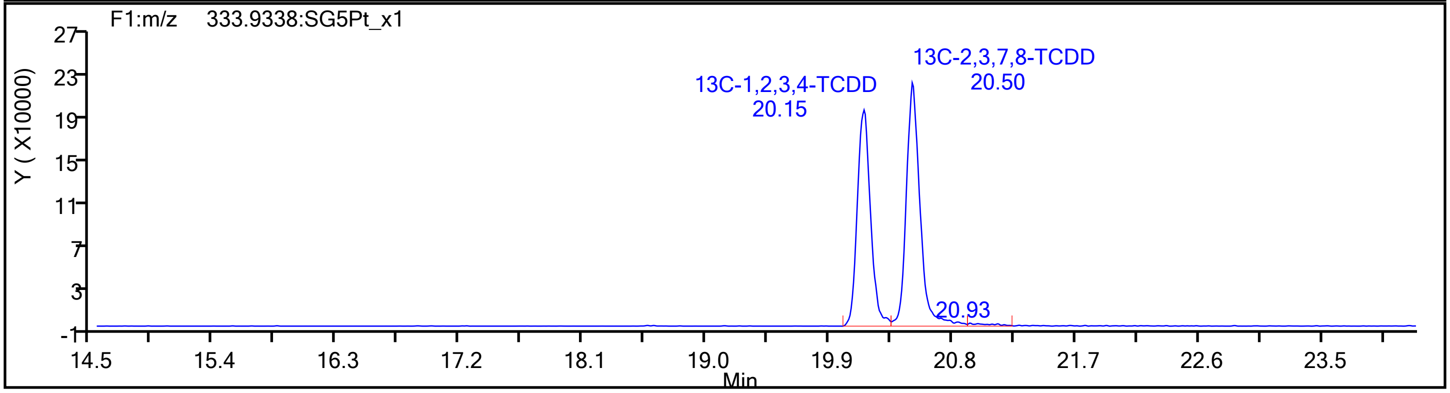

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

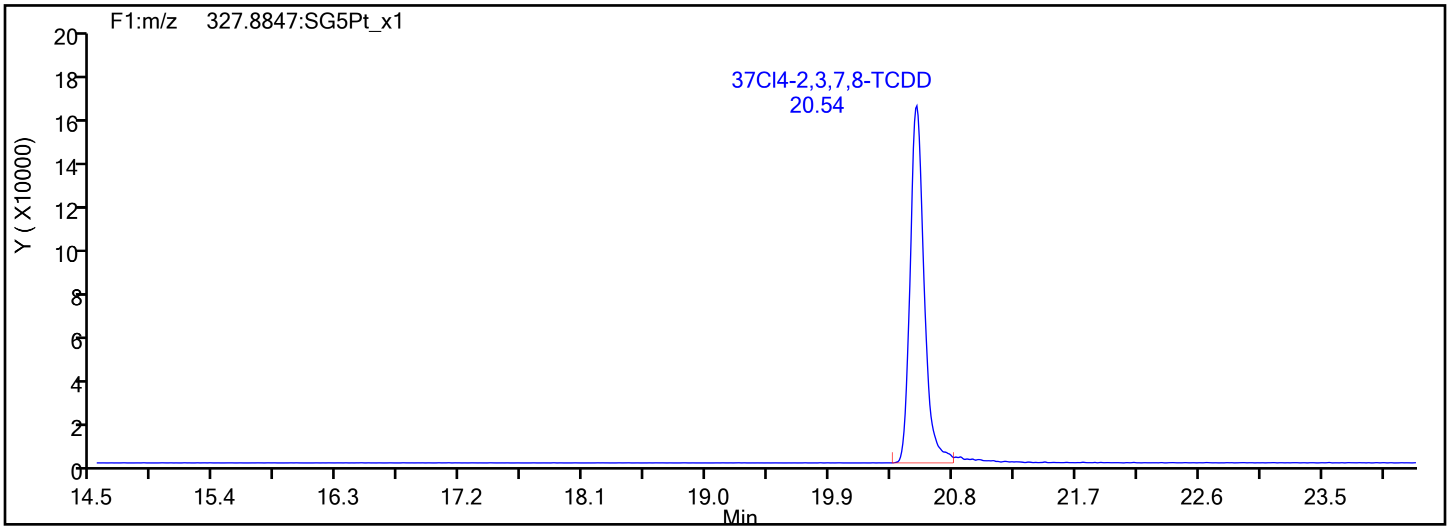

37Cl4-TCDD Standards

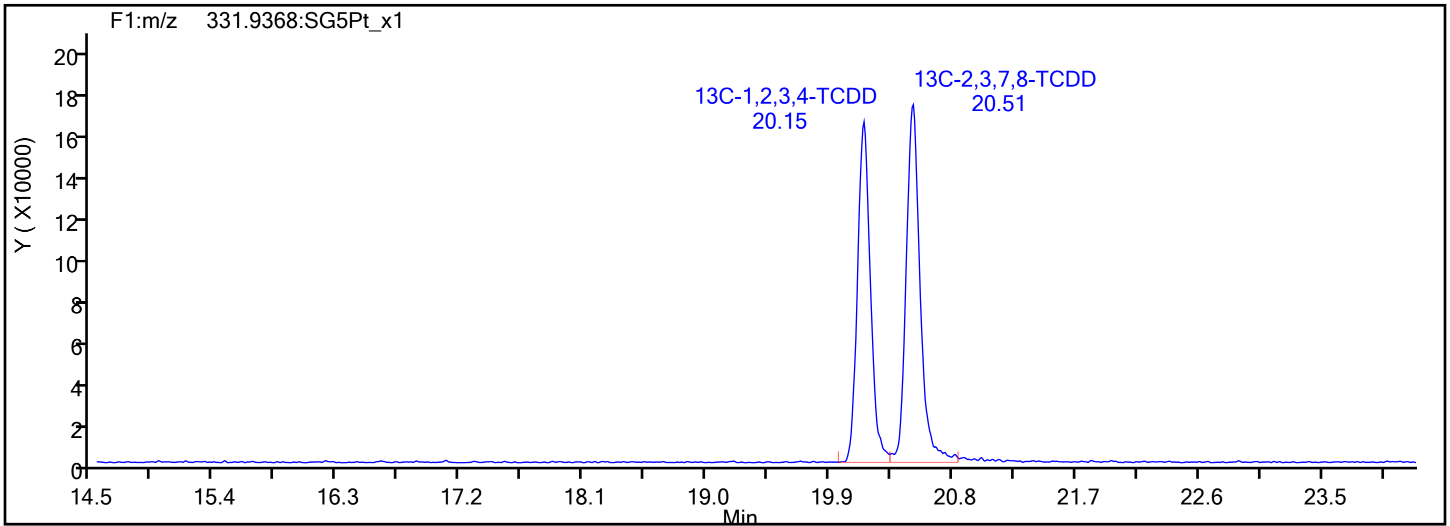

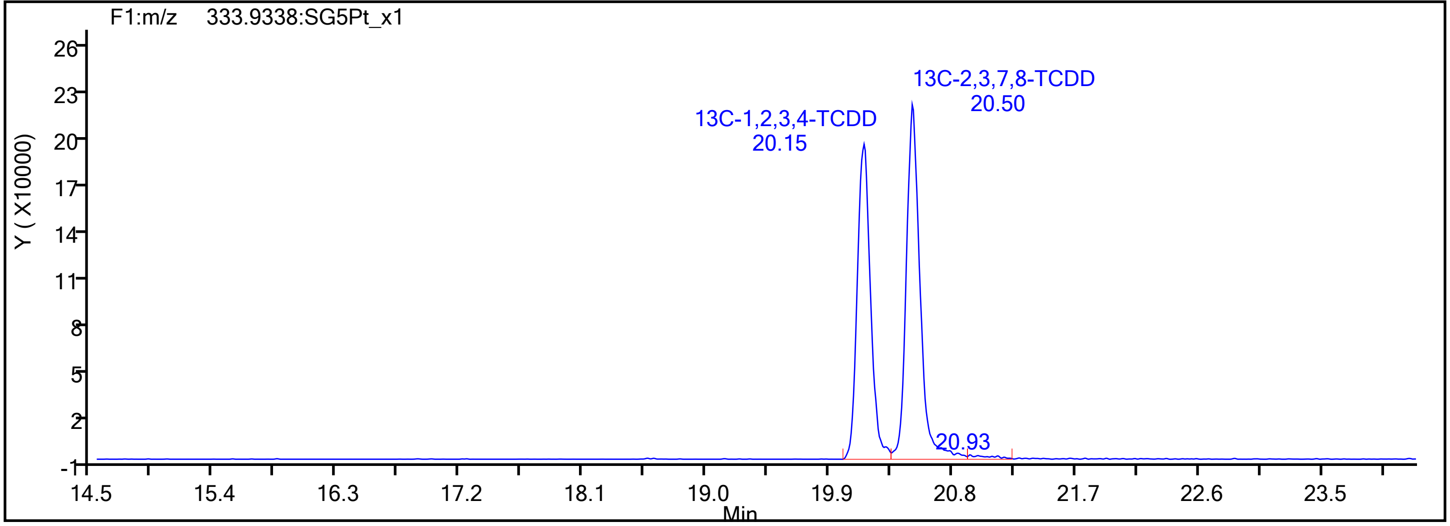

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

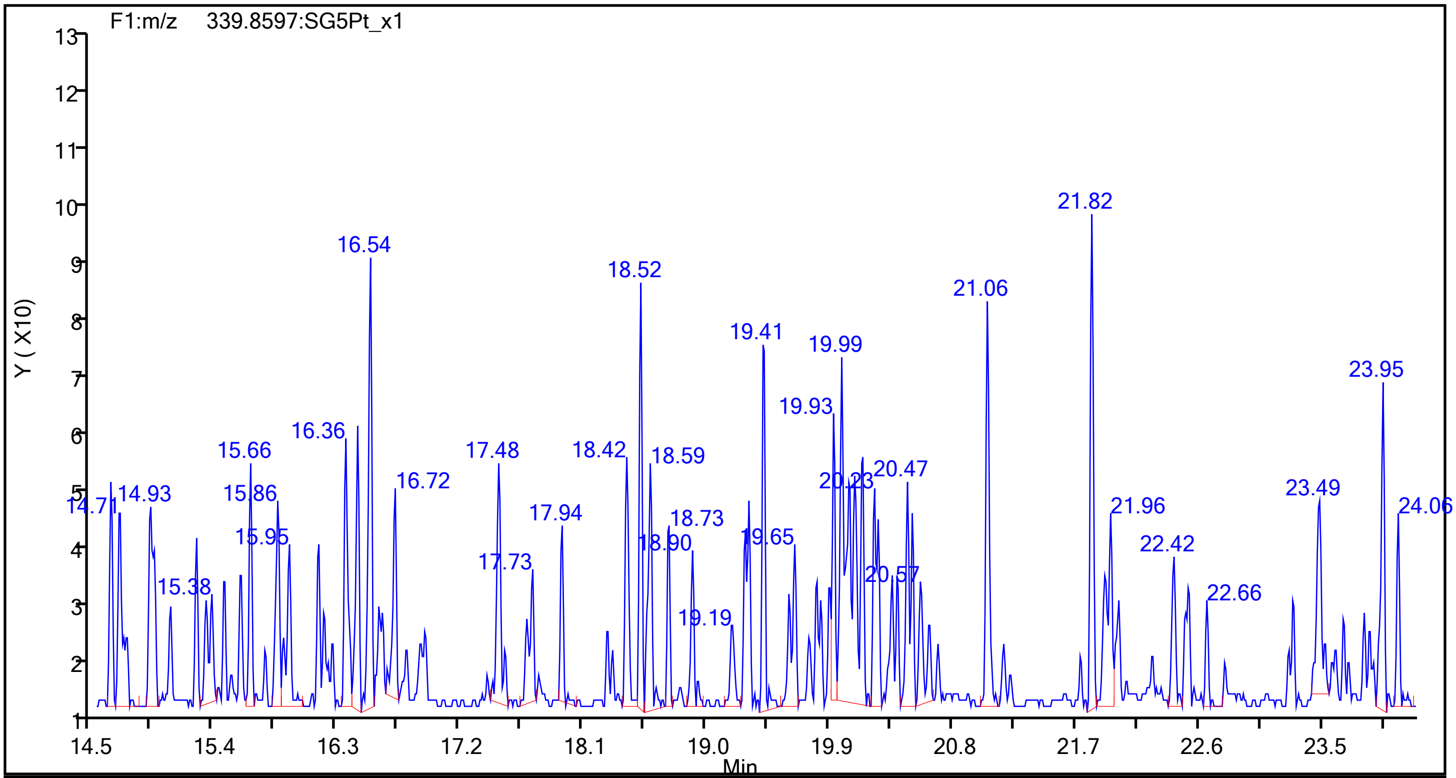

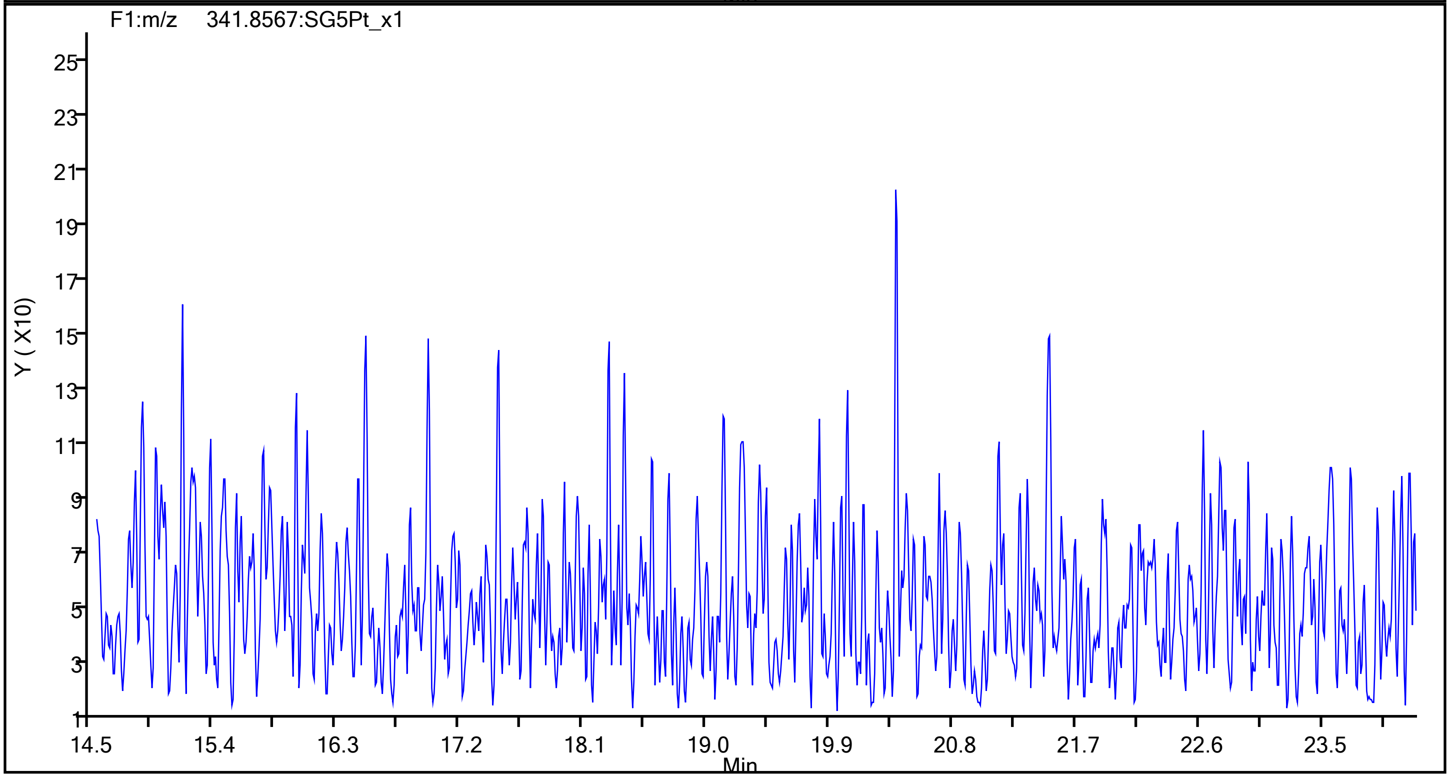

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

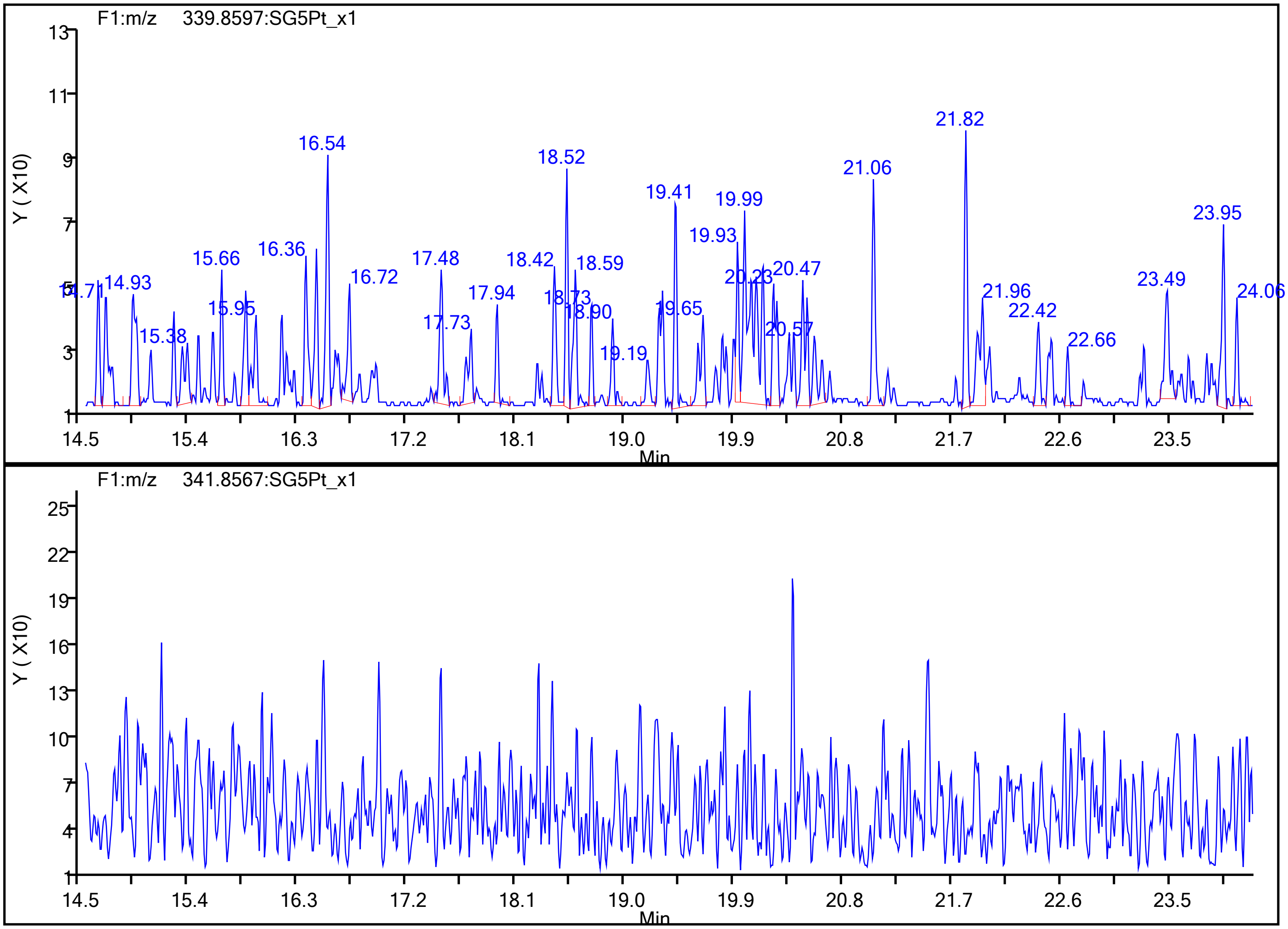

F1 PeCDFs Interference Mass

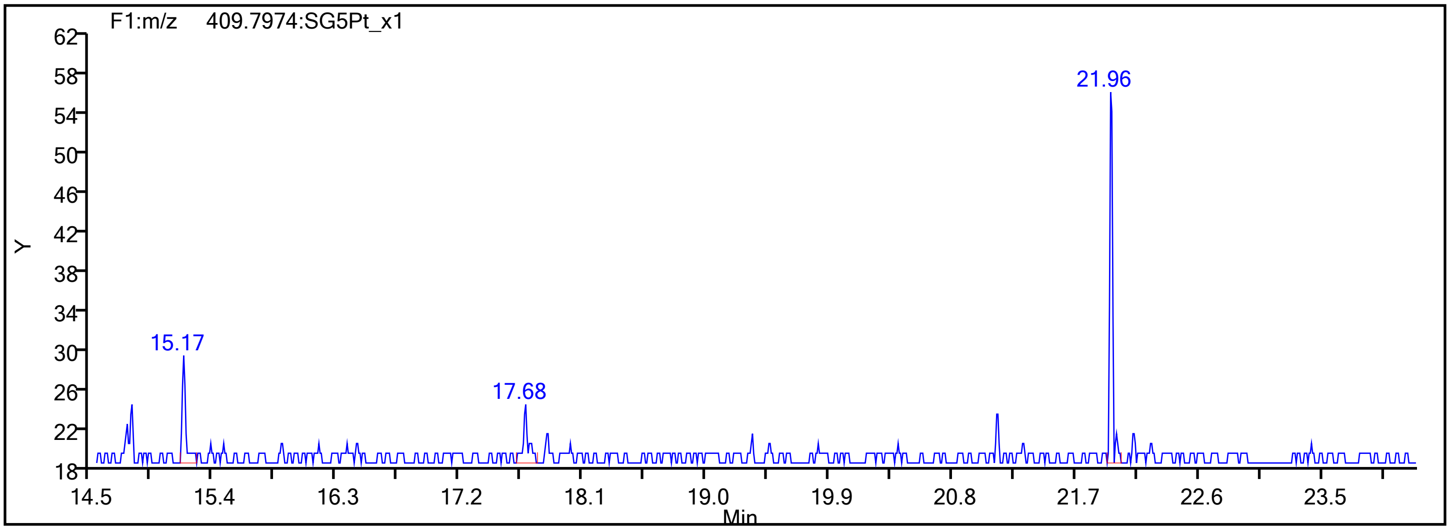

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

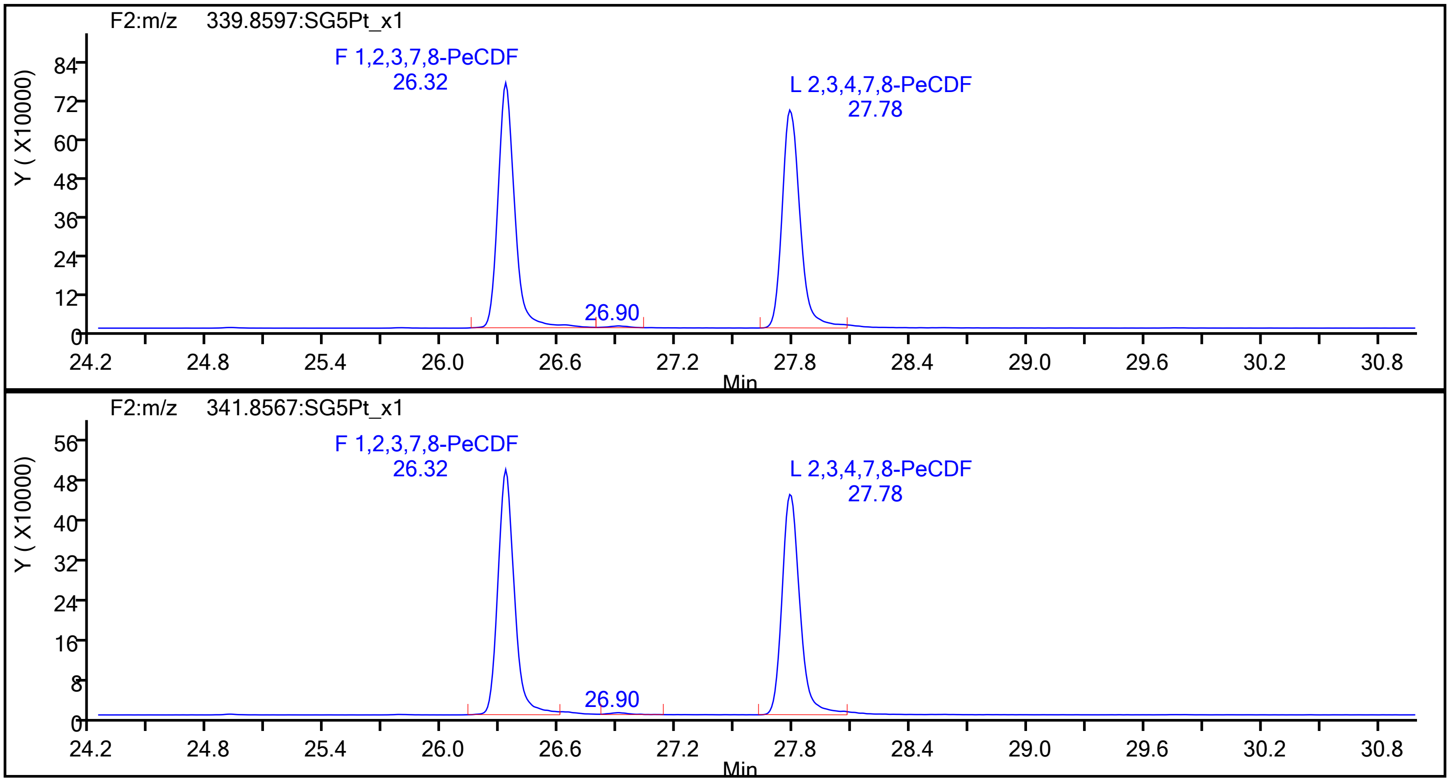

PeCDF Standards

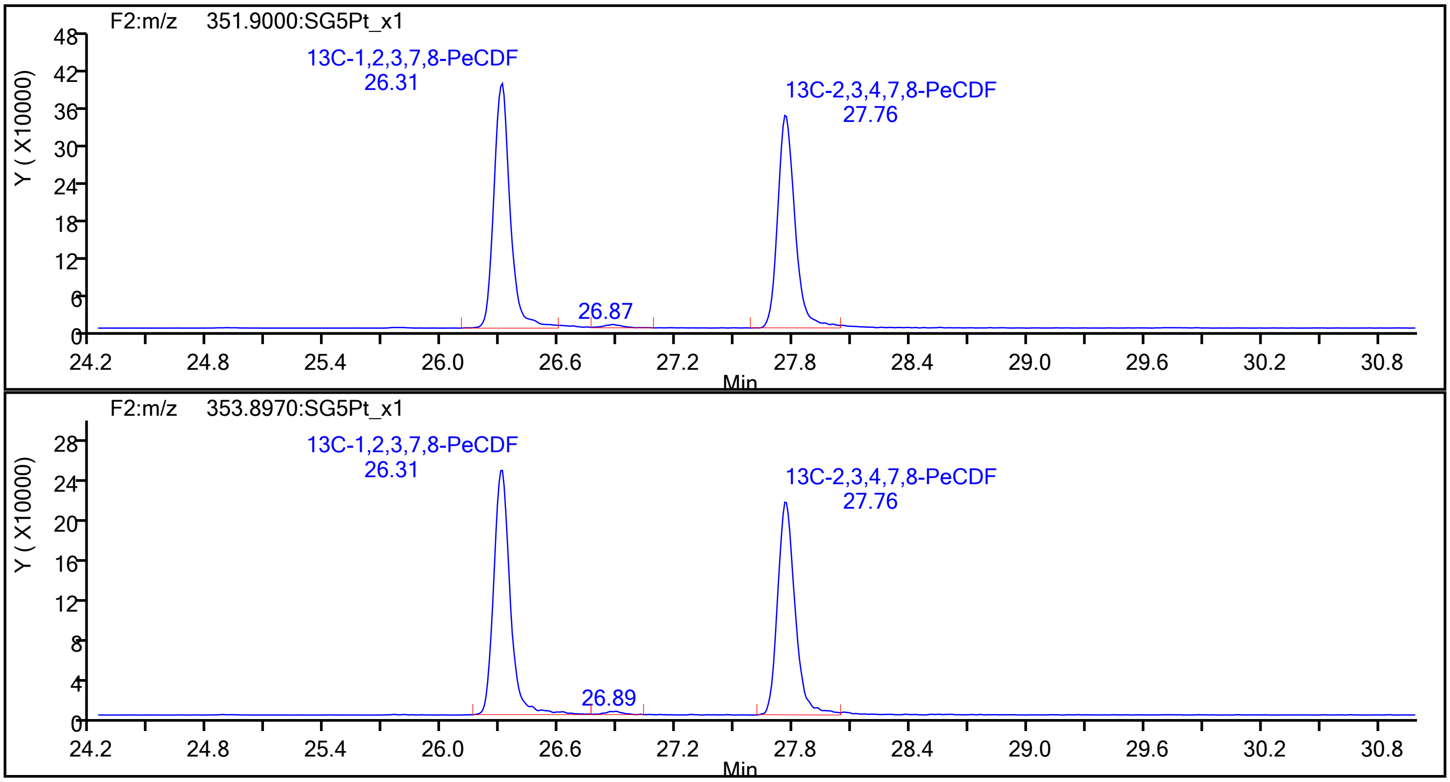

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

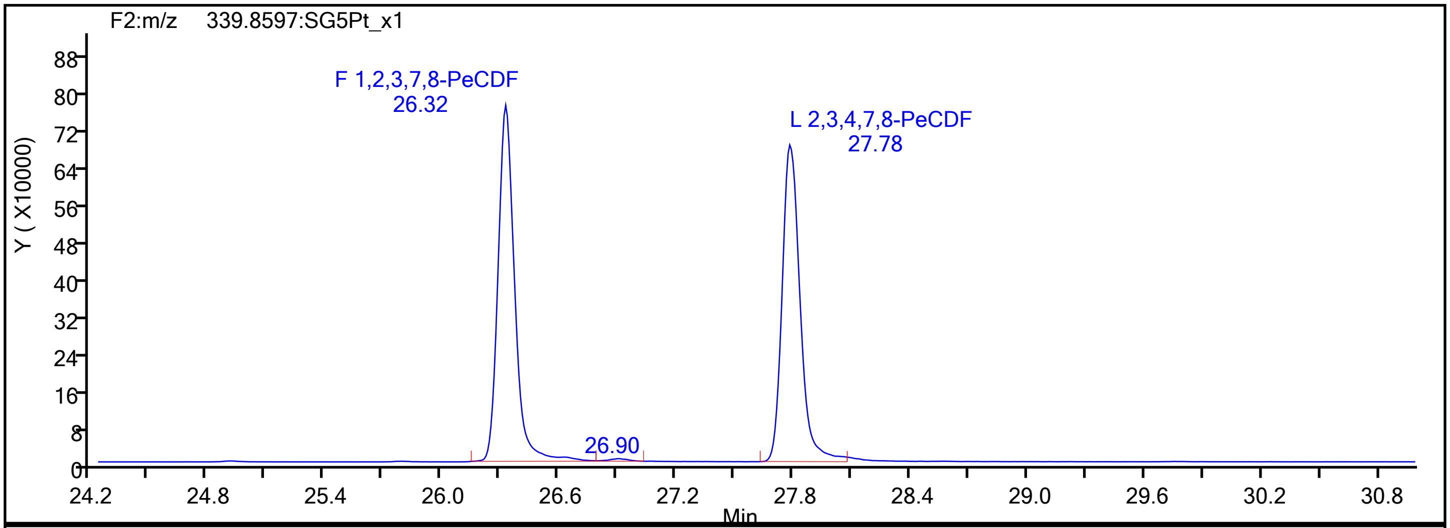

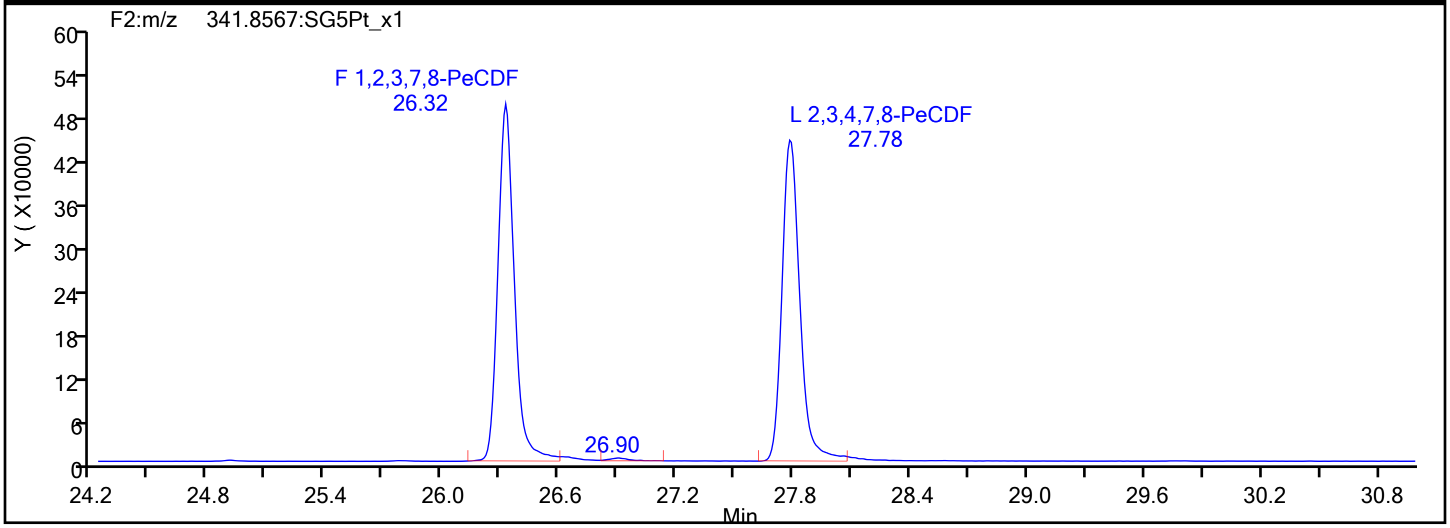

PeCDF Interference Mass

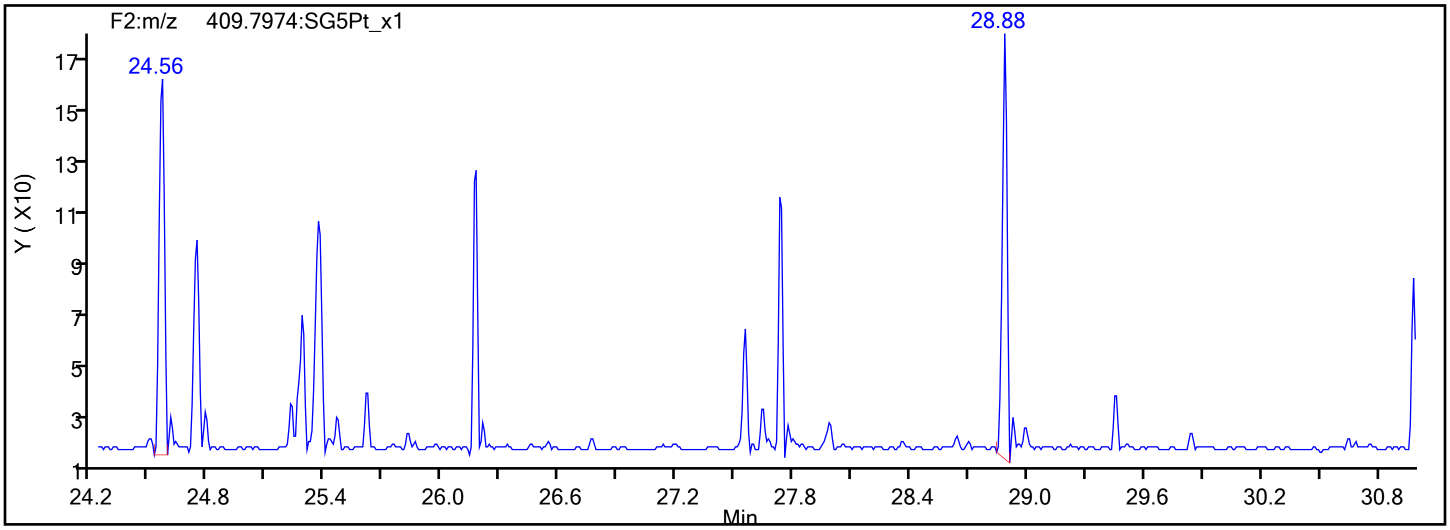

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

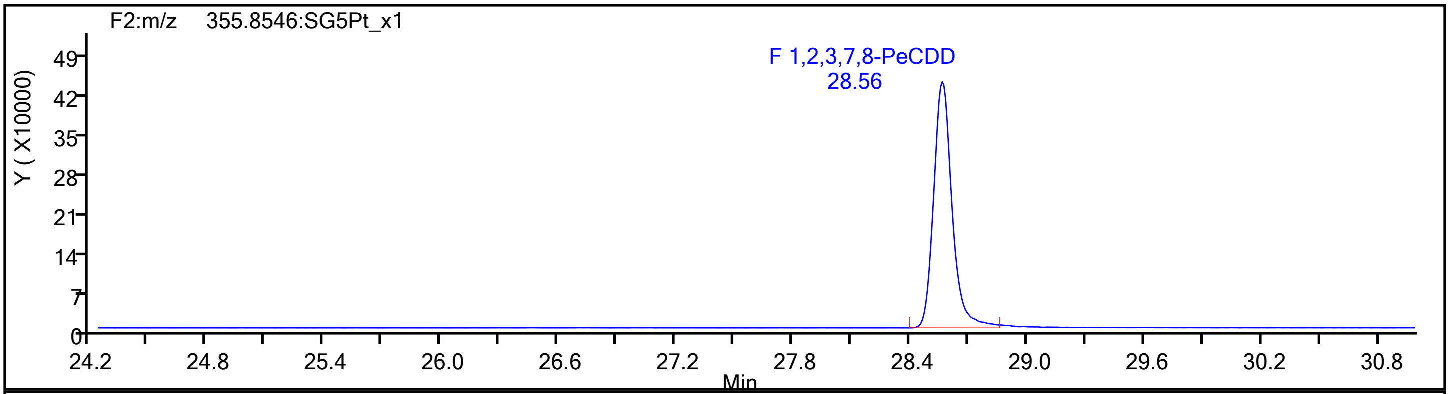

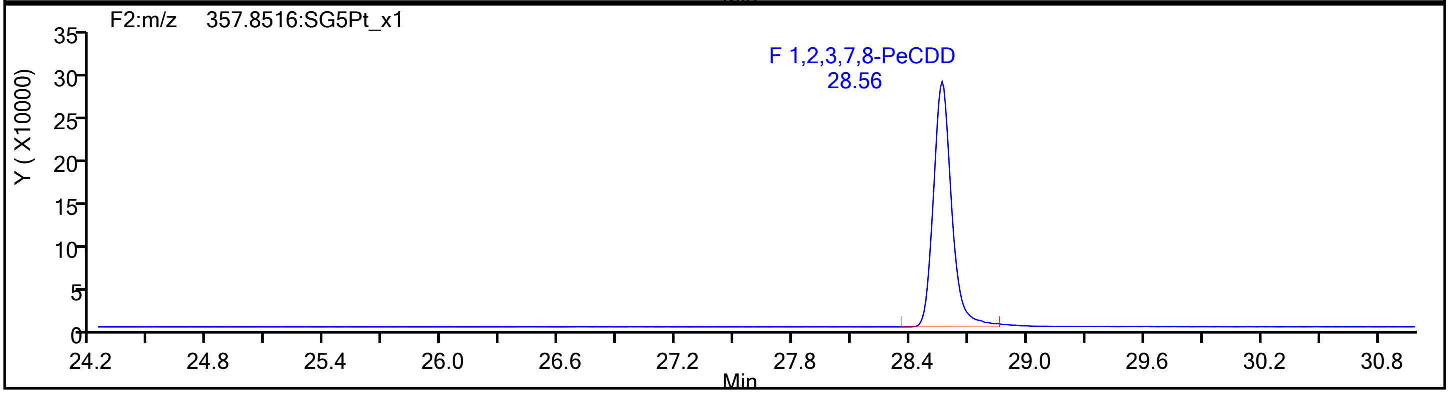

PeCDD Standards

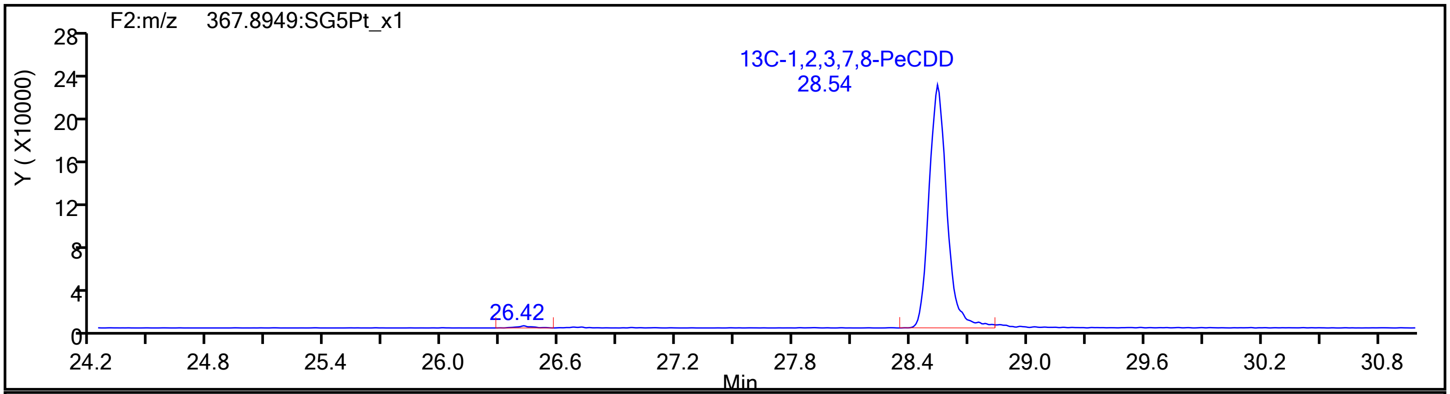

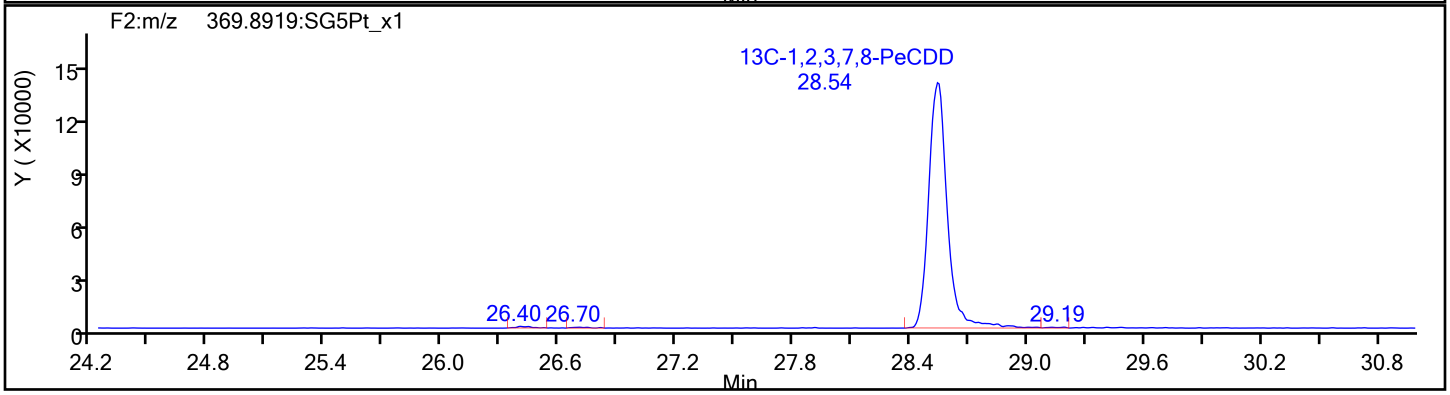

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

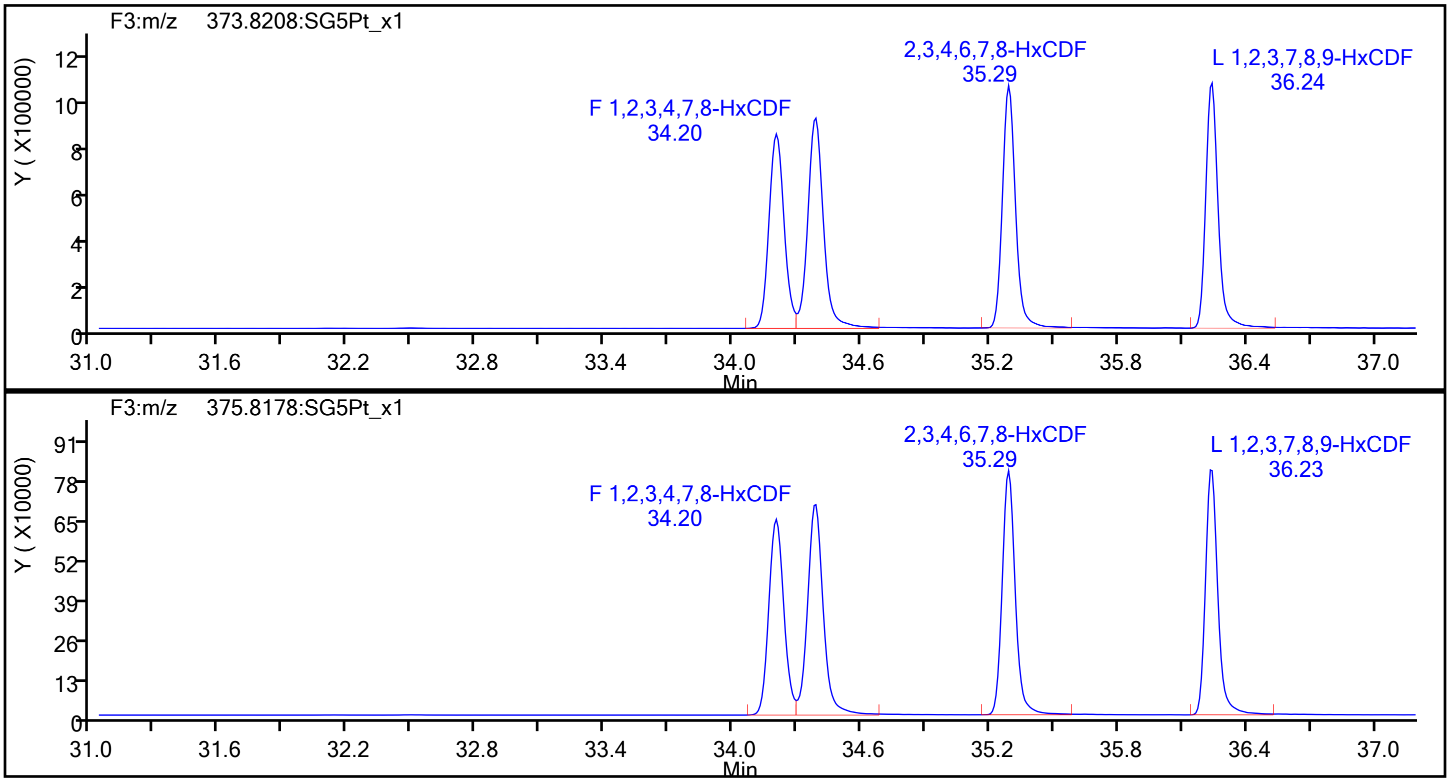

HxCDF Standards

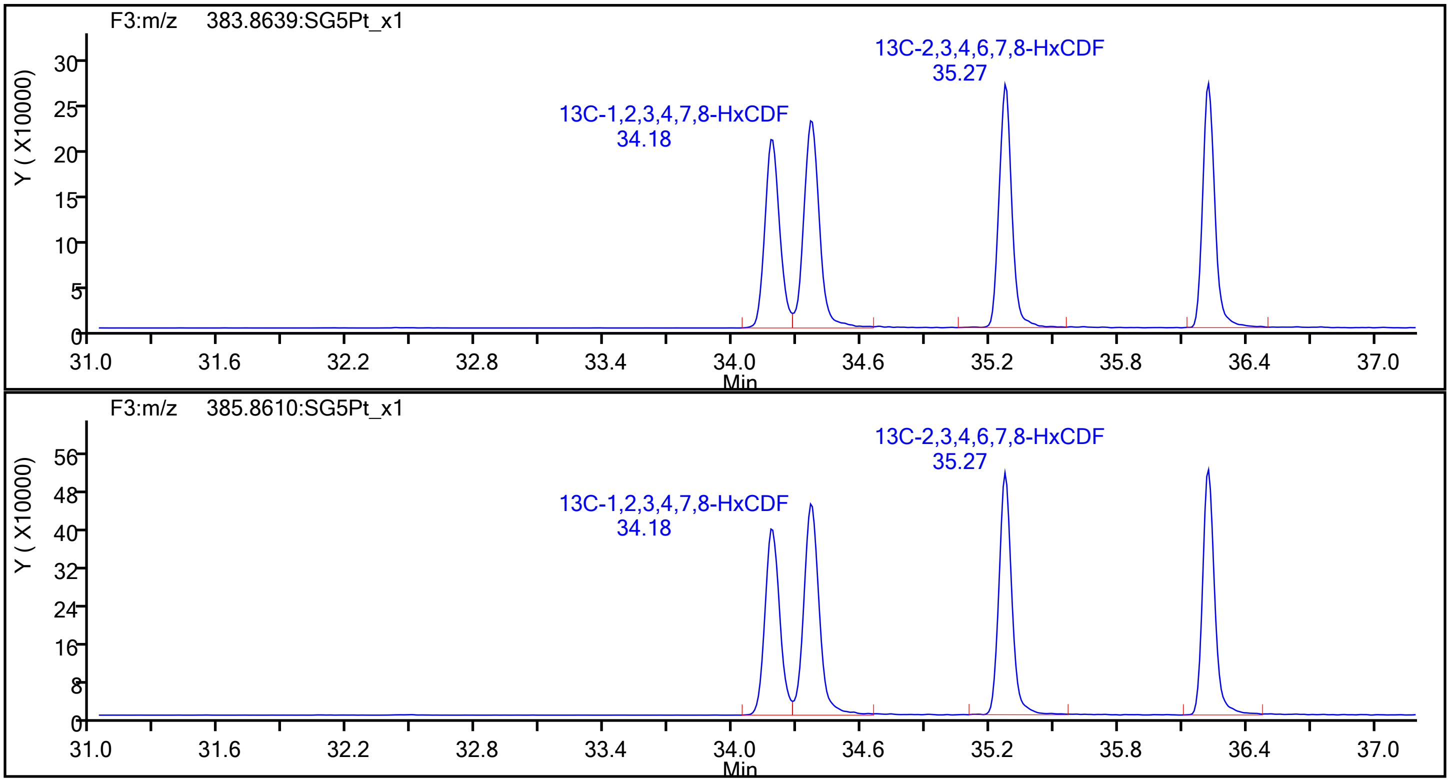

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

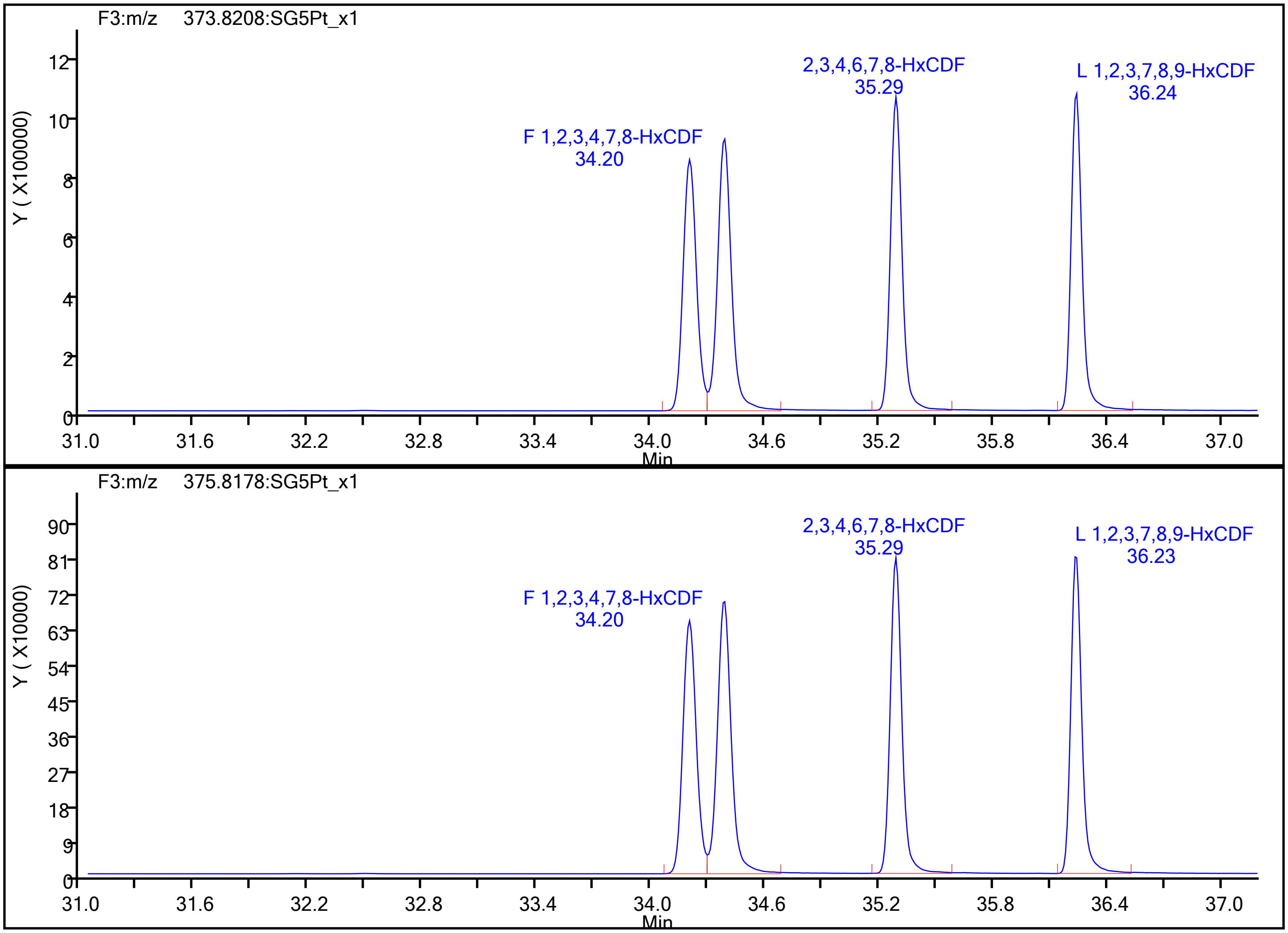

HxCDF Interference Mass

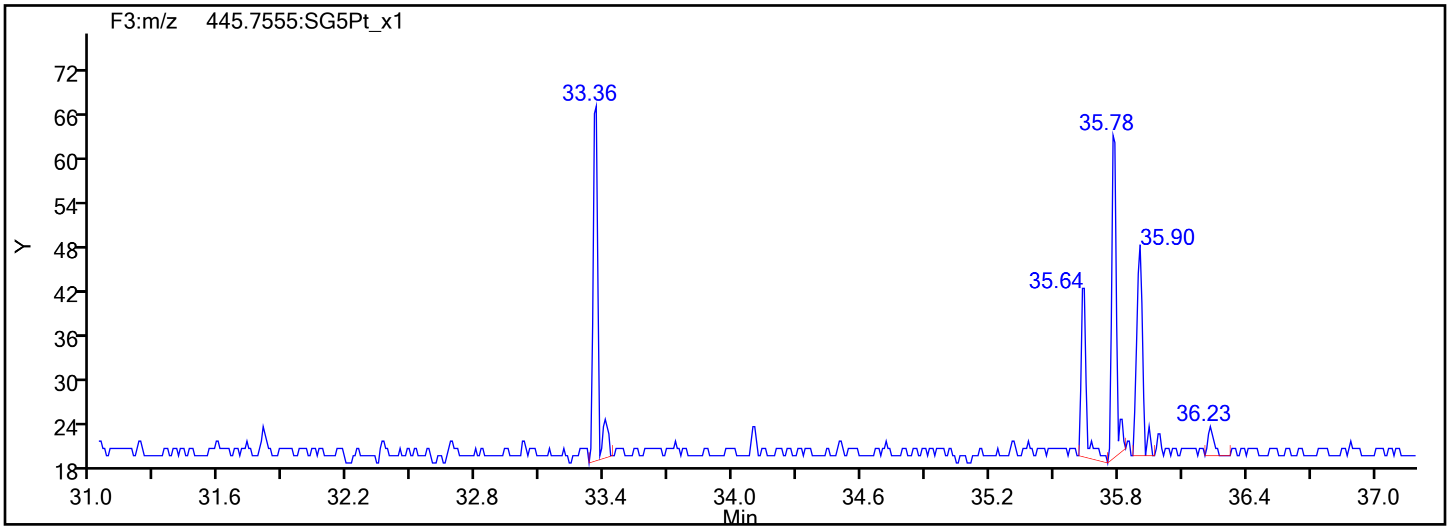

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

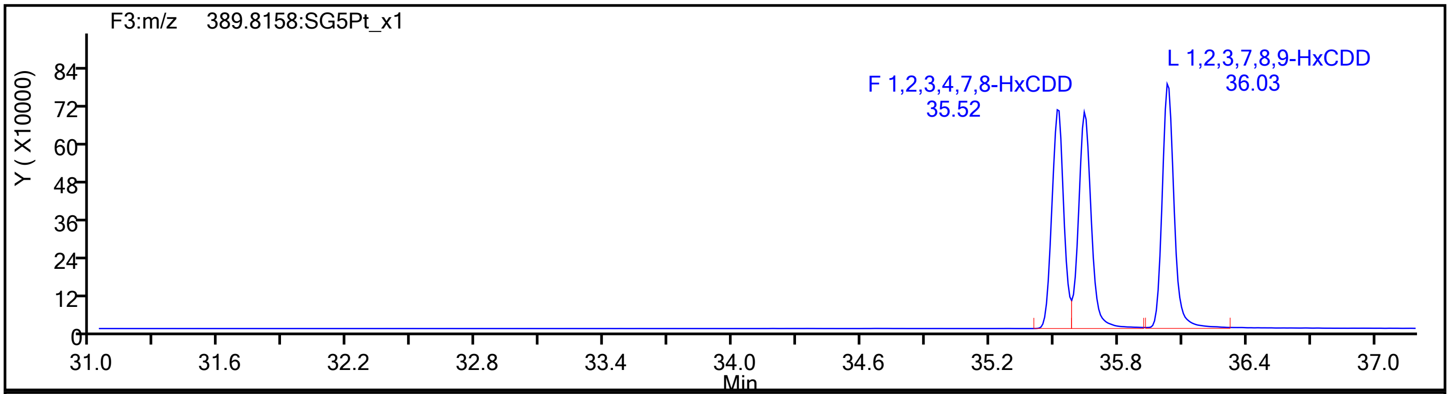

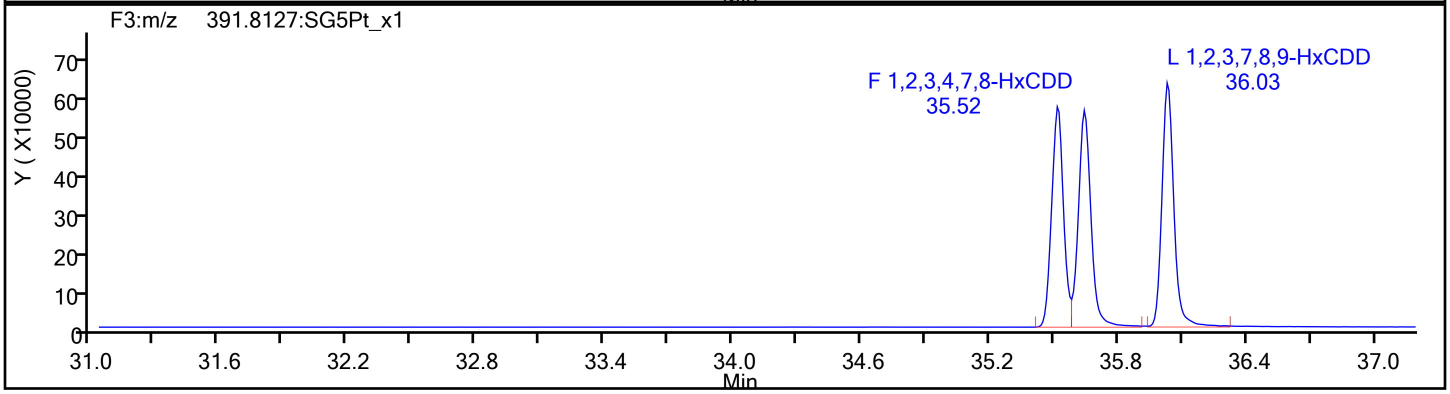

HxCDD Standards

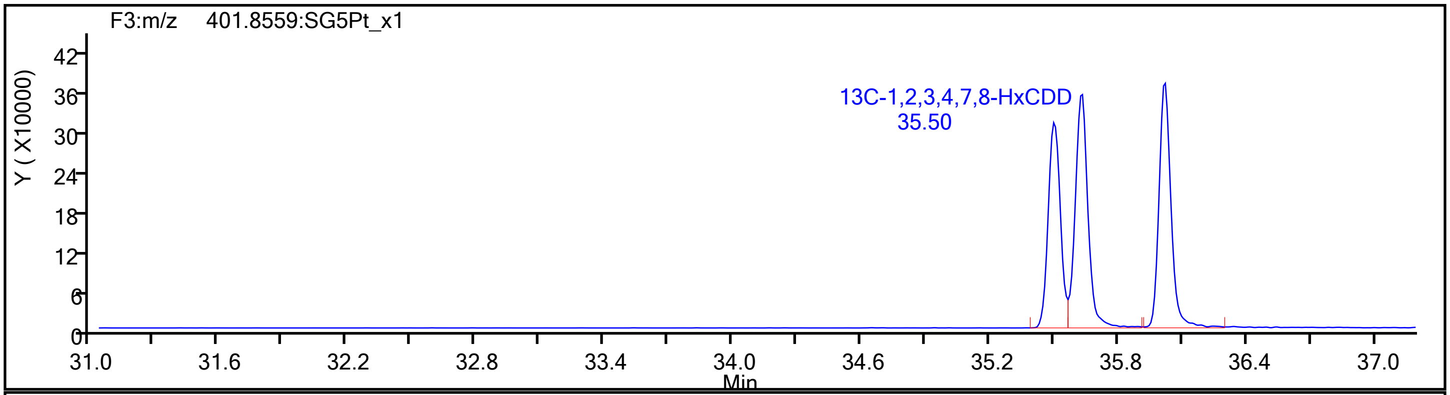

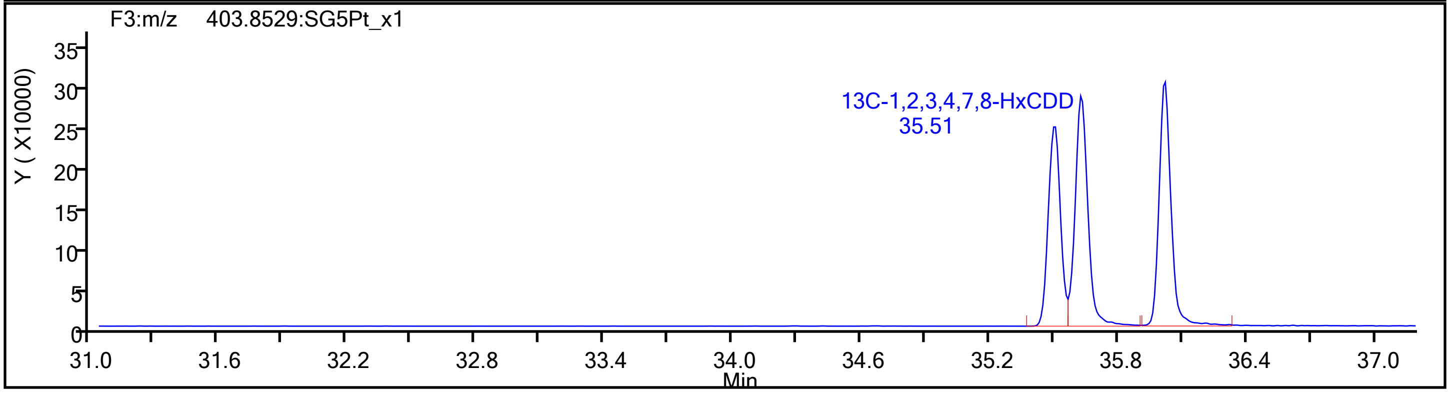

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

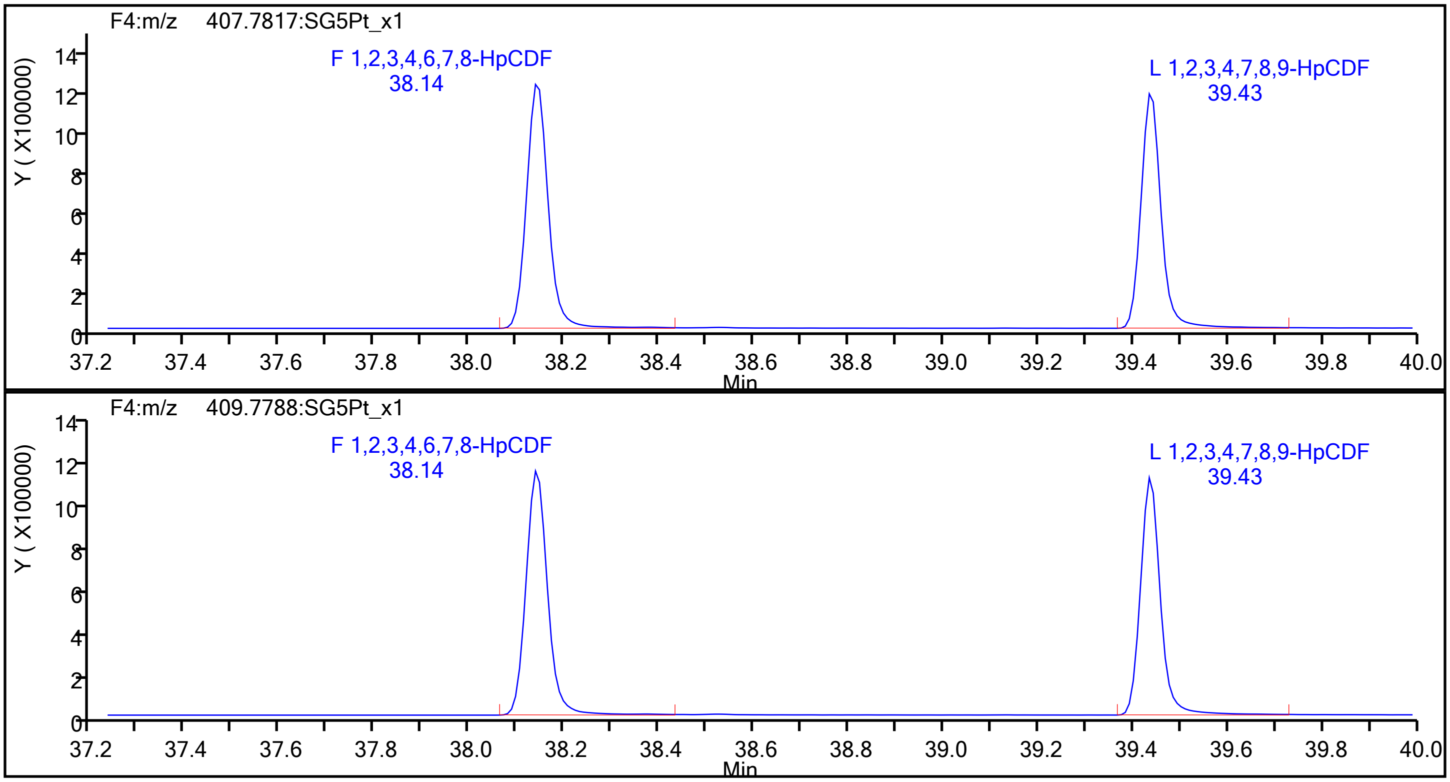

HpCDF Standards

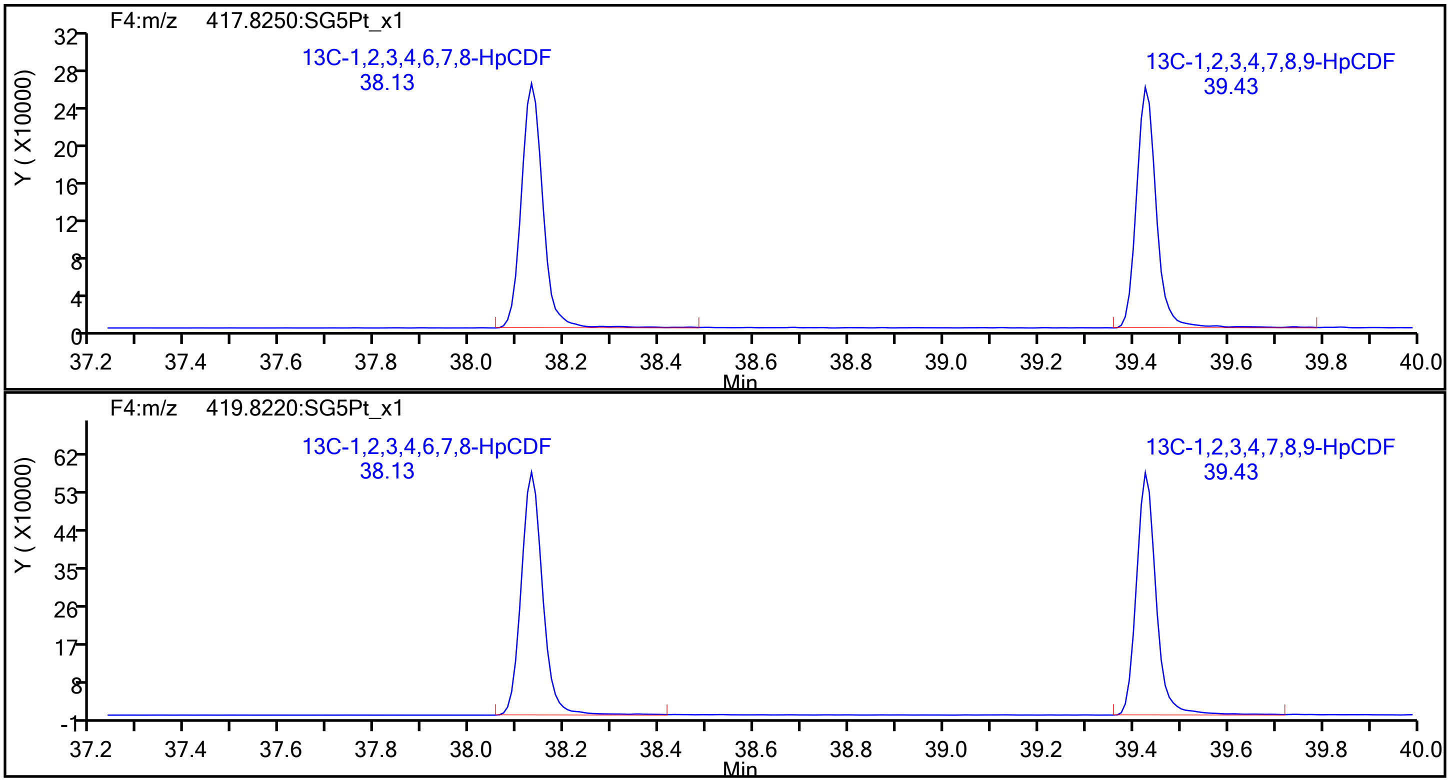

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

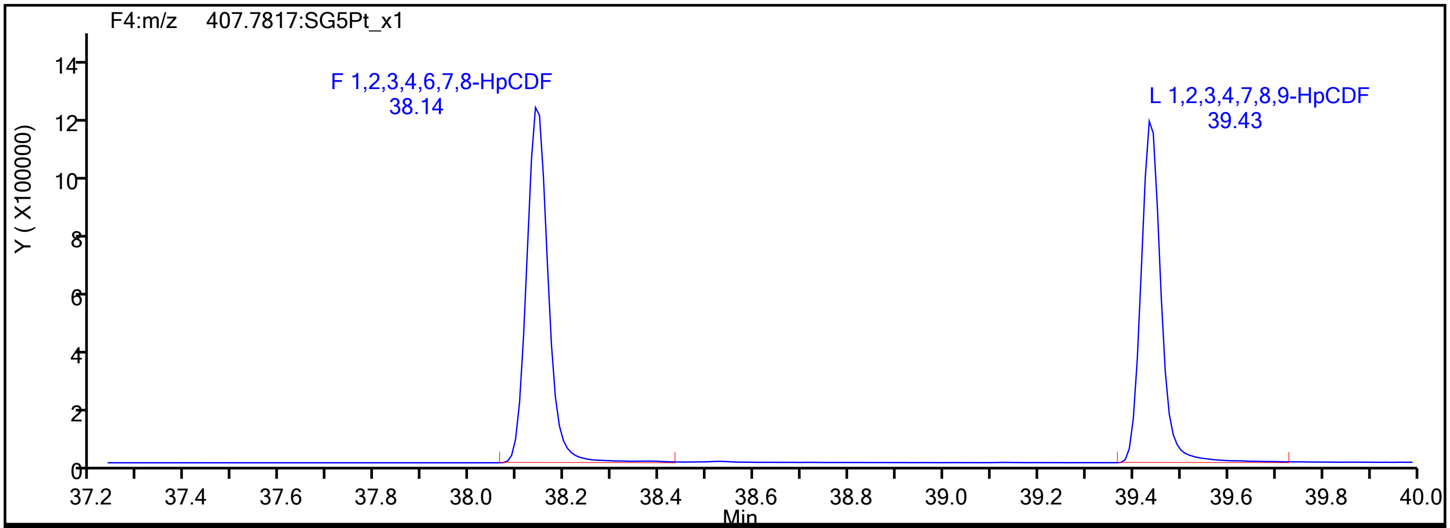

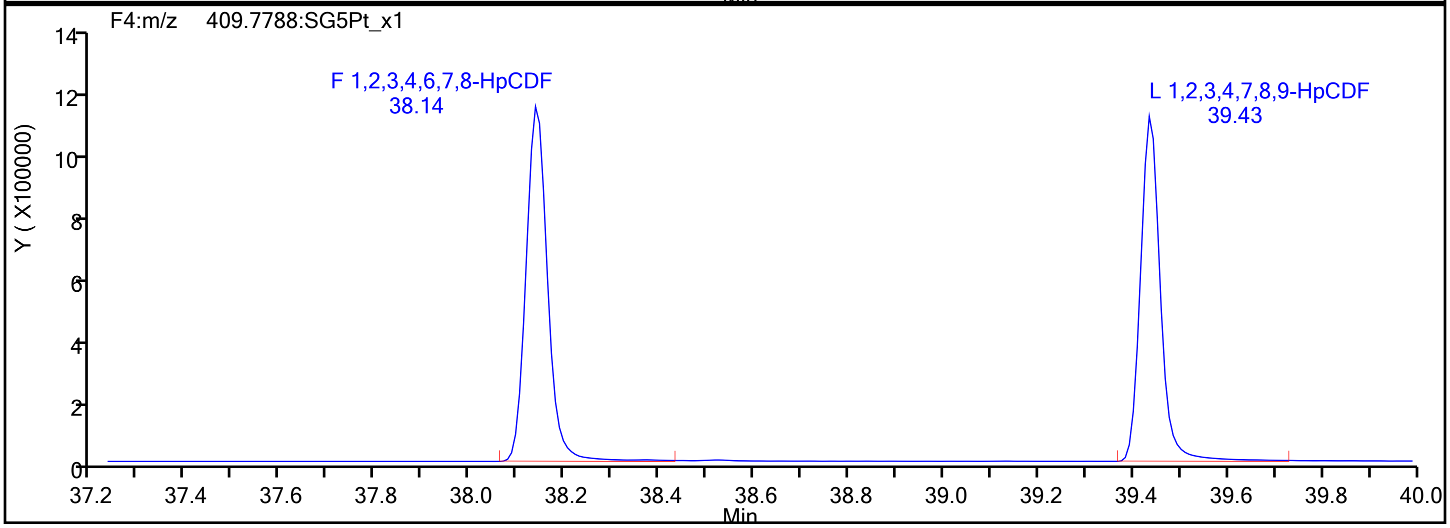

HpCDF Interference Mass

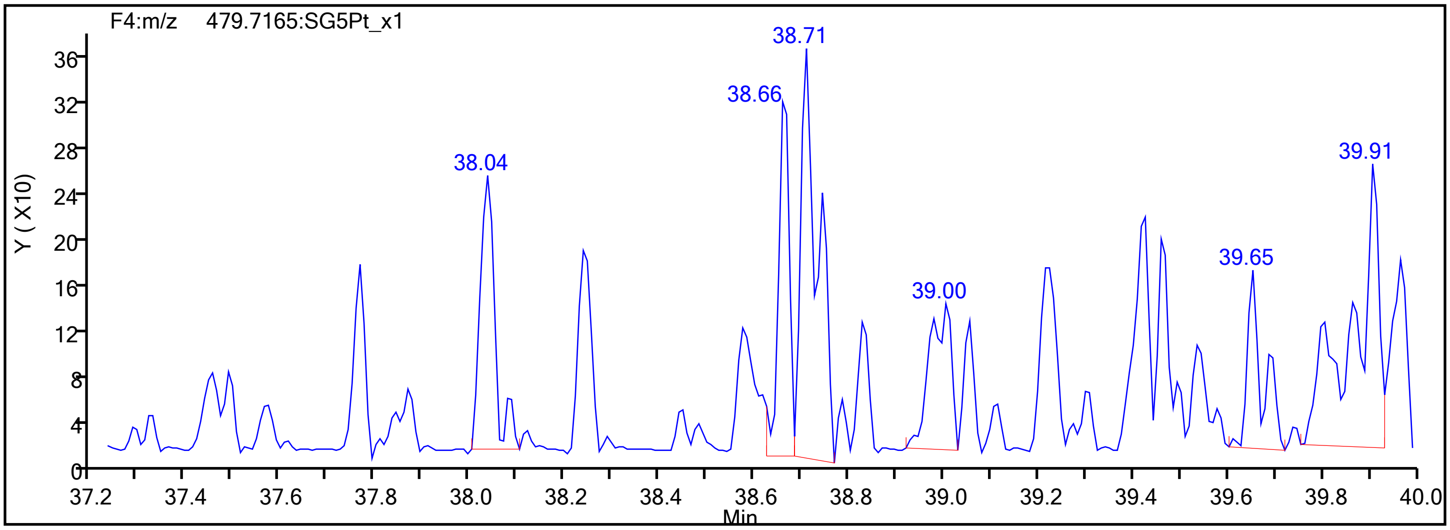

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

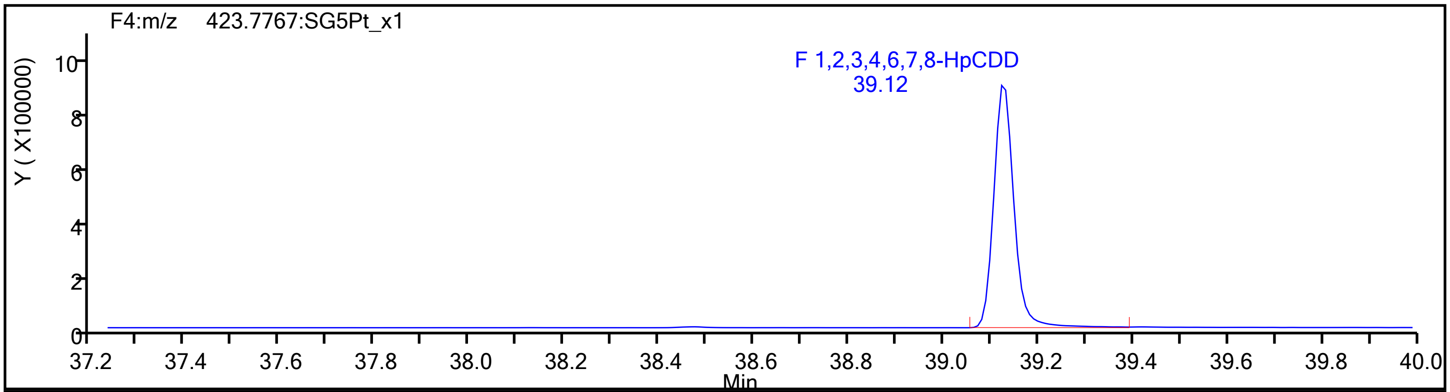

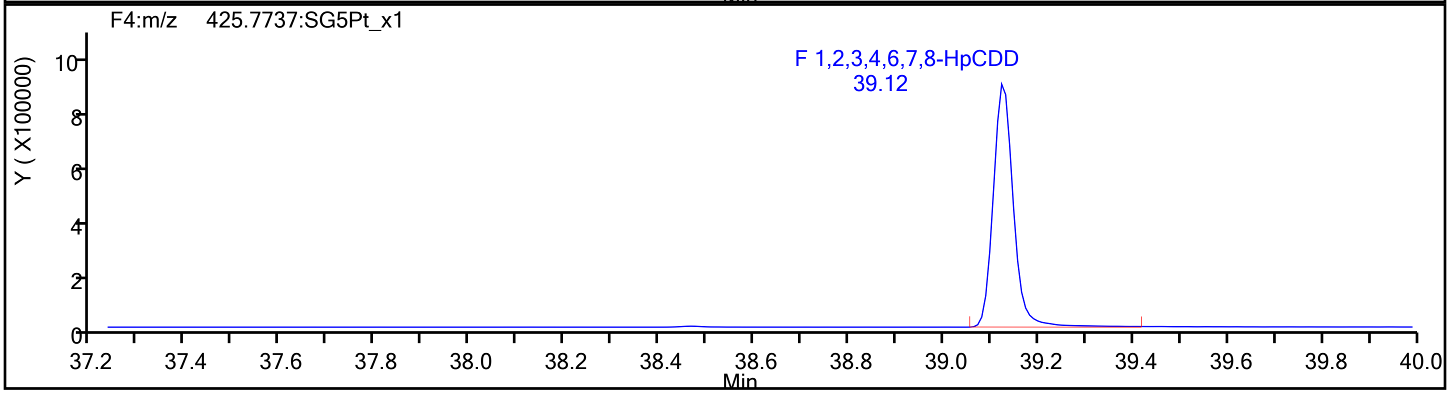

HpCDD Standards

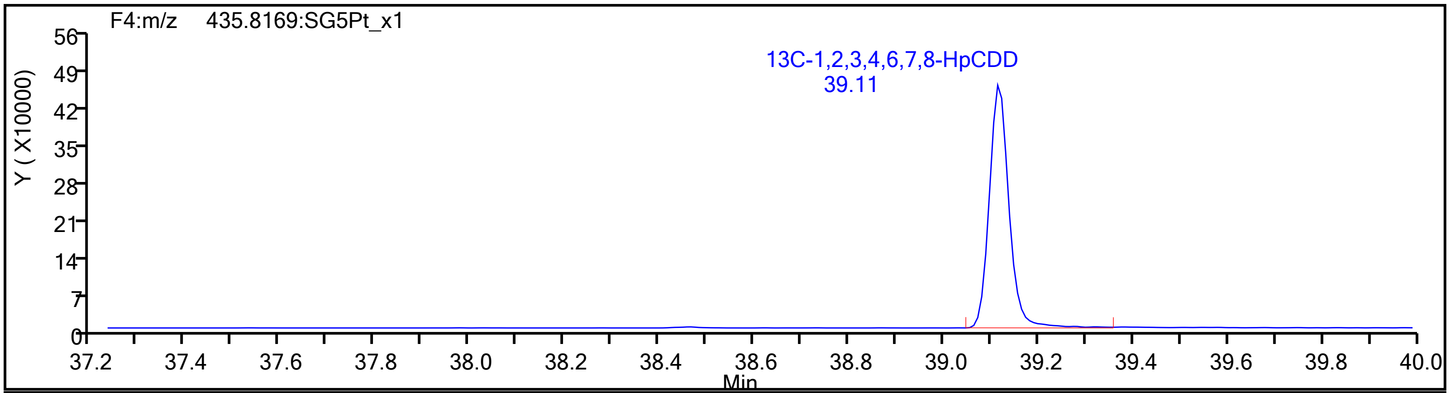

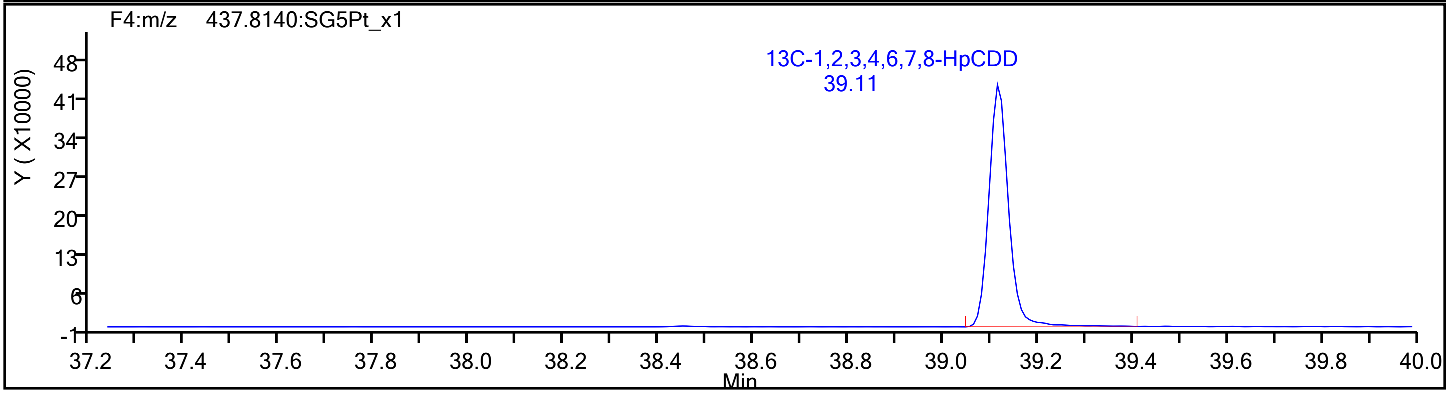

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

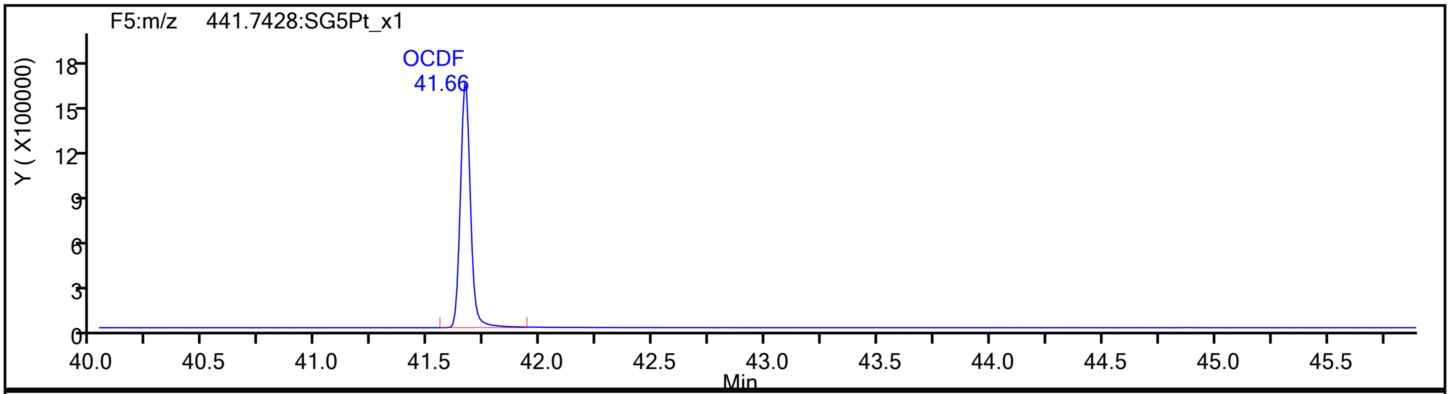

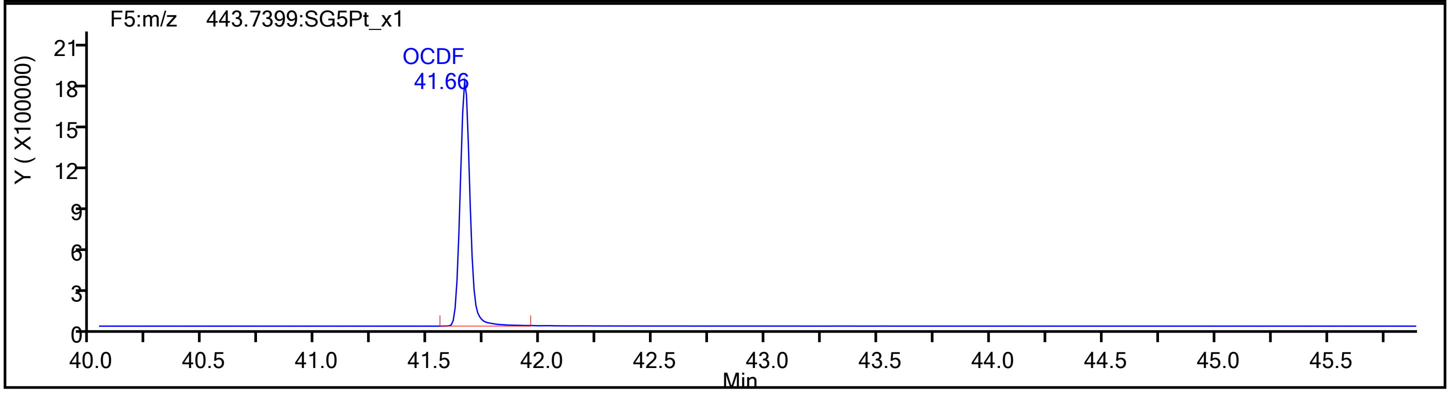

OCDF Standards

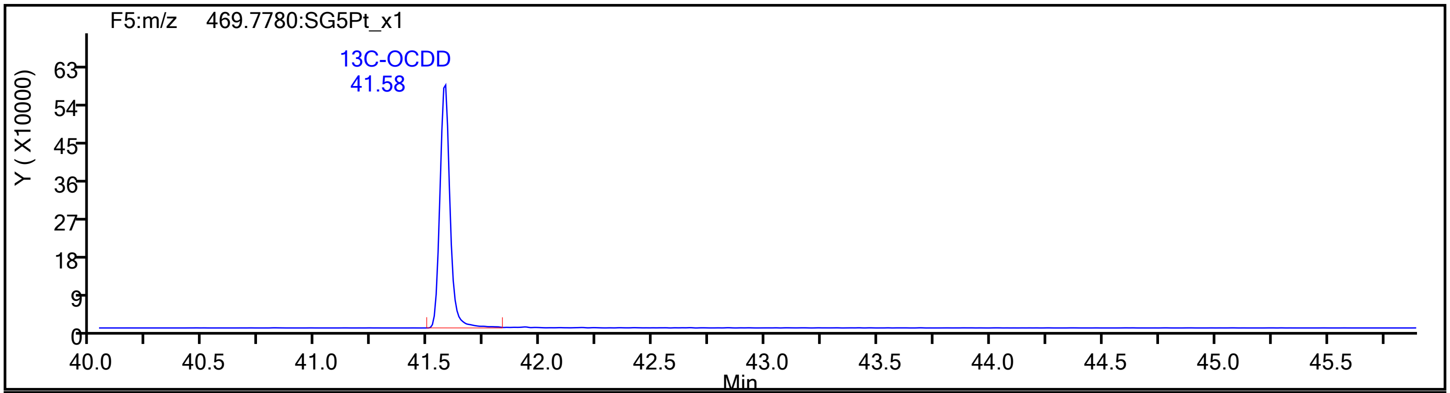

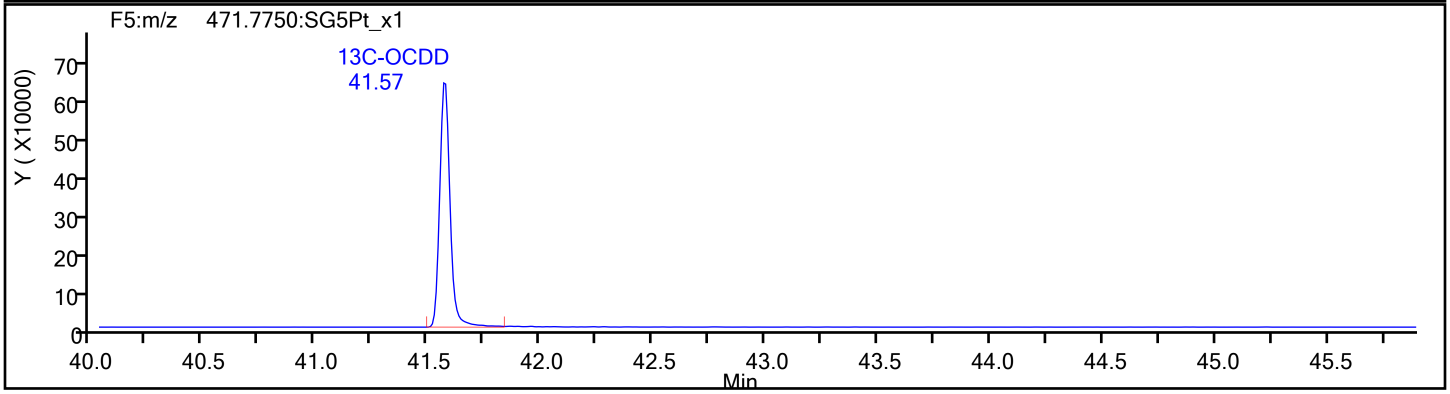

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date: 17-Sep-2020 15:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

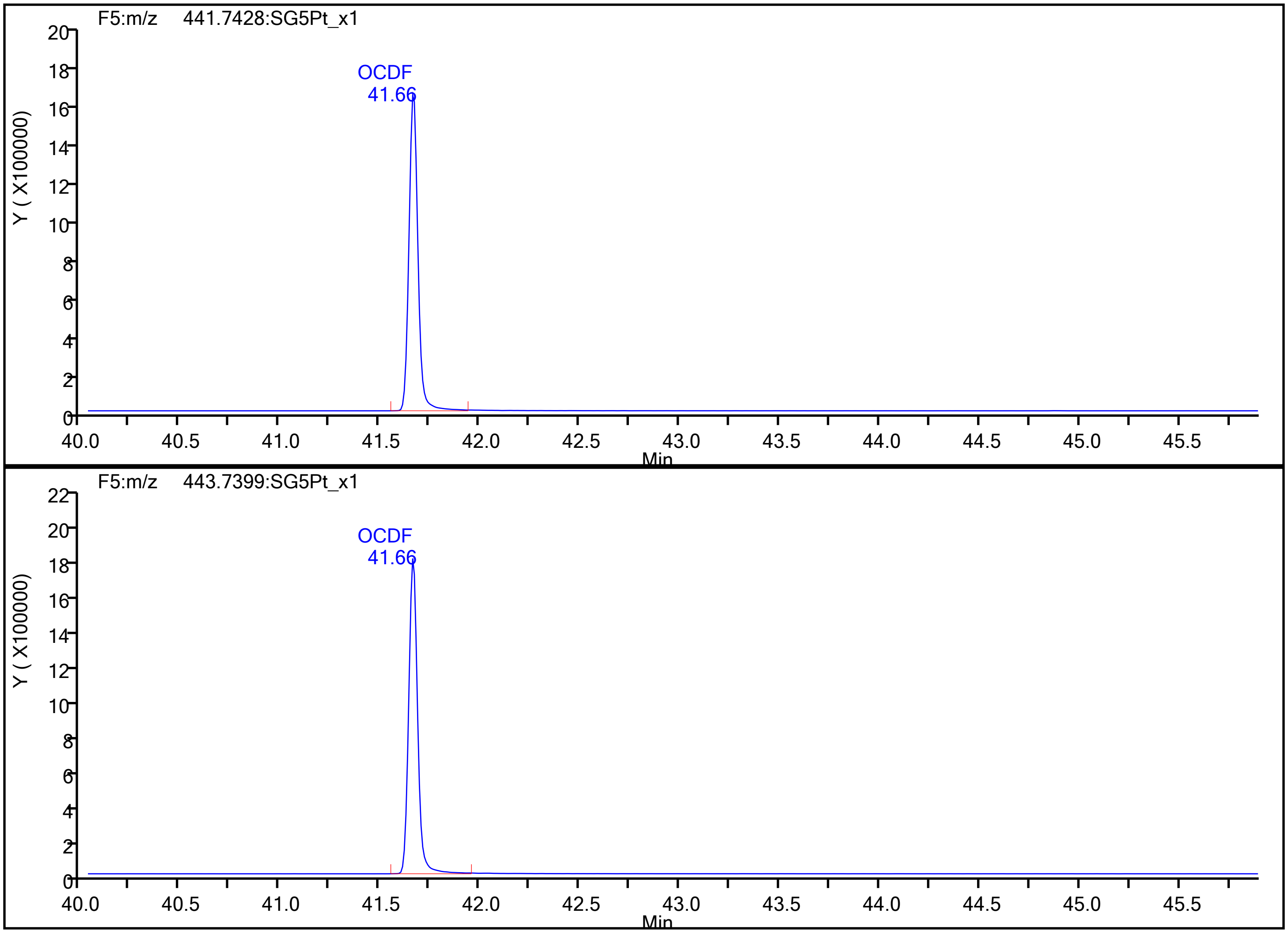

OCDF Interference Mass

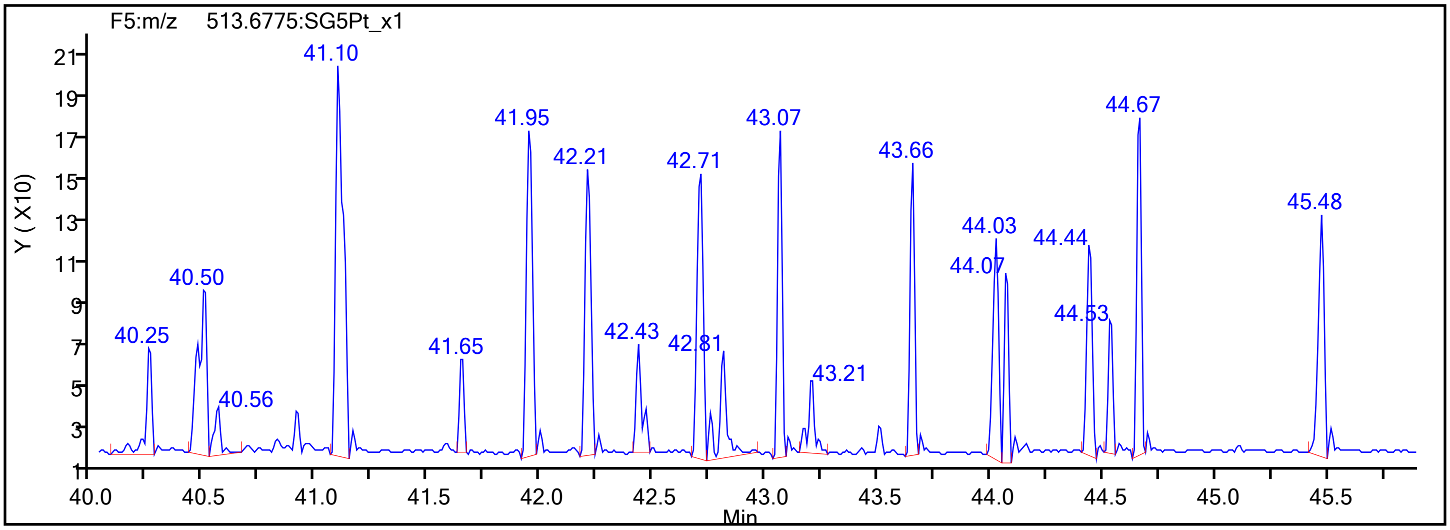

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

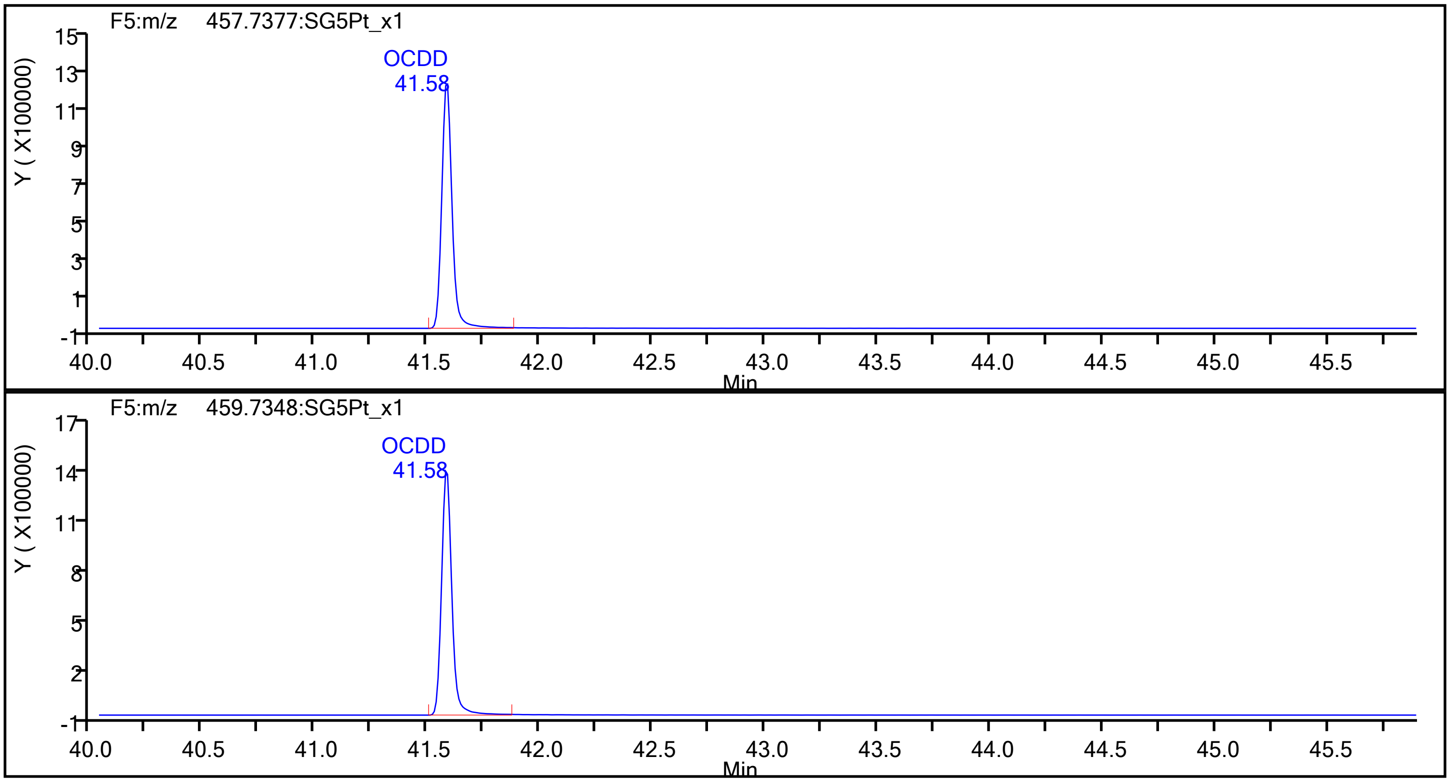

OCDD Standards

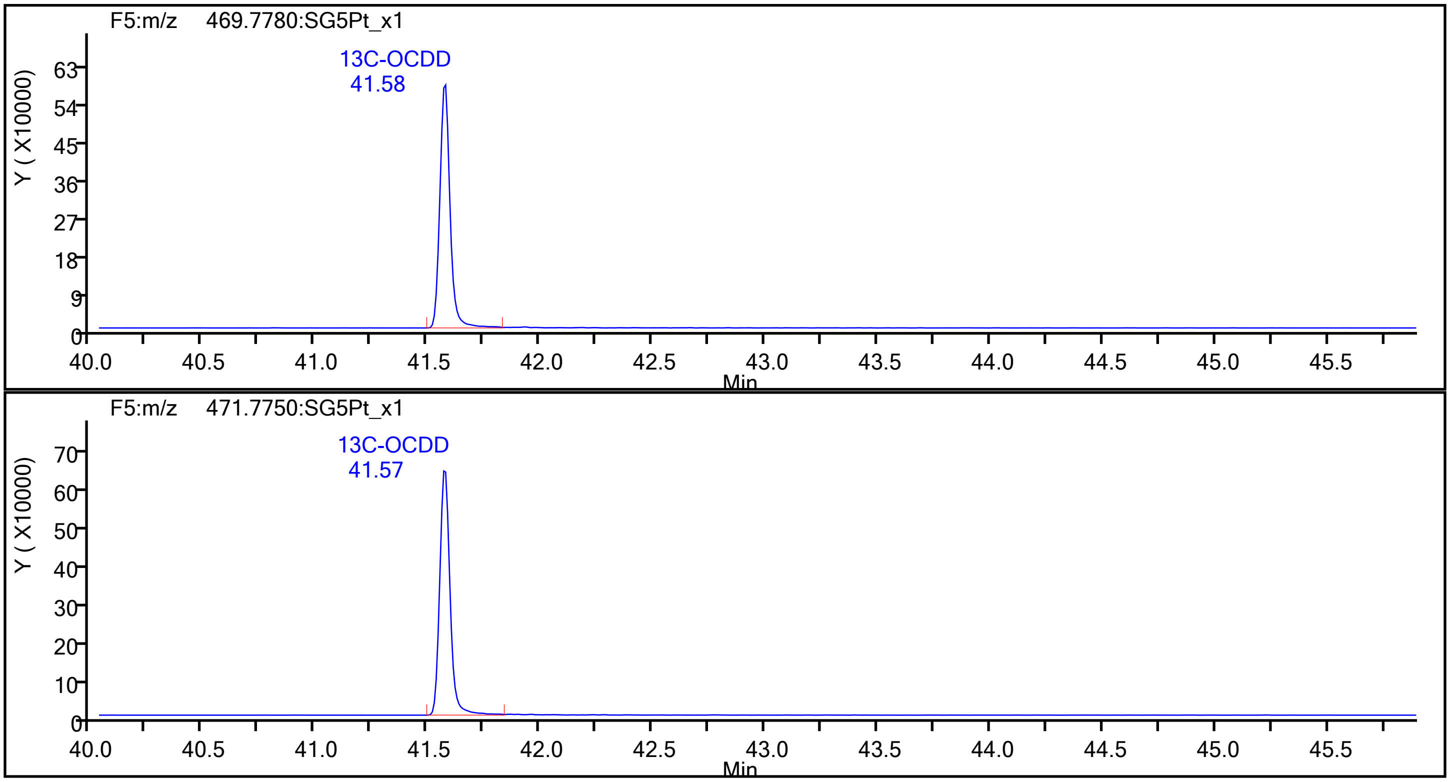

Report Date: 18-Sep-2020 11:00:41 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

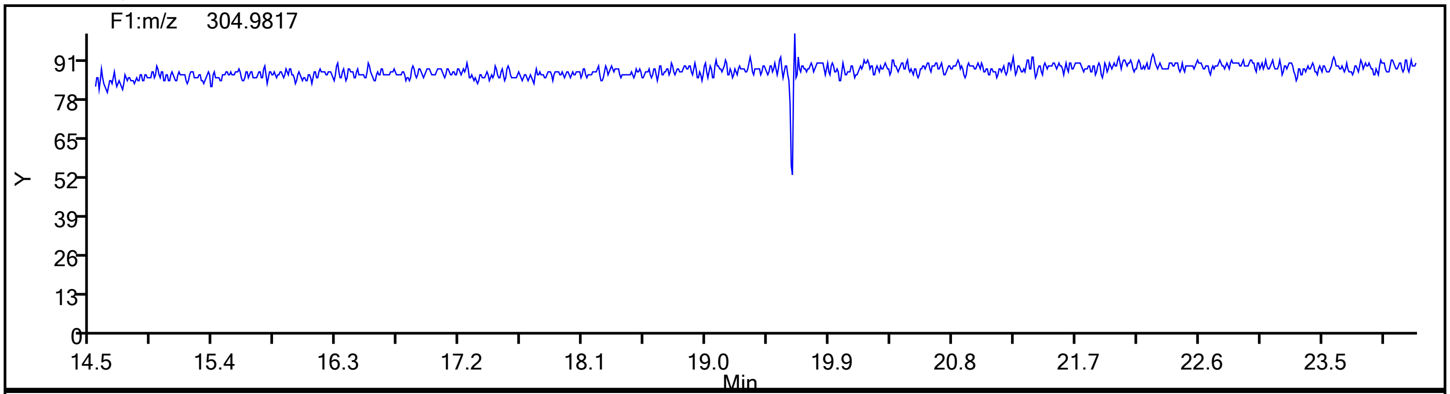

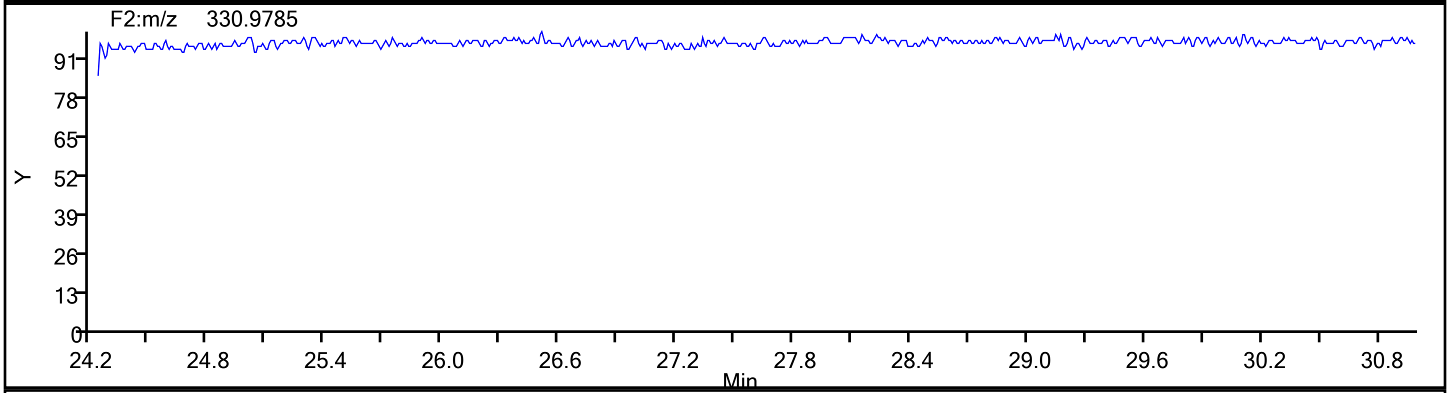

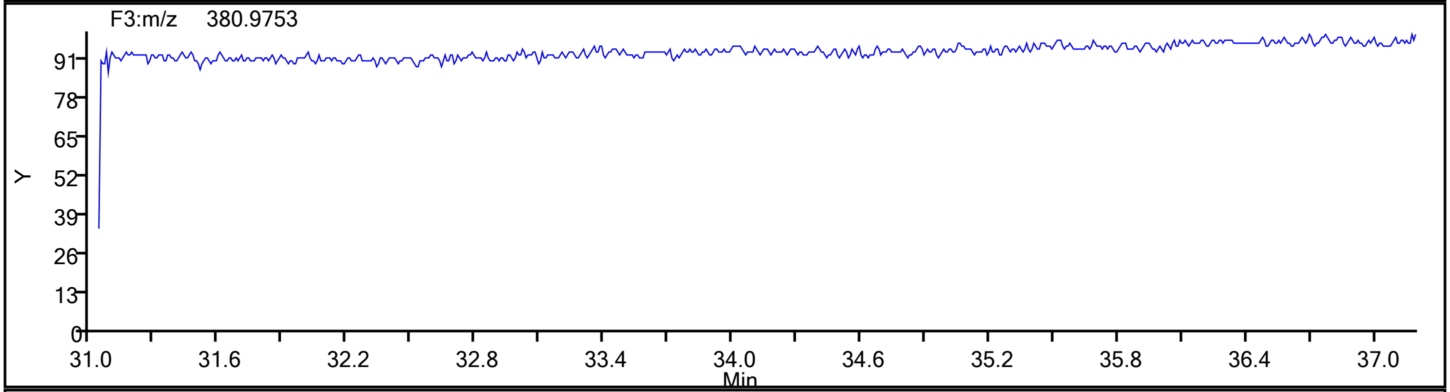

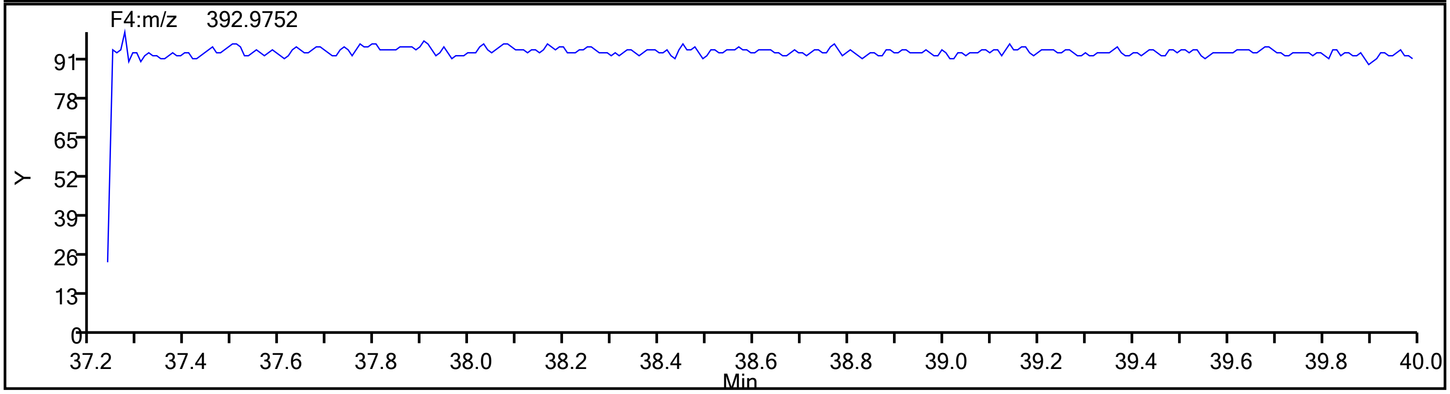

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

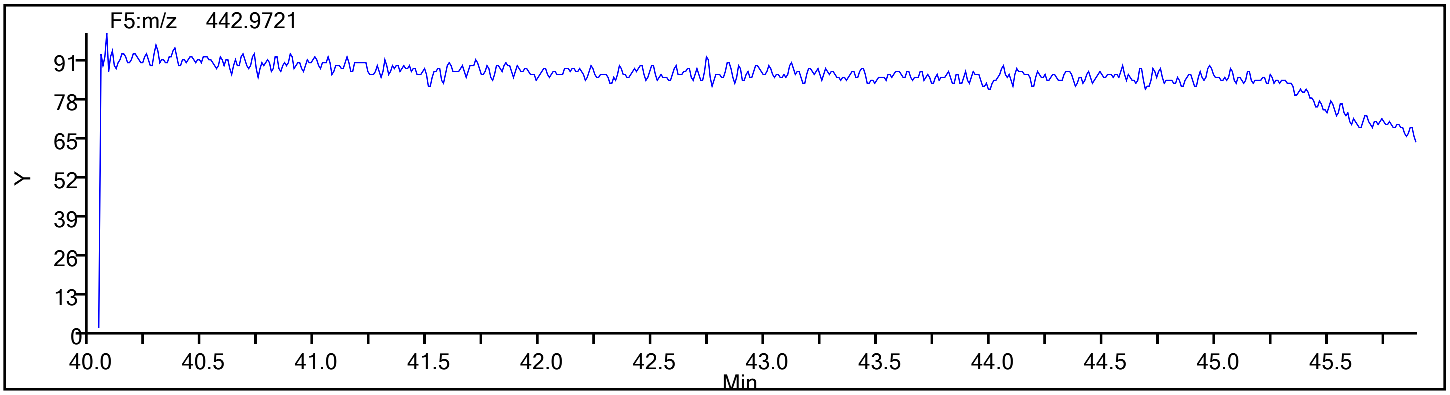

Report Date: 18-Sep-2020 11:00:54 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	17-Sep-2020 16:30:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00031				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				

Method:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	18-Sep-2020 11:00:44	Calib Date:	17-Sep-2020 16:30:00
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		

Column 1 :	DB-5 (0.32 mm)	Det: F1(14.80 :26.00)
Process Host:	CTX1070	

First Level Reviewer: shardaa Date: 17-Sep-2020 18:42:11

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.144	3199591	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.216	5066219	0.80	1.5883	99.7	99.7	0.3063	0.3063	99.69	
2,3,7,8-TCDF	19.242	10338981	0.79	1.0857	188.0	188.0	0.2088	0.2088	93.99	
S Total TCDF					188.0	188.0	0.2088	0.2088		
D 13C-2,3,7,8-TCDD	20.505	3670066	0.78	1.1194	102.5	102.5	0.2638	0.2638	102	
$ 37Cl4-2,3,7,8-TCDD	20.531	7405818		1.1468	201.8	201.8	0.1057	0.1057	101	
2,3,7,8-TCDD	20.531	7580962	0.78	1.0810	191.1	191.1	0.1674	0.1674	95.54	
S Total TCDD					191.1	191.1	0.1674	0.1674		
D 13C-1,2,3,7,8-PeCDF	26.306	4948994	1.54	1.4782	104.6	104.6	0.3775	0.3775	105	
1,2,3,7,8-PeCDF	26.331	48029276	1.57	1.0547	920.2	920.2	2.705	2.705	92.02	
D 13C-2,3,4,7,8-PeCDF	27.772	4682390	1.60	1.3912	105.2	105.2	0.4011	0.4011	105	
2,3,4,7,8-PeCDF	27.797	46990984	1.56	1.1035	909.4	909.4	3.002	3.002	90.94	
S Total PeCDF					1829.6	1829.6	2.854	2.854		
D 13C-1,2,3,7,8-PeCDD	28.547	3191360	1.58	0.9415	105.9	105.9	0.1630	0.1630	106	
1,2,3,7,8-PeCDD	28.572	30689802	1.55	1.0680	900.4	900.4	0.4988	0.4988	90.04	
S Total PeCDD					900.4	900.4	0.4988	0.4988		
D 13C-1,2,3,4,7,8-HxCDF	34.194	4185677	0.52	1.1378	101.0	101.0	0.3619	0.3619	101	
1,2,3,4,7,8-HxCDF	34.211	48519418	1.26	1.2643	916.9	916.9	3.684	3.684	91.69	
D 13C-1,2,3,6,7,8-HxCDF	34.379	4776398	0.53	1.3173	99.6	99.6	0.3126	0.3126	99.59	
1,2,3,6,7,8-HxCDF	34.396	53706793	1.26	1.2230	919.4	919.4	3.336	3.336	91.94	
D 13C-2,3,4,6,7,8-HxCDF	35.281	4517864	0.53	1.2457	99.6	99.6	0.3306	0.3306	99.62	
2,3,4,6,7,8-HxCDF	35.298	52489543	1.26	1.2464	932.1	932.1	3.103	3.103	93.21	
D 13C-1,2,3,7,8,9-HxCDF	36.233	4360996	0.52	1.1840	101.2	101.2	0.3478	0.3478	101	
1,2,3,7,8,9-HxCDF	36.250	50528283	1.27	1.2638	916.8	916.8	2.870	2.870	91.68	
S Total HxCDF					3685.2	3685.2	3.248	3.248		
* 13C-1,2,3,7,8,9-HxCDD	36.031	3640821	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.517	3126000	1.29	0.8477	101.3	101.3	0.2032	0.2032	101	
1,2,3,4,7,8-HxCDD	35.534	32309502	1.25	1.1561	894.0	894.0	1.663	1.663	89.40	
D 13C-1,2,3,6,7,8-HxCDD	35.643	3638034	1.27	0.9979	100.1	100.1	0.1726	0.1726	100	
1,2,3,6,7,8-HxCDD	35.660	34375082	1.26	1.0284	918.8	918.8	1.649	1.649	91.88	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.048	36648130	1.25	1.1789	919.2	919.2	1.529	1.529	91.92	
S Total HxCDD					2732.0	2732.0	1.614	1.614		
D 13C-1,2,3,4,6,7,8-HpCDF	38.146	3686056	0.45	0.9884	102.4	102.4	0.4027	0.4027	102	
1,2,3,4,6,7,8-HpCDF	38.154	51654249	1.03	1.5064	930.3	930.3	2.900	2.900	93.03	
D 13C-1,2,3,4,7,8,9-HpCDF	39.435	3395006	0.46	0.9203	101.3	101.3	0.4325	0.4325	101	
1,2,3,4,7,8,9-HpCDF	39.452	45362969	1.04	1.4548	918.5	918.5	3.041	3.041	91.85	
S Total HpCDF					1848.7	1848.7	2.970	2.970		
D 13C-1,2,3,4,6,7,8-HpCDD	39.132	3484029	1.07	0.9556	100.1	100.1	0.2085	0.2085	100	
1,2,3,4,6,7,8-HpCDD	39.140	33775862	1.04	1.0640	911.1	911.1	1.427	1.427	91.11	
S Total HpCDD					911.1	911.1	1.427	1.427		
D 13C-OCDD	41.583	5637421	0.90	0.7420	208.7	208.7	0.1795	0.1795	104	
OCDF	41.675	79546388	0.91	1.4296	1974.0	1974.0	1.007	1.007	98.70	
OCDD	41.591	58924724	0.88	1.1293	1851.1	1851.1	1.131	1.131	92.55	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:54 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 16:30:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:44 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:42:11

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.144	20.145	0		1429158	209136	406	1015	515		
333.9338	20.153	20.145	0		1770433	266665	156	390	1709	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.216	19.222	0	0.954	2258899	355063	601	1502	591		
317.9389	19.216	19.222	0	0.954	2807320	439018	325	812	1351	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.242	19.246	0	1.001	4570796	692908	331	827	2093		
305.8987	19.242	19.246	0	1.001	5768185	879960	389	972	2262	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.505	20.507	0	1.018	1610447	236345	406	1015	582		
333.9338	20.505	20.507	0	1.018	2059619	300901	156	390	1929	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.531	20.531	0	1.019	7405818	1058583	231	577	4583		
2,3,7,8-TCDD											
319.8965	20.531	20.532	0	1.001	3320778	475615	208	520	2287		
321.8936	20.531	20.532	0	1.001	4260184	616185	181	452	3404	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.306	26.301	0	1.306	3002142	543766	622	1555	874		
353.8970	26.306	26.301	0	1.306	1946852	334760	440	1100	761	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.331	26.321	1	1.001	29355515	5063715	6120	15300	827		
341.8567	26.323	26.321	0	1.001	18673761	3181810	3906	9765	815	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.772	27.762	1	1.379	2881681	465045	622	1555	748		
353.8970	27.772	27.762	1	1.379	1800709	291595	440	1100	663	1.60(1.32-1.78)	

Report Date: 18-Sep-2020 11:00:54 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.797	27.787	1	1.001	28644923	4568246	6120	15300	746		
341.8567	27.789	27.787	0	1.001	18346061	2905966	3906	9765	744	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.547	28.537	1	1.417	1953198	305549	159	397	1922		
369.8919	28.547	28.537	1	1.417	1238162	191917	133	332	1443	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.572	28.562	1	1.001	18631631	2832323	647	1617	4378		
357.8516	28.572	28.562	1	1.001	12058171	1839862	413	1032	4455	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.194	34.181	1	0.949	1428251	301428	516	1290	584		
385.8610	34.194	34.181	1	0.949	2757426	581050	1067	2667	545	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.211	34.200	1	1.000	27084298	5696906	9238	23095	617		
375.8178	34.211	34.200	1	1.000	21435120	4505131	7202	18005	626	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.379	34.365	1	0.954	1653235	343080	516	1290	665		
385.8610	34.379	34.365	1	0.954	3123163	664225	1067	2667	623	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.396	34.384	1	1.000	29980575	6336863	9238	23095	686		
375.8178	34.396	34.384	1	1.000	23726218	4960100	7202	18005	689	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.281	35.272	1	0.979	1560255	368388	516	1290	714		
385.8610	35.281	35.272	1	0.979	2957609	694236	1067	2667	651	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.298	35.288	1	1.000	29282831	7162968	9238	23095	775		
375.8178	35.298	35.288	1	1.000	23206712	5673658	7202	18005	788	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.233	36.225	0	1.006	1499449	387951	516	1290	752		
385.8610	36.233	36.225	0	1.006	2861547	745225	1067	2667	698	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.250	36.240	1	1.000	28283644	7561508	9238	23095	819		
375.8178	36.250	36.240	1	1.000	22244639	5928244	7202	18005	823	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.031	36.021	1		2043925	542297	365	912	1486		
403.8529	36.031	36.021	1		1596896	418646	297	742	1410	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.517	35.502	1	0.986	1763422	447728	365	912	1227		
403.8529	35.517	35.502	1	0.986	1362578	350448	297	742	1180	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.534	35.519	1	1.000	17971757	4690837	3390	8475	1384		
391.8127	35.525	35.519	0	1.000	14337745	3684900	2750	6875	1340	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.643	35.630	1	0.989	2034449	507401	365	912	1390		
403.8529	35.643	35.630	1	0.989	1603585	397536	297	742	1339	1.27(1.05-1.43)	

Report Date: 18-Sep-2020 11:00:54 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.660	35.646	1	1.000	19138549	4656810	3390	8475	1374		
391.8127	35.652	35.646	0	1.000	15236533	3708924	2750	6875	1349	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.048	36.033	1	1.015	20363383	5300555	3390	8475	1564		
391.8127	36.048	36.033	1	1.015	16284747	4170717	2750	6875	1517	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.146	38.132	1	1.059	1150954	376377	513	1282	734		
419.8220	38.146	38.132	1	1.059	2535102	817728	1017	2542	804	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.154	38.141	1	1.000	26245356	8916087	10668	26670	836		
409.7788	38.154	38.141	1	1.000	25408893	8545477	10197	25492	838	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.435	39.428	0	1.094	1074376	375751	513	1282	732		
419.8220	39.435	39.428	0	1.094	2320630	803344	1017	2542	790	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.452	39.438	1	1.000	23088367	8193911	10668	26670	768		
409.7788	39.443	39.438	0	1.000	22274602	7912261	10197	25492	776	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.132	39.118	1	1.086	1797887	609308	399	997	1527		
437.8140	39.132	39.118	1	1.086	1686142	570241	367	917	1554	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.140	39.126	1	1.000	17222651	6055565	3606	9015	1679		
425.7737	39.140	39.126	1	1.000	16553211	5739906	3559	8897	1613	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.583	41.572	1	1.154	2674374	881983	260	650	3392		
471.7750	41.583	41.572	1	1.154	2963047	963899	252	630	3825	0.90(0.76-1.02)	
OCDF											
441.7428	41.675	41.663	1	1.002	37794017	12915708	2472	6180	5225		
443.7399	41.675	41.663	1	1.002	41752371	14322889	2843	7107	5038	0.91(0.76-1.02)	
OCDD											
457.7377	41.591	41.580	1	1.000	27580886	9381101	2218	5545	4230		
459.7348	41.591	41.580	1	1.000	31343838	10776733	2497	6242	4316	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

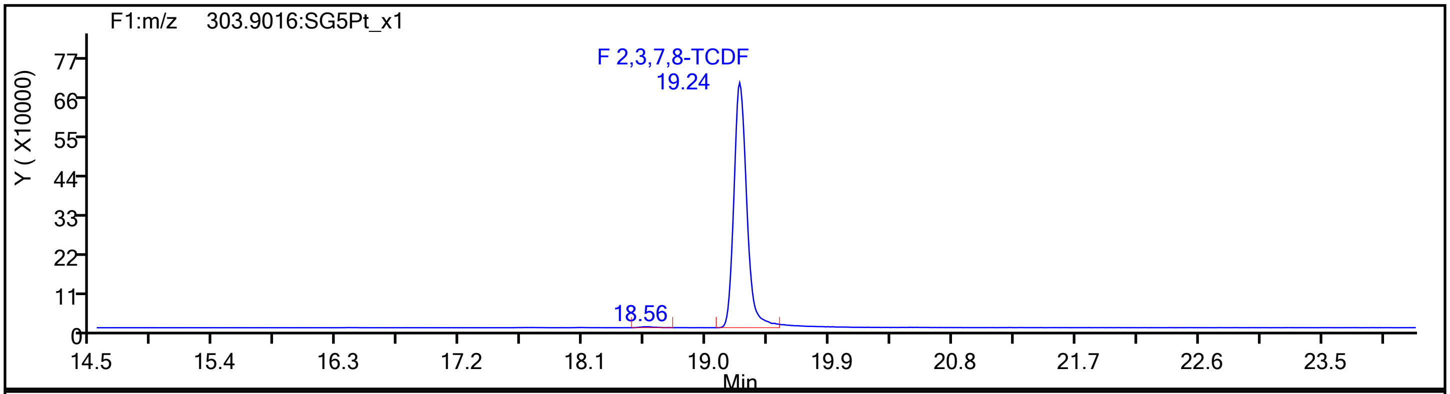

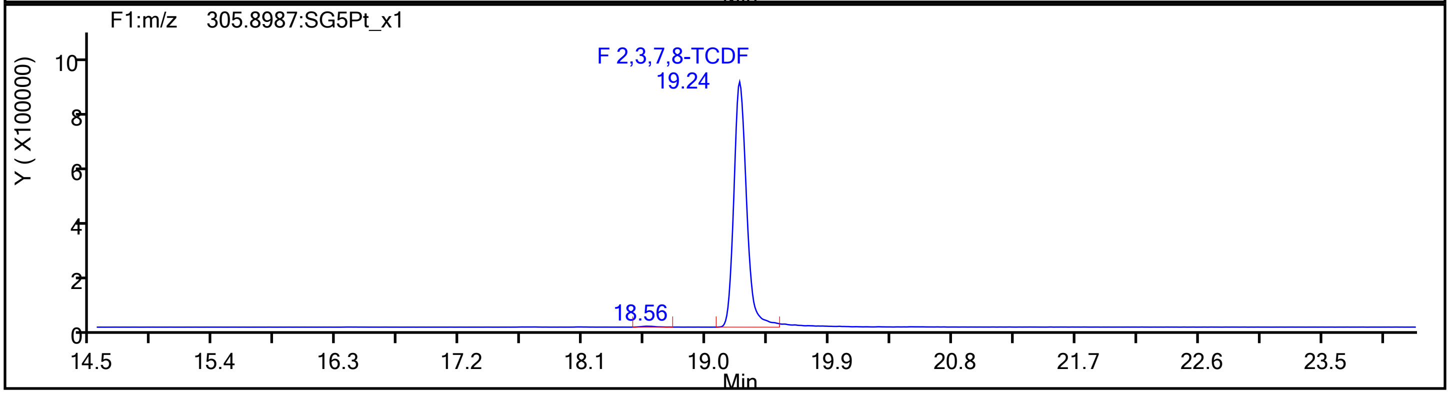

TCDF Standards

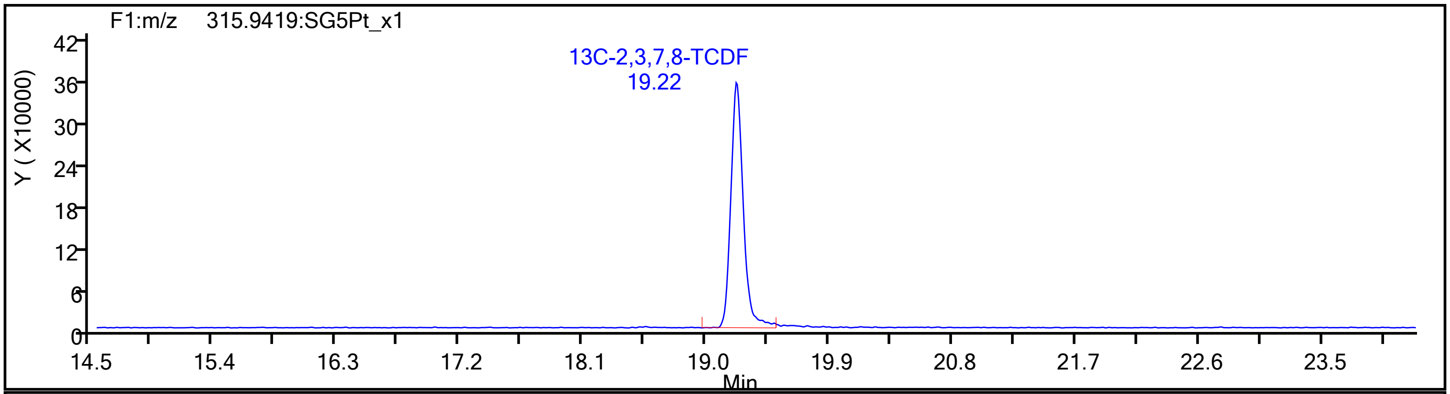

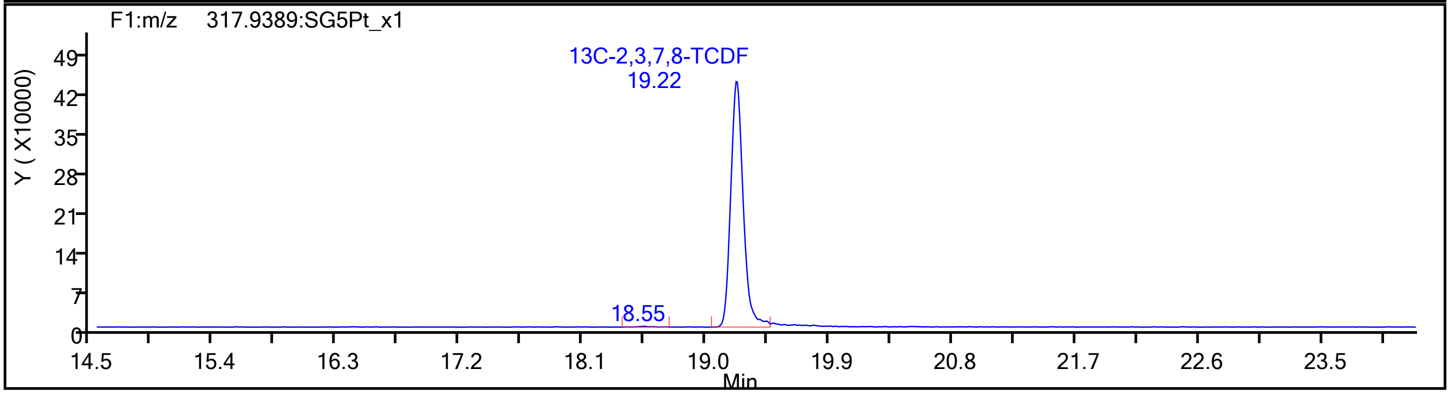

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

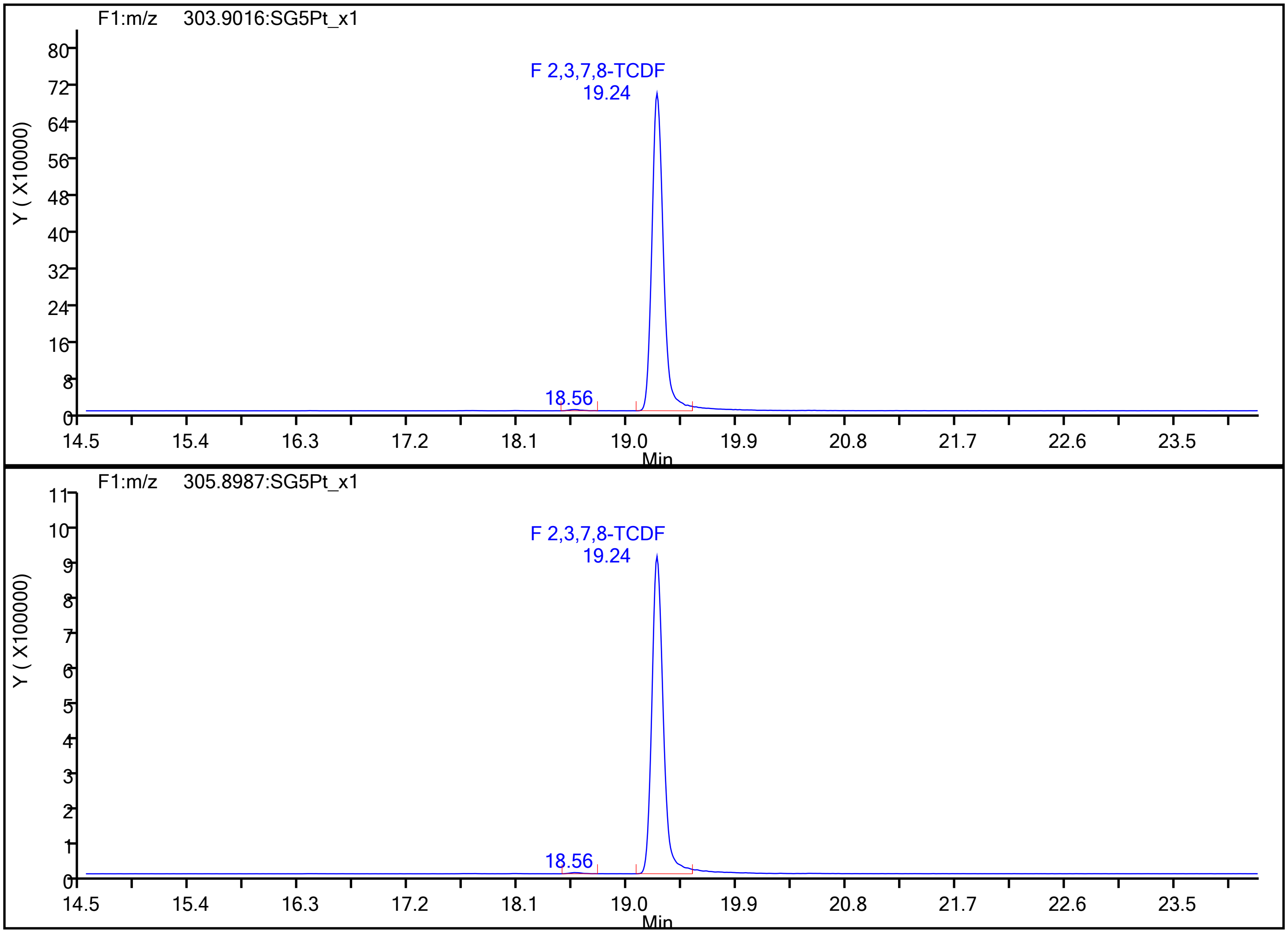

TCDF Interference Mass

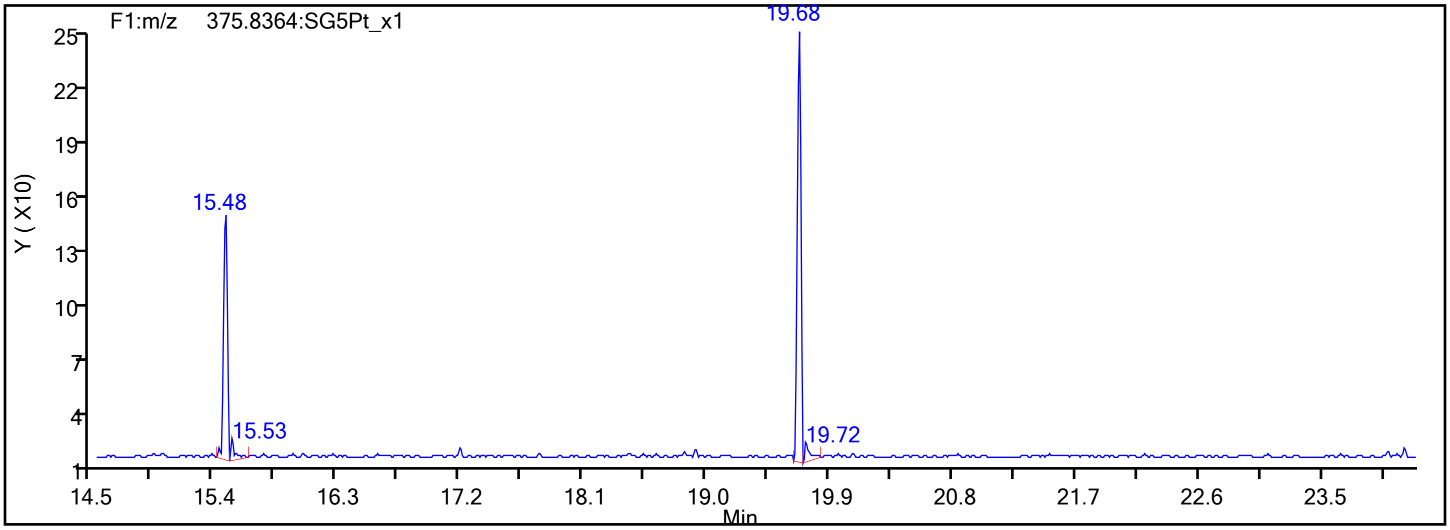

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

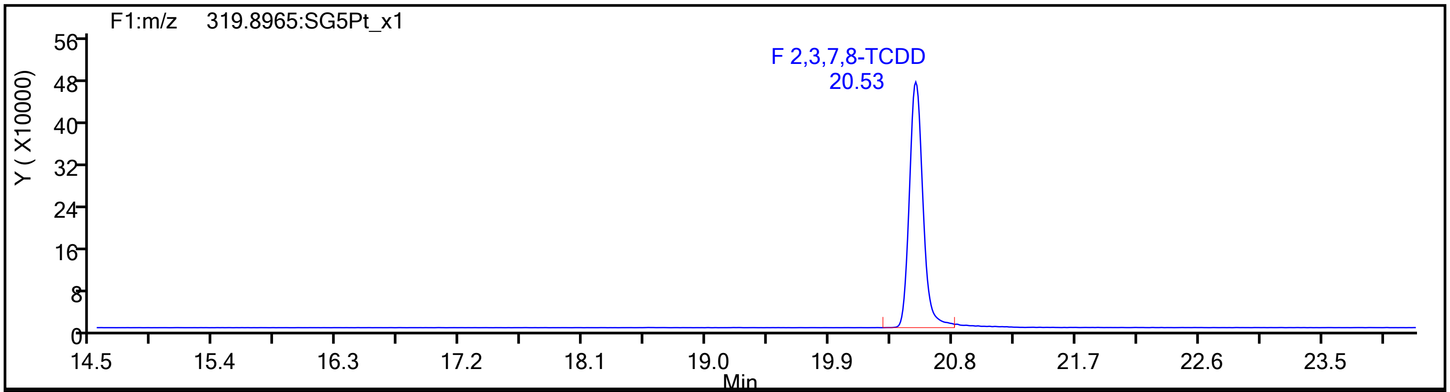

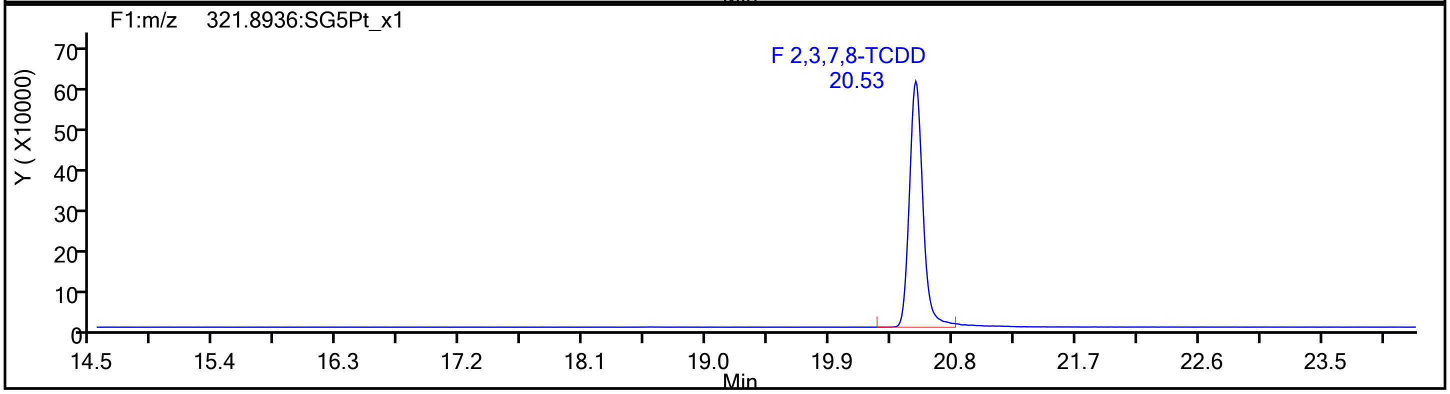

TCDD Standards

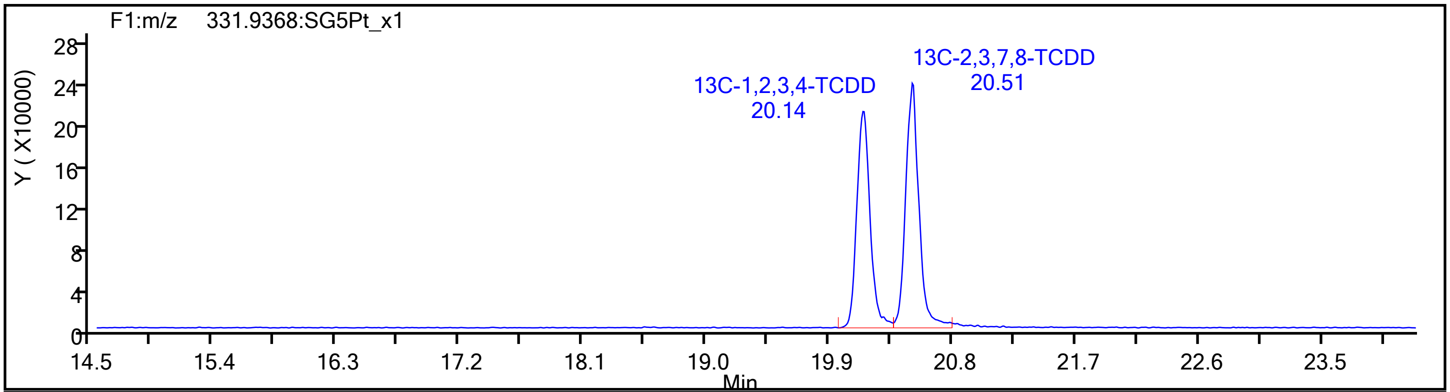

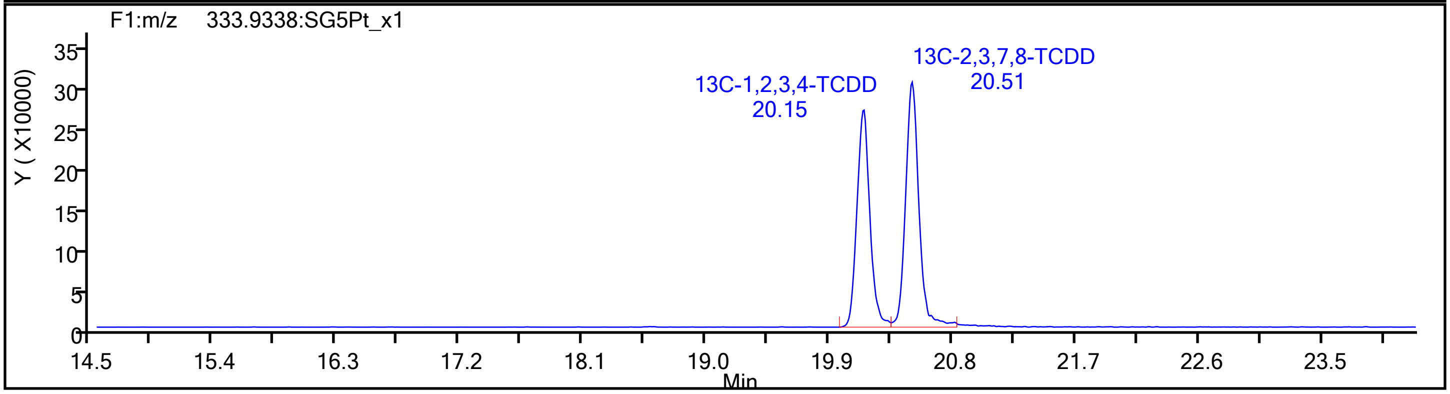

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

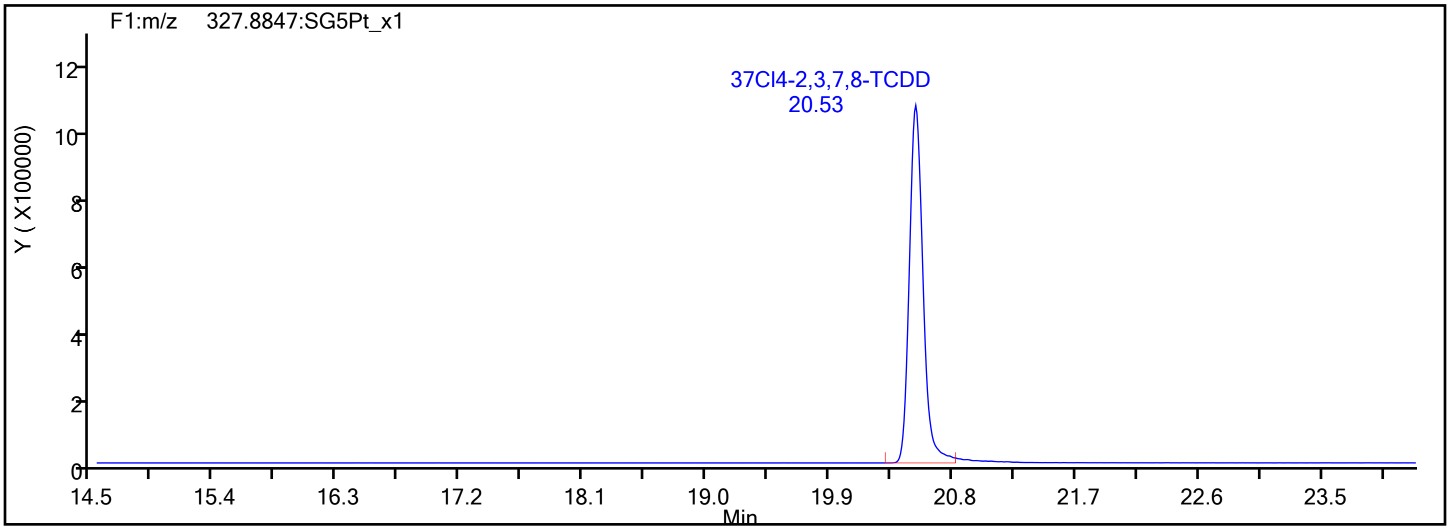

37Cl4-TCDD Standards

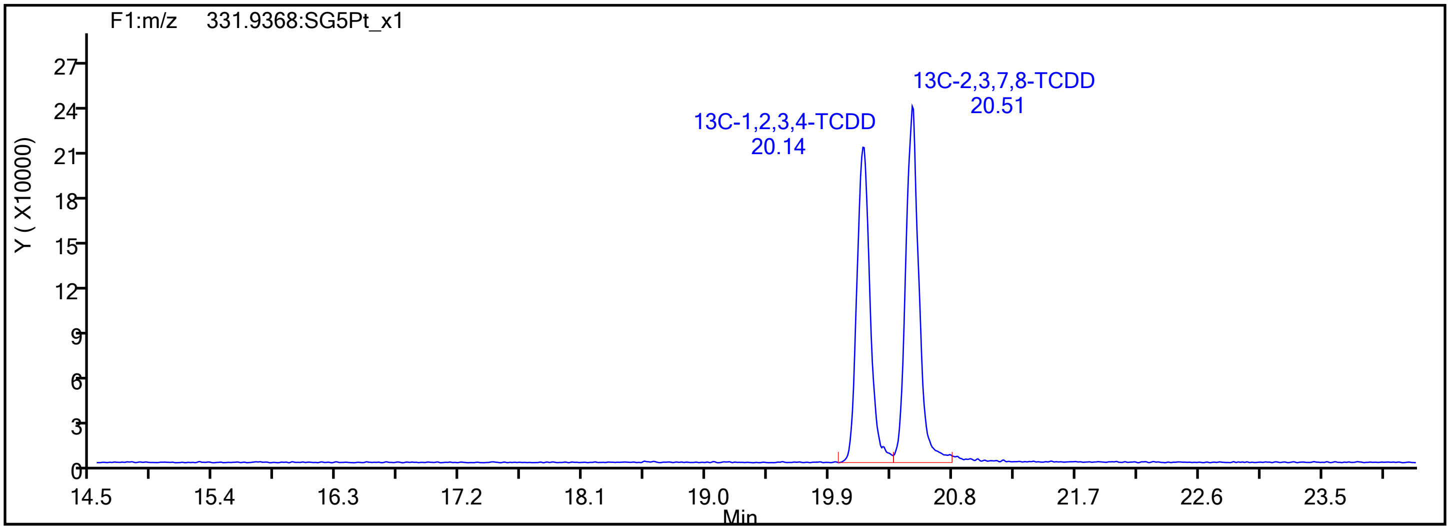

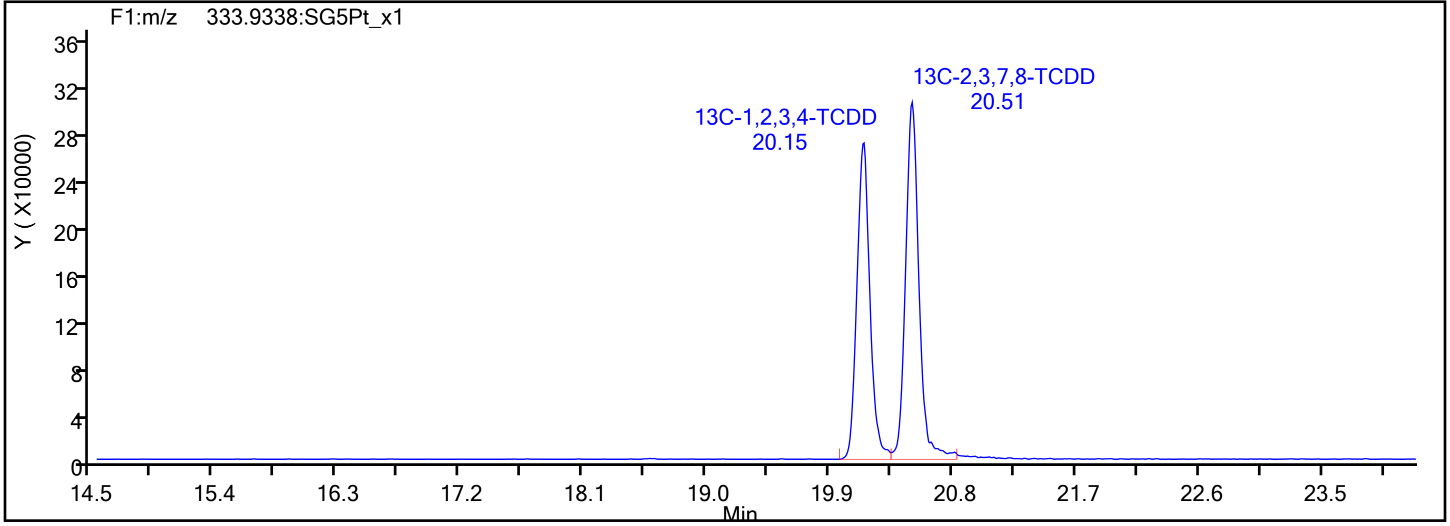

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

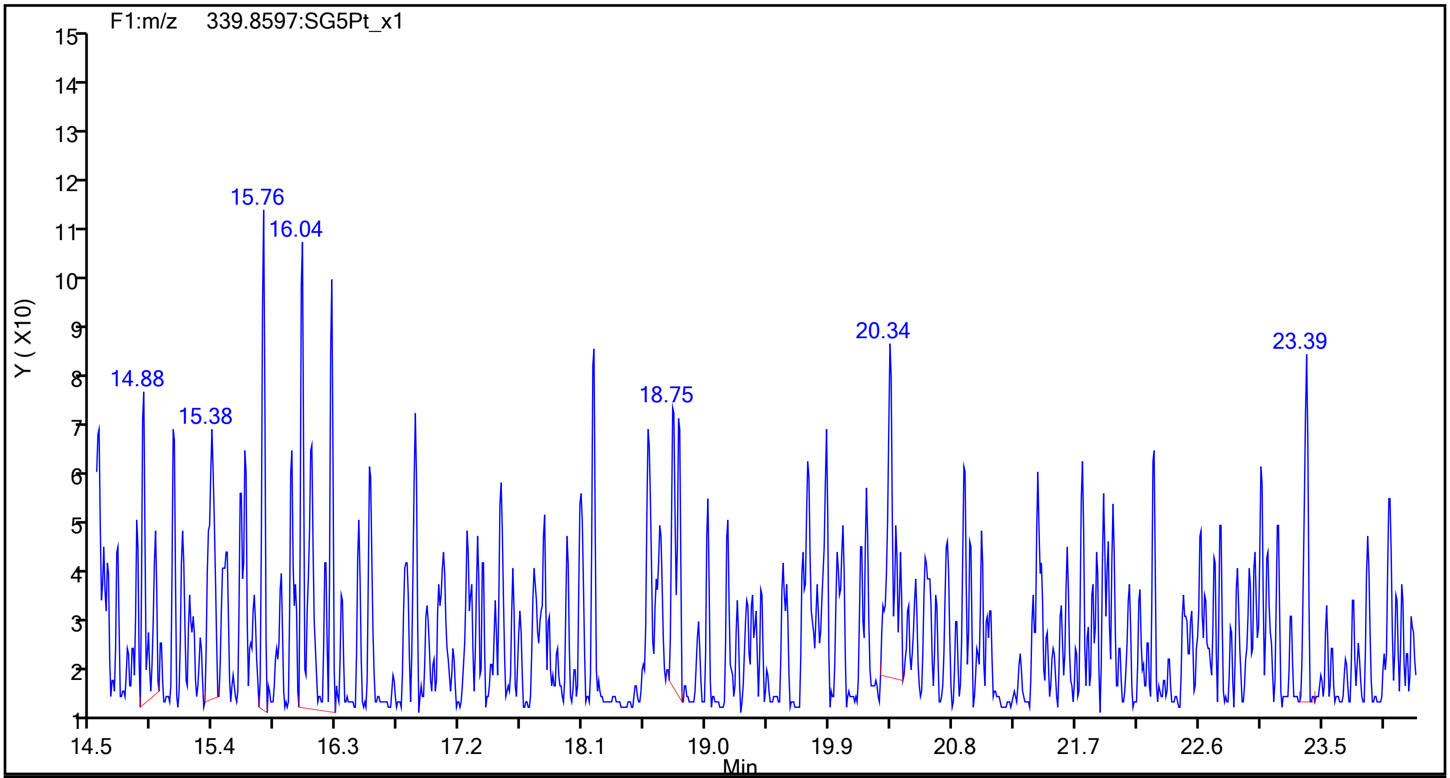

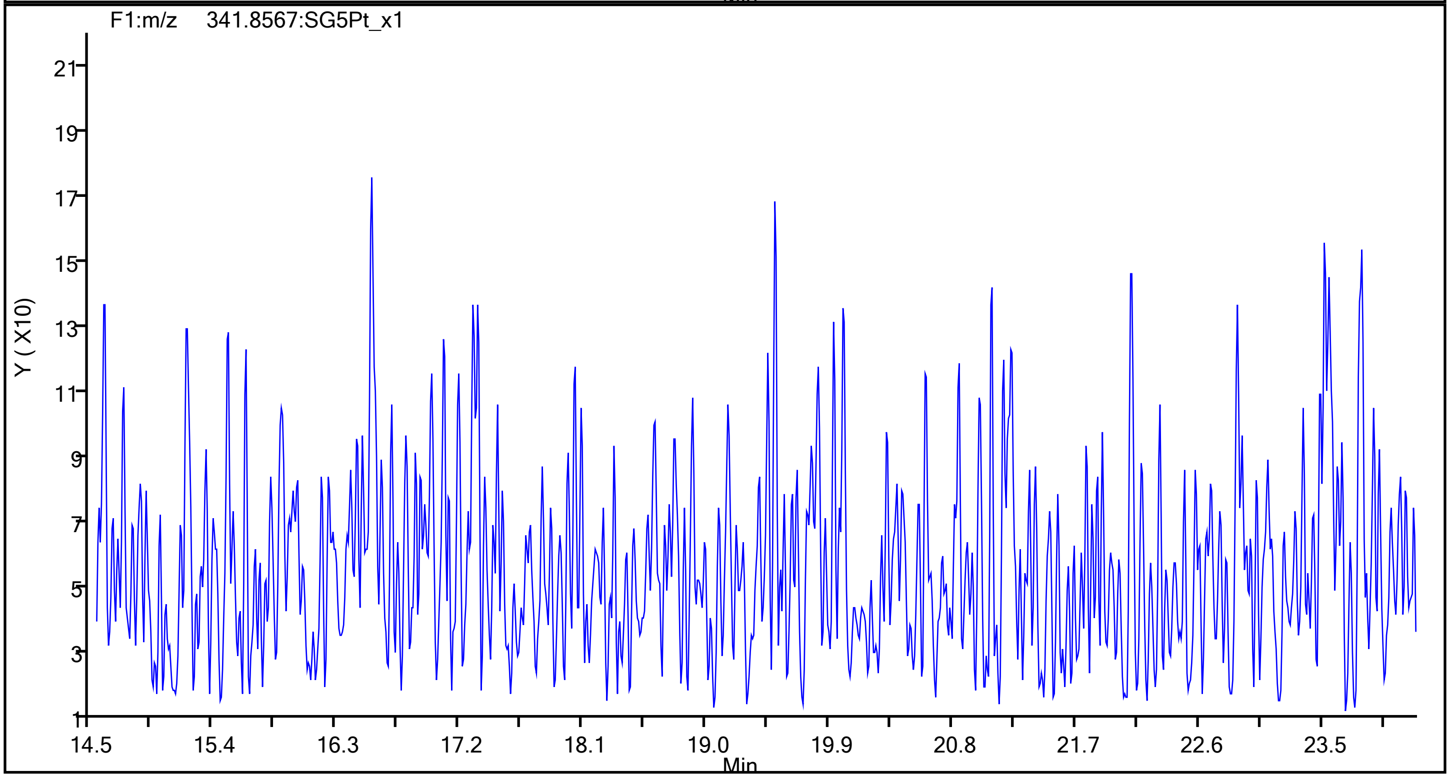

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Client ID:
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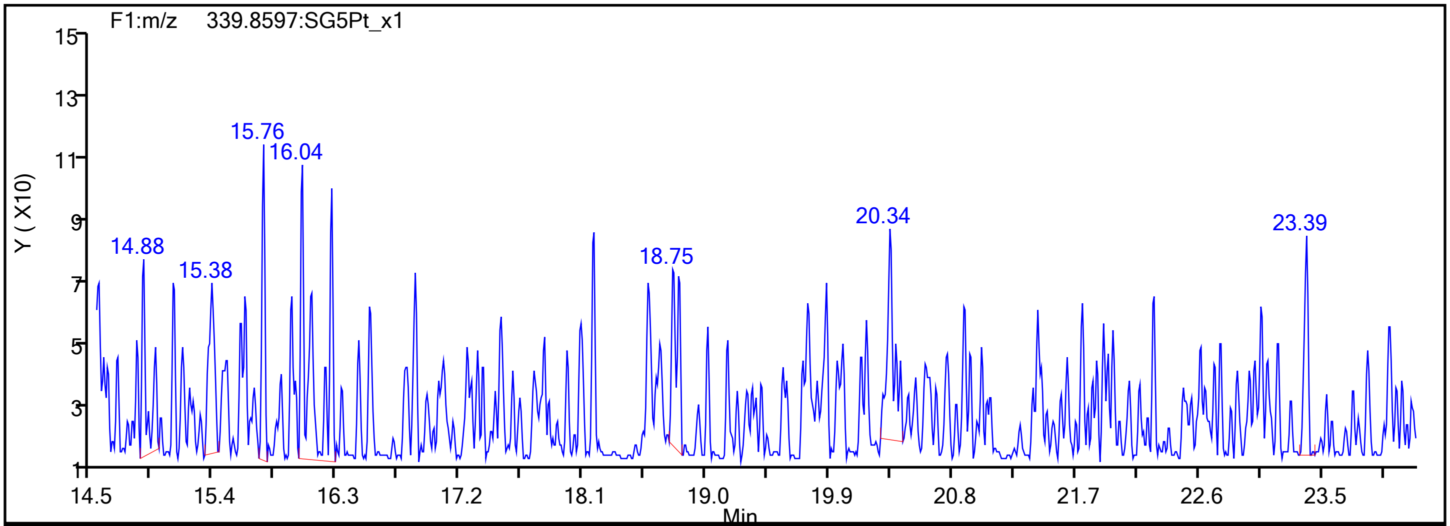

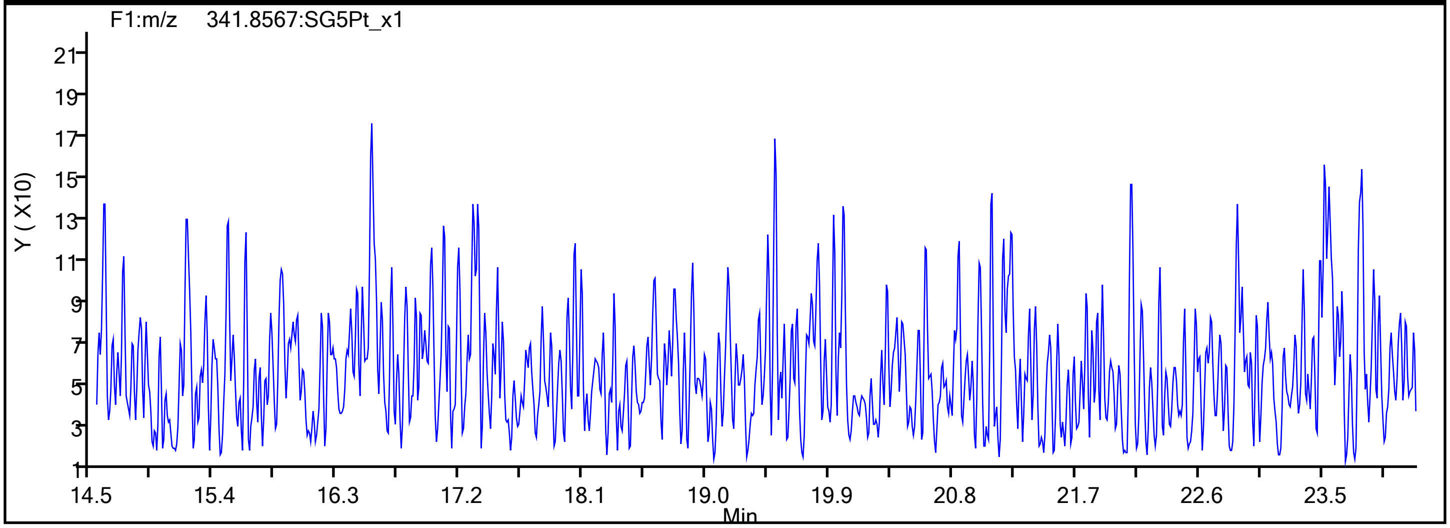

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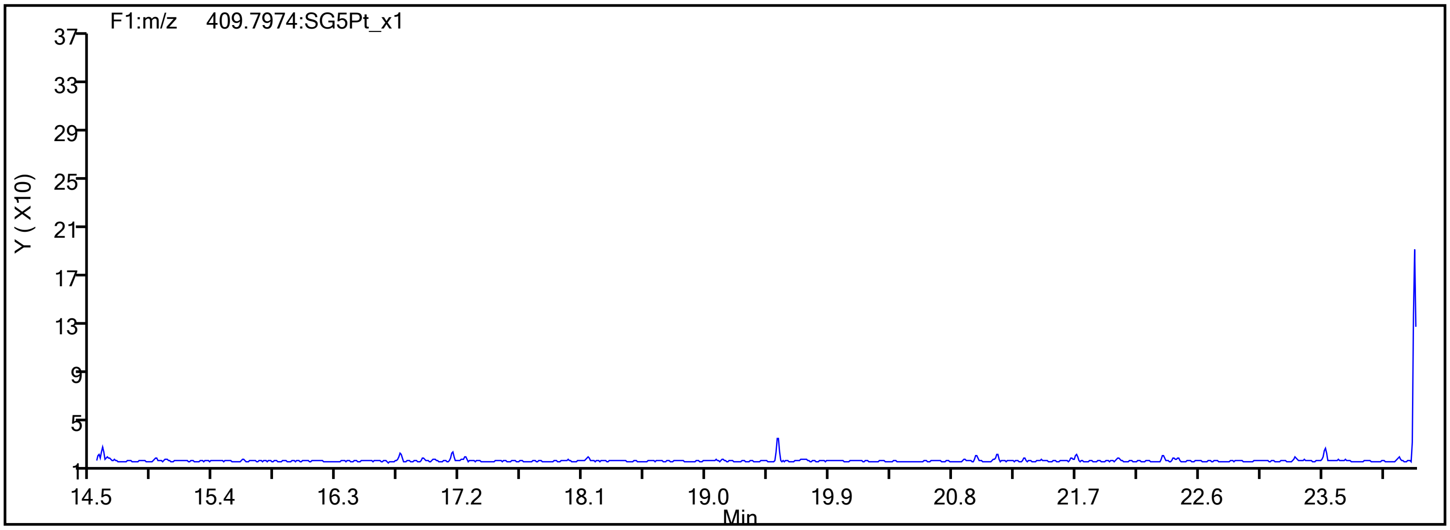

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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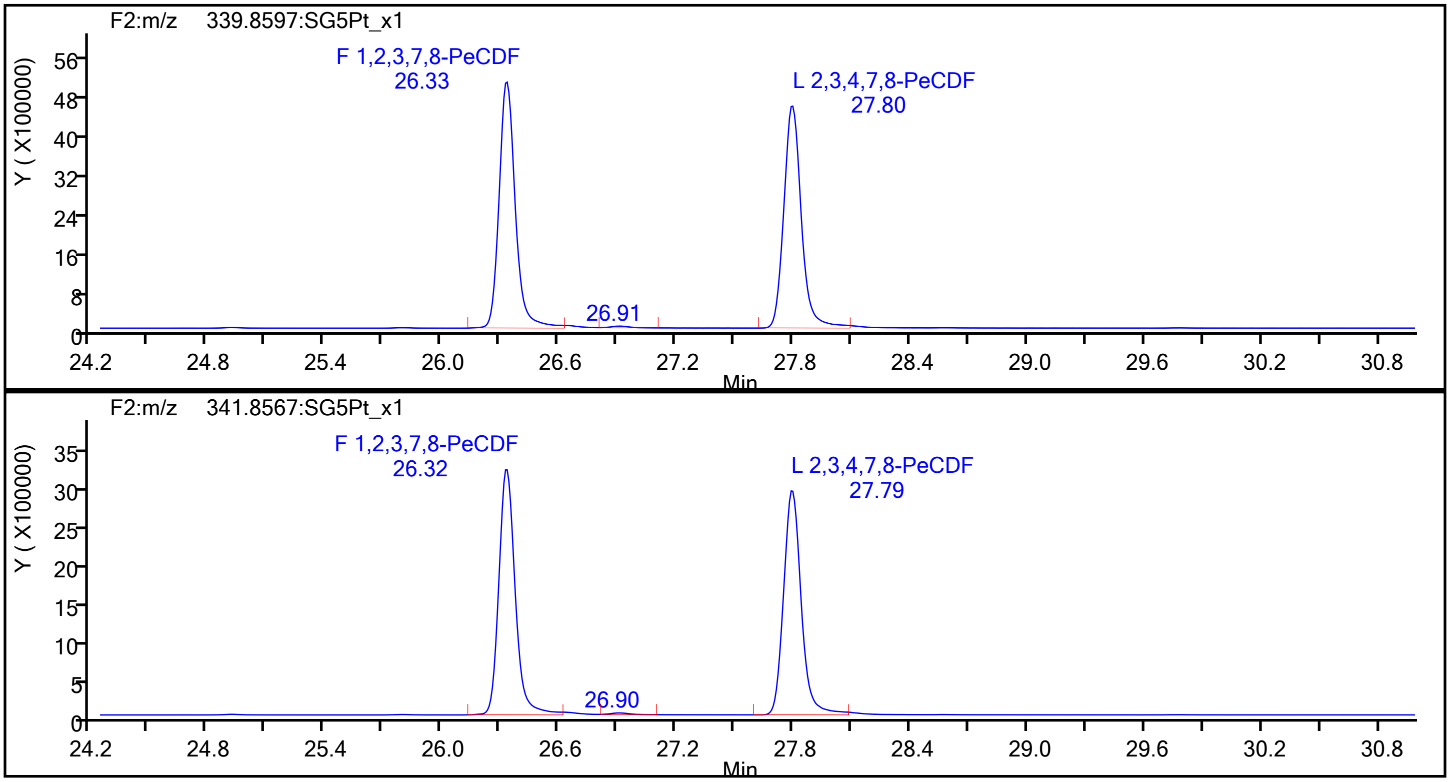

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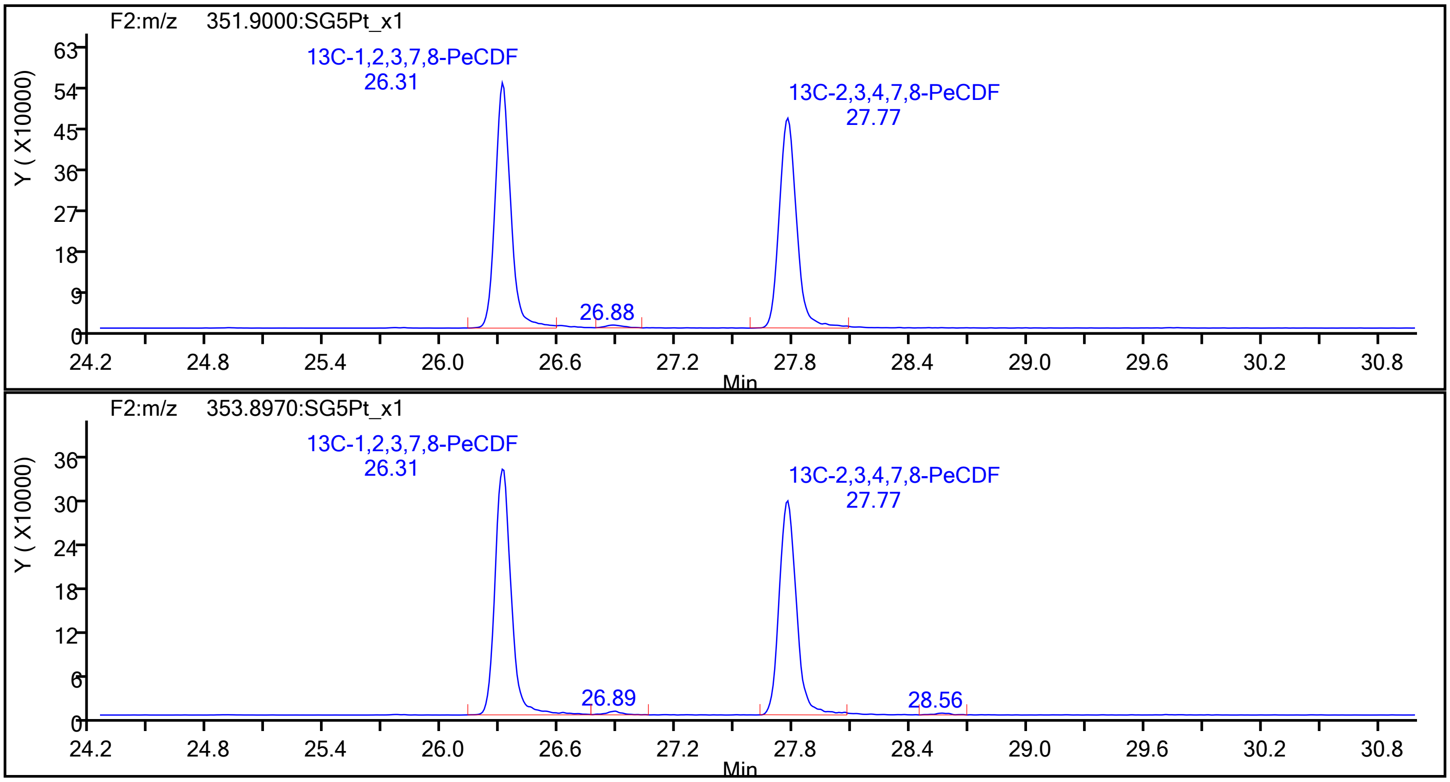

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Eurofins TestAmerica, Sacramento

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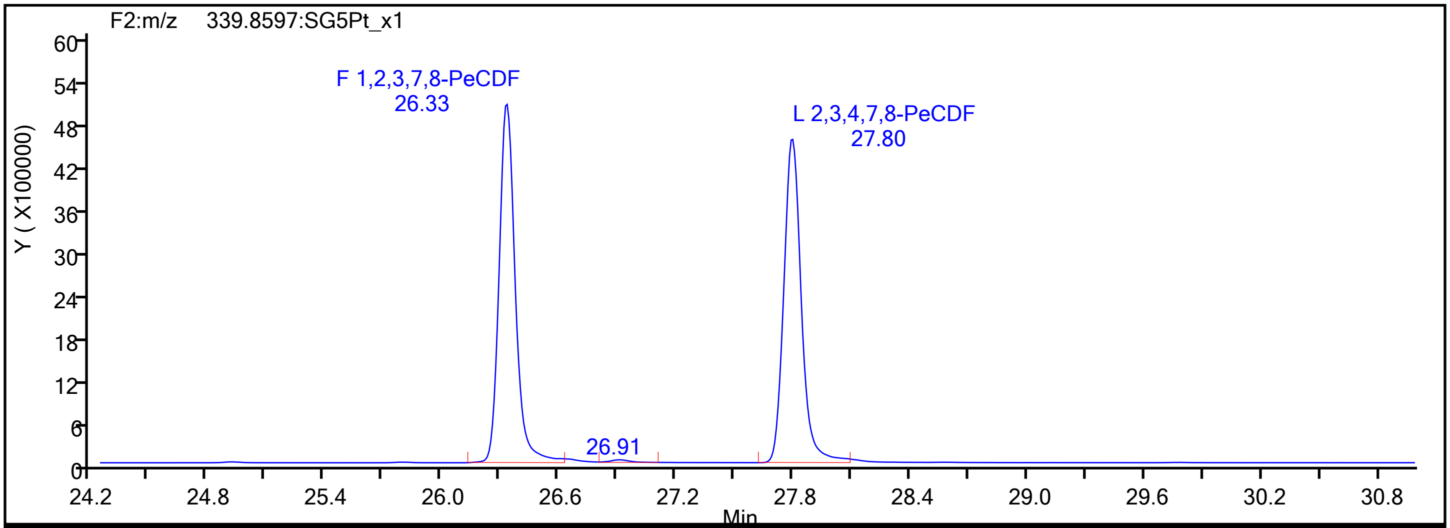

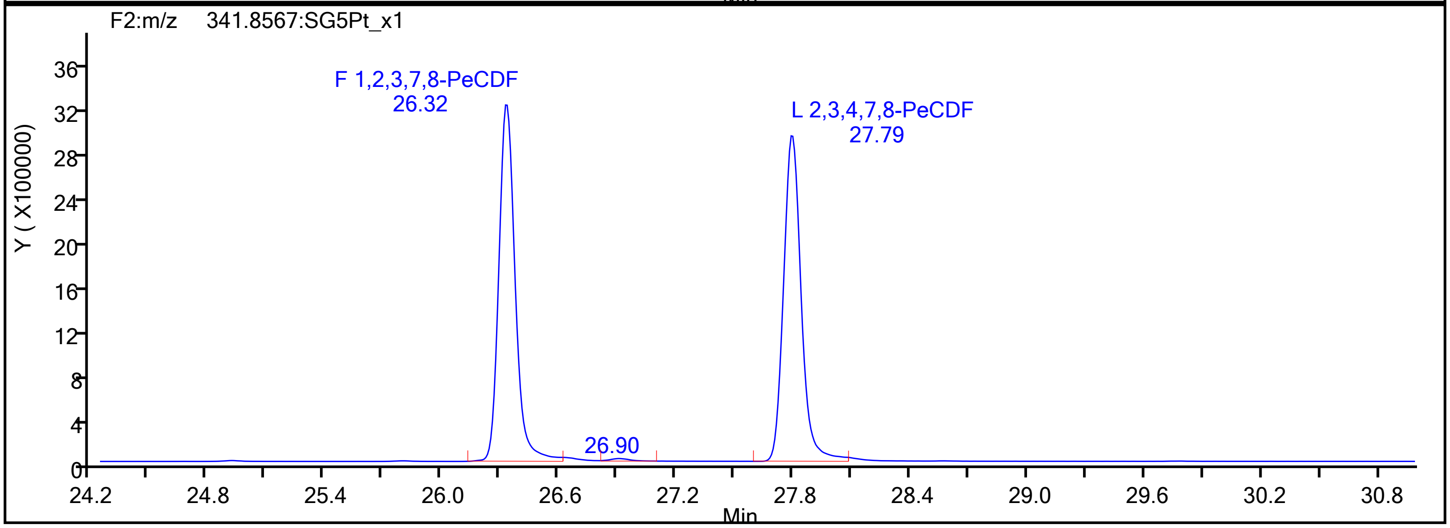

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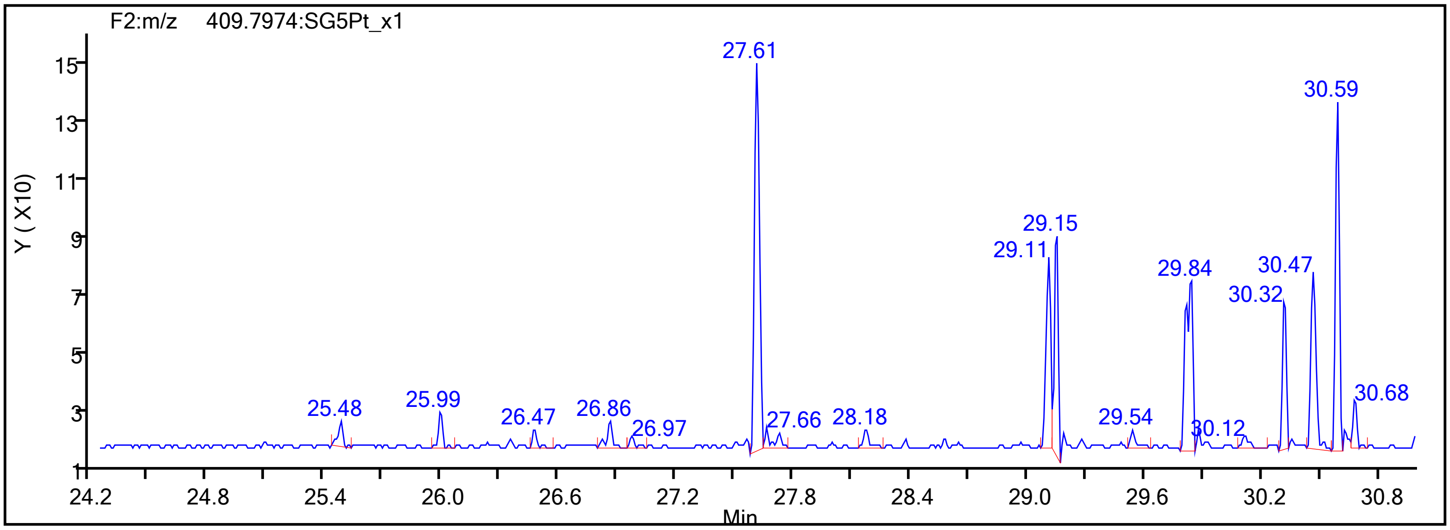

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Eurofins TestAmerica, Sacramento

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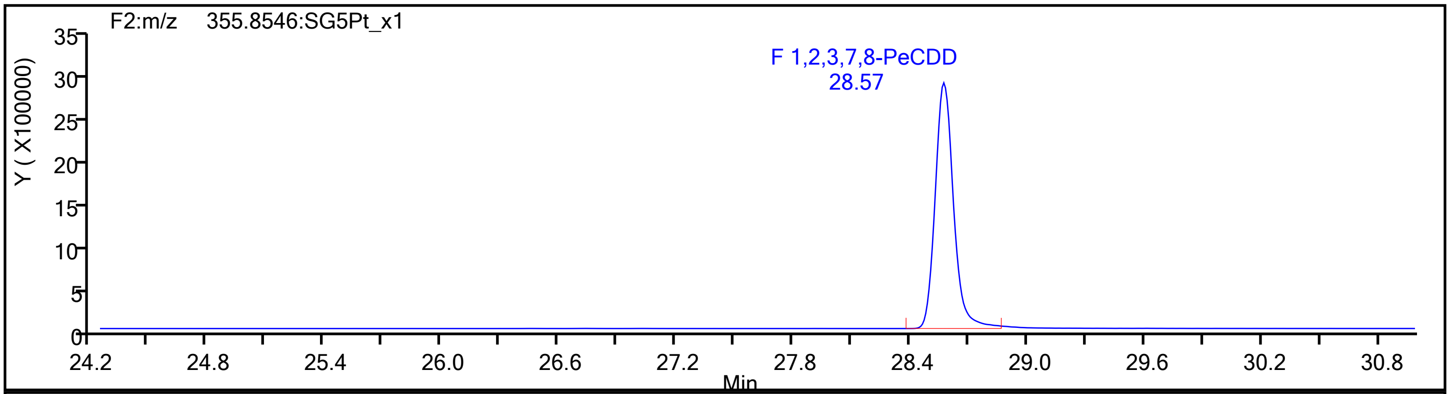

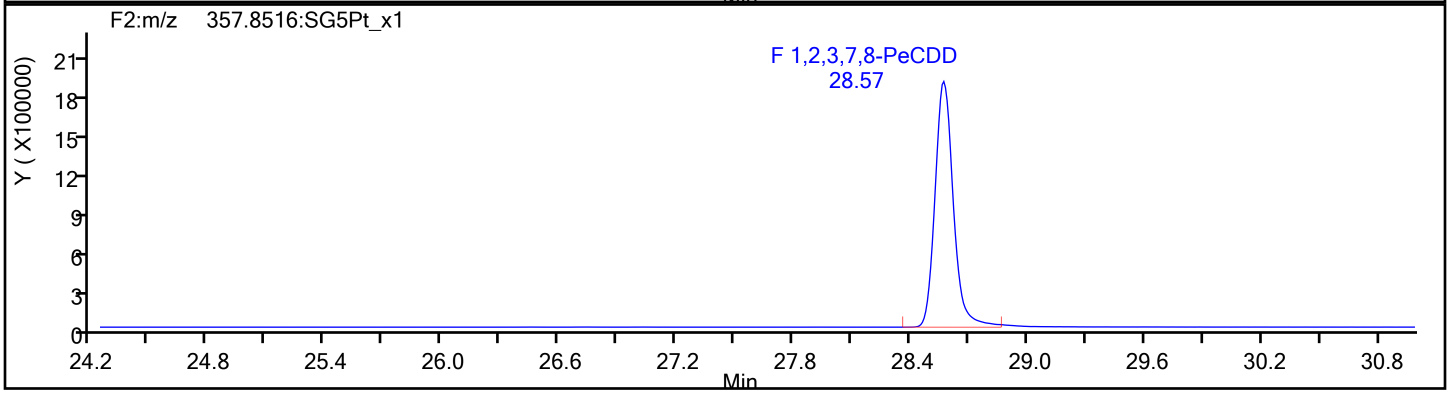

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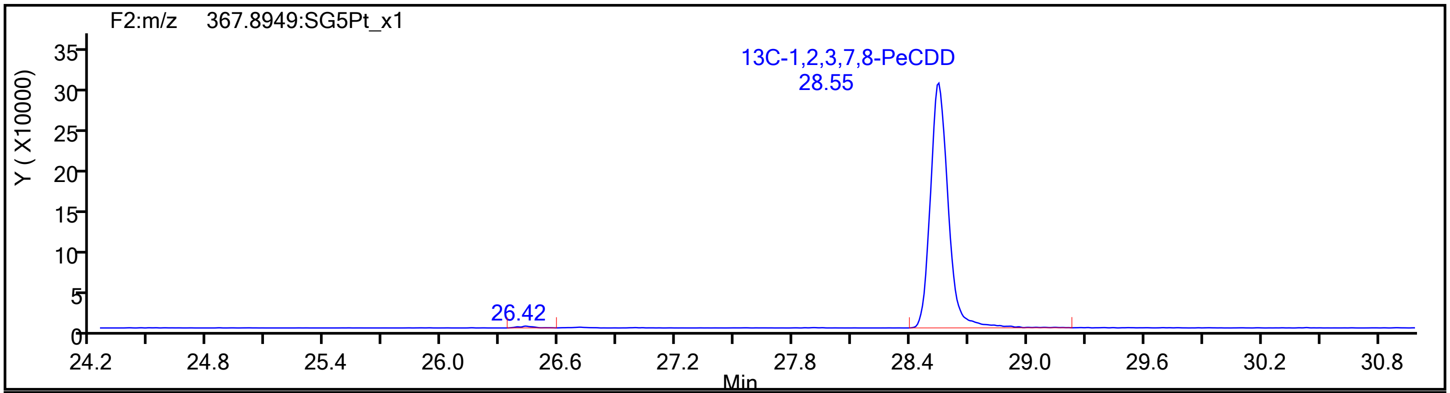

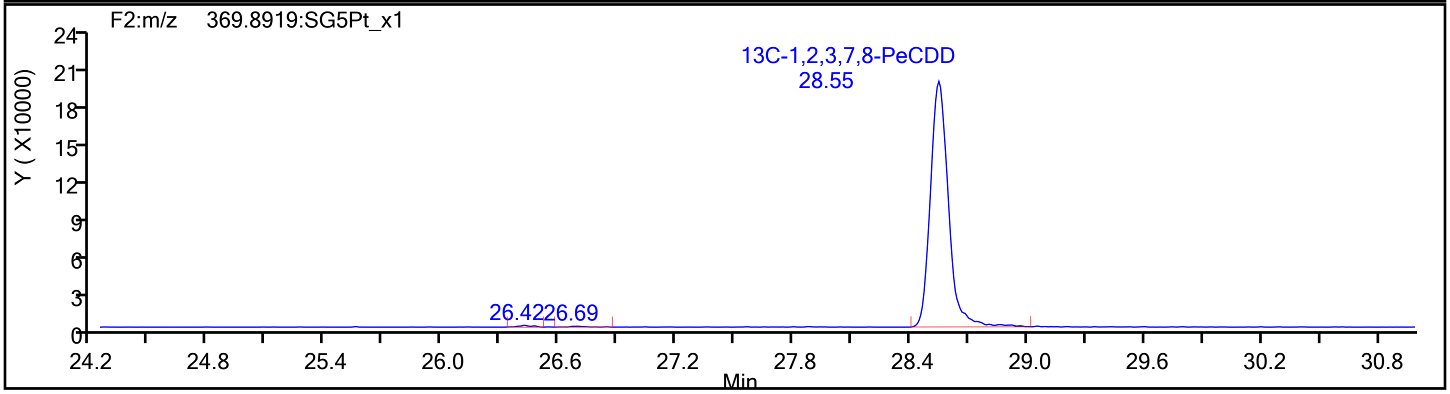

Report Date: 18-Sep-2020 11:00:55   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HxCDF

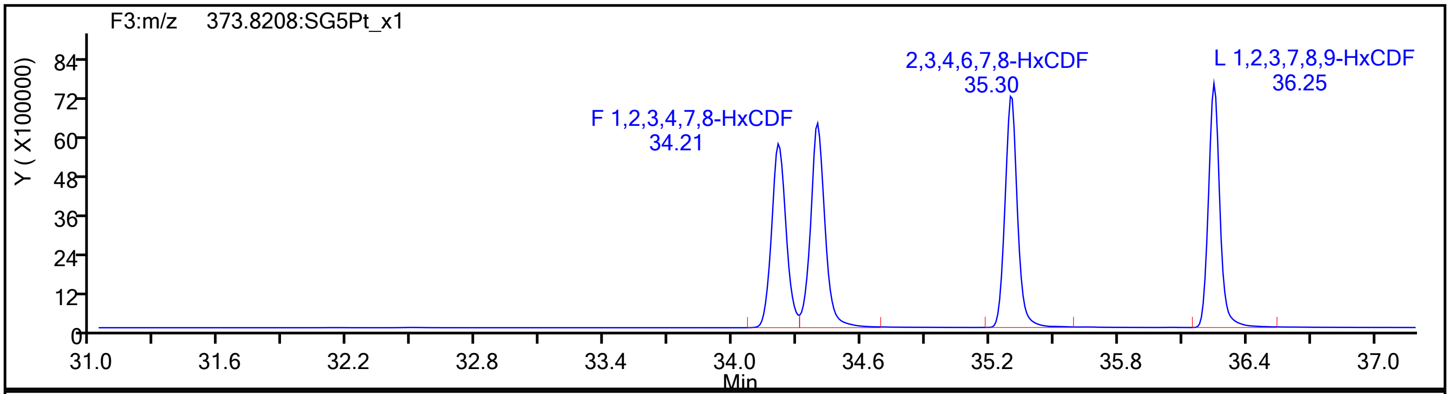

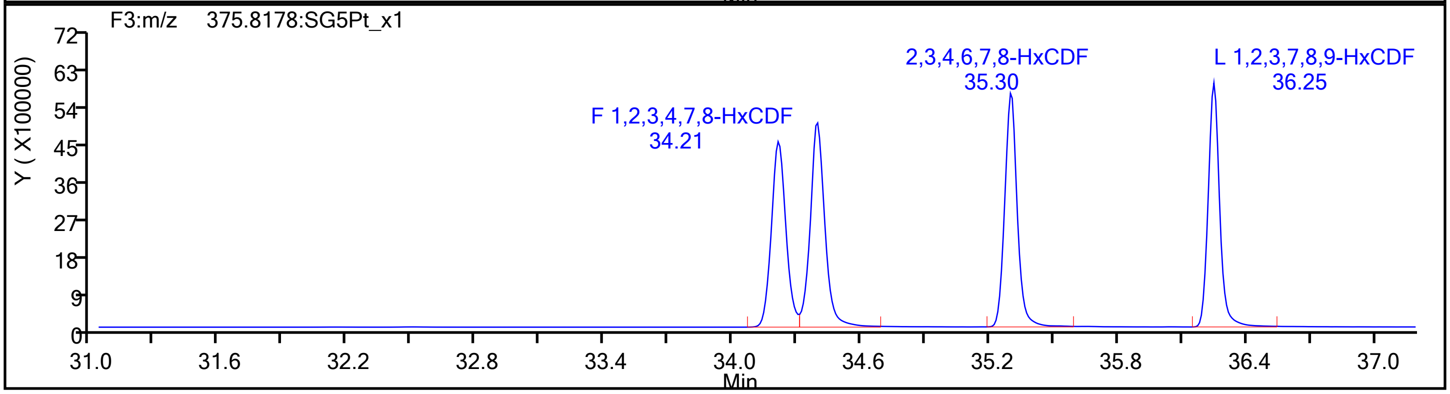

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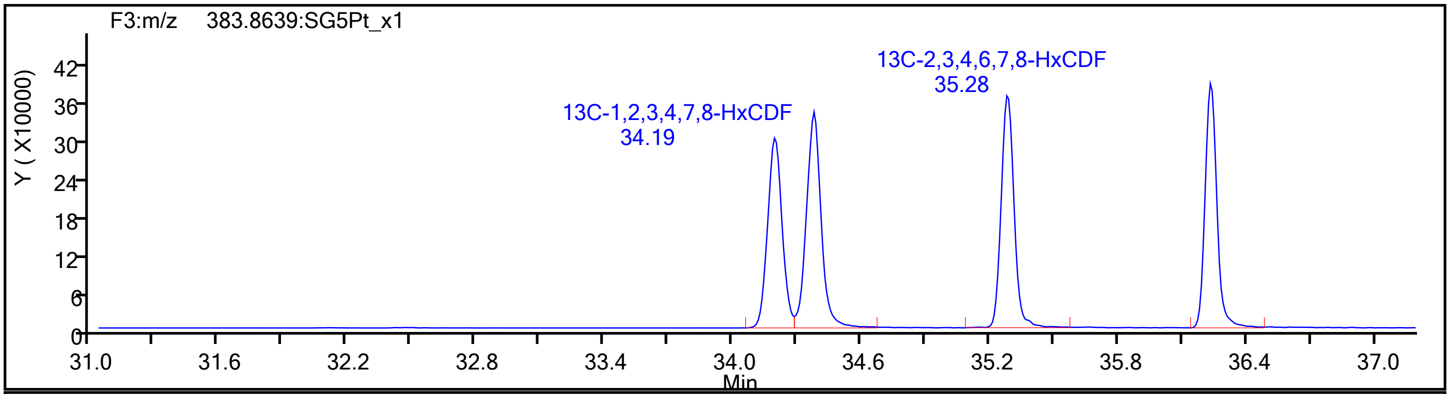

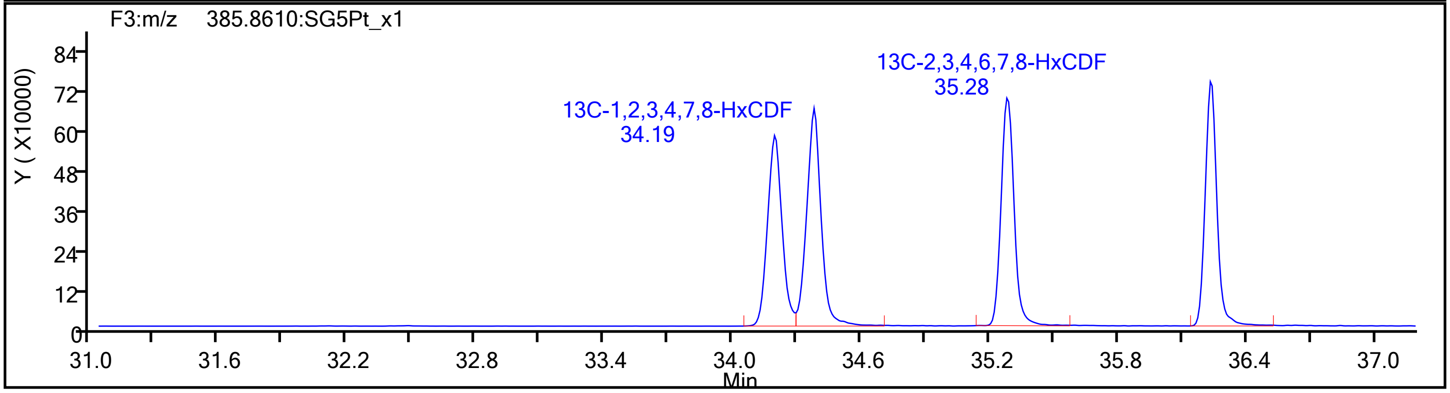

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Eurofins TestAmerica, Sacramento

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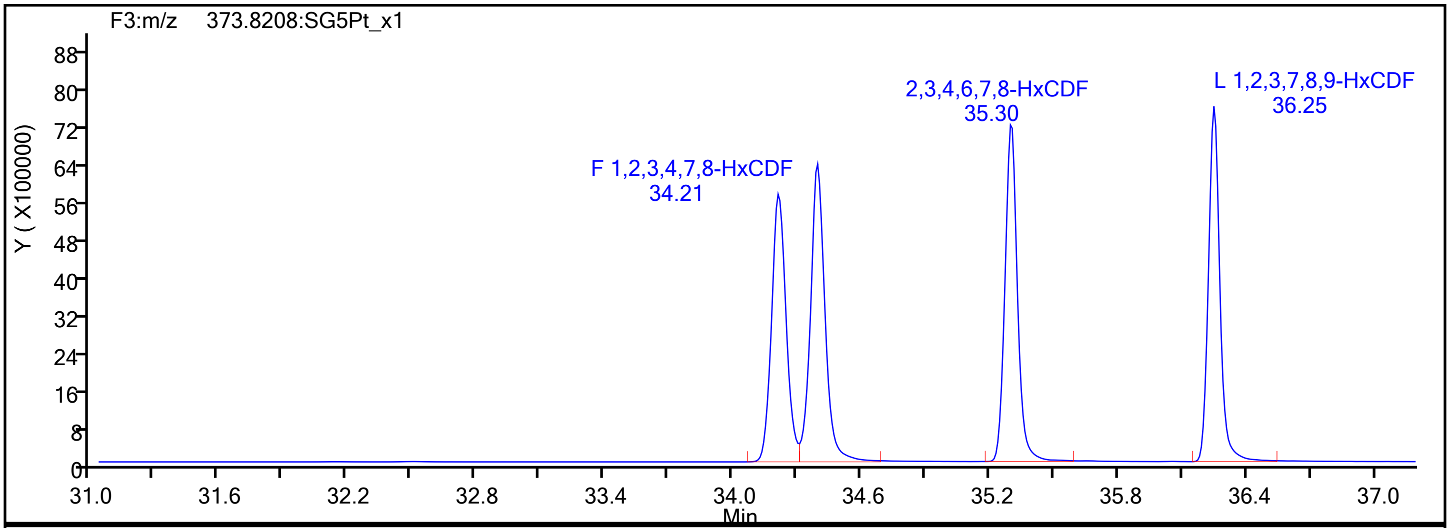

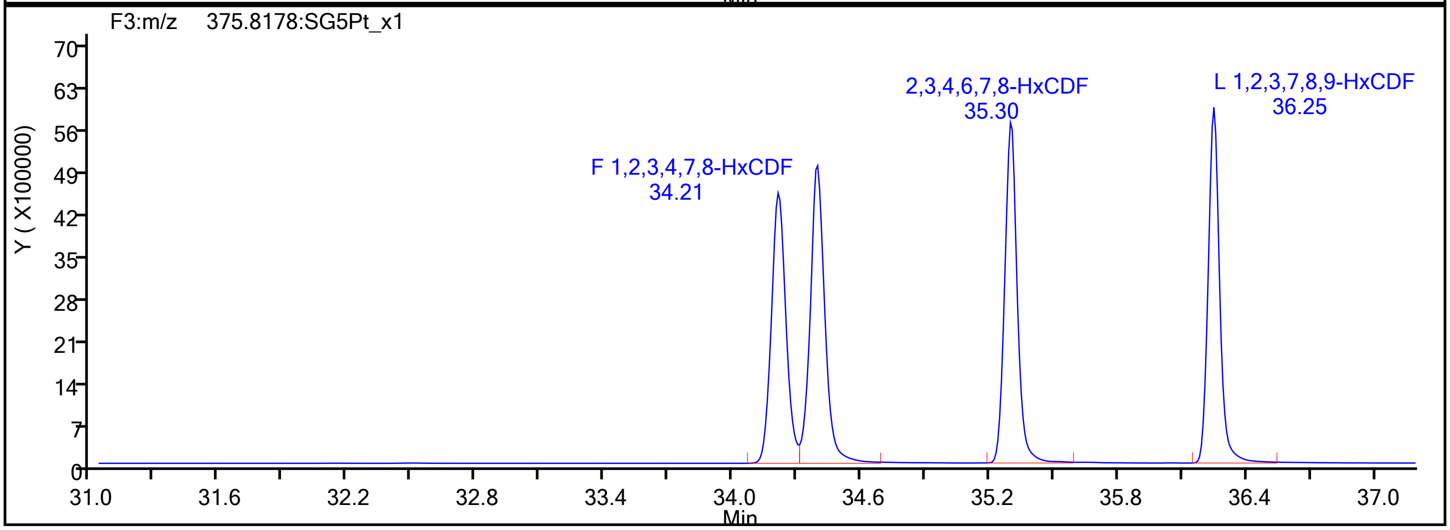

HxCDF Interference Mass

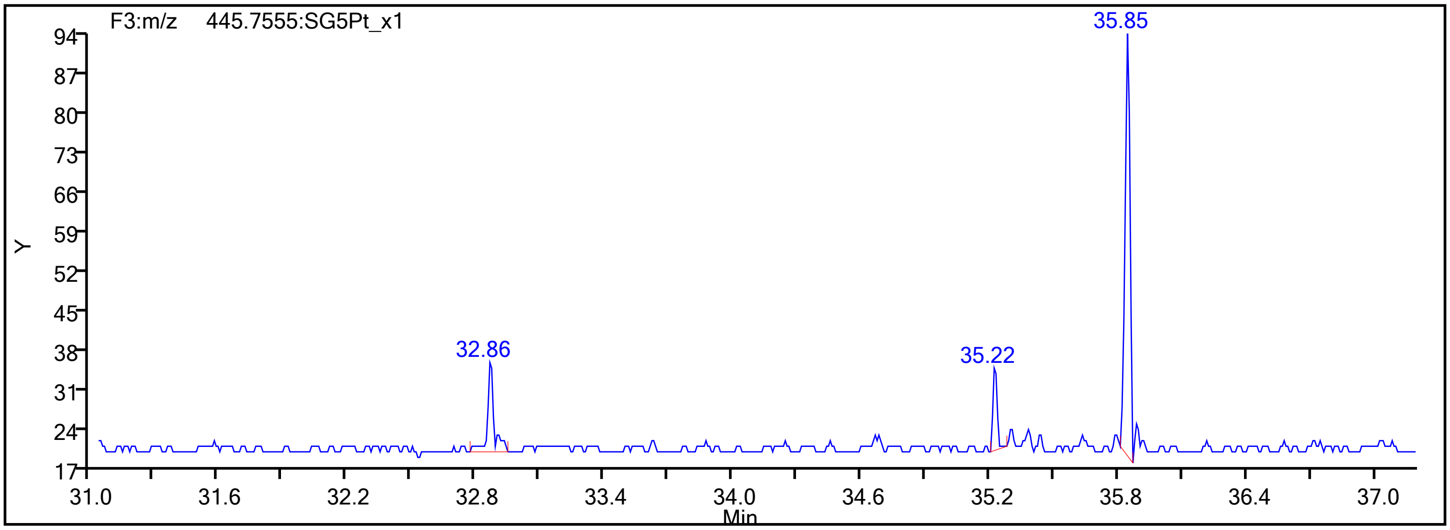

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Eurofins TestAmerica, Sacramento

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HxCDD

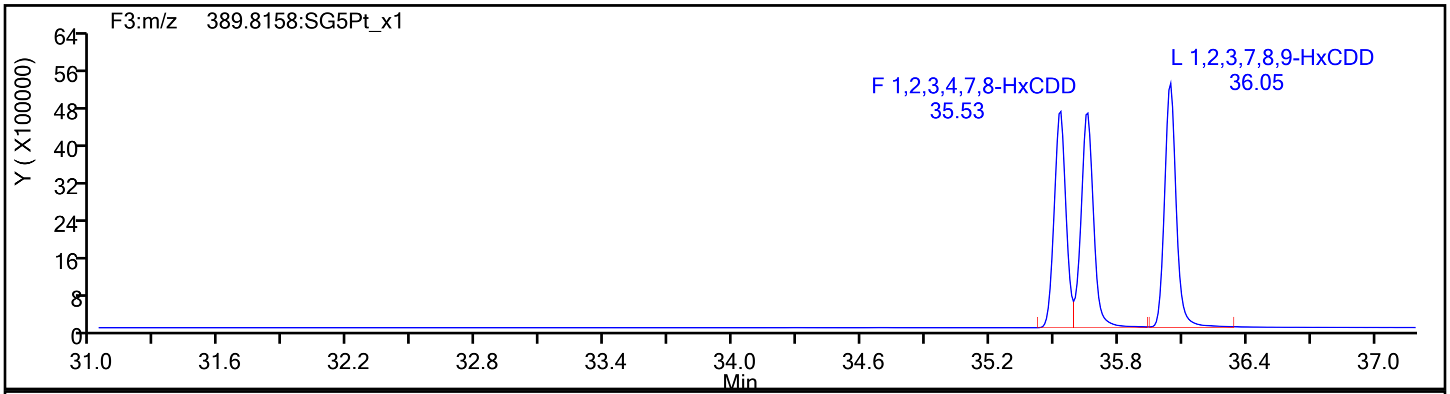

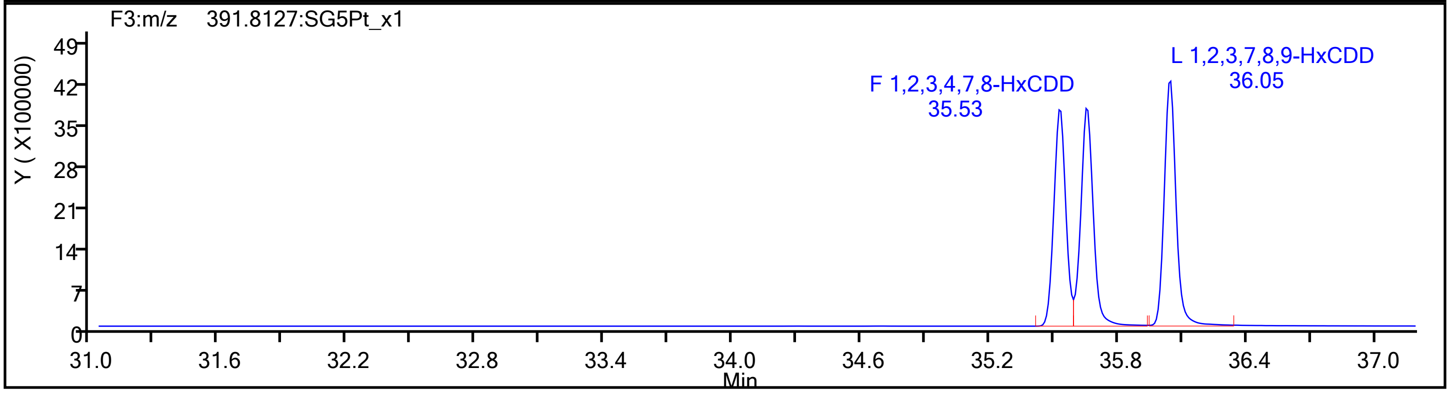

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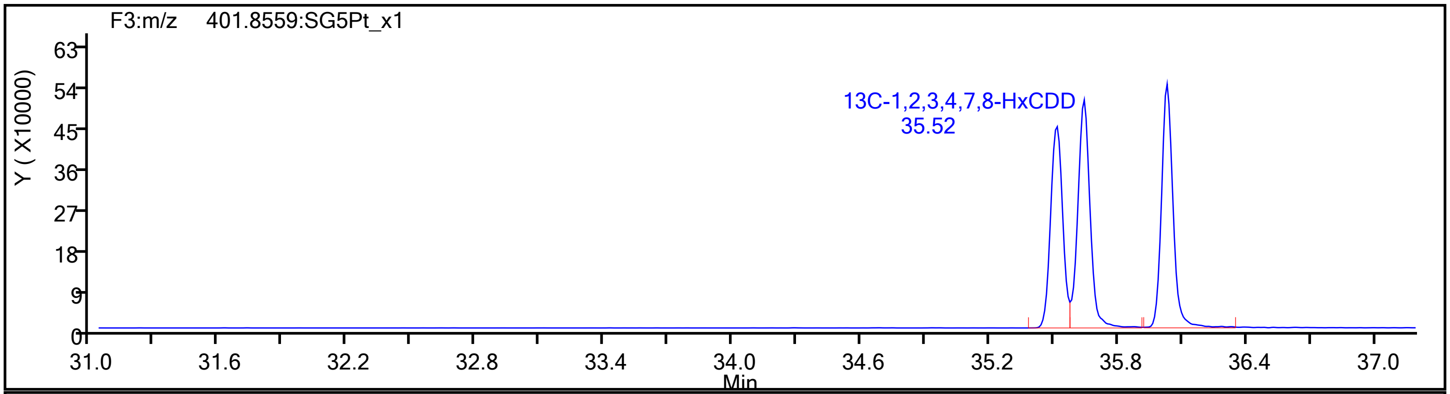

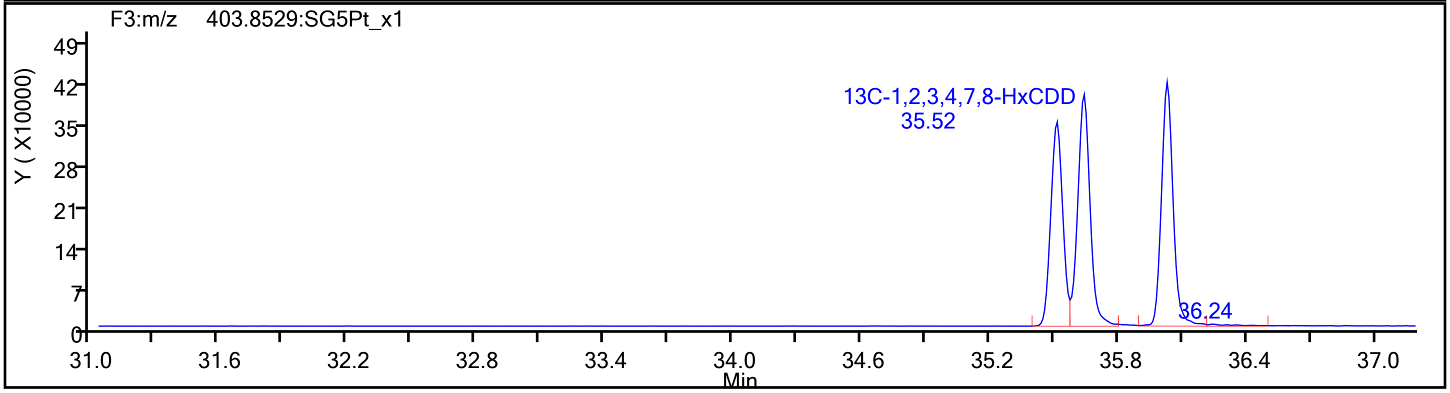

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Eurofins TestAmerica, Sacramento

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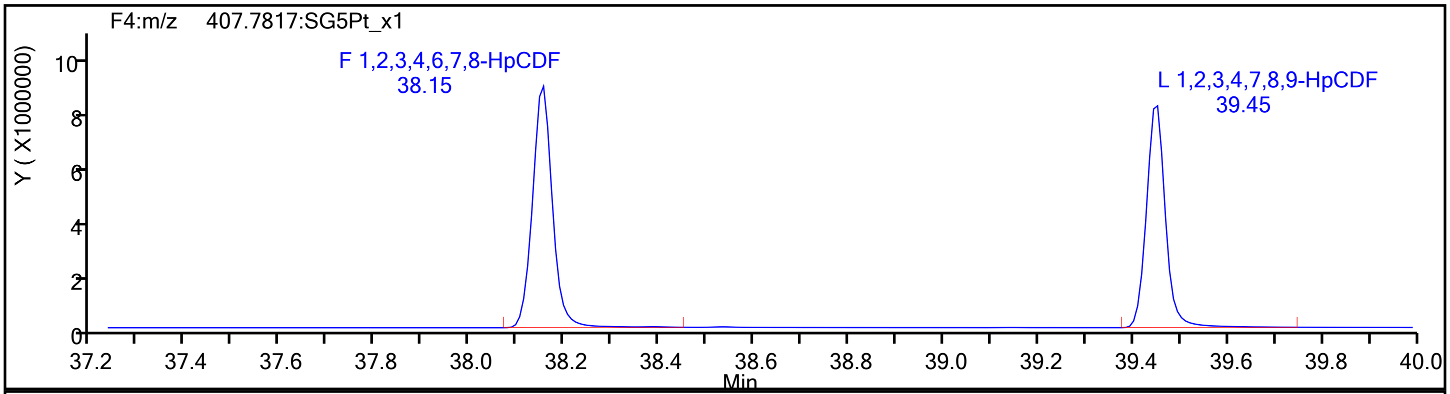

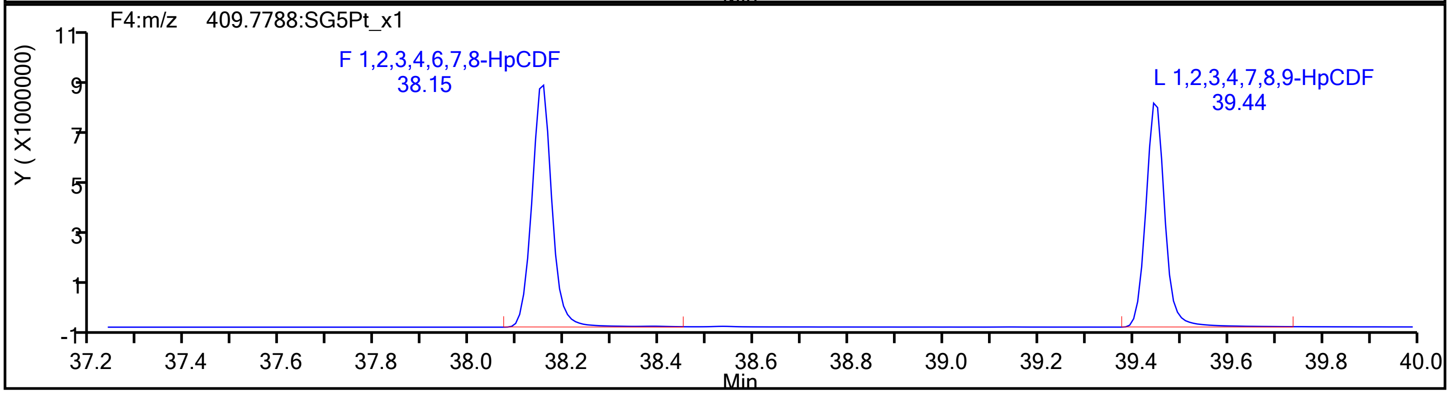

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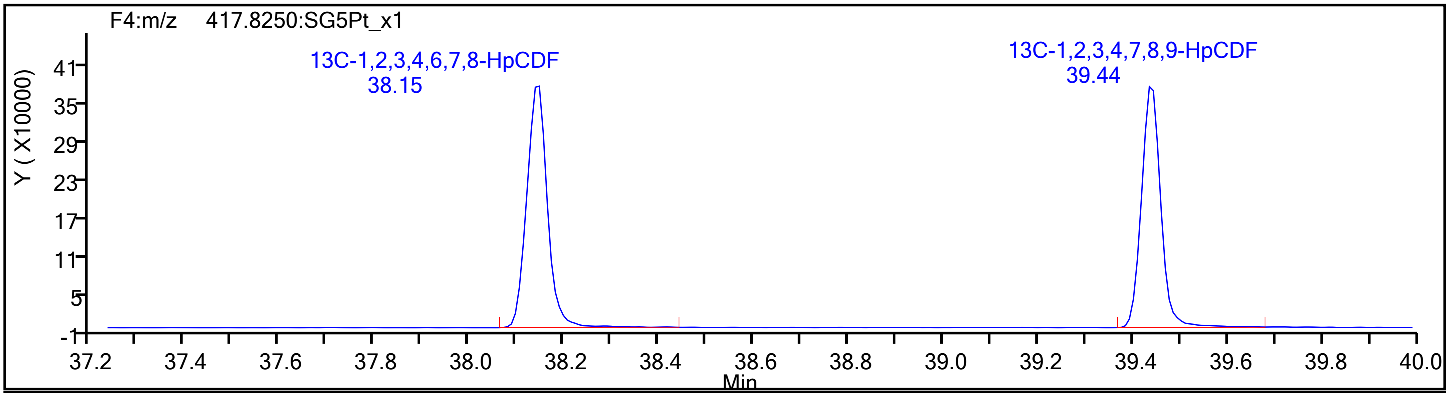

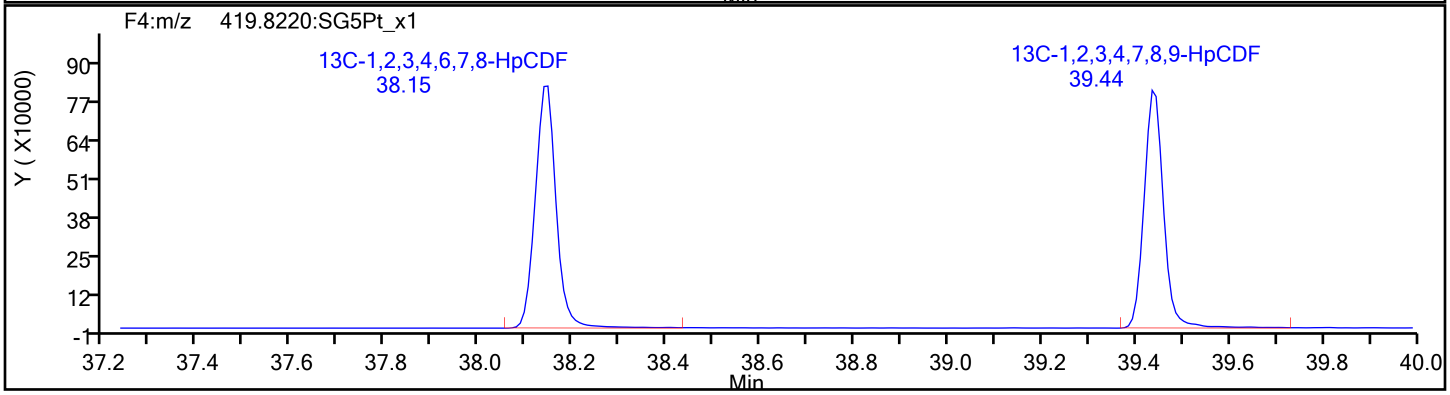

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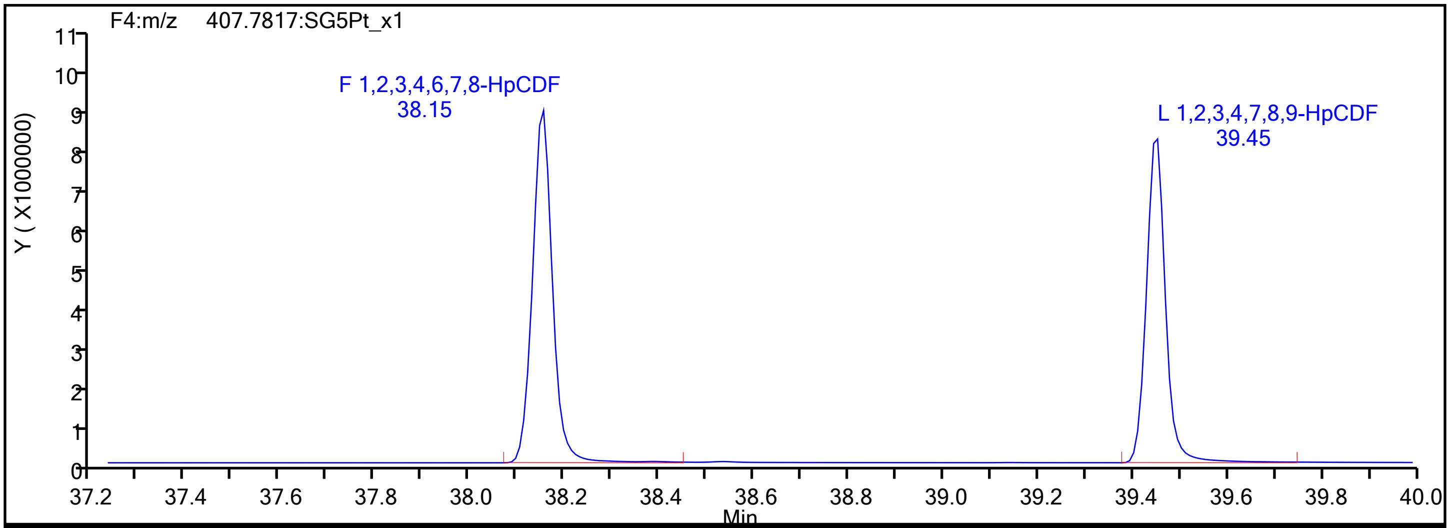

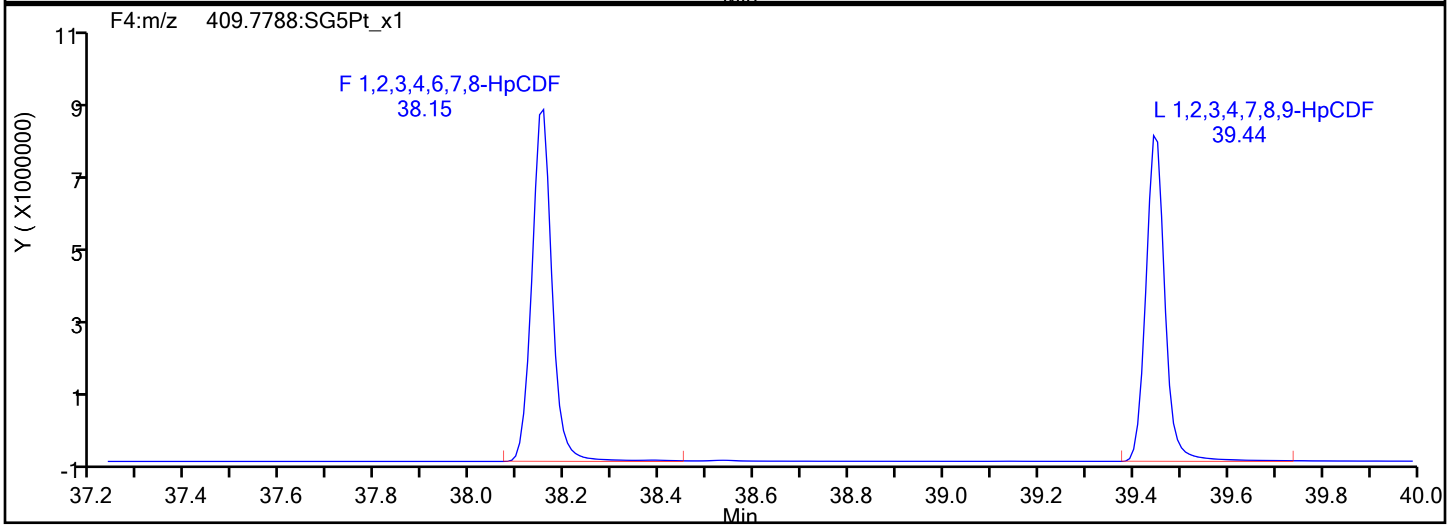

HpCDF Interference Mass

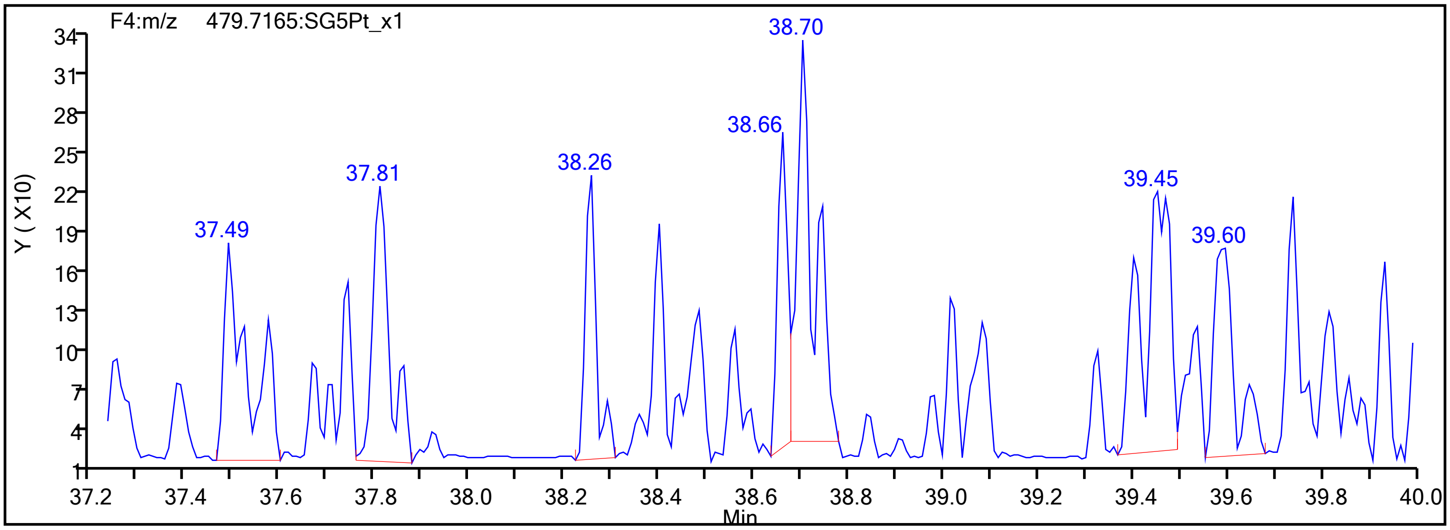

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Eurofins TestAmerica, Sacramento

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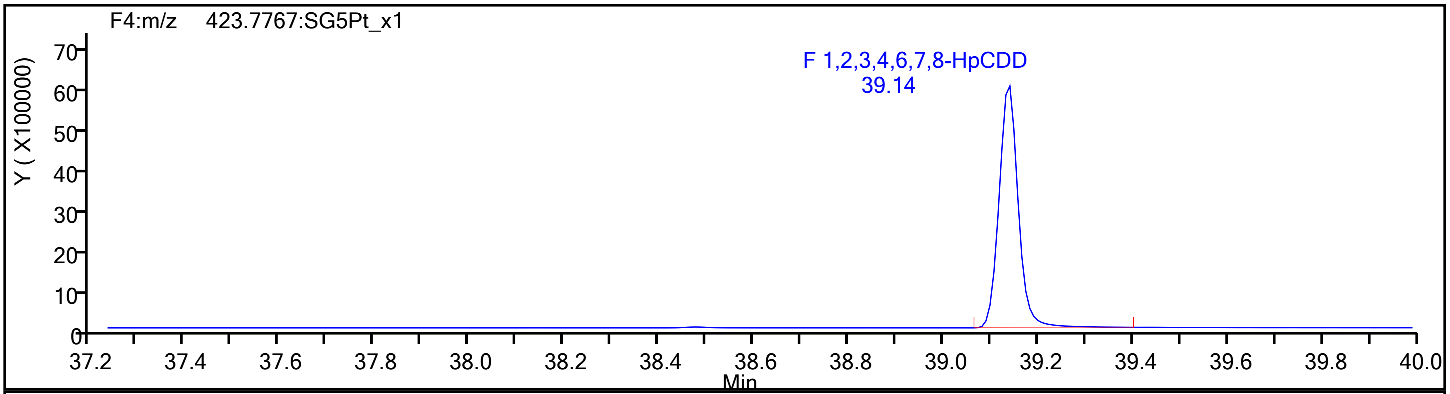

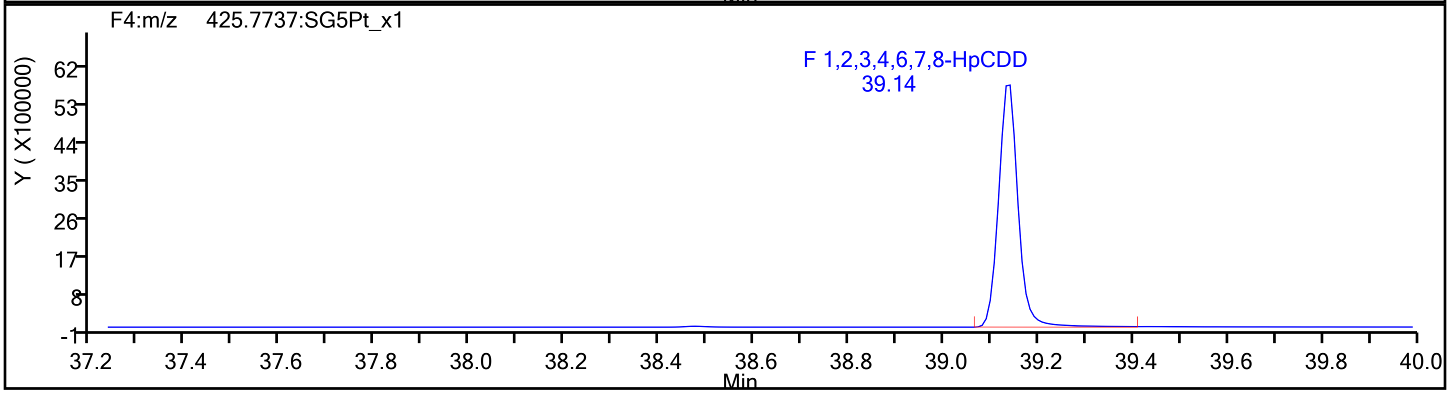

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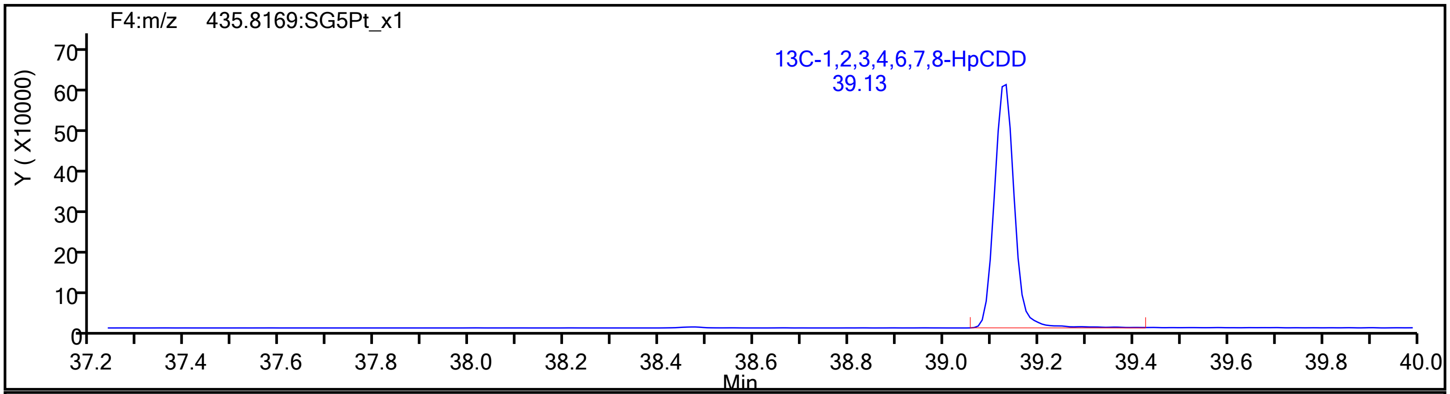

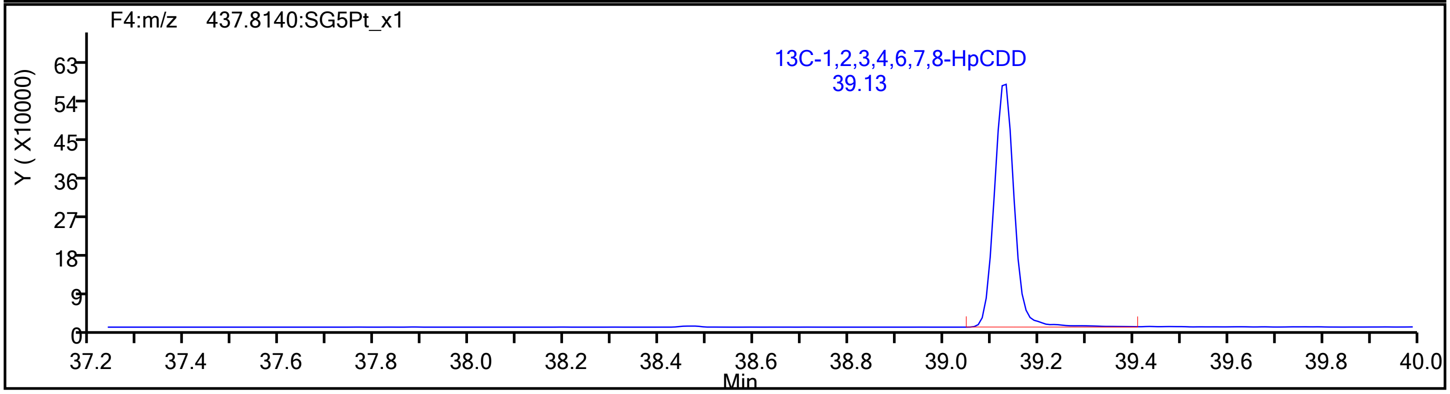

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Eurofins TestAmerica, Sacramento

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OCDF

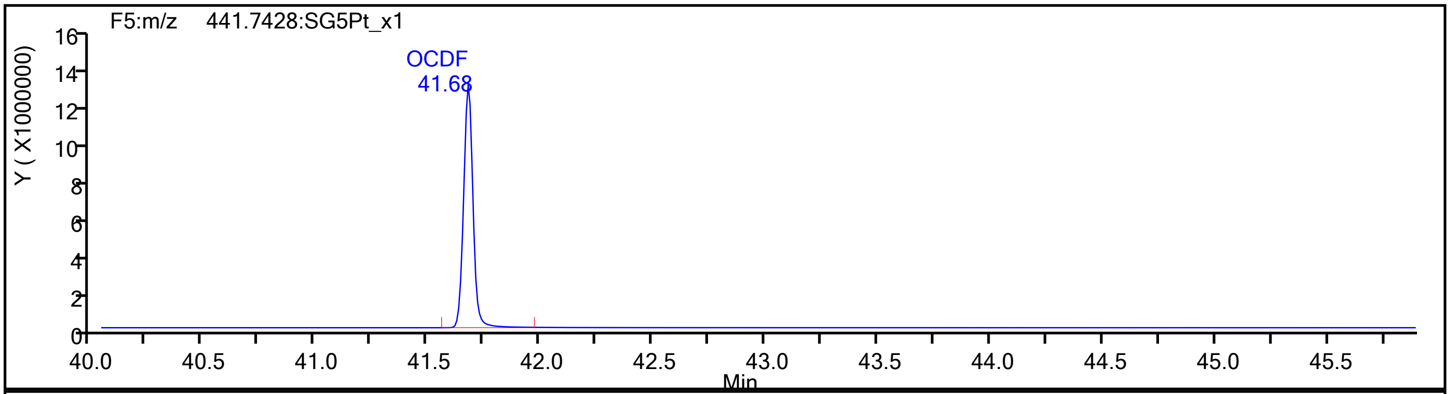

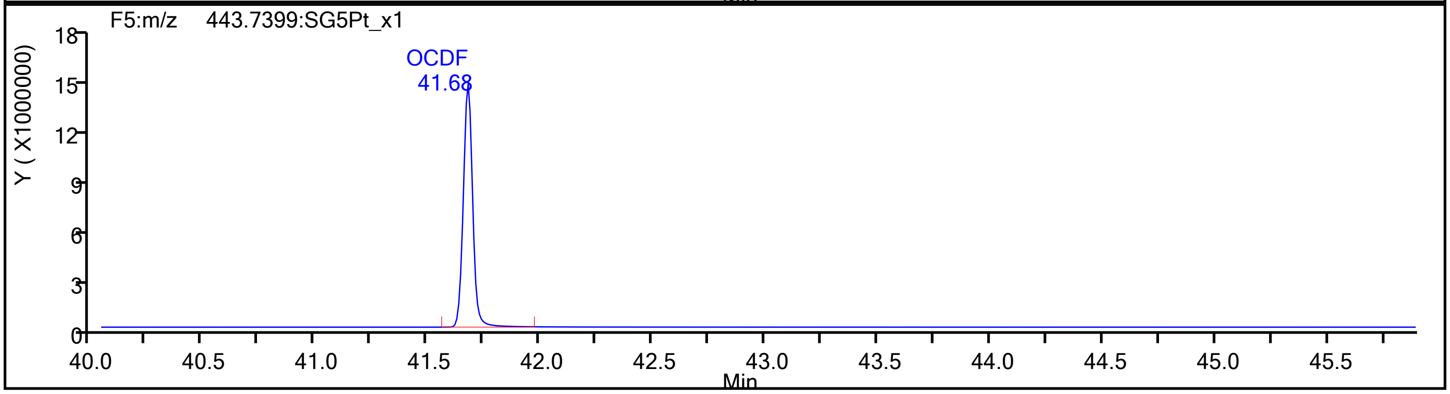

OCDF Standards

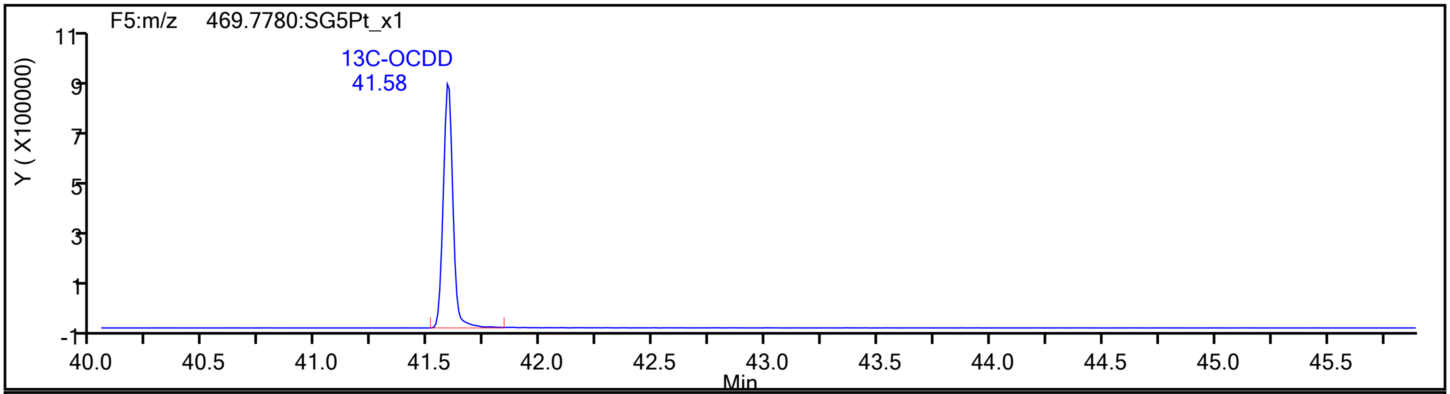

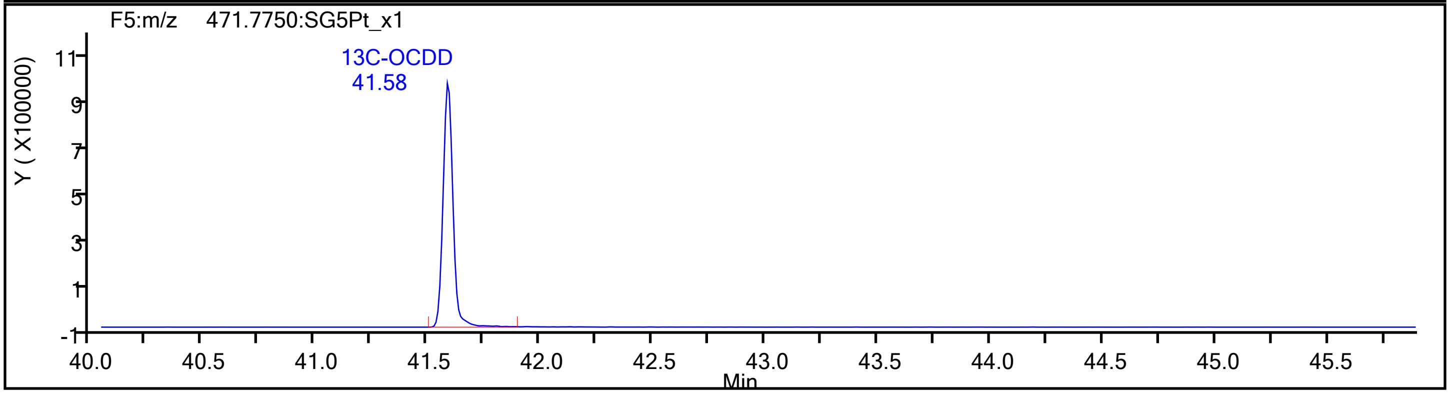

Report Date: 18-Sep-2020 11:00:56

Chrom Revision: 2.3 16-Sep-2020 17:17:04

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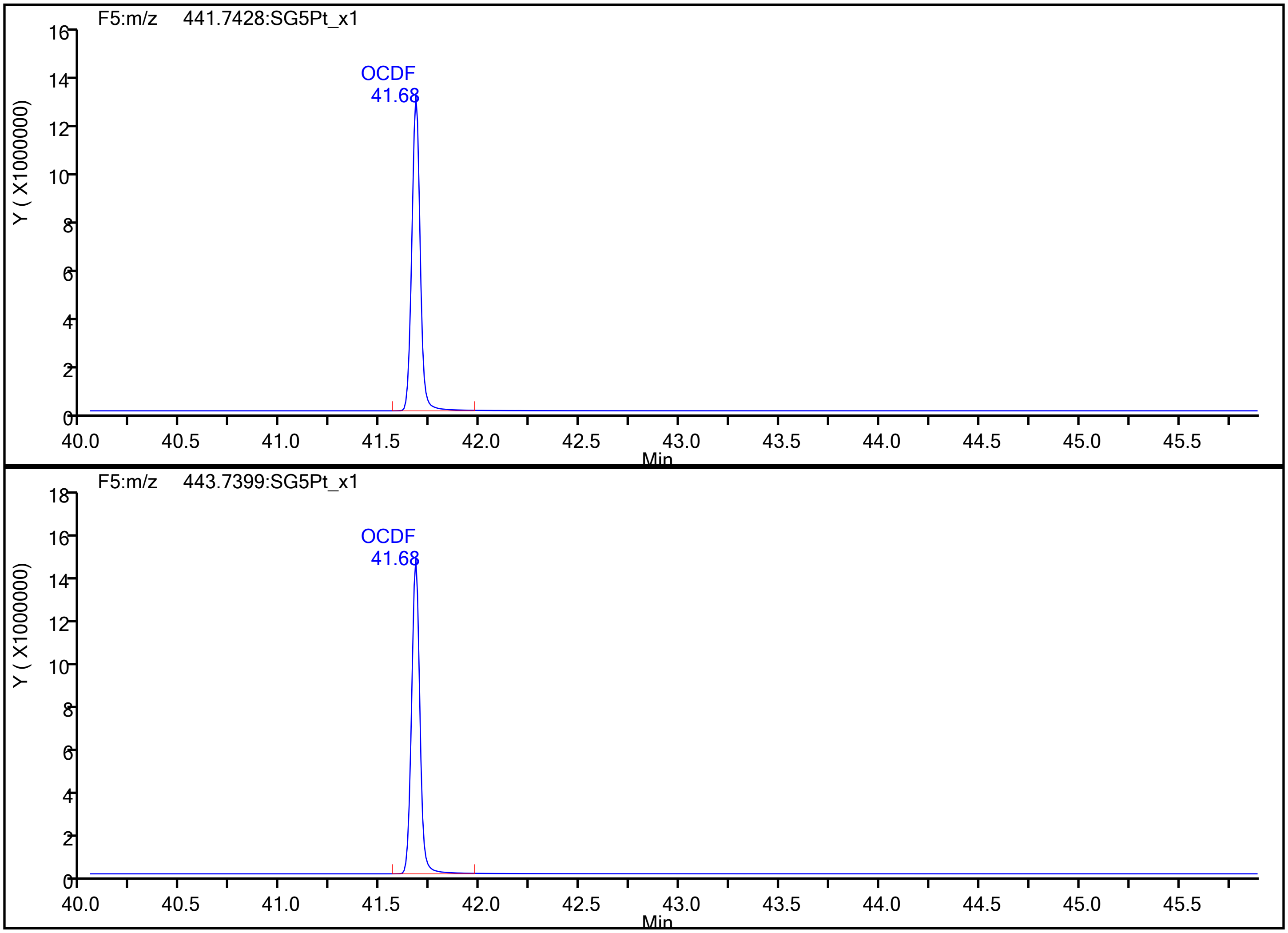

OCDF Interference Mass

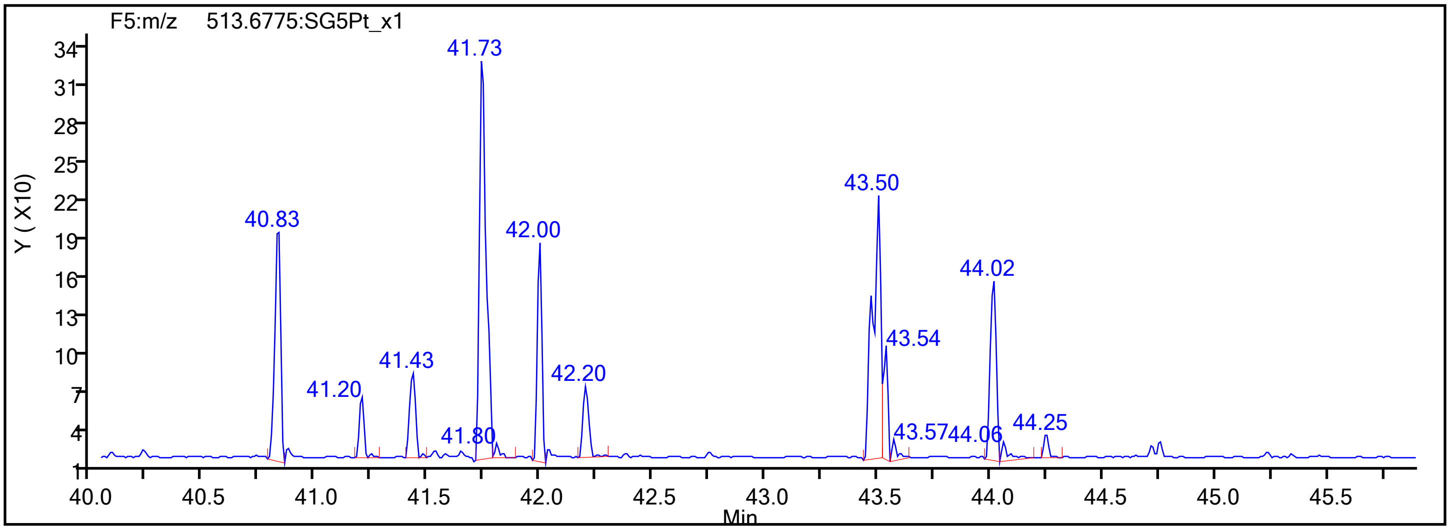

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:30:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

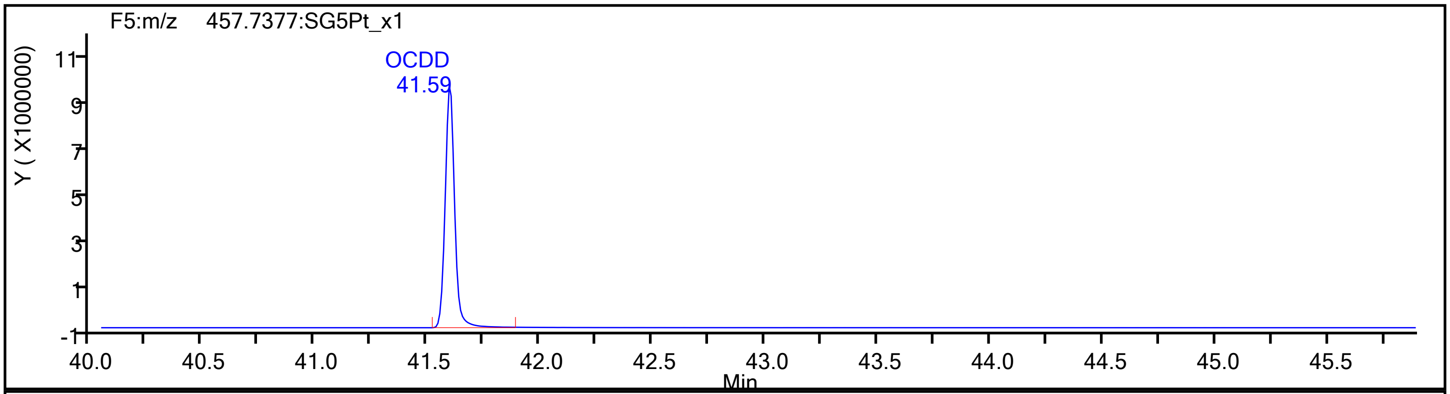

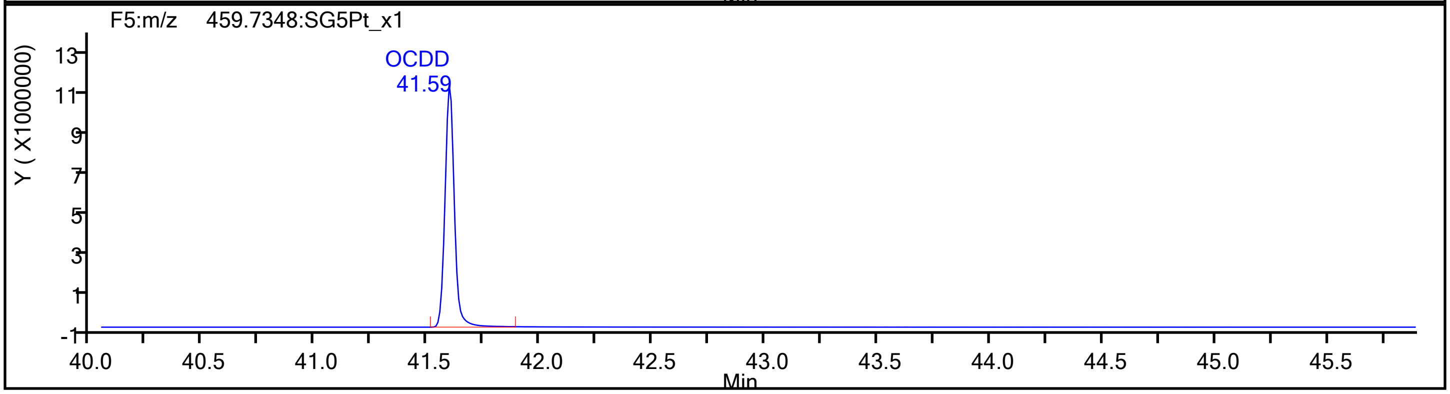

OCDD Standards

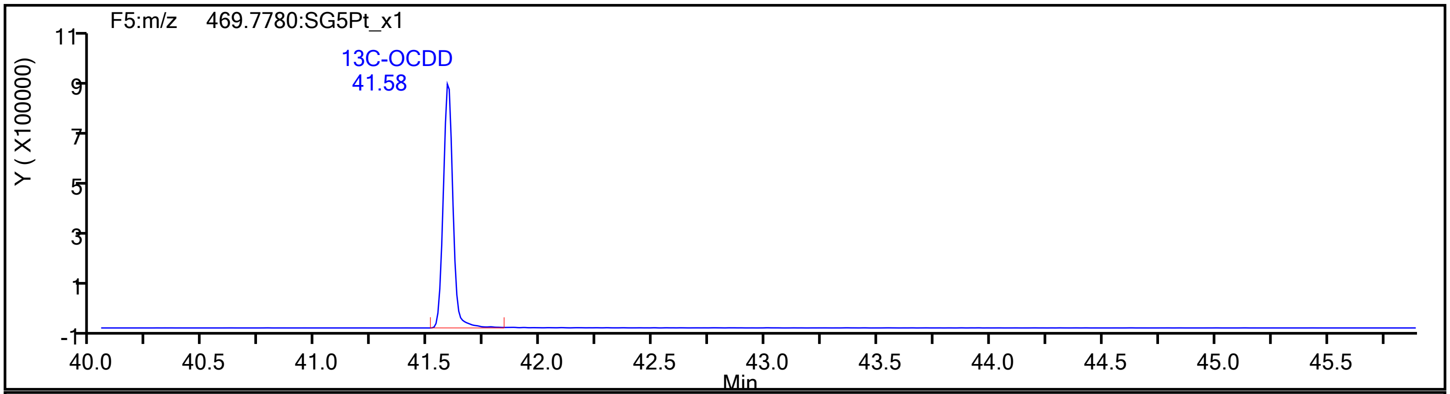

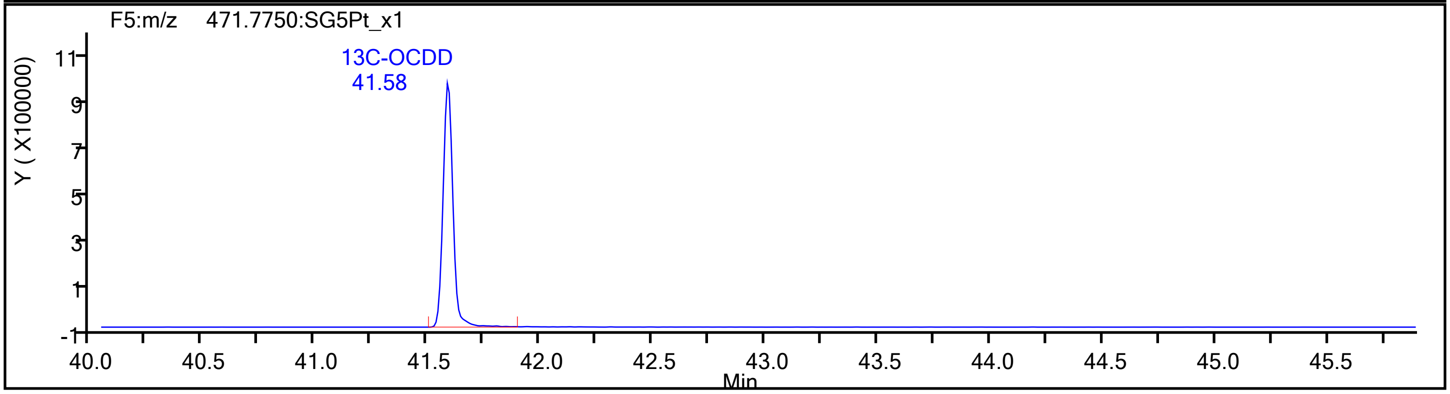

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:30:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

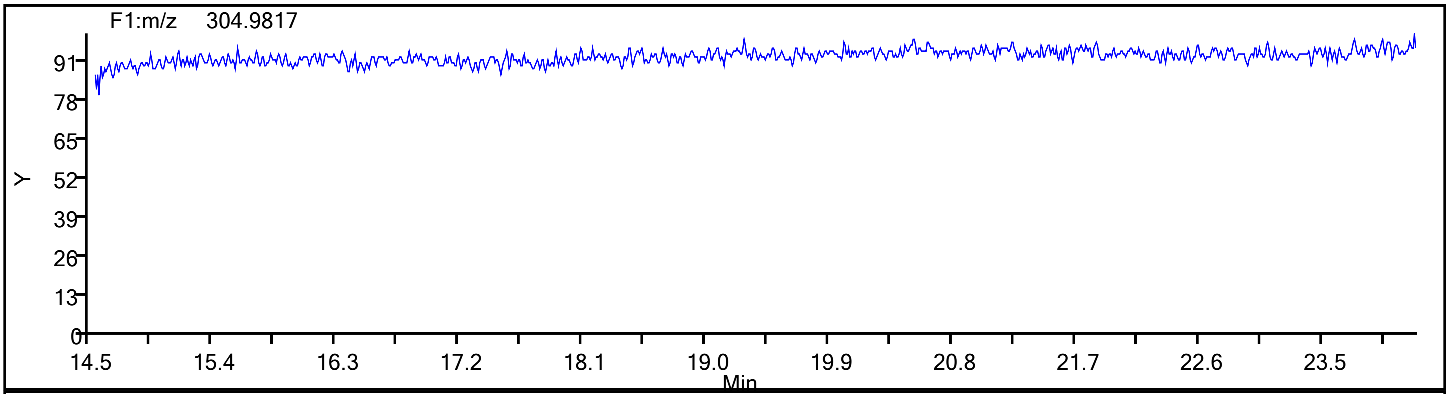

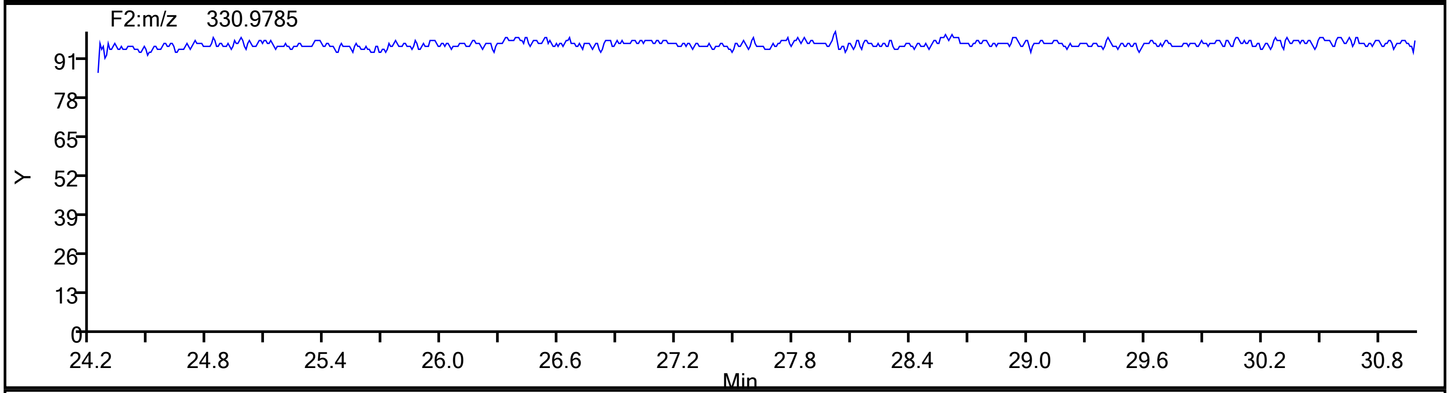

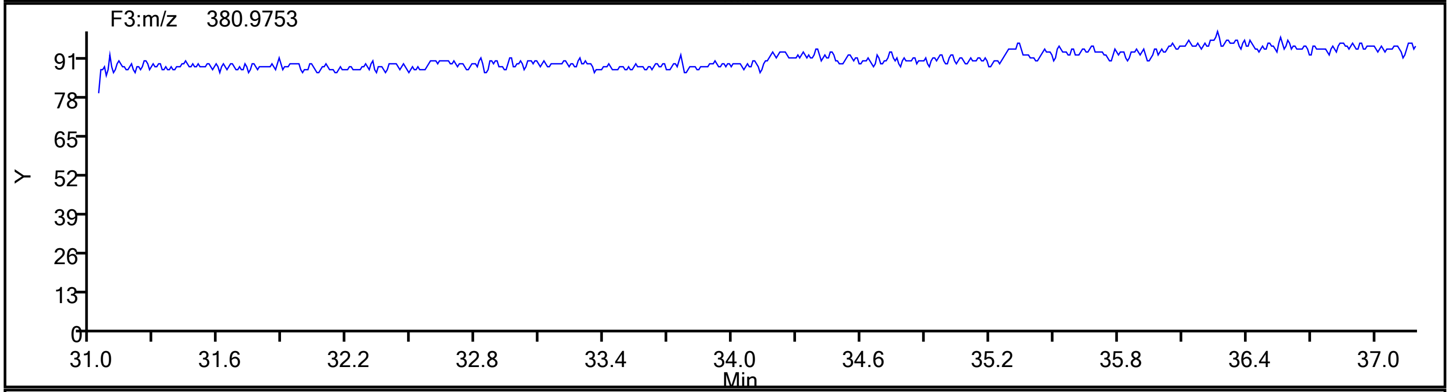

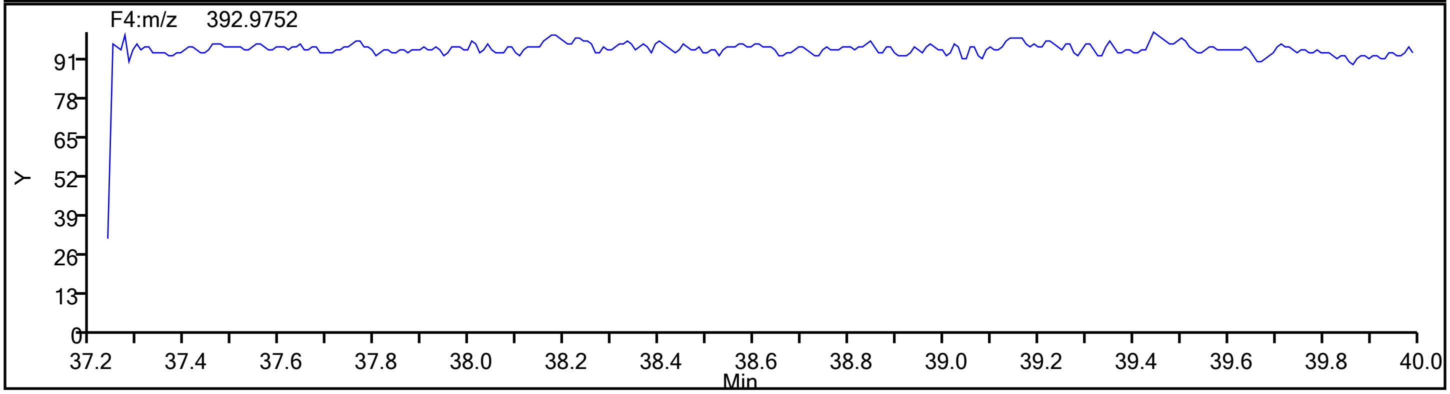

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

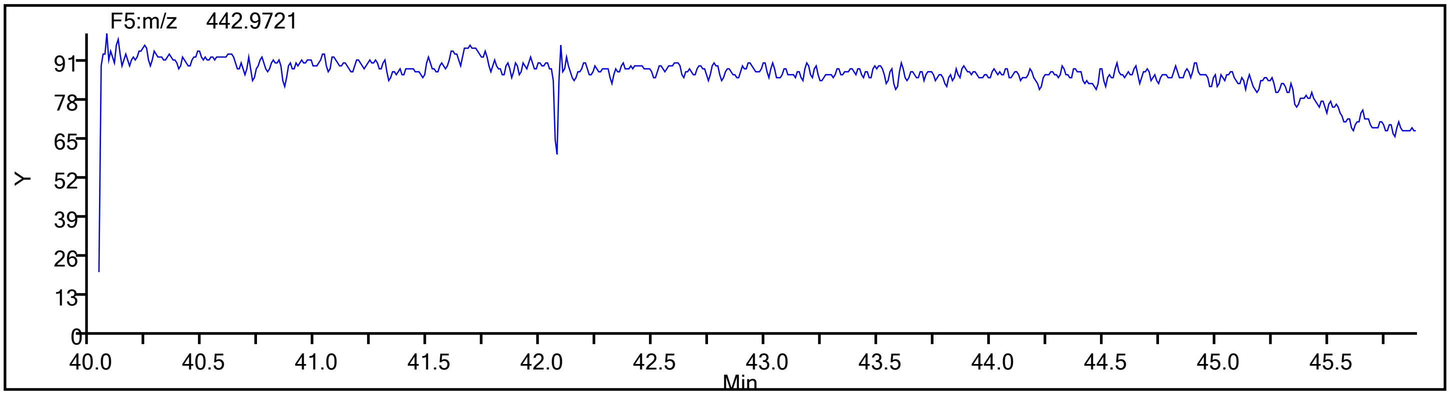

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-390253/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 06/27/2020 13:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.91	23

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d				
Injection Date:	27-Jun-2020 13:12:28	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

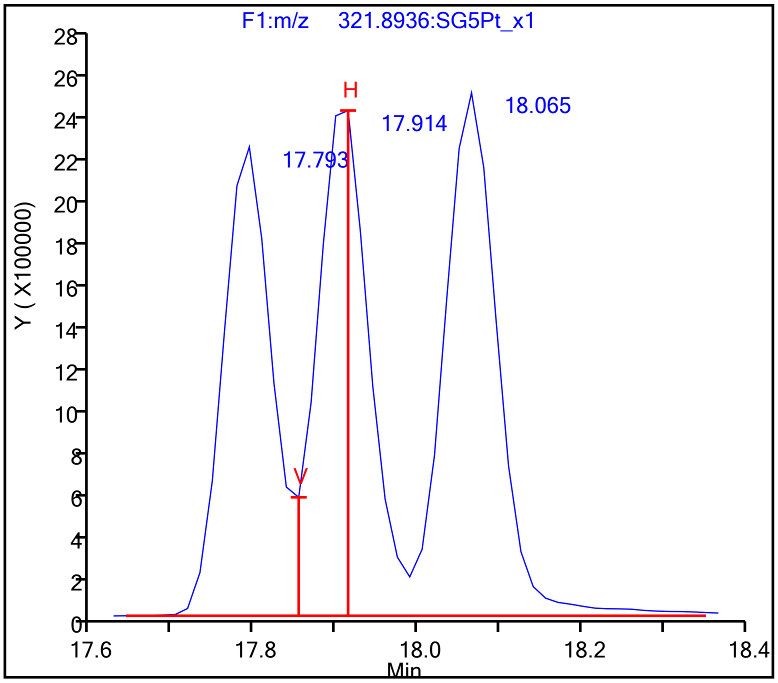

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 549299
H (Peak Height) = 2342681

%R = 23 <= 25
Passed

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): CPS 320-398641/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324
H (Peak Height) = 10494443

%R = 16 <= 25
Passed

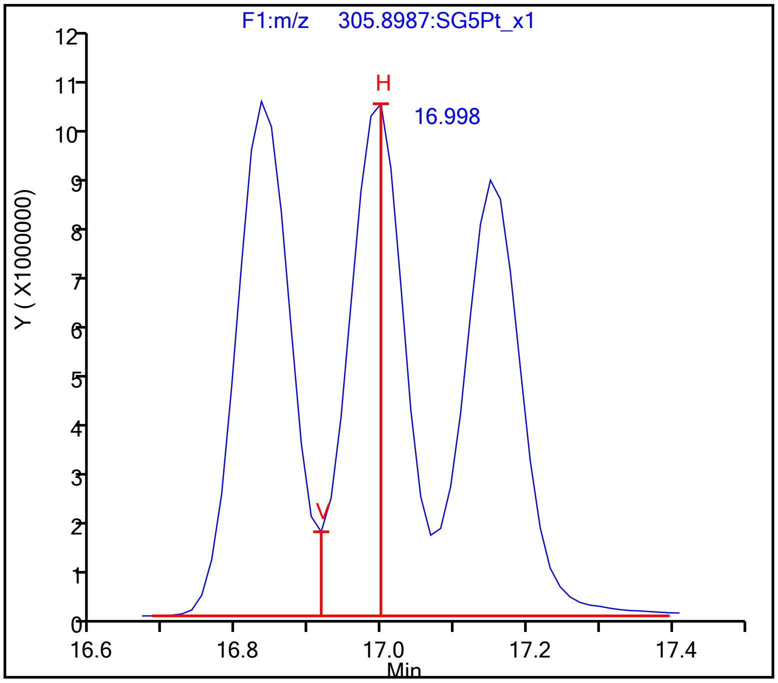

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-408767/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/01/2020 19:56

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.26	22

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d				
Injection Date:	01-Sep-2020 19:56:43	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 215387
H (Peak Height) = 984750

%R = 22 <= 25
Passed

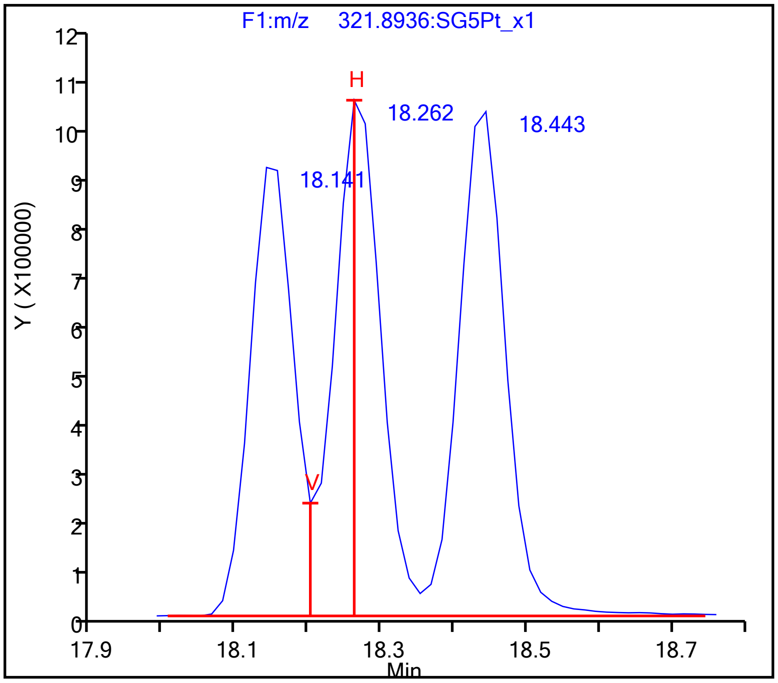

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-413255/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 09/17/2020 11:37

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.53	19

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d				
Injection Date:	17-Sep-2020 11:37:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 27657

H (Peak Height) = 143978

%R = 19 <= 25

Passed

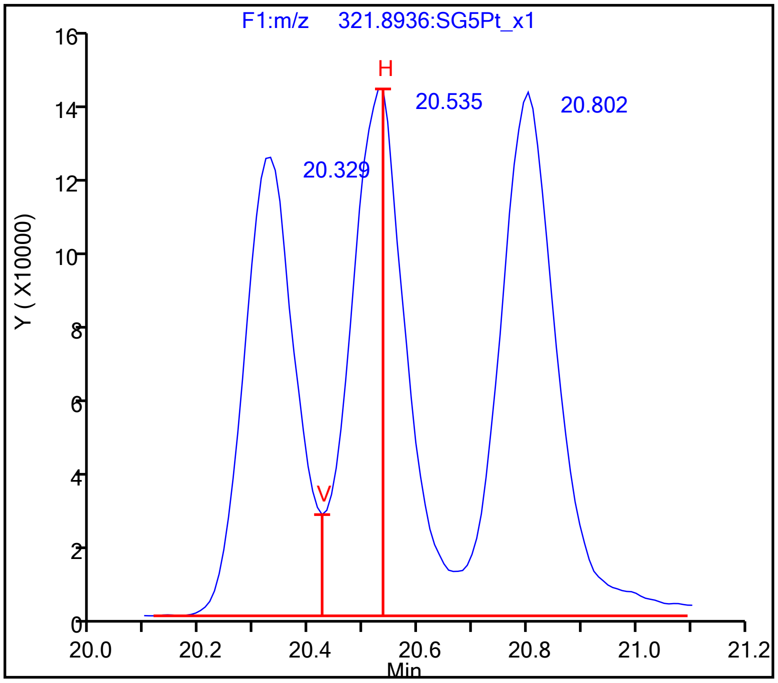

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-413813/47 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/20/2020 05:32

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.55	18

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d				
Injection Date:	20-Sep-2020 05:32:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	47
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 23771
H (Peak Height) = 131267

%R = 18 <= 25
Passed

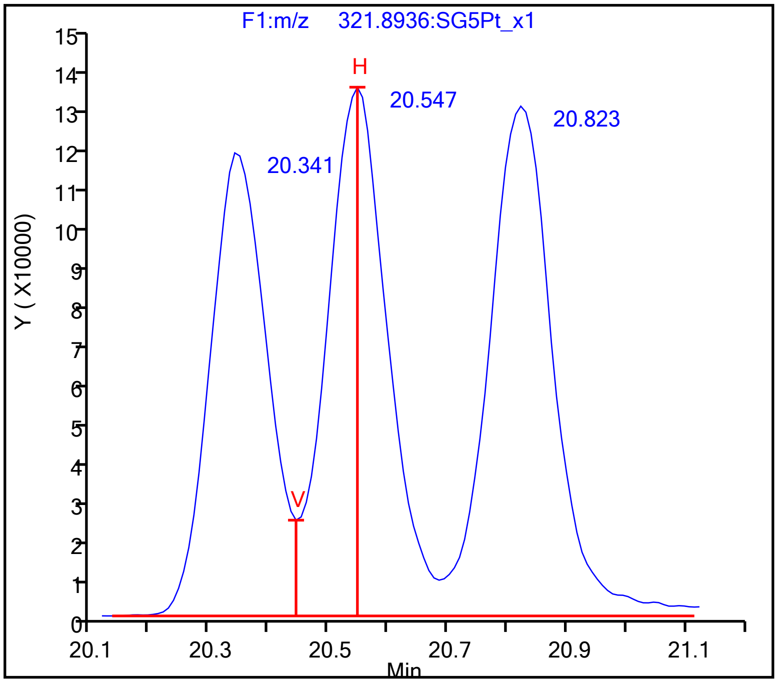

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-413816/59 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/20/2020 15:53

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.55	20

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d				
Injection Date:	20-Sep-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	59
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 25534

H (Peak Height) = 129465

%R = 20 <= 25

Passed

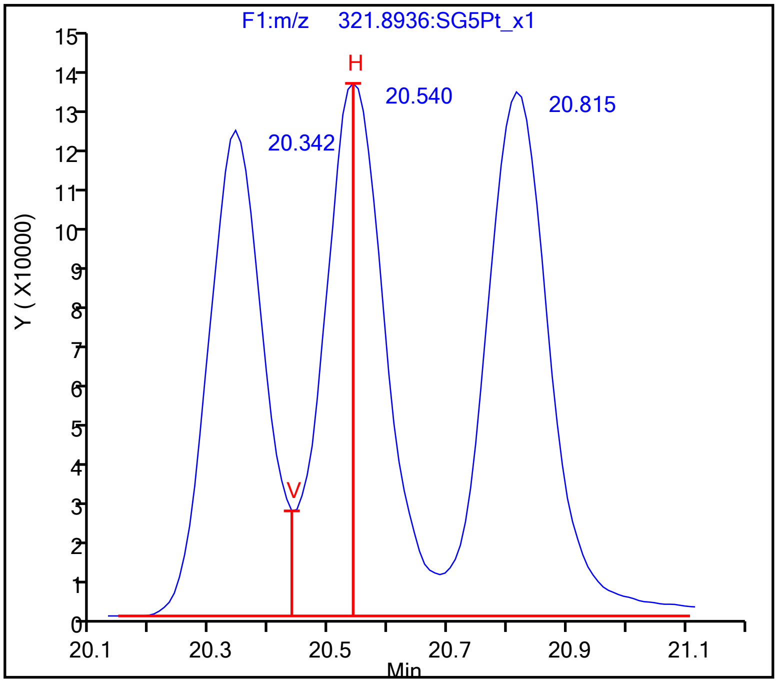

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-414413/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 09/21/2020 11:05

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.53	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d				
Injection Date:	21-Sep-2020 11:05:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 19711
H (Peak Height) = 121266

%R = 16 <= 25
Passed

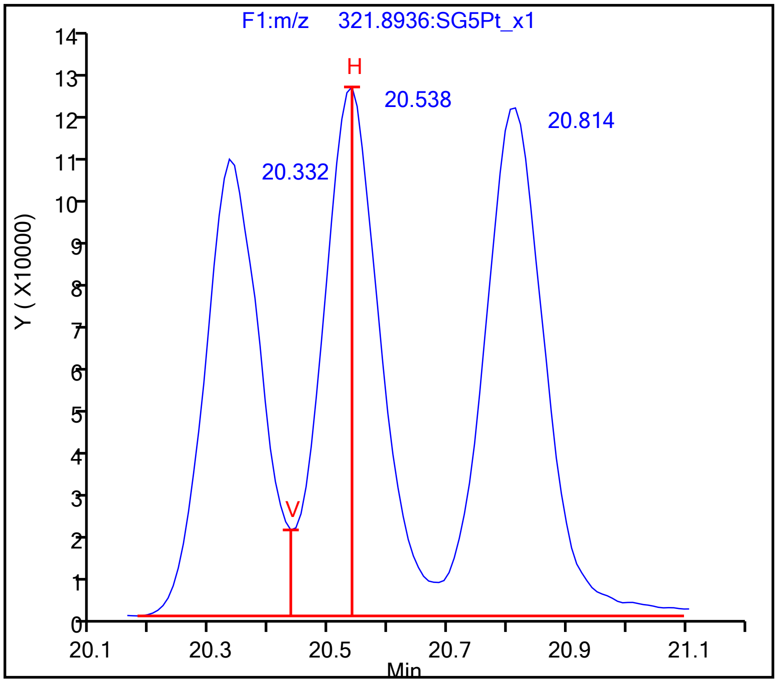

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): CPS 320-415167/1   Instrument ID (1): 11D2

GC Column (1): DB-225   ID: 0.32(mm)   Date Analyzed (1): 09/23/2020 12:02

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	15.75	20

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d				
Injection Date:	23-Sep-2020 12:02:23	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2830555
H (Peak Height) = 14435033

%R = 20 <= 25
Passed

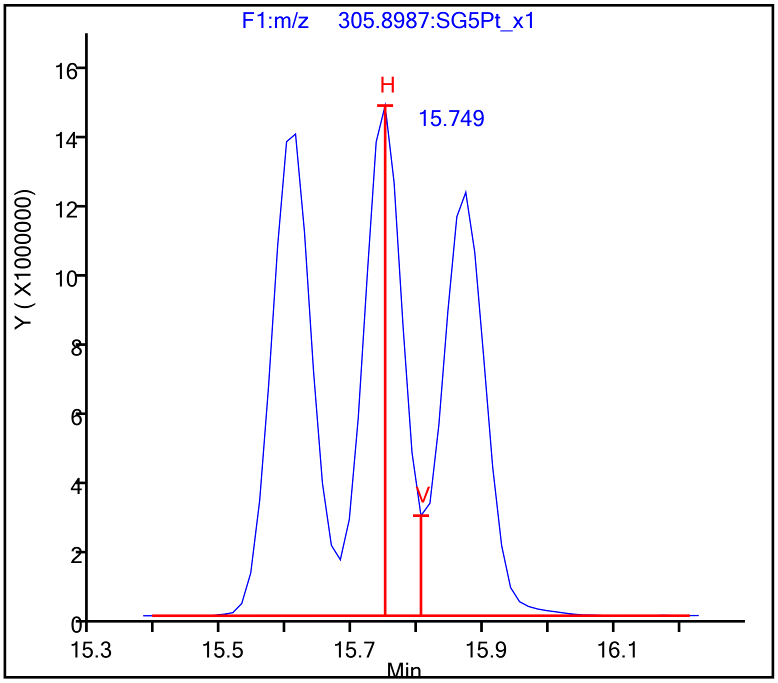

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d				
Injection Date:	23-Sep-2020 12:02:23	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID (1): WDM 320-415261/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/23/2020 21:20

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.46	18

FORM VI 1613B

Report Date: 24-Sep-2020 10:48:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d				
Injection Date:	23-Sep-2020 21:20:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 17464

H (Peak Height) = 96278

%R = 18 <= 25

Passed

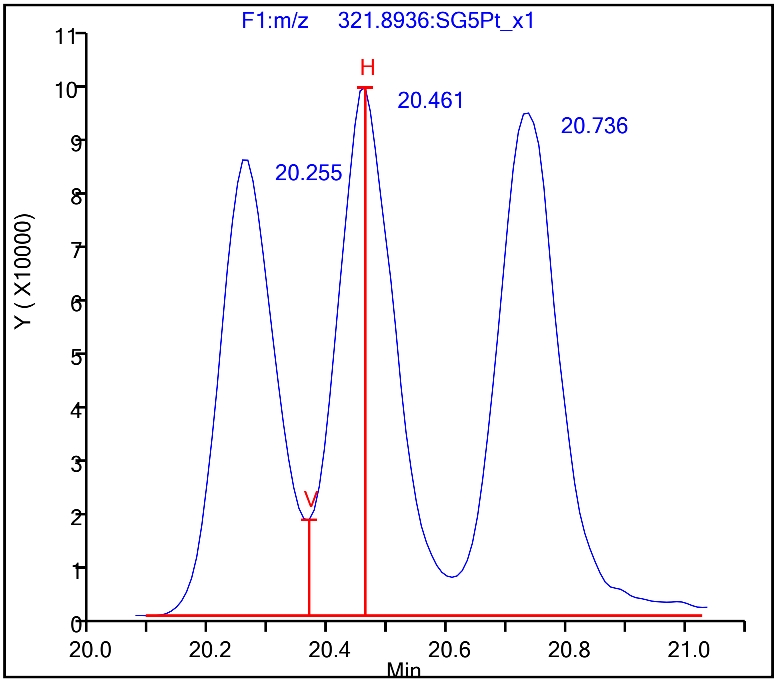

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID: ICV 320-390253/9 Calibration Date: 06/27/2020 19:24

Instrument ID: 10D5 Calib Start Date: 06/27/2020 14:42

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/27/2020 17:43

Lab File ID: 27JN20A10D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9104	0.9329		41.0	40.0	102	70-130
2,3,7,8-TCDD	AveID	1.074	1.143		42.6	40.0	106	70-130
1,2,3,7,8-PeCDF	AveID	0.9938	0.9927		200	200	100	70-130
2,3,4,7,8-PeCDF	AveID	0.8117	0.9105		224	200	112	70-130
1,2,3,7,8-PeCDD	AveID	1.018	0.999		196	200	98	70-130
1,2,3,4,7,8-HxCDF	AveID	0.8061	0.8457		210	200	105	70-130
1,2,3,6,7,8-HxCDF	AveID	0.9818	1.070		218	200	109	70-130
2,3,4,6,7,8-HxCDF	AveID	1.038	1.117		215	200	108	70-130
1,2,3,4,7,8-HxCDD	AveID	0.8202	0.8568		209	200	104	70-130
1,2,3,6,7,8-HxCDD	AveID	0.9367	1.016		217	200	108	70-130
1,2,3,7,8,9-HxCDD	AveID	0.9905	1.038		210	200	105	70-130
1,2,3,7,8,9-HxCDF	AveID	1.032	1.055		205	200	102	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.453	1.530		211	200	105	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.054	1.115		211	200	106	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.059	1.093		207	200	103	70-130
OCDD	AveID	1.150	1.213		422	400	106	70-130
OCDF	AveID	1.296	1.345		415	400	104	70-130
13C-2,3,7,8-TCDF	Ave	1.373	1.343		97.8	100	98	71-140
13C-2,3,7,8-TCDD	Ave	1.019	1.011		99.2	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.143	1.122		98.2	100	98	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.400	1.387		99.1	100	99	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8232	0.8094		98.3	100	98	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.139	1.099		96.5	100	97	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.080	0.9919		91.8	100	92	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9494	0.8976		94.5	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.9356	0.8970		95.9	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	0.9852		94.6	100	95	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8670	0.8457		97.5	100	98	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7899	0.7719		97.7	100	98	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7637	0.7479		97.9	100	98	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9093	0.8979		98.7	100	99	77-129
13C-OCDD	Ave	0.6377	0.6642		208	200	104	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.018	1.018		40.0	40.0	100	79-127

Report Date: 28-Jun-2020 13:19:38 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 27-Jun-2020 19:24:02 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 062720 ICV HRDXNIC_00045
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:19:35 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:19:29

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	39980836	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	53691088	0.77	1.3726	97.8	97.8	0.1864	0.1864	97.84	
2,3,7,8-TCDF	17.219	20035915	0.75	0.9104	41.0	41.0	0.1026	0.1026	102	
A Non-2,3,7,8-sub-TCDF	16.916						0.1026	0.1026		Rn
S Total TCDF					41.0	41.0	0.1026	0.1026		
D 13C-2,3,7,8-TCDD	17.899	40402335	0.79	1.0192	99.2	99.2	0.2917	0.2917	99.15	
2,3,7,8-TCDD	17.914	18472887	0.76	1.0745	42.6	42.6	0.0830	0.0830	106	
$ 37Cl4-2,3,7,8-TCDD	17.914	16278432		1.0176	40.0	40.0	0.0508	0.0508	100	
A Non-2,3,7,8-sub-TCDD	17.354	265730	0.76	1.0745	0.6121	0.6121	0.0830	0.6121		
S Total TCDD					43.2	43.2	0.0830	0.0830		
D 13C-1,2,3,7,8-PeCDF	22.156	44855811	1.58	1.1429	98.2	98.2	0.3536	0.3536	98.17	
1,2,3,7,8-PeCDF	22.170	89058870	1.56	0.9938	199.8	199.8	1.136	1.136	99.89	
D 13C-2,3,4,7,8-PeCDF	23.479	55440558	1.61	1.3997	99.1	99.1	0.2887	0.2887	99.07	
2,3,4,7,8-PeCDF	23.506	100959270	1.54	0.8117	224.3	224.3	1.206	1.206	112	
A F1 PeCDFs	19.698						0.0272	0.0272		
A Non-2,3,7,8-sub-PeCDF	22.798	2481708	1.47	0.9028	5.482	5.482	1.162	5.482		
S Total PeCDF					429.6	429.6	1.171	1.171		
D 13C-1,2,3,7,8-PeCDD	24.188	32361061	1.59	0.8232	98.3	98.3	0.1463	0.1463	98.33	
1,2,3,7,8-PeCDD	24.215	64639955	1.58	1.0181	196.2	196.2	0.3406	0.3406	98.10	
A Non-2,3,7,8-sub-PeCDD	23.104						0.3406	0.3406		
S Total PeCDD					196.2	196.2	0.3406	0.3406		
D 13C-1,2,3,4,7,8-HxCDF	30.319	39285418	0.50	1.1388	96.5	96.5	0.7552	0.7552	96.53	
1,2,3,4,7,8-HxCDF	30.332	66450707	1.19	0.8061	209.8	209.8	2.274	2.274	105	
D 13C-1,2,3,6,7,8-HxCDF	30.519	35447677	0.50	1.0803	91.8	91.8	0.7961	0.7961	91.82	
1,2,3,6,7,8-HxCDF	30.532	75847150	1.20	0.9818	217.9	217.9	2.145	2.145	109	
D 13C-2,3,4,6,7,8-HxCDF	31.384	32078109	0.51	0.9494	94.5	94.5	0.9059	0.9059	94.55	
2,3,4,6,7,8-HxCDF	31.397	71688168	1.19	1.0382	215.3	215.3	1.645	1.645	108	
D 13C-1,2,3,7,8,9-HxCDF	32.209	30222131	0.49	0.8670	97.5	97.5	0.992	0.992	97.54	
1,2,3,7,8,9-HxCDF	32.222	63786157	1.23	1.0321	204.5	204.5	1.788	1.788	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	29.979						1.931	1.931		
S Total HxCDF					847.5	847.5	1.963	1.963		
* 13C-1,2,3,7,8,9-HxCDD	32.023	35737073	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.583	32056230	1.26	0.9356	95.9	95.9	0.5709	0.5709	95.87	
1,2,3,4,7,8-HxCDD	31.597	54933790	1.23	0.8202	208.9	208.9	0.9898	0.9898	104	
D 13C-1,2,3,6,7,8-HxCDD	31.690	35206608	1.28	1.0416	94.6	94.6	0.5128	0.5128	94.58	
1,2,3,6,7,8-HxCDD	31.703	71540105	1.24	0.9367	216.9	216.9	0.9669	0.9669	108	
1,2,3,7,8,9-HxCDD	32.036	69847050	1.23	0.9905	209.7	209.7	0.8645	0.8645	105	
A Non-2,3,7,8-sub-HxCDD	30.652						0.9350	0.9350		
S Total HxCDD					635.5	635.5	0.9404	0.9404		
D 13C-1,2,3,4,6,7,8-HpCDF	33.676	27585908	0.44	0.7899	97.7	97.7	2.561	2.561	97.72	
1,2,3,4,6,7,8-HpCDF	33.676	84389092	1.03	1.4527	210.6	210.6	3.859	3.859	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.746	32087666	0.43	0.9093	98.7	98.7	2.225	2.225	98.75	
1,2,3,4,7,8,9-HpCDF	34.758	70141199	1.03	1.0585	206.5	206.5	5.297	5.297	103	
A Non-2,3,7,8-sub-HpCDF	34.211						4.465	4.465		
S Total HpCDF					417.1	417.1	4.578	4.578		
D 13C-1,2,3,4,6,7,8-HpCDD	34.454	26726357	1.05	0.7637	97.9	97.9	1.011	1.011	97.92	
1,2,3,4,6,7,8-HpCDD	34.466	59574143	1.04	1.0540	211.5	211.5	1.906	1.906	106	
A Non-2,3,7,8-sub-HpCDD	35.164						1.906	1.906		
S Total HpCDD					211.5	211.5	1.906	1.906		
D 13C-OCDD	36.785	47475510	0.91	0.6377	208.3	208.3	0.4298	0.4298	104	
OCDF	36.881	127724196	0.89	1.2965	415.0	415.0	0.8160	0.8160	104	
OCDD	36.797	115213567	0.90	1.1499	422.1	422.1	1.065	1.065	106	

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:19:38 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 27-Jun-2020 19:24:02 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 062720 ICV HRDXNIC_00045
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:19:35 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: shardaa Date: 28-Jun-2020 13:19:29

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.702	0		17647142	4255580	5552	13880	766		
333.9339	17.702	17.702	0		22333694	5323058	5840	14600	911	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.971	23364296	5210218	5285	13212	986		
317.9389	17.188	17.203	-1	0.971	30326792	6686043	4518	11295	1480	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.219	0	1.002	8602902	1907347	1972	4930	967		
305.8987	17.203	17.219	-1	1.001	11433013	2553723	2474	6185	1032	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.840	16.916	-5	0.980	39448	9898	1972	4930	5		
305.8987	16.840	16.916	-5	0.980	64987	15648	2474	6185	6	0.61(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.899	0	1.011	17807728	3742366	5552	13880	674		
333.9339	17.899	17.899	0	1.011	22594607	4670874	5840	14600	800	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.914	0	1.001	7997083	1751174	1643	4107	1066		
321.8936	17.914	17.914	0	1.001	10475804	2269085	1360	3400	1668	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.914	0	1.012	16278432	3556881	1981	4952	1795		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.808	17.354	27	0.995	114330	34901	1643	4107	21		
321.8936	17.808	17.354	27	0.995	151400	46912	1360	3400	34	0.76(0.65-0.89)	

Report Date: 28-Jun-2020 13:19:38 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.156	22.156	0	1.252	27458971	4455587	9595	23987	464		
353.8970	22.156	22.156	0	1.252	17396840	2871351	5888	14720	488	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.170	22.170	0	1.001	54233640	8599057	19969	49922	431		
341.8567	22.170	22.170	0	1.001	34825230	5570097	13108	32770	425	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.479	23.465	1	1.326	34181764	5236706	9595	23987	546		
353.8970	23.479	23.465	1	1.326	21258794	3208160	5888	14720	545	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.506	23.493	1	1.001	61193561	9252669	19969	49922	463		
341.8567	23.506	23.493	1	1.001	39765709	5981010	13108	32770	456	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.698						315	787			
341.8567	19.698						459	1147			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.688	22.798	-7	1.024	1476044	201143	19969	49922	10		
341.8567	22.702	22.798	-6	1.025	1005664	133406	13108	32770	10	1.47(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.188	24.188	0	1.366	19848492	2754901	2921	7302	943		
369.8919	24.188	24.188	0	1.366	12512569	1776087	1694	4235	1048	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.215	24.202	1	1.001	39559122	5515149	3642	9105	1514		
357.8516	24.215	24.202	1	1.001	25080833	3504508	2643	6607	1326	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.104						3642	9105			
357.8516	23.104						2643	6607			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.319	30.306	1	0.947	13100371	2082854	8489	21222	245		
385.8610	30.319	30.306	1	0.947	26185047	4074348	15392	38480	265	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.332	30.319	1	1.000	36138882	5846691	24532	61330	238		
375.8178	30.332	30.319	1	1.000	30311825	4889952	20620	51550	237	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.519	30.505	1	0.953	11840113	1794263	8489	21222	211		
385.8610	30.505	30.505	0	0.953	23607564	3564460	15392	38480	232	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.532	30.519	1	1.000	41377816	6357241	24532	61330	259		
375.8178	30.532	30.519	1	1.000	34469334	5316467	20620	51550	258	1.20(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.384	31.371	1	0.980	10791035	2238150	8489	21222	264		
385.8610	31.384	31.371	1	0.980	21287074	4371445	15392	38480	284	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.397	31.384	1	1.000	38957044	8094217	24532	61330	330		
375.8178	31.397	31.384	1	1.000	32731124	6816856	20620	51550	331	1.19(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.209	32.209	0	1.006	9941714	2026925	8489	21222	239		
385.8610	32.209	32.209	0	1.006	20280417	4090632	15392	38480	266	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.222	32.222	0	1.000	35144733	7039143	24532	61330	287		
375.8178	32.222	32.222	0	1.000	28641424	5911805	20620	51550	287	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.979						24532	61330			
375.8178	29.979						20620	51550			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.023	32.023	0		19992280	3854712	7510	18775	513		
403.8529	32.023	32.023	0		15744793	3086905	7321	18302	422	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.583	31.570	1	0.986	17875605	4438012	7510	18775	591		
403.8529	31.583	31.570	1	0.986	14180625	3481069	7321	18302	475	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.597	31.583	1	1.000	30285077	7397336	14558	36395	508		
391.8127	31.597	31.583	1	1.000	24648713	5996888	11160	27900	537	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.690	31.677	1	0.990	19769102	3992027	7510	18775	532		
403.8529	31.690	31.677	1	0.990	15437506	3107085	7321	18302	424	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.703	31.690	1	1.000	39538678	8085661	14558	36395	555		
391.8127	31.703	31.690	1	1.000	32001427	6668710	11160	27900	598	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.036	32.036	0	1.014	38499859	7593642	14558	36395	522		
391.8127	32.036	32.036	0	1.014	31347191	6295810	11160	27900	564	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.652						14558	36395			
391.8127	30.652						11160	27900			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.676	33.665	1	1.052	8474748	2089545	17079	42697	122		
419.8220	33.676	33.665	1	1.052	19111160	4685350	39093	97732	120	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.676	33.665	1	1.000	42837280	10467305	77459	193647	135		
409.7789	33.676	33.665	1	1.000	41551812	10279478	74458	186145	138	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.746	34.734	1	1.085	9694390	2054030	17079	42697	120		
419.8220	34.746	34.734	1	1.085	22393276	4719072	39093	97732	121	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.758	34.734	1	1.000	35592208	7424972	77459	193647	96		
409.7789	34.746	34.734	1	1.000	34548991	7187804	74458	186145	97	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.211						77459	193647			
409.7789	34.211						74458	186145			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.454	34.442	1	1.076	13709936	2910092	11770	29425	247		
437.8140	34.454	34.442	1	1.076	13016421	2786732	9676	24190	288	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.466	34.454	1	1.000	30425229	6544138	24680	61700	265		
425.7737	34.466	34.454	1	1.000	29148914	6321917	21101	52752	300	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.164						24680	61700			
425.7737	35.164						21101	52752			
13C-OCDD											
469.7779	36.785	36.773	1	1.149	22670475	3431032	3165	7912	1084		
471.7750	36.785	36.773	1	1.149	24805035	3755252	4446	11115	845	0.91(0.76-1.02)	
OCDF											
441.7428	36.881	36.869	1	1.003	60133170	10102377	7590	18975	1331		
443.7399	36.881	36.869	1	1.003	67591026	11272814	7615	19037	1480	0.89(0.76-1.02)	
OCDD											
457.7377	36.797	36.785	1	1.000	54489585	8293193	8686	21715	955		
459.7348	36.797	36.785	1	1.000	60723982	9195048	8923	22307	1030	0.90(0.76-1.02)	

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	27-Jun-2020 19:24:02	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	390253	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDD, RT: 17.354

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.074	D 13C-2,3,7,8-TCDD	100.000	40402335	8413240

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.074		100.000	40402335	8413240

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.808	114330	34901	151400	46912	0.6121	0.76	
Signal Totals:							
	114330	34901	151400	46912			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	265730	81813				0.76	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6121 = (265730 * 100.000) / (40402335 * 1.074)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 27-Jun-2020 19:24:02 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 390253 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-PeCDF, RT: 22.798

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994	D 13C-1,2,3,7,8-PeCDF	100.000	44855811	7326938
2,3,4,7,8-PeCDF	0.812	D 13C-2,3,4,7,8-PeCDF	100.000	55440558	8444866

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.903		100.000	50148184	7885902

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.688	1476044	201143	1005664	133406	5.48	1.47	
Signal Totals:							
	1476044	201143	1005664	133406			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2481708	334549				1.47	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.482 = (2481708 * 100.000) / (50148184 * 0.903)

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d
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Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

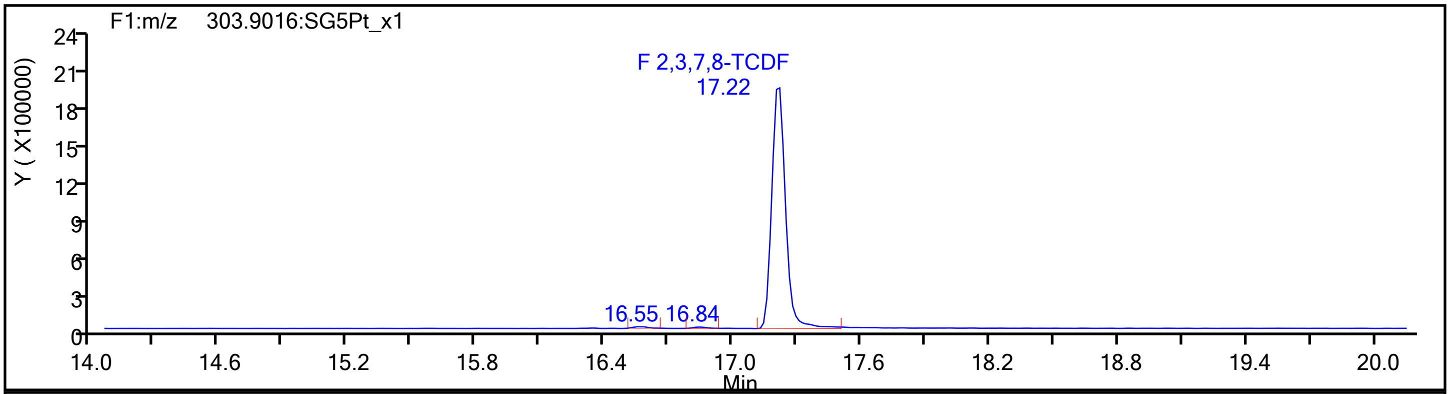

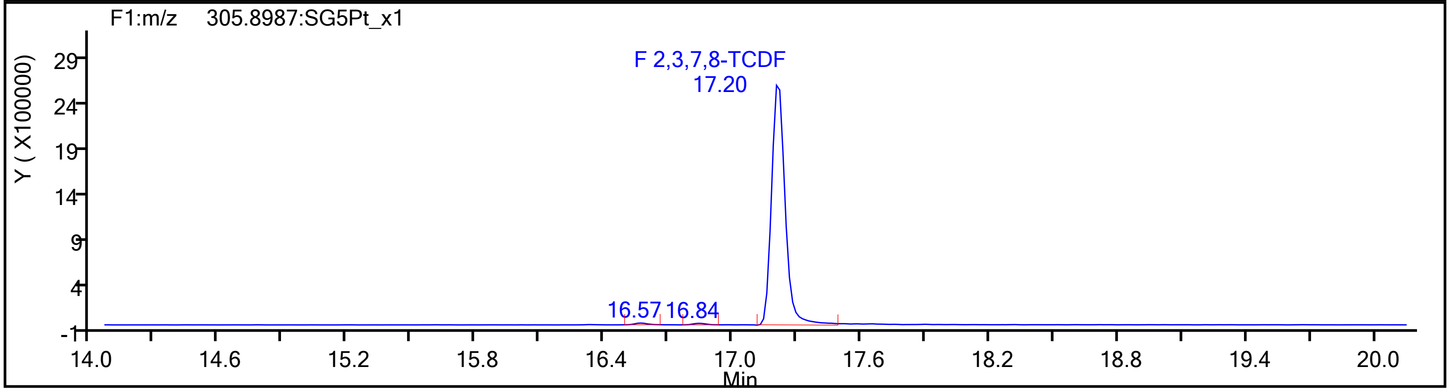

TCDF Standards

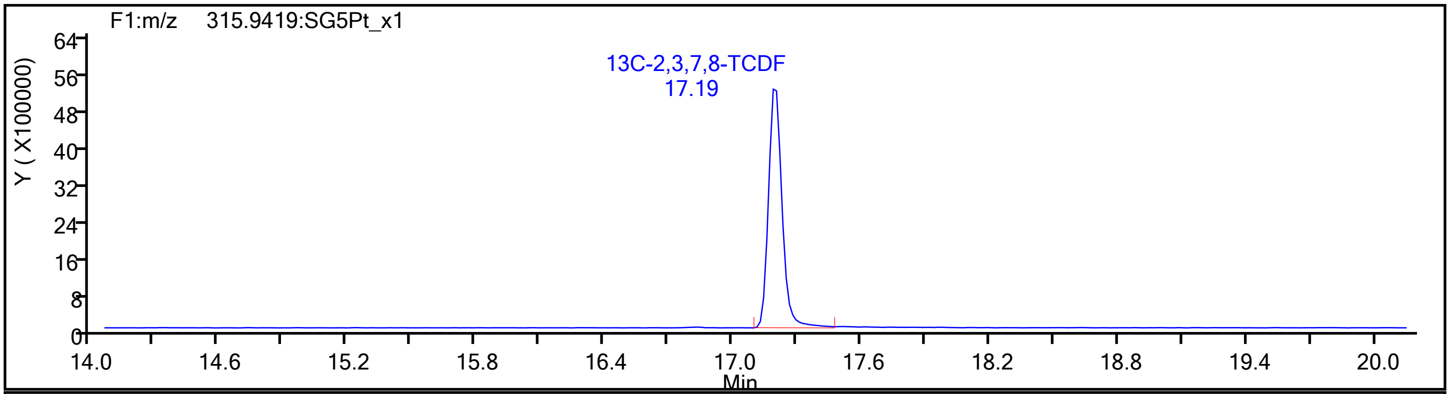

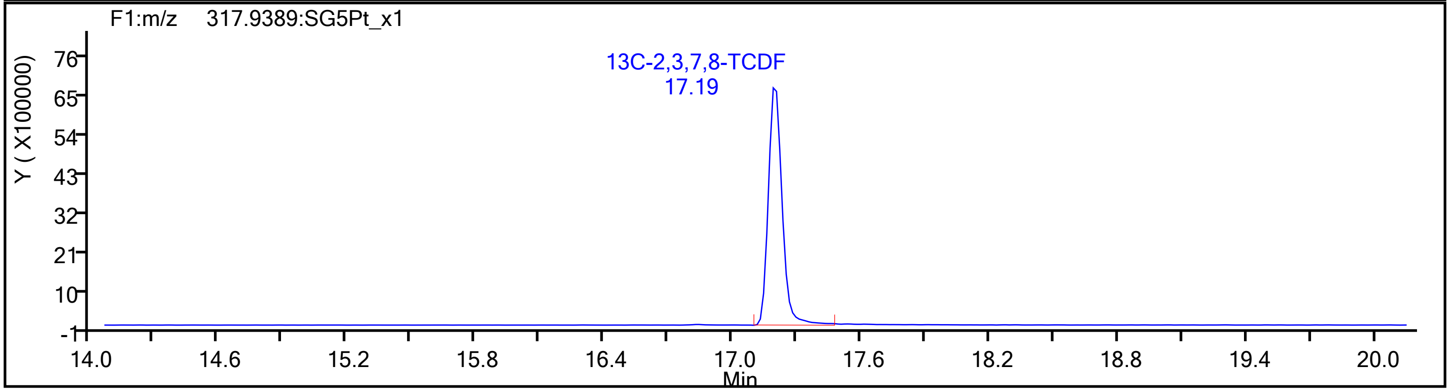

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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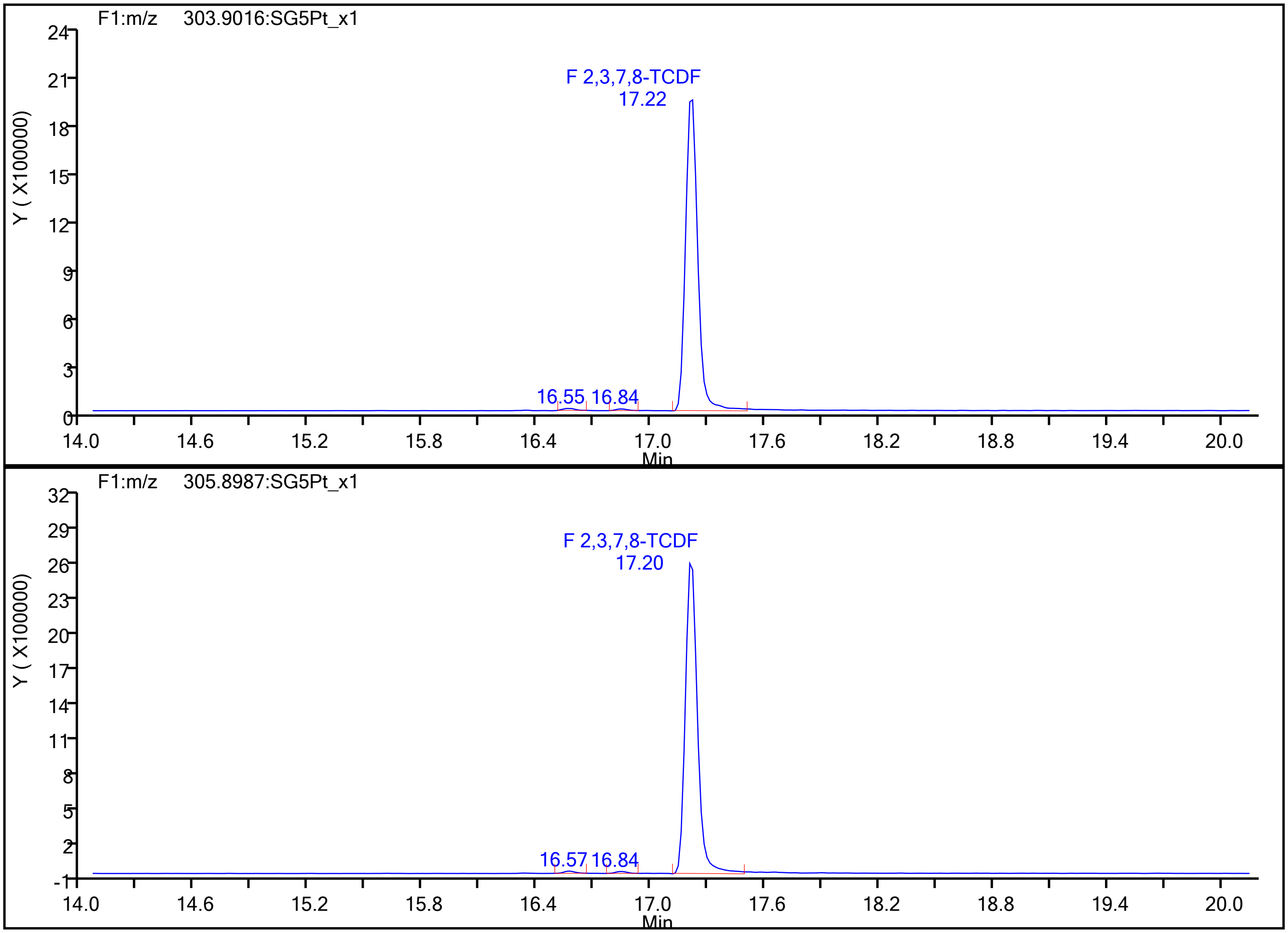

TCDF Interference Mass

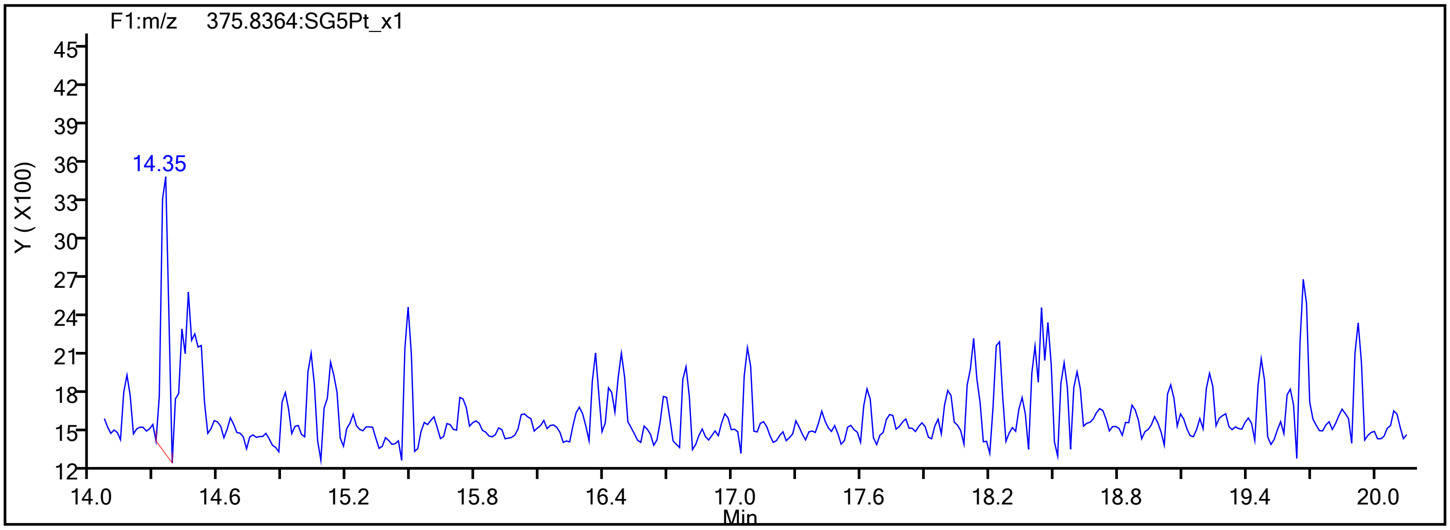

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

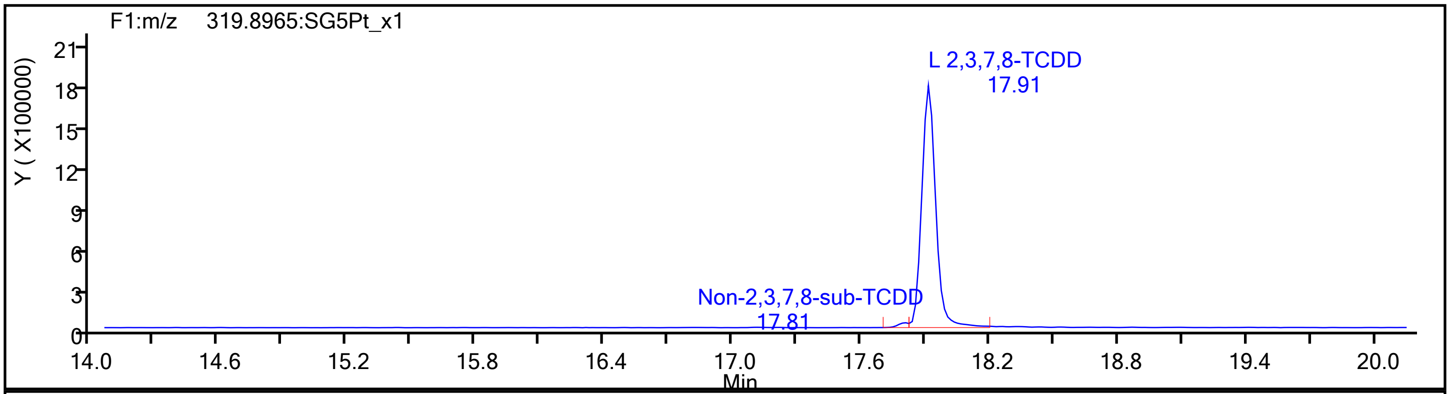

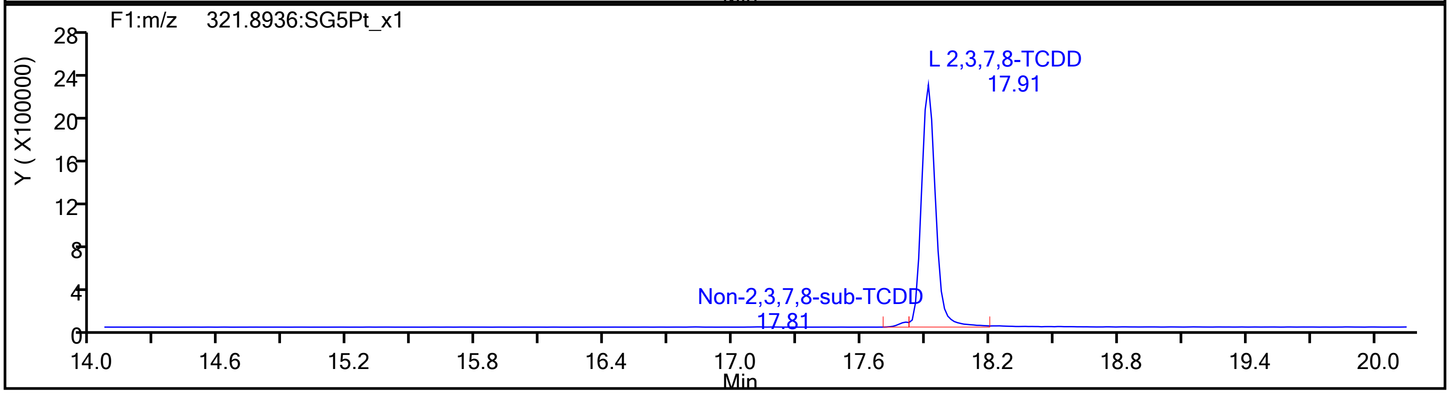

TCDD Standards

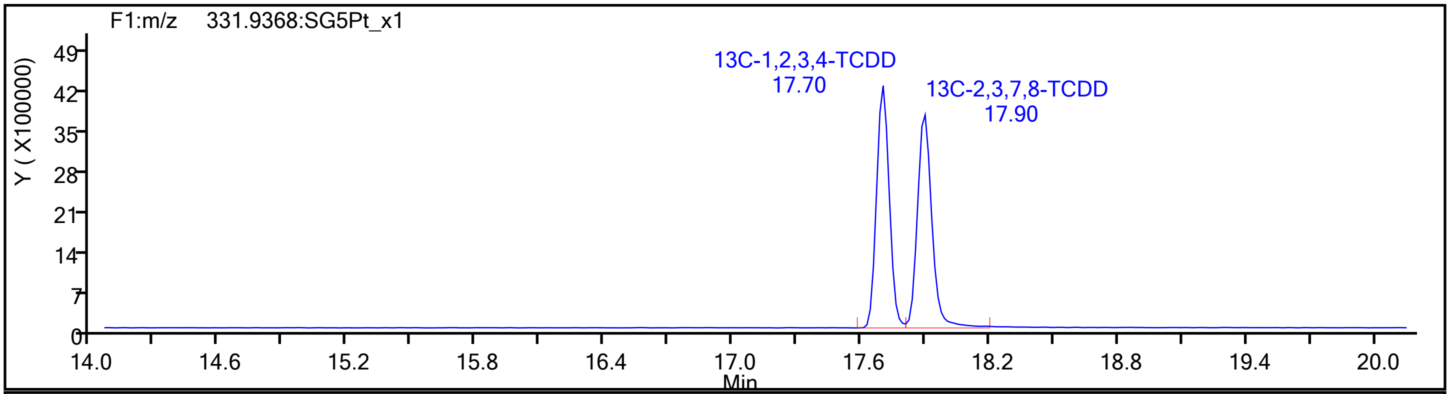

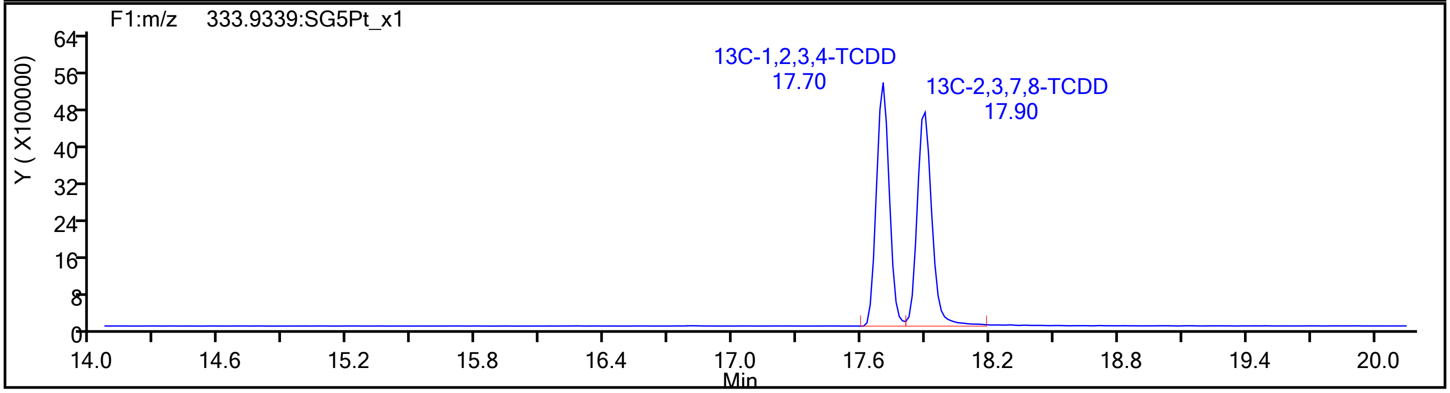

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

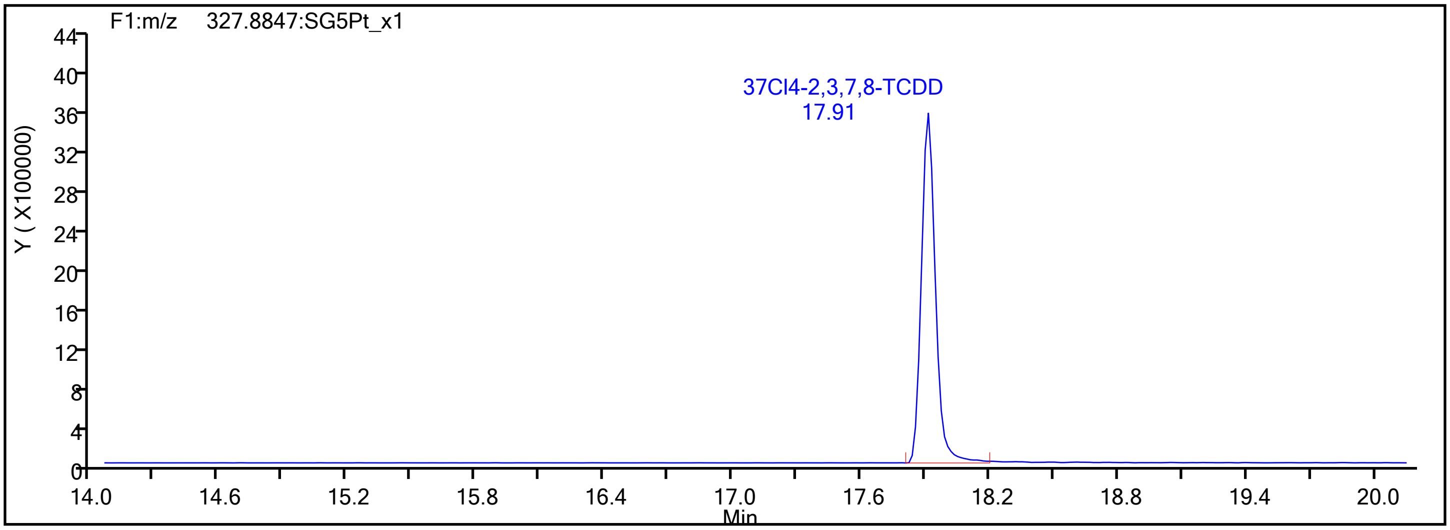

37Cl4-TCDD Standards

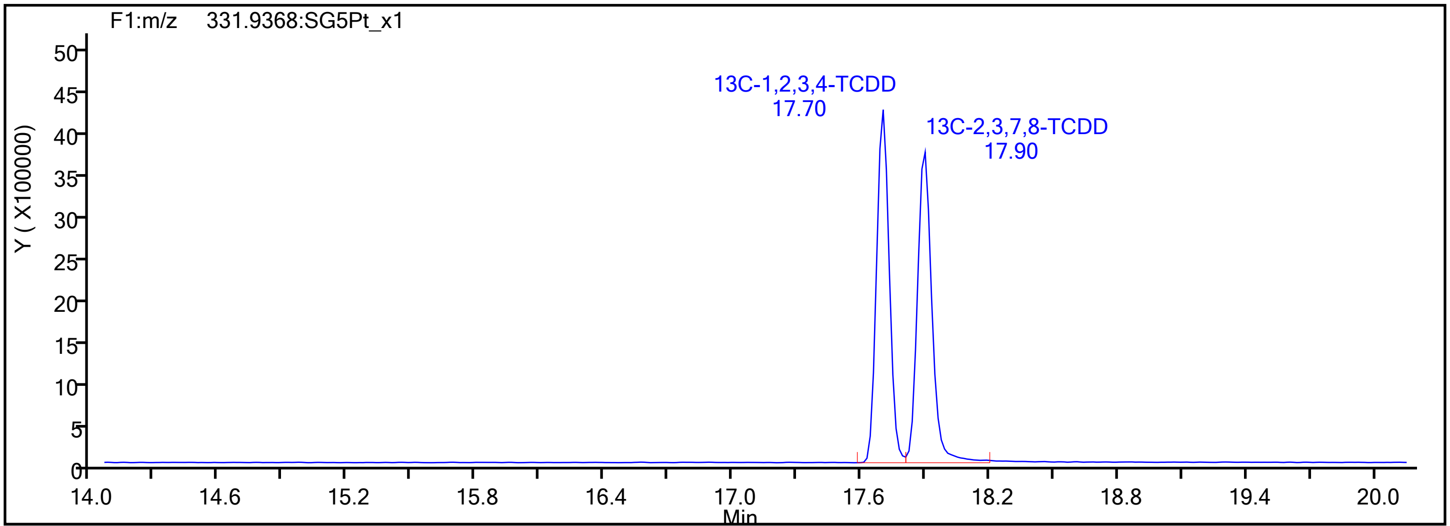

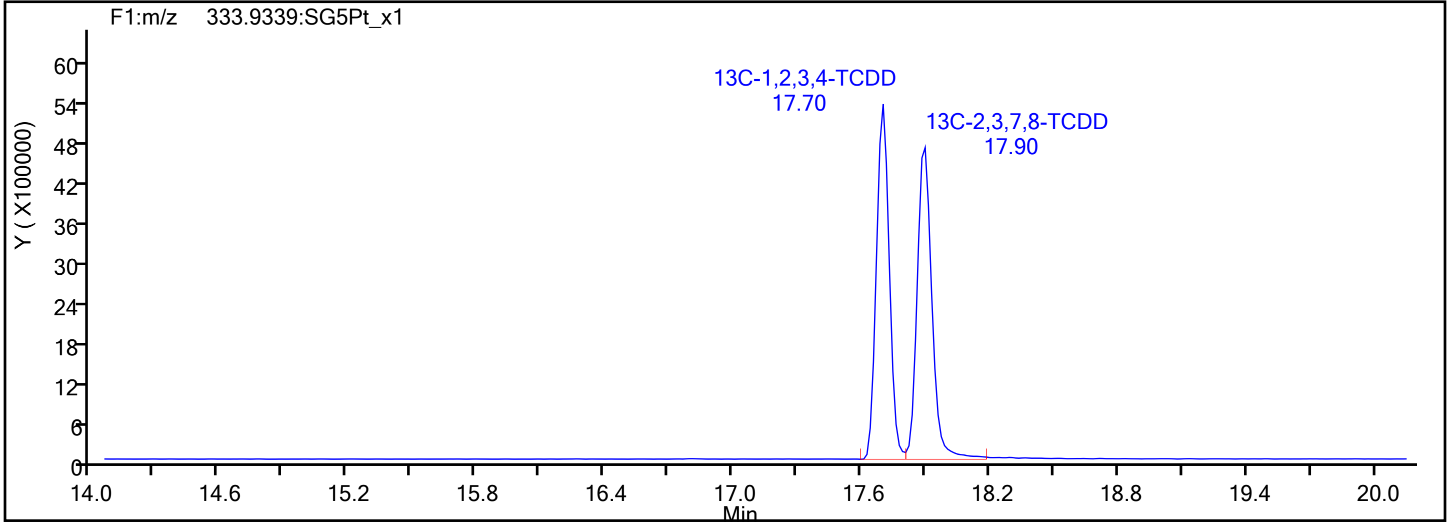

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

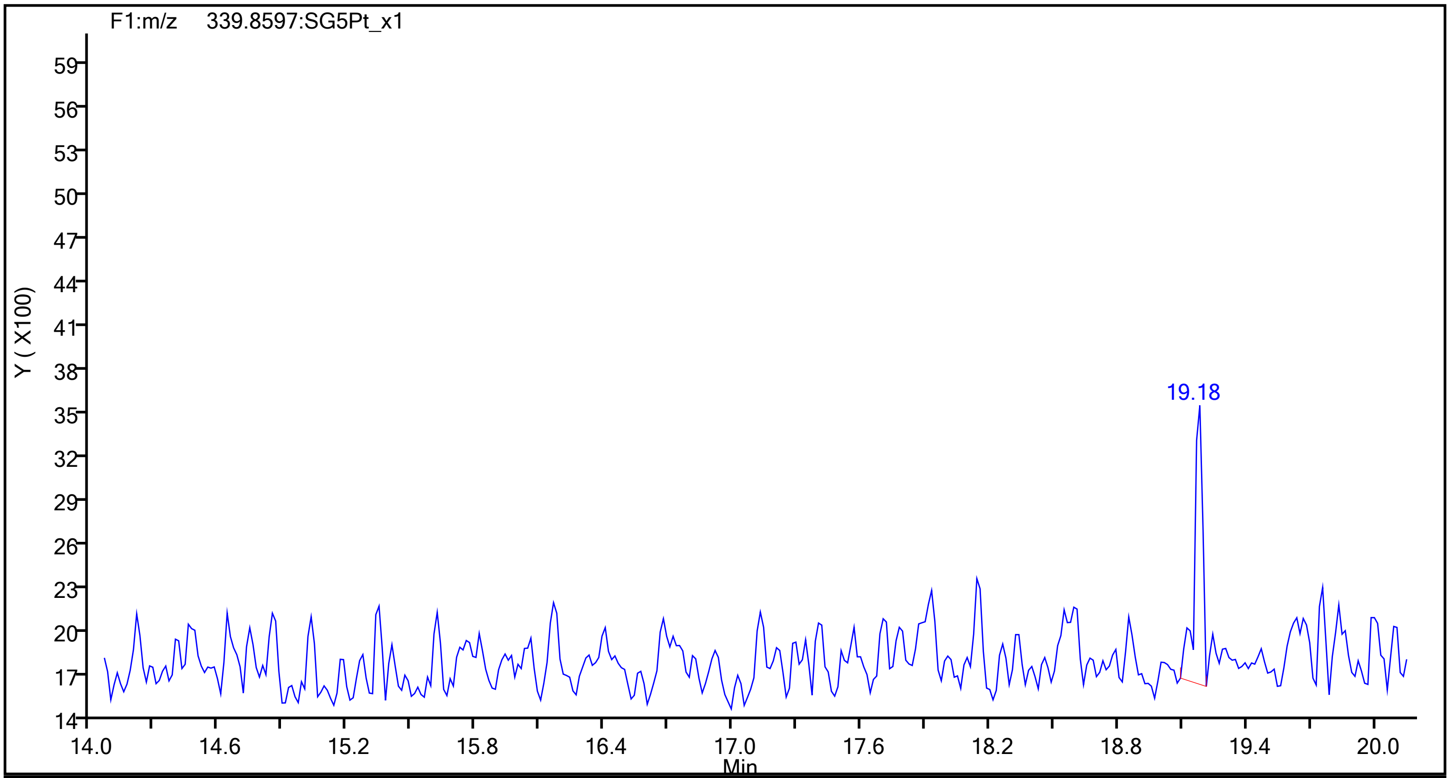

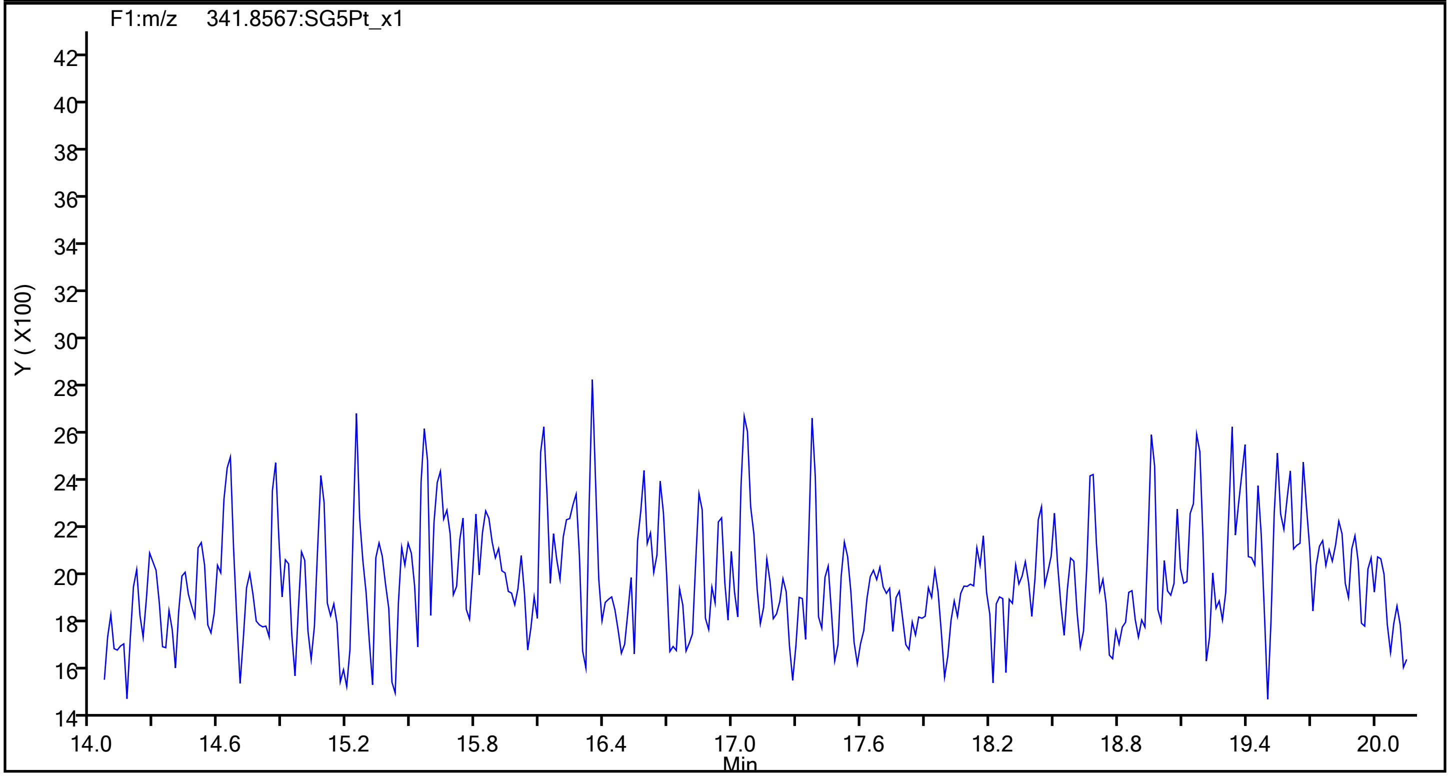

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

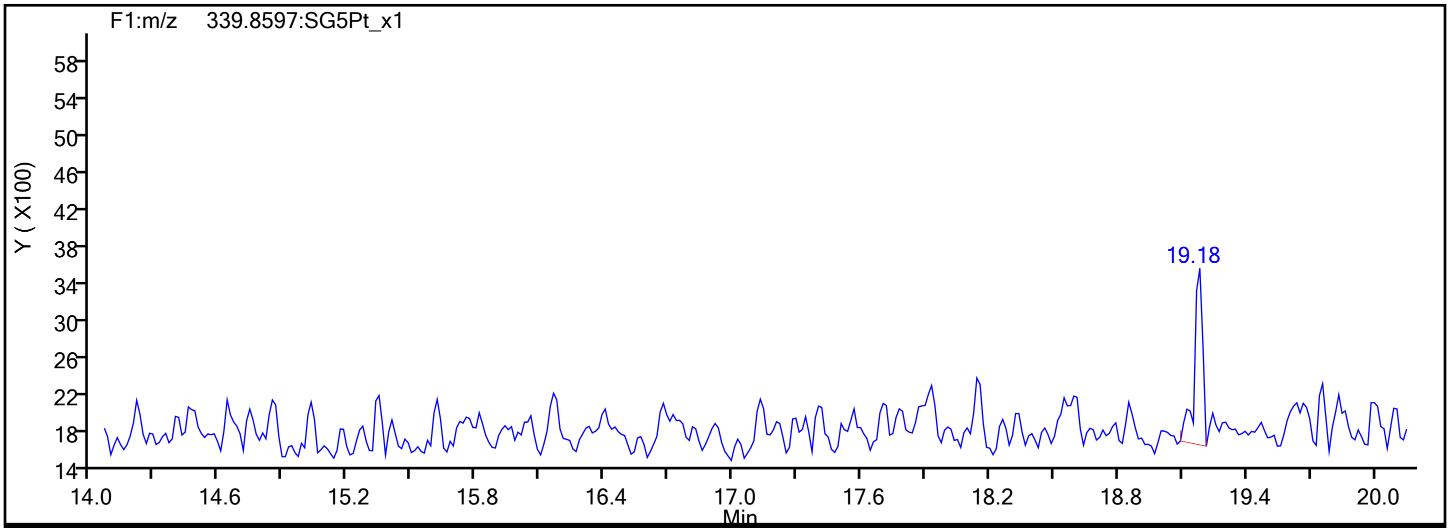

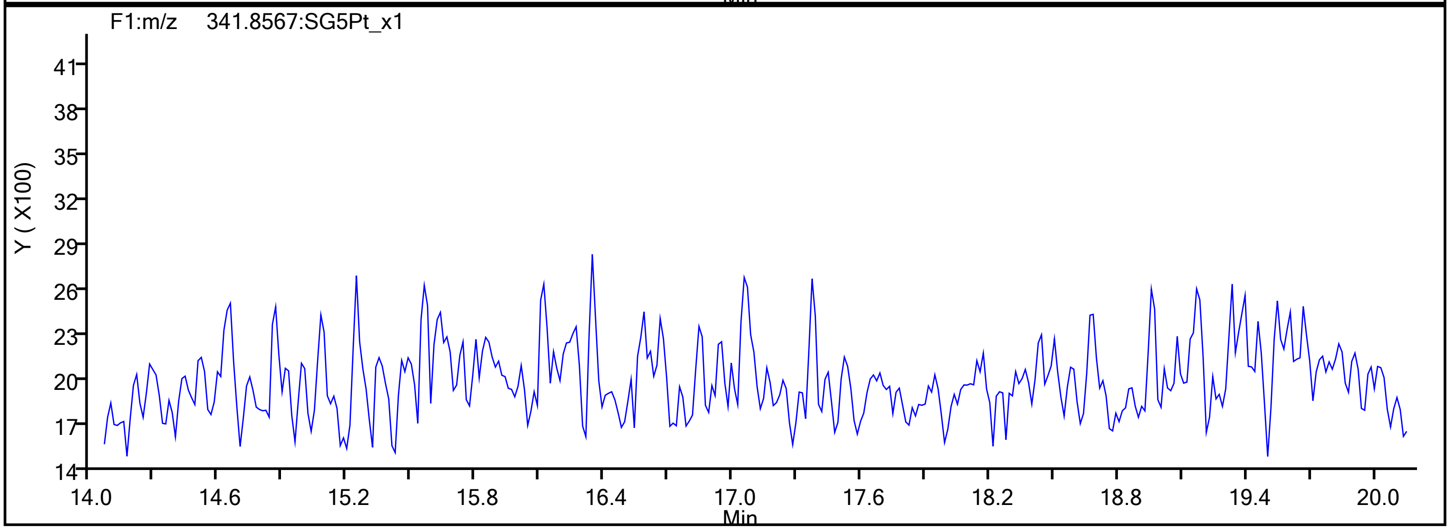

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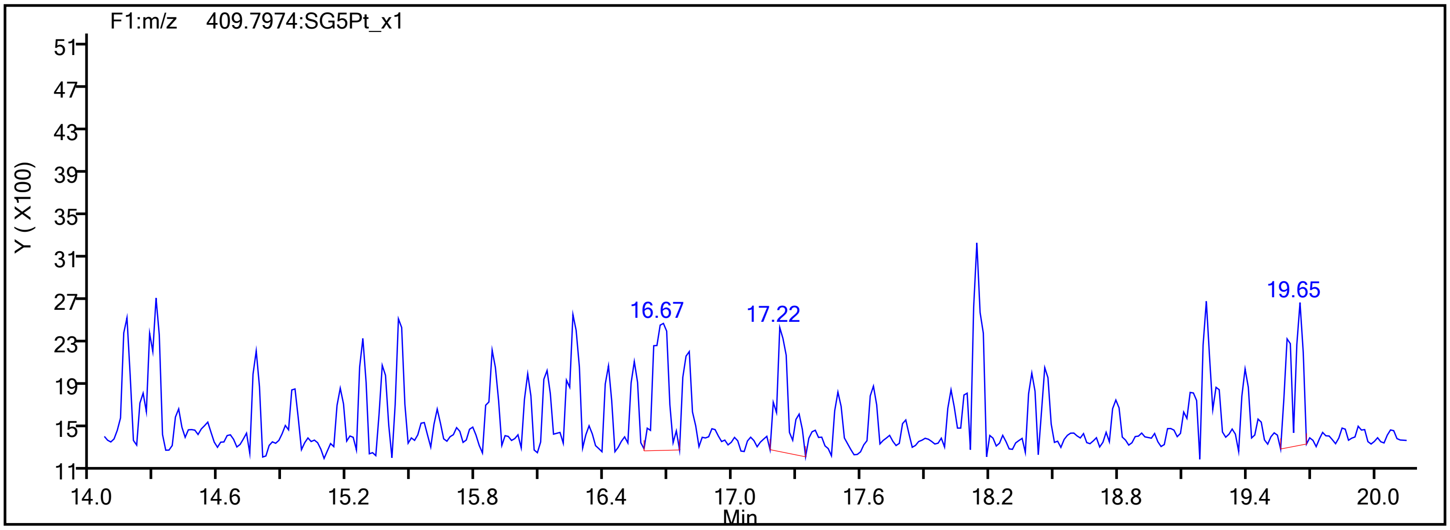

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Eurofins TestAmerica, Sacramento

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PeCDF

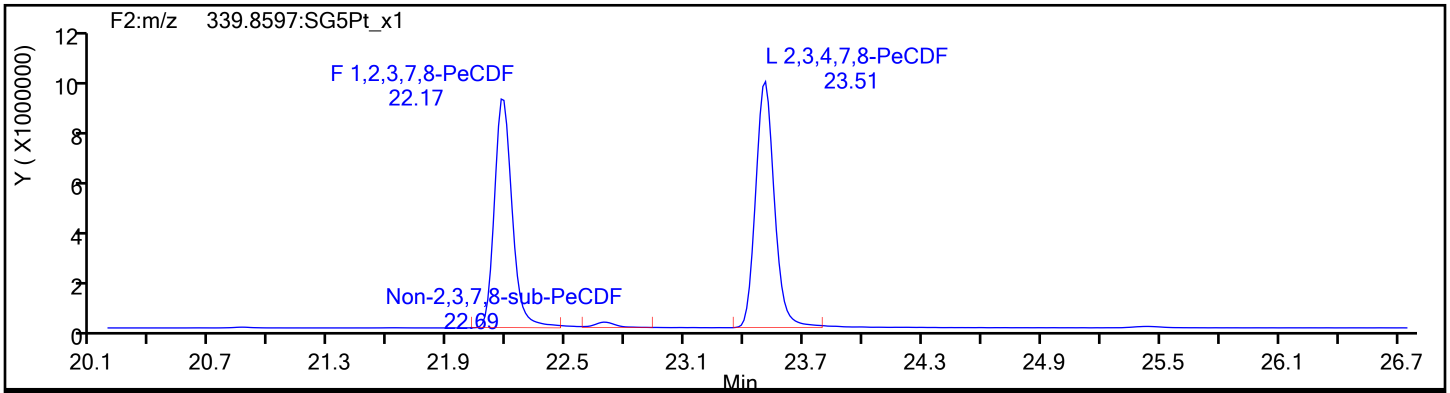

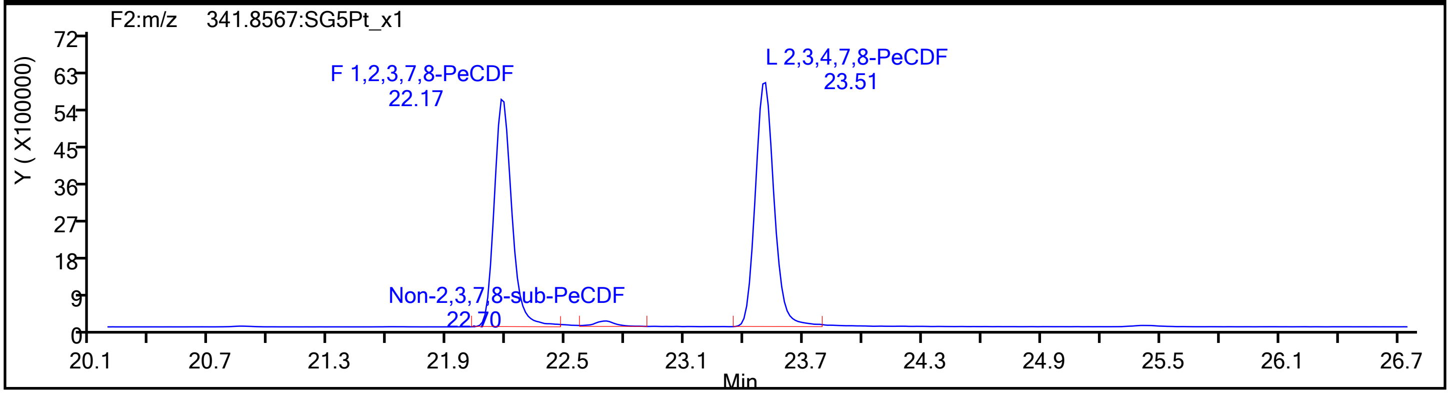

PeCDF Standards

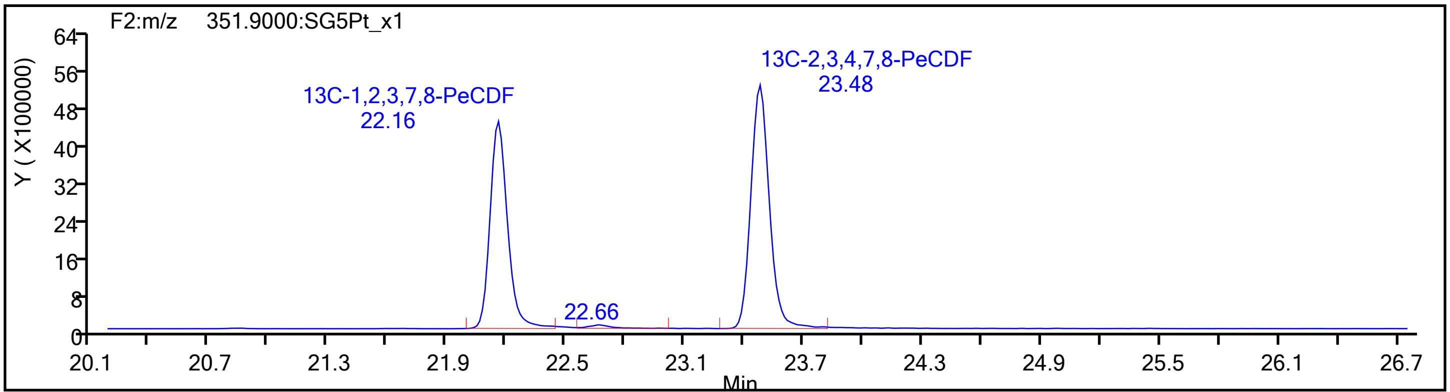

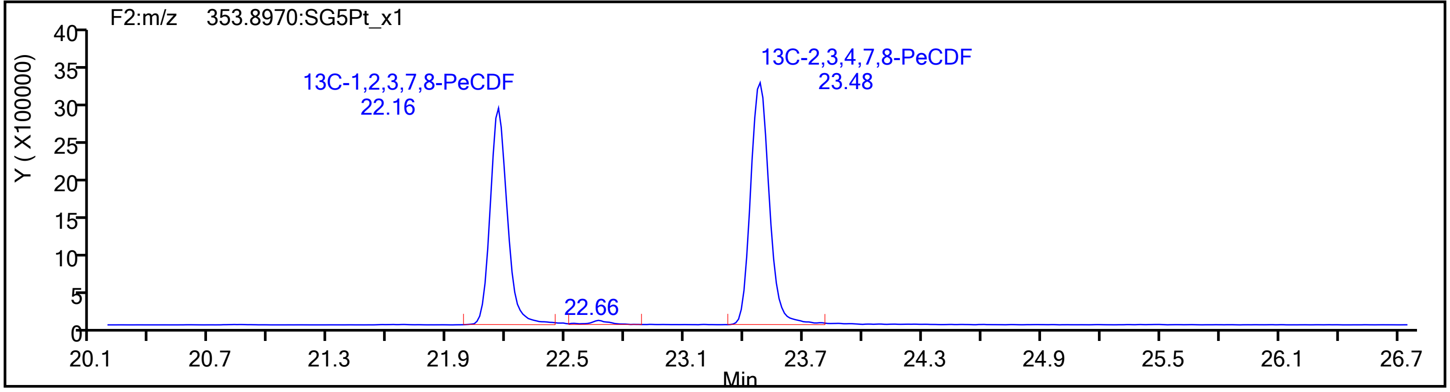

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Eurofins TestAmerica, Sacramento

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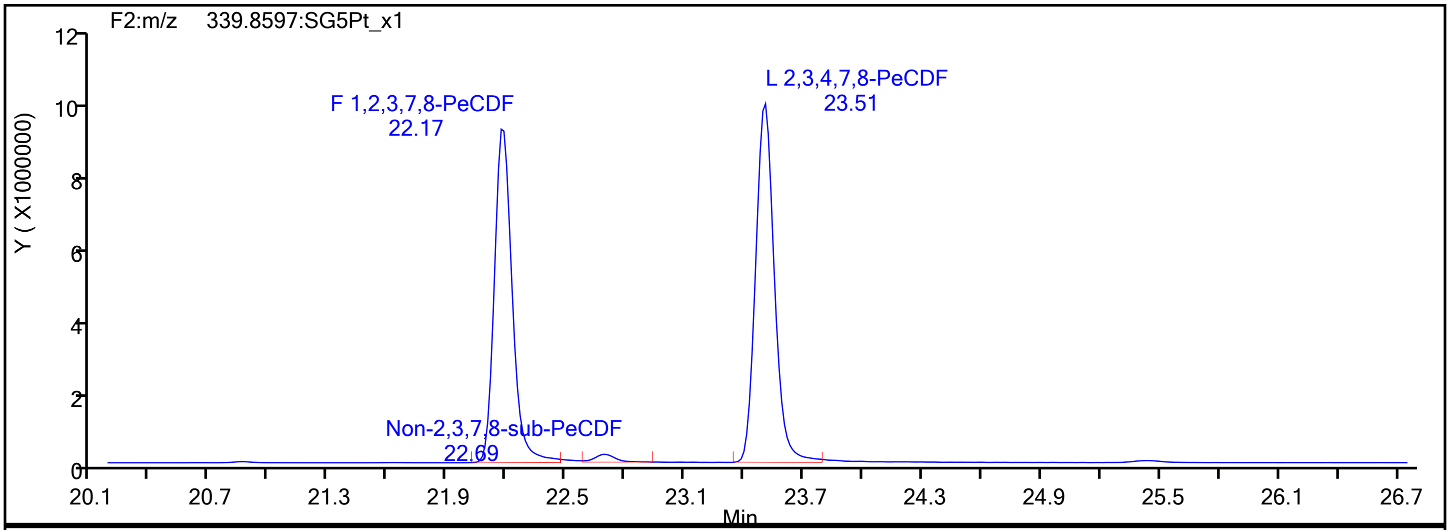

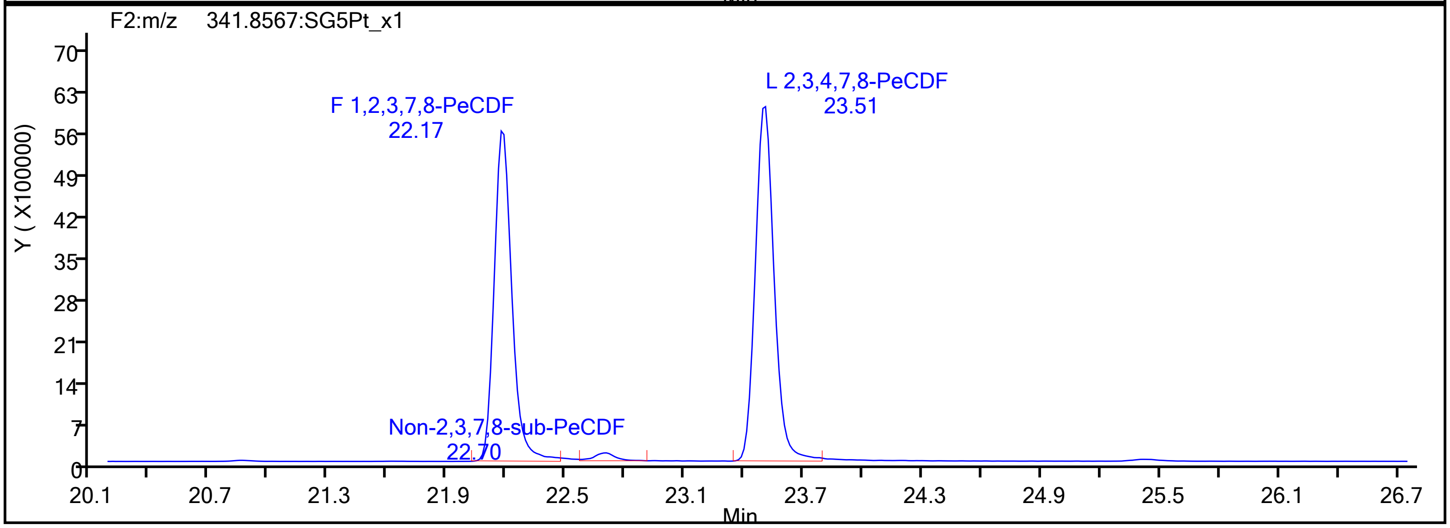

PeCDF Interference Mass

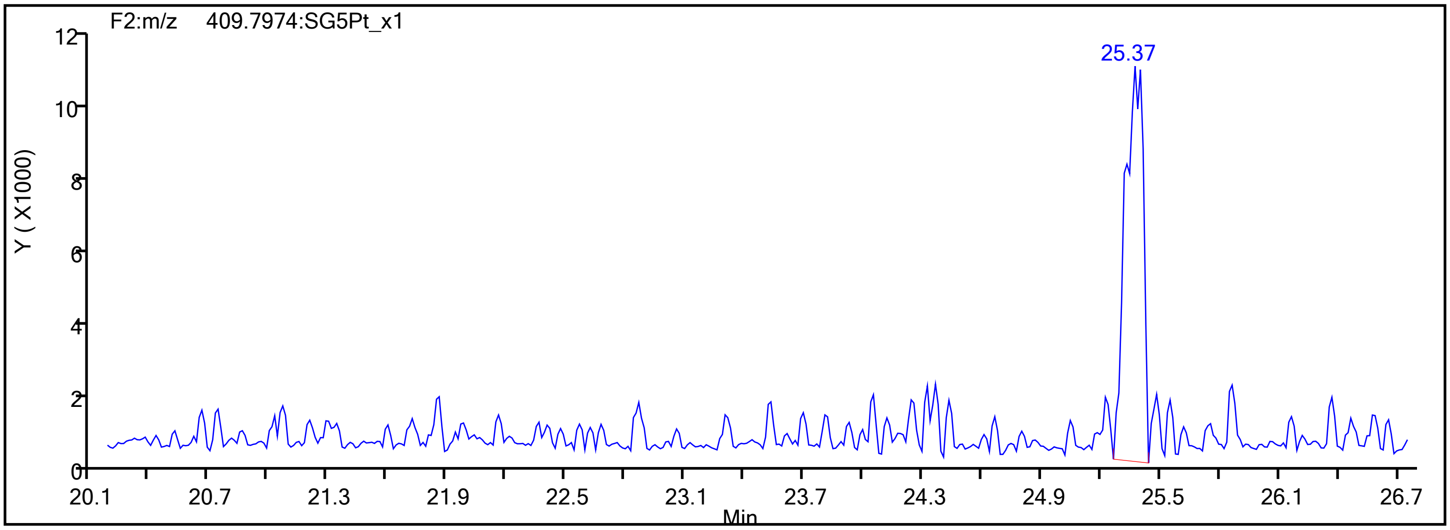

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PeCDD

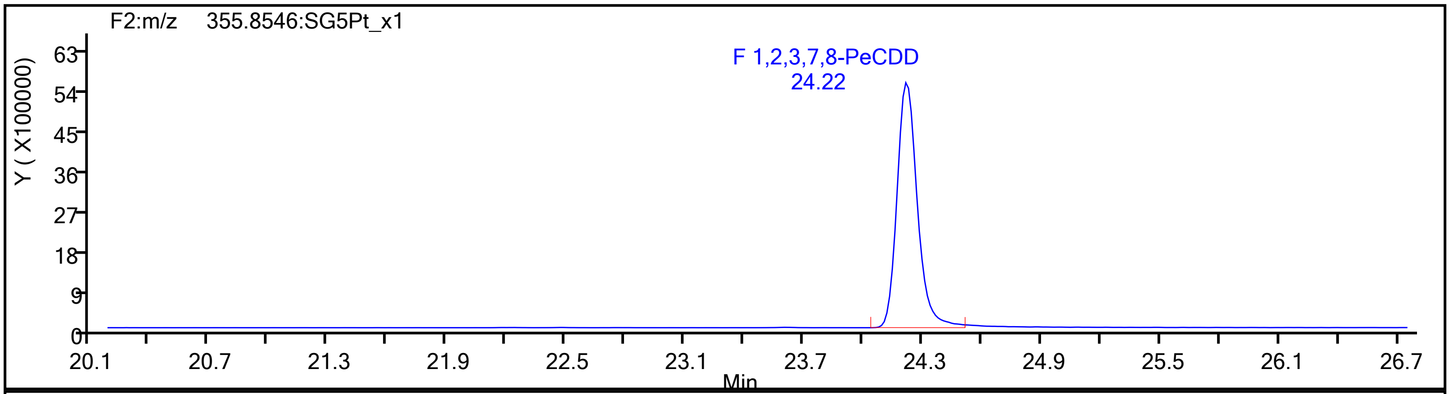

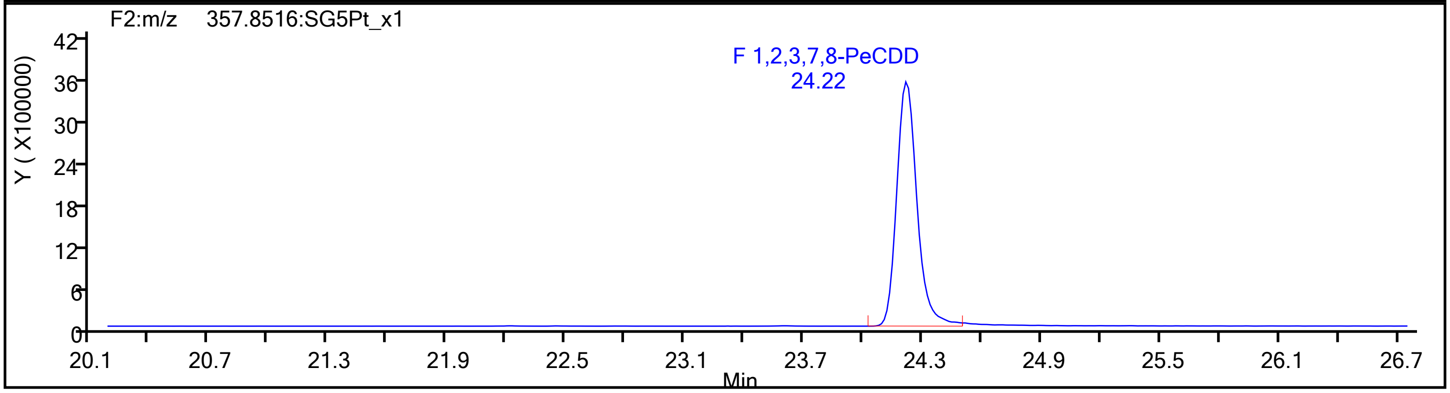

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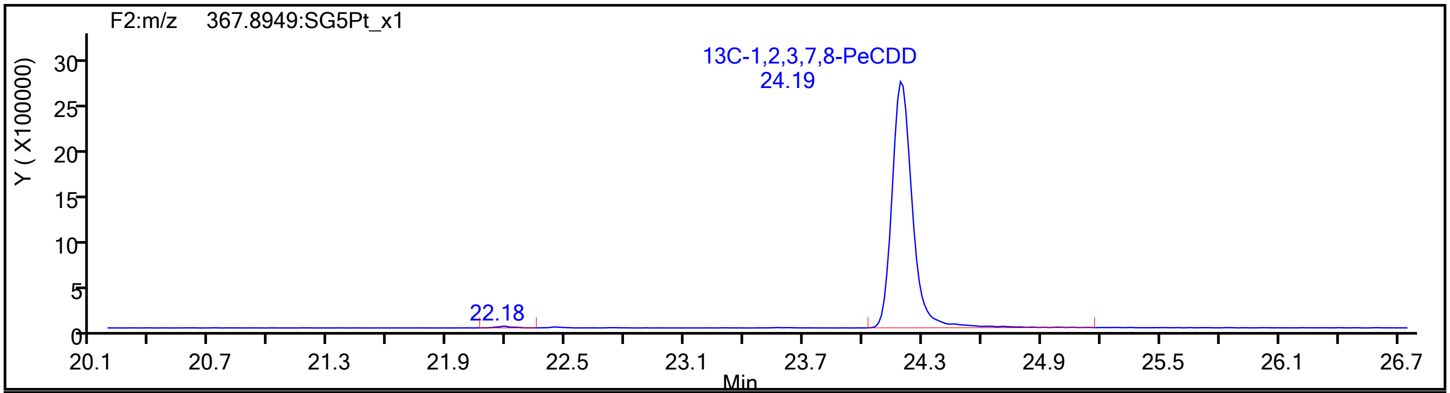

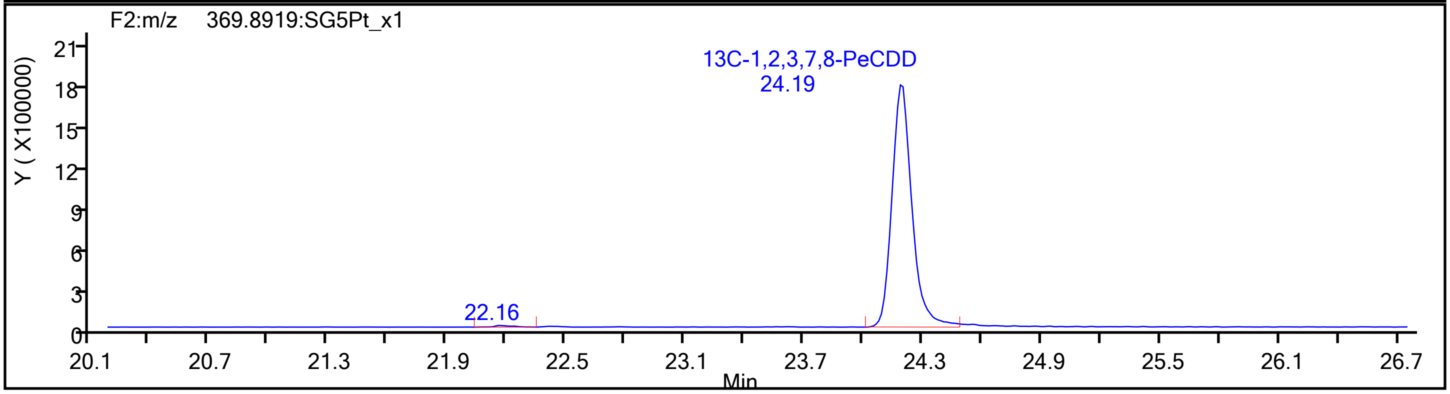

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Client ID:
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HxCDF

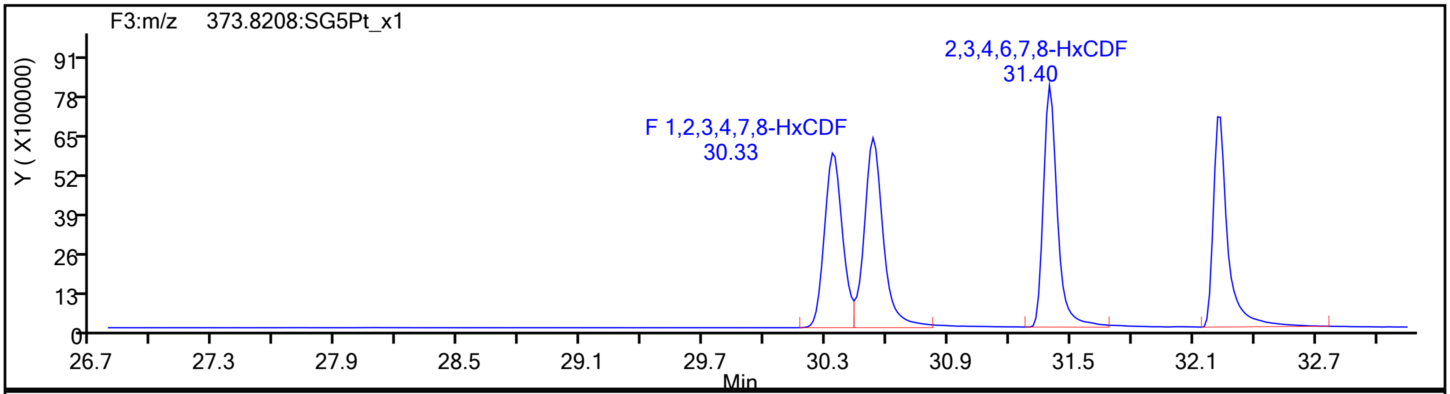

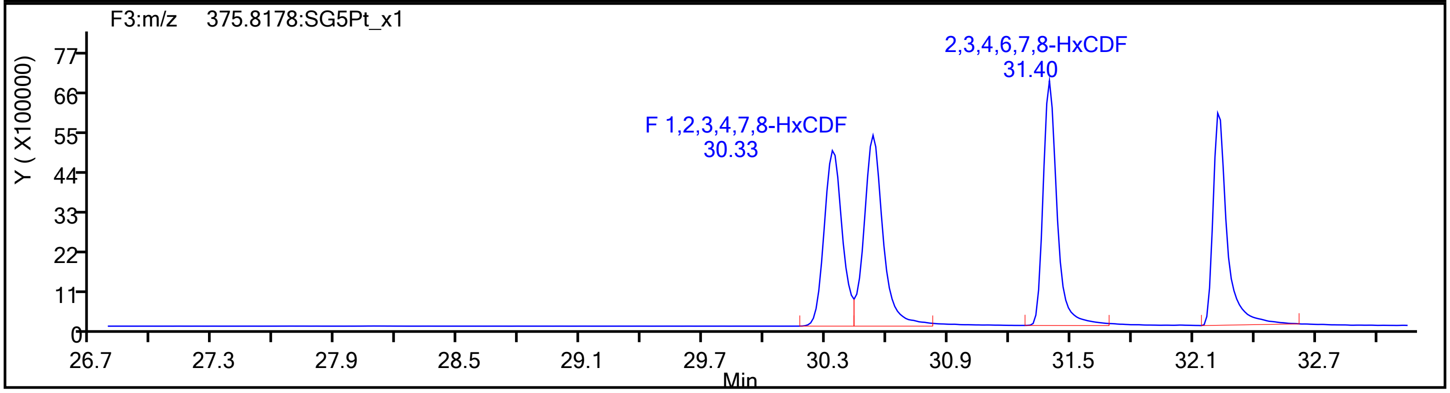

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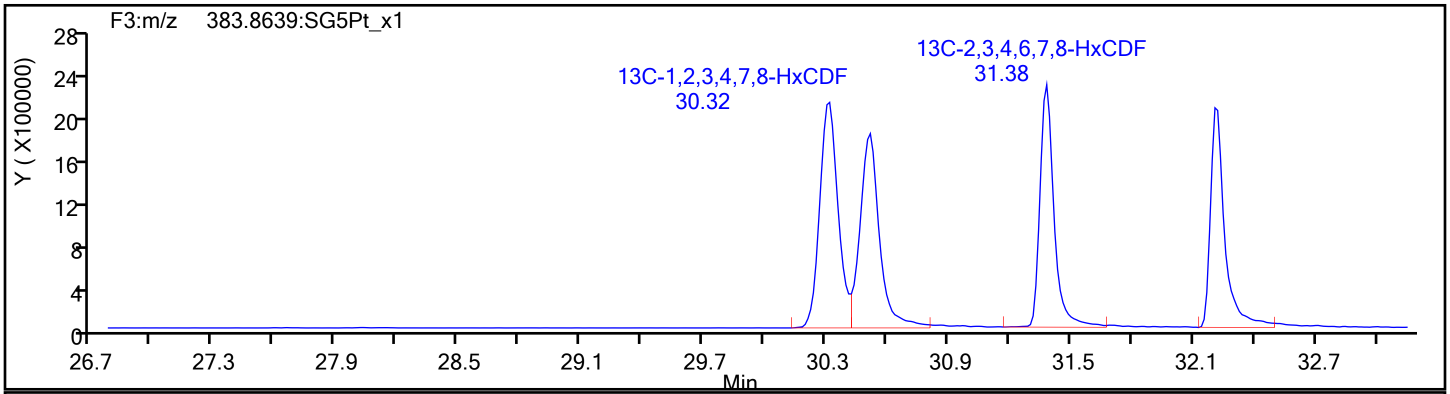

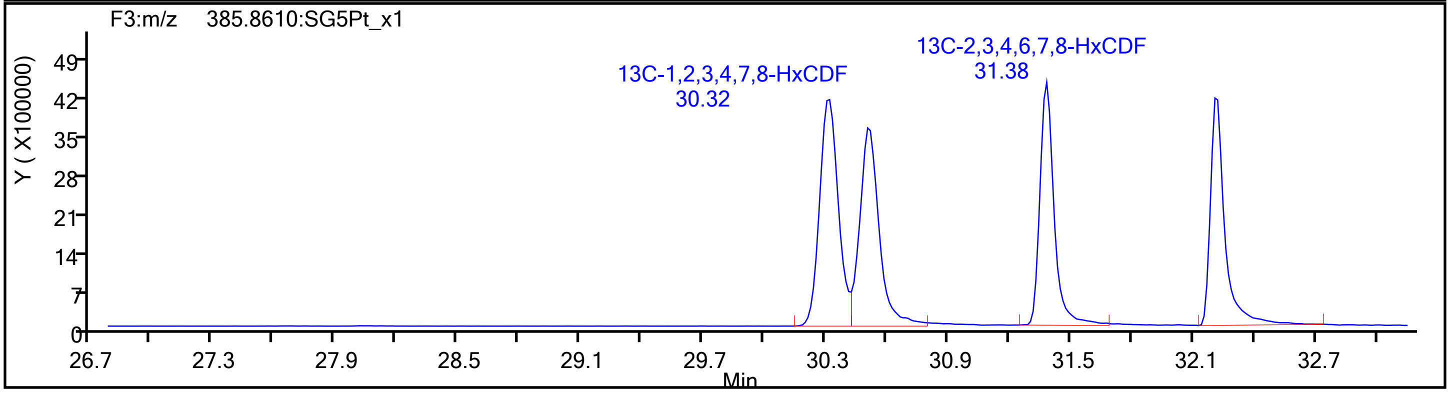

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Eurofins TestAmerica, Sacramento

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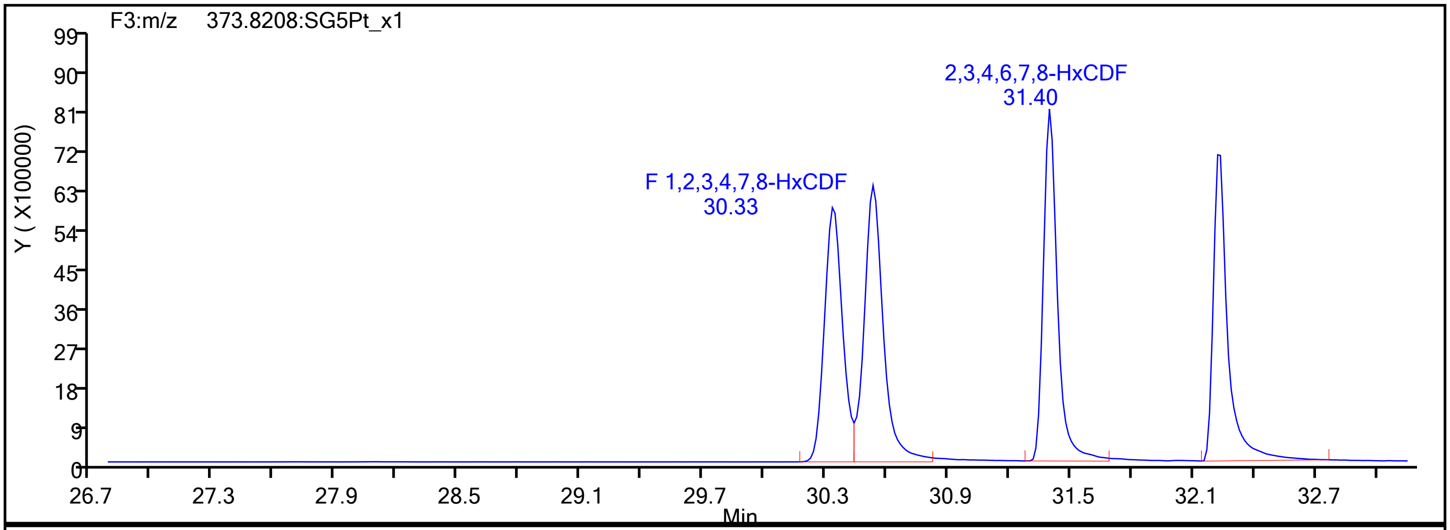

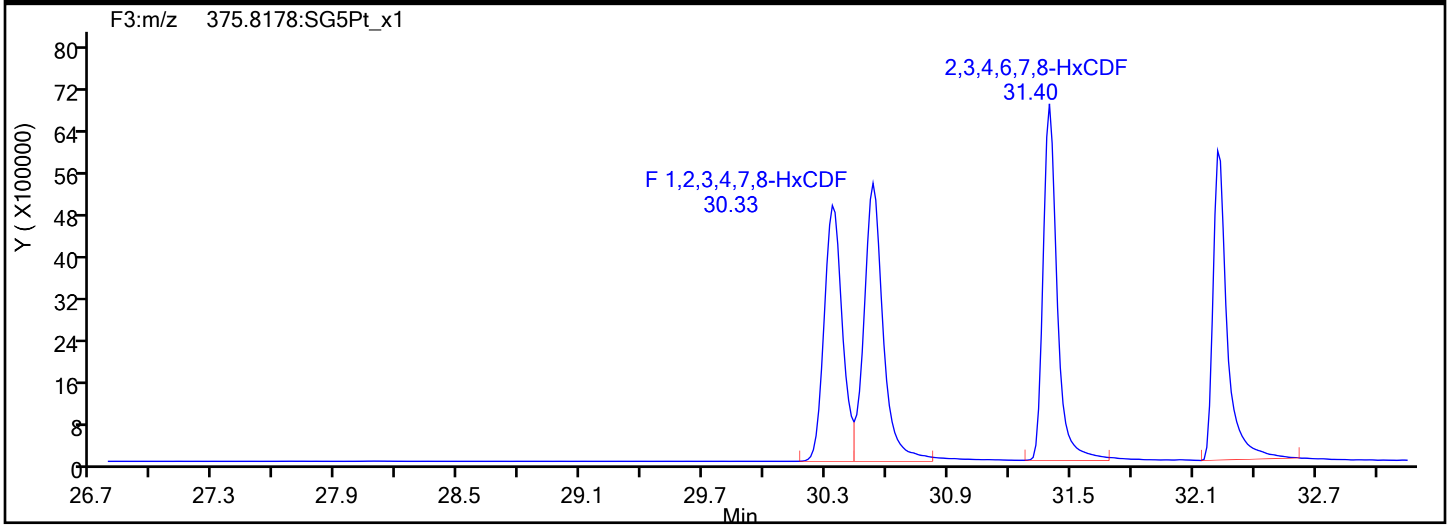

HxCDF Interference Mass

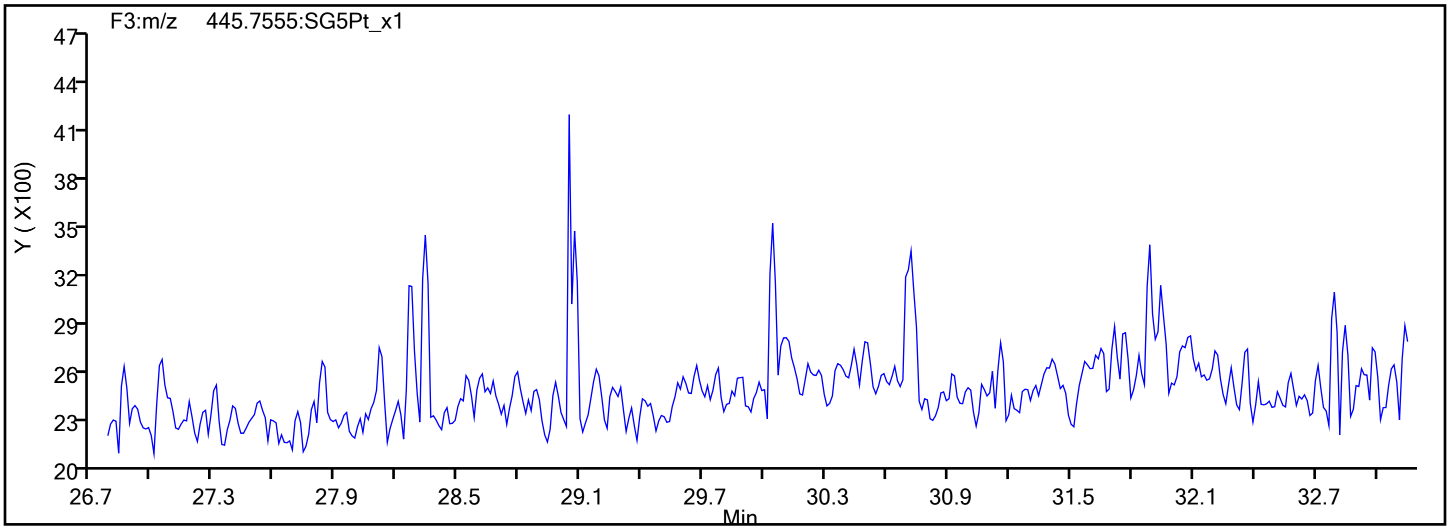

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Eurofins TestAmerica, Sacramento

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HxCDD

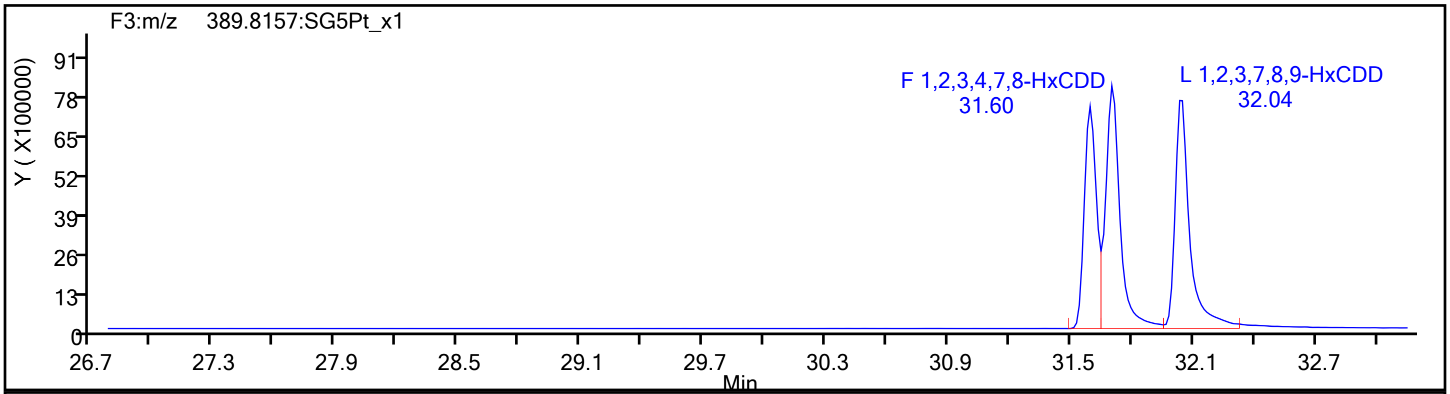

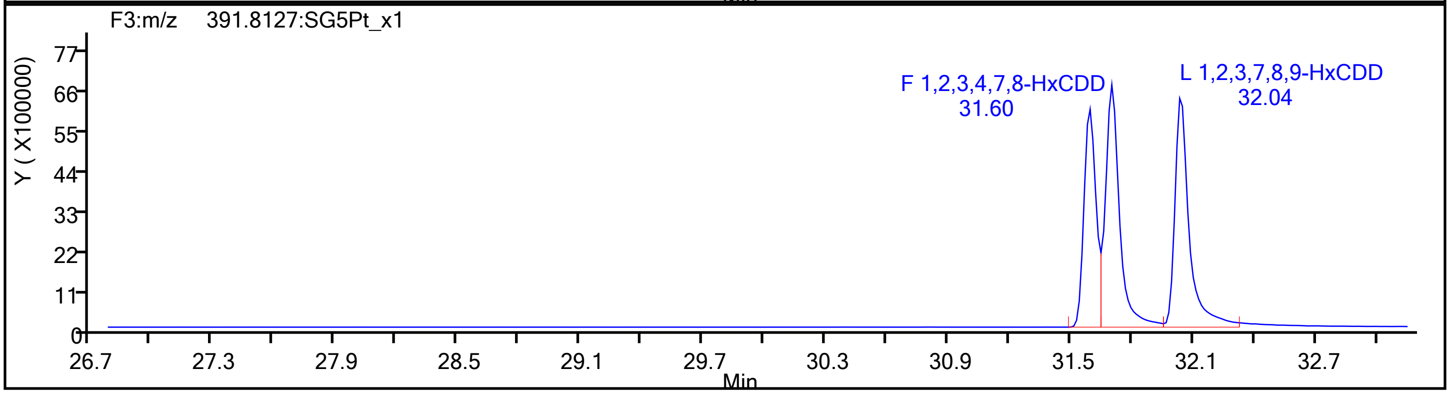

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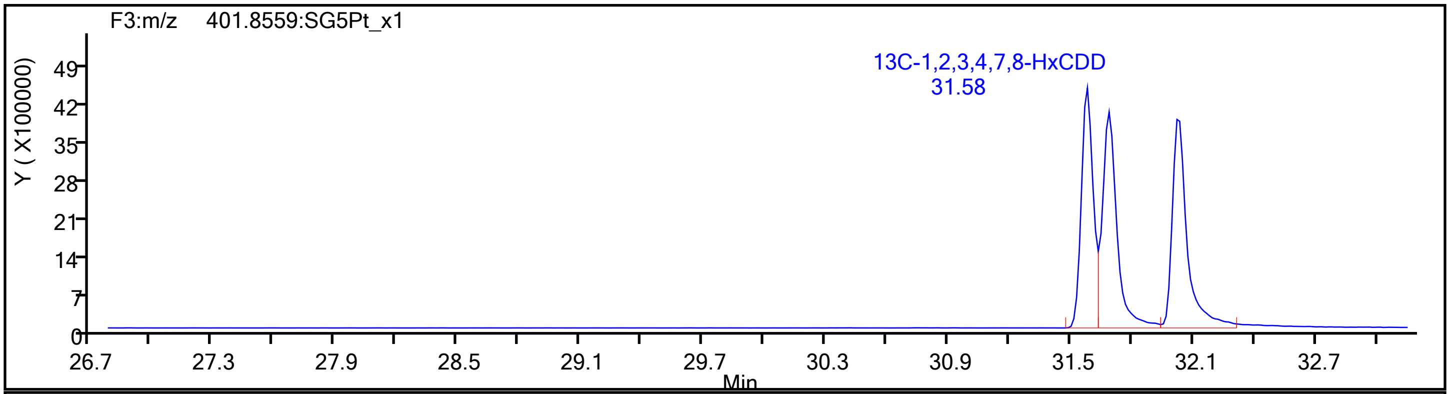

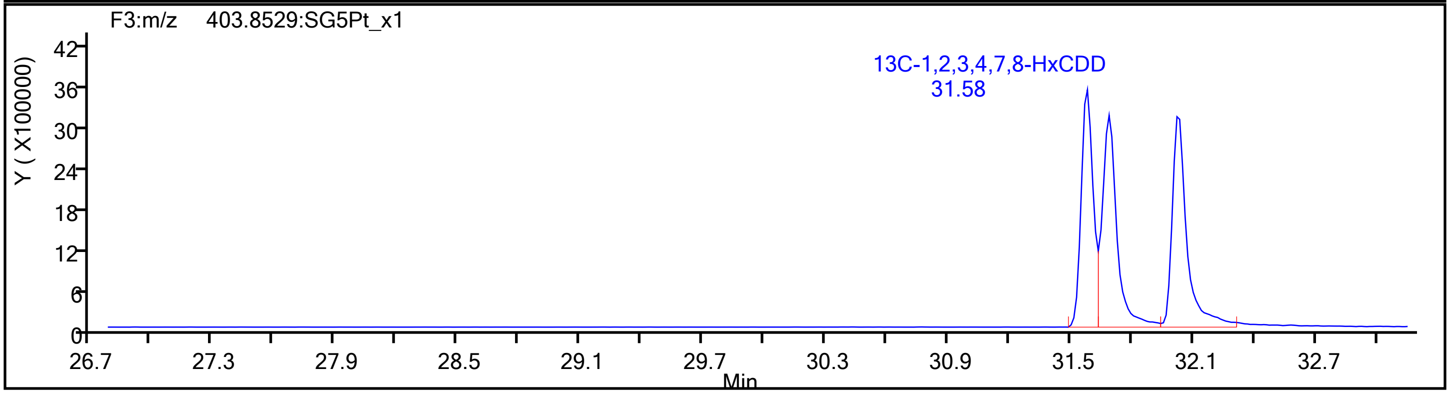

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
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HpCDF

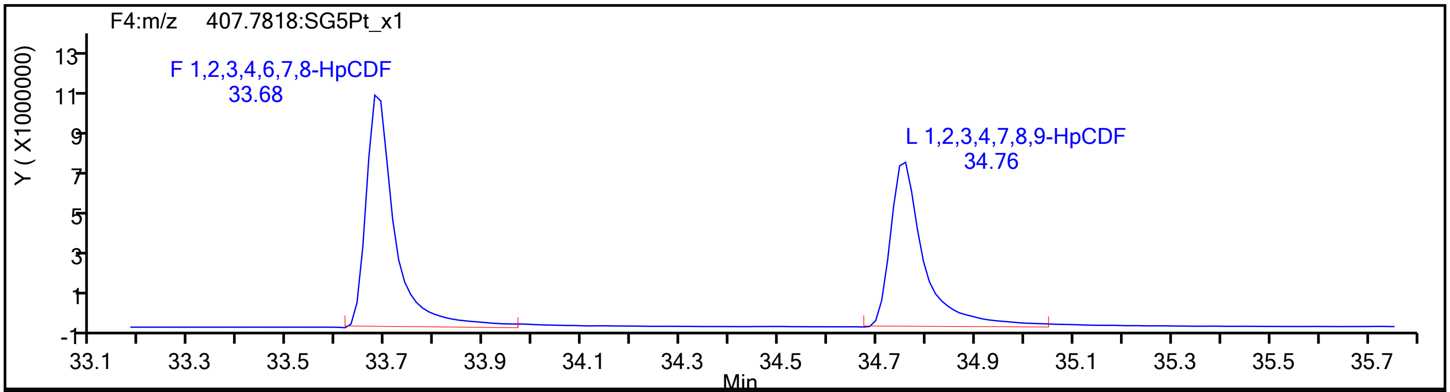

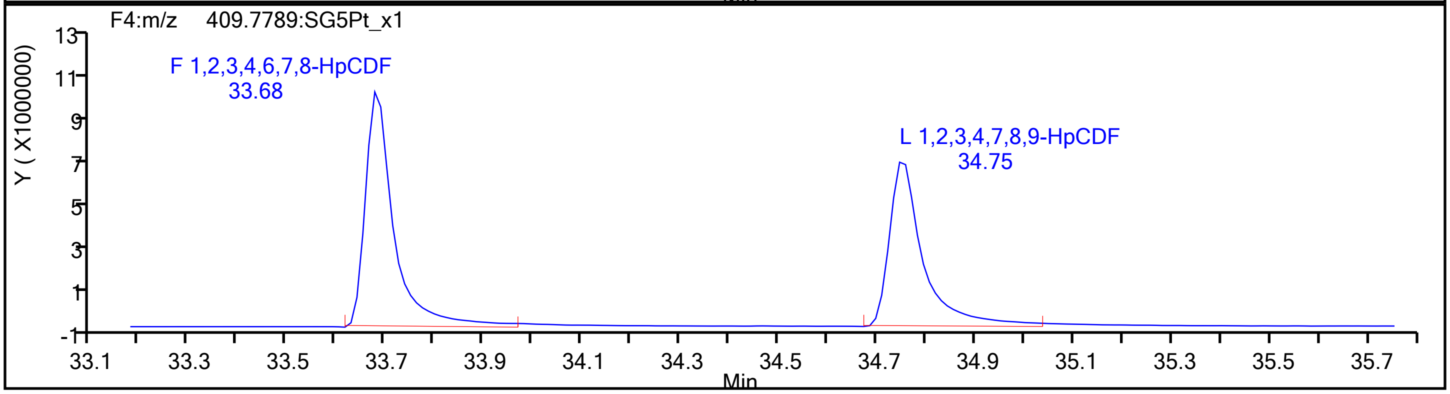

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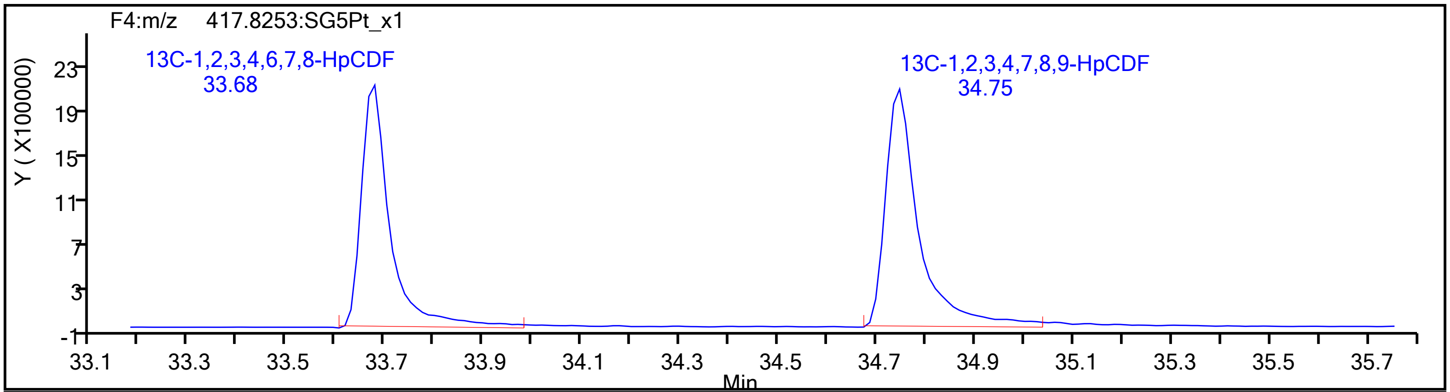

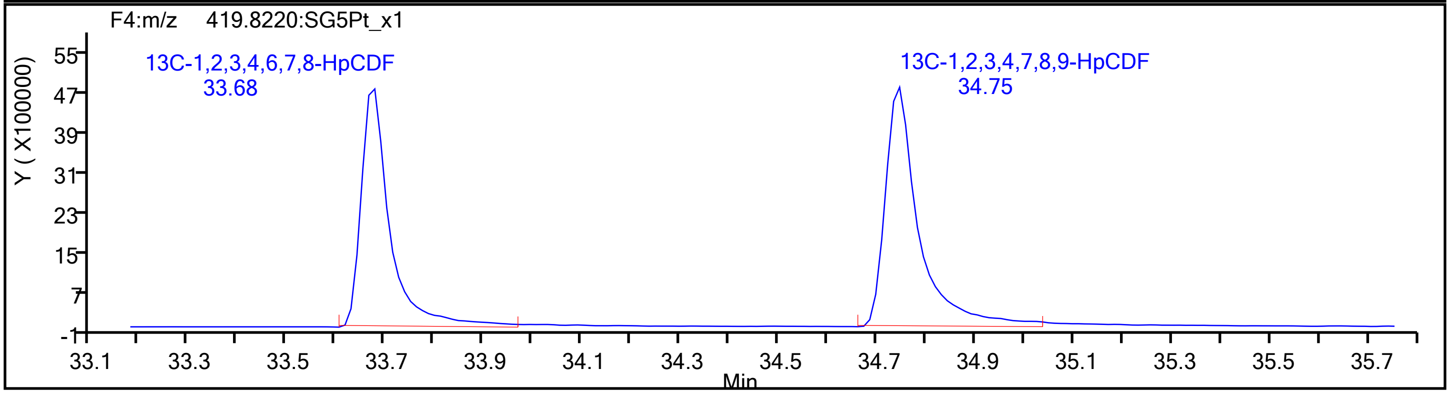

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

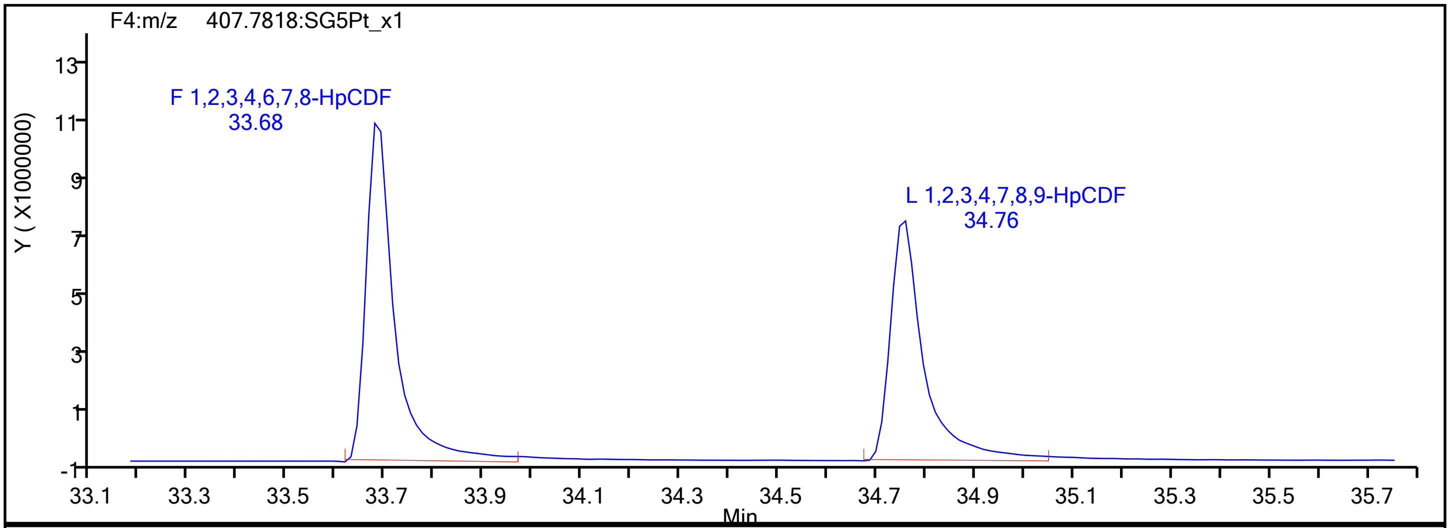

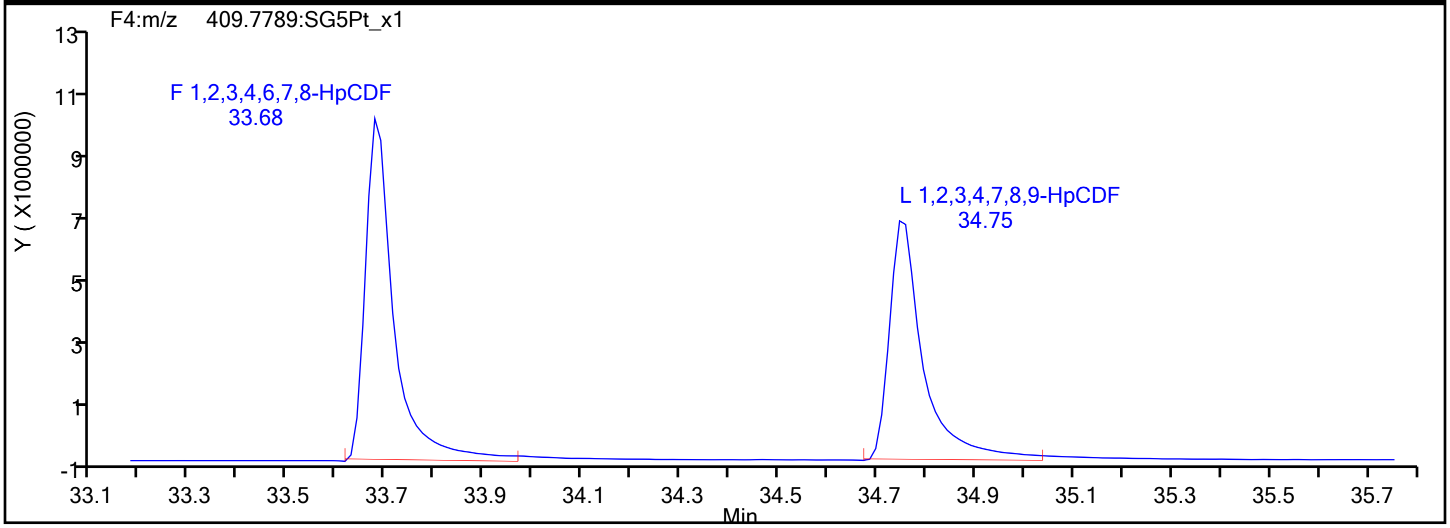

HpCDF Interference Mass

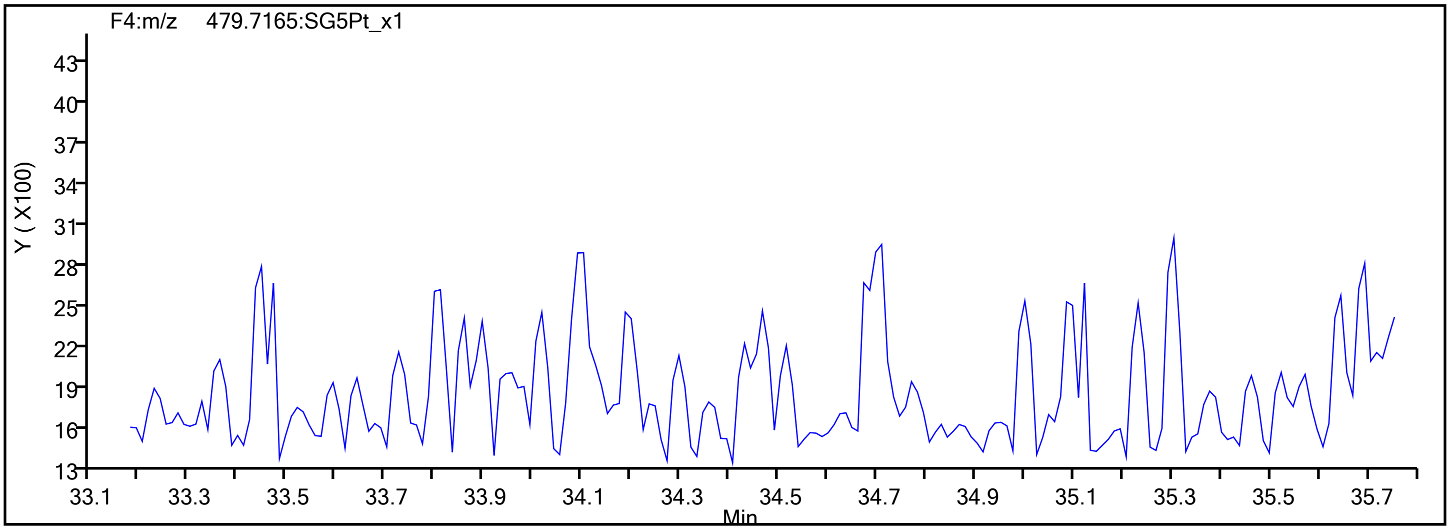

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Eurofins TestAmerica, Sacramento

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HpCDD

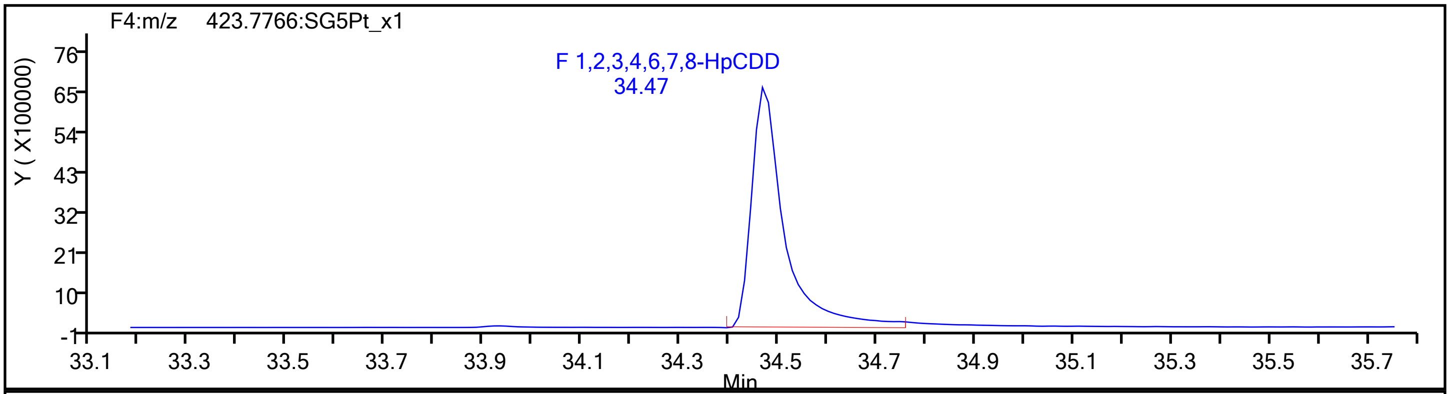

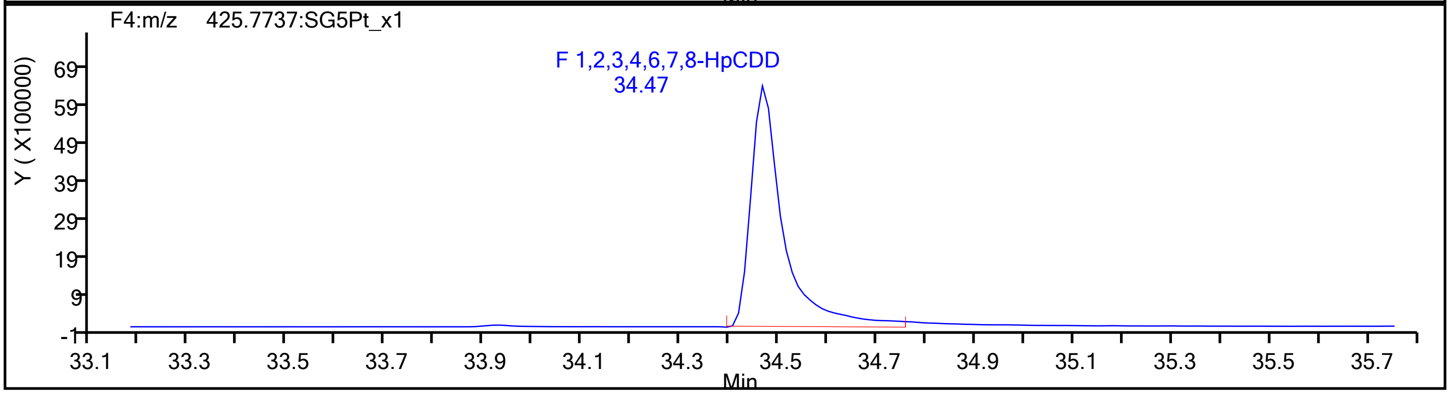

HpCDD Standards

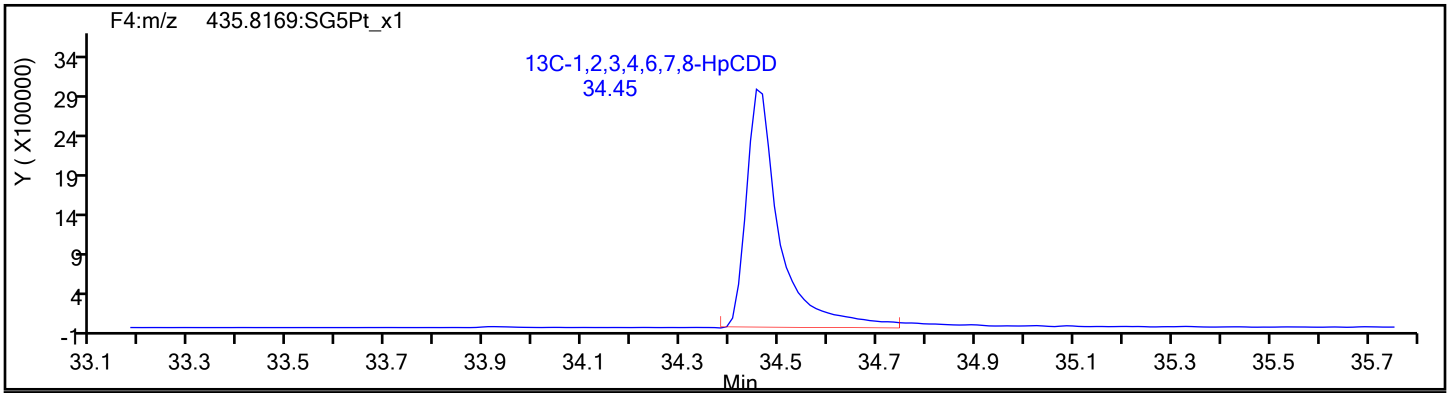

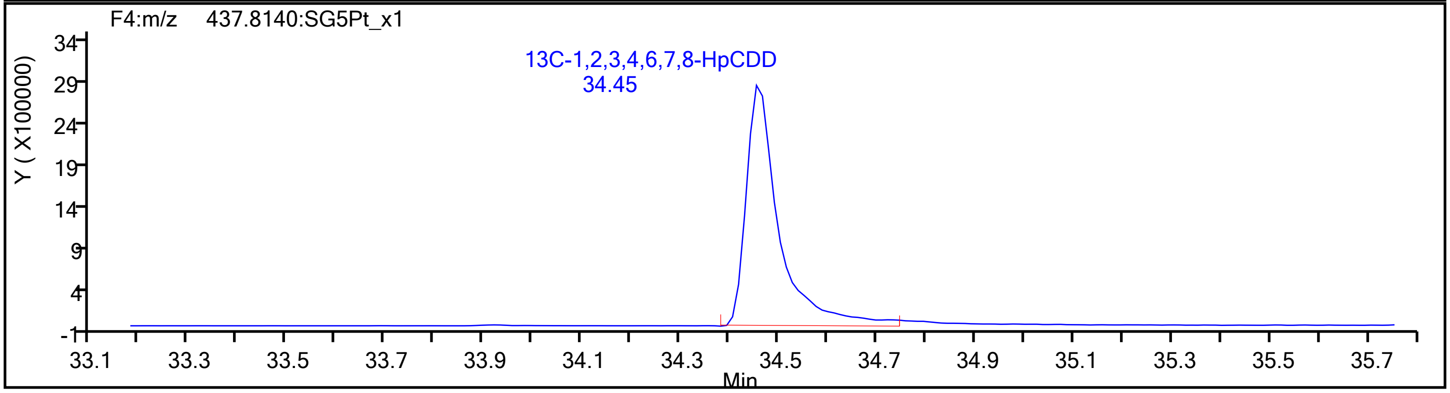

Report Date: 28-Jun-2020 13:19:39 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d

Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

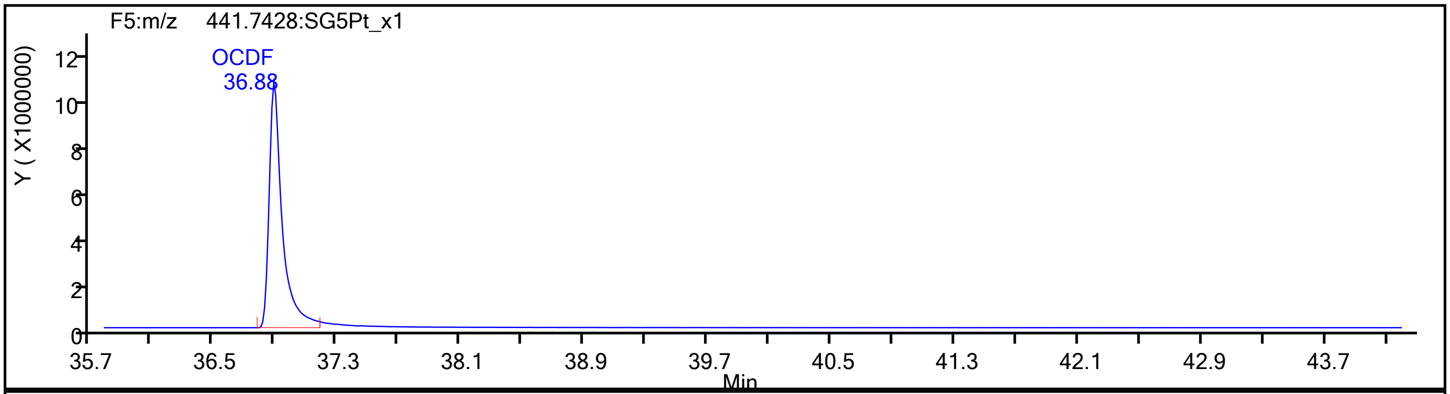

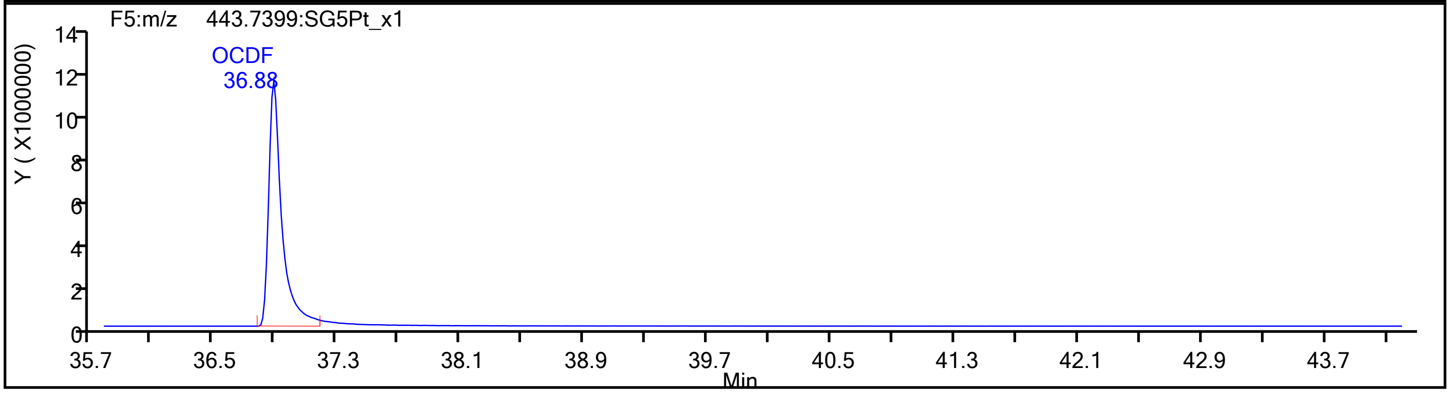

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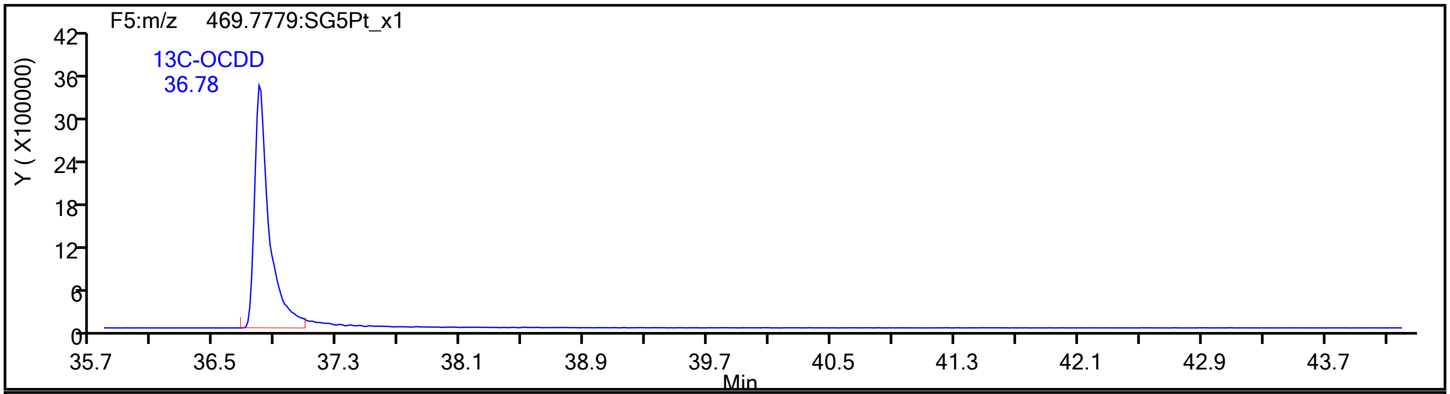

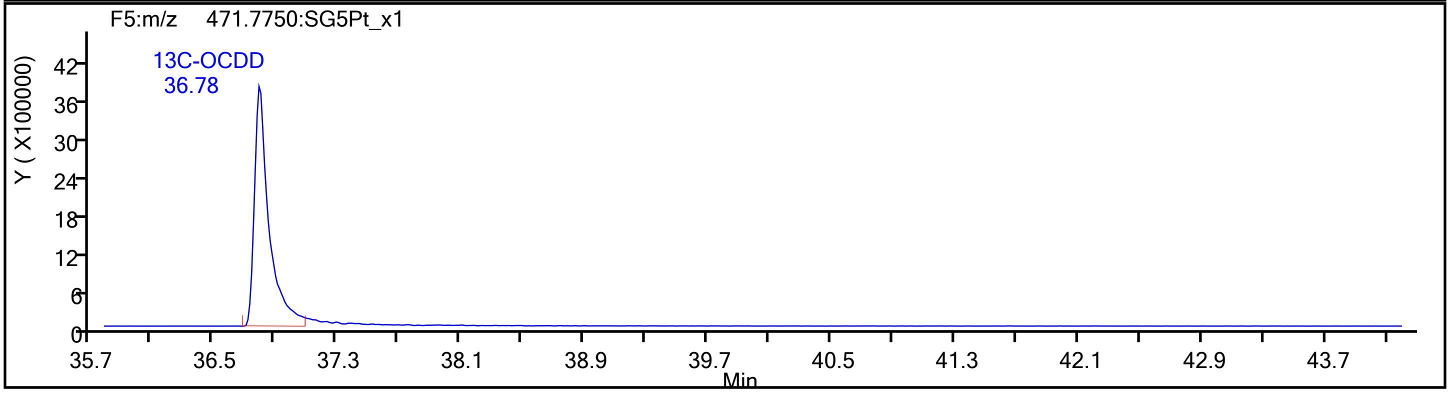

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

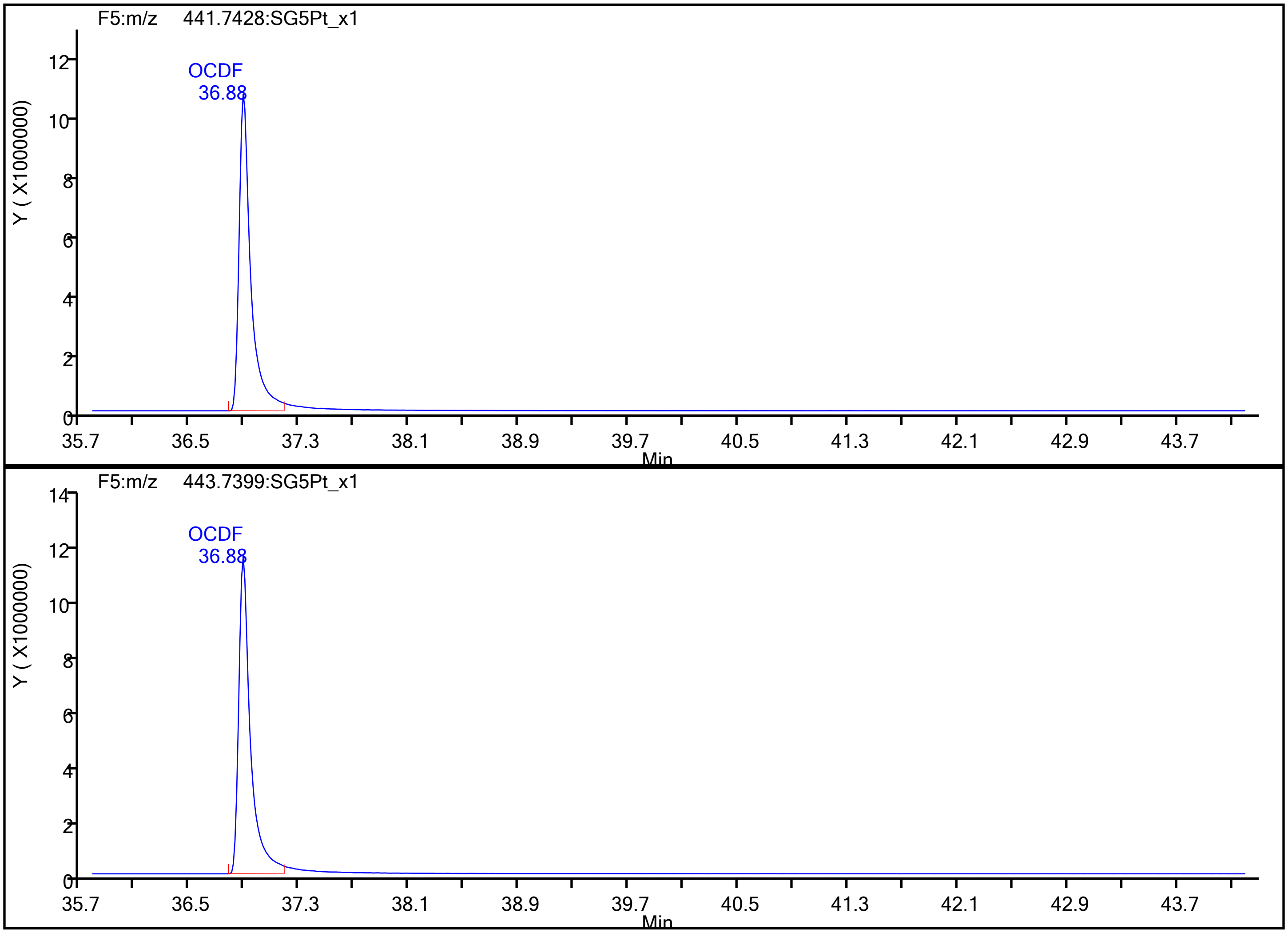

OCDF Interference Mass

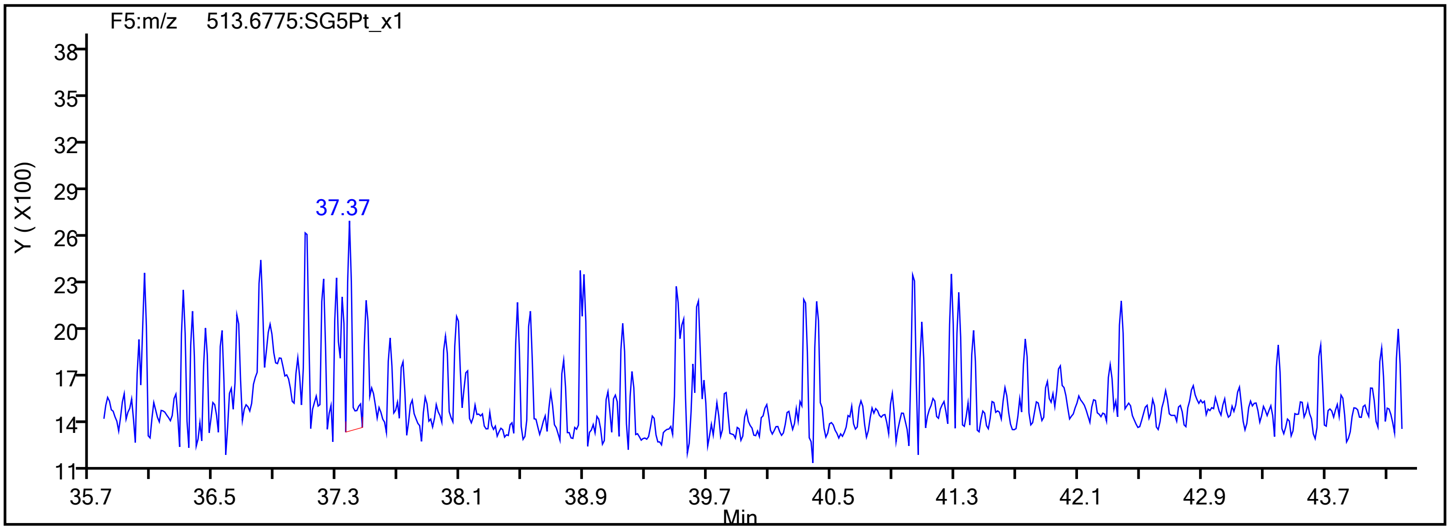

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

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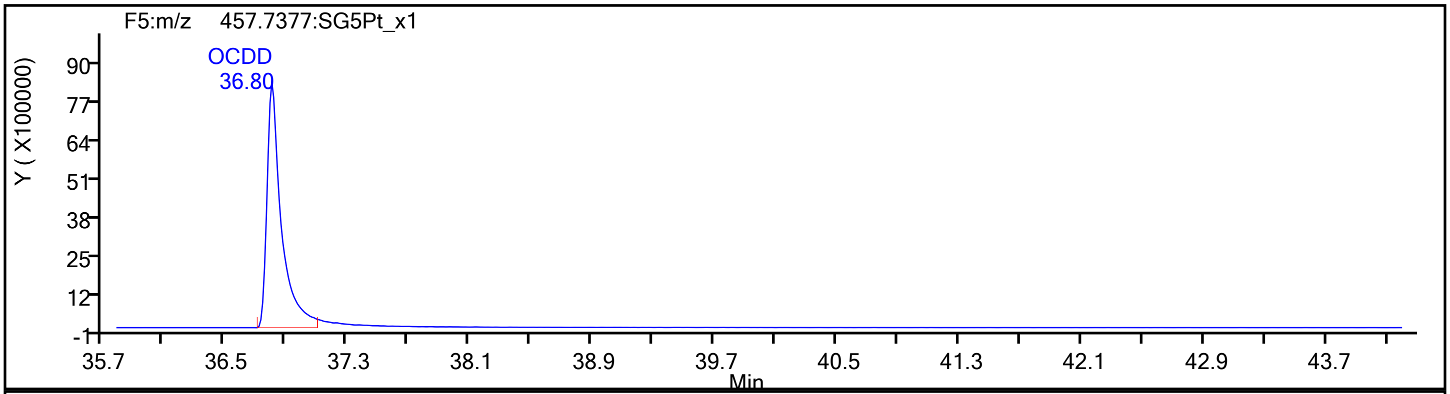

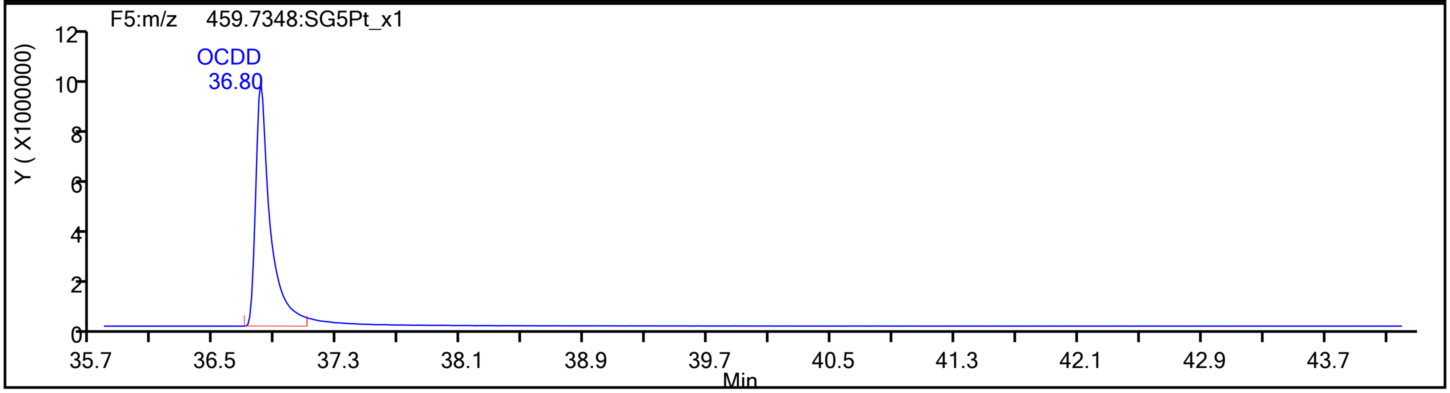

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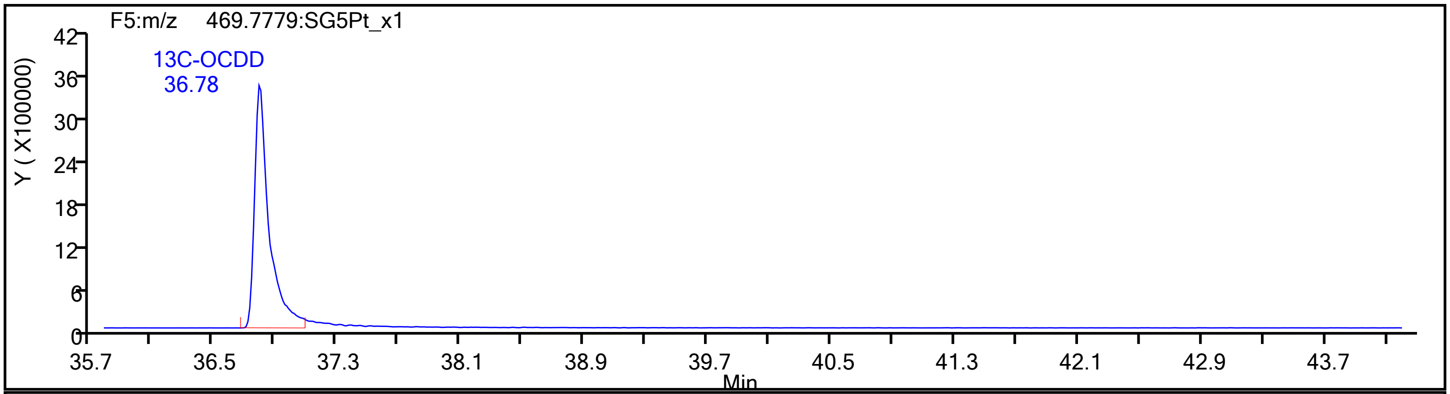

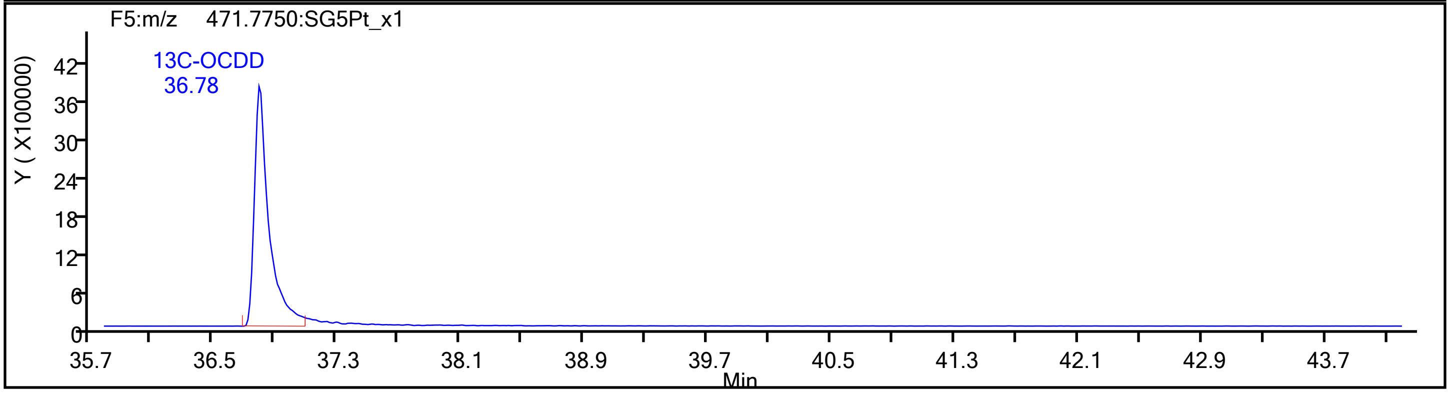

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Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jun-2020 19:24:02　　Injection Vol: 2.0 ul

Instrument ID: 10D5　　Operator ID: SMA

Method: Dioxin_10D5　　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253　　Sample Line#: 9

Column Type: DB-5　　Column Dia: 0.32 mm

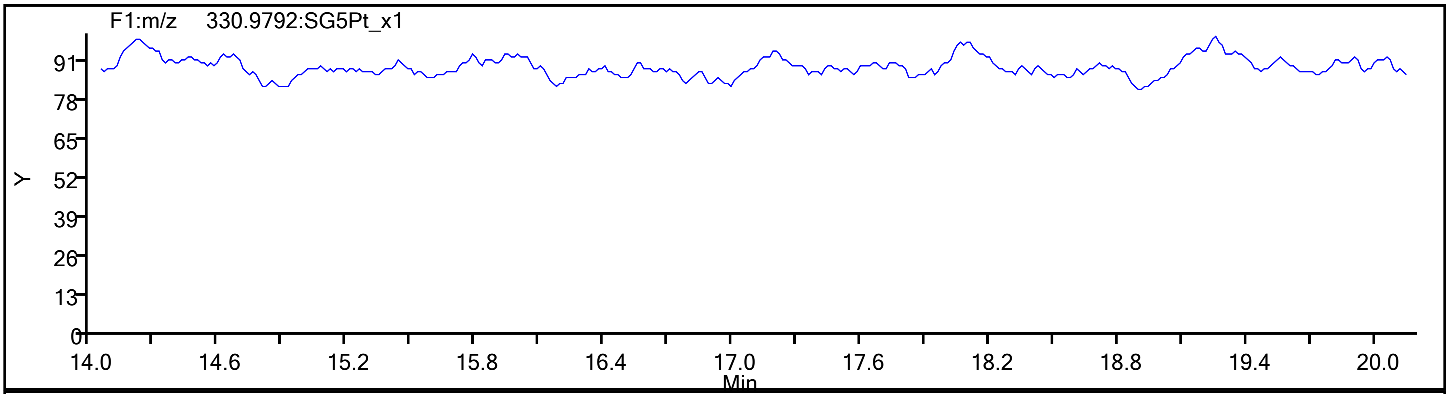

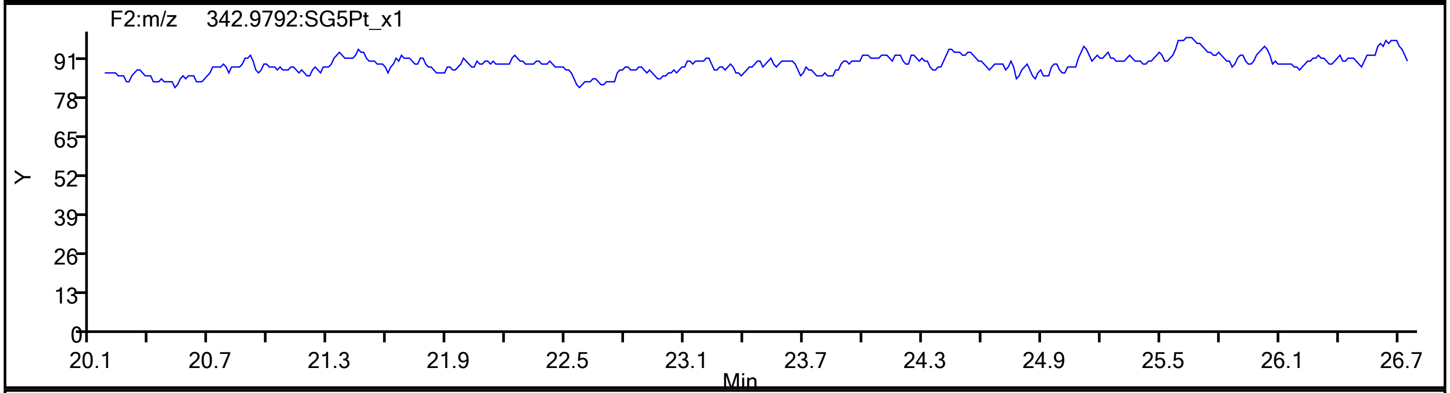

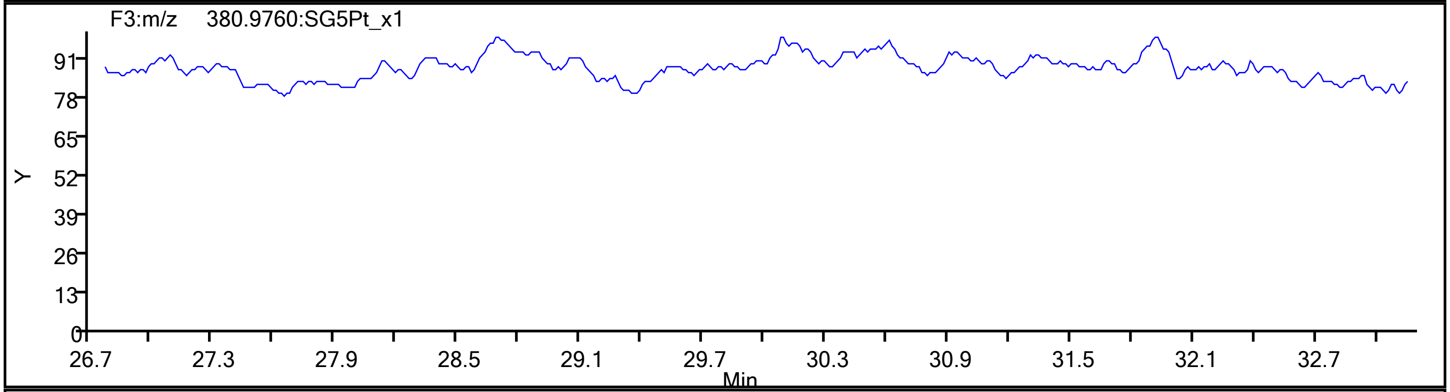

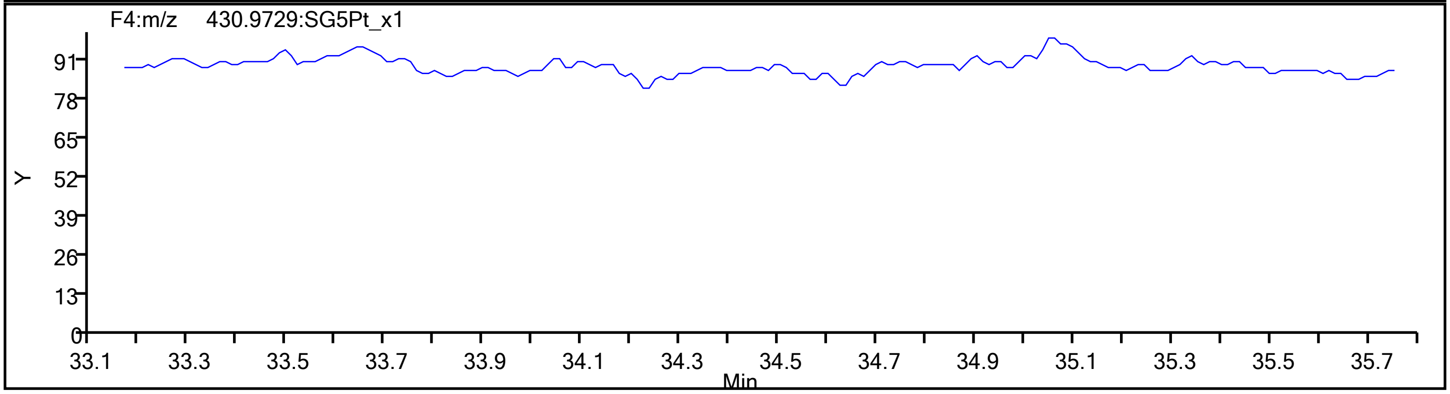

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_9.d

Injection Date:	27-Jun-2020 19:24:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

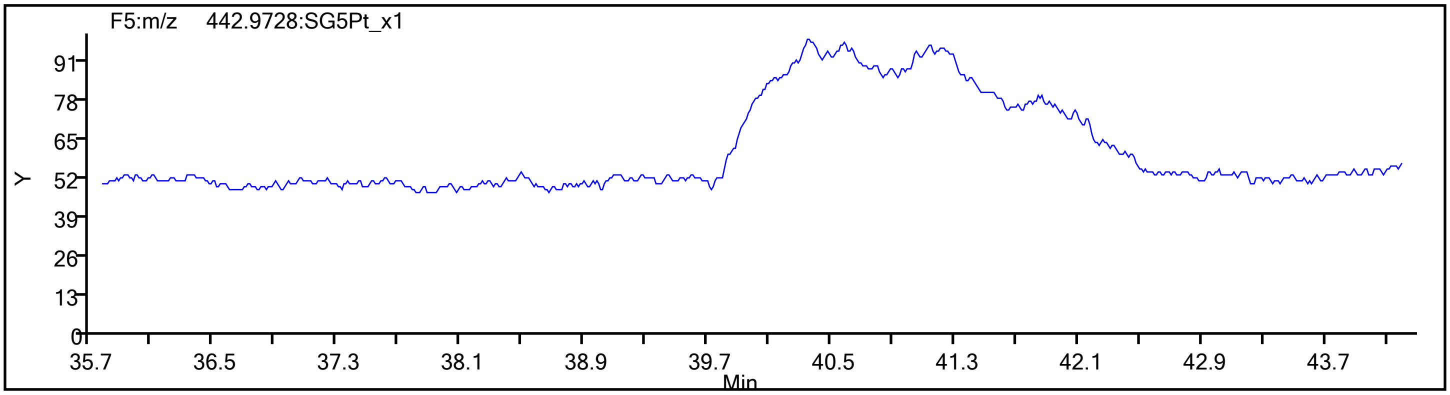

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID: CCV 320-408767/2 Calibration Date: 09/01/2020 20:41

Instrument ID: 10D5 Calib Start Date: 06/27/2020 14:42

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 06/27/2020 17:43

Lab File ID: 01SE2010D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9104	0.8548		9.39	10.0	94	84-120
2,3,7,8-TCDD	AveID	1.074	0.9861		9.18	10.0	92	78-129
1,2,3,7,8-PeCDF	AveID	0.9938	0.9563		48.1	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	0.8117	0.7743		47.7	50.0	95	82-122
1,2,3,7,8-PeCDD	AveID	1.018	0.9016		44.3	50.0	89	78-130
1,2,3,4,7,8-HxCDF	AveID	0.8061	0.7731		48.0	50.0	96	90-112
1,2,3,6,7,8-HxCDF	AveID	0.9818	0.9872		50.3	50.0	101	88-114
2,3,4,6,7,8-HxCDF	AveID	1.038	1.020		49.1	50.0	98	88-114
1,2,3,4,7,8-HxCDD	AveID	0.8202	0.7682		46.8	50.0	94	78-128
1,2,3,6,7,8-HxCDD	AveID	0.9367	0.9018		48.1	50.0	96	78-128
1,2,3,7,8,9-HxCDD	AveID	0.9905	0.9626		48.6	50.0	97	82-122
1,2,3,7,8,9-HxCDF	AveID	1.032	1.017		49.3	50.0	99	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.453	1.387		47.7	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.054	0.9436		44.8	50.0	90	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.059	0.995		47.0	50.0	94	86-116
OCDD	AveID	1.150	1.085		94.4	100	94	79-126
OCDF	AveID	1.296	1.307		101	100	101	63-159
13C-2,3,7,8-TCDF	Ave	1.373	1.453		106	100	106	71-140
13C-2,3,7,8-TCDD	Ave	1.019	0.9892		97.1	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.143	1.077		94.2	100	94	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.400	1.298		92.8	100	93	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8232	0.7589		92.2	100	92	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.139	1.213		106	100	106	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.080	1.054		97.5	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9494	0.9942		105	100	105	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.9356	0.9651		103	100	103	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	0.9337		89.6	100	90	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8670	0.9083		105	100	105	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7899	0.8497		108	100	108	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7637	0.8317		109	100	109	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9093	0.9837		108	100	108	77-129
13C-OCDD	Ave	0.6377	0.6697		210	200	105	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.018	0.9912		9.74	10.0	97	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\01SE2010D5.SPL Page 1 of 3
Last Modified: Tuesday, September 01, 2020 21:38:39 Pacific Daylight Time
Printed: Tuesday, September 01, 2020 21:38:46 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	01SE2010D5_1	WDM HRDXNCP_00042	WDM 090120	Tray01:1	Dioxin		ALM
2	01SE2010D5_2	CS-4 HRDXNL4_00094	CCV 090120	Tray01:2	Dioxin		ALM
3	01SE2010D5_3	MB 320-407683/1-A	MB 320-407683/1-A	Tray01:4	1613B(T)/Water	D177	ALM
4	01SE2010D5_4	LCS 320-407683/2-A	LCS 320-407683/2-A	Tray01:5	1613B(T)/Water		ALM
5	01SE2010D5_5	LCSD 320-407683/3-A	LCSD 320-407683/3-A	Tray01:6	1613B(T)/Water		ALM
6	01SE2010D5_6	320-64110-A-2-A	320-64110-A-2-A	Tray01:7	1613B_T/Water		ALM
7	01SE2010D5_7	320-64110-A-4-A	320-64110-A-4-A	Tray01:8	1613B/Water		ALM
8	01SE2010D5_8	320-64110-A-6-A	320-64110-A-6-A	Tray01:9	1613B/Water		ALM
9	01SE2010D5_9	320-64110-A-8-A	320-64110-A-8-A	Tray01:10	1613B/Water		ALM
10	01SE2010D5_10	320-64110-A-10-A	320-64110-A-10-A	Tray01:11	1613B_T/Water		ALM
11	01SE2010D5_11	320-64110-A-12-A	320-64110-A-12-A	Tray01:12	1613B_T/Water		ALM
12	01SE2010D5_12	320-64049-A-1-A	320-64049-A-1-A	Tray01:15	1613B/Water		ALM
13	01SE2010D5_13	320-64049-A-2-A	320-64049-A-2-A	Tray01:16	1613B/Water		ALM
14	01SE2010D5_14	660-103844-E-1-A	660-103844-E-1-A	Tray01:17	1613B_T/Water		ALM
15	01SE2010D5_15	Solvent Blank C-14	SB 090120	Tray01:3	---		ALM
16	01SE2010D5_16	CS-4 HRDXNL4_00094	CCV 090120A	Tray01:2	Dioxin		ALM
17	01SE2010D5_17	WDM HRDXNCP_00042	WDM 090120A	Tray01:1	Dioxin		ALM
18	01SE2010D5_18	Solvent Blank C-14	SB 090120A	Tray01:3	---		ALM
19	01SE2010D5_19	320-63840-A-11-A	320-63840-A-11-A	Tray01:29	8290/Solid	81	ALM
20	01SE2010D5_20	320-63840-A-12-A	320-63840-A-12-A	Tray01:30	8290/Solid		ALM
21	01SE2010D5_21	320-63840-A-13-A	320-63840-A-13-A	Tray01:31	8290/Solid		ALM
22	01SE2010D5_22	320-63840-A-14-A	320-63840-A-14-A	Tray01:32	8290/Solid		ALM
23	01SE2010D5_23	320-63840-A-15-A	320-63840-A-15-A	Tray01:33	8290/Solid		ALM
24	01SE2010D5_24	320-63840-A-16-A	320-63840-A-16-A	Tray01:34	8290/Solid		ALM
25	01SE2010D5_25	320-63840-A-17-A	320-63840-A-17-A	Tray01:35	8290/Solid		ALM
26	01SE2010D5_26	320-63840-A-18-A	320-63840-A-18-A	Tray01:36	8290/Solid		ALM
27	01SE2010D5_27	320-63840-A-19-A	320-63840-A-19-A	Tray01:37	8290/Solid		ALM
28	01SE2010D5_28	Solvent Blank C-14	SB 090120B	Tray01:3	---		ALM
29	01SE2010D5_29	CS-4 HRDXNL4_00094	CCV 090120B	Tray01:2	Dioxin		ALM
30	01SE2010D5_30	WDM HRDXNCP_00042	WDM 090120B	Tray01:1	Dioxin		ALM
31	01SE2010D5_31	Solvent Blank C-14	SB 090120C	Tray01:3	---		ALM
32	01SE2010D5_32	320-63840-A-20-A	320-63840-A-20-A	Tray01:43	8290/Solid	81	ALM
33	01SE2010D5_33	320-63840-A-21-A	320-63840-A-21-A	Tray01:44	8290/Solid		ALM
34	01SE2010D5_34	320-63840-A-22-A	320-63840-A-22-A	Tray01:45	8290/Solid		ALM
35	01SE2010D5_35	320-63840-A-23-A	320-63840-A-23-A	Tray01:46	8290/Solid		ALM
36	01SE2010D5_36	320-63840-A-24-A	320-63840-A-24-A	Tray01:47	8290/Solid		ALM
37	01SE2010D5_37	320-63840-A-25-A	320-63840-A-25-A	Tray01:48	8290/Solid		ALM
38	01SE2010D5_38	320-63840-A-26-A	320-63840-A-26-A	Tray01:49	8290/Solid		ALM
39	01SE2010D5_39	320-63840-A-27-A	320-63840-A-27-A	Tray01:50	8290/Solid		ALM
40	01SE2010D5_40	320-63840-A-28-A	320-63840-A-28-A	Tray01:51	8290/Solid		ALM
41	01SE2010D5_41	Solvent Blank C-14	SB 090120D	Tray01:3	---		ALM
42	01SE2010D5_42	CS-4 HRDXNL4_00094	CCV 090120C	Tray01:2	Dioxin		ALM
43	01SE2010D5_43	WDM HRDXNCP_00042	WDM 090120C	Tray01:1	Dioxin		ALM
~~44~~	~~01SE2010D5_44~~	~~Solvent Blank C-14~~	~~SB 090120E~~	~~Tray01:3~~	~~---~~		ALM

log file check
9-02-20 SM

9/02/20
SMA

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, September 01, 2020 19:45:58 Pacific Daylight Time

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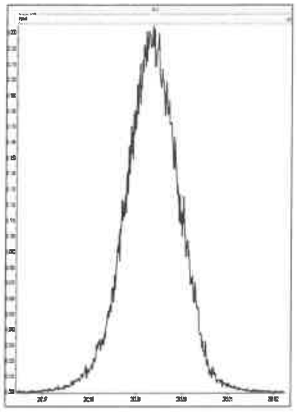

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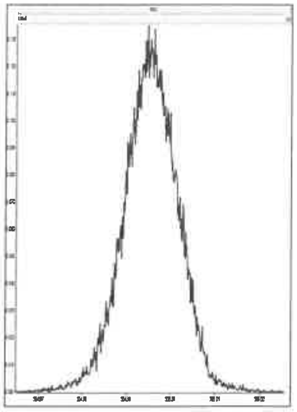

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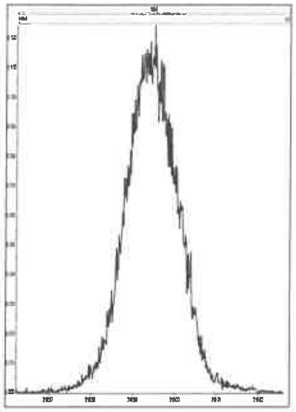

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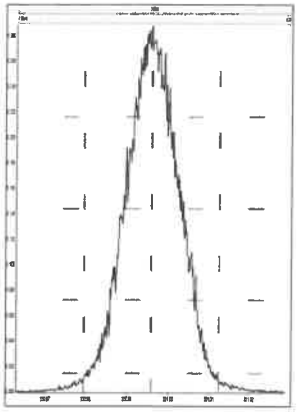

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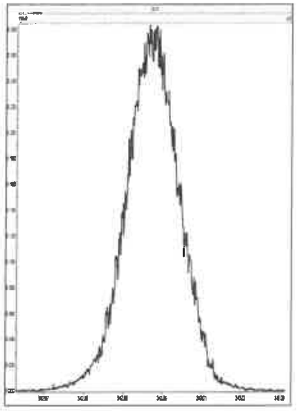

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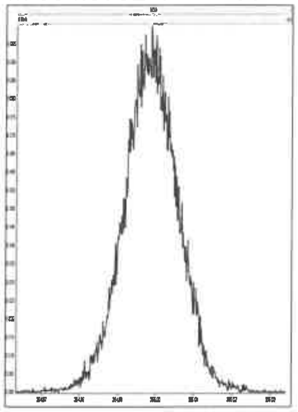

M 366.9792 R 11013

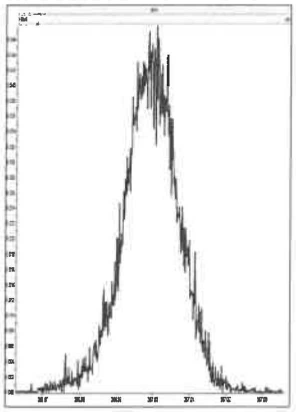

M 380.9760 R 10964

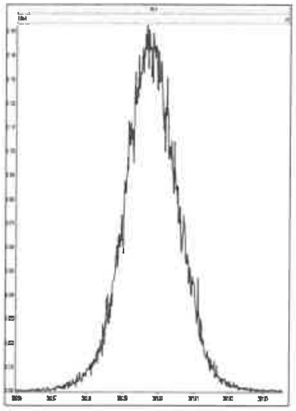

M 392.9760 R 10591

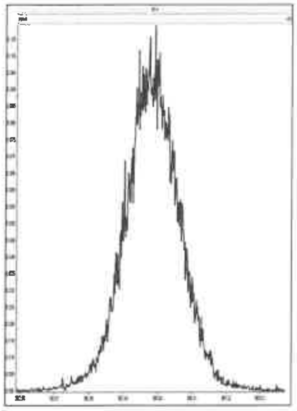

M 404.9760 R 11262

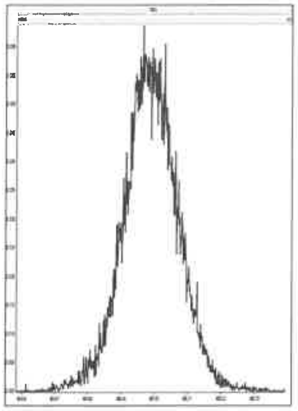

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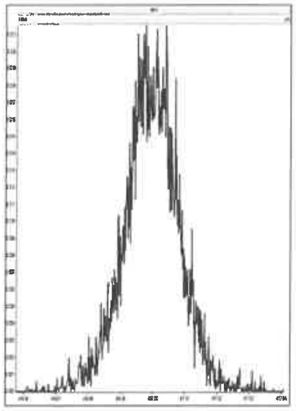

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, September 01, 2020 19:48:17 Pacific Daylight Time

M 318.9792 R 11362

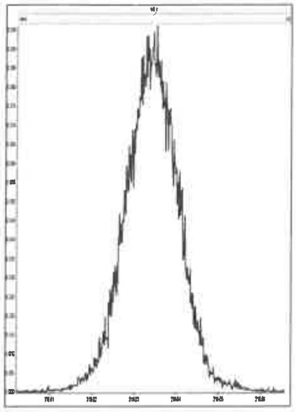

M 330.9792 R 11208

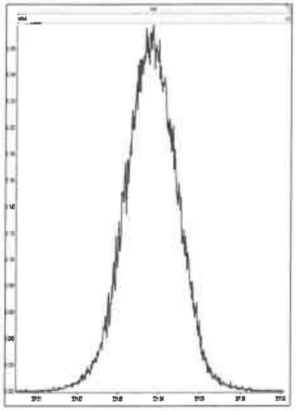

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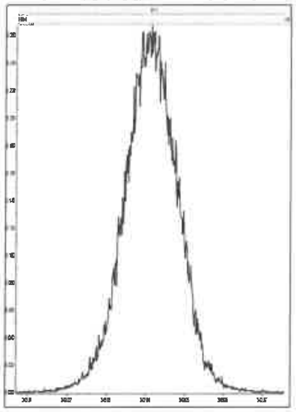

M 354.9792 R 11012

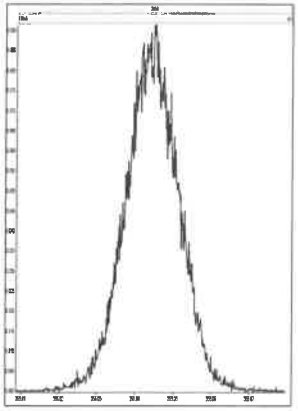

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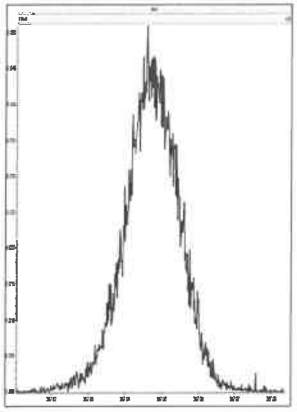

M 380.9760 R 11313

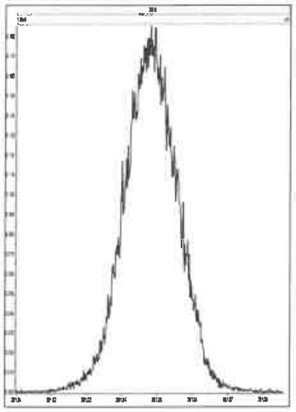

M 392.9760 R 11363

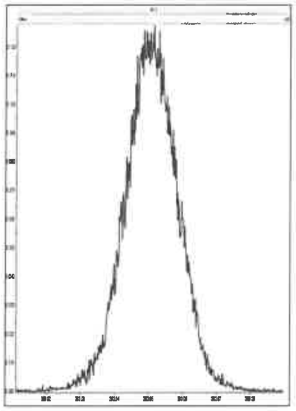

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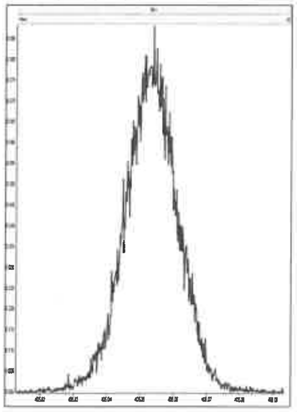

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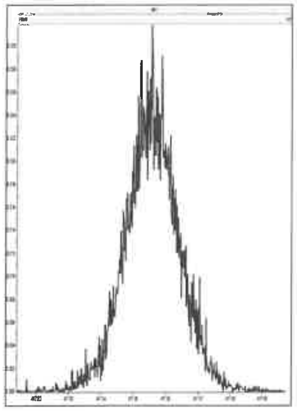

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

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M 366.9792 R 11113

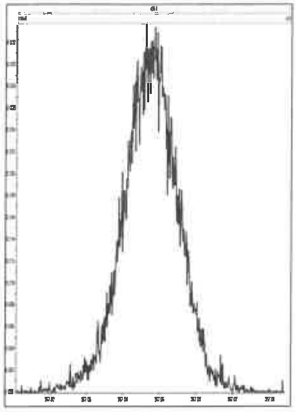

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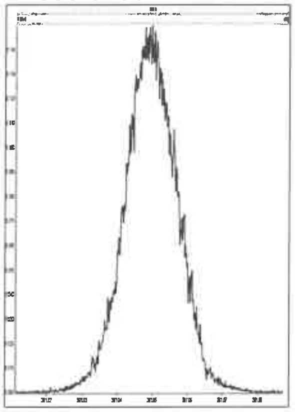

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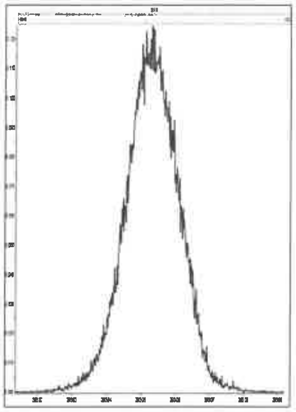

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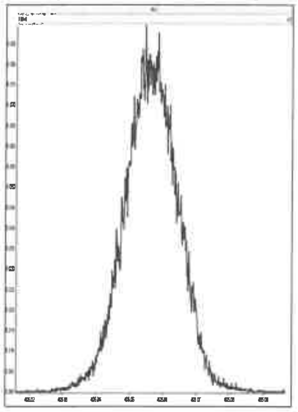

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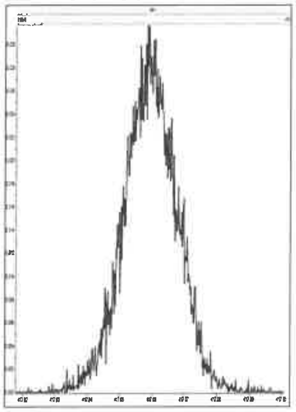

M 430.9728 R 11363

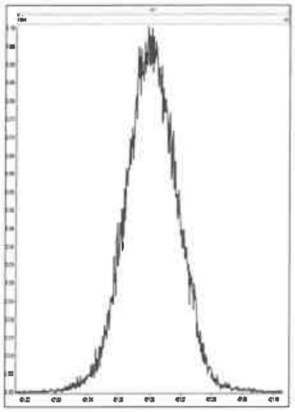

M 442.9728 R 11572

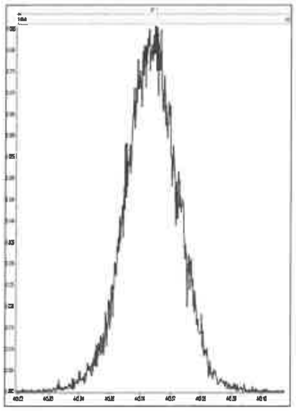

M 454.9728 R 11014

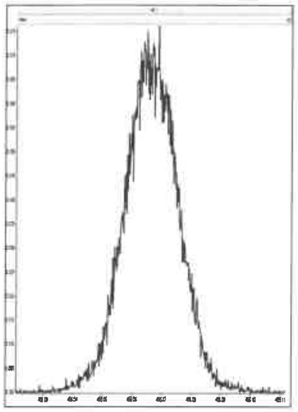

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

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M 380.9760 R 11314

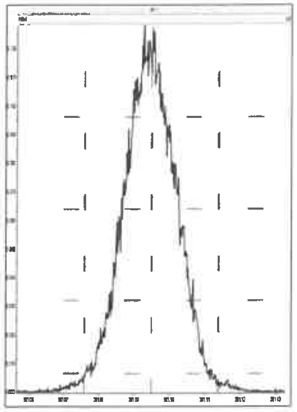

M 392.9760 R 10965

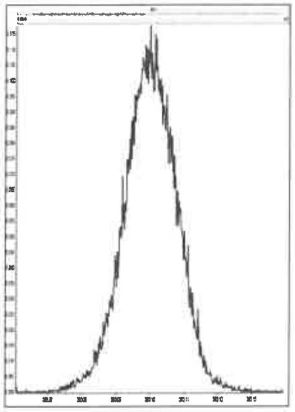

M 404.9760 R 10916

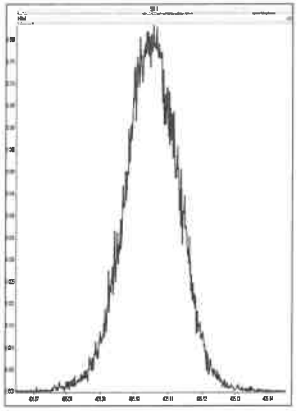

M 416.9760 R 11413

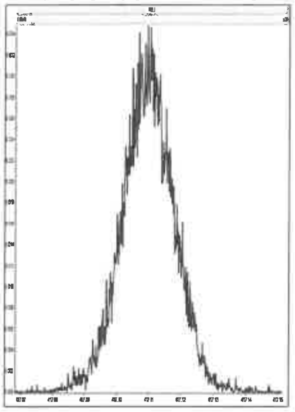

M 430.9728 R 11059

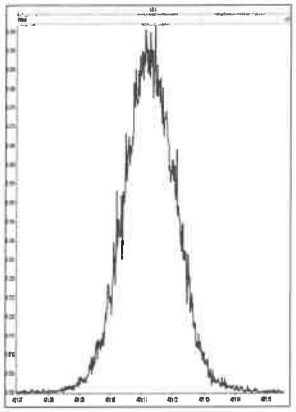

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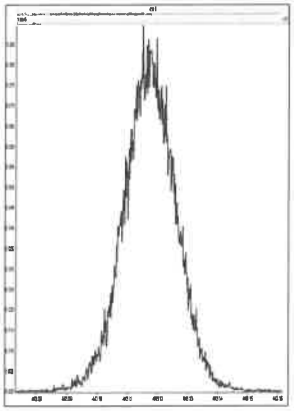

M 454.9728 R 11362

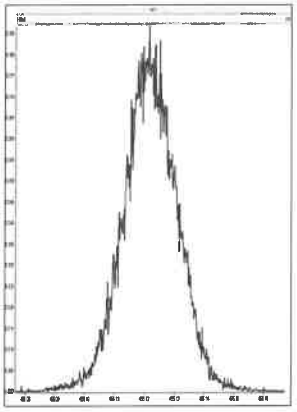

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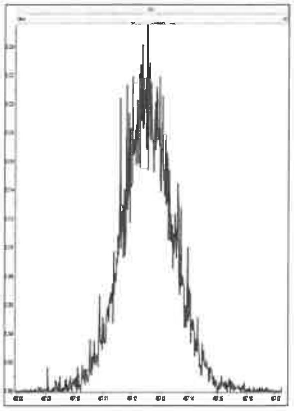

M 480.9696 R 12073

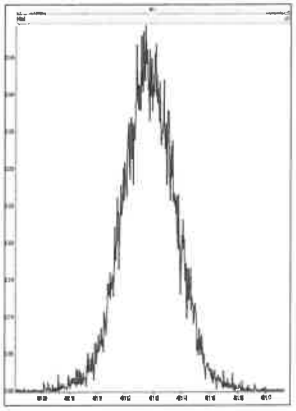

Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

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M 380.9760 R 11571

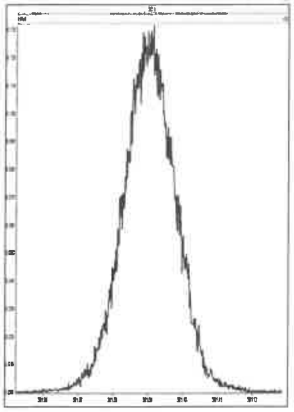

M 392.9760 R 11062

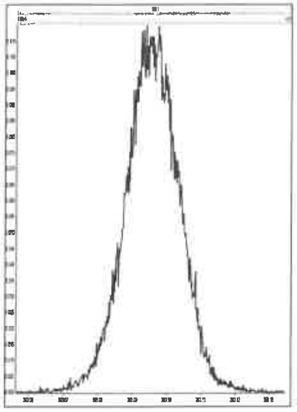

M 404.9760 R 11311

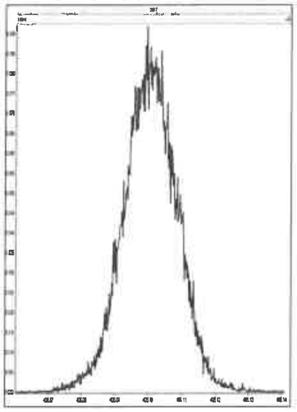

M 416.9760 R 11625

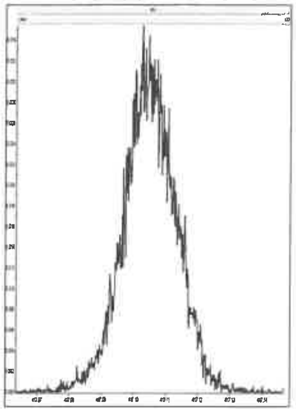

M 430.9728 R 11364

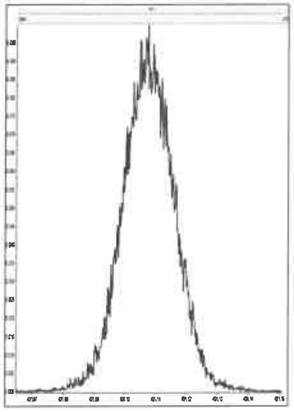

M 442.9728 R 11210

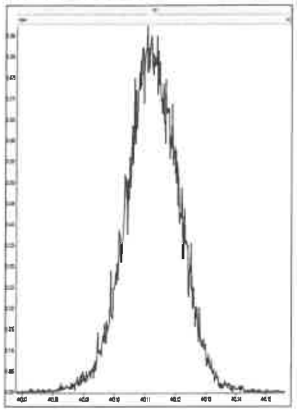

M 454.9728 R 11362

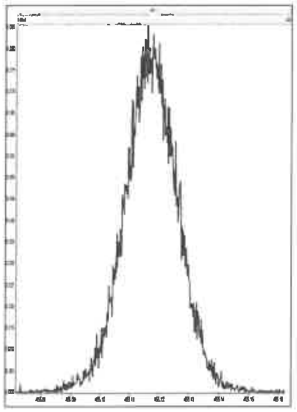

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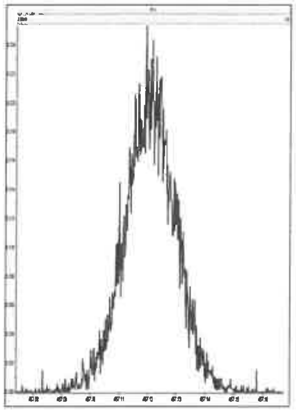

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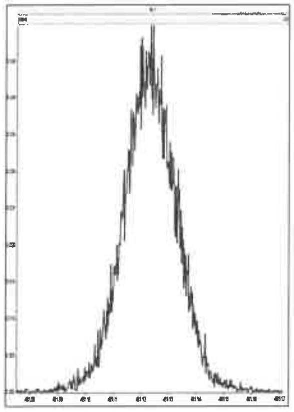

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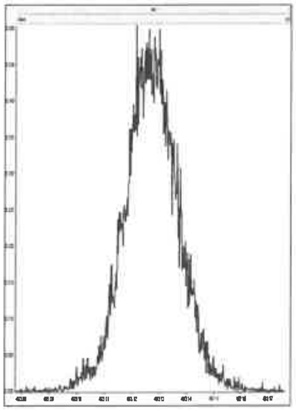

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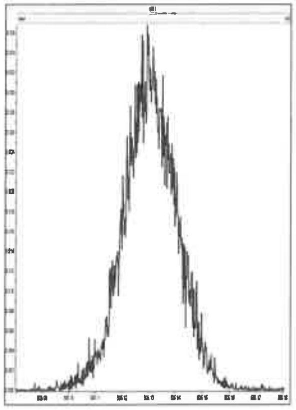

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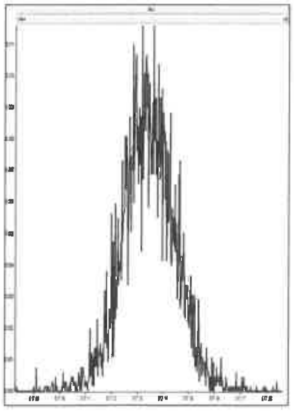

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M 292.9824 R 11665

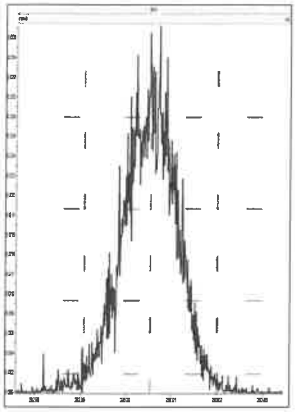

M 304.9824 R 11647

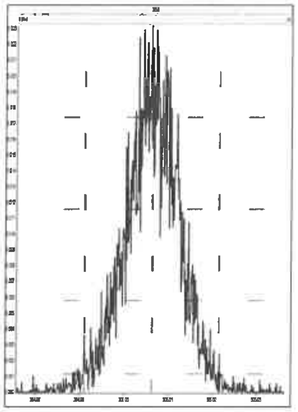

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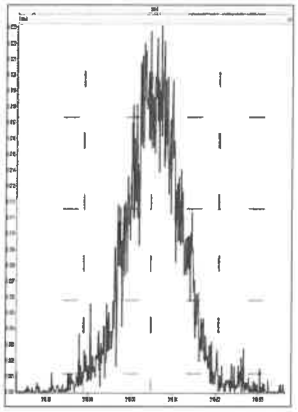

M 330.9792 R 11576

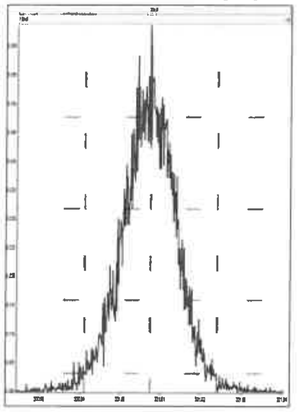

M 342.9792 R 11266

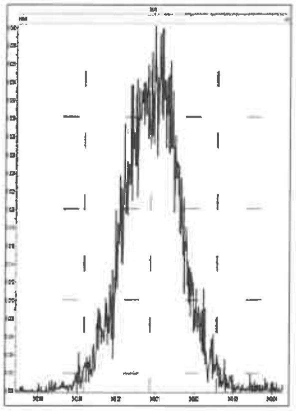

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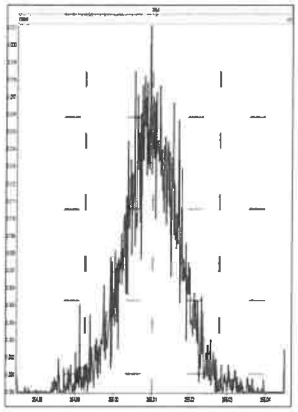

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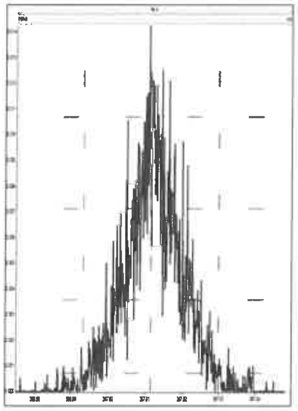

M 380.9760 R 11065

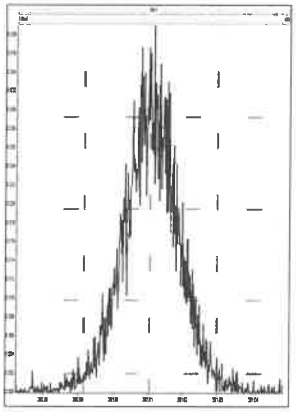

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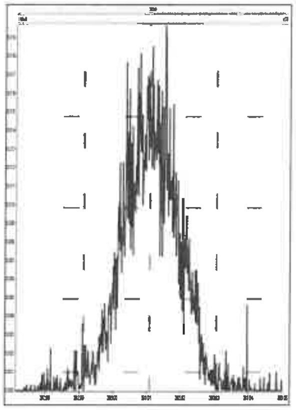

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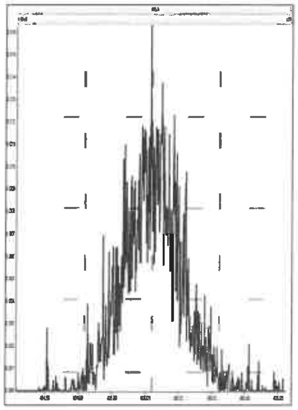

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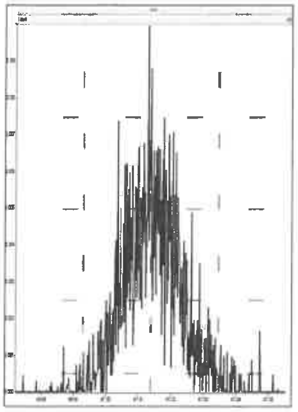

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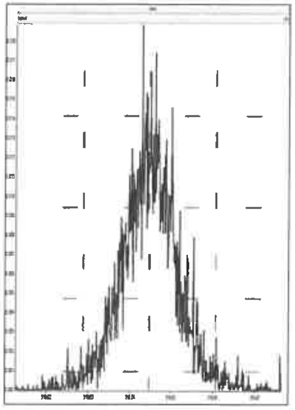

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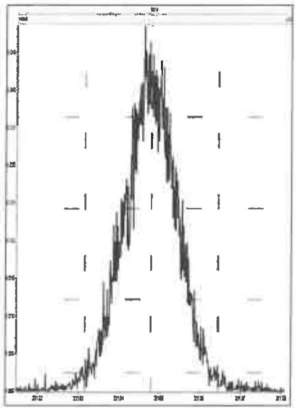

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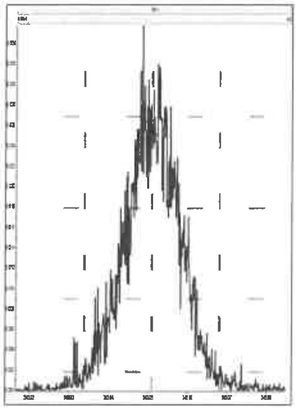

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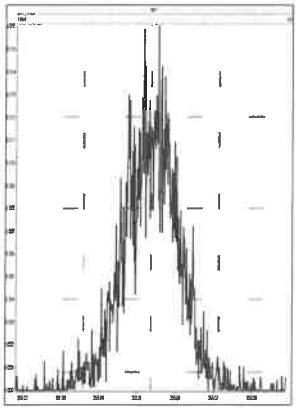

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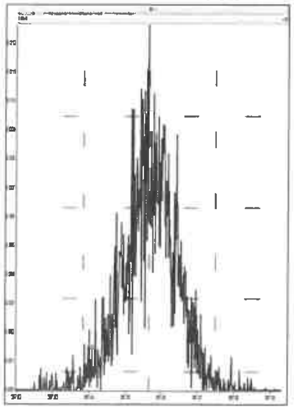

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M 380.9760 R 11233

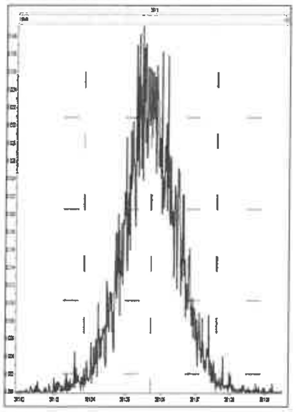

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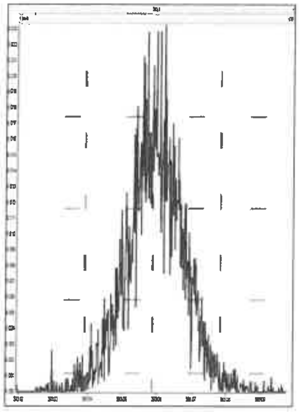

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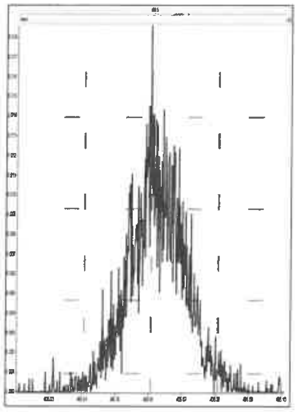

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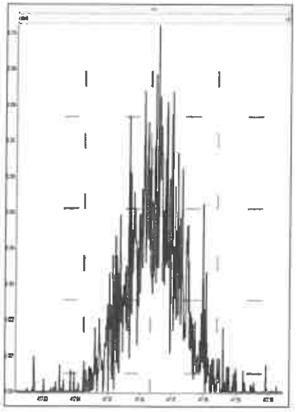

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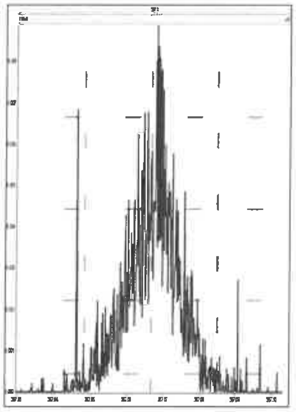

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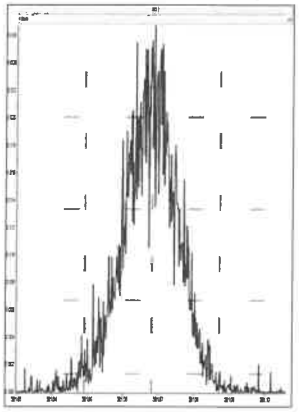

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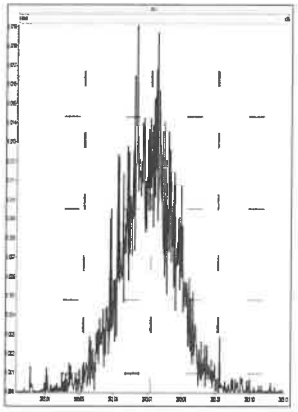

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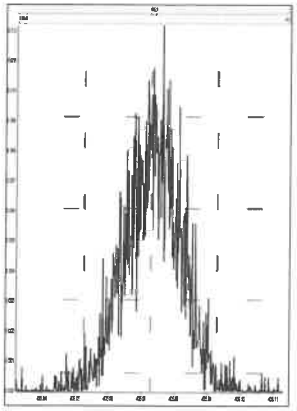

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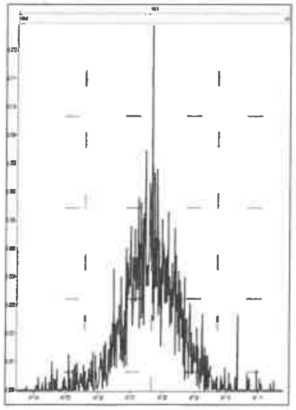

M 430.9728 R 11397

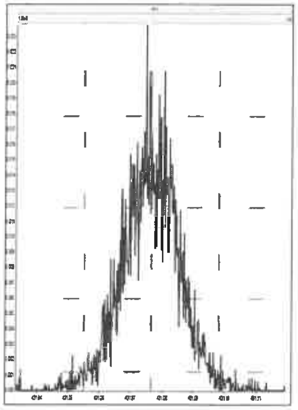

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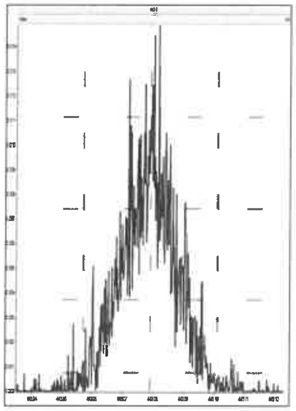

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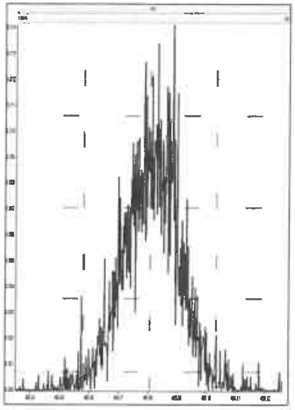

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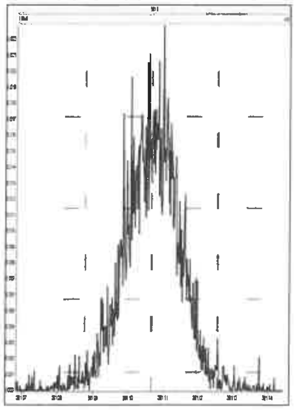

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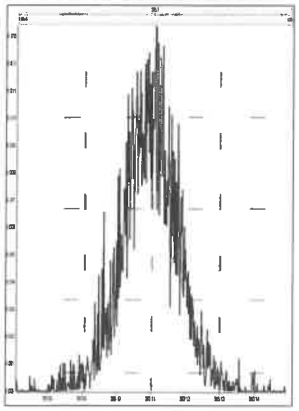

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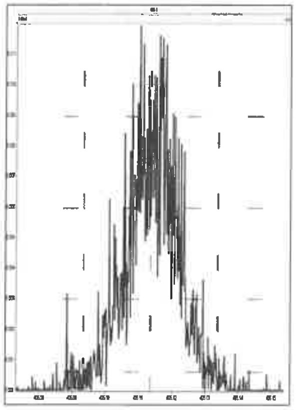

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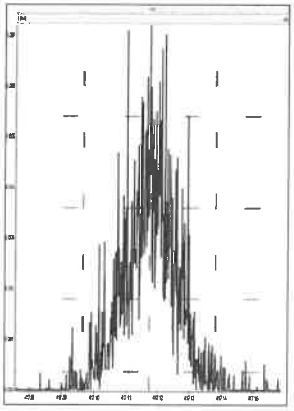

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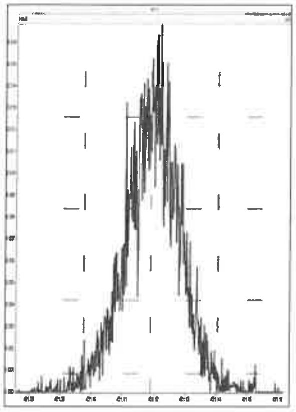

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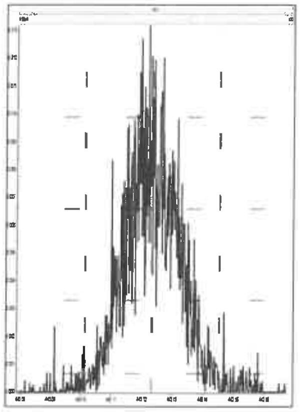

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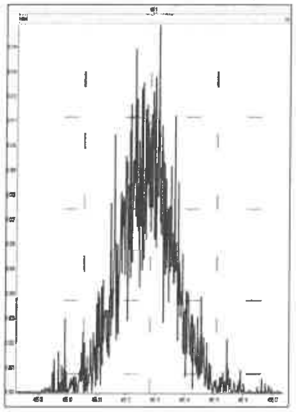

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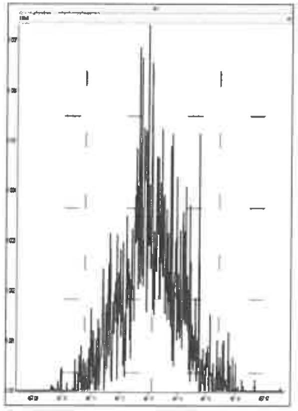

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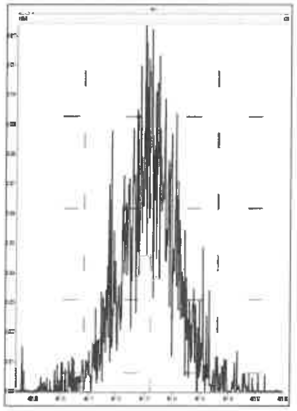

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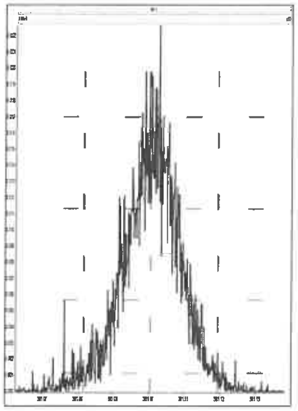

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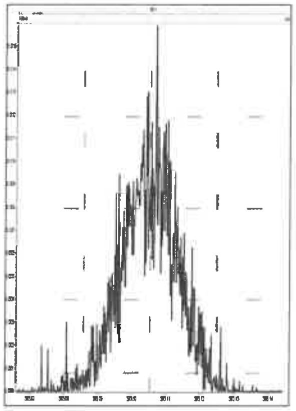

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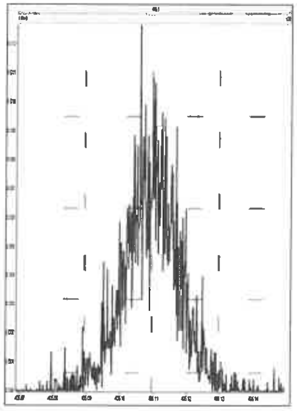

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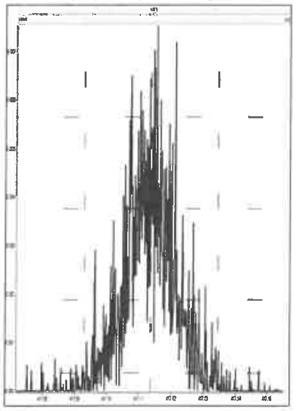

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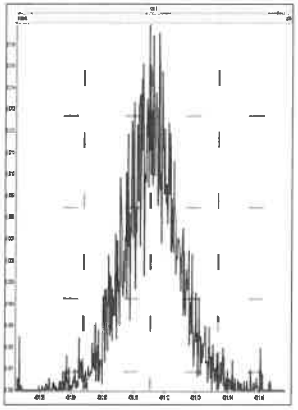

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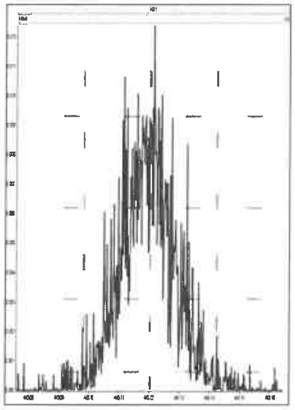

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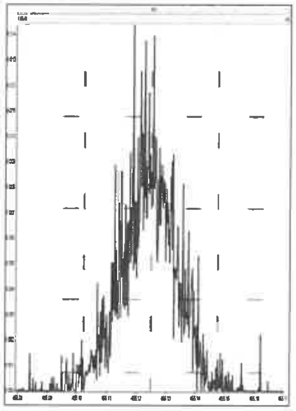

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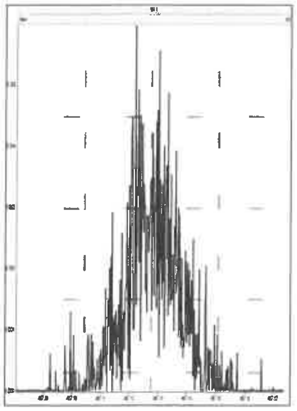

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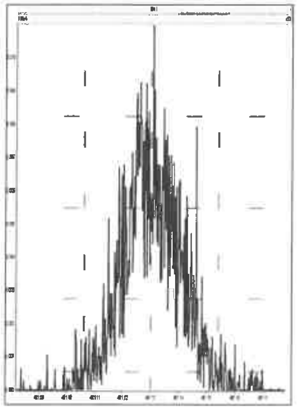

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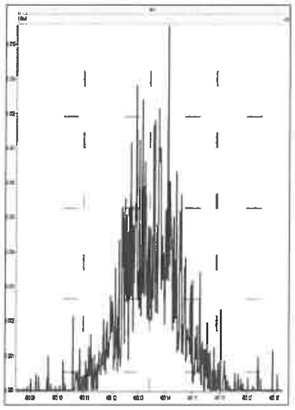

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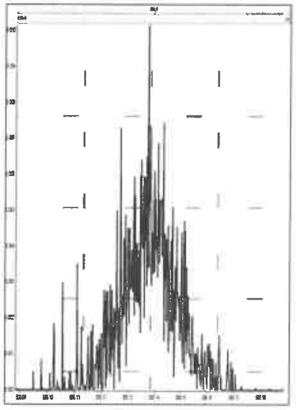

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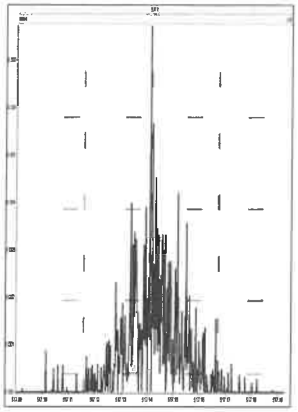

Resolution Check Report **MassLynx 4.1** Page 1 of 4

Printed: Wednesday, September 02, 2020 06:59:03 Pacific Daylight Time

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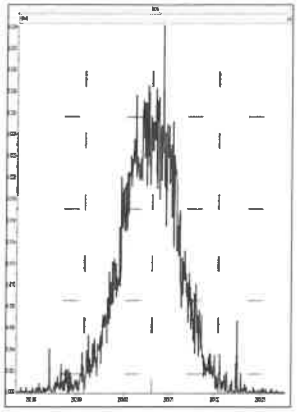

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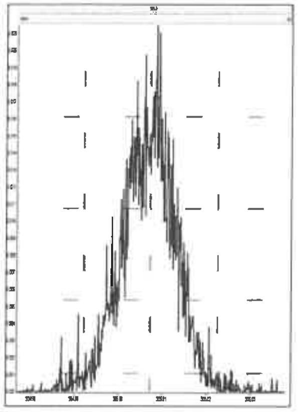

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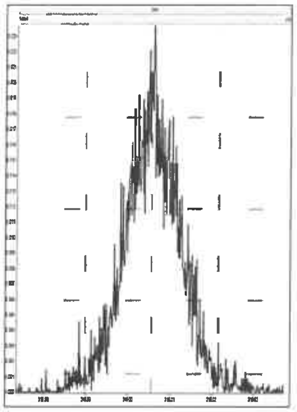

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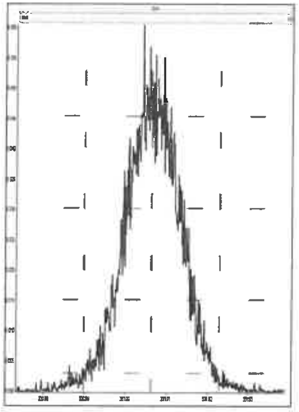

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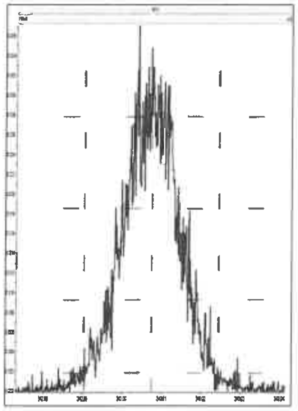

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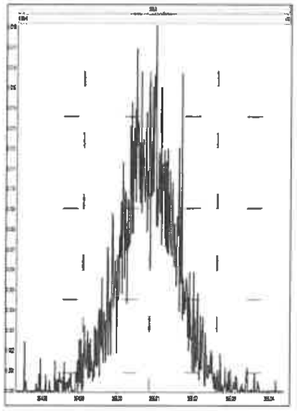

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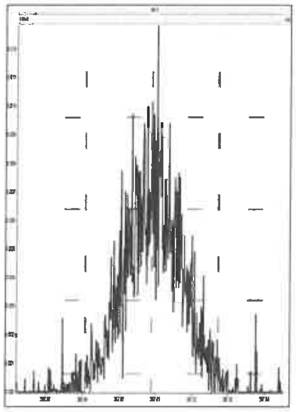

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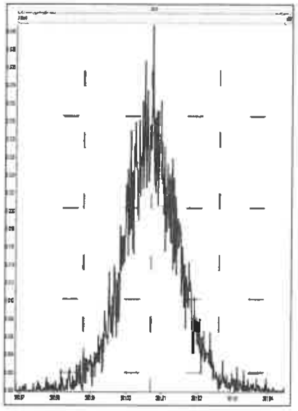

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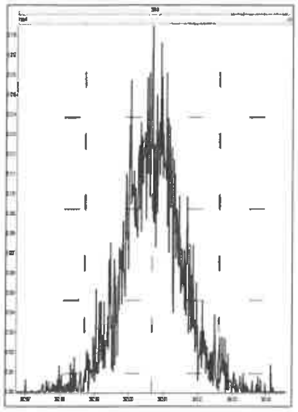

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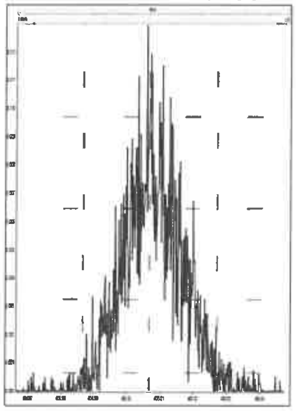

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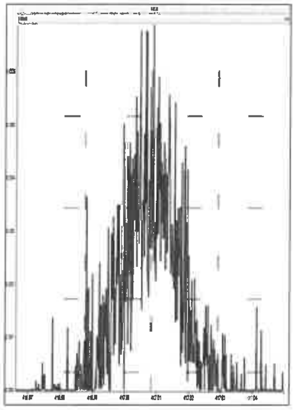

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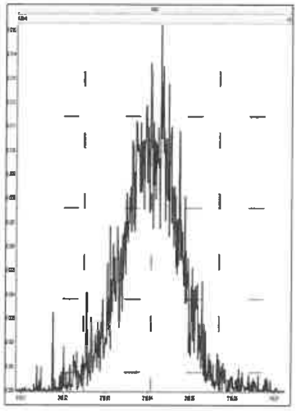

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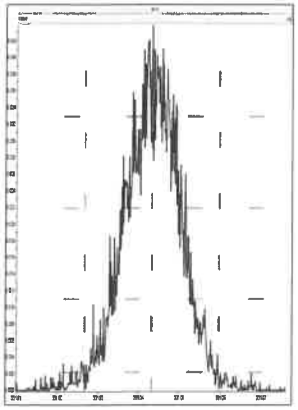

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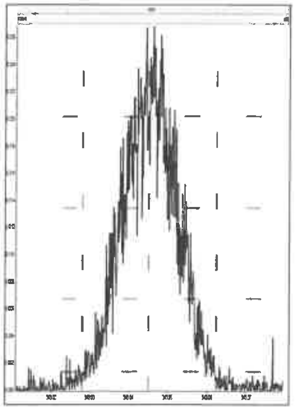

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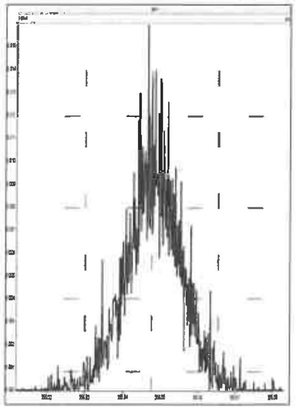

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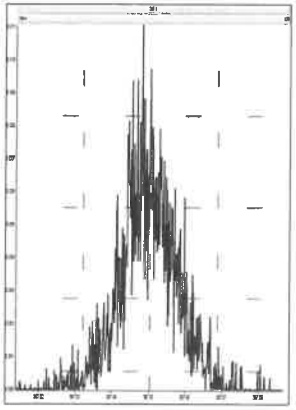

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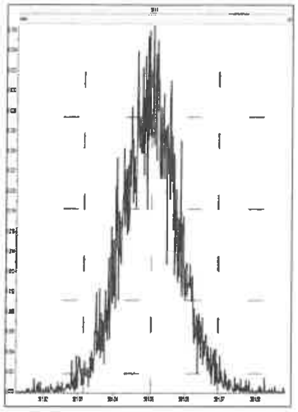

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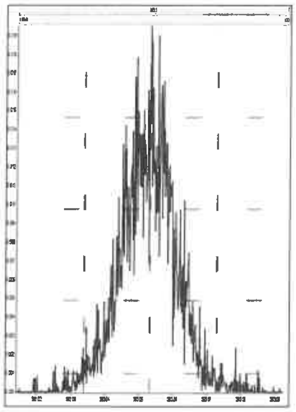

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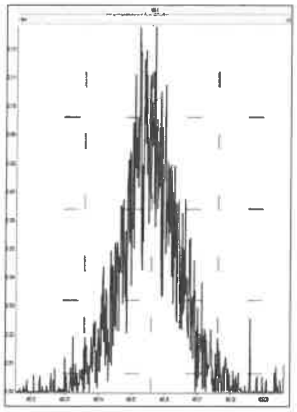

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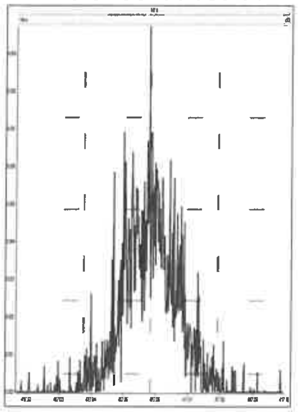

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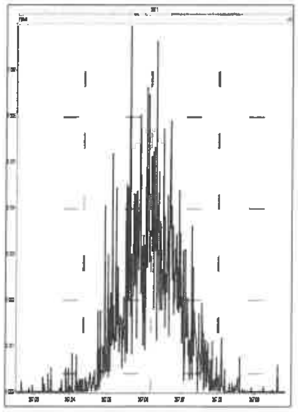

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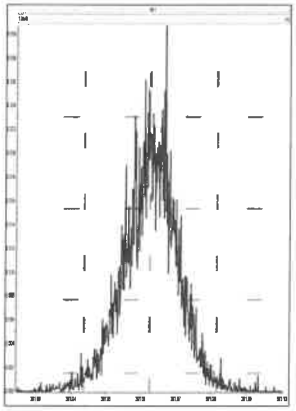

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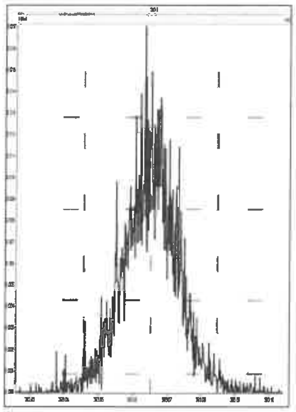

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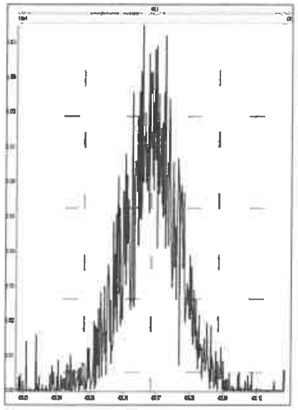

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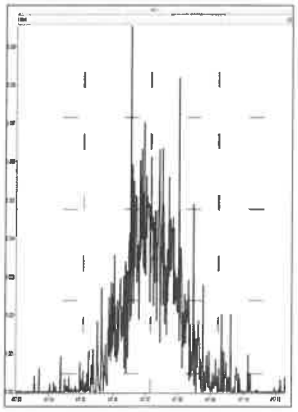

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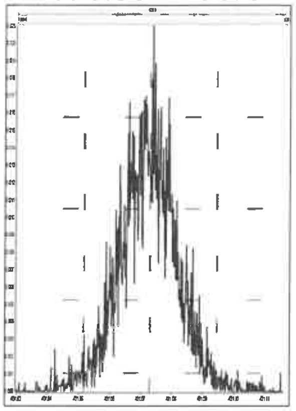

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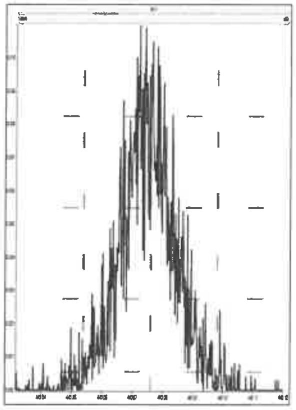

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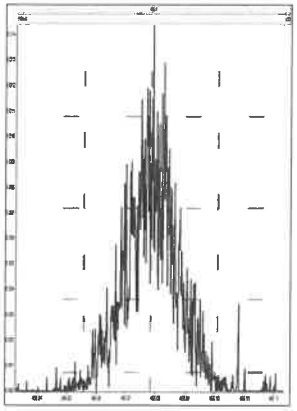

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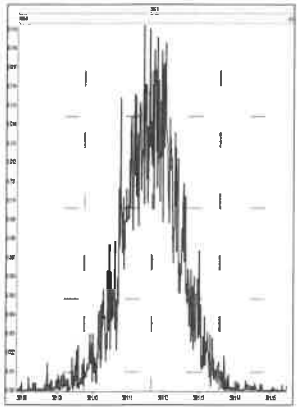

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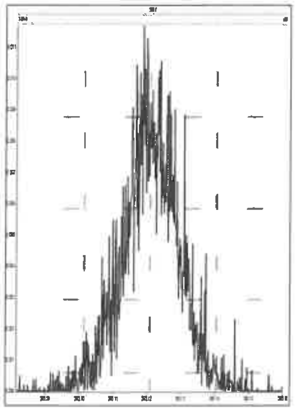

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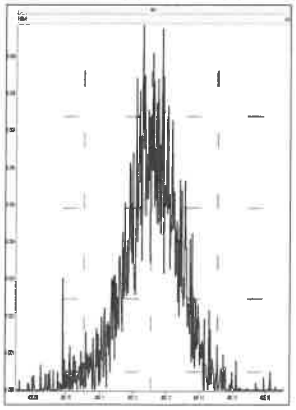

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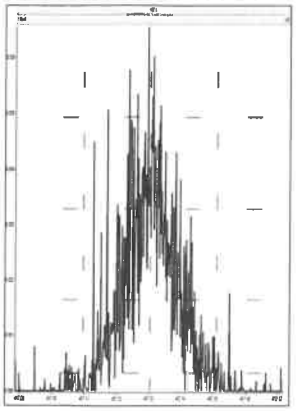

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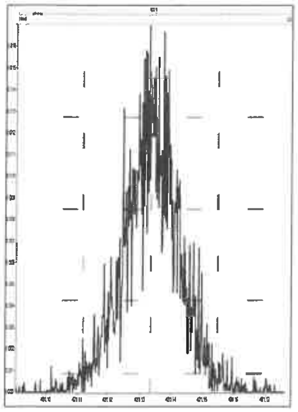

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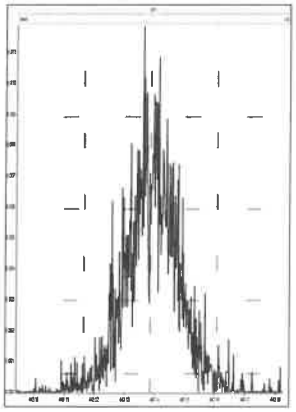

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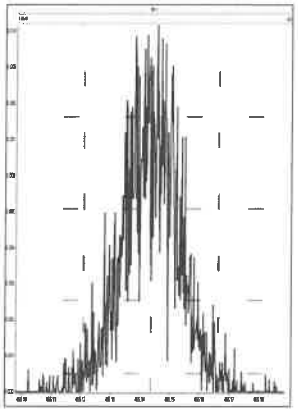

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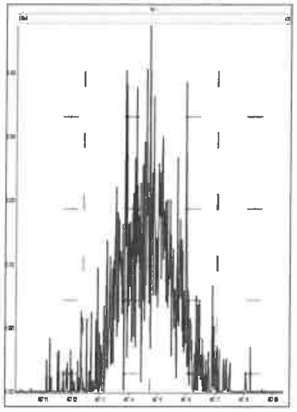

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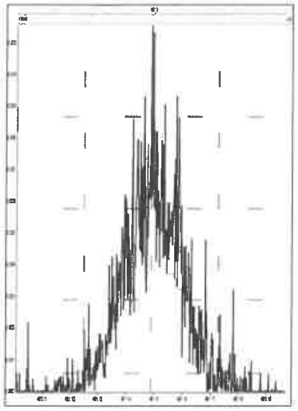

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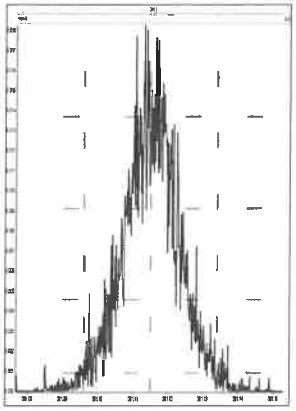

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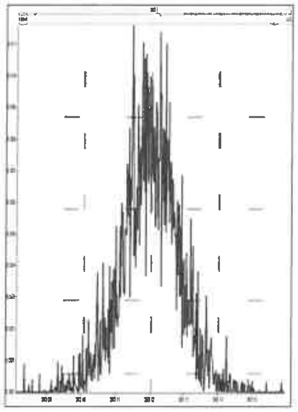

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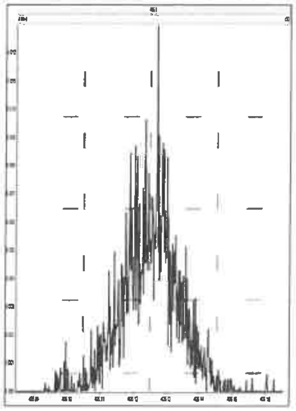

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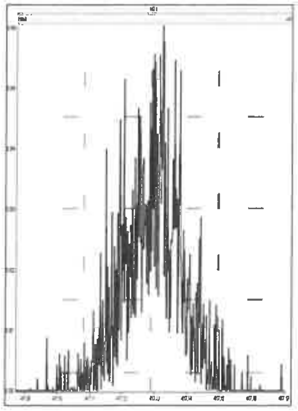

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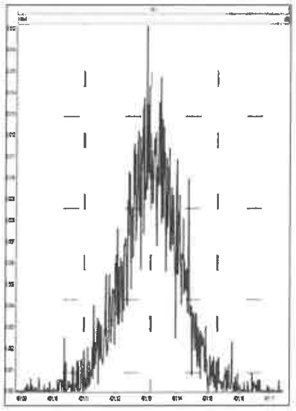

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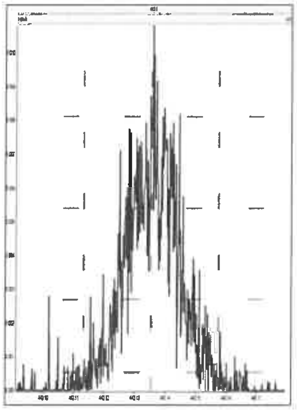

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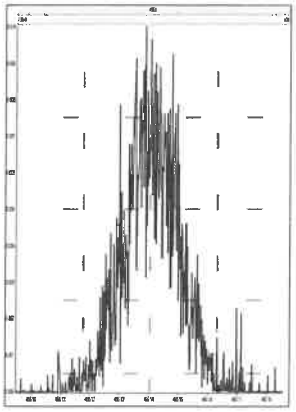

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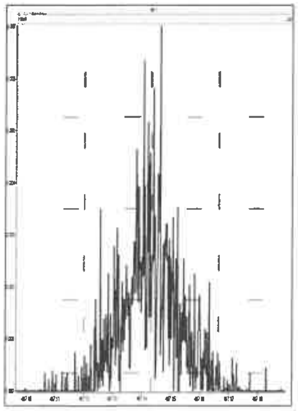

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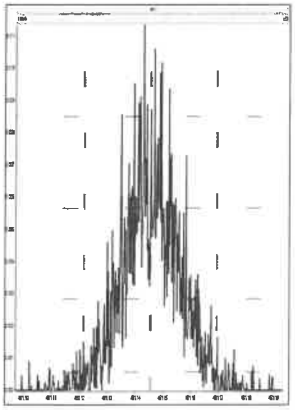

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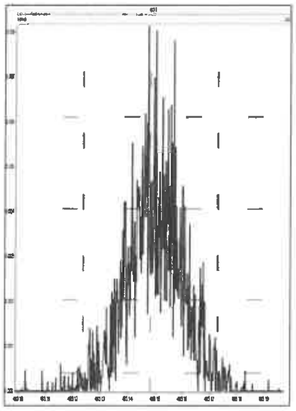

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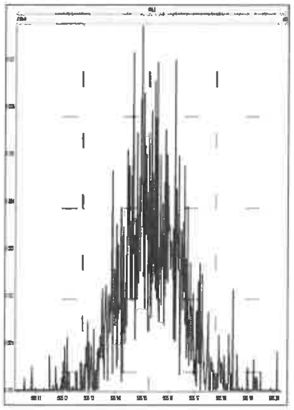

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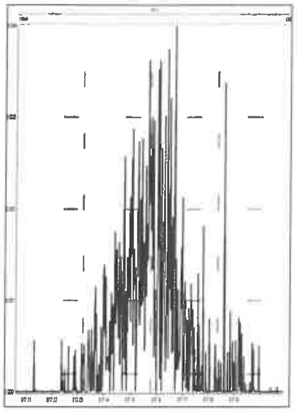

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

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Inject. Date: 01-Sep-2020 20:41:55 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 090120 CS-4 HRDXNL4_00094
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 02-Sep-2020 11:35:19 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 02-Sep-2020 11:31:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.065	20194472	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.536	29341730	0.77	1.3726	105.9	105.9	0.2262	0.2262	106	
2,3,7,8-TCDF	17.551	2508206	0.75	0.9104	9.389	9.389	0.0418	0.0418	93.89	
A Non-2,3,7,8-sub-TCDF	17.234						0.0418	0.0418		
S Total TCDF					9.389	9.389	0.0418	0.0418		
D 13C-2,3,7,8-TCDD	18.262	19975378	0.78	1.0192	97.1	97.1	0.2613	0.2613	97.05	
2,3,7,8-TCDD	18.277	1969810	0.77	1.0745	9.178	9.178	0.0560	0.0560	91.78	
$ 37Cl4-2,3,7,8-TCDD	18.277	2001762		1.0176	9.741	9.741	0.0295	0.0295	97.41	
A Non-2,3,7,8-sub-TCDD	17.695						0.0560	0.0560		
S Total TCDD					9.178	9.178	0.0560	0.0560		
D 13C-1,2,3,7,8-PeCDF	22.696	21752115	1.58	1.1429	94.2	94.2	0.2326	0.2326	94.25	
1,2,3,7,8-PeCDF	22.710	10400367	1.57	0.9938	48.1	48.1	0.1564	0.1564	96.22	
D 13C-2,3,4,7,8-PeCDF	24.074	26222248	1.62	1.3997	92.8	92.8	0.1899	0.1899	92.77	
2,3,4,7,8-PeCDF	24.101	10151910	1.54	0.8117	47.7	47.7	0.1672	0.1672	95.39	
A F1 PeCDFs	20.091						0.0408	0.0408		
A Non-2,3,7,8-sub-PeCDF	23.332						0.1605	0.1605		
S Total PeCDF					95.8	95.8	0.1618	0.1618		
D 13C-1,2,3,7,8-PeCDD	24.810	15326137	1.57	0.8232	92.2	92.2	0.1462	0.1462	92.19	
1,2,3,7,8-PeCDD	24.837	6909276	1.59	1.0181	44.3	44.3	0.1224	0.1224	88.56	
A Non-2,3,7,8-sub-PeCDD	23.699						0.1224	0.1224		
S Total PeCDD					44.3	44.3	0.1224	0.1224		
D 13C-1,2,3,4,7,8-HxCDF	30.809	19699808	0.50	1.1388	106.5	106.5	0.4926	0.4926	106	
1,2,3,4,7,8-HxCDF	30.835	7614929	1.22	0.8061	48.0	48.0	0.3366	0.3366	95.90	
D 13C-1,2,3,6,7,8-HxCDF	30.982	17117759	0.50	1.0803	97.5	97.5	0.5193	0.5193	97.54	
1,2,3,6,7,8-HxCDF	30.995	8449143	1.22	0.9818	50.3	50.3	0.3295	0.3295	101	
D 13C-2,3,4,6,7,8-HxCDF	31.740	16150367	0.50	0.9494	104.7	104.7	0.5908	0.5908	105	
2,3,4,6,7,8-HxCDF	31.753	8236785	1.25	1.0382	49.1	49.1	0.2540	0.2540	98.25	
D 13C-1,2,3,7,8,9-HxCDF	32.499	14755095	0.51	0.8670	104.8	104.8	0.6470	0.6470	105	
1,2,3,7,8,9-HxCDF	32.512	7502843	1.24	1.0321	49.3	49.3	0.2717	0.2717	98.54	
A Non-2,3,7,8-sub-HxCDF	30.522						0.2934	0.2934		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					196.6	196.6	0.2979	0.2979		
* 13C-1,2,3,7,8,9-HxCDD	32.326	16244348	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.913	15677365	1.28	0.9356	103.1	103.1	0.4160	0.4160	103	
1,2,3,4,7,8-HxCDD	31.927	6021416	1.24	0.8202	46.8	46.8	0.2178	0.2178	93.65	
D 13C-1,2,3,6,7,8-HxCDD	32.006	15167902	1.26	1.0416	89.6	89.6	0.3736	0.3736	89.65	
1,2,3,6,7,8-HxCDD	32.020	6839580	1.25	0.9367	48.1	48.1	0.2175	0.2175	96.28	
1,2,3,7,8,9-HxCDD	32.339	7422999	1.25	0.9905	48.6	48.6	0.1922	0.1922	97.19	
A Non-2,3,7,8-sub-HxCDD	31.201						0.2078	0.2078		
S Total HxCDD					143.6	143.6	0.2091	0.2091		
D 13C-1,2,3,4,6,7,8-HpCDF	33.873	13803468	0.43	0.7899	107.6	107.6	1.387	1.387	108	
1,2,3,4,6,7,8-HpCDF	33.885	9569768	1.02	1.4527	47.7	47.7	0.5512	0.5512	95.45	
D 13C-1,2,3,4,7,8,9-HpCDF	34.954	15979467	0.44	0.9093	108.2	108.2	1.205	1.205	108	
1,2,3,4,7,8,9-HpCDF	34.966	7953676	1.05	1.0585	47.0	47.0	0.7131	0.7131	94.04	
A Non-2,3,7,8-sub-HpCDF	34.425						0.6189	0.6189		
S Total HpCDF					94.7	94.7	0.6321	0.6321		
D 13C-1,2,3,4,6,7,8-HpCDD	34.662	13510462	1.04	0.7637	108.9	108.9	0.5943	0.5943	109	
1,2,3,4,6,7,8-HpCDD	34.674	6374553	1.03	1.0540	44.8	44.8	0.2571	0.2571	89.53	
A Non-2,3,7,8-sub-HpCDD	35.325						0.2571	0.2571		
S Total HpCDD					44.8	44.8	0.2571	0.2571		
D 13C-OCDD	37.006	21758779	0.92	0.6377	210.0	210.0	0.4154	0.4154	105	
OCDF	37.113	14218835	0.90	1.2965	100.8	100.8	0.1593	0.1593	101	
OCDD	37.018	11809380	0.88	1.1499	94.4	94.4	0.1827	0.1827	94.40	

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 02-Sep-2020 11:35:20 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_2.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	01-Sep-2020 20:41:55	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV 090120 CS-4 HRDXNL4_00094				
Misc. Info.:	01SE2010D5				
Operator ID:	ALM	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	02-Sep-2020 11:35:19	Calib Date:	27-Jun-2020 17:43:35		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)	Det: F1:HRSIR			
Process Host:	CTX1024				
First Level Reviewer: shardaa		Date:	02-Sep-2020 11:31:20		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.065	18.065	0		8918851	2206116	3430	8575	643		
333.9339	18.065	18.065	0		11275621	2740646	1840	4600	1489	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.536	17.536	0	0.971	12793321	3246781	3283	8207	989		
317.9389	17.536	17.536	0	0.971	16548409	4162552	2860	7150	1455	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.551	17.551	0	1.001	1074548	262517	465	1162	565		
305.8987	17.551	17.551	0	1.001	1433658	358081	664	1660	539	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						465	1162			
305.8987	17.234						664	1660			
13C-2,3,7,8-TCDD											
331.9368	18.262	18.262	0	1.011	8731111	2038435	3430	8575	594		
333.9339	18.262	18.262	0	1.011	11244267	2593987	1840	4600	1410	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.277	18.277	0	1.001	854470	197121	657	1642	300		
321.8936	18.277	18.277	0	1.001	1115340	252068	458	1145	550	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.277	18.277	0	1.012	2001762	467078	594	1485	786		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.695						657	1642			
321.8936	17.695						458	1145			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.696	22.696	0	1.256	13321563	2287002	3099	7747	738		
353.8970	22.696	22.696	0	1.256	8430552	1451403	2162	5405	671	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.710	22.710	0	1.001	6348056	1091246	1282	3205	851		
341.8567	22.710	22.710	0	1.001	4052311	699128	1042	2605	671	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	24.074	24.074	0	1.333	16210918	2636020	3099	7747	851		
353.8970	24.074	24.074	0	1.333	10011330	1644170	2162	5405	760	1.62(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	24.101	24.101	0	1.001	6162043	974590	1282	3205	760		
341.8567	24.101	24.101	0	1.001	3989867	633428	1042	2605	608	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	20.091						168	420			
341.8567	20.091						422	1055			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.332						1282	3205			
341.8567	23.332						1042	2605			
13C-1,2,3,7,8-PeCDD											
367.8949	24.810	24.810	0	1.373	9360320	1425429	1388	3470	1027		
369.8919	24.823	24.810	1	1.374	5965817	882050	993	2482	888	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.837	24.837	0	1.001	4237288	627367	732	1830	857		
357.8516	24.837	24.837	0	1.001	2671988	398515	418	1045	953	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.699						732	1830			
357.8516	23.699						418	1045			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.809	30.809	0	0.953	6587008	1365310	3194	7985	427		
385.8610	30.809	30.809	0	0.953	13112800	2732916	5953	14882	459	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.835	30.835	0	1.001	4182645	915367	2384	5960	384		
375.8178	30.835	30.835	0	1.001	3432284	737769	2064	5160	357	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.982	30.982	0	0.958	5693545	1140968	3194	7985	357		
385.8610	30.982	30.982	0	0.958	11424214	2296484	5953	14882	386	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.995	30.995	0	1.000	4647571	962860	2384	5960	404		
375.8178	30.995	30.995	0	1.000	3801572	788354	2064	5160	382	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.740	31.740	0	0.982	5414618	1404152	3194	7985	440		
385.8610	31.740	31.740	0	0.982	10735749	2812788	5953	14882	472	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.753	31.753	0	1.000	4571405	1218315	2384	5960	511		
375.8178	31.753	31.753	0	1.000	3665380	961950	2064	5160	466	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.499	32.499	0	1.005	4991822	1324661	3194	7985	415		
385.8610	32.499	32.499	0	1.005	9763273	2641660	5953	14882	444	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.512	32.512	0	1.000	4152922	1107114	2384	5960	464		
375.8178	32.512	32.512	0	1.000	3349921	892712	2064	5160	433	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						2384	5960			
375.8178	30.522						2064	5160			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.326	32.326	0		9094558	2295022	3613	9032	635		
403.8529	32.313	32.326	-1		7149790	1781462	2733	6832	652	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.913	31.913	0	0.987	8813777	2535086	3613	9032	702		
403.8529	31.913	31.913	0	0.987	6863588	1935471	2733	6832	708	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.927	31.927	0	1.000	3333507	965567	1792	4480	539		
391.8127	31.927	31.927	0	1.000	2687909	750559	1402	3505	535	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	32.006	32.006	0	0.990	8461764	2178154	3613	9032	603		
403.8529	32.006	32.006	0	0.990	6706138	1741469	2733	6832	637	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	32.020	32.020	0	1.000	3799479	992370	1792	4480	554		
391.8127	32.020	32.020	0	1.000	3040101	801726	1402	3505	572	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.339	32.339	0	1.013	4120682	1014887	1792	4480	566		
391.8127	32.326	32.339	-1	1.013	3302317	814710	1402	3505	581	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.201						1792	4480			
391.8127	31.201						1402	3505			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.873	33.873	0	1.048	4181899	1325528	7120	17800	186		
419.8220	33.873	33.873	0	1.048	9621569	3030923	10746	26865	282	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.885	33.885	0	1.000	4831337	1575871	8422	21055	187		
409.7789	33.885	33.885	0	1.000	4738431	1549003	5532	13830	280	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.954	34.954	0	1.081	4858017	1384150	7120	17800	194		
419.8220	34.954	34.954	0	1.081	11121450	3237476	10746	26865	301	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.966	34.966	0	1.000	4066560	1185842	8422	21055	141		
409.7789	34.966	34.966	0	1.000	3887116	1127407	5532	13830	204	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						8422	21055			
409.7789	34.425						5532	13830			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.662	34.662	0	1.072	6890245	2026239	3888	9720	521		
437.8140	34.662	34.662	0	1.072	6620217	1962998	3513	8782	559	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.674	34.674	0	1.000	3240000	976436	2290	5725	426		
425.7737	34.674	34.674	0	1.000	3134553	917726	2034	5085	451	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.325						2290	5725			
425.7737	35.325						2034	5085			
13C-OCDD											
469.7779	37.006	37.006	0	1.145	10401903	2578624	2708	6770	952		
471.7750	37.006	37.006	0	1.145	11356876	2778470	1612	4030	1724	0.92(0.76-1.02)	
OCDF											
441.7428	37.113	37.113	0	1.003	6719559	1737320	1115	2787	1558		
443.7399	37.113	37.113	0	1.003	7499276	1874574	1098	2745	1707	0.90(0.76-1.02)	
OCDD											
457.7377	37.018	37.018	0	1.000	5539238	1347655	1115	2787	1209		
459.7348	37.018	37.018	0	1.000	6270142	1520614	1136	2840	1339	0.88(0.76-1.02)	

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 02-Sep-2020 11:35:20 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_2.d

Injection Date: 01-Sep-2020 20:41:55 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

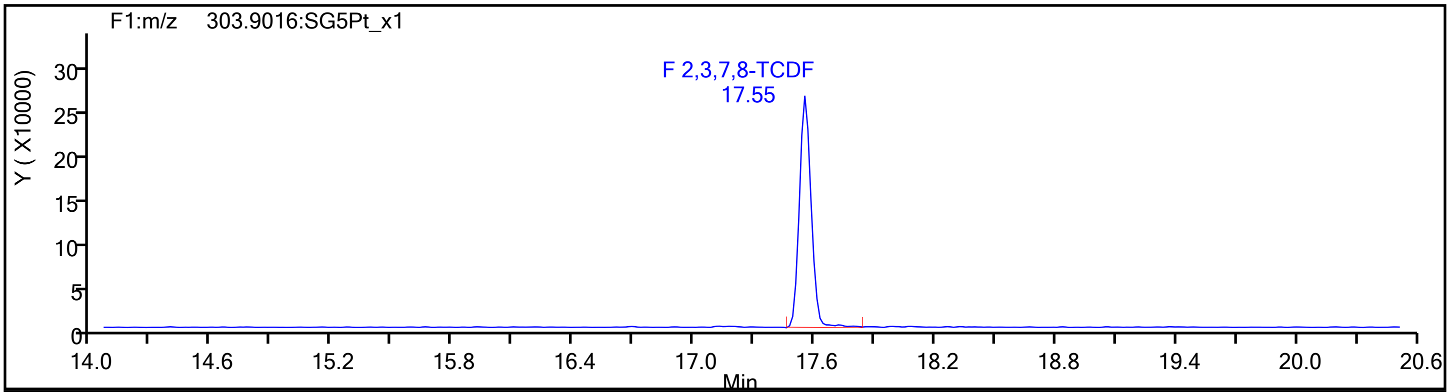

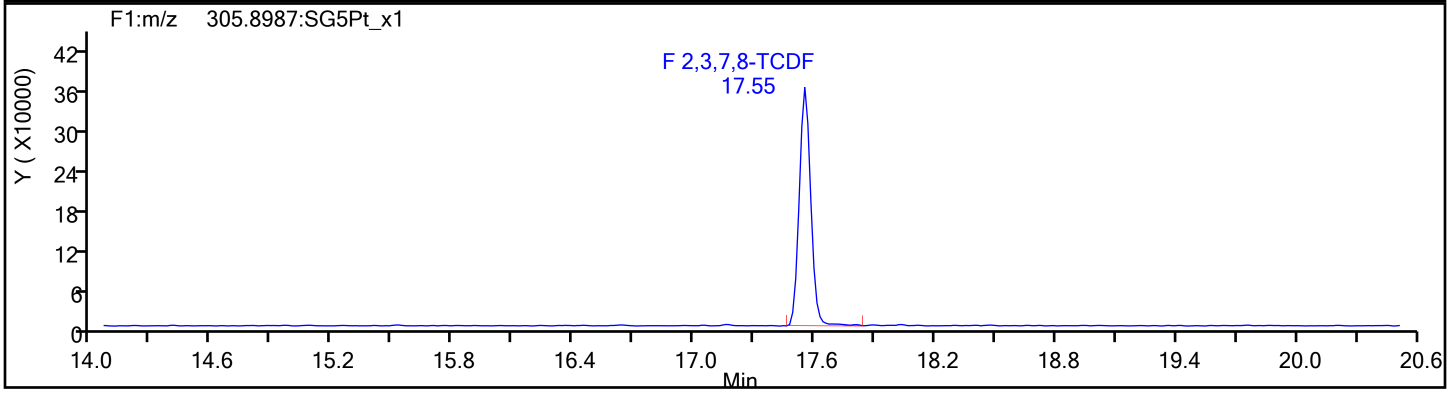

TCDF Standards

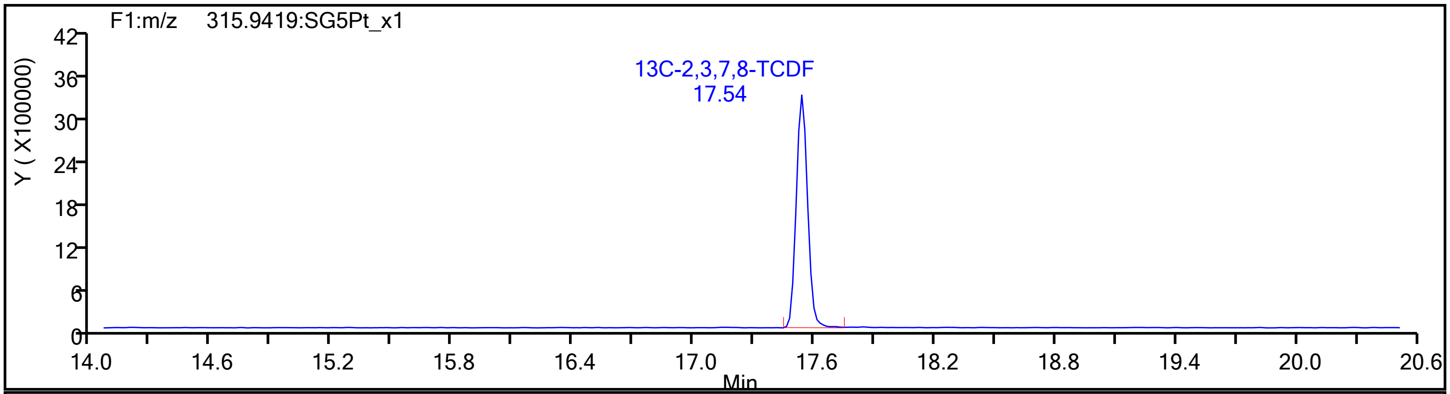

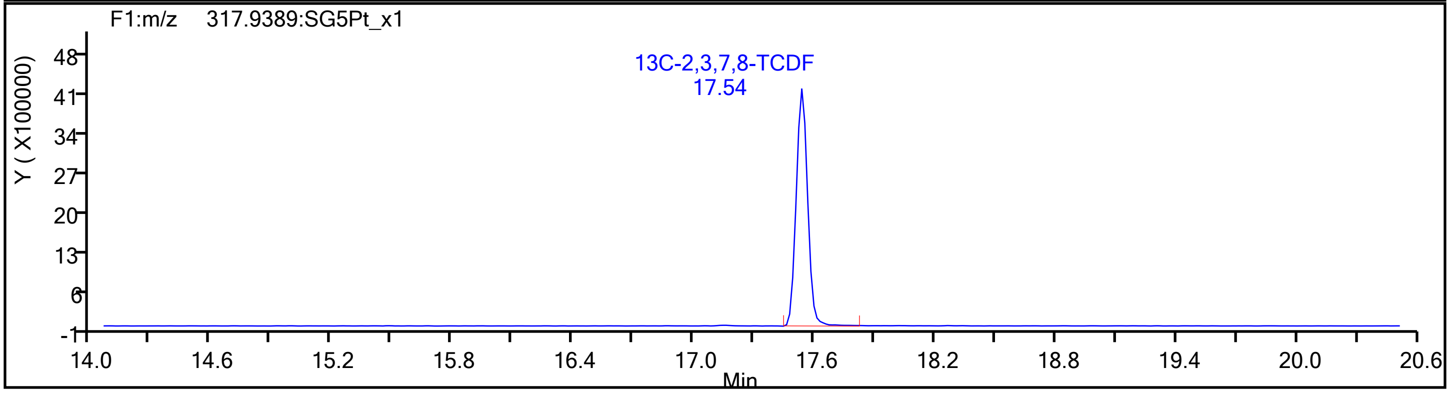

Report Date: 02-Sep-2020 11:35:20 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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TCDF

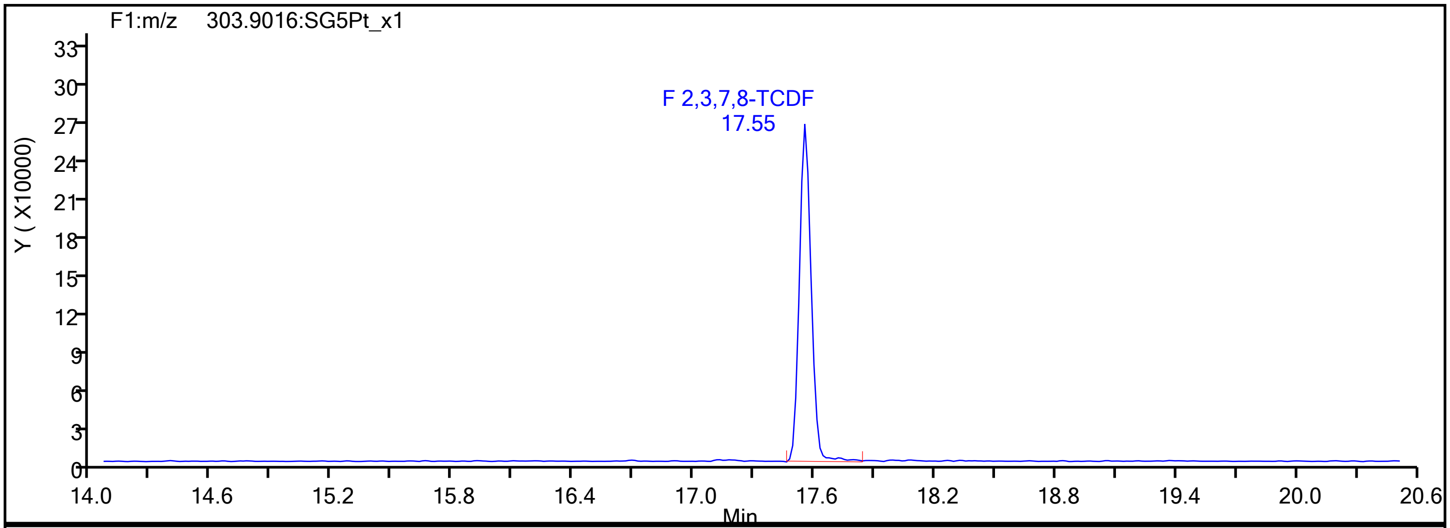

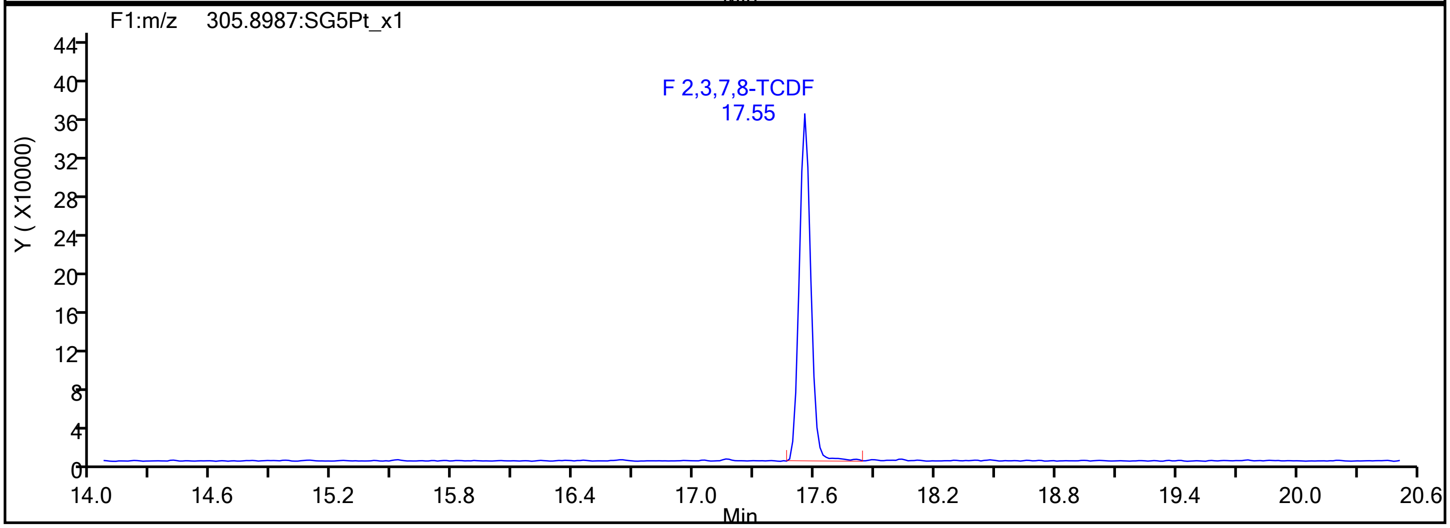

TCDF Interference Mass

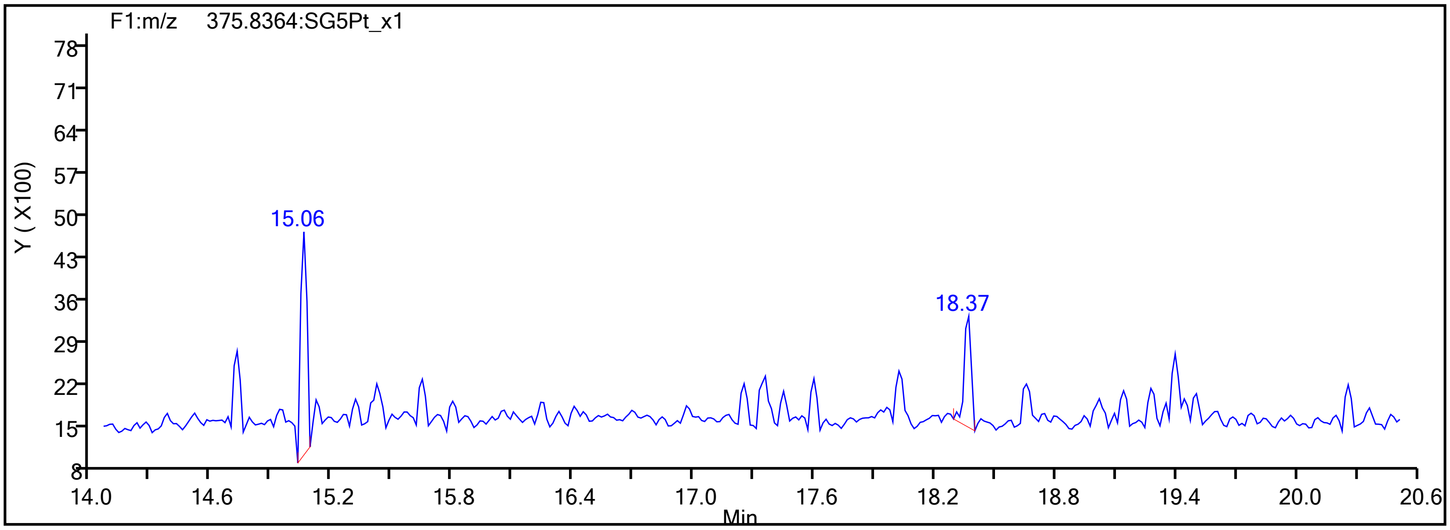

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Eurofins TestAmerica, Sacramento

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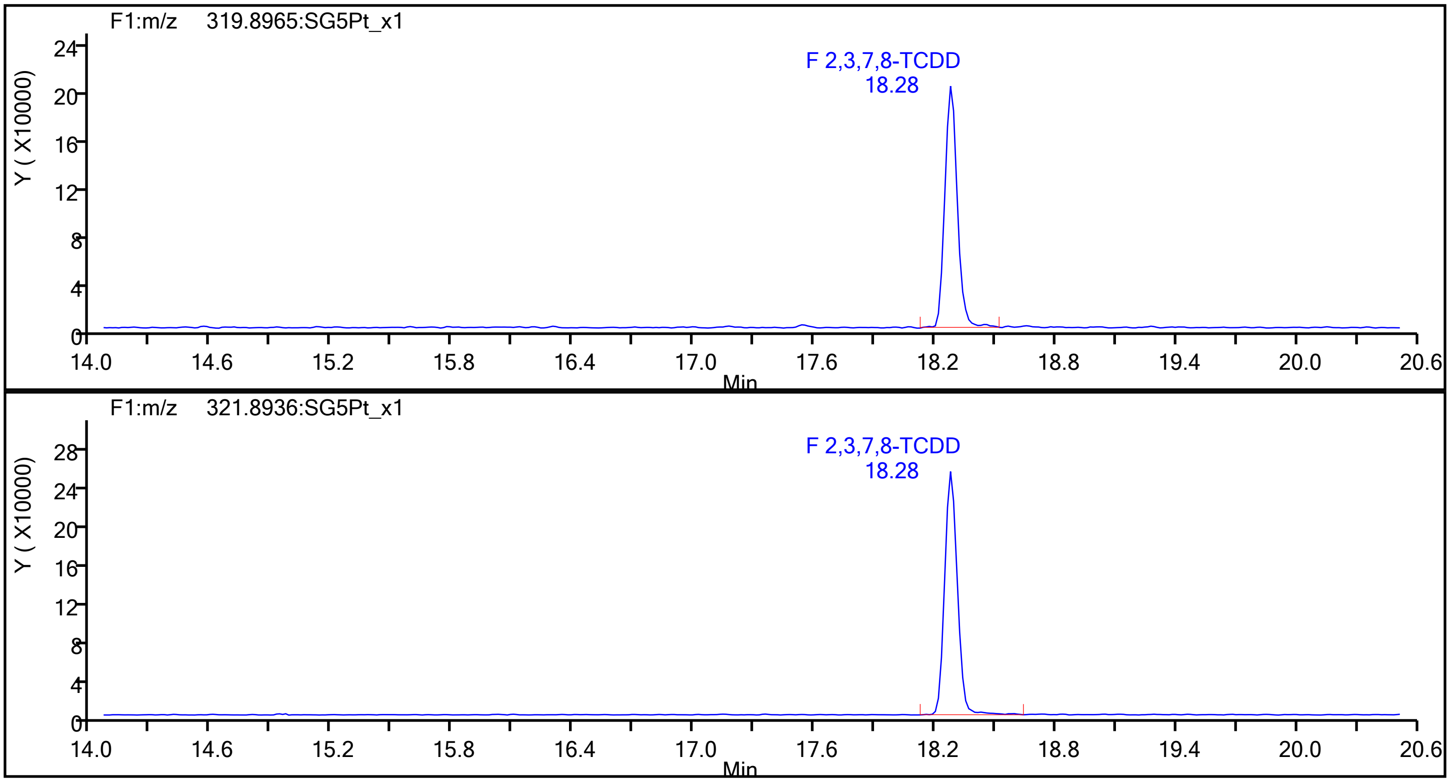

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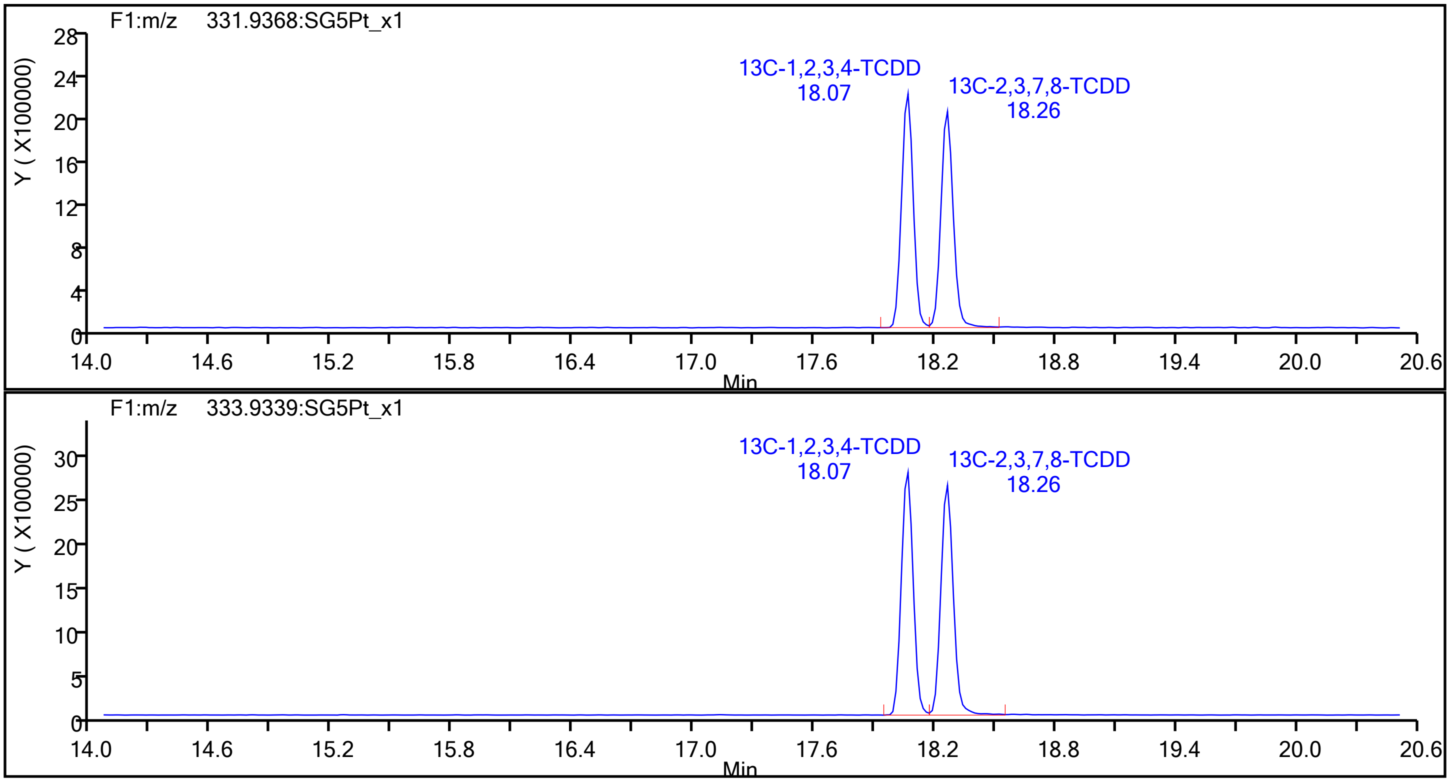

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37Cl4-TCDD

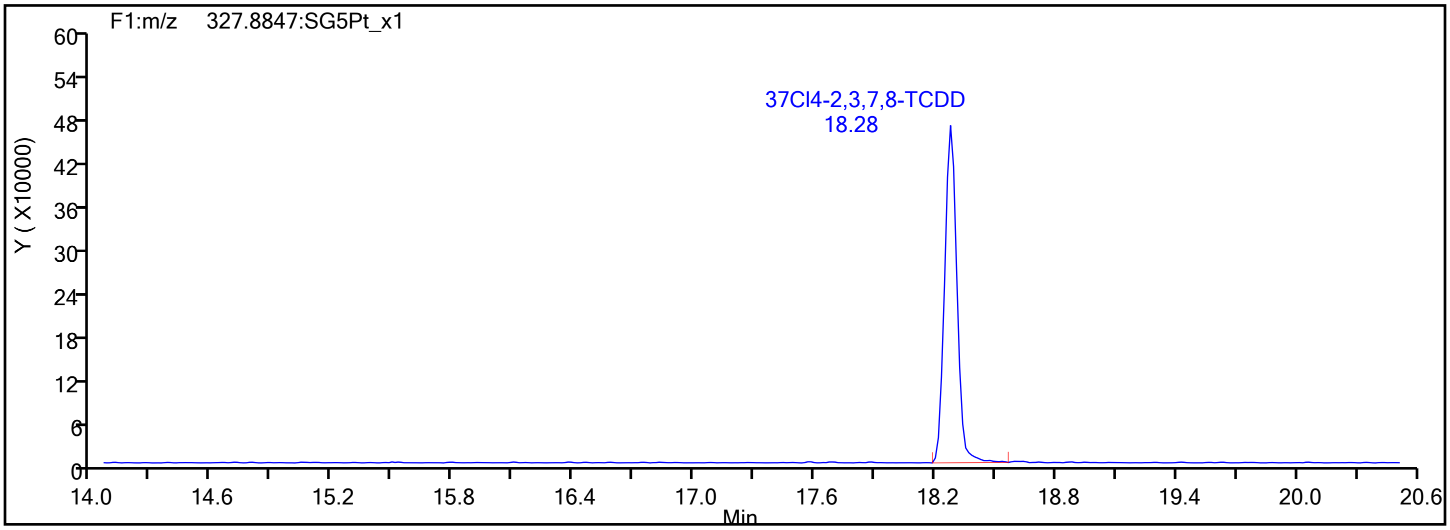

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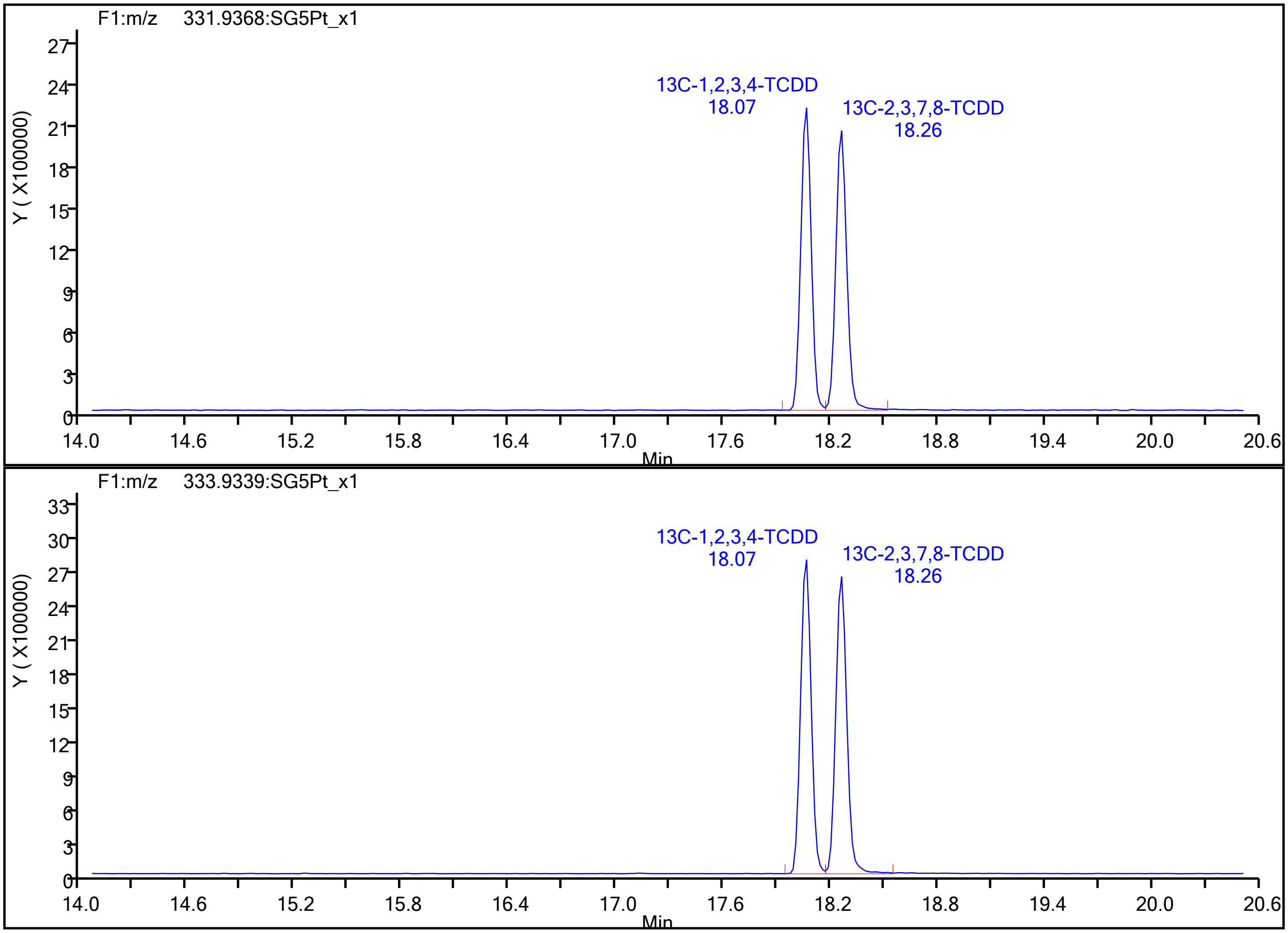

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F1 PeCDFs

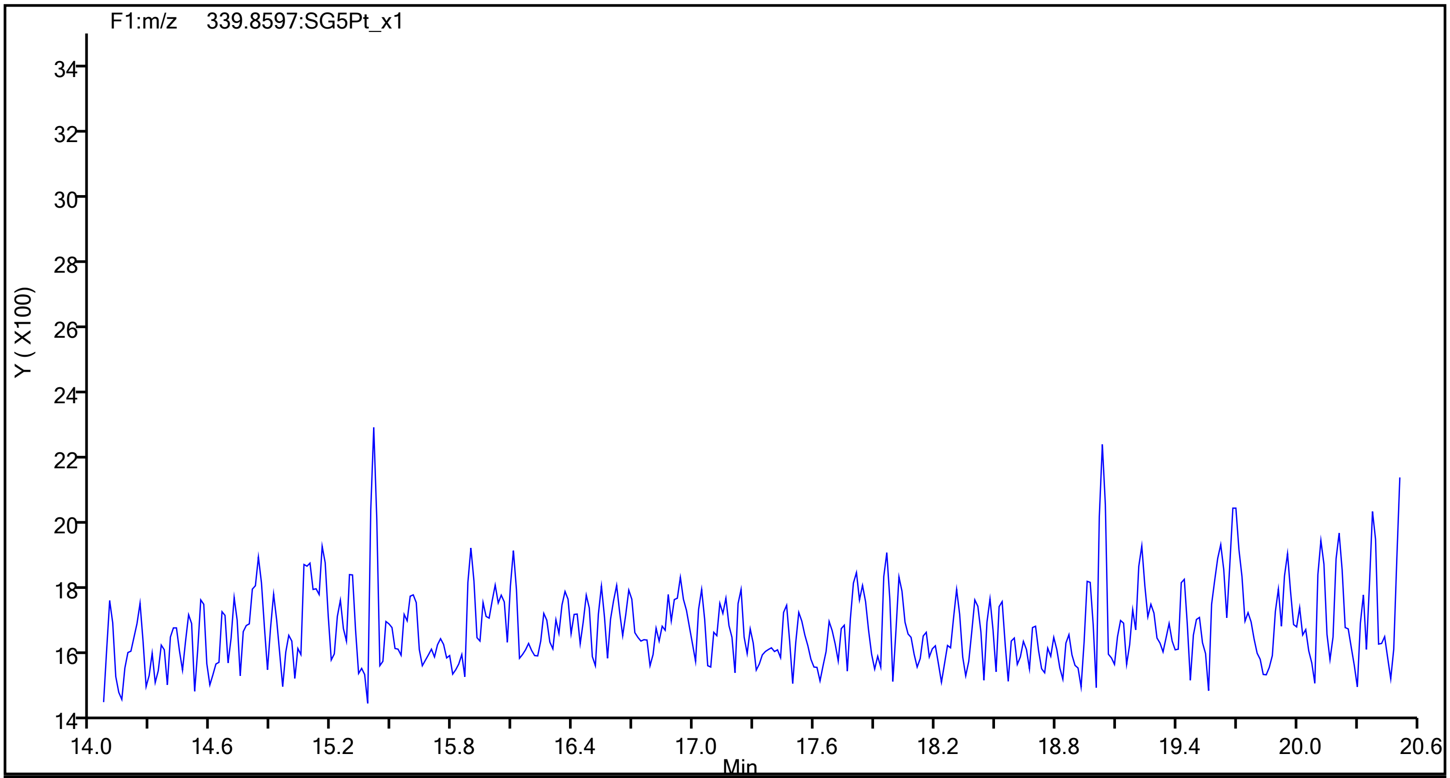

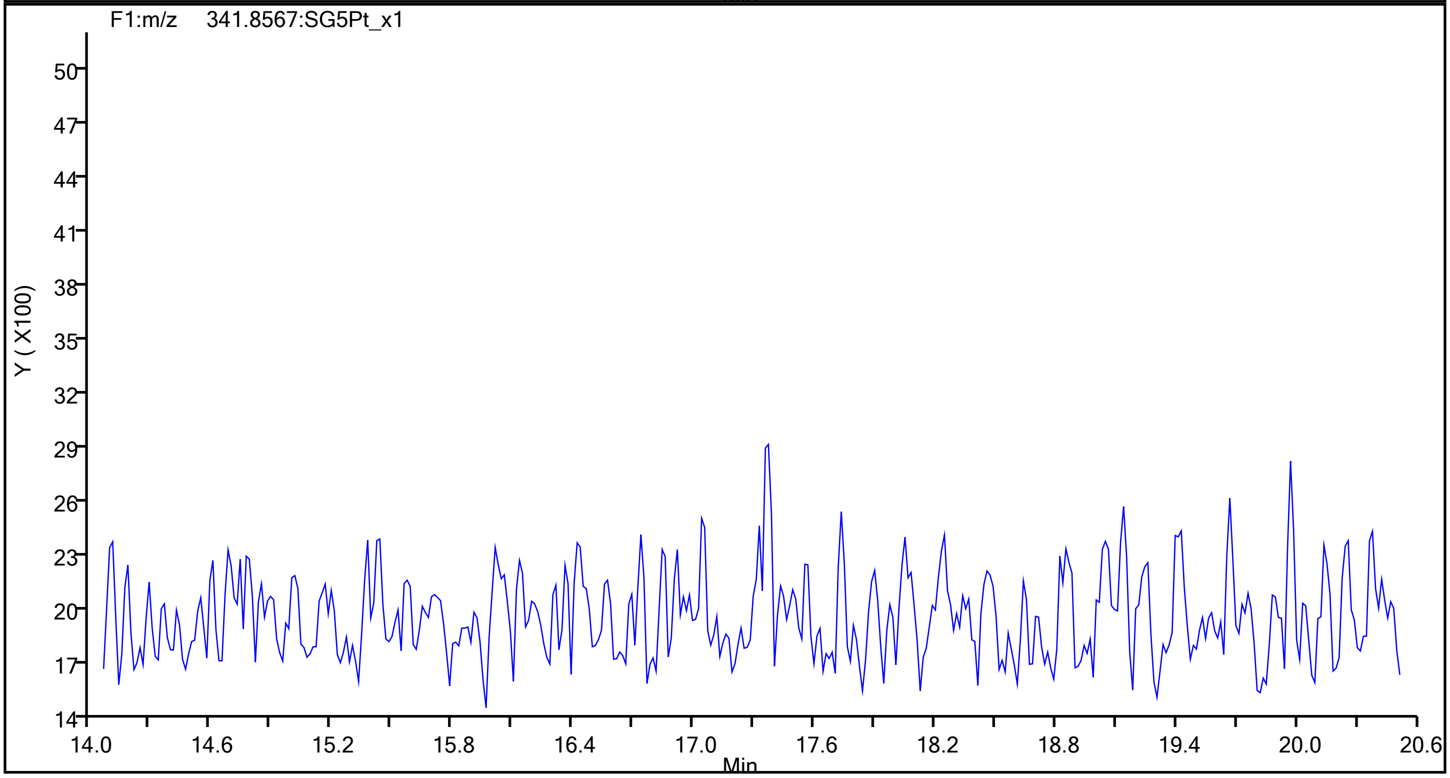

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

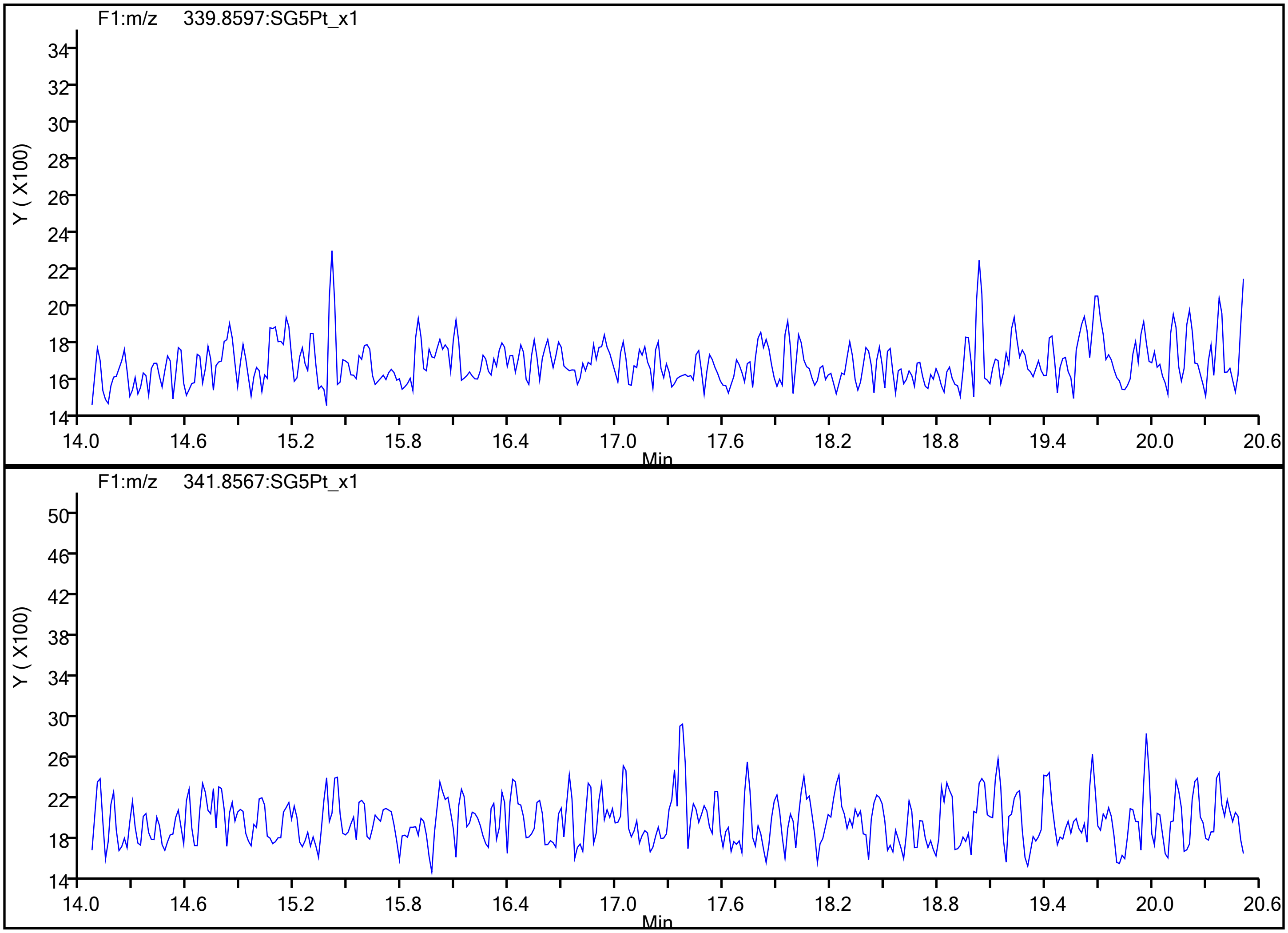

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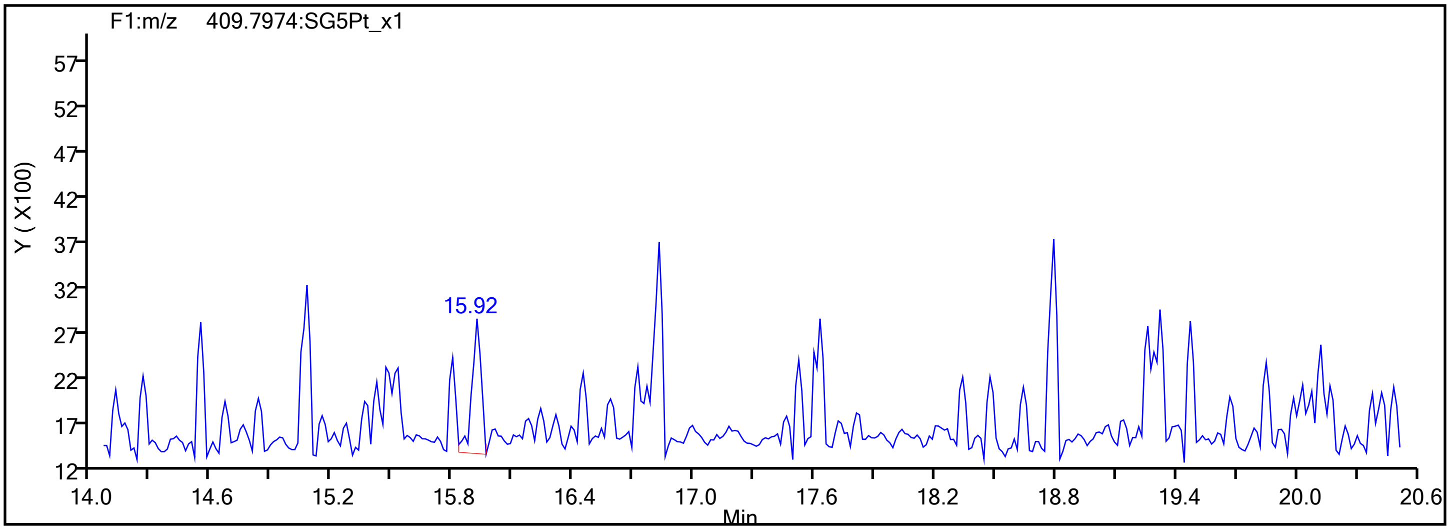

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PeCDF

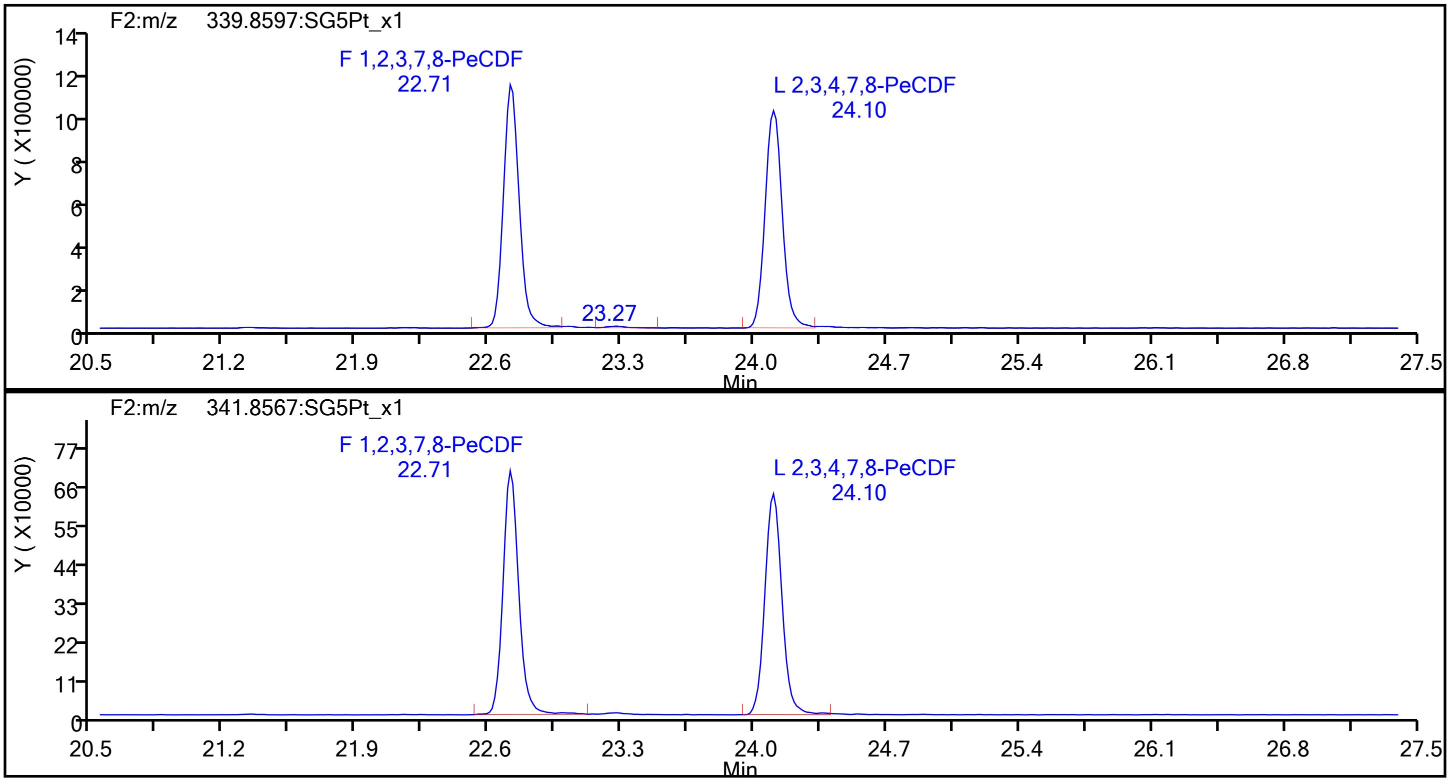

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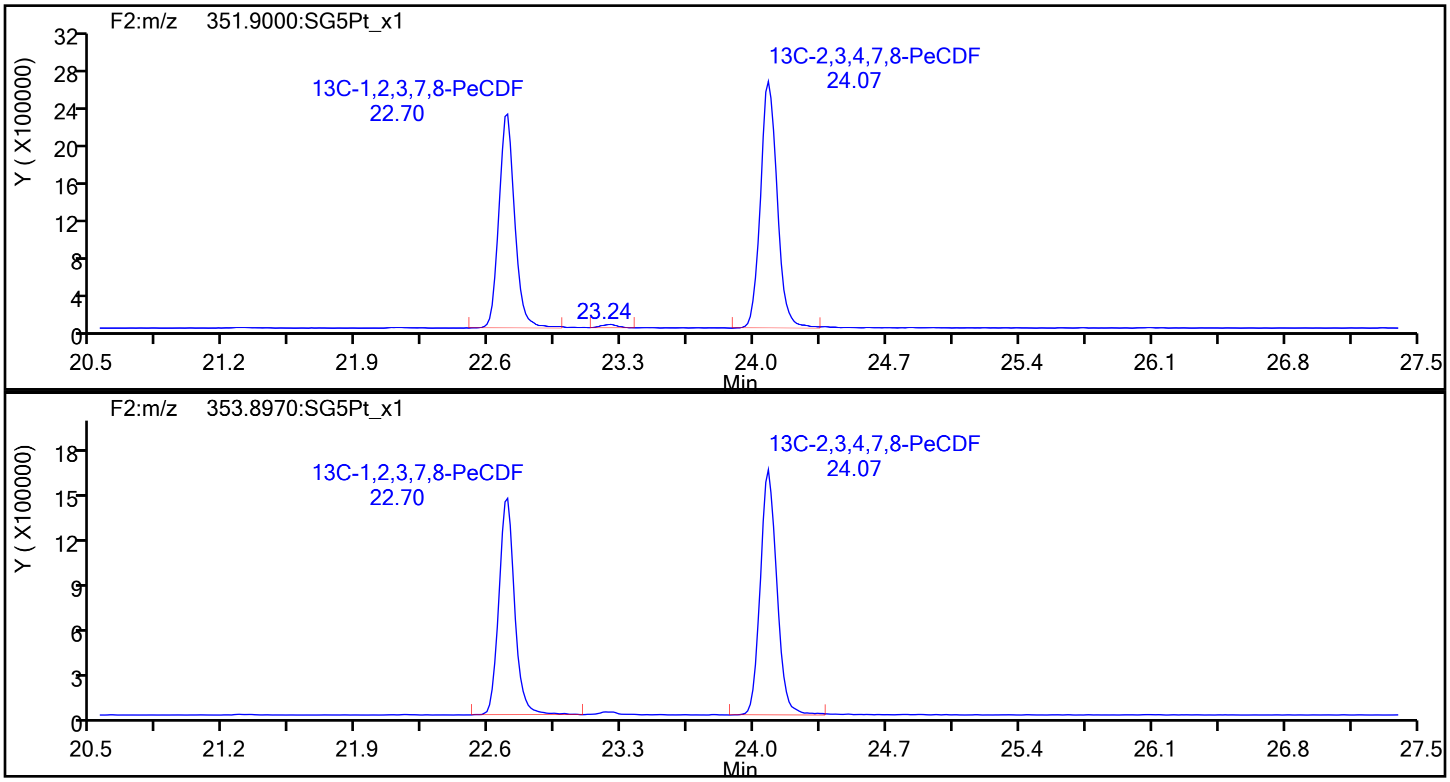

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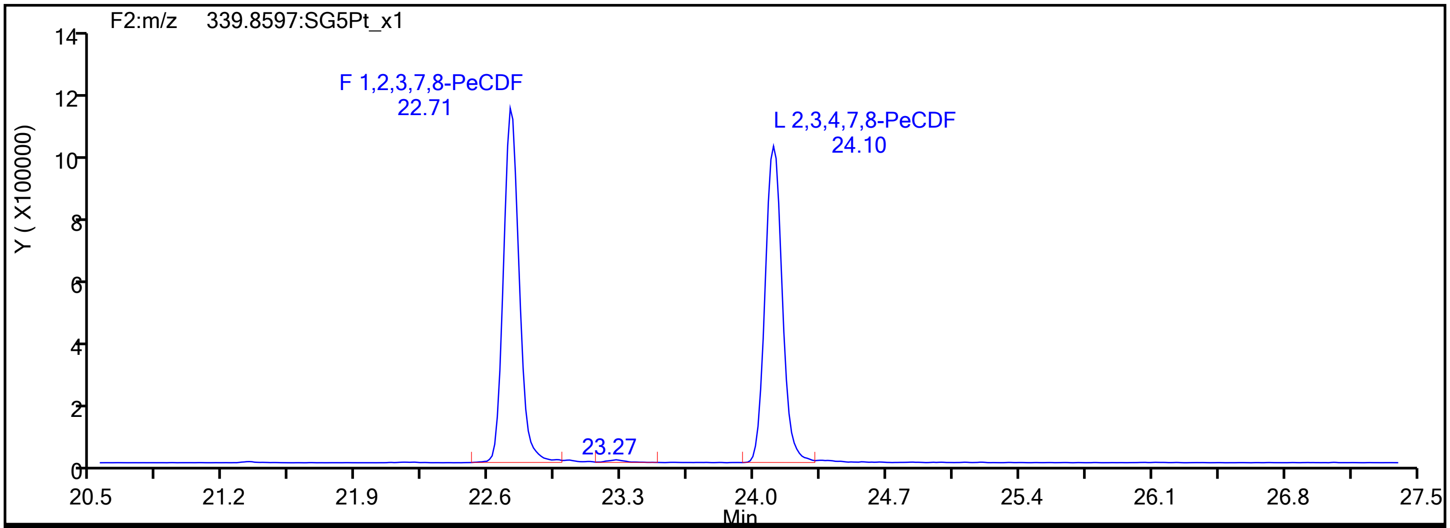

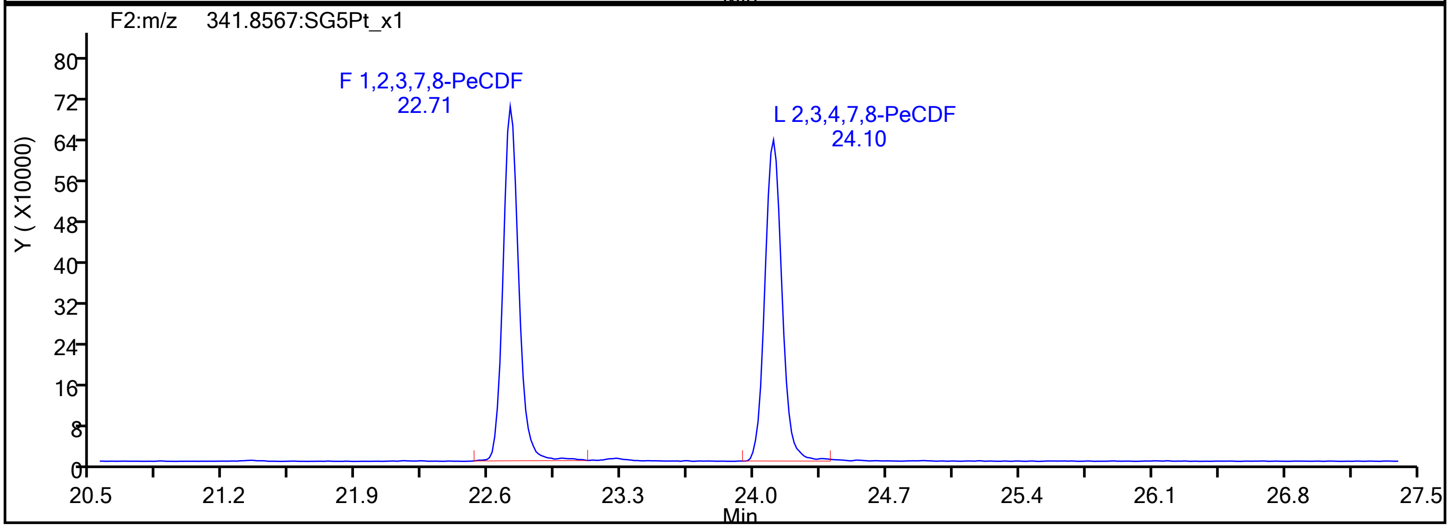

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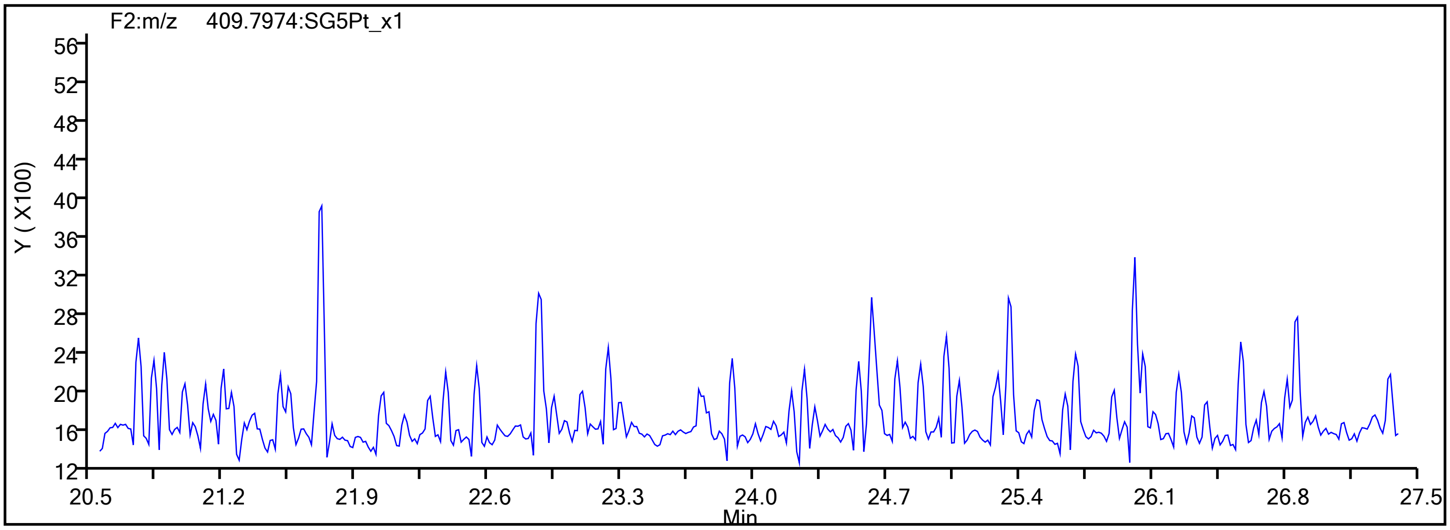

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Eurofins TestAmerica, Sacramento

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Injection Date: 01-Sep-2020 20:41:55 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

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Client ID:

Worklist#: 408767 Sample Line#: 2

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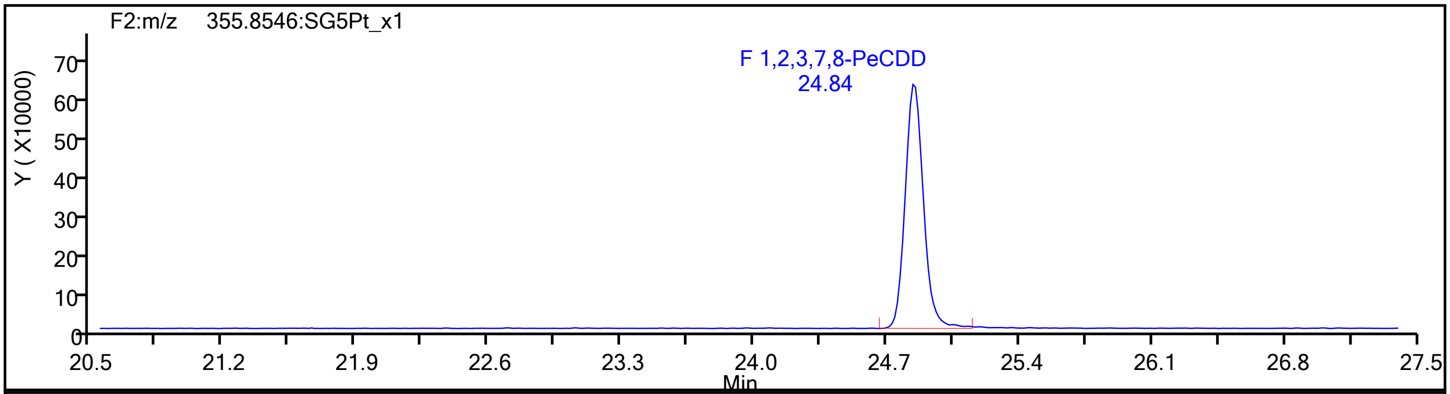

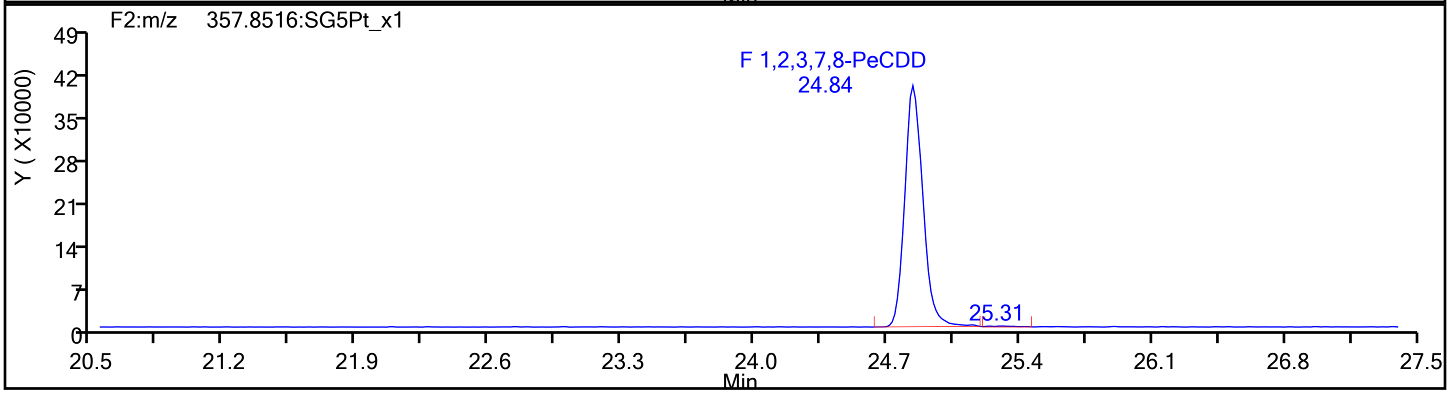

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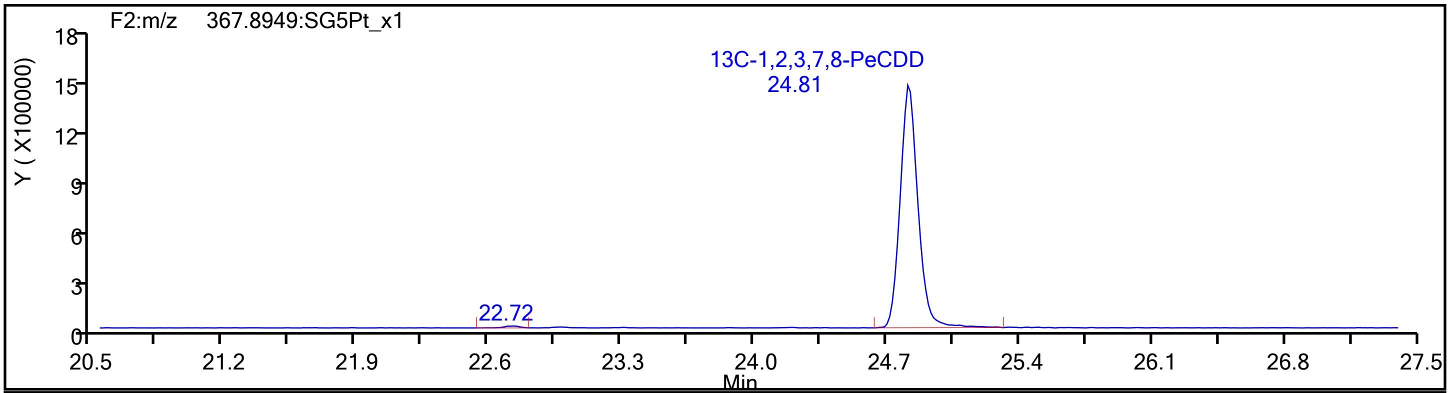

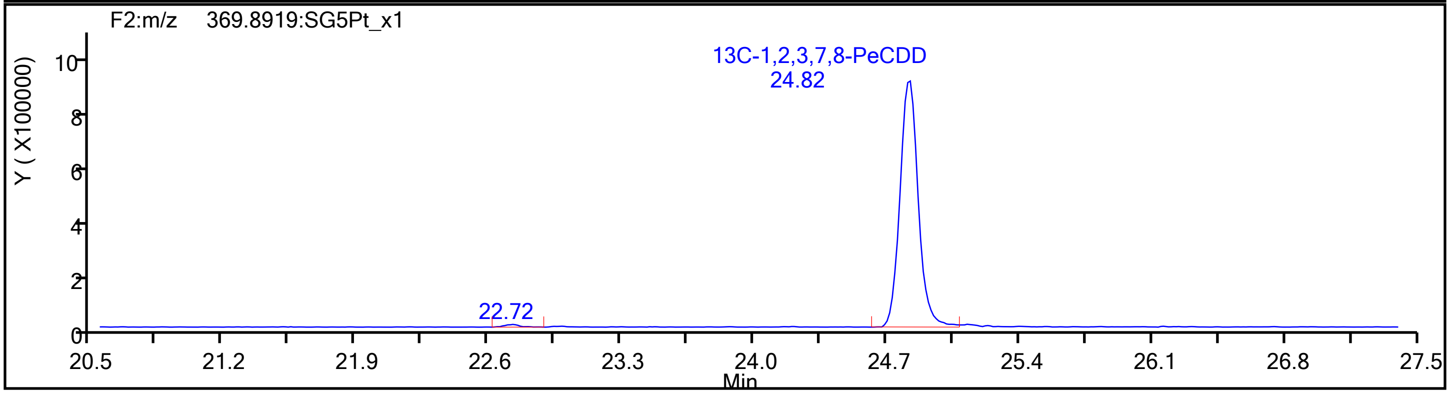

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Eurofins TestAmerica, Sacramento

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HxCDF

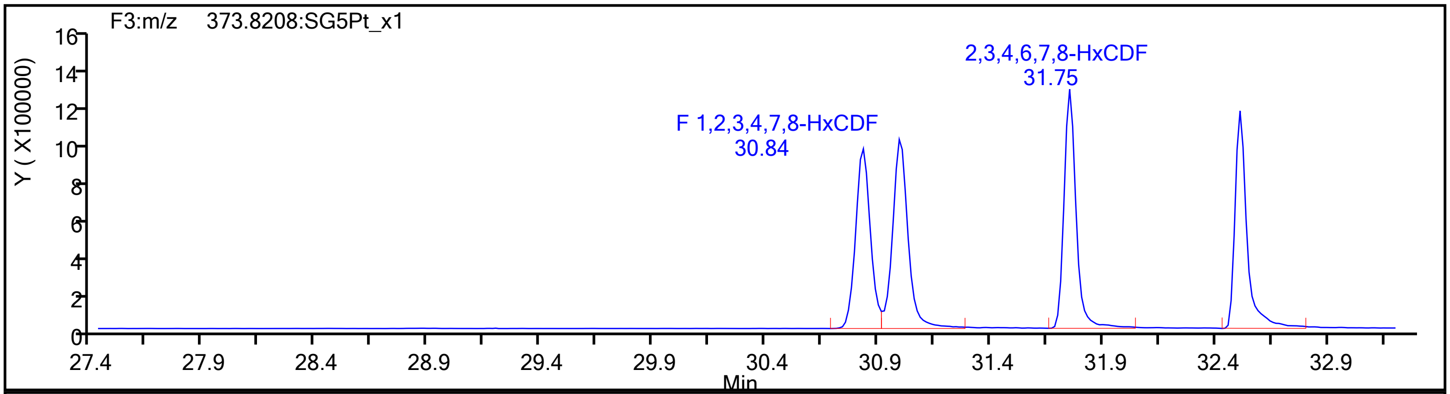

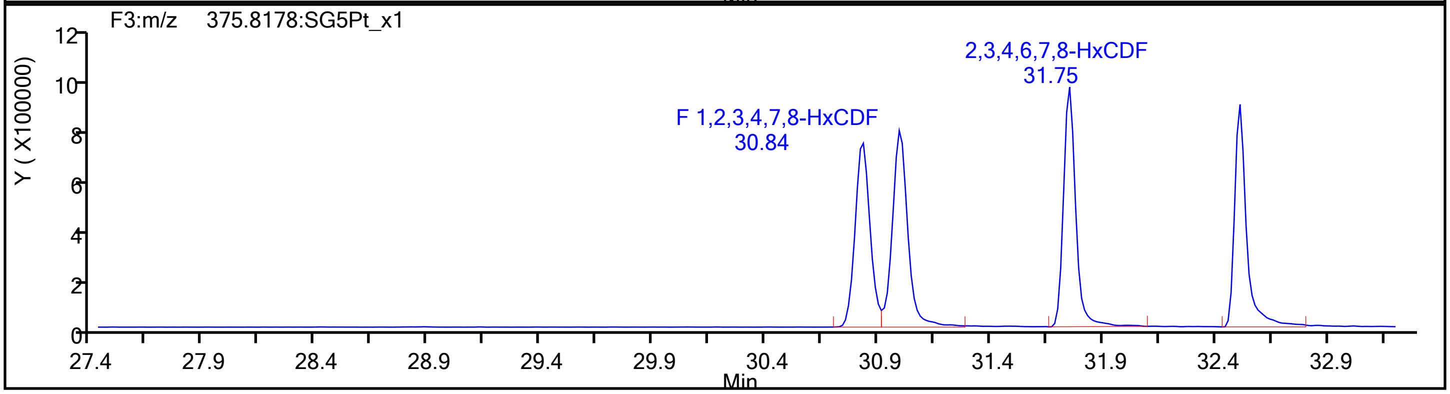

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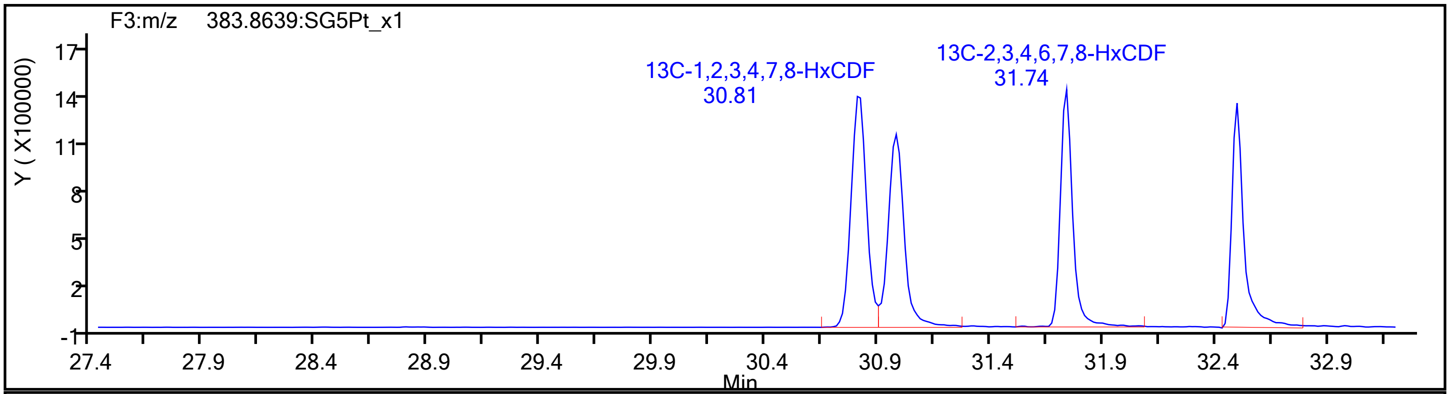

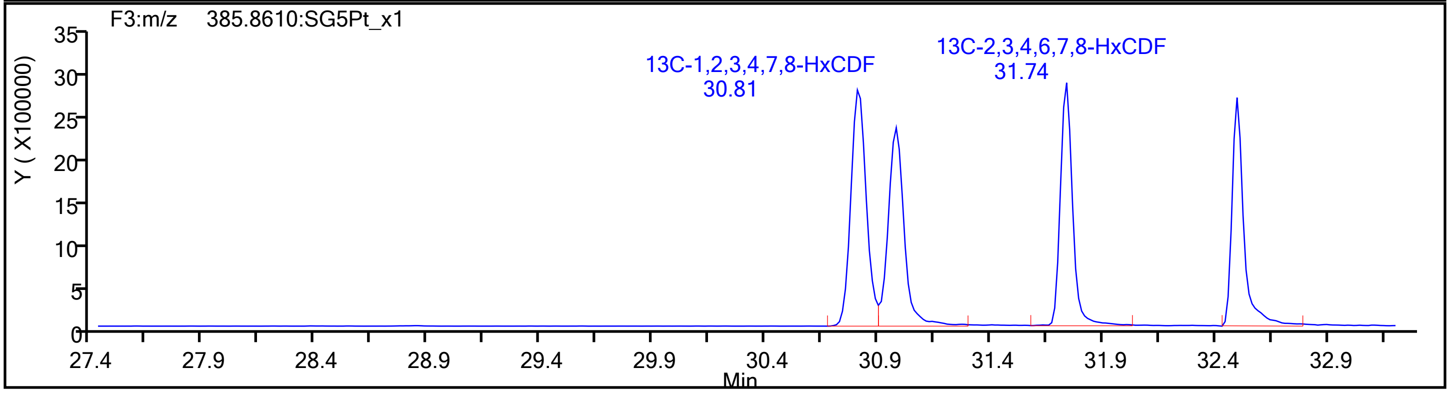

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Eurofins TestAmerica, Sacramento

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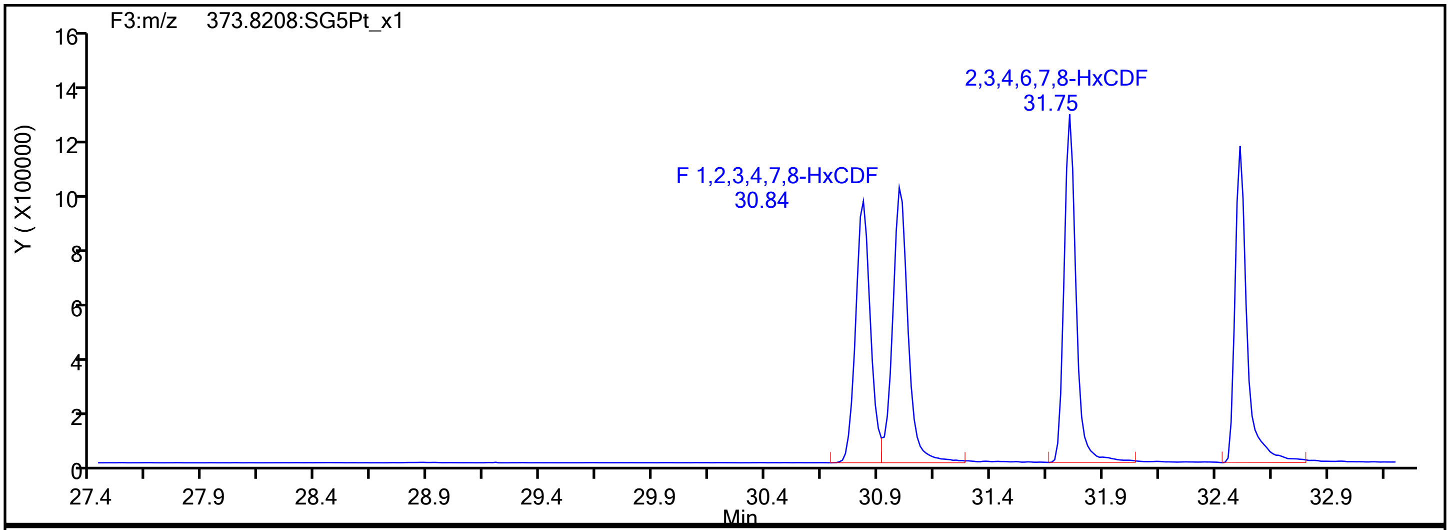

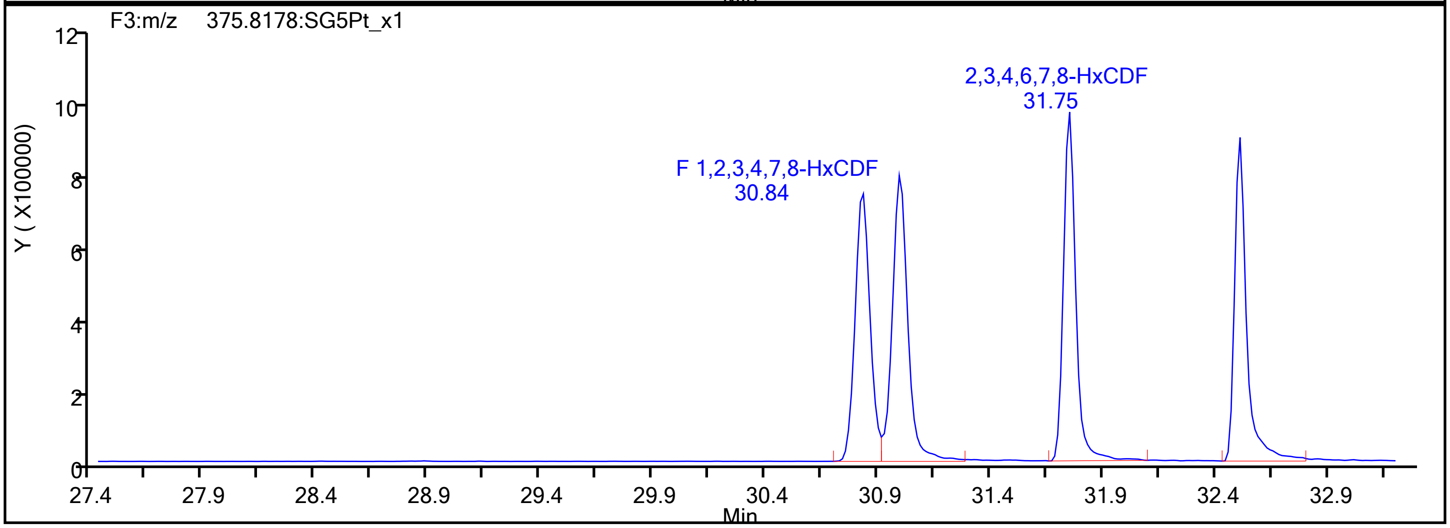

HxCDF Interference Mass

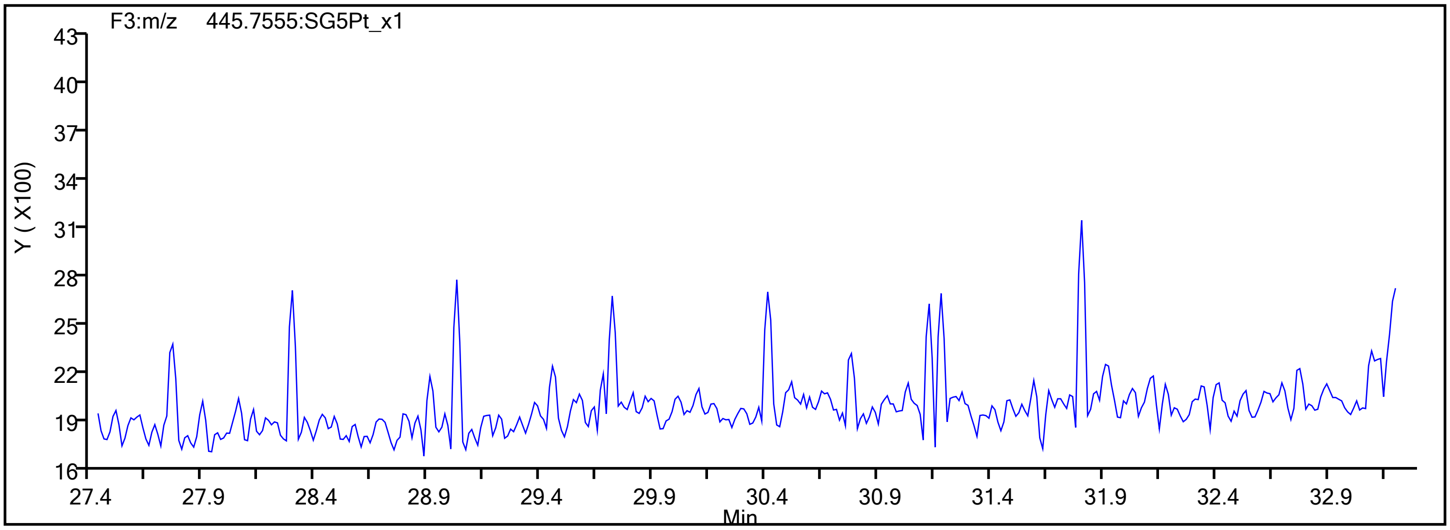

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HxCDD

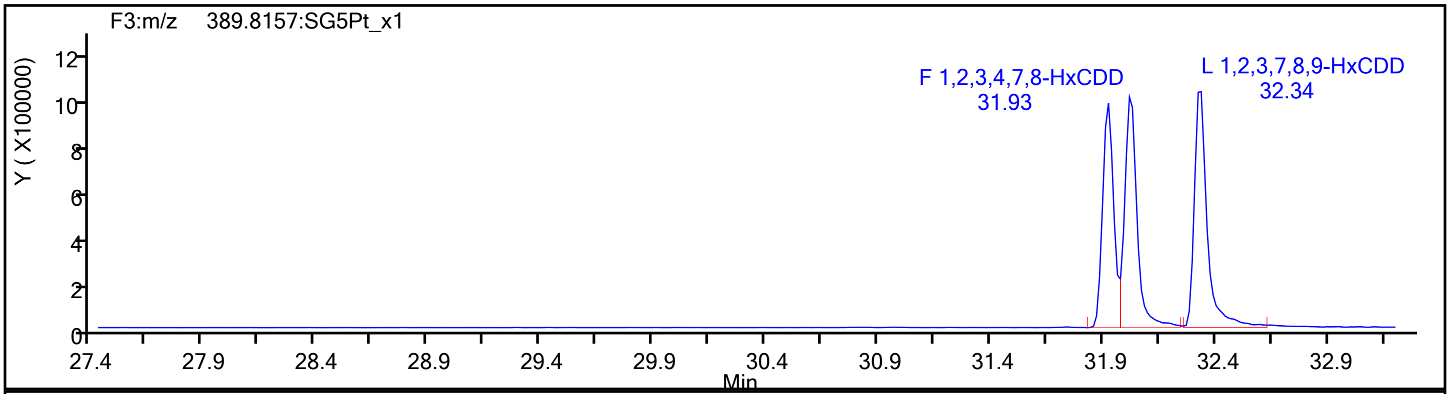

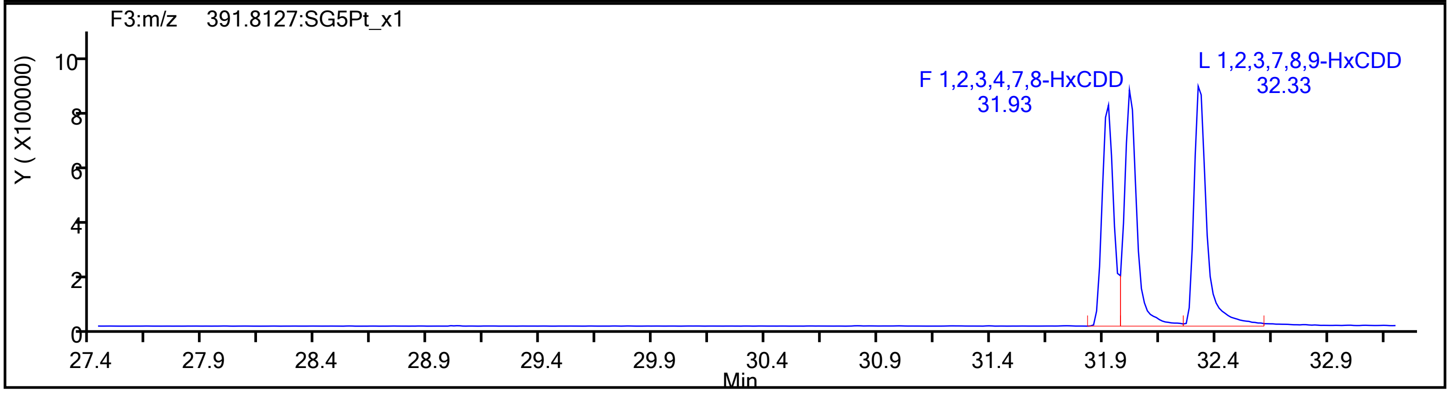

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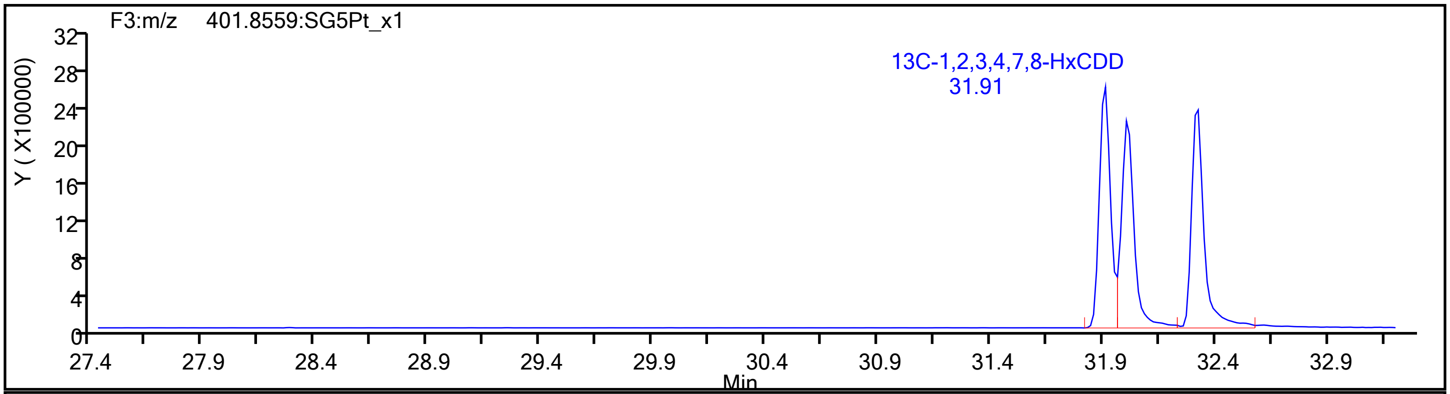

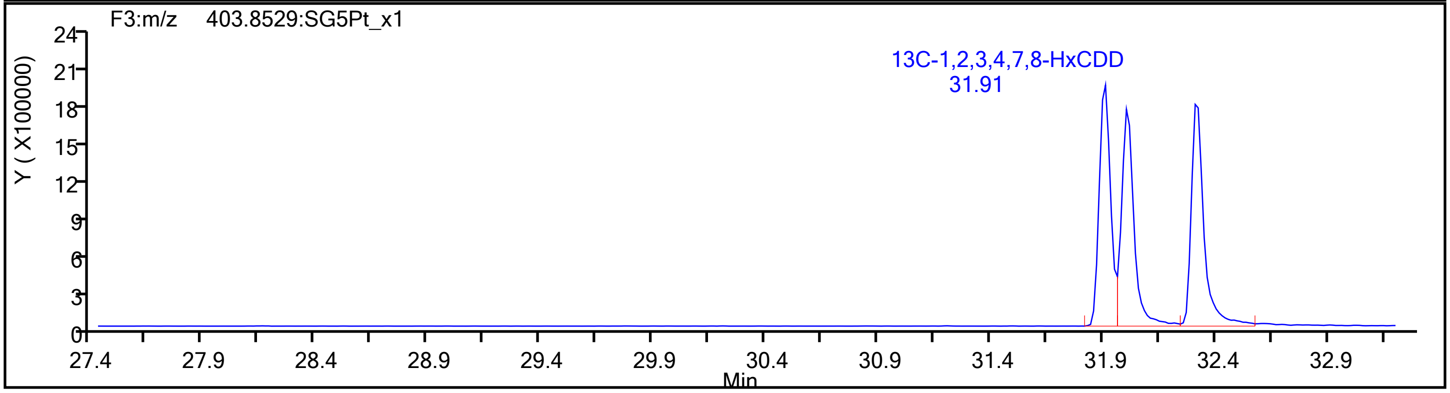

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Eurofins TestAmerica, Sacramento

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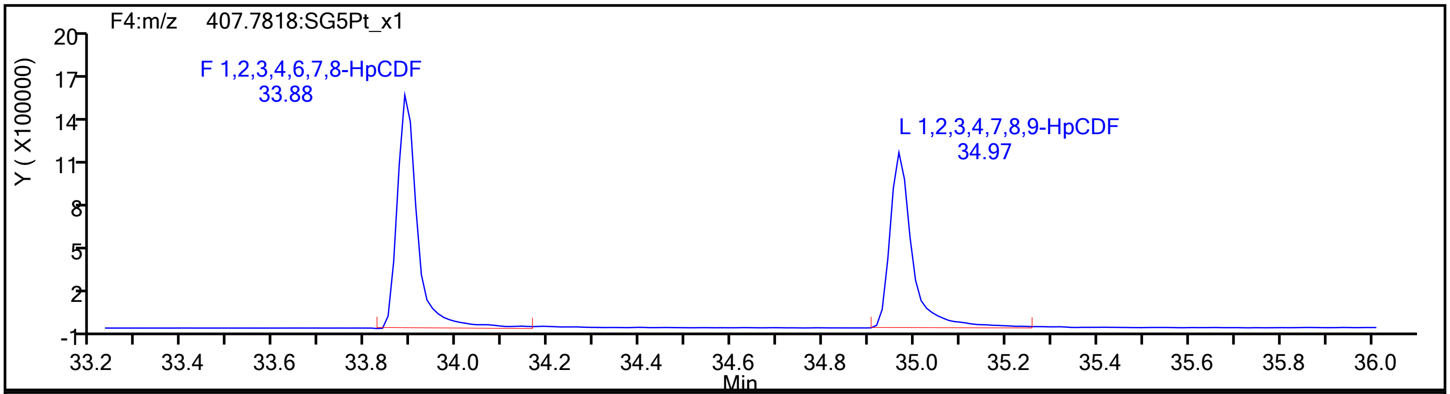

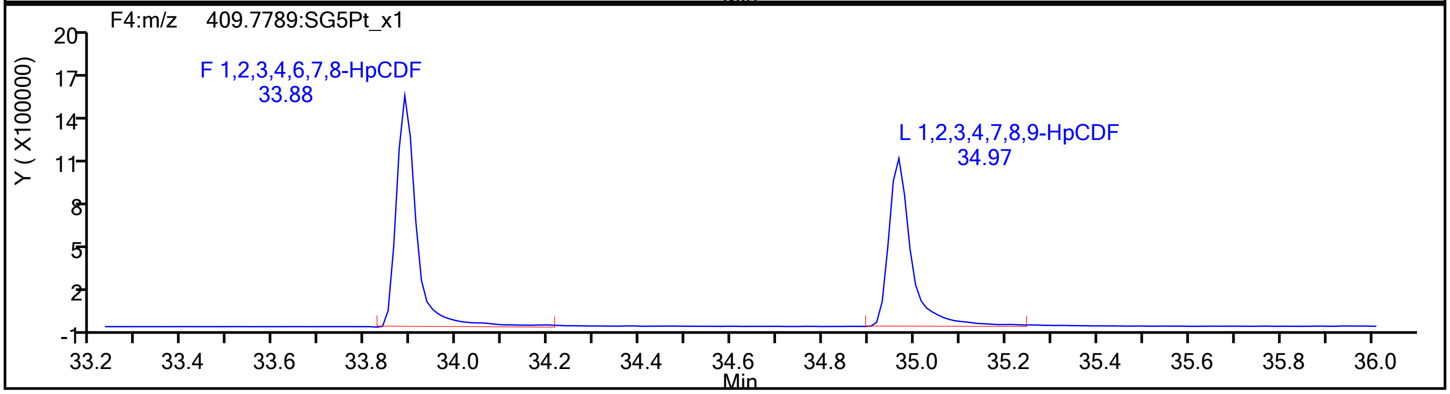

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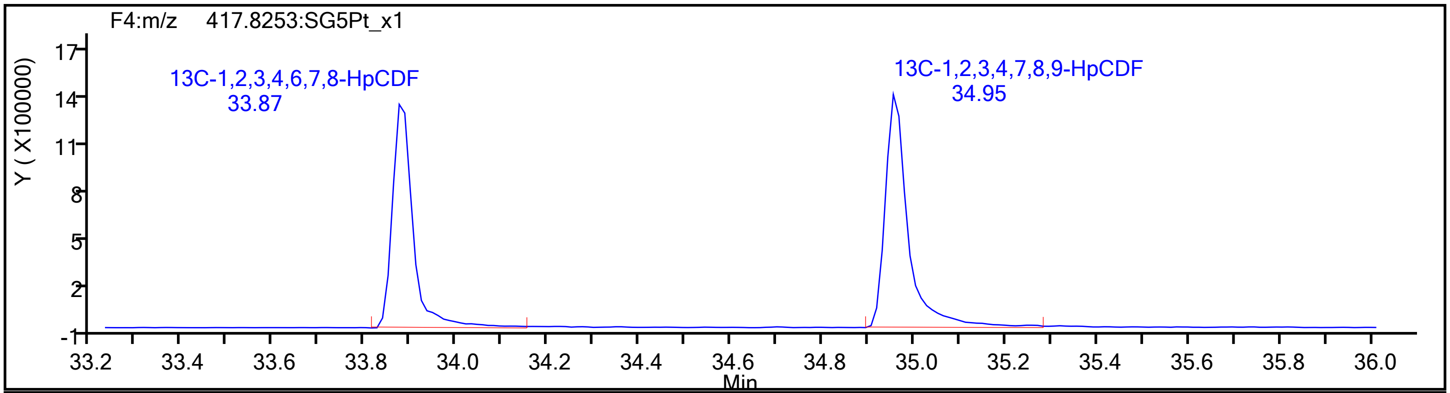

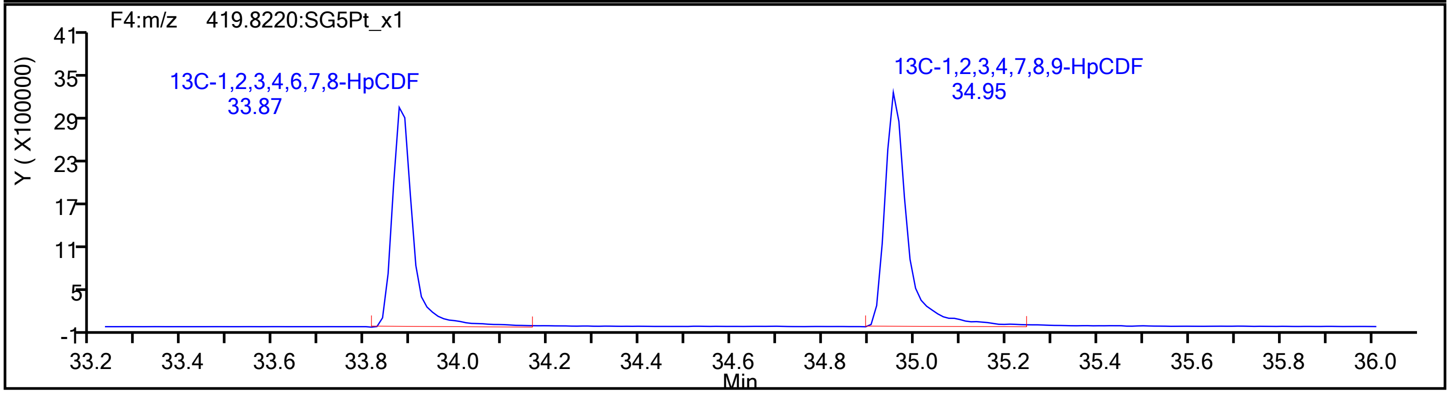

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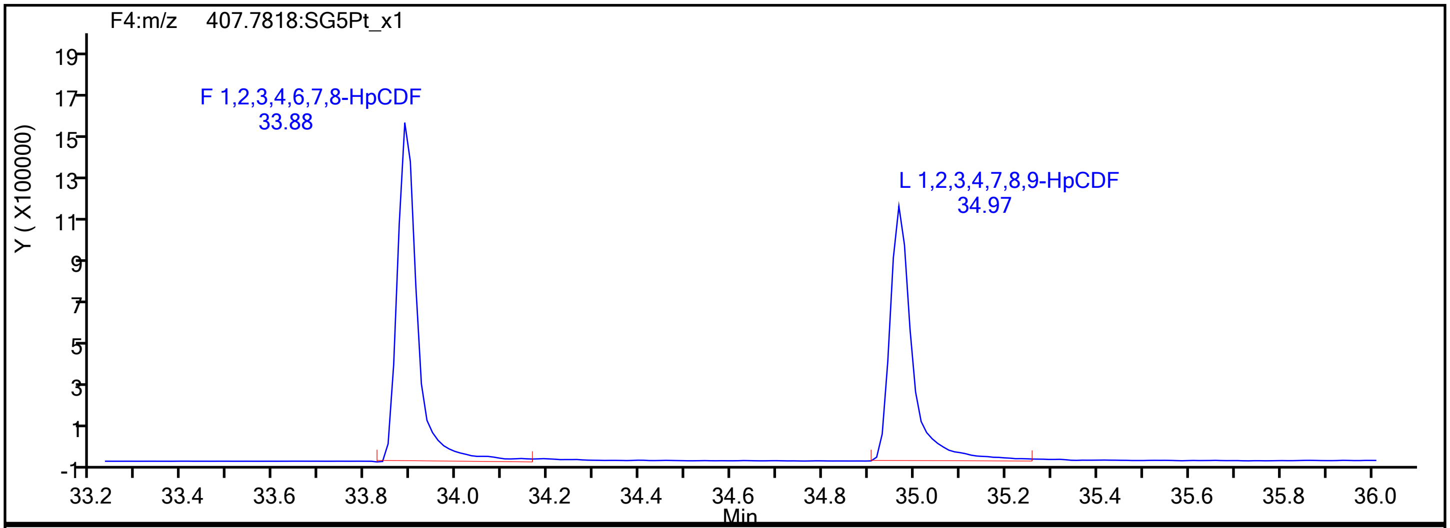

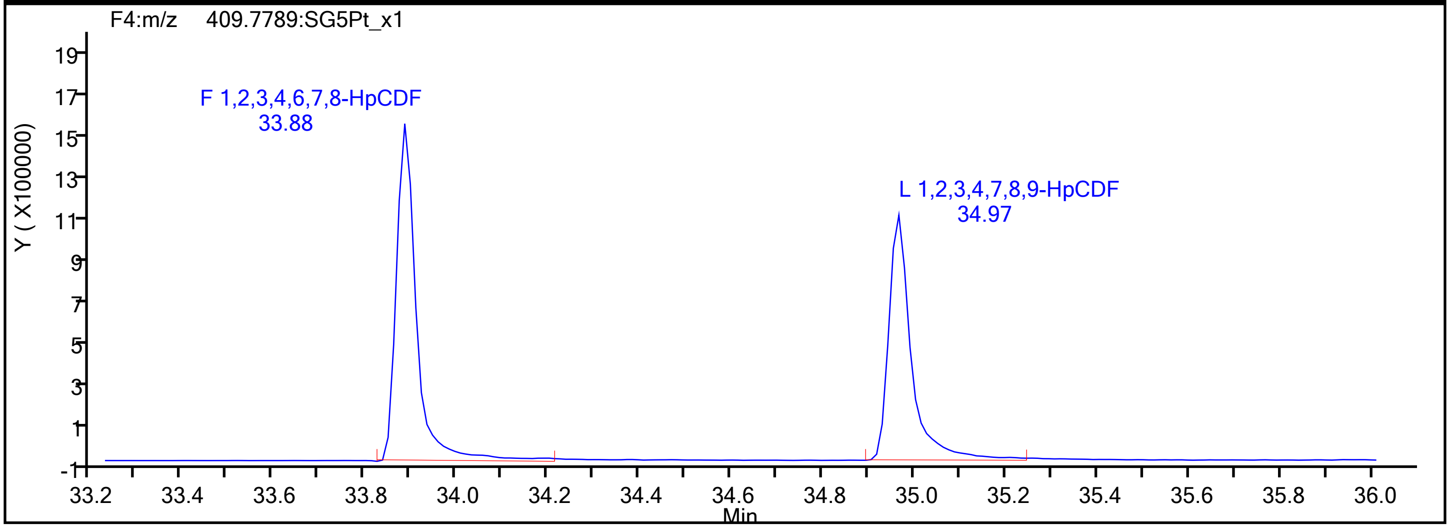

HpCDF Interference Mass

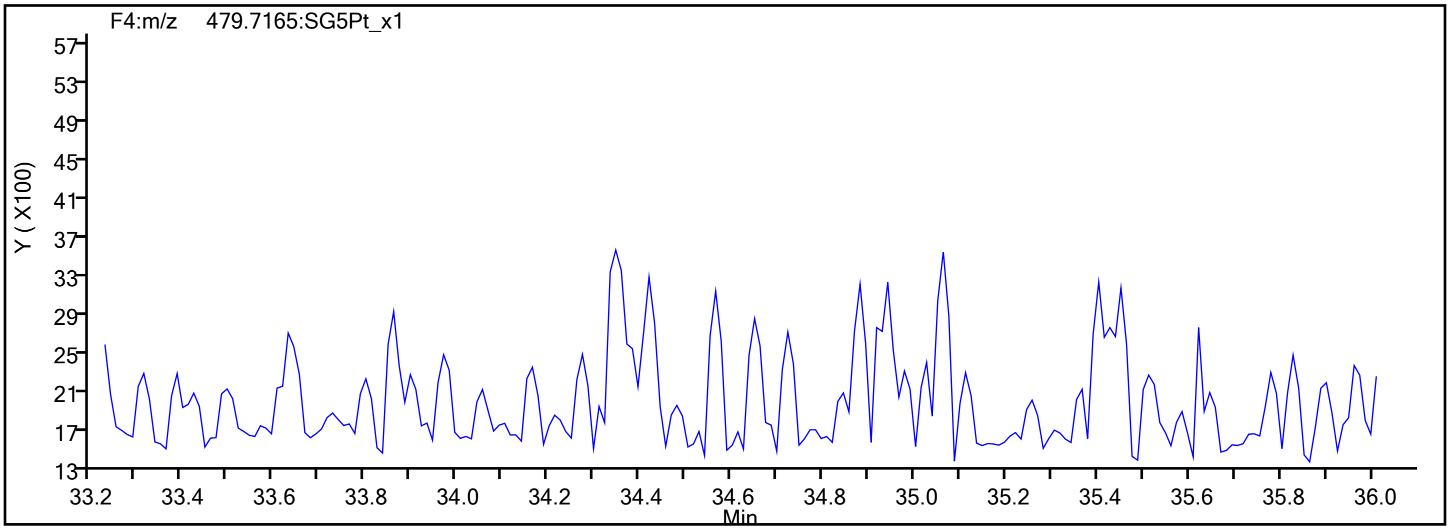

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Eurofins TestAmerica, Sacramento

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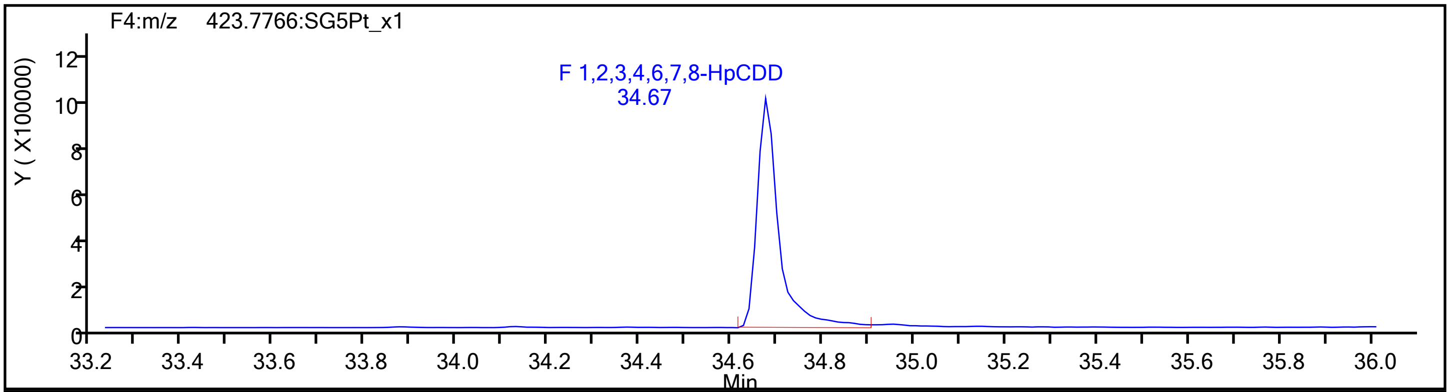

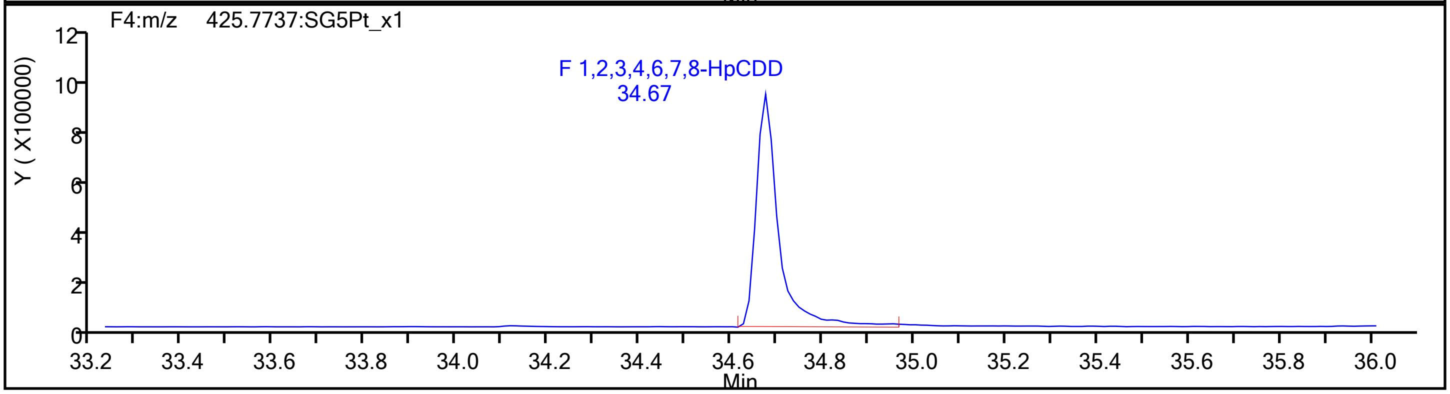

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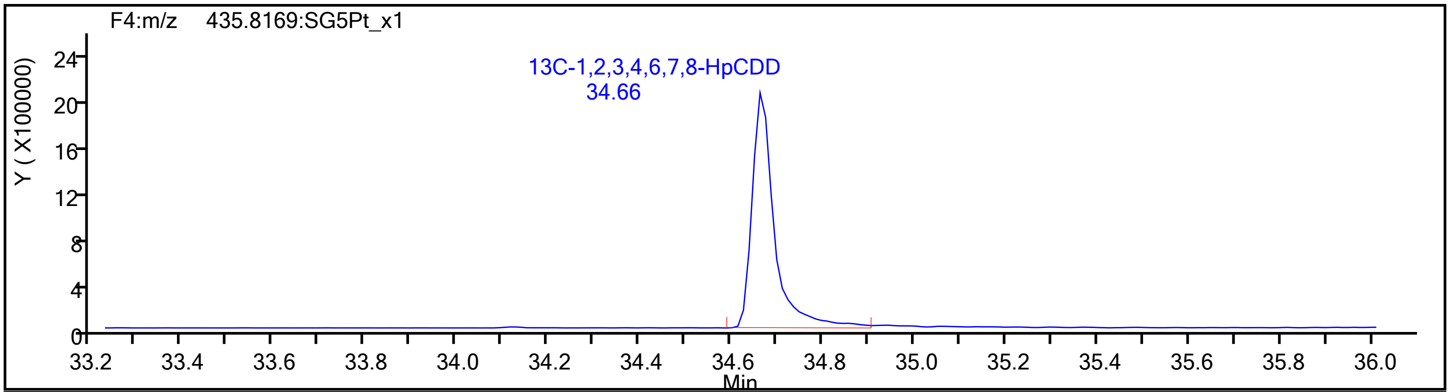

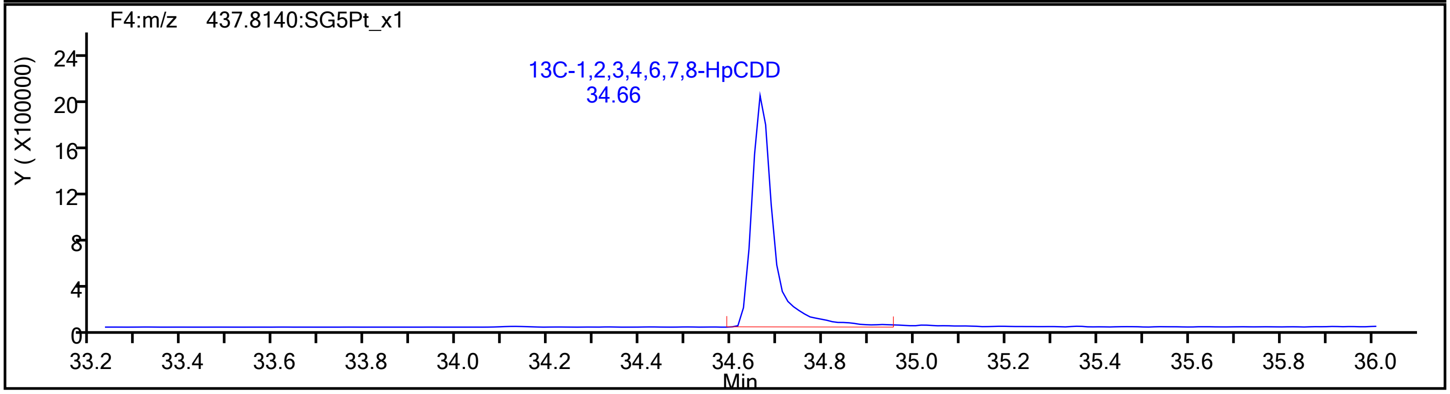

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Eurofins TestAmerica, Sacramento

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Injection Date: 01-Sep-2020 20:41:55

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

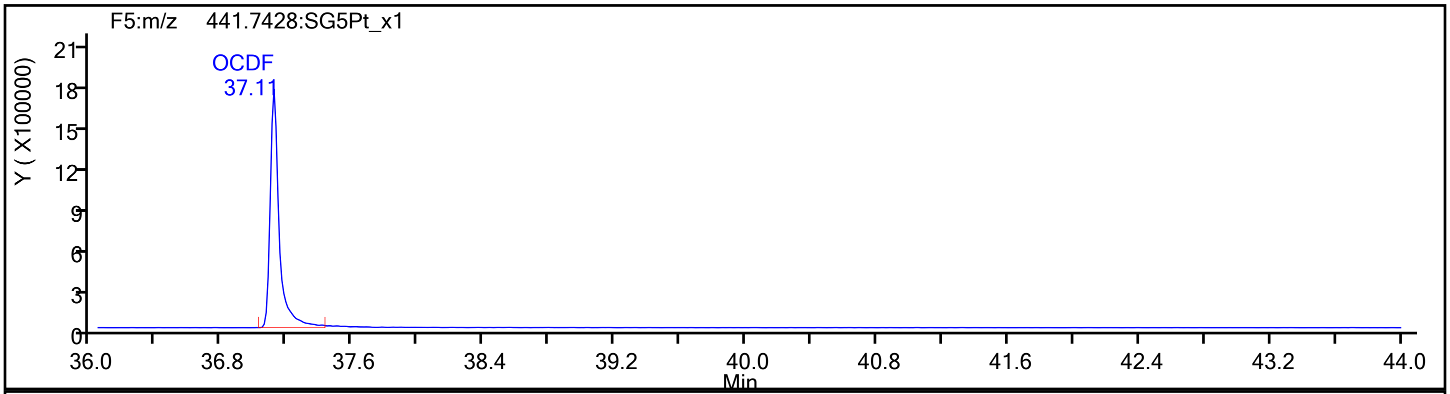

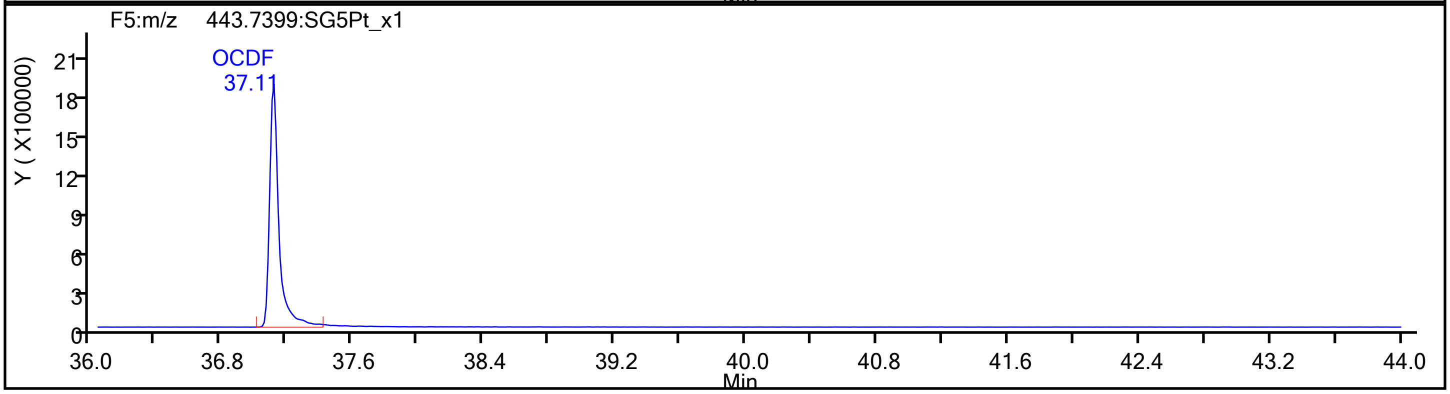

OCDF Standards

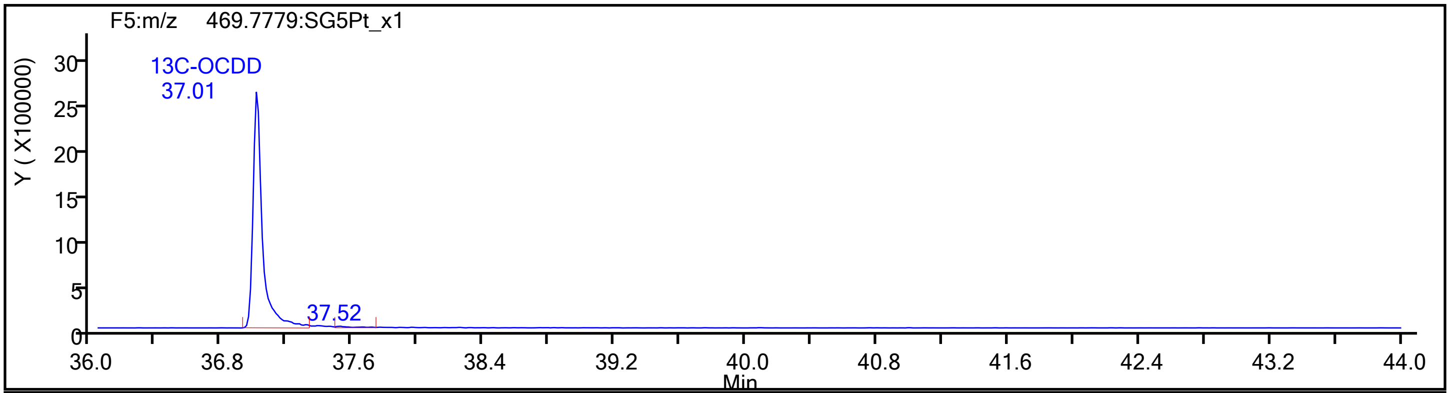

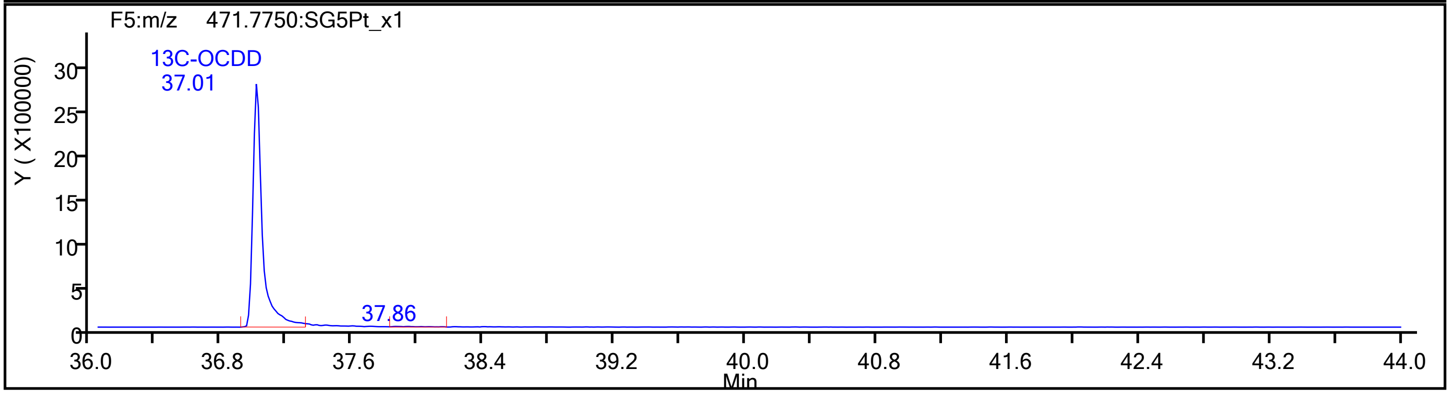

Report Date: 02-Sep-2020 11:35:20 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_2.d		
Injection Date:	01-Sep-2020 20:41:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

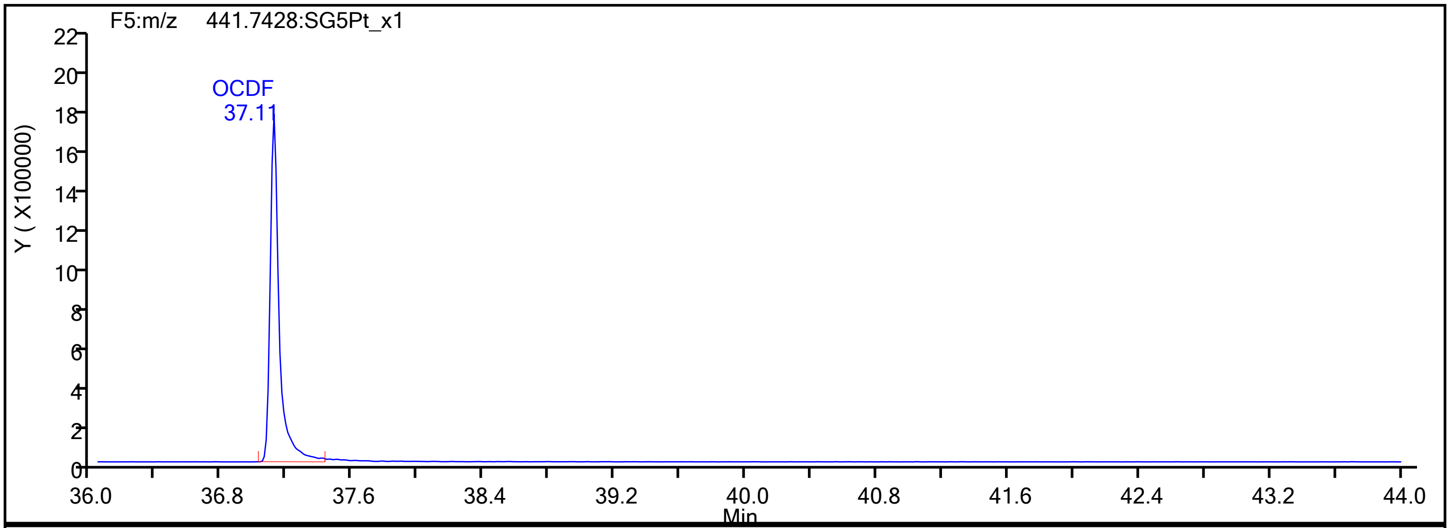

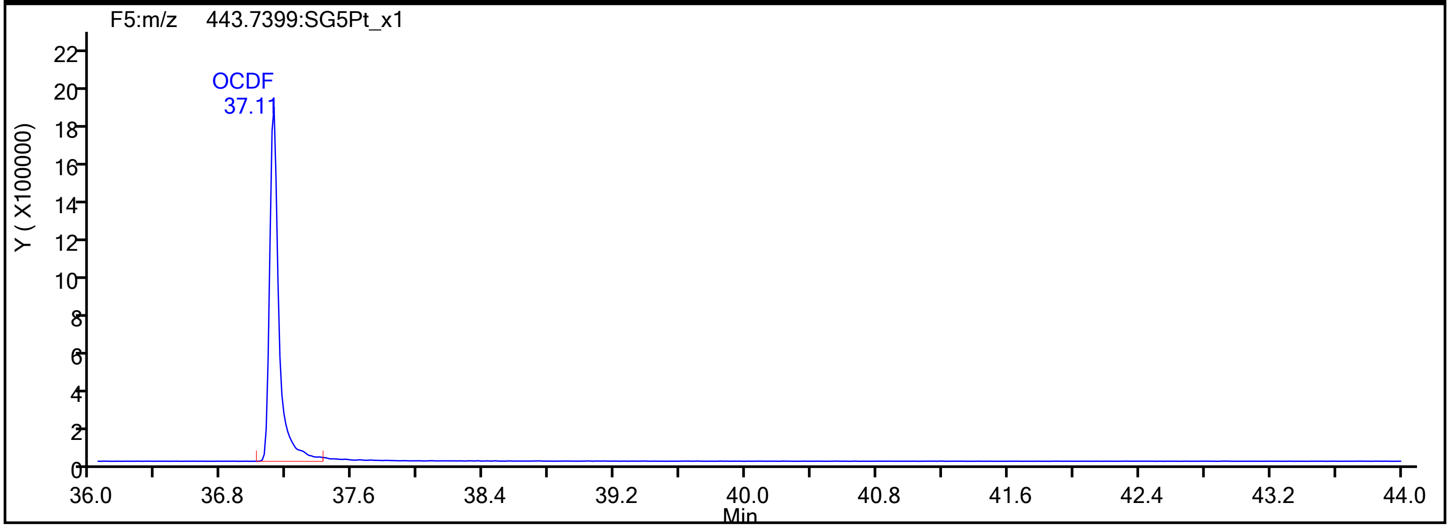

OCDF Interference Mass

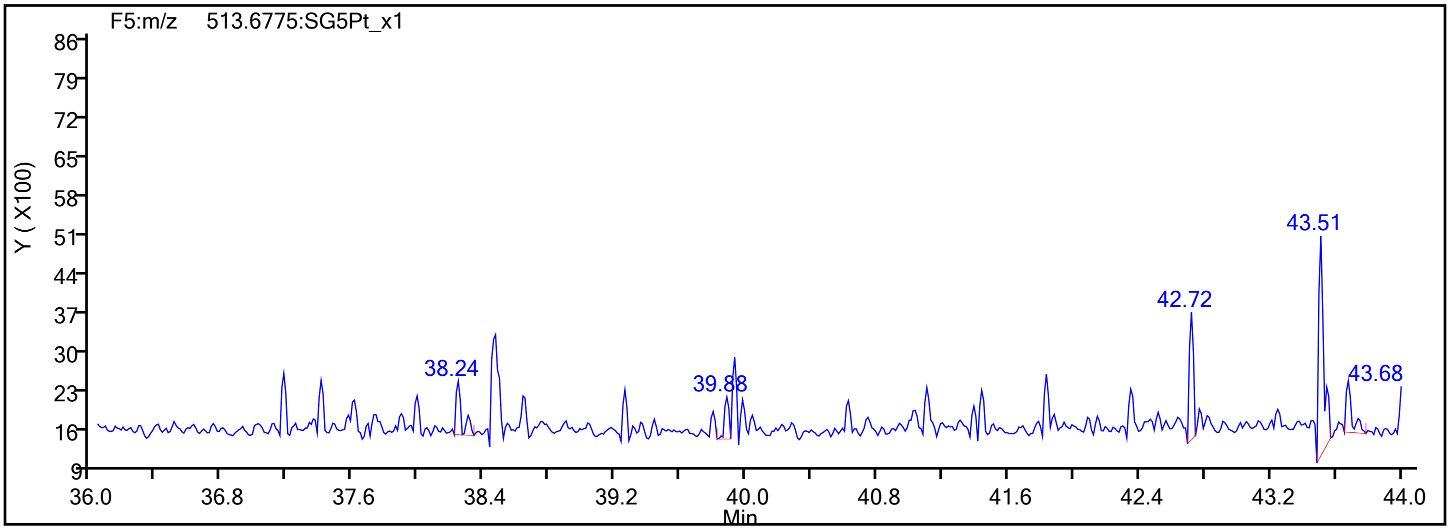

Report Date: 02-Sep-2020 11:35:20　　Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_2.d		
Injection Date:	01-Sep-2020 20:41:55	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

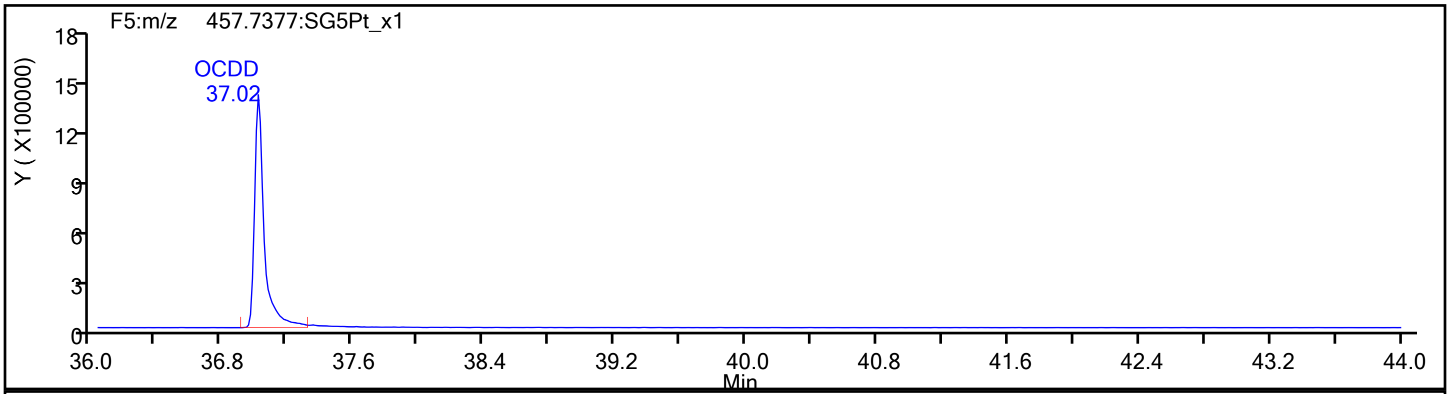

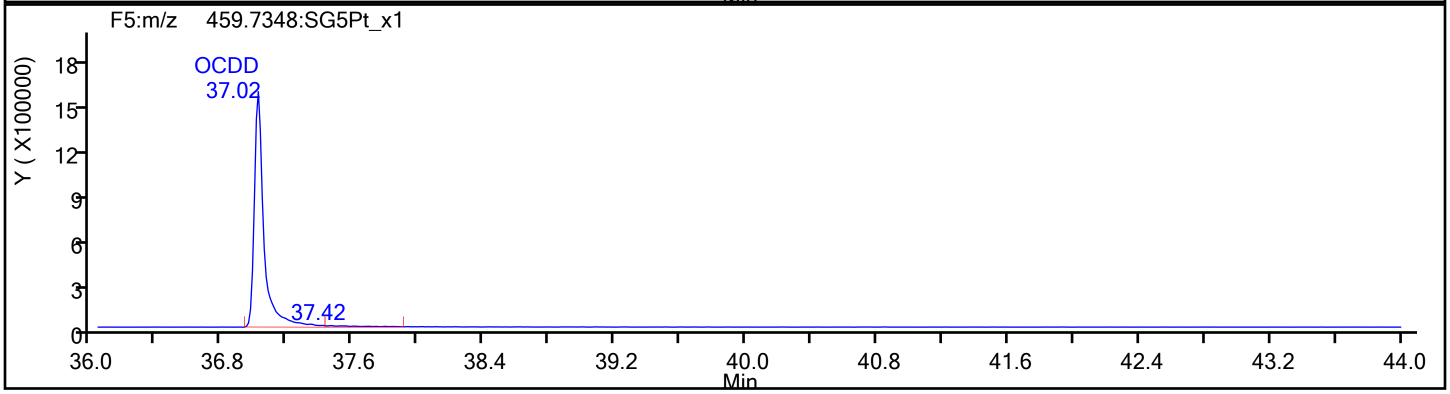

OCDD Standards

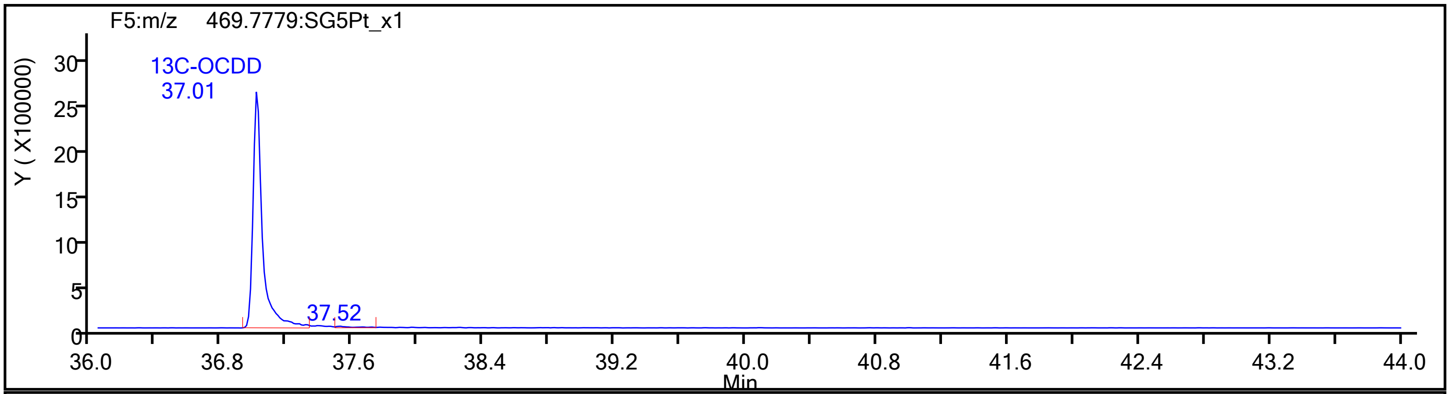

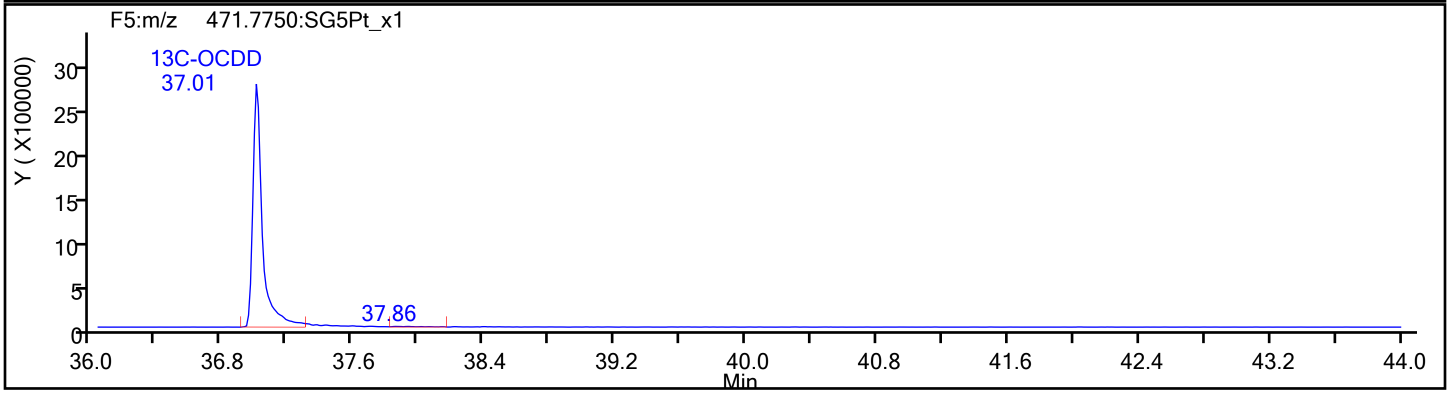

Report Date: 02-Sep-2020 11:35:20 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_2.d
Injection Date: 01-Sep-2020 20:41:55
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

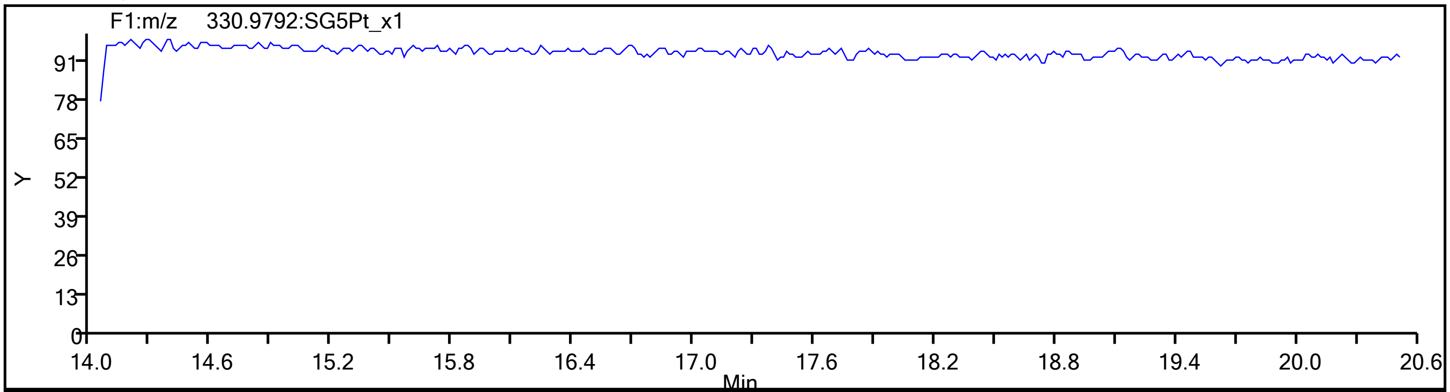

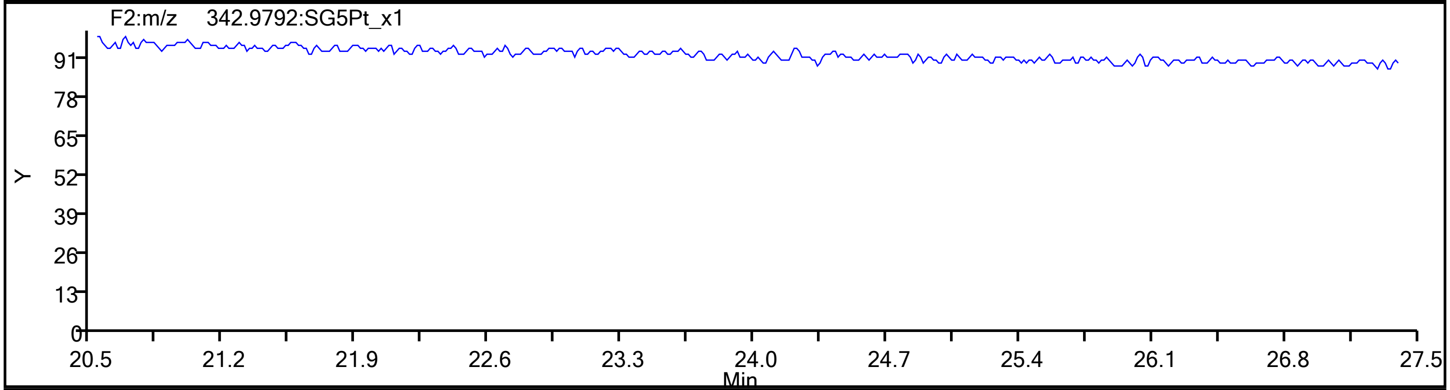

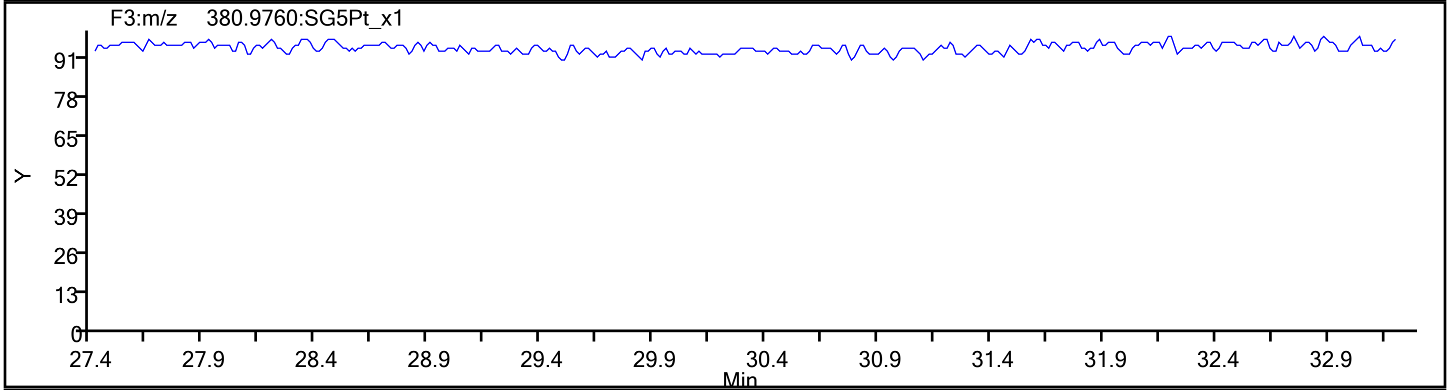

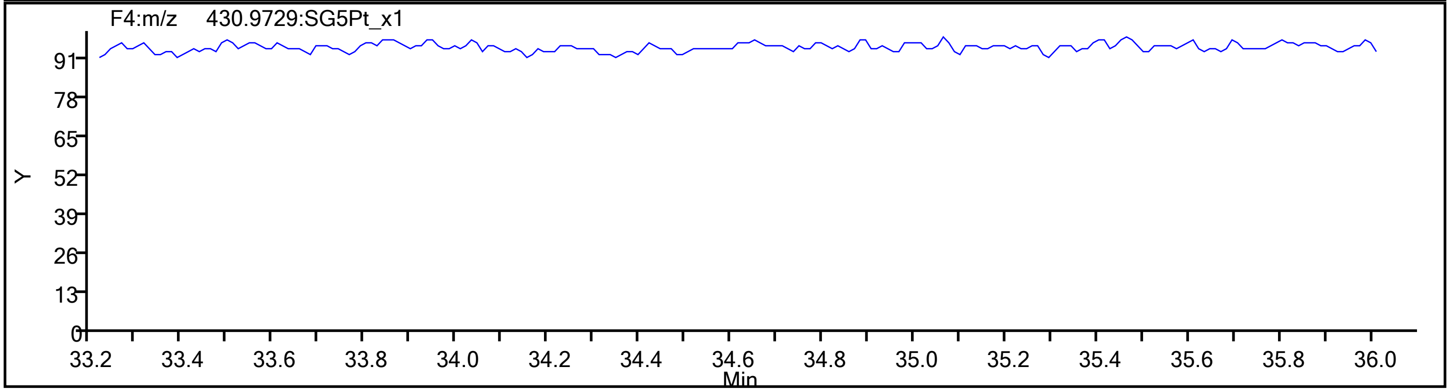

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_2.d
Injection Date: 01-Sep-2020 20:41:55
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

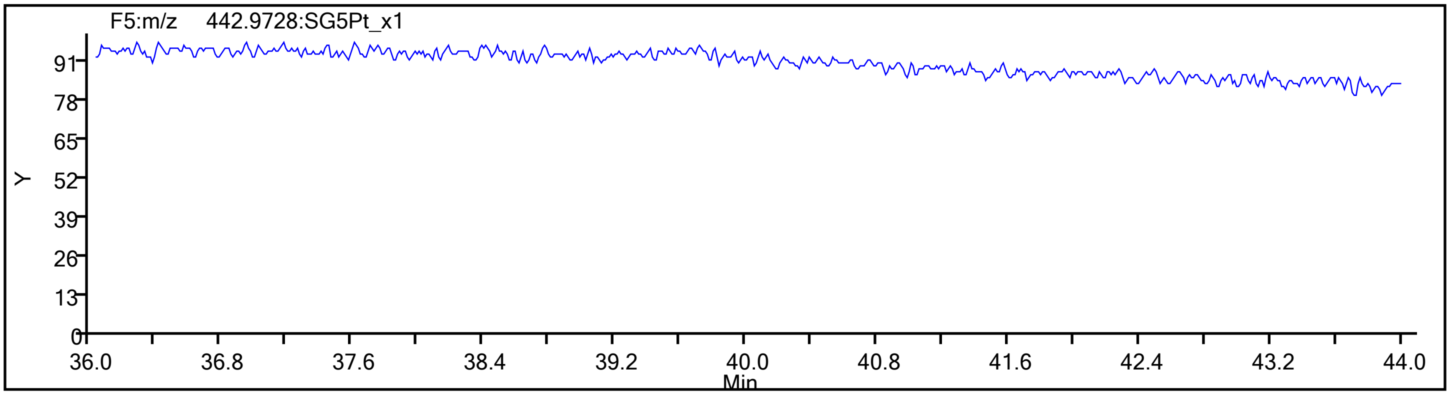

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1
SDG No.:
Lab Sample ID: ICV 320-398641/9
Calibration Date: 07/25/2020 03:40
Instrument ID: 11D2
Calib Start Date: 07/24/2020 23:50
GC Column: DB-225
ID: 0.32(mm)
Calib End Date: 07/25/2020 02:23
Lab File ID: 24JL2011D2_009.d
Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	25-Jul-2020 03:40:30	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00045				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:					
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:55:22	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

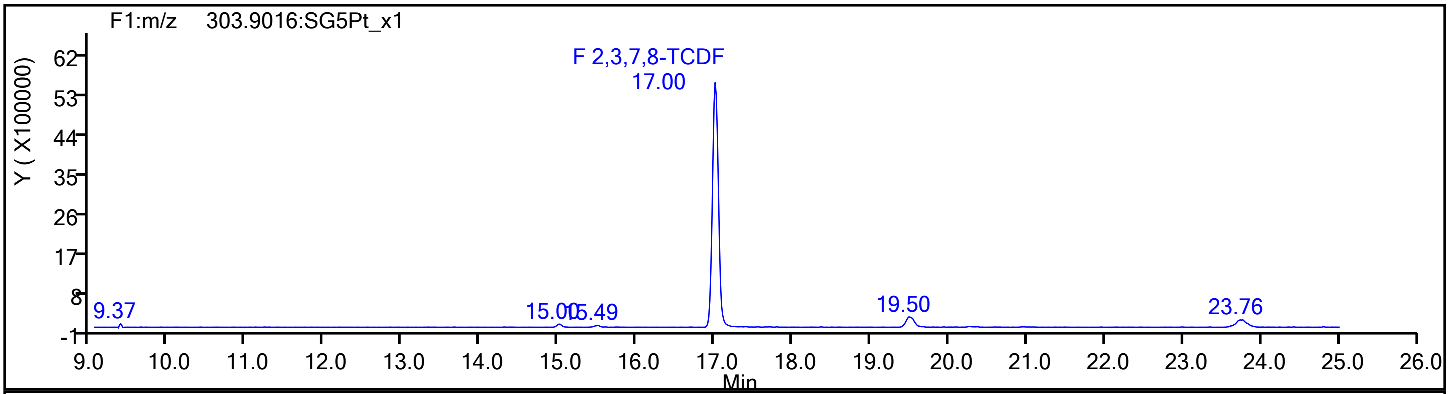

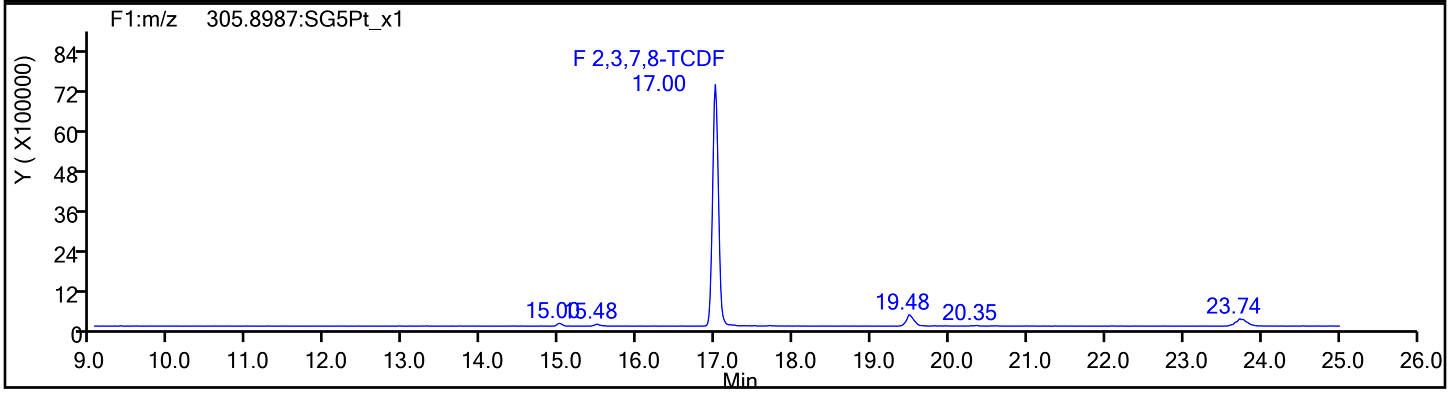

TCDF Standards

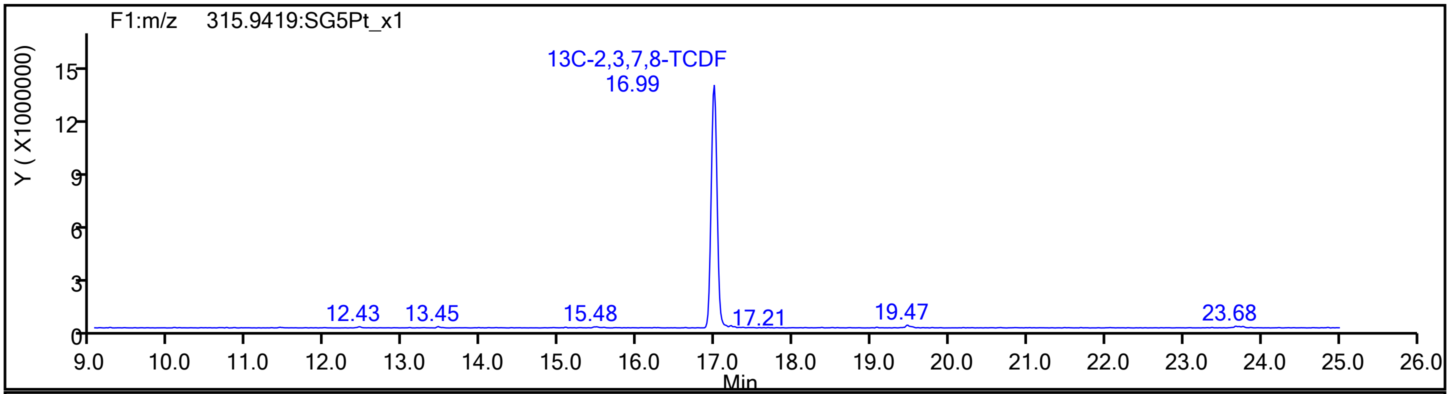

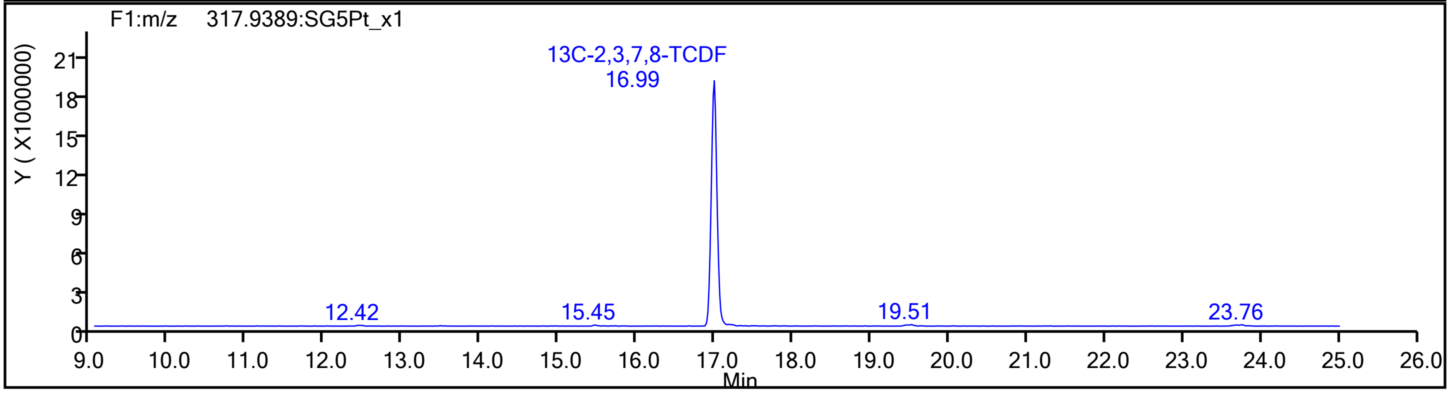

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

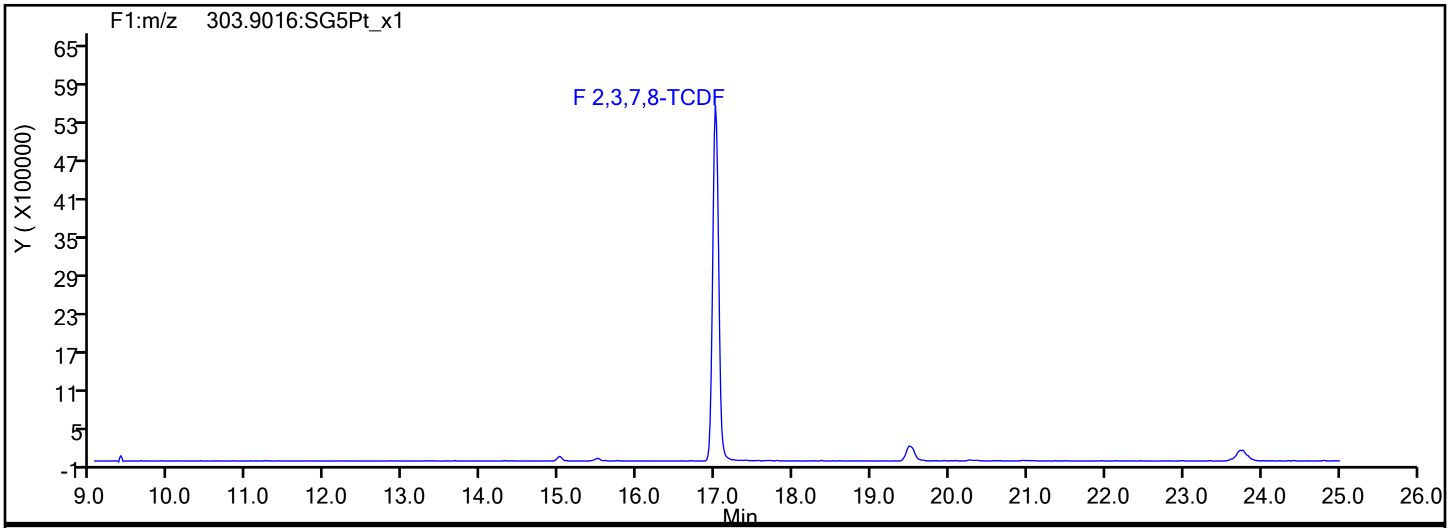

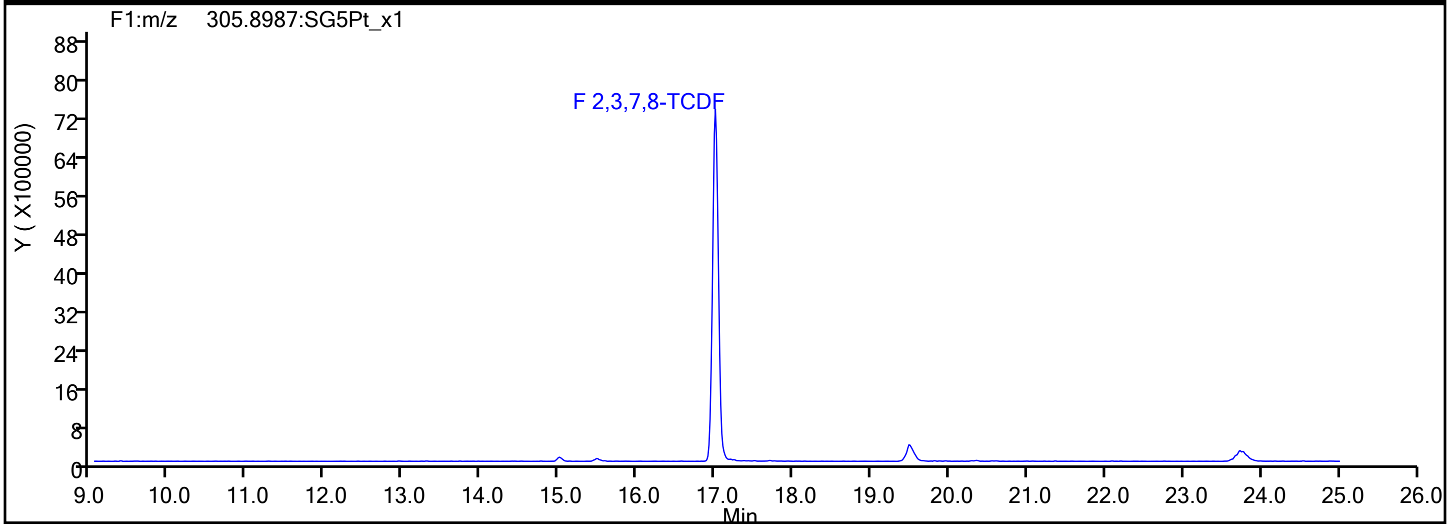

TCDF Interference Mass

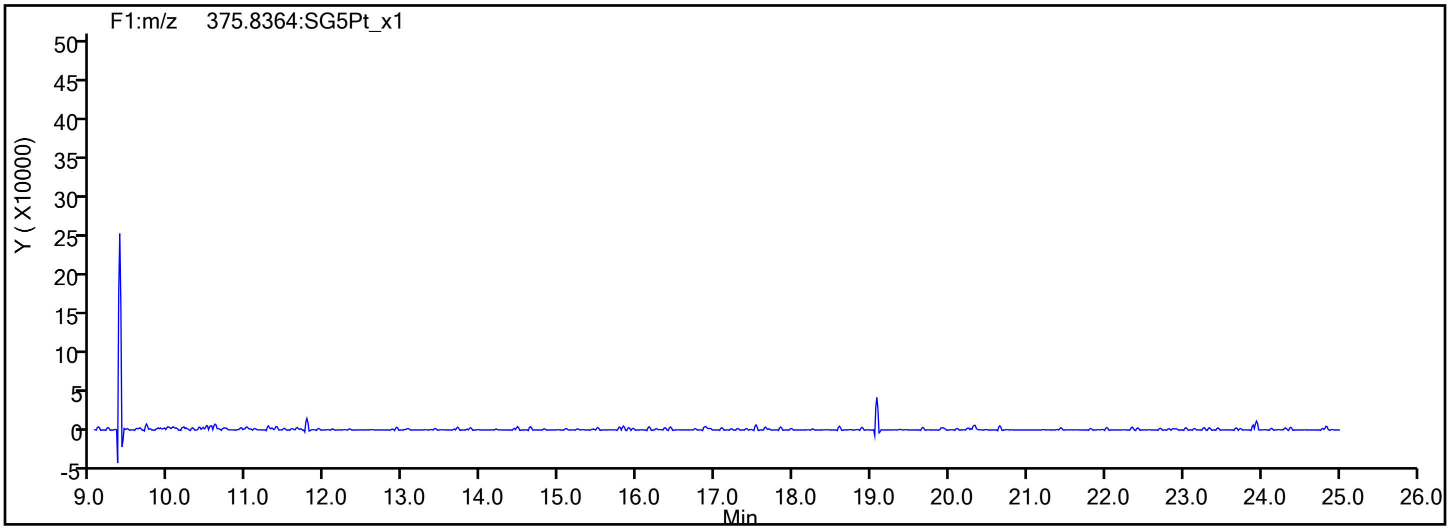

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

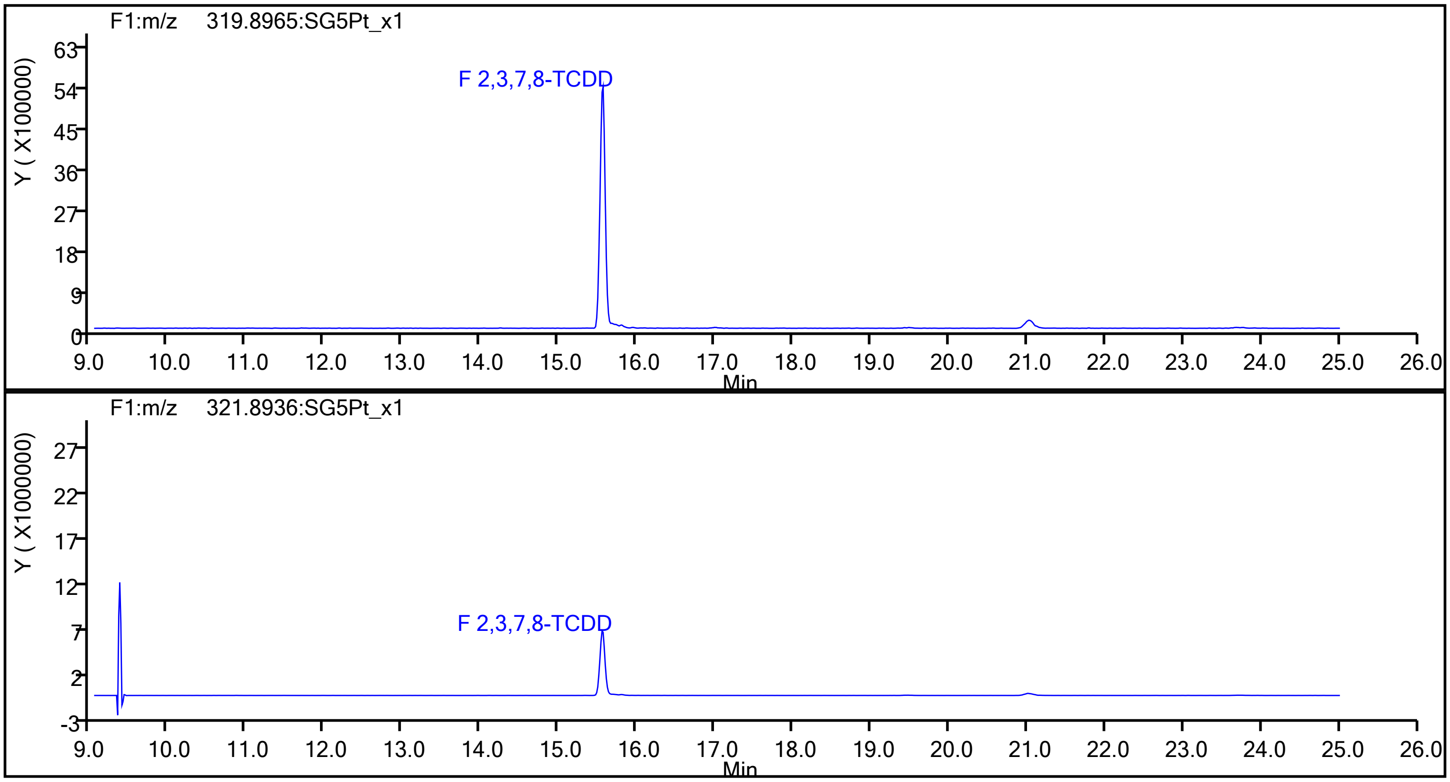

TCDD Standards

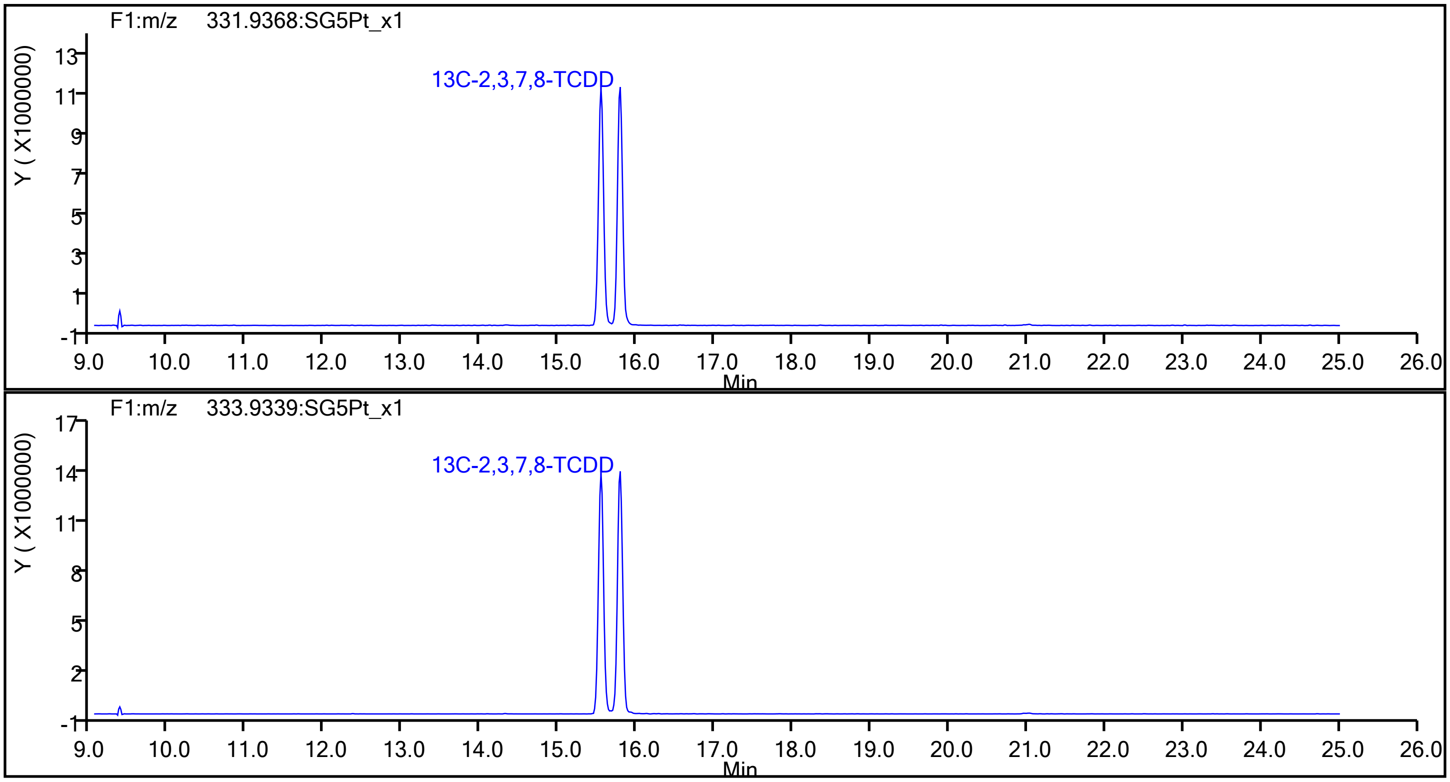

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Injection Date: 25-Jul-2020 03:40:30
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

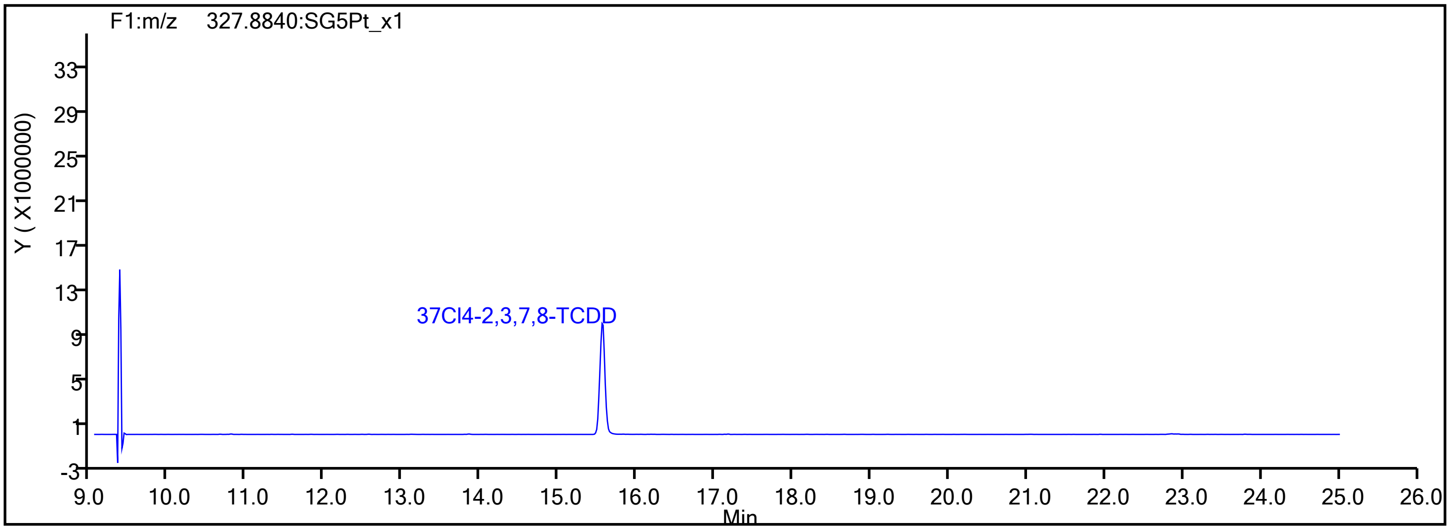

37Cl4-TCDD Standards

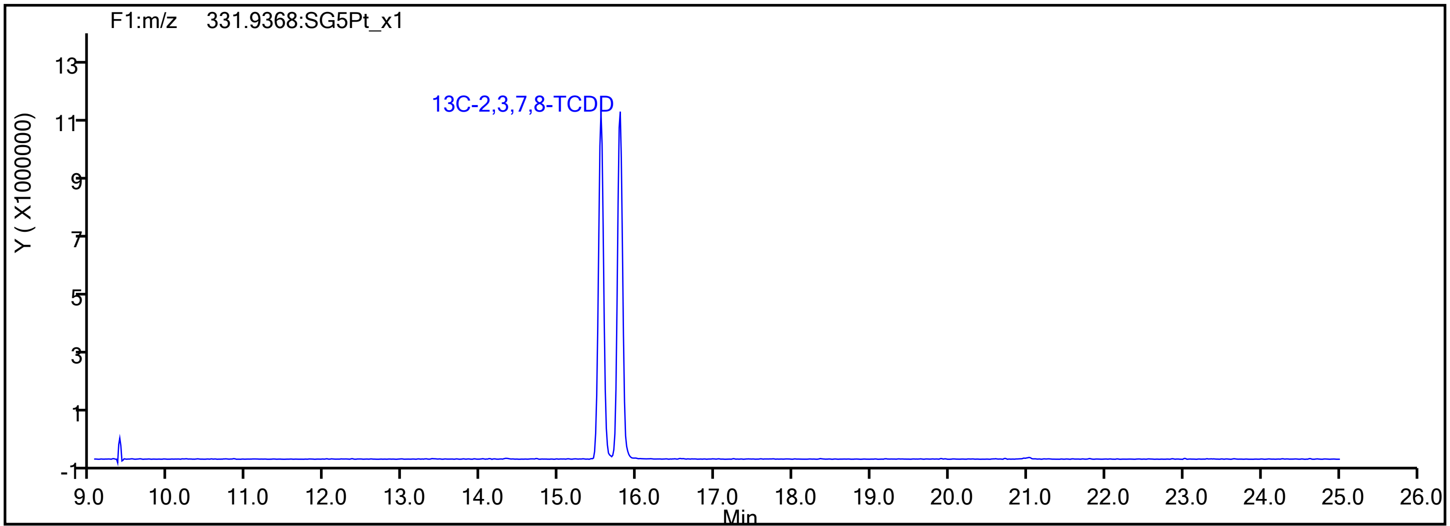

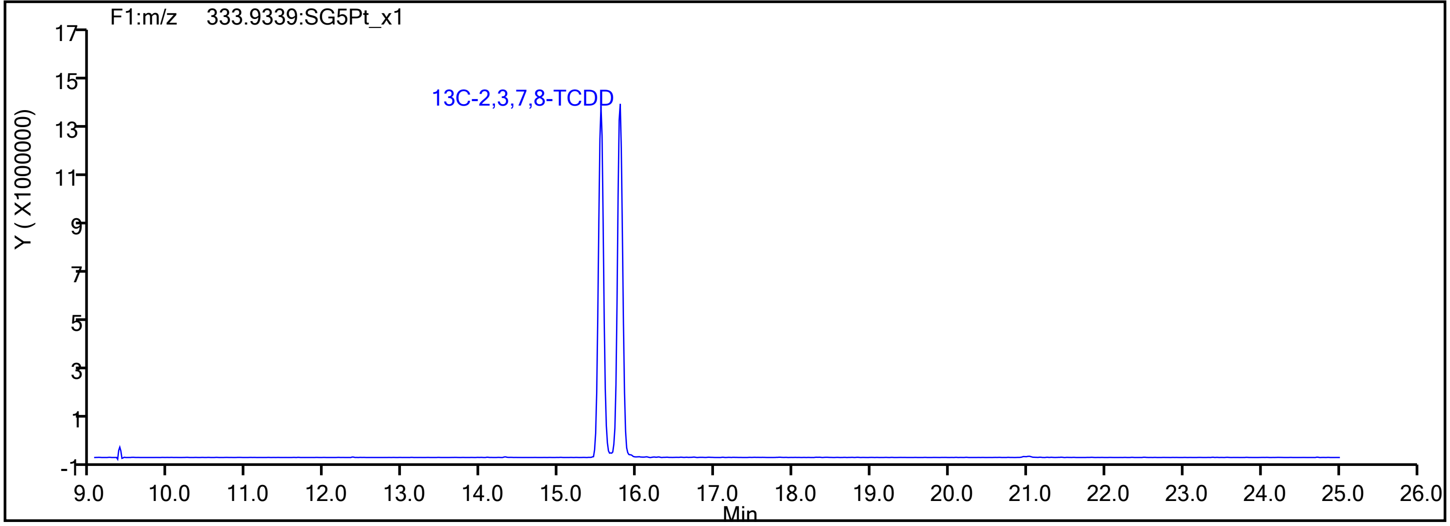

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

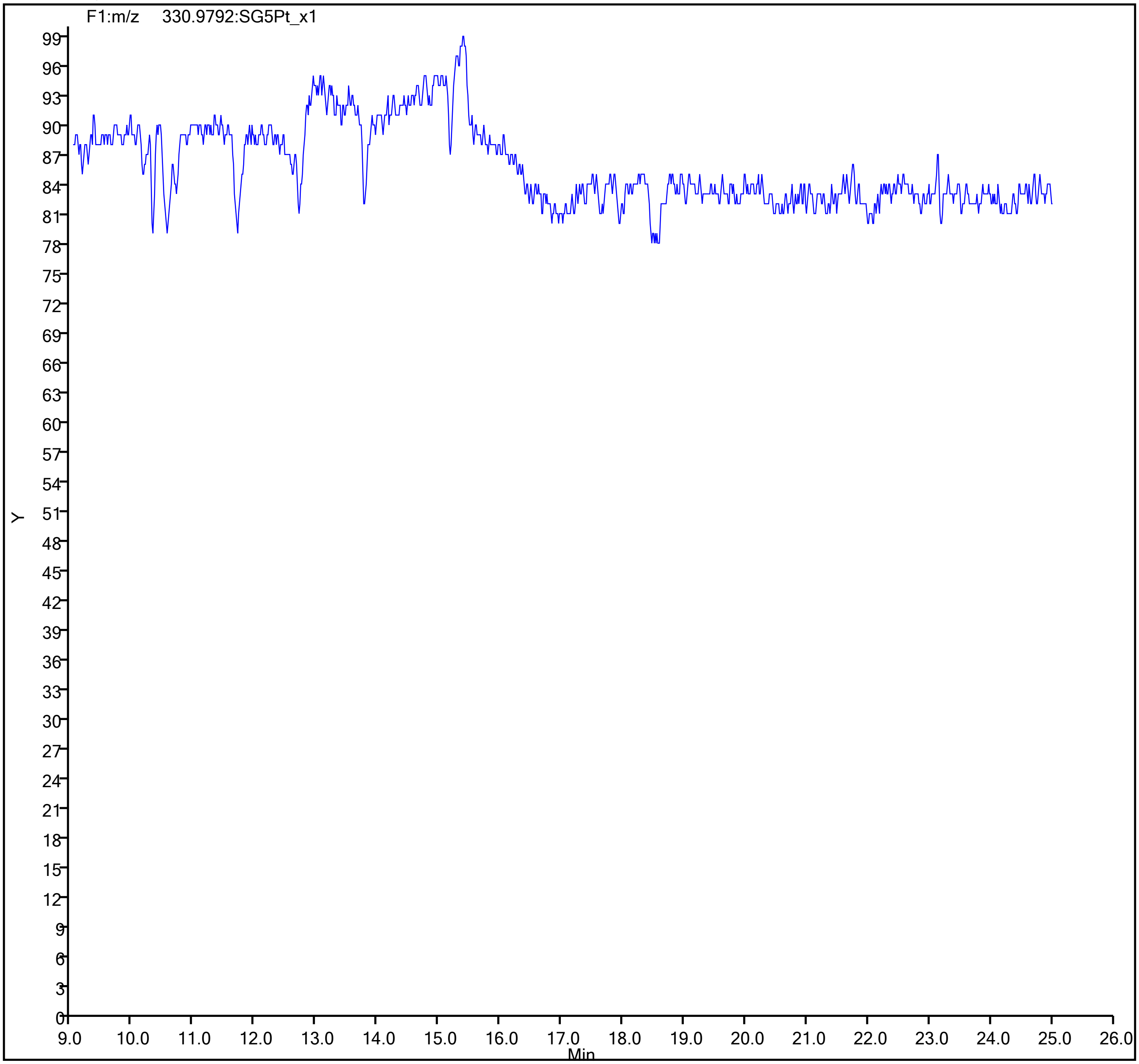

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Lab Sample ID: CCV 320-415167/2   Calibration Date: 09/23/2020 12:40

Instrument ID: 11D2   Calib Start Date: 07/24/2020 23:50

GC Column: DB-225   ID: 0.32(mm)   Calib End Date: 07/25/2020 02:23

Lab File ID: 23SE20A11D2_002.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.071		8.35	10.0	84	78-129
2,3,7,8-TCDF	AveID	0.9943	0.9189		9.24	10.0	92	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	0.9803		99.7	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.510		96.1	100	96	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9888		9.94	10.0	99	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
23SE20A11D2	1	CPS 092320	CPS HRDXNCP_00042				1.00000	
23SE20A11D2	2	CCV 092320	CCV CS-4 HRDXNL4_00094				1.00000	
23SE20A11D2	3	SB 092320	SB SOLVENT Blank C-14				1.00000	
23SE20A11D2	4	320-414515	MB 320-414515/1-A	10	1613B_DW	D182	1.00000	L
23SE20A11D2	5	320-414515	LCS 320-414515/2-A	10	1613B_DW		1.00000	L
23SE20A11D2	6	320-414515	LCSD 320-414515/3-A	10	1613B_DW		1.00000	L
23SE20A11D2	7	320-414515	320-64617-A-1-A	10	1613B_DW		1.00000	L
23SE20A11D2	8	320-414319	320-63928-A-1-C	10	EPA_23/Air	83	0.33300	Sa
23SE20A11D2	9	320-410238	440-271312-F-16-A	20	8290/Solid	D179	10.00000	g
23SE20A11D2	10	320-410918	320-64193-A-8-E	20	8290A_D5/Solid	D180	10.00000	g
23SE20A11D2	11	320-410918	320-64193-A-9-E	20	8290A_D5/Solid		10.00000	g
23SE20A11D2	12	320-410918	320-64193-A-10-E	20	8290A_D5/Solid		10.00000	g
23SE20A11D2	13	320-410918	320-64193-A-11-E	20	8290A_D5/Solid		10.00000	g
23SE20A11D2	14	320-412959	320-64049-A-3-B (10X)	20	1613B/Solid	D181	1.00000	g
23SE20A11D2	15	320-412959	320-64049-A-4-B (20X)	20	1613B/Solid		1.00000	g
23SE20A11D2	16	320-410050	320-64286-A-2-A (10X)	20	8290/Water	82	1.00000	L
23SE20A11D2	17	SB 092320A	SB SOLVENT Blank C-14				1.00000	
23SE20A11D2	18	CCV 092320A	CCV CS-4 HRDXNL4_00094				1.00000	
23SE20A11D2	19						1.00000	
23SE20A11D2	20						1.00000	
23SE20A11D2	21						1.00000	
23SE20A11D2	22						1.00000	
23SE20A11D2	23		KSS, AJS 09-23-20				1.00000	
23SE20A11D2	24						1.00000	

logfile checked
9-24-20 ALM

Peak Locate Examination:23-SEP-2020:12:00 File:23SE20A11D2
Experiment:DB225RES Function:1 Reference:PFK

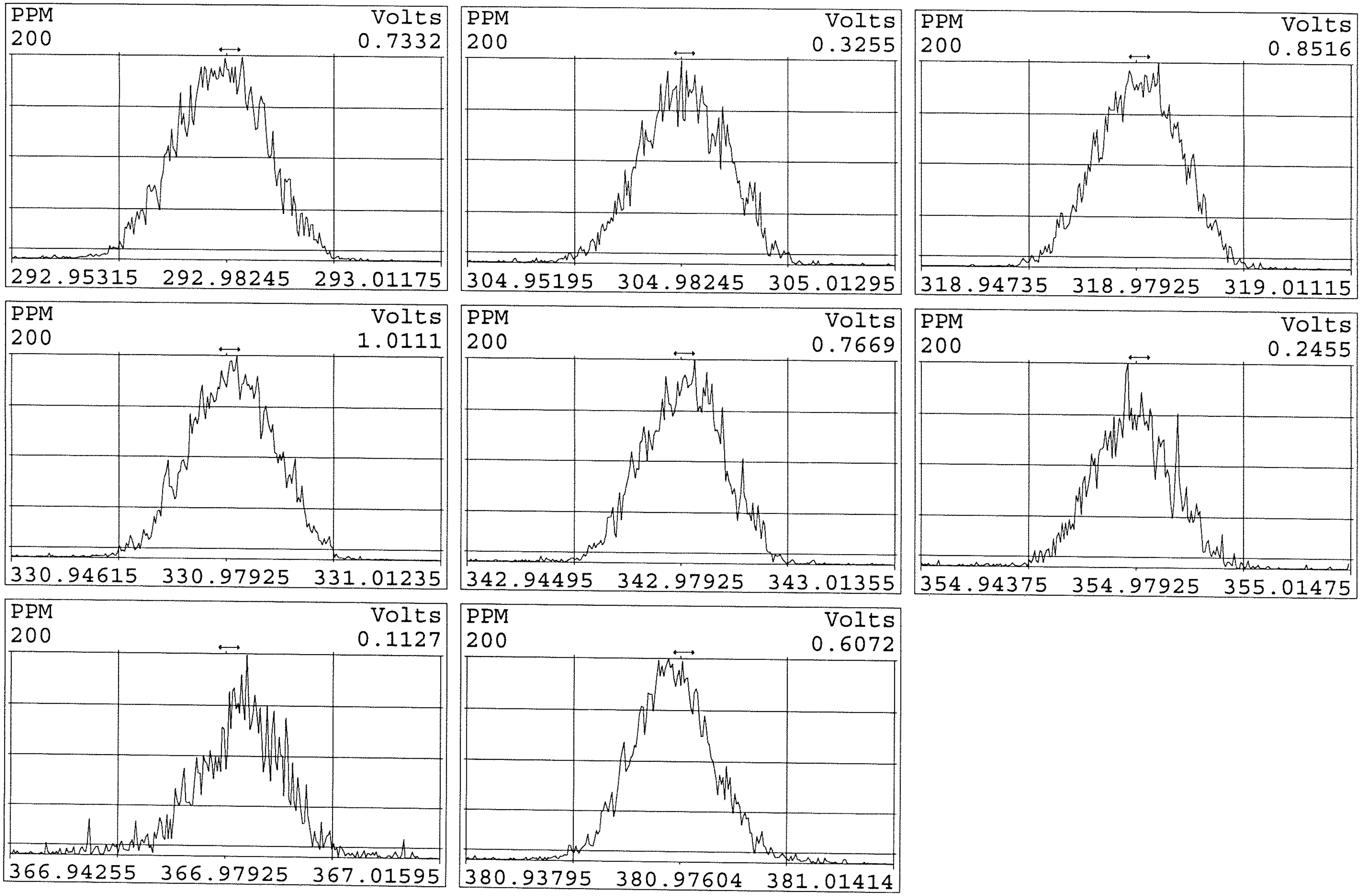

Peak Locate Examination:23-SEP-2020:23:48 File:RESCHK23SE20A11D2
Experiment:DB225RES Function:1 Reference:PFK

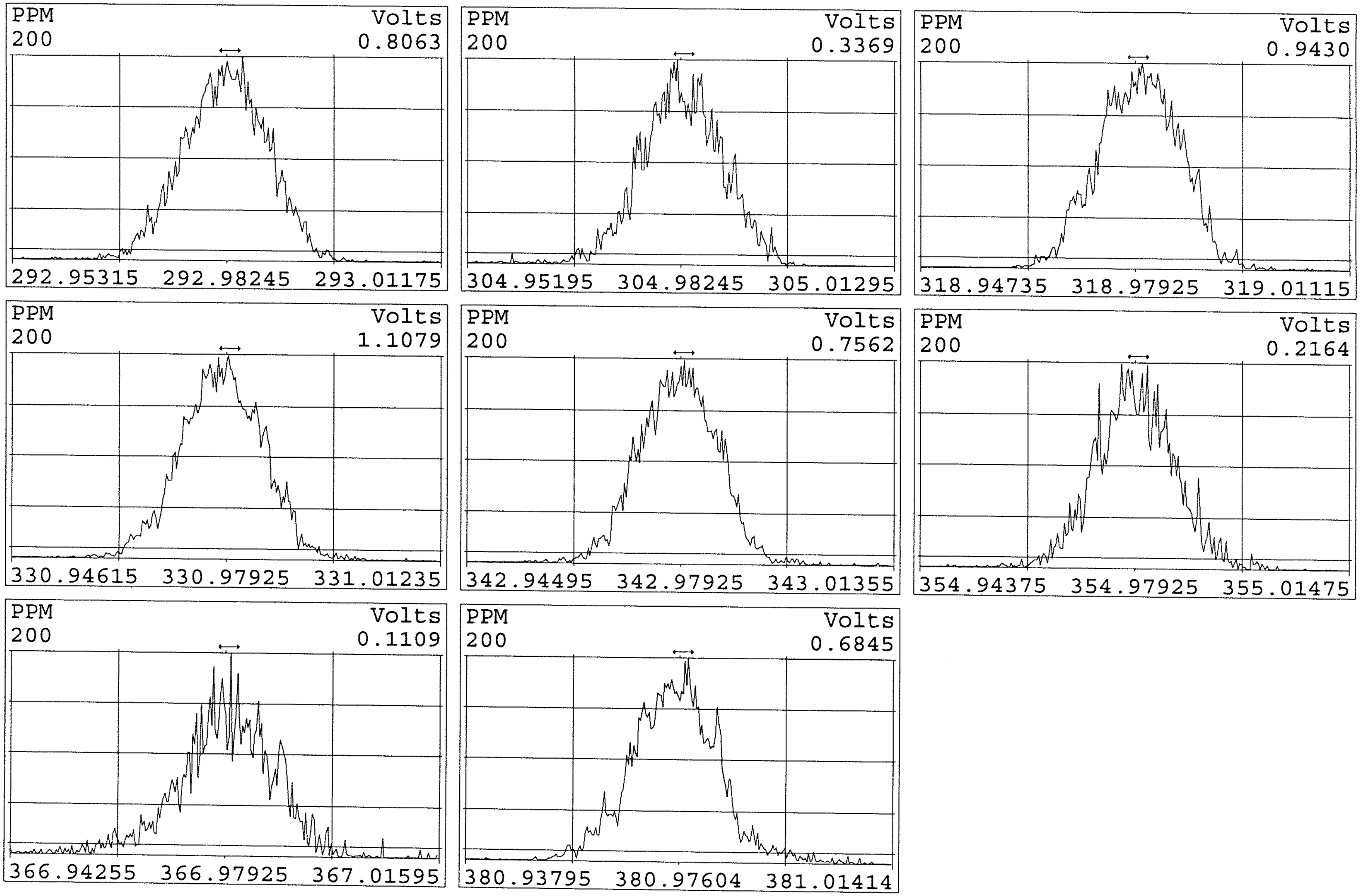

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 23-Sep-2020 12:40:41 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 15:28:18 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 15:16:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.610	186468990	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.735	281518507	0.79	1.5708	96.1	96.1	0.1831	0.1831	96.11	
2,3,7,8-TCDF	15.748	25867874	0.75	0.9943	9.242	9.242	0.0755	0.0755	92.42	
D 13C-2,3,7,8-TCDD	14.363	182790524	0.84	0.9834	99.7	99.7	0.1704	0.1704	99.69	
2,3,7,8-TCDD	14.376	19575009	0.79	1.2822	8.352	8.352	0.0682	0.0682	83.52	
$ 37Cl4-2,3,7,8-TCDD	14.376	18438382		0.9945	9.943	9.943	0.0454	0.0454	99.43	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 24-Sep-2020 15:28:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 23-Sep-2020 12:40:41 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 15:28:18 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 15:16:26

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.610	14.610	0		83926342	20059522	20150	50375	996		
333.9339	14.610	14.610	0		102542648	24593211	9785	24462	2513	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.735	15.735	0	1.077	124484698	28877825	31456	78640	918		
317.9389	15.735	15.735	0	1.077	157033809	35473272	19913	49782	1781	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.748	15.748	0	1.001	11088926	2538149	8733	21832	291		
305.8987	15.748	15.748	0	1.001	14778948	3376611	10579	26447	319	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.363	14.363	0	0.983	83678748	19826408	20150	50375	984		
333.9339	14.363	14.363	0	0.983	99111776	23378567	9785	24462	2389	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.376	14.376	0	1.001	8617616	2063734	8146	20365	253		
321.8936	14.376	14.376	0	1.001	10957393	2602181	6971	17427	373	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.376	14.376	0	0.984	18438382	4417068	8065	20162	548		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d		
Injection Date:	23-Sep-2020 12:40:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415167	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

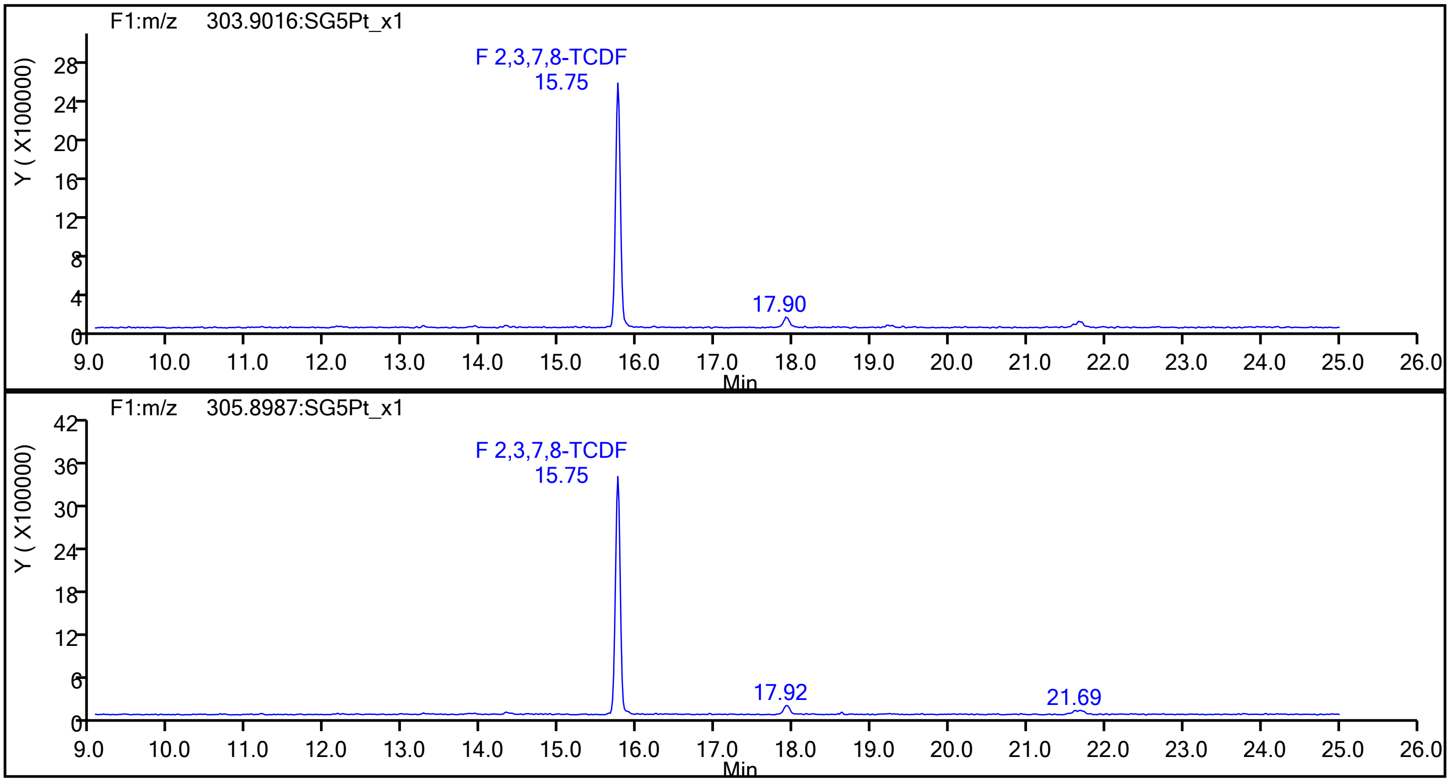

TCDF Standards

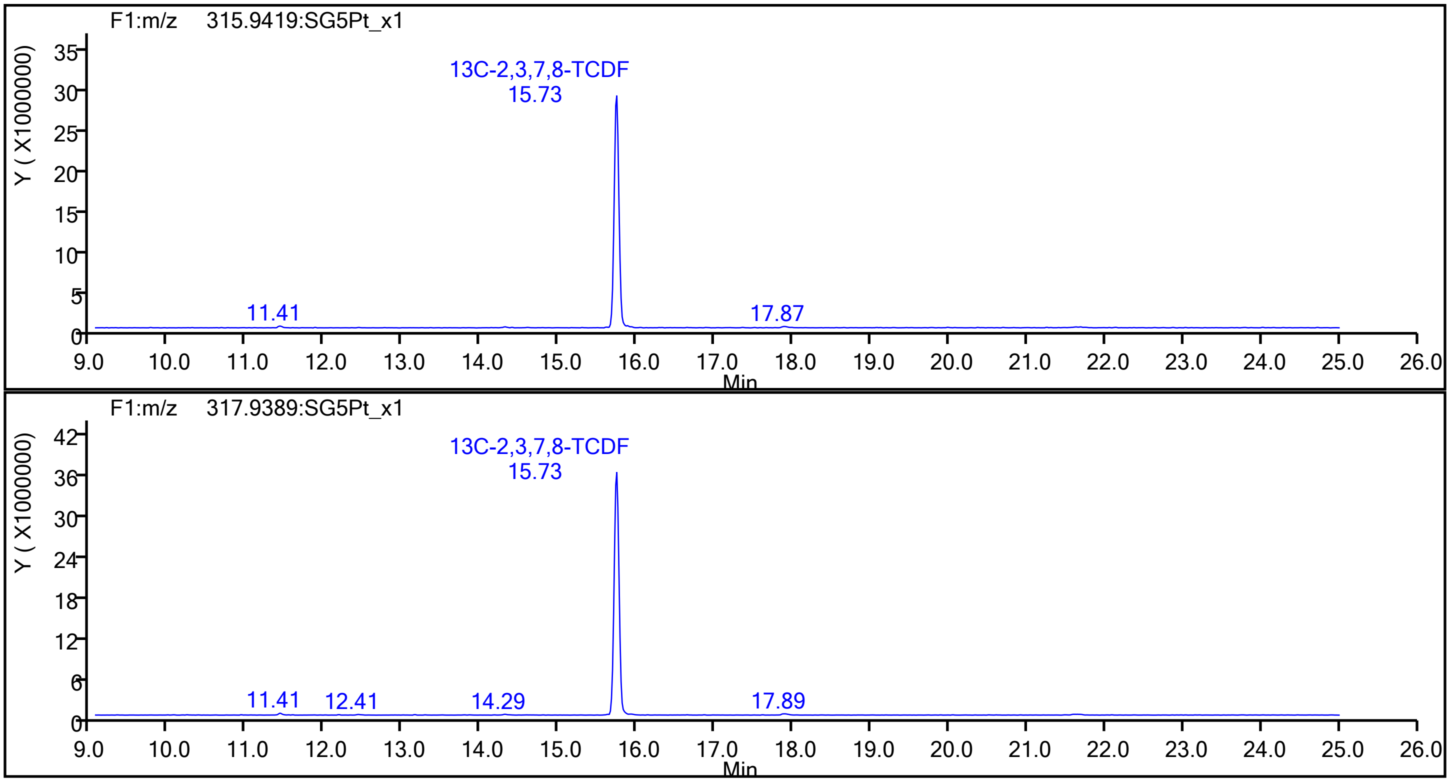

Report Date: 24-Sep-2020 15:28:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d
Injection Date: 23-Sep-2020 12:40:41
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 415167
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

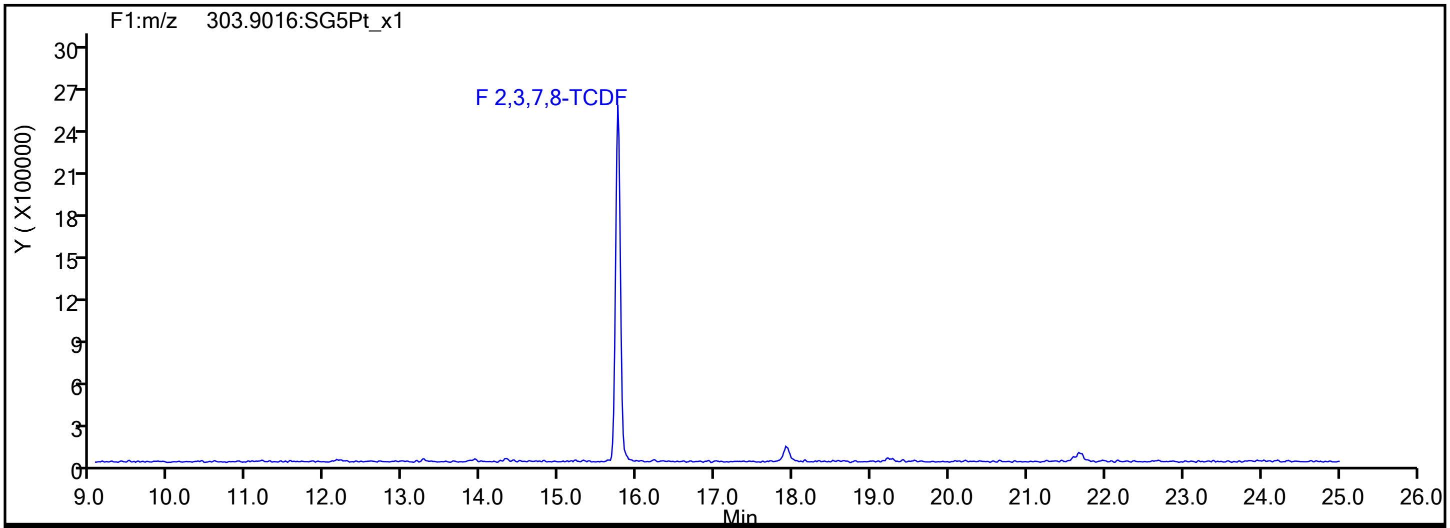

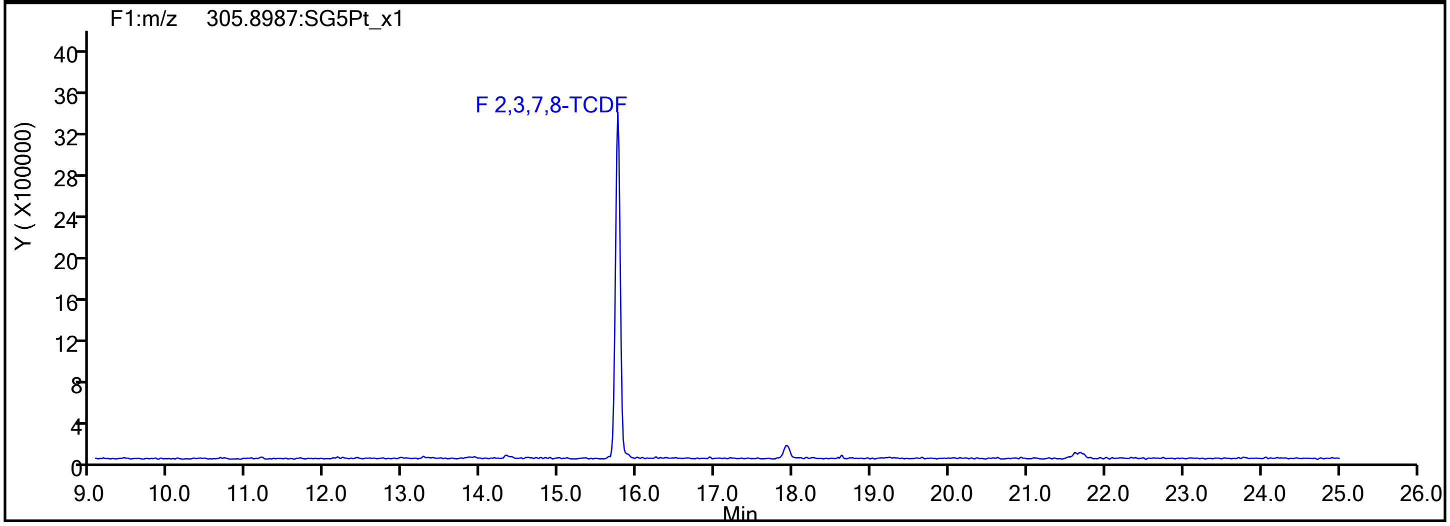

TCDF Interference Mass

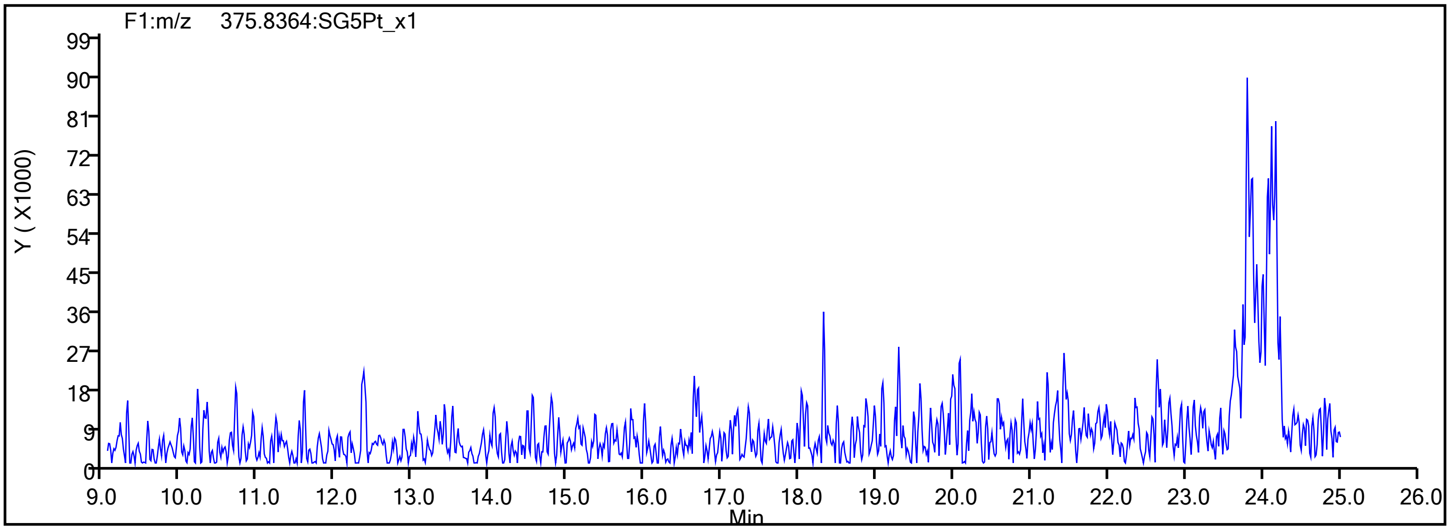

Report Date: 24-Sep-2020 15:28:19		Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d
Injection Date: 23-Sep-2020 12:40:41		Injection Vol: 2.0 ul
Instrument ID: 11D2		Operator ID:
Method: DXN_DB225_11D2		Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 415167		Sample Line#: 2
Column Type: DB-225		Column Dia: 0.32 mm

TCDD

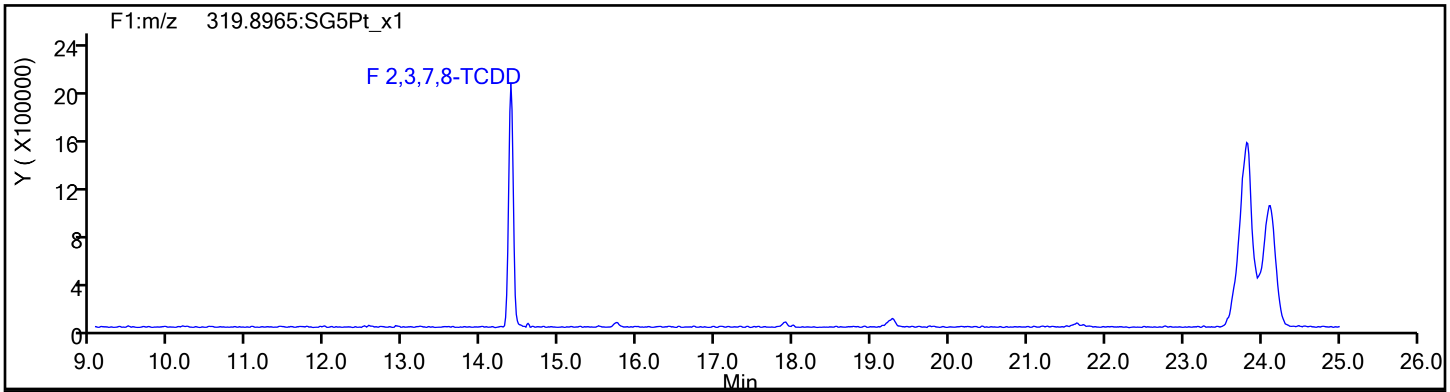

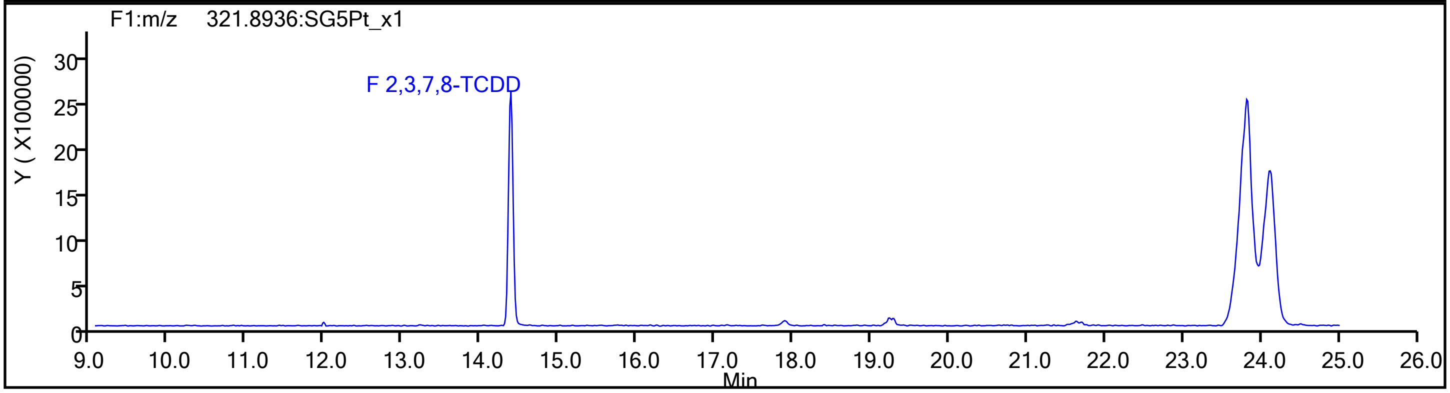

TCDD Standards

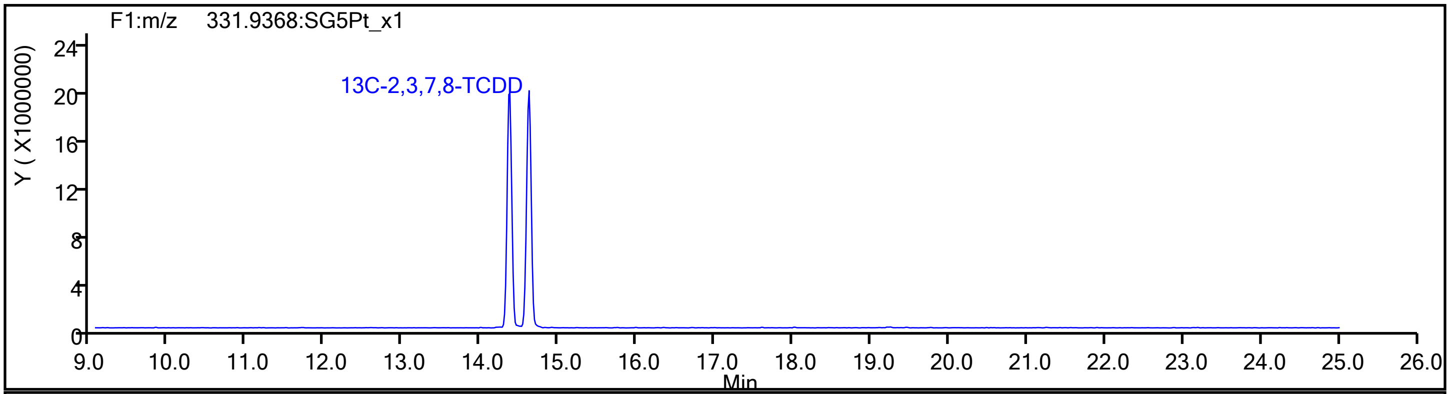

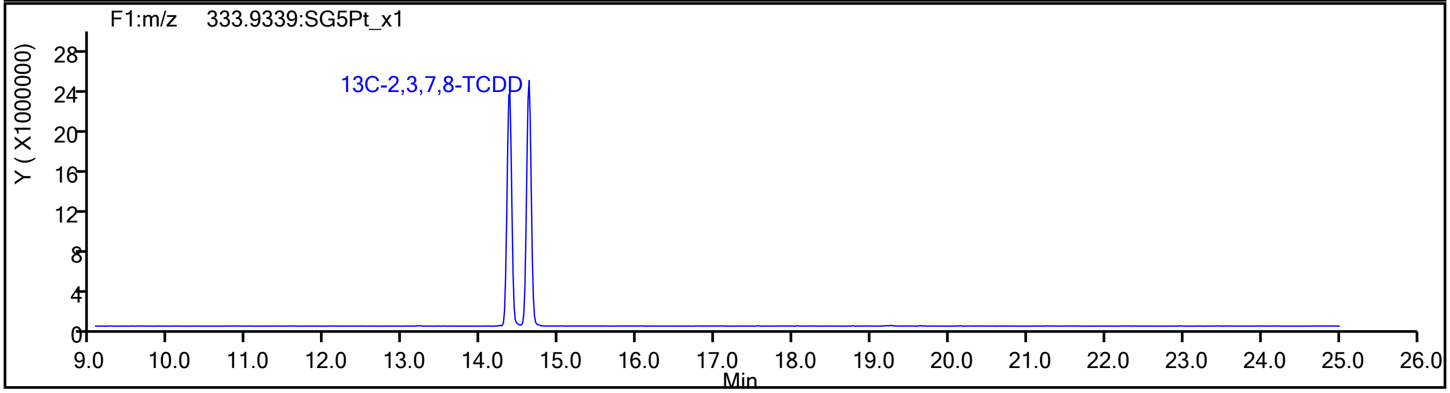

Report Date: 24-Sep-2020 15:28:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d
Injection Date: 23-Sep-2020 12:40:41 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 415167 Sample Line#: 2
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

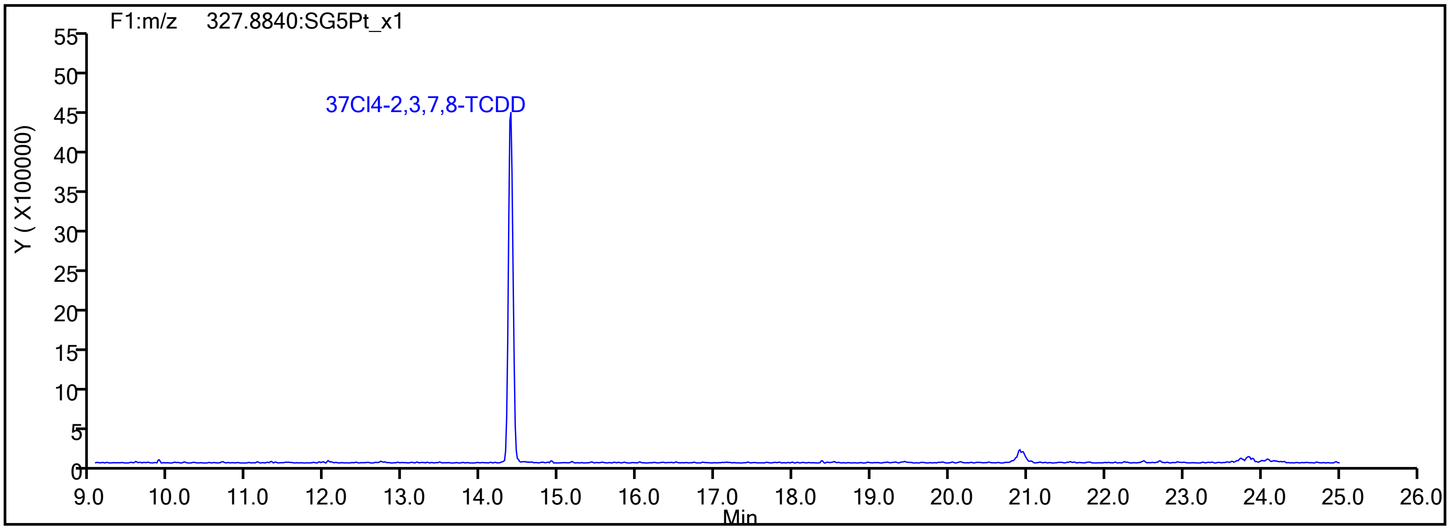

37Cl4-TCDD Standards

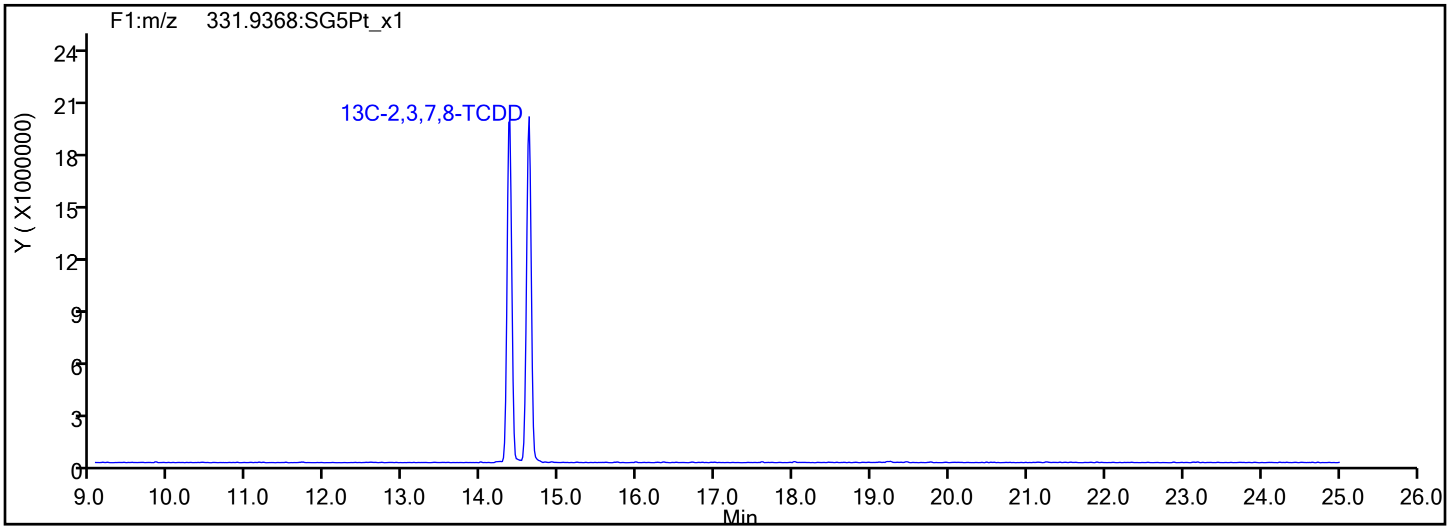

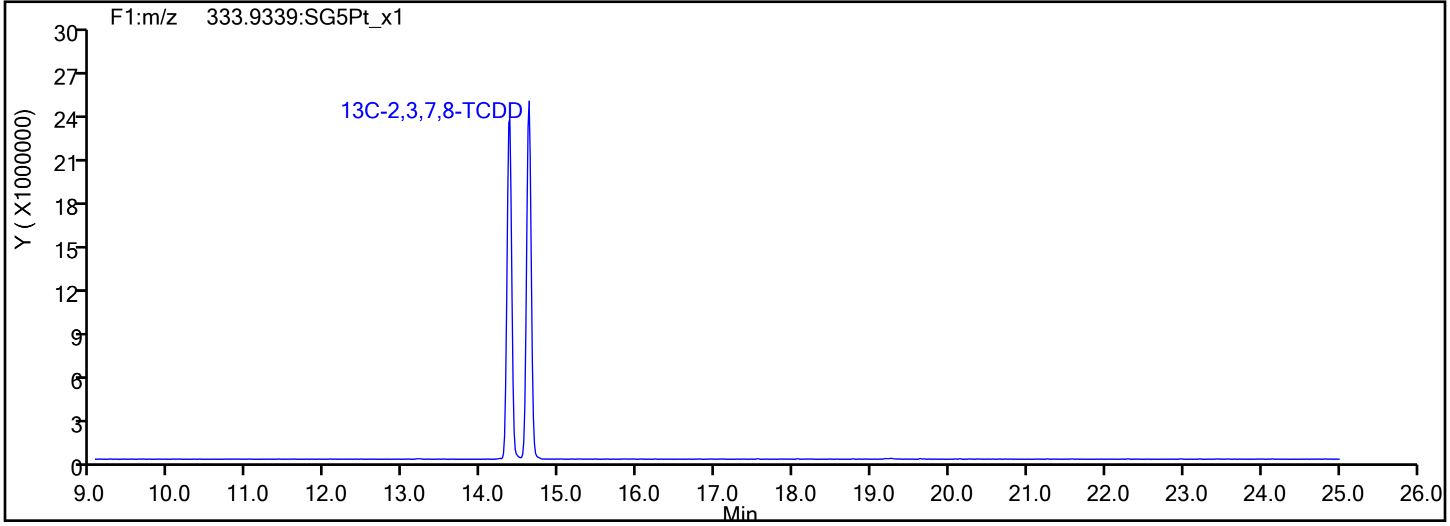

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_002.d

Injection Date:	23-Sep-2020 12:40:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415167	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

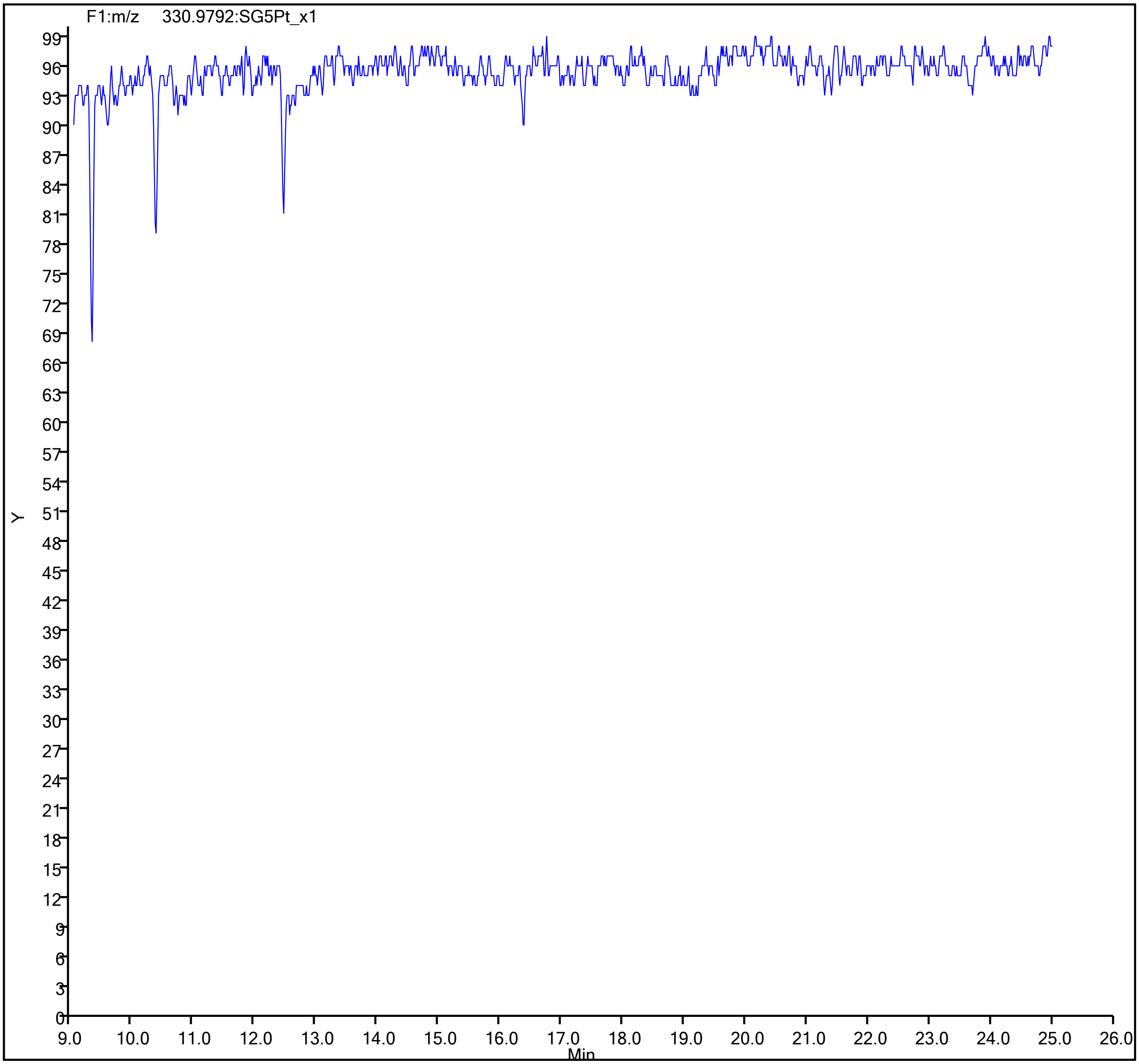

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID: ICV 320-413255/9 Calibration Date: 09/17/2020 18:07

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 17se20dfs1_10.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.044		38.5	40.0	96	70-130
2,3,7,8-TCDD	AveID	1.081	1.087		40.2	40.0	101	70-130
1,2,3,7,8-PeCDF	AveID	1.055	0.9812		186	200	93	70-130
2,3,4,7,8-PeCDF	AveID	1.104	1.101		199	200	100	70-130
1,2,3,7,8-PeCDD	AveID	1.068	0.9687		181	200	91	70-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.190		188	200	94	70-130
1,2,3,6,7,8-HxCDF	AveID	1.223	1.204		197	200	98	70-130
2,3,4,6,7,8-HxCDF	AveID	1.246	1.227		197	200	98	70-130
1,2,3,4,7,8-HxCDD	AveID	1.156	1.078		186	200	93	70-130
1,2,3,6,7,8-HxCDD	AveID	1.028	1.027		200	200	100	70-130
1,2,3,7,8,9-HxCDD	AveID	1.179	1.087		184	200	92	70-130
1,2,3,7,8,9-HxCDF	AveID	1.264	1.152		182	200	91	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.461		194	200	97	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.012		190	200	95	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.318		181	200	91	70-130
OCDD	AveID	1.129	1.091		386	400	97	70-130
OCDF	AveID	1.430	1.358		380	400	95	70-130
13C-2,3,7,8-TCDF	Ave	1.588	1.529		96.3	100	96	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.104		98.6	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.483		100	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.470		106	100	106	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9478		101	100	101	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.162		102	100	102	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.283		97.4	100	97	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.247		100	100	100	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8698		103	100	103	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	1.008		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.196		101	100	101	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	0.9891		100	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9529		99.7	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.9766		106	100	106	77-129
13C-OCDD	Ave	0.7420	0.7100		191	200	96	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.114		38.9	40.0	97	79-127

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 18:07:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 08:47:54 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1028

First Level Reviewer: krenns Date: 21-Sep-2020 08:47:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.122	2659596	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.186	4067134	0.80	1.5883	96.3	96.3	0.3357	0.3357	96.28	
2,3,7,8-TCDF	19.220	1698476	0.78	1.0857	38.5	38.5	0.0690	0.0690	96.17	
A Non-2,3,7,8-sub-TCDF	18.794	22290	0.77	1.0857	0.6140	0.5048	0.0690	0.3462		RQ
S Total TCDF					39.1	39.0	0.0690	0.0690		RQ
D 13C-2,3,7,8-TCDD	20.474	2936527	0.78	1.1194	98.6	98.6	0.3199	0.3199	98.63	
2,3,7,8-TCDD	20.500	1277292	0.79	1.0810	40.2	40.2	0.1149	0.1149	101	
$ 37Cl4-2,3,7,8-TCDD	20.508	1185629		1.1468	38.9	38.9	0.0374	0.0374	97.18	
A Non-2,3,7,8-sub-TCDD	19.607	20912	0.66	1.0810	0.6588	0.6588	0.1149	0.6588		
S Total TCDD					40.9	40.9	0.1149	0.1149		
D 13C-1,2,3,7,8-PeCDF	26.281	3942977	1.60	1.4782	100.3	100.3	0.4662	0.4662	100	
1,2,3,7,8-PeCDF	26.307	7737830	1.56	1.0547	186.1	186.1	0.9257	0.9257	93.04	
D 13C-2,3,4,7,8-PeCDF	27.747	3909476	1.61	1.3912	105.7	105.7	0.4954	0.4954	106	
2,3,4,7,8-PeCDF	27.764	8605609	1.55	1.1035	199.5	199.5	0.9067	0.9067	99.73	
A F1 PeCDFs	23.600						0.0195	0.0195		
A Non-2,3,7,8-sub-PeCDF	26.993	175820	1.44	1.0791	4.150	4.150	0.9159	4.150		
S Total PeCDF					389.7	389.7	0.9162	0.9162		
D 13C-1,2,3,7,8-PeCDD	28.521	2520875	1.58	0.9415	100.7	100.7	0.2155	0.2155	101	
1,2,3,7,8-PeCDD	28.547	4883935	1.57	1.0680	181.4	181.4	0.1964	0.1964	90.70	
A Non-2,3,7,8-sub-PeCDD	27.362						0.1964	0.1964		
S Total PeCDD					181.4	181.4	0.1964	0.1964		
D 13C-1,2,3,4,7,8-HxCDF	34.167	3317674	0.52	1.1378	102.1	102.1	0.4285	0.4285	102	
1,2,3,4,7,8-HxCDF	34.183	7893407	1.26	1.2643	188.2	188.2	0.9832	0.9832	94.09	
D 13C-1,2,3,6,7,8-HxCDF	34.352	3662372	0.53	1.3173	97.4	97.4	0.3702	0.3702	97.37	
1,2,3,6,7,8-HxCDF	34.368	8821654	1.26	1.2230	196.9	196.9	0.9566	0.9566	98.47	
D 13C-2,3,4,6,7,8-HxCDF	35.253	3561346	0.53	1.2457	100.1	100.1	0.3914	0.3914	100	
2,3,4,6,7,8-HxCDF	35.278	8739194	1.25	1.2464	196.9	196.9	0.8181	0.8181	98.44	
D 13C-1,2,3,7,8,9-HxCDF	36.214	3415580	0.53	1.1840	101.0	101.0	0.4118	0.4118	101	
1,2,3,7,8,9-HxCDF	36.222	7866401	1.26	1.2638	182.2	182.2	0.7504	0.7504	91.12	
A Non-2,3,7,8-sub-HxCDF	34.213						0.8666	0.8666		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					764.2	764.2	0.8770	0.8770		
* 13C-1,2,3,7,8,9-HxCDD	36.003	2855258	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.489	2483443	1.28	0.8477	102.6	102.6	0.2603	0.2603	103	
1,2,3,4,7,8-HxCDD	35.506	5352631	1.24	1.1561	186.4	186.4	0.3893	0.3893	93.22	
D 13C-1,2,3,6,7,8-HxCDD	35.615	2878782	1.26	0.9979	101.0	101.0	0.2211	0.2211	101	
1,2,3,6,7,8-HxCDD	35.632	5913816	1.25	1.0284	199.8	199.8	0.4167	0.4167	99.88	
1,2,3,7,8,9-HxCDD	36.020	5830430	1.25	1.1789	184.5	184.5	0.3724	0.3724	92.23	
A Non-2,3,7,8-sub-HxCDD	34.672						0.3916	0.3916		
S Total HxCDD					570.6	570.6	0.3928	0.3928		
D 13C-1,2,3,4,6,7,8-HpCDF	38.111	2824206	0.45	0.9884	100.1	100.1	0.4850	0.4850	100	
1,2,3,4,6,7,8-HpCDF	38.127	8252143	1.04	1.5064	194.0	194.0	0.7191	0.7191	96.98	
D 13C-1,2,3,4,7,8,9-HpCDF	39.417	2788517	0.46	0.9203	106.1	106.1	0.5209	0.5209	106	
1,2,3,4,7,8,9-HpCDF	39.425	7351404	1.05	1.4548	181.2	181.2	0.7105	0.7105	90.61	
A Non-2,3,7,8-sub-HpCDF	38.769						0.7145	0.7145		
S Total HpCDF					375.2	375.2	0.7148	0.7148		
D 13C-1,2,3,4,6,7,8-HpCDD	39.105	2720911	1.07	0.9556	99.7	99.7	0.2510	0.2510	99.72	
1,2,3,4,6,7,8-HpCDD	39.113	5505027	1.04	1.0640	190.2	190.2	0.4107	0.4107	95.08	
A Non-2,3,7,8-sub-HpCDD	38.941						0.4107	0.4107		n
S Total HpCDD					190.2	190.2	0.4107	0.4107		
D 13C-OCDD	41.558	4054717	0.91	0.7420	191.4	191.4	0.2171	0.2171	95.69	
OCDF	41.650	11016379	0.92	1.4296	380.1	380.1	0.2826	0.2826	95.02	
OCDD	41.566	8848500	0.89	1.1293	386.5	386.5	0.3109	0.3109	96.62	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00046	Amount Added: 1.00	Units: mL

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 18:07:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 08:47:54 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1028

First Level Reviewer: krenns Date: 21-Sep-2020 08:47:54

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.122	20.144	-1		1192172	168399	420	1050	401		
333.9338	20.113	20.144	-2		1467424	216105	131	327	1650	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.186	19.216	-2	0.953	1808713	271614	550	1375	494		
317.9389	19.194	19.216	-1	0.954	2258421	338593	270	675	1254	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.220	19.242	-1	1.002	745461	108291	66	165	1641		
305.8987	19.211	19.242	-2	1.001	953015	140652	117	292	1202	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	18.043	18.794	-45	0.940	6651	1061	66	165	16		
305.8987	18.052	18.794	-44	0.941	10939	1668	117	292	14	0.61(0.65-0.89)	
	Empc Correction				8637	1377	117	292	12		
303.9016	18.550	18.794	-15	0.967	5566	848	66	165	13		
	Empc Correction				3046	636	66	165	10		
305.8987	18.533	18.794	-16	0.966	3956	827	117	292	7	1.41(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.474	20.505	-2	1.018	1291302	175390	420	1050	418		
333.9338	20.474	20.505	-2	1.018	1645225	223004	131	327	1702	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.500	20.531	-2	1.001	562437	76985	124	310	621		
321.8936	20.500	20.531	-2	1.001	714855	98574	74	185	1332	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.508	20.531	-1	1.019	1185629	160389	66	165	2430		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											
319.8965	20.311	19.607	42	0.992	8322	1925	124	310	16		
321.8936	20.328	19.607	43	0.993	12590	2246	74	185	30	0.66(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.281	26.306	-1	1.306	2427118	406452	621	1552	655		
353.8970	26.281	26.306	-1	1.306	1515859	252400	439	1097	575	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.307	26.331	-1	1.001	4714022	776980	1553	3882	500		
341.8567	26.307	26.331	-1	1.001	3023808	492959	1020	2550	483	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.747	27.772	-1	1.379	2411072	397541	621	1552	640		
353.8970	27.747	27.772	-1	1.379	1498404	245248	439	1097	559	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.764	27.797	-2	1.001	5235926	830056	1553	3882	534		
341.8567	27.764	27.797	-2	1.001	3369683	534849	1020	2550	524	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.600						15	37			
341.8567	23.600						40	100			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.871	26.993	-7	1.022	103730	17576	1553	3882	11		
341.8567	26.871	26.993	-7	1.022	72090	11766	1020	2550	12	1.44(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.521	28.547	-2	1.417	1543850	235852	164	410	1438		
369.8919	28.521	28.547	-2	1.417	977025	155952	148	370	1054	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.547	28.572	-2	1.001	2982453	453378	217	542	2089		
357.8516	28.547	28.572	-2	1.001	1901482	286670	112	280	2560	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.362						217	542			
357.8516	27.362						112	280			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.167	34.194	-2	0.949	1134792	228722	510	1275	448		
385.8610	34.167	34.194	-2	0.949	2182882	440783	915	2287	482	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.183	34.211	-2	1.000	4393738	873234	1872	4680	466		
375.8178	34.183	34.211	-2	1.000	3499669	701204	1457	3642	481	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.352	34.379	-2	0.954	1264493	241979	510	1275	474		
385.8610	34.352	34.379	-2	0.954	2397879	469362	915	2287	513	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.368	34.396	-2	1.000	4918121	964693	1872	4680	515		
375.8178	34.368	34.396	-2	1.000	3903533	764281	1457	3642	525	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.253	35.281	-2	0.979	1236977	281991	510	1275	553		
385.8610	35.253	35.281	-2	0.979	2324369	534155	915	2287	584	0.53(0.43-0.59)	

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	35.278	35.298	-1	1.001	4862378	1105500	1872	4680	591		
375.8178	35.270	35.298	-2	1.000	3876816	888903	1457	3642	610	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.214	36.233	-1	1.006	1180099	304598	510	1275	597		
385.8610	36.214	36.233	-1	1.006	2235481	573001	915	2287	626	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.222	36.250	-2	1.000	4392368	1096618	1872	4680	586		
375.8178	36.222	36.250	-2	1.000	3474033	881252	1457	3642	605	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.213						1872	4680			
375.8178	34.213						1457	3642			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.003	36.031	-2		1586177	403442	363	907	1111		
403.8529	36.003	36.031	-2		1269081	327090	282	705	1160	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.489	35.517	-2	0.986	1394556	368017	363	907	1014		
403.8529	35.489	35.517	-2	0.986	1088887	281939	282	705	1000	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.506	35.534	-2	1.000	2964676	767235	638	1595	1203		
391.8127	35.506	35.534	-2	1.000	2387955	615184	532	1330	1156	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.615	35.643	-2	0.989	1604431	378708	363	907	1043		
403.8529	35.615	35.643	-2	0.989	1274351	303839	282	705	1077	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.632	35.660	-2	1.000	3287779	781634	638	1595	1225		
391.8127	35.632	35.660	-2	1.000	2626037	621879	532	1330	1169	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.020	36.048	-2	1.015	3238630	831532	638	1595	1303		
391.8127	36.020	36.048	-2	1.015	2591800	661242	532	1330	1243	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.672						638	1595			
391.8127	34.672						532	1330			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.111	38.146	-2	1.059	876384	288604	494	1235	584		
419.8220	38.111	38.146	-2	1.059	1947822	626711	907	2267	691	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.127	38.154	-2	1.000	4212100	1336957	2017	5042	663		
409.7788	38.127	38.154	-2	1.000	4040043	1273790	1949	4872	654	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.417	39.435	-1	1.095	873746	297798	494	1235	603		
419.8220	39.417	39.435	-1	1.095	1914771	661413	907	2267	729	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.425	39.452	-2	1.000	3766281	1310691	2017	5042	650		
409.7788	39.425	39.452	-2	1.000	3585123	1246789	1949	4872	640	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.769						2017	5042			
409.7788	38.769						1949	4872			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.105	39.132	-2	1.086	1406669	482668	436	1090	1107		
437.8140	39.105	39.132	-2	1.086	1314242	452251	265	662	1707	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.113	39.140	-2	1.000	2812145	983165	865	2162	1137		
425.7737	39.113	39.140	-2	1.000	2692882	936675	769	1922	1218	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.447	38.941	-30	0.983	22616	7798	865	2162	9		
425.7737	38.447	38.941	-30	0.983	20785	6994	769	1922	9	1.09(0.88-1.20)	
13C-OCDD											
469.7780	41.558	41.583	-1	1.154	1930627	630577	238	595	2649		
471.7750	41.558	41.583	-1	1.154	2124090	702205	233	582	3014	0.91(0.76-1.02)	
OCDF											
441.7428	41.650	41.675	-1	1.002	5267434	1701746	468	1170	3636		
443.7399	41.650	41.675	-1	1.002	5748945	1849177	609	1522	3036	0.92(0.76-1.02)	
OCDD											
457.7377	41.566	41.591	-1	1.000	4172866	1361068	465	1162	2927		
459.7348	41.566	41.591	-1	1.000	4675634	1528433	471	1177	3245	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Sep-2020 18:07:00
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 413255
Lims Sample ID: 9
Sublist:

Non-2,3,7,8-sub-TCDF, RT: 18.794

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	4067134	610207

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	4067134	610207

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.043	6651	1061	10939	1668	0.3984	0.61	RQ
18.043	6651	1061	8637	1377	0.3462		Empc Correction
18.550	5566	848	3956	827	0.2156	1.41	RnQ
18.550	3046	636	3956	827	0.1586		Empc Correction
Signal Totals:							
	9697	1697	12593	2204			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27112	4404				0.82	RQ
	22290	3901					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6140 = (27112 * 100.000) / (4067134 * 1.086)
Empc Amount: 0.5048 = (22290 * 100.000) / (4067134 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Sep-2020 18:07:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413255 Lims Sample ID: 9
Sublist:

Non-2,3,7,8-sub-TCDD, RT: 19.607

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	2936527	398394

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	2936527	398394

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.311	8322	1925	12590	2246	0.6588	0.66	
Signal Totals:							
	8322	1925	12590	2246			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	20912	4171				0.66	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6588 = (20912 * 100.000) / (2936527 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 18:07:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 26.993

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	3942977	658852
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	3909476	642789

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	3926226	650820

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.871	103730	17576	72090	11766	4.15	1.44	
Signal Totals:							
	103730	17576	72090	11766			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	175820	29342				1.44	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.150 = (175820 * 100.000) / (3926226 * 1.079)

Report Date: 21-Sep-2020 08:48:04
Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Injection Date: 17-Sep-2020 18:07:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

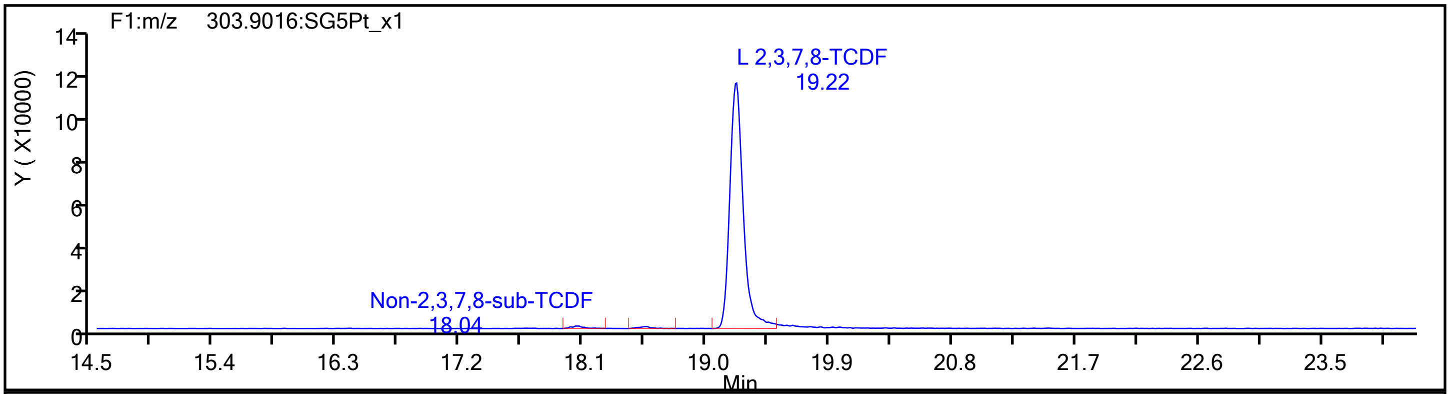

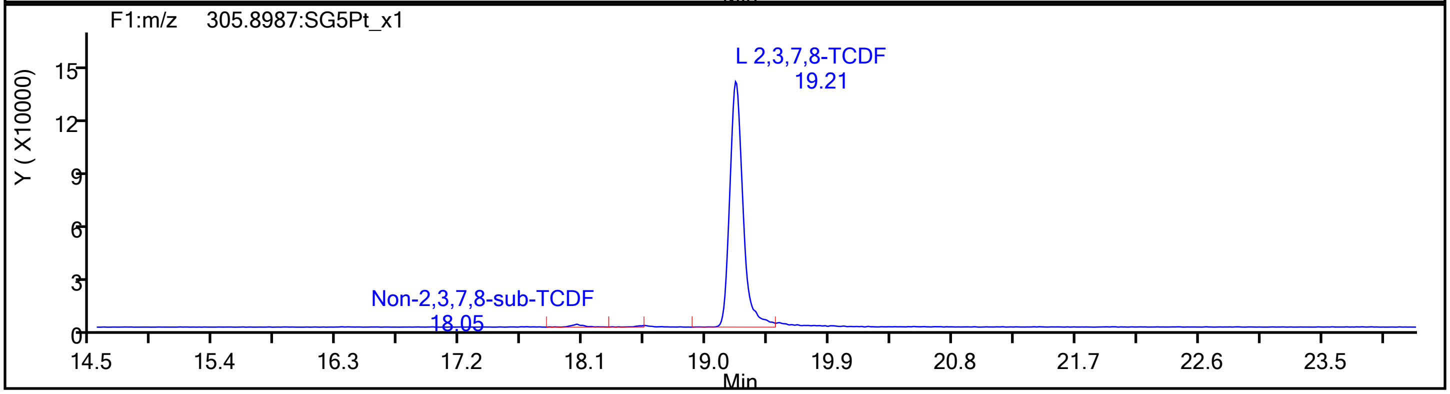

TCDF Standards

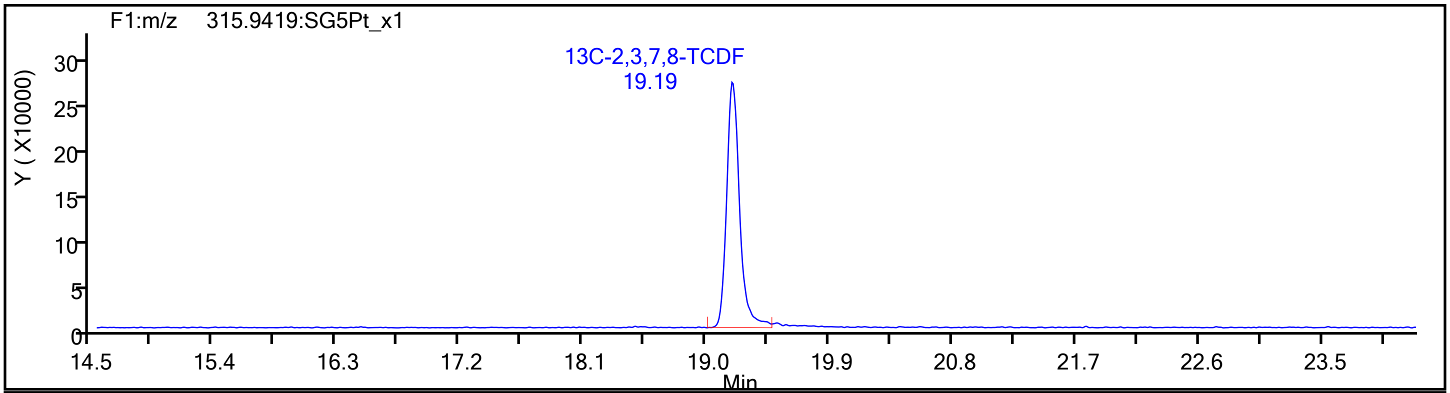

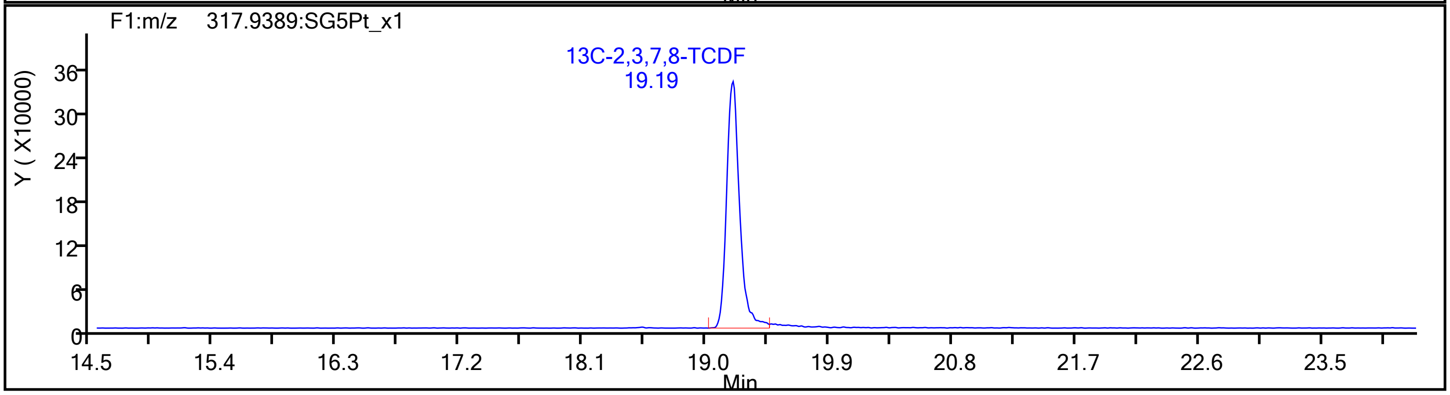

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

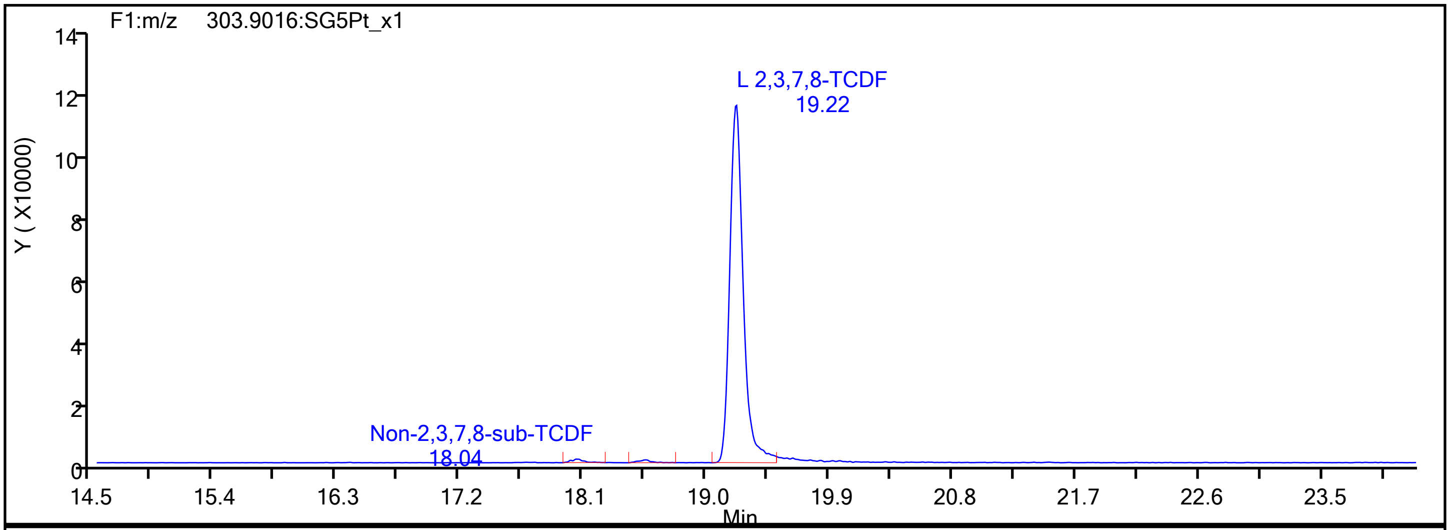

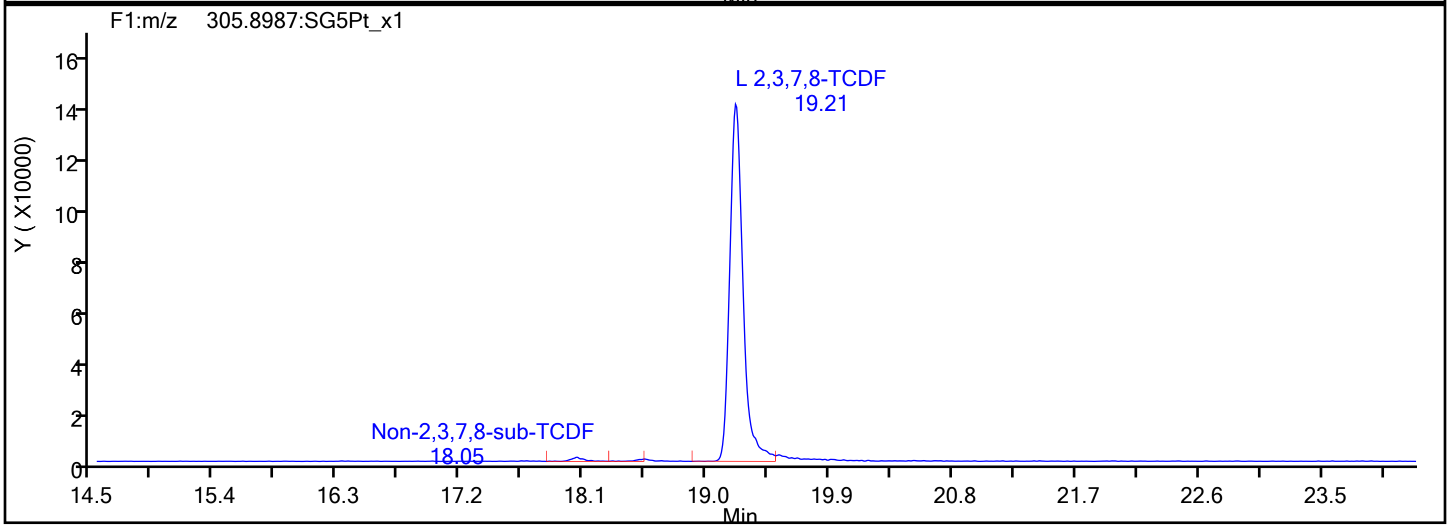

TCDF Interference Mass

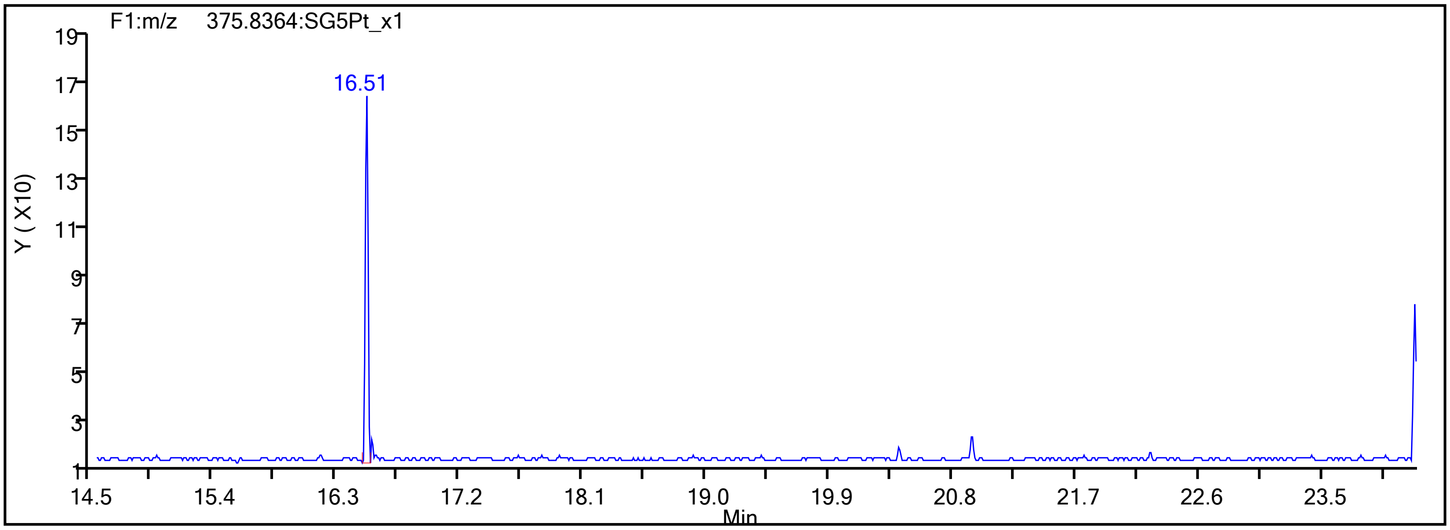

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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TCDD

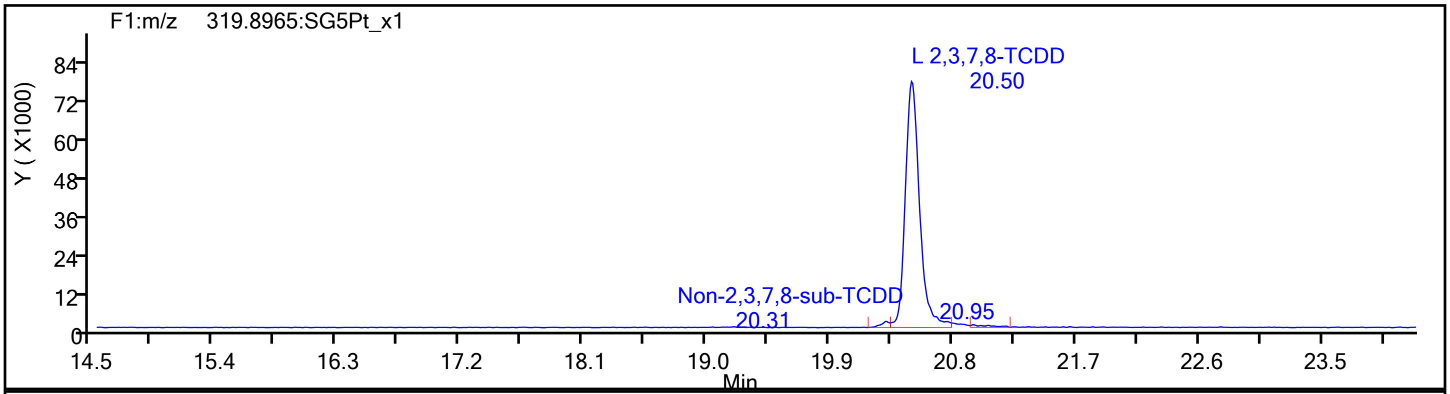

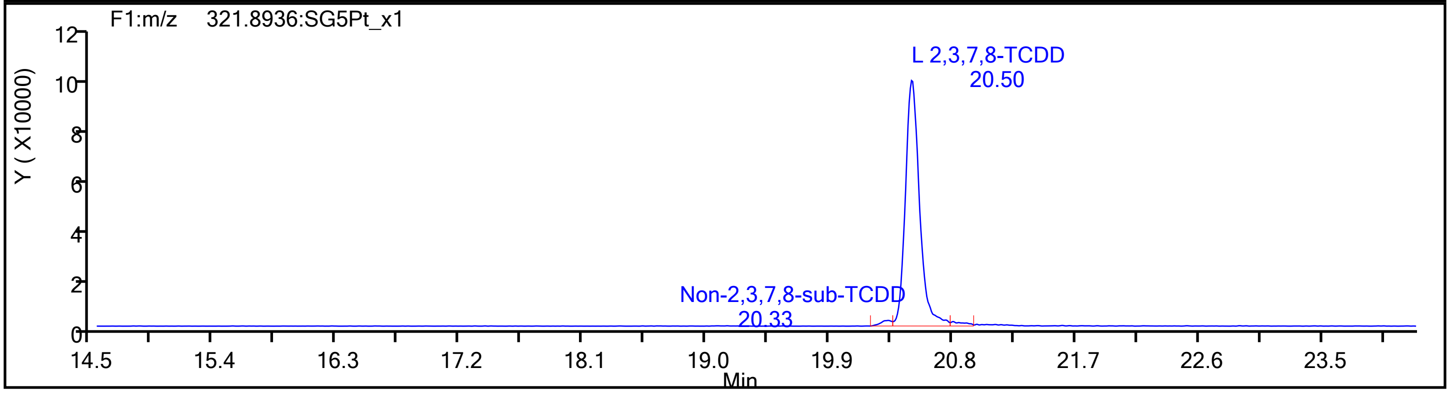

TCDD Standards

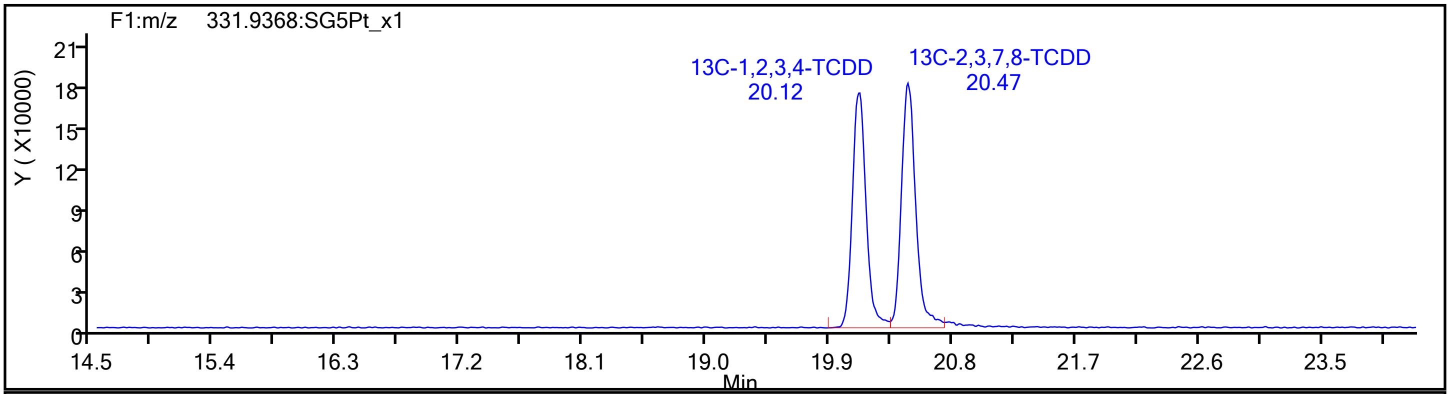

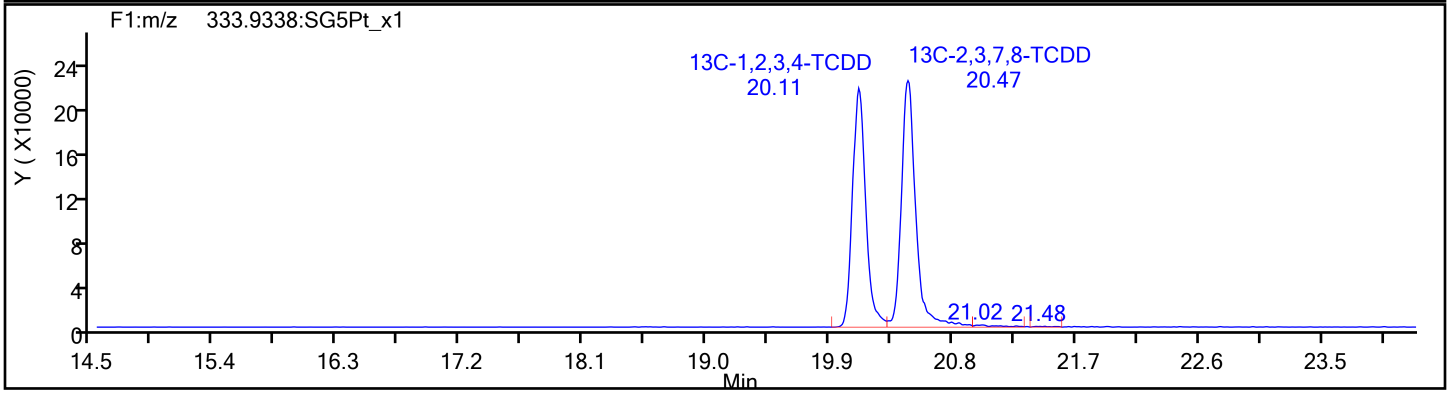

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 9
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Column Dia: 0.32 mm

37Cl4-TCDD

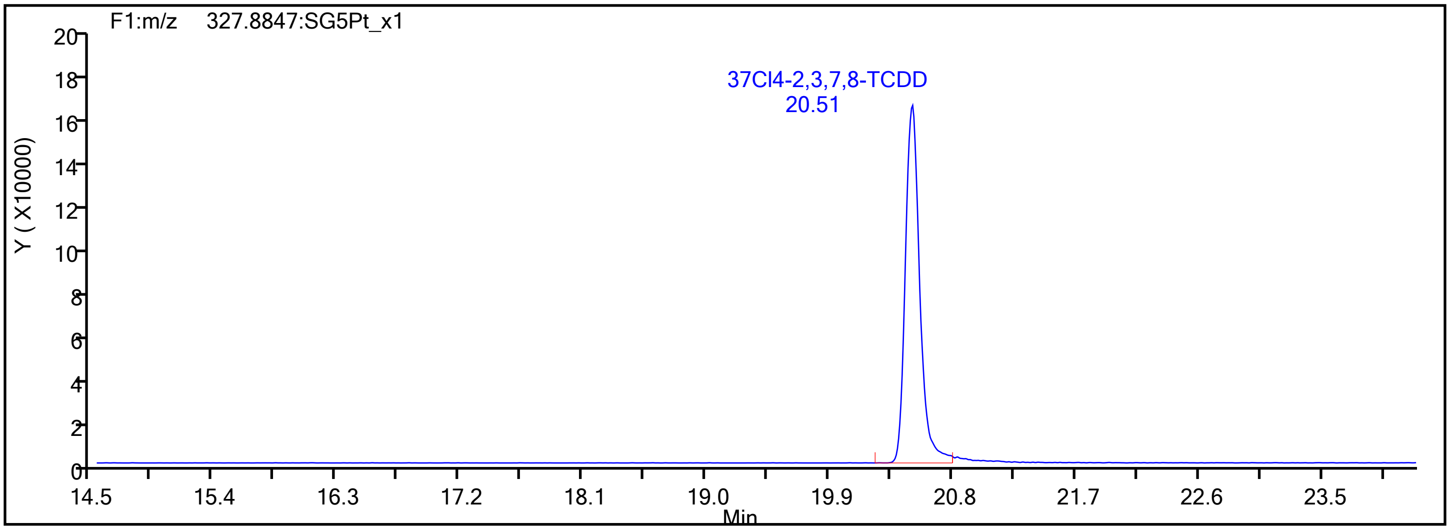

37Cl4-TCDD Standards

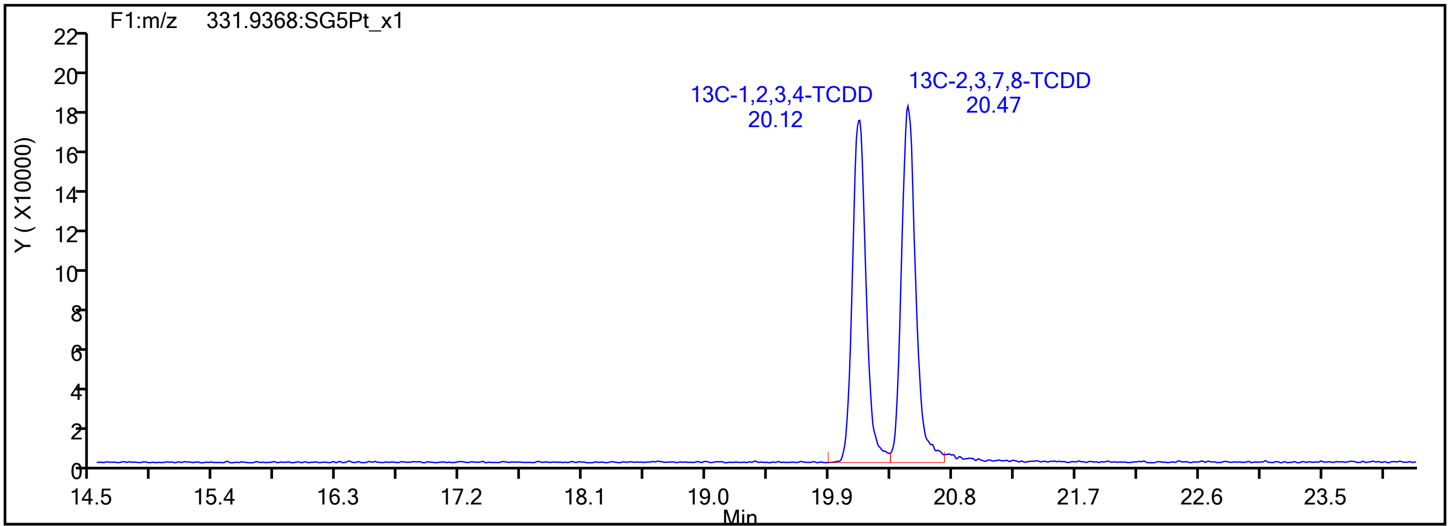

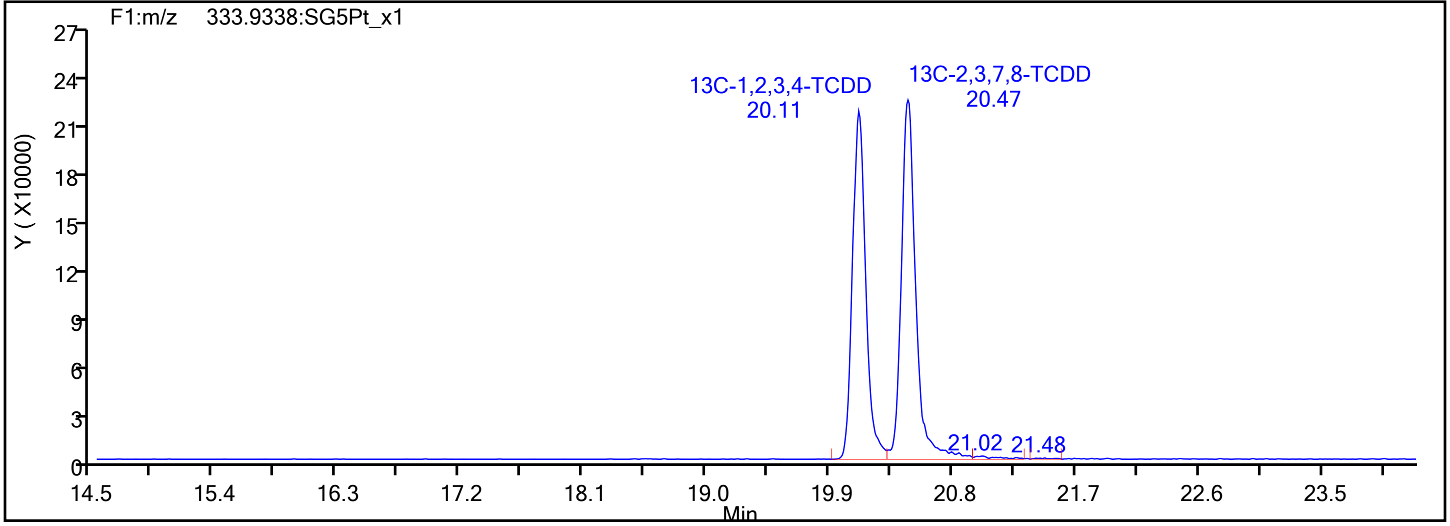

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

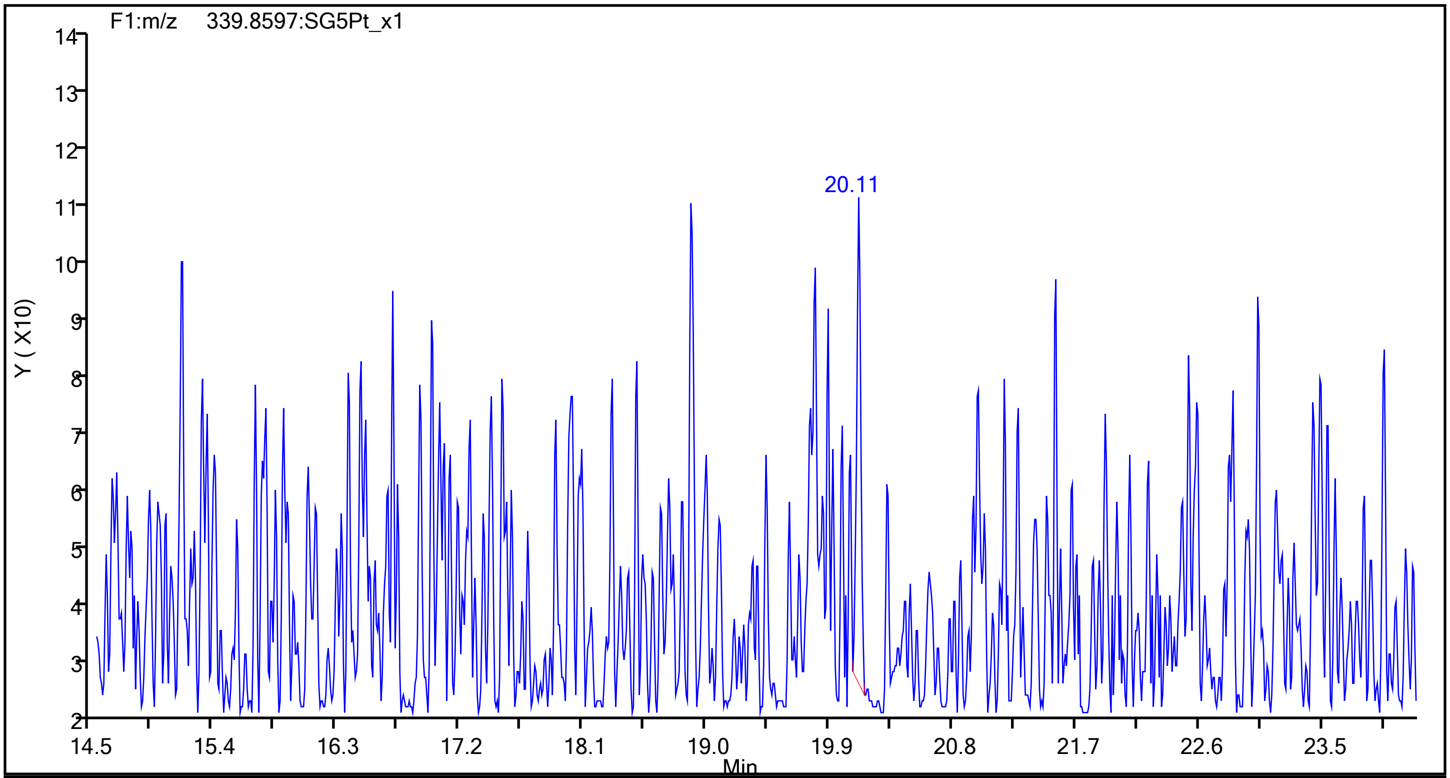

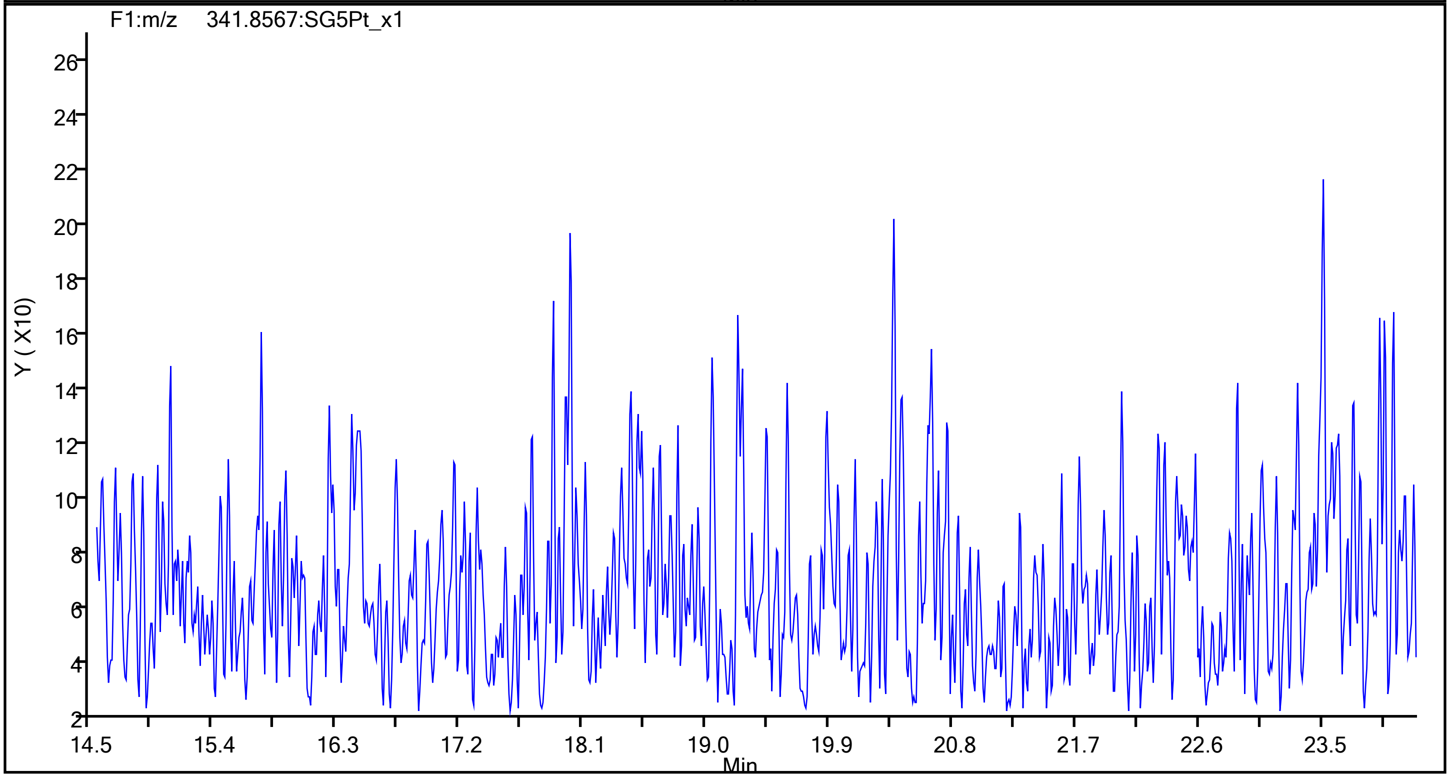

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
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Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

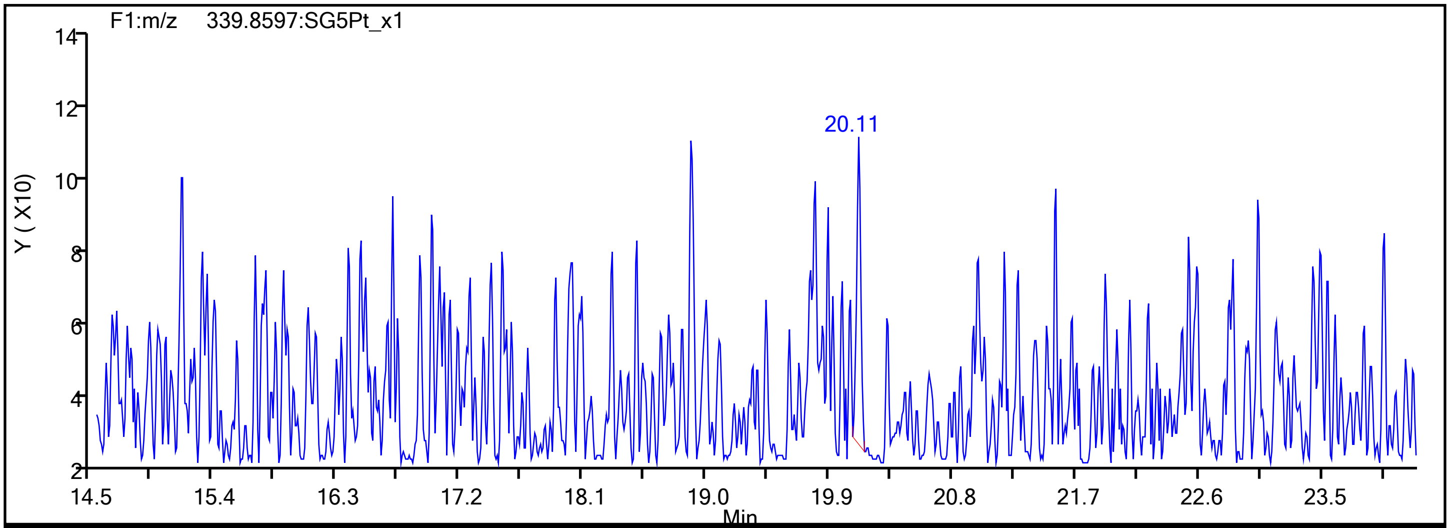

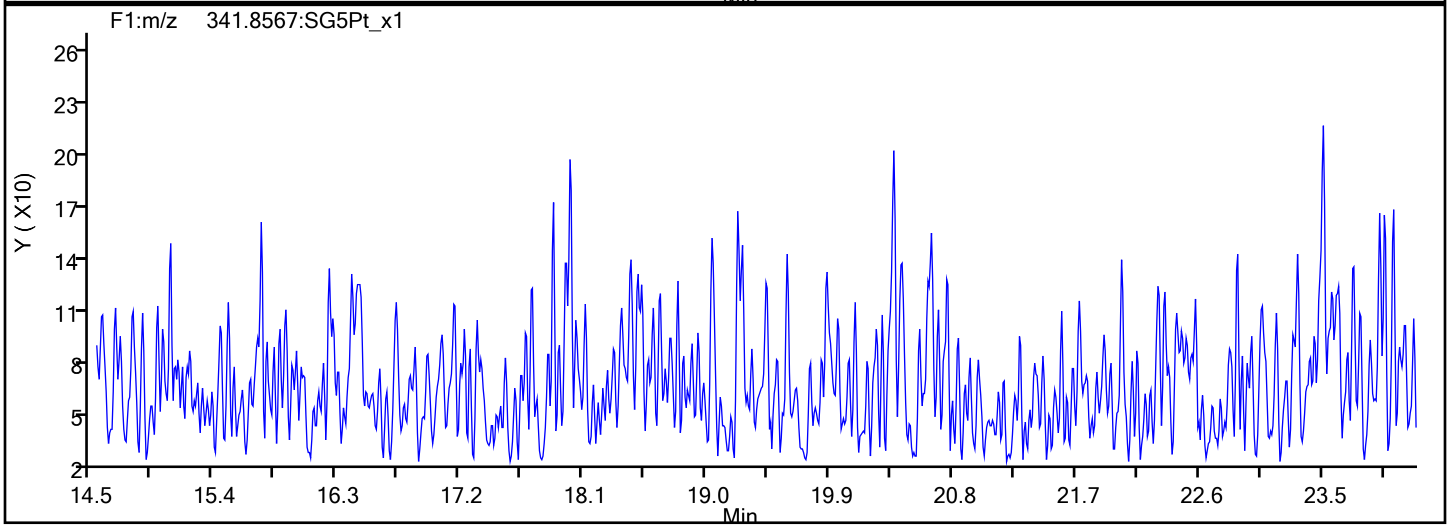

F1 PeCDFs Interference Mass

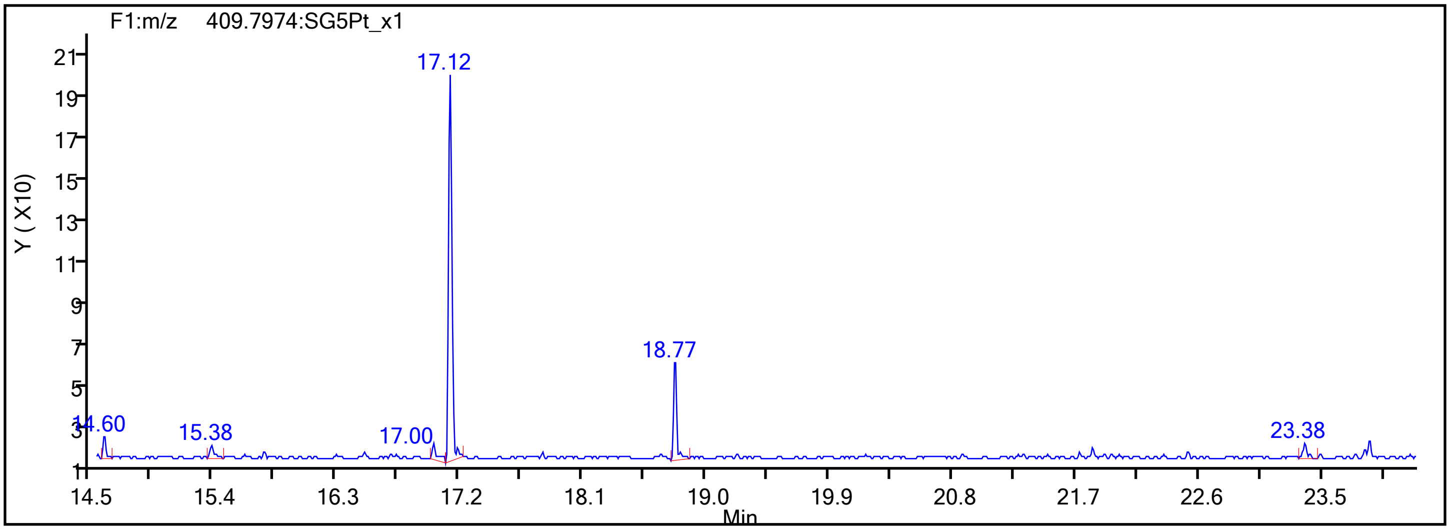

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d

Injection Date: 17-Sep-2020 18:07:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

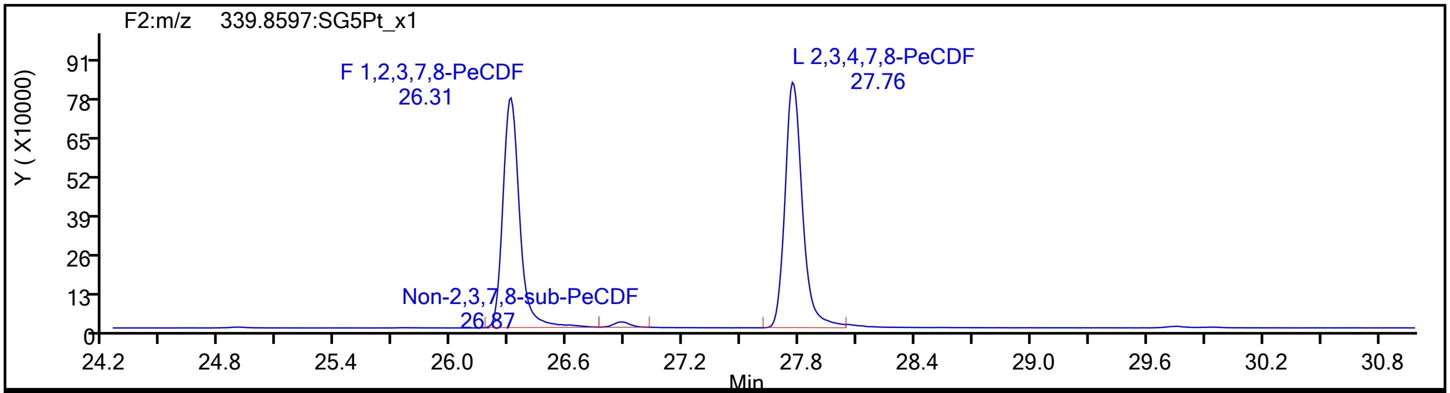

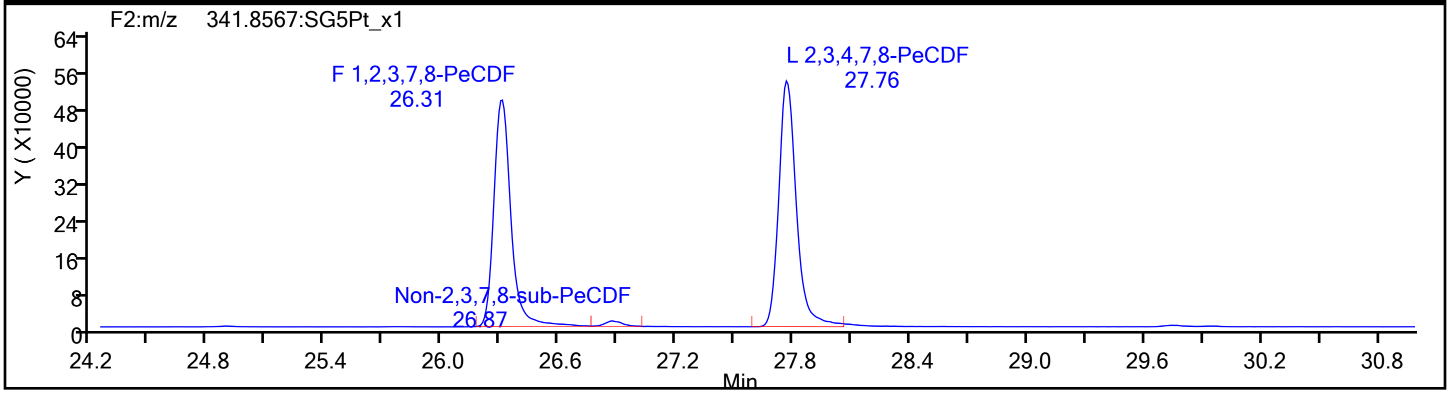

PeCDF Standards

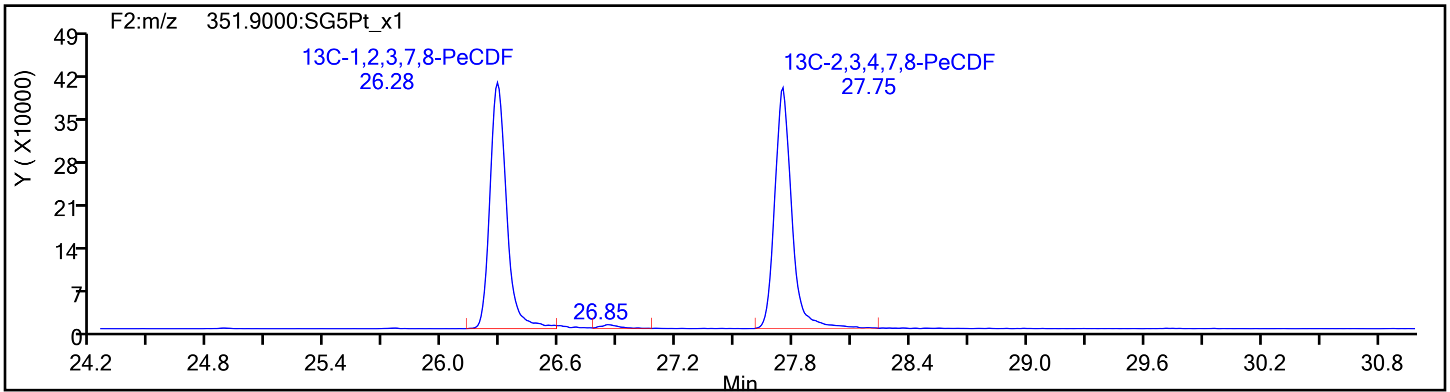

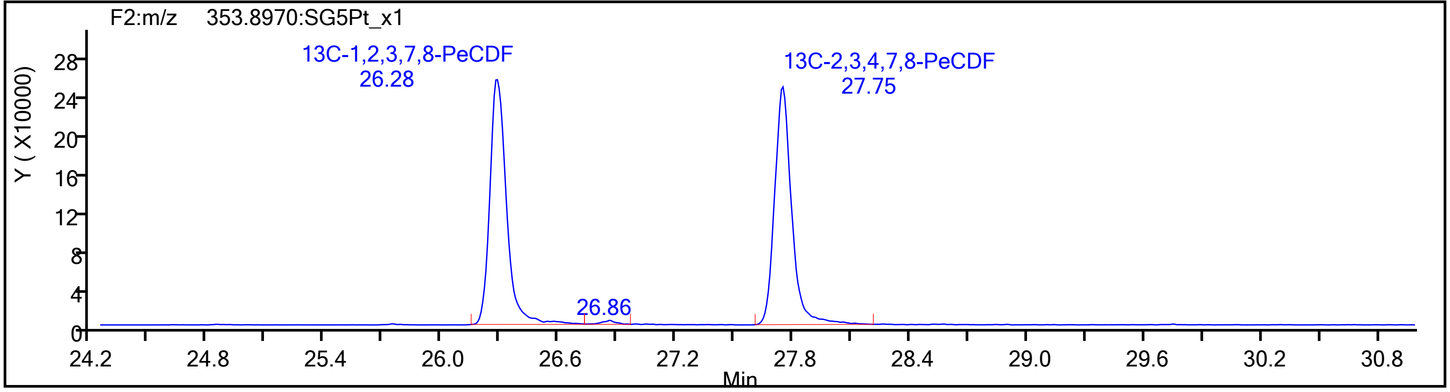

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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PeCDF

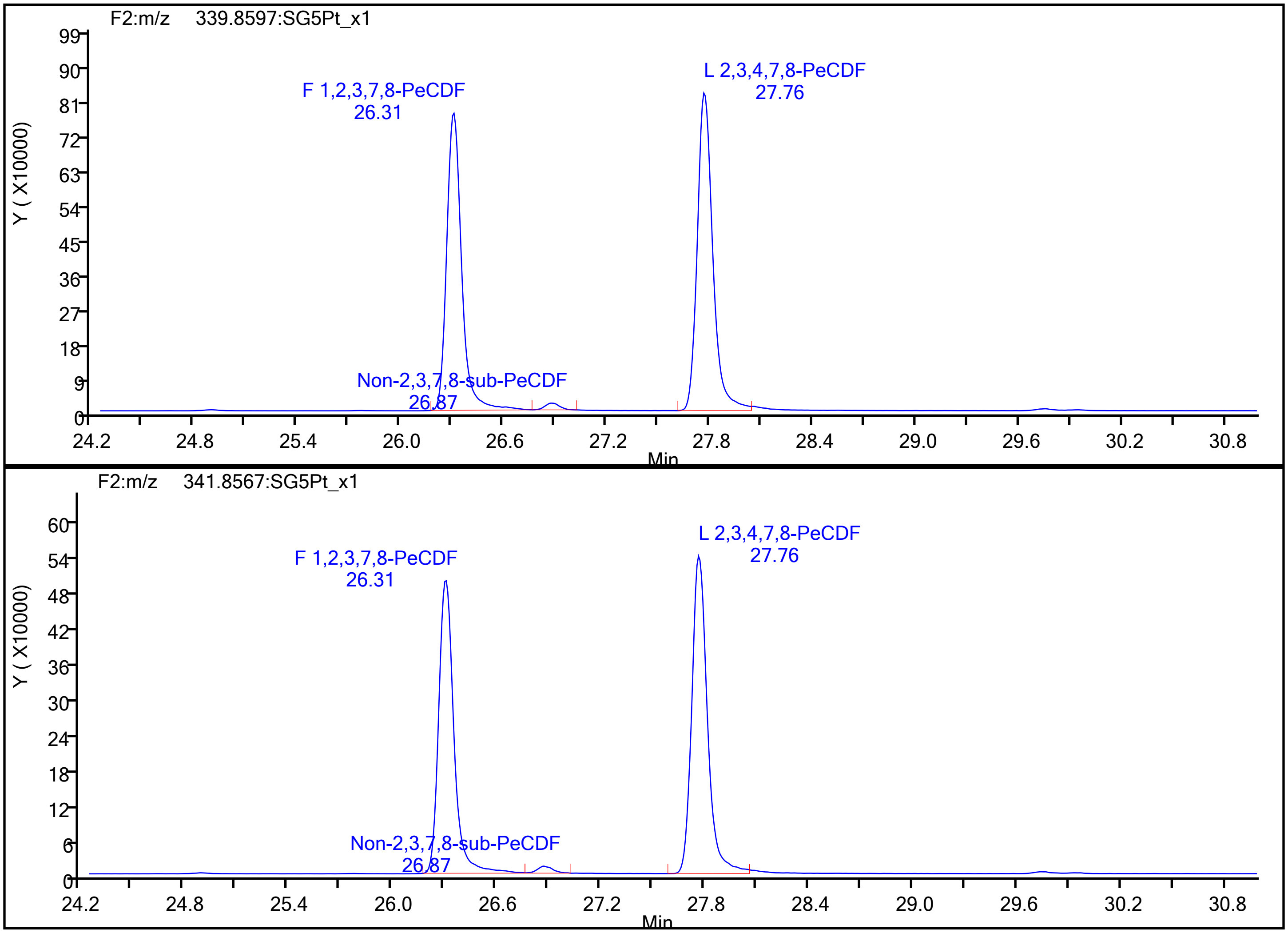

PeCDF Interference Mass

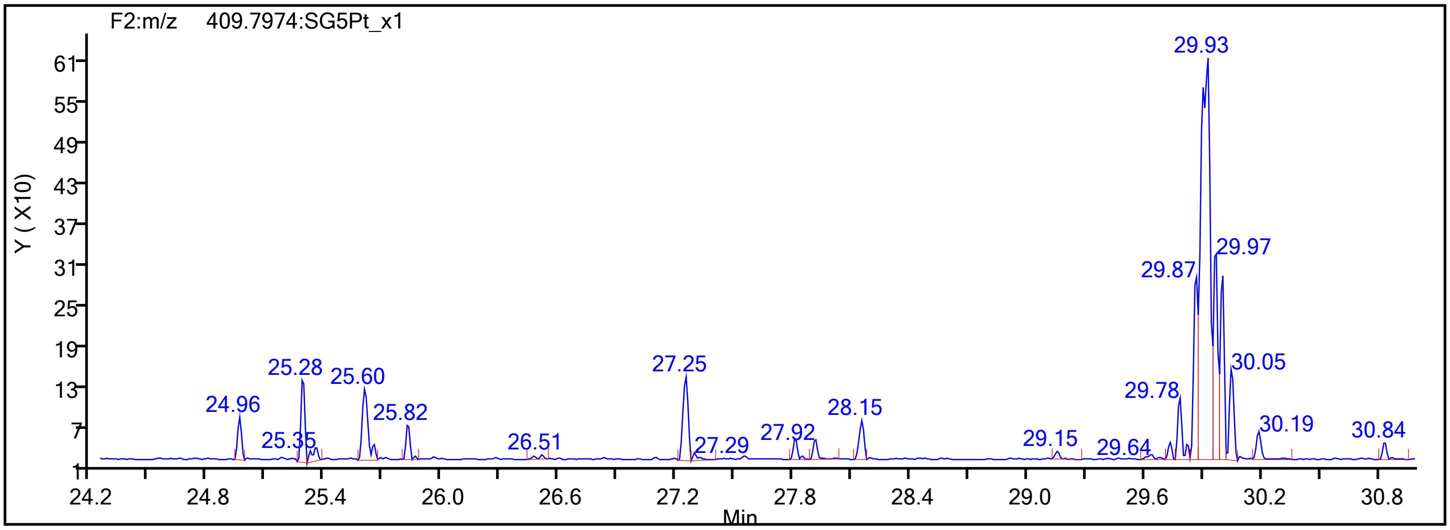

Report Date: 21-Sep-2020 08:48:04　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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PeCDD

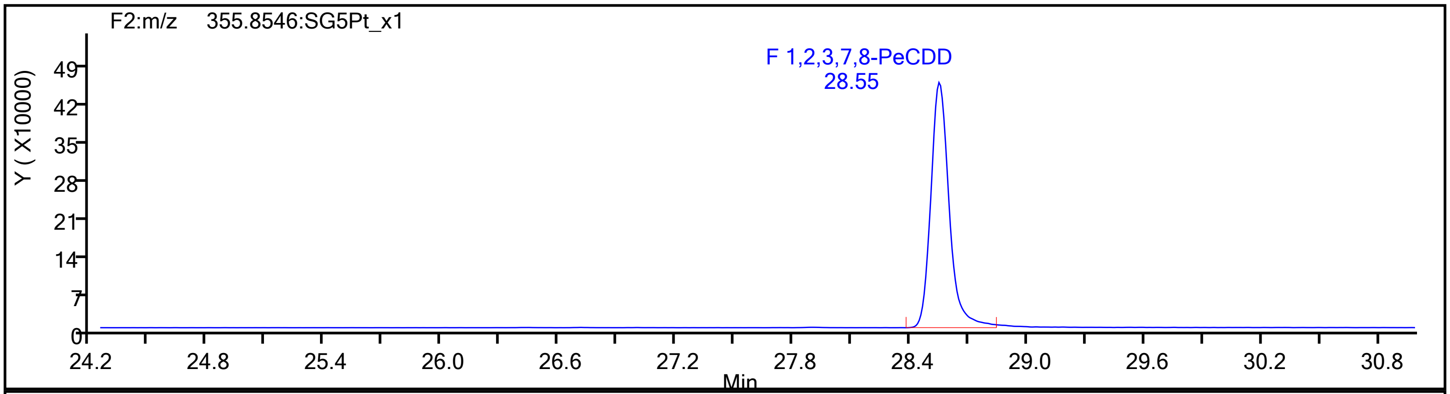

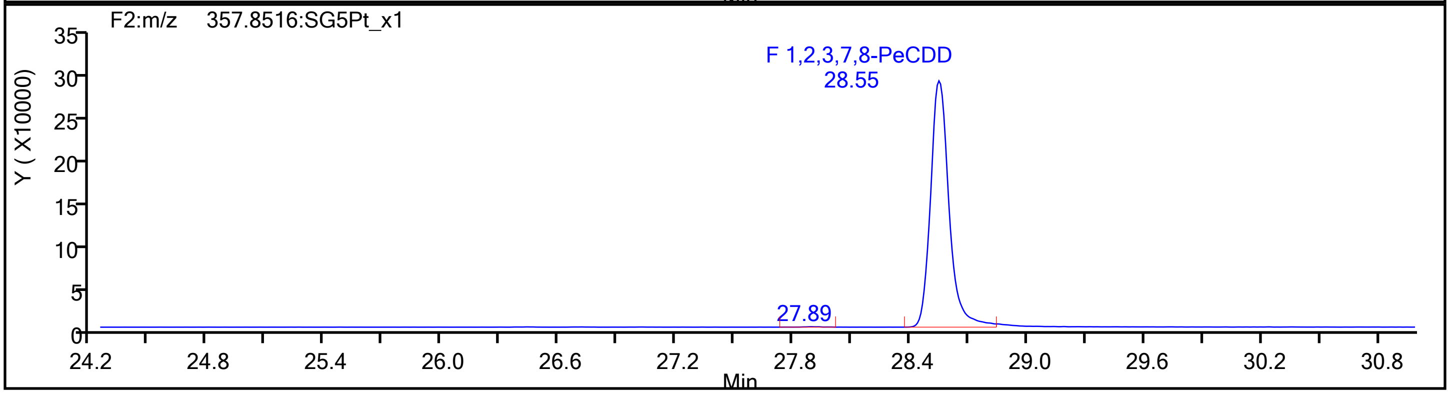

PeCDD Standards

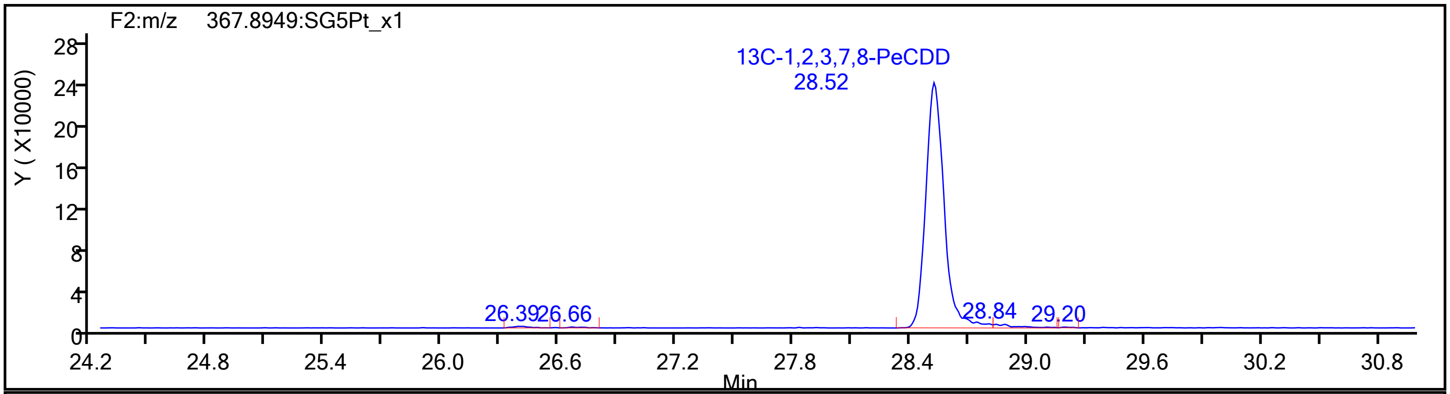

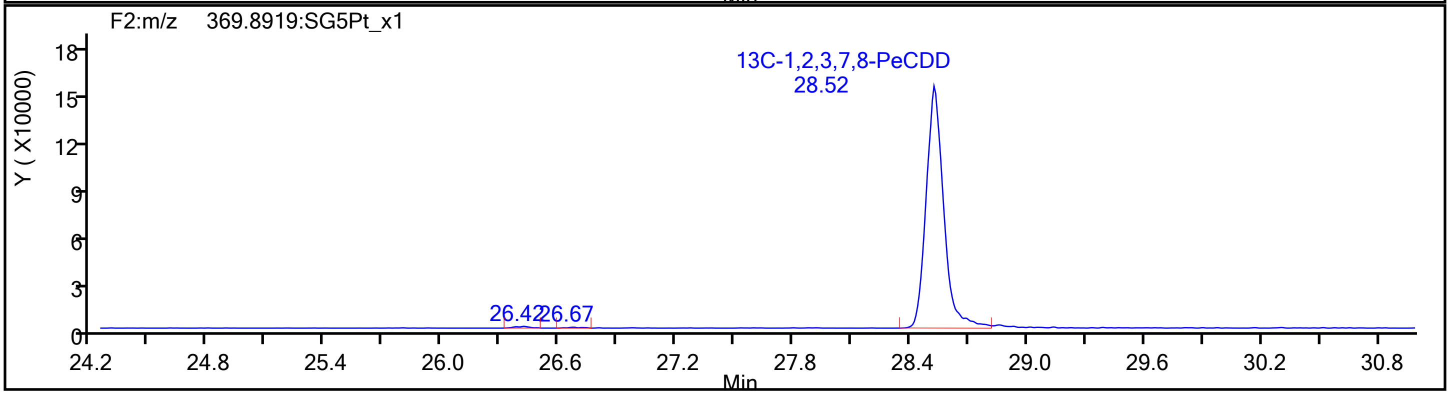

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HxCDF

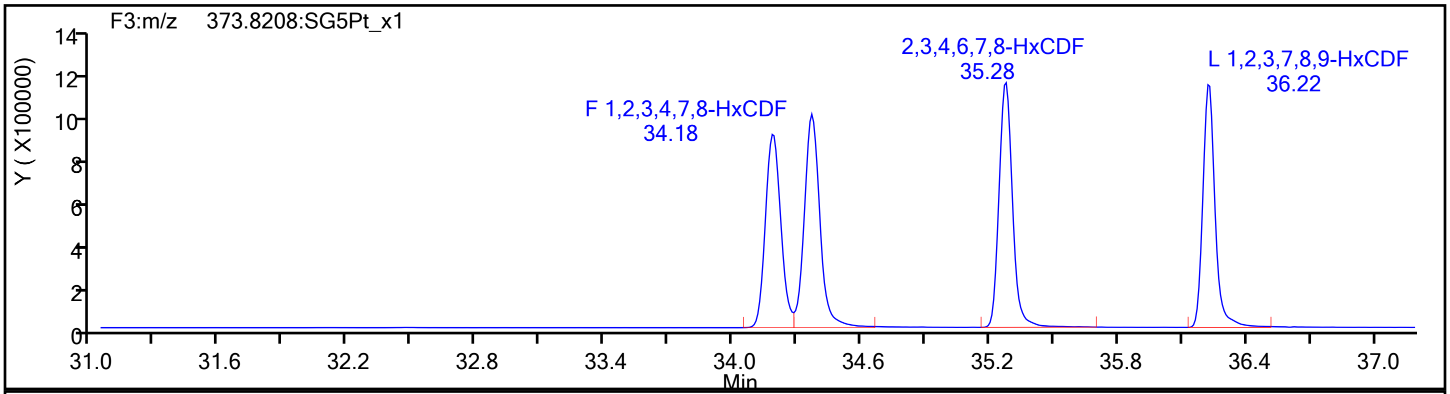

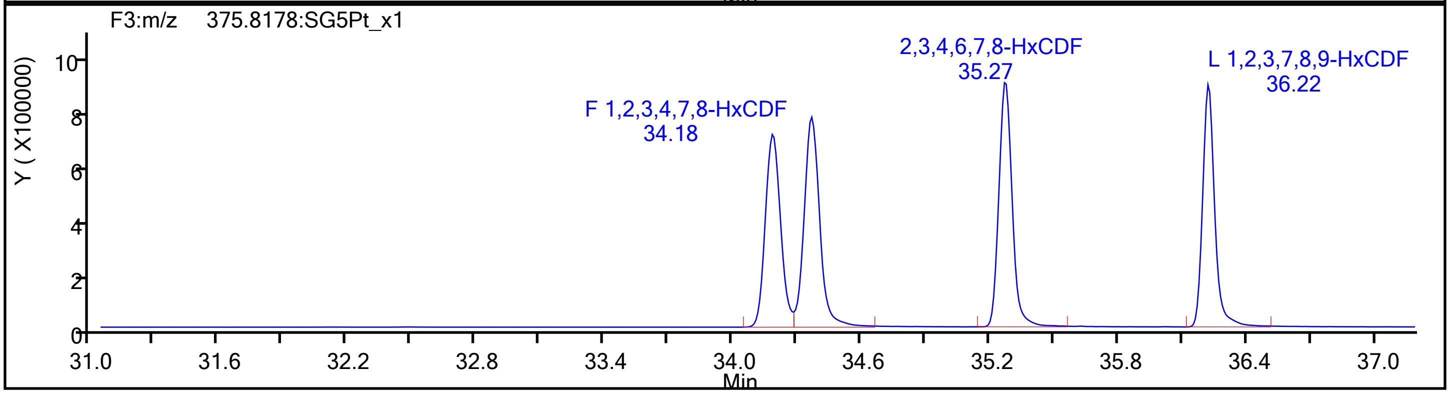

HxCDF Standards

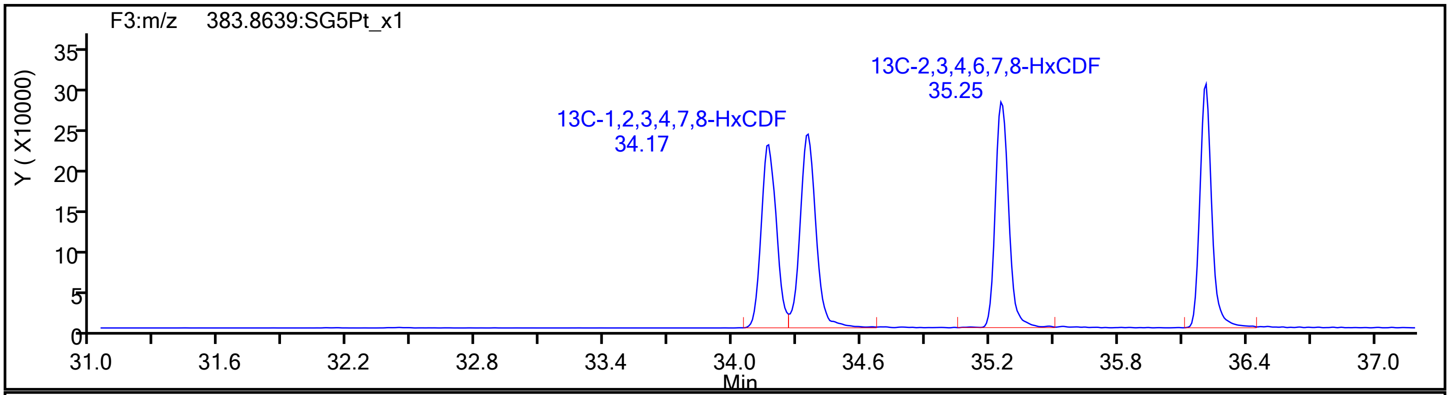

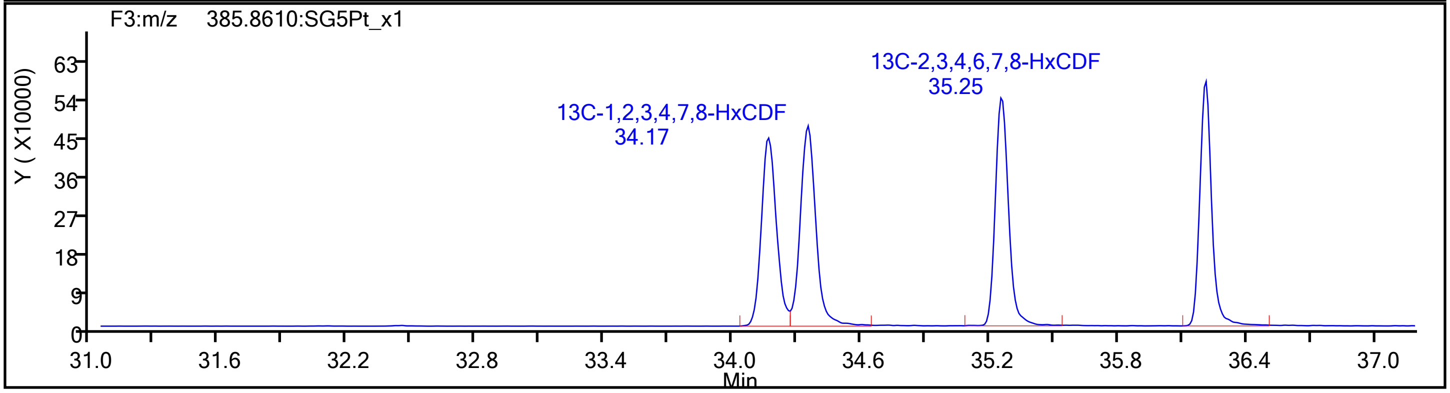

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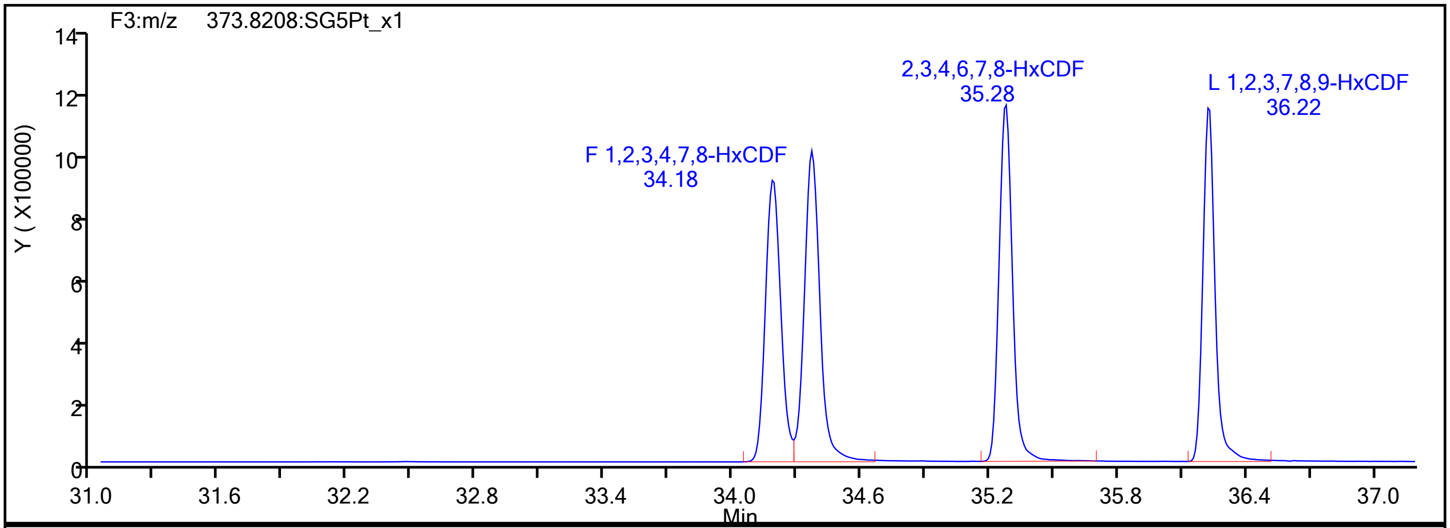

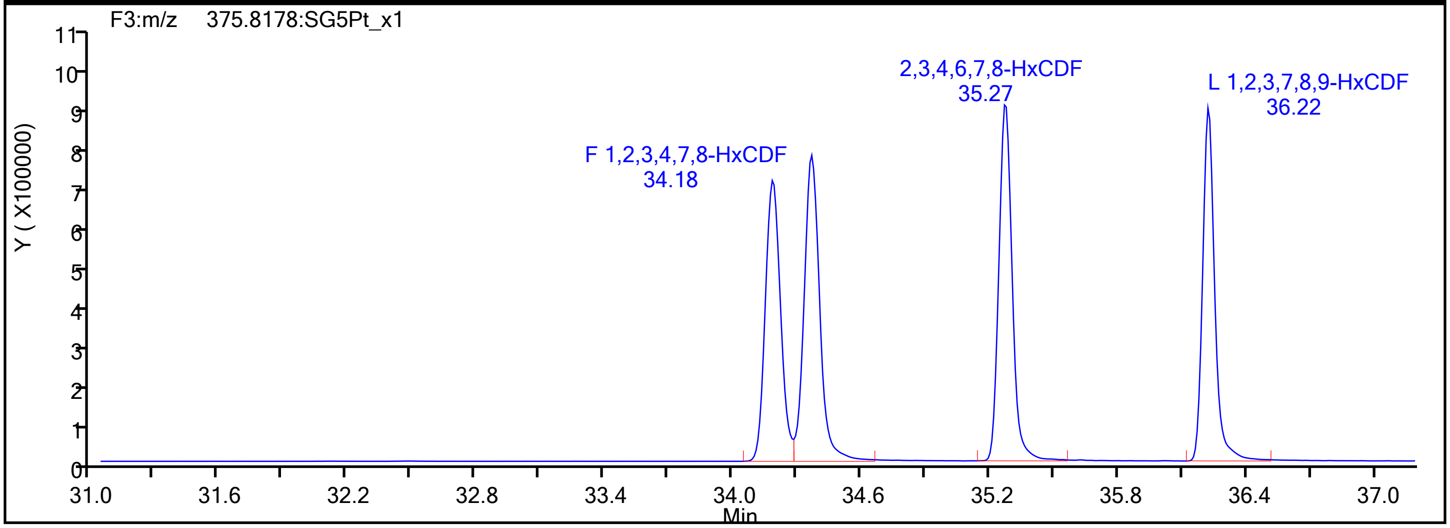

HxCDF Interference Mass

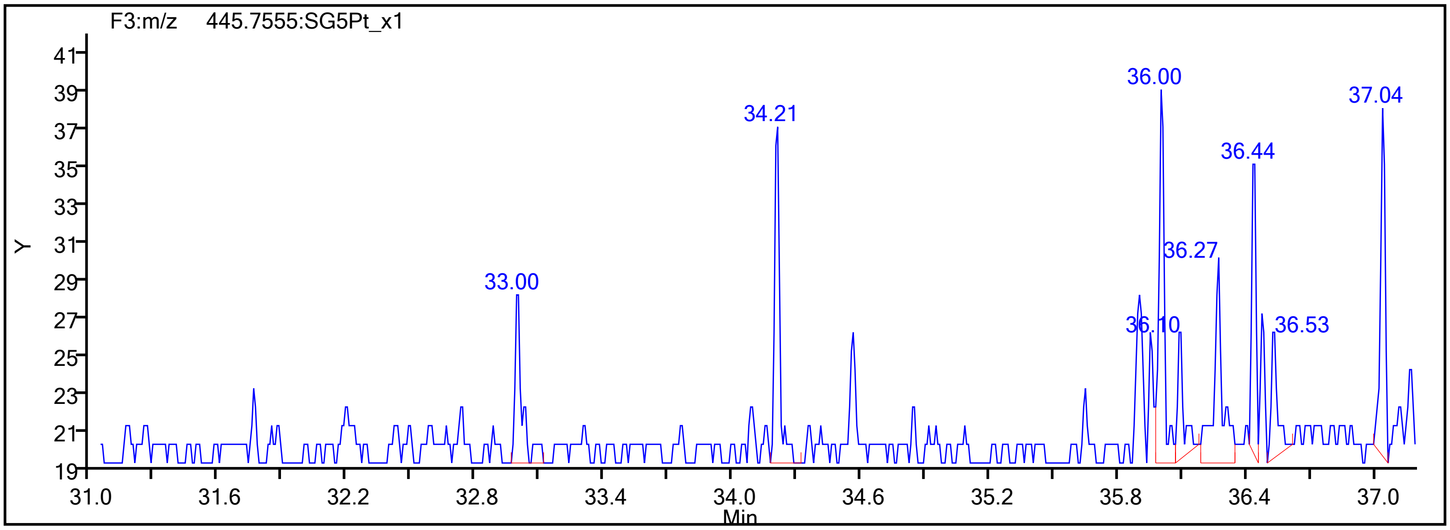

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDD

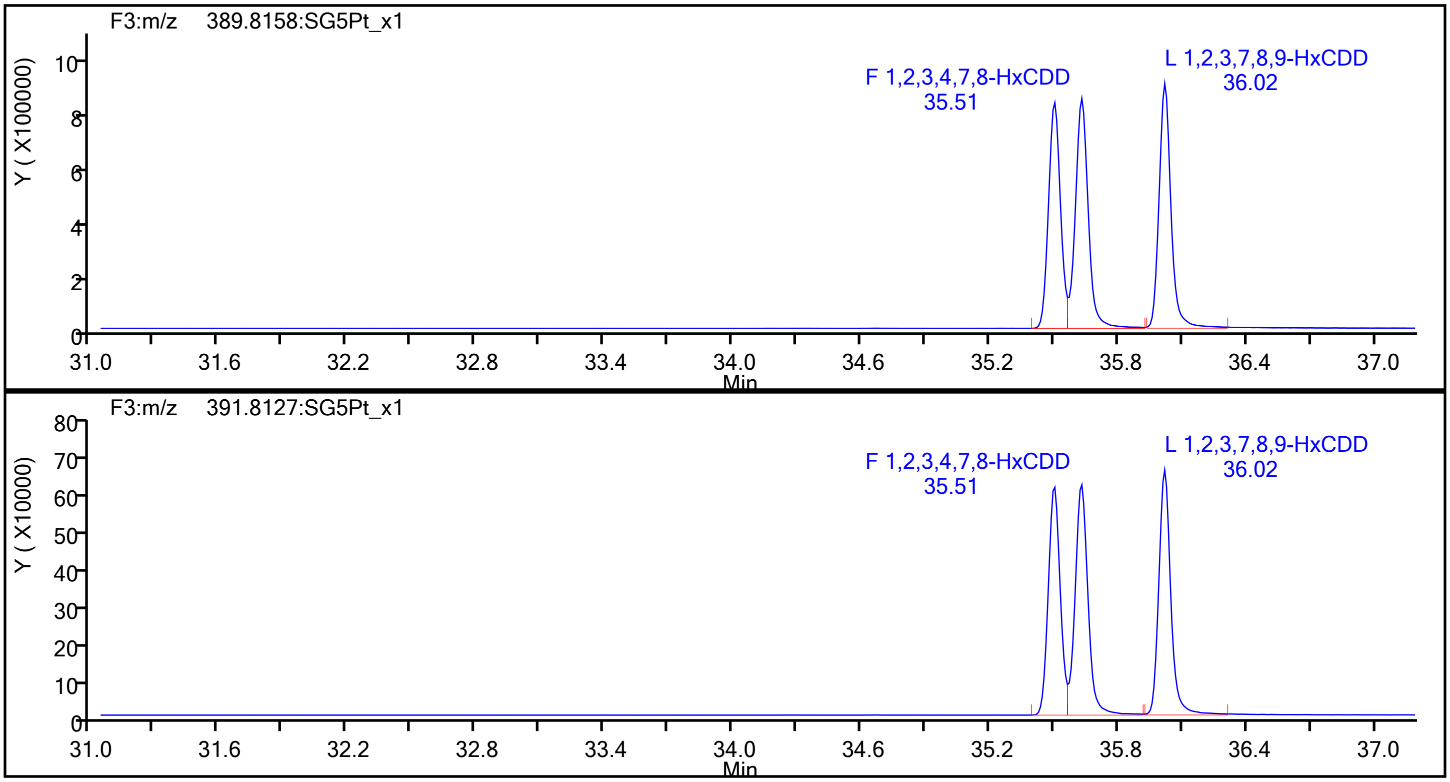

HxCDD Standards

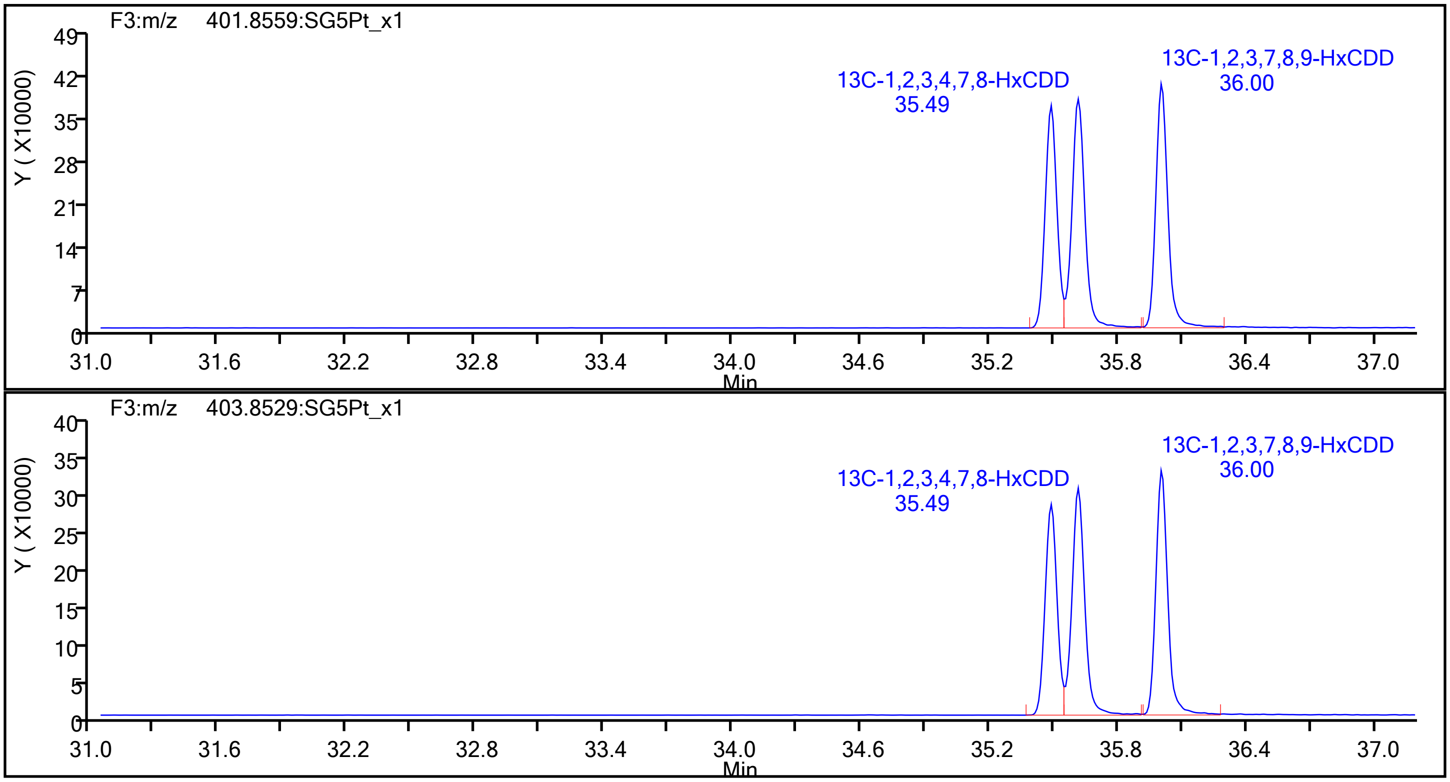

Report Date: 21-Sep-2020 08:48:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HpCDF

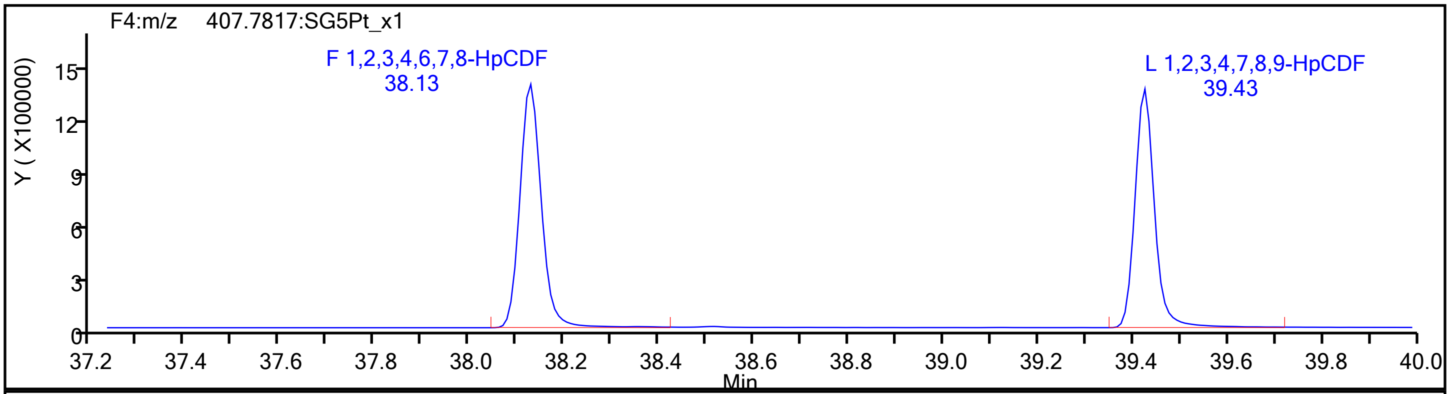

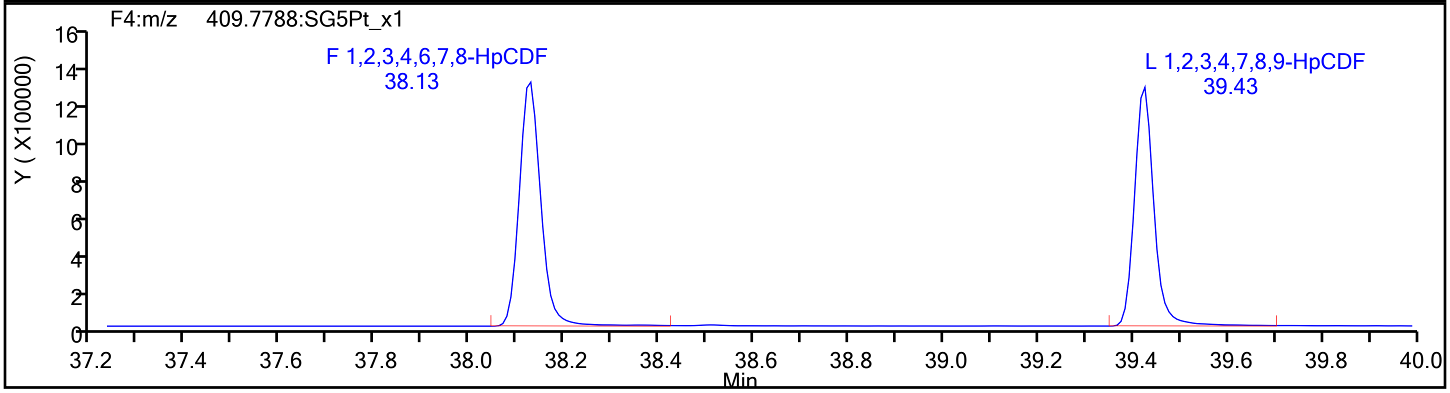

HpCDF Standards

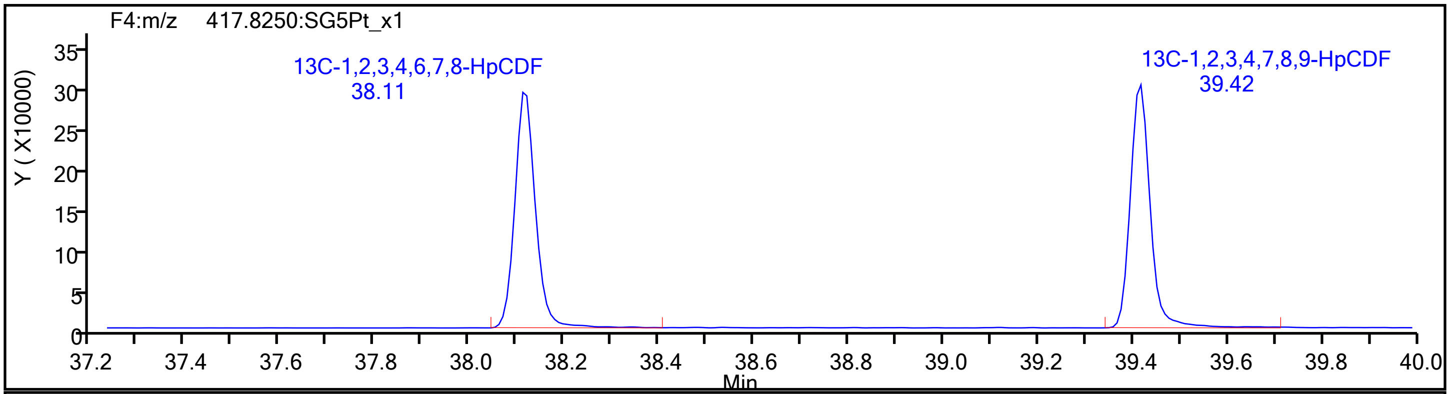

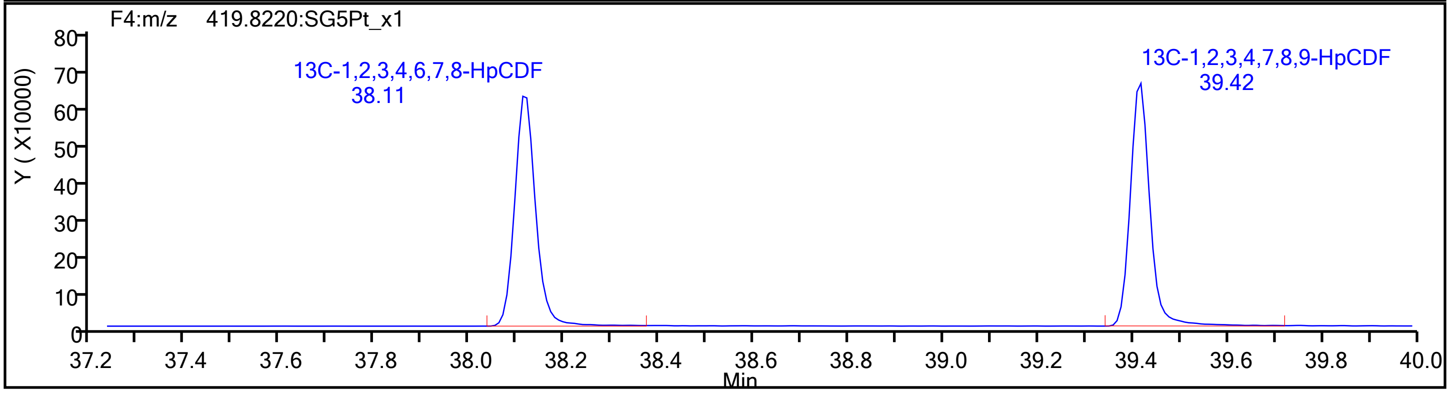

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Eurofins TestAmerica, Sacramento

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HpCDF

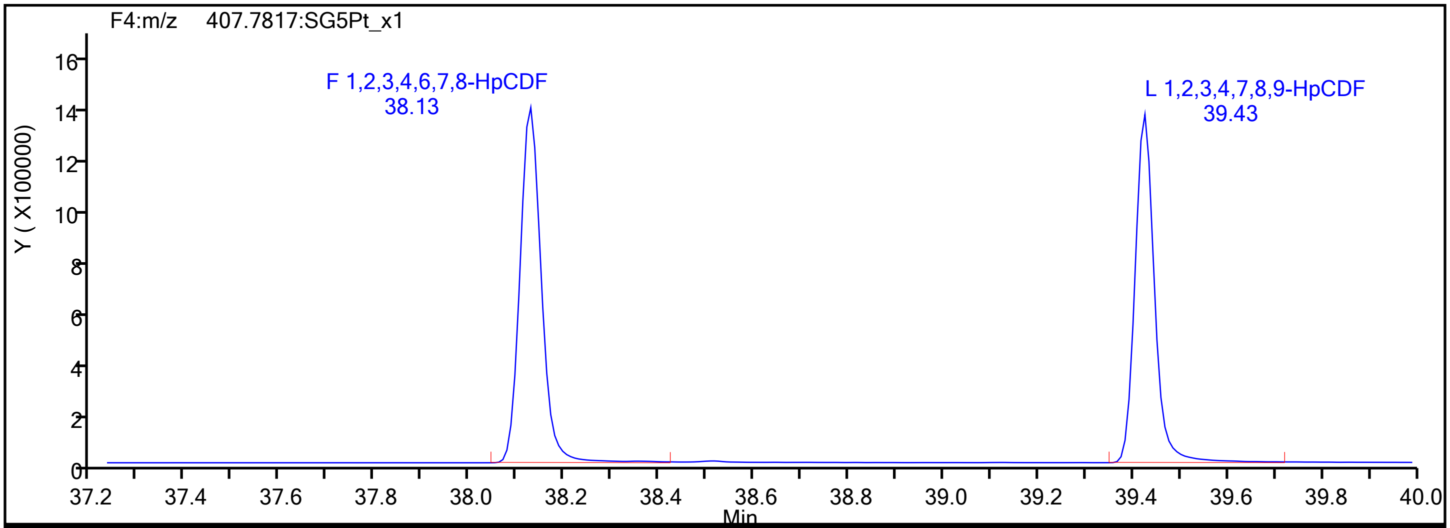

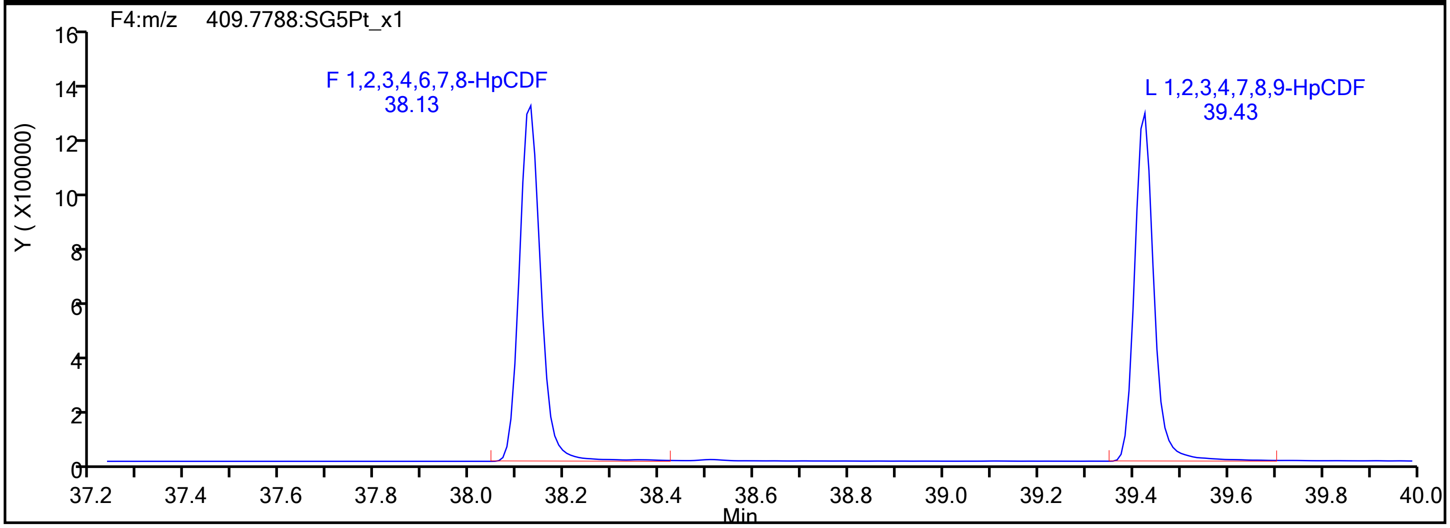

HpCDF Interference Mass

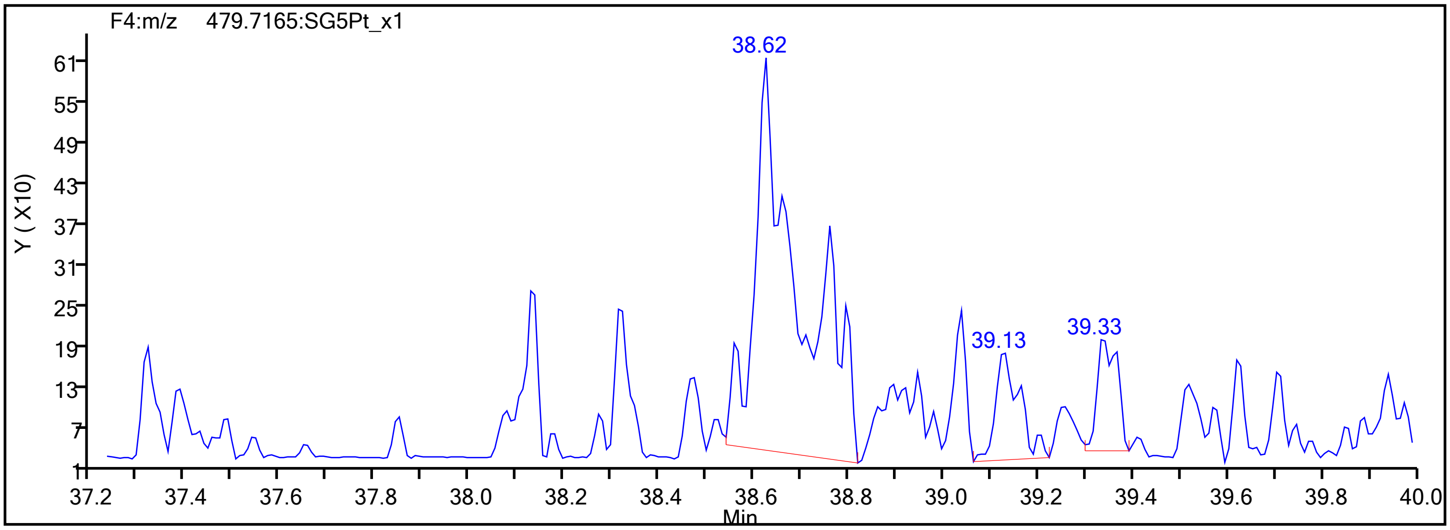

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 18:07:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 9

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HpCDD

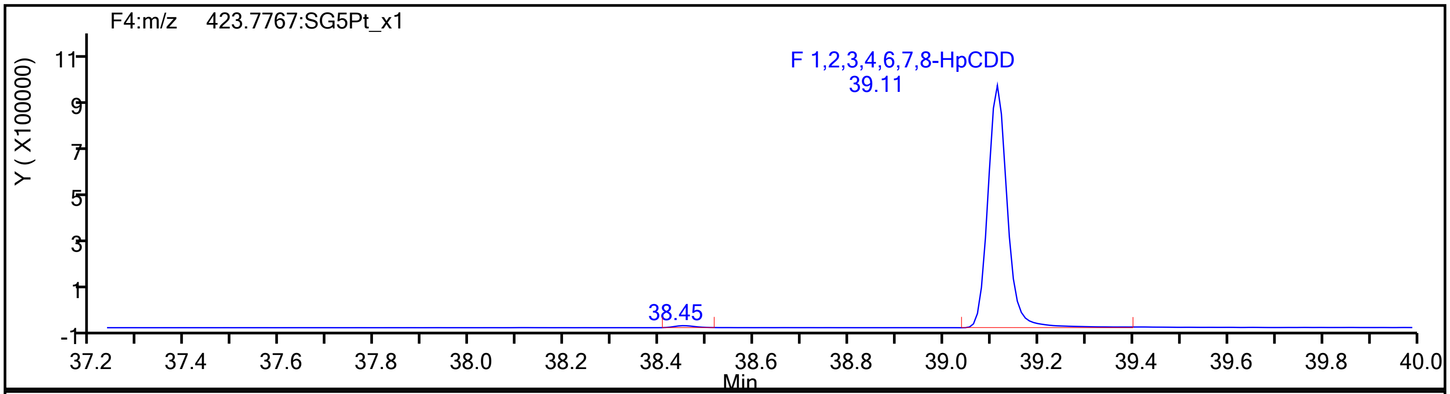

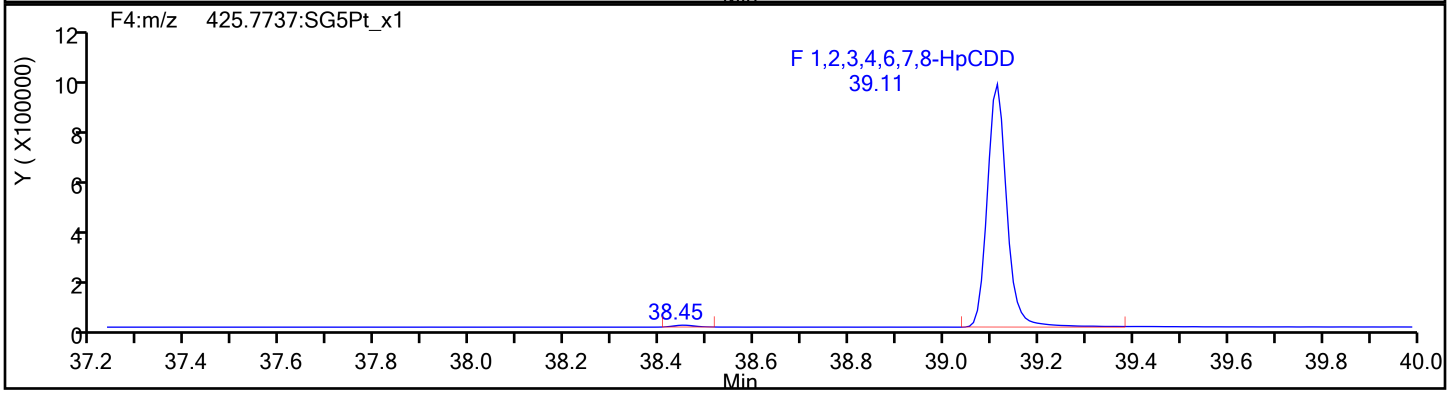

HpCDD Standards

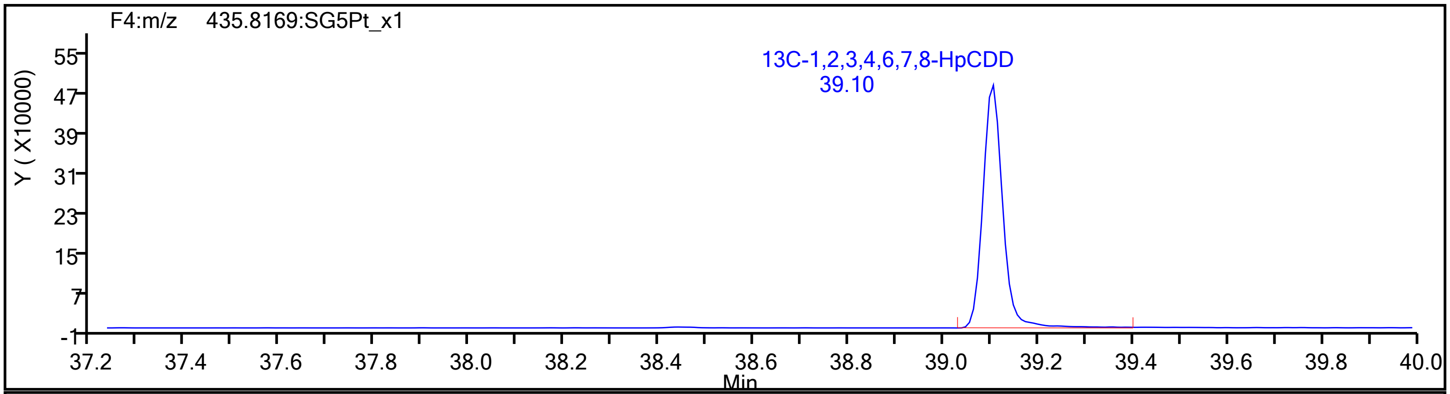

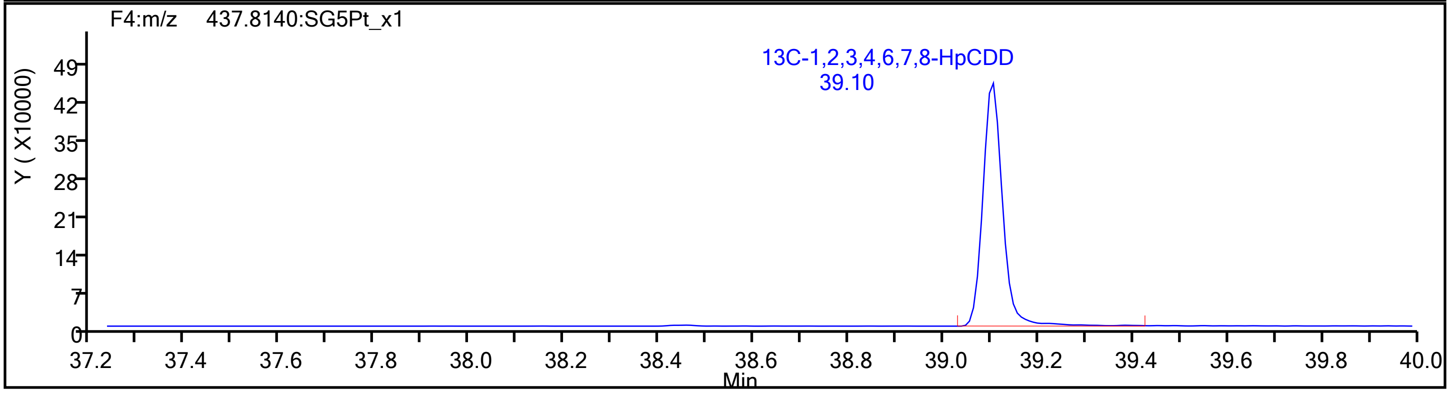

Report Date: 21-Sep-2020 08:48:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

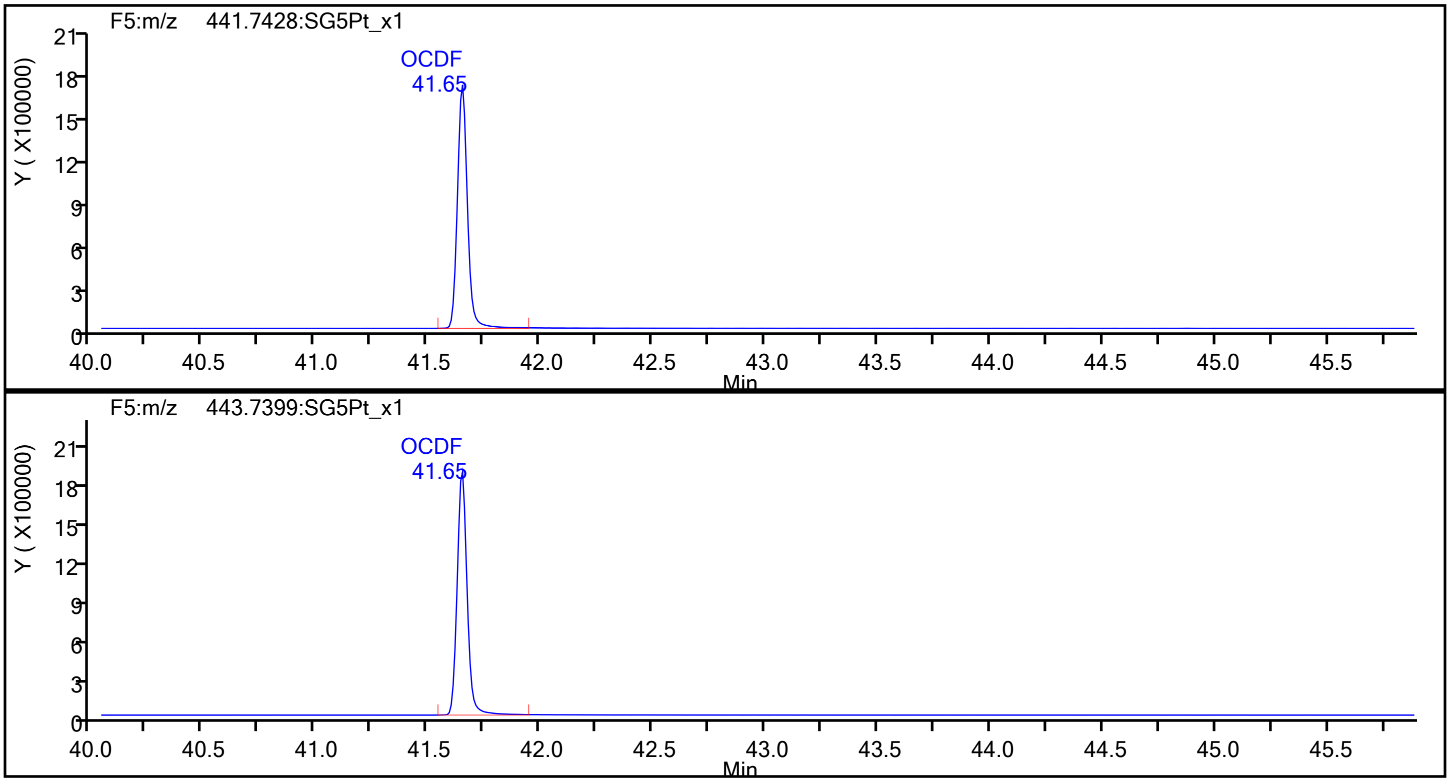

OCDF Standards

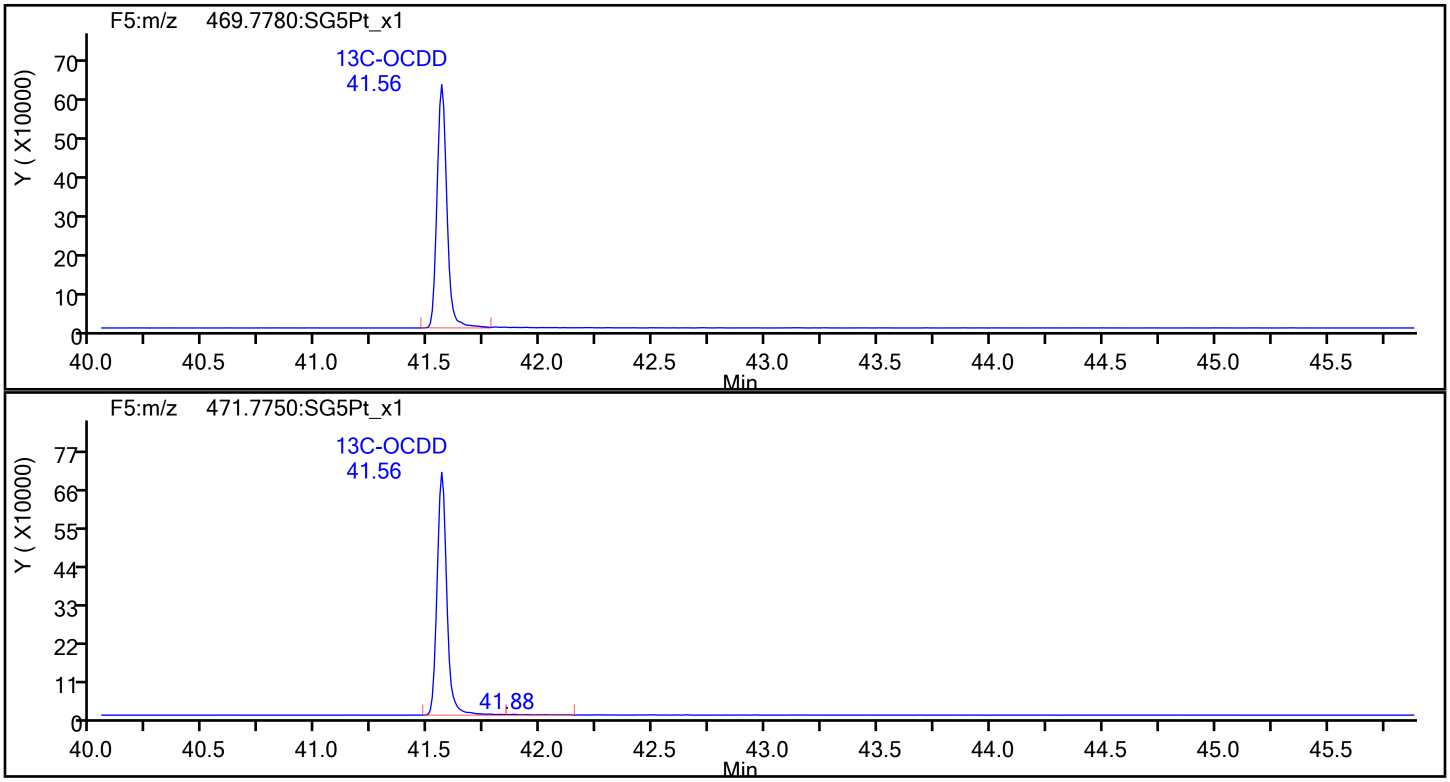

Report Date: 21-Sep-2020 08:48:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

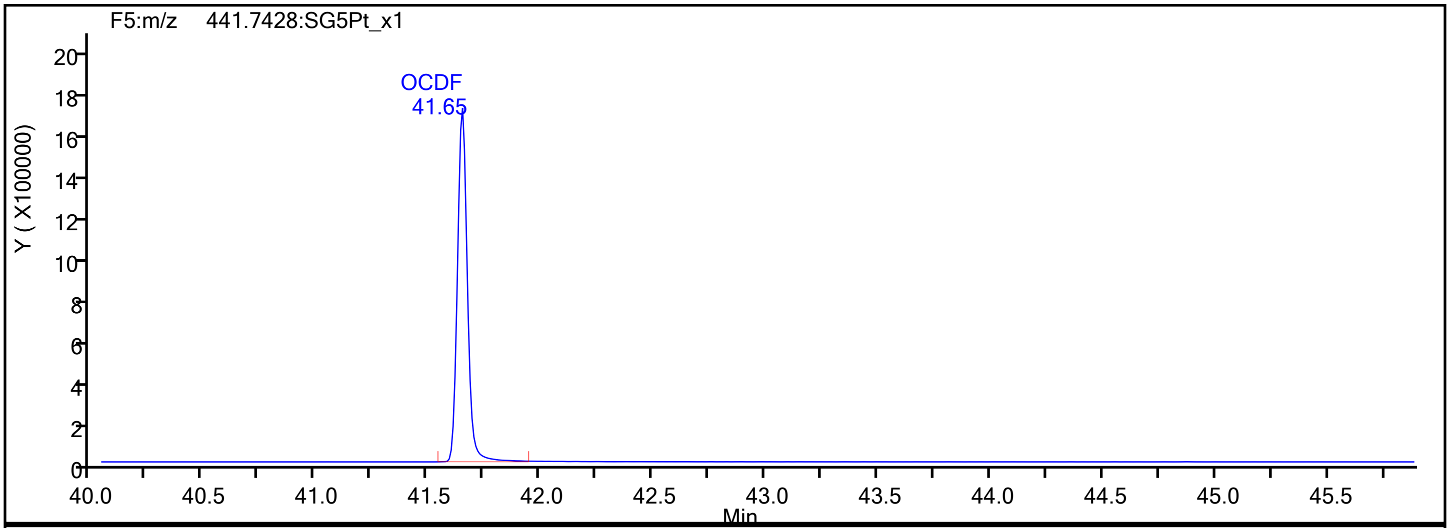

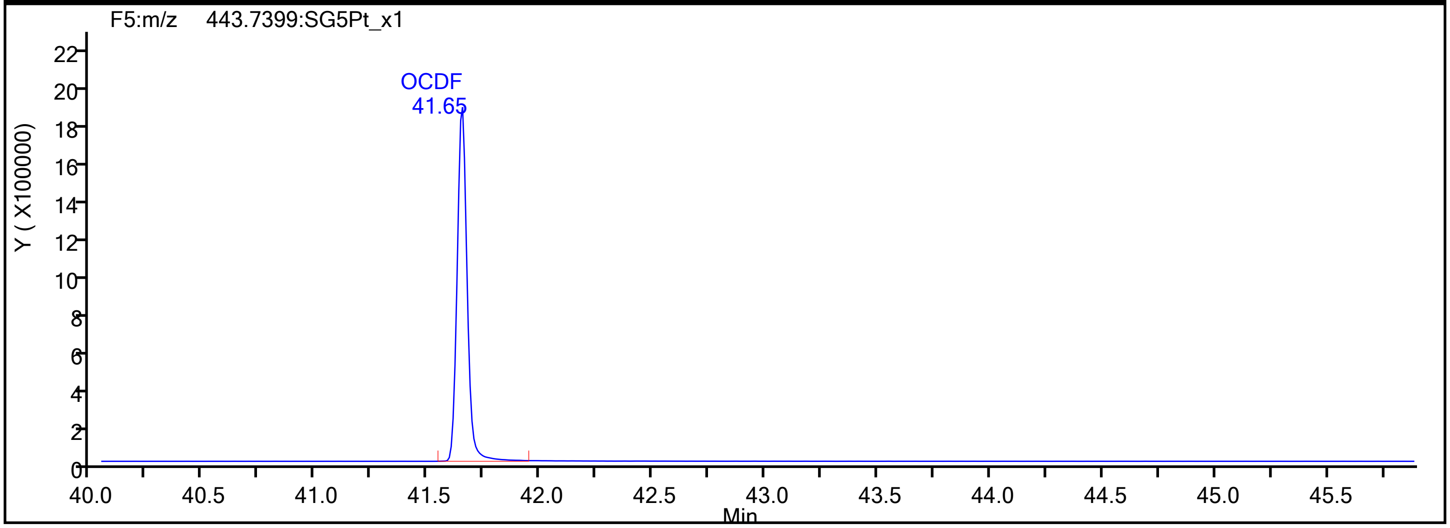

OCDF Interference Mass

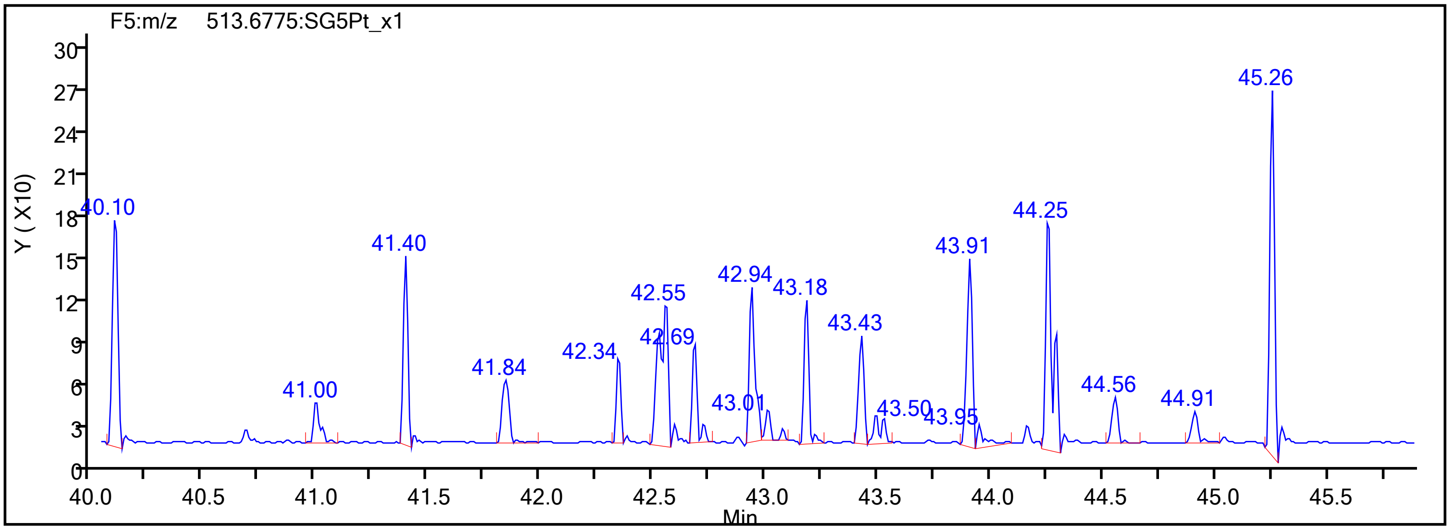

Report Date: 21-Sep-2020 08:48:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

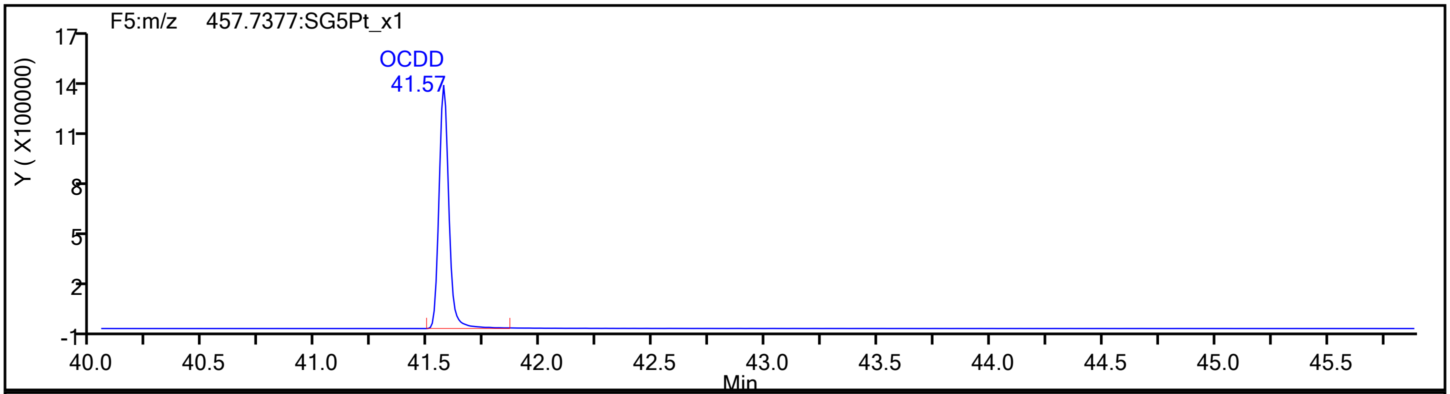

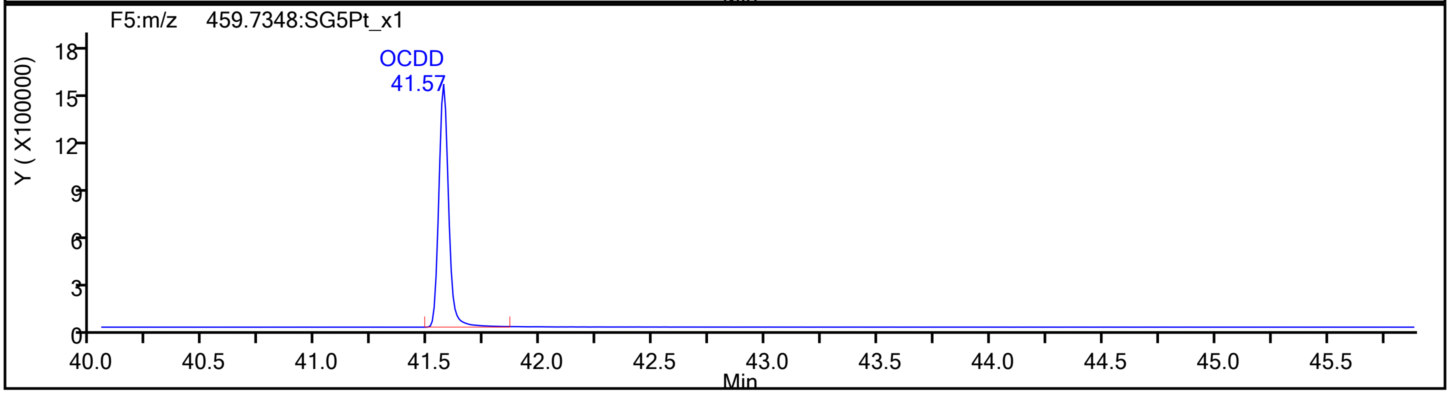

OCDD Standards

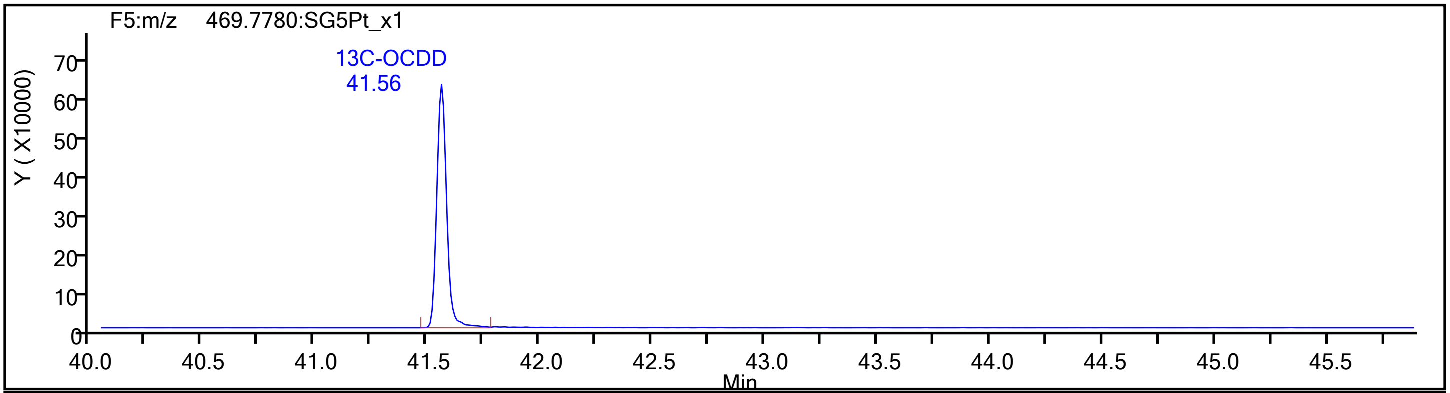

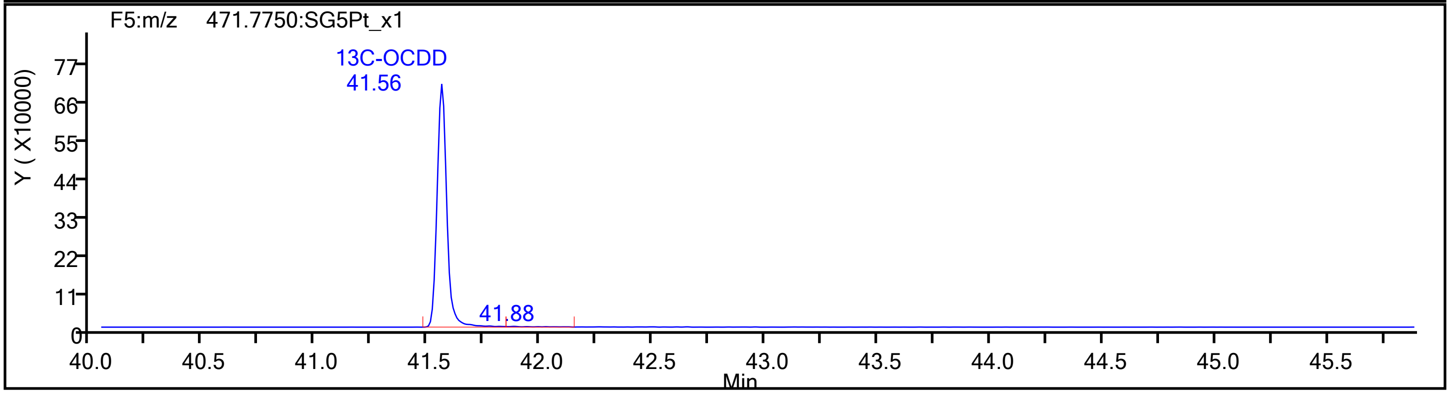

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Injection Date: 17-Sep-2020 18:07:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

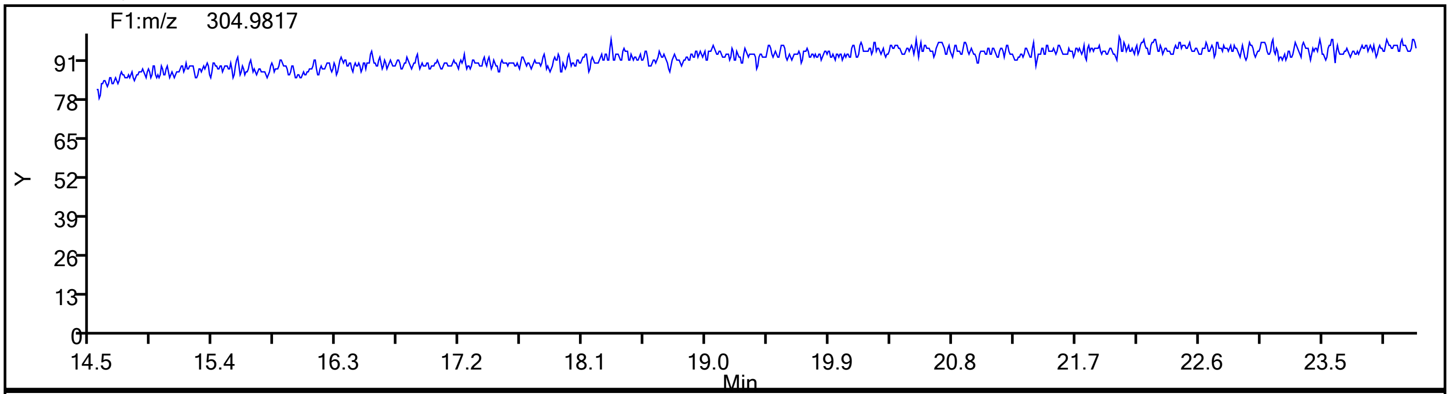

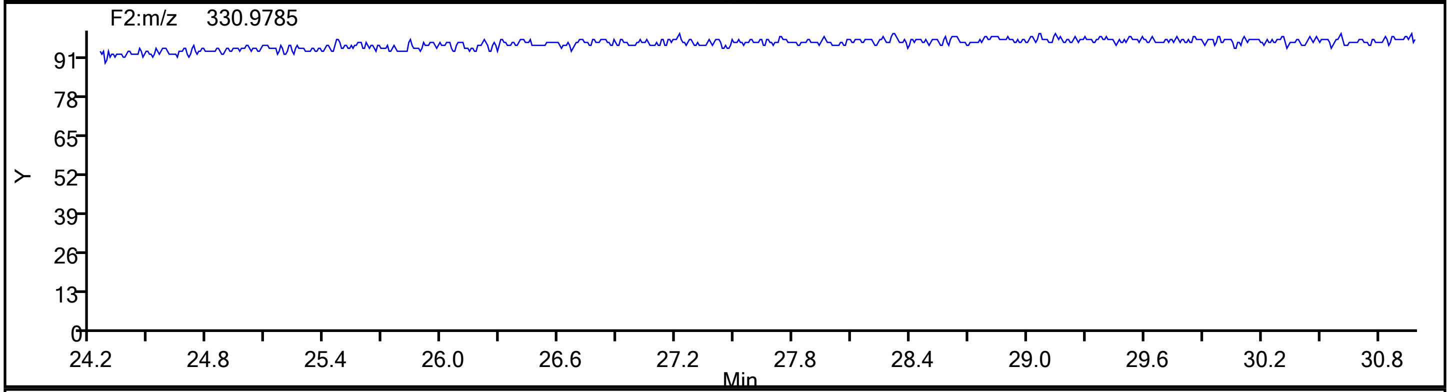

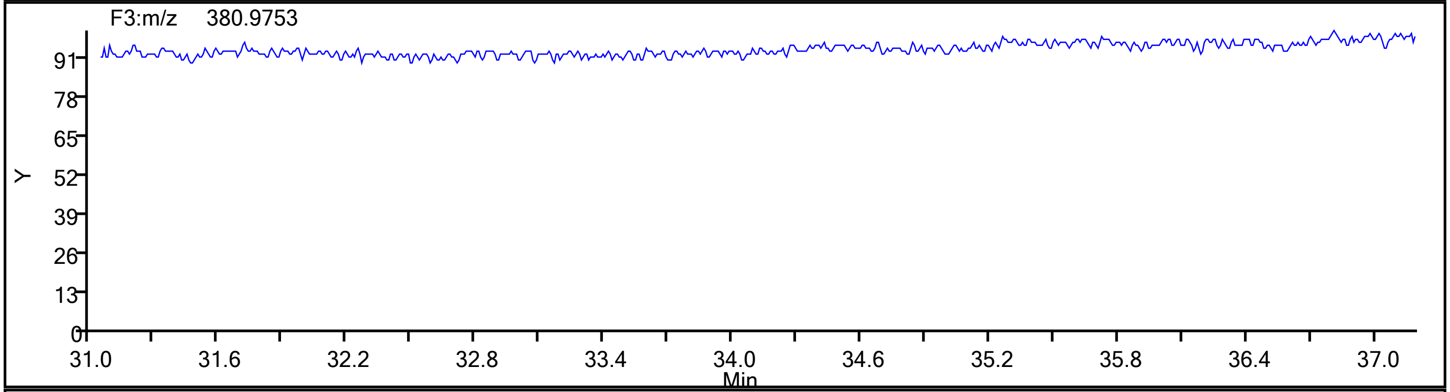

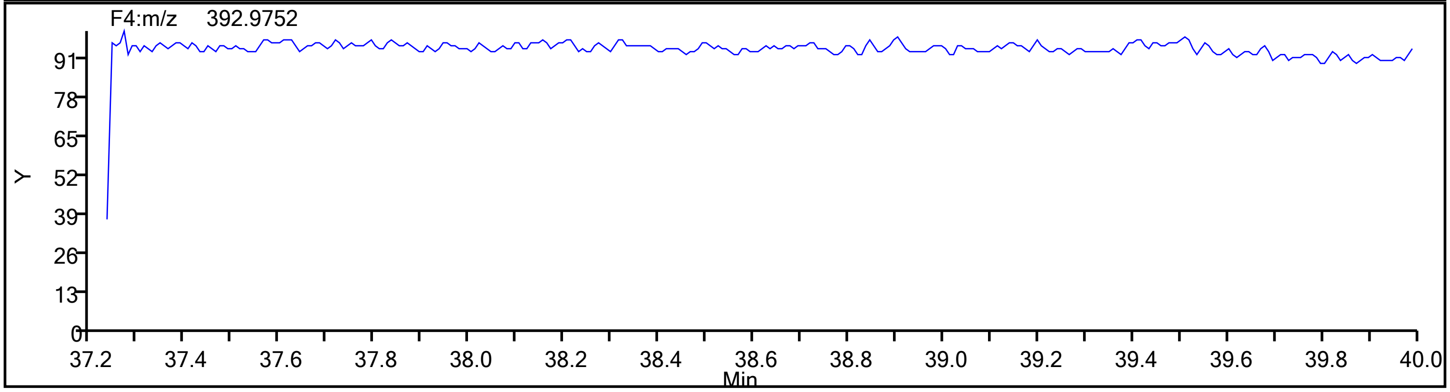

Report Date: 21-Sep-2020 08:48:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

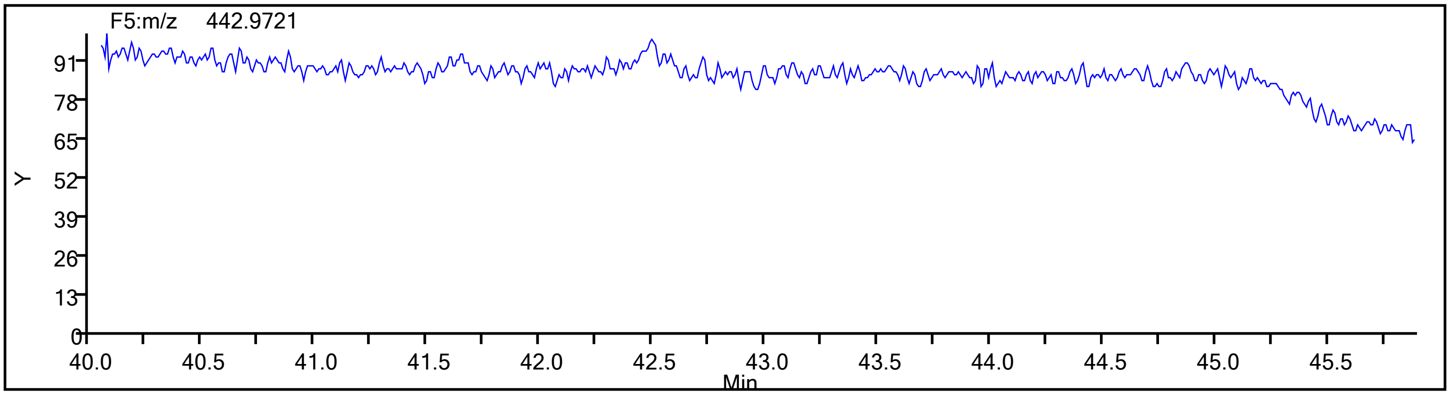

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID: CCV 320-413813/46 Calibration Date: 09/20/2020 04:24

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 18se20dfs1_53.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.054		9.71	10.0	97	84-120
2,3,7,8-TCDD	AveID	1.081	1.061		9.82	10.0	98	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.007		47.8	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.066		48.3	50.0	97	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.023		47.9	50.0	96	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.247		49.3	50.0	99	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.186		48.5	50.0	97	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.192		47.8	50.0	96	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.124		48.6	50.0	97	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	0.9860		47.9	50.0	96	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.153		48.9	50.0	98	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.214		48.0	50.0	96	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.433		47.6	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.039		48.8	50.0	98	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.412		48.5	50.0	97	86-116
OCDD	AveID	1.129	1.079		95.5	100	96	79-126
OCDF	AveID	1.430	1.363		95.3	100	95	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.558		98.1	100	98	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.100		98.2	100	98	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.431		96.8	100	97	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.340		96.3	100	96	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9410		100	100	100	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.054		92.6	100	93	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.215		92.2	100	92	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.177		94.5	100	94	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8052		95.0	100	95	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	0.9821		98.4	100	98	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.110		93.8	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	0.9783		99.0	100	99	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9621		101	100	101	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.9053		98.4	100	98	77-129
13C-OCDD	Ave	0.7420	0.8136		219	200	110	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.162		10.1	10.0	101	79-127

	File Name	Sample Name	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	18SE20DFS1_1	Resolution Check	RC 091820	46			AJS	1.000	
2	18SE20DFS1_2	WDM HRDXNCP_00042	WDM 091820	1	8290/1613B		AJS	1.000	
3	18SE20DFS1_3	CS-4 HRDXNL4_00095	CCV 091820	2	8290/1613B		AJS	1.000	
4	18SE20DFS1_4	Solvent Blank C-14	SB 091820	3			AJS	1.000	
5	18SE20DFS1_5	MB 320-411883/1-A	MB 320-411883/1-A	4	8290/Waste	82	AJS	10.000	g
6	18SE20DFS1_6	320-64512-A-1-A	320-64512-A-1-A	5	8290/Waste		AJS	0.100	g
7	18SE20DFS1_7	LCS 320-411883/2-A	LCS 320-411883/2-A	6	8290/Waste		AJS	10.000	g
8	18SE20DFS1_8	LCSD 320-411883/3-A	LCSD 320-411883/3-A	7	8290/Waste		AJS	10.000	g
9	18SE20DFS1_9	Resolution Check	RC 091820A	46			AJS	1.000	
10	18SE20DFS1_10	CS-4 HRDXNL4_00095	CCV 091820A	2	8290/1613B		AJS	1.000	
11	18SE20DFS1_11	Resolution Check	RC 091820B	46			AJS	1.000	
12	18SE20DFS1_12	WDM HRDXNCP_00042	WDM 091820A	1			AJS	1.000	
13	18SE20DFS1_13	Solvent Blank C-14	SB 091820A	3			AJS	1.000	
14	18SE20DFS1_14	MB 320-410054/1-A	MB 320-410054/1-A	8	1613B(T)/Water	D178	AJS	1.000	L
15	18SE20DFS1_15	LCS 320-410054/2-A	LCS 320-410054/2-A	9	1613B(T)/Water		AJS	1.000	L
16	18SE20DFS1_16	LCSD 320-410054/3-A	LCSD 320-410054/3-A	10	1613B(T)/Water		AJS	1.000	L
17	18SE20DFS1_17	660-104015-G-1-A	660-104015-G-1-A	11	1613B_T/Water		AJS	1.000	L
18	18SE20DFS1_18	680-188257-A-4-A	680-188257-A-4-A	12	1613B/Water		AJS	1.000	L
19	18SE20DFS1_19	660-104011-D-1-A	660-104011-D-1-A	13	1613B_T/Water		AJS	1.000	L
20	18SE20DFS1_20	MB 320-407388/1-A	MB 320-407388/1-A	14	1613B/Solid	D176	AJS	10.000	g
21	18SE20DFS1_21	LCS 320-407388/2-A	LCS 320-407388/2-A	15	1613B/Solid		AJS	10.000	g
22	18SE20DFS1_22	LCSD 320-407388/3-A	LCSD 320-407388/3-A	16	1613B/Solid		AJS	10.000	g
23	18SE20DFS1_23	320-64036-A-1-A	320-64036-A-1-A	17	1613B/Solid		AJS	10.000	g
24	18SE20DFS1_24	Resolution Check	RC 091820C	46			AJS	1.000	
25	18SE20DFS1_25	WDM HRDXNCP_00042	WDM 091820B	1			AJS	1.000	
26	18SE20DFS1_26	CS-4 HRDXNL4_00095	CCV 091820B	2	8290/1613B		AJS	1.000	
27	18SE20DFS1_27	Solvent Blank C-14	SB 091820B	3			AJS	1.000	
28	18SE20DFS1_28	MB 320-412528/1-A	MB 320-412528/1-A	18	8290(A)/Solid	D181	AJS	10.000	g
29	18SE20DFS1_29	LCS 320-412528/2-A	LCS 320-412528/2-A	19	8290(A)/Solid		AJS	10.000	g
30	18SE20DFS1_30	LCSD 320-412528/3-A	LCSD 320-412528/3-A	20	8290(A)/Solid		AJS	10.000	g
31	18SE20DFS1_31	460-217926-A-1-A	460-217926-A-1-A	21	8290A/Solid		AJS	10.000	g
32	18SE20DFS1_32	460-217926-A-2-A	460-217926-A-2-A	22	8290A/Solid		AJS	10.000	g
33	18SE20DFS1_33	440-271312-F-17-A	440-271312-F-17-A	23	8290/Solid	D179	AJS	10.000	g
34	18SE20DFS1_34	440-271312-F-18-A	440-271312-F-18-A	24	8290/Solid		AJS	10.000	g
35	18SE20DFS1_35	440-271312-F-19-A	440-271312-F-19-A	25	8290/Solid		AJS	10.000	g
36	18SE20DFS1_36	Solvent Blank C-14	SB 091820C	3			AJS	1.000	
37	18SE20DFS1_37	Resolution Check	RC 091820D	46			AJS	1.000	
38	18SE20DFS1_38	CS-4 HRDXNL4_00095	CCV 091820C	2	8290/1613B		AJS	1.000	
39	18SE20DFS1_39	Resolution Check	RC 091820E	46			AJS	1.000	
▶ 40	18SE20DFS1_40	WDM HRDXNCP_00042	WDM 091820C	1			AJS	1.000	

	File Name	Sample Name	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
41	18SE20DFS1_41	Solvent Blank C-14	SB 091820D	3			AJS	1.000	
42	18SE20DFS1_42	MB 320-410254/1-A	MB 320-410254/1-A	26	8290(A)/Solid	D179	AJS	10.000	g
43	18SE20DFS1_43	LCS 320-410254/2-A	LCS 320-410254/2-A	27	8290(A)/Solid		AJS	10.000	g
44	18SE20DFS1_44	LCSD 320-410254/3-A	LCSD 320-410254/3-A	28	8290(A)/Solid		AJS	10.000	g
45	18SE20DFS1_45	440-271312-F-20-A	440-271312-F-20-A	29	8290/Solid		AJS	10.000	g
46	18SE20DFS1_46	440-271312-F-22-A	440-271312-F-22-A	30	8290/Solid		AJS	10.000	g
47	18SE20DFS1_47	440-271312-F-23-A	440-271312-F-23-A	31	8290/Solid		AJS	10.000	g
48	18SE20DFS1_48	440-271312-F-24-A	440-271312-F-24-A	32	8290/Solid		AJS	10.000	g
49	18SE20DFS1_49	440-271312-F-25-A	440-271312-F-25-A	33	8290/Solid		AJS	10.000	g
50	18SE20DFS1_50	460-217486-A-1-A	460-217486-A-1-A	34	8290A/Solid		AJS	10.000	g
51	18SE20DFS1_51	Solvent Blank C-14	SB 091820E	3			AJS	1.000	
52	18SE20DFS1_52	Resolution Check	RC 091820F	46			AJS	1.000	
53	18SE20DFS1_53	CS-4 HRDXNL4_00095	CCV 091820D	2	8290/1613B		AJS	1.000	
54	18SE20DFS1_54	Resolution Check	RC 091820G	46			AJS	1.000	
55	18SE20DFS1_55	WDM HRDXNCP_00042	WDM 091820D	1			AJS	1.000	
56	18SE20DFS1_56	Solvent Blank C-14	SB 091820F	3			AJS	1.000	
57	18SE20DFS1_57	460-217486-A-2-A	460-217486-A-2-A	35	8290A/Solid	D179	AJS	10.000	g
58	18SE20DFS1_58	460-217486-A-3-A	460-217486-A-3-A	36	8290A/Solid		AJS	10.000	g
59	18SE20DFS1_59	460-217486-A-4-A	460-217486-A-4-A	37	8290A/Solid		AJS	10.000	g
60	18SE20DFS1_60	460-217486-A-5-A	460-217486-A-5-A	38	8290A/Solid		AJS	10.000	g
61	18SE20DFS1_61	460-217486-A-6-A	460-217486-A-6-A	39	8290A/Solid		AJS	10.000	g
62	18SE20DFS1_62	460-217486-A-7-A	460-217486-A-7-A	40	8290A/Solid		AJS	10.000	g
63	18SE20DFS1_63	320-64049-A-3-B	320-64049-A-3-B	41	1613B/Solid	D181	AJS	1.000	g
64	18SE20DFS1_64	320-64049-A-4-B	320-64049-A-4-B	42	1613B/Solid		AJS	1.000	g
65	18SE20DFS1_65	Solvent Blank C-14	SB 091820G	3			AJS	1.000	
66	18SE20DFS1_66	Resolution Check	RC 091820H	46			AJS	1.000	
67	18SE20DFS1_67	CS-4 HRDXNL4_00095	CCV 091820E	2	8290/1613B		AJS	1.000	
68	18SE20DFS1_68	Resolution Check	RC 091820I	46			AJS	1.000	
69	18SE20DFS1_69	WDM HRDXNCP_00042	WDM 091820E	1			AJS	1.000	
70	18SE20DFS1_70	Solvent Blank C-14	SB 091820H	3			AJS	1.000	
71	18SE20DFS1_71	MB 320-412959/1-A	MB 320-412959/1-A	43	1613B/Solid	D181	AJS	10.000	g
72	18SE20DFS1_72	LCS 320-412959/2-A	LCS 320-412959/2-A	44	1613B/Solid		AJS	10.000	g
73	18SE20DFS1_73	LCSD 320-412959/3-A	LCSD 320-412959/3-A	45	1613B/Solid		AJS	10.000	g
74	18SE20DFS1_74	MB 320-410050/1-A	MB 320-410050/1-A	47	8290/Water		AJS	1.000	L
75	18SE20DFS1_75	LCS 320-410050/2-A	LCS 320-410050/2-A	48	8290/Water		AJS	1.000	L
76	18SE20DFS1_76	LCSD 320-410050/3-A	LCSD 320-410050/3-A	49	8290/Water		AJS	1.000	L
77	18SE20DFS1_77	320-64286-A-1-A	320-64286-A-1-A	50	8290/Water		AJS	1.000	L
78	18SE20DFS1_78	320-64286-A-2-A	320-64286-A-2-A	51	8290/Water		AJS	1.000	L
79	18SE20DFS1_79	Solvent Blank C-14	SB 091820I	3			AJS	1.000	
80	18SE20DFS1_80	Resolution Check	RC 091820I	46			AJS	1.000	

Log file checked
09/19/20 SMA

81	18SE20DFS1_81	CS-4 HRDXNL4_00095	CCV 091820F	2	8290/1613B		AJS	1.000
82	18SE20DFS1_82	Resolution Check	RC 091820J	46			AJS	1.000
*								

Resolution Check Report (DFS SN: 3487)

Date:	19 Sep 2020 16:53
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12062 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12284 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 12016 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12148 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12103 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11794 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11789 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12162 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12135 [5%height]

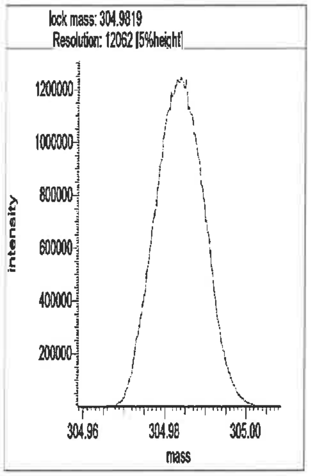

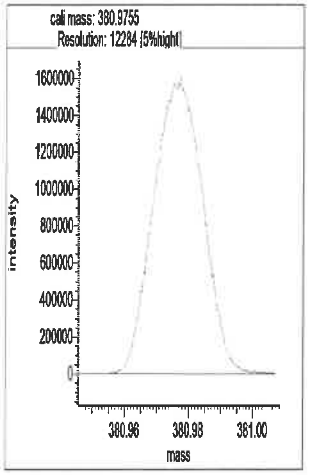

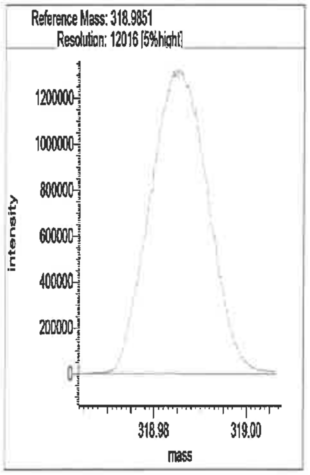

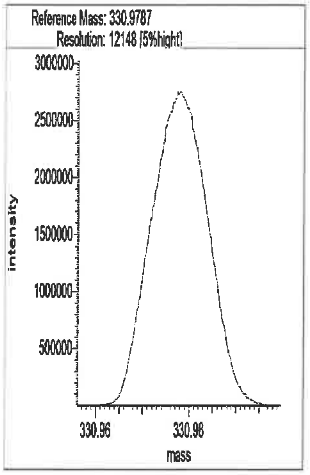

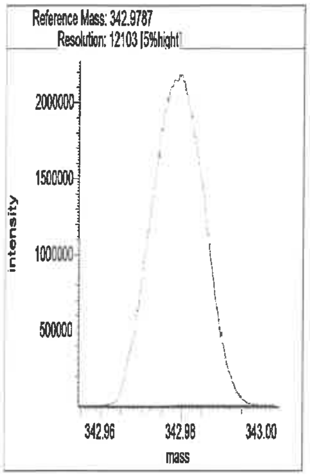

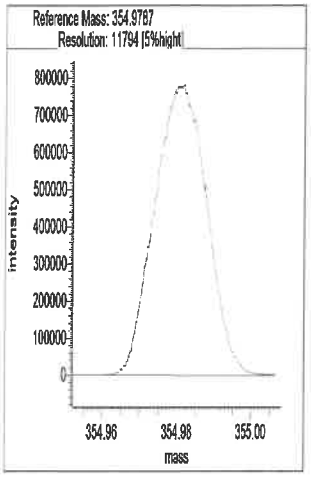

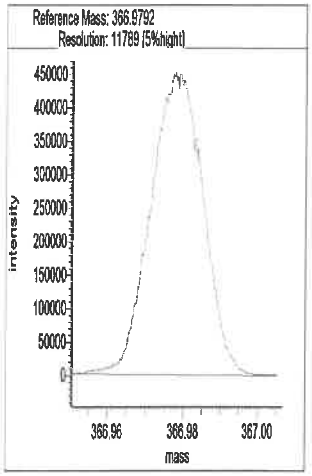

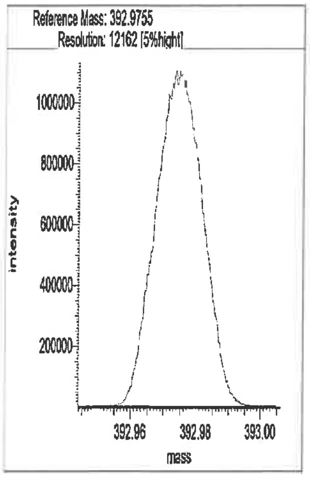

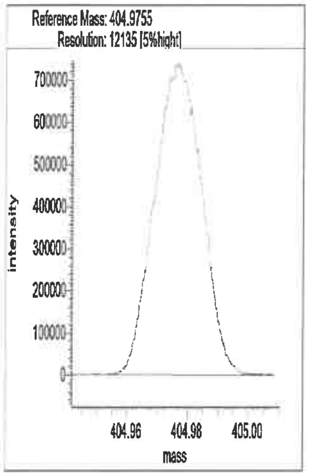

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11936 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12229 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11947 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12149 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11567 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12163 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12211 [5%height]

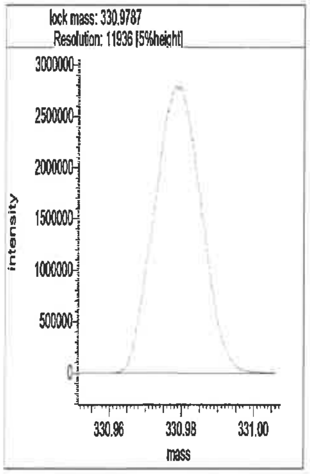

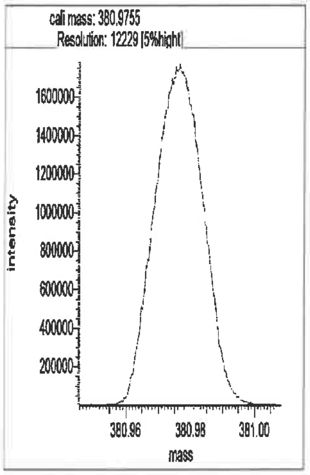

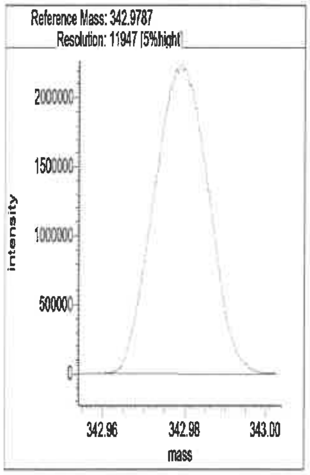

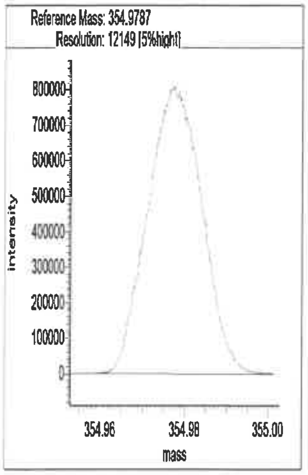

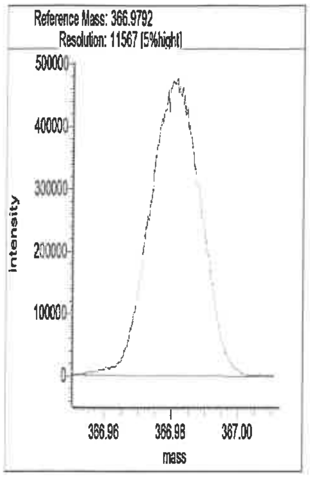

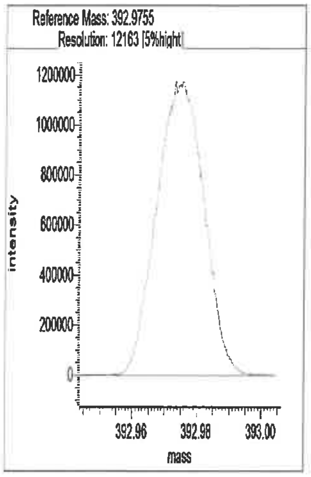

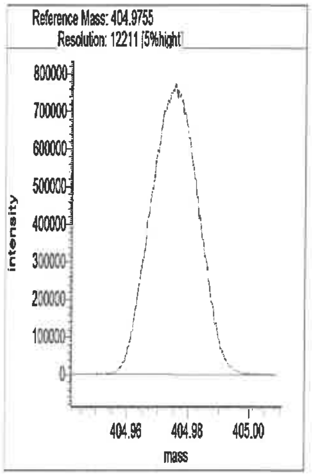

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11856 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12242 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11977 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12123 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12209 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12345 [5%height]

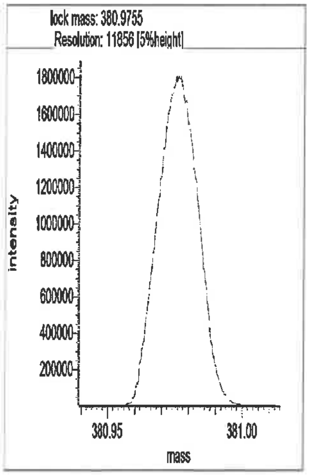

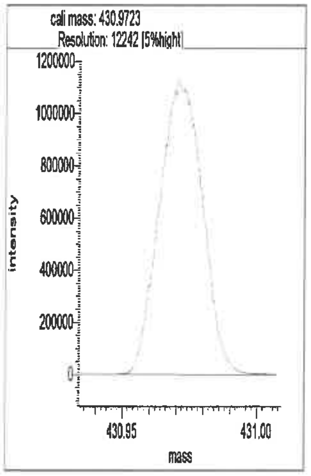

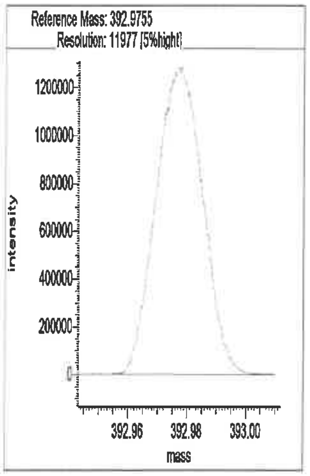

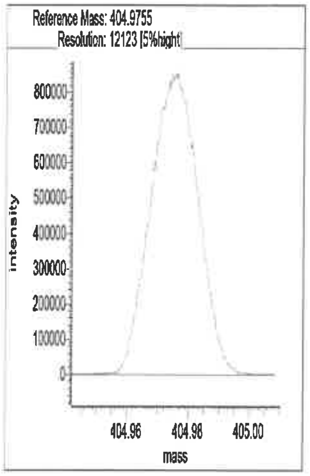

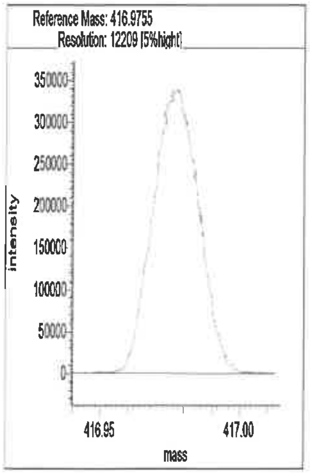

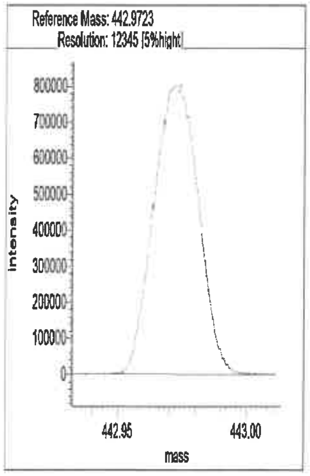

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12032 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12090 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12100 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 18654 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12040 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12166 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12135 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12213 [5%height]

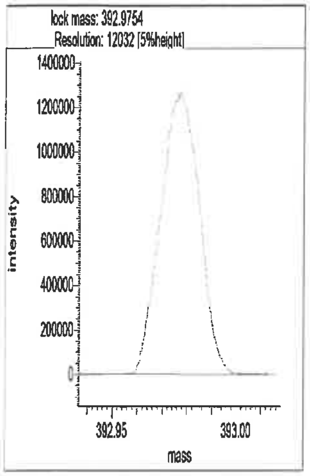

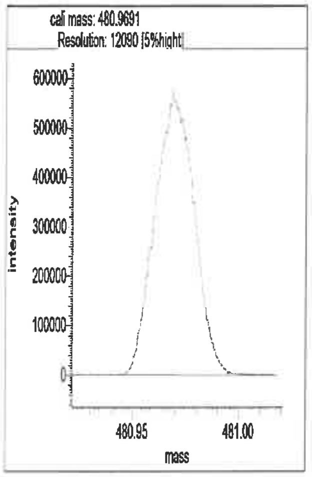

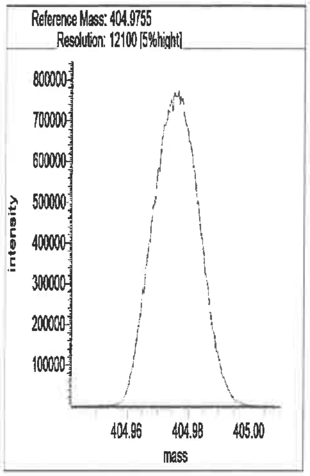

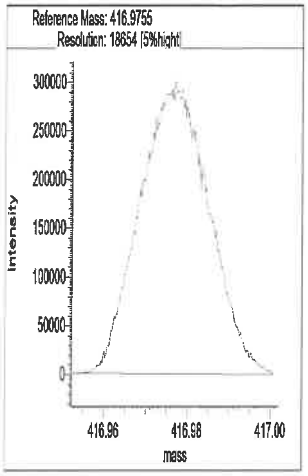

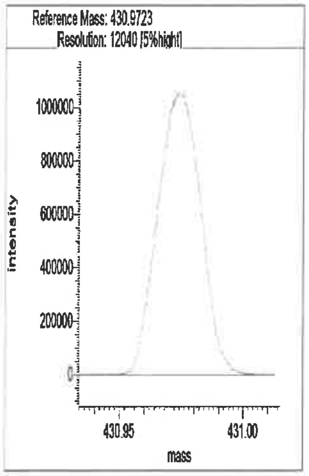

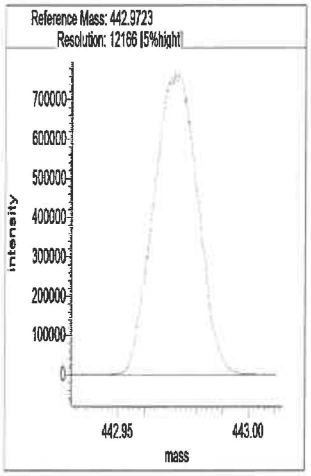

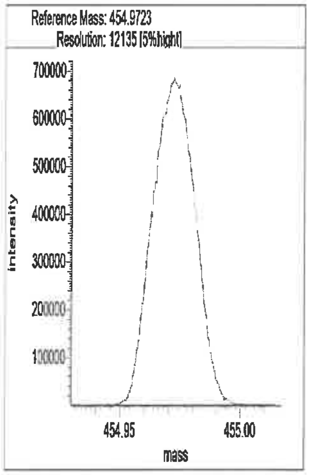

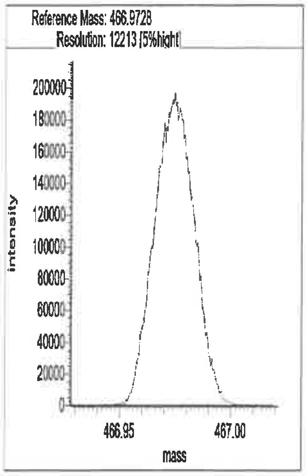

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11910 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12155 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12172 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12009 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11926 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12369 [5%height]

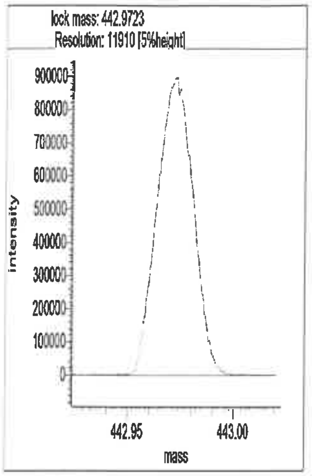
lock mass: 442.9723
Resolution: 11910 [5%height]

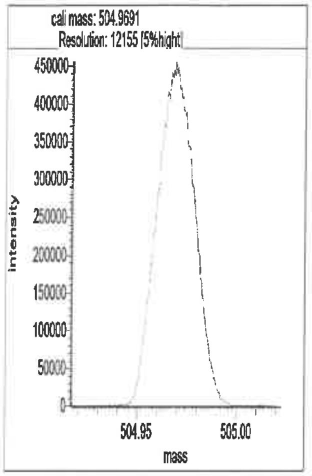
cali mass: 504.9691
Resolution: 12155 [5%hight]

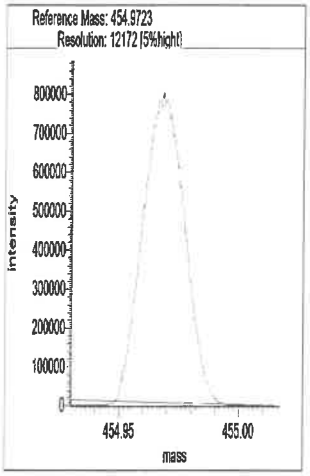
Reference Mass: 454.9723
Resolution: 12172 [5%hight]

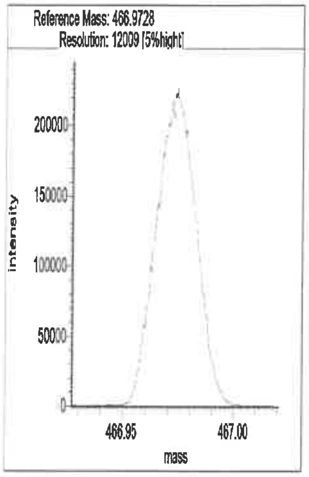
Reference Mass: 466.9728
Resolution: 12009 [5%hight]

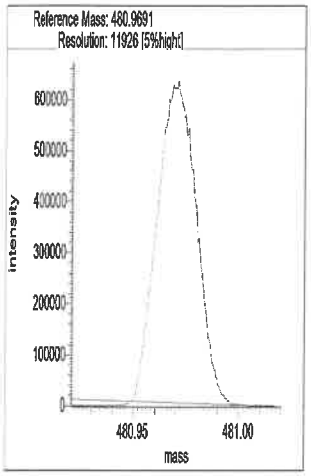
Reference Mass: 480.9691
Resolution: 11926 [5%hight]

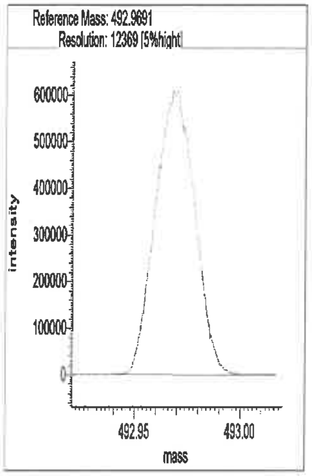
Reference Mass: 492.9691
Resolution: 12369 [5%hight]

Resolution Check Report (DFS SN: 3487)

Date:	19 Sep 2020 18:01
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11936 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12162 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11870 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12070 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12033 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12132 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11737 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12235 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12378 [5%height]

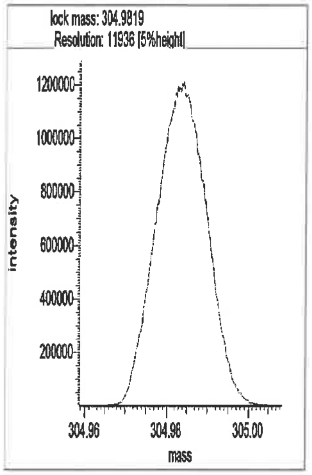

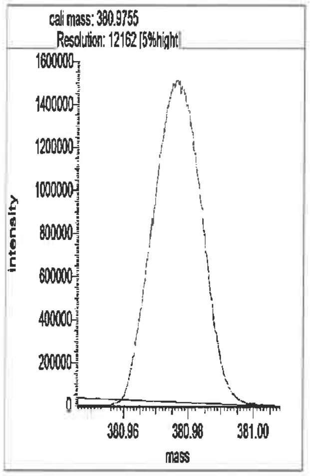

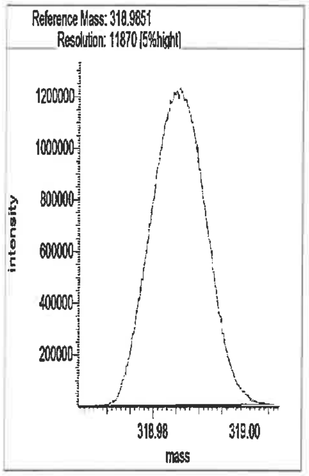

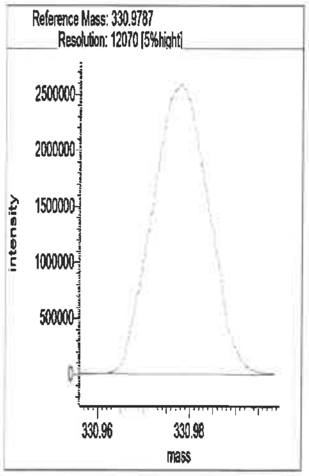

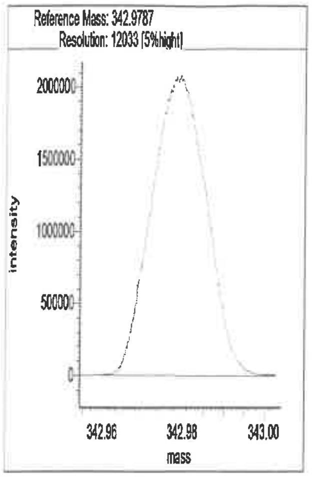

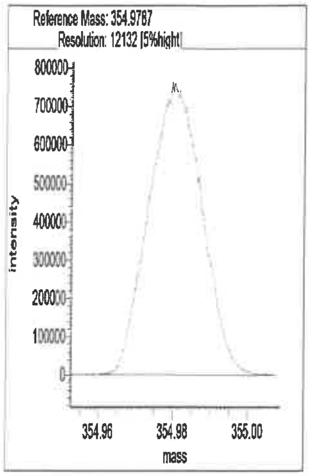

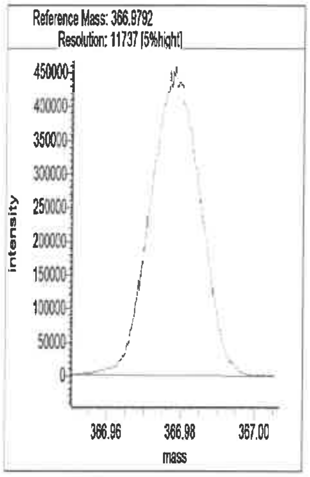

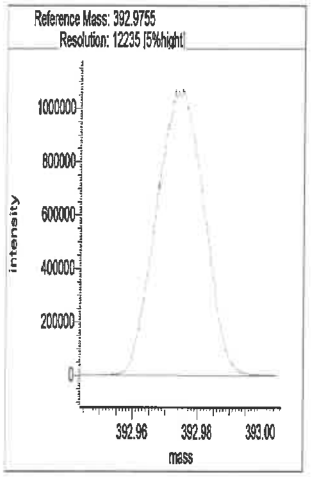

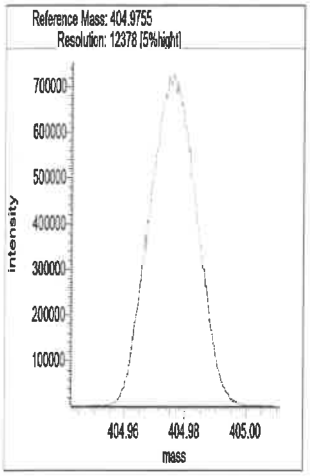

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11837 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12102 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12011 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12146 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11909 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12214 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12230 [5%height]

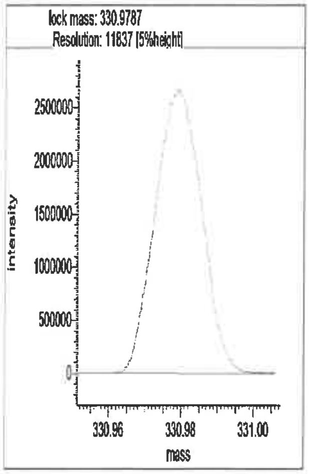

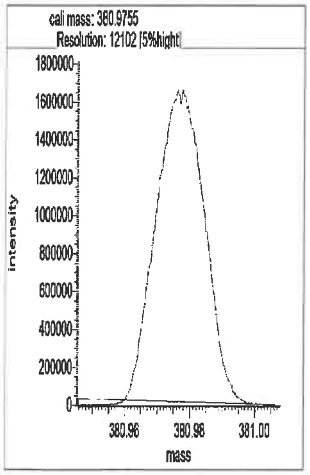

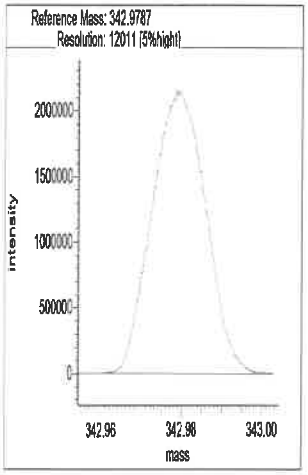

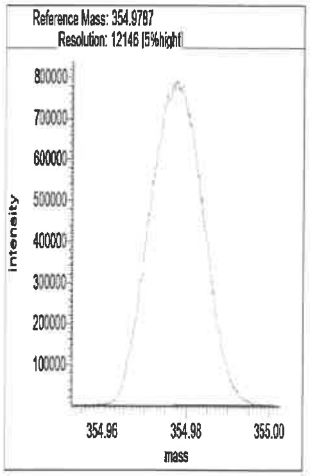

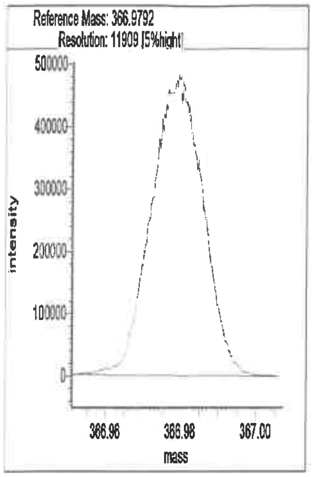

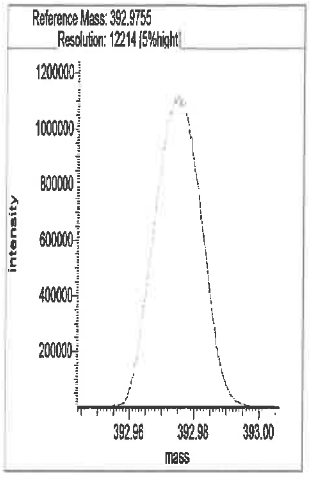

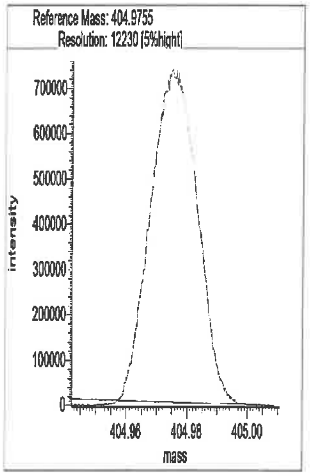

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11889 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12244 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12081 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12143 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12104 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12253 [5%height]

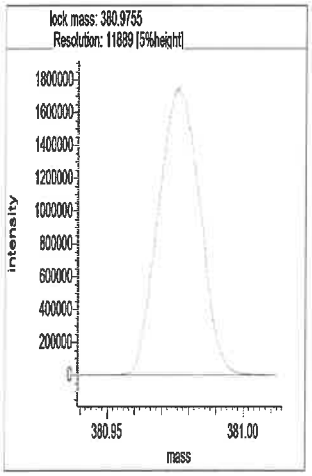

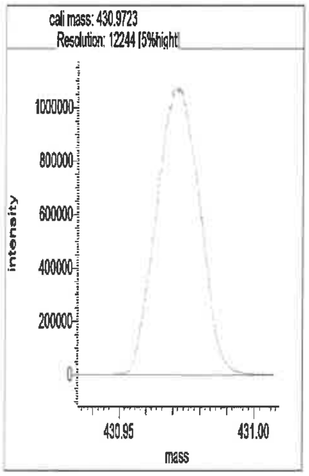

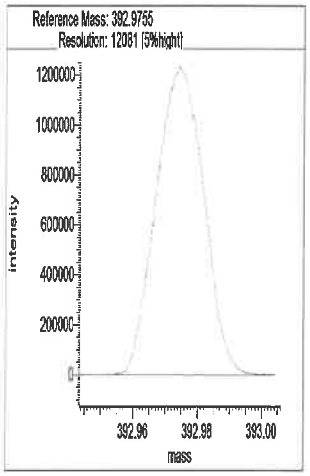

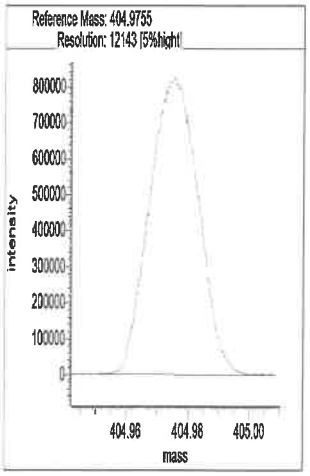

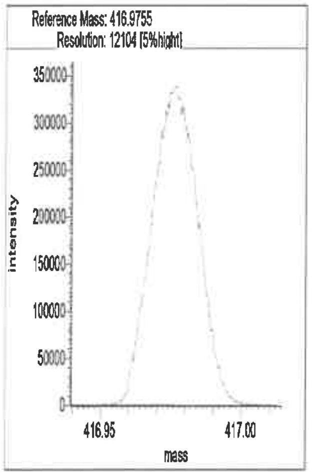

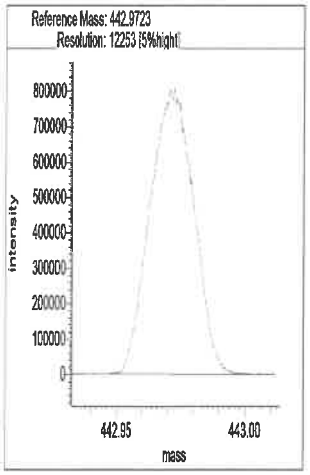

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12001 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12025 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12020 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12102 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12111 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12061 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12347 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12238 [5%height]

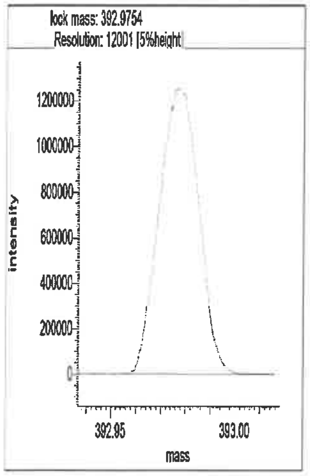

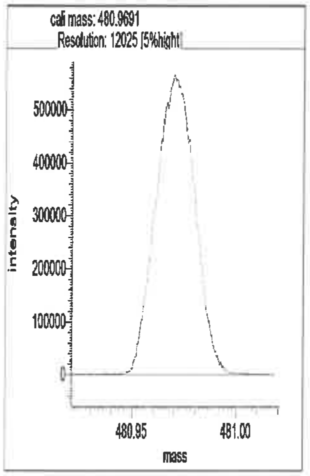

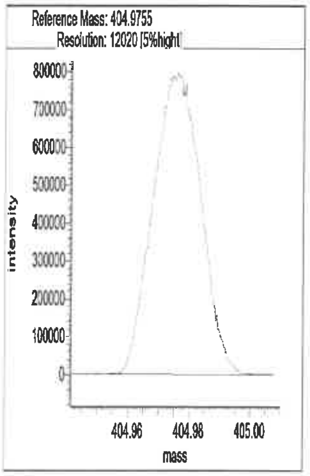

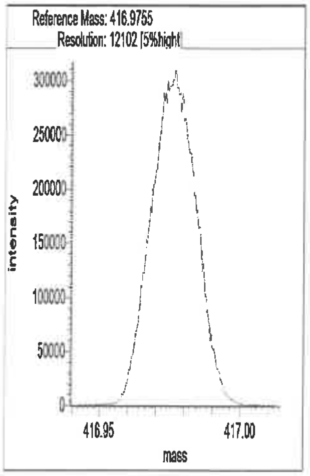

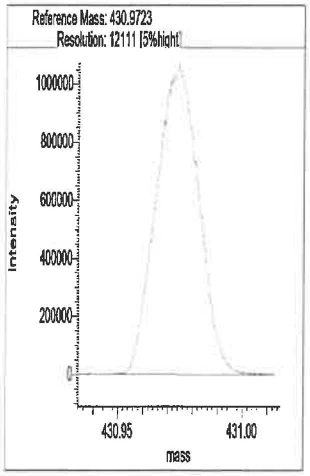

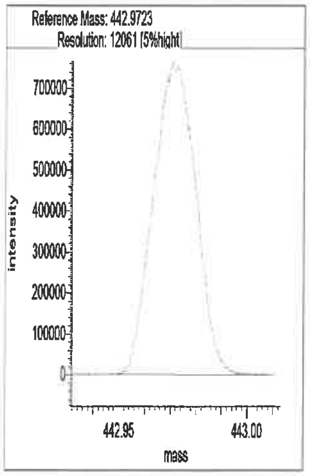

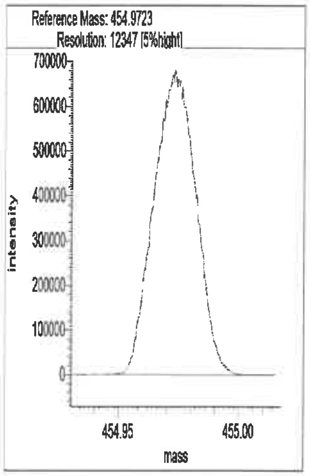

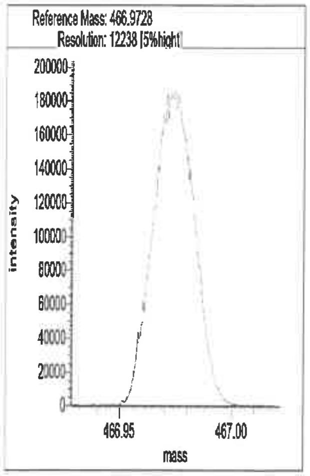

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12124 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12199 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11968 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 11971 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12192 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12006 [5%height]

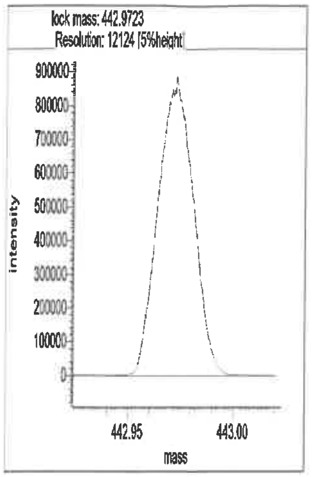
lock mass: 442.9723
Resolution: 12124 [5%height]
intensity
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

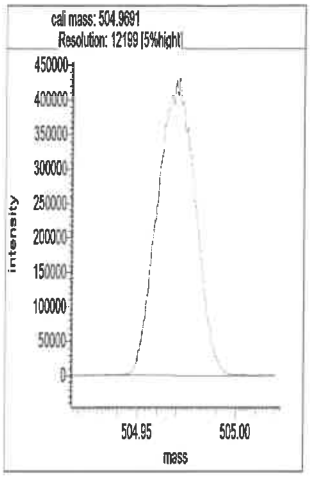
cali mass: 504.9691
Resolution: 12199 [5%hight]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

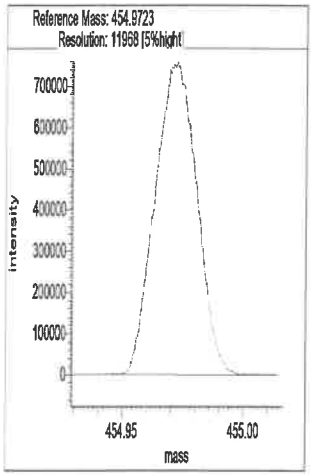
Reference Mass: 454.9723
Resolution: 11968 [5%hight]
intensity
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

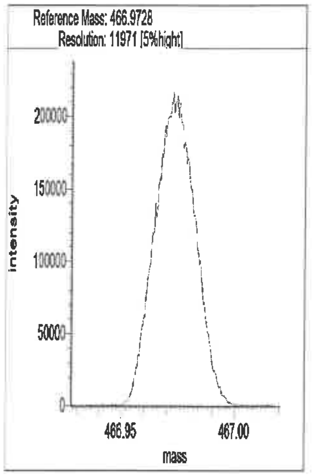
Reference Mass: 466.9728
Resolution: 11971 [5%hight]
intensity
200000
150000
100000
50000
0
466.95
467.00
mass

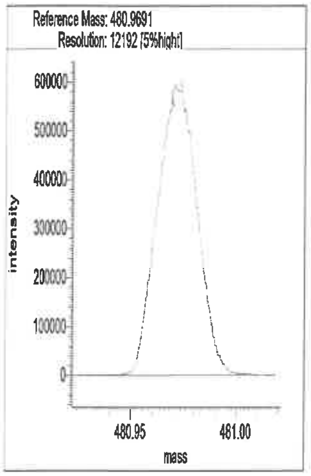
Reference Mass: 480.9691
Resolution: 12192 [5%hight]
intensity
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

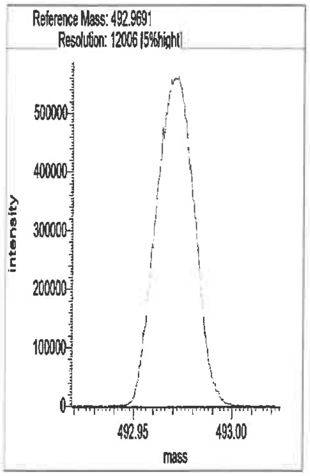
Reference Mass: 492.9691
Resolution: 12006 [5%hight]
intensity
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date: 20 Sep 2020 04:03
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11896 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12390 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11942 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12311 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12237 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12369 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 12111 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12472 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12285 [5%height]

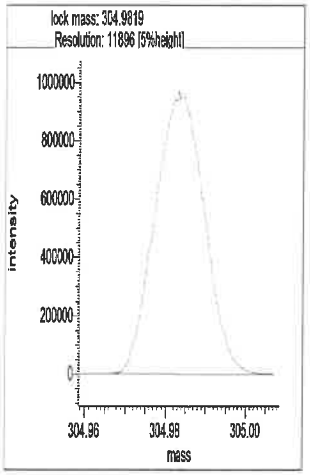

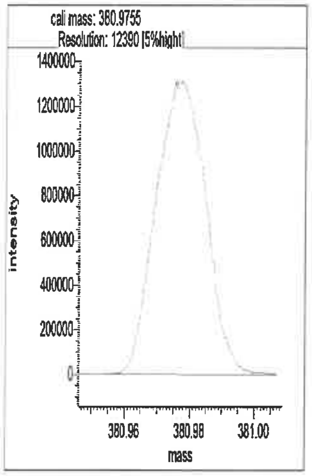

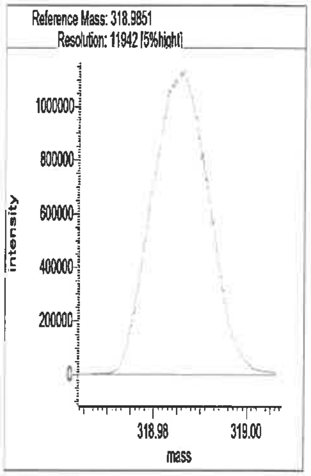

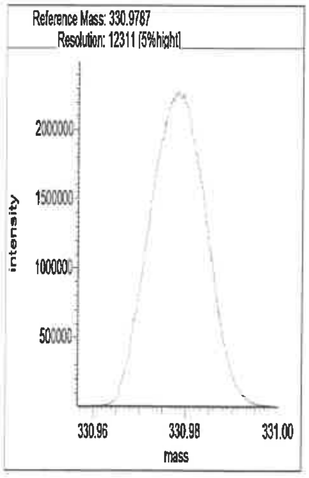

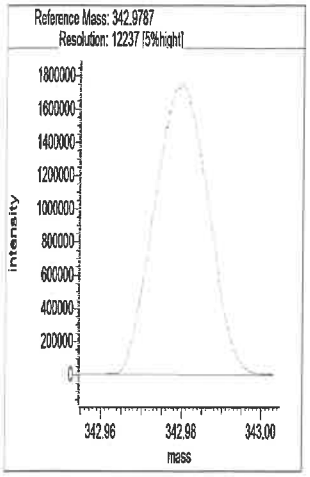

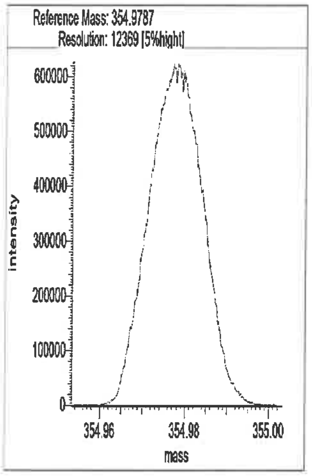

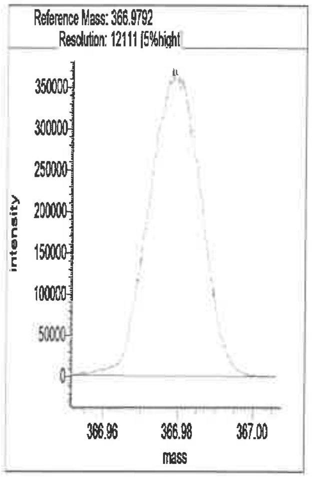

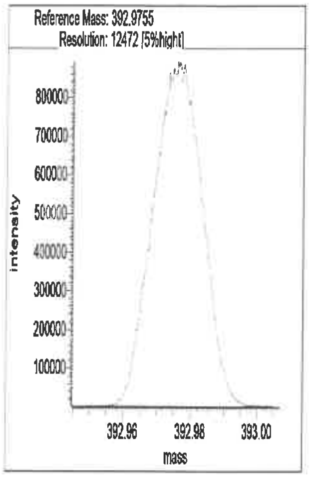

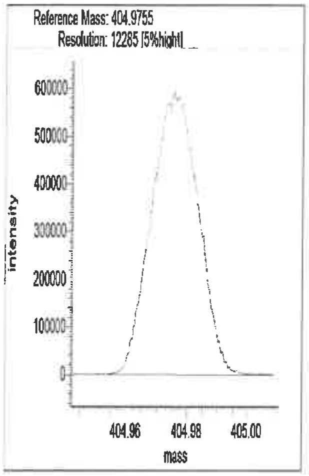

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12196 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12298 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12217 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12309 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11885 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12496 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12668 [5%height]

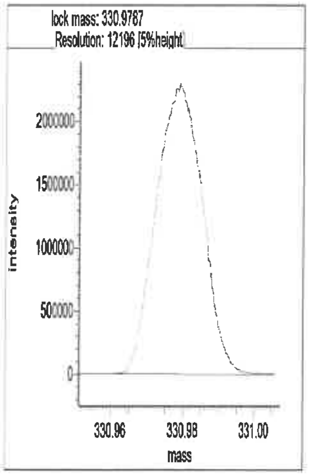

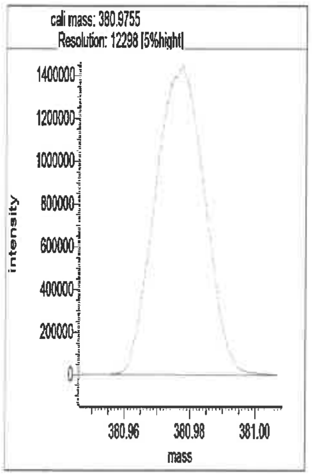

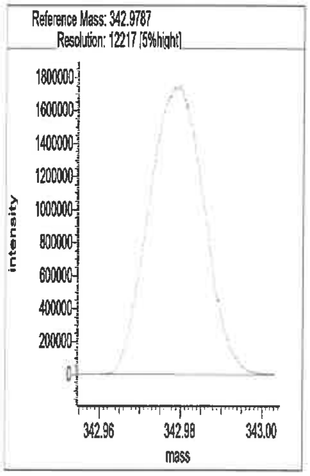

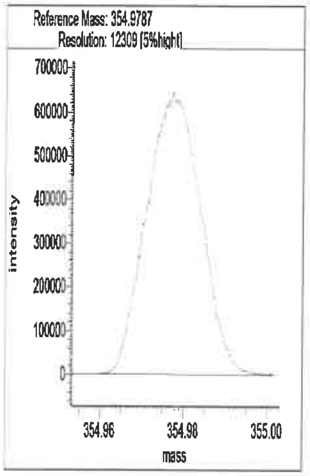

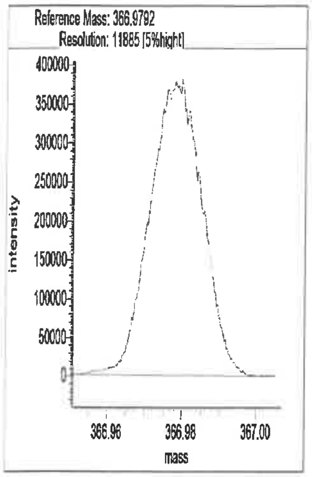

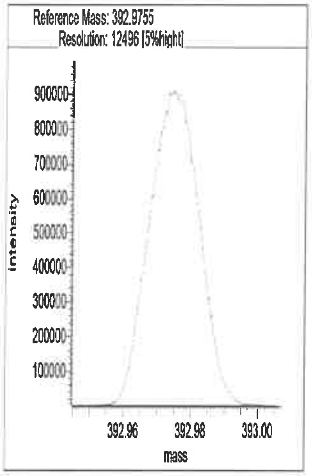

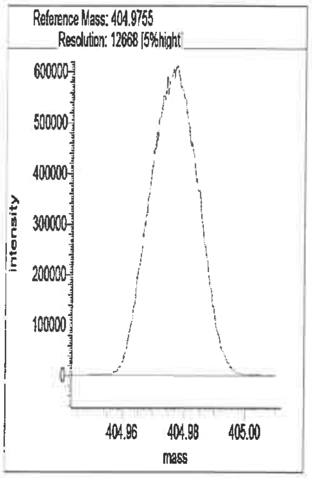

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12238 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12376 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12135 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12276 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12223 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12393 [5%height]

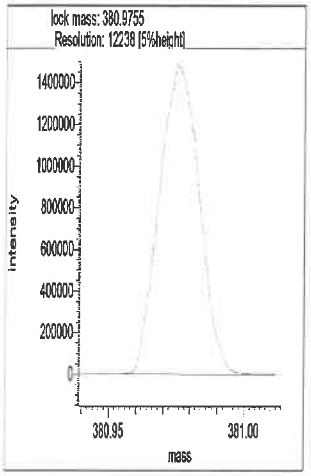

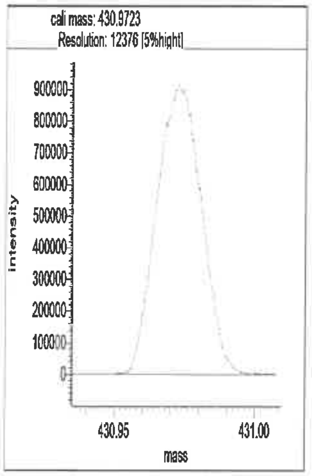

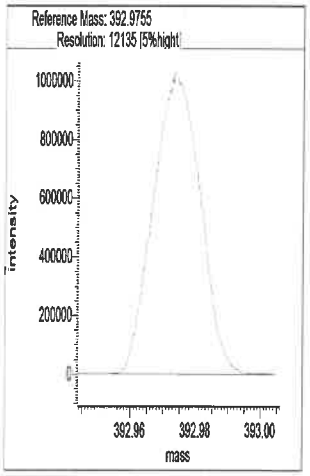

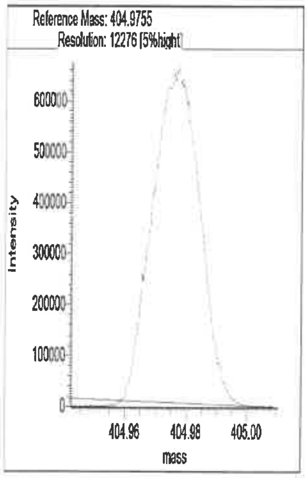

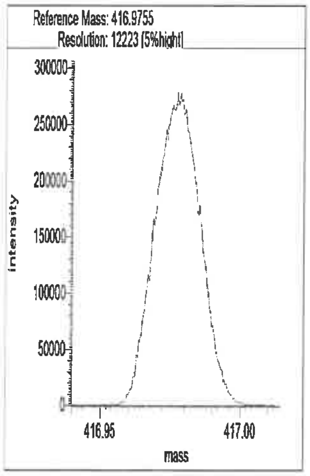

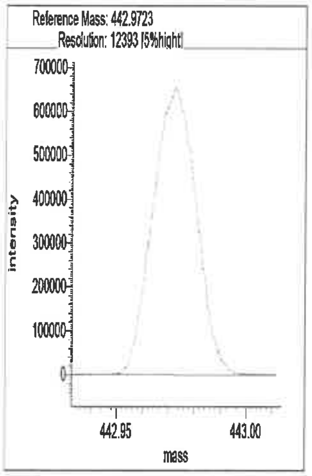

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12140 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12163 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12194 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12016 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12390 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12332 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12579 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12440 [5%height]

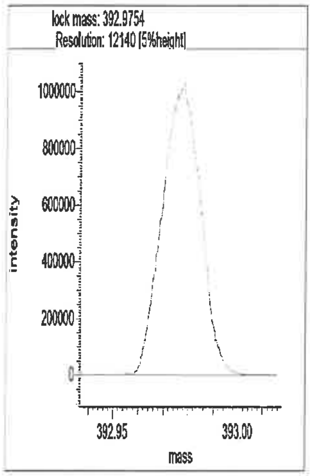

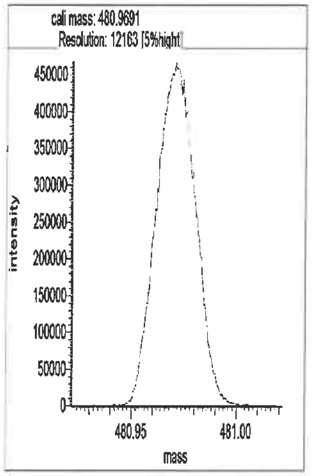

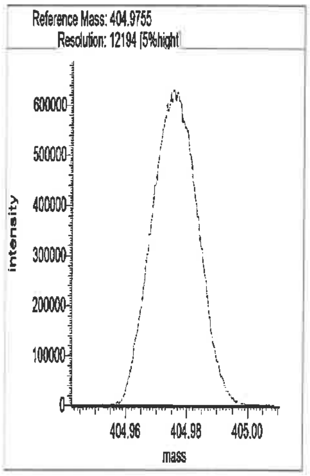

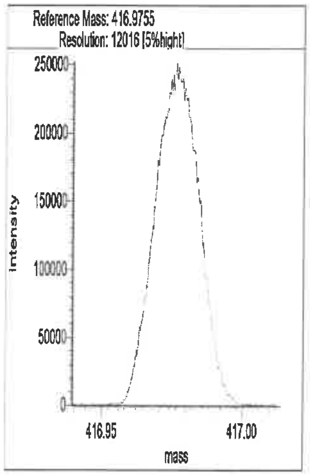

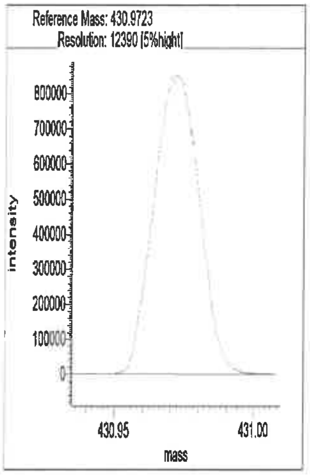

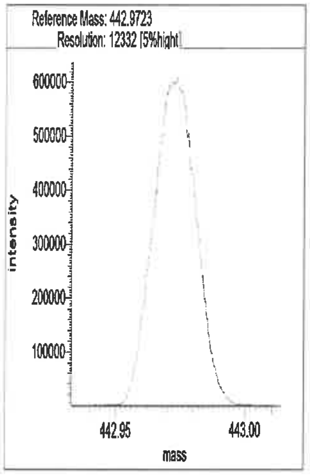

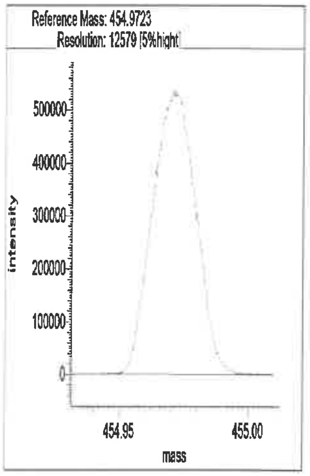

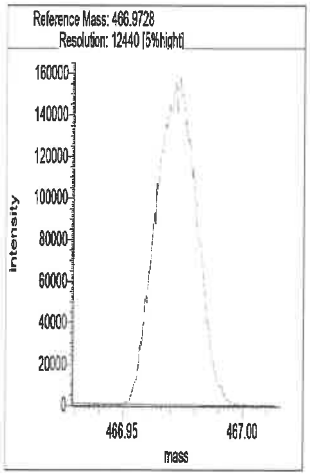

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12157 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12359 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12215 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12322 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12268 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12387 [5%height]

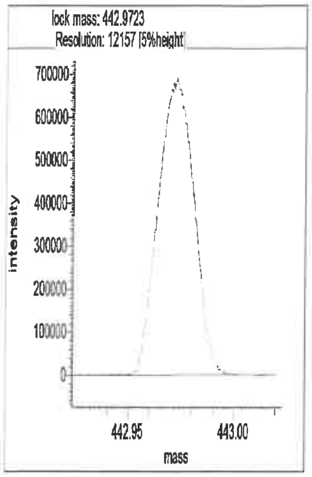
lock mass: 442.9723
Resolution: 12157 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

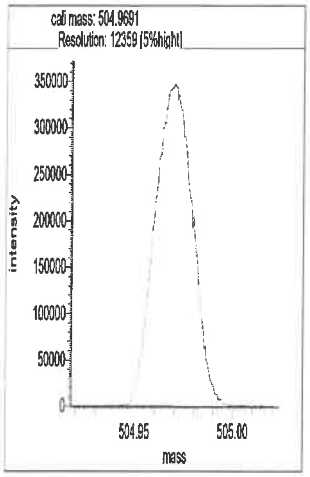
cali mass: 504.9691
Resolution: 12359 [5%hight]
intensity
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

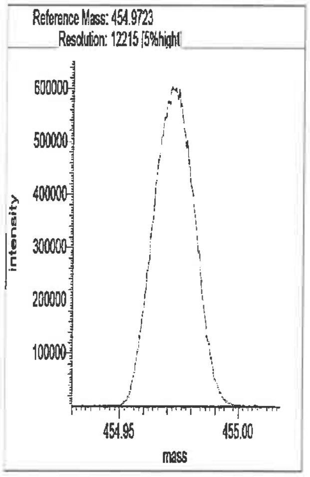
Reference Mass: 454.9723
Resolution: 12215 [5%hight]
intensity
600000
500000
400000
300000
200000
100000
454.95
455.00
mass

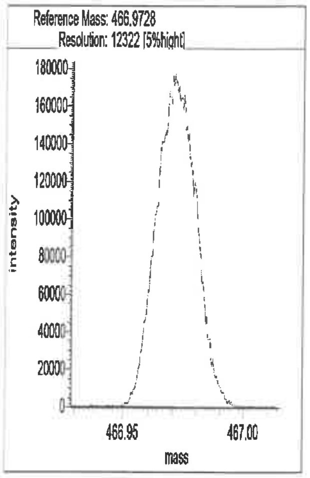
Reference Mass: 466.9728
Resolution: 12322 [5%hight]
intensity
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

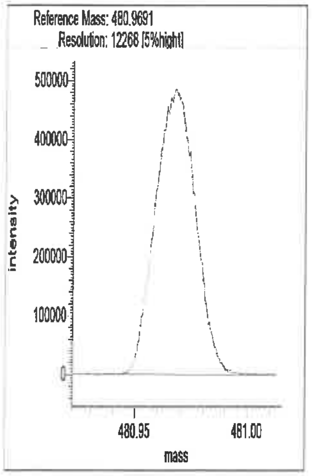
Reference Mass: 480.9691
Resolution: 12268 [5%hight]
intensity
500000
400000
300000
200000
100000
0
480.95
481.00
mass

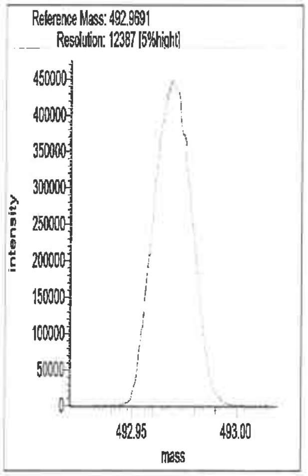
Reference Mass: 492.9691
Resolution: 12387 [5%hight]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	20 Sep 2020 05:11
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11952 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12198 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 12010 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12156 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12396 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12437 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11745 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12394 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12380 [5%height]

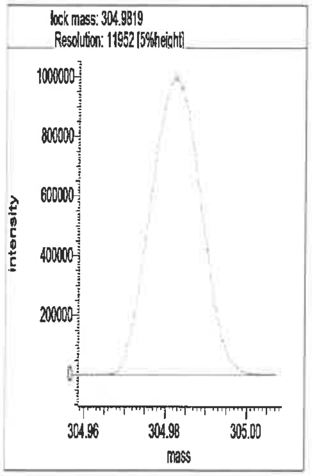

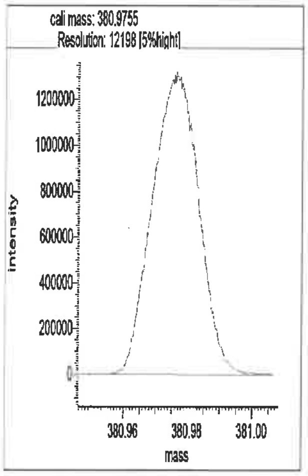

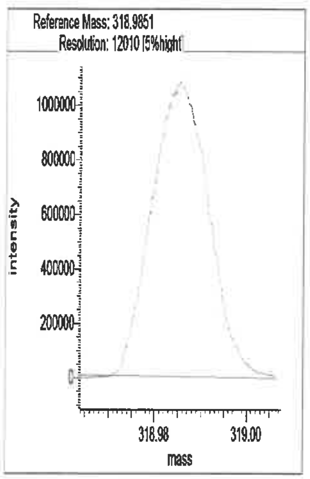

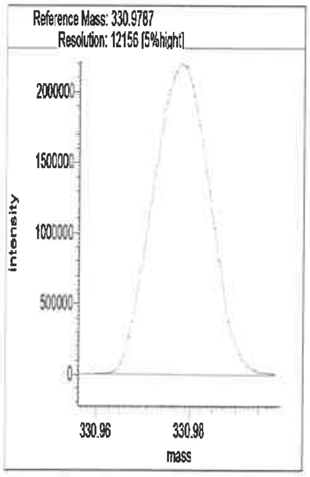

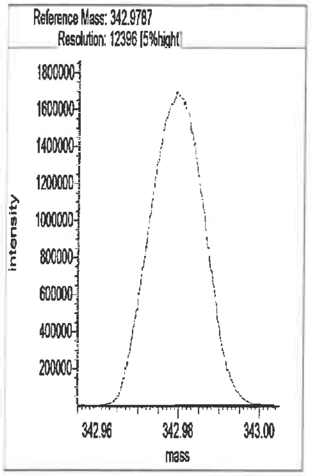

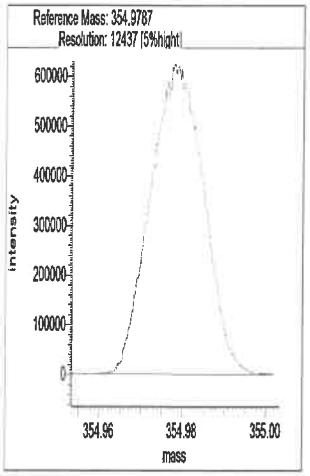

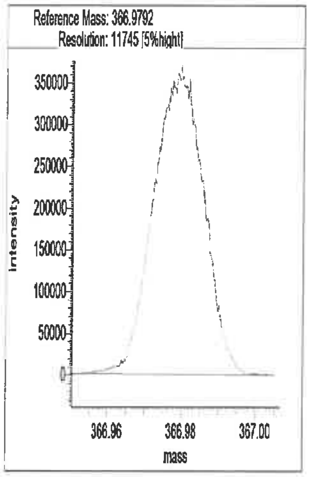

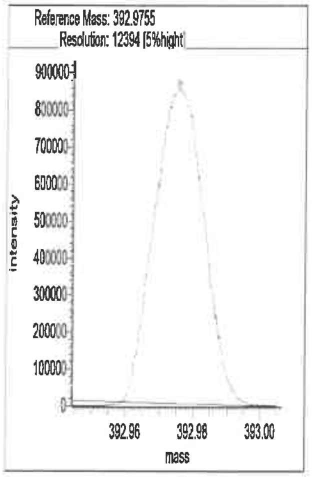

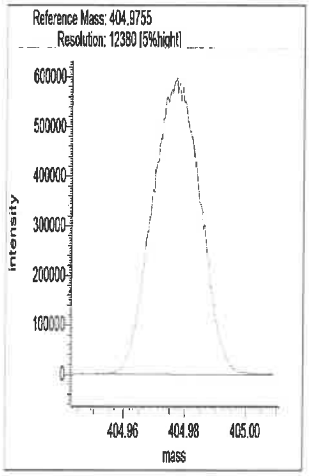

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12033 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12228 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12221 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12056 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11816 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12349 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12168 [5%height]

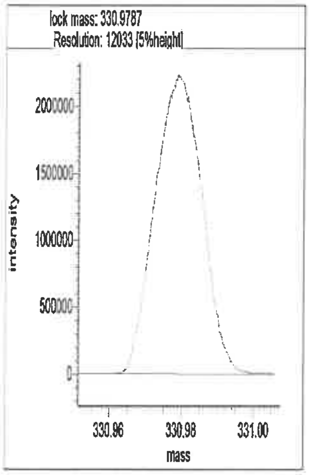

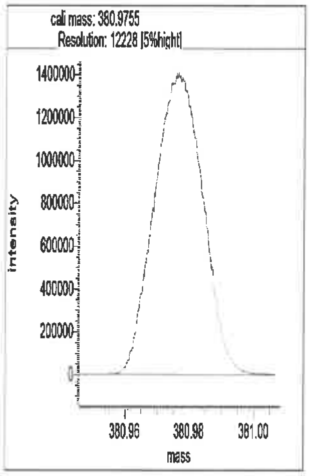

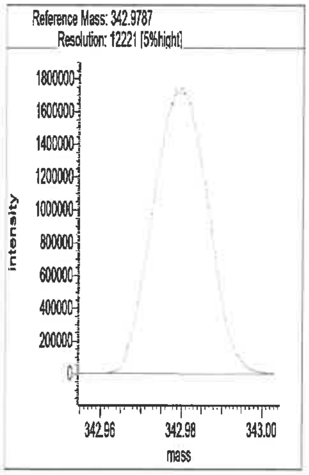

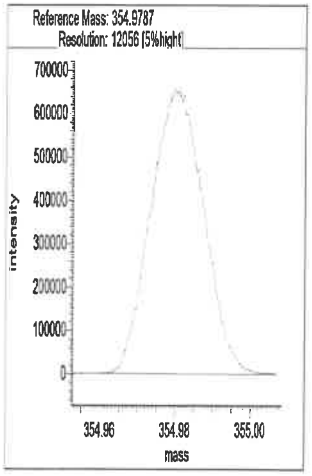

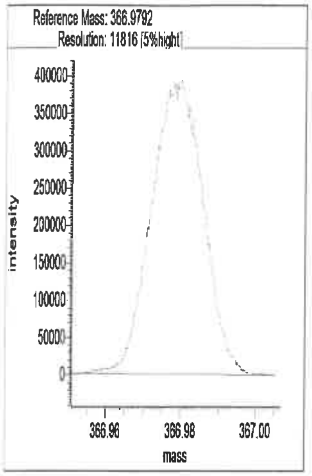

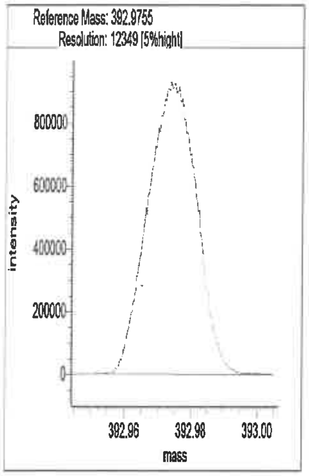

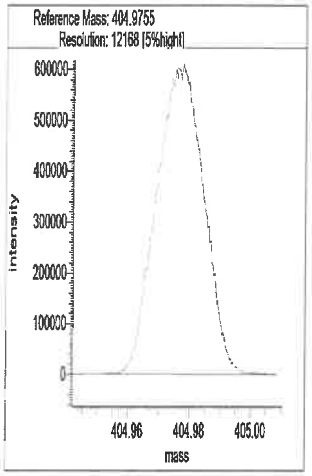

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11903 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12340 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12009 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12175 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12015 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12346 [5%height]

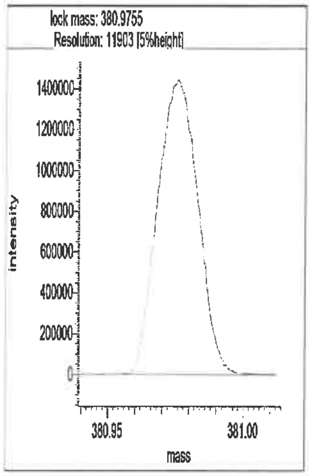

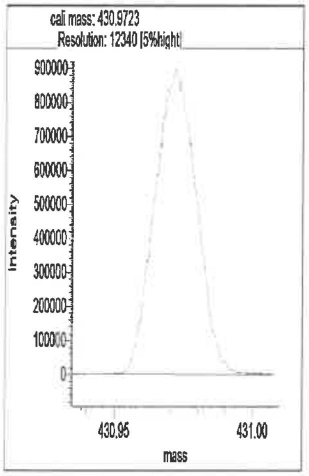

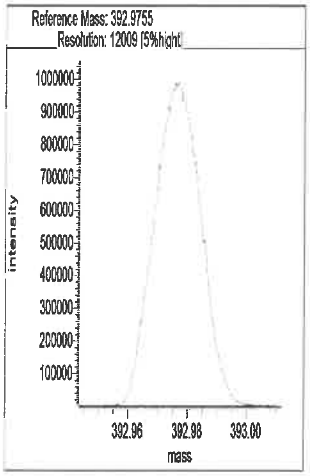

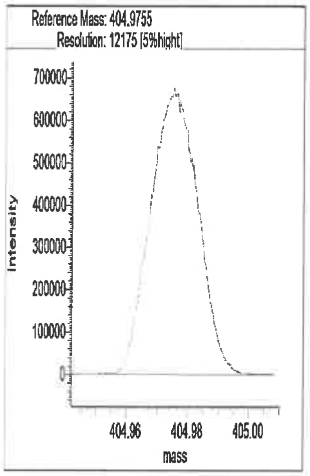

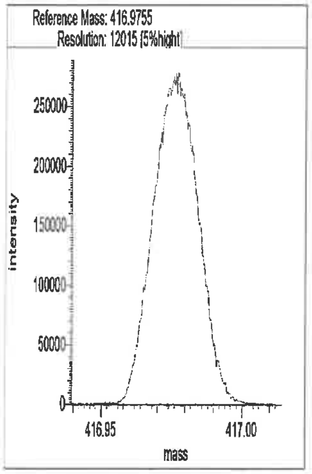

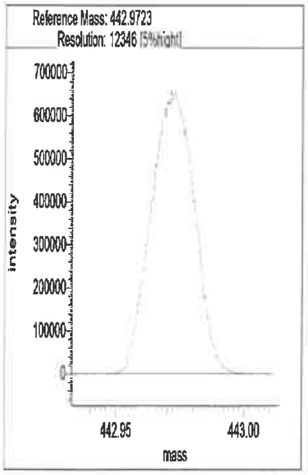

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12150 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12452 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12054 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11931 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12258 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12132 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12288 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12155 [5%height]

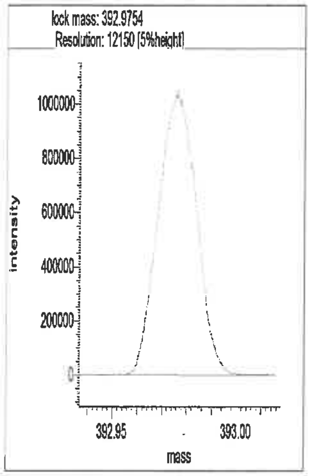

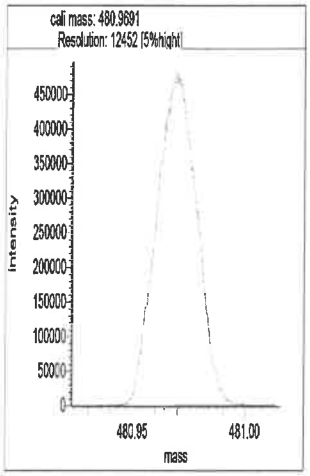

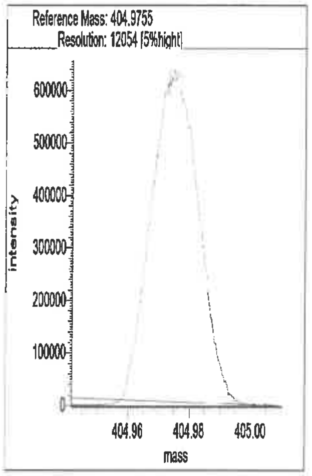

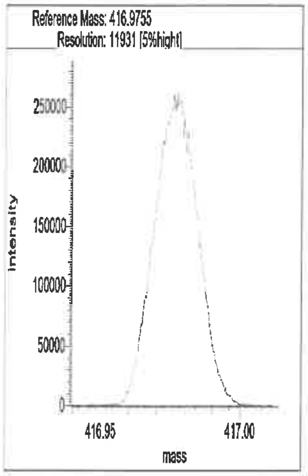

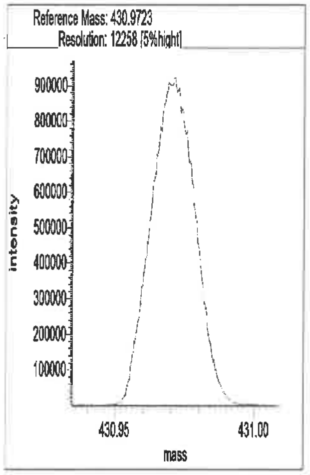

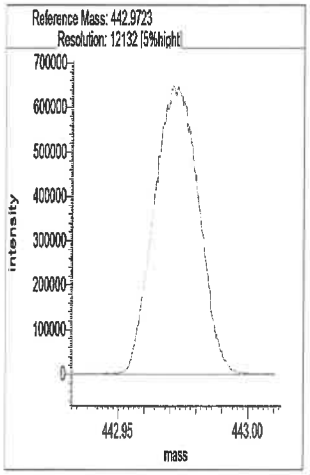

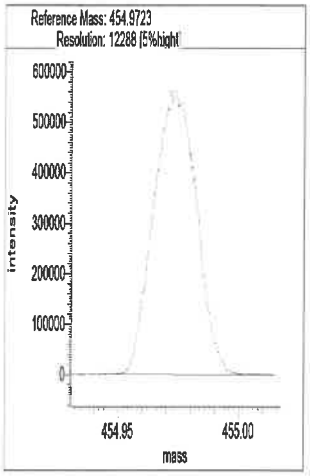

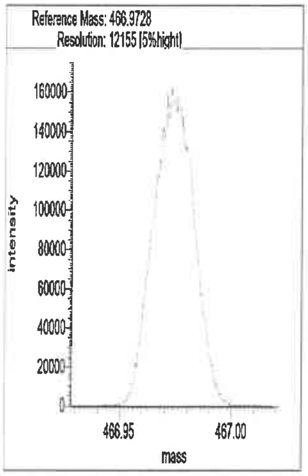

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12092 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12435 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11890 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11968 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12147 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12138 [5%height]

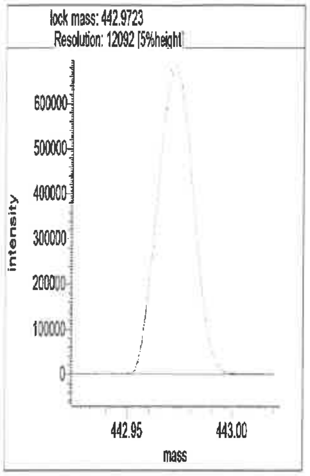
lock mass: 442.9723
Resolution: 12092 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

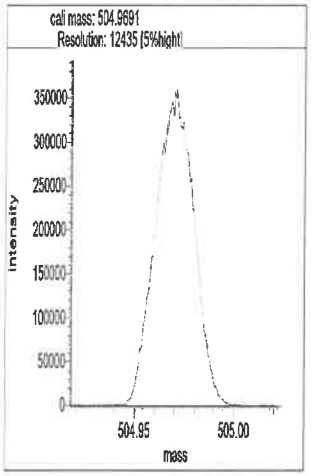
cali mass: 504.9691
Resolution: 12435 [5%hight]
intensity
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

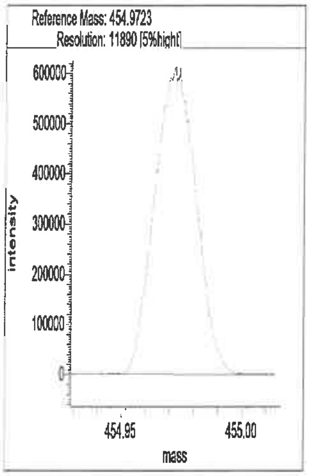
Reference Mass: 454.9723
Resolution: 11890 [5%hight]
intensity
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

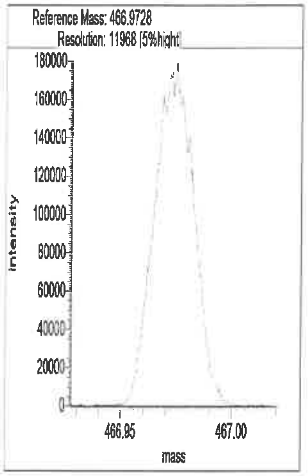
Reference Mass: 466.9728
Resolution: 11968 [5%hight]
intensity
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

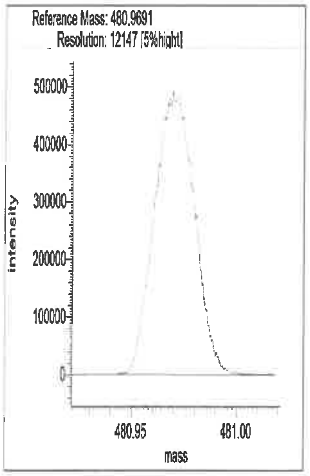
Reference Mass: 480.9691
Resolution: 12147 [5%hight]
intensity
500000
400000
300000
200000
100000
0
480.95
481.00
mass

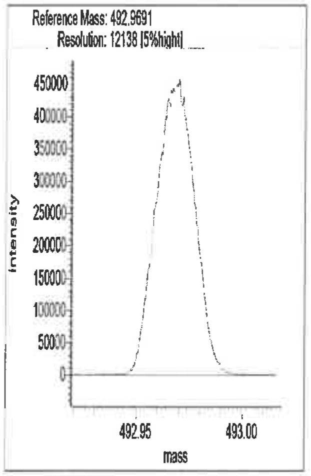
Reference Mass: 492.9691
Resolution: 12138 [5%hight]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	20 Sep 2020 14:23
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11600 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11937 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 11644 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11837 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11982 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12169 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11832 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11993 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12014 [5%height]

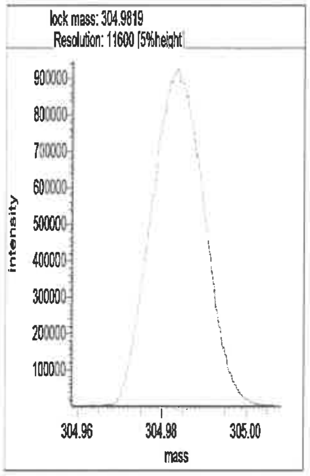
lock mass: 304.9819
Resolution: 11600 [5%height]

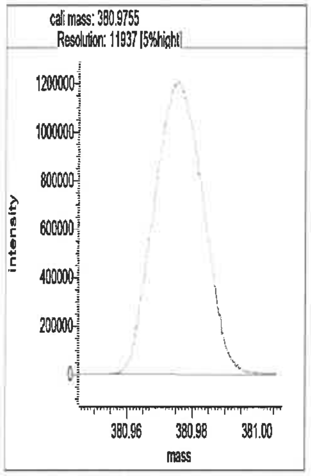
cali mass: 380.9755
Resolution: 11937 [5%hight]

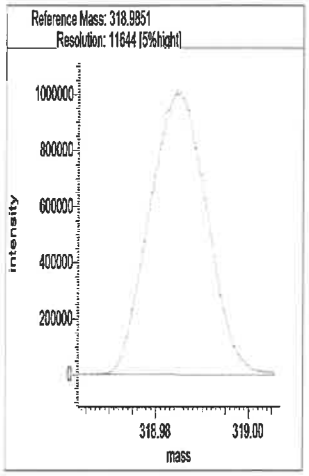
Reference Mass: 318.9851
Resolution: 11644 [5%hight]

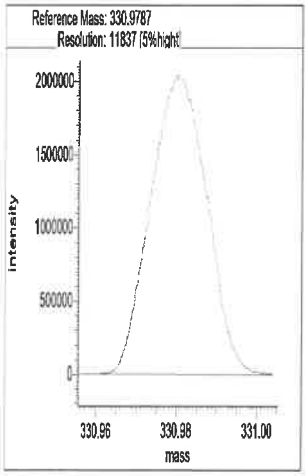
Reference Mass: 330.9787
Resolution: 11837 [5%hight]

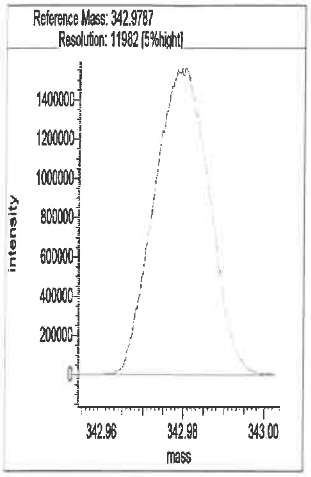

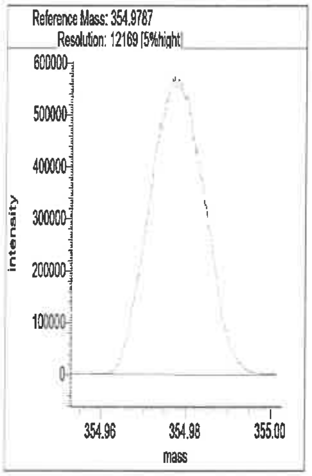

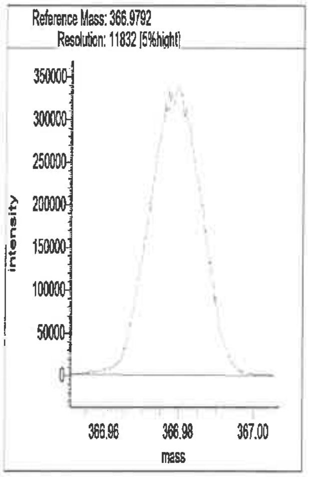

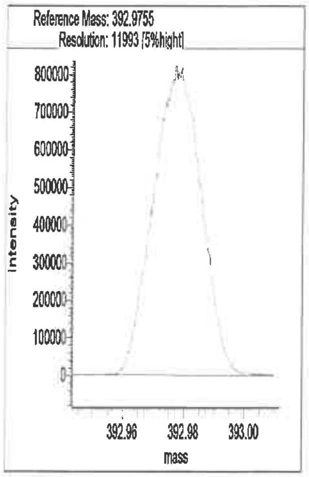

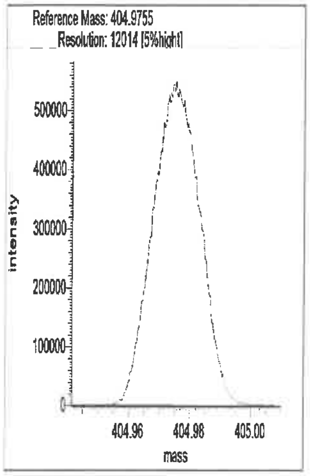

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11670 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12030 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11640 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11874 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11815 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12116 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12126 [5%height]

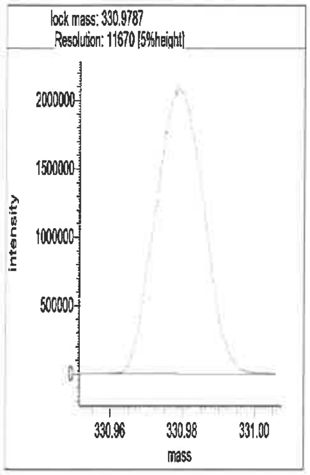

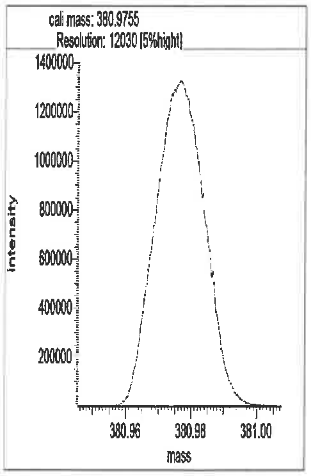

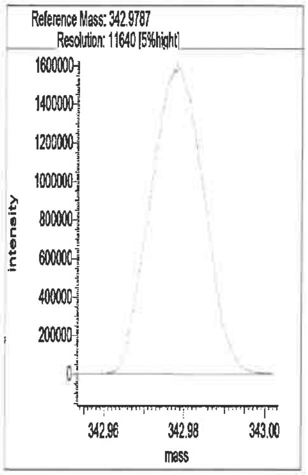

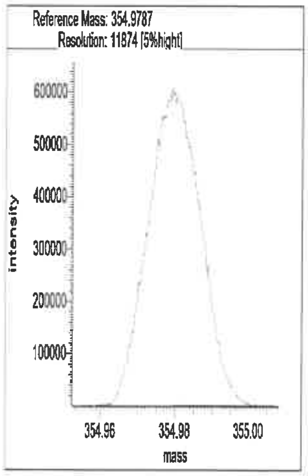

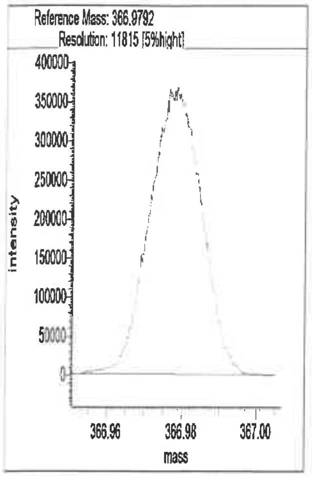

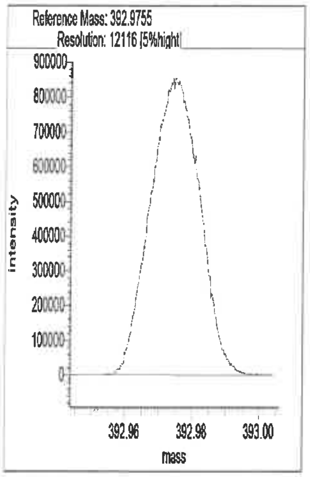

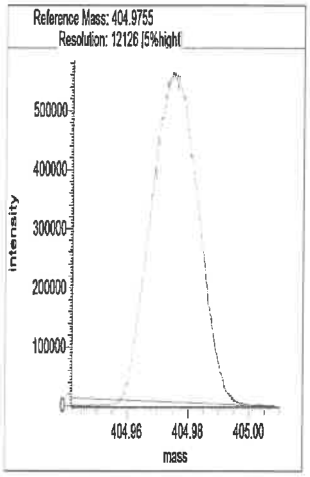

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11616 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12051 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11878 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12359 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11834 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11874 [5%height]

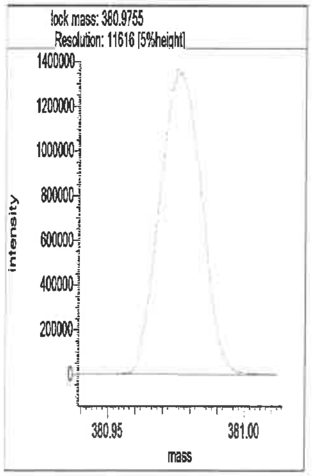

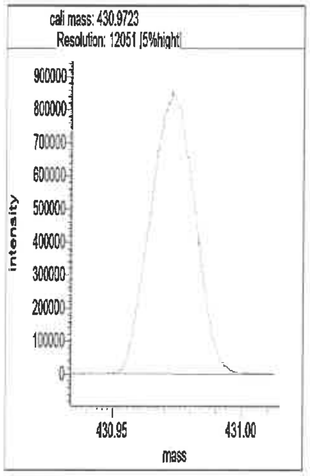

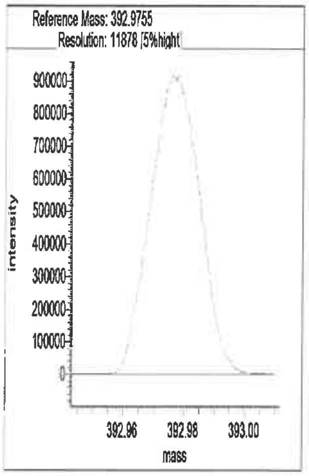

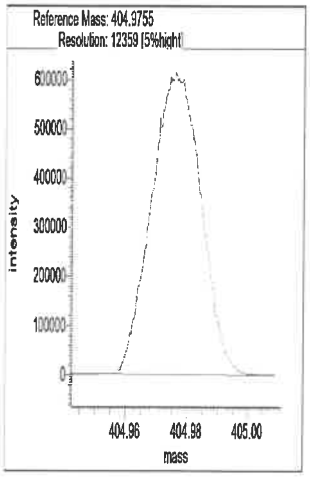

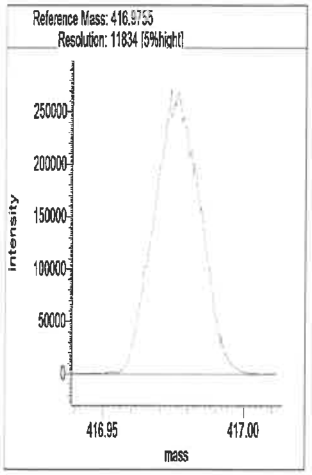

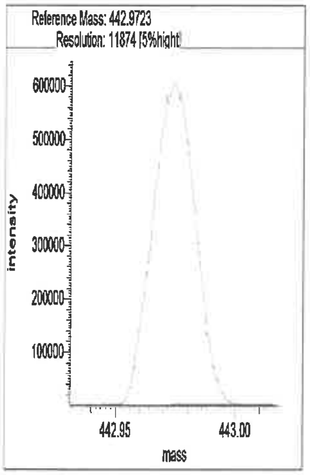

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11697 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11881 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11672 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11710 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11981 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11915 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12045 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12111 [5%height]

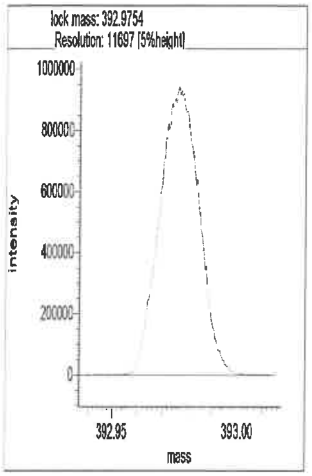

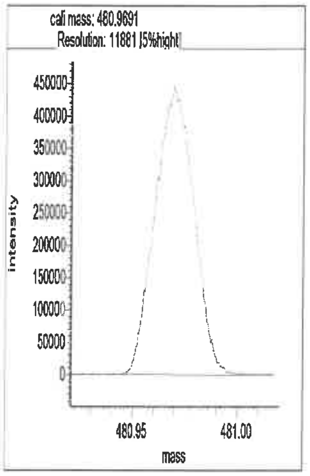

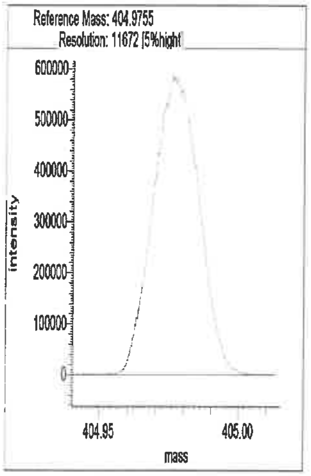

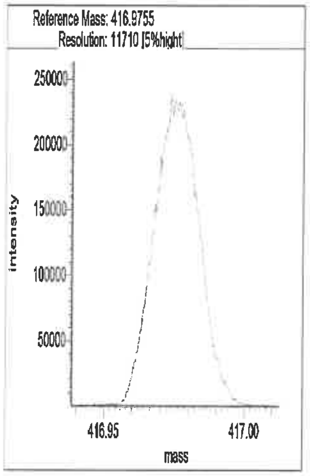

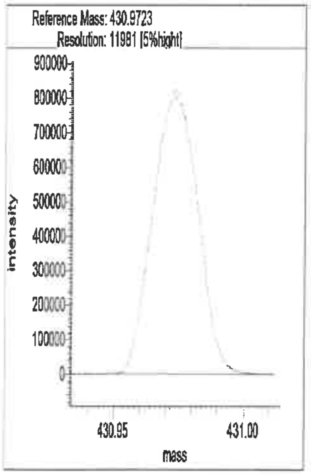

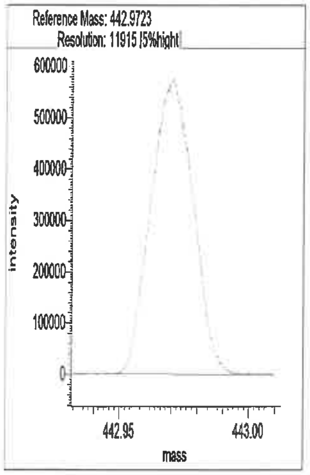

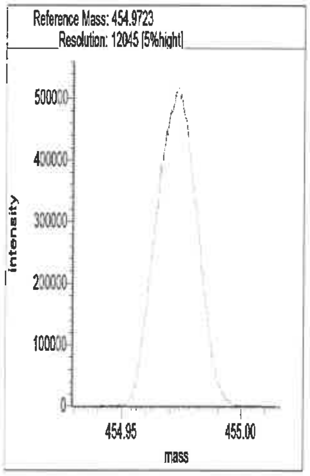

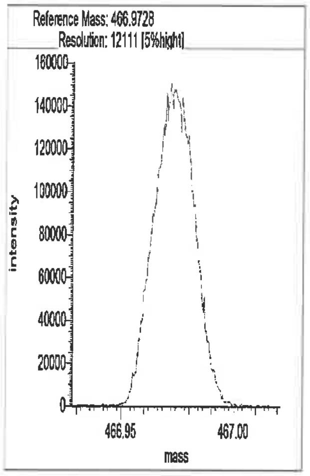

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11911 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12140 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11741 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11738 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11951 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12100 [5%height]

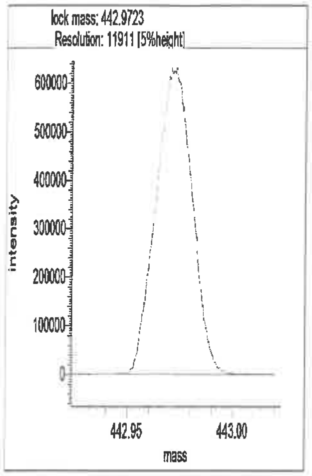

lock mass: 442.9723
Resolution: 11911 [5%height]

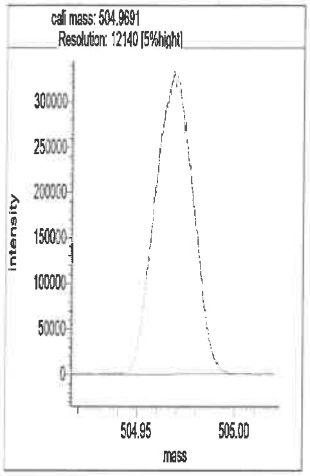

cali mass: 504.9691
Resolution: 12140 [5%hight]

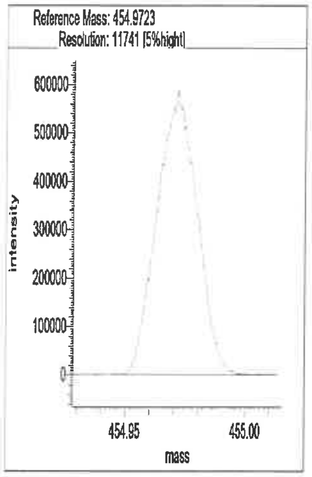

Reference Mass: 454.9723
Resolution: 11741 [5%hight]

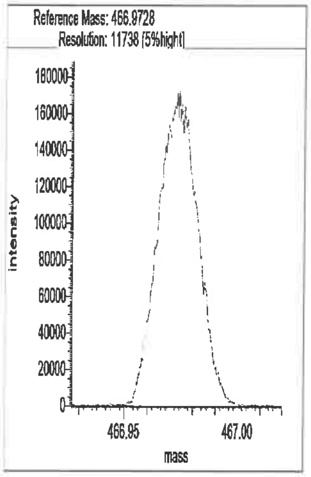

Reference Mass: 466.9728
Resolution: 11738 [5%hight]

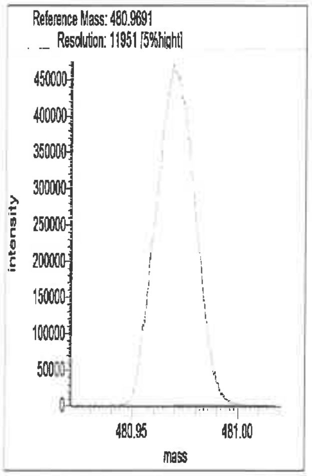

Reference Mass: 480.9691
Resolution: 11951 [5%hight]

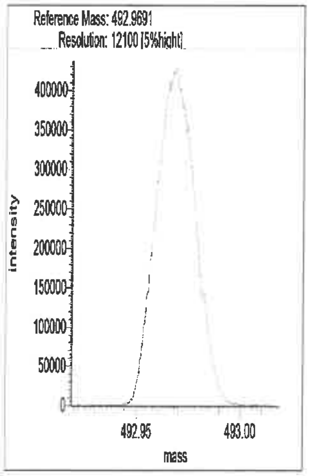

Reference Mass: 492.9691
Resolution: 12100 [5%hight]

Resolution Check Report (DFS SN: 3487)

Date:	20 Sep 2020 15:31
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11805 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11815 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11673 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11782 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11886 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12040 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11647 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12167 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12202 [5%height]

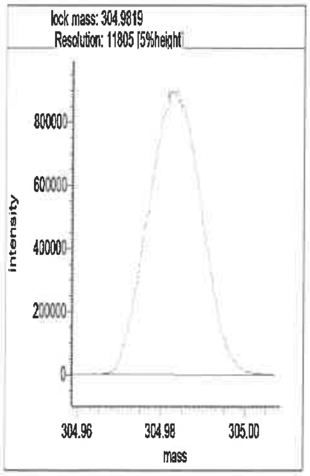

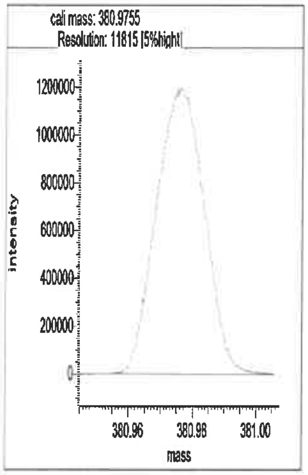

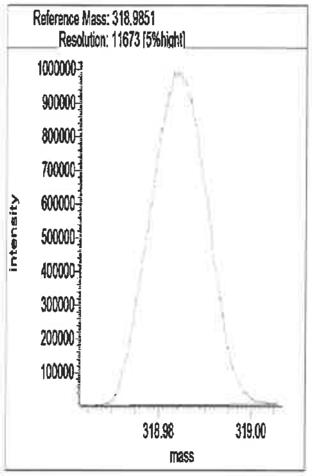

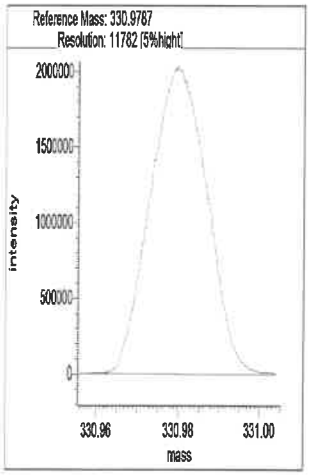

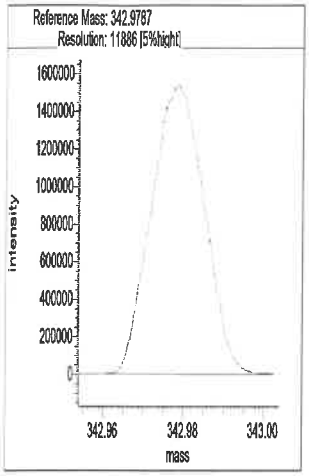

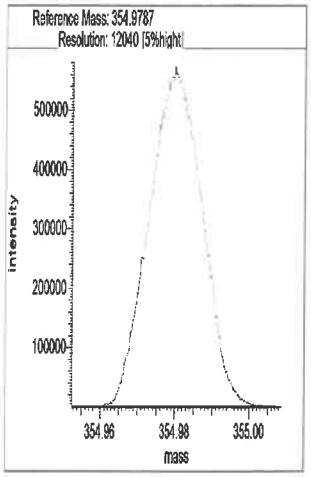

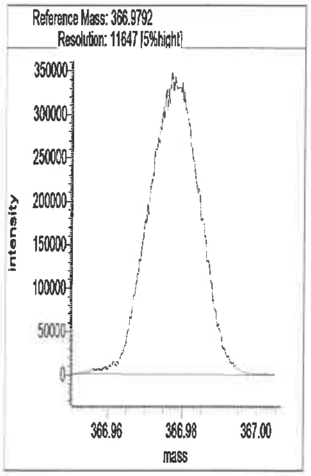

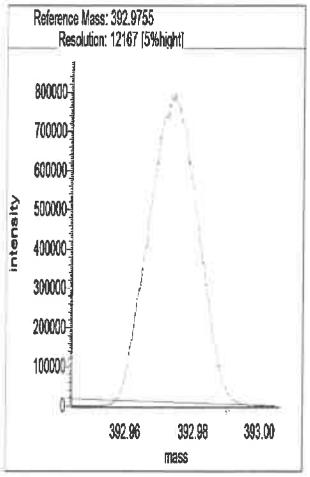

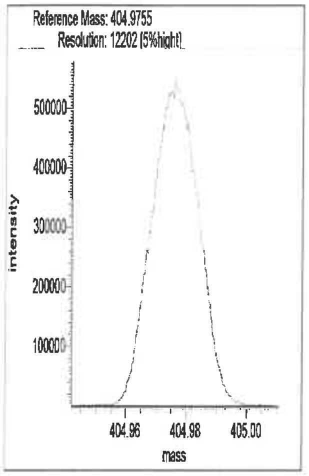

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11789 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11777 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11681 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11925 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11512 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11813 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12017 [5%height]

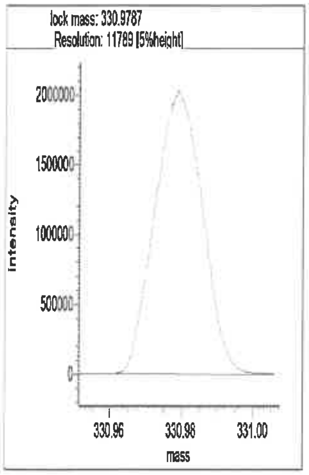

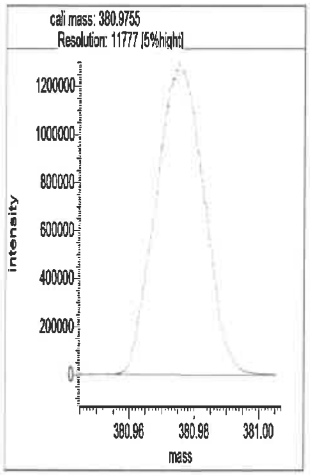

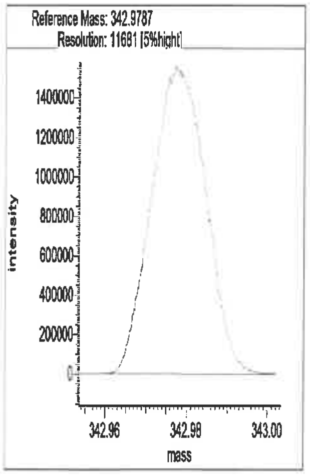

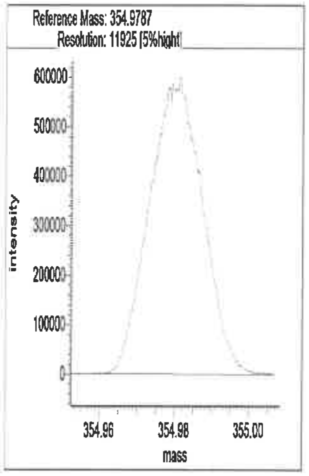

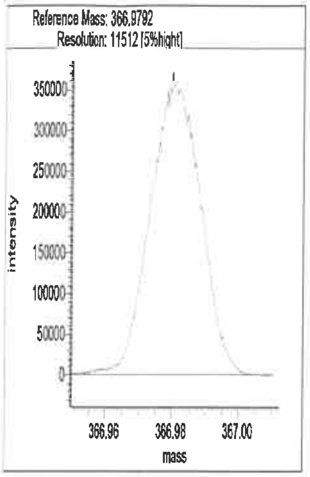

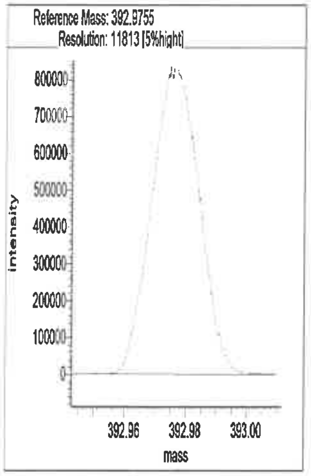

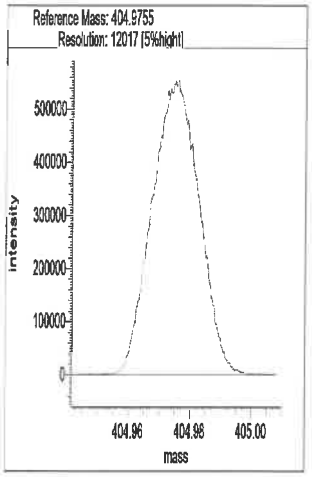

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11575 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12078 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11631 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11747 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11997 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12103 [5%height]

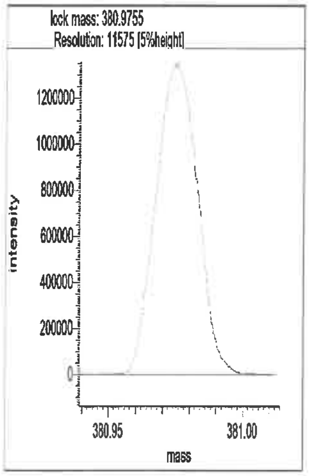

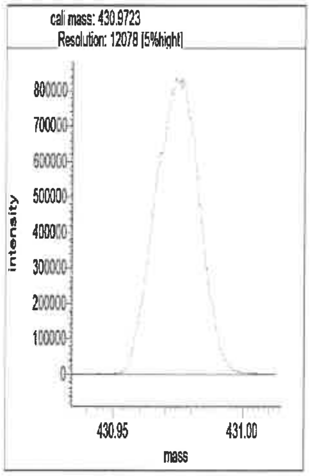

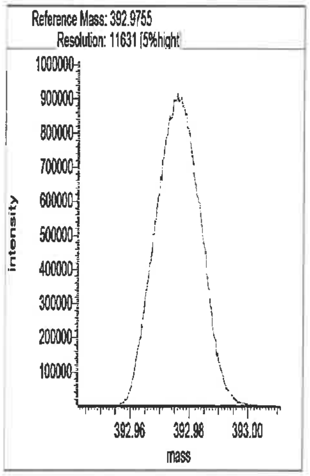

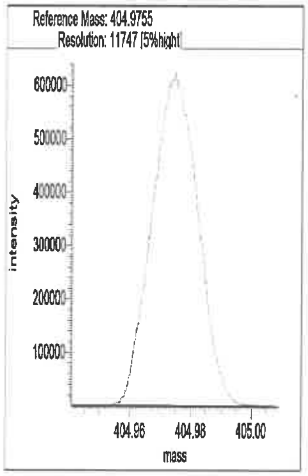

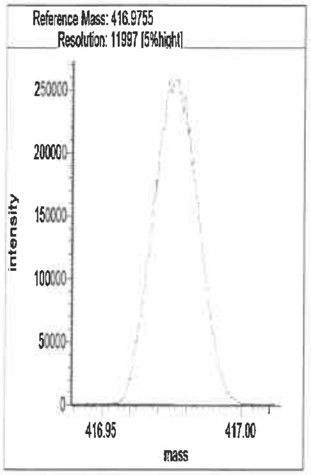

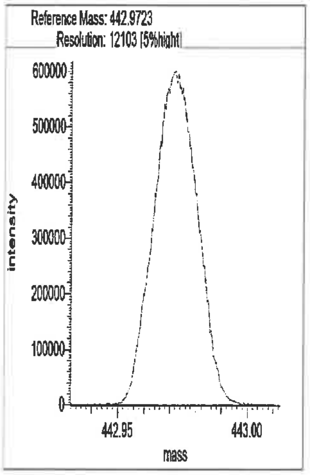

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11720 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12010 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11727 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11780 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11705 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12150 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12041 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12114 [5%height]

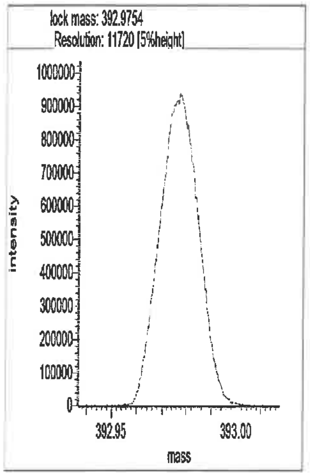

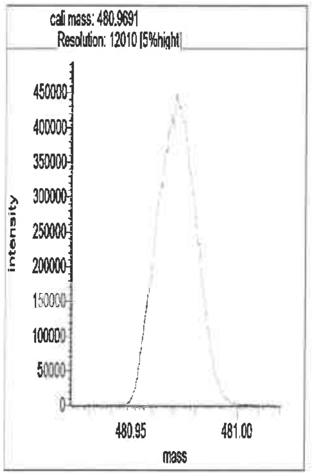

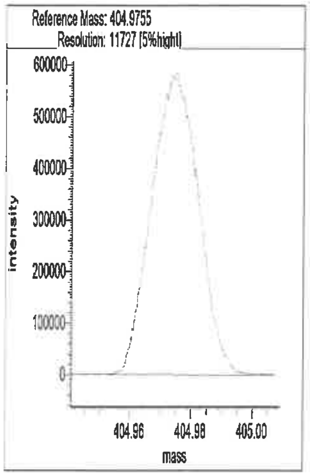

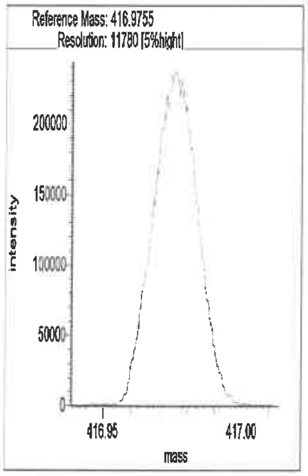

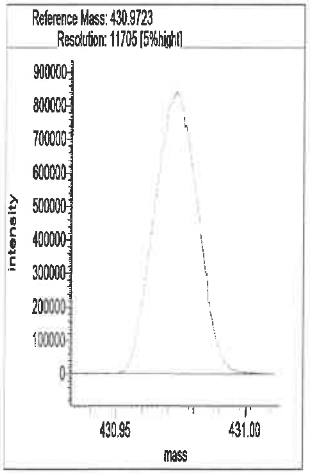

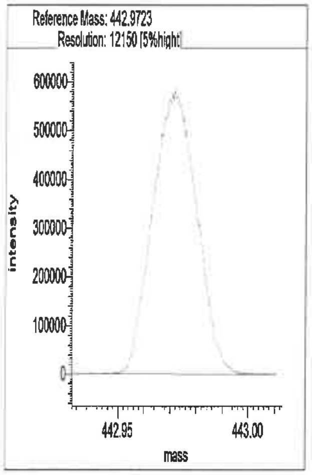

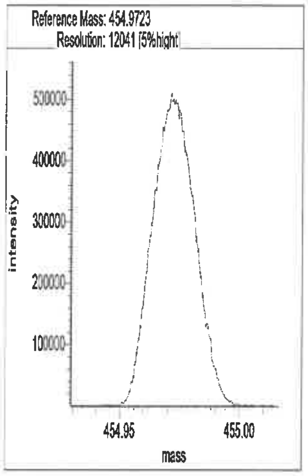

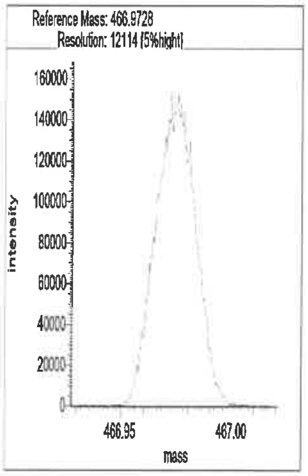

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11707 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12048 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11684 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11750 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11977 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11935 [5%height]

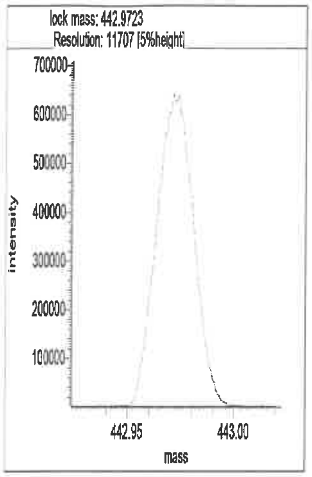
lock mass: 442.9723
Resolution: 11707 [5%height]
700000
600000
500000
400000
300000
200000
100000
intensity
442.95
443.00
mass

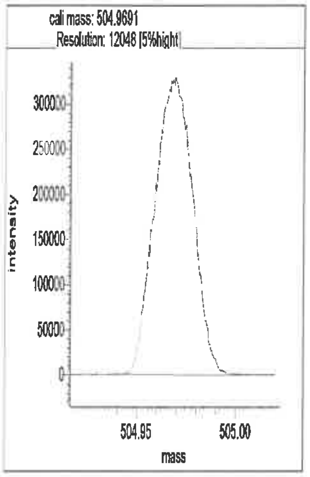
cali mass: 504.9691
Resolution: 12048 [5%hight]
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

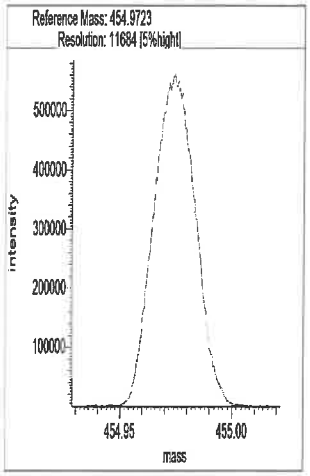
Reference Mass: 454.9723
Resolution: 11684 [5%hight]
500000
400000
300000
200000
100000
intensity
454.95
455.00
mass

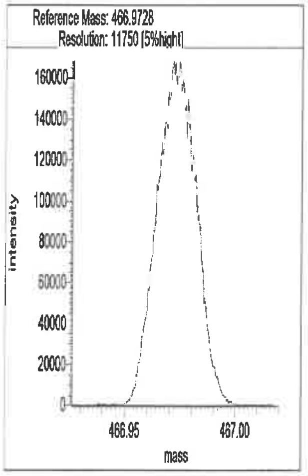
Reference Mass: 466.9728
Resolution: 11750 [5%hight]
160000
140000
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

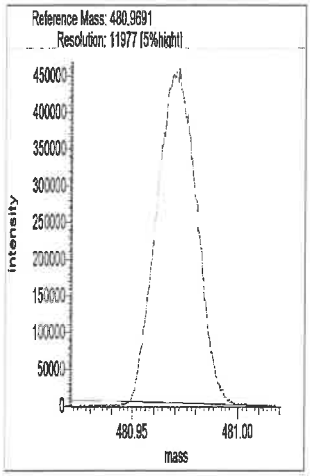
Reference Mass: 480.9691
Resolution: 11977 [5%hight]
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
480.95
481.00
mass

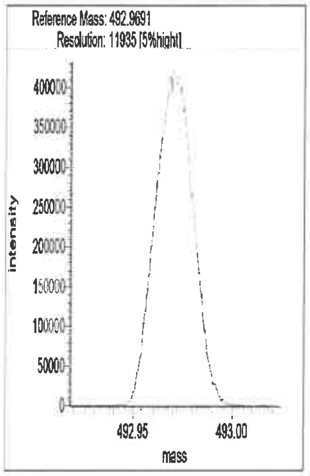
Reference Mass: 492.9691
Resolution: 11935 [5%hight]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
492.95
493.00
mass

Report Date: 21-Sep-2020 11:24:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Sep-2020 04:24:00 ALS Bottle#: 0 Worklist Smp#: 46
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 11:24:52 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: stephensk Date: 21-Sep-2020 08:02:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.135	3252184	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.215	5067355	0.79	1.5883	98.1	98.1	0.2489	0.2489	98.10	
2,3,7,8-TCDF	19.240	534056	0.78	1.0857	9.708	9.708	0.0397	0.0397	97.08	
A Non-2,3,7,8-sub-TCDF	18.819						0.0397	0.0397		
S Total TCDF					9.708	9.708	0.0397	0.0397		
D 13C-2,3,7,8-TCDD	20.496	3575809	0.79	1.1194	98.2	98.2	0.2086	0.2086	98.22	
2,3,7,8-TCDD	20.522	379417	0.79	1.0810	9.816	9.816	0.0505	0.0505	98.16	
$ 37Cl4-2,3,7,8-TCDD	20.522	377930		1.1468	10.1	10.1	0.0115	0.0115	101	
A Non-2,3,7,8-sub-TCDD	19.632						0.0505	0.0505		
S Total TCDD					9.816	9.816	0.0505	0.0505		
D 13C-1,2,3,7,8-PeCDF	26.274	4655319	1.57	1.4782	96.8	96.8	0.3629	0.3629	96.84	
1,2,3,7,8-PeCDF	26.299	2344680	1.57	1.0547	47.8	47.8	0.1714	0.1714	95.51	
D 13C-2,3,4,7,8-PeCDF	27.731	4357586	1.58	1.3912	96.3	96.3	0.3856	0.3856	96.31	
2,3,4,7,8-PeCDF	27.756	2322345	1.55	1.1035	48.3	48.3	0.1897	0.1897	96.59	
A F1 PeCDFs	23.613						0.0186	0.0186		
A Non-2,3,7,8-sub-PeCDF	27.000						0.1798	0.1798		n
S Total PeCDF					96.0	96.0	0.1806	0.1806		
D 13C-1,2,3,7,8-PeCDD	28.505	3060464	1.60	0.9415	100.0	100.0	0.1574	0.1574	99.96	
1,2,3,7,8-PeCDD	28.531	1565146	1.57	1.0680	47.9	47.9	0.0731	0.0731	95.77	
A Non-2,3,7,8-sub-PeCDD	27.373						0.0731	0.0731		
S Total PeCDD					47.9	47.9	0.0731	0.0731		
D 13C-1,2,3,4,7,8-HxCDF	34.150	3704255	0.53	1.1378	92.6	92.6	0.3265	0.3265	92.63	
1,2,3,4,7,8-HxCDF	34.166	2309737	1.26	1.2643	49.3	49.3	0.2304	0.2304	98.64	
D 13C-1,2,3,6,7,8-HxCDF	34.326	4270421	0.53	1.3173	92.2	92.2	0.2820	0.2820	92.23	
1,2,3,6,7,8-HxCDF	34.352	2533124	1.25	1.2230	48.5	48.5	0.2122	0.2122	97.00	
D 13C-2,3,4,6,7,8-HxCDF	35.236	4136612	0.53	1.2457	94.5	94.5	0.2983	0.2983	94.48	
2,3,4,6,7,8-HxCDF	35.253	2465893	1.24	1.2464	47.8	47.8	0.1869	0.1869	95.65	
D 13C-1,2,3,7,8,9-HxCDF	36.196	3901524	0.53	1.1840	93.8	93.8	0.3138	0.3138	93.75	
1,2,3,7,8,9-HxCDF	36.205	2367510	1.26	1.2638	48.0	48.0	0.1750	0.1750	96.03	
A Non-2,3,7,8-sub-HxCDF	34.224						0.1988	0.1988		
S Total HxCDF					193.7	193.7	0.2011	0.2011		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.986	3514900	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.472	2830076	1.31	0.8477	95.0	95.0	0.1958	0.1958	94.98	
1,2,3,4,7,8-HxCDD	35.489	1590603	1.25	1.1561	48.6	48.6	0.1036	0.1036	97.23	
D 13C-1,2,3,6,7,8-HxCDD	35.599	3451986	1.27	0.9979	98.4	98.4	0.1663	0.1663	98.42	
1,2,3,6,7,8-HxCDD	35.615	1701817	1.26	1.0284	47.9	47.9	0.1032	0.1032	95.88	
1,2,3,7,8,9-HxCDD	36.003	1810485	1.25	1.1789	48.9	48.9	0.0955	0.0955	97.79	
A Non-2,3,7,8-sub-HxCDD	34.679						0.1004	0.1004		
S Total HxCDD					145.4	145.4	0.1008	0.1008		
D 13C-1,2,3,4,6,7,8-HpCDF	38.102	3438567	0.45	0.9884	99.0	99.0	0.4187	0.4187	98.98	
1,2,3,4,6,7,8-HpCDF	38.111	2463928	1.04	1.5064	47.6	47.6	0.1782	0.1782	95.14	
D 13C-1,2,3,4,7,8,9-HpCDF	39.399	3182070	0.46	0.9203	98.4	98.4	0.4496	0.4496	98.37	
1,2,3,4,7,8,9-HpCDF	39.408	2246426	1.04	1.4548	48.5	48.5	0.1842	0.1842	97.05	
A Non-2,3,7,8-sub-HpCDF	38.780						0.1811	0.1811		
S Total HpCDF					96.1	96.1	0.1812	0.1812		
D 13C-1,2,3,4,6,7,8-HpCDD	39.088	3381610	1.05	0.9556	100.7	100.7	0.2474	0.2474	101	
1,2,3,4,6,7,8-HpCDD	39.096	1756217	1.04	1.0640	48.8	48.8	0.0976	0.0976	97.62	
A Non-2,3,7,8-sub-HpCDD	38.875						0.0976	0.0976		
S Total HpCDD					48.8	48.8	0.0976	0.0976		
D 13C-OCDD	41.541	5719371	0.89	0.7420	219.3	219.3	0.2857	0.2857	110	
OCDF	41.634	3897868	0.91	1.4296	95.3	95.3	0.0994	0.0994	95.34	
OCDD	41.550	3085352	0.89	1.1293	95.5	95.5	0.0997	0.0997	95.54	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	20-Sep-2020 04:24:00	ALS Bottle#:	0	Worklist Smp#:	46
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00095				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	21-Sep-2020 11:24:52	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1009				
First Level Reviewer: stephensk		Date:	21-Sep-2020 08:02:39		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.135	20.135	0		1451432	220028	310	775	710		
333.9338	20.135	20.135	0		1800752	272508	150	375	1817	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.215	19.215	0	0.954	2242422	345645	460	1150	751		
317.9389	19.215	19.215	0	0.954	2824933	431567	319	797	1353	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.240	19.240	0	1.001	233262	36656	56	140	655		
305.8987	19.232	19.240	-1	1.001	300794	45452	78	195	583	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.819						56	140			
305.8987	18.819						78	195			
13C-2,3,7,8-TCDD											
331.9368	20.496	20.496	0	1.018	1575191	219131	310	775	707		
333.9338	20.496	20.496	0	1.018	2000618	279284	150	375	1862	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.522	20.522	0	1.001	166996	23840	82	205	291		
321.8936	20.522	20.522	0	1.001	212421	29722	27	67	1101	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.522	20.522	0	1.019	377930	53264	26	65	2049		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.632						82	205			
321.8936	19.632						27	67			
13C-1,2,3,7,8-PeCDF											
351.9000	26.274	26.274	0	1.305	2844391	493460	660	1650	748		
353.8970	26.274	26.274	0	1.305	1810928	309670	397	992	780	1.57(1.32-1.78)	

Report Date: 21-Sep-2020 11:24:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.299	26.299	0	1.001	1431288	245663	324	810	758		
341.8567	26.291	26.299	-1	1.001	913392	154321	257	642	600	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.731	27.731	0	1.377	2666022	423453	660	1650	642		
353.8970	27.731	27.731	0	1.377	1691564	270171	397	992	681	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.756	27.756	0	1.001	1412199	218264	324	810	674		
341.8567	27.756	27.756	0	1.001	910146	141144	257	642	549	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.613						23	57			
341.8567	23.613						37	92			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.872	27.000	-8	1.023	13378	1908	324	810	6		
341.8567	26.880	27.000	-7	1.023	7832	1066	257	642	4	1.71(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.505	28.505	0	1.416	1883536	288578	172	430	1678		
369.8919	28.505	28.505	0	1.416	1176928	178814	120	300	1490	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.531	28.531	0	1.001	957230	140599	110	275	1278		
357.8516	28.531	28.531	0	1.001	607916	89599	36	90	2489	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.373						110	275			
357.8516	27.373						36	90			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.150	34.150	0	0.949	1281310	265239	433	1082	613		
385.8610	34.150	34.150	0	0.949	2422945	499261	885	2212	564	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.166	34.166	0	1.000	1287362	263125	495	1237	532		
375.8178	34.166	34.166	0	1.000	1022375	207871	396	990	525	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.326	34.326	0	0.954	1484174	295175	433	1082	682		
385.8610	34.326	34.326	0	0.954	2786247	563054	885	2212	636	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.352	34.352	0	1.001	1407159	277194	495	1237	560		
375.8178	34.343	34.352	-1	1.000	1125965	223512	396	990	564	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.236	35.236	0	0.979	1427443	325214	433	1082	751		
385.8610	35.236	35.236	0	0.979	2709169	630786	885	2212	713	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.253	35.253	0	1.000	1366491	314017	495	1237	634		
375.8178	35.253	35.253	0	1.000	1099402	254224	396	990	642	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.196	36.196	0	1.006	1349404	347308	433	1082	802		
385.8610	36.196	36.196	0	1.006	2552120	659630	885	2212	745	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.205	36.205	0	1.000	1317623	334895	495	1237	677		
375.8178	36.205	36.205	0	1.000	1049887	267068	396	990	674	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.224						495	1237			
375.8178	34.224						396	990			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.986	35.986	0		1969970	495179	334	835	1483		
403.8529	35.986	35.986	0		1544930	391702	255	637	1536	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.472	35.472	0	0.986	1605501	411285	334	835	1231		
403.8529	35.472	35.472	0	0.986	1224575	319049	255	637	1251	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.489	35.489	0	1.000	882943	226963	189	472	1201		
391.8127	35.489	35.489	0	1.000	707660	180411	161	402	1121	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.599	35.599	0	0.989	1931320	462286	334	835	1384		
403.8529	35.599	35.599	0	0.989	1520666	362268	255	637	1421	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.615	35.615	0	1.000	947319	227408	189	472	1203		
391.8127	35.615	35.615	0	1.000	754498	183702	161	402	1141	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.003	36.003	0	1.015	1007209	257421	189	472	1362		
391.8127	36.003	36.003	0	1.015	803276	206158	161	402	1280	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.679						189	472			
391.8127	34.679						161	402			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.102	38.102	0	1.059	1070597	342201	497	1242	689		
419.8220	38.102	38.102	0	1.059	2367970	761371	971	2427	784	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.111	38.111	0	1.000	1255394	402161	630	1575	638		
409.7788	38.111	38.111	0	1.000	1208534	385868	555	1387	695	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.399	39.399	0	1.095	1003378	347776	497	1242	700		
419.8220	39.399	39.399	0	1.095	2178692	757587	971	2427	780	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.408	39.408	0	1.000	1143037	394745	630	1575	627		
409.7788	39.408	39.408	0	1.000	1103389	385496	555	1387	695	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.780						630	1575			
409.7788	38.780						555	1387			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.088	39.088	0	1.086	1733371	600444	448	1120	1340		
437.8140	39.088	39.088	0	1.086	1648239	569490	391	977	1456	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.096	39.096	0	1.000	895694	303624	261	652	1163		
425.7737	39.096	39.096	0	1.000	860523	295998	225	562	1316	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.875						261	652			
425.7737	38.875						225	562			
13C-OCDD											
469.7780	41.541	41.541	0	1.154	2696362	897923	364	910	2467		
471.7750	41.541	41.541	0	1.154	3023009	1005695	388	970	2592	0.89(0.76-1.02)	
OCDF											
441.7428	41.634	41.634	0	1.002	1856643	614908	239	597	2573		
443.7399	41.634	41.634	0	1.002	2041225	676260	302	755	2239	0.91(0.76-1.02)	
OCDD											
457.7377	41.550	41.550	0	1.000	1454480	484888	214	535	2266		
459.7348	41.550	41.550	0	1.000	1630872	546028	215	537	2540	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 11:24:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d		
Injection Date:	20-Sep-2020 04:24:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	46
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

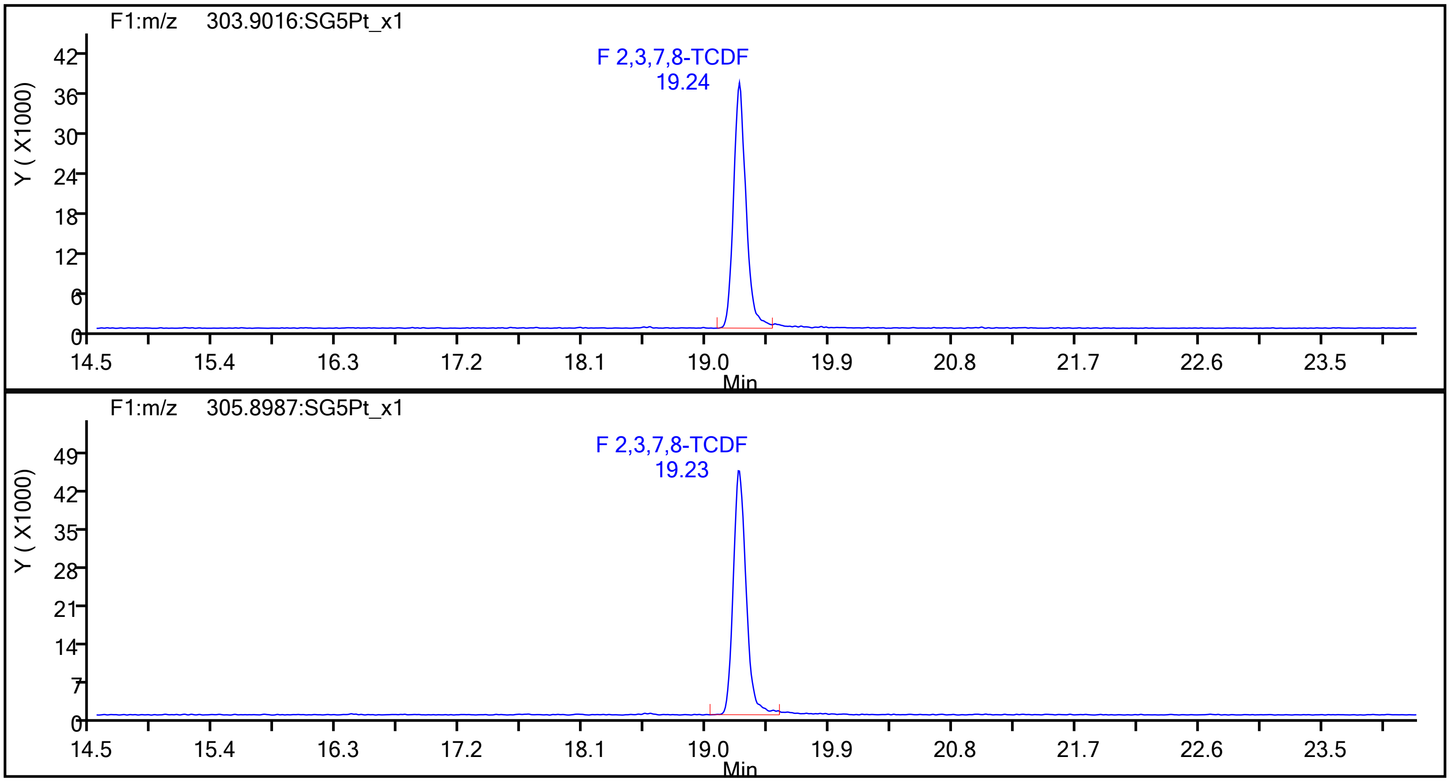

TCDF Standards

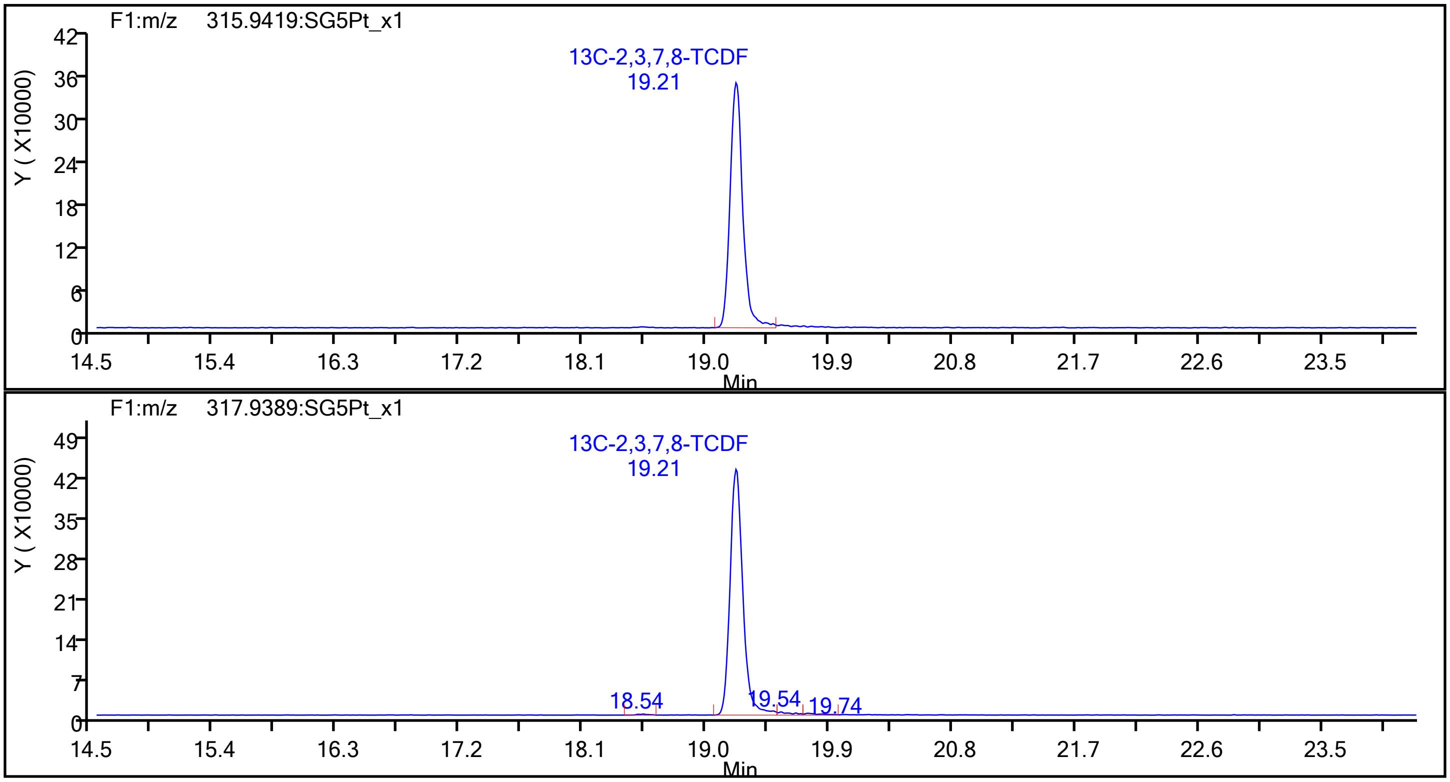

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d
Injection Date: 20-Sep-2020 04:24:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413813
Sample Line#: 46
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

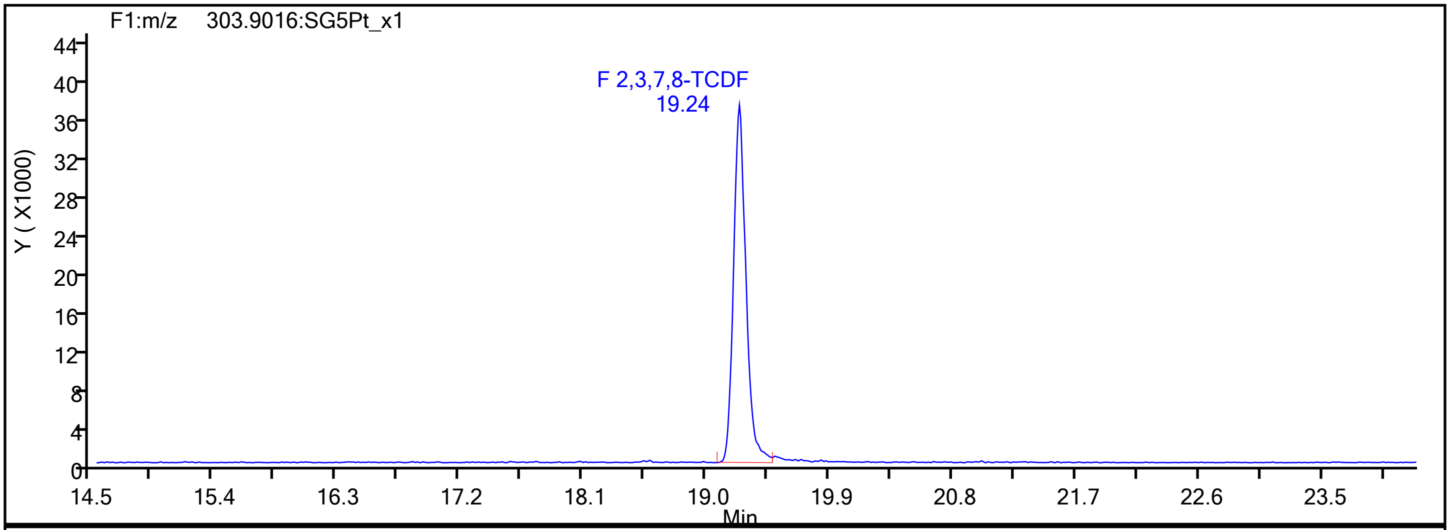

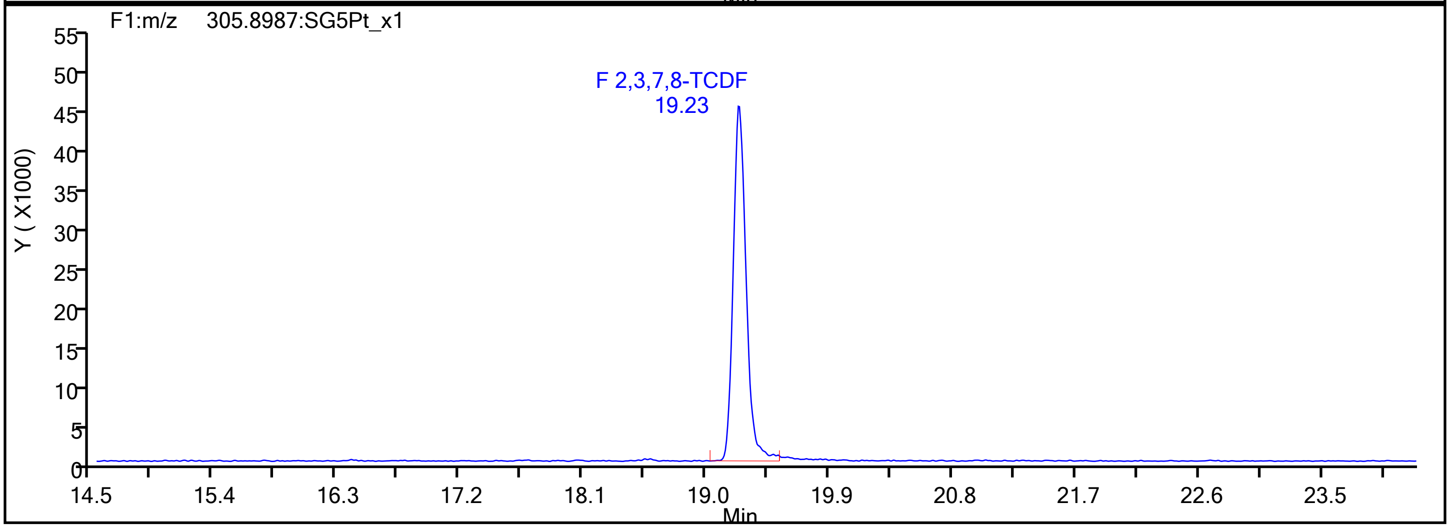

TCDF Interference Mass

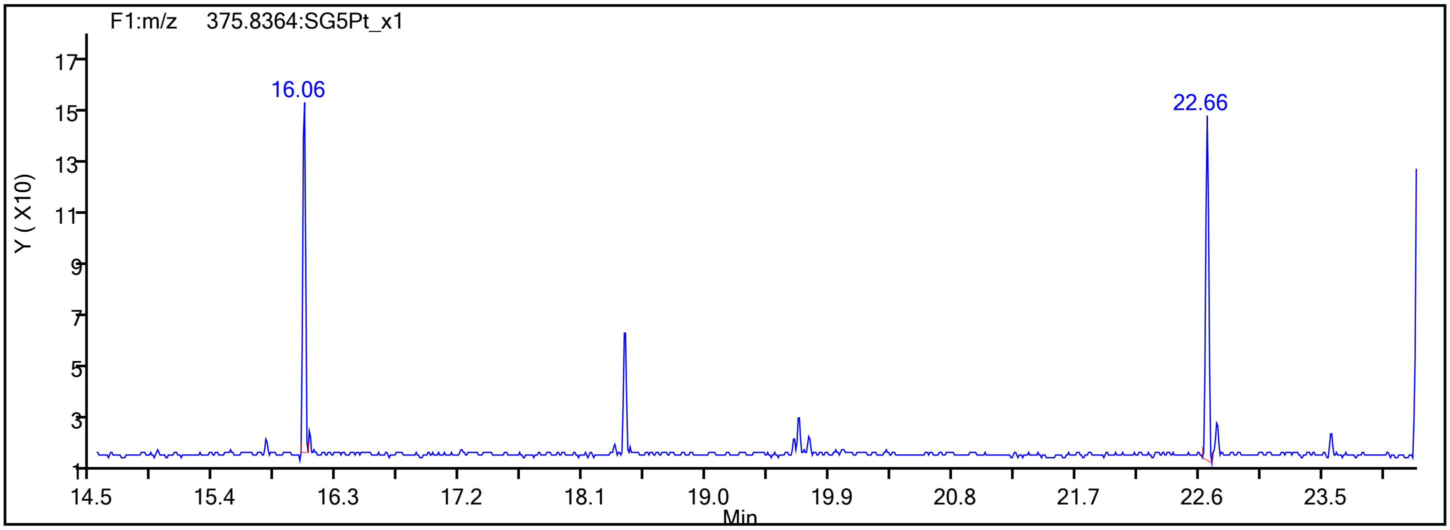

Report Date: 21-Sep-2020 11:24:59 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d		
Injection Date:	20-Sep-2020 04:24:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	46
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

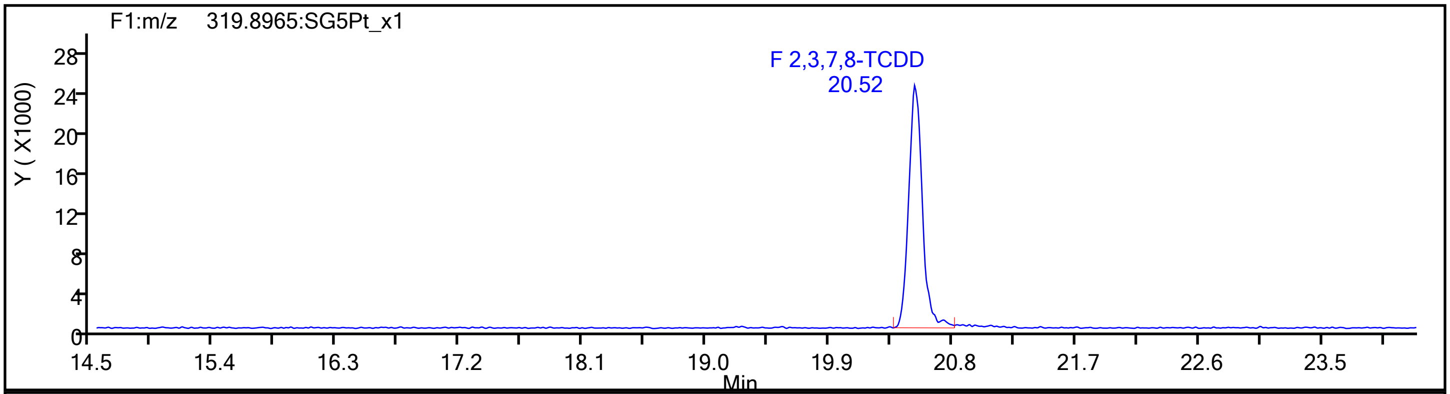

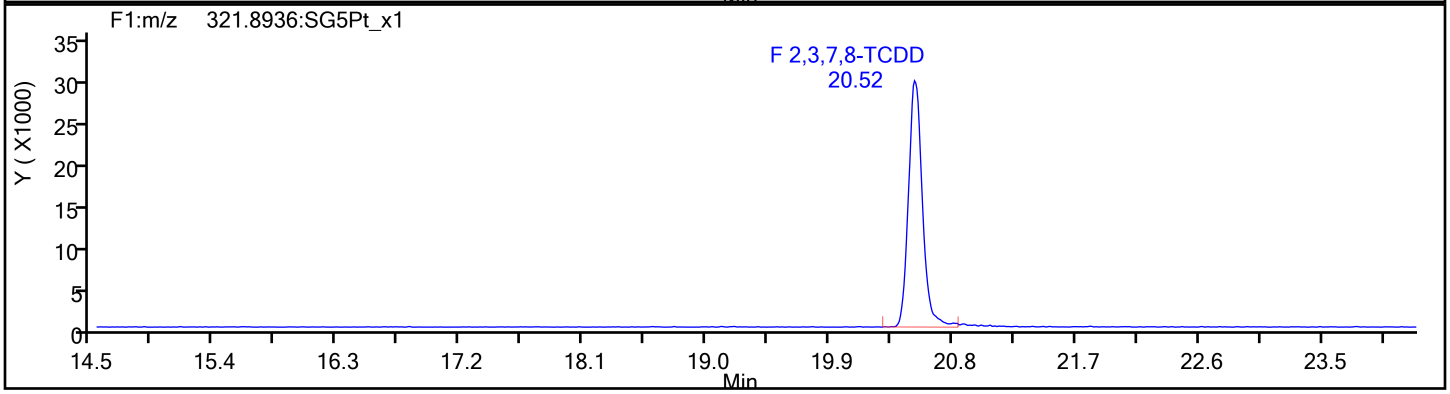

TCDD Standards

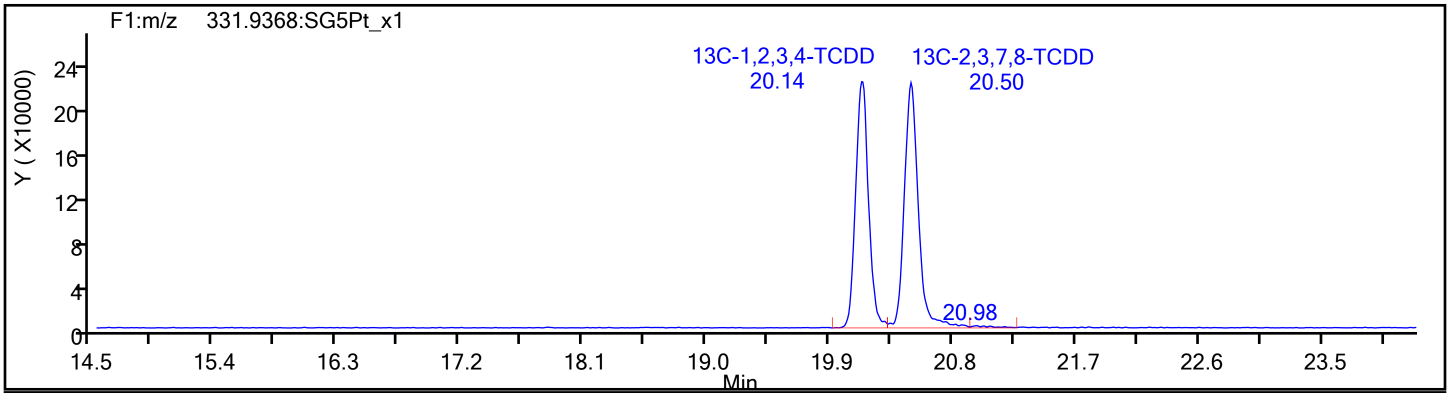

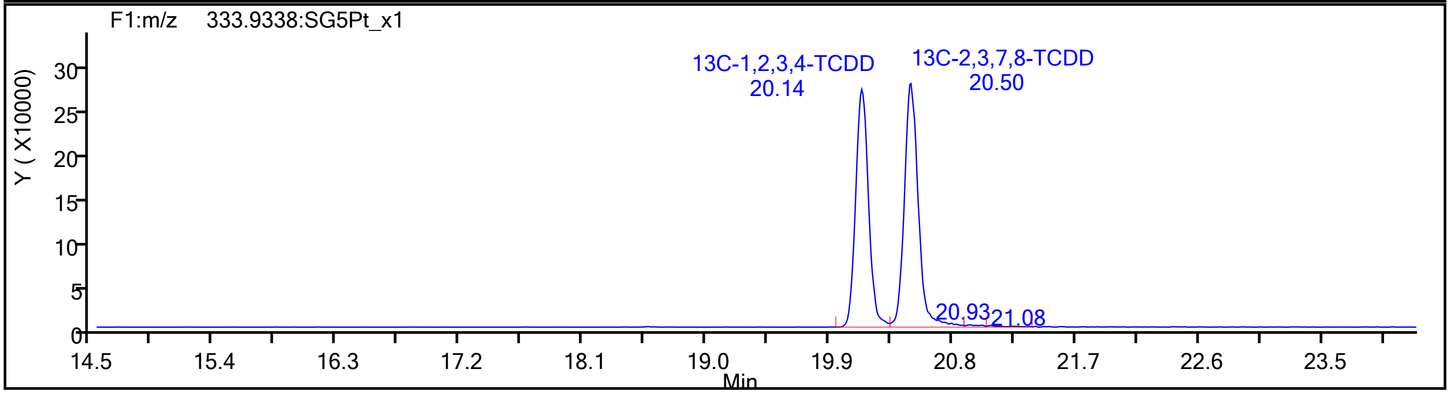

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d		
Injection Date:	20-Sep-2020 04:24:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	46
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

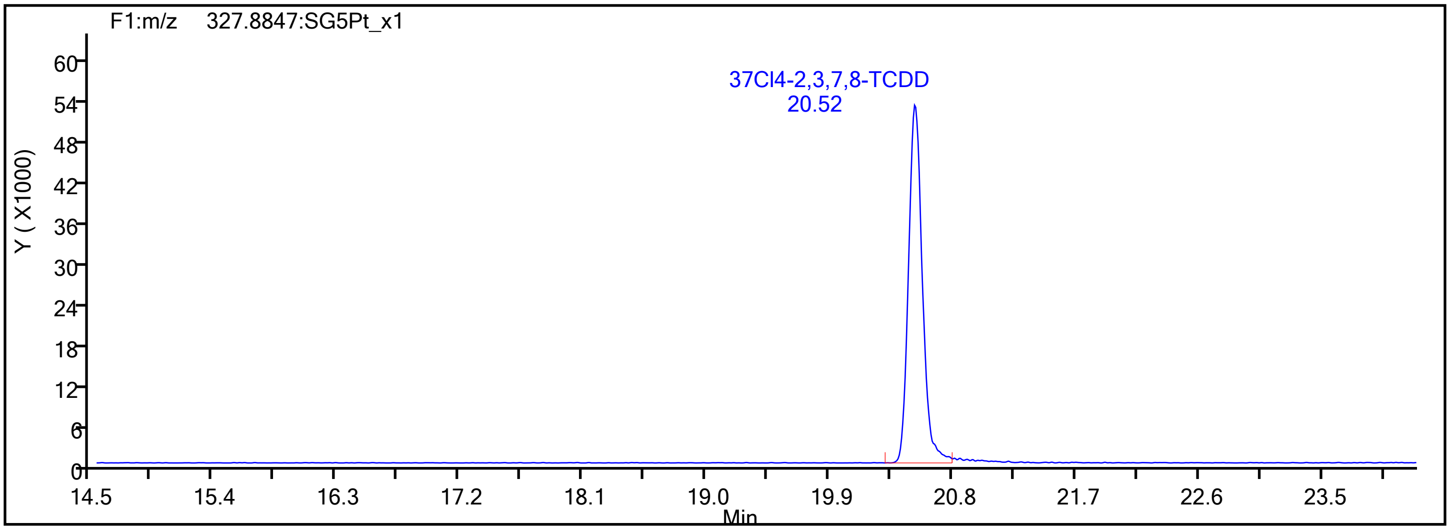

37Cl4-TCDD Standards

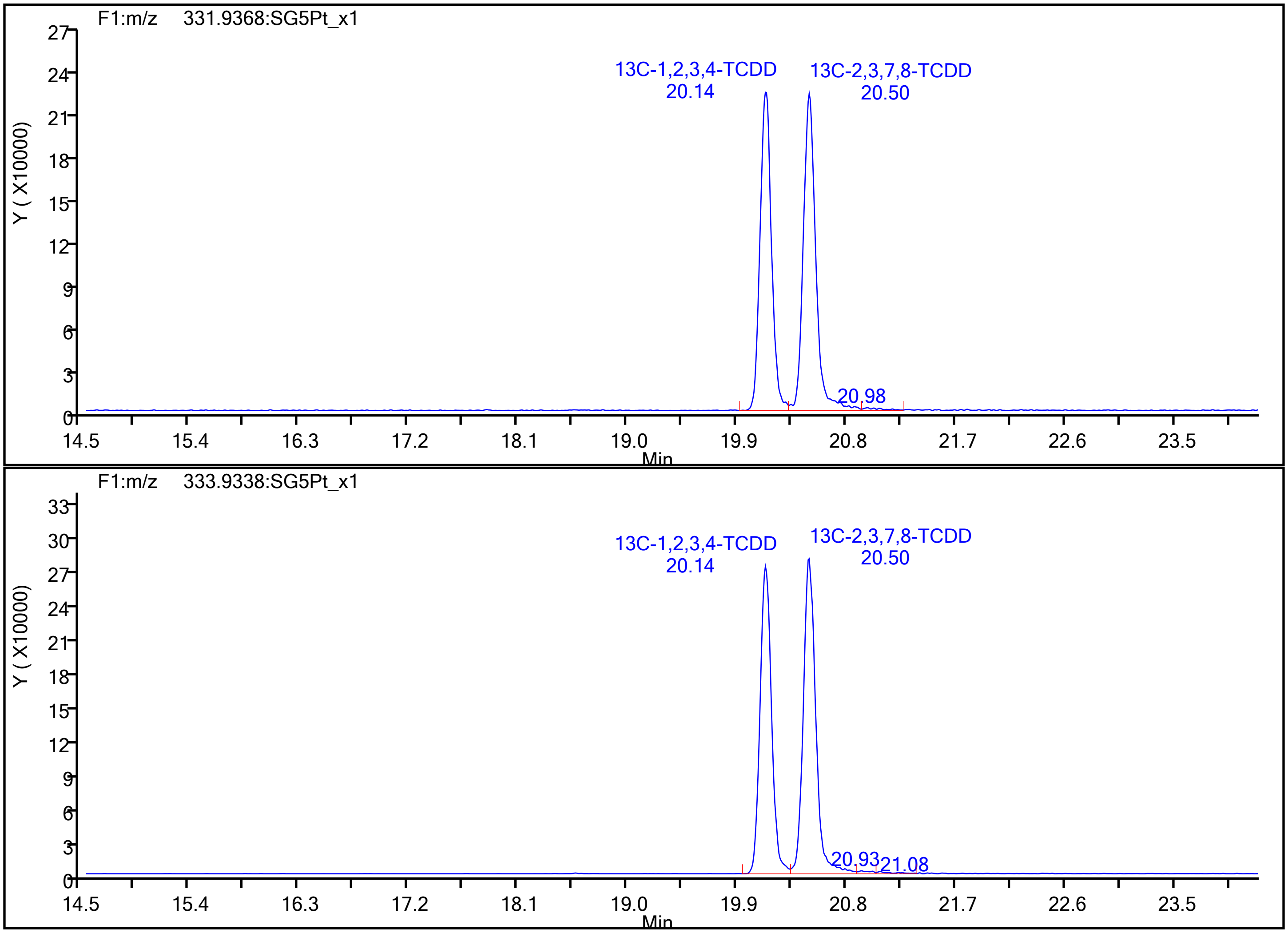

Report Date: 21-Sep-2020 11:24:59 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 04:24:00 Injection Vol: 1.0 ul

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Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413813 Sample Line#: 46

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

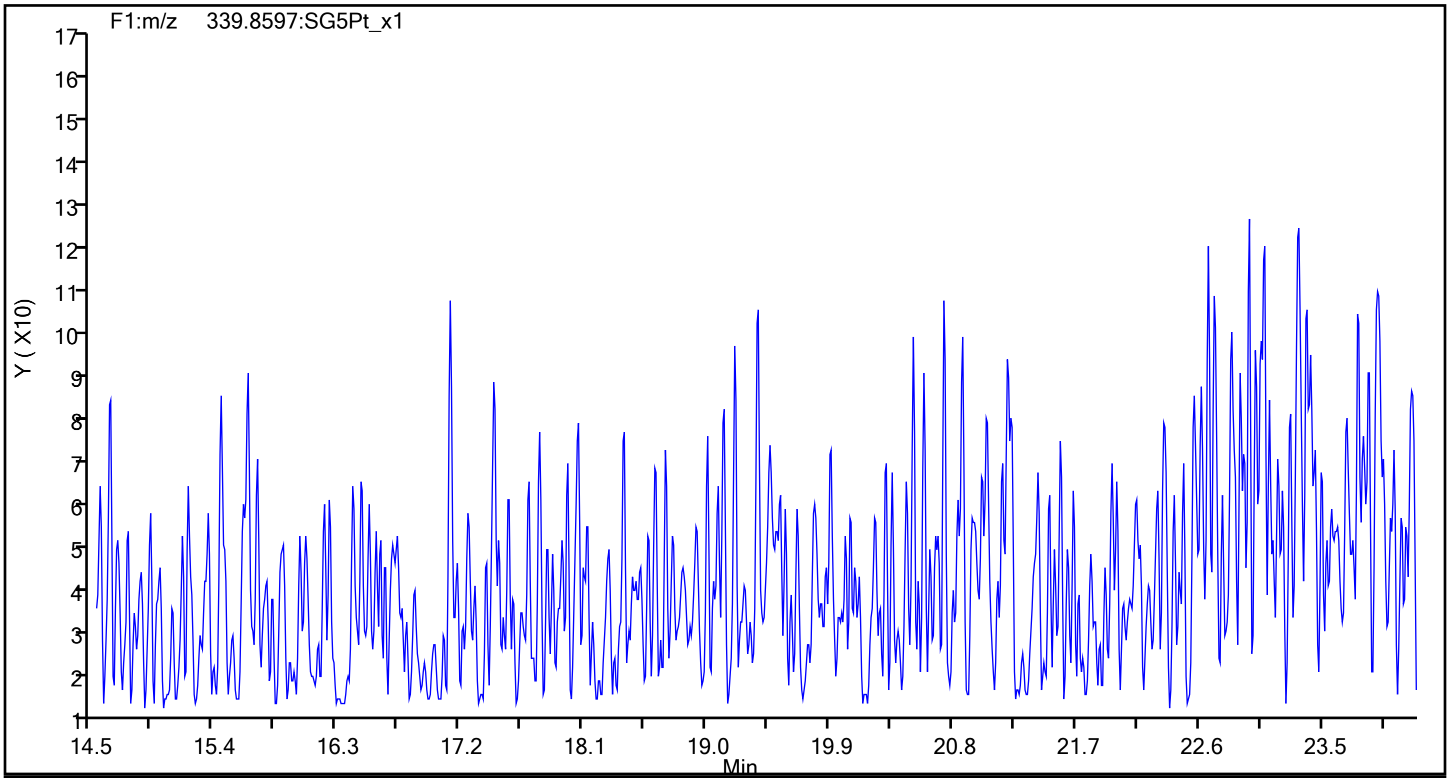

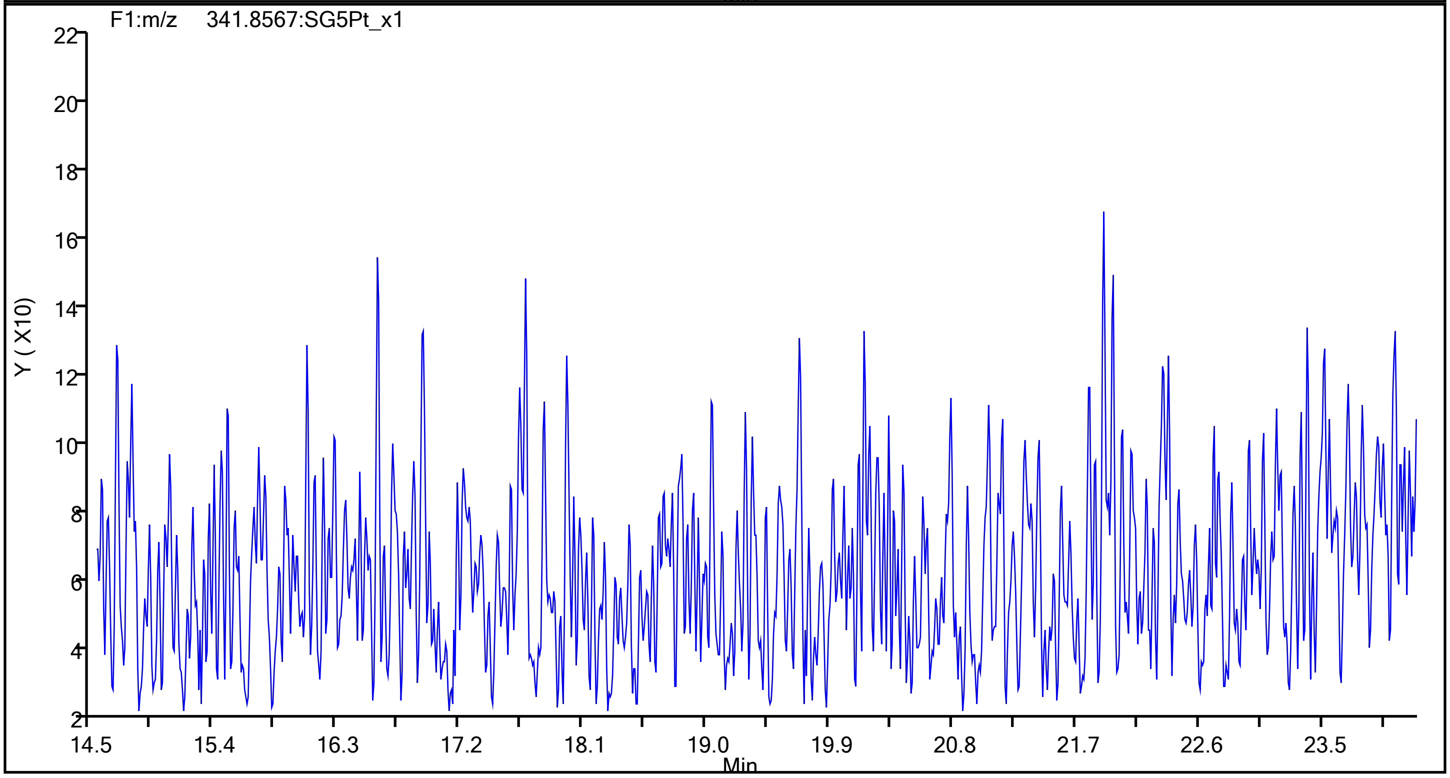

Eurofins TestAmerica, Sacramento

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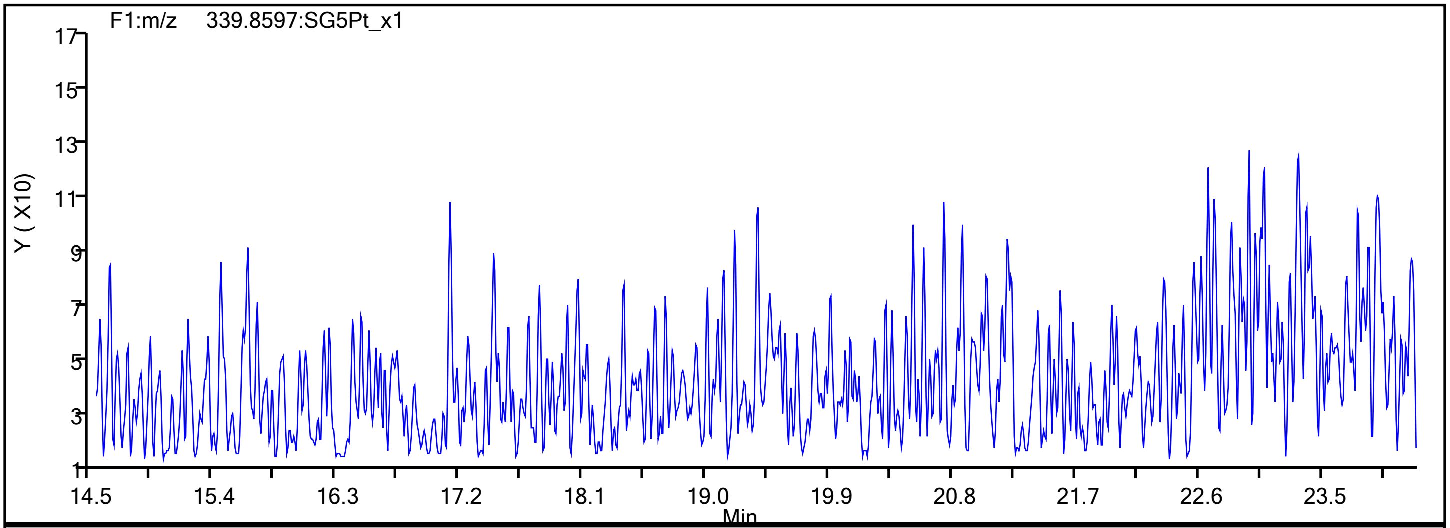

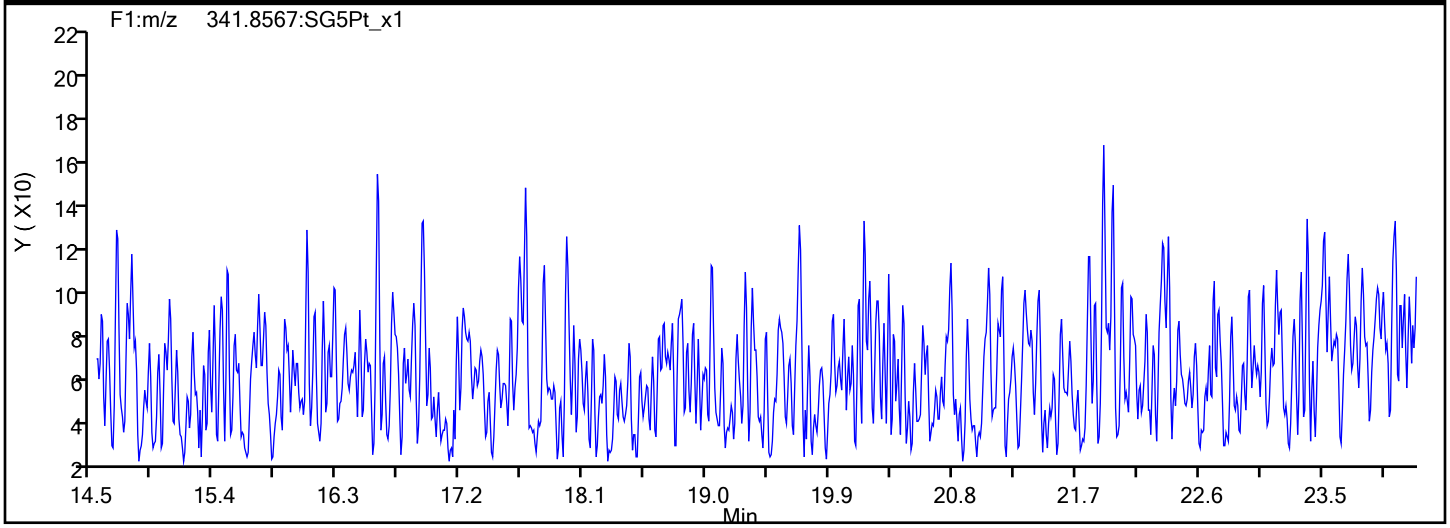

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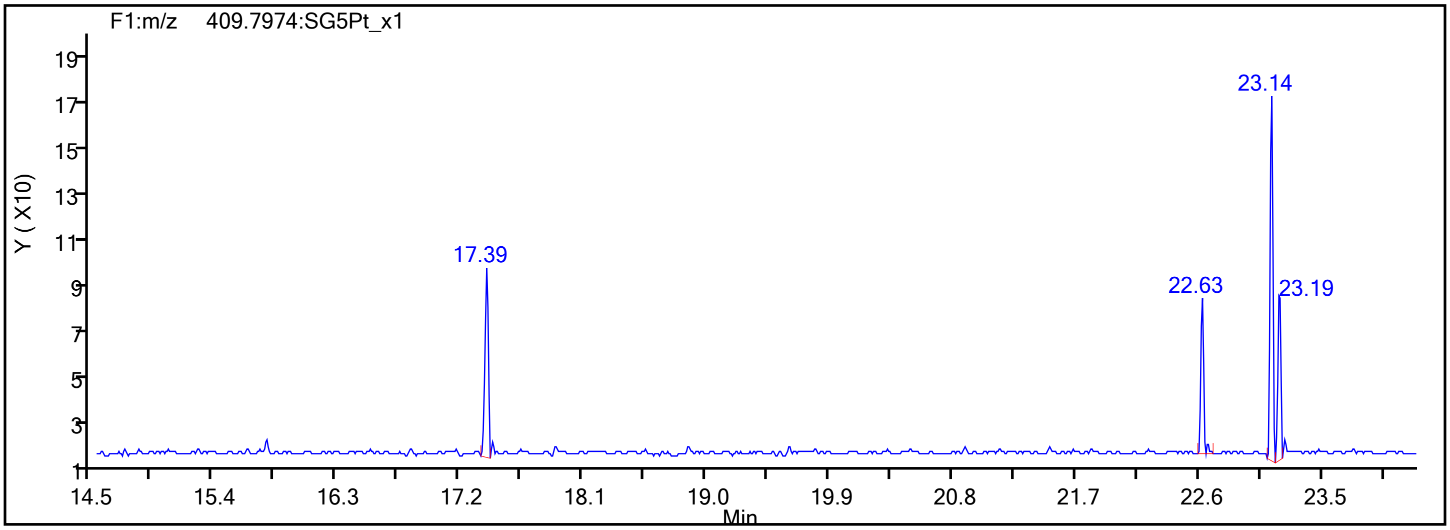

Report Date: 21-Sep-2020 11:24:59 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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PeCDF

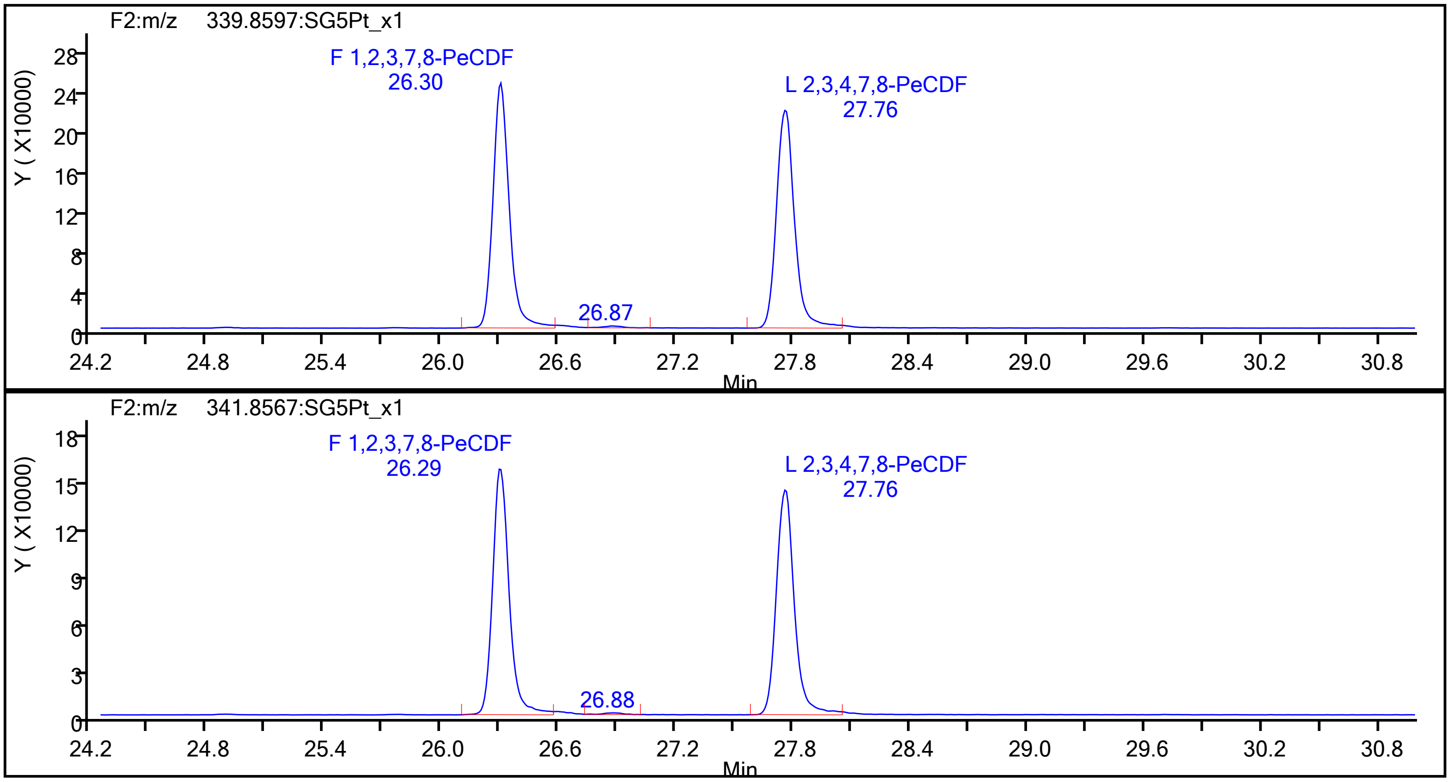

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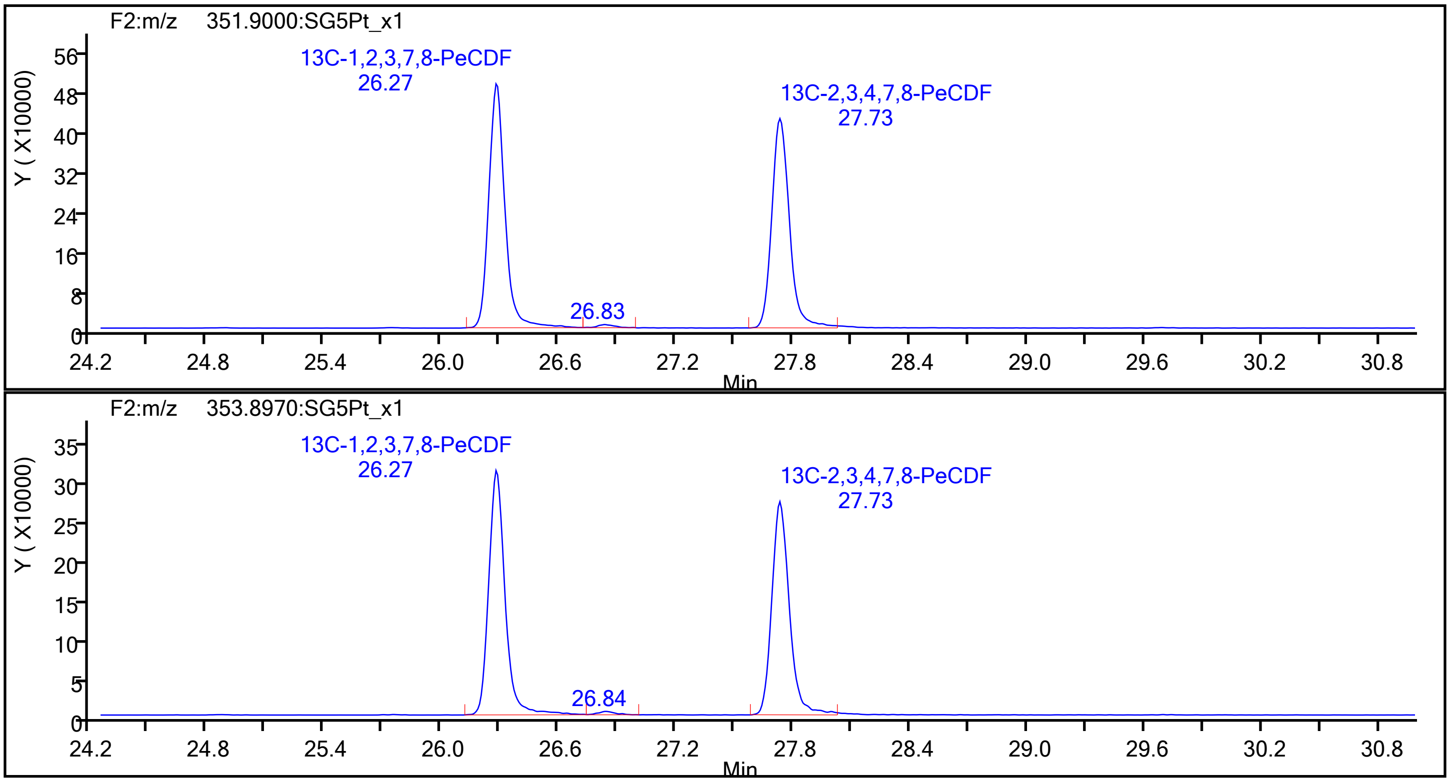

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Eurofins TestAmerica, Sacramento

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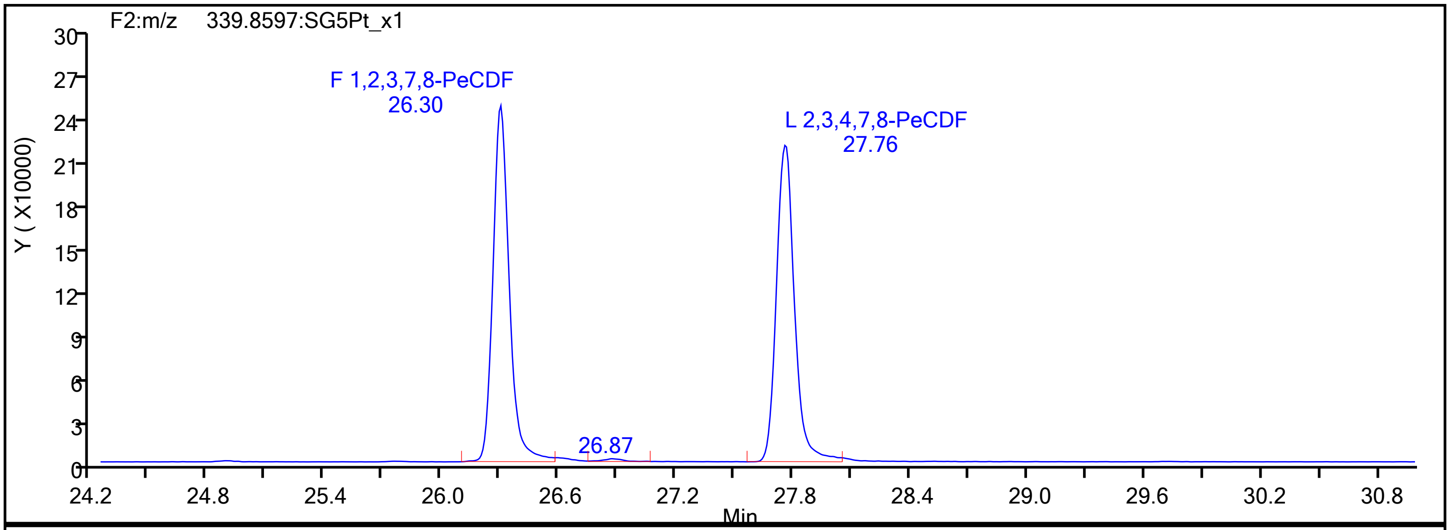

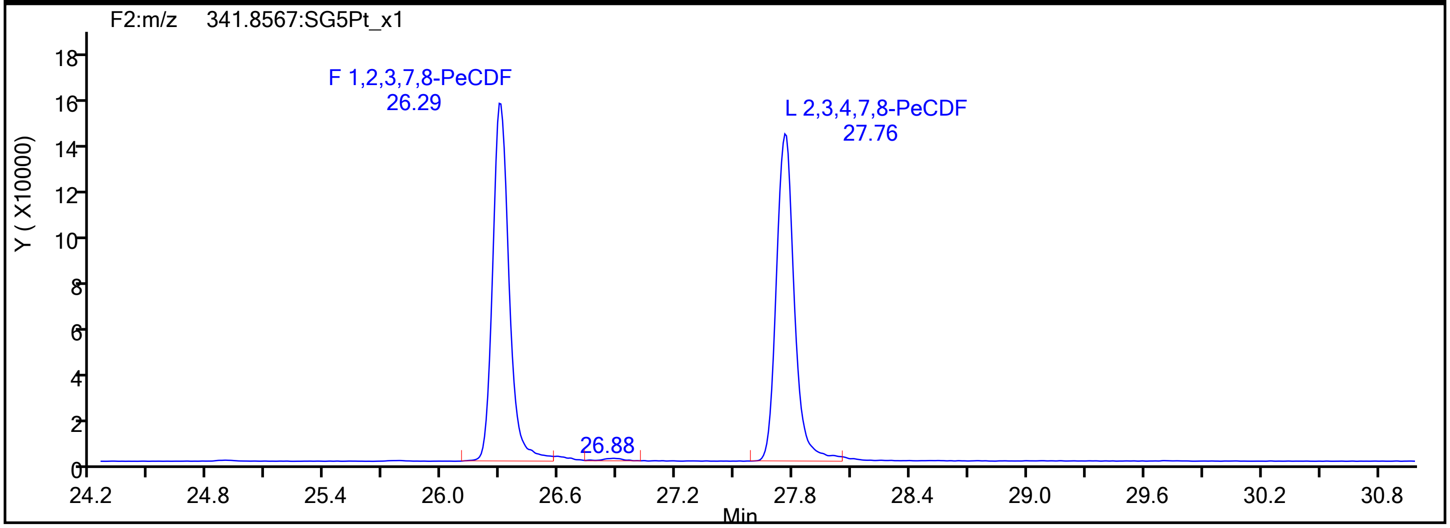

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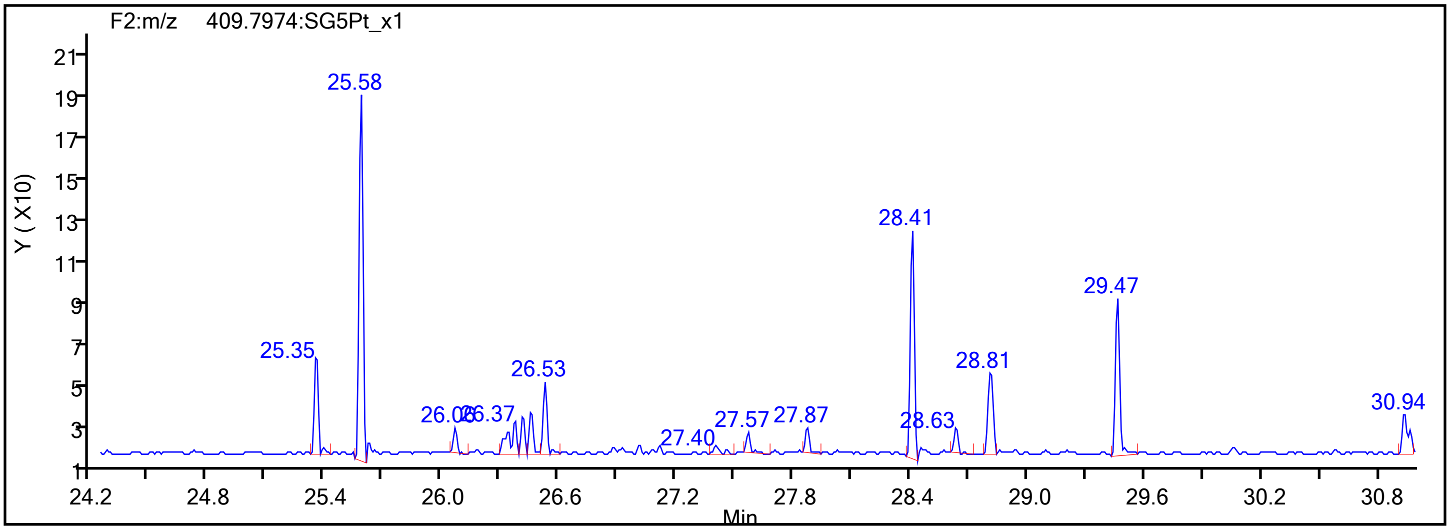

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Eurofins TestAmerica, Sacramento

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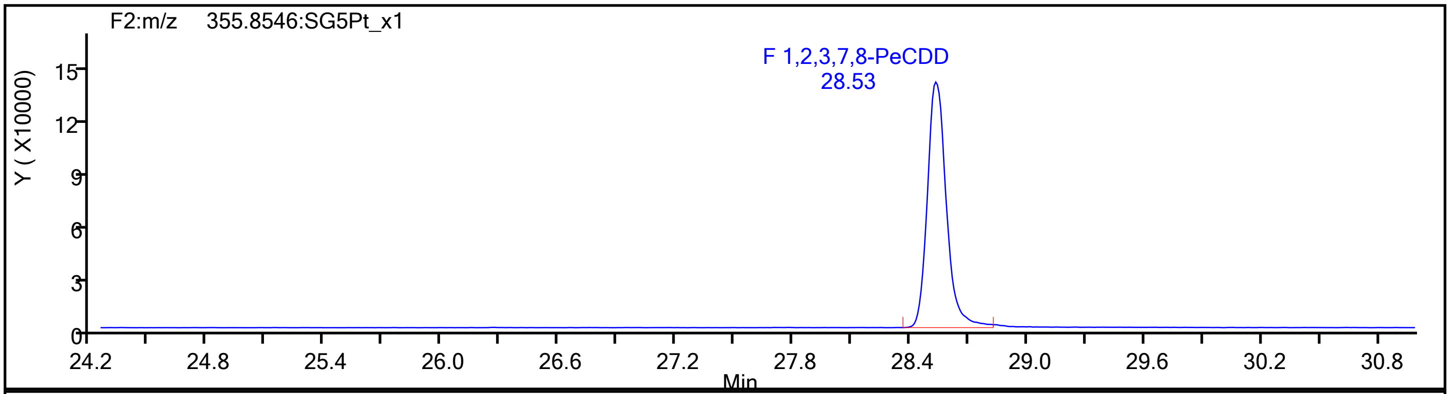

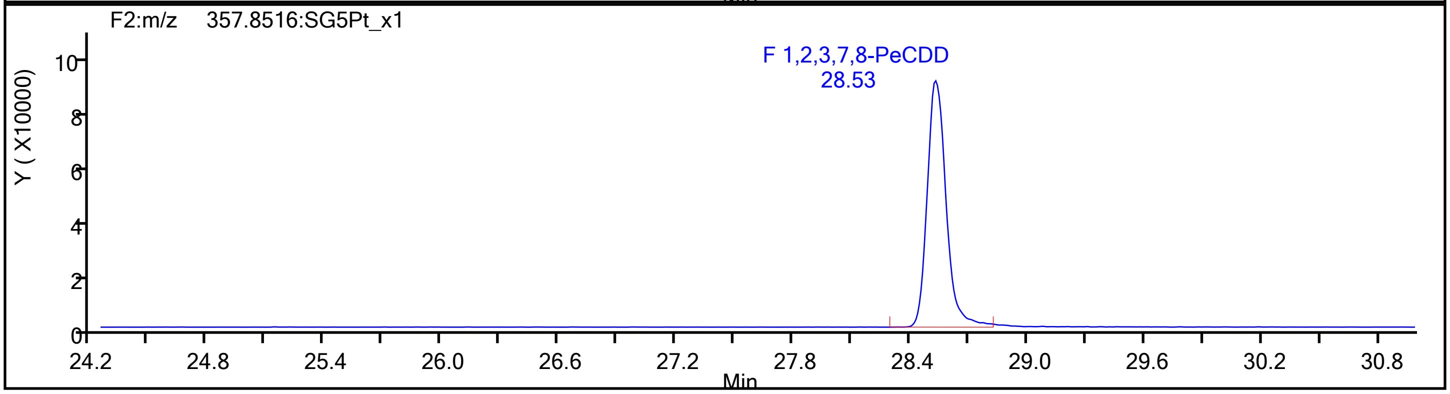

PeCDD Standards

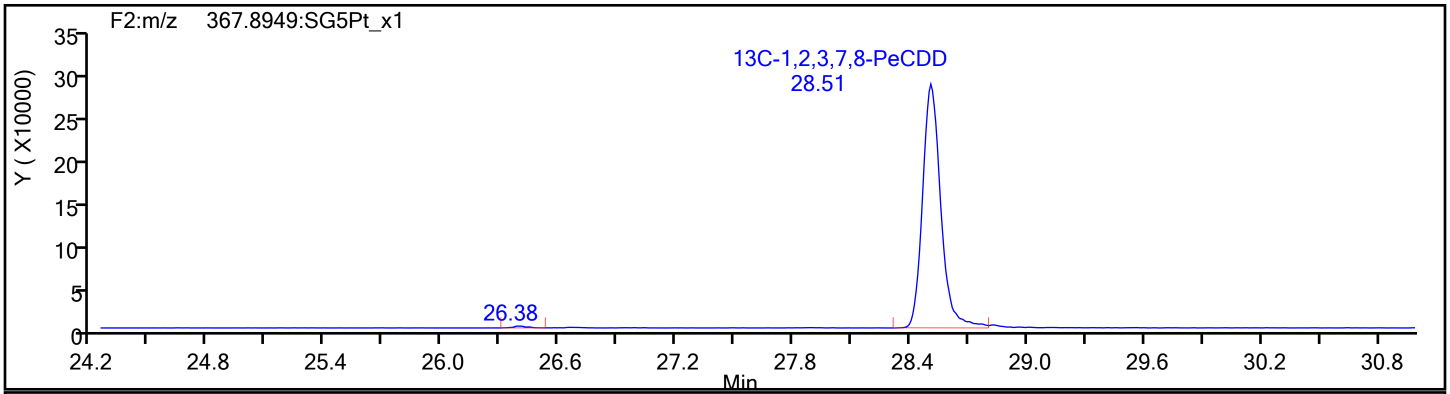

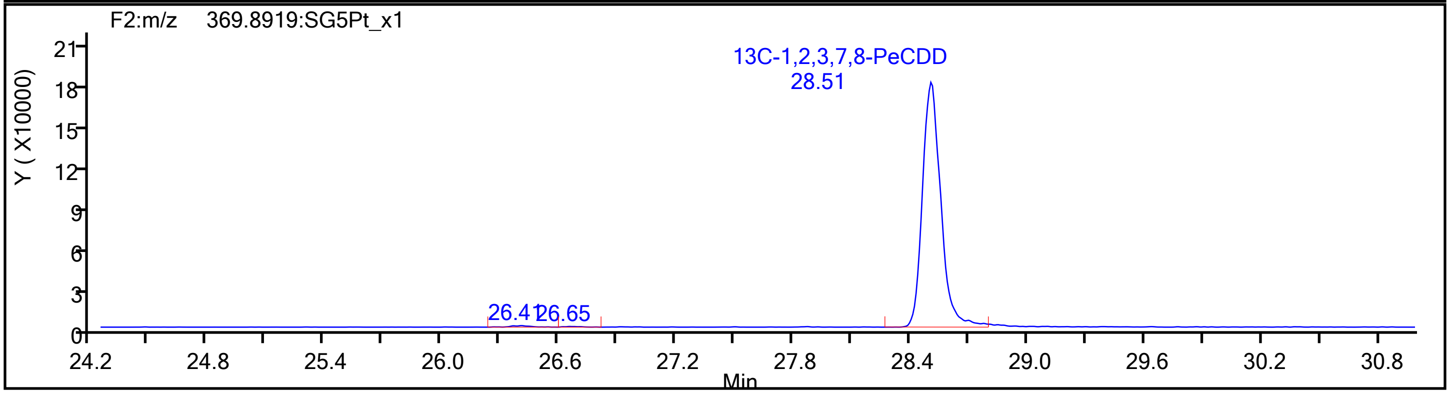

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Eurofins TestAmerica, Sacramento

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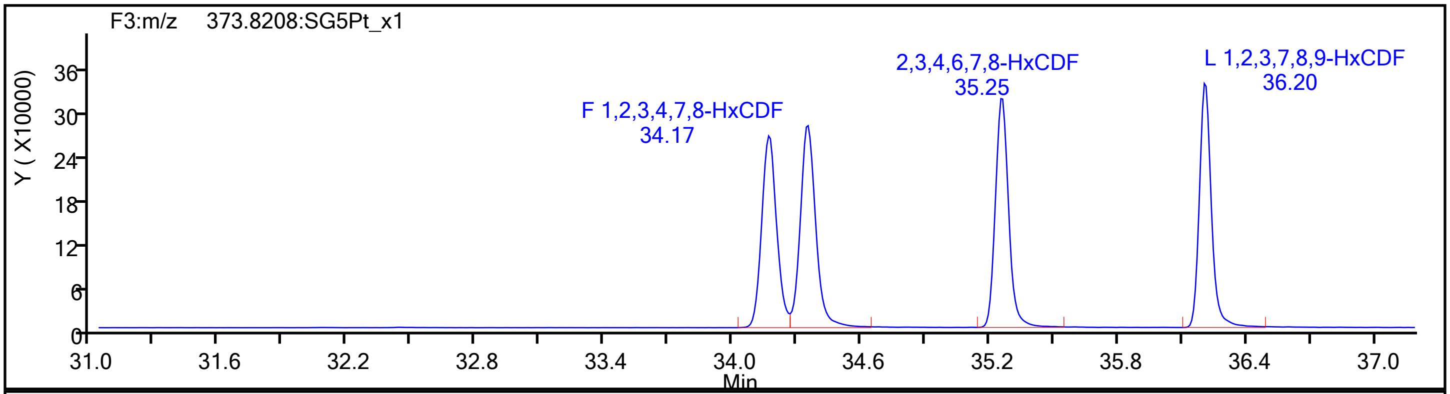

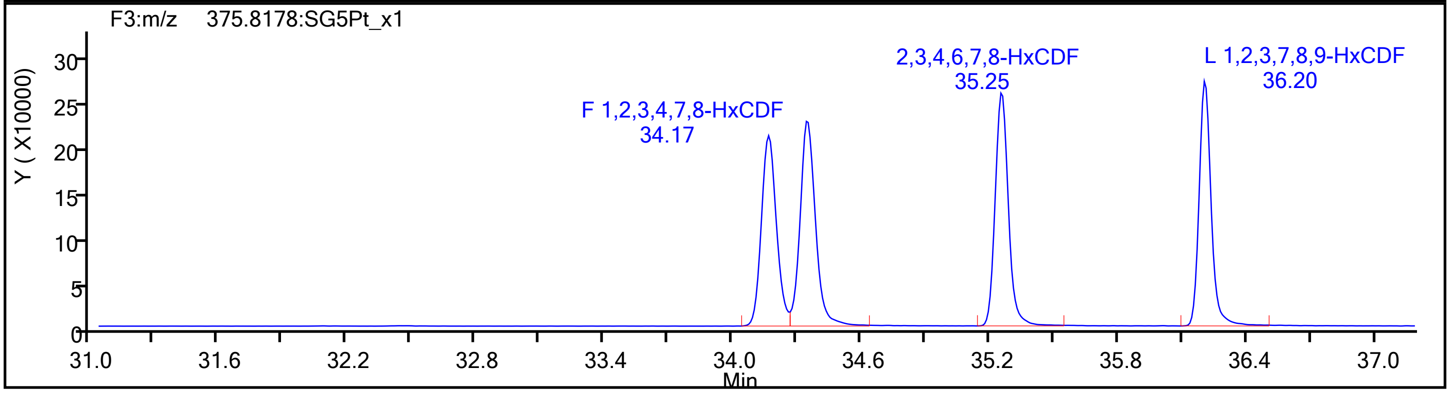

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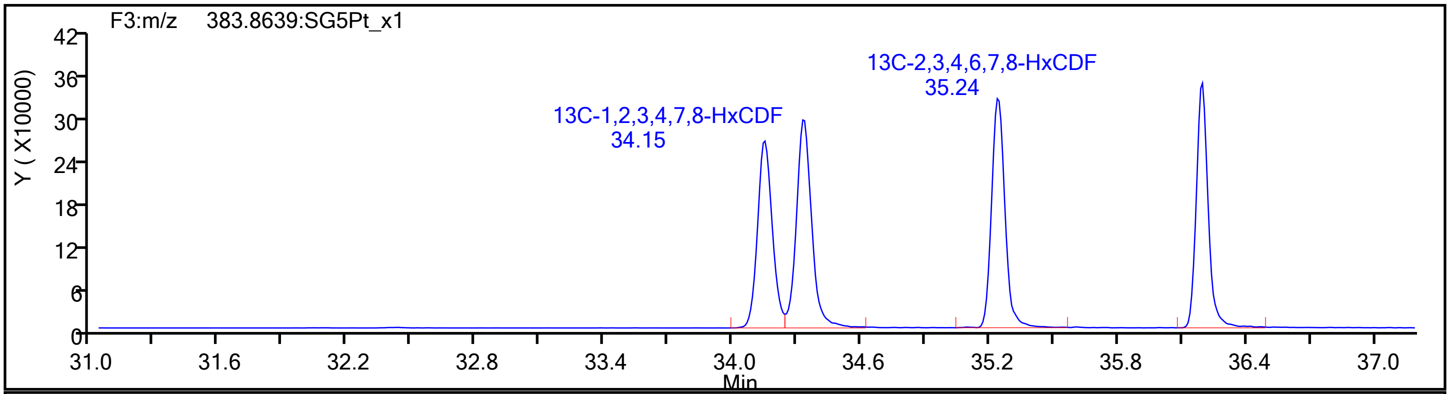

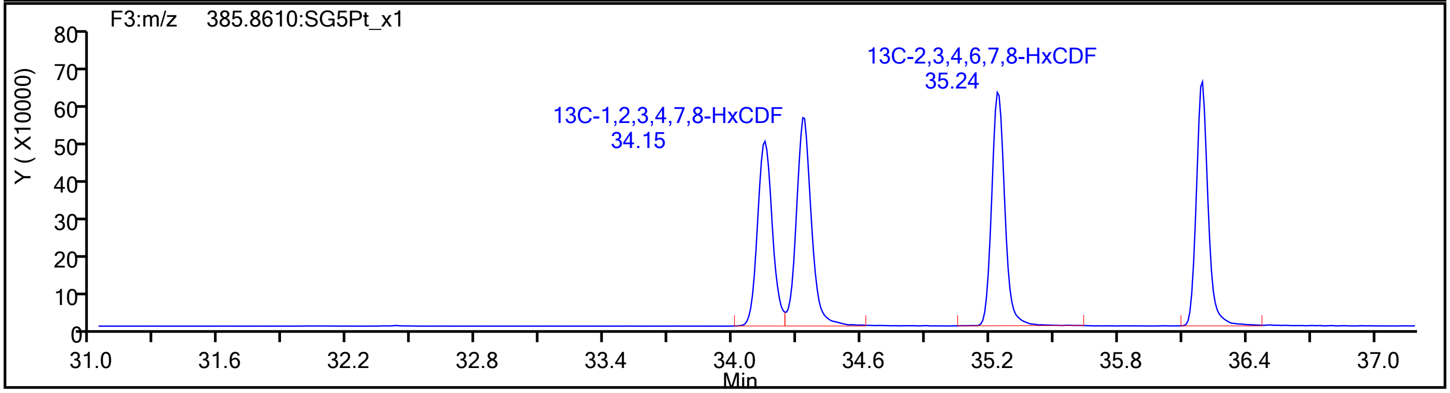

Eurofins TestAmerica, Sacramento

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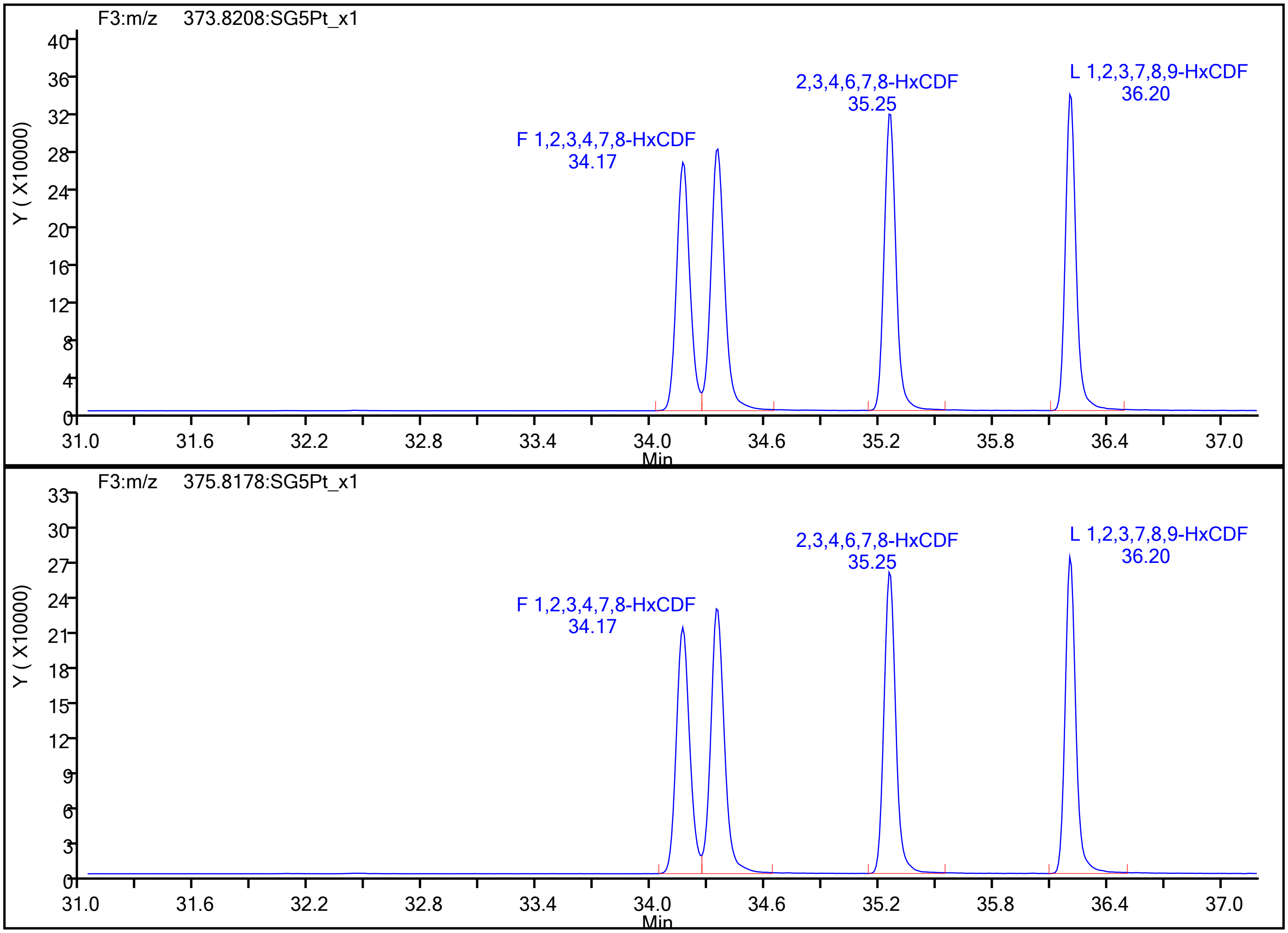

HxCDF Interference Mass

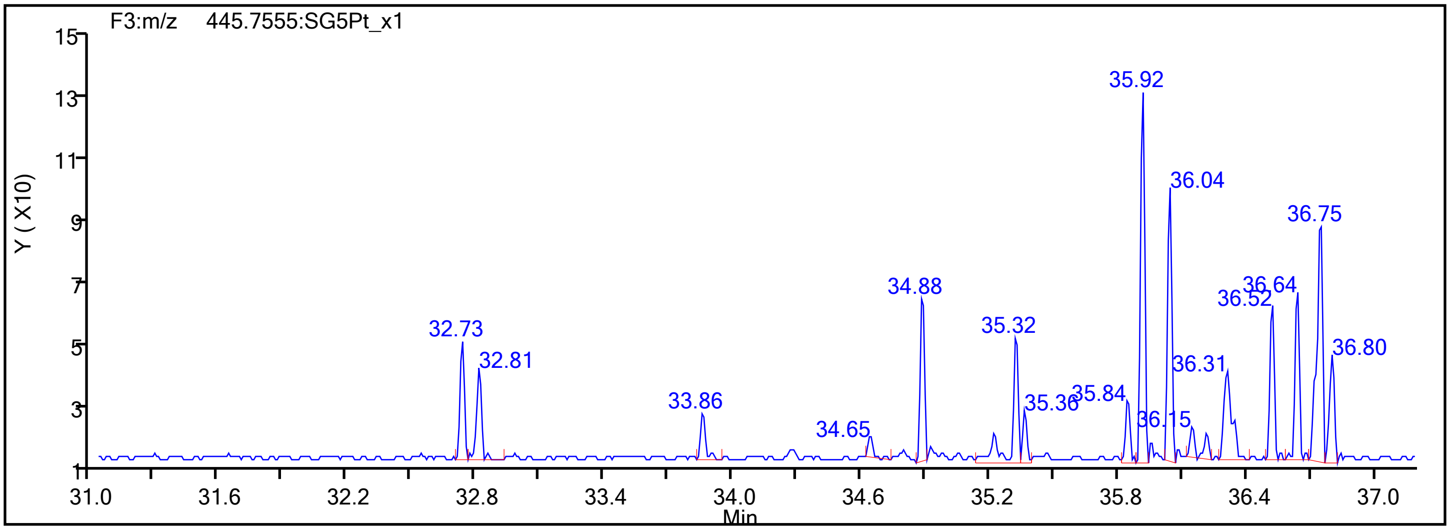

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Eurofins TestAmerica, Sacramento

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HxCDD

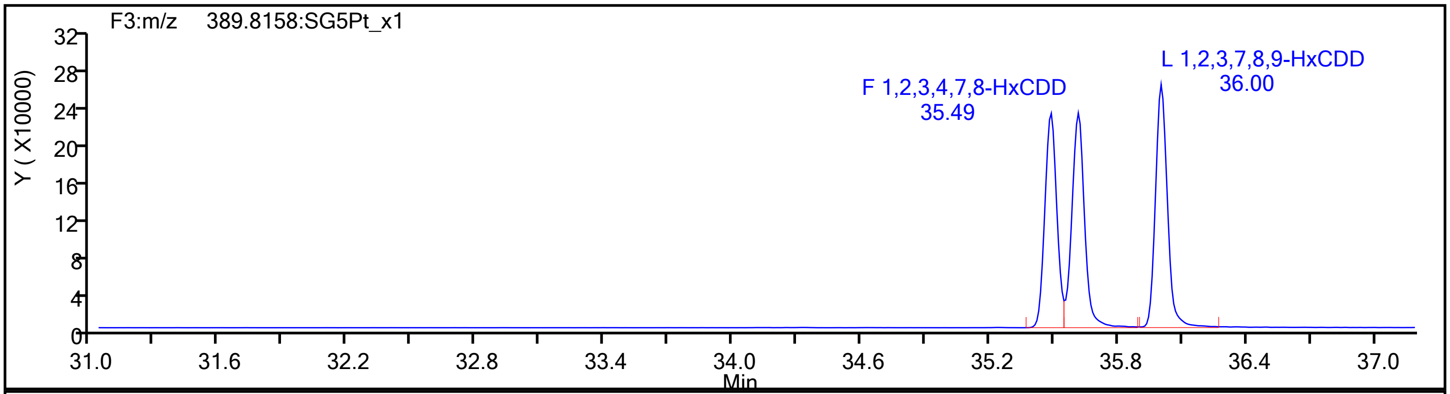

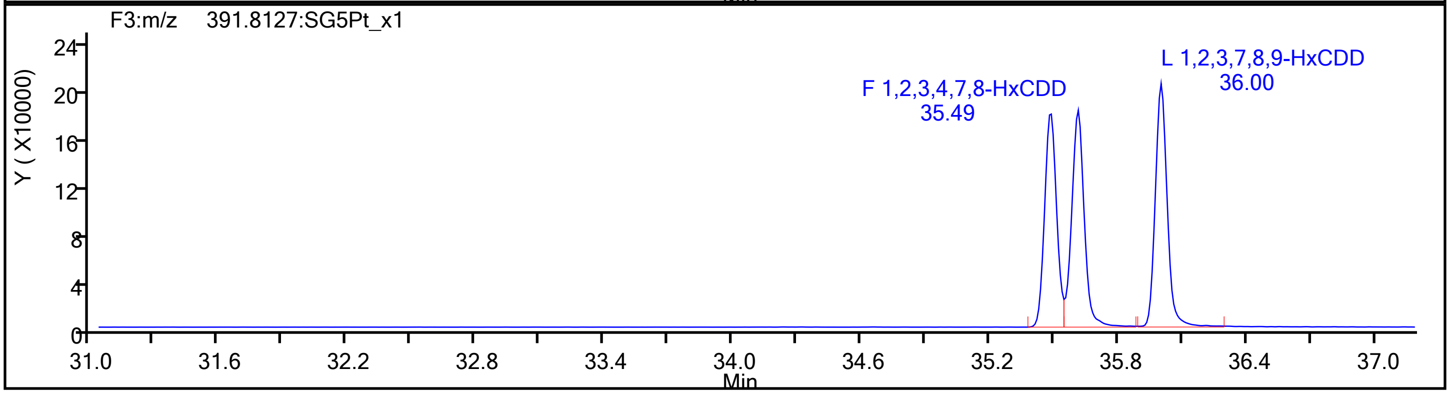

HxCDD Standards

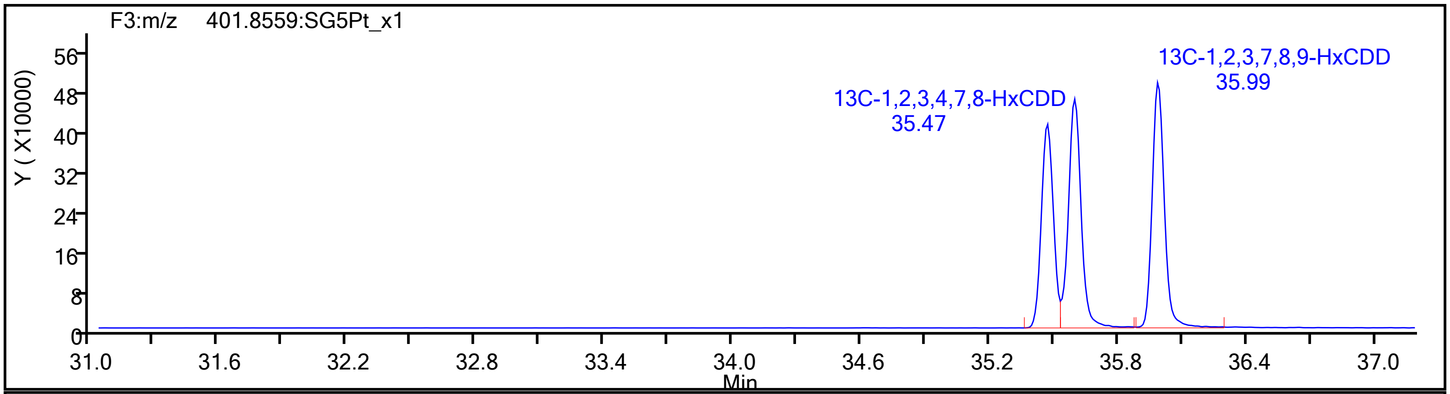

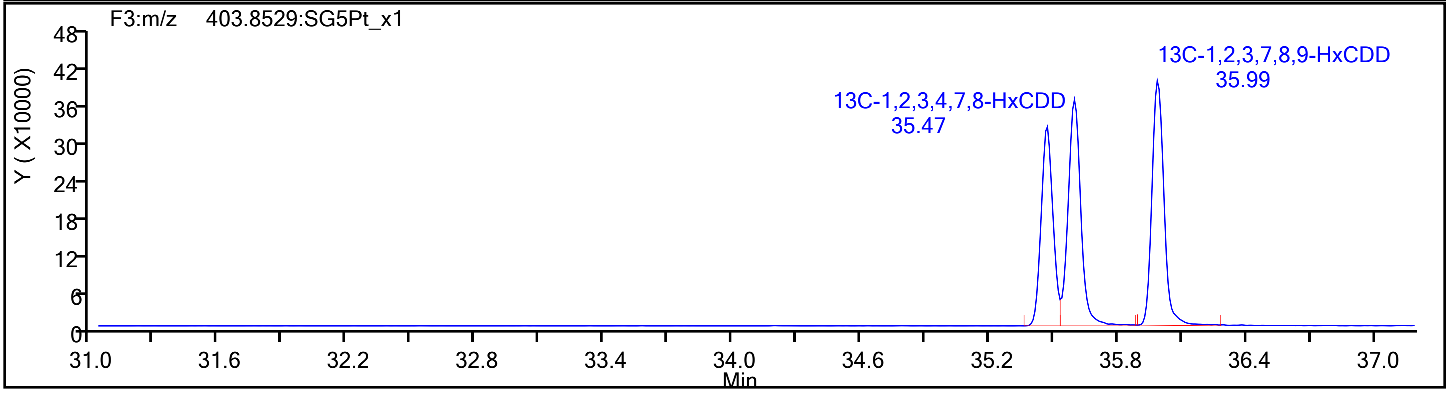

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Eurofins TestAmerica, Sacramento

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HpCDF

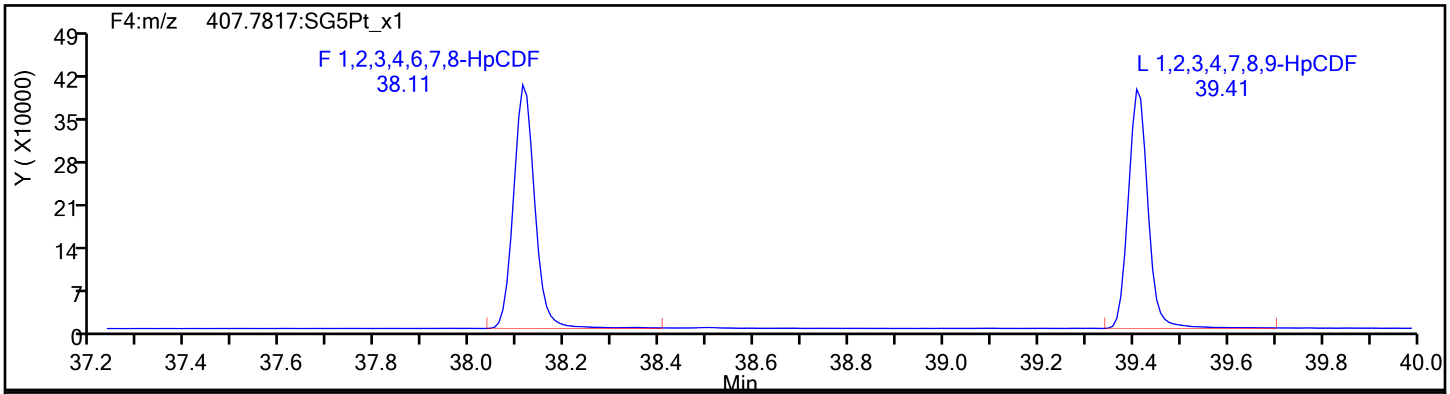

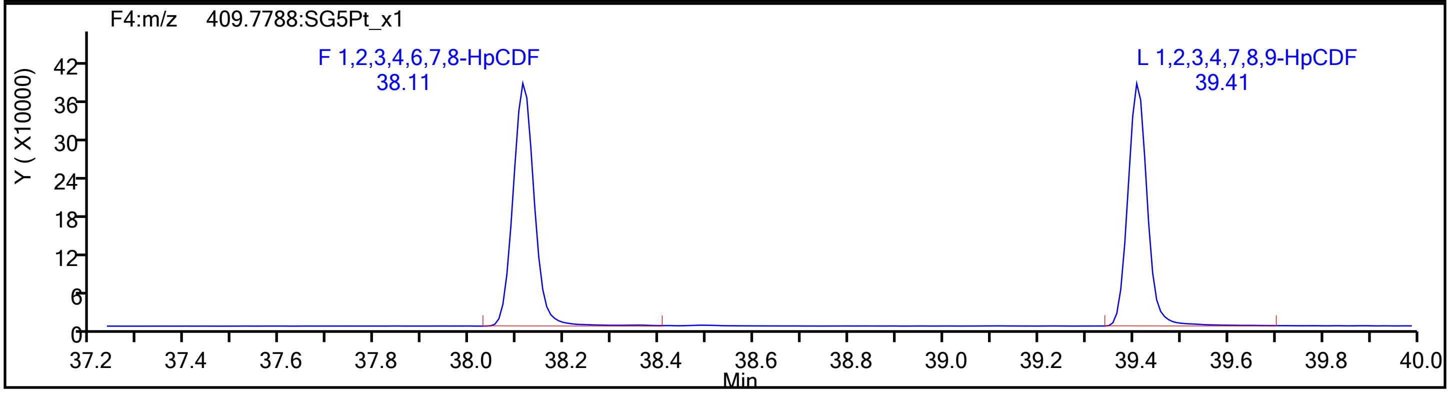

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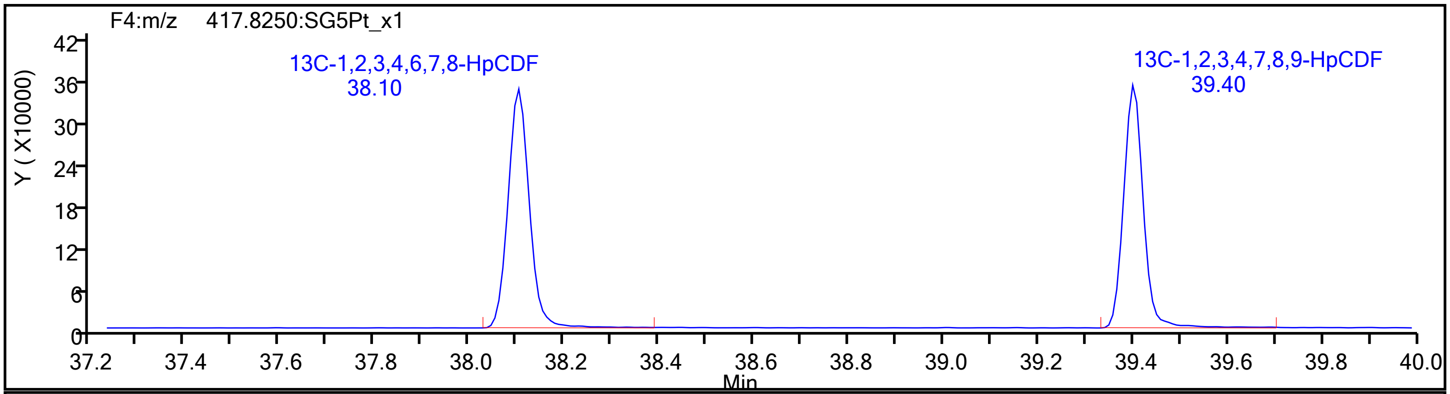

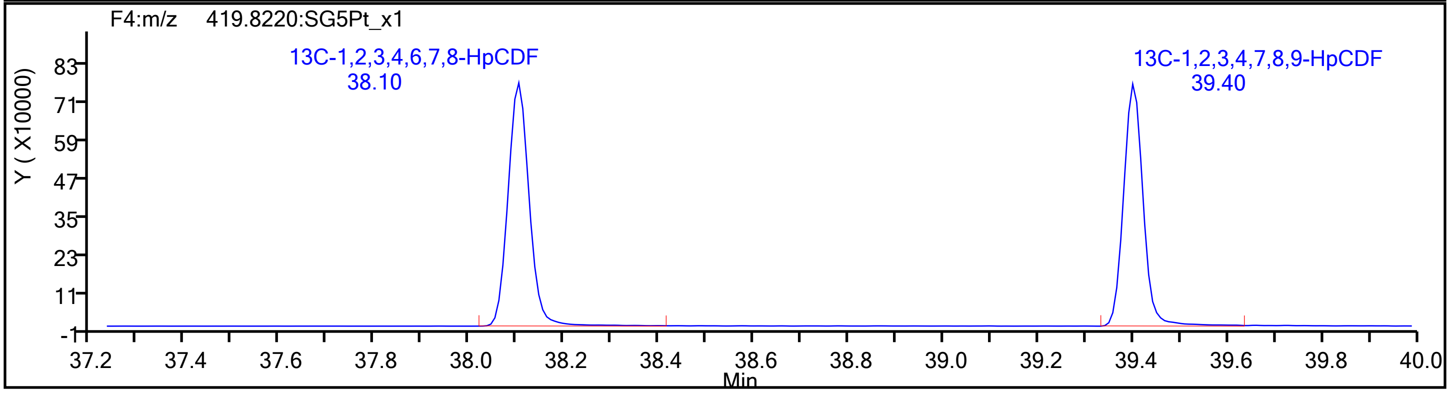

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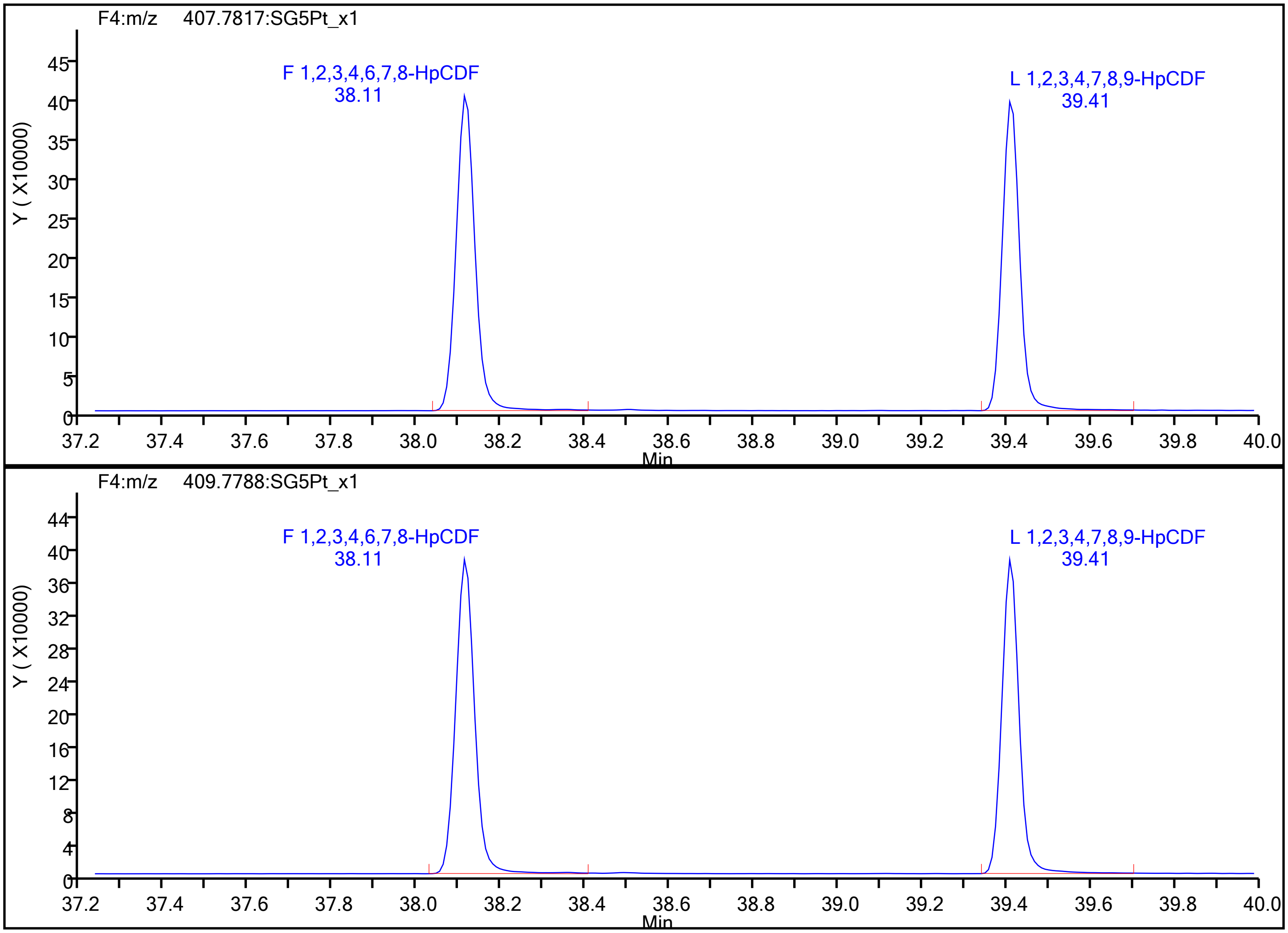

HpCDF Interference Mass

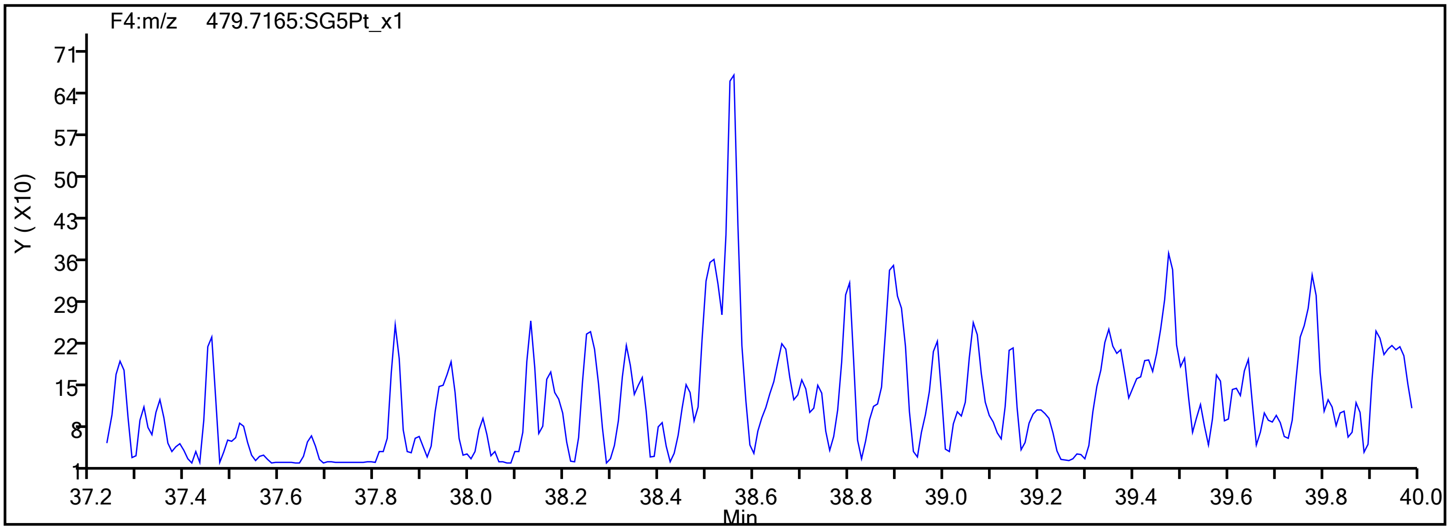

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

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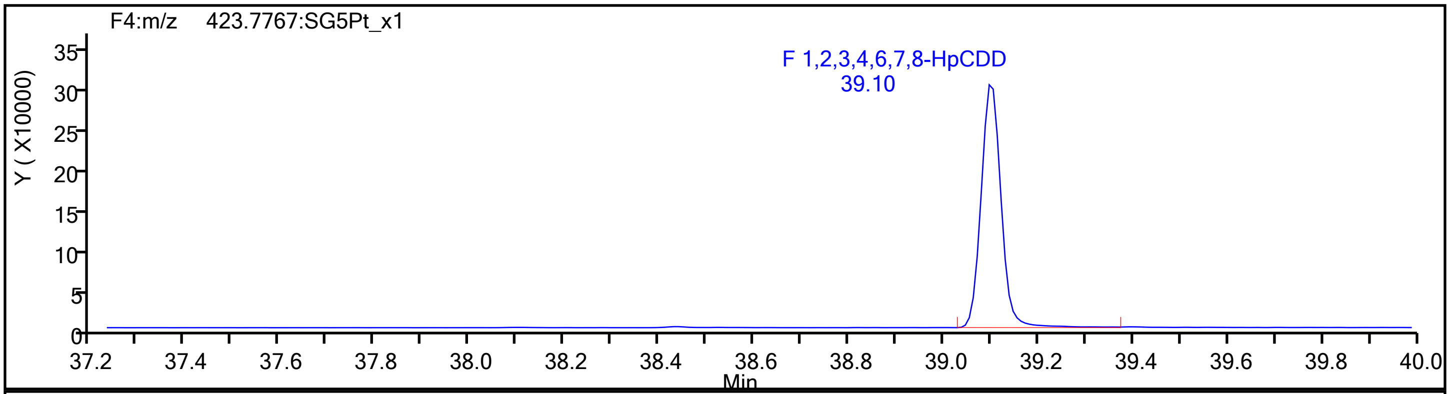

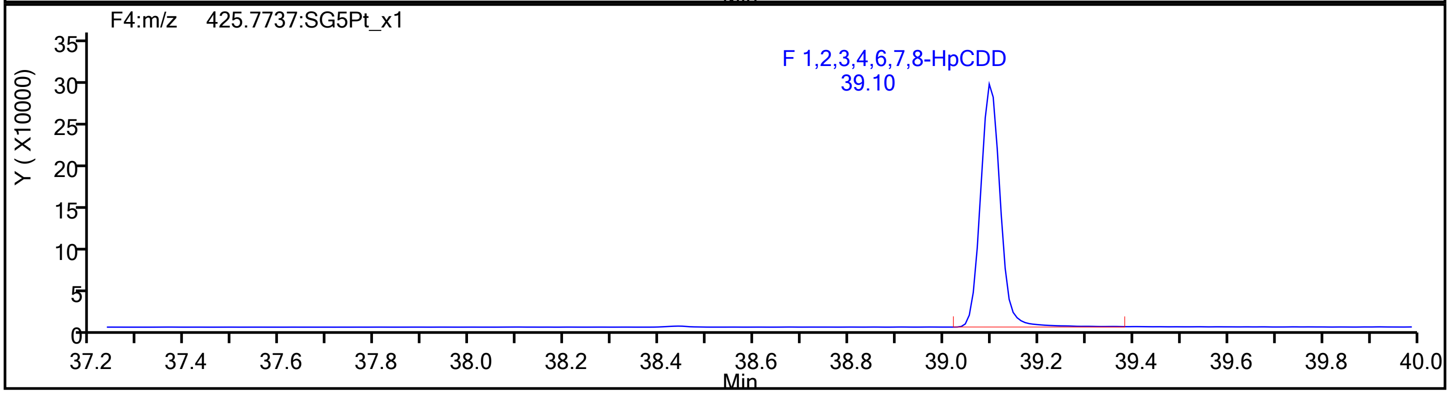

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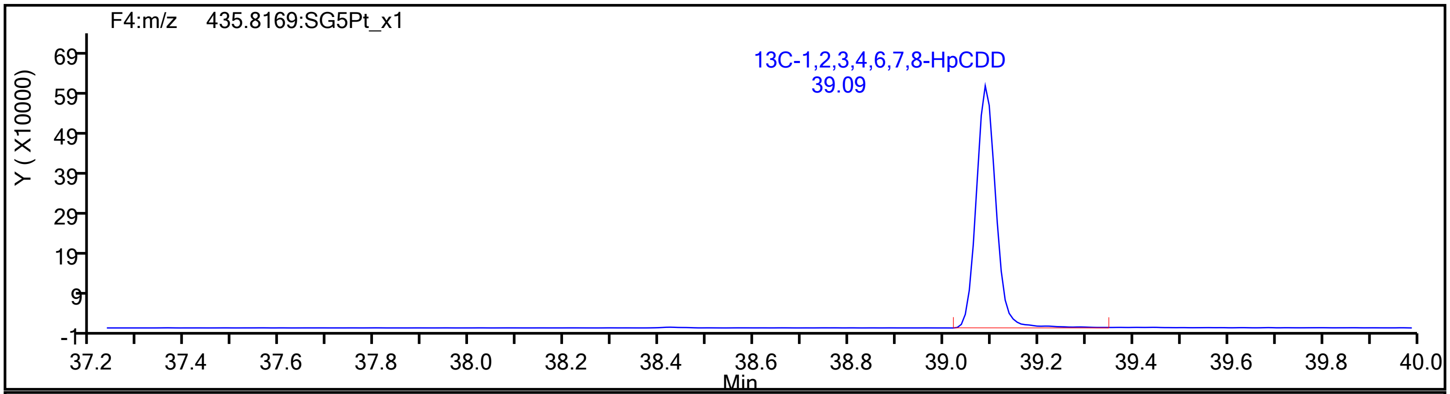

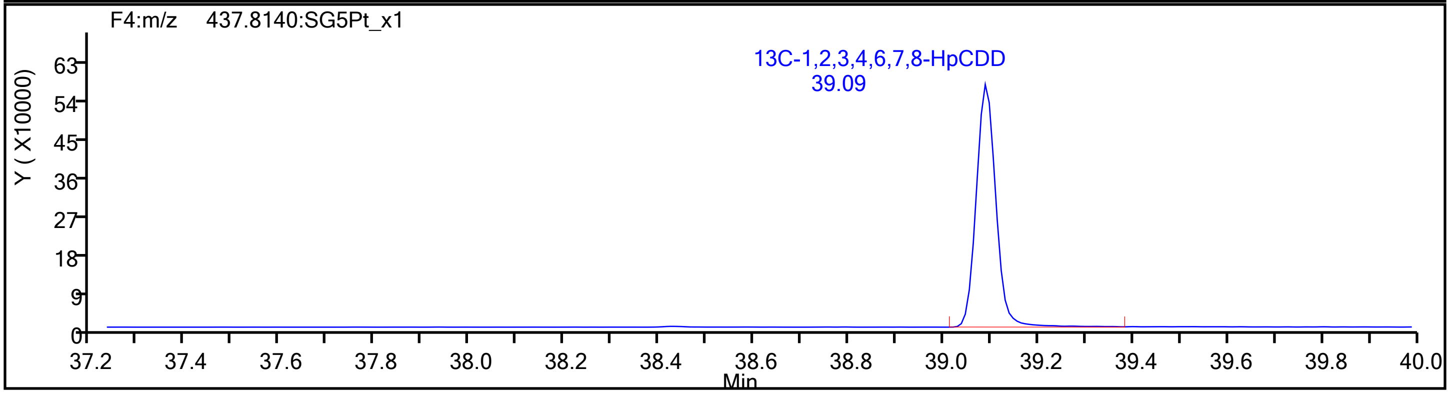

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Eurofins TestAmerica, Sacramento

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OCDF

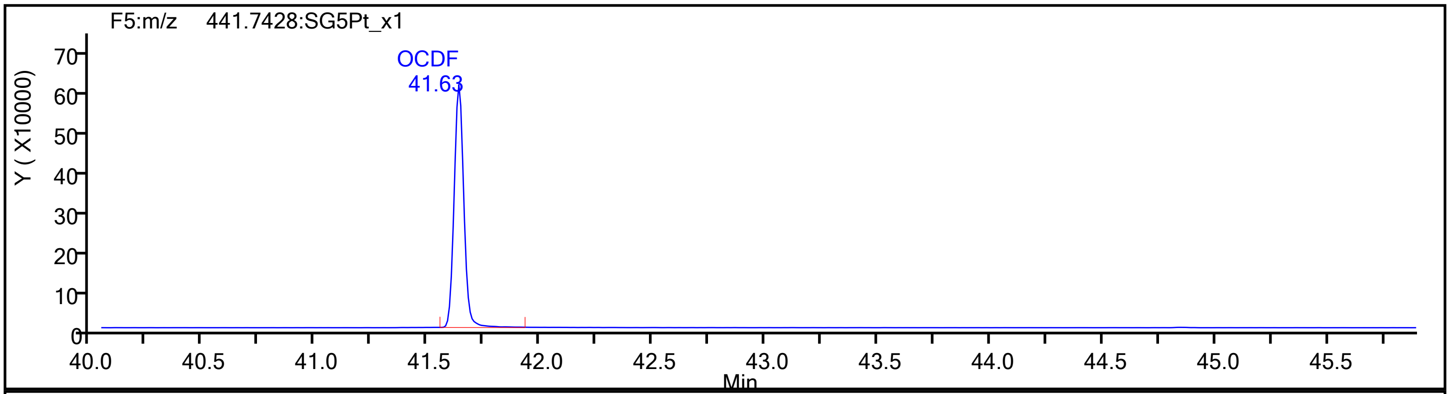

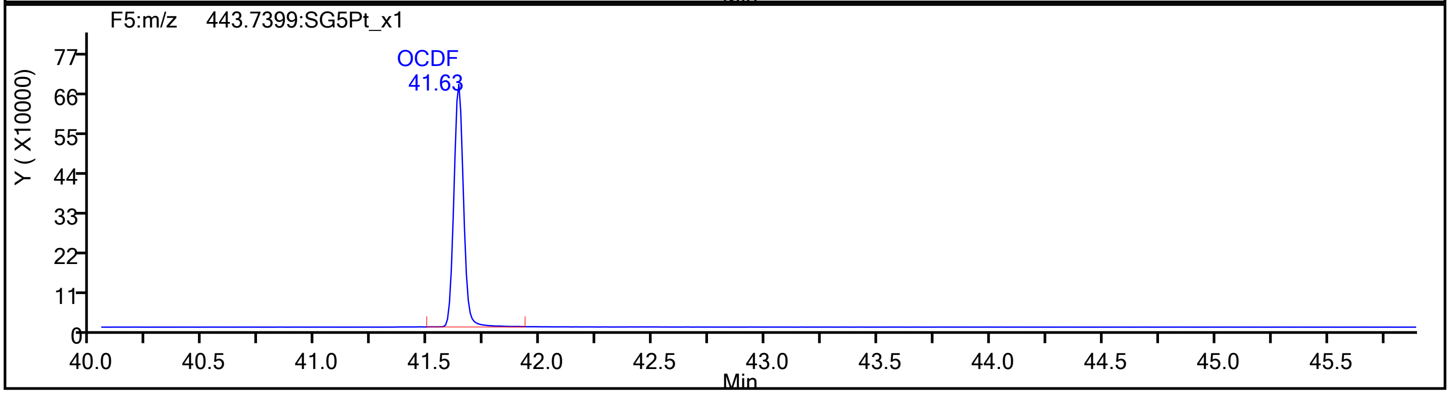

OCDF Standards

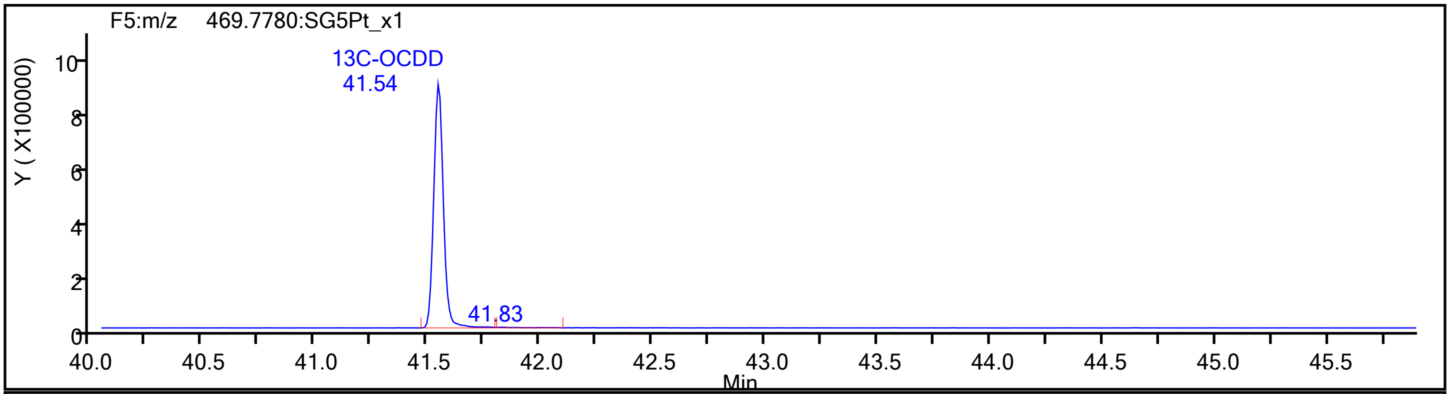

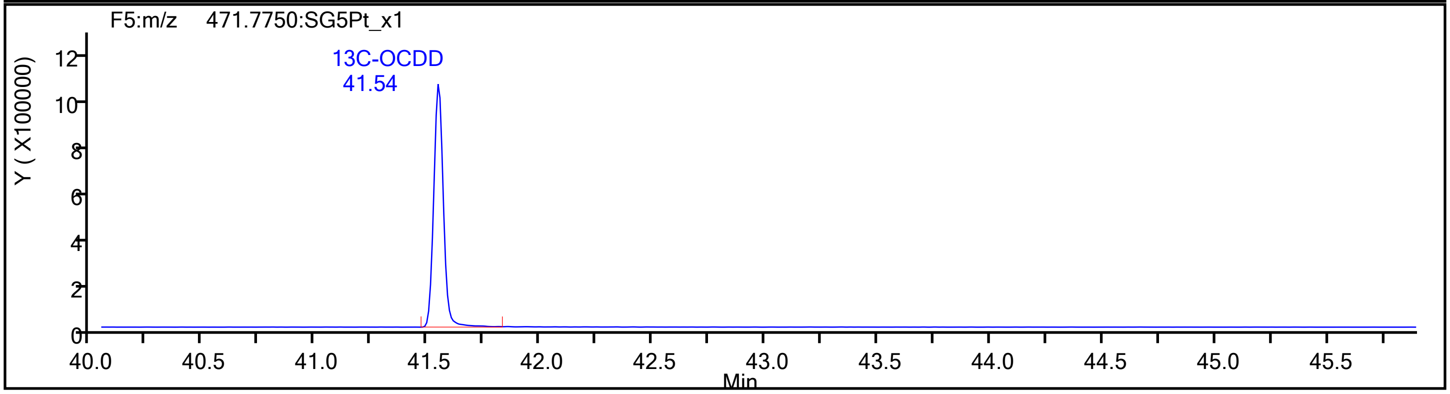

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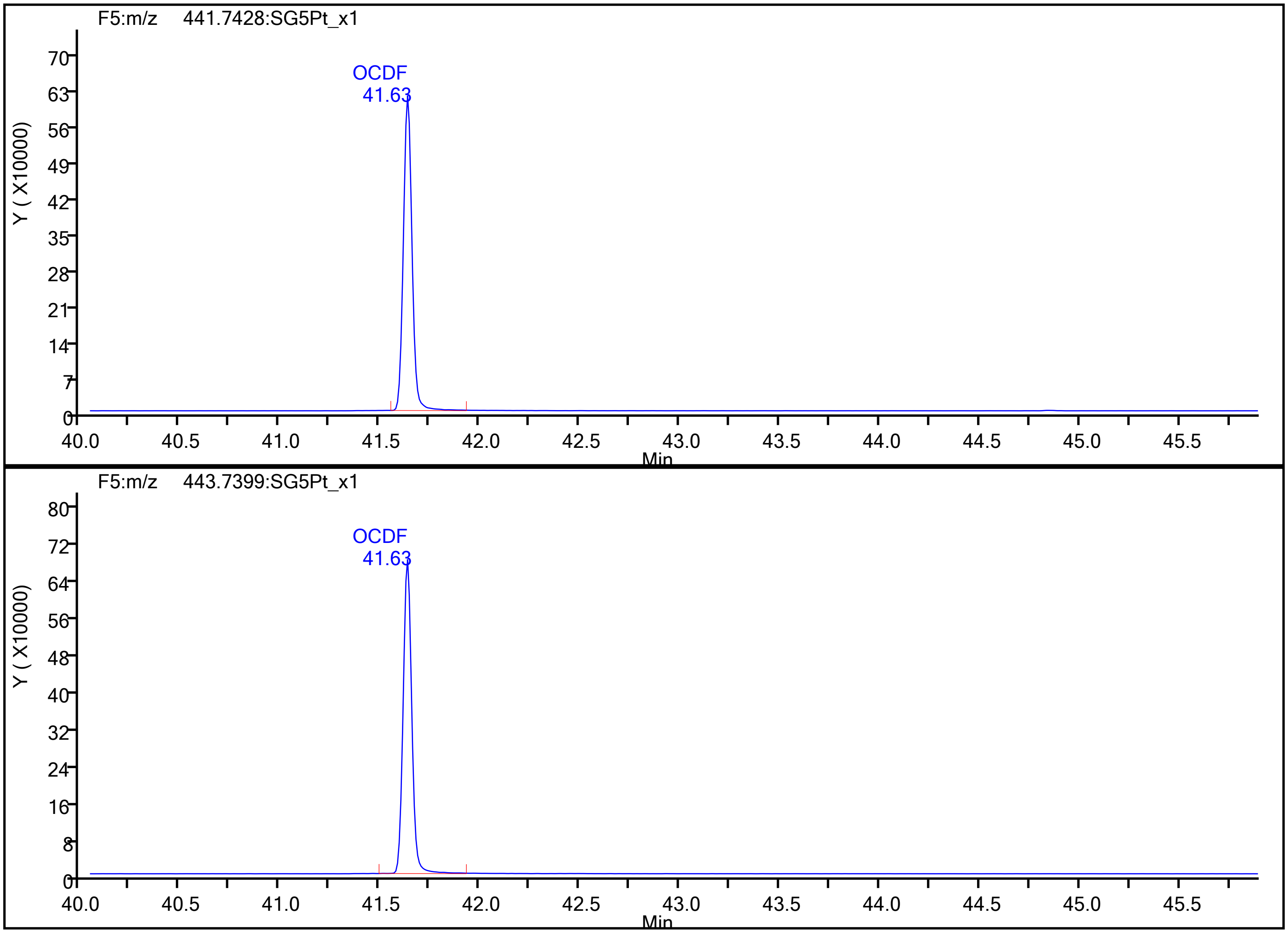

OCDF Interference Mass

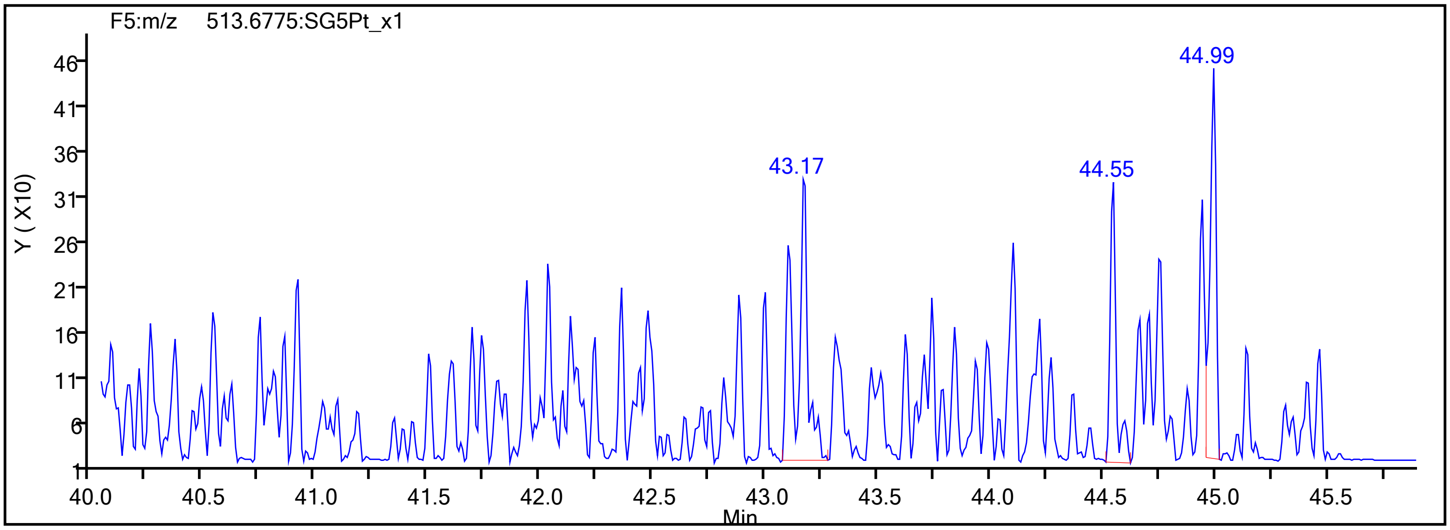

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OCDD

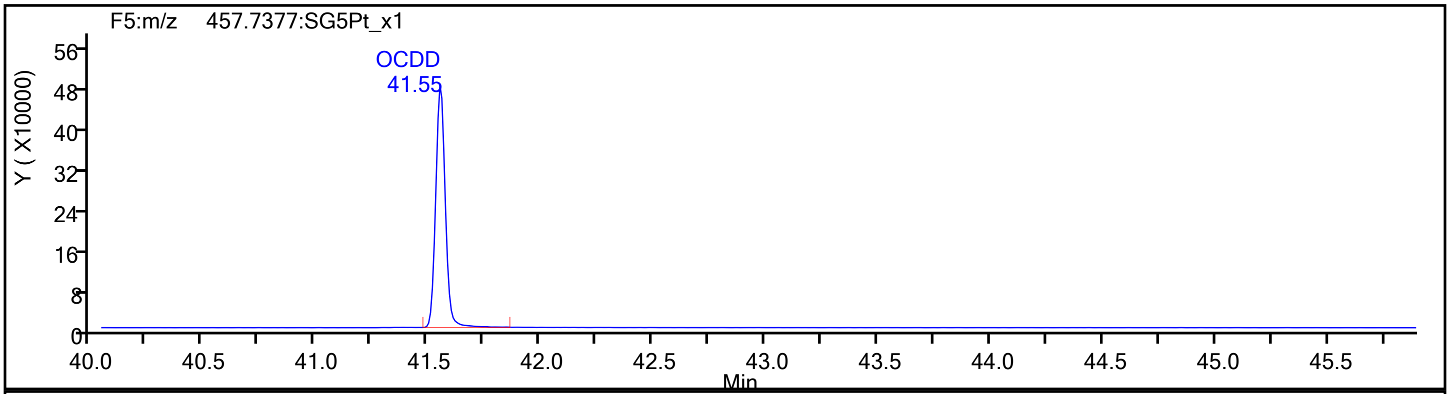

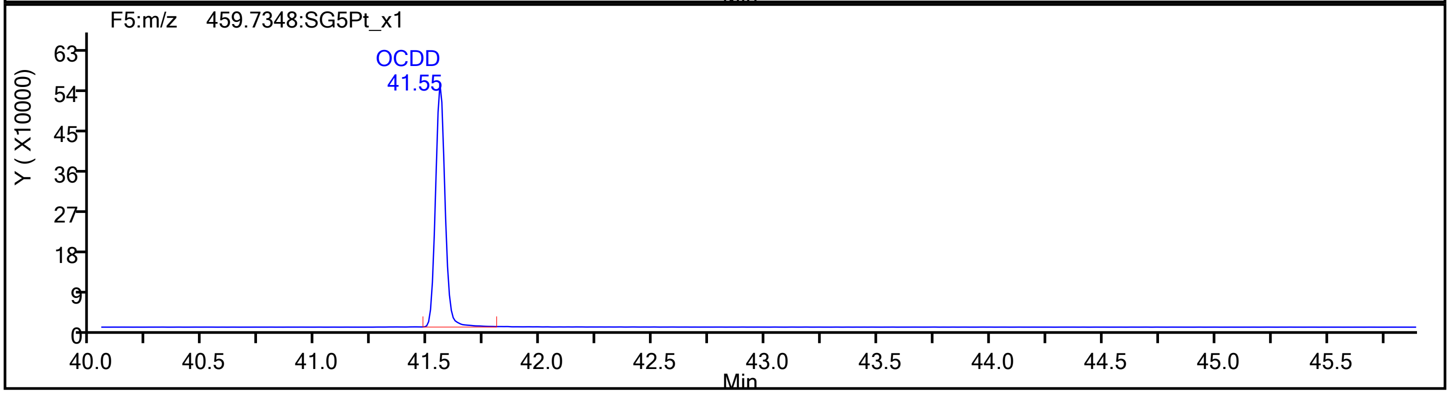

OCDD Standards

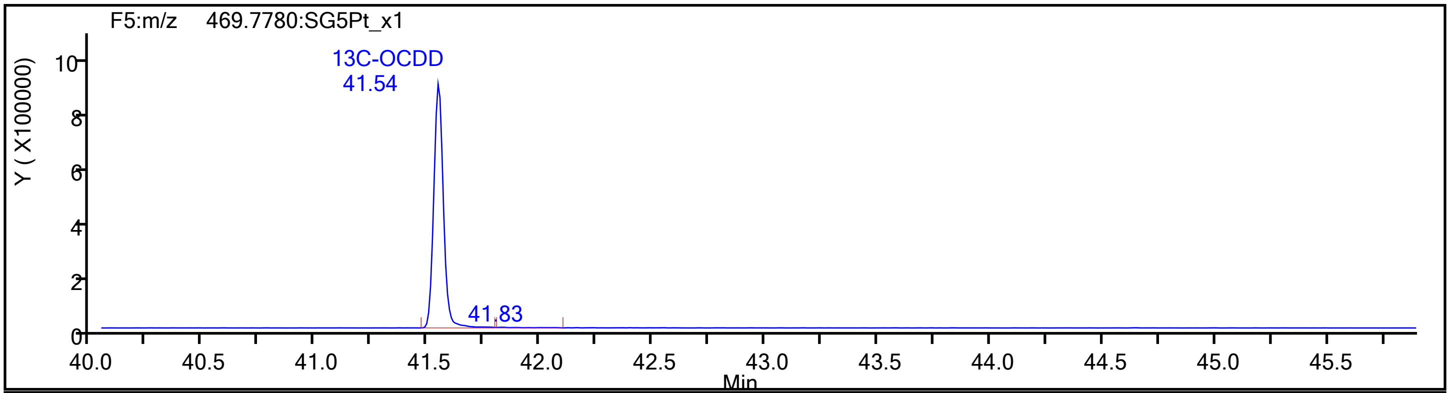

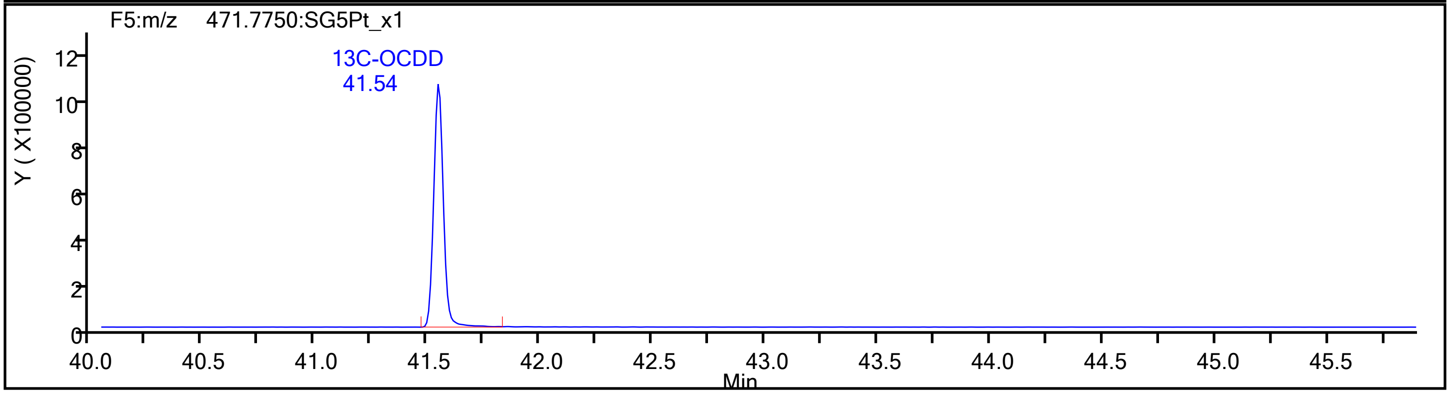

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Eurofins TestAmerica, Sacramento

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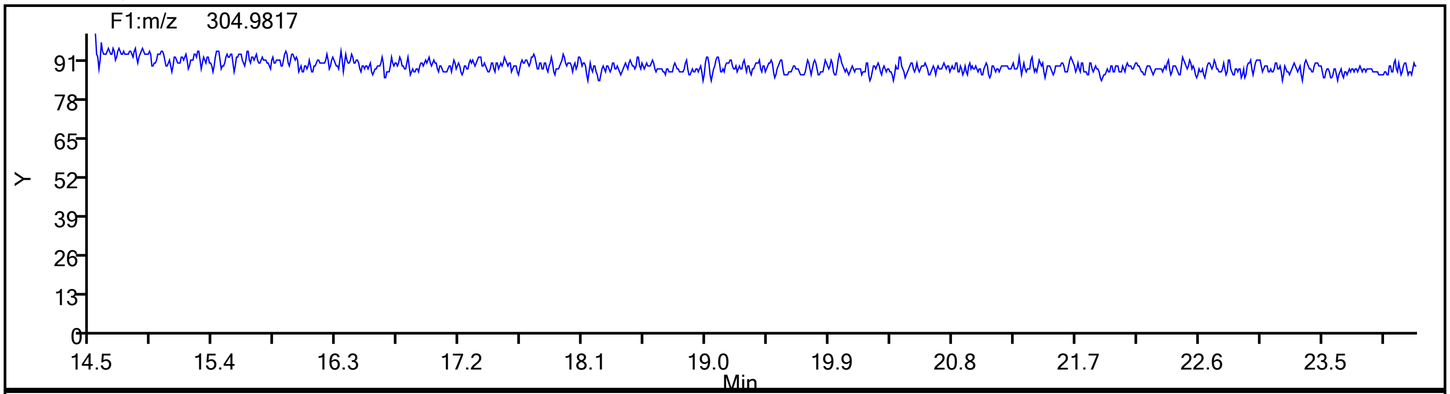

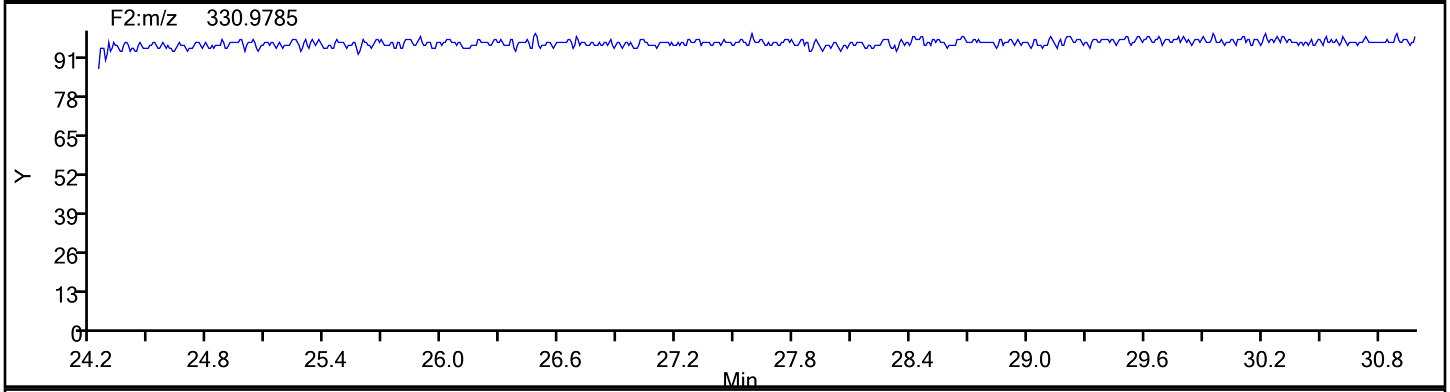

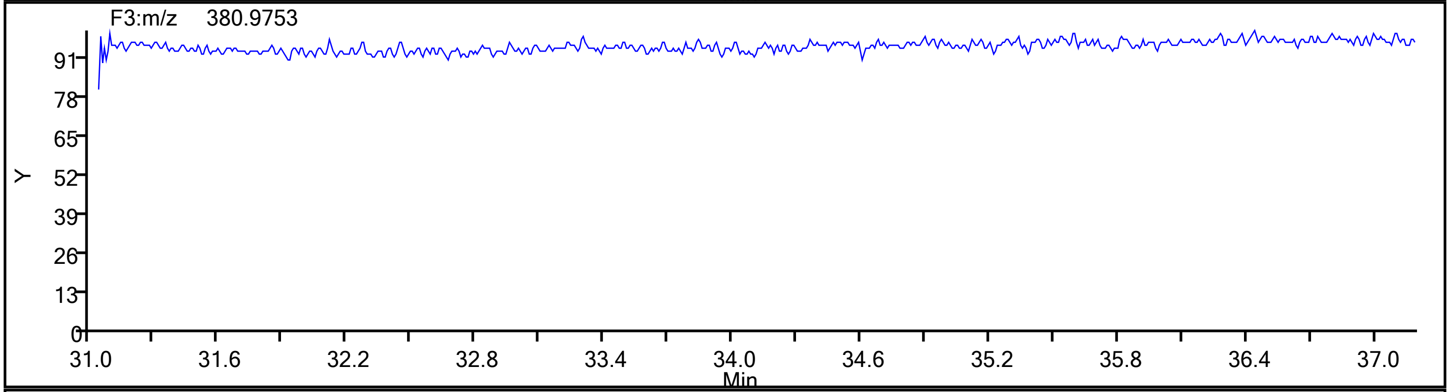

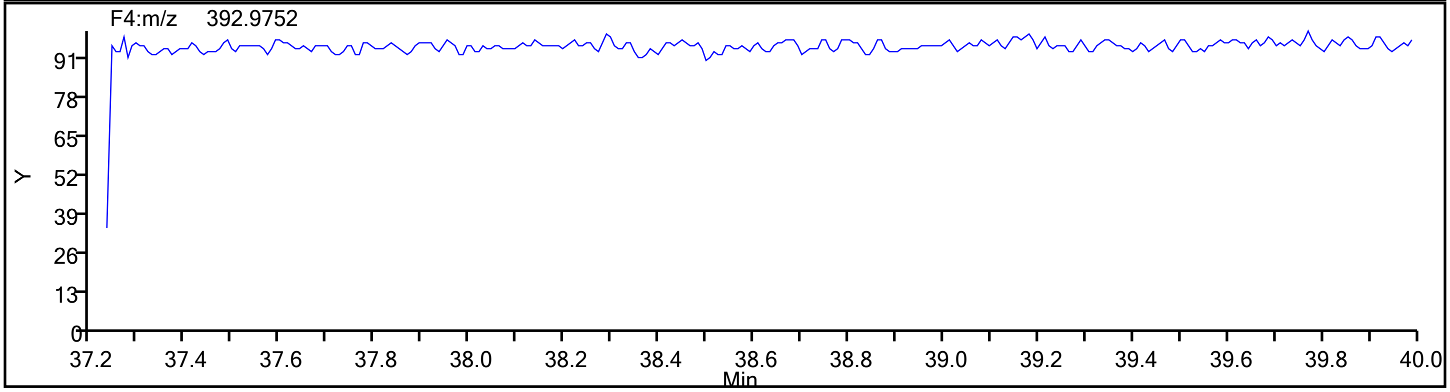

Report Date: 21-Sep-2020 11:24:59 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_53.d
Injection Date: 20-Sep-2020 04:24:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413813
Sample Line#: 46
Column Type: DB-5
Column Dia: 0.32 mm

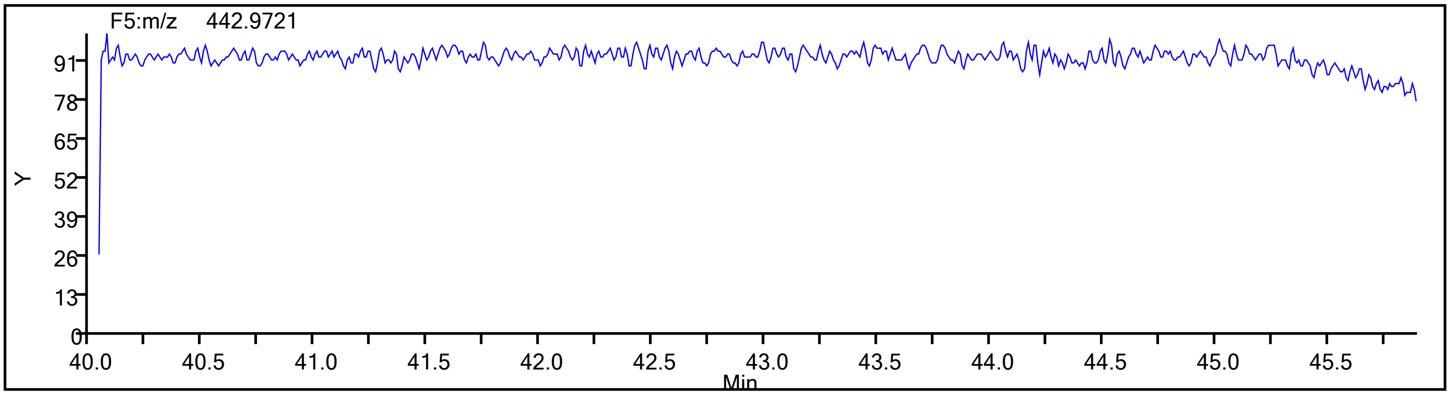

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID: CCV 320-413816/58 Calibration Date: 09/20/2020 14:45

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 18se20dfs1_67.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.049		9.66	10.0	97	84-120
2,3,7,8-TCDD	AveID	1.081	1.079		9.98	10.0	100	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.015		48.1	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.062		48.1	50.0	96	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.034		48.4	50.0	97	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.245		49.2	50.0	98	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.196		48.9	50.0	98	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.192		47.8	50.0	96	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.120		48.4	50.0	97	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	0.9874		48.0	50.0	96	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.138		48.3	50.0	97	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.212		48.0	50.0	96	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.438		47.7	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.027		48.3	50.0	97	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.394		47.9	50.0	96	86-116
OCDD	AveID	1.129	1.078		95.5	100	95	79-126
OCDF	AveID	1.430	1.351		94.5	100	94	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.578		99.4	100	99	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.086		97.0	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.415		95.7	100	96	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.324		95.2	100	95	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9411		100	100	100	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.052		92.5	100	92	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.253		95.1	100	95	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.184		95.0	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8256		97.4	100	97	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	0.9944		99.7	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.117		94.3	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	0.9583		97.0	100	97	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9473		99.1	100	99	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.9037		98.2	100	98	77-129
13C-OCDD	Ave	0.7420	0.7602		205	200	102	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.159		10.1	10.0	101	79-127

	File Name	Sample Name	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	18SE20DFS1_1	Resolution Check	RC 091820	46			AJS	1.000	
2	18SE20DFS1_2	WDM HRDXNCP_00042	WDM 091820	1	8290/1613B		AJS	1.000	
3	18SE20DFS1_3	CS-4 HRDXNL4_00095	CCV 091820	2	8290/1613B		AJS	1.000	
4	18SE20DFS1_4	Solvent Blank C-14	SB 091820	3			AJS	1.000	
5	18SE20DFS1_5	MB 320-411883/1-A	MB 320-411883/1-A	4	8290/Waste	82	AJS	10.000	g
6	18SE20DFS1_6	320-64512-A-1-A	320-64512-A-1-A	5	8290/Waste		AJS	0.100	g
7	18SE20DFS1_7	LCS 320-411883/2-A	LCS 320-411883/2-A	6	8290/Waste		AJS	10.000	g
8	18SE20DFS1_8	LCSD 320-411883/3-A	LCSD 320-411883/3-A	7	8290/Waste		AJS	10.000	g
9	18SE20DFS1_9	Resolution Check	RC 091820A	46			AJS	1.000	
10	18SE20DFS1_10	CS-4 HRDXNL4_00095	CCV 091820A	2	8290/1613B		AJS	1.000	
11	18SE20DFS1_11	Resolution Check	RC 091820B	46			AJS	1.000	
12	18SE20DFS1_12	WDM HRDXNCP_00042	WDM 091820A	1			AJS	1.000	
13	18SE20DFS1_13	Solvent Blank C-14	SB 091820A	3			AJS	1.000	
14	18SE20DFS1_14	MB 320-410054/1-A	MB 320-410054/1-A	8	1613B(T)/Water	D178	AJS	1.000	L
15	18SE20DFS1_15	LCS 320-410054/2-A	LCS 320-410054/2-A	9	1613B(T)/Water		AJS	1.000	L
16	18SE20DFS1_16	LCSD 320-410054/3-A	LCSD 320-410054/3-A	10	1613B(T)/Water		AJS	1.000	L
17	18SE20DFS1_17	660-104015-G-1-A	660-104015-G-1-A	11	1613B_T/Water		AJS	1.000	L
18	18SE20DFS1_18	680-188257-A-4-A	680-188257-A-4-A	12	1613B/Water		AJS	1.000	L
19	18SE20DFS1_19	660-104011-D-1-A	660-104011-D-1-A	13	1613B_T/Water		AJS	1.000	L
20	18SE20DFS1_20	MB 320-407388/1-A	MB 320-407388/1-A	14	1613B/Solid	D176	AJS	10.000	g
21	18SE20DFS1_21	LCS 320-407388/2-A	LCS 320-407388/2-A	15	1613B/Solid		AJS	10.000	g
22	18SE20DFS1_22	LCSD 320-407388/3-A	LCSD 320-407388/3-A	16	1613B/Solid		AJS	10.000	g
23	18SE20DFS1_23	320-64036-A-1-A	320-64036-A-1-A	17	1613B/Solid		AJS	10.000	g
24	18SE20DFS1_24	Resolution Check	RC 091820C	46			AJS	1.000	
25	18SE20DFS1_25	WDM HRDXNCP_00042	WDM 091820B	1			AJS	1.000	
26	18SE20DFS1_26	CS-4 HRDXNL4_00095	CCV 091820B	2	8290/1613B		AJS	1.000	
27	18SE20DFS1_27	Solvent Blank C-14	SB 091820B	3			AJS	1.000	
28	18SE20DFS1_28	MB 320-412528/1-A	MB 320-412528/1-A	18	8290(A)/Solid	D181	AJS	10.000	g
29	18SE20DFS1_29	LCS 320-412528/2-A	LCS 320-412528/2-A	19	8290(A)/Solid		AJS	10.000	g
30	18SE20DFS1_30	LCSD 320-412528/3-A	LCSD 320-412528/3-A	20	8290(A)/Solid		AJS	10.000	g
31	18SE20DFS1_31	460-217926-A-1-A	460-217926-A-1-A	21	8290A/Solid		AJS	10.000	g
32	18SE20DFS1_32	460-217926-A-2-A	460-217926-A-2-A	22	8290A/Solid		AJS	10.000	g
33	18SE20DFS1_33	440-271312-F-17-A	440-271312-F-17-A	23	8290/Solid	D179	AJS	10.000	g
34	18SE20DFS1_34	440-271312-F-18-A	440-271312-F-18-A	24	8290/Solid		AJS	10.000	g
35	18SE20DFS1_35	440-271312-F-19-A	440-271312-F-19-A	25	8290/Solid		AJS	10.000	g
36	18SE20DFS1_36	Solvent Blank C-14	SB 091820C	3			AJS	1.000	
37	18SE20DFS1_37	Resolution Check	RC 091820D	46			AJS	1.000	
38	18SE20DFS1_38	CS-4 HRDXNL4_00095	CCV 091820C	2	8290/1613B		AJS	1.000	
39	18SE20DFS1_39	Resolution Check	RC 091820E	46			AJS	1.000	
▶ 40	18SE20DFS1_40	WDM HRDXNCP_00042	WDM 091820C	1			AJS	1.000	

	File Name	Sample Name	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
41	18SE20DFS1_41	Solvent Blank C-14	SB 091820D	3			AJS	1.000	
42	18SE20DFS1_42	MB 320-410254/1-A	MB 320-410254/1-A	26	8290(A)/Solid	D179	AJS	10.000	g
43	18SE20DFS1_43	LCS 320-410254/2-A	LCS 320-410254/2-A	27	8290(A)/Solid		AJS	10.000	g
44	18SE20DFS1_44	LCSD 320-410254/3-A	LCSD 320-410254/3-A	28	8290(A)/Solid		AJS	10.000	g
45	18SE20DFS1_45	440-271312-F-20-A	440-271312-F-20-A	29	8290/Solid		AJS	10.000	g
46	18SE20DFS1_46	440-271312-F-22-A	440-271312-F-22-A	30	8290/Solid		AJS	10.000	g
47	18SE20DFS1_47	440-271312-F-23-A	440-271312-F-23-A	31	8290/Solid		AJS	10.000	g
48	18SE20DFS1_48	440-271312-F-24-A	440-271312-F-24-A	32	8290/Solid		AJS	10.000	g
49	18SE20DFS1_49	440-271312-F-25-A	440-271312-F-25-A	33	8290/Solid		AJS	10.000	g
50	18SE20DFS1_50	460-217486-A-1-A	460-217486-A-1-A	34	8290A/Solid		AJS	10.000	g
51	18SE20DFS1_51	Solvent Blank C-14	SB 091820E	3			AJS	1.000	
52	18SE20DFS1_52	Resolution Check	RC 091820F	46			AJS	1.000	
53	18SE20DFS1_53	CS-4 HRDXNL4_00095	CCV 091820D	2	8290/1613B		AJS	1.000	
54	18SE20DFS1_54	Resolution Check	RC 091820G	46			AJS	1.000	
55	18SE20DFS1_55	WDM HRDXNCP_00042	WDM 091820D	1			AJS	1.000	
56	18SE20DFS1_56	Solvent Blank C-14	SB 091820F	3			AJS	1.000	
57	18SE20DFS1_57	460-217486-A-2-A	460-217486-A-2-A	35	8290A/Solid	D179	AJS	10.000	g
58	18SE20DFS1_58	460-217486-A-3-A	460-217486-A-3-A	36	8290A/Solid		AJS	10.000	g
59	18SE20DFS1_59	460-217486-A-4-A	460-217486-A-4-A	37	8290A/Solid		AJS	10.000	g
60	18SE20DFS1_60	460-217486-A-5-A	460-217486-A-5-A	38	8290A/Solid		AJS	10.000	g
61	18SE20DFS1_61	460-217486-A-6-A	460-217486-A-6-A	39	8290A/Solid		AJS	10.000	g
62	18SE20DFS1_62	460-217486-A-7-A	460-217486-A-7-A	40	8290A/Solid		AJS	10.000	g
63	18SE20DFS1_63	320-64049-A-3-B	320-64049-A-3-B	41	1613B/Solid	D181	AJS	1.000	g
64	18SE20DFS1_64	320-64049-A-4-B	320-64049-A-4-B	42	1613B/Solid		AJS	1.000	g
65	18SE20DFS1_65	Solvent Blank C-14	SB 091820G	3			AJS	1.000	
66	18SE20DFS1_66	Resolution Check	RC 091820H	46			AJS	1.000	
67	18SE20DFS1_67	CS-4 HRDXNL4_00095	CCV 091820E	2	8290/1613B		AJS	1.000	
68	18SE20DFS1_68	Resolution Check	RC 091820I	46			AJS	1.000	
69	18SE20DFS1_69	WDM HRDXNCP_00042	WDM 091820E	1			AJS	1.000	
70	18SE20DFS1_70	Solvent Blank C-14	SB 091820H	3			AJS	1.000	
71	18SE20DFS1_71	MB 320-412959/1-A	MB 320-412959/1-A	43	1613B/Solid	D181	AJS	10.000	g
72	18SE20DFS1_72	LCS 320-412959/2-A	LCS 320-412959/2-A	44	1613B/Solid		AJS	10.000	g
73	18SE20DFS1_73	LCSD 320-412959/3-A	LCSD 320-412959/3-A	45	1613B/Solid		AJS	10.000	g
74	18SE20DFS1_74	MB 320-410050/1-A	MB 320-410050/1-A	47	8290/Water		AJS	1.000	L
75	18SE20DFS1_75	LCS 320-410050/2-A	LCS 320-410050/2-A	48	8290/Water		AJS	1.000	L
76	18SE20DFS1_76	LCSD 320-410050/3-A	LCSD 320-410050/3-A	49	8290/Water		AJS	1.000	L
77	18SE20DFS1_77	320-64286-A-1-A	320-64286-A-1-A	50	8290/Water		AJS	1.000	L
78	18SE20DFS1_78	320-64286-A-2-A	320-64286-A-2-A	51	8290/Water		AJS	1.000	L
79	18SE20DFS1_79	Solvent Blank C-14	SB 091820I	3			AJS	1.000	
80	18SE20DFS1_80	Resolution Check	RC 091820I	46			AJS	1.000	

Log file checked
09/19/20 SMA

81	18SE20DFS1_81	CS-4 HRDXNL4_00095	CCV 091820F	2	8290/1613B		AJS	1.000	
82	18SE20DFS1_82	Resolution Check	RC 091820J	46			AJS	1.000	
*									

Resolution Check Report (DFS SN: 3487)

Date: 20 Sep 2020 14:23
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11600 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11937 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11644 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11837 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11982 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12169 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11832 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11993 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12014 [5%height]

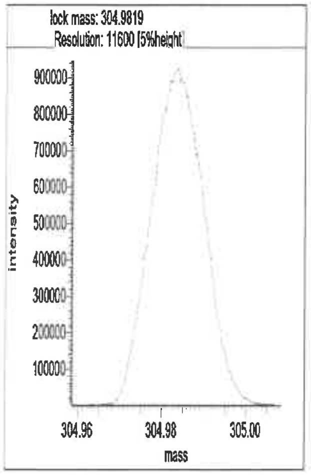

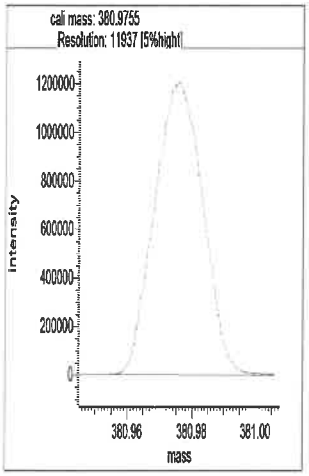

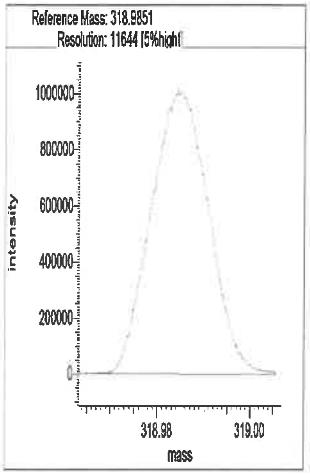

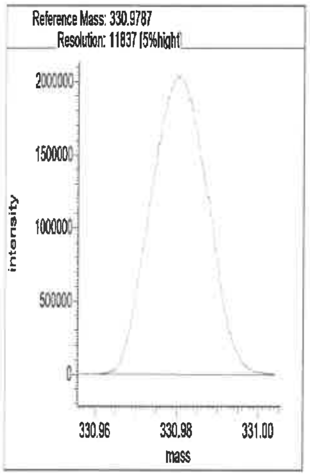

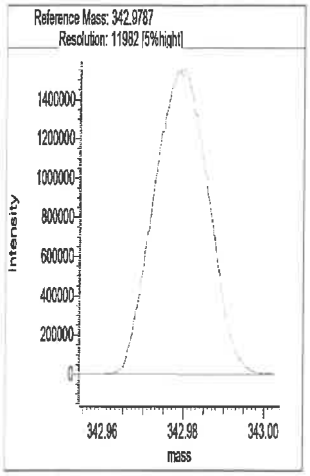

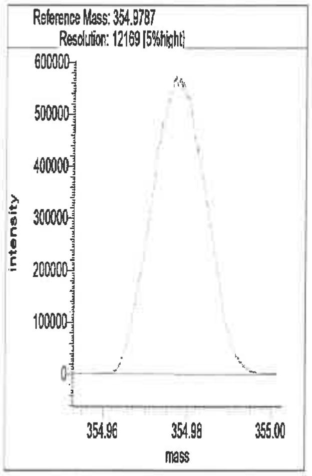

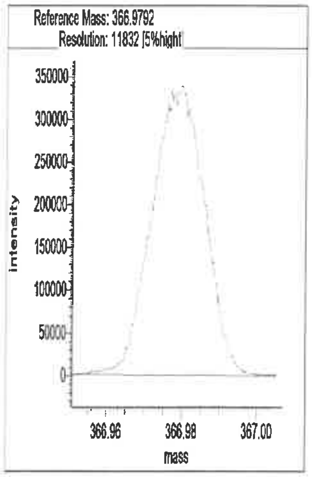

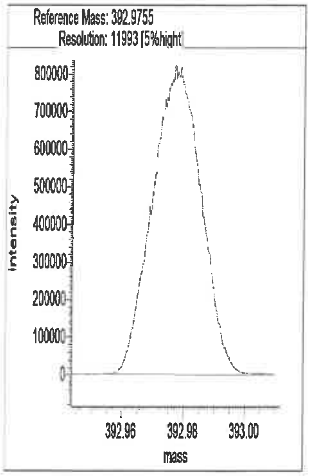

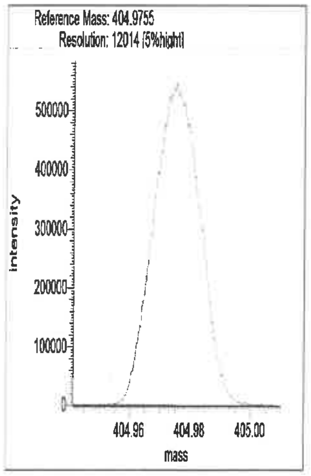

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11670 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12030 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11640 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11874 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11815 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12116 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12126 [5%height]

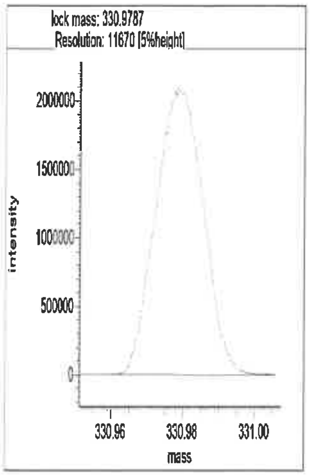

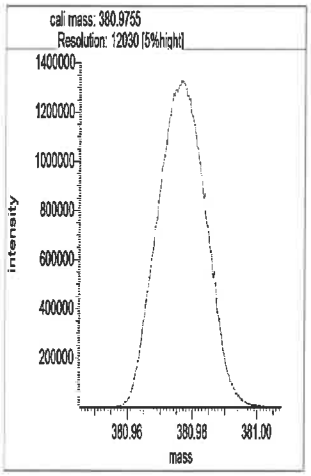

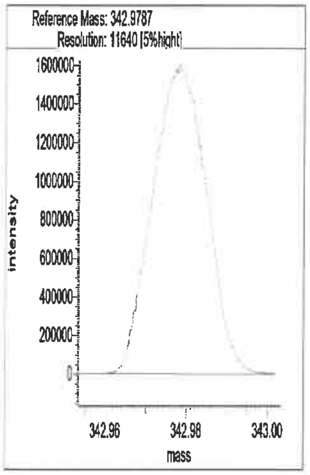

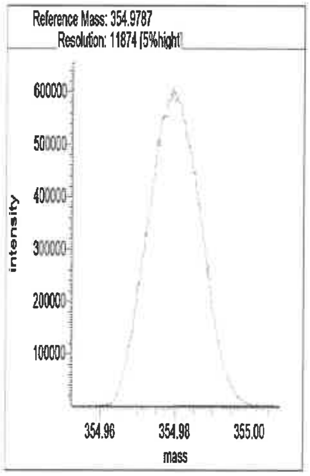

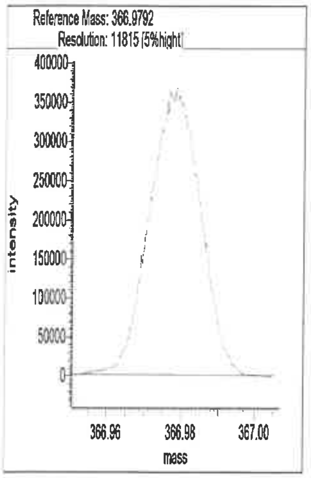

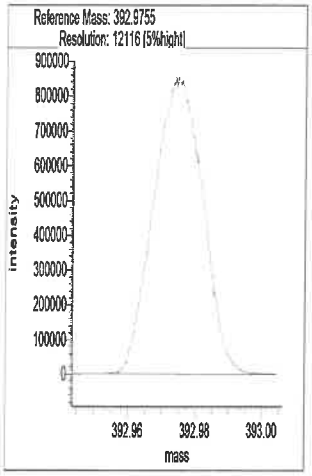

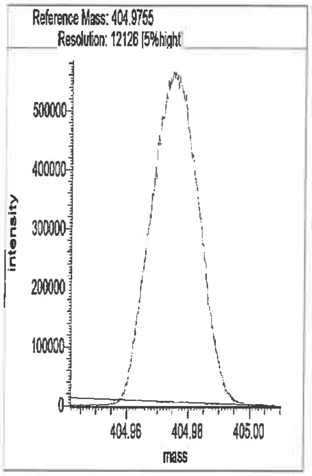

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11616 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12051 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11878 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12359 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11834 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11874 [5%height]

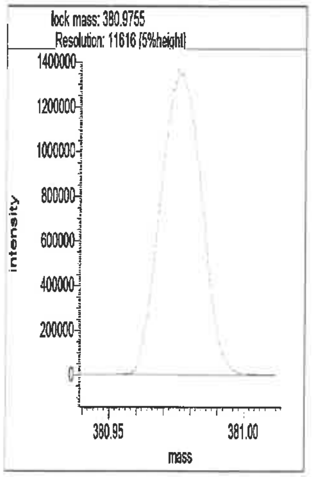

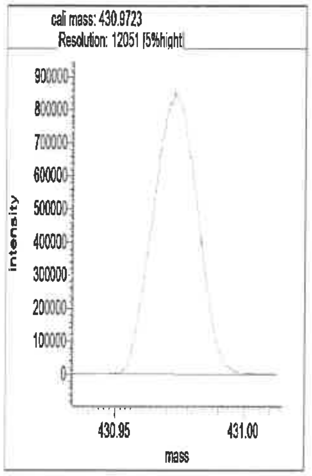

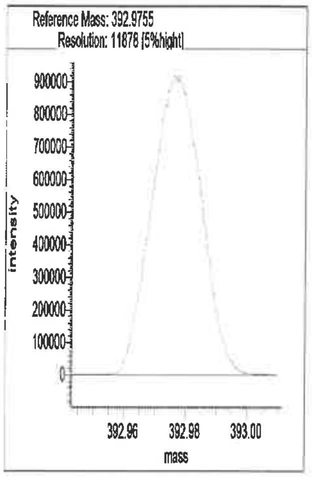

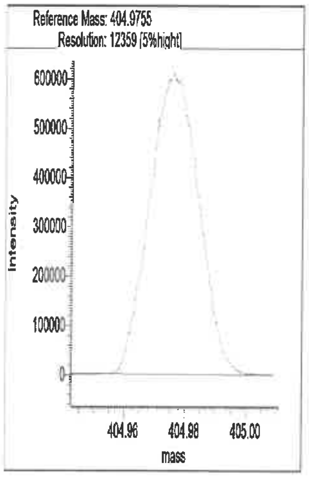

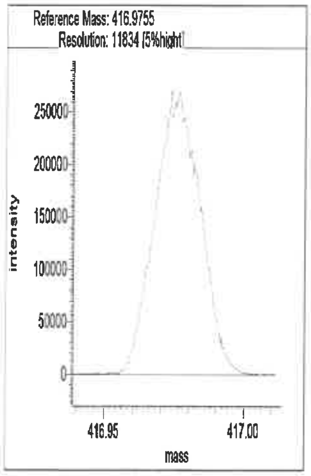

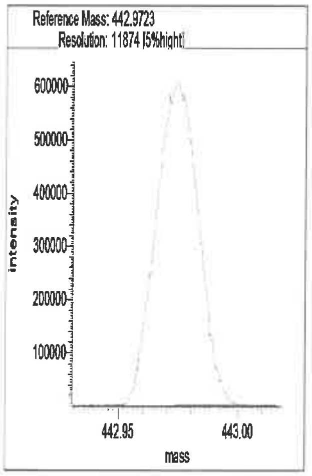

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11697 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11881 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11672 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11710 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11981 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11915 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12045 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12111 [5%height]

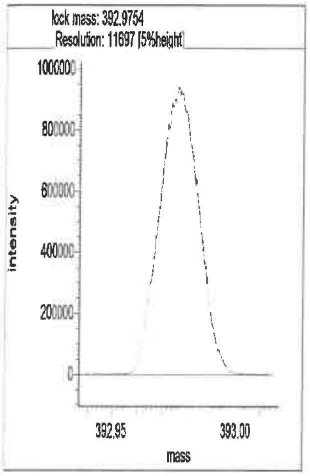

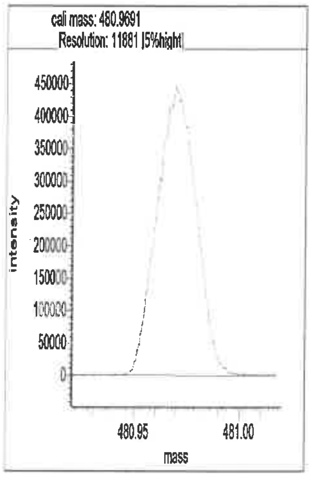

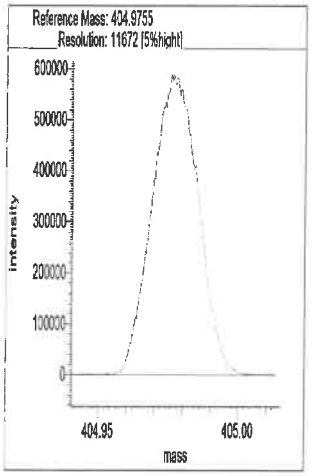

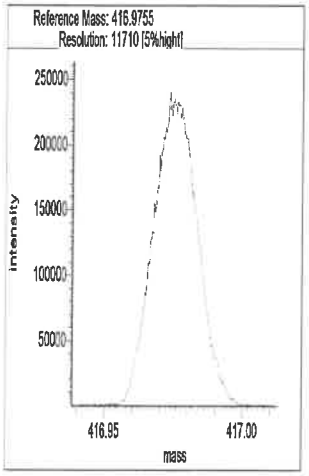

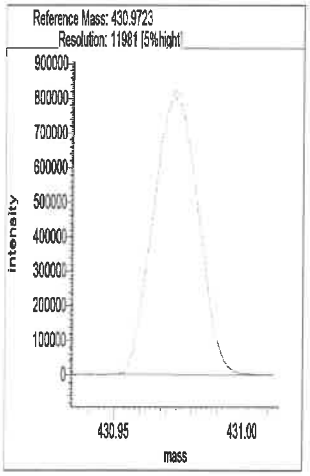

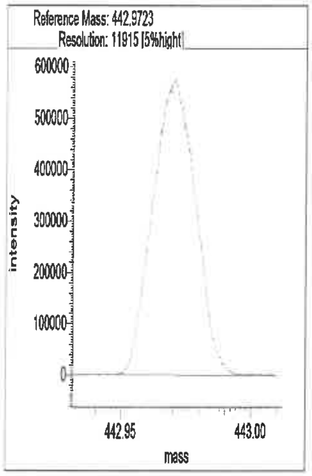

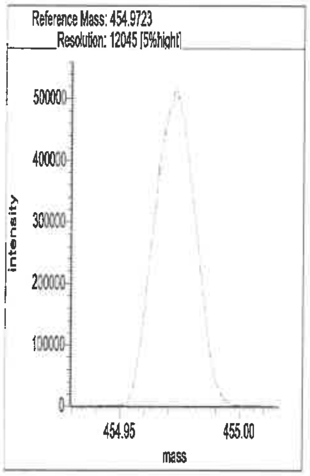

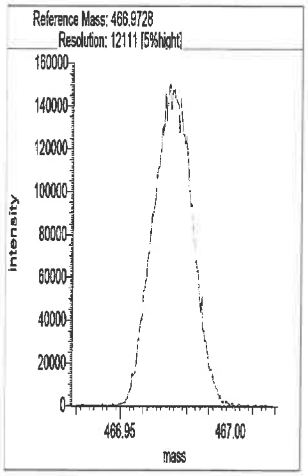

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11911 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12140 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11741 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 11738 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11951 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12100 [5%height]

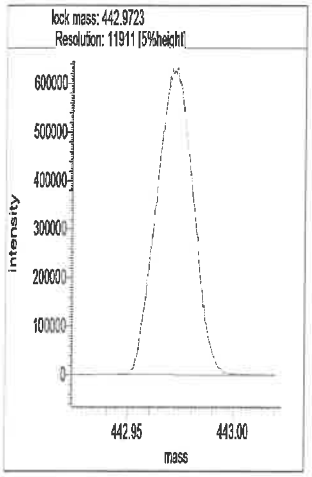
lock mass: 442.9723
Resolution: 11911 [5%height]

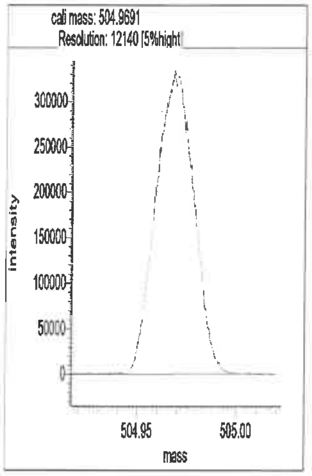
cali mass: 504.9691
Resolution: 12140 [5%hight]

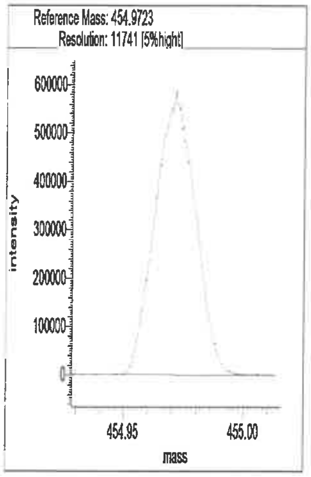
Reference Mass: 454.9723
Resolution: 11741 [5%hight]

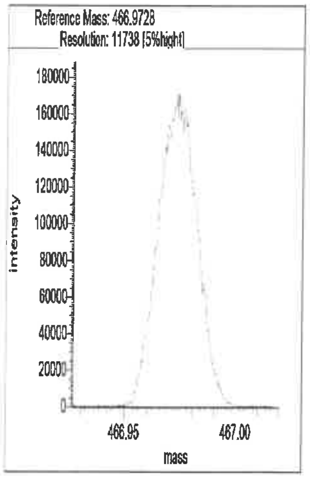
Reference Mass: 466.9728
Resolution: 11738 [5%hight]

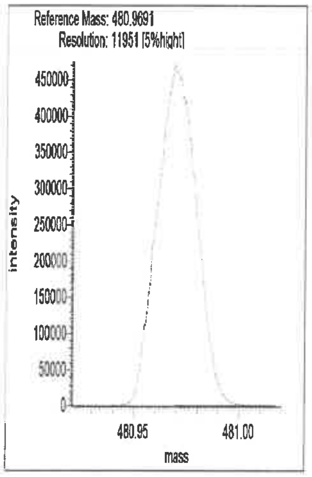
Reference Mass: 480.9691
Resolution: 11951 [5%hight]

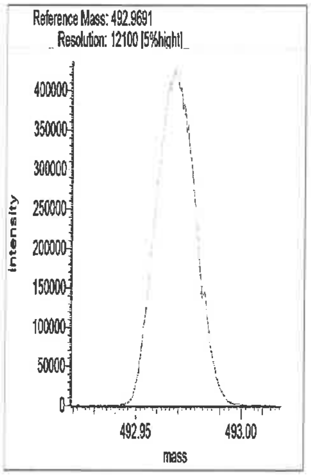
Reference Mass: 492.9691
Resolution: 12100 [5%hight]

Resolution Check Report (DFS SN: 3487)

Date: 20 Sep 2020 15:31
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11805 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11815 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11673 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11782 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11886 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12040 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11647 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12167 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12202 [5%height]

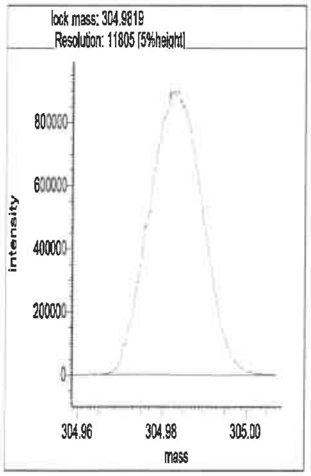

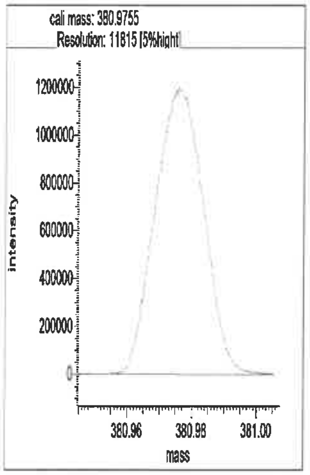

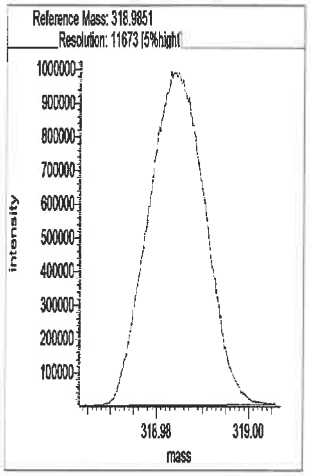

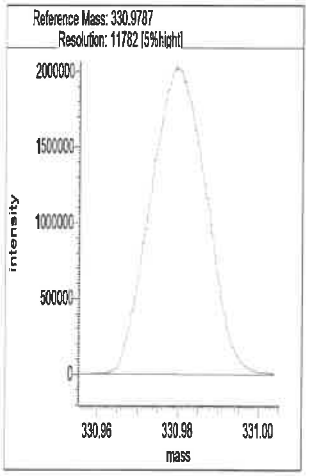

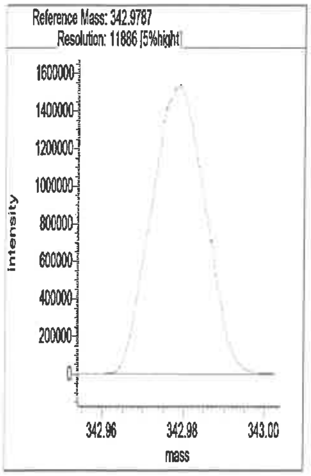

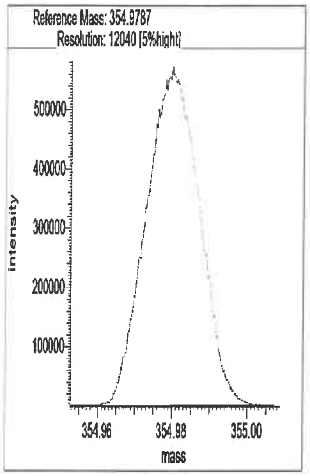

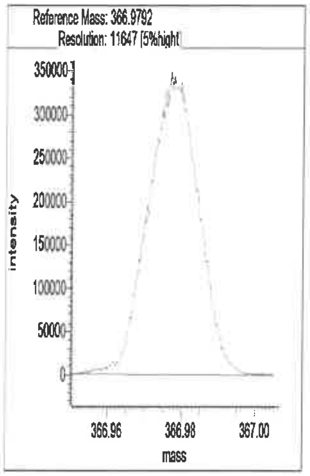

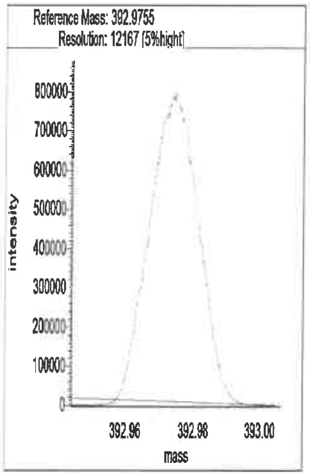

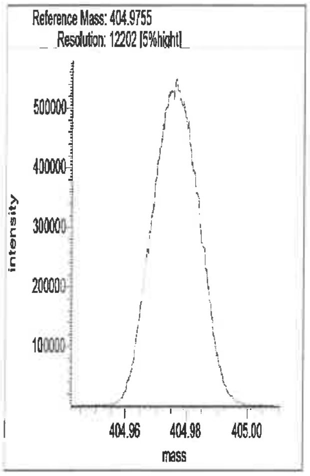

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11789 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11777 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11681 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11925 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11512 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11813 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12017 [5%height]

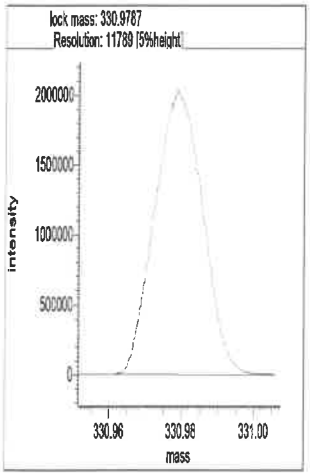

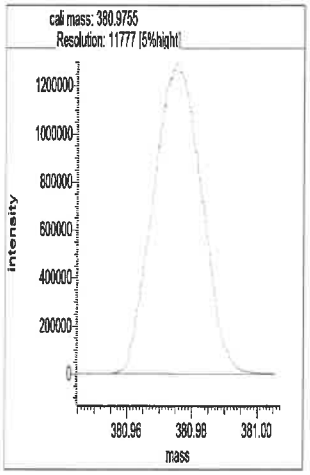

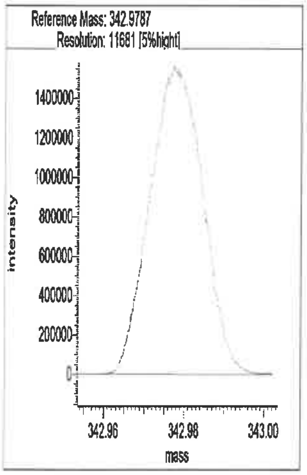

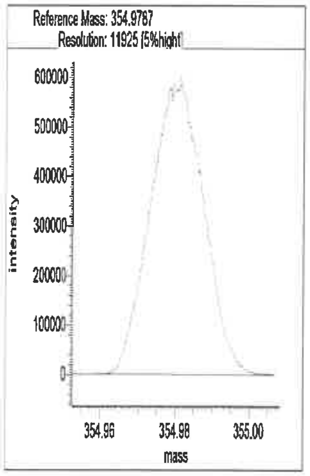

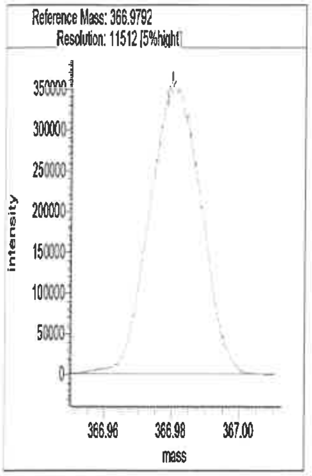

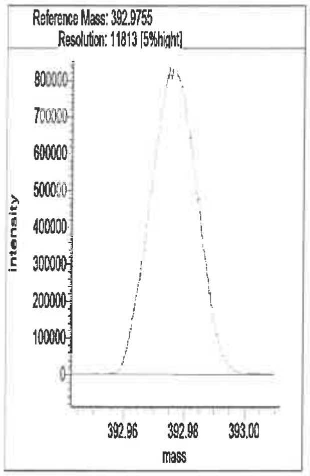

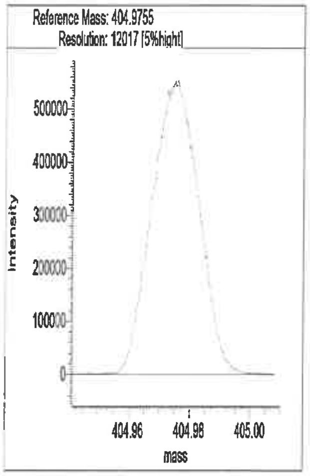

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11575 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12078 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11631 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11747 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11997 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12103 [5%height]

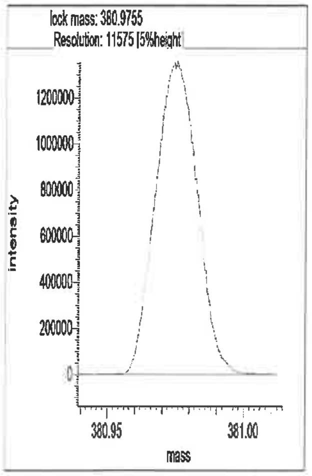

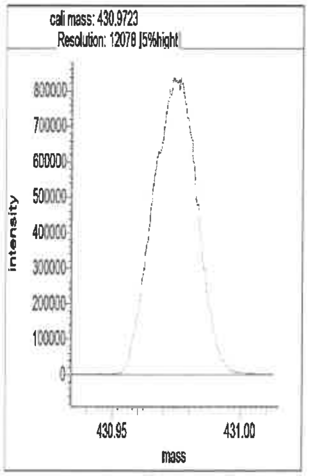

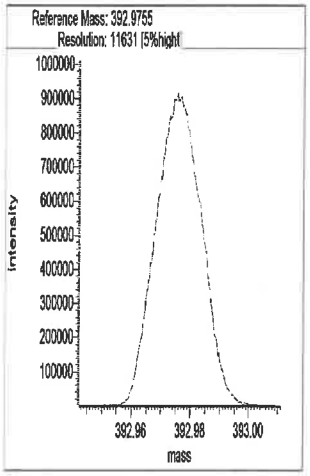

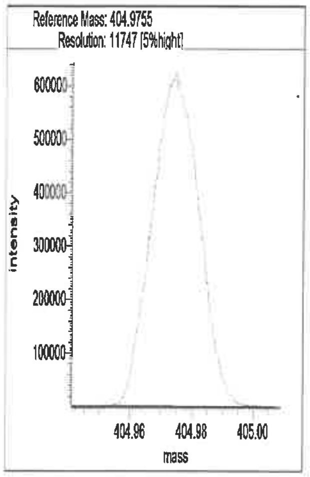

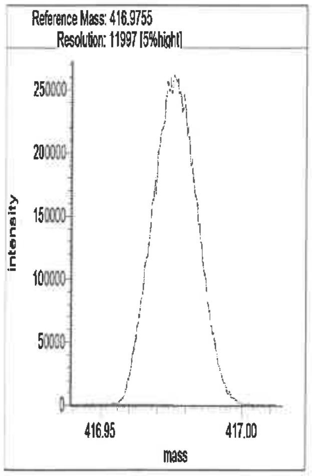

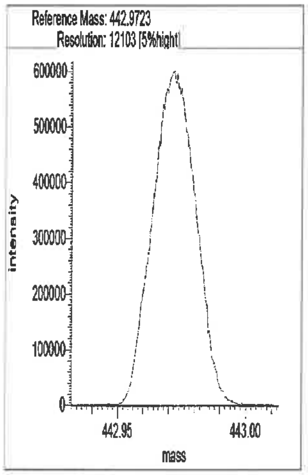

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11720 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12010 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11727 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11780 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11705 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12150 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12041 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12114 [5%height]

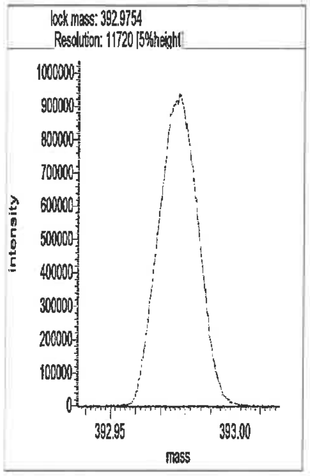

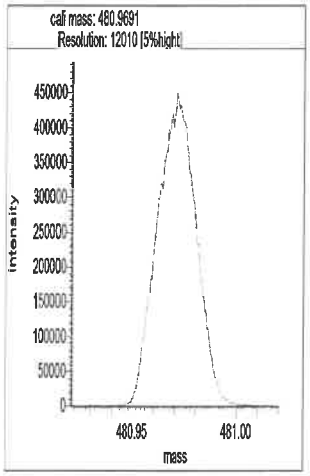

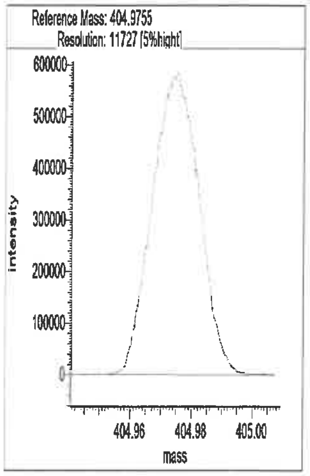

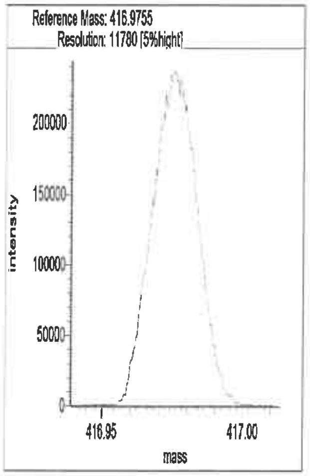

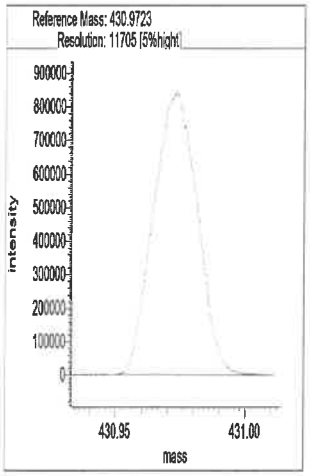

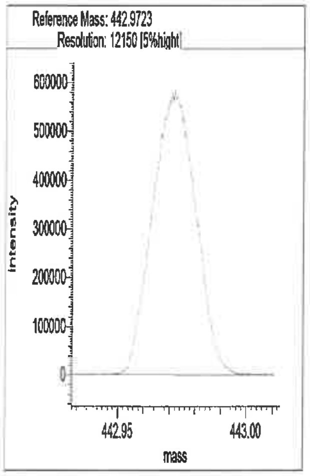

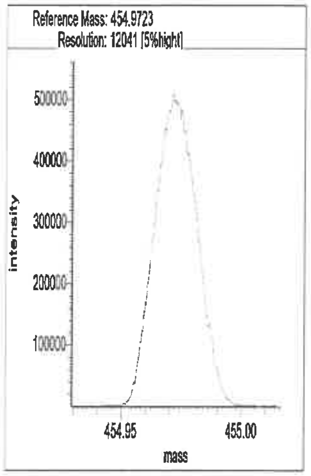

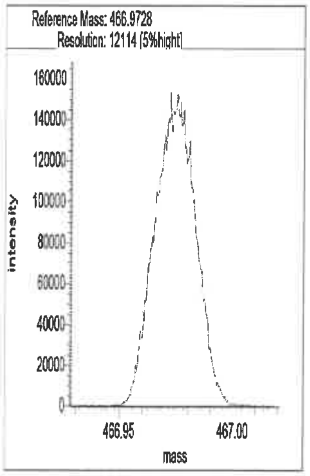

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11707 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12048 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11684 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11750 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11977 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11935 [5%height]

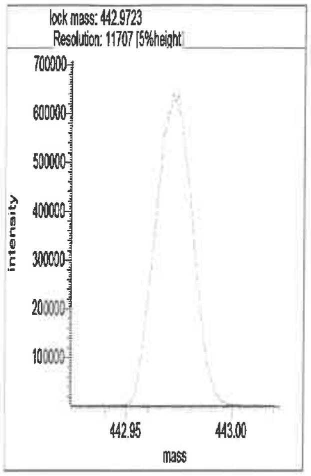
lock mass: 442.9723
Resolution: 11707 [5%height]
700000
600000
500000
400000
300000
200000
100000
intensity
442.95
443.00
mass

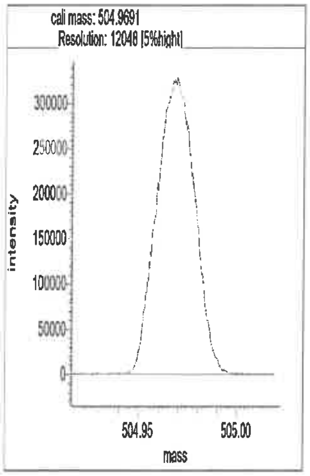
cali mass: 504.9691
Resolution: 12048 [5%hight]
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

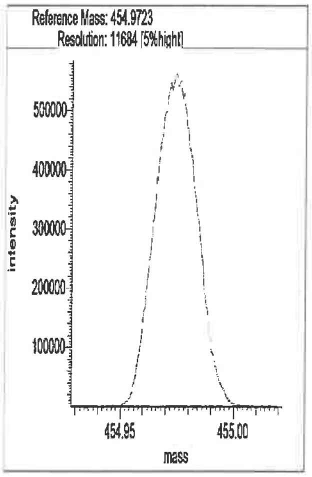
Reference Mass: 454.9723
Resolution: 11684 [5%hight]
500000
400000
300000
200000
100000
intensity
454.95
455.00
mass

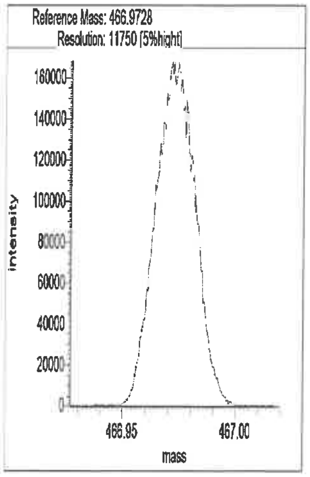
Reference Mass: 466.9728
Resolution: 11750 [5%hight]
160000
140000
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

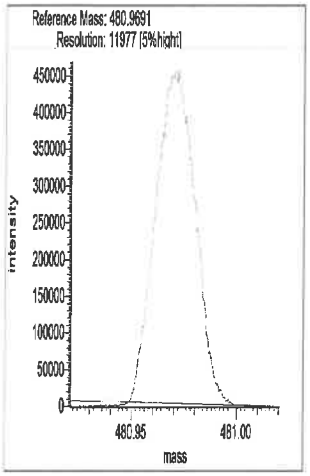
Reference Mass: 480.9691
Resolution: 11977 [5%hight]
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
480.95
481.00
mass

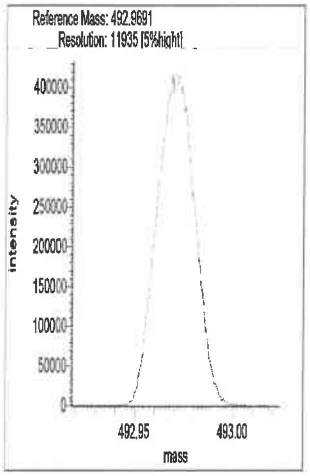
Reference Mass: 492.9691
Resolution: 11935 [5%hight]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	21 Sep 2020 00:44
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12299 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12124 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 12338 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12448 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12333 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12372 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11520 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12403 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12520 [5%height]

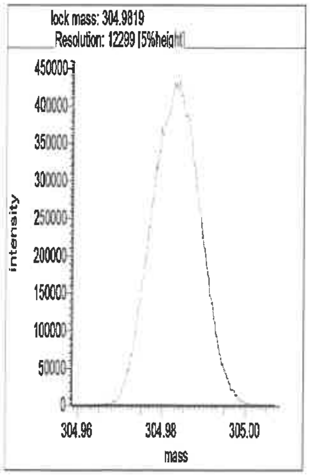

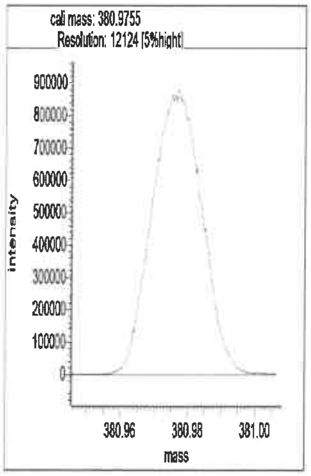

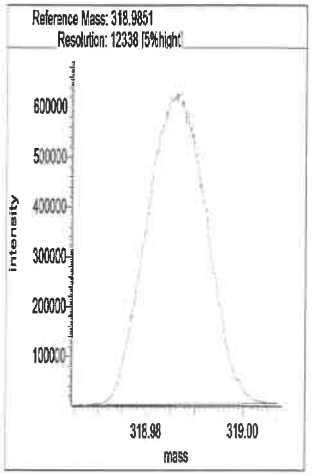

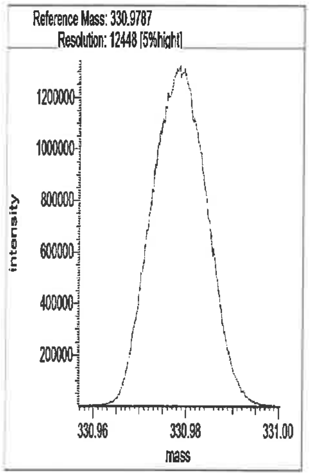

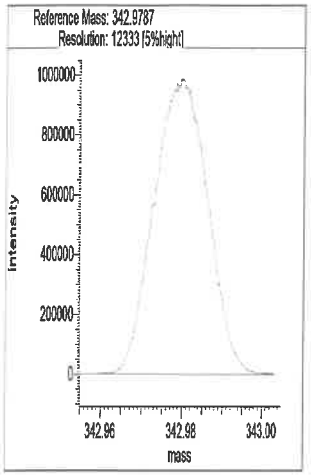

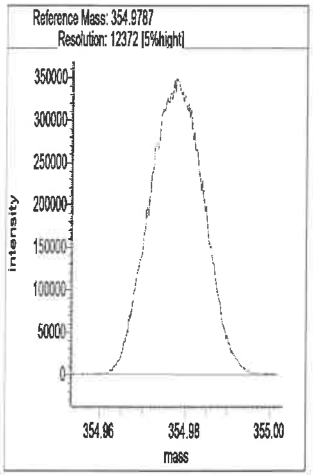

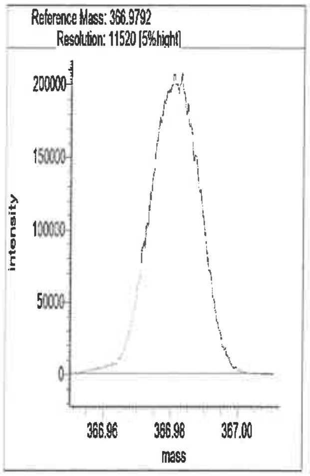

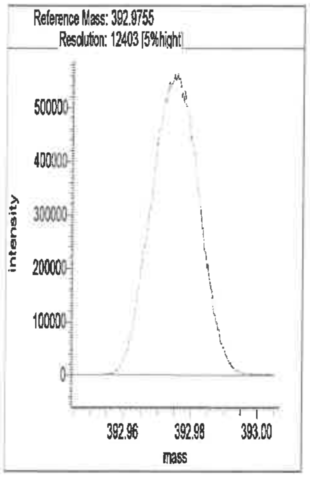

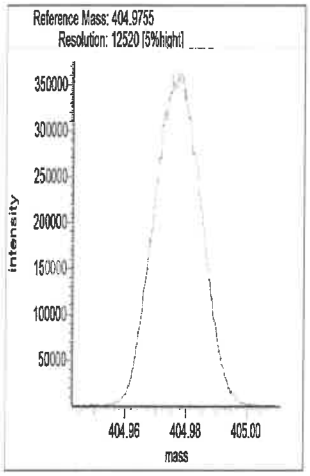

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12546 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12454 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12246 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12391 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11850 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12272 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12214 [5%height]

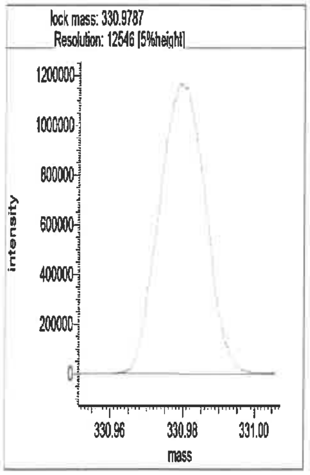

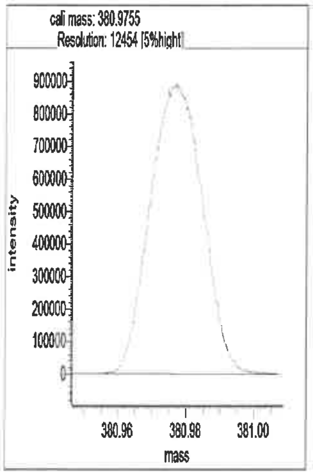

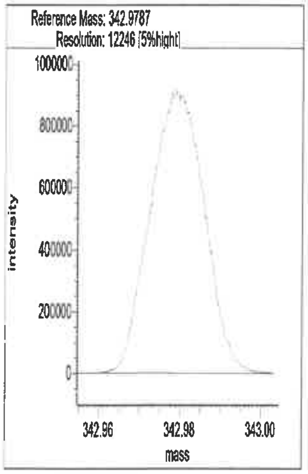

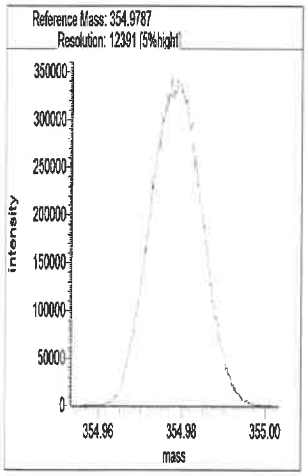

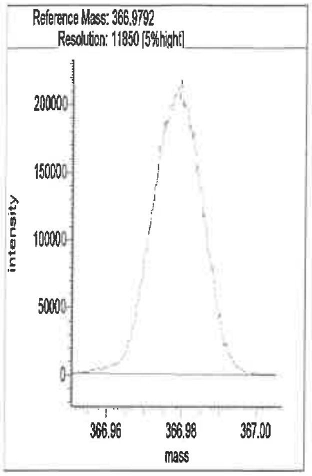

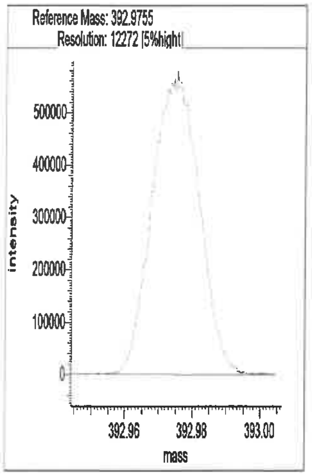

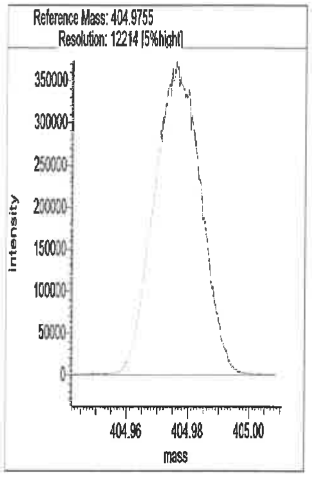

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12206 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12401 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12223 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12337 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12354 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12158 [5%height]

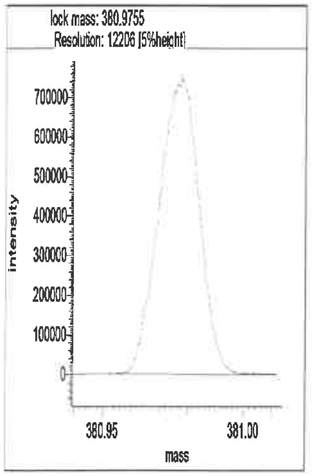

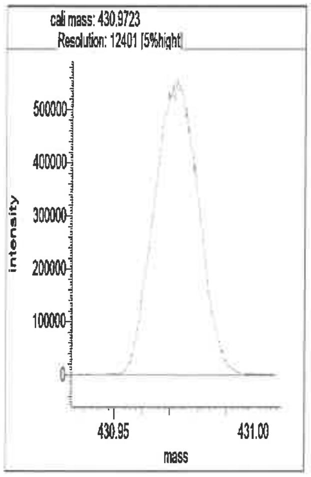

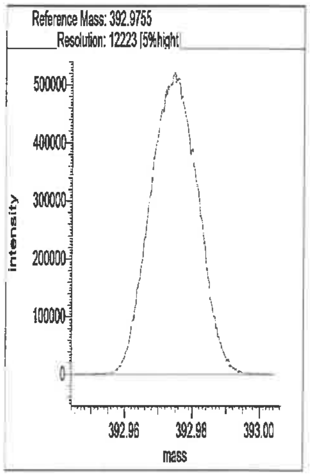

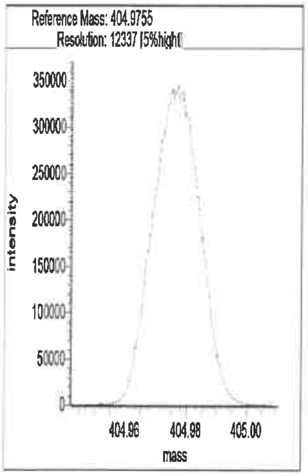

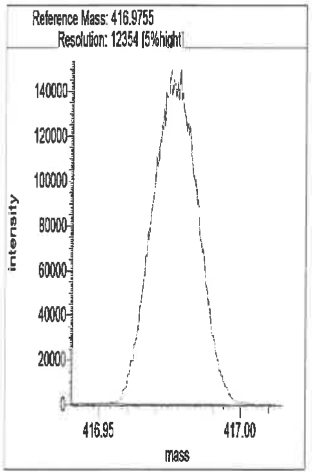

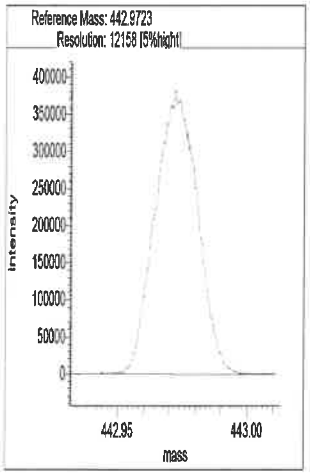

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12486 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12014 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12241 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12118 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12145 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12258 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12392 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 11892 [5%height]

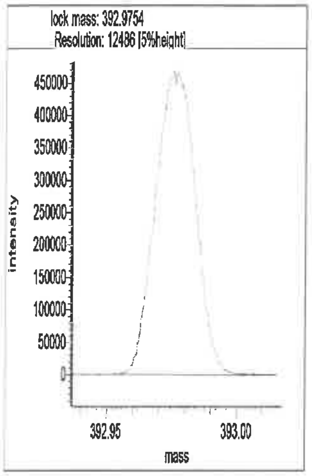

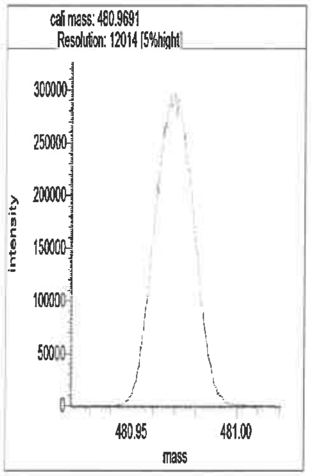

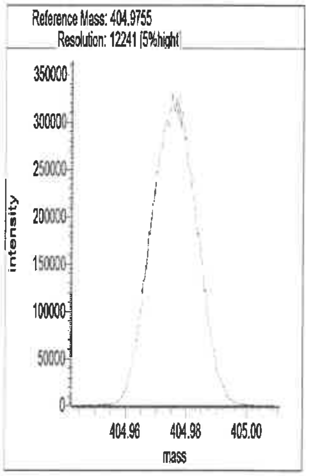

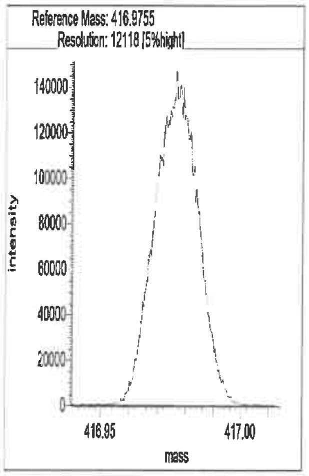

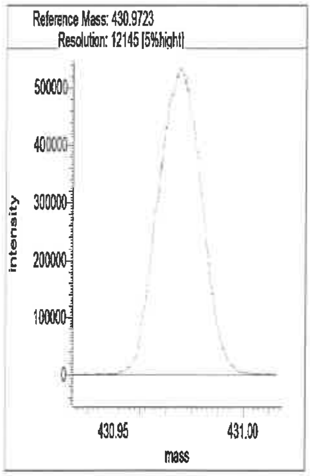

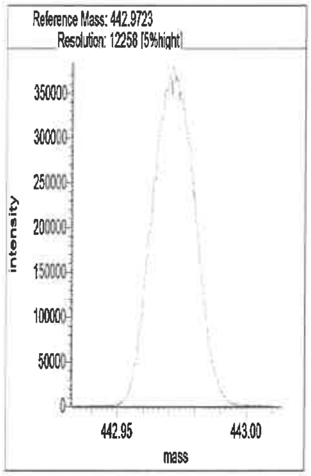

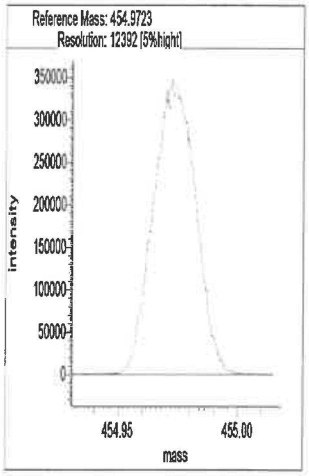

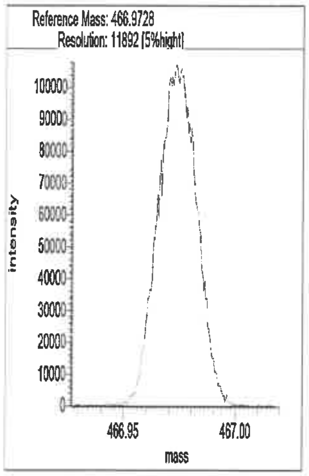

<u>Segment 5</u>

Lock mass 442.9723 [m/z] Resolution: 12407 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12266 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12514 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12263 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12251 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11691 [5%height]

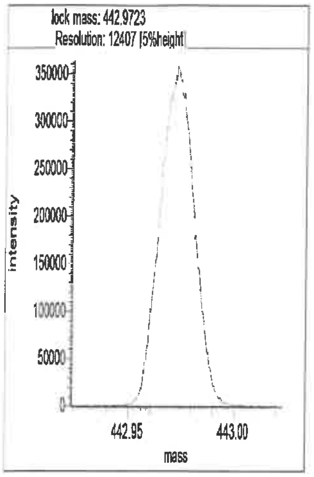
lock mass: 442.9723
Resolution: 12407 [5%height]
350000
300000
250000
200000
150000
100000
50000
0
intensity
442.95
443.00
mass

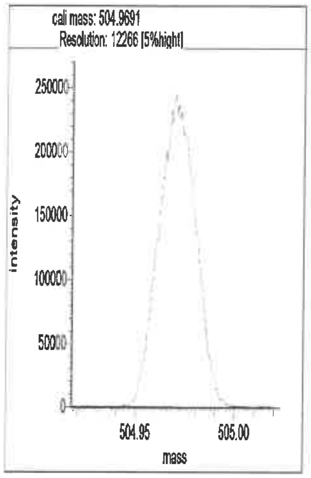
cali mass: 504.9691
Resolution: 12266 [5%hight]
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

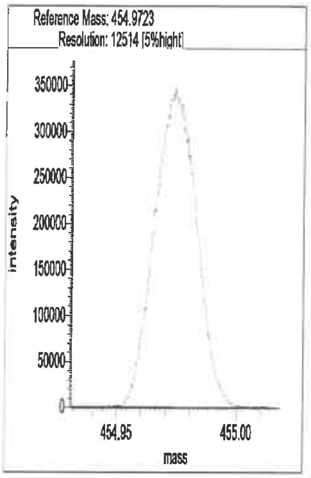
Reference Mass: 454.9723
Resolution: 12514 [5%hight]
350000
300000
250000
200000
150000
100000
50000
0
intensity
454.95
455.00
mass

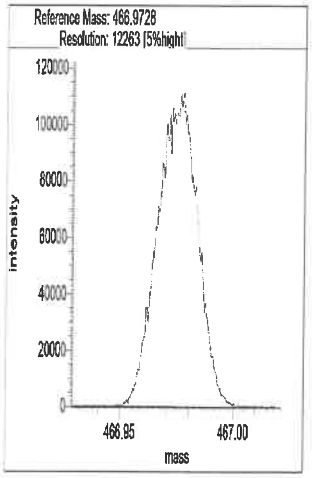
Reference Mass: 466.9728
Resolution: 12263 [5%hight]
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

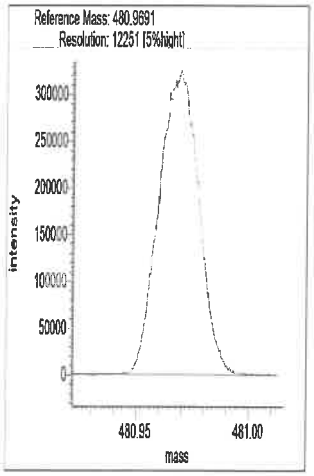
Reference Mass: 480.9691
Resolution: 12251 [5%hight]
300000
250000
200000
150000
100000
50000
0
intensity
480.95
481.00
mass

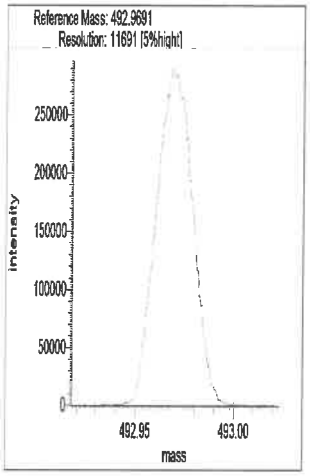
Reference Mass: 492.9691
Resolution: 11691 [5%hight]
250000
200000
150000
100000
50000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	21 Sep 2020 01:52
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12142 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11526 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 12155 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12220 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12073 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12049 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11521 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12138 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12171 [5%height]

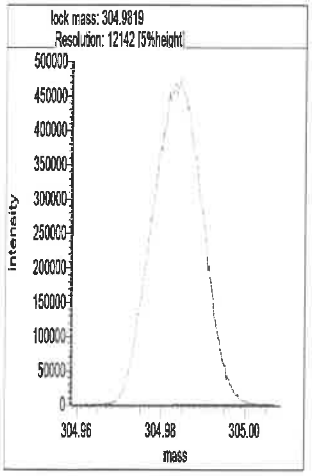

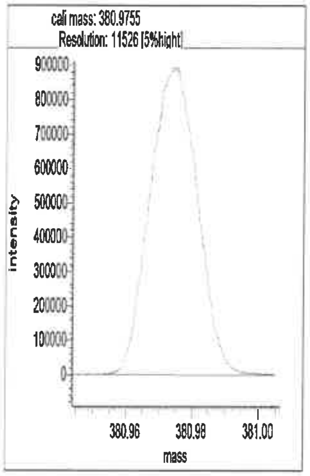

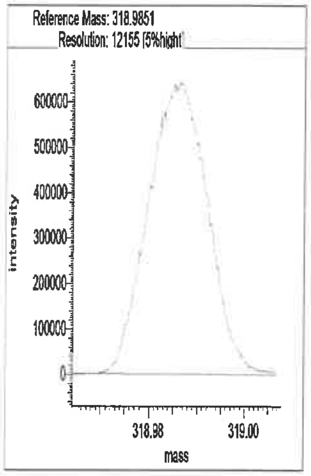

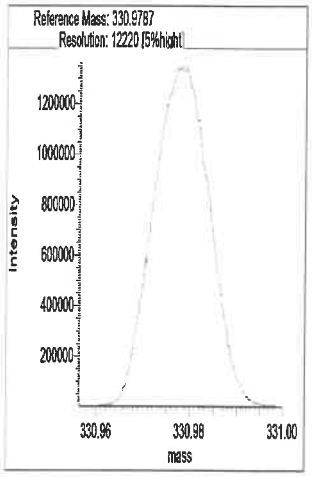

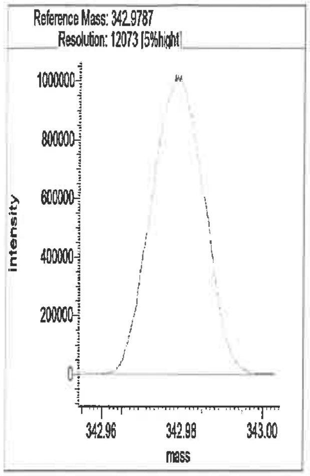

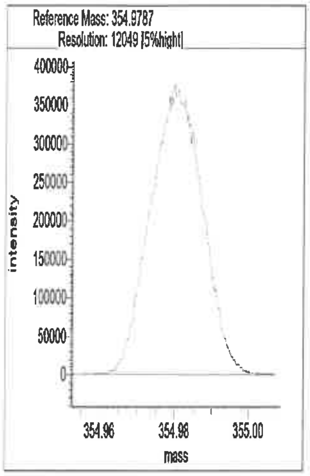

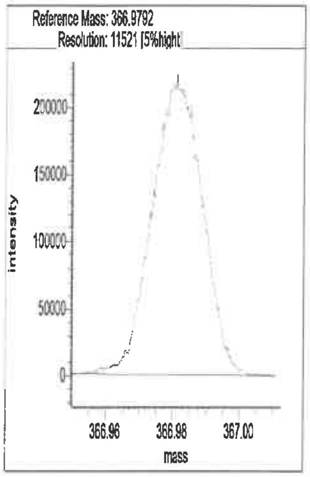

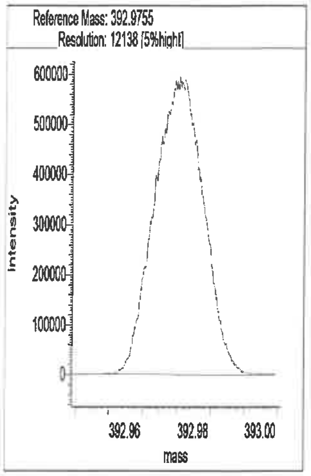

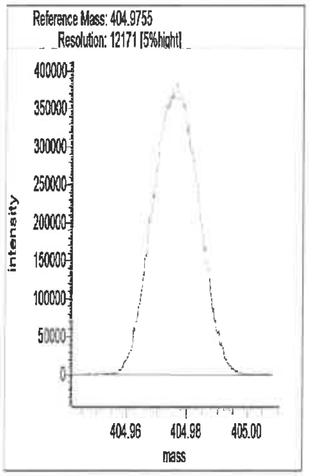

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12187 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12446 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12365 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12430 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11747 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12318 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12113 [5%height]

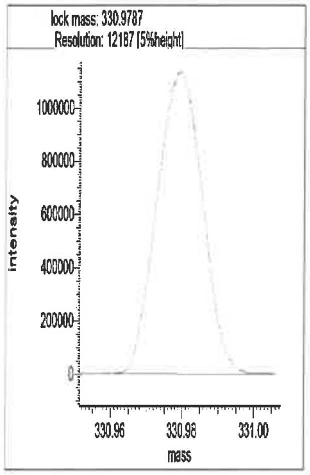

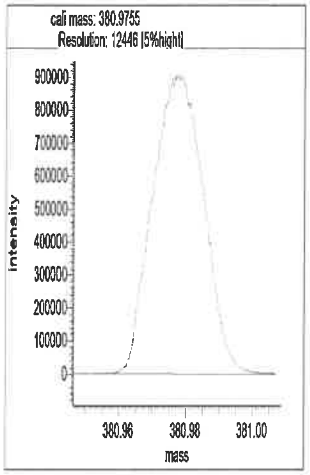

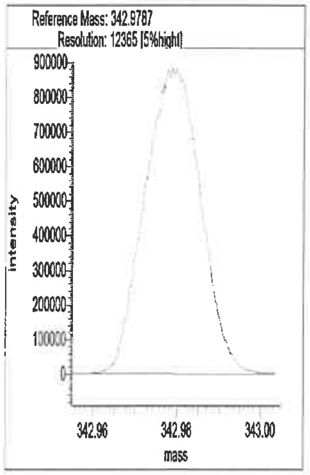

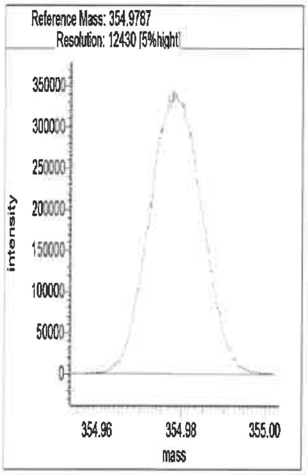

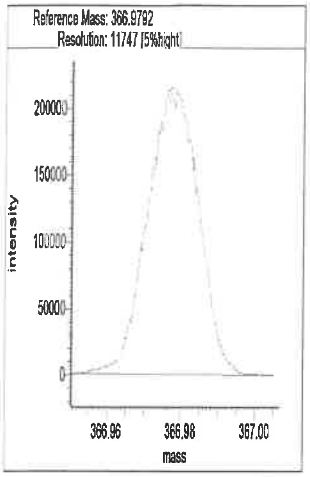

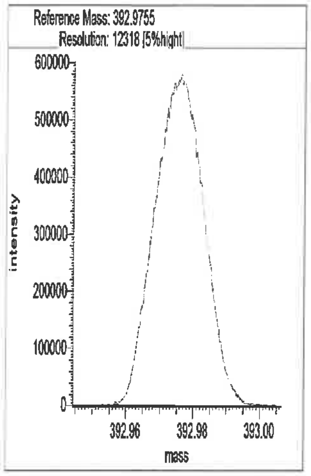

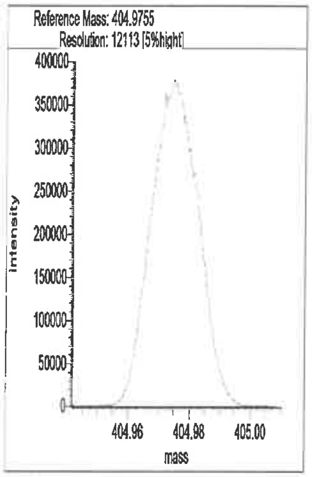

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12215 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12242 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12413 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12304 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12275 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11967 [5%height]

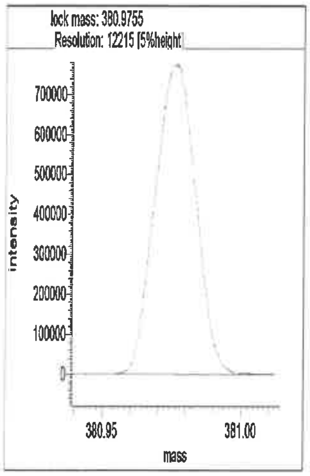

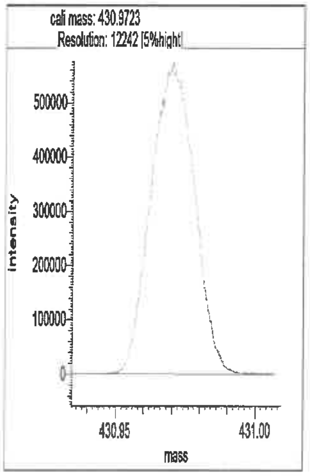

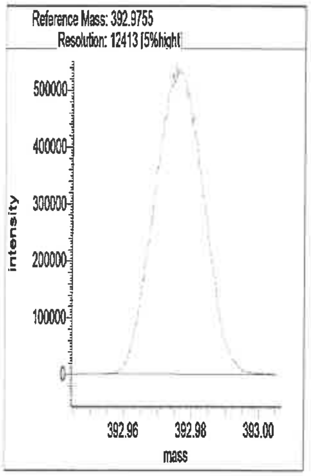

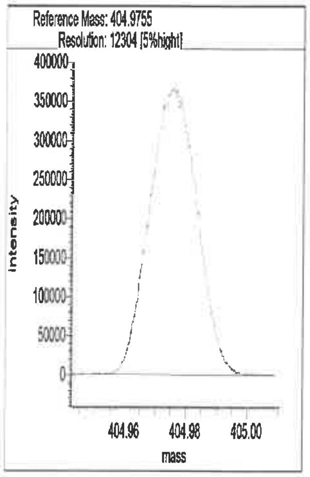

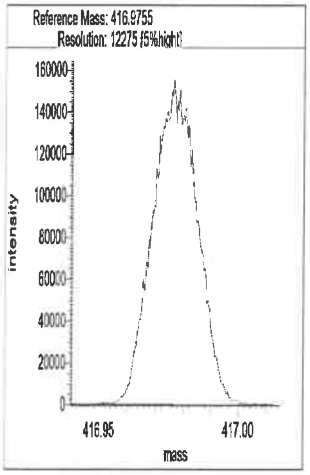

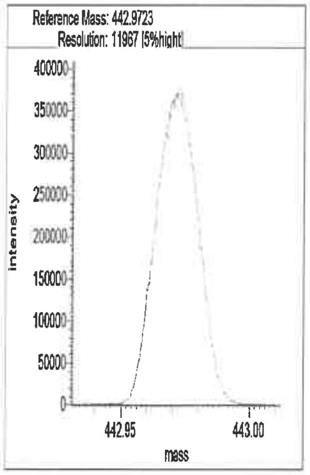

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12289 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12099 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12163 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11959 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12241 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12071 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12111 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12163 [5%height]

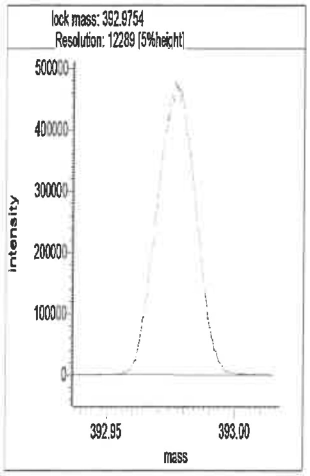

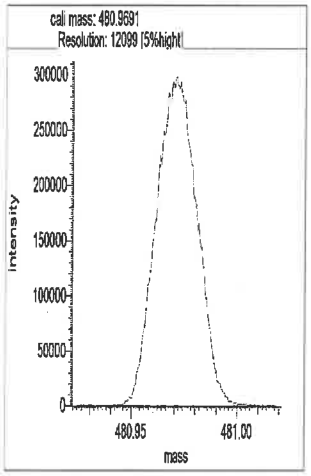

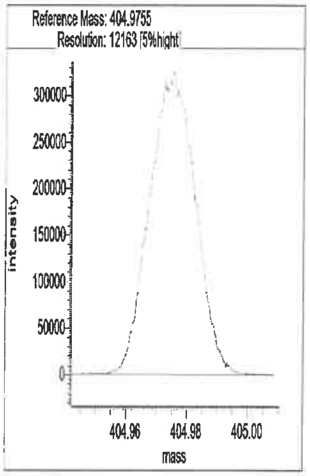

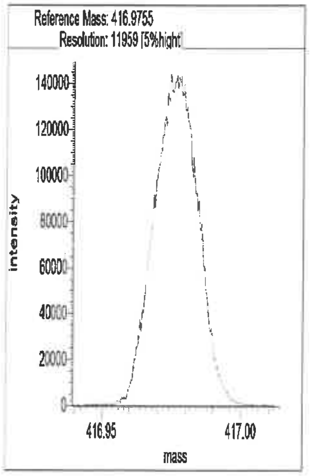

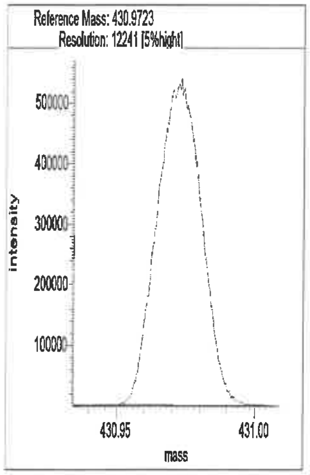

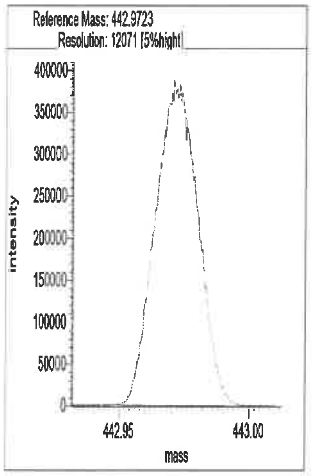

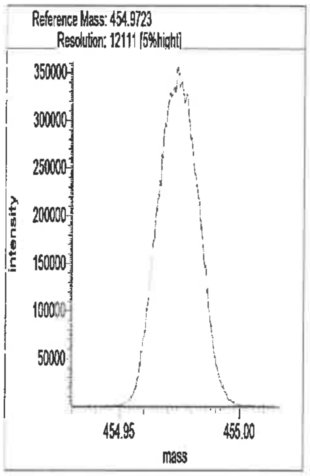

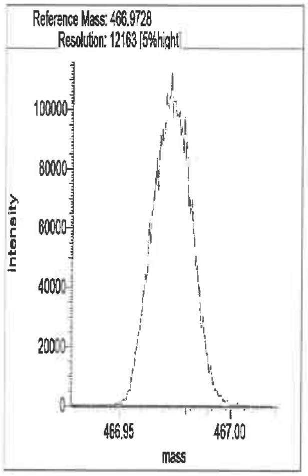

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12061 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12157 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12214 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12351 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12322 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12255 [5%height]

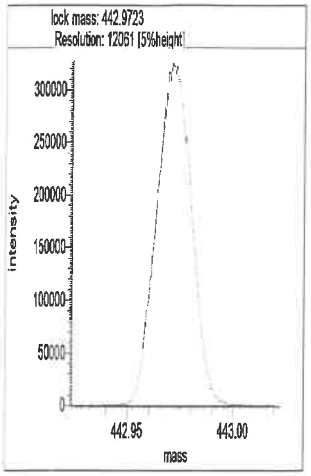
lock mass: 442.9723
Resolution: 12061 [5%height]
intensity
300000
250000
200000
150000
100000
50000
0
442.95
443.00
mass

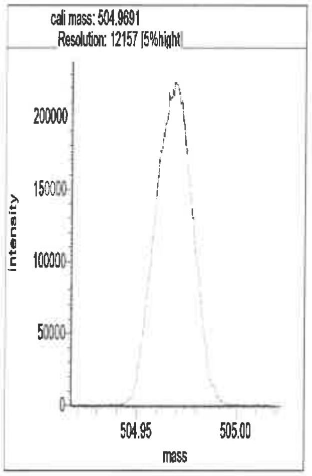
cali mass: 504.9691
Resolution: 12157 [5%hight]
intensity
200000
150000
100000
50000
0
504.95
505.00
mass

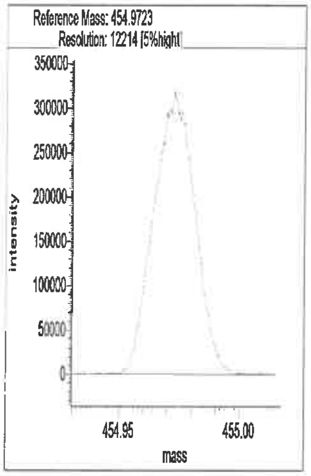
Reference Mass: 454.9723
Resolution: 12214 [5%hight]
intensity
350000
300000
250000
200000
150000
100000
50000
0
454.95
455.00
mass

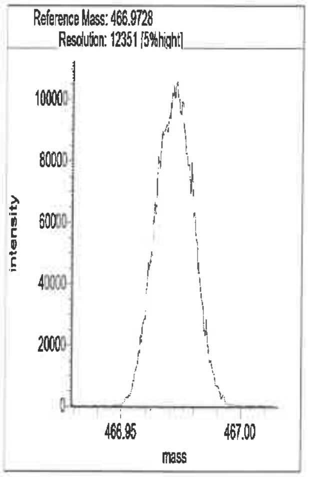
Reference Mass: 466.9728
Resolution: 12351 [5%hight]
intensity
100000
80000
60000
40000
20000
0
466.95
467.00
mass

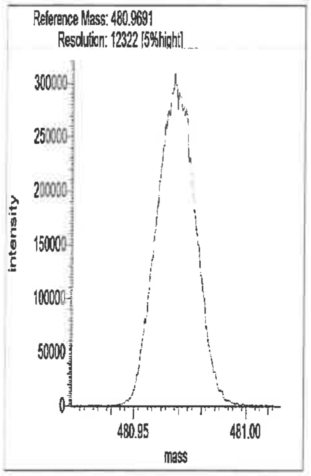
Reference Mass: 480.9691
Resolution: 12322 [5%hight]
intensity
300000
250000
200000
150000
100000
50000
0
480.95
481.00
mass

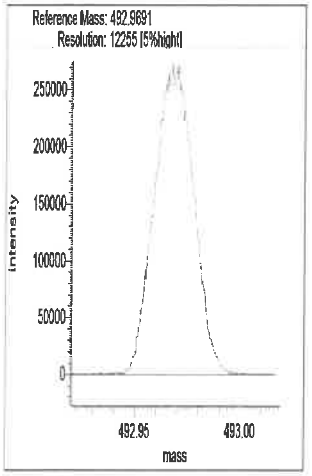
Reference Mass: 492.9691
Resolution: 12255 [5%hight]
intensity
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Sep-2020 14:45:00 ALS Bottle#: 0 Worklist Smp#: 58
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 11:24:18 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: stephensk Date: 21-Sep-2020 08:05:24

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.189	3274361	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.268	5168210	0.78	1.5883	99.4	99.4	0.2702	0.2702	99.37	
2,3,7,8-TCDF	19.294	542034	0.78	1.0857	9.660	9.660	0.0377	0.0377	96.60	
A Non-2,3,7,8-sub-TCDF	18.816						0.0377	0.0377		
S Total TCDF					9.660	9.660	0.0377	0.0377		
D 13C-2,3,7,8-TCDD	20.550	3555361	0.79	1.1194	97.0	97.0	0.2195	0.2195	97.00	
2,3,7,8-TCDD	20.584	383718	0.75	1.0810	9.984	9.984	0.0530	0.0530	99.84	
$ 37Cl4-2,3,7,8-TCDD	20.584	379436		1.1468	10.1	10.1	0.0147	0.0147	101	
A Non-2,3,7,8-sub-TCDD	19.624						0.0530	0.0530		
S Total TCDD					9.984	9.984	0.0530	0.0530		
D 13C-1,2,3,7,8-PeCDF	26.324	4632960	1.57	1.4782	95.7	95.7	0.3856	0.3856	95.72	
1,2,3,7,8-PeCDF	26.349	2350288	1.58	1.0547	48.1	48.1	0.1775	0.1775	96.20	
D 13C-2,3,4,7,8-PeCDF	27.781	4336036	1.57	1.3912	95.2	95.2	0.4097	0.4097	95.19	
2,3,4,7,8-PeCDF	27.806	2301894	1.58	1.1035	48.1	48.1	0.1880	0.1880	96.21	
A F1 PeCDFs	23.607						0.007787	0.007787		
A Non-2,3,7,8-sub-PeCDF	27.000						0.1824	0.1824		n
S Total PeCDF					96.2	96.2	0.1827	0.1827		
D 13C-1,2,3,7,8-PeCDD	28.564	3081415	1.60	0.9415	100.0	100.0	0.1304	0.1304	99.96	
1,2,3,7,8-PeCDD	28.589	1592639	1.59	1.0680	48.4	48.4	0.0571	0.0571	96.79	
A Non-2,3,7,8-sub-PeCDD	27.361						0.0571	0.0571		
S Total PeCDD					48.4	48.4	0.0571	0.0571		
D 13C-1,2,3,4,7,8-HxCDF	34.192	3618736	0.54	1.1378	92.5	92.5	0.3959	0.3959	92.46	
1,2,3,4,7,8-HxCDF	34.217	2252131	1.25	1.2643	49.2	49.2	0.2424	0.2424	98.45	
D 13C-1,2,3,6,7,8-HxCDF	34.385	4310304	0.52	1.3173	95.1	95.1	0.3420	0.3420	95.12	
1,2,3,6,7,8-HxCDF	34.402	2576597	1.25	1.2230	48.9	48.9	0.2185	0.2185	97.75	
D 13C-2,3,4,6,7,8-HxCDF	35.286	4072466	0.53	1.2457	95.0	95.0	0.3616	0.3616	95.04	
2,3,4,6,7,8-HxCDF	35.303	2426502	1.25	1.2464	47.8	47.8	0.1860	0.1860	95.60	
D 13C-1,2,3,7,8,9-HxCDF	36.238	3842010	0.53	1.1840	94.3	94.3	0.3805	0.3805	94.33	
1,2,3,7,8,9-HxCDF	36.255	2328843	1.26	1.2638	48.0	48.0	0.1816	0.1816	95.93	
A Non-2,3,7,8-sub-HxCDF	34.215						0.2043	0.2043		
S Total HxCDF					193.9	193.9	0.2071	0.2071		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.036	3439945	1.27	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.514	2839980	1.27	0.8477	97.4	97.4	0.2284	0.2284	97.39	
1,2,3,4,7,8-HxCDD	35.530	1590420	1.25	1.1561	48.4	48.4	0.1115	0.1115	96.88	
D 13C-1,2,3,6,7,8-HxCDD	35.648	3420760	1.27	0.9979	99.7	99.7	0.1940	0.1940	99.66	
1,2,3,6,7,8-HxCDD	35.657	1688852	1.26	1.0284	48.0	48.0	0.1119	0.1119	96.01	
1,2,3,7,8,9-HxCDD	36.053	1781412	1.24	1.1789	48.3	48.3	0.1032	0.1032	96.54	
A Non-2,3,7,8-sub-HxCDD	34.670						0.1085	0.1085		
S Total HxCDD					144.7	144.7	0.1089	0.1089		
D 13C-1,2,3,4,6,7,8-HpCDF	38.144	3296504	0.46	0.9884	97.0	97.0	0.4435	0.4435	96.96	
1,2,3,4,6,7,8-HpCDF	38.161	2370404	1.04	1.5064	47.7	47.7	0.1860	0.1860	95.47	
D 13C-1,2,3,4,7,8,9-HpCDF	39.442	3108565	0.46	0.9203	98.2	98.2	0.4763	0.4763	98.19	
1,2,3,4,7,8,9-HpCDF	39.451	2166870	1.03	1.4548	47.9	47.9	0.1876	0.1876	95.83	
A Non-2,3,7,8-sub-HpCDF	38.760						0.1868	0.1868		
S Total HpCDF					95.6	95.6	0.1868	0.1868		
D 13C-1,2,3,4,6,7,8-HpCDD	39.130	3258597	1.05	0.9556	99.1	99.1	0.2198	0.2198	99.13	
1,2,3,4,6,7,8-HpCDD	39.138	1673128	1.05	1.0640	48.3	48.3	0.0929	0.0929	96.51	
A Non-2,3,7,8-sub-HpCDD	38.875						0.0929	0.0929		
S Total HpCDD					48.3	48.3	0.0929	0.0929		
D 13C-OCDD	41.583	5230145	0.90	0.7420	204.9	204.9	0.2326	0.2326	102	
OCDF	41.676	3532234	0.91	1.4296	94.5	94.5	0.0940	0.0940	94.48	
OCDD	41.592	2819993	0.89	1.1293	95.5	95.5	0.0848	0.0848	95.49	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 11:24:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 20-Sep-2020 14:45:00 ALS Bottle#: 0 Worklist Smp#: 58
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 11:24:18 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: stephensk Date: 21-Sep-2020 08:05:24

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.189	20.189	0		1449207	214399	292	730	734		
333.9338	20.180	20.189	-1		1825154	271887	186	465	1462	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.268	19.268	0	0.954	2264193	343538	595	1487	577		
317.9389	19.268	19.268	0	0.954	2904017	427047	240	600	1779	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.294	19.294	0	1.001	237358	35322	49	122	721		
305.8987	19.294	19.294	0	1.001	304676	44663	77	192	580	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.816						49	122			
305.8987	18.816						77	192			
13C-2,3,7,8-TCDD											
331.9368	20.550	20.550	0	1.018	1567823	223606	292	730	766		
333.9338	20.550	20.550	0	1.018	1987538	285916	186	465	1537	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.584	20.584	0	1.002	164468	23833	90	225	265		
321.8936	20.575	20.584	-1	1.001	219250	30745	27	67	1139	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.584	20.584	0	1.020	379436	53058	33	82	1608		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.624						90	225			
321.8936	19.624						27	67			
13C-1,2,3,7,8-PeCDF											
351.9000	26.324	26.324	0	1.304	2830483	476188	668	1670	713		
353.8970	26.332	26.324	1	1.304	1802477	299529	441	1102	679	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.349	26.349	0	1.001	1440566	236255	344	860	687		
341.8567	26.349	26.349	0	1.001	909722	149189	237	592	629	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.781	27.781	0	1.376	2646196	429298	668	1670	643		
353.8970	27.781	27.781	0	1.376	1689840	270599	441	1102	614	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.806	27.806	0	1.001	1409751	222353	344	860	646		
341.8567	27.806	27.806	0	1.001	892143	139922	237	592	590	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.607						3	7			
341.8567	23.607						22	55			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.947	26.996	-3	1.024	13442	1935	344	860	6		
341.8567	26.913	26.996	-5	1.022	8763	1209	237	592	5	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.564	28.564	0	1.415	1894861	280016	134	335	2090		
369.8919	28.555	28.564	-1	1.414	1186554	174131	105	262	1658	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.589	28.589	0	1.001	978052	141202	81	202	1743		
357.8516	28.589	28.589	0	1.001	614587	90018	30	75	3001	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.361						81	202			
357.8516	27.361						30	75			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.192	34.192	0	0.949	1263072	255948	535	1337	478		
385.8610	34.200	34.192	1	0.949	2355664	472280	1054	2635	448	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.217	34.217	0	1.001	1251929	253625	496	1240	511		
375.8178	34.217	34.217	0	1.001	1000202	201478	397	992	508	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.385	34.385	0	0.954	1480873	290458	535	1337	543		
385.8610	34.377	34.385	-1	0.954	2829431	544589	1054	2635	517	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.402	34.402	0	1.000	1430452	277252	496	1240	559		
375.8178	34.402	34.402	0	1.000	1146145	220950	397	992	557	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.286	35.286	0	0.979	1402238	329178	535	1337	615		
385.8610	35.286	35.286	0	0.979	2670228	633358	1054	2635	601	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.303	35.303	0	1.000	1349774	316857	496	1240	639		
375.8178	35.303	35.303	0	1.000	1076728	251849	397	992	634	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.238	36.238	0	1.006	1330771	337933	535	1337	632		
385.8610	36.238	36.238	0	1.006	2511239	634832	1054	2635	602	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.255	36.255	0	1.000	1296892	321023	496	1240	647		
375.8178	36.255	36.255	0	1.000	1031951	255838	397	992	644	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.215						496	1240			
375.8178	34.215						397	992			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.036	36.036	0		1924539	493153	375	937	1315		
403.8529	36.036	36.036	0		1515406	388564	308	770	1262	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.514	35.514	0	0.985	1591623	399042	375	937	1064		
403.8529	35.514	35.514	0	0.985	1248357	318251	308	770	1033	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.530	35.530	0	1.000	884350	224414	198	495	1133		
391.8127	35.530	35.530	0	1.000	706070	178756	172	430	1039	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.648	35.648	0	0.989	1910867	449982	375	937	1200		
403.8529	35.648	35.648	0	0.989	1509893	353787	308	770	1149	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.657	35.657	0	1.000	942415	223379	198	495	1128		
391.8127	35.657	35.657	0	1.000	746437	176842	172	430	1028	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.053	36.053	0	1.015	985934	249945	198	495	1262		
391.8127	36.045	36.053	-1	1.015	795478	198070	172	430	1152	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.670						198	495			
391.8127	34.670						172	430			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.144	38.144	0	1.058	1031496	325051	521	1302	624		
419.8220	38.144	38.144	0	1.058	2265008	710807	1025	2562	693	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.161	38.161	0	1.000	1207316	373129	614	1535	608		
409.7788	38.153	38.161	-1	1.000	1163088	364548	547	1367	666	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.442	39.442	0	1.095	972176	335226	521	1302	643		
419.8220	39.442	39.442	0	1.095	2136389	727922	1025	2562	710	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.451	39.451	0	1.000	1101935	375090	614	1535	611		
409.7788	39.451	39.451	0	1.000	1064935	365675	547	1367	669	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.760						614	1535			
409.7788	38.760						547	1367			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.130	39.130	0	1.086	1671446	578316	360	900	1606		
437.8140	39.130	39.130	0	1.086	1587151	544521	381	952	1429	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.138	39.138	0	1.000	857790	292510	235	587	1245		
425.7737	39.138	39.138	0	1.000	815338	279741	209	522	1338	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.875						235	587			
425.7737	38.875						209	522			
13C-OCDD											
469.7780	41.583	41.583	0	1.154	2475973	788819	320	800	2465		
471.7750	41.583	41.583	0	1.154	2754172	885353	289	722	3064	0.90(0.76-1.02)	
OCDF											
441.7428	41.676	41.676	0	1.002	1682906	537980	203	507	2650		
443.7399	41.676	41.676	0	1.002	1849328	592731	247	617	2400	0.91(0.76-1.02)	
OCDD											
457.7377	41.592	41.592	0	1.000	1328139	425668	152	380	2800		
459.7348	41.592	41.592	0	1.000	1491854	485726	169	422	2874	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 11:24:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d		
Injection Date:	20-Sep-2020 14:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

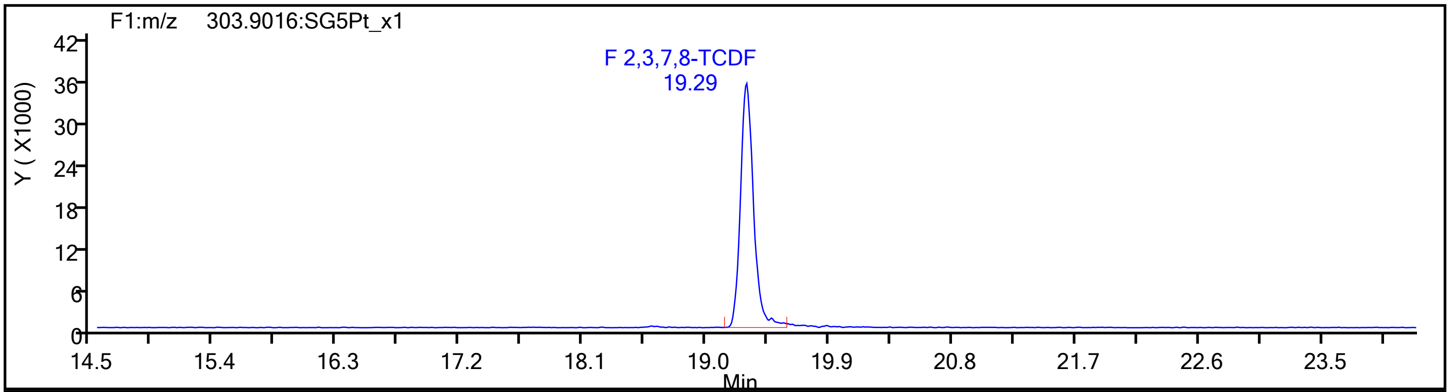

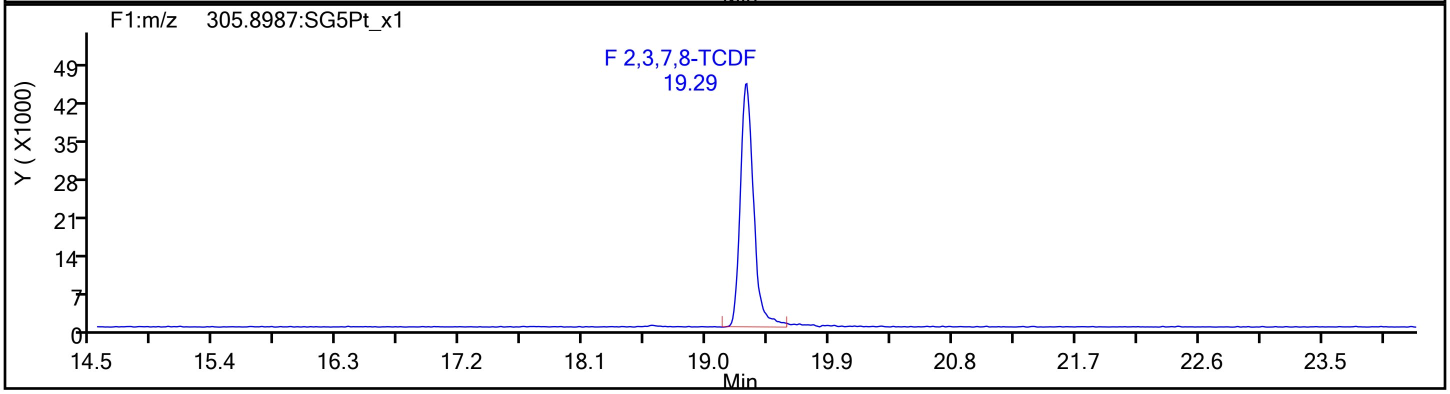

TCDF Standards

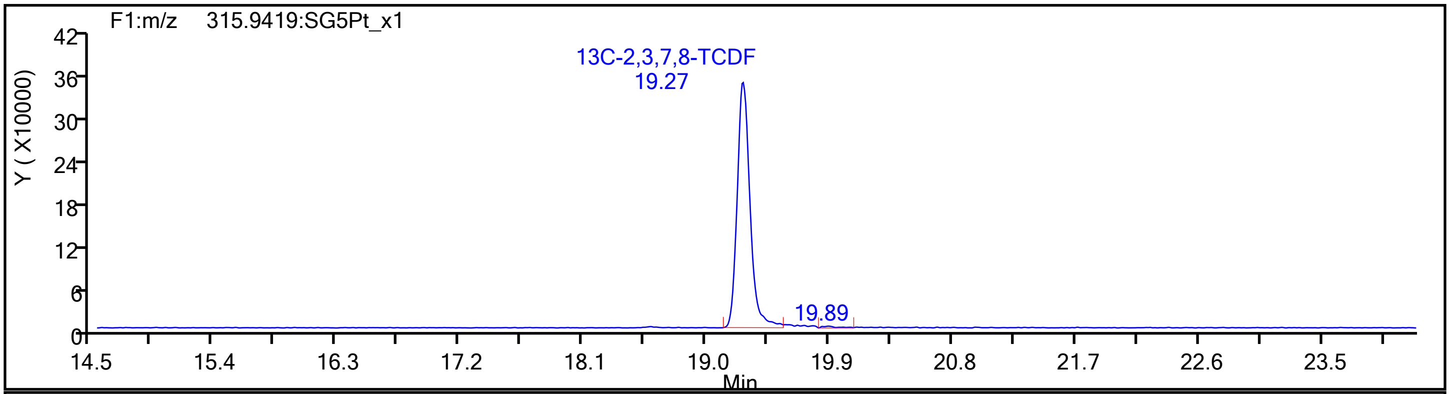

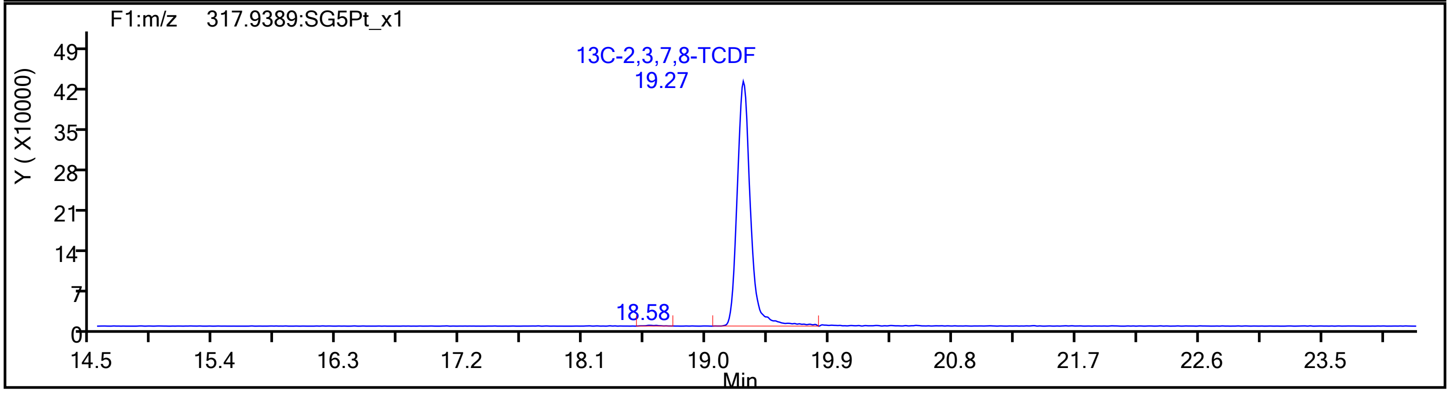

Report Date: 21-Sep-2020 11:24:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

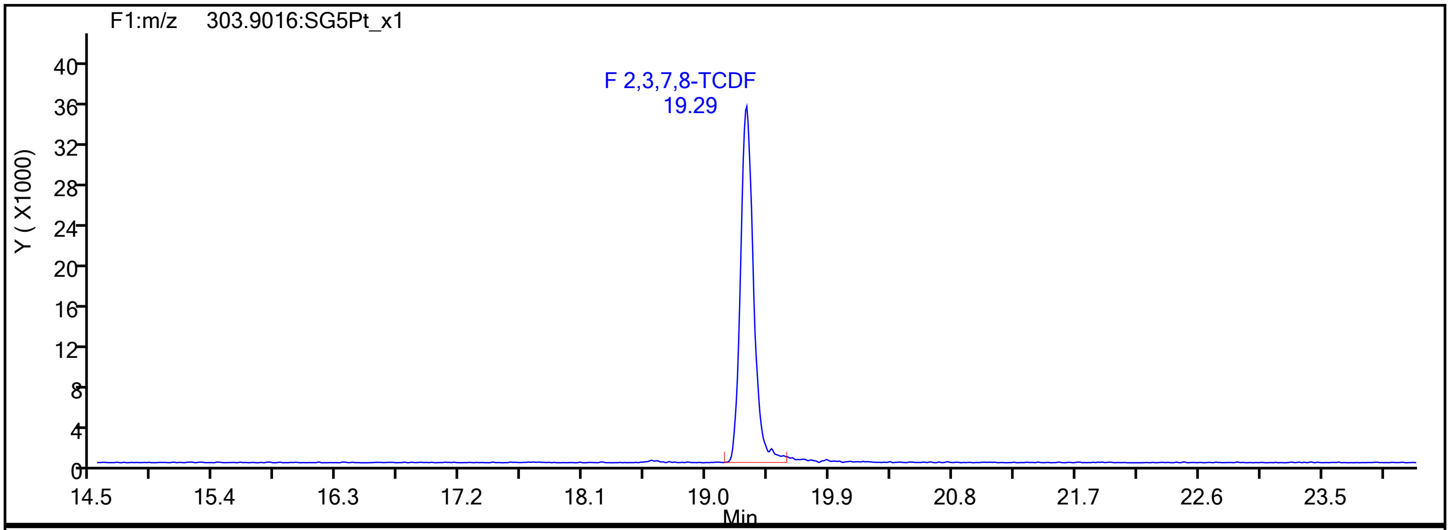

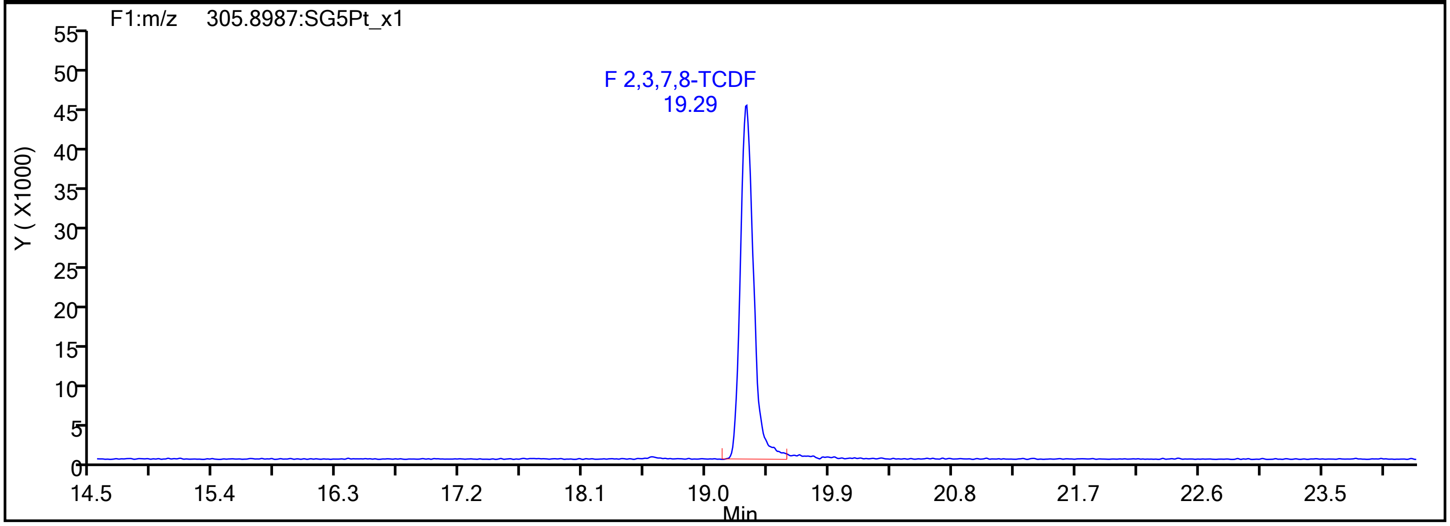

TCDF Interference Mass

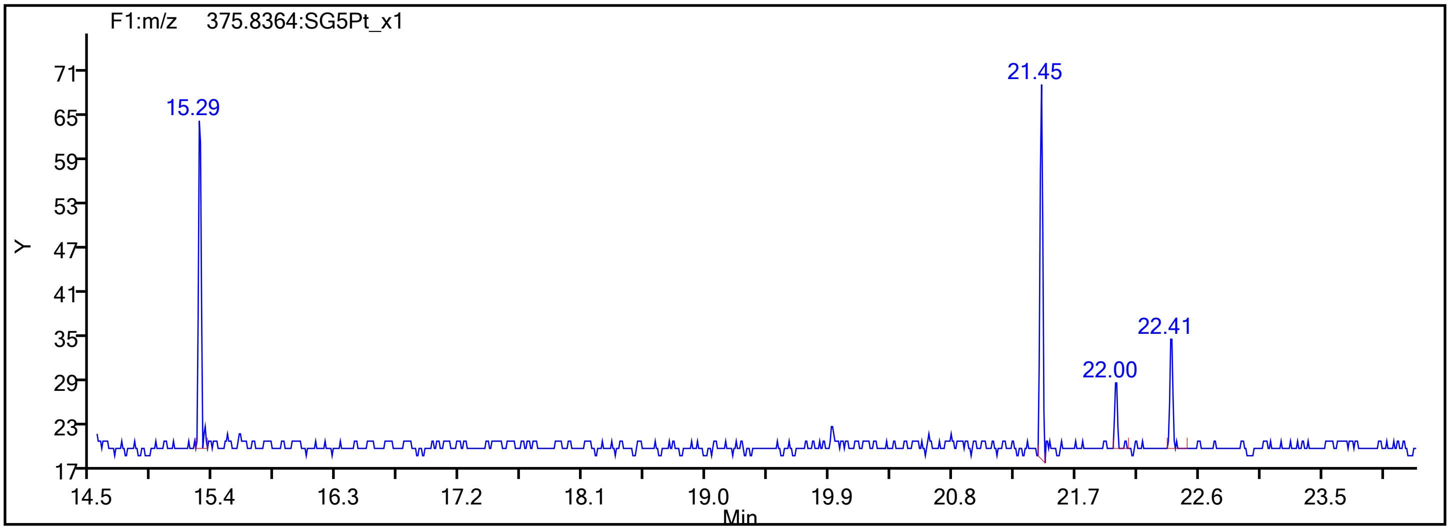

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d		
Injection Date:	20-Sep-2020 14:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

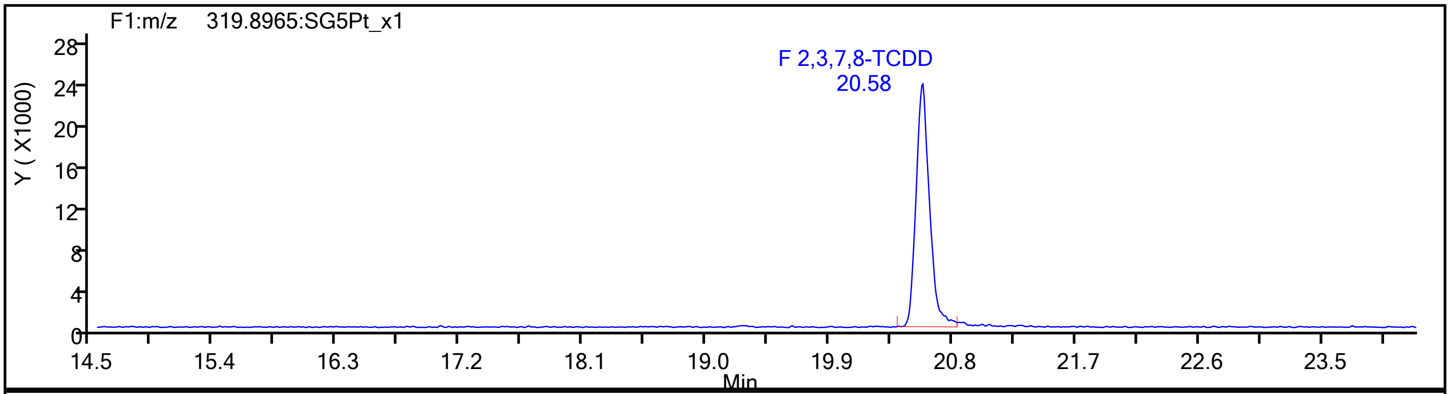

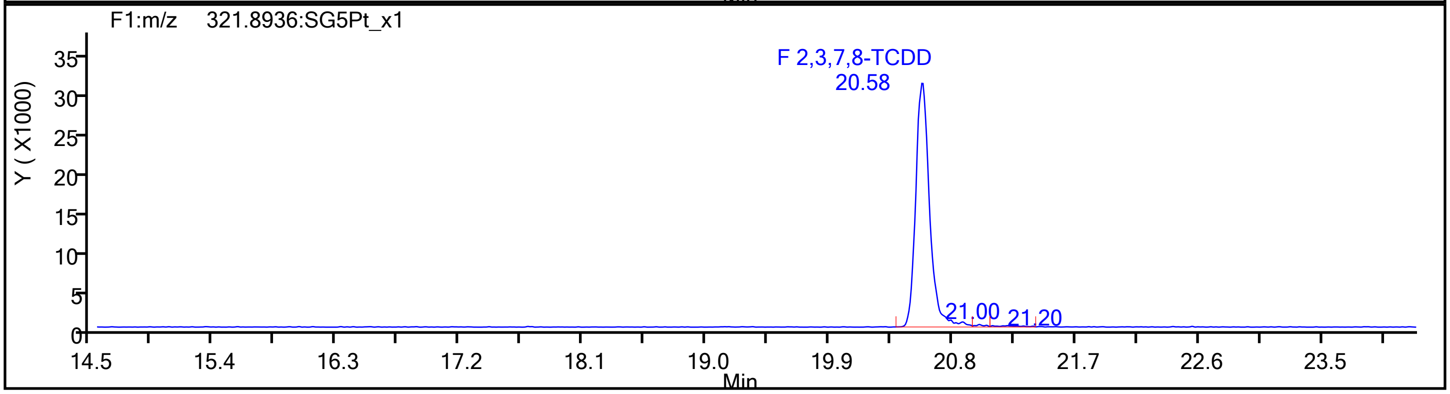

TCDD Standards

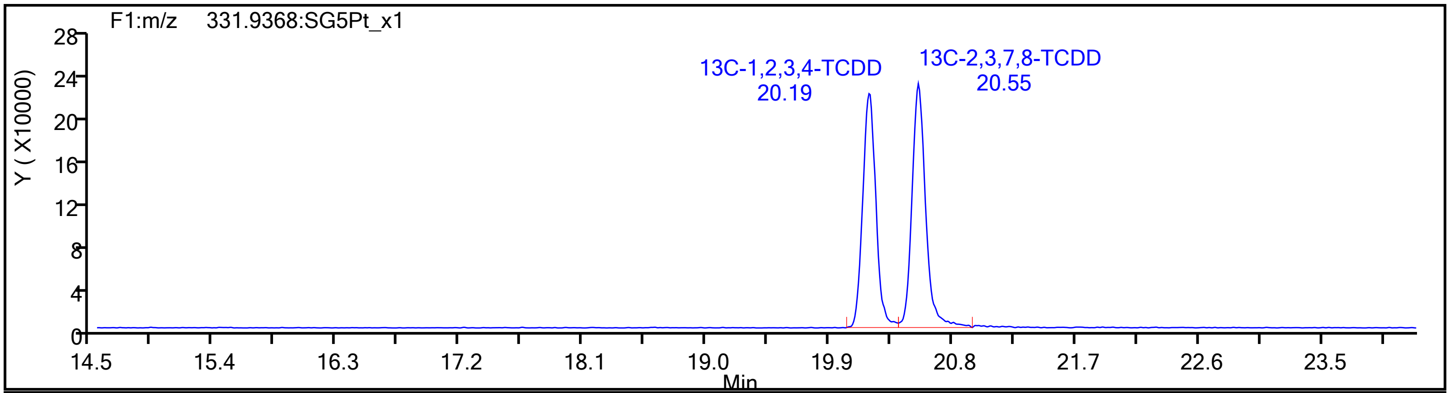

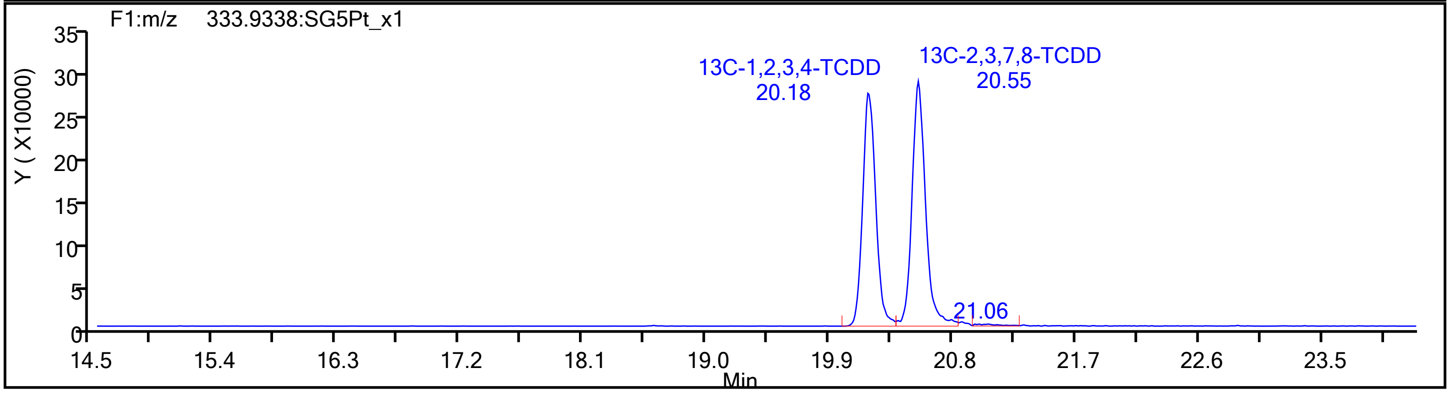

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

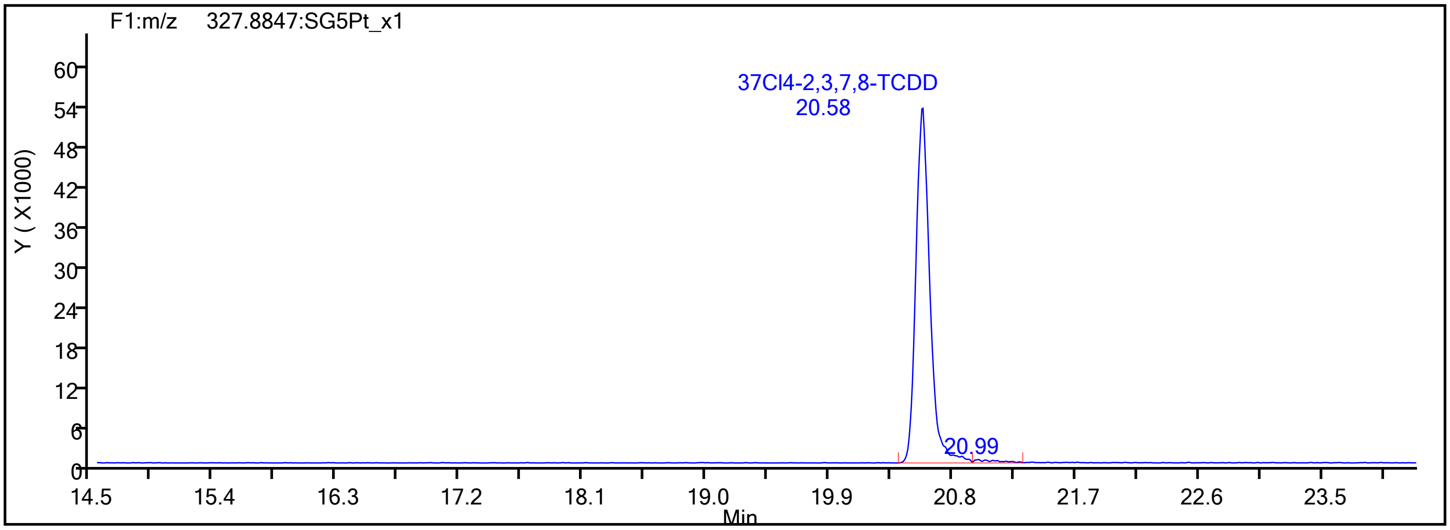

37Cl4-TCDD Standards

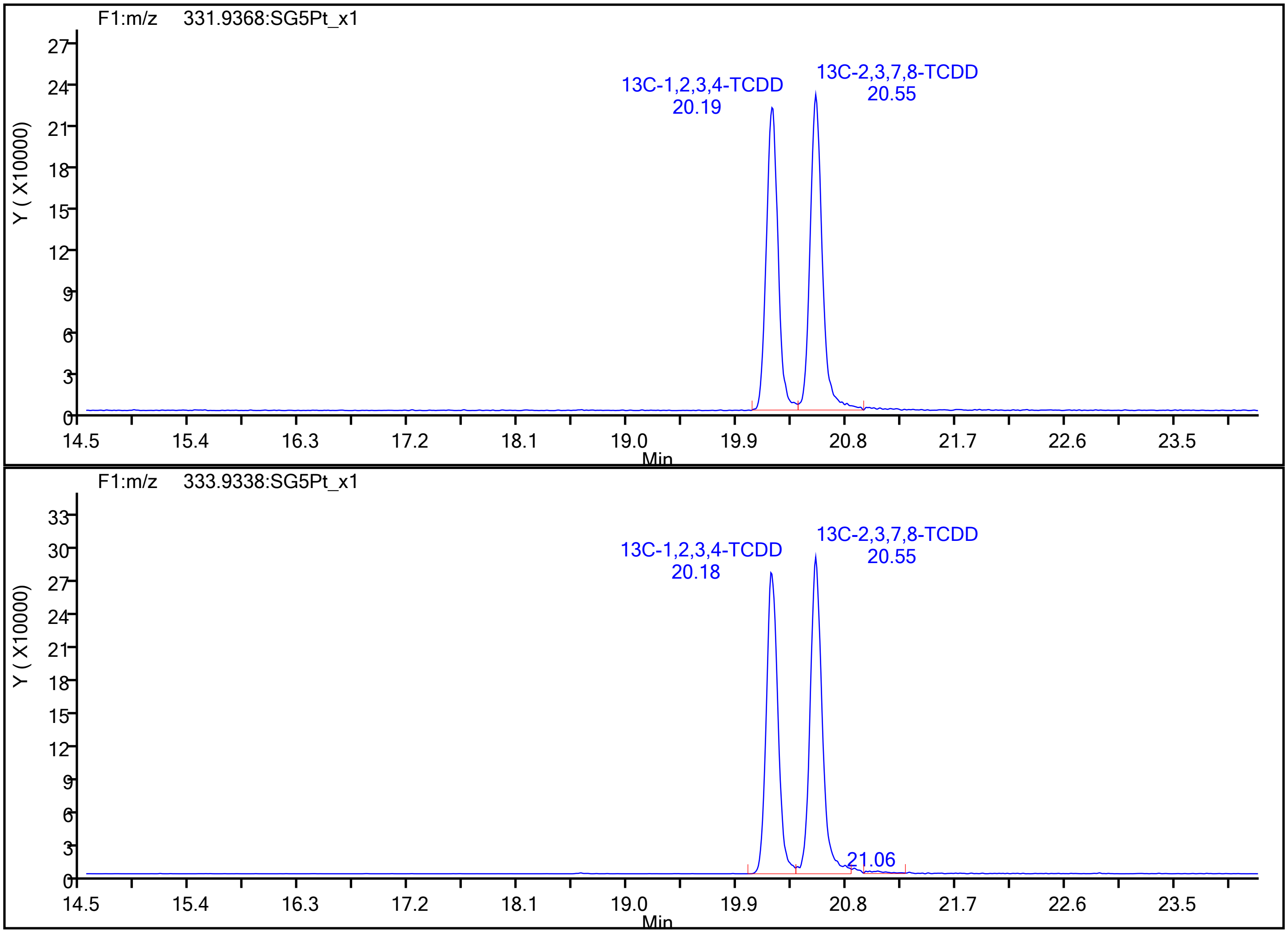

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	20-Sep-2020 14:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

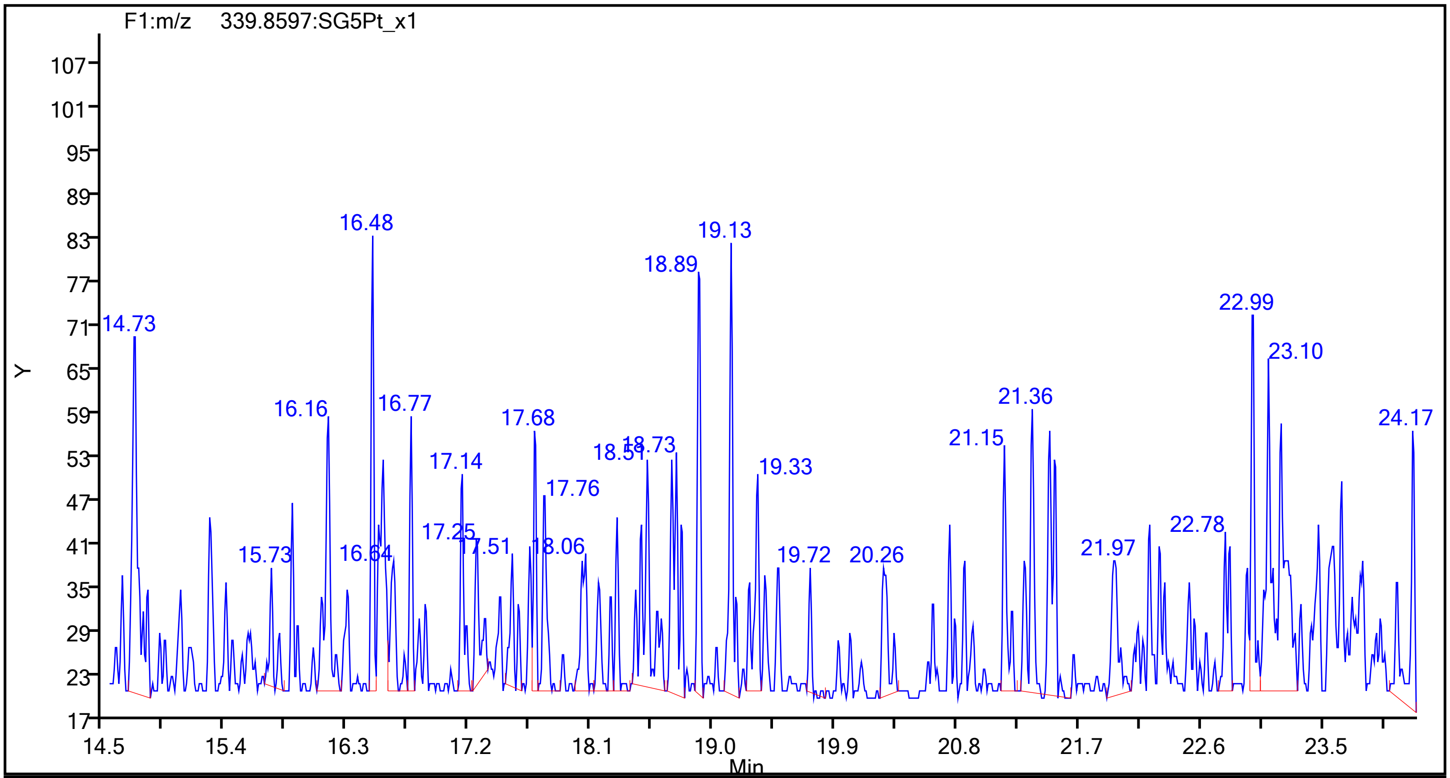

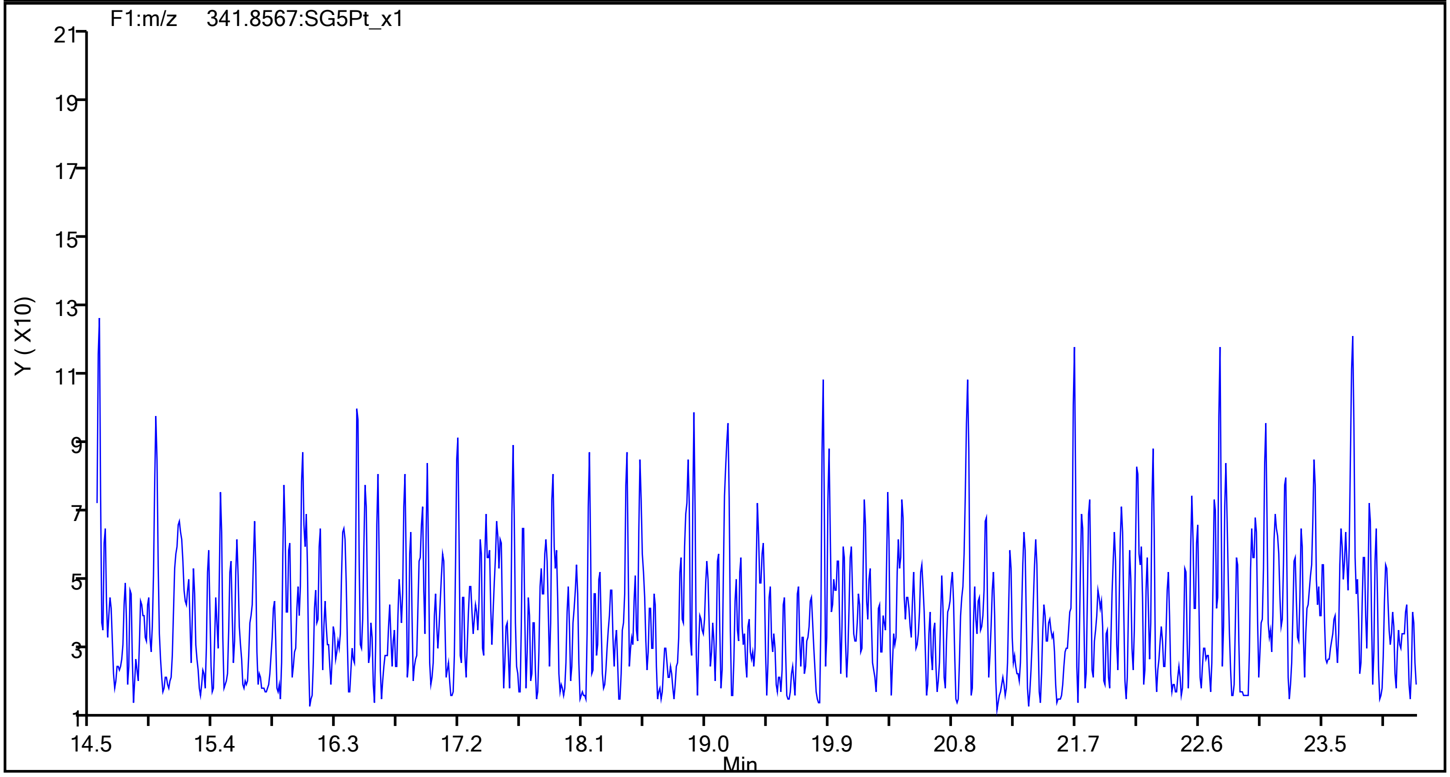

Report Date: 21-Sep-2020 11:24:25　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d

Injection Date:	20-Sep-2020 14:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

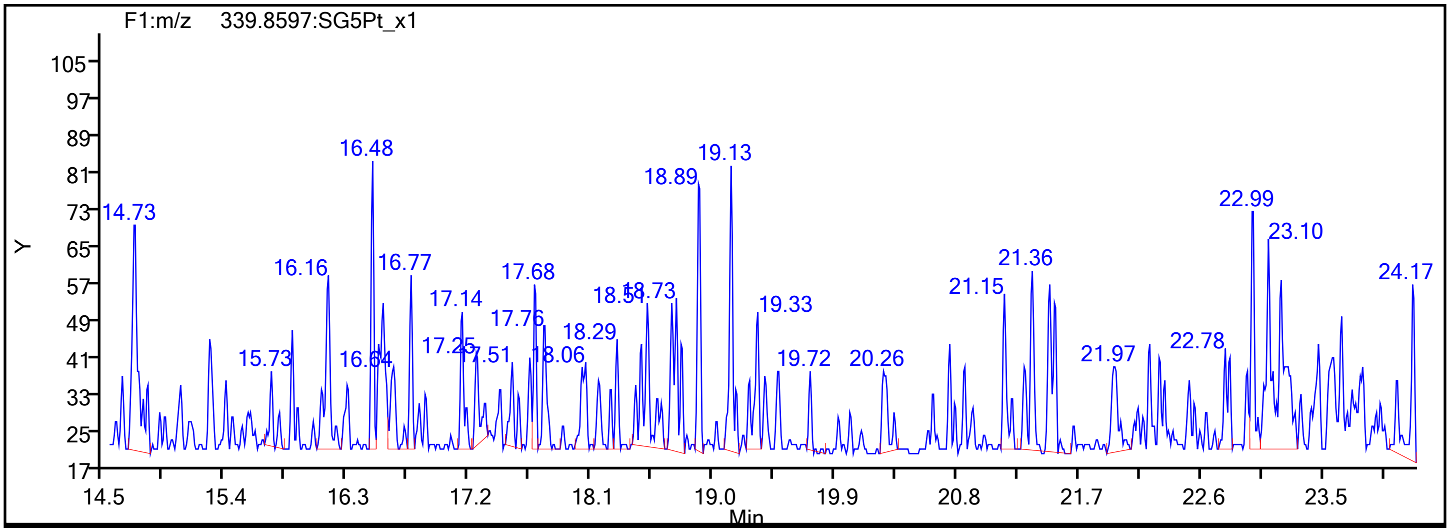

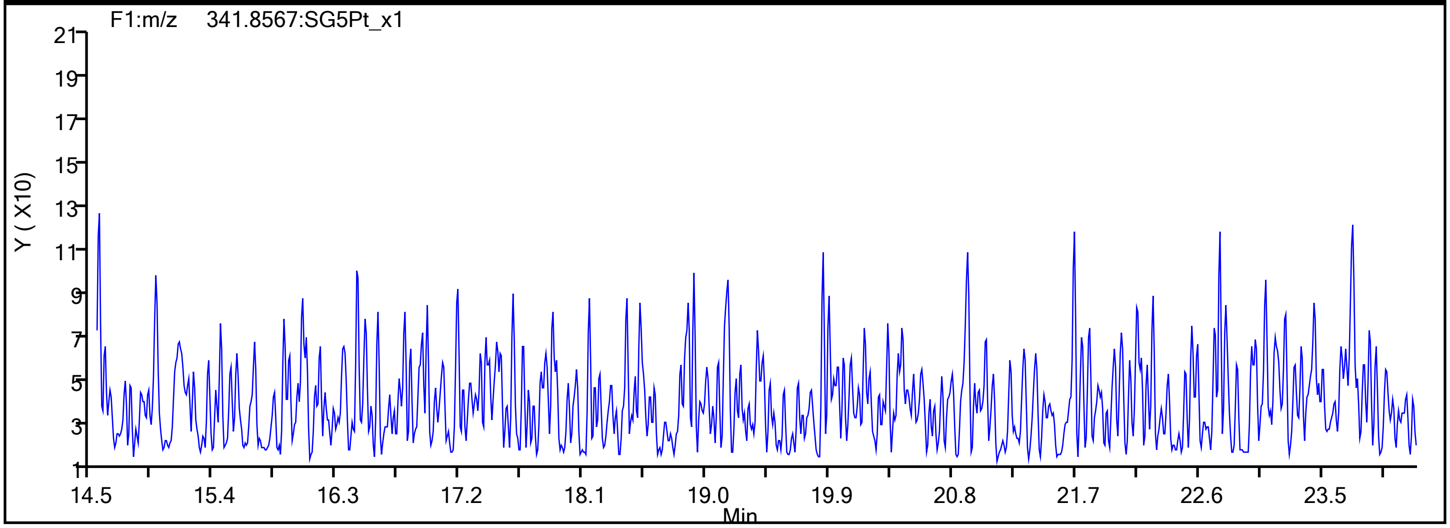

F1 PeCDFs Interference Mass

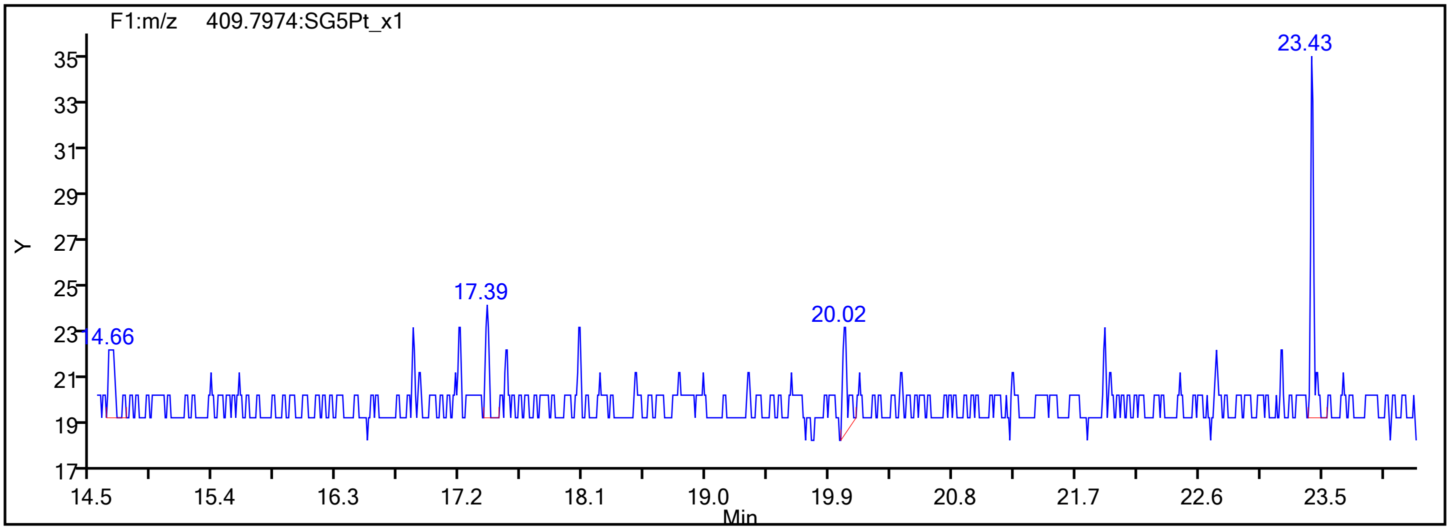

Report Date: 21-Sep-2020 11:24:25
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d
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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 58
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

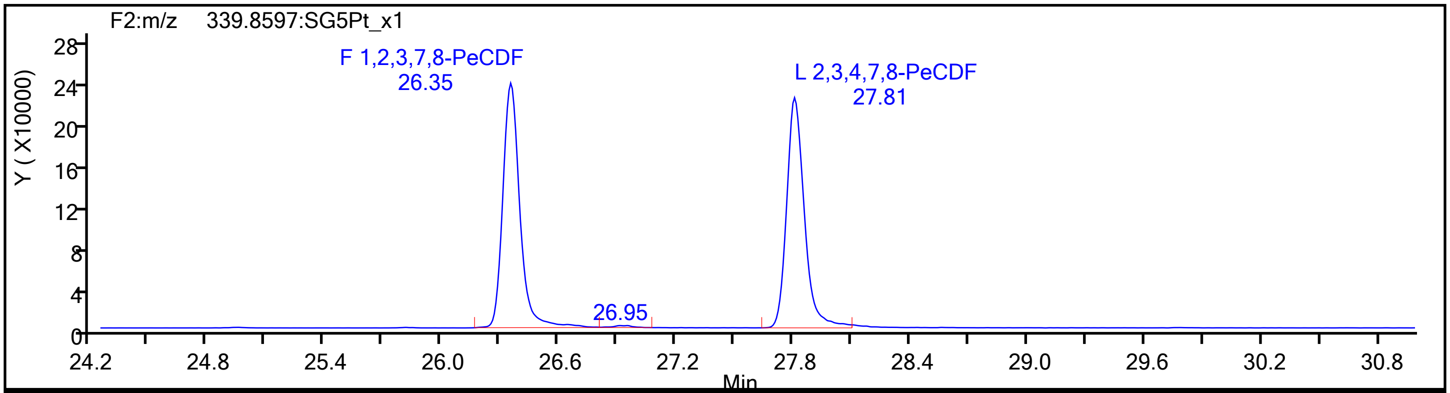

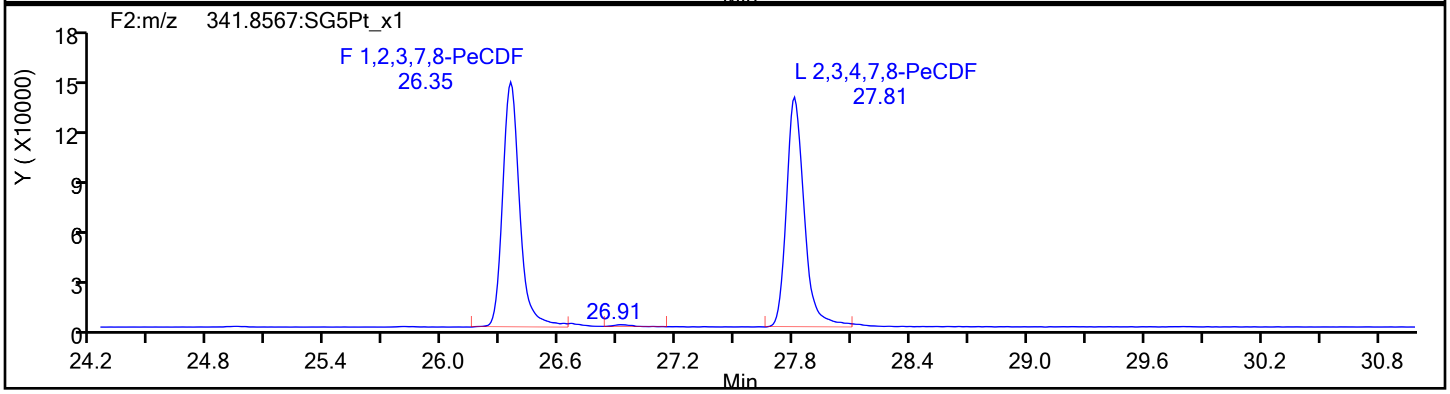

PeCDF Standards

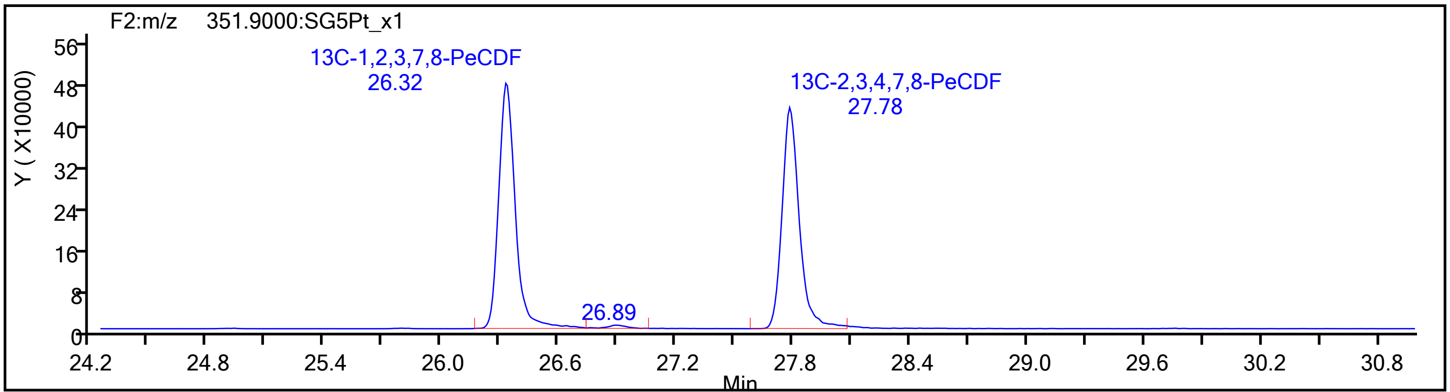

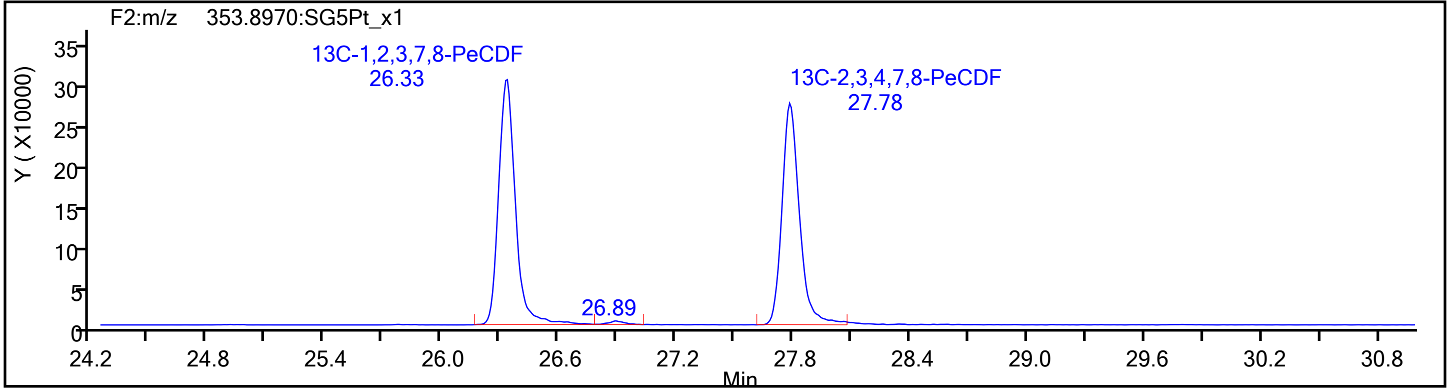

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d
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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 413816
Sample Line#: 58
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

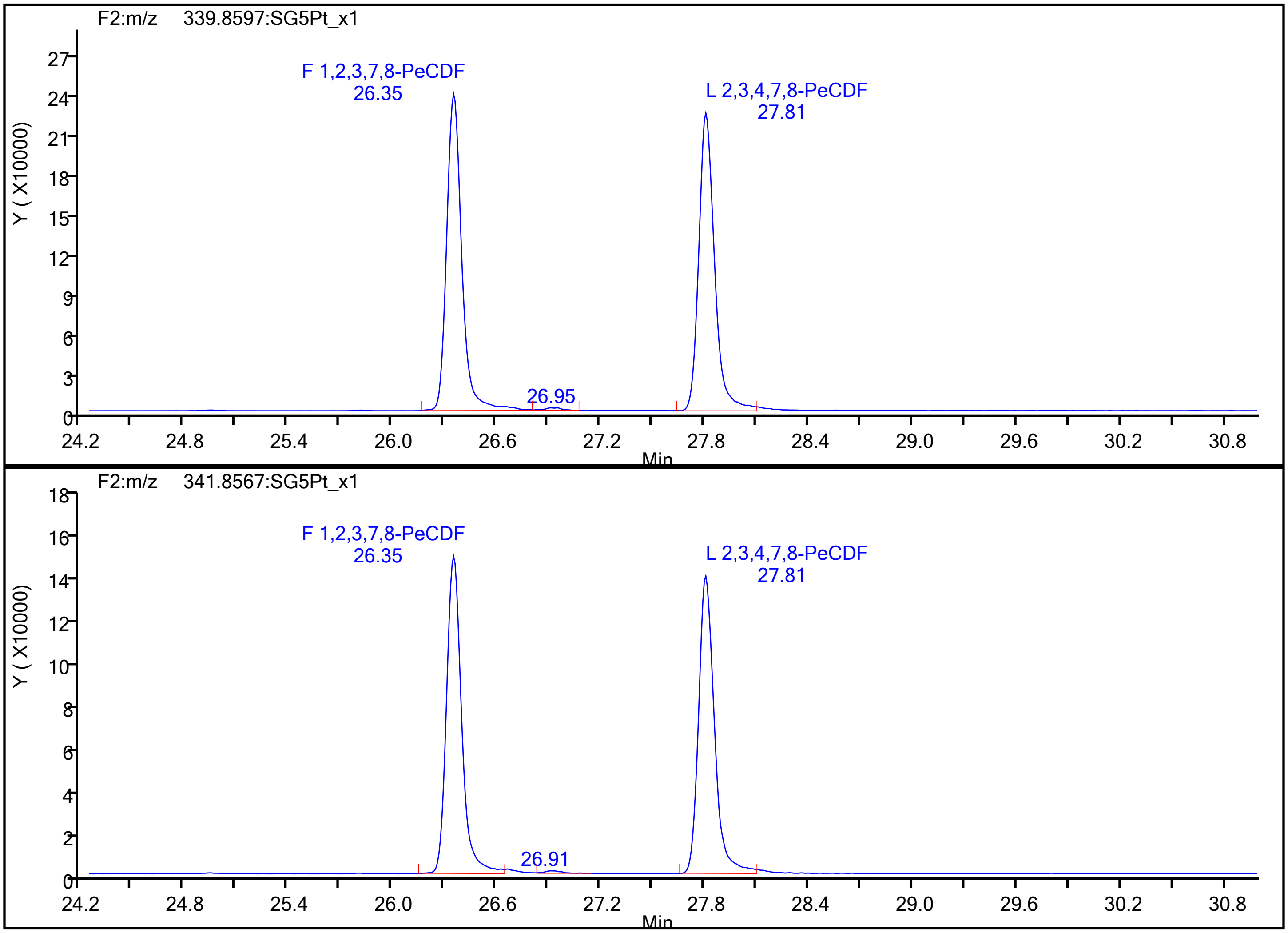

PeCDF Interference Mass

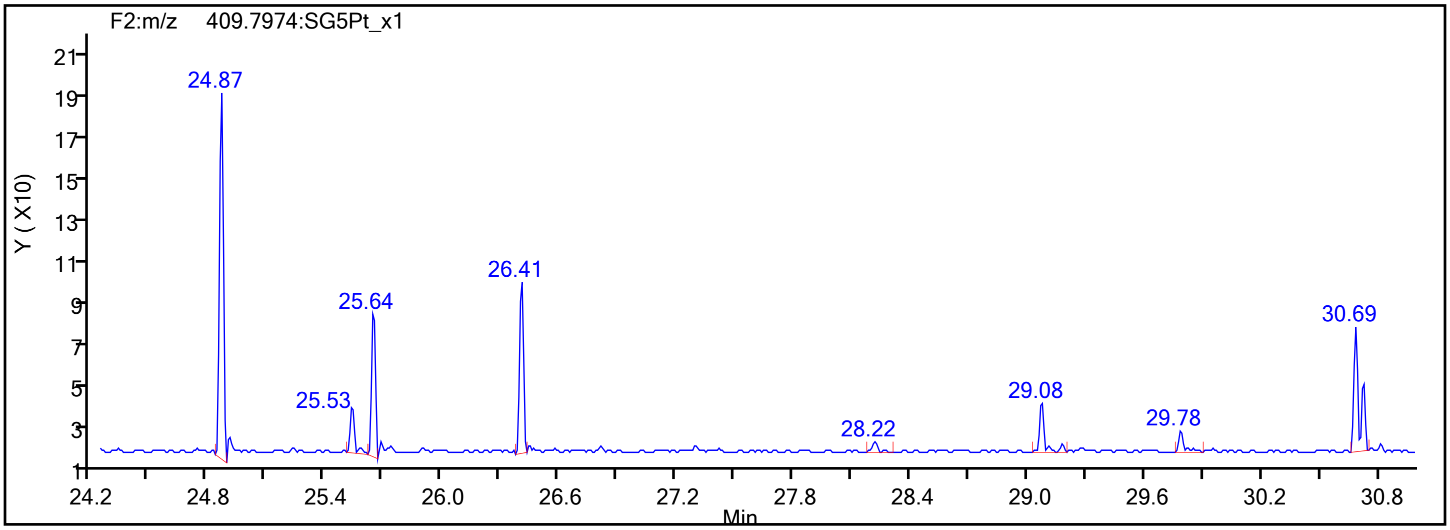

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDD

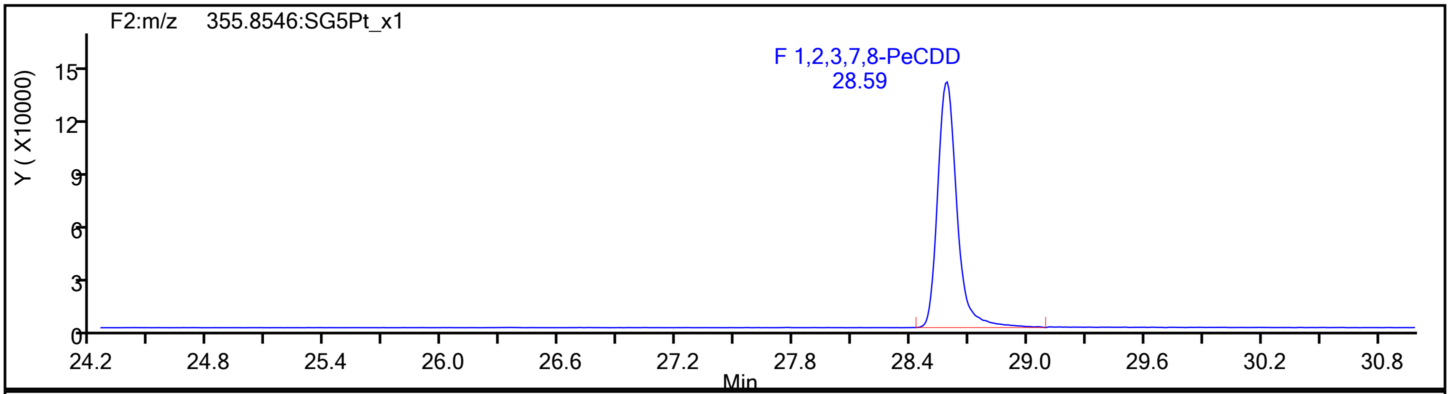

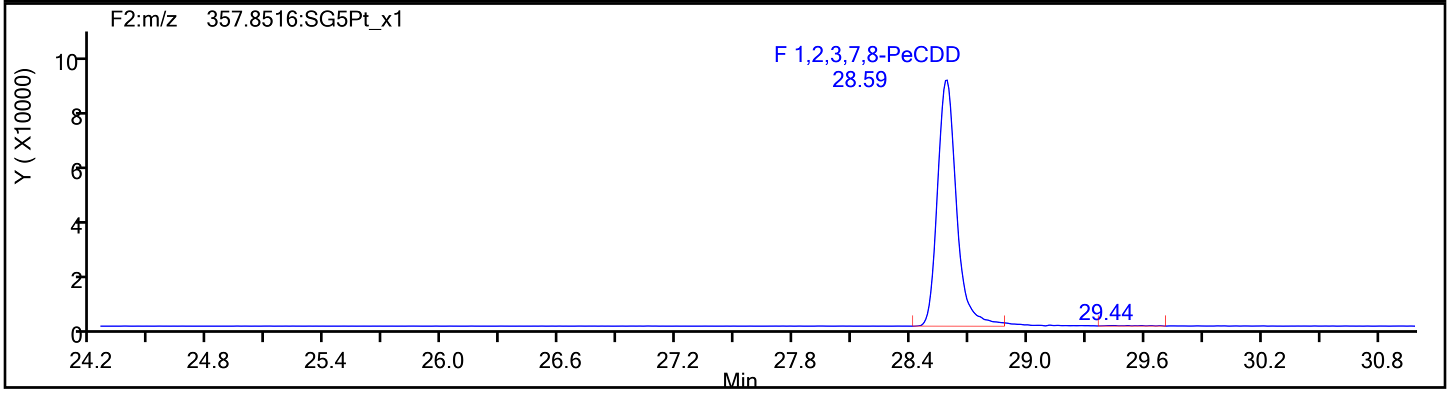

PeCDD Standards

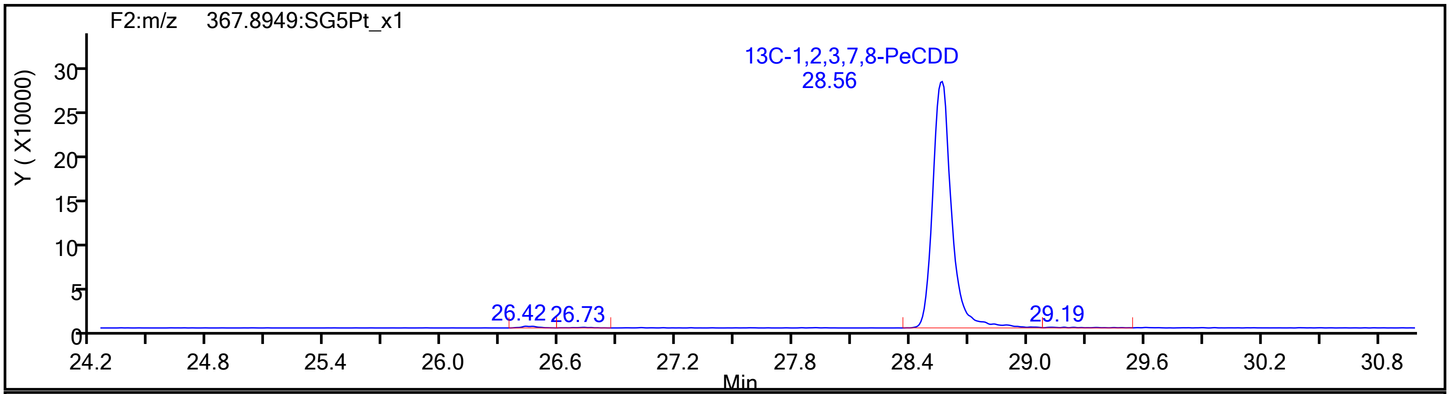

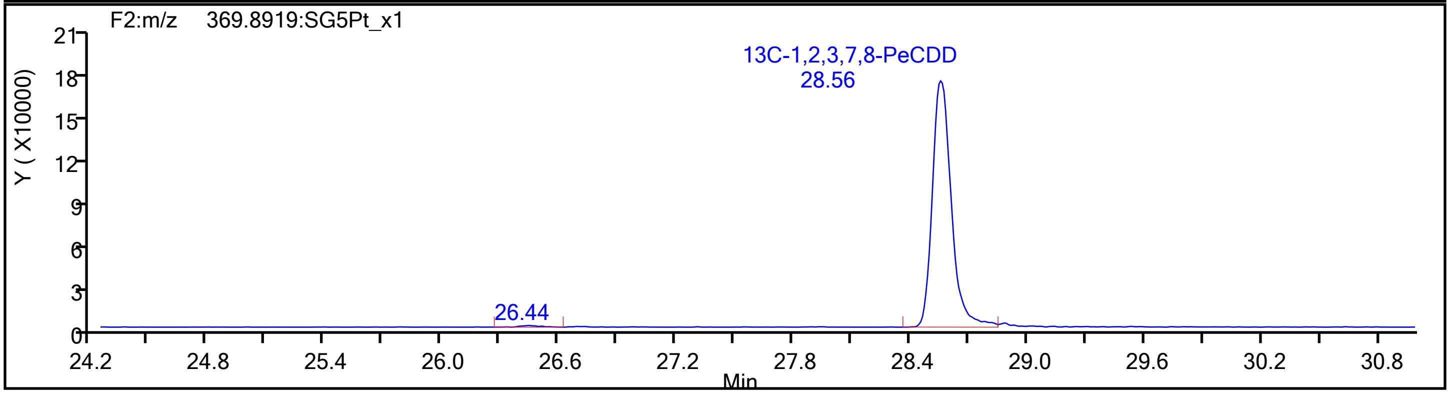

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

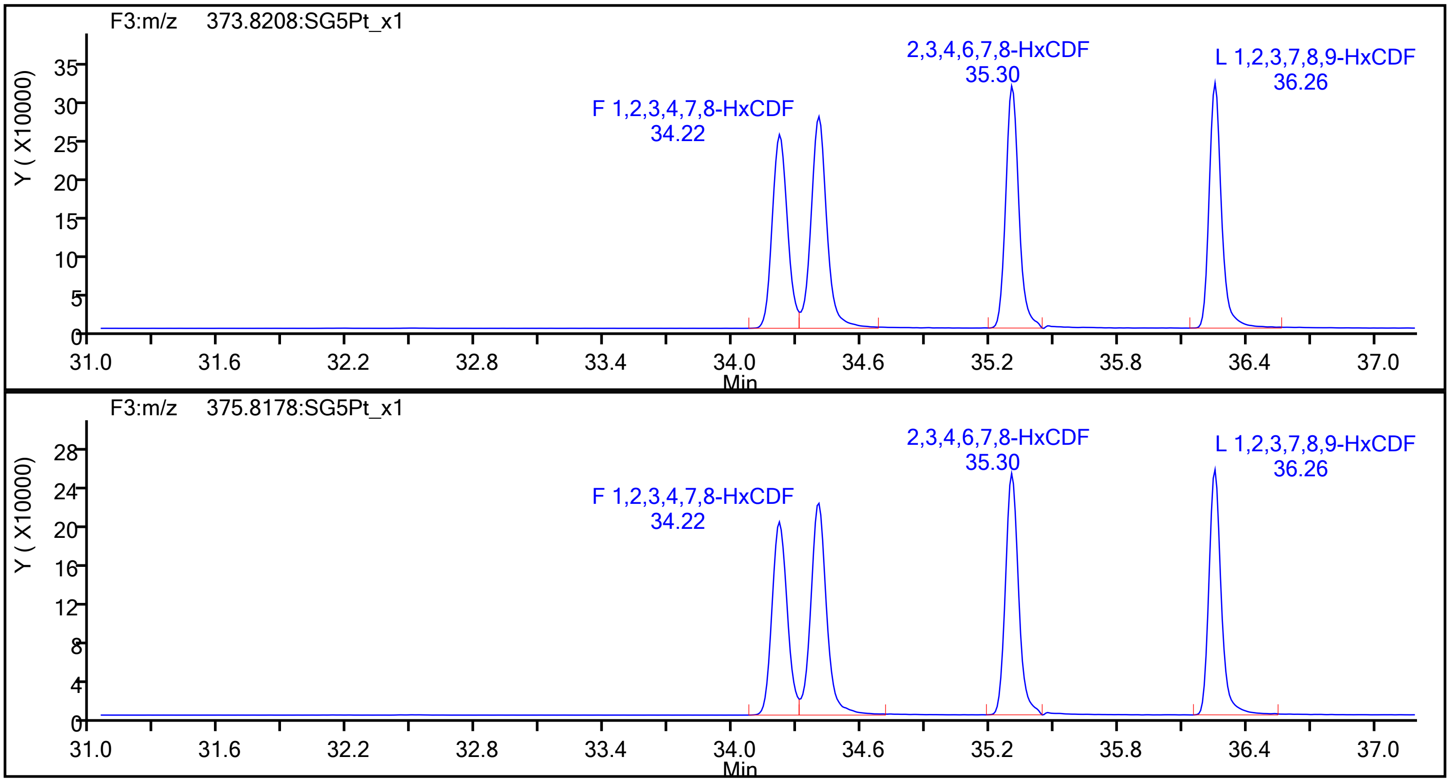

HxCDF Standards

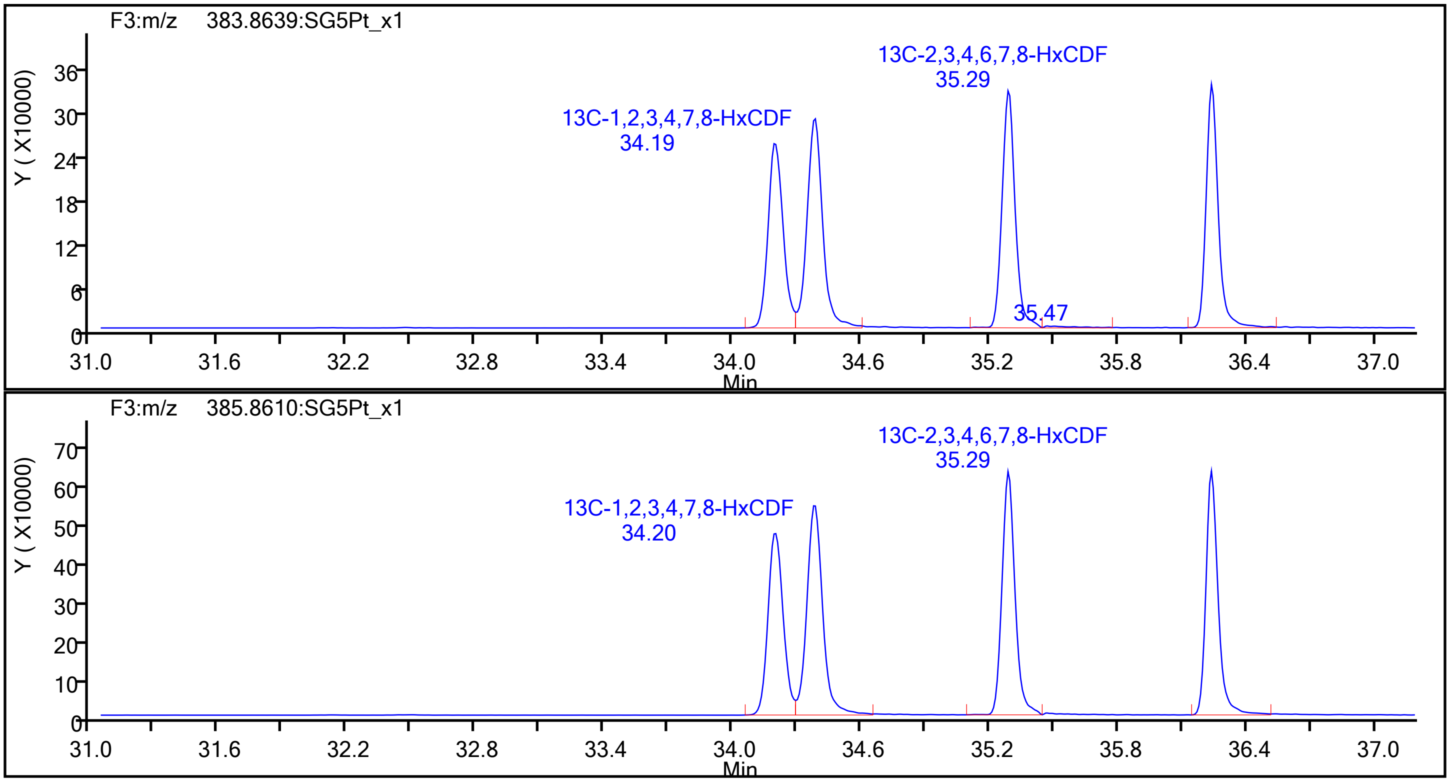

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

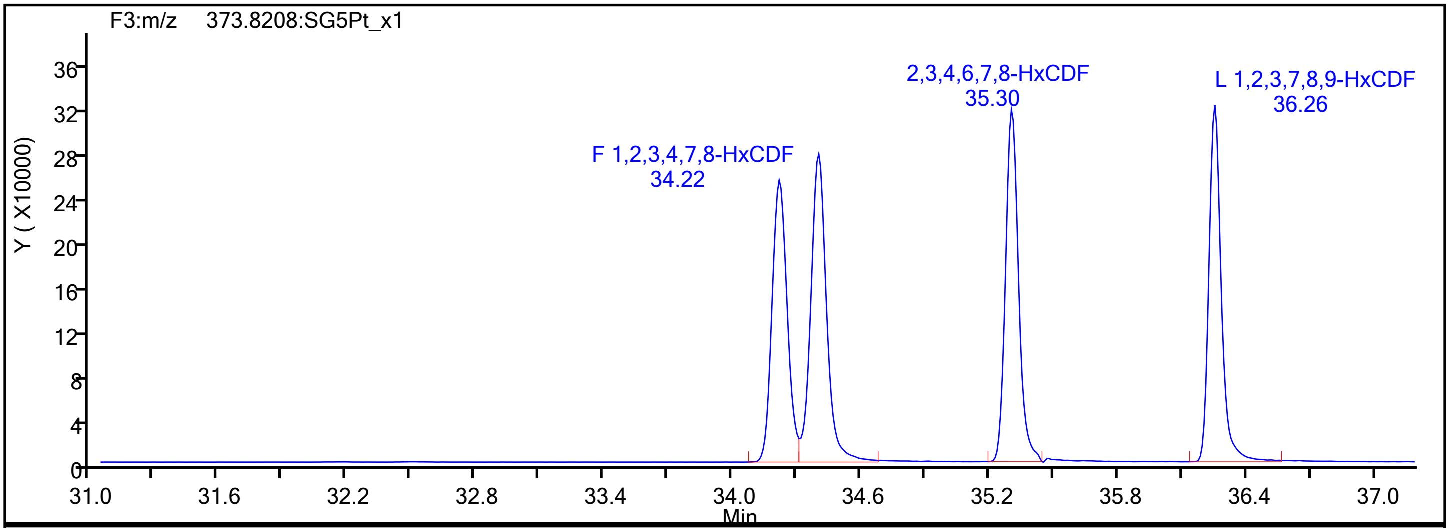

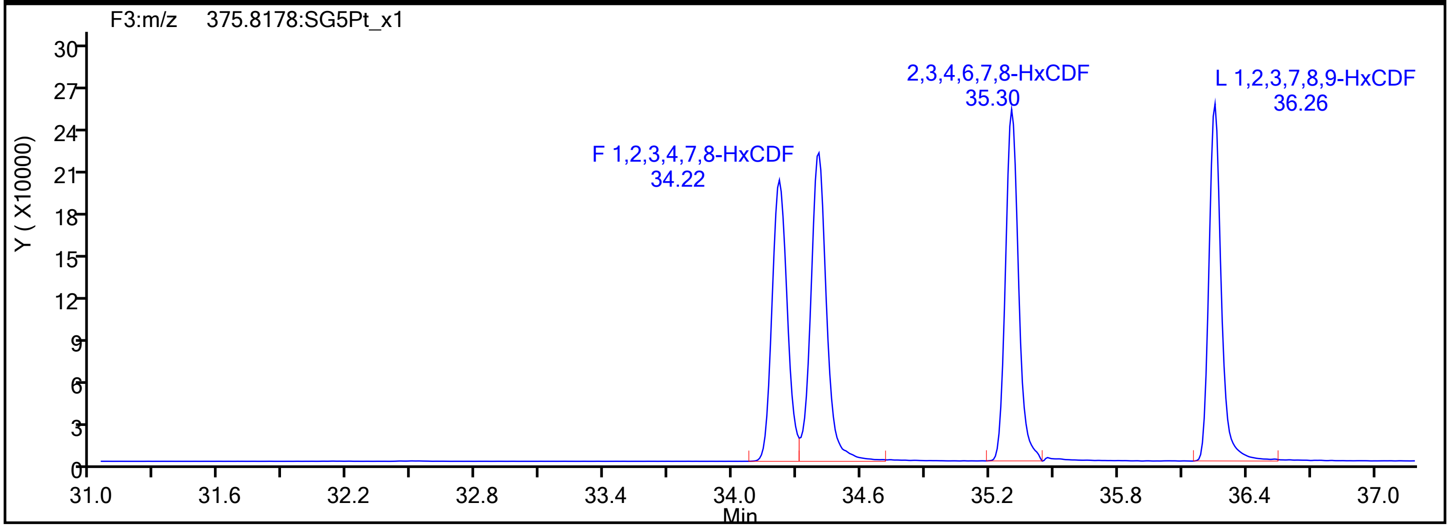

HxCDF Interference Mass

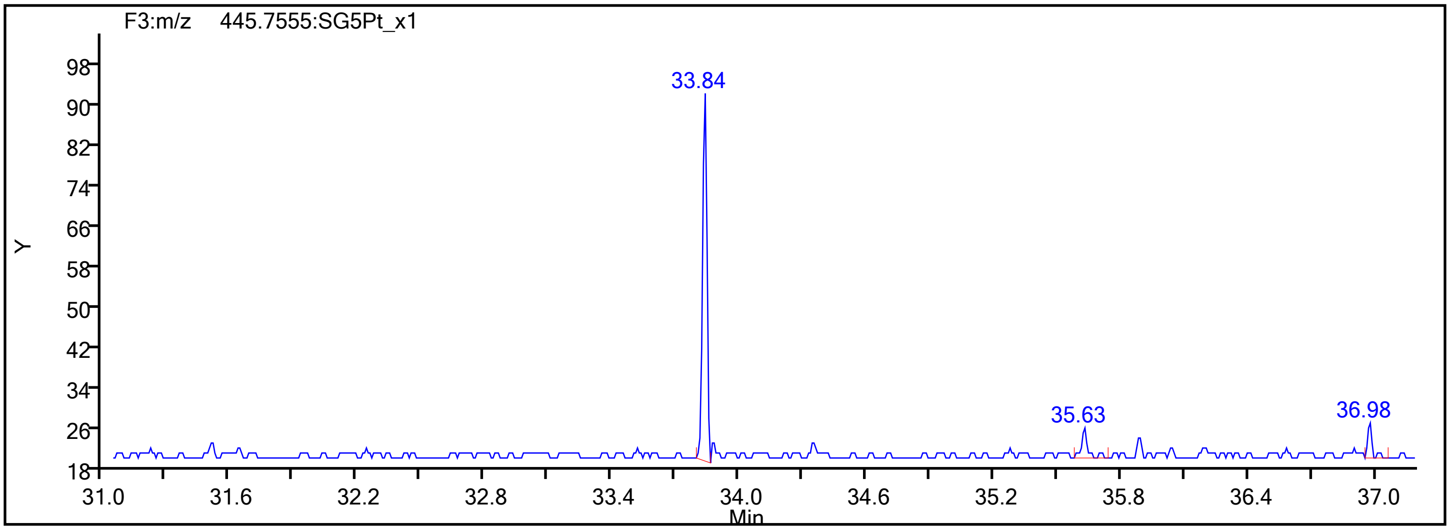

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d
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HxCDD

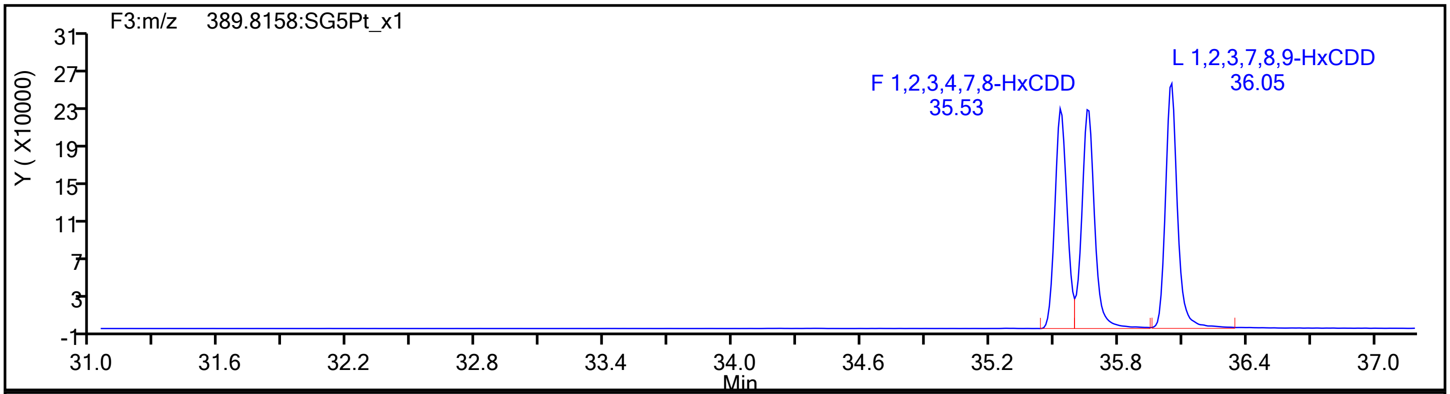

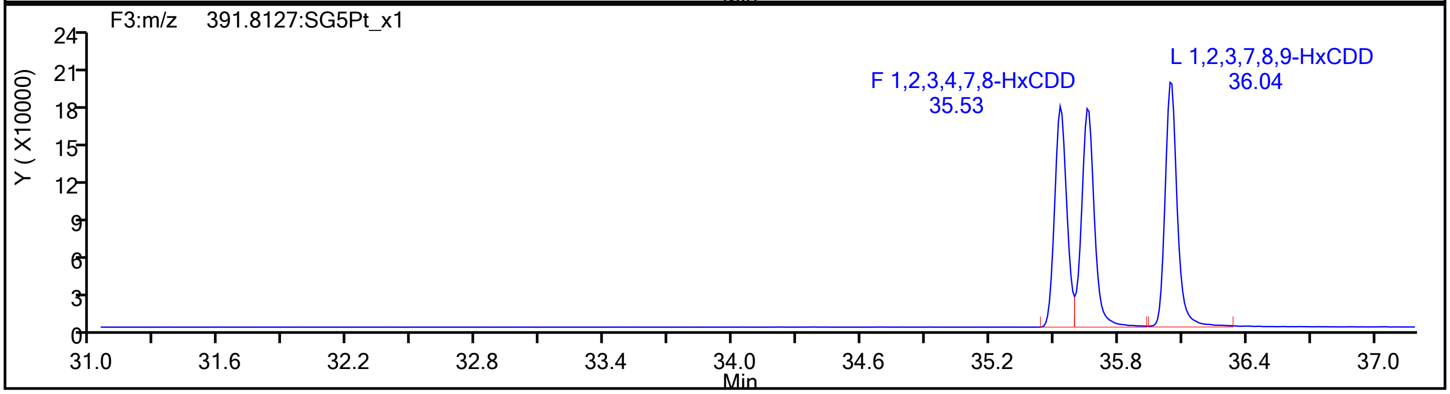

HxCDD Standards

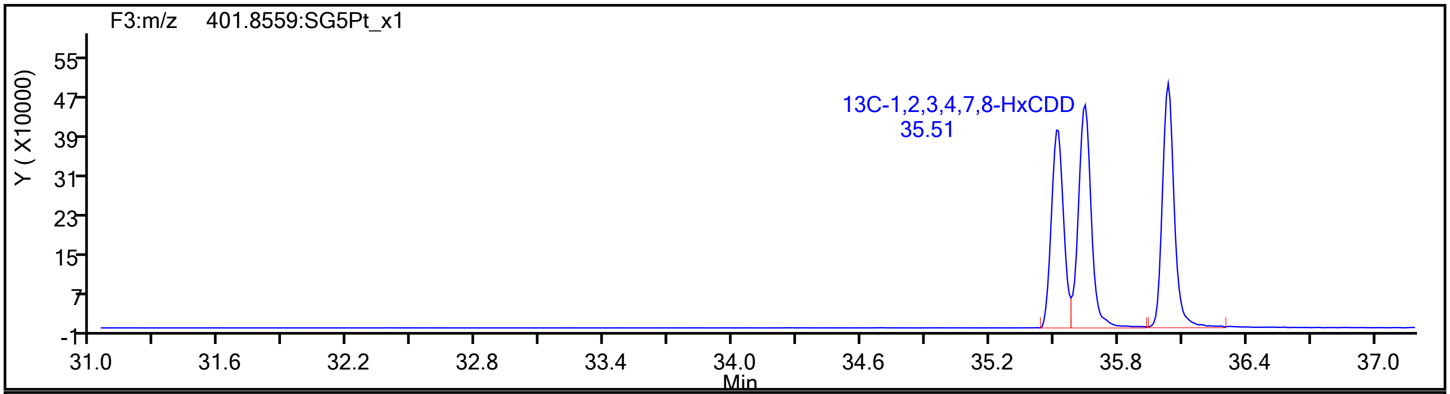

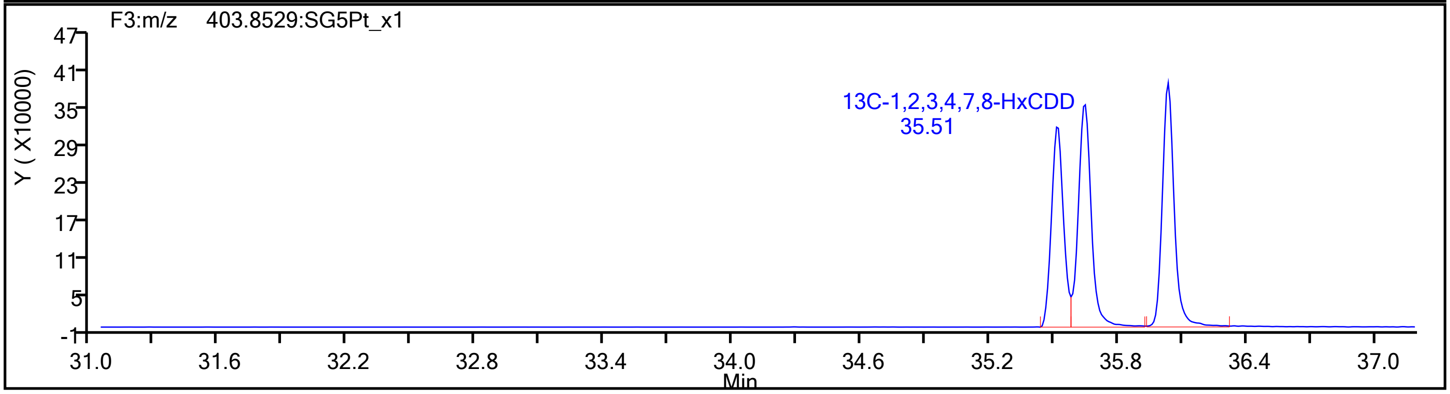

Report Date: 21-Sep-2020 11:24:25　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d
Injection Date: 20-Sep-2020 14:45:00　Injection Vol: 1.0 ul
Instrument ID: DFS 1　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816　Sample Line#: 58
Column Type: DB-5　Column Dia: 0.32 mm

HpCDF

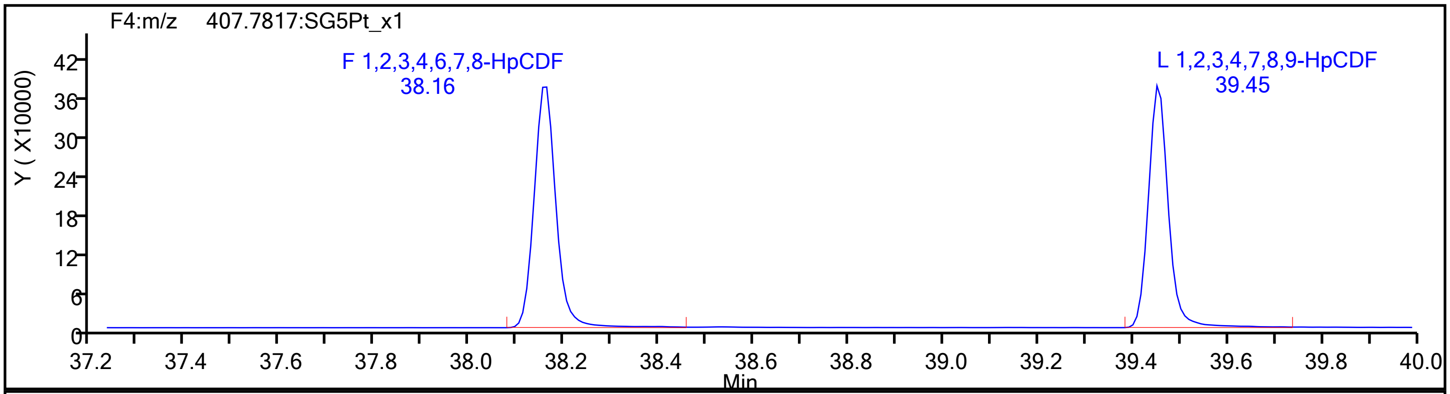

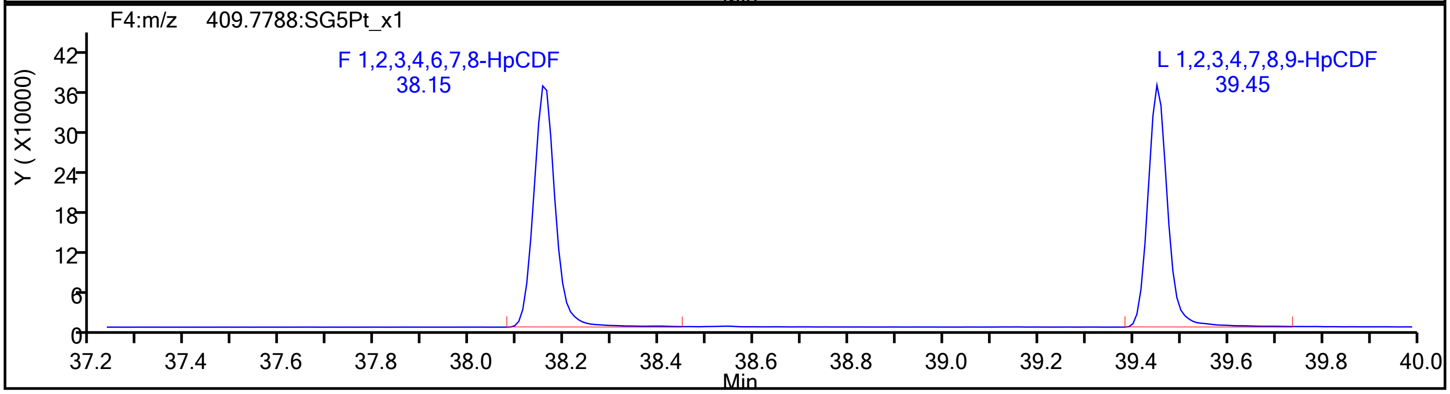

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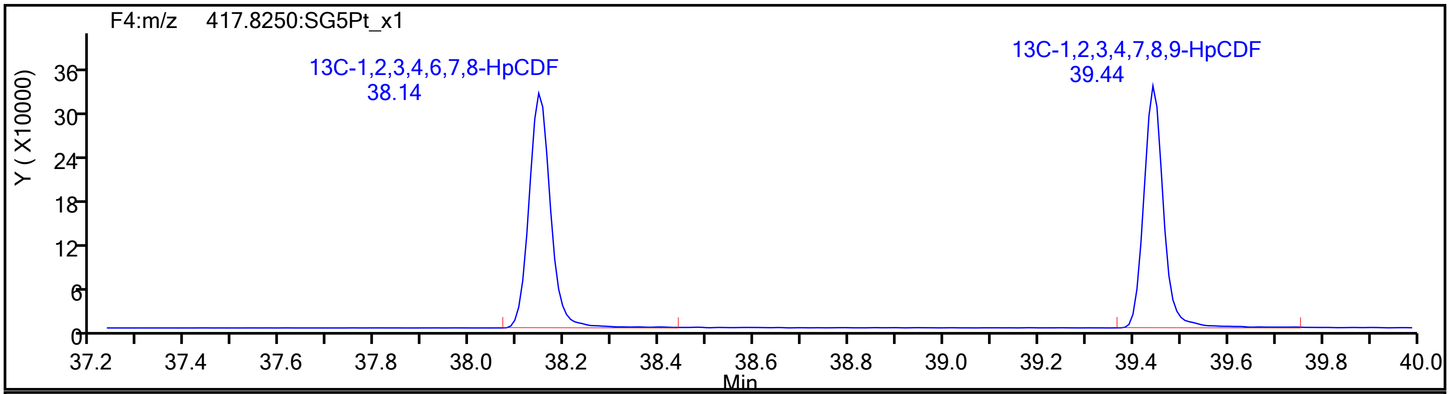

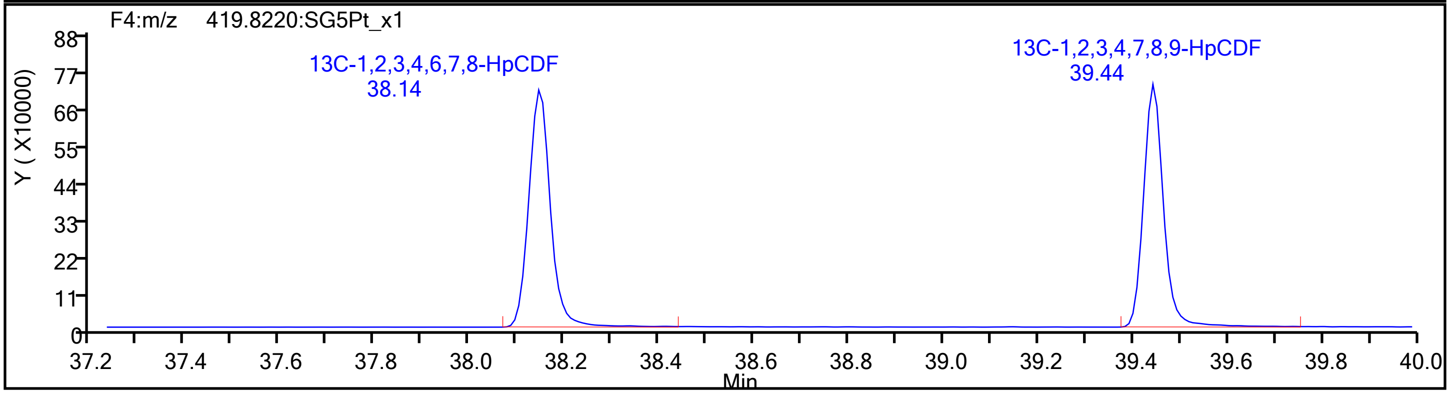

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 58
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

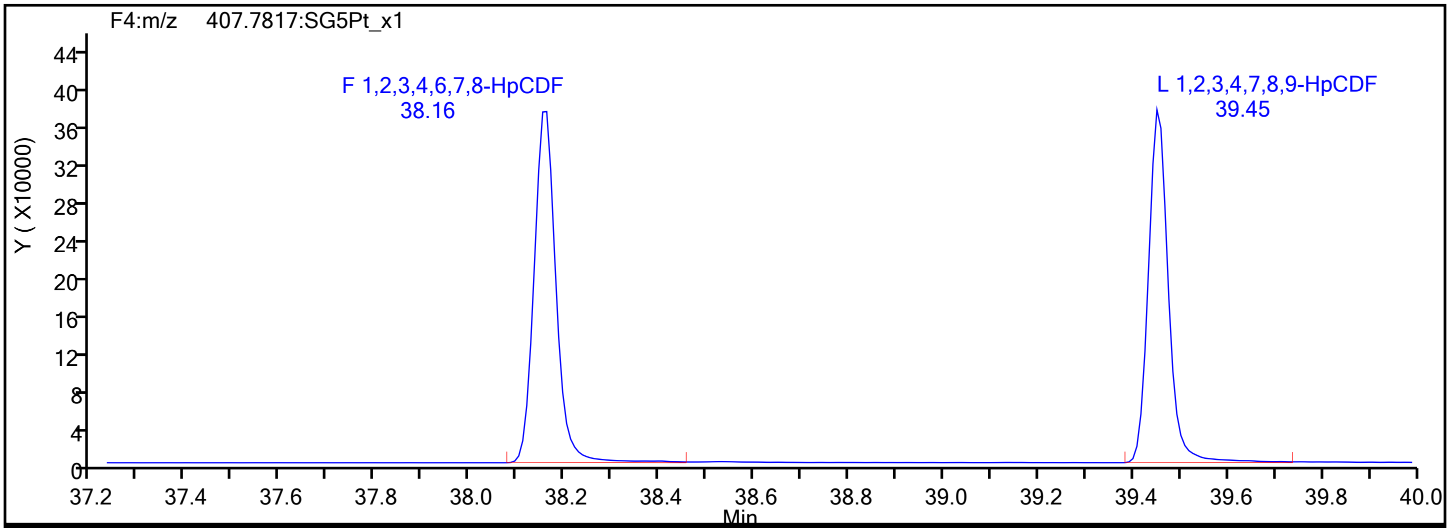

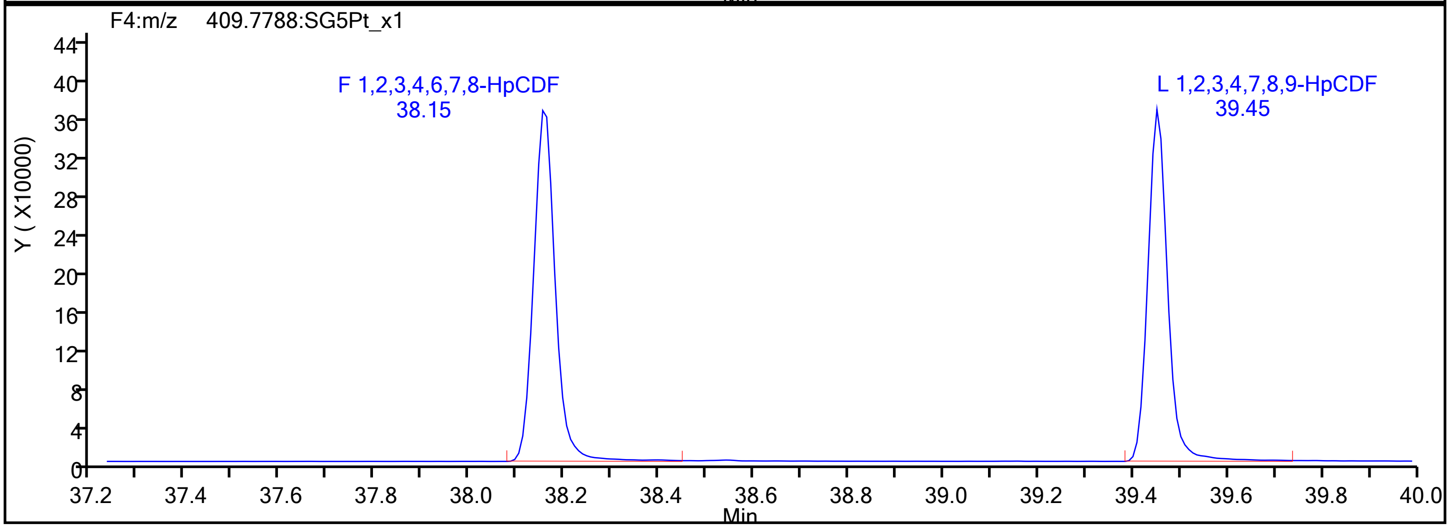

HpCDF Interference Mass

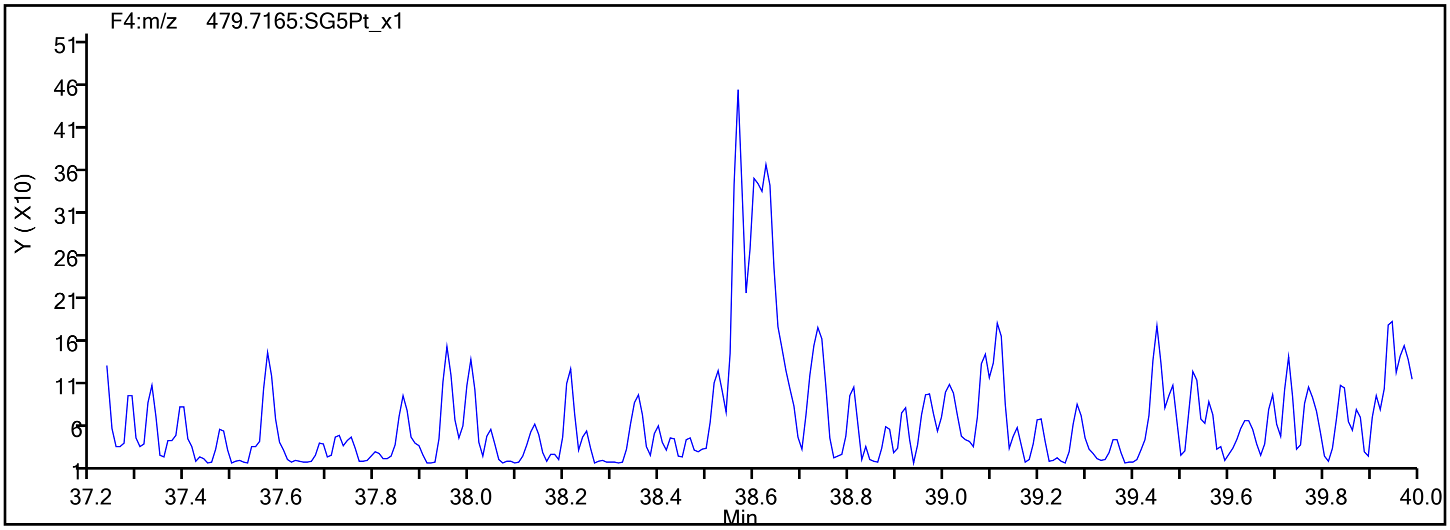

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_67.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

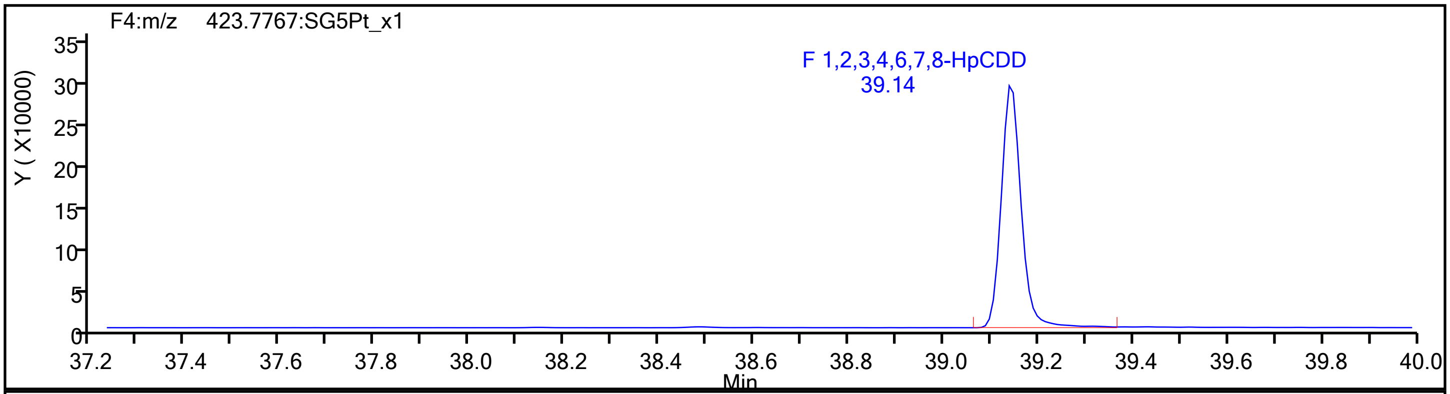

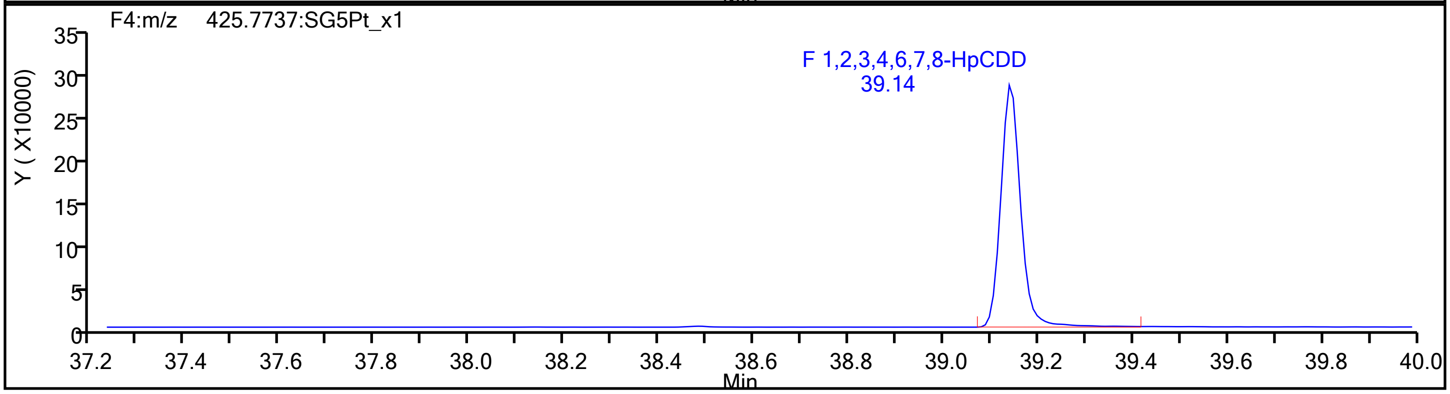

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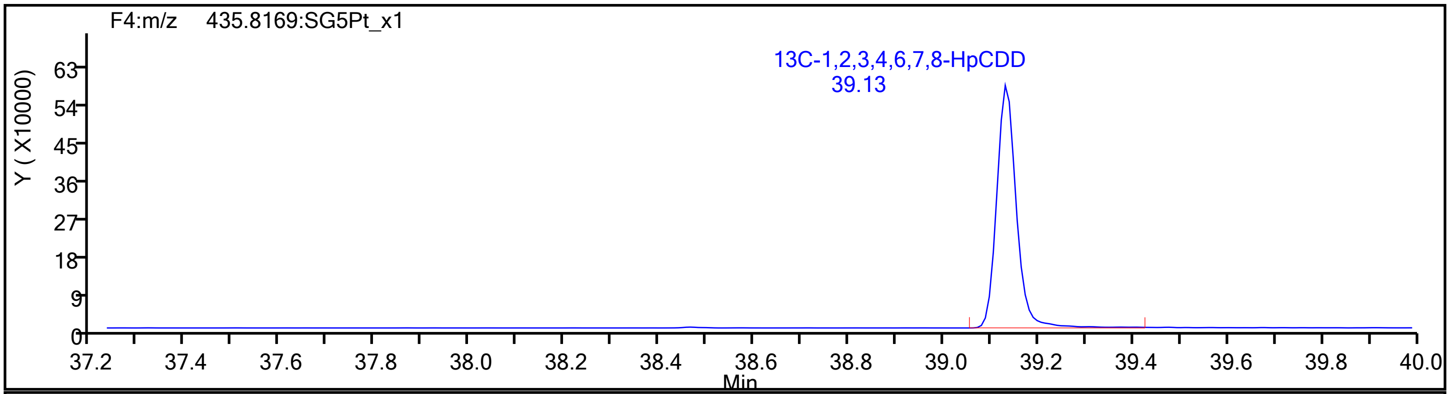

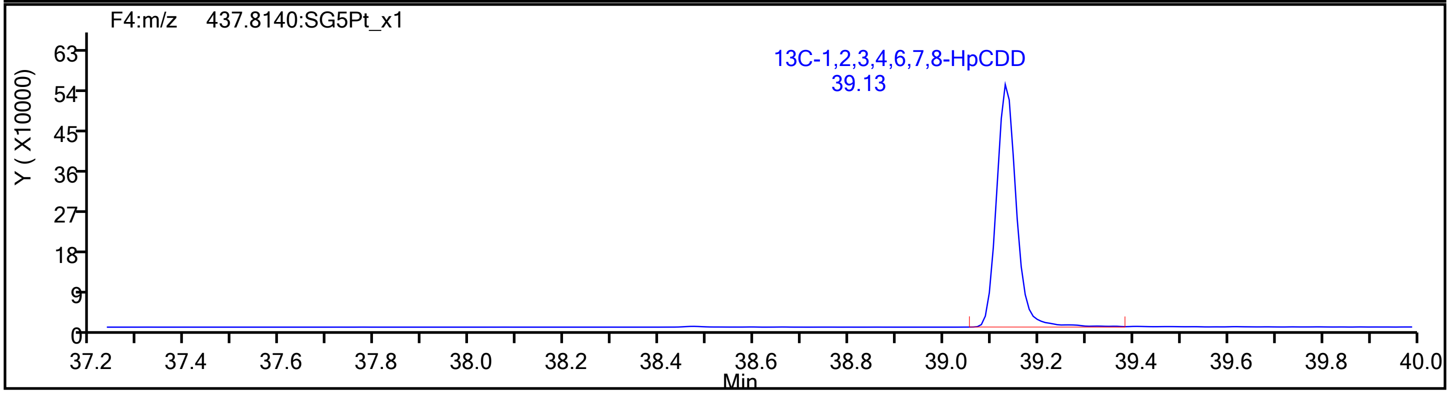

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

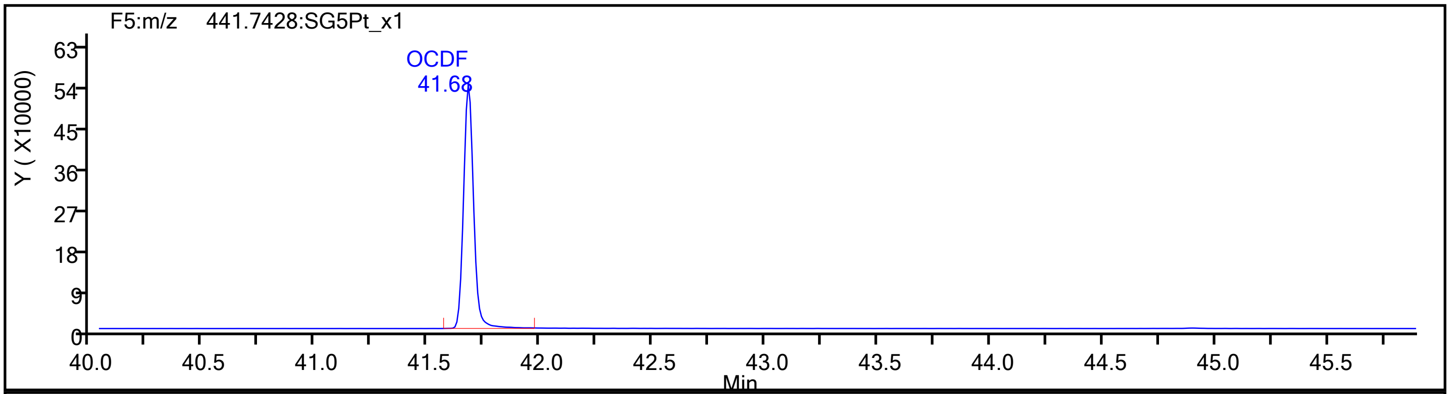

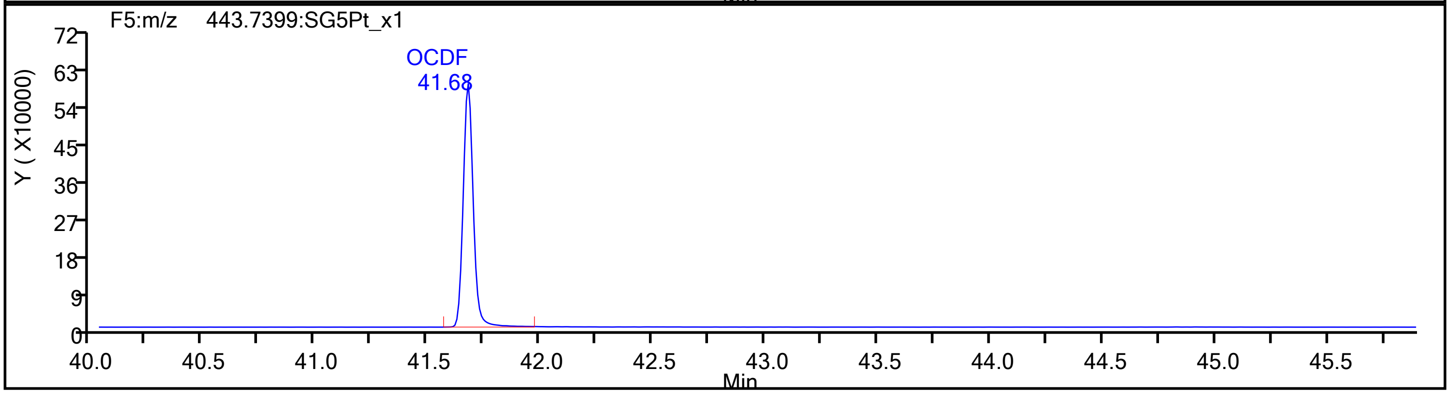

OCDF Standards

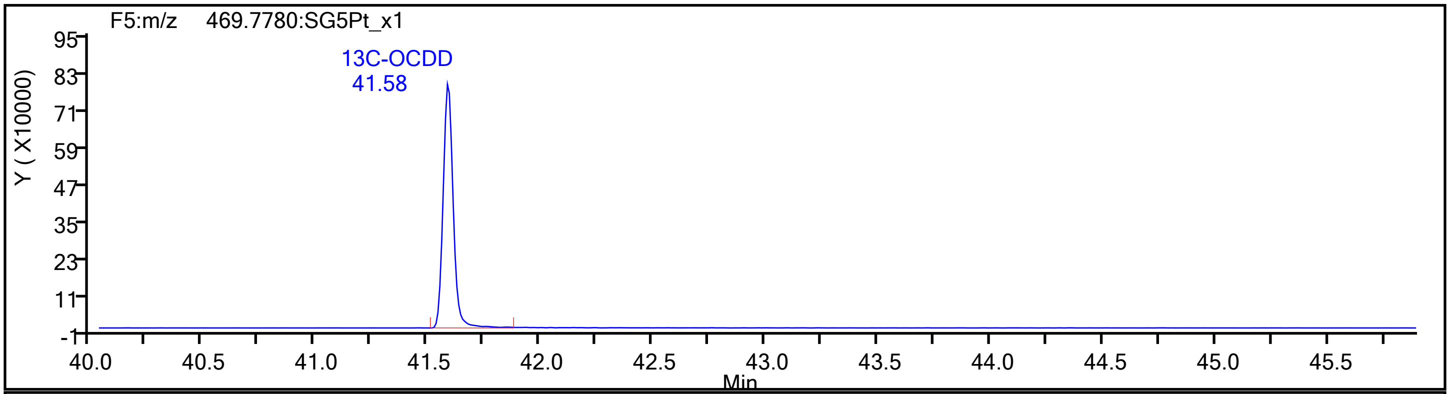

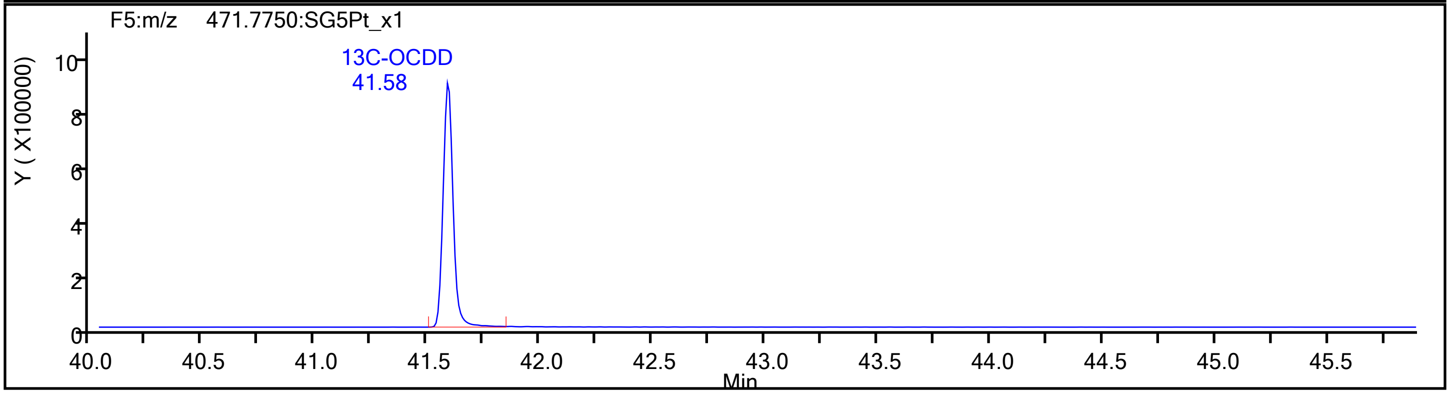

Report Date: 21-Sep-2020 11:24:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	58
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

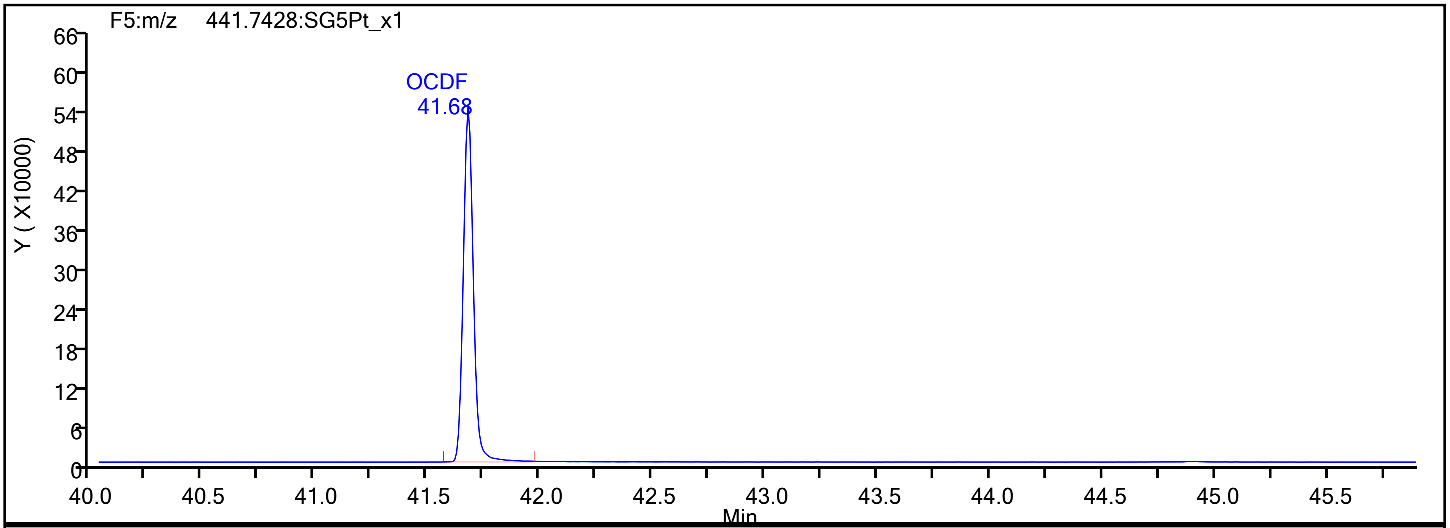

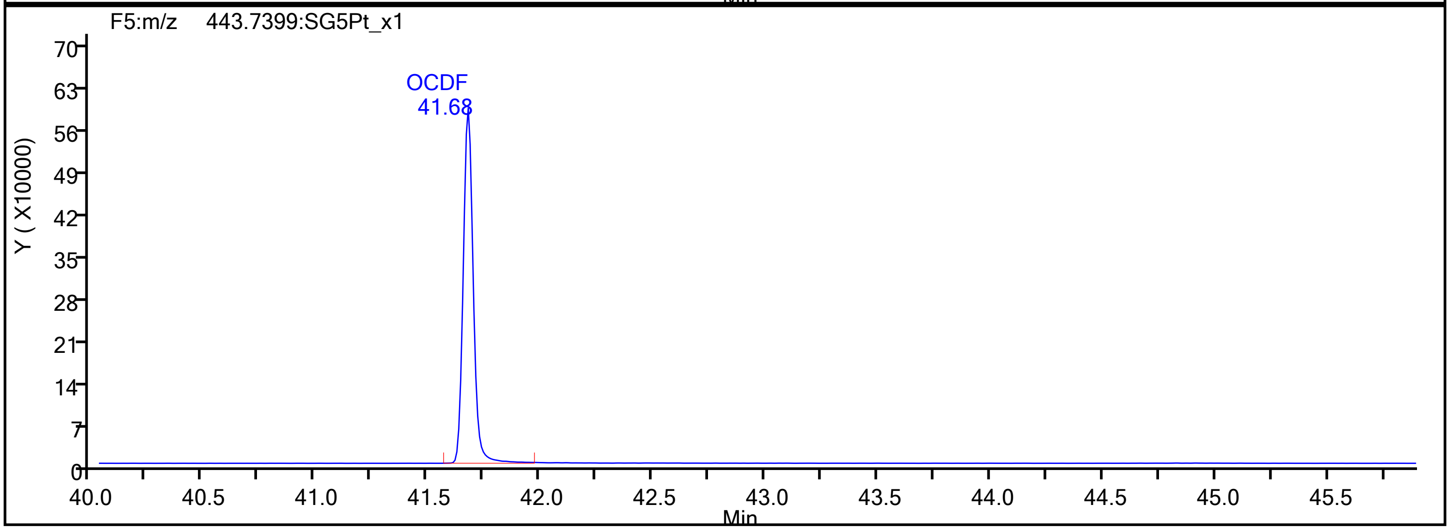

OCDF Interference Mass

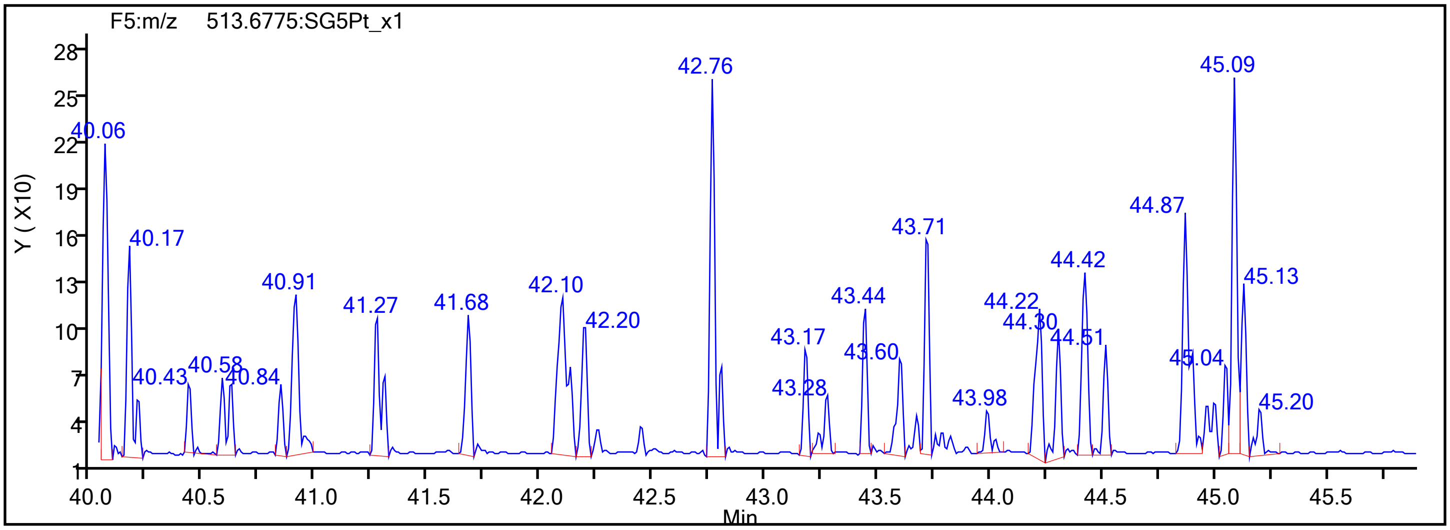

Report Date: 21-Sep-2020 11:24:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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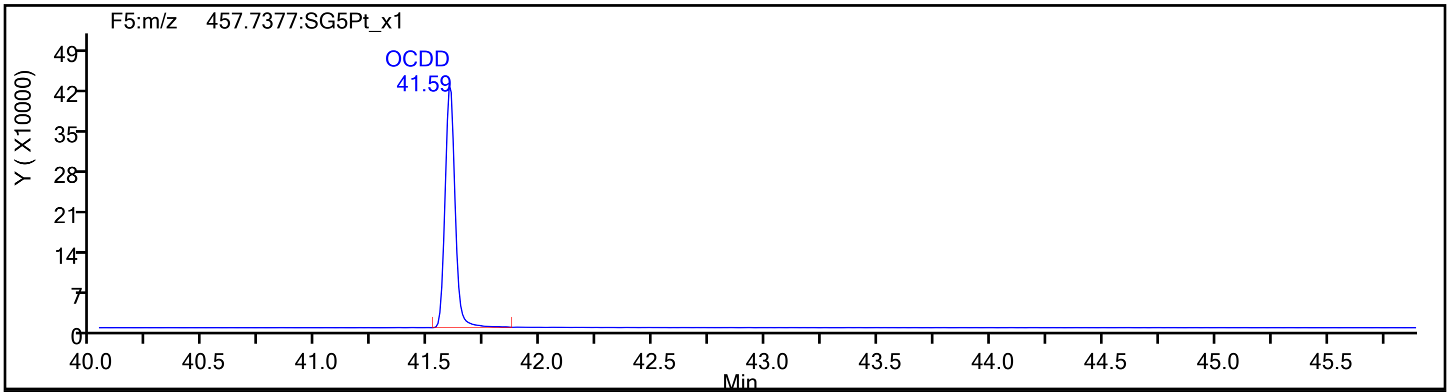

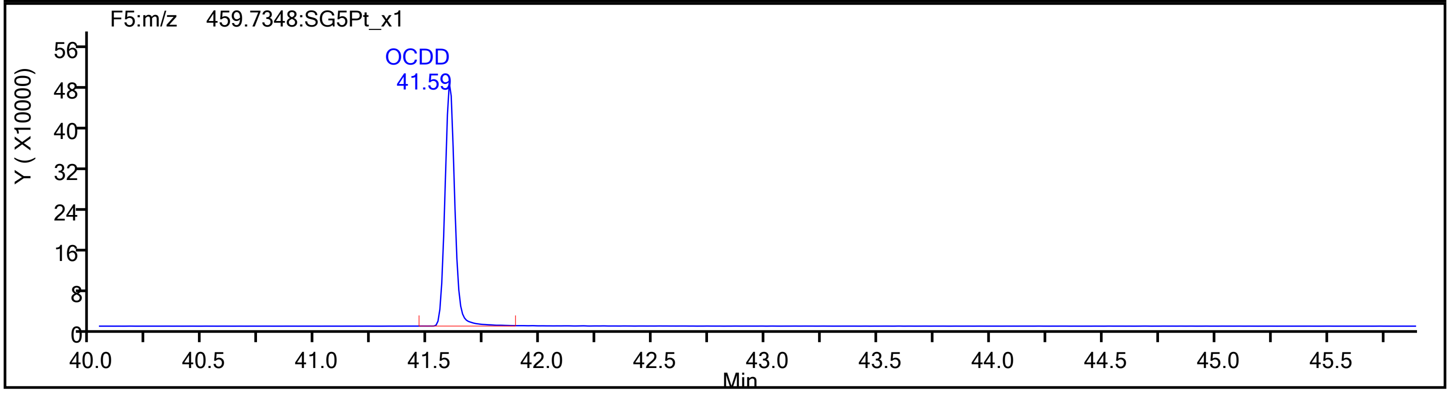

OCDD Standards

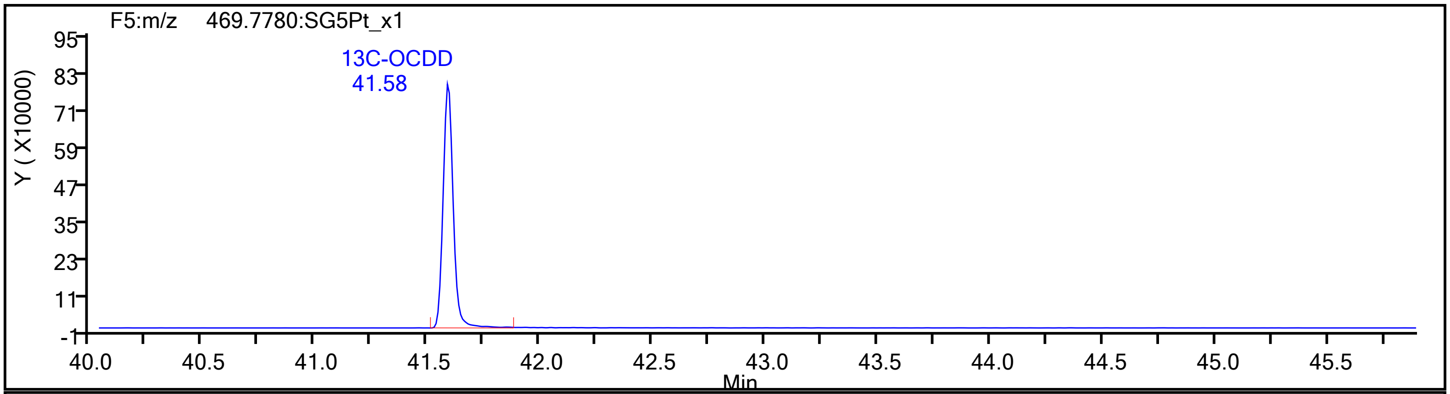

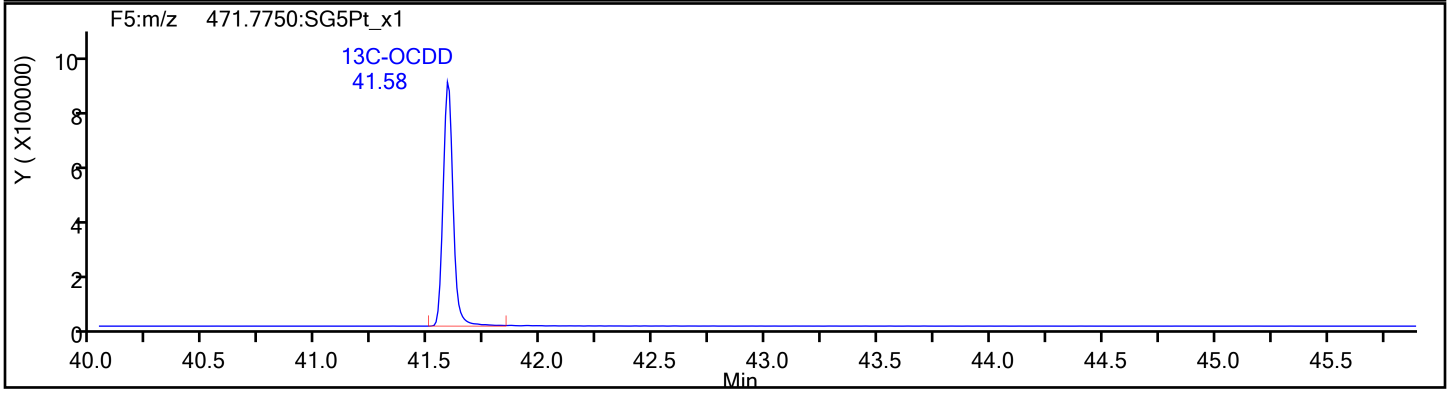

Report Date: 21-Sep-2020 11:24:26　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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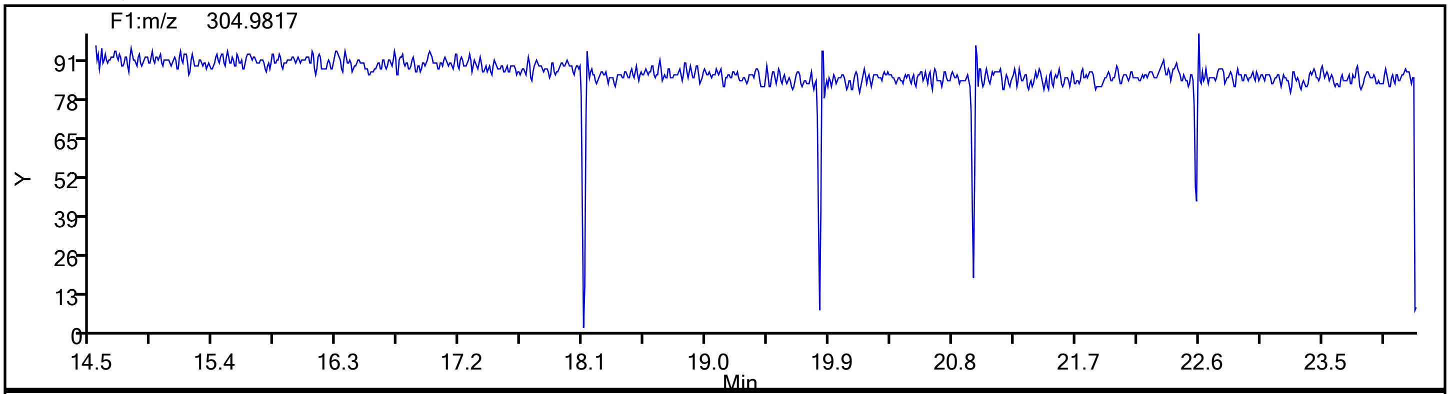

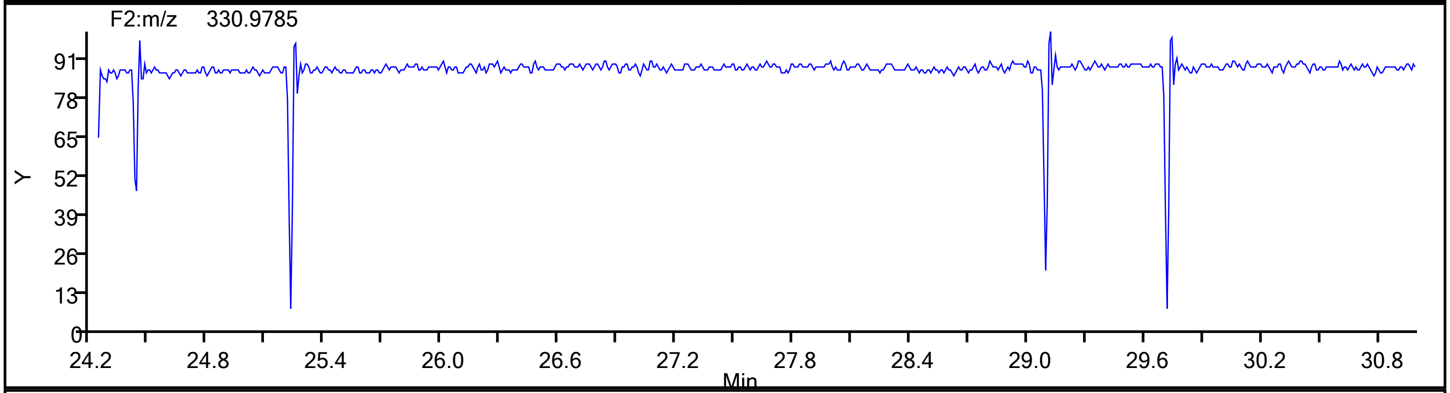

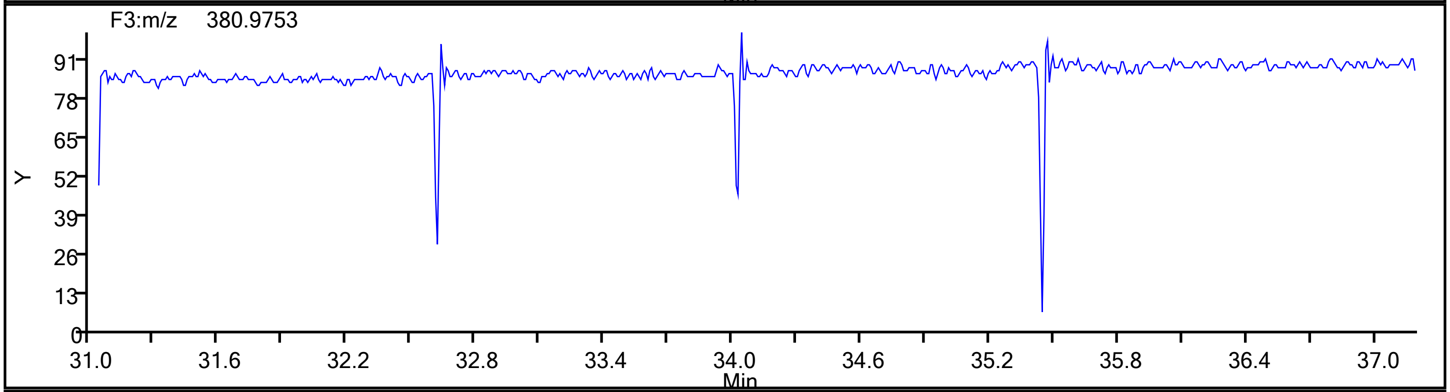

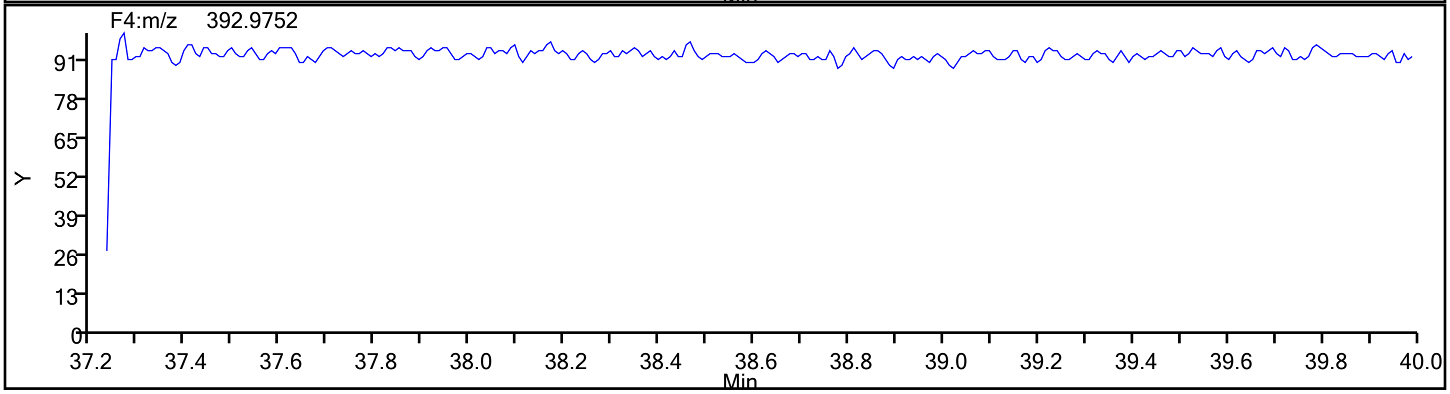

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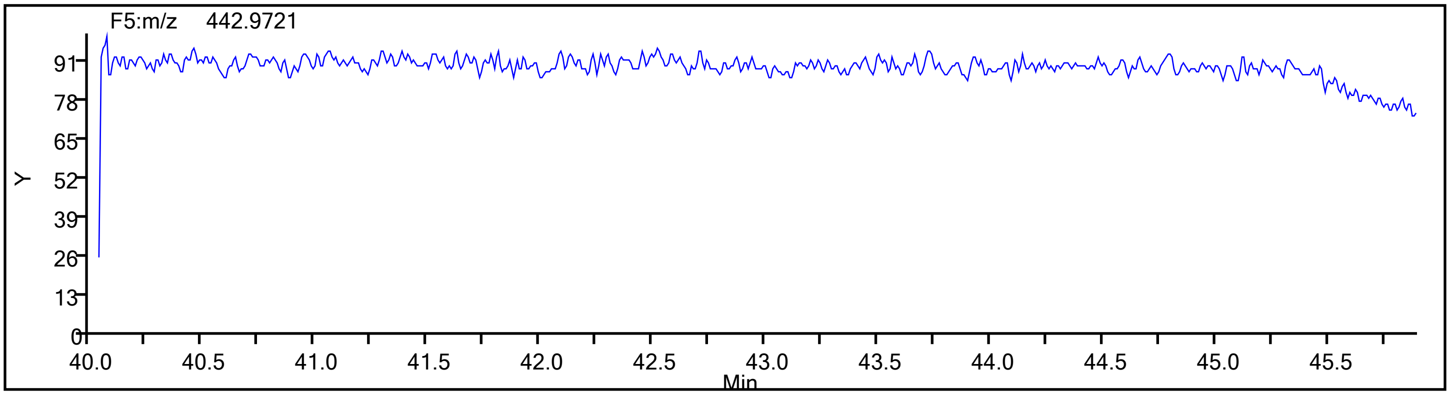

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Lab Sample ID: CCV 320-414413/2 Calibration Date: 09/21/2020 11:55

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 21se20dfs1_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.041		9.59	10.0	96	84-120
2,3,7,8-TCDD	AveID	1.081	1.033		9.55	10.0	96	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.002		47.5	50.0	95	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.051		47.6	50.0	95	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.017		47.6	50.0	95	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.245		49.2	50.0	98	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.186		48.5	50.0	97	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.193		47.8	50.0	96	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.107		47.9	50.0	96	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	0.9798		47.6	50.0	95	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.129		47.9	50.0	96	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.194		47.2	50.0	94	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.438		47.7	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.012		47.6	50.0	95	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.401		48.2	50.0	96	86-116
OCDD	AveID	1.129	1.063		94.1	100	94	79-126
OCDF	AveID	1.430	1.320		92.3	100	92	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.512		95.2	100	95	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.091		97.5	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.410		95.4	100	95	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.314		94.4	100	94	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9261		98.4	100	98	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.063		93.4	100	93	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.238		94.0	100	94	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.204		96.6	100	97	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8124		95.8	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	0.9872		98.9	100	99	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.118		94.4	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	0.9575		96.9	100	97	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9674		101	100	101	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.8881		96.5	100	97	77-129
13C-OCDD	Ave	0.7420	0.7518		203	200	101	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.135		9.90	10.0	99	79-127

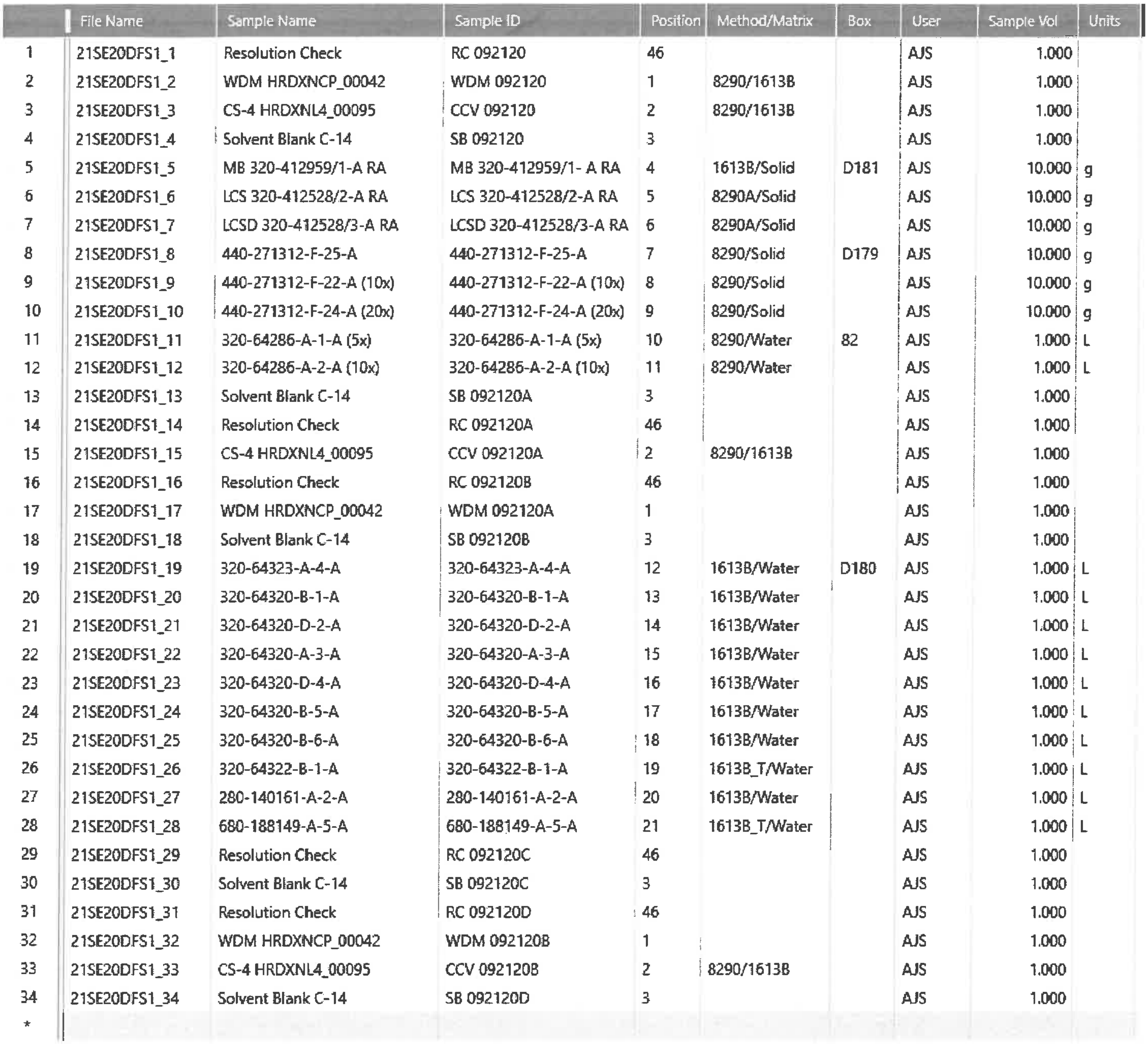

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2	21SE20DFS1_2	WDM HRDXNCP_00042	WDM 092120	1	8290/1613B		AJS	1.000	
3	21SE20DFS1_3	CS-4 HRDXNL4_00095	CCV 092120	2	8290/1613B		AJS	1.000	
4	21SE20DFS1_4	Solvent Blank C-14	SB 092120	3			AJS	1.000	
5	21SE20DFS1_5	MB 320-412959/1-A RA	MB 320-412959/1- A RA	4	1613B/Solid	D181	AJS	10.000	g
6	21SE20DFS1_6	LCS 320-412528/2-A RA	LCS 320-412528/2-A RA	5	8290A/Solid		AJS	10.000	g
7	21SE20DFS1_7	LCSD 320-412528/3-A RA	LCSD 320-412528/3-A RA	6	8290A/Solid		AJS	10.000	g
8	21SE20DFS1_8	440-271312-F-25-A	440-271312-F-25-A	7	8290/Solid	D179	AJS	10.000	g
9	21SE20DFS1_9	440-271312-F-22-A (10x)	440-271312-F-22-A (10x)	8	8290/Solid		AJS	10.000	g
10	21SE20DFS1_10	440-271312-F-24-A (20x)	440-271312-F-24-A (20x)	9	8290/Solid		AJS	10.000	g
11	21SE20DFS1_11	320-64286-A-1-A (5x)	320-64286-A-1-A (5x)	10	8290/Water	82	AJS	1.000	L
12	21SE20DFS1_12	320-64286-A-2-A (10x)	320-64286-A-2-A (10x)	11	8290/Water		AJS	1.000	L
13	21SE20DFS1_13	Solvent Blank C-14	SB 092120A	3			AJS	1.000	
14	21SE20DFS1_14	Resolution Check	RC 092120A	46			AJS	1.000	
15	21SE20DFS1_15	CS-4 HRDXNL4_00095	CCV 092120A	2	8290/1613B		AJS	1.000	
16	21SE20DFS1_16	Resolution Check	RC 092120B	46			AJS	1.000	
17	21SE20DFS1_17	WDM HRDXNCP_00042	WDM 092120A	1			AJS	1.000	
18	21SE20DFS1_18	Solvent Blank C-14	SB 092120B	3			AJS	1.000	
19	21SE20DFS1_19	320-64323-A-4-A	320-64323-A-4-A	12	1613B/Water	D180	AJS	1.000	L
20	21SE20DFS1_20	320-64320-B-1-A	320-64320-B-1-A	13	1613B/Water		AJS	1.000	L
21	21SE20DFS1_21	320-64320-D-2-A	320-64320-D-2-A	14	1613B/Water		AJS	1.000	L
22	21SE20DFS1_22	320-64320-A-3-A	320-64320-A-3-A	15	1613B/Water		AJS	1.000	L
23	21SE20DFS1_23	320-64320-D-4-A	320-64320-D-4-A	16	1613B/Water		AJS	1.000	L
24	21SE20DFS1_24	320-64320-B-5-A	320-64320-B-5-A	17	1613B/Water		AJS	1.000	L
25	21SE20DFS1_25	320-64320-B-6-A	320-64320-B-6-A	18	1613B/Water		AJS	1.000	L
26	21SE20DFS1_26	320-64322-B-1-A	320-64322-B-1-A	19	1613B_T/Water		AJS	1.000	L
27	21SE20DFS1_27	280-140161-A-2-A	280-140161-A-2-A	20	1613B/Water		AJS	1.000	L
28	21SE20DFS1_28	680-188149-A-5-A	680-188149-A-5-A	21	1613B_T/Water		AJS	1.000	L
29	21SE20DFS1_29	Resolution Check	RC 092120C	46			AJS	1.000	
30	21SE20DFS1_30	Solvent Blank C-14	SB 092120C	3			AJS	1.000	
31	21SE20DFS1_31	Resolution Check	RC 092120D	46			AJS	1.000	
32	21SE20DFS1_32	WDM HRDXNCP_00042	WDM 092120B	1			AJS	1.000	
33	21SE20DFS1_33	CS-4 HRDXNL4_00095	CCV 092120B	2	8290/1613B		AJS	1.000	
34	21SE20DFS1_34	Solvent Blank C-14	SB 092120D	3			AJS	1.000	
*									

logfile checked
9-21-20 ALM

Resolution Check Report (DFS SN: 3487)

Date:	21 Sep 2020 10:43
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11338 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12006 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11292 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11638 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11536 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11744 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11566 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11859 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12022 [5%height]

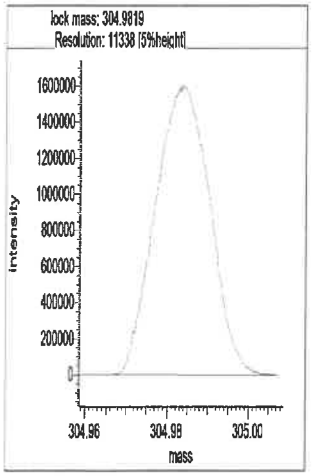

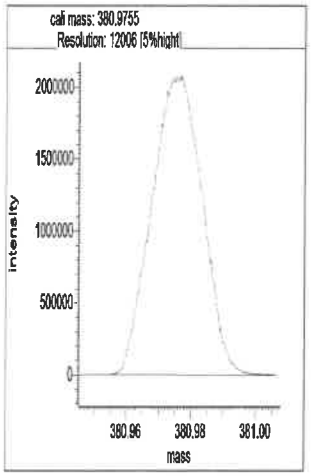

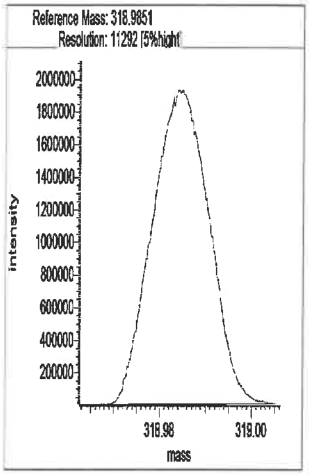

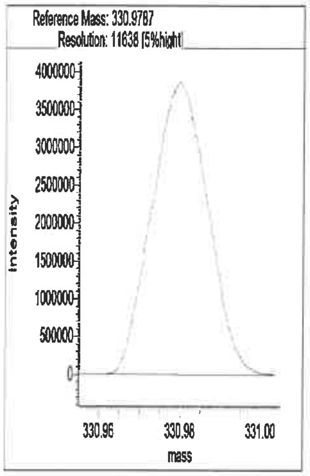

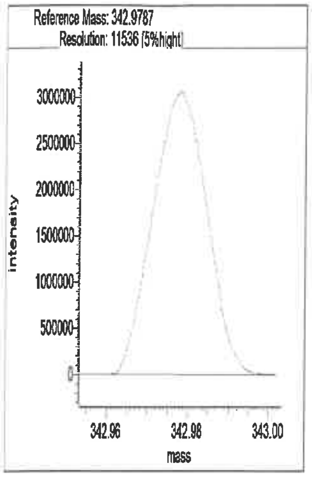

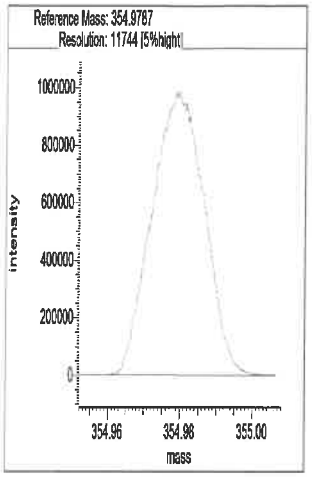

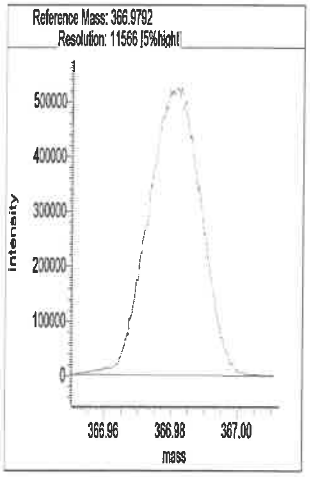

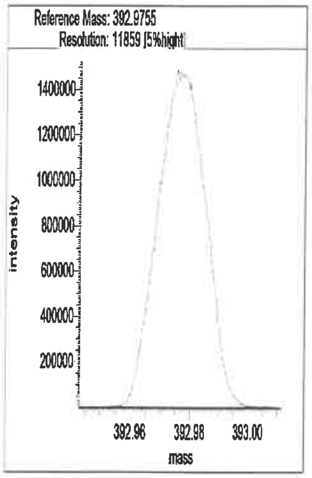

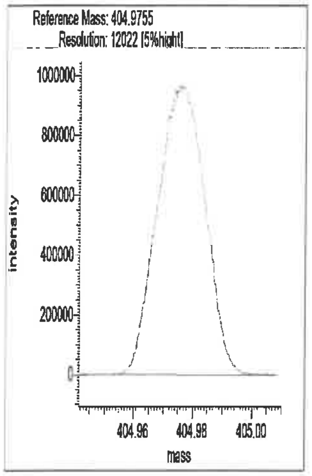

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11420 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11693 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11336 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11637 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 10992 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11798 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11953 [5%height]

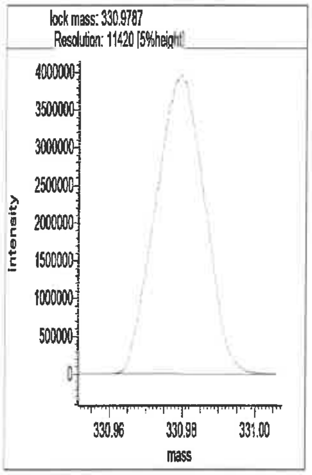

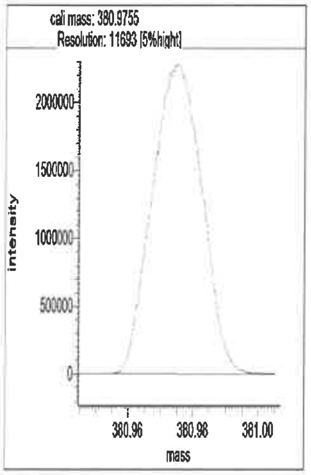

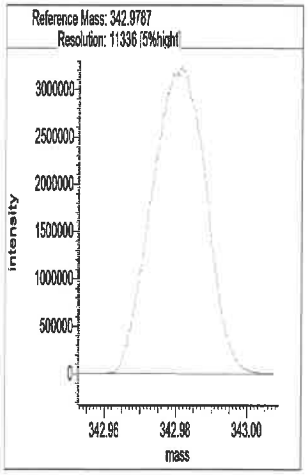

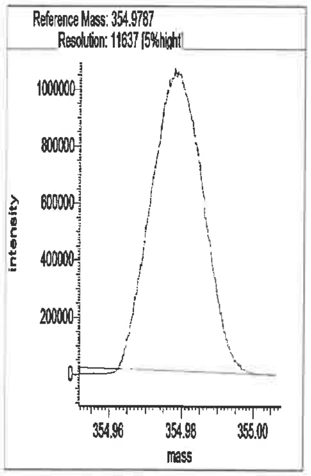

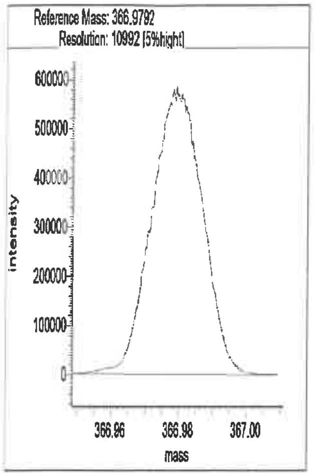

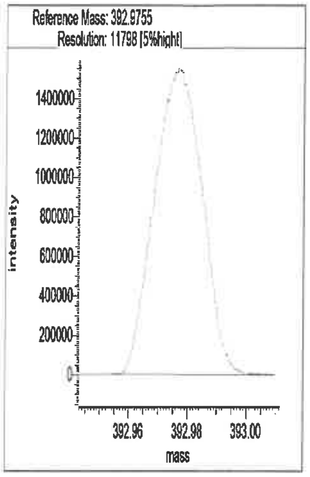

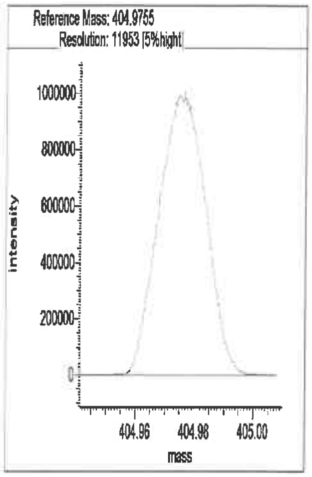

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11486 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11756 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11586 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11536 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11993 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11558 [5%height]

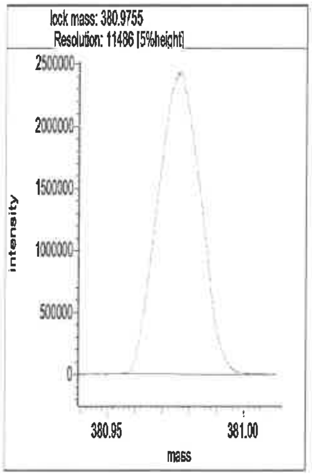

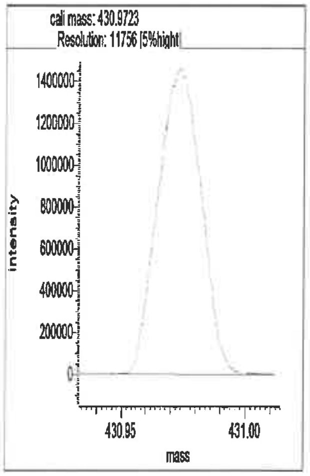

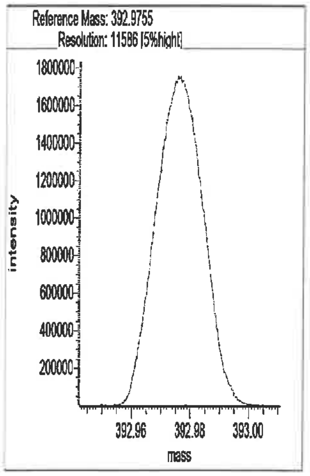

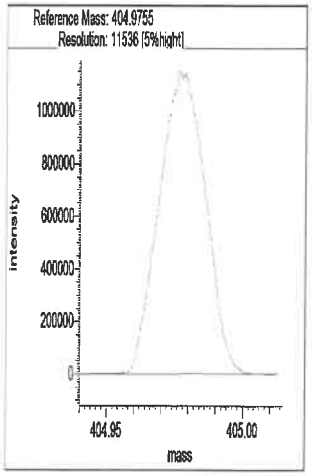

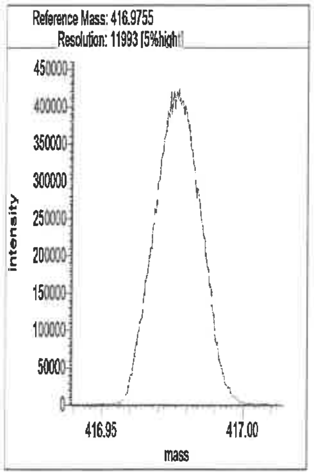

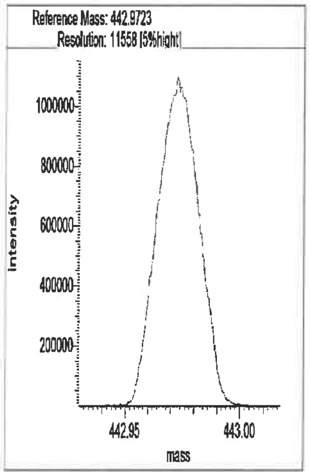

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11437 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11859 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11548 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11825 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11566 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11836 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11788 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11761 [5%height]

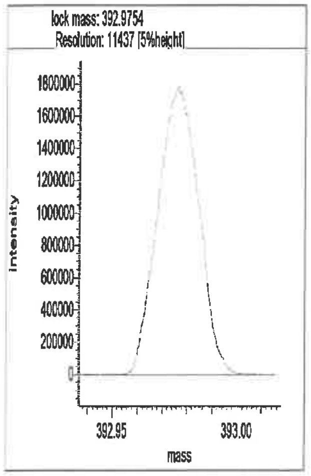

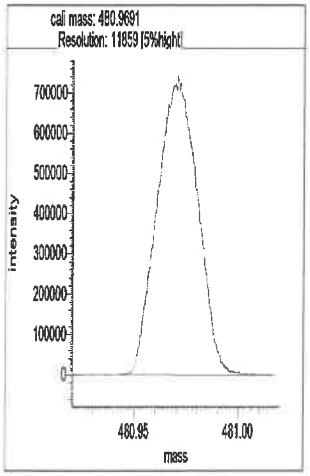

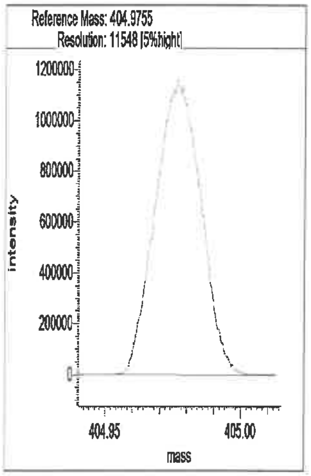

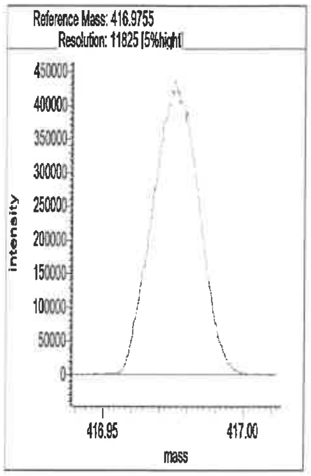

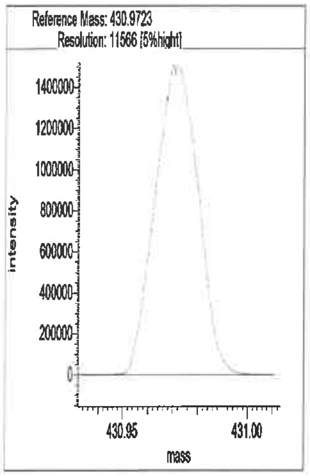

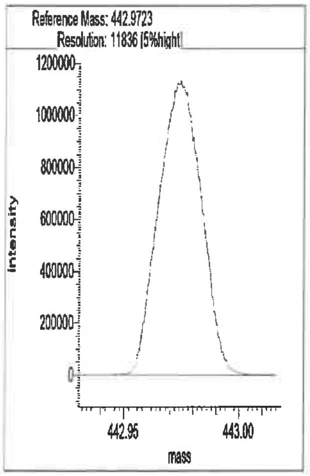

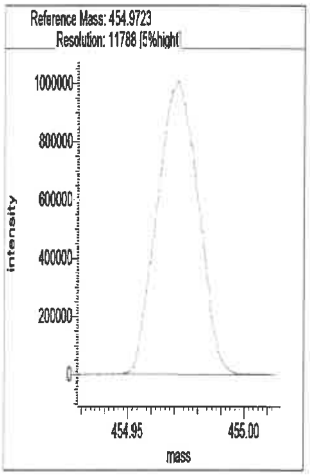

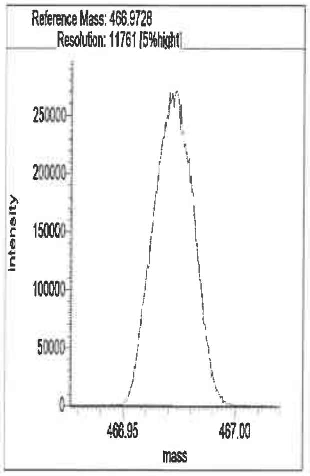

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11596 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11876 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11646 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 11565 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11553 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11747 [5%height]

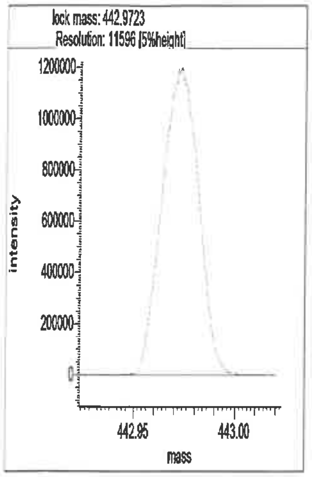

lock mass: 442.9723
Resolution: 11596 [5%height]

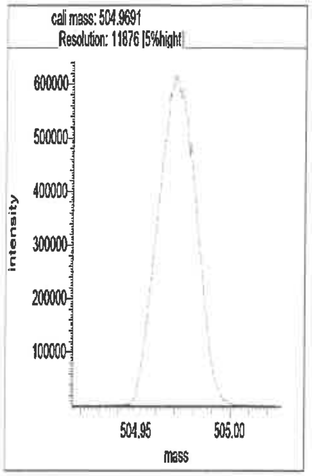

cali mass: 504.9691
Resolution: 11876 [5%hight]

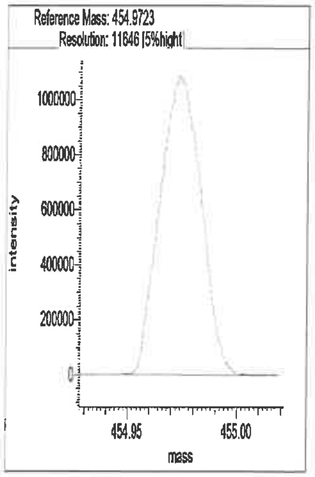

Reference Mass: 454.9723
Resolution: 11646 [5%hight]

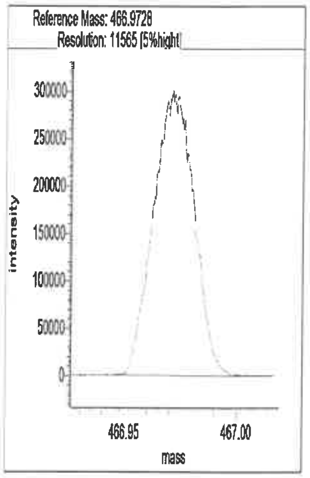

Reference Mass: 466.9728
Resolution: 11565 [5%hight]

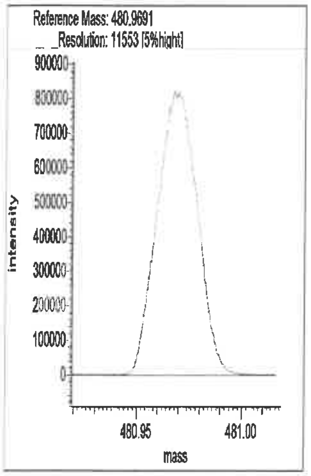

Reference Mass: 480.9691
Resolution: 11553 [5%hight]

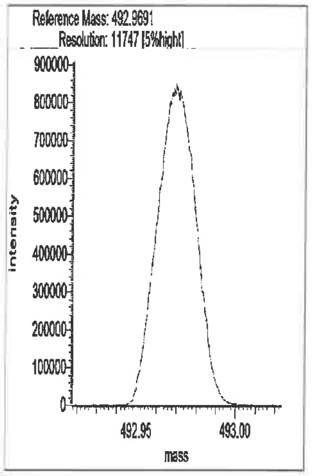

Reference Mass: 492.9691
Resolution: 11747 [5%hight]

Resolution Check Report (DFS SN: 3487)

Date:	21 Sep 2020 21:27
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12318 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12556 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 12167 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12232 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12492 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12516 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11807 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12569 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12510 [5%height]

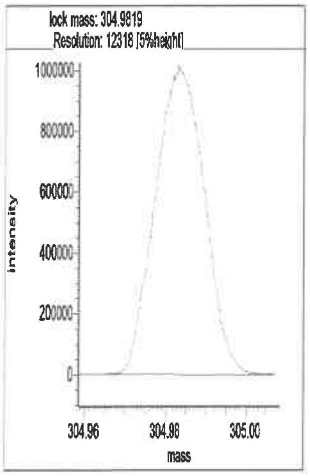

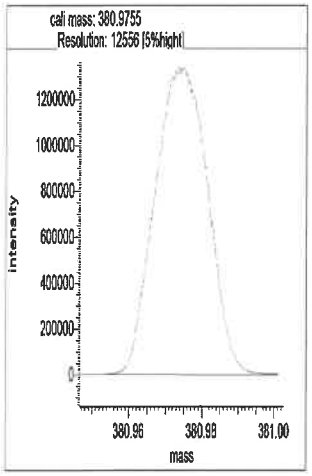

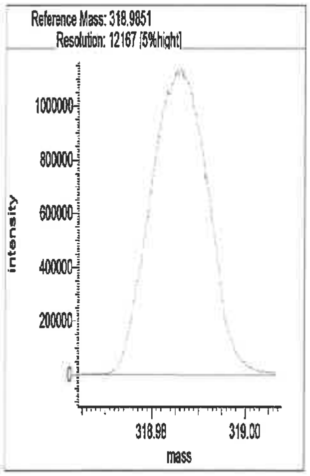

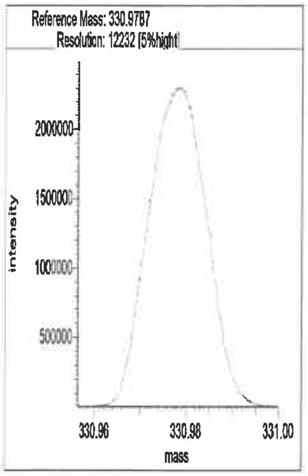

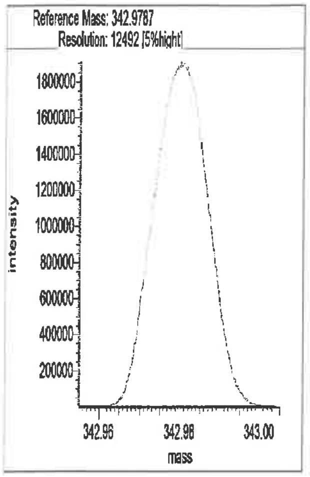

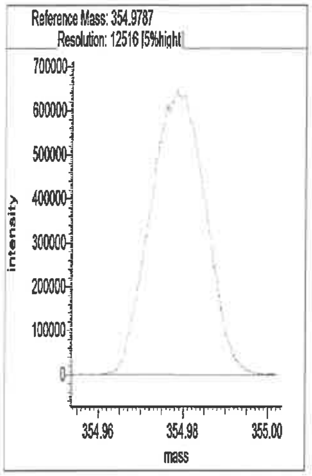

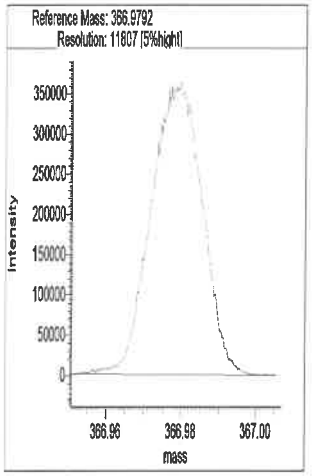

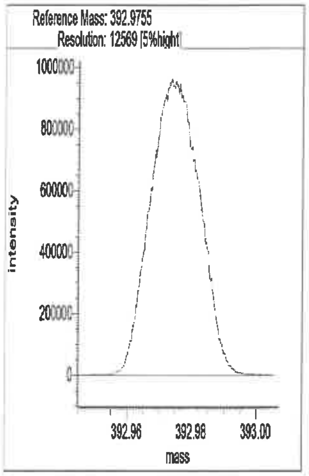

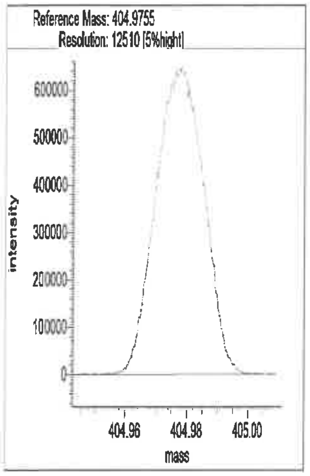

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12472 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12473 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12423 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12291 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 12289 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12581 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12566 [5%height]

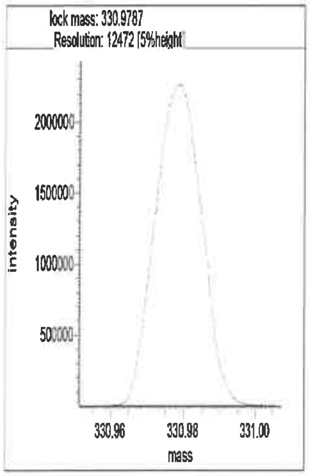

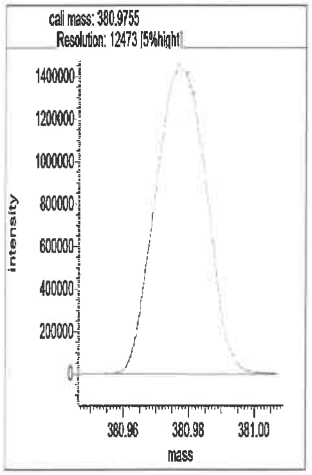

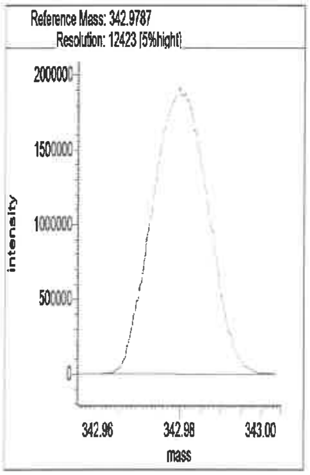

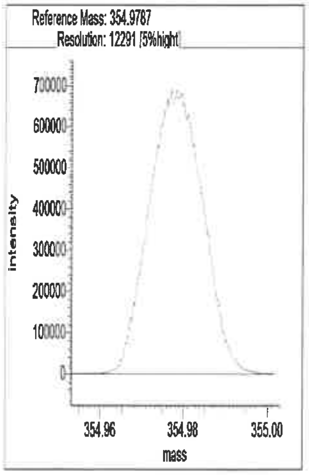

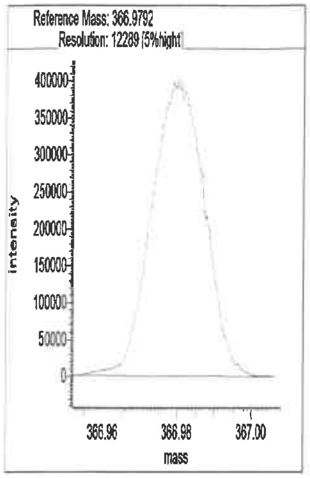

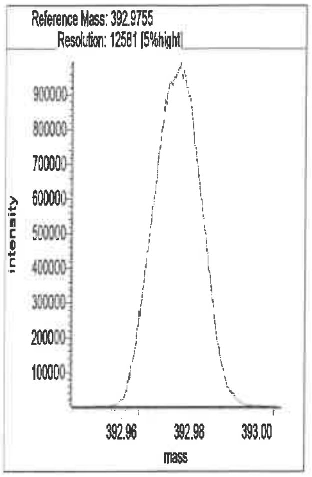

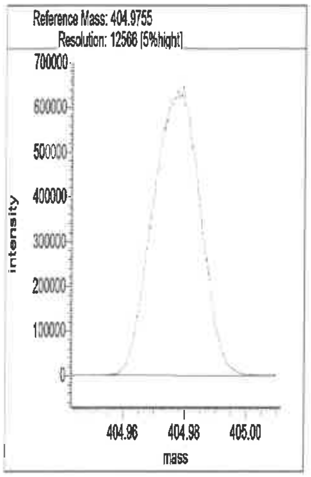

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12396 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12394 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12460 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12436 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12489 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12524 [5%height]

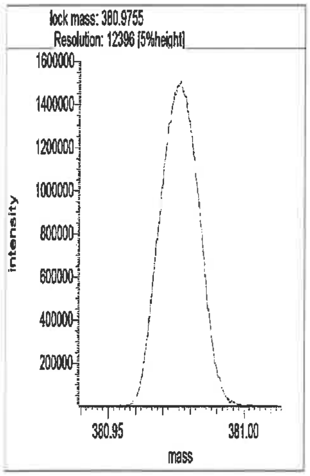

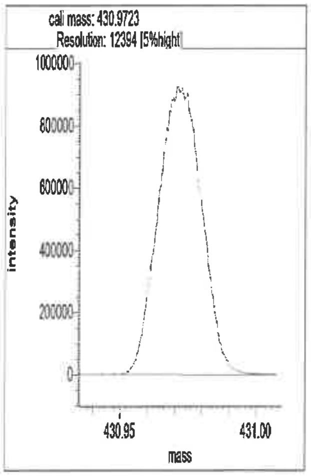

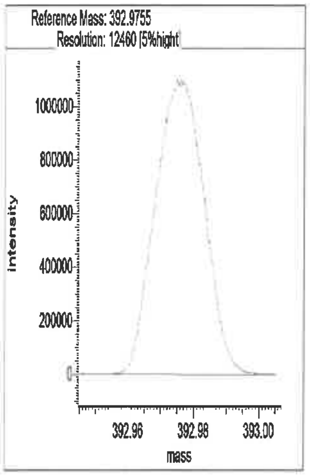

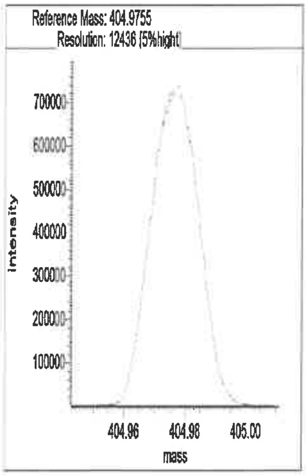

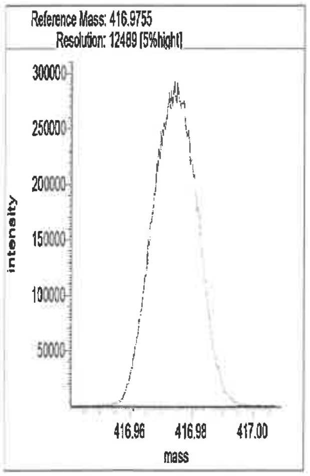

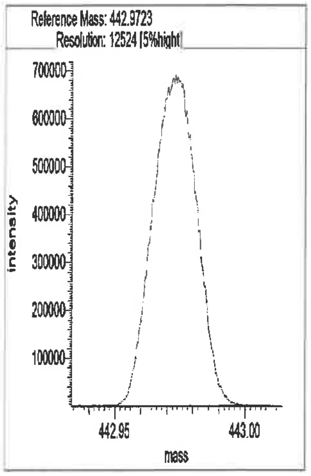

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12306 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12464 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12399 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12392 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12336 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12592 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12547 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12630 [5%height]

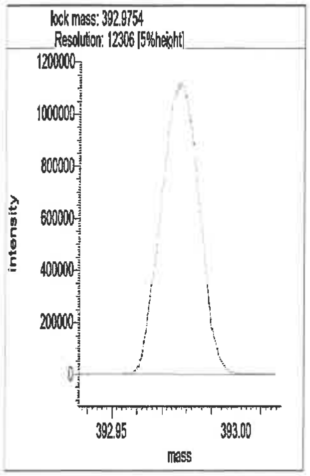

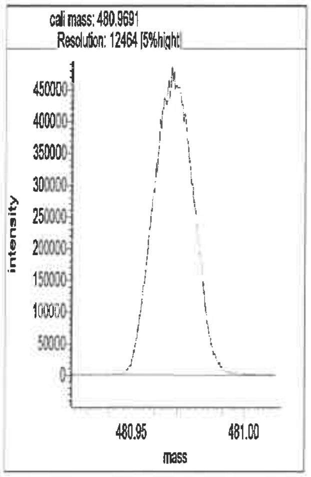

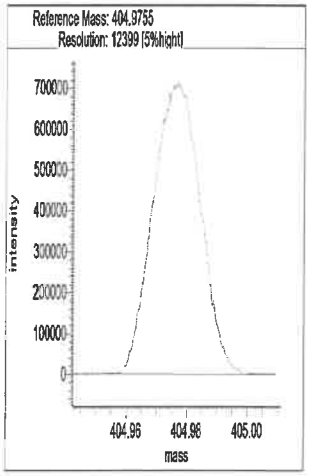

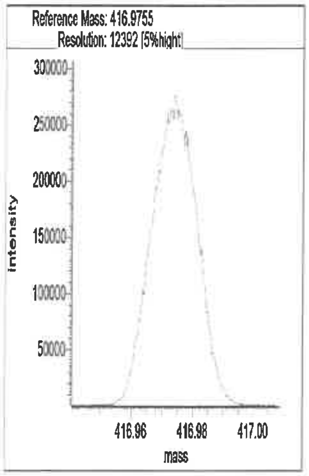

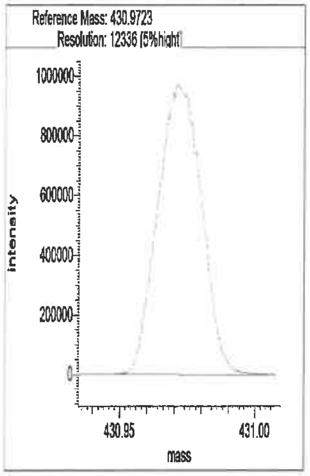

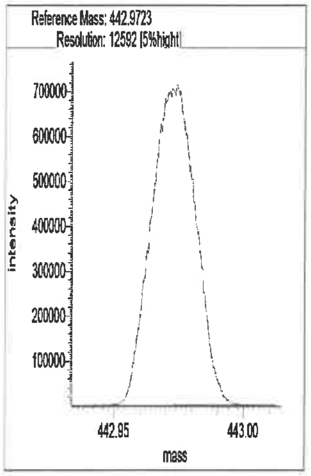

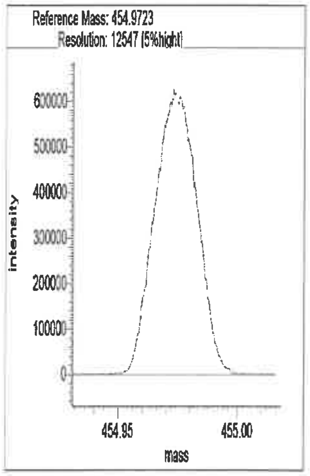

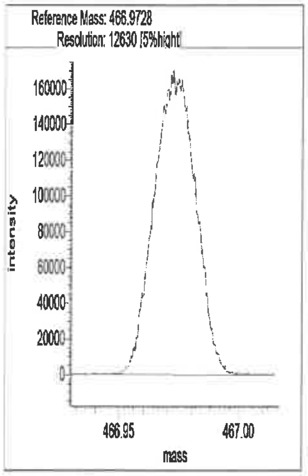

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12442 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12669 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12427 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12584 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12204 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12533 [5%height]

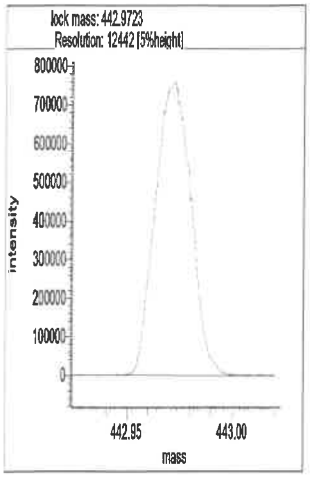

lock mass: 442.9723
Resolution: 12442 [5%height]

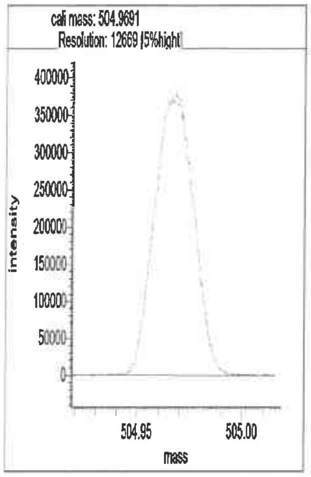

cali mass: 504.9691
Resolution: 12669 [5%hight]

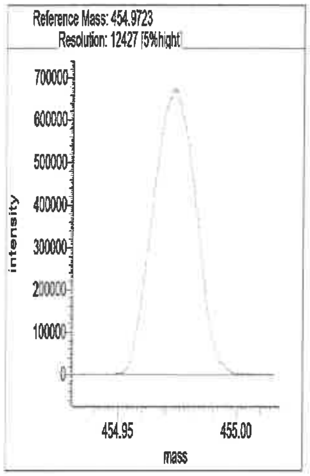

Reference Mass: 454.9723
Resolution: 12427 [5%hight]

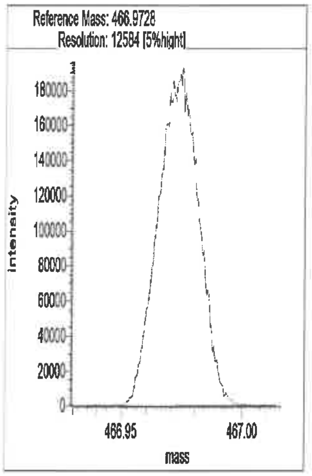

Reference Mass: 466.9728
Resolution: 12584 [5%hight]

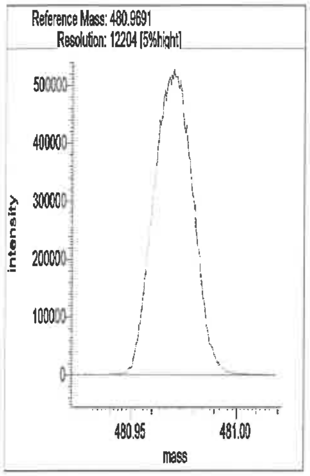

Reference Mass: 480.9691
Resolution: 12204 [5%hight]

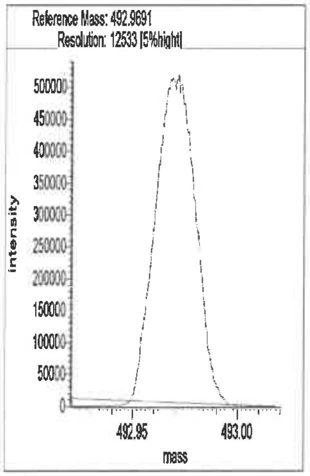

Reference Mass: 492.9691
Resolution: 12533 [5%hight]

Resolution Check Report (DFS SN: 3487)

Date:	21 Sep 2020 22:35
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12350 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12497 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 12372 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12333 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12624 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12437 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 12241 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12638 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12614 [5%height]

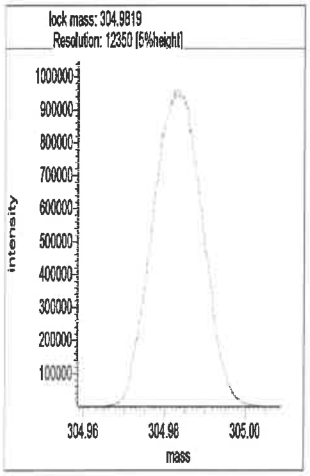

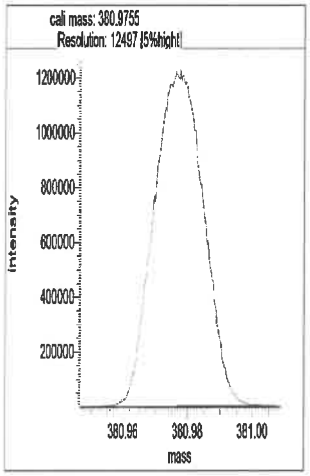

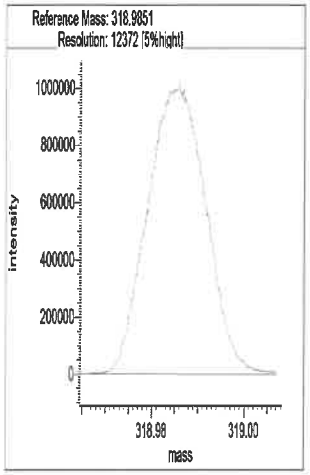

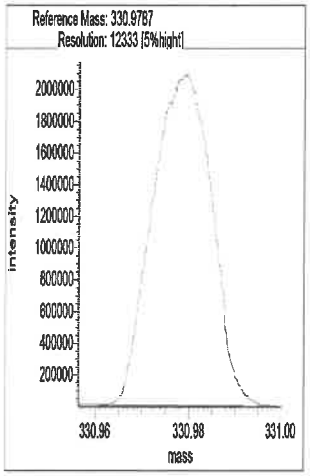

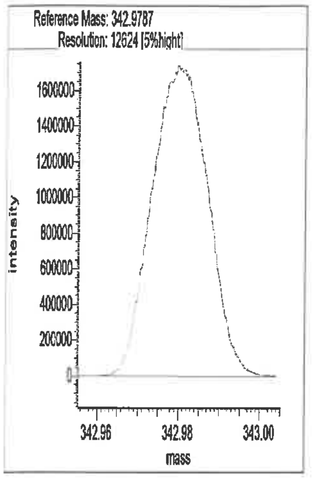

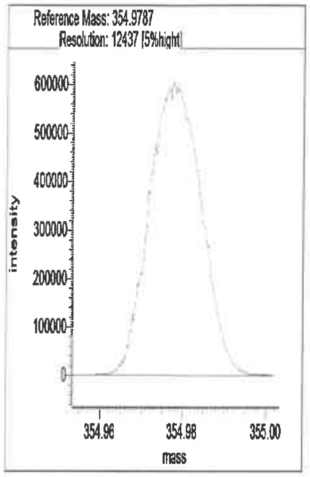

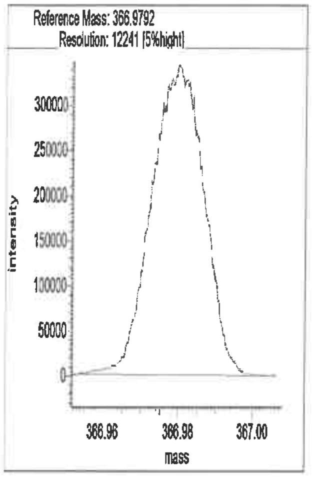

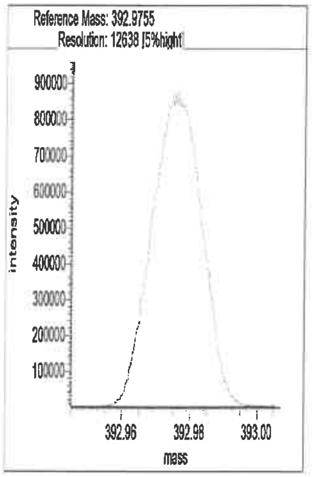

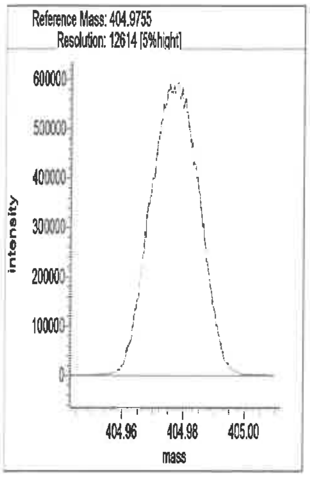

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12558 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12447 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12294 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12563 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 12030 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12588 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12675 [5%height]

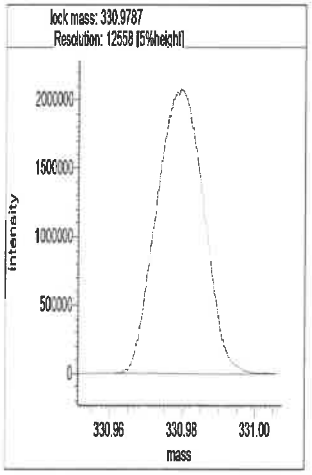

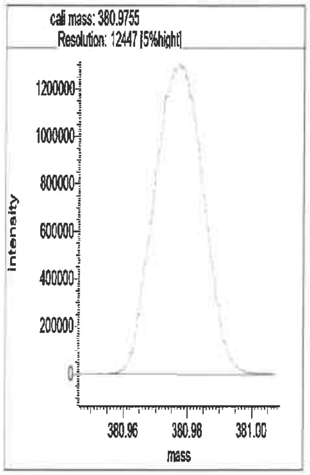

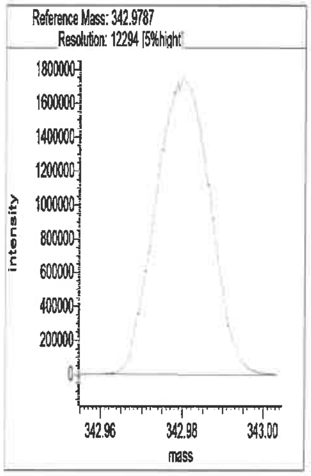

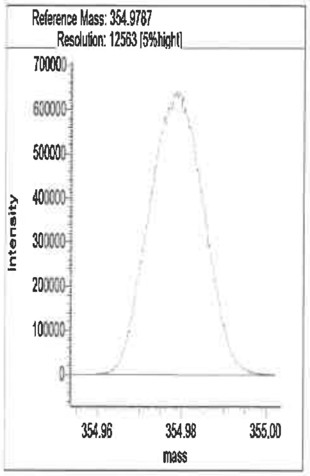

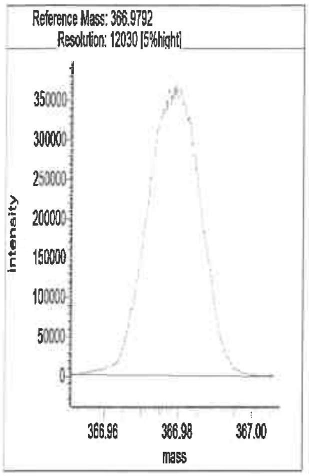

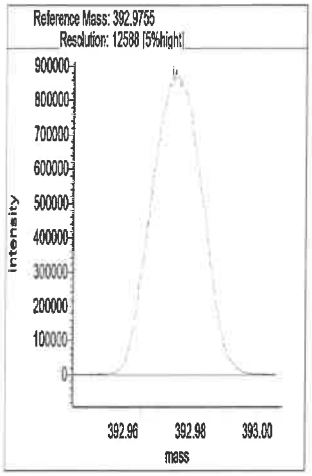

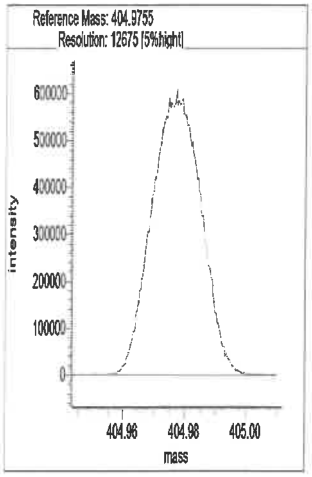

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12334 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12642 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12449 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12688 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12478 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12696 [5%height]

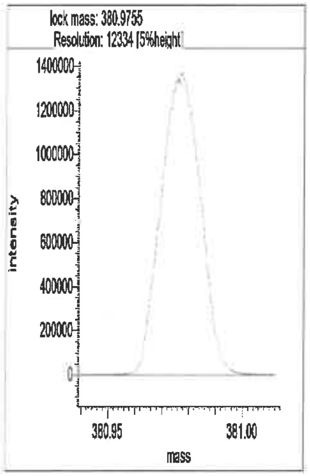

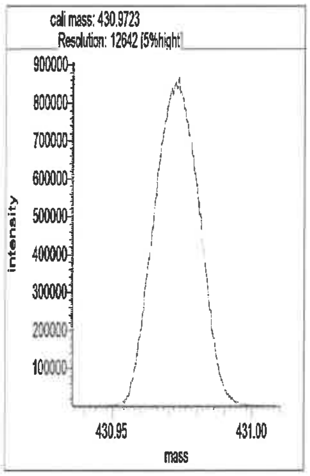

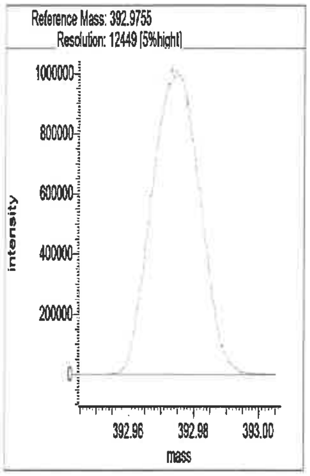

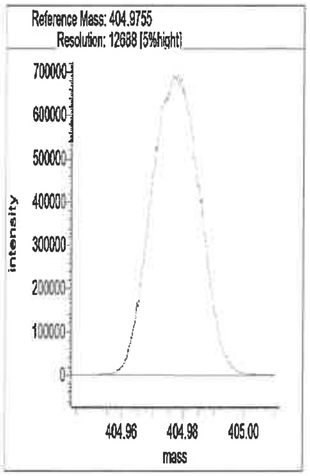

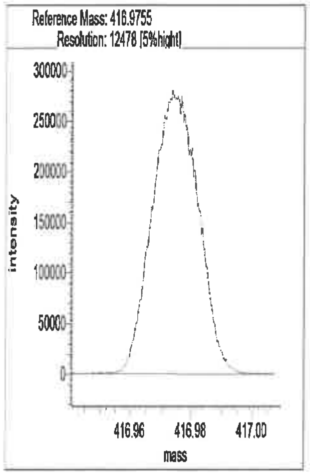

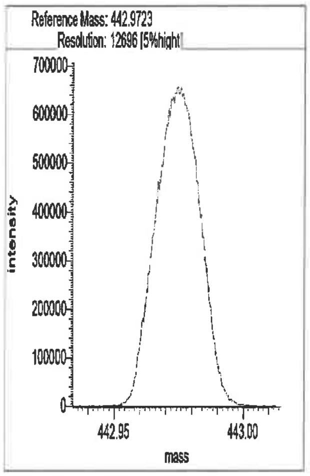

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12588 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12443 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12330 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12672 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12380 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12568 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12433 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12623 [5%height]

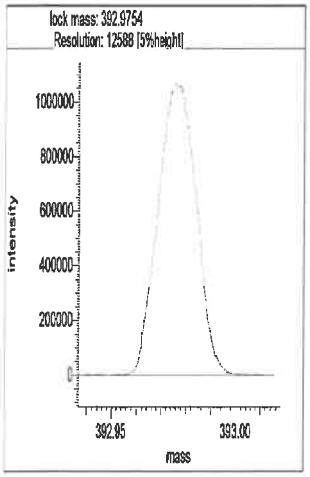

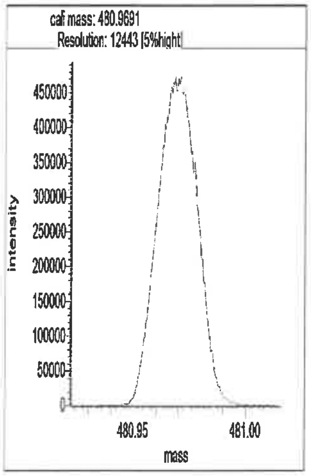

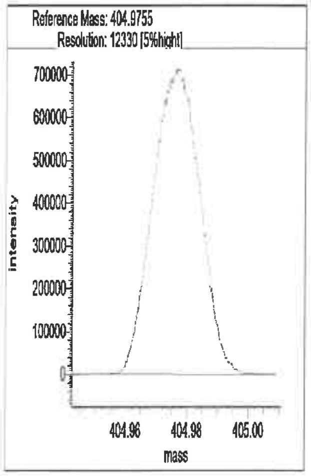

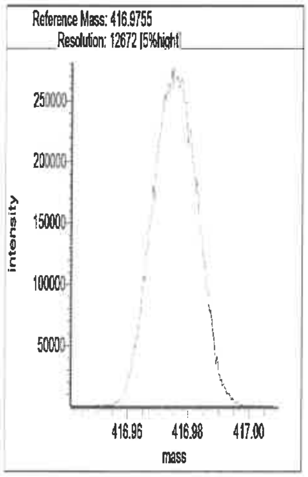

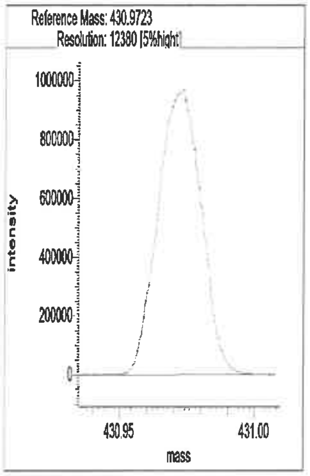

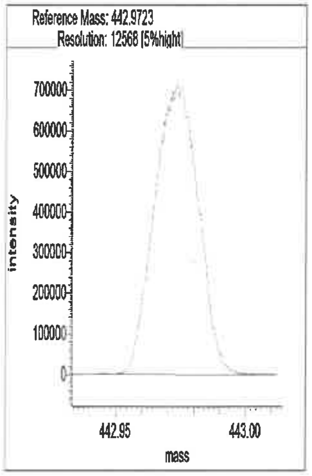

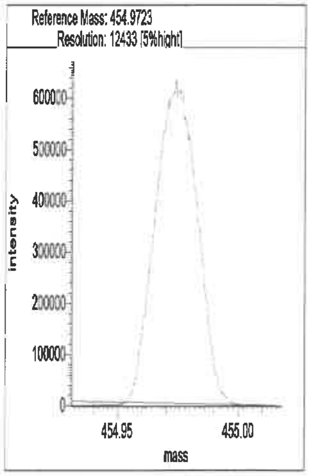

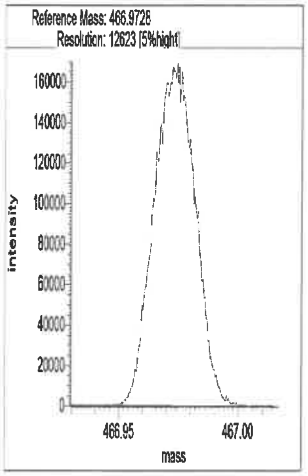

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12482 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12348 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12411 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12301 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12491 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12709 [5%height]

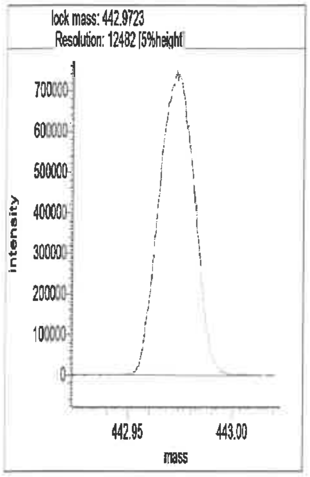
lock mass: 442.9723
Resolution: 12482 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

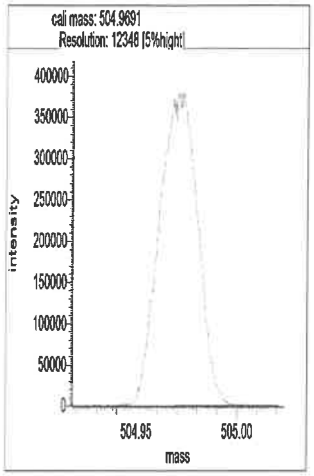
cali mass: 504.9691
Resolution: 12348 [5%hight]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

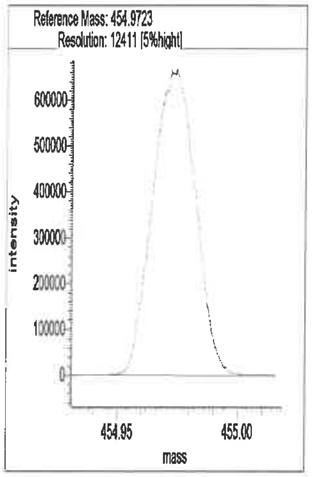
Reference Mass: 454.9723
Resolution: 12411 [5%hight]
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

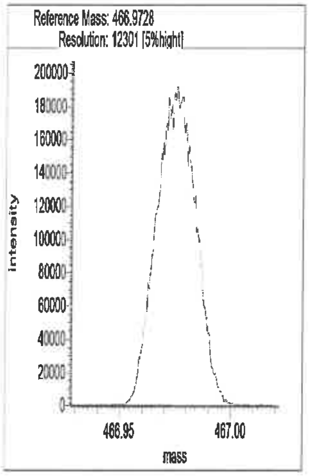
Reference Mass: 466.9728
Resolution: 12301 [5%hight]
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
intensity
466.95
467.00
mass

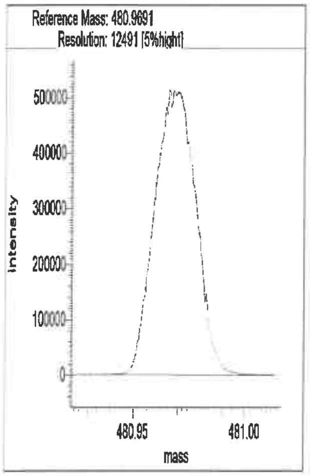
Reference Mass: 480.9691
Resolution: 12491 [5%hight]
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

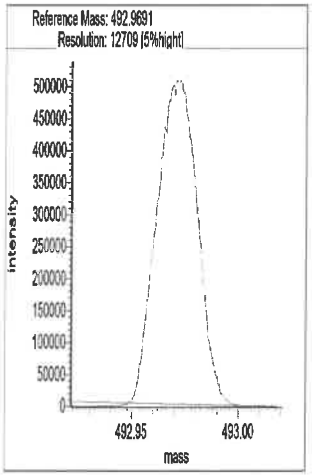
Reference Mass: 492.9691
Resolution: 12709 [5%hight]
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 21-Sep-2020 11:55:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 18:44:51 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: shardaa Date: 21-Sep-2020 16:20:05

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.099	2921359	0.82	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.178	4417079	0.79	1.5883	95.2	95.2	0.3285	0.3285	95.19	
2,3,7,8-TCDF	19.213	459644	0.80	1.0857	9.585	9.585	0.0393	0.0393	95.85	
A Non-2,3,7,8-sub-TCDF	18.810						0.0393	0.0393		
S Total TCDF					9.585	9.585	0.0393	0.0393		
D 13C-2,3,7,8-TCDD	20.460	3187766	0.80	1.1194	97.5	97.5	0.3040	0.3040	97.48	
2,3,7,8-TCDD	20.495	329164	0.75	1.0810	9.552	9.552	0.0661	0.0661	95.52	
$ 37Cl4-2,3,7,8-TCDD	20.495	331657		1.1468	9.900	9.900	0.0188	0.0188	99.00	
A Non-2,3,7,8-sub-TCDD	19.614						0.0661	0.0661		
S Total TCDD					9.552	9.552	0.0661	0.0661		
D 13C-1,2,3,7,8-PeCDF	26.263	4118063	1.56	1.4782	95.4	95.4	0.3548	0.3548	95.36	
1,2,3,7,8-PeCDF	26.289	2063457	1.55	1.0547	47.5	47.5	0.1684	0.1684	95.02	
D 13C-2,3,4,7,8-PeCDF	27.720	3837437	1.58	1.3912	94.4	94.4	0.3770	0.3770	94.42	
2,3,4,7,8-PeCDF	27.745	2017416	1.56	1.1035	47.6	47.6	0.1842	0.1842	95.28	
A F1 PeCDFs	23.612						0.0167	0.0167		
A Non-2,3,7,8-sub-PeCDF	26.990						0.1757	0.1757		Rn
S Total PeCDF					95.2	95.2	0.1763	0.1763		
D 13C-1,2,3,7,8-PeCDD	28.494	2705439	1.62	0.9415	98.4	98.4	0.1635	0.1635	98.37	
1,2,3,7,8-PeCDD	28.528	1376092	1.54	1.0680	47.6	47.6	0.0675	0.0675	95.25	
A Non-2,3,7,8-sub-PeCDD	27.364						0.0675	0.0675		
S Total PeCDD					47.6	47.6	0.0675	0.0675		
D 13C-1,2,3,4,7,8-HxCDF	34.153	3223488	0.53	1.1378	93.4	93.4	0.3975	0.3975	93.41	
1,2,3,4,7,8-HxCDF	34.170	2006846	1.25	1.2643	49.2	49.2	0.2431	0.2431	98.49	
D 13C-1,2,3,6,7,8-HxCDF	34.338	3754924	0.52	1.3173	94.0	94.0	0.3433	0.3433	93.98	
1,2,3,6,7,8-HxCDF	34.355	2225735	1.26	1.2230	48.5	48.5	0.2276	0.2276	96.93	
D 13C-2,3,4,6,7,8-HxCDF	35.248	3651173	0.52	1.2457	96.6	96.6	0.3630	0.3630	96.64	
2,3,4,6,7,8-HxCDF	35.265	2177116	1.25	1.2464	47.8	47.8	0.1909	0.1909	95.68	
D 13C-1,2,3,7,8,9-HxCDF	36.201	3389813	0.52	1.1840	94.4	94.4	0.3820	0.3820	94.39	
1,2,3,7,8,9-HxCDF	36.217	2023024	1.26	1.2638	47.2	47.2	0.1917	0.1917	94.45	
A Non-2,3,7,8-sub-HxCDF	34.222						0.2109	0.2109		
S Total HxCDF					192.8	192.8	0.2133	0.2133		

Report Date: 21-Sep-2020 18:44:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.998	3033093	1.27	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.484	2463958	1.26	0.8477	95.8	95.8	0.2406	0.2406	95.83	
1,2,3,4,7,8-HxCDD	35.493	1364087	1.24	1.1561	47.9	47.9	0.1217	0.1217	95.77	
D 13C-1,2,3,6,7,8-HxCDD	35.611	2994318	1.28	0.9979	98.9	98.9	0.2044	0.2044	98.93	
1,2,3,6,7,8-HxCDD	35.627	1466878	1.26	1.0284	47.6	47.6	0.1212	0.1212	95.27	
1,2,3,7,8,9-HxCDD	36.015	1540823	1.26	1.1789	47.9	47.9	0.1121	0.1121	95.78	
A Non-2,3,7,8-sub-HxCDD	34.677						0.1179	0.1179		
S Total HxCDD					143.4	143.4	0.1183	0.1183		
D 13C-1,2,3,4,6,7,8-HpCDF	38.114	2904095	0.47	0.9884	96.9	96.9	0.5073	0.5073	96.87	
1,2,3,4,6,7,8-HpCDF	38.131	2088204	1.03	1.5064	47.7	47.7	0.1966	0.1966	95.47	
D 13C-1,2,3,4,7,8,9-HpCDF	39.412	2693787	0.45	0.9203	96.5	96.5	0.5449	0.5449	96.50	
1,2,3,4,7,8,9-HpCDF	39.428	1887621	1.04	1.4548	48.2	48.2	0.2083	0.2083	96.33	
A Non-2,3,7,8-sub-HpCDF	38.776						0.2023	0.2023		
S Total HpCDF					95.9	95.9	0.2024	0.2024		
D 13C-1,2,3,4,6,7,8-HpCDD	39.108	2934064	1.06	0.9556	101.2	101.2	0.2710	0.2710	101	
1,2,3,4,6,7,8-HpCDD	39.116	1484687	1.05	1.0640	47.6	47.6	0.1143	0.1143	95.12	
A Non-2,3,7,8-sub-HpCDD	38.941						0.1143	0.1143		
S Total HpCDD					47.6	47.6	0.1143	0.1143		
D 13C-OCDD	41.561	4560589	0.90	0.7420	202.6	202.6	0.2517	0.2517	101	
OCDF	41.654	3009977	0.91	1.4296	92.3	92.3	0.0987	0.0987	92.33	
OCDD	41.569	2423246	0.88	1.1293	94.1	94.1	0.0885	0.0885	94.10	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 18:44:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 21-Sep-2020 11:55:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 18:44:51 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: shardaa Date: 21-Sep-2020 16:20:05

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.099	20.099	0		1314851	202499	390	975	519		
333.9338	20.107	20.099	1		1606508	237369	209	522	1136	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.178	19.178	0	0.954	1953387	302026	634	1585	476		
317.9389	19.178	19.178	0	0.954	2463692	377182	284	710	1328	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.213	19.213	0	1.002	203706	30898	42	105	736		
305.8987	19.204	19.213	-1	1.001	255938	38700	74	185	523	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.810						42	105			
305.8987	18.810						74	185			
13C-2,3,7,8-TCDD											
331.9368	20.460	20.460	0	1.018	1413068	195619	390	975	502		
333.9338	20.452	20.460	-1	1.018	1774698	248125	209	522	1187	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.495	20.495	0	1.002	140915	21483	84	210	256		
321.8936	20.486	20.495	-1	1.001	188249	25796	43	107	600	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.495	20.495	0	1.020	331657	47022	38	95	1237		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.614						84	210			
321.8936	19.614						43	107			
13C-1,2,3,7,8-PeCDF											
351.9000	26.263	26.263	0	1.307	2511395	420063	543	1357	774		
353.8970	26.263	26.263	0	1.307	1606668	273487	380	950	720	1.56(1.32-1.78)	

Report Date: 21-Sep-2020 18:44:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.289	26.289	0	1.001	1254091	209319	285	712	734		
341.8567	26.289	26.289	0	1.001	809366	135505	208	520	651	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.720	27.720	0	1.379	2351962	372839	543	1357	687		
353.8970	27.720	27.720	0	1.379	1485475	233135	380	950	614	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.745	27.745	0	1.001	1229939	195349	285	712	685		
341.8567	27.745	27.745	0	1.001	787477	124952	208	520	601	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.612						10	25			
341.8567	23.612						37	92			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.844	26.991	-9	1.022	10757	1619	285	712	6		
341.8567	26.853	26.991	-8	1.022	8481	1164	208	520	6	1.27(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.494	28.494	0	1.418	1672401	248204	153	382	1622		
369.8919	28.494	28.494	0	1.418	1033038	156693	118	295	1328	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.528	28.528	0	1.001	835009	126155	85	212	1484		
357.8516	28.519	28.528	-1	1.001	541083	80896	32	80	2528	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.364						85	212			
357.8516	27.364						32	80			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.153	34.153	0	0.949	1118317	228223	438	1095	521		
385.8610	34.153	34.153	0	0.949	2105171	436260	915	2287	477	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.170	34.170	0	1.000	1116875	228958	449	1122	510		
375.8178	34.170	34.170	0	1.000	889971	181159	368	920	492	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.338	34.338	0	0.954	1289016	253358	438	1095	578		
385.8610	34.338	34.338	0	0.954	2465908	480289	915	2287	525	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.355	34.355	0	1.000	1239150	242630	449	1122	540		
375.8178	34.355	34.355	0	1.000	986585	192317	368	920	523	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.248	35.248	0	0.979	1251332	299904	438	1095	685		
385.8610	35.248	35.248	0	0.979	2399841	558118	915	2287	610	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.265	35.265	0	1.000	1211499	282696	449	1122	630		
375.8178	35.265	35.265	0	1.000	965617	223044	368	920	606	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.201	36.201	0	1.006	1166473	289882	438	1095	662		
385.8610	36.201	36.201	0	1.006	2223340	553136	915	2287	605	0.52(0.43-0.59)	

Report Date: 21-Sep-2020 18:44:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.217	36.217	0	1.000	1129816	275469	449	1122	614		
375.8178	36.217	36.217	0	1.000	893208	216959	368	920	590	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.222						449	1122			
375.8178	34.222						368	920			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.998	35.998	0		1695076	416524	336	840	1240		
403.8529	35.998	35.998	0		1338017	331313	274	685	1209	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.484	35.484	0	0.986	1374770	341765	336	840	1017		
403.8529	35.476	35.484	-1	0.985	1089188	267419	274	685	976	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.493	35.493	0	1.000	755391	185921	177	442	1050		
391.8127	35.493	35.493	0	1.000	608696	152382	166	415	918	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.611	35.611	0	0.989	1680039	383670	336	840	1142		
403.8529	35.602	35.611	-1	0.989	1314279	304090	274	685	1110	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.627	35.627	0	1.000	819051	186695	177	442	1055		
391.8127	35.619	35.627	-1	1.000	647827	149323	166	415	900	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.015	36.015	0	1.015	858330	209988	177	442	1186		
391.8127	36.015	36.015	0	1.015	682493	168584	166	415	1016	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.677						177	442			
391.8127	34.677						166	415			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.114	38.114	0	1.059	923862	288127	480	1200	600		
419.8220	38.114	38.114	0	1.059	1980233	616009	1020	2550	604	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.131	38.131	0	1.000	1060782	325203	542	1355	600		
409.7788	38.122	38.131	-1	1.000	1027422	320068	529	1322	605	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.412	39.412	0	1.095	838289	275571	480	1200	574		
419.8220	39.412	39.412	0	1.095	1855498	607824	1020	2550	596	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.428	39.428	0	1.000	961886	318843	542	1355	588		
409.7788	39.428	39.428	0	1.000	925735	305388	529	1322	577	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.776						542	1355			
409.7788	38.776						529	1322			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.108	39.108	0	1.086	1507162	490239	419	1047	1170		
437.8140	39.108	39.108	0	1.086	1426902	463364	356	890	1302	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.116	39.116	0	1.000	759282	250809	245	612	1024		
425.7737	39.116	39.116	0	1.000	725405	236194	219	547	1079	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						245	612			
425.7737	38.941						219	547			
13C-OCDD											
469.7780	41.561	41.561	0	1.155	2158767	682732	286	715	2387		
471.7750	41.561	41.561	0	1.155	2401822	762849	273	682	2794	0.90(0.76-1.02)	
OCDF											
441.7428	41.654	41.654	0	1.002	1434612	441424	178	445	2480		
443.7399	41.645	41.654	-1	1.002	1575365	482806	230	575	2099	0.91(0.76-1.02)	
OCDD											
457.7377	41.569	41.569	0	1.000	1137117	357031	135	337	2645		
459.7348	41.569	41.569	0	1.000	1286129	403571	154	385	2621	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 18:44:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d		
Injection Date:	21-Sep-2020 11:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

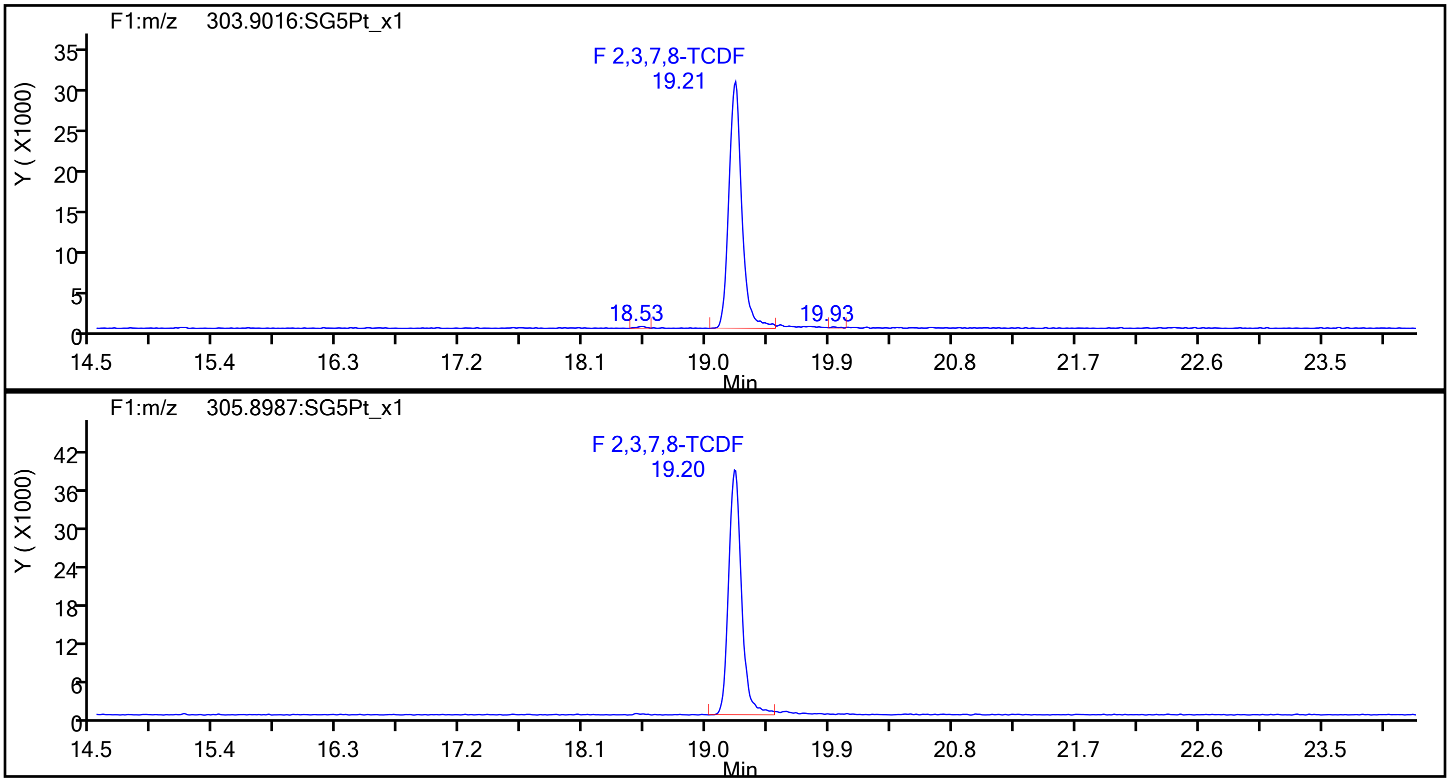

TCDF Standards

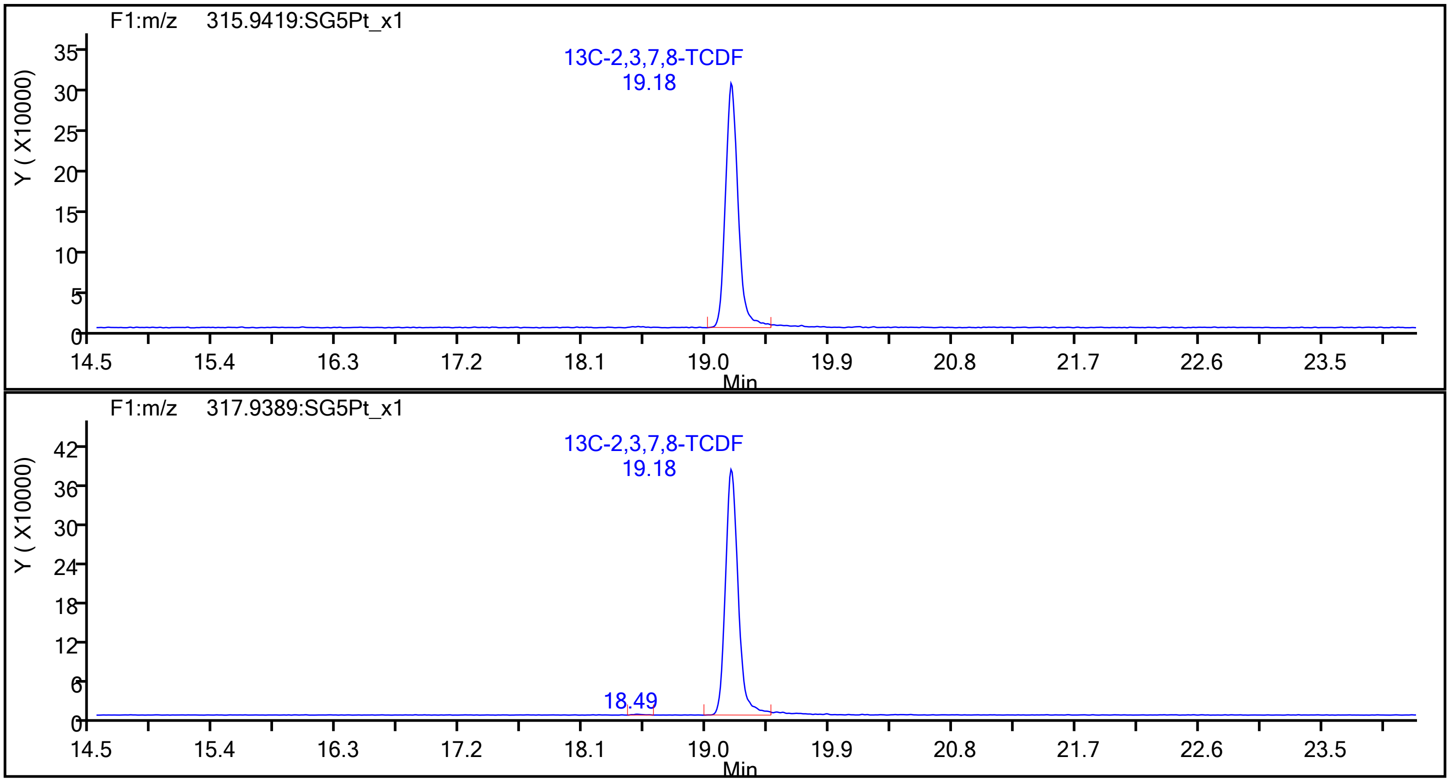

Report Date: 21-Sep-2020 18:44:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d		
Injection Date:	21-Sep-2020 11:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

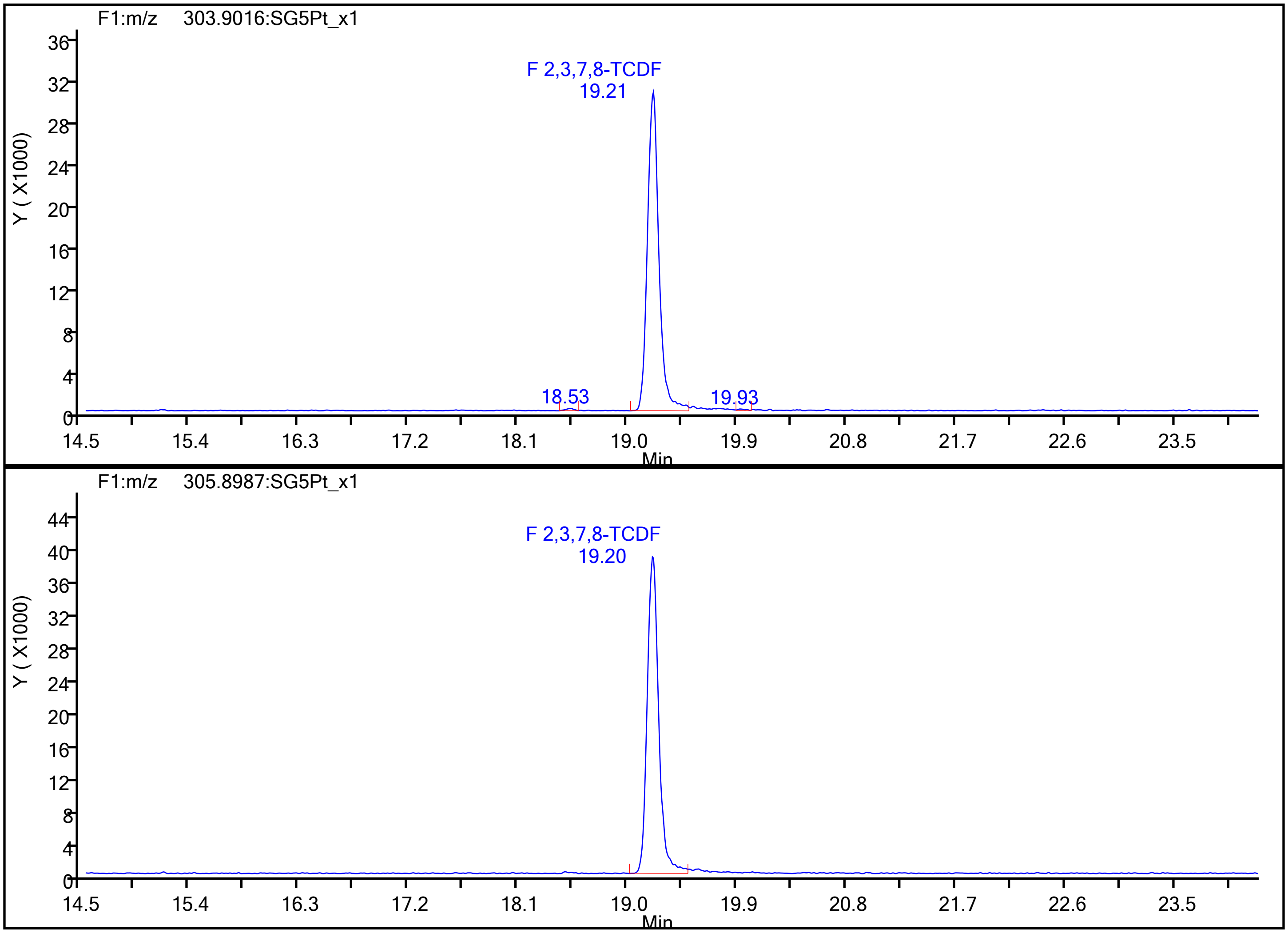

TCDF Interference Mass

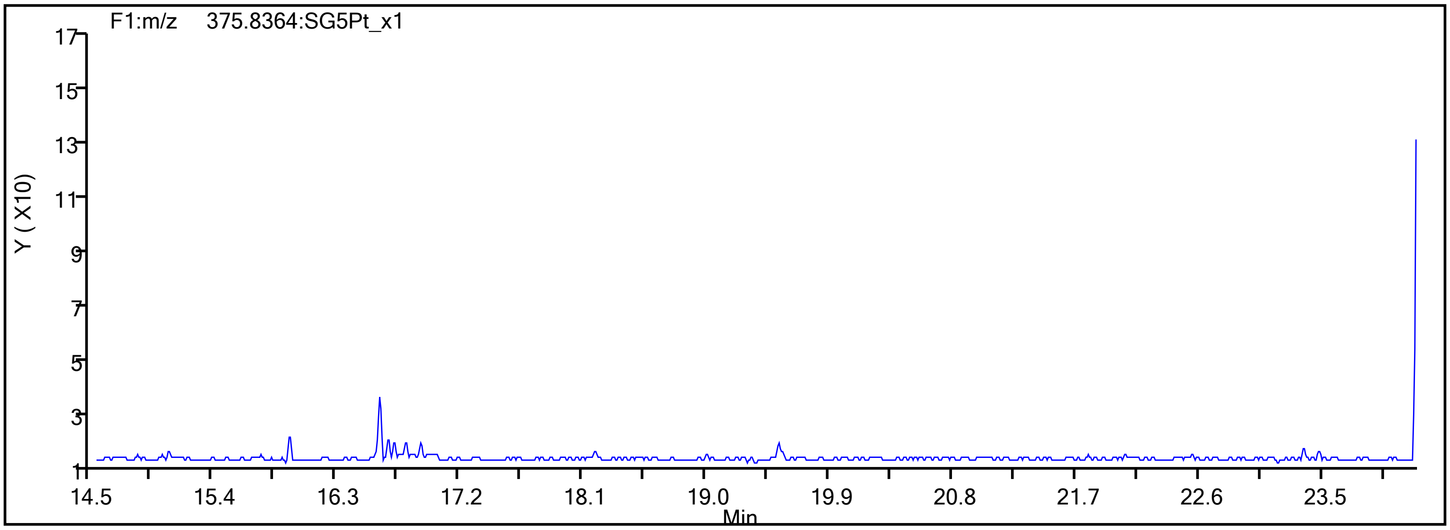

Report Date: 21-Sep-2020 18:44:52 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d		
Injection Date:	21-Sep-2020 11:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

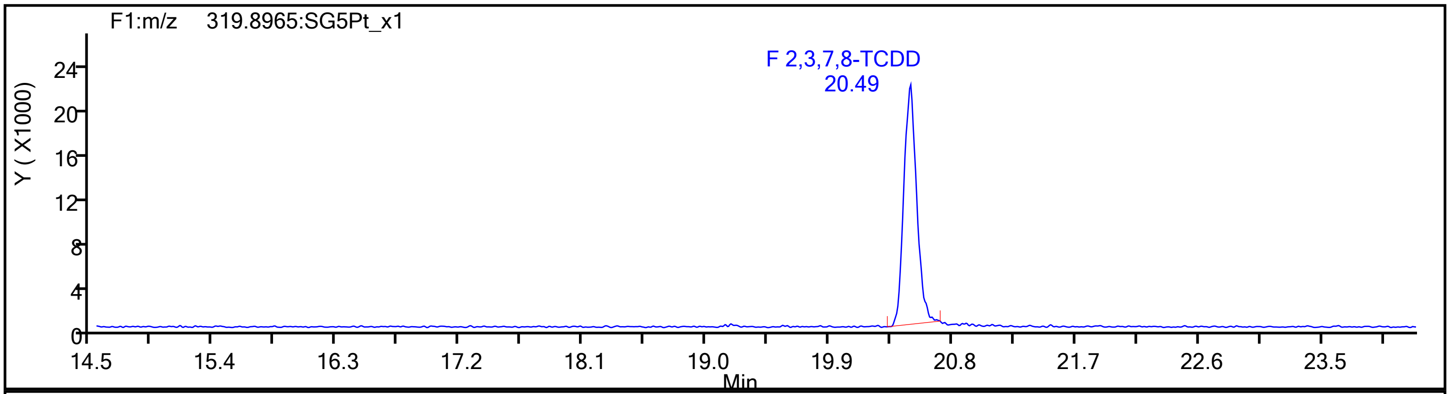

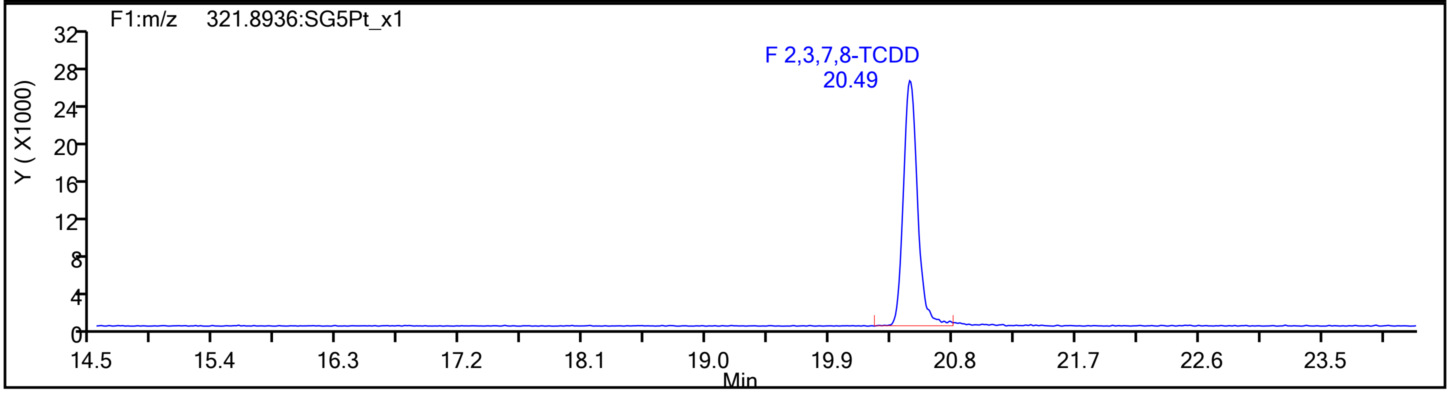

TCDD Standards

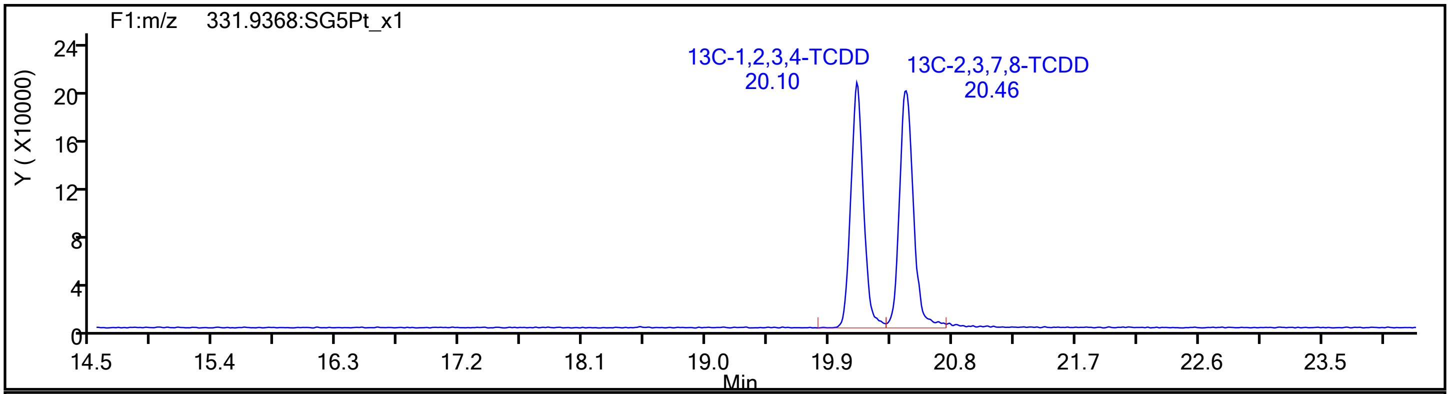

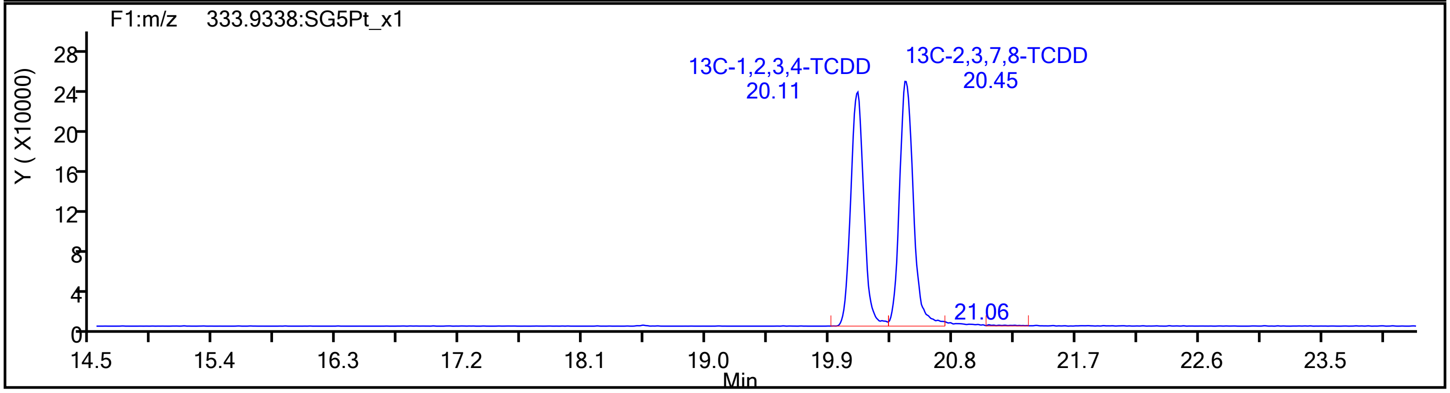

Report Date: 21-Sep-2020 18:44:52 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

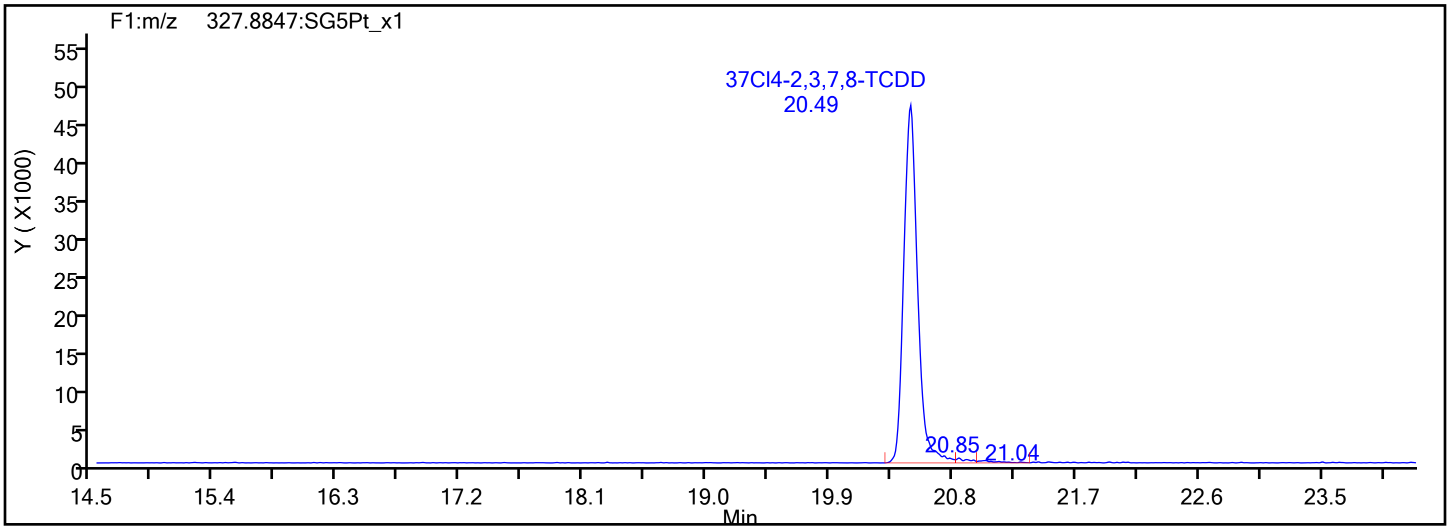

37Cl4-TCDD Standards

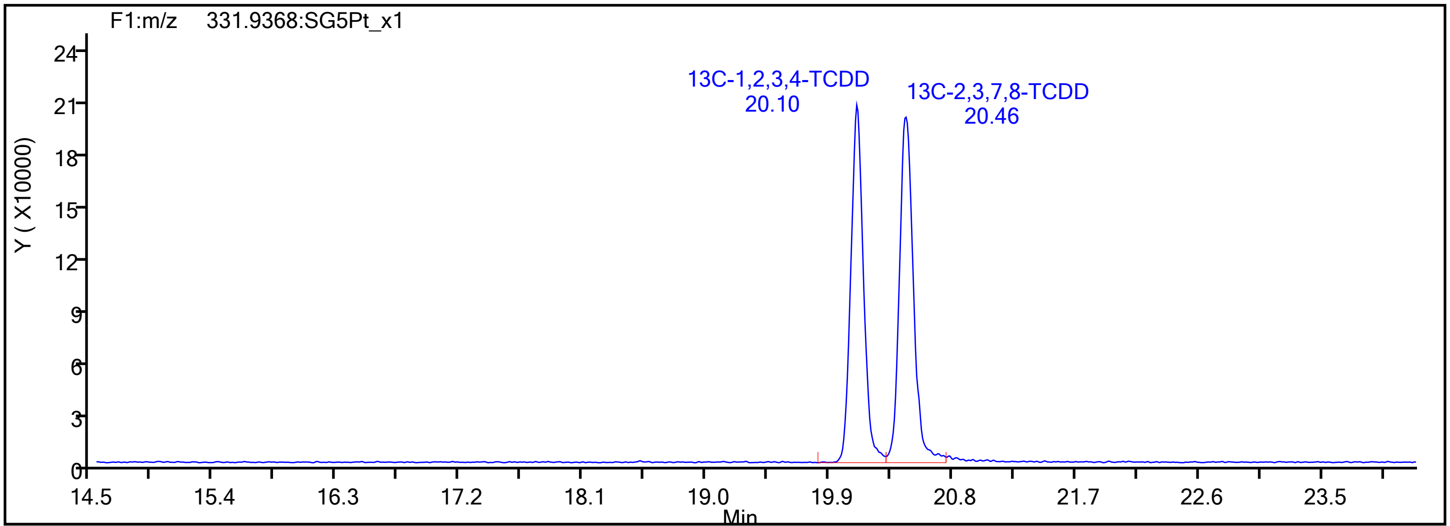

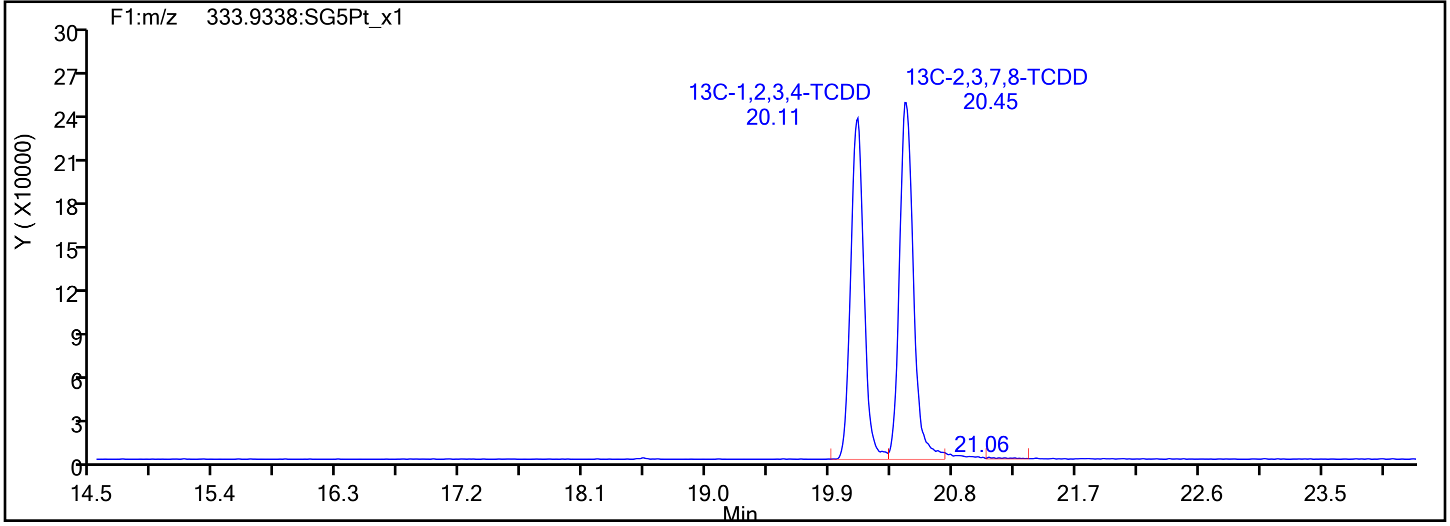

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F1 PeCDFs

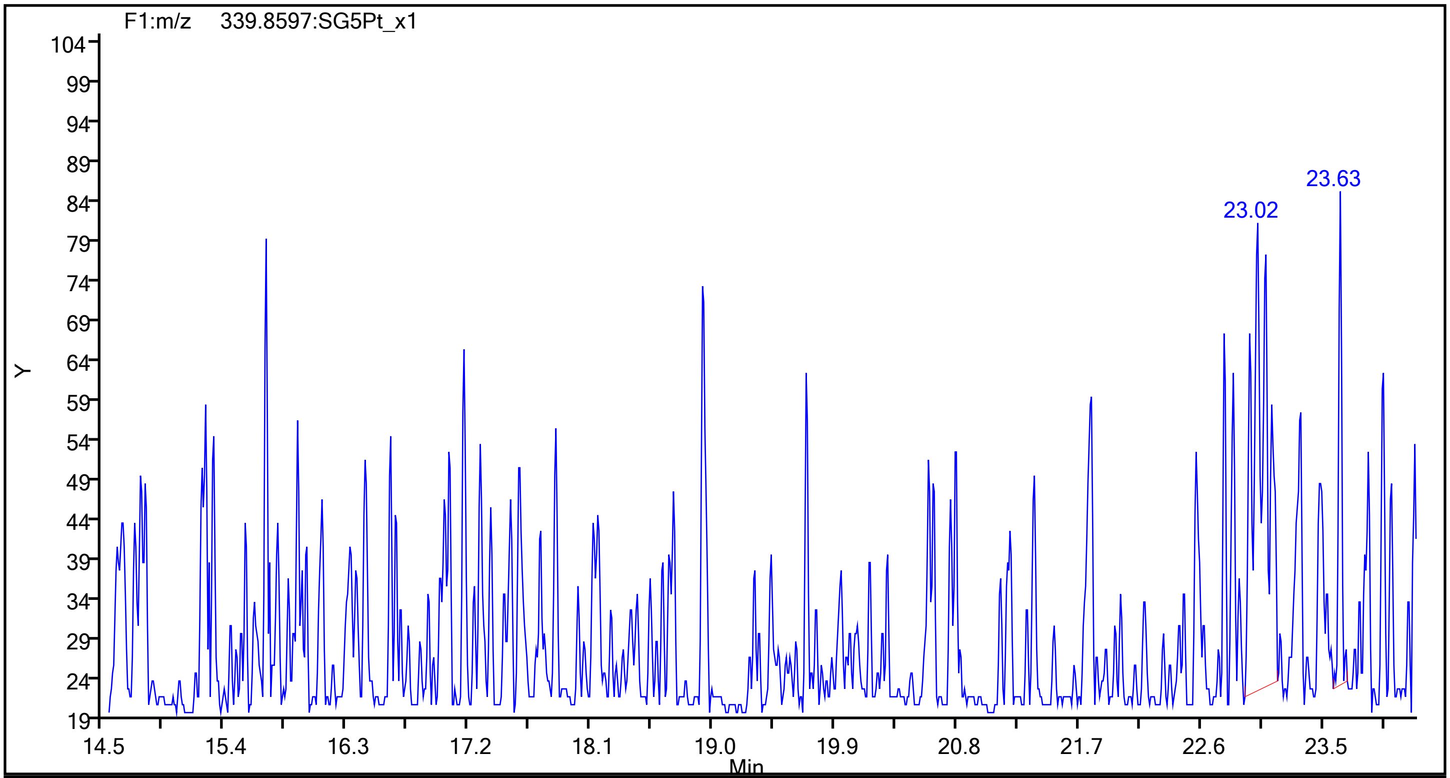

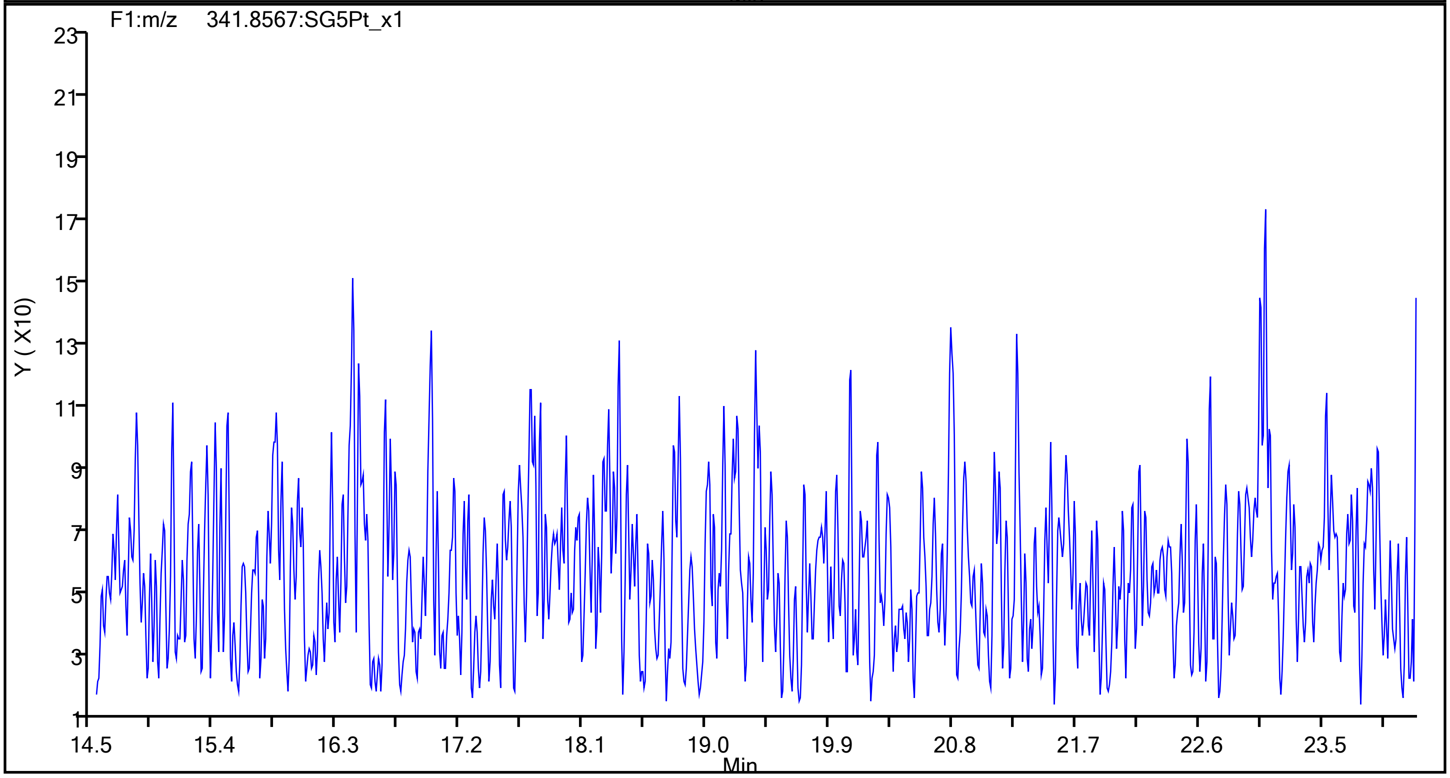

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

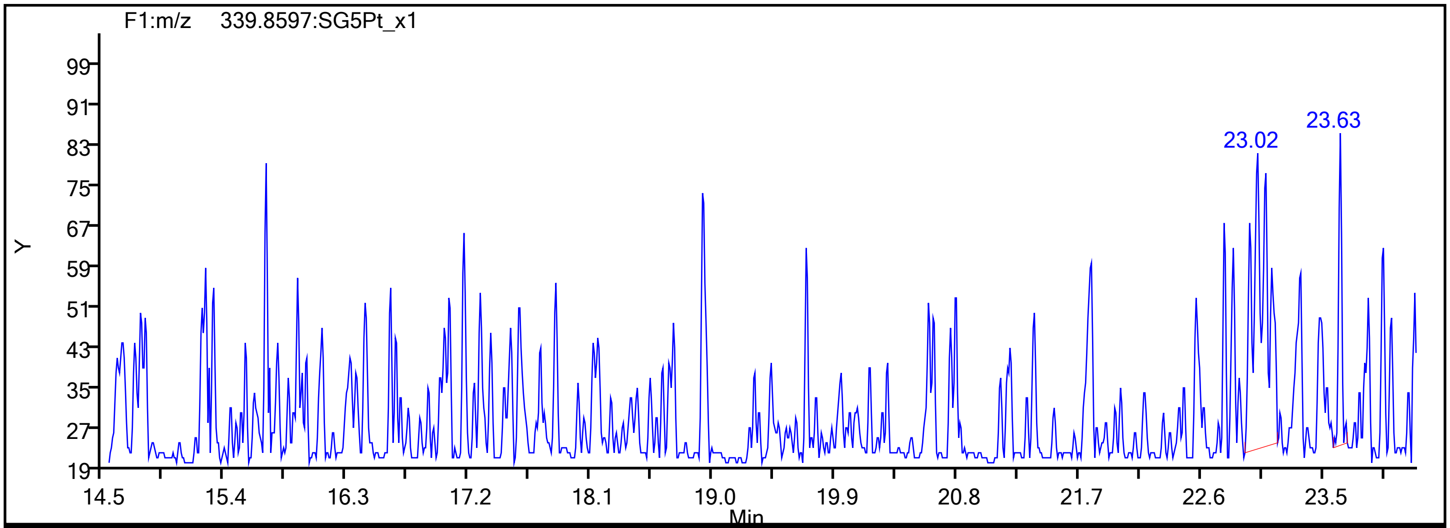

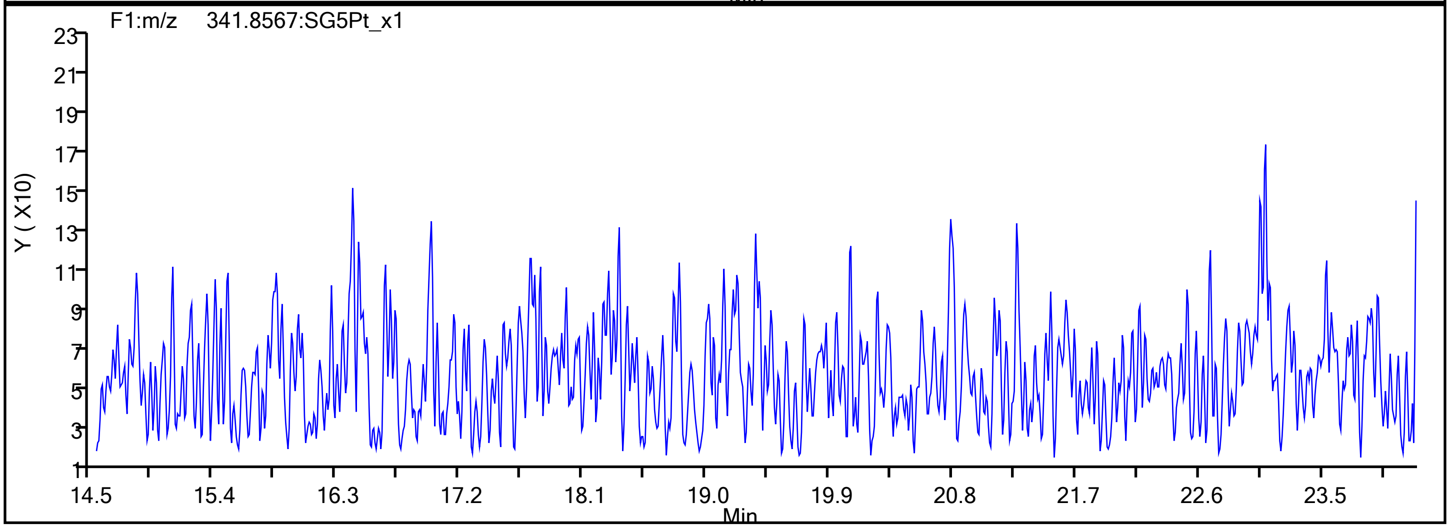

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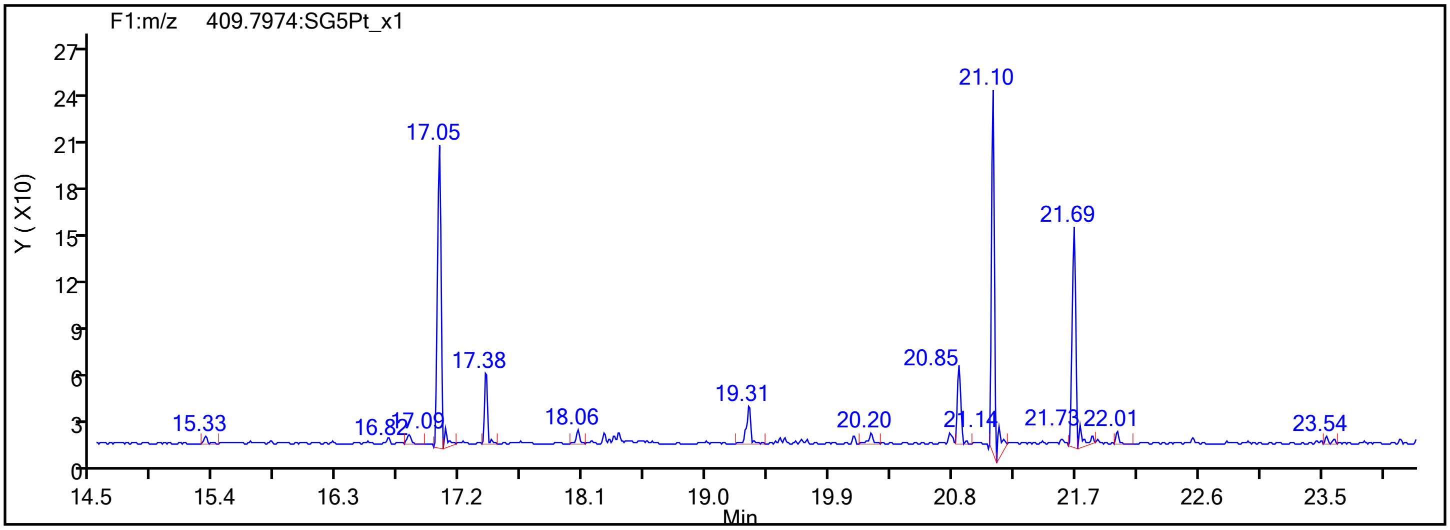

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Eurofins TestAmerica, Sacramento

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PeCDF

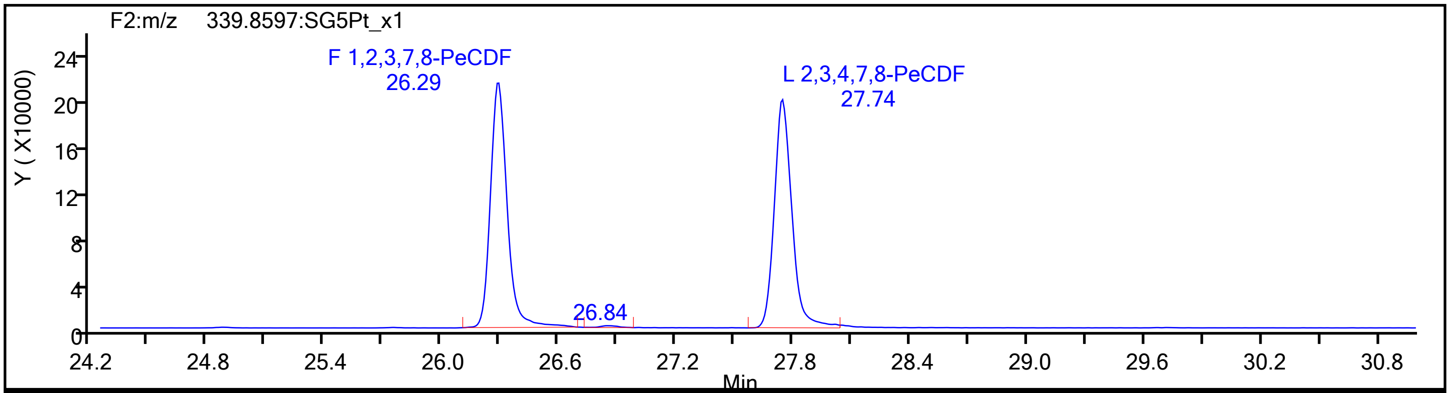

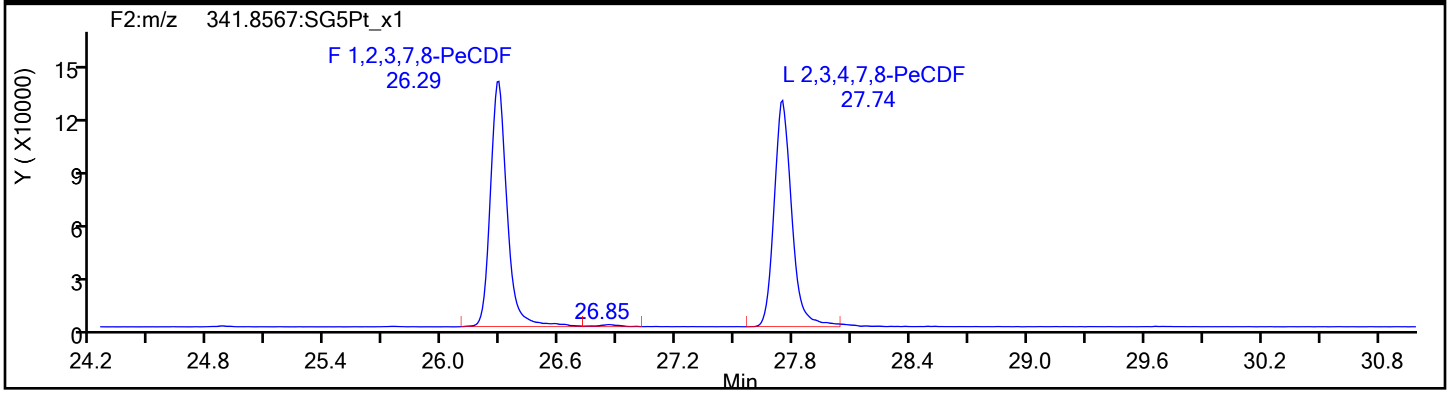

PeCDF Standards

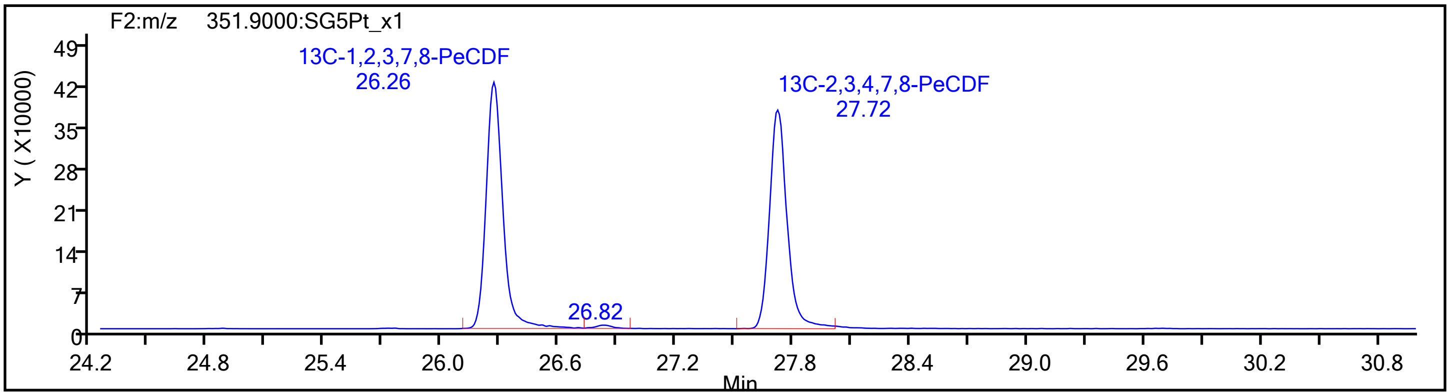

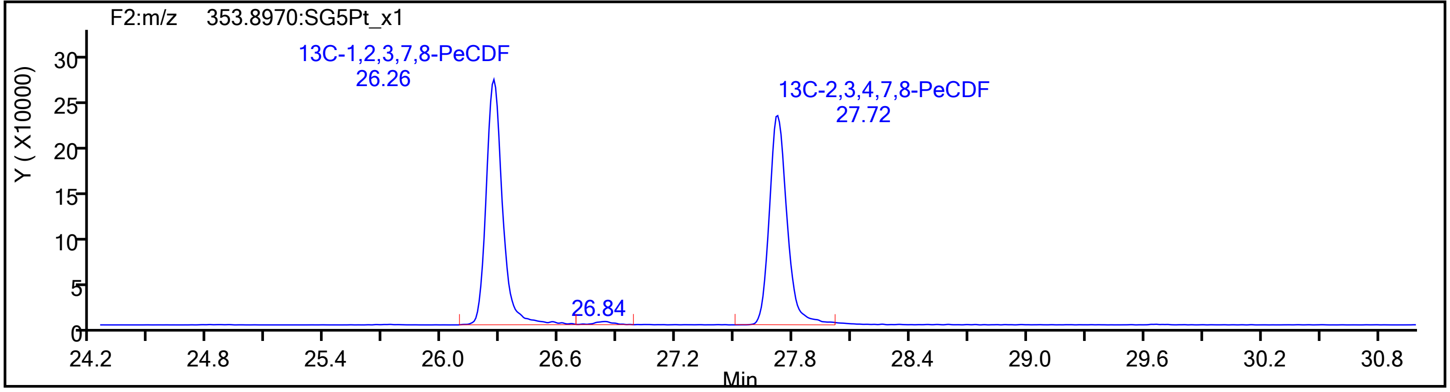

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Eurofins TestAmerica, Sacramento

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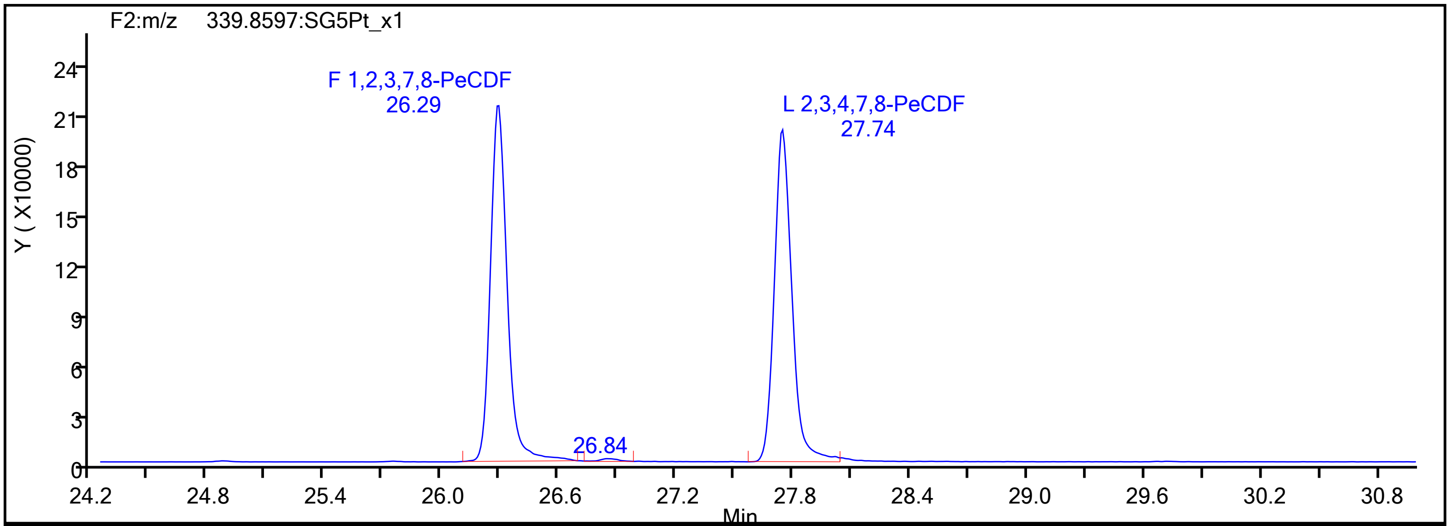

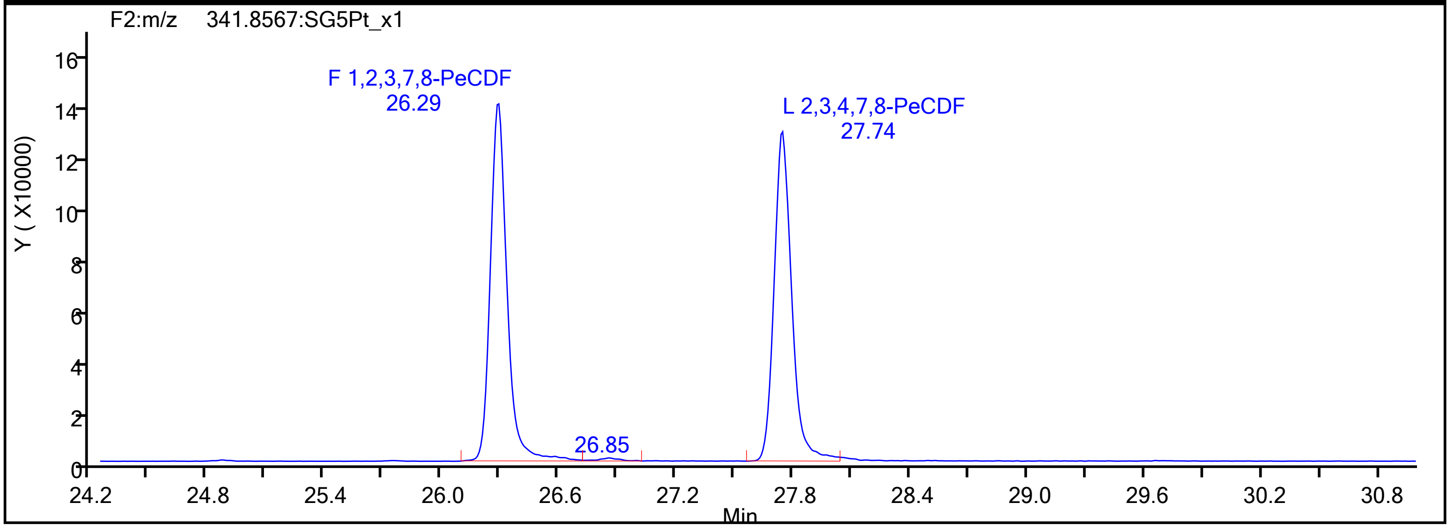

PeCDF Interference Mass

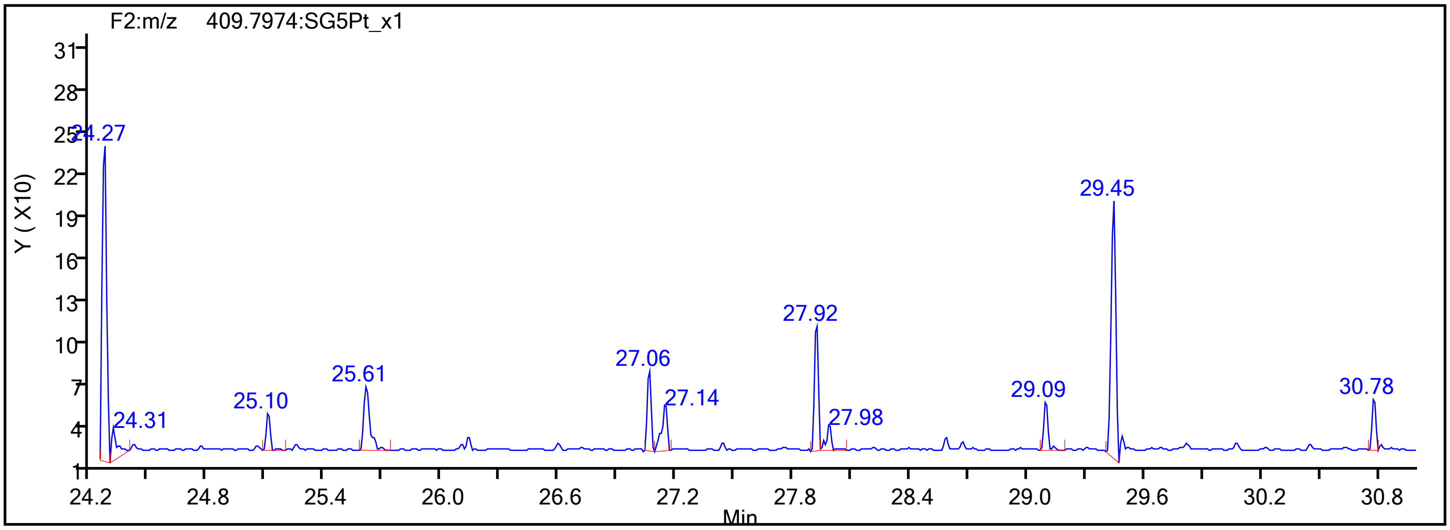

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PeCDD

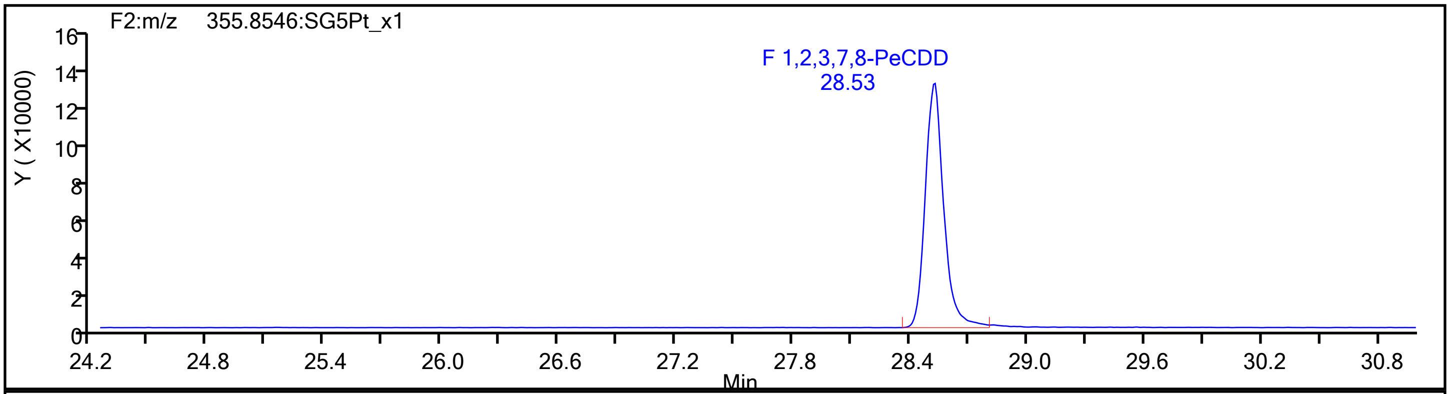

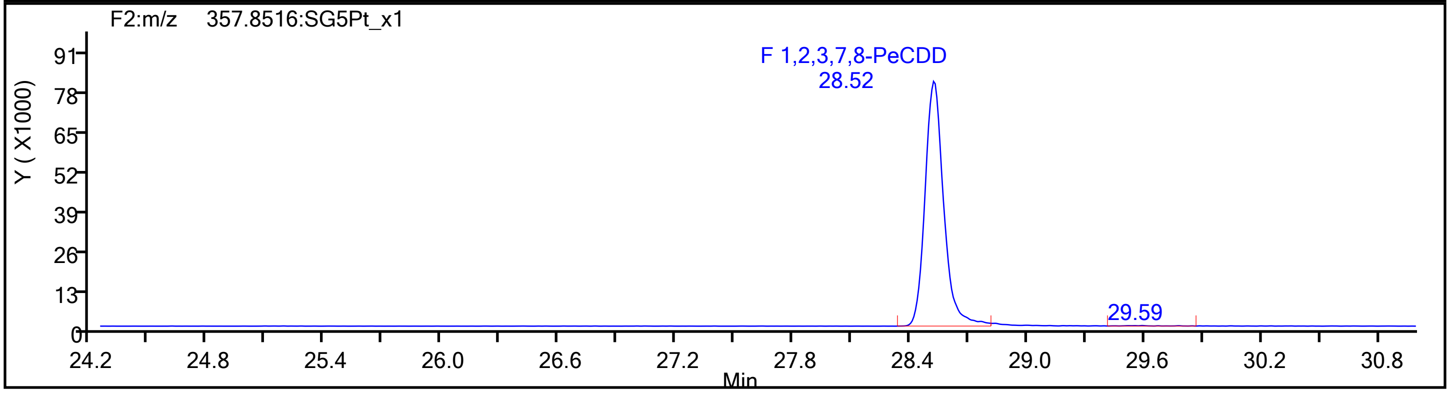

PeCDD Standards

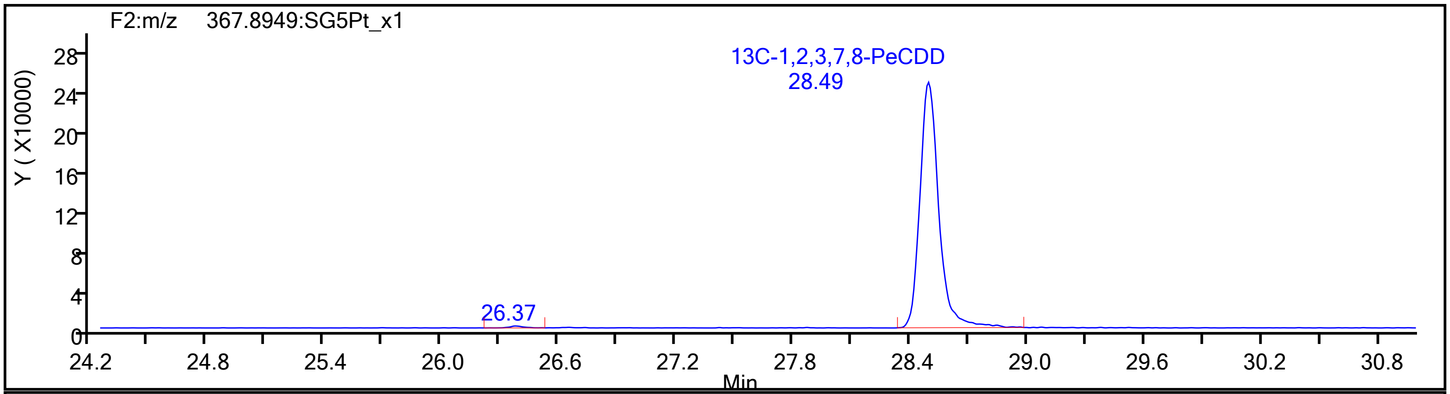

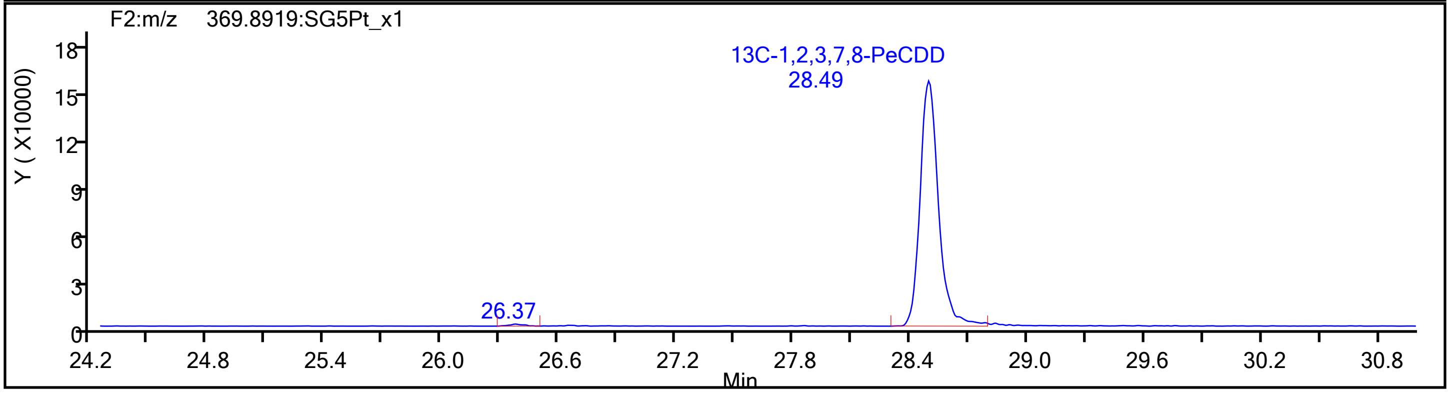

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Eurofins TestAmerica, Sacramento

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HxCDF

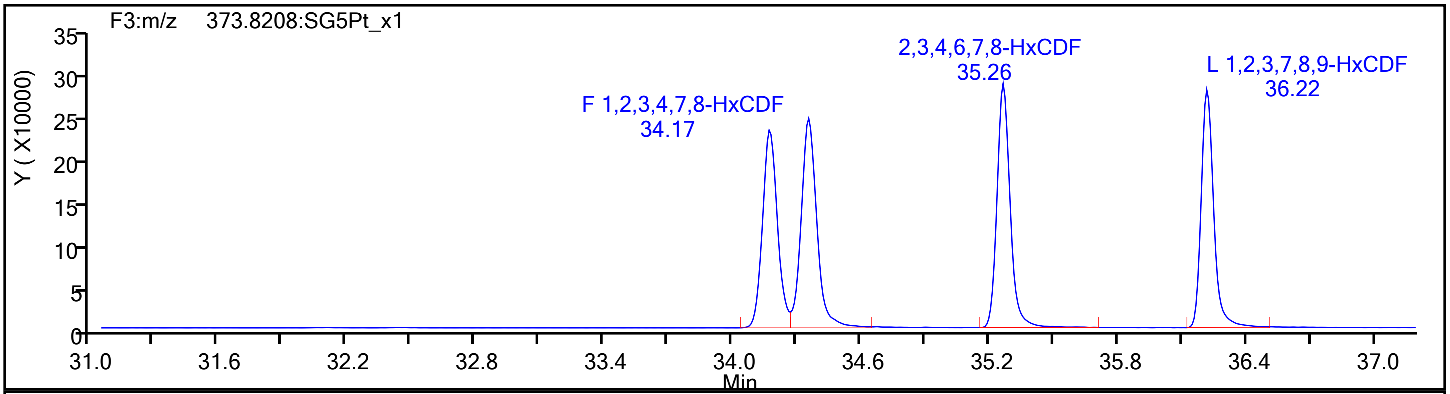

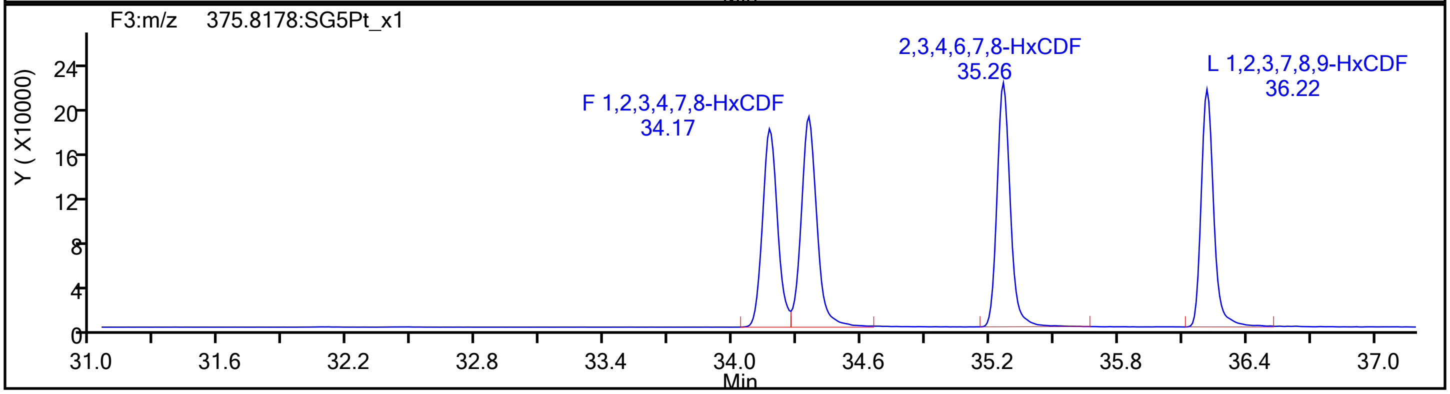

HxCDF Standards

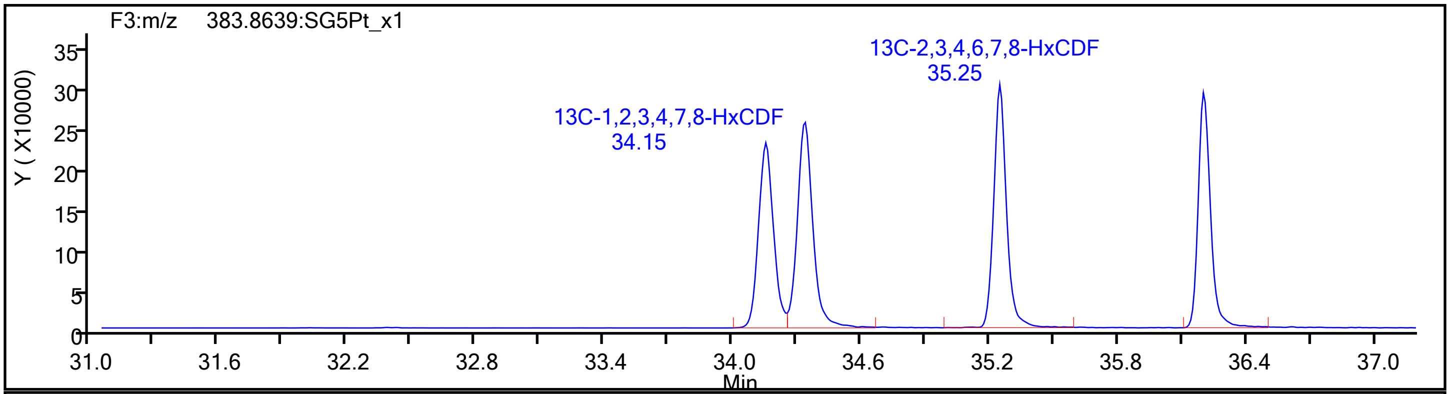

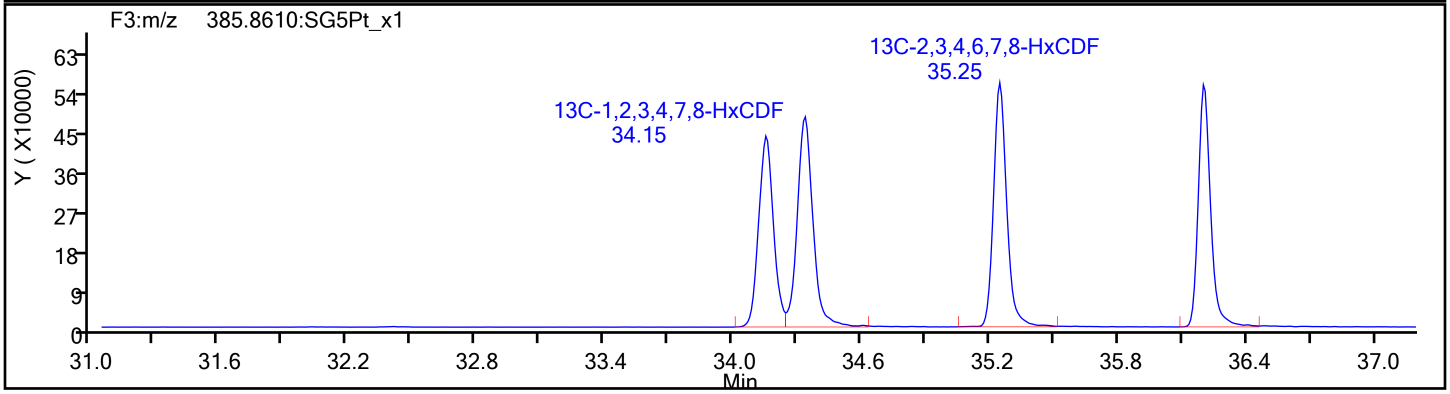

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Eurofins TestAmerica, Sacramento

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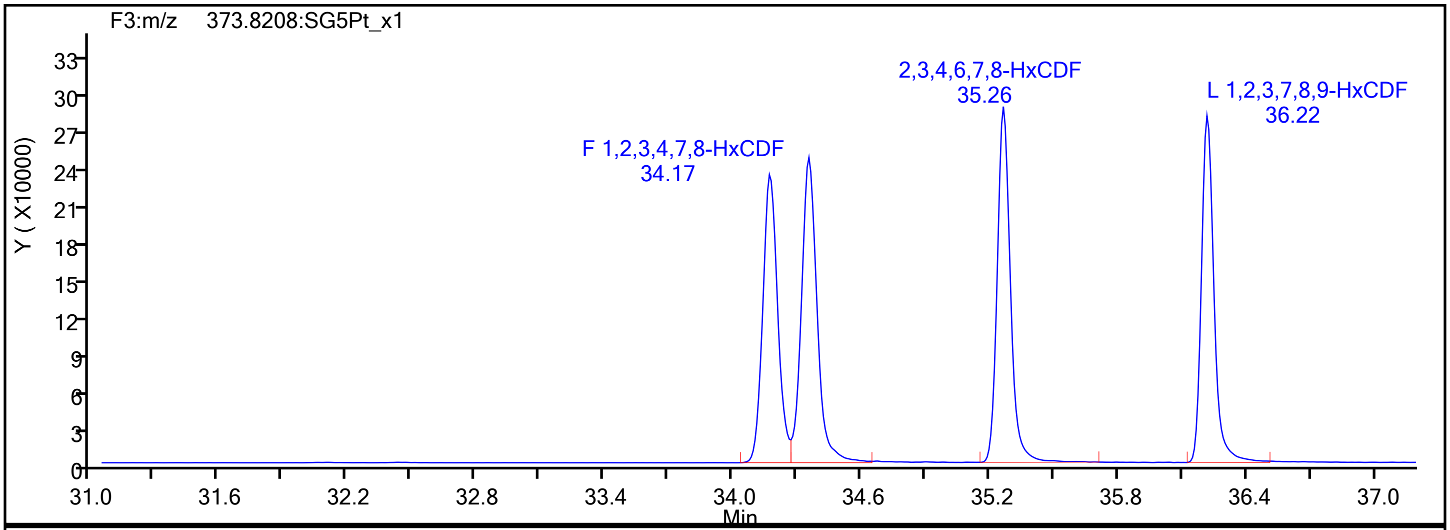

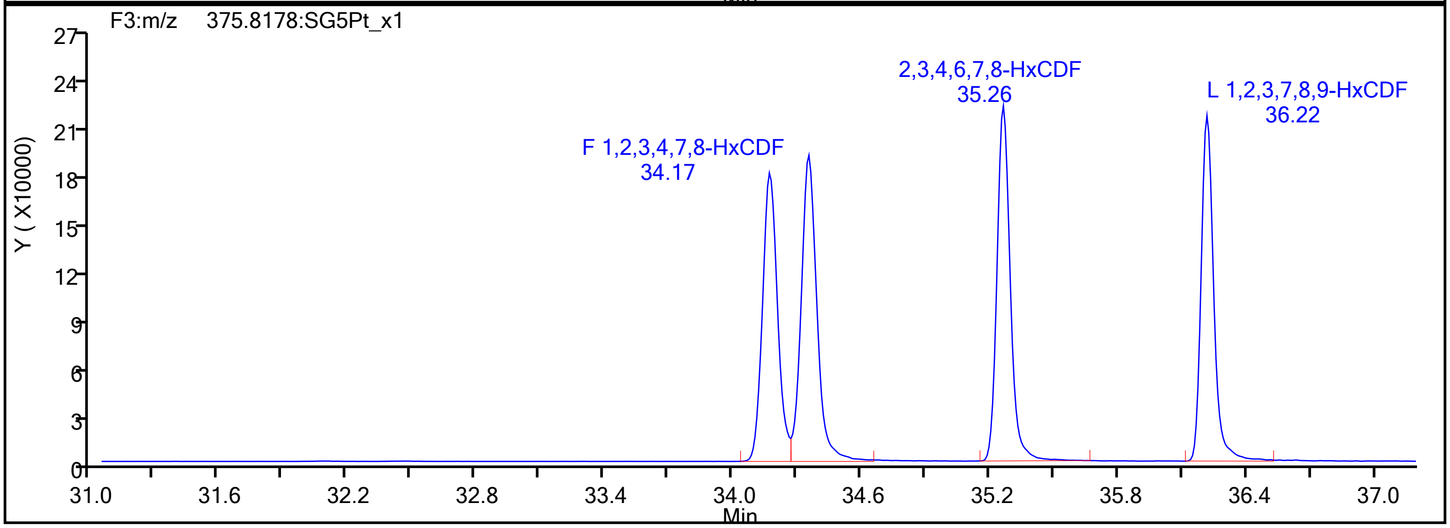

HxCDF Interference Mass

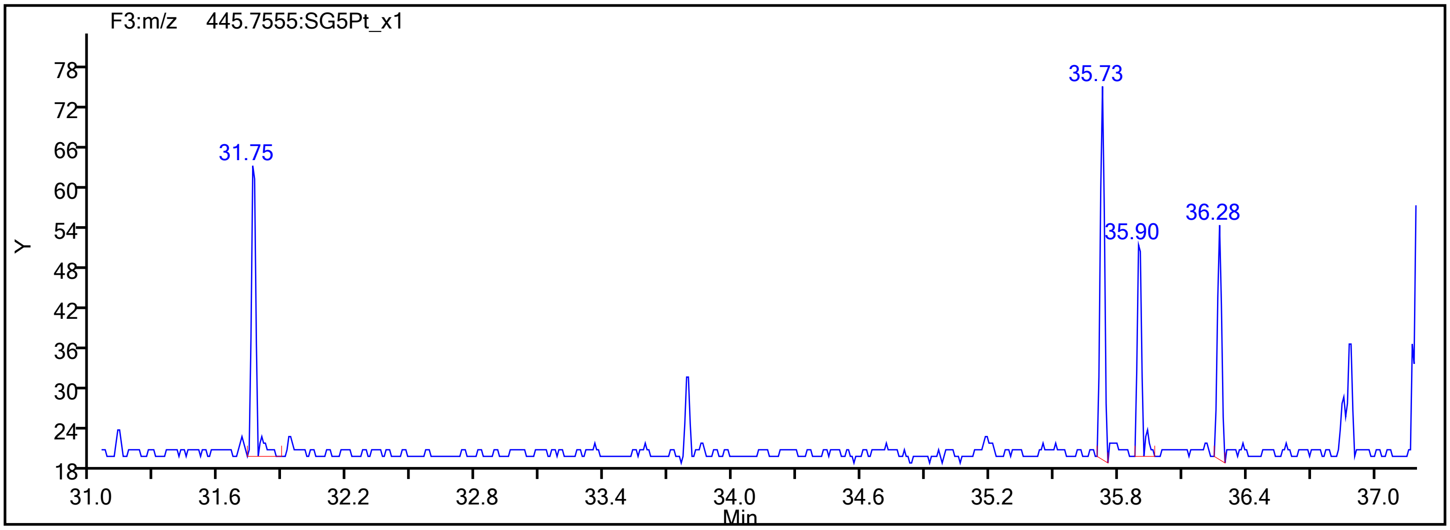

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HxCDD

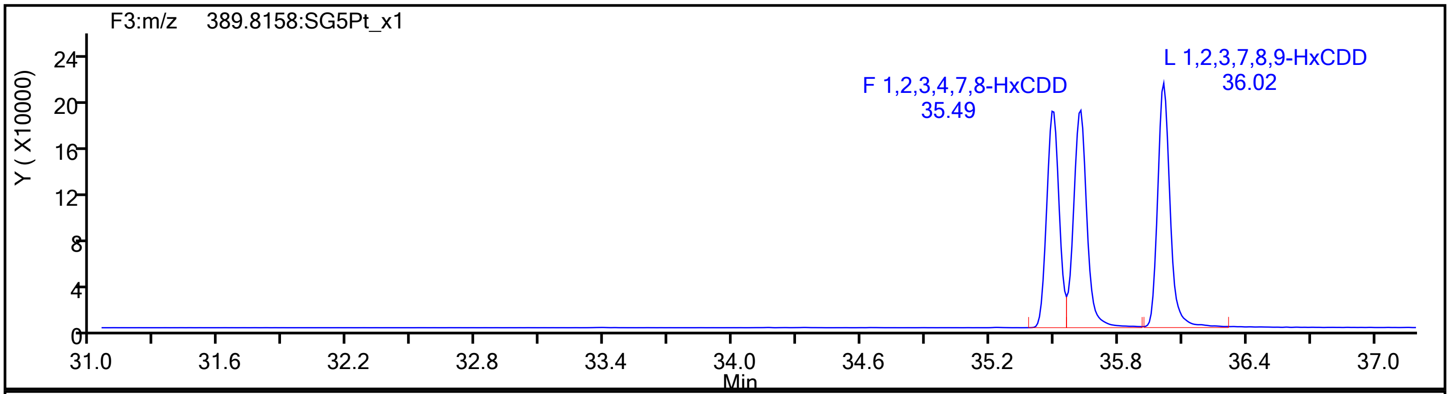

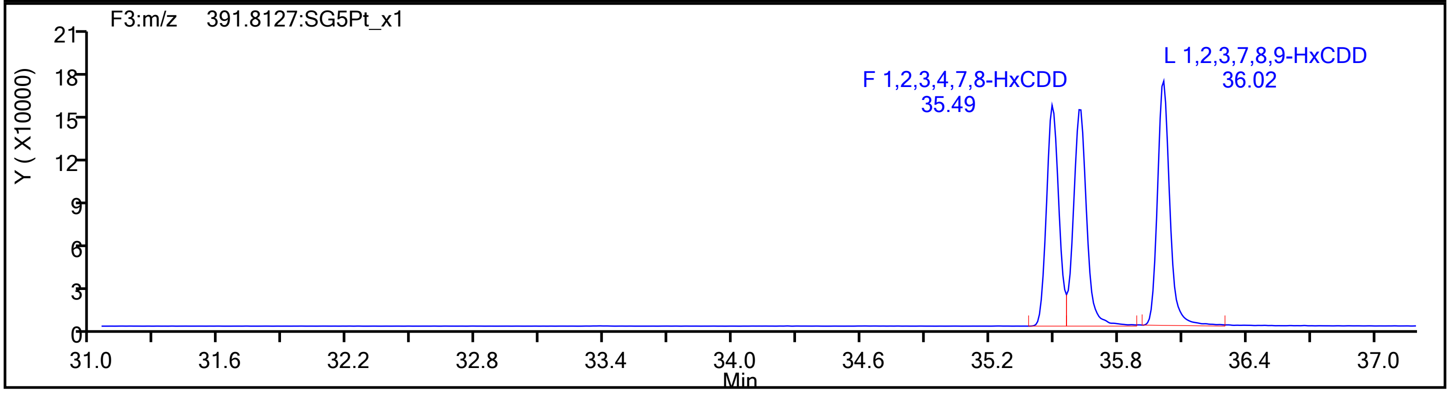

HxCDD Standards

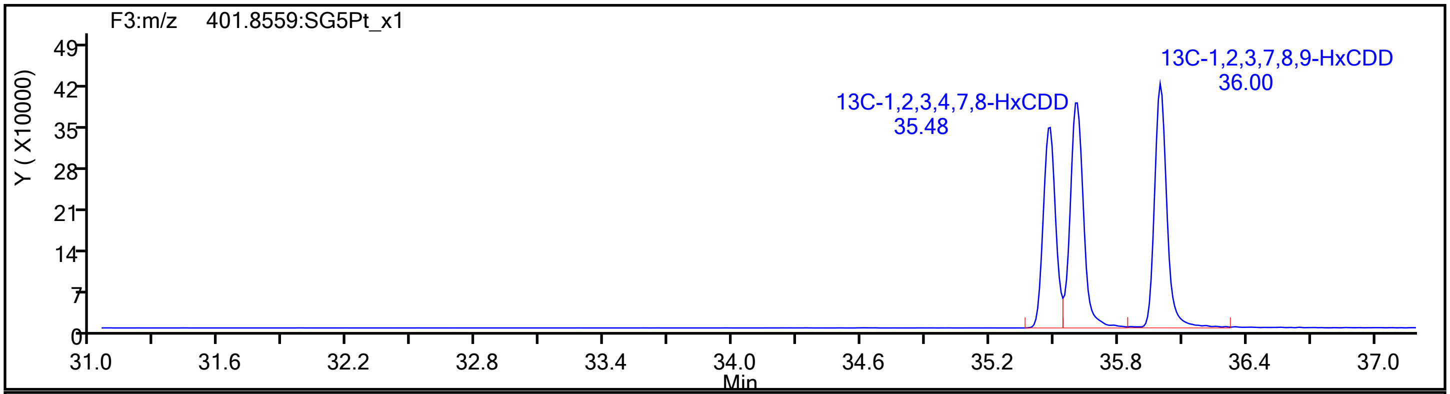

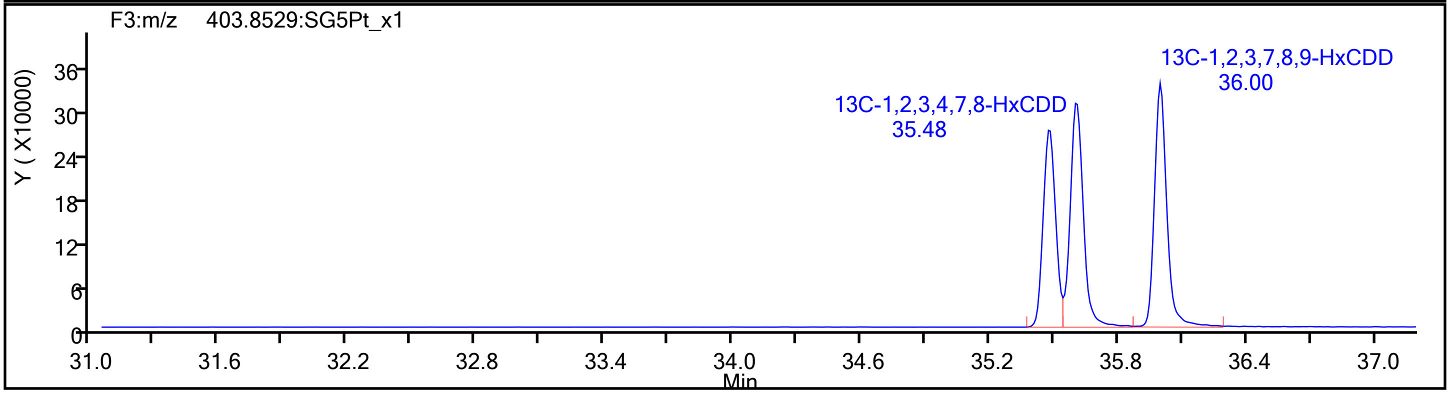

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HpCDF

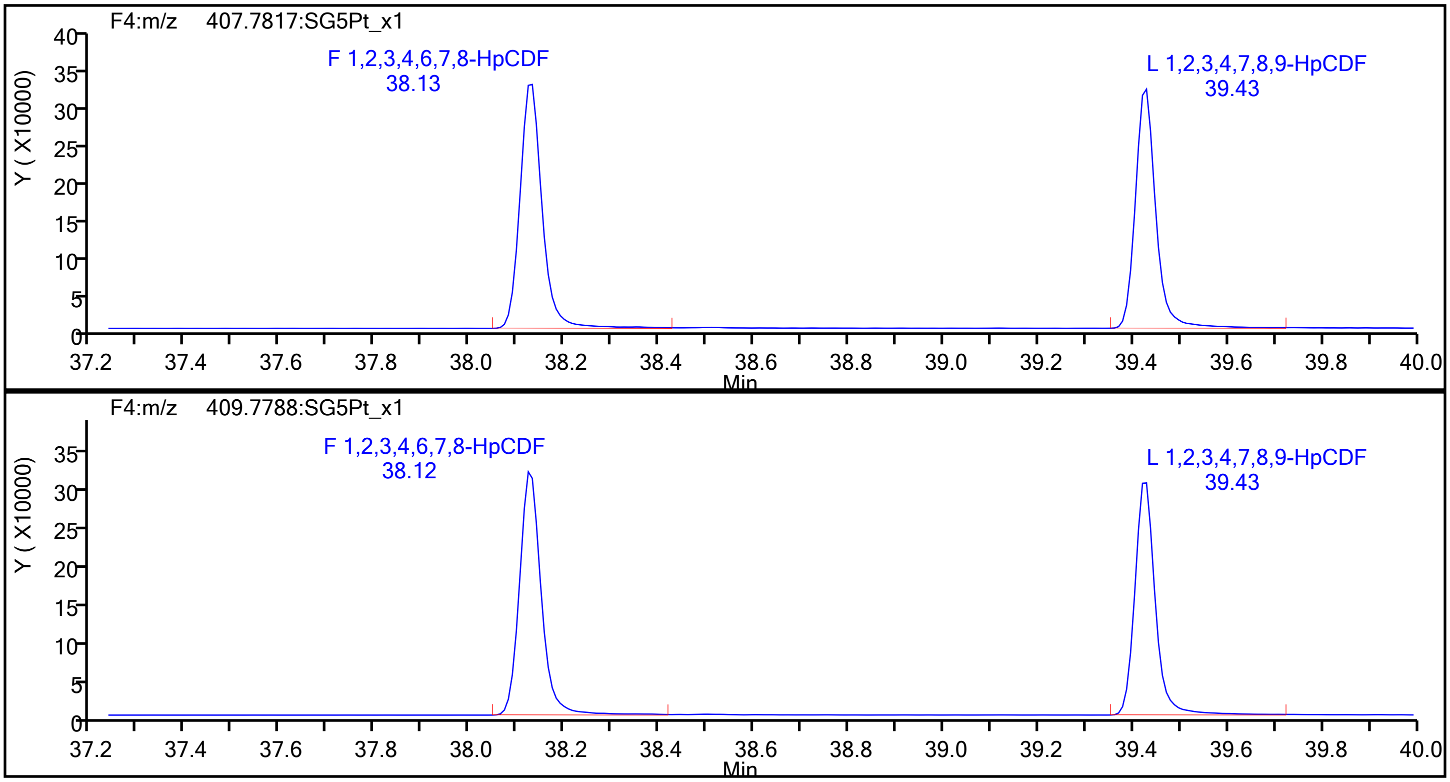

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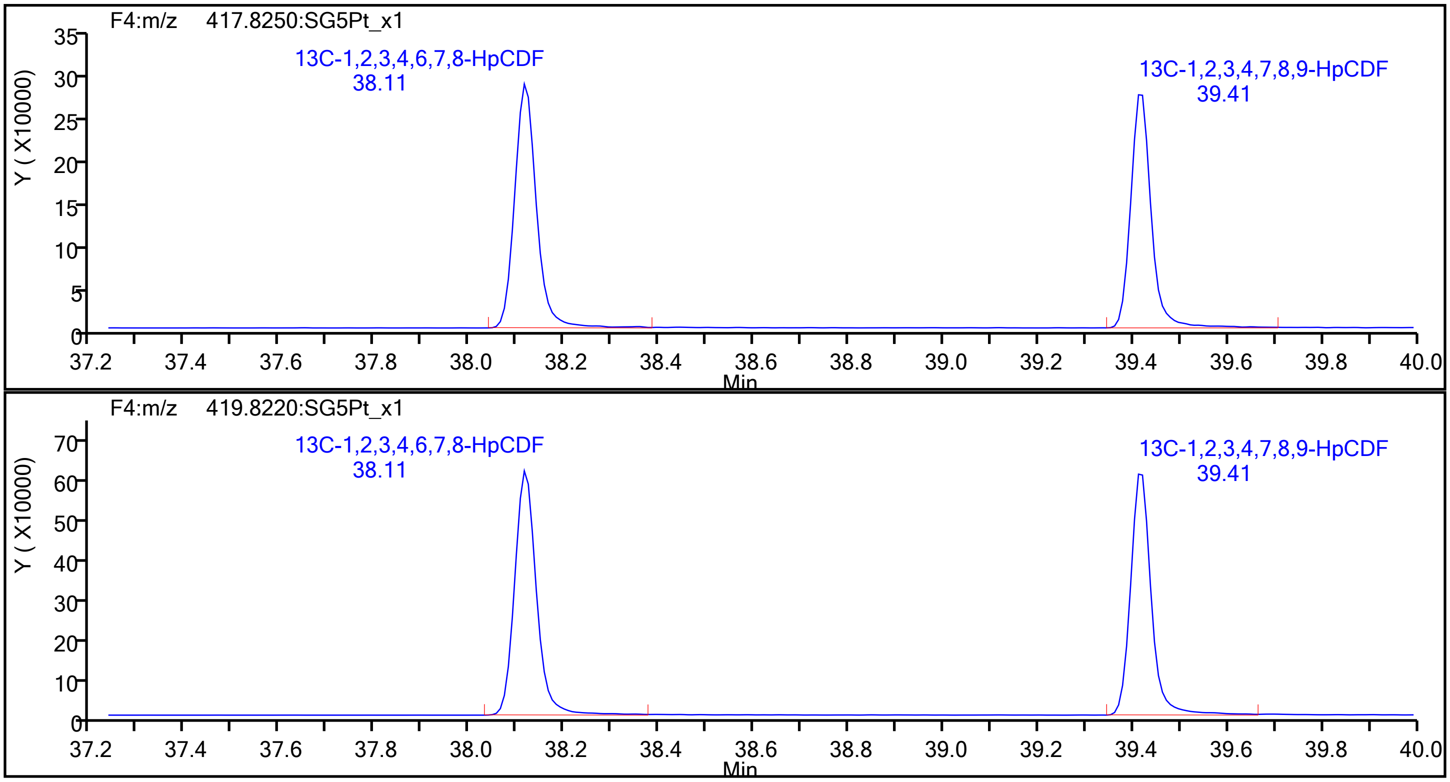

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Eurofins TestAmerica, Sacramento

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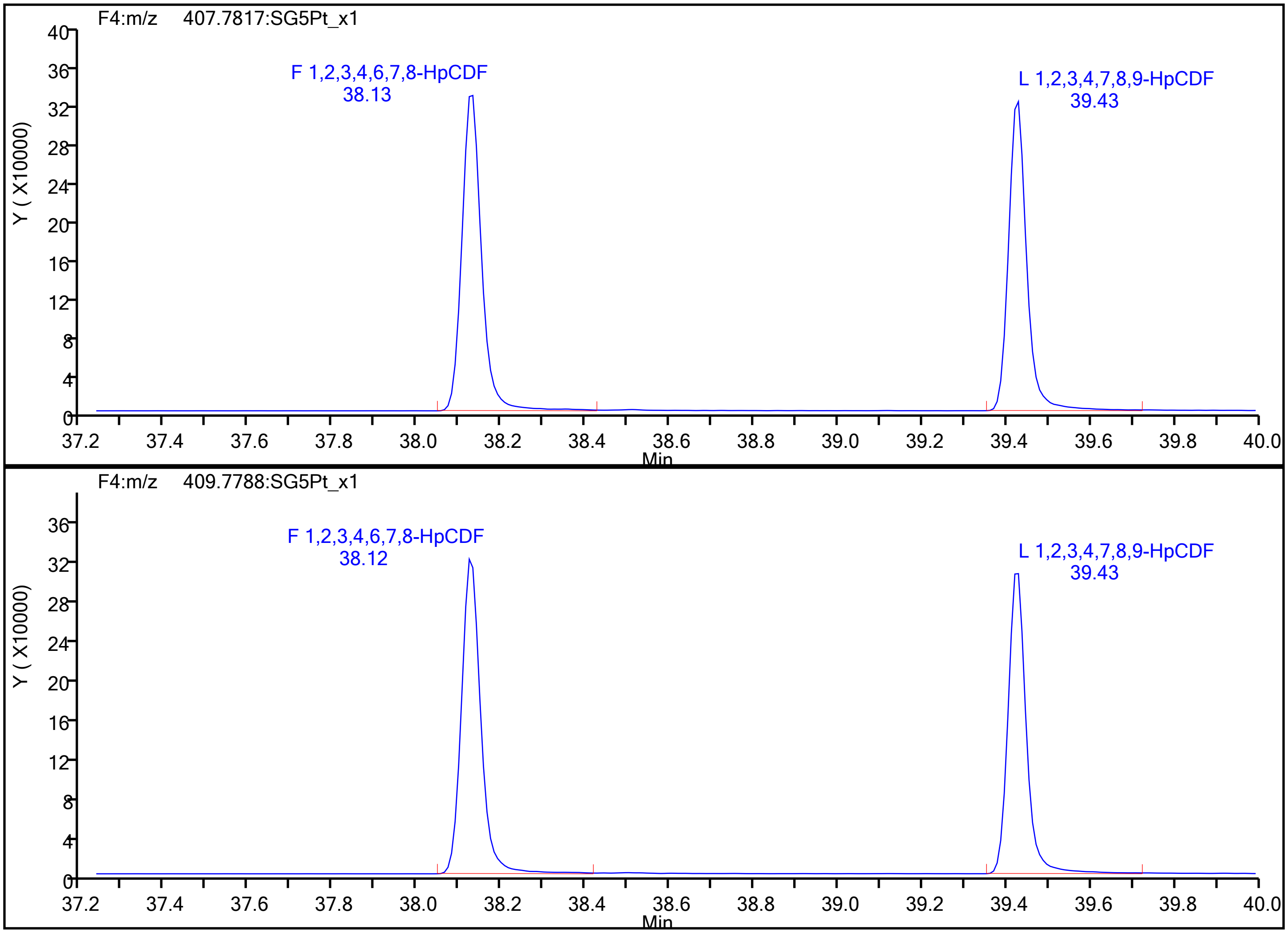

HpCDF Interference Mass

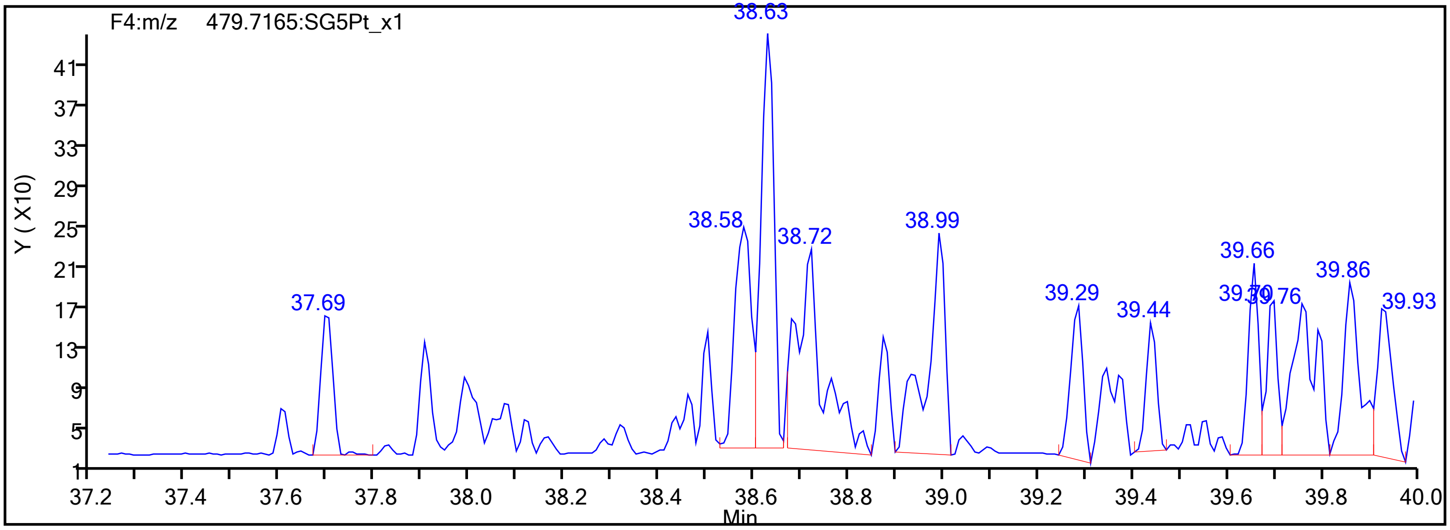

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HpCDD

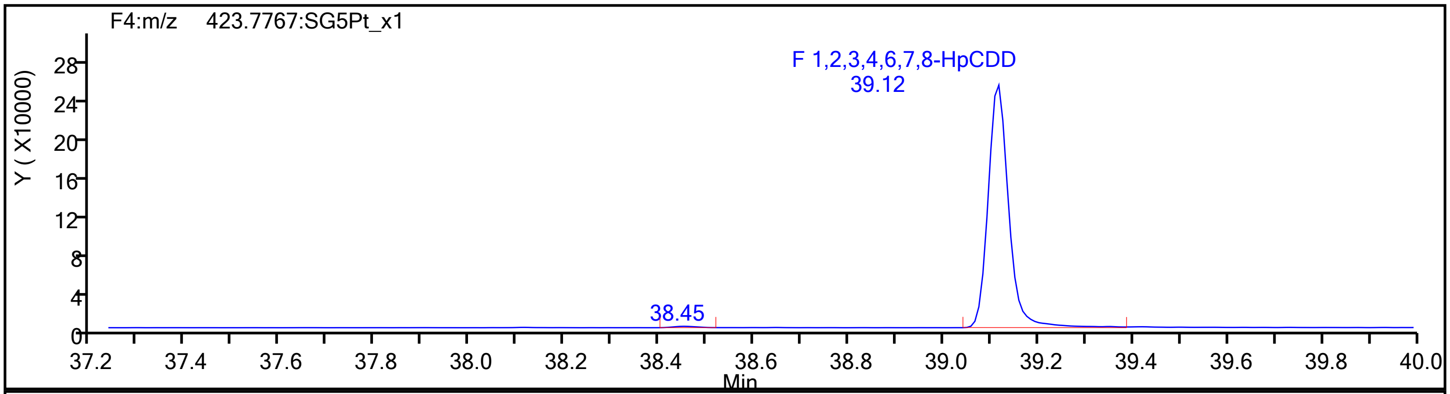

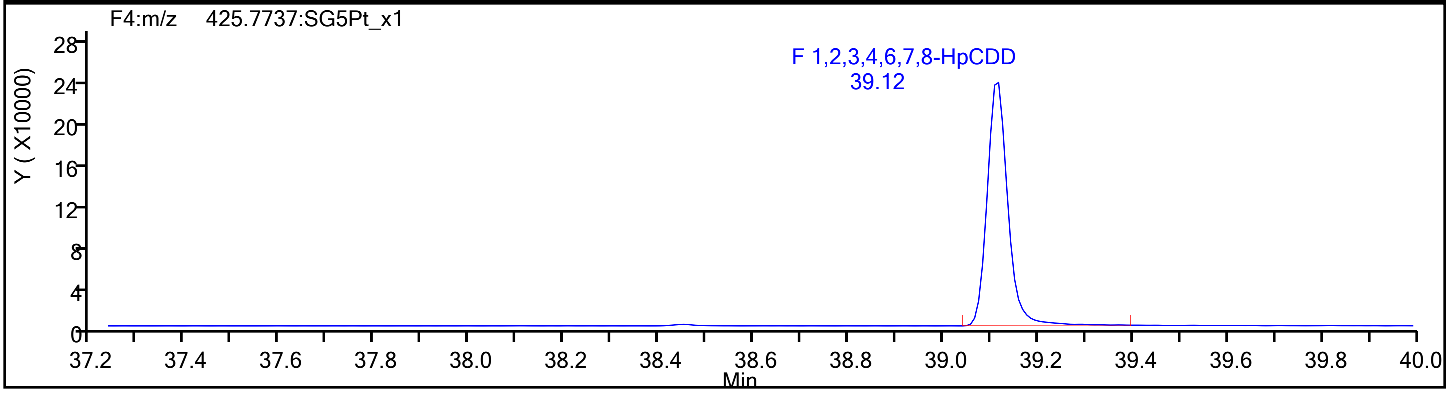

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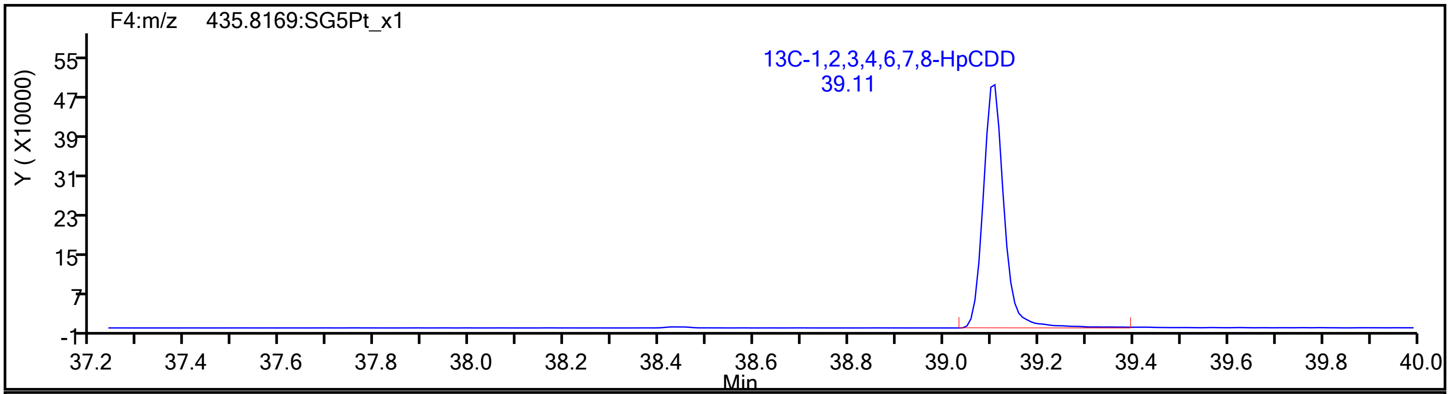

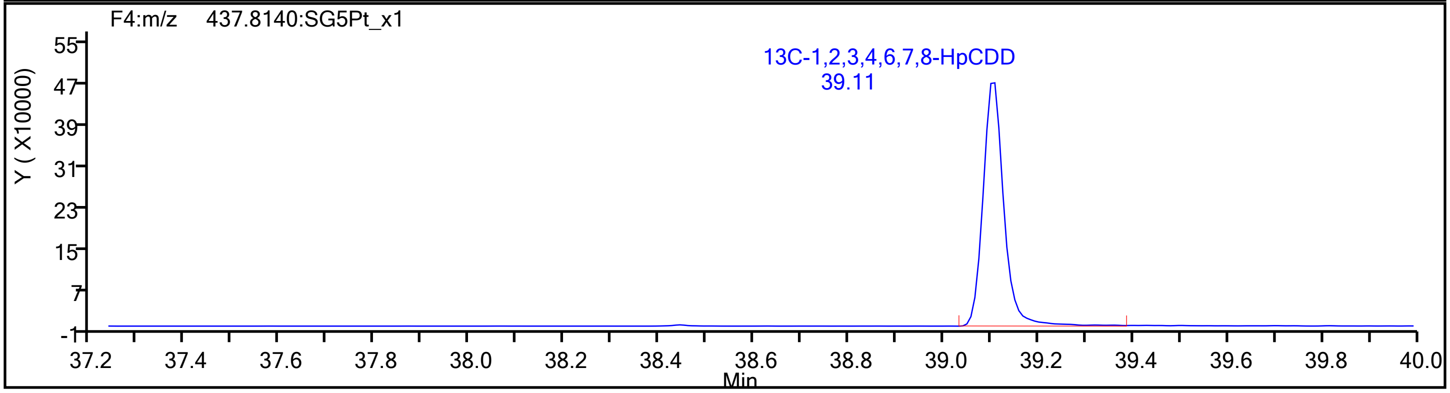

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Eurofins TestAmerica, Sacramento

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OCDF

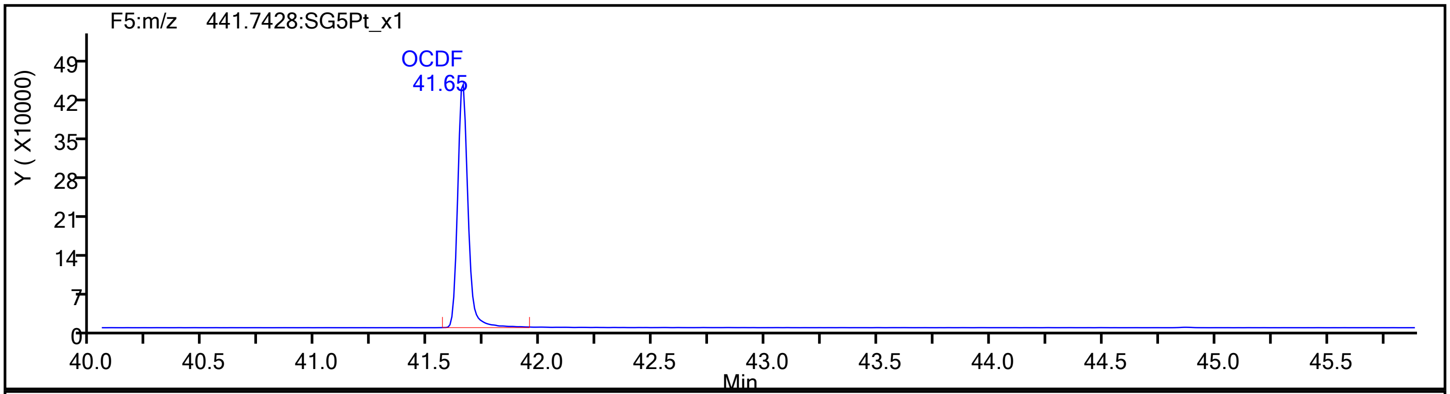

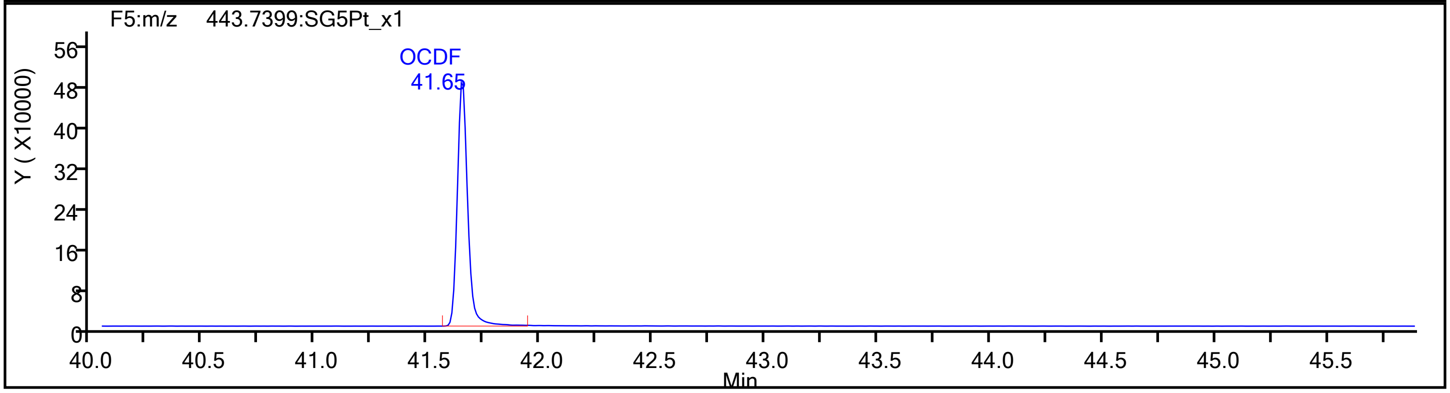

OCDF Standards

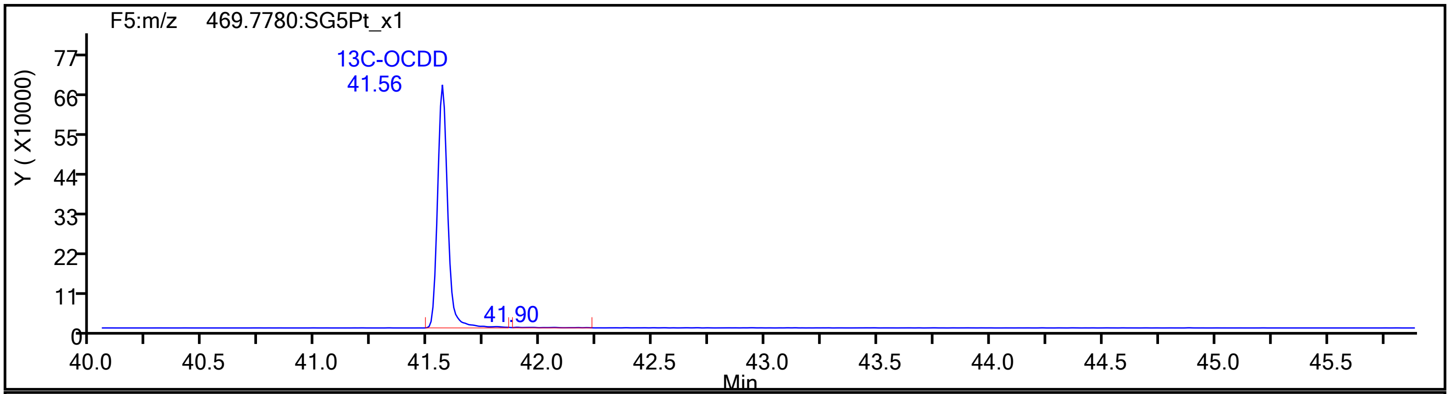

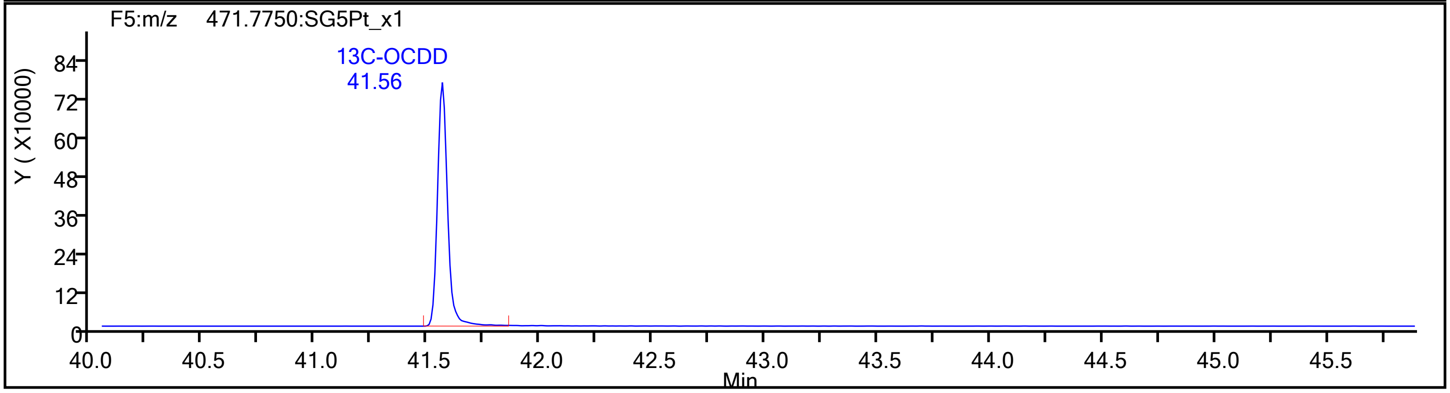

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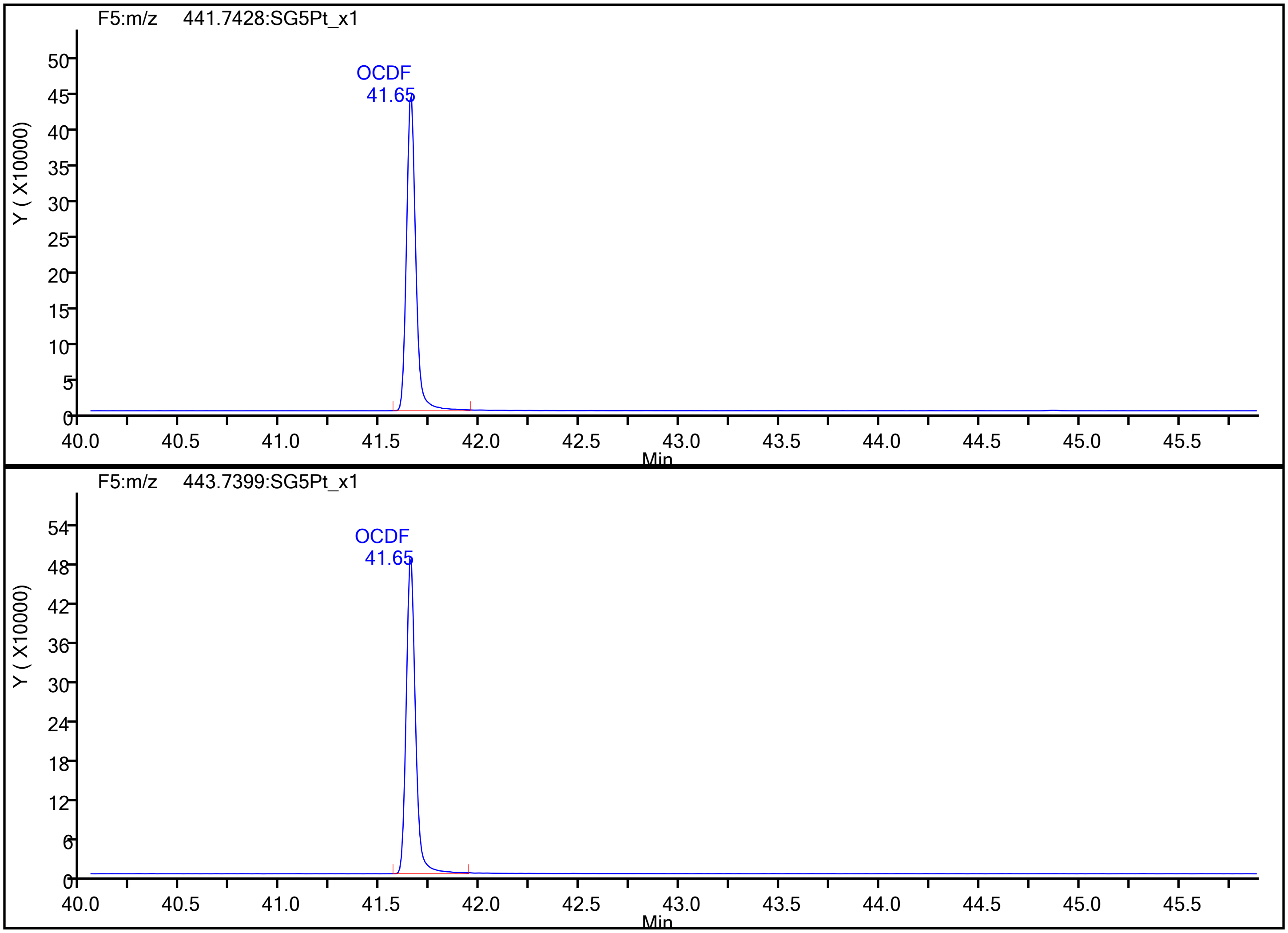

OCDF Interference Mass

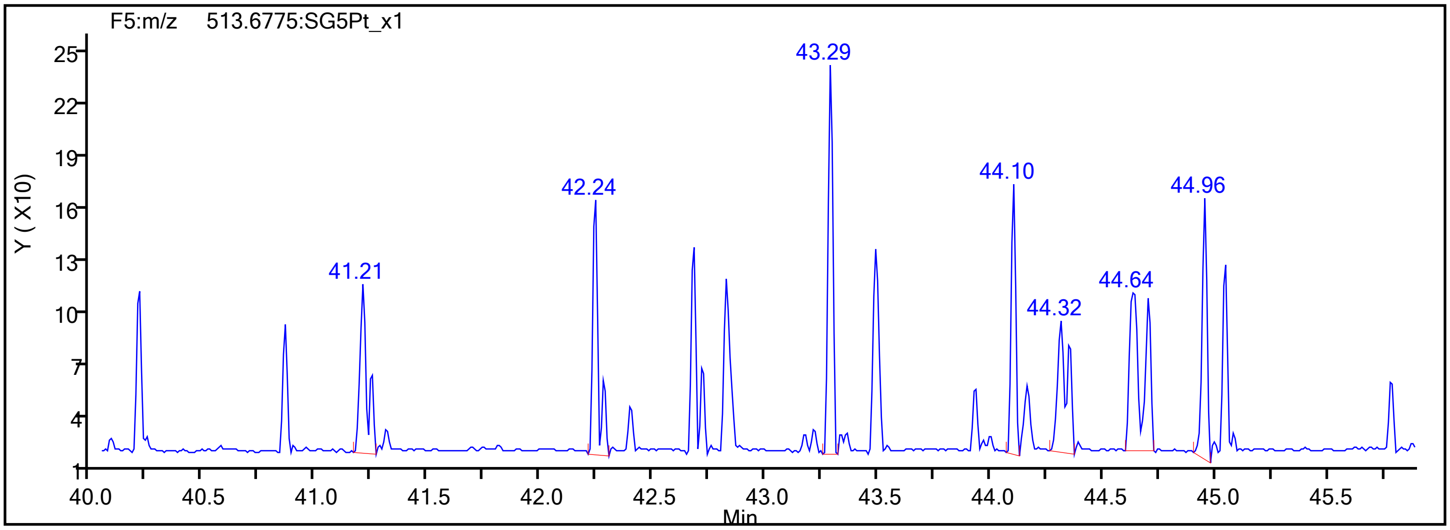

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Eurofins TestAmerica, Sacramento

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OCDD

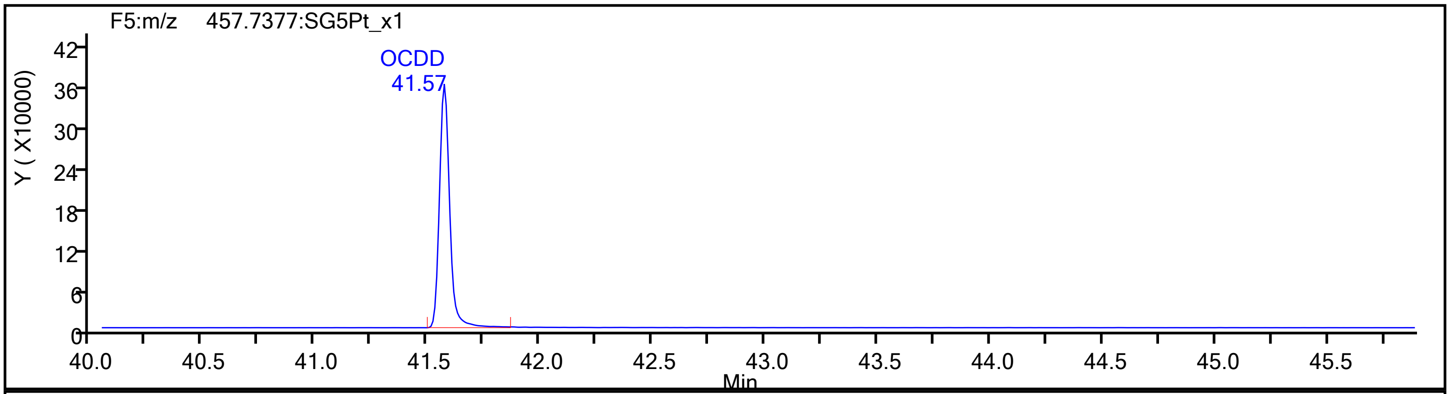

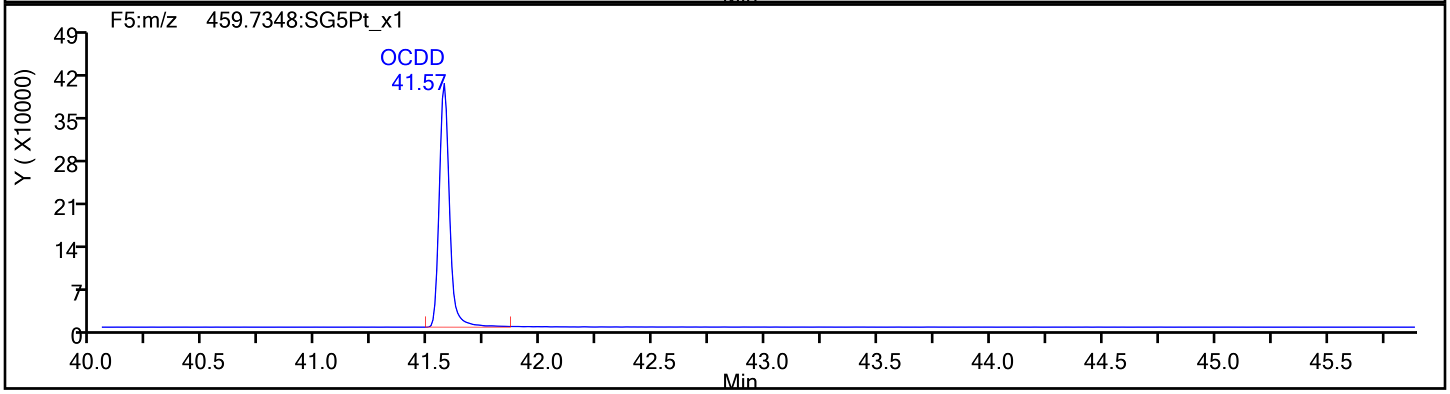

OCDD Standards

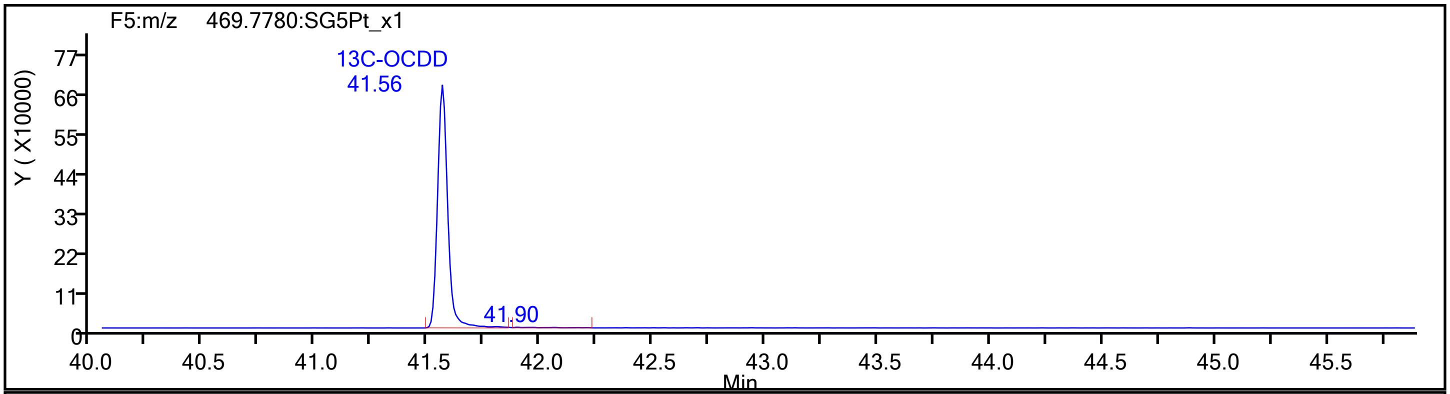

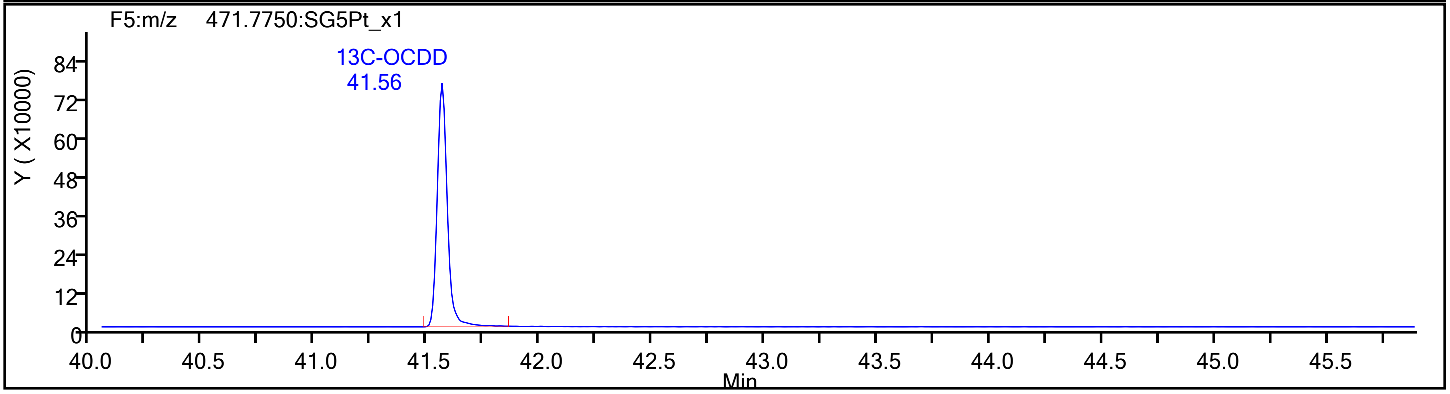

Report Date: 21-Sep-2020 18:44:52 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d

Injection Date: 21-Sep-2020 11:55:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

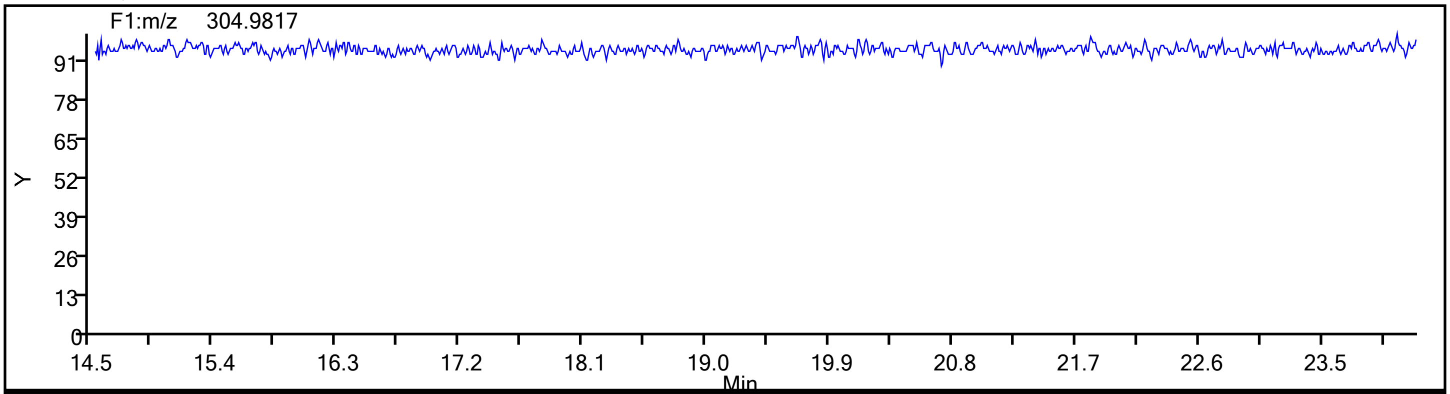

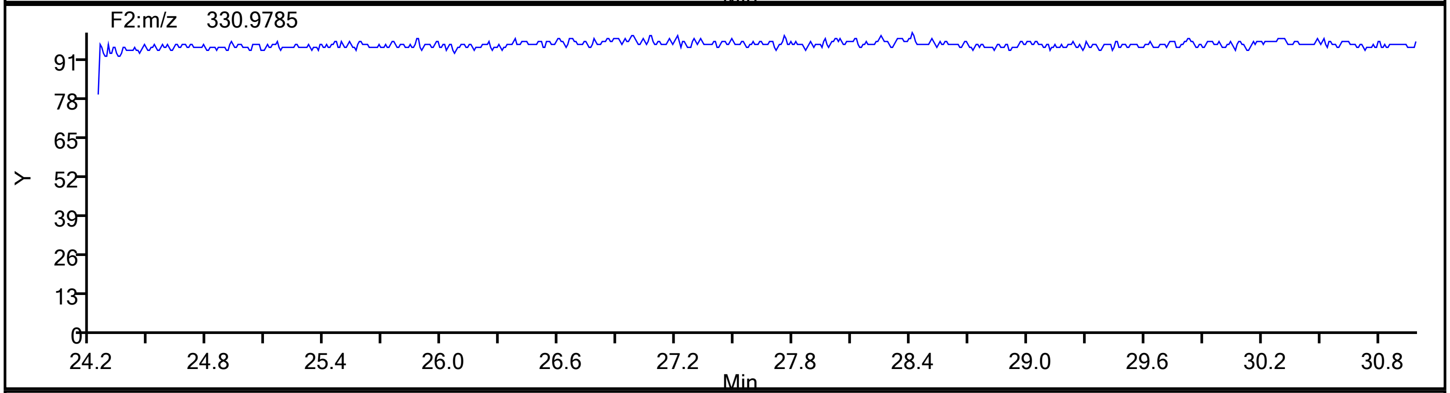

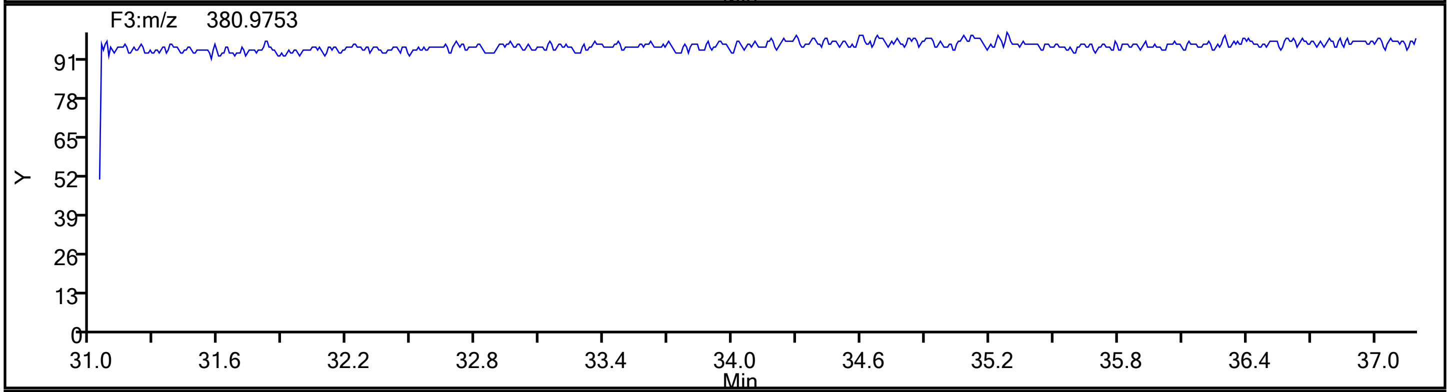

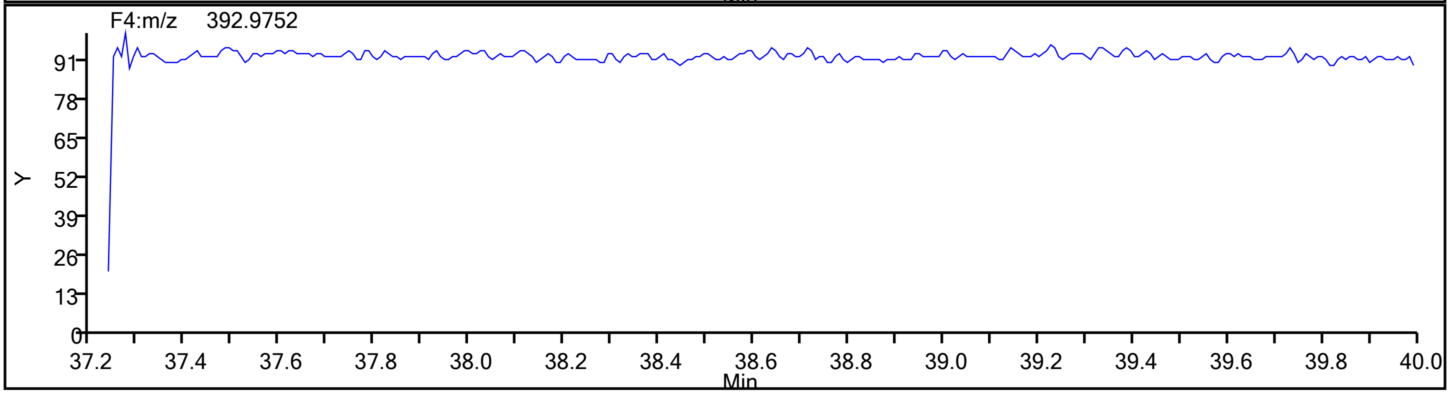

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_3.d

Injection Date: 21-Sep-2020 11:55:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

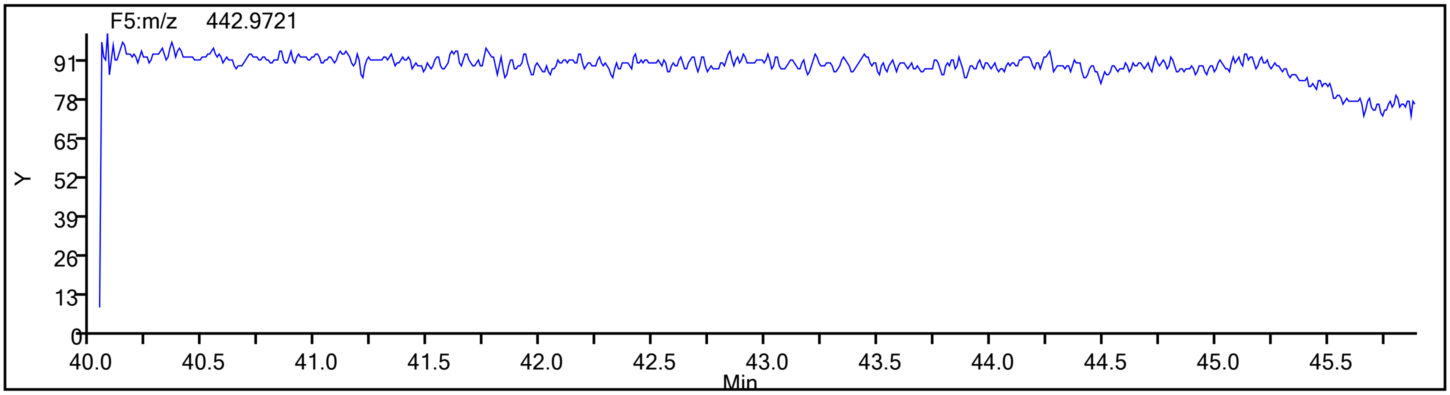

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Lab Sample ID: CCV 320-415261/2   Calibration Date: 09/23/2020 22:08

Instrument ID: DFS 1   Calib Start Date: 09/17/2020 13:16

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 09/17/2020 16:30

Lab File ID: 23se20dfs1_3.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.037		9.55	10.0	95	84-120
2,3,7,8-TCDD	AveID	1.081	1.032		9.55	10.0	95	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.004		47.6	50.0	95	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.037		47.0	50.0	94	82-122
1,2,3,7,8-PeCDD	AveID	1.068	0.999		46.8	50.0	94	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.225		48.4	50.0	97	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.185		48.5	50.0	97	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.201		48.2	50.0	96	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.088		47.1	50.0	94	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	0.9705		47.2	50.0	94	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.110		47.1	50.0	94	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.190		47.1	50.0	94	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.432		47.5	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.014		47.7	50.0	95	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.400		48.1	50.0	96	86-116
OCDD	AveID	1.129	1.051		93.1	100	93	79-126
OCDF	AveID	1.430	1.327		92.8	100	93	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.494		94.0	100	94	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.064		95.0	100	95	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.382		93.5	100	94	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.297		93.2	100	93	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9274		98.5	100	99	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.072		94.2	100	94	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.262		95.8	100	96	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.200		96.3	100	96	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8330		98.3	100	98	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	0.999		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.119		94.5	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	0.9344		94.5	100	95	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9289		97.2	100	97	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.8760		95.2	100	95	77-129
13C-OCDD	Ave	0.7420	0.6908		186	200	93	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.134		9.89	10.0	99	79-127

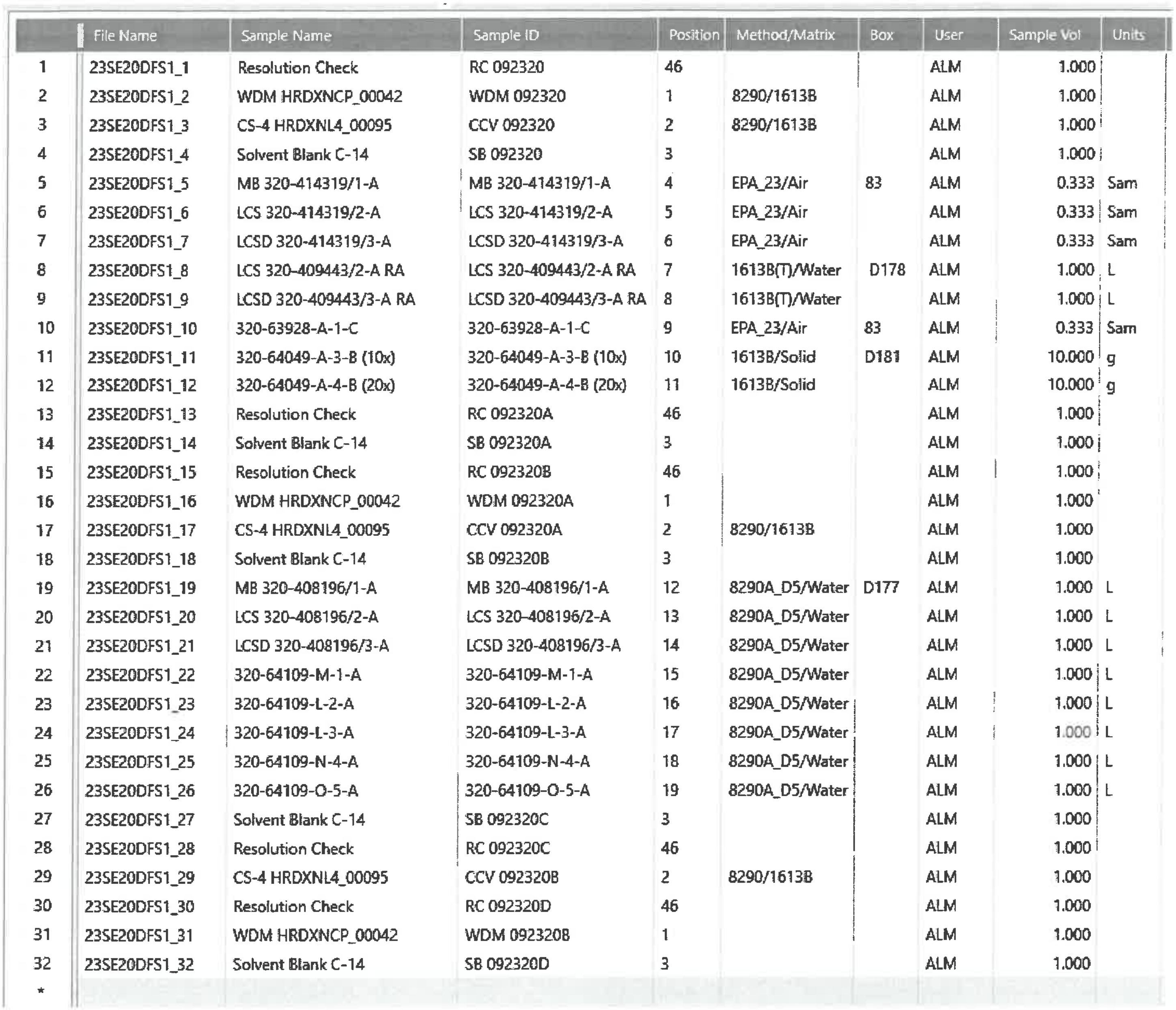

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1	23SE20DFS1_1	Resolution Check	RC 092320	46			ALM	1.000	
2	23SE20DFS1_2	WDM HRDXNCP_00042	WDM 092320	1	8290/1613B		ALM	1.000	
3	23SE20DFS1_3	CS-4 HRDXNL4_00095	CCV 092320	2	8290/1613B		ALM	1.000	
4	23SE20DFS1_4	Solvent Blank C-14	SB 092320	3			ALM	1.000	
5	23SE20DFS1_5	MB 320-414319/1-A	MB 320-414319/1-A	4	EPA_23/Air	83	ALM	0.333	Sam
6	23SE20DFS1_6	LCS 320-414319/2-A	LCS 320-414319/2-A	5	EPA_23/Air		ALM	0.333	Sam
7	23SE20DFS1_7	LCSD 320-414319/3-A	LCSD 320-414319/3-A	6	EPA_23/Air		ALM	0.333	Sam
8	23SE20DFS1_8	LCS 320-409443/2-A RA	LCS 320-409443/2-A RA	7	1613B(T)/Water	D178	ALM	1.000	L
9	23SE20DFS1_9	LCSD 320-409443/3-A RA	LCSD 320-409443/3-A RA	8	1613B(T)/Water		ALM	1.000	L
10	23SE20DFS1_10	320-63928-A-1-C	320-63928-A-1-C	9	EPA_23/Air	83	ALM	0.333	Sam
11	23SE20DFS1_11	320-64049-A-3-B (10x)	320-64049-A-3-B (10x)	10	1613B/Solid	D181	ALM	10.000	g
12	23SE20DFS1_12	320-64049-A-4-B (20x)	320-64049-A-4-B (20x)	11	1613B/Solid		ALM	10.000	g
13	23SE20DFS1_13	Resolution Check	RC 092320A	46			ALM	1.000	
14	23SE20DFS1_14	Solvent Blank C-14	SB 092320A	3			ALM	1.000	
15	23SE20DFS1_15	Resolution Check	RC 092320B	46			ALM	1.000	
16	23SE20DFS1_16	WDM HRDXNCP_00042	WDM 092320A	1			ALM	1.000	
17	23SE20DFS1_17	CS-4 HRDXNL4_00095	CCV 092320A	2	8290/1613B		ALM	1.000	
18	23SE20DFS1_18	Solvent Blank C-14	SB 092320B	3			ALM	1.000	
19	23SE20DFS1_19	MB 320-408196/1-A	MB 320-408196/1-A	12	8290A_D5/Water	D177	ALM	1.000	L
20	23SE20DFS1_20	LCS 320-408196/2-A	LCS 320-408196/2-A	13	8290A_D5/Water		ALM	1.000	L
21	23SE20DFS1_21	LCSD 320-408196/3-A	LCSD 320-408196/3-A	14	8290A_D5/Water		ALM	1.000	L
22	23SE20DFS1_22	320-64109-M-1-A	320-64109-M-1-A	15	8290A_D5/Water		ALM	1.000	L
23	23SE20DFS1_23	320-64109-L-2-A	320-64109-L-2-A	16	8290A_D5/Water		ALM	1.000	L
24	23SE20DFS1_24	320-64109-L-3-A	320-64109-L-3-A	17	8290A_D5/Water		ALM	1.000	L
25	23SE20DFS1_25	320-64109-N-4-A	320-64109-N-4-A	18	8290A_D5/Water		ALM	1.000	L
26	23SE20DFS1_26	320-64109-O-5-A	320-64109-O-5-A	19	8290A_D5/Water		ALM	1.000	L
27	23SE20DFS1_27	Solvent Blank C-14	SB 092320C	3			ALM	1.000	
28	23SE20DFS1_28	Resolution Check	RC 092320C	46			ALM	1.000	
29	23SE20DFS1_29	CS-4 HRDXNL4_00095	CCV 092320B	2	8290/1613B		ALM	1.000	
30	23SE20DFS1_30	Resolution Check	RC 092320D	46			ALM	1.000	
31	23SE20DFS1_31	WDM HRDXNCP_00042	WDM 092320B	1			ALM	1.000	
32	23SE20DFS1_32	Solvent Blank C-14	SB 092320D	3			ALM	1.000	
*									

Log file checked

Ajs

9-24-20

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date:	23 Sep 2020 20:56
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11582 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11990 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11699 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11864 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11965 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12045 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11714 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12077 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11919 [5%height]

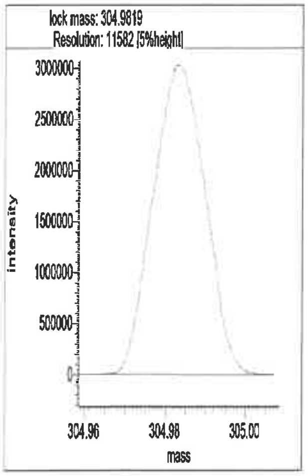

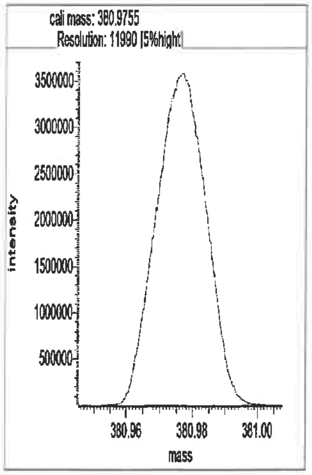

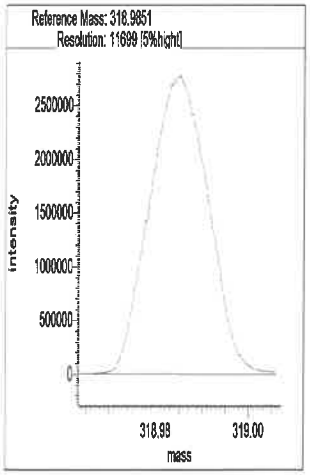

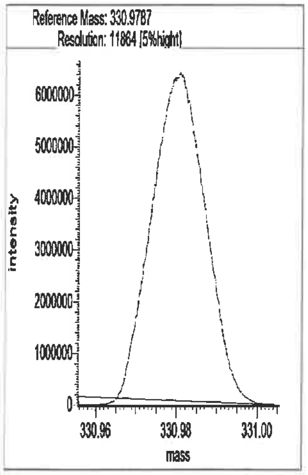

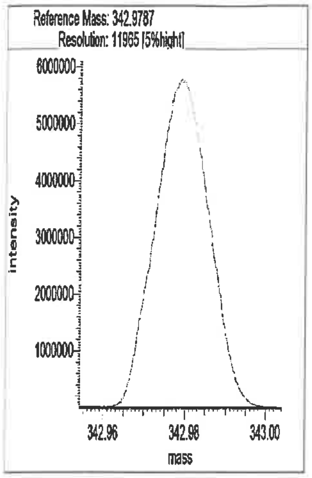

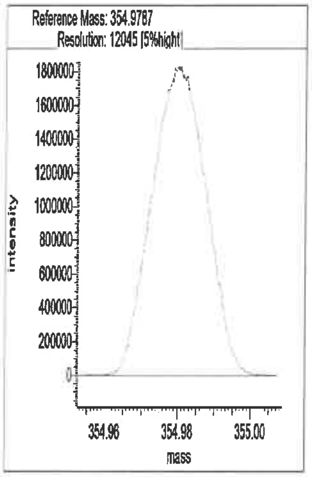

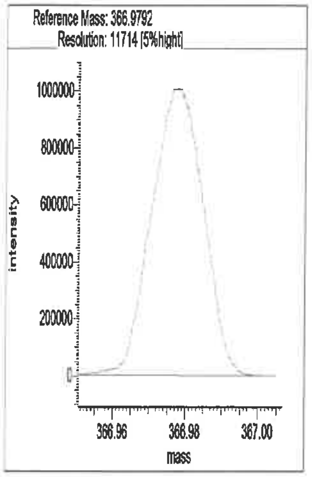

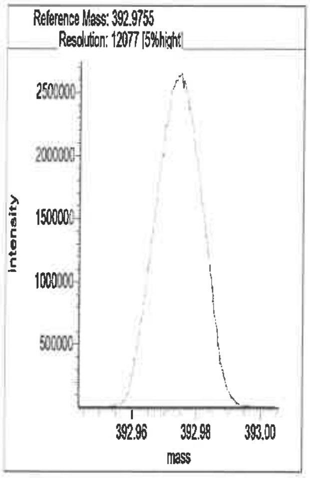

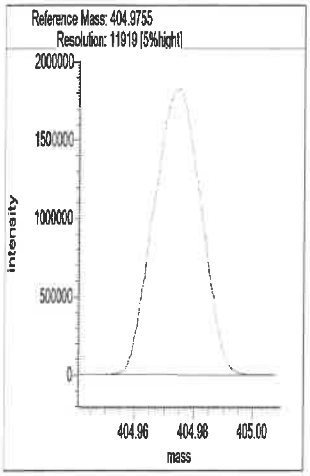

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11771 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11936 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11915 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11870 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11657 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11996 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12036 [5%height]

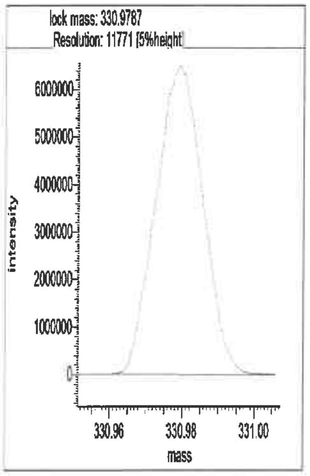

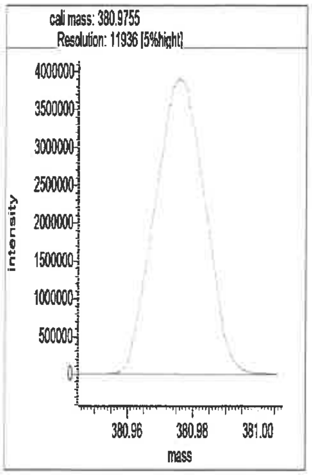

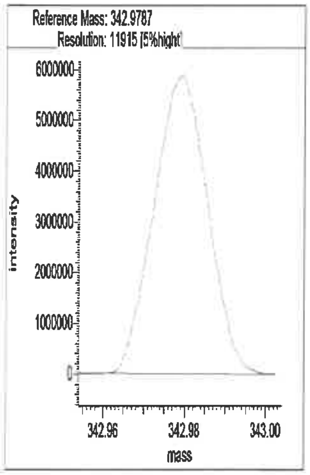

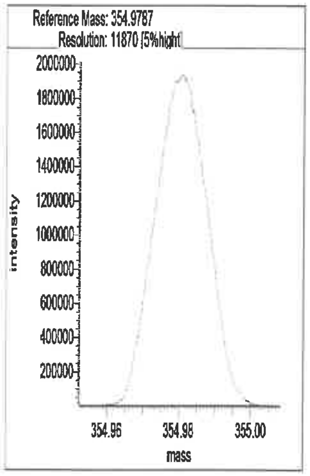

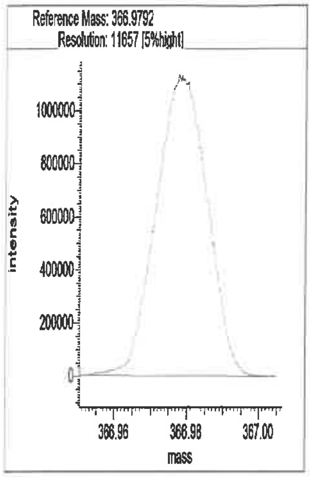

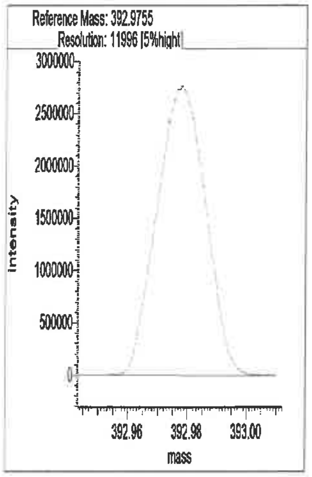

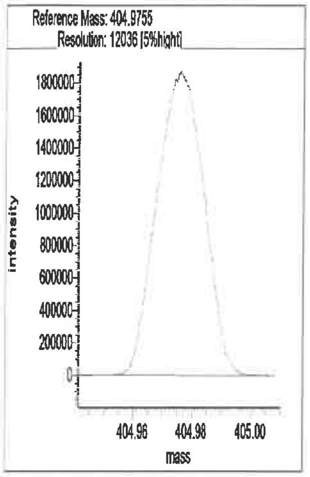

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11814 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12007 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11881 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12025 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12008 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11949 [5%height]

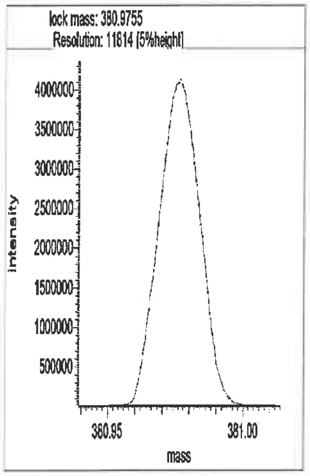

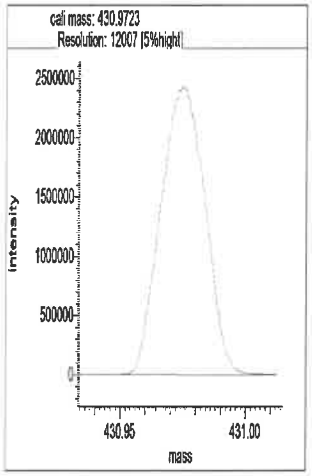

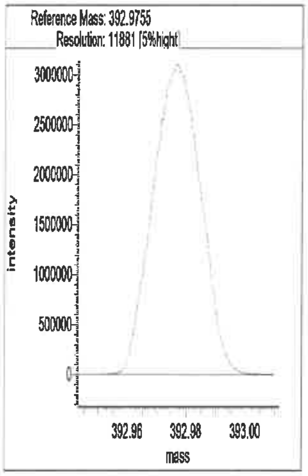

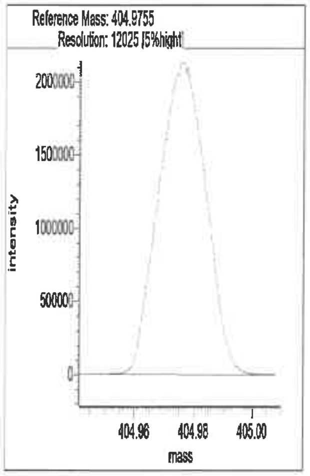

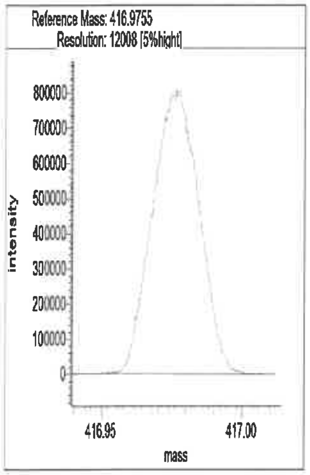

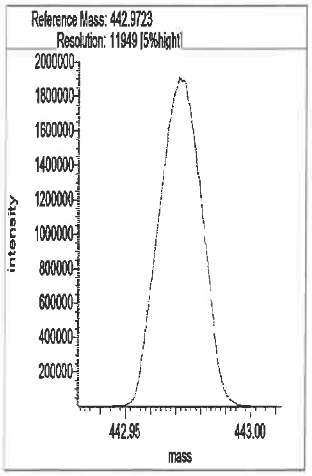

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11676 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12000 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11924 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11869 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11896 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11968 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12029 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12011 [5%height]

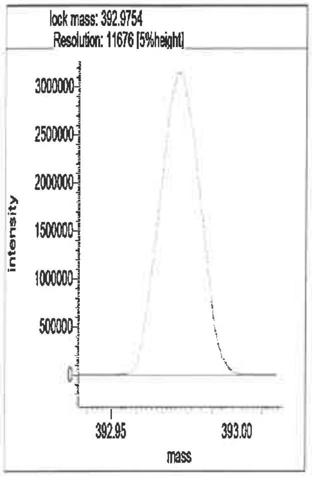

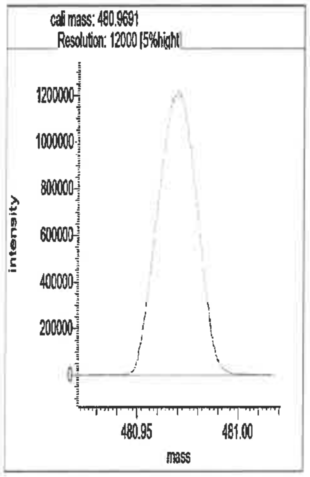

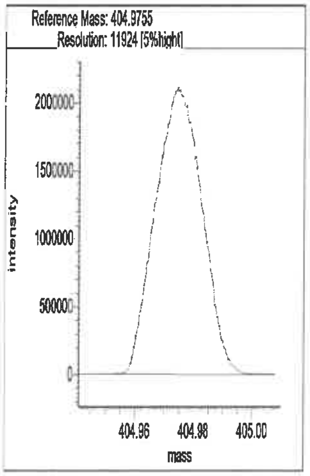

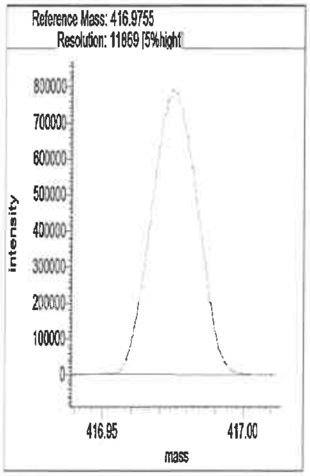

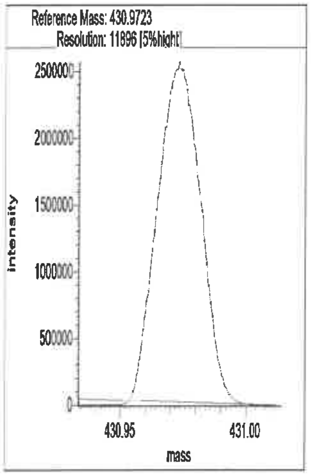

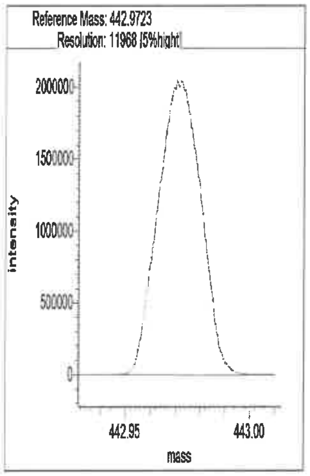

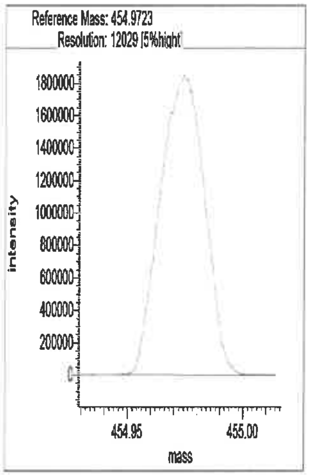

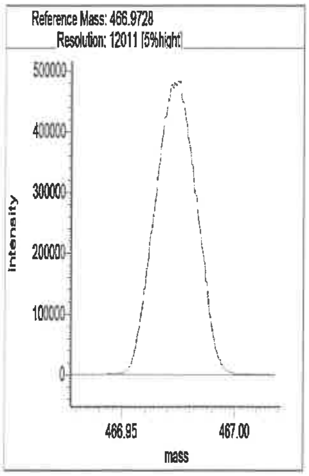

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11773 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12239 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11914 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12066 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12052 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12055 [5%height]

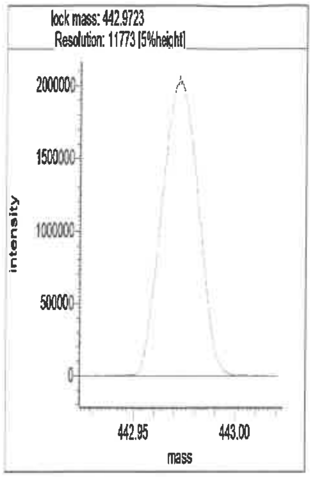
lock mass: 442.9723
Resolution: 11773 [5%height]

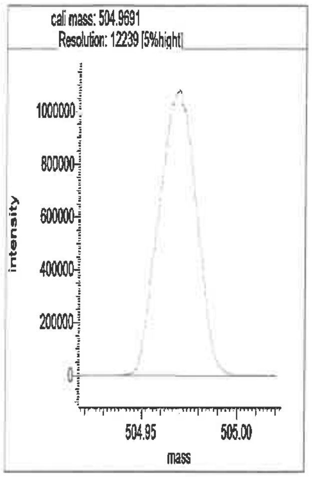
cali mass: 504.9691
Resolution: 12239 [5%hight]

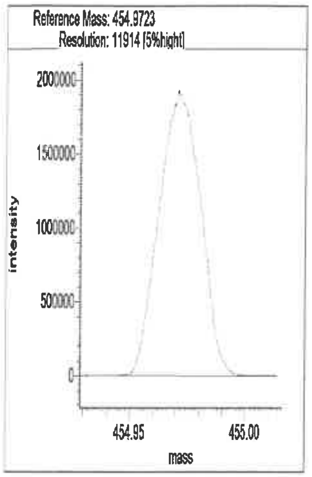
Reference Mass: 454.9723
Resolution: 11914 [5%hight]

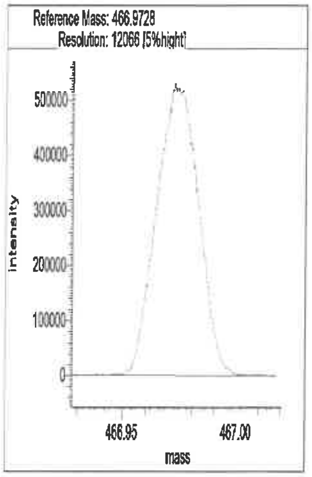
Reference Mass: 466.9728
Resolution: 12066 [5%hight]

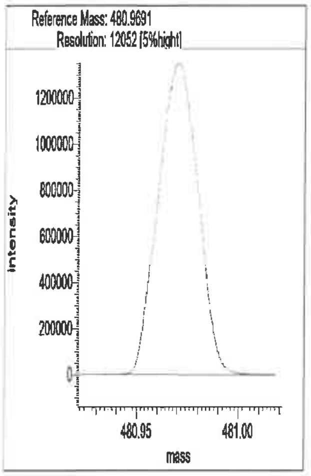
Reference Mass: 480.9691
Resolution: 12052 [5%hight]

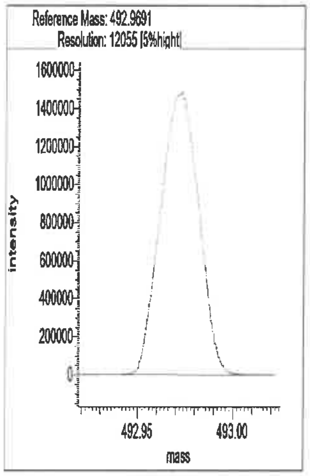
Reference Mass: 492.9691
Resolution: 12055 [5%hight]

Resolution Check Report (DFS SN: 3487)

eurofins Environment Testing TestAmerica

Date: 24 Sep 2020 06:27
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11981 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12060 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11832 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11987 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12054 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12244 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11893 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12220 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12190 [5%height]

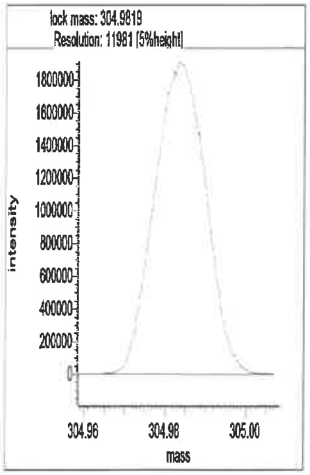

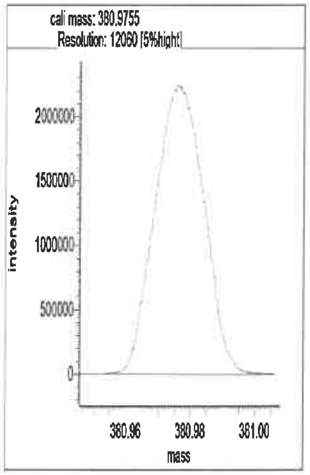

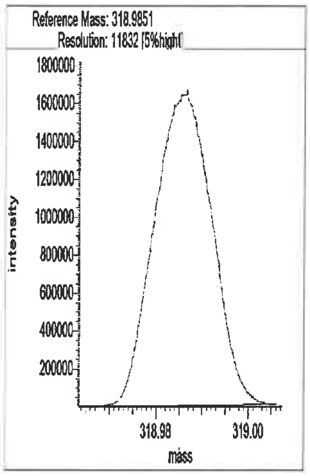

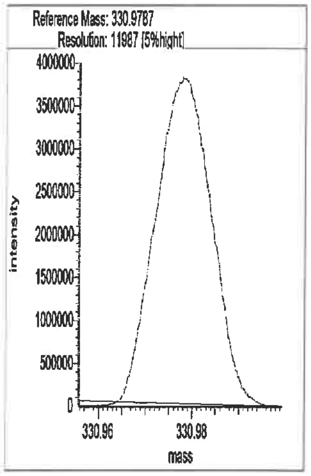

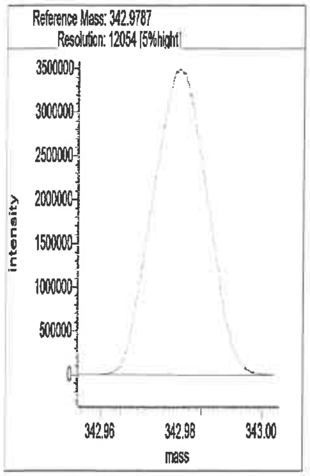

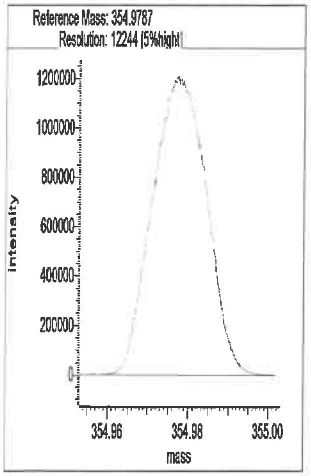

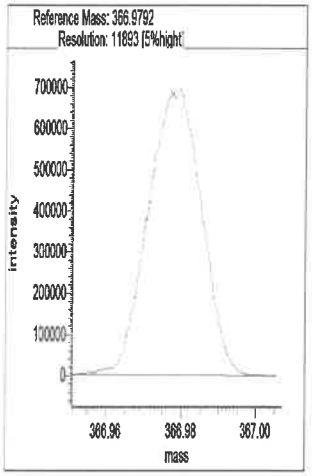

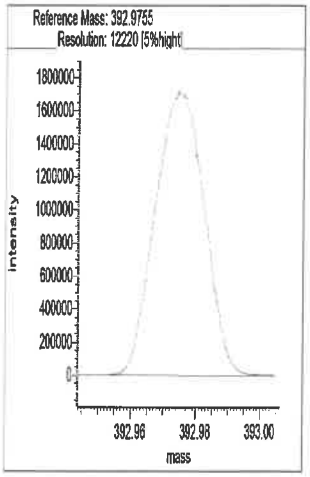

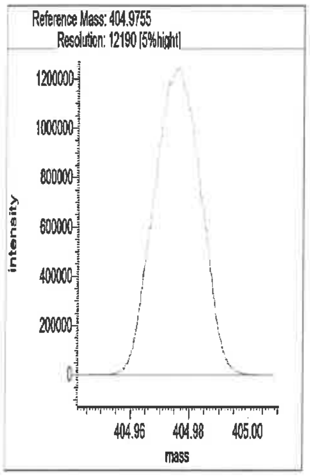

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11919 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12075 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12042 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11945 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11900 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12165 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12116 [5%height]

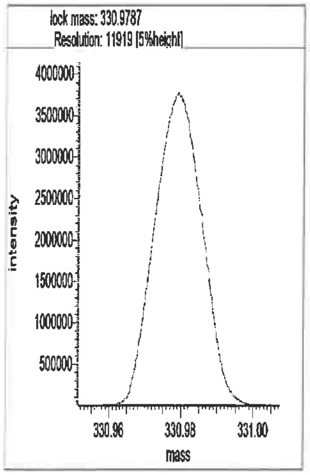

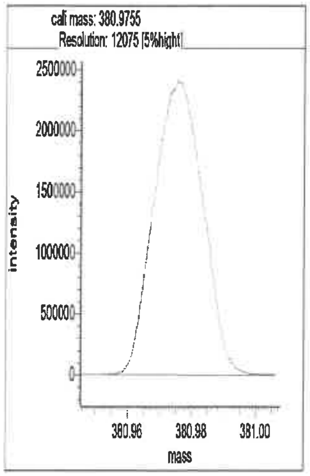

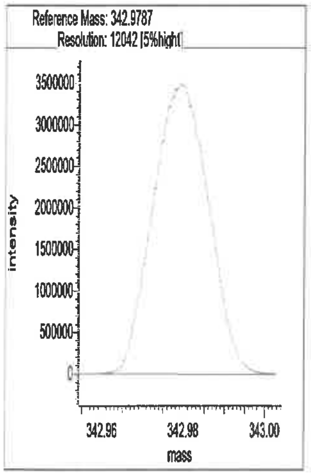

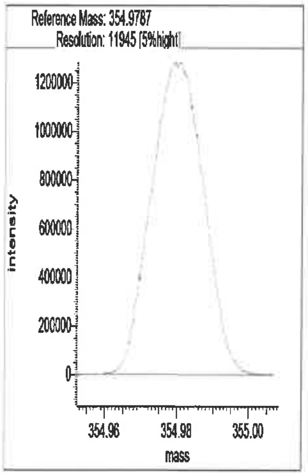

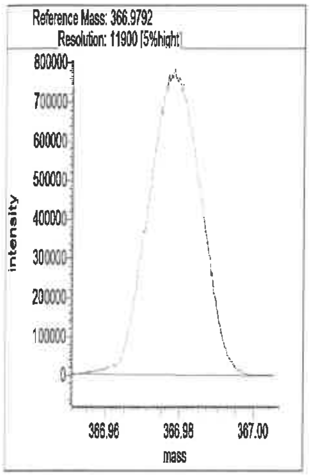

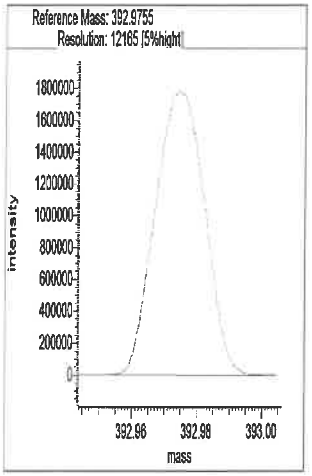

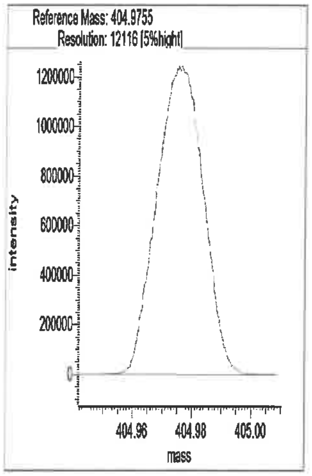

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12062 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12339 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12042 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12243 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12299 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12318 [5%height]

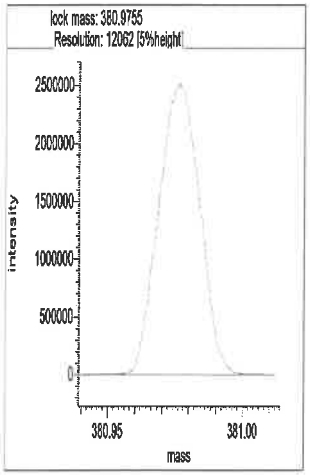

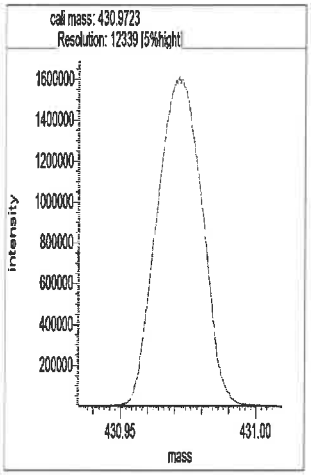

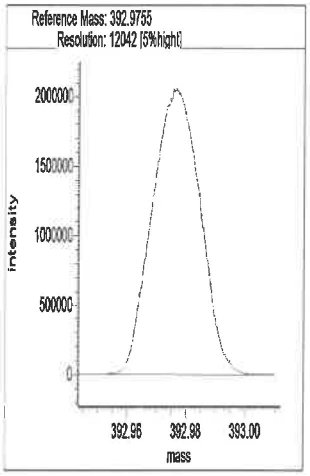

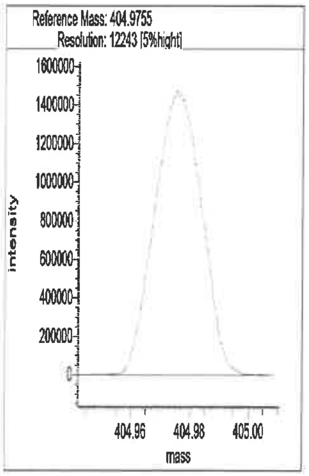

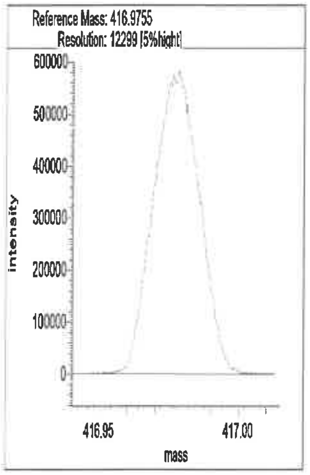

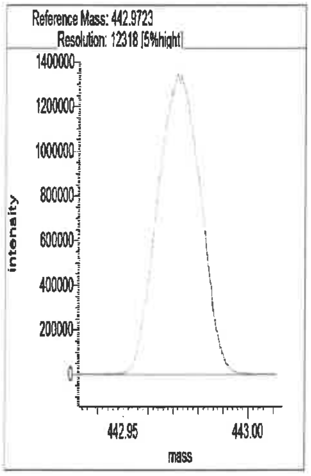

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12043 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12196 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12285 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12216 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12191 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12343 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12352 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12293 [5%height]

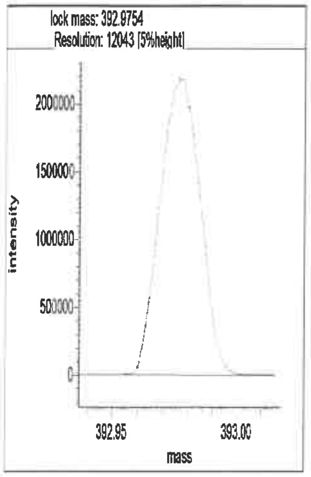

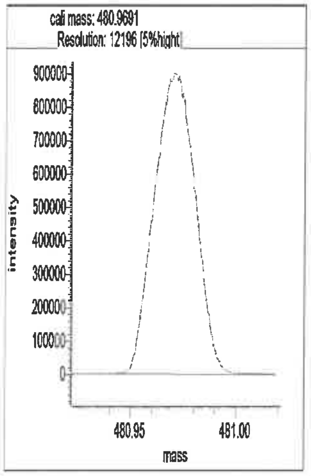

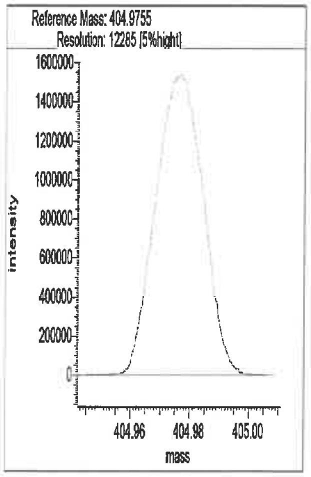

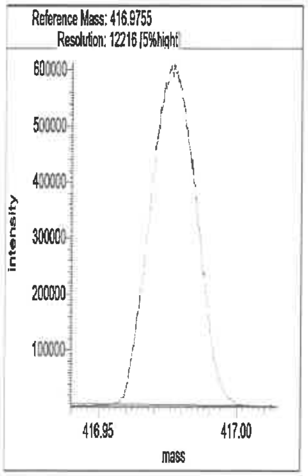

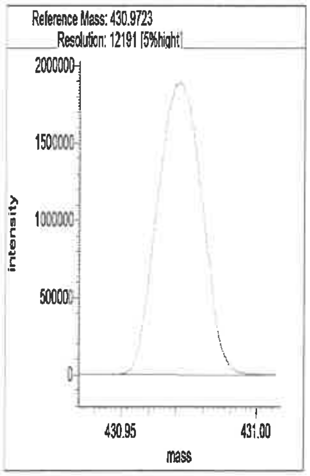

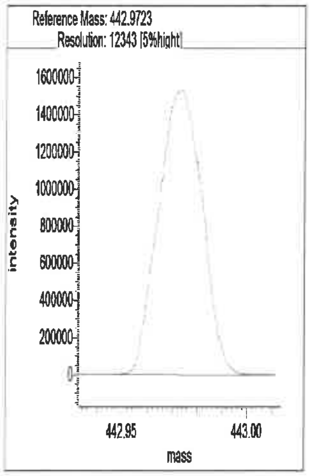

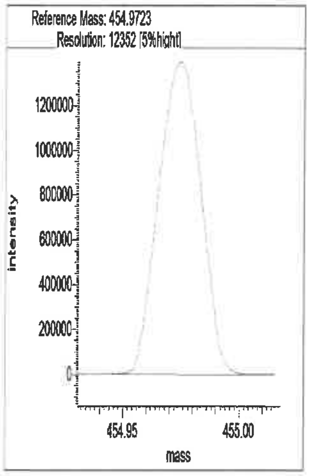

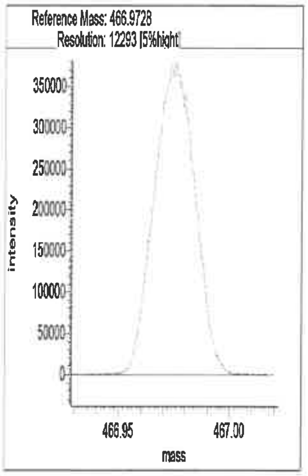

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12128 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12381 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12142 [5%height]

Ref. mass 466.9728 [m/z] Resolution: 12247 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12131 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12436 [5%height]

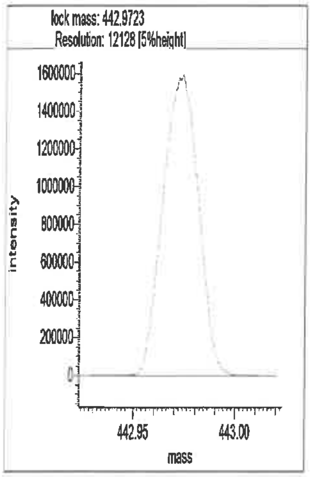
lock mass: 442.9723
Resolution: 12128 [5%height]
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

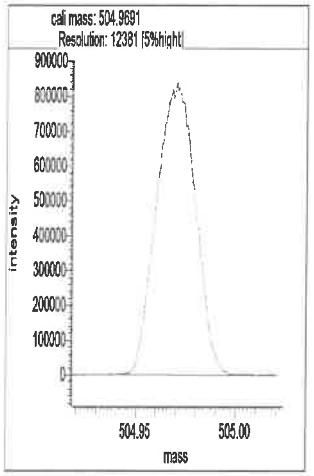
cali mass: 504.9691
Resolution: 12381 [5%hight]
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
504.95
505.00
mass

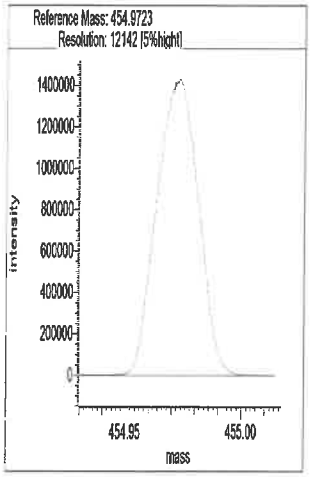
Reference Mass: 454.9723
Resolution: 12142 [5%hight]
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
454.95
455.00
mass

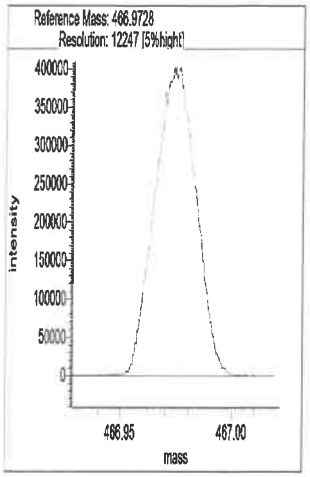
Reference Mass: 466.9728
Resolution: 12247 [5%hight]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

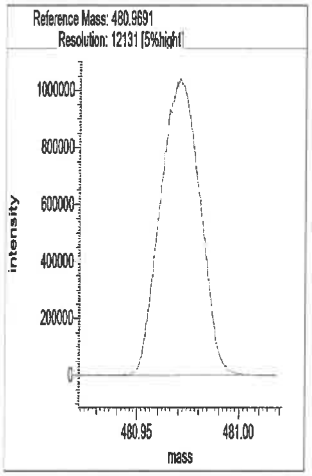
Reference Mass: 480.9691
Resolution: 12131 [5%hight]
1000000
800000
600000
400000
200000
0
intensity
480.95
481.00
mass

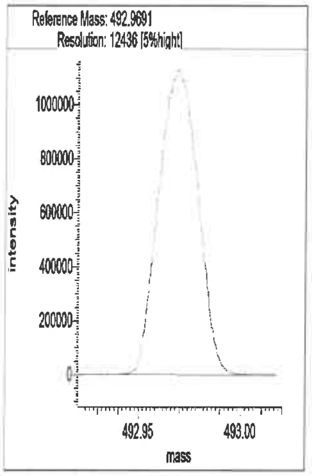
Reference Mass: 492.9691
Resolution: 12436 [5%hight]
1000000
800000
600000
400000
200000
0
intensity
492.95
493.00
mass

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 23-Sep-2020 22:08:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 11:59:56 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 11:59:32

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.007	2629672	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.095	3928276	0.78	1.5883	94.0	94.0	0.5055	0.5055	94.05	
2,3,7,8-TCDF	19.121	407222	0.79	1.0857	9.549	9.549	0.0586	0.0586	95.49	
A Non-2,3,7,8-sub-TCDF	18.740						0.0586	0.0586		
S Total TCDF					9.549	9.549	0.0586	0.0586		
D 13C-2,3,7,8-TCDD	20.359	2797197	0.80	1.1194	95.0	95.0	0.4424	0.4424	95.02	
2,3,7,8-TCDD	20.394	288686	0.77	1.0810	9.547	9.547	0.1090	0.1090	95.47	
$ 37Cl4-2,3,7,8-TCDD	20.394	298137		1.1468	9.886	9.886	0.0212	0.0212	98.86	
A Non-2,3,7,8-sub-TCDD	19.549						0.1090	0.1090		
S Total TCDD					9.547	9.547	0.1090	0.1090		
D 13C-1,2,3,7,8-PeCDF	26.181	3634546	1.60	1.4782	93.5	93.5	0.4180	0.4180	93.50	
1,2,3,7,8-PeCDF	26.206	1825122	1.59	1.0547	47.6	47.6	0.2031	0.2031	95.23	
D 13C-2,3,4,7,8-PeCDF	27.630	3410886	1.59	1.3912	93.2	93.2	0.4441	0.4441	93.23	
2,3,4,7,8-PeCDF	27.655	1768621	1.54	1.1035	47.0	47.0	0.2135	0.2135	93.97	
A F1 PeCDFs	23.567						0.0291	0.0291		
A Non-2,3,7,8-sub-PeCDF	26.957						0.2079	0.2079		Rn
S Total PeCDF					94.6	94.6	0.2083	0.2083		
D 13C-1,2,3,7,8-PeCDD	28.404	2438642	1.58	0.9415	98.5	98.5	0.2019	0.2019	98.50	
1,2,3,7,8-PeCDD	28.430	1217776	1.56	1.0680	46.8	46.8	0.0942	0.0942	93.51	
A Non-2,3,7,8-sub-PeCDD	27.294						0.0942	0.0942		
S Total PeCDD					46.8	46.8	0.0942	0.0942		
D 13C-1,2,3,4,7,8-HxCDF	34.076	2768213	0.52	1.1378	94.2	94.2	0.4751	0.4751	94.20	
1,2,3,4,7,8-HxCDF	34.101	1694905	1.26	1.2643	48.4	48.4	0.2806	0.2806	96.86	
D 13C-1,2,3,6,7,8-HxCDF	34.261	3259316	0.53	1.3173	95.8	95.8	0.4103	0.4103	95.80	
1,2,3,6,7,8-HxCDF	34.286	1931824	1.26	1.2230	48.5	48.5	0.2542	0.2542	96.92	
D 13C-2,3,4,6,7,8-HxCDF	35.179	3099397	0.53	1.2457	96.3	96.3	0.4339	0.4339	96.34	
2,3,4,6,7,8-HxCDF	35.196	1860577	1.25	1.2464	48.2	48.2	0.2240	0.2240	96.32	
D 13C-1,2,3,7,8,9-HxCDF	36.149	2889038	0.52	1.1840	94.5	94.5	0.4565	0.4565	94.48	
1,2,3,7,8,9-HxCDF	36.157	1718770	1.27	1.2638	47.1	47.1	0.2179	0.2179	94.15	
A Non-2,3,7,8-sub-HxCDF	34.158						0.2417	0.2417		
S Total HxCDF					192.1	192.1	0.2442	0.2442		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.938	2582764	1.26	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.416	2151546	1.25	0.8477	98.3	98.3	0.2848	0.2848	98.27	
1,2,3,4,7,8-HxCDD	35.432	1170812	1.24	1.1561	47.1	47.1	0.1365	0.1365	94.14	
D 13C-1,2,3,6,7,8-HxCDD	35.542	2580643	1.26	0.9979	100.1	100.1	0.2419	0.2419	100	
1,2,3,6,7,8-HxCDD	35.559	1252218	1.25	1.0284	47.2	47.2	0.1363	0.1363	94.37	
1,2,3,7,8,9-HxCDD	35.955	1313402	1.25	1.1789	47.1	47.1	0.1259	0.1259	94.17	
A Non-2,3,7,8-sub-HxCDD	34.626						0.1324	0.1324		
S Total HxCDD					141.3	141.3	0.1329	0.1329		
D 13C-1,2,3,4,6,7,8-HpCDF	38.065	2413232	0.45	0.9884	94.5	94.5	0.5549	0.5549	94.54	
1,2,3,4,6,7,8-HpCDF	38.073	1727407	1.05	1.5064	47.5	47.5	0.2253	0.2253	95.04	
D 13C-1,2,3,4,7,8,9-HpCDF	39.371	2262448	0.46	0.9203	95.2	95.2	0.5959	0.5959	95.18	
1,2,3,4,7,8,9-HpCDF	39.379	1584158	1.04	1.4548	48.1	48.1	0.2366	0.2366	96.26	
A Non-2,3,7,8-sub-HpCDF	38.744						0.2308	0.2308		
S Total HpCDF					95.6	95.6	0.2309	0.2309		
D 13C-1,2,3,4,6,7,8-HpCDD	39.059	2399150	1.04	0.9556	97.2	97.2	0.2765	0.2765	97.20	
1,2,3,4,6,7,8-HpCDD	39.067	1216509	1.04	1.0640	47.7	47.7	0.1216	0.1216	95.31	
A Non-2,3,7,8-sub-HpCDD	38.941						0.1216	0.1216		
S Total HpCDD					47.7	47.7	0.1216	0.1216		
D 13C-OCDD	41.519	3568407	0.90	0.7420	186.2	186.2	0.4613	0.4613	93.10	
OCDF	41.603	2367756	0.92	1.4296	92.8	92.8	0.1480	0.1480	92.83	
OCDD	41.527	1875835	0.89	1.1293	93.1	93.1	0.1540	0.1540	93.10	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	23-Sep-2020 22:08:00	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00095				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	24-Sep-2020 11:59:56	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1611				
First Level Reviewer: shardaa		Date:	24-Sep-2020 11:59:32		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.007	20.007	0		1160676	172617	620	1550	278		
333.9338	20.007	20.007	0		1468996	225562	169	422	1335	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.095	19.095	0	0.954	1722795	266361	801	2002	333		
317.9389	19.095	19.095	0	0.954	2205481	342236	478	1195	716	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.121	19.121	0	1.001	179329	26436	48	120	551		
305.8987	19.112	19.121	-1	1.001	227893	33643	107	267	314	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.740						48	120			
305.8987	18.740						107	267			
13C-2,3,7,8-TCDD											
331.9368	20.359	20.359	0	1.018	1240776	175006	620	1550	282		
333.9338	20.359	20.359	0	1.018	1556421	221163	169	422	1309	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.394	20.394	0	1.002	125665	17980	131	327	137		
321.8936	20.394	20.394	0	1.002	163021	22724	56	140	406	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.394	20.394	0	1.019	298137	41110	39	97	1054		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.549						131	327			
321.8936	19.549						56	140			
13C-1,2,3,7,8-PeCDF											
351.9000	26.181	26.181	0	1.309	2235842	367571	563	1407	653		
353.8970	26.181	26.181	0	1.309	1398704	239421	421	1052	569	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.206	26.206	0	1.001	1120494	187285	286	715	655		
341.8567	26.206	26.206	0	1.001	704628	119169	234	585	509	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.630	27.630	0	1.381	2094837	335100	563	1407	595		
353.8970	27.630	27.630	0	1.381	1316049	216583	421	1052	514	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.655	27.655	0	1.001	1073410	166426	286	715	582		
341.8567	27.655	27.655	0	1.001	695211	108475	234	585	464	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.567						7	17			
341.8567	23.567						66	165			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.762	26.955	-12	1.022	8009	1276	286	715	4		
341.8567	26.779	26.955	-11	1.023	6434	945	234	585	4	1.24(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.404	28.404	0	1.420	1491701	230350	173	432	1332		
369.8919	28.404	28.404	0	1.420	946941	149203	130	325	1148	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.430	28.430	0	1.001	742671	108756	120	300	906		
357.8516	28.430	28.430	0	1.001	475105	70351	33	82	2132	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.294						120	300			
357.8516	27.294						33	82			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.076	34.076	0	0.948	949598	192986	464	1160	416		
385.8610	34.076	34.076	0	0.948	1818615	358597	908	2270	395	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.101	34.101	0	1.001	944059	188042	447	1117	421		
375.8178	34.101	34.101	0	1.001	750846	148790	336	840	443	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.261	34.261	0	0.953	1125471	219671	464	1160	473		
385.8610	34.261	34.261	0	0.953	2133845	409813	908	2270	451	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.286	34.286	0	1.001	1077926	205467	447	1117	460		
375.8178	34.286	34.286	0	1.001	853898	163186	336	840	486	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.179	35.179	0	0.979	1071899	242036	464	1160	522		
385.8610	35.179	35.179	0	0.979	2027498	458942	908	2270	505	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.196	35.196	0	1.000	1035188	231114	447	1117	517		
375.8178	35.196	35.196	0	1.000	825389	185071	336	840	551	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.149	36.149	0	1.006	982229	243013	464	1160	524		
385.8610	36.149	36.149	0	1.006	1906809	467678	908	2270	515	0.52(0.43-0.59)	

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.157	36.157	0	1.000	961627	231866	447	1117	519		
375.8178	36.157	36.157	0	1.000	757143	183807	336	840	547	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.158						447	1117			
375.8178	34.158						336	840			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.938	35.938	0		1439936	352435	324	810	1088		
403.8529	35.938	35.938	0		1142828	282134	289	722	976	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.416	35.416	0	0.985	1195702	298060	324	810	920		
403.8529	35.416	35.416	0	0.985	955844	238499	289	722	825	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.432	35.432	0	1.000	648721	162986	169	422	964		
391.8127	35.432	35.432	0	1.000	522091	131201	170	425	772	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.542	35.542	0	0.989	1439904	334349	324	810	1032		
403.8529	35.542	35.542	0	0.989	1140739	270017	289	722	934	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.559	35.559	0	1.000	694443	162839	169	422	964		
391.8127	35.559	35.559	0	1.000	557775	130989	170	425	771	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.955	35.955	0	1.015	728904	179180	169	422	1060		
391.8127	35.955	35.955	0	1.015	584498	144390	170	425	849	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.626						169	422			
391.8127	34.626						170	425			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.065	38.065	0	1.059	752825	234849	459	1147	512		
419.8220	38.065	38.065	0	1.059	1660407	516579	933	2332	554	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.073	38.073	0	1.000	882747	268486	525	1312	511		
409.7788	38.073	38.073	0	1.000	844660	257416	495	1237	520	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.371	39.371	0	1.096	707801	231902	459	1147	505		
419.8220	39.371	39.371	0	1.096	1554647	508884	933	2332	545	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.379	39.379	0	1.000	807117	263558	525	1312	502		
409.7788	39.379	39.379	0	1.000	777041	255342	495	1237	516	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.744						525	1312			
409.7788	38.744						495	1237			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.059	39.059	0	1.087	1222663	399544	372	930	1074		
437.8140	39.059	39.059	0	1.087	1176487	385249	299	747	1288	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.067	39.067	0	1.000	619534	200692	225	562	892		
425.7737	39.067	39.067	0	1.000	596975	196834	181	452	1087	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						225	562			
425.7737	38.941						181	452			
13C-OCDD											
469.7780	41.519	41.519	0	1.155	1693668	484792	479	1197	1012		
471.7750	41.510	41.519	-1	1.155	1874739	540973	390	975	1387	0.90(0.76-1.02)	
OCDF											
441.7428	41.603	41.603	0	1.002	1133077	336842	172	430	1958		
443.7399	41.603	41.603	0	1.002	1234679	370710	262	655	1415	0.92(0.76-1.02)	
OCDD											
457.7377	41.527	41.527	0	1.000	884721	253576	183	457	1386		
459.7348	41.519	41.527	-1	1.000	991114	283198	174	435	1628	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d
Injection Date: 23-Sep-2020 22:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 415261
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

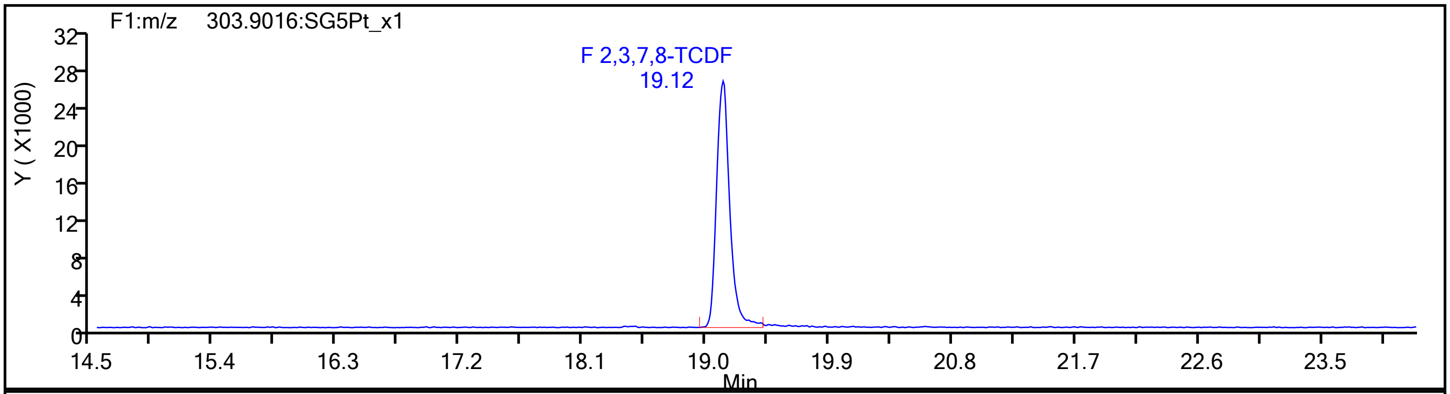

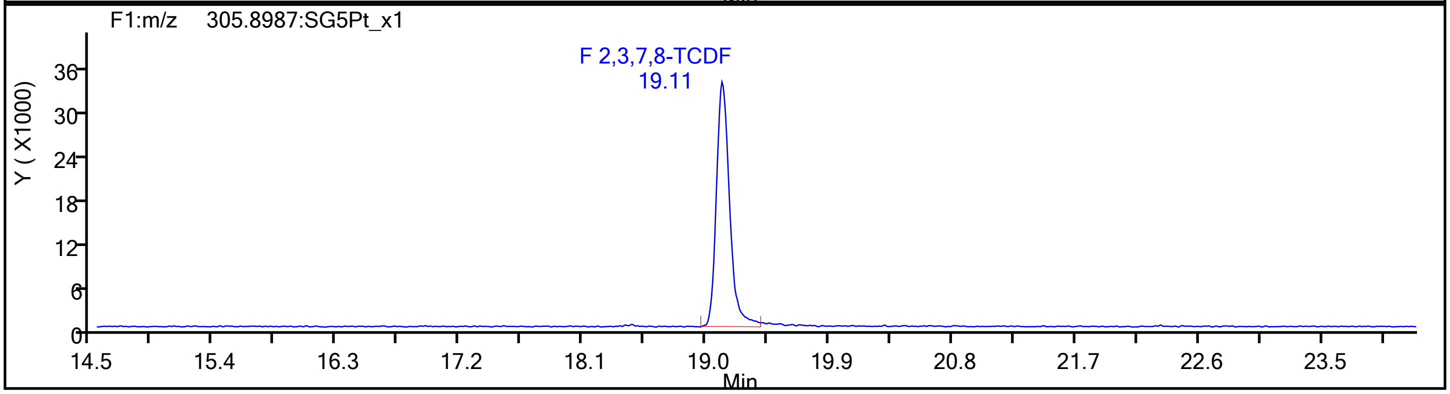

TCDF Standards

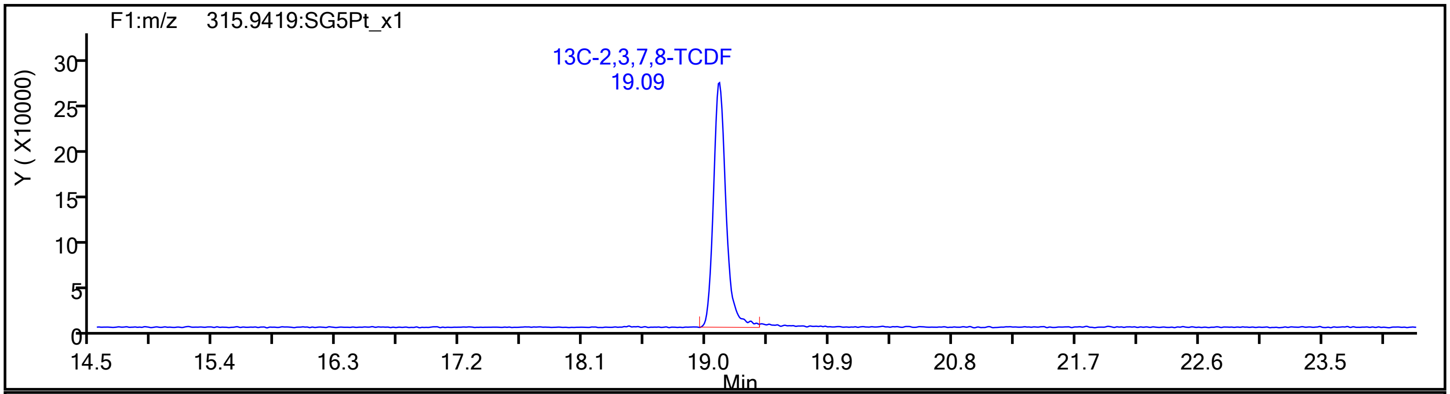

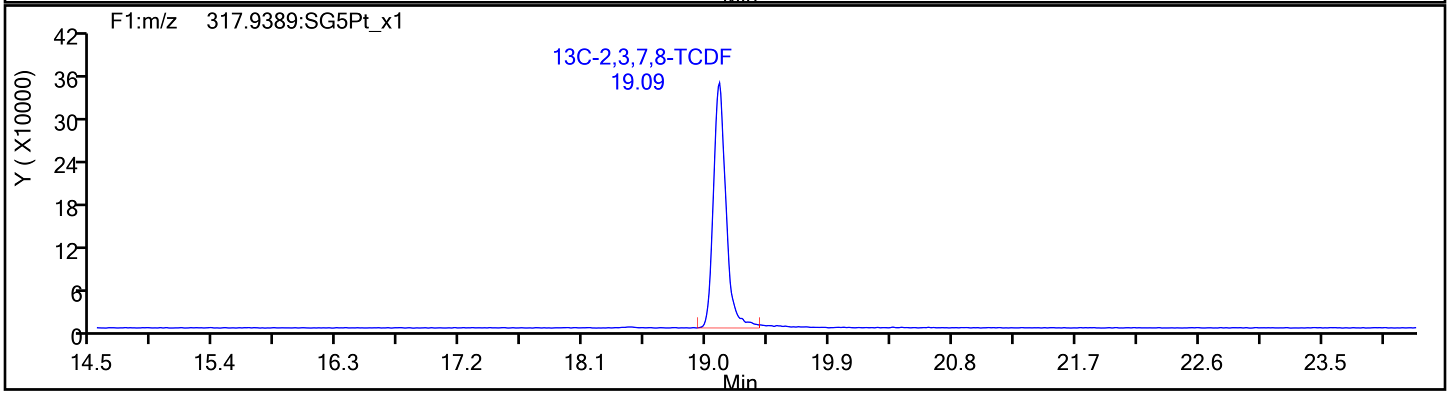

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d		
Injection Date:	23-Sep-2020 22:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415261	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

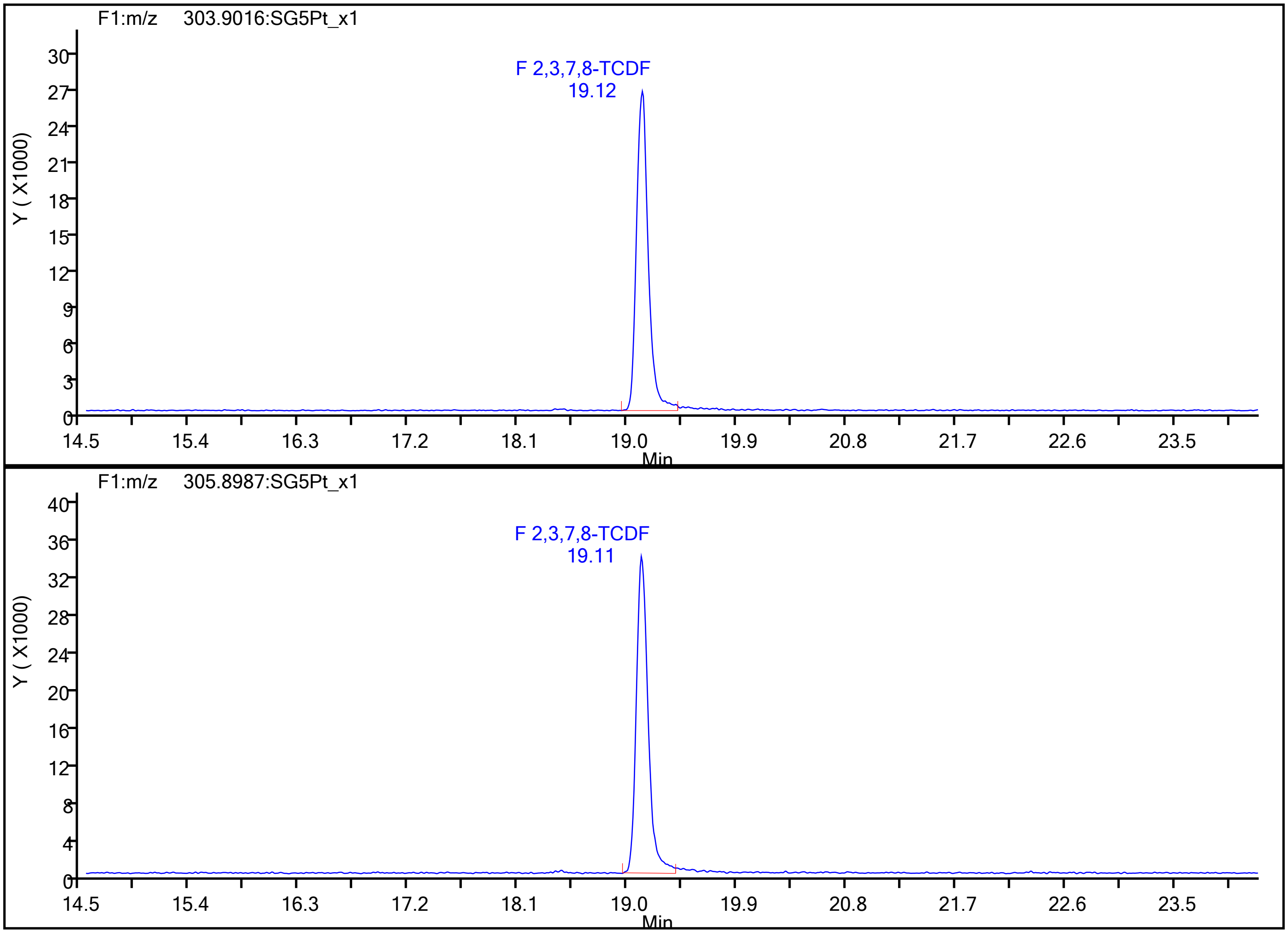

TCDF Interference Mass

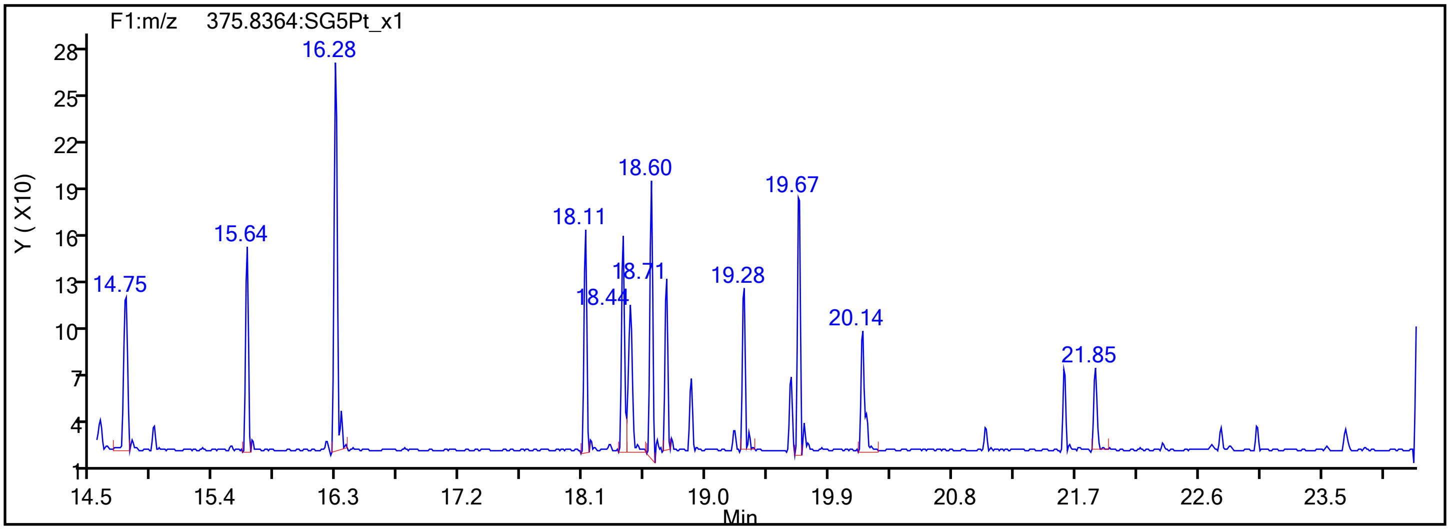

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d
Injection Date: 23-Sep-2020 22:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 415261
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

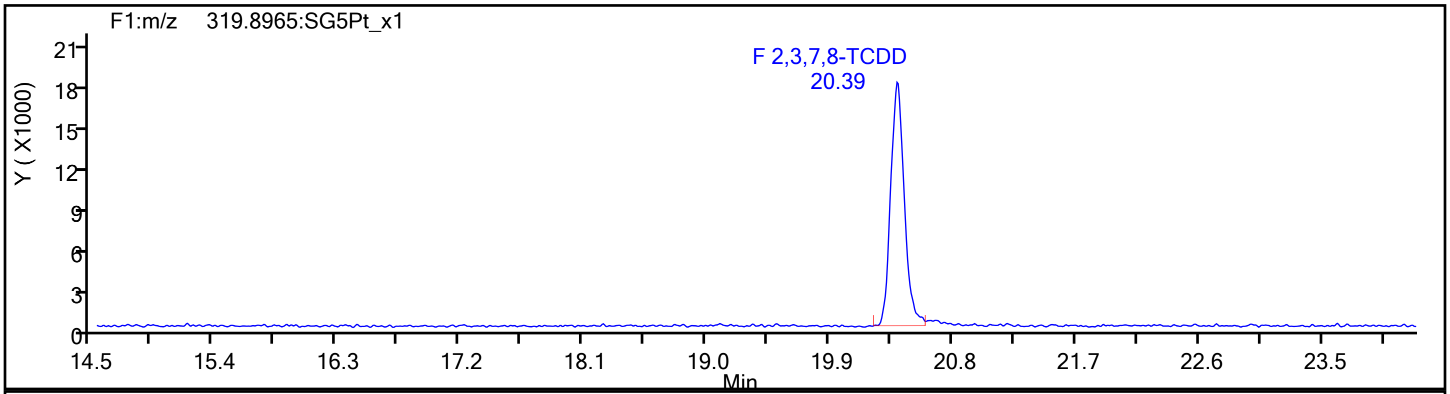

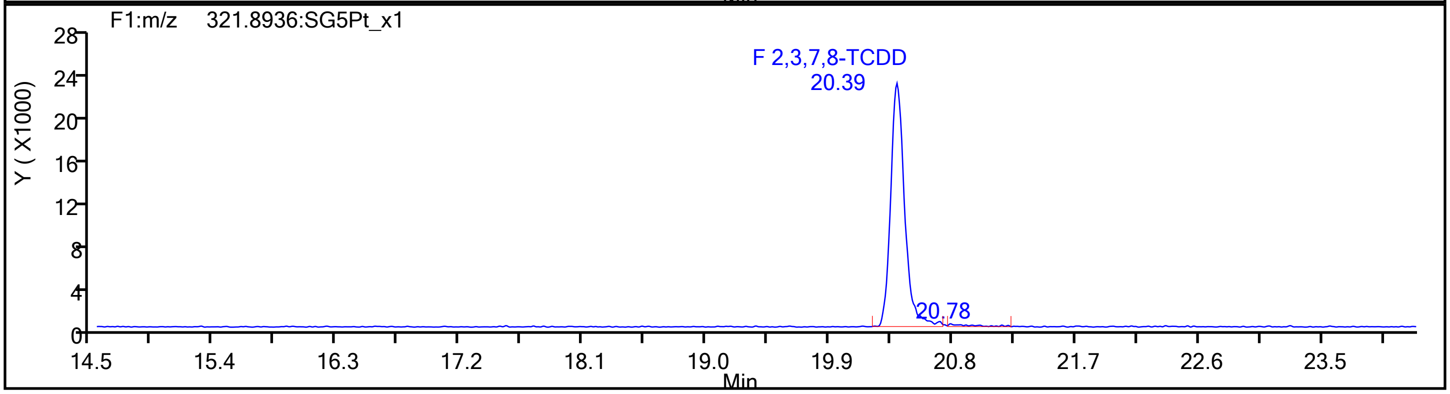

TCDD Standards

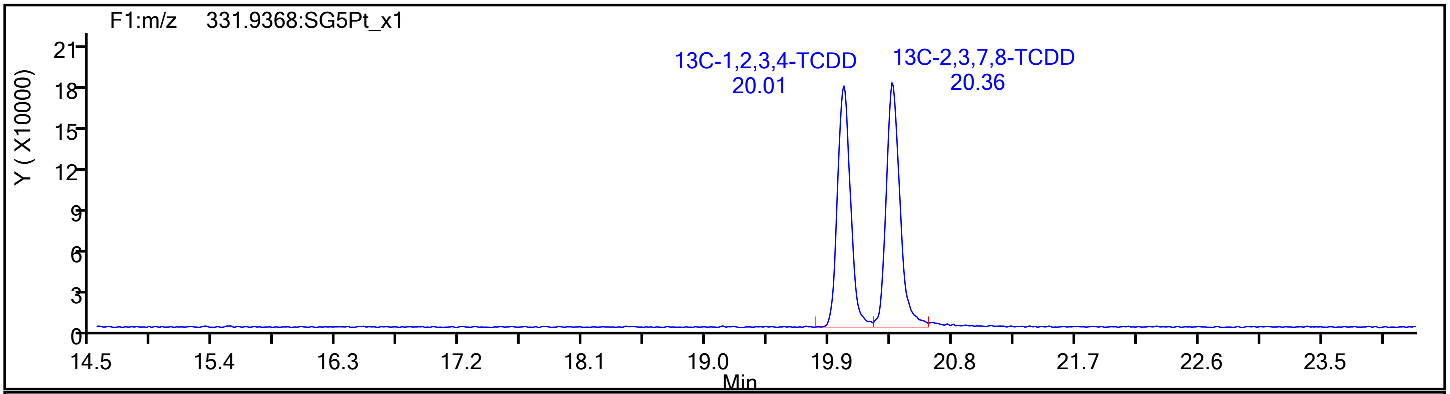

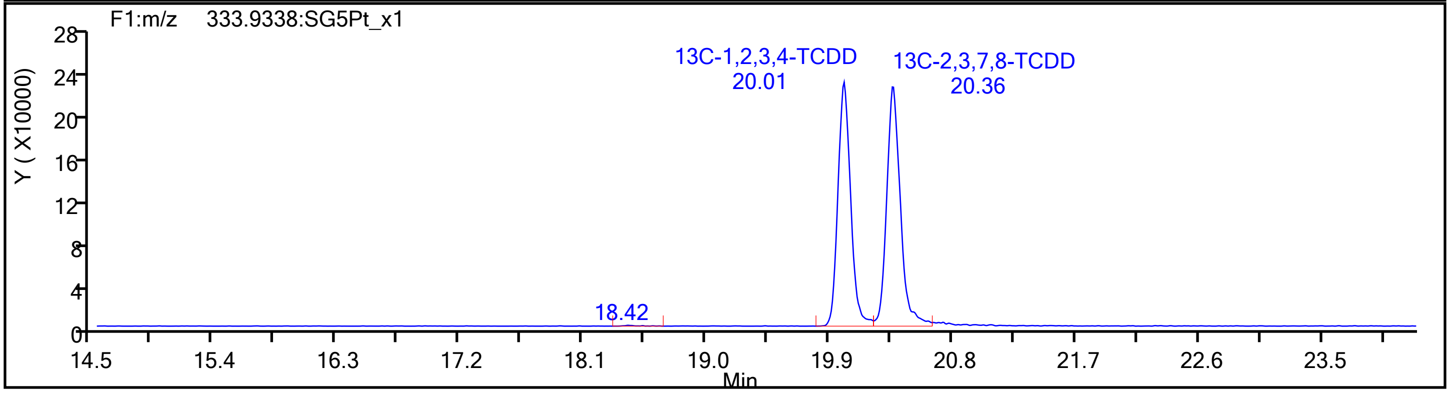

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d

Injection Date: 23-Sep-2020 22:08:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 415261

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

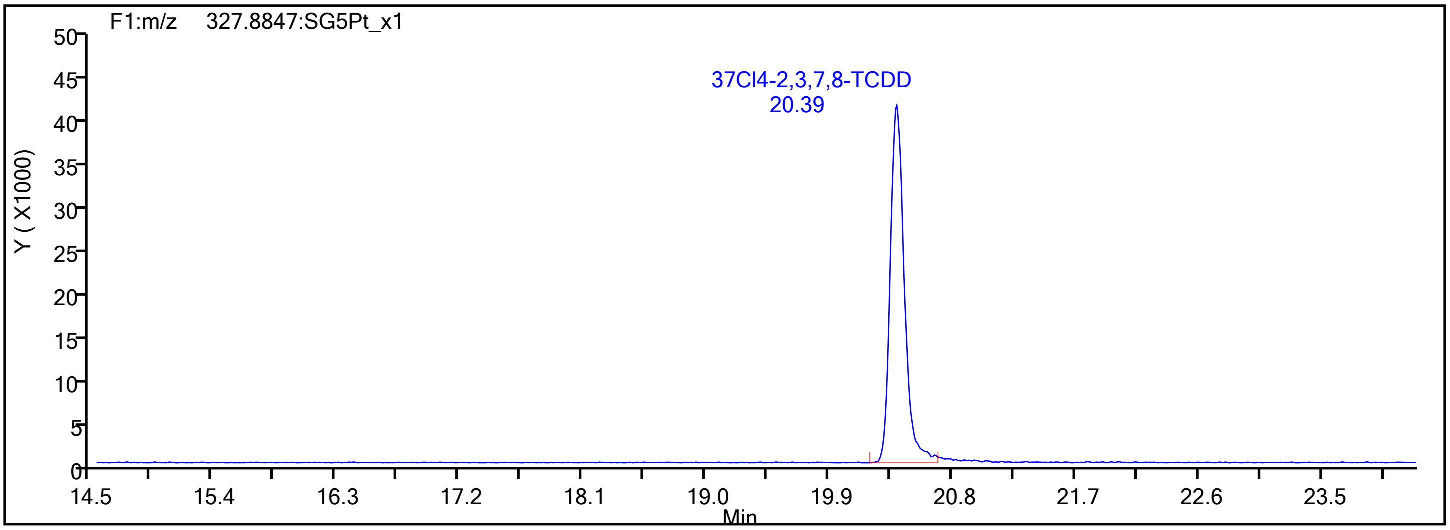

37Cl4-TCDD Standards

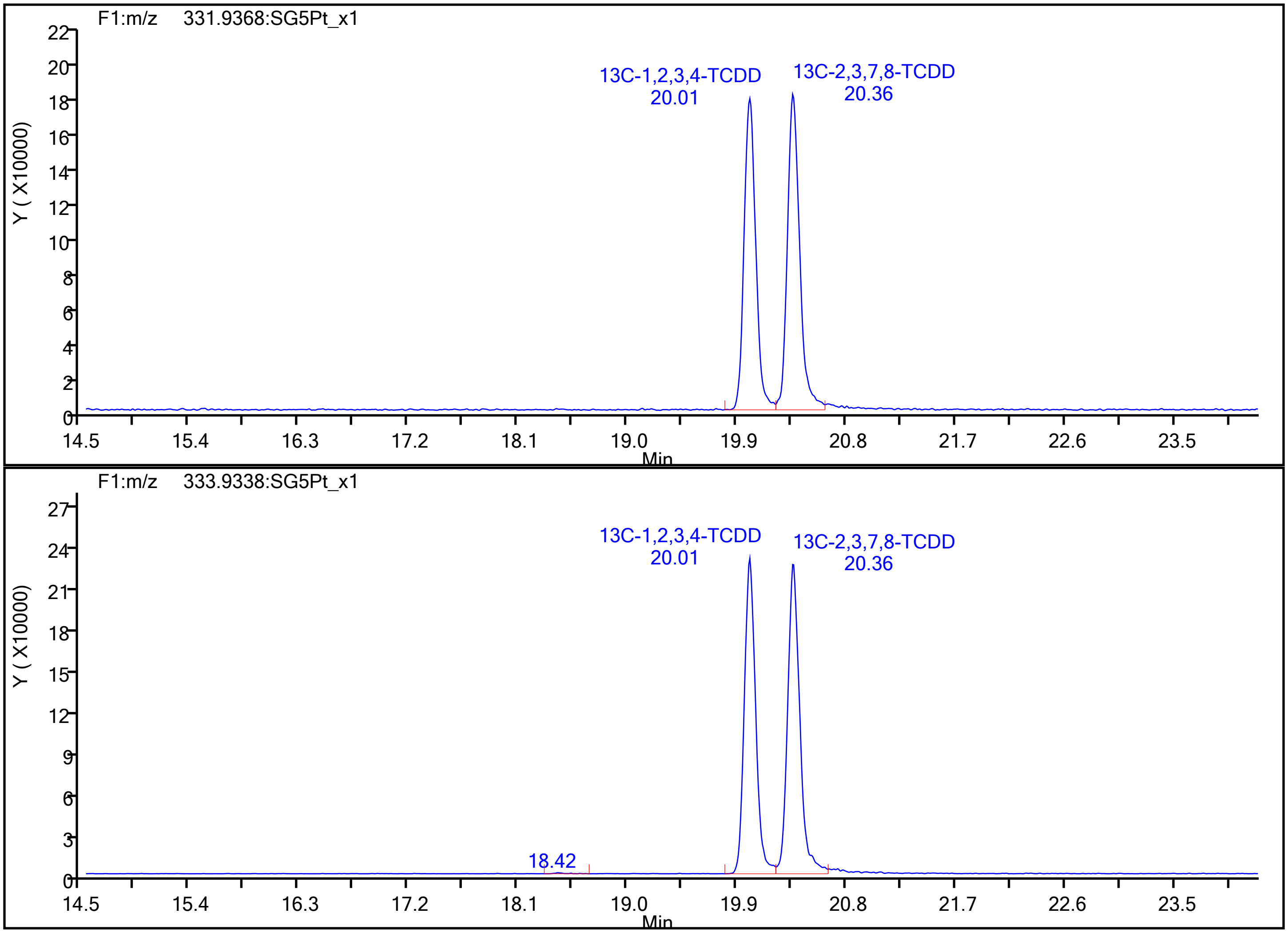

Report Date: 24-Sep-2020 11:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

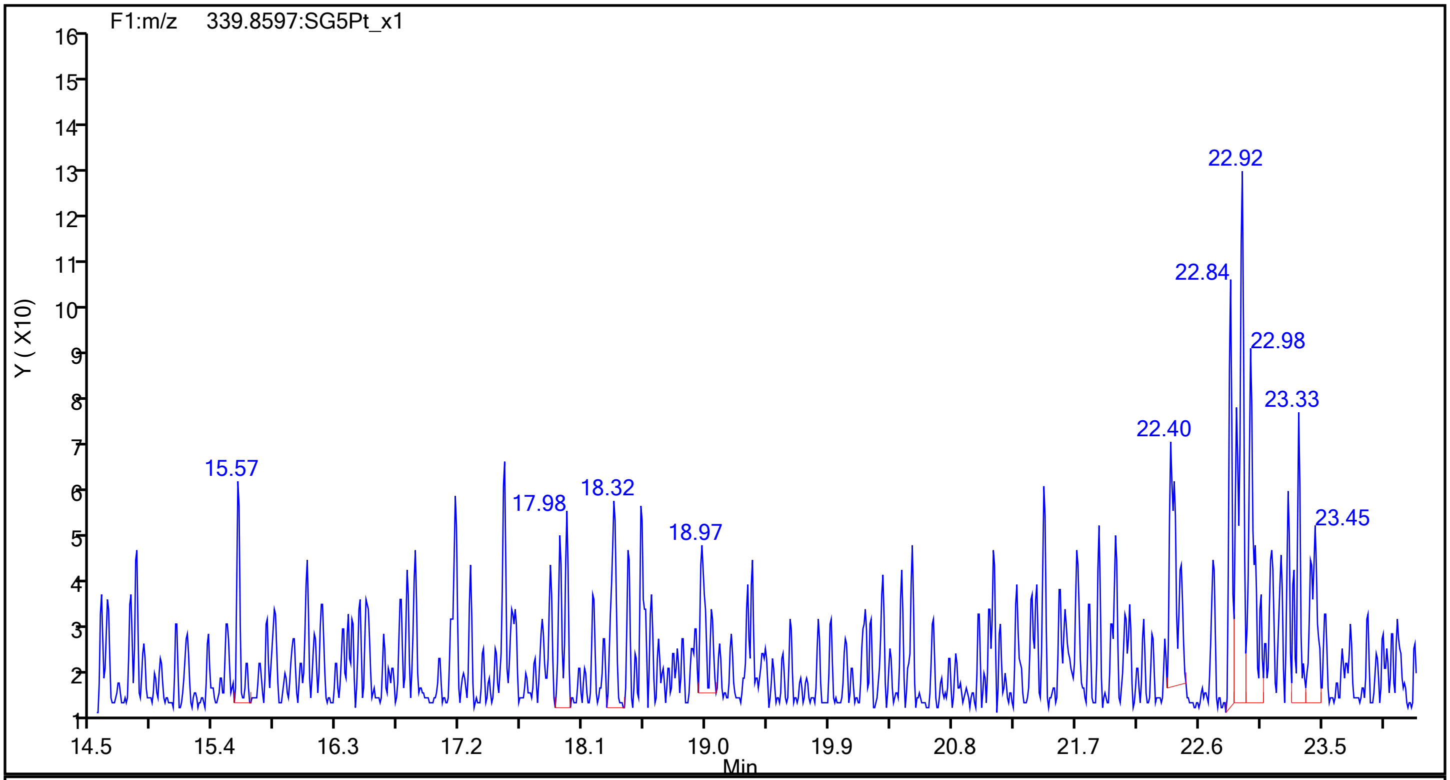

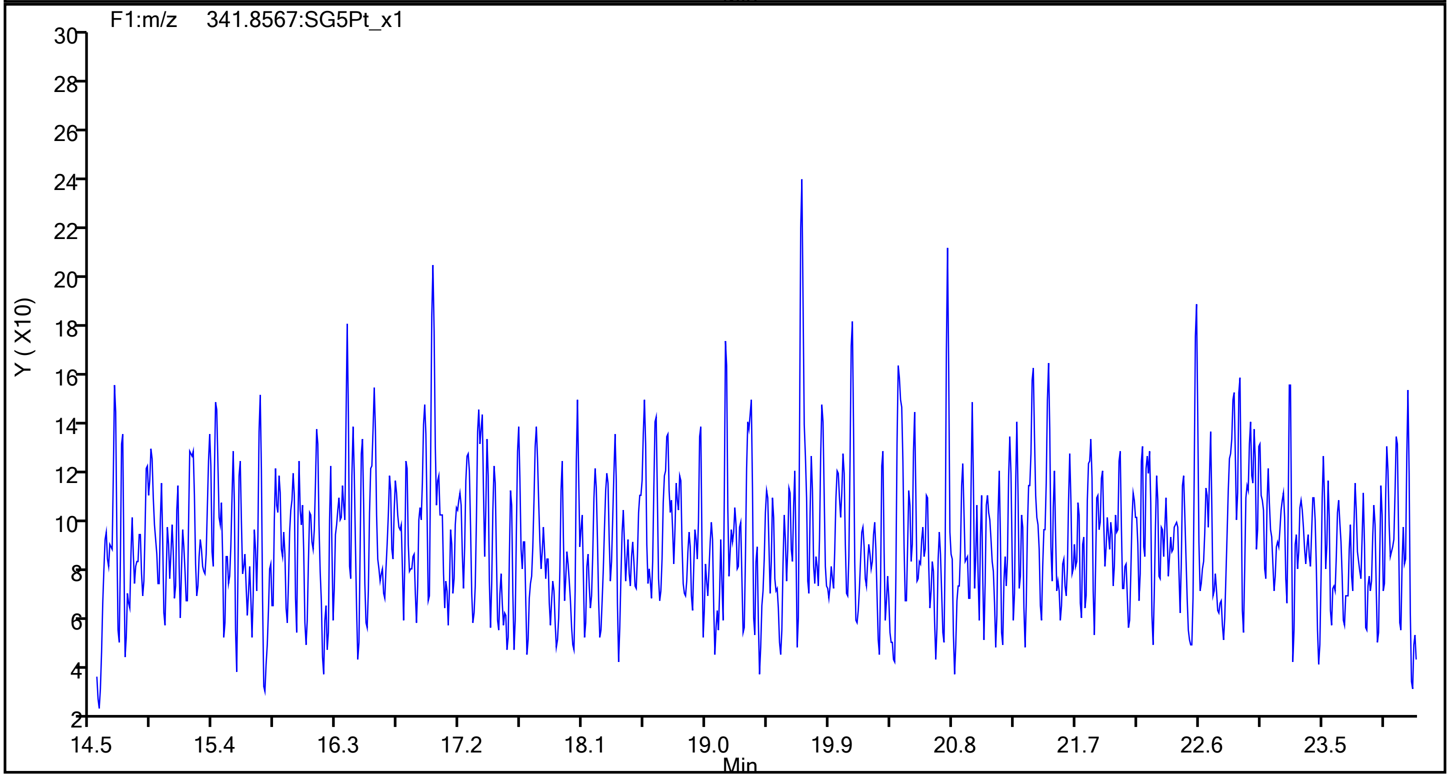

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Eurofins TestAmerica, Sacramento

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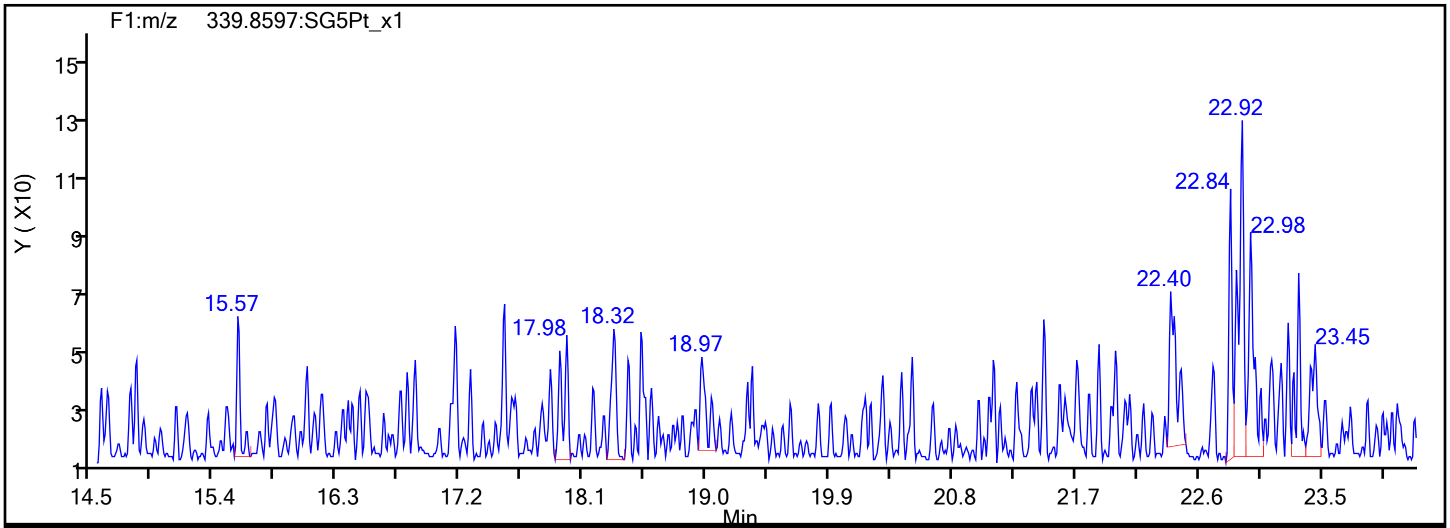

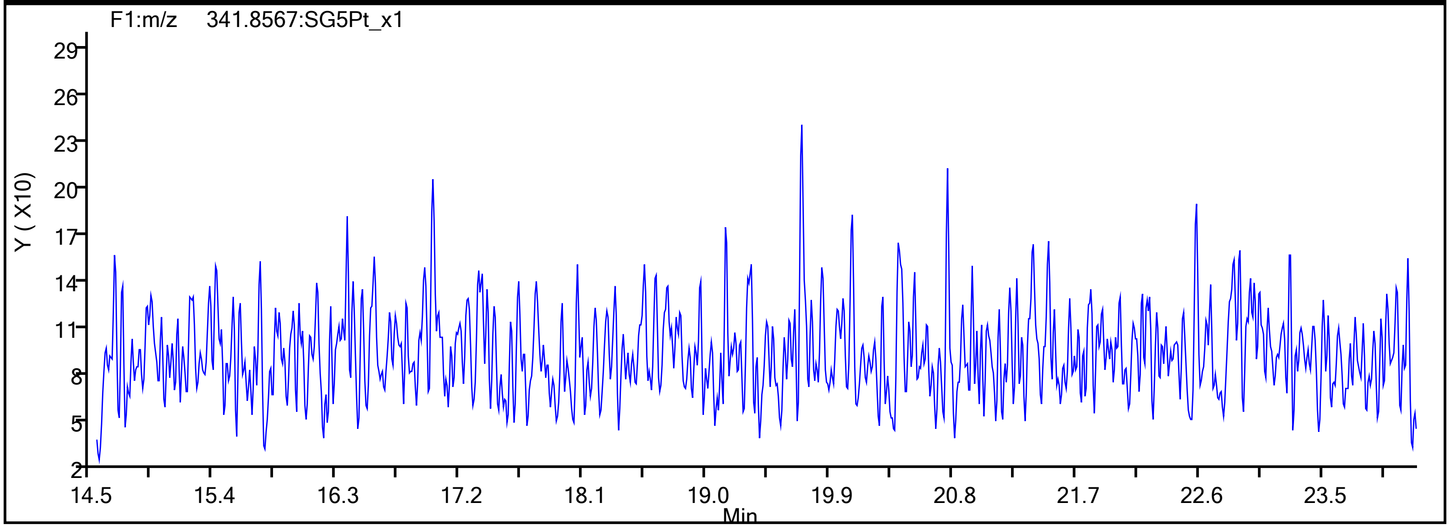

F1 PeCDFs Interference Mass

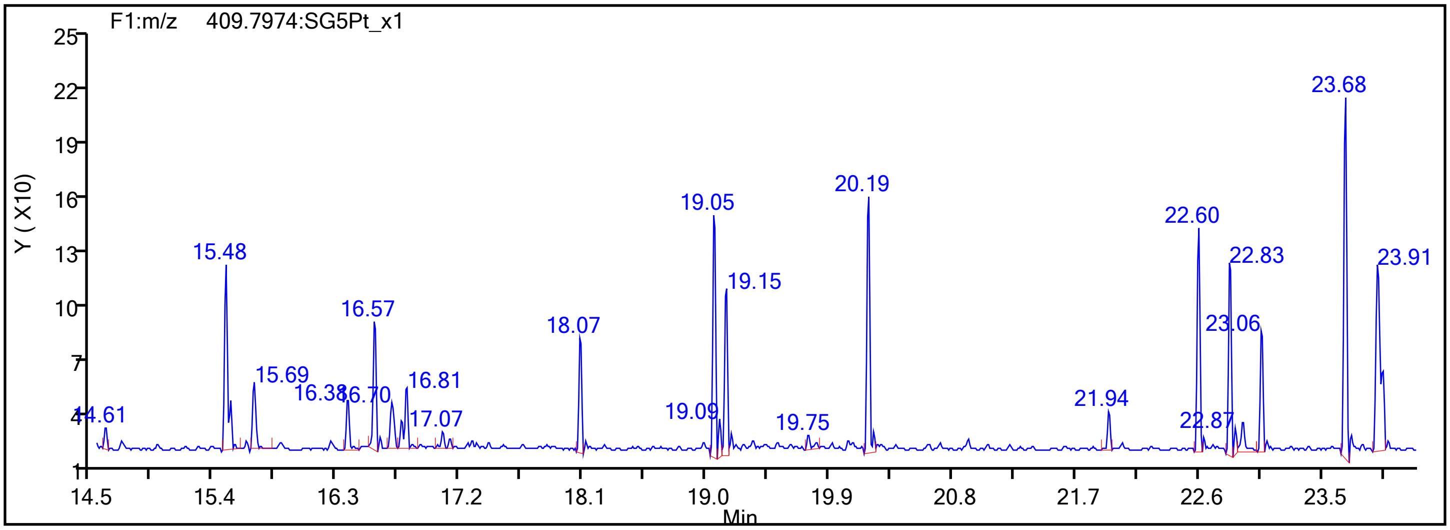

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Eurofins TestAmerica, Sacramento

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PeCDF

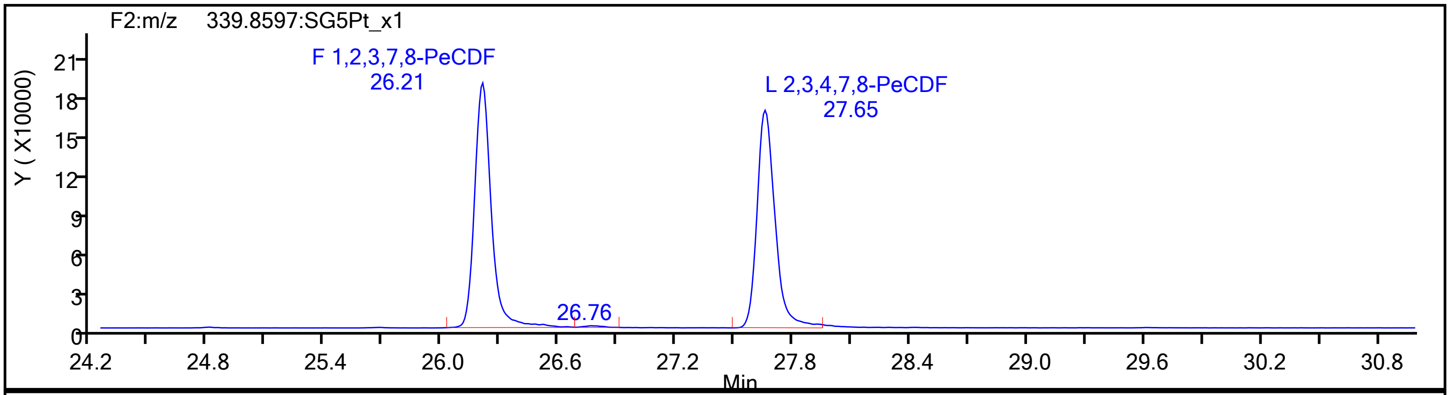

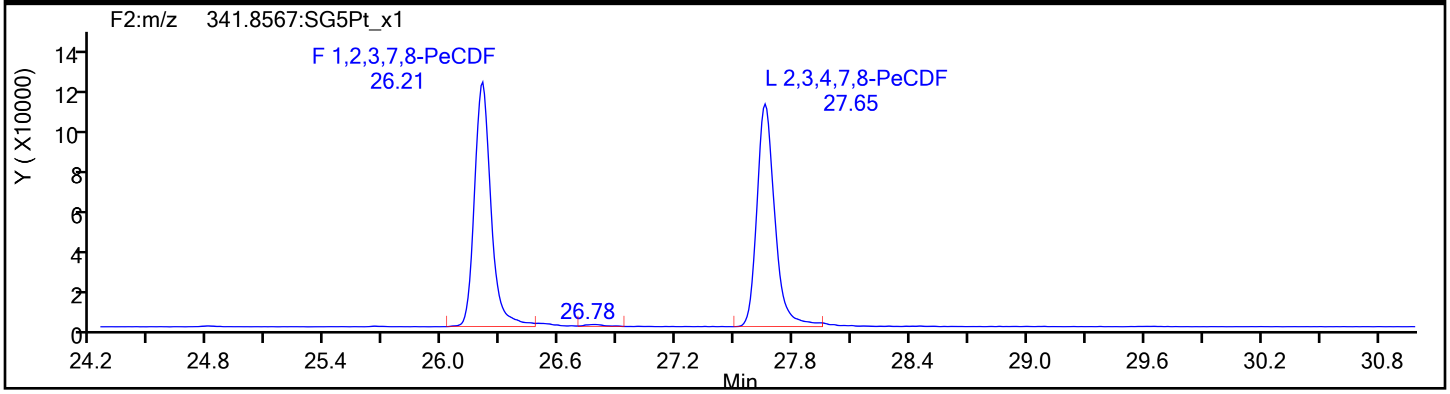

PeCDF Standards

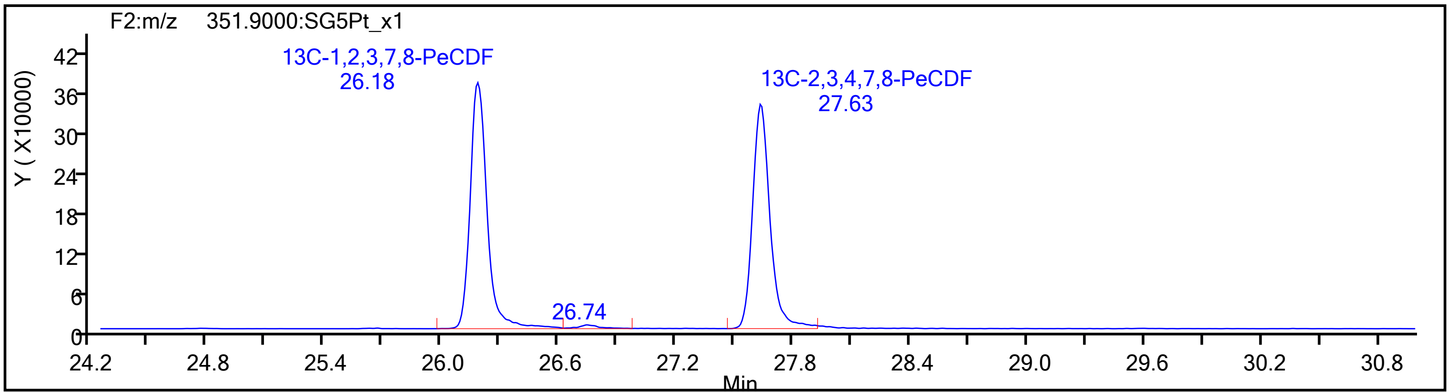

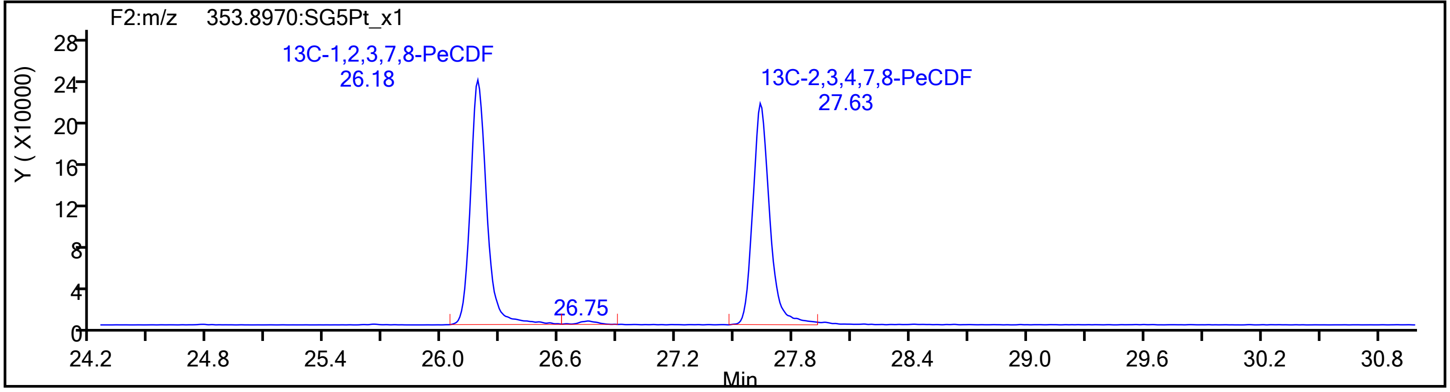

Report Date: 24-Sep-2020 11:59:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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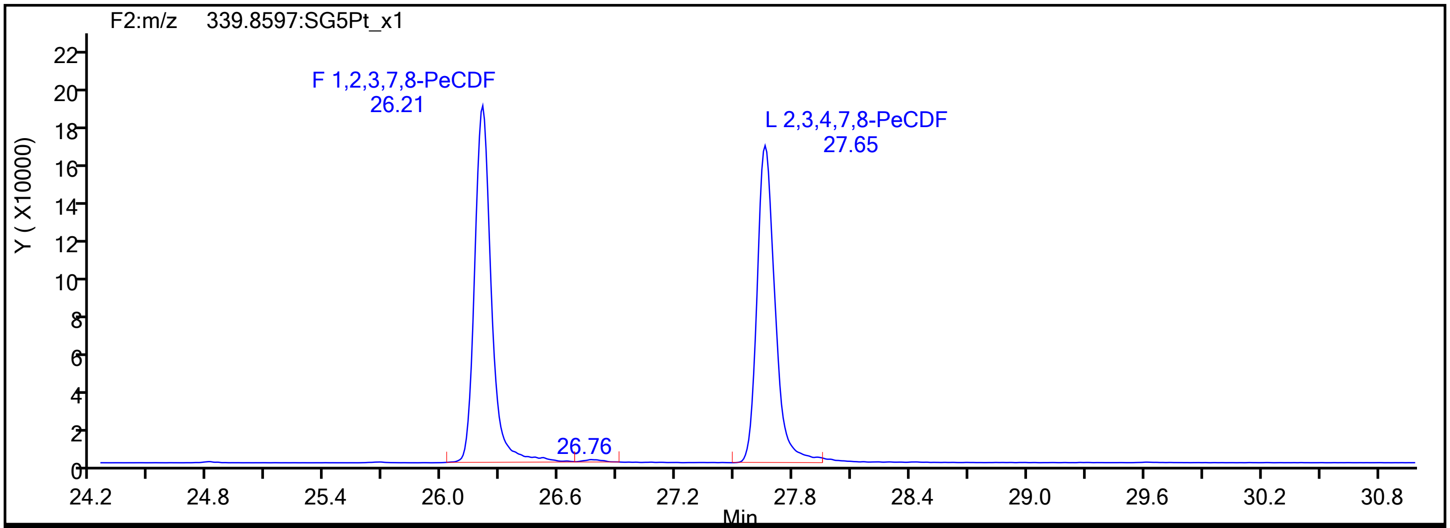

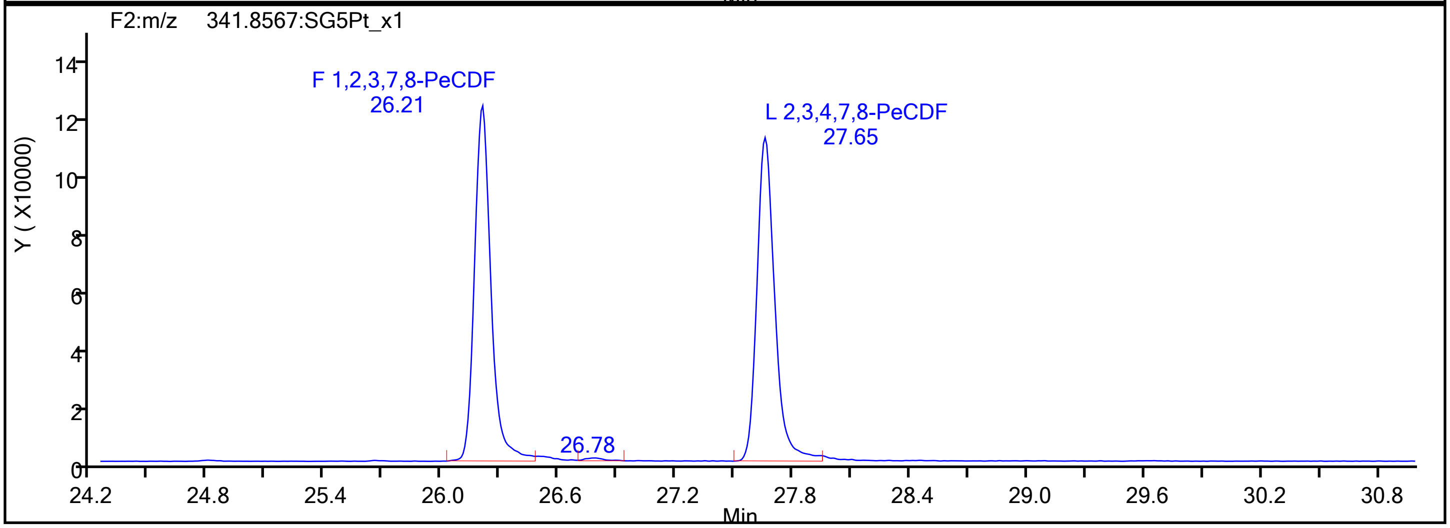

PeCDF Interference Mass

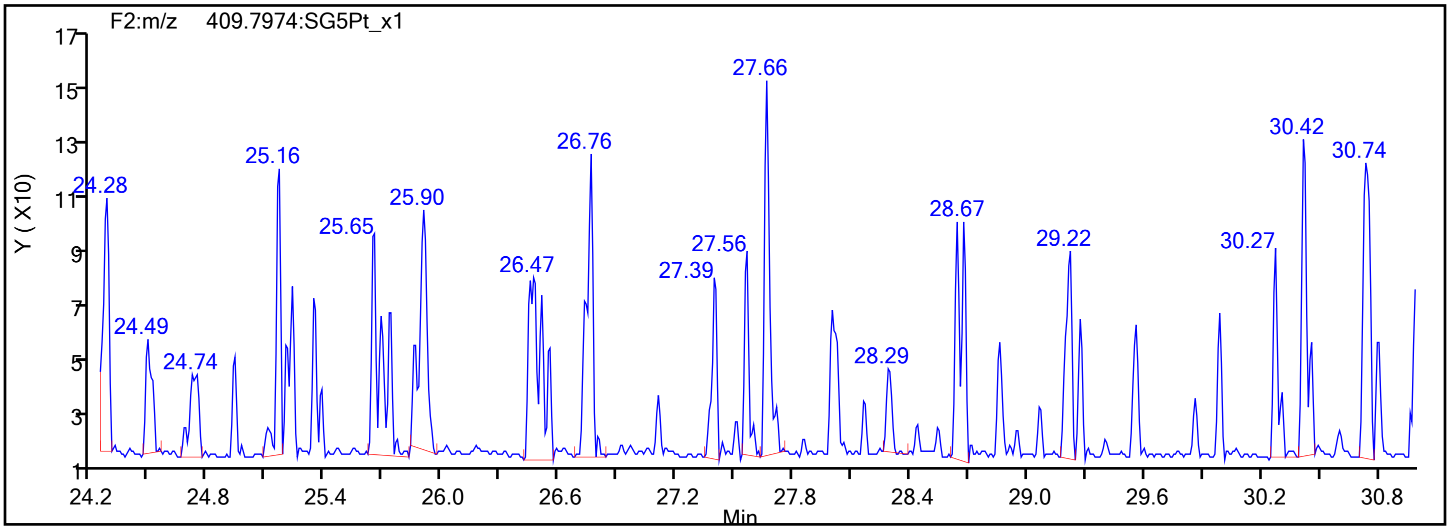

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Eurofins TestAmerica, Sacramento

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PeCDD

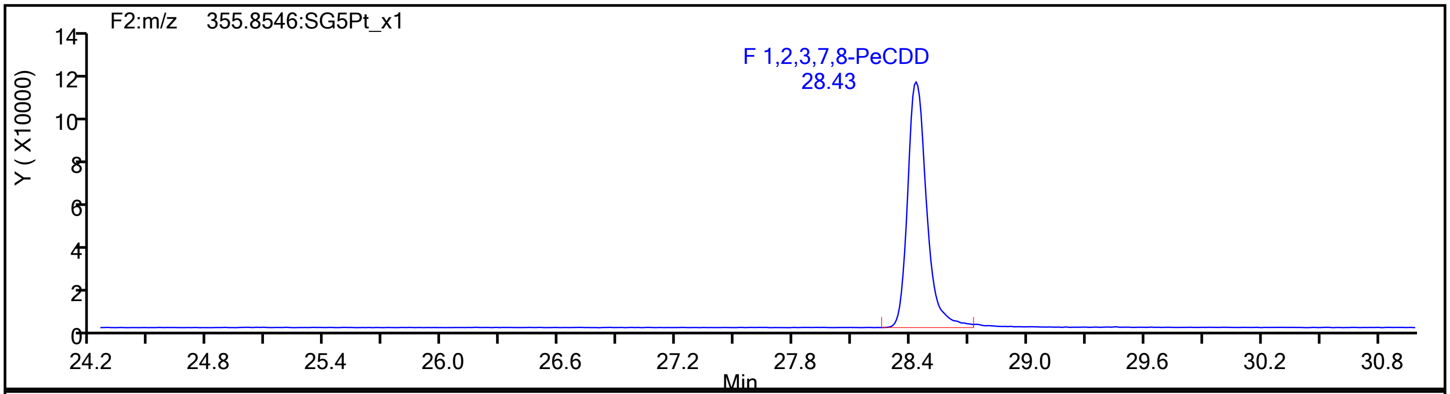

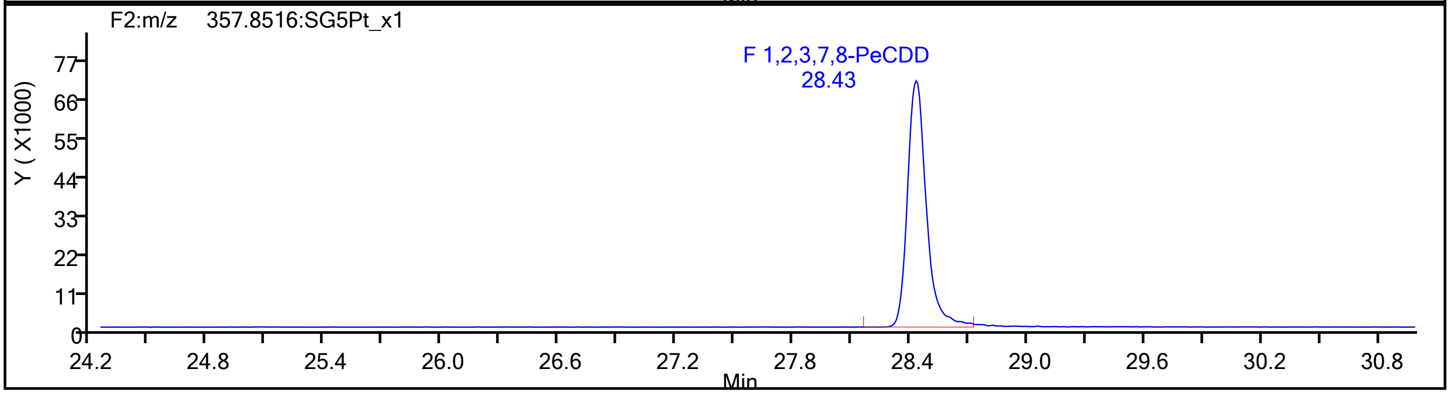

PeCDD Standards

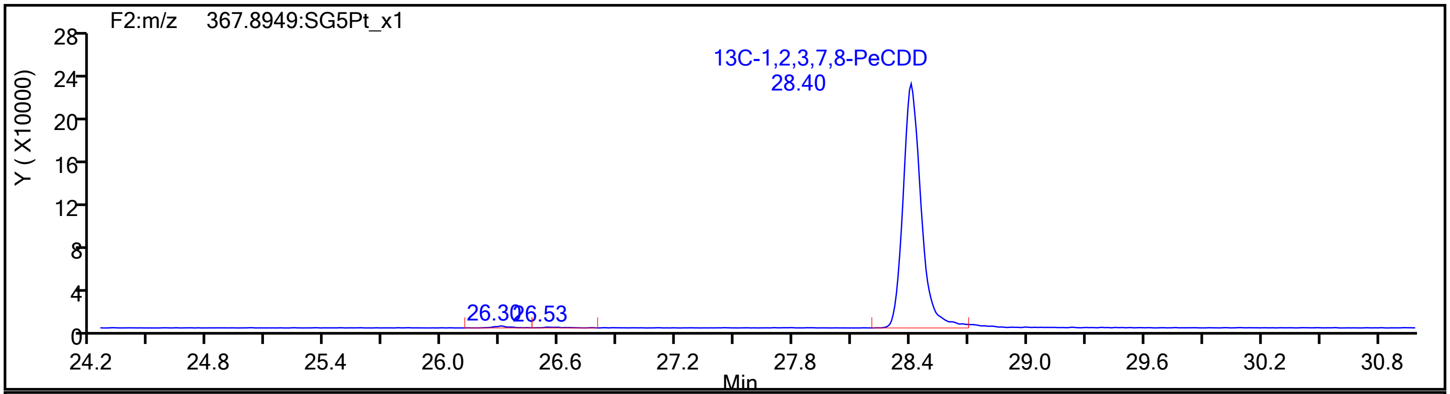

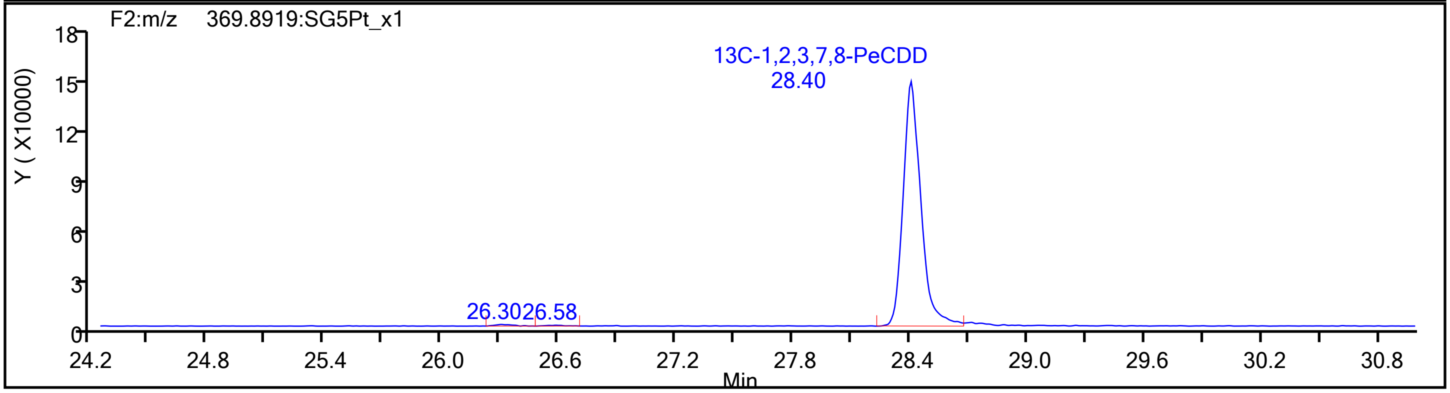

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

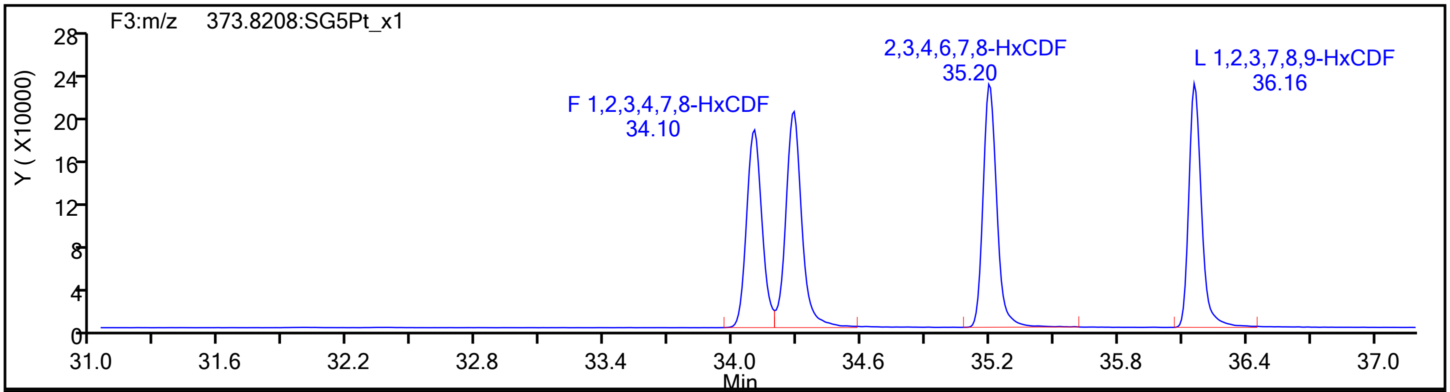

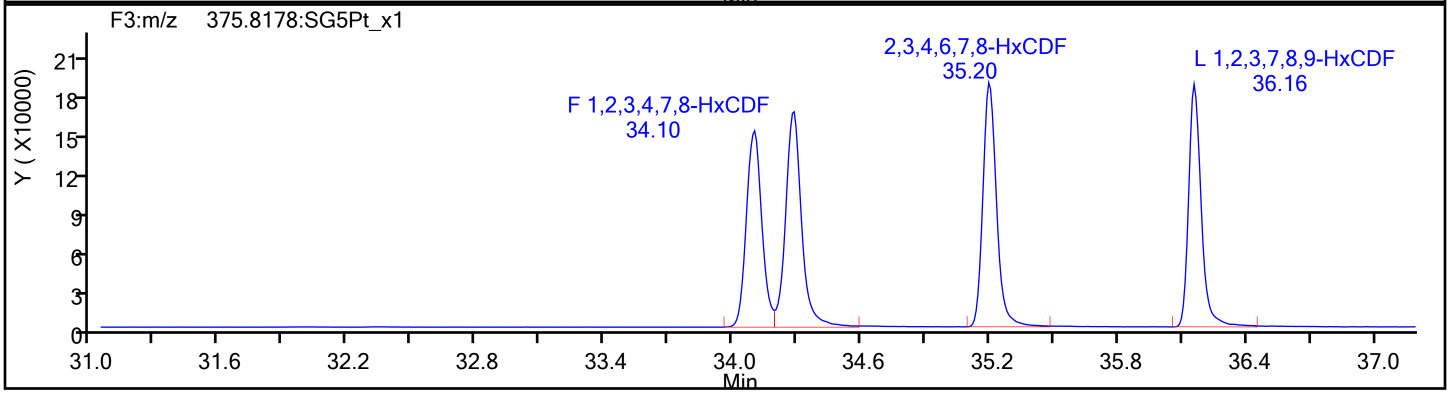

HxCDF Standards

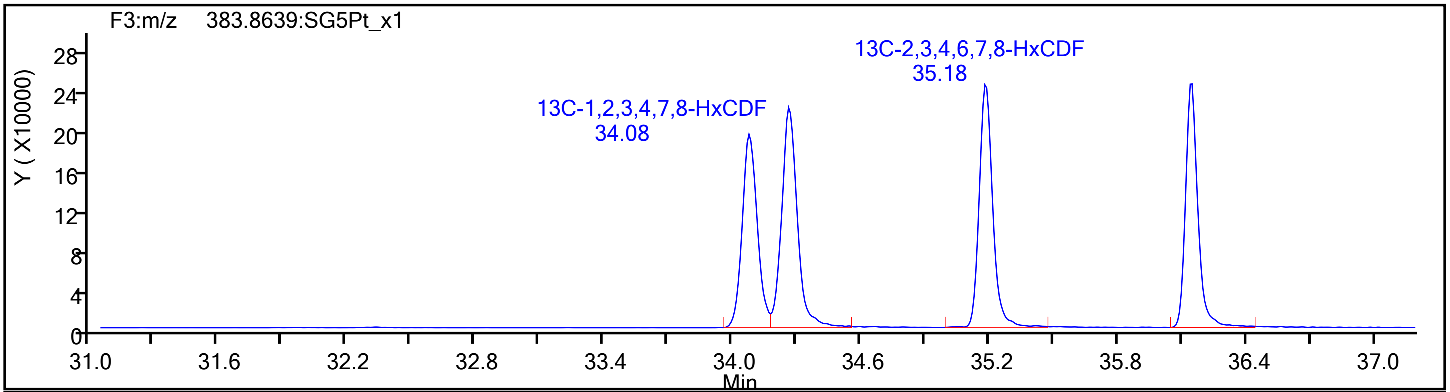

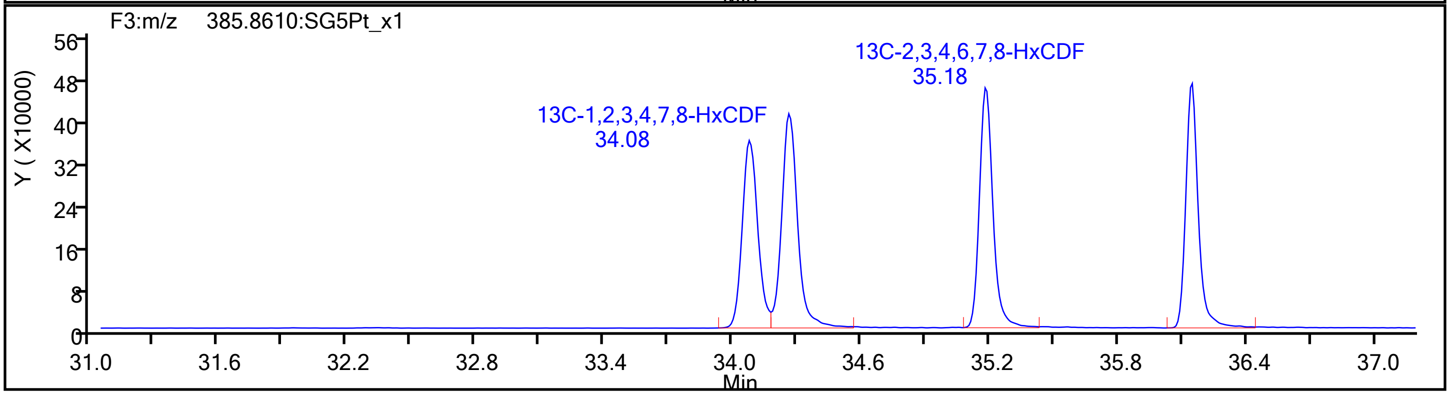

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Eurofins TestAmerica, Sacramento

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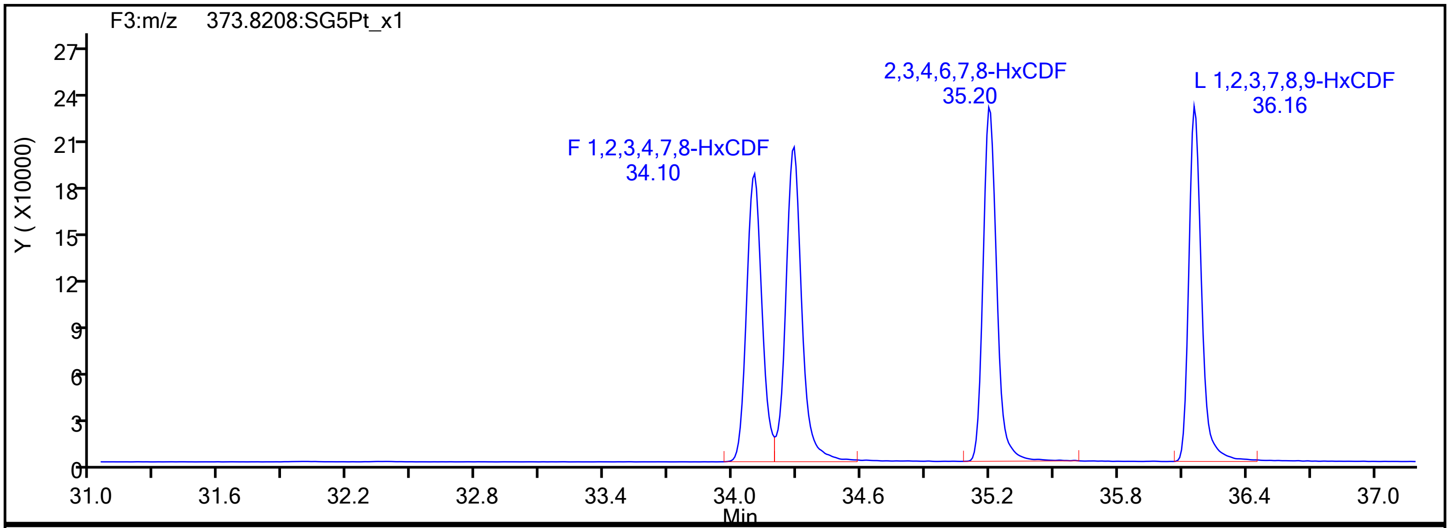

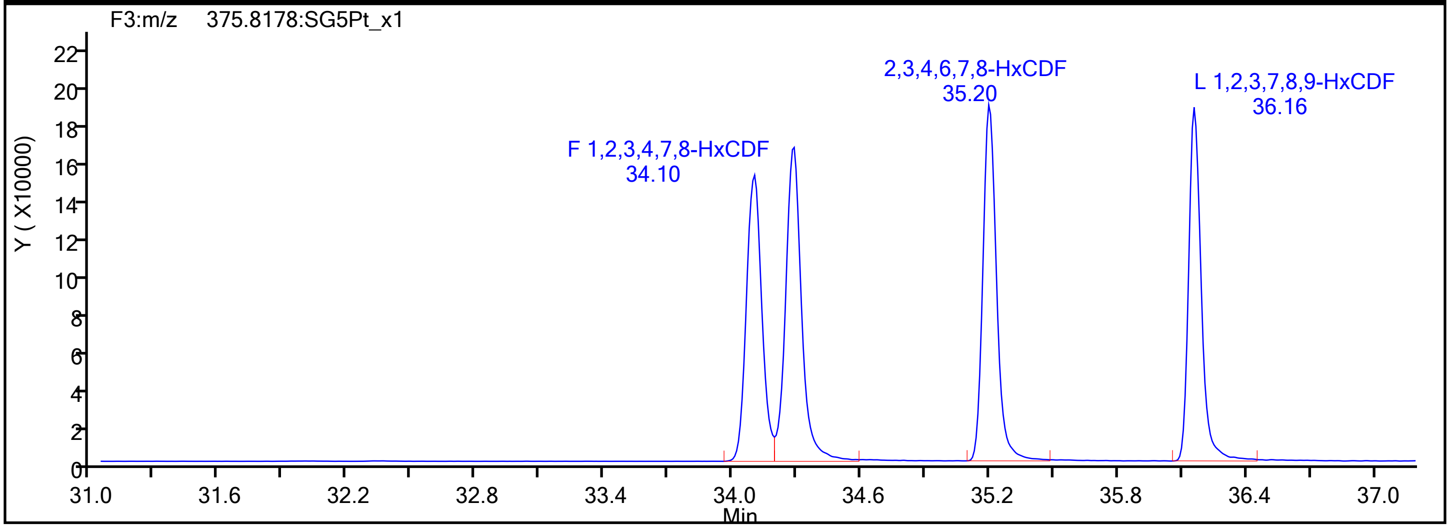

HxCDF Interference Mass

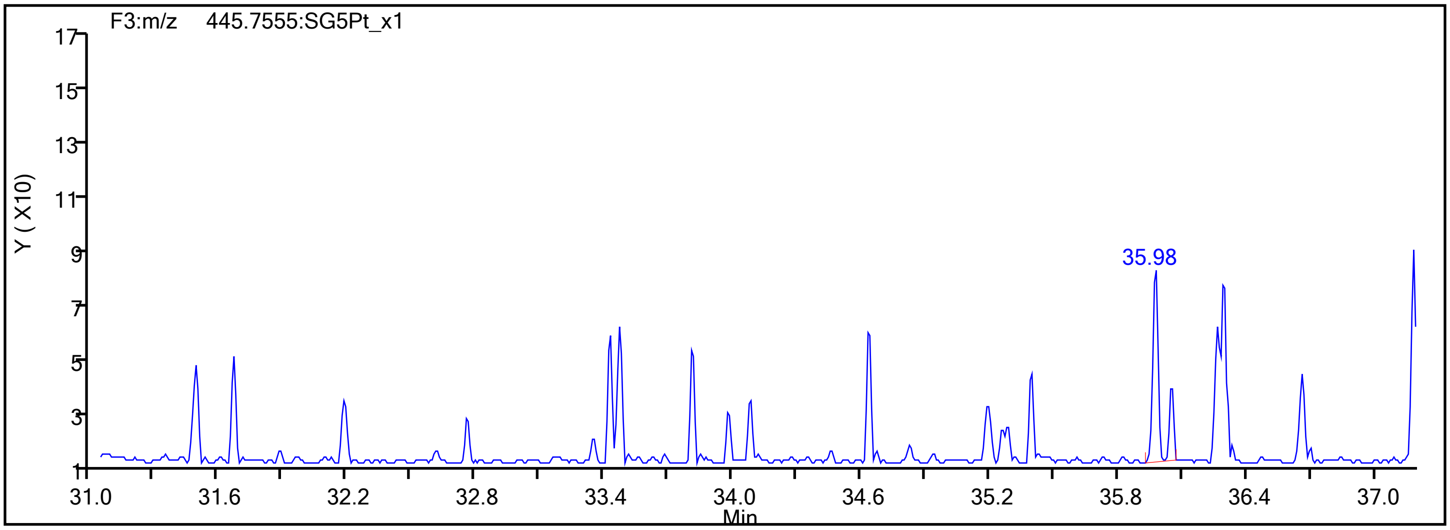

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Eurofins TestAmerica, Sacramento

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Injection Date: 23-Sep-2020 22:08:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 415261 Sample Line#: 2

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HxCDD

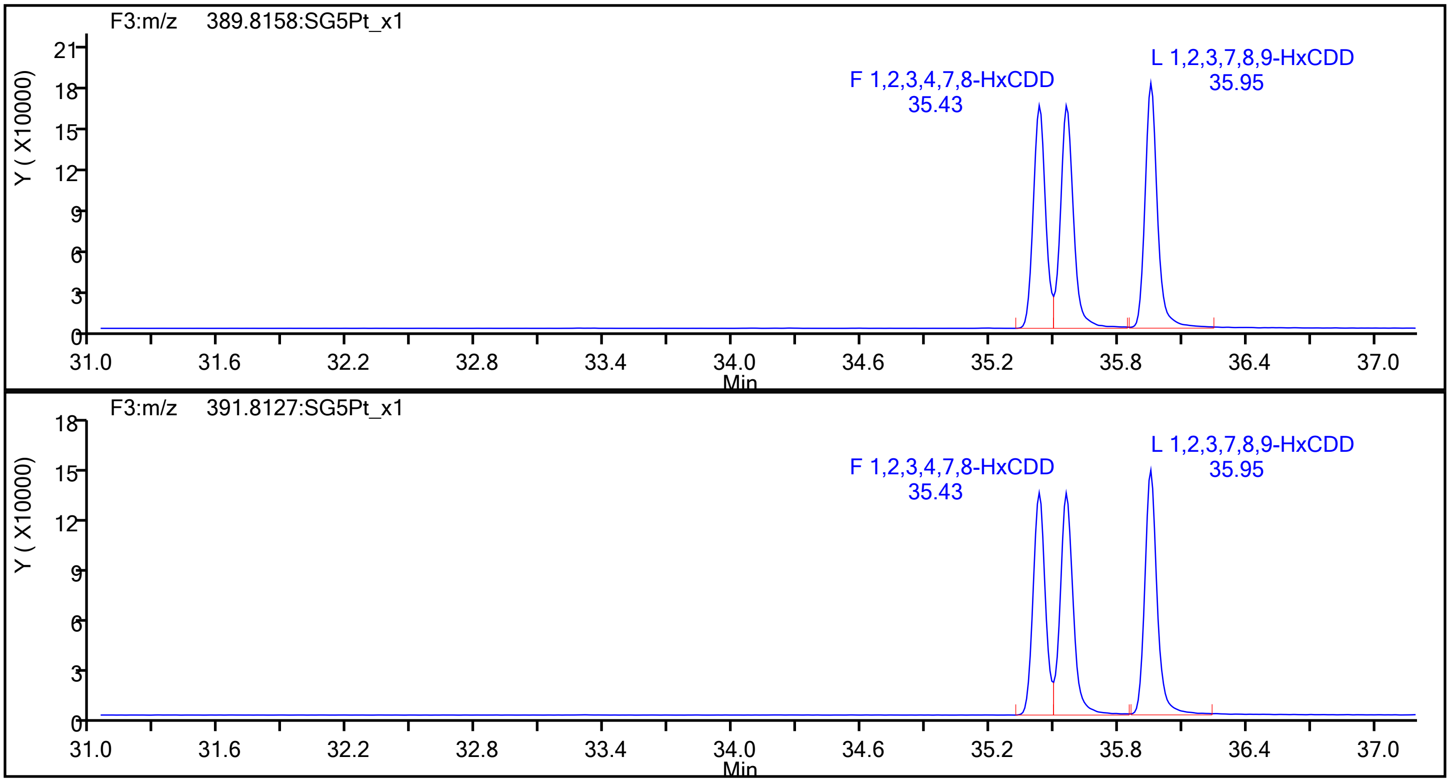

HxCDD Standards

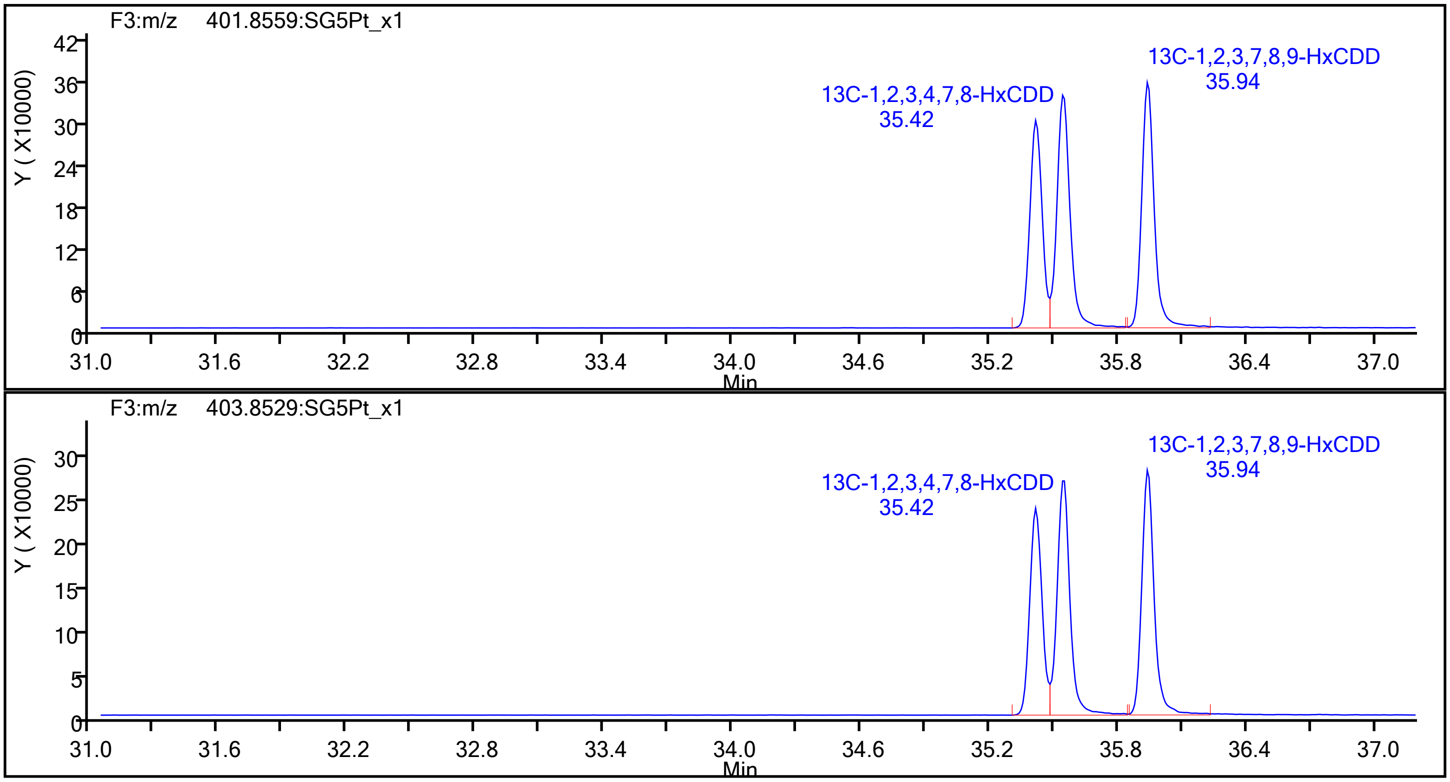

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HpCDF

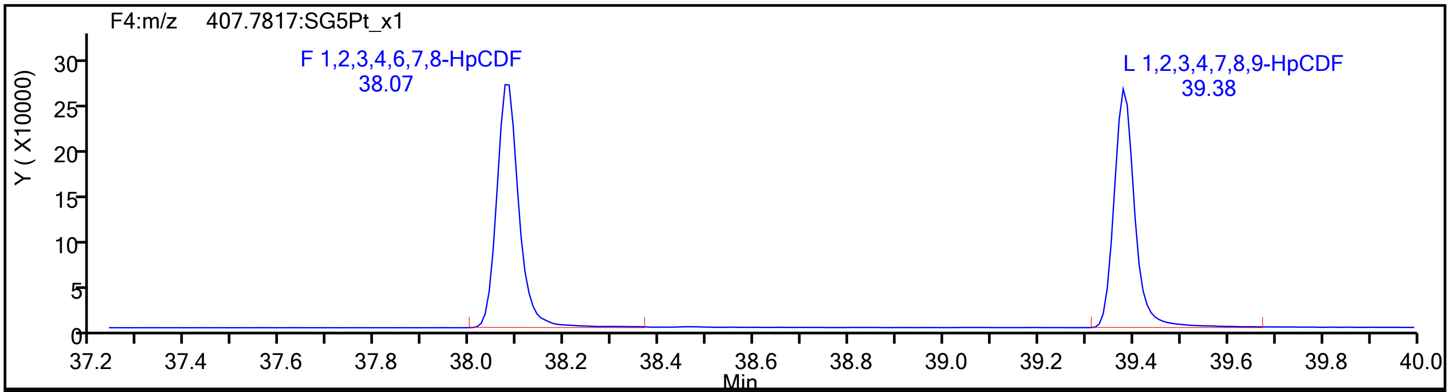

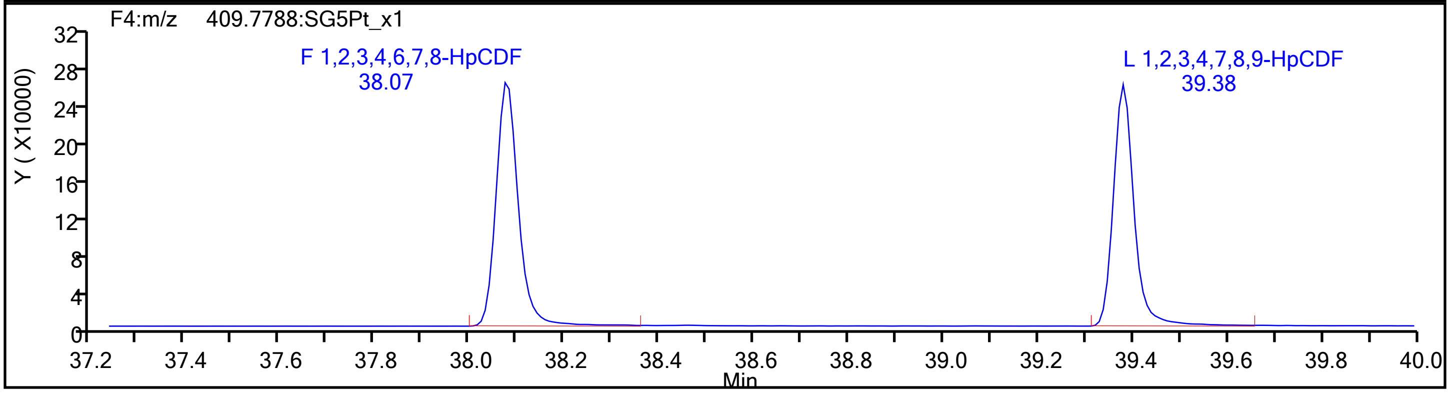

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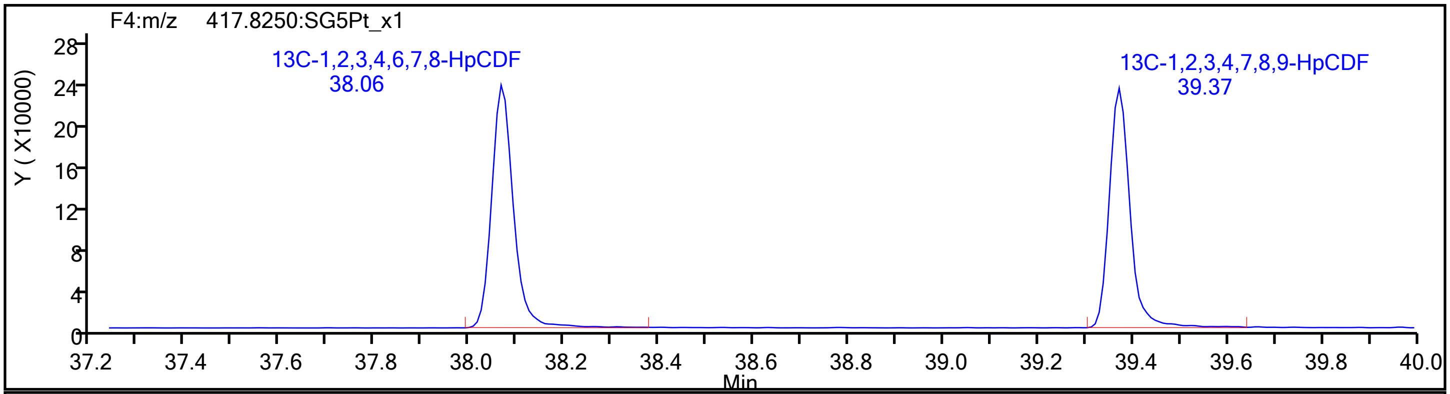

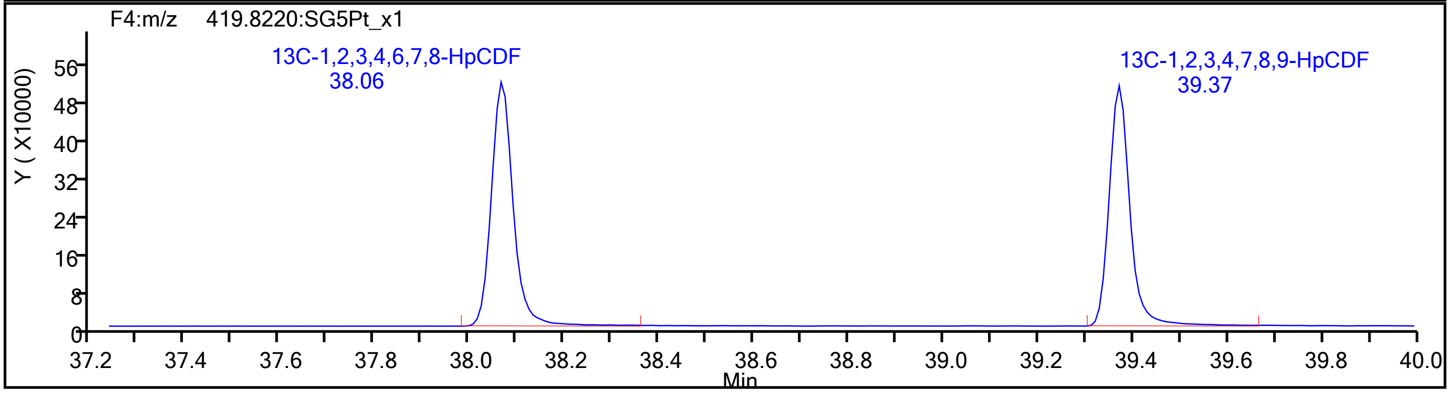

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Eurofins TestAmerica, Sacramento

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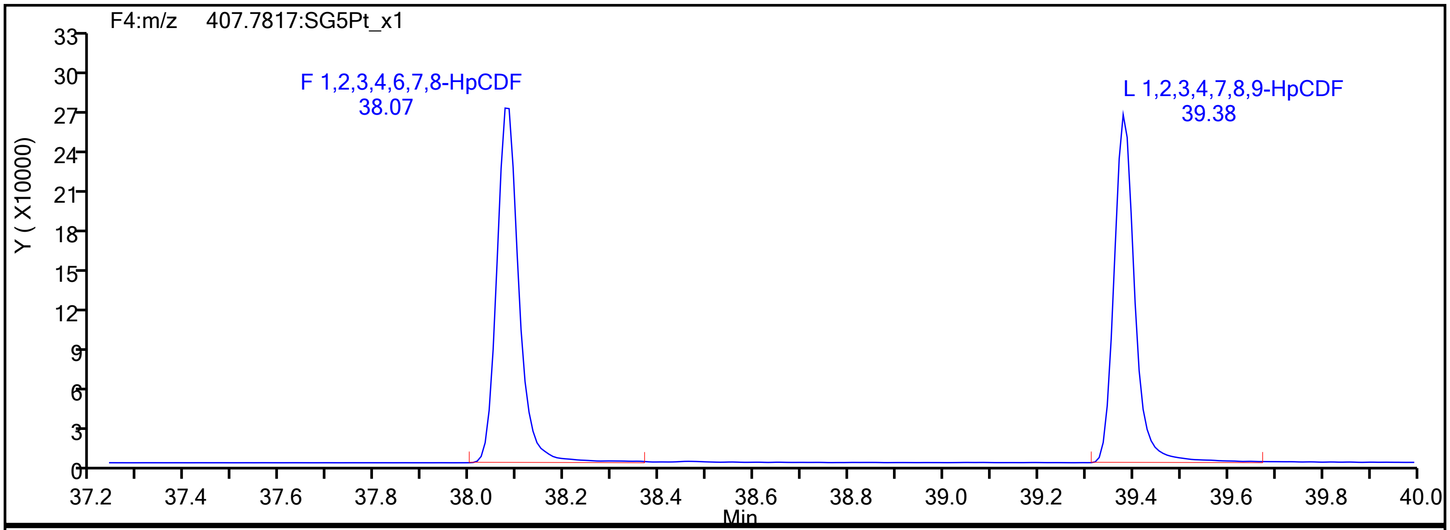

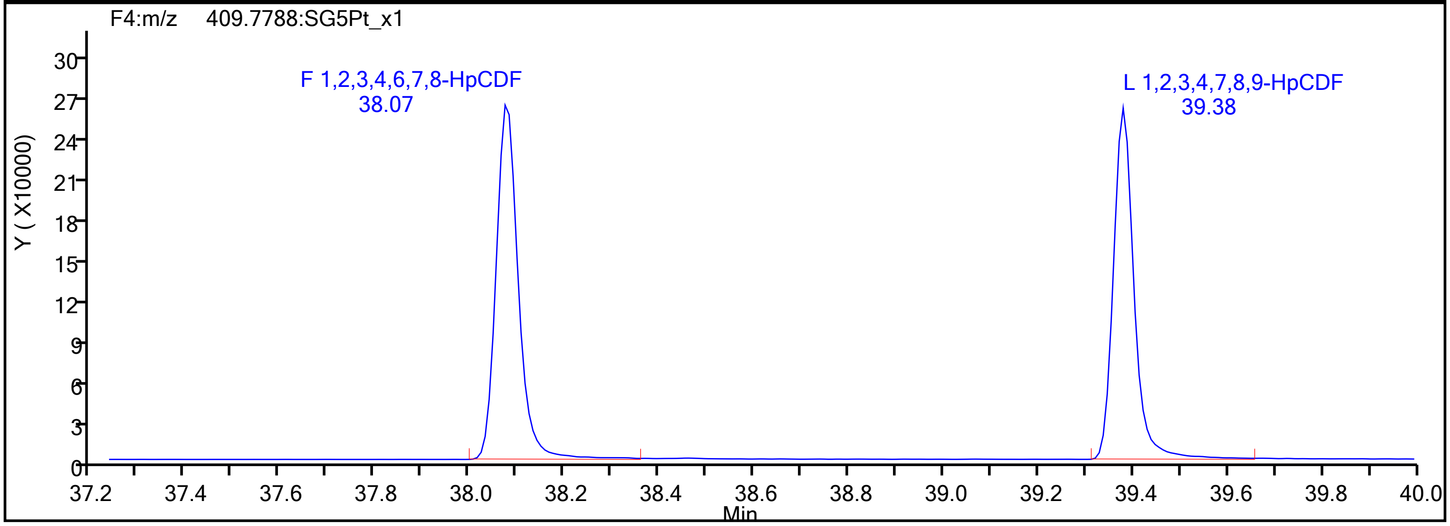

HpCDF Interference Mass

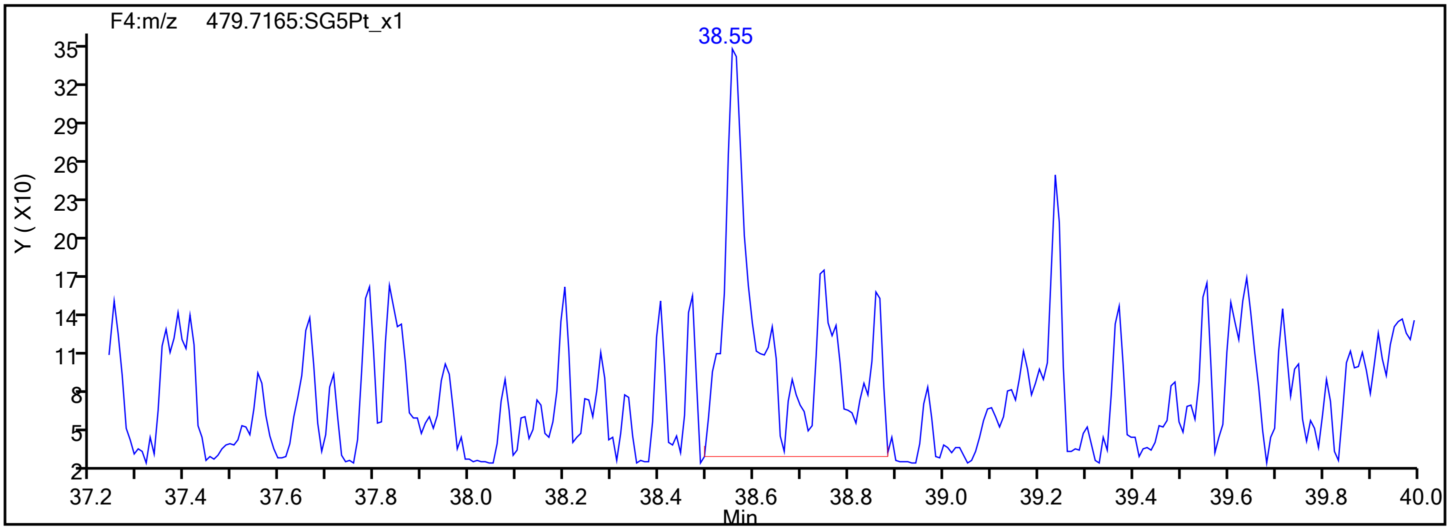

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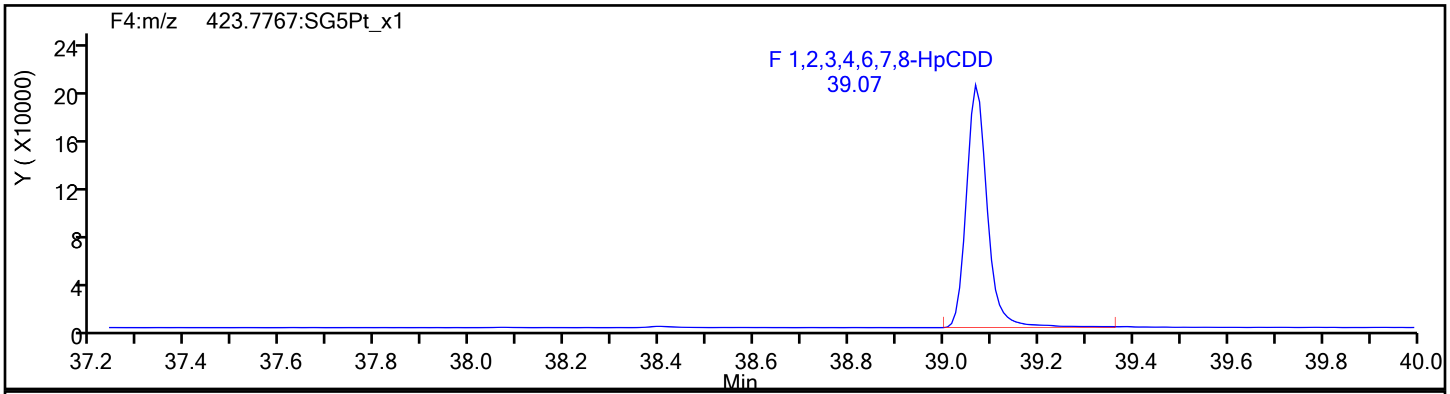

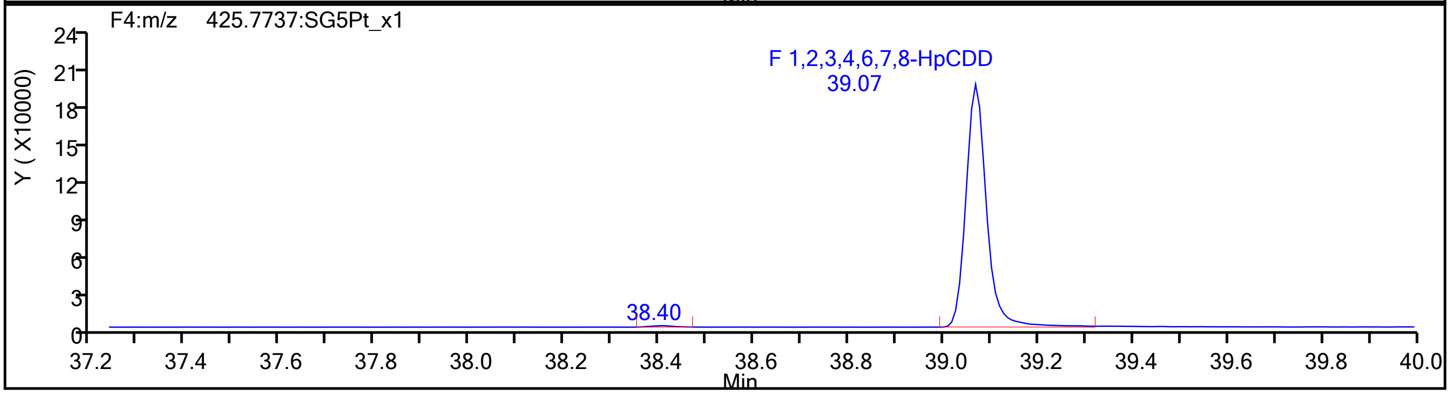

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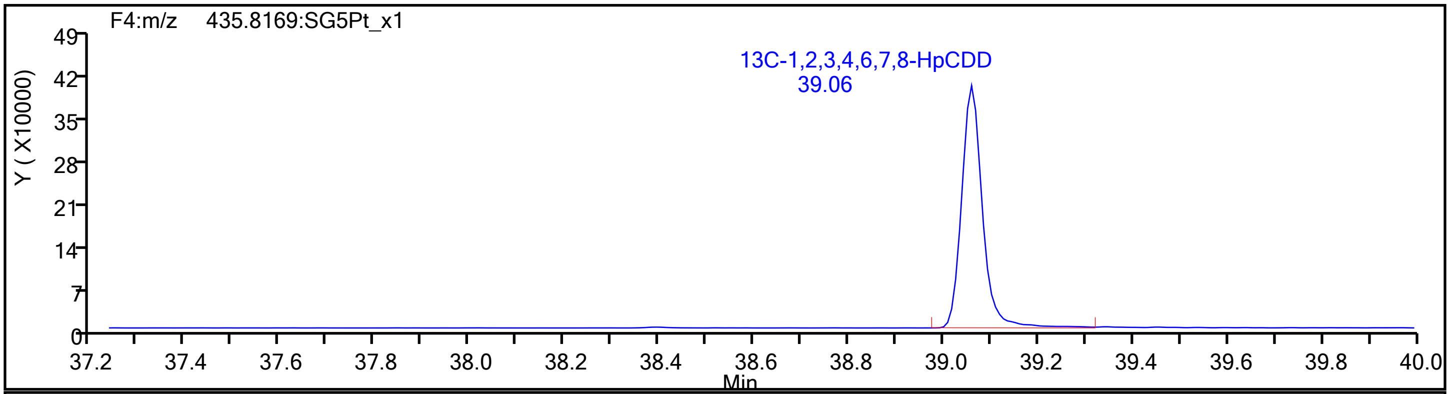

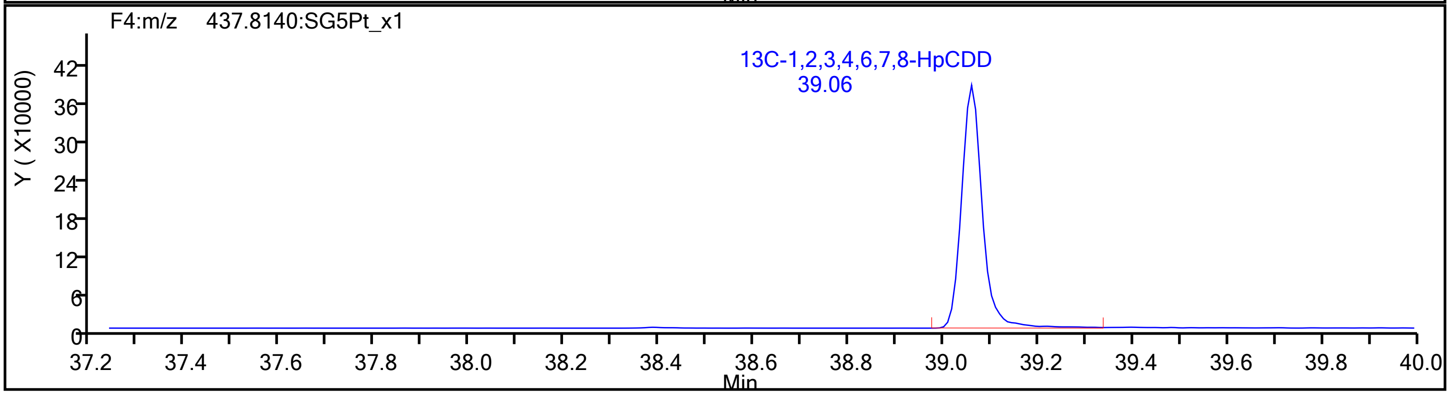

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Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

OCDF

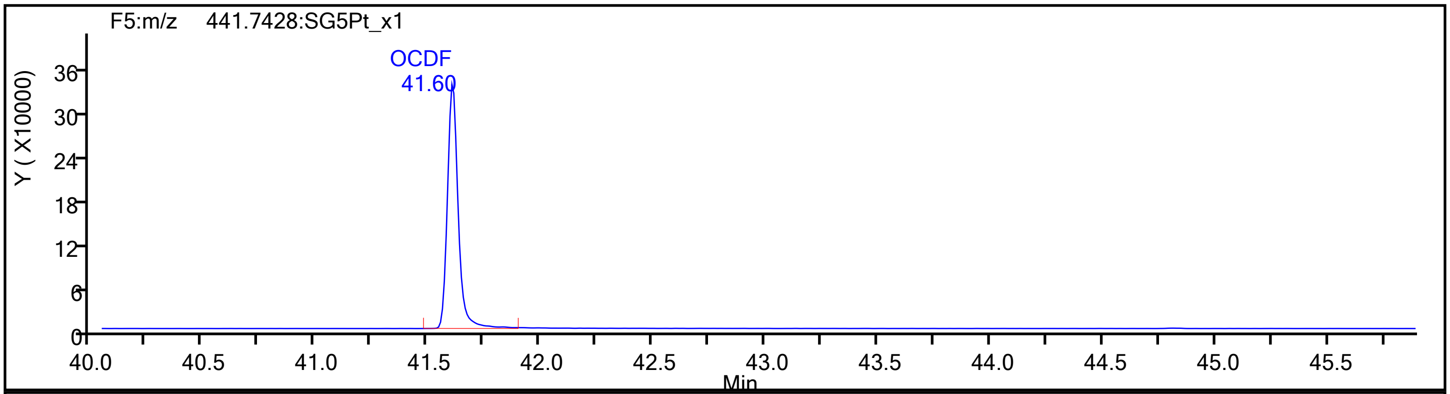

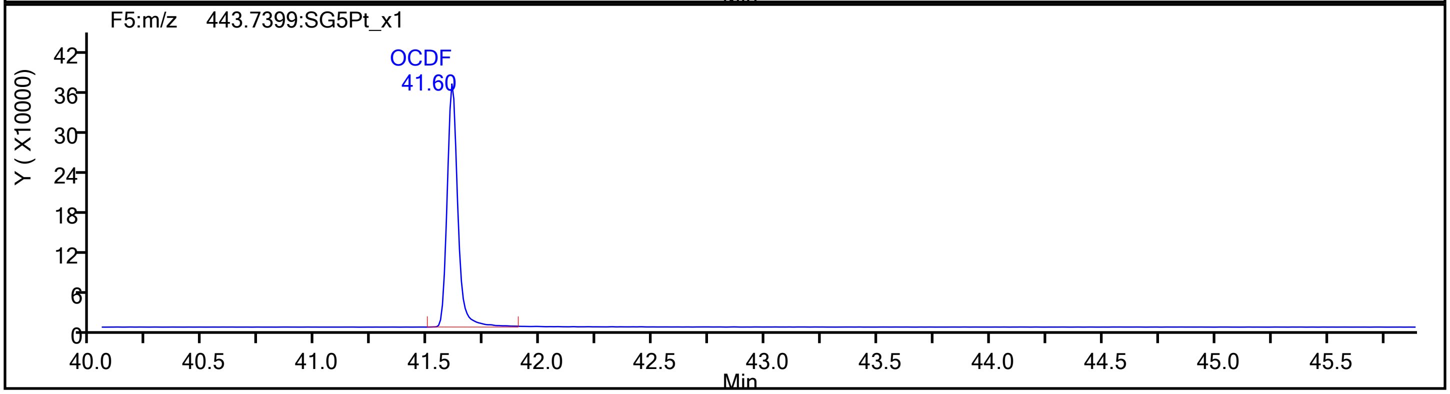

OCDF Standards

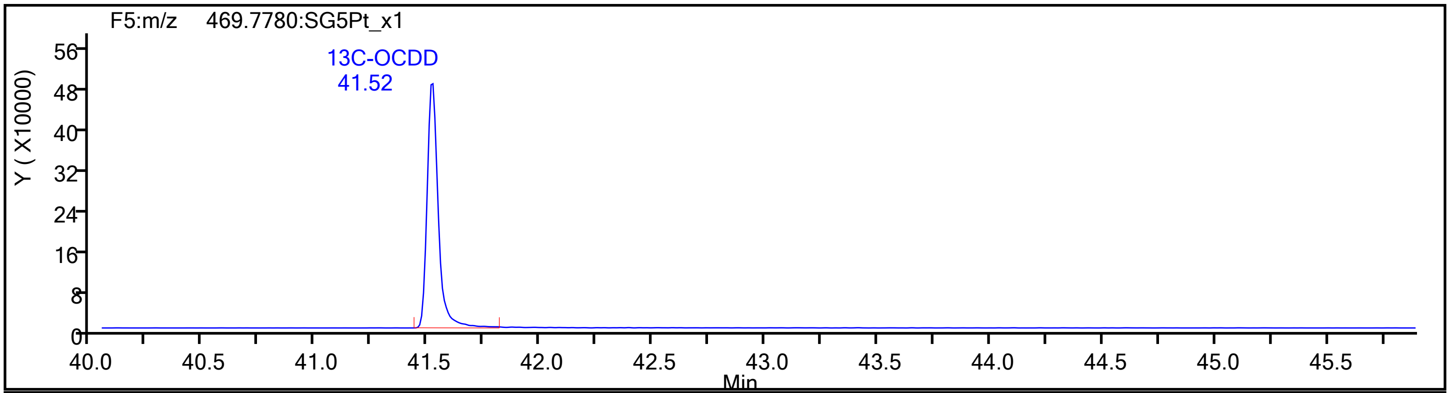

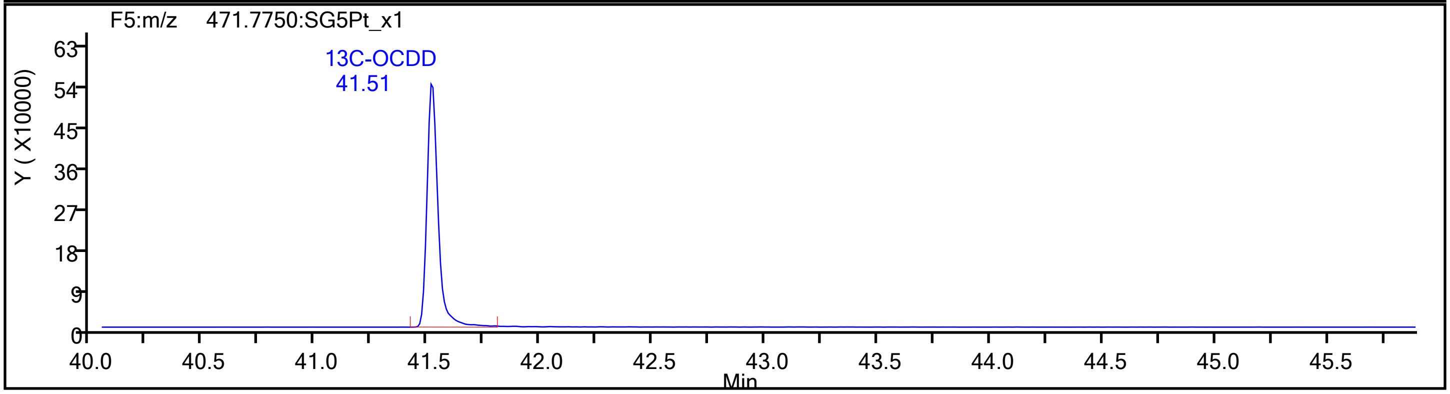

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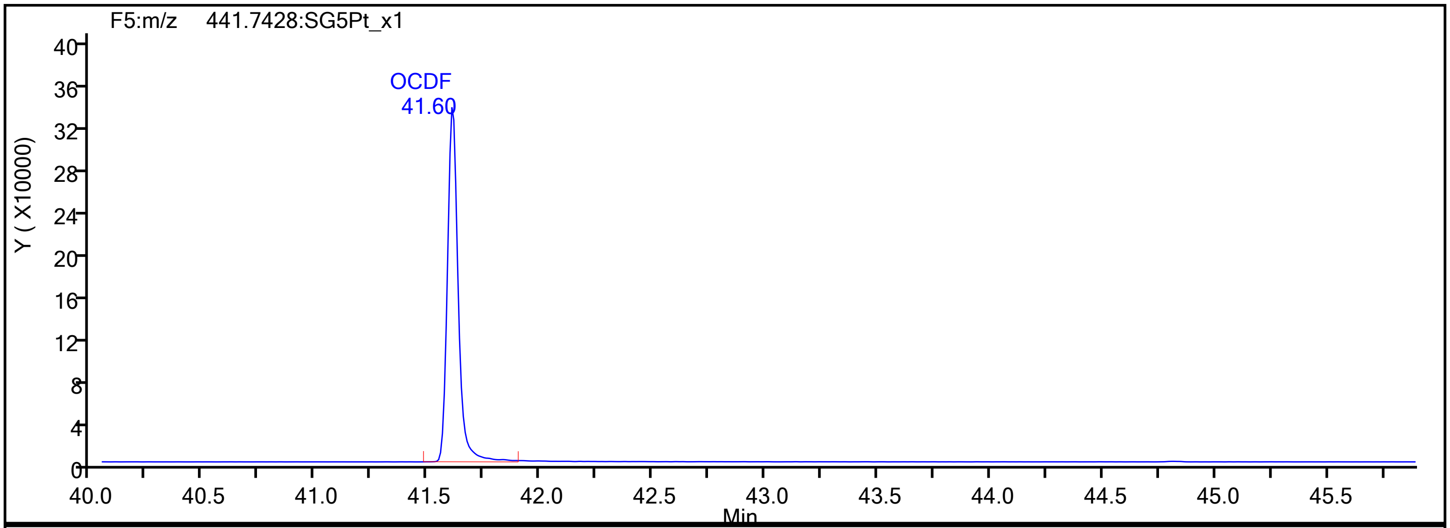

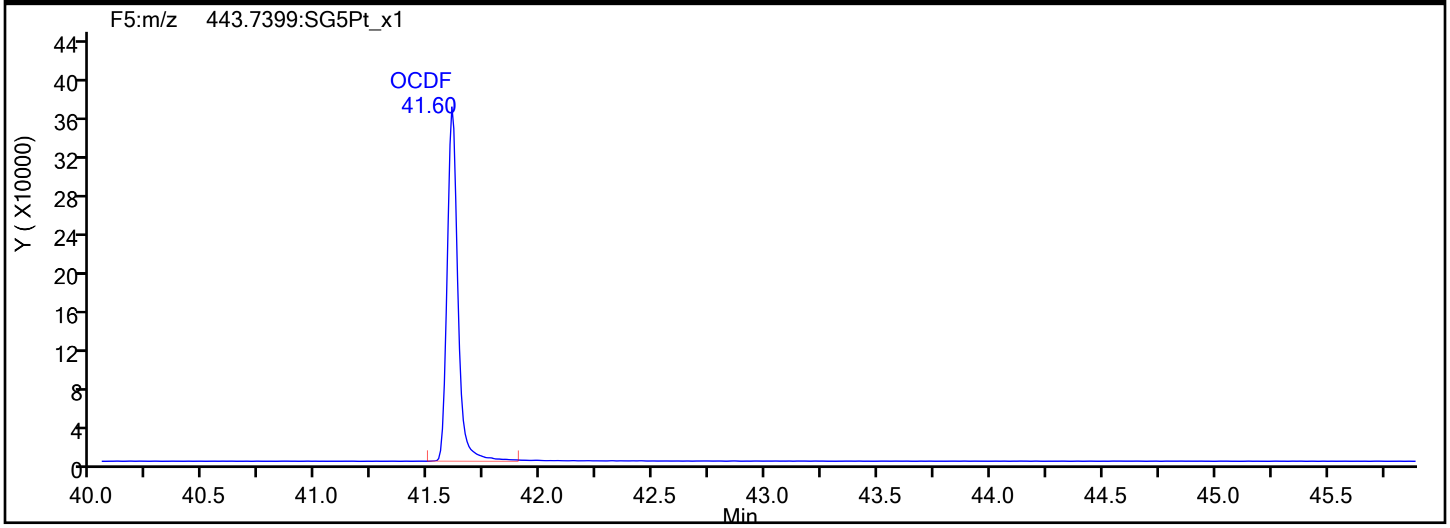

OCDF Interference Mass

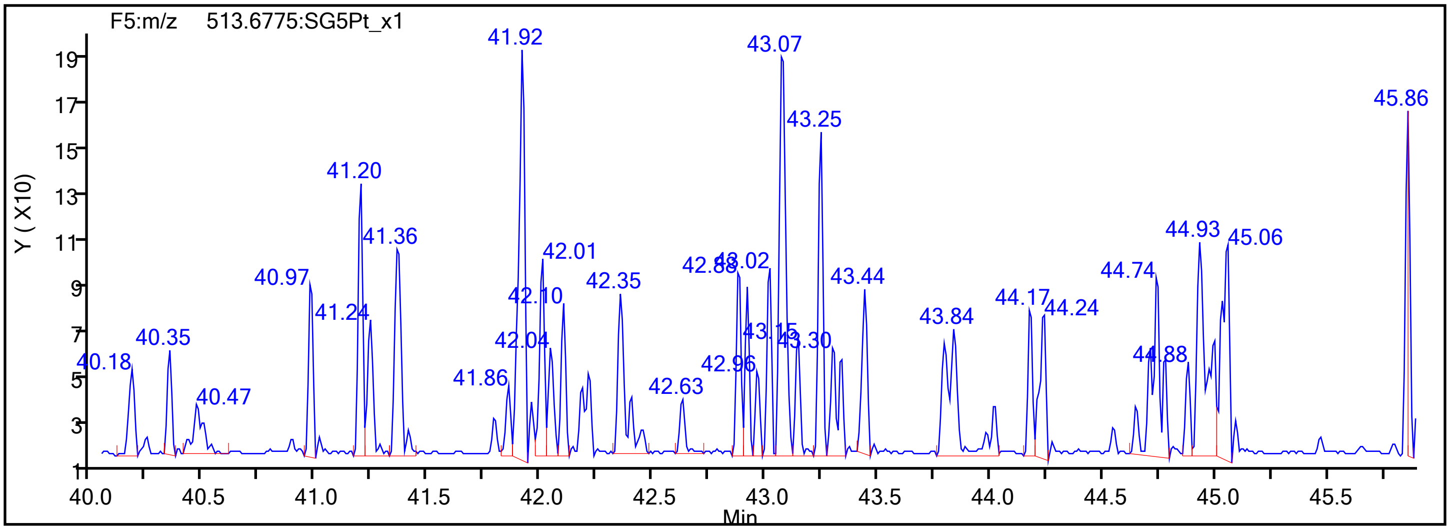

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OCDD

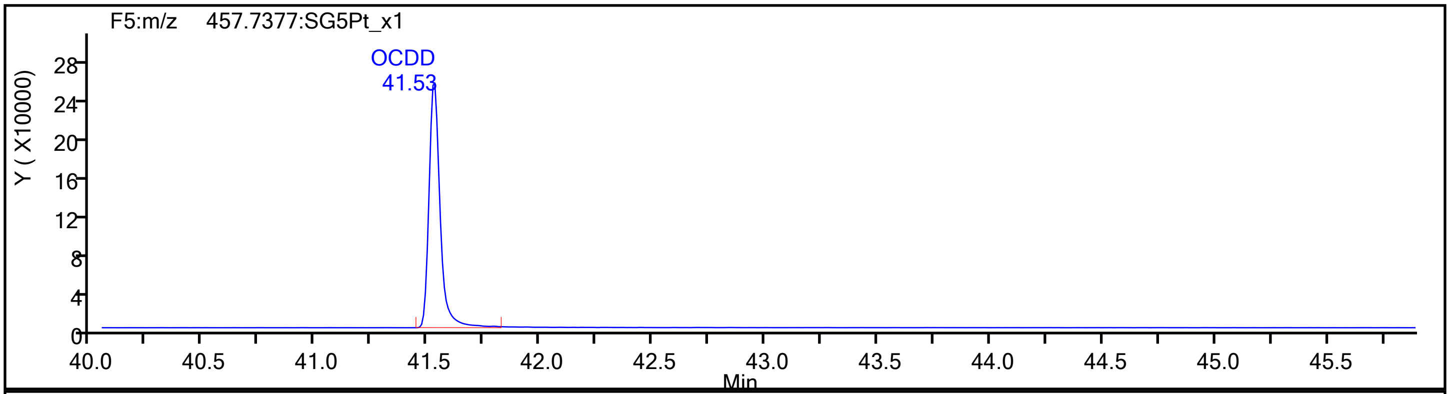

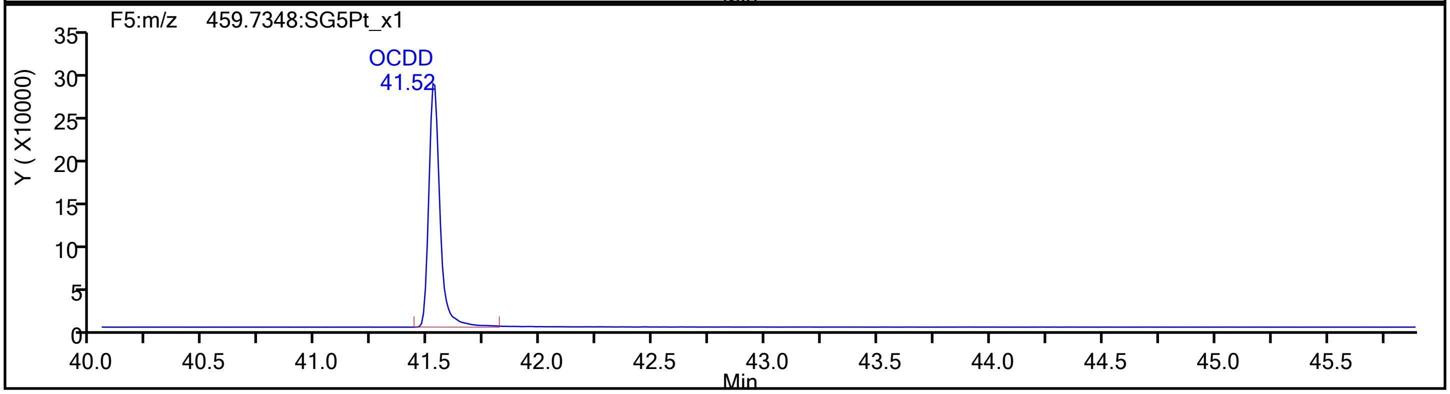

OCDD Standards

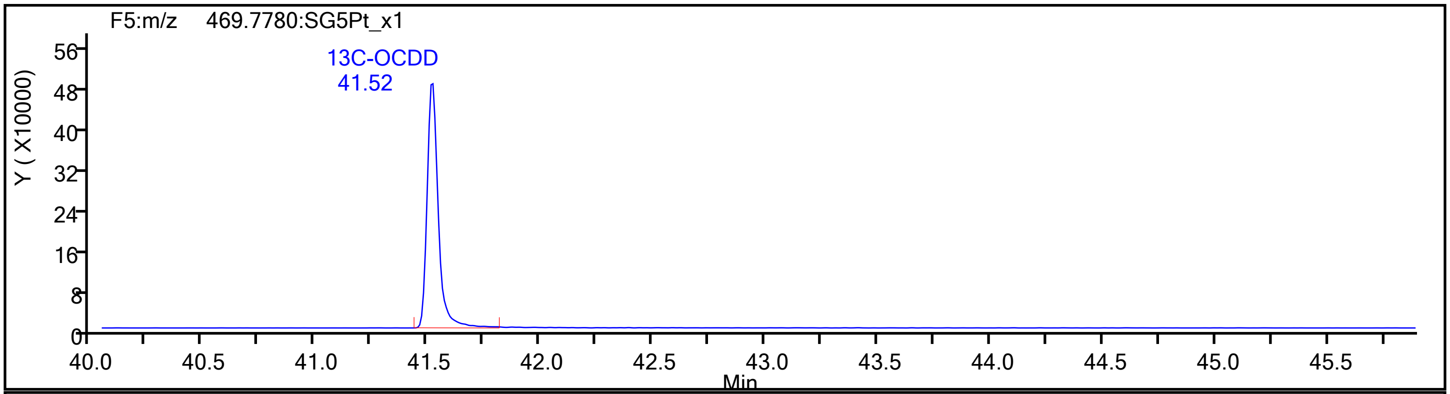

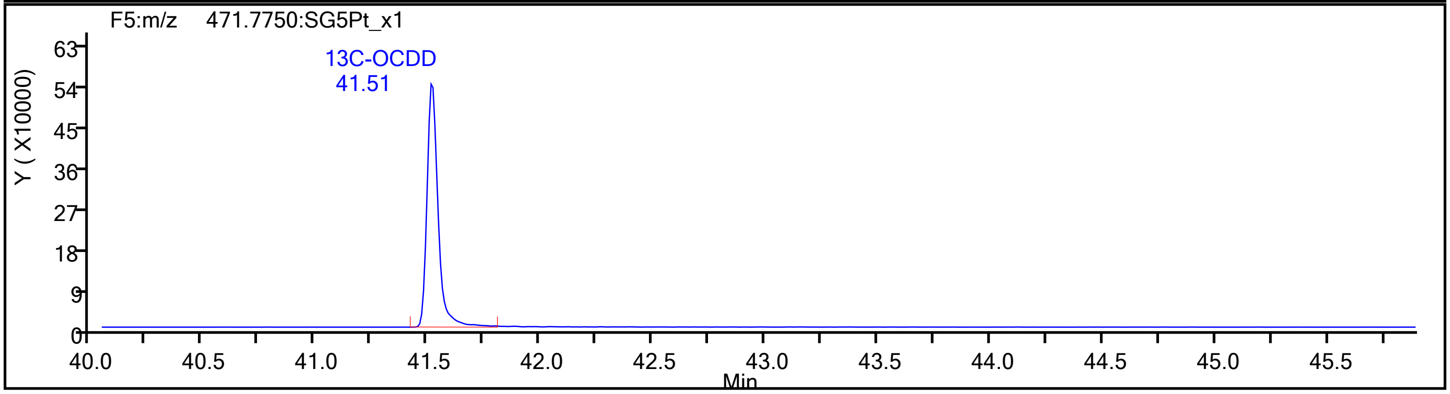

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d

Injection Date: 23-Sep-2020 22:08:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 415261 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

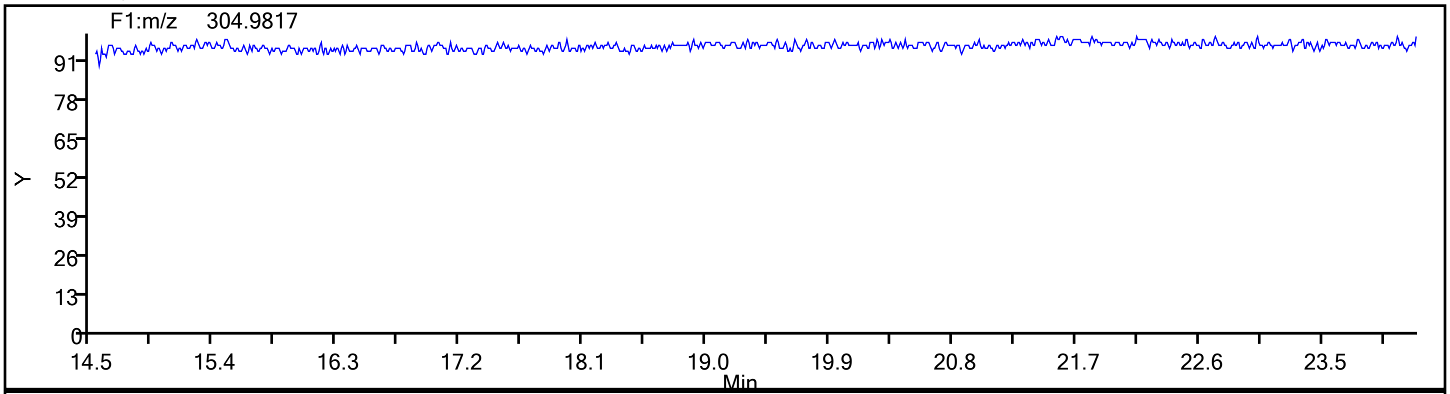

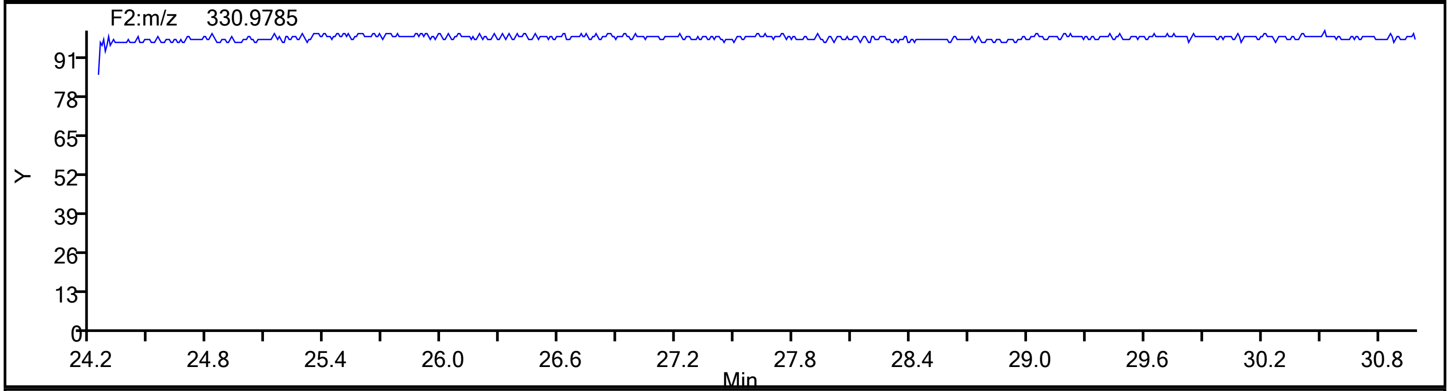

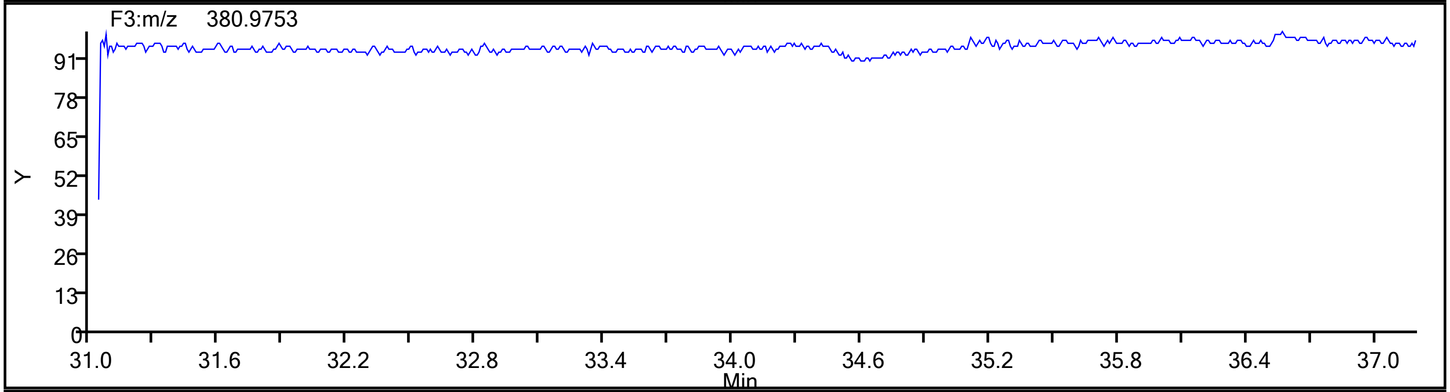

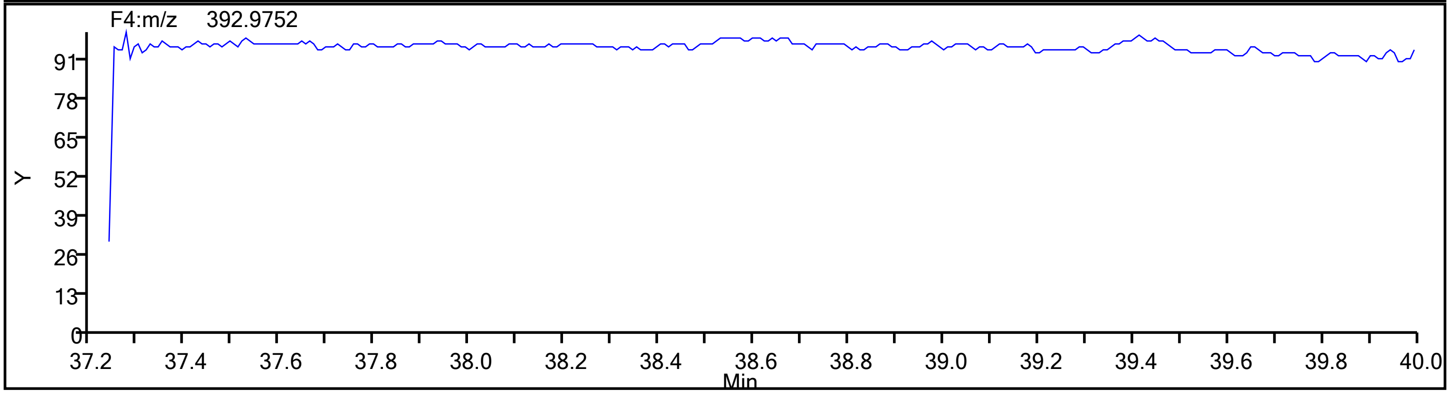

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_3.d

Injection Date:	23-Sep-2020 22:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415261	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

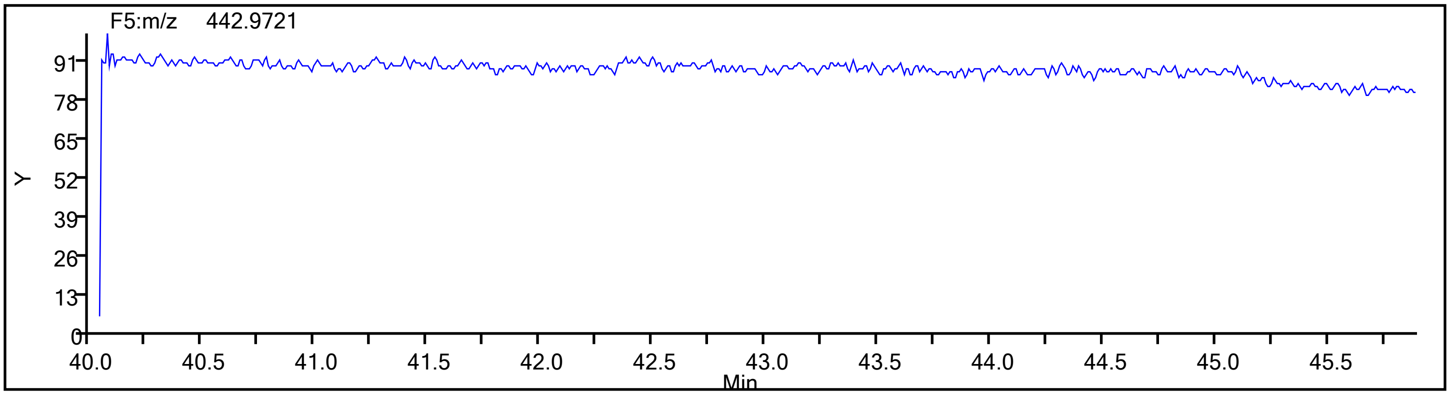

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jun-2020 13:12:28 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 062720A WDM HRDXNCP_00040
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:21 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:37:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.188	24325911	0.79	1.3726					0.00	
2,3,7,8-TCDF	17.219	46102914	0.75	0.9104	83.3	83.3	0.3197	0.3197		
A Non-2,3,7,8-sub-TCDF	16.916						0.3197	0.3197		
S Total TCDF					83.3	83.3	0.3197	0.3197		
D 13C-2,3,7,8-TCDD	17.884	16737508	0.81	1.0192					0.00	
2,3,7,8-TCDD	17.914	18251912	0.77	1.0745	40.6	40.6	0.2565	0.2565		
A Non-2,3,7,8-sub-TCDD	17.354						0.2565	0.2565		
S Total TCDD					40.6	40.6	0.2565	0.2565		
A F1 PeCDFs	19.698						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.798	95798	1.34	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	23.104						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.979						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.652						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.676	15424529	1.04	1.4527						
1,2,3,4,7,8,9-HpCDF	34.746	12173274	1.03	1.0585						
A Non-2,3,7,8-sub-HpCDF	34.211						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.466	10176922	1.03	1.0540						
A Non-2,3,7,8-sub-HpCDD	35.164						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.830	24618226	0.76							
1,3,6,8-TCDD	15.722	18675858	0.79							
2,3,4,7-TCDF	17.219	46102914	0.75							
1,2,3,7-TCDD	17.793	16167705	0.77							
1,2,3,9-TCDD	18.065	19778456	0.78							
1,2,3,9-TCDF	18.065	19789317	0.75							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	18.987	7575012								
1,2,8,9-TCDF	19.003	20285265	0.73							
1,3,4,6,8-PeCDF	19.275	24350114	1.54							
1,2,4,7,9-PeCDD	21.024	15228773	1.59							
1,2,3,8,9-PeCDD	25.184	14239957	1.62							
1,2,3,8,9-PeCDF	25.402	16985212	1.56							
1,2,3,4,6,8-HxCDF	27.657	14280063	1.20							
1,2,4,6,7,9-HxCDD	29.214	13675440	1.27							
1,2,3,4,6,7-HxCDD	31.983	13334366	1.25							
1,2,3,4,8,9-HxCDF	32.302	13578470	1.20							
1,2,3,4,6,7,9-HpCDD	33.919	11582583	1.04							

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jun-2020 13:12:28 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 062720A WDM HRDXNCP_00040
Misc. Info.: 27JN2010AD5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jun-2020 13:16:21 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1062

First Level Reviewer: messecara Date: 27-Jun-2020 21:37:39

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.188	17.188	0	1.000	10726332	2551122	4528	11320	563		
317.9389	17.188	17.188	0	1.000	13599579	3251064	2964	7410	1097	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.215	0	1.002	19773259	4480955	7435	18587	603		
305.8987	17.219	17.215	0	1.002	26329655	5915338	9454	23635	626	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.916						7435	18587			
305.8987	16.916						9454	23635			
13C-2,3,7,8-TCDD											
331.9368	17.884	17.884	0	1.000	7500992	1693942	3852	9630	440		
333.9339	17.884	17.884	0	1.000	9236516	2080651	2086	5215	997	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.911	0	1.002	7921659	1782893	4840	12100	368		
321.8936	17.914	17.911	0	1.002	10330253	2341866	5562	13905	421	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.354						4840	12100			
321.8936	17.354						5562	13905			
A F1 PeCDFs											
339.8597	19.698						1405	3512			
341.8567	19.698						876	2190			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.170	22.798	-38	1.000	54792	8695	2091	5227	4		
341.8567	22.170	22.798	-38	1.000	41006	5817	1518	3795	4	1.34(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.104						3002	7505			
357.8516	23.104						2043	5107			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.979						3500	8750			
375.8178	29.979						2689	6722			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.652						3381	8452			
391.8127	30.652						2715	6787			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.676	33.667	1	1.000	7855527	1827537	17435	43587	105		
409.7789	33.676	33.667	1	1.000	7569002	1740715	16362	40905	106	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.746	34.739	0	1.000	6163806	1205590	17435	43587	69		
409.7789	34.746	34.739	0	1.000	6009468	1183947	16362	40905	72	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.211						17435	43587			
409.7789	34.211						16362	40905			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.466	34.457	1	1.000	5172822	1044846	13123	32807	80		
425.7737	34.466	34.457	1	1.000	5004100	978929	12841	32102	76	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.164						13123	32807			
425.7737	35.164						12841	32102			
1,3,6,8-TCDF											
303.9016	14.830	14.830	0		10669295	3290432	7435	18587	443		
305.8987	14.830	14.830	0		13948931	4323101	9454	23635	457	0.76(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.722	15.722	0		8227174	2297870	4840	12100	475		
321.8936	15.722	15.722	0		10448684	3001271	5562	13905	540	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.219	17.219	0		19773259	4480955	7435	18587	603		
305.8987	17.219	17.219	0		26329655	5915338	9454	23635	626	0.75(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.793	17.793	0		7033855	1680770	4840	12100	347		
321.8936	17.793	17.793	0		9133850	2173642	5562	13905	391	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.065	18.065	0		8658742	1907146	4840	12100	394		
321.8936	18.065	18.065	0		11119714	2424393	5562	13905	436	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.065	18.065	0		8476231	1932021	7435	18587	260		
305.8987	18.065	18.065	0		11313086	2585287	9454	23635	273	0.75(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.987	18.987	0		7575012	1582880	4840	12100	327		
1,2,8,9-TCDF											
303.9016	19.003	19.003	0		8583854	1737543	7435	18587	234		
305.8987	18.987	19.003	-1		11701411	2320715	9454	23635	245	0.73(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.275	19.275	0		14773450	3175151	1405	3512	2260		
341.8567	19.275	19.275	0		9576664	2041966	876	2190	2331	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	21.024	21.024	0		9346187	1558364	3002	7505	519		
357.8516	21.024	21.024	0		5882586	982676	2043	5107	481	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.184	25.184	0		8803327	1180835	3002	7505	393		
357.8516	25.184	25.184	0		5436630	720272	2043	5107	353	1.62(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.402	25.402	0		10356901	1353248	2091	5227	647		
341.8567	25.402	25.402	0		6628311	869626	1518	3795	573	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.657	27.657	0		7799888	929300	3500	8750	266		
375.8178	27.657	27.657	0		6480175	774262	2689	6722	288	1.20(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.214	29.214	0		7644053	819212	3381	8452	242		
391.8127	29.214	29.214	0		6031387	656665	2715	6787	242	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.983	31.983	0		7400023	1561477	3381	8452	462		
391.8127	31.983	31.983	0		5934343	1272505	2715	6787	469	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.302	32.302	0		7414354	1635355	3500	8750	467		
375.8178	32.302	32.302	0		6164116	1378803	2689	6722	513	1.20(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.919	33.919	0		5918360	1263900	13123	32807	96		
425.7737	33.919	33.919	0		5664223	1201009	12841	32102	94	1.04(0.88-1.20)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 27-Jun-2020 13:12:28 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 390253 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 22.798

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994				
2,3,4,7,8-PeCDF	0.812				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.170	54792	8695	41006	5817		1.34	
Signal Totals:							
	54792	8695	41006	5817			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	95798	14512				1.34	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (95798 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d

Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

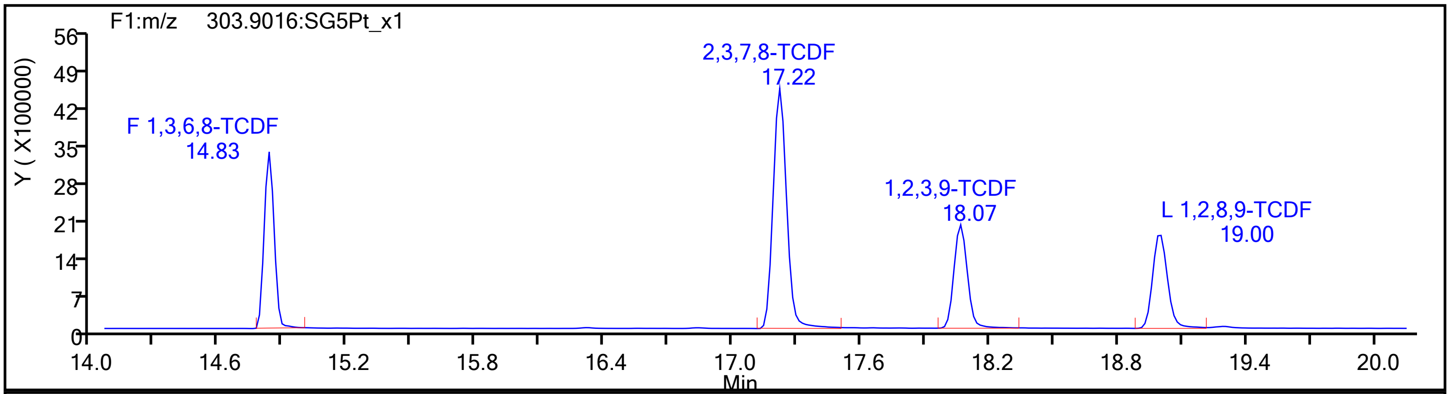

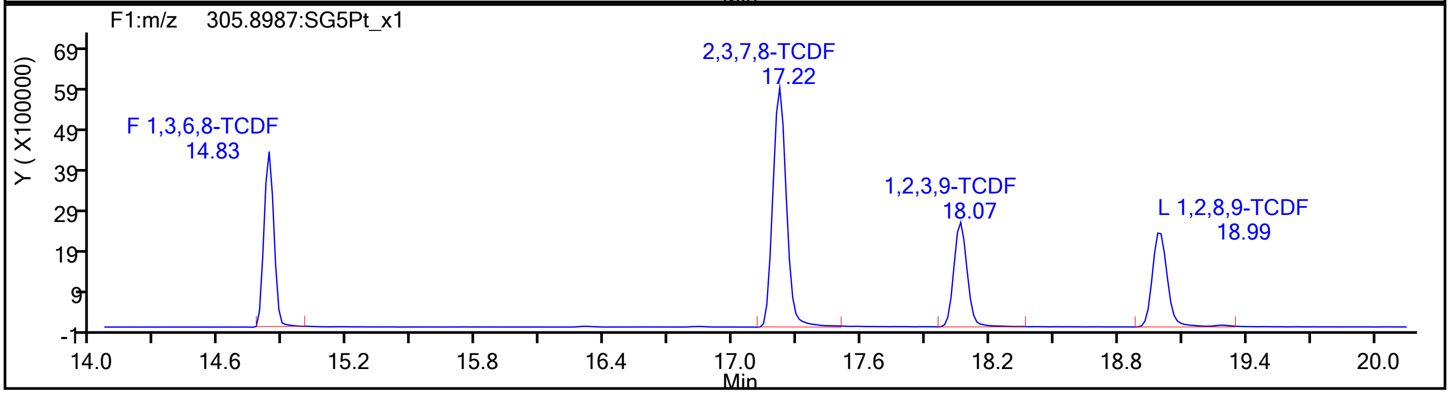

TCDF Standards

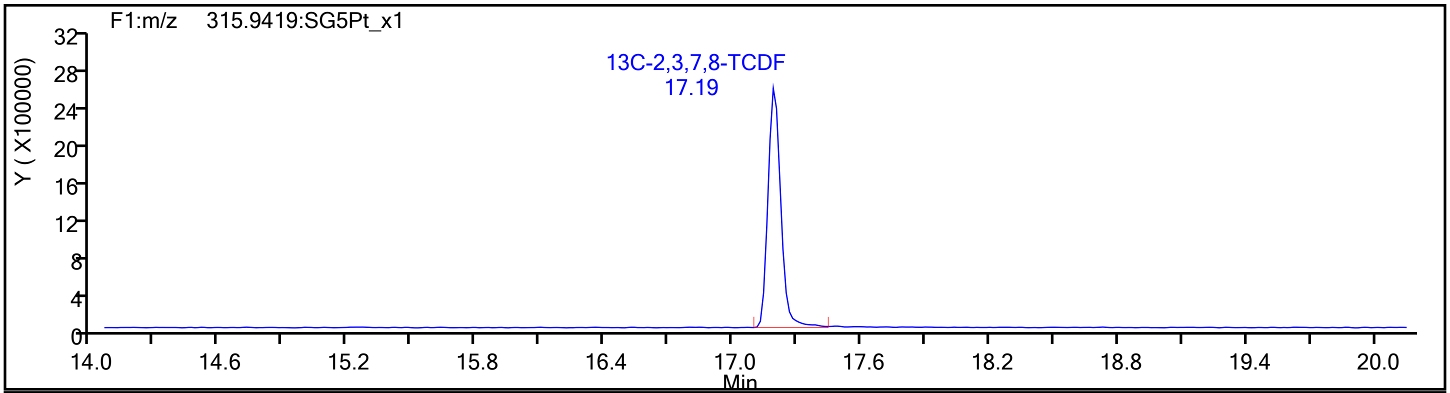

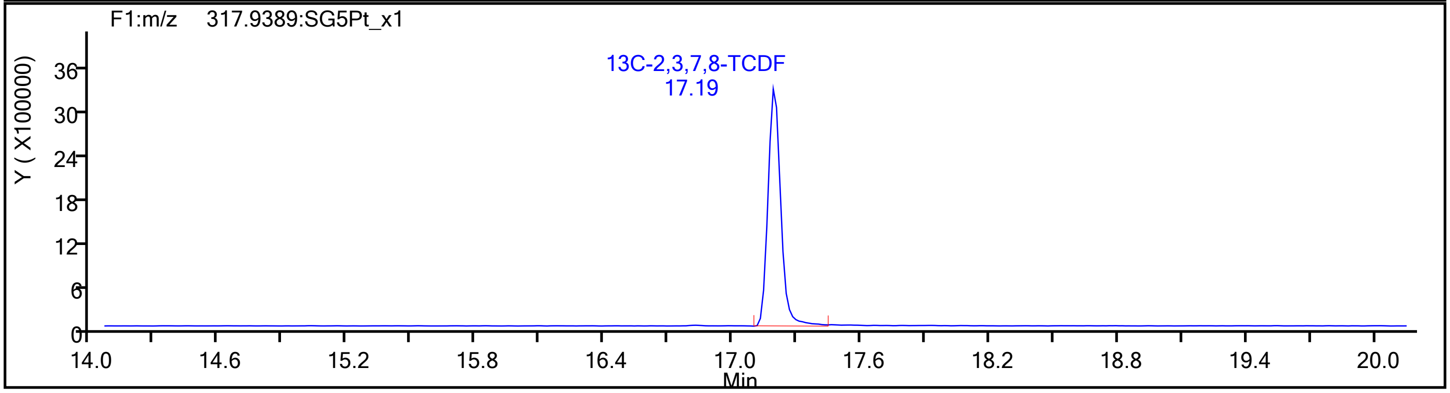

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Injection Date: 27-Jun-2020 13:12:28
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

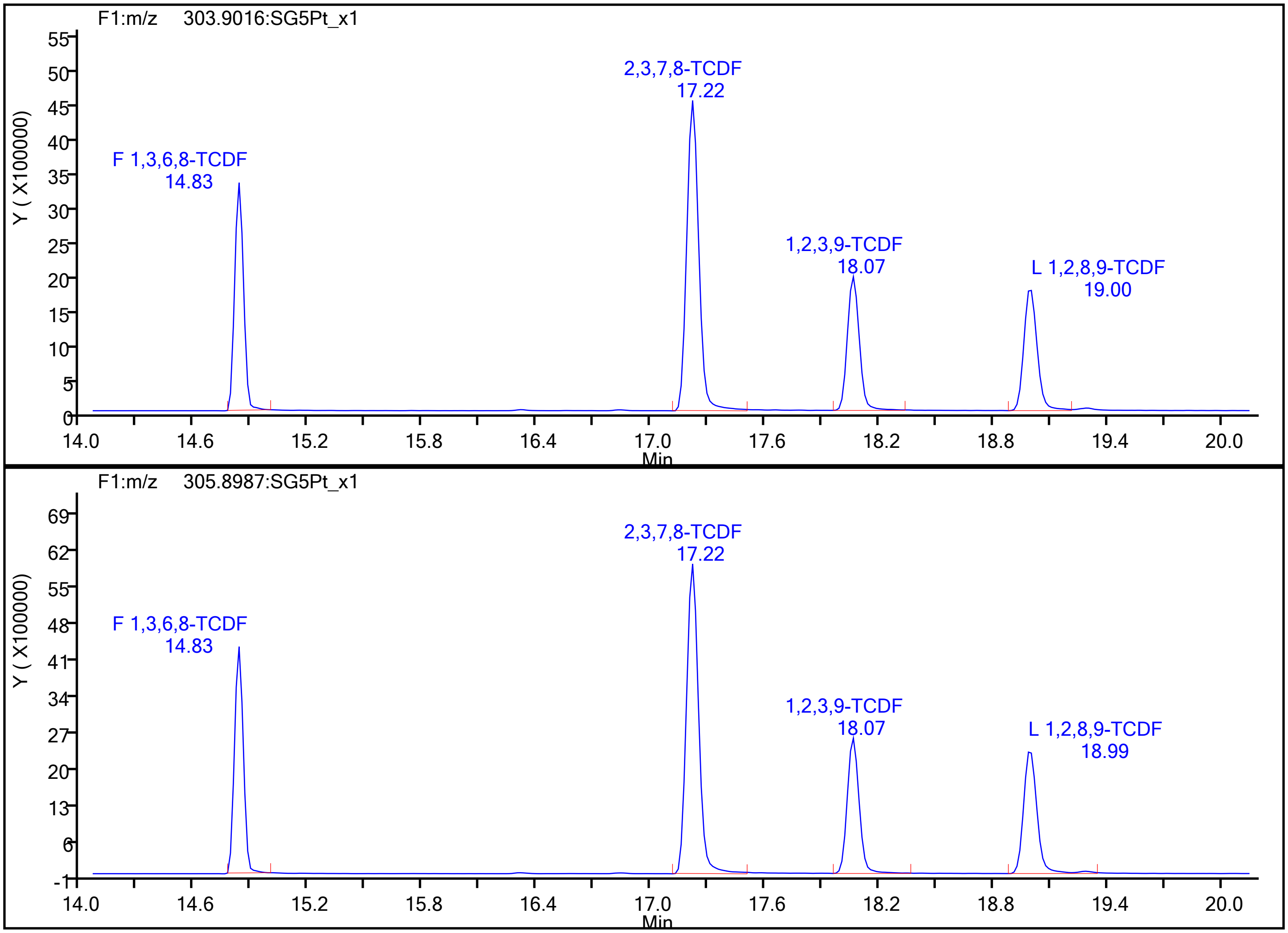

TCDF Interference Mass

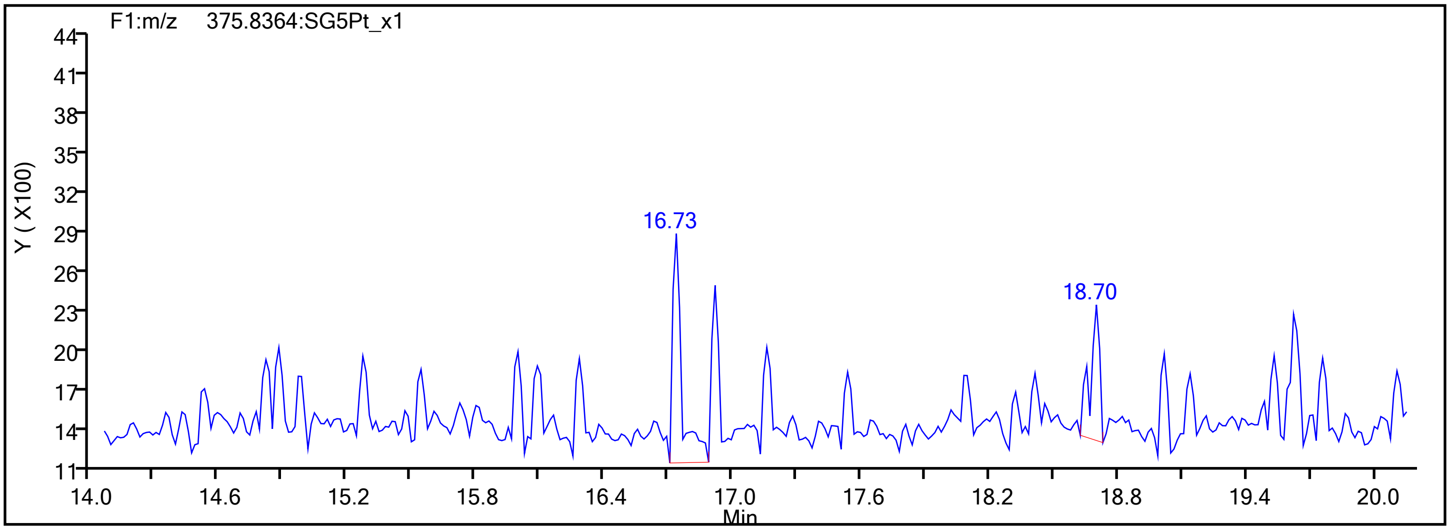

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

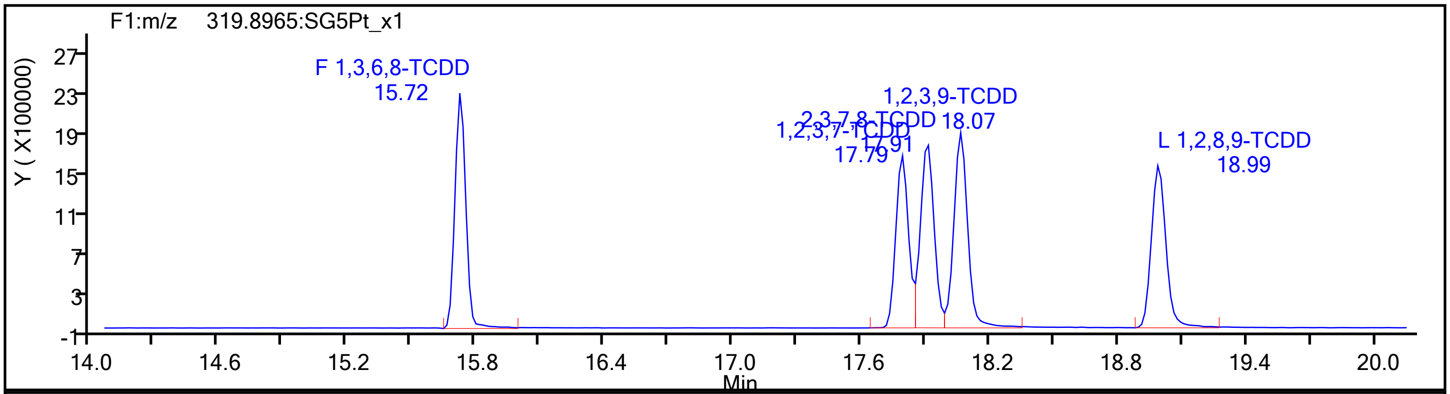

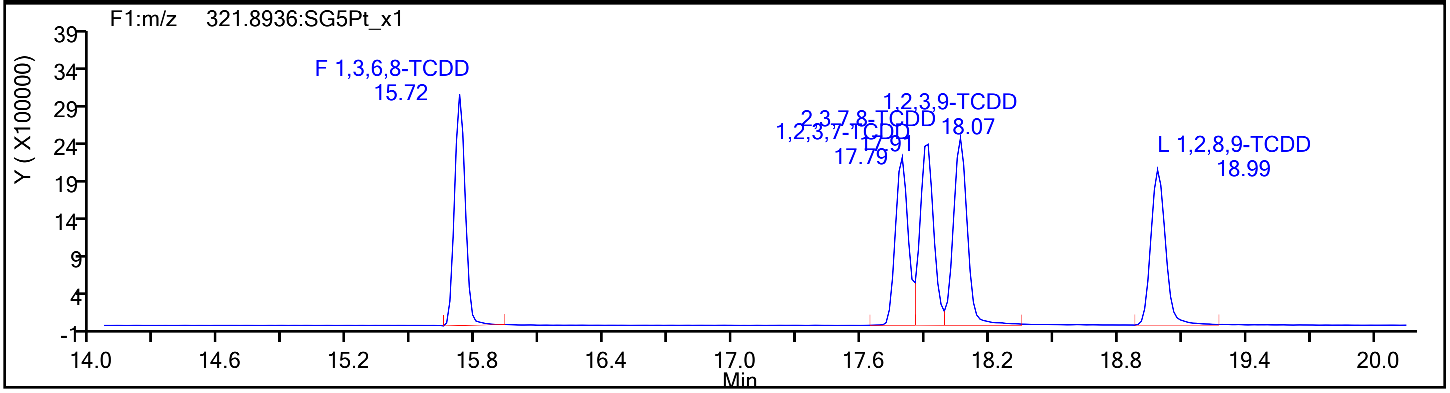

TCDD Standards

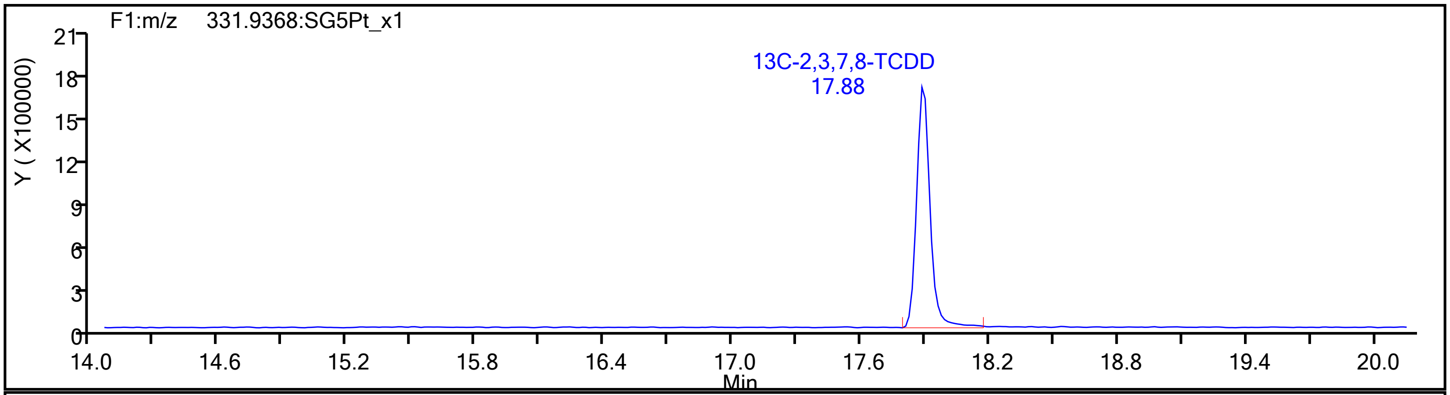

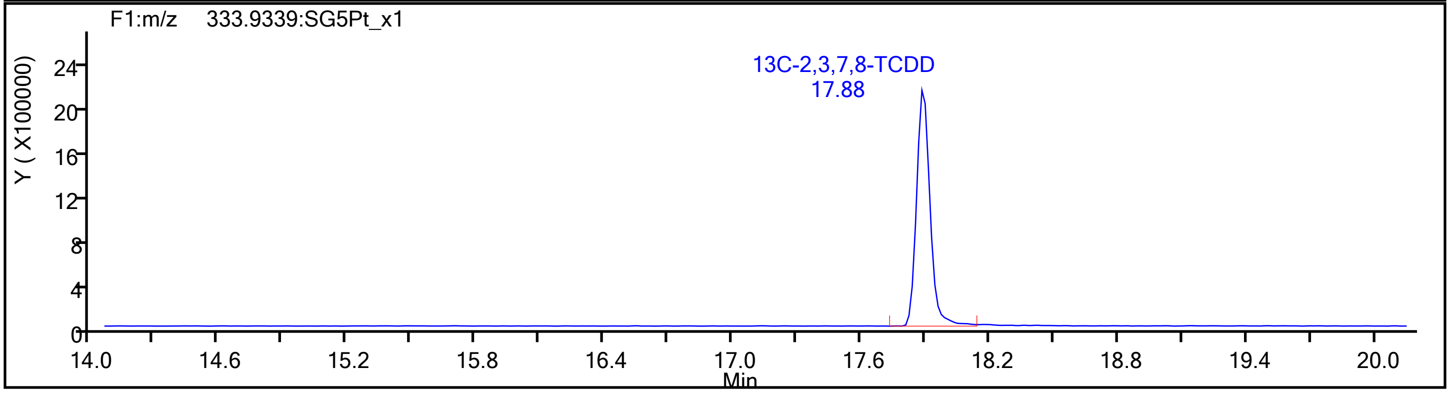

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

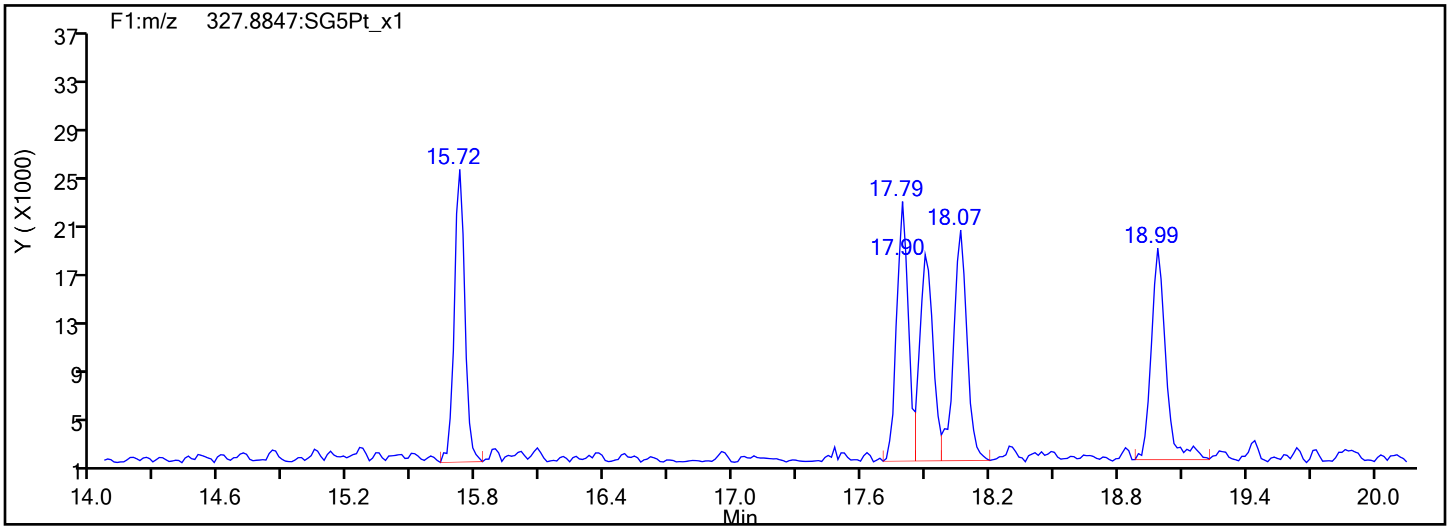

37Cl4-TCDD Standards

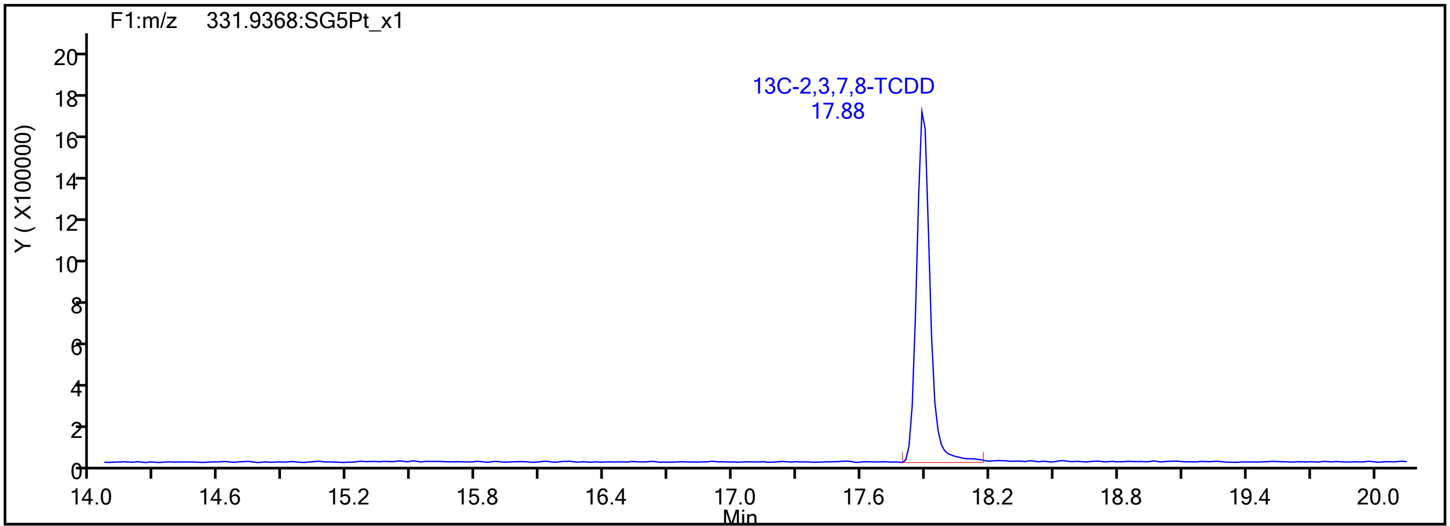

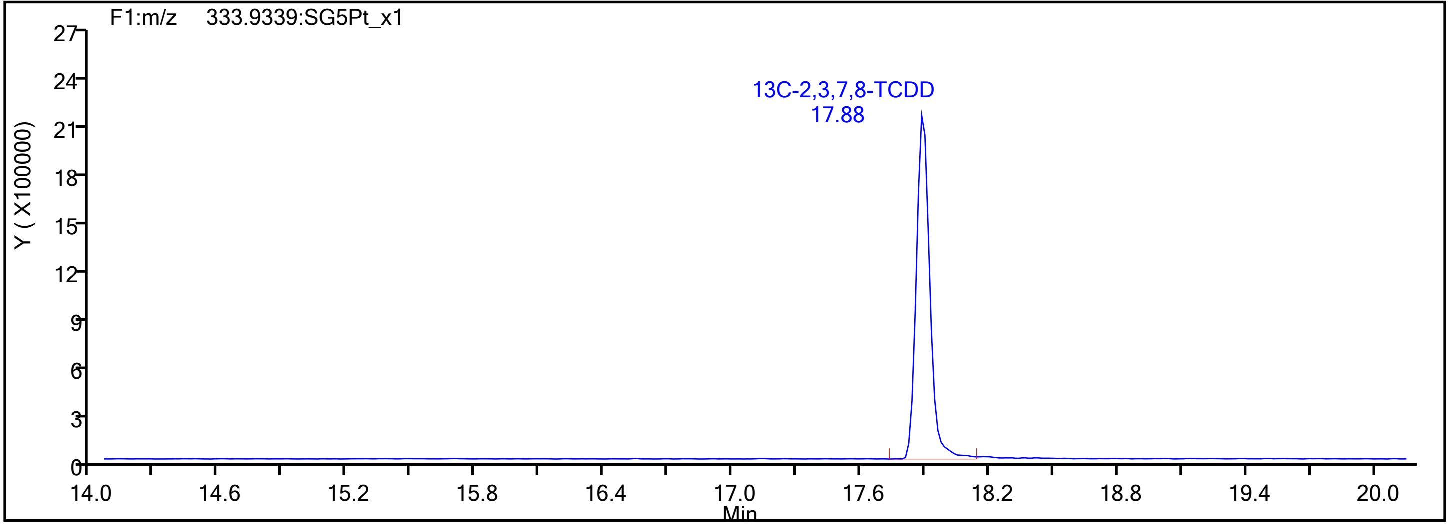

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

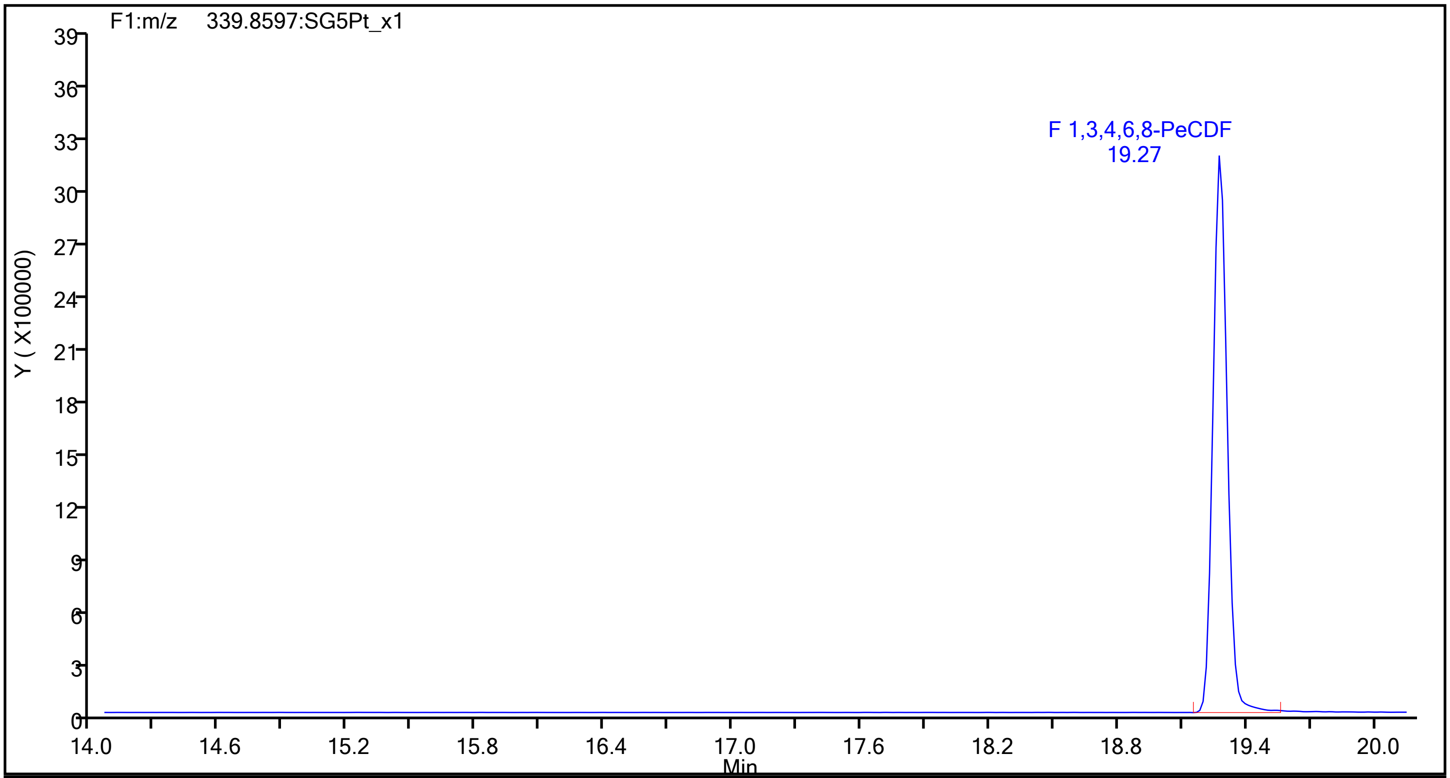

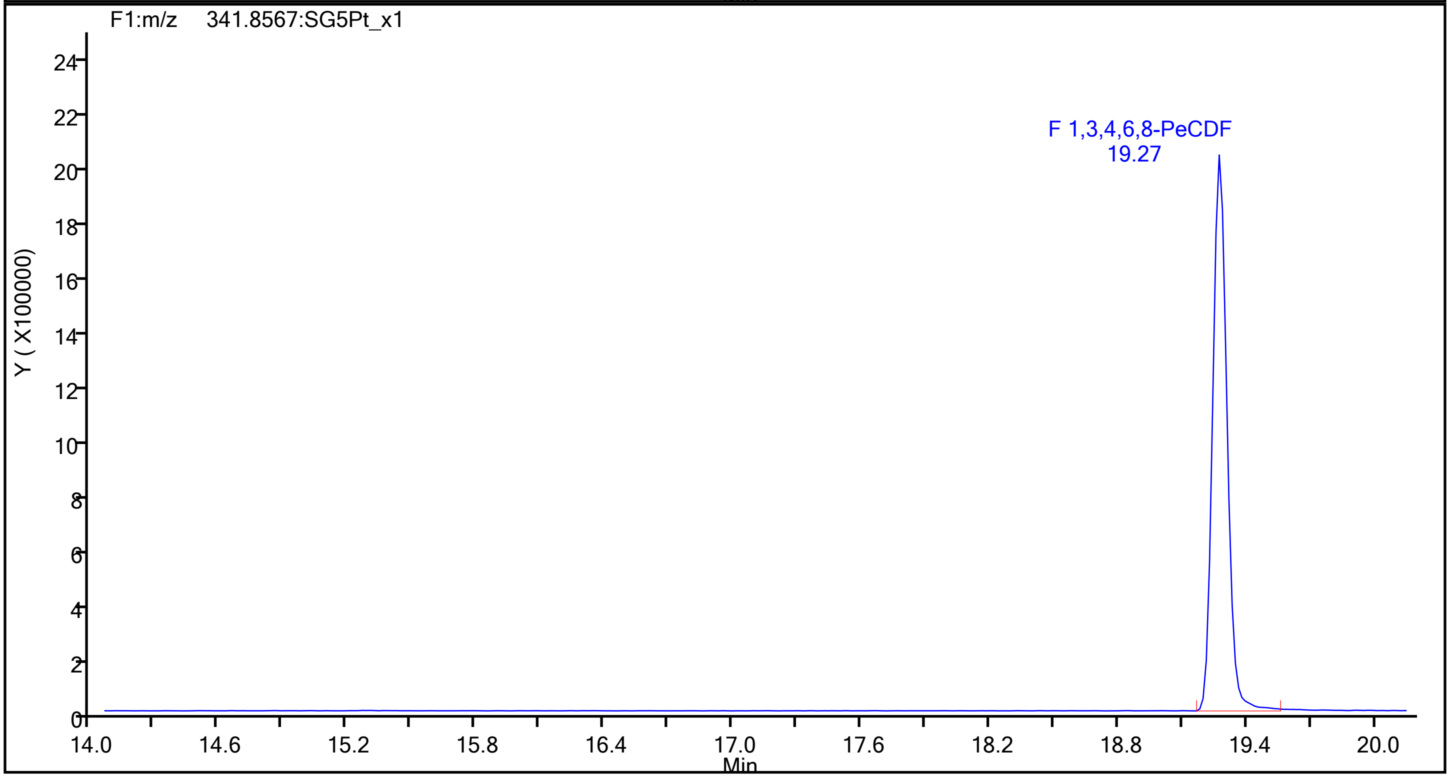

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

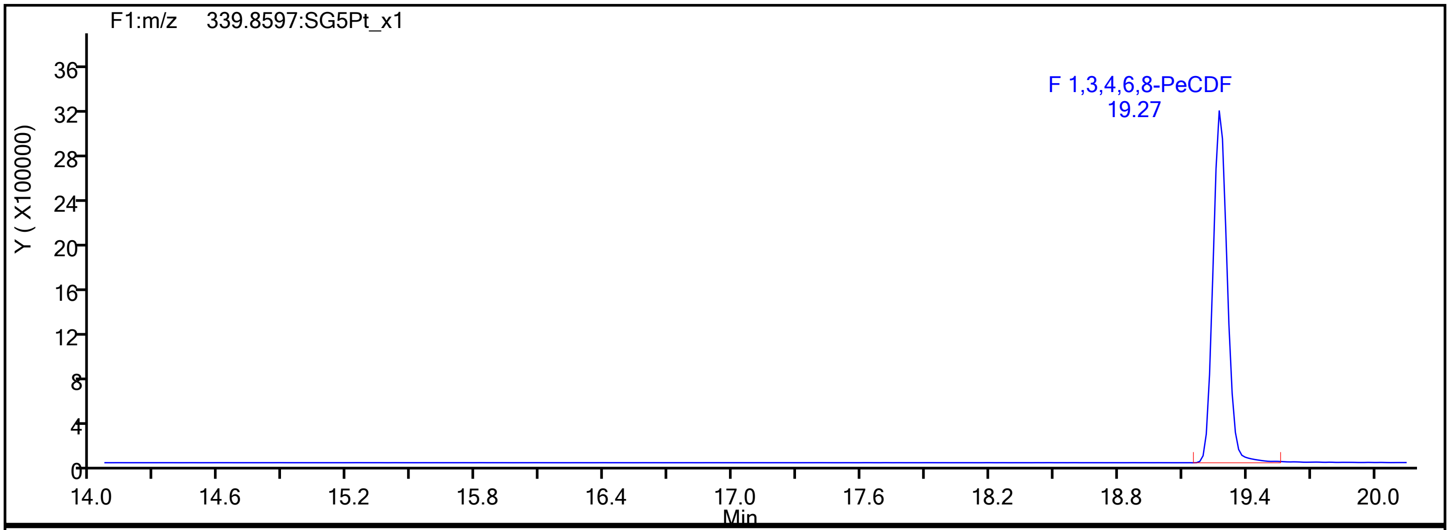

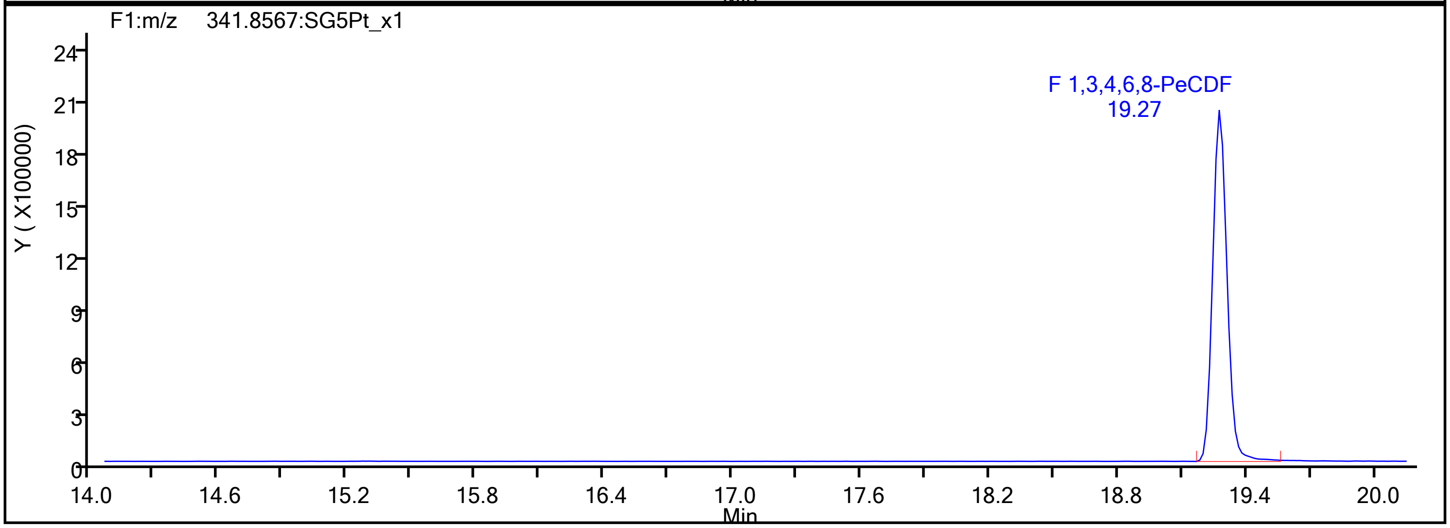

F1 PeCDFs Interference Mass

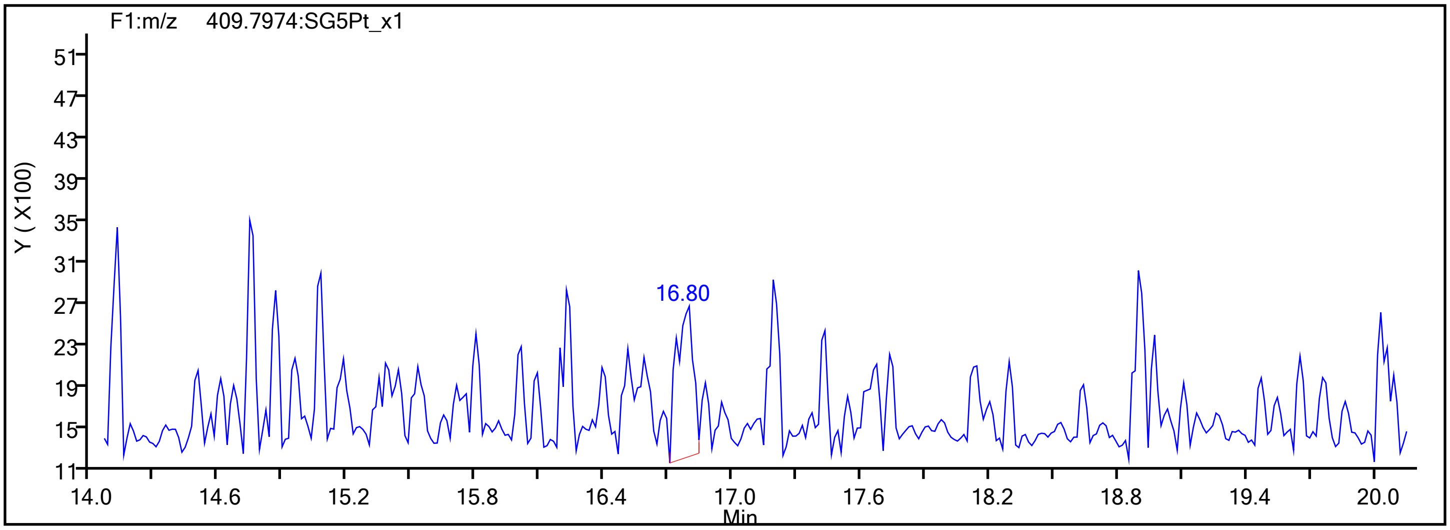

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

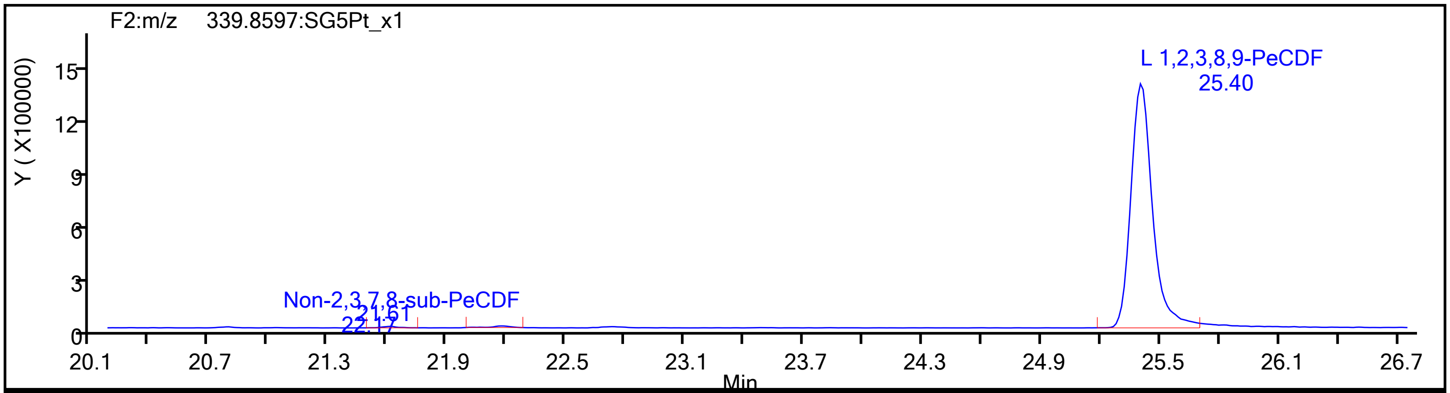

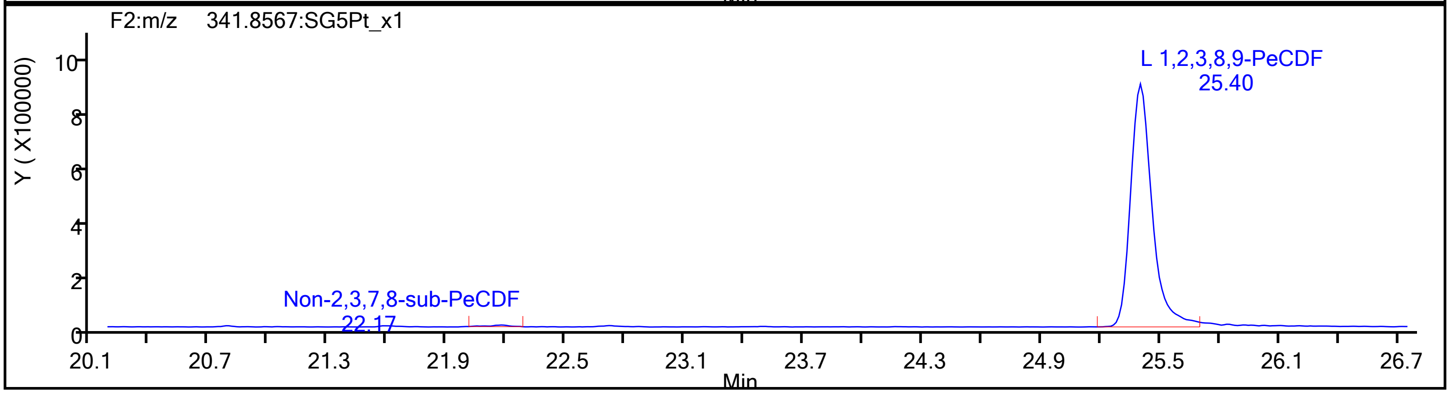

PeCDF Standards

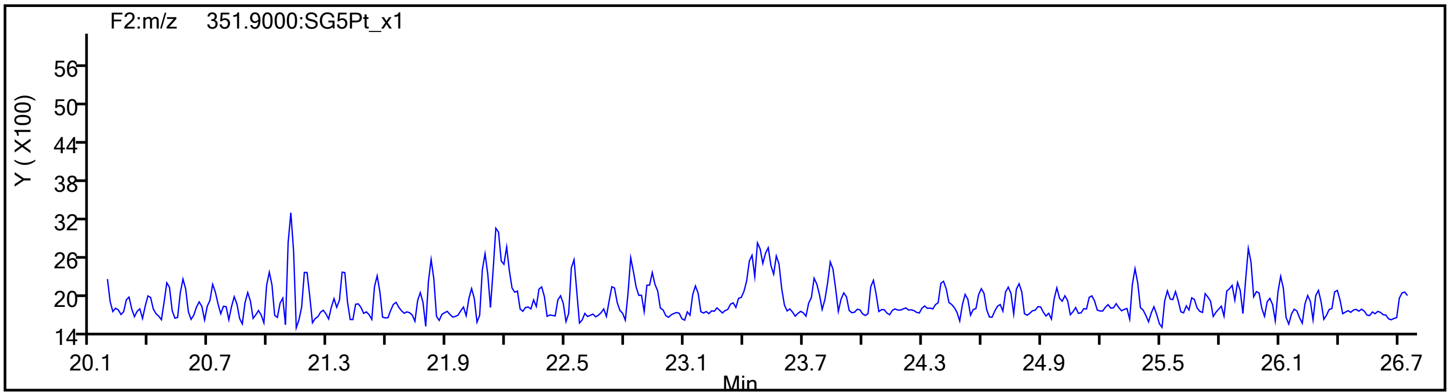

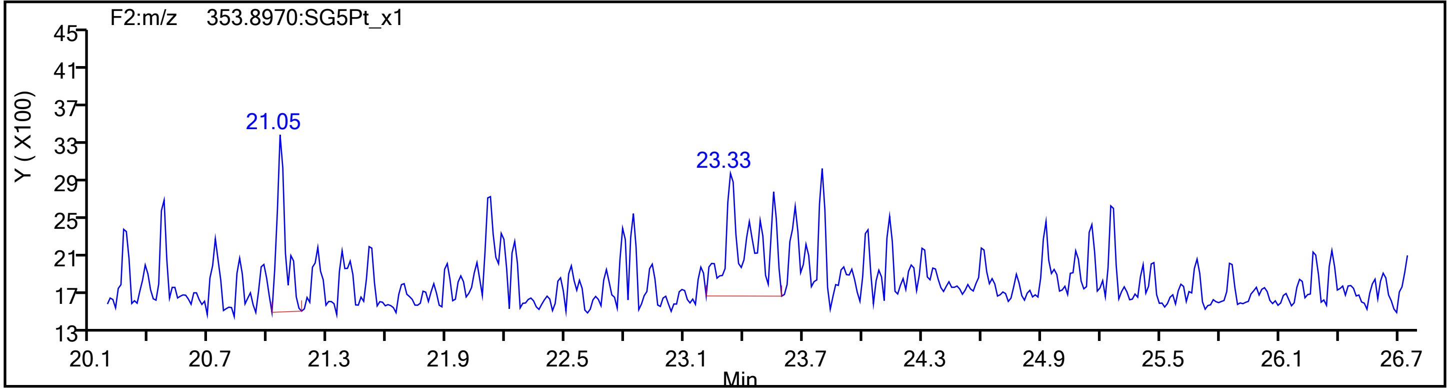

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d
Injection Date: 27-Jun-2020 13:12:28
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

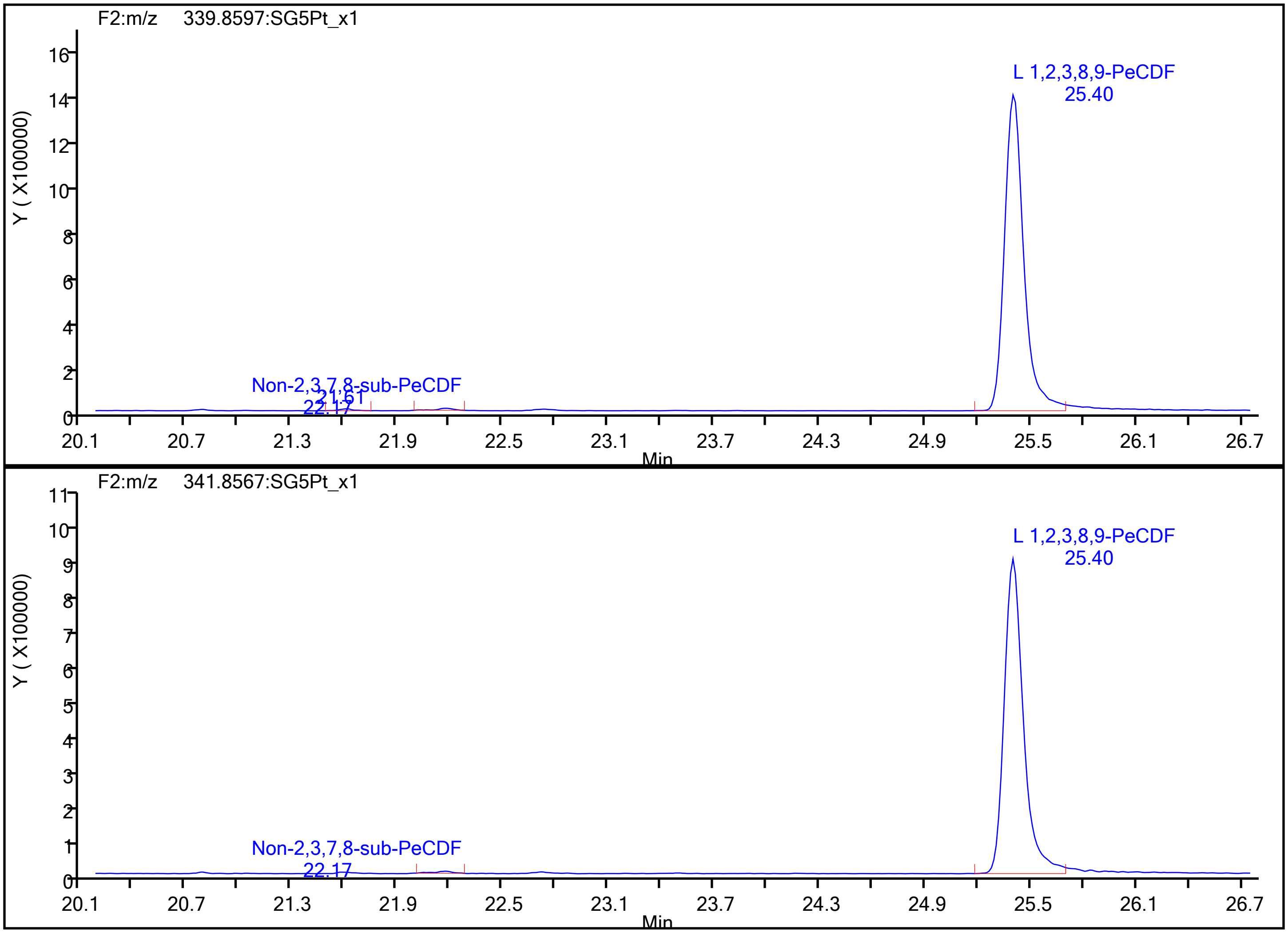

PeCDF Interference Mass

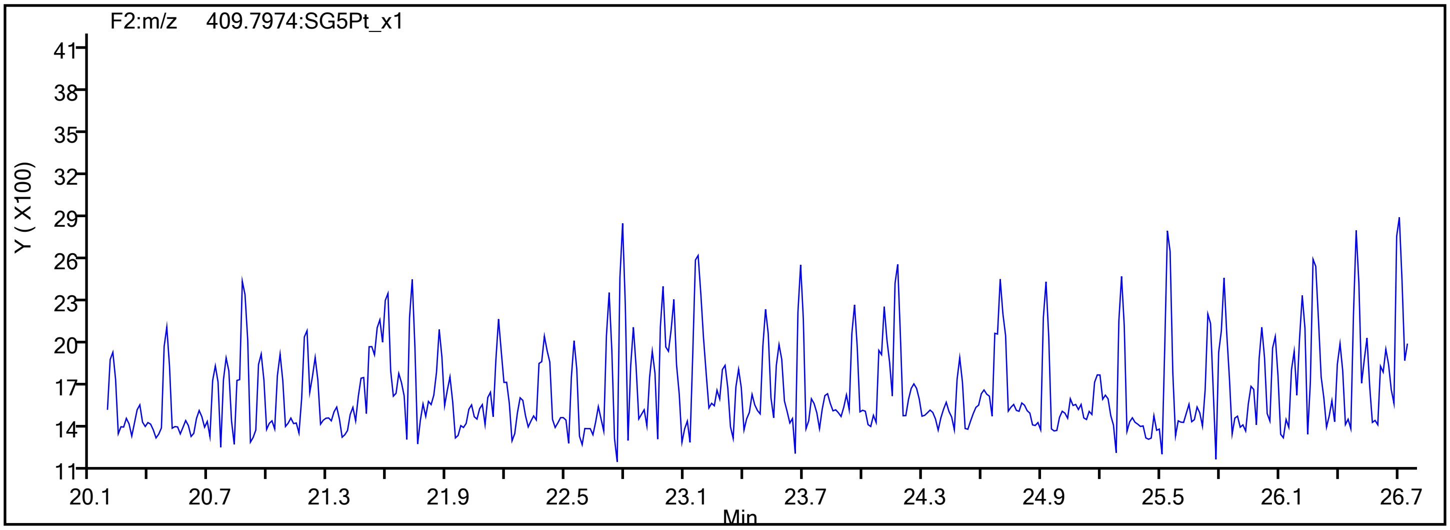

Report Date: 28-Jun-2020 13:16:24　　　　　　Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
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PeCDD

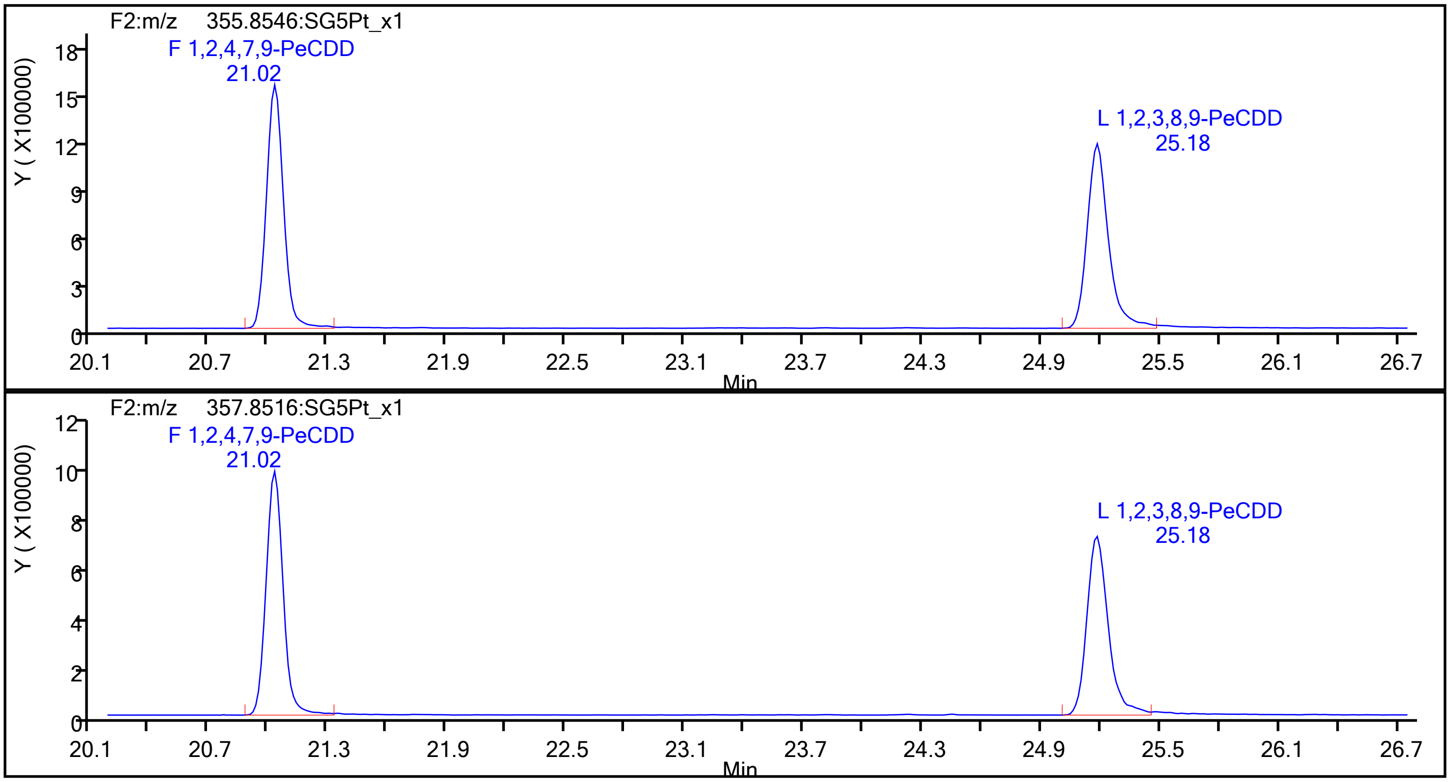

PeCDD Standards

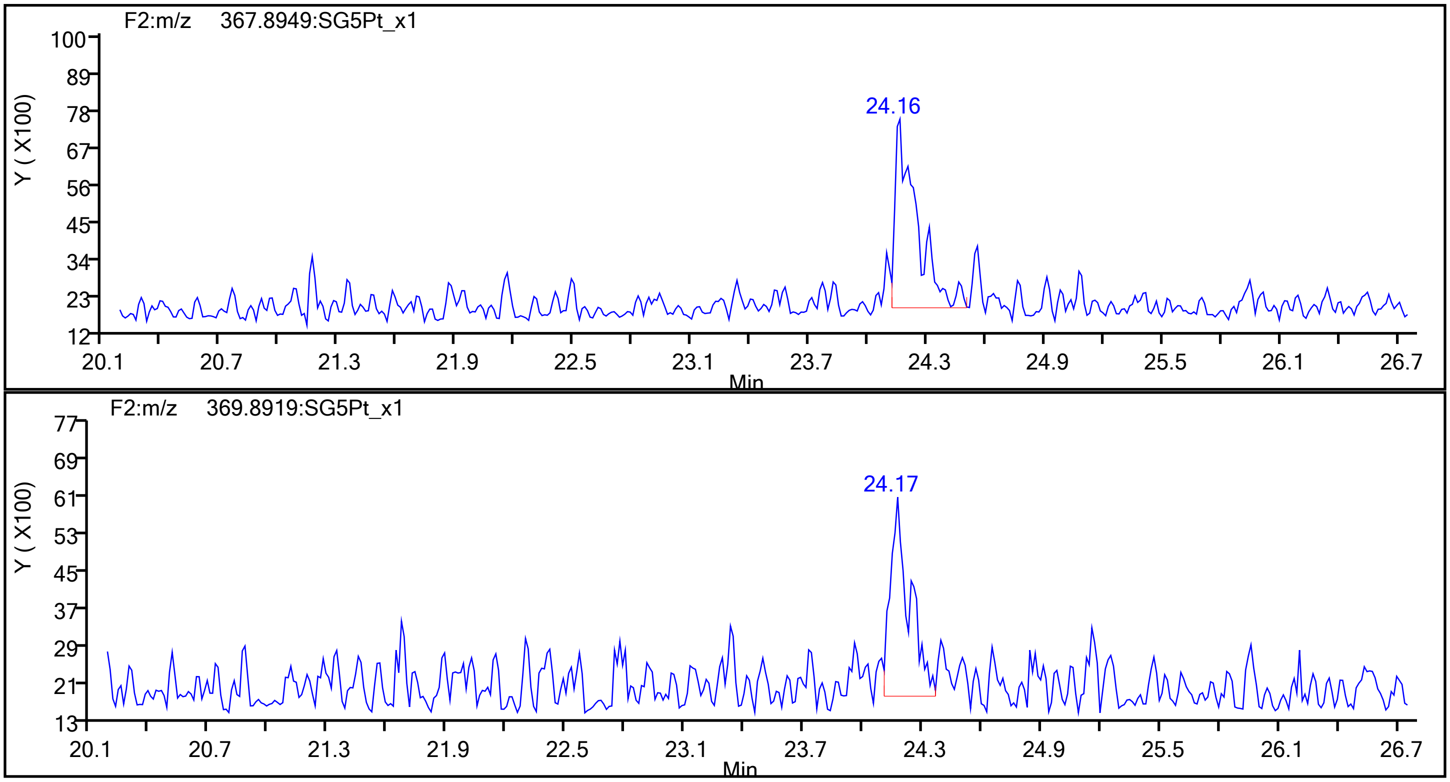

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d

Injection Date: 27-Jun-2020 13:12:28 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390253 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

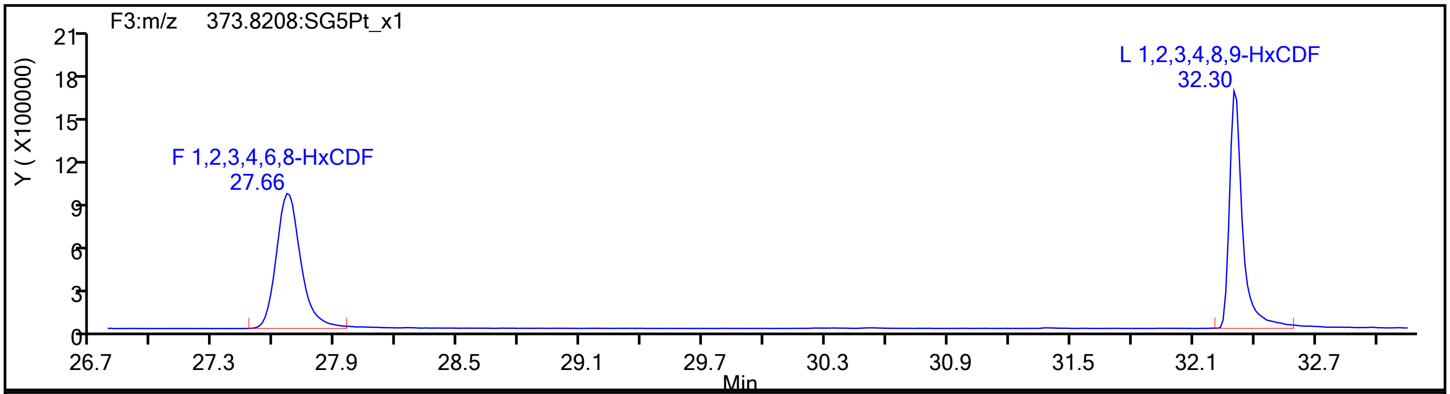

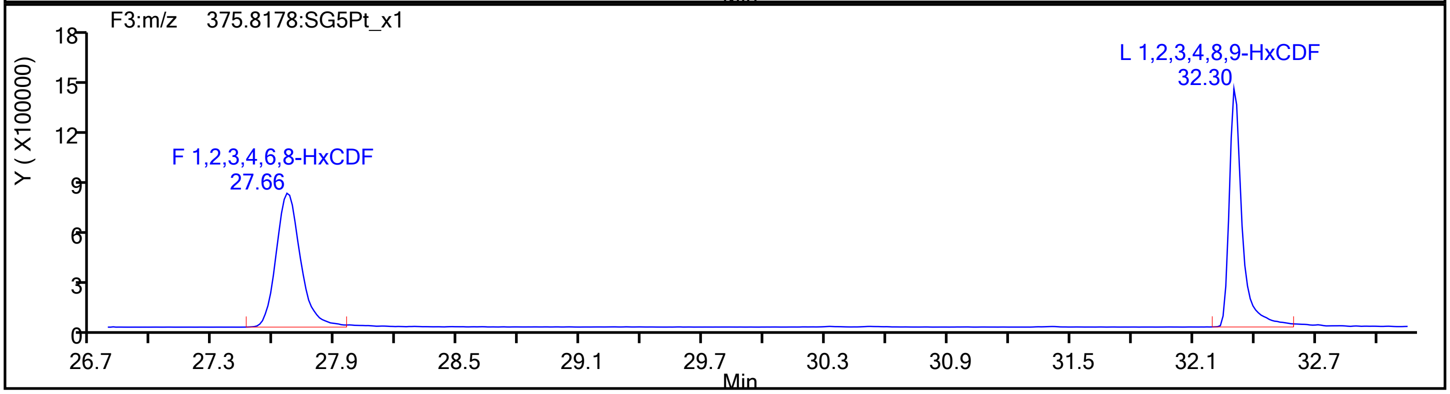

HxCDF Standards

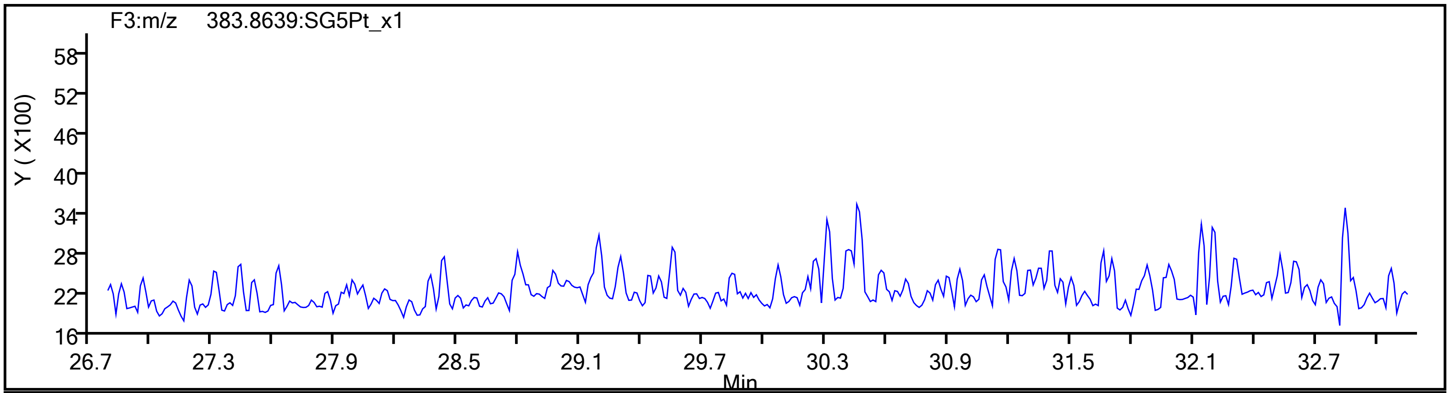

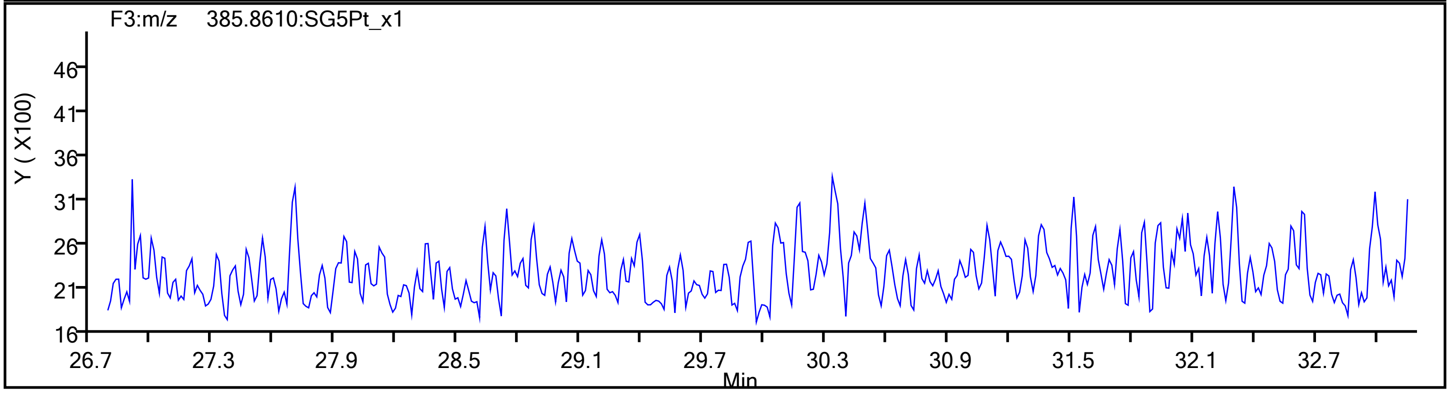

Report Date: 28-Jun-2020 13:16:24 | Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d		
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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

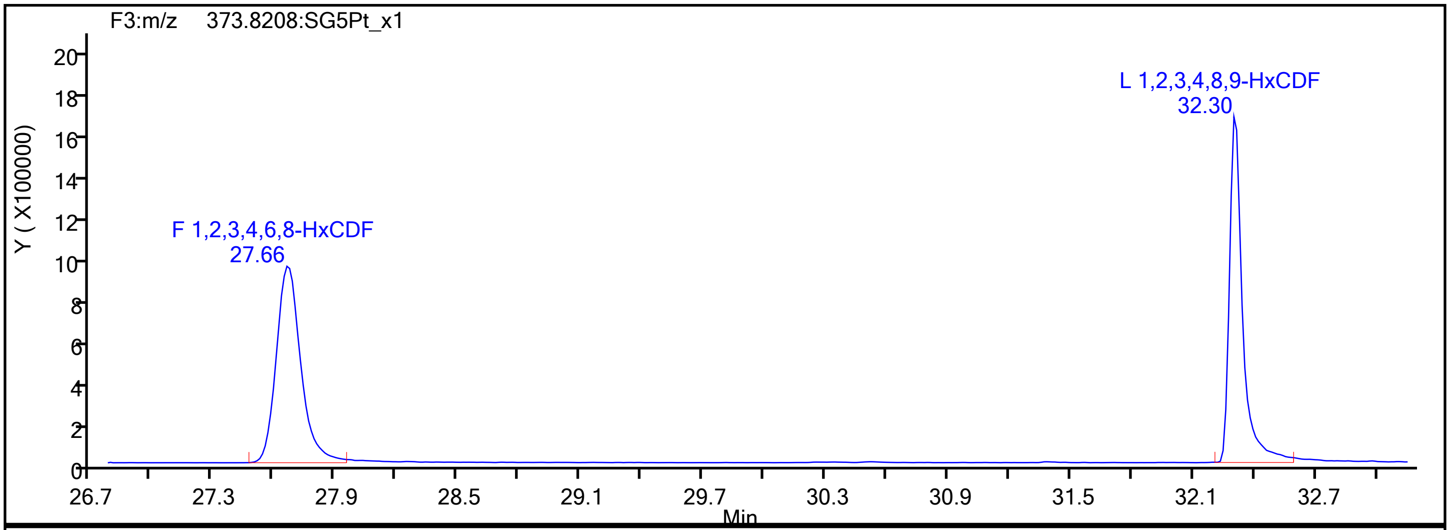

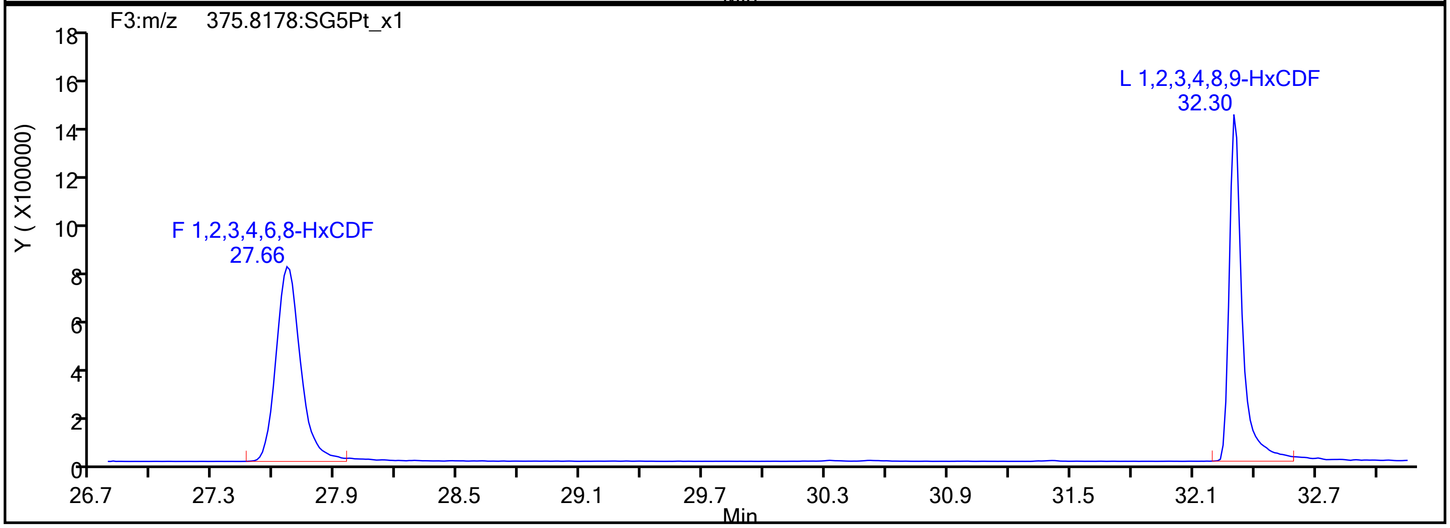

HxCDF Interference Mass

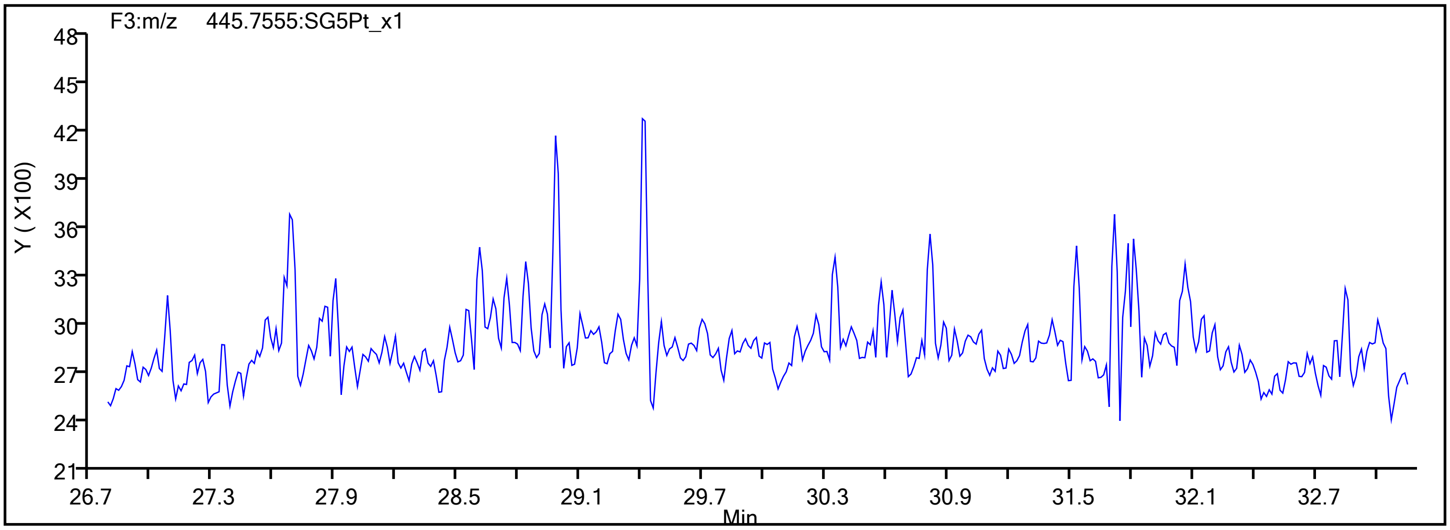

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d

Injection Date: 27-Jun-2020 13:12:28
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390253
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Column Dia: 0.32 mm

HpCDF

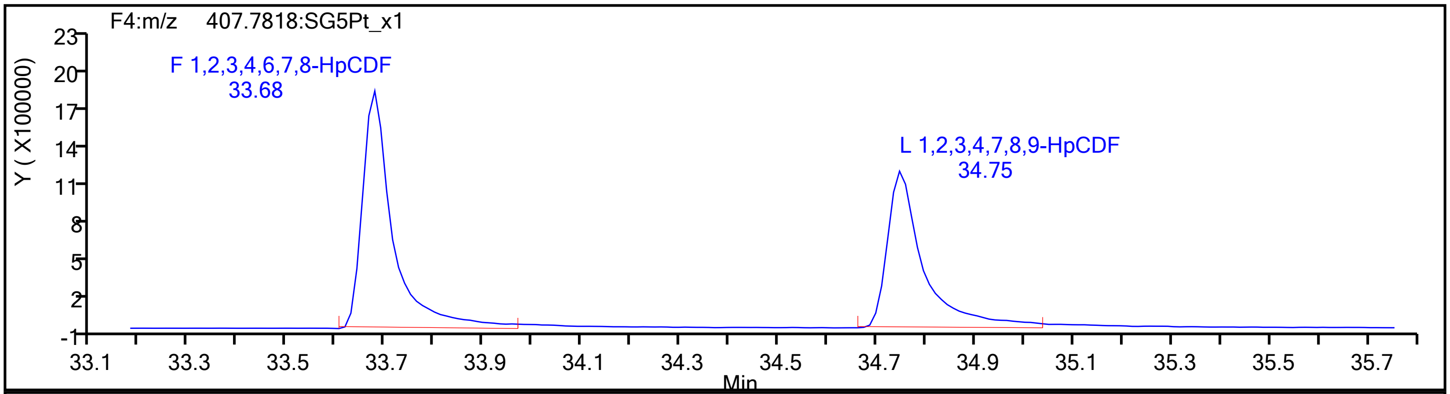

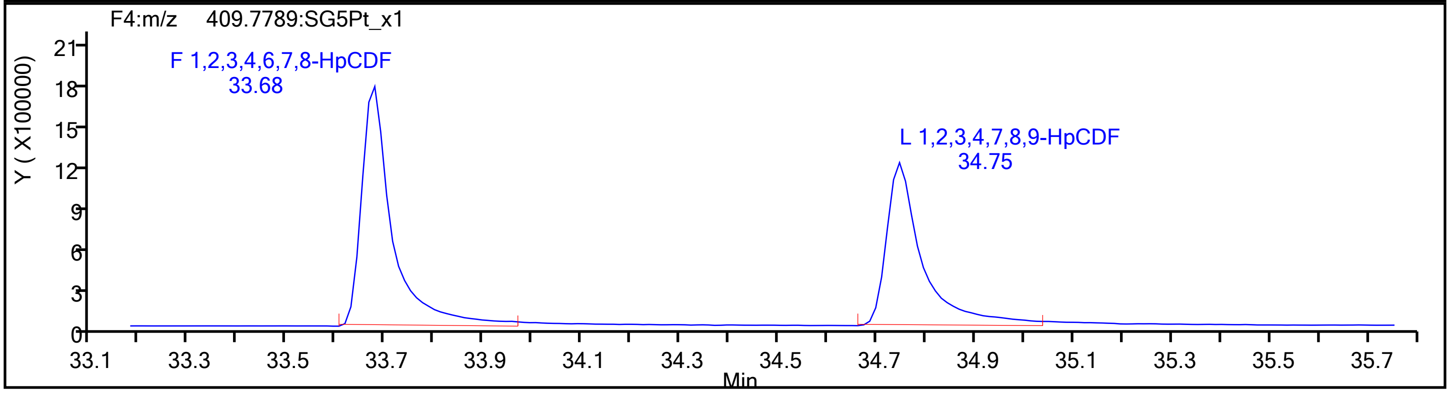

HpCDF Standards

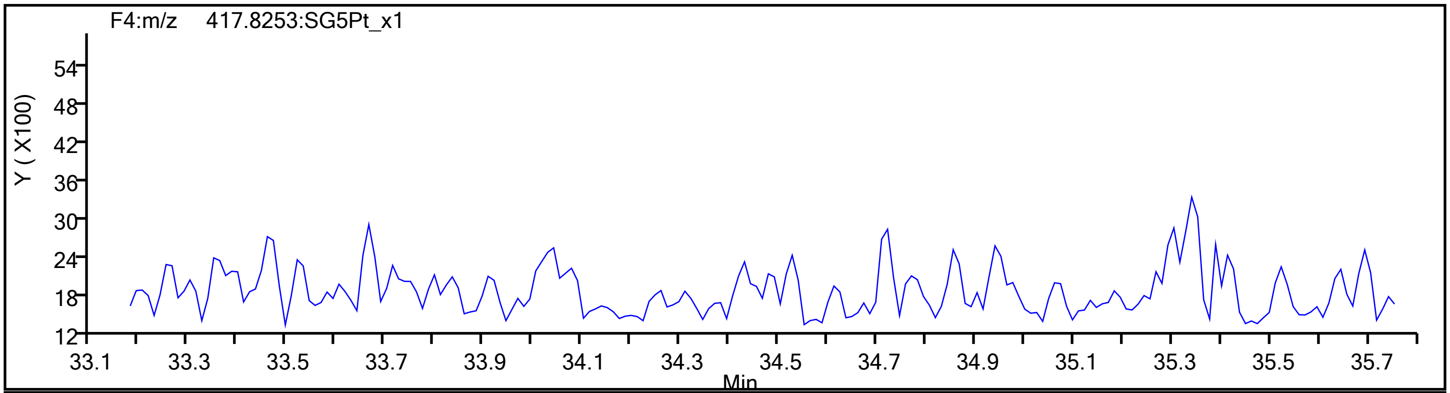

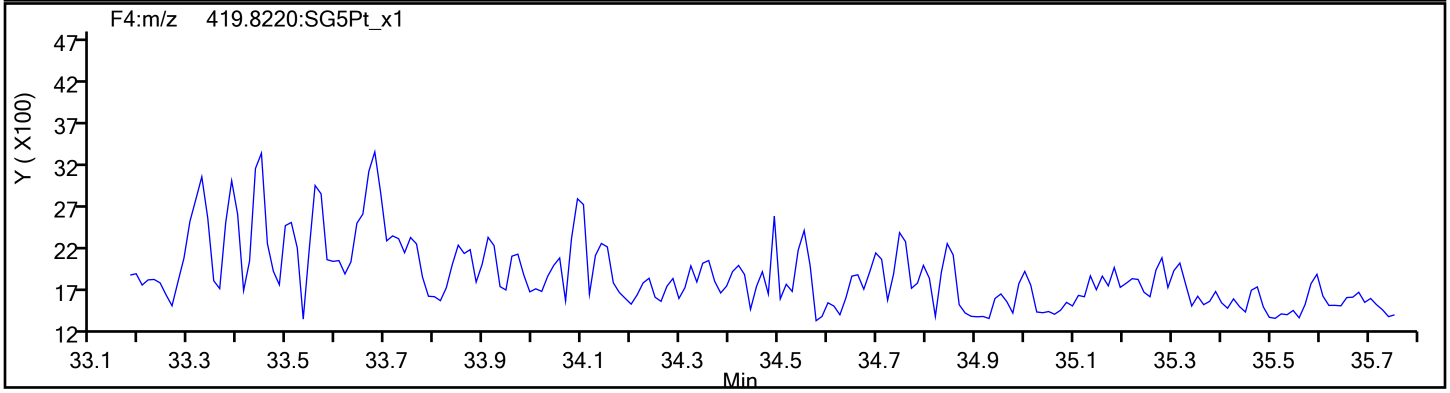

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_1.d

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

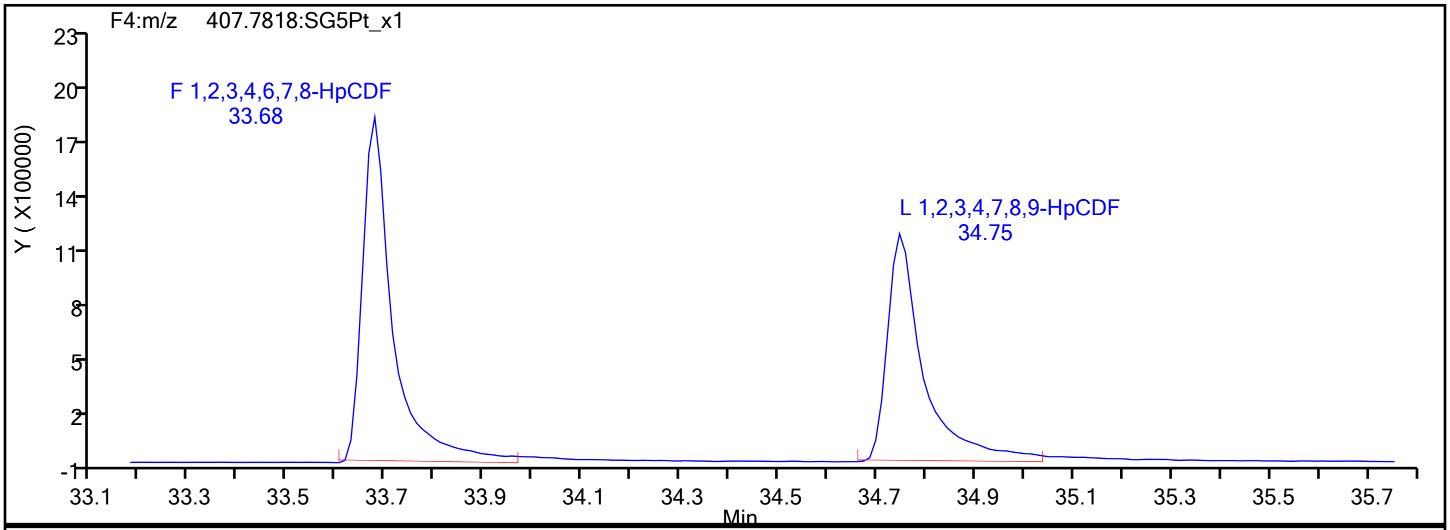

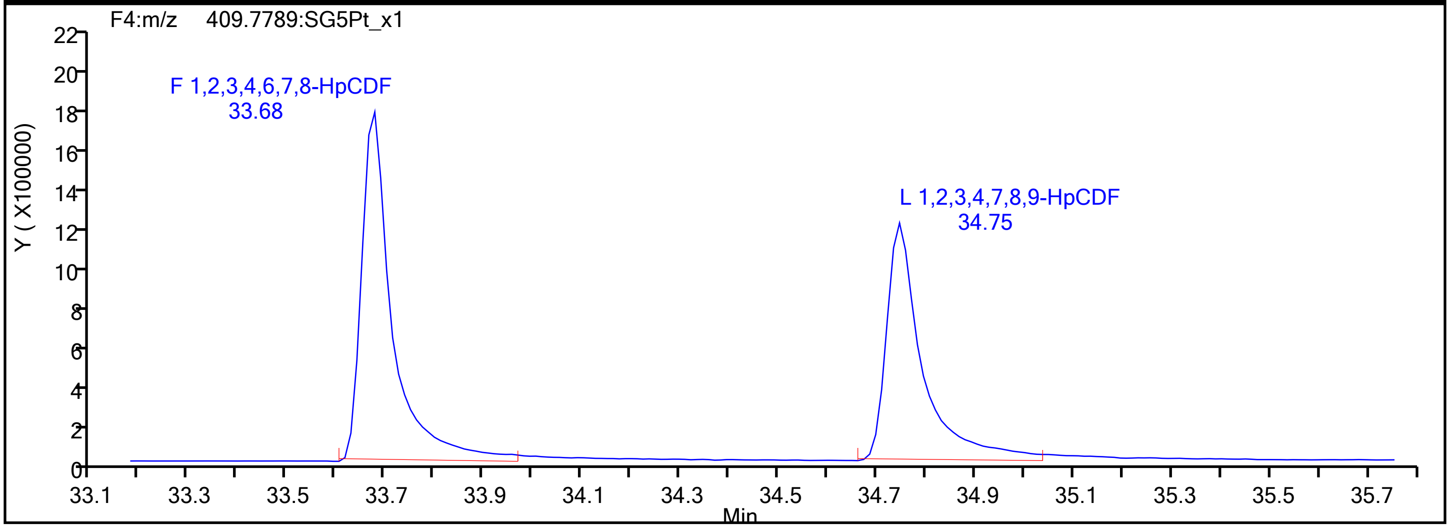

HpCDF Interference Mass

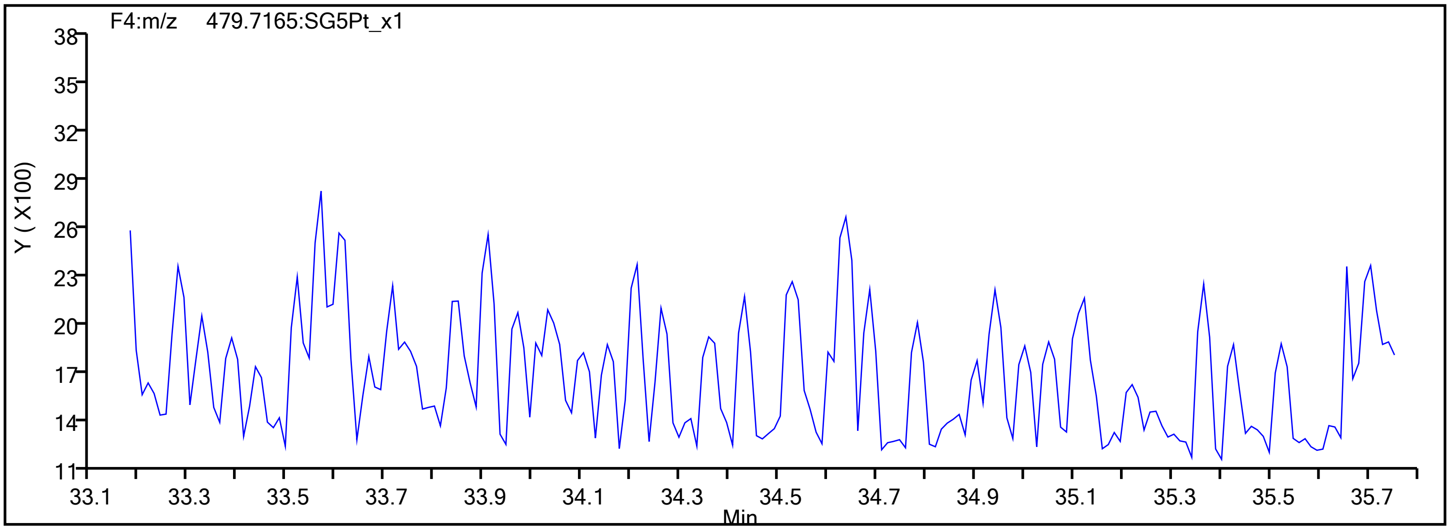

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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HpCDD

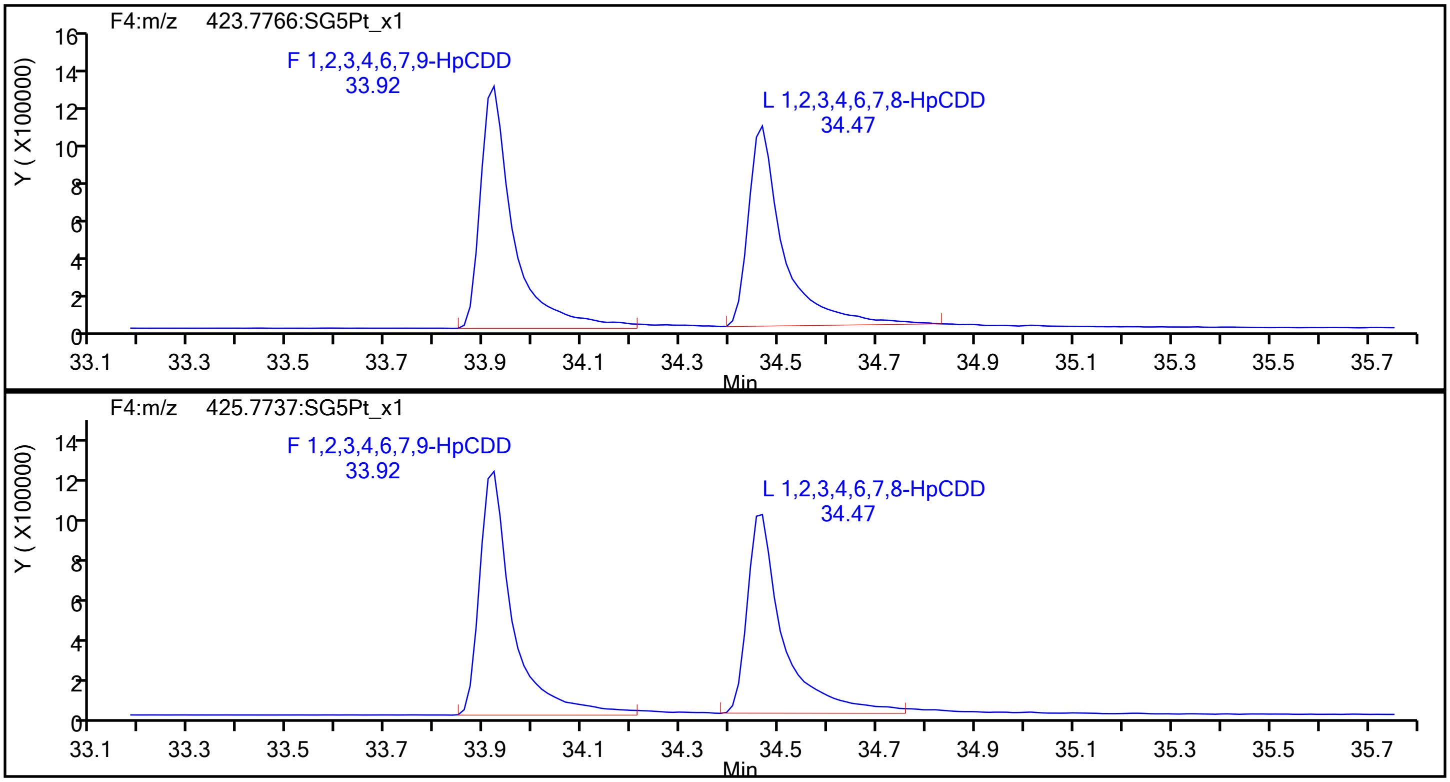

HpCDD Standards

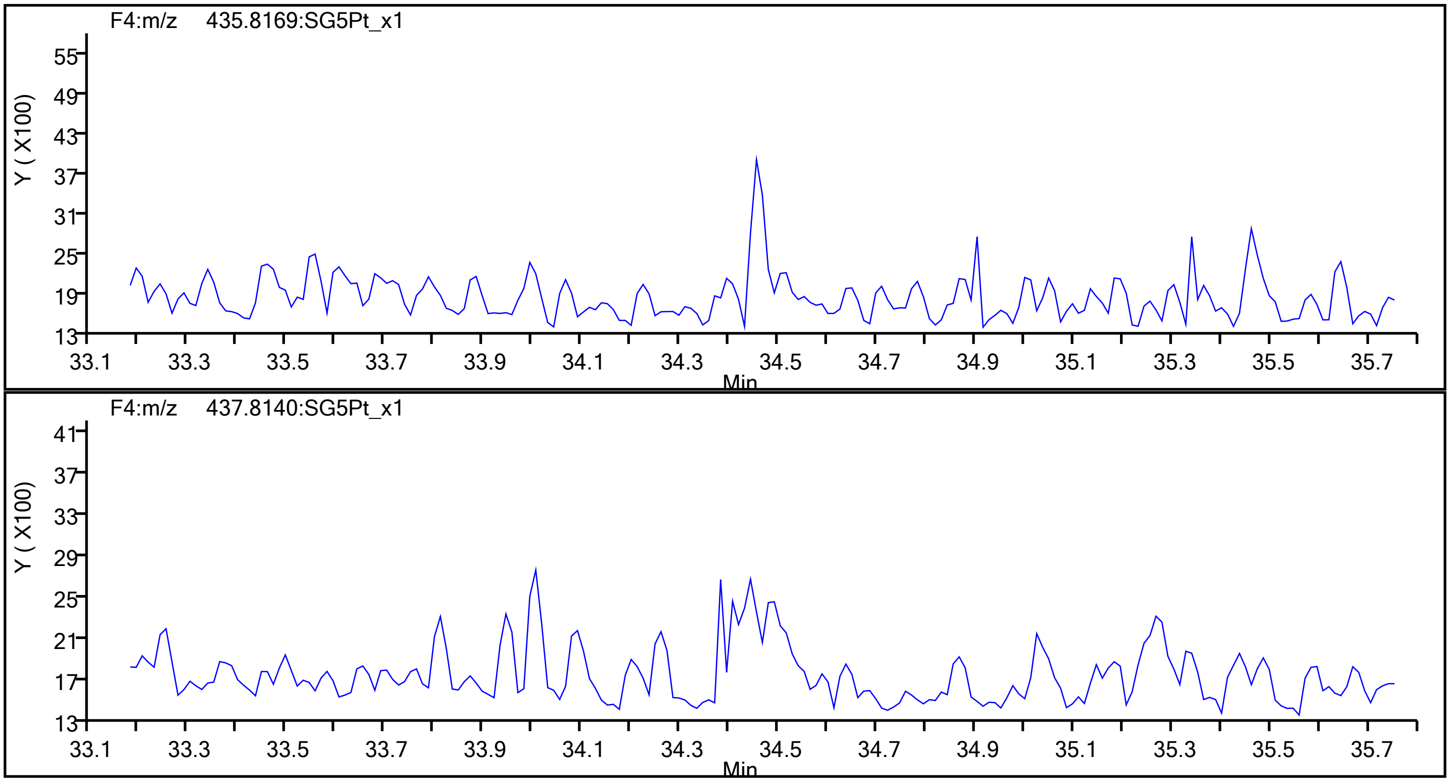

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
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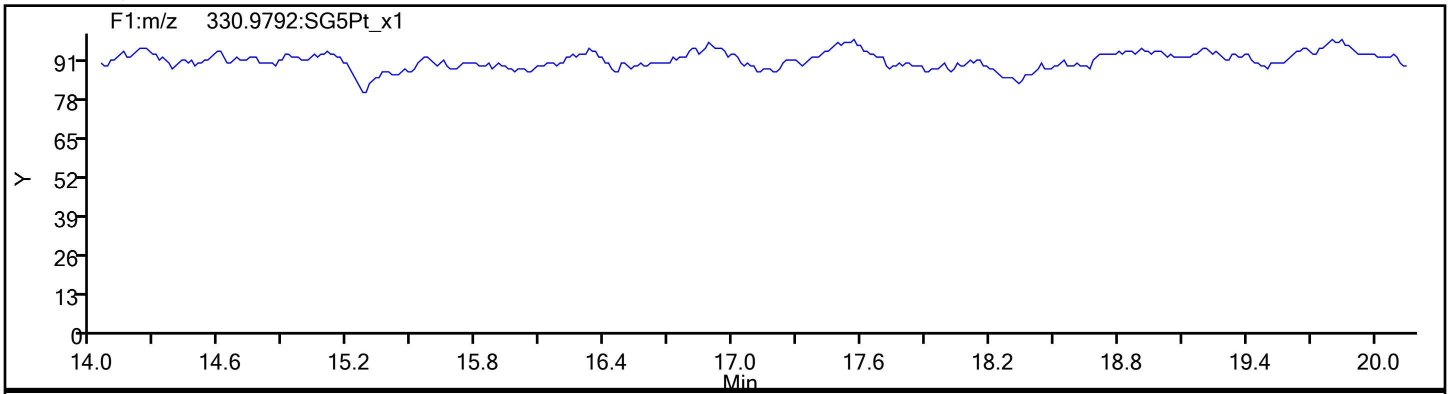

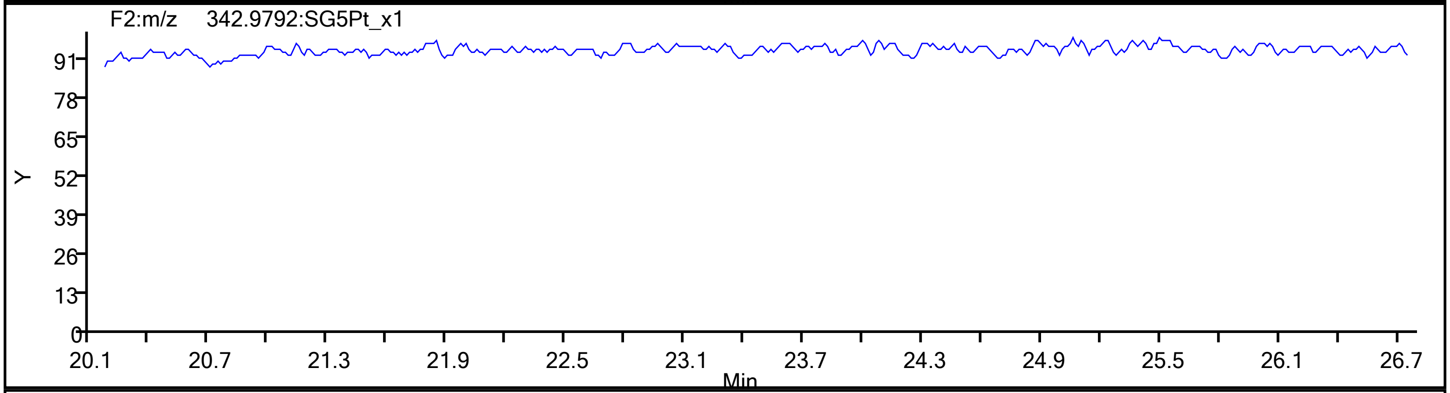

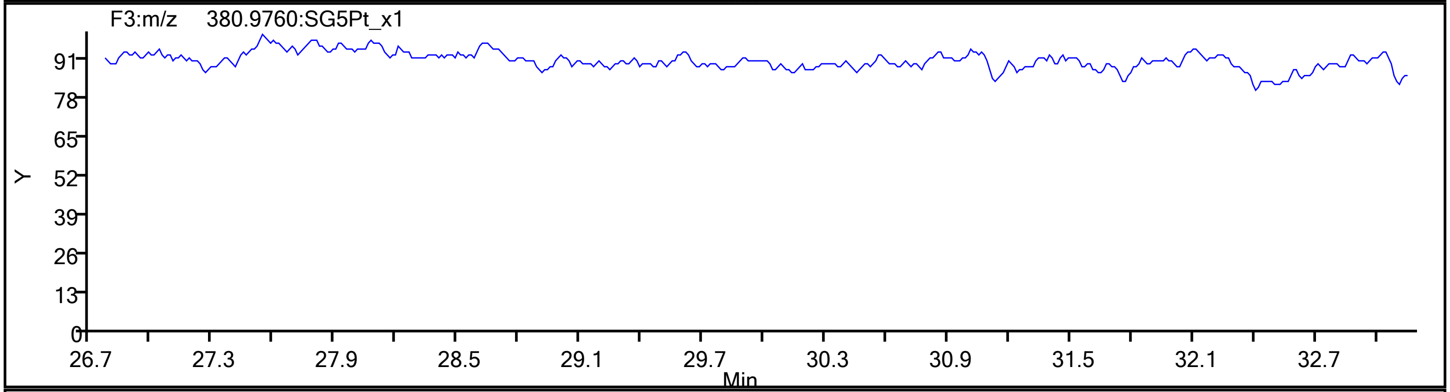

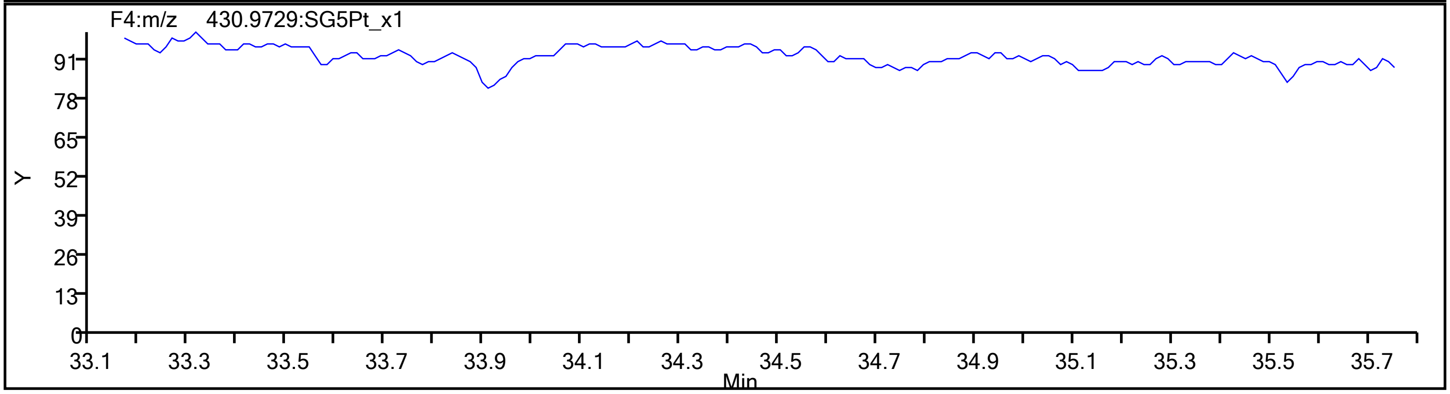

Report Date: 28-Jun-2020 13:16:24 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jun-2020 13:12:28	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390253	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

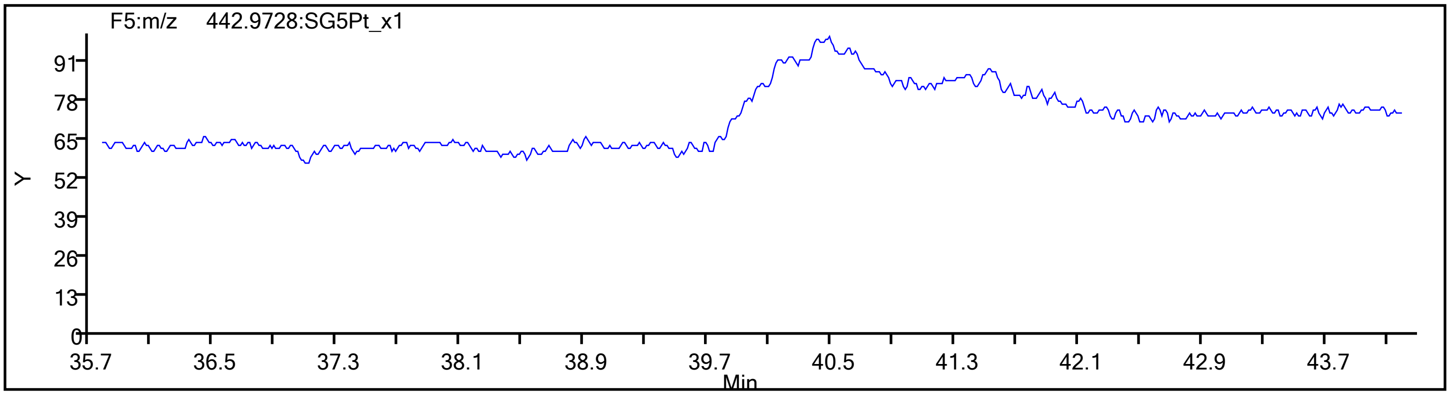

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 01-Sep-2020 19:56:43 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 090120 WDM HRDXNCP_00042
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 02-Sep-2020 11:35:18 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 02-Sep-2020 11:27:38

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.521	10411444	0.79	1.3726					0.00	
2,3,7,8-TCDF	17.551	20555104	0.75	0.9104	86.7	86.7	0.3449	0.3449		
A Non-2,3,7,8-sub-TCDF	17.234						0.3449	0.3449		
S Total TCDF					86.7	86.7	0.3449	0.3449		
D 13C-2,3,7,8-TCDD	18.247	6746671	0.76	1.0192					0.00	
2,3,7,8-TCDD	18.262	7745316	0.76	1.0745	42.7	42.7	0.1421	0.1421		
A Non-2,3,7,8-sub-TCDD	17.695						0.1421	0.1421		
S Total TCDD					42.7	42.7	0.1421	0.1421		
A F1 PeCDFs	20.091						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	23.332						0.0	0.0		
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	23.699						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.522						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	31.201	46502	1.27	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.885	6759816	1.05	1.4527						
1,2,3,4,7,8,9-HpCDF	34.966	5478756	1.03	1.0585						
A Non-2,3,7,8-sub-HpCDF	34.425						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.674	4319827	1.05	1.0540						
A Non-2,3,7,8-sub-HpCDD	35.325						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.041	12298085	0.75							
1,3,6,8-TCDD	15.979	8045963	0.77							
2,3,4,7-TCDF	17.551	20555104	0.75							
1,2,3,7-TCDD	18.156	6337581	0.77							
1,2,3,9-TCDF	18.443	8736096	0.75							
1,2,3,9-TCDD	18.443	7863412	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.411	3145788								
1,2,8,9-TCDF	19.426	9099518	0.78							
1,3,4,6,8-PeCDF	19.698	9893915	1.56							
1,2,4,7,9-PeCDD	21.524	5916346	1.56							
1,2,3,8,9-PeCDD	25.874	5266576	1.58							
1,2,3,8,9-PeCDF	26.105	6597838	1.58							
1,2,3,4,6,8-HxCDF	28.452	6144659	1.23							
1,2,4,6,7,9-HxCDD	29.997	5130282	1.24							
1,2,3,4,6,7-HxCDD	32.299	5010688	1.25							
1,2,3,4,8,9-HxCDF	32.592	5846159	1.24							
1,2,3,4,6,7,9-HpCDD	34.128	5042366	1.04							

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 01-Sep-2020 19:56:43 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 090120 WDM HRDXNCP_00042
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 02-Sep-2020 11:35:18 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 02-Sep-2020 11:27:38

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.521	17.521	0	1.000	4595717	1143053	4290	10725	266		
317.9389	17.521	17.521	0	1.000	5815727	1441275	2228	5570	647	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.551	17.551	0	1.002	8808030	2009985	3692	9230	544		
305.8987	17.551	17.551	0	1.002	11747074	2666041	4423	11057	603	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						3692	9230			
305.8987	17.234						4423	11057			
13C-2,3,7,8-TCDD											
331.9368	18.247	18.247	0	1.000	2924191	683565	3129	7822	218		
333.9339	18.247	18.247	0	1.000	3822480	882760	1320	3300	669	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.262	18.262	0	1.001	3343556	748842	1290	3225	580		
321.8936	18.262	18.262	0	1.001	4401760	984620	1101	2752	894	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.695						1290	3225			
321.8936	17.695						1101	2752			
A F1 PeCDFs											
339.8597	20.091						435	1087			
341.8567	20.091						660	1650			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.332						921	2302			
341.8567	23.332						708	1770			
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.699						1054	2635			
357.8516	23.699						737	1842			

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						1105	2762			
375.8178	30.522						799	1997			
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.221	31.201	1	1.000	25997	5716	1816	4540	3		
391.8127	31.234	31.201	2	1.000	20505	5761	1447	3617	4	1.27(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.885	33.885	0	1.000	3459117	1051706	5724	14310	184		
409.7789	33.885	33.885	0	1.000	3300699	1023798	6504	16260	157	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.966	34.966	0	1.000	2784739	793122	5724	14310	139		
409.7789	34.966	34.966	0	1.000	2694017	765292	6504	16260	118	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						5724	14310			
409.7789	34.425						6504	16260			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.674	34.674	0	1.000	2210434	619459	5390	13475	115		
425.7737	34.674	34.674	0	1.000	2109393	609825	3949	9872	154	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.325						5390	13475			
425.7737	35.325						3949	9872			
1,3,6,8-TCDF											
303.9016	15.041	15.041	0		5285159	1550951	3692	9230	420		
305.8987	15.041	15.041	0		7012926	2074405	4423	11057	469	0.75(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.979	15.979	0		3493621	991588	1290	3225	769		
321.8936	15.979	15.979	0		4552342	1296976	1101	2752	1178	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.551	17.551	0		8808030	2009985	3692	9230	544		
305.8987	17.551	17.551	0		11747074	2666041	4423	11057	603	0.75(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	18.156	18.156	0		2765864	677973	1290	3225	526		
321.8936	18.141	18.156	-1		3571717	856393	1101	2752	778	0.77(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.443	18.443	0		3738086	864590	3692	9230	234		
305.8987	18.443	18.443	0		4998010	1141074	4423	11057	258	0.75(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.443	18.443	0		3463387	775110	1290	3225	601		
321.8936	18.443	18.443	0		4400025	962986	1101	2752	875	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	19.411	19.411	0		3145788	662369	1290	3225	513		
1,2,8,9-TCDF											
303.9016	19.426	19.426	0		4000105	819132	3692	9230	222		
305.8987	19.426	19.426	0		5099413	1088684	4423	11057	246	0.78(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.698	19.698	0		6030113	1342059	435	1087	3085		
341.8567	19.698	19.698	0		3863802	844459	660	1650	1279	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	21.524	21.524	0		3604755	628058	1054	2635	596		
357.8516	21.524	21.524	0		2311591	386808	737	1842	525	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.874	25.874	0		3227270	440701	1054	2635	418		
357.8516	25.874	25.874	0		2039306	282918	737	1842	384	1.58(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	26.105	26.105	0		4036997	545846	921	2302	593		
341.8567	26.119	26.105	1		2560841	343208	708	1770	485	1.58(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	28.452	28.452	0		3393956	428172	1105	2762	387		
375.8178	28.439	28.452	-1		2750703	332546	799	1997	416	1.23(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.997	29.997	0		2843724	417616	1816	4540	230		
391.8127	29.997	29.997	0		2286558	345107	1447	3617	238	1.24(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.299	32.299	0		2780092	737206	1816	4540	406		
391.8127	32.299	32.299	0		2230596	572495	1447	3617	396	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.592	32.592	0		3235496	872469	1105	2762	790		
375.8178	32.592	32.592	0		2610663	721522	799	1997	903	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	34.128	34.128	0		2576064	770596	5390	13475	143		
425.7737	34.128	34.128	0		2466302	729118	3949	9872	185	1.04(0.88-1.20)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	01-Sep-2020 19:56:43	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 31.201

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.820				
1,2,3,6,7,8-HxCDD	0.937				
1,2,3,7,8,9-HxCDD	0.990				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
31.221	25997	5716	20505	5761		1.27	
Signal Totals:							
	25997	5716	20505	5761			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	46502	11477				1.27	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (46502 * 0.0) / (0 * 0.000)

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

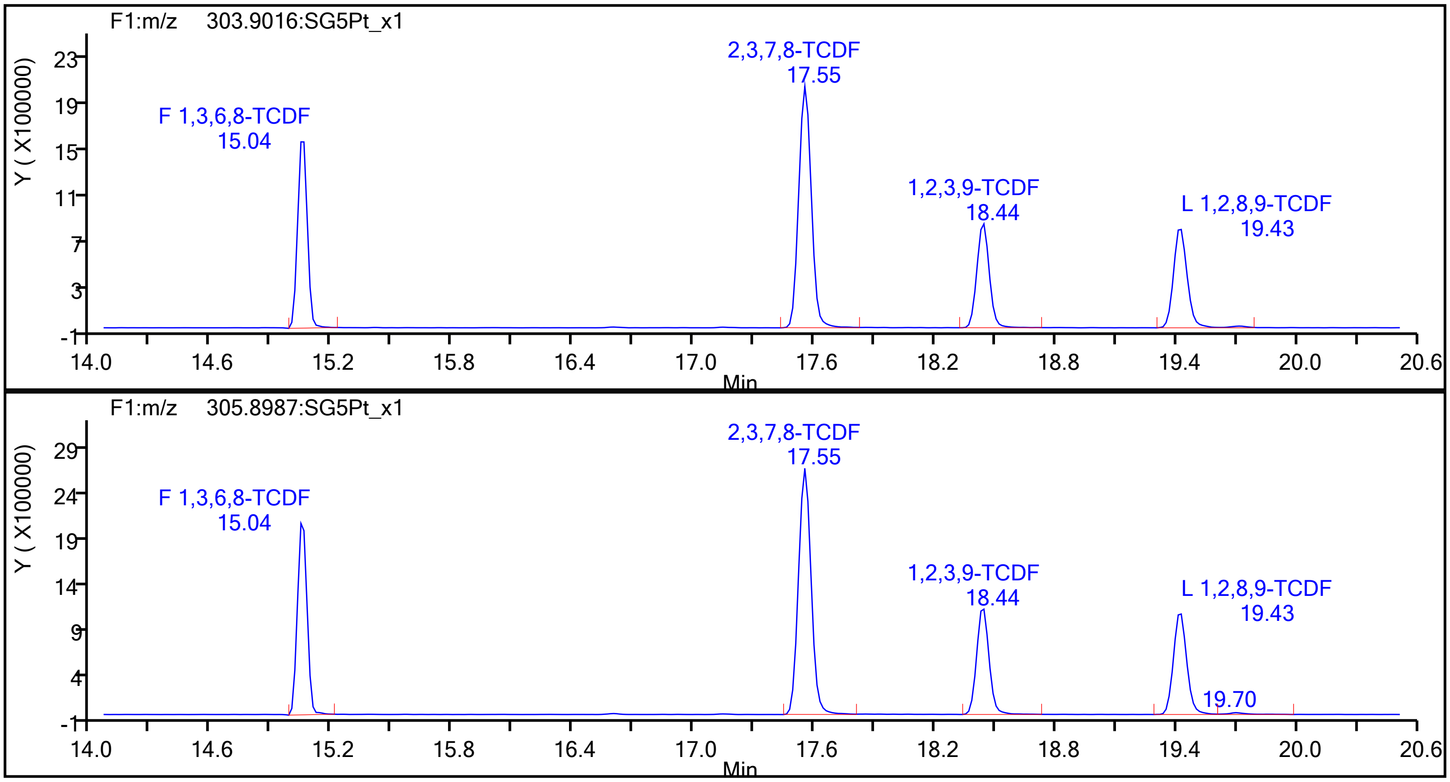

TCDF Standards

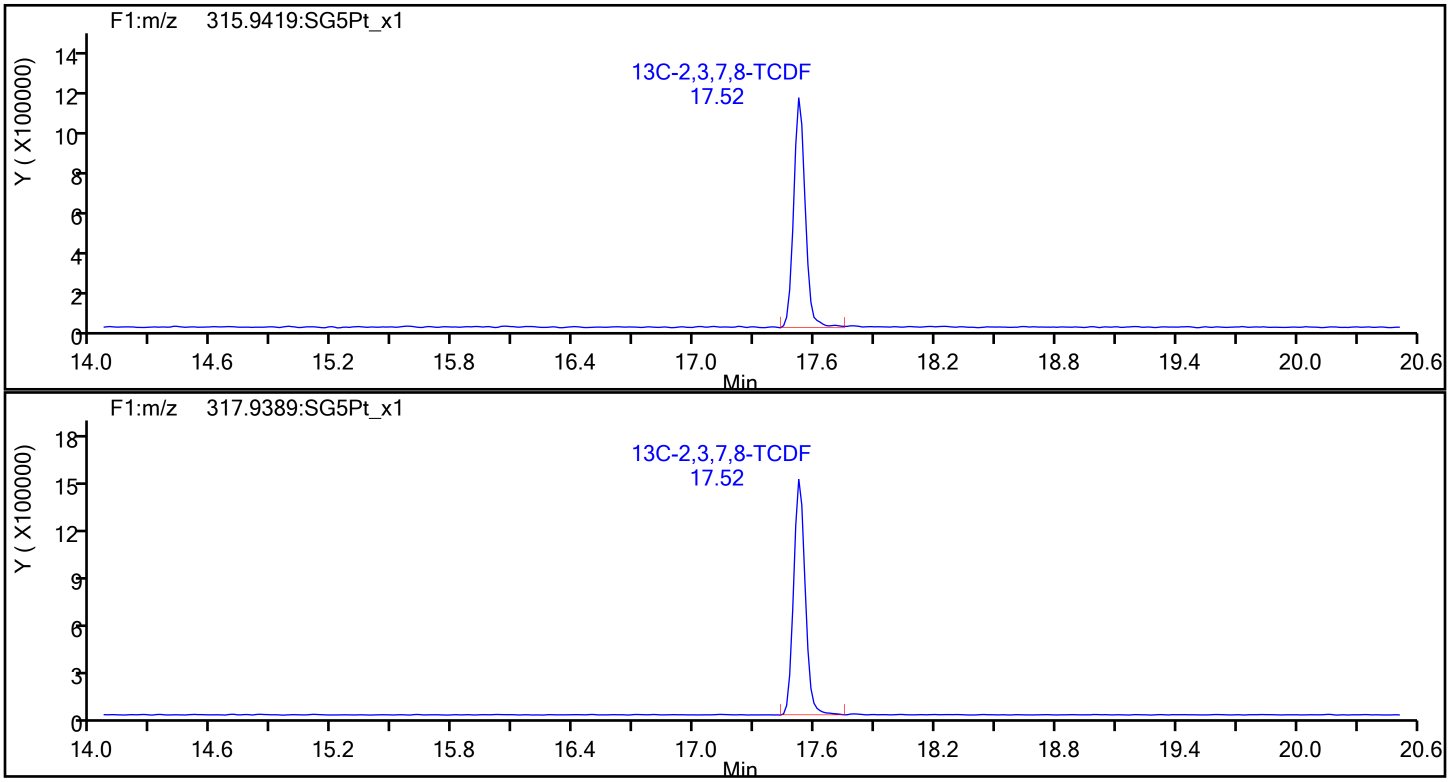

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

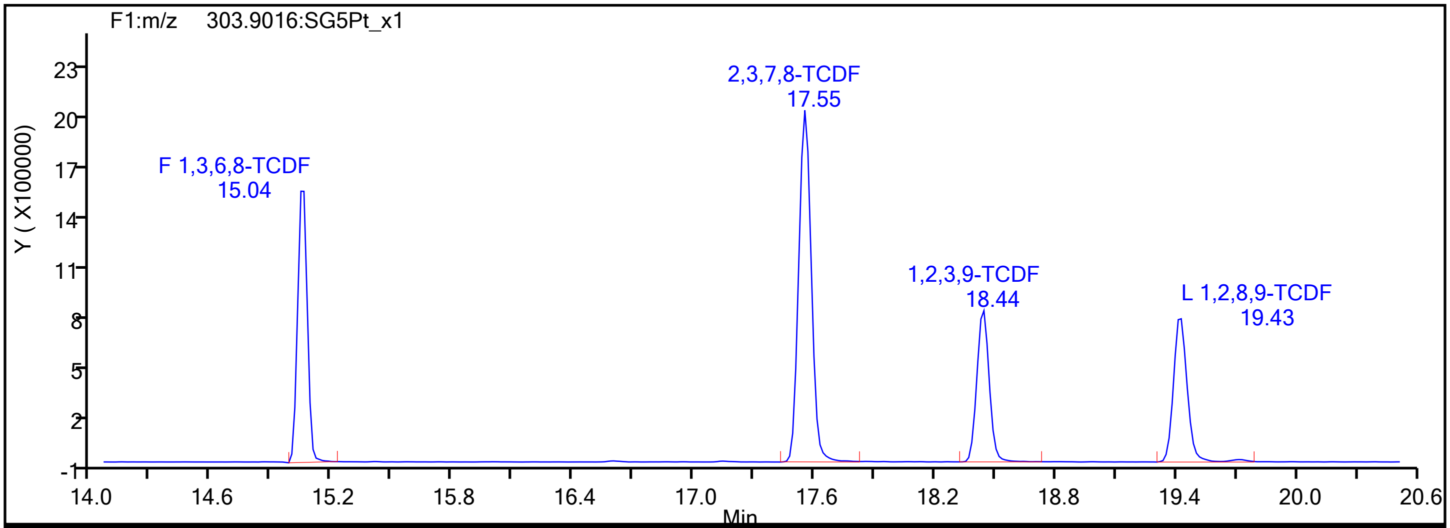

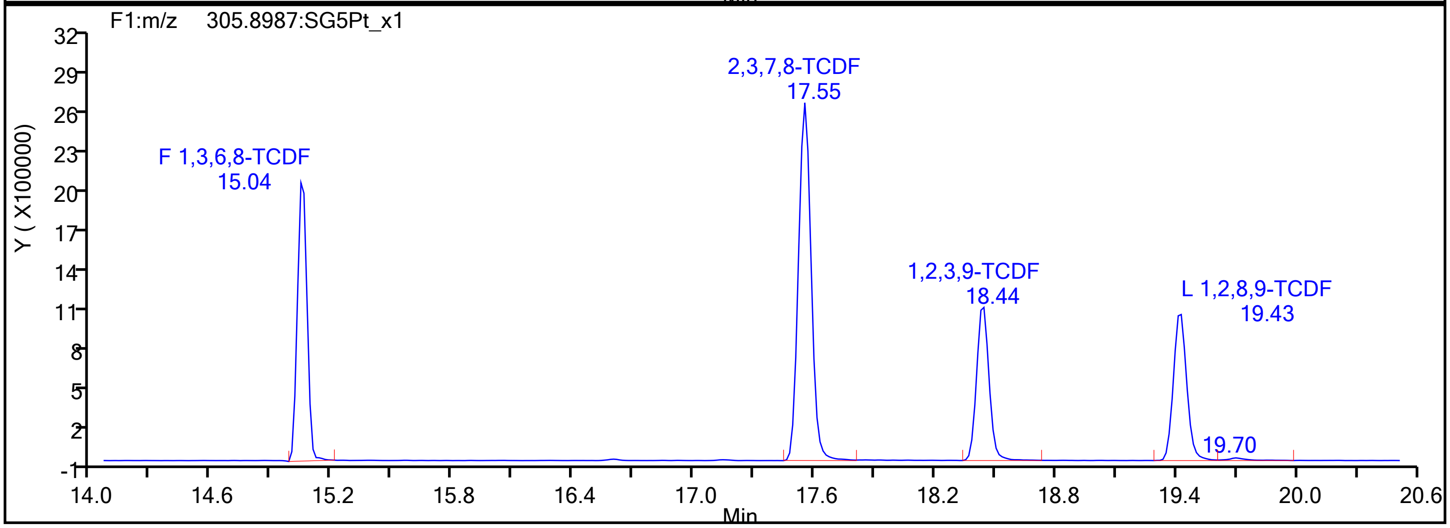

TCDF Interference Mass

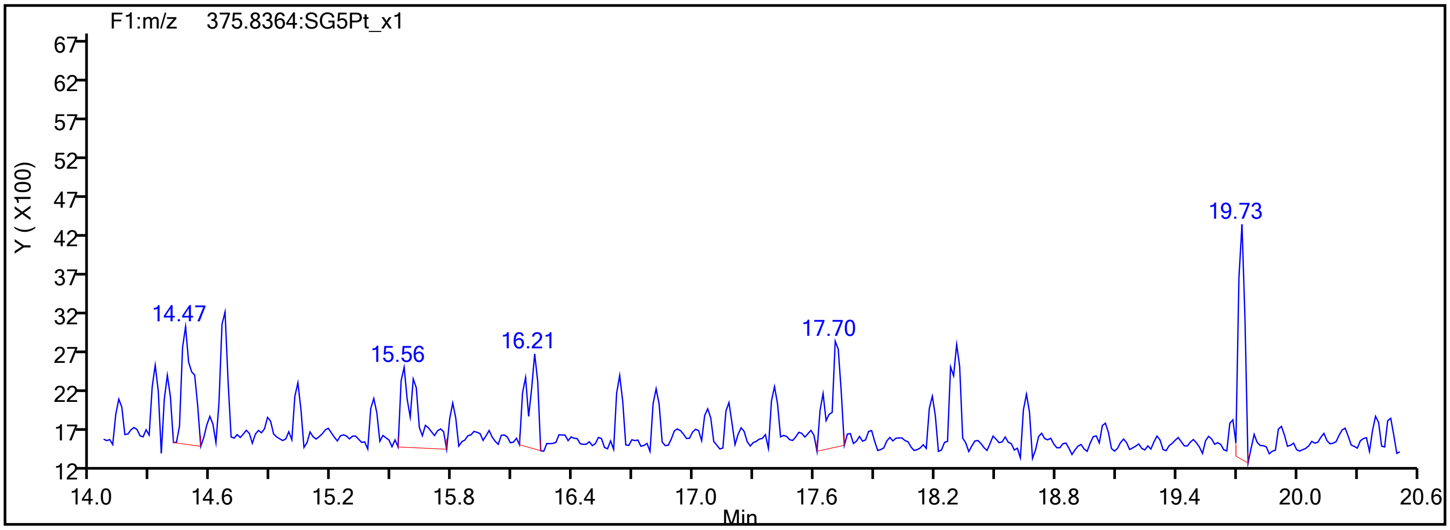

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d

Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

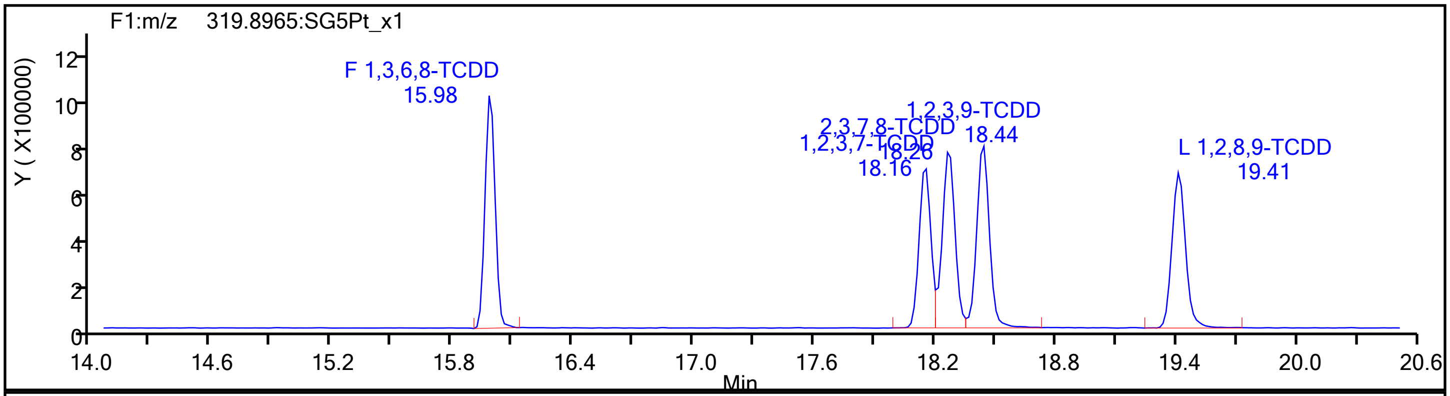

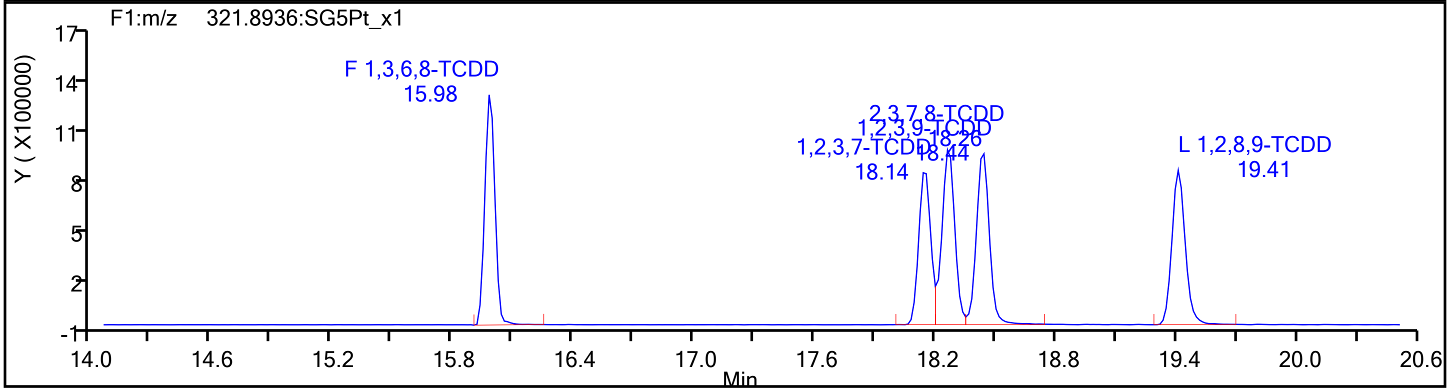

TCDD Standards

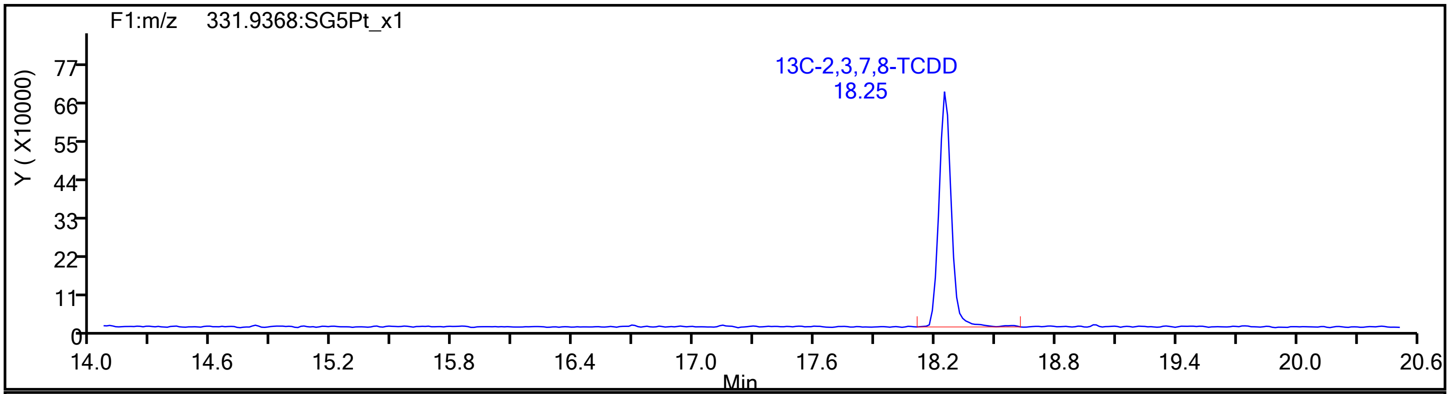

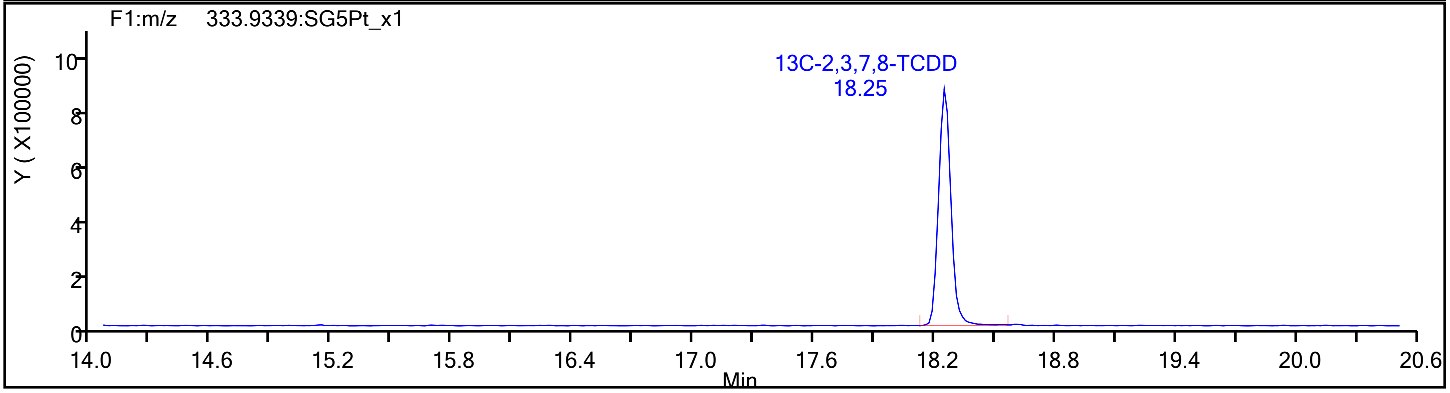

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

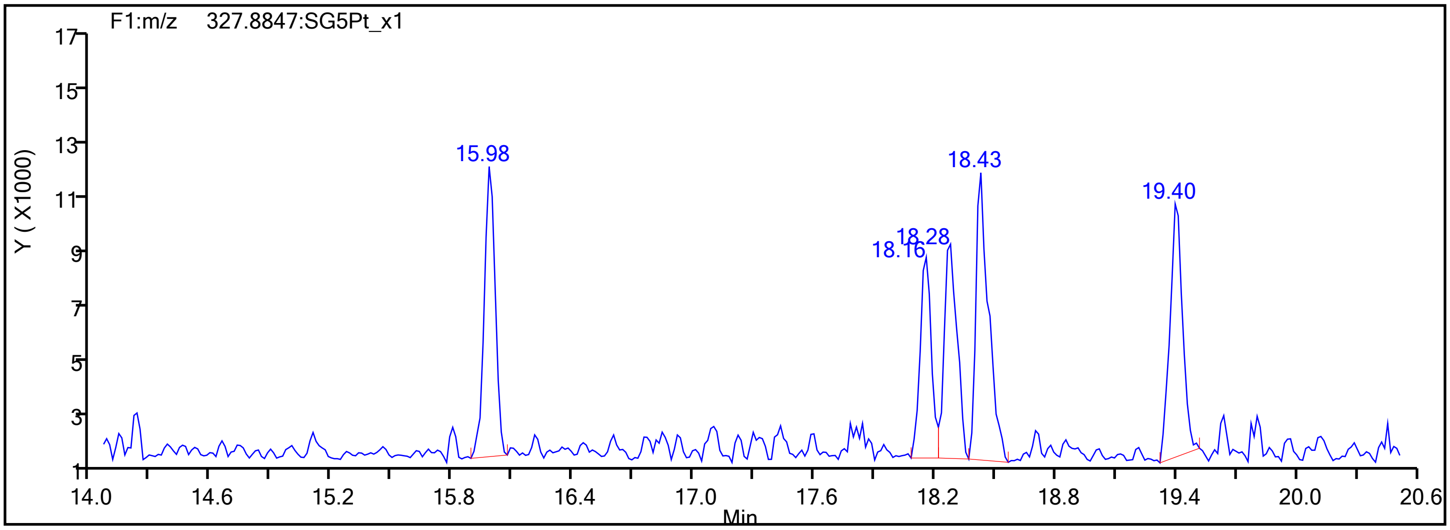

37Cl4-TCDD Standards

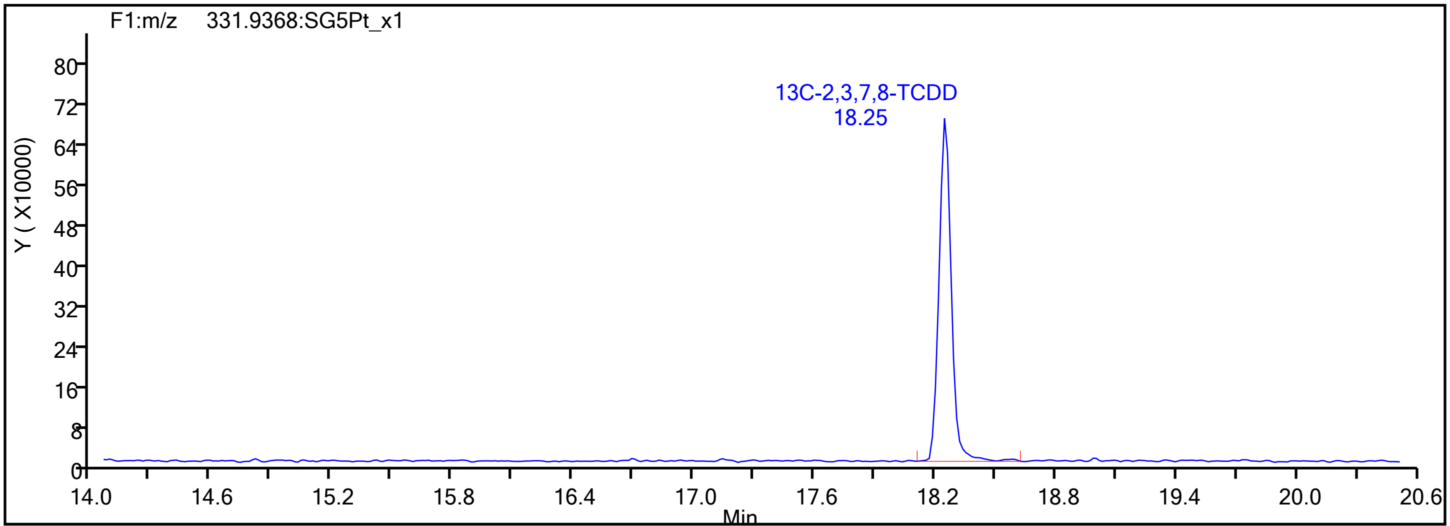

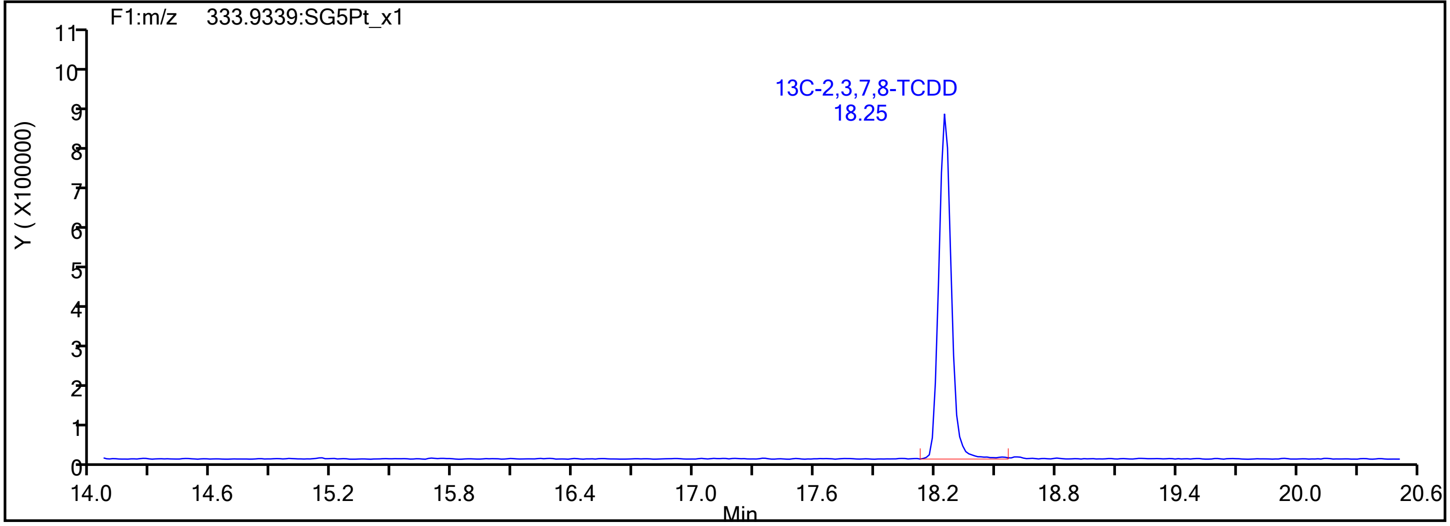

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

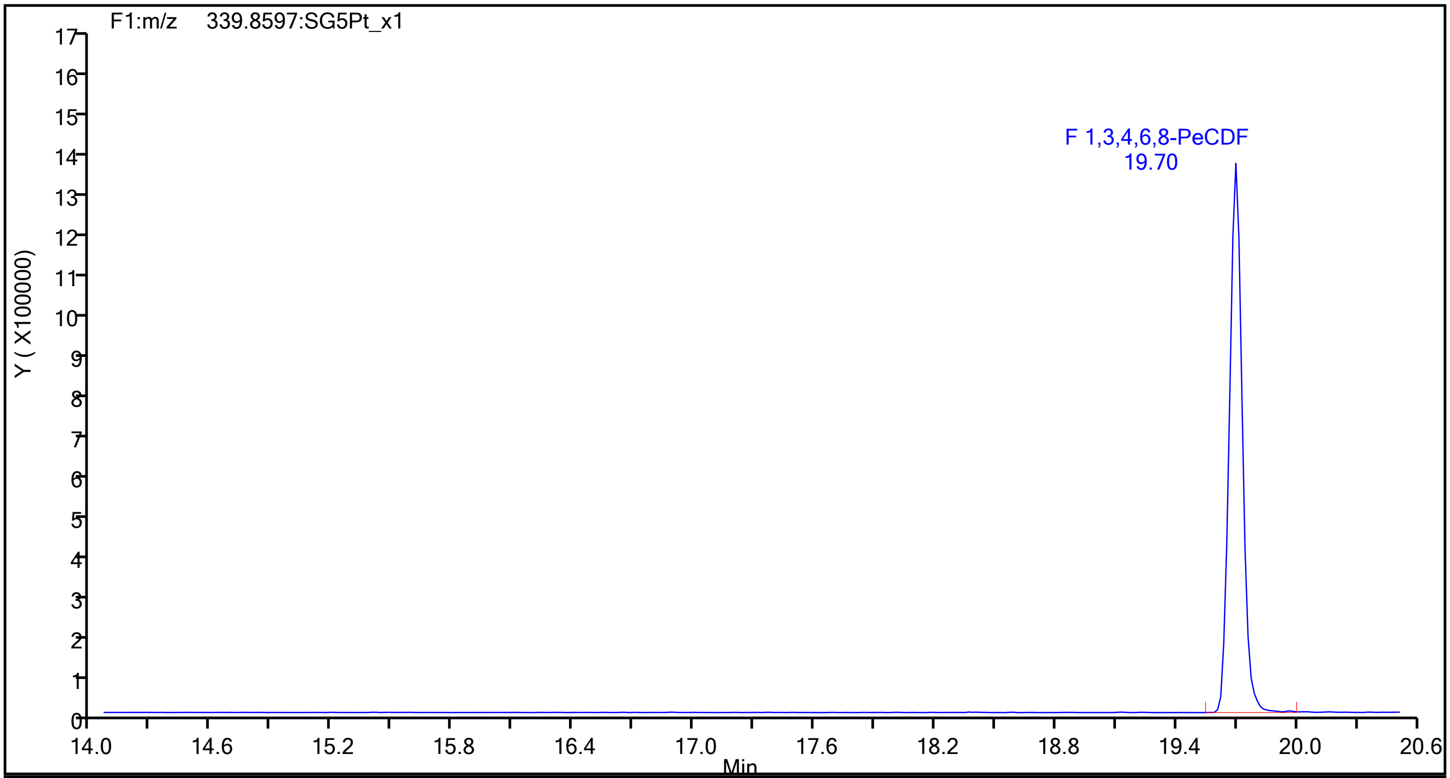

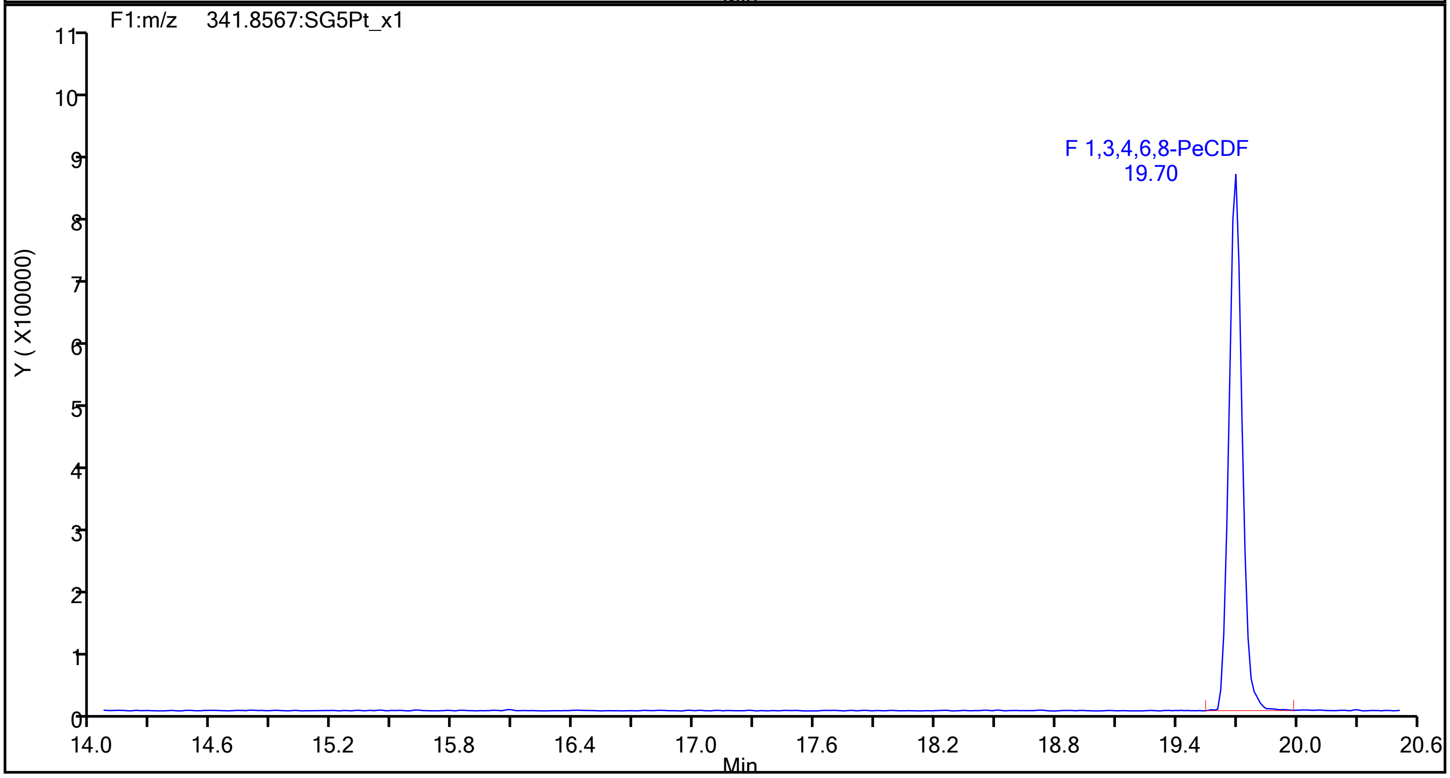

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

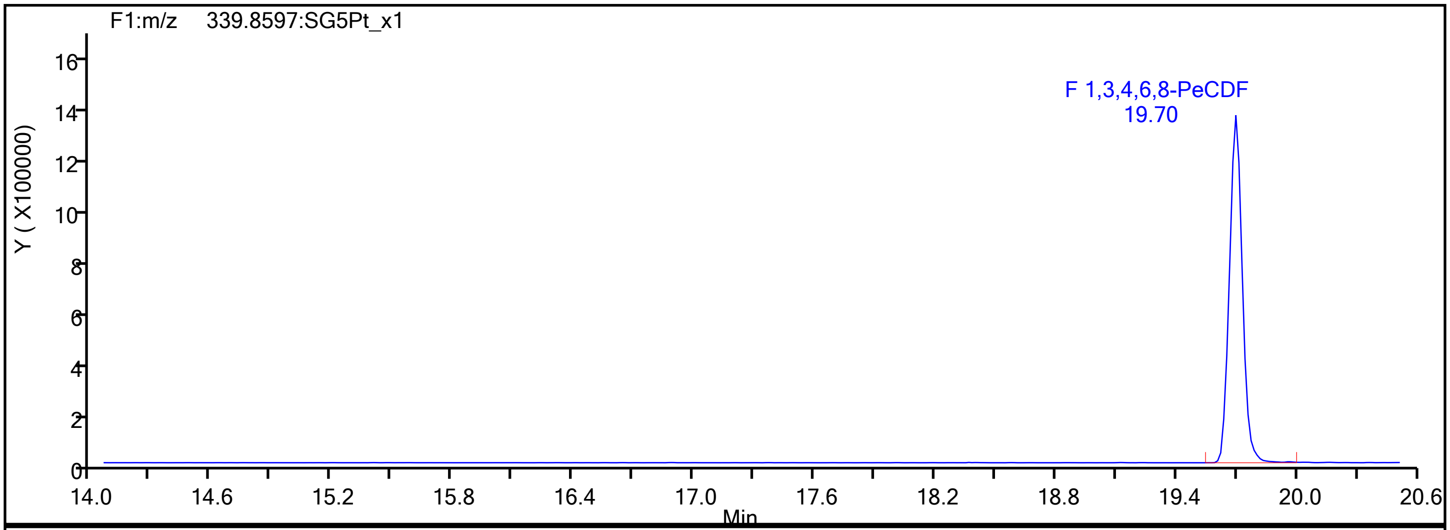

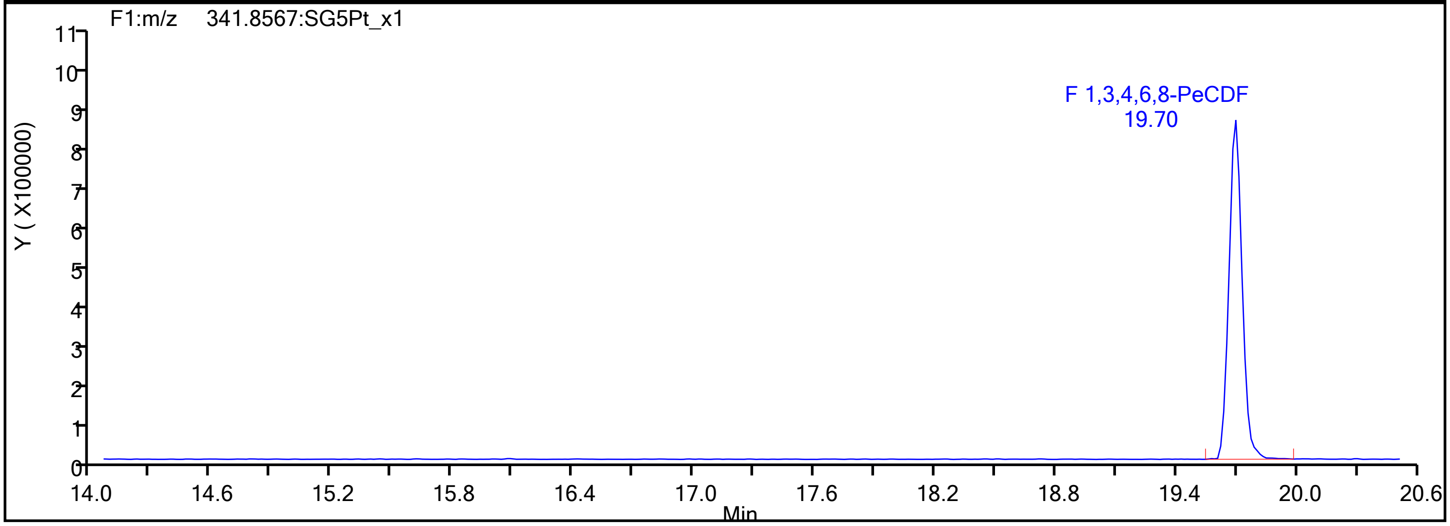

F1 PeCDFs Interference Mass

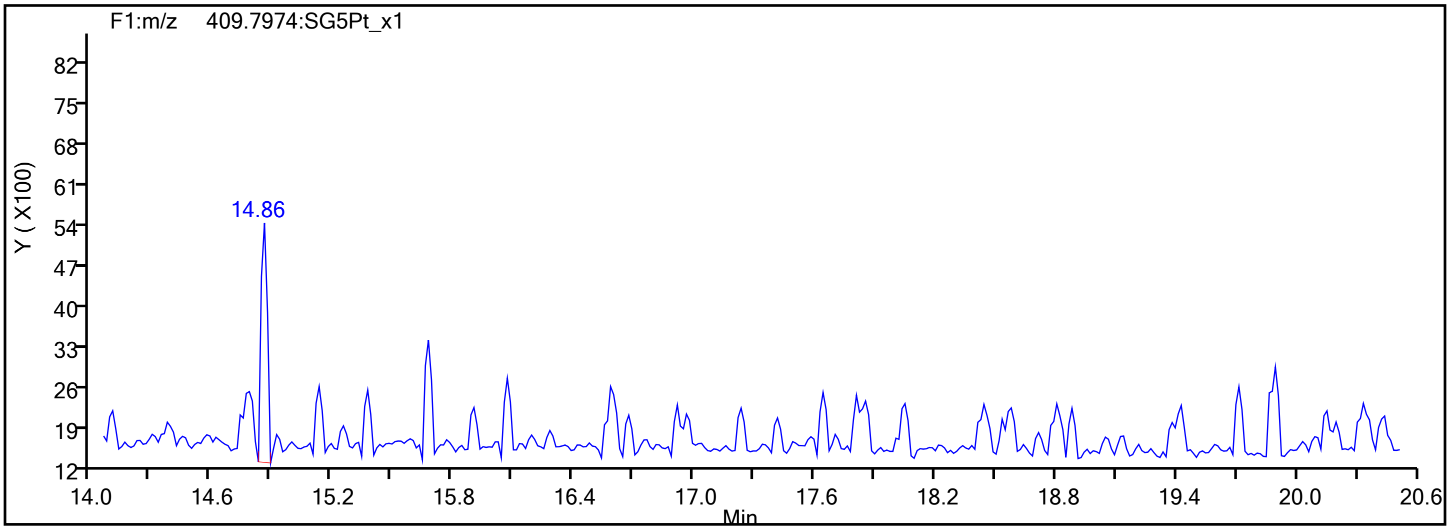

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d
Injection Date: 01-Sep-2020 19:56:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

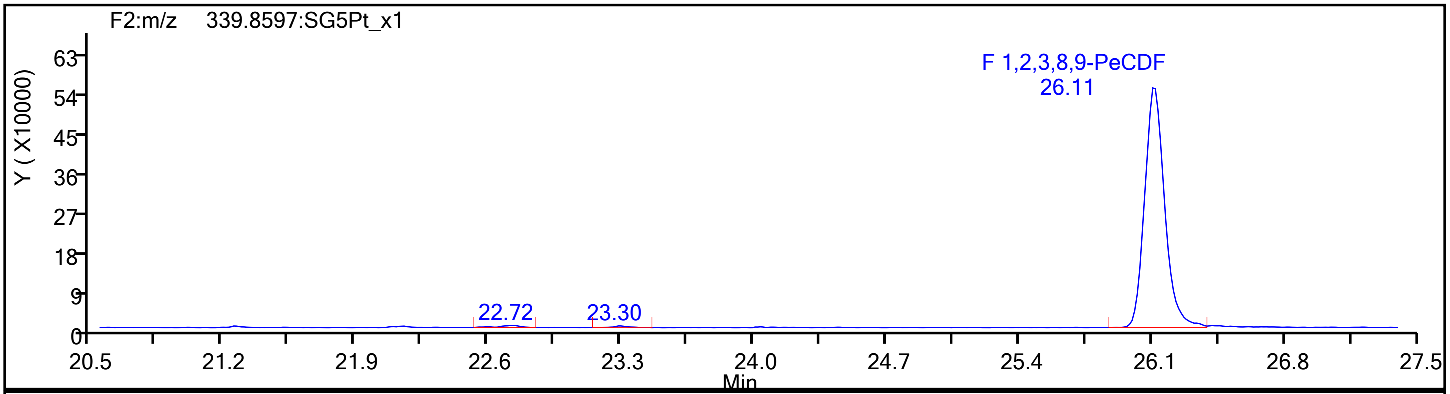

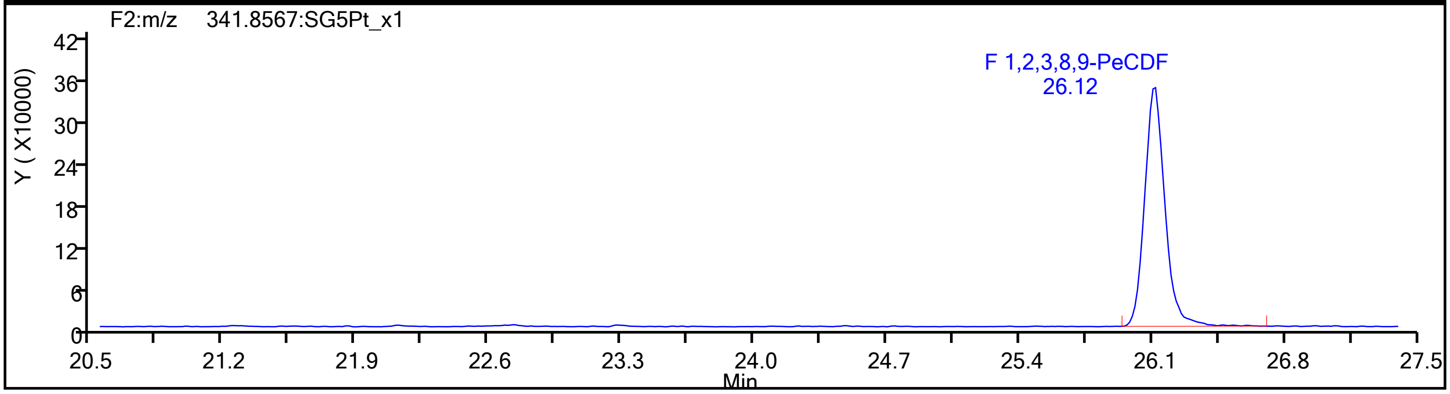

PeCDF Standards

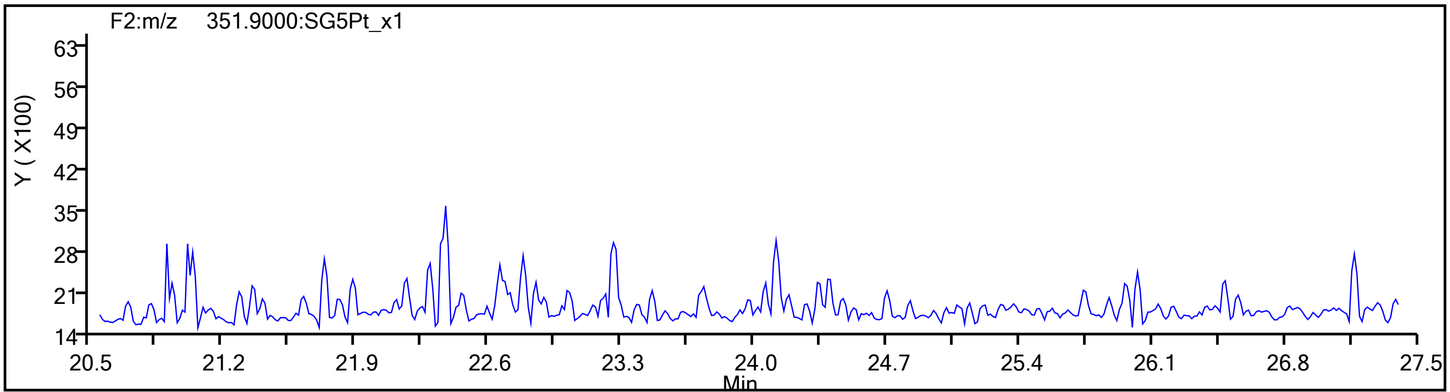

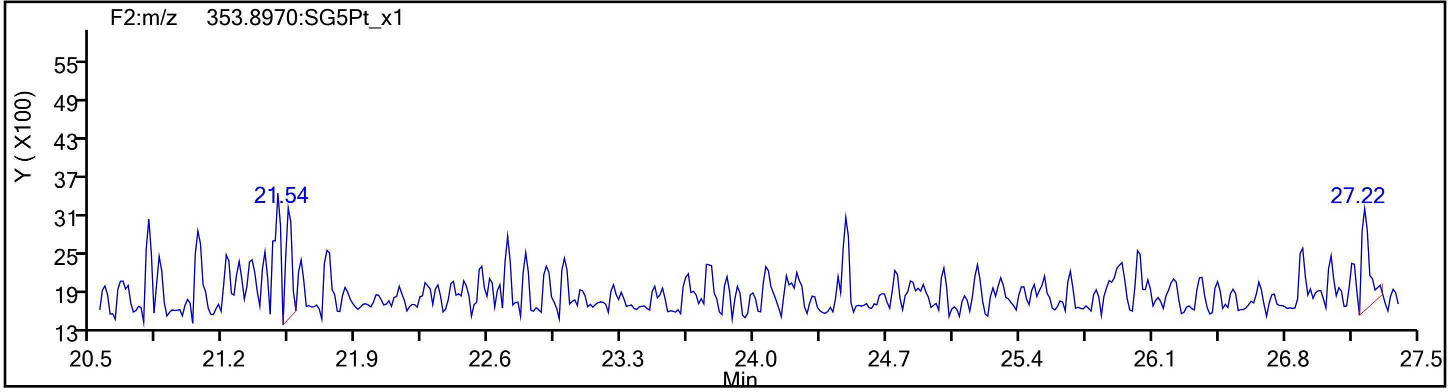

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

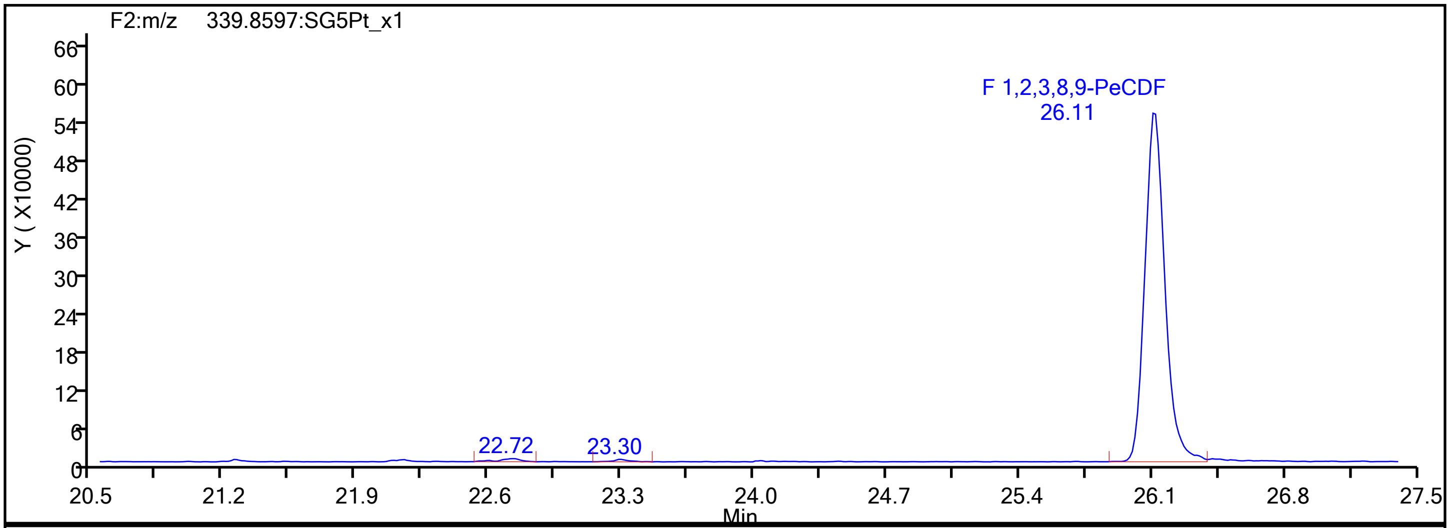

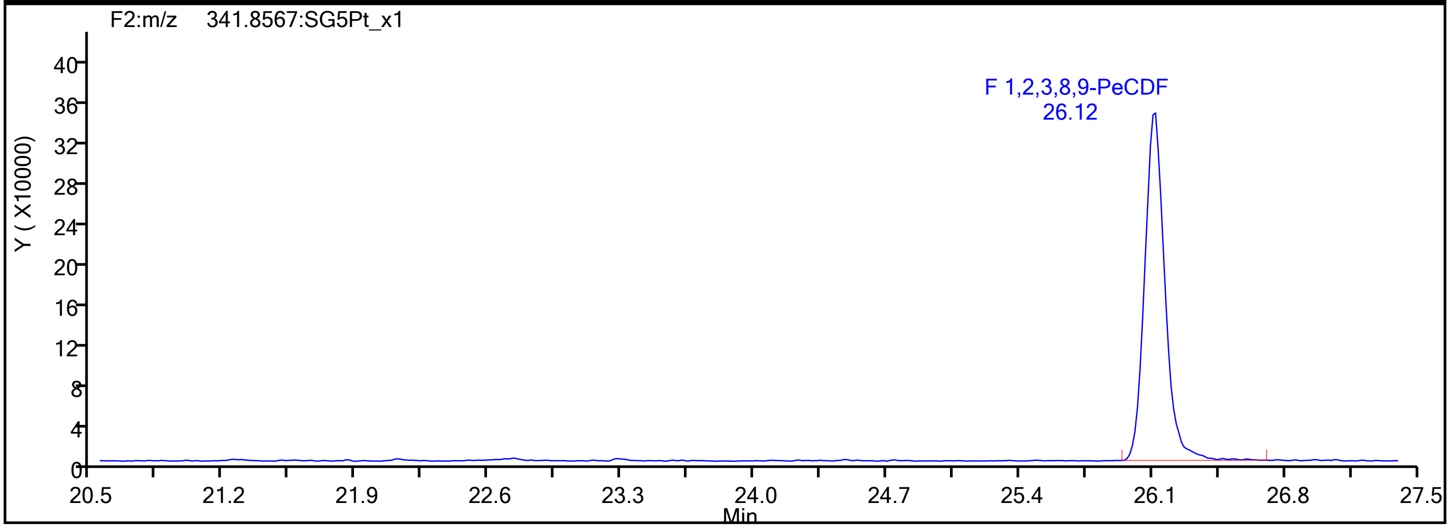

PeCDF Interference Mass

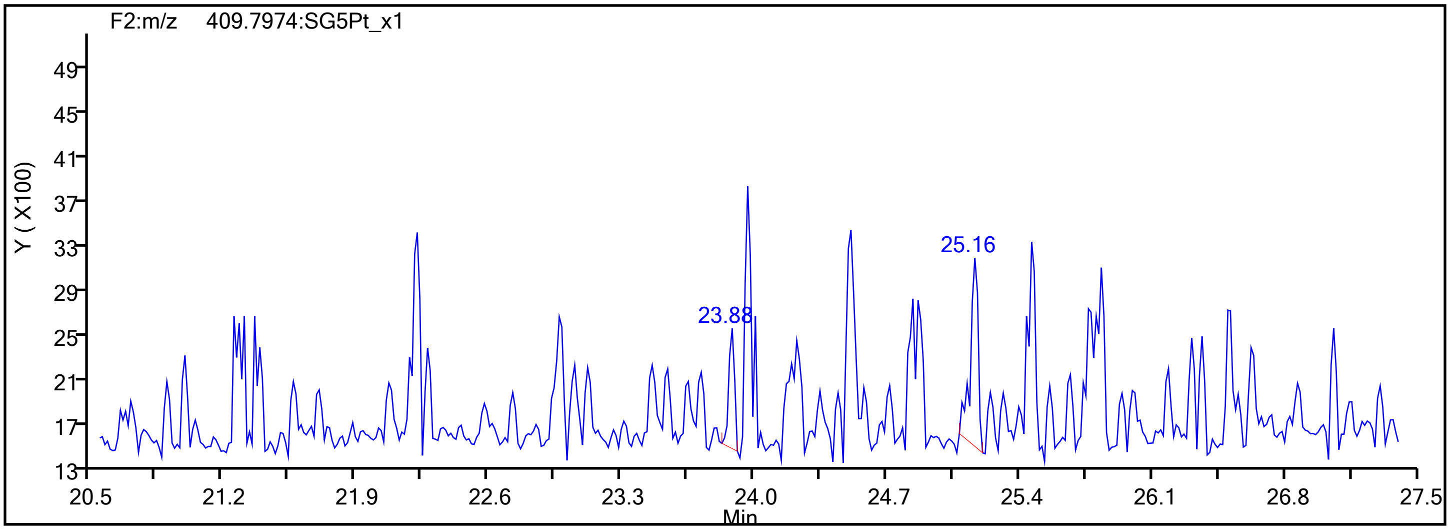

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d
Injection Date: 01-Sep-2020 19:56:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

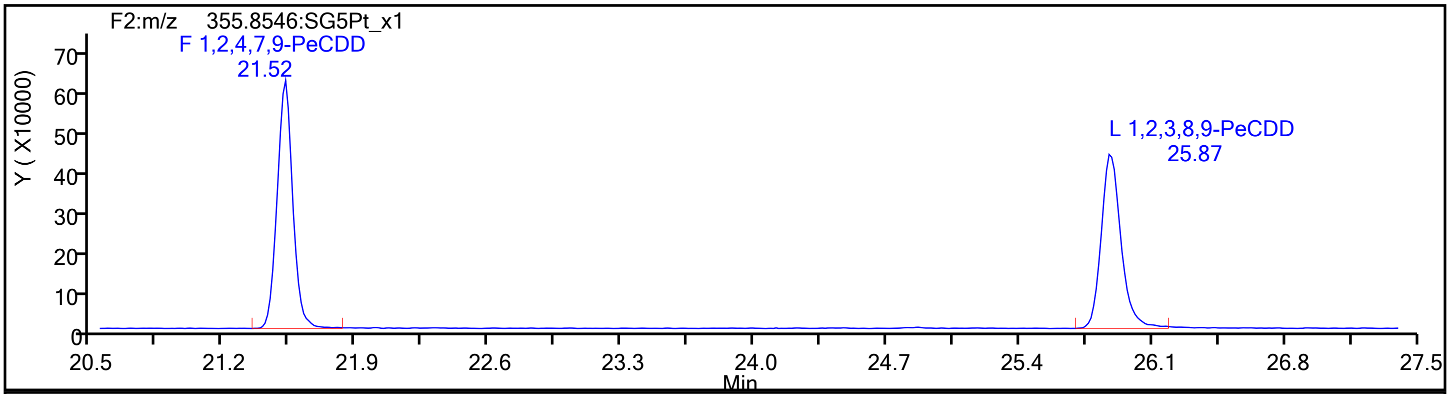

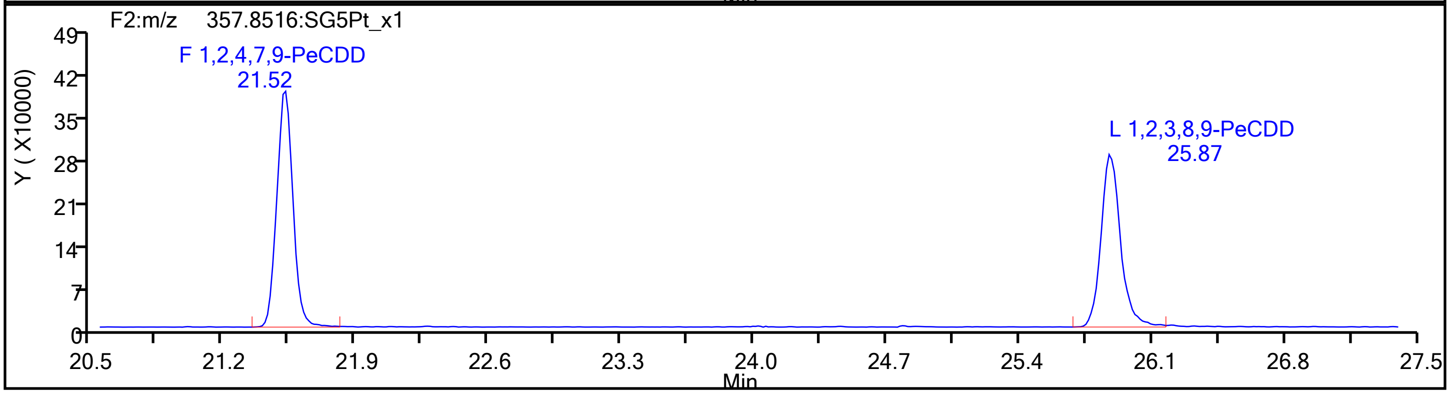

PeCDD Standards

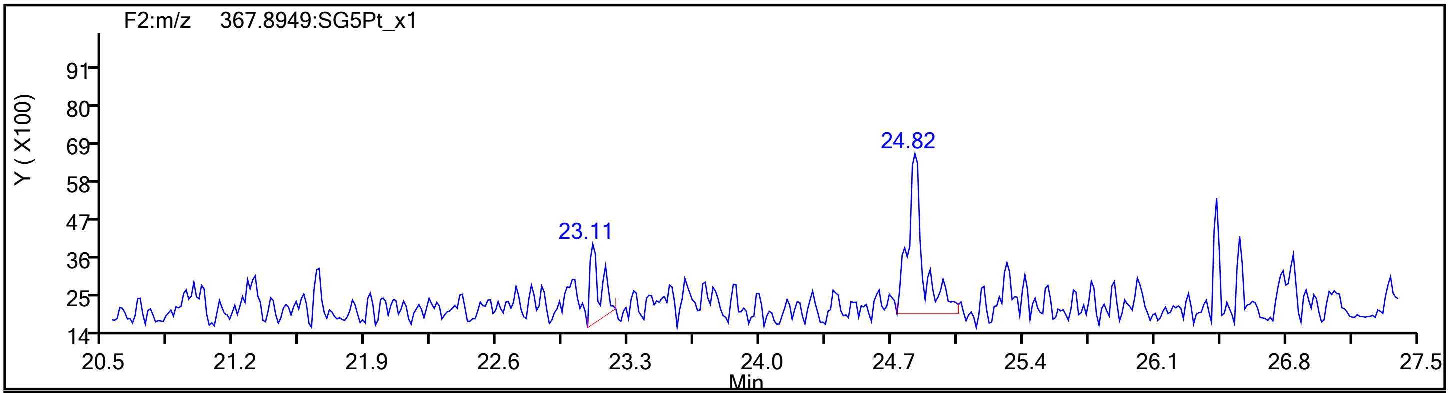

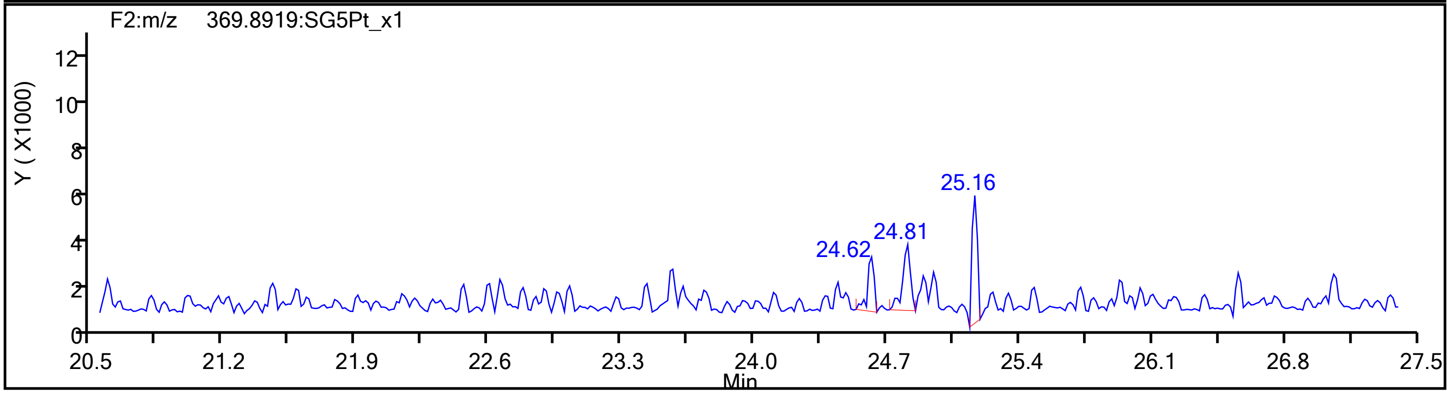

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d
Injection Date: 01-Sep-2020 19:56:43 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

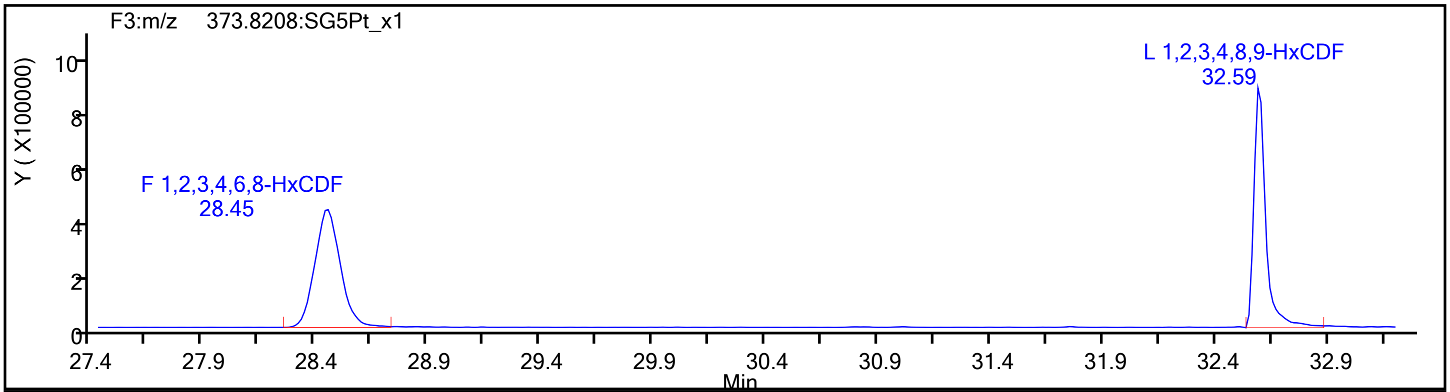

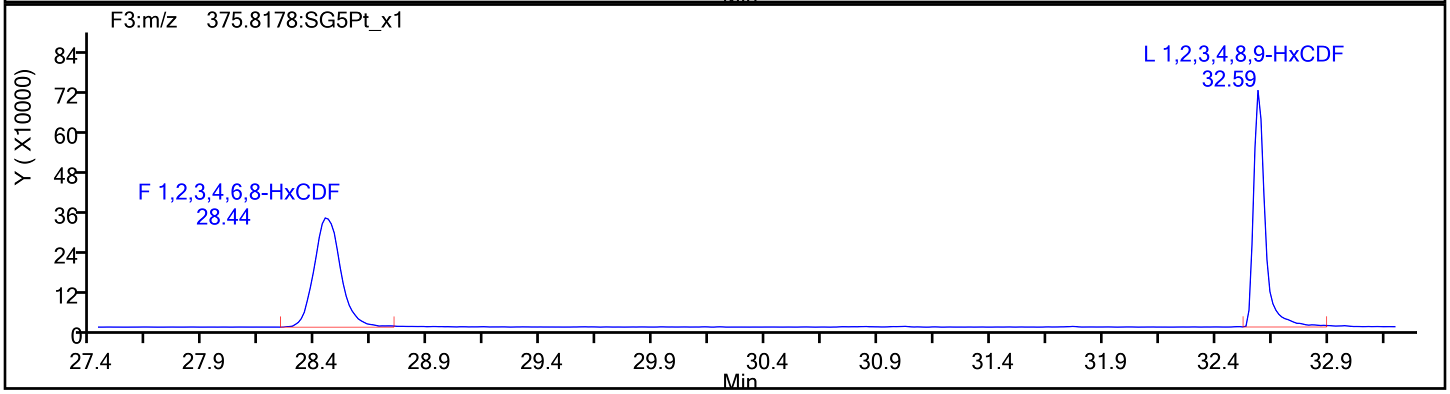

HxCDF Standards

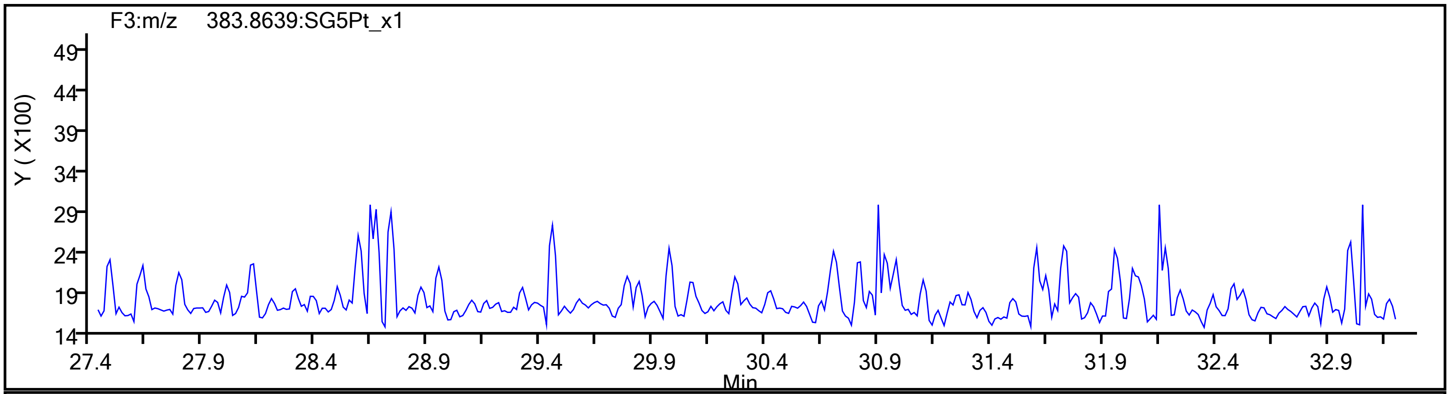

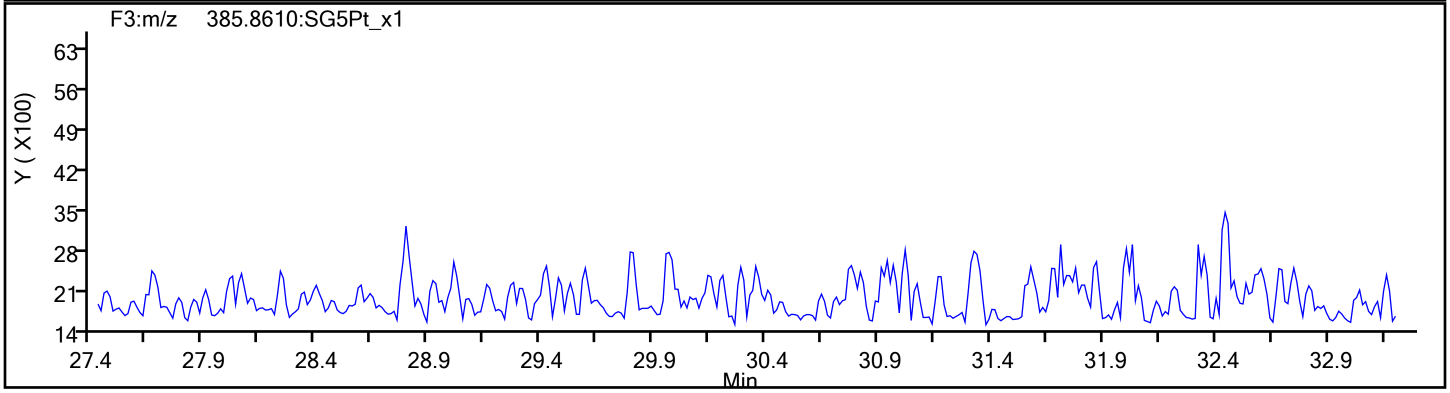

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

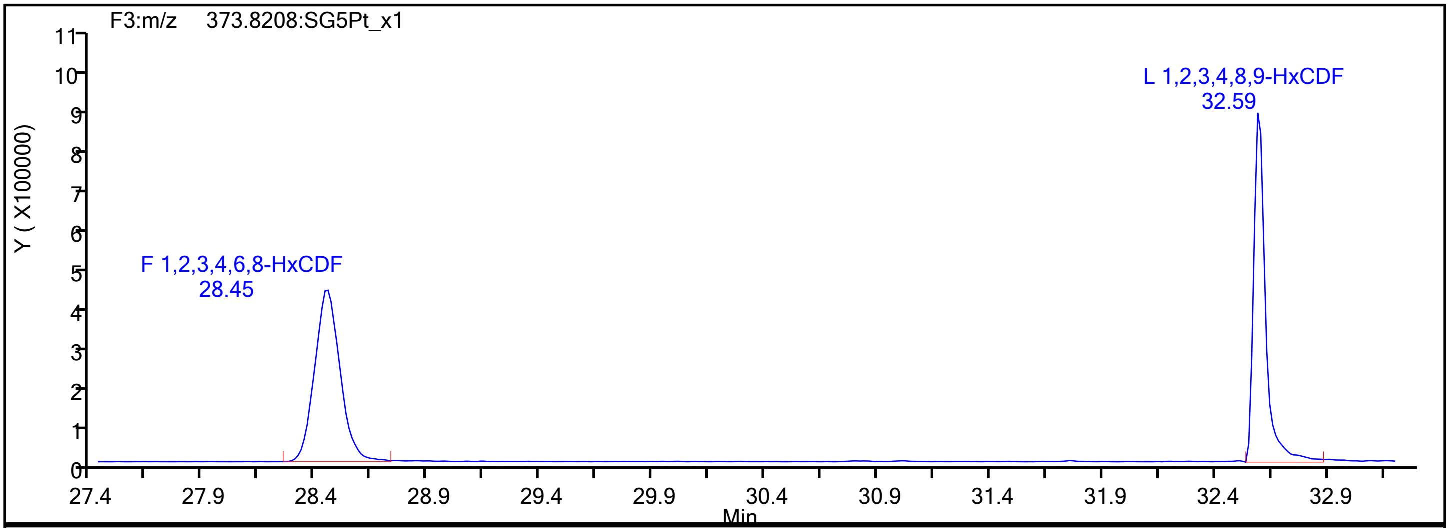

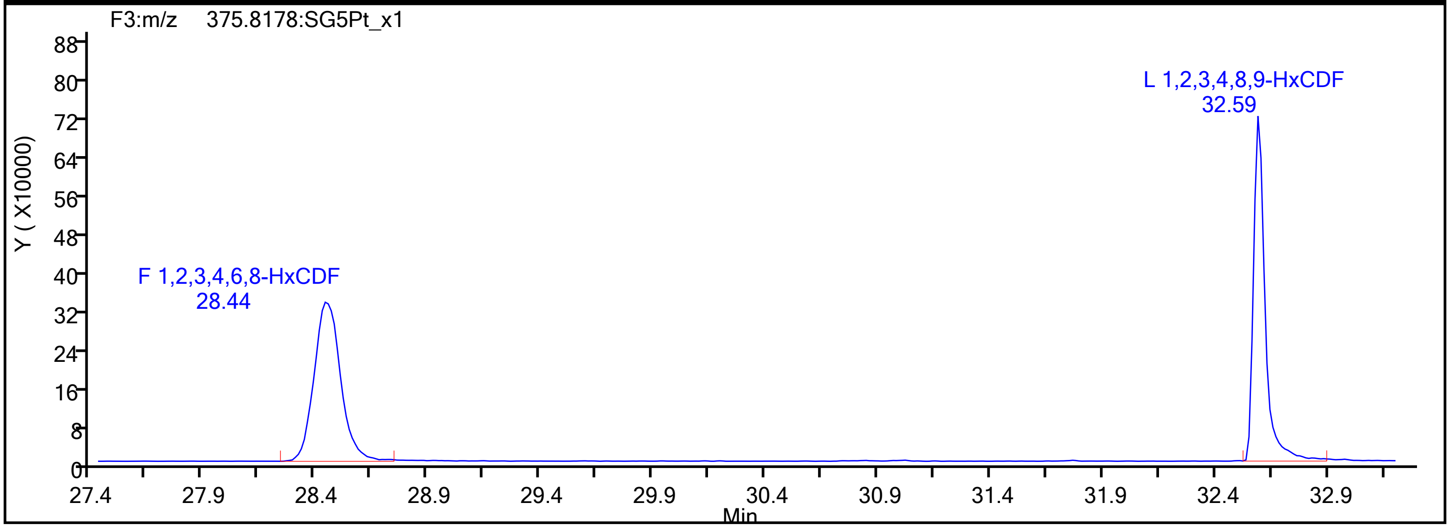

HxCDF Interference Mass

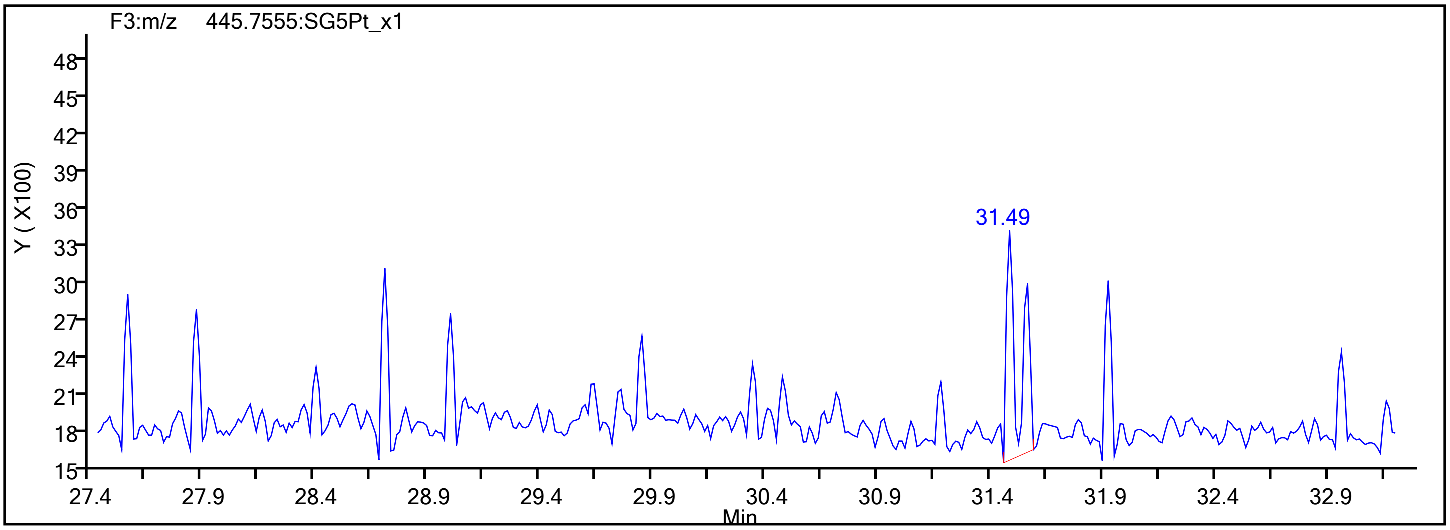

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d

Injection Date: 01-Sep-2020 19:56:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

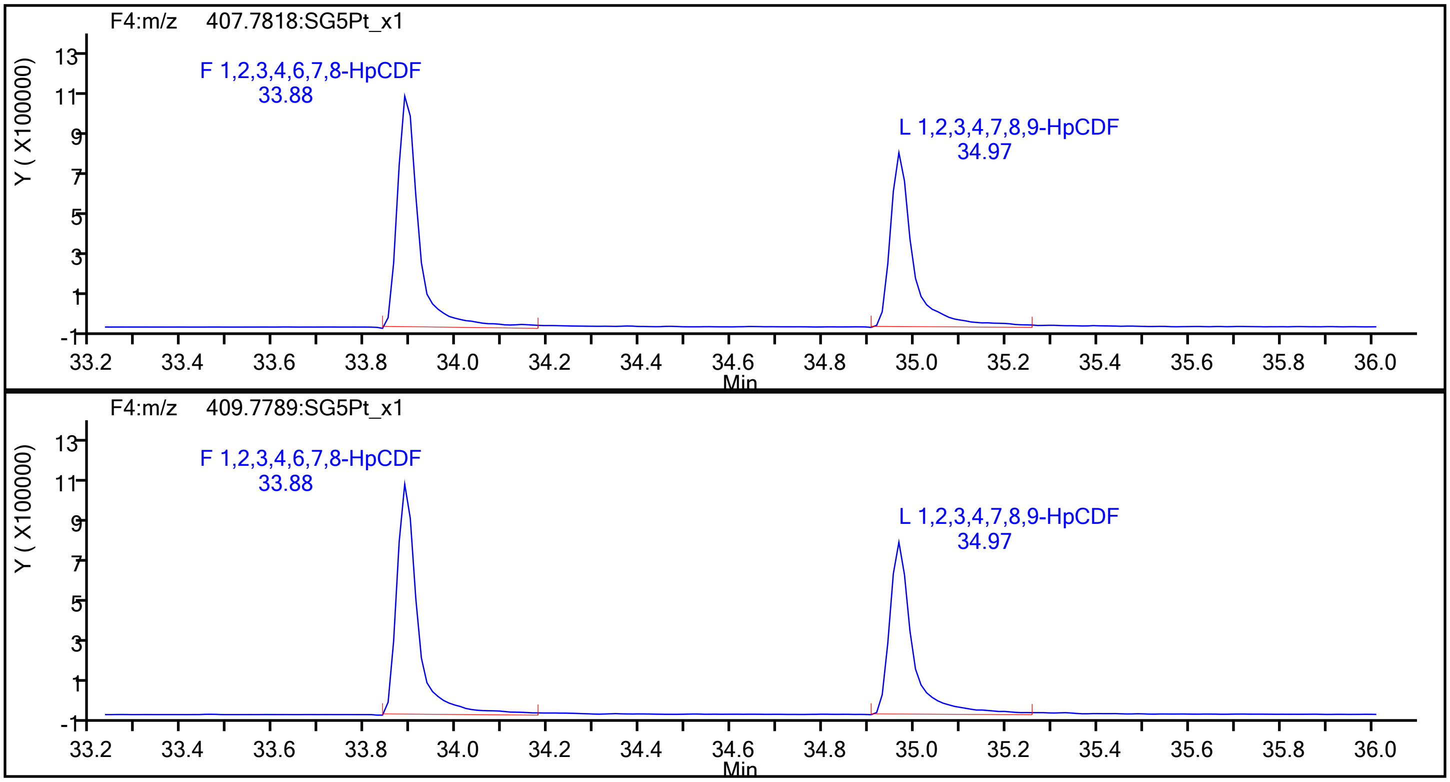

HpCDF Standards

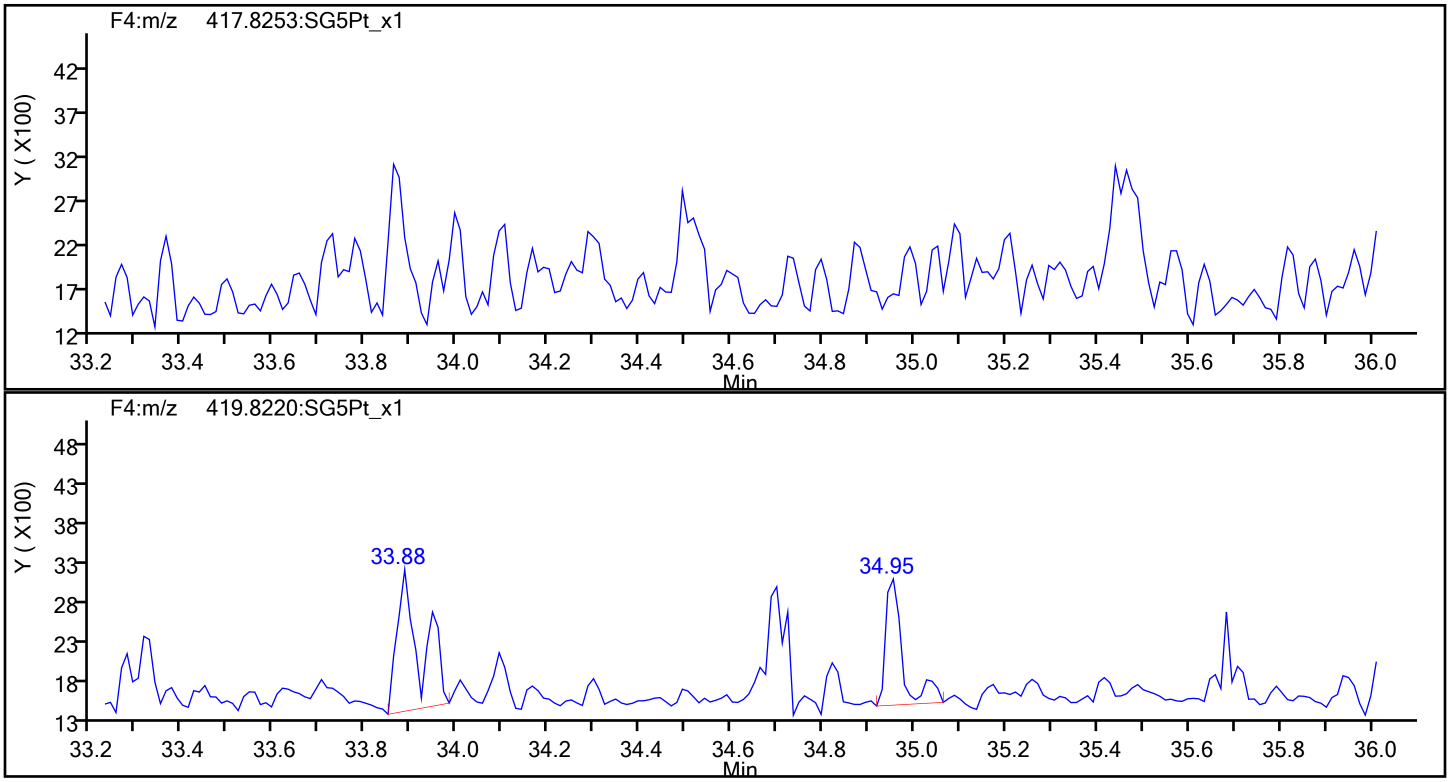

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

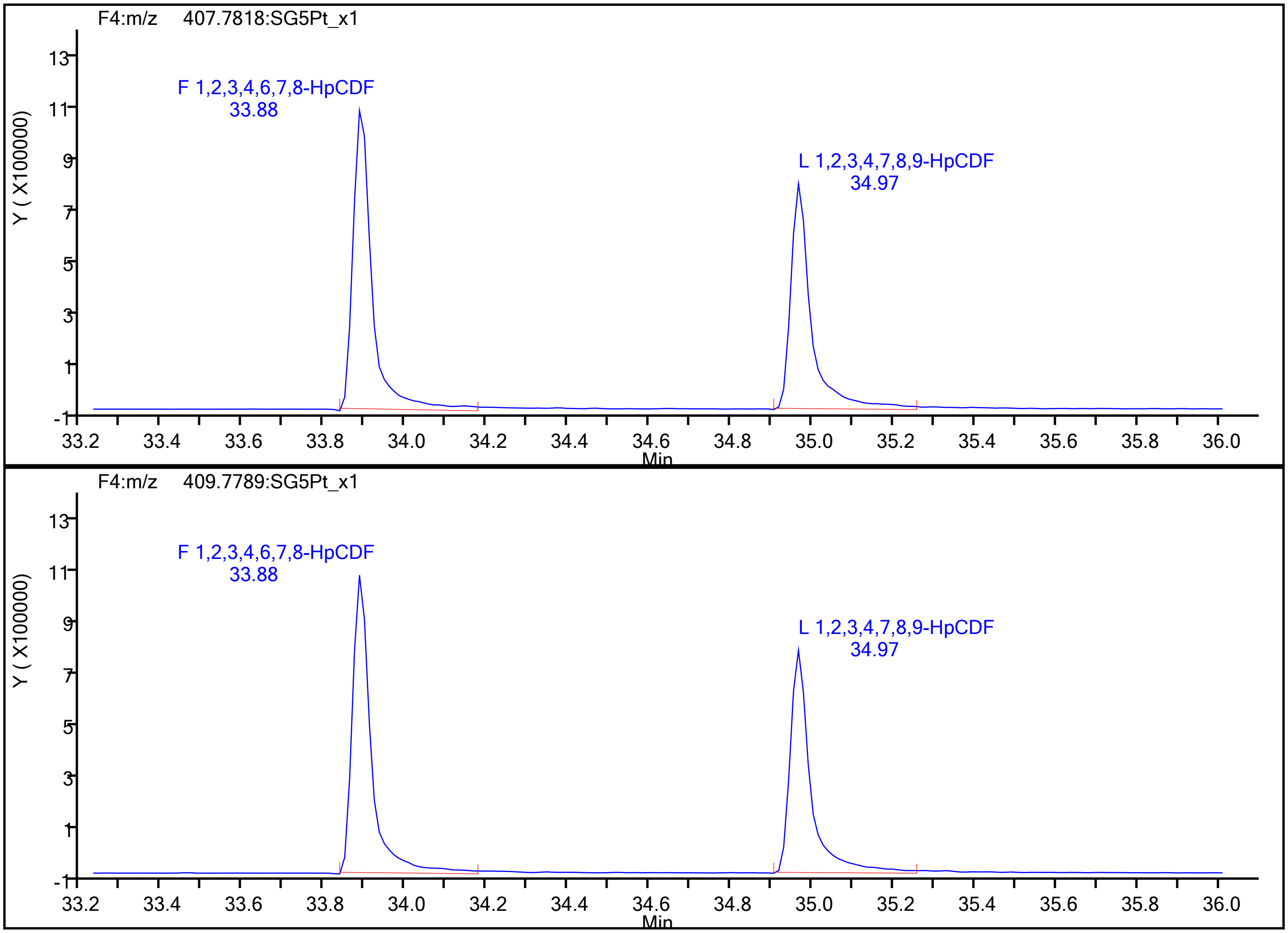

HpCDF Interference Mass

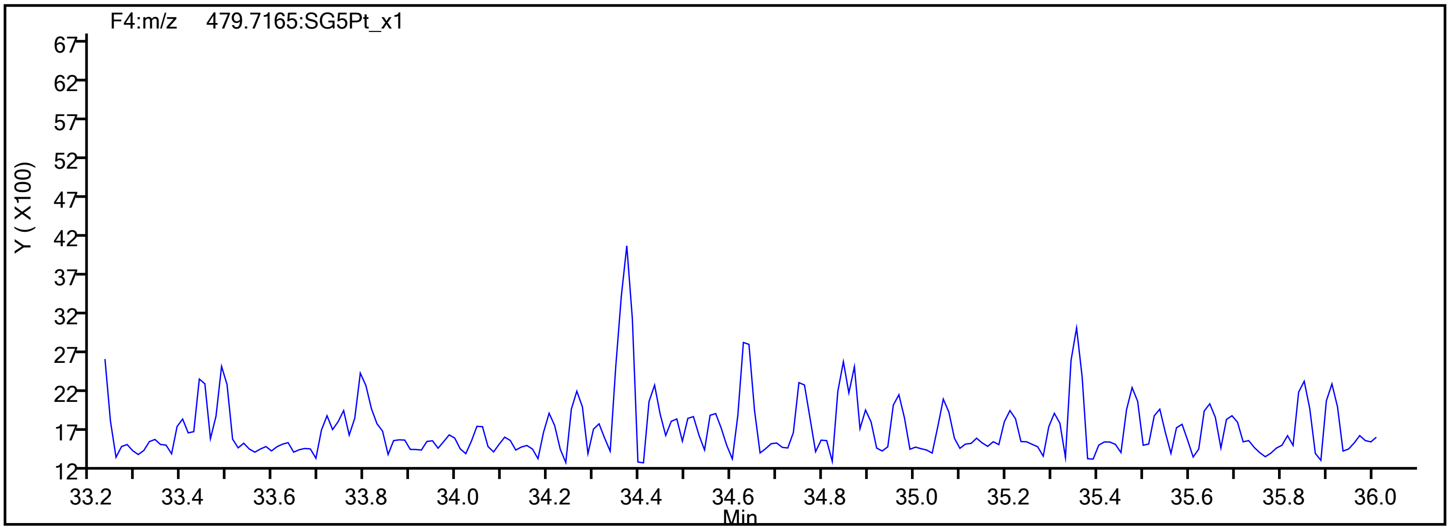

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d

Injection Date: 01-Sep-2020 19:56:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

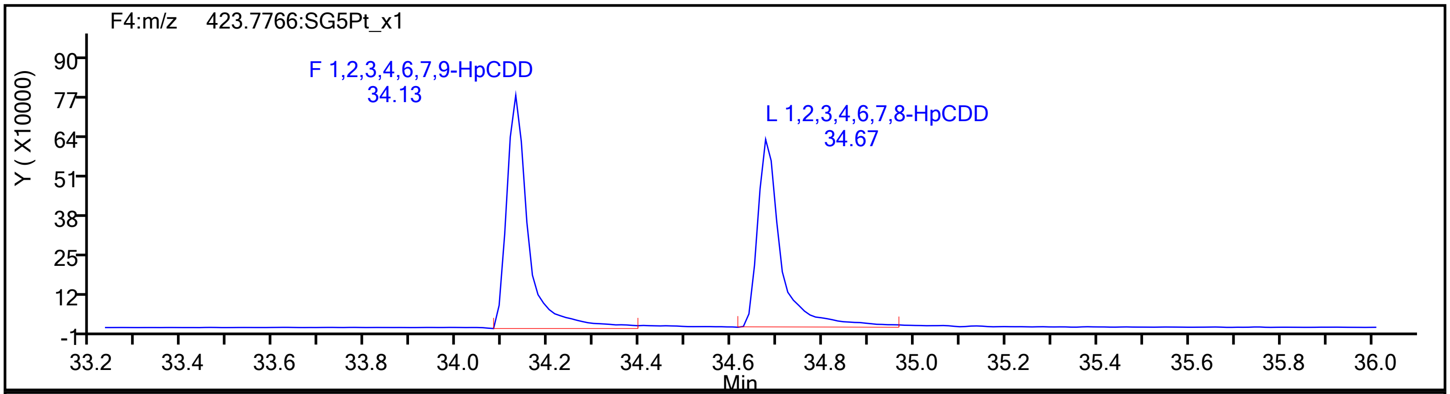

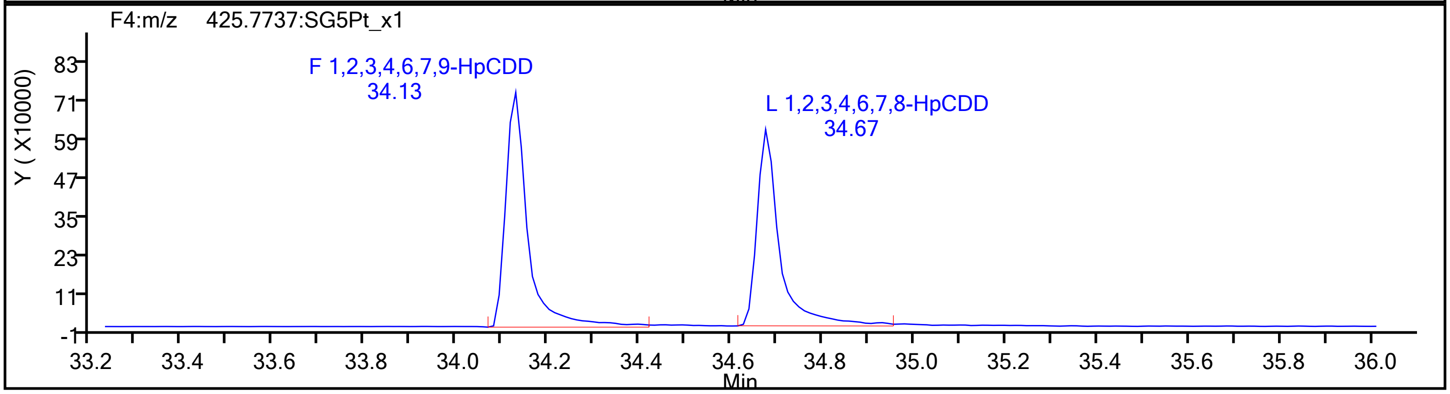

HpCDD Standards

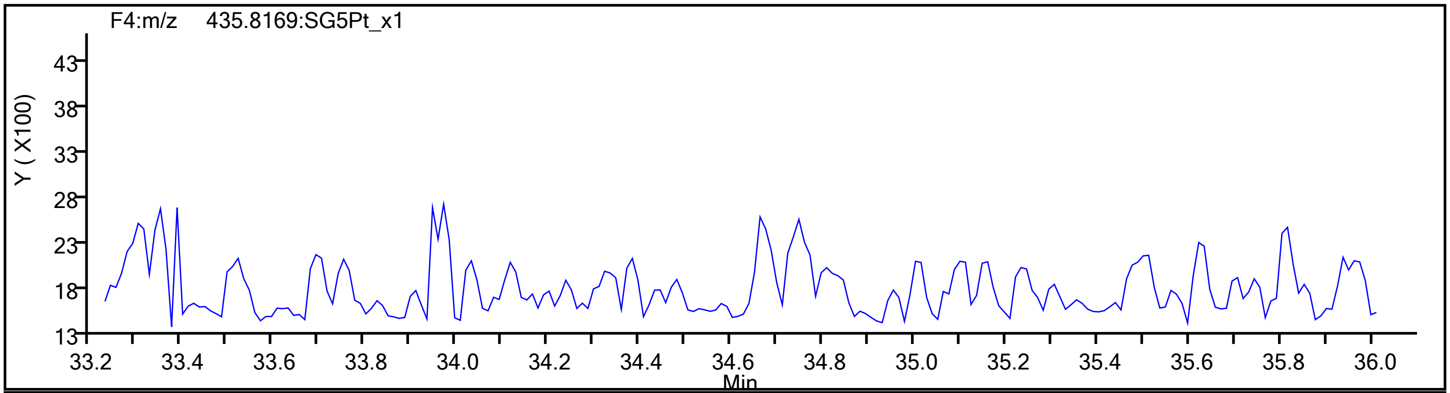

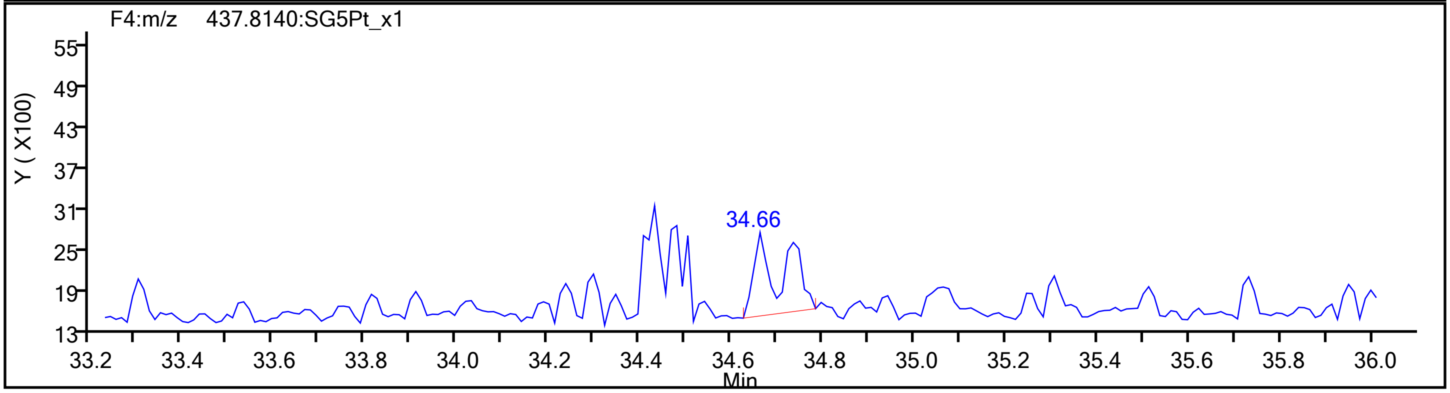

Report Date: 02-Sep-2020 11:35:18 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d

Injection Date: 01-Sep-2020 19:56:43

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

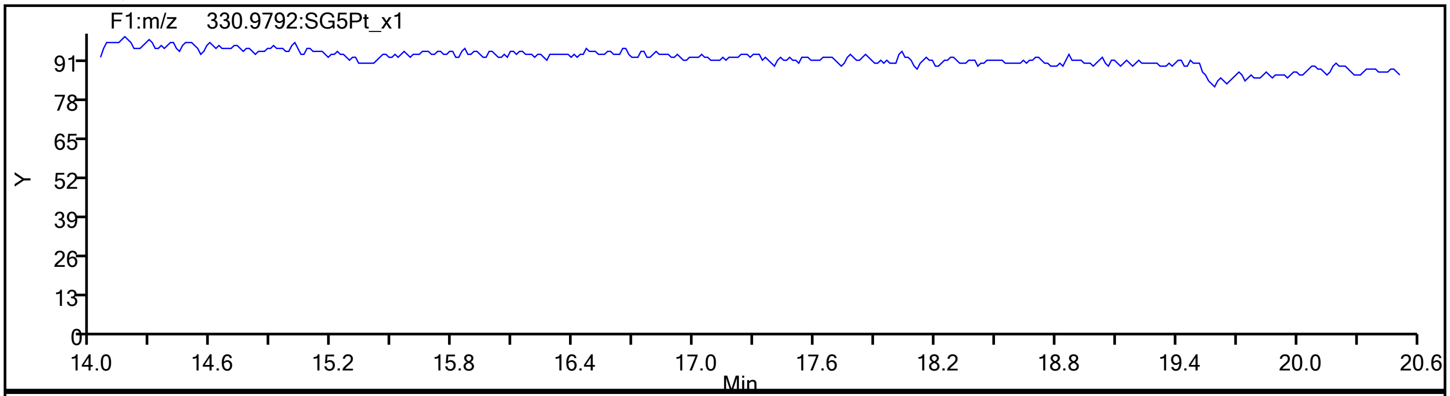

F1:m/z 330.9792:SG5Pt_x1

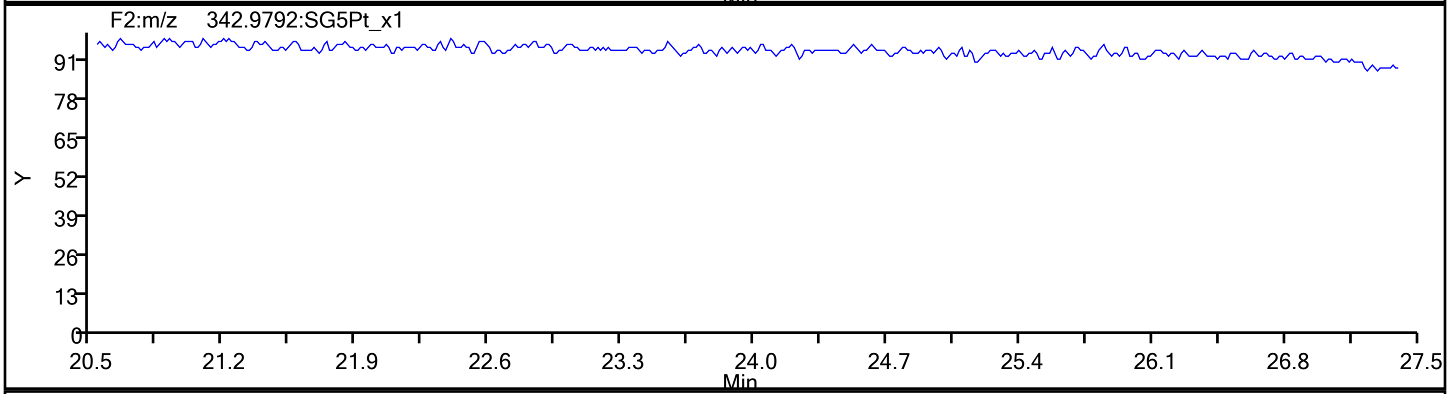

F2:m/z 342.9792:SG5Pt_x1

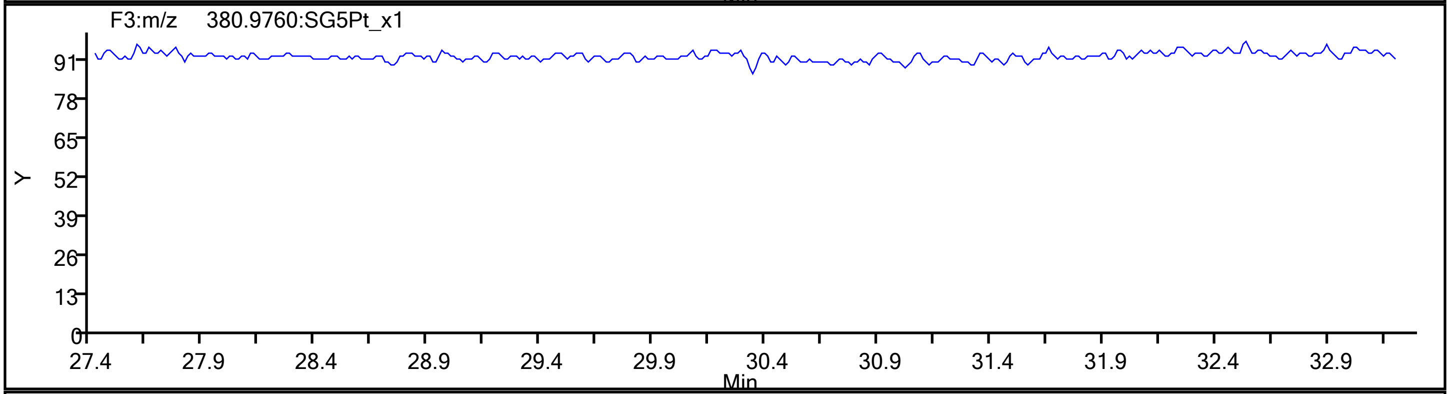

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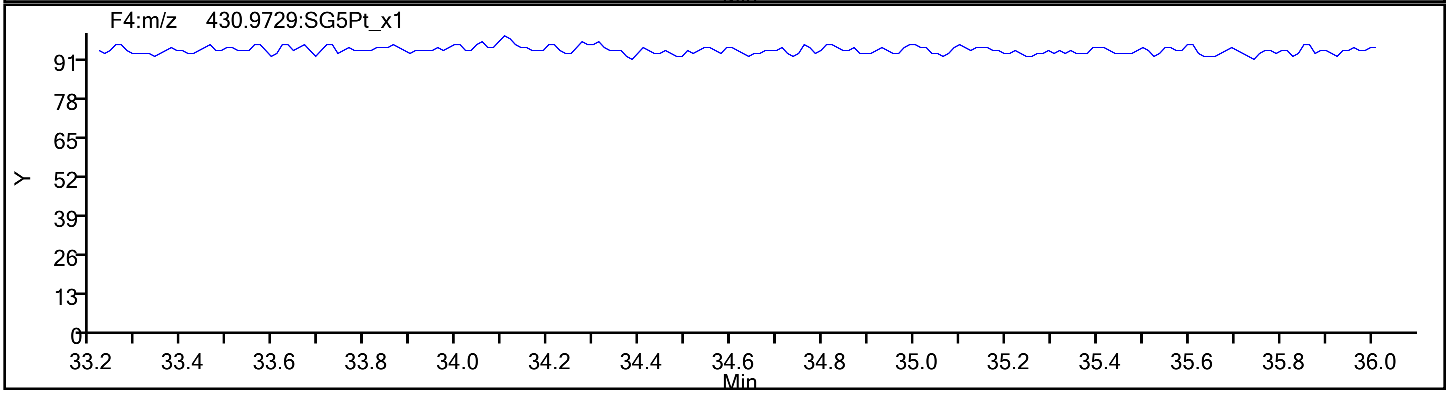

F4:m/z 430.9729:SG5Pt_x1

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_1.d		
Injection Date:	01-Sep-2020 19:56:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

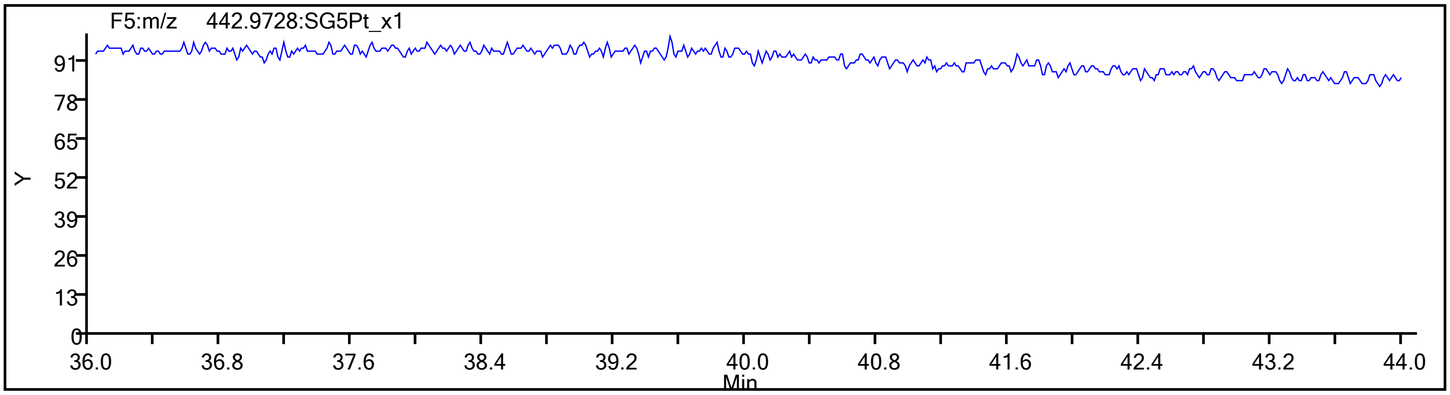

Report Date: 27-Jul-2020 12:42:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:20		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d

Injection Date: 24-Jul-2020 22:33:34
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

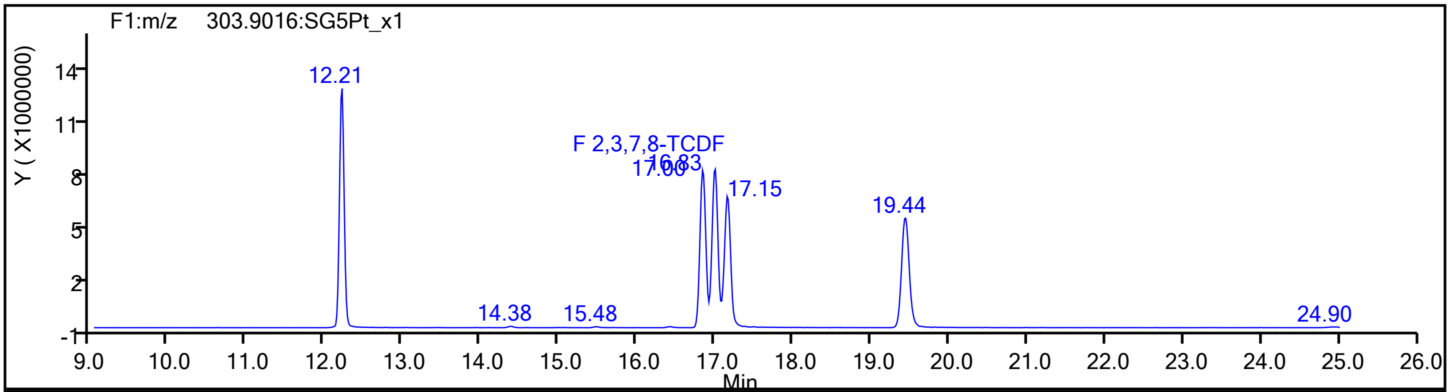

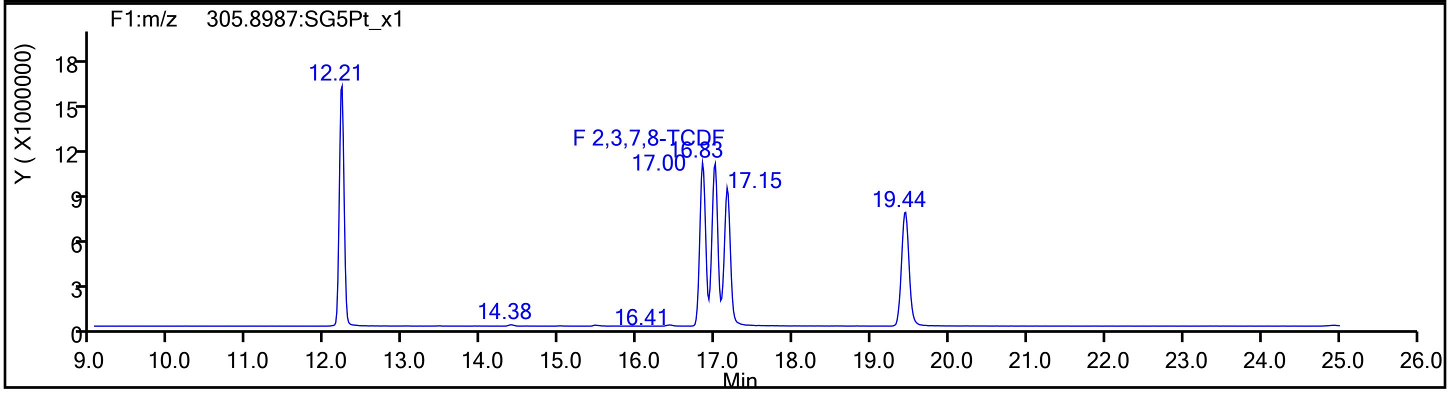

TCDF Standards

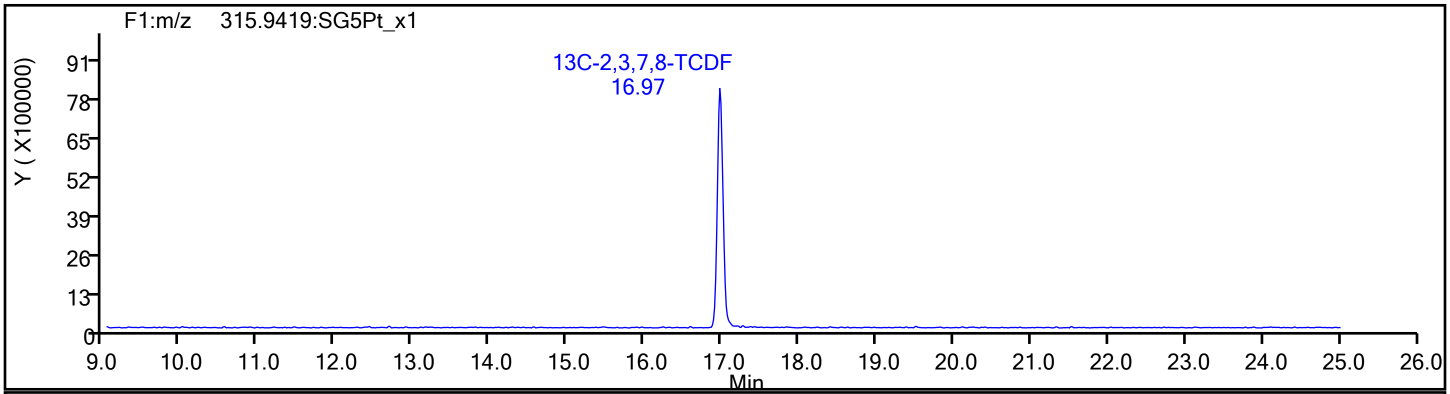

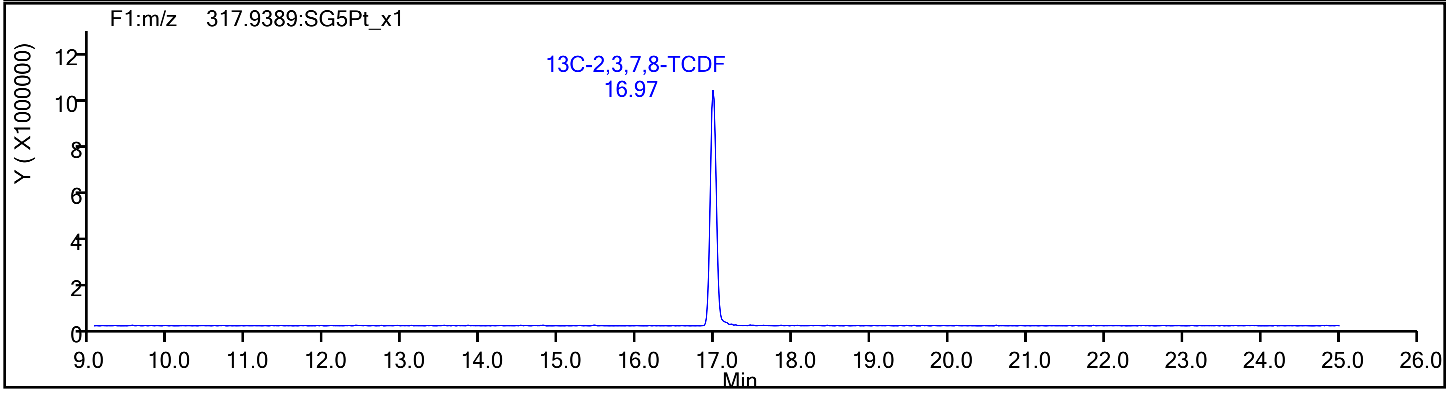

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

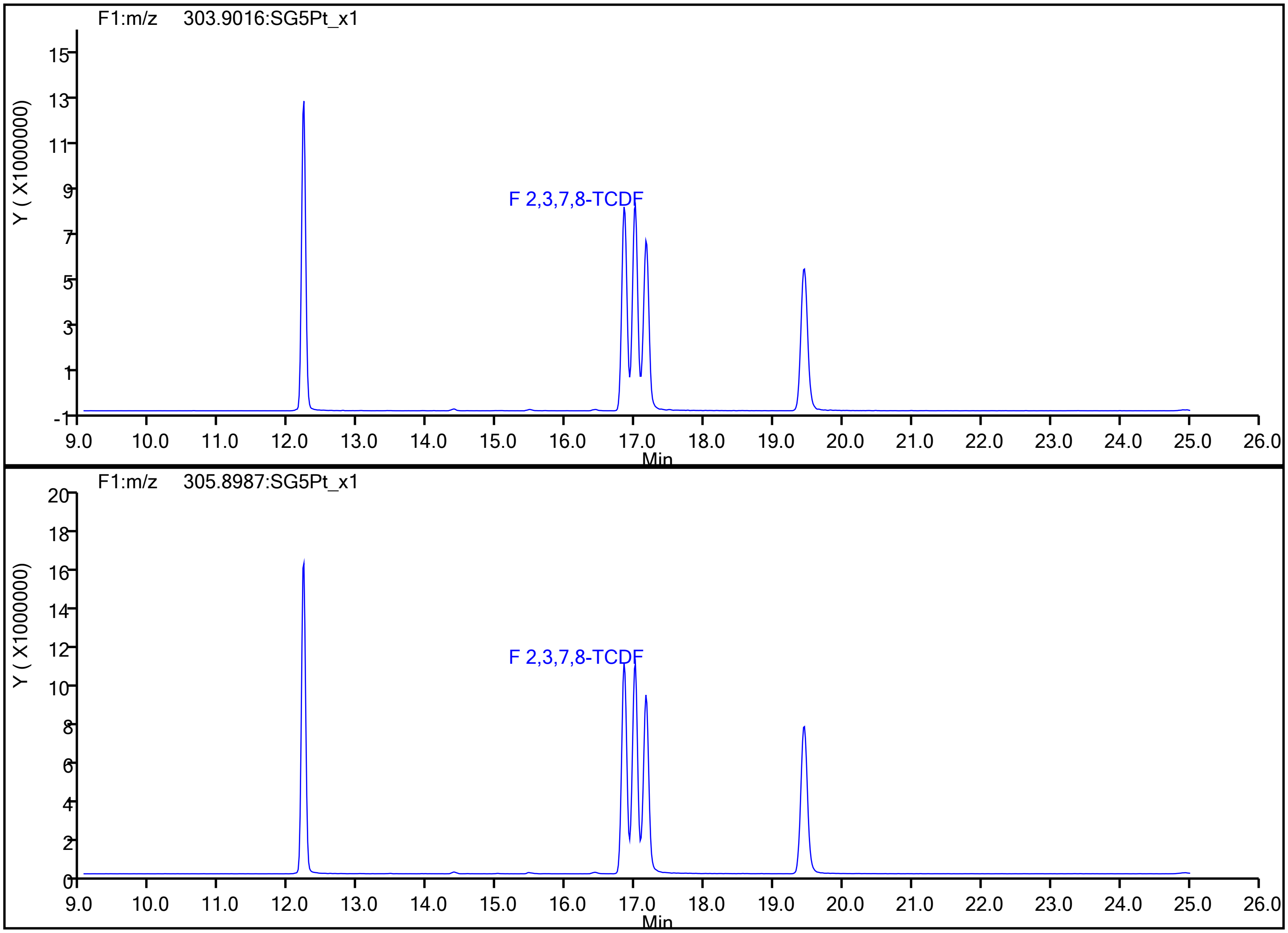

TCDF Interference Mass

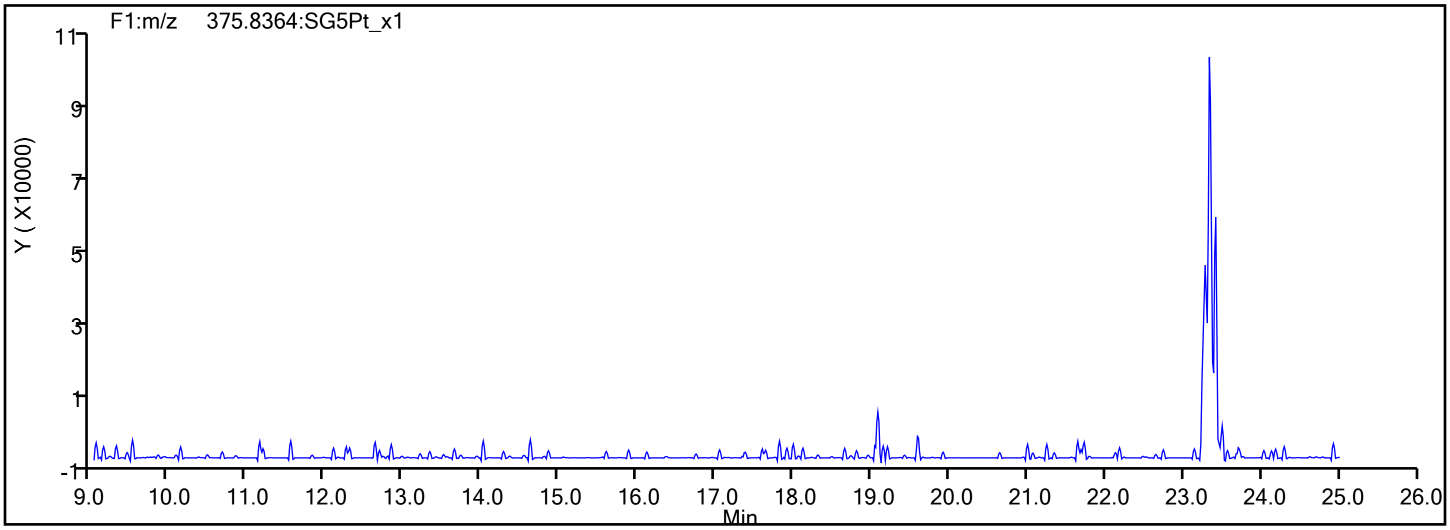

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

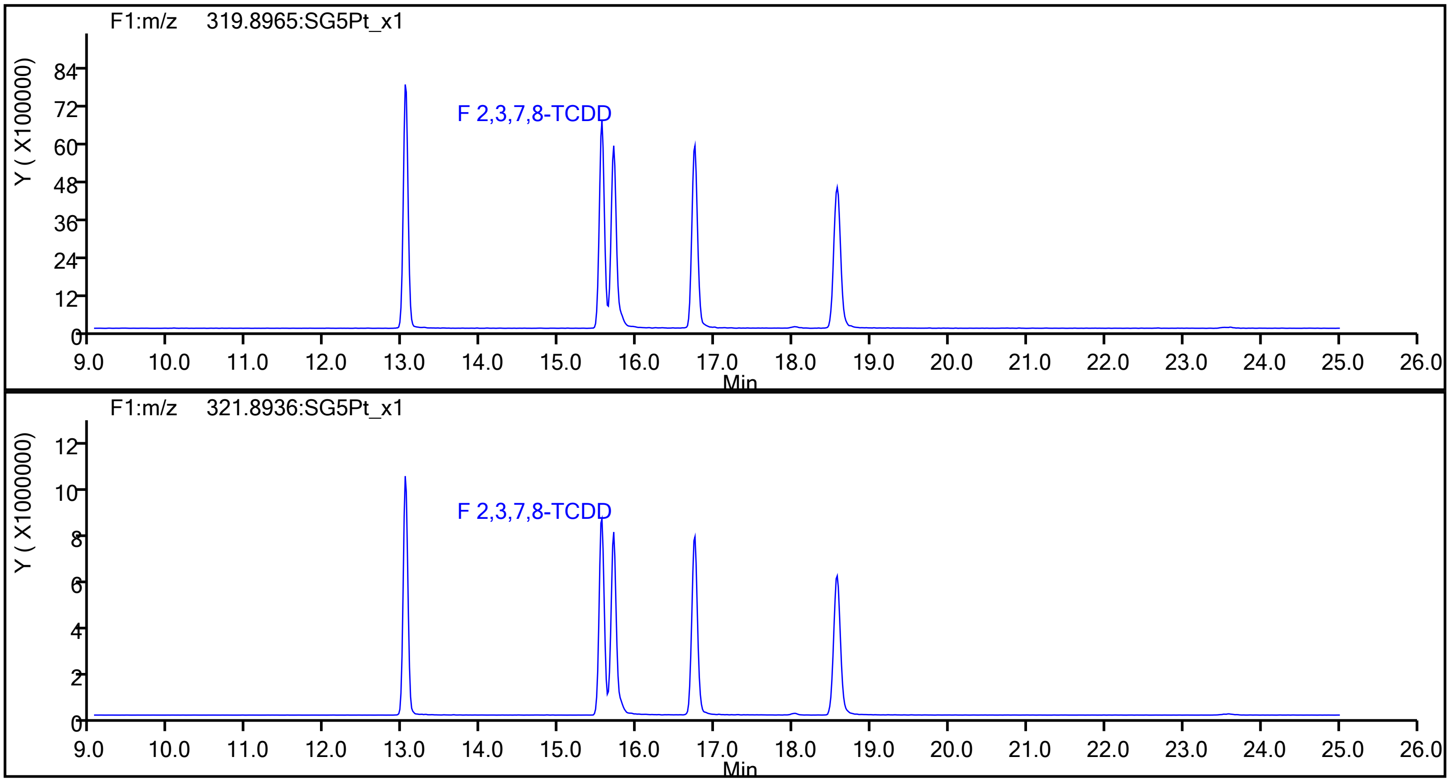

TCDD Standards

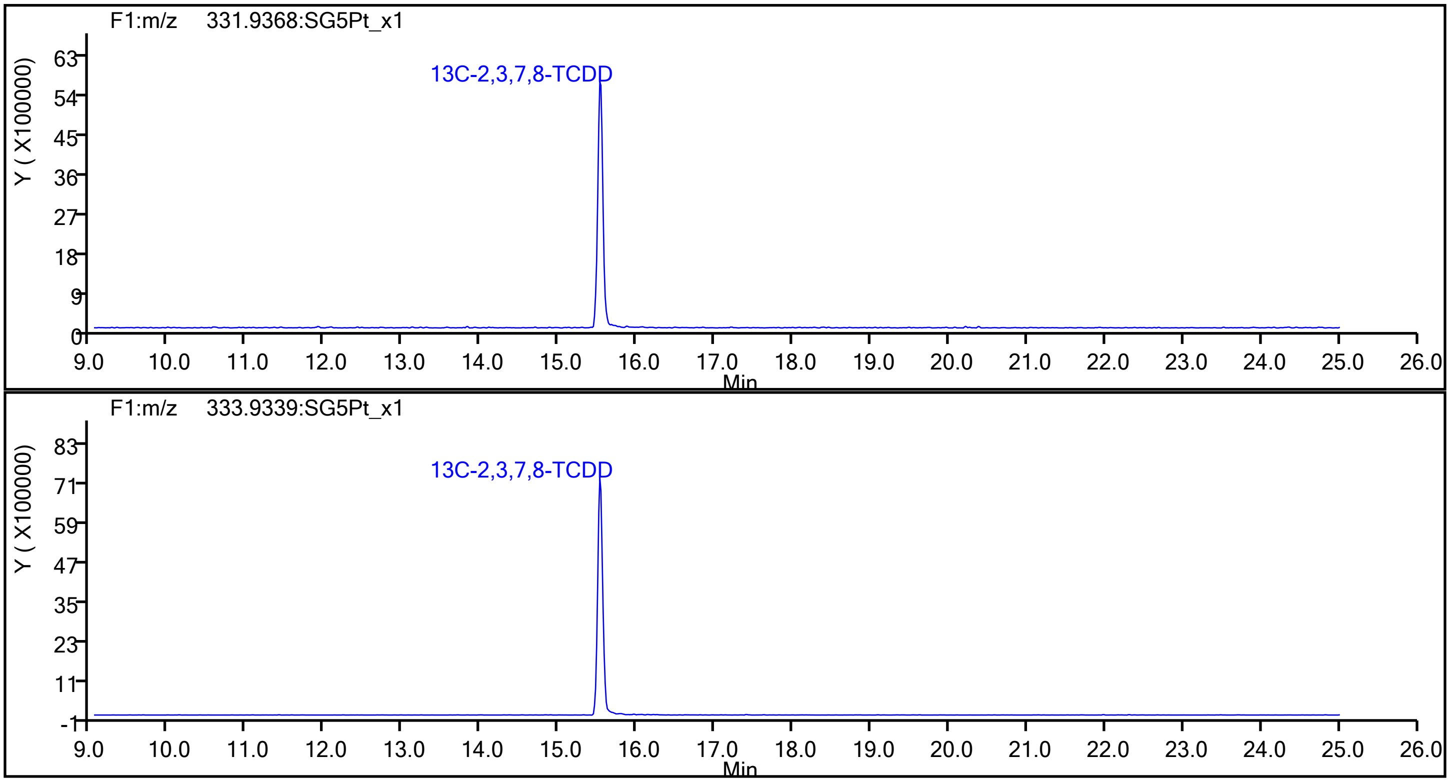

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

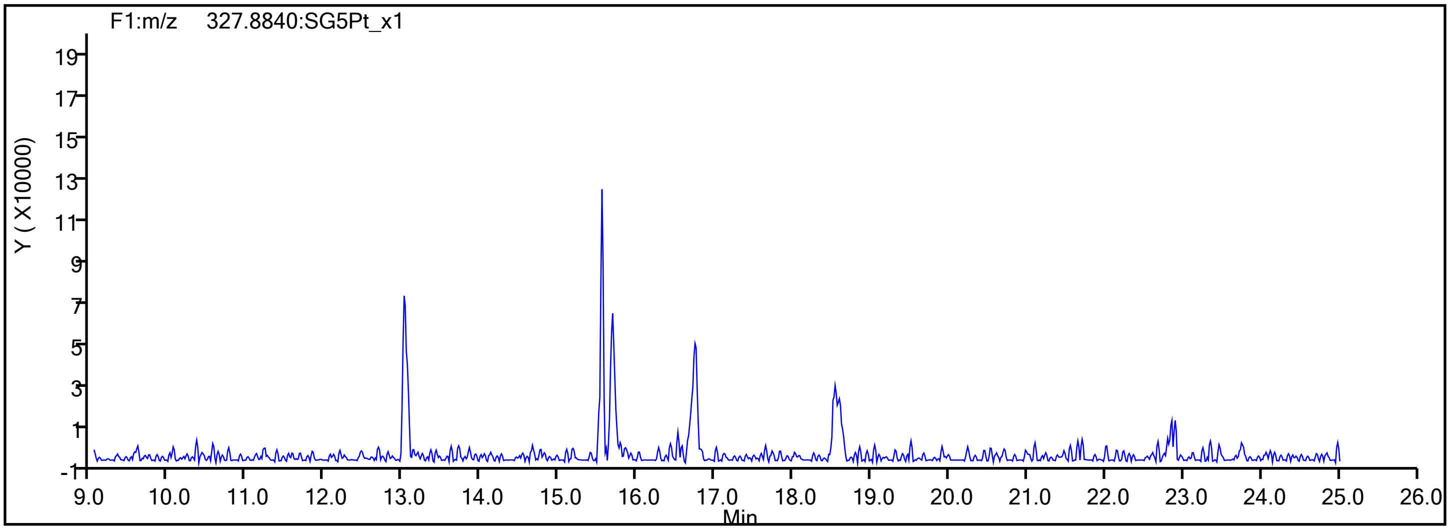

37Cl4-TCDD Standards

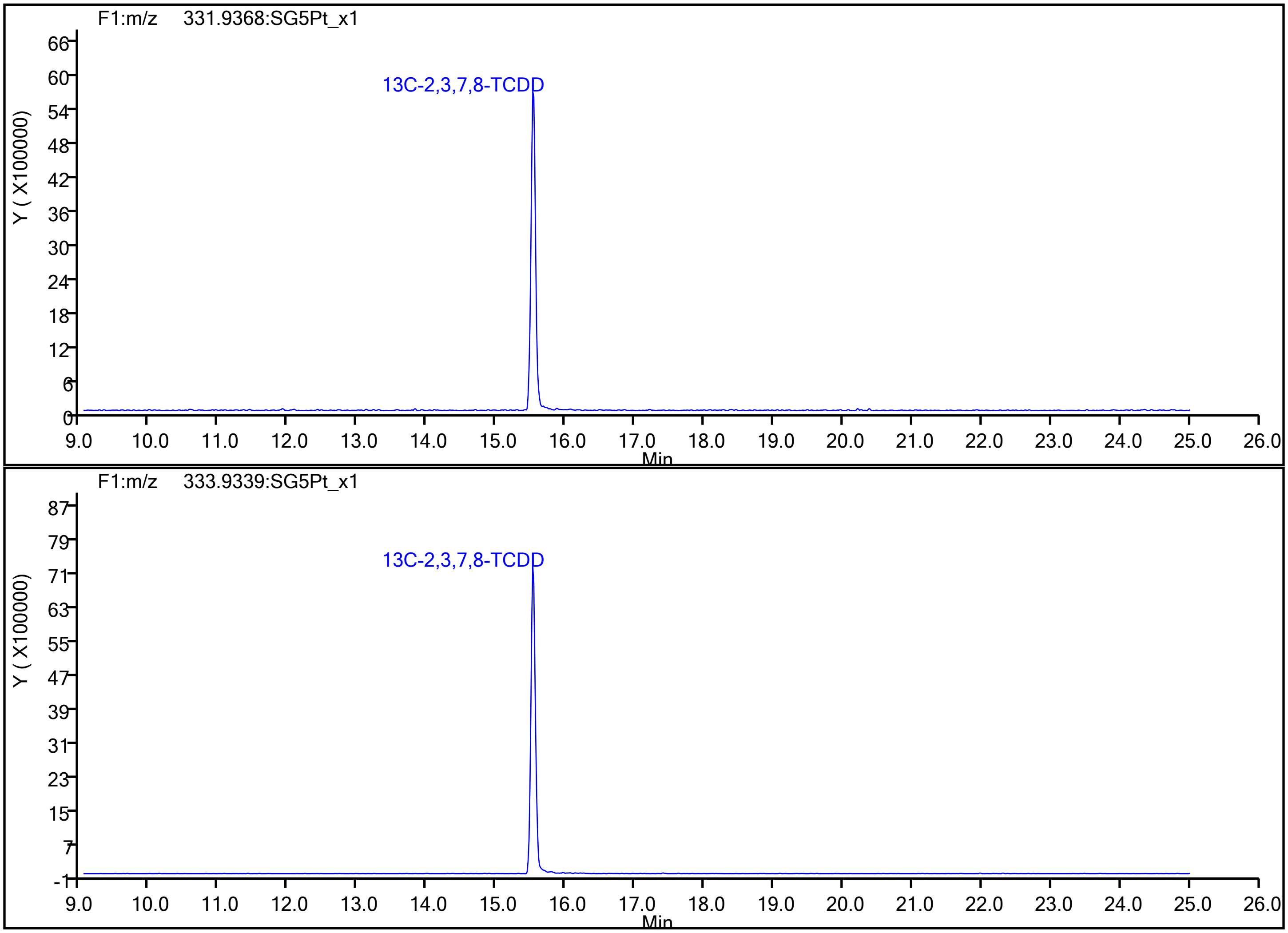

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d

Injection Date: 24-Jul-2020 22:33:34 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 1

Column Type: DB-225 Column Dia: 0.32 mm

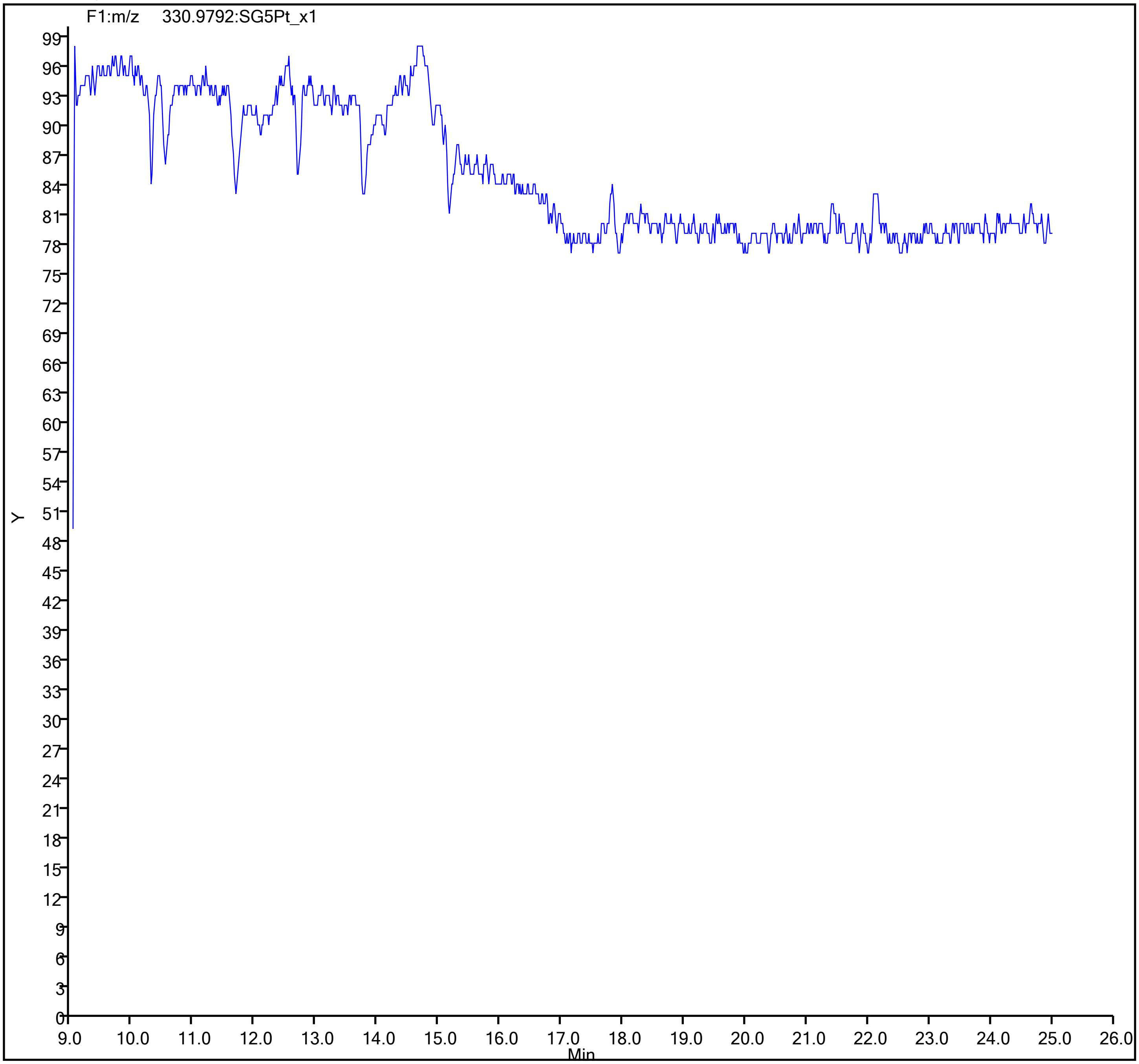

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 23-Sep-2020 12:02:23 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 15:28:20 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1611

First Level Reviewer: messecara Date: 24-Sep-2020 02:32:21

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	15.735	107171618	0.80	1.5708					0.00	
2,3,7,8-TCDF	15.749	108634671	0.81	0.9943	40.8	40.8	0.1149	0.1149		
D 13C-2,3,7,8-TCDD	14.350	55528893	0.78	0.9834					0.00	a
2,3,7,8-TCDD	14.377	65315621	0.77	1.2822	36.7	36.7	0.0810	0.0810		a
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags
Review Flags
a - User Assigned ID

Reagents:
HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 24-Sep-2020 15:28:22 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 23-Sep-2020 12:02:23 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 15:28:20 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1611

First Level Reviewer: messecara Date: 24-Sep-2020 02:32:21

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	15.735	15.735	0	1.000	47552919	10810323	23014	57535	470		
317.9389	15.735	15.735	0	1.000	59618699	13630532	14452	36130	943	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.749	15.749	0	1.001	48507477	11097580	15114	37785	734		
305.8987	15.749	15.749	0	1.001	60127194	14435033	12804	32010	1127	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											a
331.9368	14.350	14.350	0	1.000	24298269	5946964	16259	40647	366		a
333.9339	14.350	14.350	0	1.000	31230624	7565350	9217	23042	821	0.78(0.65-0.89)	
2,3,7,8-TCDD											a
319.8965	14.377	14.377	0	1.002	28381377	6801392	7417	18542	917		a
321.8936	14.364	14.377	-1	1.001	36934244	8829516	6609	16522	1336	0.77(0.65-0.89)	

QC Flag Legend

Processing Flags
Review Flags
a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 24-Sep-2020 15:28:22 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d

Injection Date: 23-Sep-2020 12:02:23

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 415167

Sample Line#: 1

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

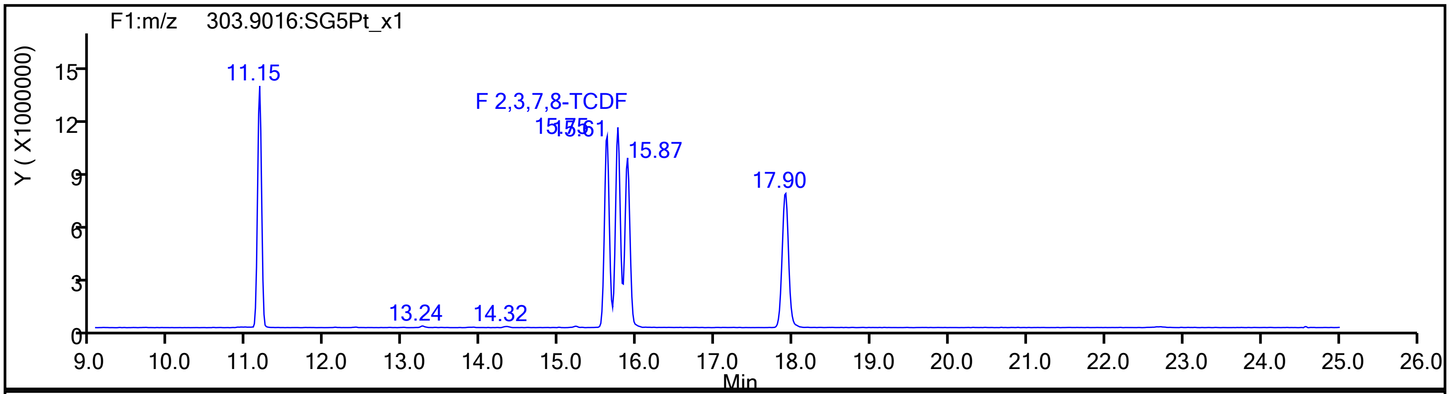

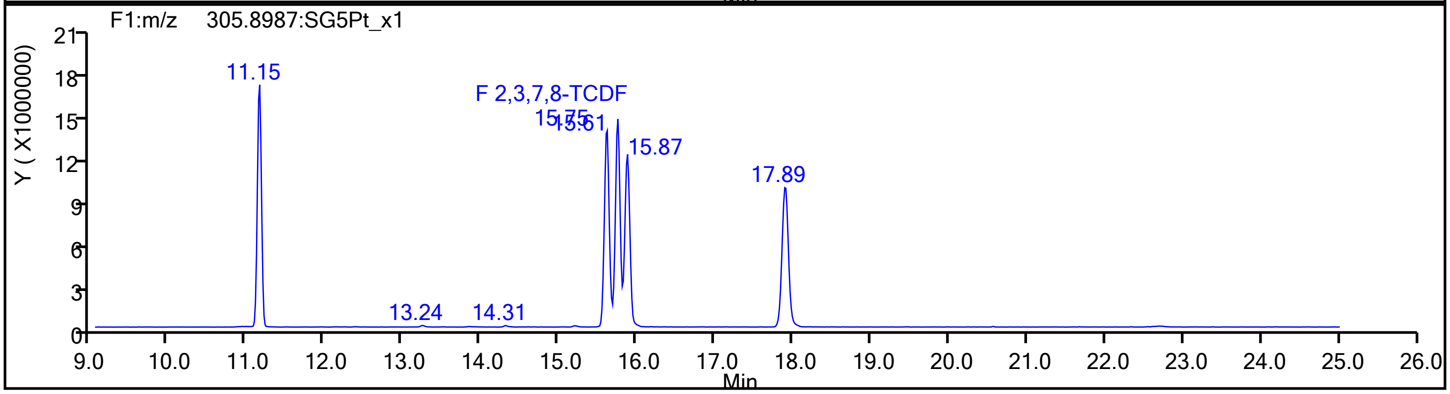

TCDF Standards

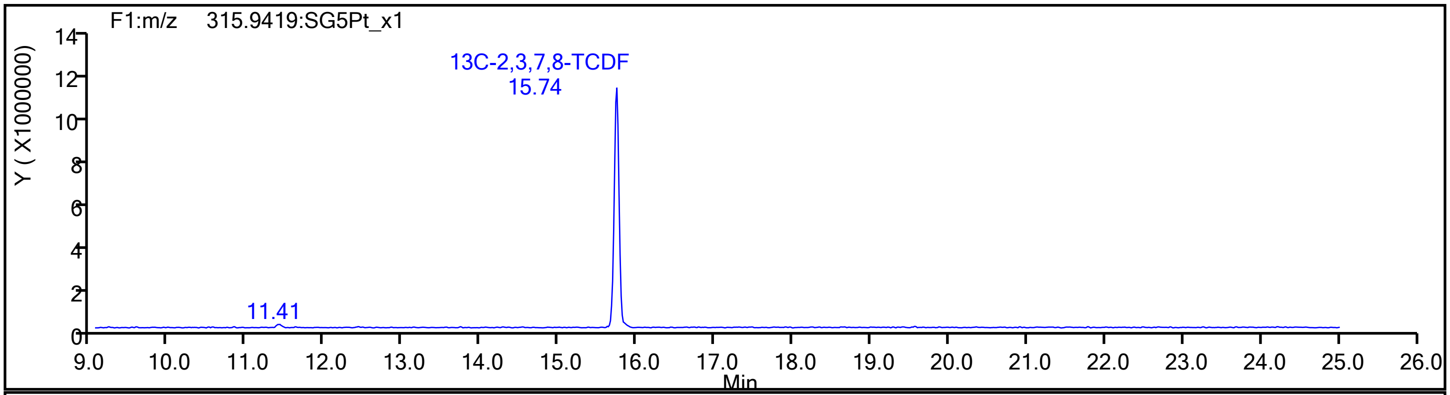

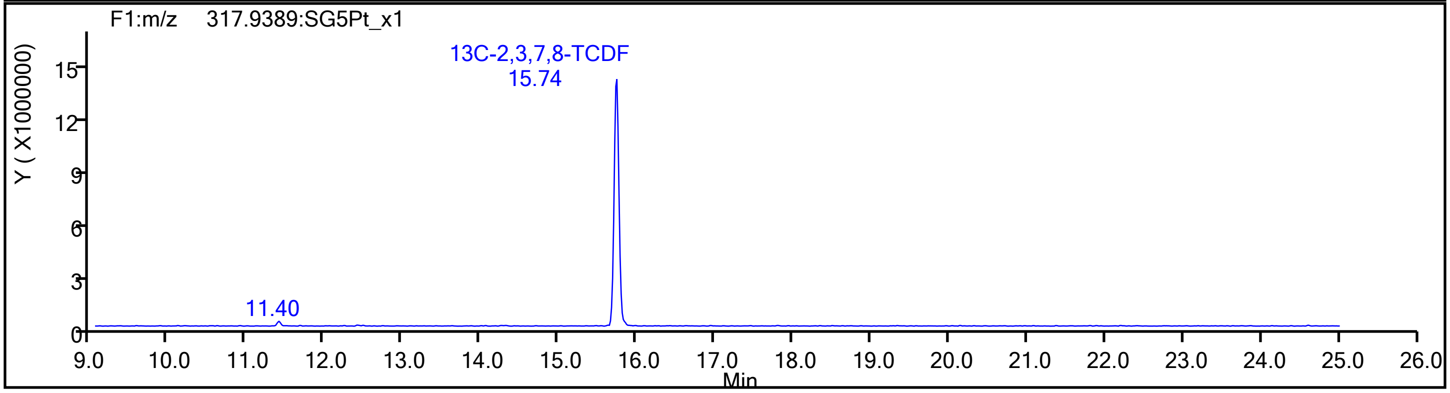

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d		
Injection Date:	23-Sep-2020 12:02:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415167	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

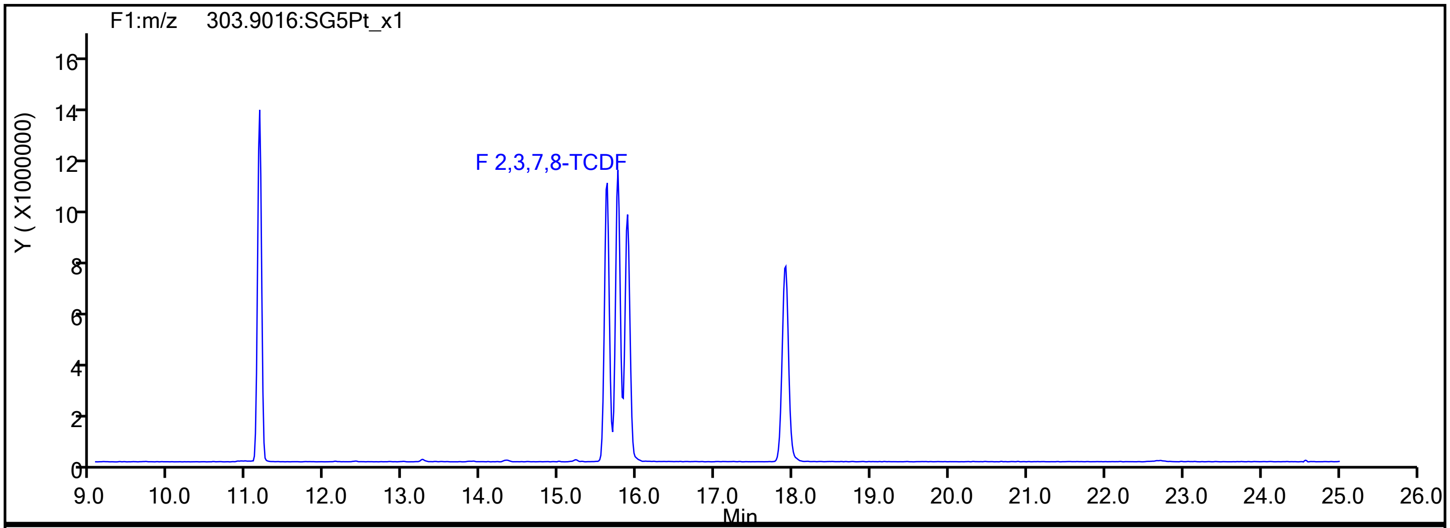

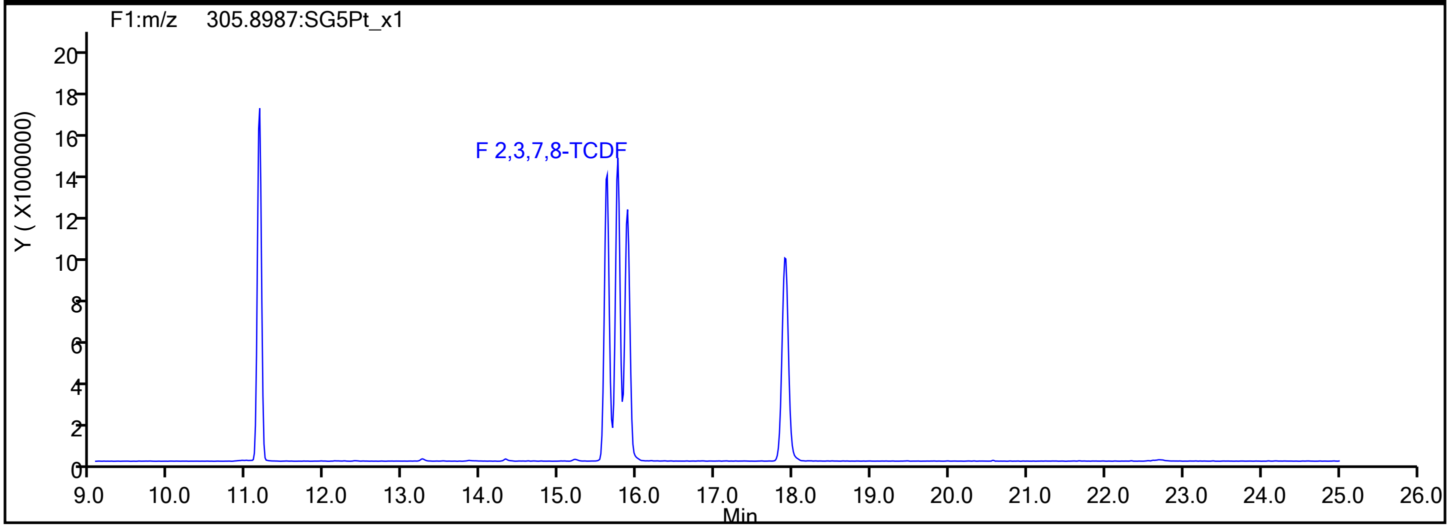

TCDF Interference Mass

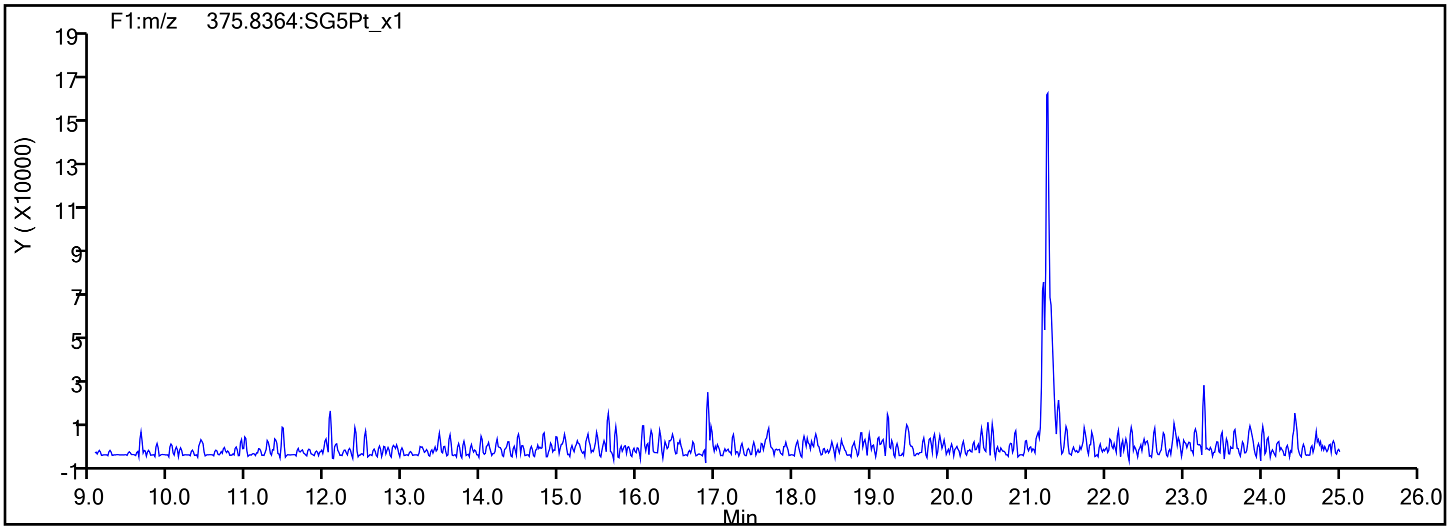

Report Date: 24-Sep-2020 15:28:22 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d		
Injection Date:	23-Sep-2020 12:02:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415167	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

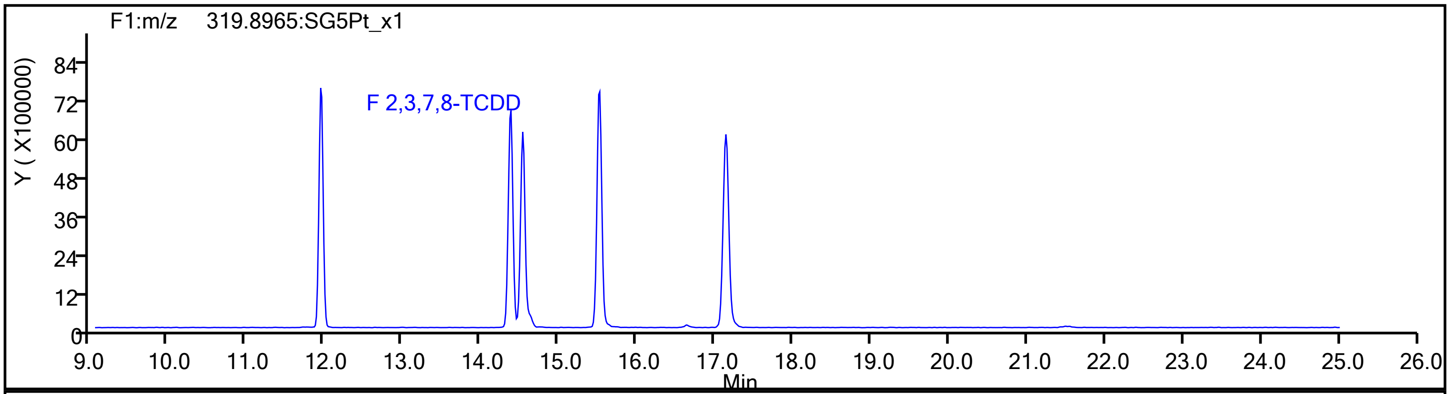

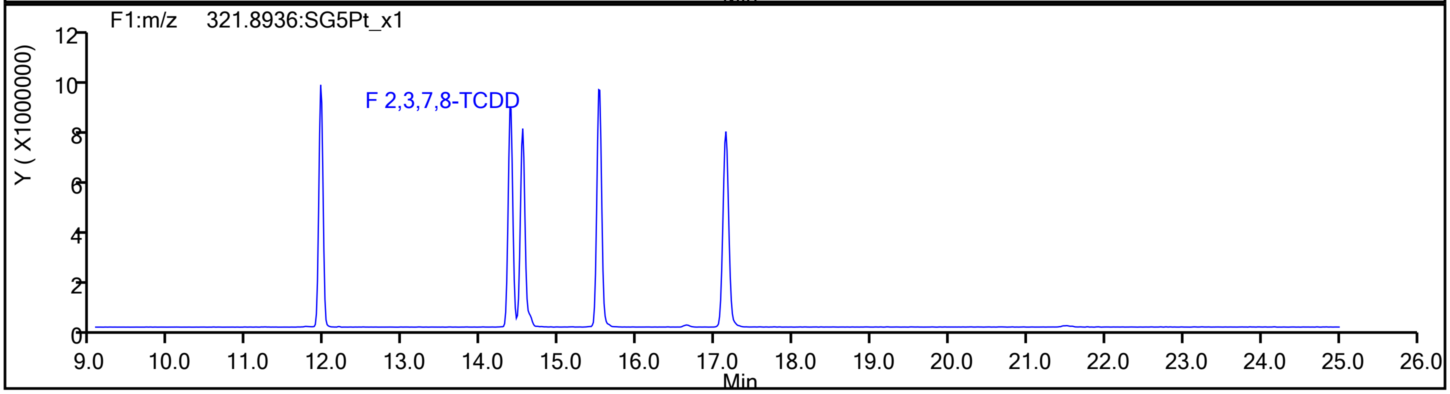

TCDD Standards

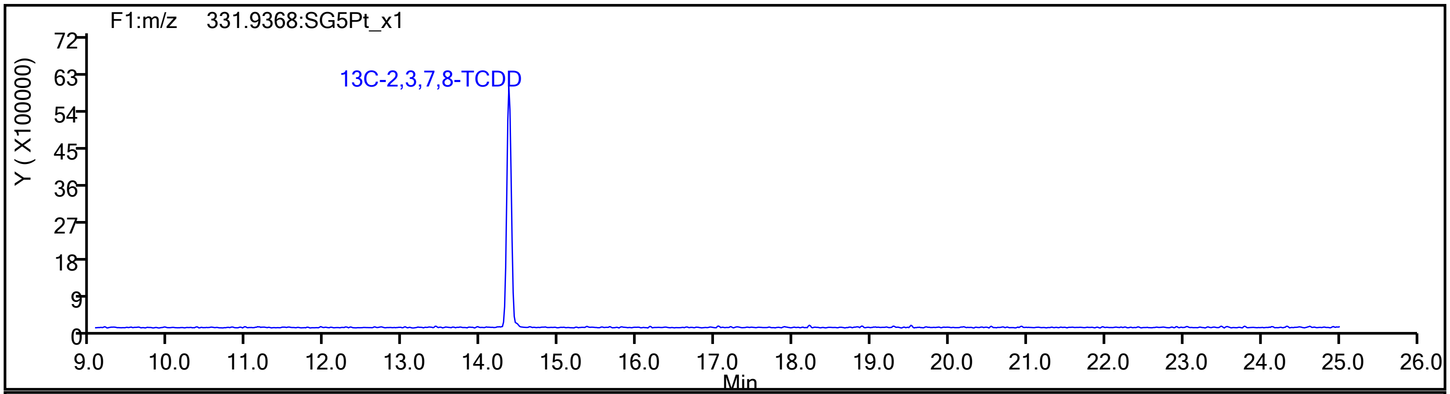

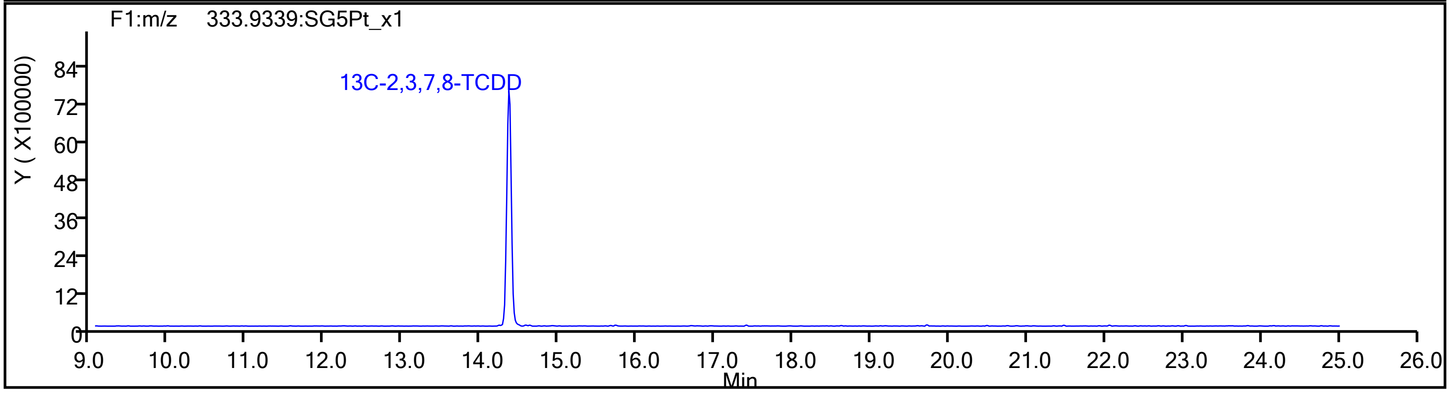

Report Date: 24-Sep-2020 15:28:22
Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d
Injection Date: 23-Sep-2020 12:02:23
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 415167
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

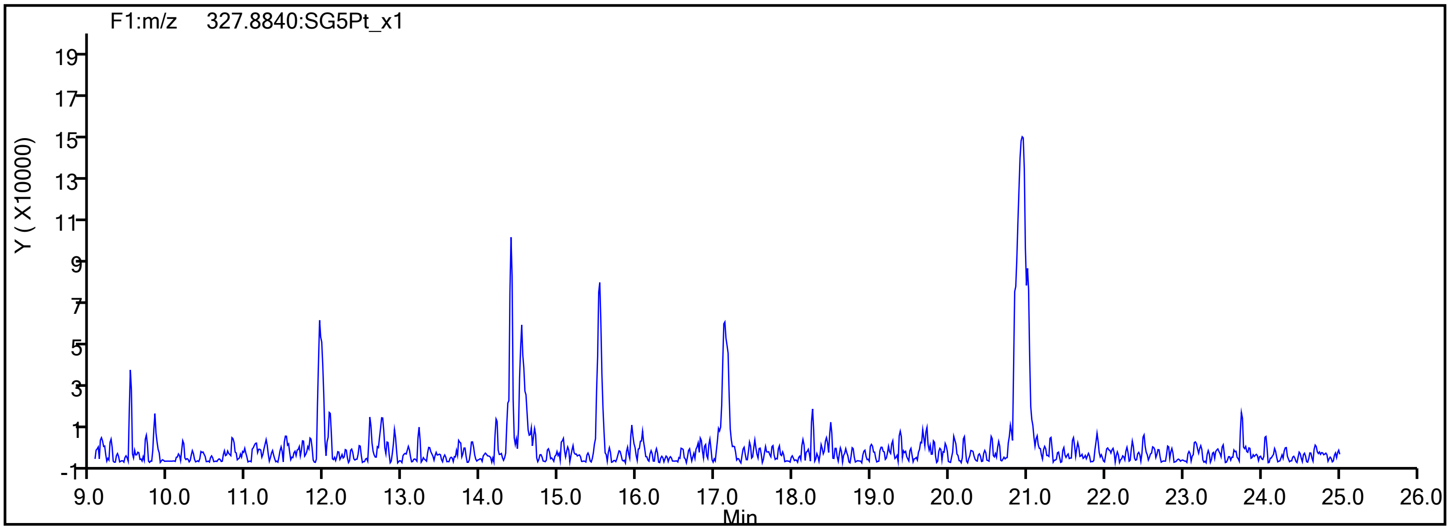

37Cl4-TCDD Standards

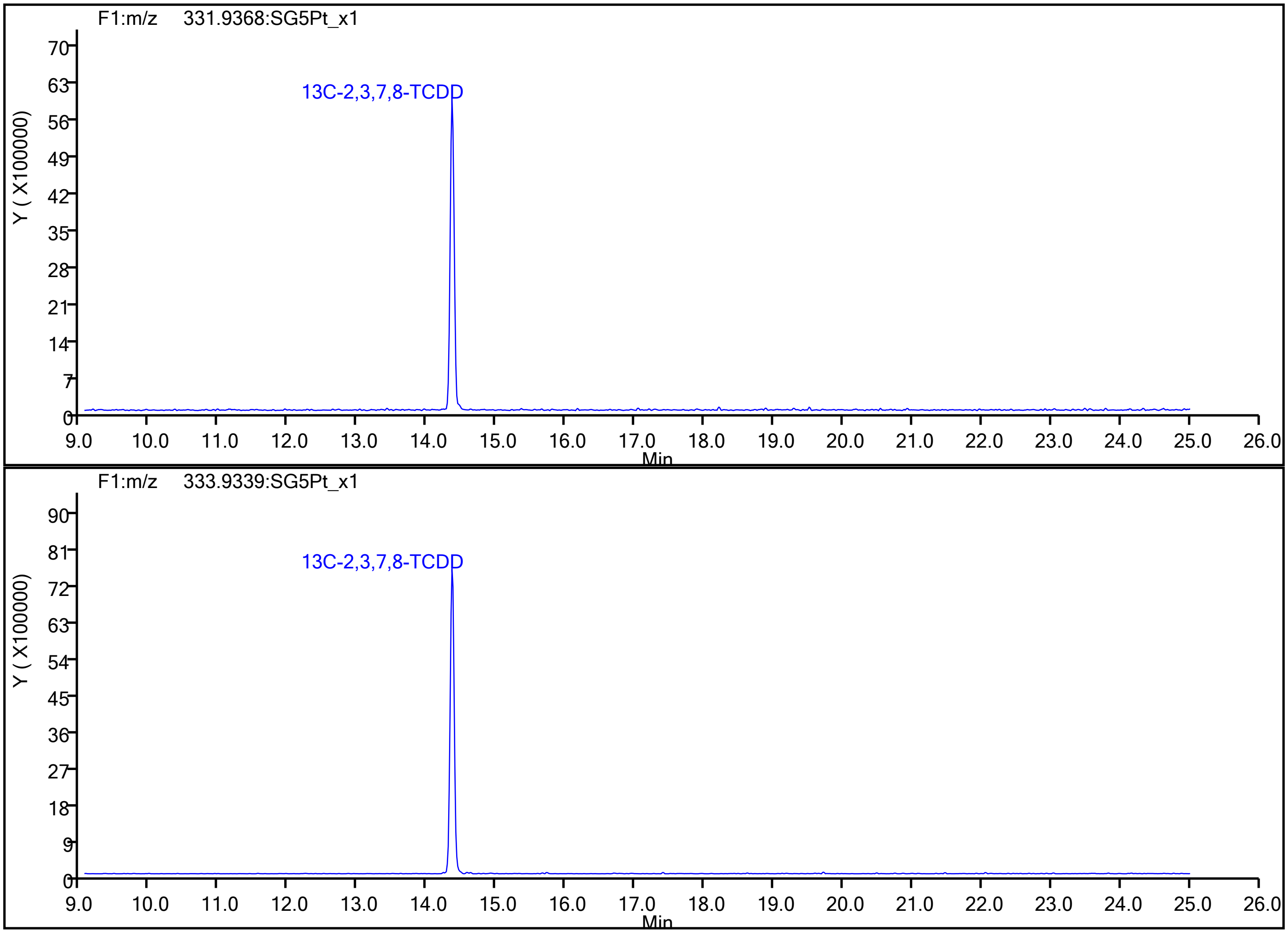

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200923-103918.b\23SE20A11D2_001.d		
Injection Date:	23-Sep-2020 12:02:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415167	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

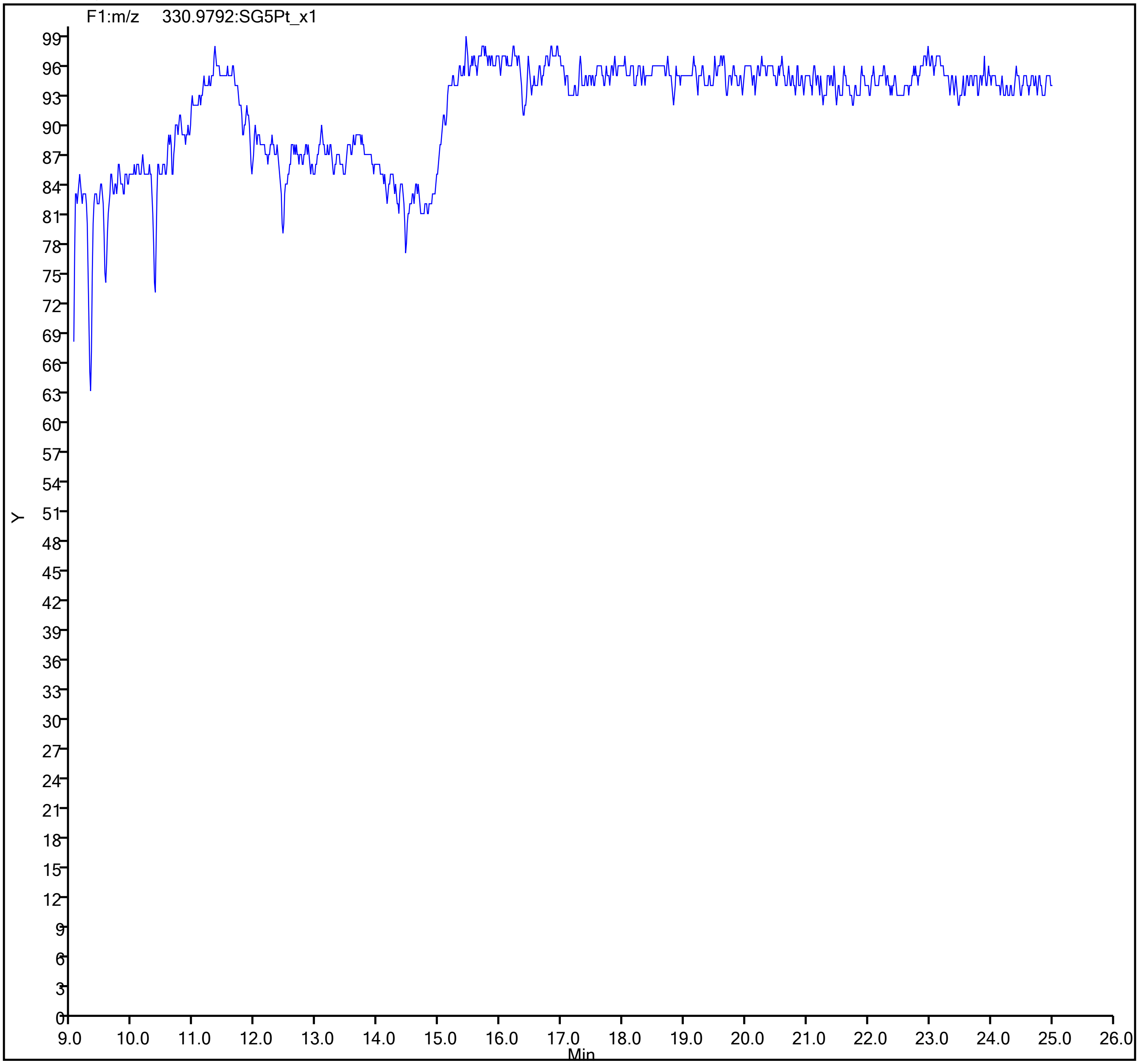

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 11:37:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Sep-2020 18:47:15 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: shardaa Date: 17-Sep-2020 14:06:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.210	2522167	0.79	1.5883					0.00	
2,3,7,8-TCDF	19.253	5383611	0.79	1.0857	78.6	78.6	0.3518	0.3518		
A Non-2,3,7,8-sub-TCDF	18.794						0.3518	0.3518		
S Total TCDF					78.6	78.6	0.3518	0.3518		
D 13C-2,3,7,8-TCDD	20.492	1633403	0.79	1.1194					0.00	
2,3,7,8-TCDD	20.527	1845908	0.80	1.0810	41.8	41.8	0.2782	0.2782		
A Non-2,3,7,8-sub-TCDD	19.607						0.2782	0.2782		
S Total TCDD					41.8	41.8	0.2782	0.2782		
A F1 PeCDFs	23.600	1584	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.993	37278	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	27.362						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	34.213	13529	1.35	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.672	19676	1.14	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.121	2303643	1.03	1.5064						
1,2,3,4,7,8,9-HpCDF	39.417	1981873	1.04	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.769						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.106	1521050	1.04	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.161	2687059	0.79							
1,3,6,8-TCDD	16.699	1788273	0.78							
2,3,4,7-TCDF	19.253	5383611	0.79							
1,2,3,7-TCDD	20.329	1481446	0.79							
1,2,3,9-TCDF	20.716	2355933	0.79							
1,2,3,9-TCDD	20.802	1918140	0.78							
1,2,8,9-TCDF	22.428	2480142	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	22.514	764750								
1,3,4,6,8-PeCDF	23.039	2295594	1.56							
1,2,4,7,9-PeCDD	25.161	1607203	1.56							
1,2,3,8,9-PeCDD	29.564	1522711	1.55							
1,2,3,8,9-PeCDF	29.724	2011691	1.57							
1,2,3,4,6,8-HxCDF	32.099	2347104	1.27							
1,2,4,6,7,9-HxCDD	33.388	1723900	1.25							
1,2,3,4,6,7-HxCDD	35.956	1700403	1.25							
1,2,3,4,8,9-HxCDF	36.326	2258870	1.26							
1,2,3,4,6,7,9-HpCDD	38.441	1661144	1.05							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 17-Sep-2020 18:47:24　　Chrom Revision: 2.3　16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	17-Sep-2020 11:37:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00042				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	17-Sep-2020 18:47:15	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1063				

First Level Reviewer: shardaa　　Date: 17-Sep-2020 14:06:36

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.210	19.210	0	1.000	1116142	177348	719	1797	247		
317.9389	19.210	19.210	0	1.000	1406025	214870	429	1072	501	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.253	19.246	0	1.002	2375027	326449	645	1612	506		
305.8987	19.253	19.246	0	1.002	3008584	413043	853	2132	484	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.794						645	1612			
305.8987	18.794						853	2132			
13C-2,3,7,8-TCDD											
331.9368	20.492	20.492	0	1.000	722717	101060	463	1157	218		
333.9338	20.501	20.492	1	1.000	910686	124375	85	212	1463	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.527	20.532	0	1.002	820013	115777	339	847	342		
321.8936	20.535	20.532	0	1.002	1025895	143922	339	847	425	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.607						339	847			
321.8936	19.607						339	847			
A F1 PeCDFs											RQ
339.8597	16.476	23.600	-427	1.000	963	154	27	67	6		
341.8567	16.476	23.600	-427	1.000	6442	1078	60	150	18	0.15(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.750	26.993	-74	1.000	5534	1015	177	442	6		
341.8567	25.750	26.993	-74	1.000	3903	620	159	397	4	1.42(1.32-1.78)	
339.8597	26.314	26.993	-41	1.000	9689	1347	177	442	8		
341.8567	26.306	26.993	-41	1.000	8696	1066	159	397	7	1.11(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.912	26.993	-5	1.000	7207	1209	177	442	7		
341.8567	26.903	26.993	-5	1.000	4695	664	159	397	4	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.362						267	667			
357.8516	27.362						138	345			
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.373	34.213	10	1.000	7773	1859	350	875	5		
375.8178	34.364	34.213	9	1.000	5756	1218	254	635	5	1.35(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.651	34.672	-1	1.000	10486	2057	215	537	10		
391.8127	34.651	34.672	-1	1.000	9190	1928	189	472	10	1.14(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.121	38.141	-1	1.000	1170853	364198	644	1610	566		
409.7788	38.121	38.141	-1	1.000	1132790	349286	592	1480	590	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.417	39.438	-1	1.000	1012663	324987	644	1610	505		
409.7788	39.409	39.438	-2	1.000	969210	312841	592	1480	528	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.769						644	1610			
409.7788	38.769						592	1480			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.106	39.126	-1	1.000	774532	259279	458	1145	566		
425.7737	39.106	39.126	-1	1.000	746518	246920	413	1032	598	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						458	1145			
425.7737	38.941						413	1032			
1,3,6,8-TCDF											
303.9016	15.161	15.161	0		1186477	240908	645	1612	374		
305.8987	15.161	15.161	0		1500582	305194	853	2132	358	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.699	16.699	0		782156	141561	339	847	418		
321.8936	16.699	16.699	0		1006117	185842	339	847	548	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.253	19.253	0		2375027	326449	645	1612	506		
305.8987	19.253	19.253	0		3008584	413043	853	2132	484	0.79(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.329	20.329	0		654452	99090	339	847	292		
321.8936	20.329	20.329	0		826994	125288	339	847	370	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.716	20.716	0		1039323	142760	645	1612	221		
305.8987	20.707	20.716	-1		1316610	180036	853	2132	211	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.802	20.802	0		837663	112205	339	847	331		
321.8936	20.802	20.802	0		1080477	143086	339	847	422	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	22.428	22.428	0		1097149	142639	645	1612	221		
305.8987	22.420	22.428	-1		1382993	177064	853	2132	208	0.79(0.65-0.89)	

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	22.514	22.514	0		764750	95778	339	847	283		
1,3,4,6,8-PeCDF											
339.8597	23.039	23.039	0		1398828	192738	27	67	7138		
341.8567	23.039	23.039	0		896766	120618	60	150	2010	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.161	25.161	0		978358	157744	267	667	591		
357.8516	25.152	25.161	-1		628845	103440	138	345	750	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.564	29.564	0		925446	129436	267	667	485		
357.8516	29.555	29.564	-1		597265	83528	138	345	605	1.55(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.724	29.724	0		1227876	167813	177	442	948		
341.8567	29.724	29.724	0		783815	108294	159	397	681	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.099	32.099	0		1311089	172896	350	875	494		
375.8178	32.107	32.099	1		1036015	134835	254	635	531	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.388	33.388	0		959152	166009	215	537	772		
391.8127	33.388	33.388	0		764748	130983	189	472	693	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.956	35.956	0		945535	236040	215	537	1098		
391.8127	35.956	35.956	0		754868	188398	189	472	997	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.326	36.326	0		1257245	321693	350	875	919		
375.8178	36.326	36.326	0		1001625	256249	254	635	1009	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.441	38.441	0		850808	270967	458	1145	592		
425.7737	38.441	38.441	0		810336	256648	413	1032	621	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 11:37:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	1

F1 PeCDFs, RT: 23.600

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.476	963	154	6442	1078		0.15	R
Signal Totals:							
	963	154	6442	1078			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7405	1232				0.15	RQ
	1584	253					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (7405 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (1584 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 11:37:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 26.993

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.750	5534	1015	3903	620		1.42	
26.314	9689	1347	8696	1066		1.11	R
26.912	7207	1209	4695	664		1.54	
Signal Totals:							
	22430	3571	17294	2350			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	39724	5921				1.30	RQ
	37278	5724					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (39724 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (37278 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 11:37:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 34.213

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.373	7773	1859	5756	1218		1.35	
Signal Totals:							
	7773	1859	5756	1218			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13529	3077				1.35	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13529 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 11:37:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 34.672

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.651	10486	2057	9190	1928		1.14	
Signal Totals:							
	10486	2057	9190	1928			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	19676	3985				1.14	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (19676 * 0.0) / (0 * 0.000)

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

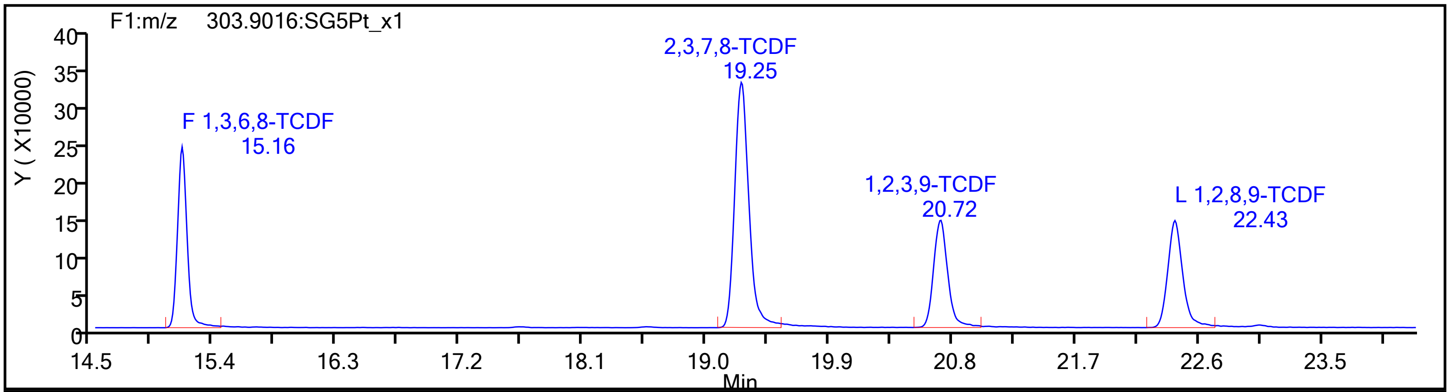

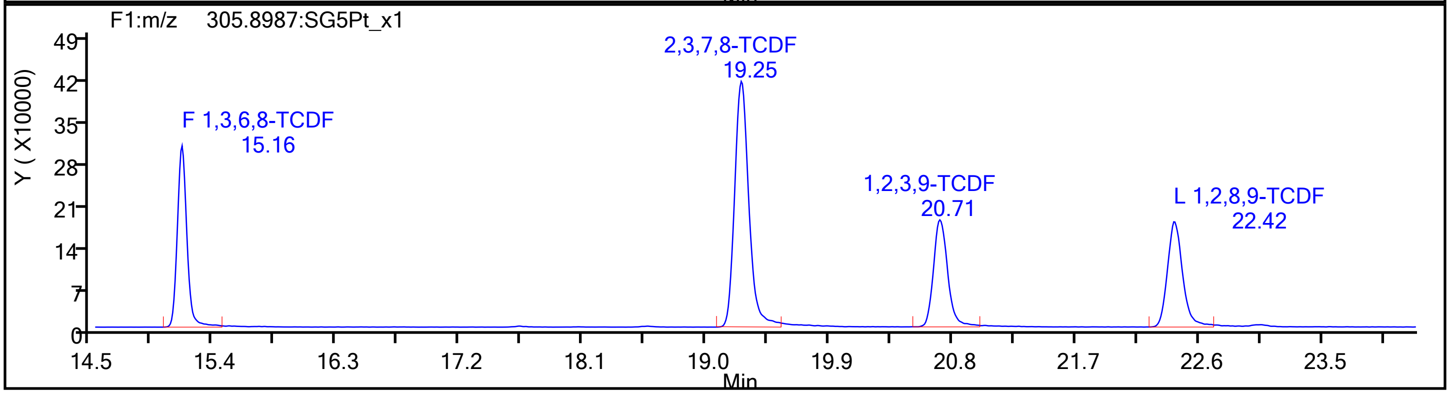

TCDF Standards

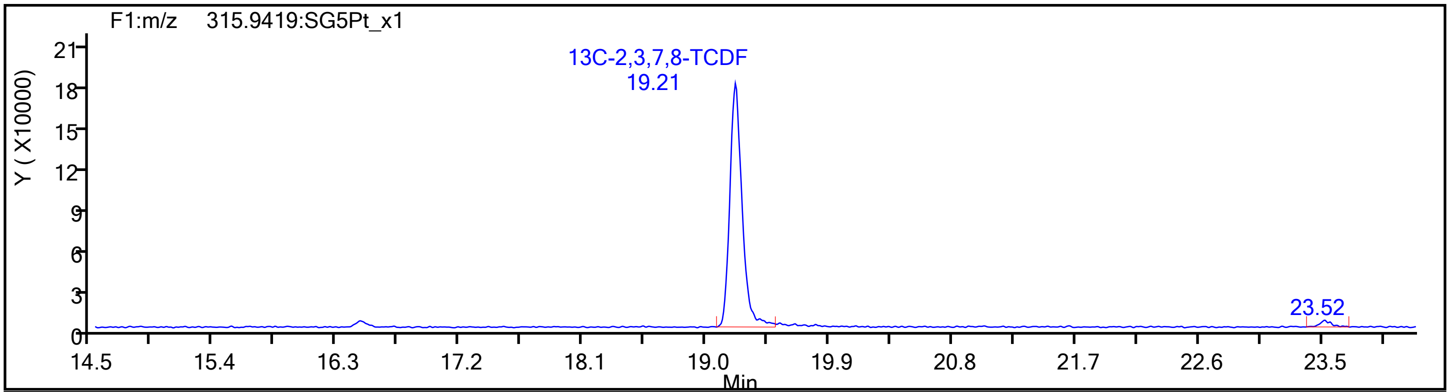

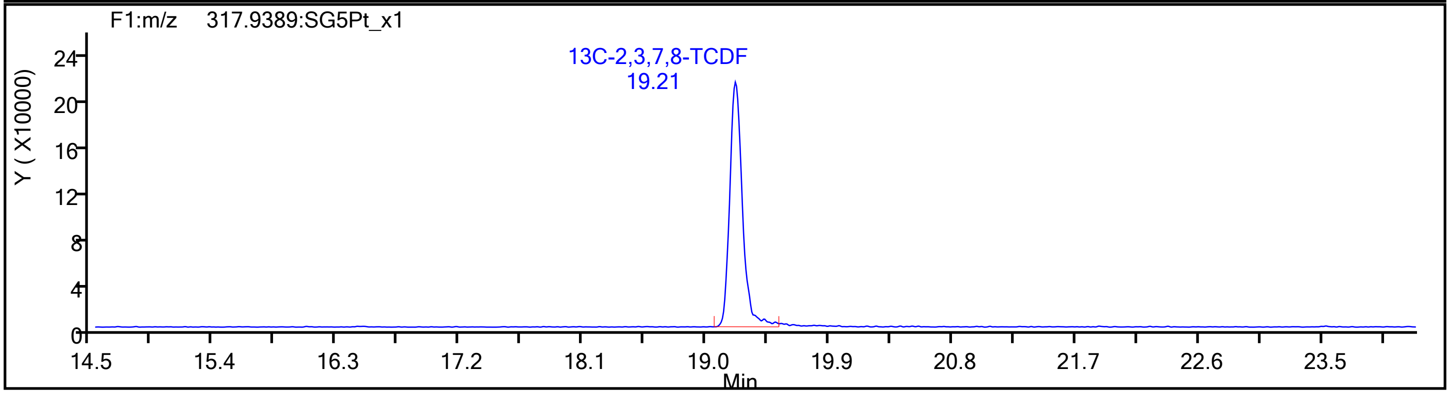

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date: 17-Sep-2020 11:37:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

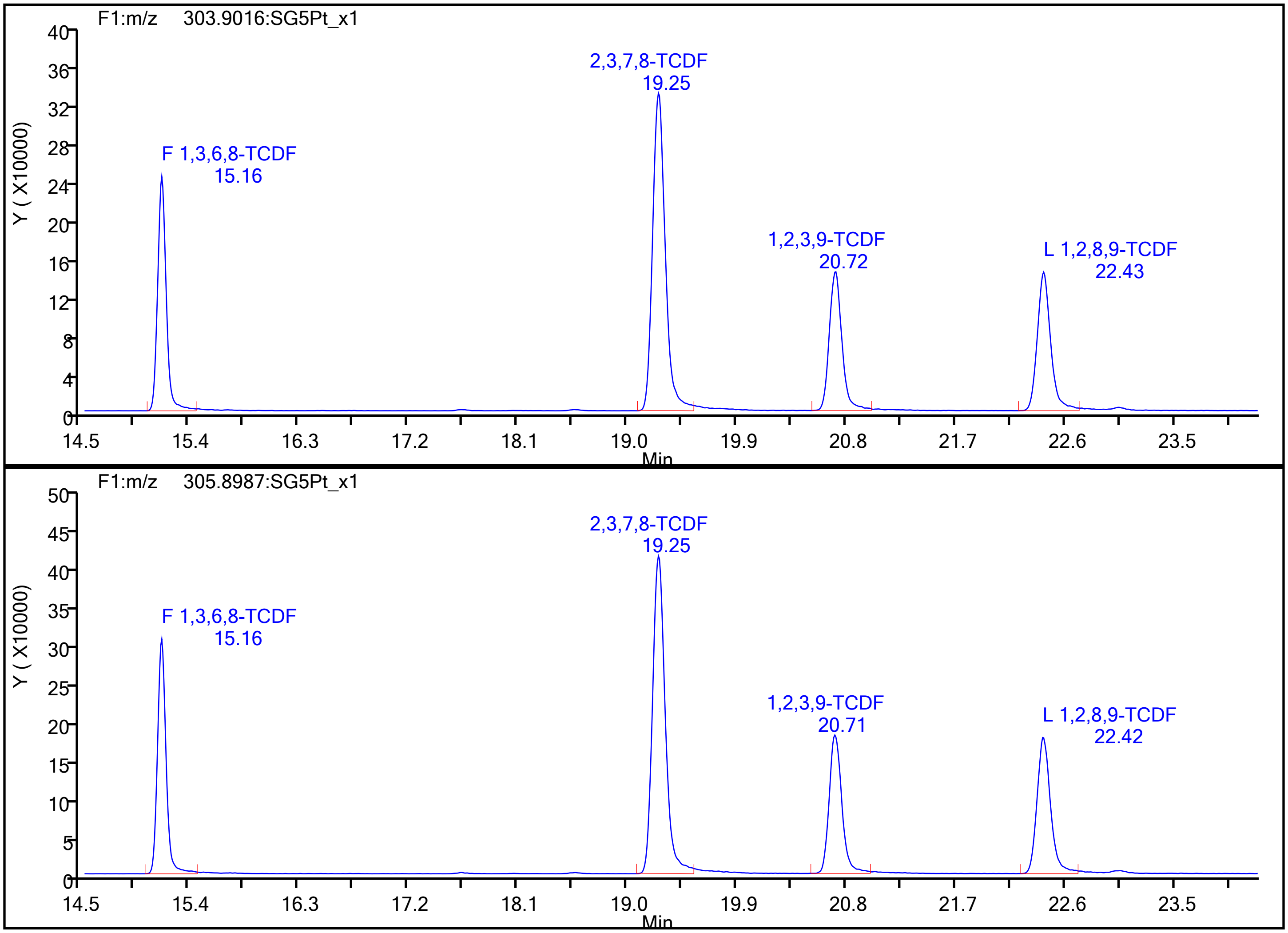

TCDF Interference Mass

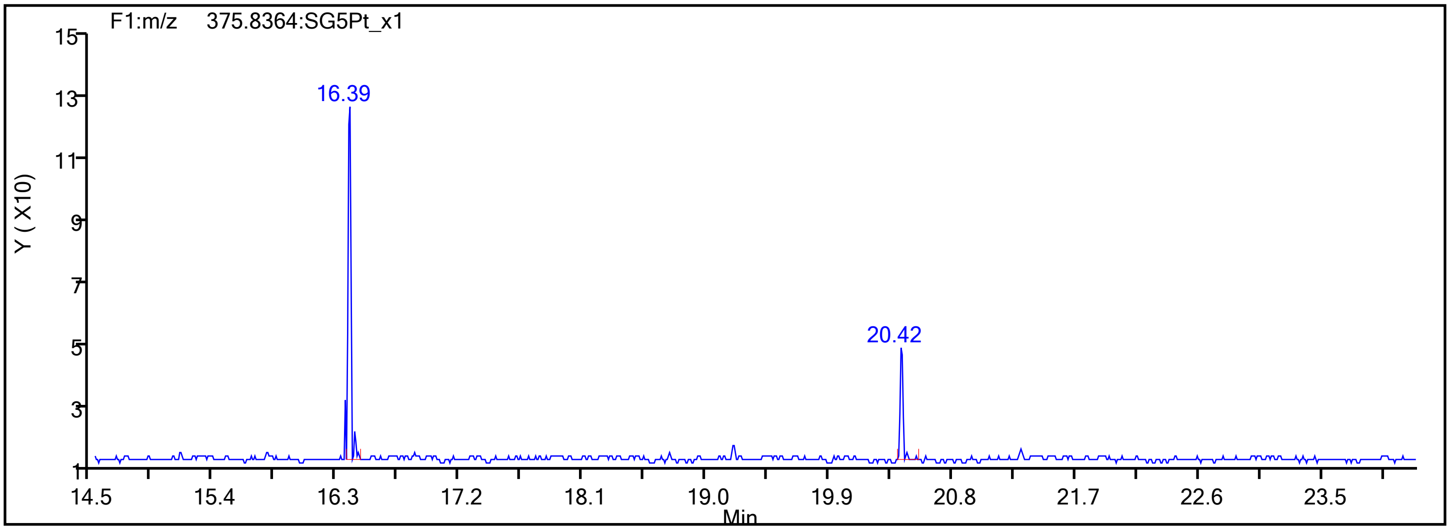

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Injection Date: 17-Sep-2020 11:37:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

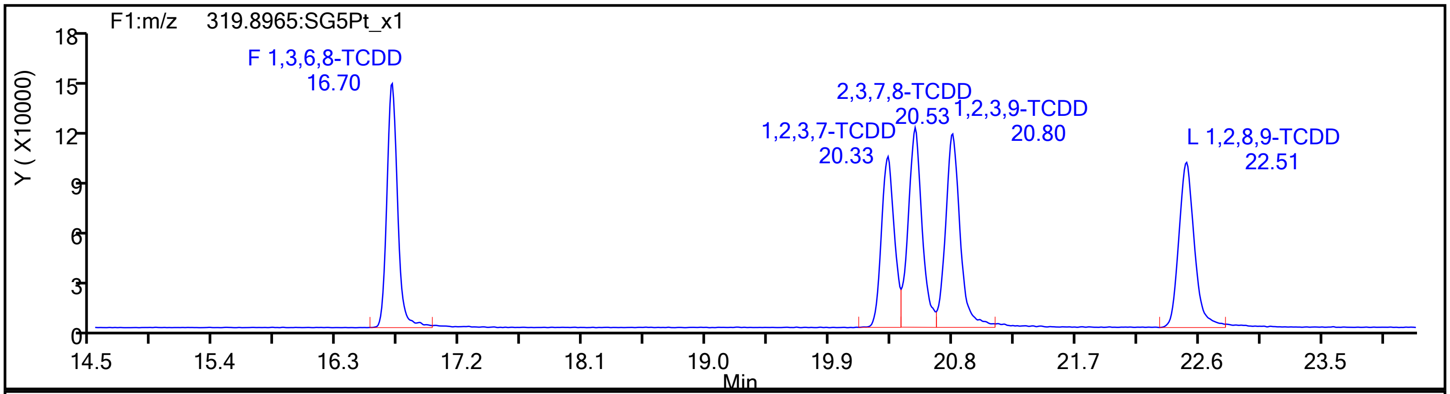

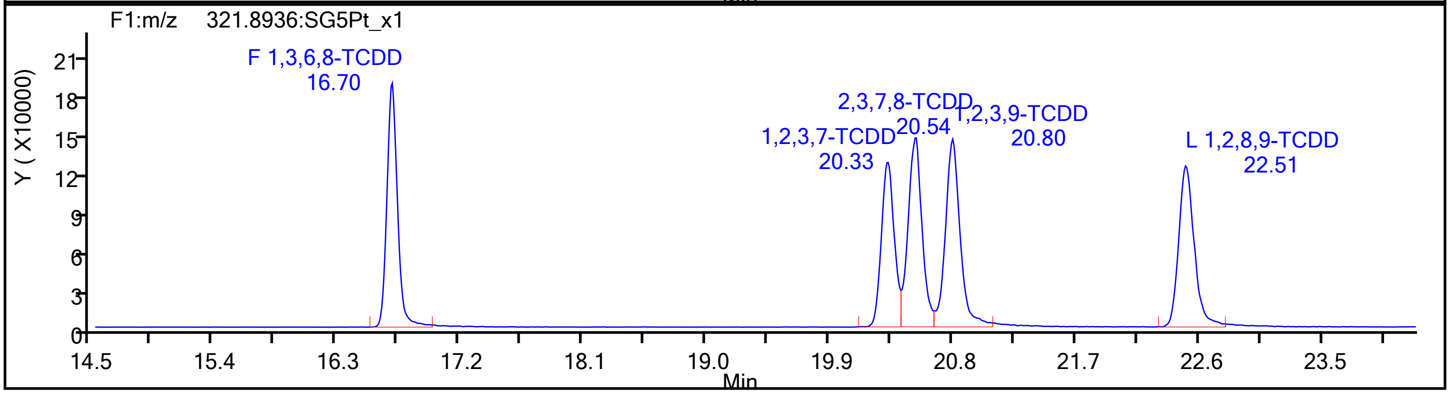

TCDD Standards

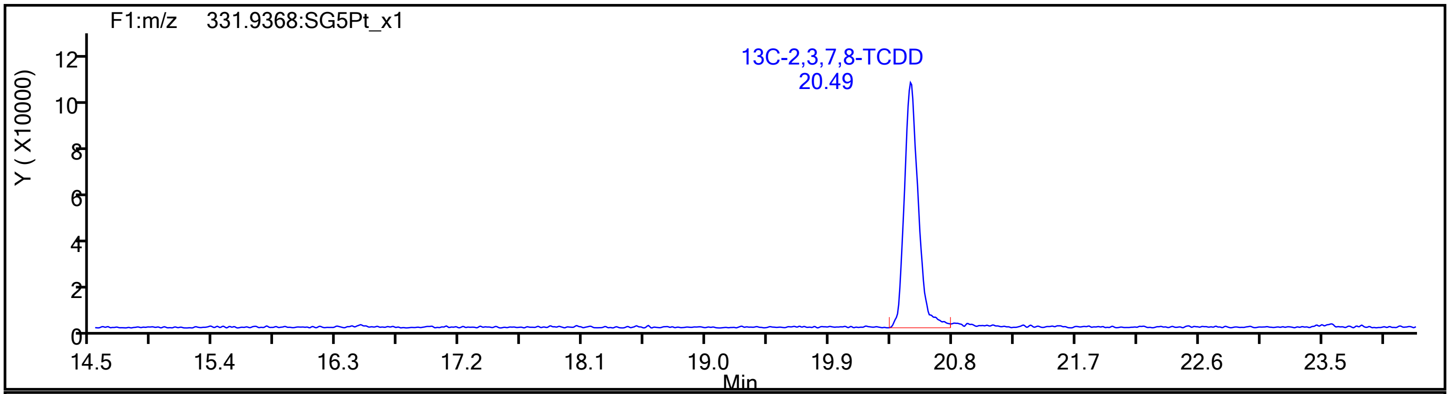

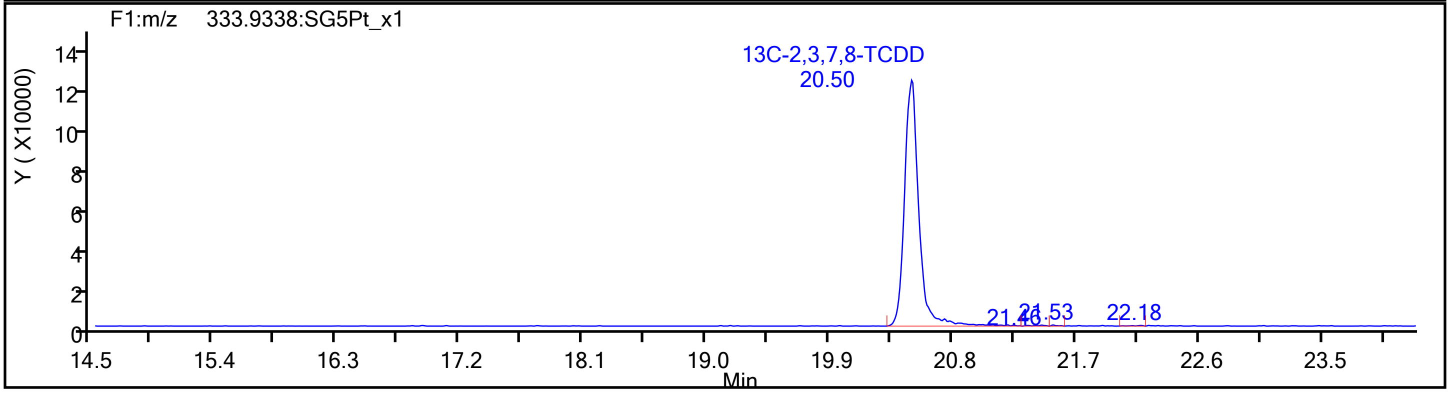

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

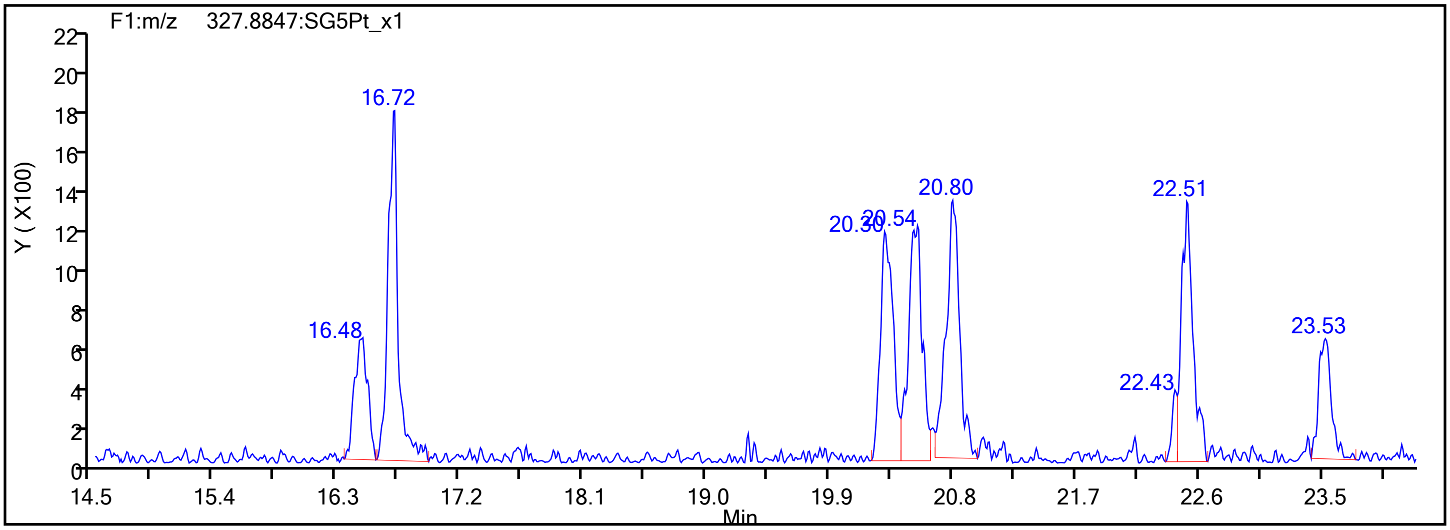

37Cl4-TCDD Standards

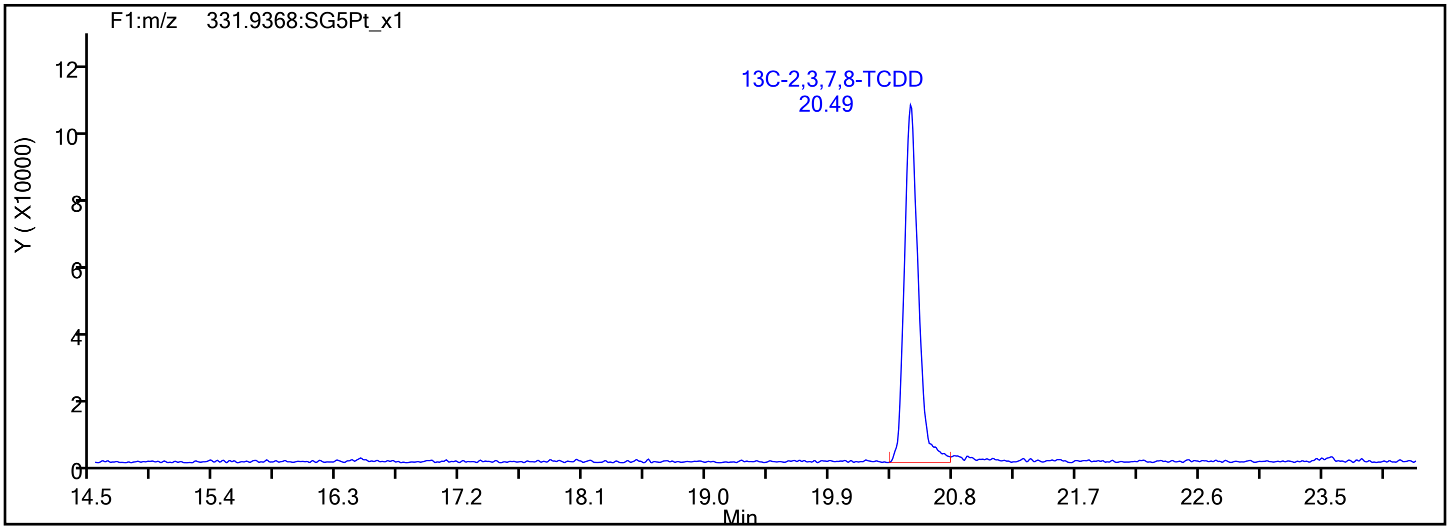

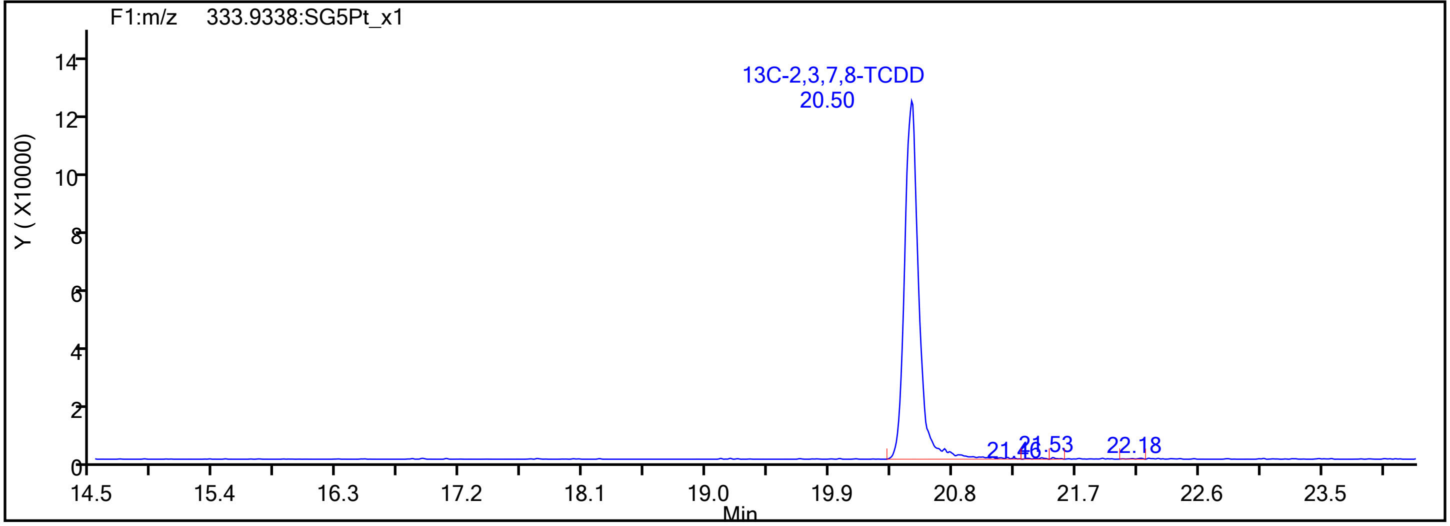

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

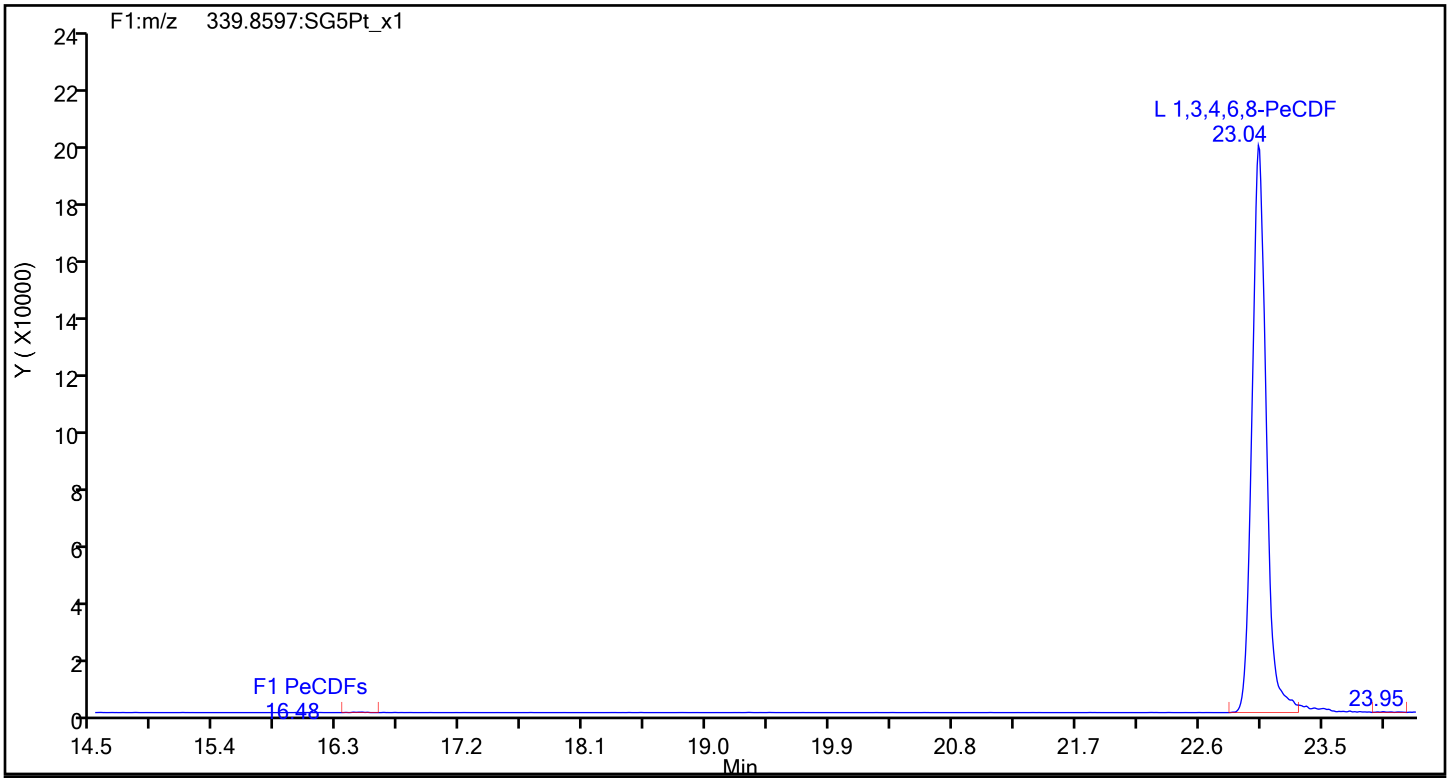

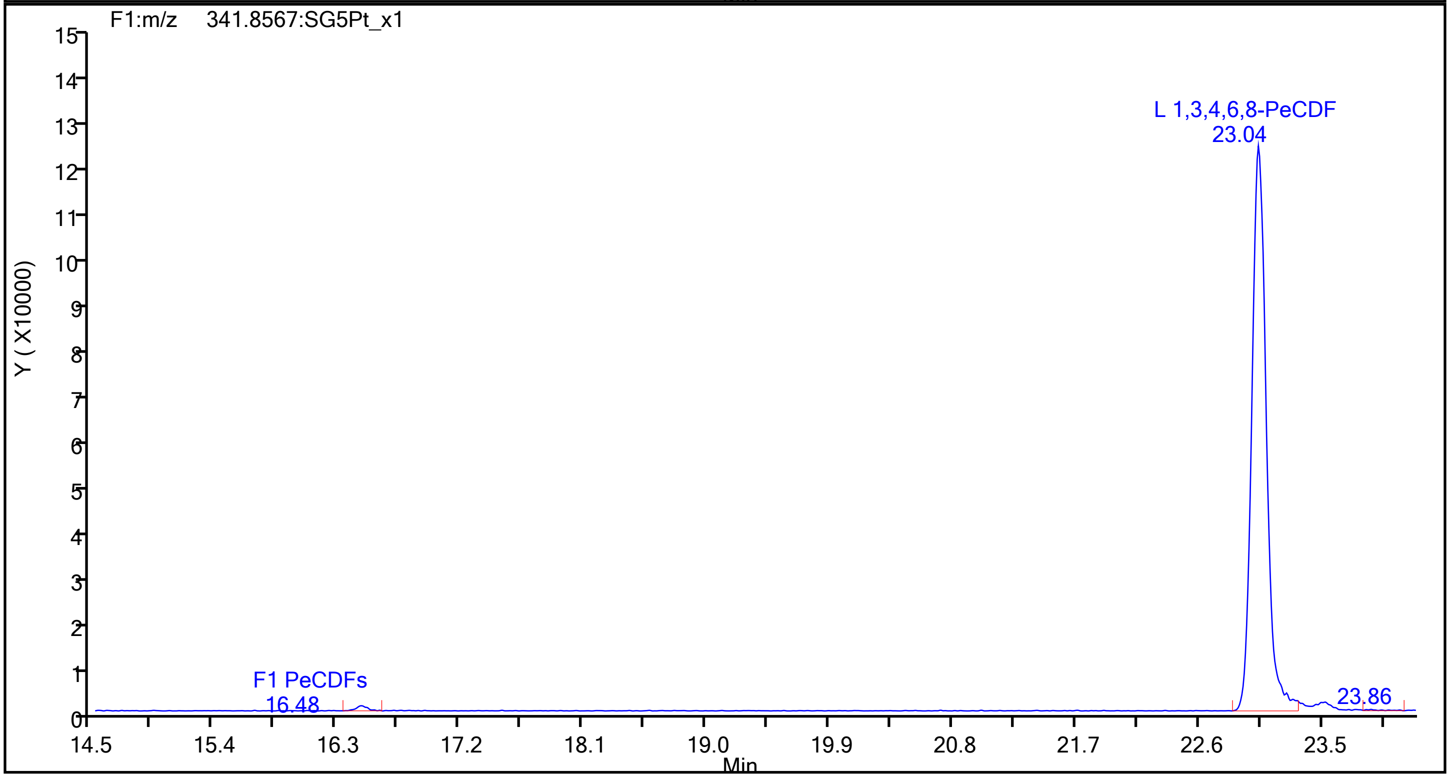

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

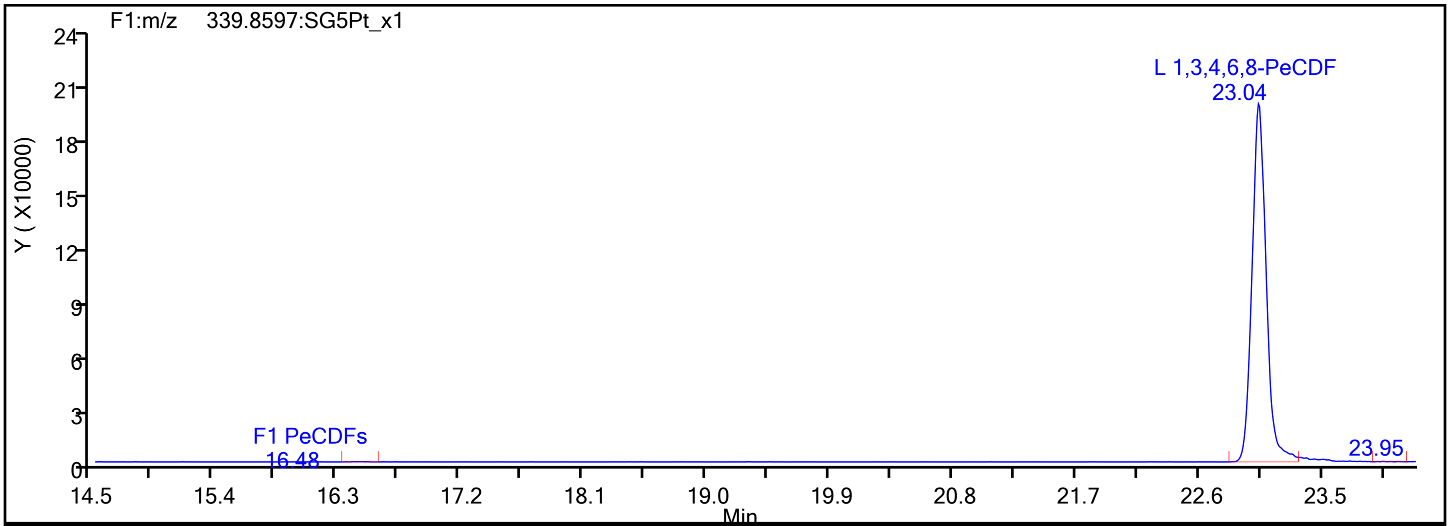

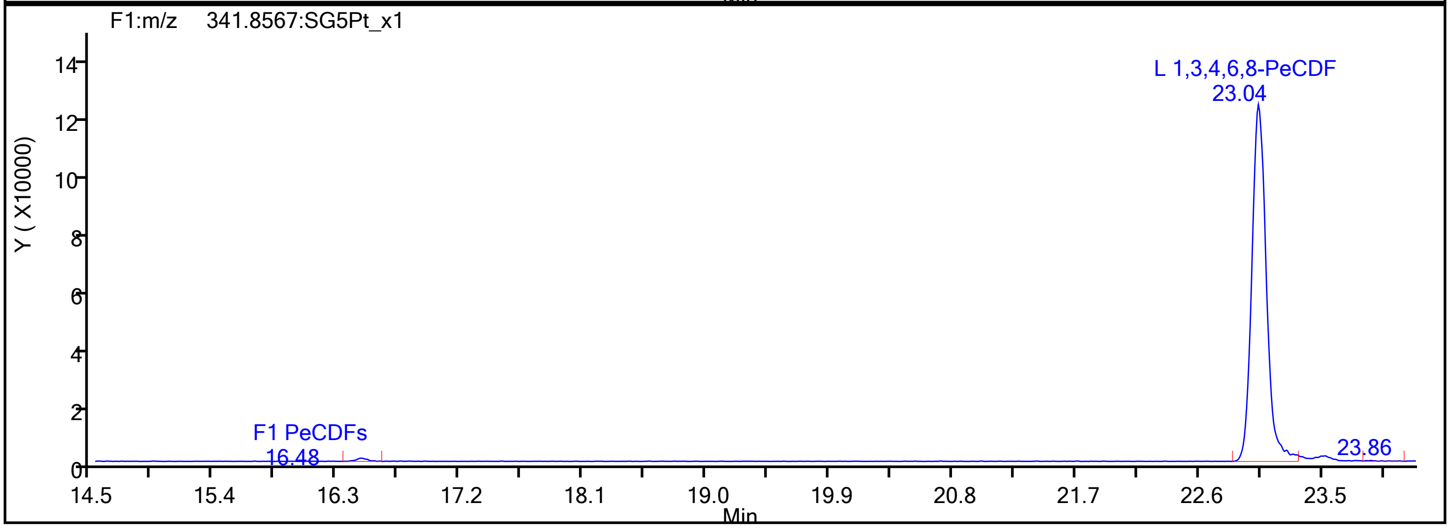

F1 PeCDFs Interference Mass

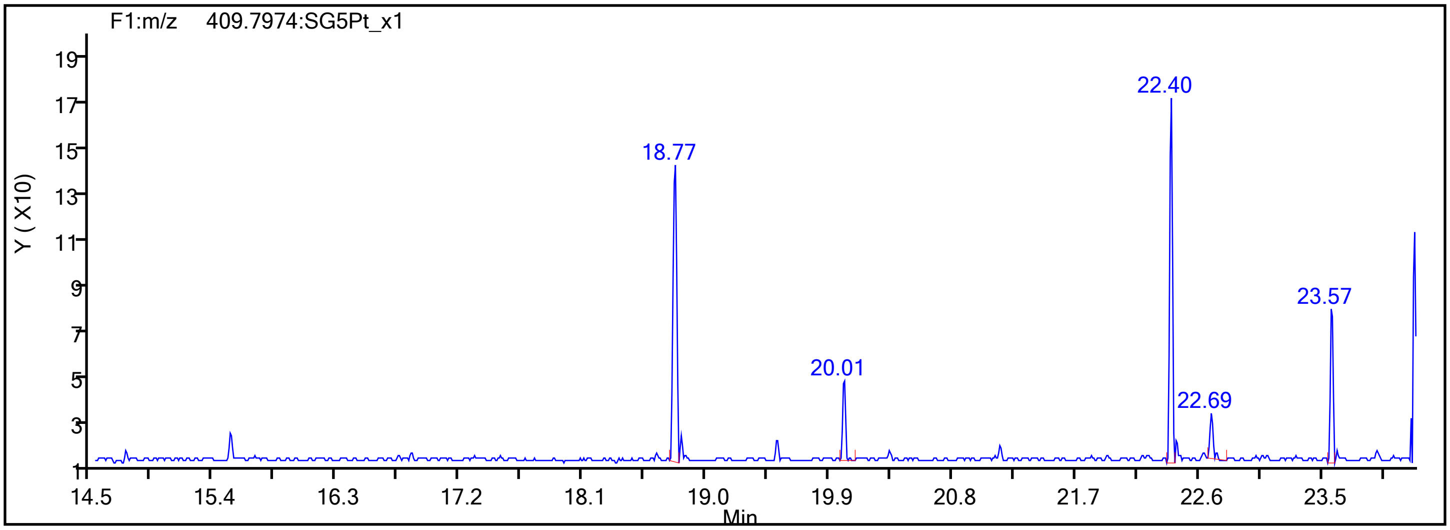

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

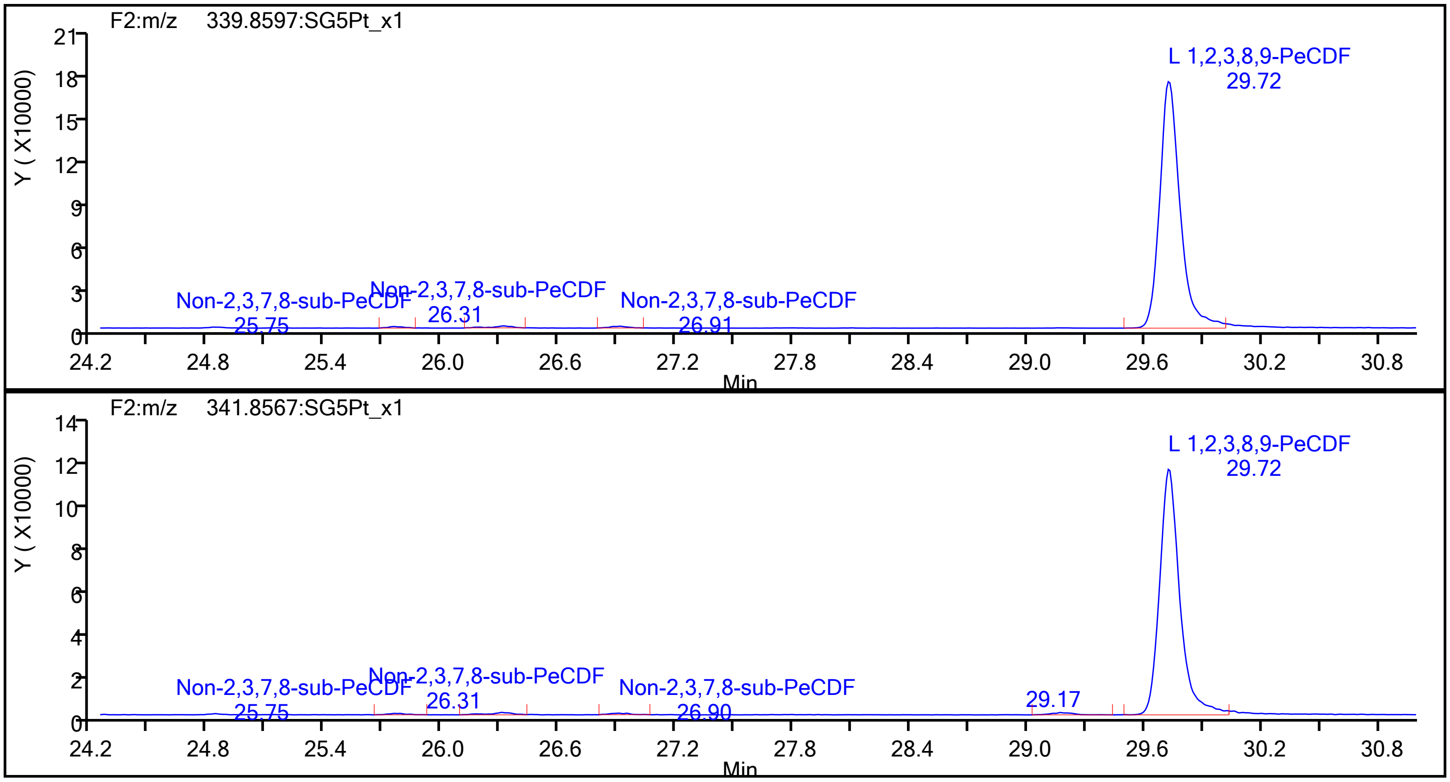

PeCDF Standards

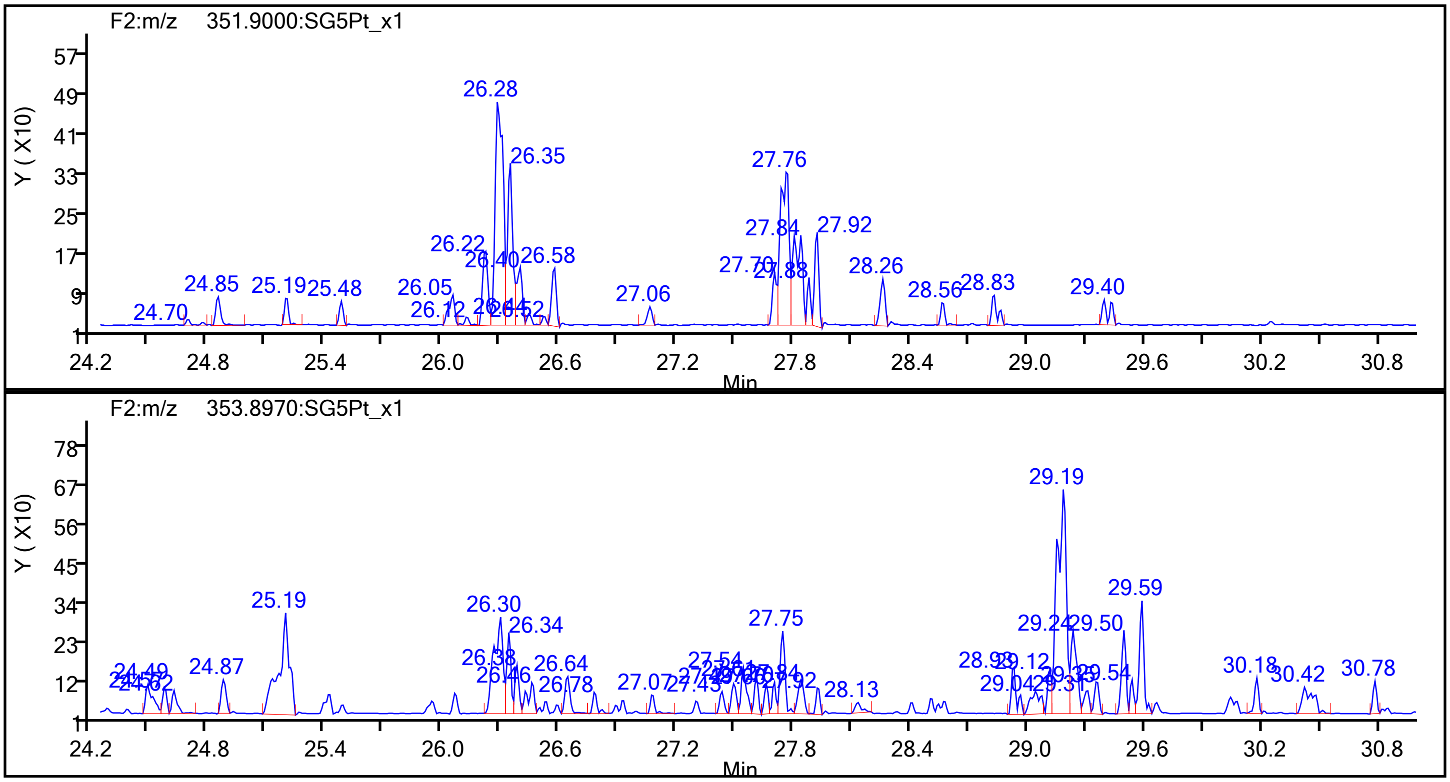

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

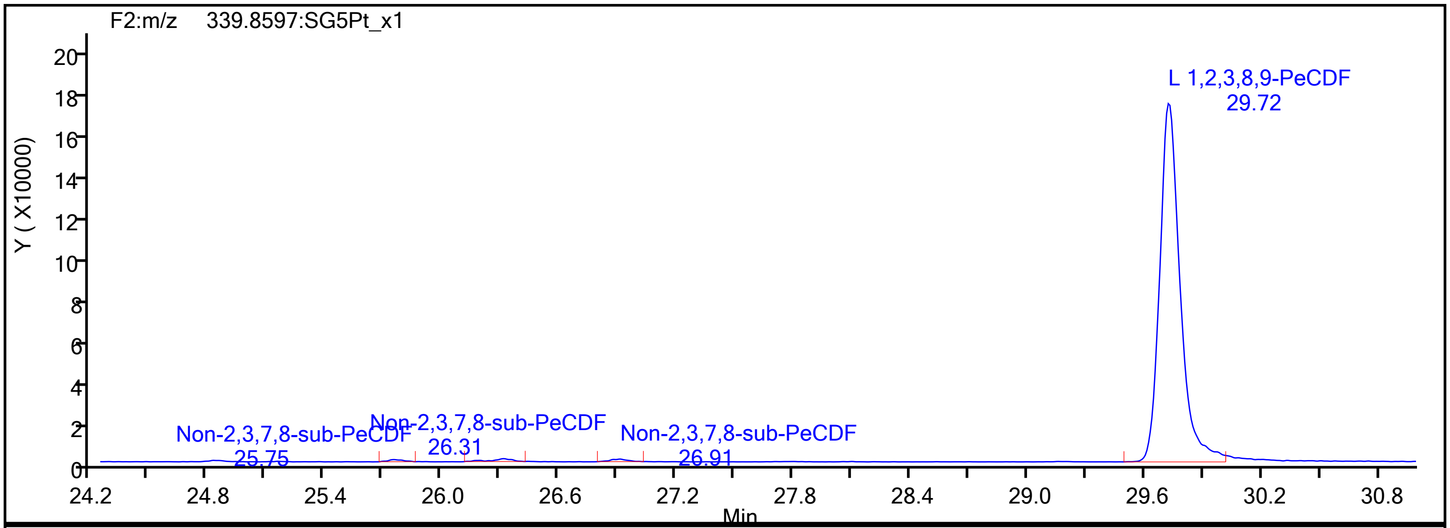

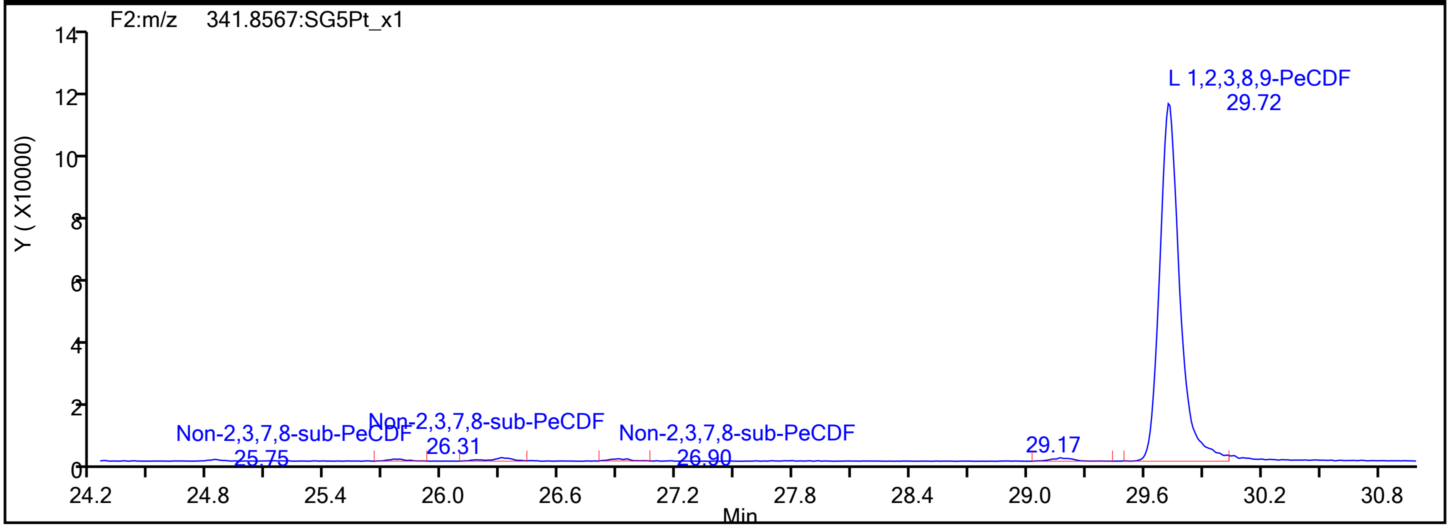

PeCDF Interference Mass

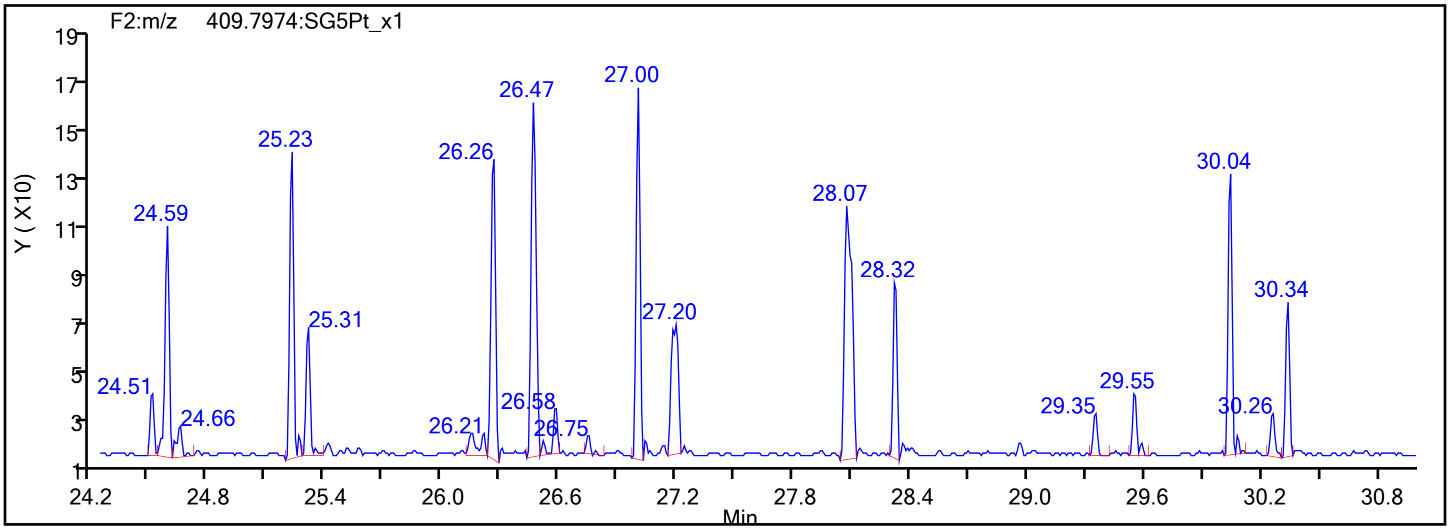

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

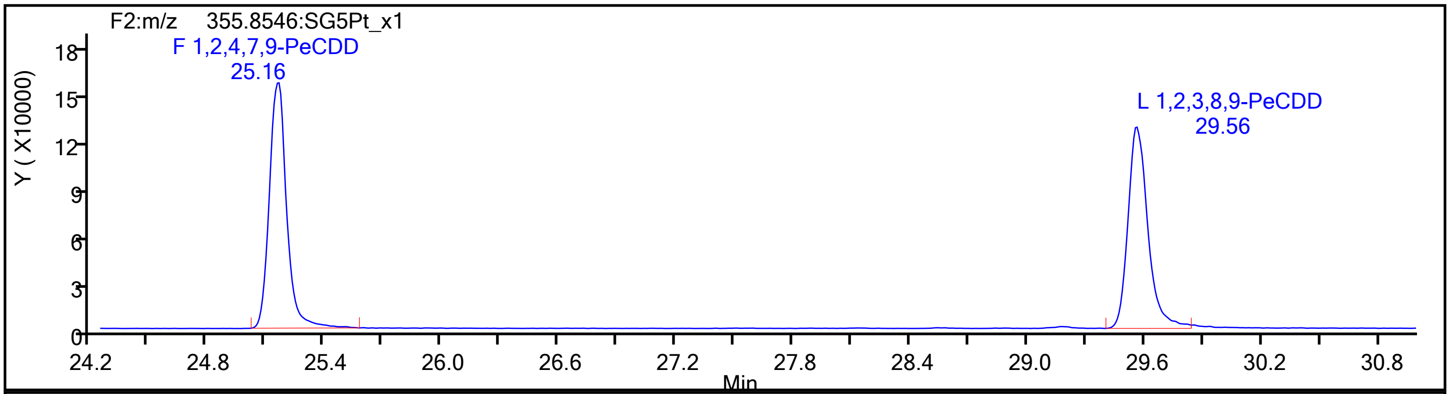

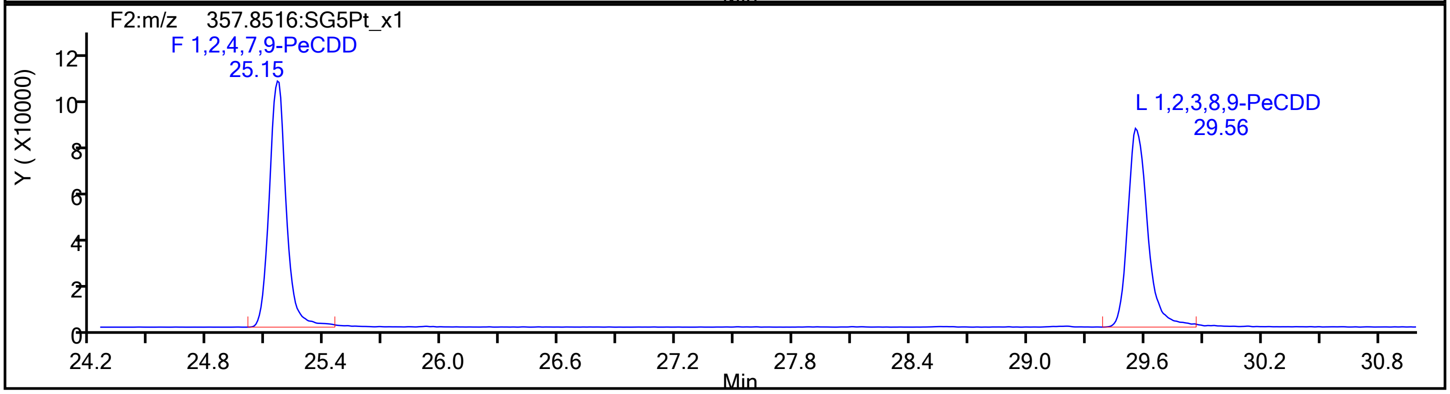

PeCDD Standards

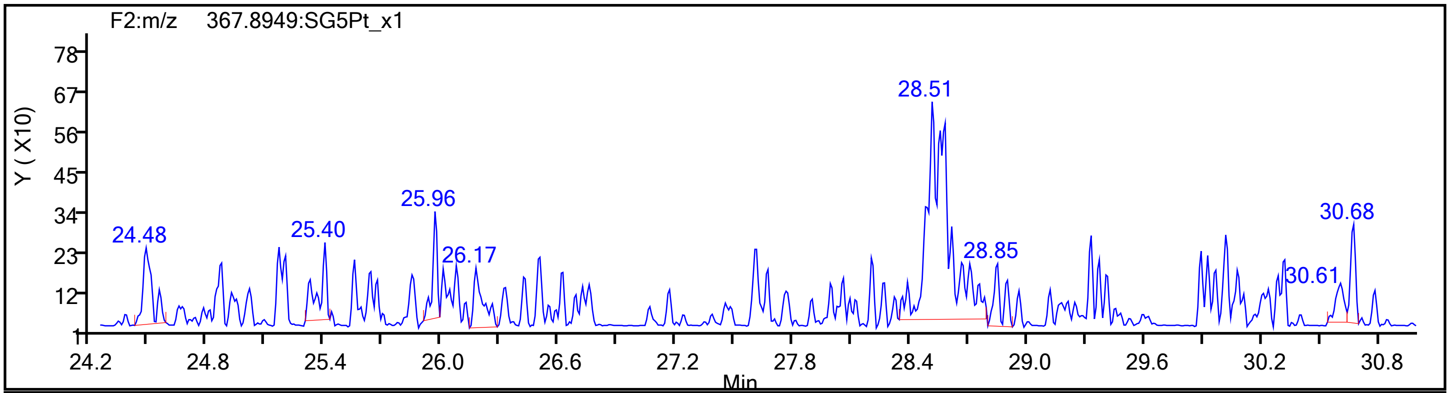

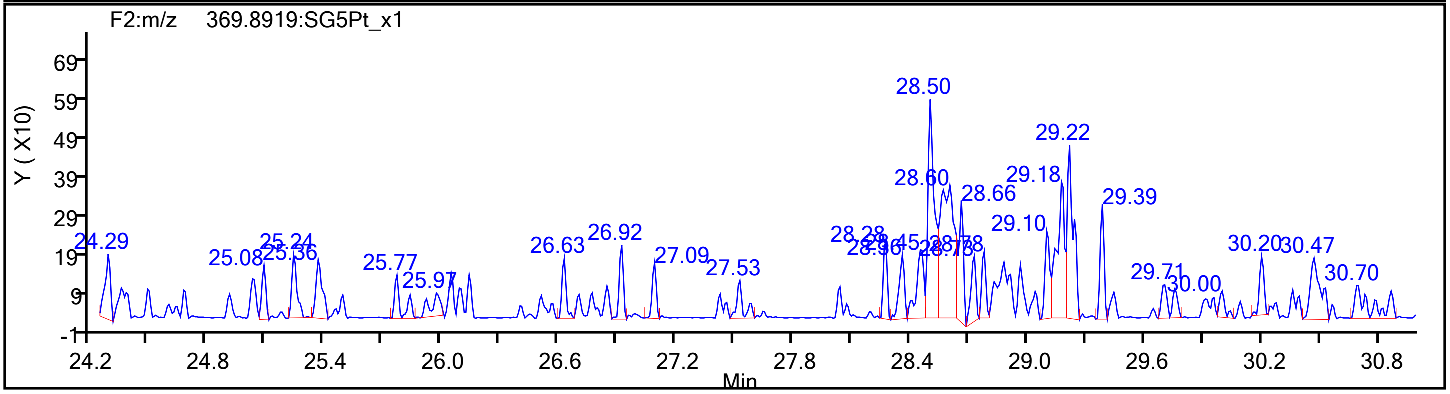

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date: 17-Sep-2020 11:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

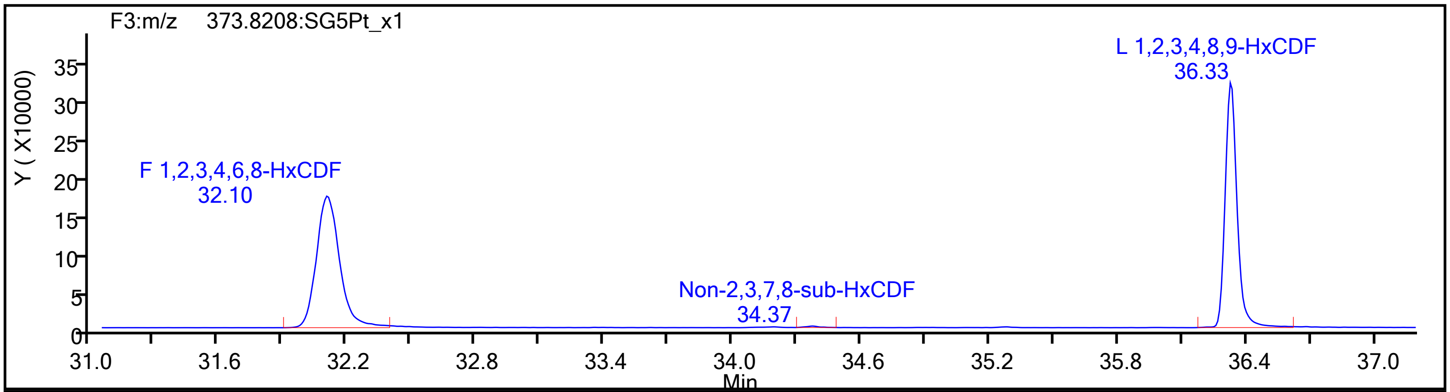

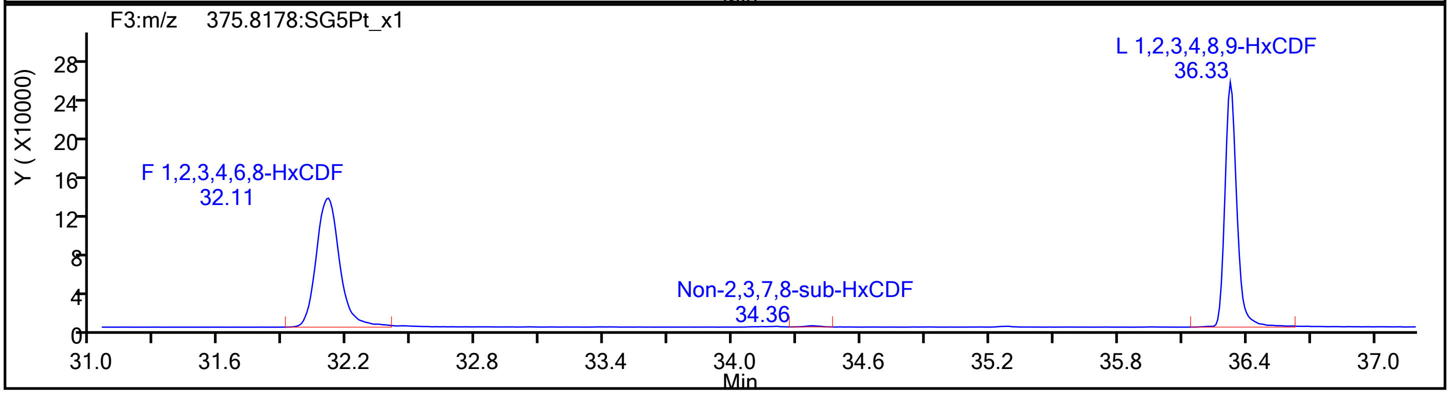

HxCDF Standards

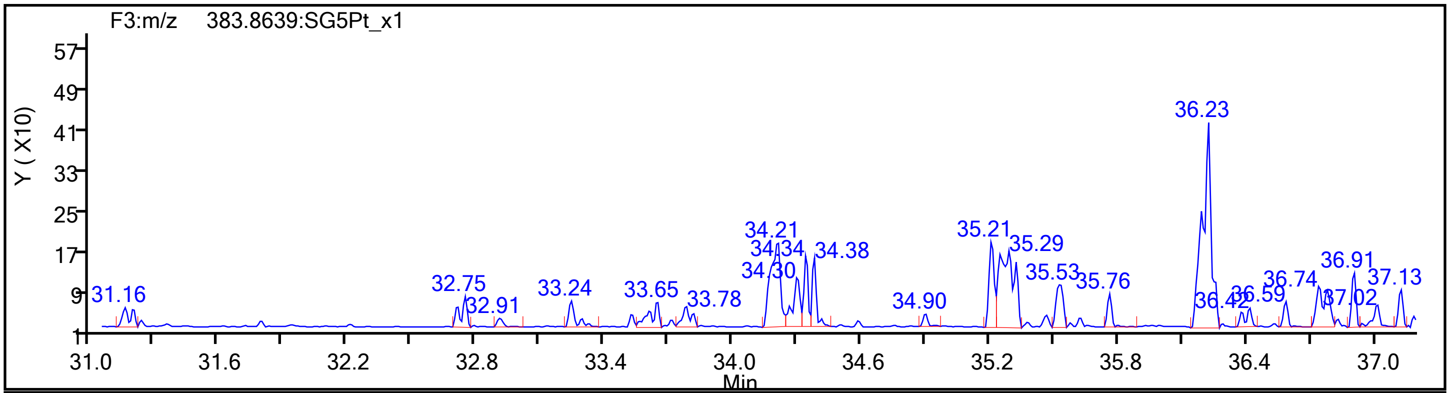

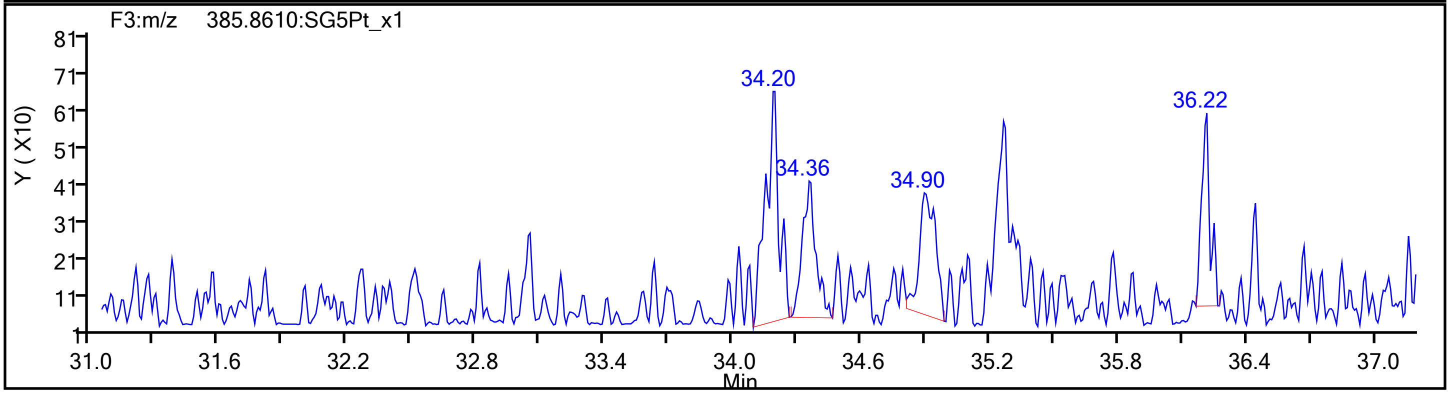

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

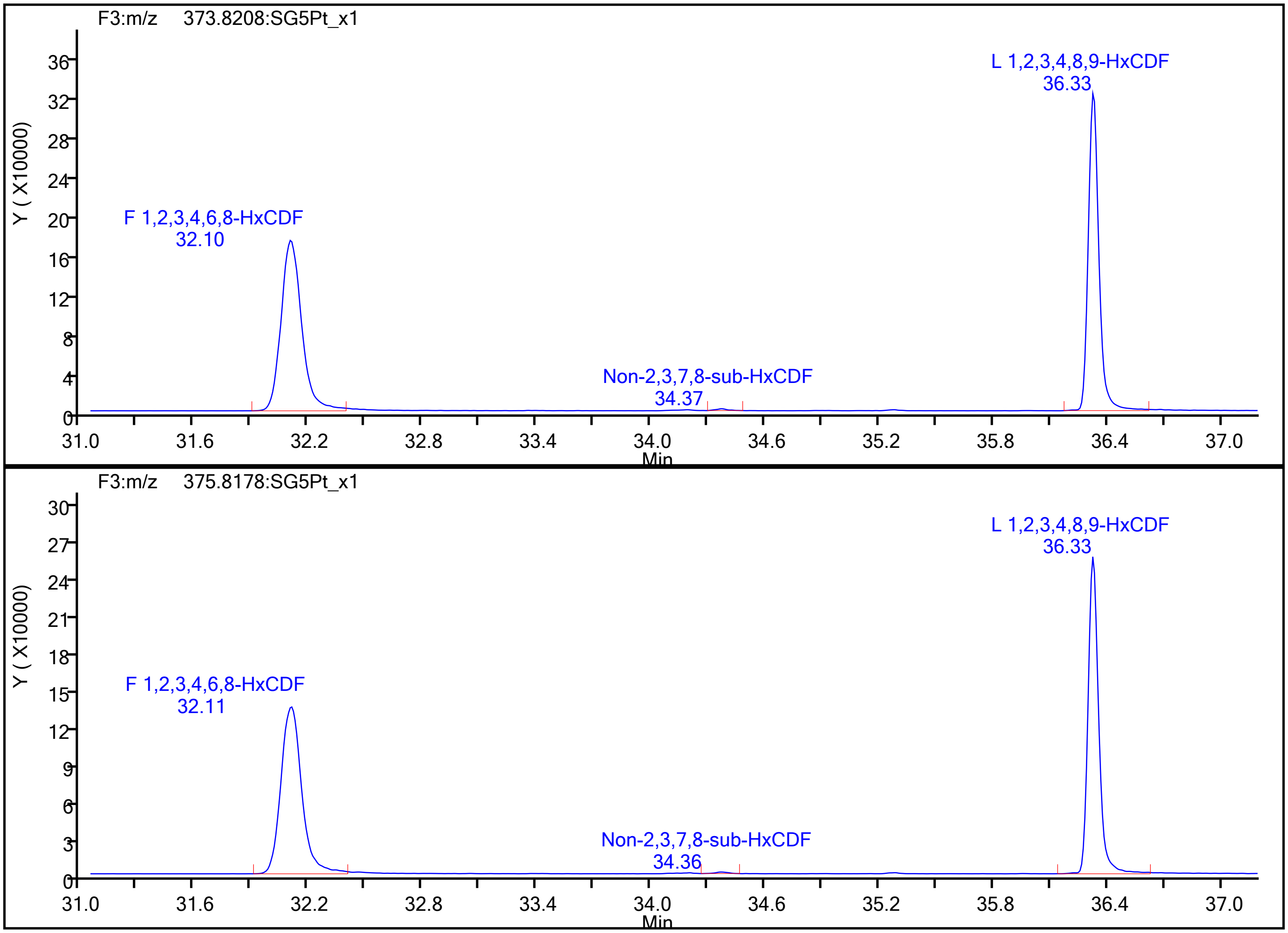

HxCDF Interference Mass

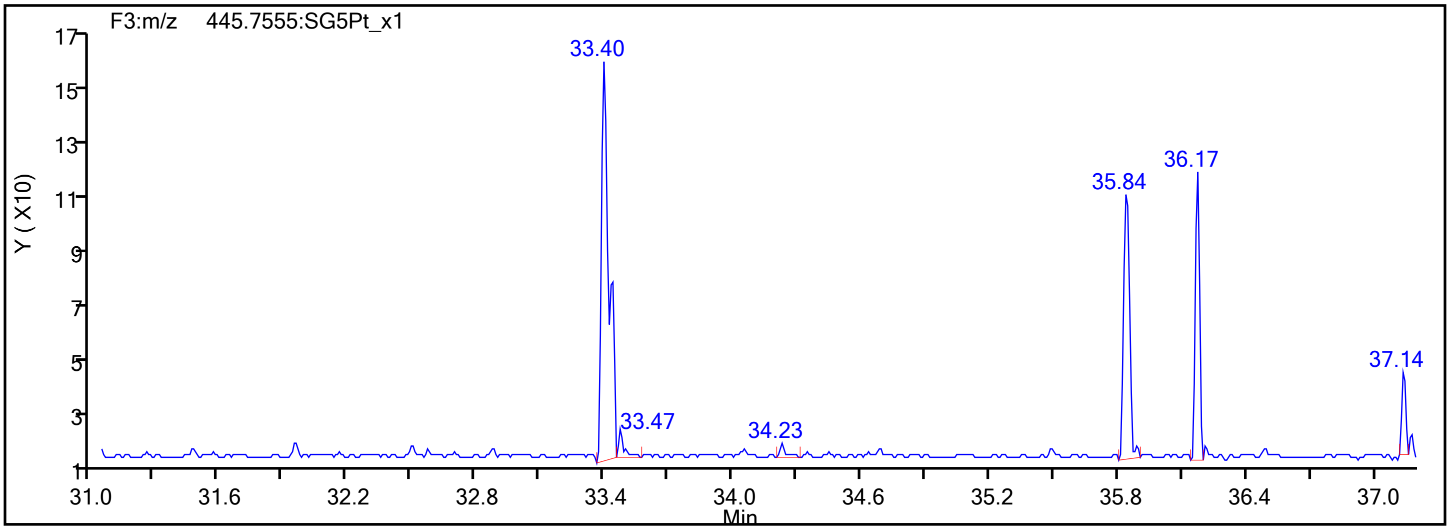

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date: 17-Sep-2020 11:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

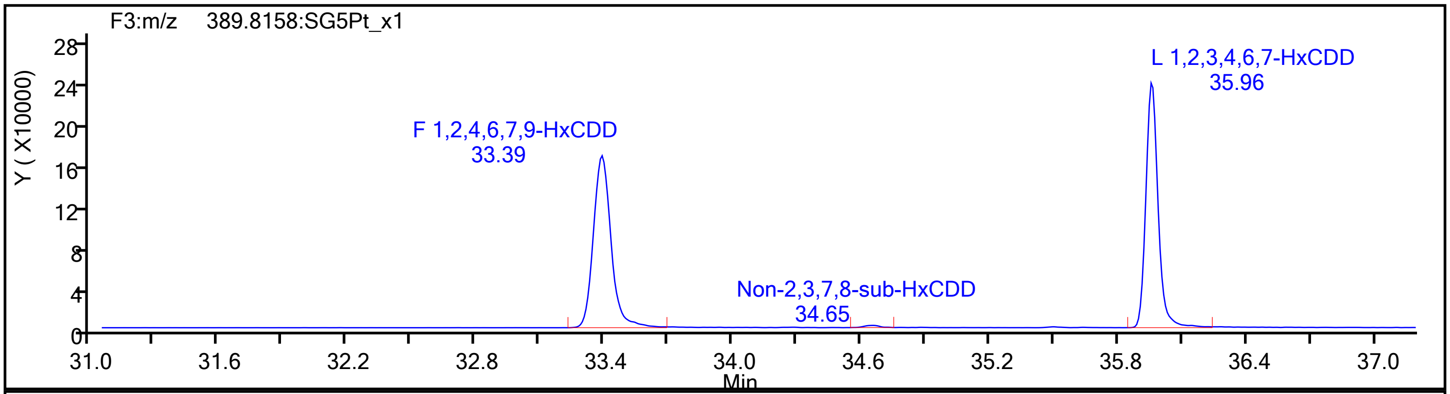

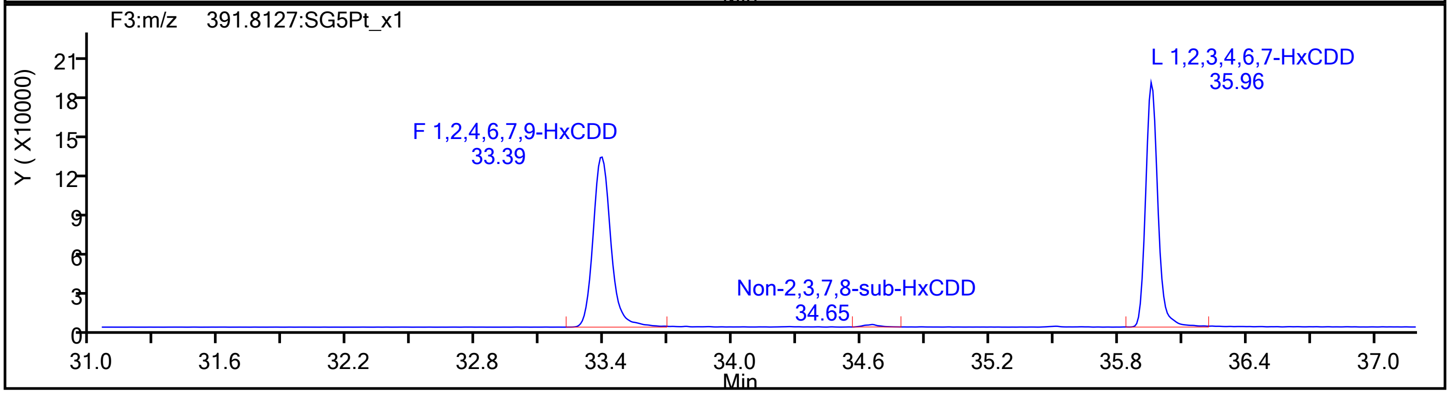

HxCDD Standards

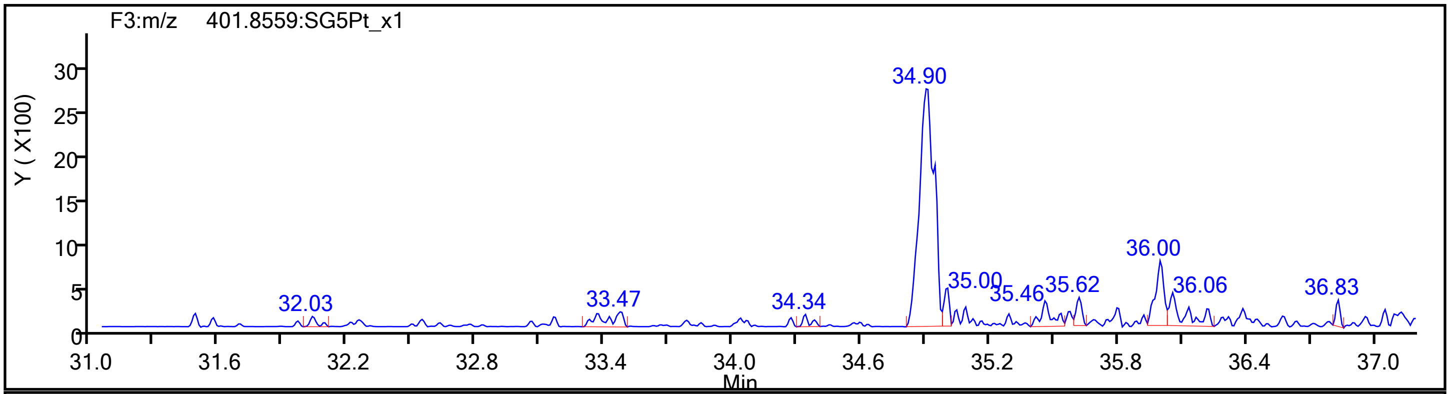

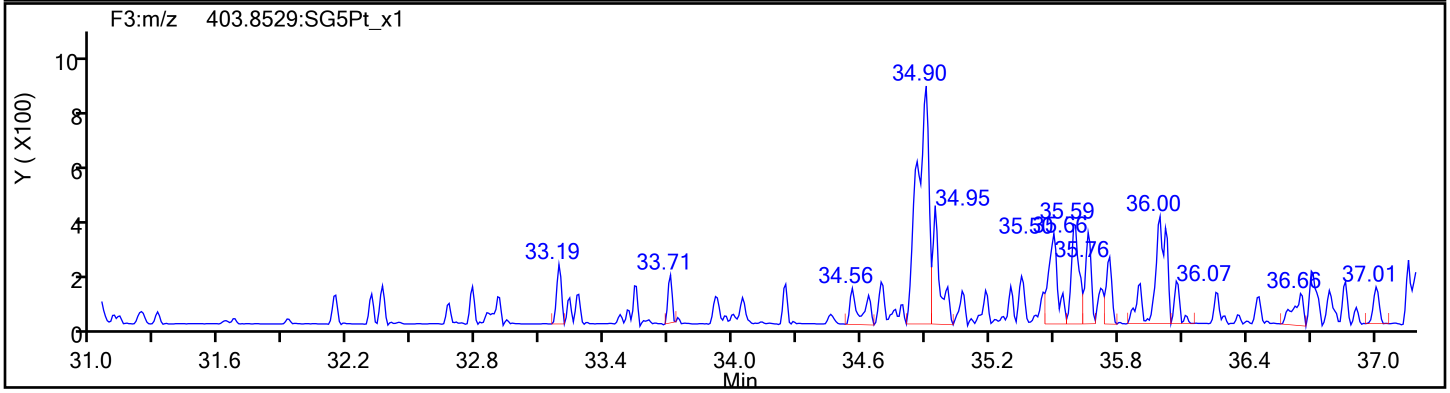

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

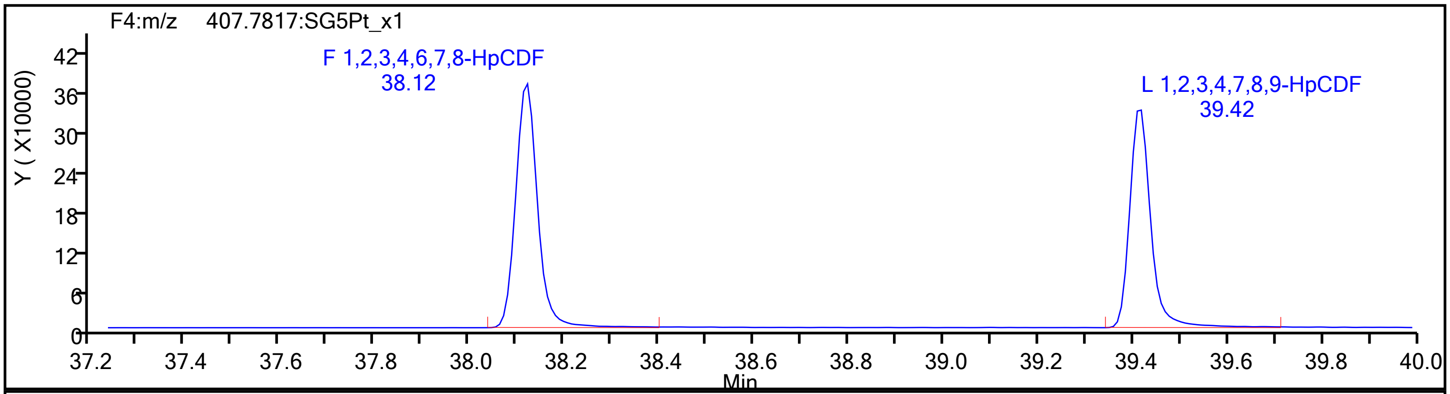

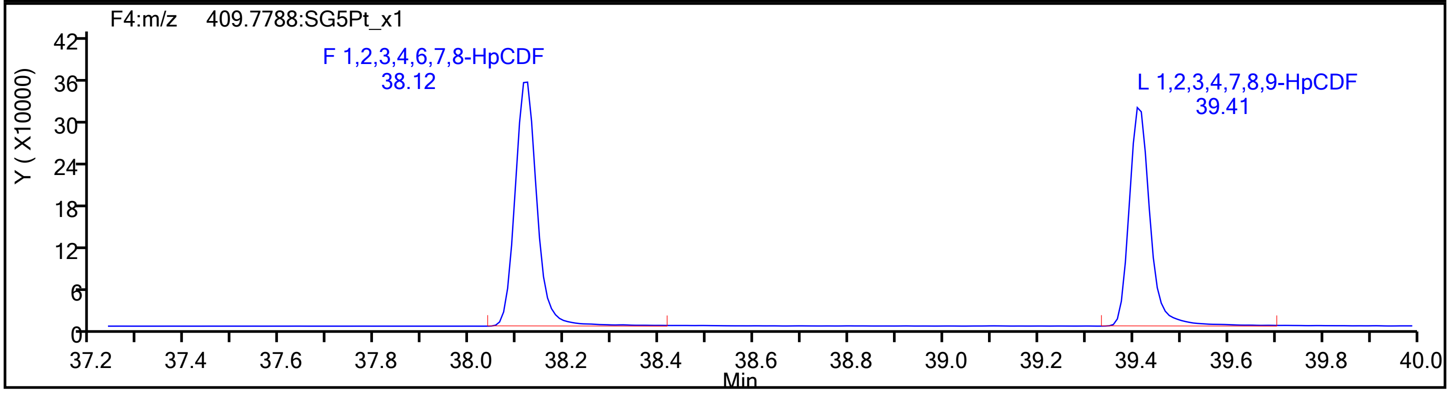

HpCDF Standards

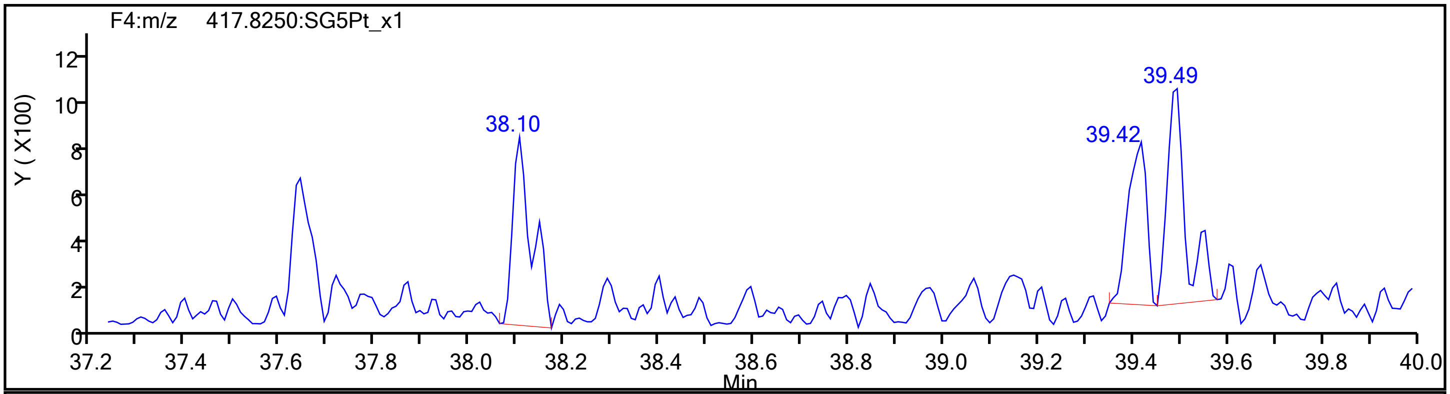

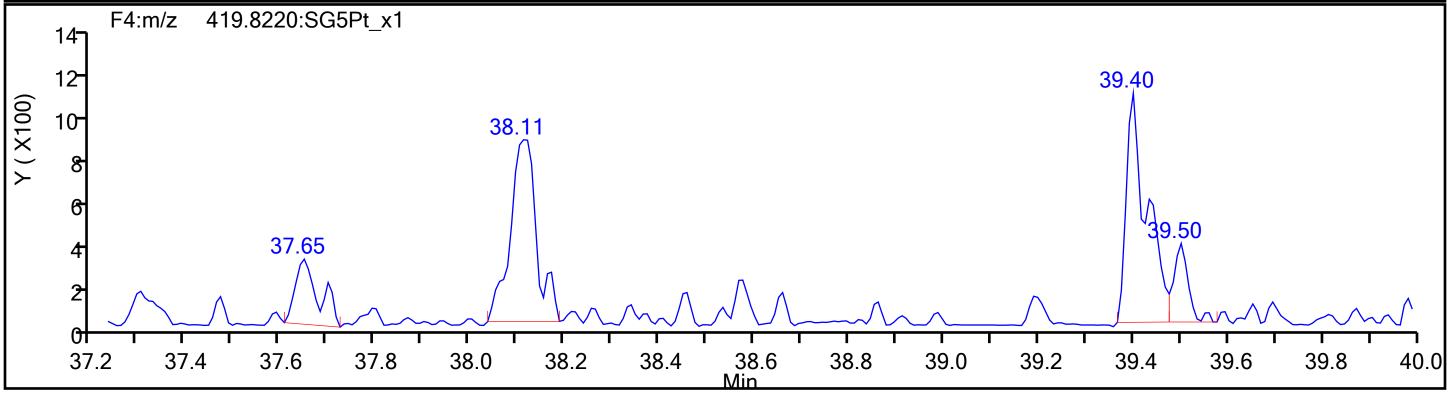

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

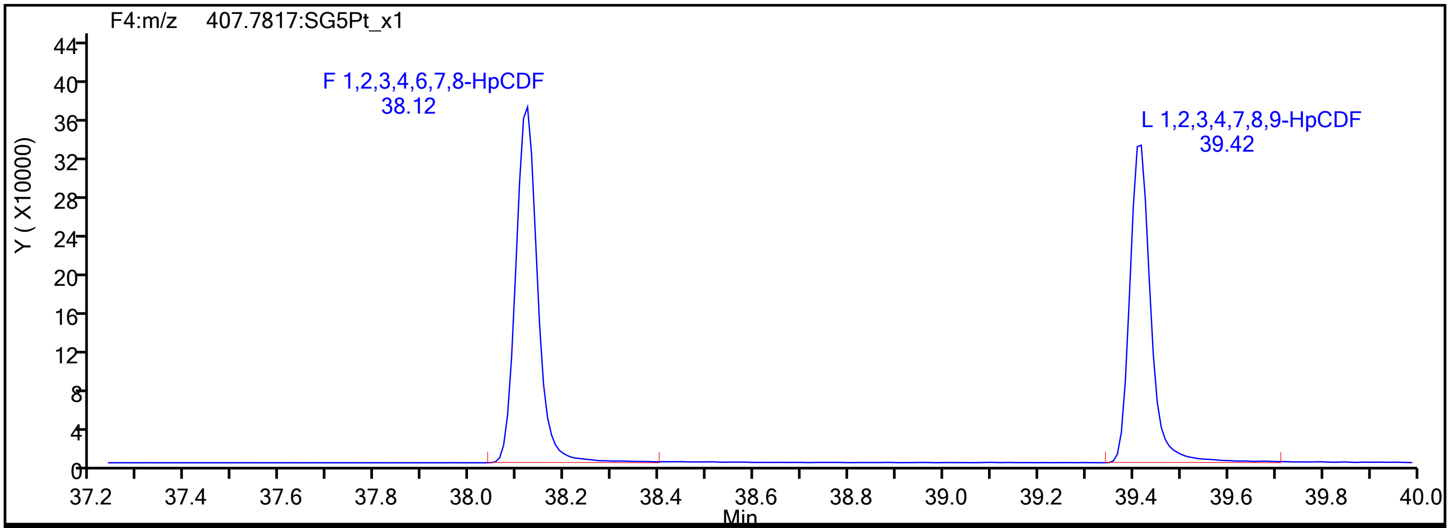

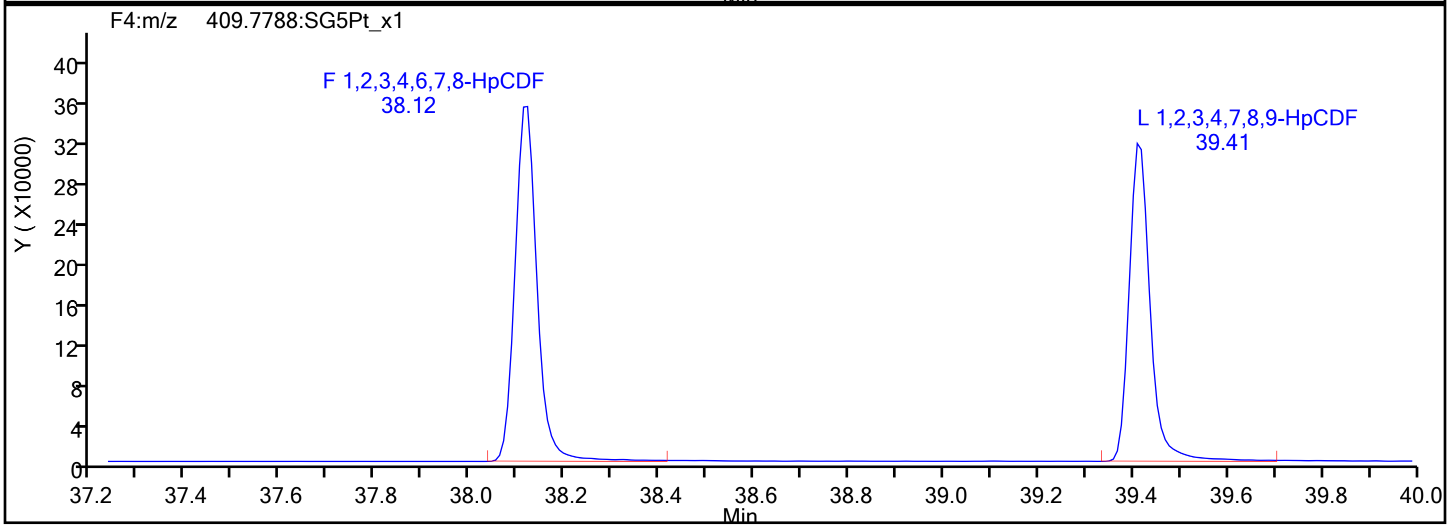

HpCDF Interference Mass

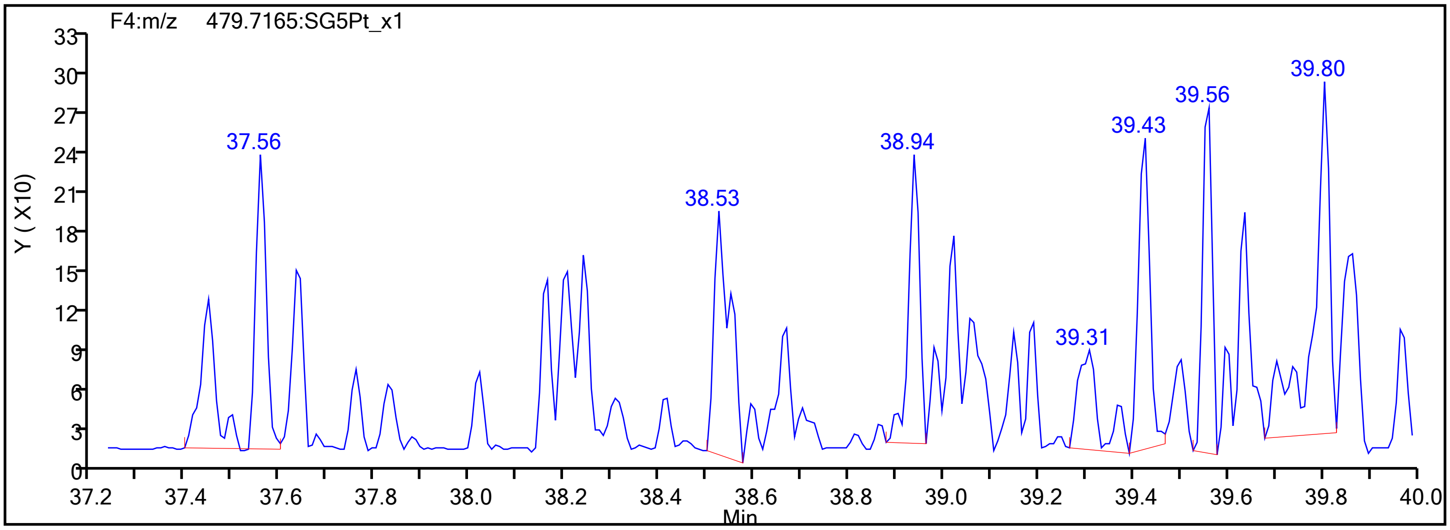

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Injection Date: 17-Sep-2020 11:37:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

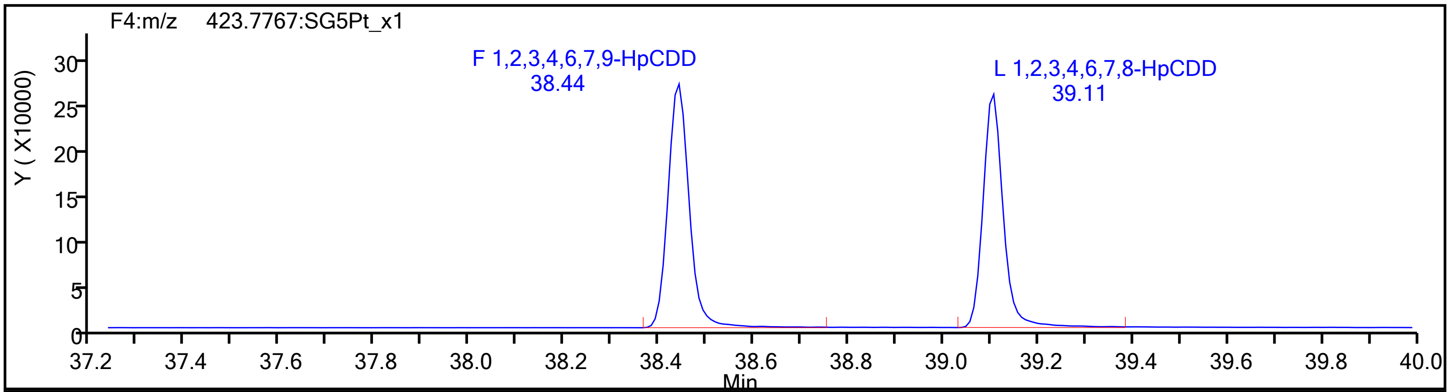

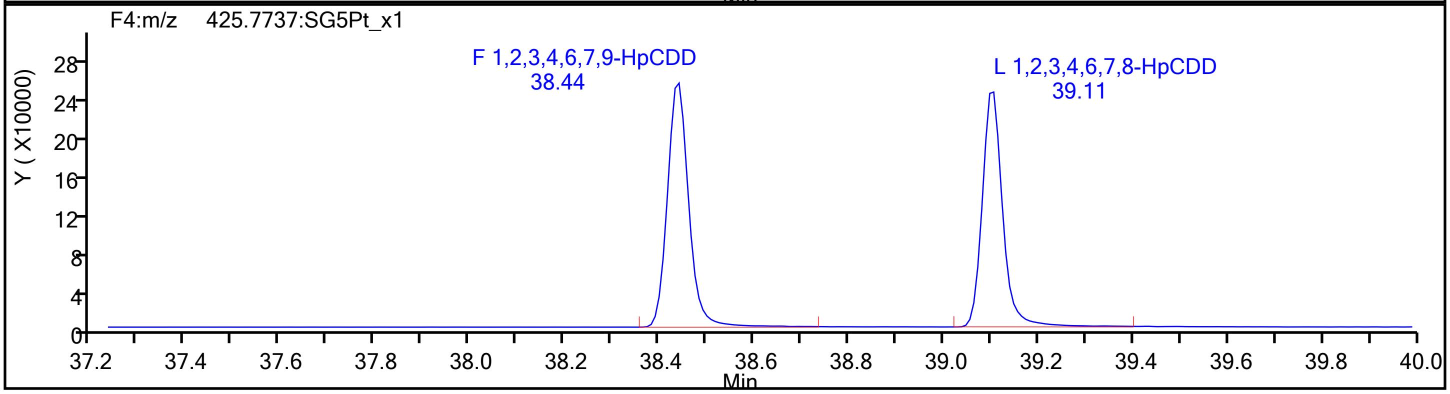

HpCDD Standards

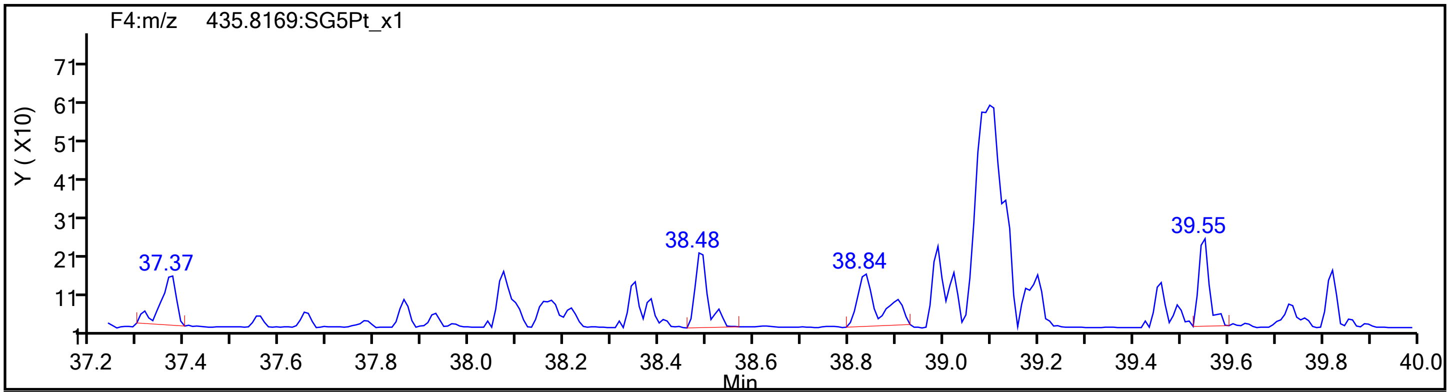

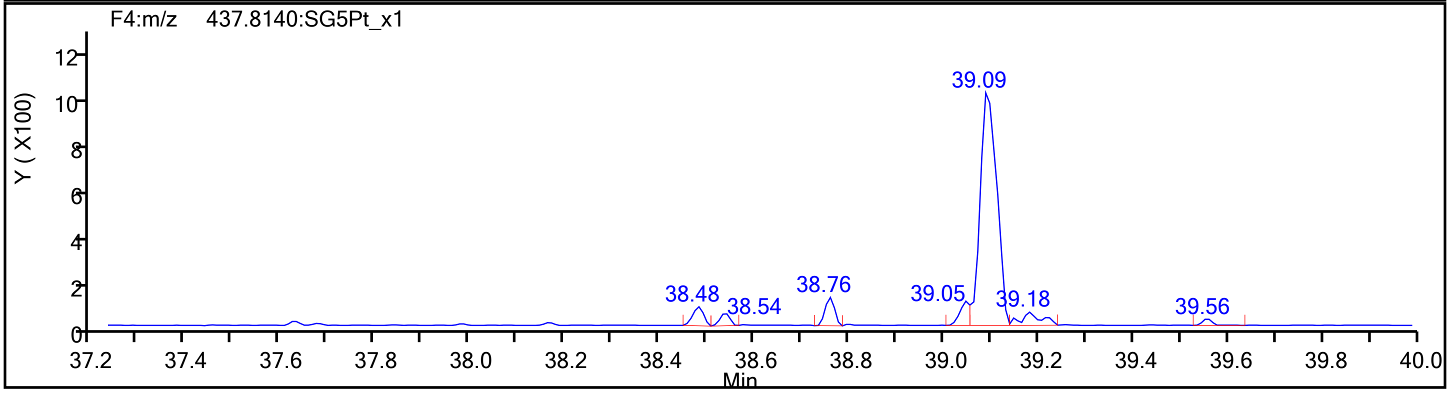

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

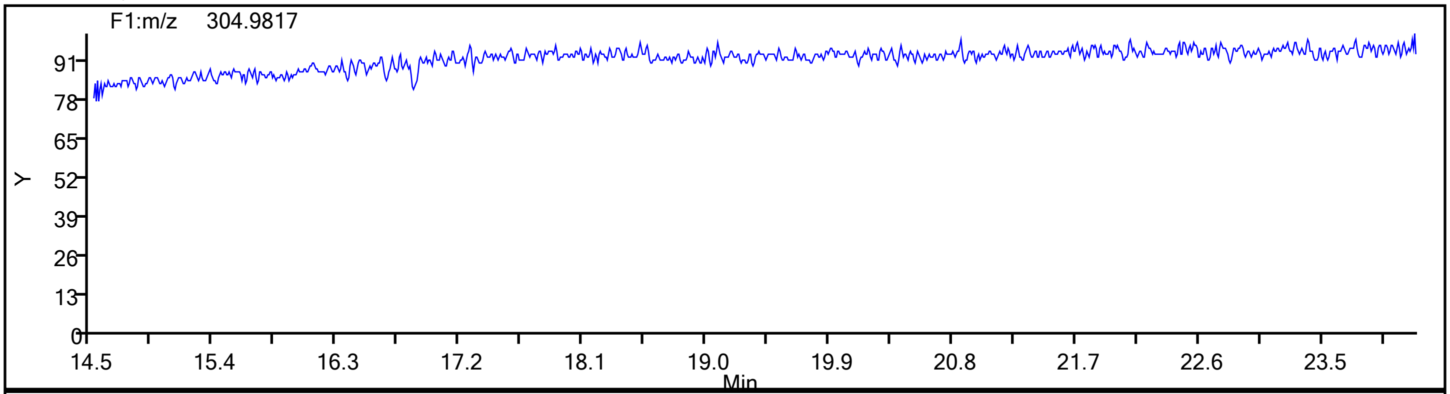

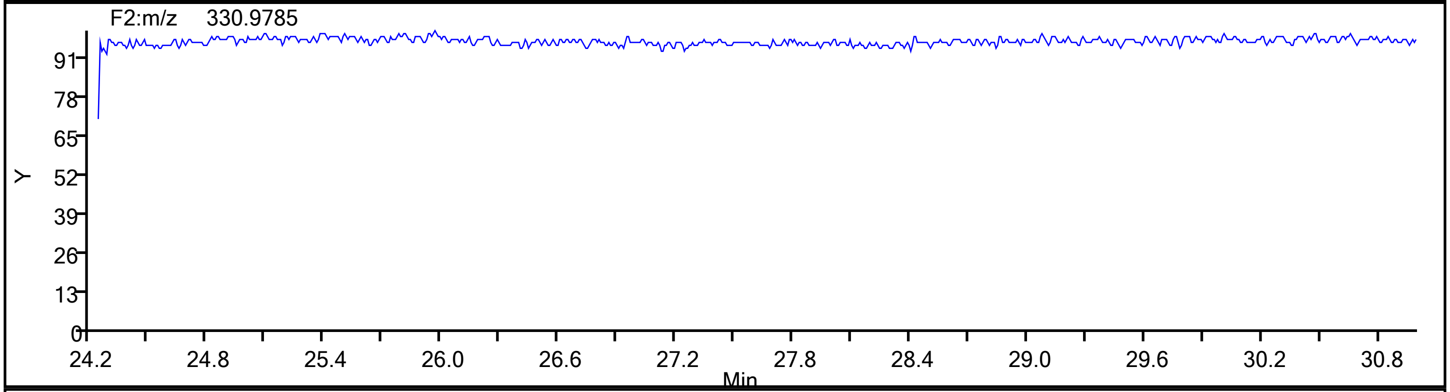

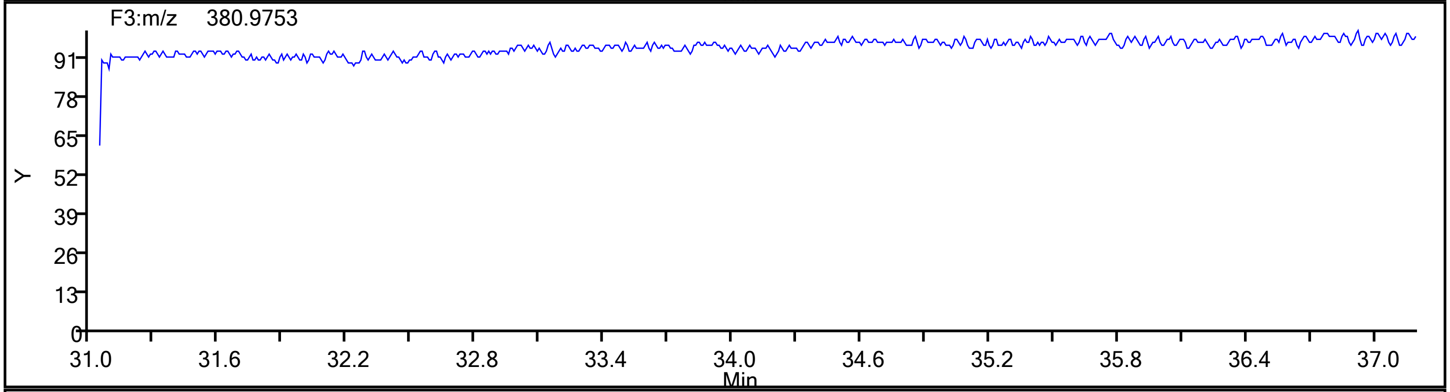

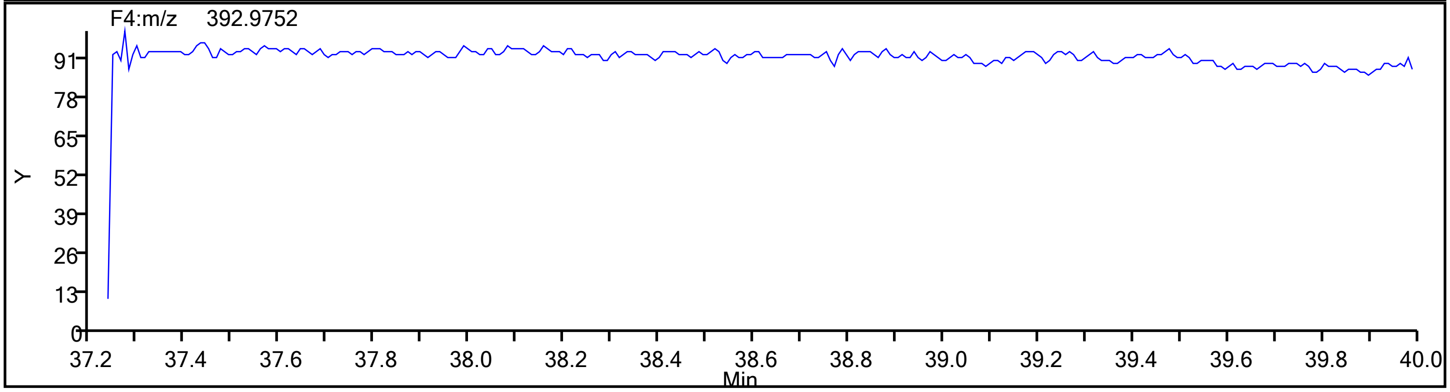

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date: 17-Sep-2020 11:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

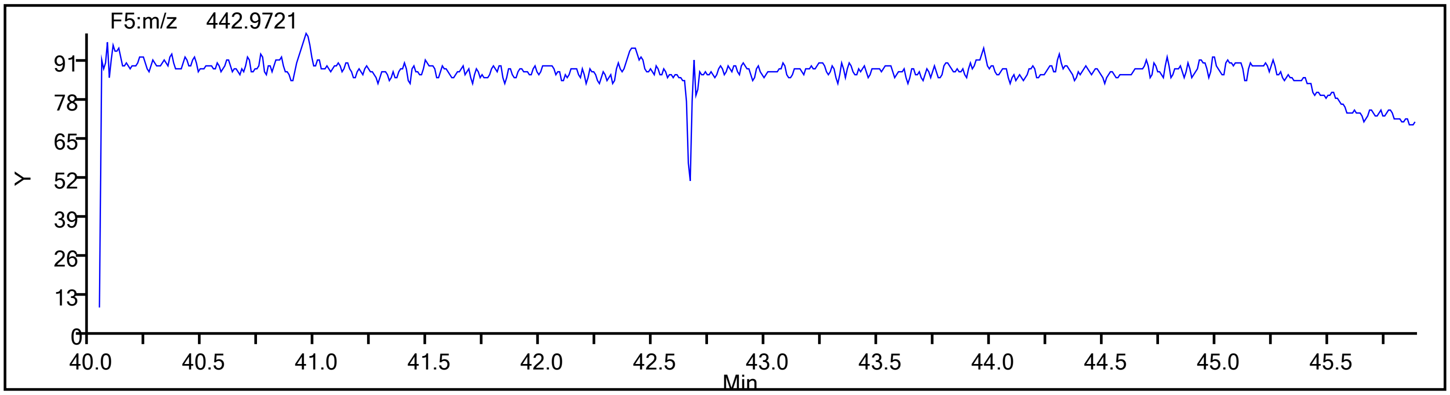

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	20-Sep-2020 05:32:00	ALS Bottle#:	0	Worklist Smp#:	47
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00042				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	21-Sep-2020 11:24:48	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1009				

First Level Reviewer: shardaa Date: 21-Sep-2020 11:12:05

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.240	2267522	0.79	1.5883					0.00	
2,3,7,8-TCDF	19.283	4851277	0.79	1.0857	78.8	78.8	0.3189	0.3189		
A Non-2,3,7,8-sub-TCDF	18.819						0.3189	0.3189		
S Total TCDF					78.8	78.8	0.3189	0.3189		
D 13C-2,3,7,8-TCDD	20.513	1462560	0.79	1.1194					0.00	
2,3,7,8-TCDD	20.547	1658726	0.78	1.0810	42.0	42.0	0.2289	0.2289		
A Non-2,3,7,8-sub-TCDD	19.632						0.2289	0.2289		
S Total TCDD					42.0	42.0	0.2289	0.2289		
A F1 PeCDFs	23.613	1722	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	27.000	40058	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	27.373	6721	1.55	0.0000						RQ
S Total PeCDD										RQ
A Non-2,3,7,8-sub-HxCDF	34.224	11827	1.39	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.679	17546	1.16	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.132	2076948	1.04	1.5064						
1,2,3,4,7,8,9-HpCDF	39.428	1919860	1.03	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.780						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.117	1480694	1.04	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.875						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.198	2868107	0.79							
1,3,6,8-TCDD	16.728	1691579	0.79							
2,3,4,7-TCDF	19.283	4851277	0.79							
1,2,3,7-TCDD	20.341	1369546	0.78							
1,2,3,9-TCDF	20.736	2111397	0.79							
1,2,3,9-TCDD	20.823	1730940	0.79							
1,2,8,9-TCDF	22.440	2187686	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	22.535	673474								
1,3,4,6,8-PeCDF	23.060	2023005	1.57							
1,2,4,7,9-PeCDD	25.171	1445234	1.56							
1,2,3,8,9-PeCDD	29.574	1415853	1.57							
1,2,3,8,9-PeCDF	29.734	1849398	1.56							
1,2,3,4,6,8-HxCDF	32.111	2100118	1.26							
1,2,4,6,7,9-HxCDD	33.391	1531438	1.26							
1,2,3,4,6,7-HxCDD	35.967	1528126	1.24							
1,2,3,4,8,9-HxCDF	36.338	2003628	1.25							
1,2,3,4,6,7,9-HpCDD	38.452	1564671	1.04							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 20-Sep-2020 05:32:00 ALS Bottle#: 0 Worklist Smp#: 47
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 11:24:48 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: shardaa Date: 21-Sep-2020 11:12:05

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.240	19.240	0	1.000	1001707	158243	451	1127	351		
317.9389	19.240	19.240	0	1.000	1265815	198219	242	605	819	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.283	19.283	0	1.002	2133794	304057	527	1317	577		
305.8987	19.274	19.283	-1	1.002	2717483	379774	707	1767	537	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.819						527	1317			
305.8987	18.819						707	1767			
13C-2,3,7,8-TCDD											
331.9368	20.513	20.513	0	1.000	645927	93858	266	665	353		
333.9338	20.513	20.513	0	1.000	816633	118272	114	285	1037	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.547	20.547	0	1.002	727665	102327	269	672	380		
321.8936	20.547	20.547	0	1.002	931061	131208	256	640	513	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.632						269	672			
321.8936	19.632						256	640			
A F1 PeCDFs											RQ
339.8597	16.505	23.613	-426	1.000	1047	231	29	72	8		
341.8567	16.487	23.613	-427	1.000	5784	1117	42	105	27	0.18(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	24.852	27.000	-129	1.000	2818	599	158	395	4		
341.8567	24.852	27.000	-129	1.000	2792	520	130	325	4	1.01(1.32-1.78)	
339.8597	25.786	27.000	-73	1.000	5277	1049	158	395	7		
341.8567	25.769	27.000	-74	1.000	4085	683	130	325	5	1.29(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.325	27.000	-40	1.000	12273	1445	158	395	9		
341.8567	26.333	27.000	-40	1.000	6301	932	130	325	7	1.95(1.32-1.78)	
339.8597	26.906	27.000	-6	1.000	6652	1195	158	395	8		
341.8567	26.906	27.000	-6	1.000	4022	793	130	325	6	1.65(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	29.170	27.373	108	1.000	10329	1505	225	562	7		
357.8516	29.178	27.373	108	1.000	2636	382	105	262	4	3.92(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.376	34.224	9	1.000	6882	1386	284	710	5		
375.8178	34.376	34.224	9	1.000	4945	1270	221	552	6	1.39(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.663	34.679	-1	1.000	9430	1829	171	427	11		
391.8127	34.671	34.679	0	1.000	8116	1423	139	347	10	1.16(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.132	38.132	0	1.000	1057303	338884	522	1305	649		
409.7788	38.132	38.132	0	1.000	1019645	323824	503	1257	644	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.428	39.428	0	1.000	975483	341345	522	1305	654		
409.7788	39.428	39.428	0	1.000	944377	327115	503	1257	650	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.780						522	1305			
409.7788	38.780						503	1257			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.117	39.117	0	1.000	756284	257384	356	890	723		
425.7737	39.117	39.117	0	1.000	724410	248504	339	847	733	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.875						356	890			
425.7737	38.875						339	847			
1,3,6,8-TCDF											
303.9016	15.198	15.198	0		1266918	254982	527	1317	484		
305.8987	15.189	15.198	-1		1601189	327839	707	1767	464	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.728	16.728	0		744997	137476	269	672	511		
321.8936	16.728	16.728	0		946582	170041	256	640	664	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.283	19.283	0		2133794	304057	527	1317	577		
305.8987	19.274	19.283	-1		2717483	379774	707	1767	537	0.79(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.341	20.341	0		601979	91185	269	672	339		
321.8936	20.341	20.341	0		767567	114959	256	640	449	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.736	20.736	0		929444	132173	527	1317	251		
305.8987	20.736	20.736	0		1181953	165480	707	1767	234	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.823	20.823	0		764561	100892	269	672	375		
321.8936	20.823	20.823	0		966379	126552	256	640	494	0.79(0.65-0.89)	

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	22.440	22.440	0		964616	123110	527	1317	234		
305.8987	22.440	22.440	0		1223070	157430	707	1767	223	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	22.535	22.535	0		673474	84833	269	672	315		
1,3,4,6,8-PeCDF											
339.8597	23.060	23.060	0		1235275	174528	29	72	6018		
341.8567	23.060	23.060	0		787730	113974	42	105	2714	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.171	25.171	0		881064	146510	225	562	651		
357.8516	25.171	25.171	0		564170	92607	105	262	882	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.574	29.574	0		865562	125000	225	562	556		
357.8516	29.565	29.574	-1		550291	78556	105	262	748	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.734	29.734	0		1128216	153383	158	395	971		
341.8567	29.734	29.734	0		721182	99067	130	325	762	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.111	32.111	0		1168932	157013	284	710	553		
375.8178	32.111	32.111	0		931186	124588	221	552	564	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.391	33.391	0		852694	148706	171	427	870		
391.8127	33.391	33.391	0		678744	118704	139	347	854	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.967	35.967	0		846061	213667	171	427	1250		
391.8127	35.967	35.967	0		682065	172479	139	347	1241	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.338	36.338	0		1114277	295924	284	710	1042		
375.8178	36.338	36.338	0		889351	238025	221	552	1077	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.452	38.452	0		796600	263986	356	890	742		
425.7737	38.452	38.452	0		768071	255373	339	847	753	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d

Lims ID: WDM

Client ID:

Inject. Date: 20-Sep-2020 05:32:00 Dil. Factor: 1.0000

Sample Type: WDM, Window Defining Mix

Instrument ID: DFS 1 Operator: Xcalibur_System

Lims Batch ID: 413813 Lims Sample ID: 47

F1 PeCDFs, RT: 23.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.505	1047	231	5784	1117		0.18	R
Signal Totals:							
	1047	231	5784	1117			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6831	1348				0.18	RQ
	1722	380					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.0 = (6831 * 0.0) / (0 * 0.000)

Empc Amount: 0.0 = (1722 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	20-Sep-2020 05:32:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	47

Non-2,3,7,8-sub-PeCDF, RT: 27.000

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.852	2818	599	2792	520		1.01	R
25.786	5277	1049	4085	683		1.29	R
26.325	12273	1445	6301	932		1.95	R
26.906	6652	1195	4022	793		1.65	
Signal Totals:							
	27020	4288	17200	2928			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	44220	7216				1.57	RQ
	40058	7074					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (44220 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (40058 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d
Lims ID: WDM
Client ID:
Inject. Date: 20-Sep-2020 05:32:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 413813
Lims Sample ID: 47

Non-2,3,7,8-sub-PeCDD, RT: 27.373

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
29.170	10329	1505	2636	382		3.92	R
Signal Totals:							
	10329	1505	2636	382			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12965	1887				3.92	RQ
	6721	974					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (12965 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (6721 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	20-Sep-2020 05:32:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413813	Lims Sample ID:	47

Non-2,3,7,8-sub-HxCDF, RT: 34.224

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.376	6882	1386	4945	1270		1.39	
Signal Totals:							
	6882	1386	4945	1270			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11827	2656				1.39	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11827 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d
Lims ID: WDM
Client ID:
Inject. Date: 20-Sep-2020 05:32:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413813 Lims Sample ID: 47

Non-2,3,7,8-sub-HxCDD, RT: 34.679

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.663	9430	1829	8116	1423		1.16	
Signal Totals:							
	9430	1829	8116	1423			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	17546	3252				1.16	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (17546 * 0.0) / (0 * 0.000)

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

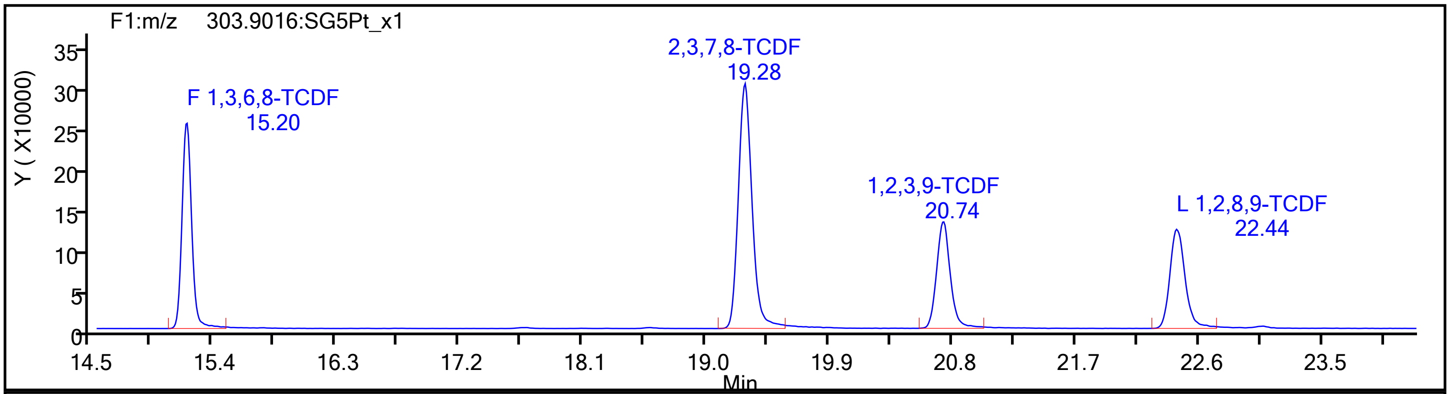

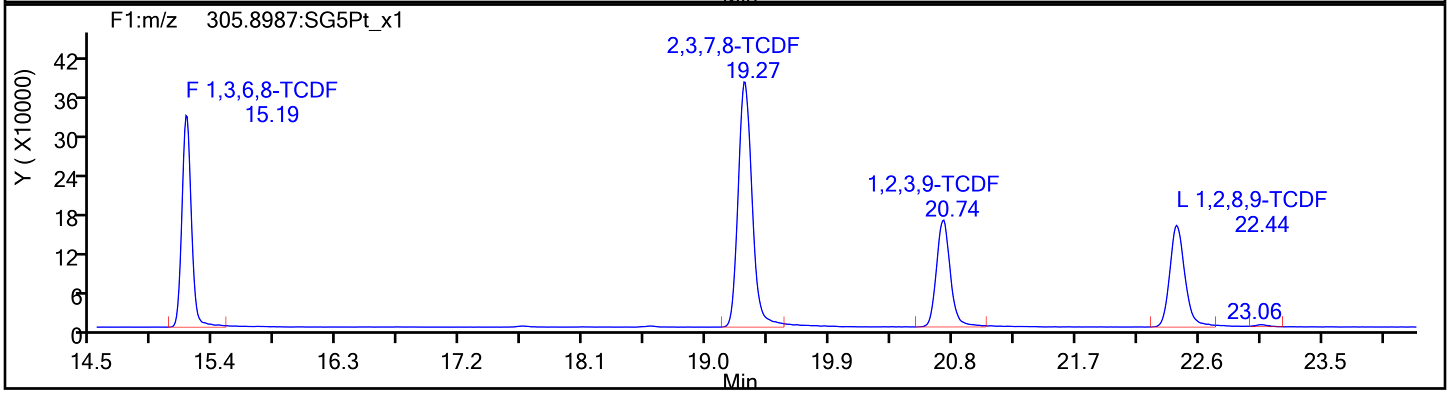

TCDF Standards

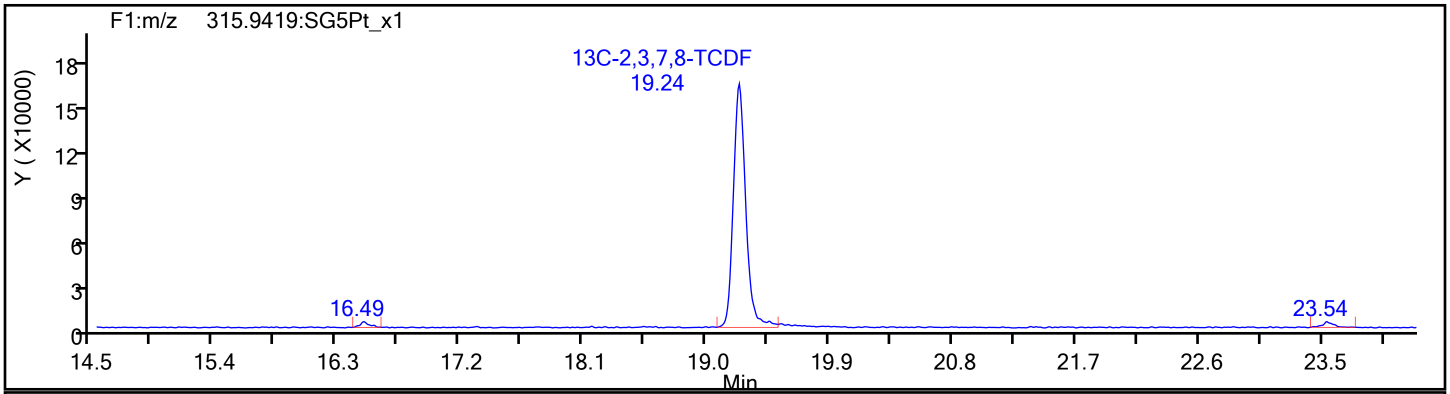

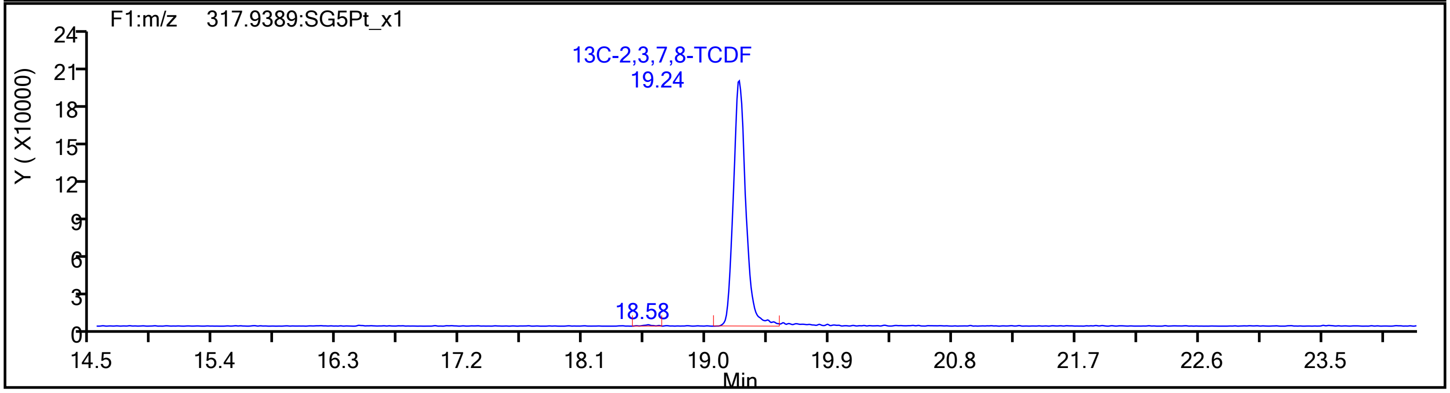

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d
Injection Date: 20-Sep-2020 05:32:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413813 Sample Line#: 47
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

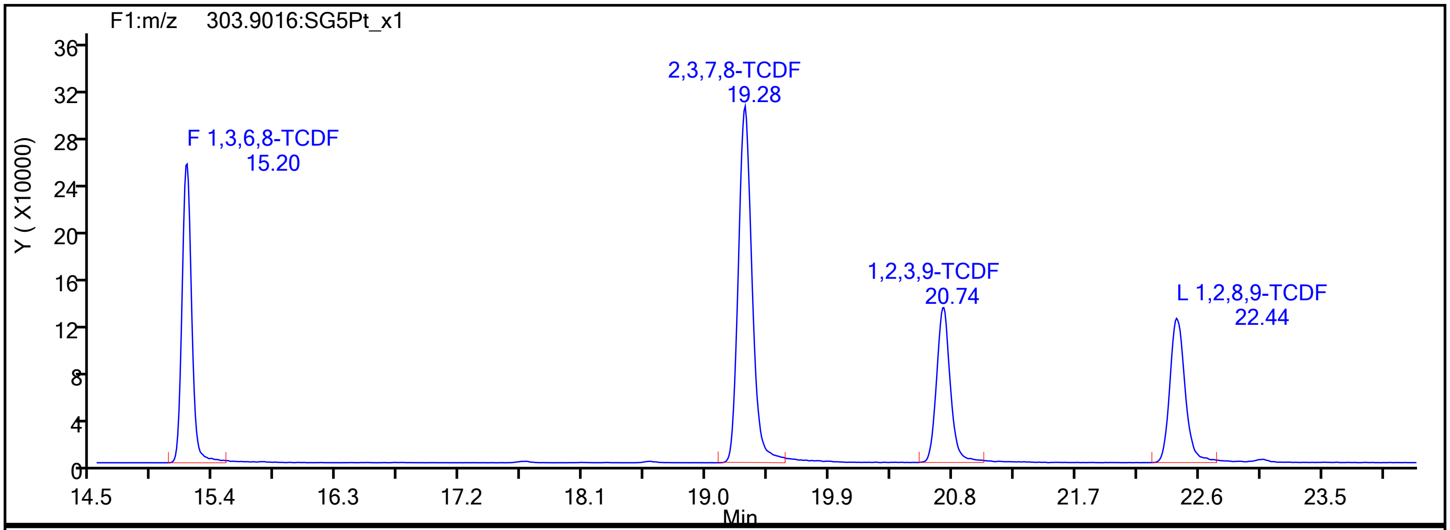

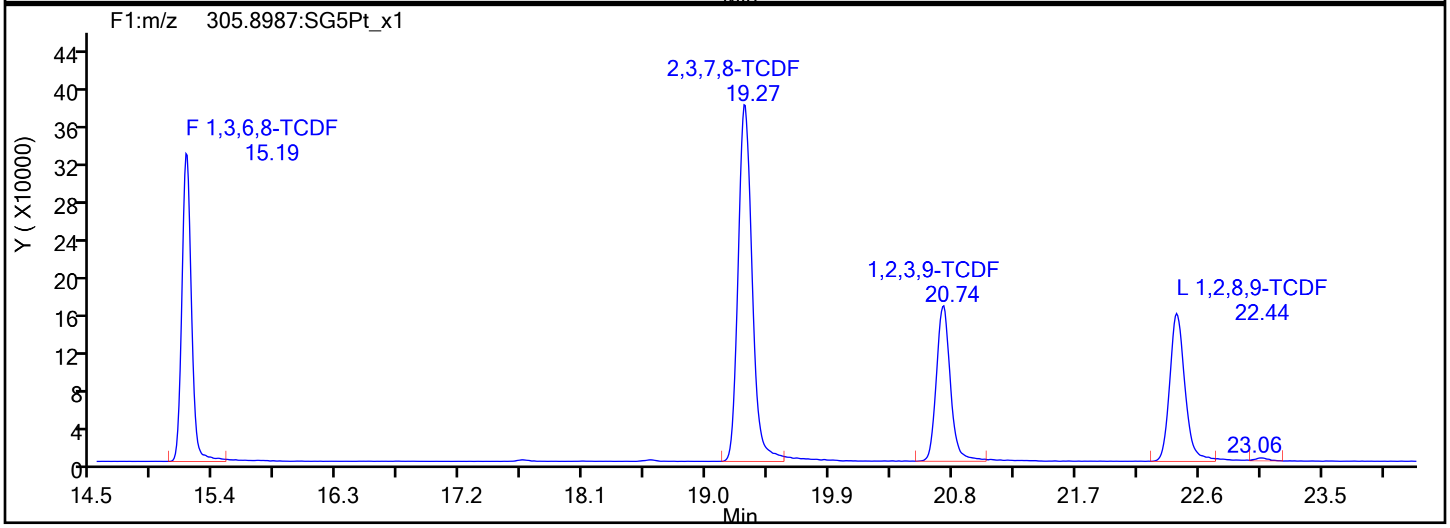

TCDF Interference Mass

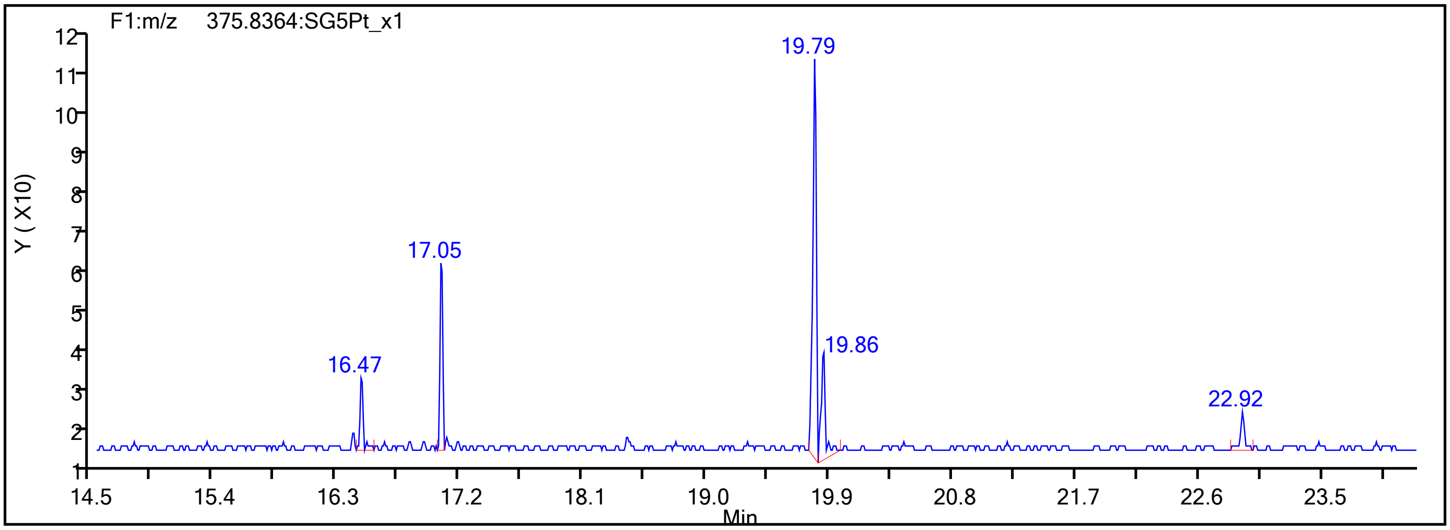

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d

Injection Date: 20-Sep-2020 05:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413813
Sample Line#: 47
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

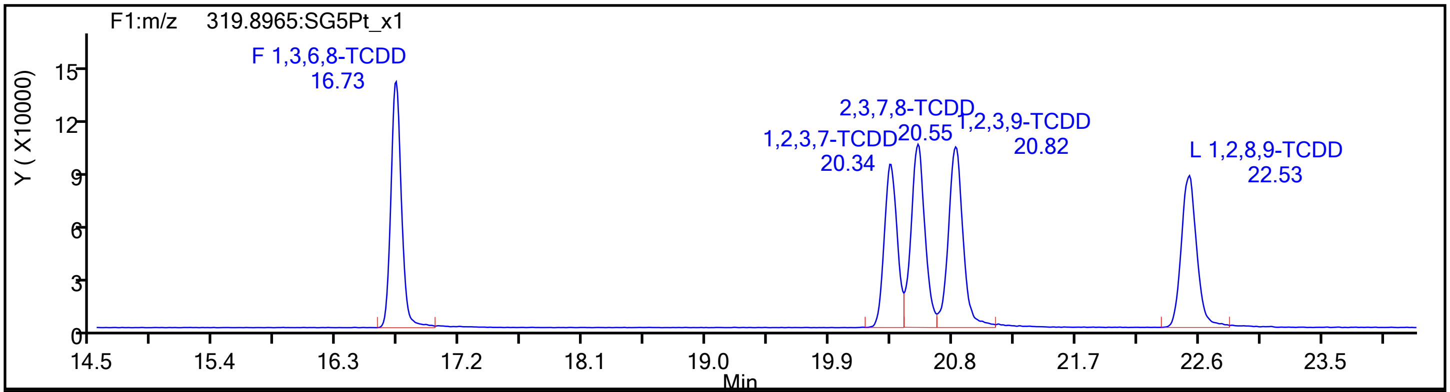

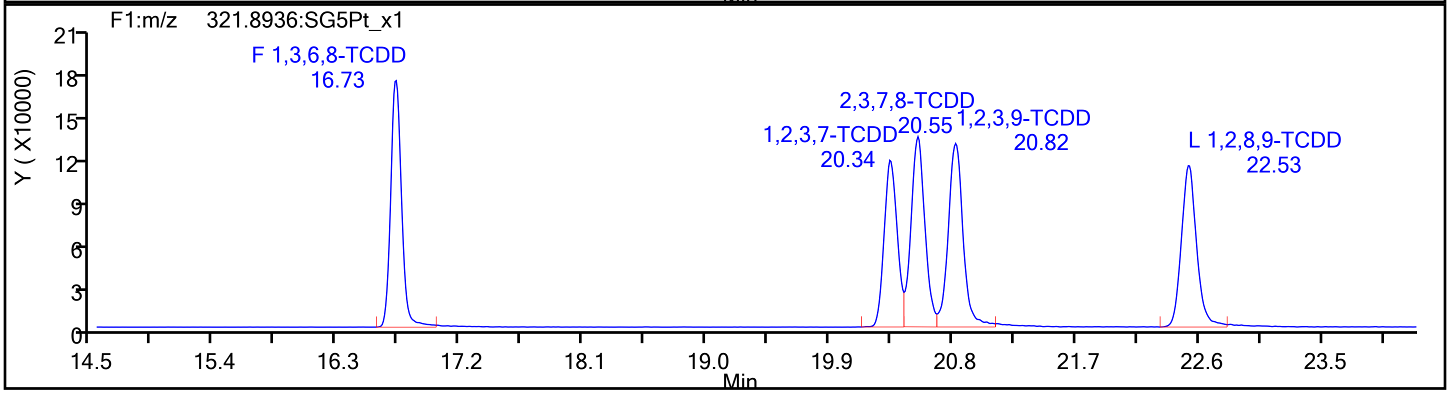

TCDD Standards

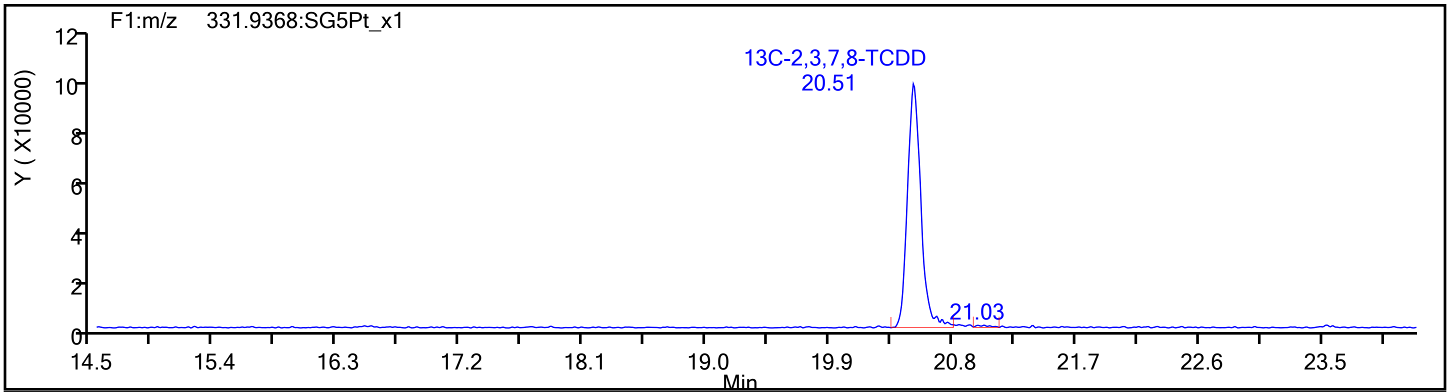

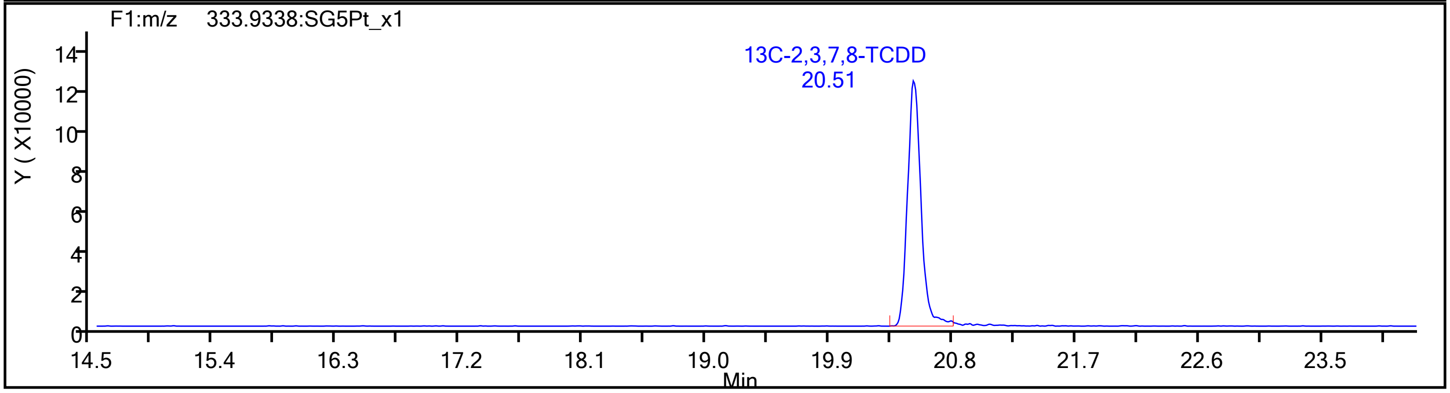

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

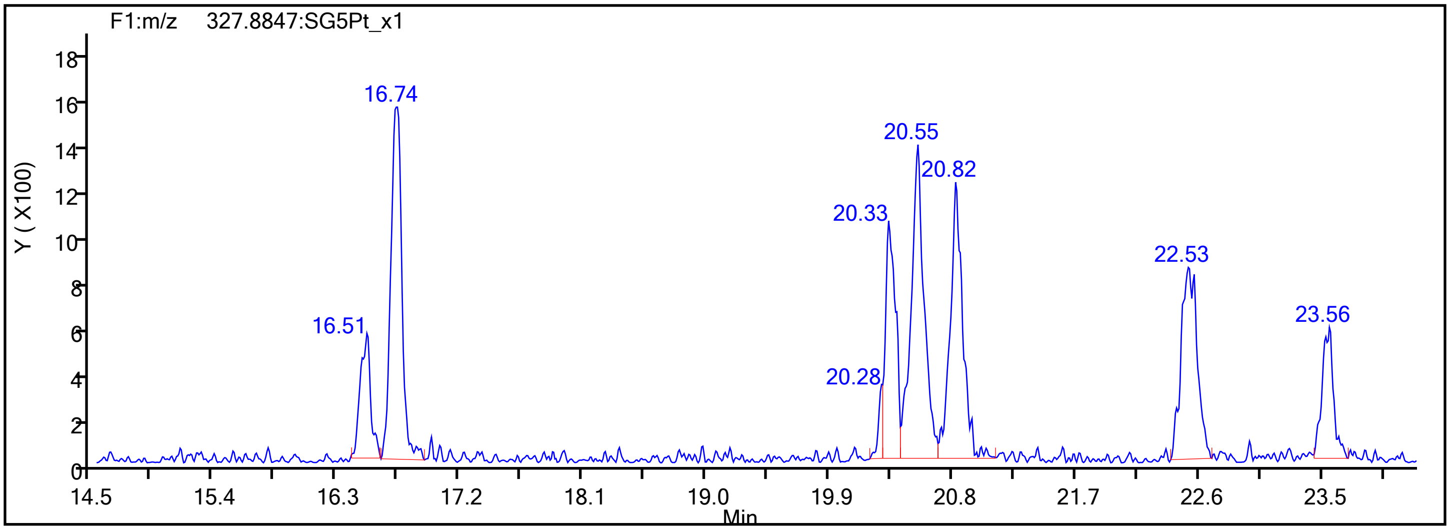

37Cl4-TCDD Standards

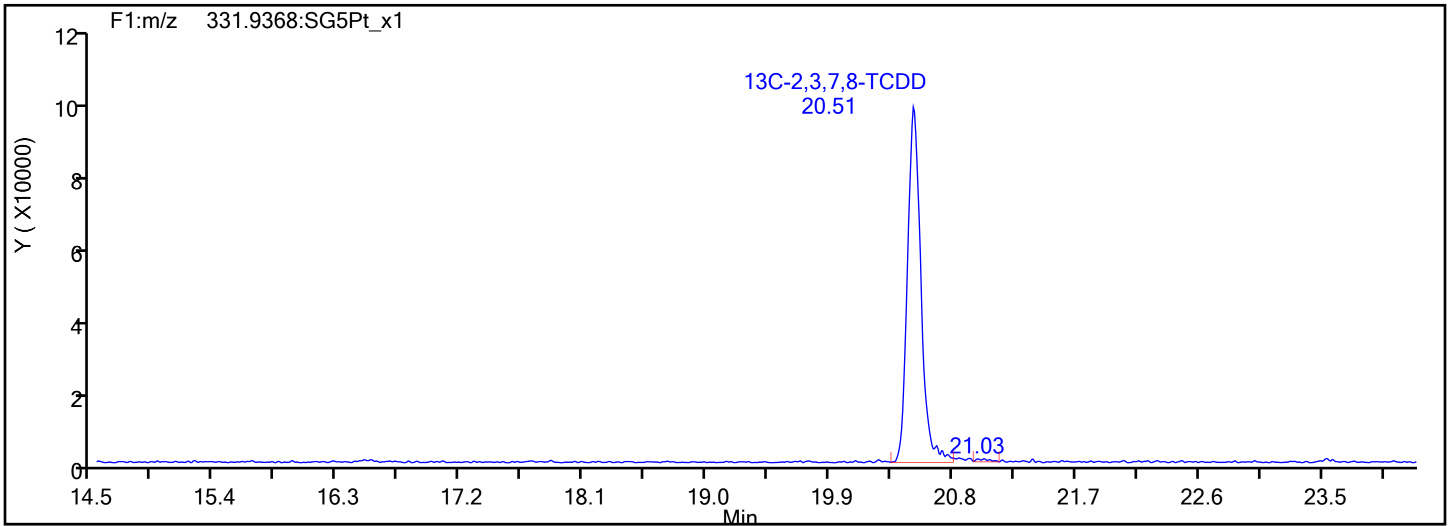

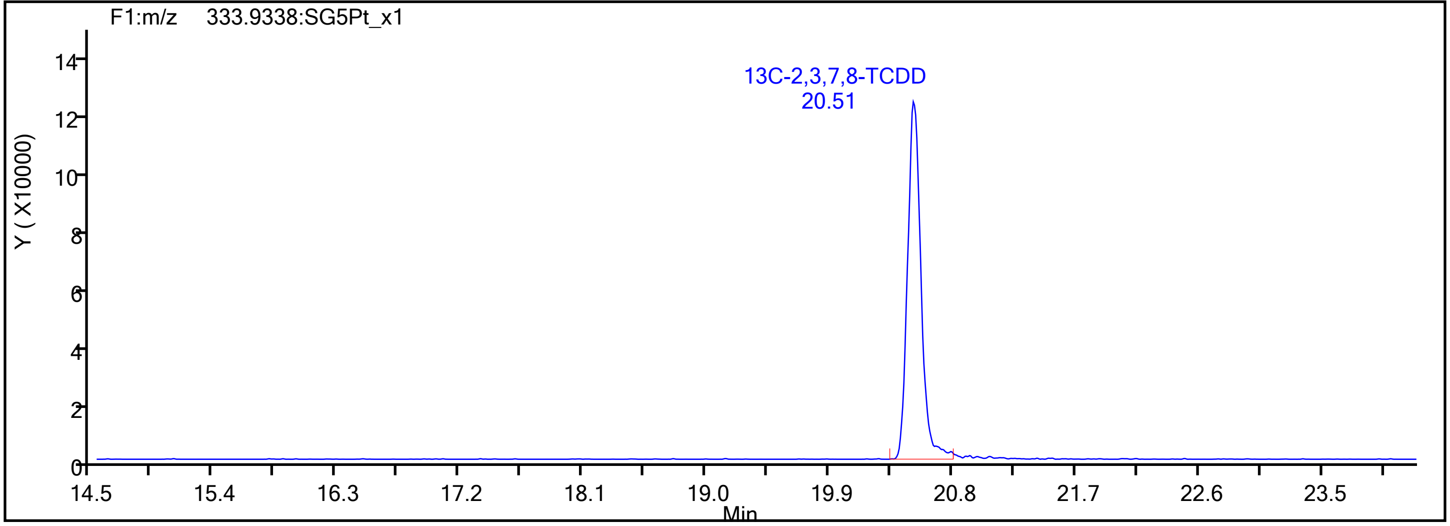

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Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

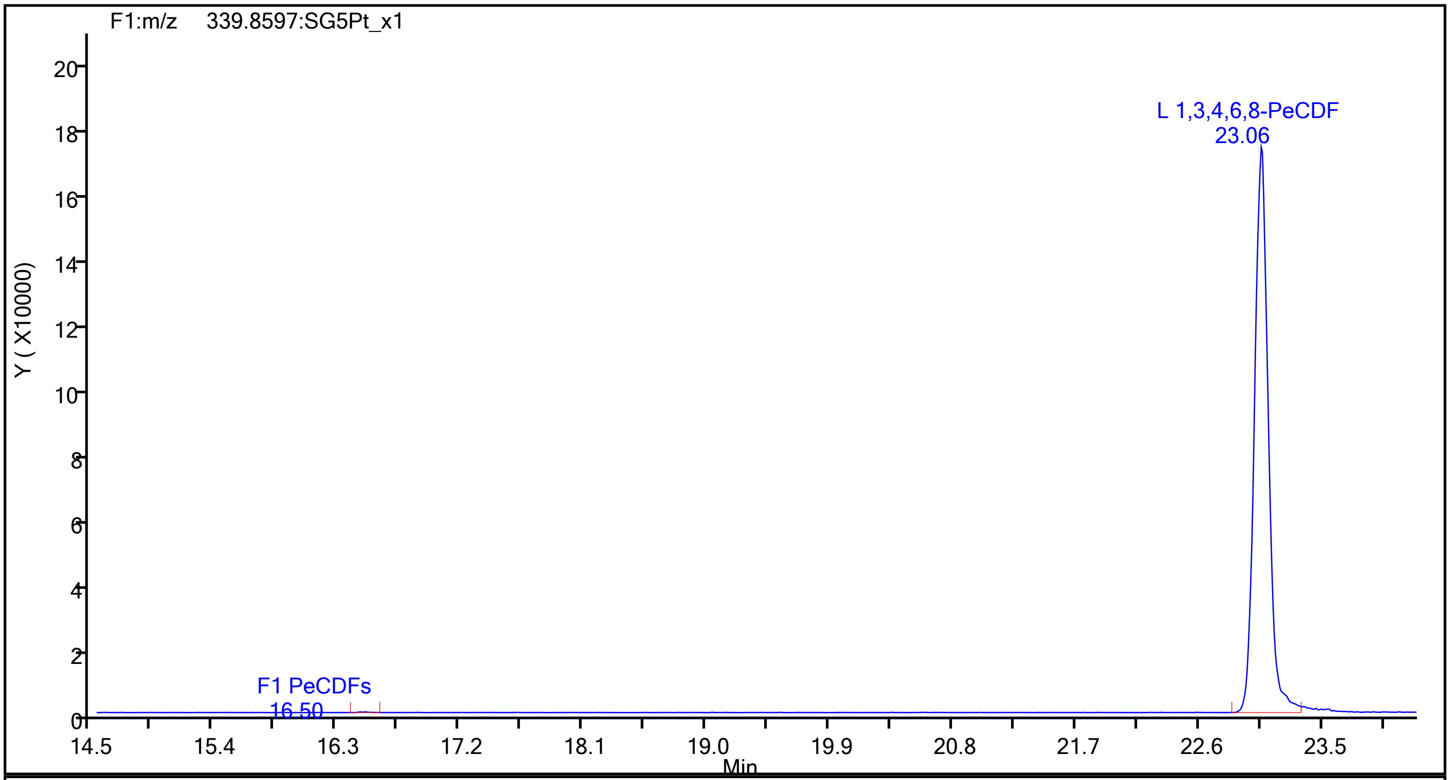

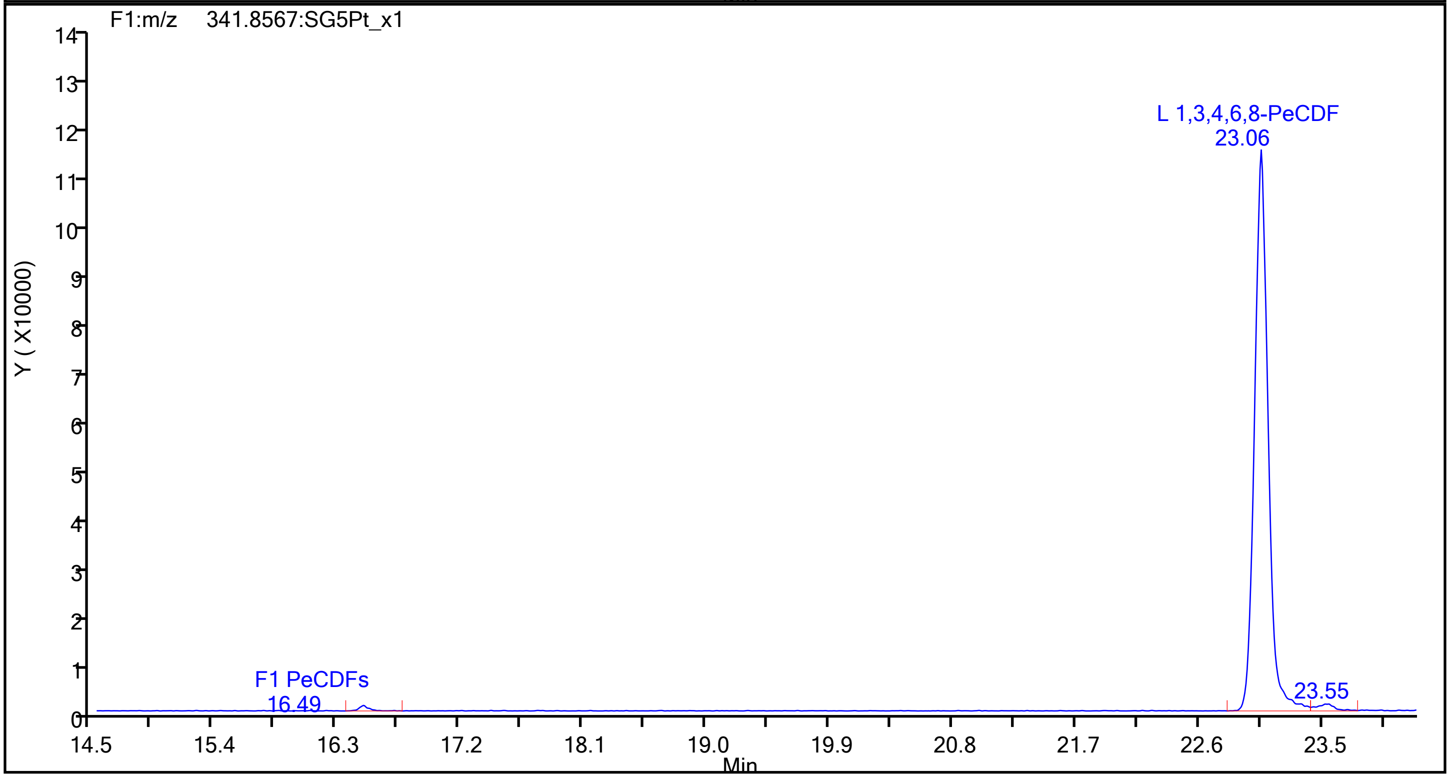

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

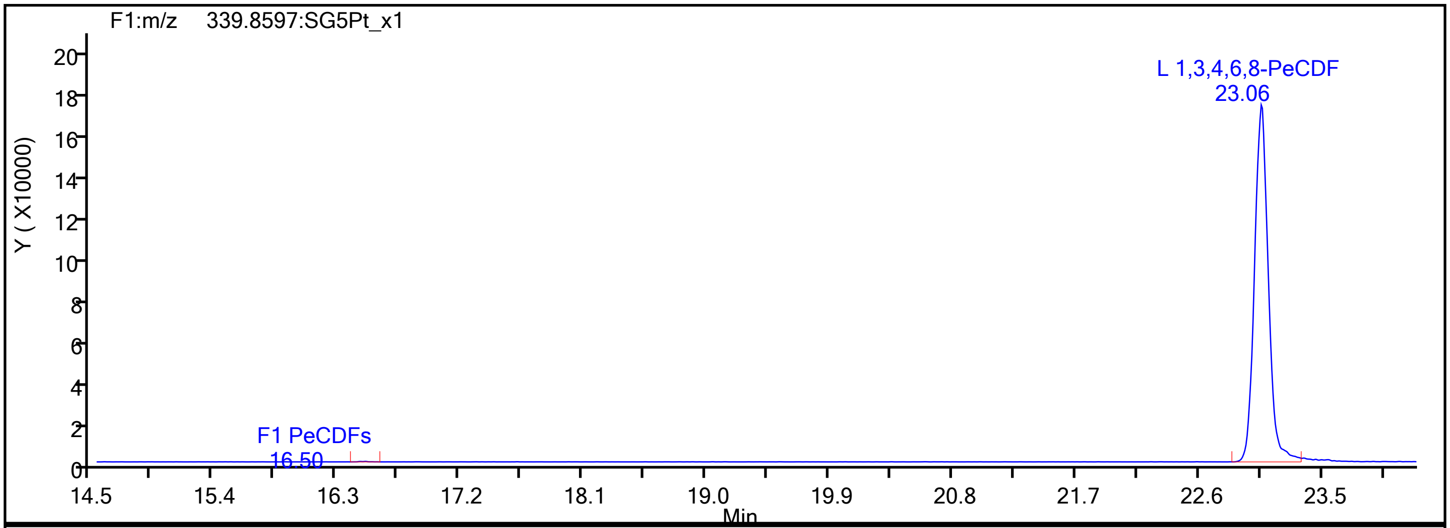

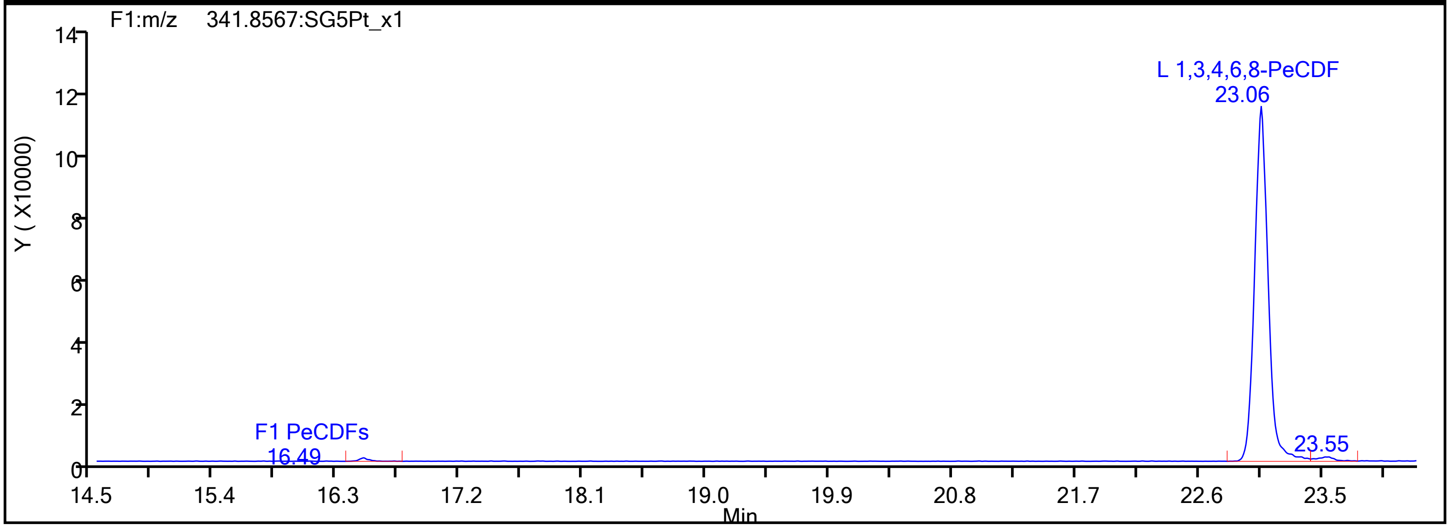

F1 PeCDFs Interference Mass

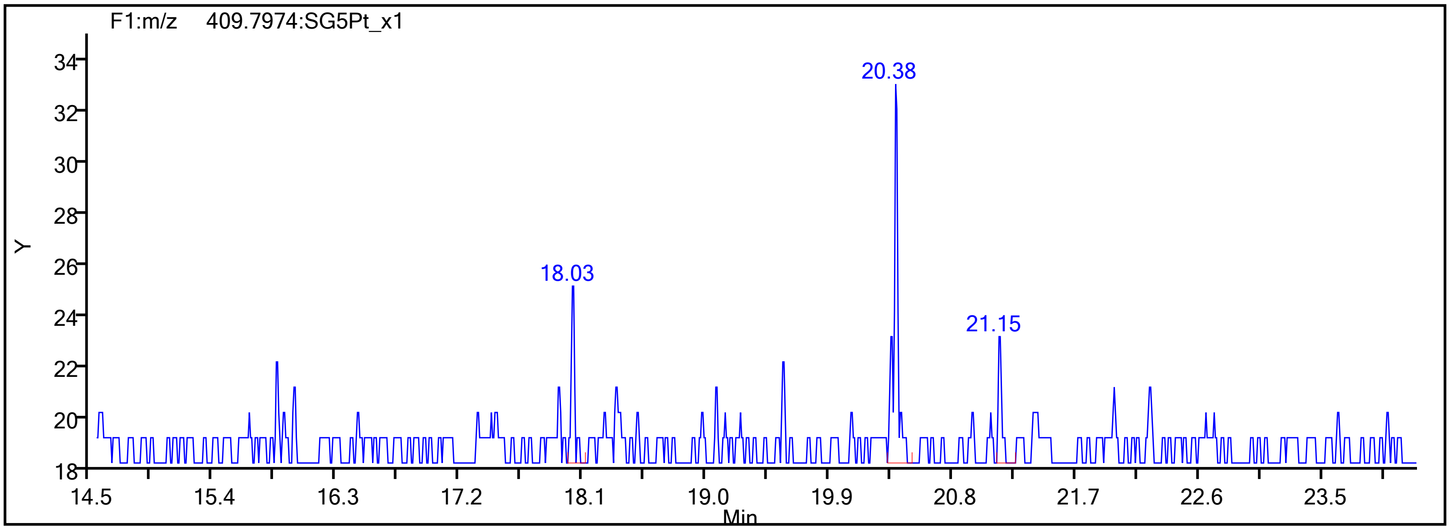

Report Date: 21-Sep-2020 11:24:50 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

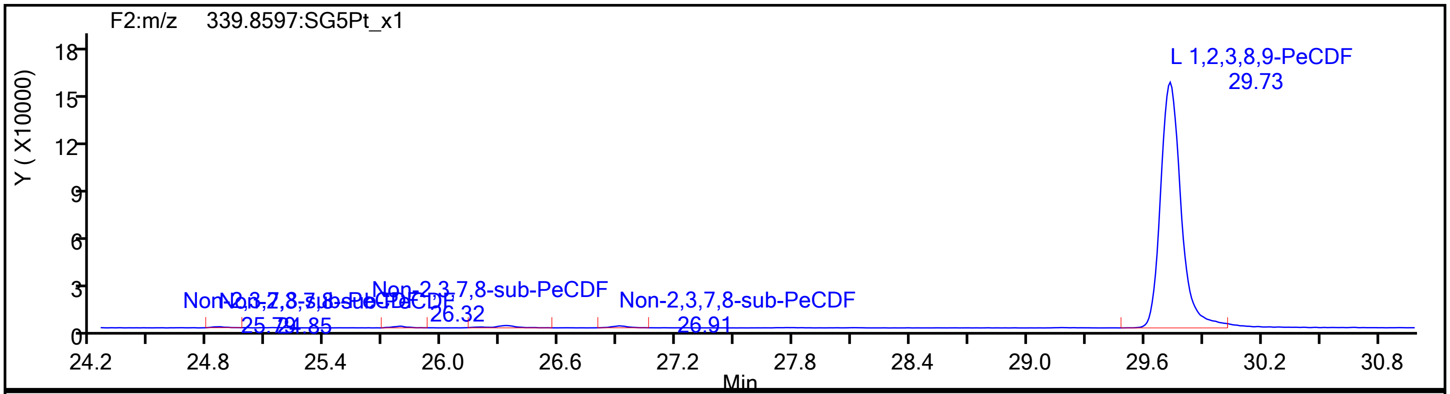

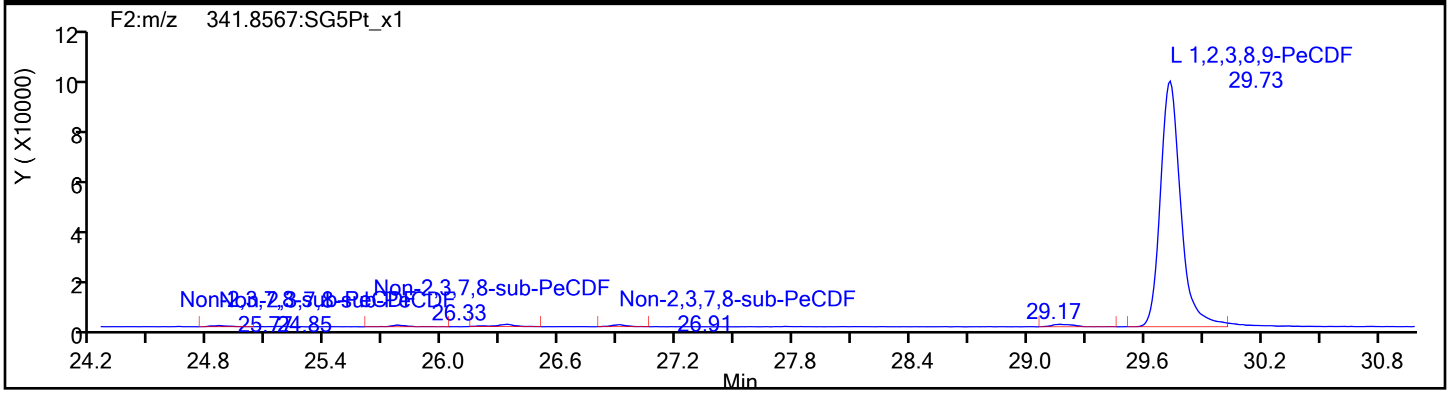

PeCDF Standards

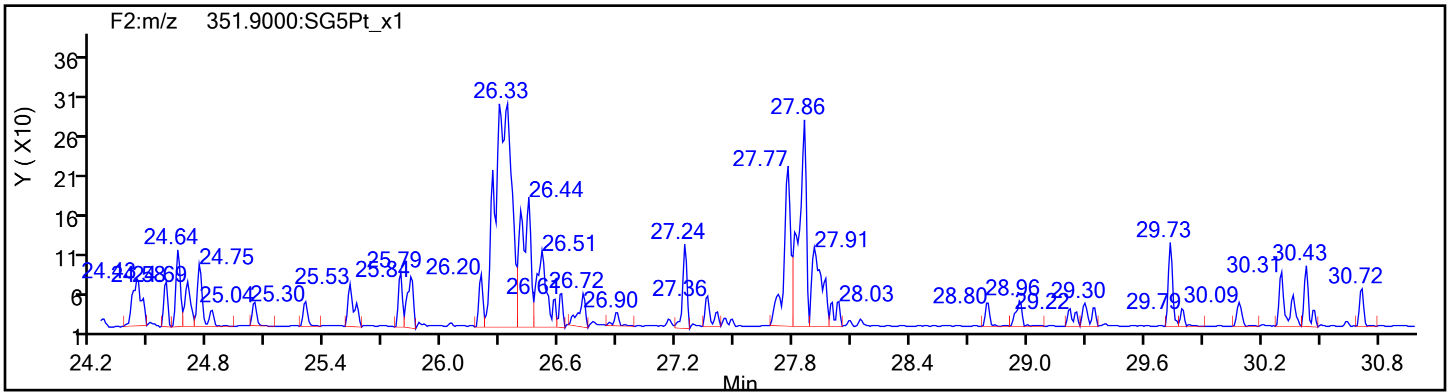

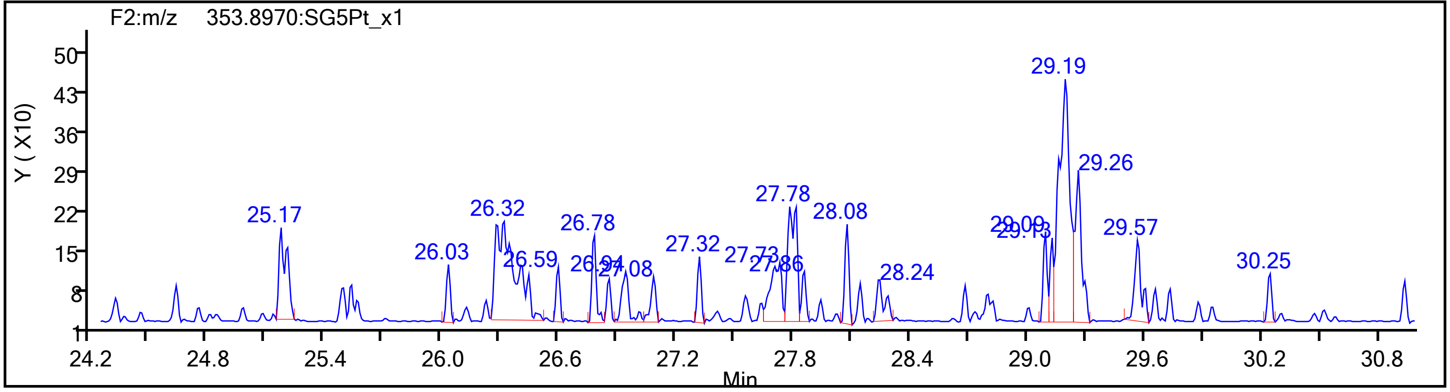

Report Date: 21-Sep-2020 11:24:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

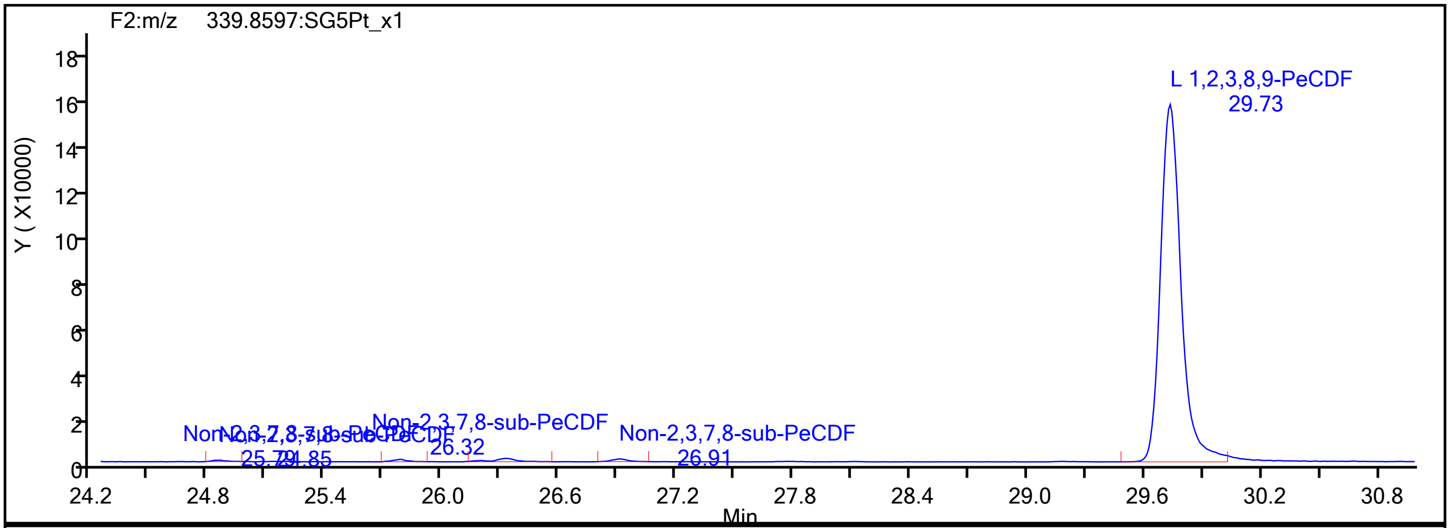

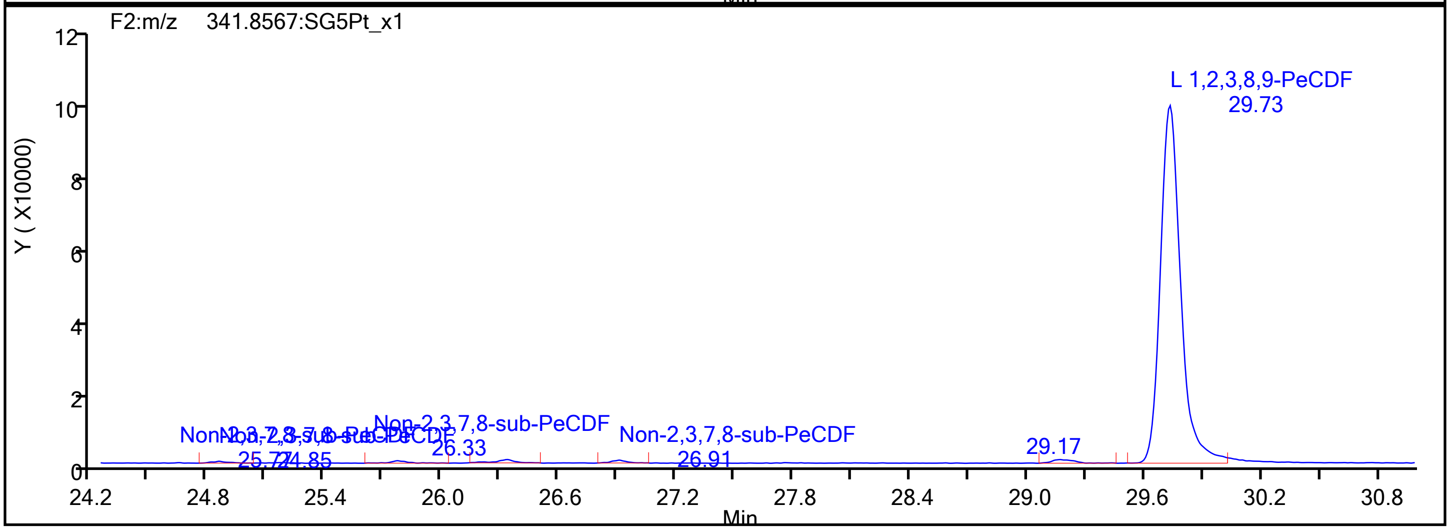

PeCDF Interference Mass

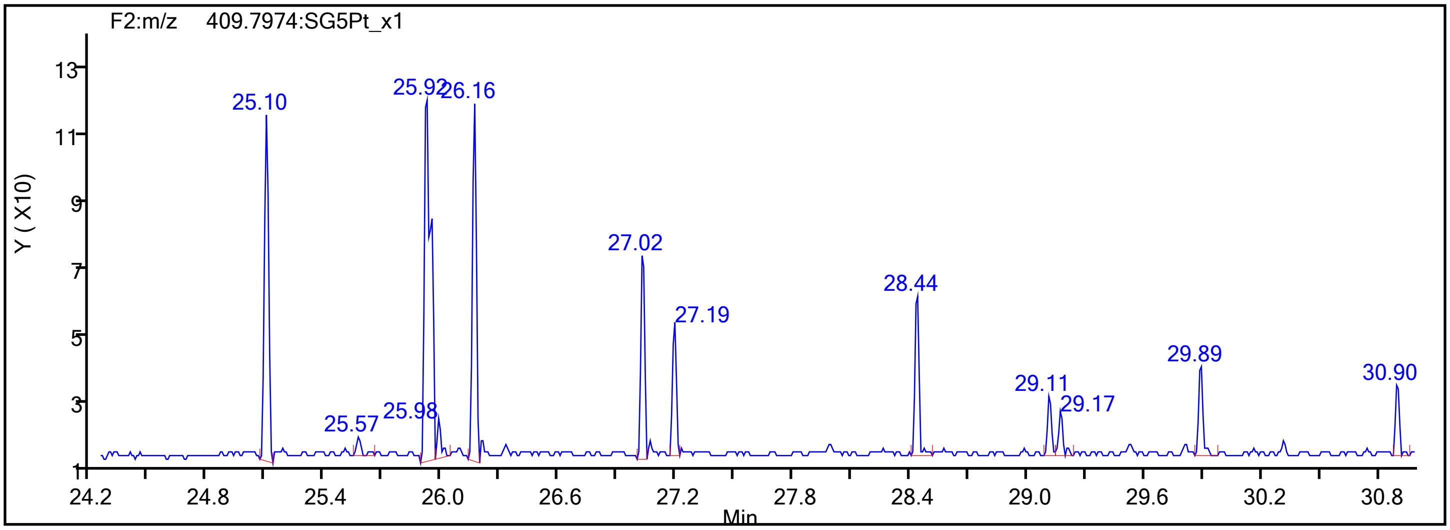

Report Date: 21-Sep-2020 11:24:51   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d
Injection Date: 20-Sep-2020 05:32:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413813   Sample Line#: 47
Column Type: DB-5   Column Dia: 0.32 mm

PeCDD

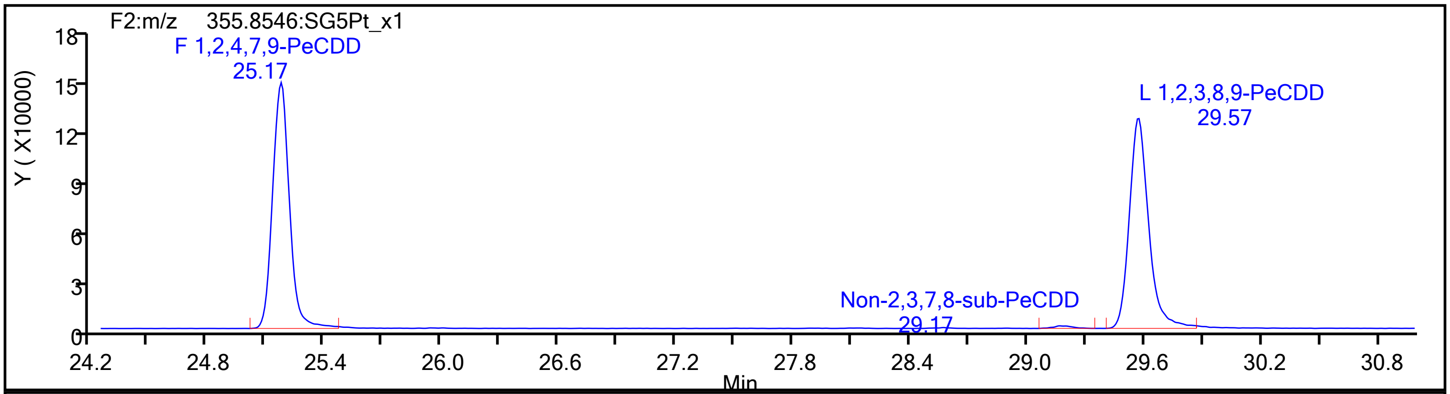

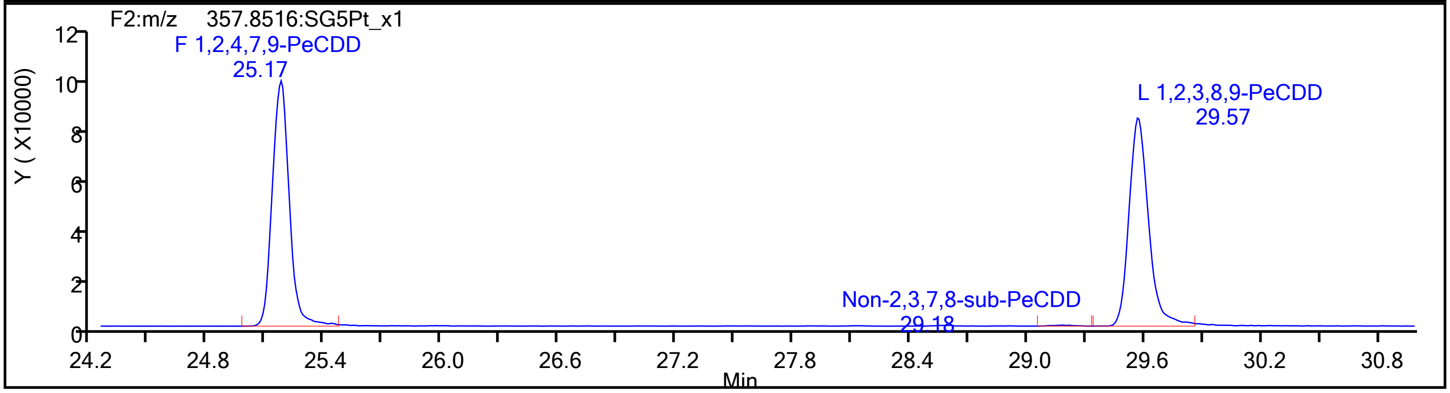

PeCDD Standards

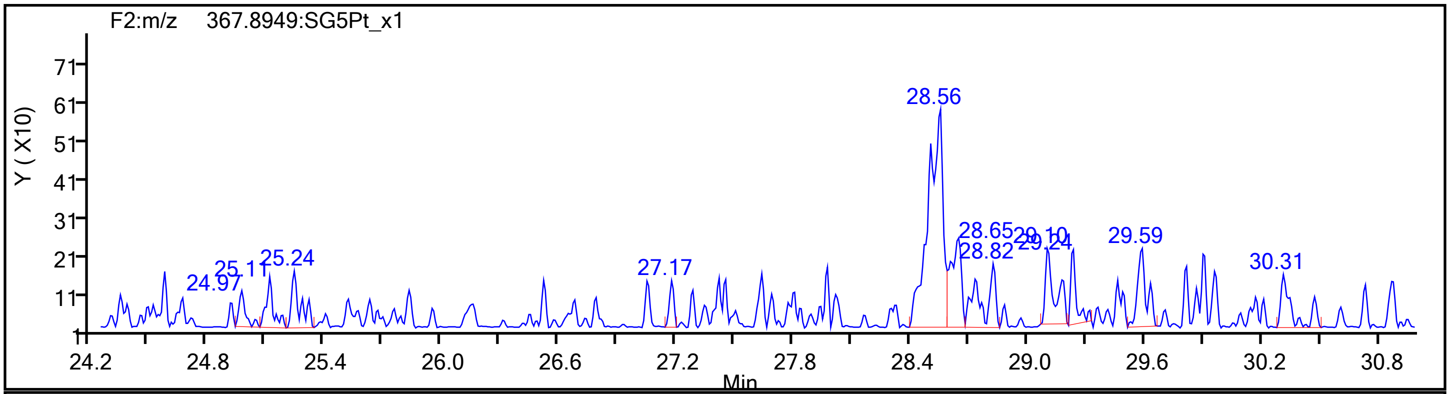

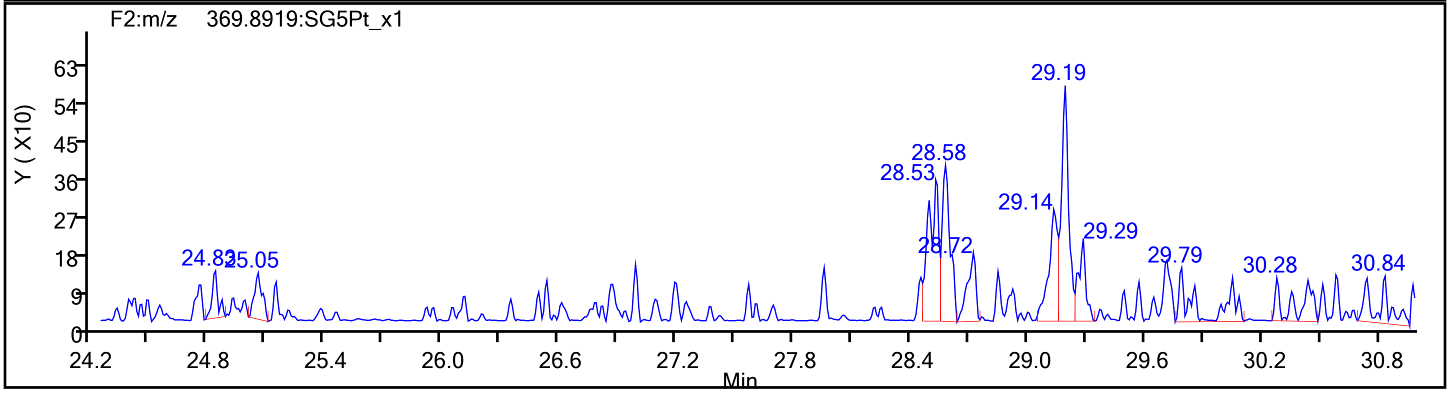

Report Date: 21-Sep-2020 11:24:51　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

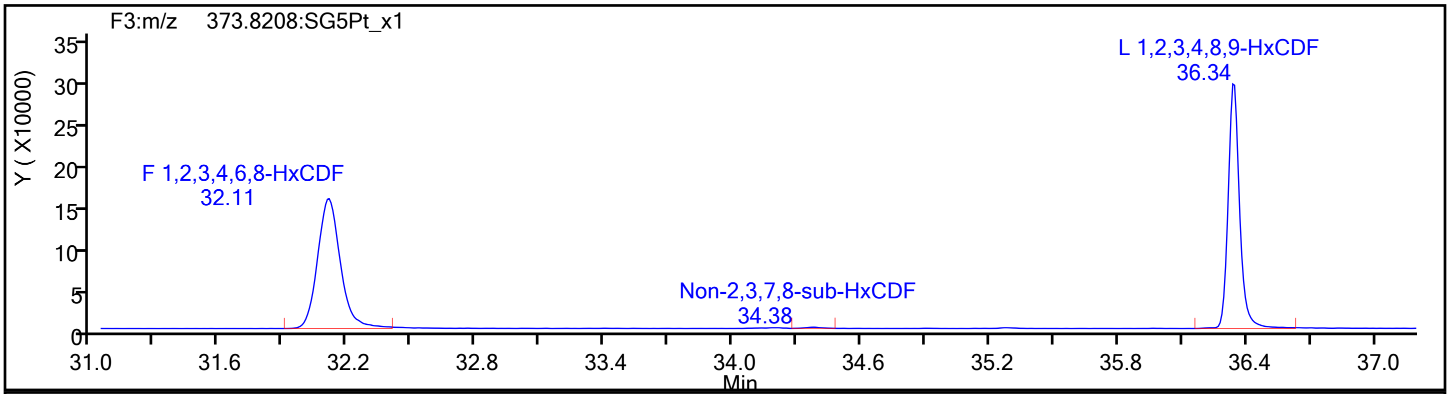

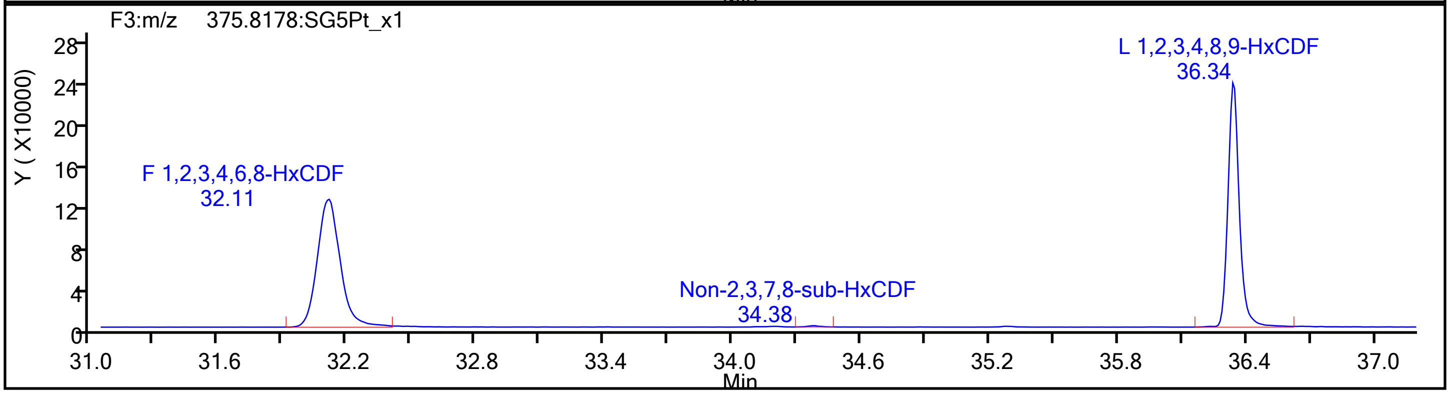

HxCDF Standards

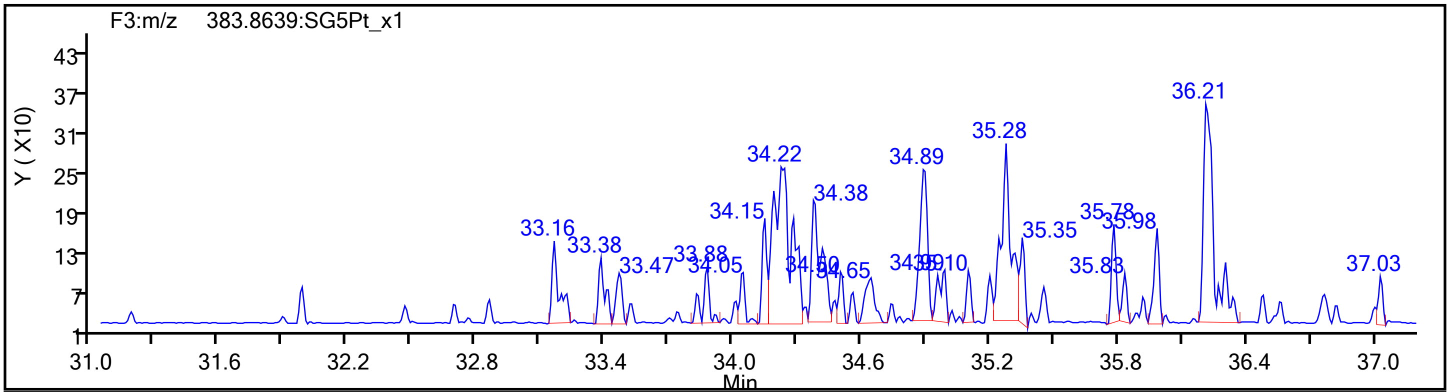

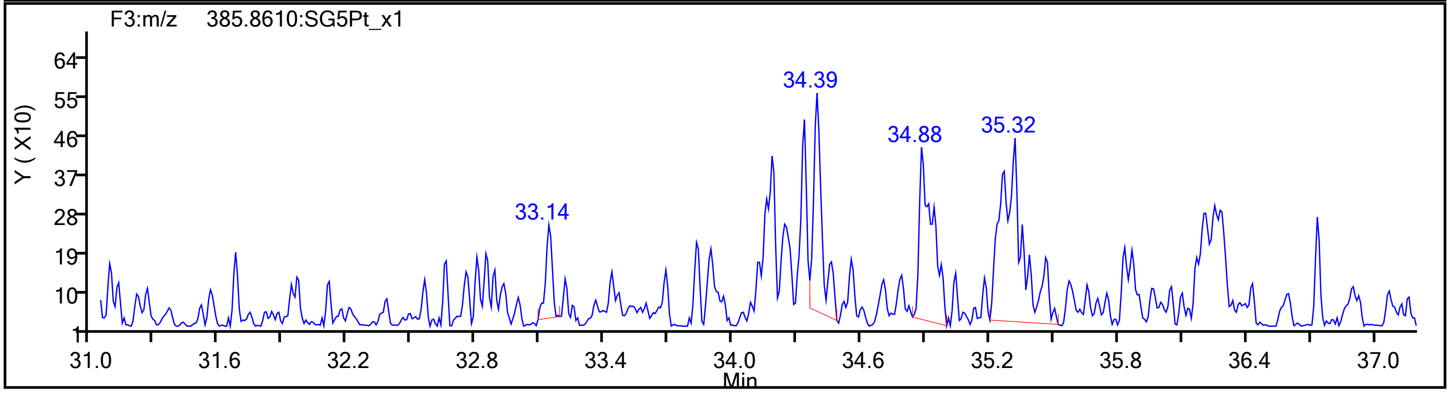

Report Date: 21-Sep-2020 11:24:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d
Injection Date: 20-Sep-2020 05:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413813
Sample Line#: 47
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

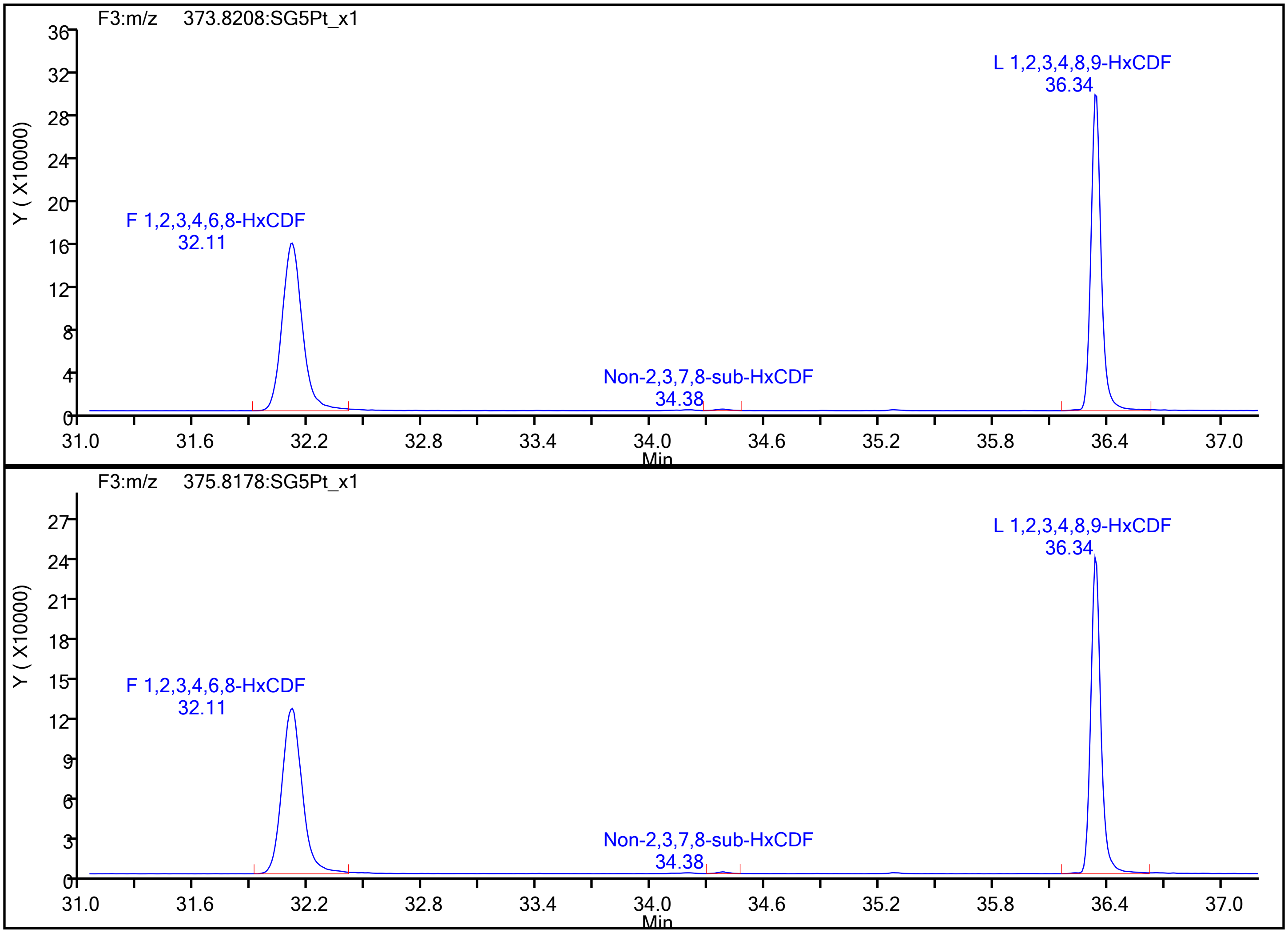

HxCDF Interference Mass

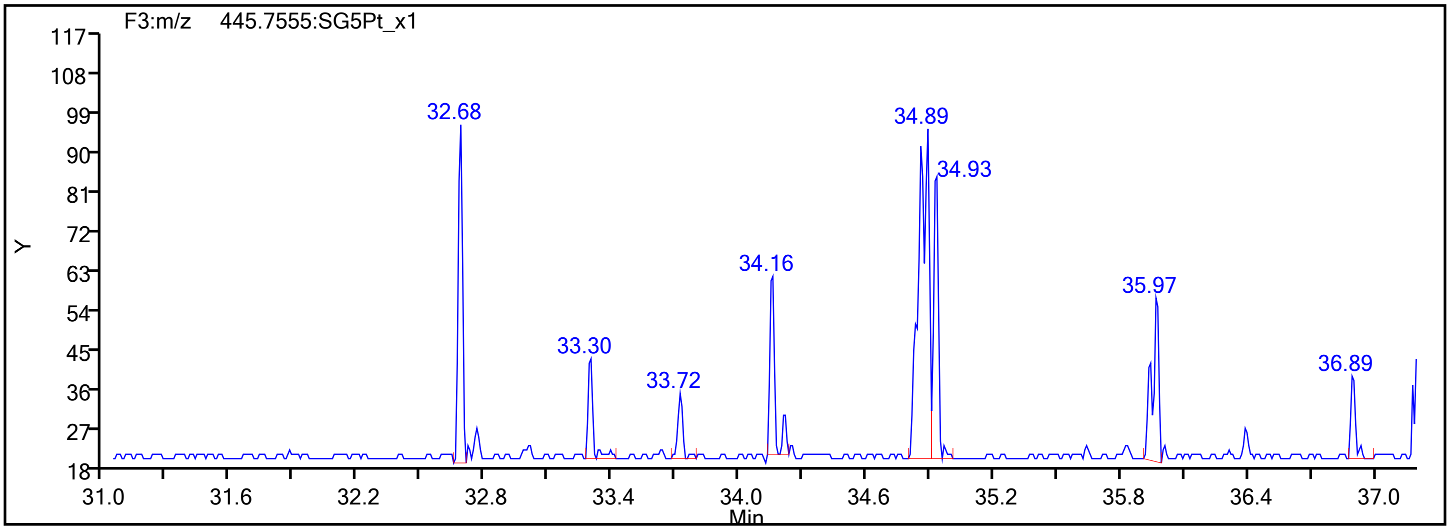

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

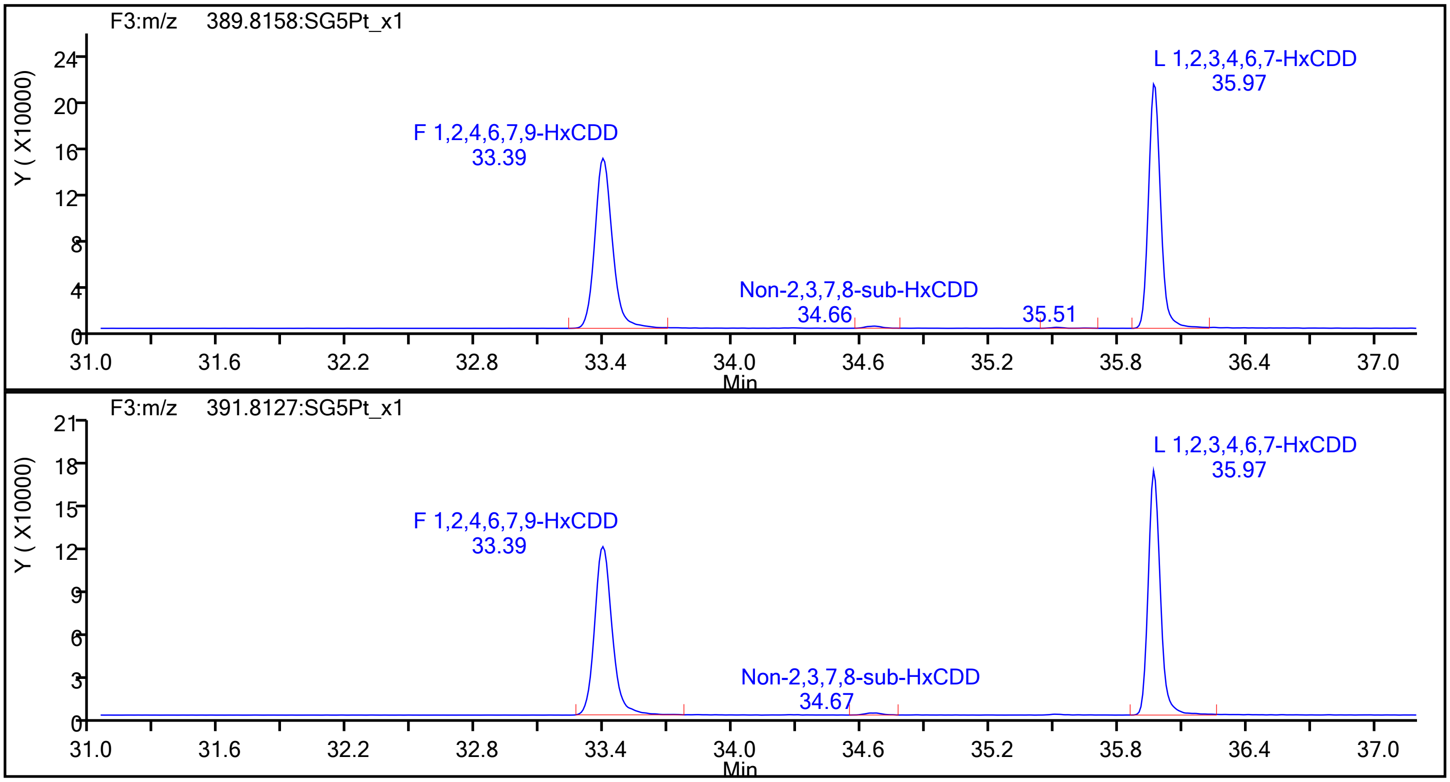

HxCDD Standards

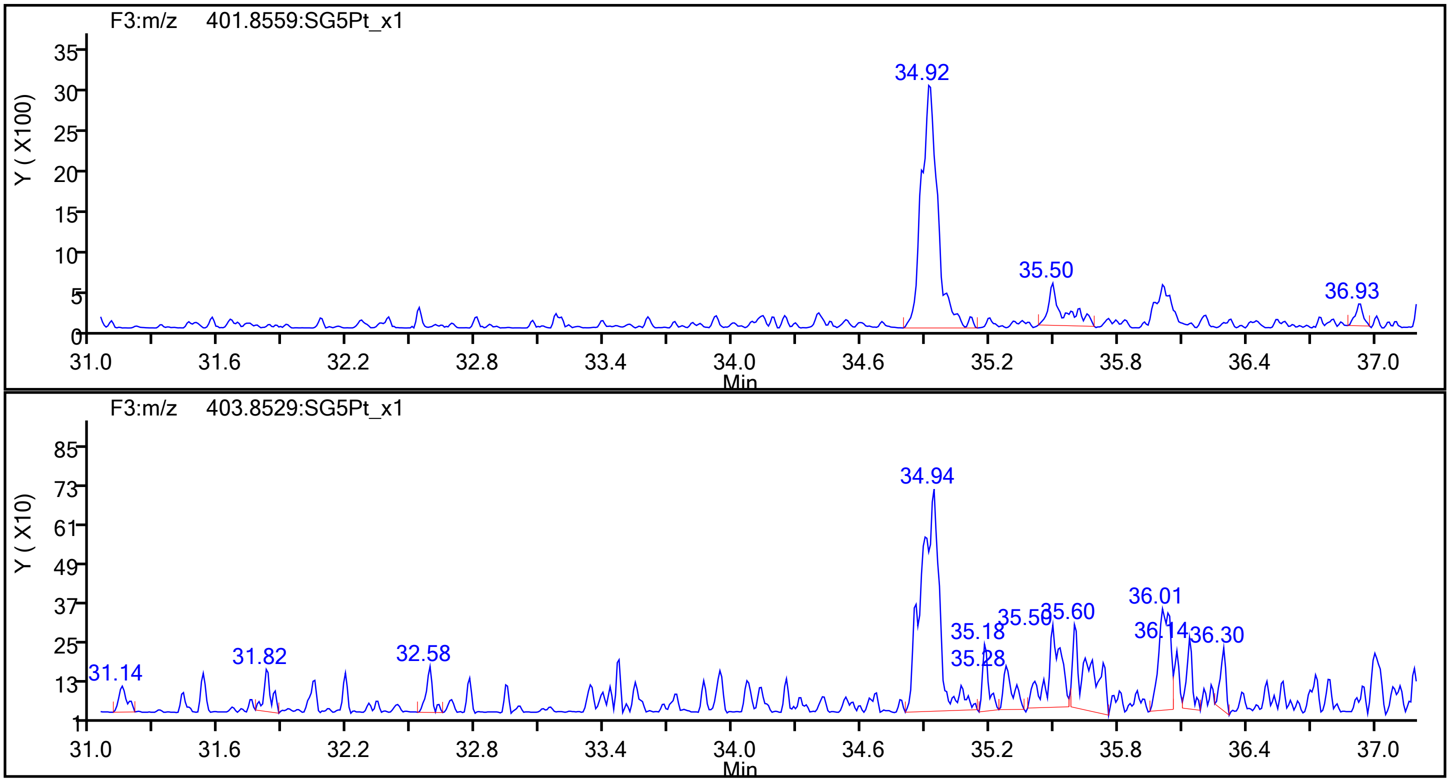

Report Date: 21-Sep-2020 11:24:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

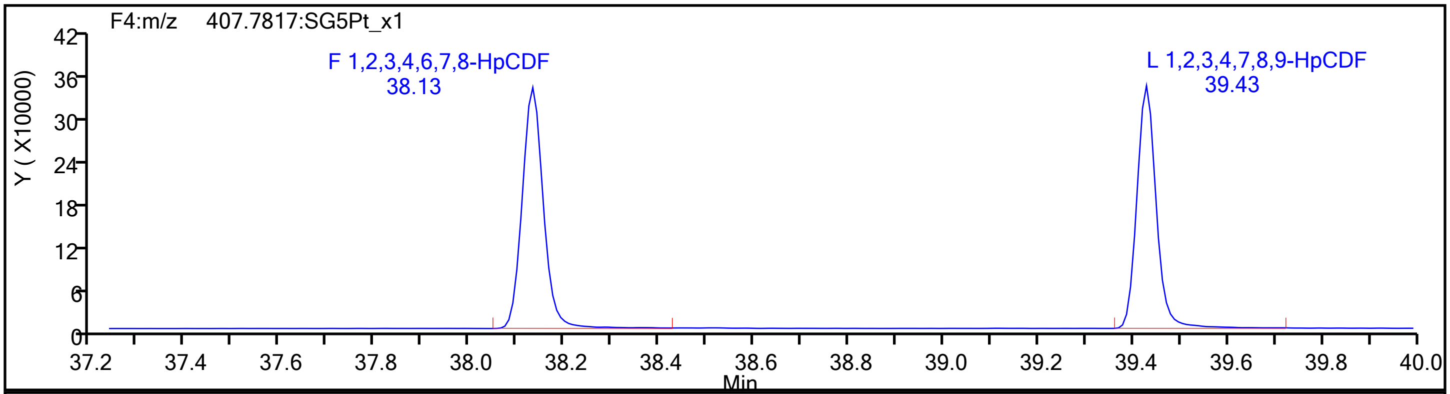

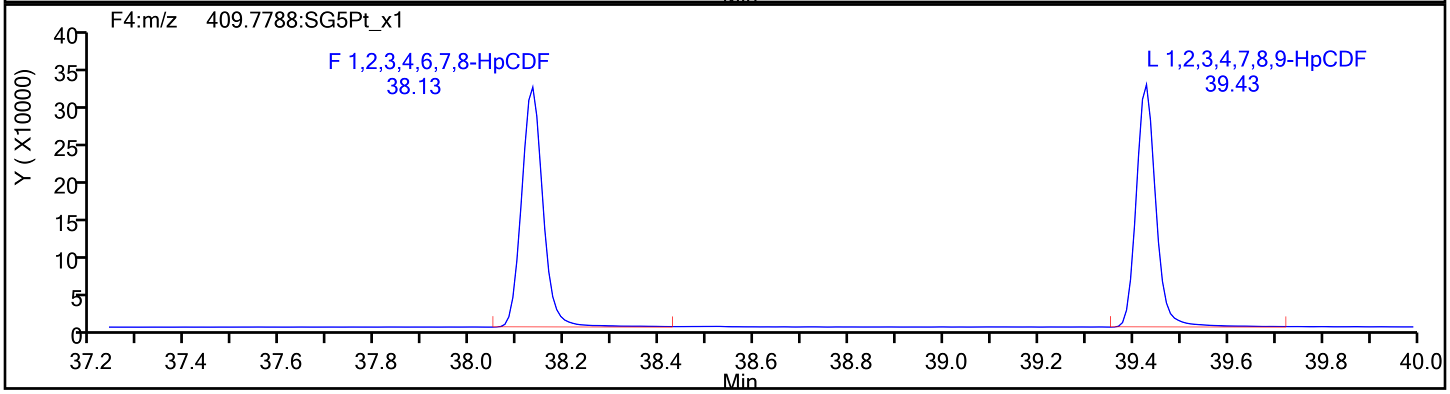

HpCDF Standards

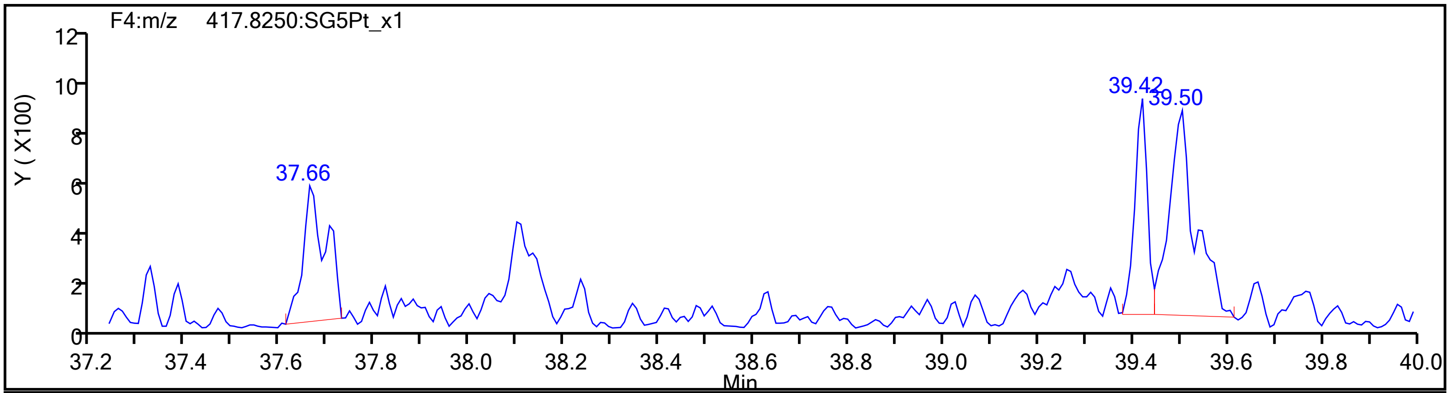

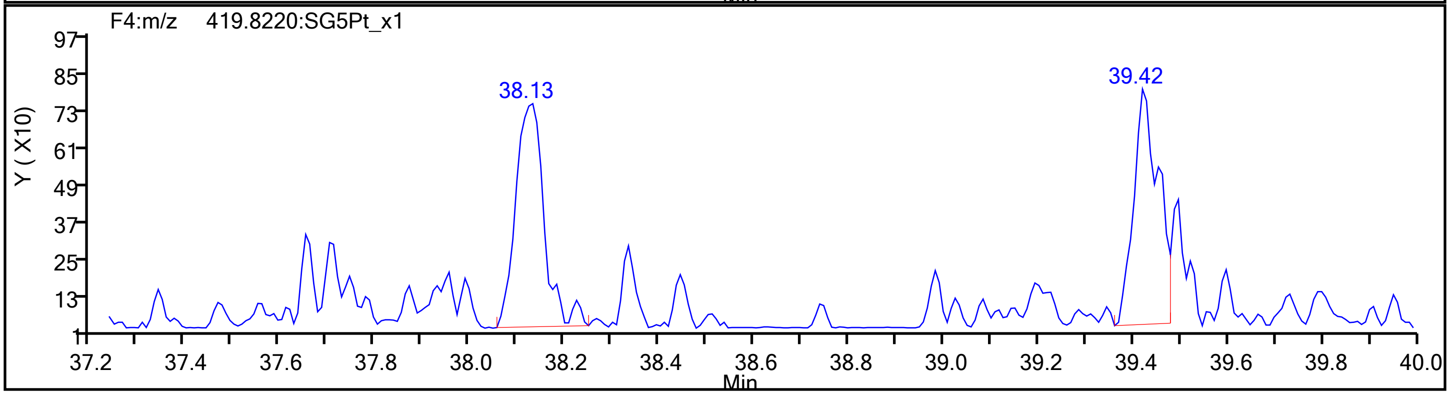

Report Date: 21-Sep-2020 11:24:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

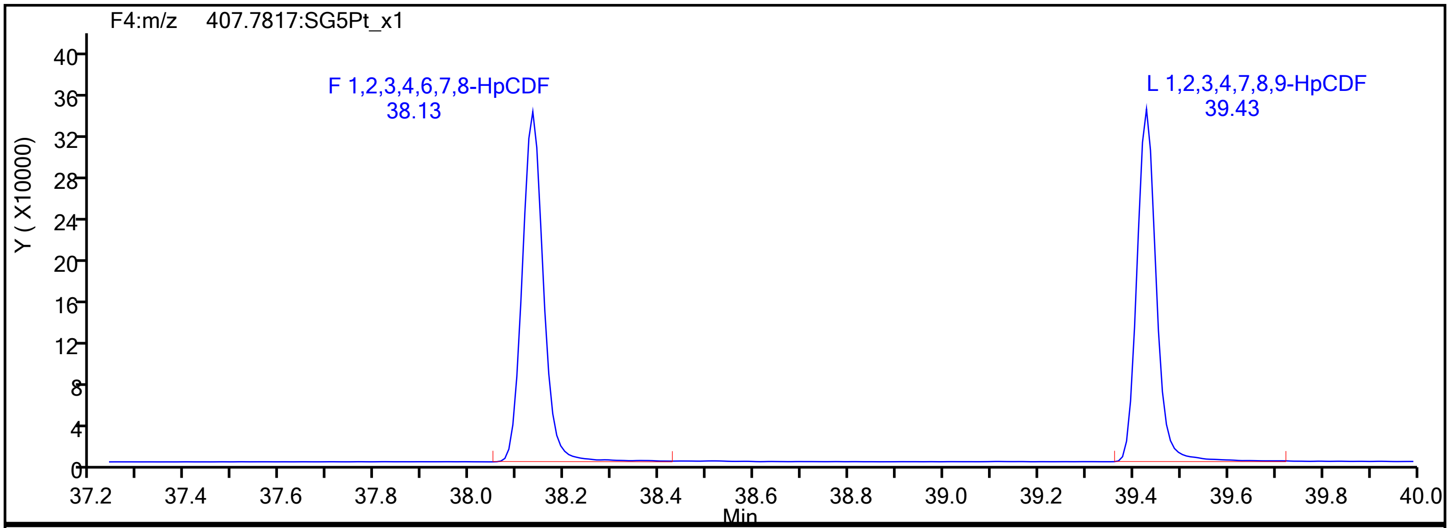

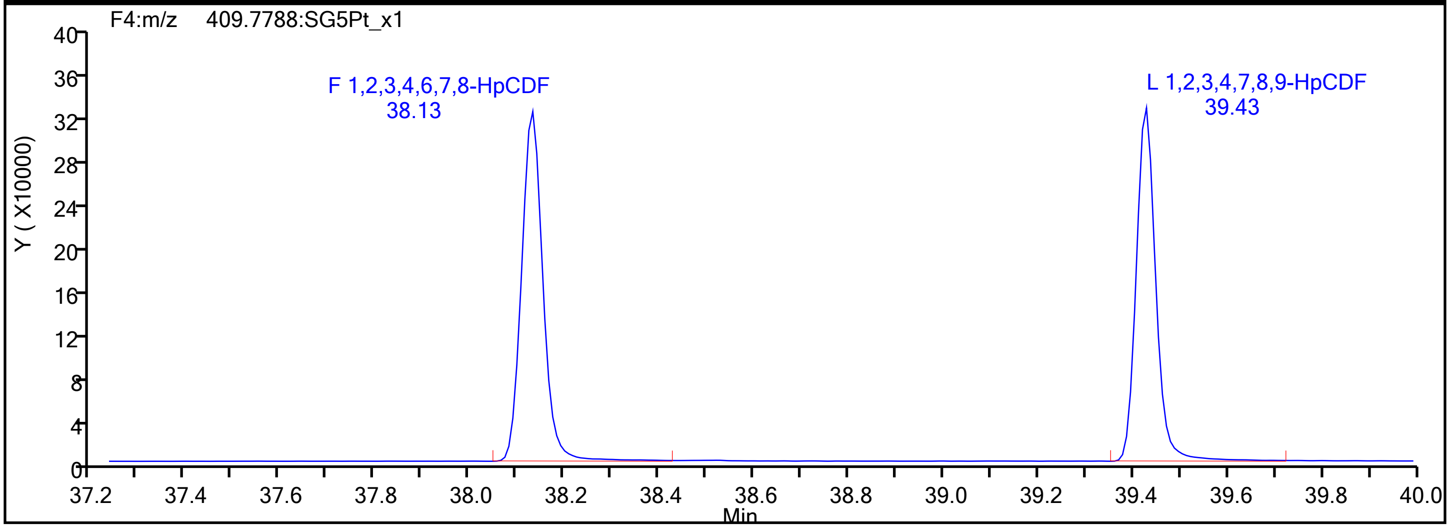

HpCDF Interference Mass

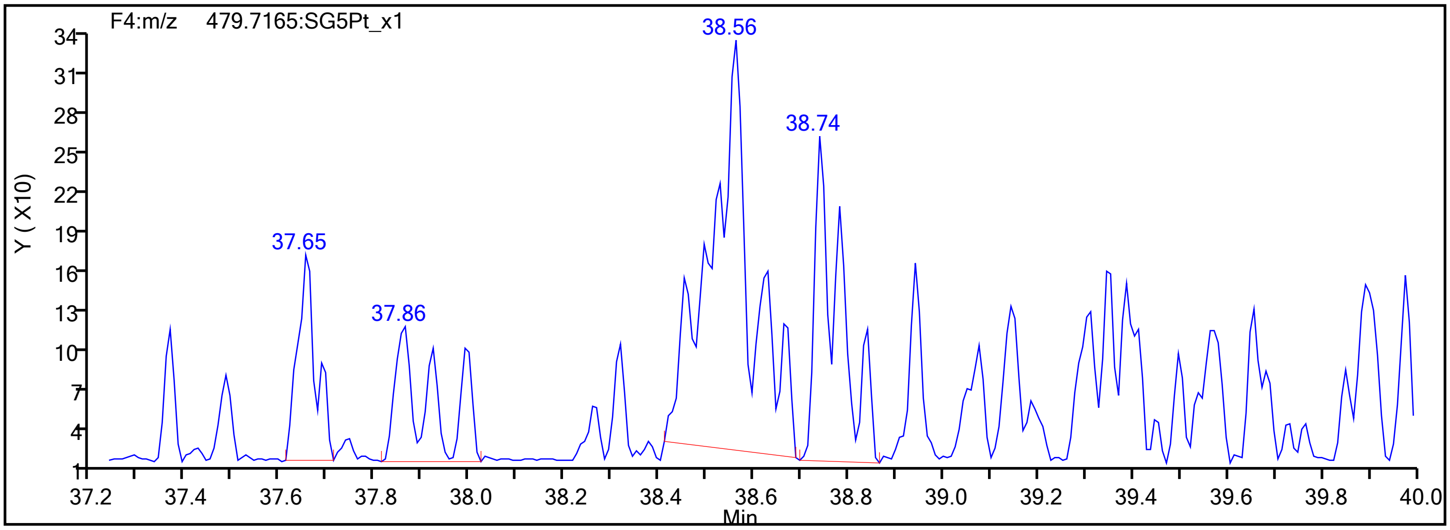

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

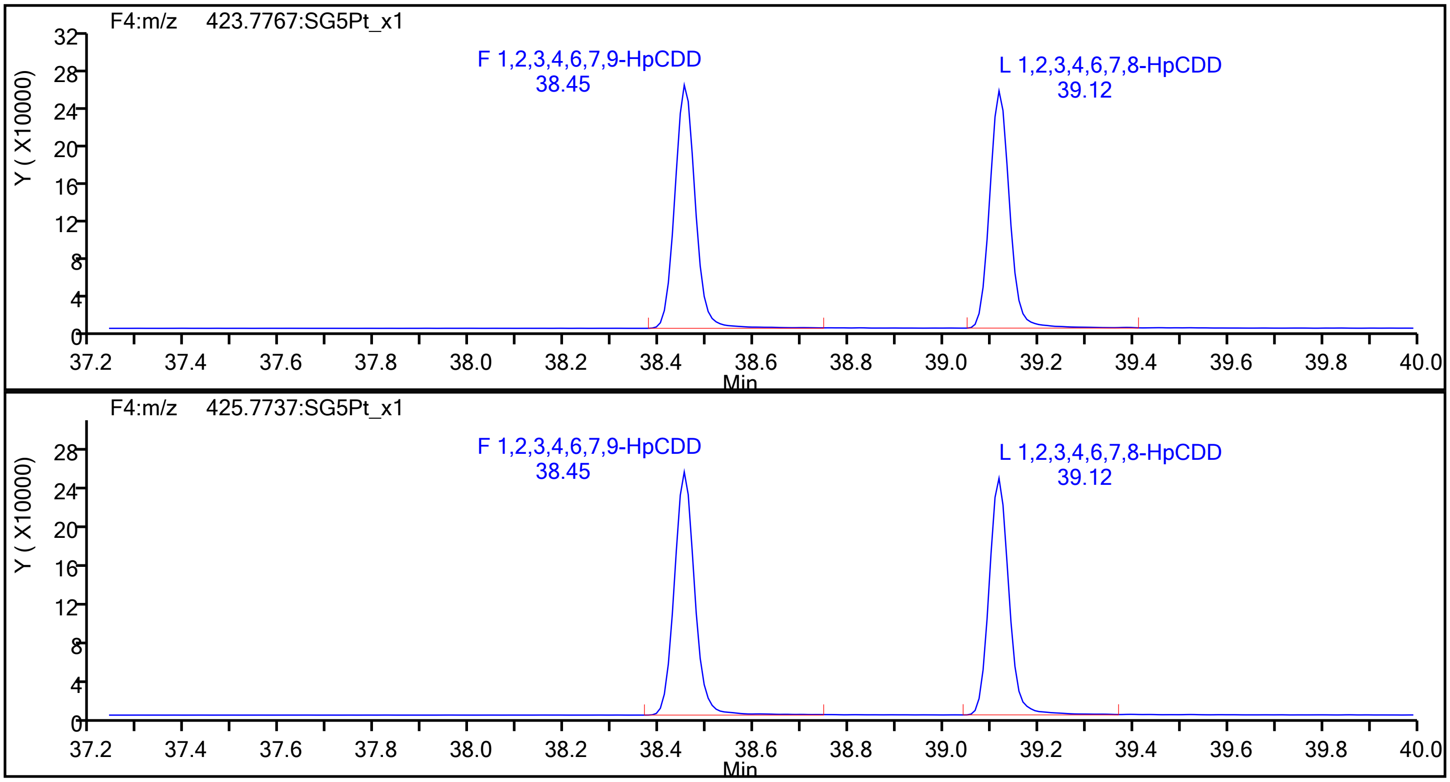

HpCDD Standards

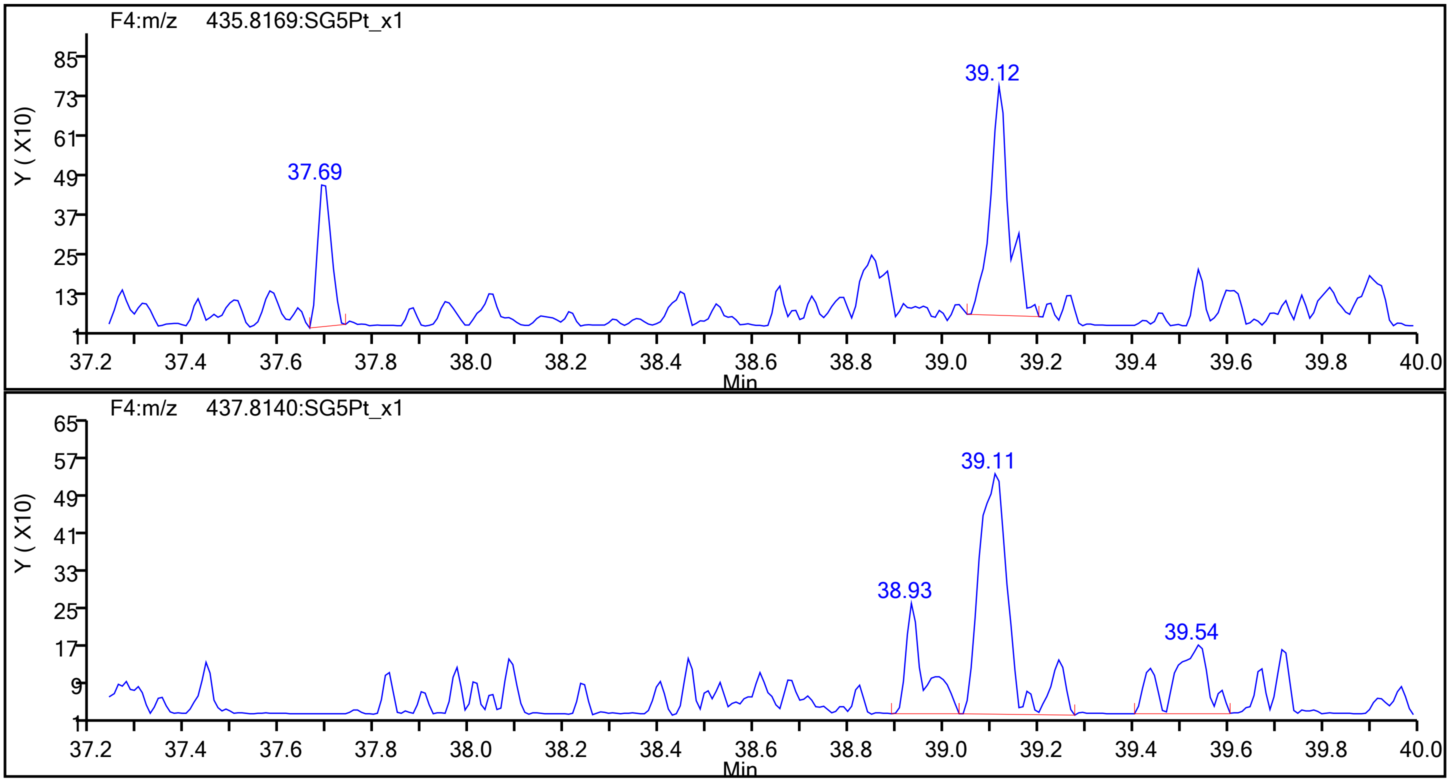

Report Date: 21-Sep-2020 11:24:51 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
Injection Date:	20-Sep-2020 05:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

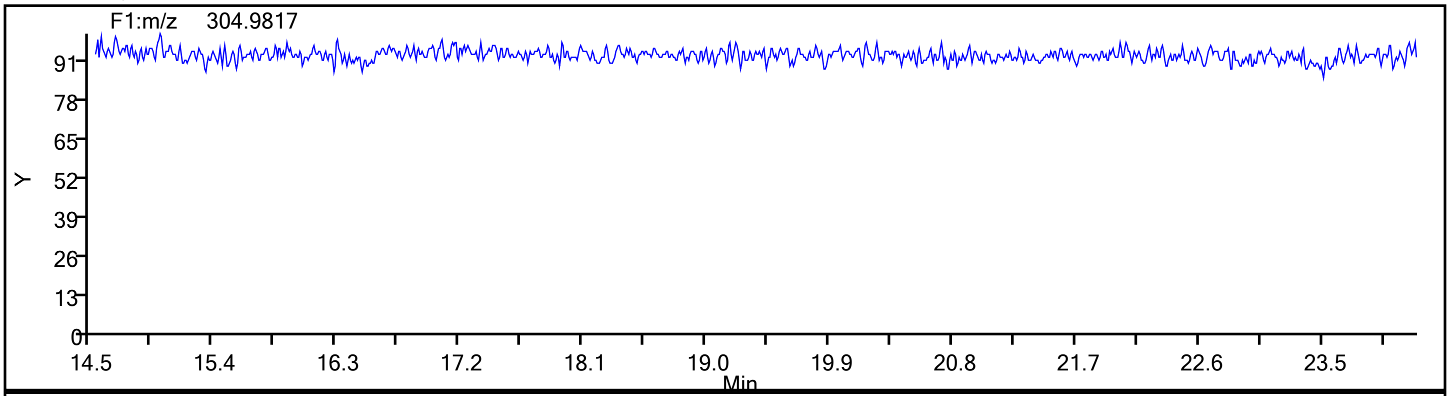

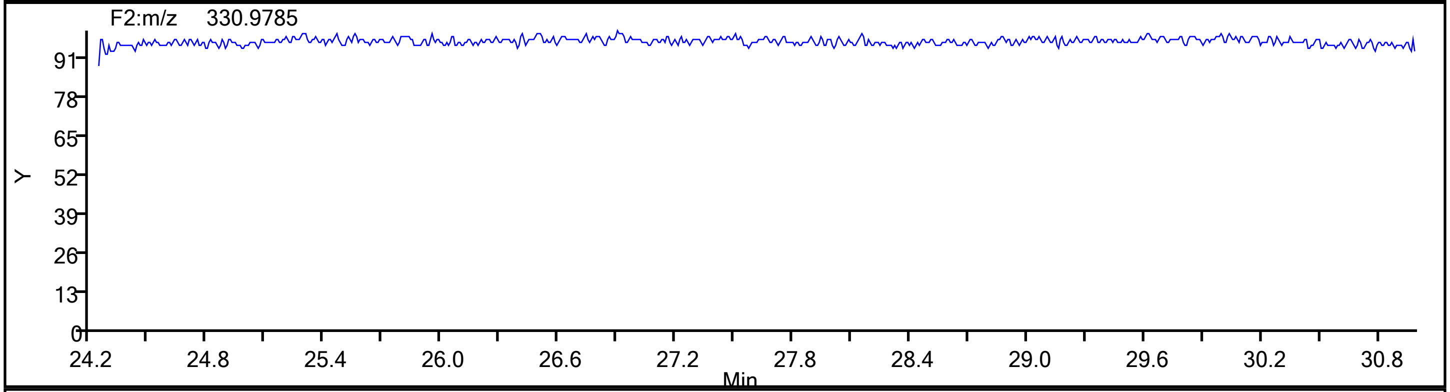

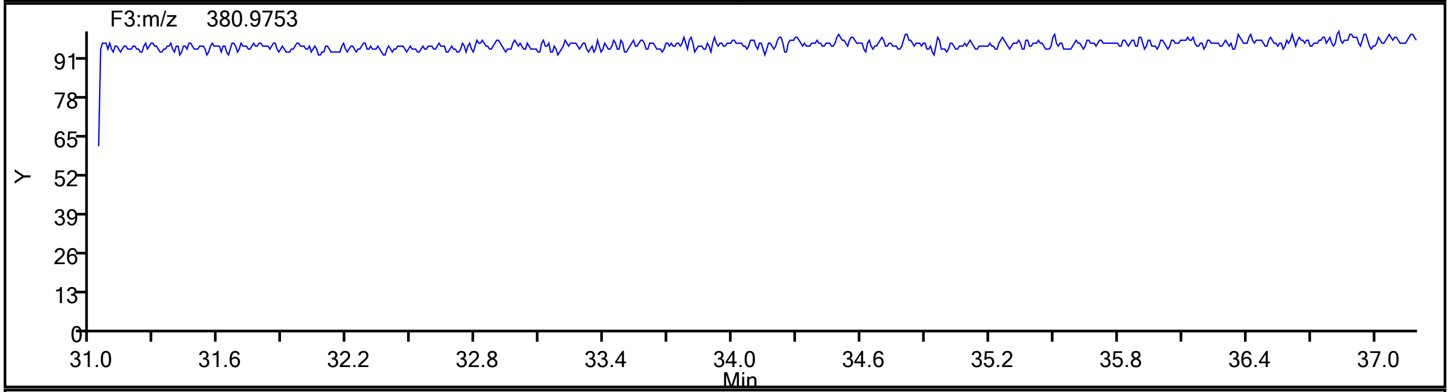

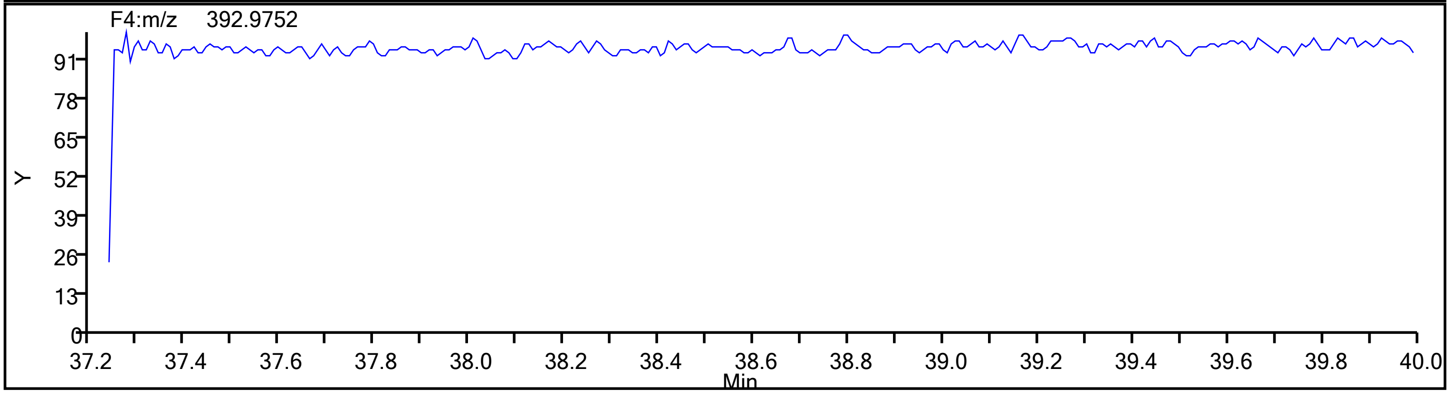

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_55.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413813	Sample Line#:	47
Column Type:	DB-5	Column Dia:	0.32 mm

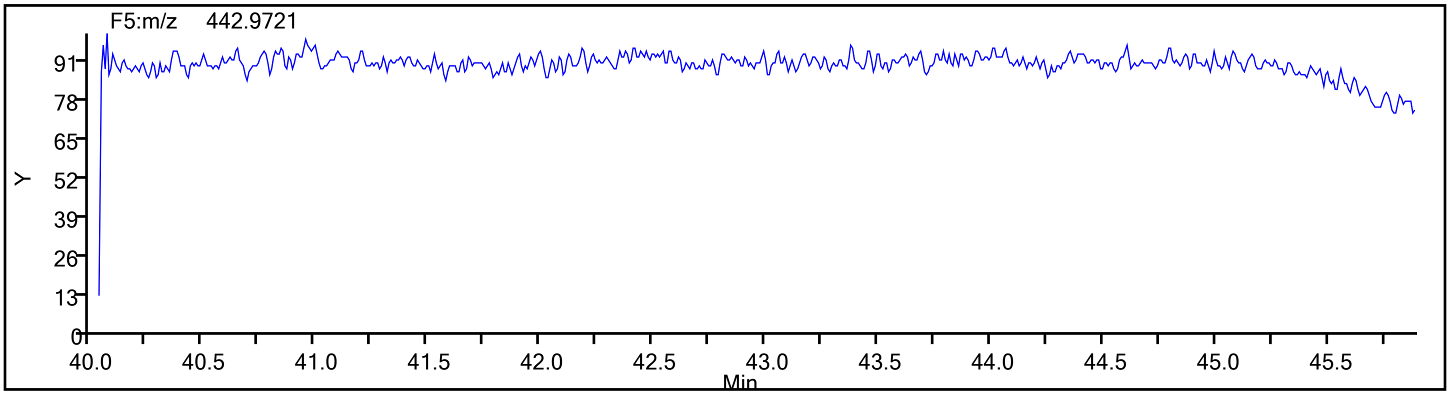

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 20-Sep-2020 15:53:00 ALS Bottle#: 0 Worklist Smp#: 59
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 12:53:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: stephensk Date: 21-Sep-2020 08:06:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.233	2292233	0.79	1.5883					0.00	
2,3,7,8-TCDF	19.276	4924290	0.79	1.0857	79.2	79.2	0.3256	0.3256		
A Non-2,3,7,8-sub-TCDF	18.816						0.3256	0.3256		
S Total TCDF					79.2	79.2	0.3256	0.3256		
D 13C-2,3,7,8-TCDD	20.514	1462442	0.82	1.1194					0.00	
2,3,7,8-TCDD	20.549	1686475	0.79	1.0810	42.7	42.7	0.2293	0.2293		
A Non-2,3,7,8-sub-TCDD	19.624						0.2293	0.2293		
S Total TCDD					42.7	42.7	0.2293	0.2293		
A F1 PeCDFs	23.607	1316	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.996	40007	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	27.361						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	34.215	10635	1.17	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.670	15430	1.25	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.112	1929401	1.04	1.5064						
1,2,3,4,7,8,9-HpCDF	39.409	1698534	1.04	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.760						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.105	1336018	1.04	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.875						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.183	2901091	0.78							
1,3,6,8-TCDD	16.722	1695827	0.78							
2,3,4,7-TCDF	19.276	4924290	0.79							
1,2,3,7-TCDD	20.342	1380818	0.80							
1,2,3,9-TCDF	20.729	2117381	0.79							
1,2,3,9-TCDD	20.815	1740156	0.79							
1,2,8,9-TCDF	22.448	2179949	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	22.525	681854								
1,3,4,6,8-PeCDF	23.050	1983303	1.56							
1,2,4,7,9-PeCDD	25.154	1421383	1.58							
1,2,3,8,9-PeCDD	29.568	1371678	1.56							
1,2,3,8,9-PeCDF	29.728	1799637	1.56							
1,2,3,4,6,8-HxCDF	32.105	2032115	1.26							
1,2,4,6,7,9-HxCDD	33.385	1482438	1.25							
1,2,3,4,6,7-HxCDD	35.955	1430352	1.25							
1,2,3,4,8,9-HxCDF	36.326	1898597	1.26							
1,2,3,4,6,7,9-HpCDD	38.441	1429014	1.05							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 12:53:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	20-Sep-2020 15:53:00	ALS Bottle#:	0	Worklist Smp#:	59
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00042				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	21-Sep-2020 12:53:25	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1009				

First Level Reviewer: stephensk Date: 21-Sep-2020 08:06:23

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.233	19.233	0	1.000	1013654	153942	386	965	399		
317.9389	19.224	19.233	-1	1.000	1278579	197683	222	555	890	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.276	19.276	0	1.002	2176689	305263	558	1395	547		
305.8987	19.276	19.276	0	1.002	2747601	384621	685	1712	561	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.816						558	1395			
305.8987	18.816						685	1712			
13C-2,3,7,8-TCDD											
331.9368	20.514	20.514	0	1.000	658115	95334	265	662	360		
333.9338	20.514	20.514	0	1.000	804327	117722	81	202	1453	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.549	20.549	0	1.002	742862	104687	264	660	397		
321.8936	20.540	20.549	-1	1.001	943613	129436	264	660	490	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.624						264	660			
321.8936	19.624						264	660			
A F1 PeCDFs											RQ
339.8597	16.473	23.607	-427	1.000	800	132	36	90	4		
341.8567	16.499	23.607	-426	1.000	6200	1211	73	182	17	0.13(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	24.859	26.996	-128	1.000	3782	694	134	335	5		
341.8567	24.851	26.996	-128	1.000	1882	433	115	287	4	2.01(1.32-1.78)	
339.8597	25.761	26.996	-74	1.000	4945	883	134	335	7		
341.8567	25.752	26.996	-74	1.000	3193	526	115	287	5	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.300	26.996	-42	1.000	8756	1312	134	335	10		
341.8567	26.308	26.996	-41	1.000	5803	778	115	287	7	1.51(1.32-1.78)	
339.8597	26.890	26.996	-6	1.000	7858	1007	134	335	8		
341.8567	26.898	26.996	-6	1.000	4653	708	115	287	6	1.69(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.361						206	515			
357.8516	27.361						107	267			
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.363	34.215	9	1.000	5743	1246	251	627	5		
375.8178	34.363	34.215	9	1.000	4892	1053	209	522	5	1.17(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.649	34.670	-1	1.000	8557	1805	159	397	11		
391.8127	34.649	34.670	-1	1.000	6873	1460	138	345	11	1.25(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.112	38.112	0	1.000	982418	308132	477	1192	646		
409.7788	38.112	38.112	0	1.000	946983	299683	464	1160	646	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.409	39.409	0	1.000	866430	290031	477	1192	608		
409.7788	39.409	39.409	0	1.000	832104	282204	464	1160	608	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.760						477	1192			
409.7788	38.760						464	1160			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.105	39.105	0	1.000	681082	225985	350	875	646		
425.7737	39.097	39.105	-1	1.000	654936	217679	330	825	660	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.875						350	875			
425.7737	38.875						330	825			
1,3,6,8-TCDF											
303.9016	15.183	15.183	0		1275070	261750	558	1395	469		
305.8987	15.183	15.183	0		1626021	331909	685	1712	485	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.722	16.722	0		745164	136333	264	660	516		
321.8936	16.714	16.722	-1		950663	174636	264	660	662	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.276	19.276	0		2176689	305263	558	1395	547		
305.8987	19.276	19.276	0		2747601	384621	685	1712	561	0.79(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.342	20.342	0		614501	93811	264	660	355		
321.8936	20.342	20.342	0		766317	118043	264	660	447	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.729	20.729	0		937416	131235	558	1395	235		
305.8987	20.721	20.729	-1		1179965	165215	685	1712	241	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.815	20.815	0		769246	102618	264	660	389		
321.8936	20.815	20.815	0		970910	127379	264	660	482	0.79(0.65-0.89)	

Report Date: 21-Sep-2020 12:53:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	22.448	22.448	0		965281	122414	558	1395	219		
305.8987	22.439	22.448	-1		1214668	154056	685	1712	225	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	22.525	22.525	0		681854	87340	264	660	331		
1,3,4,6,8-PeCDF											
339.8597	23.050	23.050	0		1209869	168105	36	90	4670		
341.8567	23.050	23.050	0		773434	108452	73	182	1486	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.154	25.154	0		869428	139528	206	515	677		
357.8516	25.154	25.154	0		551955	89941	107	267	841	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.568	29.568	0		836693	119803	206	515	582		
357.8516	29.560	29.568	-1		534985	76780	107	267	718	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.728	29.728	0		1096395	147159	134	335	1098		
341.8567	29.728	29.728	0		703242	94979	115	287	826	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.105	32.105	0		1132525	152334	251	627	607		
375.8178	32.105	32.105	0		899590	120147	209	522	575	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.385	33.385	0		822275	143667	159	397	904		
391.8127	33.385	33.385	0		660163	116420	138	345	844	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.955	35.955	0		795644	199267	159	397	1253		
391.8127	35.955	35.955	0		634708	162327	138	345	1176	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.326	36.326	0		1058276	274193	251	627	1092		
375.8178	36.326	36.326	0		840321	216596	209	522	1036	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.441	38.441	0		733514	236037	350	875	674		
425.7737	38.432	38.441	-1		695500	222923	330	825	676	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Lims ID: WDM
Client ID:
Inject. Date: 20-Sep-2020 15:53:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 413816
Lims Sample ID: 59

F1 PeCDFs, RT: 23.607

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.473	800	132	6200	1211		0.13	R
Signal Totals:							
	800	132	6200	1211			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7000	1343				0.13	RQ
	1316	217					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (7000 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (1316 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	20-Sep-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413816	Lims Sample ID:	59

Non-2,3,7,8-sub-PeCDF, RT: 26.996

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.859	3782	694	1882	433		2.01	R
25.761	4945	883	3193	526		1.55	
26.300	8756	1312	5803	778		1.51	
26.890	7858	1007	4653	708		1.69	
Signal Totals:							
	25341	3896	15531	2445			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	40872	6341				1.63	RQ
	40007	6318					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (40872 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (40007 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	20-Sep-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413816	Lims Sample ID:	59

Non-2,3,7,8-sub-HxCDF, RT: 34.215

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.363	5743	1246	4892	1053		1.17	
Signal Totals:							
	5743	1246	4892	1053			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10635	2299				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (10635 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	20-Sep-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413816	Lims Sample ID:	59

Non-2,3,7,8-sub-HxCDD, RT: 34.670

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.649	8557	1805	6873	1460		1.25	
Signal Totals:							
	8557	1805	6873	1460			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15430	3265				1.25	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15430 * 0.0) / (0 * 0.000)

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Injection Date:	20-Sep-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	59
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

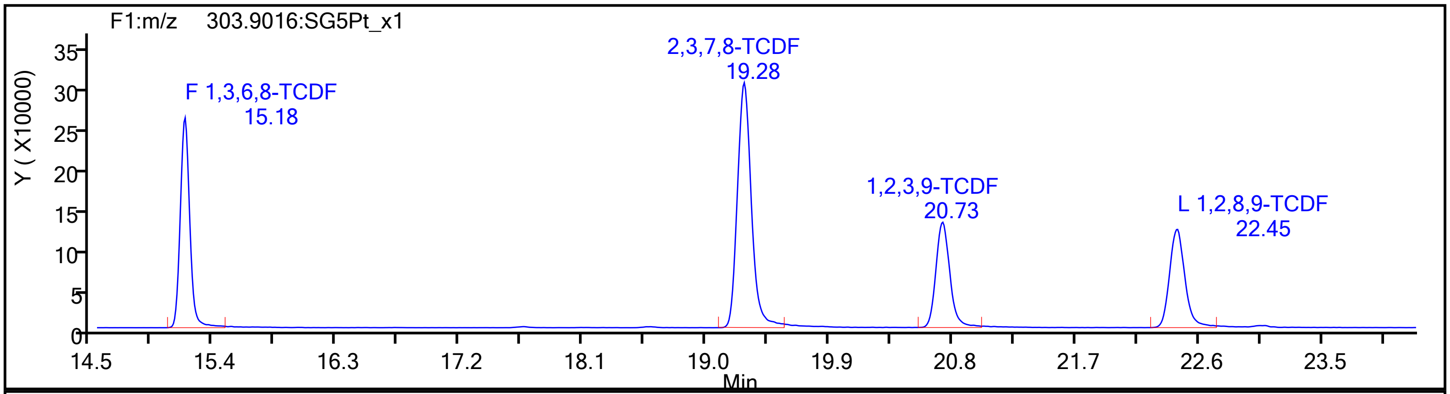

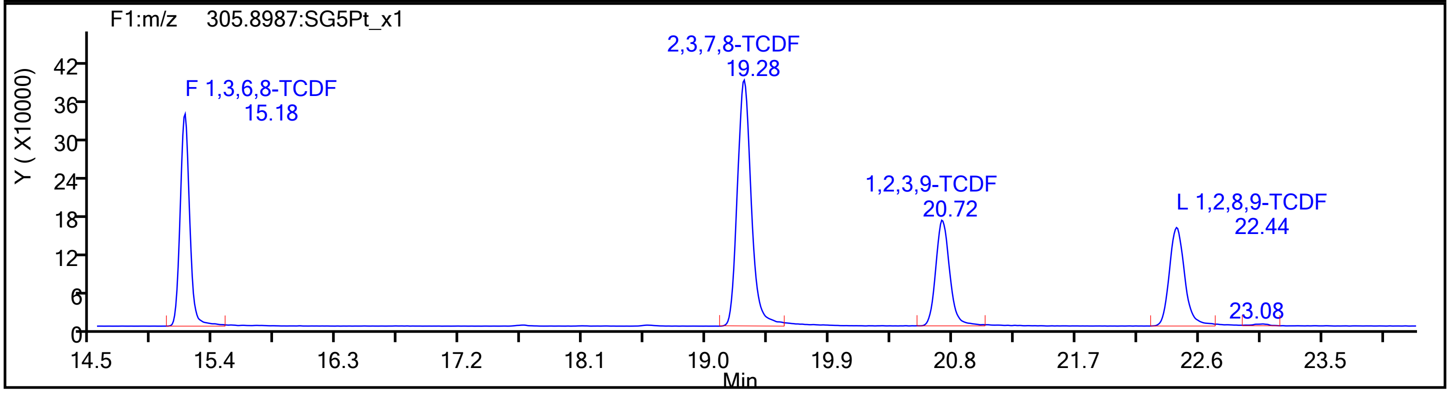

TCDF Standards

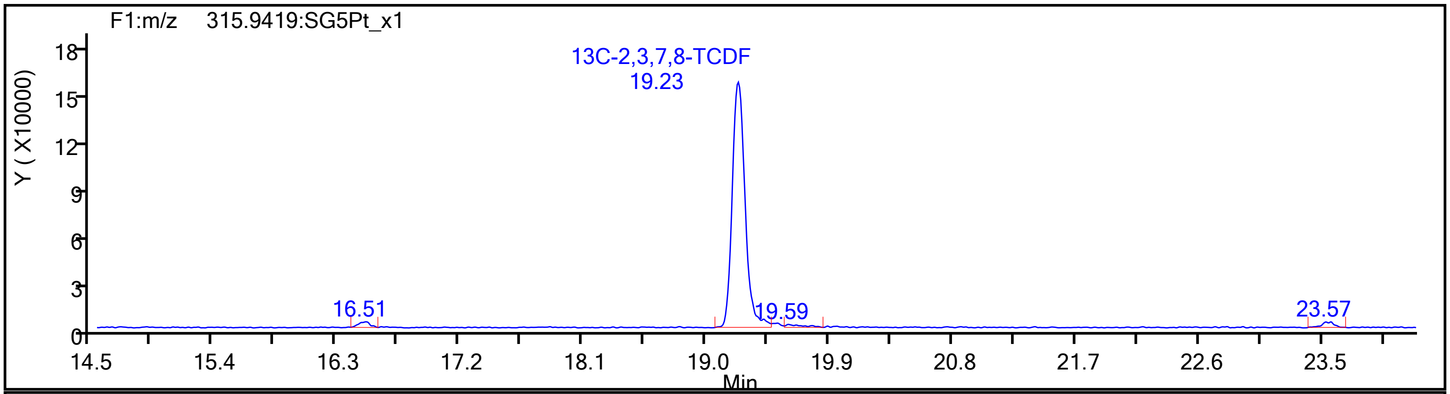

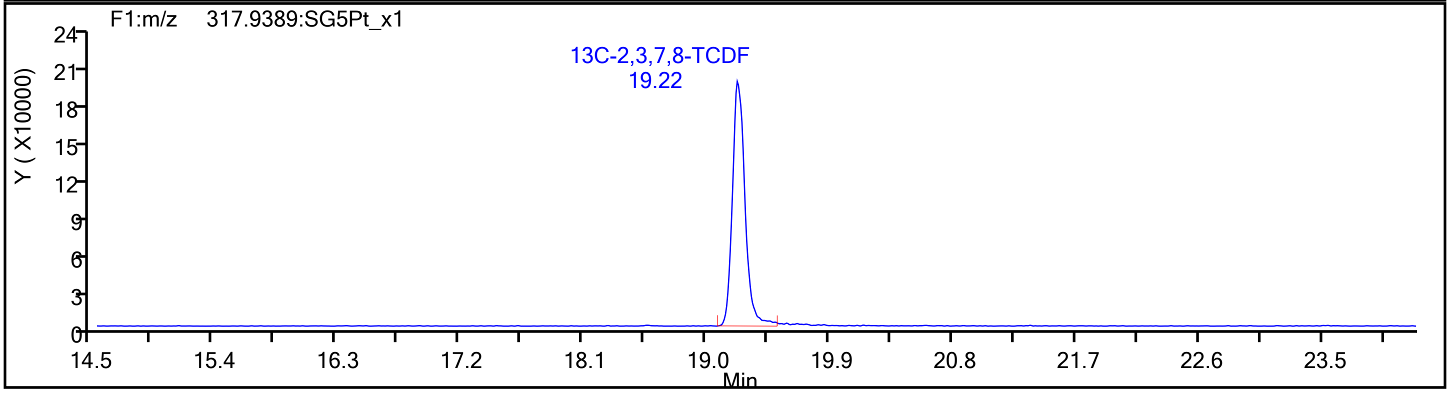

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d

Injection Date:	20-Sep-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	59
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

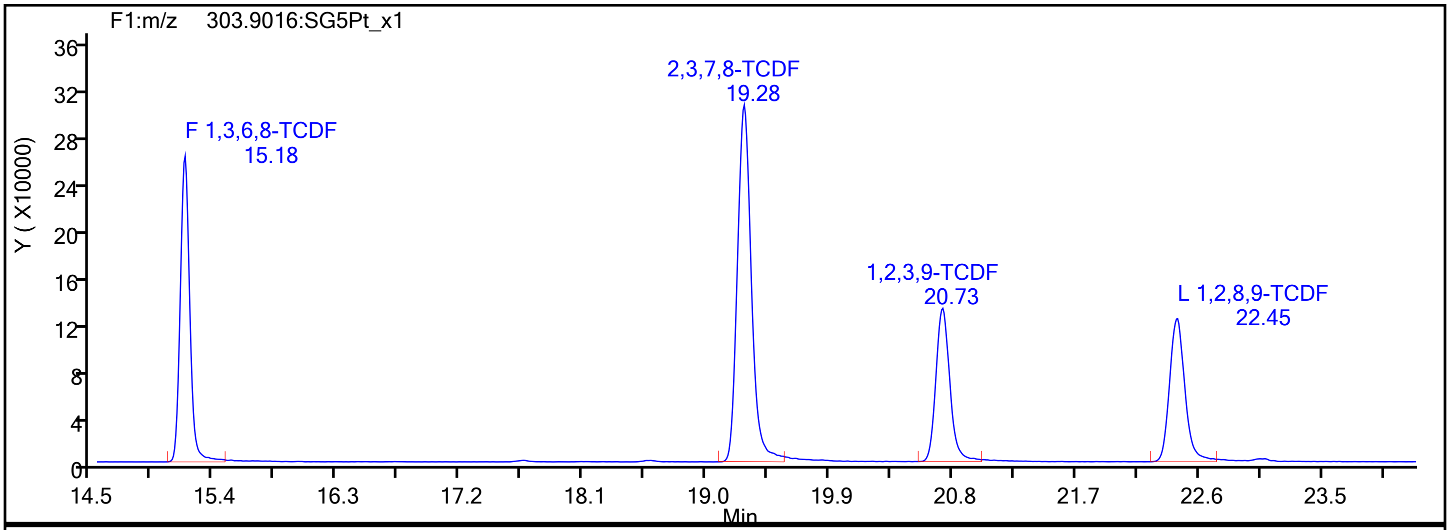

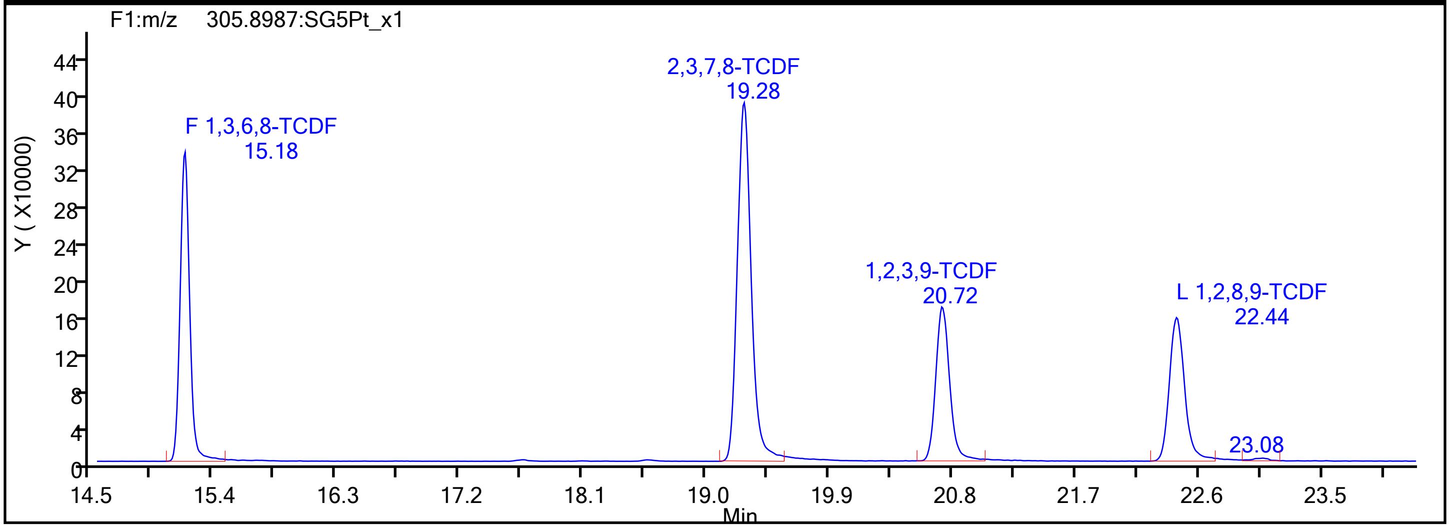

TCDF Interference Mass

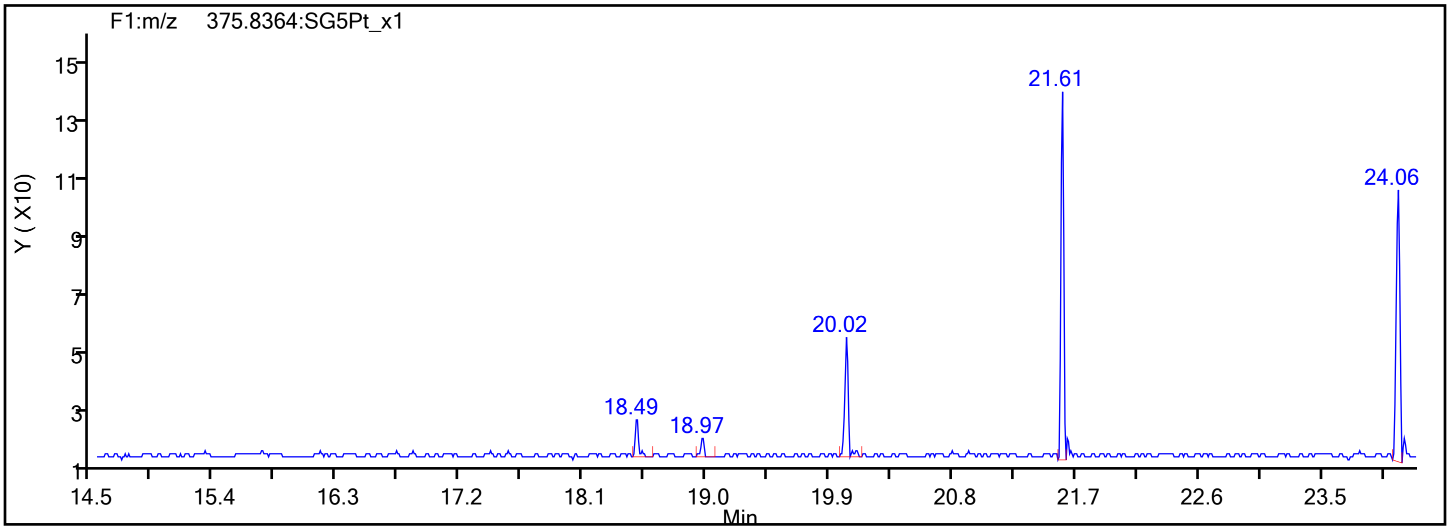

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 59
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

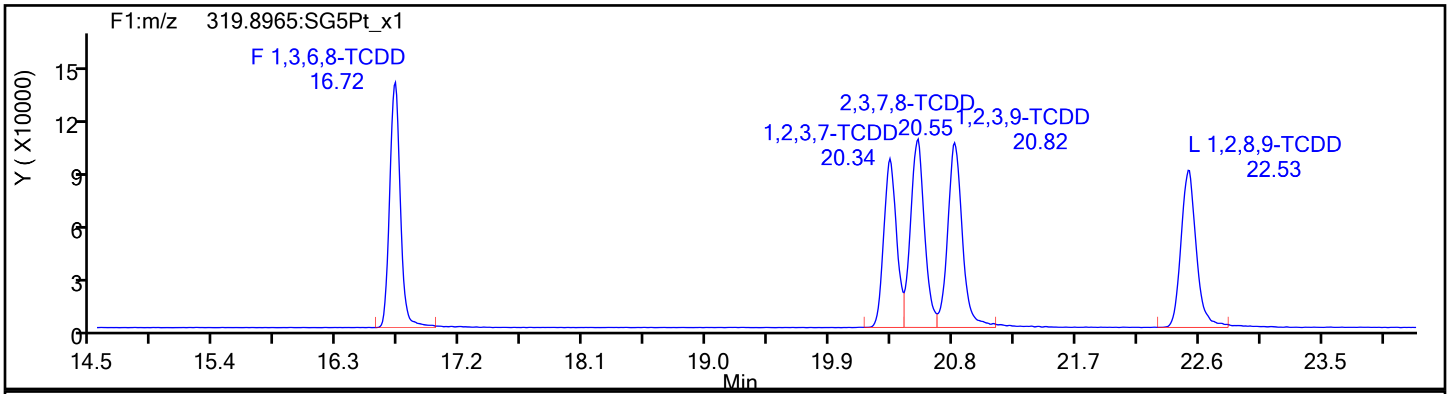

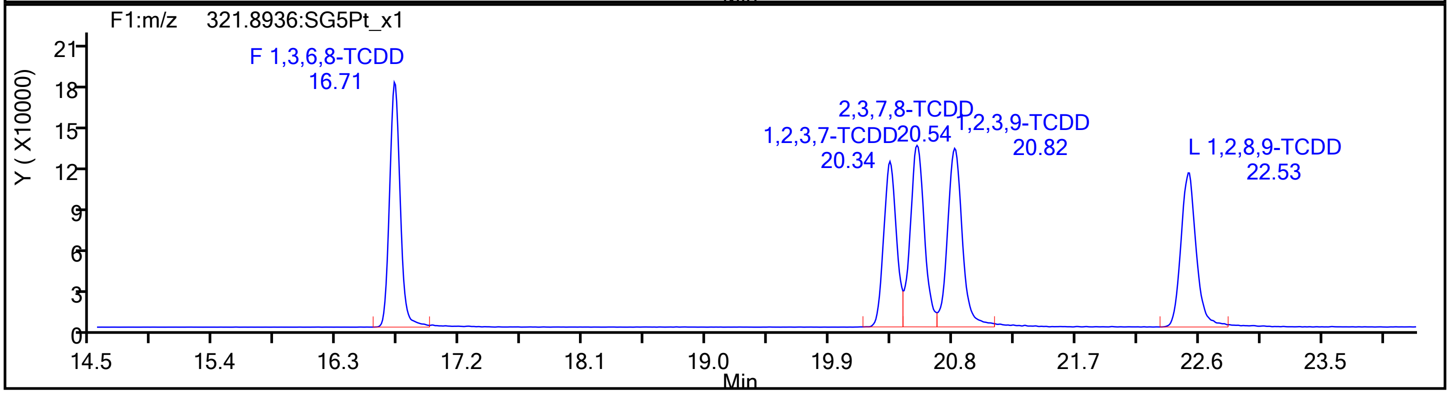

TCDD Standards

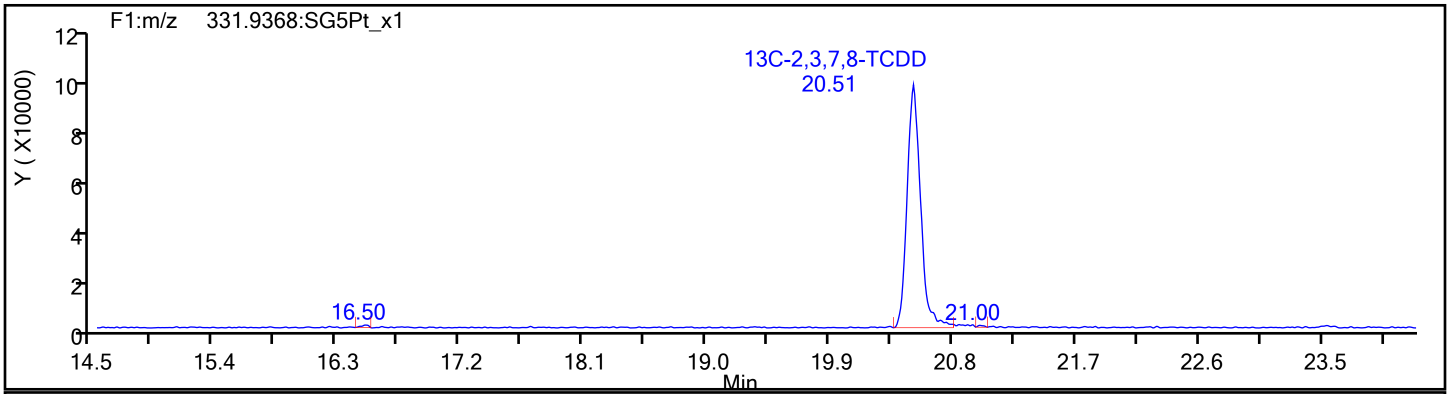

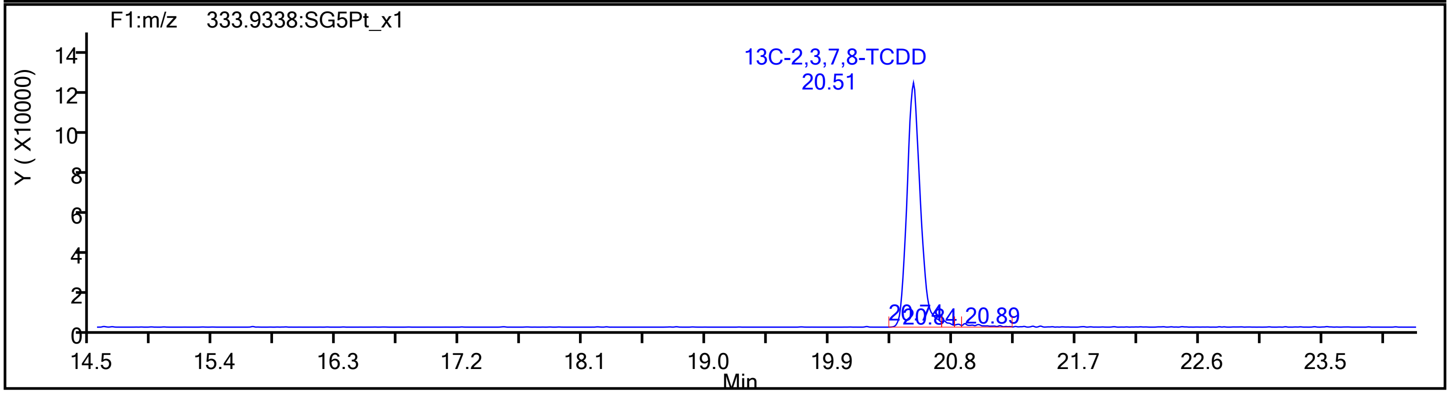

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816 Sample Line#: 59
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

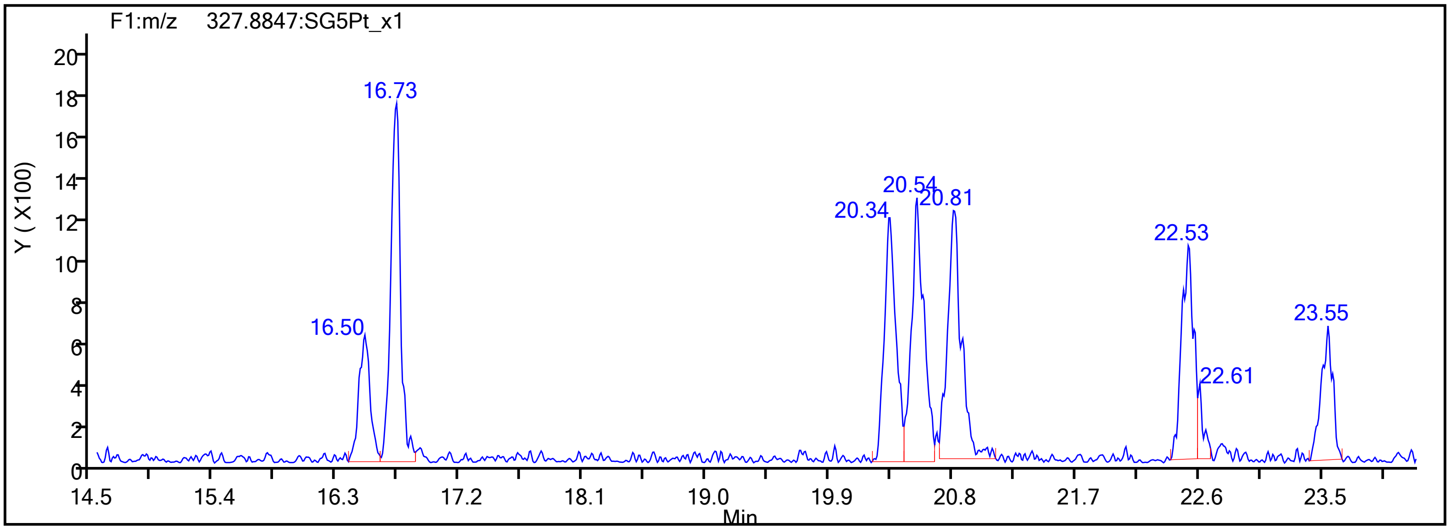

37Cl4-TCDD Standards

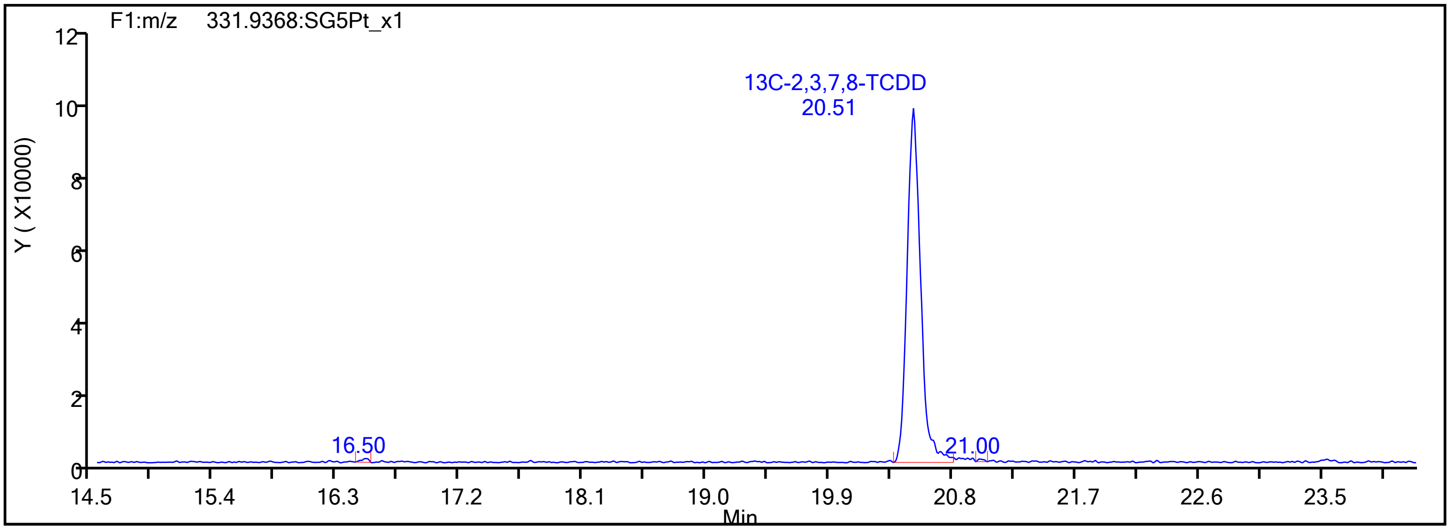

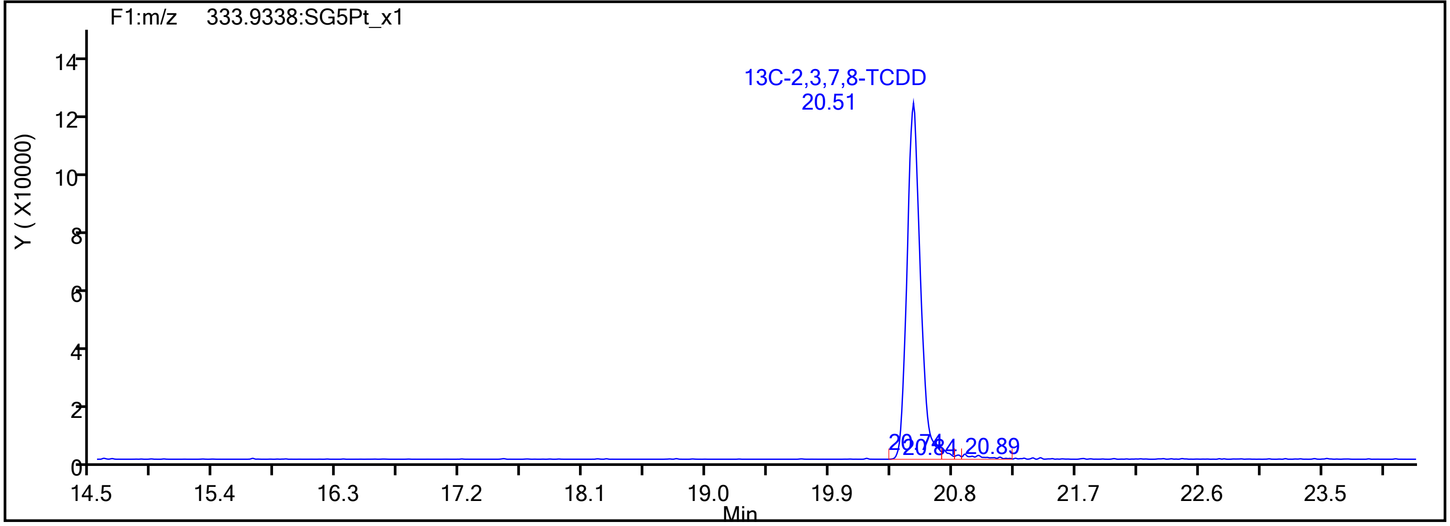

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 59
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

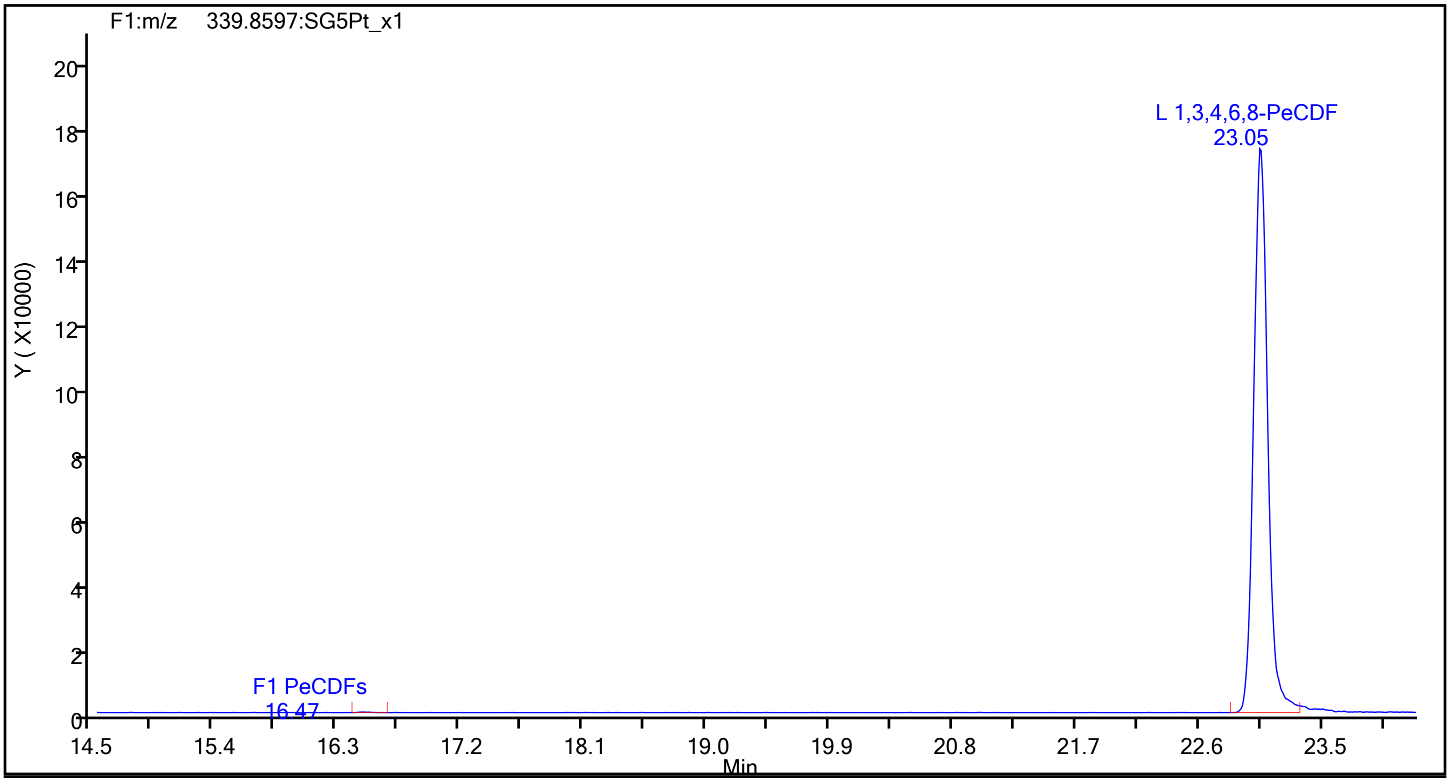

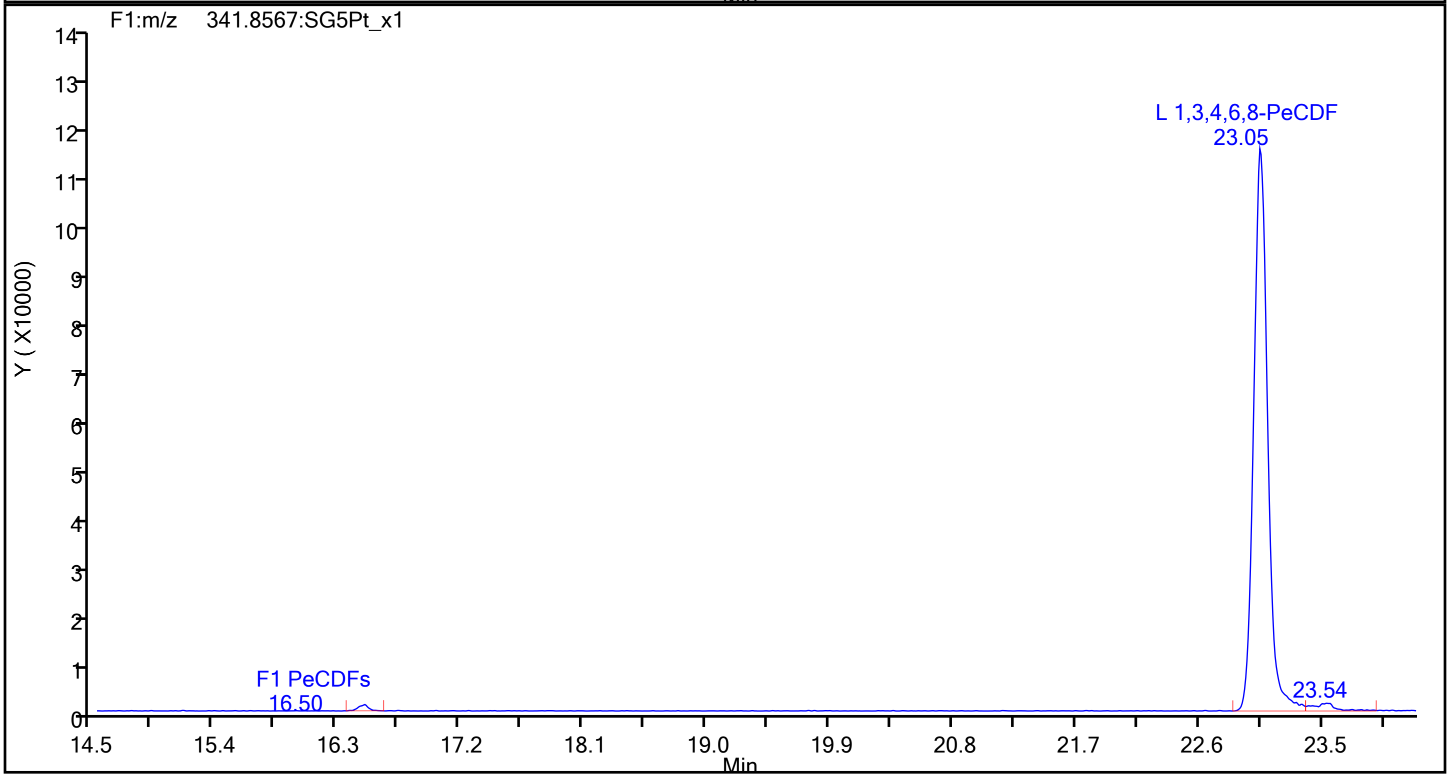

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Injection Date:	20-Sep-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	59
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

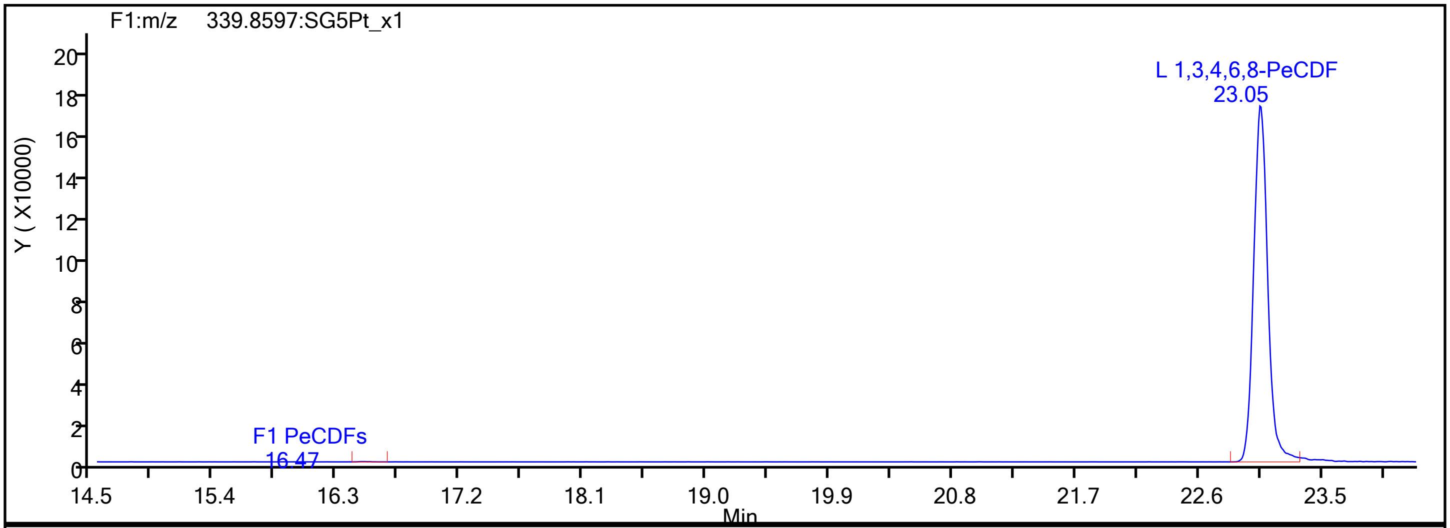

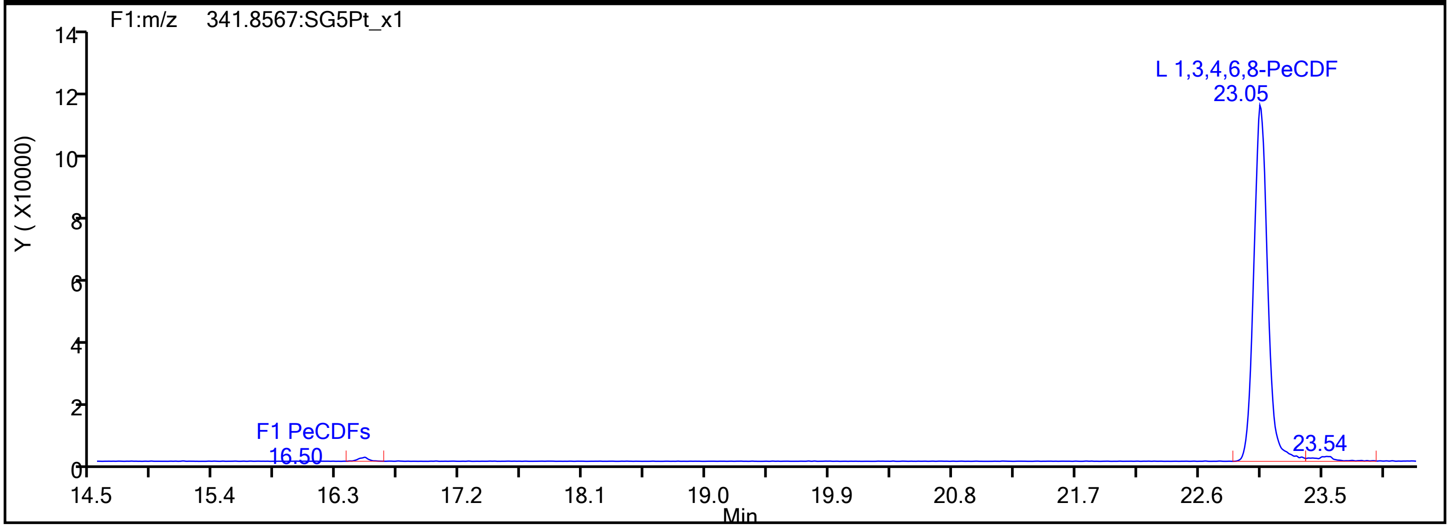

F1 PeCDFs Interference Mass

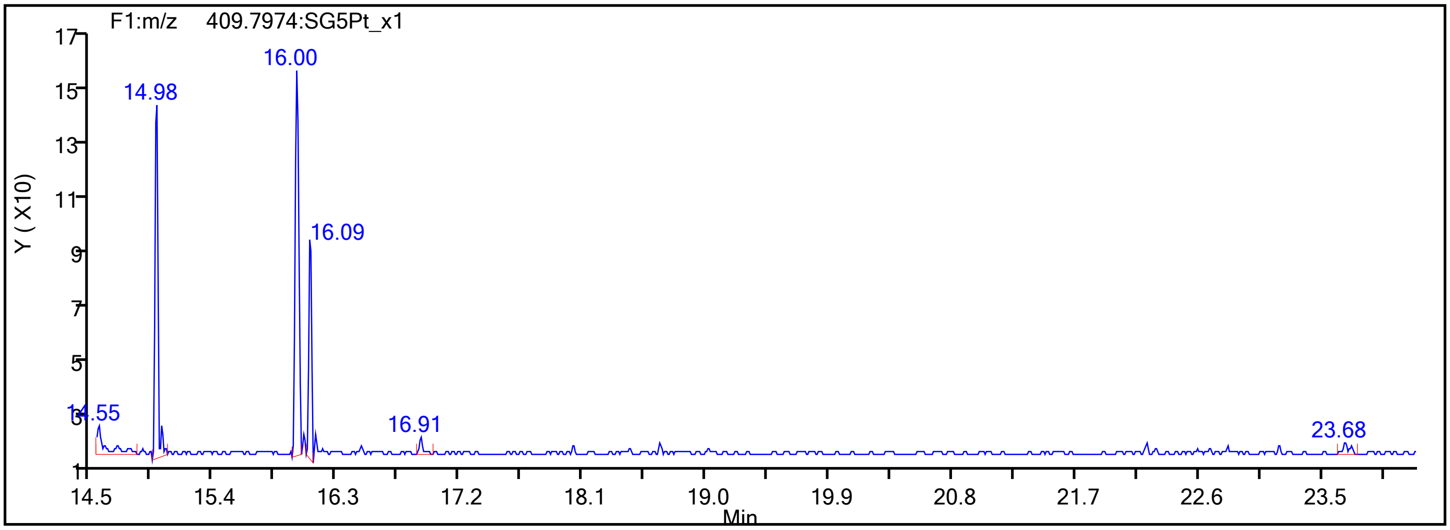

Report Date: 21-Sep-2020 12:53:26   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816   Sample Line#: 59
Column Type: DB-5   Column Dia: 0.32 mm

PeCDF

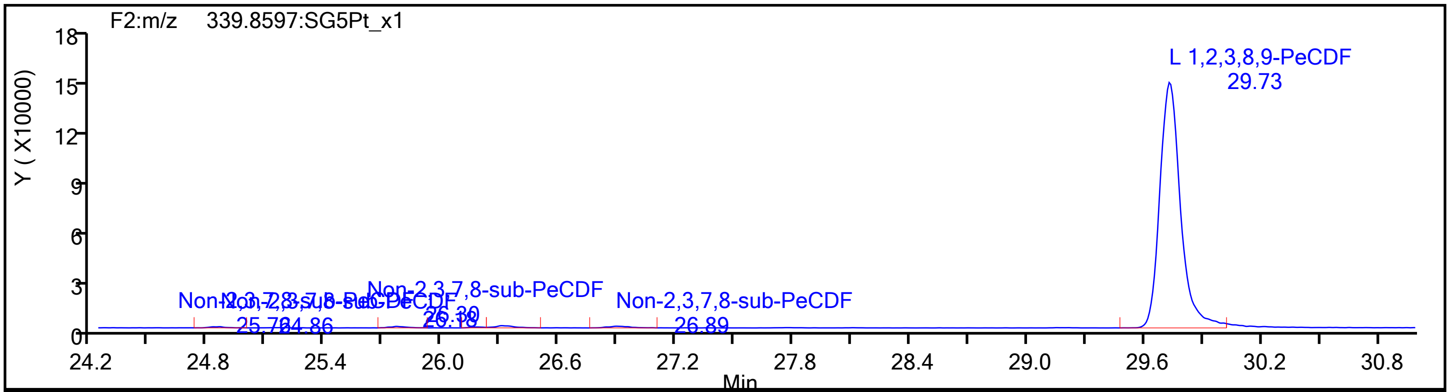

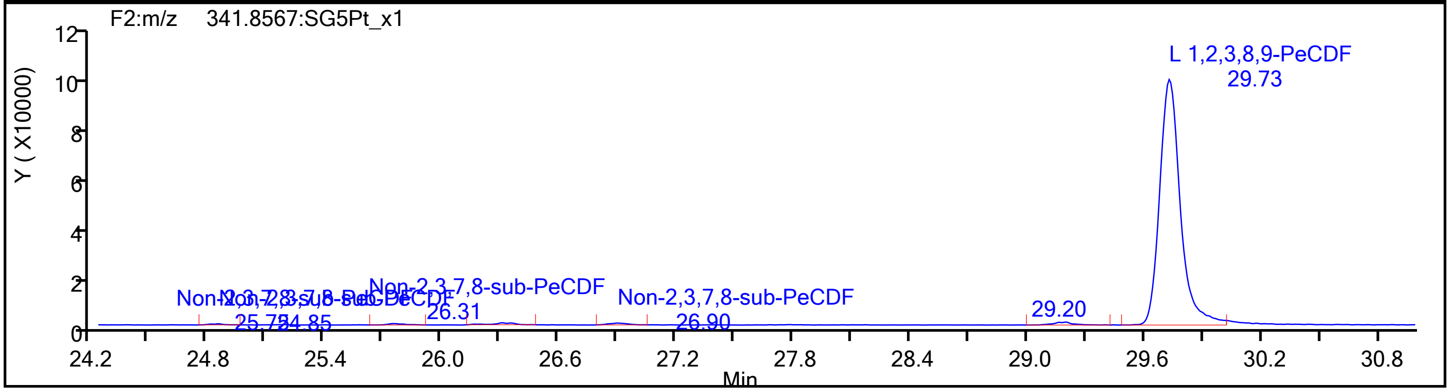

PeCDF Standards

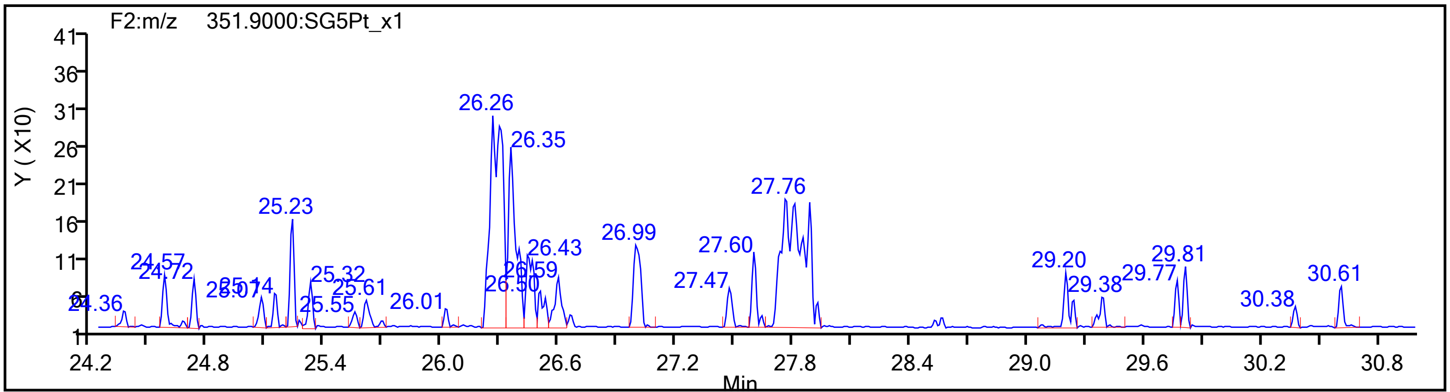

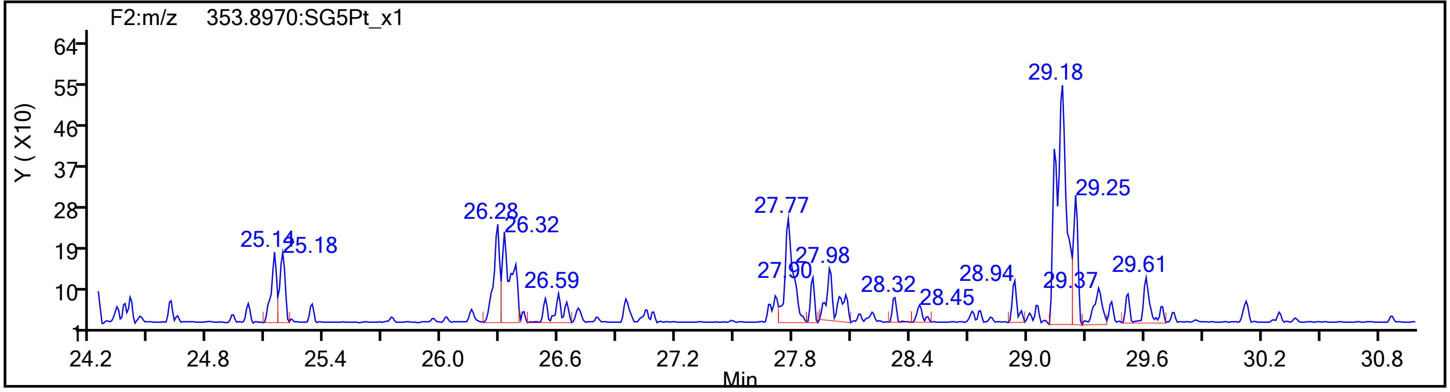

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 59
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

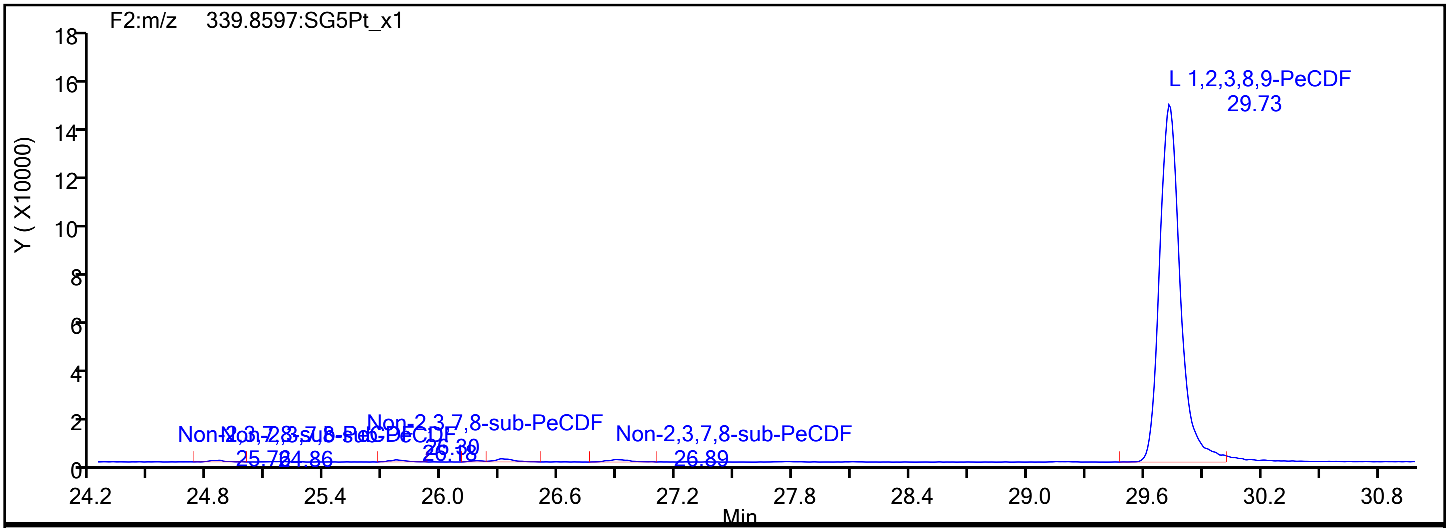

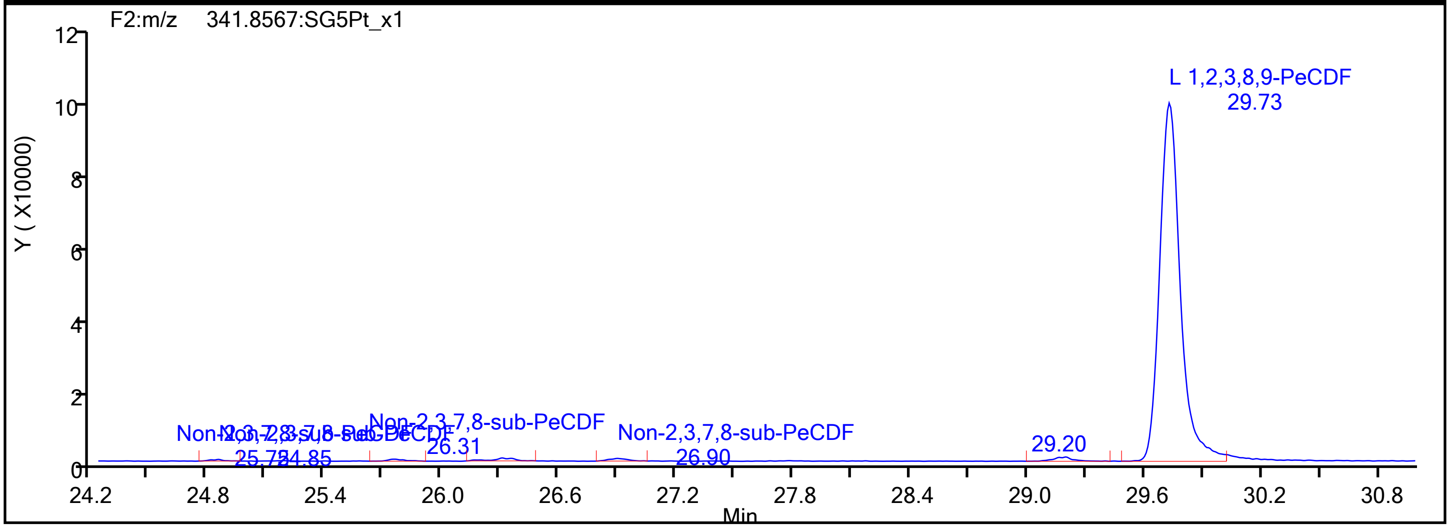

PeCDF Interference Mass

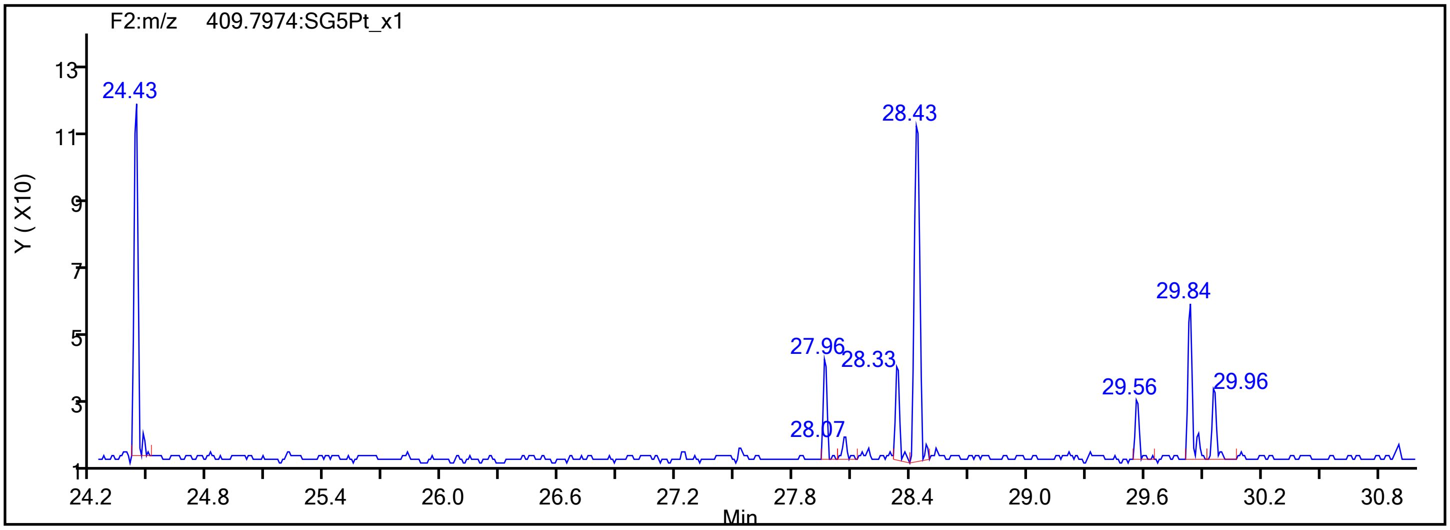

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Injection Date:	20-Sep-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	59
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

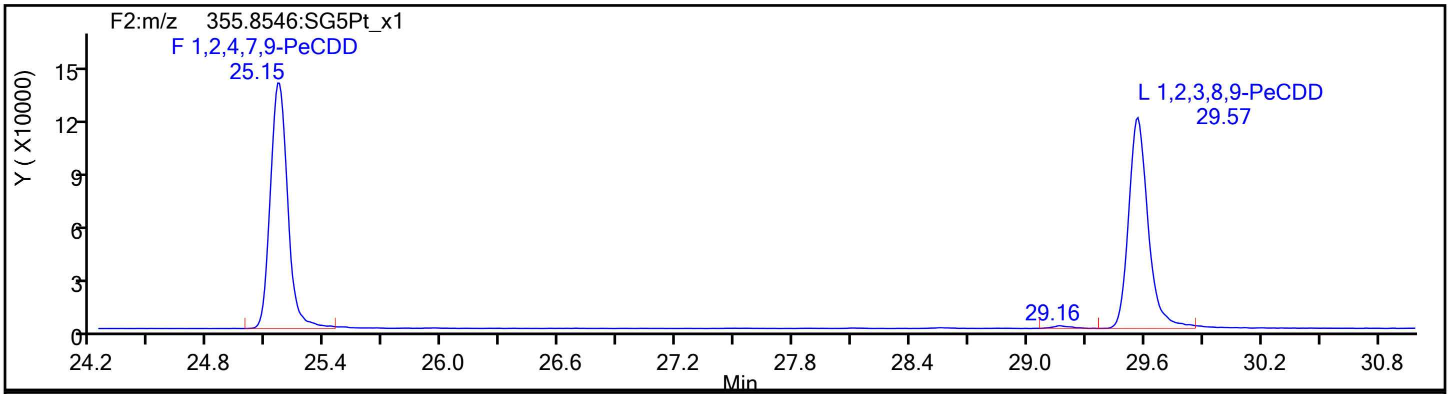

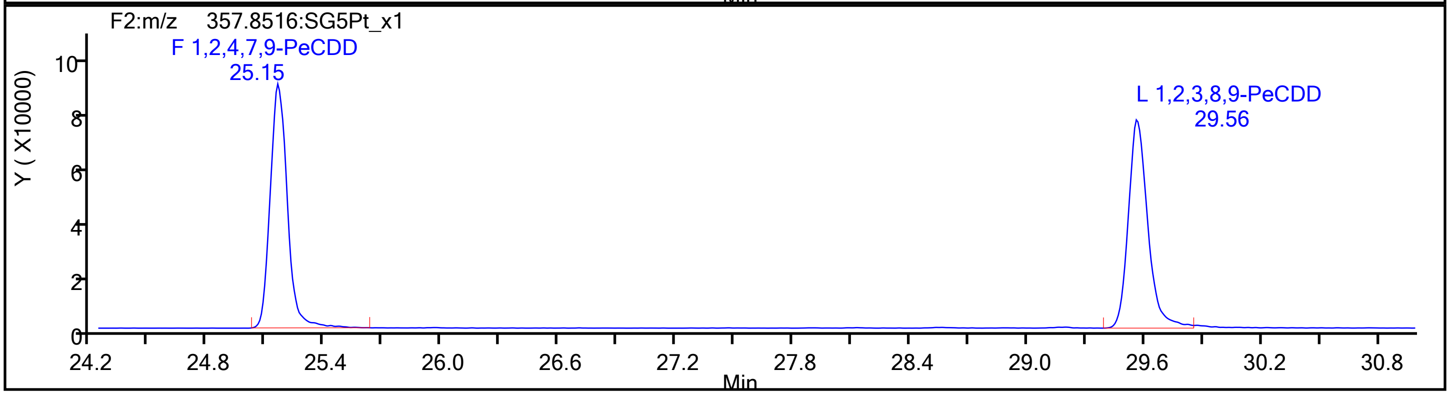

PeCDD Standards

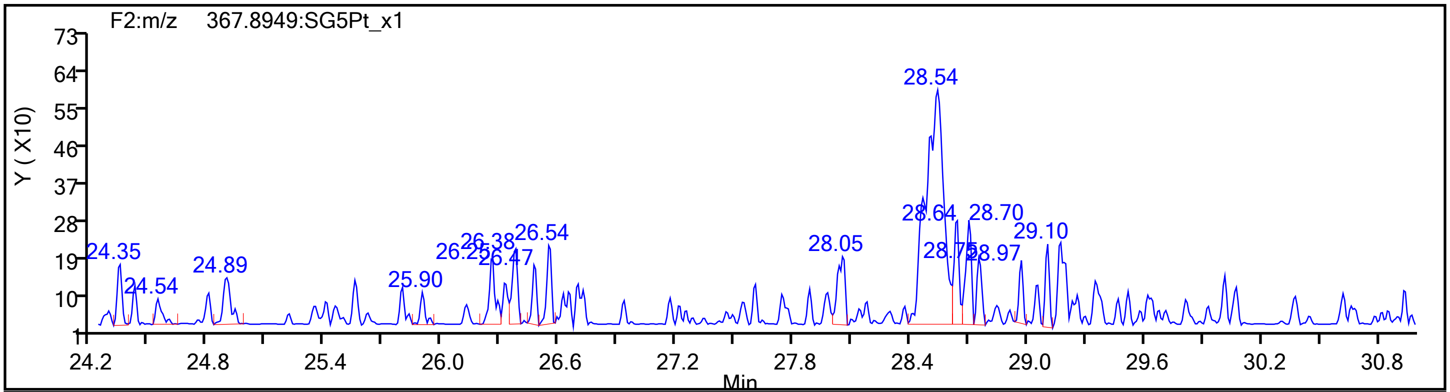

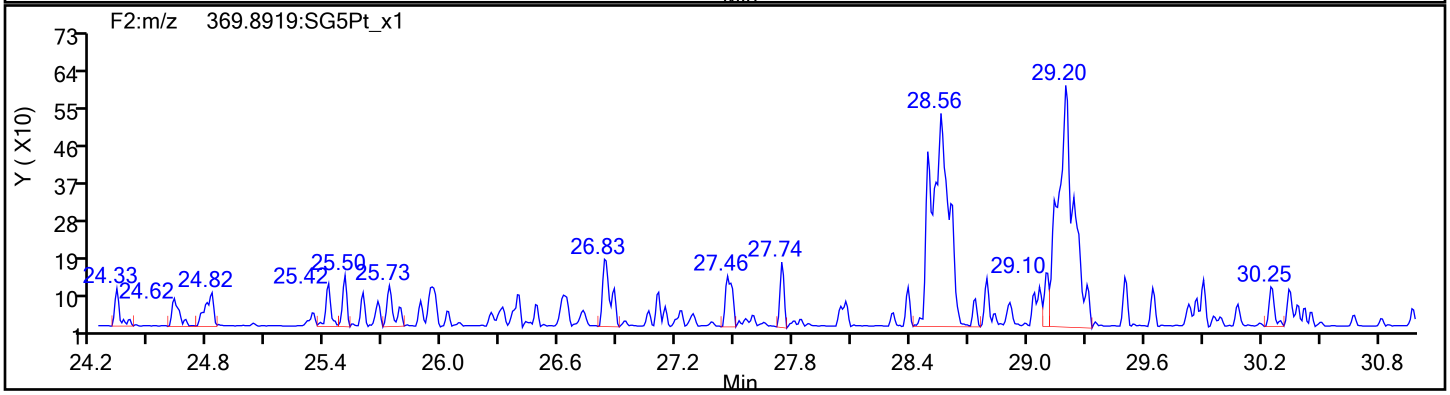

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Injection Date:	20-Sep-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	59
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

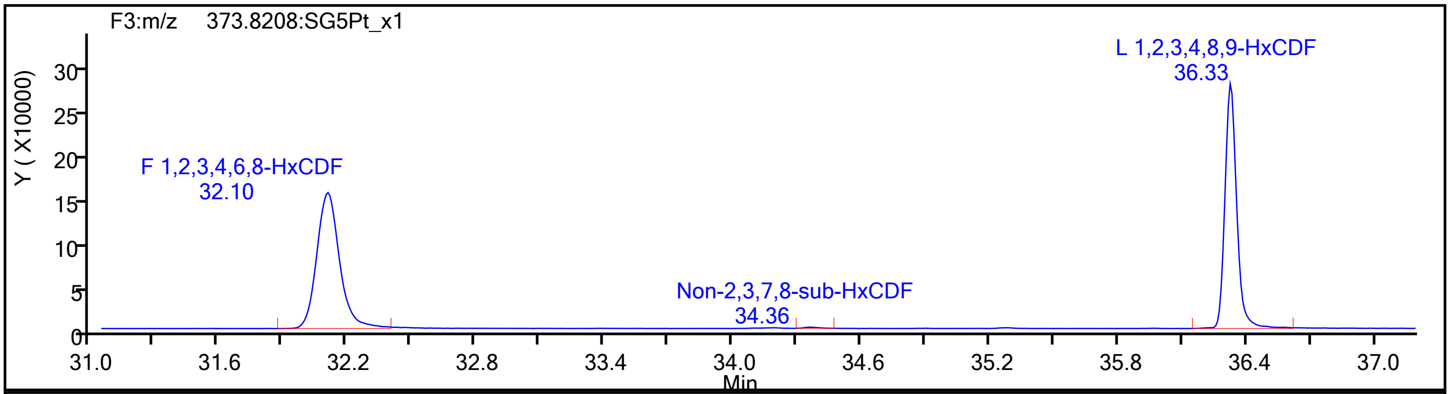

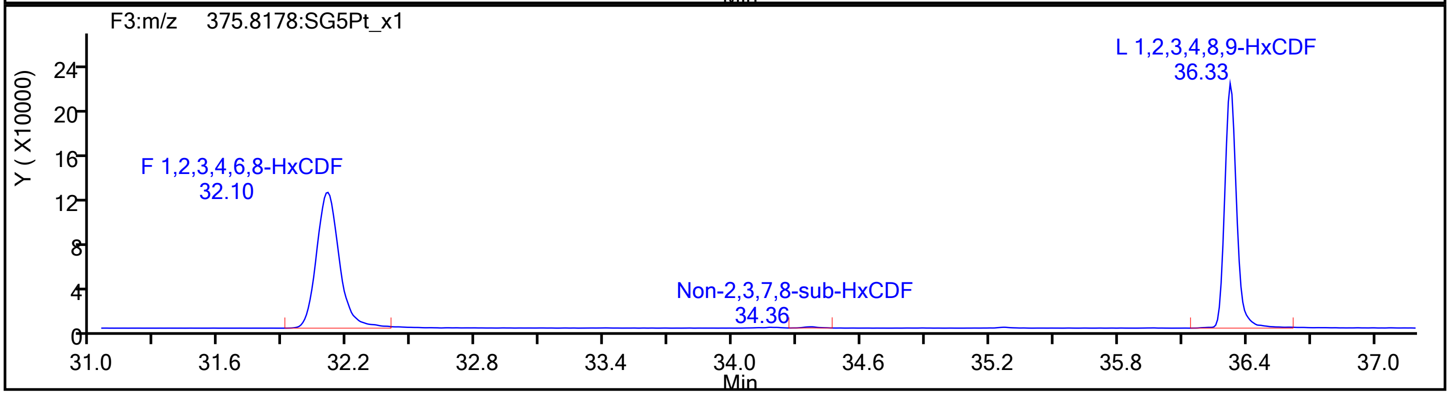

HxCDF Standards

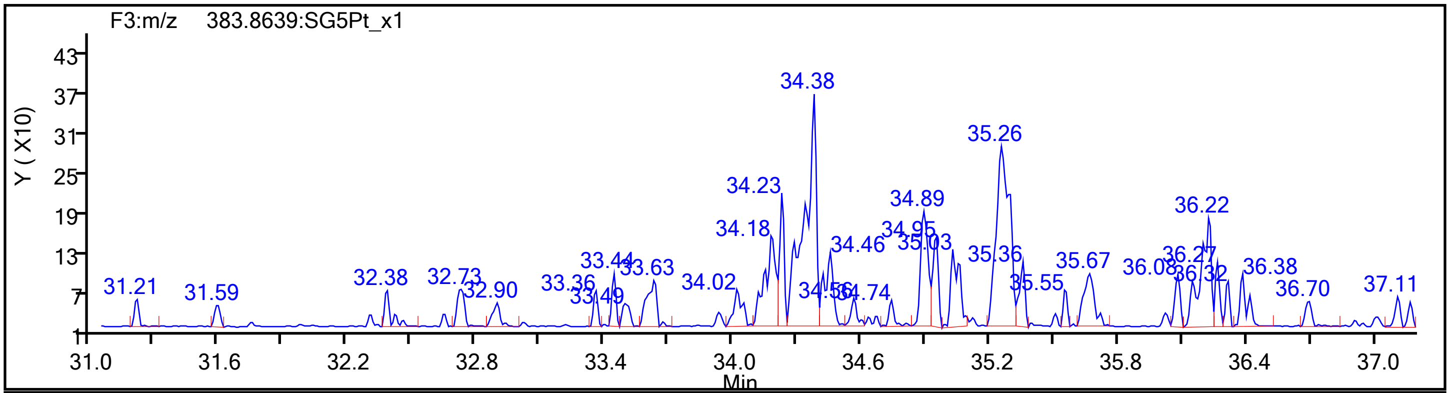

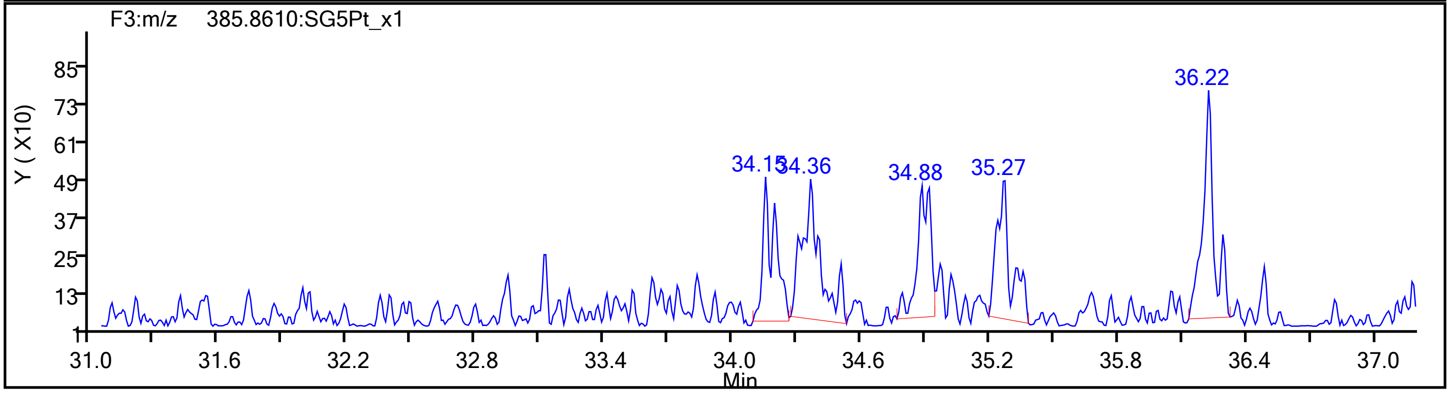

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d

Injection Date: 20-Sep-2020 15:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816 Sample Line#: 59

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

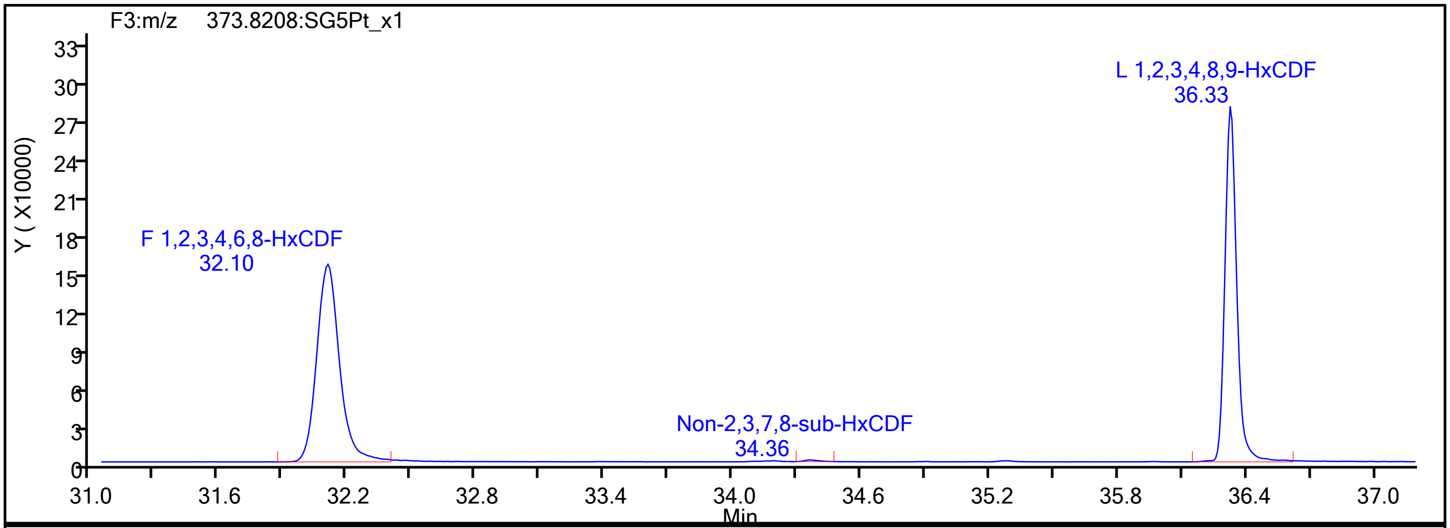

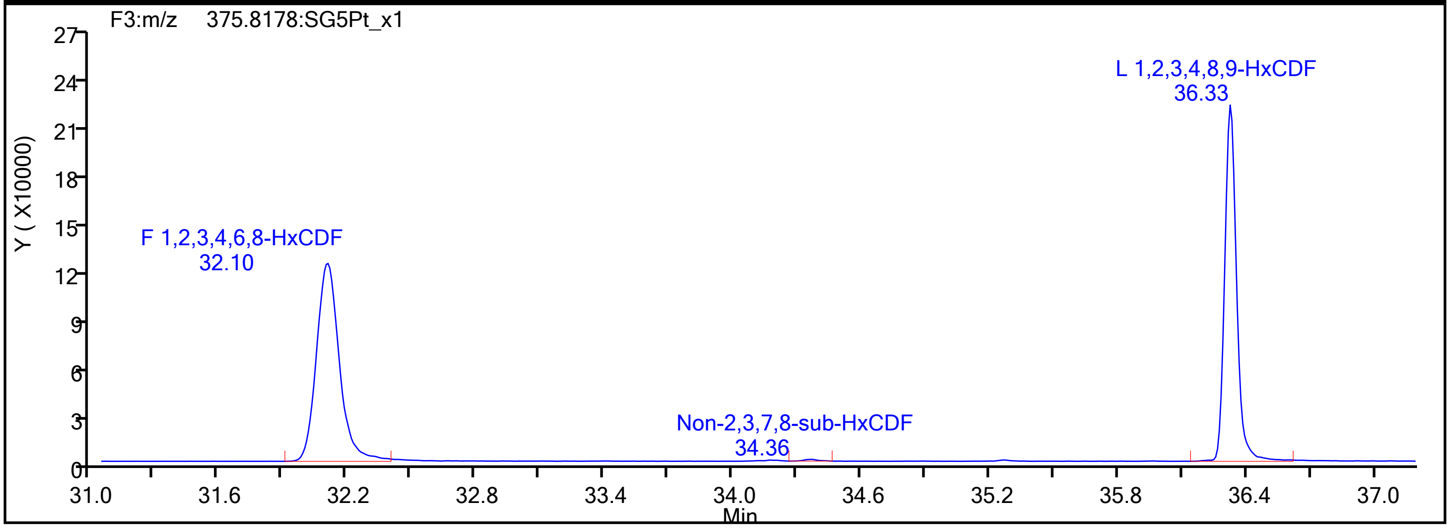

HxCDF Interference Mass

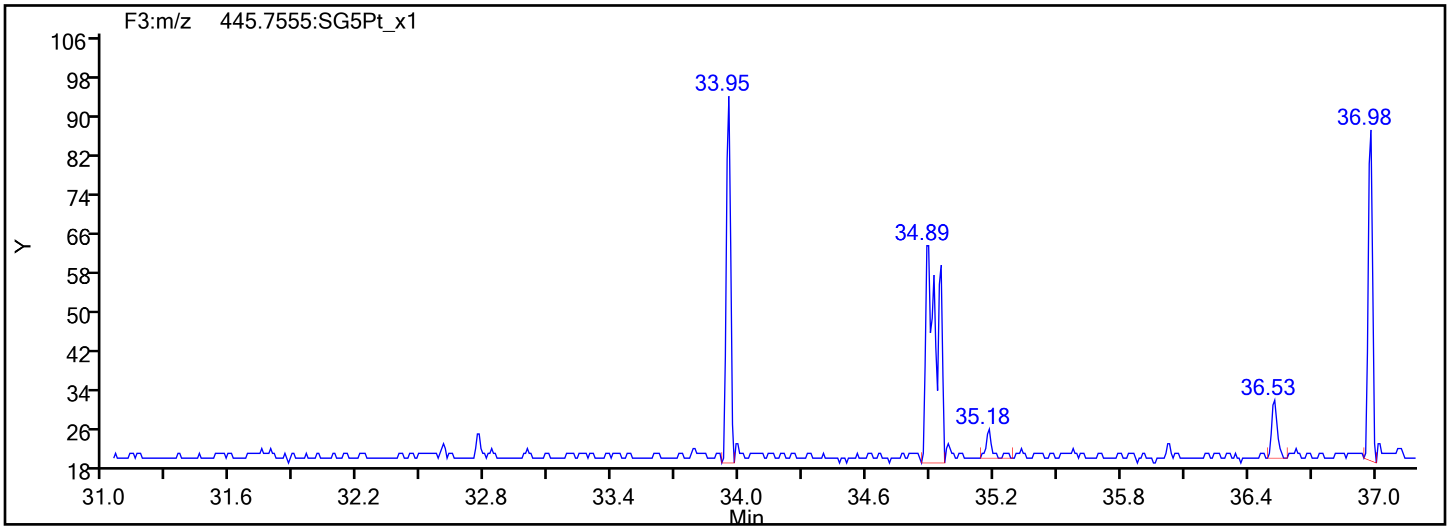

Report Date: 21-Sep-2020 12:53:26   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816   Sample Line#: 59
Column Type: DB-5   Column Dia: 0.32 mm

HxCDD

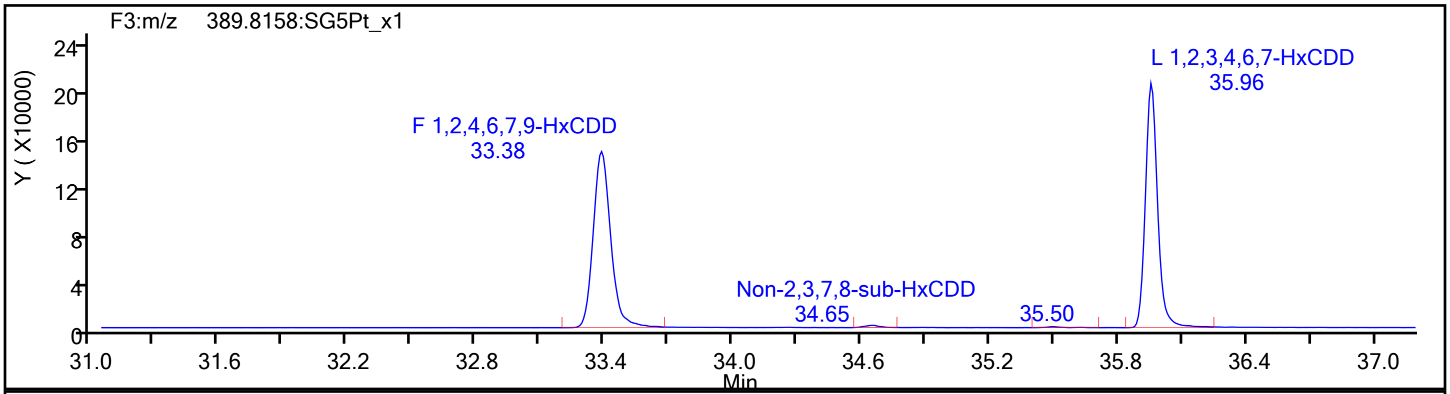

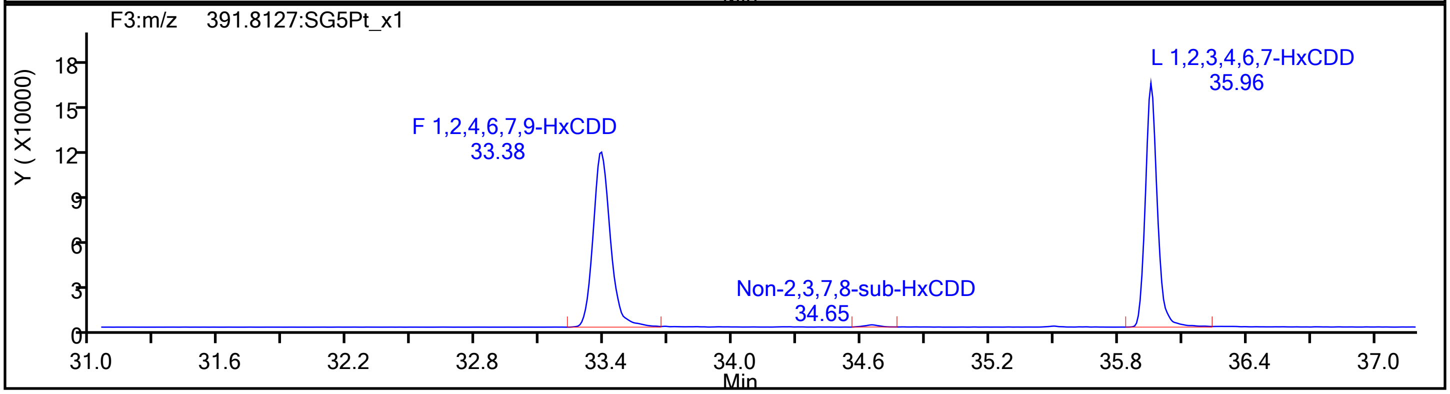

HxCDD Standards

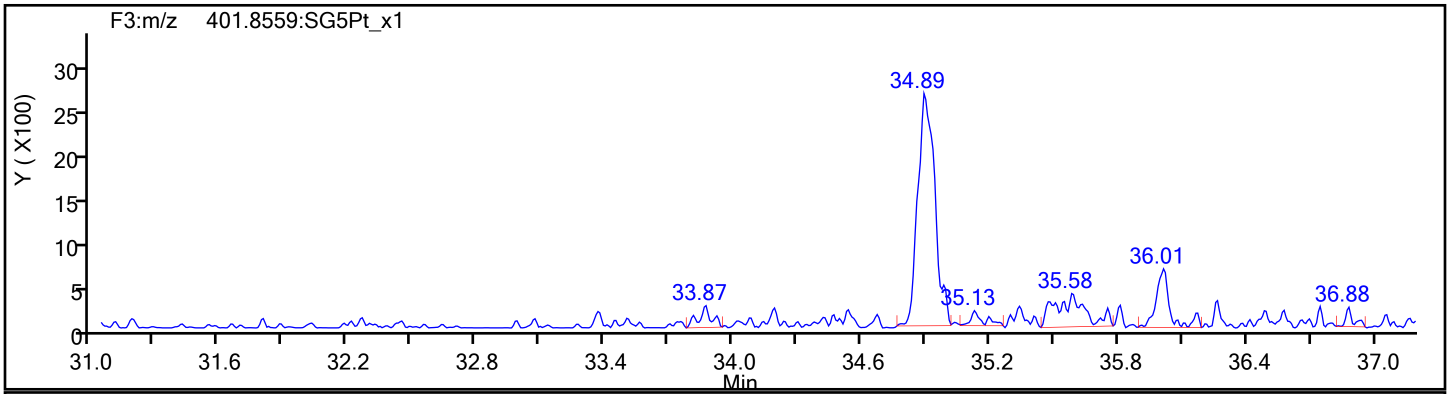

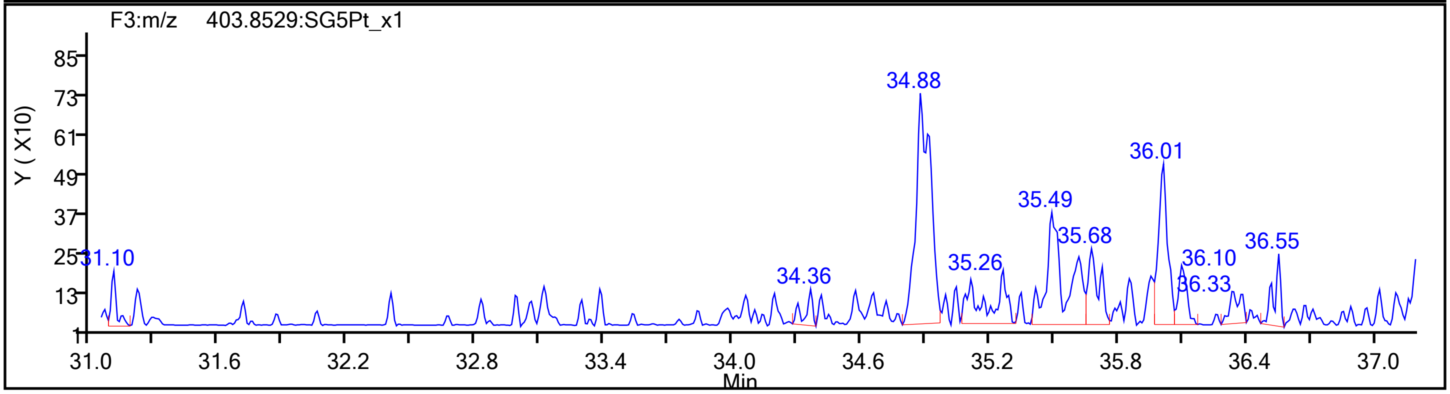

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d

Injection Date: 20-Sep-2020 15:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816 Sample Line#: 59

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

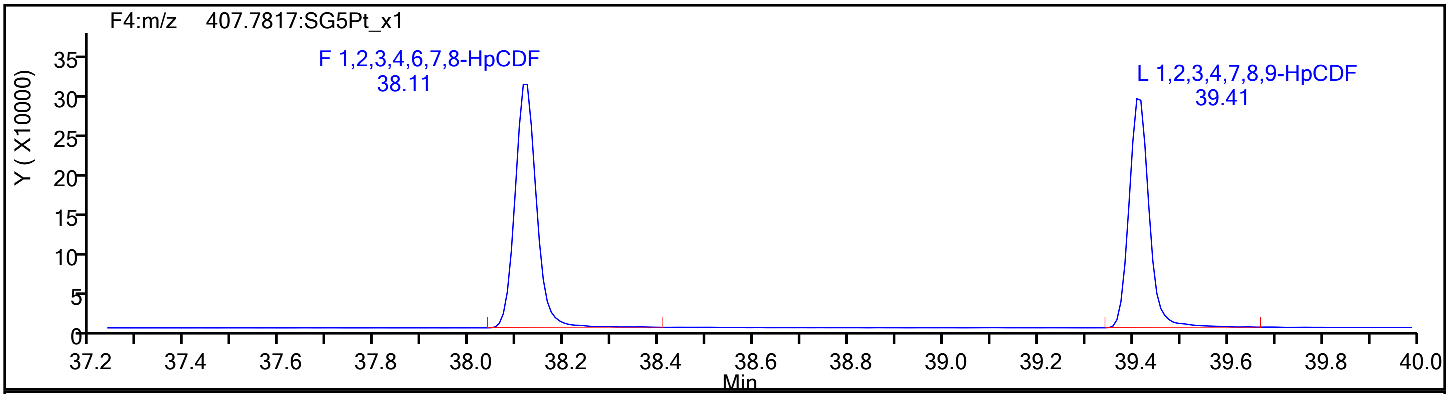

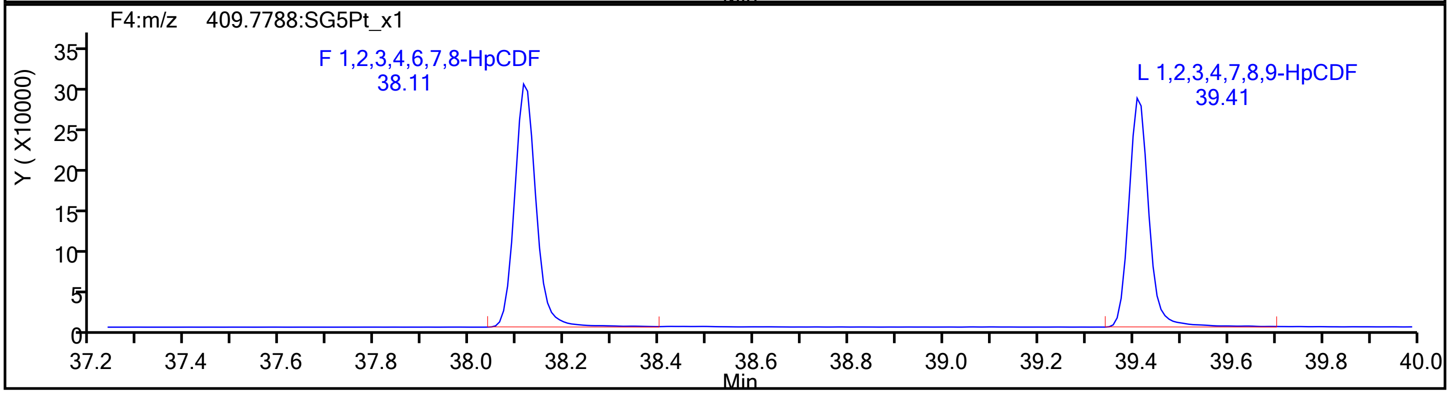

HpCDF Standards

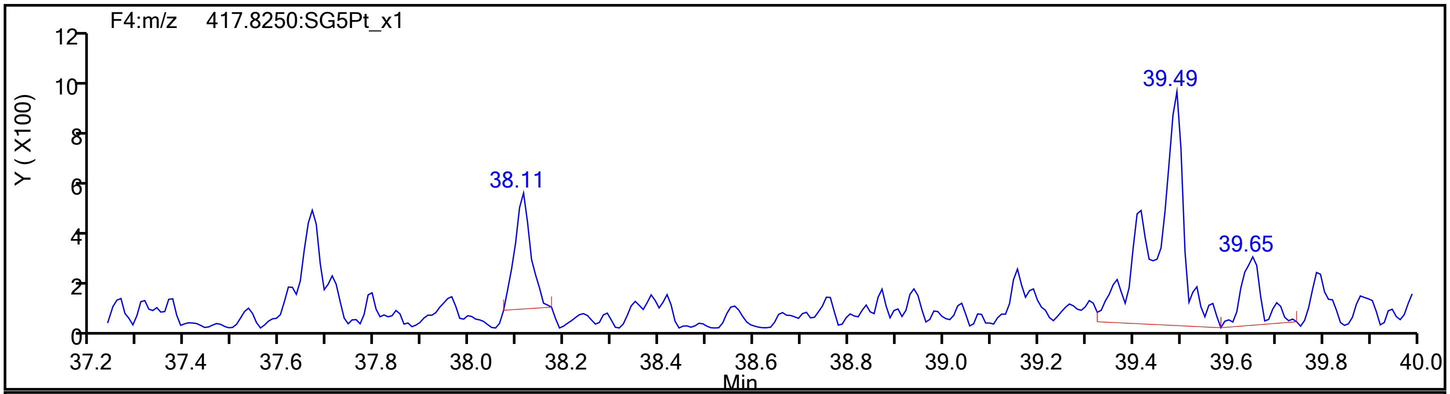

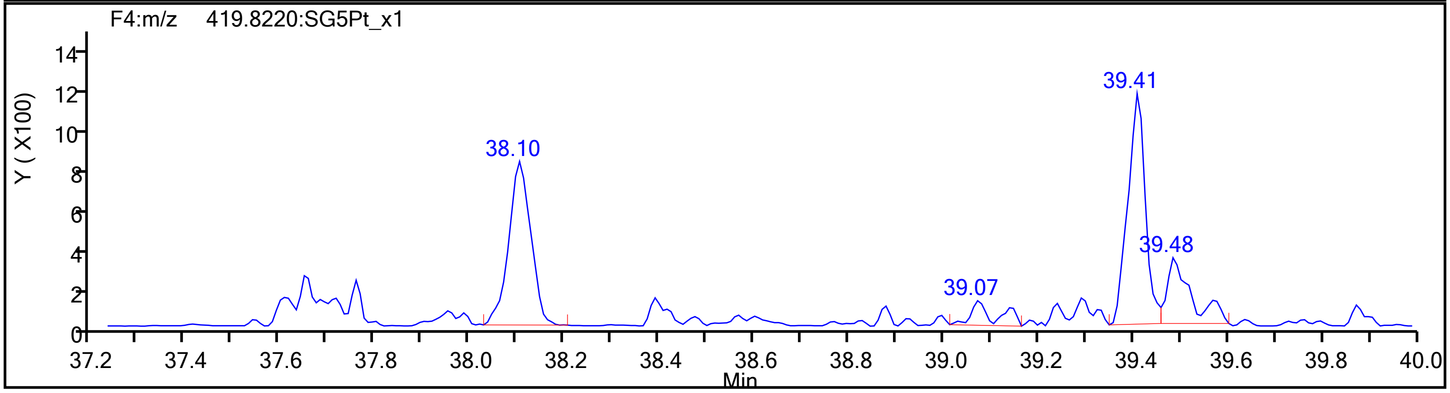

Report Date: 21-Sep-2020 12:53:26
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d
Injection Date: 20-Sep-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 59
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

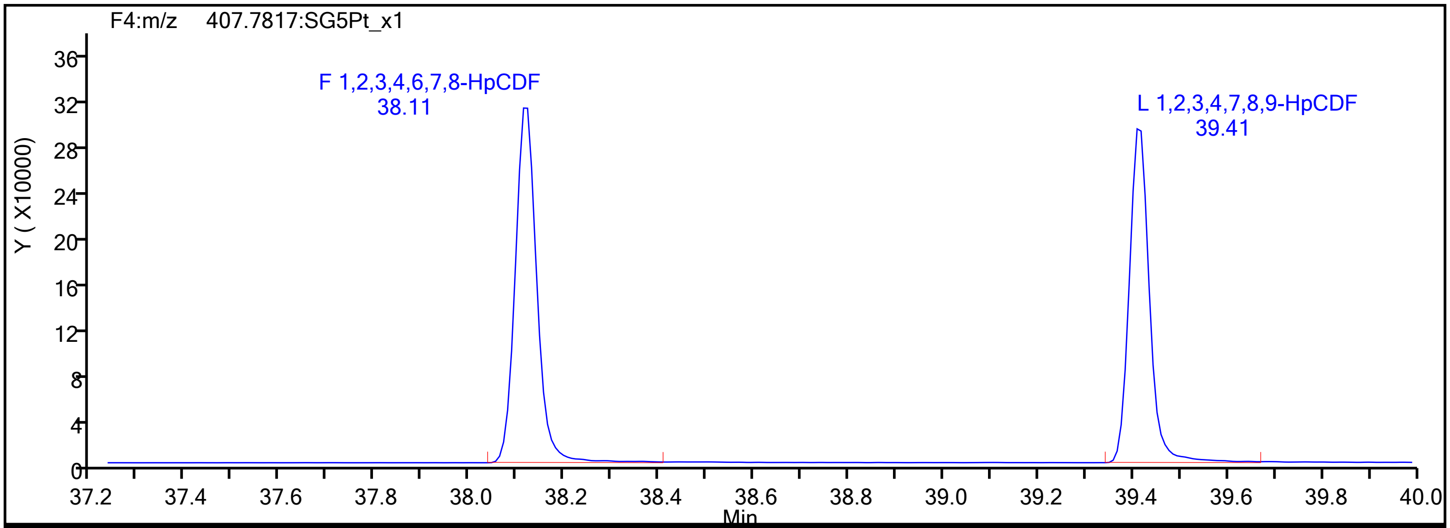

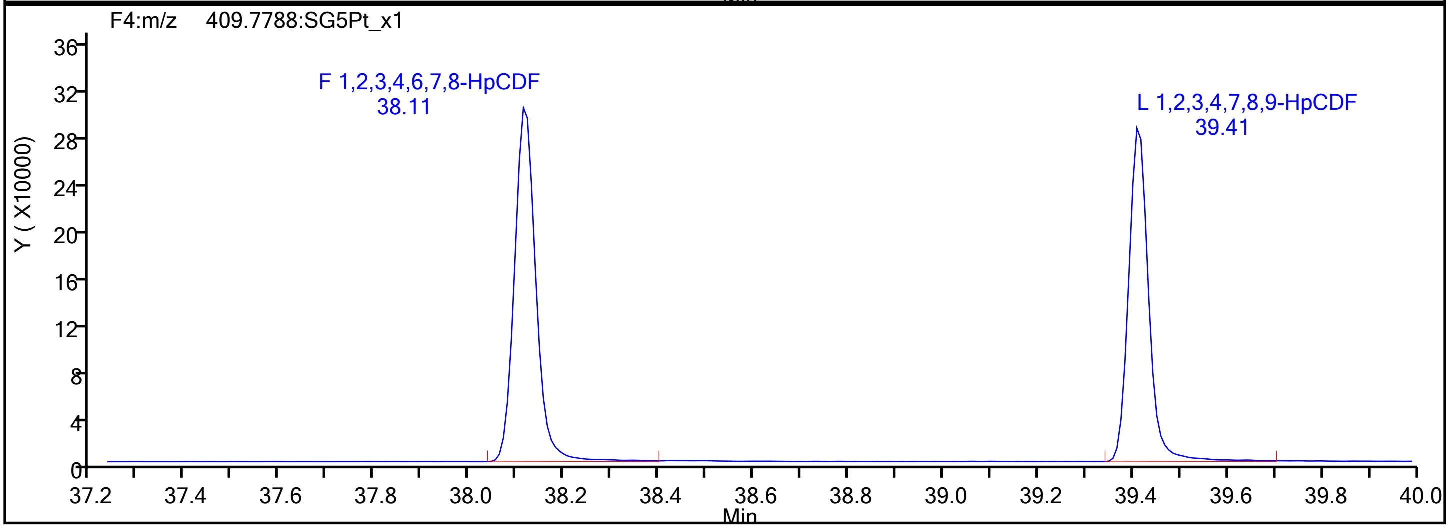

HpCDF Interference Mass

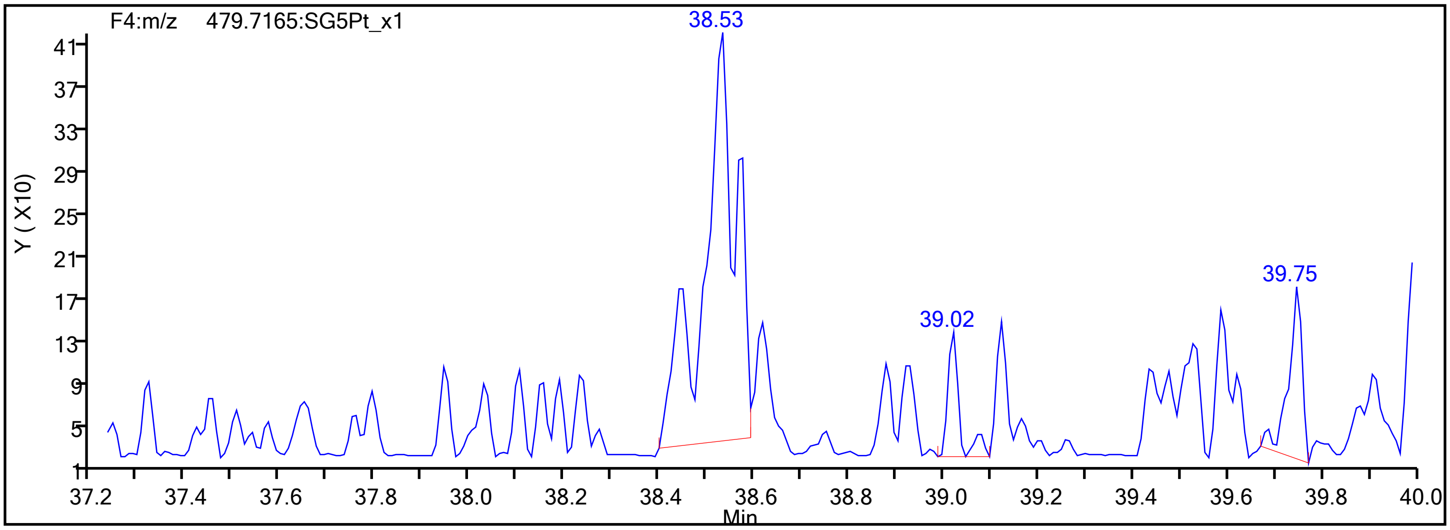

Report Date: 21-Sep-2020 12:53:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 59
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

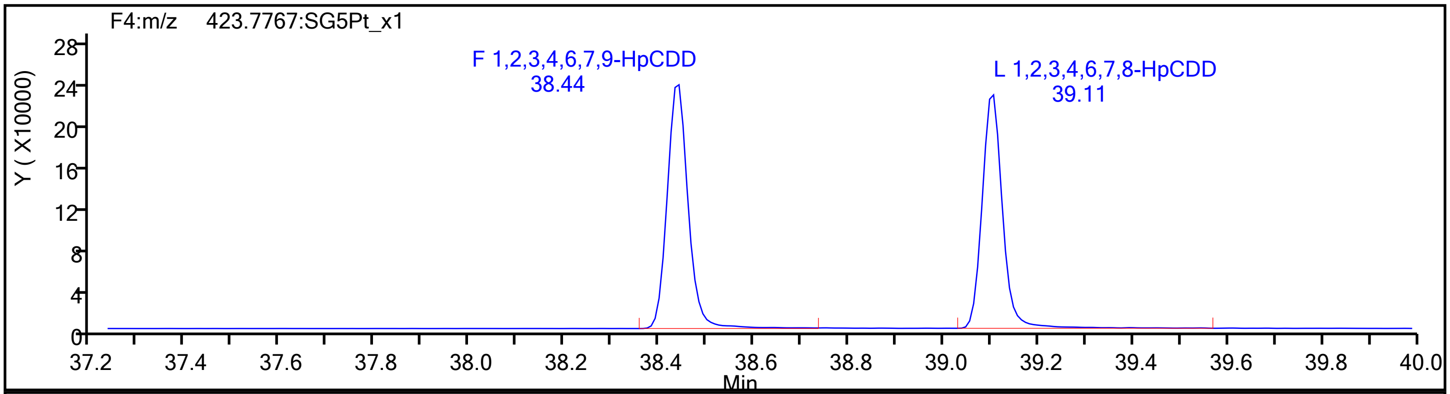

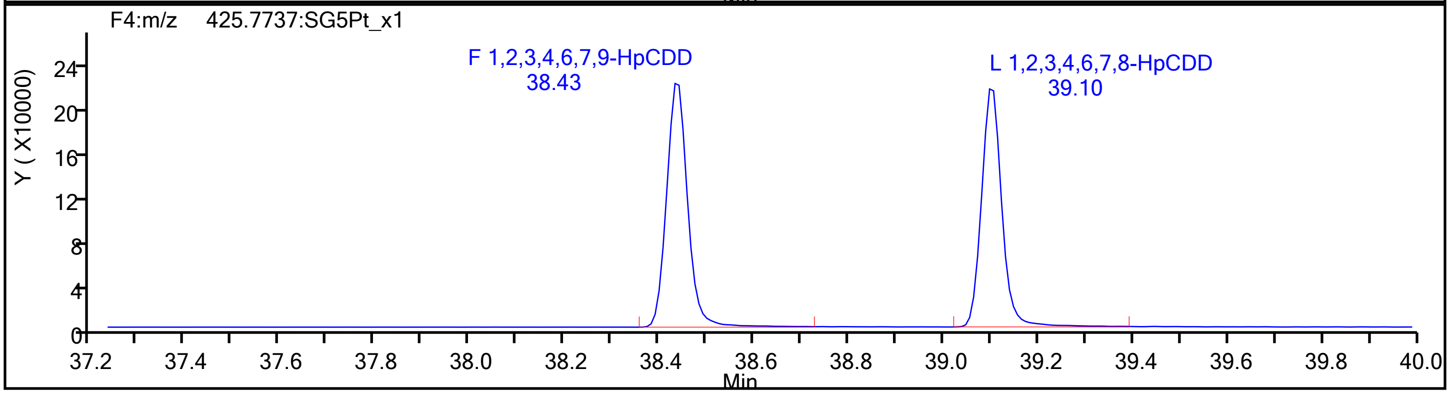

HpCDD Standards

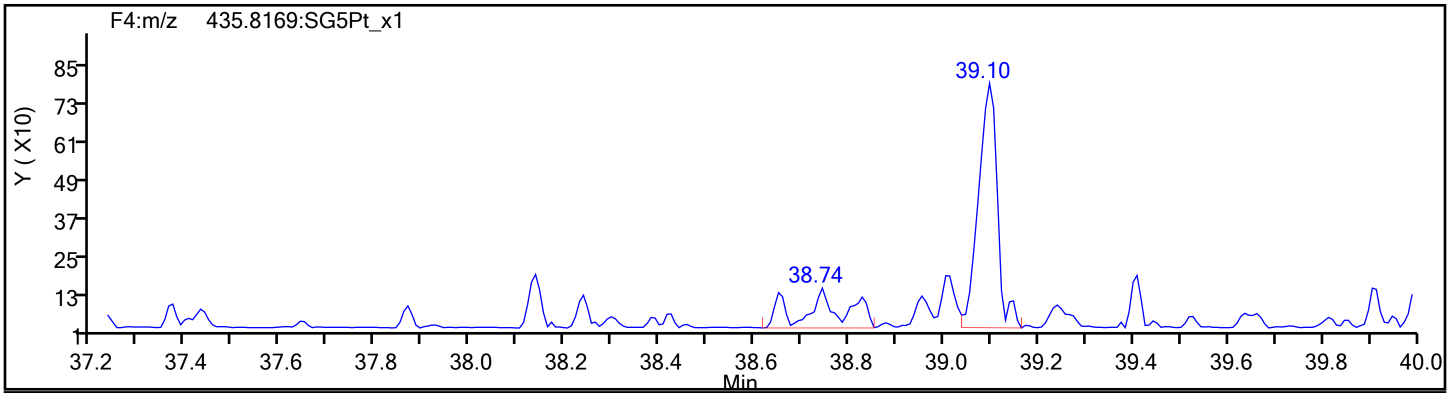

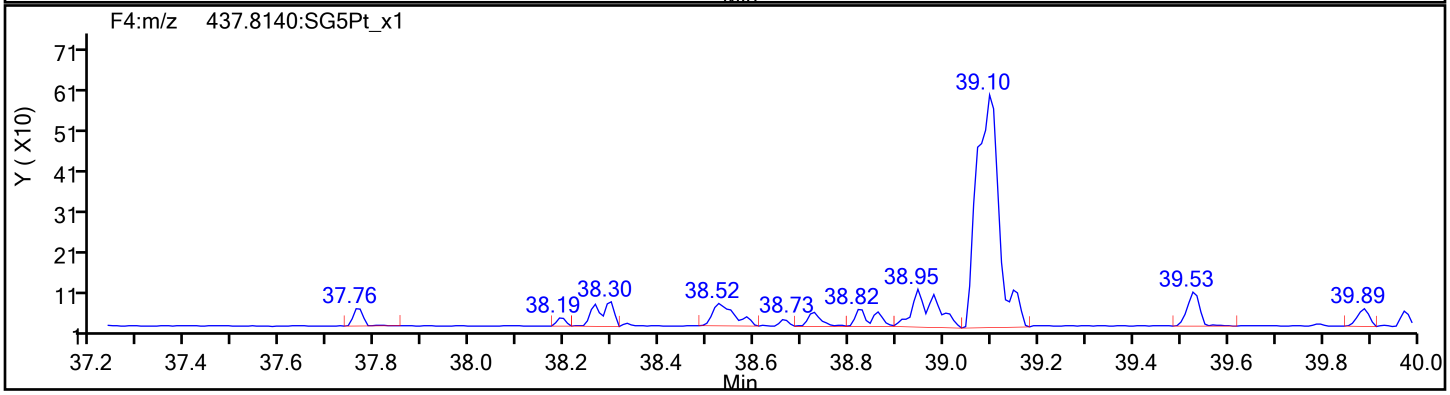

Report Date: 21-Sep-2020 12:53:27 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d

Injection Date: 20-Sep-2020 15:53:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816

Sample Line#: 59

Column Type: DB-5

Column Dia: 0.32 mm

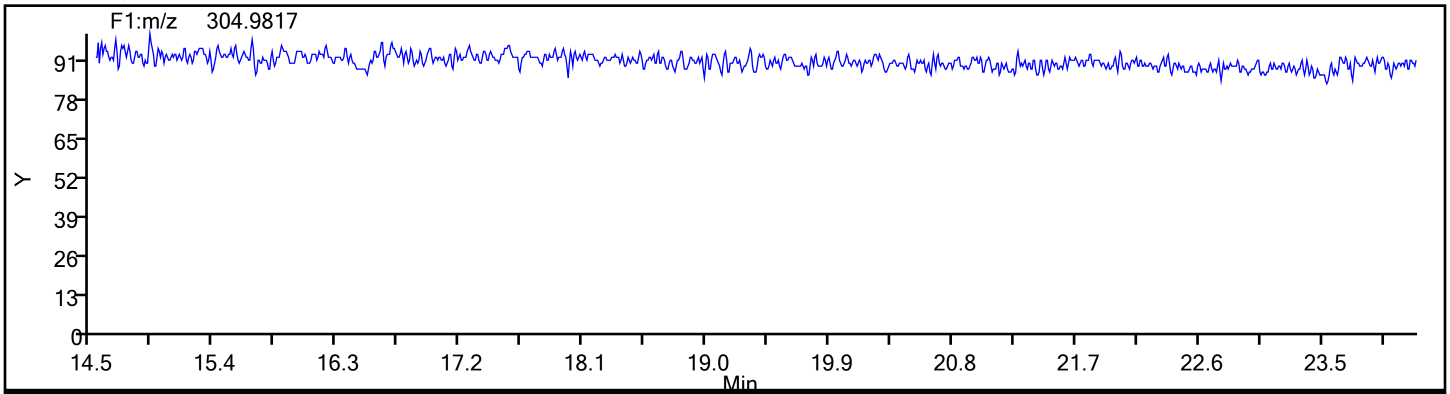

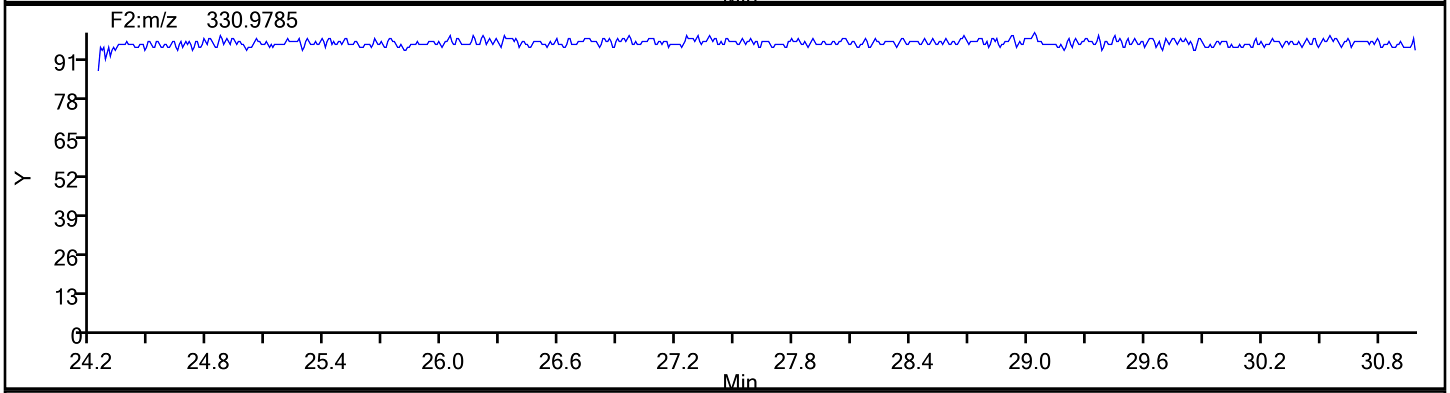

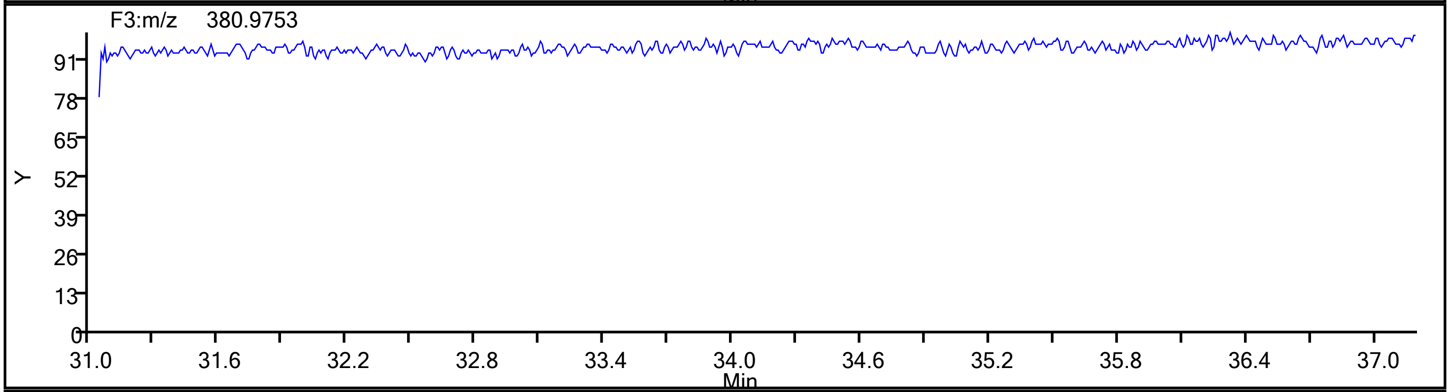

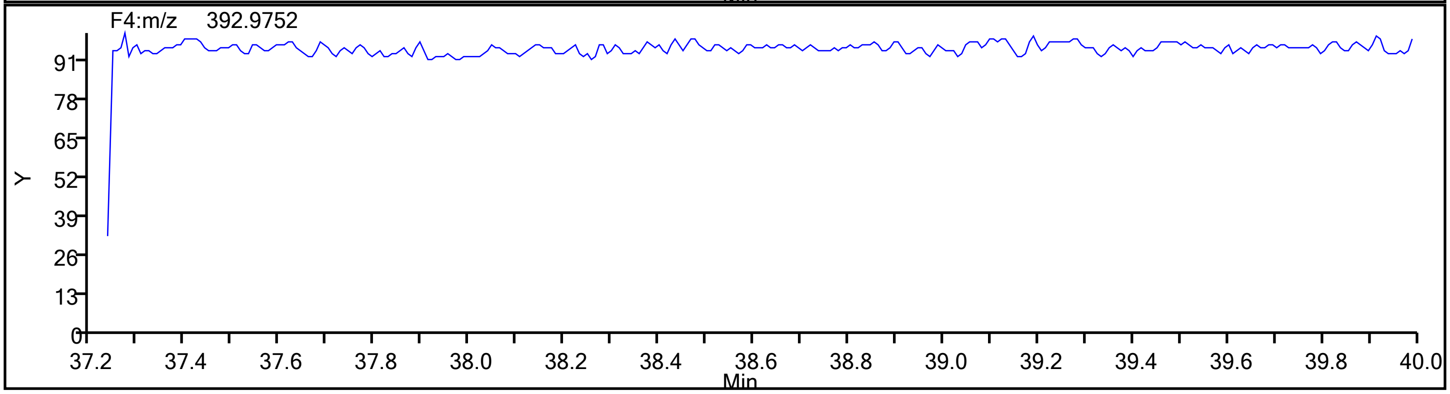

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_69.d		
Injection Date:	20-Sep-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	59
Column Type:	DB-5	Column Dia:	0.32 mm

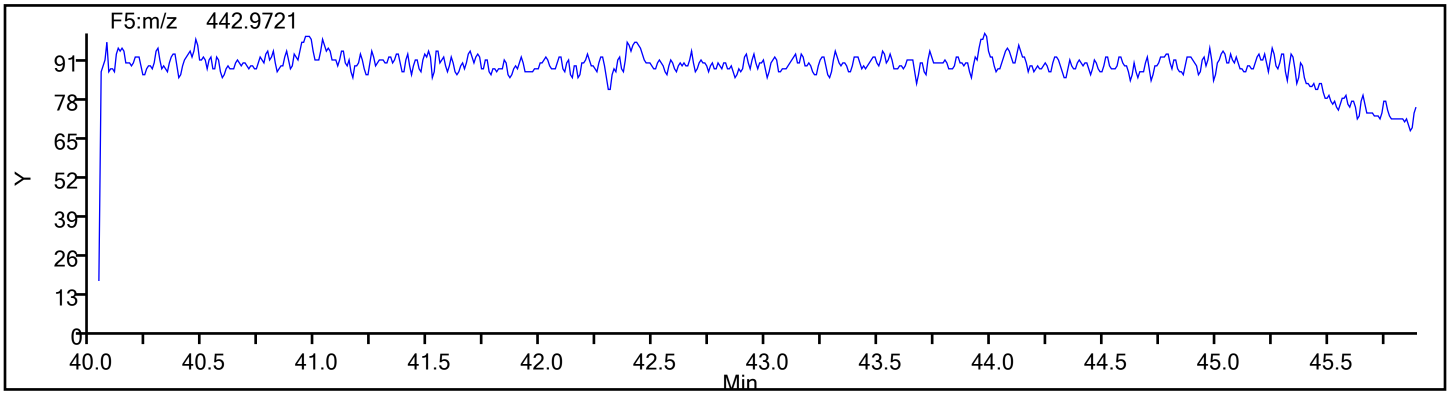

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 21-Sep-2020 11:05:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 18:44:56 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: shardaa Date: 21-Sep-2020 18:44:18

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.222	2017543	0.79	1.5883					0.00	
2,3,7,8-TCDF	19.274	4206679	0.79	1.0857	76.8	76.8	0.2957	0.2957		
A Non-2,3,7,8-sub-TCDF	18.810						0.2957	0.2957		
S Total TCDF					76.8	76.8	0.2957	0.2957		
D 13C-2,3,7,8-TCDD	20.504	1342535	0.82	1.1194					0.00	
2,3,7,8-TCDD	20.530	1477903	0.79	1.0810	40.7	40.7	0.2177	0.2177		
A Non-2,3,7,8-sub-TCDD	19.614						0.2177	0.2177		
S Total TCDD					40.7	40.7	0.2177	0.2177		
A F1 PeCDFs	23.612	6487	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.991	31052	1.57	0.0000						
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	27.364	4748	1.55	0.0000						RQ
S Total PeCDD										RQ
A Non-2,3,7,8-sub-HxCDF	34.222	10487	1.27	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.677	15563	1.12	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.127	1843595	1.04	1.5064						
1,2,3,4,7,8,9-HpCDF	39.424	1663211	1.03	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.776						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.113	1321791	1.04	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.188	2507179	0.78							
1,3,6,8-TCDD	16.719	1514370	0.79							
2,3,4,7-TCDF	19.274	4206679	0.79							
1,2,3,7-TCDD	20.332	1224655	0.80							
1,2,3,9-TCDF	20.719	1833212	0.79							
1,2,3,9-TCDD	20.814	1508493	0.79							
1,2,8,9-TCDF	22.431	1895929	0.78							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	22.509	610844								
1,3,4,6,8-PeCDF	23.059	1896599	1.59							
1,2,4,7,9-PeCDD	25.170	1287587	1.54							
1,2,3,8,9-PeCDD	29.557	1254969	1.55							
1,2,3,8,9-PeCDF	29.717	1589056	1.55							
1,2,3,4,6,8-HxCDF	32.104	1774166	1.26							
1,2,4,6,7,9-HxCDD	33.384	1348172	1.24							
1,2,3,4,6,7-HxCDD	35.970	1368605	1.25							
1,2,3,4,8,9-HxCDF	36.341	1741160	1.26							
1,2,3,4,6,7,9-HpCDD	38.447	1388459	1.03							

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042	Amount Added: 1.00	Units: mL

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	21-Sep-2020 11:05:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00042				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	21-Sep-2020 18:44:56	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1009				

First Level Reviewer: shardaa Date: 21-Sep-2020 18:44:18

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.222	19.222	0	1.000	887946	135553	627	1567	216		
317.9389	19.222	19.222	0	1.000	1129597	173501	272	680	638	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.274	19.274	0	1.003	1850273	263557	435	1087	606		
305.8987	19.265	19.274	-1	1.002	2356406	333499	557	1392	599	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.810						435	1087			
305.8987	18.810						557	1392			
13C-2,3,7,8-TCDD											
331.9368	20.504	20.504	0	1.000	604242	86724	394	985	220		
333.9338	20.504	20.504	0	1.000	738293	107046	88	220	1216	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.530	20.530	0	1.001	652352	93885	220	550	427		
321.8936	20.538	20.530	1	1.002	825551	121263	236	590	514	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.614						220	550			
321.8936	19.614						236	590			
A F1 PeCDFs											RQ
339.8597	16.478	23.612	-427	1.000	992	243	43	107	6		
341.8567	16.487	23.612	-427	1.000	7216	1261	50	125	25	0.14(1.32-1.78)	
339.8597	23.730	23.612	7	1.000	3642	399	43	107	9		
341.8567	23.902	23.612	17	1.000	1904	218	50	125	4	1.91(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	25.768	26.991	-73	1.000	5063	843	98	245	9		
341.8567	25.760	26.991	-74	1.000	2841	487	116	290	4	1.78(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.315	26.991	-40	1.000	7232	1274	98	245	13		
341.8567	26.323	26.991	-40	1.000	4923	684	116	290	6	1.47(1.32-1.78)	
339.8597	26.888	26.991	-6	1.000	6654	1100	98	245	11		
341.8567	26.879	26.991	-7	1.000	4339	701	116	290	6	1.53(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	29.162	27.364	108	1.000	9288	1408	222	555	6		
357.8516	29.170	27.364	108	1.000	1862	399	108	270	4	4.99(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.378	34.222	9	1.000	5871	1217	252	630	5		
375.8178	34.369	34.222	9	1.000	4616	1059	189	472	6	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.647	34.677	-2	1.000	8237	1778	165	412	11		
391.8127	34.639	34.677	-2	1.000	7326	1466	140	350	10	1.12(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.127	38.127	0	1.000	938507	287312	530	1325	542		
409.7788	38.127	38.127	0	1.000	905088	278146	519	1297	536	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.424	39.424	0	1.000	844797	282725	530	1325	533		
409.7788	39.424	39.424	0	1.000	818414	274911	519	1297	530	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.776						530	1325			
409.7788	38.776						519	1297			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.113	39.113	0	1.000	672904	223141	376	940	593		
425.7737	39.113	39.113	0	1.000	648887	216600	364	910	595	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						376	940			
425.7737	38.941						364	910			
1,3,6,8-TCDF											
303.9016	15.188	15.188	0		1100941	229369	435	1087	527		
305.8987	15.188	15.188	0		1406238	291136	557	1392	523	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.719	16.719	0		668584	124127	220	550	564		
321.8936	16.719	16.719	0		845786	158173	236	590	670	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.274	19.274	0		1850273	263557	435	1087	606		
305.8987	19.265	19.274	-1		2356406	333499	557	1392	599	0.79(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.332	20.332	0		542853	82459	220	550	375		
321.8936	20.332	20.332	0		681802	104703	236	590	444	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.719	20.719	0		807443	115837	435	1087	266		
305.8987	20.719	20.719	0		1025769	146427	557	1392	263	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.814	20.814	0		666900	92031	220	550	418		
321.8936	20.814	20.814	0		841593	116455	236	590	493	0.79(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	22.431	22.431	0		833388	109898	435	1087	253		
305.8987	22.431	22.431	0		1062541	140491	557	1392	252	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	22.509	22.509	0		610844	77297	220	550	351		
1,3,4,6,8-PeCDF											
339.8597	23.059	23.059	0		1164521	161279	43	107	3751		
341.8567	23.059	23.059	0		732078	99032	50	125	1981	1.59(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.170	25.170	0		780772	127436	222	555	574		
357.8516	25.162	25.170	-1		506815	83909	108	270	777	1.54(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.557	29.557	0		763428	111024	222	555	500		
357.8516	29.557	29.557	0		491541	70336	108	270	651	1.55(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.717	29.717	0		965934	133254	98	245	1360		
341.8567	29.717	29.717	0		623122	85229	116	290	735	1.55(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.104	32.104	0		988622	130845	252	630	519		
375.8178	32.096	32.104	-1		785544	104820	189	472	555	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.384	33.384	0		747225	128659	165	412	780		
391.8127	33.384	33.384	0		600947	102390	140	350	731	1.24(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.970	35.970	0		759039	186623	165	412	1131		
391.8127	35.962	35.970	-1		609566	149485	140	350	1068	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.341	36.341	0		970900	247776	252	630	983		
375.8178	36.332	36.341	-1		770260	197411	189	472	1045	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.447	38.447	0		704774	223036	376	940	593		
425.7737	38.447	38.447	0		683685	216984	364	910	596	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	21-Sep-2020 11:05:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	414413	Lims Sample ID:	1

F1 PeCDFs, RT: 23.612

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.478	992	243	7216	1261		0.14	R
23.730	3642	399	1904	218		1.91	R
Signal Totals:							
	4634	642	9120	1479			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13754	2121				0.51	RQ
	6487	954					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13754 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (6487 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	21-Sep-2020 11:05:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	414413	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 26.991

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.768	5063	843	2841	487		1.78	
26.315	7232	1274	4923	684		1.47	
26.888	6654	1100	4339	701		1.53	
Signal Totals:							
	18949	3217	12103	1872			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	31052	5089				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (31052 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	21-Sep-2020 11:05:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	414413	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDD, RT: 27.364

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
29.162	9288	1408	1862	399		4.99	R
Signal Totals:							
	9288	1408	1862	399			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11150	1807				4.99	RQ
	4748	1017					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11150 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (4748 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 21-Sep-2020 11:05:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 414413
Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDF, RT: 34.222

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.378	5871	1217	4616	1059		1.27	
Signal Totals:							
	5871	1217	4616	1059			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10487	2276				1.27	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (10487 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	21-Sep-2020 11:05:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	414413	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 34.677

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.647	8237	1778	7326	1466		1.12	
Signal Totals:							
	8237	1778	7326	1466			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15563	3244				1.12	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15563 * 0.0) / (0 * 0.000)

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Injection Date:	21-Sep-2020 11:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

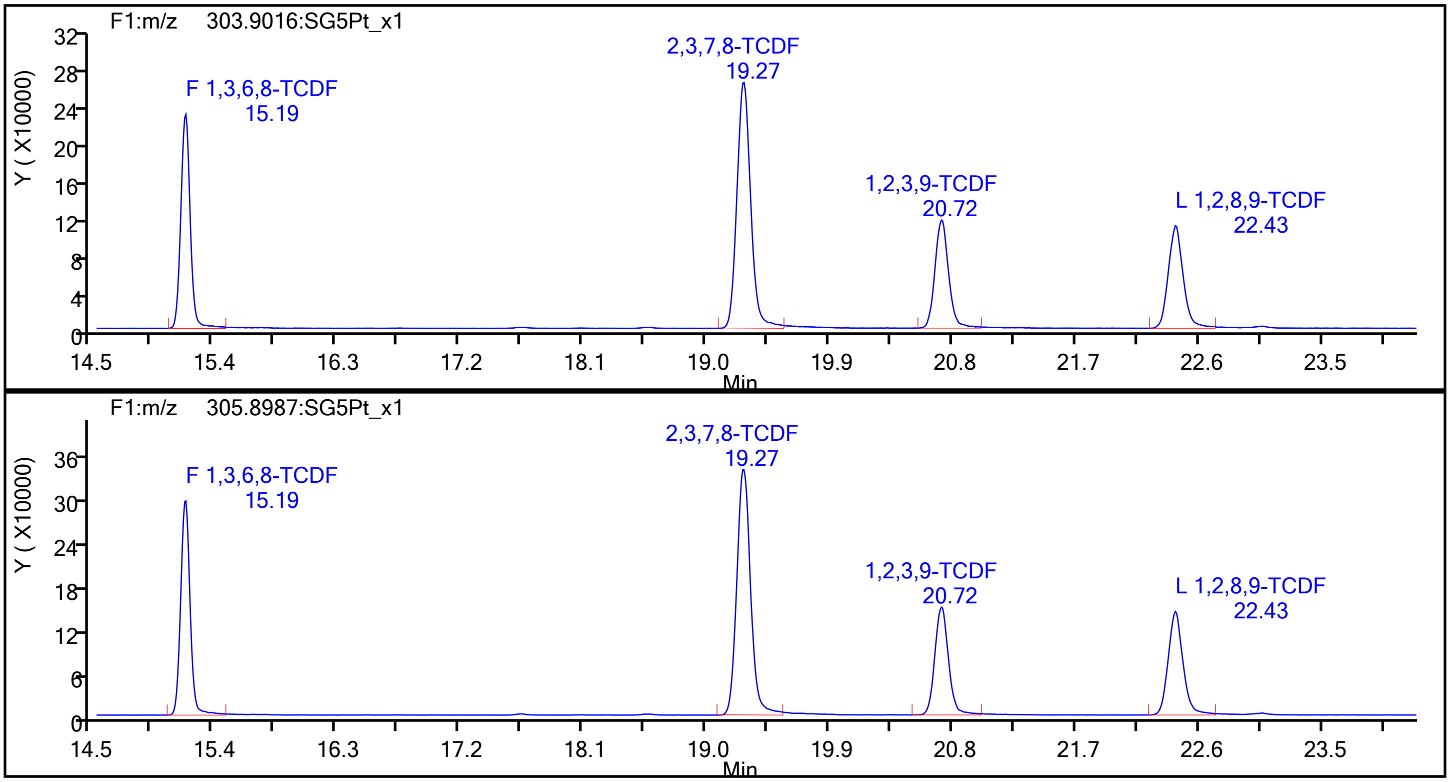

TCDF Standards

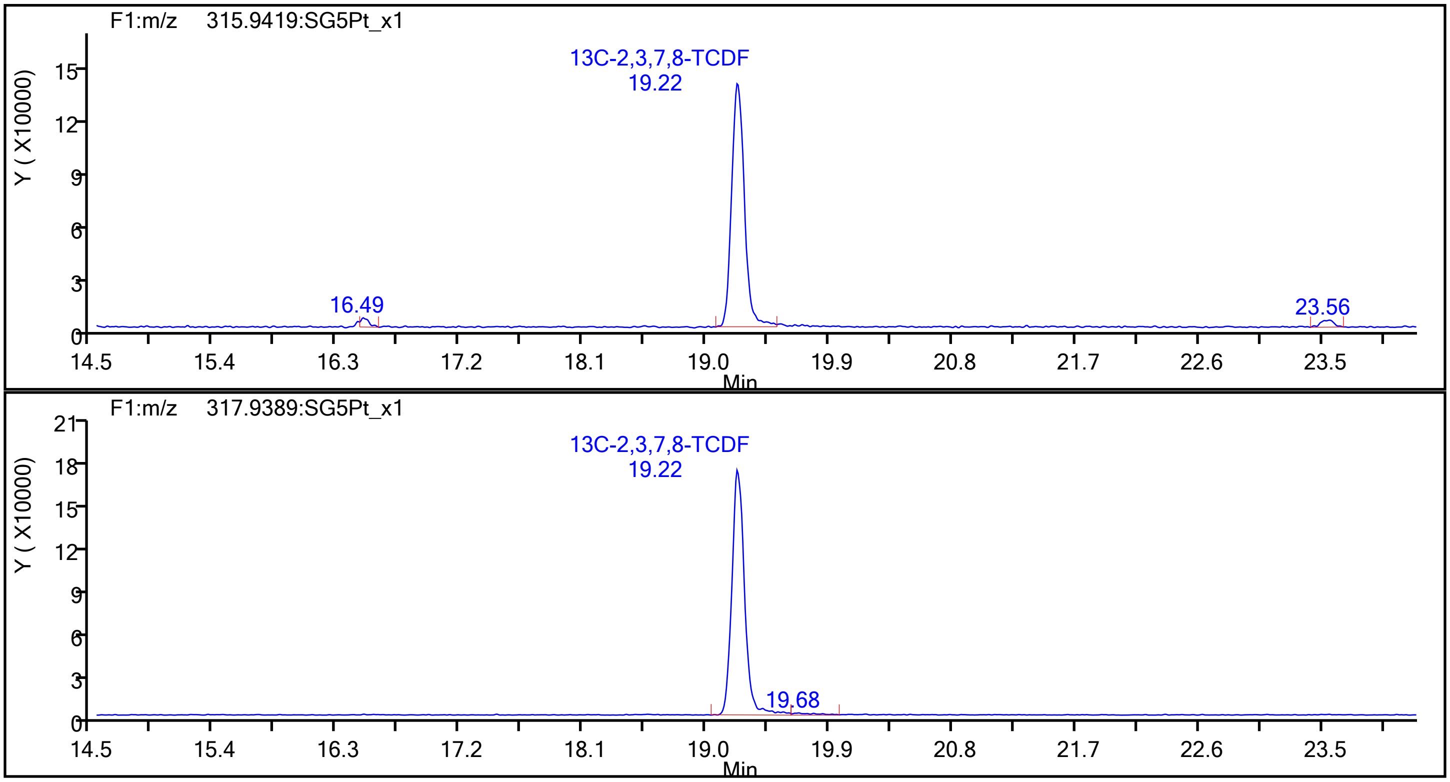

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d

Injection Date: 21-Sep-2020 11:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

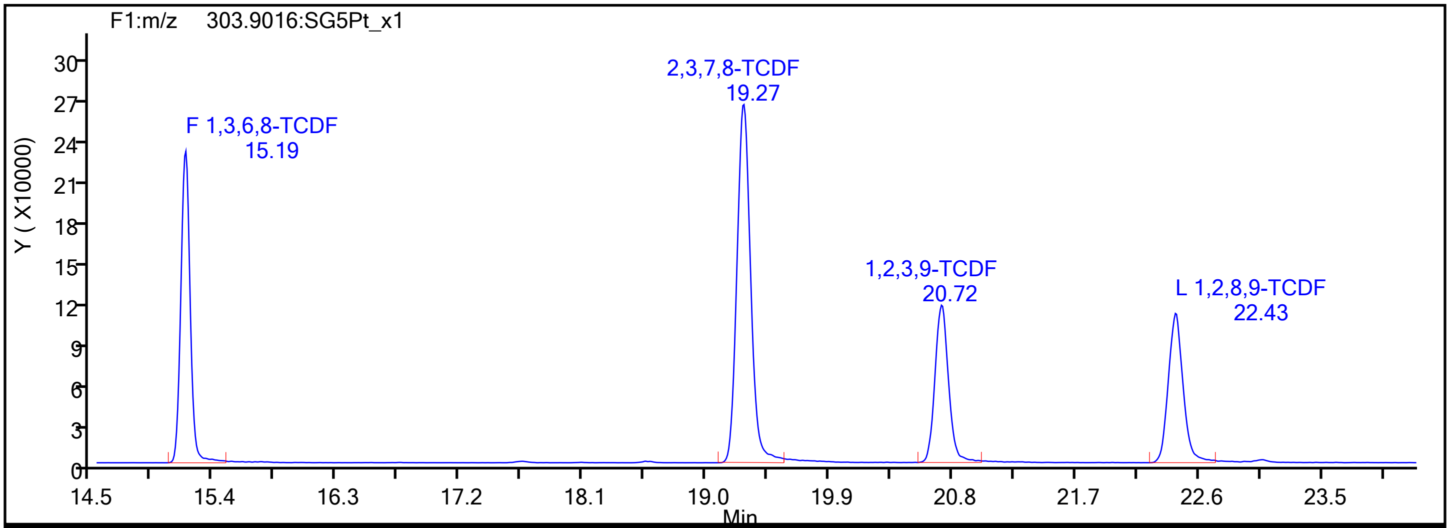

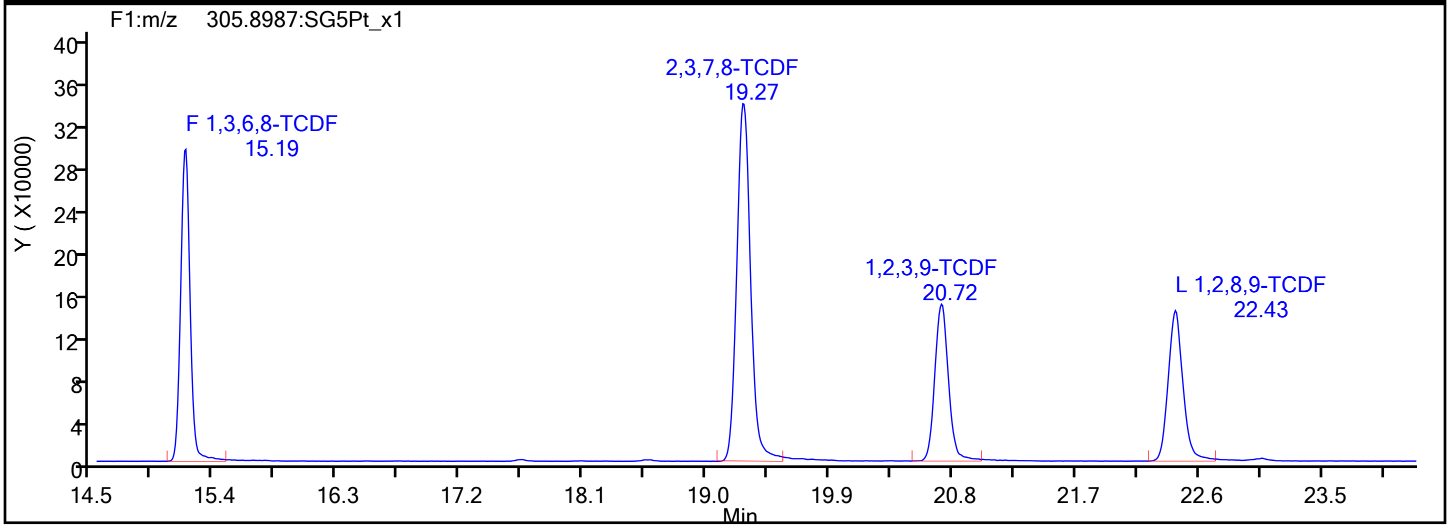

TCDF Interference Mass

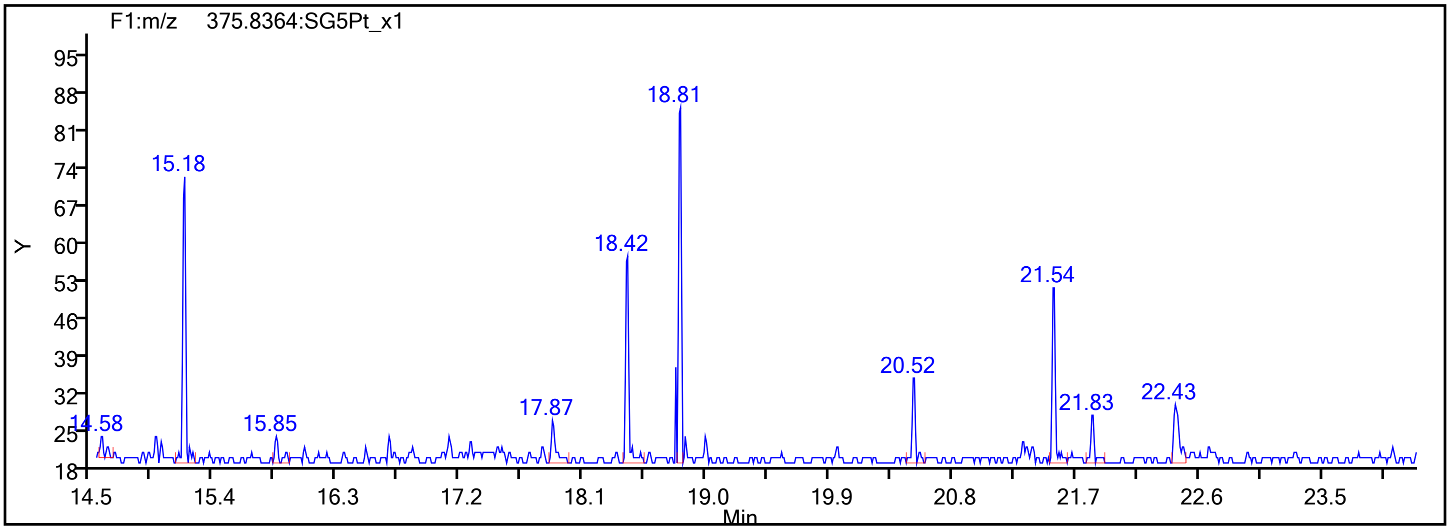

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d
Injection Date: 21-Sep-2020 11:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

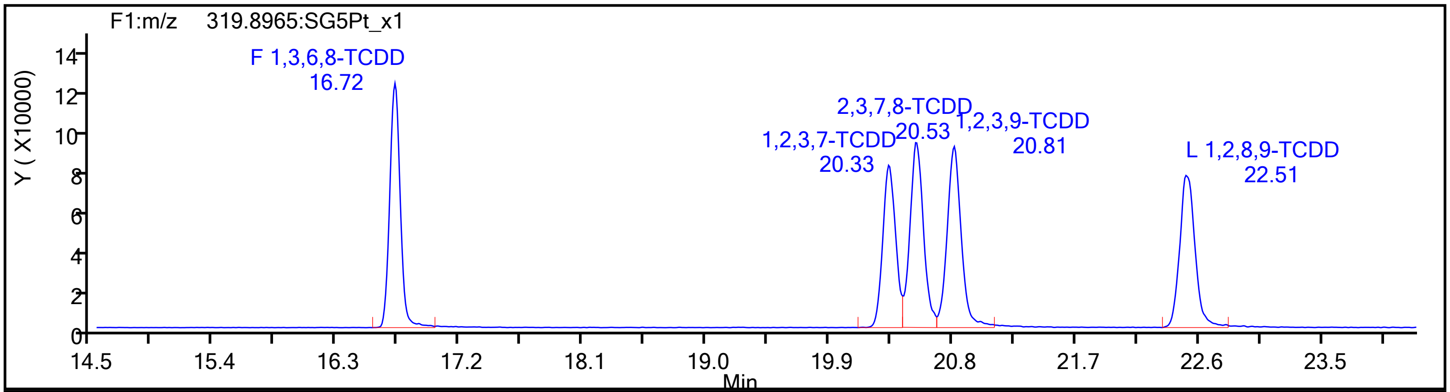

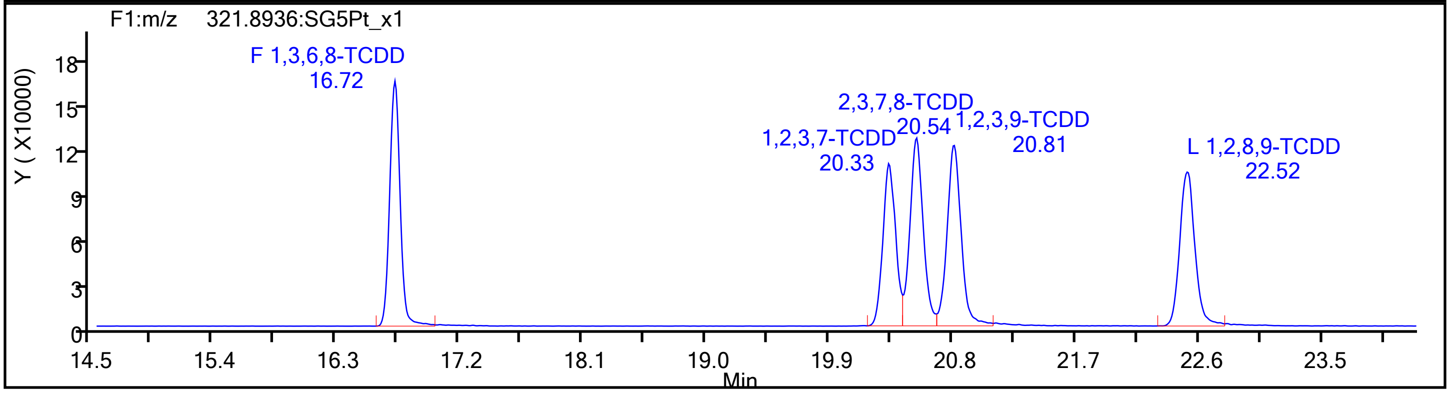

TCDD Standards

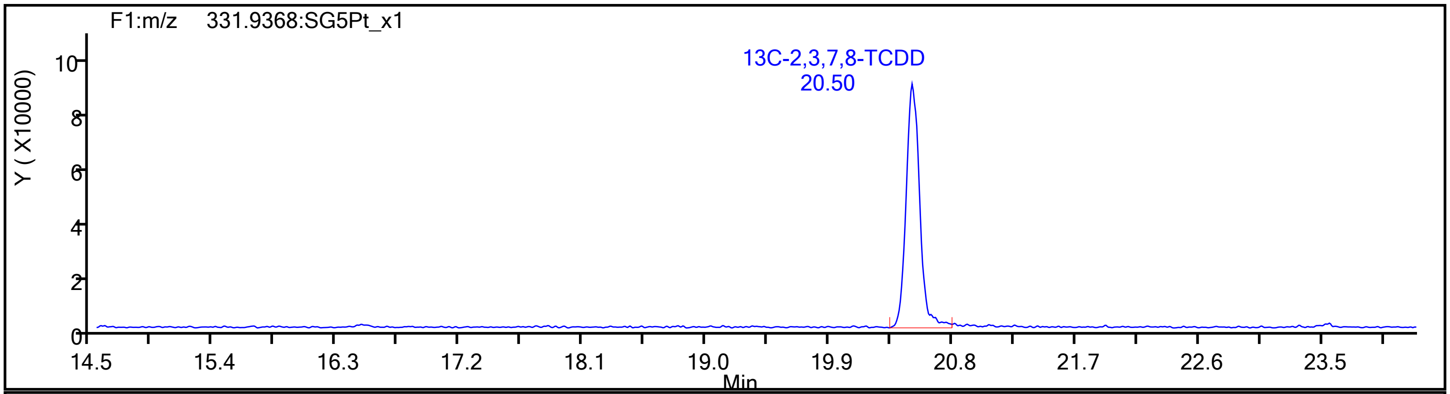

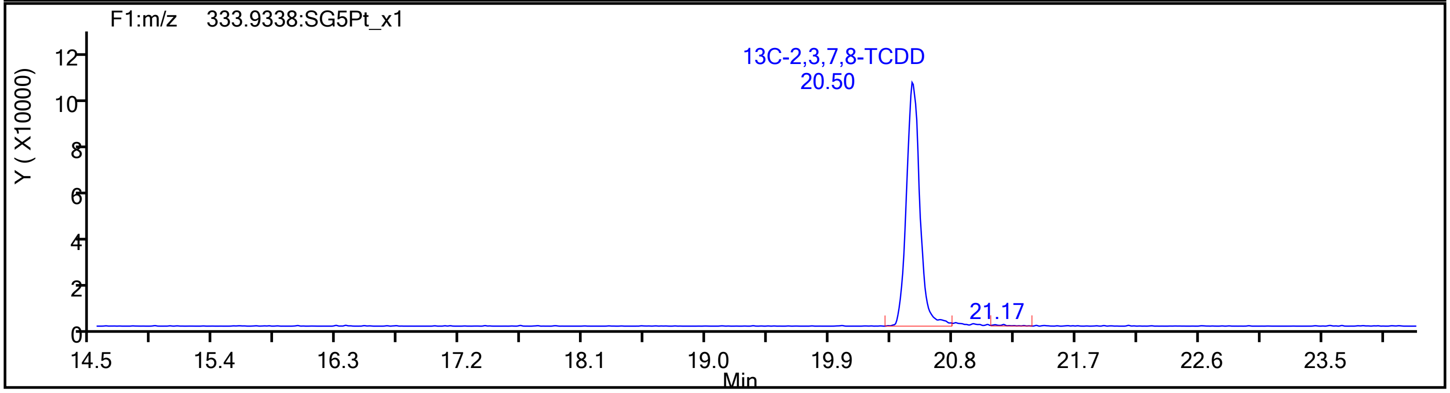

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Injection Date:	21-Sep-2020 11:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

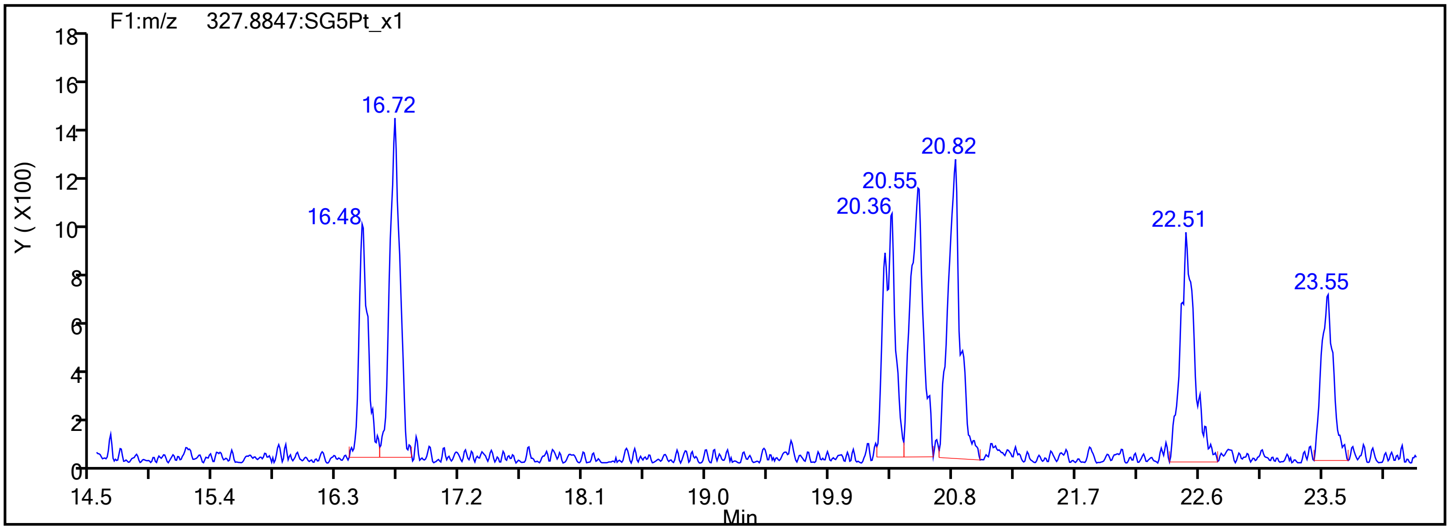

37Cl4-TCDD Standards

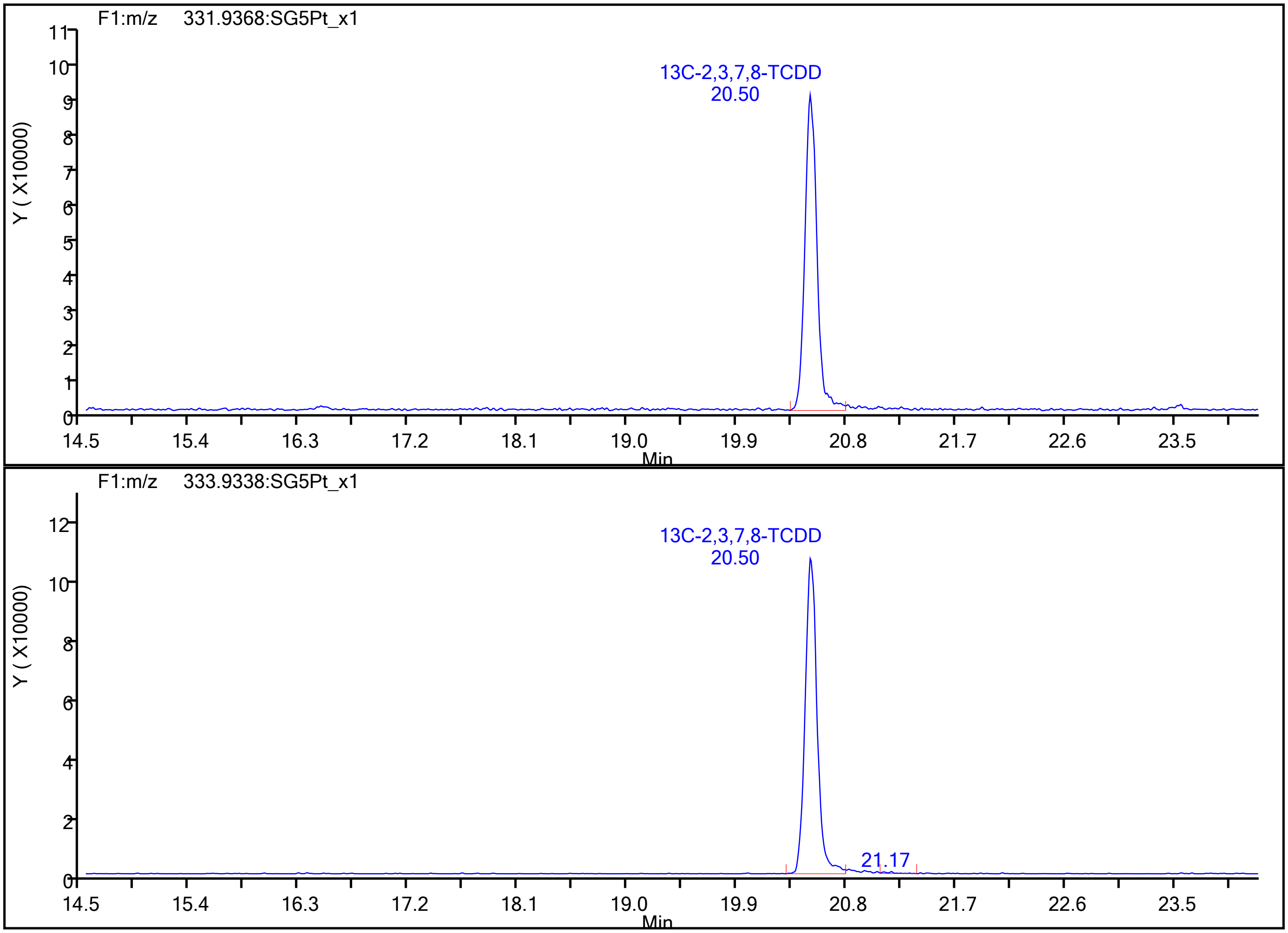

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d
Injection Date: 21-Sep-2020 11:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

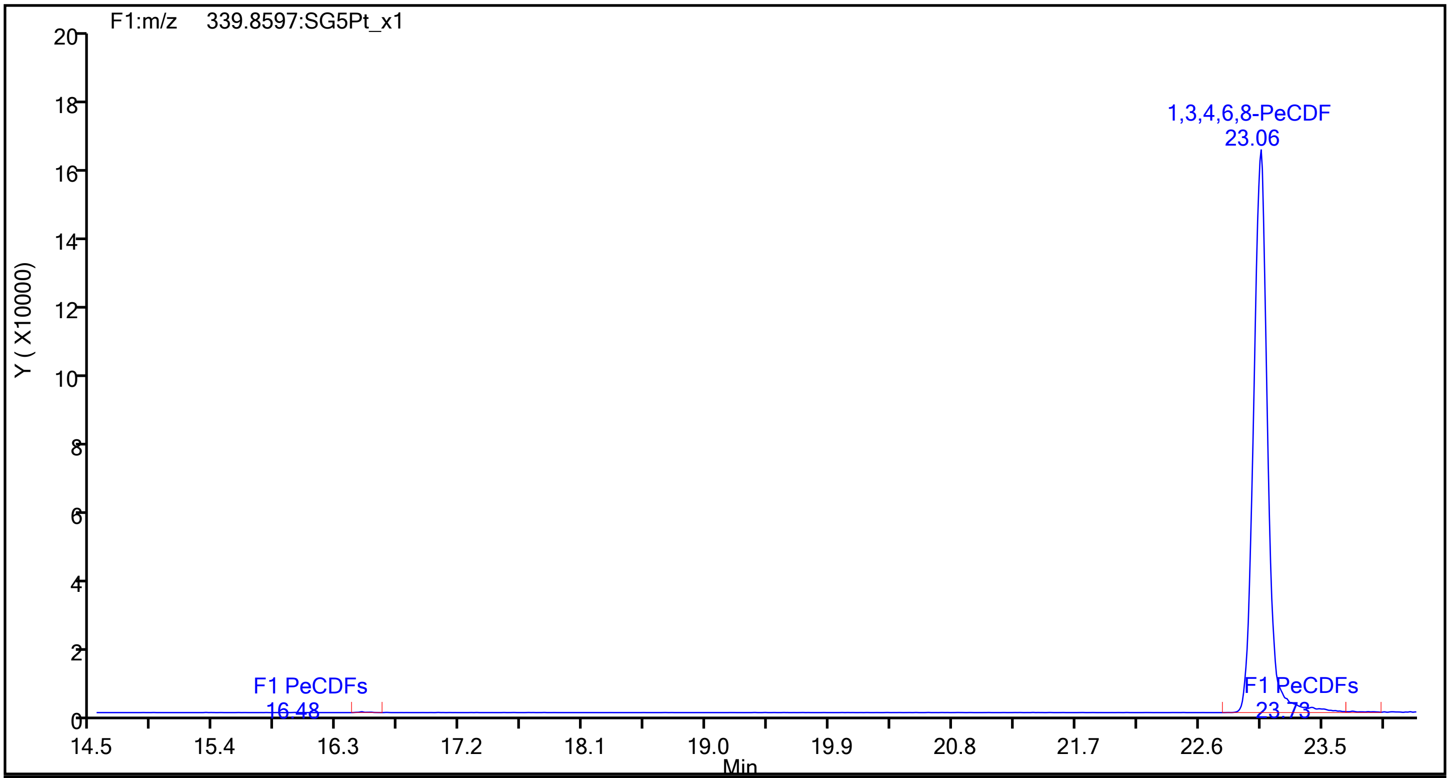

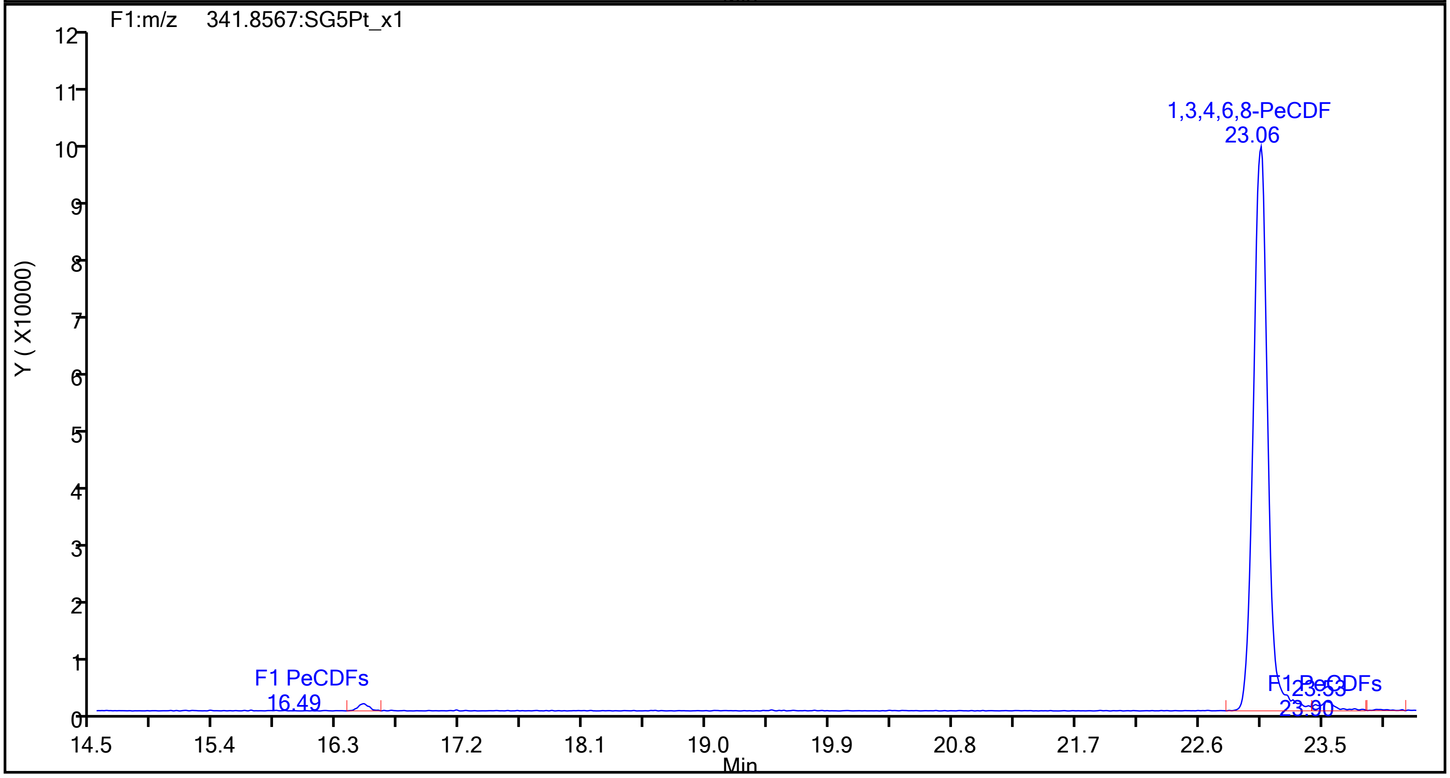

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d
Injection Date: 21-Sep-2020 11:05:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

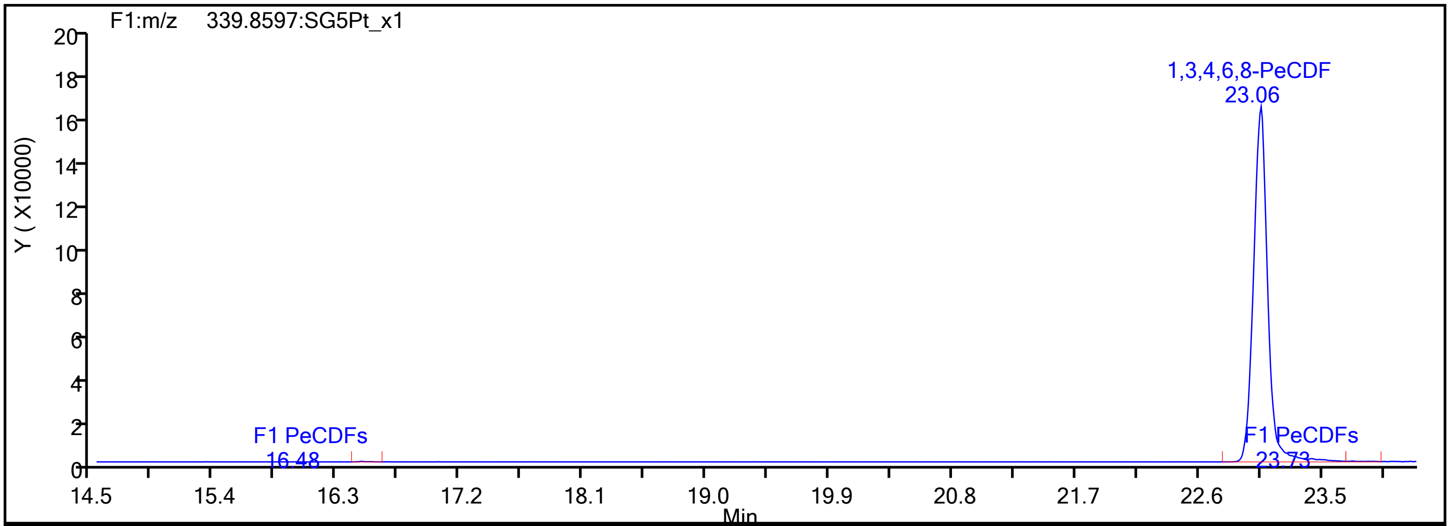

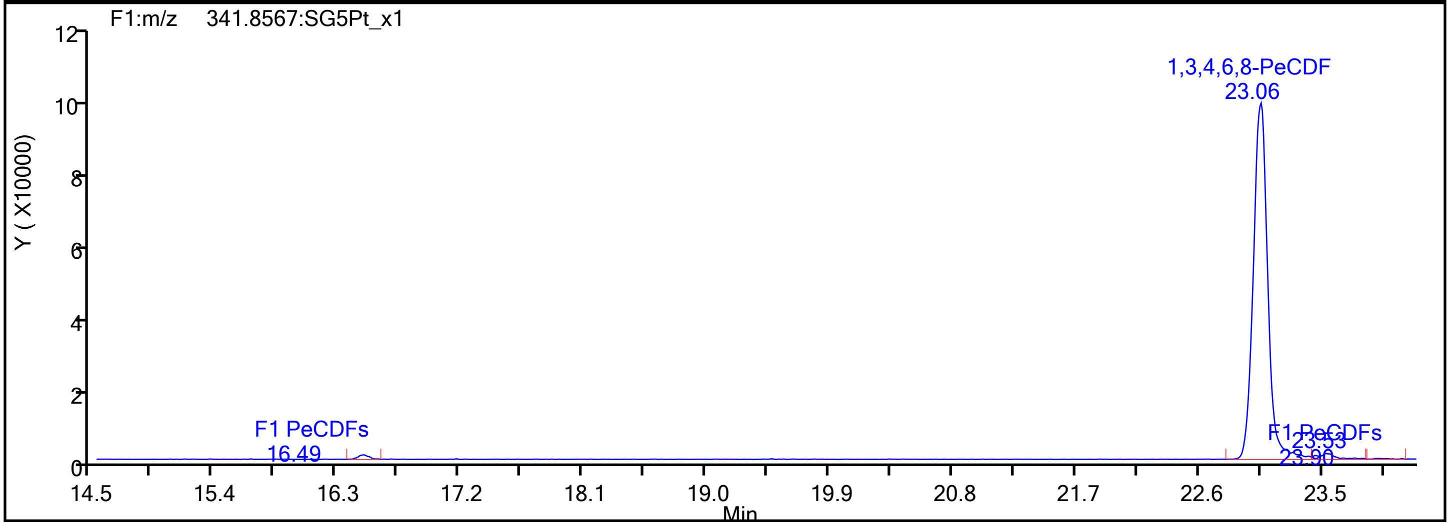

F1 PeCDFs Interference Mass

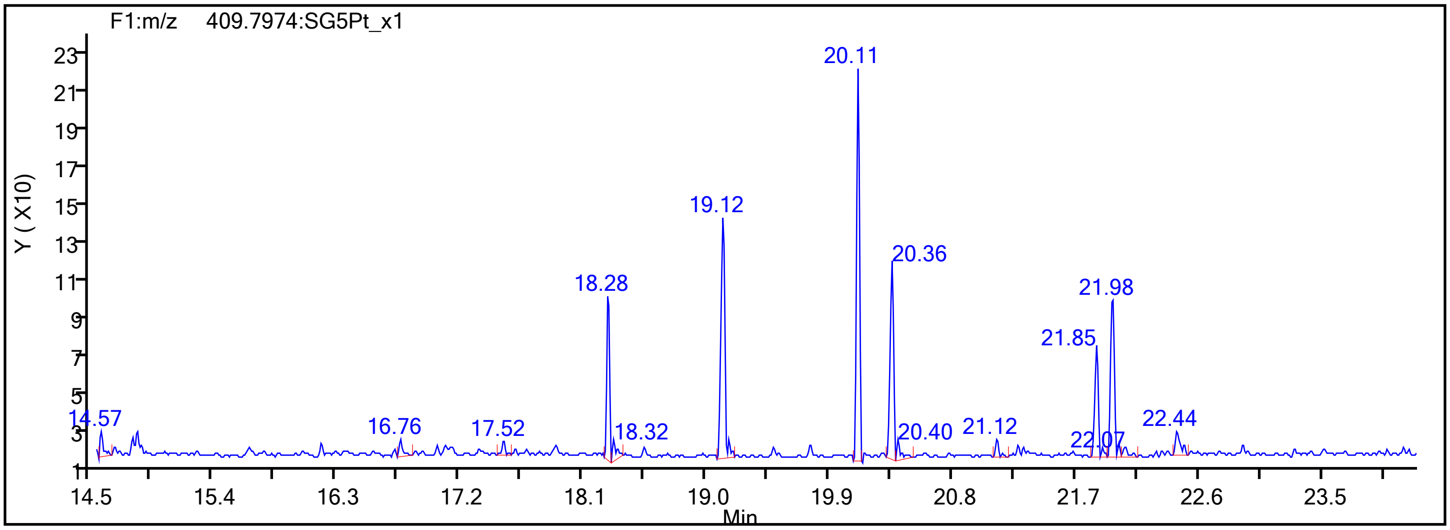

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

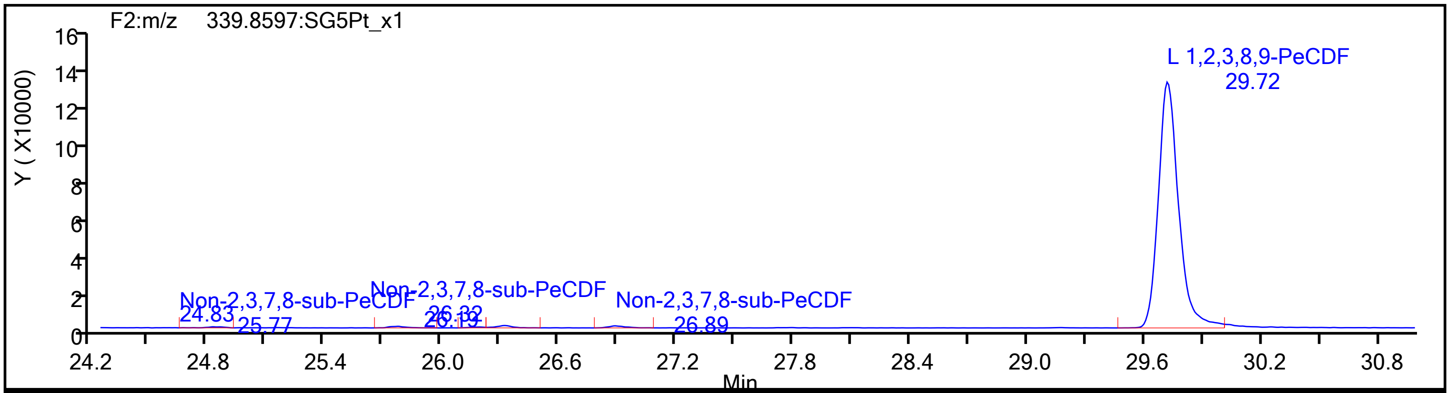

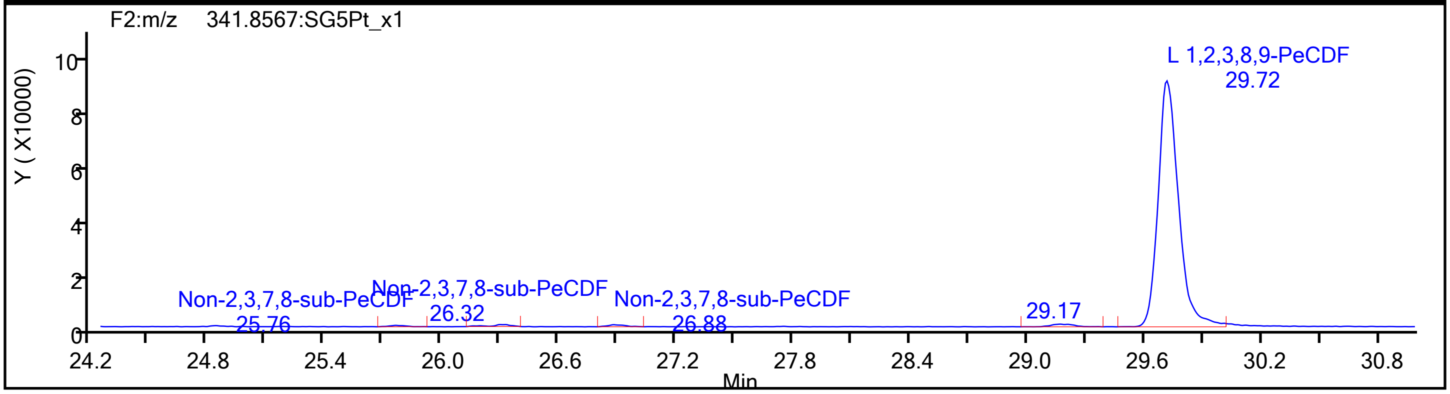

PeCDF Standards

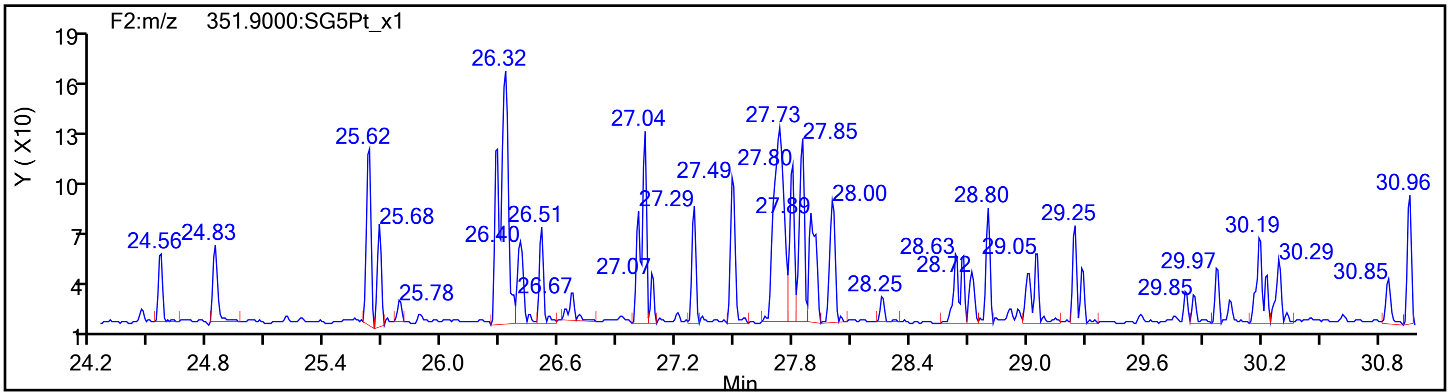

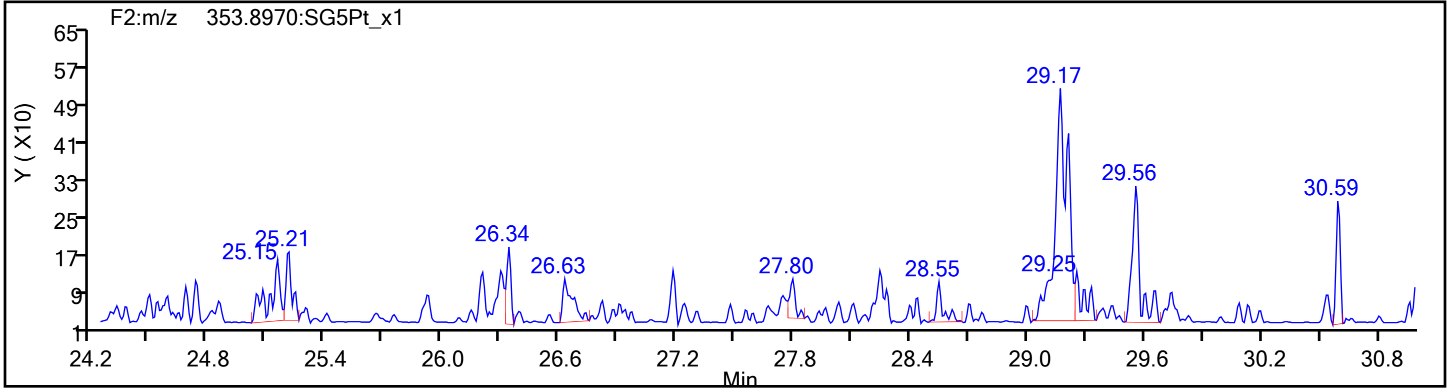

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d
Injection Date: 21-Sep-2020 11:05:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
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Client ID:
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PeCDF

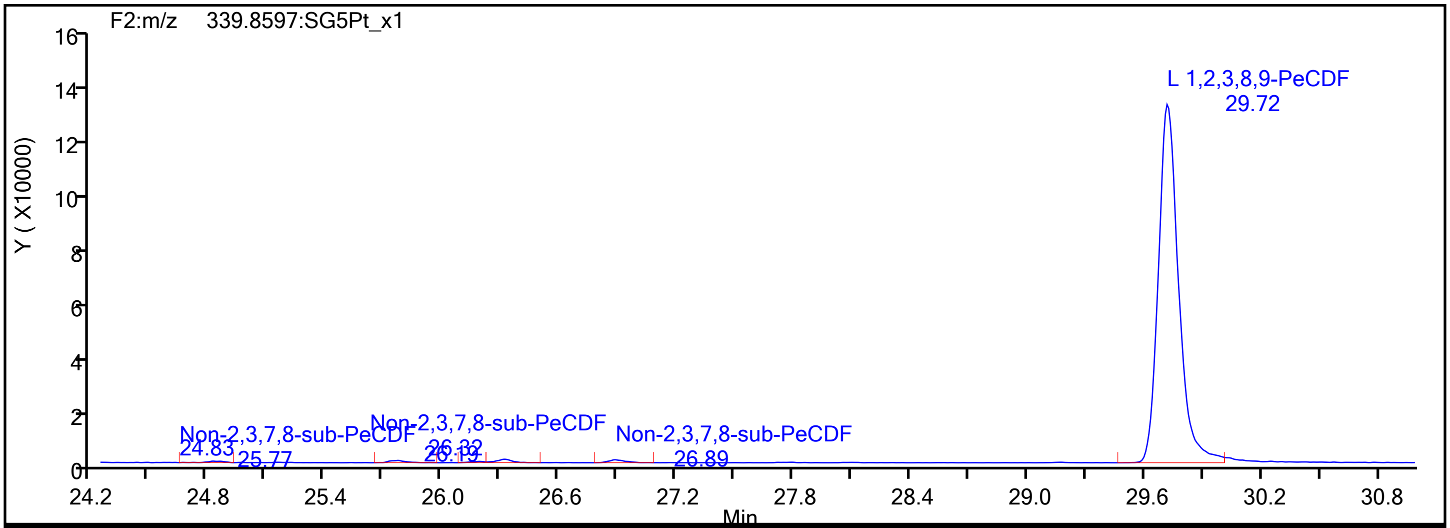

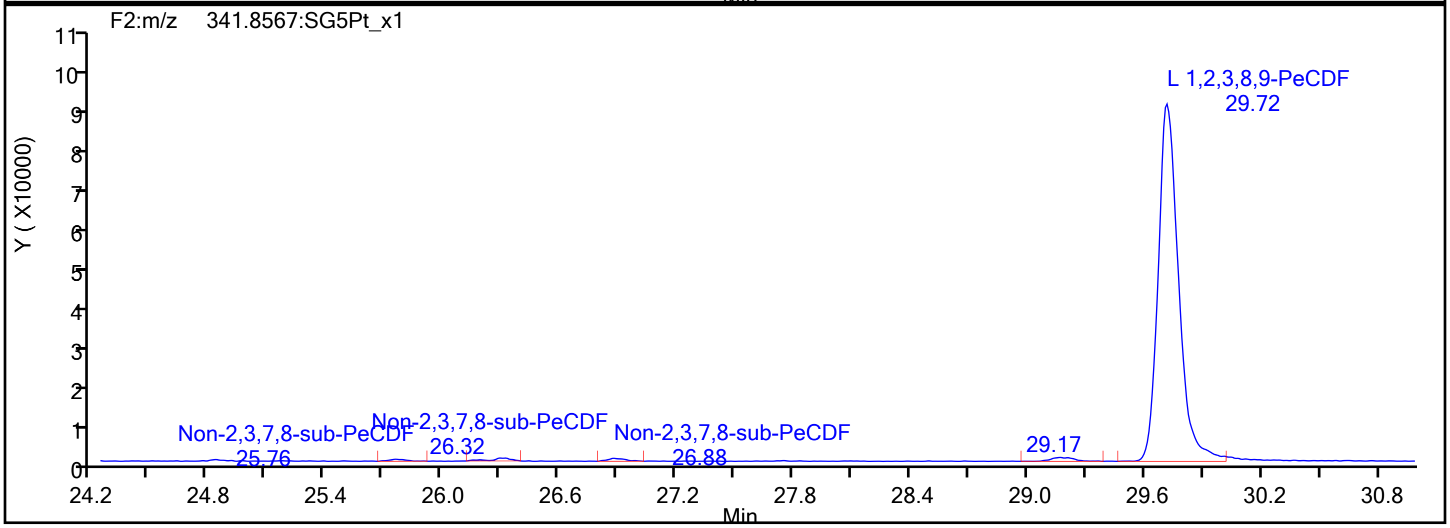

PeCDF Interference Mass

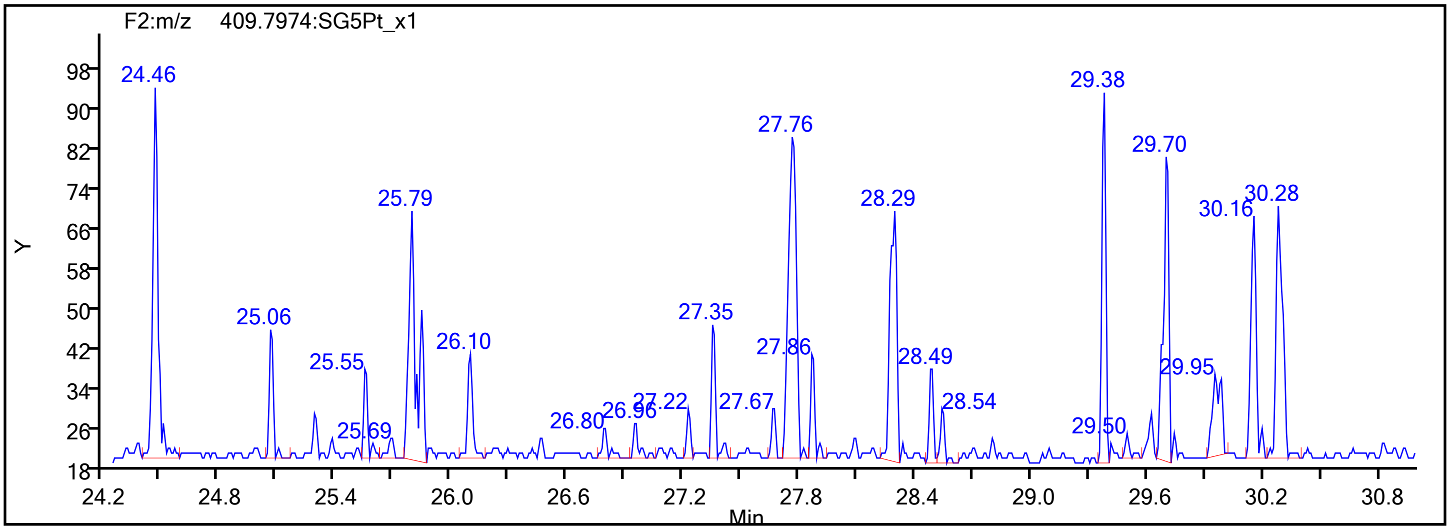

Report Date: 21-Sep-2020 18:44:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
Injection Date:	21-Sep-2020 11:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDD

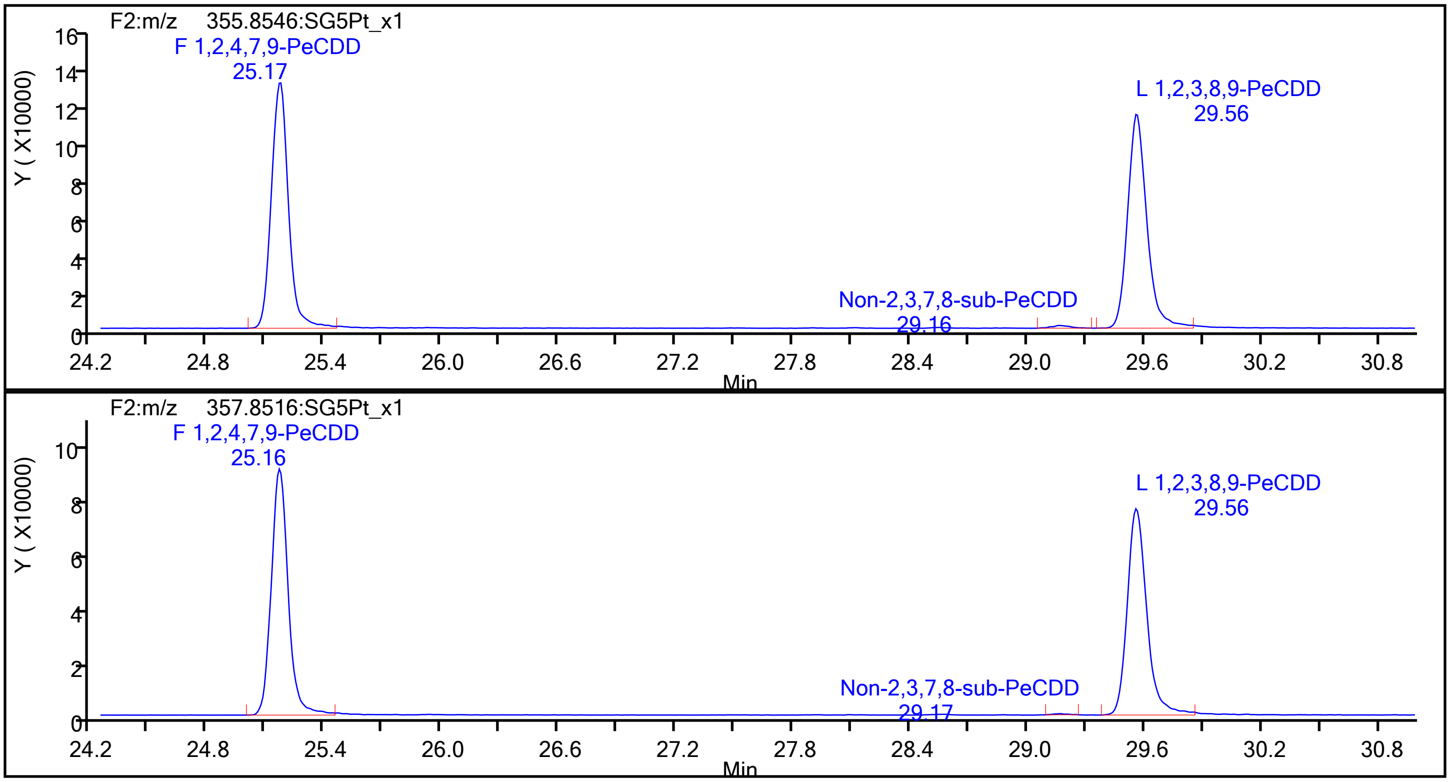

PeCDD Standards

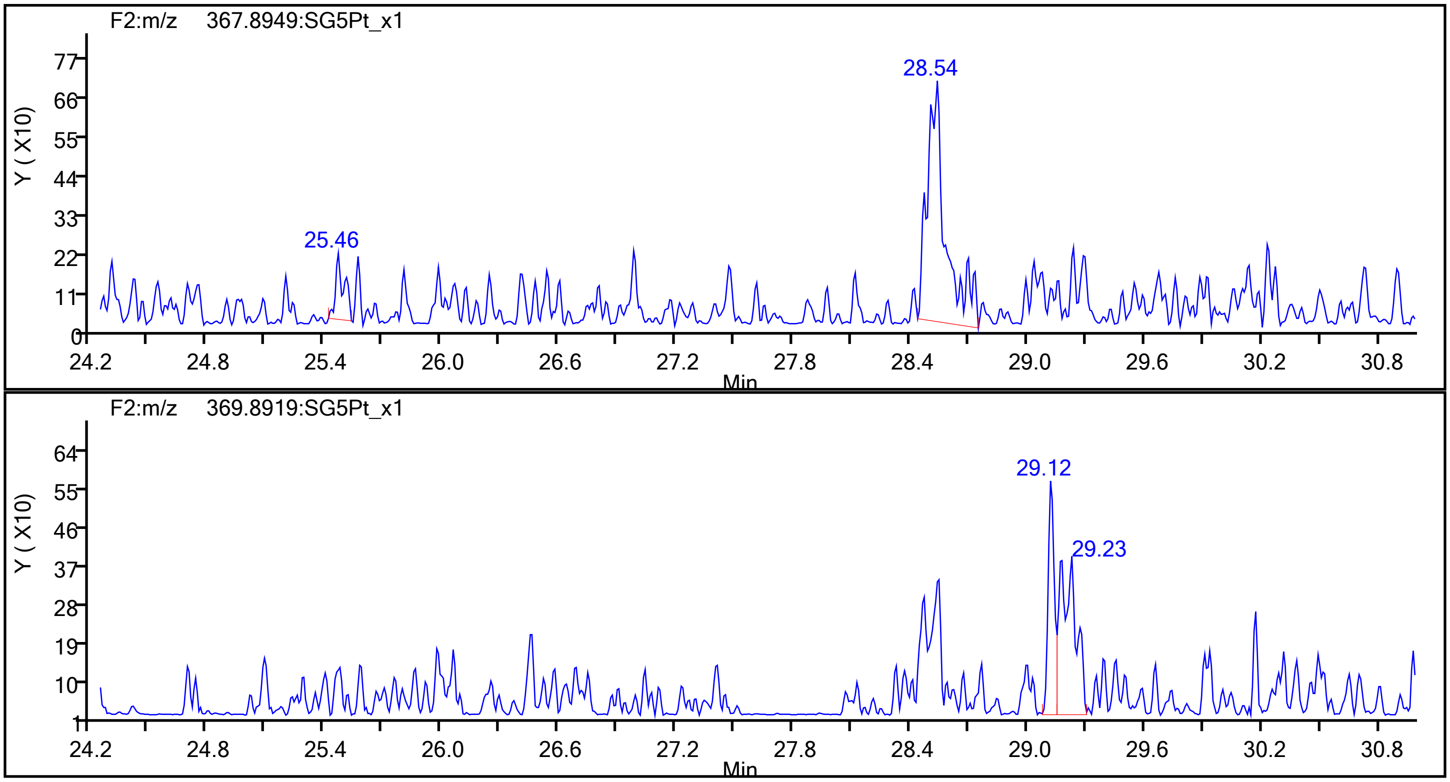

Report Date: 21-Sep-2020 18:44:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HxCDF

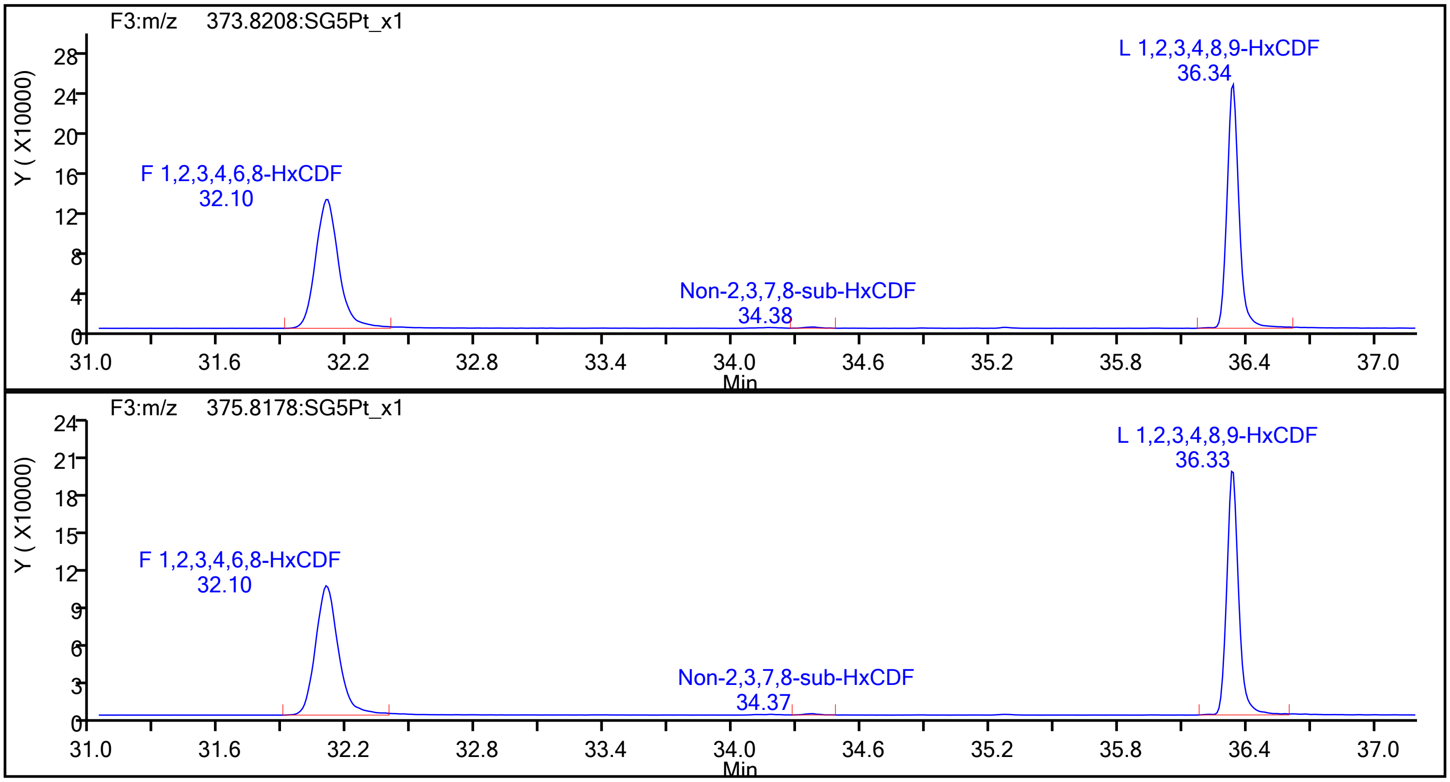

HxCDF Standards

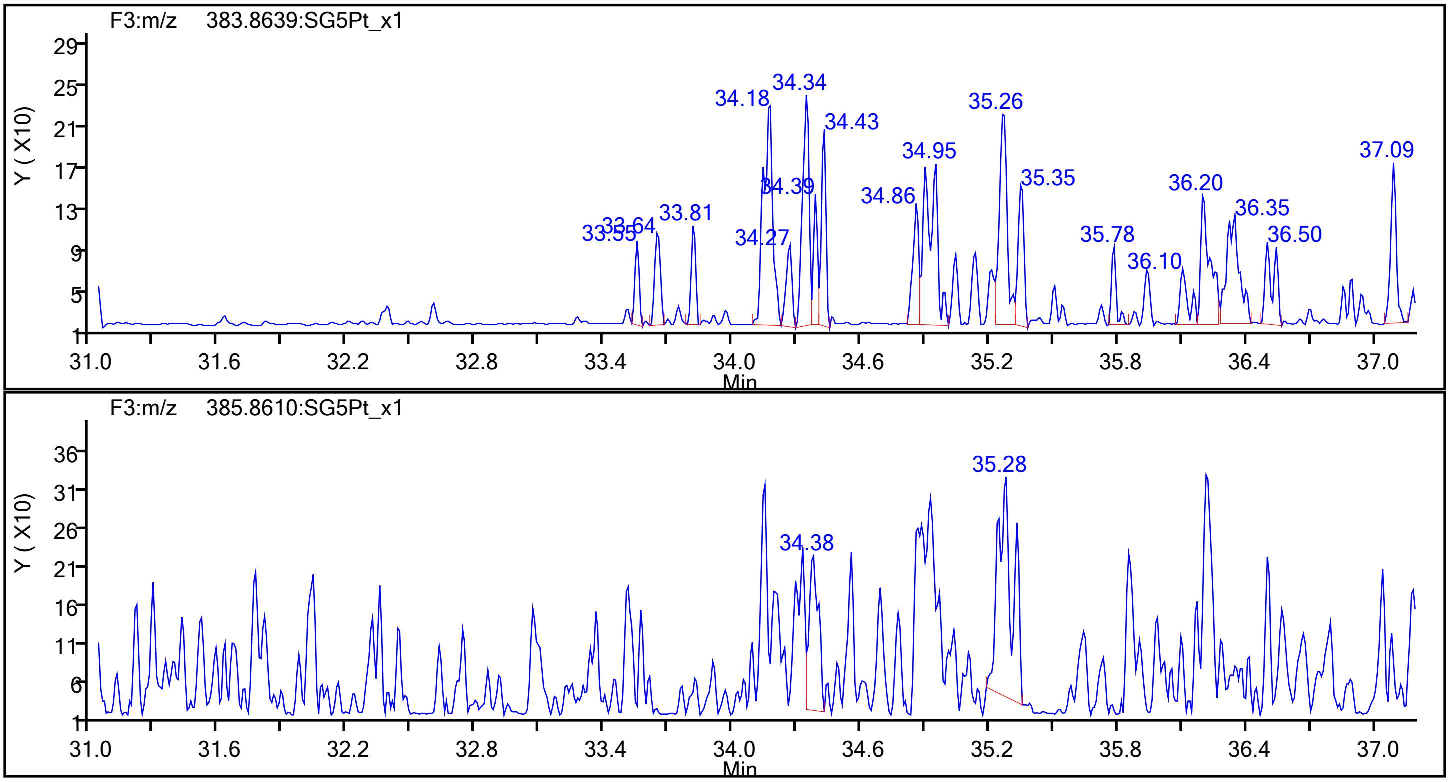

Report Date: 21-Sep-2020 18:44:57
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
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HxCDF

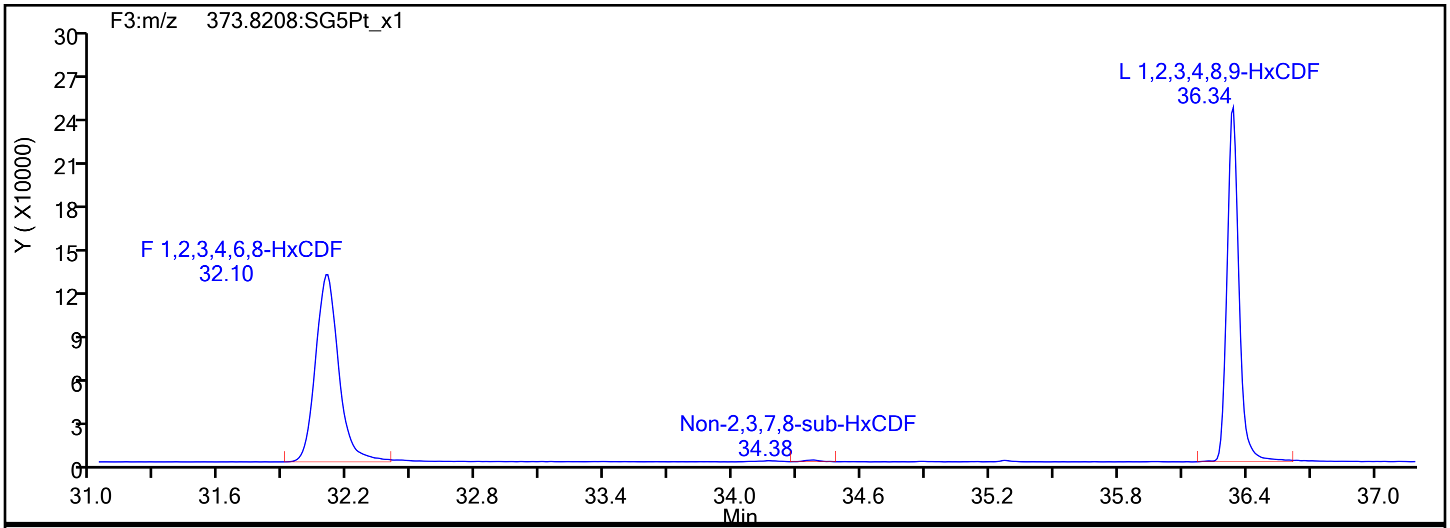

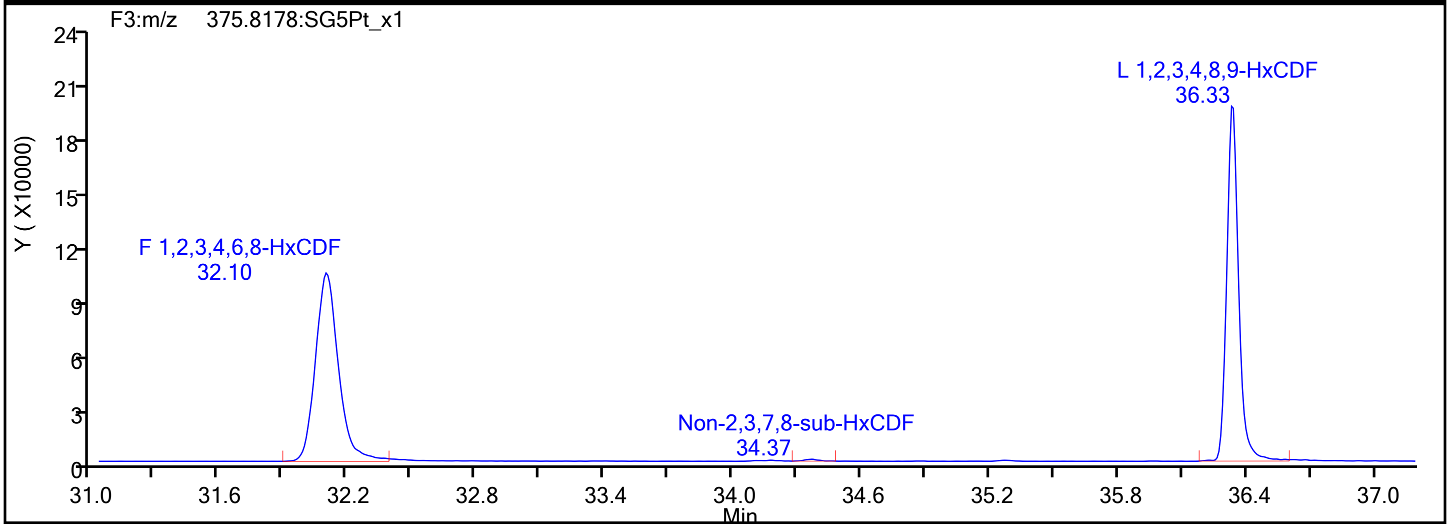

HxCDF Interference Mass

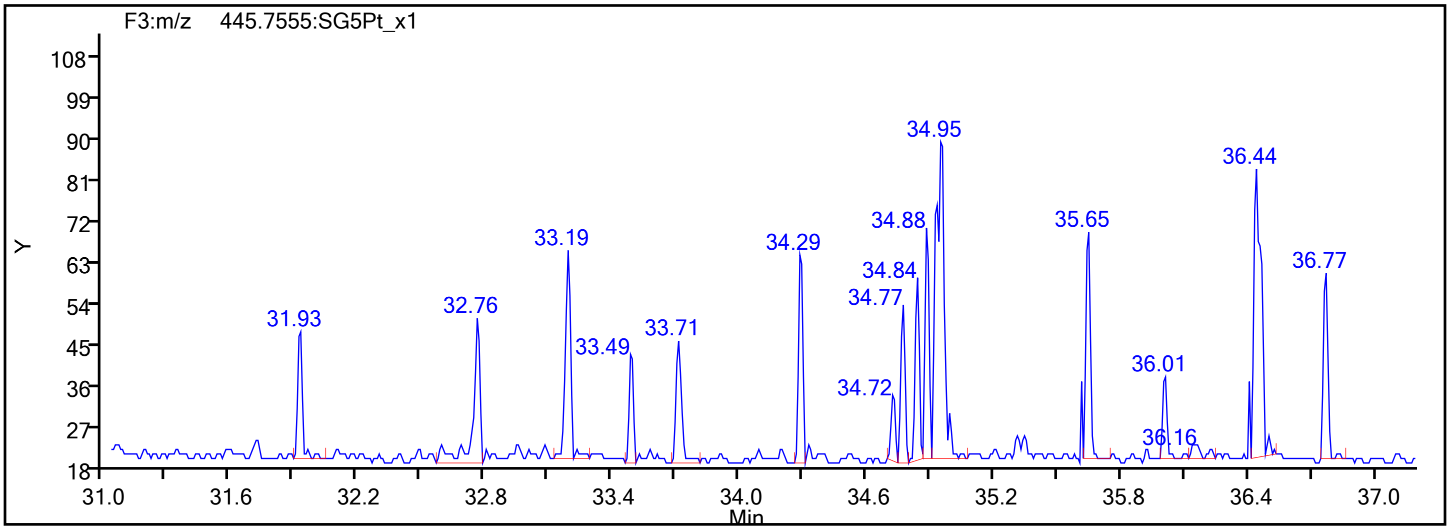

Report Date: 21-Sep-2020 18:44:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

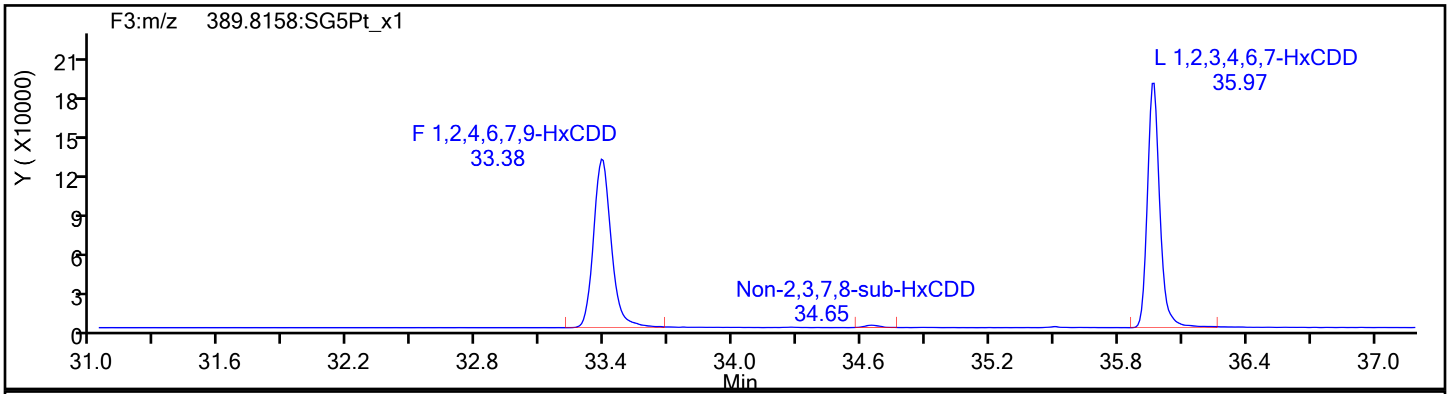

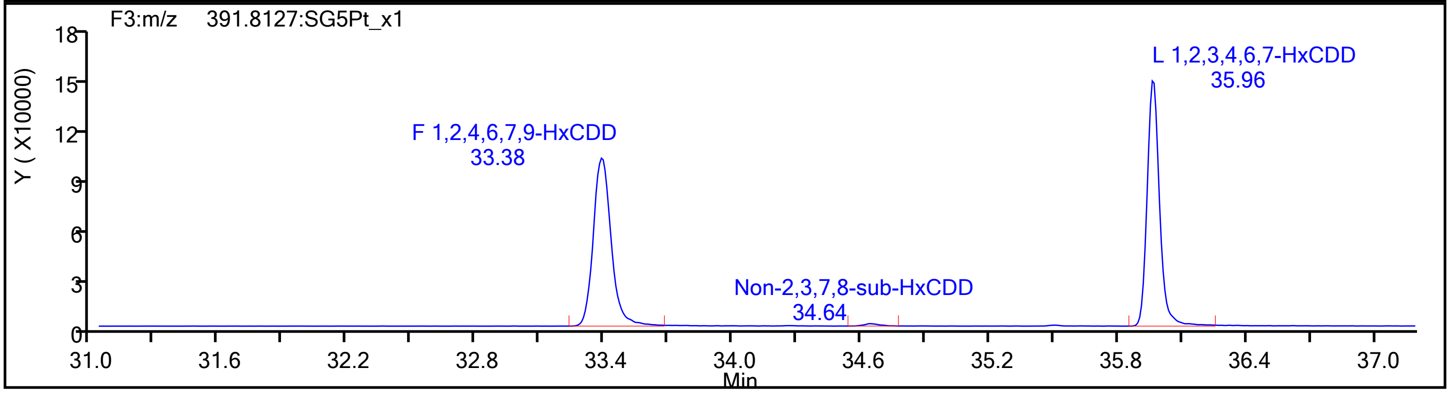

HxCDD Standards

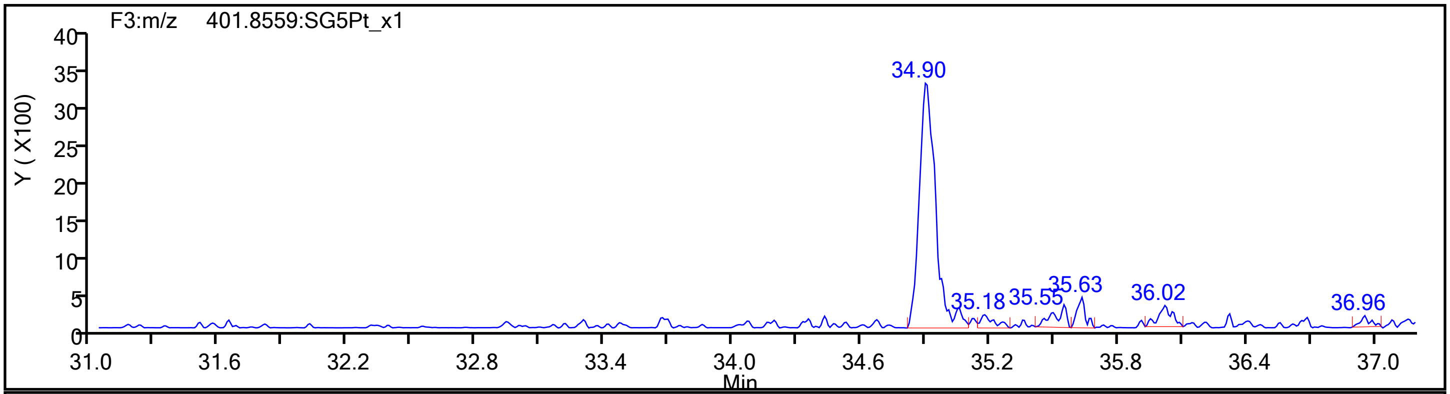

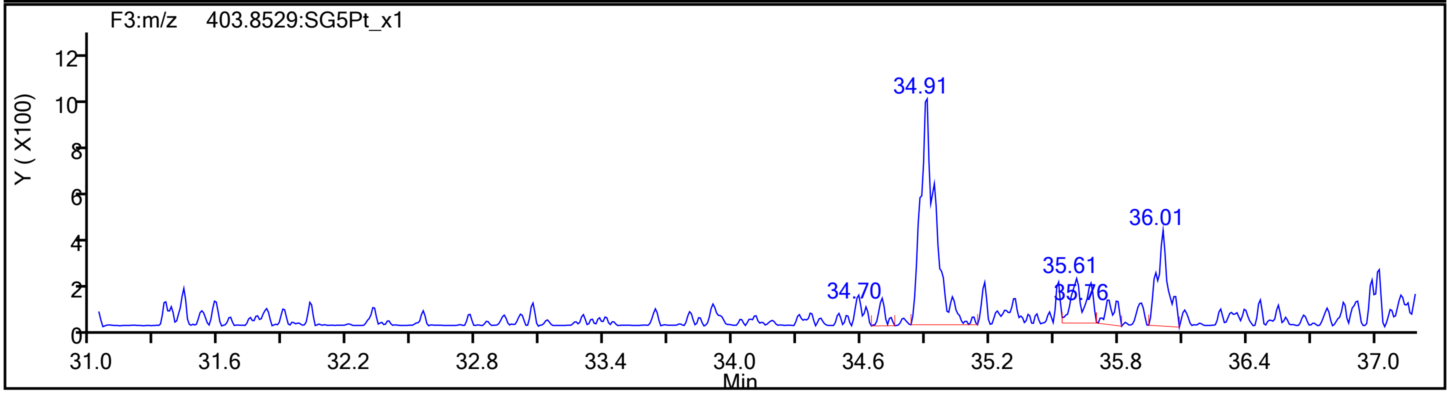

Report Date: 21-Sep-2020 18:44:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

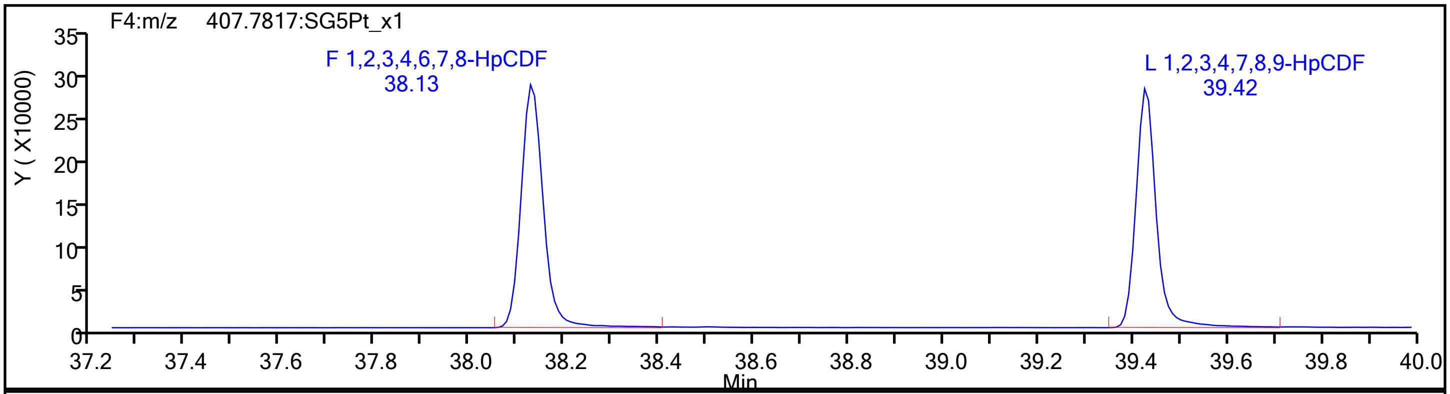

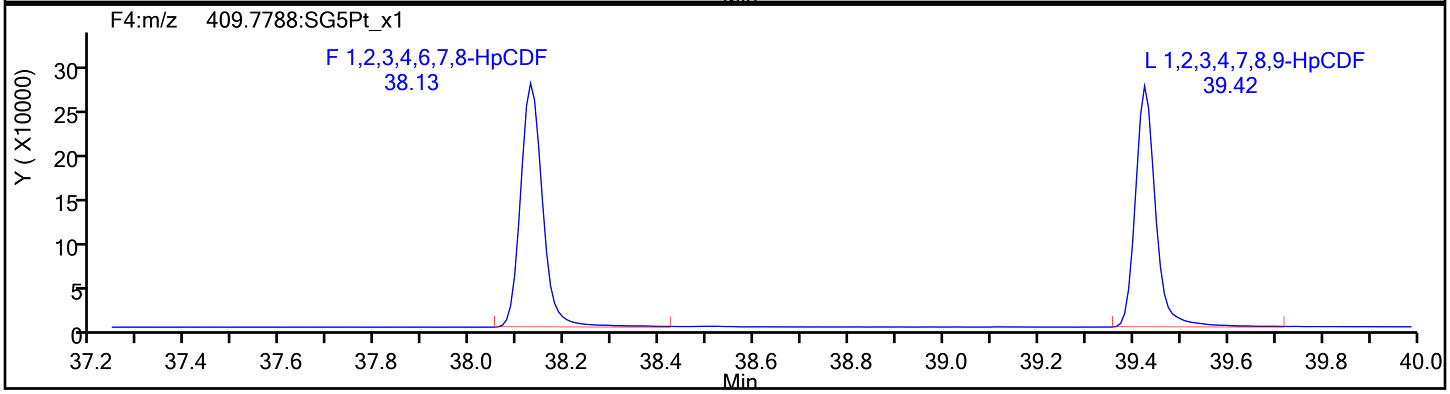

HpCDF Standards

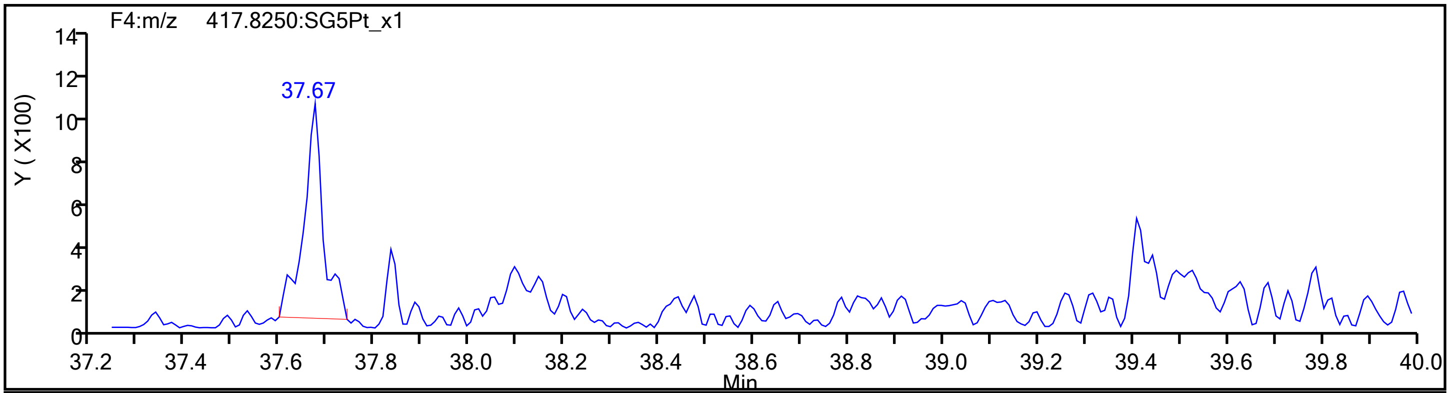

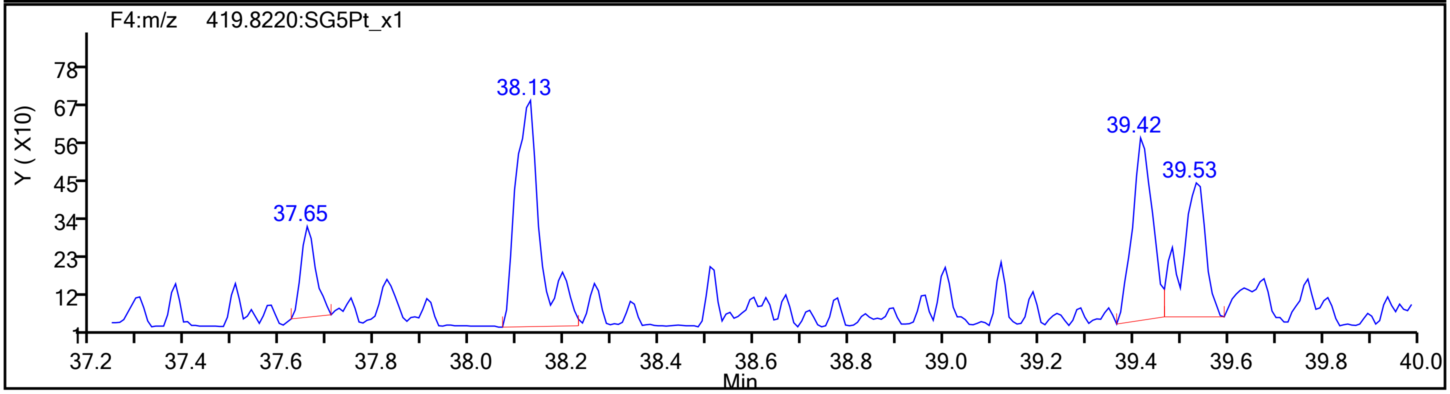

Report Date: 21-Sep-2020 18:44:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HpCDF

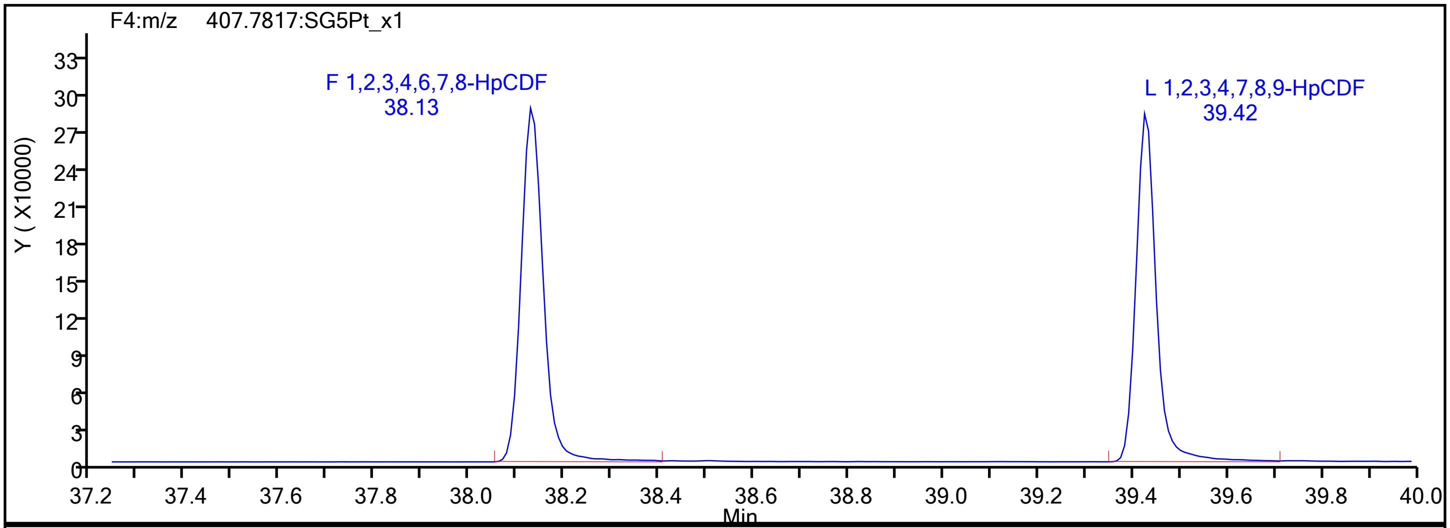

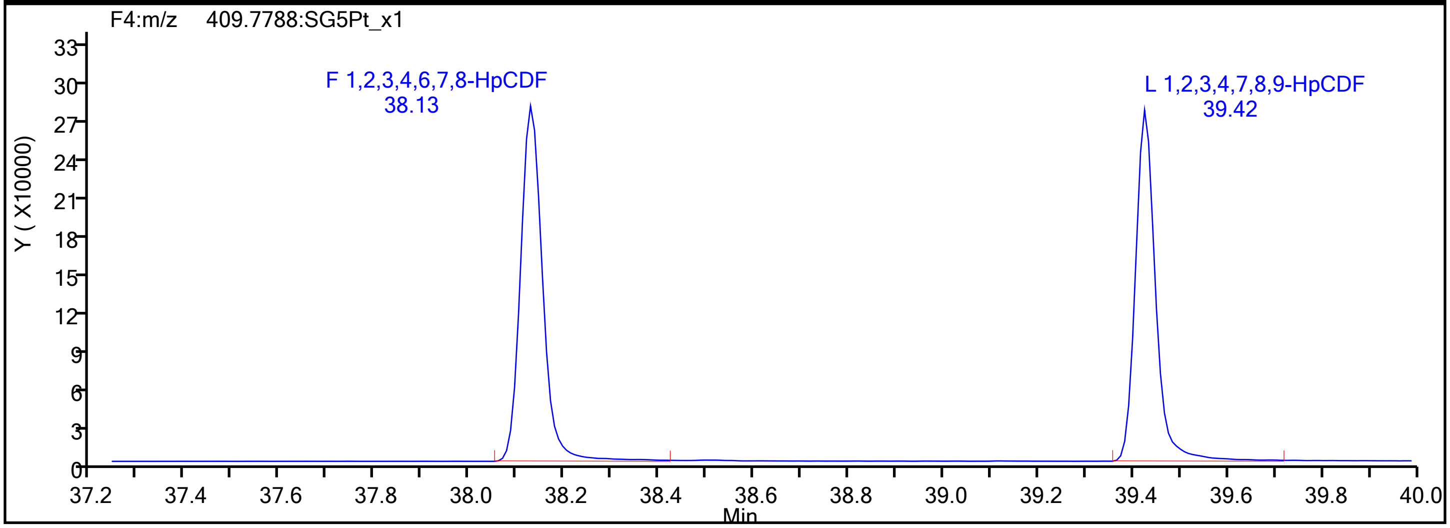

HpCDF Interference Mass

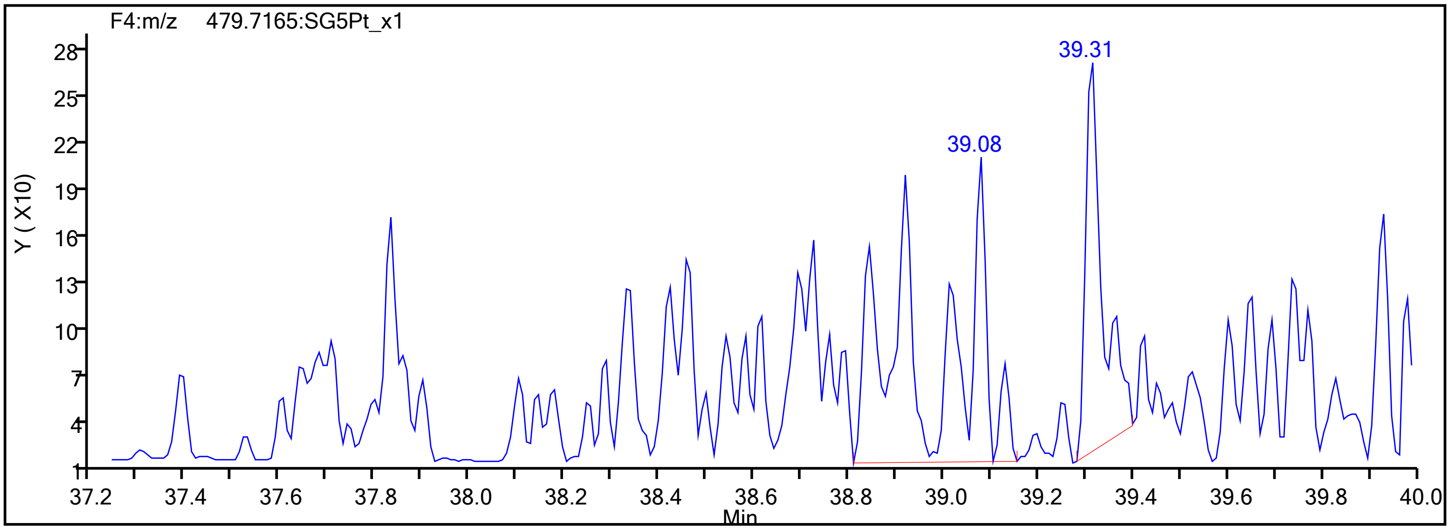

Report Date: 21-Sep-2020 18:44:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 21-Sep-2020 11:05:00
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HpCDD

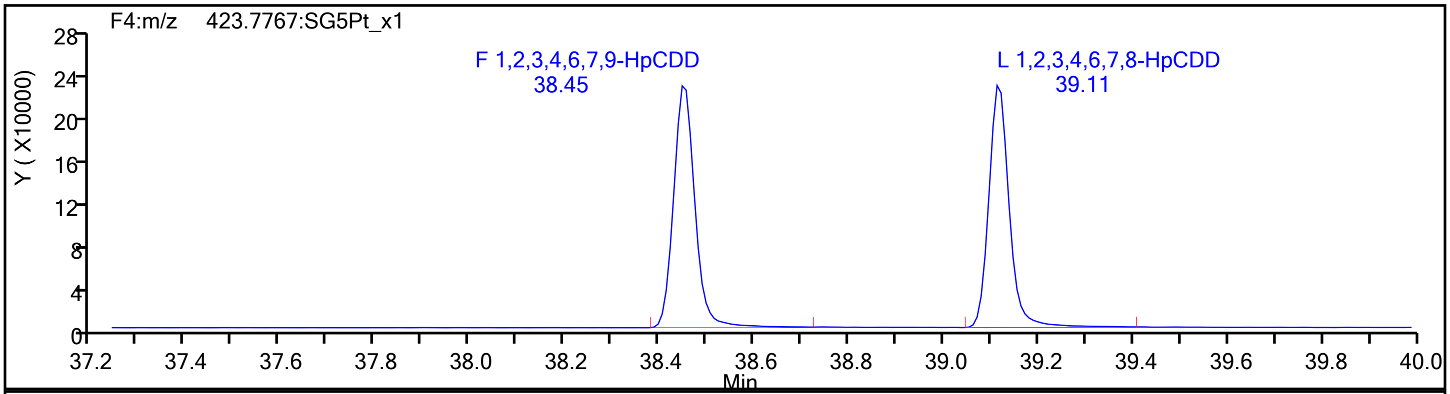

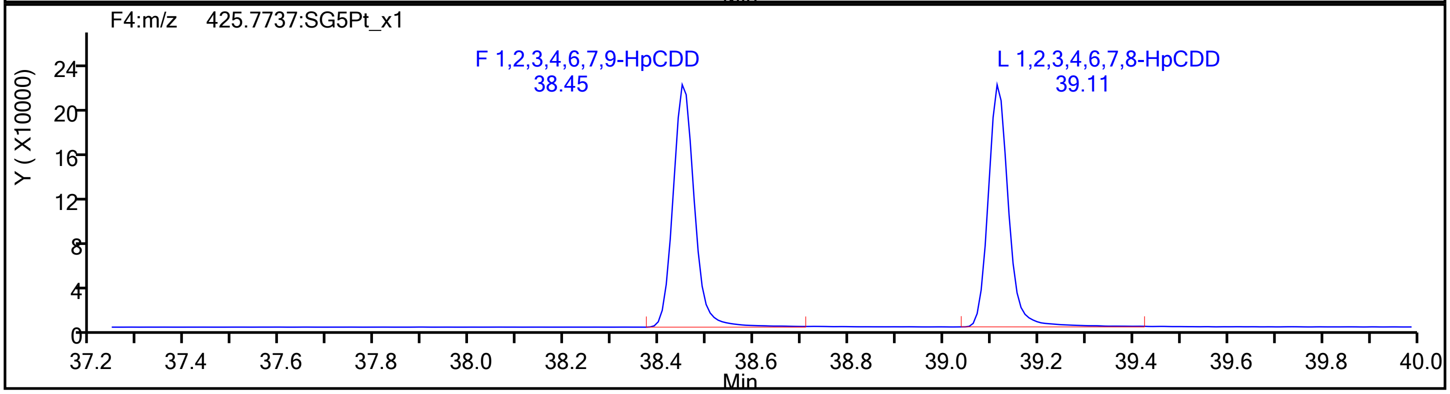

HpCDD Standards

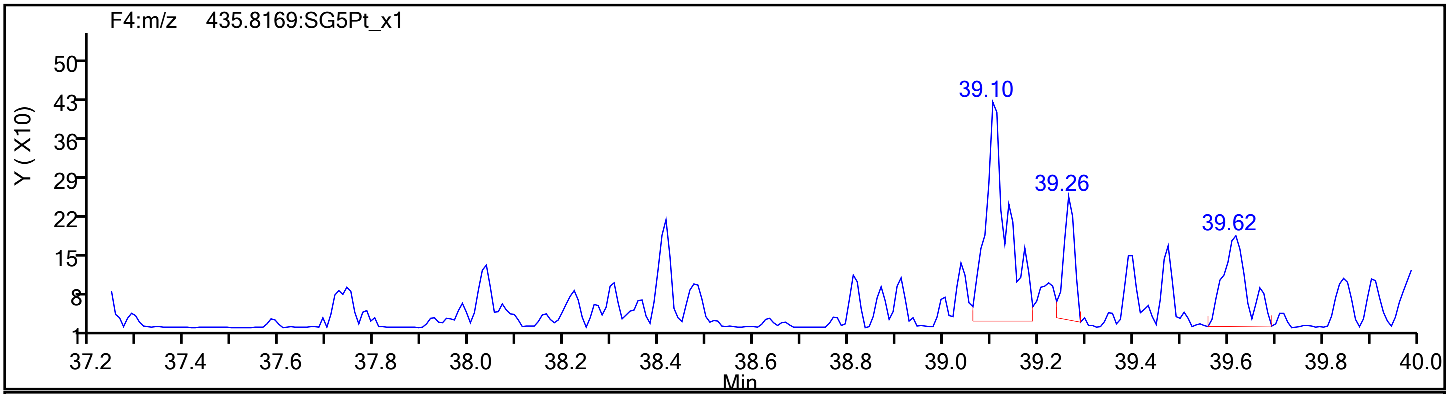

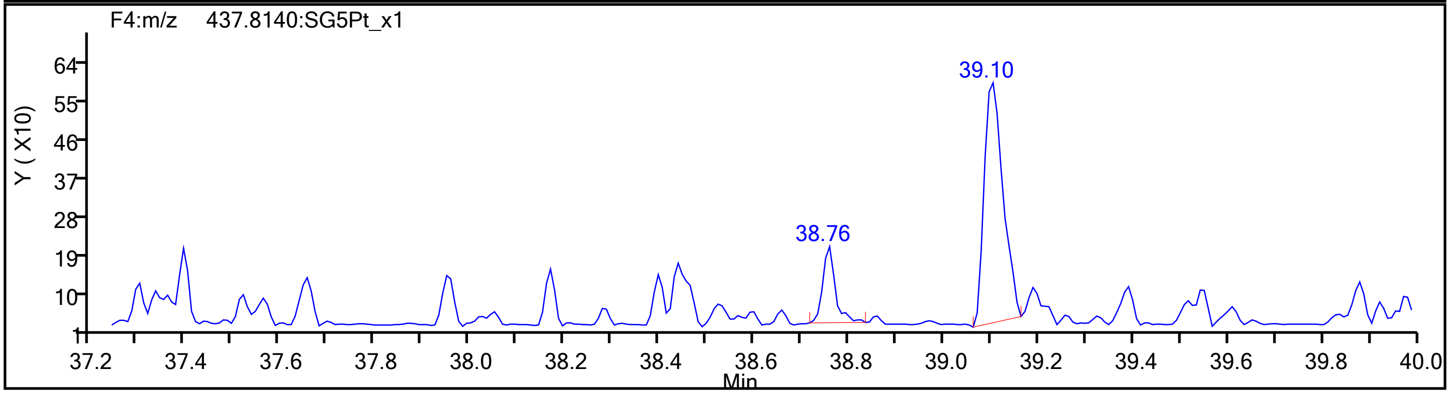

Report Date: 21-Sep-2020 18:44:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 21-Sep-2020 11:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 1
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Column Dia: 0.32 mm

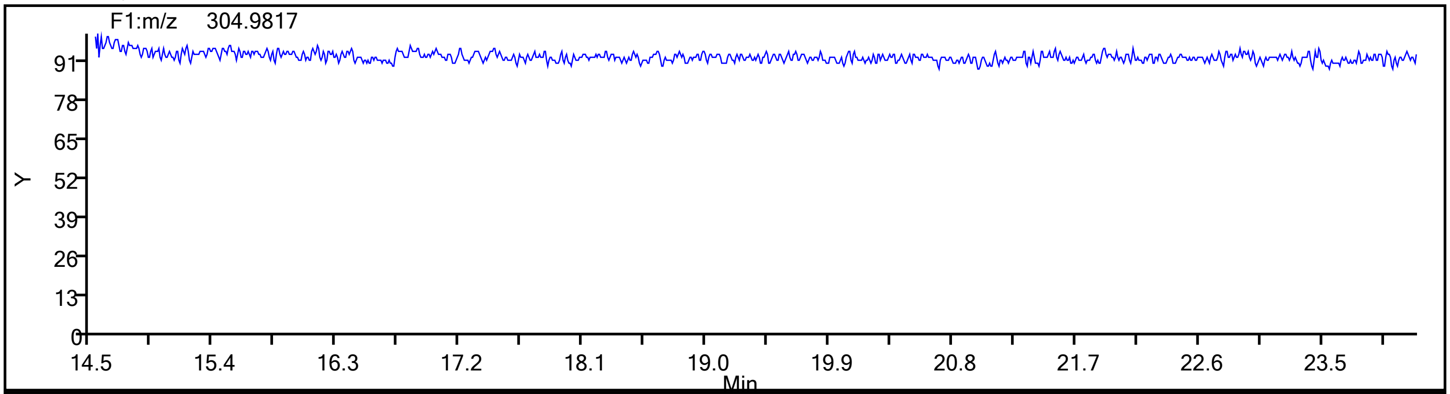

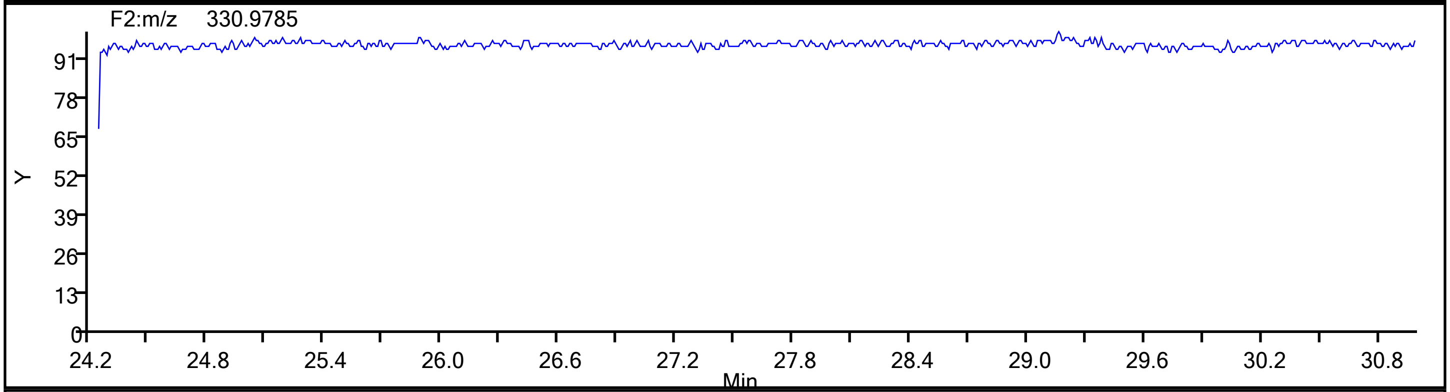

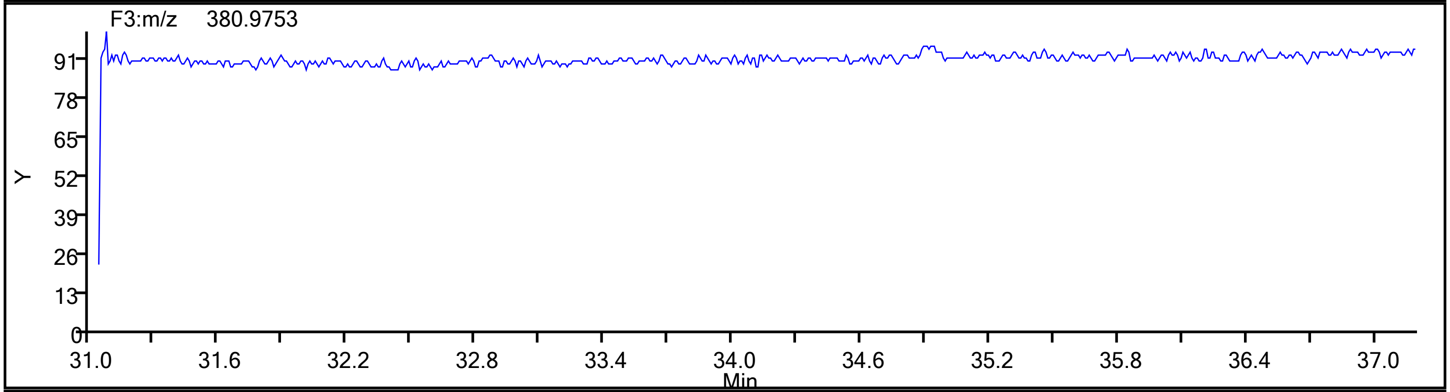

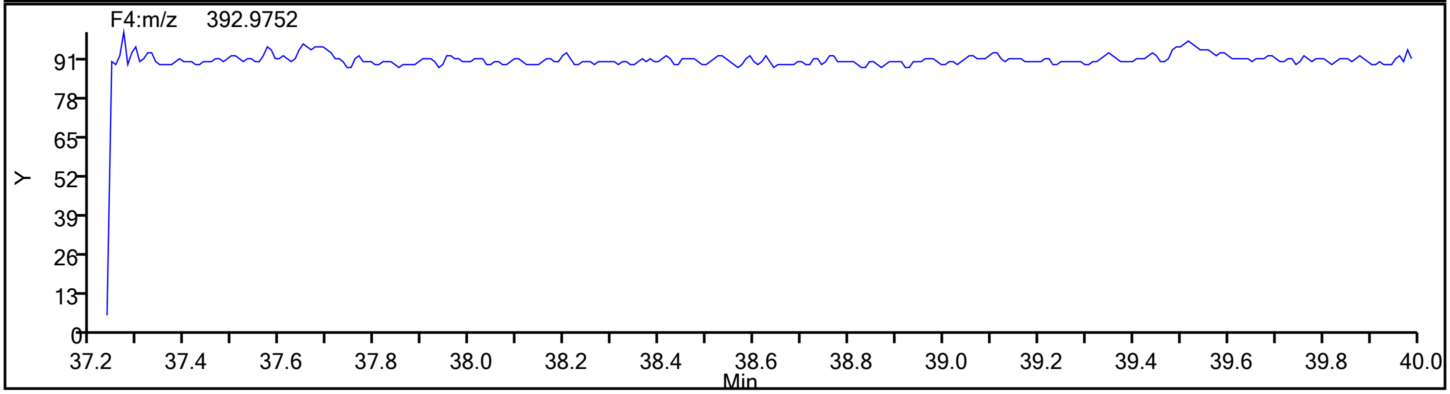

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_2.d

Injection Date: 21-Sep-2020 11:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
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Limit Group: HR - 1613B - ICAL
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Worklist#: 414413
Sample Line#: 1
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Column Dia: 0.32 mm

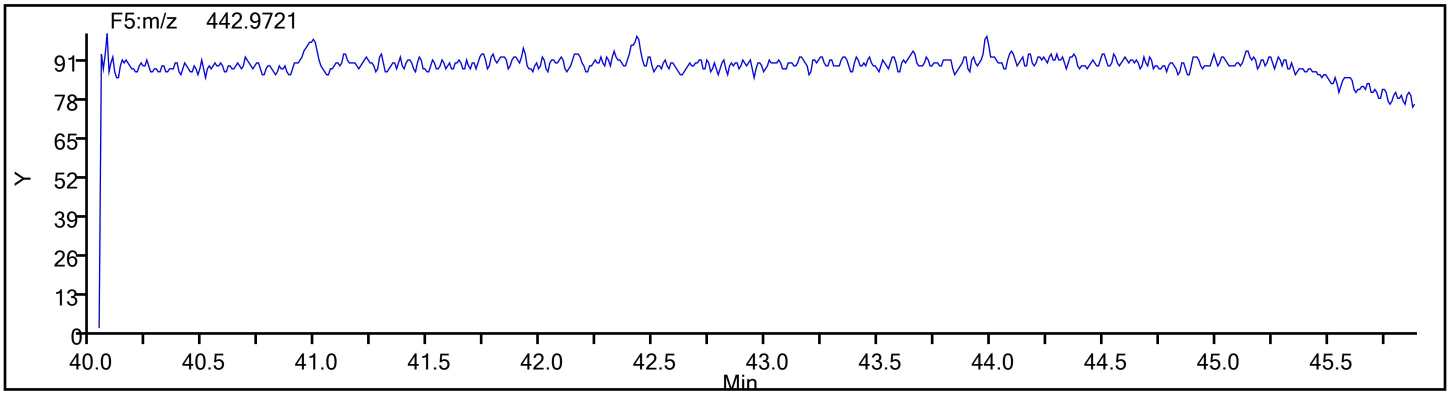

Report Date: 24-Sep-2020 10:48:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 23-Sep-2020 21:20:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 10:48:17 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 10:21:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.153	1612389	0.81	1.5883					0.00	
2,3,7,8-TCDF	19.205	3351102	0.79	1.0857	76.6	76.6	0.3348	0.3348		
A Non-2,3,7,8-sub-TCDF	18.740						0.3348	0.3348		
S Total TCDF					76.6	76.6	0.3348	0.3348		
D 13C-2,3,7,8-TCDD	20.435	1104274	0.79	1.1194					0.00	
2,3,7,8-TCDD	20.461	1181381	0.78	1.0810	39.6	39.6	0.2705	0.2705		
A Non-2,3,7,8-sub-TCDD	19.549						0.2705	0.2705		
S Total TCDD					39.6	39.6	0.2705	0.2705		
A F1 PeCDFs	23.567	1671	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.955	19351	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	27.294	8147	1.55	0.0000						RQ
S Total PeCDD										RQ
A Non-2,3,7,8-sub-HxCDF	34.158	7718	1.05	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.626	10755	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	38.096	1346606	1.04	1.5064						
1,2,3,4,7,8,9-HpCDF	39.393	1157376	1.04	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.744						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.090	904919	1.03	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.137	2001208	0.79							
1,3,6,8-TCDD	16.667	1185587	0.78							
2,3,4,7-TCDF	19.205	3351102	0.79							
1,2,3,7-TCDD	20.255	984598	0.77							
1,2,3,9-TCDF	20.642	1453889	0.79							
1,2,3,9-TCDD	20.736	1233654	0.78							
1,2,8,9-TCDF	22.344	1513412	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	22.430	483484								
1,3,4,6,8-PeCDF	22.972	1571077	1.56							
1,2,4,7,9-PeCDD	25.104	1023836	1.57							
1,2,3,8,9-PeCDD	29.485	992077	1.57							
1,2,3,8,9-PeCDF	29.645	1254487	1.57							
1,2,3,4,6,8-HxCDF	32.018	1429271	1.26							
1,2,4,6,7,9-HxCDD	33.324	1043284	1.23							
1,2,3,4,6,7-HxCDD	35.927	997093	1.26							
1,2,3,4,8,9-HxCDF	36.298	1271193	1.25							
1,2,3,4,6,7,9-HpCDD	38.416	990431	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 23-Sep-2020 21:20:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 24-Sep-2020 10:48:17 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1611

First Level Reviewer: shardaa Date: 24-Sep-2020 10:21:37

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.153	19.153	0	1.000	720189	109181	687	1717	159		
317.9389	19.162	19.153	1	1.000	892200	140886	372	930	379	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.205	19.205	0	1.003	1473962	208010	393	982	529		
305.8987	19.205	19.205	0	1.003	1877140	263600	516	1290	511	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.740						393	982			
305.8987	18.740						516	1290			
13C-2,3,7,8-TCDD											
331.9368	20.435	20.435	0	1.000	486999	71731	521	1302	138		
333.9338	20.435	20.435	0	1.000	617275	90361	105	262	861	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.461	20.461	0	1.001	516587	75527	247	617	306		
321.8936	20.461	20.461	0	1.001	664794	96238	227	567	424	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.549						247	617			
321.8936	19.549						227	567			
A F1 PeCDFs											RQ
339.8597	16.427	23.567	-428	1.000	1016	201	32	80	6		
341.8567	16.444	23.567	-427	1.000	7656	1323	60	150	22	0.13(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.719	26.955	-74	1.000	2966	535	118	295	5		
341.8567	25.686	26.955	-76	1.000	2920	508	117	292	4	1.02(1.32-1.78)	
339.8597	26.241	26.955	-43	1.000	7547	951	118	295	8		
341.8567	26.250	26.955	-42	1.000	2745	546	117	292	5	2.75(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.831	26.955	-7	1.000	4352	749	118	295	6		
341.8567	26.823	26.955	-8	1.000	3121	543	117	292	5	1.39(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	29.114	27.294	109	1.000	10743	1597	207	517	8		
357.8516	29.114	27.294	109	1.000	3195	588	101	252	6	3.36(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.310	34.158	9	1.000	3957	945	213	532	4		
375.8178	34.318	34.158	10	1.000	3761	806	148	370	5	1.05(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	34.613	34.626	-1	1.000	5954	1179	126	315	9		
391.8127	34.596	34.626	-2	1.000	5759	1049	124	310	8	1.03(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.096	38.096	0	1.000	685448	205173	418	1045	491		
409.7788	38.096	38.096	0	1.000	661158	199610	394	985	507	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.393	39.393	0	1.000	590506	183573	418	1045	439		
409.7788	39.393	39.393	0	1.000	566870	179800	394	985	456	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.744						418	1045			
409.7788	38.744						394	985			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.090	39.090	0	1.000	459342	139559	346	865	403		
425.7737	39.081	39.090	-1	1.000	445577	137819	299	747	461	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						346	865			
425.7737	38.941						299	747			
1,3,6,8-TCDF											
303.9016	15.137	15.112	1		883225	182358	393	982	464		
305.8987	15.137	15.112	1		1117983	230257	516	1290	446	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.667	16.643	1		520957	93367	247	617	378		
321.8936	16.659	16.643	1		664630	123637	227	567	545	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.205	19.172	2		1473962	208010	393	982	529		
305.8987	19.205	19.172	2		1877140	263600	516	1290	511	0.79(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.255	20.239	1		429215	62914	247	617	255		
321.8936	20.255	20.239	1		555383	83070	227	567	366	0.77(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.642	20.626	1		641428	88548	393	982	225		
305.8987	20.650	20.626	1		812461	111820	516	1290	217	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.736	20.712	1		540121	71488	247	617	289		
321.8936	20.736	20.712	1		693533	91627	227	567	404	0.78(0.65-0.89)	

Report Date: 24-Sep-2020 10:48:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	22.344	22.320	1		668108	84154	393	982	214		
305.8987	22.336	22.320	1		845304	105541	516	1290	205	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	22.430	22.406	1		483484	62640	247	617	254		
1,3,4,6,8-PeCDF											
339.8597	22.972	22.939	2		957716	119486	32	80	3734		
341.8567	22.972	22.939	2		613361	77124	60	150	1285	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.104	25.086	1		625425	102263	207	517	494		
357.8516	25.104	25.086	1		398411	65222	101	252	646	1.57(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.485	29.467	1		605380	84610	207	517	409		
357.8516	29.485	29.467	1		386697	55212	101	252	547	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.645	29.627	1		765664	103257	118	295	875		
341.8567	29.645	29.627	1		488823	64719	117	292	553	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.018	31.997	1		796359	103611	213	532	486		
375.8178	32.018	31.997	1		632912	81019	148	370	547	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.324	33.303	1		575757	97690	126	315	775		
391.8127	33.324	33.303	1		467527	78415	124	310	632	1.23(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.927	35.899	2		555748	135091	126	315	1072		
391.8127	35.919	35.899	1		441345	108661	124	310	876	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.298	36.278	1		706192	178537	213	532	838		
375.8178	36.298	36.278	1		565001	140900	148	370	952	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.416	38.402	1		505950	154517	346	865	447		
425.7737	38.416	38.402	1		484481	151115	299	747	505	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 23-Sep-2020 21:20:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 415261
Lims Sample ID: 1

F1 PeCDFs, RT: 23.567

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.427	1016	201	7656	1323		0.13	R
Signal Totals:							
	1016	201	7656	1323			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8672	1524				0.13	RQ
	1671	330					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (8672 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (1671 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 23-Sep-2020 21:20:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 415261 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 26.955

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.719	2966	535	2920	508		1.02	R
26.241	7547	951	2745	546		2.75	R
26.831	4352	749	3121	543		1.39	
Signal Totals:							
	14865	2235	8786	1597			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	23651	3832				1.69	RQ
	19351	3564					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (23651 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (19351 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	23-Sep-2020 21:20:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDD, RT: 27.294

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
29.114	10743	1597	3195	588		3.36	R
Signal Totals:							
	10743	1597	3195	588			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13938	2185				3.36	RQ
	8147	1499					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13938 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (8147 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	23-Sep-2020 21:20:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 34.158

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.310	3957	945	3761	806		1.05	
Signal Totals:							
	3957	945	3761	806			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7718	1751				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (7718 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	23-Sep-2020 21:20:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	415261	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 34.626

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.613	5954	1179	5759	1049		1.03	R
Signal Totals:							
	5954	1179	5759	1049			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11713	2228				1.03	RQ
	10755	2129					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11713 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (10755 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 24-Sep-2020 10:48:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d		
Injection Date:	23-Sep-2020 21:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415261	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

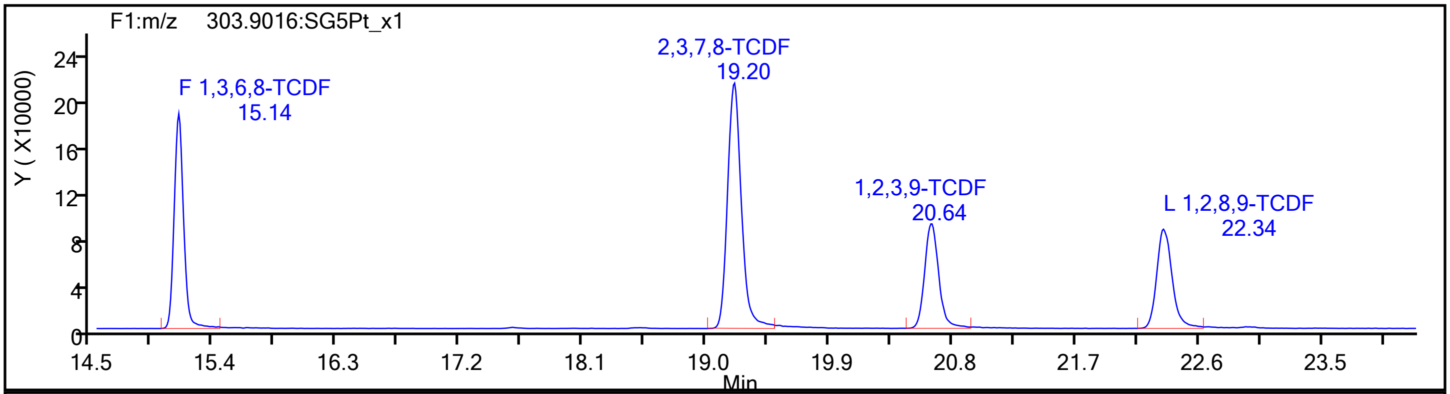

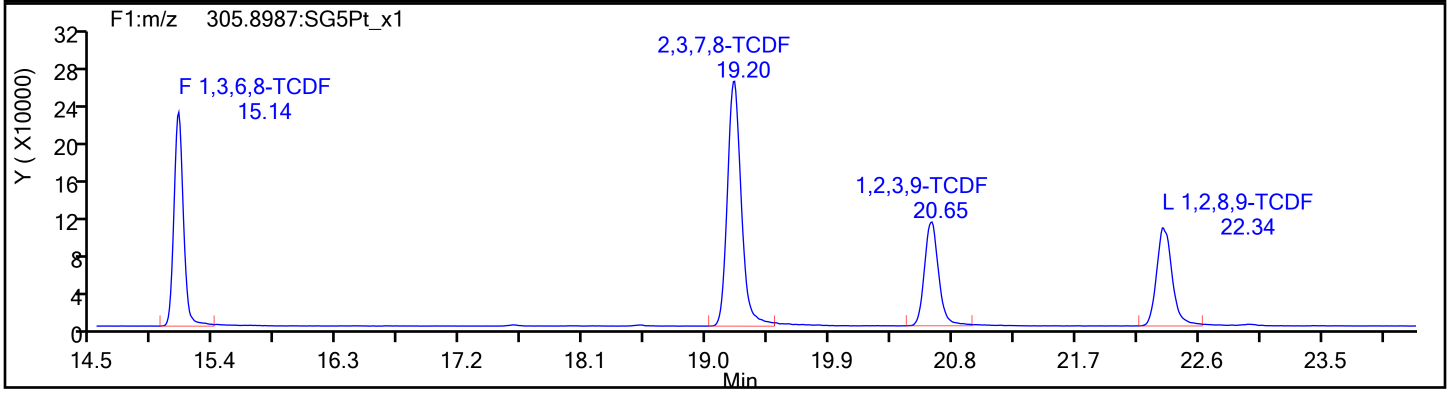

TCDF Standards

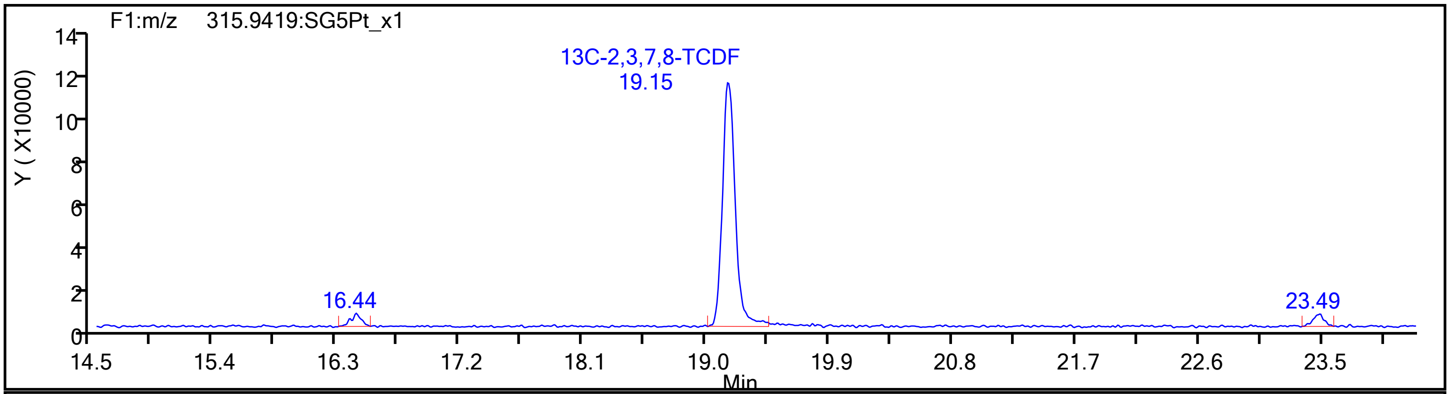

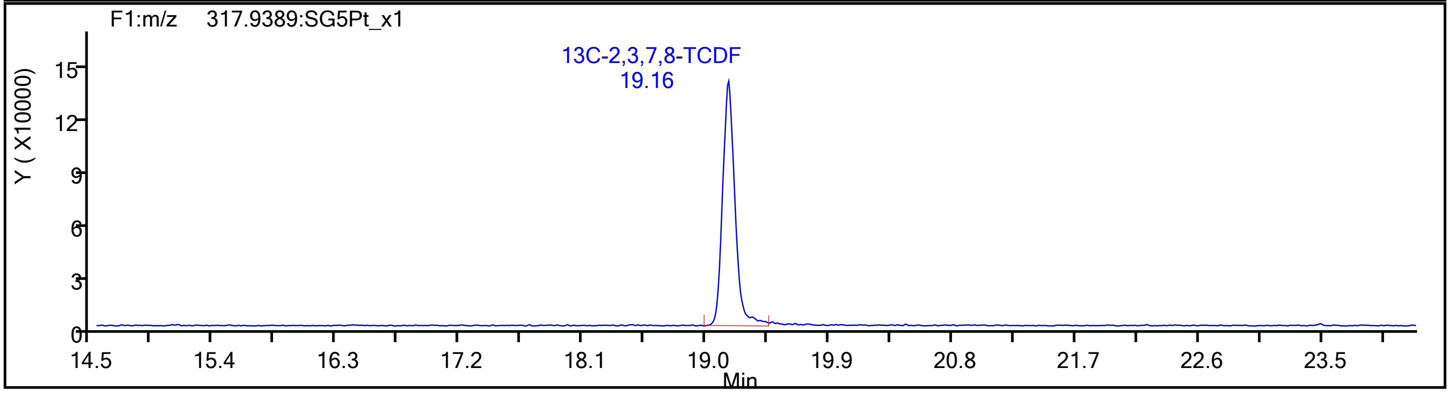

Report Date: 24-Sep-2020 10:48:19 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200924-103938.b\23se20dfs1_2.d		
Injection Date:	23-Sep-2020 21:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	415261	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

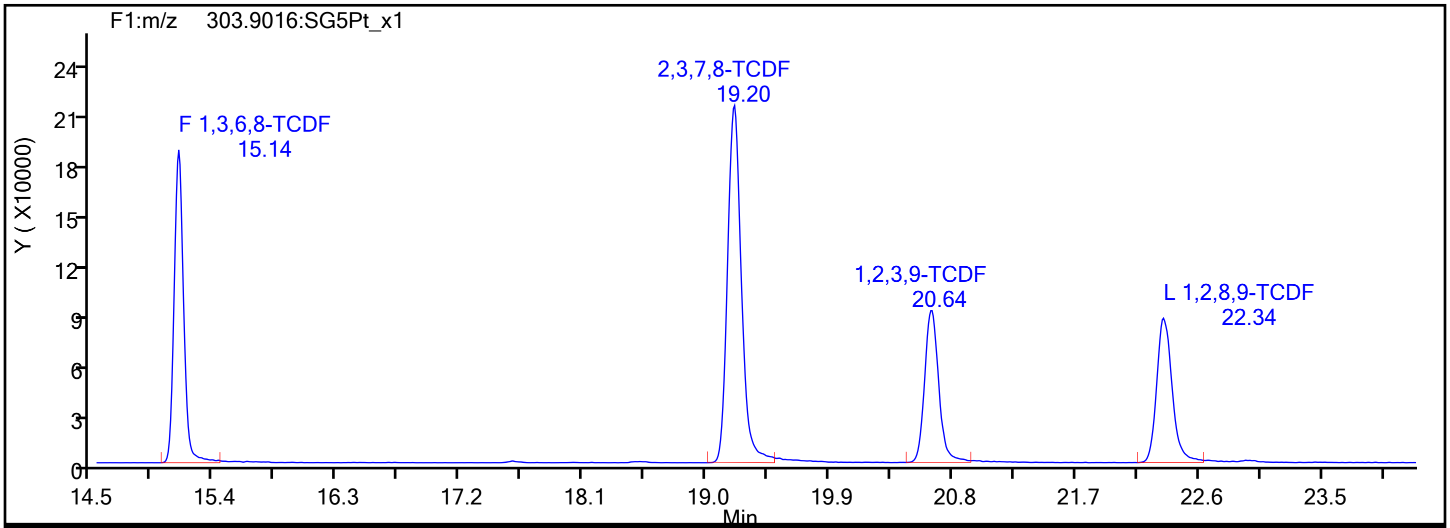

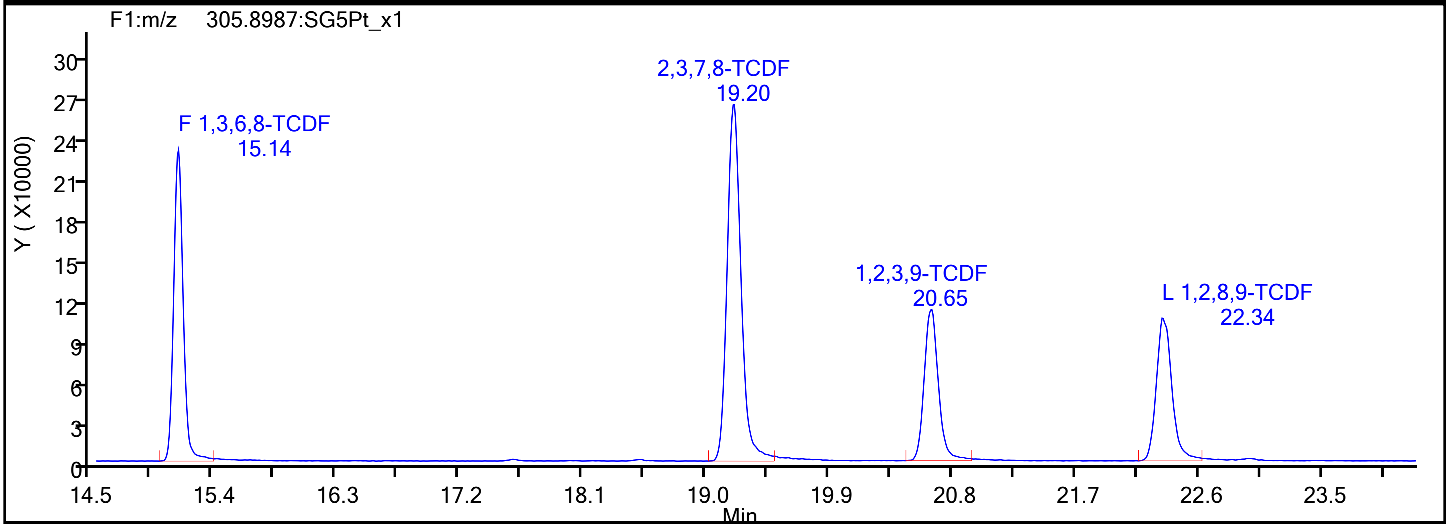

TCDF Interference Mass

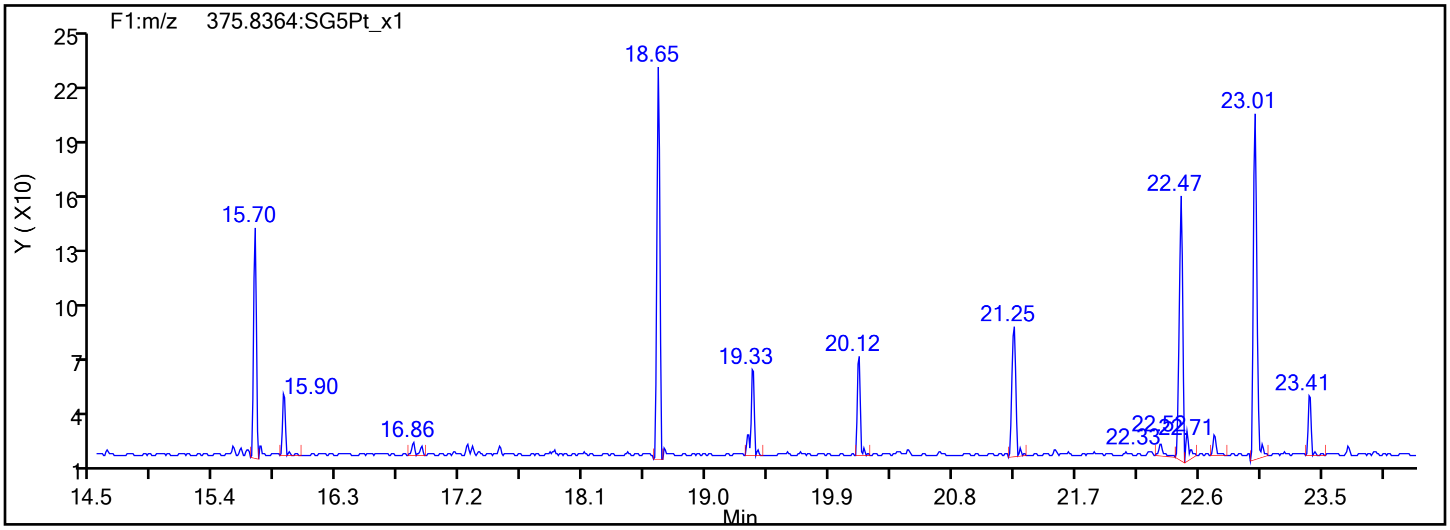

Report Date: 24-Sep-2020 10:48:19
Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

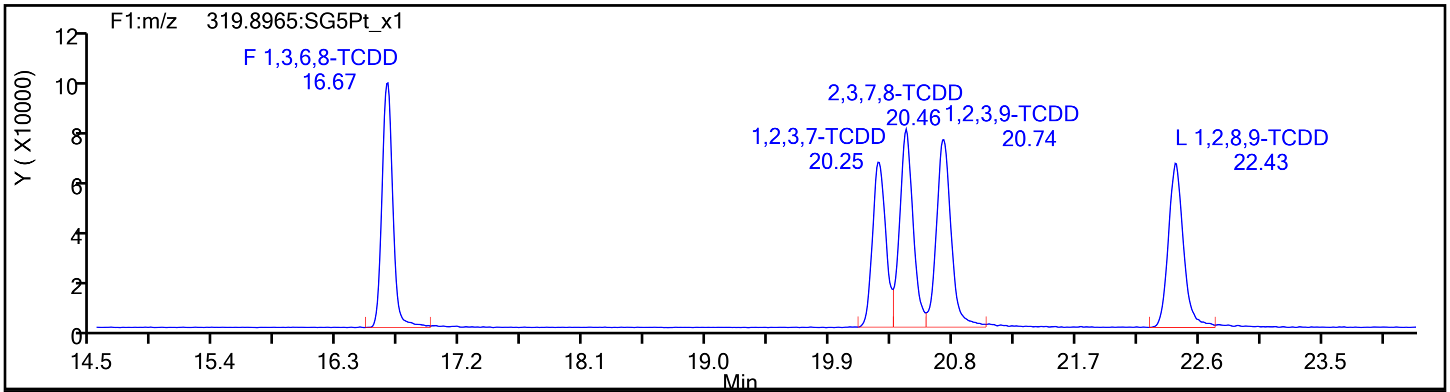

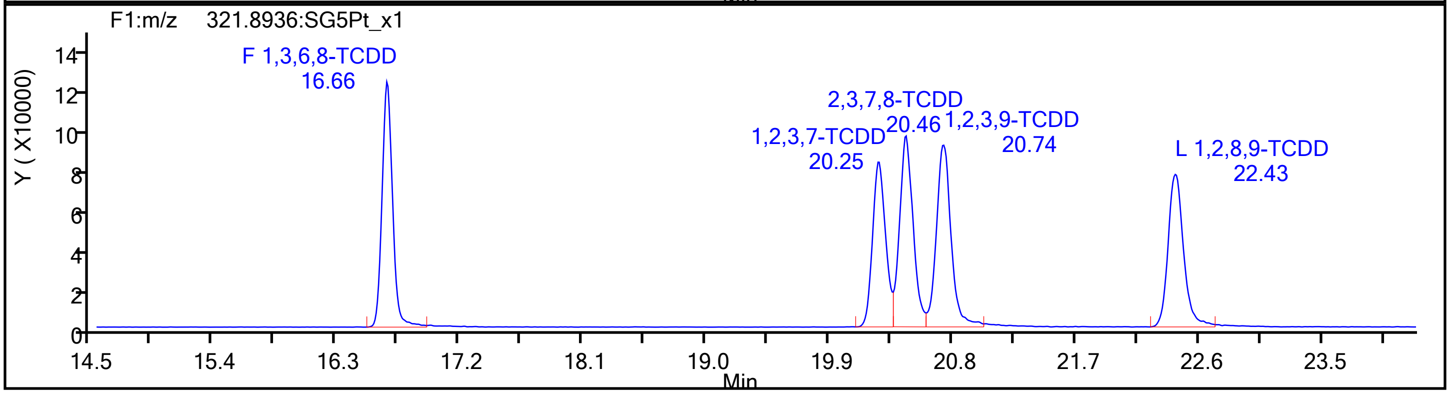

TCDD Standards

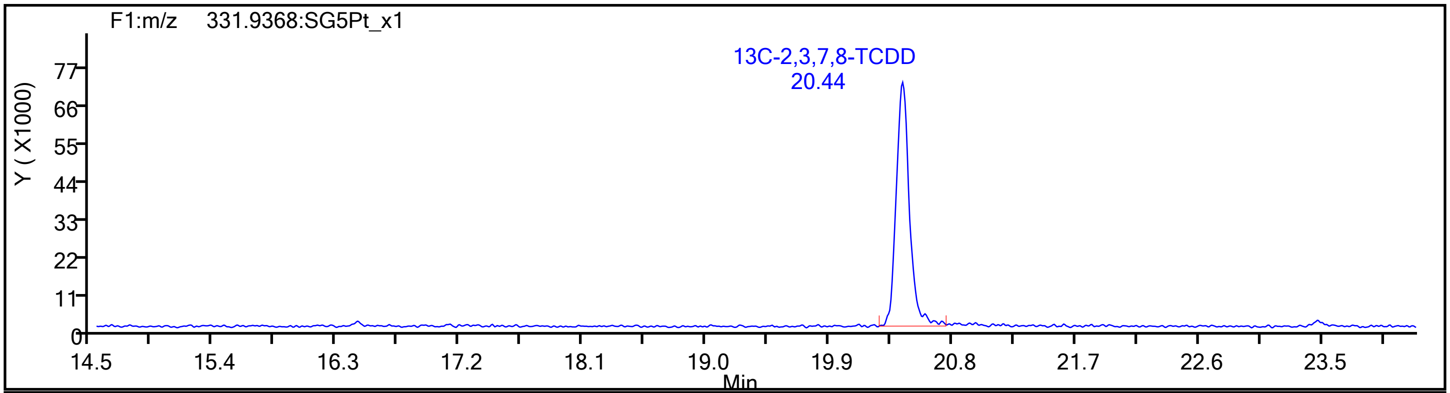

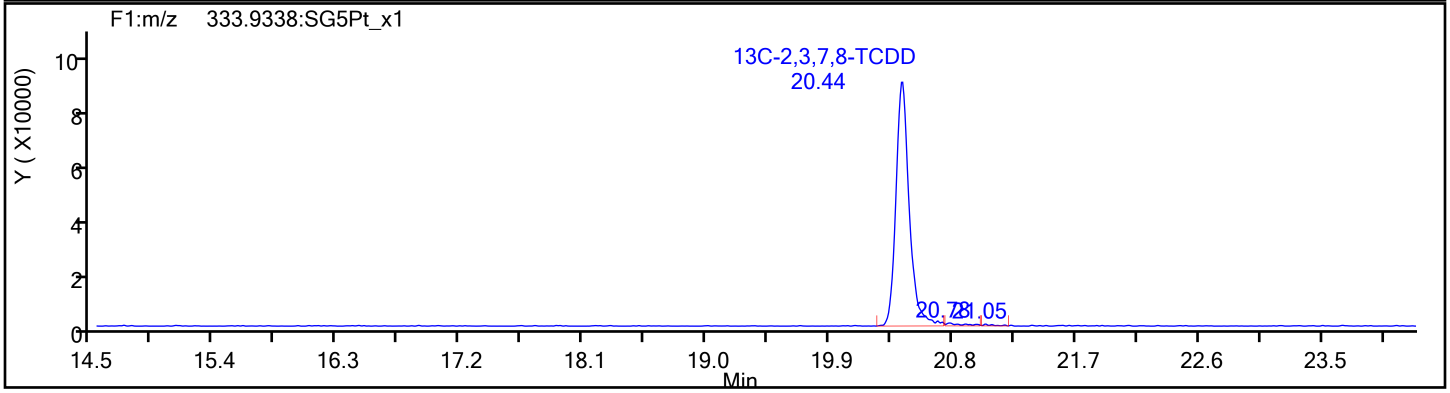

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

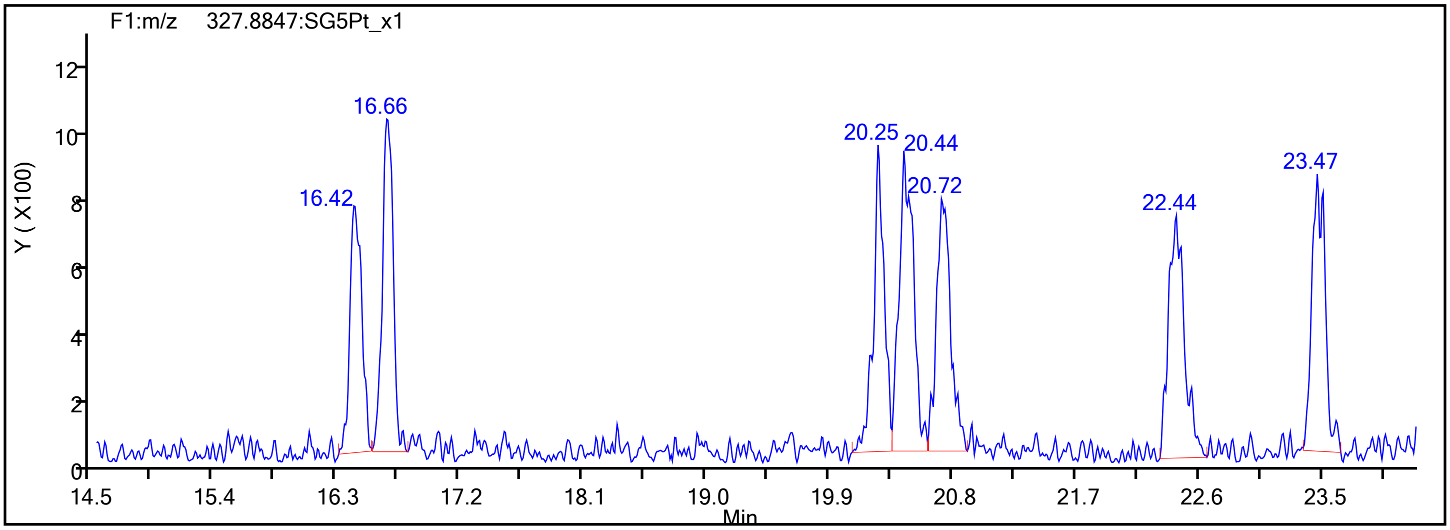

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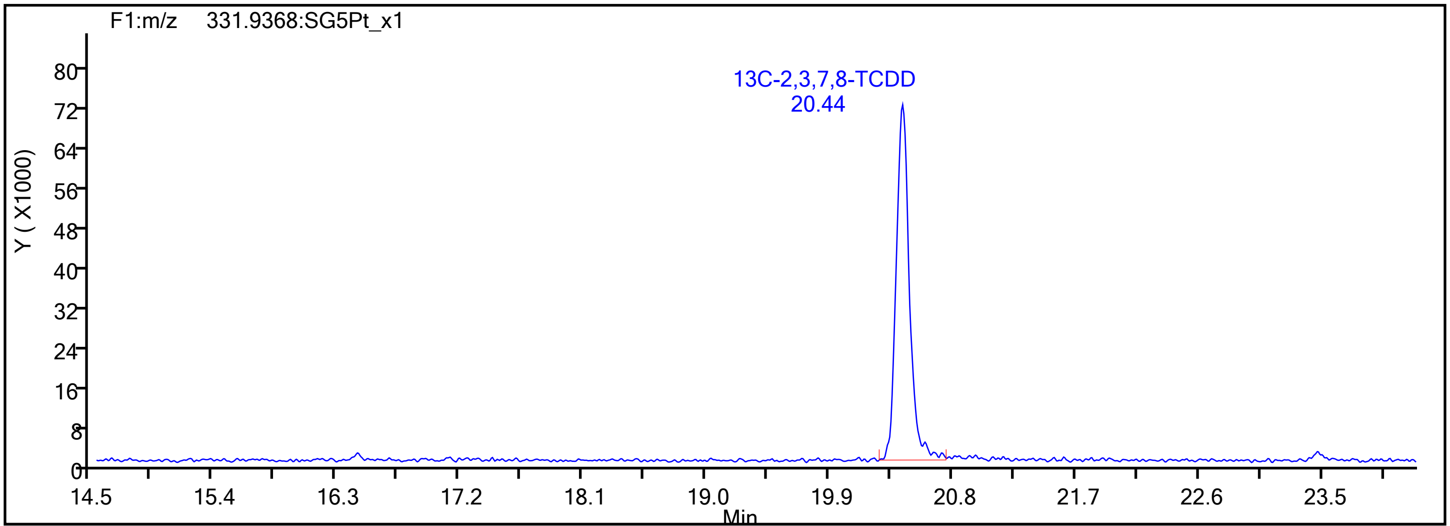

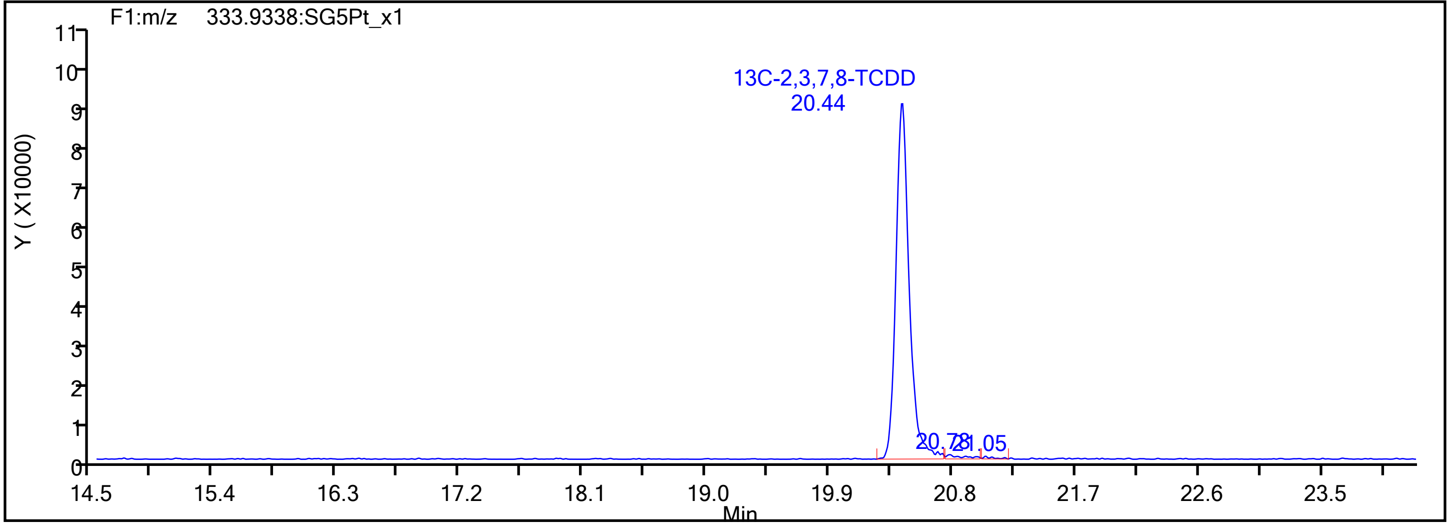

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

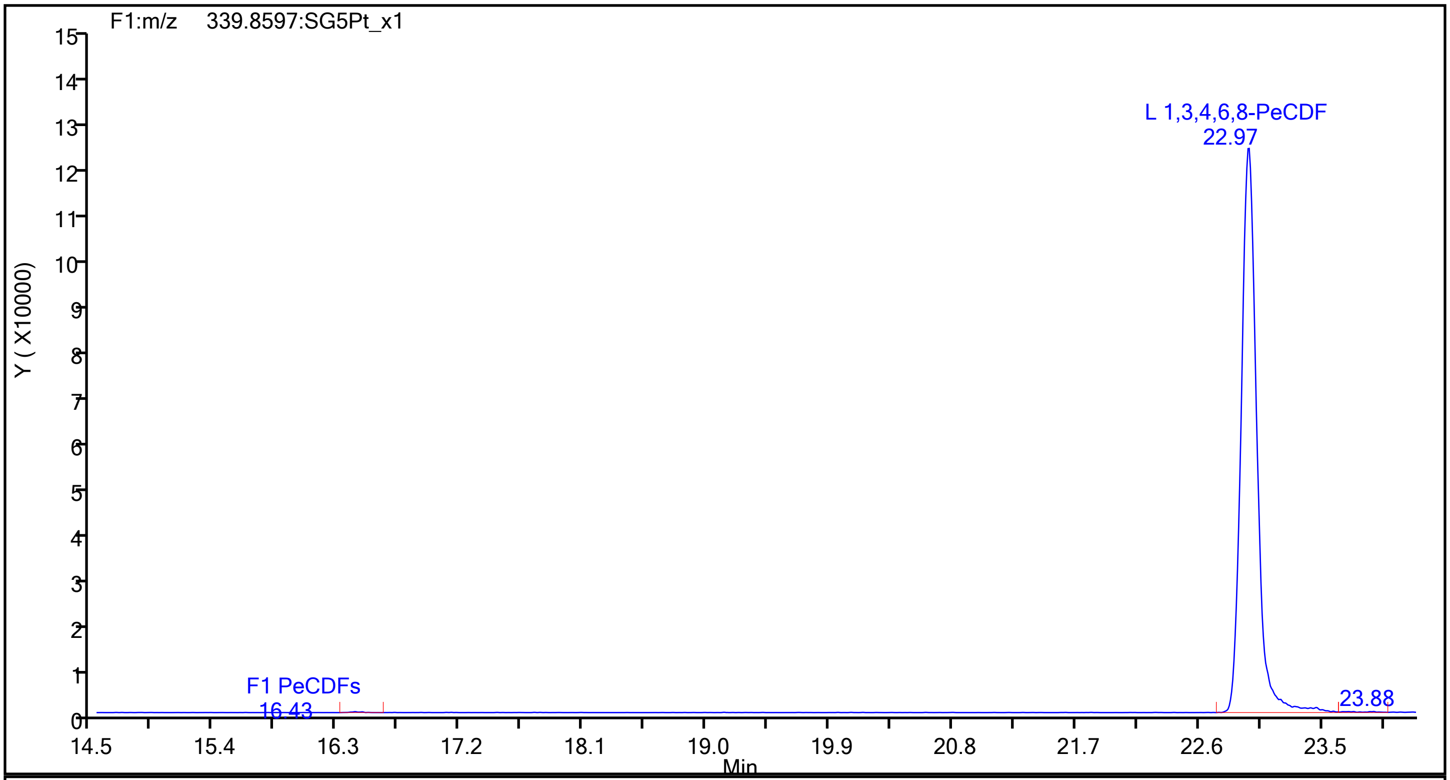

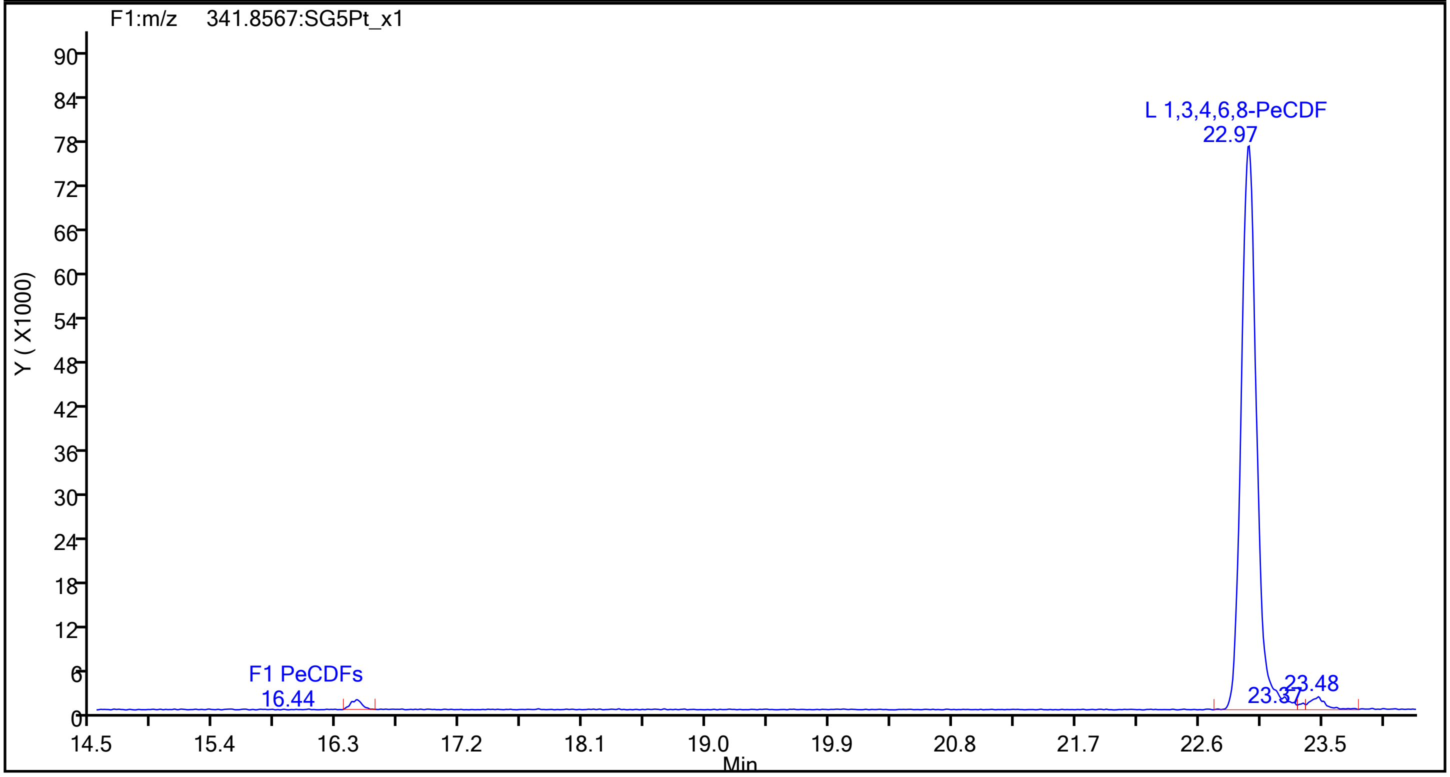

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Eurofins TestAmerica, Sacramento

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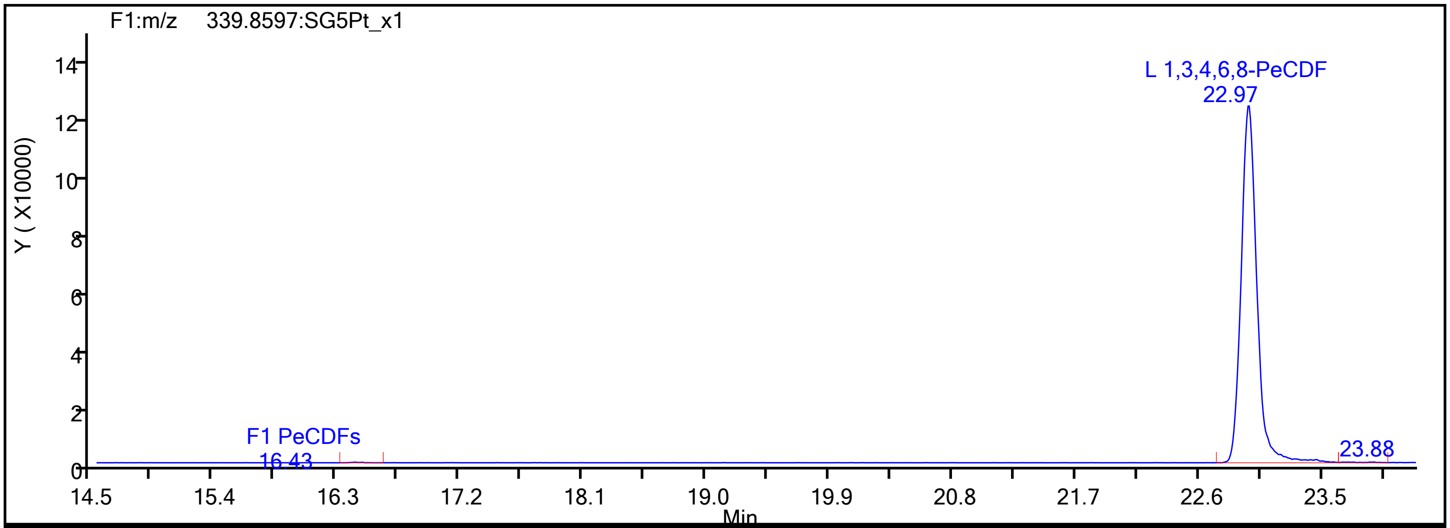

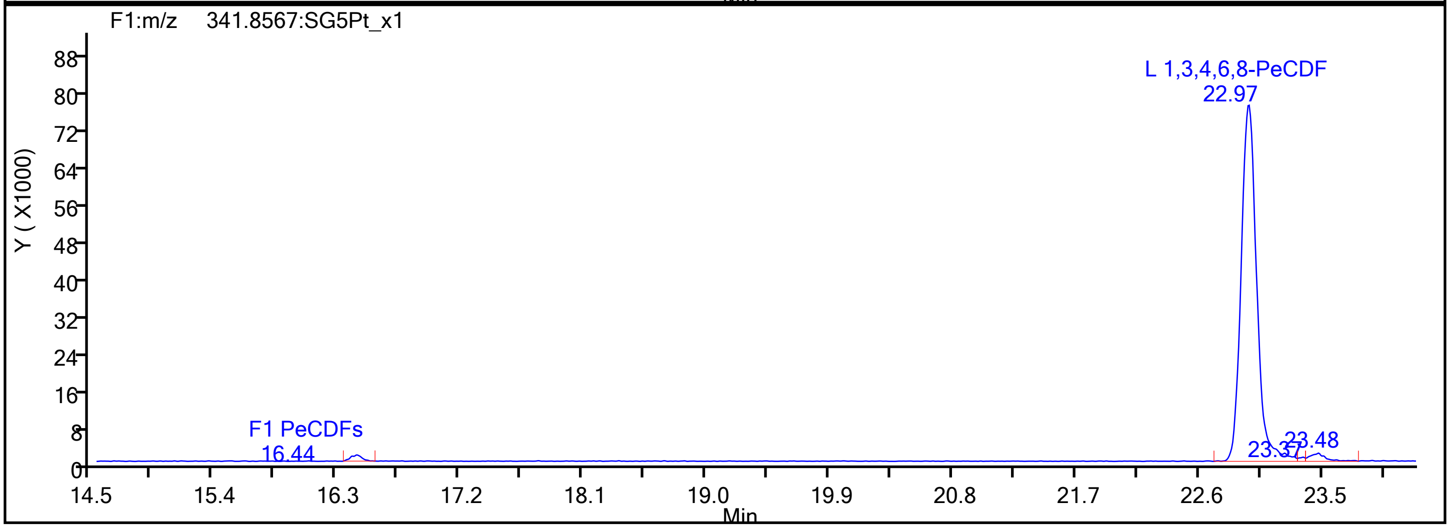

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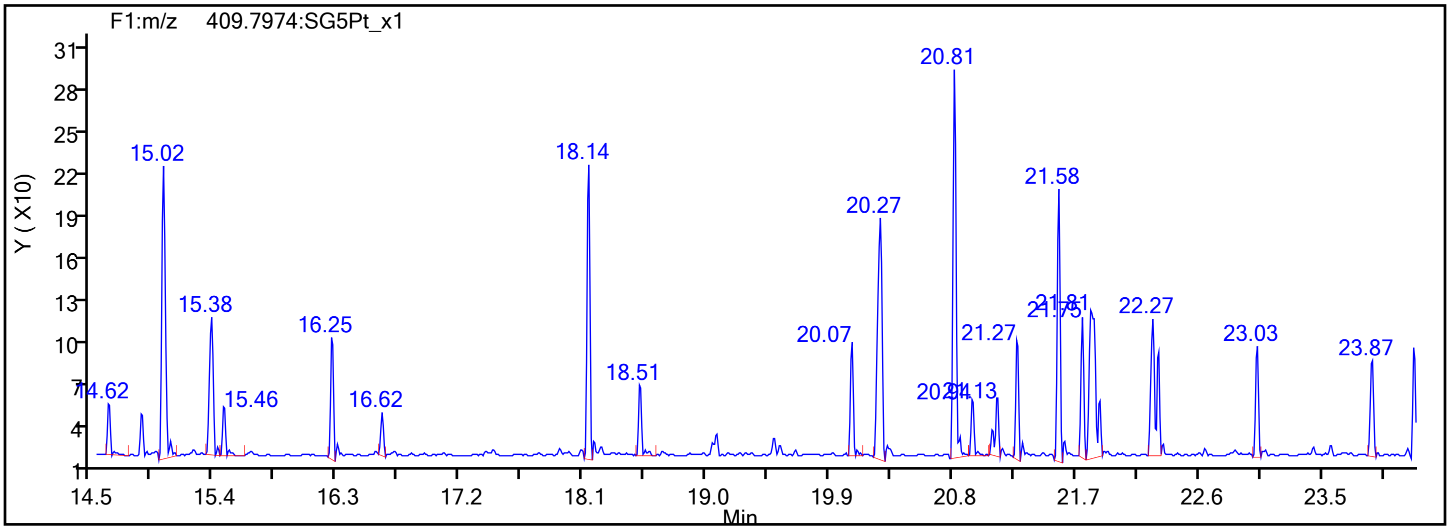

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Eurofins TestAmerica, Sacramento

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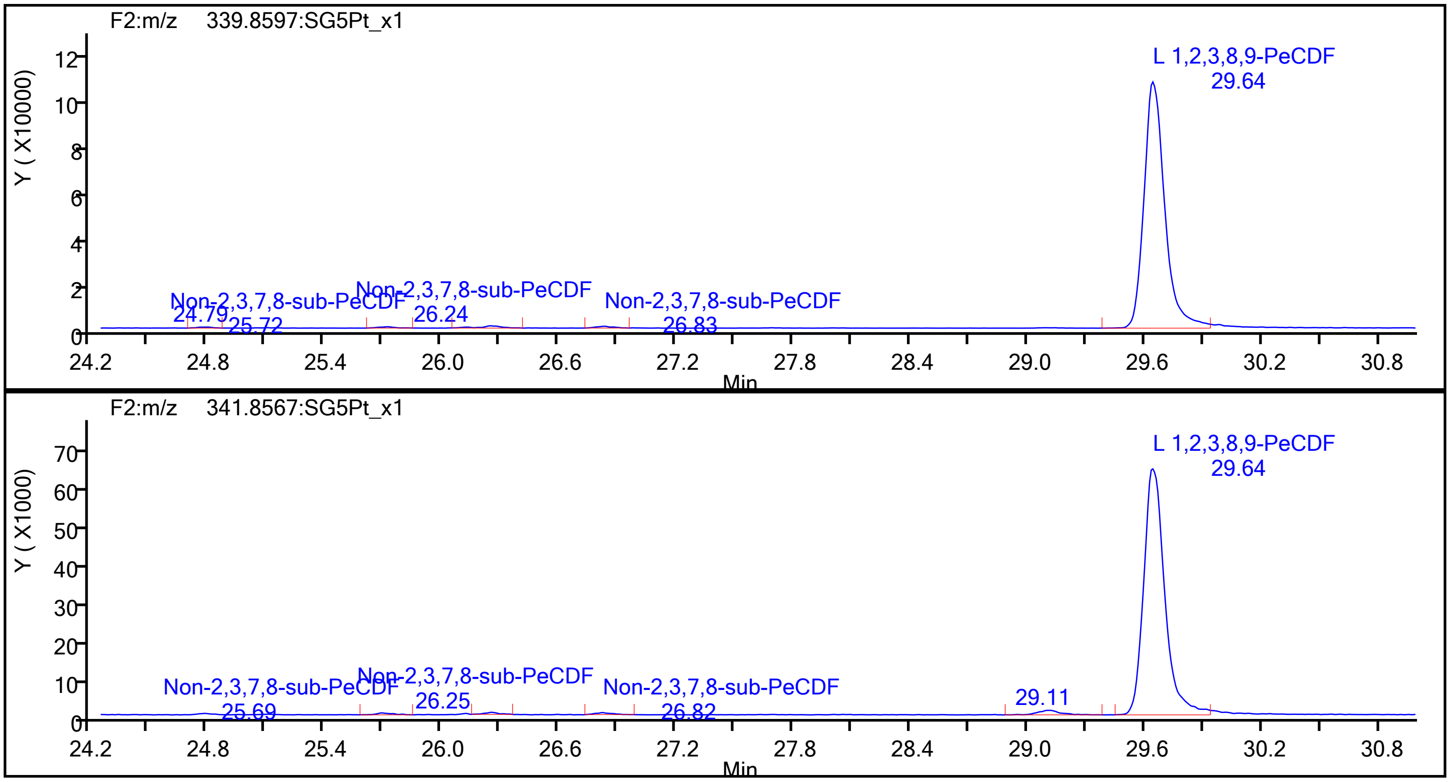

PeCDF Standards

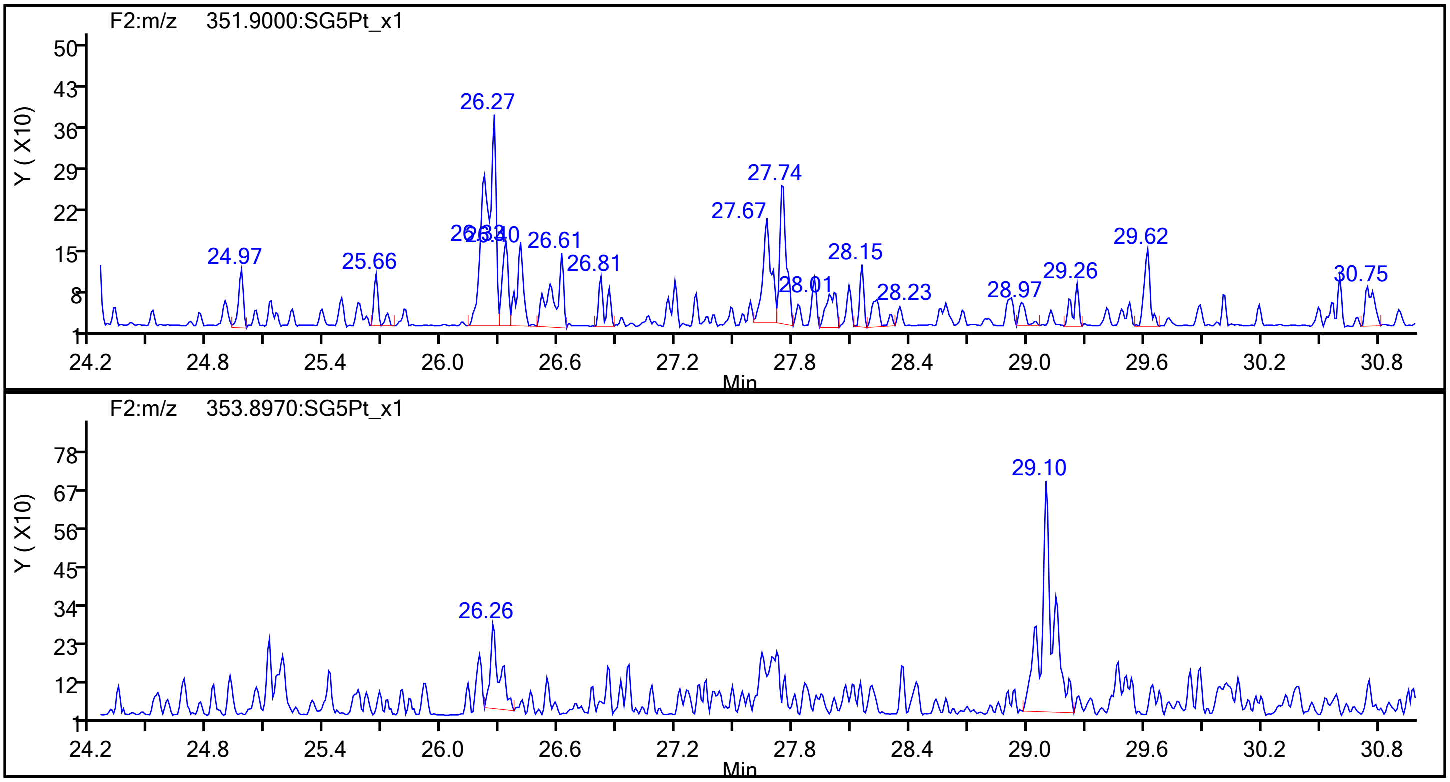

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Eurofins TestAmerica, Sacramento

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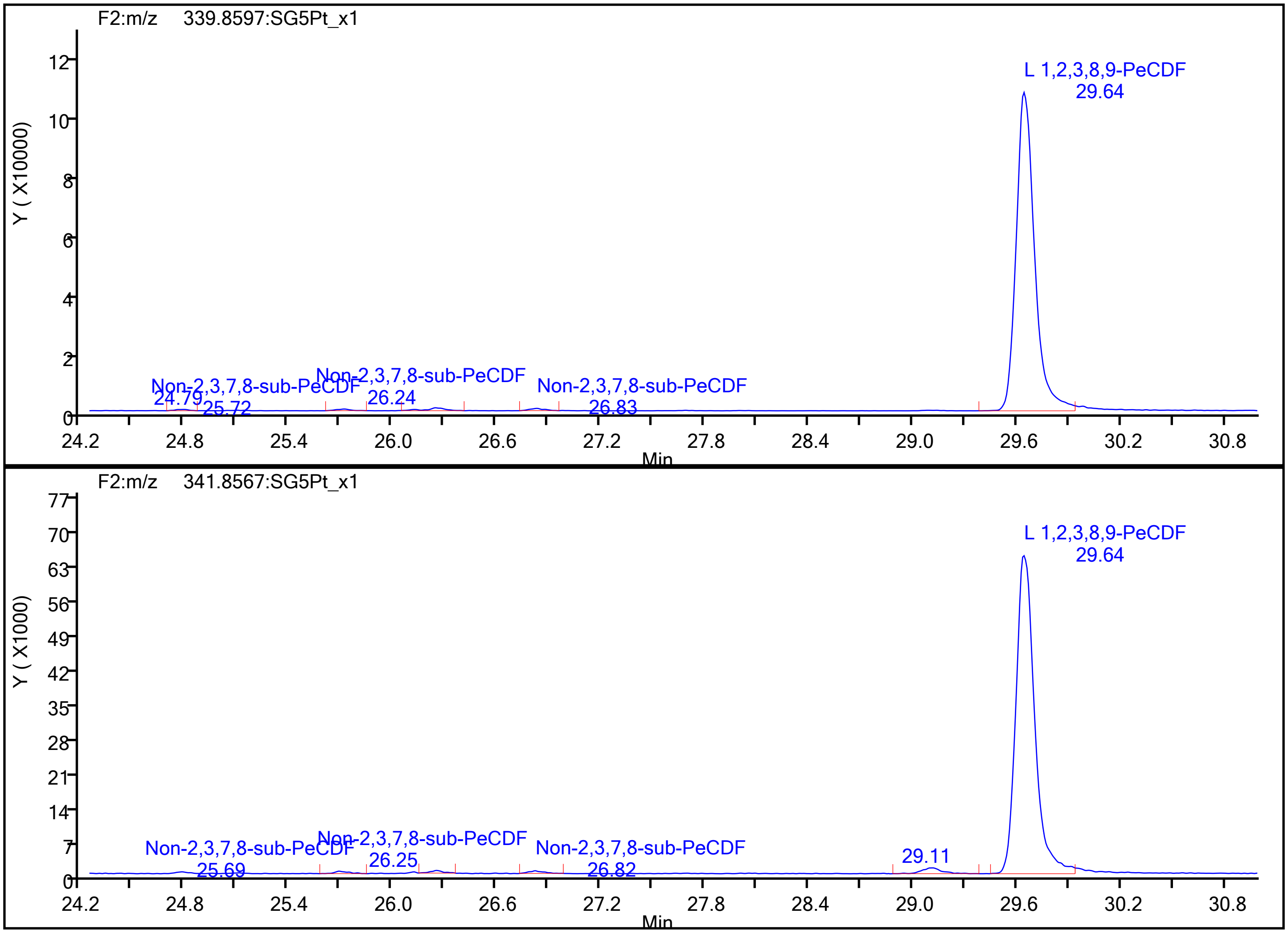

PeCDF Interference Mass

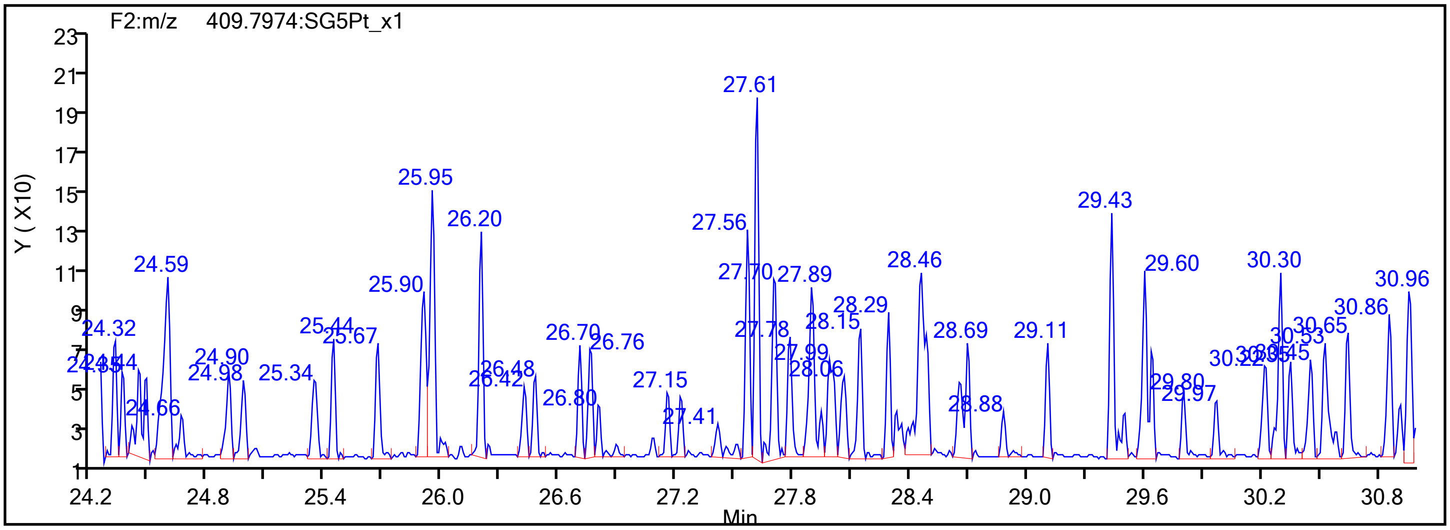

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDD

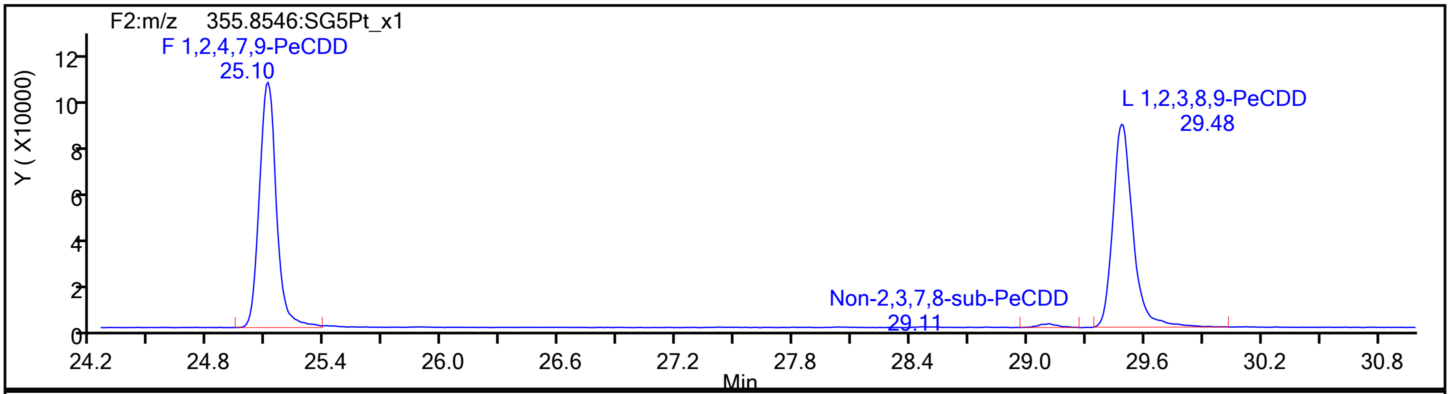

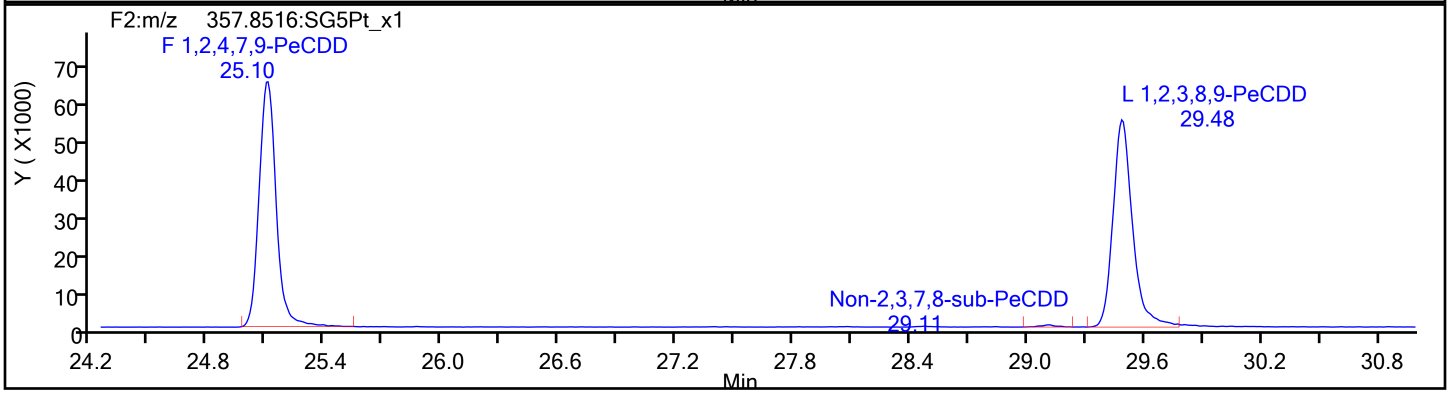

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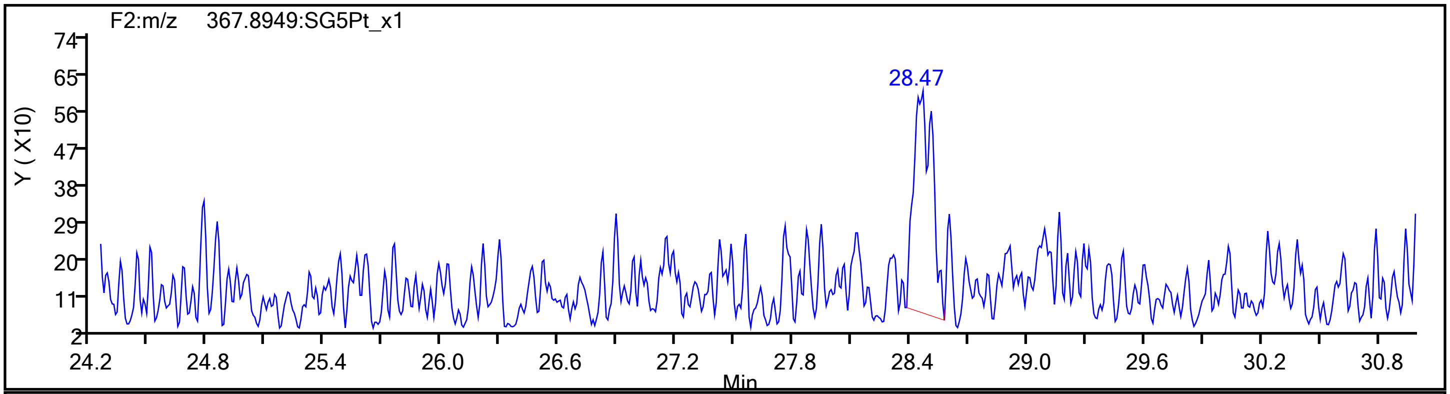

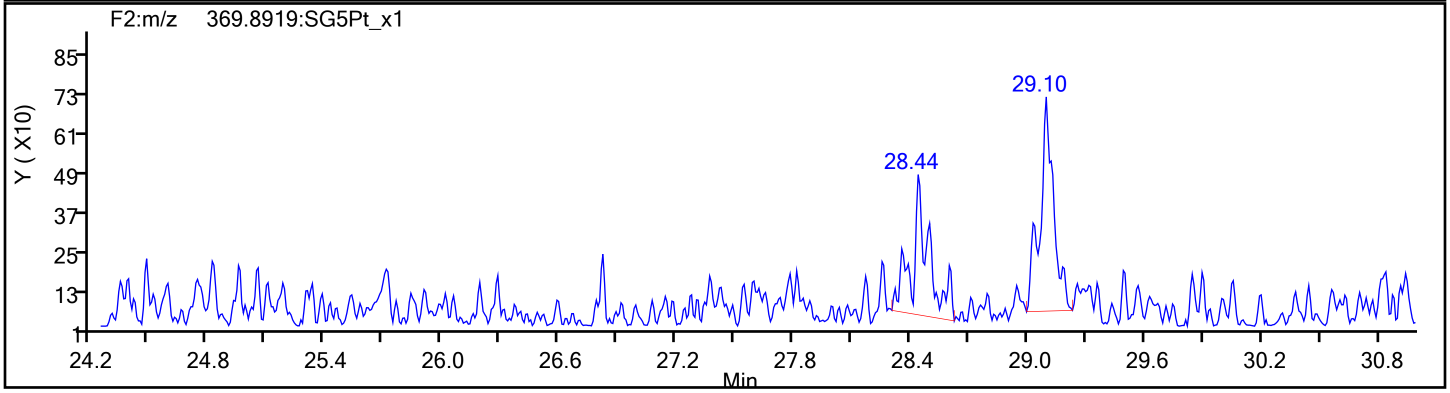

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Eurofins TestAmerica, Sacramento

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HxCDF

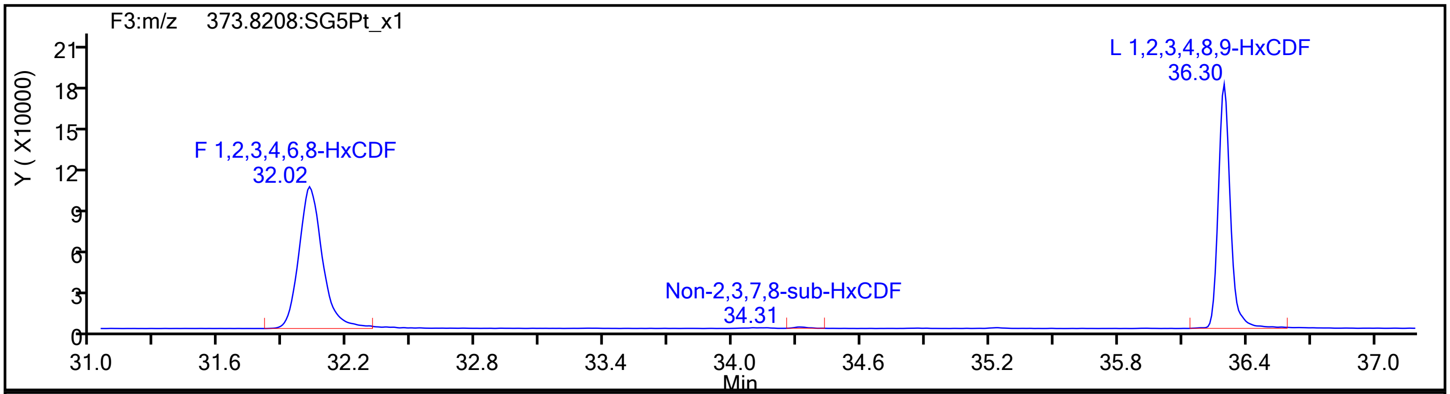

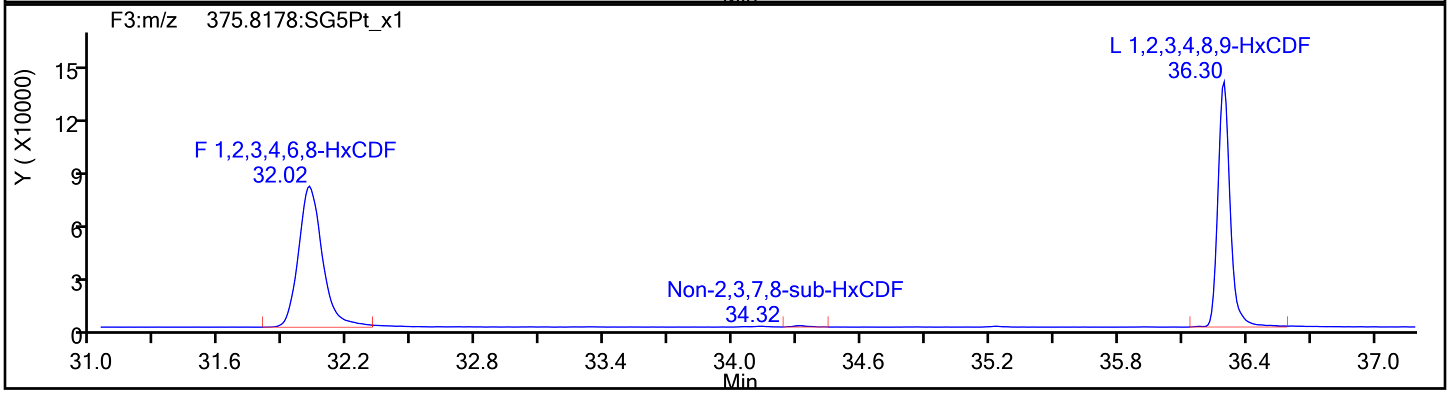

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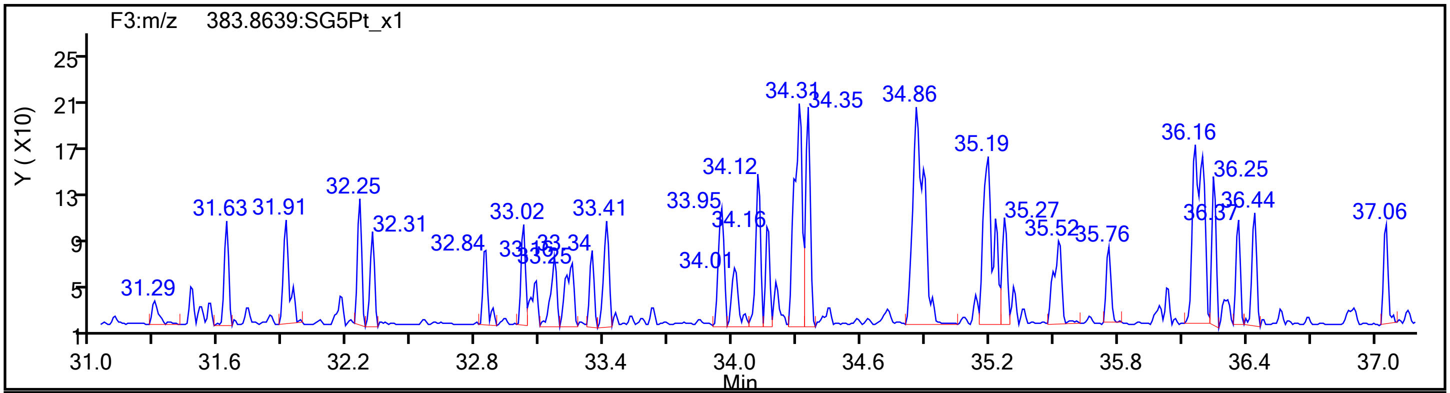

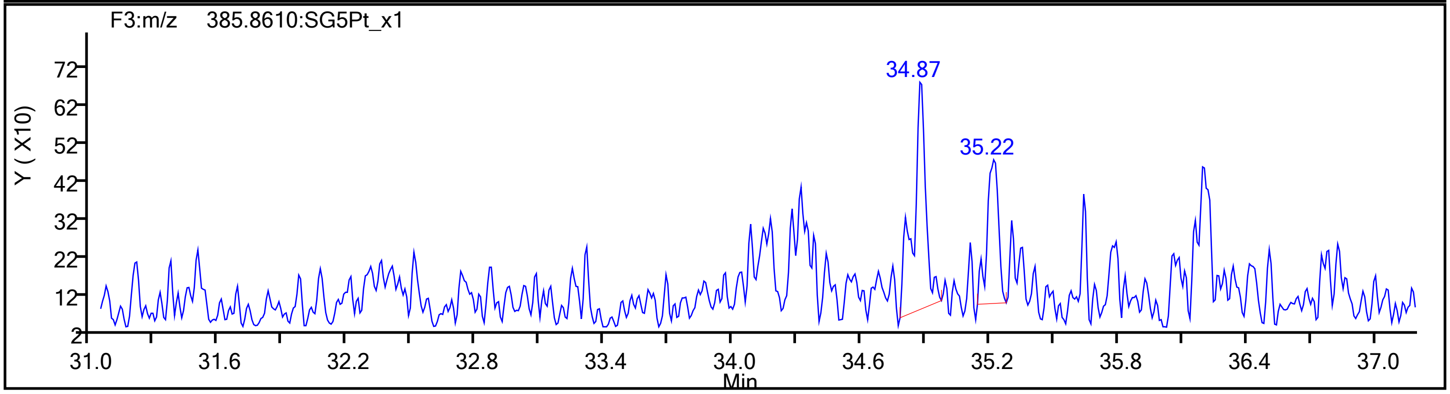

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Eurofins TestAmerica, Sacramento

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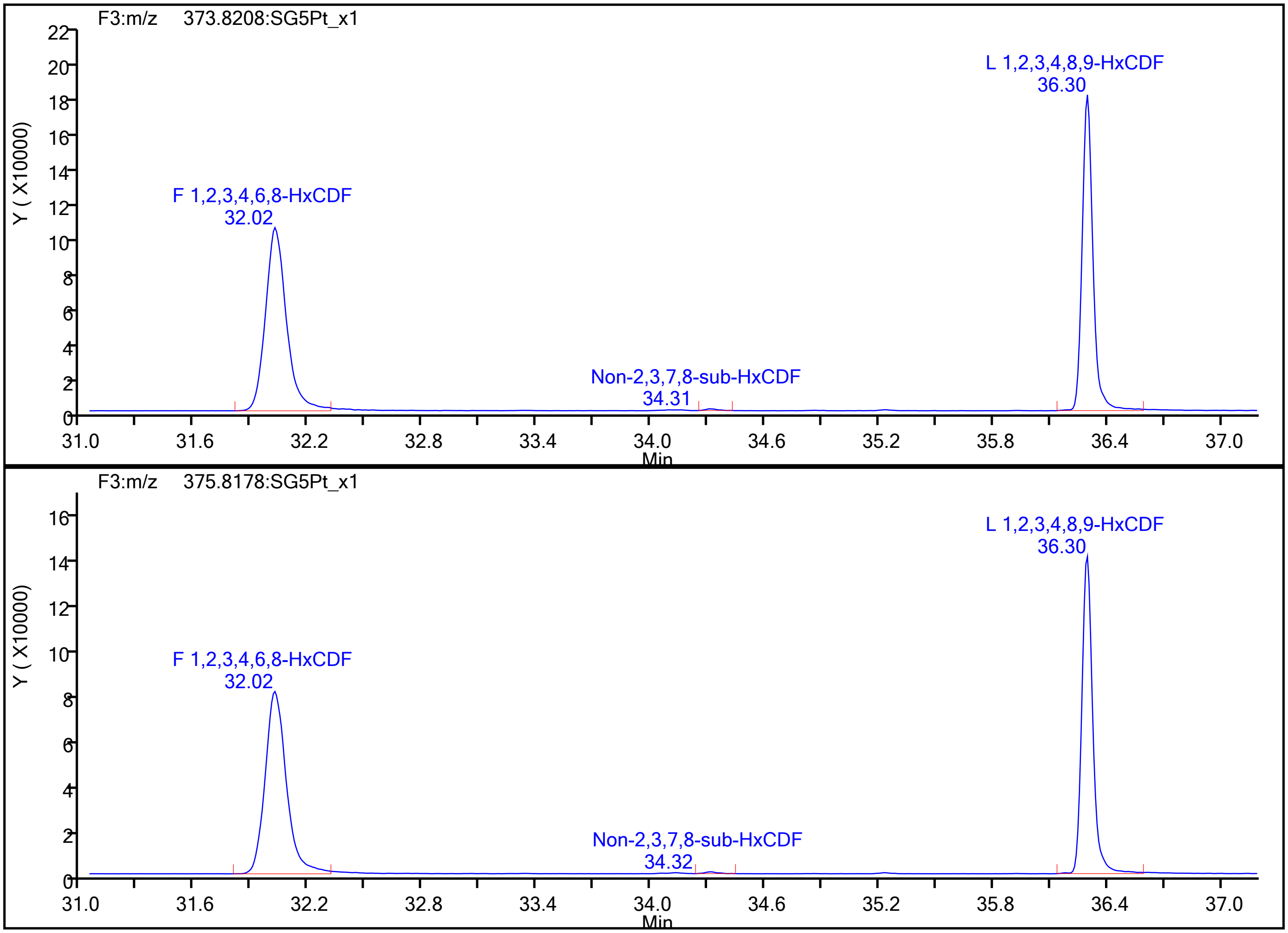

HxCDF Interference Mass

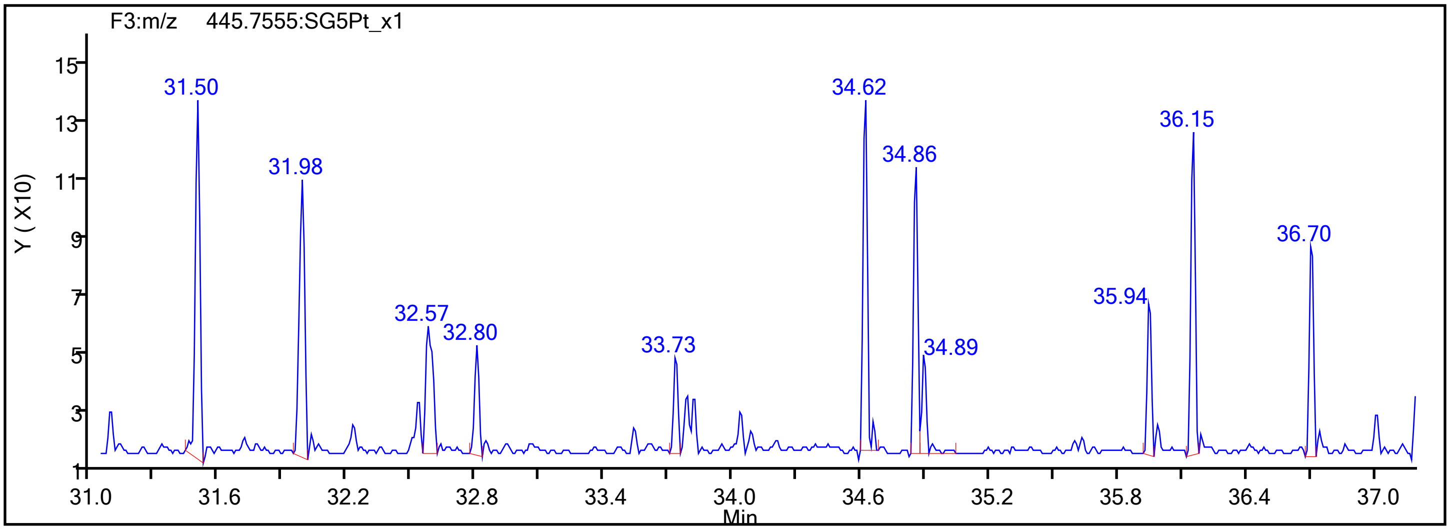

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Eurofins TestAmerica, Sacramento

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HxCDD

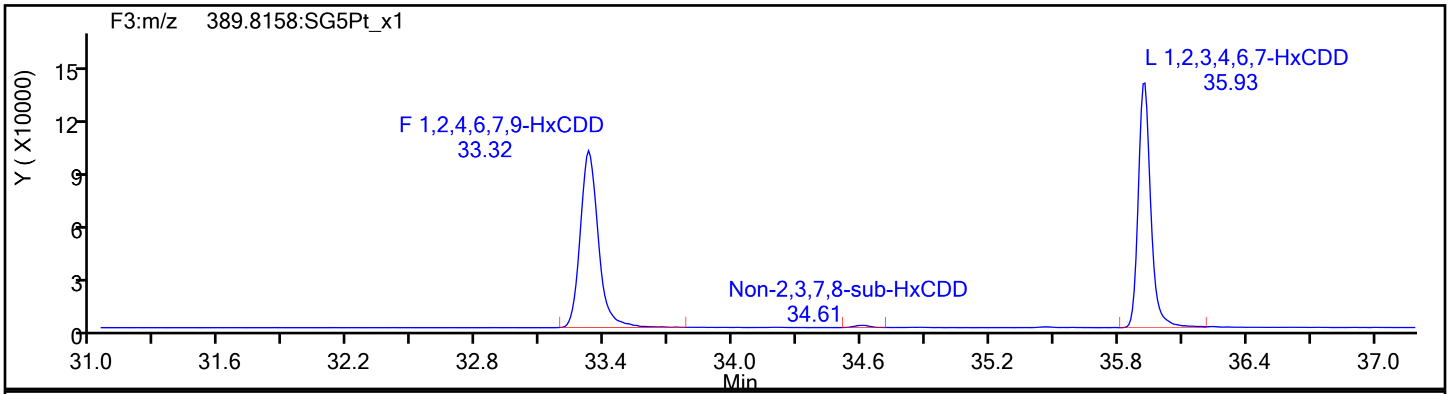

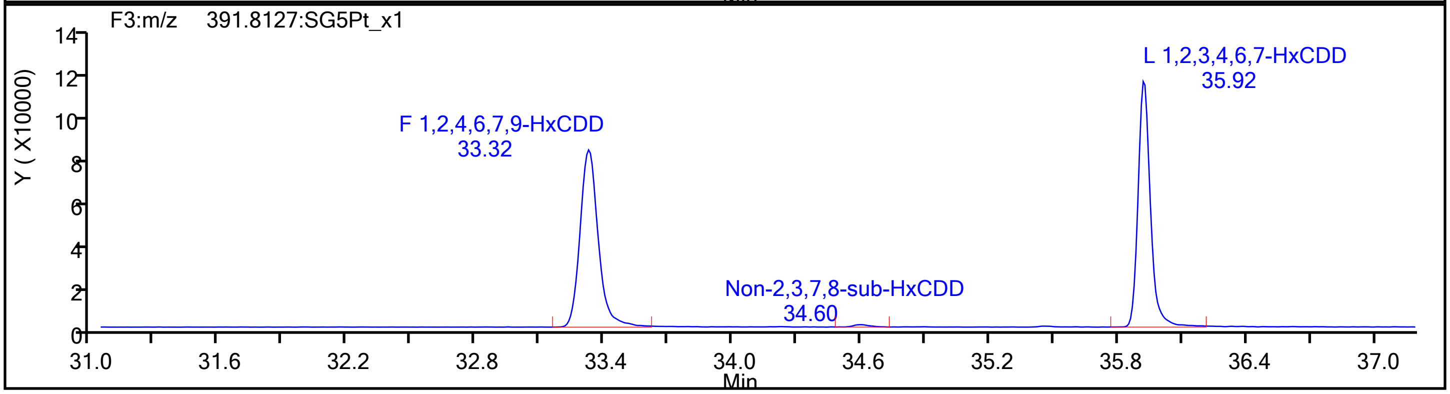

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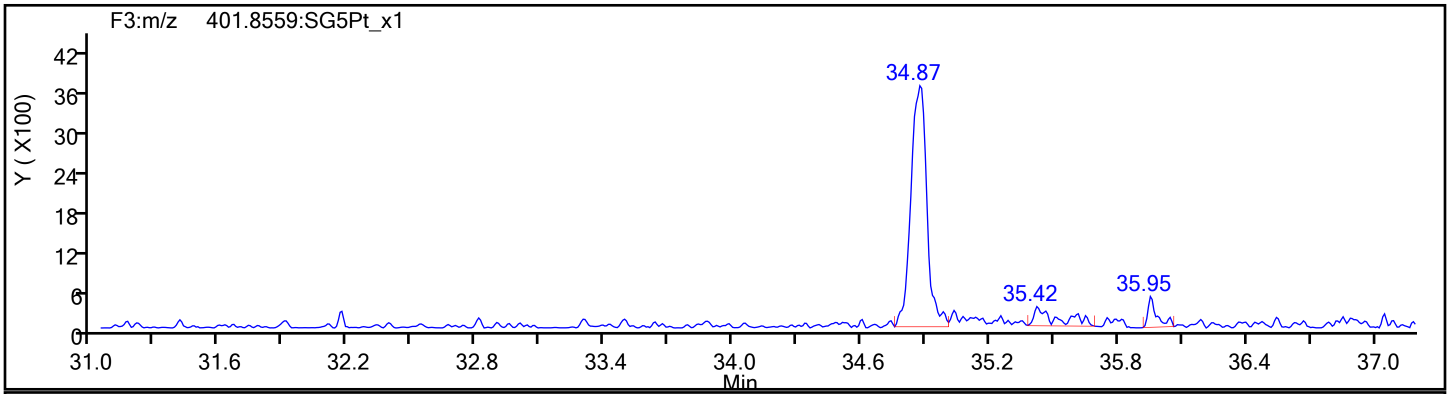

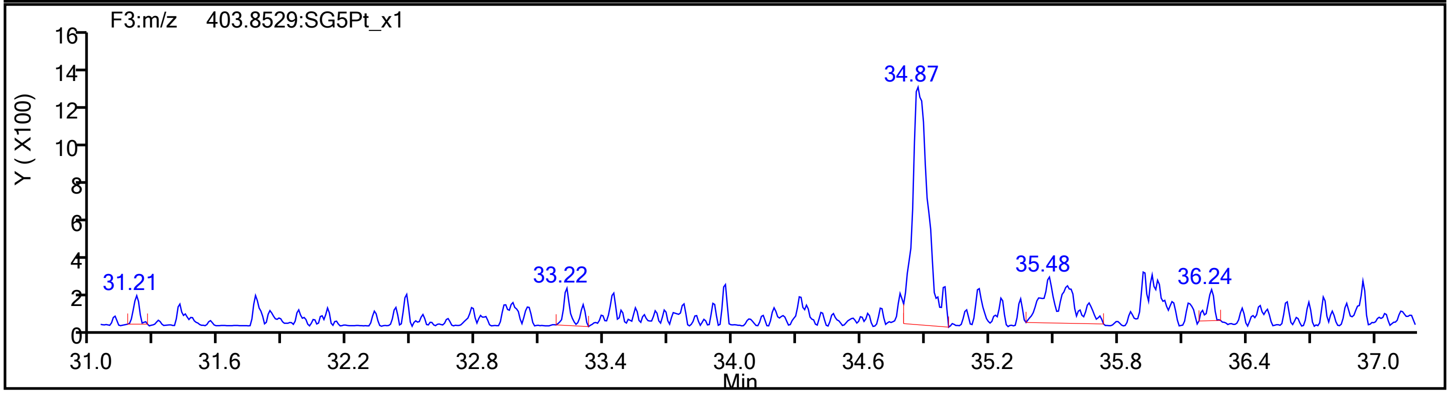

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

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Worklist#: 415261

Sample Line#: 1

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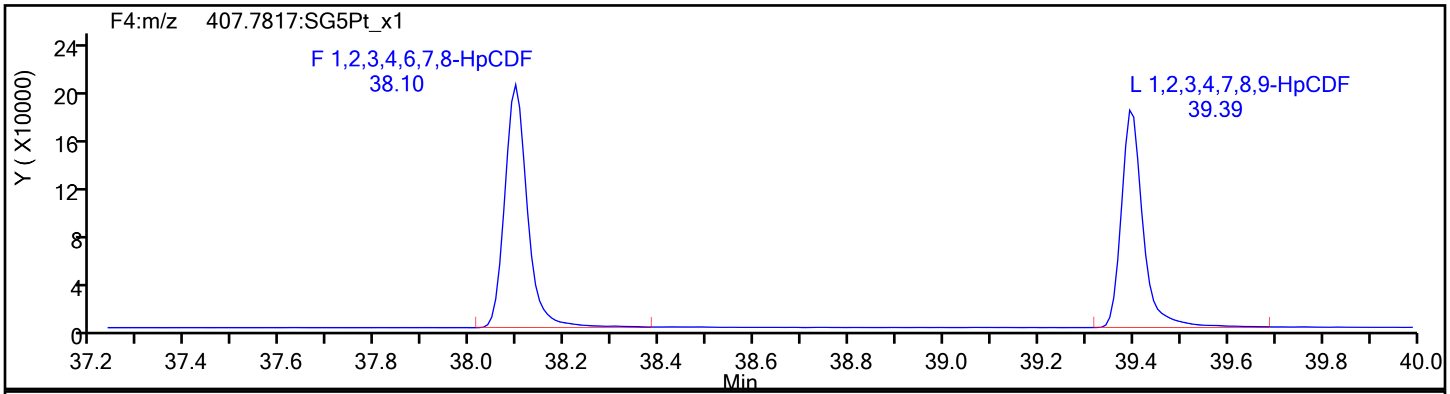

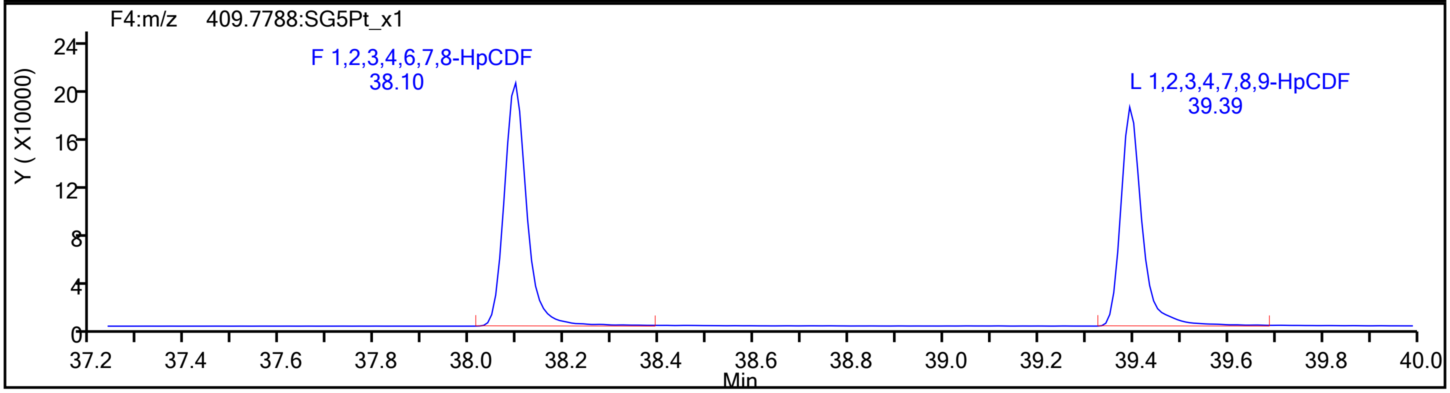

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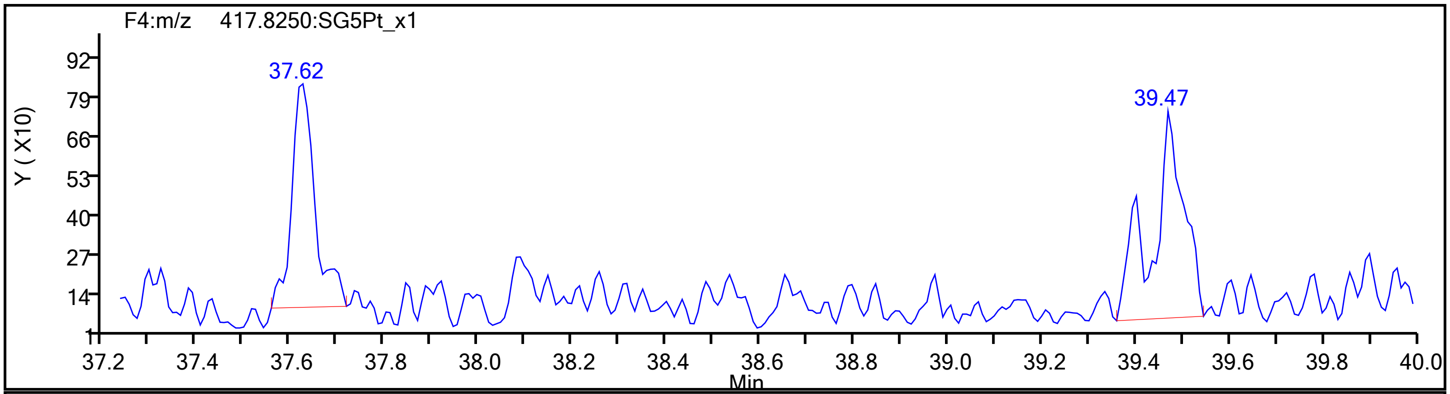

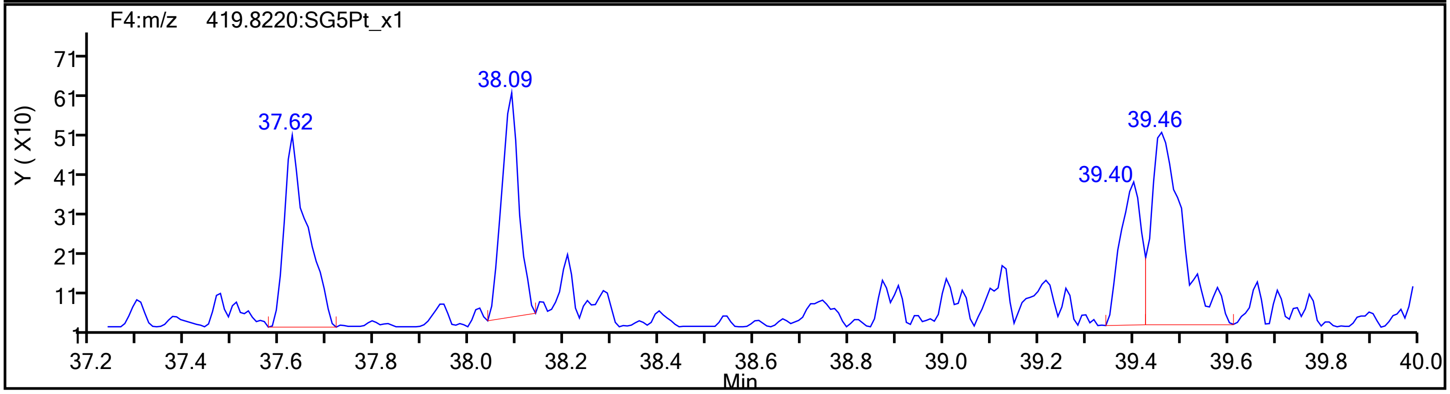

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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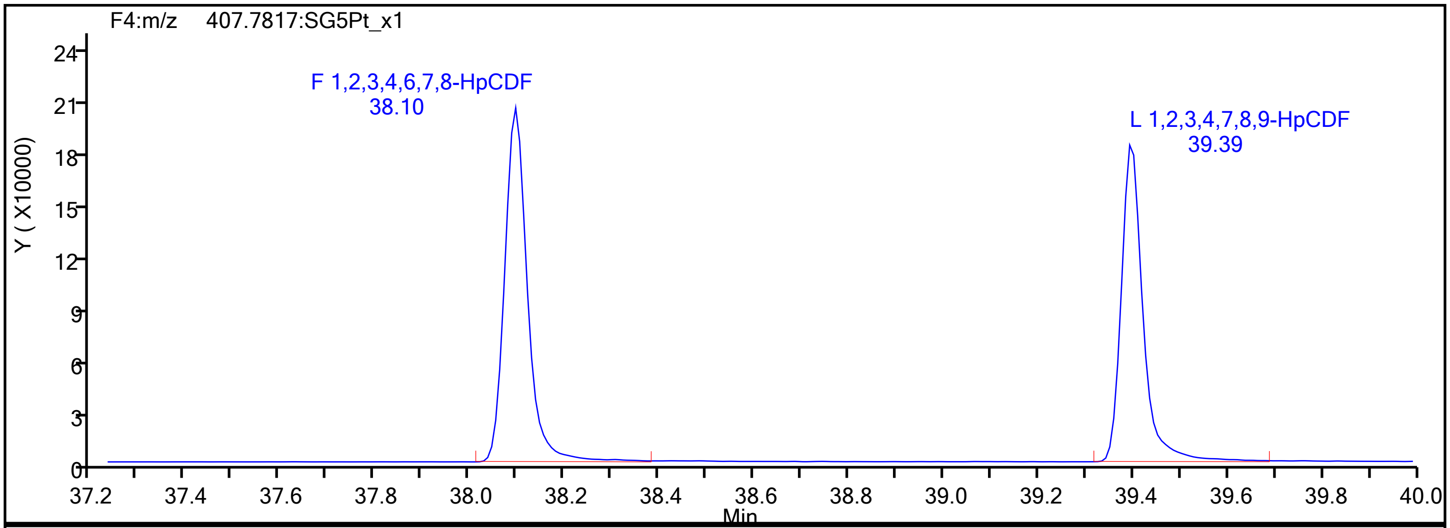

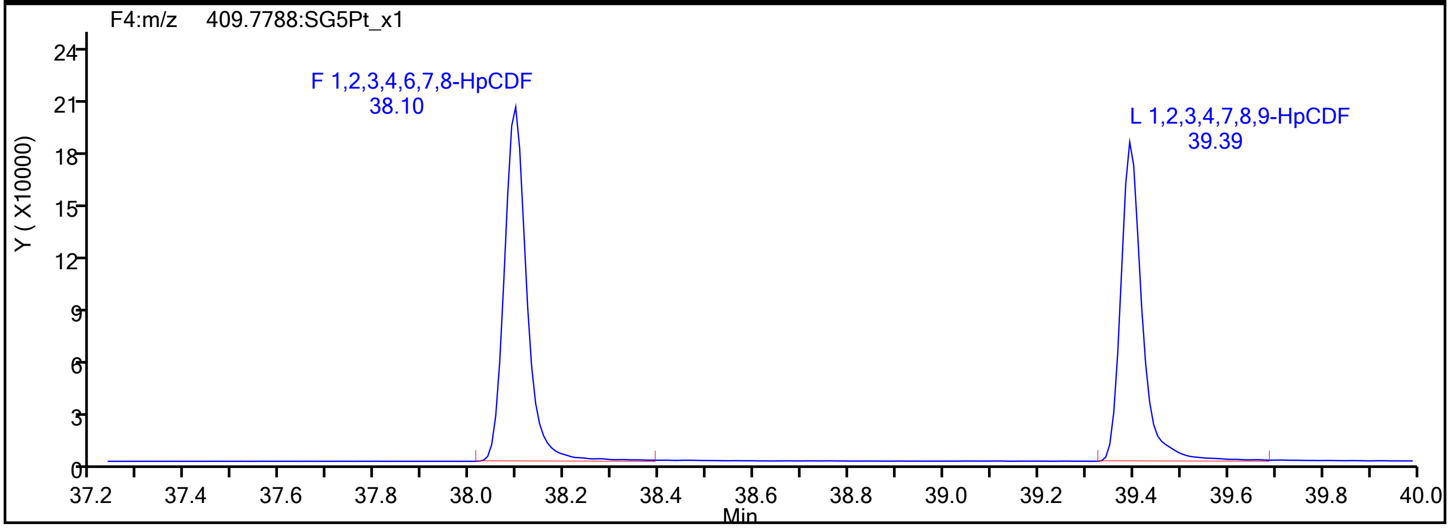

HpCDF Interference Mass

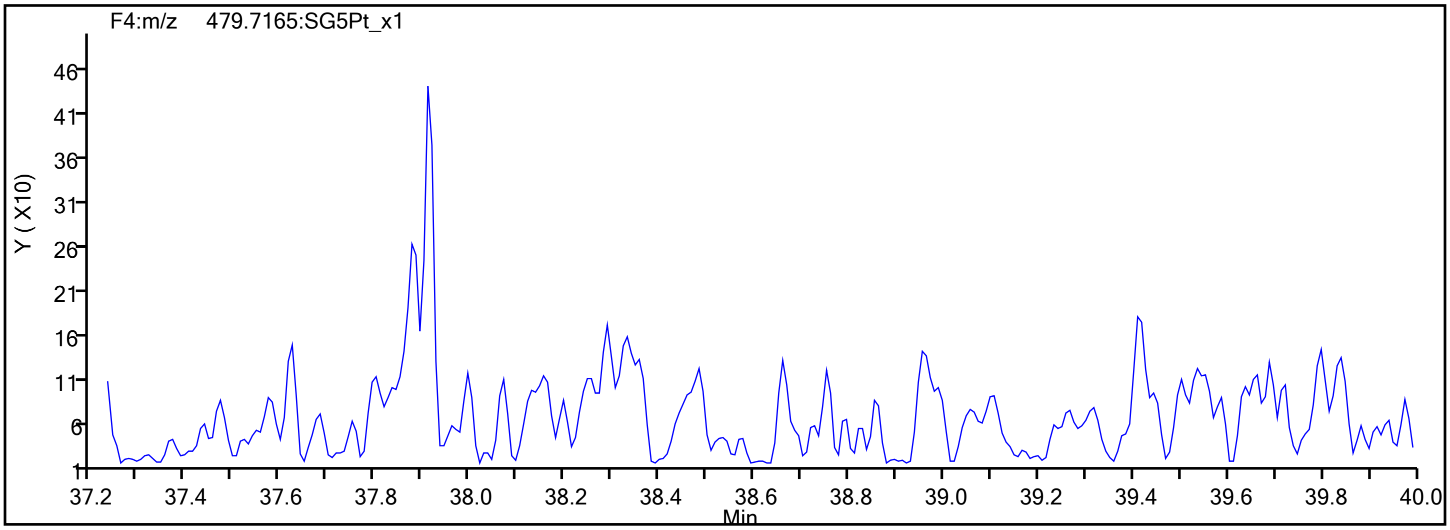

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Injection Date: 23-Sep-2020 21:20:00
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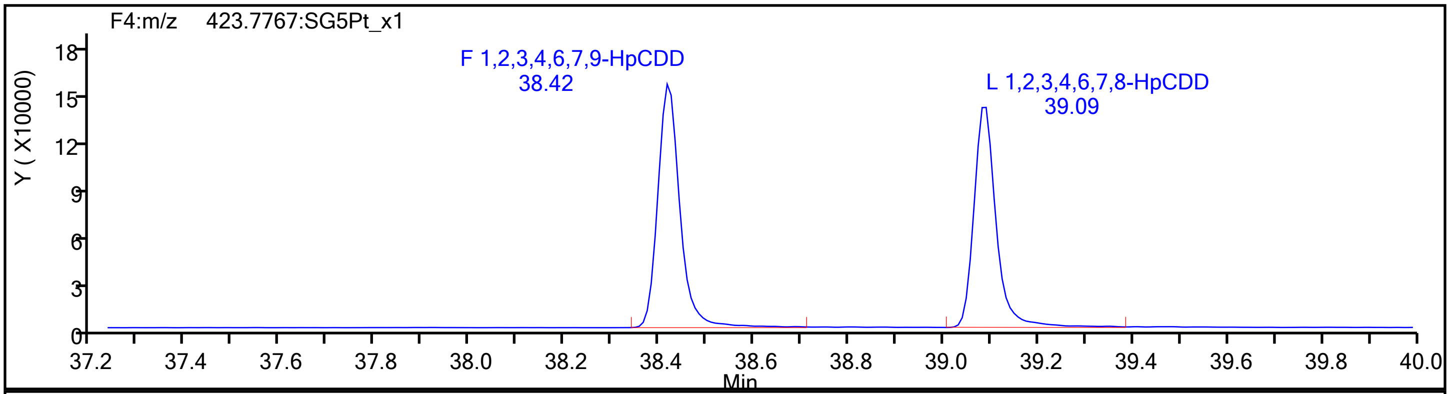

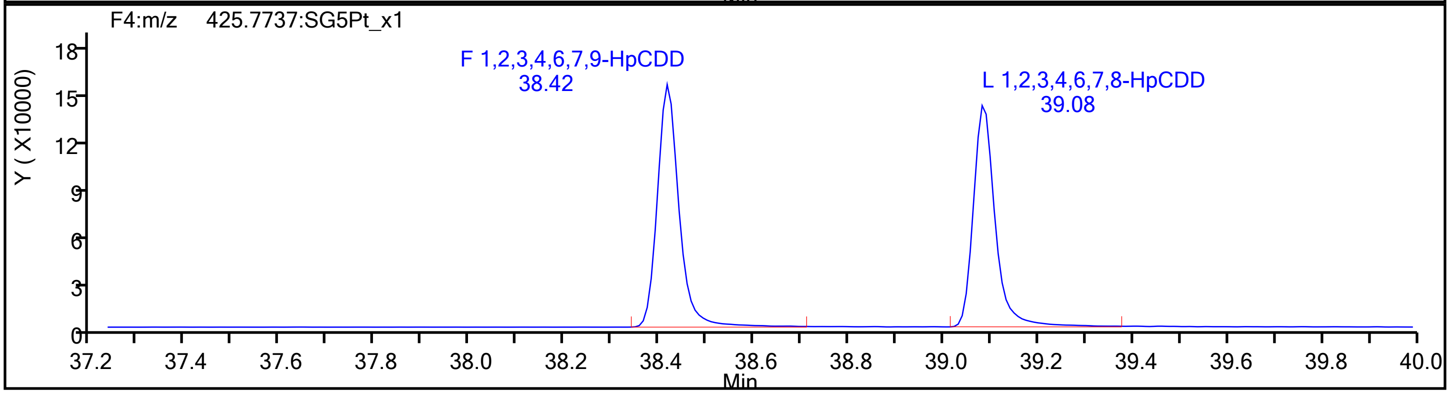

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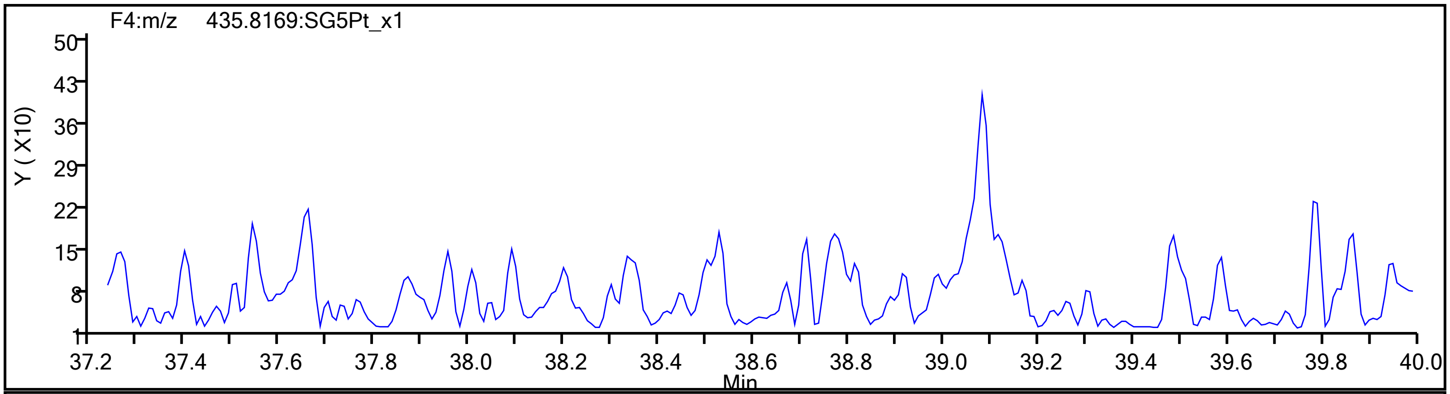

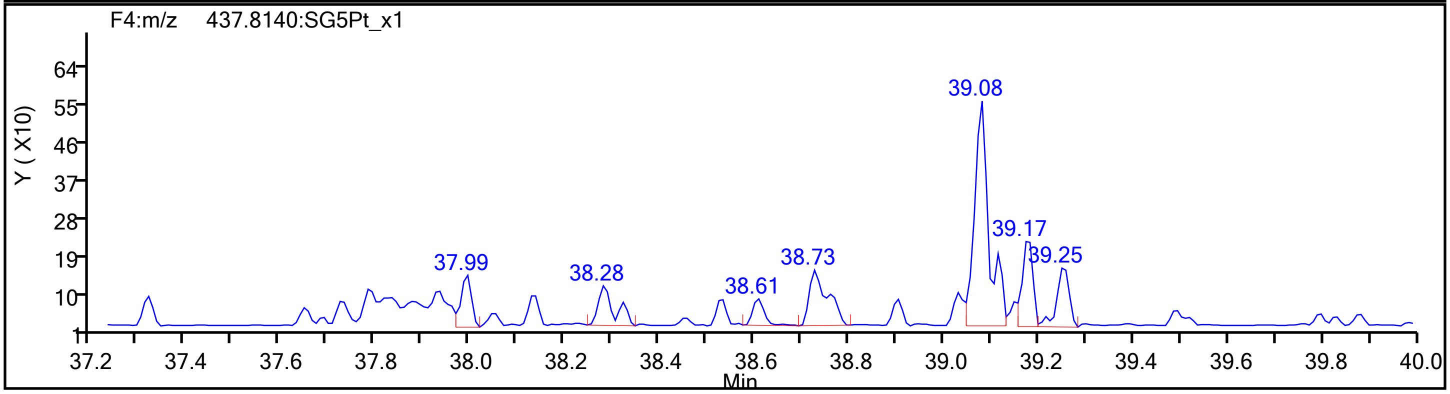

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Eurofins TestAmerica, Sacramento

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Injection Date: 23-Sep-2020 21:20:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 415261

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

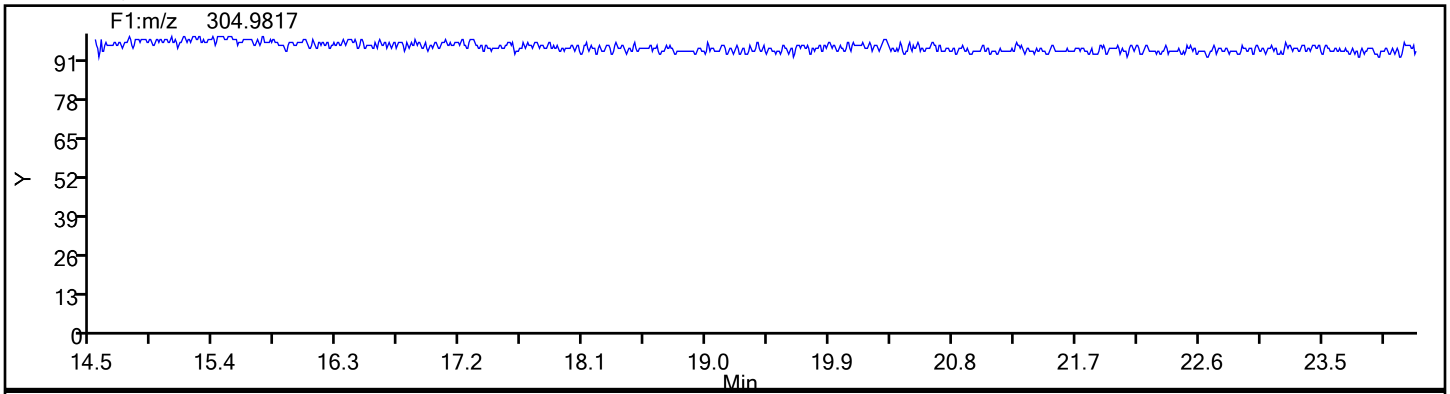

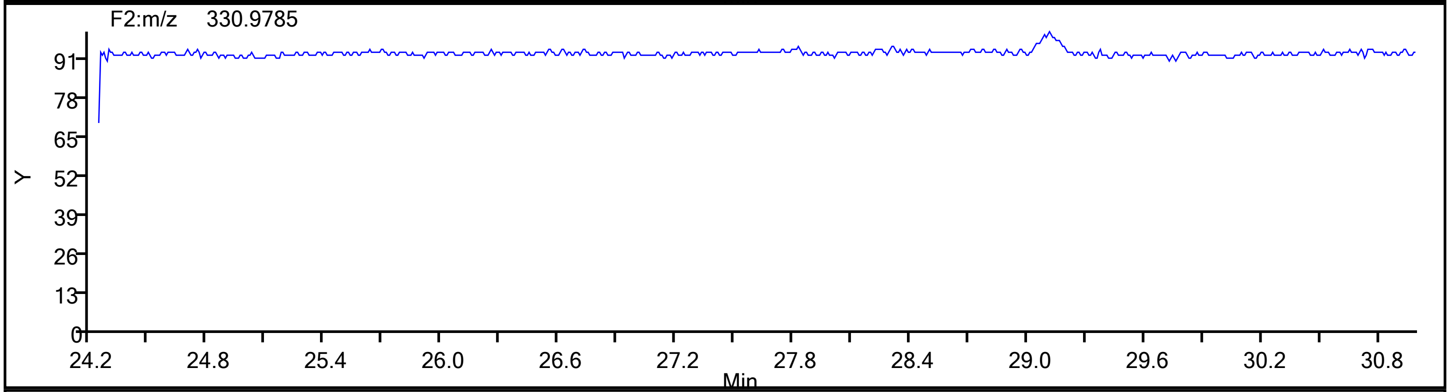

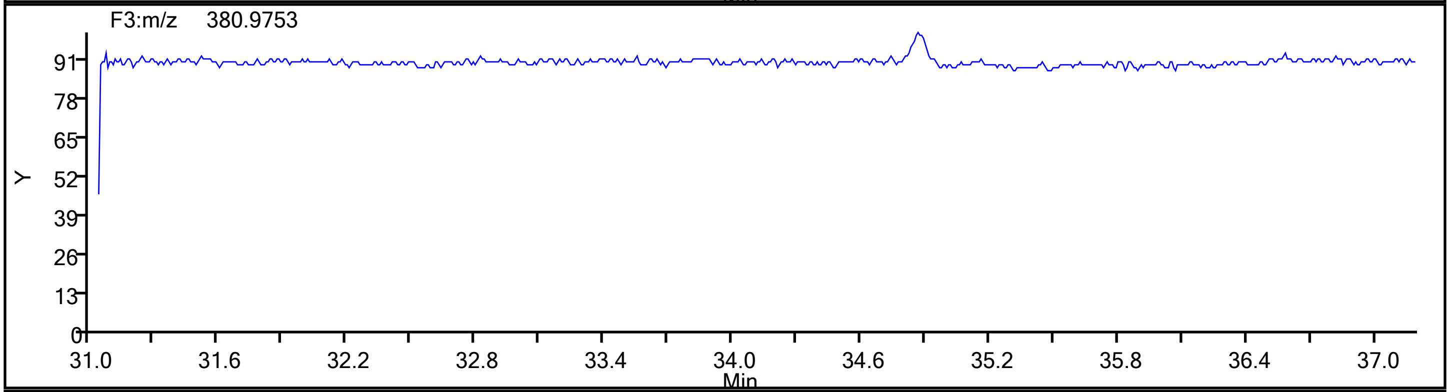

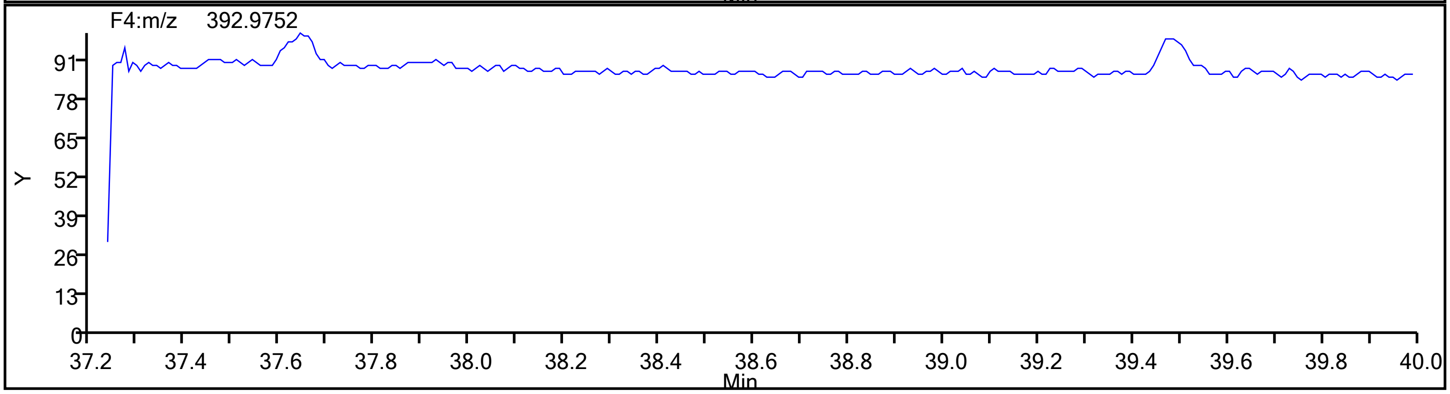

Eurofins TestAmerica, Sacramento

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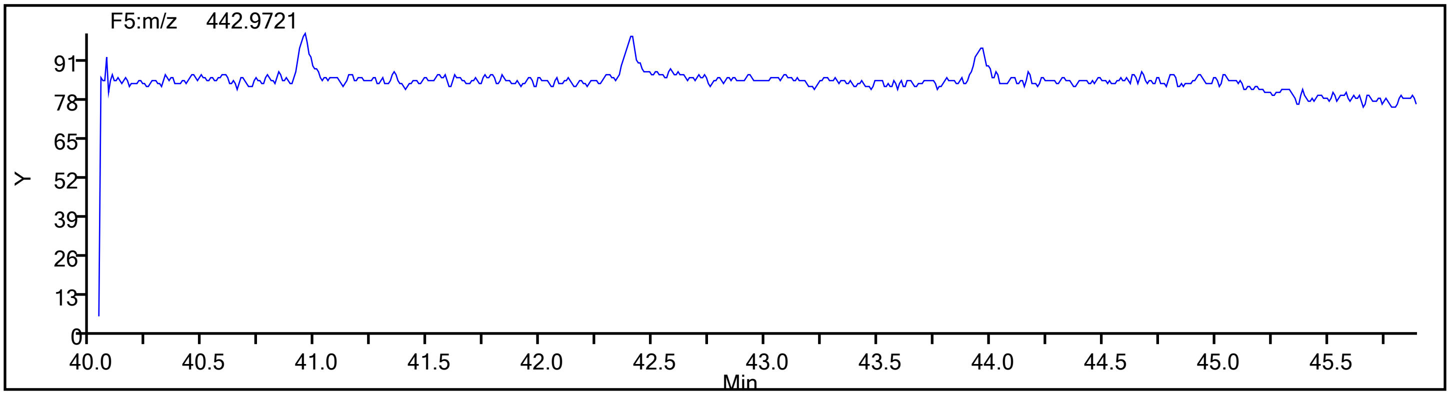

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-407683/1-A

Matrix: Water Lab File ID: 01SE2010D5_3.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 08/28/2020 14:44

Sample wt/vol: 1000(mL) Date Analyzed: 09/01/2020 21:39

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 408767 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	1.2
51207-31-9	2,3,7,8-TCDF	ND		10	0.96
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.5
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.2
57117-31-4	2,3,4,7,8-PeCDF	ND		50	1.6
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	1.7
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	1.3
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	1.3
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	1.3
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	1.0
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.84
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.74
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.85
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.59
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	1.0
3268-87-9	OCDD	4.03	J	100	1.1
39001-02-0	OCDF	ND		100	1.5
41903-57-5	Total TCDD	3.26	J	10	1.2
30402-14-3	Total TCDF	ND		10	0.96
36088-22-9	Total PeCDD	ND		50	1.5
30402-15-4	Total PeCDF	ND		50	1.6
34465-46-8	Total HxCDD	ND		50	1.7
55684-94-1	Total HxCDF	ND		50	1.3
37871-00-4	Total HpCDD	ND		50	0.85
38998-75-3	Total HpCDF	ND		50	1.0

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID:

Lab Sample ID: MB 320-407683/1-A

Matrix: Water

Lab File ID: 01SE2010D5_3.d

Analysis Method: 1613B

Date Collected:

Extract. Method: 1613B

Date Extracted: 08/28/2020 14:44

Sample wt/vol: 1000(mL)

Date Analyzed: 09/01/2020 21:39

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 408767

Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	77		25-164
89059-46-1	13C-2,3,7,8-TCDF	81		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	69		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	69		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	54		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	61		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	76		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	68		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	88		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	92		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	95		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	93		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	70		26-138
114423-97-1	13C-OCDD	89		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d
Lims ID: MB 320-407683/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Sep-2020 21:39:27 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-407683/1-A MB 320-407683/1-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 08:45:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 08:45:50

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.050	17834515	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.536	19706078	0.78	1.3726	80.5	80.5	0.2367	0.2367	80.50	
2,3,7,8-TCDF	17.551						0.0481	0.0481		
A Non-2,3,7,8-sub-TCDF	17.234						0.0481	0.0481		
S Total TCDF							0.0481	0.0481		
D 13C-2,3,7,8-TCDD	18.262	13963873	0.78	1.0192	76.8	76.8	0.2121	0.2121	76.82	
2,3,7,8-TCDD	18.277						0.0596	0.0596		
$ 37Cl4-2,3,7,8-TCDD	18.277	7429528		1.0176	40.9	40.9	0.0496	0.0496	102	
A Non-2,3,7,8-sub-TCDD	17.695	24477	0.77	1.0745	0.2070	0.1631	0.0596	0.1193		RQM
S Total TCDD					0.2070	0.1631	0.0596	0.0596		RQ
D 13C-1,2,3,7,8-PeCDF	22.683	14154339	1.59	1.1429	69.4	69.4	0.1849	0.1849	69.44	
1,2,3,7,8-PeCDF	22.710						0.0577	0.0577		
D 13C-2,3,4,7,8-PeCDF	24.074	13490275	1.61	1.3997	54.0	54.0	0.1510	0.1510	54.04	
2,3,4,7,8-PeCDF	24.101						0.0822	0.0822		
A F1 PeCDFs	20.091						0.0736	0.0736		
A Non-2,3,7,8-sub-PeCDF	23.332						0.0683	0.0683		
S Total PeCDF							0.0822	0.0822		
D 13C-1,2,3,7,8-PeCDD	24.810	10091224	1.57	0.8232	68.7	68.7	0.1616	0.1616	68.74	
1,2,3,7,8-PeCDD	24.837						0.0755	0.0755		
A Non-2,3,7,8-sub-PeCDD	23.699						0.0755	0.0755		
S Total PeCDD							0.0755	0.0755		
D 13C-1,2,3,4,7,8-HxCDF	30.809	9516745	0.50	1.1388	68.4	68.4	0.4580	0.4580	68.41	
1,2,3,4,7,8-HxCDF	30.835						0.0657	0.0657		
D 13C-1,2,3,6,7,8-HxCDF	30.982	10569141	0.49	1.0803	80.1	80.1	0.4828	0.4828	80.09	
1,2,3,6,7,8-HxCDF	30.995						0.0500	0.0500		
D 13C-2,3,4,6,7,8-HxCDF	31.740	10622303	0.50	0.9494	91.6	91.6	0.5493	0.5493	91.59	
2,3,4,6,7,8-HxCDF	31.753						0.0371	0.0371		
D 13C-1,2,3,7,8,9-HxCDF	32.499	9335148	0.50	0.8670	88.1	88.1	0.6015	0.6015	88.14	
1,2,3,7,8,9-HxCDF	32.512						0.0419	0.0419		
A Non-2,3,7,8-sub-HxCDF	30.522						0.0469	0.0469		
S Total HxCDF							0.0657	0.0657		

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.313	12215747	1.21	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.900	6981880	1.25	0.9356	61.1	61.1	0.3585	0.3585	61.09	
1,2,3,4,7,8-HxCDD	31.927						0.0873	0.0873		
D 13C-1,2,3,6,7,8-HxCDD	32.007	9648193	1.25	1.0416	75.8	75.8	0.3221	0.3221	75.83	
1,2,3,6,7,8-HxCDD	32.020						0.0632	0.0632		
1,2,3,7,8,9-HxCDD	32.339						0.0655	0.0655		
A Non-2,3,7,8-sub-HxCDD	31.201						0.0708	0.0708		
S Total HxCDD							0.0873	0.0873		
D 13C-1,2,3,4,6,7,8-HpCDF	33.873	8982172	0.44	0.7899	93.1	93.1	1.051	1.051	93.09	
1,2,3,4,6,7,8-HpCDF	33.885						0.0296	0.0296		
D 13C-1,2,3,4,7,8,9-HpCDF	34.954	7801972	0.43	0.9093	70.2	70.2	0.9133	0.9133	70.24	
1,2,3,4,7,8,9-HpCDF	34.966						0.0523	0.0523		
A Non-2,3,7,8-sub-HpCDF	34.425						0.0386	0.0386		
S Total HpCDF							0.0523	0.0523		
D 13C-1,2,3,4,6,7,8-HpCDD	34.662	8843795	1.05	0.7637	94.8	94.8	0.6988	0.6988	94.80	
1,2,3,4,6,7,8-HpCDD	34.674						0.0423	0.0423		
A Non-2,3,7,8-sub-HpCDD	35.325						0.0423	0.0423		
S Total HpCDD							0.0423	0.0423		
D 13C-OCDD	37.006	13859431	0.91	0.6377	177.9	177.9	0.4778	0.4778	88.95	
OCDF	37.113						0.0744	0.0744		
OCDD	37.006	16046	0.91	1.1499	0.2014	0.2014	0.0559	0.0559		M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d
Lims ID: MB 320-407683/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Sep-2020 21:39:27 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-407683/1-A MB 320-407683/1-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 08:45:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 08:45:50

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.050	18.065	-1		7859292	1920795	2377	5942	808		
333.9339	18.050	18.065	-1		9975223	2373493	1336	3340	1777	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.536	17.536	0	0.972	8626527	2106853	3514	8785	600		
317.9389	17.536	17.536	0	0.972	11079551	2700168	2067	5167	1306	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.551						327	817			
305.8987	17.551						515	1287			
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						327	817			
305.8987	17.234						515	1287			
13C-2,3,7,8-TCDD											
331.9368	18.262	18.262	0	1.012	6116639	1381297	2377	5942	581		
333.9339	18.247	18.262	-1	1.011	7847234	1814771	1336	3340	1358	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.277						502	1255			
321.8936	18.277						316	790			
37Cl4-2,3,7,8-TCDD											
327.8847	18.277	18.277	0	1.013	7429528	1731905	867	2167	1998		
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	15.994	17.695	-102	0.876	8413	2373	502	1255	5		M
321.8936	15.994	17.695	-102	0.876	9482	1881	316	790	6	0.89(0.65-0.89)	M
319.8965	16.281	17.695	-85	0.892	9442	2355	502	1255	5		
	Empc Correction				2863	923	502	1255	2		
321.8936	16.296	17.695	-84	0.892	3719	1200	316	790	4	2.54(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.683	22.696	-1	1.257	8698254	1475852	2153	5382	685		
353.8970	22.683	22.696	-1	1.257	5456085	956182	1477	3692	647	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.710						200	500			
341.8567	22.710						358	895			
13C-2,3,4,7,8-PeCDF											
351.9000	24.074	24.074	0	1.334	8325562	1296300	2153	5382	602		
353.8970	24.074	24.074	0	1.334	5164713	795018	1477	3692	538	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	24.101						200	500			
341.8567	24.101						358	895			
A F1 PeCDFs											
339.8597	20.091						206	515			
341.8567	20.091						395	987			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.332						200	500			
341.8567	23.332						358	895			
13C-1,2,3,7,8-PeCDD											
367.8949	24.810	24.810	0	1.375	6162895	912330	1228	3070	743		
369.8919	24.810	24.810	0	1.375	3928329	573099	1057	2642	542	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.837						289	722			
357.8516	24.837						168	420			
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.699						289	722			
357.8516	23.699						168	420			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.809	30.809	0	0.953	3157115	655944	2155	5387	304		
385.8610	30.809	30.809	0	0.953	6359630	1345449	4460	11150	302	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.835						228	570			
375.8178	30.835						196	490			
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.982	30.982	0	0.959	3495961	693012	2155	5387	322		
385.8610	30.982	30.982	0	0.959	7073180	1466535	4460	11150	329	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.995						228	570			
375.8178	30.995						196	490			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.740	31.740	0	0.982	3550168	931902	2155	5387	432		
385.8610	31.740	31.740	0	0.982	7072135	1819990	4460	11150	408	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.753						228	570			
375.8178	31.753						196	490			

Report Date: 03-Sep-2020 08:45:50 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.499	32.499	0	1.006	3109774	819717	2155	5387	380		
385.8610	32.499	32.499	0	1.006	6225374	1630956	4460	11150	366	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.512						228	570			
375.8178	32.512						196	490			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						228	570			
375.8178	30.522						196	490			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.313	32.326	-1		6682064	1734626	2422	6055	716		
403.8529	32.313	32.326	-1		5533683	1436165	1833	4582	784	1.21(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.900	31.913	-1	0.987	3884380	1124806	2422	6055	464		
403.8529	31.900	31.913	-1	0.987	3097500	882212	1833	4582	481	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.927						303	757			
391.8127	31.927						272	680			
13C-1,2,3,6,7,8-HxCDD											
401.8559	32.007	32.006	0	0.991	5354559	1359252	2422	6055	561		
403.8529	32.007	32.006	0	0.991	4293634	1066527	1833	4582	582	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	32.020						303	757			
391.8127	32.020						272	680			
1,2,3,7,8,9-HxCDD											
389.8157	32.339						303	757			
391.8127	32.339						272	680			
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.201						303	757			
391.8127	31.201						272	680			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.873	33.873	0	1.048	2738603	896806	3330	8325	269		
419.8220	33.873	33.873	0	1.048	6243569	2008613	7203	18007	279	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.885						333	832			
409.7789	33.885						167	417			
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.954	34.954	0	1.082	2342502	684828	3330	8325	206		
419.8220	34.954	34.954	0	1.082	5459470	1572693	7203	18007	218	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.966						333	832			
409.7789	34.966						167	417			
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						333	832			
409.7789	34.425						167	417			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.662	34.662	0	1.073	4524717	1287261	3760	9400	342		
437.8140	34.662	34.662	0	1.073	4319078	1261002	3009	7522	419	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.674						272	680			
425.7737	34.674						183	457			
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.325						272	680			
425.7737	35.325						183	457			
13C-OCDD											
469.7779	37.006	37.006	0	1.145	6596711	1550132	1972	4930	786		
471.7750	37.006	37.006	0	1.145	7262720	1771433	1893	4732	936	0.91(0.76-1.02)	
OCDF											
441.7428	37.113						233	582			
443.7399	37.113						408	1020			
OCDD											M
457.7377	37.006	37.018	-1	1.000	7654	2155	236	590	9		
459.7348	37.018	37.018	0	1.000	8392	2046	191	477	11	0.91(0.76-1.02)	M

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated

Report Date: 03-Sep-2020 08:45:50 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Lims ID:	MB 320-407683/1-A		
Client ID:			
Inject. Date:	01-Sep-2020 21:39:27	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	3

Non-2,3,7,8-sub-TCDD, RT: 17.695

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.074	D 13C-2,3,7,8-TCDD	100.000	13963873	3196068

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.074		100.000	13963873	3196068

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.994	8413	2373	9482	1881	0.1193	0.89	M
16.281	9442	2355	3719	1200	0.0877	2.54	RQ
16.281	2863	923	3719	1200	0.0439		Empc Correction
Signal Totals:							
	11276	3296	13201	3081			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	31056	7809				1.35	RQM
	24477	6377					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2070 = (31056 * 100.000) / (13963873 * 1.074)
Empc Amount: 0.1631 = (24477 * 100.000) / (13963873 * 1.074)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d				
Injection Date:	01-Sep-2020 21:39:27	Instrument ID:	10D5		
Lims ID:	MB 320-407683/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.95- 19.44)

Signal: 1

Processing Integration Results

RT = 15.994 Area = 10525

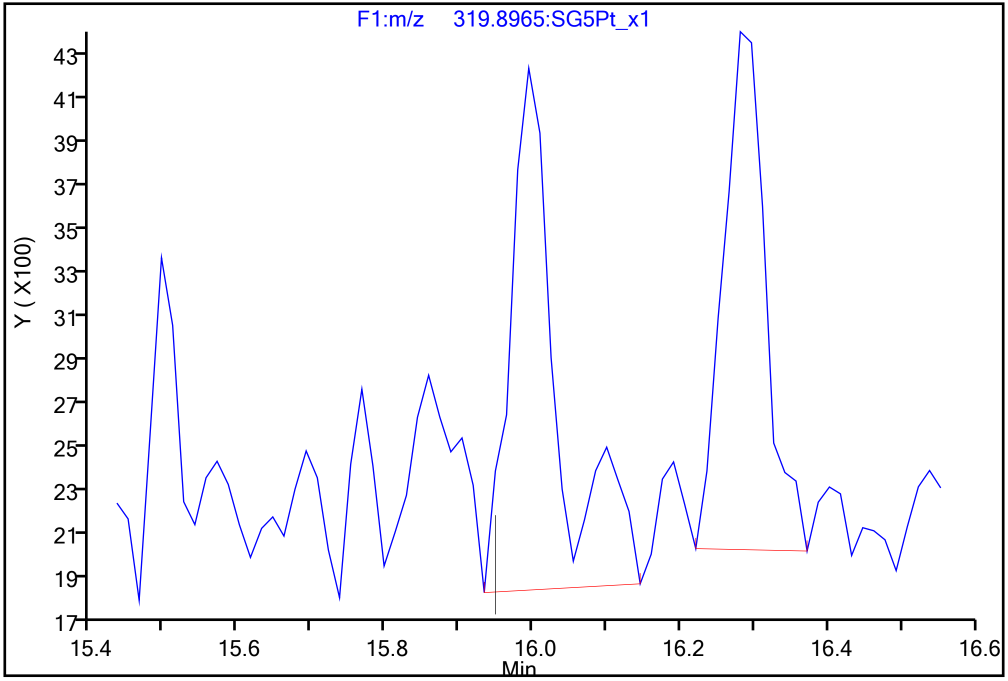

Manual Integration Results

RT = 15.994 Area = 8413 M

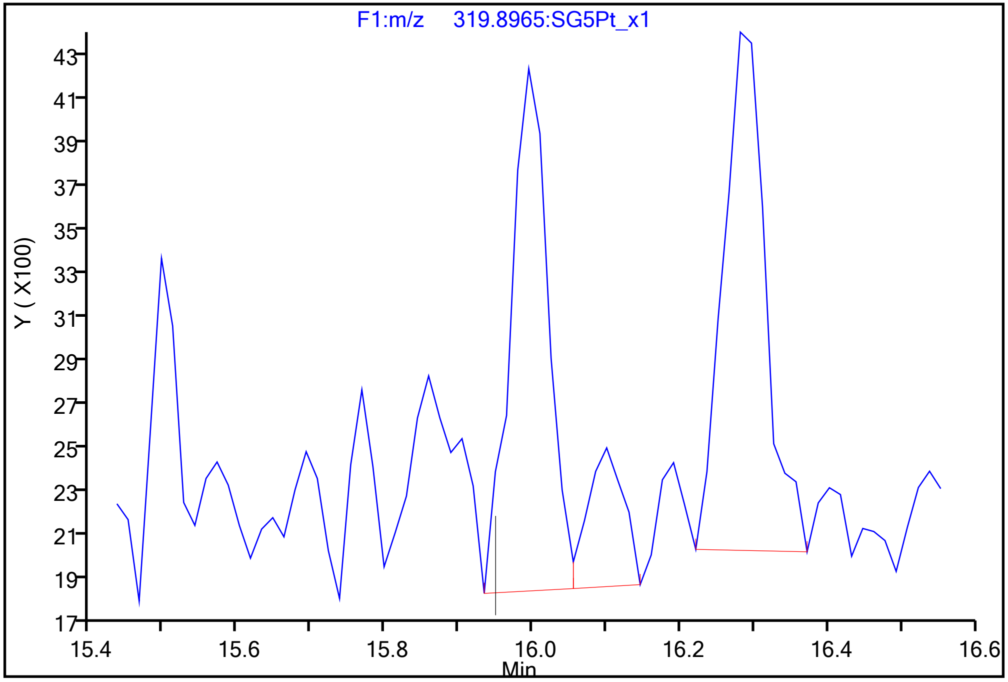

Reviewer: dadunj, 03-Sep-2020 08:44:35

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d
Injection Date: 01-Sep-2020 21:39:27 Instrument ID: 10D5
Lims ID: MB 320-407683/1-A
Client ID:
Operator ID: ALM ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (15.95- 19.44)

Signal: 2

Processing Integration Results

RT = 15.994 Area = 12119

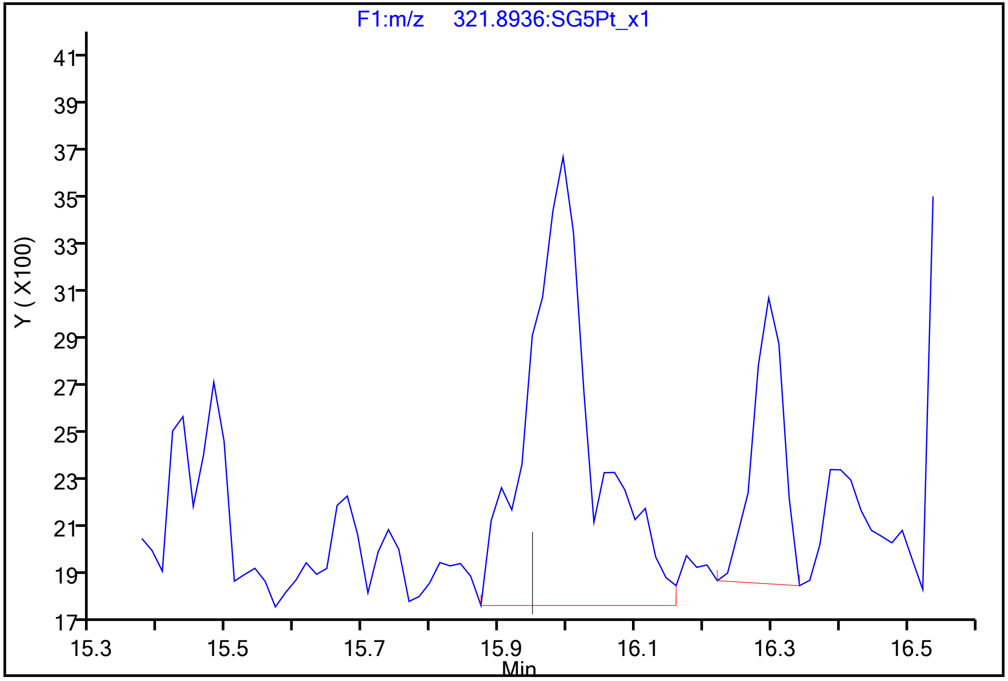

Manual Integration Results

RT = 15.994 Area = 9482 M

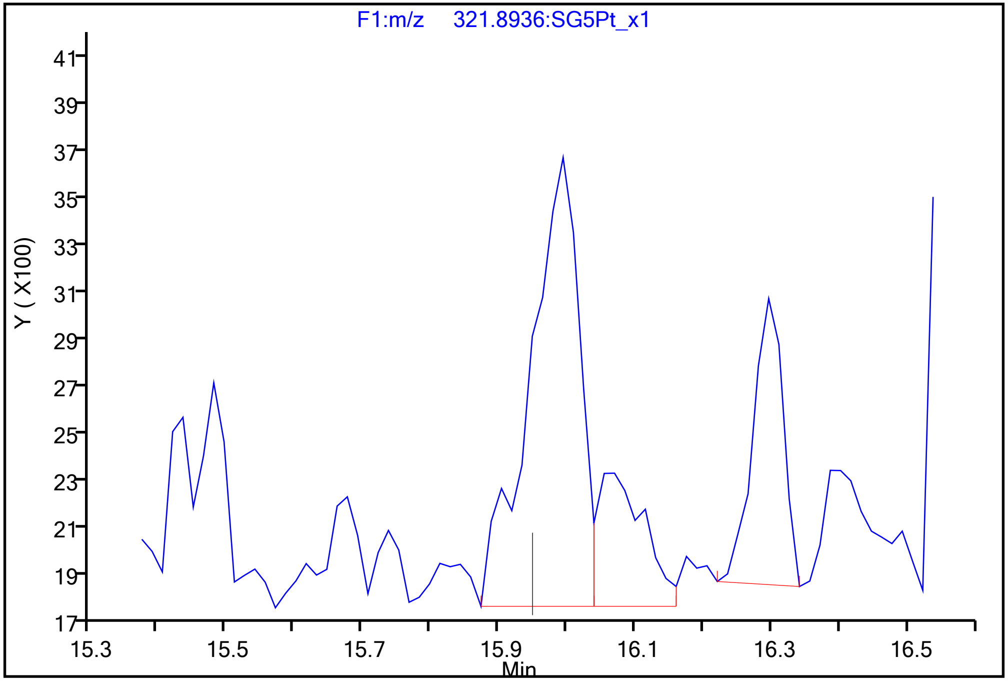

Reviewer: dadunj, 03-Sep-2020 08:44:38
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 03-Sep-2020 08:45:51

Chrom Revision: 2.3 20-Aug-2020 13:57:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d
Injection Date: 01-Sep-2020 21:39:27
Instrument ID: 10D5
Lims ID: MB 320-407683/1-A
Client ID:
Operator ID: ALM
ALS Bottle#: 4
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5:HRSIR

OCDD, CAS: 3268-87-9

Signal: 2

RT: 37.02
Area: 9182
Amount: 0.211282
Amount Units: pg/ul

Processing Integration Results

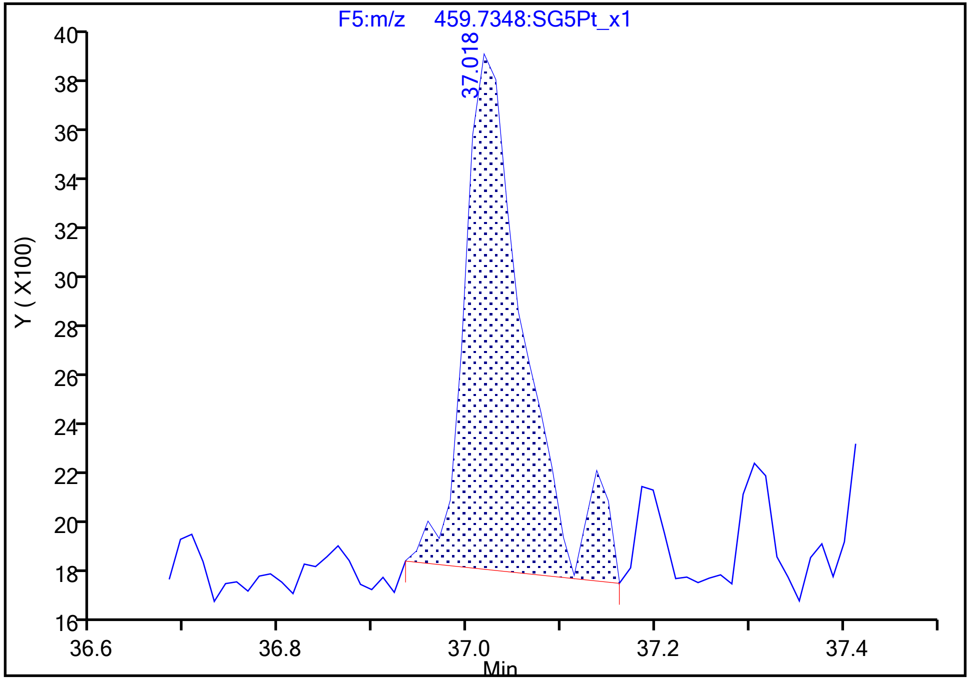

RT: 37.02
Area: 8392
Amount: 0.201368
Amount Units: pg/ul

Manual Integration Results

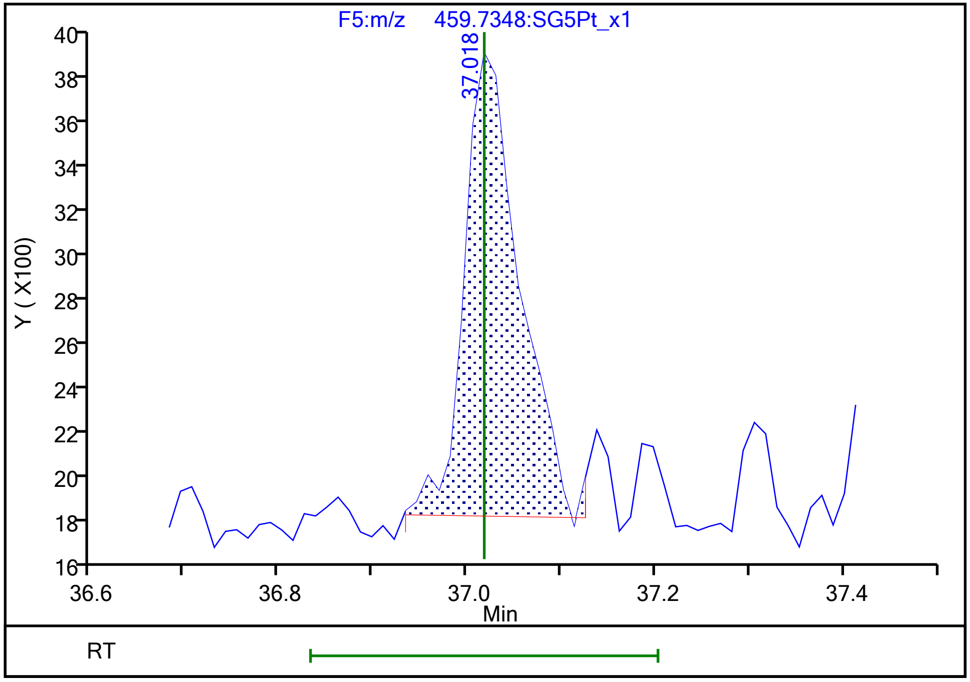

Reviewer: dadunj, 03-Sep-2020 08:45:13
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

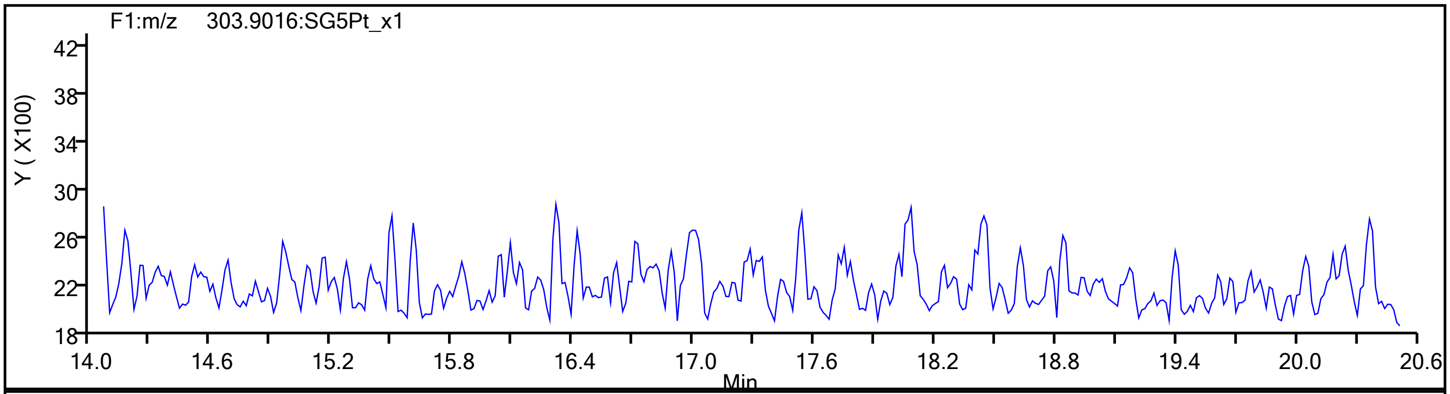

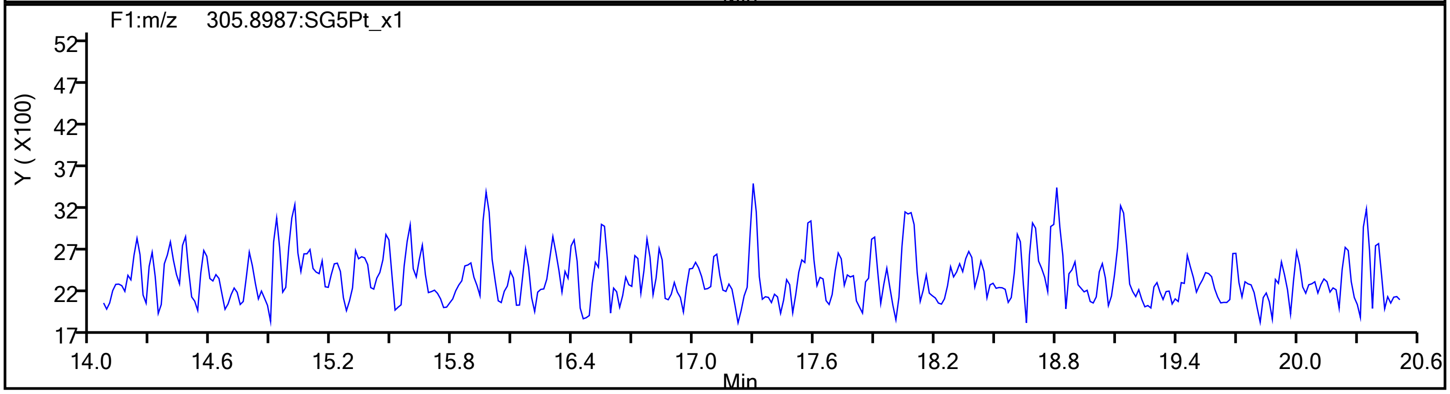

TCDF Standards

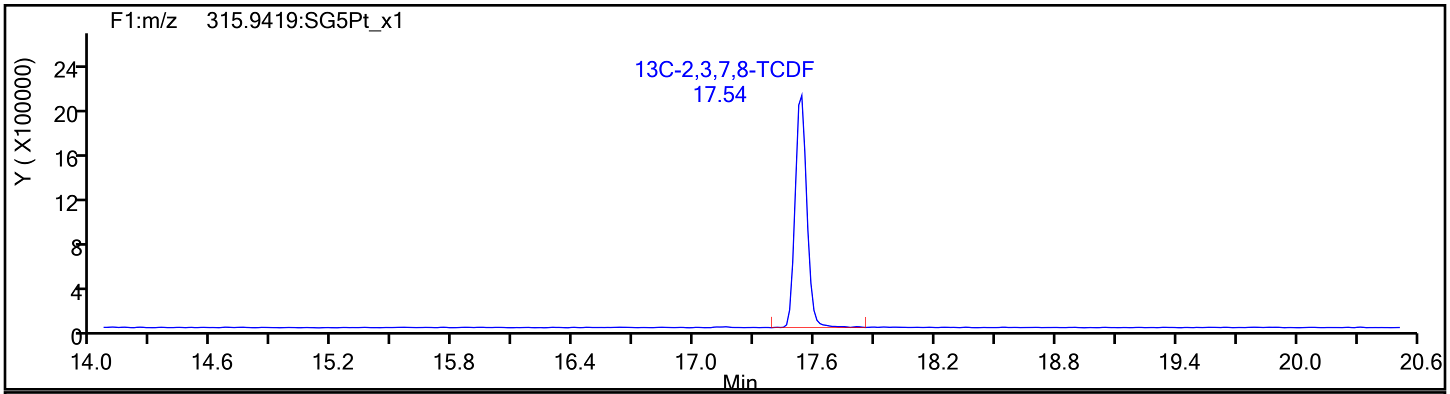

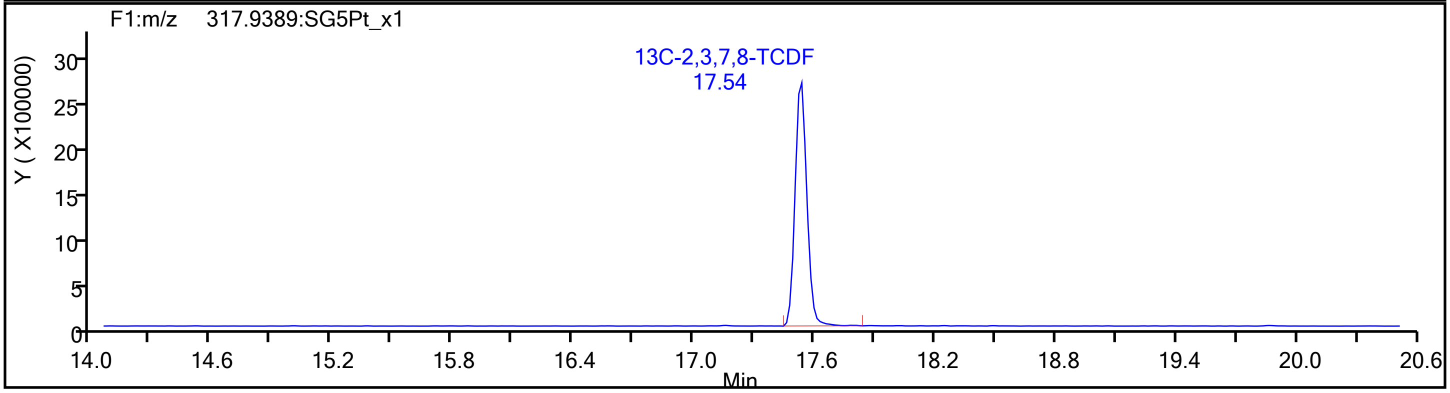

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

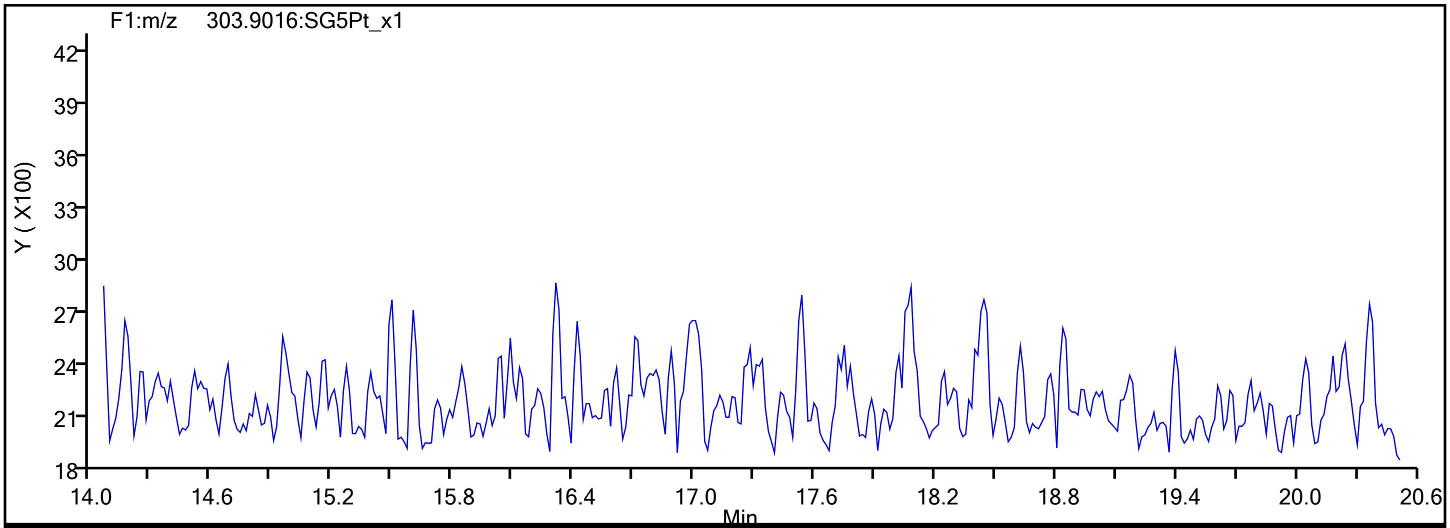

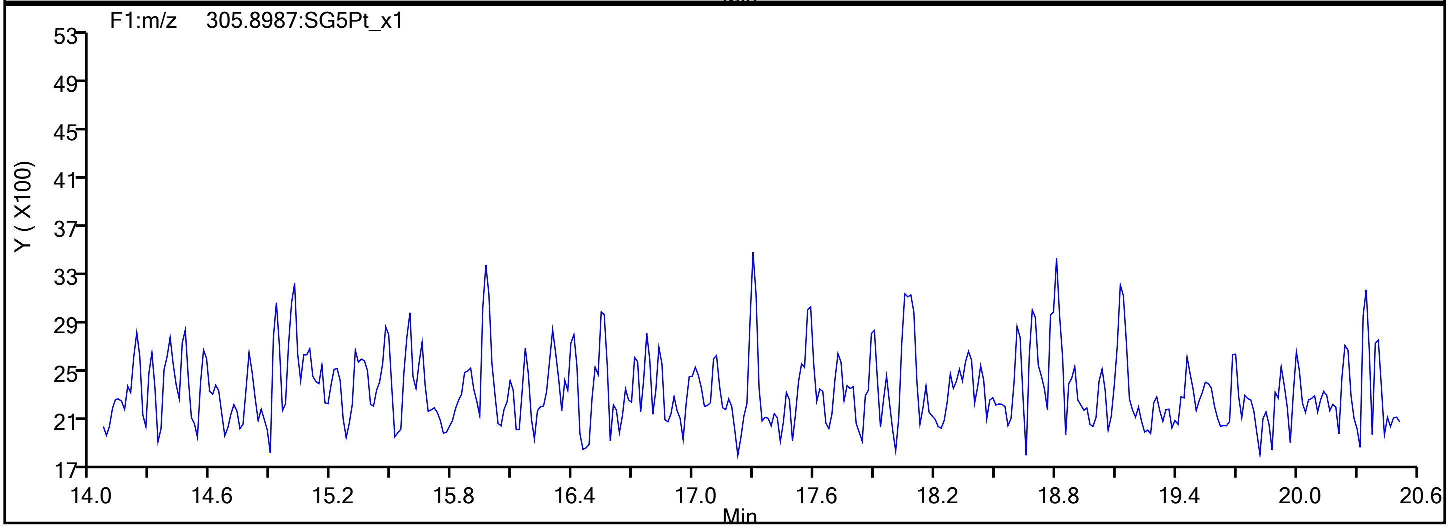

TCDF Interference Mass

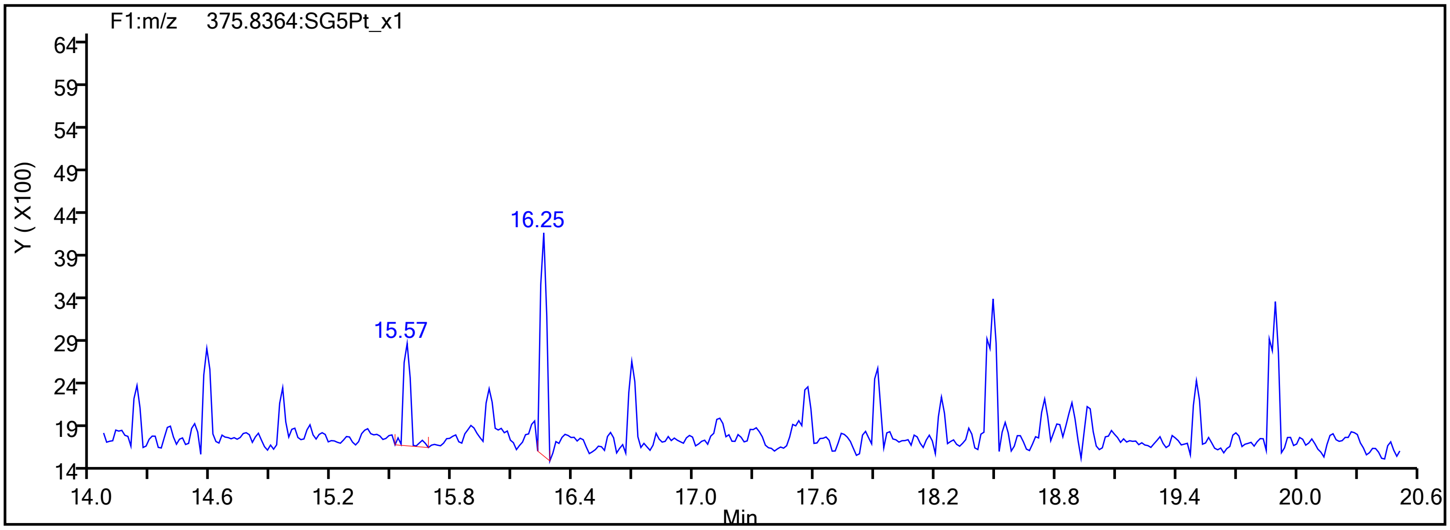

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d

Injection Date: 01-Sep-2020 21:39:27 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

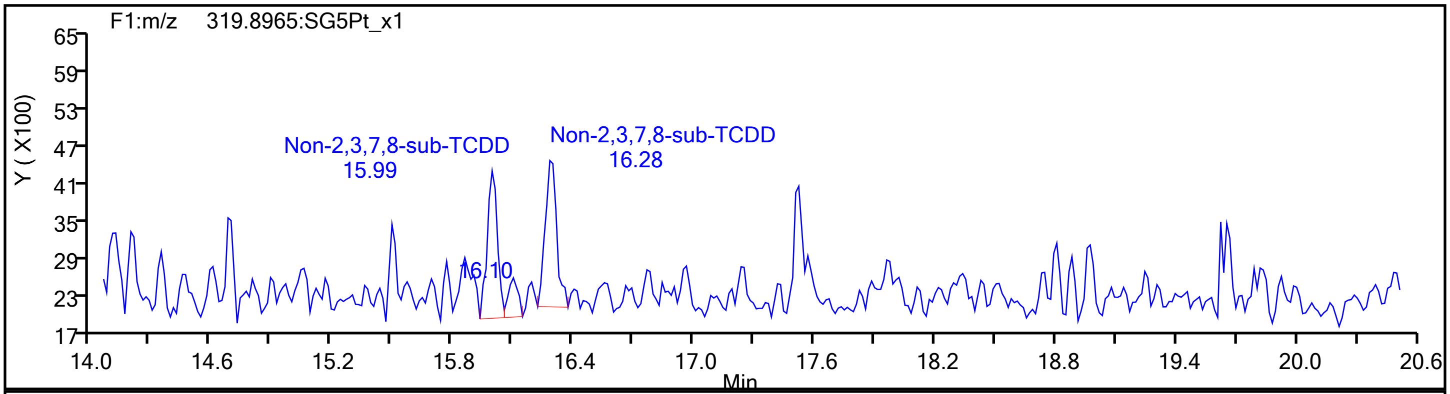

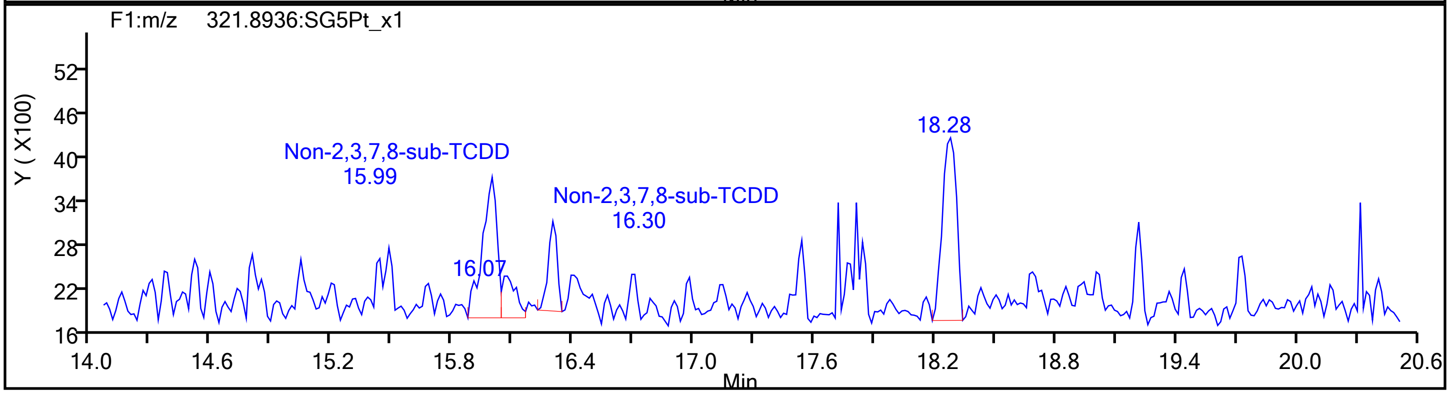

TCDD Standards

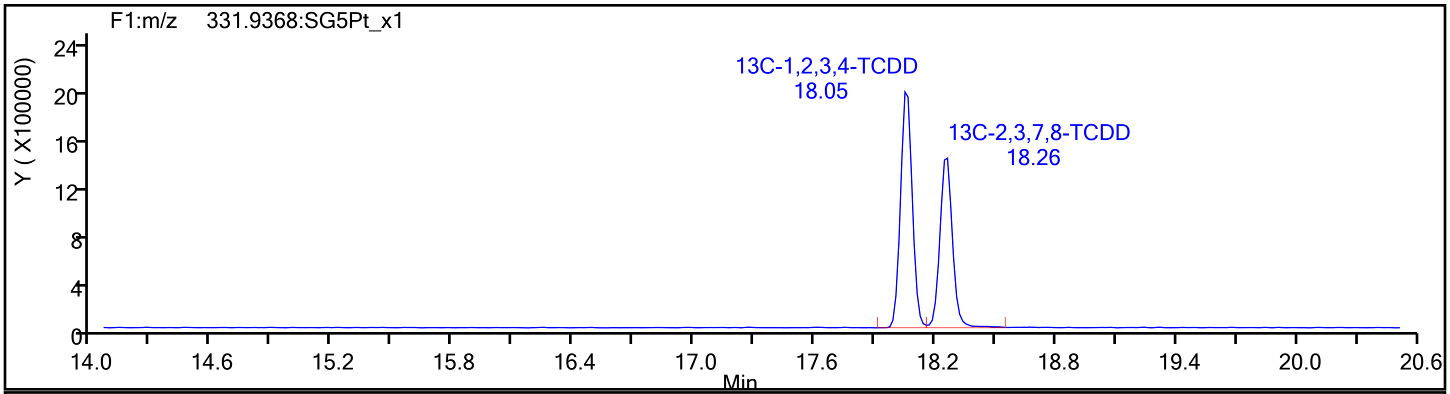

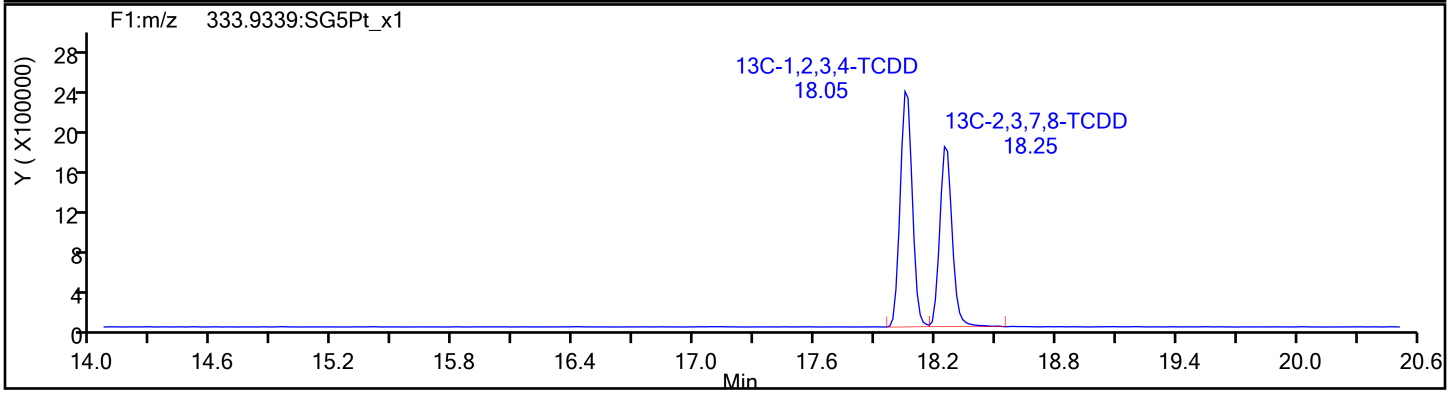

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

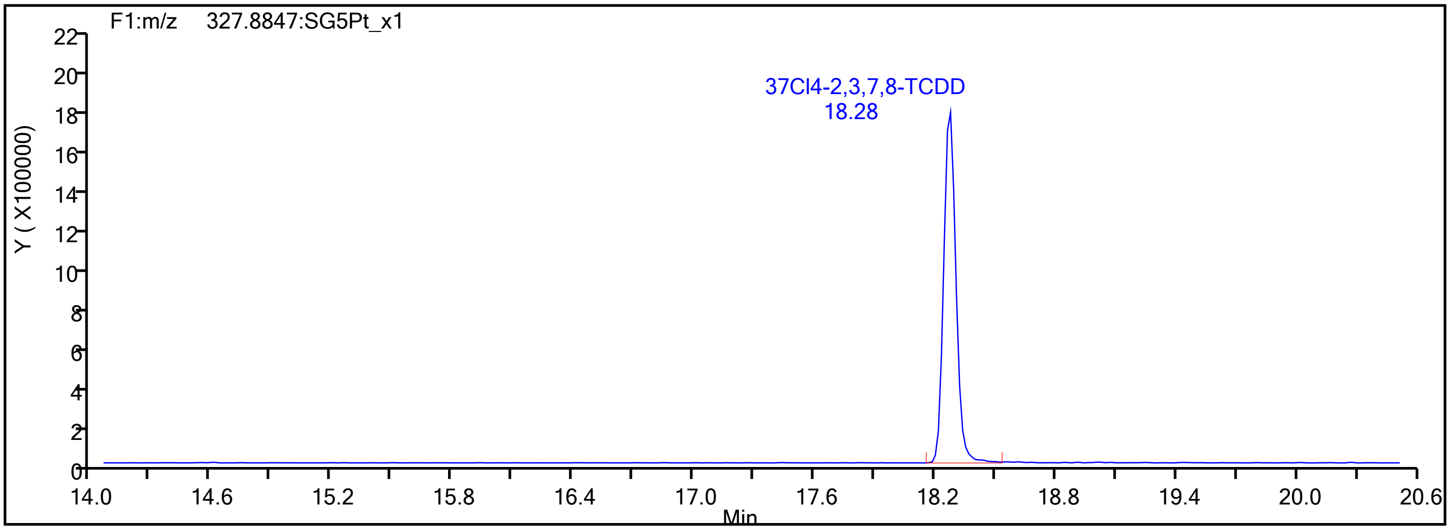

37Cl4-TCDD Standards

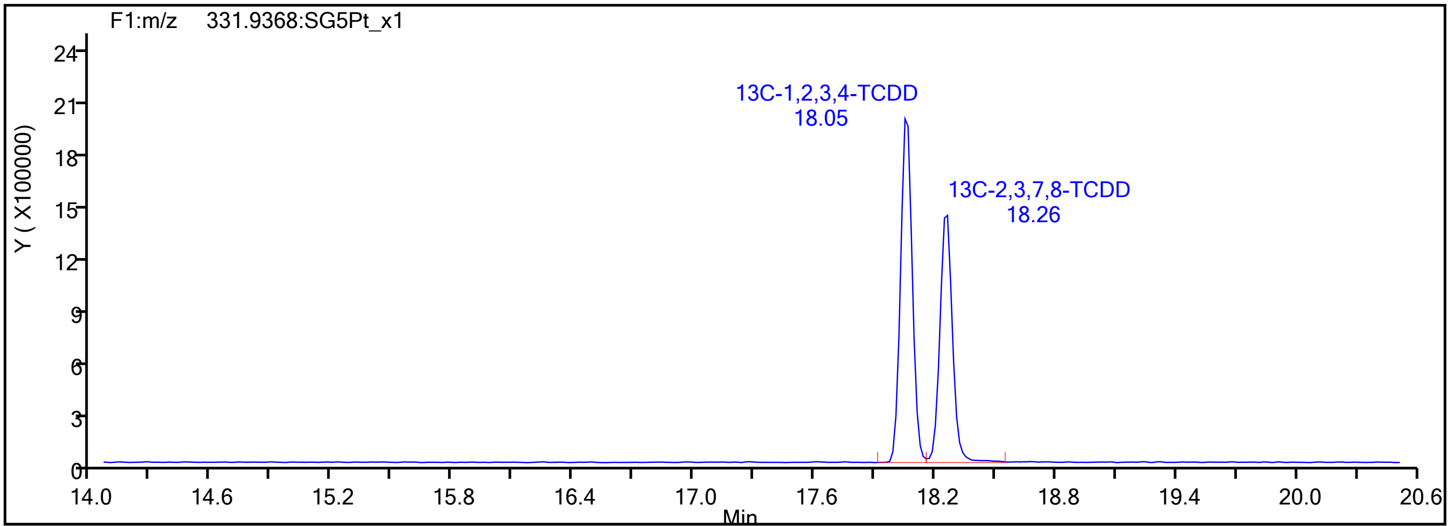

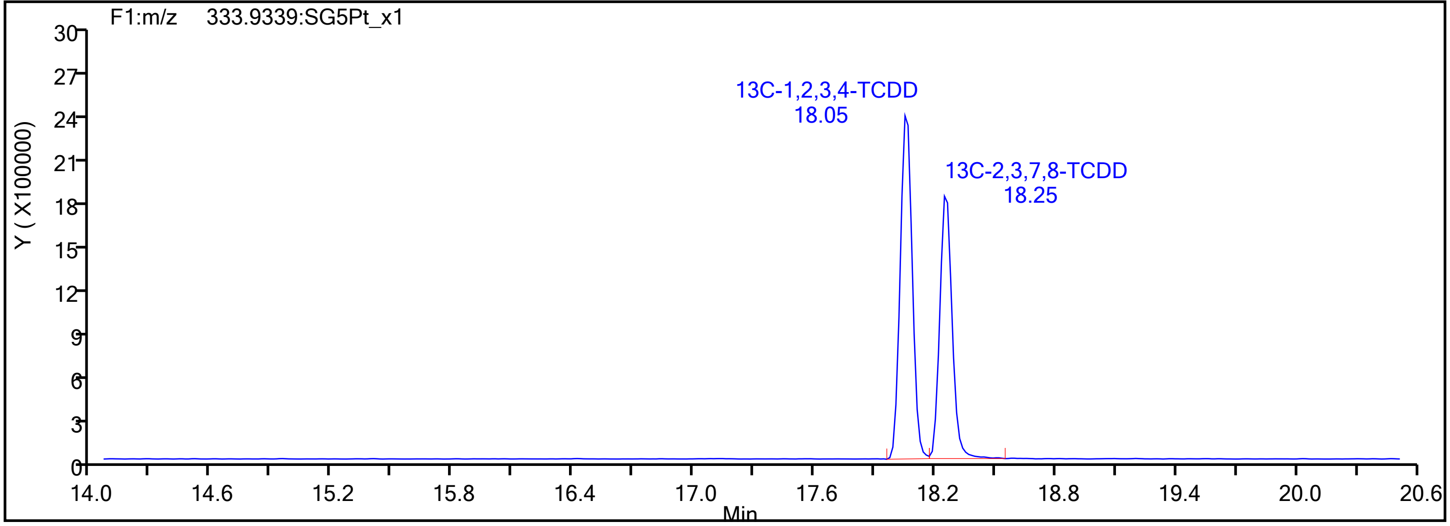

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Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

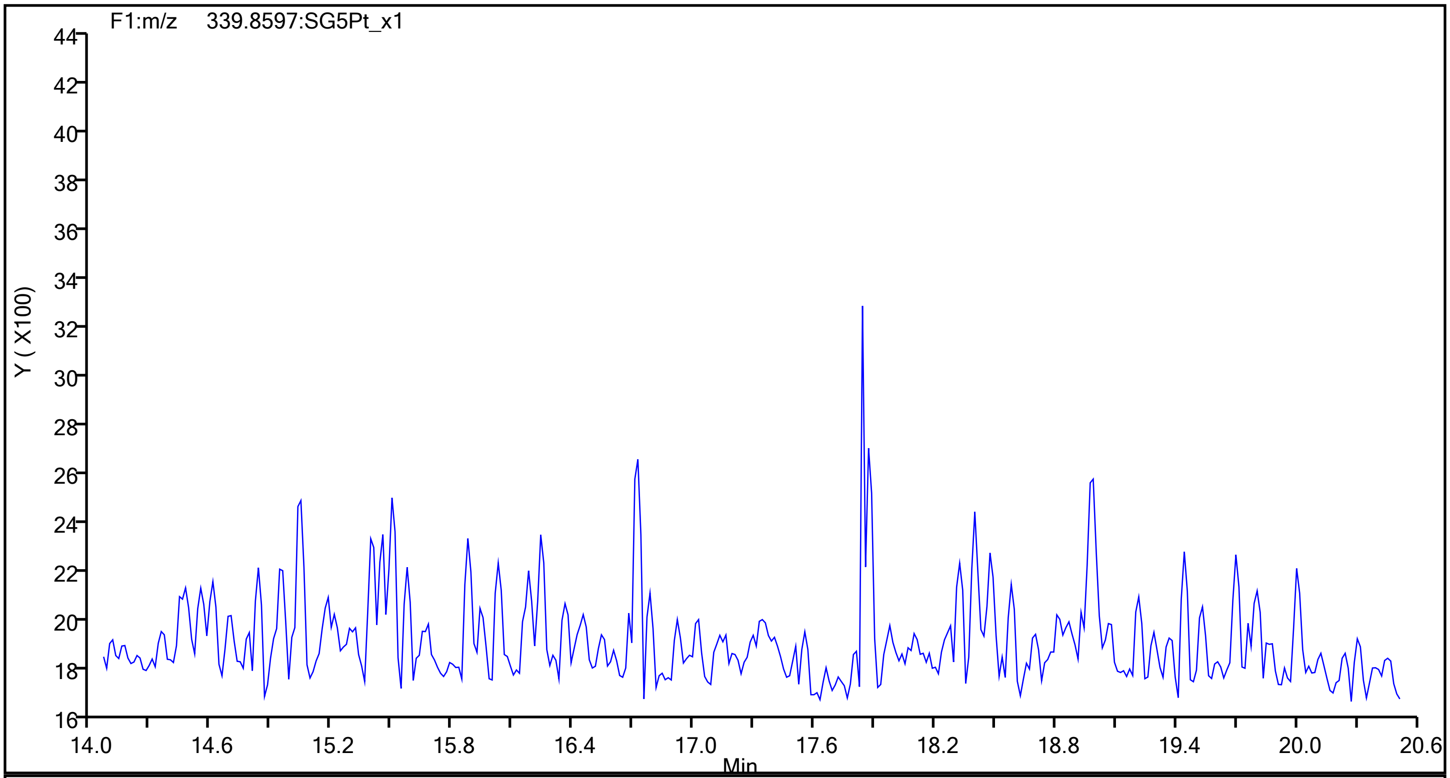

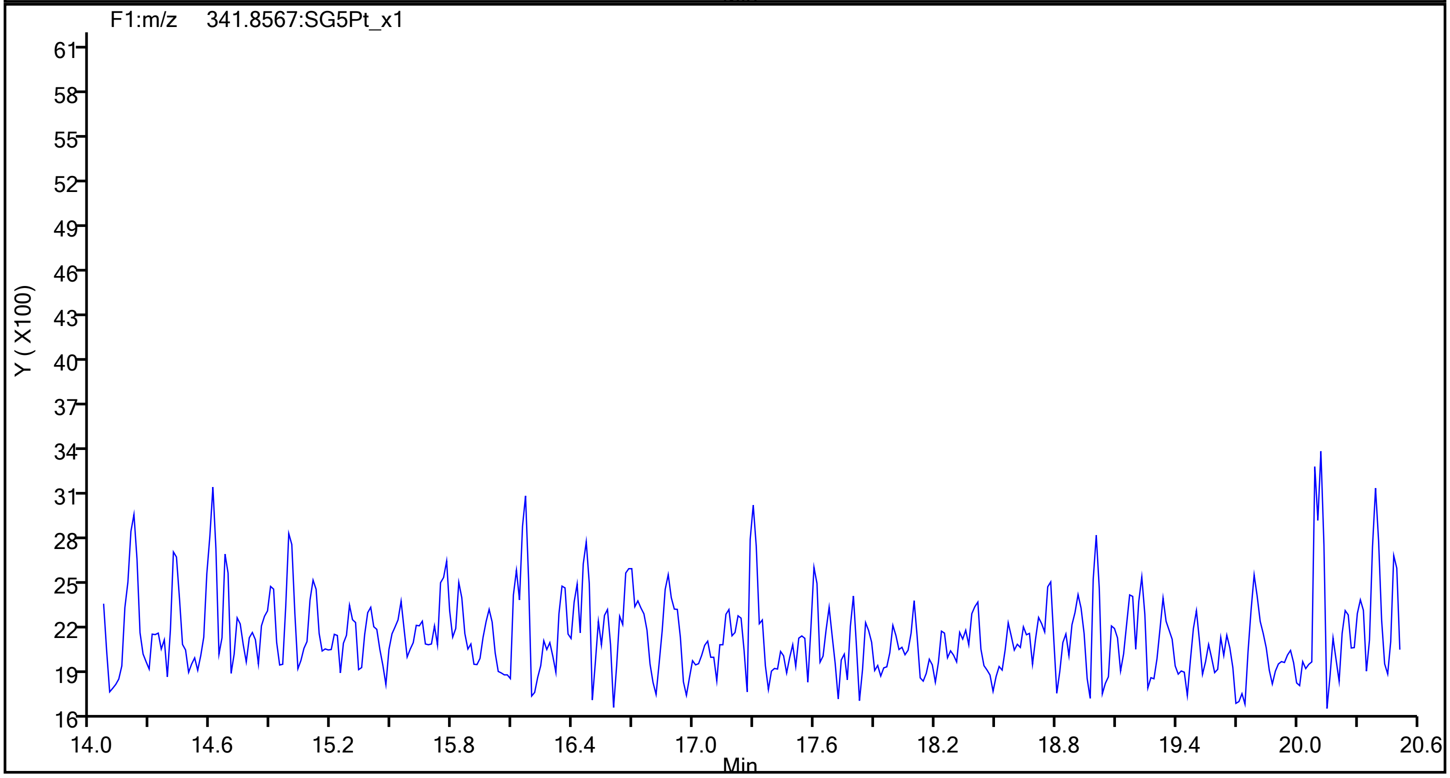

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

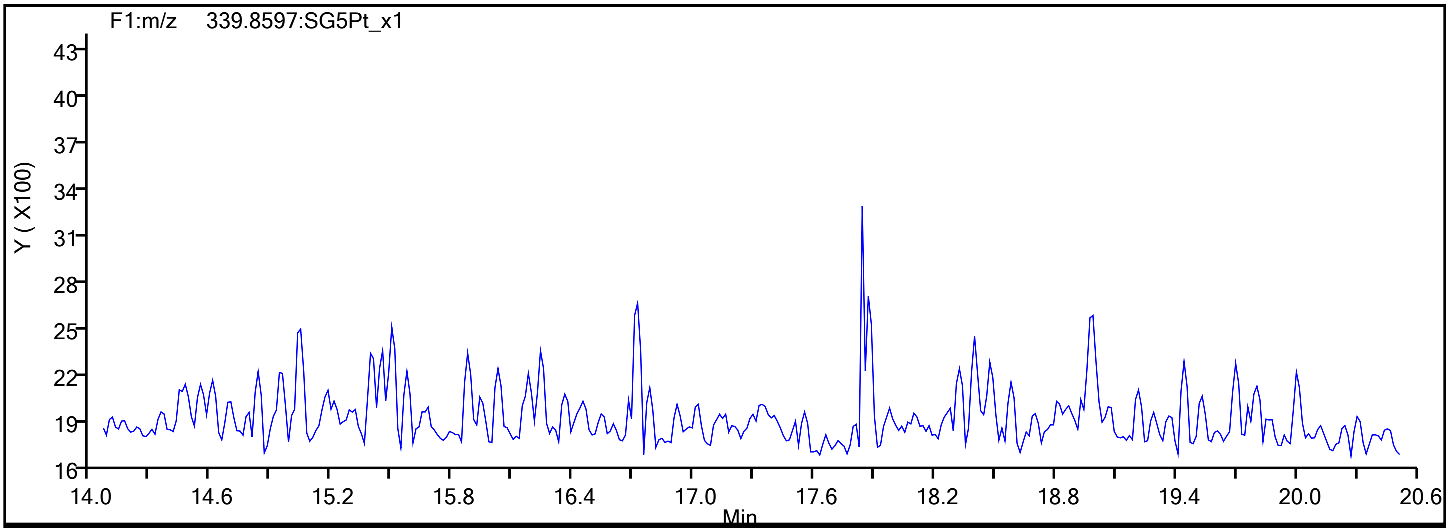

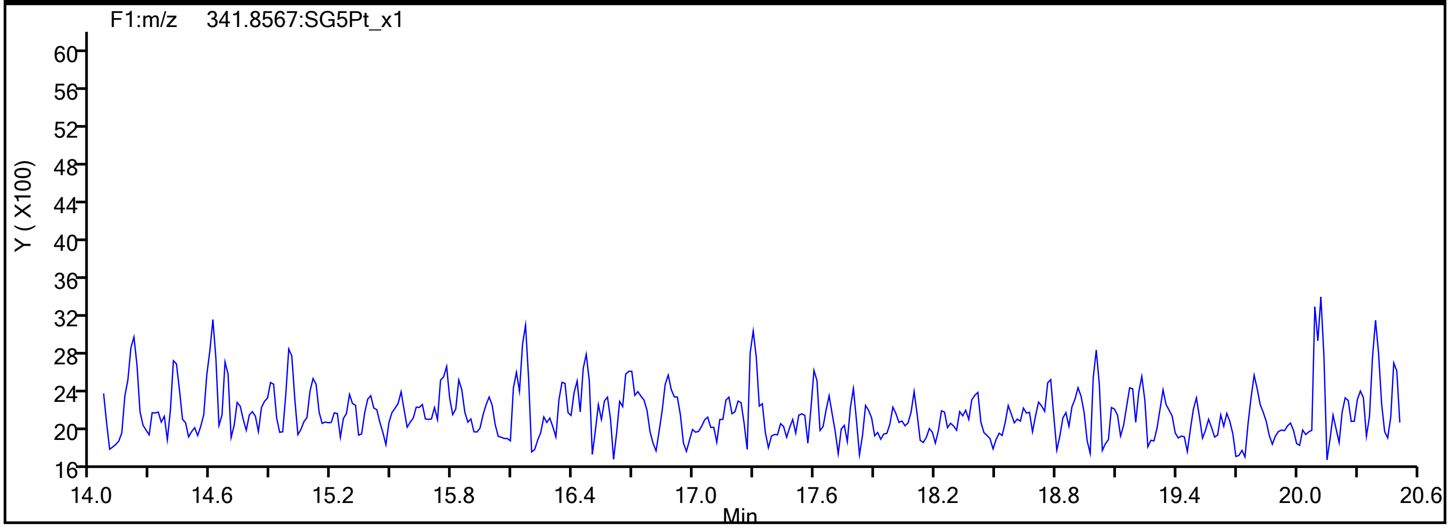

F1 PeCDFs Interference Mass

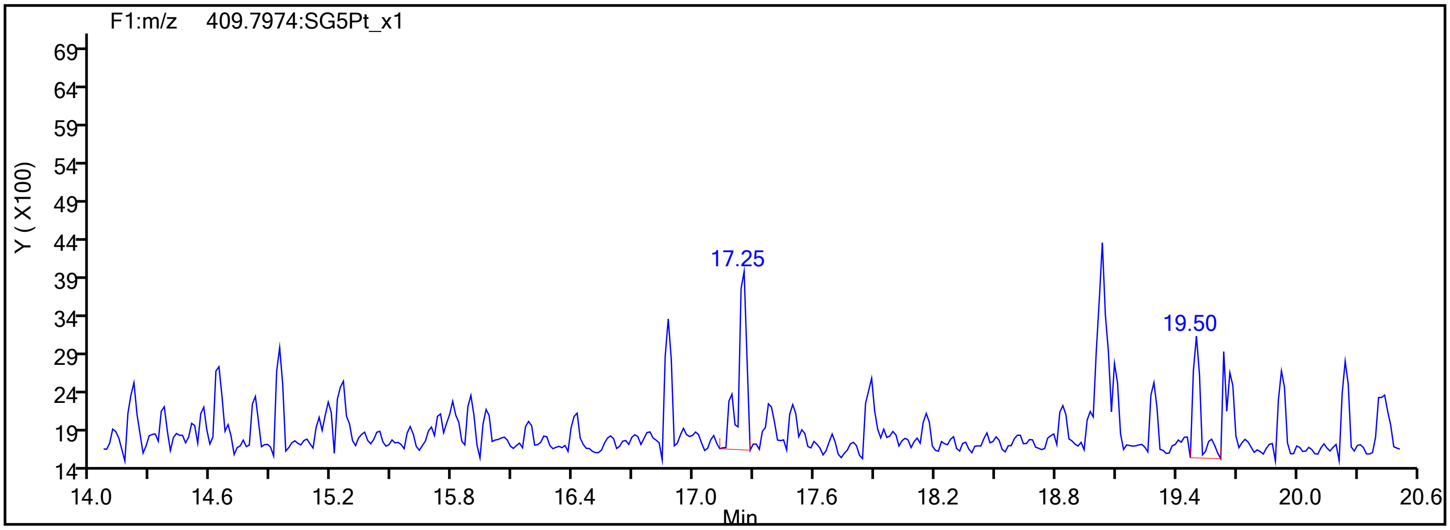

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

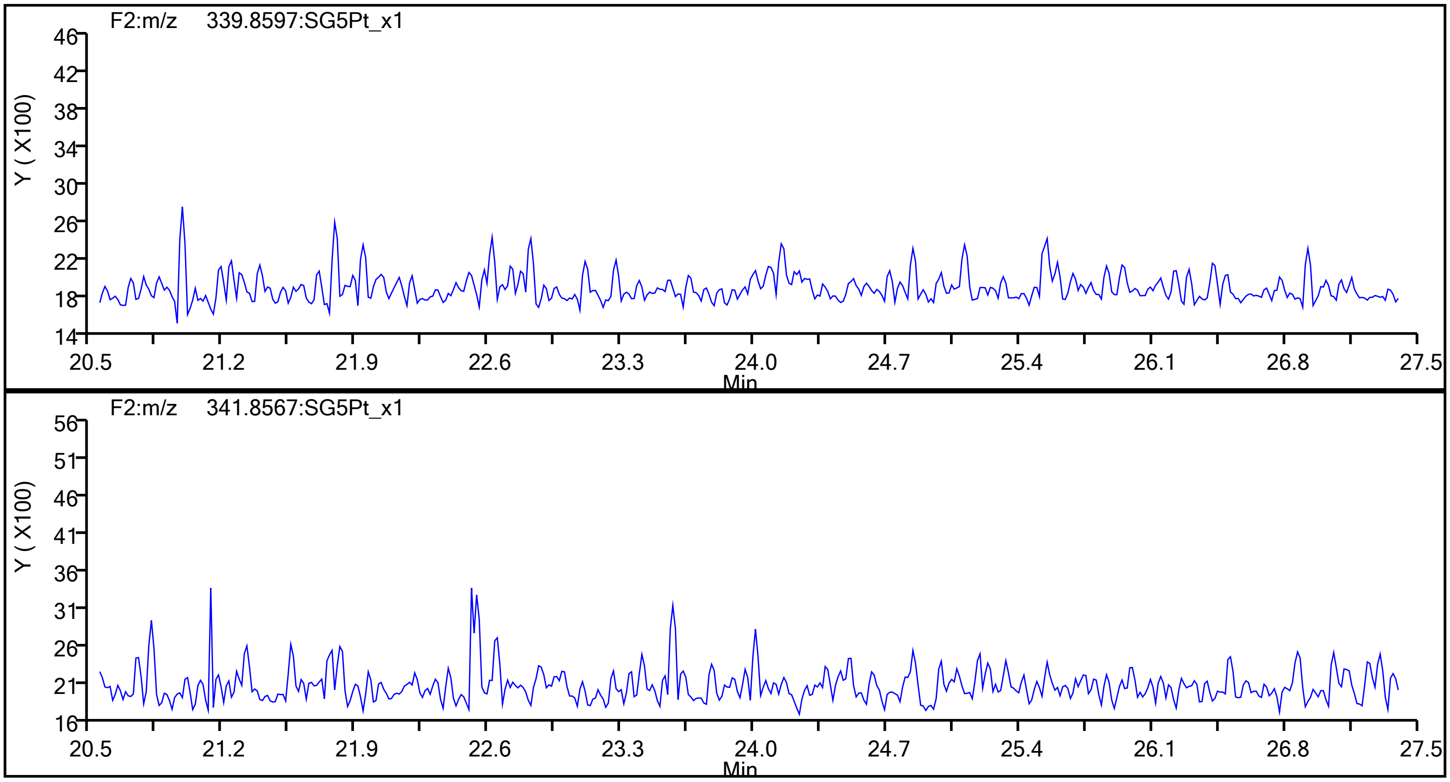

PeCDF Standards

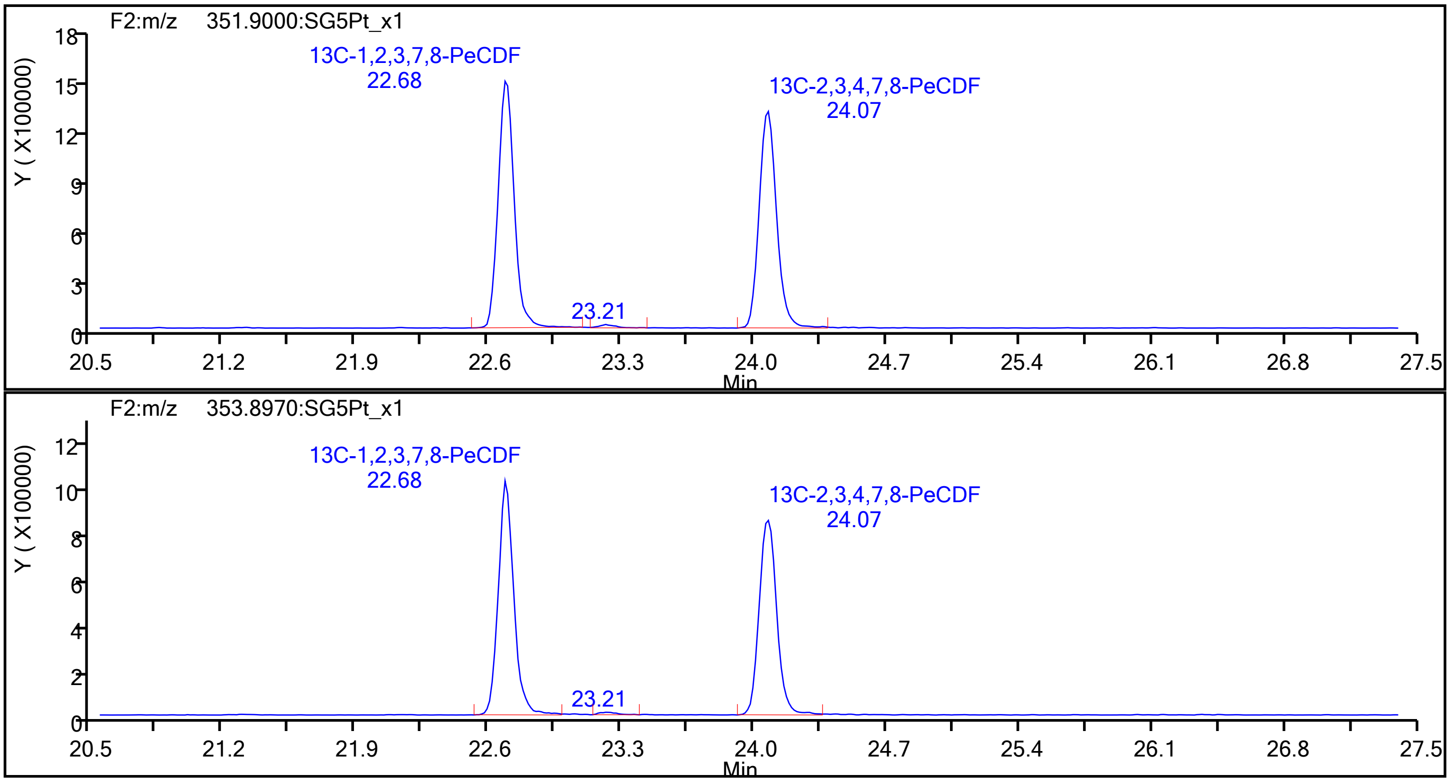

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

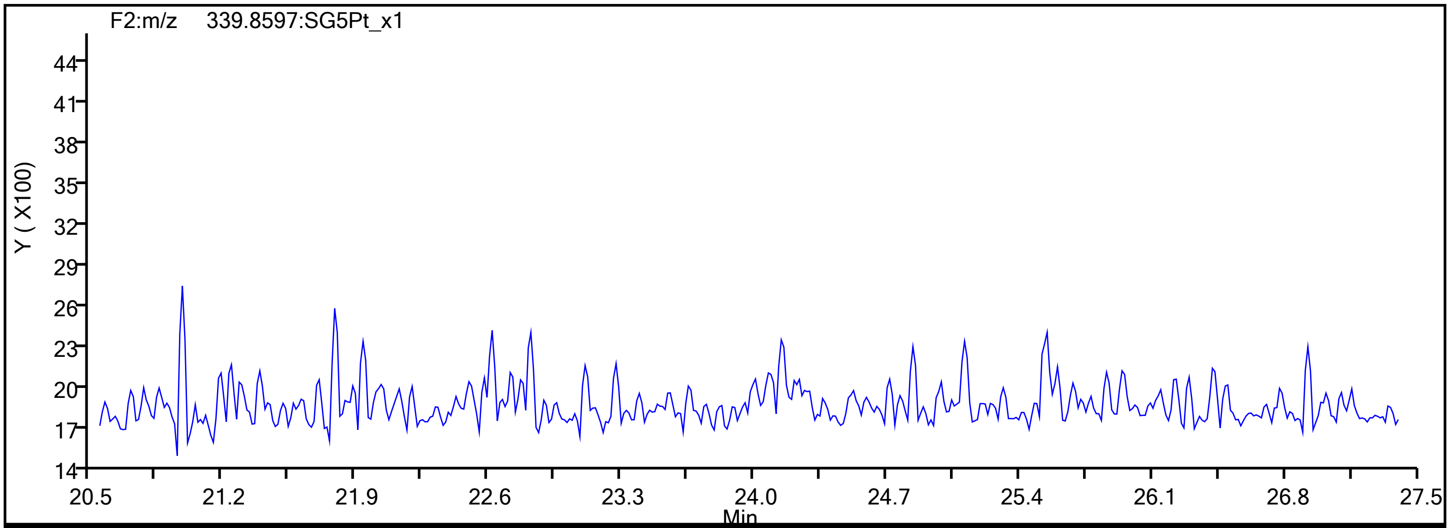

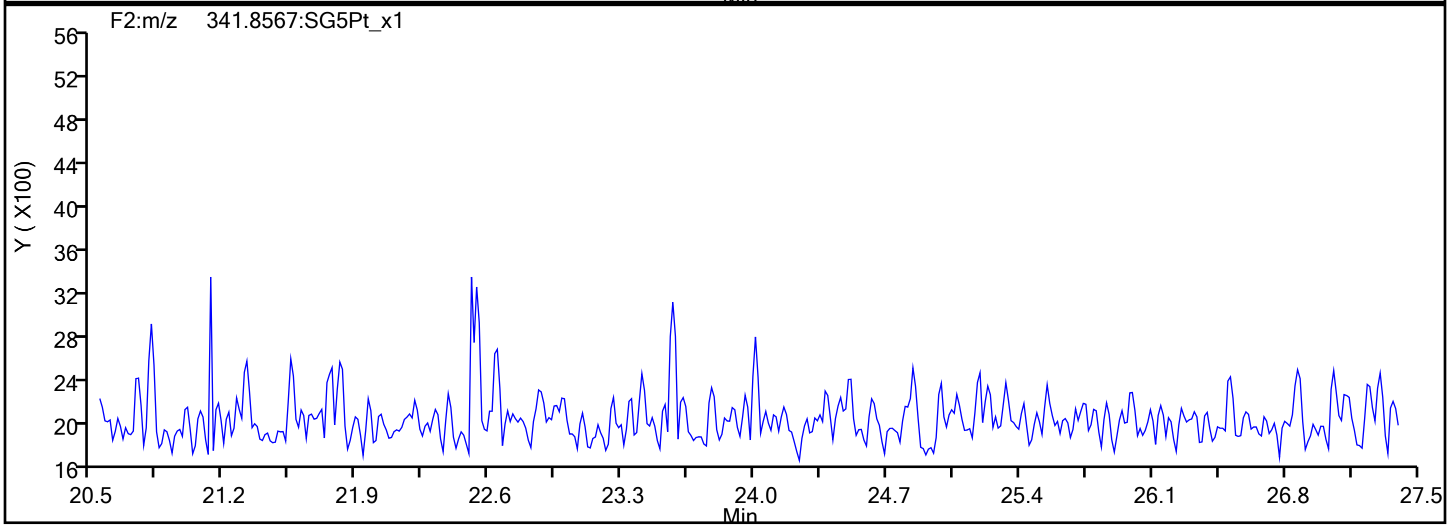

PeCDF Interference Mass

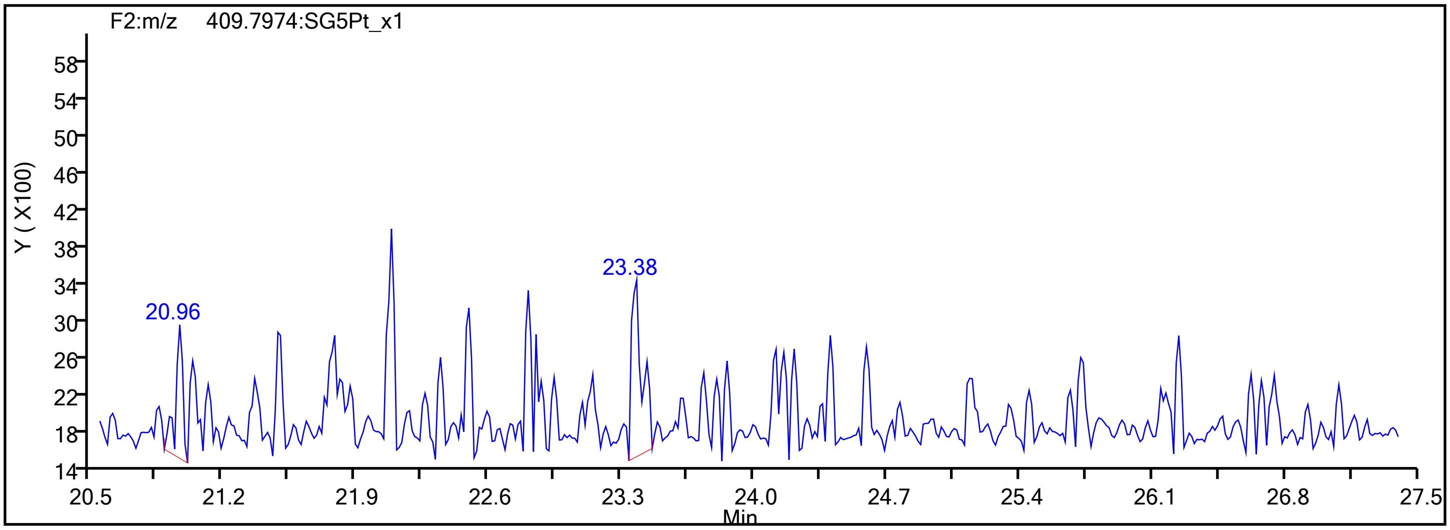

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

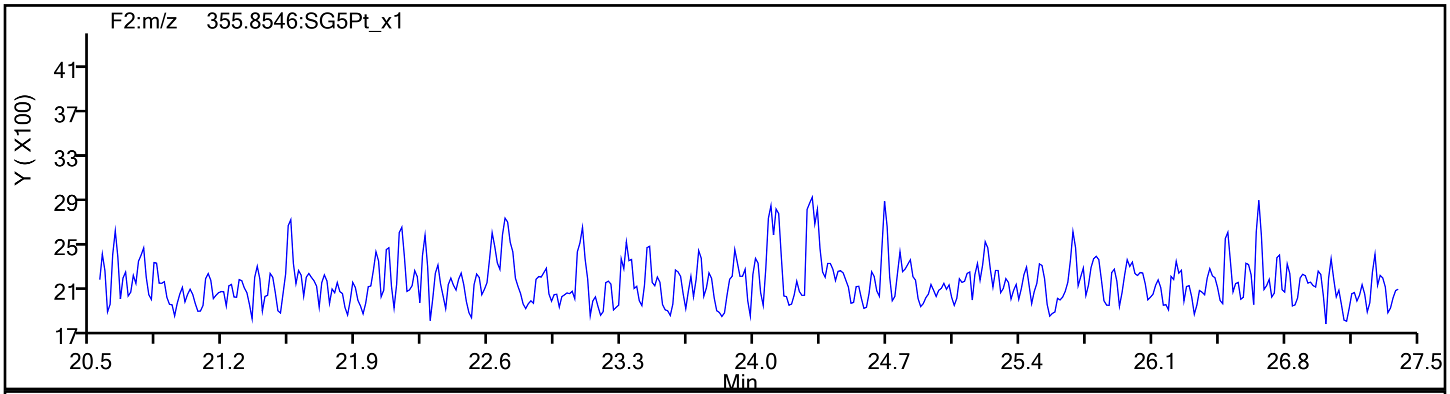

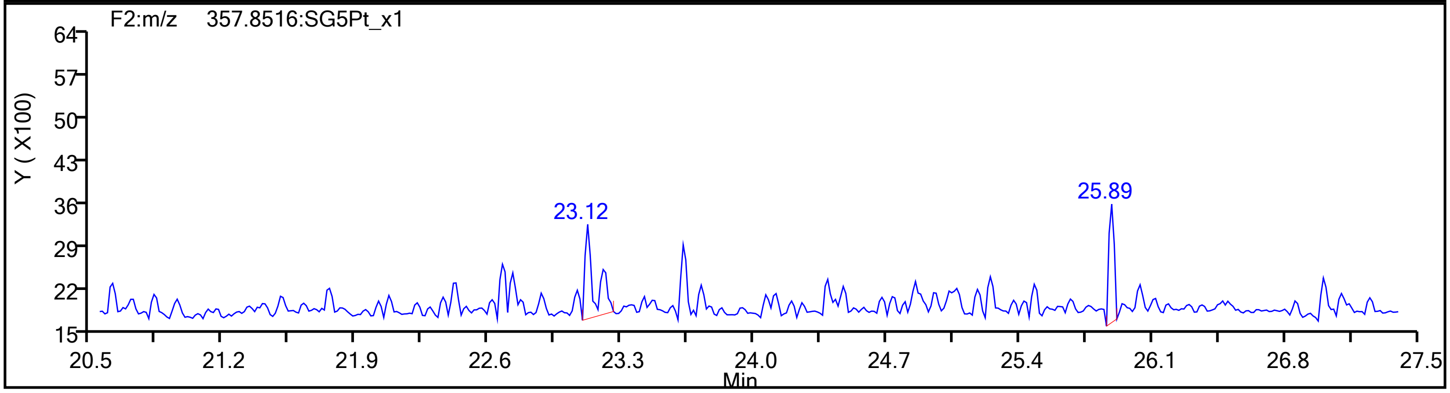

PeCDD Standards

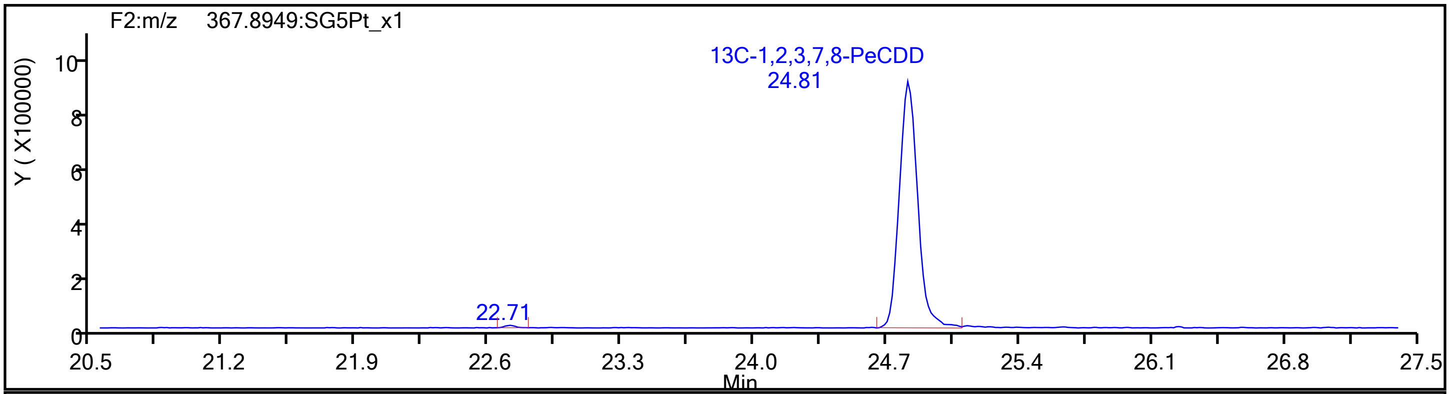

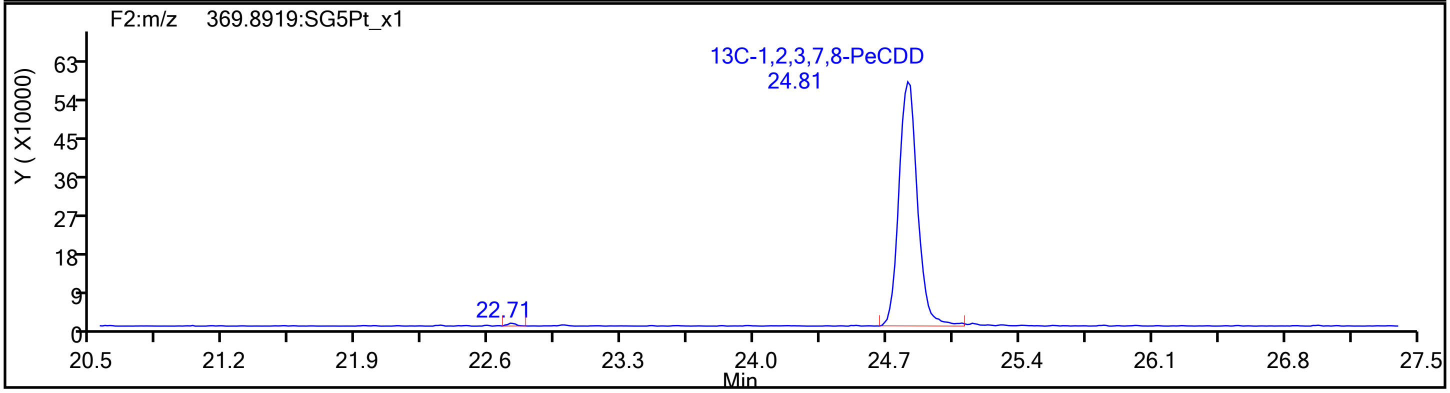

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

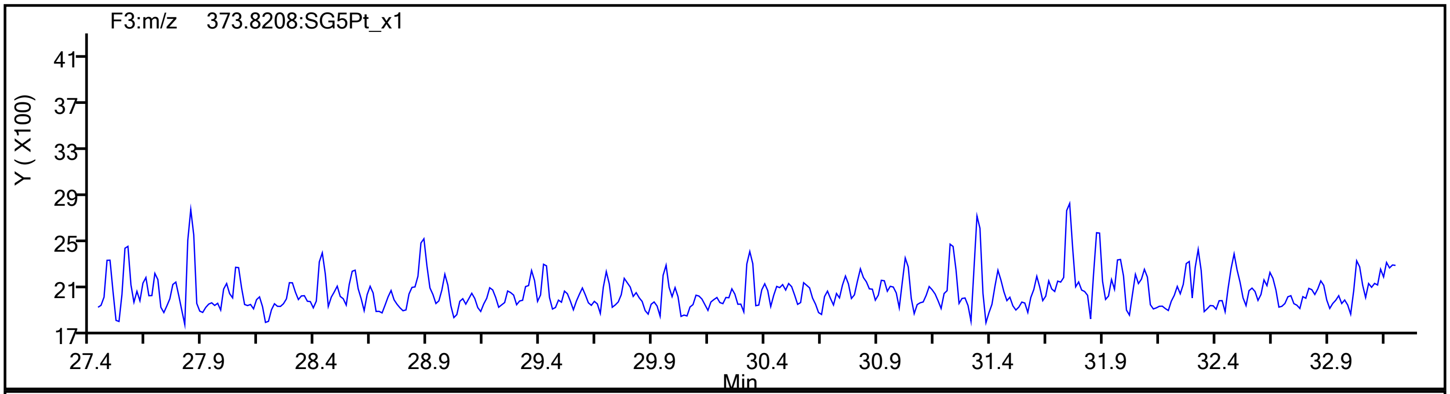

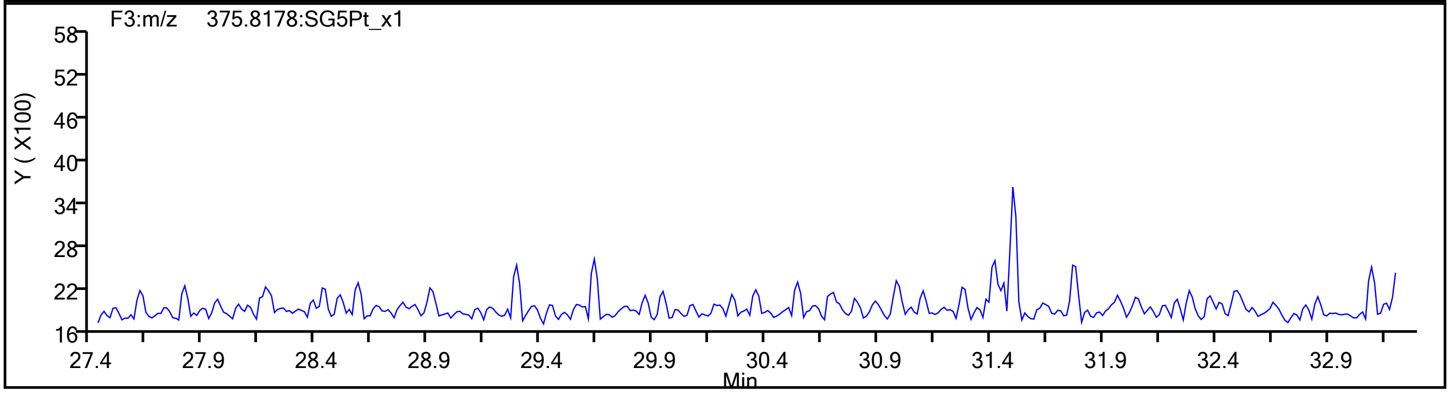

HxCDF Standards

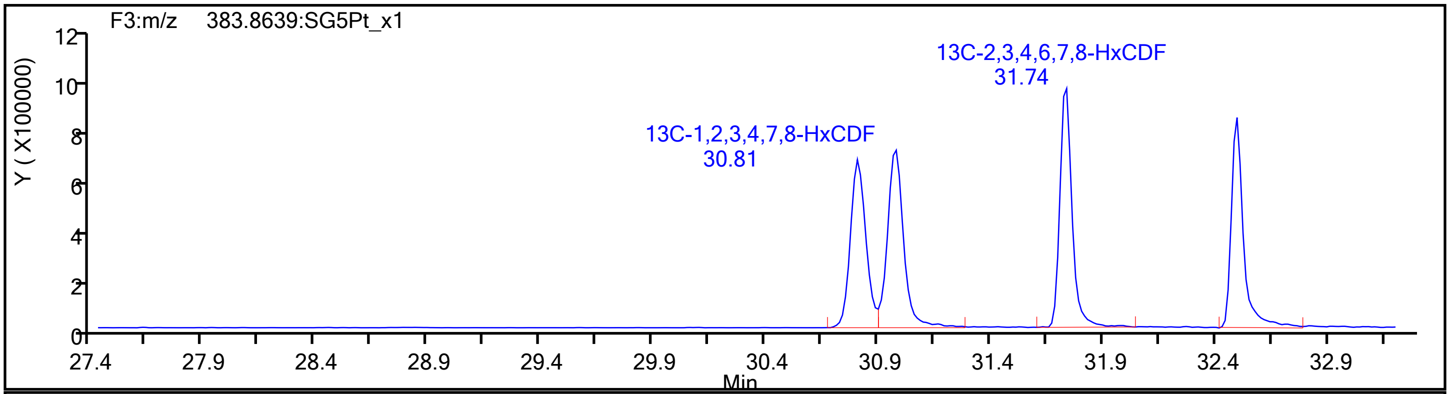

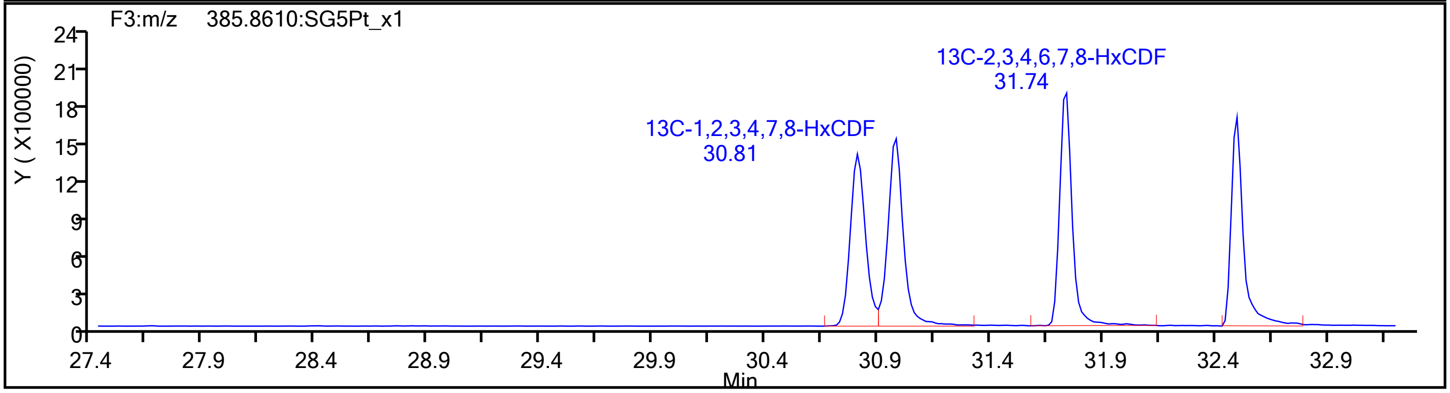

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

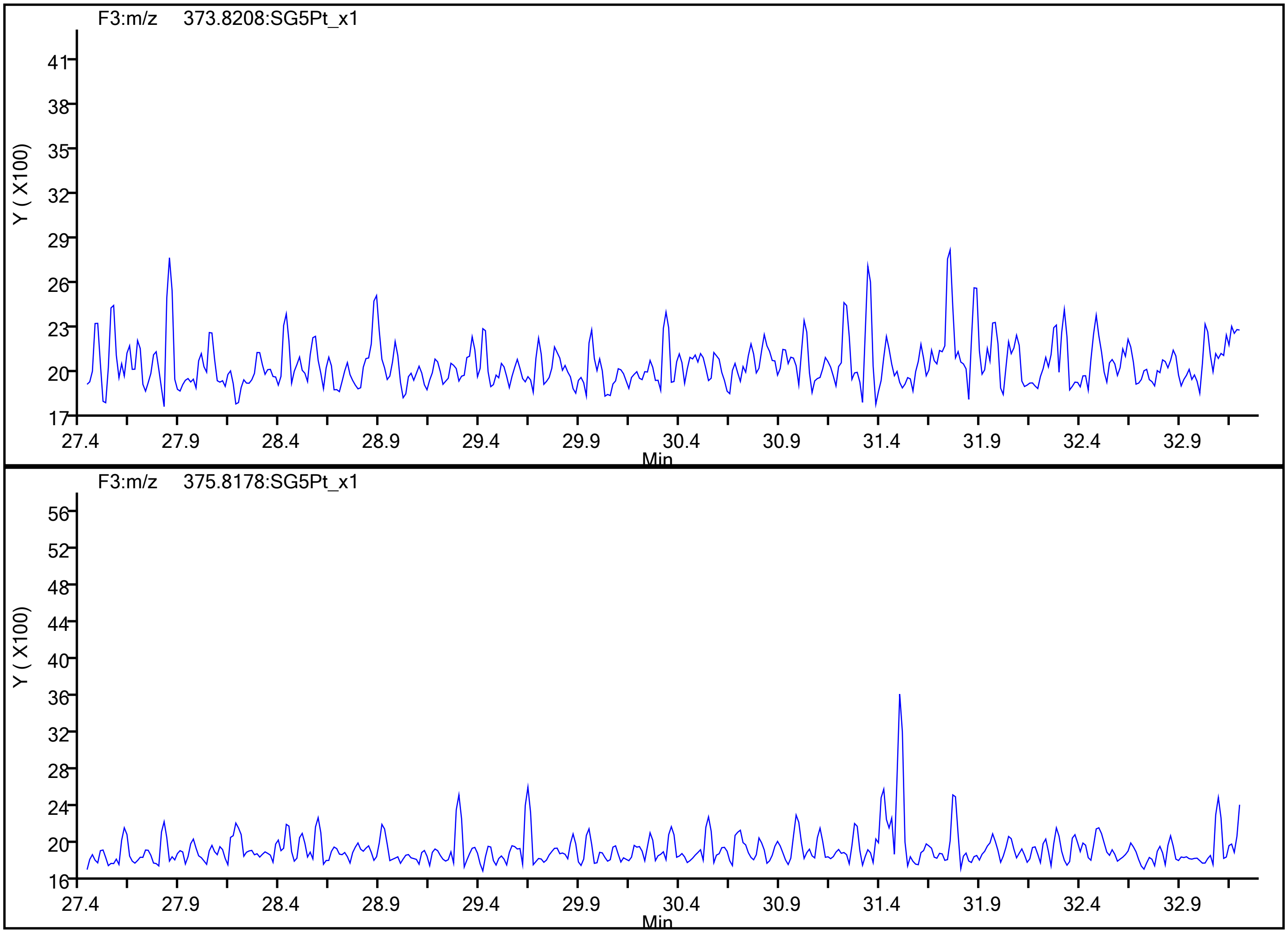

HxCDF Interference Mass

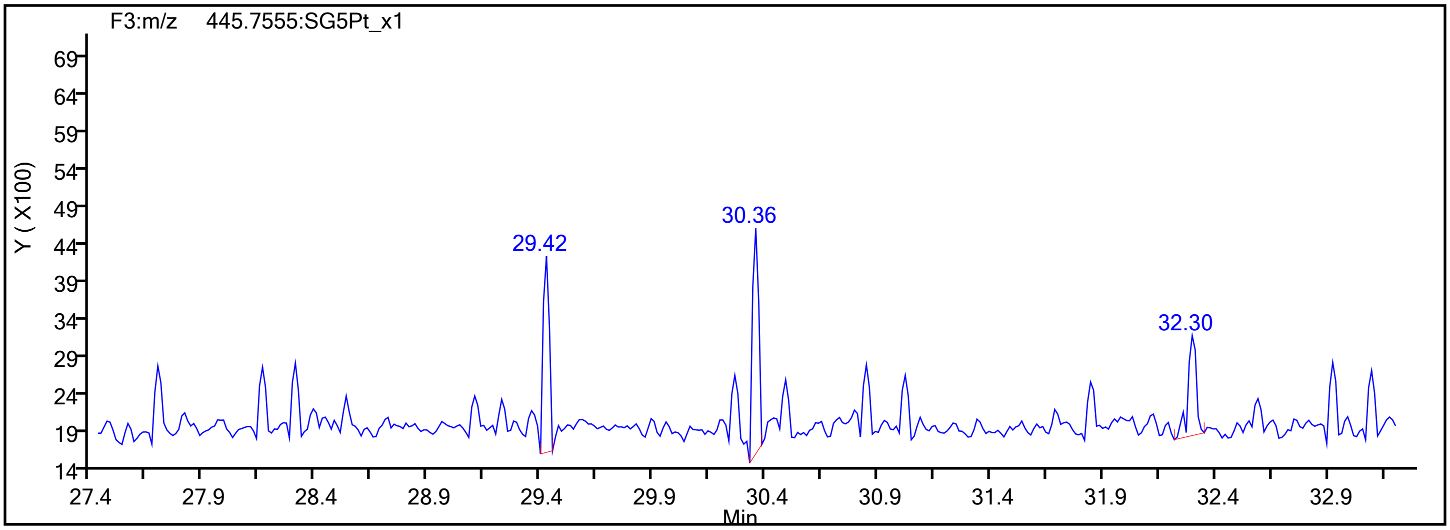

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

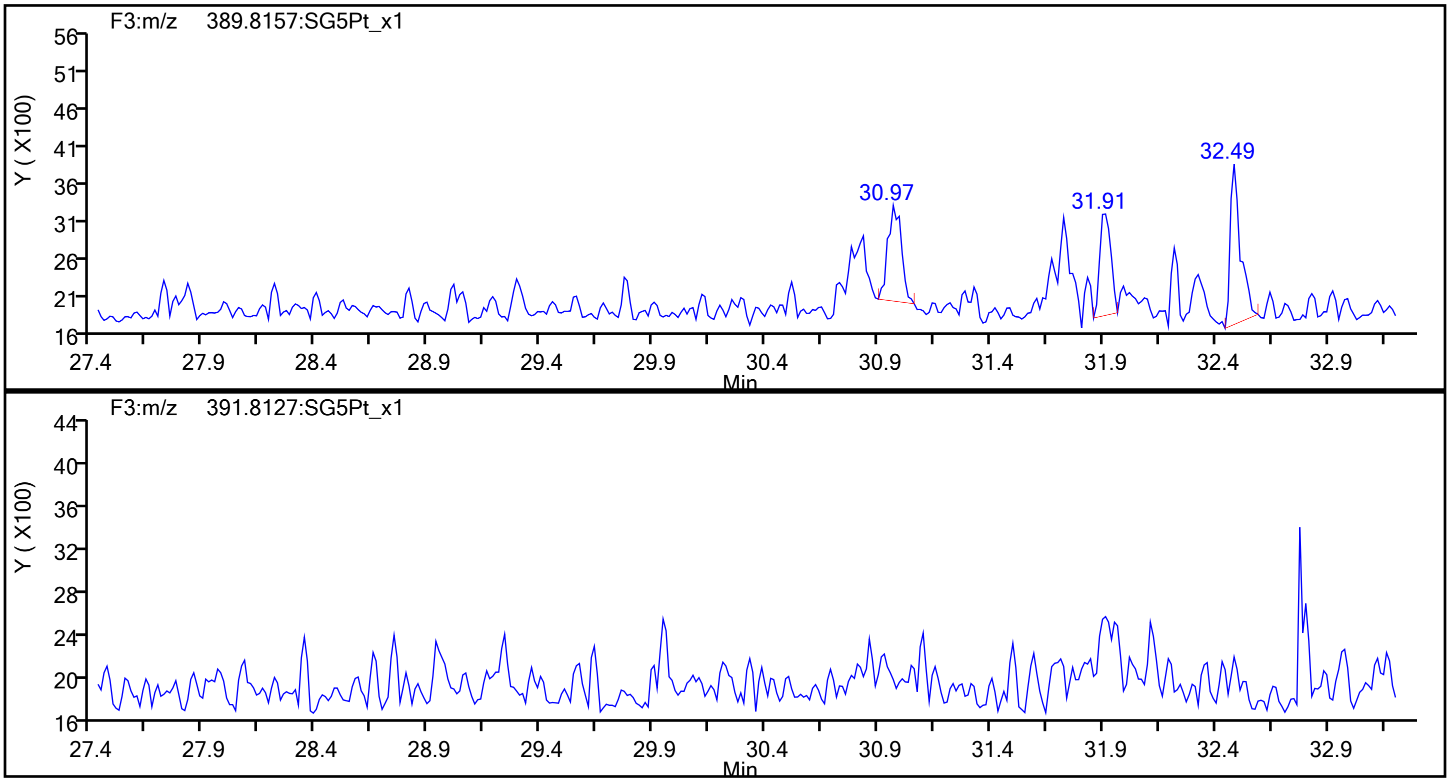

HxCDD Standards

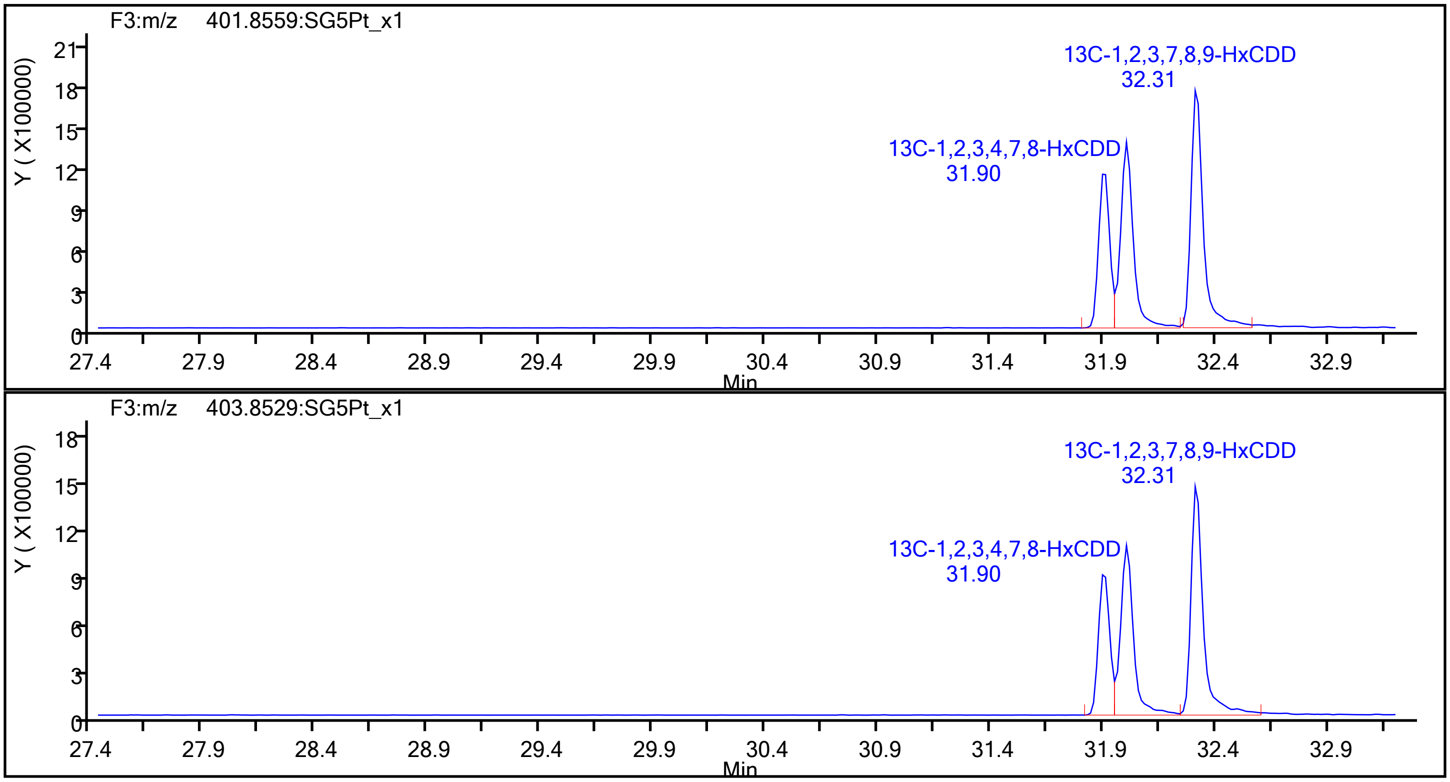

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

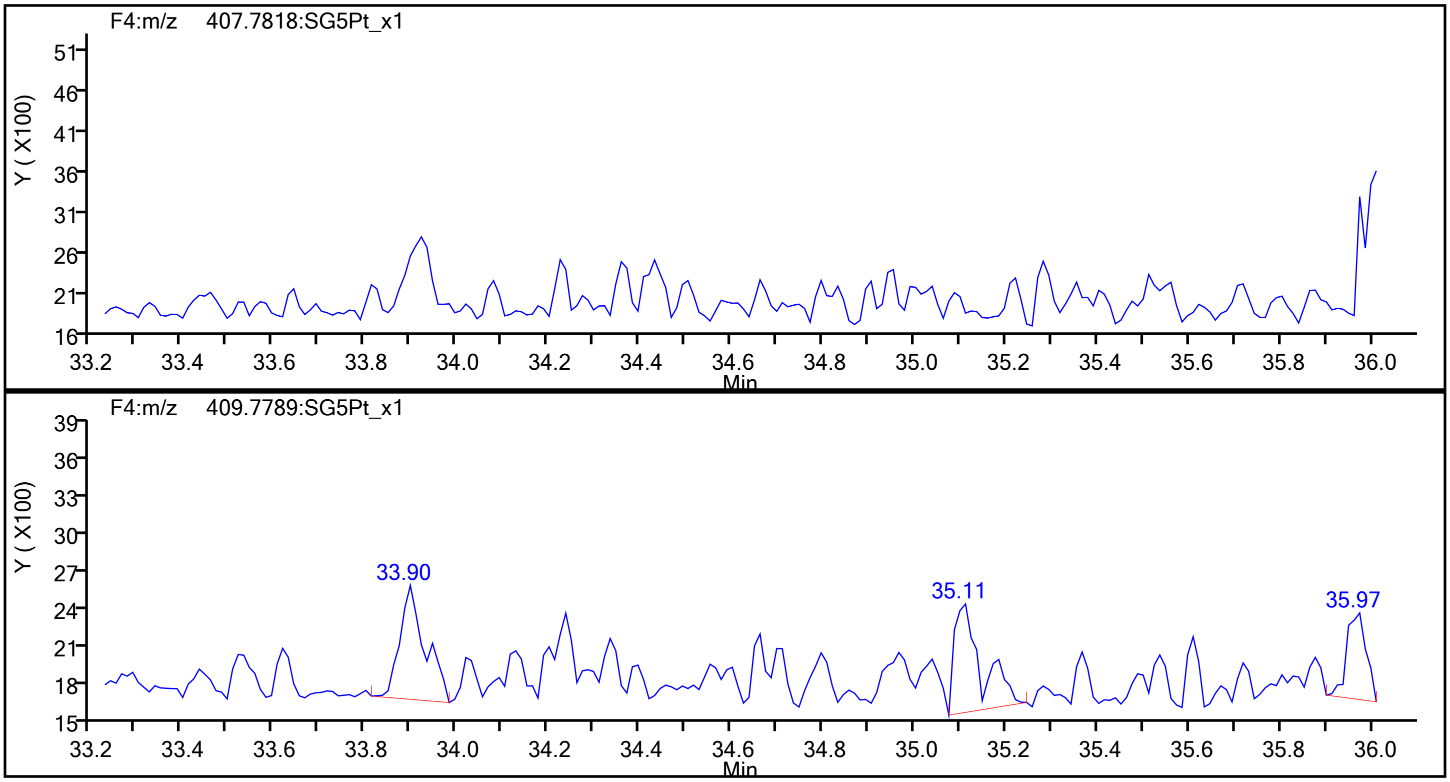

HpCDF Standards

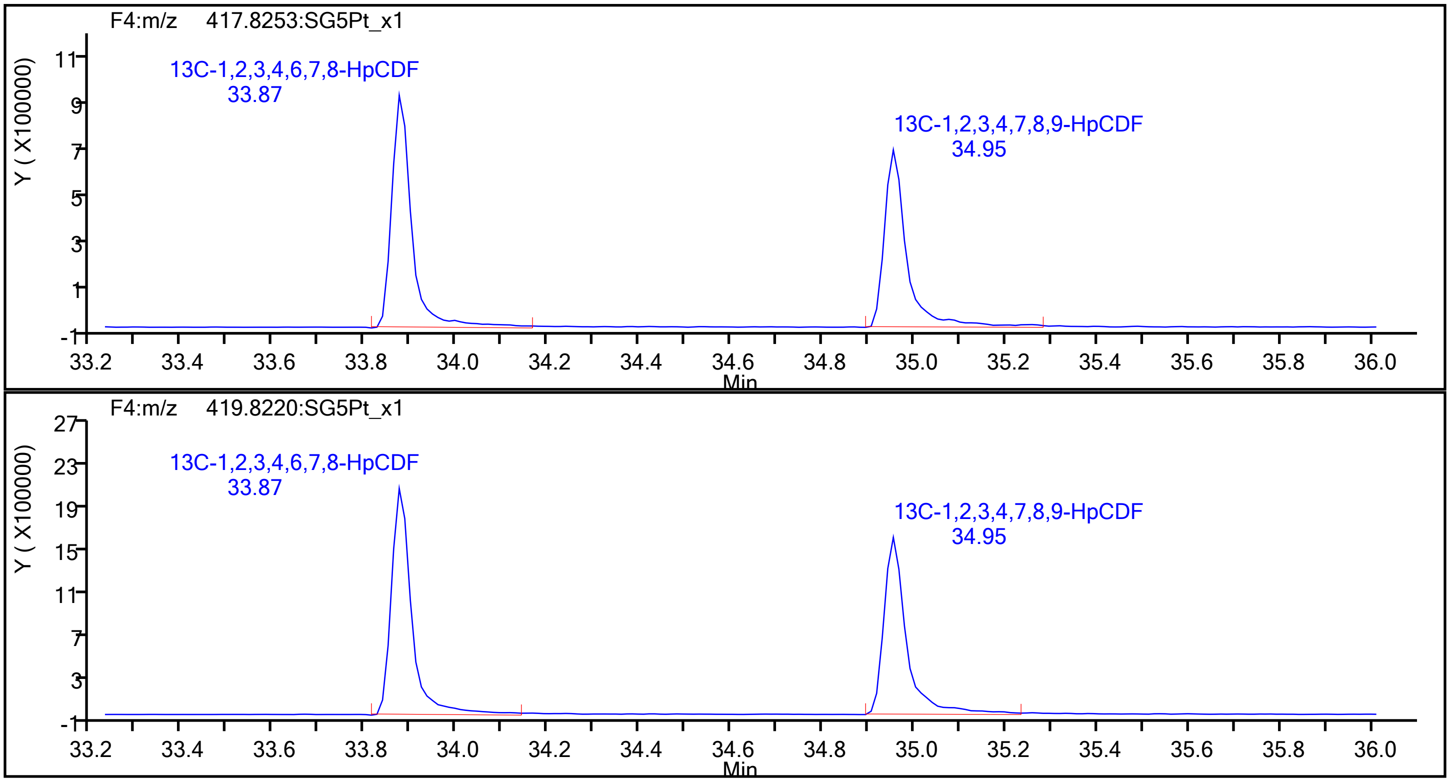

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

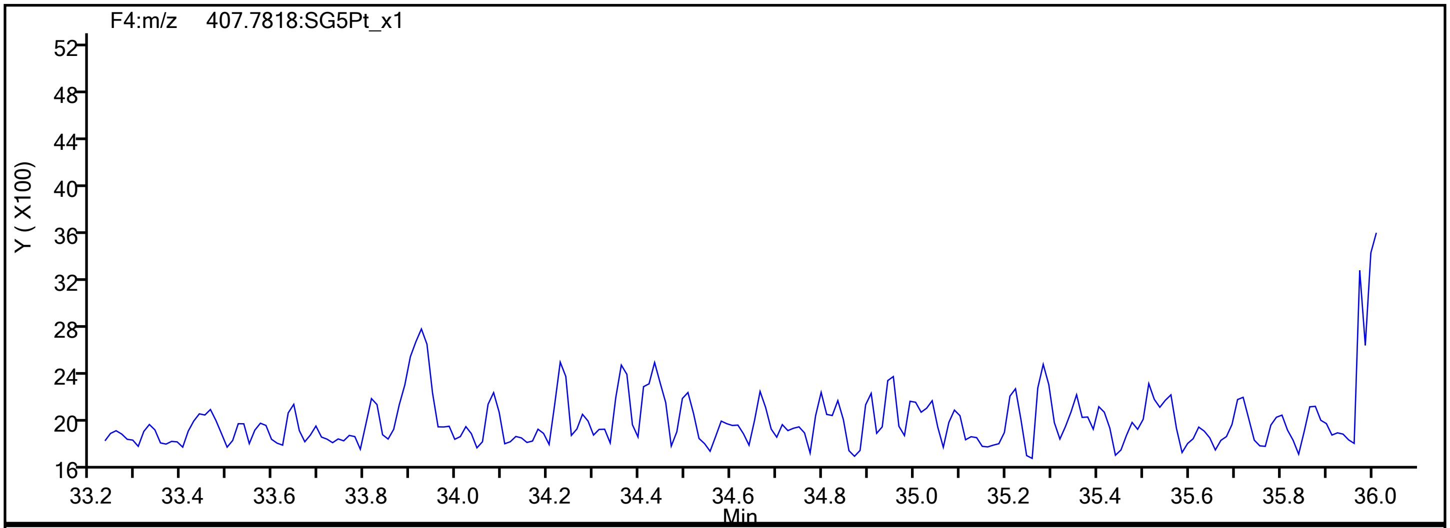

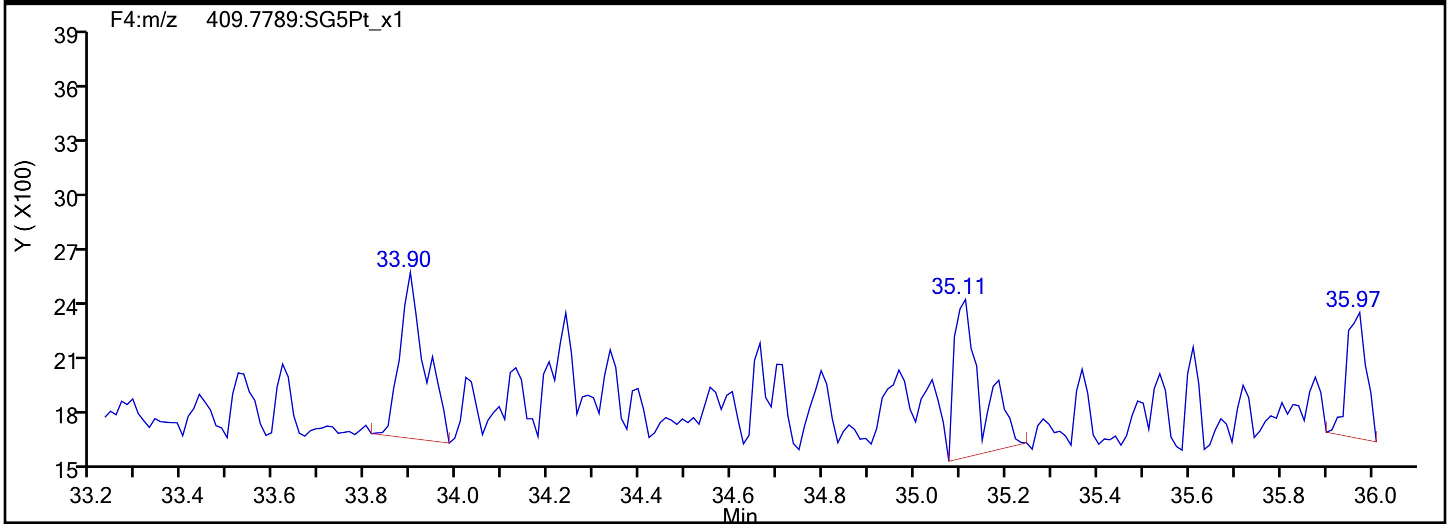

HpCDF Interference Mass

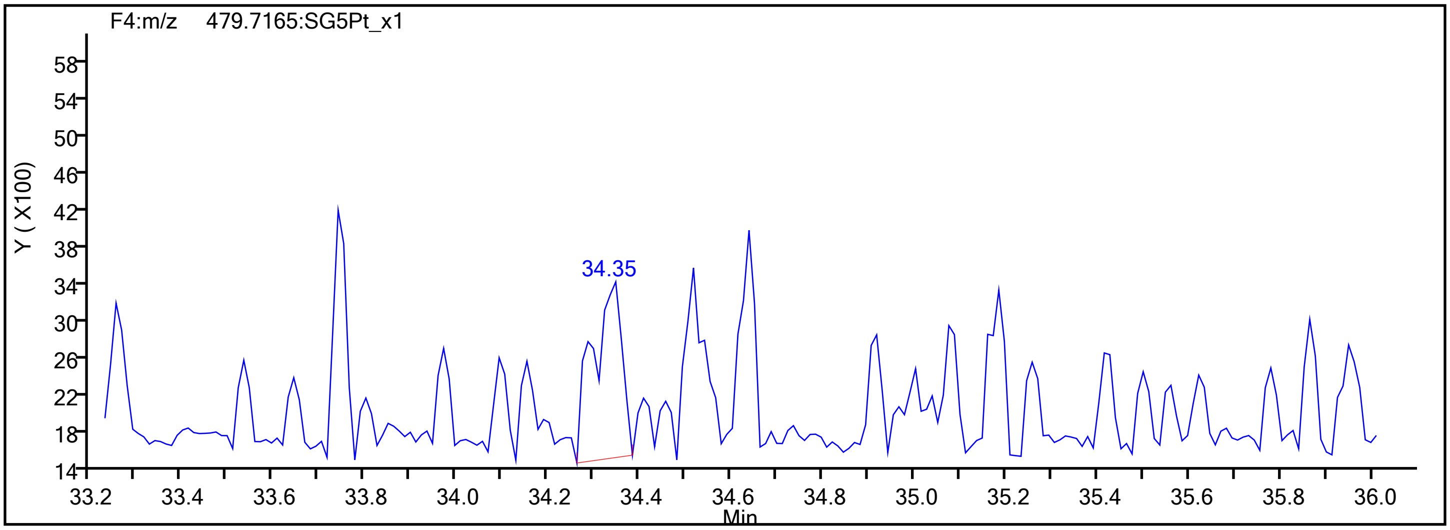

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d
Injection Date: 01-Sep-2020 21:39:27 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

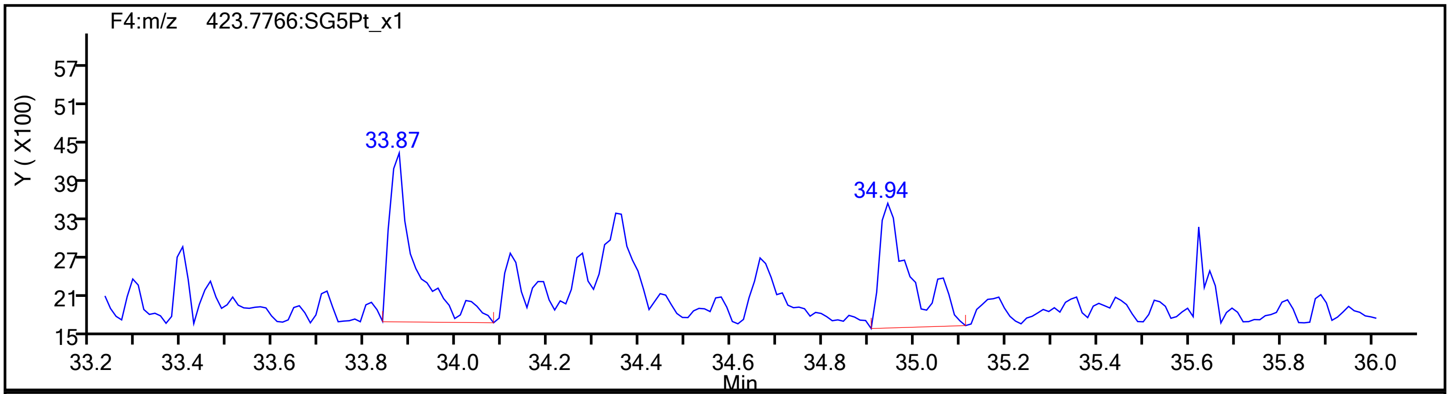

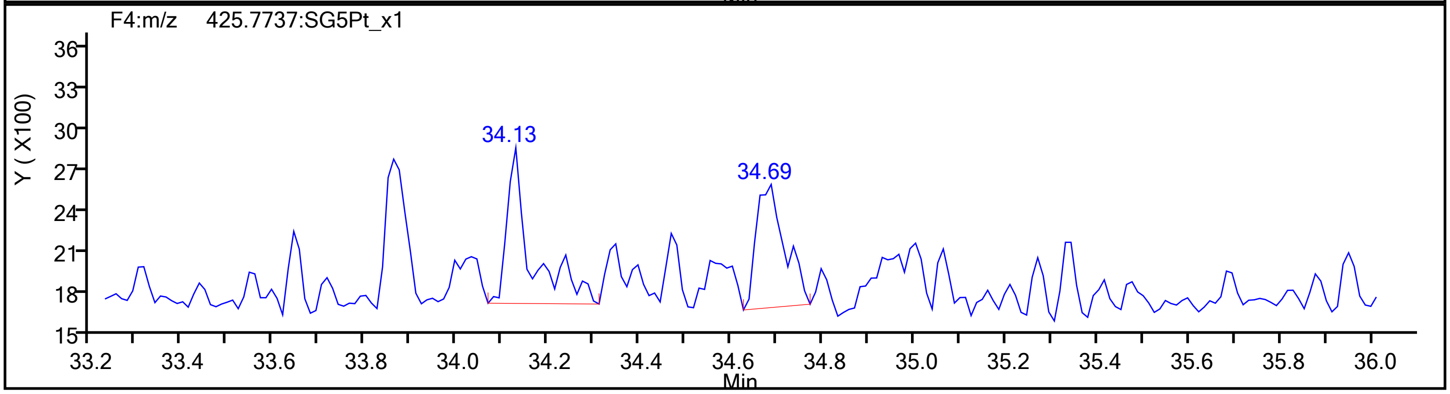

HpCDD Standards

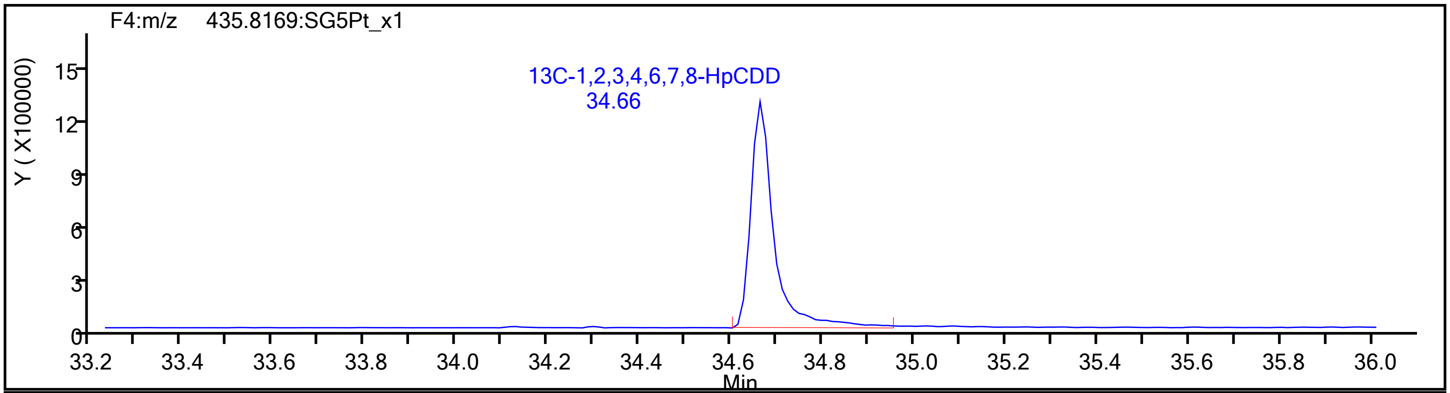

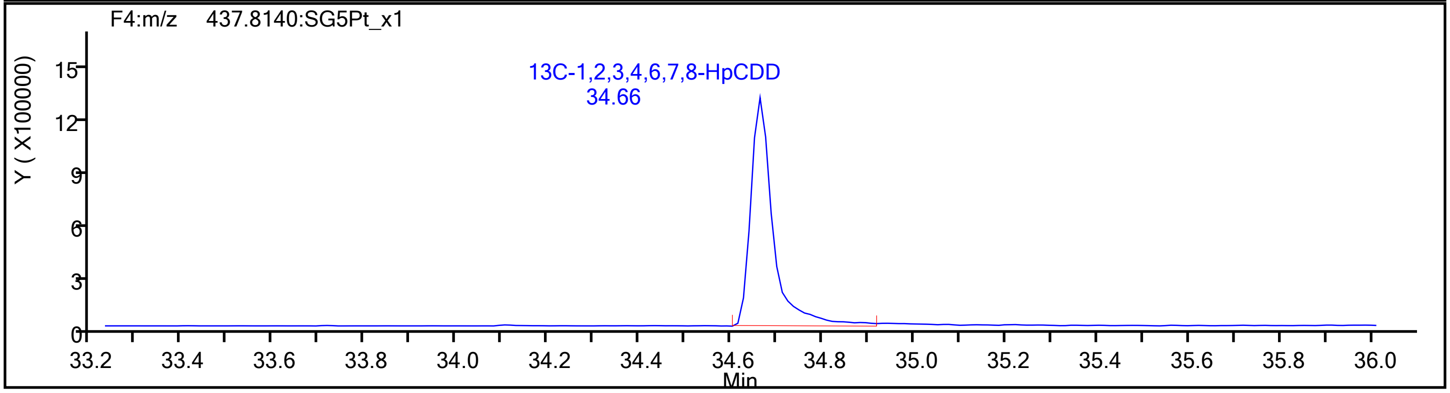

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d

Injection Date: 01-Sep-2020 21:39:27

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767

Sample Line#: 3

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

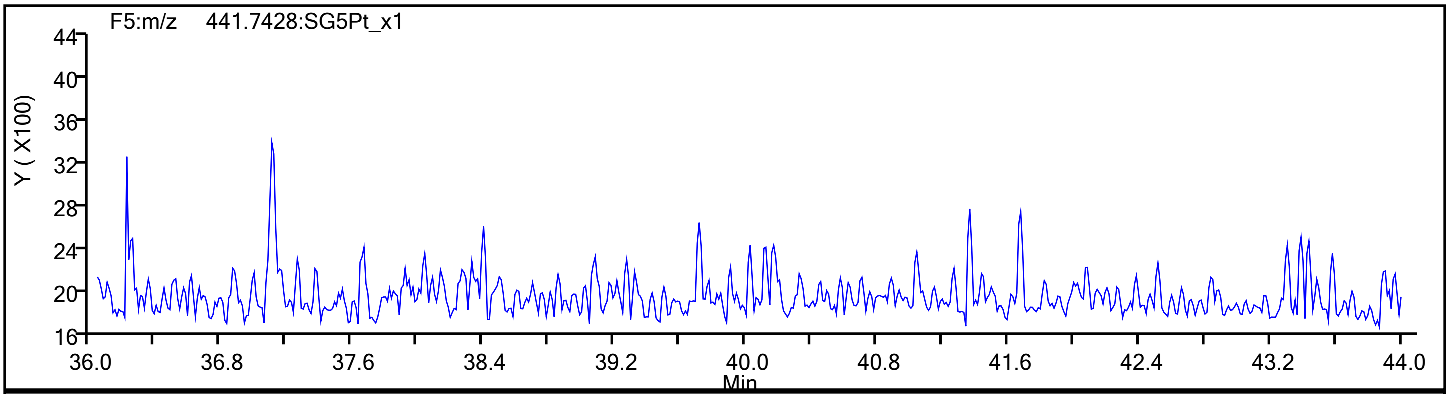

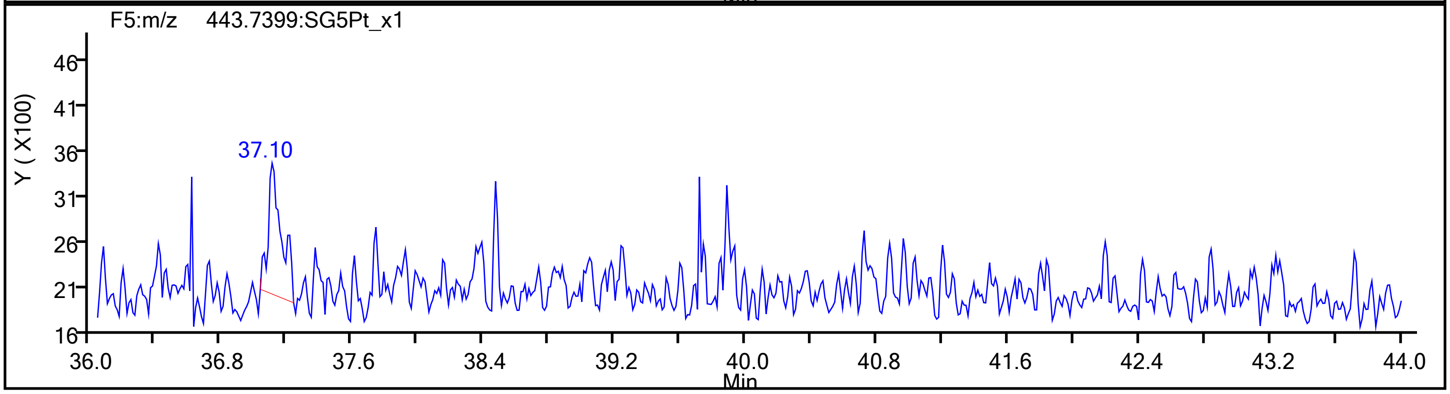

OCDF Standards

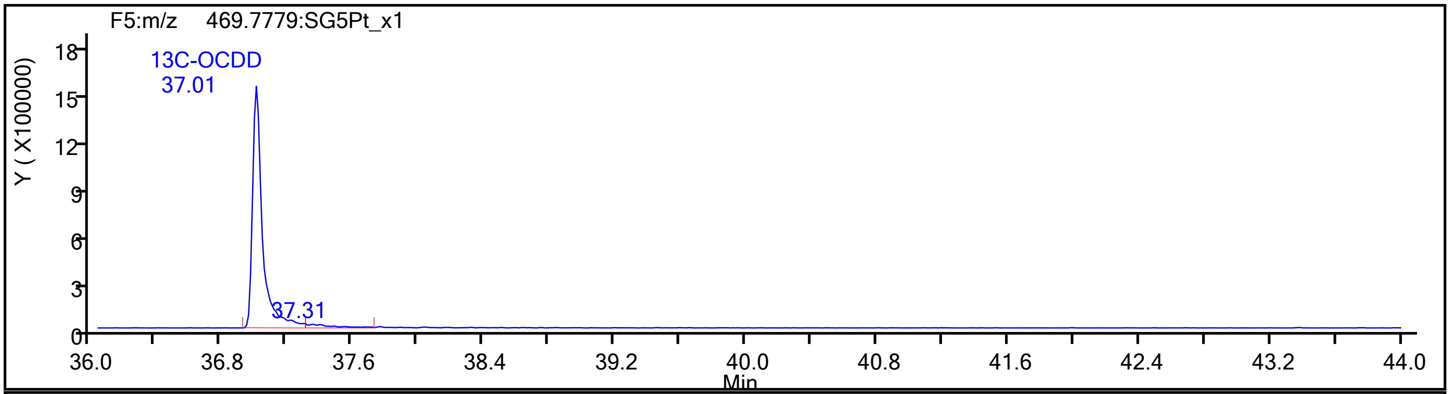

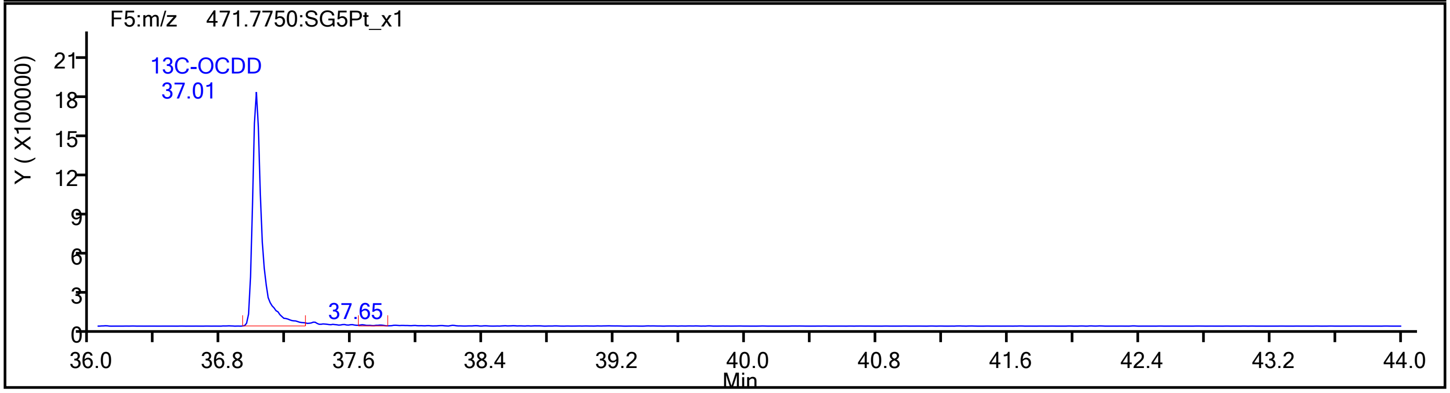

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

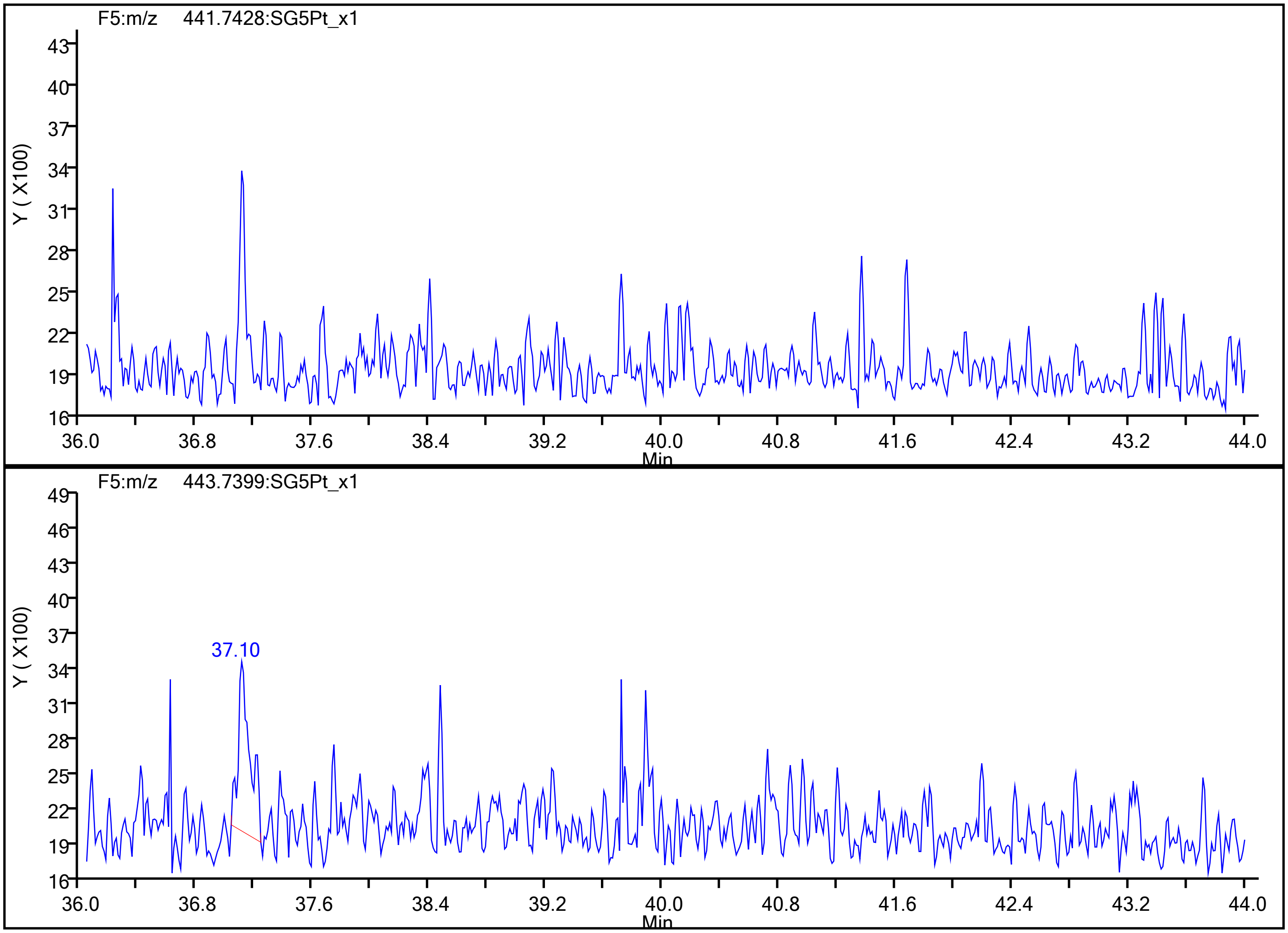

OCDF Interference Mass

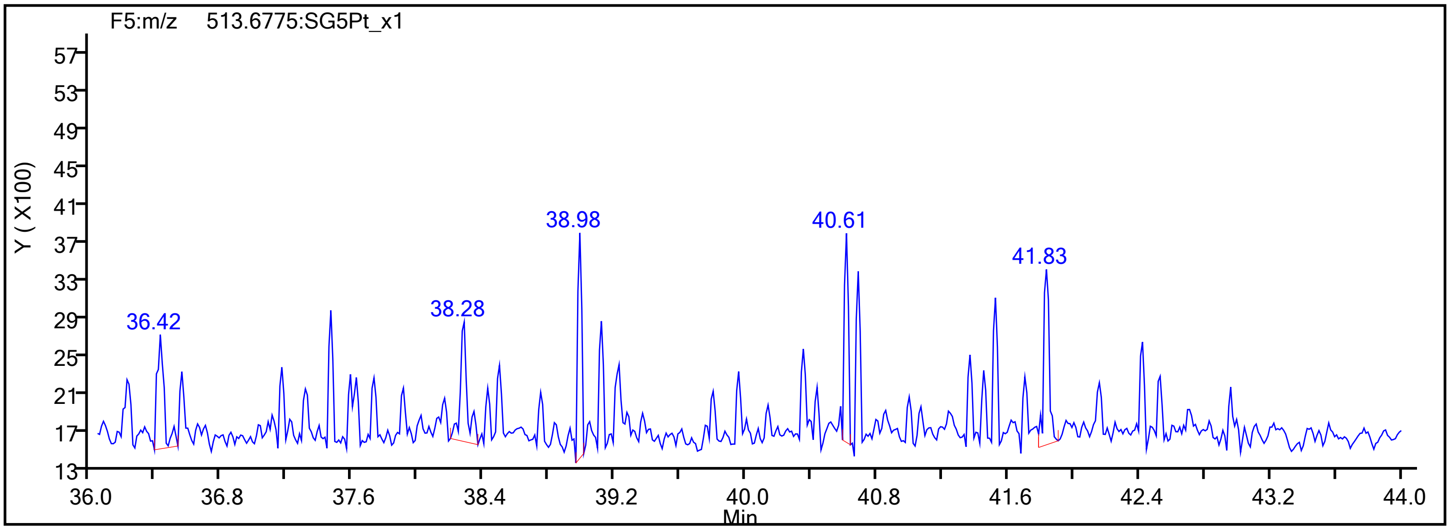

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

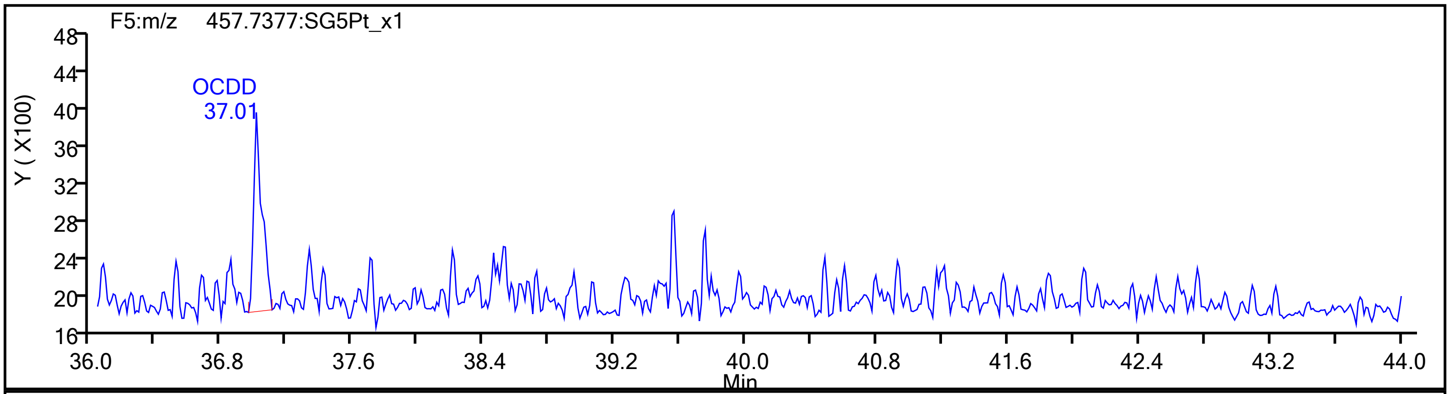

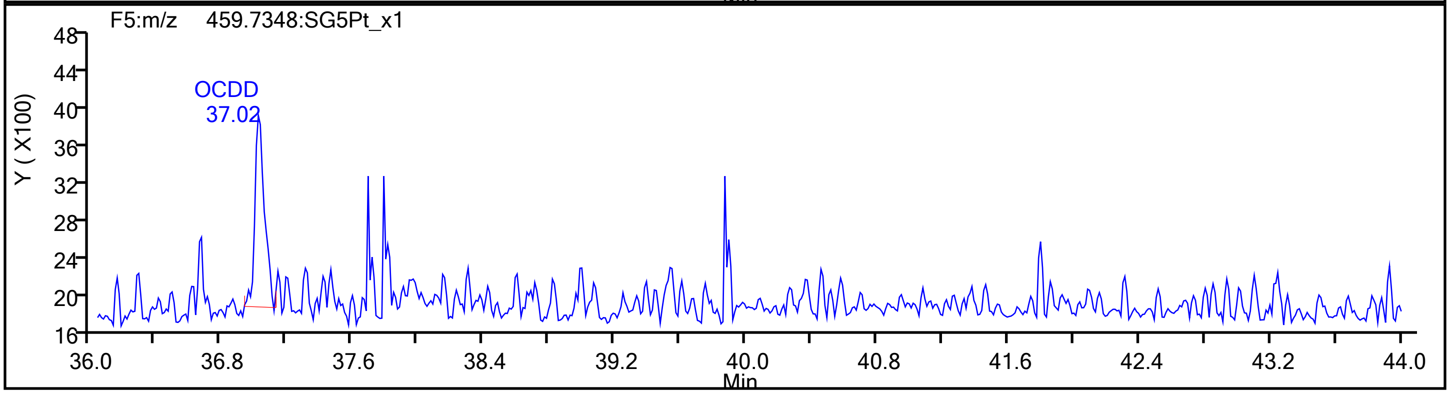

OCDD Standards

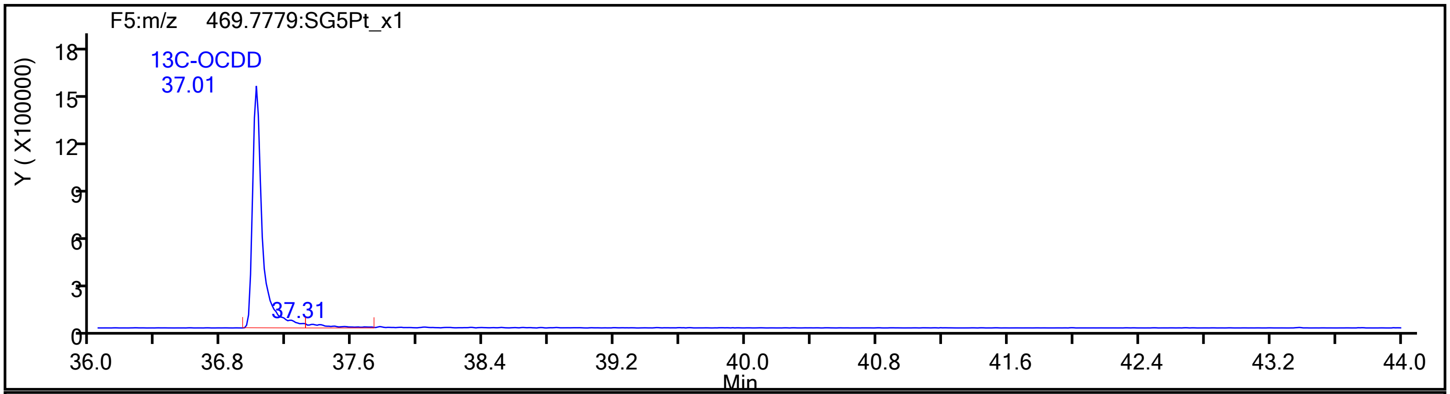

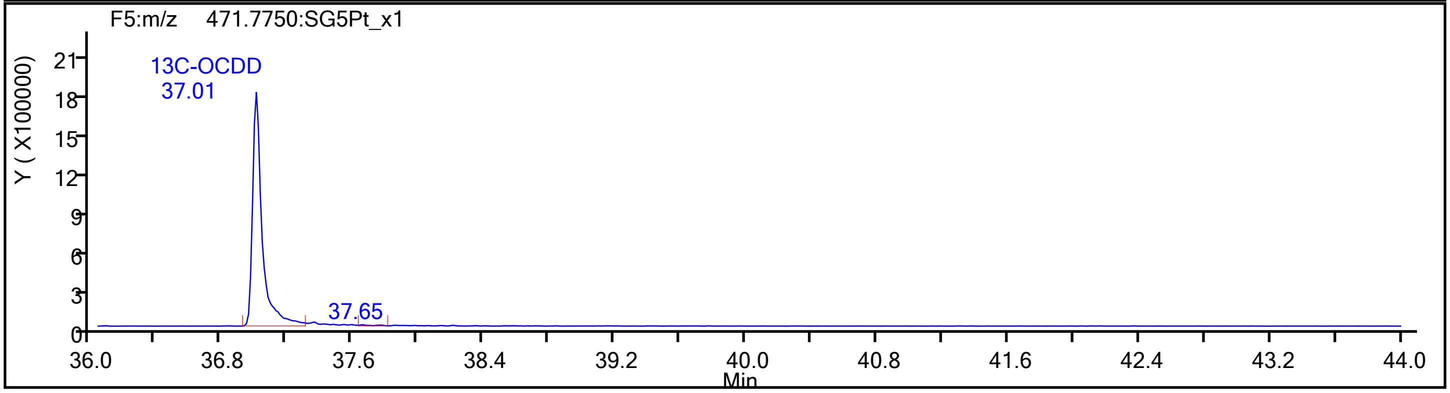

Report Date: 03-Sep-2020 08:45:51 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d

Injection Date: 01-Sep-2020 21:39:27

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767

Sample Line#: 3

Column Type: DB-5

Column Dia: 0.32 mm

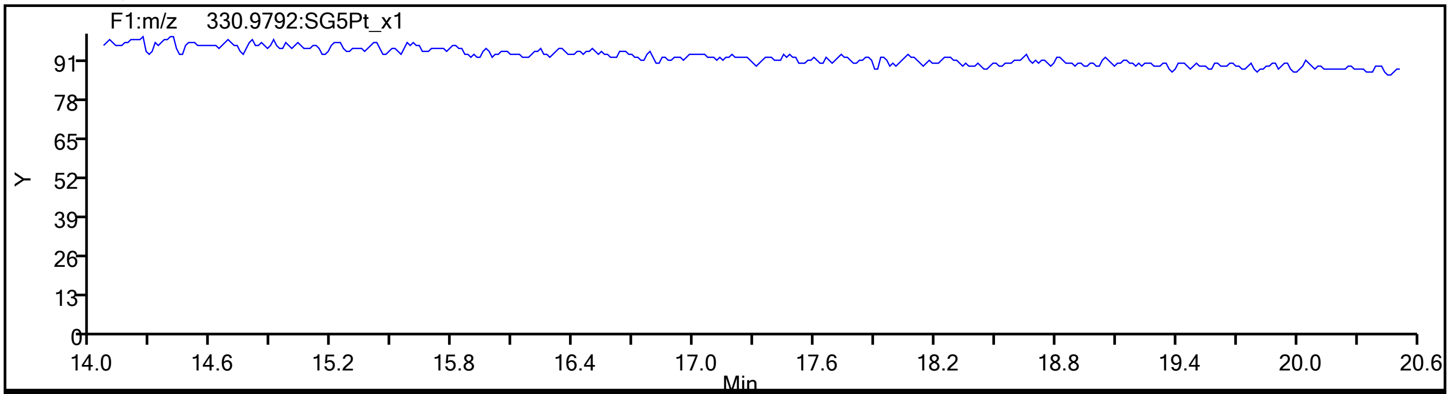

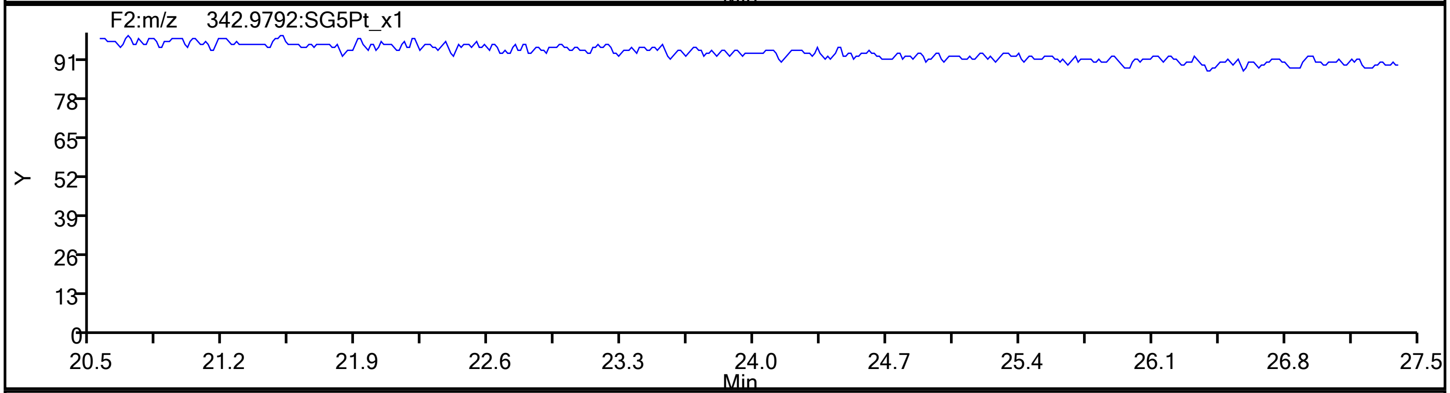

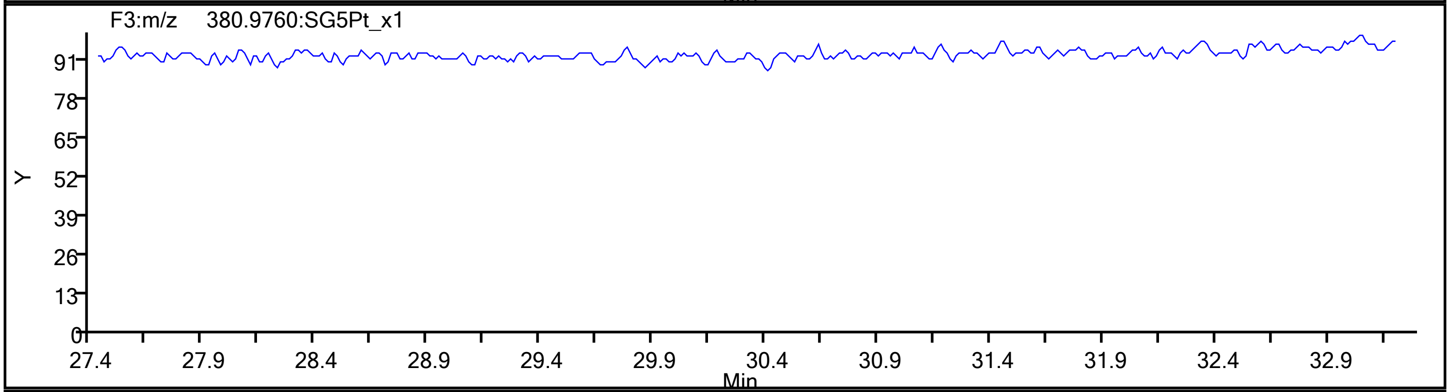

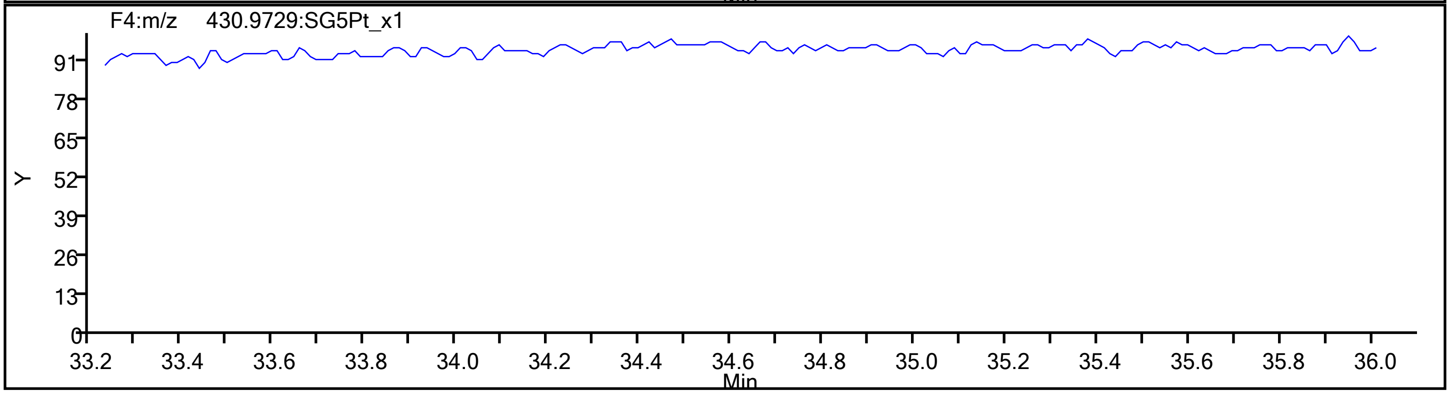

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_3.d		
Injection Date:	01-Sep-2020 21:39:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

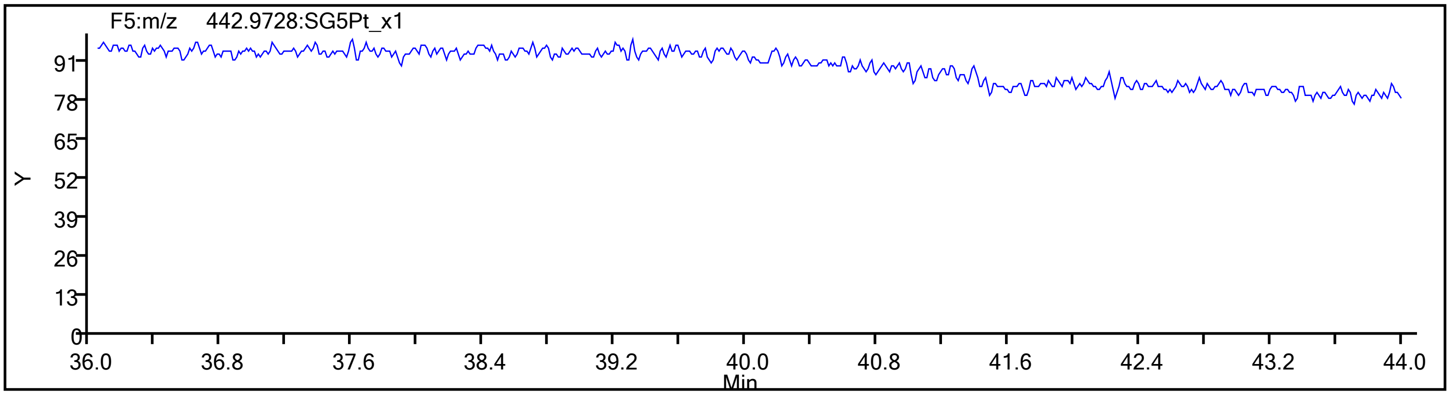

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-412959/1-A

Matrix: Sediment Lab File ID: 21se20dfs1_5.d

Analysis Method: 1613B Date Collected:

Extract. Method: HRMS-Sox Date Extracted: 09/17/2020 05:13

Sample wt/vol: 10(g) Date Analyzed: 09/21/2020 14:13

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 414413 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.14
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.061
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.10
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.048
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.052
39227-28-6	1,2,3,4,7,8-HxCDD	0.182	J	5.0	0.029
57653-85-7	1,2,3,6,7,8-HxCDD	0.103	J	5.0	0.029
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.027
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.036
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.033
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.028
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.274	J	5.0	0.026
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.226	J	5.0	0.021
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.177	J	5.0	0.021
3268-87-9	OCDD	1.55	J	10	0.036
39001-02-0	OCDF	0.688	J	10	0.078
41903-57-5	Total TCDD	ND		1.0	0.14
30402-14-3	Total TCDF	ND		1.0	0.061
36088-22-9	Total PeCDD	ND		5.0	0.10
30402-15-4	Total PeCDF	ND		5.0	0.052
34465-46-8	Total HxCDD	0.285	J	5.0	0.028
55684-94-1	Total HxCDF	ND		5.0	0.036
37871-00-4	Total HpCDD	0.444	J	5.0	0.026
38998-75-3	Total HpCDF	0.403	J	5.0	0.021

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-412959/1-A
Matrix: Sediment	Lab File ID: 21se20dfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: HRMS-Sox	Date Extracted: 09/17/2020 05:13
Sample wt/vol: 10(g)	Date Analyzed: 09/21/2020 14:13
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 414413	Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		25-164
89059-46-1	13C-2,3,7,8-TCDF	66		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	71		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	68		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	68		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	74		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	69		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	70		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	71		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	74		26-138
114423-97-1	13C-OCDD	74		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	90		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Lims ID: MB 320-412959/1-A
Client ID:
Sample Type: MB
Inject. Date: 21-Sep-2020 14:13:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-412959/1-A RA
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 23-Sep-2020 08:29:06 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: ruangyotsakuld Date: 23-Sep-2020 08:29:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.103	2994191	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.182	3155970	0.80	1.5883	66.4	66.4	0.2672	0.2672	66.36	
2,3,7,8-TCDF	19.225						0.0307	0.0307		
A Non-2,3,7,8-sub-TCDF	18.802						0.0307	0.0307		
S Total TCDF							0.0307	0.0307		
D 13C-2,3,7,8-TCDD	20.464	2336355	0.78	1.1194	69.7	69.7	0.2722	0.2722	69.71	
$ 37Cl4-2,3,7,8-TCDD	20.490	1234761		1.1468	36.0	36.0	0.0326	0.0326	89.90	
2,3,7,8-TCDD	20.522						0.0696	0.0696		
A Non-2,3,7,8-sub-TCDD	19.606						0.0696	0.0696		
S Total TCDD							0.0696	0.0696		
D 13C-1,2,3,7,8-PeCDF	26.259	2994397	1.54	1.4782	67.7	67.7	0.2709	0.2709	67.65	
1,2,3,7,8-PeCDF	26.301						0.0240	0.0240		
D 13C-2,3,4,7,8-PeCDF	27.717	2842224	1.57	1.3912	68.2	68.2	0.2879	0.2879	68.23	
2,3,4,7,8-PeCDF	27.757						0.0258	0.0258		
A F1 PeCDFs	23.599						0.0170	0.0170		
A Non-2,3,7,8-sub-PeCDF	26.988						0.0248	0.0248		
S Total PeCDF							0.0258	0.0258		
D 13C-1,2,3,7,8-PeCDD	28.492	2013275	1.62	0.9415	71.4	71.4	0.1179	0.1179	71.42	
1,2,3,7,8-PeCDD	28.540						0.0515	0.0515		
A Non-2,3,7,8-sub-PeCDD	27.353						0.0515	0.0515		
S Total PeCDD							0.0515	0.0515		
D 13C-1,2,3,4,7,8-HxCDF	34.146	2430588	0.53	1.1378	69.7	69.7	0.3176	0.3176	69.69	
1,2,3,4,7,8-HxCDF	34.184						0.0179	0.0179		
D 13C-1,2,3,6,7,8-HxCDF	34.331	2805574	0.53	1.3173	69.5	69.5	0.2744	0.2744	69.48	
1,2,3,6,7,8-HxCDF	34.361						0.0167	0.0167		
D 13C-2,3,4,6,7,8-HxCDF	35.242	2714148	0.52	1.2457	71.1	71.1	0.2901	0.2901	71.08	
2,3,4,6,7,8-HxCDF	35.271						0.0141	0.0141		
D 13C-1,2,3,7,8,9-HxCDF	36.203	2542405	0.53	1.1840	70.1	70.1	0.3052	0.3052	70.05	
1,2,3,7,8,9-HxCDF	36.226						0.0141	0.0141		
A Non-2,3,7,8-sub-HxCDF	34.210						0.0156	0.0156		
S Total HxCDF							0.0179	0.0179		
* 13C-1,2,3,7,8,9-HxCDD	35.992	3065361	1.26	2.9E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.478	1914569	1.29	0.8477	73.7	73.7	0.2248	0.2248	73.68	
1,2,3,4,7,8-HxCDD	35.495	2019	1.24	1.1561	0.1012	0.0912	0.0145	0.0145		RQM
D 13C-1,2,3,6,7,8-HxCDD	35.604	2274585	1.25	0.9979	74.4	74.4	0.1910	0.1910	74.36	
1,2,3,6,7,8-HxCDD	35.596	1203	1.11	1.0284	0.0514	0.0514	0.0143	0.0143		
1,2,3,7,8,9-HxCDD	36.024						0.0133	0.0133		
A Non-2,3,7,8-sub-HxCDD	34.669						0.0140	0.0140		
S Total HxCDD					0.1526	0.1426	0.0140	0.0140		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.114	2214464	0.46	0.9884	73.1	73.1	0.4263	0.4263	73.09	
1,2,3,4,6,7,8-HpCDF	38.123	3768	0.98	1.5064	0.1130	0.1130	0.0103	0.0103		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.412	2090335	0.46	0.9203	74.1	74.1	0.4578	0.4578	74.10	
1,2,3,4,7,8,9-HpCDF	39.429	2693	1.03	1.4548	0.0886	0.0886	0.0104	0.0104		M
A Non-2,3,7,8-sub-HpCDF	38.771						0.0104	0.0104		
S Total HpCDF					0.2015	0.2015	0.0104	0.0104		
D 13C-1,2,3,4,6,7,8-HpCDD	39.100	2223279	1.07	0.9556	75.9	75.9	0.2168	0.2168	75.90	
1,2,3,4,6,7,8-HpCDD	39.109	3245	1.19	1.0640	0.1372	0.1372	0.0131	0.0131		
A Non-2,3,7,8-sub-HpCDD	38.941	2007	1.04	1.0640	0.0958	0.0848	0.0131	0.0848		RQ
S Total HpCDD					0.2330	0.2220	0.0131	0.0131		RQ
D 13C-OCDD	41.561	3374556	0.90	0.7420	148.4	148.4	0.1827	0.1827	74.18	
OCDF	41.653	8295	0.81	1.4296	0.3439	0.3439	0.0391	0.0391		M
OCDD	41.569	14796	0.85	1.1293	0.7765	0.7765	0.0180	0.0180		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Lims ID: MB 320-412959/1-A
Client ID:
Sample Type: MB
Inject. Date: 21-Sep-2020 14:13:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-412959/1-A RA
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 23-Sep-2020 08:29:06 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1009

First Level Reviewer: ruangyotsakuld Date: 23-Sep-2020 08:29:06

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.103	20.135	-2		1323234	202954	386	965	526		
333.9338	20.103	20.135	-2		1670957	256508	174	435	1474	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.182	19.215	-2	0.954	1400884	214139	505	1262	424		
317.9389	19.182	19.215	-2	0.954	1755086	265446	275	687	965	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.258						15	37			
305.8987	19.258						49	122			
A Non-2,3,7,8-sub-TCDF											
303.9016	18.802						15	37			
305.8987	18.802						49	122			
13C-2,3,7,8-TCDD											
331.9368	20.464	20.497	-2	1.018	1027461	141793	386	965	367		
333.9338	20.464	20.497	-2	1.018	1308894	186398	174	435	1071	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.490	20.522	-2	1.019	1234761	172564	69	172	2501		
2,3,7,8-TCDD											
319.8965	20.522						79	197			
321.8936	20.522						20	50			
A Non-2,3,7,8-sub-TCDD											
319.8965	19.606						79	197			
321.8936	19.606						20	50			
13C-1,2,3,7,8-PeCDF											
351.9000	26.259	26.282	-1	1.306	1816845	311937	434	1085	719		
353.8970	26.259	26.282	-1	1.306	1177552	190395	302	755	630	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.299						9	22			
341.8567	26.299						42	105			
13C-2,3,4,7,8-PeCDF											
351.9000	27.717	27.740	-1	1.379	1738329	271141	434	1085	625		
353.8970	27.717	27.740	-1	1.379	1103895	175672	302	755	582	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.756						9	22			
341.8567	27.756						42	105			
A F1 PeCDFs											
339.8597	23.599						3	7			
341.8567	23.599						32	80			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.988						9	22			
341.8567	26.988						42	105			
13C-1,2,3,7,8-PeCDD											
367.8949	28.492	28.515	-1	1.417	1244320	188883	118	295	1601		
369.8919	28.492	28.515	-1	1.417	768955	120073	86	215	1396	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.540						58	145			
357.8516	28.540						10	25			
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.353						58	145			
357.8516	27.353						10	25			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.146	34.158	-1	0.949	838769	166379	366	915	455		
385.8610	34.146	34.158	-1	0.949	1591819	320005	724	1810	442	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.184						30	75			
375.8178	34.184						14	35			
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.331	34.344	-1	0.954	976815	188995	366	915	516		
385.8610	34.331	34.344	-1	0.954	1828759	348247	724	1810	481	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.361						30	75			
375.8178	34.361						14	35			
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.242	35.254	-1	0.979	932861	220531	366	915	603		
385.8610	35.242	35.254	-1	0.979	1781287	404466	724	1810	559	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.271						30	75			
375.8178	35.271						14	35			
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.203	36.205	0	1.006	876405	208828	366	915	571		
385.8610	36.194	36.205	-1	1.006	1666000	406782	724	1810	562	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.222						30	75			
375.8178	36.222						14	35			
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.210						30	75			
375.8178	34.210						14	35			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.992	36.003	-1		1708658	415964	320	800	1300		
403.8529	35.992	36.003	-1		1356703	338032	255	637	1326	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.478	35.481	0	0.986	1078599	270876	320	800	846		
403.8529	35.478	35.481	0	0.986	835970	206579	255	637	810	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	35.495	35.498	0	1.000	1118	294	11	27	27		
391.8127	35.486	35.498	-1	1.000	1121	306	21	52	15	1.00(1.05-1.43)	M
	Empc Correction				901	237	21	52	11		
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.604	35.608	0	0.989	1263272	299225	320	800	935		
403.8529	35.604	35.608	0	0.989	1011313	243166	255	637	954	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.596	35.624	-2	1.000	633	135	11	27	12		
391.8127	35.621	35.624	0	1.000	570	125	21	52	6	1.11(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.020						11	27			
391.8127	36.020						21	52			
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.669						11	27			
391.8127	34.669						21	52			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.114	38.118	0	1.059	692684	207504	434	1085	478		
419.8220	38.114	38.118	0	1.059	1521780	468320	837	2092	560	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.123	38.123	0	1.000	1868	582	27	67	22		
409.7788	38.123	38.123	0	1.000	1900	546	15	37	36	0.98(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.412	39.416	0	1.095	657699	216486	434	1085	499		
419.8220	39.412	39.416	0	1.095	1432636	477063	837	2092	570	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7817	39.429	39.420	1	1.000	1366	390	27	67	14		
409.7788	39.421	39.420	0	1.000	1327	371	15	37	25	1.03(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.771						27	67			
409.7788	38.771						15	37			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.100	39.104	0	1.086	1151345	376975	318	795	1185		
437.8140	39.100	39.104	0	1.086	1071934	352257	307	767	1147	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.109	39.108	0	1.000	1760	583	26	65	22		
425.7737	39.109	39.108	0	1.000	1485	493	15	37	33	1.19(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											RQ
423.7767	38.451	38.941	-29	0.983	1282	373	26	65	14		
	Empc Correction				1023	300	26	65	12		
425.7737	38.435	38.941	-30	0.983	984	289	15	37	19	1.30(0.88-1.20)	
13C-OCDD											
469.7780	41.561	41.558	0	1.155	1599165	474044	234	585	2026		
471.7750	41.561	41.558	0	1.155	1775391	527607	175	437	3015	0.90(0.76-1.02)	
OCDF											M
441.7428	41.653	41.651	0	1.002	3719	1146	24	60	48		M
443.7399	41.645	41.651	0	1.002	4576	1203	88	220	14	0.81(0.76-1.02)	M
OCDD											
457.7377	41.569	41.567	0	1.000	6798	1969	18	45	109		
459.7348	41.561	41.567	0	1.000	7998	2185	23	57	95	0.85(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Lims ID:	MB 320-412959/1-A		
Client ID:			
Inject. Date:	21-Sep-2020 14:13:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	414413	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDD, RT: 34.669

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	1914569	477455
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2274585	542391
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2094577	509923

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
Signal Totals:							
	0	0	0	0			

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Lims ID: MB 320-412959/1-A
Client ID:
Inject. Date: 21-Sep-2020 14:13:00
Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 414413
Lims Sample ID: 4

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2223279	729232

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	2223279	729232

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.451	1282	373	984	289	0.0958	1.30	RQ
38.451	1023	300	984	289	0.0848		Empc Correction
Signal Totals:							
	1023	300	984	289			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2266	662				1.30	RQ
	2007	589					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0958 = (2266 * 100.000) / (2223279 * 1.064)
Empc Amount: 0.0848 = (2007 * 100.000) / (2223279 * 1.064)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 23-Sep-2020 08:29:07

Chrom Revision: 2.3 16-Sep-2020 17:17:04
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d				
Injection Date:	21-Sep-2020 14:13:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-412959/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT: 35.49
Area: 1589
Amount: 0.122301
Amount Units: pg/ul

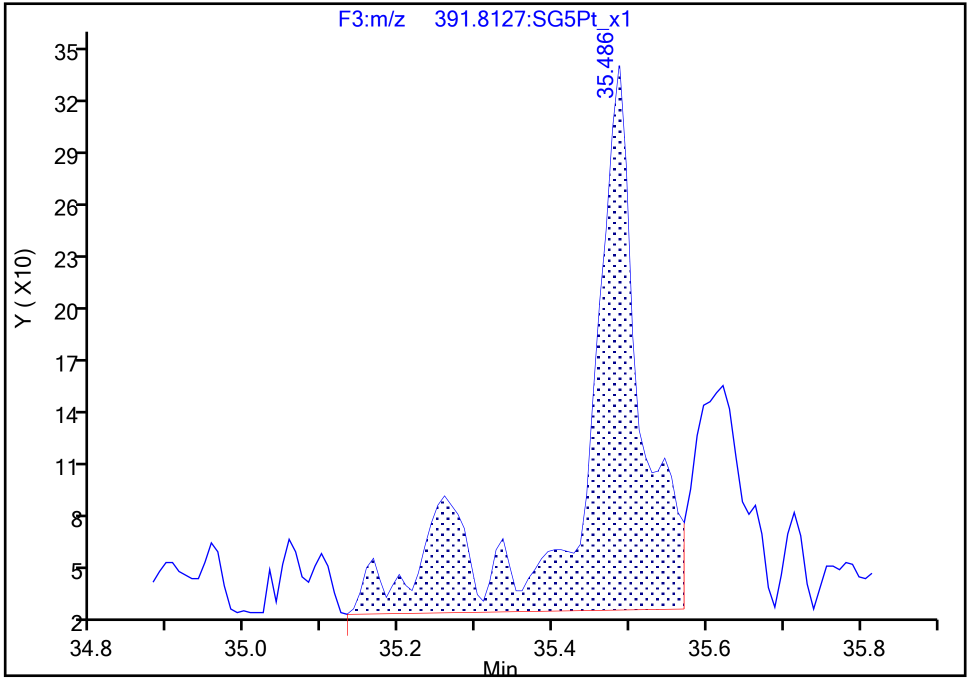

Manual Integration Results

RT: 35.49
Area: 1121
Amount: 0.101157
Amount Units: pg/ul

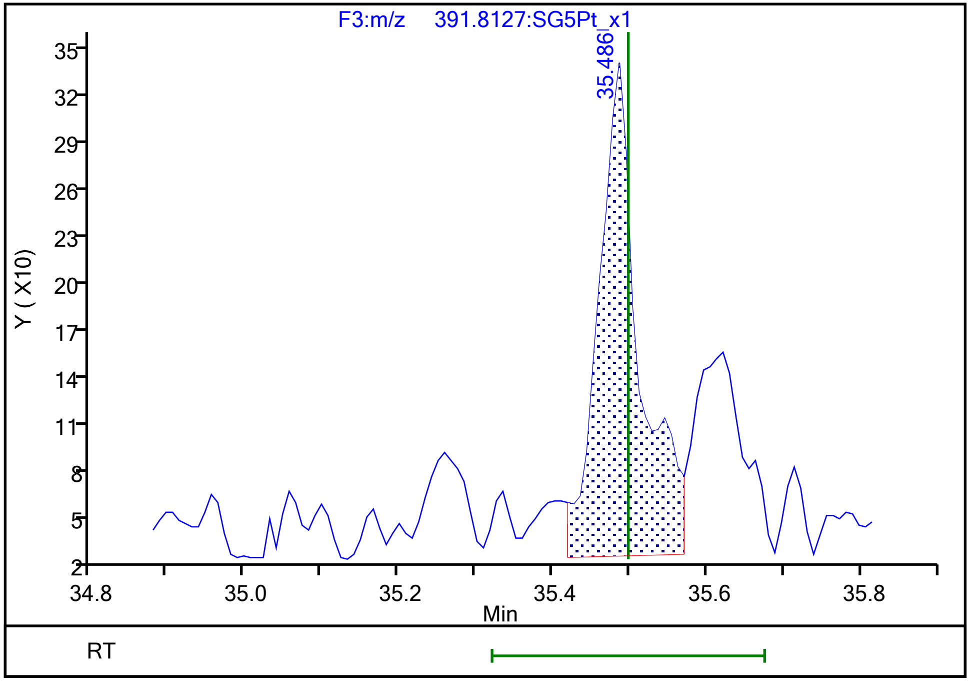

Reviewer: ruangyotsakuld, 23-Sep-2020 08:27:47

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00 Instrument ID: DFS 1
Lims ID: MB 320-412959/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT: 38.12
Area: 1986
Amount: 0.115533
Amount Units: pg/ul

Processing Integration Results

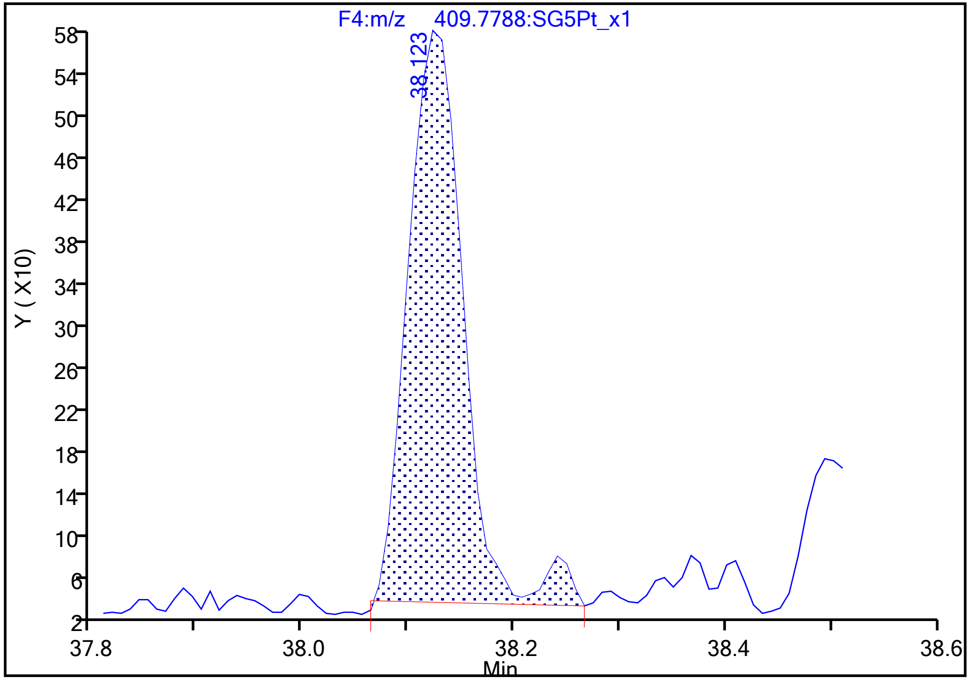

RT: 38.12
Area: 1900
Amount: 0.112955
Amount Units: pg/ul

Manual Integration Results

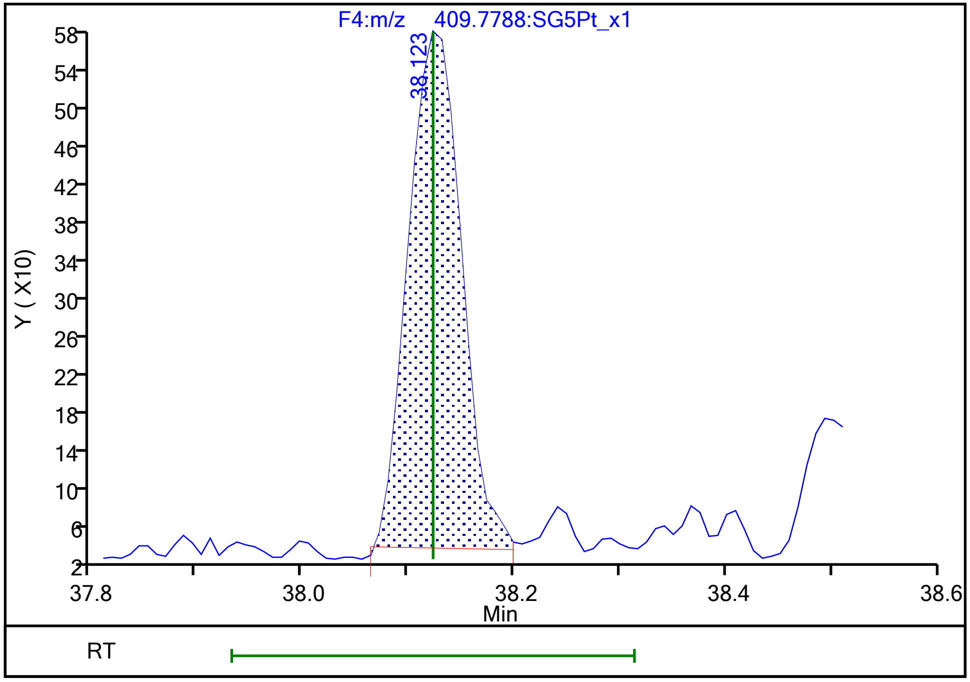

Reviewer: ruangyotsakuld, 23-Sep-2020 08:28:03
Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 23-Sep-2020 08:29:07
Chrom Revision: 2.3 16-Sep-2020 17:17:04
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00
Instrument ID: DFS 1
Lims ID: MB 320-412959/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT:	39.42
Area:	1116
Amount:	0.081618
Amount Units:	pg/ul

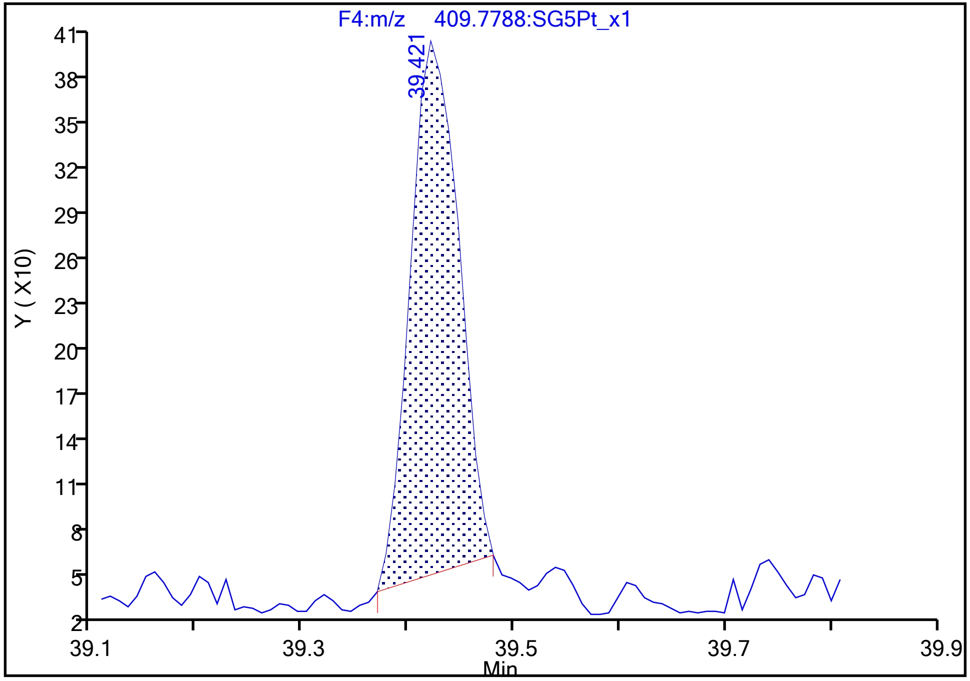

Manual Integration Results

RT:	39.42
Area:	1327
Amount:	0.088556
Amount Units:	pg/ul

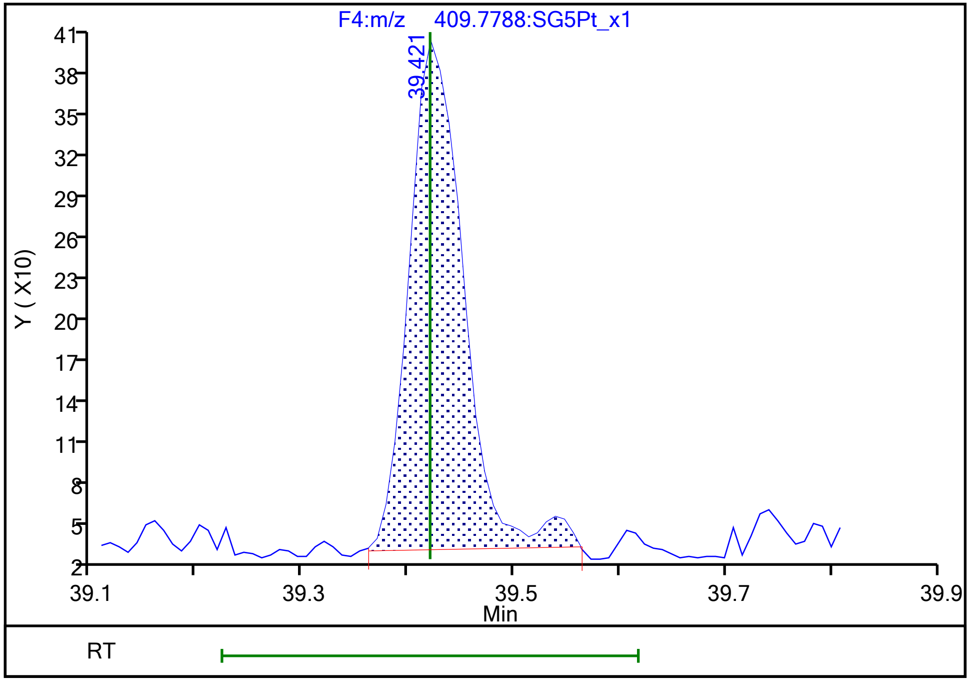

Reviewer: ruangyotsakuld, 23-Sep-2020 08:28:14
Audit Action: Manually Integrated
Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00 Instrument ID: DFS 1
Lims ID: MB 320-412959/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 2

Processing Integration Results

RT: 41.64
Area: 4178
Amount: 0.331693
Amount Units: pg/ul

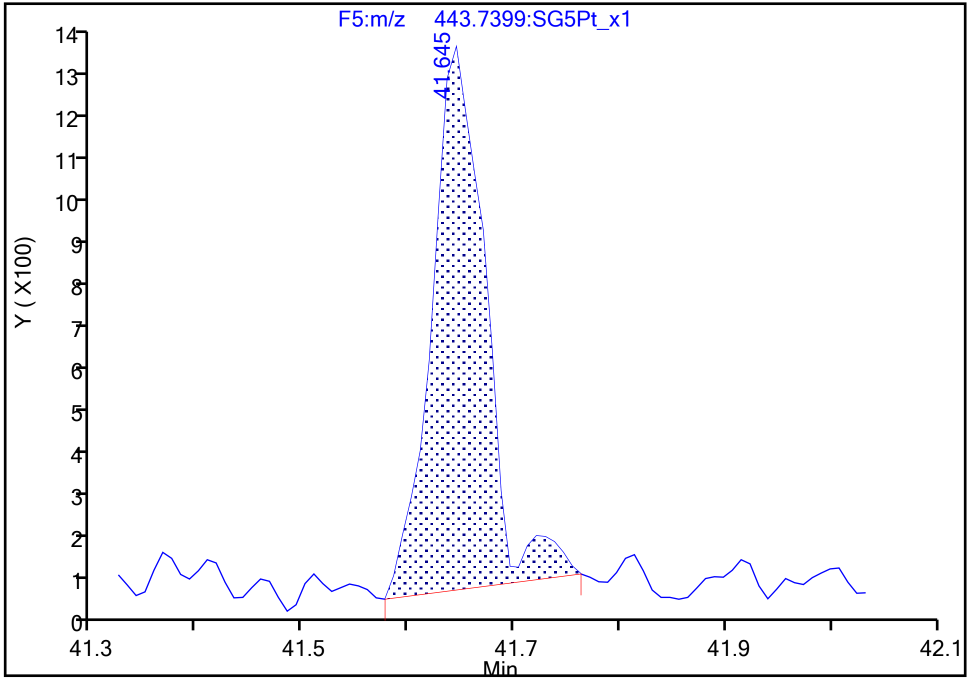

Manual Integration Results

RT: 41.64
Area: 4576
Amount: 0.343882
Amount Units: pg/ul

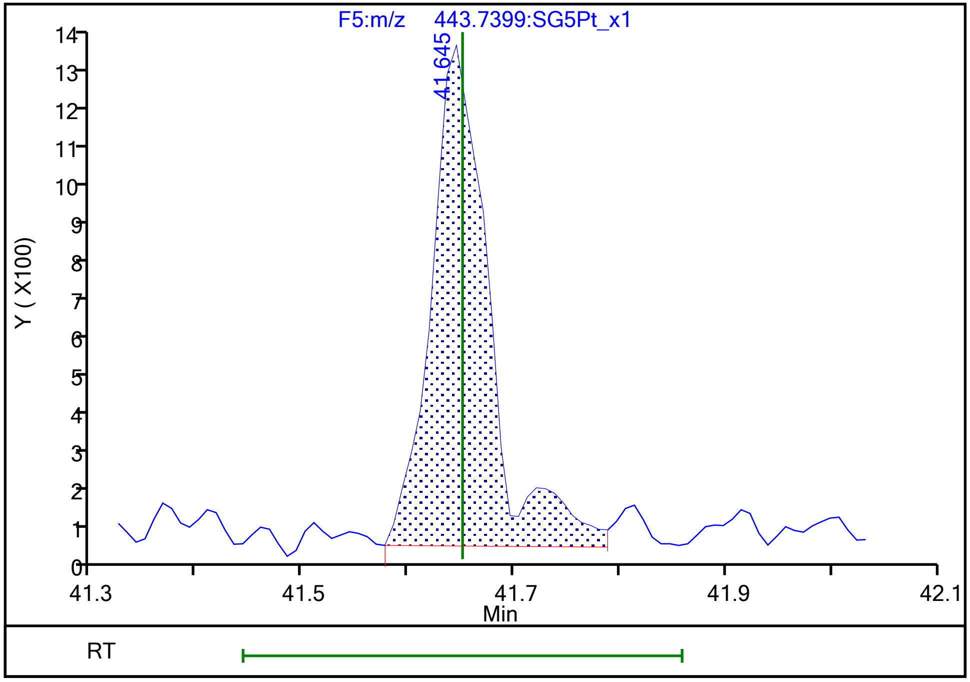

Reviewer: ruangyotsakuld, 23-Sep-2020 08:28:45
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d				
Injection Date:	21-Sep-2020 14:13:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-412959/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT:	41.65
Area:	3823
Amount:	0.331693
Amount Units:	pg/ul

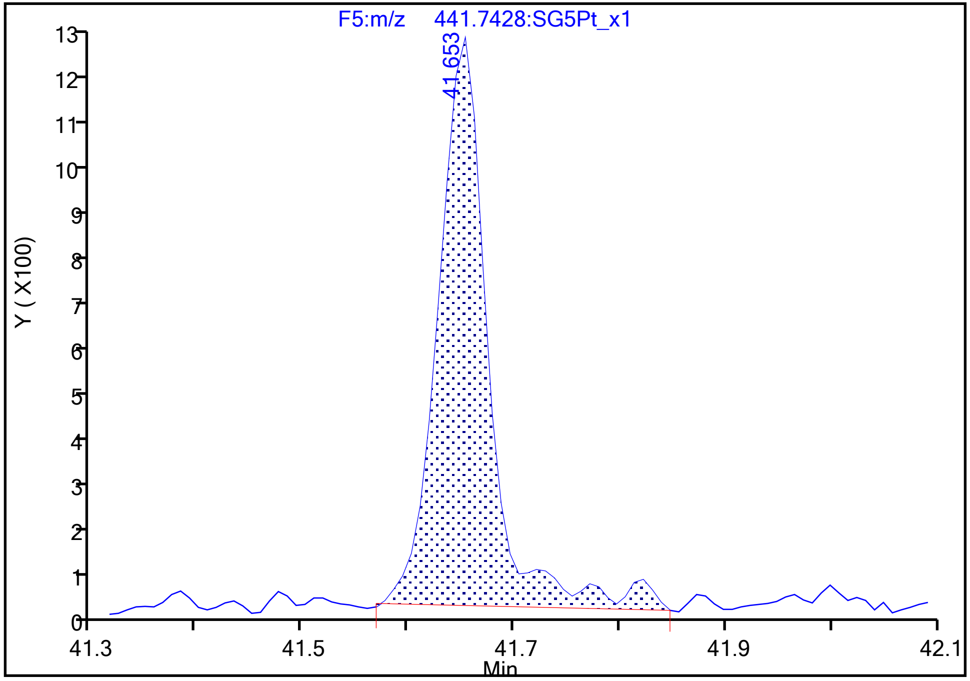

Manual Integration Results

RT:	41.65
Area:	3719
Amount:	0.343882
Amount Units:	pg/ul

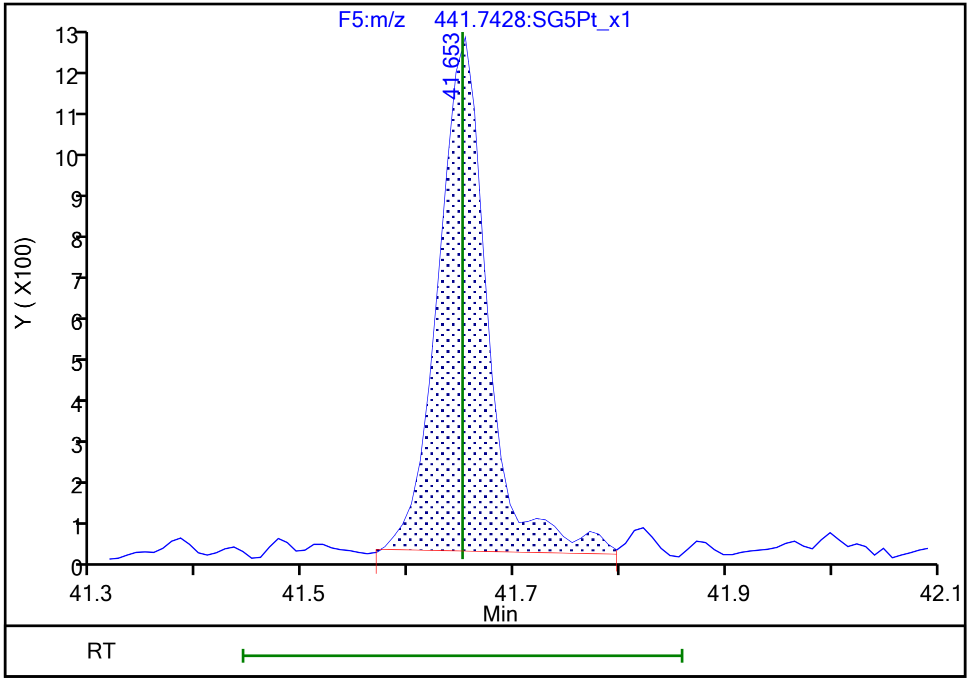

Reviewer: ruangyotsakuld, 23-Sep-2020 08:28:49

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d

Injection Date: 21-Sep-2020 14:13:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

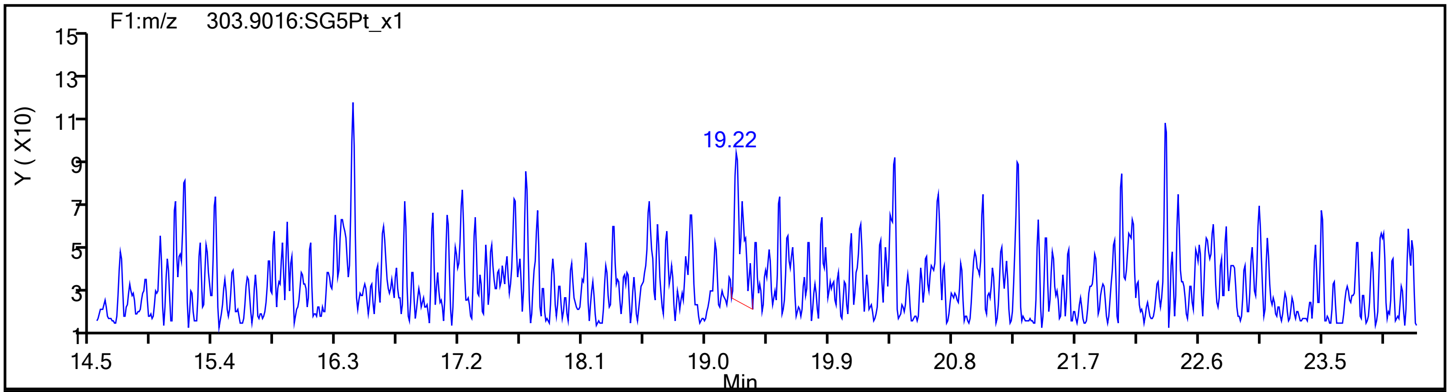

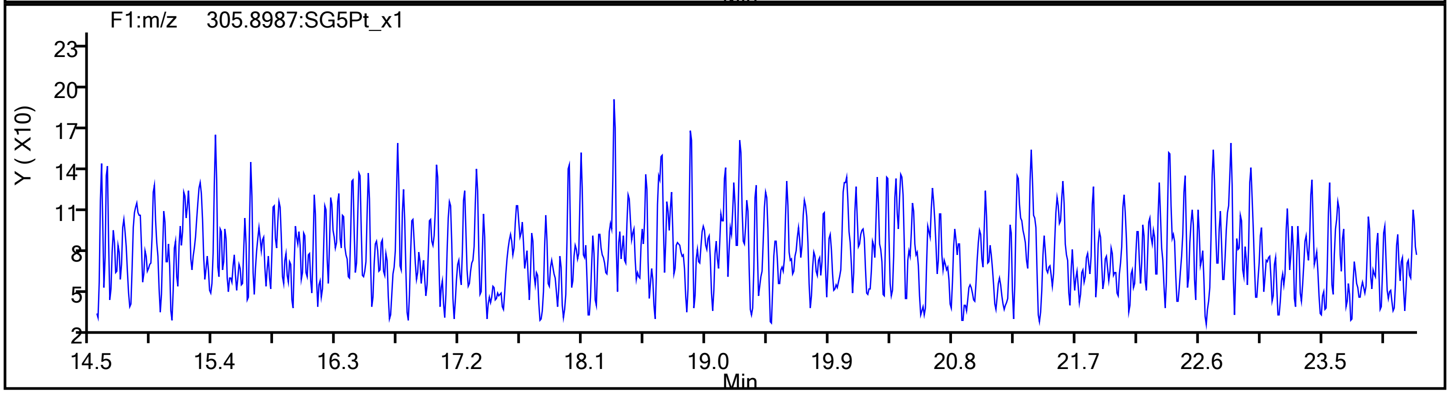

TCDF Standards

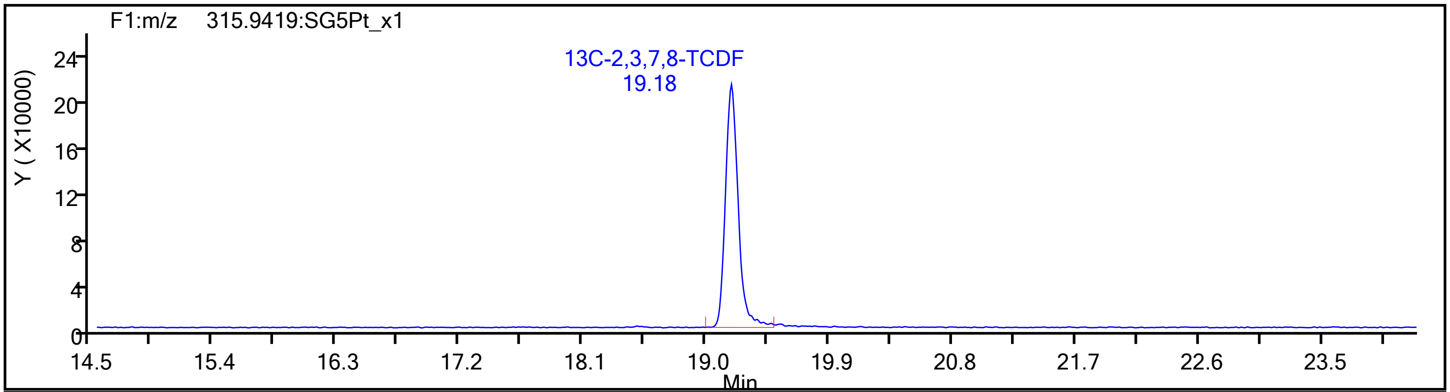

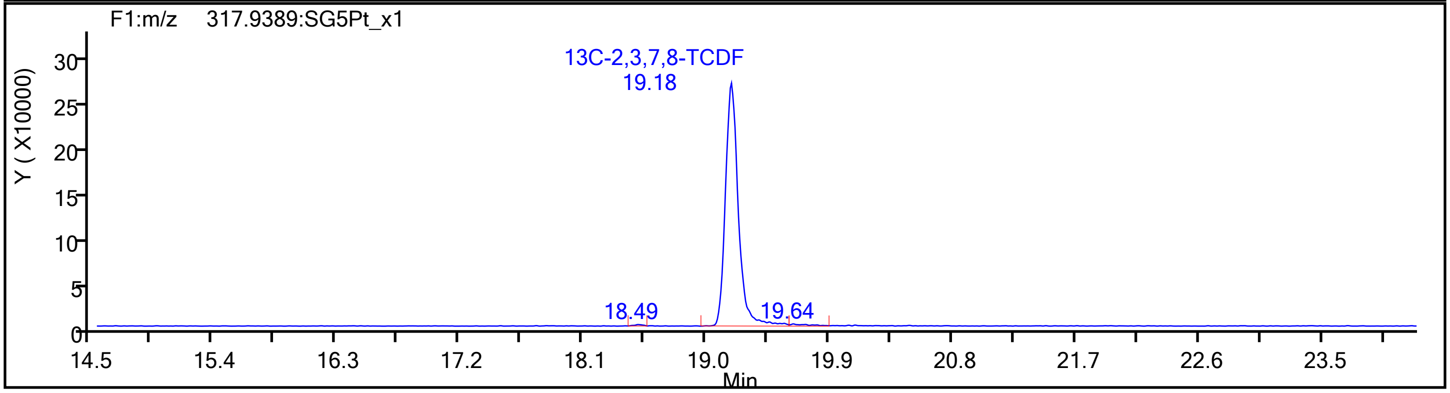

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

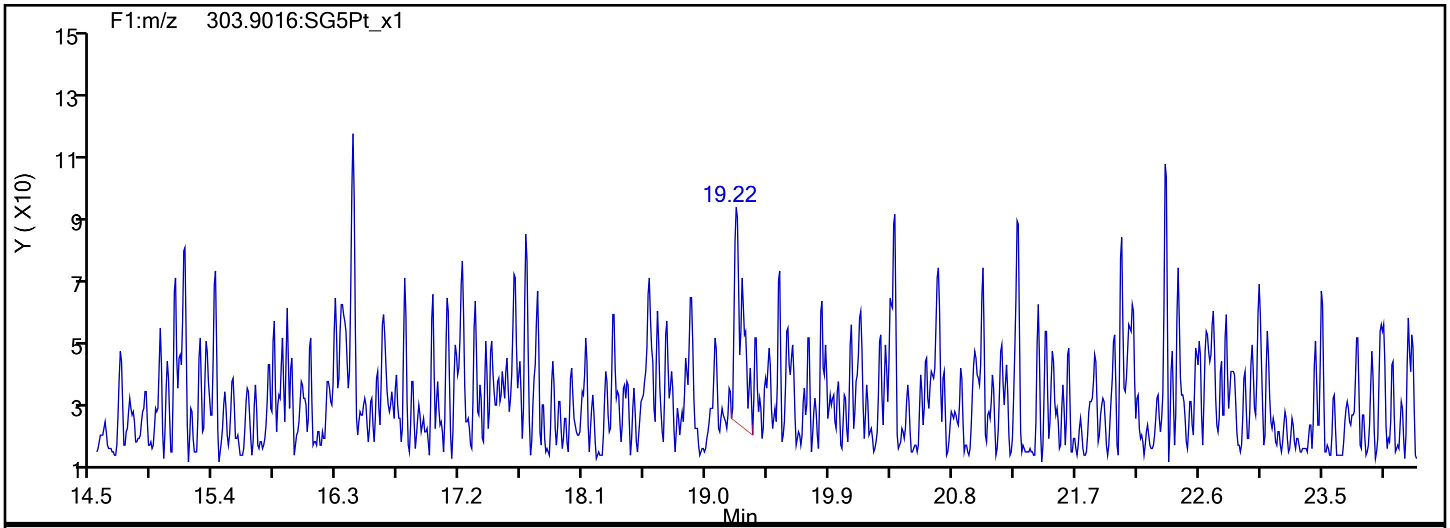

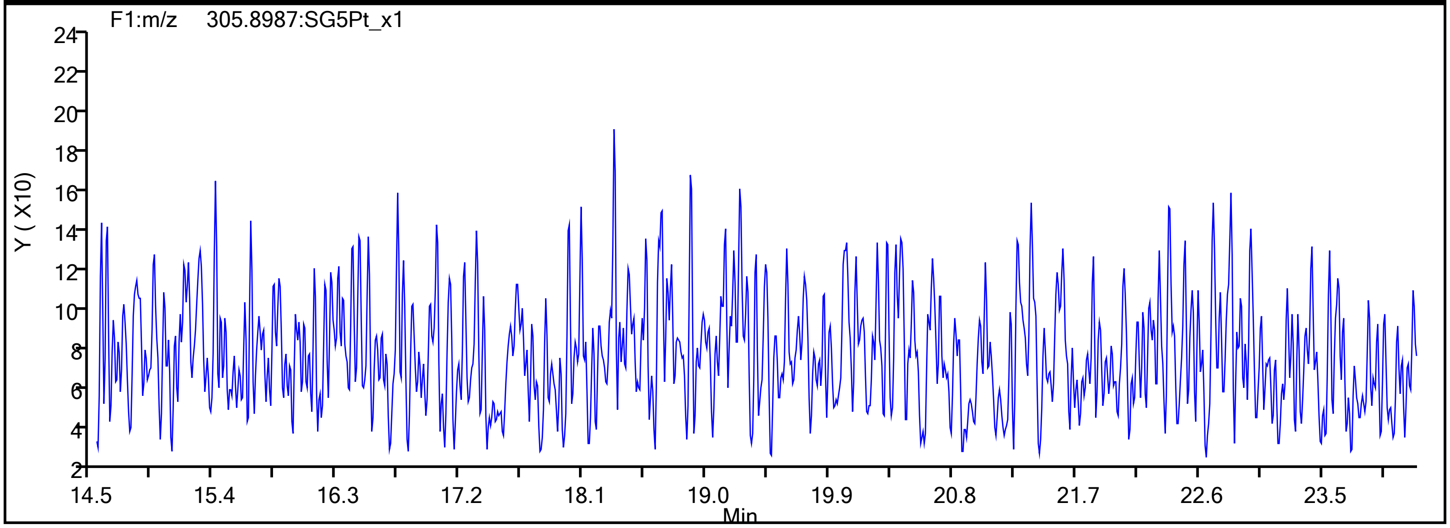

TCDF Interference Mass

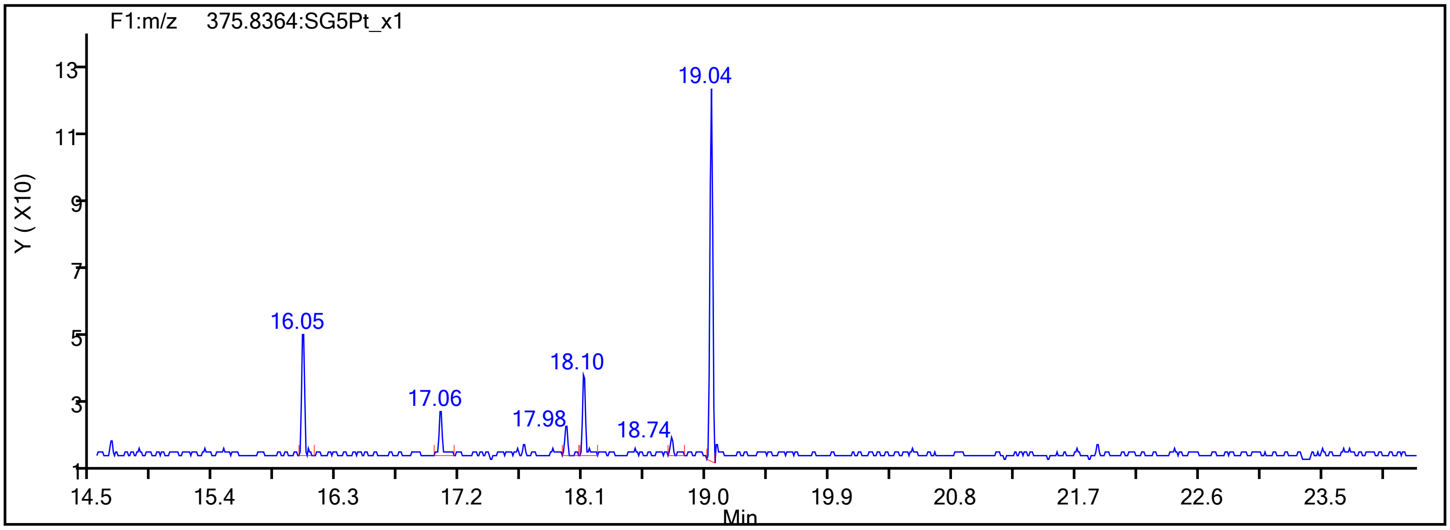

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

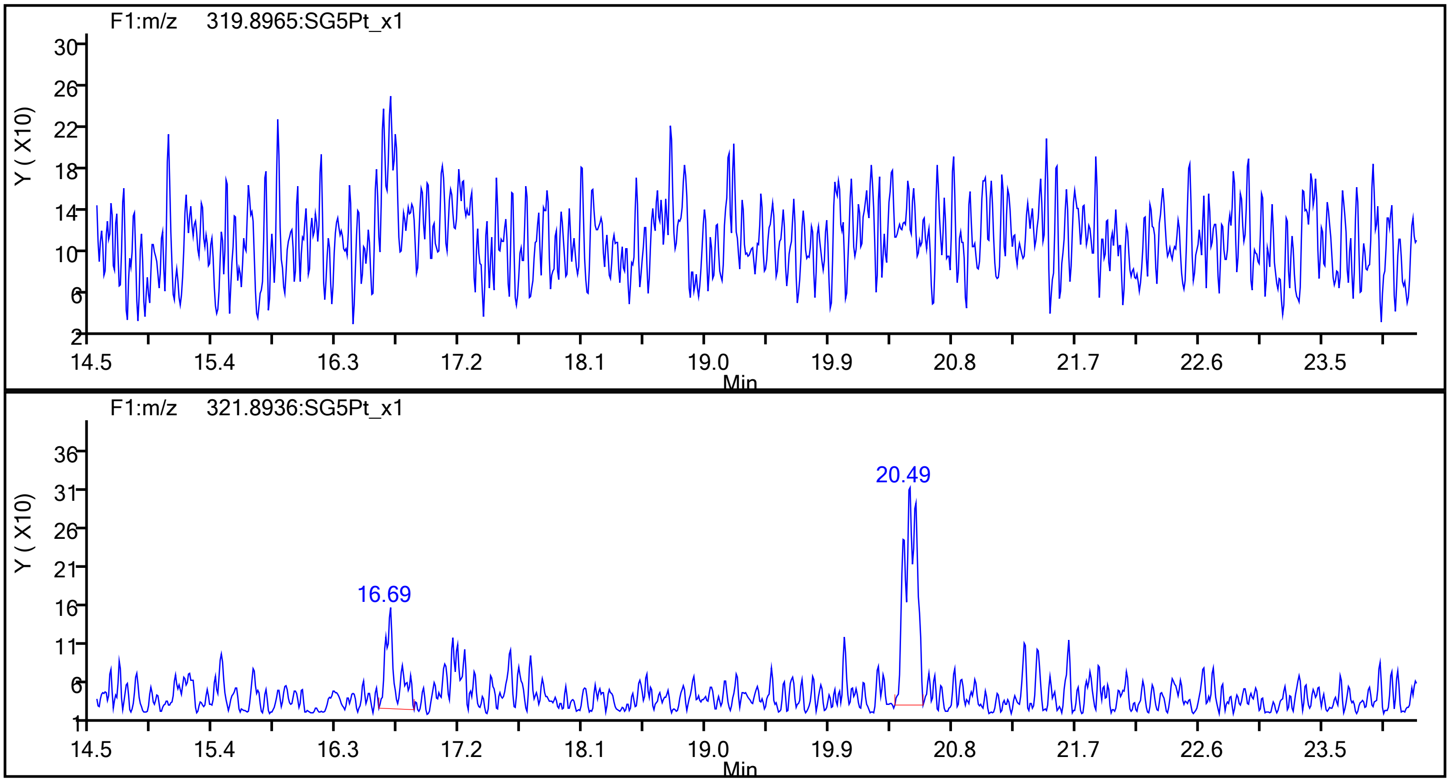

TCDD Standards

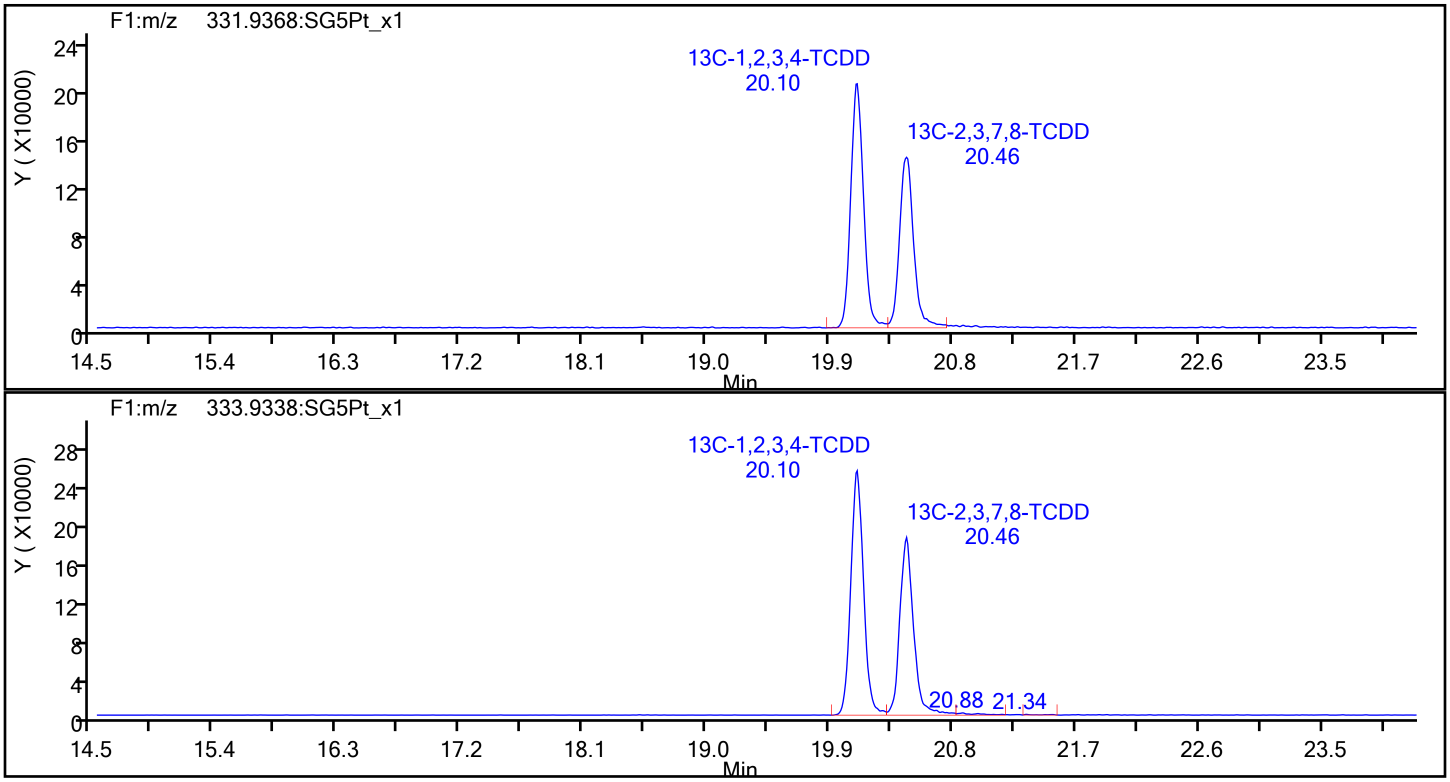

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d

Injection Date: 21-Sep-2020 14:13:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

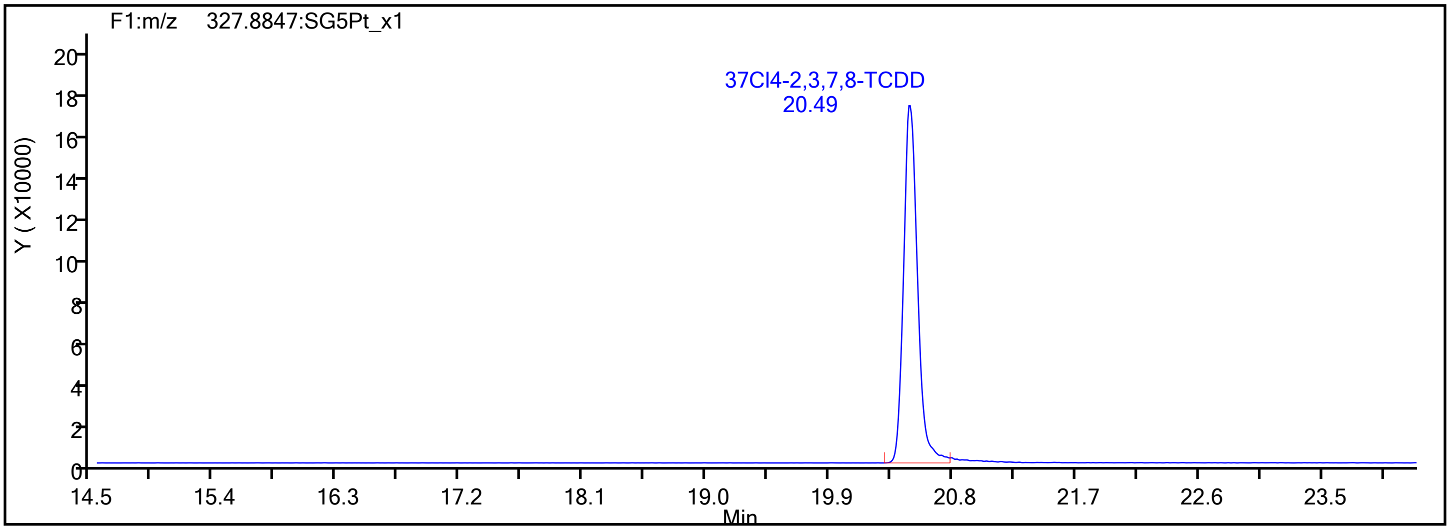

37Cl4-TCDD Standards

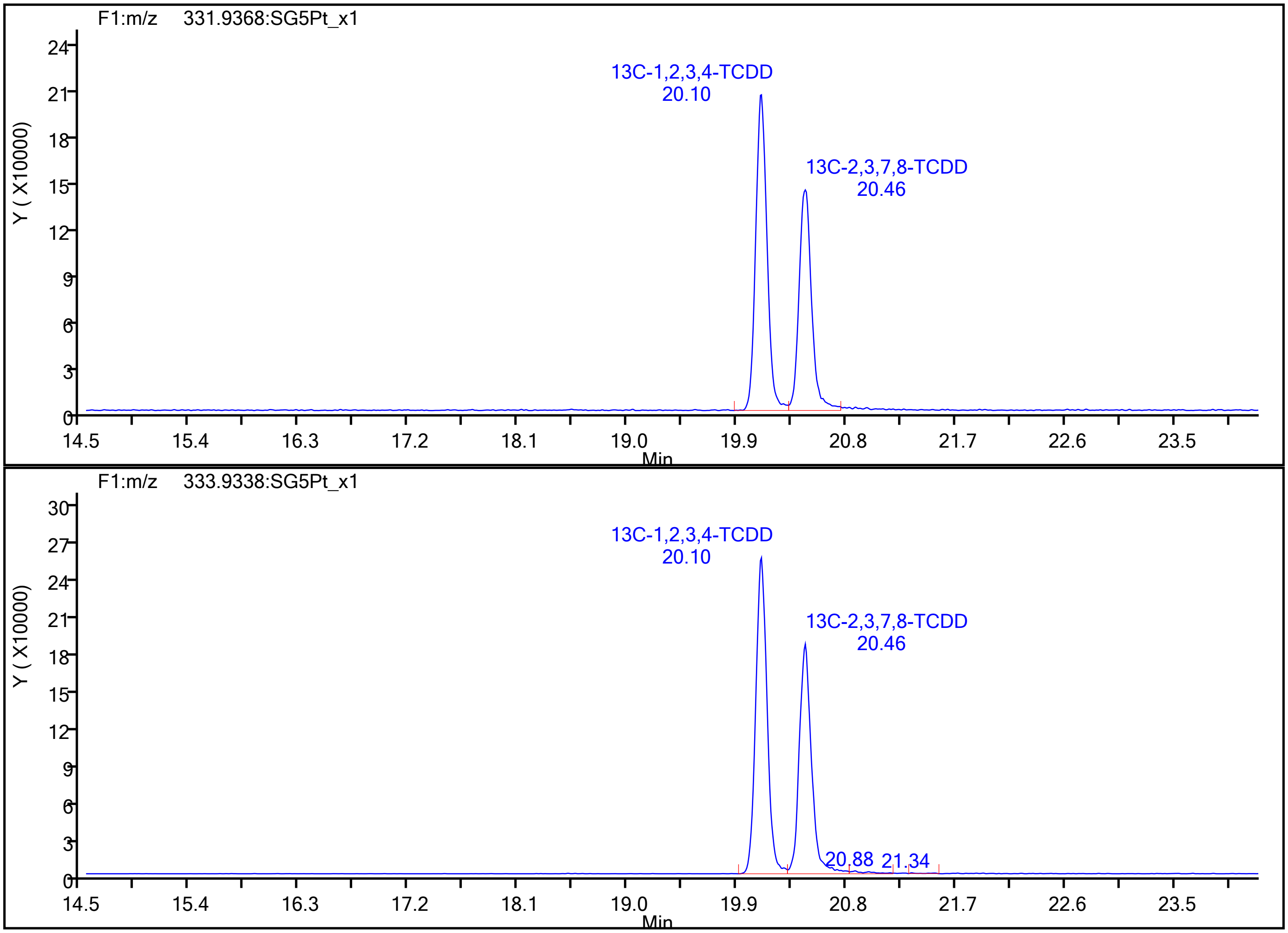

Report Date: 23-Sep-2020 08:29:07
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

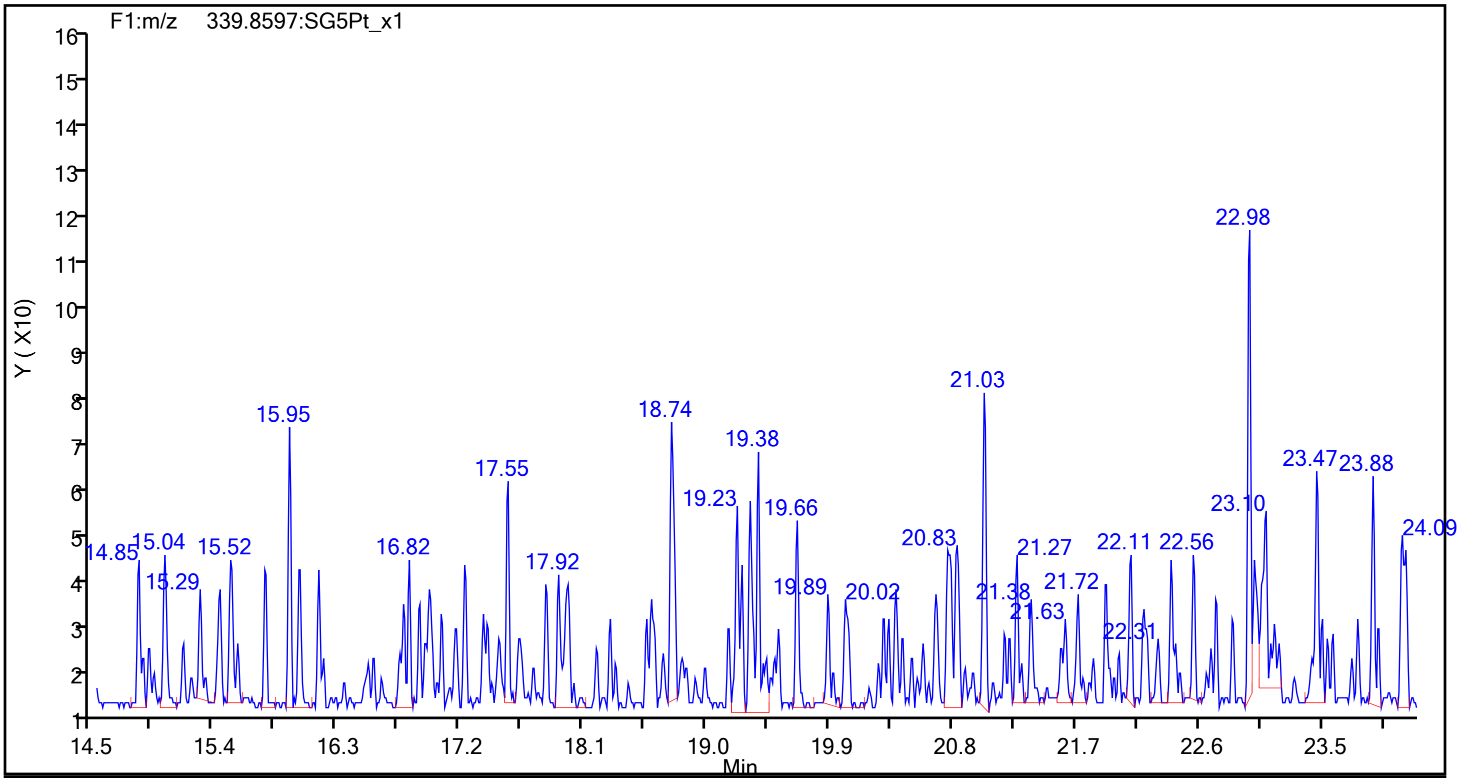

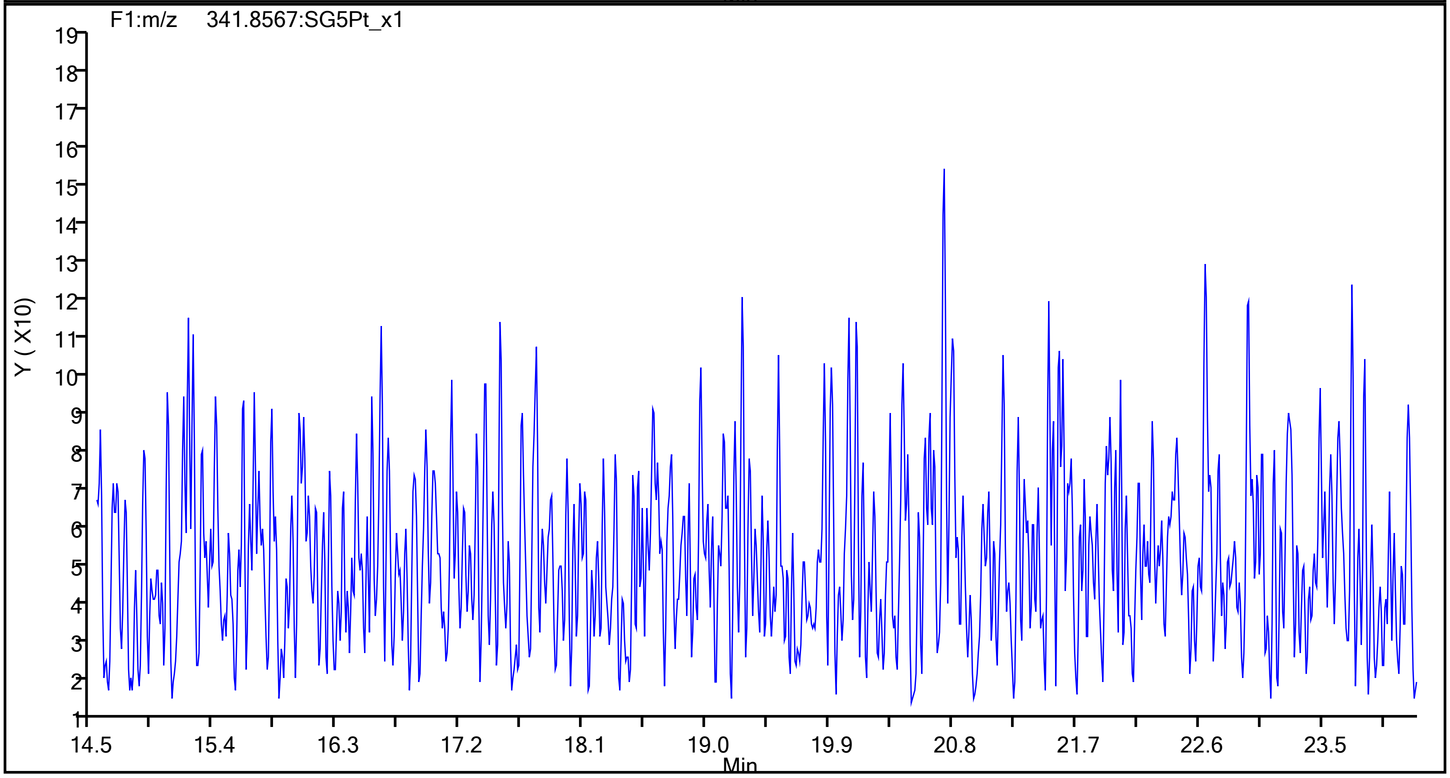

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d

Injection Date: 21-Sep-2020 14:13:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

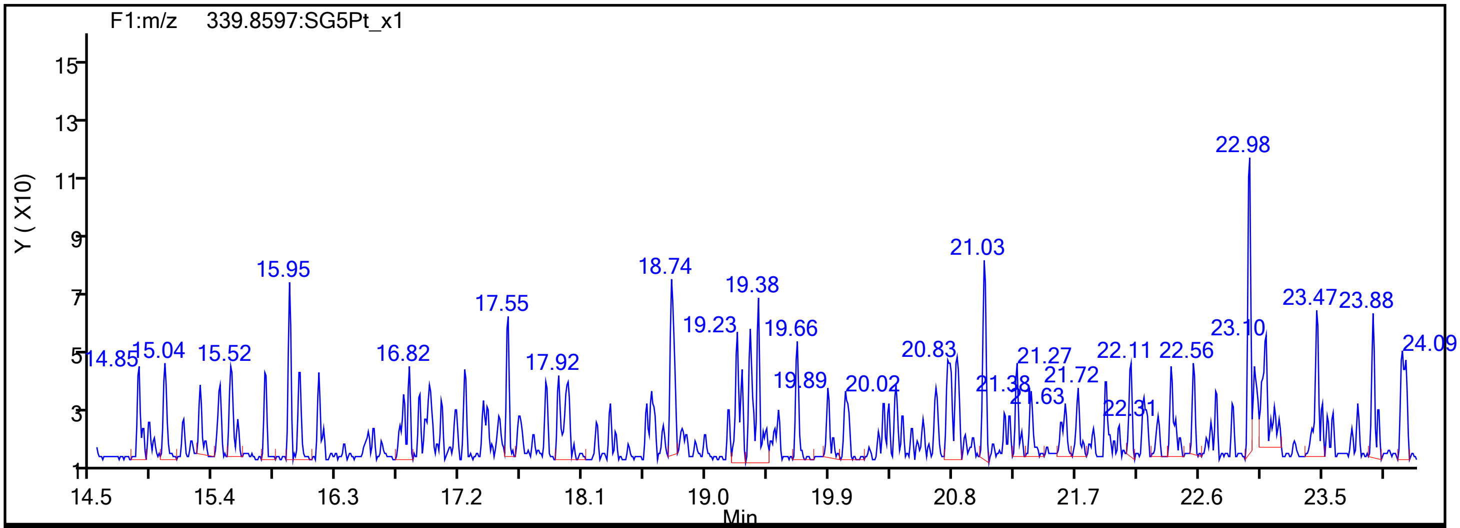

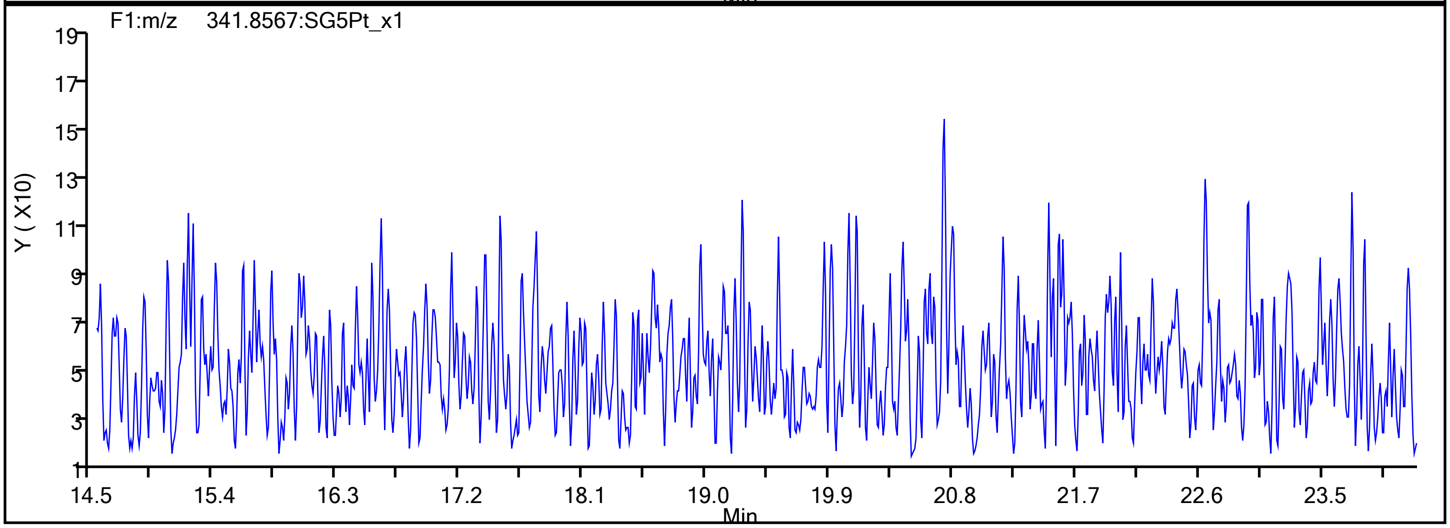

F1 PeCDFs Interference Mass

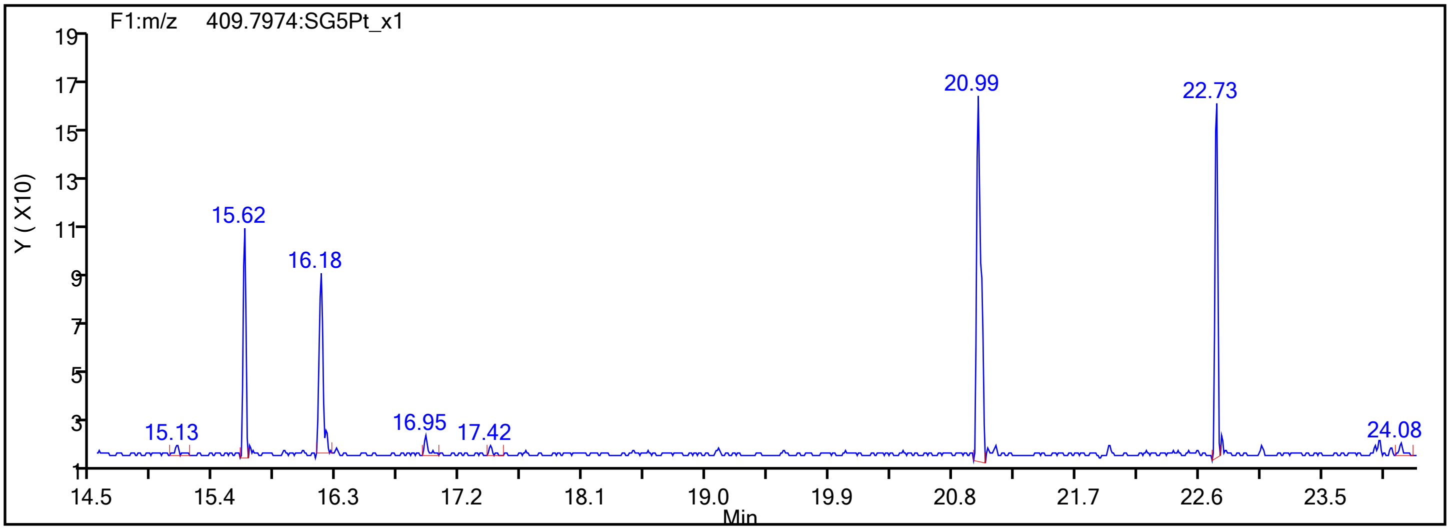

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

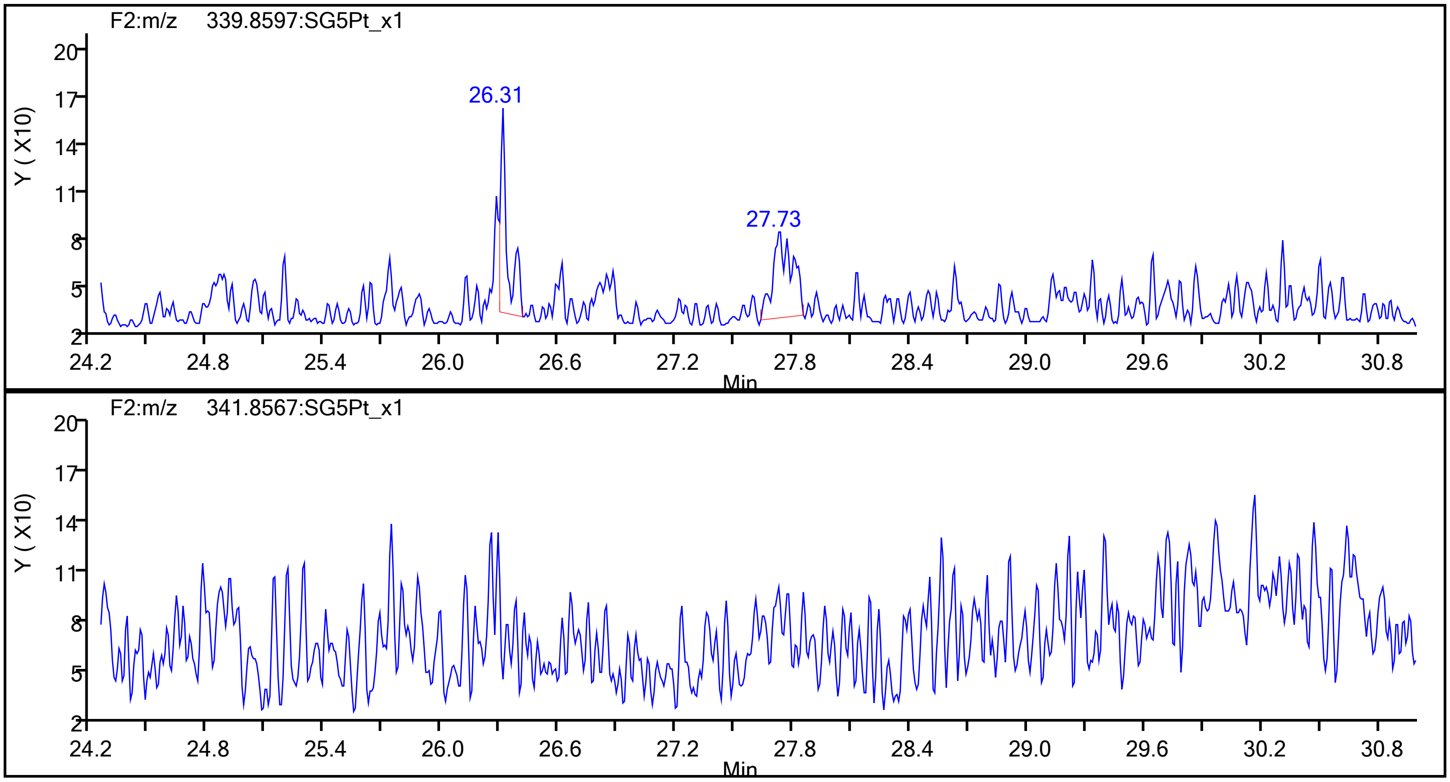

PeCDF Standards

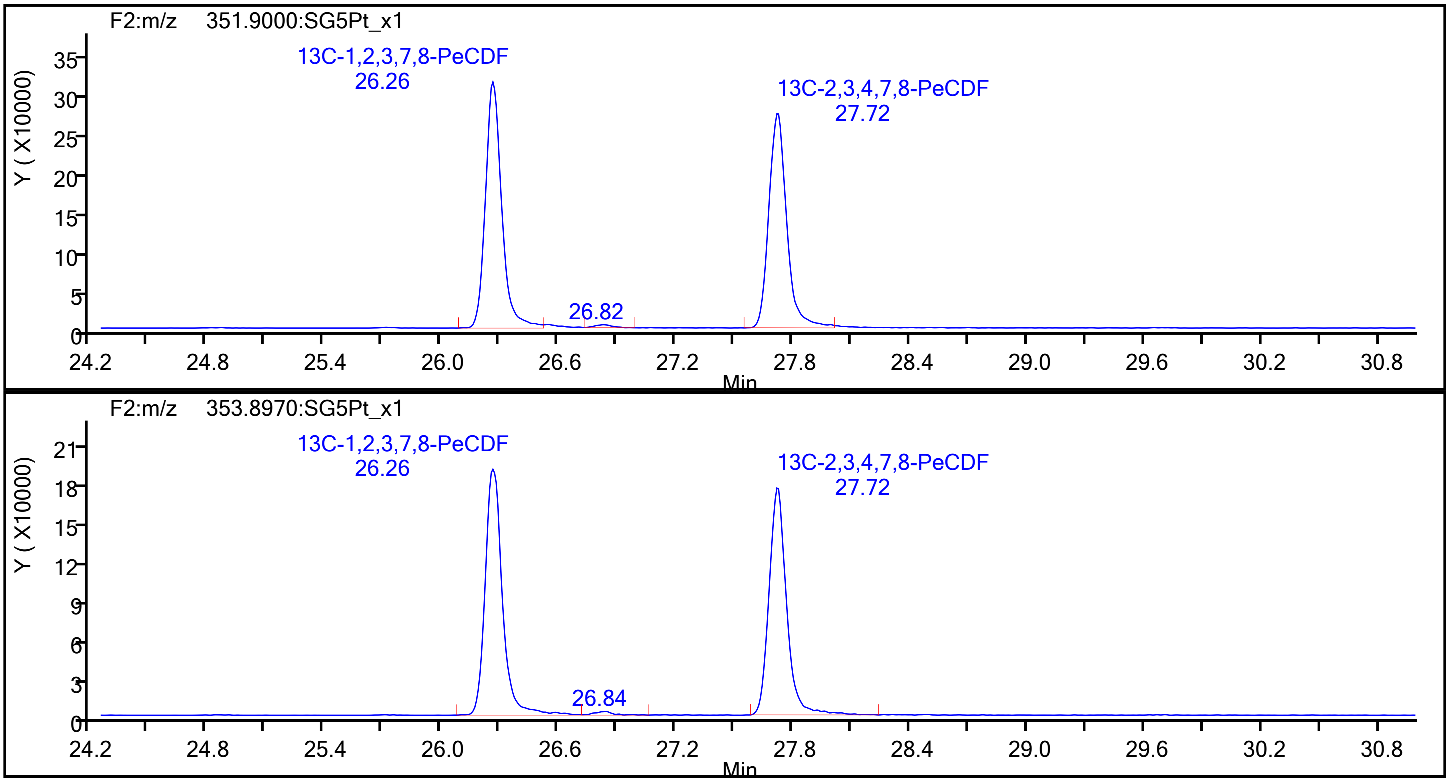

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

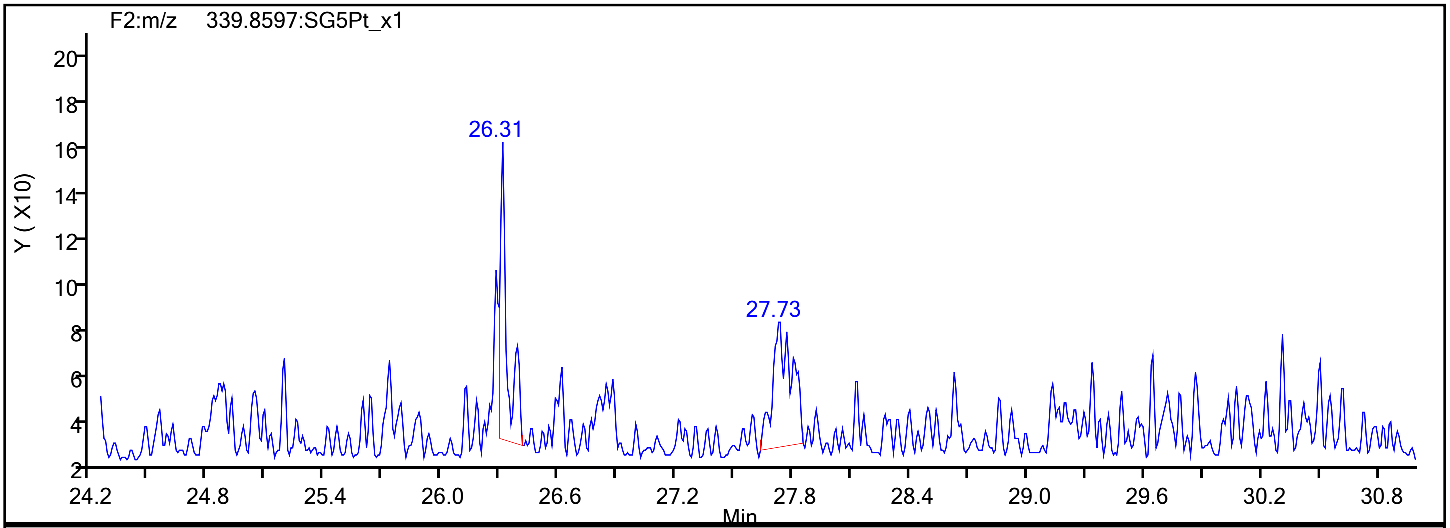

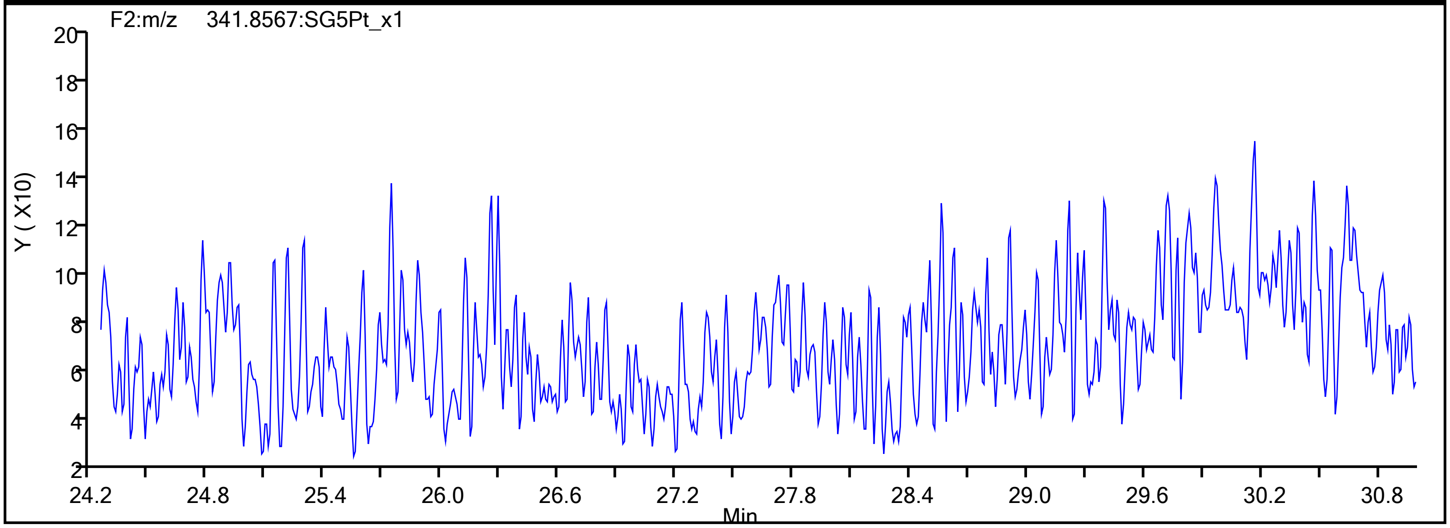

PeCDF Interference Mass

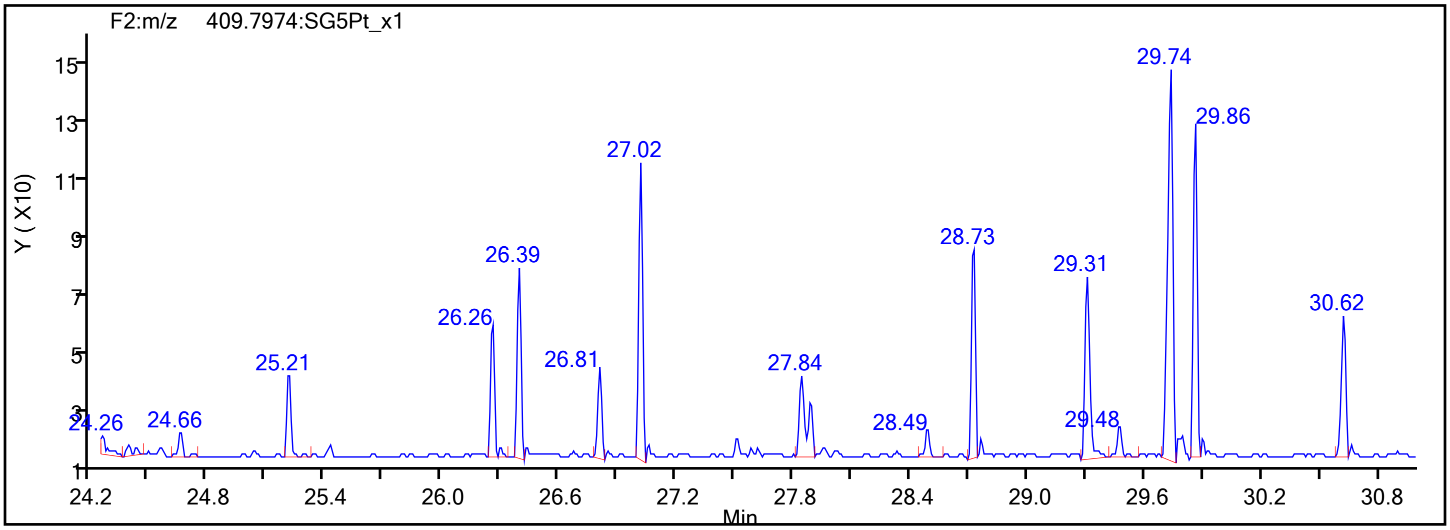

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

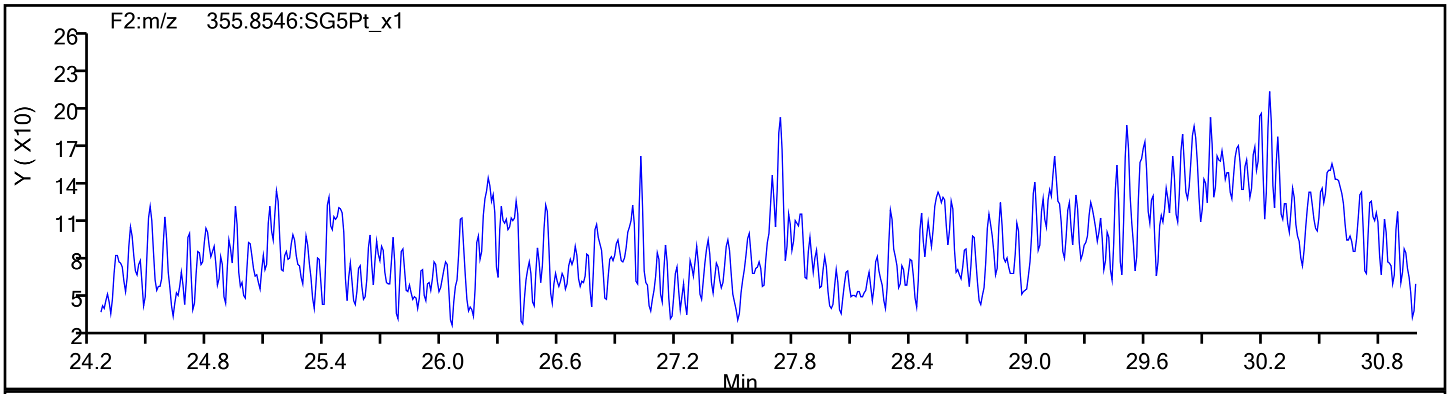

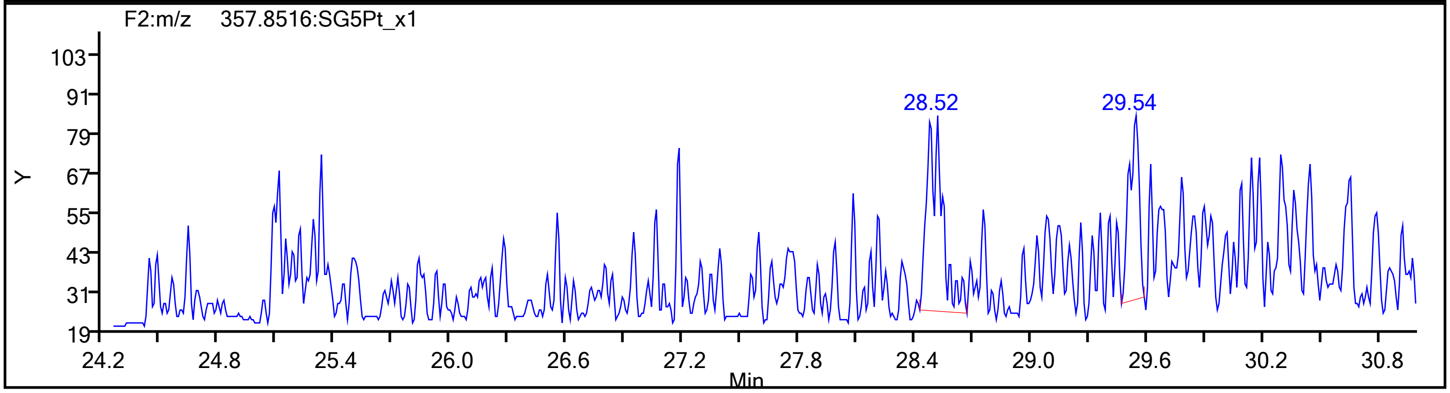

PeCDD Standards

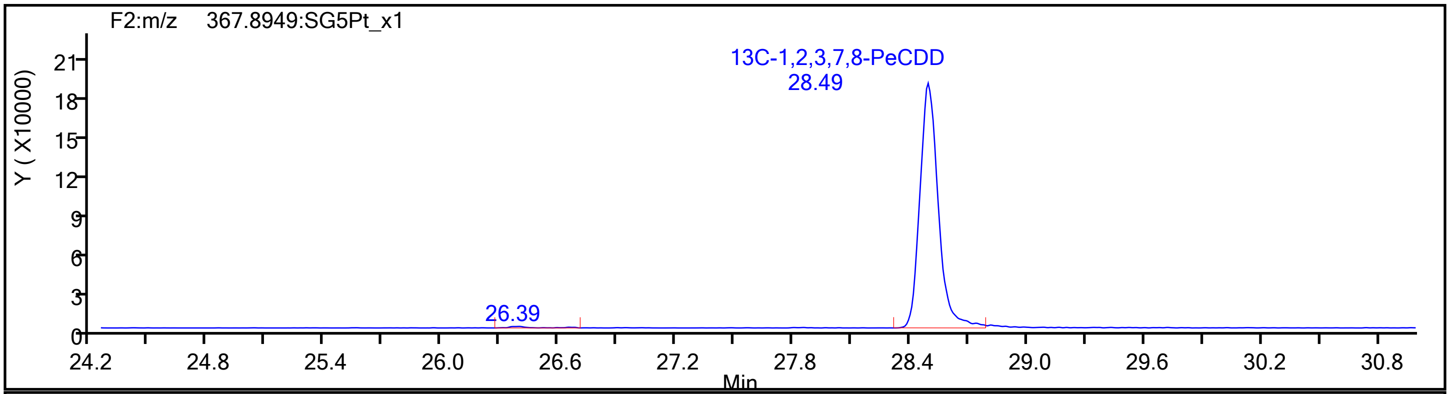

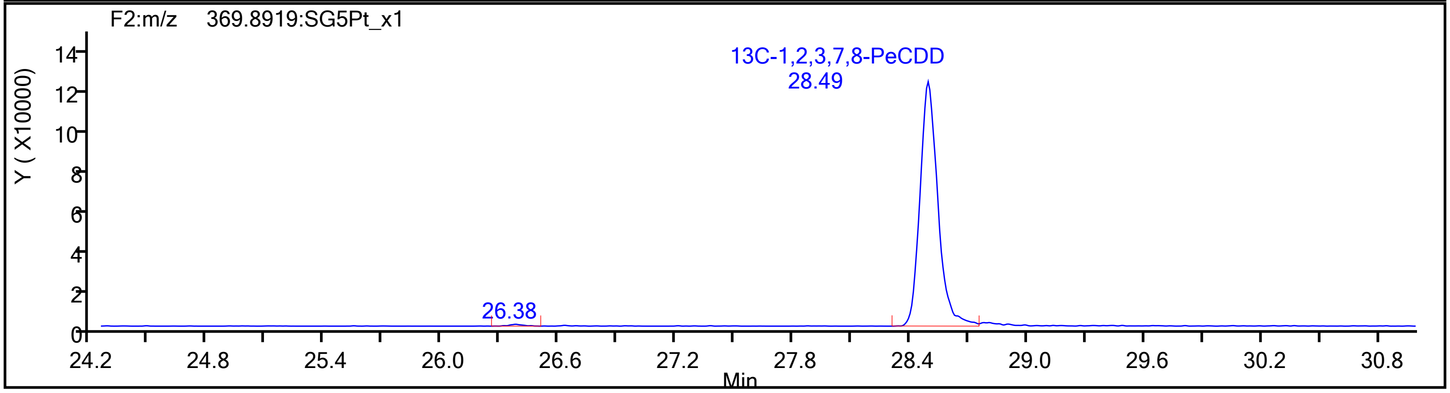

Report Date: 23-Sep-2020 08:29:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

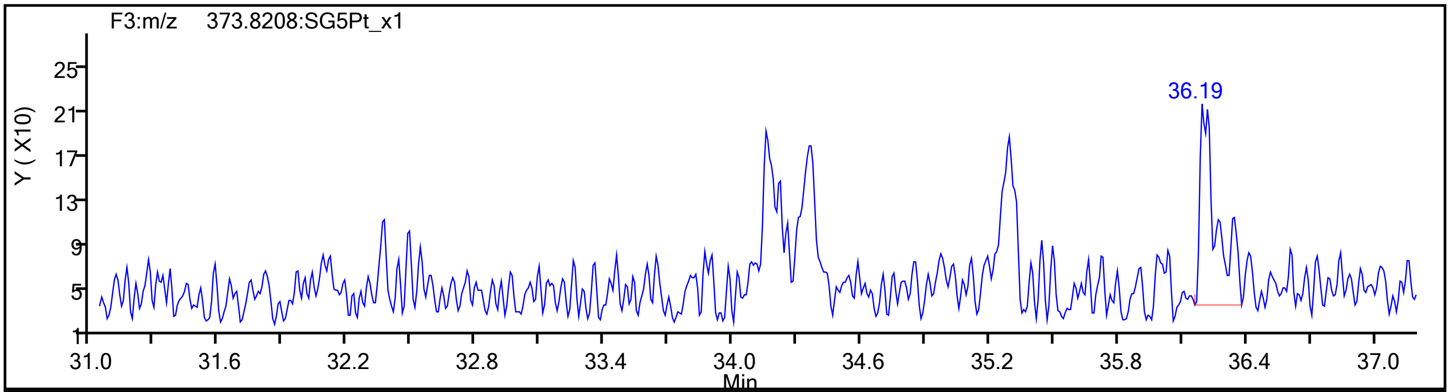

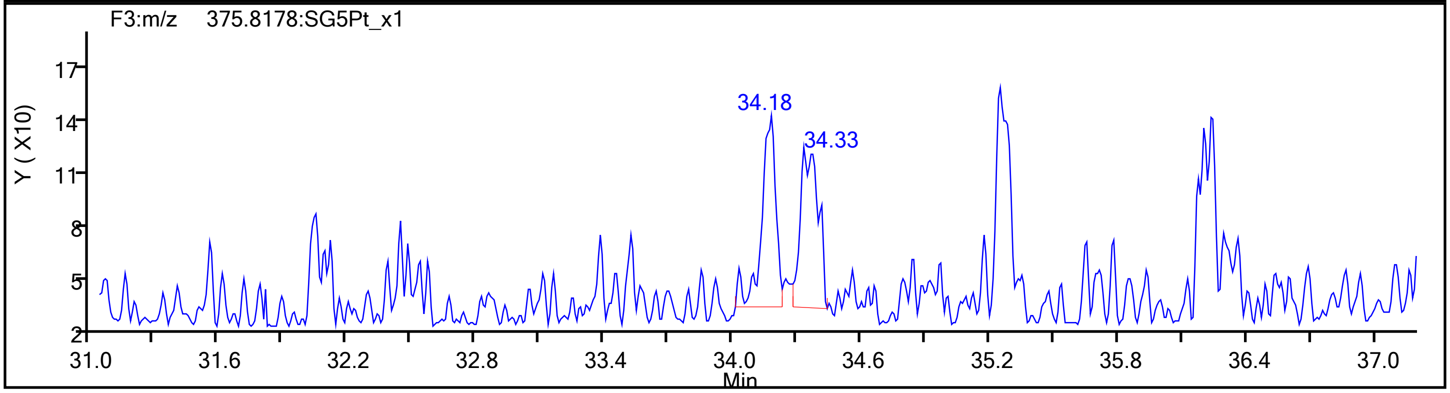

HxCDF Standards

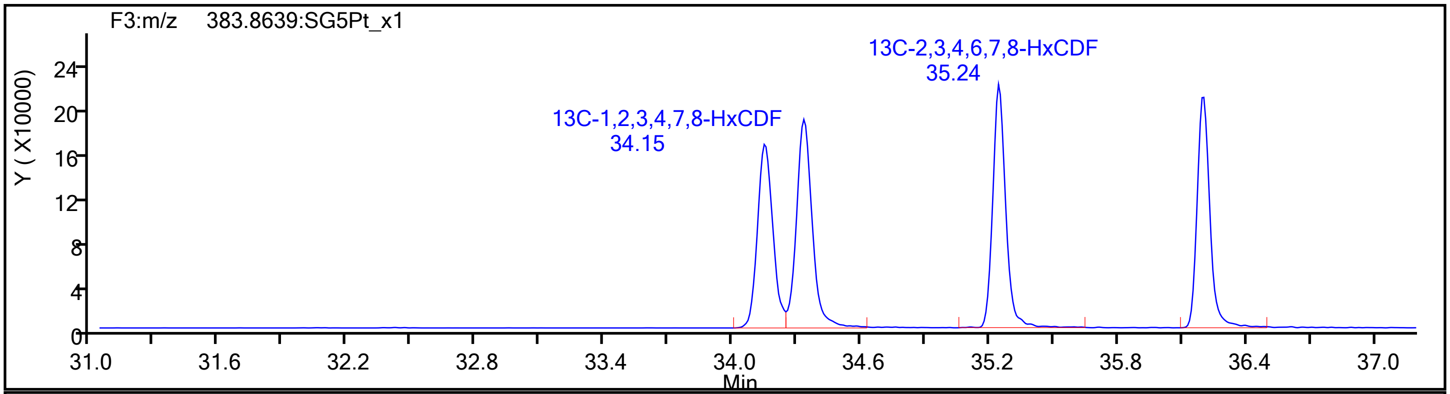

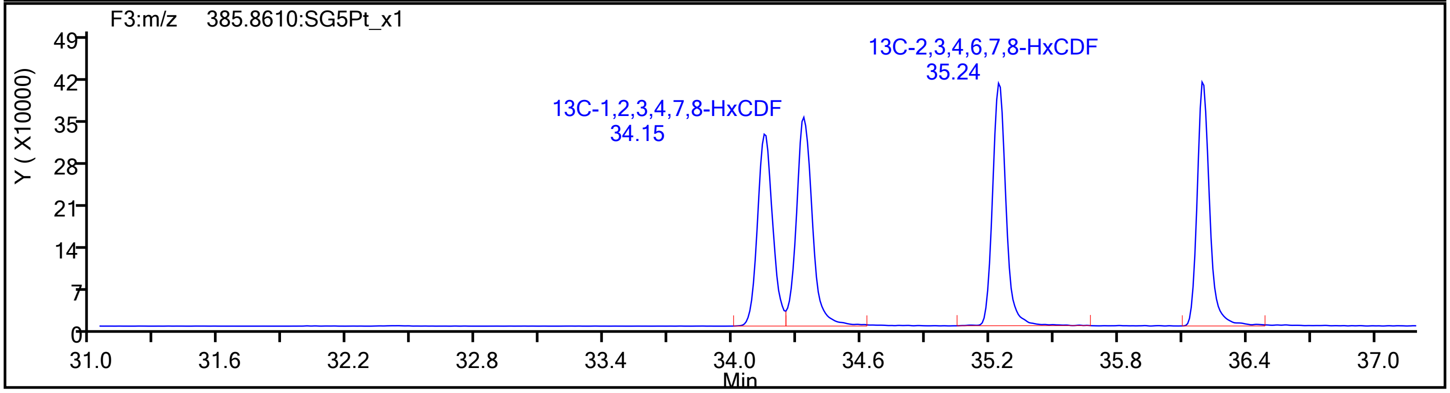

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d

Injection Date: 21-Sep-2020 14:13:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

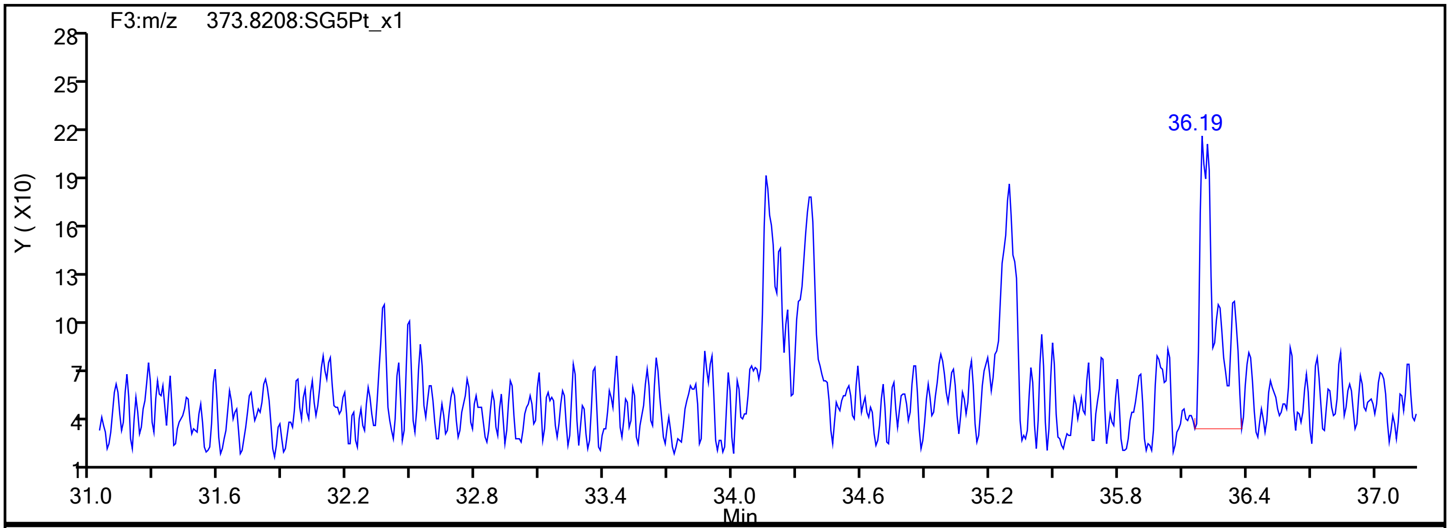

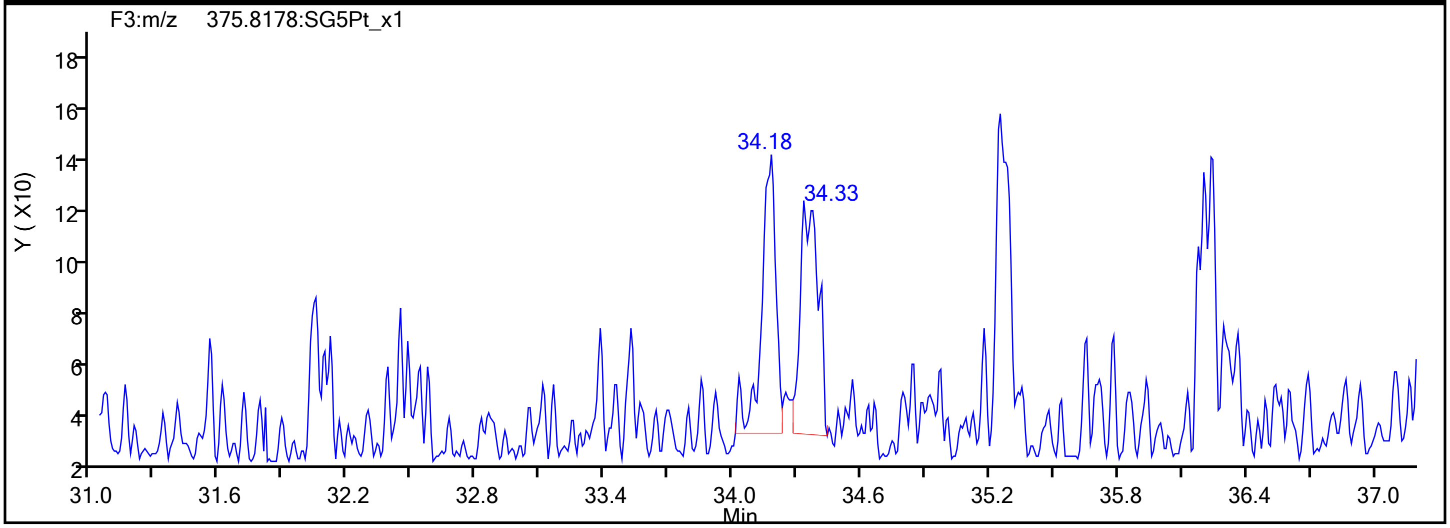

HxCDF Interference Mass

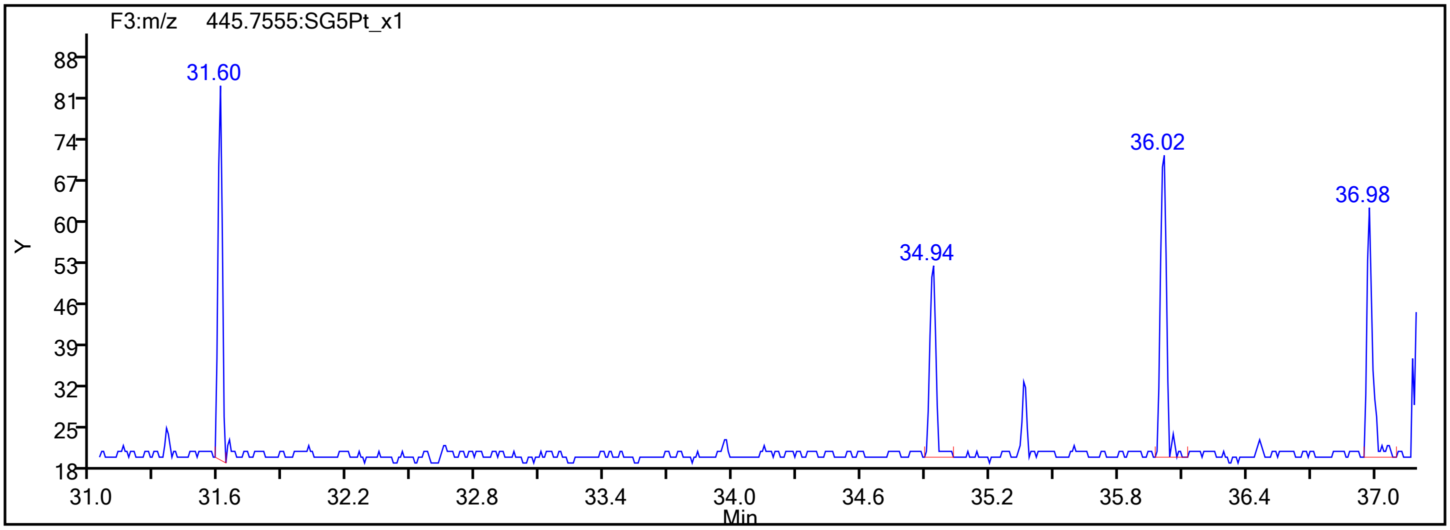

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

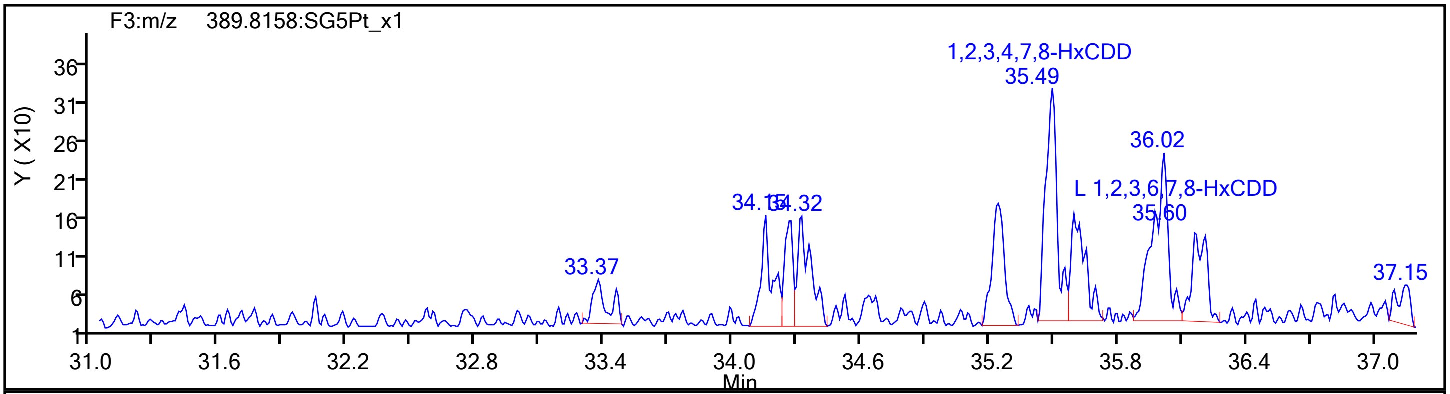

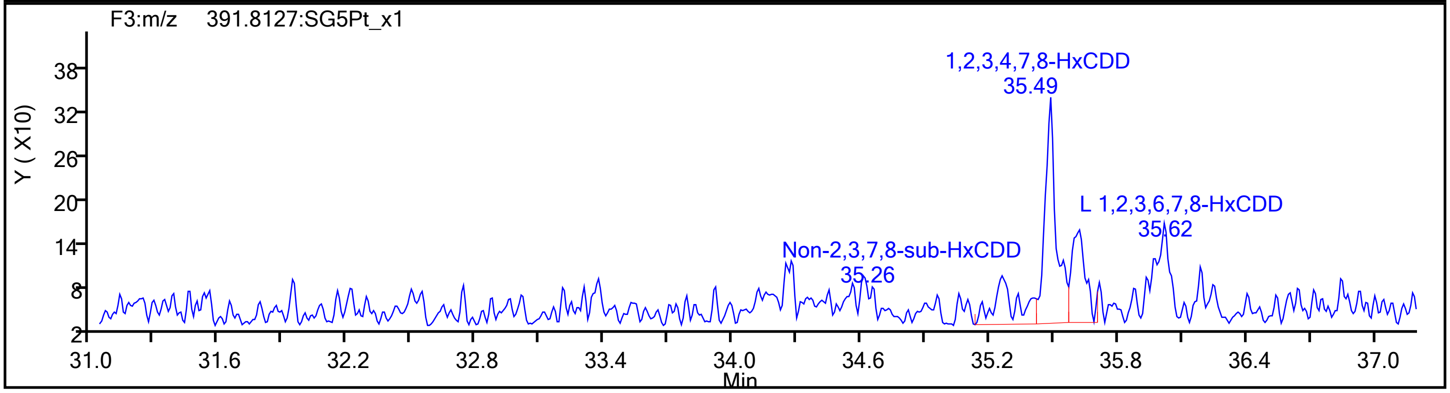

HxCDD Standards

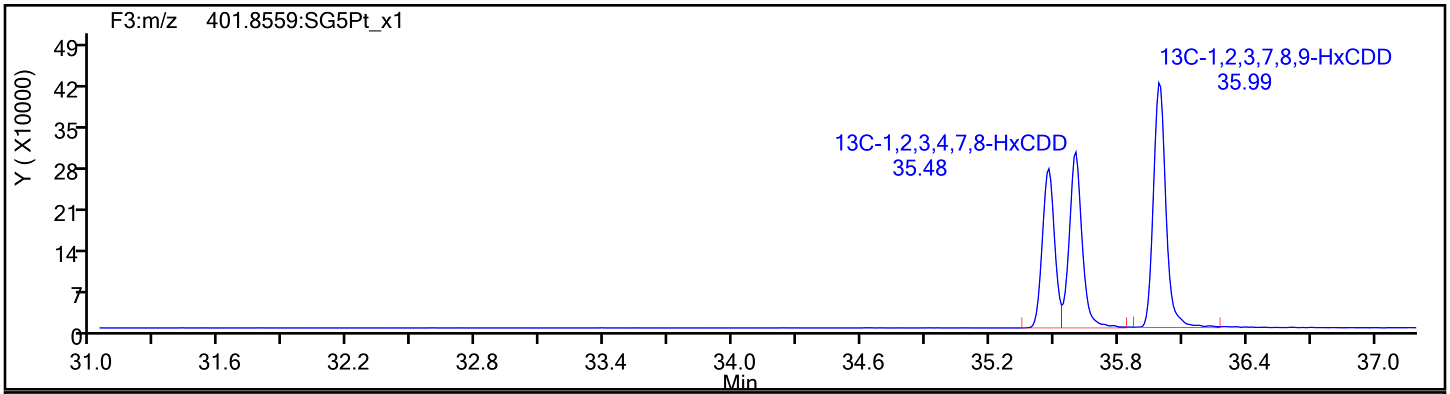

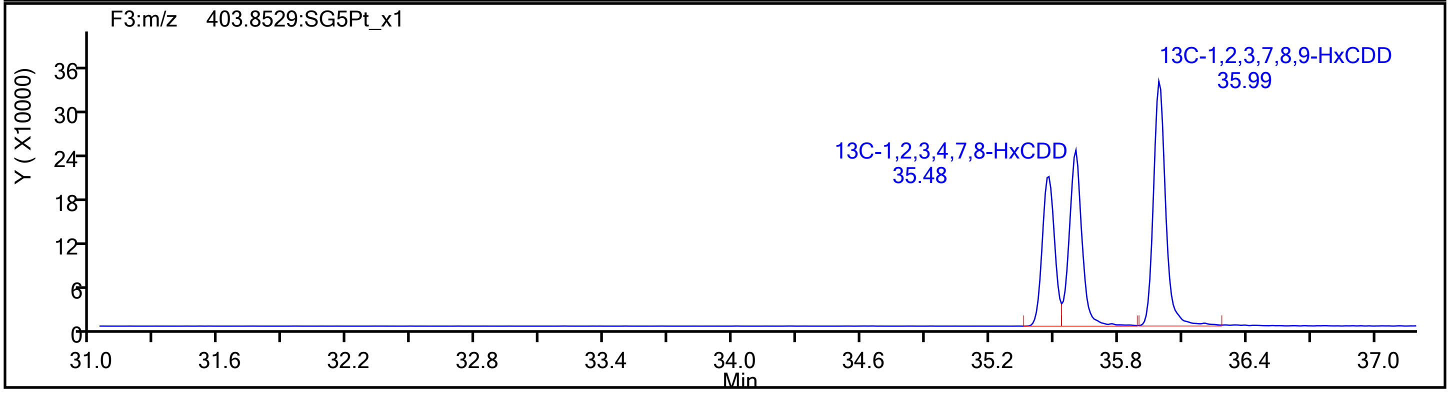

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

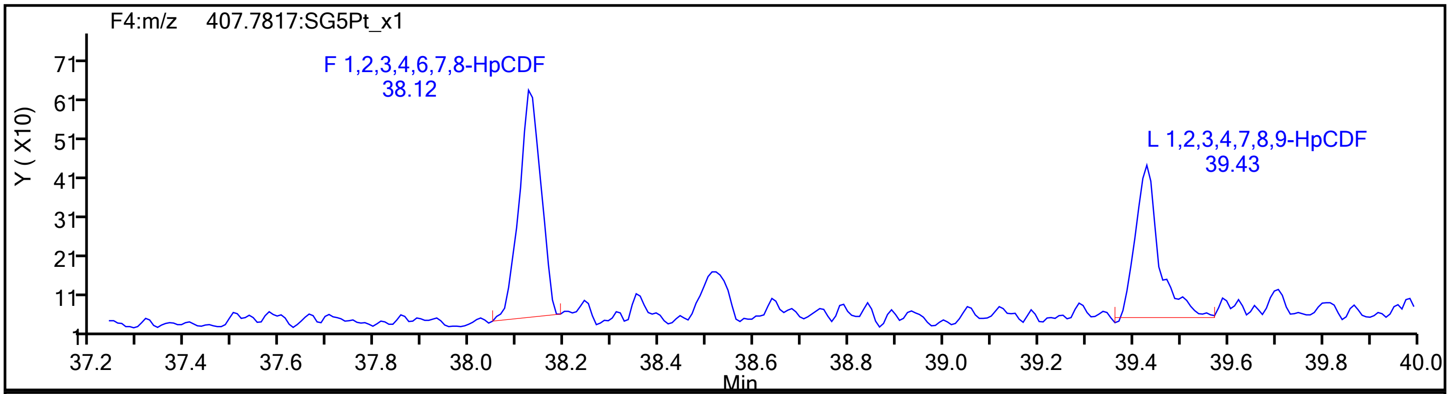

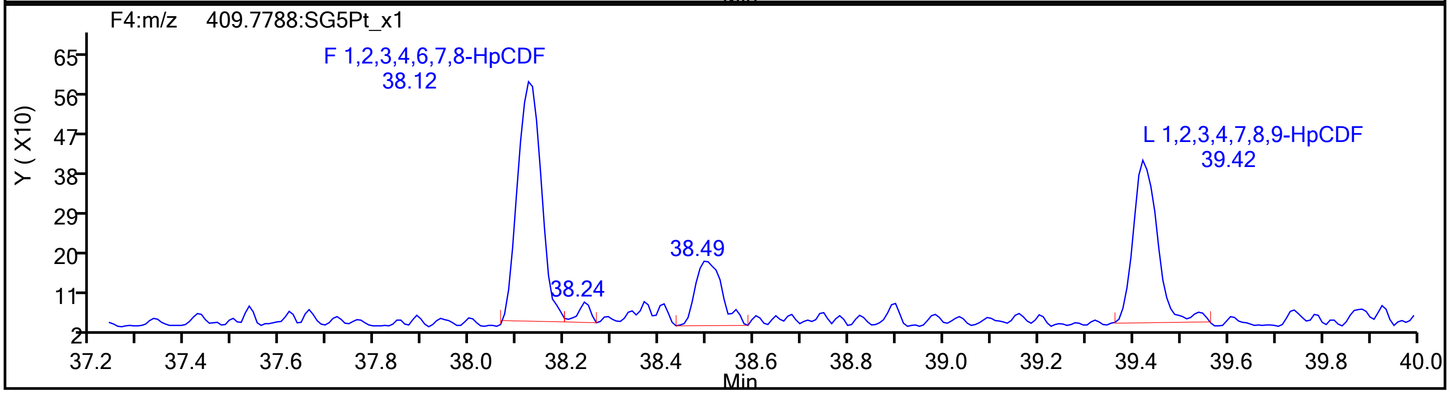

HpCDF Standards

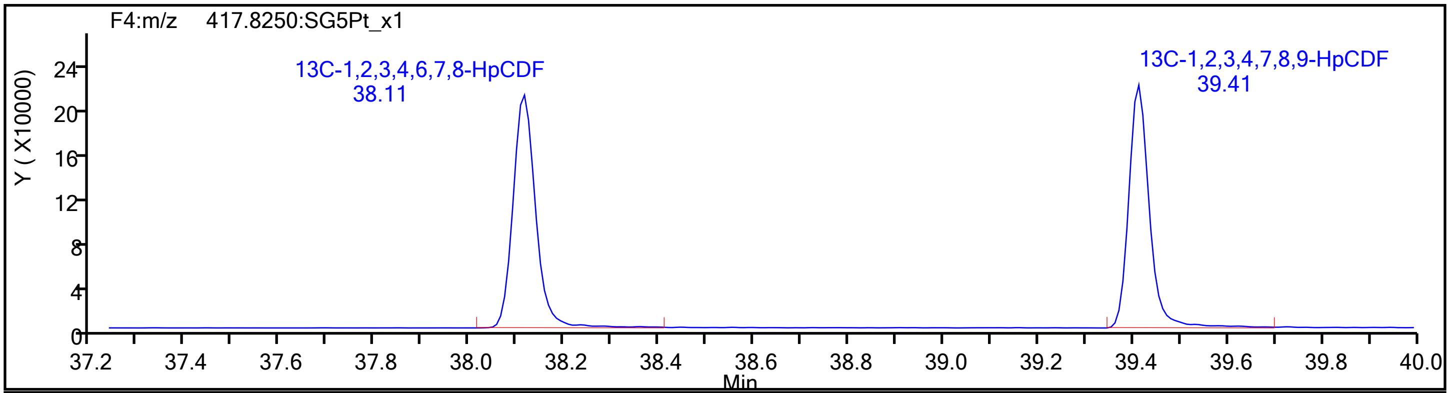

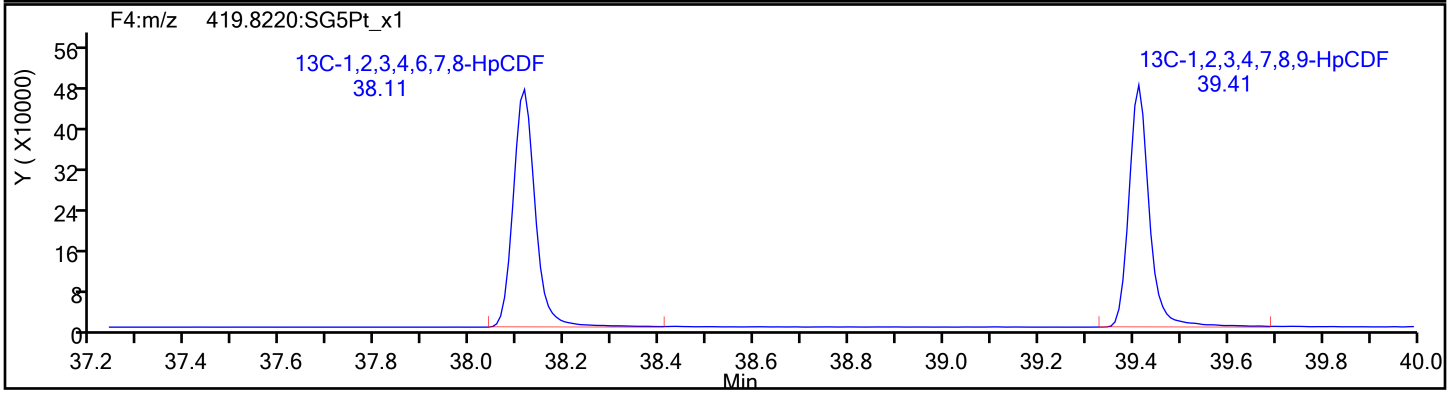

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d

Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

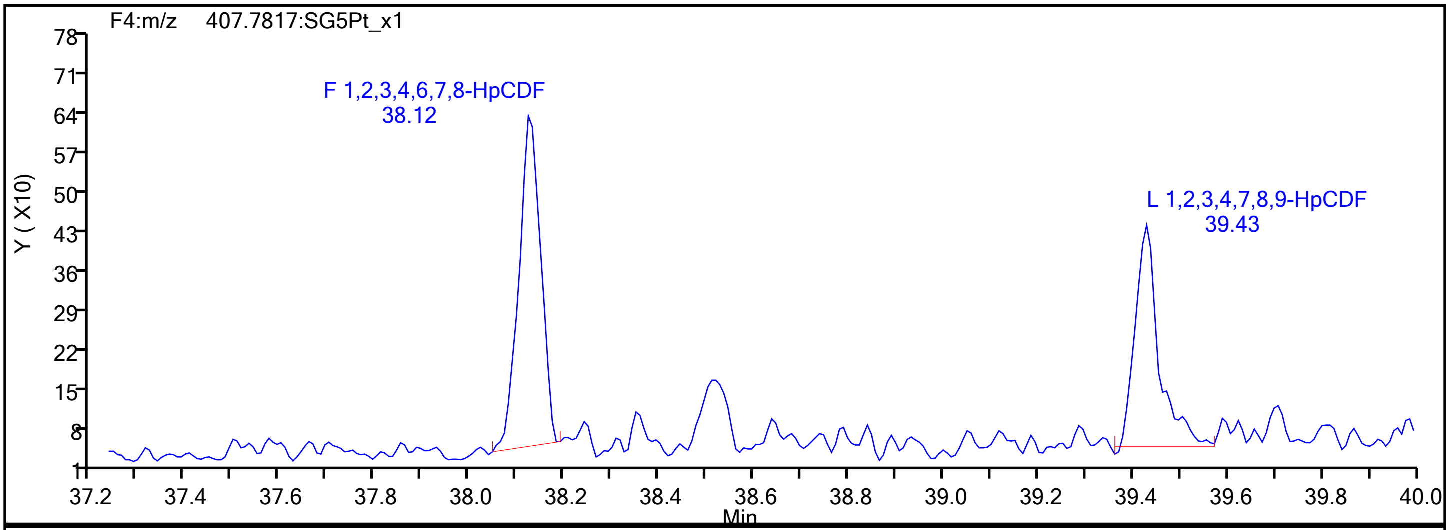

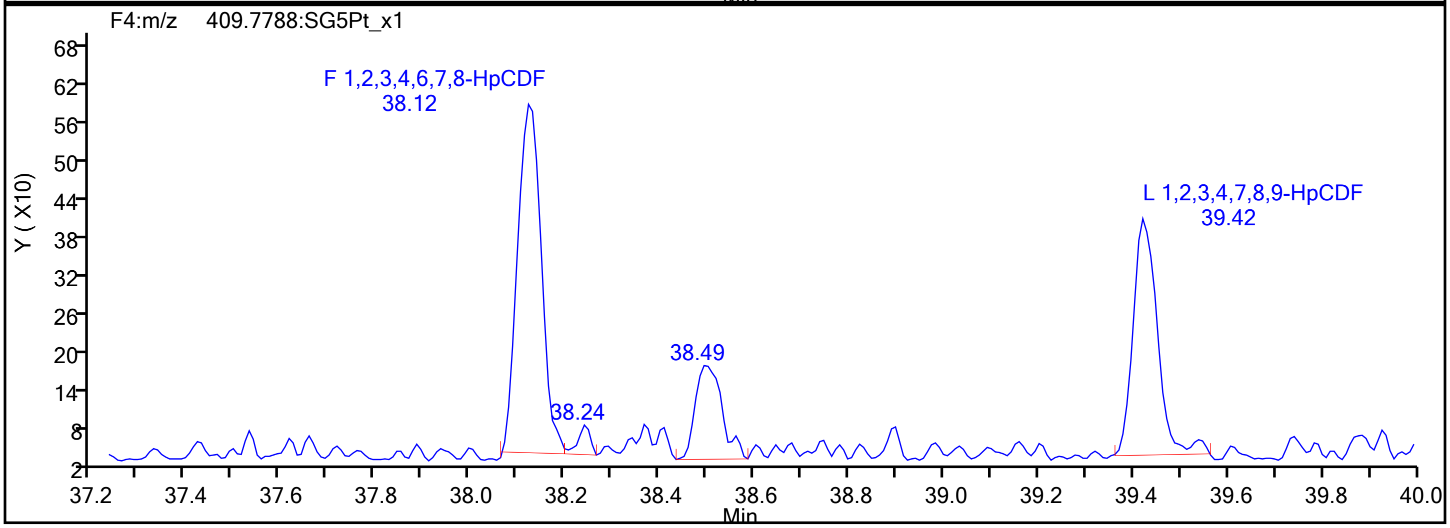

HpCDF Interference Mass

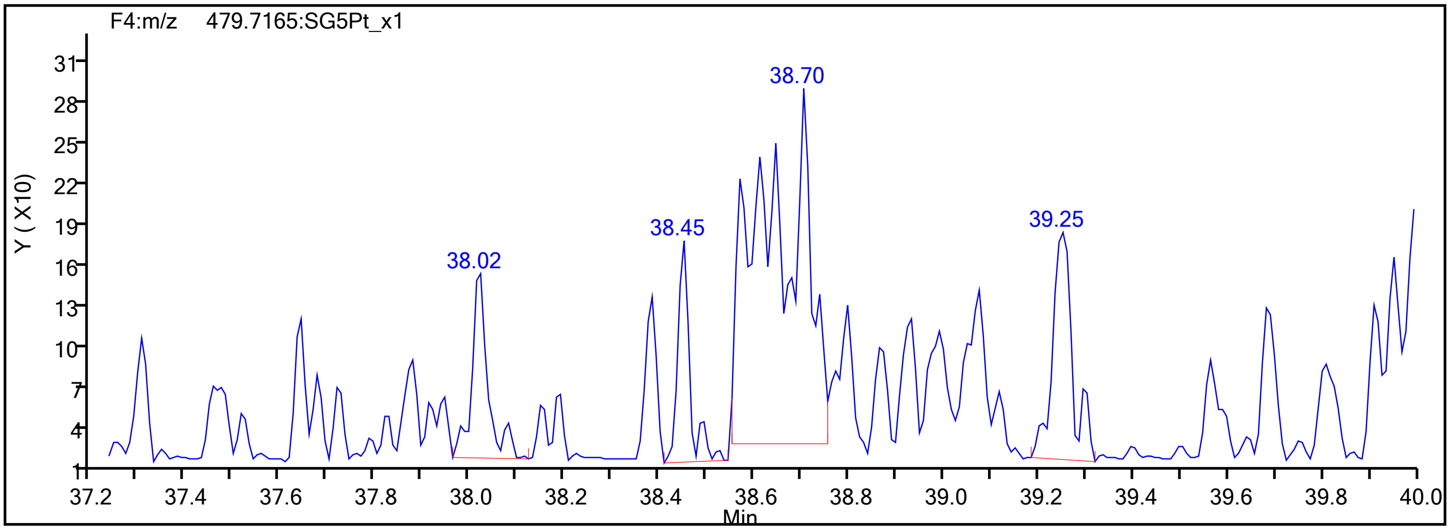

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

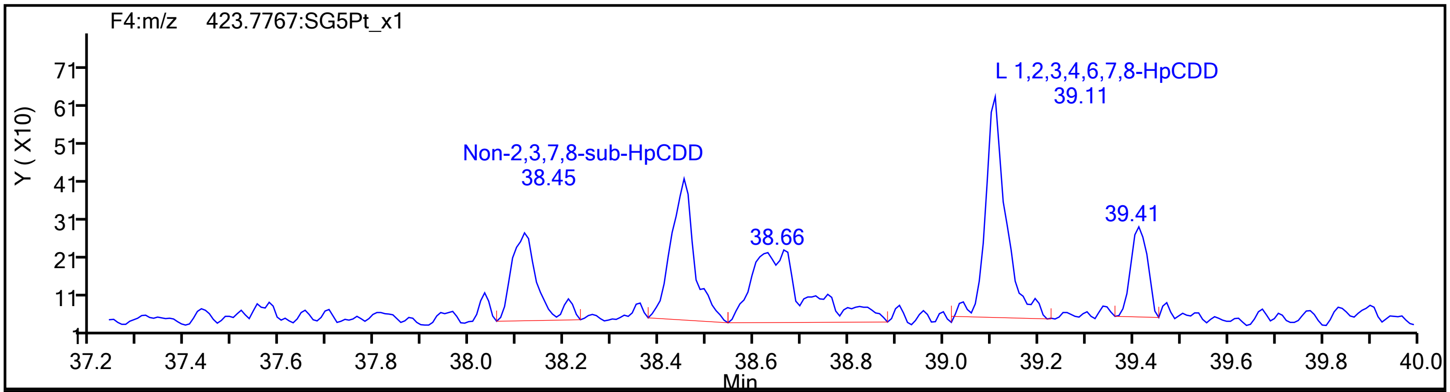

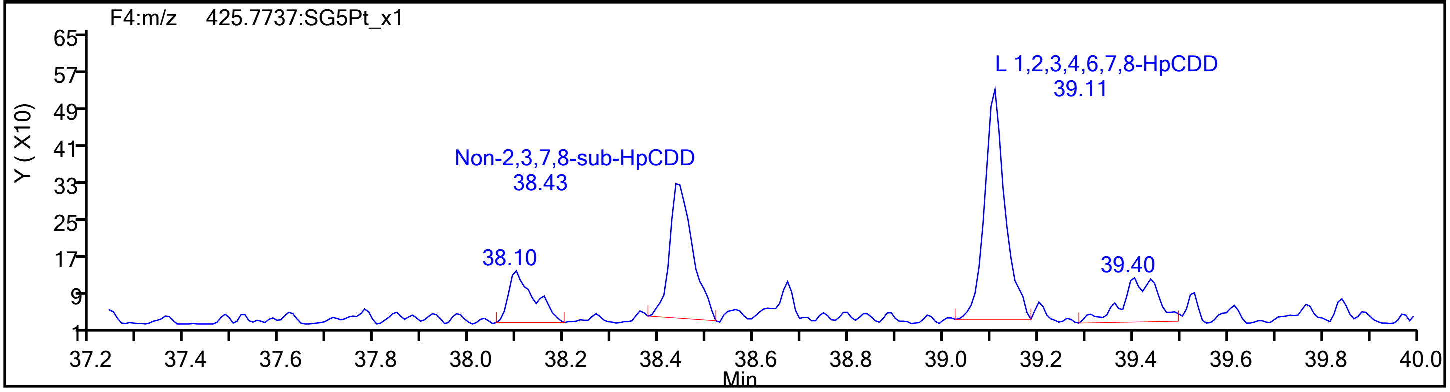

HpCDD Standards

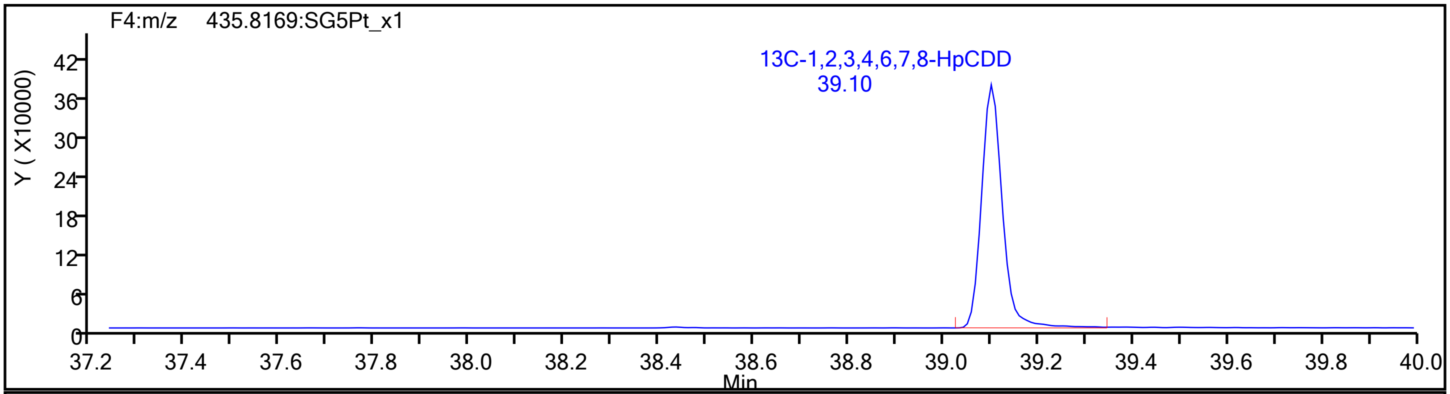

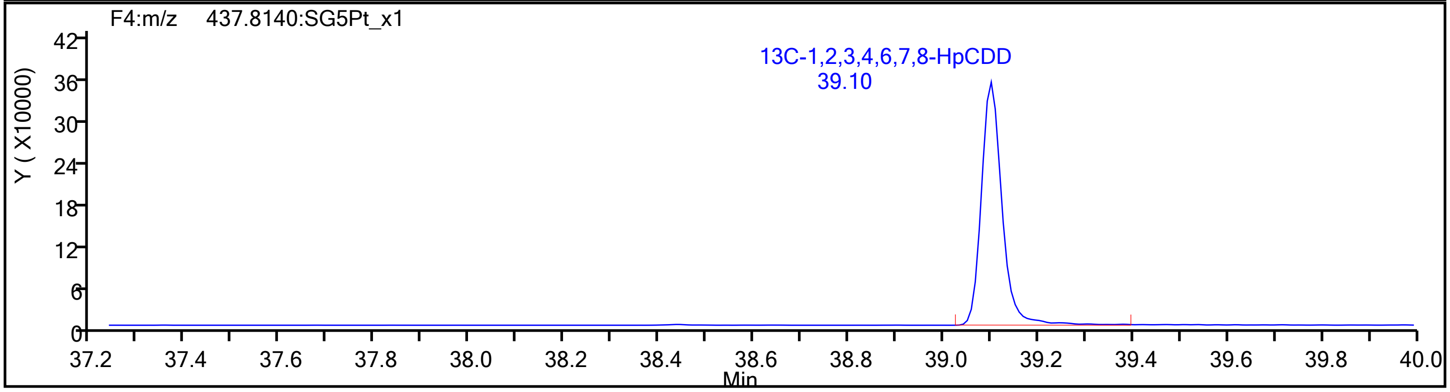

Report Date: 23-Sep-2020 08:29:08
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

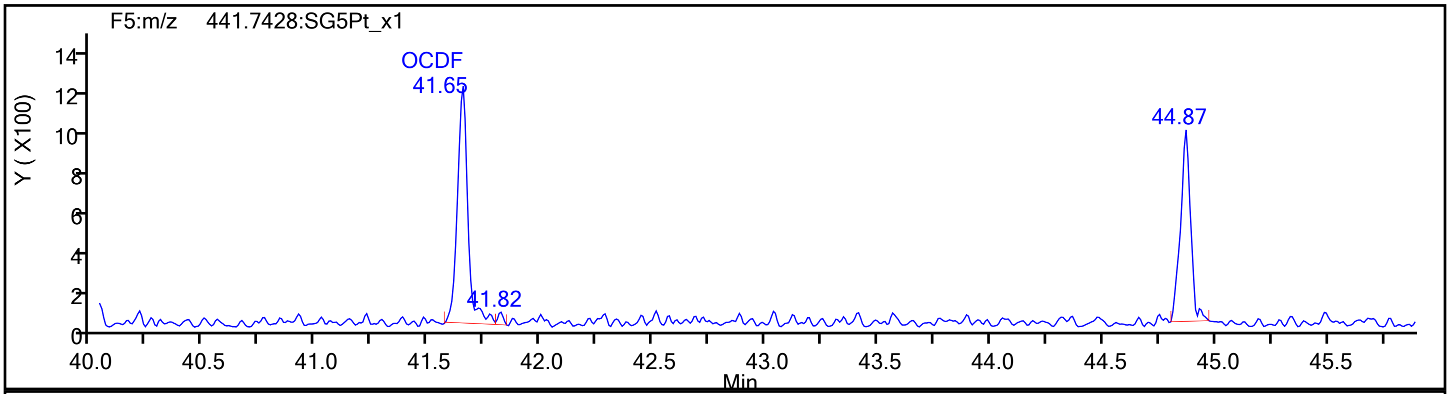

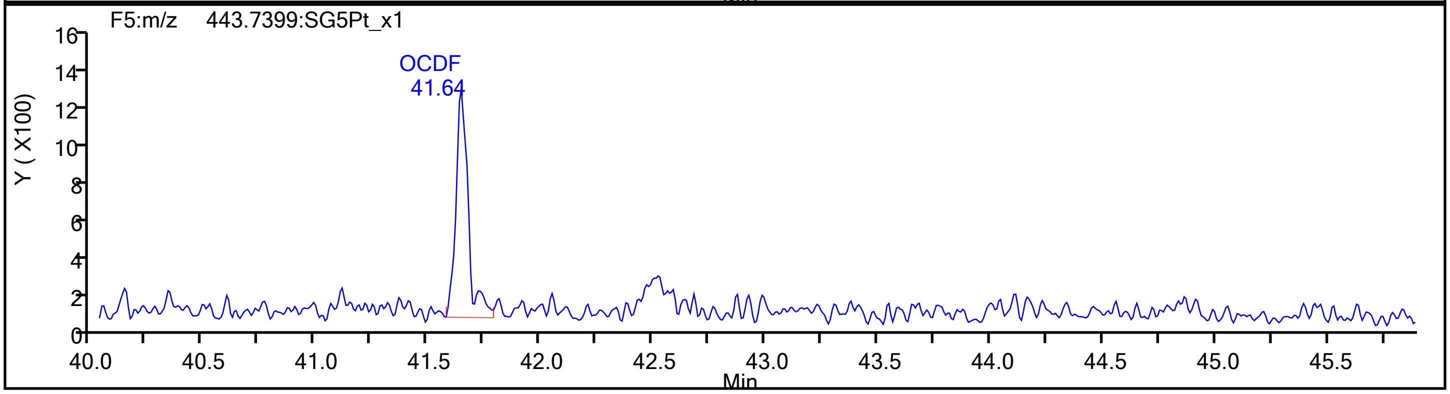

OCDF Standards

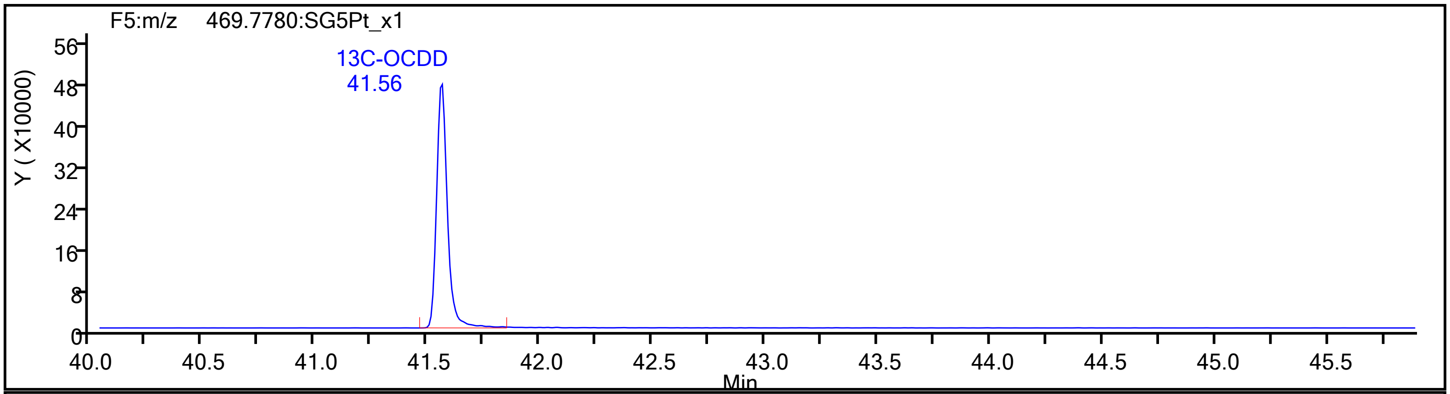

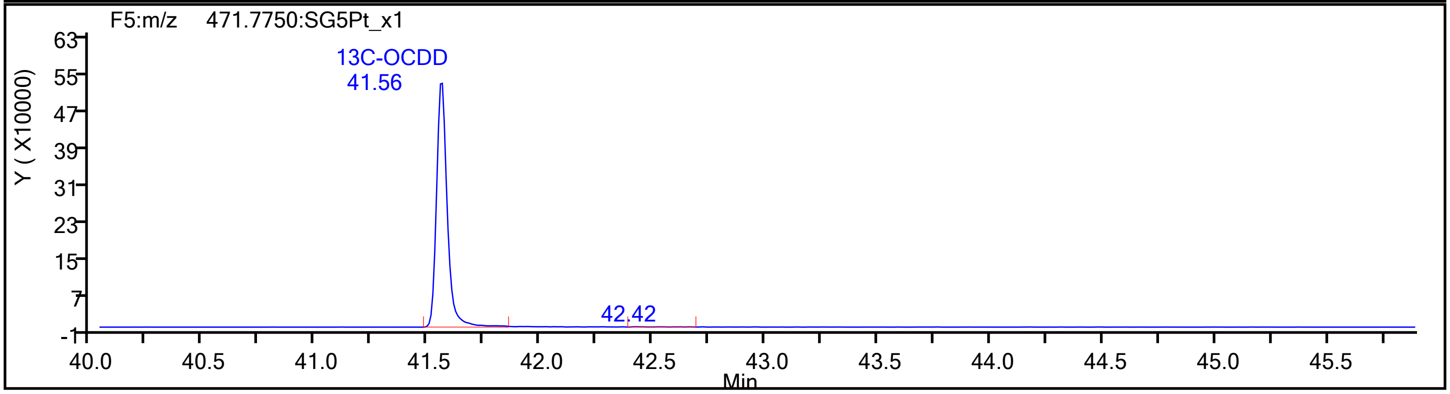

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d
Injection Date: 21-Sep-2020 14:13:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 414413
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

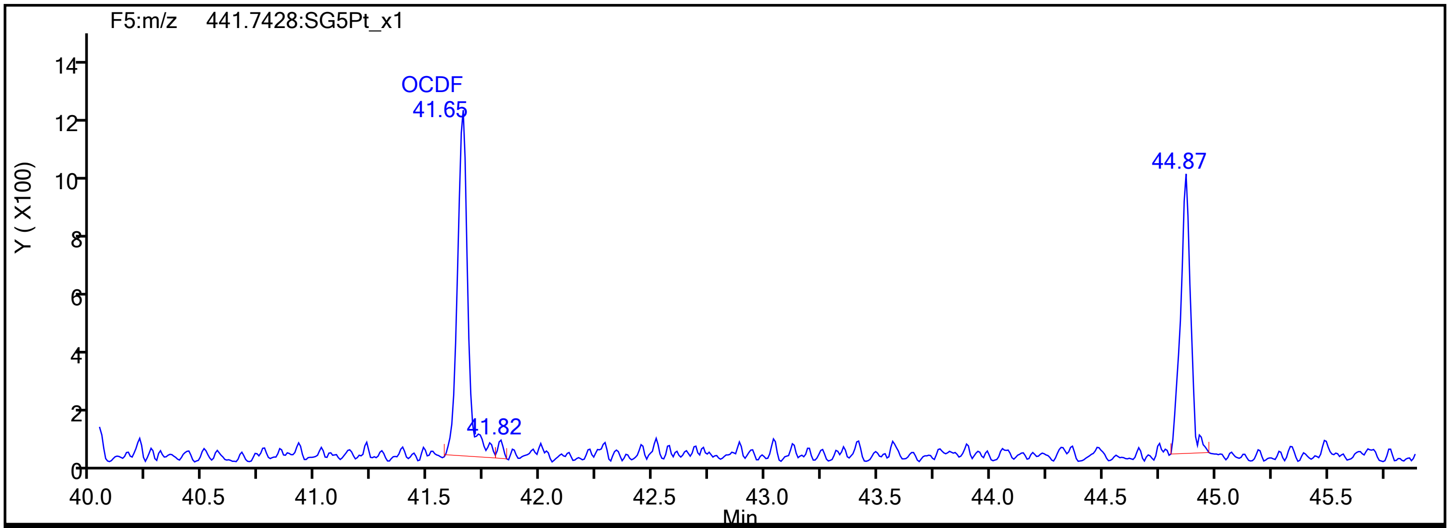

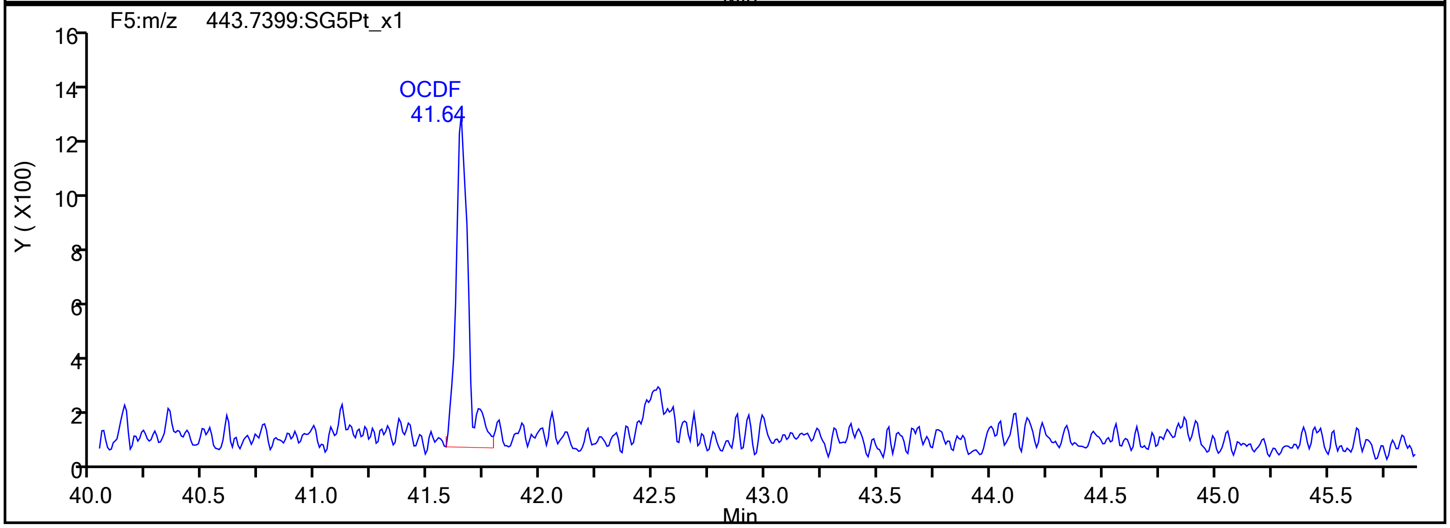

OCDF Interference Mass

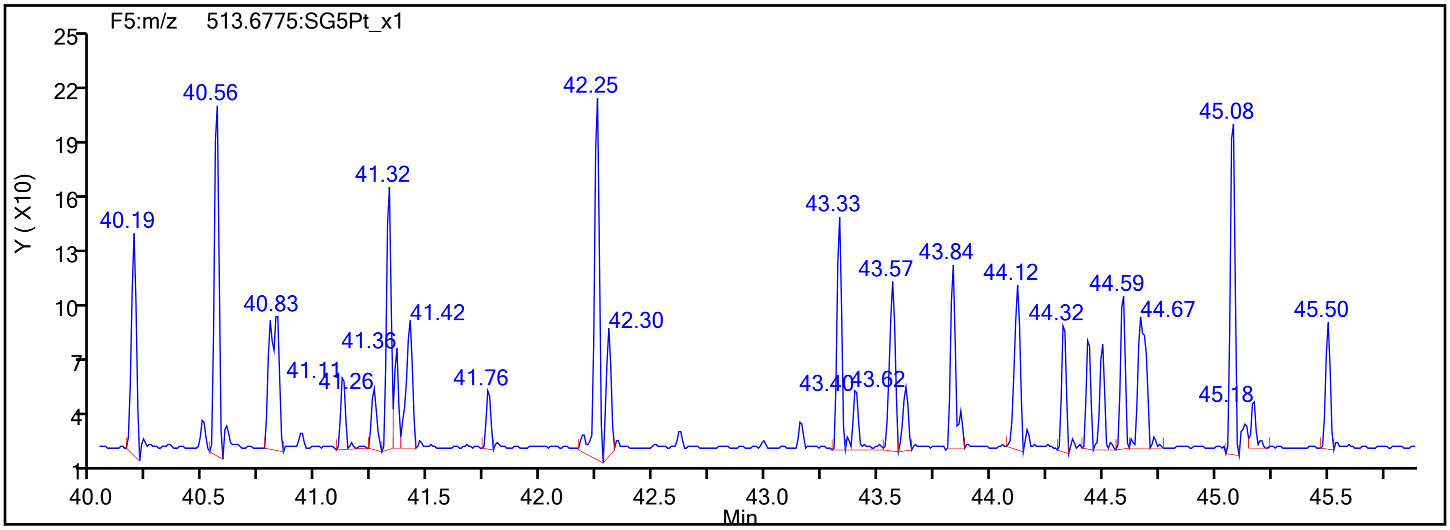

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

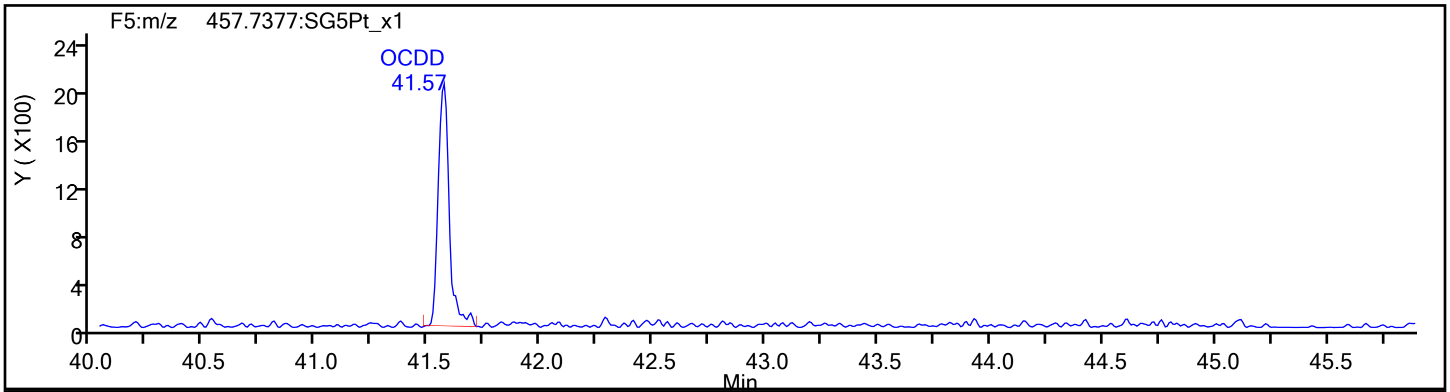

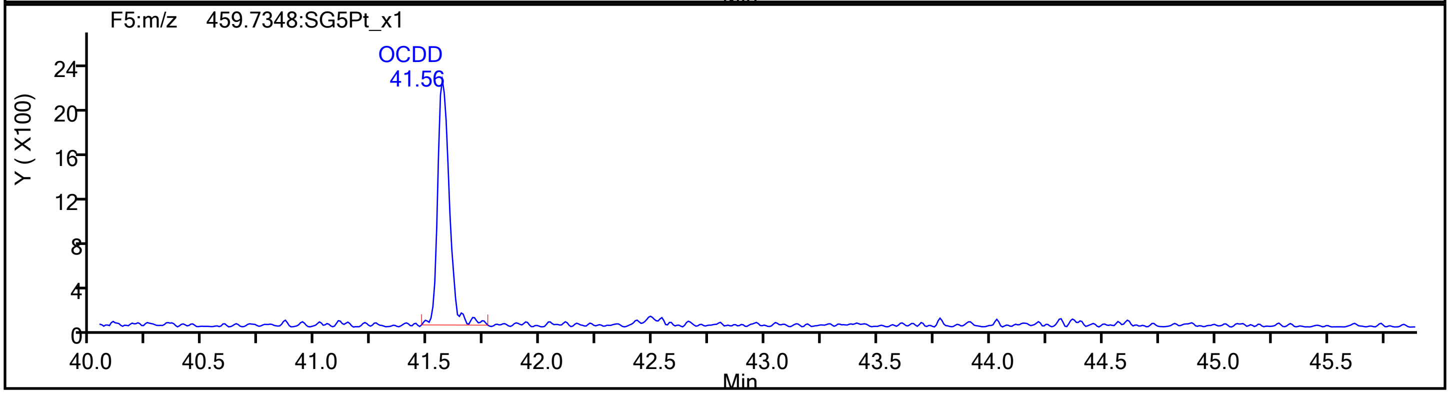

OCDD Standards

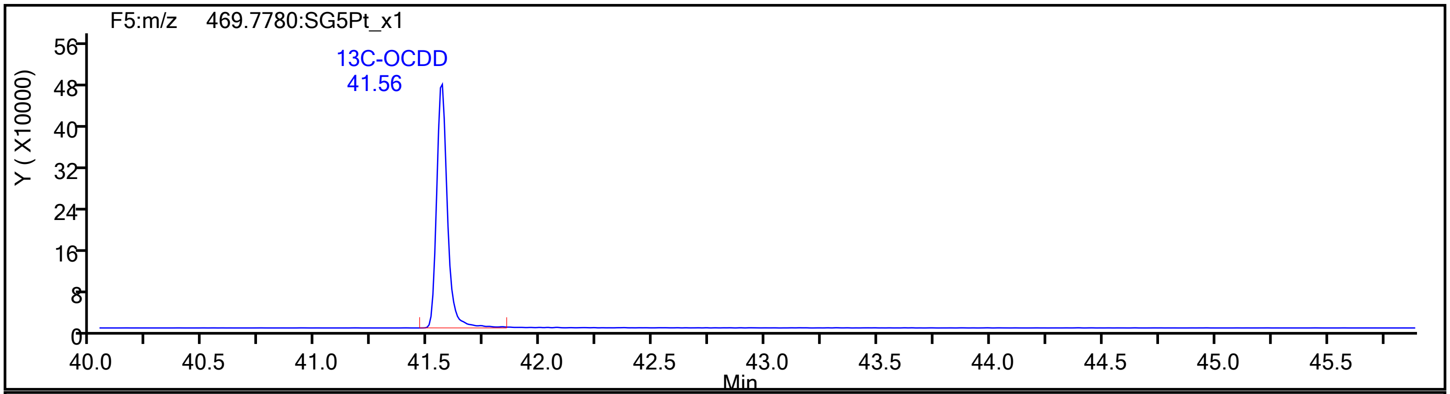

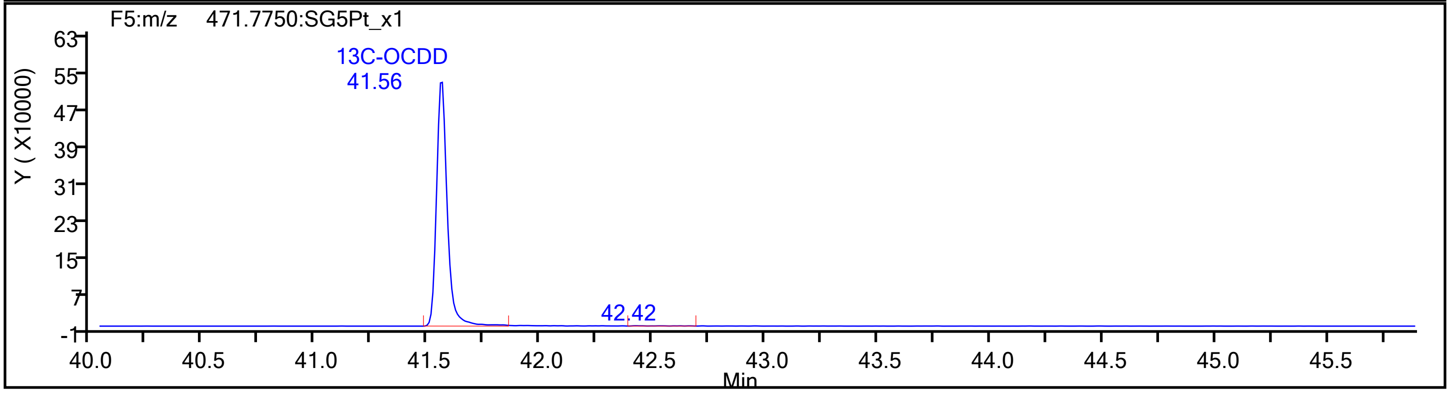

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d

Injection Date: 21-Sep-2020 14:13:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 414413 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

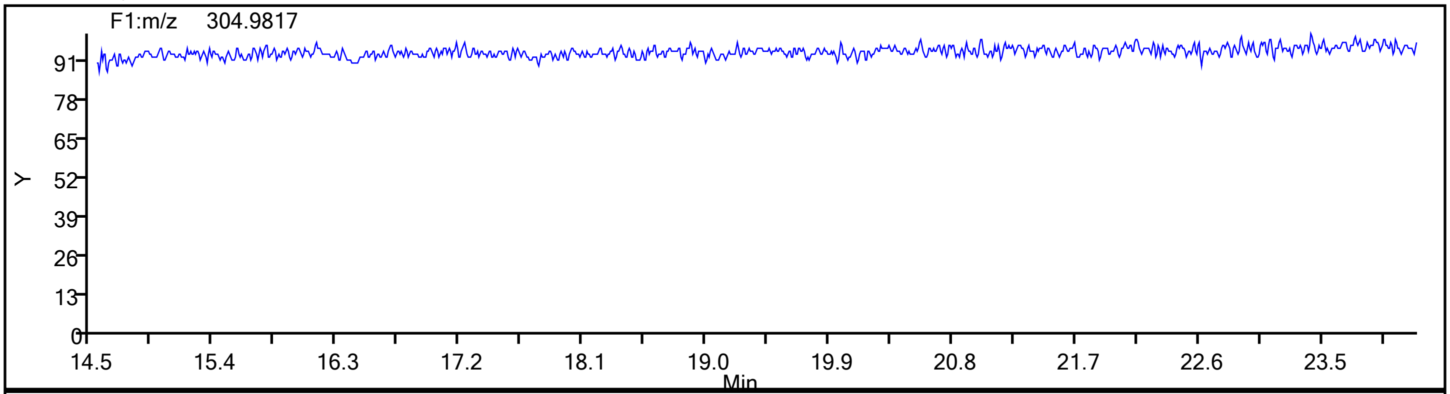

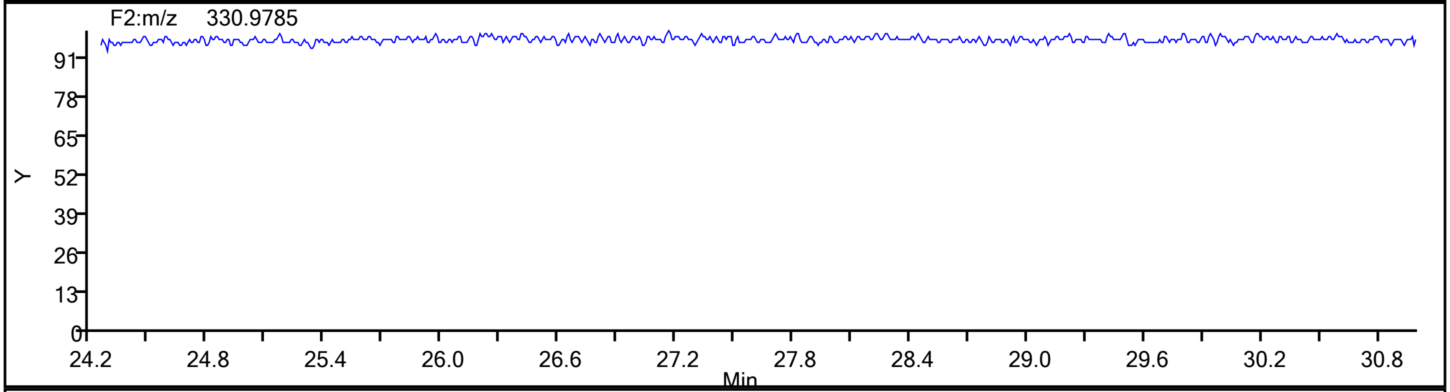

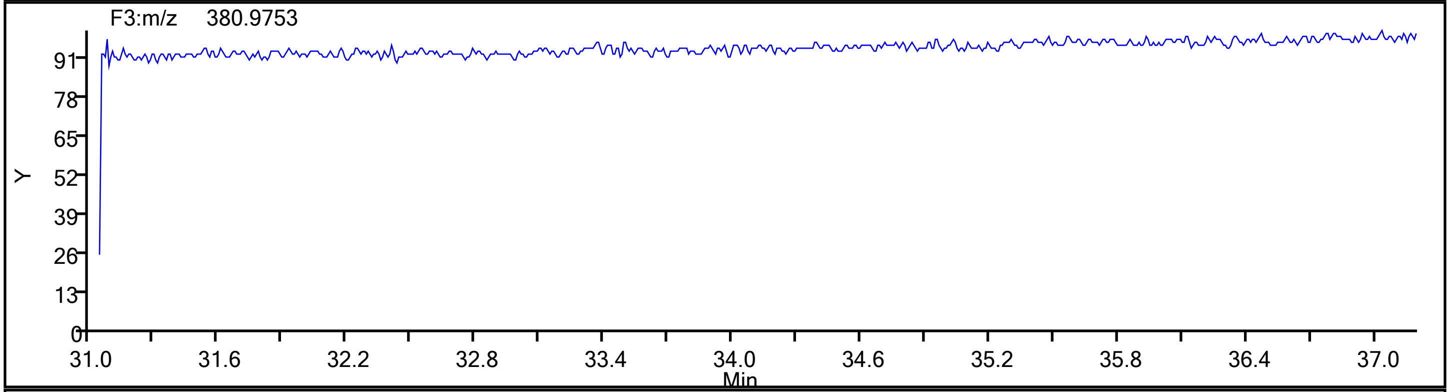

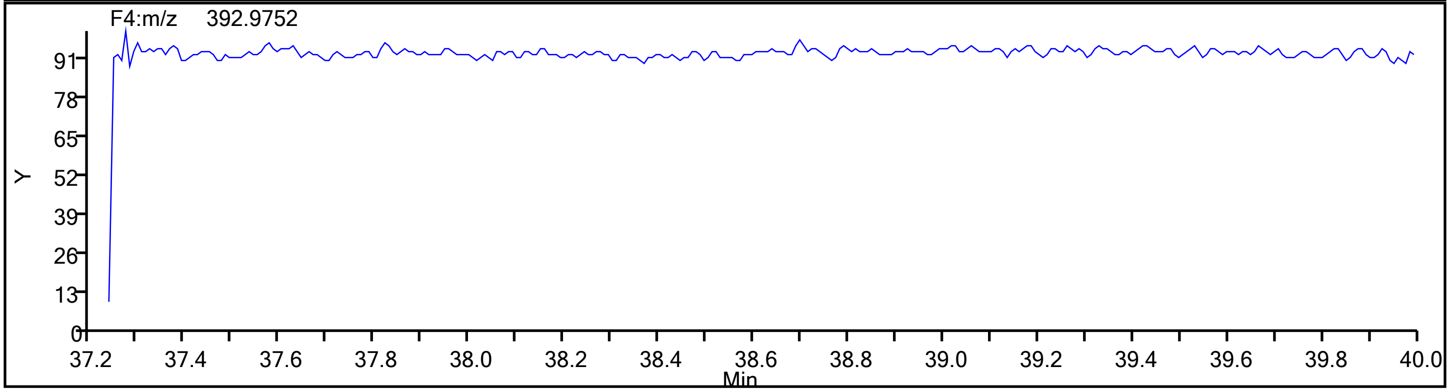

Report Date: 23-Sep-2020 08:29:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200921-103753.b\21se20dfs1_5.d		
Injection Date:	21-Sep-2020 14:13:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	414413	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

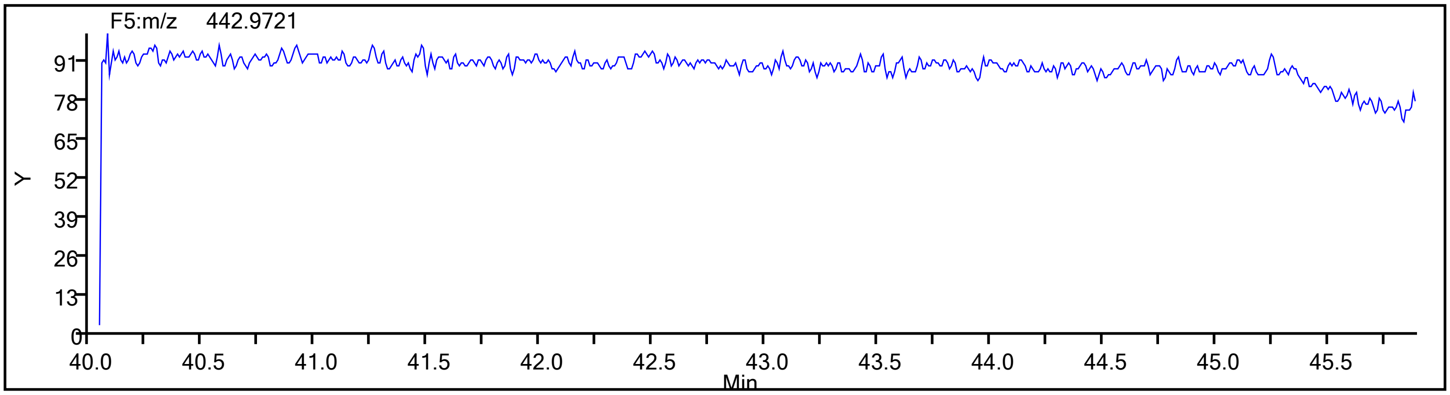

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-407683/2-A

Matrix: Water Lab File ID: 01SE2010D5_4.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 08/28/2020 14:44

Sample wt/vol: 1000(mL) Date Analyzed: 09/01/2020 22:24

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 408767 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	197		10	1.3
51207-31-9	2,3,7,8-TCDF	207		10	1.2
40321-76-4	1,2,3,7,8-PeCDD	987		50	2.5
57117-41-6	1,2,3,7,8-PeCDF	1060		50	4.0
57117-31-4	2,3,4,7,8-PeCDF	1360		50	5.3
39227-28-6	1,2,3,4,7,8-HxCDD	1390		50	7.9
57653-85-7	1,2,3,6,7,8-HxCDD	1070		50	5.9
19408-74-3	1,2,3,7,8,9-HxCDD	1210		50	6.0
70648-26-9	1,2,3,4,7,8-HxCDF	1370		50	11
57117-44-9	1,2,3,6,7,8-HxCDF	1120		50	7.8
72918-21-9	1,2,3,7,8,9-HxCDF	1080		50	6.8
60851-34-5	2,3,4,6,7,8-HxCDF	1070		50	6.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	955		50	5.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	1000		50	9.2
55673-89-7	1,2,3,4,7,8,9-HpCDF	1350		50	16
3268-87-9	OCDD	1940		100	4.3
39001-02-0	OCDF	2080		100	3.8
41903-57-5	Total TCDD	197		10	1.3
30402-14-3	Total TCDF	207		10	1.2
36088-22-9	Total PeCDD	987		50	2.5
30402-15-4	Total PeCDF	2430		50	4.7
34465-46-8	Total HxCDD	3670		50	6.6
55684-94-1	Total HxCDF	4640		50	7.9
37871-00-4	Total HpCDD	955		50	5.8
38998-75-3	Total HpCDF	2360		50	13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-407683/2-A
Matrix: Water	Lab File ID: 01SE2010D5_4.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 08/28/2020 14:44
Sample wt/vol: 1000(mL)	Date Analyzed: 09/01/2020 22:24
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 408767	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		20-175
89059-46-1	13C-2,3,7,8-TCDF	83		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	75		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	73		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	57		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	68		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	79		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	88		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	89		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	98		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	94		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	72		20-186
114423-97-1	13C-OCDD	96		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		31-191

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d
Lims ID: LCS 320-407683/2-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Sep-2020 22:24:31 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-407683/2-A LCS 320-407683/2-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 08:45:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 08:46:18

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.065	18483312	0.79	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.536	21095536	0.75	1.3726	83.2	83.2	0.1869	0.1869	83.15	
2,3,7,8-TCDF	17.566	1986821	0.74	0.9104	10.3	10.3	0.0585	0.0585	103	
A Non-2,3,7,8-sub-TCDF	17.234						0.0585	0.0585		
S Total TCDF					10.3	10.3	0.0585	0.0585		
D 13C-2,3,7,8-TCDD	18.262	15110682	0.76	1.0192	80.2	80.2	0.1996	0.1996	80.21	
2,3,7,8-TCDD	18.292	1602261	0.77	1.0745	9.869	9.869	0.0654	0.0654	98.69	
$ 37Cl4-2,3,7,8-TCDD	18.277	7354302		1.0176	39.1	39.1	0.0676	0.0676	97.75	
A Non-2,3,7,8-sub-TCDD	17.695						0.0654	0.0654		
S Total TCDD					9.869	9.869	0.0654	0.0654		
D 13C-1,2,3,7,8-PeCDF	22.696	15513119	1.55	1.1429	73.4	73.4	0.1716	0.1716	73.44	
1,2,3,7,8-PeCDF	22.724	8183221	1.54	0.9938	53.1	53.1	0.2000	0.2000	106	
D 13C-2,3,4,7,8-PeCDF	24.074	14821057	1.57	1.3997	57.3	57.3	0.1401	0.1401	57.29	
2,3,4,7,8-PeCDF	24.101	8157627	1.57	0.8117	67.8	67.8	0.2669	0.2669	136	
A F1 PeCDFs	20.091						0.0691	0.0691		
A Non-2,3,7,8-sub-PeCDF	23.332	64541	1.55	0.9028	0.5366	0.4714	0.2297	0.4714	0.00	RQ
S Total PeCDF					121.4	121.4	0.2335	0.2335		RQ
D 13C-1,2,3,7,8-PeCDD	24.824	11418669	1.55	0.8232	75.0	75.0	0.1291	0.1291	75.05	
1,2,3,7,8-PeCDD	24.837	5739813	1.57	1.0181	49.4	49.4	0.1260	0.1260	98.75	
A Non-2,3,7,8-sub-PeCDD	23.699						0.1260	0.1260		
S Total PeCDD					49.4	49.4	0.1260	0.1260		
D 13C-1,2,3,4,7,8-HxCDF	30.822	10307378	0.52	1.1388	68.1	68.1	0.4547	0.4547	68.06	
1,2,3,4,7,8-HxCDF	30.835	5677185	1.24	0.8061	68.3	68.3	0.5326	0.5326	137	
D 13C-1,2,3,6,7,8-HxCDF	30.982	11403431	0.51	1.0803	79.4	79.4	0.4793	0.4793	79.38	
1,2,3,6,7,8-HxCDF	31.008	6242173	1.23	0.9818	55.8	55.8	0.3915	0.3915	112	
D 13C-2,3,4,6,7,8-HxCDF	31.740	11225511	0.50	0.9494	88.9	88.9	0.5454	0.5454	88.91	
2,3,4,6,7,8-HxCDF	31.753	6259934	1.22	1.0382	53.7	53.7	0.3063	0.3063	107	
D 13C-1,2,3,7,8,9-HxCDF	32.499	10191077	0.50	0.8670	88.4	88.4	0.5973	0.5973	88.39	
1,2,3,7,8,9-HxCDF	32.512	5688255	1.24	1.0321	54.1	54.1	0.3410	0.3410	108	
A Non-2,3,7,8-sub-HxCDF	30.522						0.3799	0.3799		
S Total HxCDF					231.9	231.9	0.3929	0.3929		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.326	13298094	1.26	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.913	8002203	1.22	0.9356	64.3	64.3	0.3562	0.3562	64.32	
1,2,3,4,7,8-HxCDD	31.927	4548783	1.24	0.8202	69.3	69.3	0.3939	0.3939	139	
D 13C-1,2,3,6,7,8-HxCDD	32.020	10391985	1.27	1.0416	75.0	75.0	0.3200	0.3200	75.03	
1,2,3,6,7,8-HxCDD	32.033	5206361	1.28	0.9367	53.5	53.5	0.2932	0.2932	107	
1,2,3,7,8,9-HxCDD	32.339	5533465	1.24	0.9905	60.7	60.7	0.2998	0.2998	121	
A Non-2,3,7,8-sub-HxCDD	31.201						0.3242	0.3242		
S Total HxCDD					183.5	183.5	0.3290	0.3290		
D 13C-1,2,3,4,6,7,8-HpCDF	33.885	9838460	0.45	0.7899	93.7	93.7	1.007	1.007	93.66	
1,2,3,4,6,7,8-HpCDF	33.897	7177813	1.04	1.4527	50.2	50.2	0.4610	0.4610	100	
D 13C-1,2,3,4,7,8,9-HpCDF	34.966	8701605	0.41	0.9093	72.0	72.0	0.8744	0.8744	71.96	
1,2,3,4,7,8,9-HpCDF	34.978	6227420	1.04	1.0585	67.6	67.6	0.8227	0.8227	135	
A Non-2,3,7,8-sub-HpCDF	34.425						0.6030	0.6030		
S Total HpCDF					117.8	117.8	0.6419	0.6419		
D 13C-1,2,3,4,6,7,8-HpCDD	34.674	9938155	1.06	0.7637	97.9	97.9	0.6335	0.6335	97.86	
1,2,3,4,6,7,8-HpCDD	34.687	5001189	1.05	1.0540	47.7	47.7	0.2884	0.2884	95.49	
A Non-2,3,7,8-sub-HpCDD	35.325						0.2884	0.2884		
S Total HpCDD					47.7	47.7	0.2884	0.2884		
D 13C-OCDD	37.018	16258590	0.89	0.6377	191.7	191.7	0.3271	0.3271	95.86	
OCDF	37.113	10965101	0.89	1.2965	104.0	104.0	0.1877	0.1877	104	
OCDD	37.030	9055510	0.89	1.1499	96.9	96.9	0.2138	0.2138	96.87	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d
Lims ID: LCS 320-407683/2-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Sep-2020 22:24:31 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-407683/2-A LCS 320-407683/2-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 08:45:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 08:46:18

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.065	18.065	0		8160393	2000163	2236	5590	895		
333.9339	18.065	18.065	0		10322919	2630230	1532	3830	1717	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.536	17.536	0	0.971	9030288	2155451	3032	7580	711		
317.9389	17.536	17.536	0	0.971	12065248	2924814	1720	4300	1700	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.566	17.551	1	1.002	845991	212846	406	1015	524		
305.8987	17.551	17.551	0	1.001	1140830	273236	676	1690	404	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						406	1015			
305.8987	17.234						676	1690			
13C-2,3,7,8-TCDD											
331.9368	18.262	18.262	0	1.011	6549102	1501625	2236	5590	672		
333.9339	18.262	18.262	0	1.011	8561580	1982936	1532	3830	1294	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.292	18.277	1	1.002	699199	158226	544	1360	291		
321.8936	18.277	18.277	0	1.001	903062	206361	435	1087	474	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.277	18.277	0	1.012	7354302	1676614	1275	3187	1315		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.695						544	1360			
321.8936	17.695						435	1087			
13C-1,2,3,7,8-PeCDF											
351.9000	22.696	22.696	0	1.256	9421343	1596622	2268	5670	704		
353.8970	22.696	22.696	0	1.256	6091776	1000138	1364	3410	733	1.55(1.32-1.78)	

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.724	22.710	1	1.001	4963797	851091	1085	2712	784		
341.8567	22.710	22.710	0	1.001	3219424	536339	980	2450	547	1.54(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	24.074	24.074	0	1.333	9064377	1468054	2268	5670	647		
353.8970	24.074	24.074	0	1.333	5756680	914328	1364	3410	670	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	24.101	24.101	0	1.001	4985124	800268	1085	2712	738		
341.8567	24.101	24.101	0	1.001	3172503	514749	980	2450	525	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	20.091						224	560			
341.8567	20.091						397	992			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	23.256	23.332	-5	1.025	39231	6735	1085	2712	6		
341.8567	23.256	23.332	-5	1.025	34239	4660	980	2450	5	1.15(1.32-1.78)	
	Empc Correction				25310	4345	980	2450	4		
13C-1,2,3,7,8-PeCDD											
367.8949	24.824	24.810	1	1.374	6946820	1024581	1166	2915	879		
369.8919	24.810	24.810	0	1.373	4471849	672006	803	2007	837	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.837	24.837	0	1.001	3508963	521140	524	1310	995		
357.8516	24.851	24.837	1	1.001	2230850	337339	347	867	972	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.699						524	1310			
357.8516	23.699						347	867			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.822	30.809	1	0.953	3515052	733298	3093	7732	237		
385.8610	30.822	30.809	1	0.953	6792326	1455913	4286	10715	340	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.835	30.835	0	1.000	3144890	666412	1986	4965	336		
375.8178	30.835	30.835	0	1.000	2532295	543901	1774	4435	307	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.982	30.982	0	0.958	3838838	831367	3093	7732	269		
385.8610	30.982	30.982	0	0.958	7564593	1613902	4286	10715	377	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	31.008	30.995	1	1.001	3439656	750062	1986	4965	378		
375.8178	30.995	30.995	0	1.000	2802517	580495	1774	4435	327	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.740	31.740	0	0.982	3721704	991368	3093	7732	321		
385.8610	31.740	31.740	0	0.982	7503807	1964113	4286	10715	458	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.753	31.753	0	1.000	3443753	906221	1986	4965	456		
375.8178	31.753	31.753	0	1.000	2816181	756232	1774	4435	426	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.499	32.499	0	1.005	3413154	865262	3093	7732	280		
385.8610	32.499	32.499	0	1.005	6777923	1805776	4286	10715	421	0.50(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.512	32.512	0	1.000	3146638	829987	1986	4965	418		
375.8178	32.512	32.512	0	1.000	2541617	679965	1774	4435	383	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						1986	4965			
375.8178	30.522						1774	4435			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.326	32.326	0		7414726	2010648	2543	6357	791		
403.8529	32.326	32.326	0		5883368	1551682	2206	5515	703	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.913	31.913	0	0.987	4404786	1296530	2543	6357	510		
403.8529	31.913	31.913	0	0.987	3597417	1040019	2206	5515	471	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.927	31.927	0	1.000	2519247	745213	1615	4037	461		
391.8127	31.927	31.927	0	1.000	2029536	596446	1405	3512	425	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	32.020	32.006	1	0.991	5814238	1552279	2543	6357	610		
403.8529	32.020	32.006	1	0.991	4577747	1196448	2206	5515	542	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	32.033	32.020	1	1.000	2923225	762461	1615	4037	472		
391.8127	32.033	32.020	1	1.000	2283136	594136	1405	3512	423	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.339	32.339	0	1.013	3058838	808512	1615	4037	501		
391.8127	32.339	32.339	0	1.013	2474627	646285	1405	3512	460	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.201						1615	4037			
391.8127	31.201						1405	3512			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.885	33.873	1	1.048	3029872	995683	3416	8540	291		
419.8220	33.885	33.873	1	1.048	6808588	2291998	7913	19782	290	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.897	33.885	1	1.000	3651032	1194005	4821	12052	248		
409.7789	33.897	33.885	1	1.000	3526781	1134565	3987	9967	285	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.966	34.954	1	1.082	2549280	758957	3416	8540	222		
419.8220	34.966	34.954	1	1.082	6152325	1769639	7913	19782	224	0.41(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.978	34.966	1	1.000	3169670	919591	4821	12052	191		
409.7789	34.966	34.966	0	1.000	3057750	894993	3987	9967	224	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						4821	12052			
409.7789	34.425						3987	9967			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.674	34.662	1	1.073	5120476	1492863	3247	8117	460		
437.8140	34.674	34.662	1	1.073	4817679	1405124	3647	9117	385	1.06(0.88-1.20)	

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.687	34.674	1	1.000	2565868	742962	1921	4802	387		
425.7737	34.674	34.674	0	1.000	2435321	709155	1603	4007	442	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.325						1921	4802			
425.7737	35.325						1603	4007			
13C-OCDD											
469.7779	37.018	37.006	1	1.145	7640325	1936407	1856	4640	1043		
471.7750	37.018	37.006	1	1.145	8618265	2073712	1117	2792	1857	0.89(0.76-1.02)	
OCDF											
441.7428	37.113	37.113	0	1.003	5172867	1308530	910	2275	1438		
443.7399	37.113	37.113	0	1.003	5792234	1497263	1042	2605	1437	0.89(0.76-1.02)	
OCDD											
457.7377	37.030	37.018	1	1.000	4273666	1050230	789	1972	1331		
459.7348	37.018	37.018	0	1.000	4781844	1159754	1183	2957	980	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d		
Lims ID:	LCS 320-407683/2-A		
Client ID:			
Inject. Date:	01-Sep-2020 22:24:31	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	408767	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDF, RT: 23.332

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.994	D 13C-1,2,3,7,8-PeCDF	100.000	15513119	2596760
2,3,4,7,8-PeCDF	0.812	D 13C-2,3,4,7,8-PeCDF	100.000	14821057	2382382

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.903		100.000	15167088	2489571

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.256	39231	6735	34239	4660	0.5366	1.15	RQ
23.256	39231	6735	25310	4345	0.4714		Empc Correction
Signal Totals:							
	39231	6735	25310	4345			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	73470	11395				1.15	RQ
	64541	11080					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5366 = (73470 * 100.000) / (15167088 * 0.903)
Empc Amount: 0.4714 = (64541 * 100.000) / (15167088 * 0.903)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d
Injection Date: 01-Sep-2020 22:24:31 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

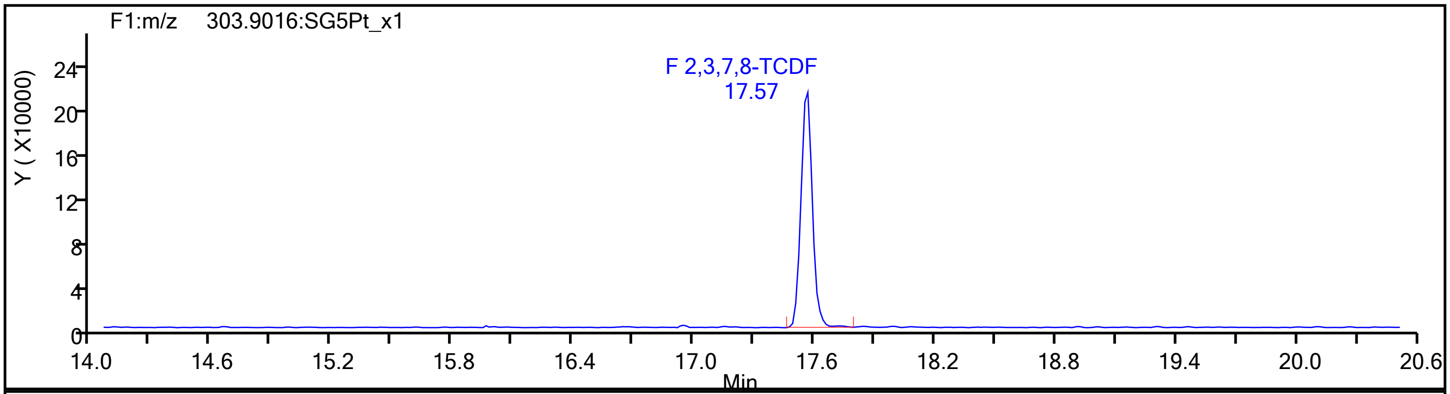

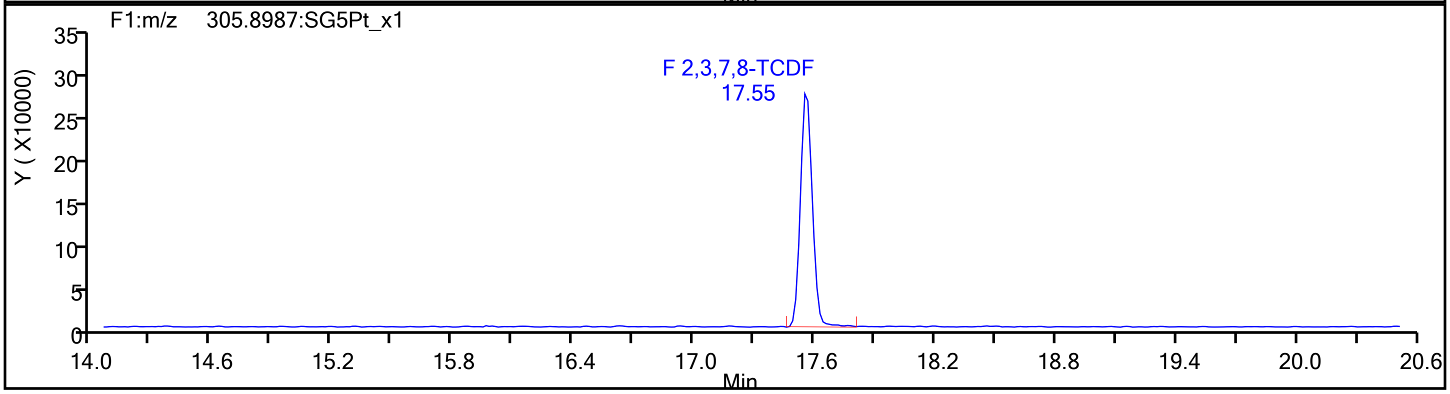

TCDF Standards

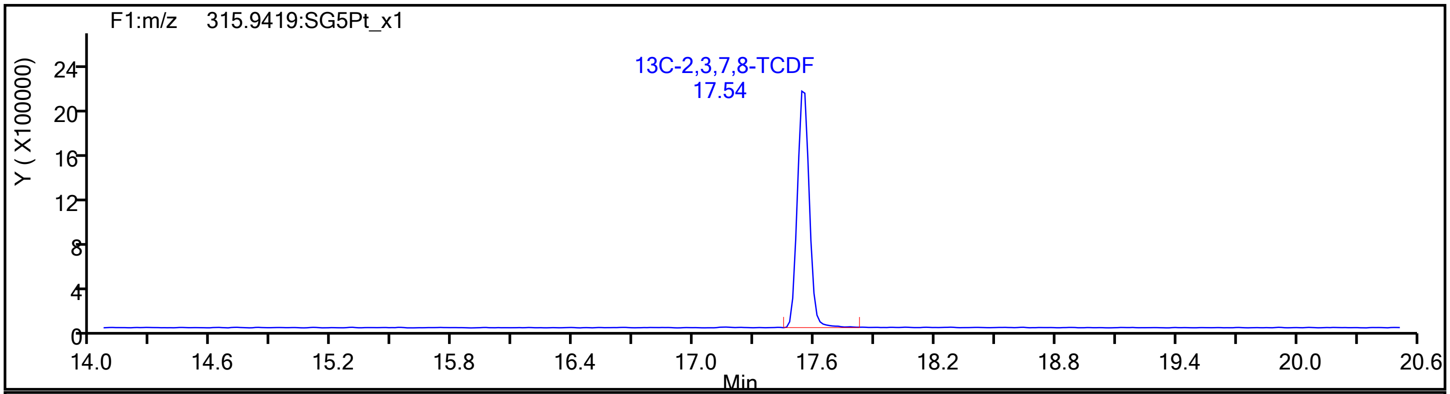

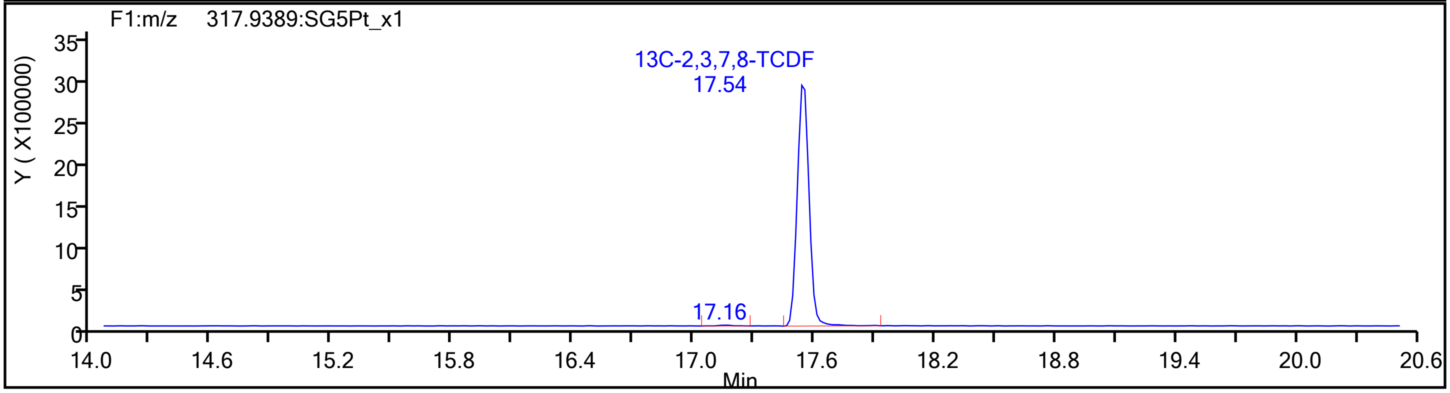

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d		
Injection Date:	01-Sep-2020 22:24:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

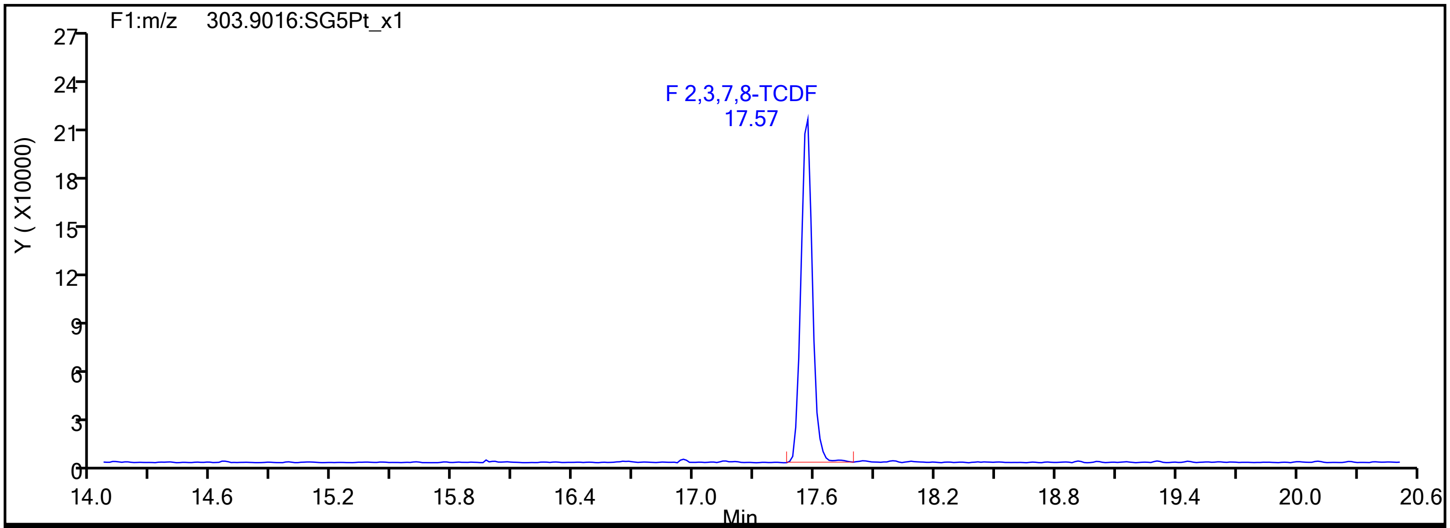

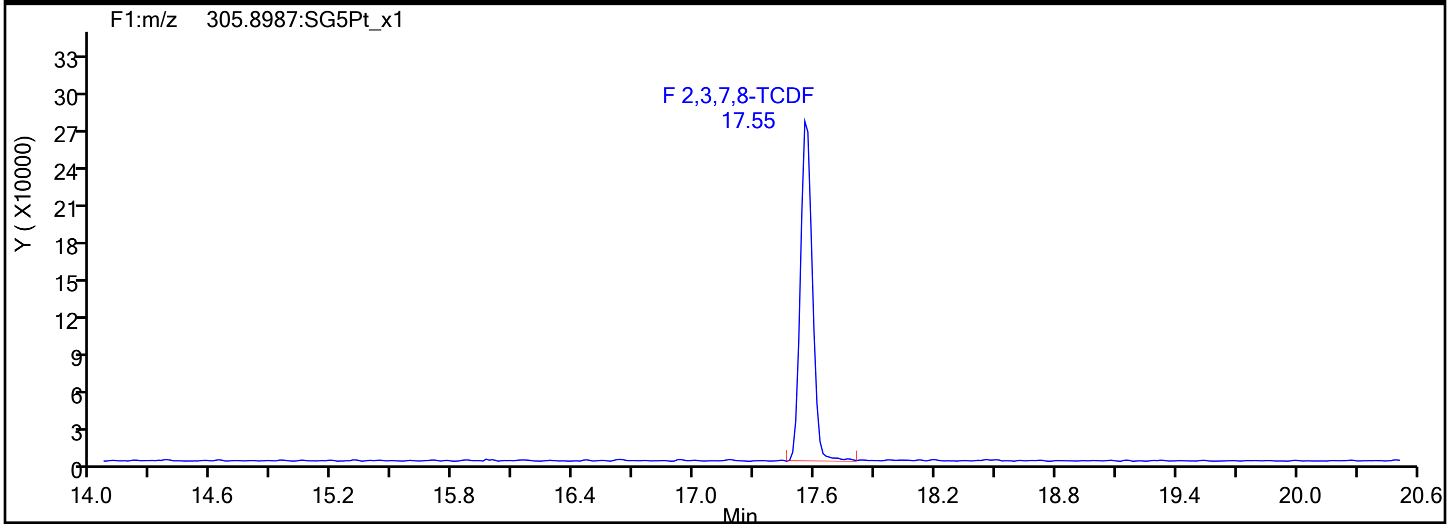

TCDF Interference Mass

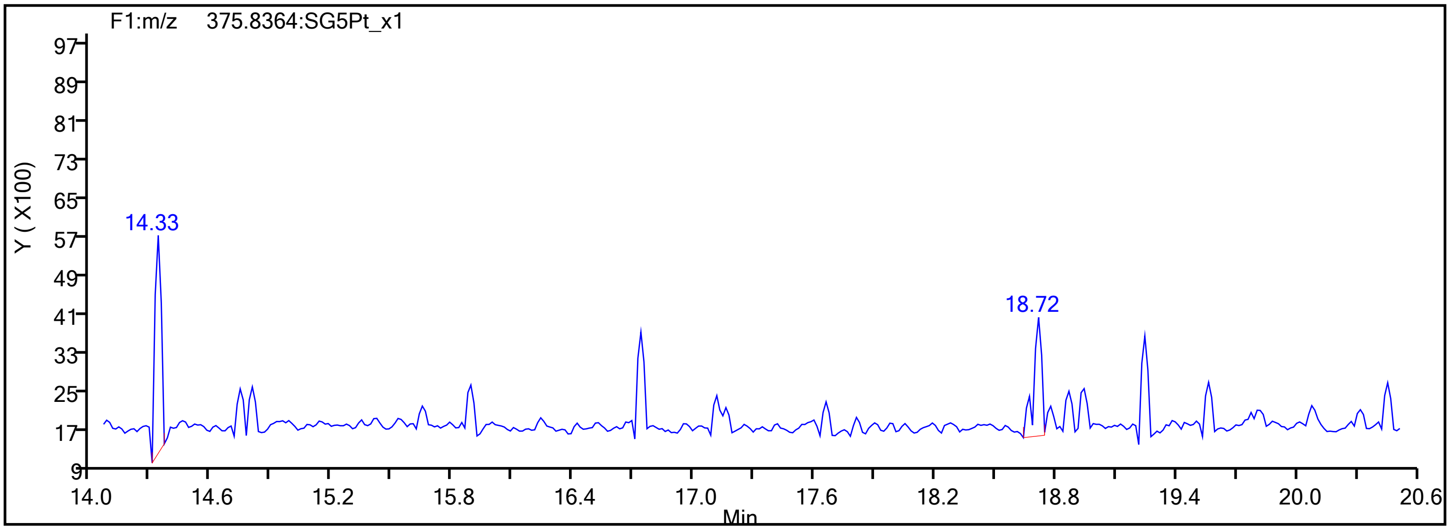

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d
Injection Date: 01-Sep-2020 22:24:31
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

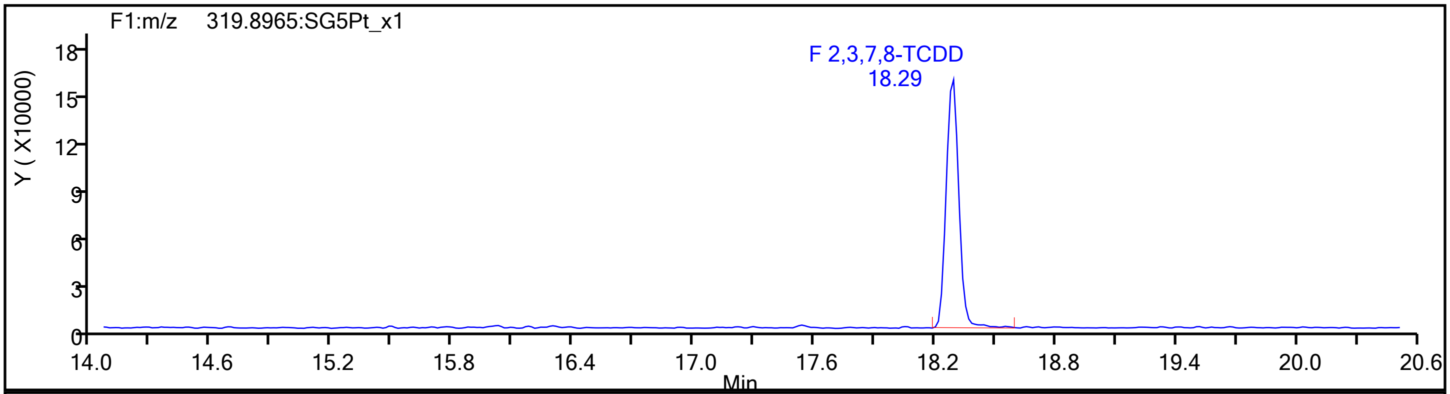

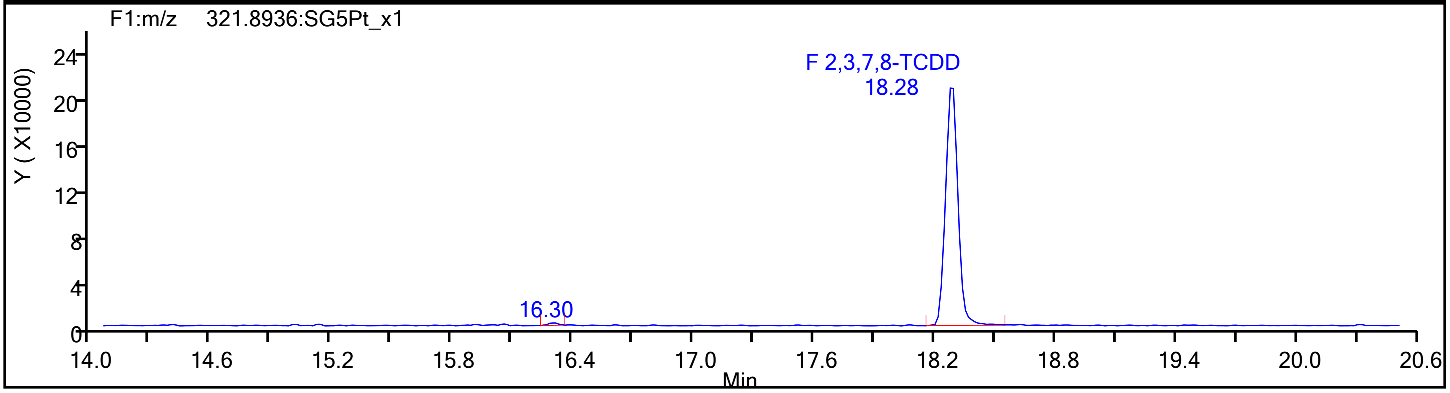

TCDD Standards

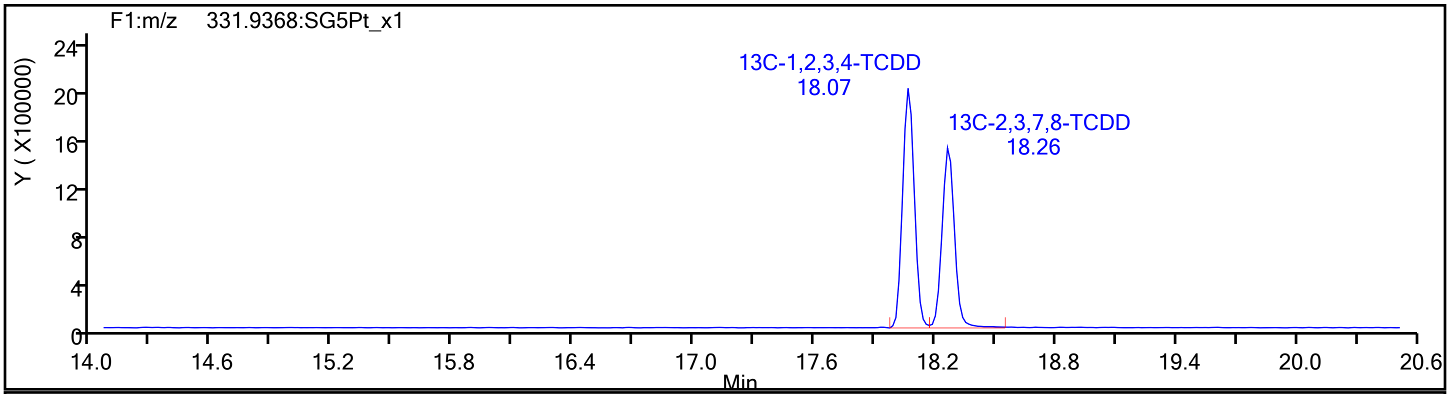

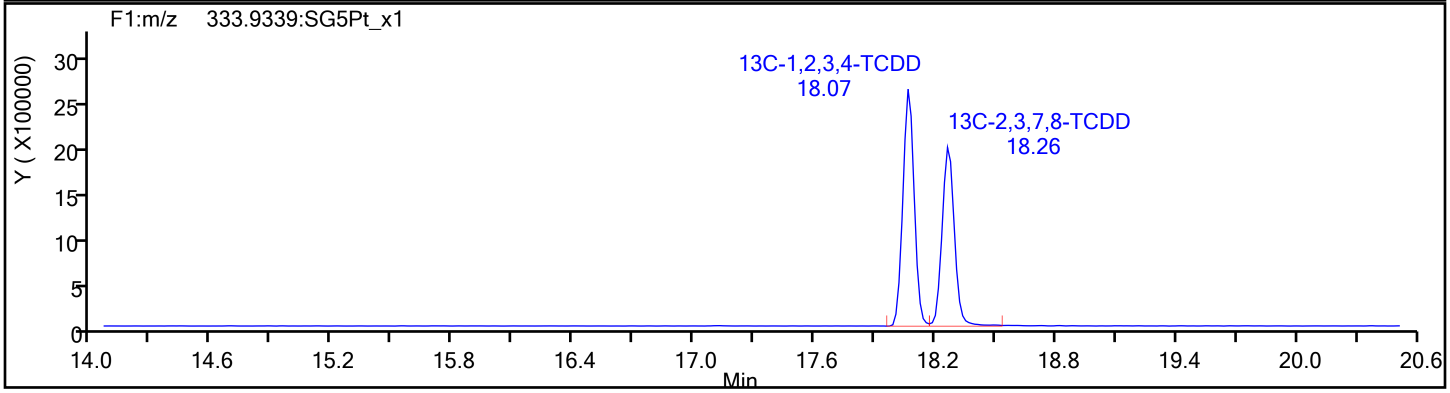

Report Date: 03-Sep-2020 08:46:19
Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d		
Injection Date:	01-Sep-2020 22:24:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

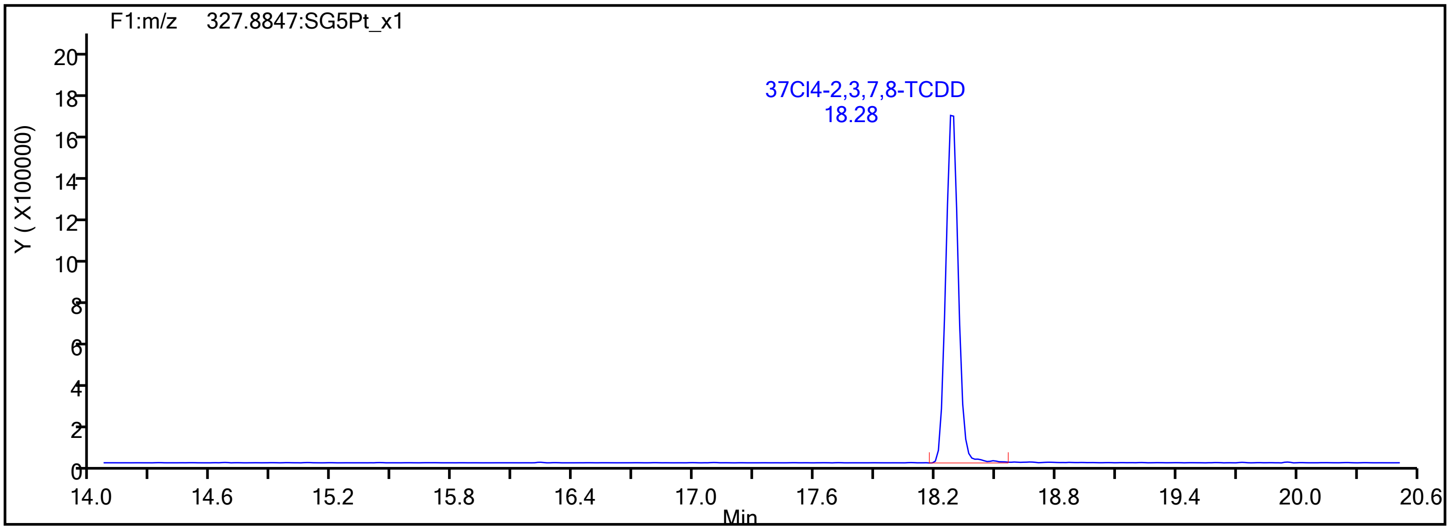

37Cl4-TCDD Standards

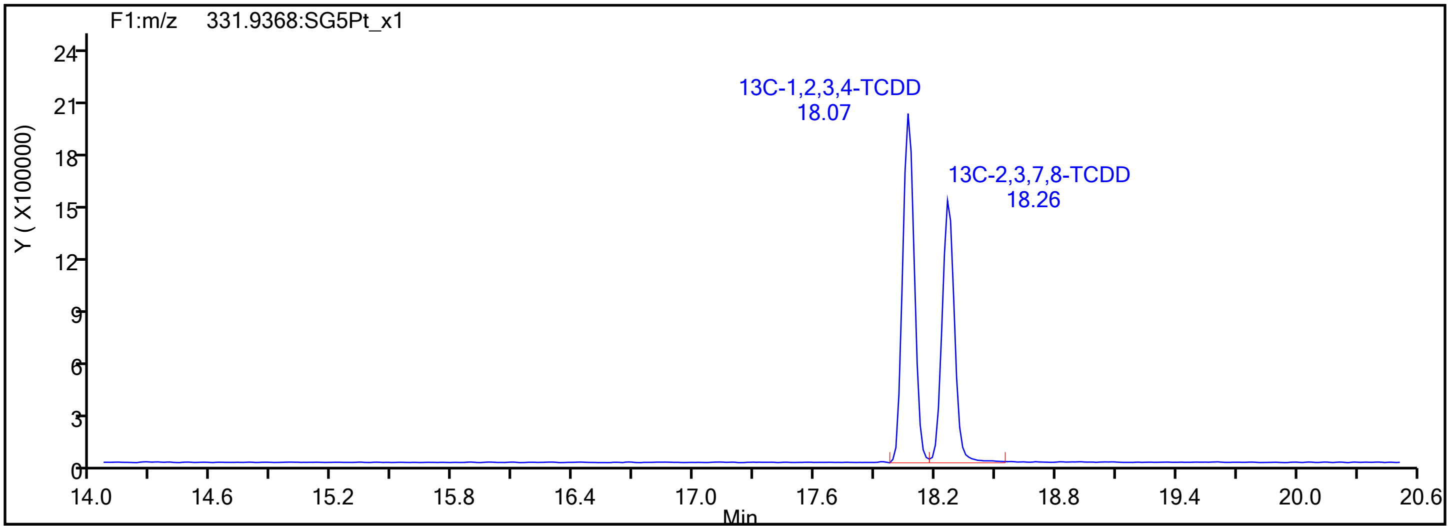

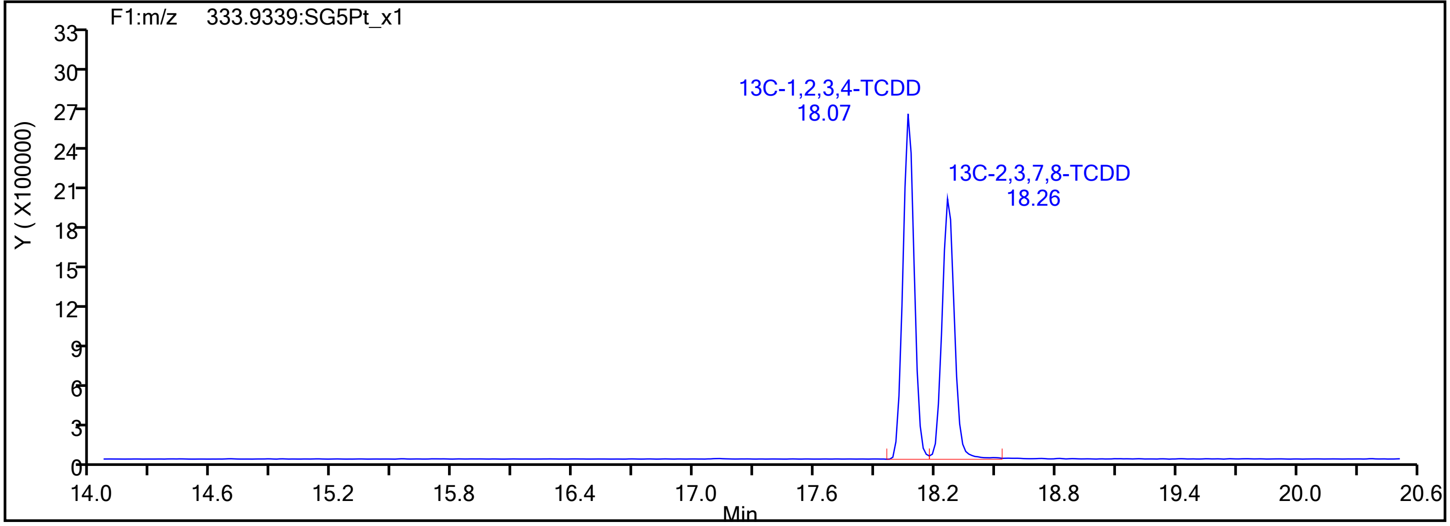

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

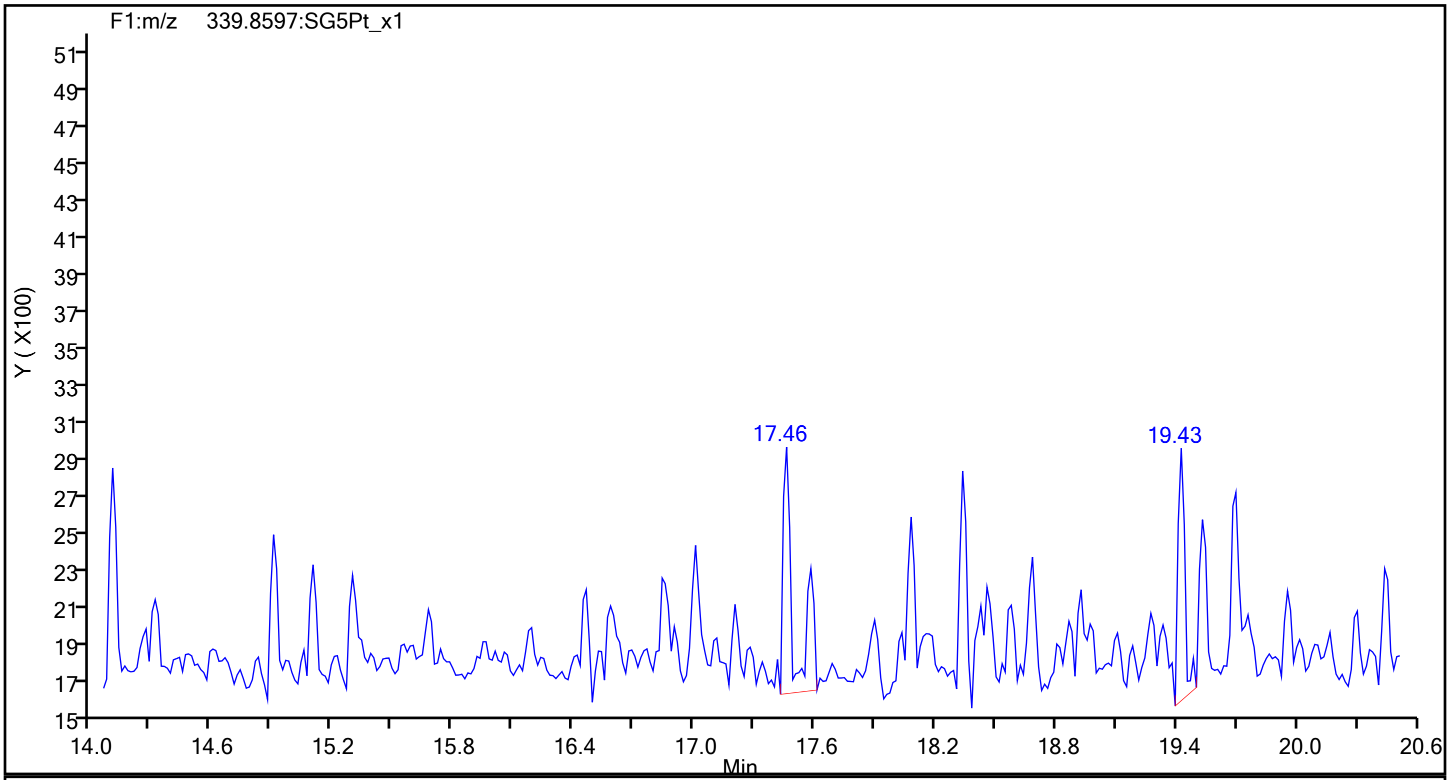

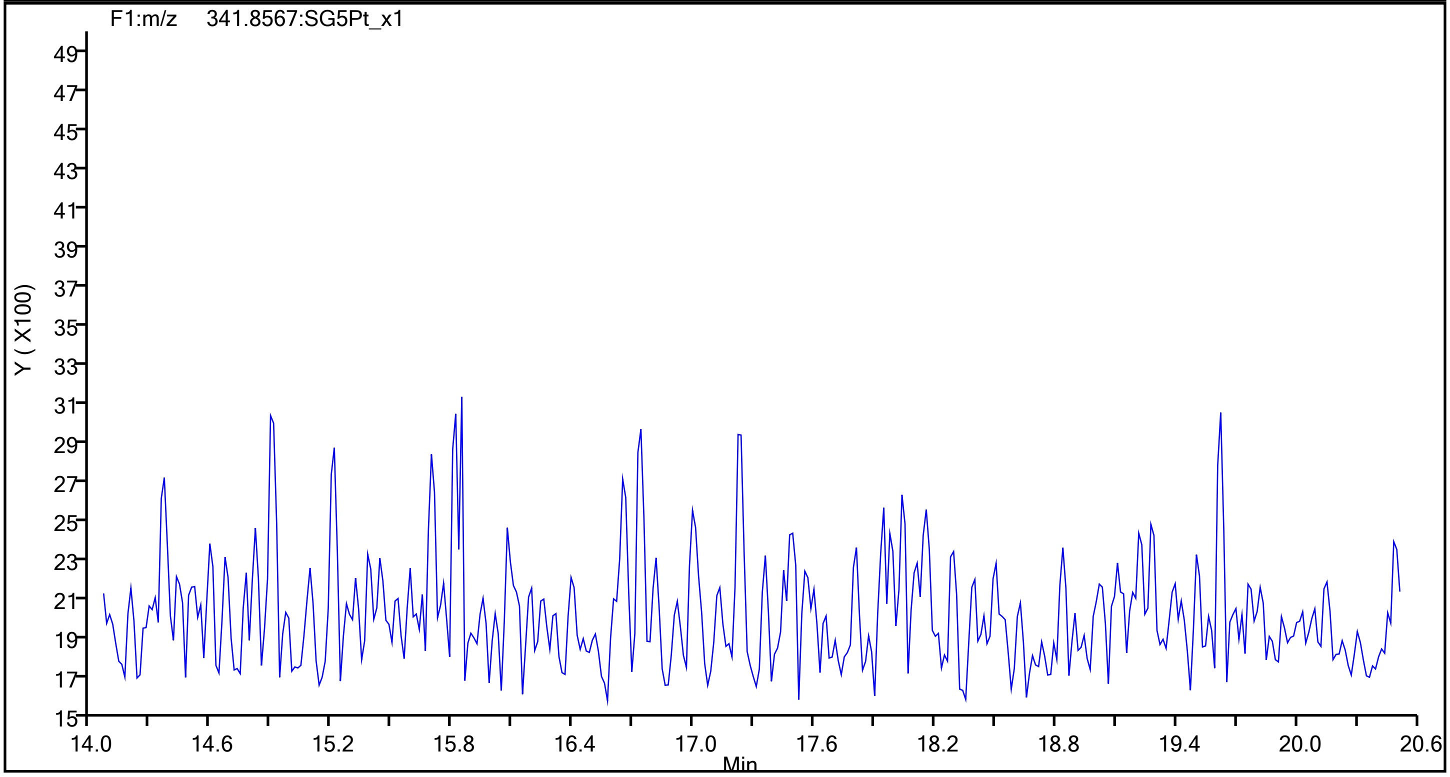

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

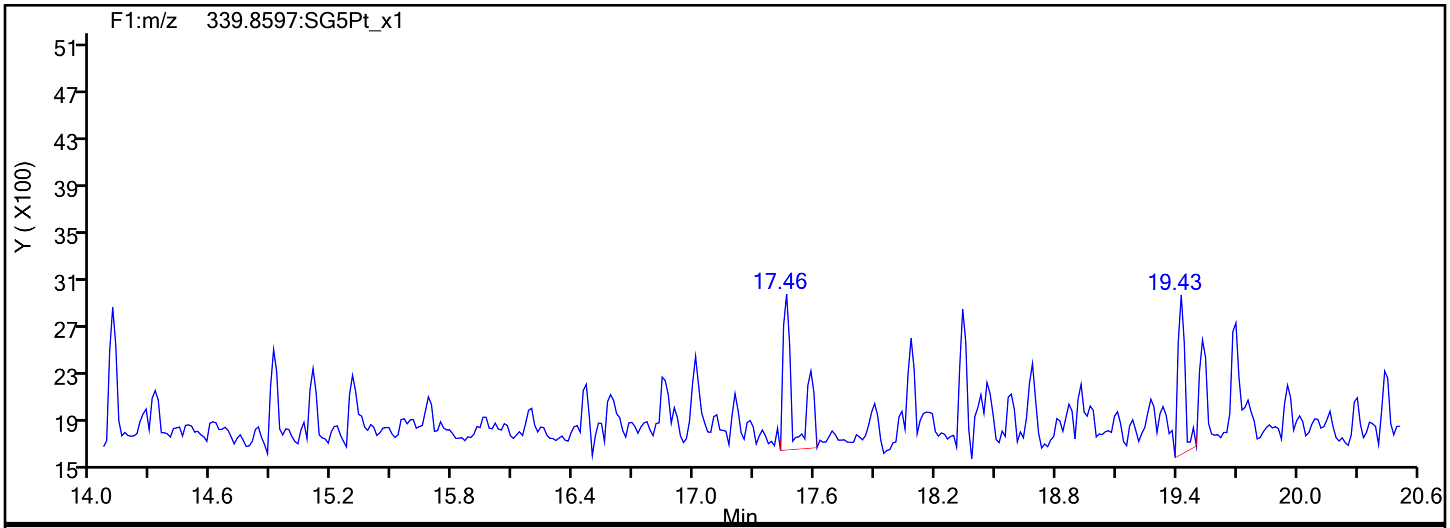

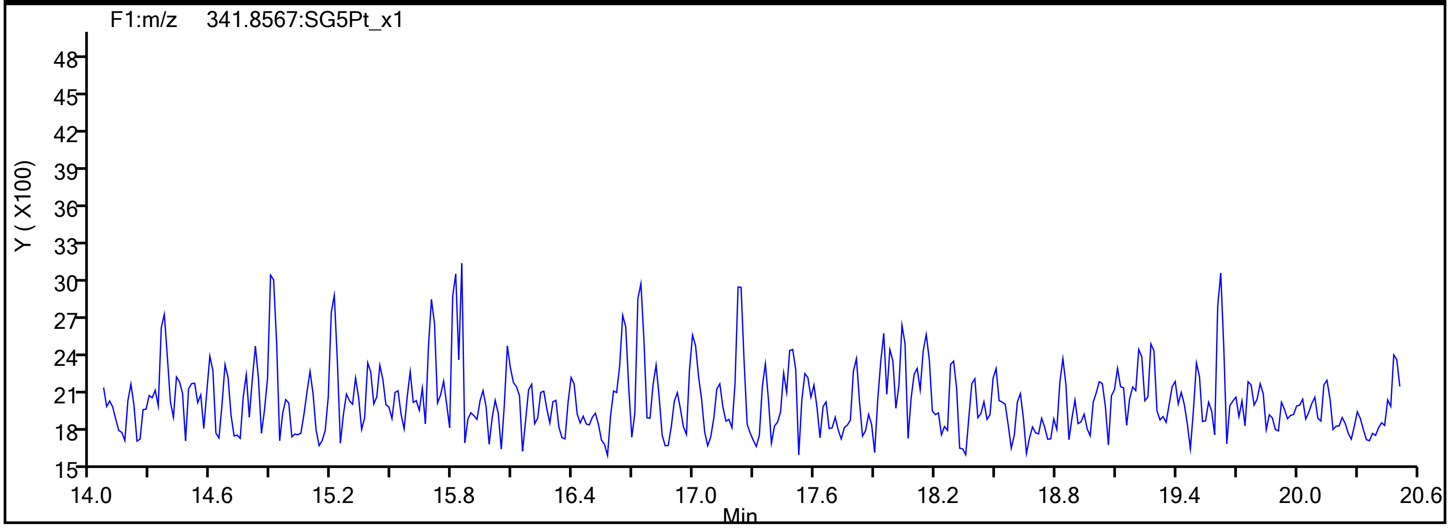

F1 PeCDFs Interference Mass

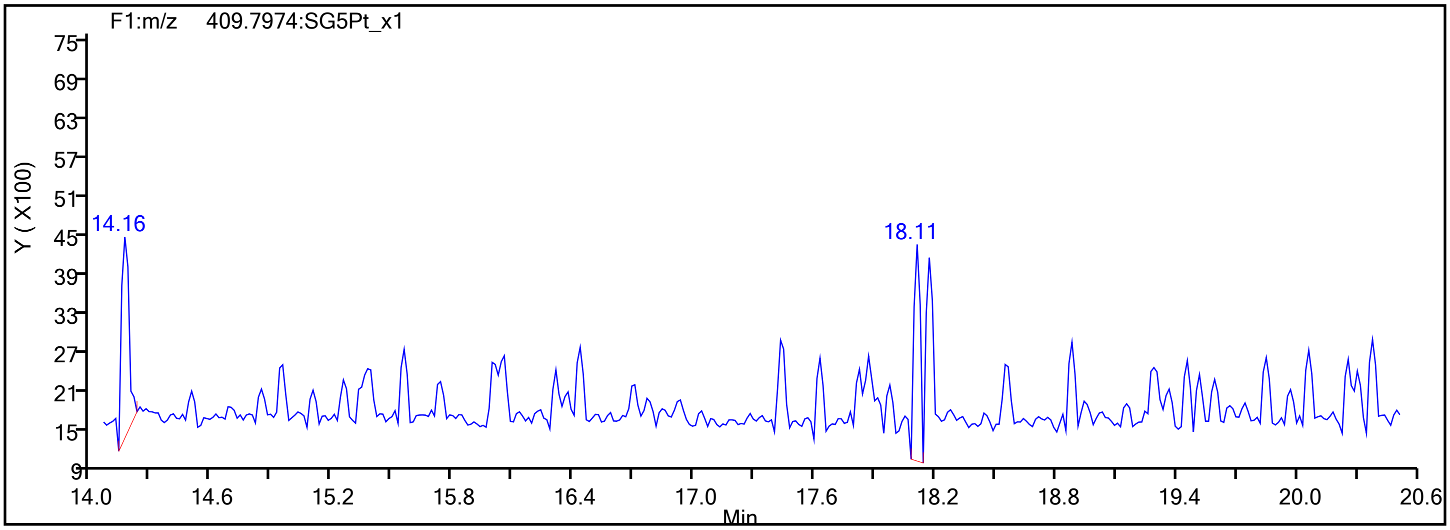

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

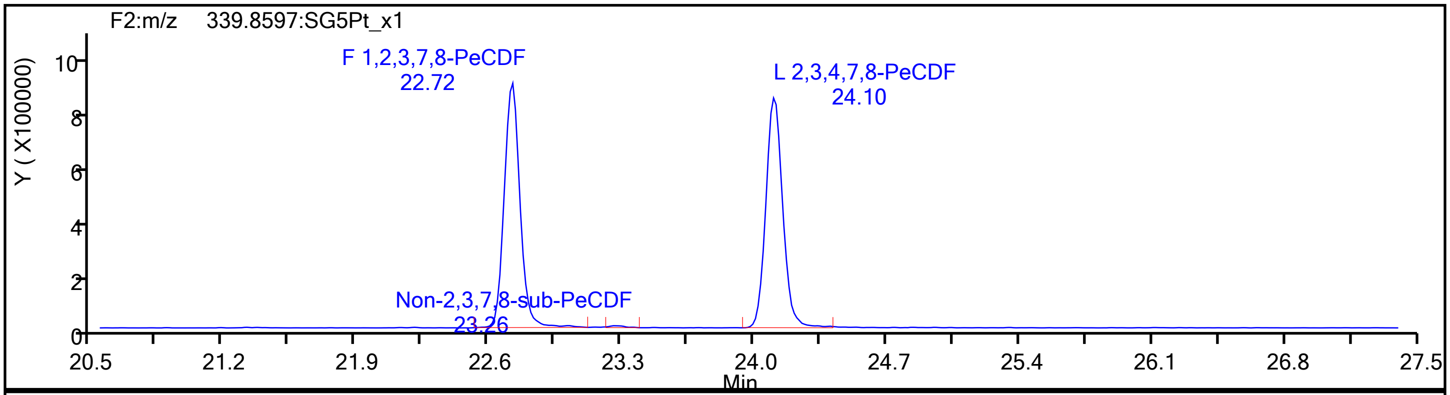

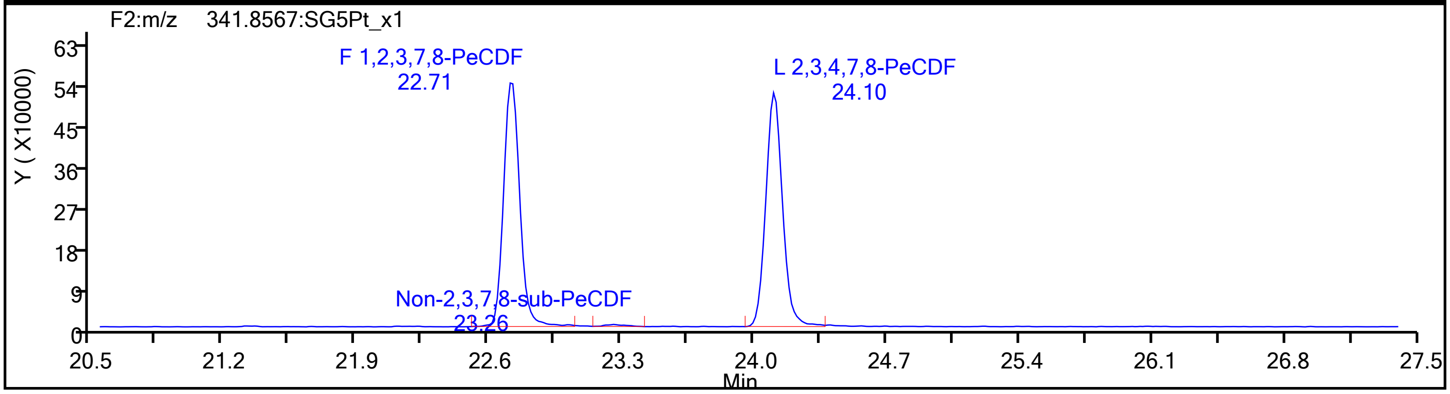

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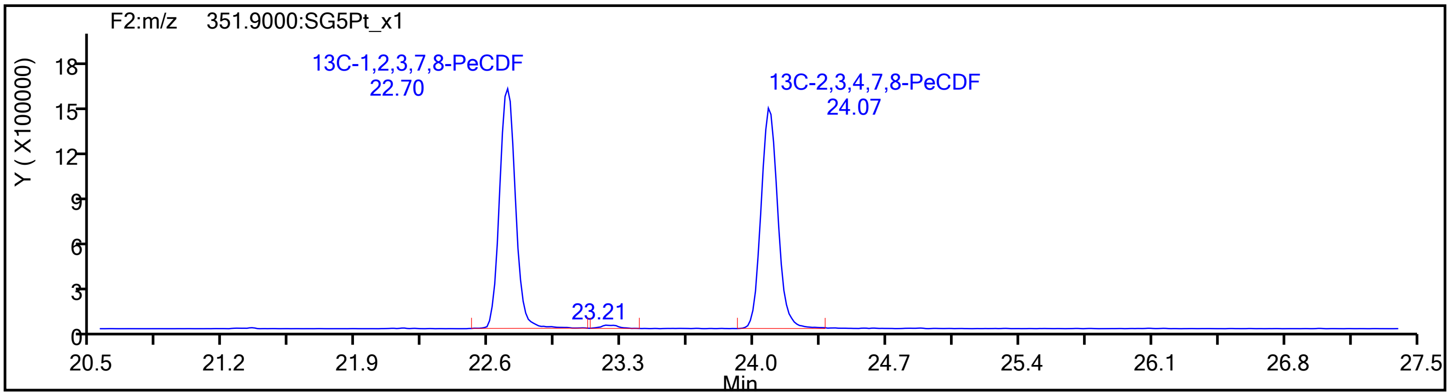

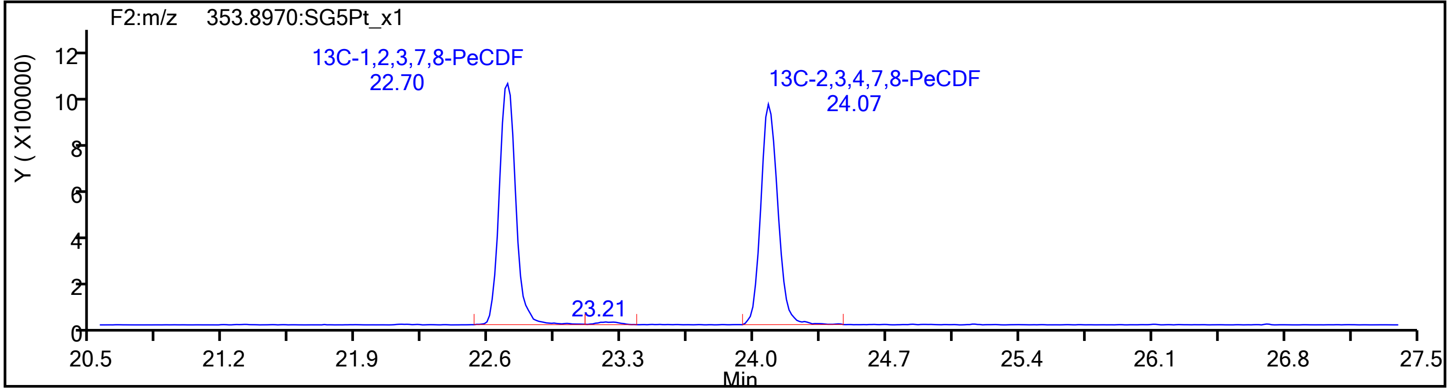

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PeCDF

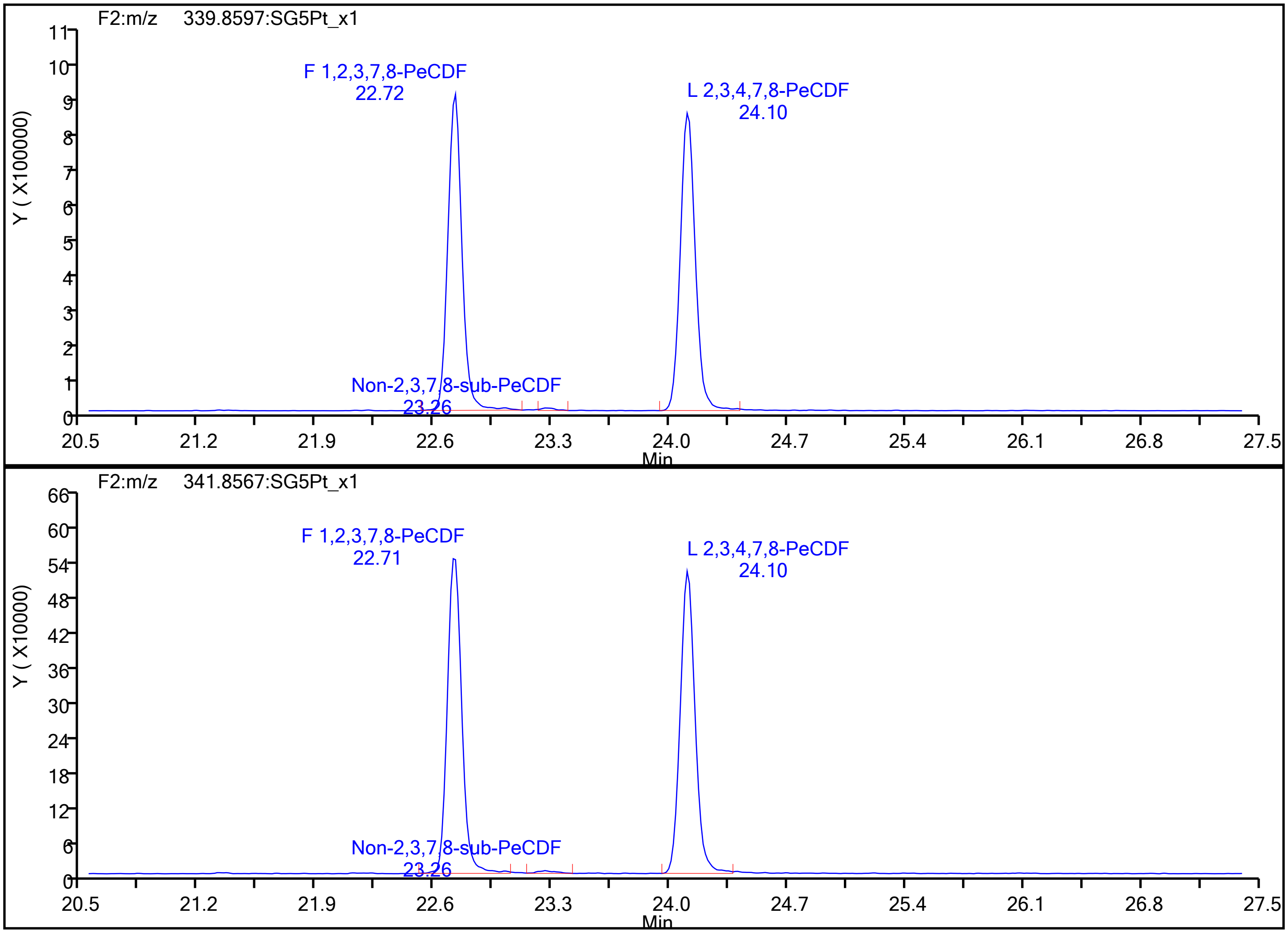

PeCDF Interference Mass

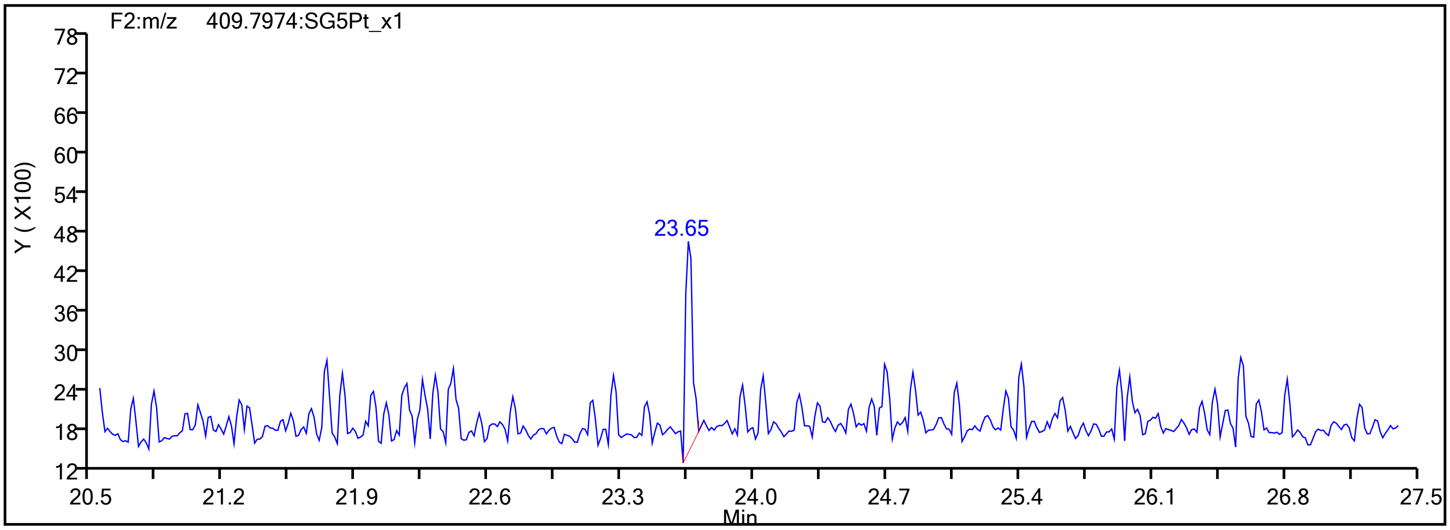

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Eurofins TestAmerica, Sacramento

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Injection Date: 01-Sep-2020 22:24:31

Injection Vol: 2.0 ul

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Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

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Sample Line#: 4

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PeCDD

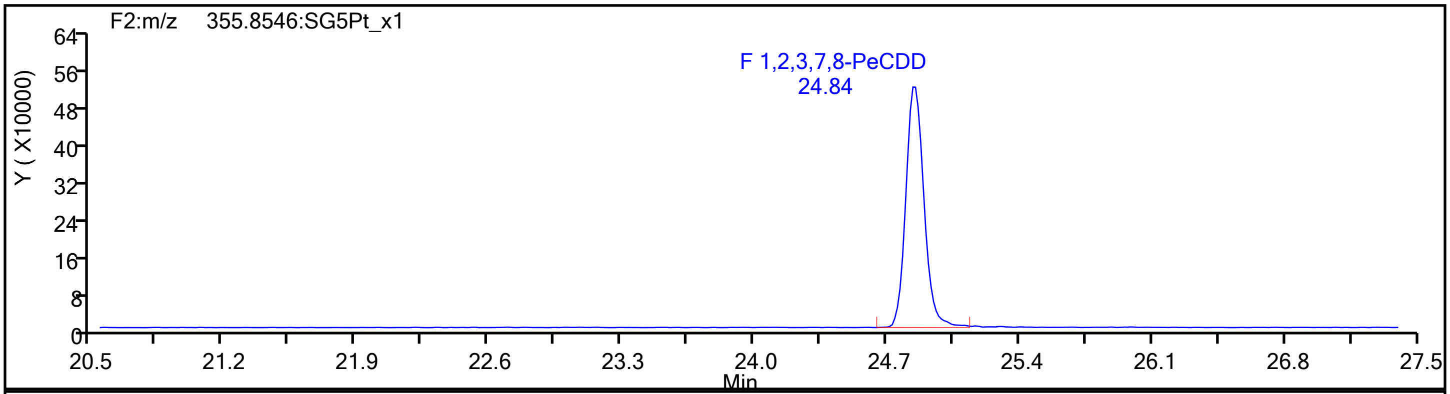

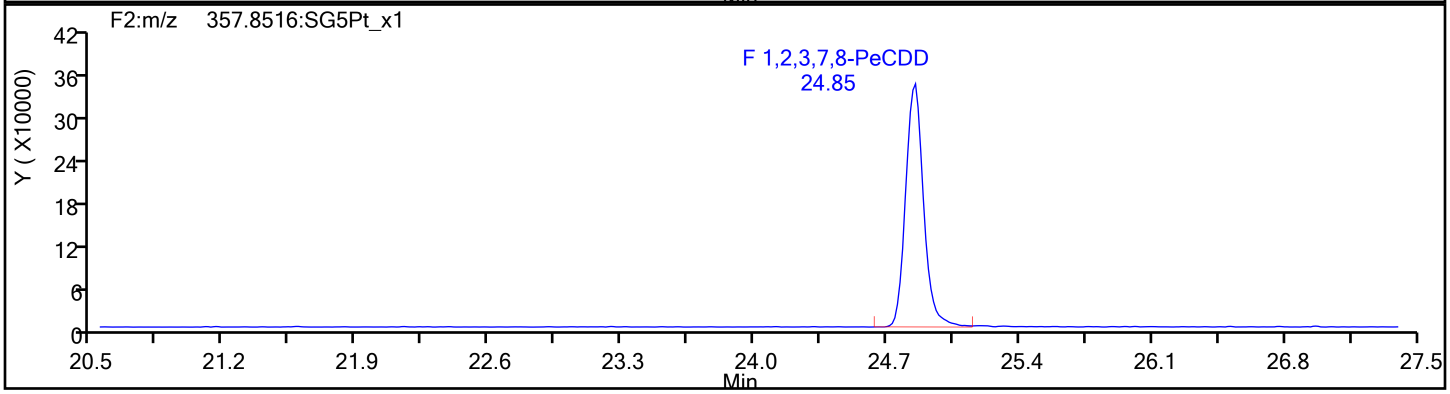

PeCDD Standards

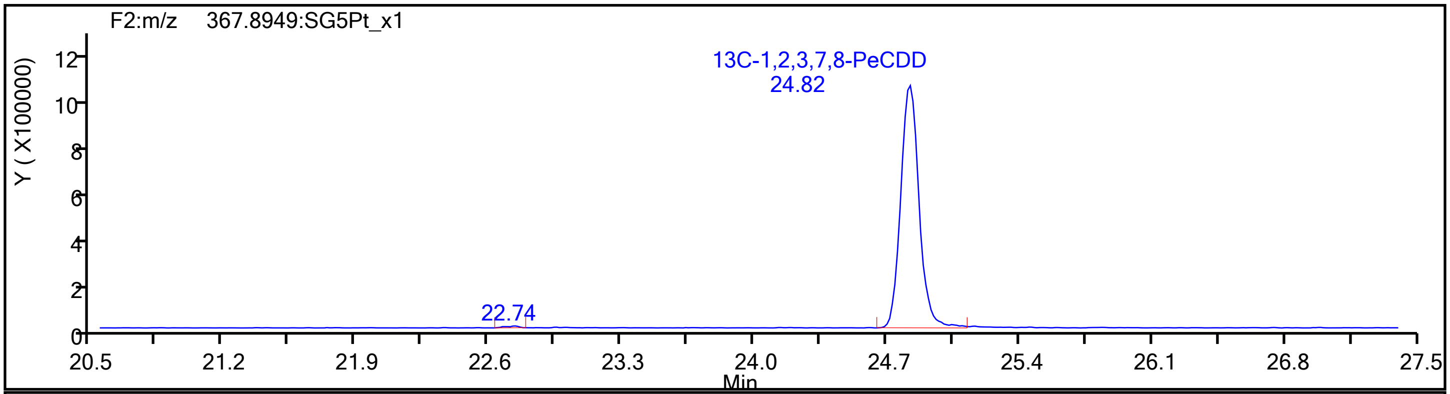

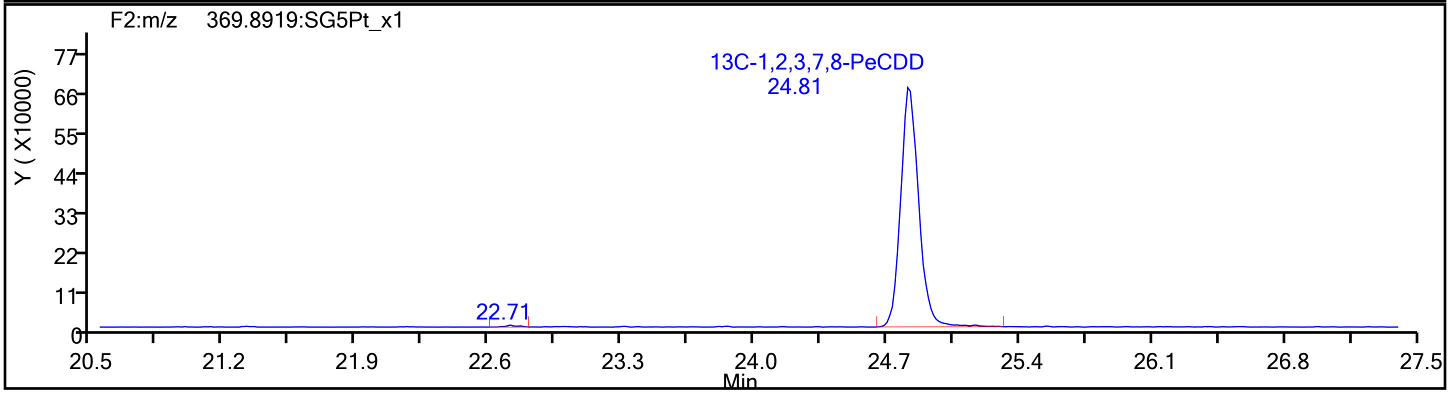

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

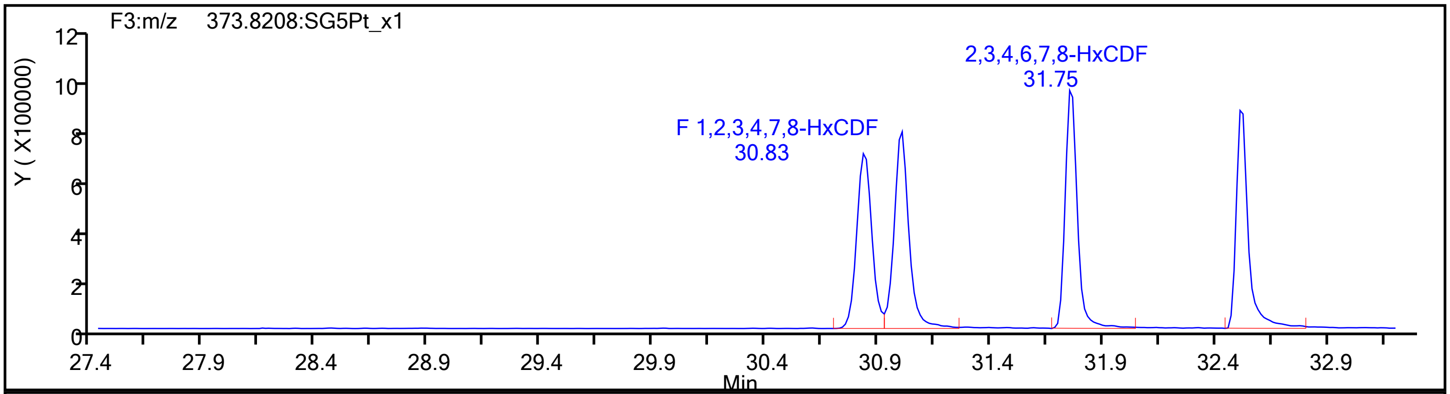

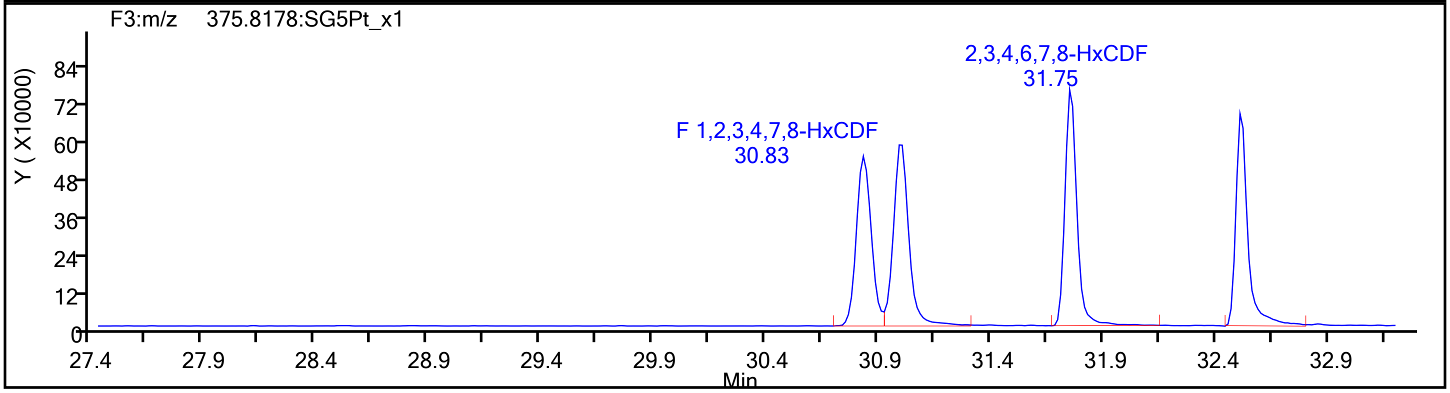

HxCDF Standards

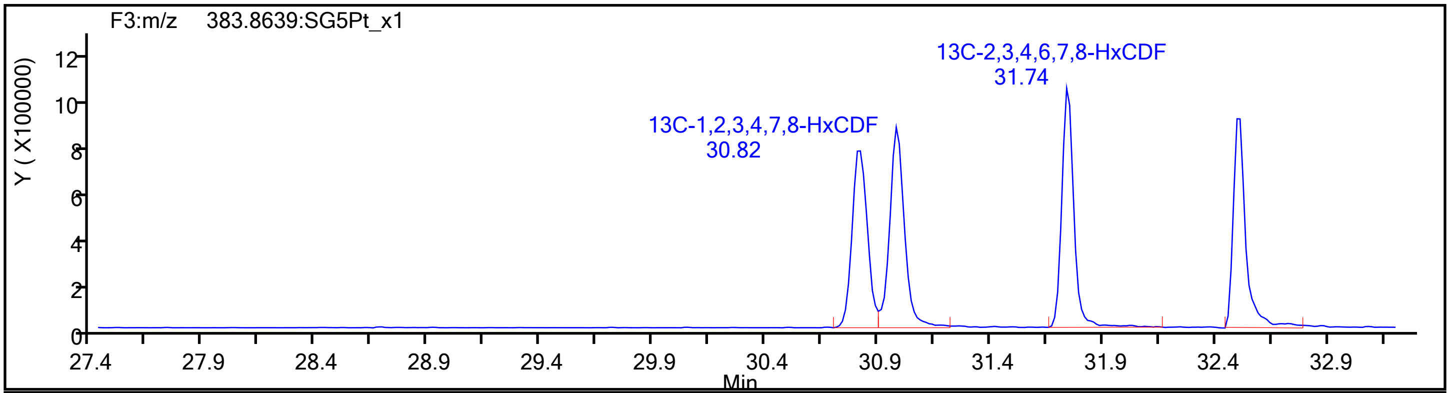

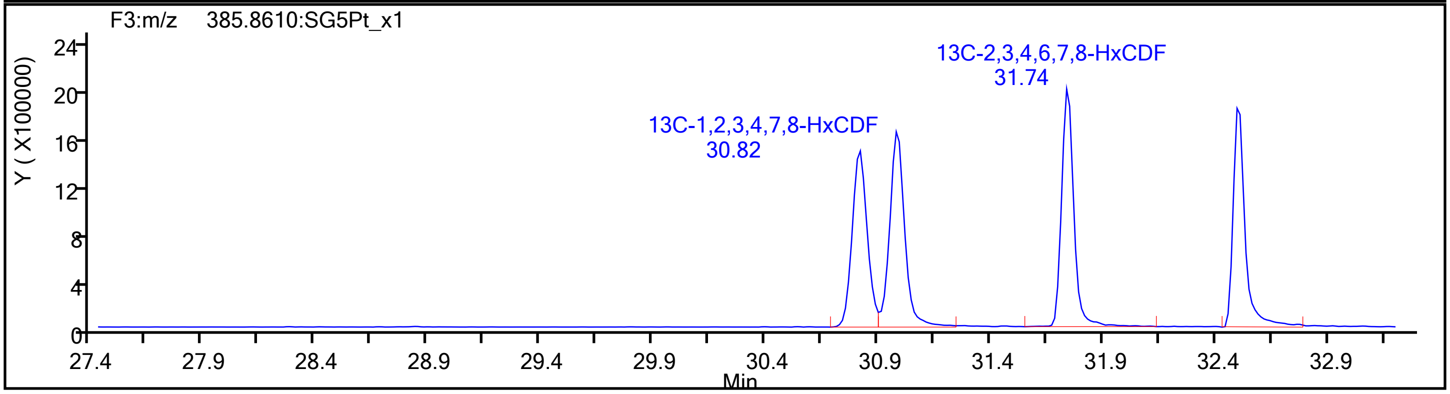

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Eurofins TestAmerica, Sacramento

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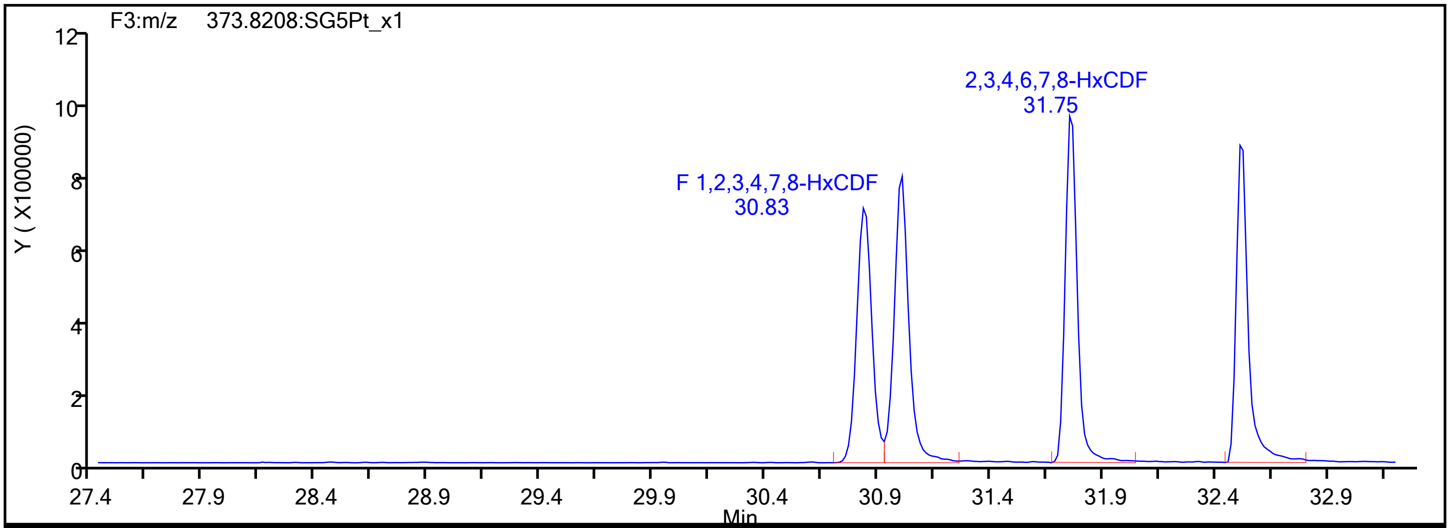

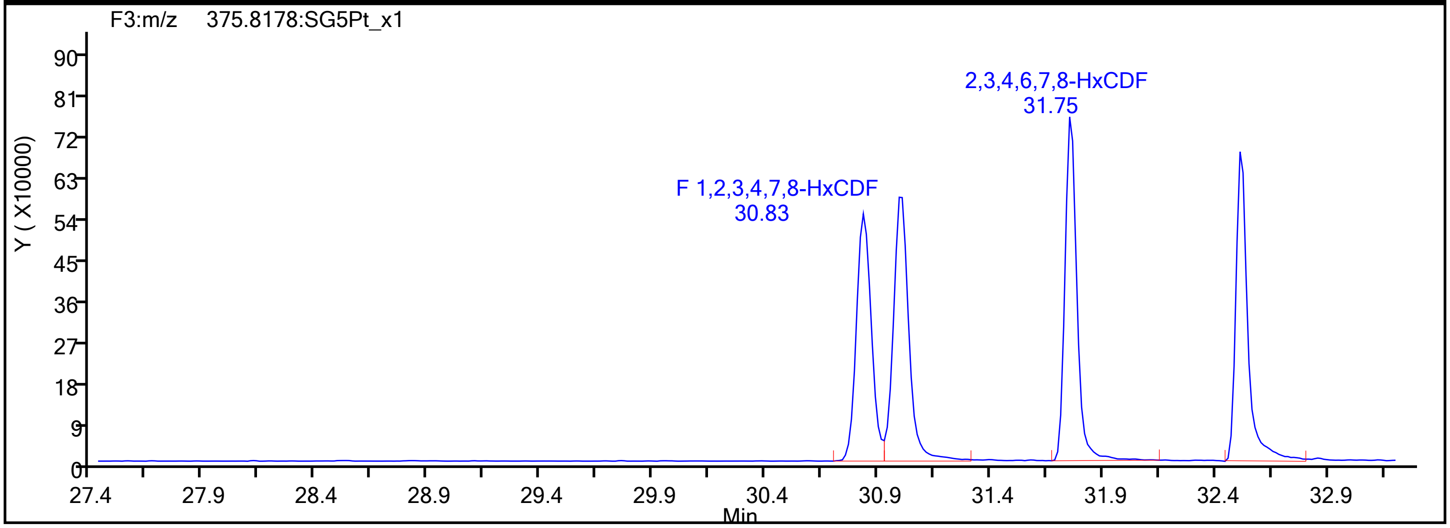

HxCDF Interference Mass

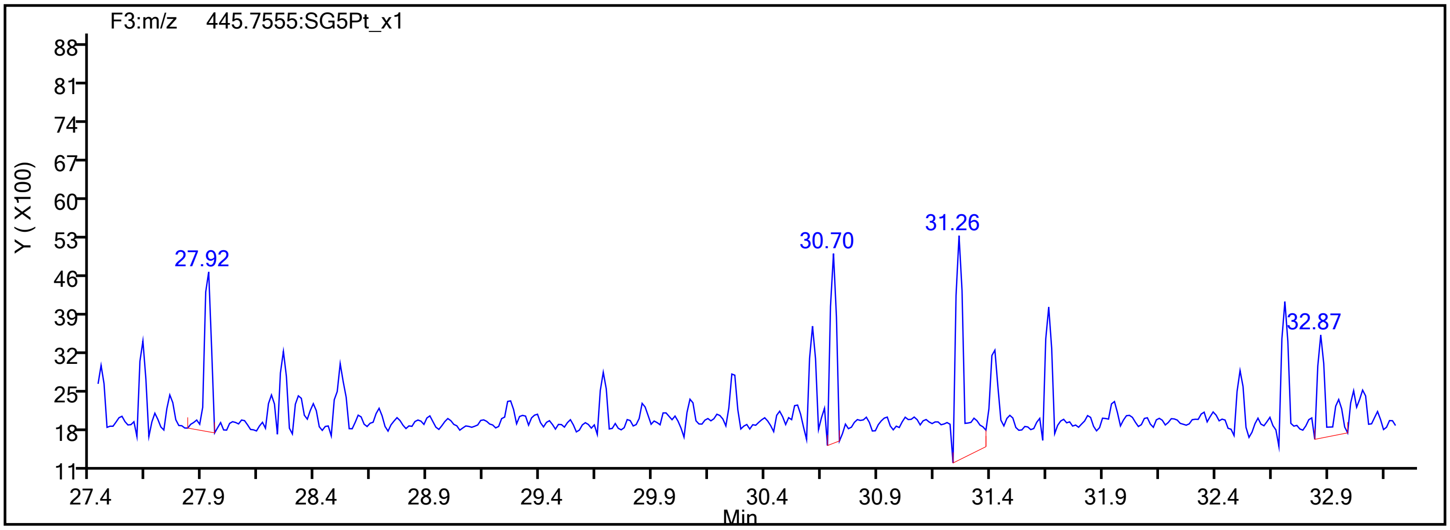

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HxCDD

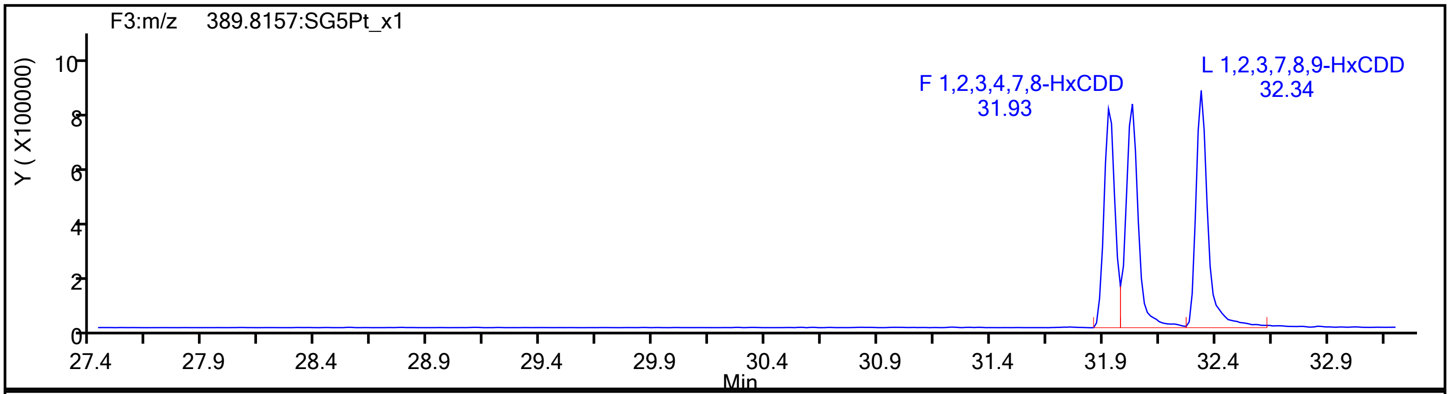

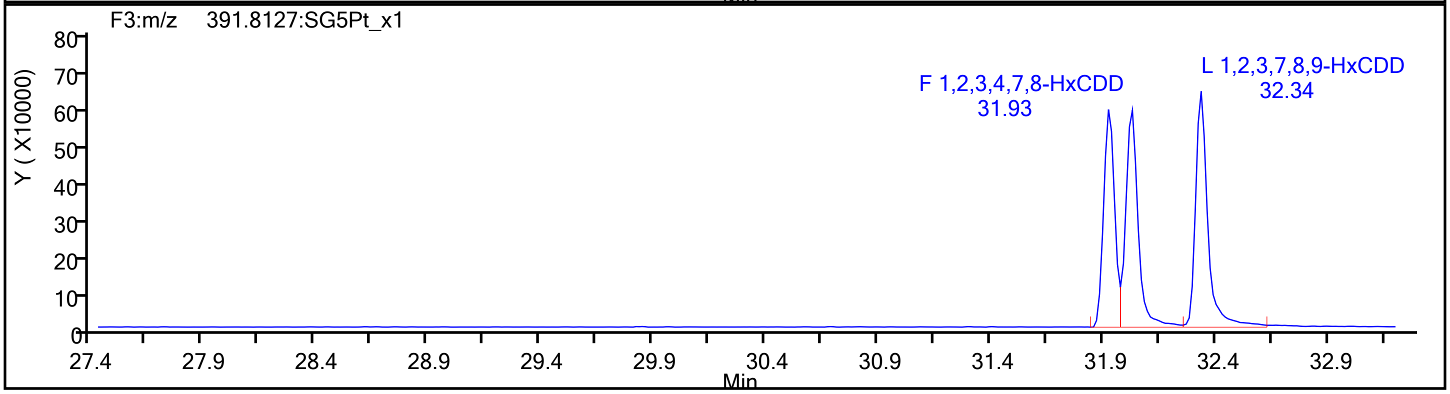

HxCDD Standards

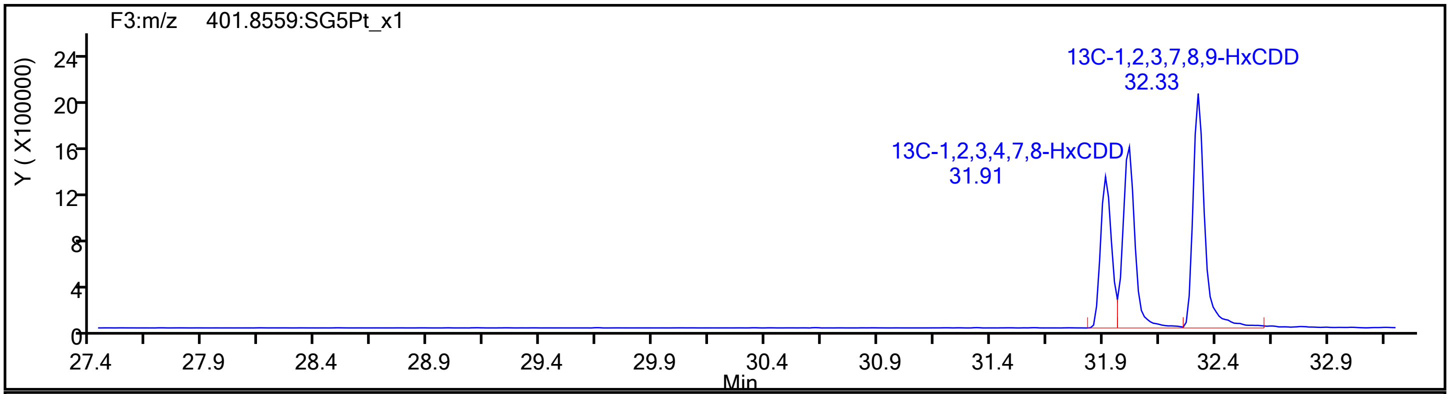

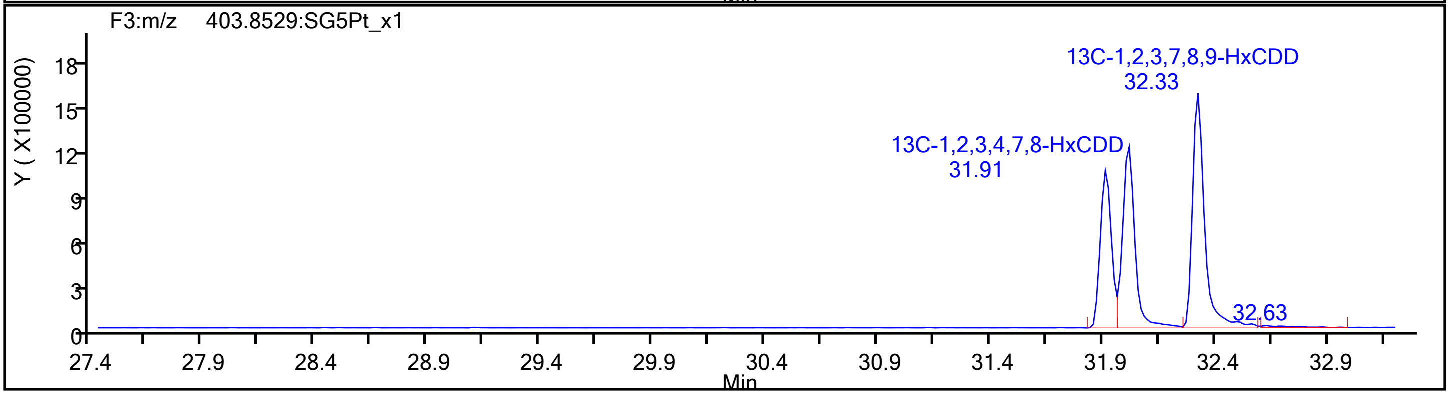

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Eurofins TestAmerica, Sacramento

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HpCDF

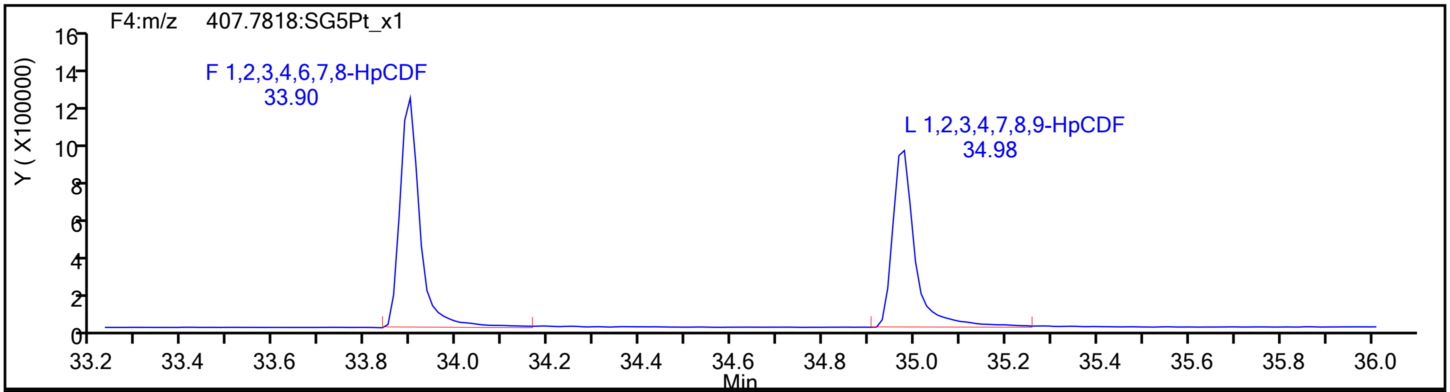

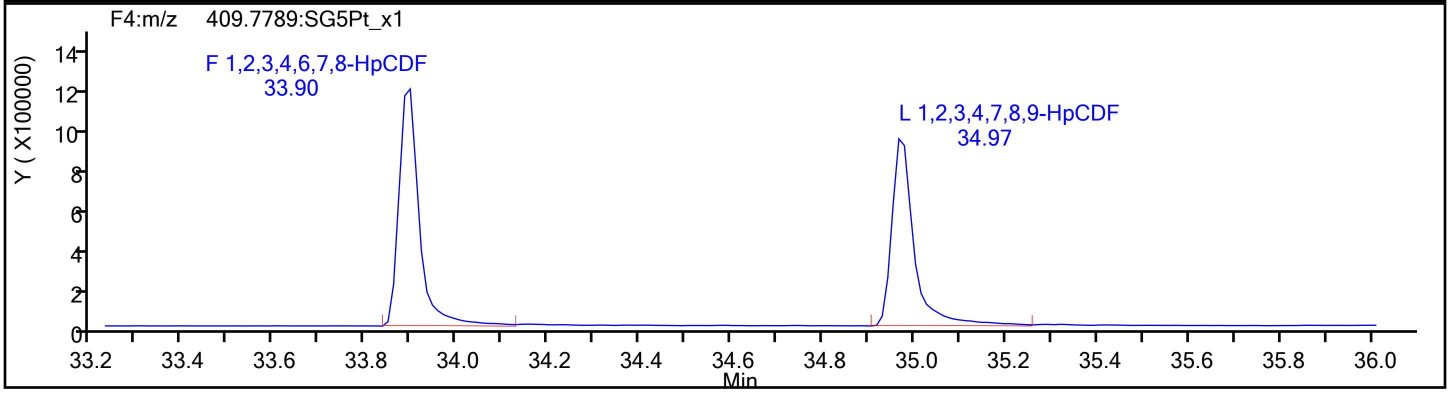

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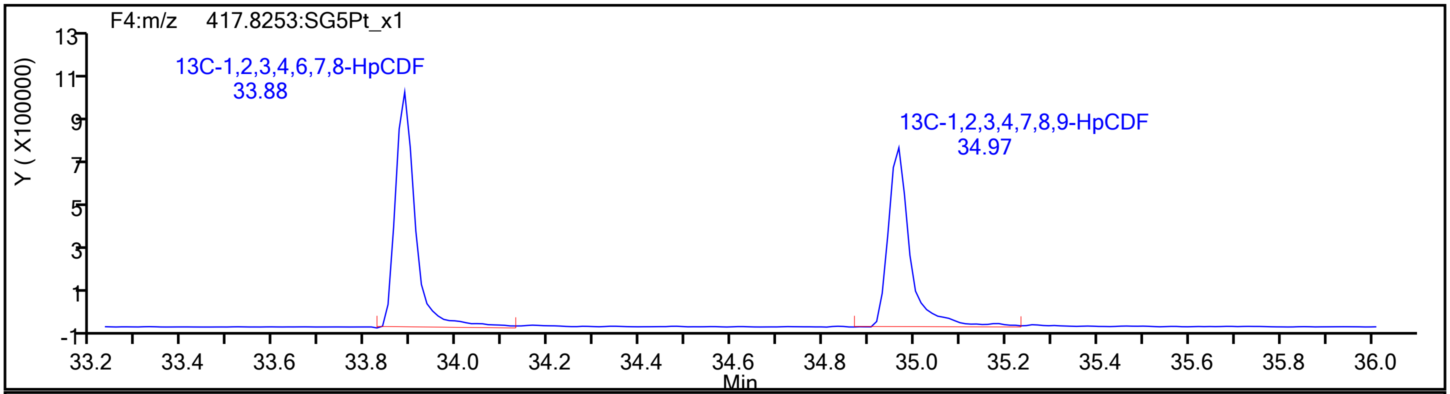

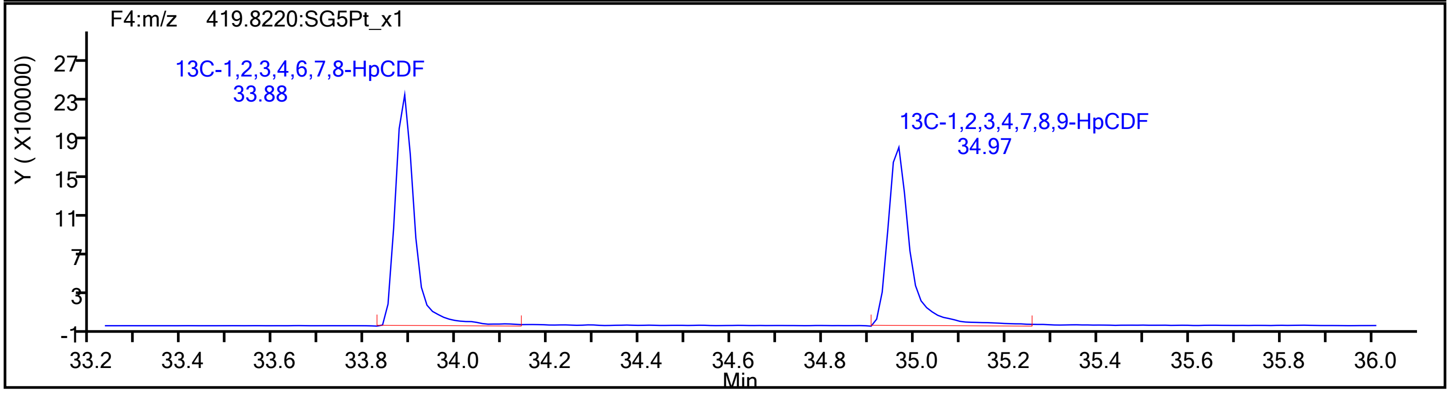

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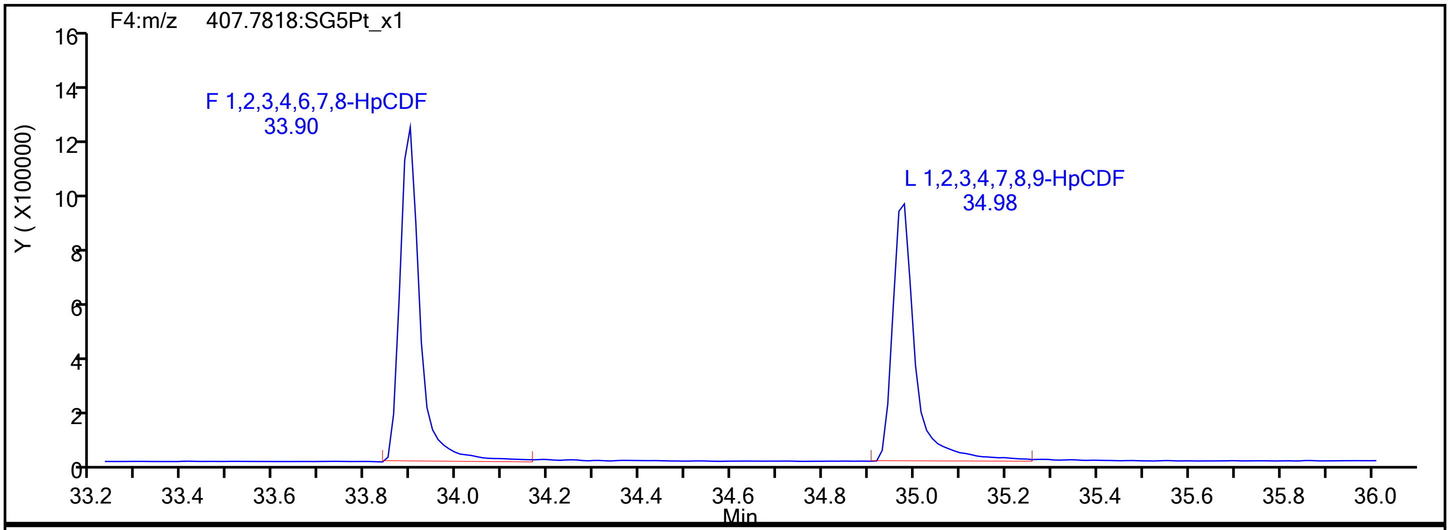

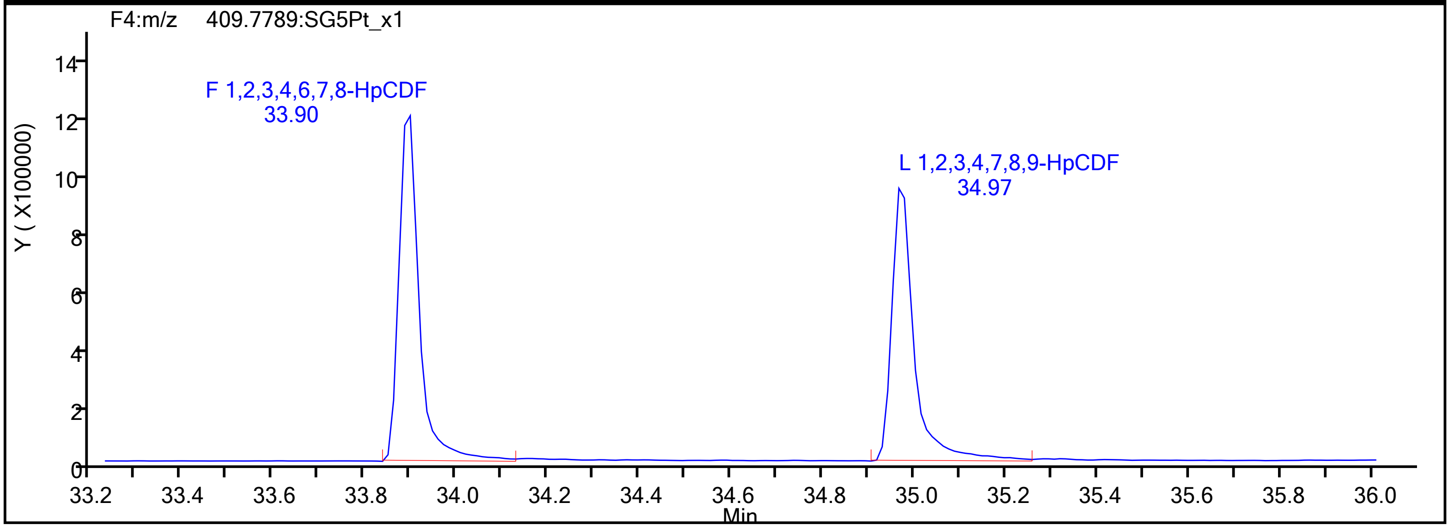

HpCDF Interference Mass

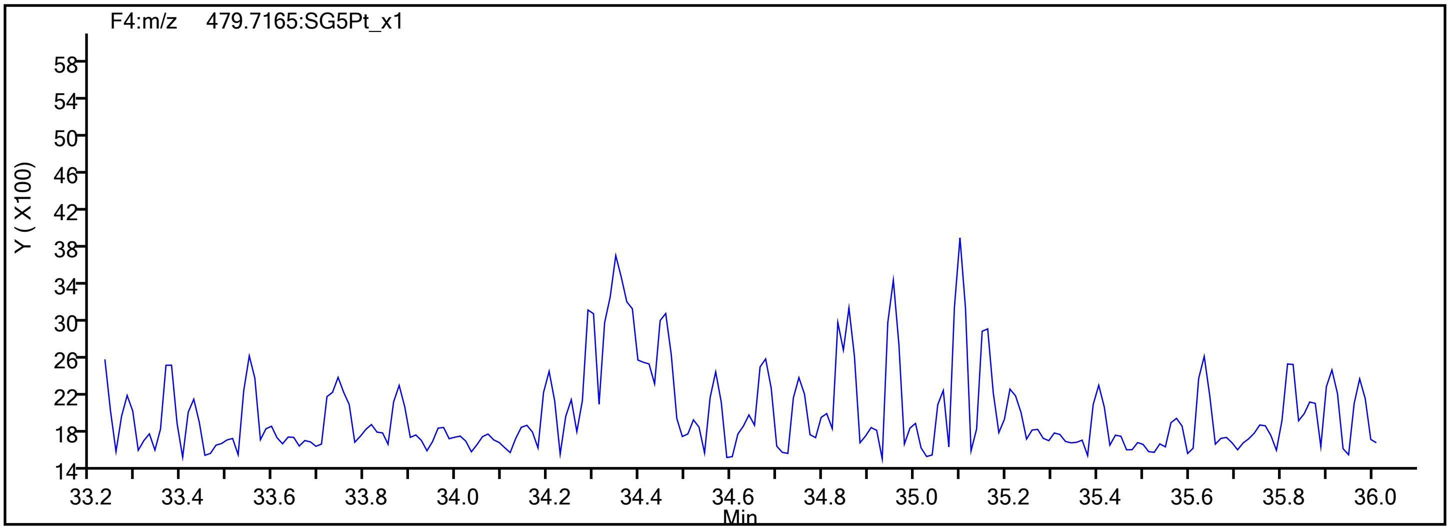

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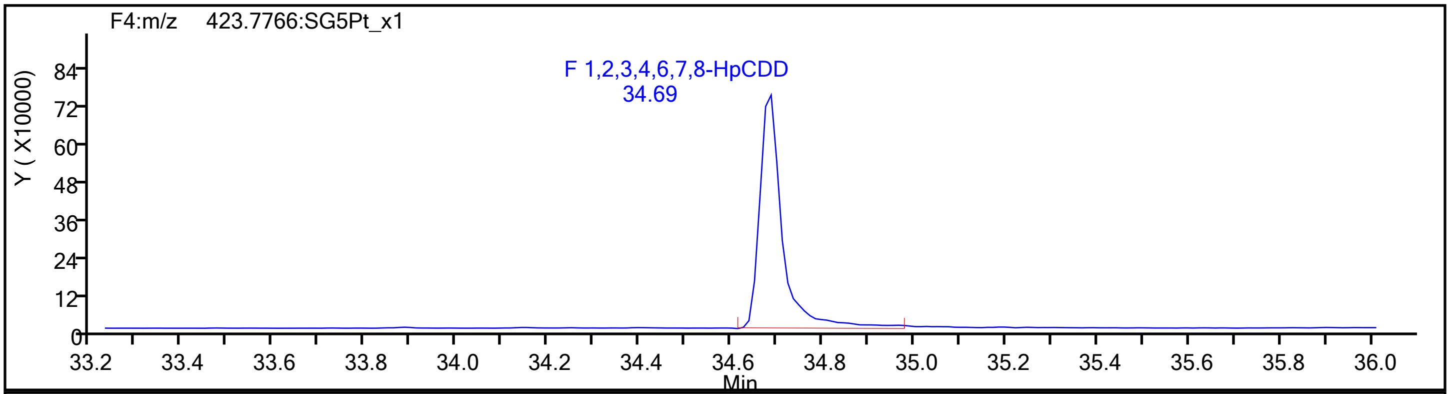

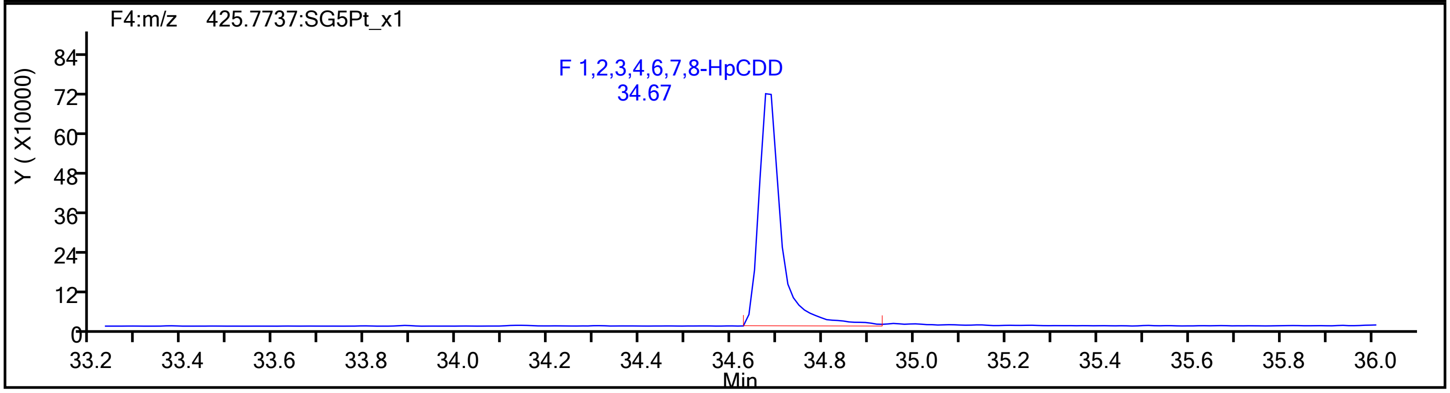

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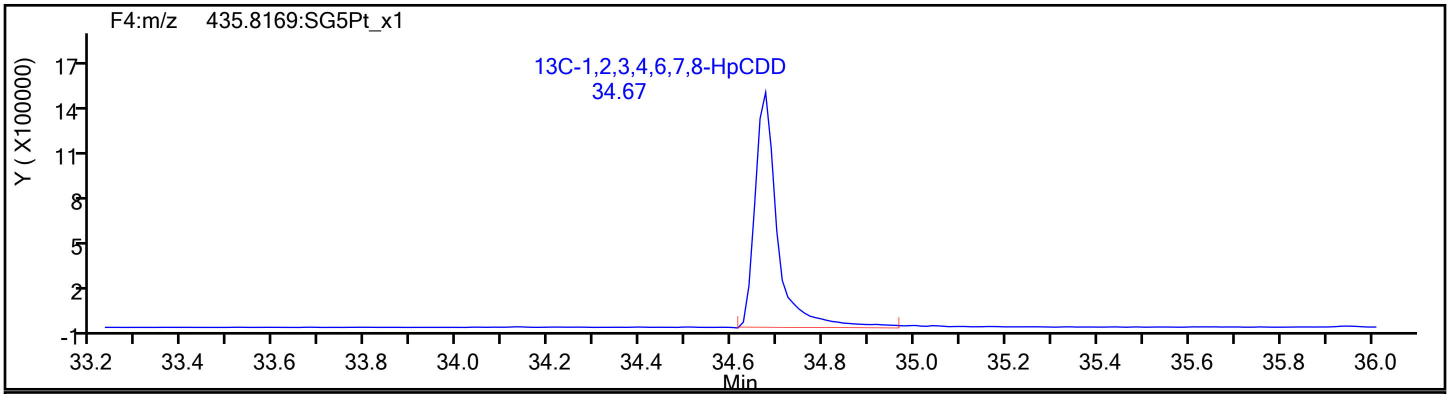

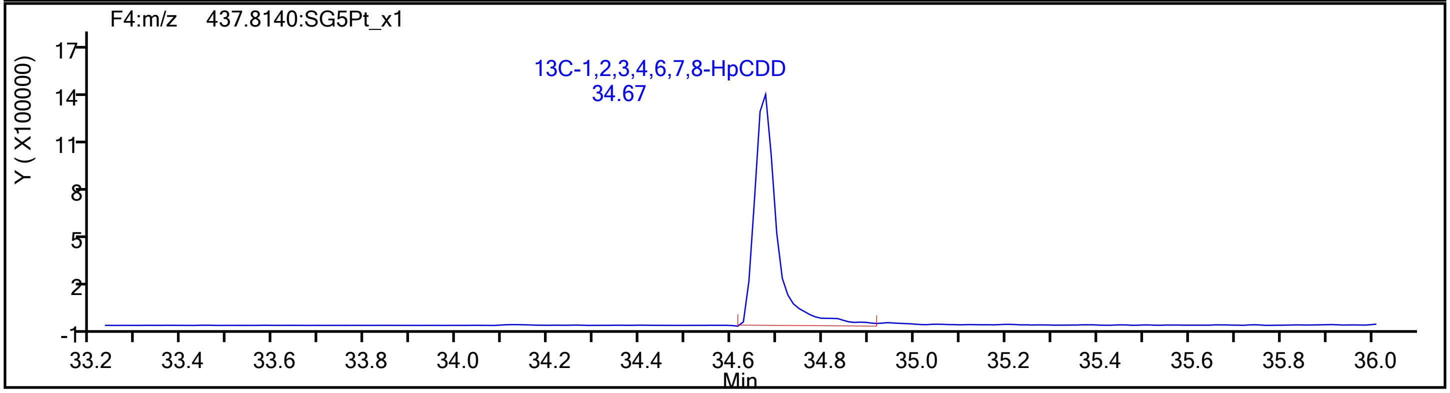

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OCDF

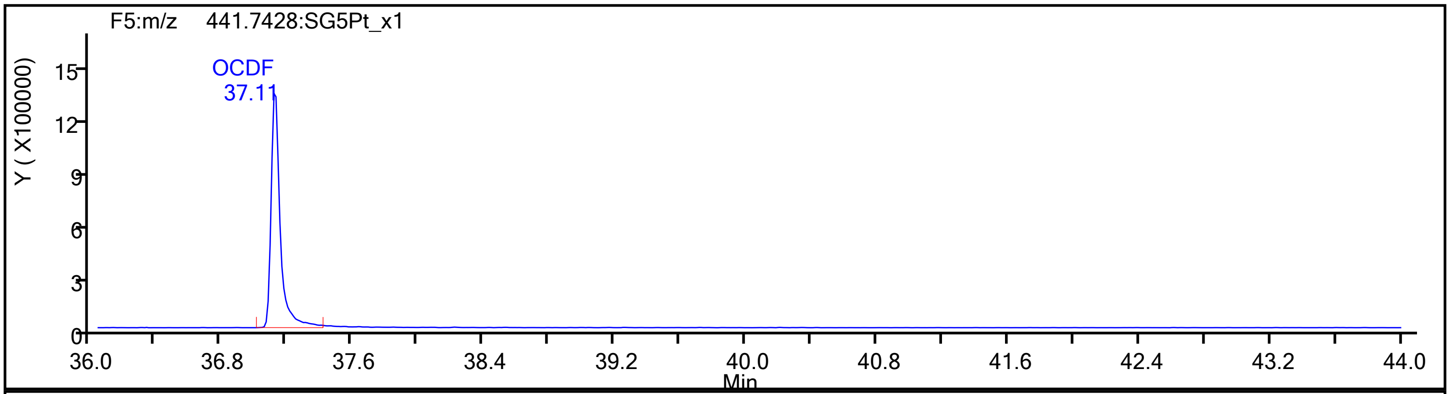

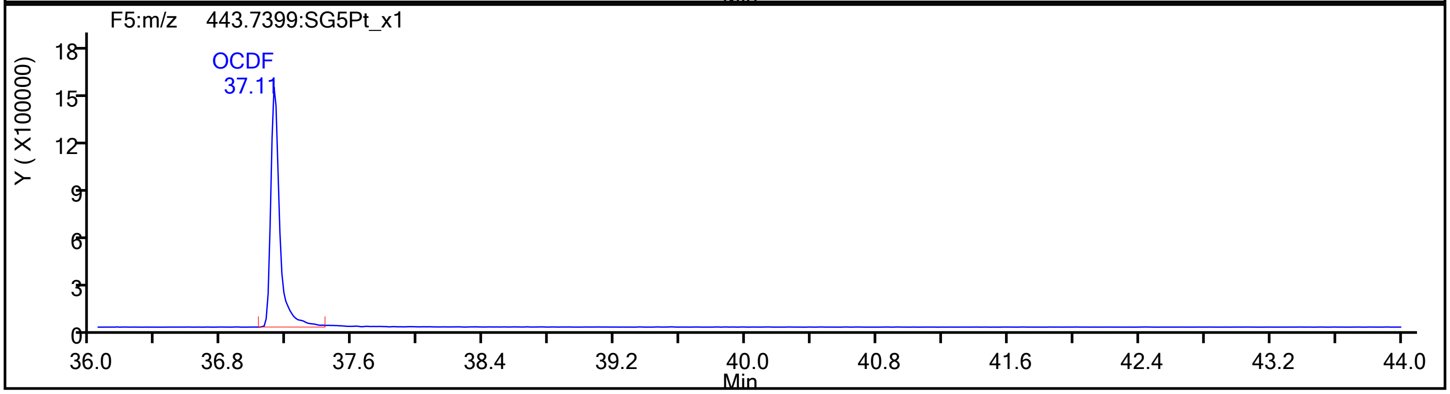

OCDF Standards

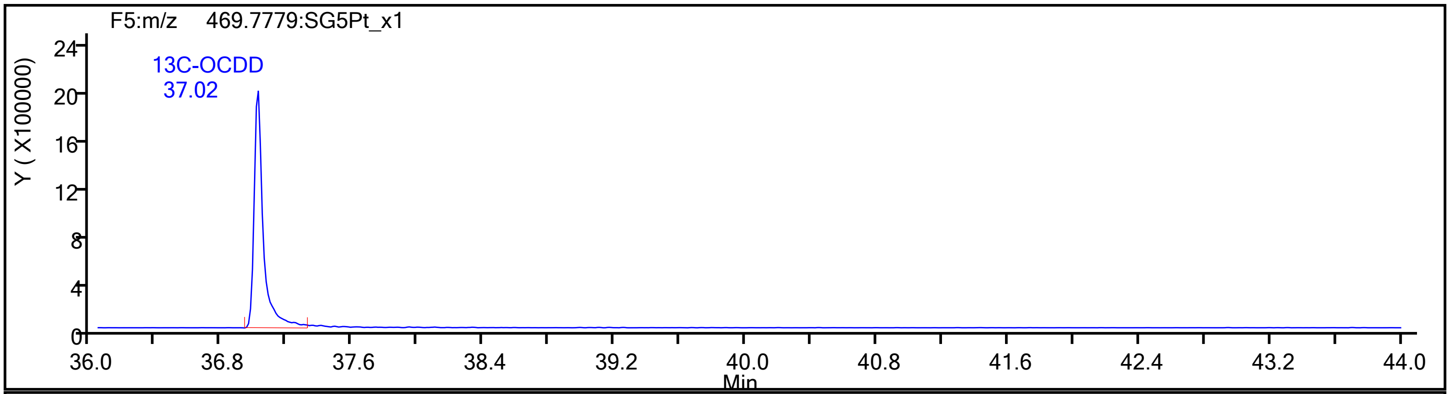

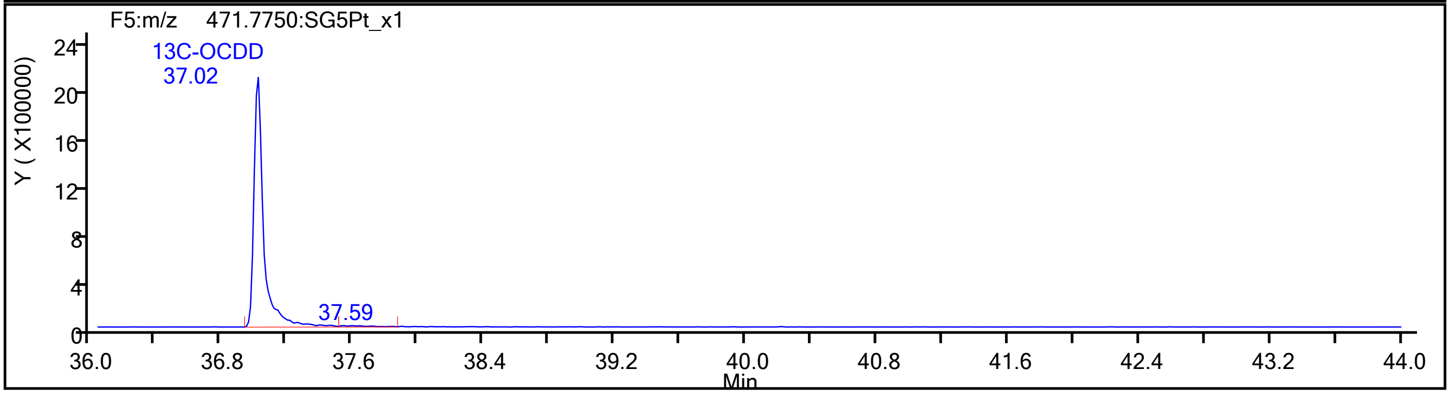

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Eurofins TestAmerica, Sacramento

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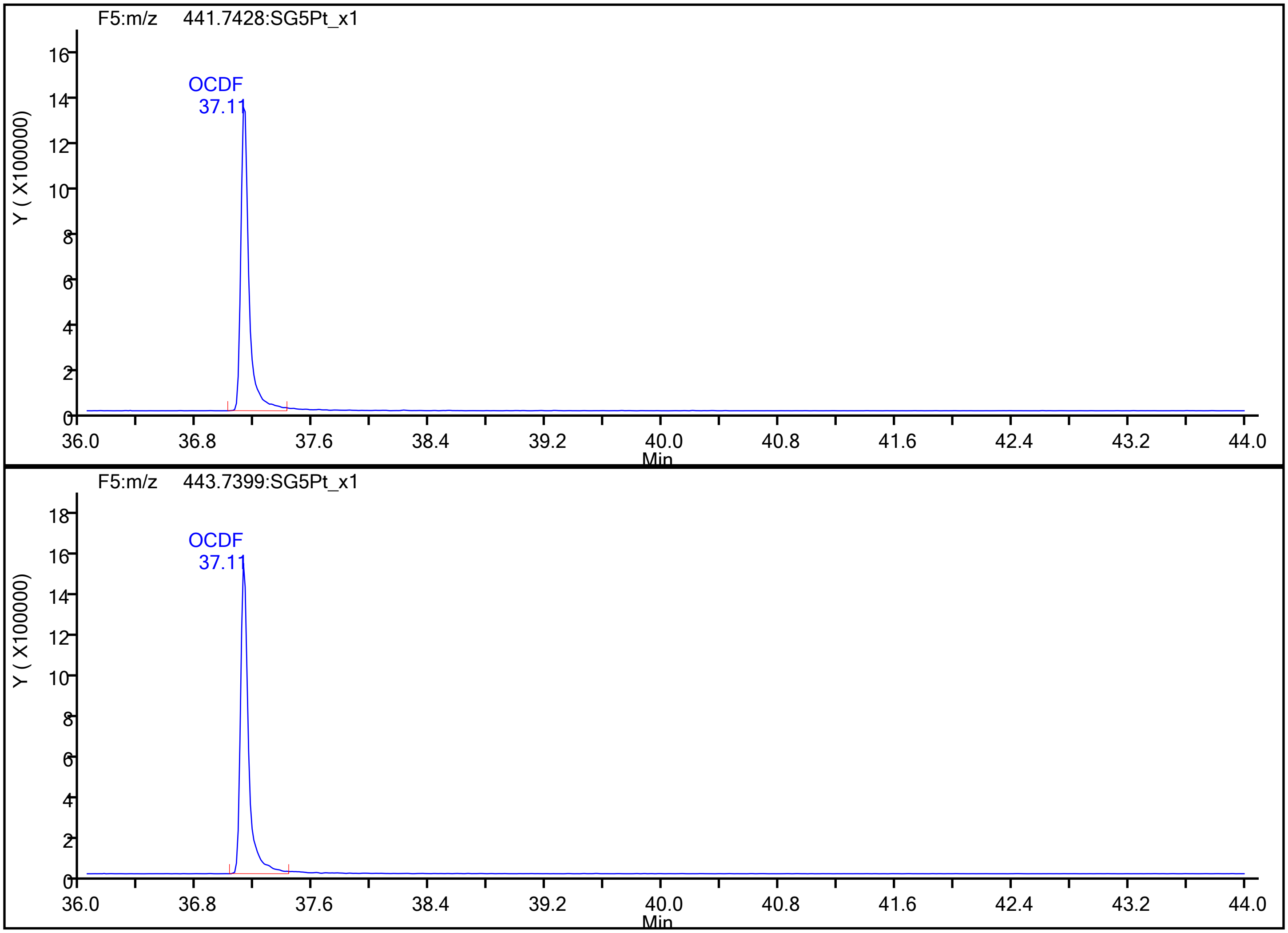

OCDF Interference Mass

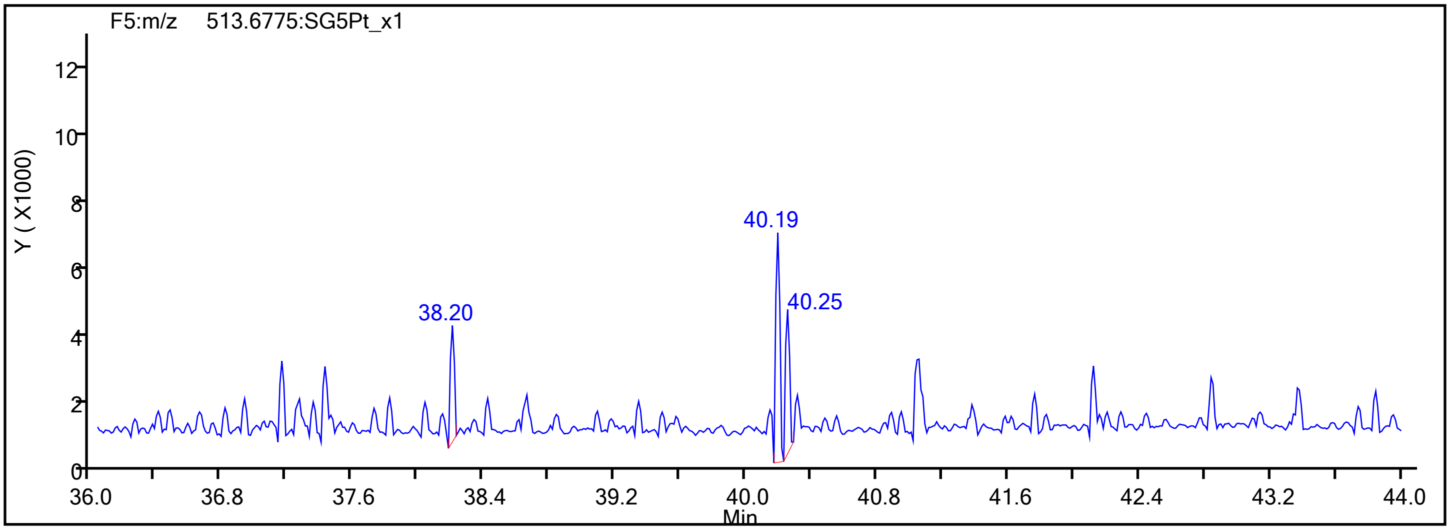

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Eurofins TestAmerica, Sacramento

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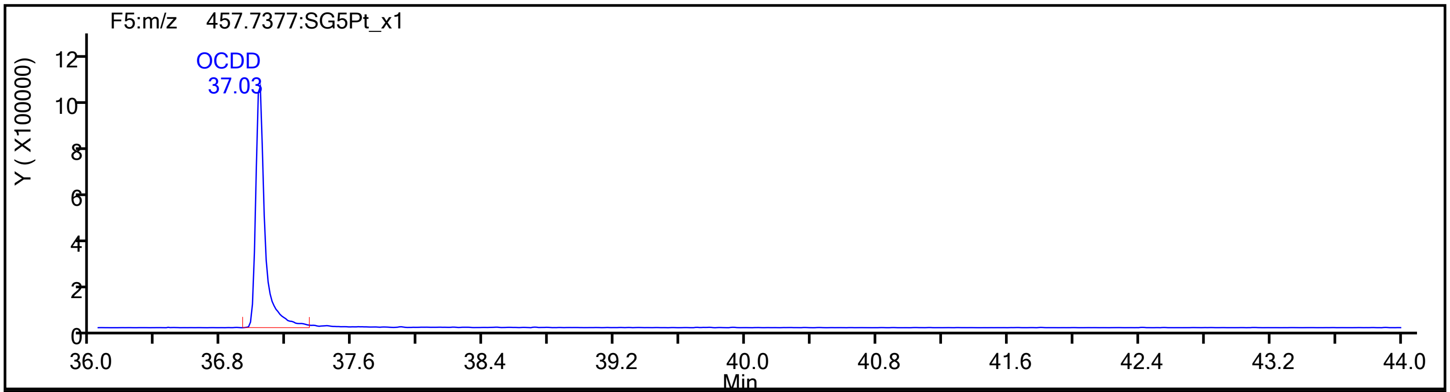

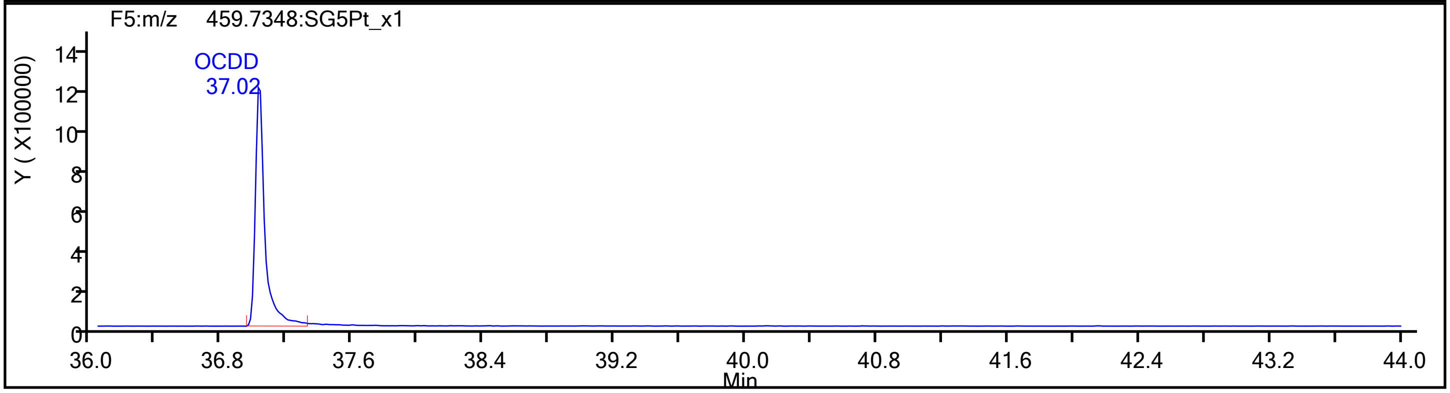

OCDD Standards

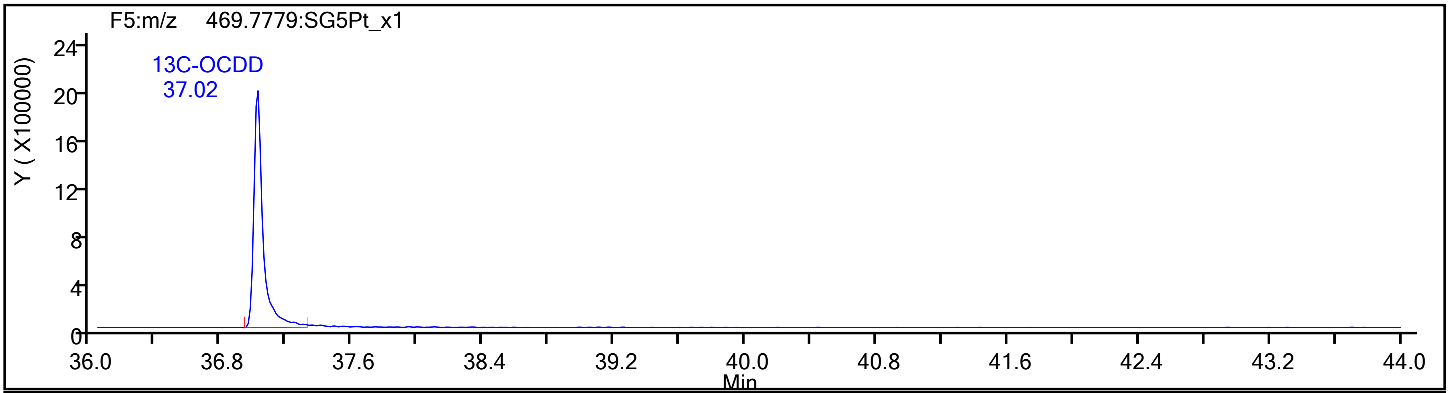

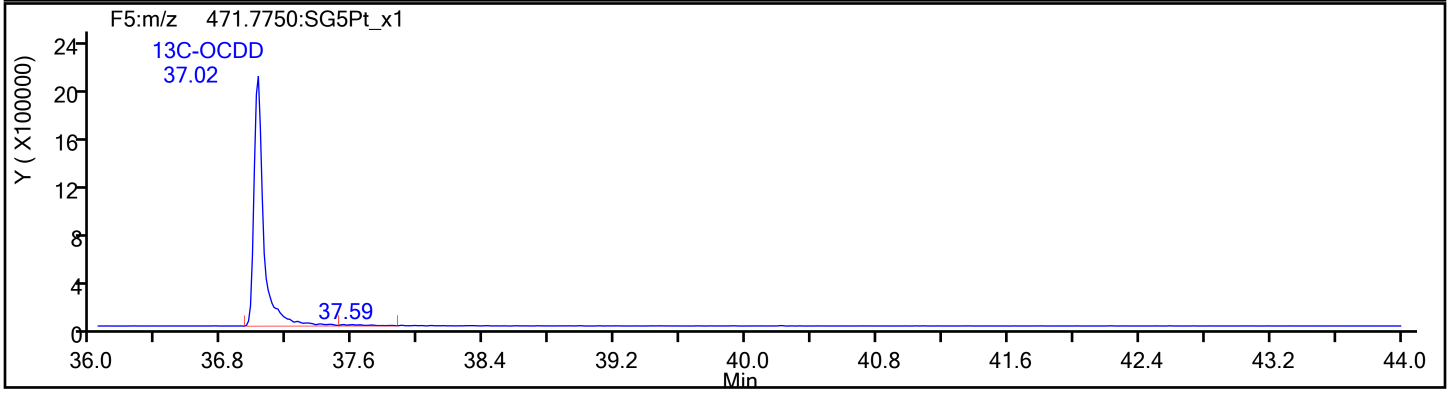

Report Date: 03-Sep-2020 08:46:19 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d		
Injection Date:	01-Sep-2020 22:24:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

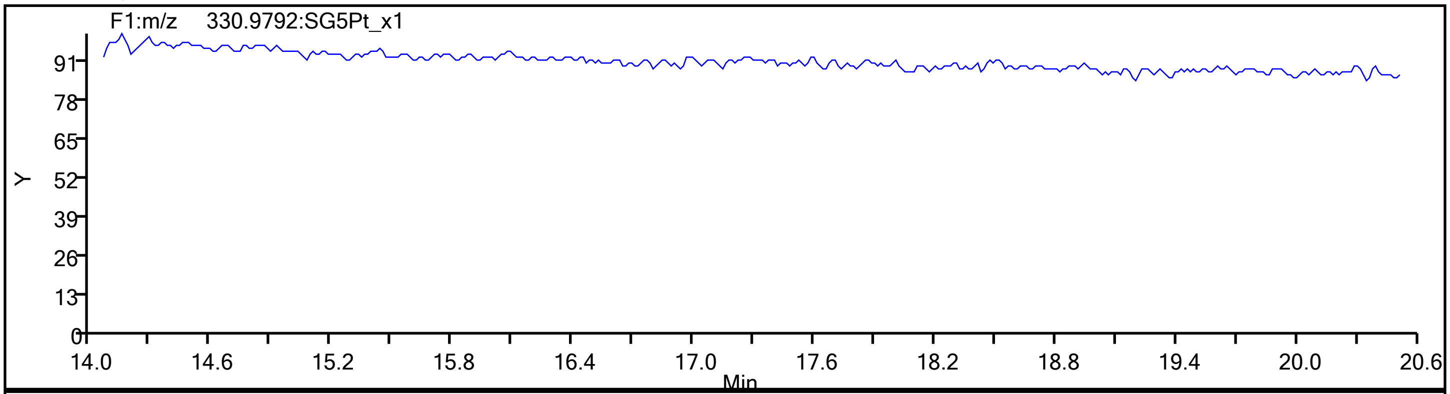

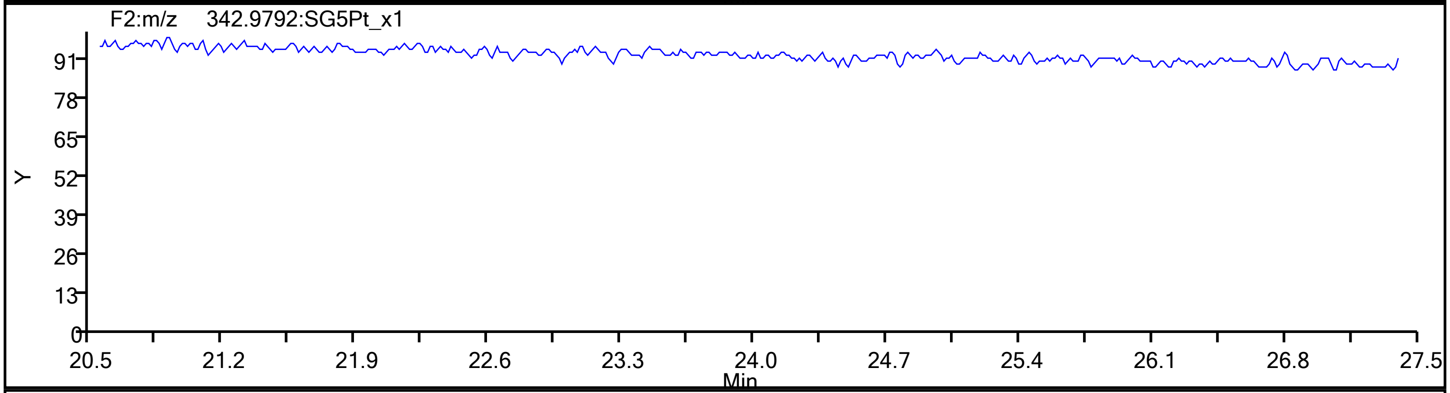

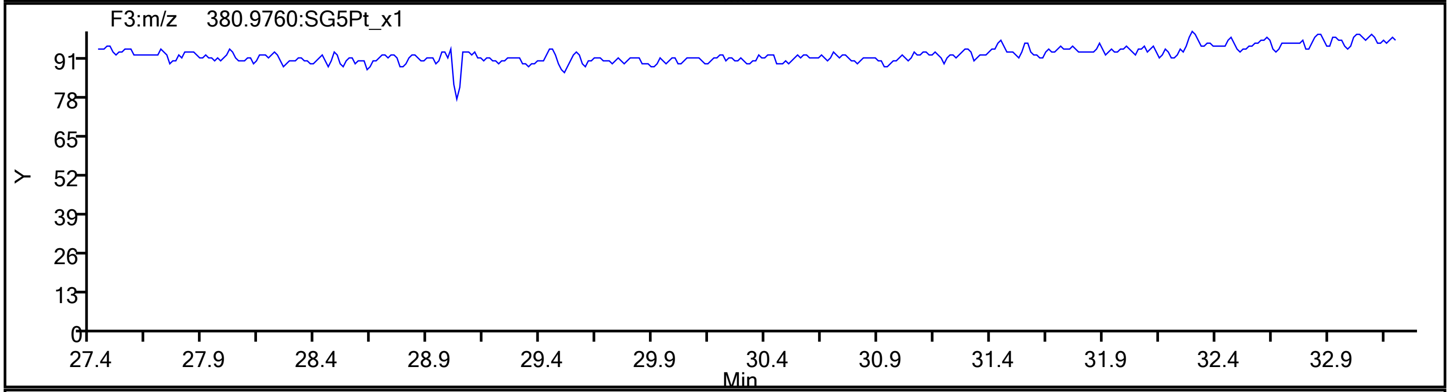

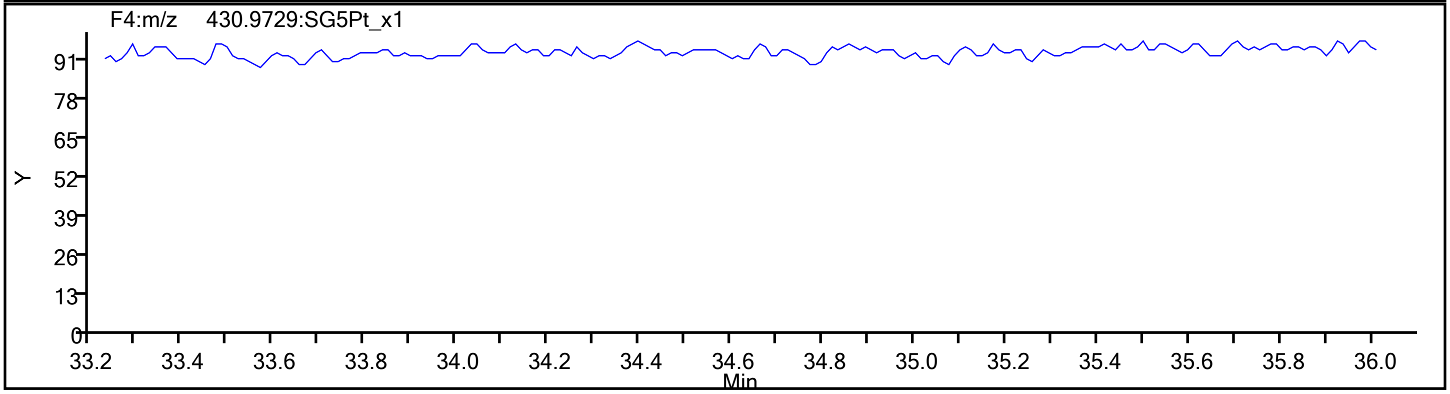

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_4.d		
Injection Date:	01-Sep-2020 22:24:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

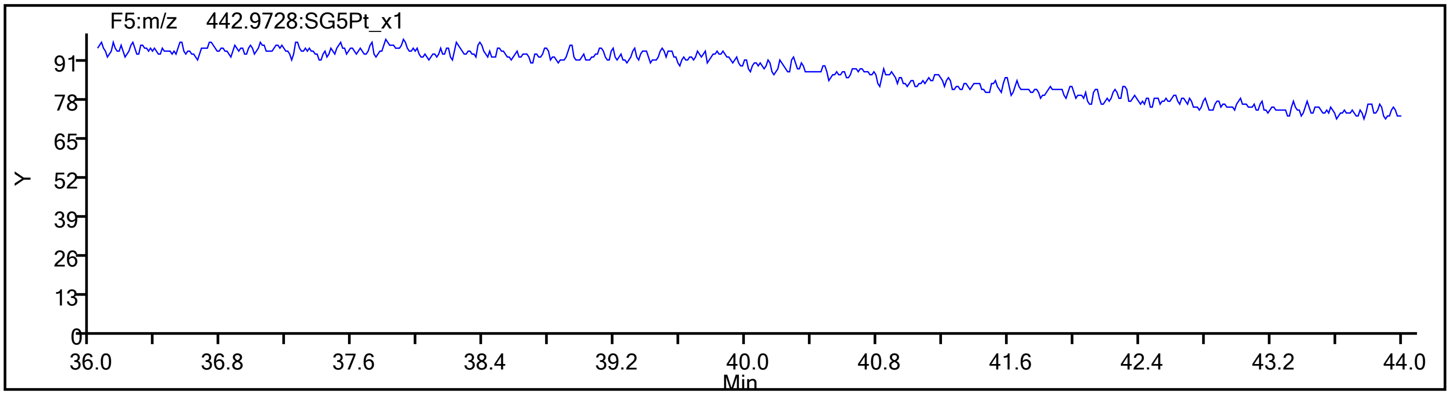

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 320-412959/2-A
Matrix: Sediment
Lab File ID: 18se20dfs1_72.d
Analysis Method: 1613B
Date Collected:
Extract. Method: HRMS-Sox
Date Extracted: 09/17/2020 05:13
Sample wt/vol: 10(g)
Date Analyzed: 09/20/2020 18:18
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 413816
Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	20.8		1.0	0.11
51207-31-9	2,3,7,8-TCDF	20.5		1.0	0.078
40321-76-4	1,2,3,7,8-PeCDD	102		5.0	0.14
57117-41-6	1,2,3,7,8-PeCDF	100		5.0	0.37
57117-31-4	2,3,4,7,8-PeCDF	98.9		5.0	0.40
39227-28-6	1,2,3,4,7,8-HxCDD	98.3		5.0	0.21
57653-85-7	1,2,3,6,7,8-HxCDD	99.5		5.0	0.22
19408-74-3	1,2,3,7,8,9-HxCDD	101		5.0	0.20
70648-26-9	1,2,3,4,7,8-HxCDF	99.3		5.0	0.47
57117-44-9	1,2,3,6,7,8-HxCDF	100		5.0	0.44
72918-21-9	1,2,3,7,8,9-HxCDF	98.7		5.0	0.38
60851-34-5	2,3,4,6,7,8-HxCDF	99.2		5.0	0.39
35822-46-9	1,2,3,4,6,7,8-HpCDD	99.5		5.0	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	99.0		5.0	0.39
55673-89-7	1,2,3,4,7,8,9-HpCDF	97.7		5.0	0.40
3268-87-9	OCDD	199		10	0.16
39001-02-0	OCDF	198		10	0.17
41903-57-5	Total TCDD	20.8		1.0	0.11
30402-14-3	Total TCDF	20.5		1.0	0.078
36088-22-9	Total PeCDD	102		5.0	0.14
30402-15-4	Total PeCDF	199		5.0	0.38
34465-46-8	Total HxCDD	298		5.0	0.21
55684-94-1	Total HxCDF	398		5.0	0.42
37871-00-4	Total HpCDD	99.5		5.0	0.21
38998-75-3	Total HpCDF	197		5.0	0.39

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-412959/2-A
Matrix: Sediment	Lab File ID: 18se20dfs1_72.d
Analysis Method: 1613B	Date Collected:
Extract. Method: HRMS-Sox	Date Extracted: 09/17/2020 05:13
Sample wt/vol: 10(g)	Date Analyzed: 09/20/2020 18:18
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 413816	Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	73		20-175
89059-46-1	13C-2,3,7,8-TCDF	75		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	71		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	73		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	72		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	77		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	78		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	77		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	77		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	78		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	79		20-186
114423-97-1	13C-OCDD	81		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		31-191

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Lims ID: LCS 320-412959/2-A
Client ID:
Sample Type: LCS
Inject. Date: 20-Sep-2020 18:18:00 ALS Bottle#: 0 Worklist Smp#: 62
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-412959/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 22-Sep-2020 10:46:03 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1059

First Level Reviewer: shardaa Date: 21-Sep-2020 12:37:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.106	3370940	0.80	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.178	3992126	0.83	1.5883	74.6	74.6	0.2230	0.2230	74.56	
2,3,7,8-TCDF	19.203	443729	0.75	1.0857	10.2	10.2	0.0388	0.0388	102	
A Non-2,3,7,8-sub-TCDF	18.816						0.0388	0.0388		RQU
S Total TCDF					10.2	10.2	0.0388	0.0388		
D 13C-2,3,7,8-TCDD	20.458	2765665	0.79	1.1194	73.3	73.3	0.2104	0.2104	73.29	
2,3,7,8-TCDD	20.484	310590	0.77	1.0810	10.4	10.4	0.0568	0.0568	104	
$ 37Cl4-2,3,7,8-TCDD	20.484	1448364		1.1468	37.5	37.5	0.0274	0.0274	93.67	
A Non-2,3,7,8-sub-TCDD	19.624						0.0568	0.0568		
S Total TCDD					10.4	10.4	0.0568	0.0568		
D 13C-1,2,3,7,8-PeCDF	26.252	3623519	1.58	1.4782	72.7	72.7	0.3066	0.3066	72.72	
1,2,3,7,8-PeCDF	26.277	1911029	1.58	1.0547	50.0	50.0	0.1842	0.1842	100	
D 13C-2,3,4,7,8-PeCDF	27.709	3373837	1.60	1.3912	71.9	71.9	0.3258	0.3258	71.94	
2,3,4,7,8-PeCDF	27.734	1840990	1.57	1.1035	49.4	49.4	0.1986	0.1986	98.89	
A F1 PeCDFs	23.607						0.0114	0.0114		
A Non-2,3,7,8-sub-PeCDF	26.996						0.1909	0.1909		
S Total PeCDF					99.5	99.5	0.1914	0.1914		
D 13C-1,2,3,7,8-PeCDD	28.484	2266740	1.59	0.9415	71.4	71.4	0.1492	0.1492	71.43	
1,2,3,7,8-PeCDD	28.509	1233098	1.56	1.0680	50.9	50.9	0.0720	0.0720	102	
A Non-2,3,7,8-sub-PeCDD	27.361						0.0720	0.0720		
S Total PeCDD					50.9	50.9	0.0720	0.0720		
D 13C-1,2,3,4,7,8-HxCDF	34.135	2943380	0.52	1.1378	77.6	77.6	0.2949	0.2949	77.62	
1,2,3,4,7,8-HxCDF	34.152	1847821	1.27	1.2643	49.7	49.7	0.2356	0.2356	99.31	
D 13C-1,2,3,6,7,8-HxCDF	34.321	3375614	0.53	1.3173	76.9	76.9	0.2547	0.2547	76.89	
1,2,3,6,7,8-HxCDF	34.337	2073116	1.25	1.2230	50.2	50.2	0.2208	0.2208	100	
D 13C-2,3,4,6,7,8-HxCDF	35.231	3253131	0.54	1.2457	78.4	78.4	0.2693	0.2693	78.36	
2,3,4,6,7,8-HxCDF	35.248	2012194	1.25	1.2464	49.6	49.6	0.1929	0.1929	99.25	
D 13C-1,2,3,7,8,9-HxCDF	36.183	3057217	0.53	1.1840	77.5	77.5	0.2834	0.2834	77.48	
1,2,3,7,8,9-HxCDF	36.200	1906180	1.27	1.2638	49.3	49.3	0.1908	0.1908	98.67	
A Non-2,3,7,8-sub-HxCDF	34.215						0.2083	0.2083		
S Total HxCDF					198.8	198.8	0.2100	0.2100		
* 13C-1,2,3,7,8,9-HxCDD	35.981	3332636	1.25	2.9E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.458	2188022	1.28	0.8477	77.4	77.4	0.2121	0.2121	77.45	
1,2,3,4,7,8-HxCDD	35.475	1243596	1.26	1.1561	49.2	49.2	0.1062	0.1062	98.33	
D 13C-1,2,3,6,7,8-HxCDD	35.584	2586032	1.27	0.9979	77.8	77.8	0.1802	0.1802	77.76	
1,2,3,6,7,8-HxCDD	35.601	1322527	1.25	1.0284	49.7	49.7	0.1085	0.1085	99.46	
1,2,3,7,8,9-HxCDD	35.989	1416802	1.24	1.1789	50.3	50.3	0.0992	0.0992	101	
A Non-2,3,7,8-sub-HxCDD	34.670						0.1043	0.1043		
S Total HxCDD					149.2	149.2	0.1046	0.1046		
D 13C-1,2,3,4,6,7,8-HpCDF	38.089	2566275	0.45	0.9884	77.9	77.9	0.3394	0.3394	77.91	
1,2,3,4,6,7,8-HpCDF	38.105	1913469	1.04	1.5064	49.5	49.5	0.1931	0.1931	98.99	
D 13C-1,2,3,4,7,8,9-HpCDF	39.395	2413911	0.45	0.9203	78.7	78.7	0.3645	0.3645	78.71	
1,2,3,4,7,8,9-HpCDF	39.404	1715538	1.04	1.4548	48.9	48.9	0.1997	0.1997	97.70	
A Non-2,3,7,8-sub-HpCDF	38.760						0.1963	0.1963		
S Total HpCDF					98.3	98.3	0.1964	0.1964		
D 13C-1,2,3,4,6,7,8-HpCDD	39.083	2516435	1.06	0.9556	79.0	79.0	0.1952	0.1952	79.01	
1,2,3,4,6,7,8-HpCDD	39.092	1332629	1.05	1.0640	49.8	49.8	0.1031	0.1031	99.54	
A Non-2,3,7,8-sub-HpCDD	38.875						0.1031	0.2783		U
S Total HpCDD					49.8	49.8	0.1031	0.1031		
D 13C-OCDD	41.535	4013062	0.90	0.7420	162.3	162.3	0.1735	0.1735	81.14	
OCDF	41.627	2839474	0.91	1.4296	99.0	99.0	0.0873	0.0873	98.99	
OCDD	41.543	2253475	0.89	1.1293	99.4	99.4	0.0791	0.0791	99.45	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d				
Lims ID:	LCS 320-412959/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	20-Sep-2020 18:18:00	ALS Bottle#:	0	Worklist Smp#:	62
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCS 320-412959/2-A				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	22-Sep-2020 10:46:03	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1059				
First Level Reviewer: shardaa		Date:	21-Sep-2020 12:37:52		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.106	20.128	-1		1493664	216778	316	790	686		
333.9338	20.097	20.128	-2		1877276	282971	155	387	1826	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.178	19.208	-2	0.954	1810089	265427	429	1072	619		
317.9389	19.178	19.208	-2	0.954	2182037	333445	279	697	1195	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.203	19.225	-1	1.001	190122	27437	46	115	596		
305.8987	19.203	19.225	-1	1.001	253607	36686	55	137	667	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.490	18.816	-19	0.964	655	199	46	115	4		
305.8987	18.499	18.816	-19	0.965	1221	213	55	137	4	0.54(0.65-0.89)	
	Empc Correction				850	258	55	137	5		
13C-2,3,7,8-TCDD											
331.9368	20.458	20.489	-2	1.018	1224582	172390	316	790	546		
333.9338	20.458	20.489	-2	1.018	1541083	210269	155	387	1357	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.484	20.515	-2	1.001	135317	18831	64	160	294		
321.8936	20.484	20.515	-2	1.001	175273	24531	30	75	818	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.484	20.515	-2	1.019	1448364	200722	63	157	3186		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.624						64	160			
321.8936	19.624						30	75			
13C-1,2,3,7,8-PeCDF											
351.9000	26.252	26.266	-1	1.306	2220148	373518	540	1350	692		
353.8970	26.252	26.266	-1	1.306	1403371	228783	366	915	625	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.277	26.283	0	1.001	1169901	192127	271	677	709		
341.8567	26.277	26.283	0	1.001	741128	122025	197	492	619	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.709	27.723	-1	1.378	2075548	326782	540	1350	605		
353.8970	27.709	27.723	-1	1.378	1298289	206951	366	915	565	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.734	27.740	0	1.001	1124420	175497	271	677	648		
341.8567	27.734	27.740	0	1.001	716570	110722	197	492	562	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.607						3	7			
341.8567	23.607						25	62			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.996						271	677			
341.8567	26.996						197	492			
13C-1,2,3,7,8-PeCDD											
367.8949	28.484	28.498	-1	1.417	1390508	214476	154	385	1393		
369.8919	28.493	28.498	0	1.417	876232	136519	127	317	1075	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.509	28.523	-1	1.001	752275	112751	79	197	1427		
357.8516	28.509	28.523	-1	1.001	480823	72197	29	72	2490	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.361						79	197			
357.8516	27.361						29	72			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.135	34.135	0	0.949	1011408	209717	373	932	562		
385.8610	34.135	34.135	0	0.949	1931972	398650	765	1912	521	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.152	34.160	0	1.000	1035336	207071	406	1015	510		
375.8178	34.152	34.160	0	1.000	812485	162956	319	797	511	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.321	34.329	0	0.954	1168136	234930	373	932	630		
385.8610	34.321	34.329	0	0.954	2207478	435935	765	1912	570	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.337	34.345	0	1.000	1153033	228485	406	1015	563		
375.8178	34.337	34.345	0	1.000	920083	180954	319	797	567	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.231	35.229	0	0.979	1135399	263574	373	932	707		
385.8610	35.231	35.229	0	0.979	2117732	490059	765	1912	641	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.248	35.246	0	1.000	1118939	256401	406	1015	632		
375.8178	35.248	35.246	0	1.000	893255	204127	319	797	640	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.183	36.181	0	1.006	1055387	261193	373	932	700		
385.8610	36.183	36.181	0	1.006	2001830	490357	765	1912	641	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.200	36.198	0	1.000	1065236	262534	406	1015	647		
375.8178	36.200	36.198	0	1.000	840944	204285	319	797	640	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.215						406	1015			
375.8178	34.215						319	797			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.981	35.979	0		1850894	471753	359	897	1314		
403.8529	35.972	35.979	0		1481742	376267	251	627	1499	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.458	35.457	0	0.985	1228549	320634	359	897	893		
403.8529	35.458	35.457	0	0.985	959473	245272	251	627	977	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.475	35.474	0	1.000	692626	178214	154	385	1157		
391.8127	35.475	35.474	0	1.000	550970	139870	124	310	1128	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.584	35.583	0	0.989	1445643	347387	359	897	968		
403.8529	35.584	35.583	0	0.989	1140389	275750	251	627	1099	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.601	35.600	0	1.000	734131	175332	154	385	1139		
391.8127	35.601	35.600	0	1.000	588396	139602	124	310	1126	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.989	35.988	0	1.015	784754	193174	154	385	1254		
391.8127	35.989	35.988	0	1.015	632048	156975	124	310	1266	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.670						154	385			
391.8127	34.670						124	310			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.089	38.085	0	1.059	802445	255711	372	930	687		
419.8220	38.089	38.085	0	1.059	1763830	566538	766	1915	740	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.105	38.102	0	1.000	973313	309348	485	1212	638		
409.7788	38.105	38.102	0	1.000	940156	293900	472	1180	623	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.395	39.382	1	1.095	752648	257026	372	930	691		
419.8220	39.387	39.382	0	1.095	1661263	566423	766	1915	739	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.404	39.399	0	1.000	874963	300234	485	1212	619		
409.7788	39.404	39.399	0	1.000	840575	284886	472	1180	604	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.760						485	1212			
409.7788	38.760						472	1180			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.083	39.079	0	1.086	1294757	441168	305	762	1446		
437.8140	39.083	39.079	0	1.086	1221678	411575	328	820	1255	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.092	39.088	0	1.000	681870	234341	194	485	1208		
425.7737	39.092	39.088	0	1.000	650759	221205	180	450	1229	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											U
423.7767	38.426	38.875	-27	0.983	3804	1226	194	485	6		
425.7737	38.426	38.875	-27	0.983	3647	1105	180	450	6	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.535	41.533	0	1.154	1901592	621045	209	522	2972		
471.7750	41.535	41.533	0	1.154	2111470	693692	228	570	3043	0.90(0.76-1.02)	
OCDF											
441.7428	41.627	41.625	0	1.002	1354028	440021	139	347	3166		
443.7399	41.627	41.625	0	1.002	1485446	483564	189	472	2559	0.91(0.76-1.02)	
OCDD											
457.7377	41.543	41.541	0	1.000	1063964	347917	121	302	2875		
459.7348	41.543	41.541	0	1.000	1189511	386926	114	285	3394	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Lims ID: LCS 320-412959/2-A
Client ID:
Inject. Date: 20-Sep-2020 18:18:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413816 Lims Sample ID: 62

Non-2,3,7,8-sub-TCDF, RT: 18.816

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	3992126	598872

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	3992126	598872

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.490	655	199	1221	213	0.0433	0.54	RQ
18.490	655	199	850	258	0.0347		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Lims ID:	LCS 320-412959/2-A
Client ID:	

Inject. Date:	20-Sep-2020 18:18:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413816	Lims Sample ID:	62

Non-2,3,7,8-sub-HpCDD, RT: 38.875

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2516435	852743

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	2516435	852743

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.426	3804	1226	3647	1105	0.2783	1.04	

Compound is Marked ND

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

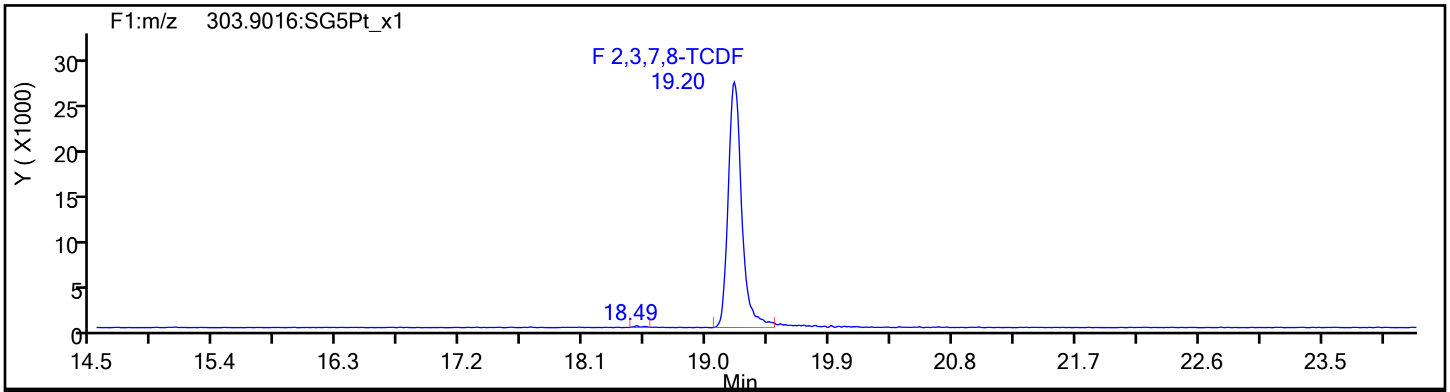

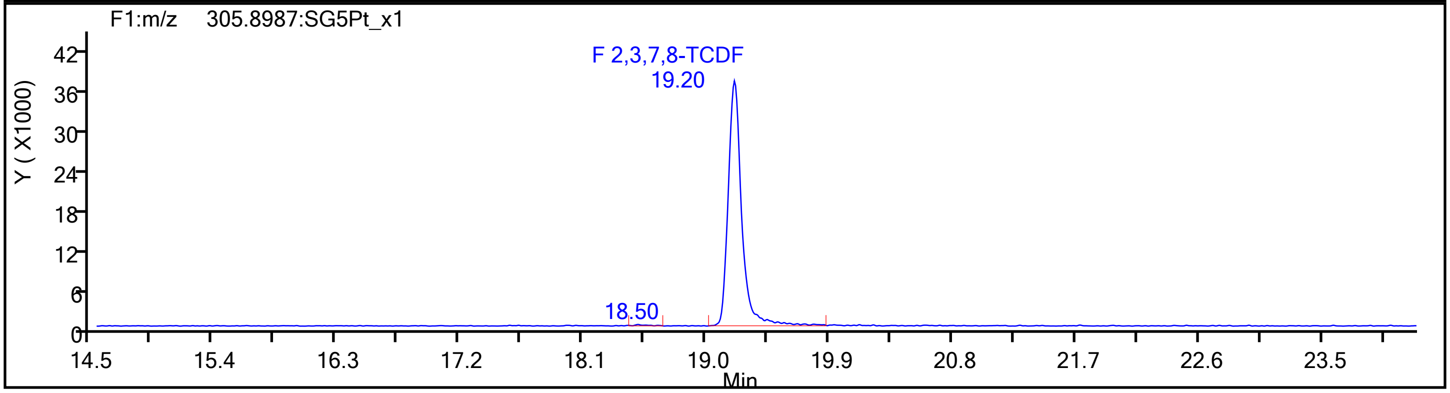

TCDF Standards

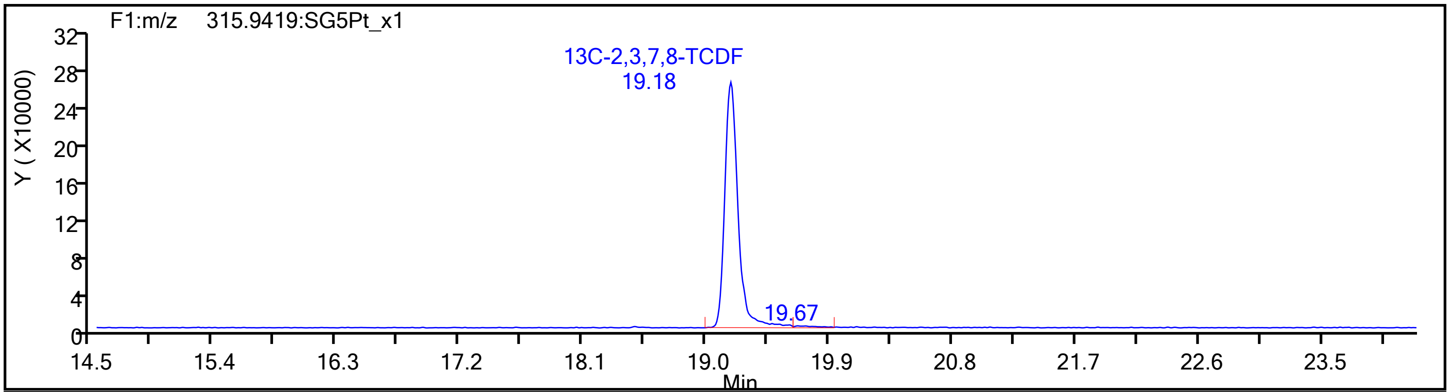

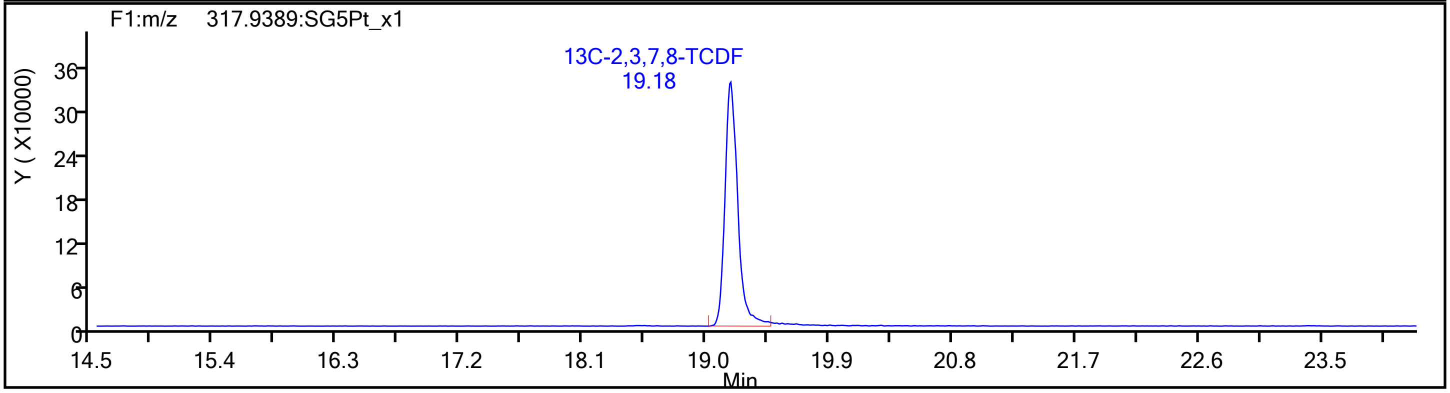

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

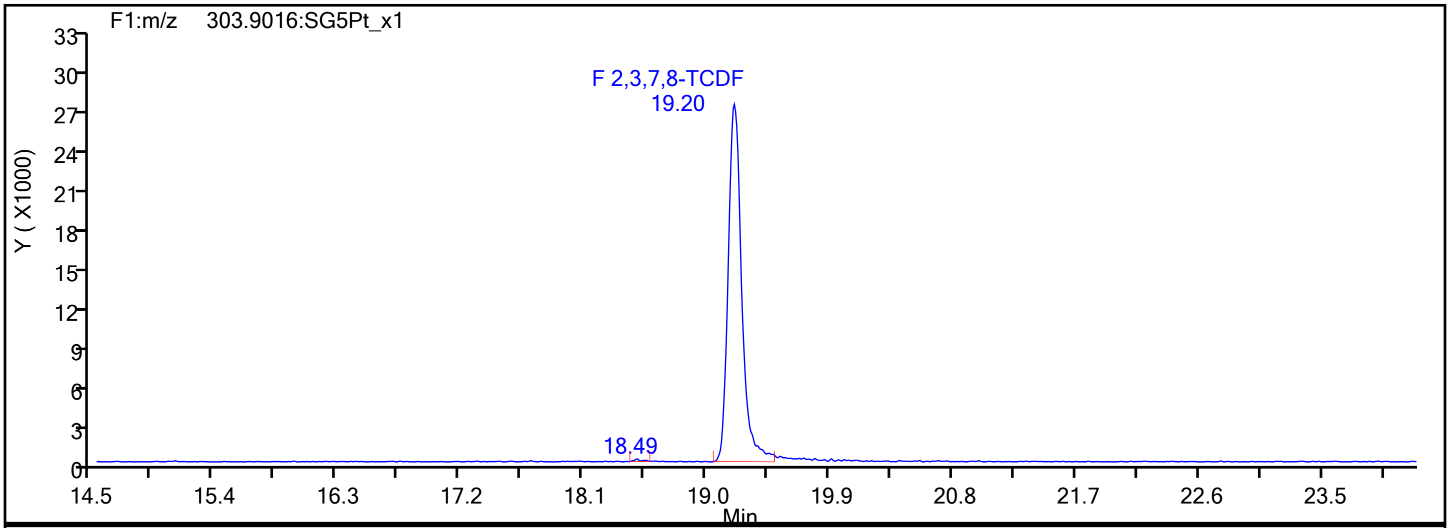

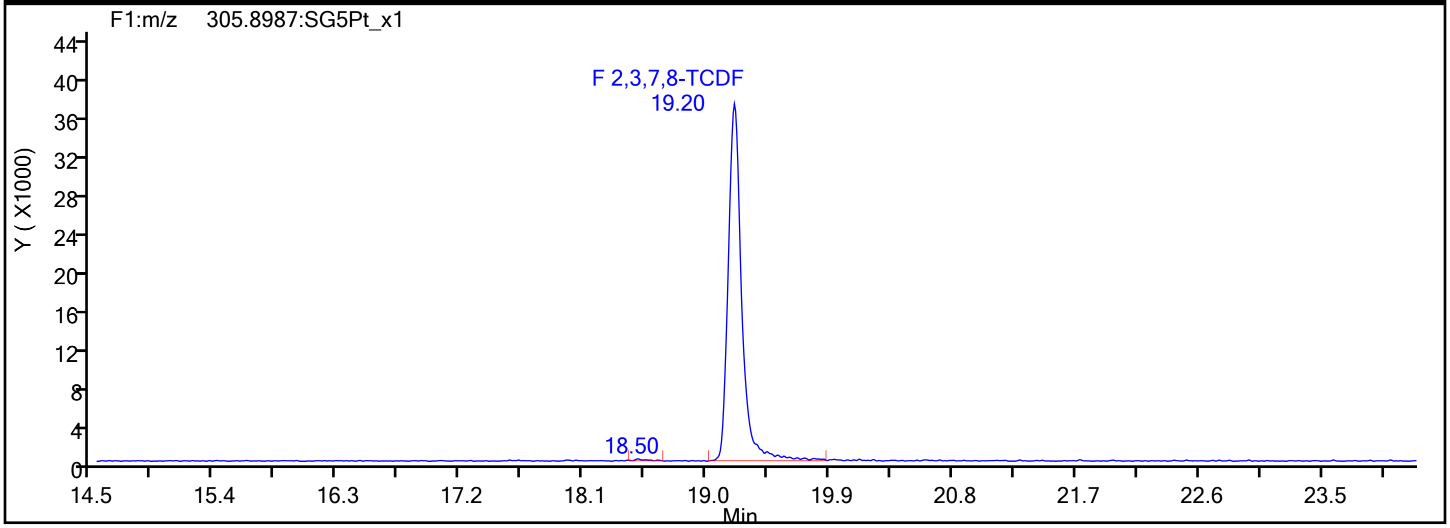

TCDF Interference Mass

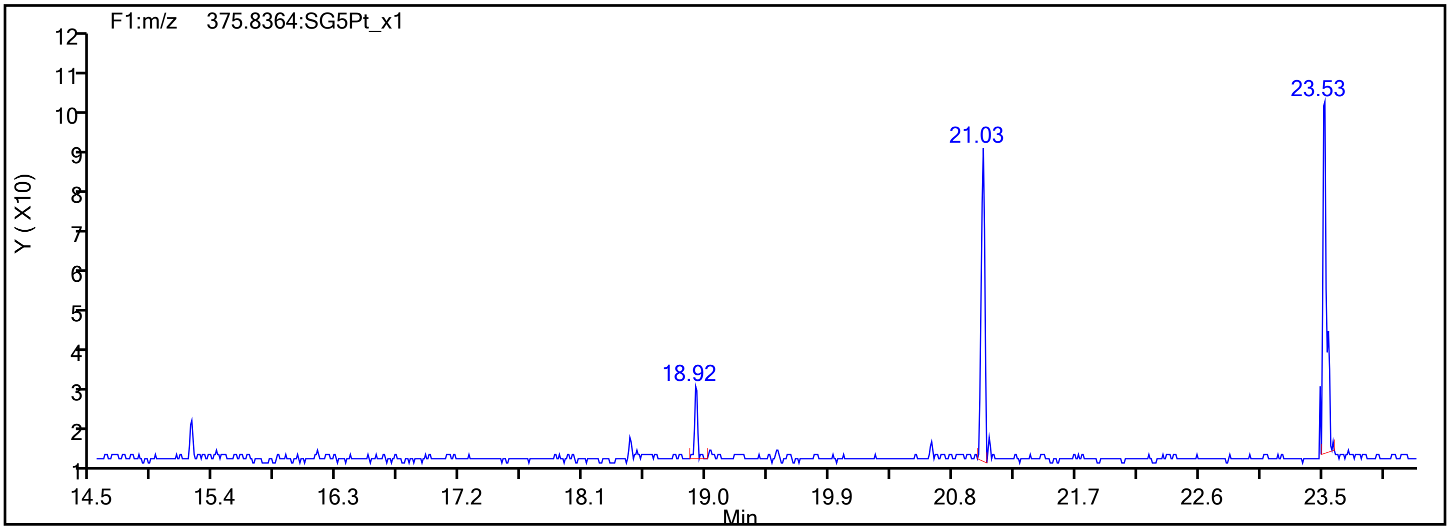

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d

Injection Date: 20-Sep-2020 18:18:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816

Sample Line#: 62

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

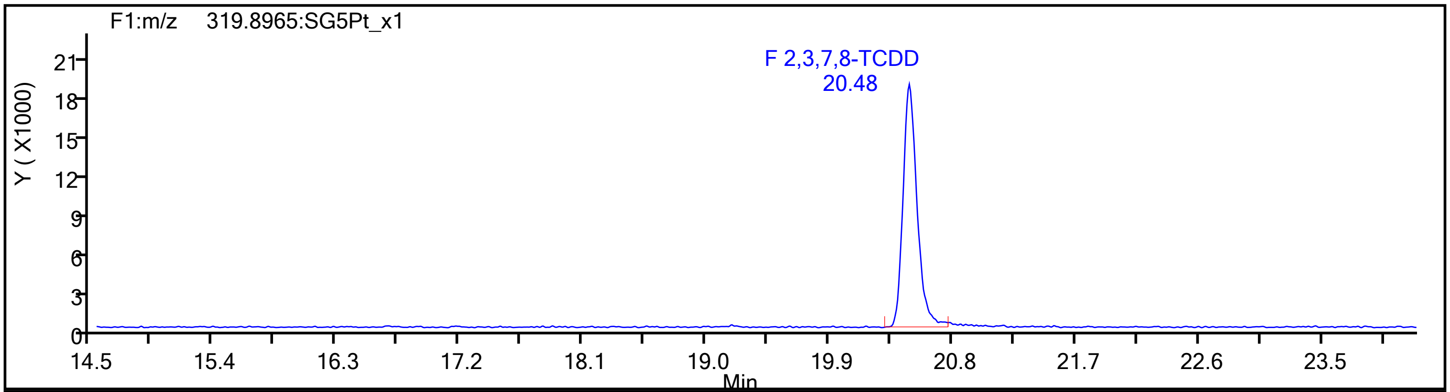

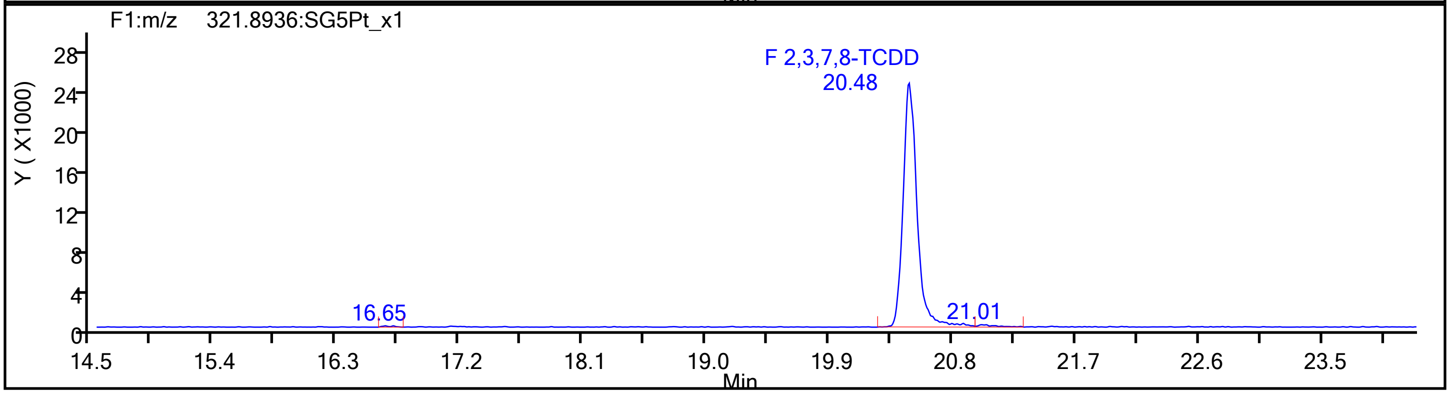

TCDD Standards

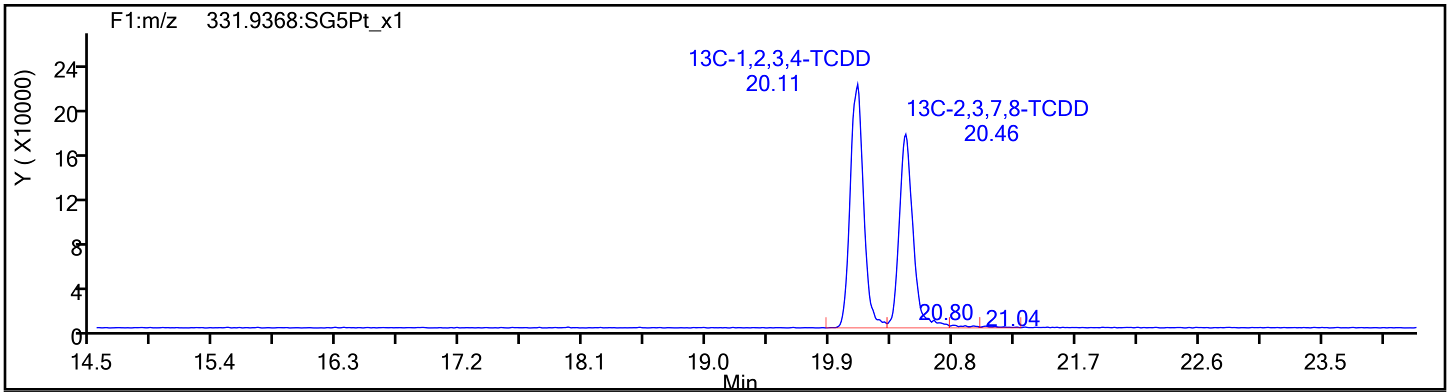

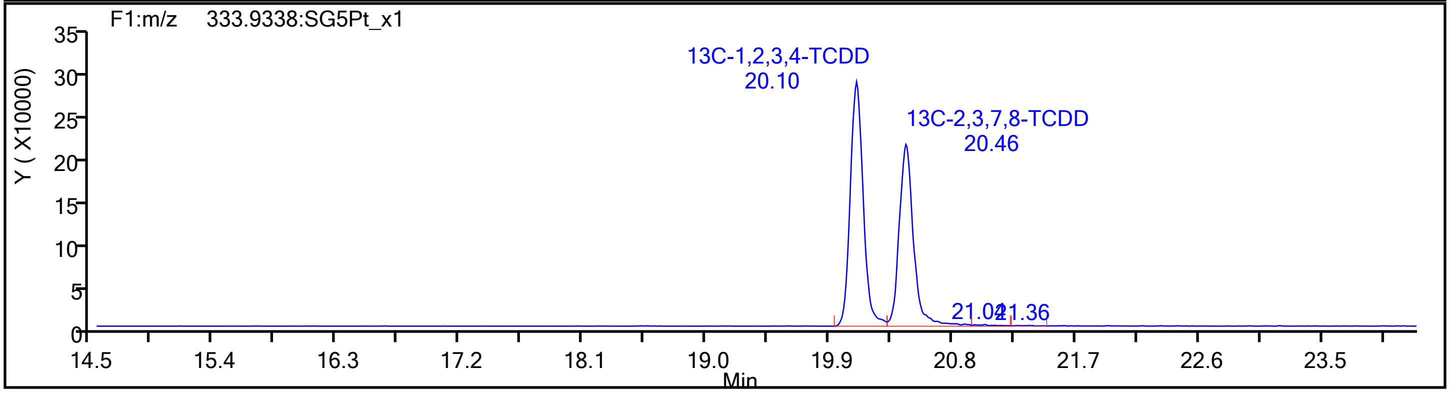

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

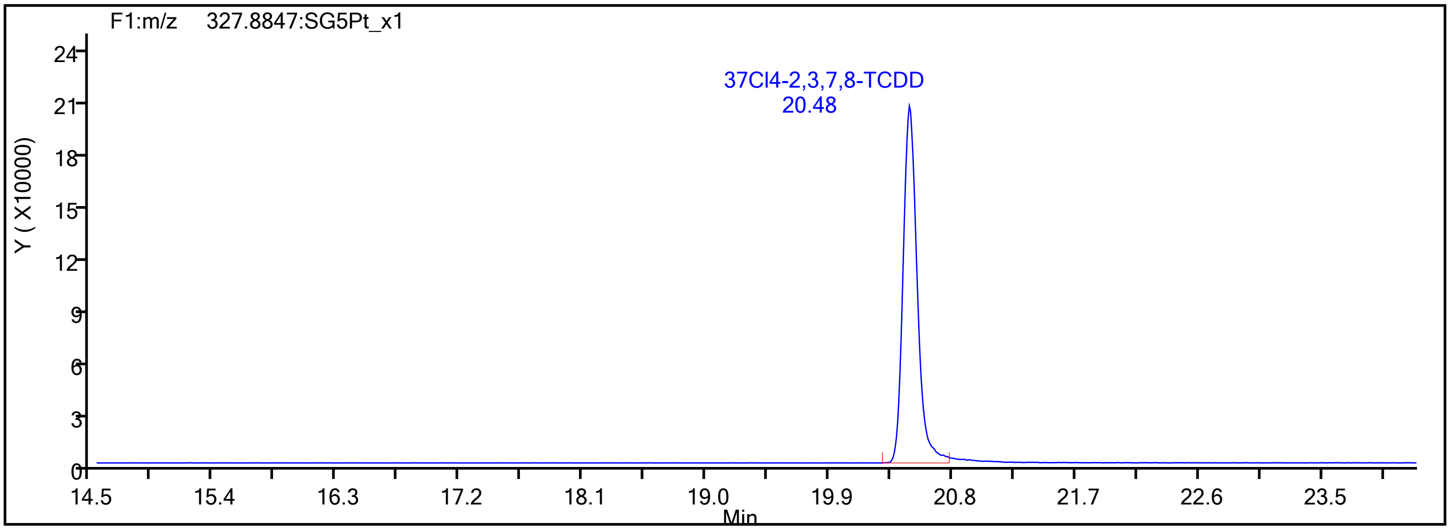

37Cl4-TCDD Standards

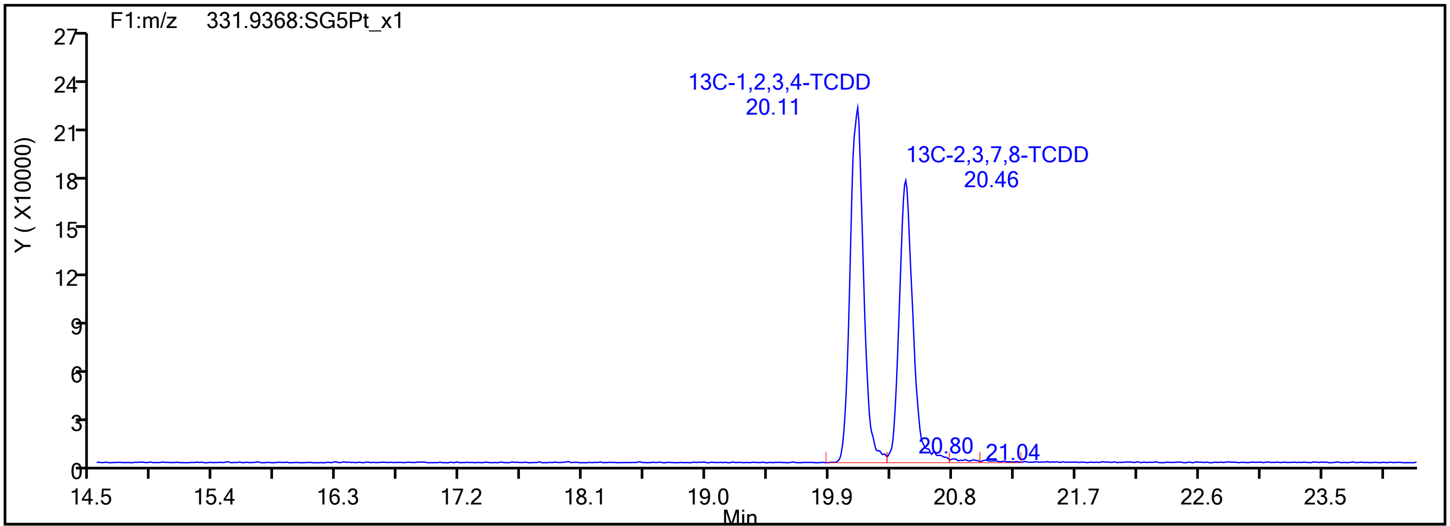

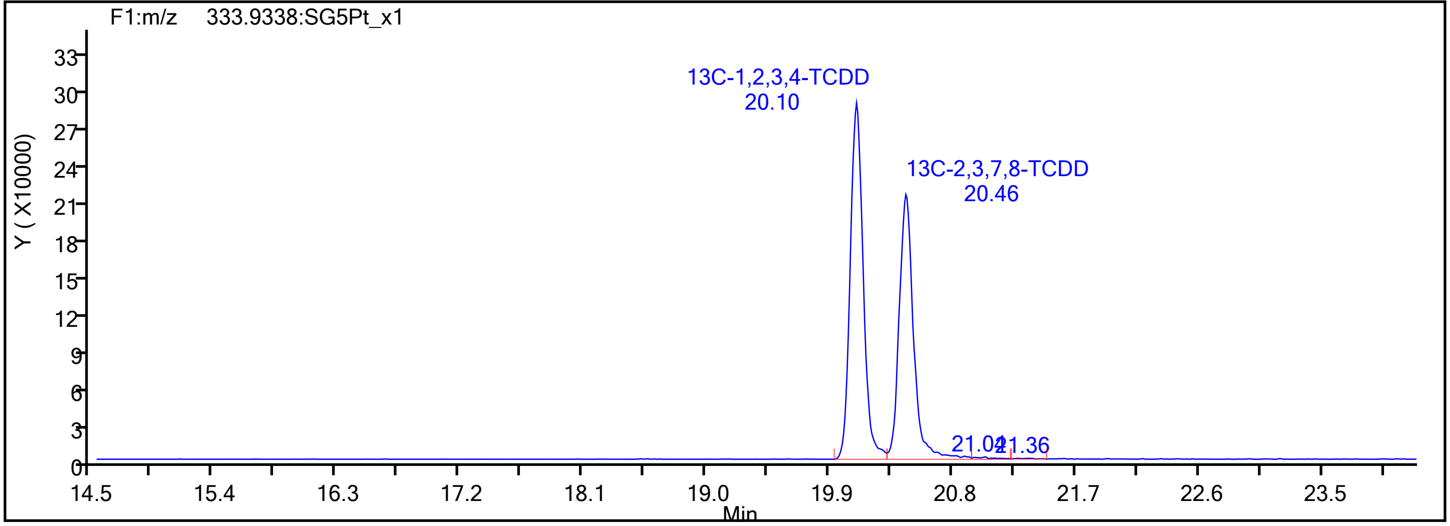

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

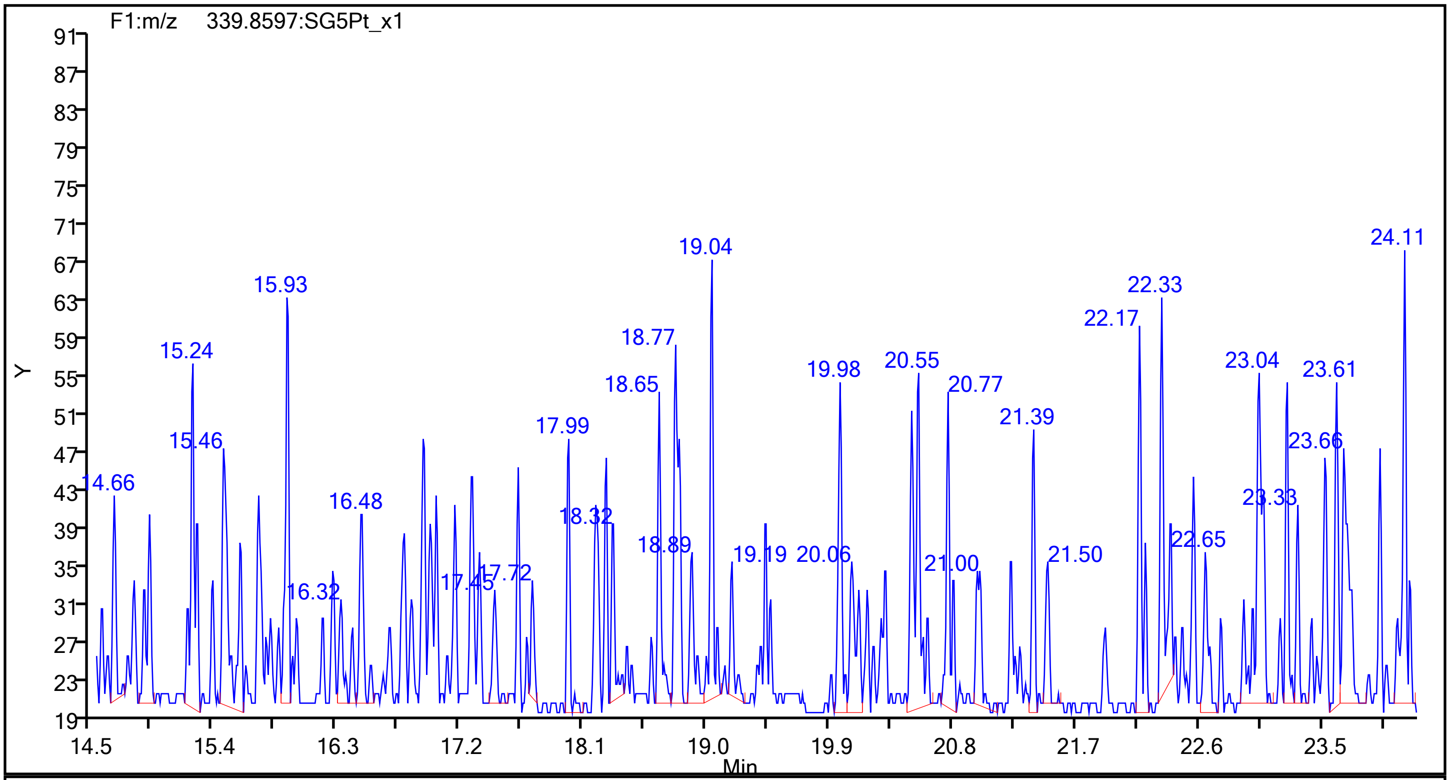

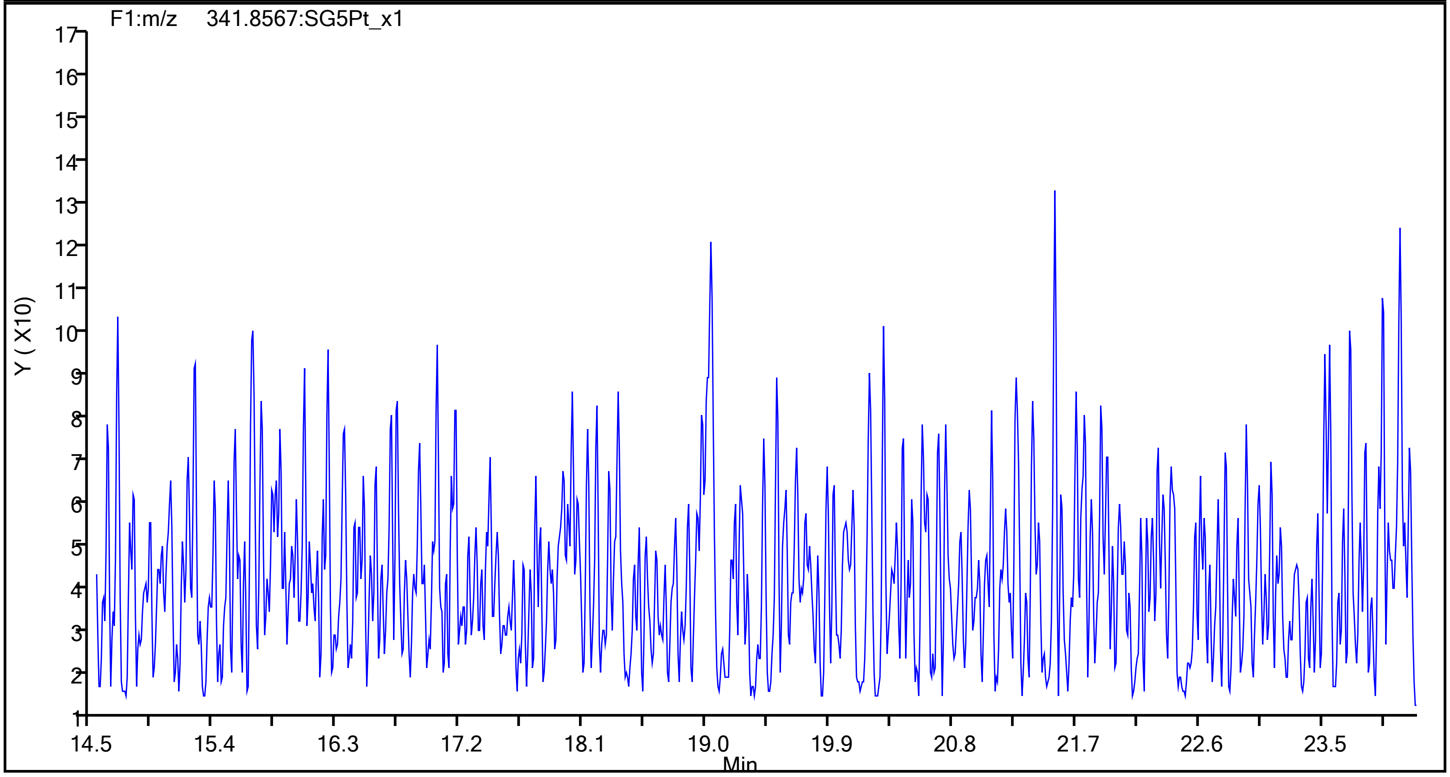

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Injection Date: 20-Sep-2020 18:18:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 62
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

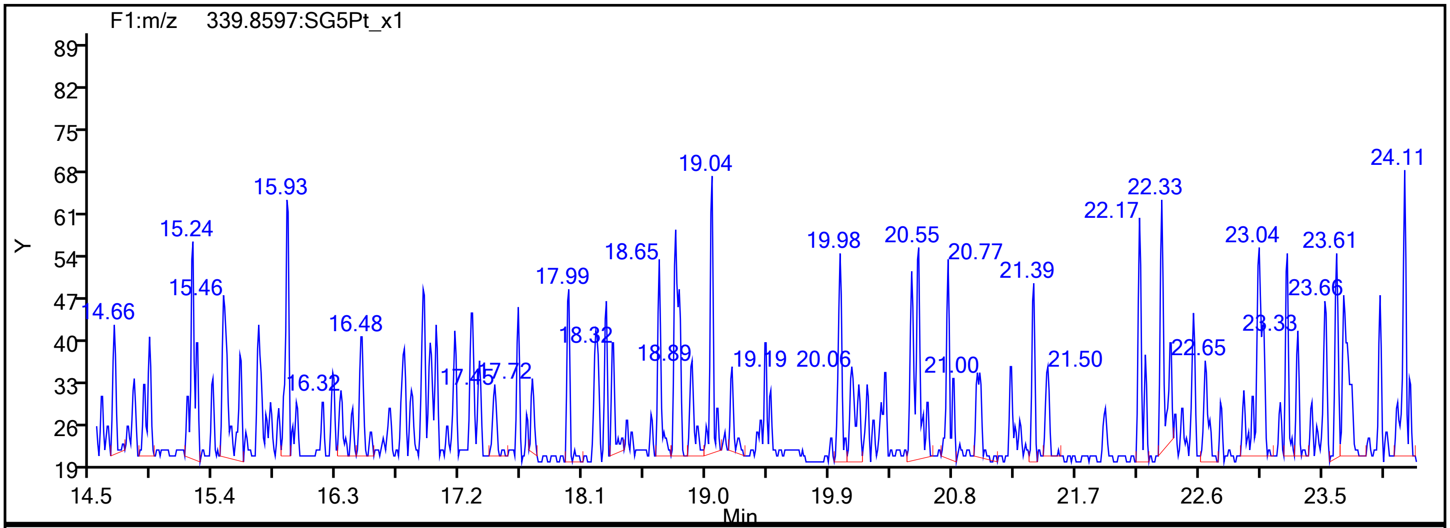

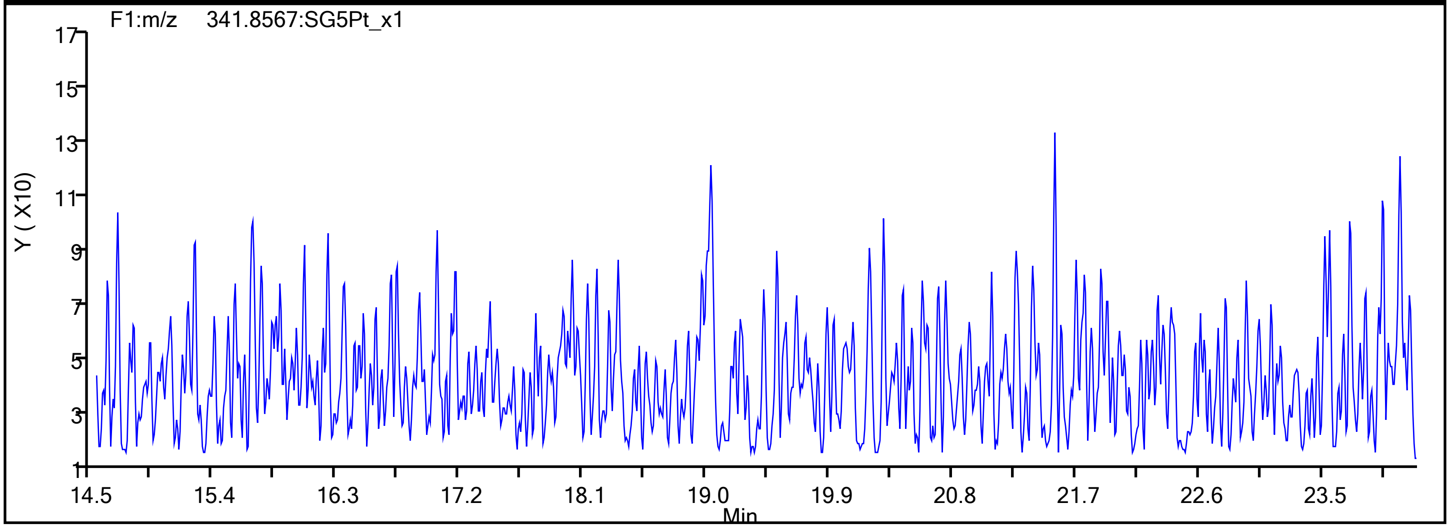

F1 PeCDFs Interference Mass

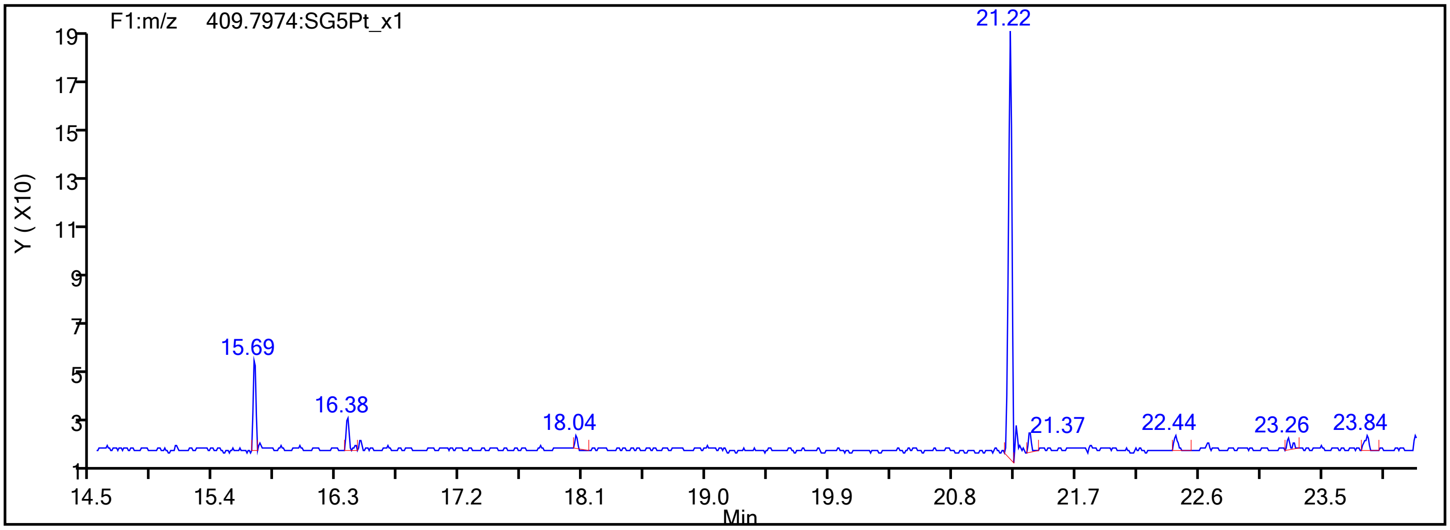

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Injection Date: 20-Sep-2020 18:18:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816 Sample Line#: 62
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

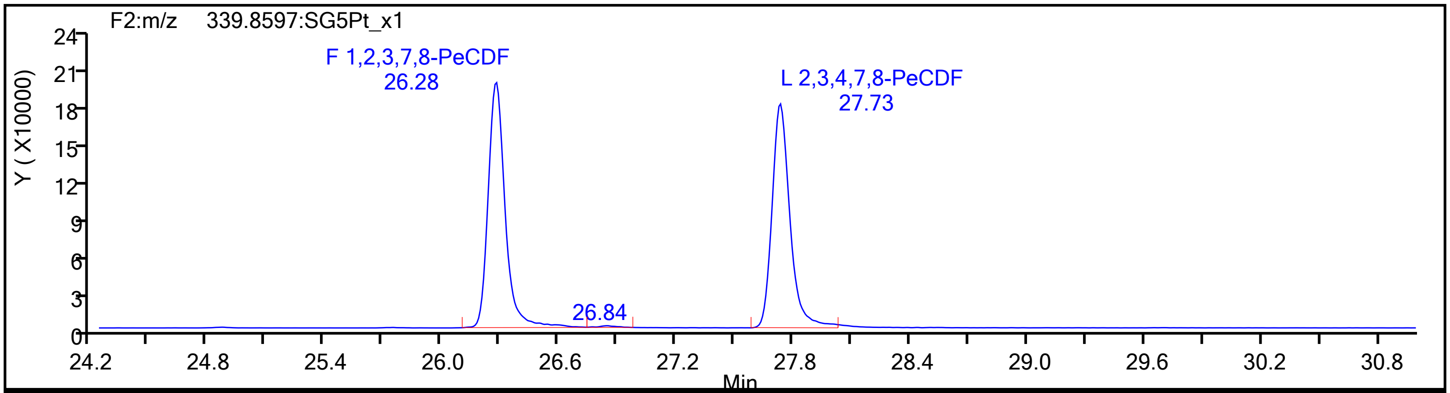

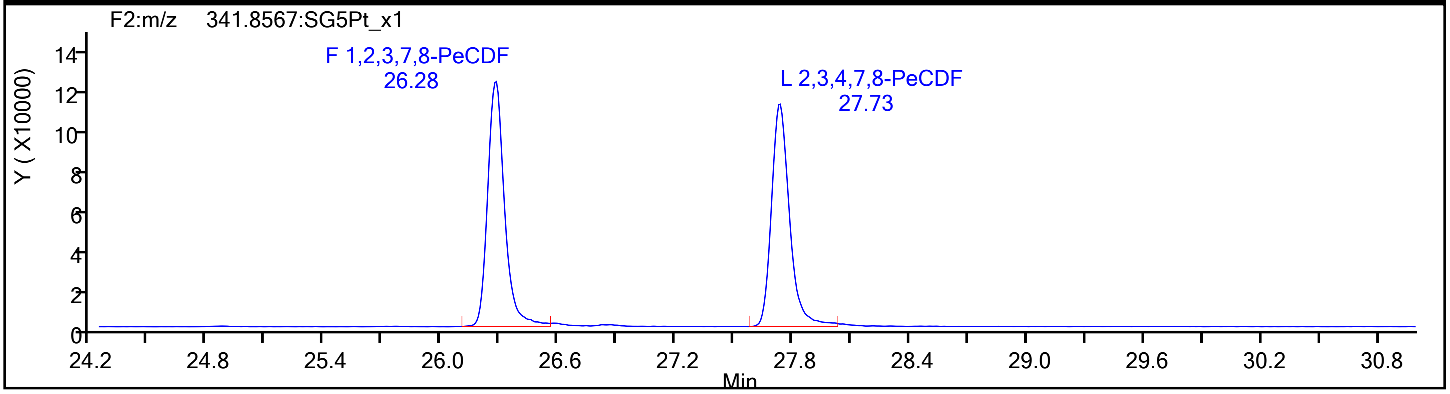

PeCDF Standards

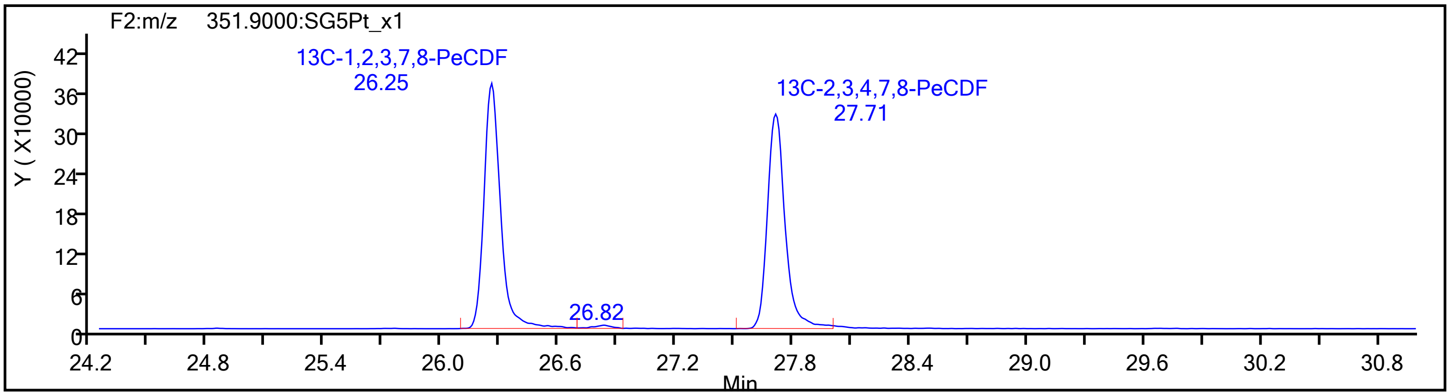

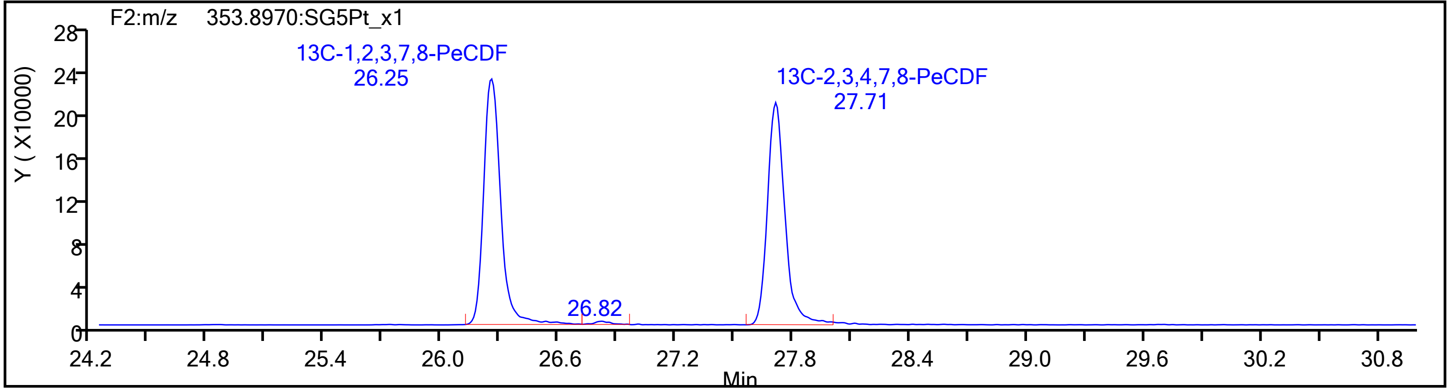

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d

Injection Date: 20-Sep-2020 18:18:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816

Sample Line#: 62

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

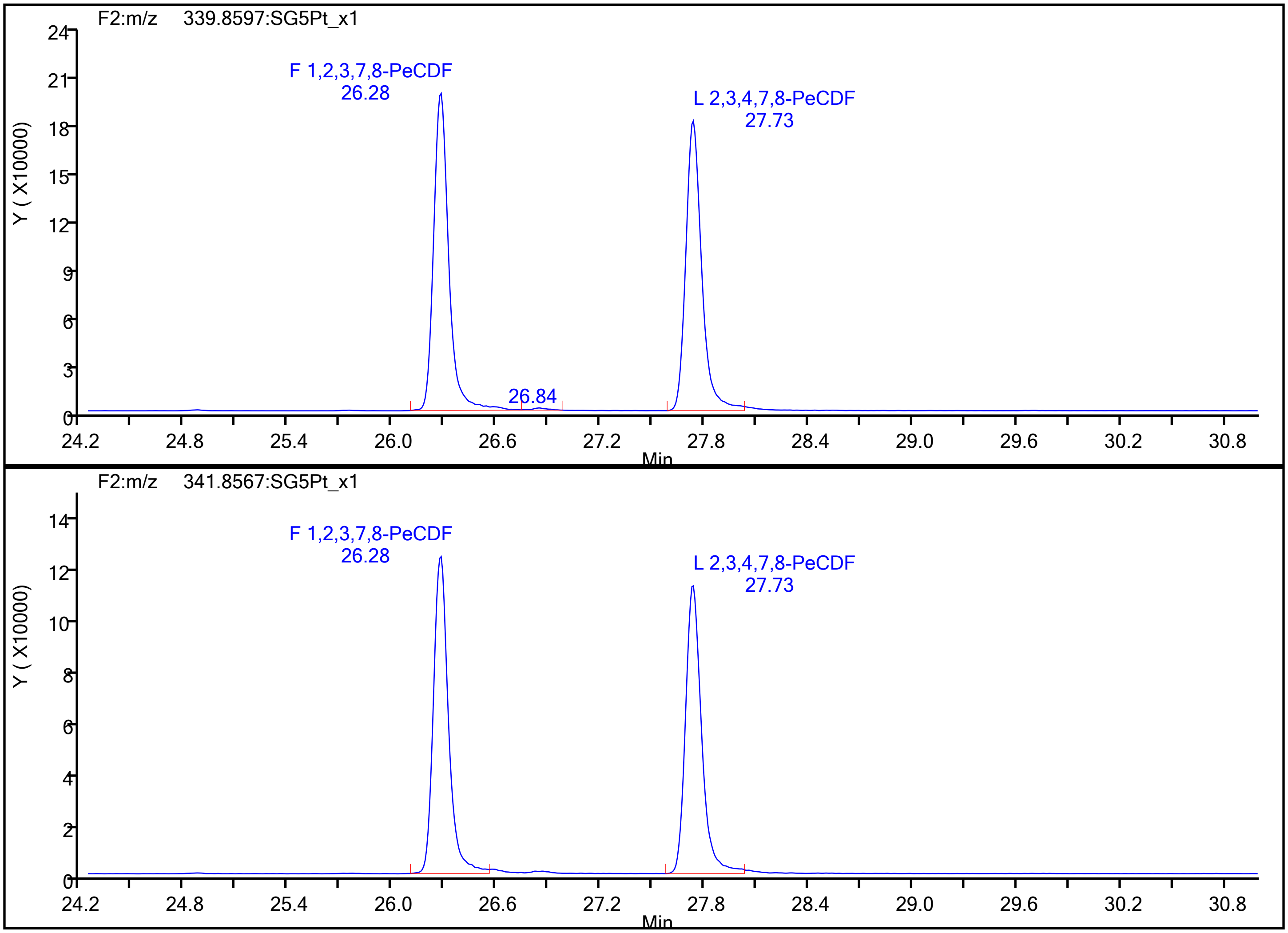

PeCDF Interference Mass

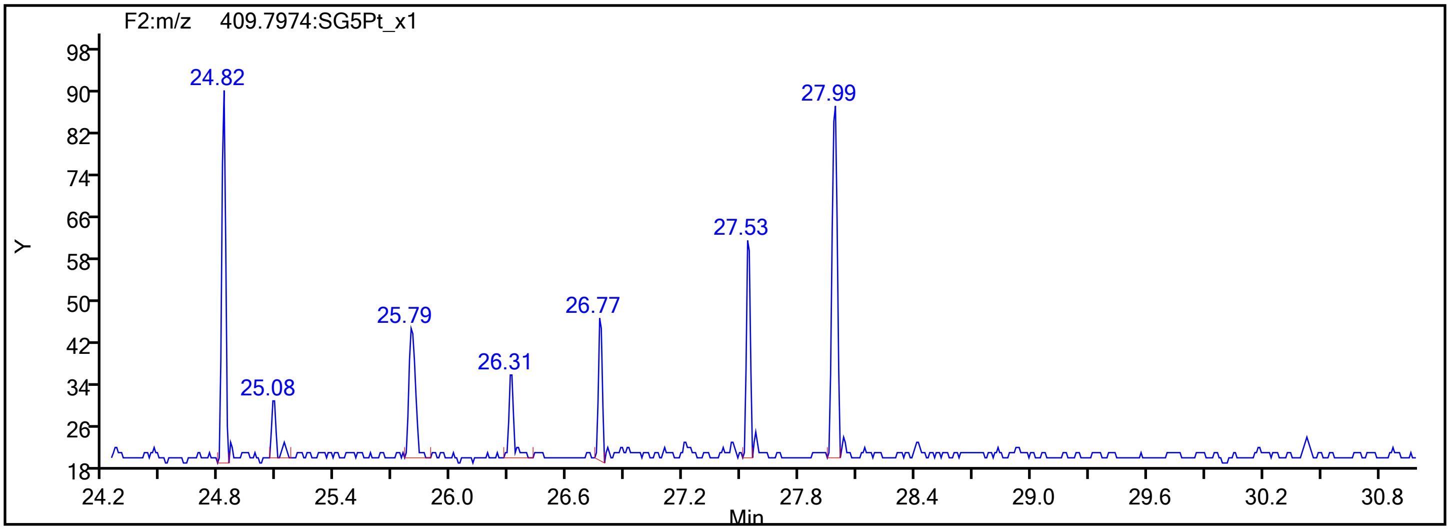

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Injection Date: 20-Sep-2020 18:18:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816 Sample Line#: 62
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

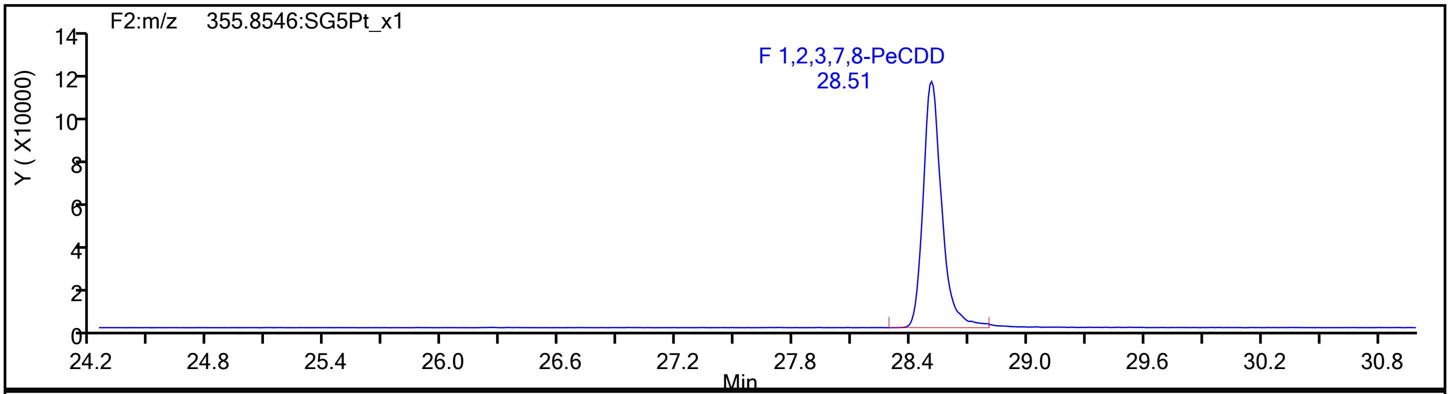

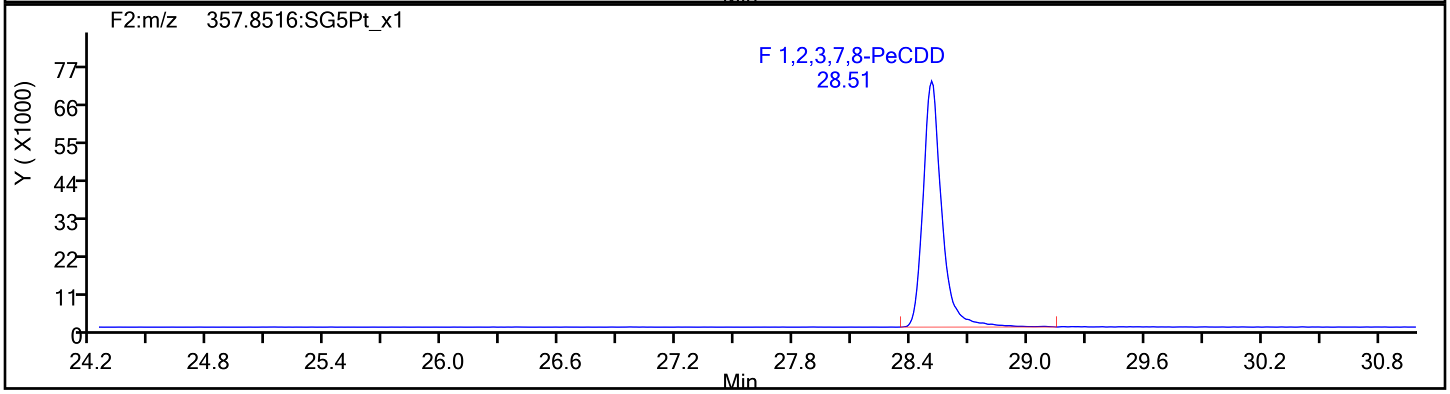

PeCDD Standards

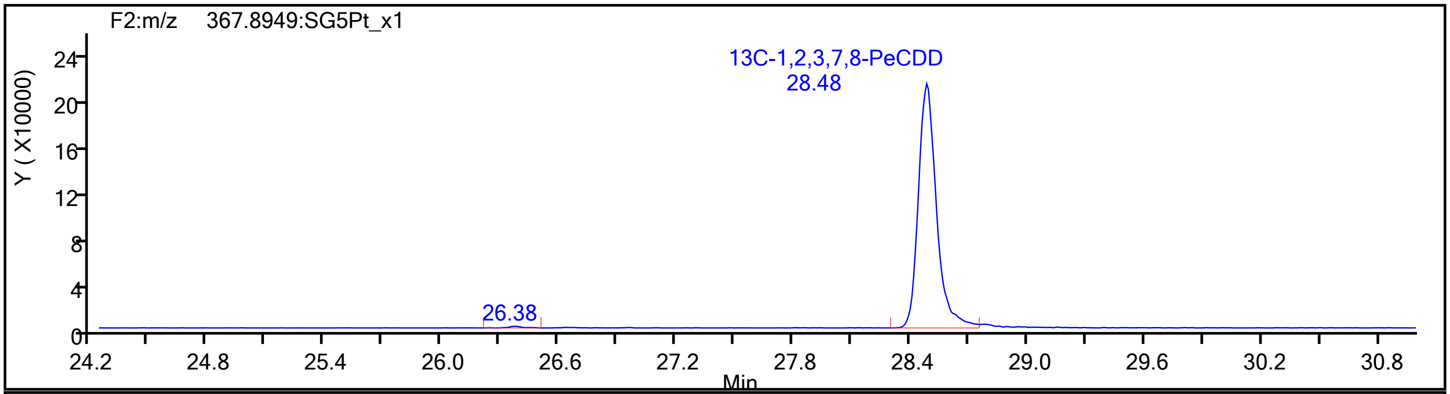

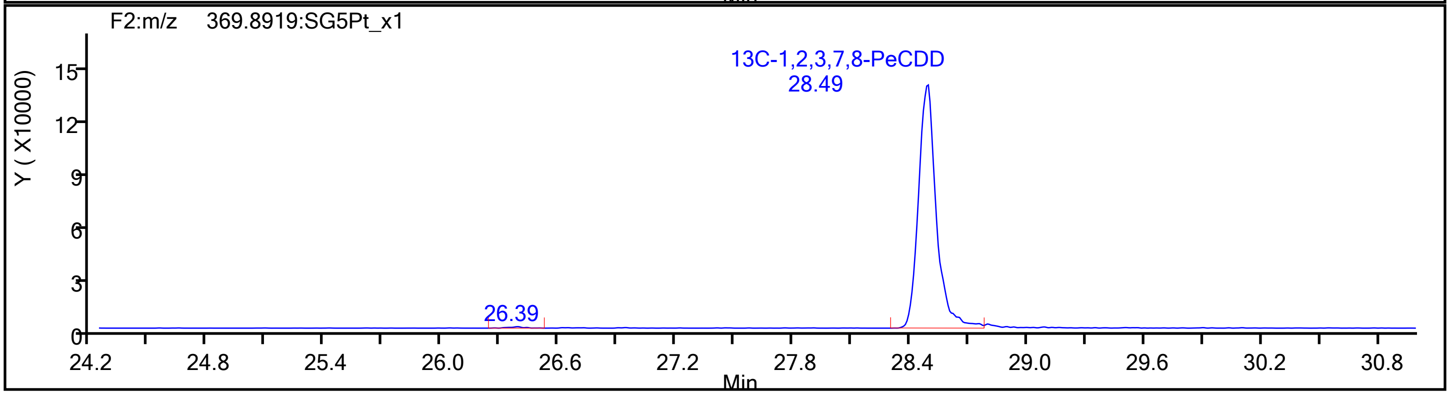

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Injection Date: 20-Sep-2020 18:18:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 62
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

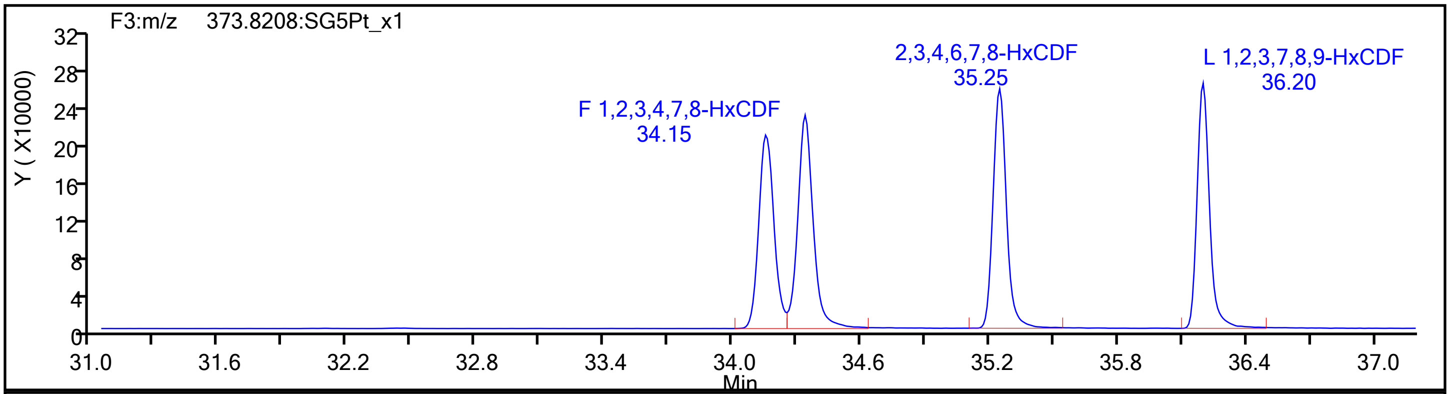

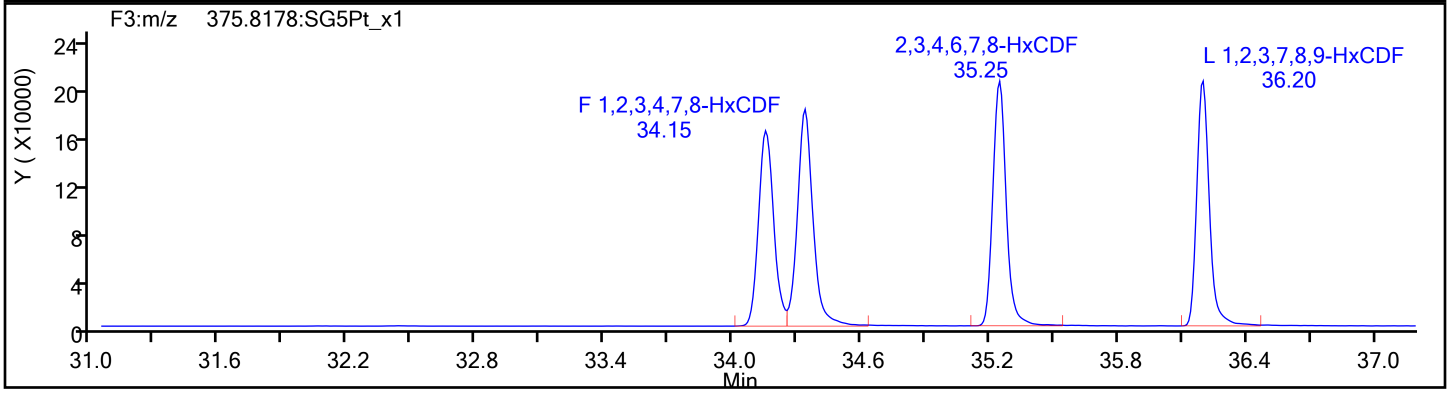

HxCDF Standards

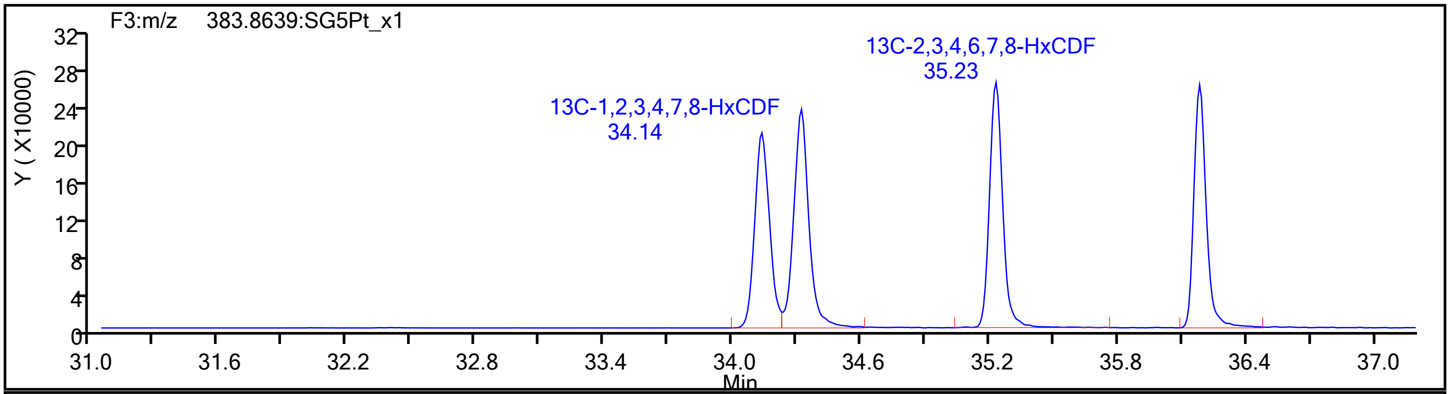

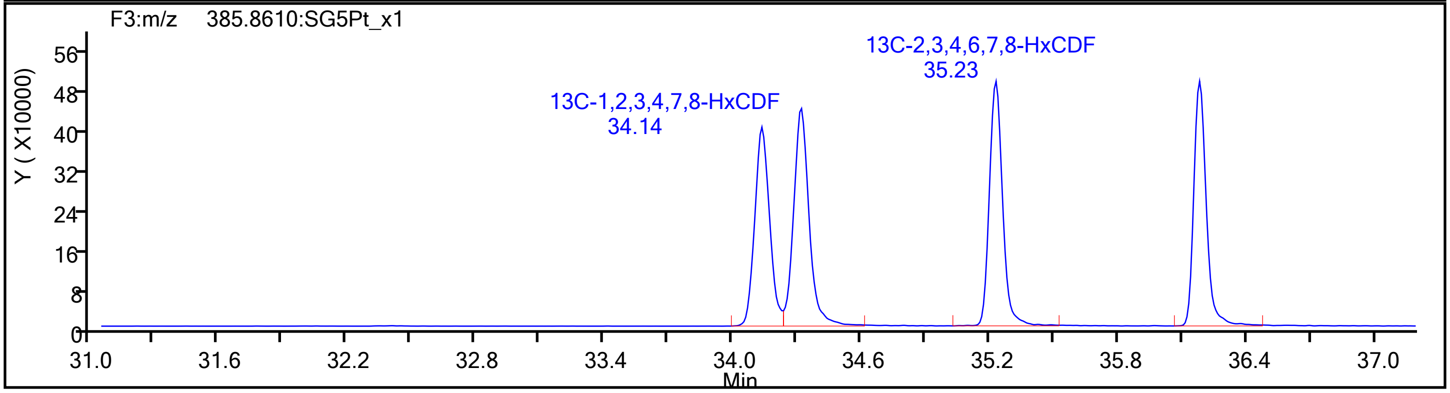

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d
Injection Date: 20-Sep-2020 18:18:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413816
Sample Line#: 62
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

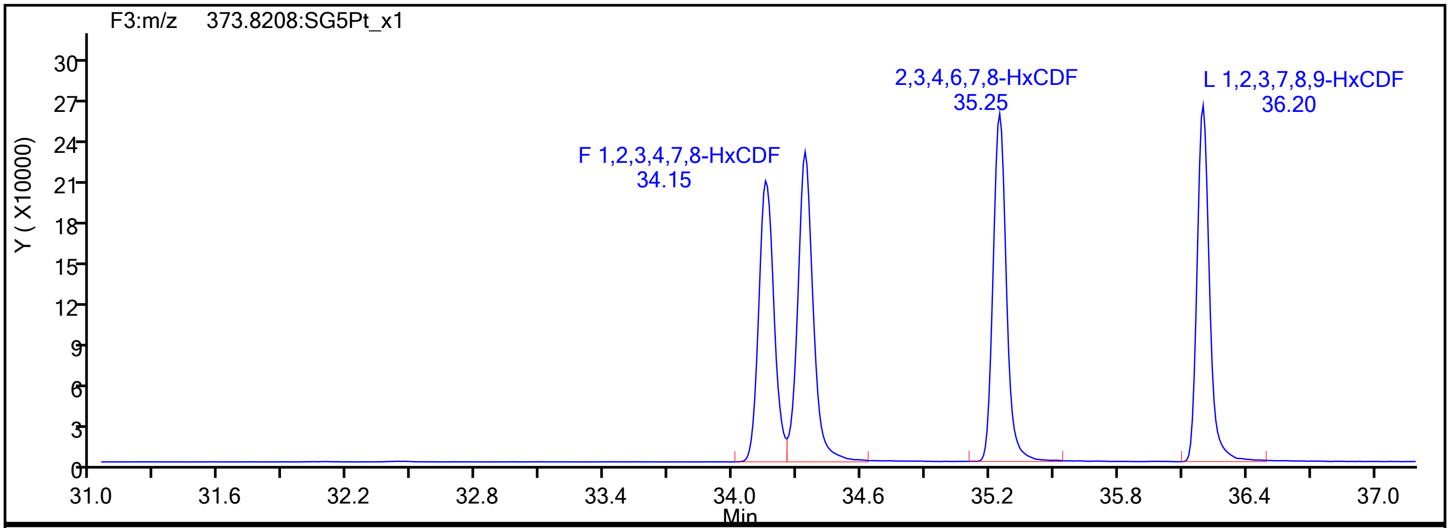

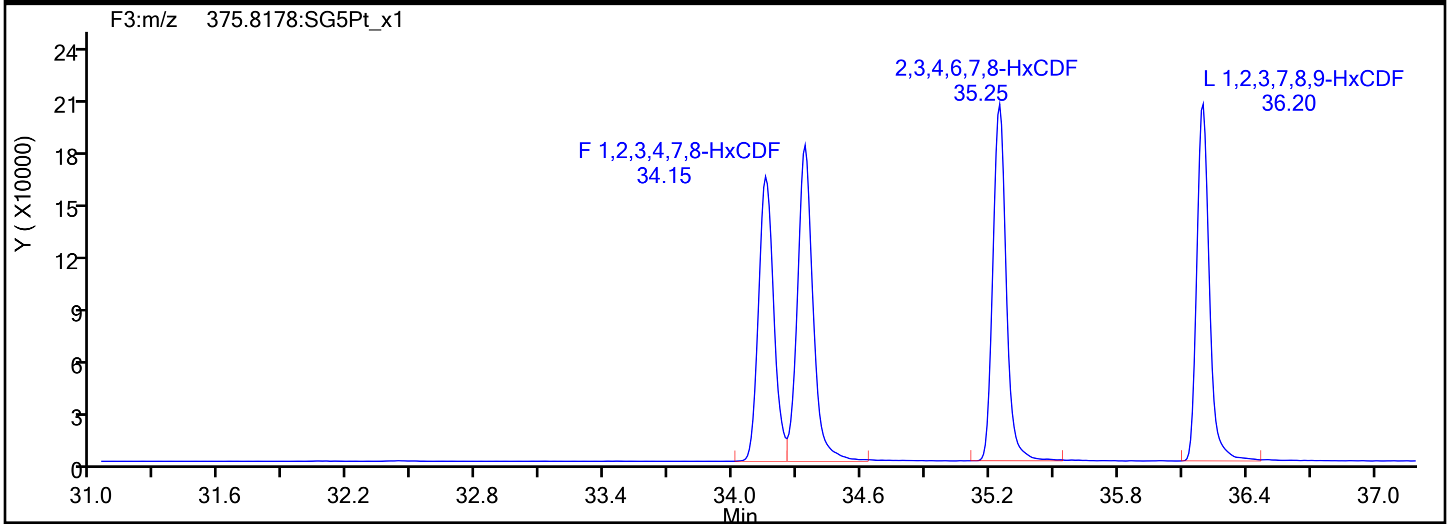

HxCDF Interference Mass

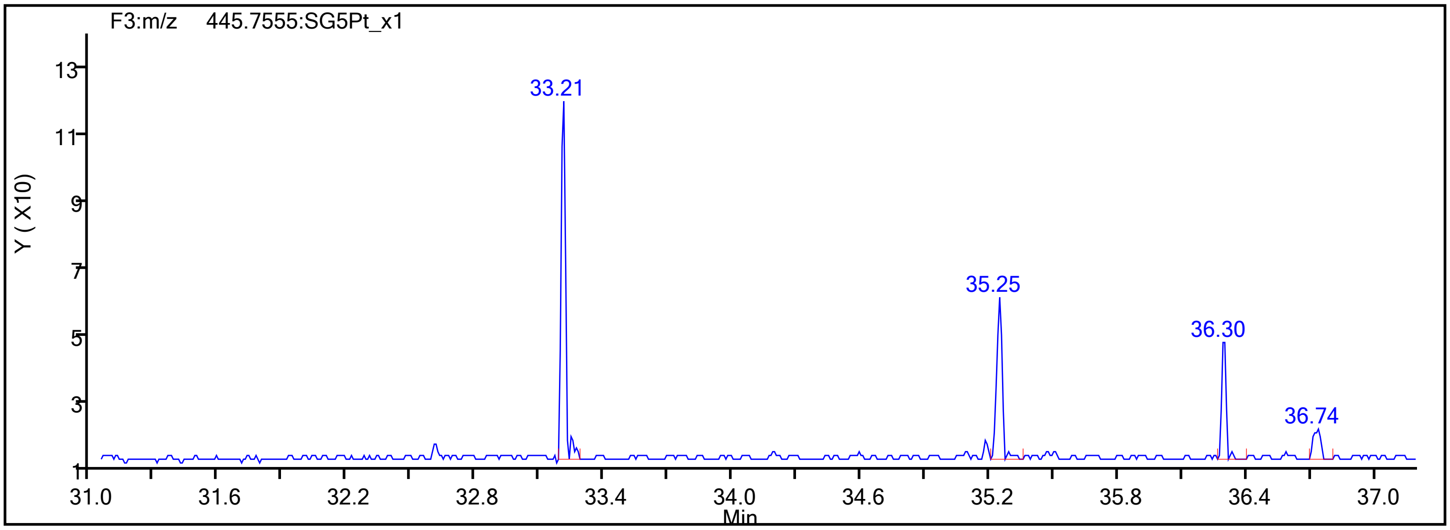

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

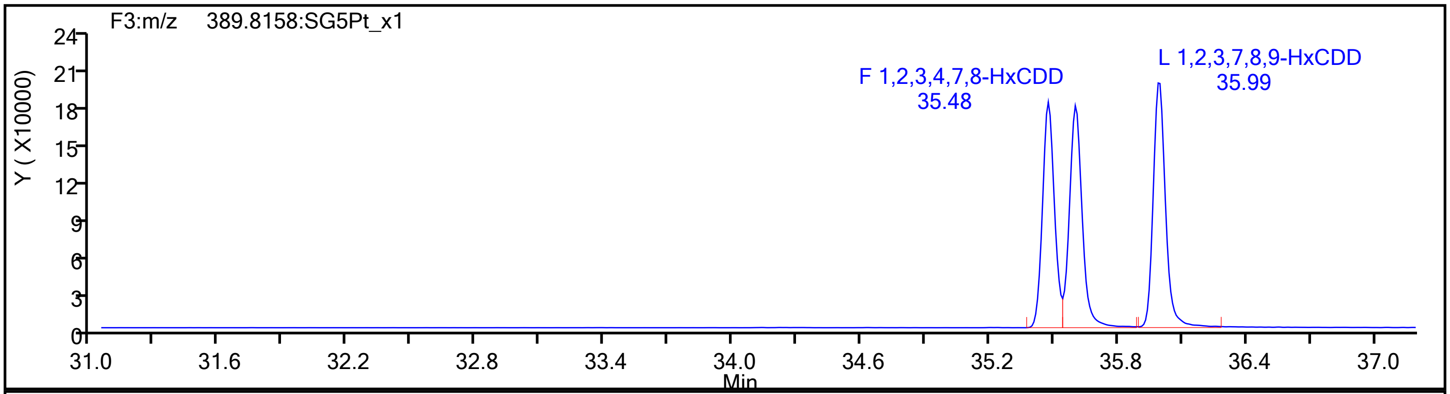

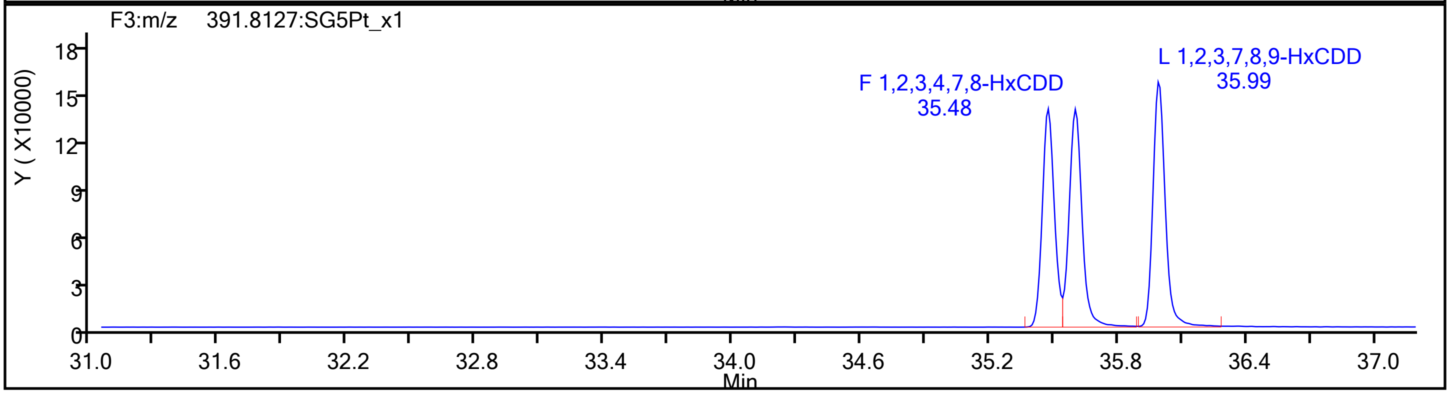

HxCDD Standards

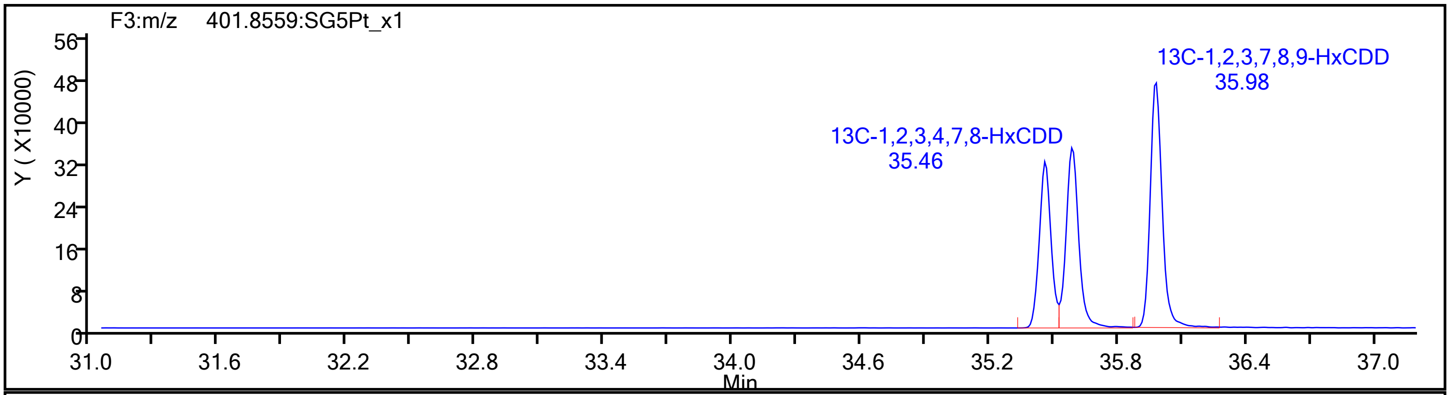

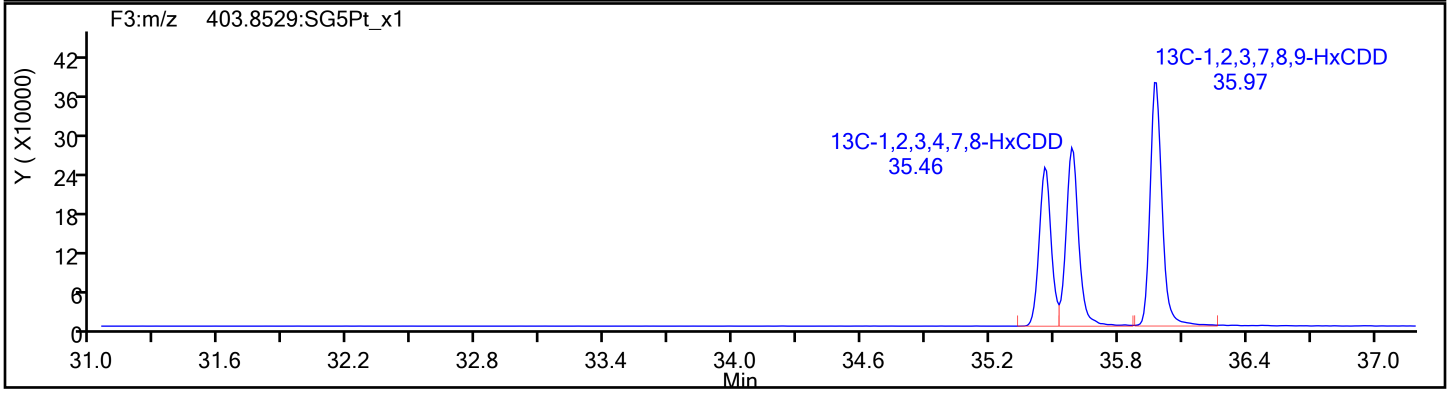

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

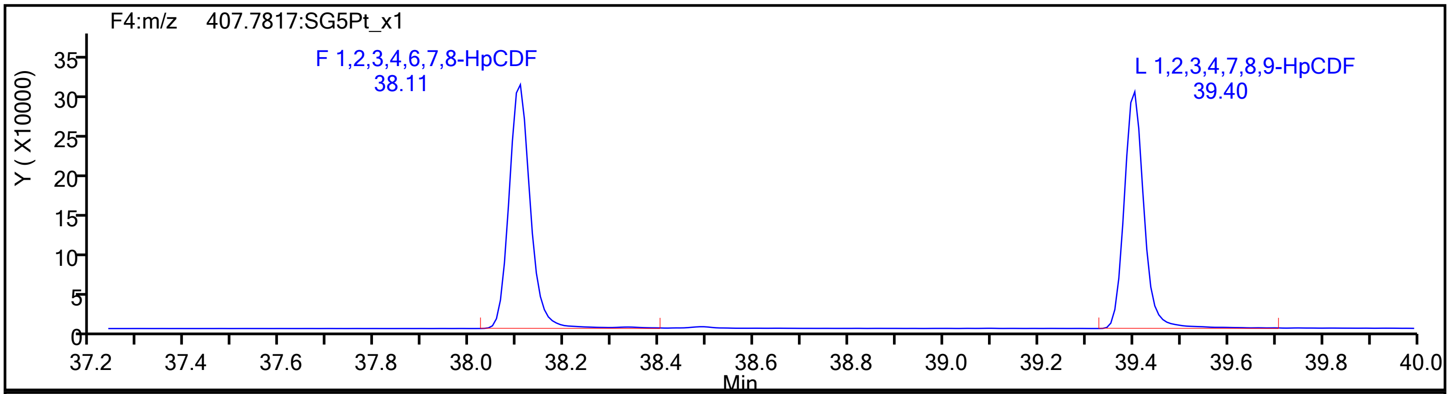

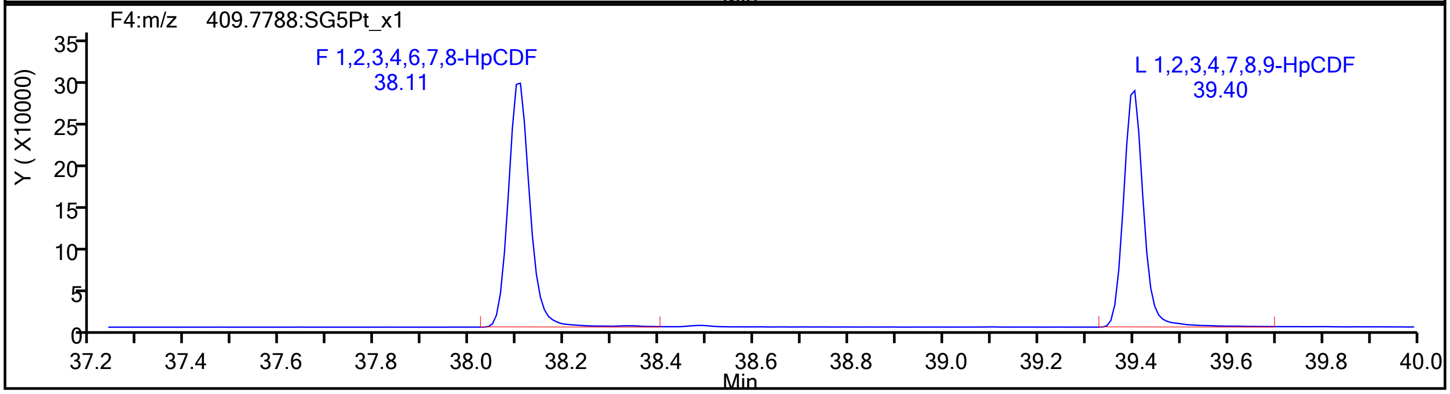

HpCDF Standards

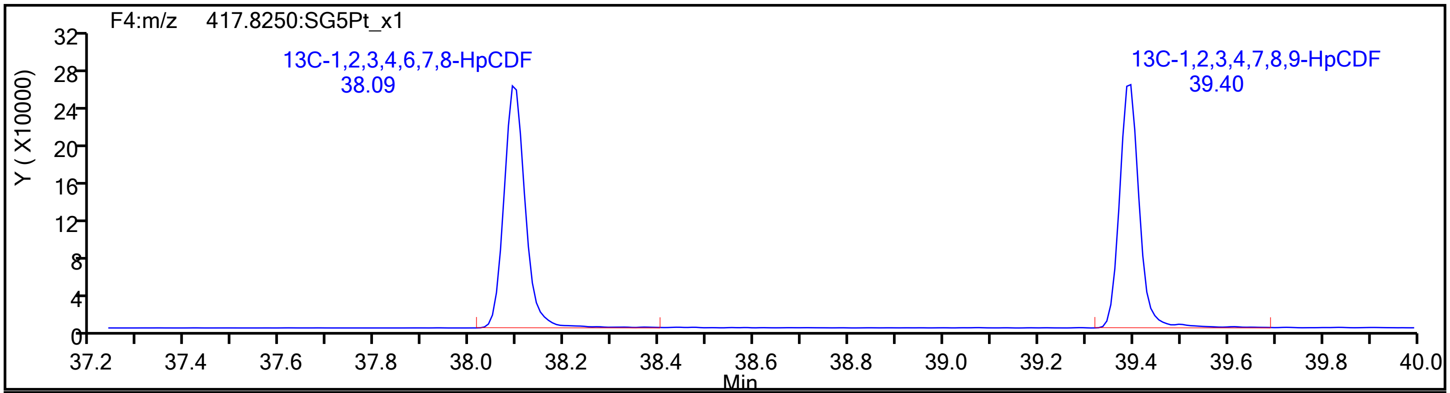

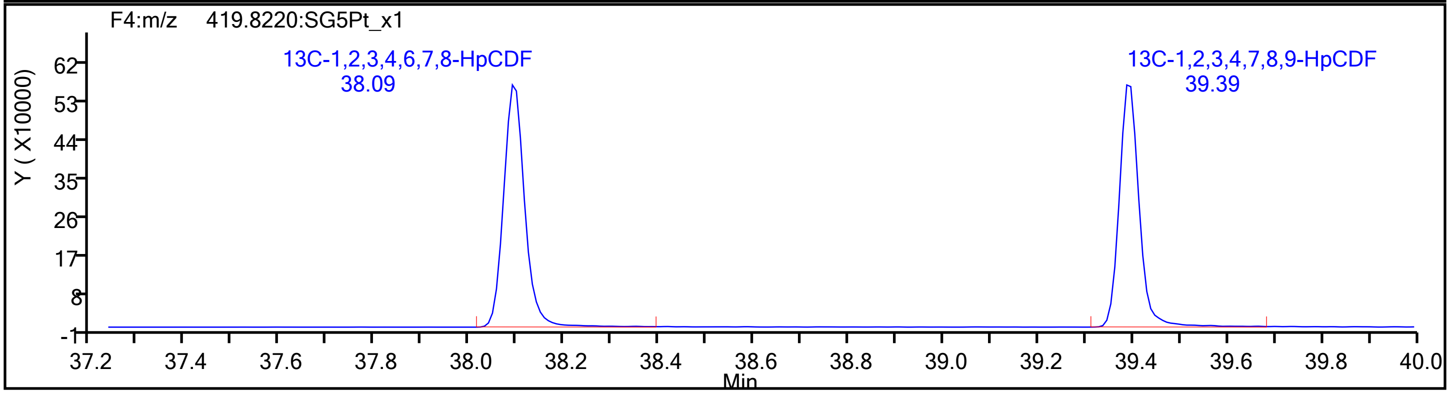

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d

Injection Date: 20-Sep-2020 18:18:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816

Sample Line#: 62

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

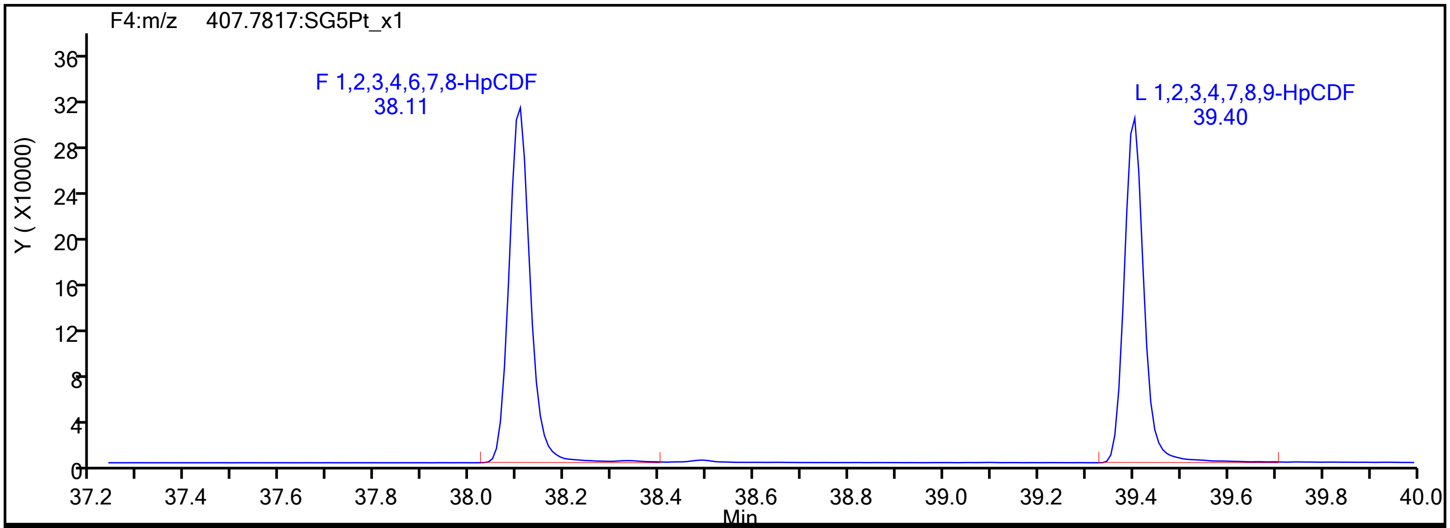

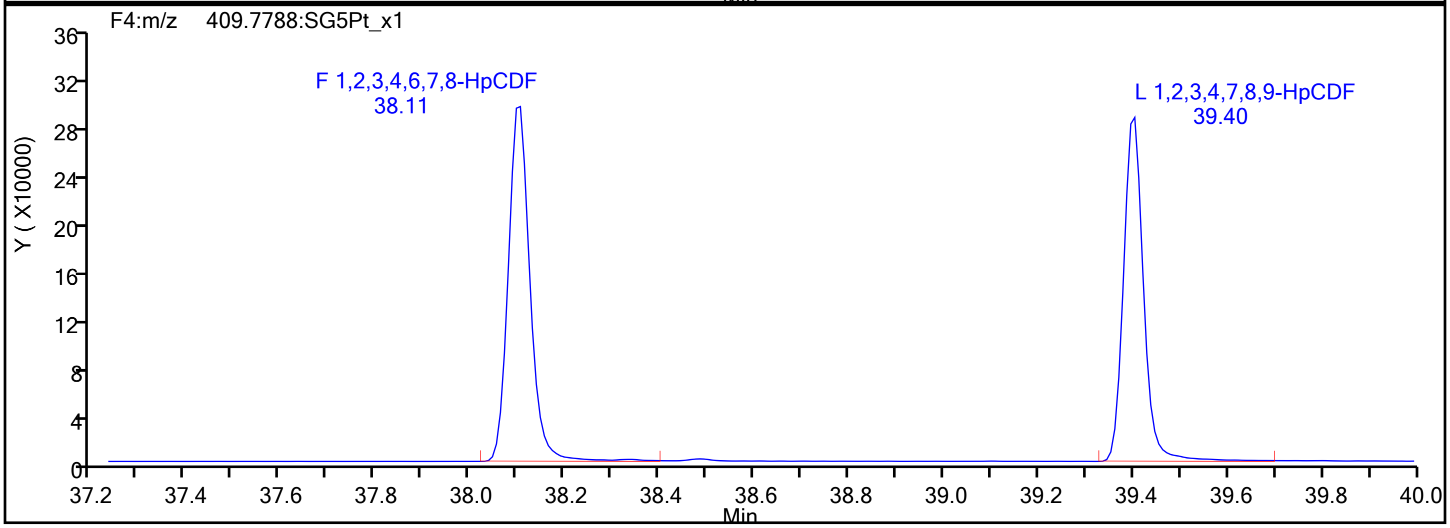

HpCDF Interference Mass

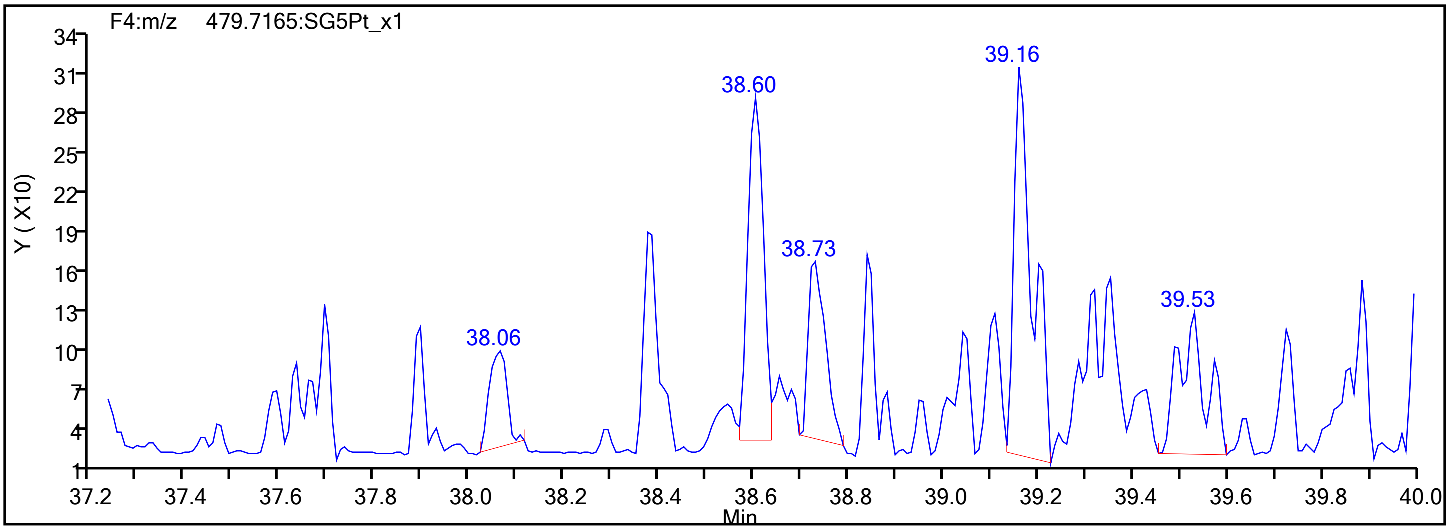

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

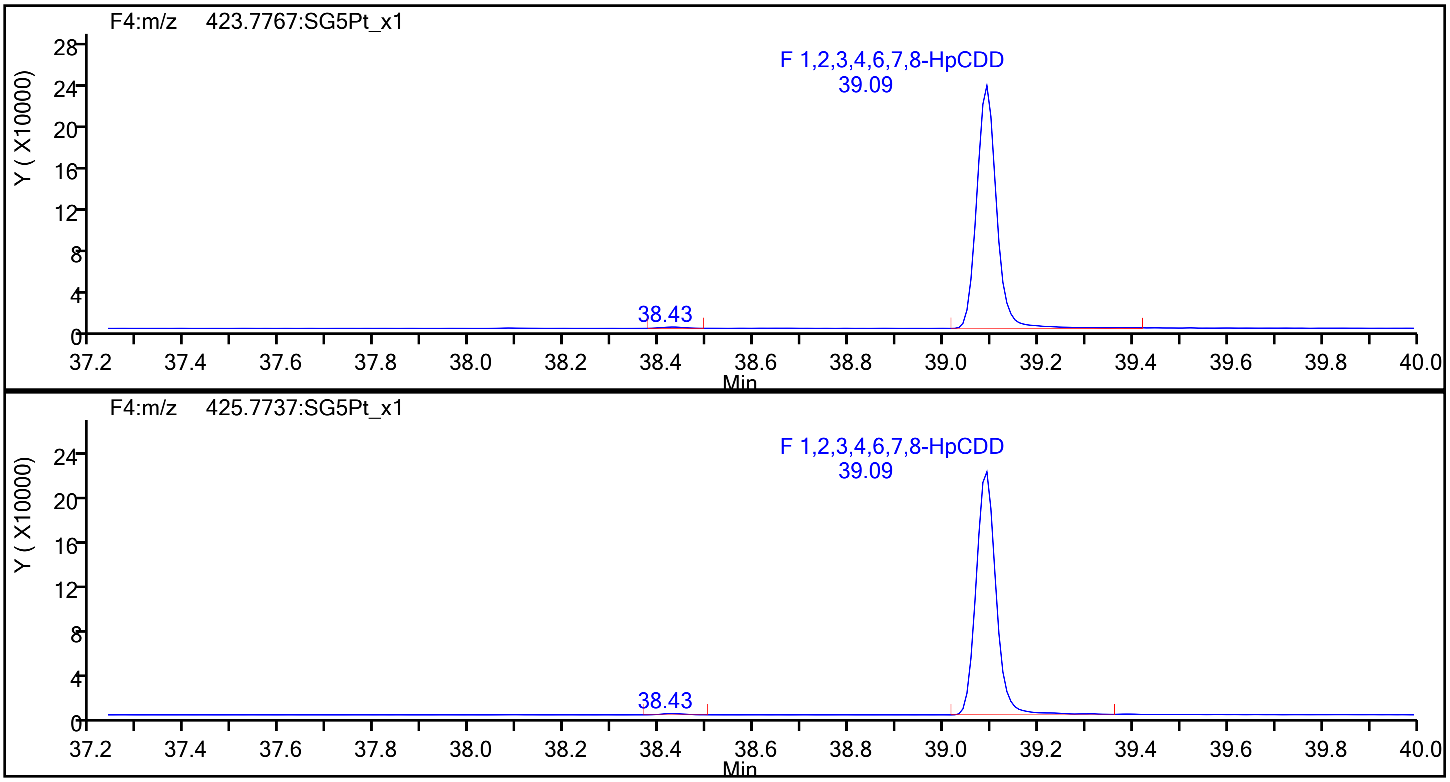

HpCDD Standards

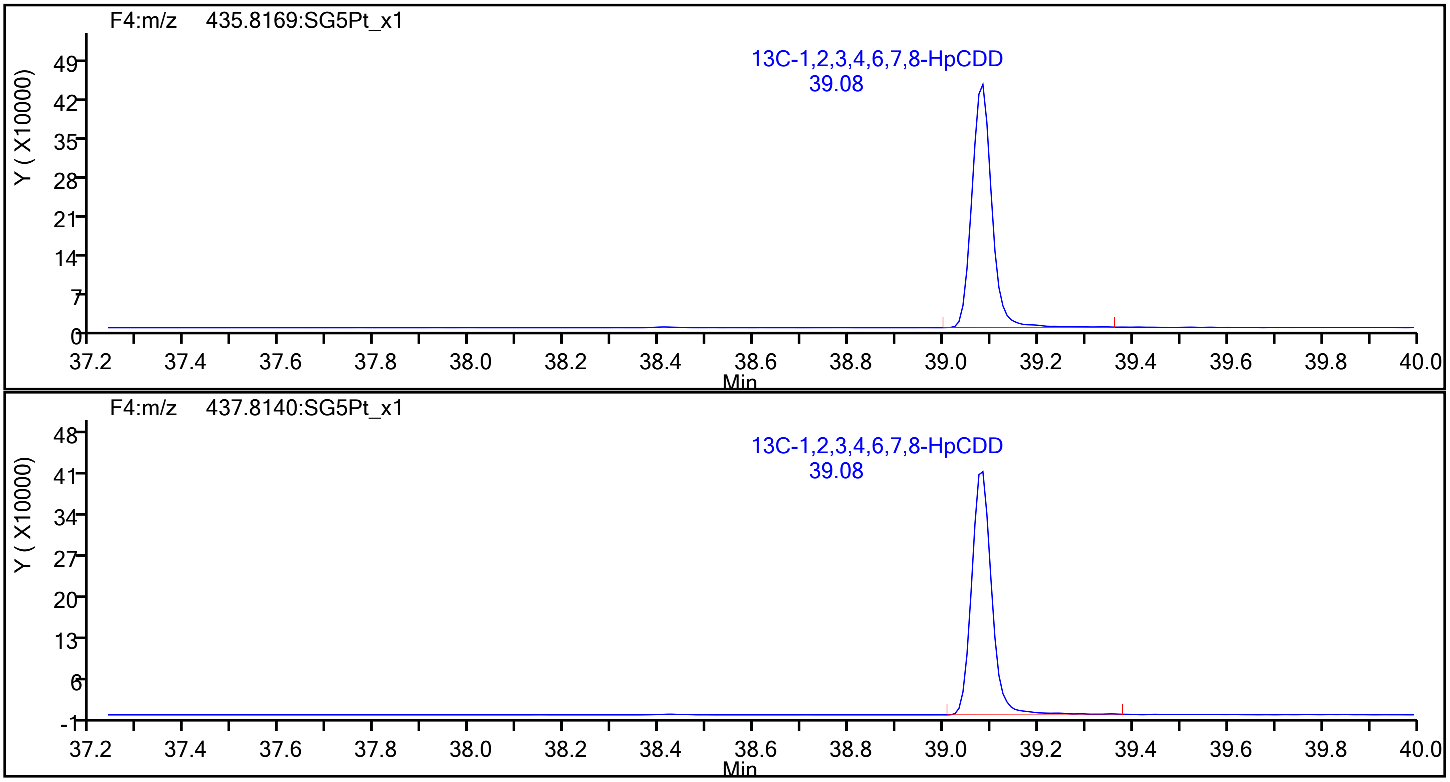

Report Date: 22-Sep-2020 10:46:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

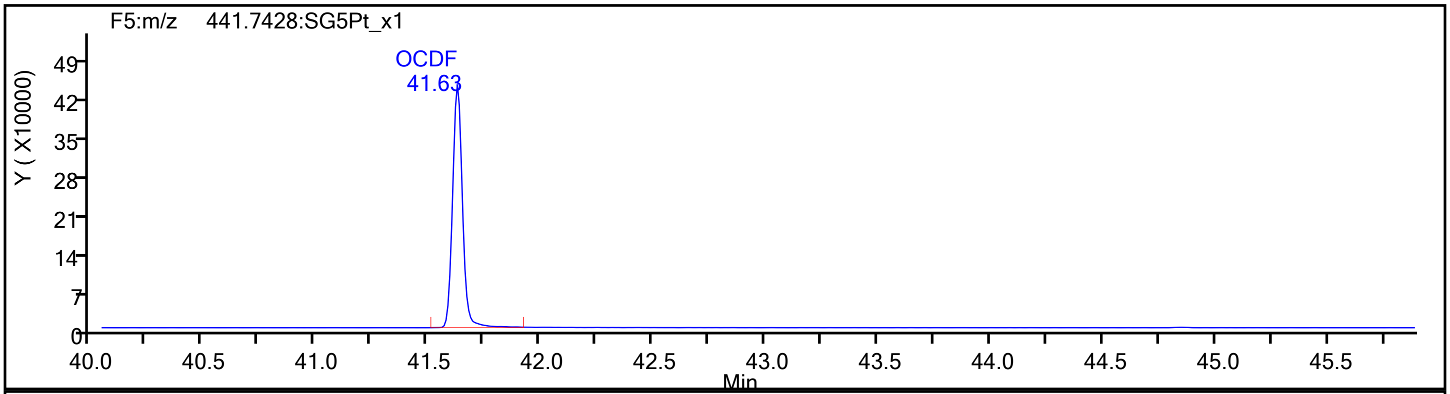

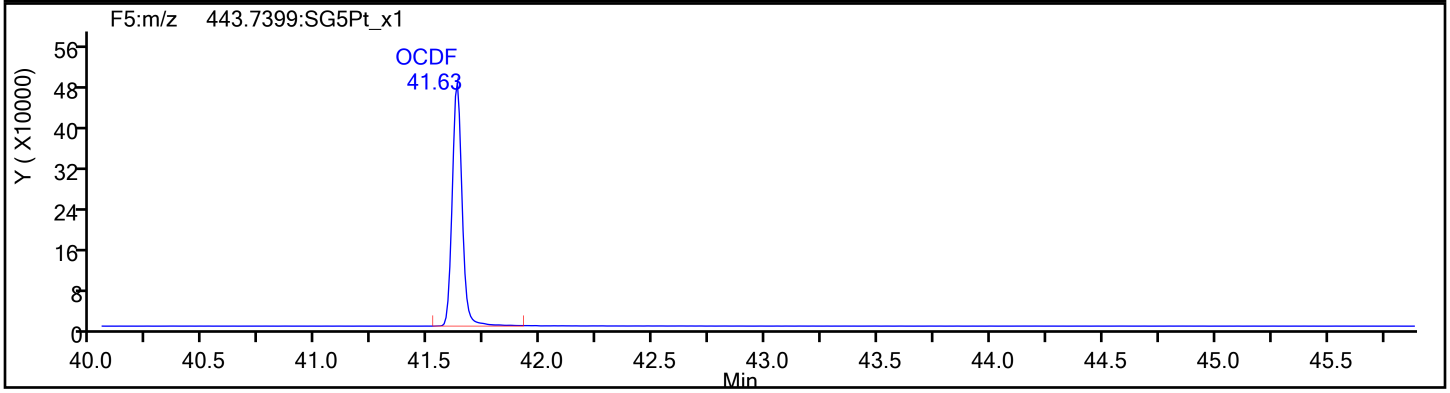

OCDF Standards

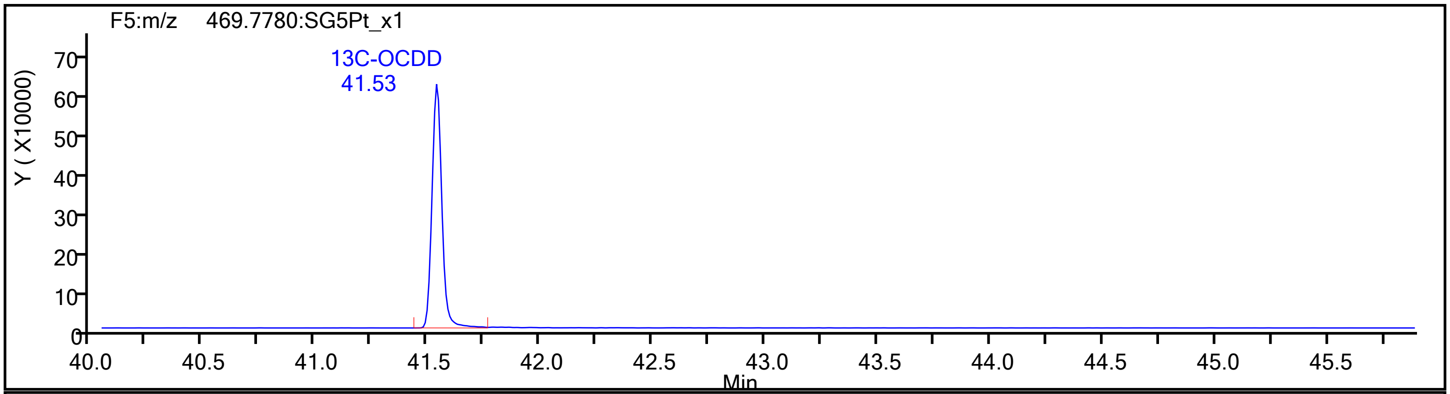

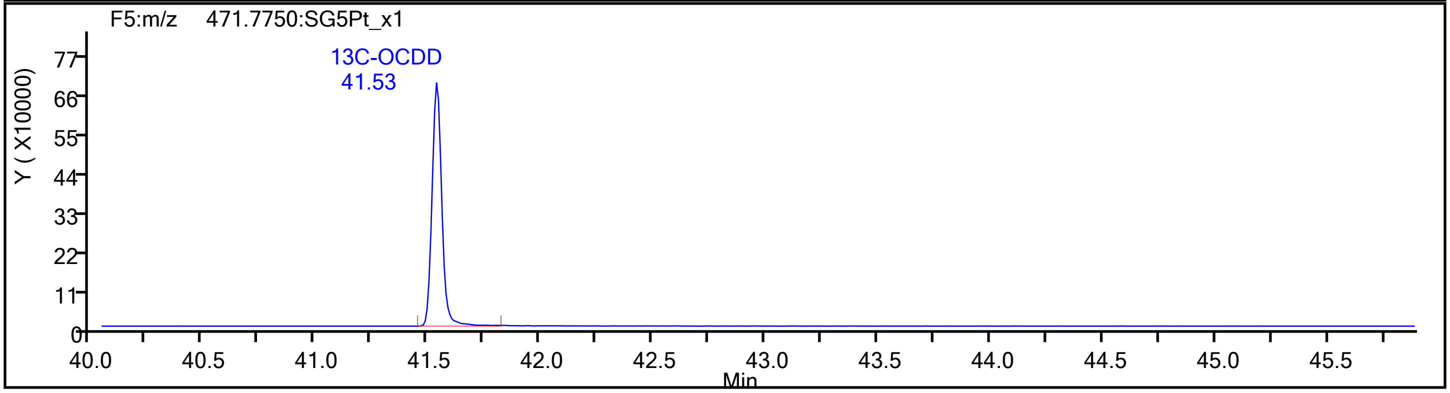

Report Date: 22-Sep-2020 10:46:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

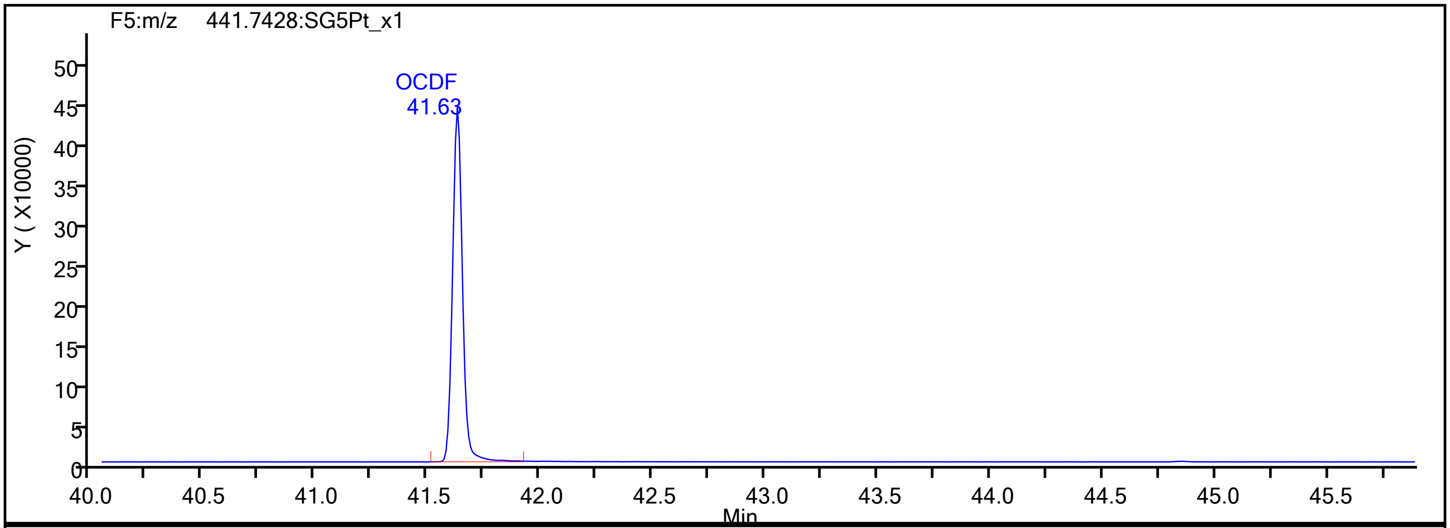

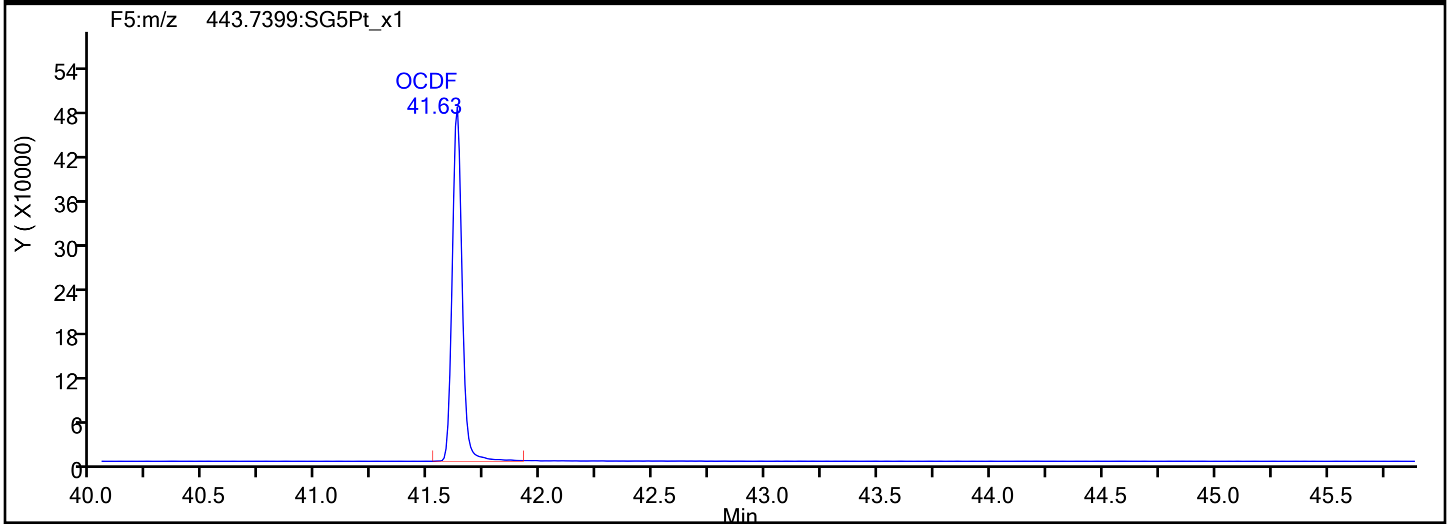

OCDF Interference Mass

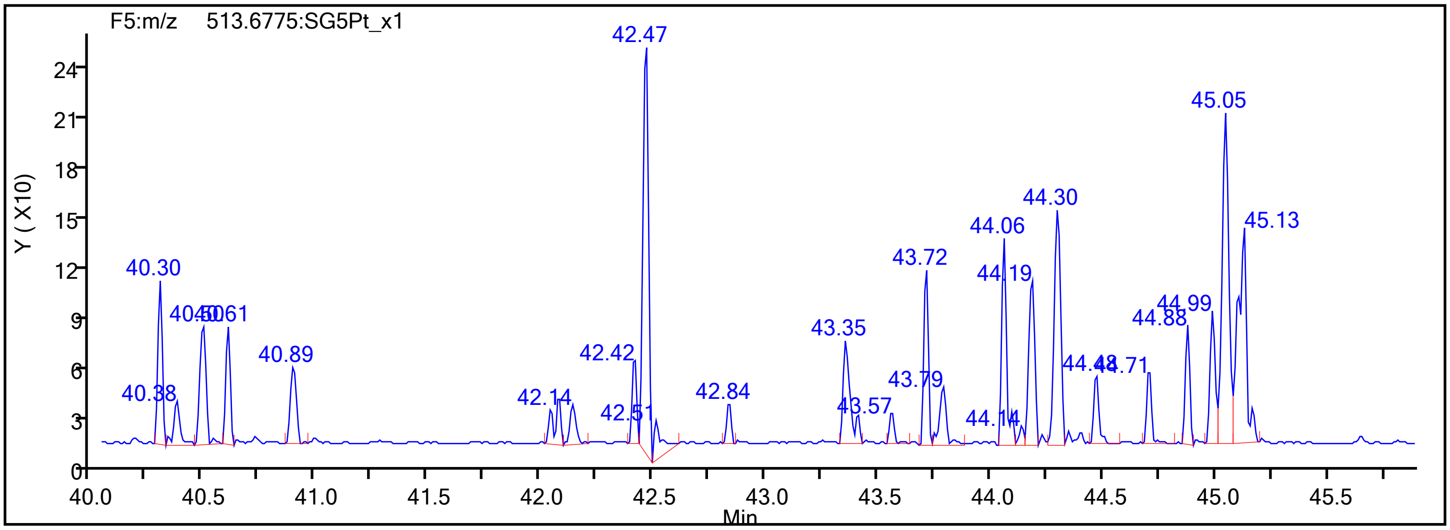

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d

Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

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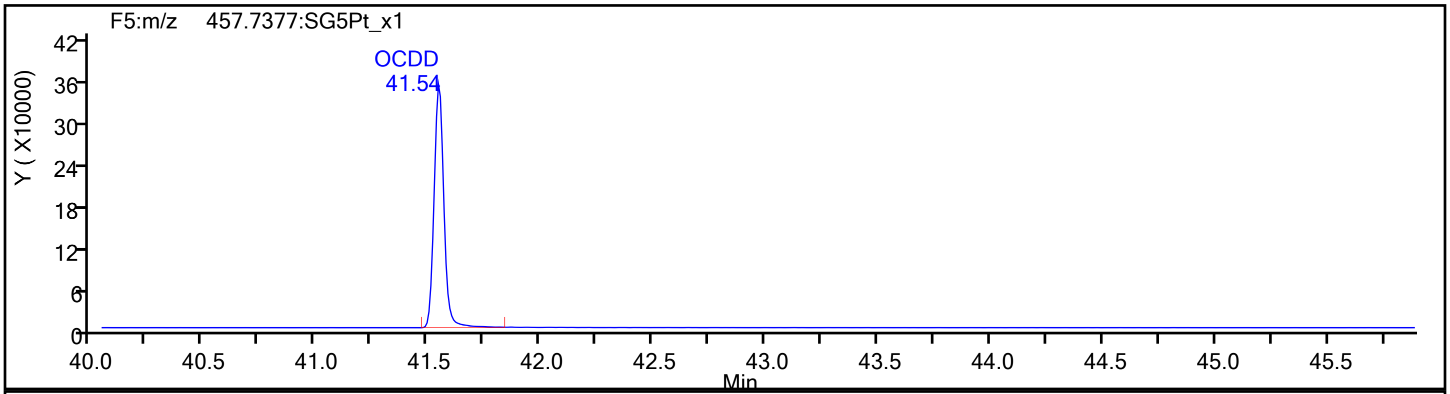

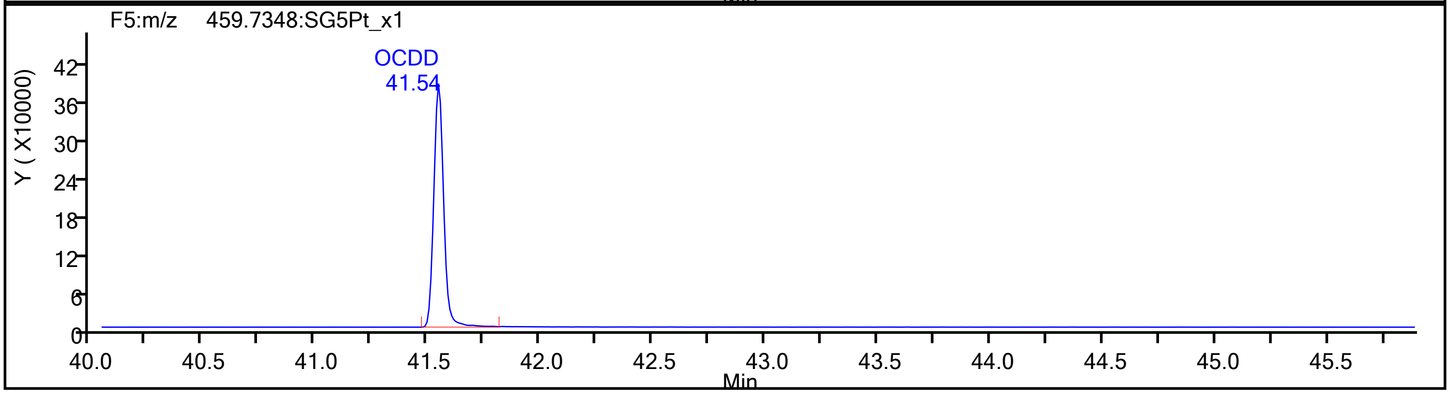

OCDD Standards

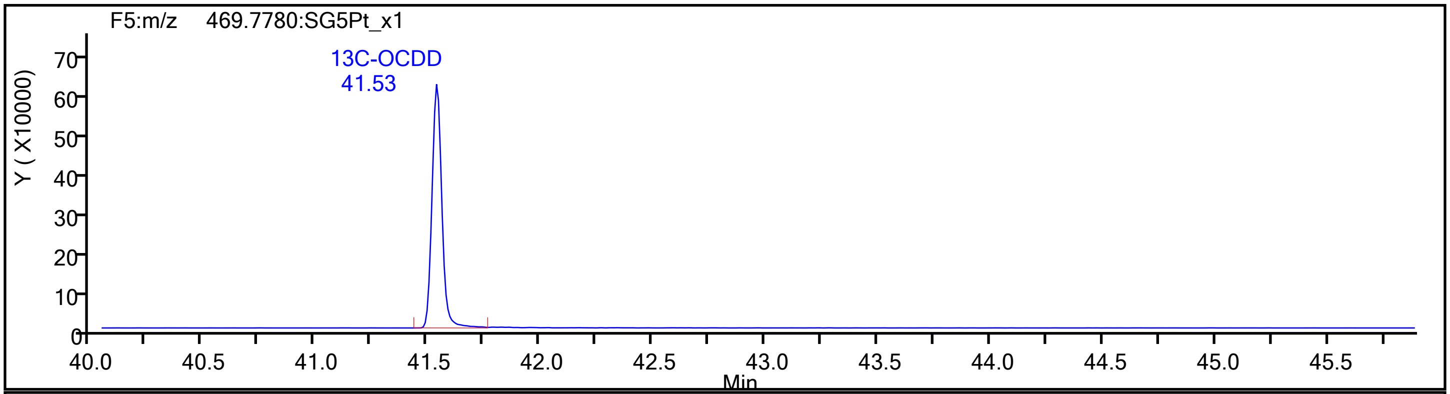

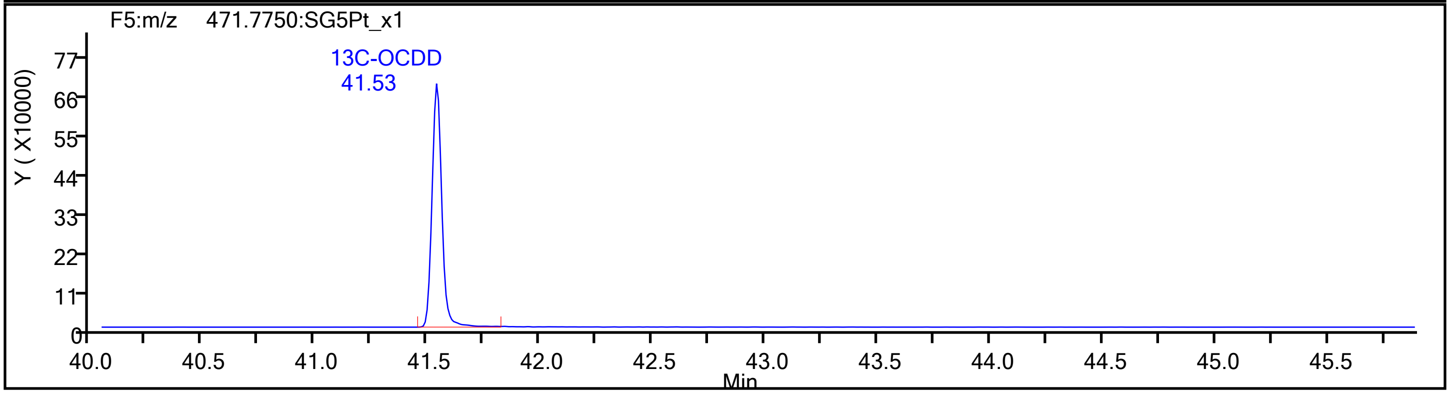

Report Date: 22-Sep-2020 10:46:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d

Injection Date: 20-Sep-2020 18:18:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816 Sample Line#: 62

Column Type: DB-5 Column Dia: 0.32 mm

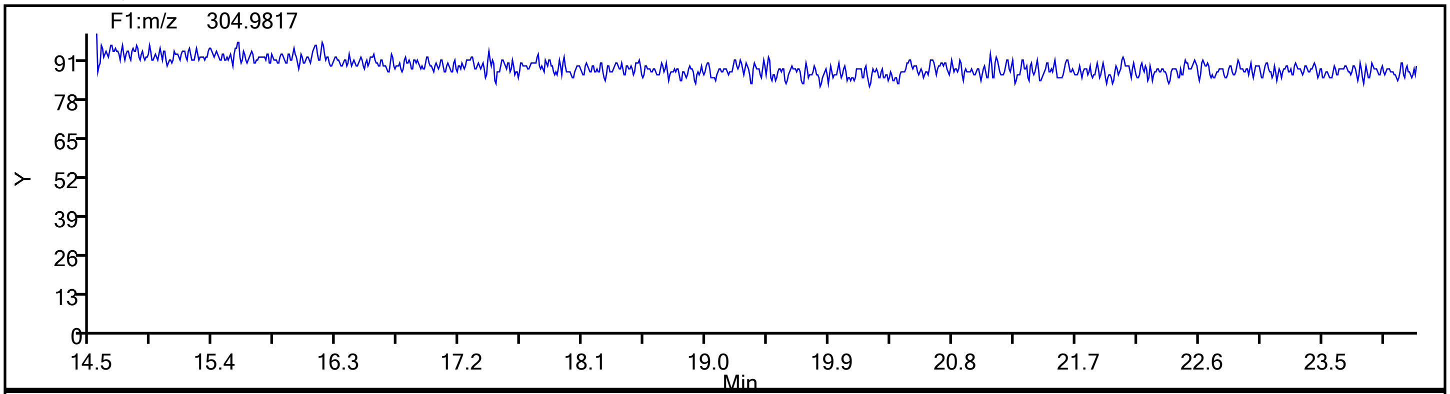

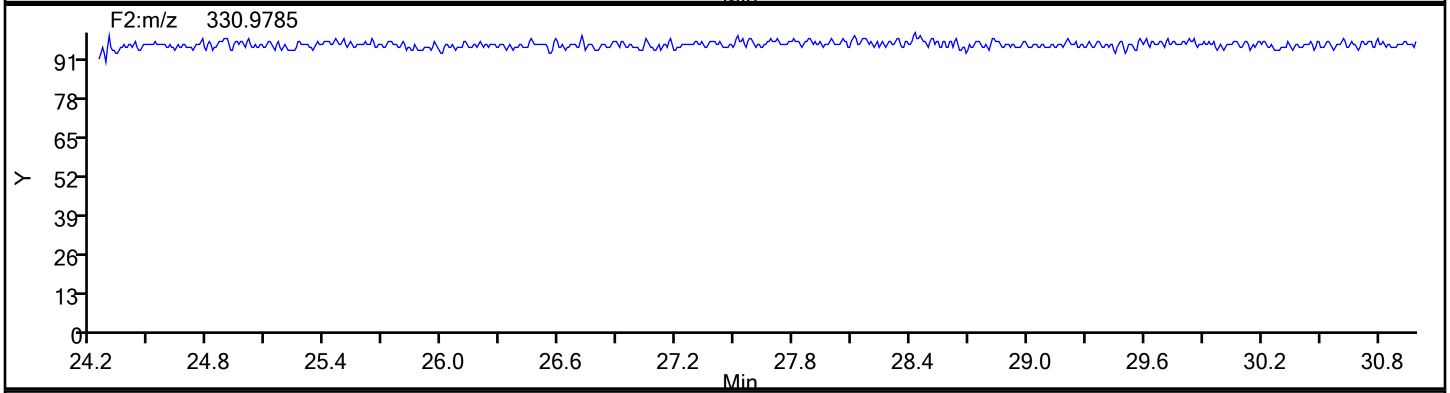

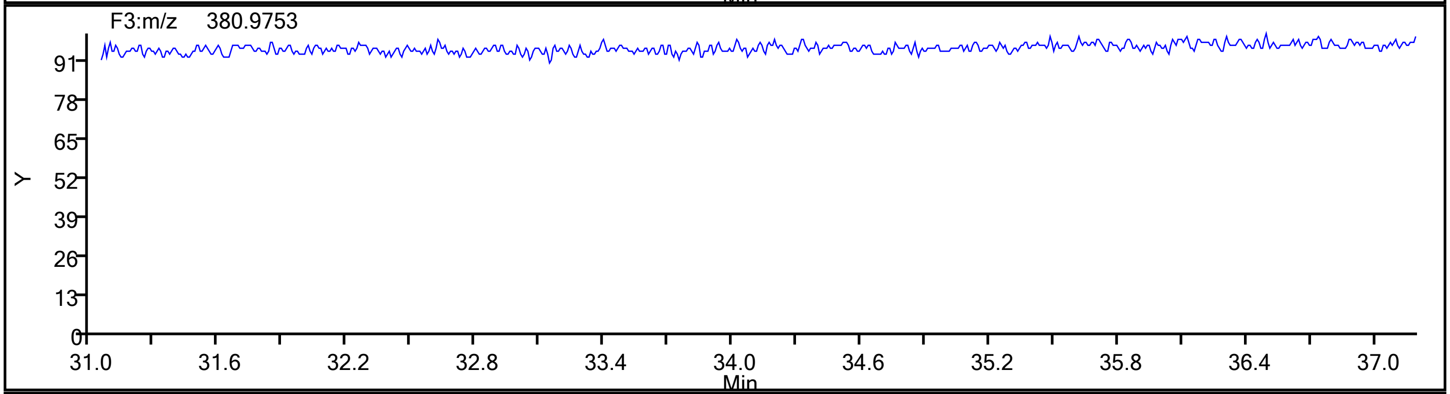

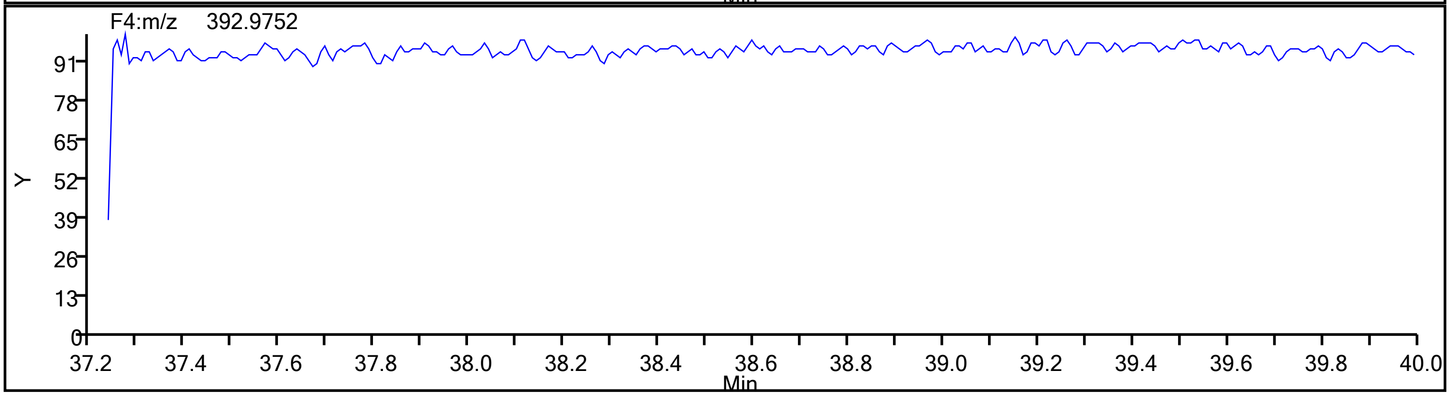

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_72.d		
Injection Date:	20-Sep-2020 18:18:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	62
Column Type:	DB-5	Column Dia:	0.32 mm

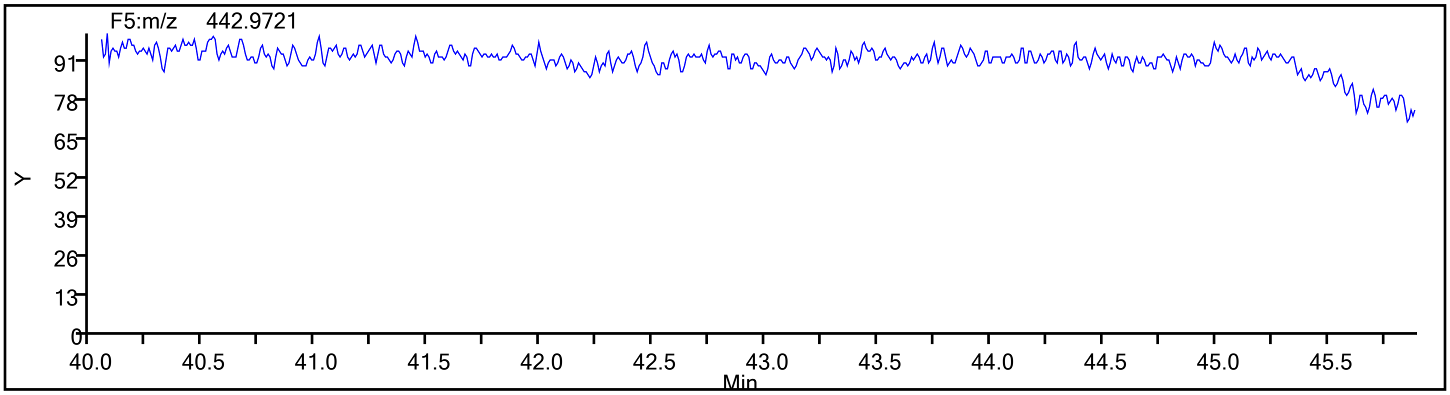

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-64049-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-407683/3-A
Matrix: Water	Lab File ID: 01SE2010D5_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 08/28/2020 14:44
Sample wt/vol: 1000(mL)	Date Analyzed: 09/01/2020 23:09
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 408767	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	206		10	1.7
51207-31-9	2,3,7,8-TCDF	212		10	1.2
40321-76-4	1,2,3,7,8-PeCDD	1000		50	3.5
57117-41-6	1,2,3,7,8-PeCDF	1070		50	4.0
57117-31-4	2,3,4,7,8-PeCDF	1380		50	5.6
39227-28-6	1,2,3,4,7,8-HxCDD	1400		50	8.4
57653-85-7	1,2,3,6,7,8-HxCDD	1100		50	6.4
19408-74-3	1,2,3,7,8,9-HxCDD	1230		50	6.5
70648-26-9	1,2,3,4,7,8-HxCDF	1390		50	10
57117-44-9	1,2,3,6,7,8-HxCDF	1130		50	7.9
72918-21-9	1,2,3,7,8,9-HxCDF	1090		50	6.4
60851-34-5	2,3,4,6,7,8-HxCDF	1080		50	6.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	950		50	7.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	1020		50	9.6
55673-89-7	1,2,3,4,7,8,9-HpCDF	1340		50	17
3268-87-9	OCDD	2010		100	3.5
39001-02-0	OCDF	2130		100	3.4
41903-57-5	Total TCDD	206		10	1.7
30402-14-3	Total TCDF	212		10	1.2
36088-22-9	Total PeCDD	1000		50	3.5
30402-15-4	Total PeCDF	2460		50	4.8
34465-46-8	Total HxCDD	3730		50	7.1
55684-94-1	Total HxCDF	4690		50	7.7
37871-00-4	Total HpCDD	950		50	7.1
38998-75-3	Total HpCDF	2370		50	13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1

SDG No.:

Client Sample ID:
Lab Sample ID: LCSD 320-407683/3-A

Matrix: Water
Lab File ID: 01SE2010D5_5.d

Analysis Method: 1613B
Date Collected:

Extract. Method: 1613B
Date Extracted: 08/28/2020 14:44

Sample wt/vol: 1000(mL)
Date Analyzed: 09/01/2020 23:09

Con. Extract Vol.: 20(uL)
Dilution Factor: 1

Injection Volume: 2(uL)
Level: (low/med) Low

% Moisture:
GPC Cleanup:(Y/N) N

Analysis Batch No.: 408767
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	77		20-175
89059-46-1	13C-2,3,7,8-TCDF	82		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	71		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	72		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	54		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	89		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	90		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	101		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	97		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	73		20-186
114423-97-1	13C-OCDD	94		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		31-191

Report Date: 03-Sep-2020 08:46:49   Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d
Lims ID: LCSD 320-407683/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 01-Sep-2020 23:09:31   ALS Bottle#: 6   Worklist Smp#: 5
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: LCSD 320-407683/3-A LCSD 320-407683/3-A
Misc. Info.: 01SE2010D5
Operator ID: ALM   Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 08:45:50   Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj   Date: 03-Sep-2020 08:46:49

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.065	19156656	0.76	4.5E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.536	21527055	0.77	1.3726	81.9	81.9	0.1778	0.1778	81.87	
2,3,7,8-TCDF	17.566	2073051	0.78	0.9104	10.6	10.6	0.0595	0.0595	106	
A Non-2,3,7,8-sub-TCDF	17.234						0.0595	0.0595		
S Total TCDF					10.6	10.6	0.0595	0.0595		
D 13C-2,3,7,8-TCDD	18.262	15130829	0.77	1.0192	77.5	77.5	0.1958	0.1958	77.50	
2,3,7,8-TCDD	18.292	1671116	0.78	1.0745	10.3	10.3	0.0860	0.0860	103	
$ 37Cl4-2,3,7,8-TCDD	18.277	7676103		1.0176	39.4	39.4	0.0468	0.0468	98.44	
A Non-2,3,7,8-sub-TCDD	17.695						0.0860	0.0860		
S Total TCDD					10.3	10.3	0.0860	0.0860		
D 13C-1,2,3,7,8-PeCDF	22.696	15671792	1.63	1.1429	71.6	71.6	0.2155	0.2155	71.58	
1,2,3,7,8-PeCDF	22.724	8361277	1.56	0.9938	53.7	53.7	0.2018	0.2018	107	
D 13C-2,3,4,7,8-PeCDF	24.087	14584385	1.58	1.3997	54.4	54.4	0.1760	0.1760	54.39	
2,3,4,7,8-PeCDF	24.115	8191523	1.58	0.8117	69.2	69.2	0.2823	0.2823	138	
A F1 PeCDFs	20.091						0.0806	0.0806		
A Non-2,3,7,8-sub-PeCDF	23.332						0.2370	0.2370		
S Total PeCDF					122.9	122.9	0.2421	0.2421		
D 13C-1,2,3,7,8-PeCDD	24.837	11228469	1.56	0.8232	71.2	71.2	0.1594	0.1594	71.20	
1,2,3,7,8-PeCDD	24.865	5723744	1.56	1.0181	50.1	50.1	0.1764	0.1764	100	
A Non-2,3,7,8-sub-PeCDD	23.699						0.1764	0.1764		
S Total PeCDD					50.1	50.1	0.1764	0.1764		
D 13C-1,2,3,4,7,8-HxCDF	30.822	10167961	0.50	1.1388	68.7	68.7	0.4654	0.4654	68.70	
1,2,3,4,7,8-HxCDF	30.848	5677766	1.22	0.8061	69.3	69.3	0.5181	0.5181	139	
D 13C-1,2,3,6,7,8-HxCDF	30.995	11201422	0.50	1.0803	79.8	79.8	0.4906	0.4906	79.78	
1,2,3,6,7,8-HxCDF	31.008	6207841	1.24	0.9818	56.4	56.4	0.3932	0.3932	113	
D 13C-2,3,4,6,7,8-HxCDF	31.753	11136593	0.50	0.9494	90.3	90.3	0.5583	0.5583	90.25	
2,3,4,6,7,8-HxCDF	31.767	6269813	1.25	1.0382	54.2	54.2	0.3045	0.3045	108	
D 13C-1,2,3,7,8,9-HxCDF	32.512	10061323	0.52	0.8670	89.3	89.3	0.6113	0.6113	89.29	
1,2,3,7,8,9-HxCDF	32.526	5675524	1.21	1.0321	54.7	54.7	0.3212	0.3212	109	
A Non-2,3,7,8-sub-HxCDF	30.522						0.3714	0.3714		
S Total HxCDF					234.6	234.6	0.3842	0.3842		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.326	12997148	1.27	3.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.913	7822528	1.26	0.9356	64.3	64.3	0.4602	0.4602	64.33	
1,2,3,4,7,8-HxCDD	31.940	4503313	1.23	0.8202	70.2	70.2	0.4212	0.4212	140	
D 13C-1,2,3,6,7,8-HxCDD	32.020	10183406	1.24	1.0416	75.2	75.2	0.4134	0.4134	75.22	
1,2,3,6,7,8-HxCDD	32.033	5252221	1.23	0.9367	55.1	55.1	0.3176	0.3176	110	
1,2,3,7,8,9-HxCDD	32.339	5465119	1.23	0.9905	61.3	61.3	0.3228	0.3228	123	
A Non-2,3,7,8-sub-HxCDD	31.201						0.3491	0.3491		
S Total HxCDD					186.5	186.5	0.3539	0.3539		
D 13C-1,2,3,4,6,7,8-HpCDF	33.885	9929450	0.42	0.7899	96.7	96.7	1.686	1.686	96.72	
1,2,3,4,6,7,8-HpCDF	33.897	7378012	1.04	1.4527	51.1	51.1	0.4816	0.4816	102	
D 13C-1,2,3,4,7,8,9-HpCDF	34.966	8633605	0.42	0.9093	73.1	73.1	1.465	1.465	73.06	
1,2,3,4,7,8,9-HpCDF	34.978	6132648	1.03	1.0585	67.1	67.1	0.8571	0.8571	134	
A Non-2,3,7,8-sub-HpCDF	34.425						0.6292	0.6292		
S Total HpCDF					118.3	118.3	0.6693	0.6693		
D 13C-1,2,3,4,6,7,8-HpCDD	34.675	9999393	1.03	0.7637	100.7	100.7	0.7380	0.7380	101	
1,2,3,4,6,7,8-HpCDD	34.687	5003963	1.04	1.0540	47.5	47.5	0.3546	0.3546	94.96	
A Non-2,3,7,8-sub-HpCDD	35.325						0.3546	0.3546		
S Total HpCDD					47.5	47.5	0.3546	0.3546		
D 13C-OCDD	37.018	15647563	0.90	0.6377	188.8	188.8	0.3101	0.3101	94.39	
OCDF	37.126	10799519	0.90	1.2965	106.5	106.5	0.1722	0.1722	106	
OCDD	37.030	9042436	0.88	1.1499	100.5	100.5	0.1744	0.1744	101	

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Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d
Lims ID: LCSD 320-407683/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 01-Sep-2020 23:09:31 ALS Bottle#: 6 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-407683/3-A LCSD 320-407683/3-A
Misc. Info.: 01SE2010D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Sep-2020 08:45:50 Calib Date: 27-Jun-2020 17:43:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200627-98445.b\27JN20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1017

First Level Reviewer: dadunj Date: 03-Sep-2020 08:46:49

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.065	18.065	0		8290793	2054485	2250	5625	913		
333.9339	18.065	18.065	0		10865863	2621653	1483	3707	1768	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.536	17.536	0	0.971	9380305	2189483	2861	7152	765		
317.9389	17.536	17.536	0	0.971	12146750	2934201	1703	4257	1723	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.566	17.551	1	1.002	905962	206826	505	1262	410		
305.8987	17.551	17.551	0	1.001	1167089	277018	605	1512	458	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.234						505	1262			
305.8987	17.234						605	1512			
13C-2,3,7,8-TCDD											
331.9368	18.262	18.262	0	1.011	6583417	1532155	2250	5625	681		
333.9339	18.262	18.262	0	1.011	8547412	1986019	1483	3707	1339	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.292	18.277	1	1.002	731366	162905	717	1792	227		
321.8936	18.277	18.277	0	1.001	939750	211899	583	1457	363	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.277	18.277	0	1.012	7676103	1749734	890	2225	1966		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.695						717	1792			
321.8936	17.695						583	1457			
13C-1,2,3,7,8-PeCDF											
351.9000	22.696	22.696	0	1.256	9716911	1629624	2838	7095	574		
353.8970	22.696	22.696	0	1.256	5954881	1031082	1769	4422	583	1.63(1.32-1.78)	

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Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.724	22.710	1	1.001	5099945	848138	1161	2902	731		
341.8567	22.724	22.710	1	1.001	3261332	539952	974	2435	554	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	24.087	24.074	1	1.333	8924463	1433301	2838	7095	505		
353.8970	24.087	24.074	1	1.333	5659922	895654	1769	4422	506	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	24.115	24.101	1	1.001	5015141	784631	1161	2902	676		
341.8567	24.115	24.101	1	1.001	3176382	497353	974	2435	511	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	20.091						301	752			
341.8567	20.091						425	1062			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.332						1161	2902			
341.8567	23.332						974	2435			
13C-1,2,3,7,8-PeCDD											
367.8949	24.837	24.810	2	1.375	6849879	1027255	1221	3052	841		
369.8919	24.824	24.810	1	1.374	4378590	657908	1233	3082	534	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.865	24.837	2	1.001	3485387	521686	672	1680	776		
357.8516	24.851	24.837	1	1.001	2238357	327140	539	1347	607	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.699						672	1680			
357.8516	23.699						539	1347			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.822	30.809	1	0.953	3397501	719231	2882	7205	250		
385.8610	30.822	30.809	1	0.953	6770460	1400749	4288	10720	327	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.848	30.835	1	1.001	3119419	663003	1877	4692	353		
375.8178	30.848	30.835	1	1.001	2558347	537915	1665	4162	323	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.995	30.982	1	0.959	3746173	766918	2882	7205	266		
385.8610	30.995	30.982	1	0.959	7455249	1526988	4288	10720	356	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	31.008	30.995	1	1.000	3431356	717613	1877	4692	382		
375.8178	31.008	30.995	1	1.000	2776485	586246	1665	4162	352	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.753	31.740	1	0.982	3714916	944079	2882	7205	328		
385.8610	31.753	31.740	1	0.982	7421677	1857081	4288	10720	433	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.767	31.753	1	1.000	3483436	916565	1877	4692	488		
375.8178	31.767	31.753	1	1.000	2786377	738199	1665	4162	443	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.512	32.499	1	1.006	3455809	923505	2882	7205	320		
385.8610	32.512	32.499	1	1.006	6605514	1747851	4288	10720	408	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.526	32.512	1	1.000	3112920	810141	1877	4692	432		
375.8178	32.526	32.512	1	1.000	2562604	656570	1665	4162	394	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.522						1877	4692			
375.8178	30.522						1665	4162			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.326	32.326	0		7268592	1866425	3596	8990	519		
403.8529	32.326	32.326	0		5728556	1515437	2229	5572	680	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.913	31.913	0	0.987	4363895	1269217	3596	8990	353		
403.8529	31.913	31.913	0	0.987	3458633	1020697	2229	5572	458	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.940	31.927	1	1.001	2484887	729921	1418	3545	515		
391.8127	31.927	31.927	0	1.000	2018426	596904	1747	4367	342	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	32.020	32.006	1	0.991	5645606	1467365	3596	8990	408		
403.8529	32.020	32.006	1	0.991	4537800	1191858	2229	5572	535	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	32.033	32.020	1	1.000	2901810	759961	1418	3545	536		
391.8127	32.033	32.020	1	1.000	2350411	617059	1747	4367	353	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.339	32.339	0	1.013	3010676	795688	1418	3545	561		
391.8127	32.339	32.339	0	1.013	2454443	649595	1747	4367	372	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.201						1418	3545			
391.8127	31.201						1747	4367			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.885	33.873	1	1.048	2943798	951899	4773	11932	199		
419.8220	33.885	33.873	1	1.048	6985652	2286077	13248	33120	173	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.897	33.885	1	1.000	3760844	1226637	4601	11502	267		
409.7789	33.897	33.885	1	1.000	3617168	1175265	4460	11150	264	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.966	34.954	1	1.082	2570469	736100	4773	11932	154		
419.8220	34.966	34.954	1	1.082	6063136	1760528	13248	33120	133	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.978	34.966	1	1.000	3113626	919727	4601	11502	200		
409.7789	34.978	34.966	1	1.000	3019022	854235	4460	11150	192	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.425						4601	11502			
409.7789	34.425						4460	11150			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.675	34.662	1	1.073	5064739	1543610	2980	7450	518		
437.8140	34.675	34.662	1	1.073	4934654	1495034	4645	11612	322	1.03(0.88-1.20)	

Report Date: 03-Sep-2020 08:46:49 Chrom Revision: 2.3 20-Aug-2020 13:57:12
Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.687	34.674	1	1.000	2555896	758258	2128	5320	356		
425.7737	34.687	34.674	1	1.000	2448067	718075	2414	6035	297	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	35.325						2128	5320			
425.7737	35.325						2414	6035			
13C-OCDD											
469.7779	37.018	37.006	1	1.145	7403545	1863909	1200	3000	1553		
471.7750	37.018	37.006	1	1.145	8244018	2060284	1475	3687	1397	0.90(0.76-1.02)	
OCDF											
441.7428	37.126	37.113	1	1.003	5103085	1268963	870	2175	1459		
443.7399	37.114	37.113	0	1.003	5696434	1440231	882	2205	1633	0.90(0.76-1.02)	
OCDD											
457.7377	37.030	37.018	1	1.000	4231804	1052930	697	1742	1511		
459.7348	37.030	37.018	1	1.000	4810632	1161159	877	2192	1324	0.88(0.76-1.02)	

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d		
Injection Date:	01-Sep-2020 23:09:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

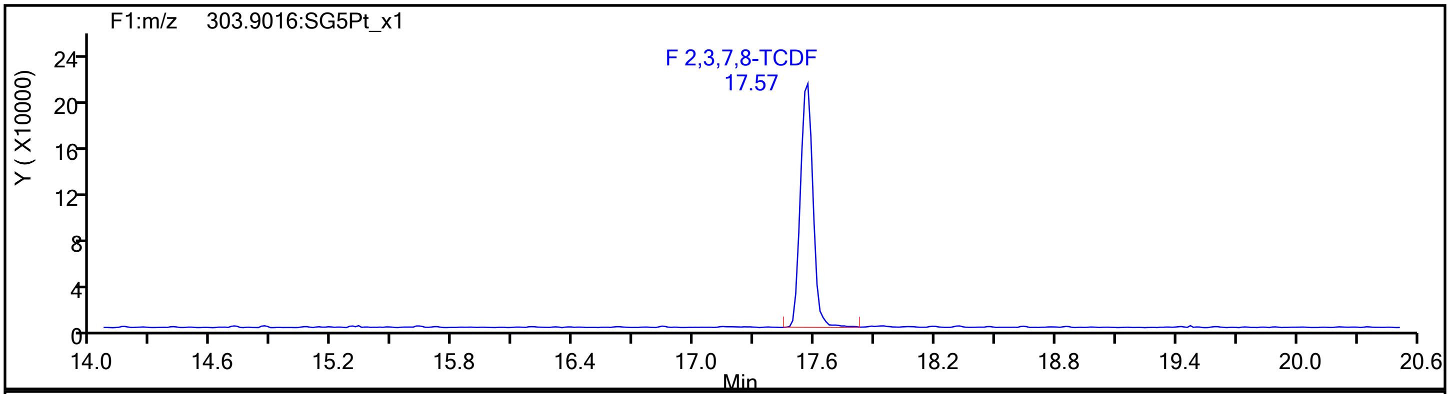

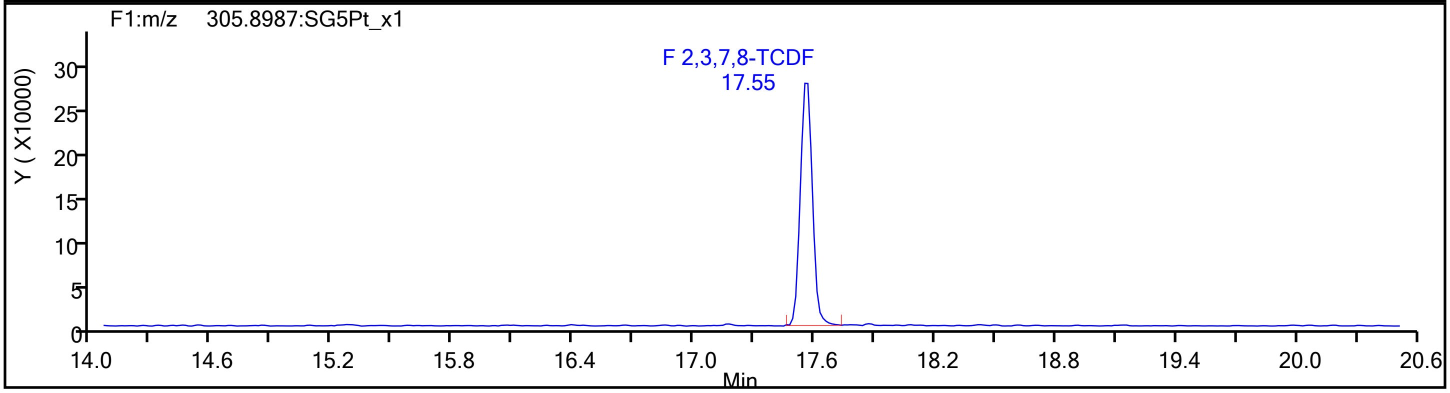

TCDF Standards

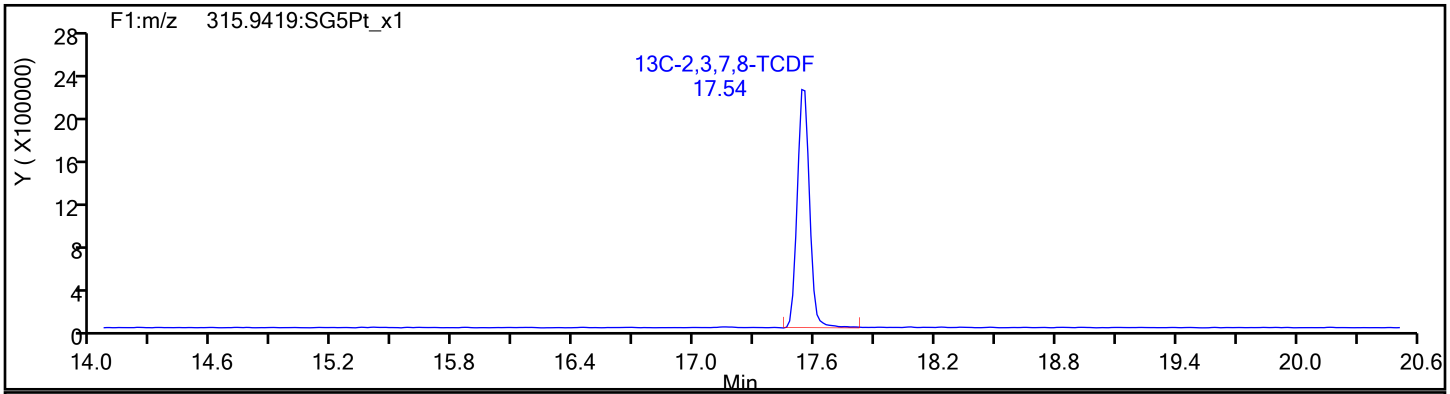

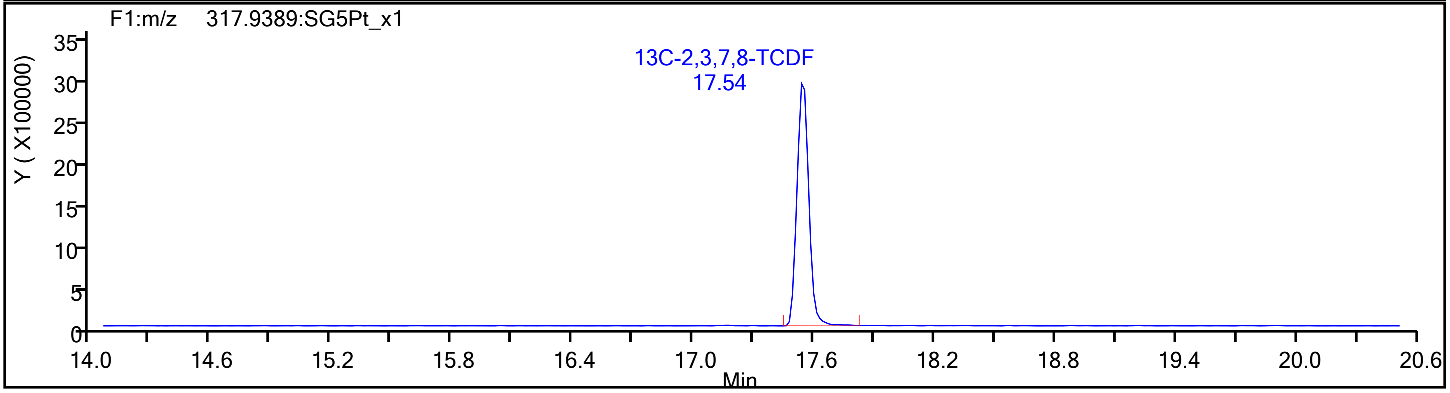

Report Date: 03-Sep-2020 08:46:50 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

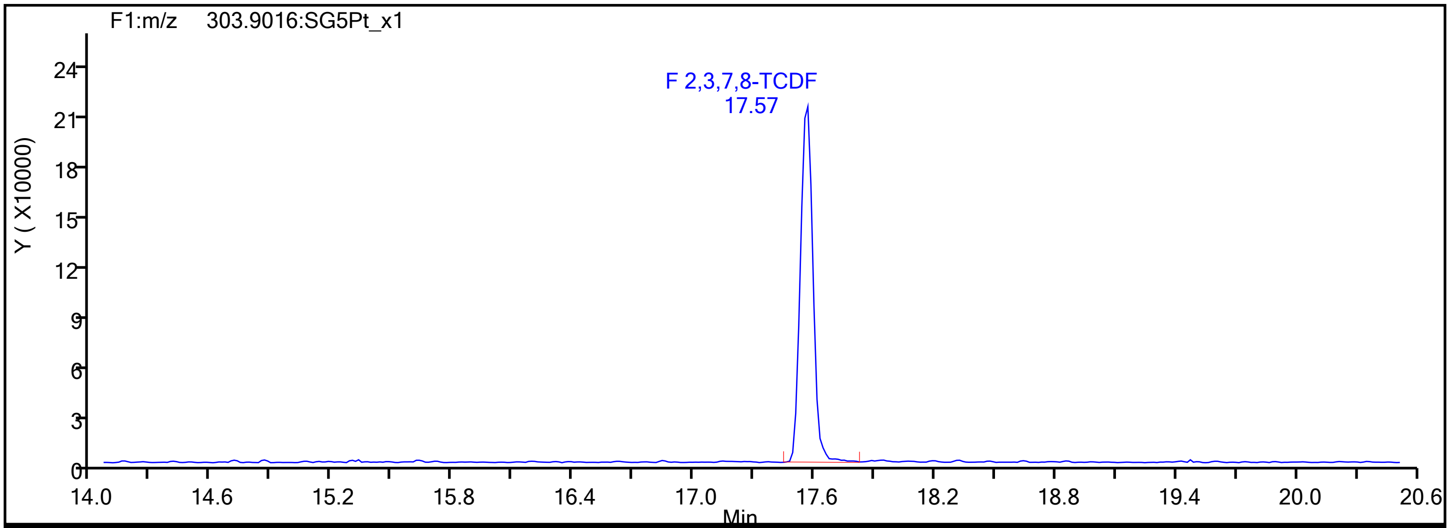

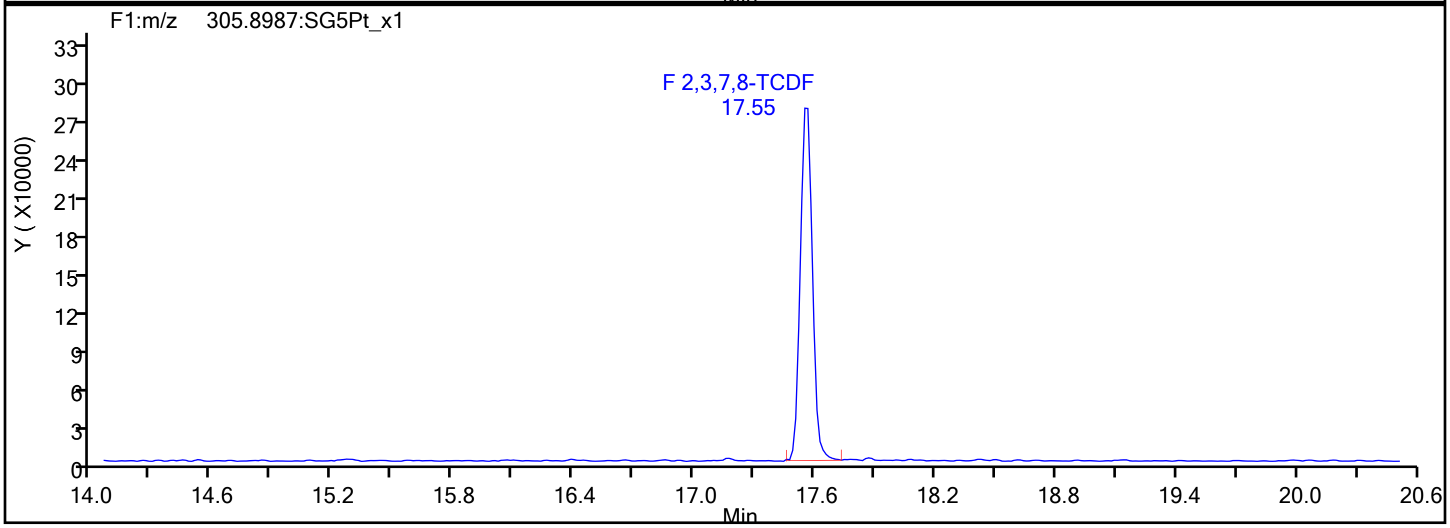

TCDF Interference Mass

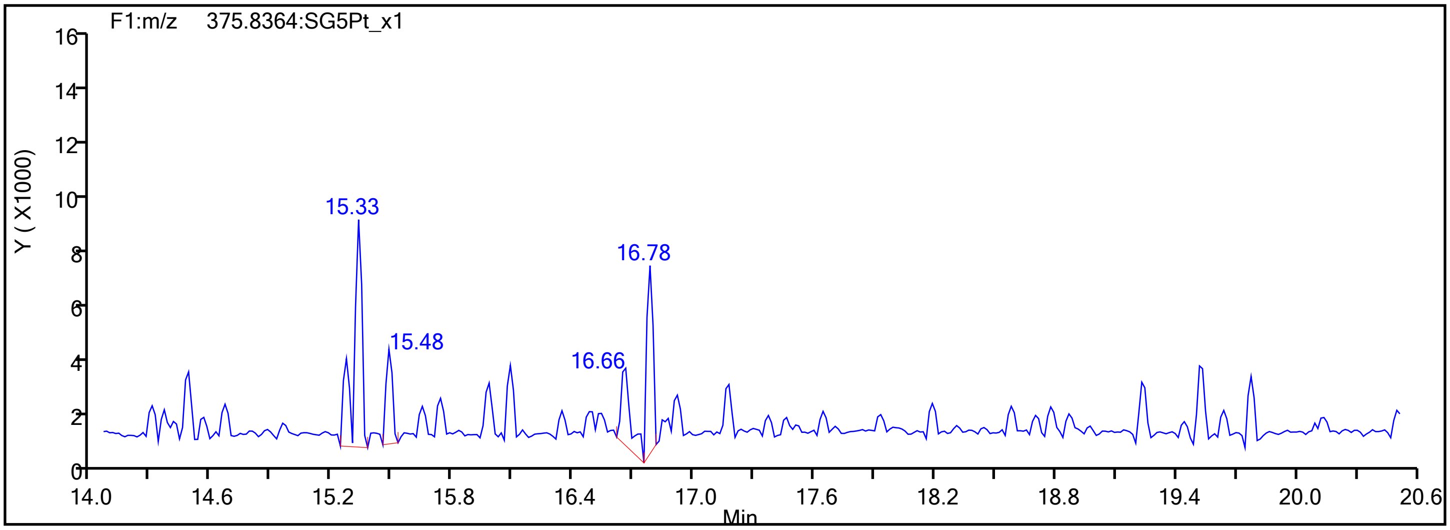

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Eurofins TestAmerica, Sacramento

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TCDD

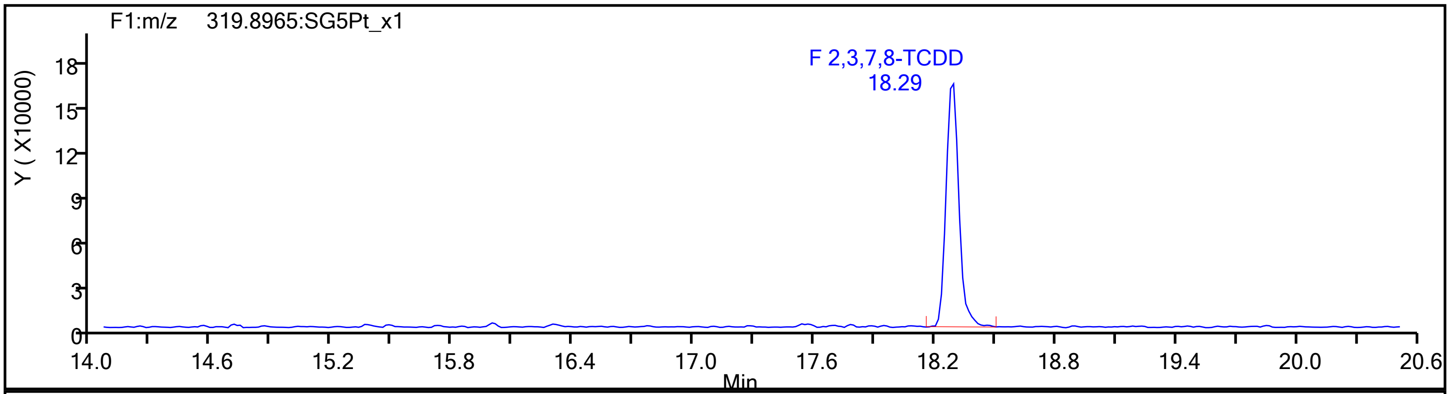

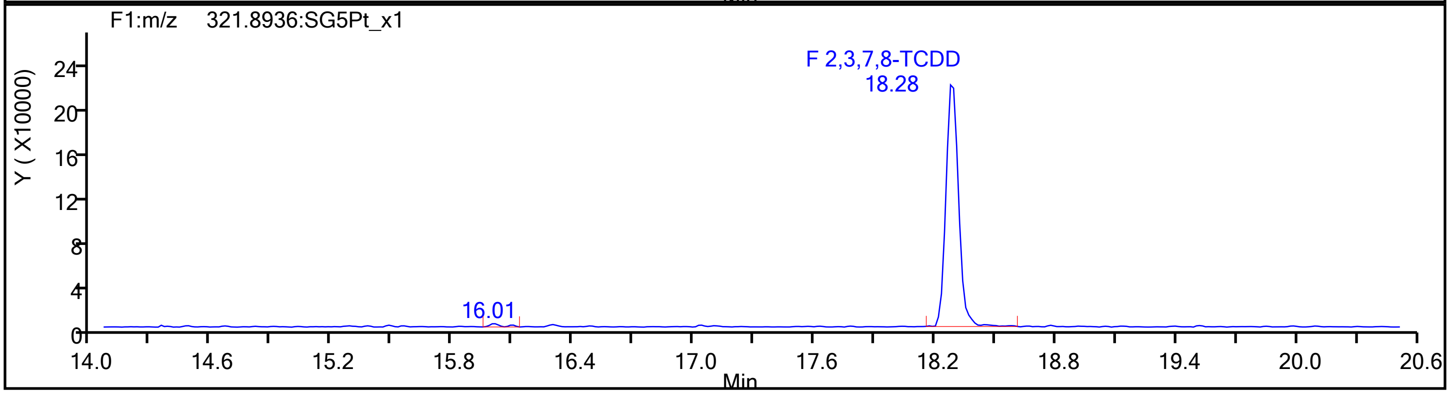

TCDD Standards

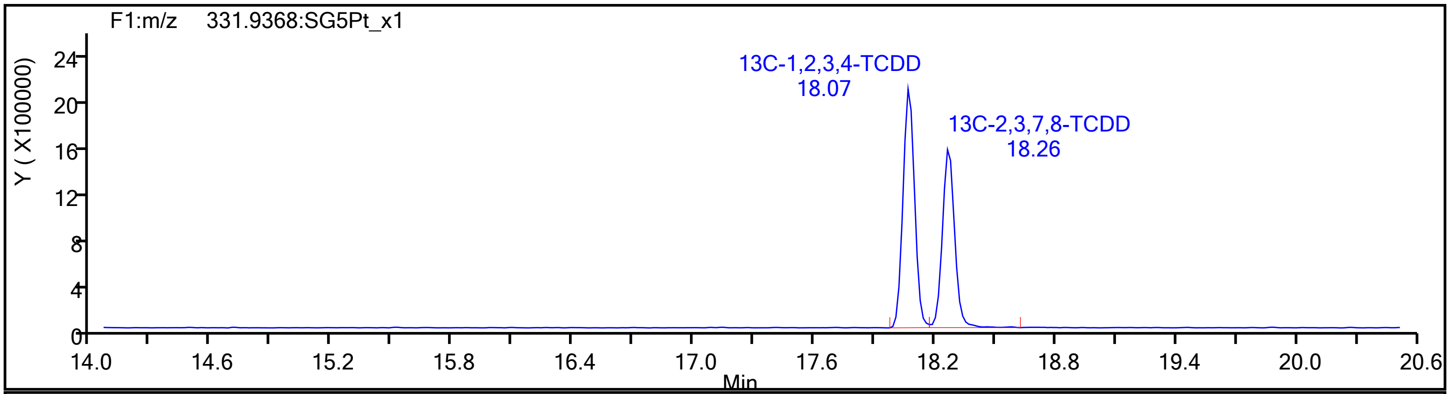

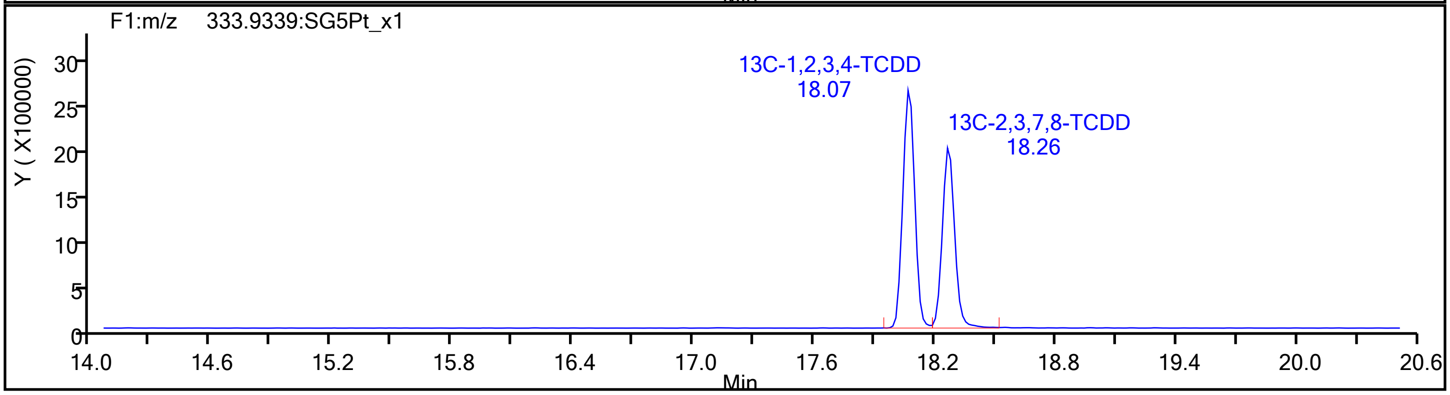

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

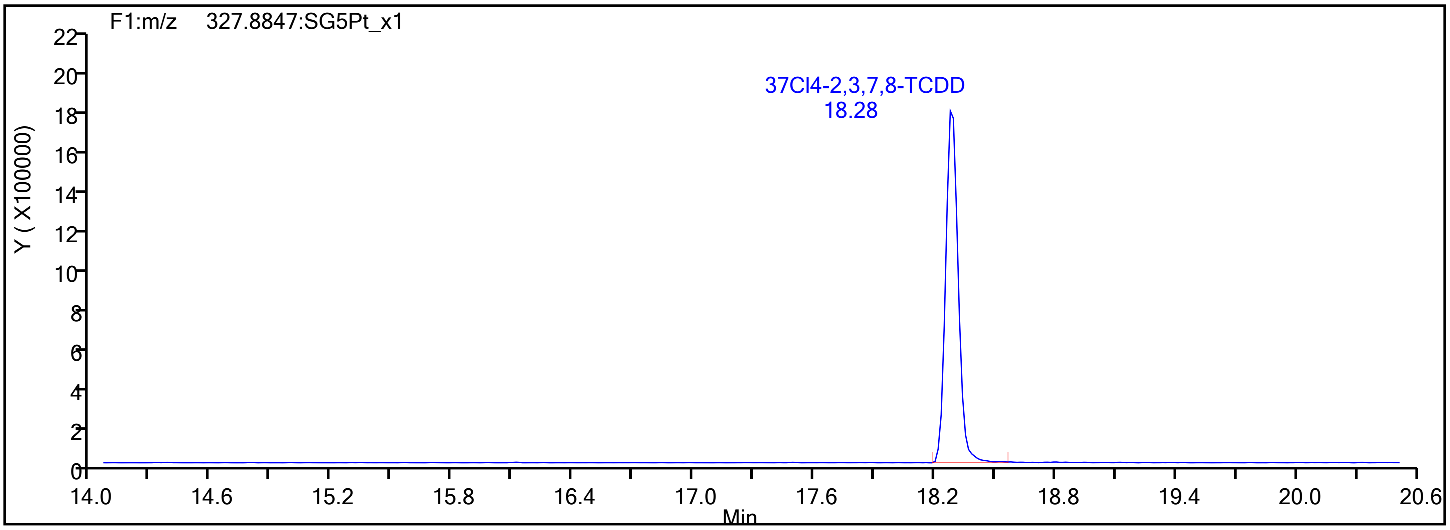

37Cl4-TCDD Standards

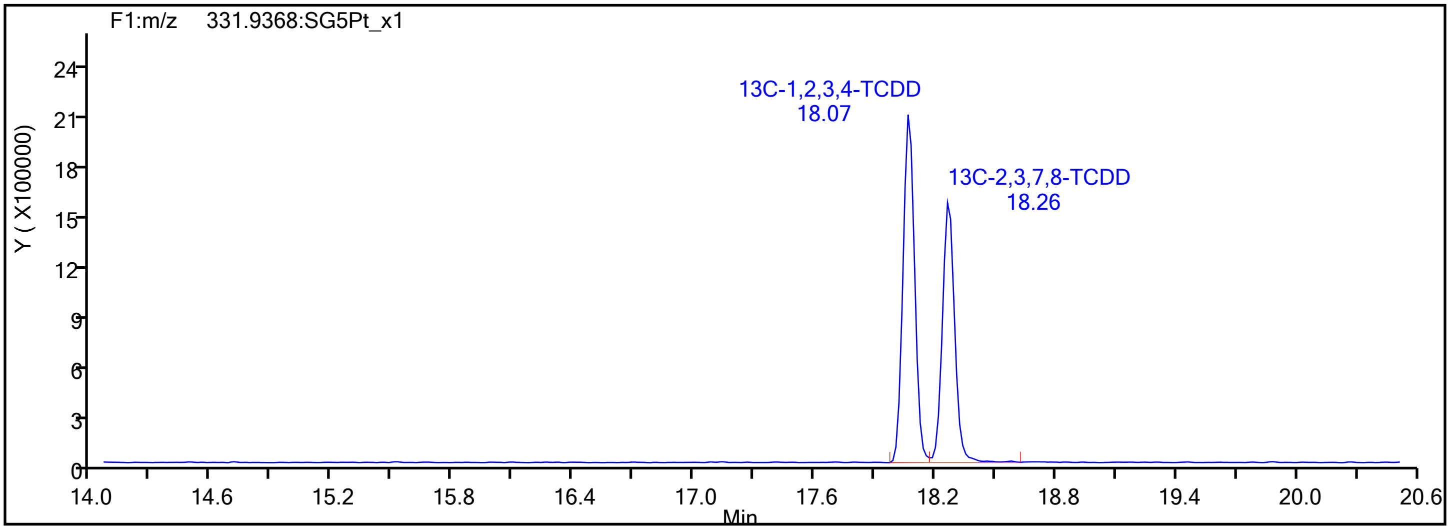

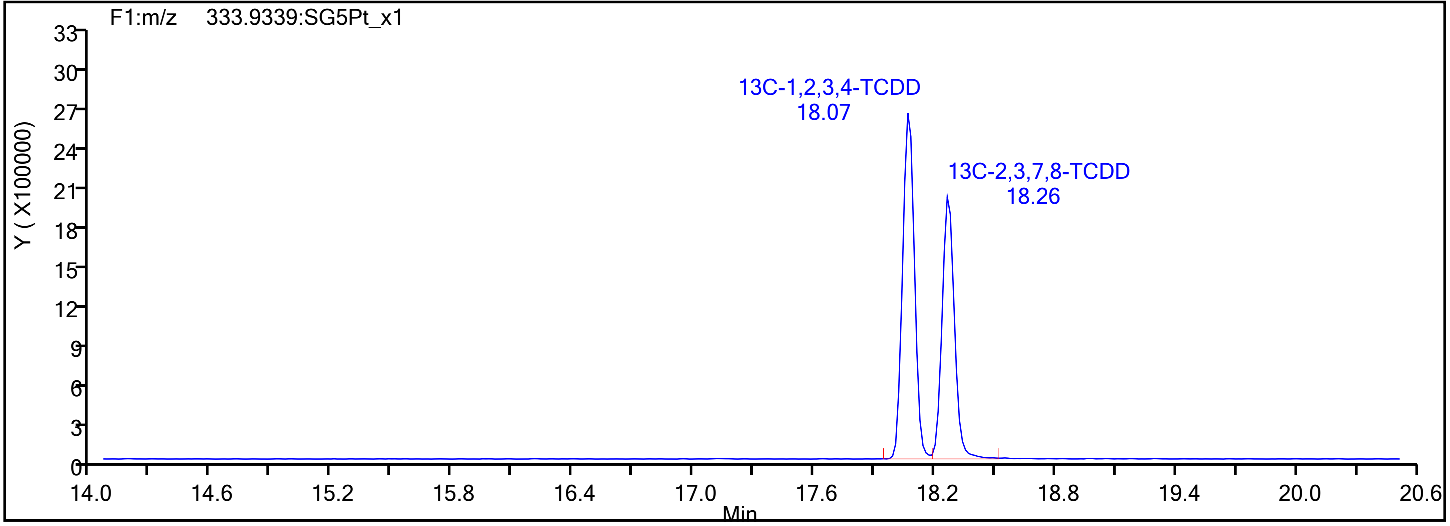

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F1 PeCDFs

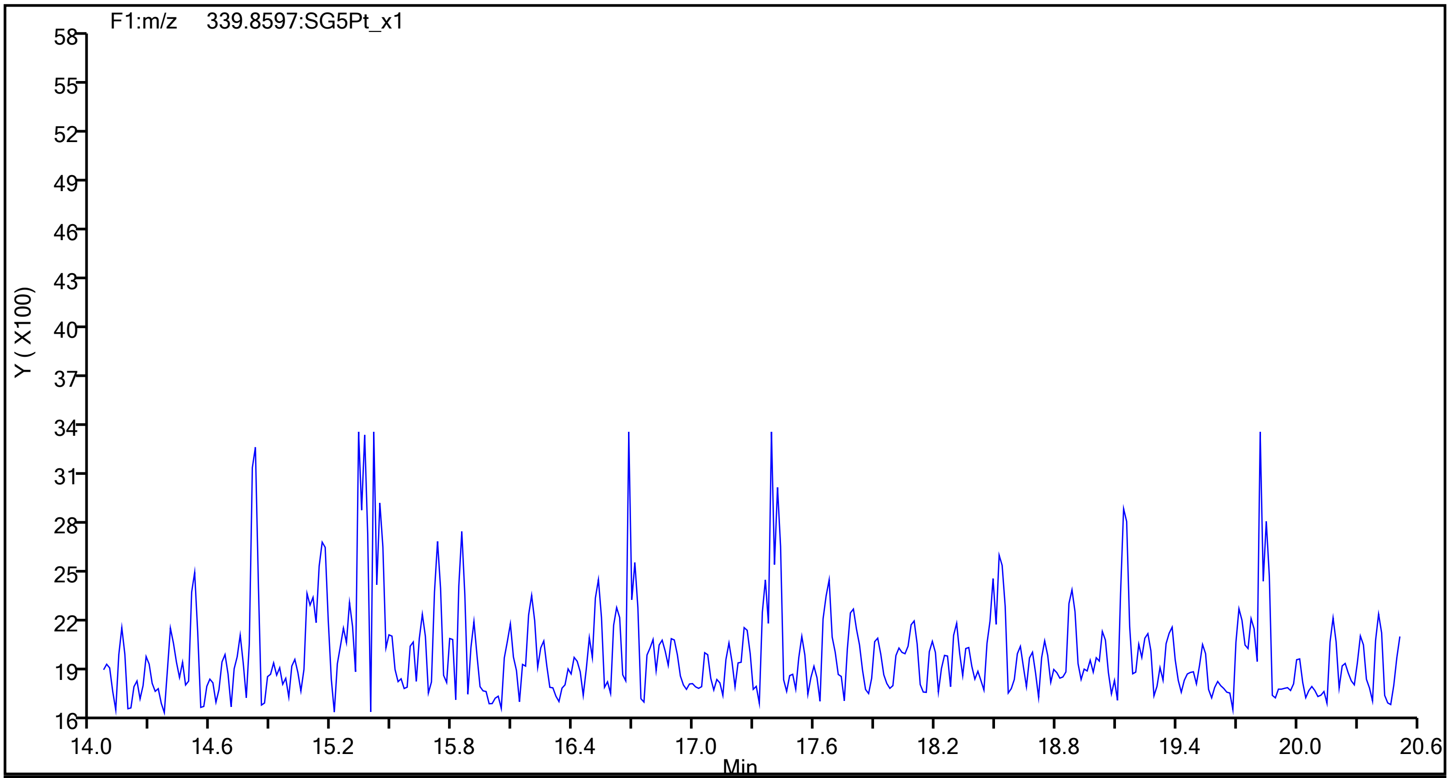

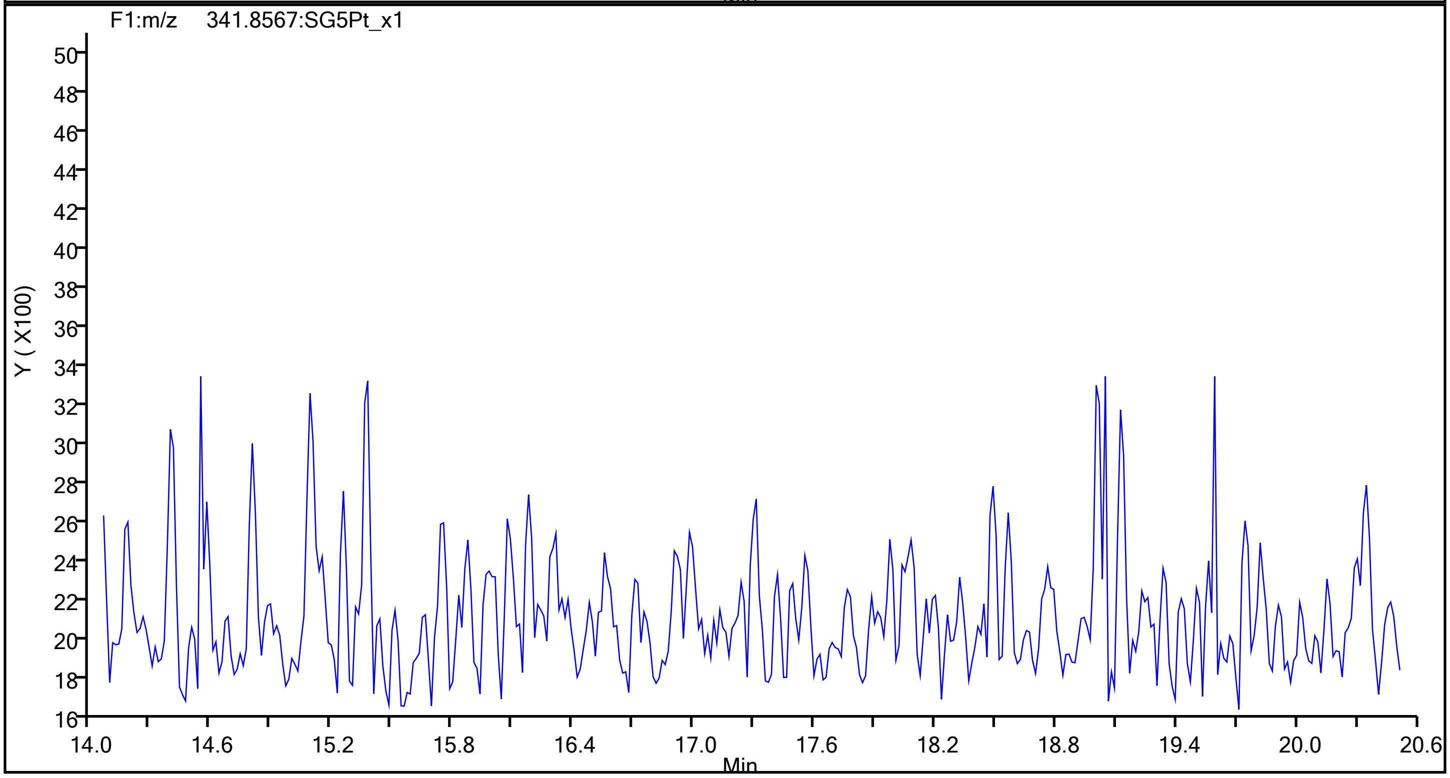

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

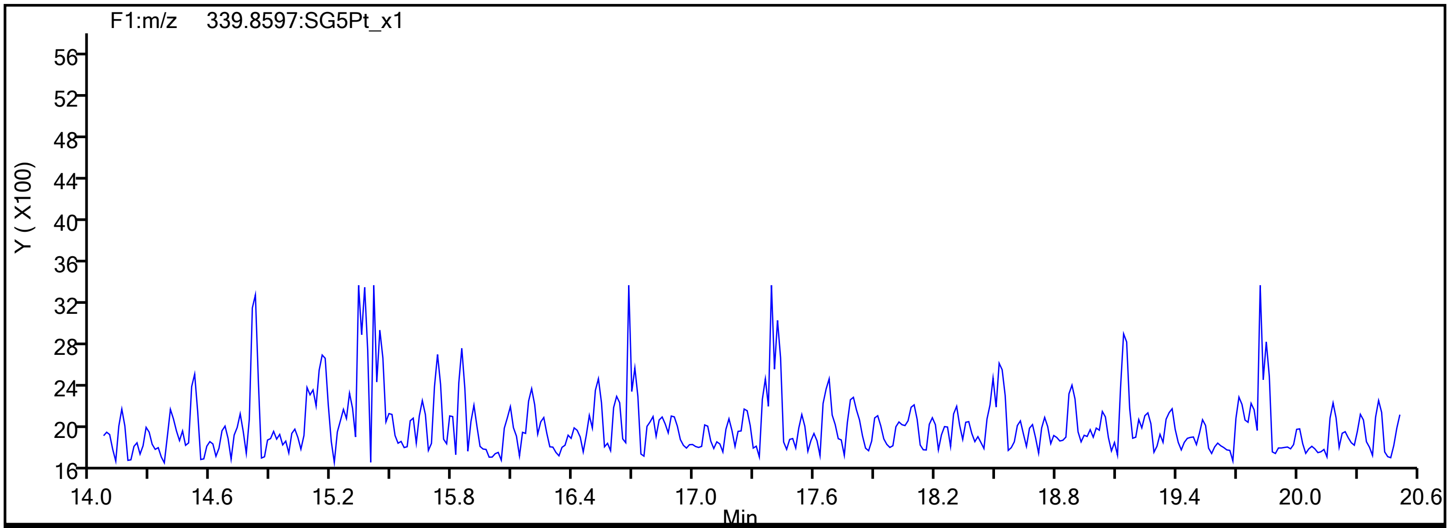

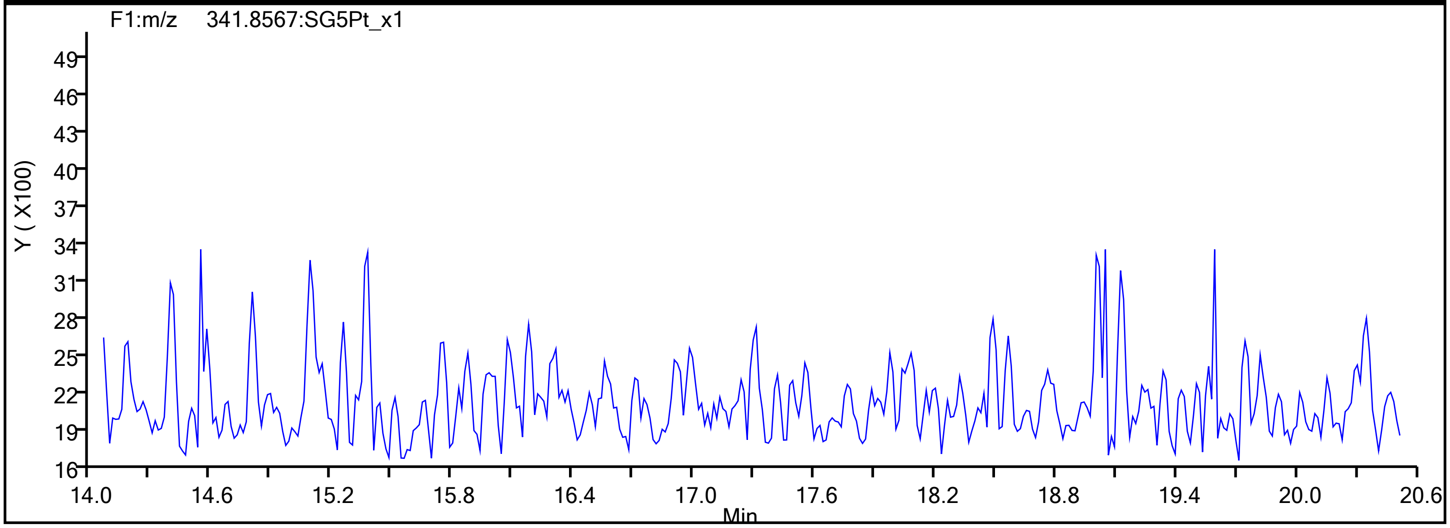

F1 PeCDFs Interference Mass

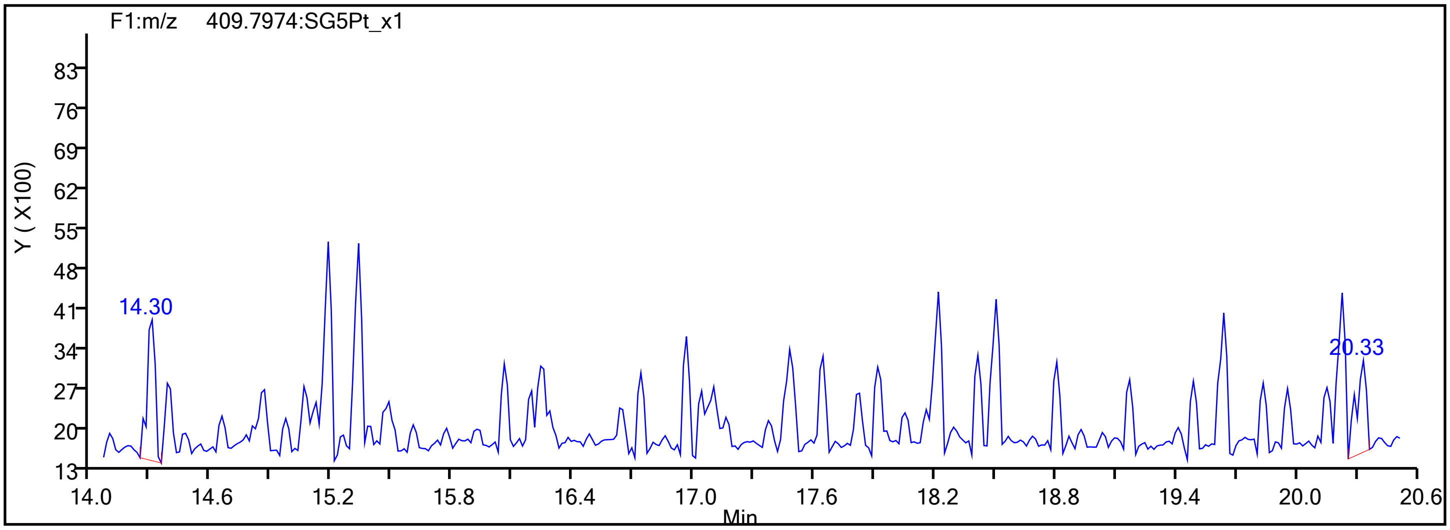

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Eurofins TestAmerica, Sacramento

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PeCDF

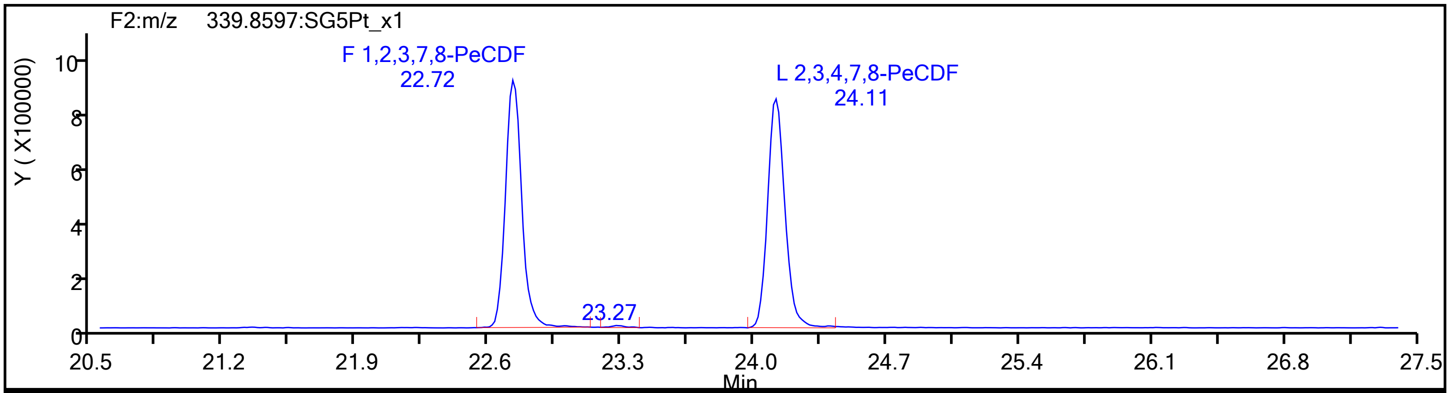

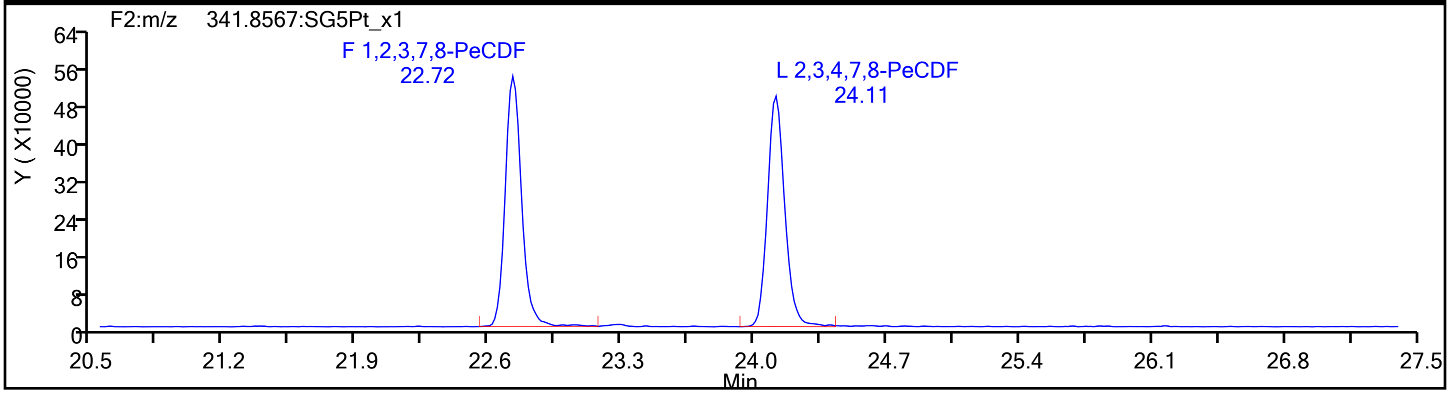

PeCDF Standards

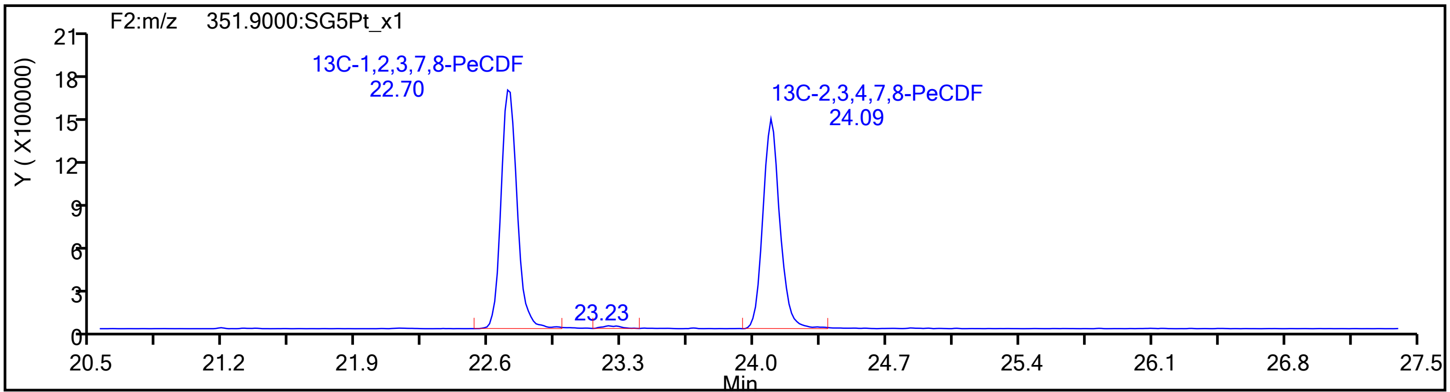

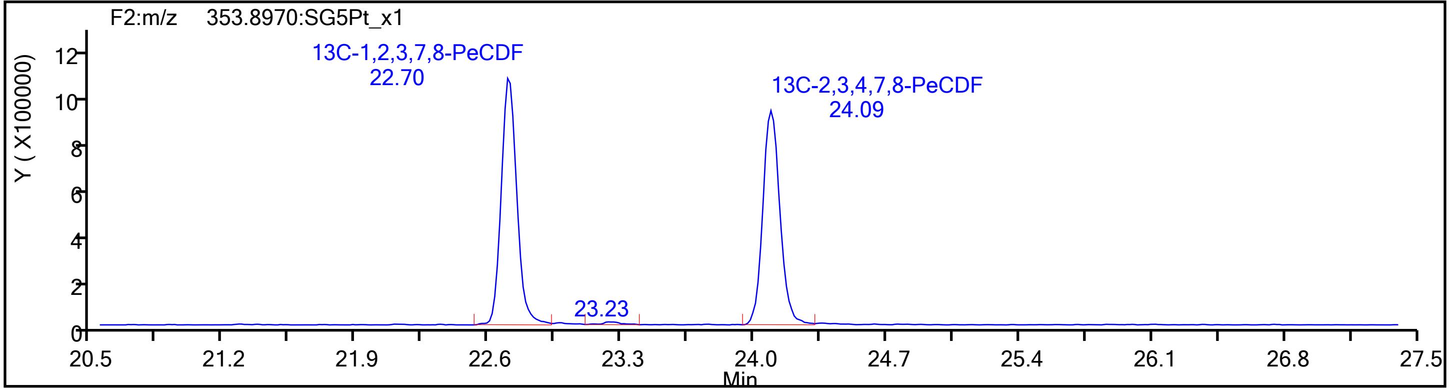

Eurofins TestAmerica, Sacramento

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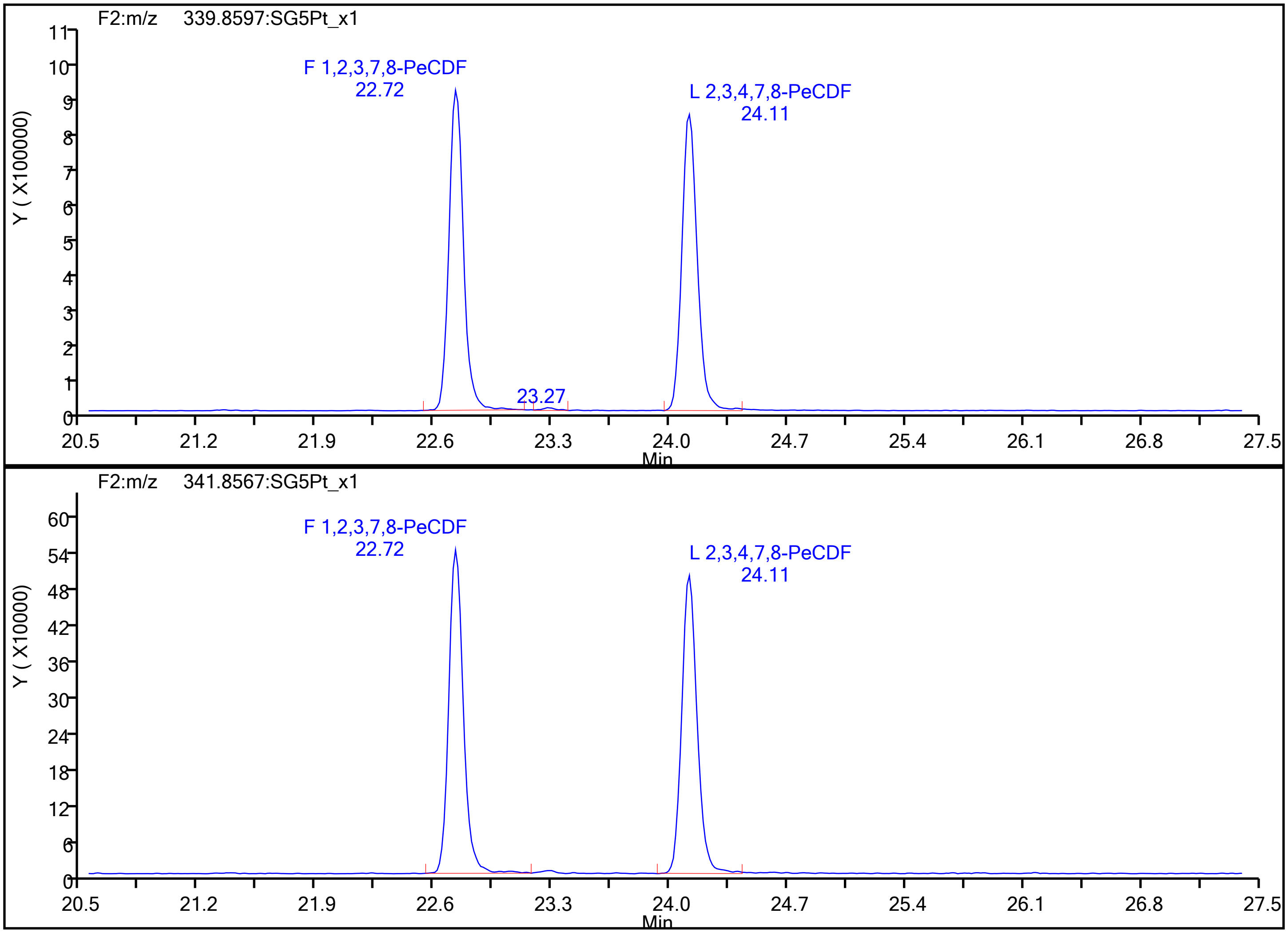

PeCDF Interference Mass

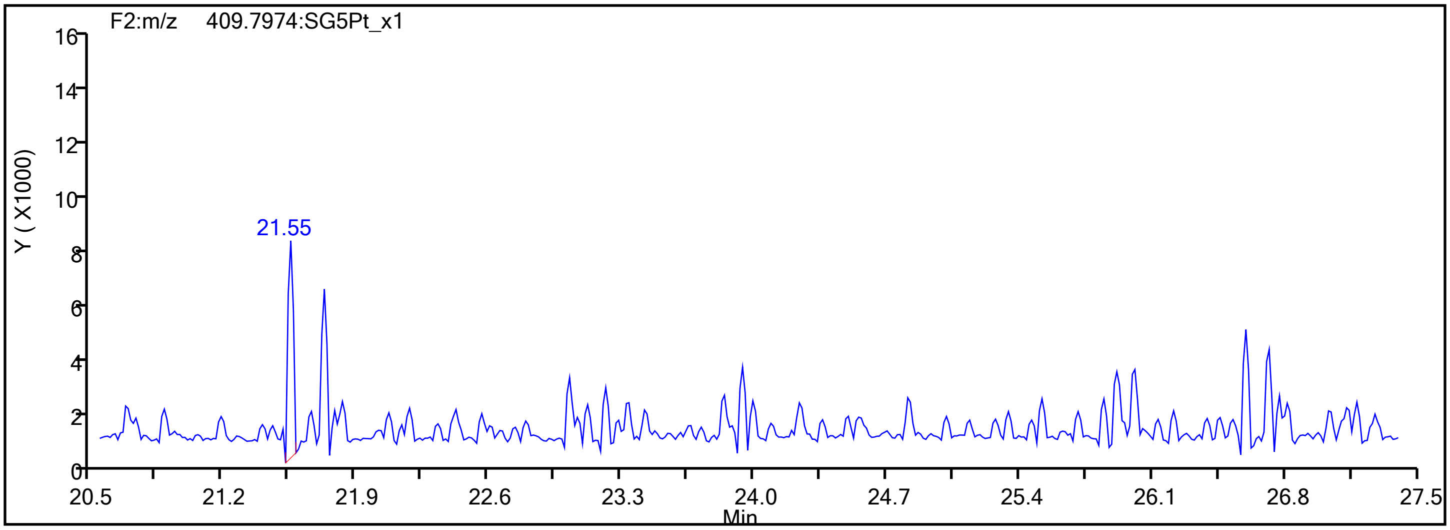

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Eurofins TestAmerica, Sacramento

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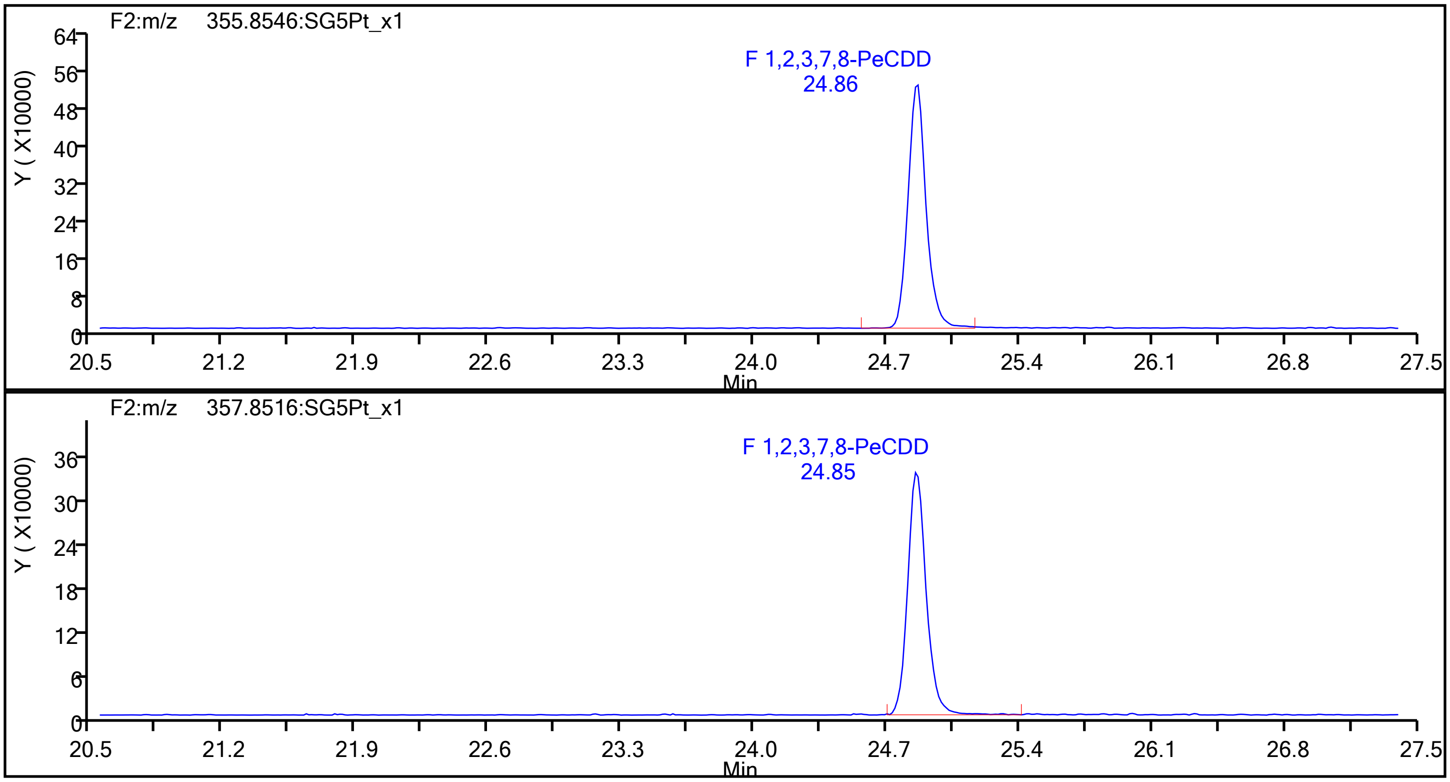

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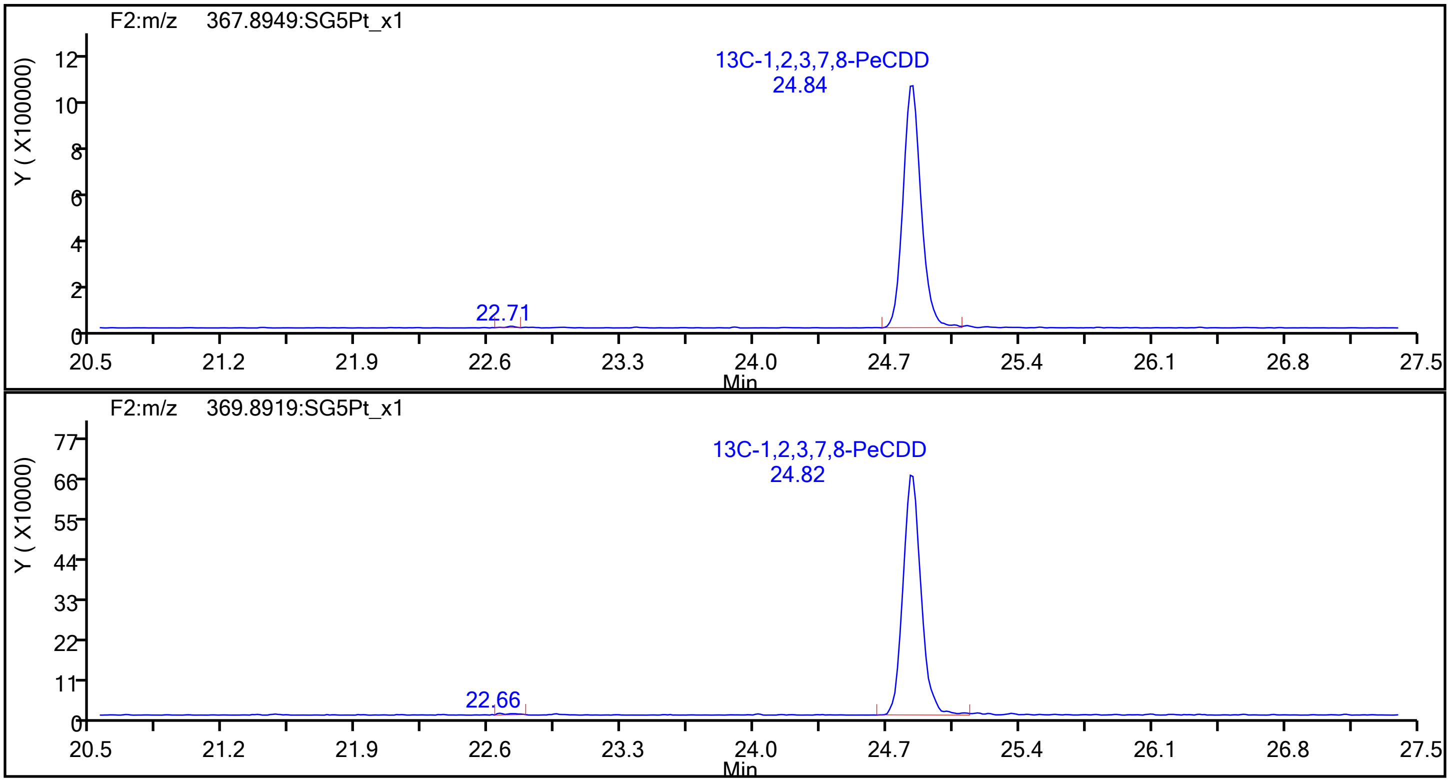

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HxCDF

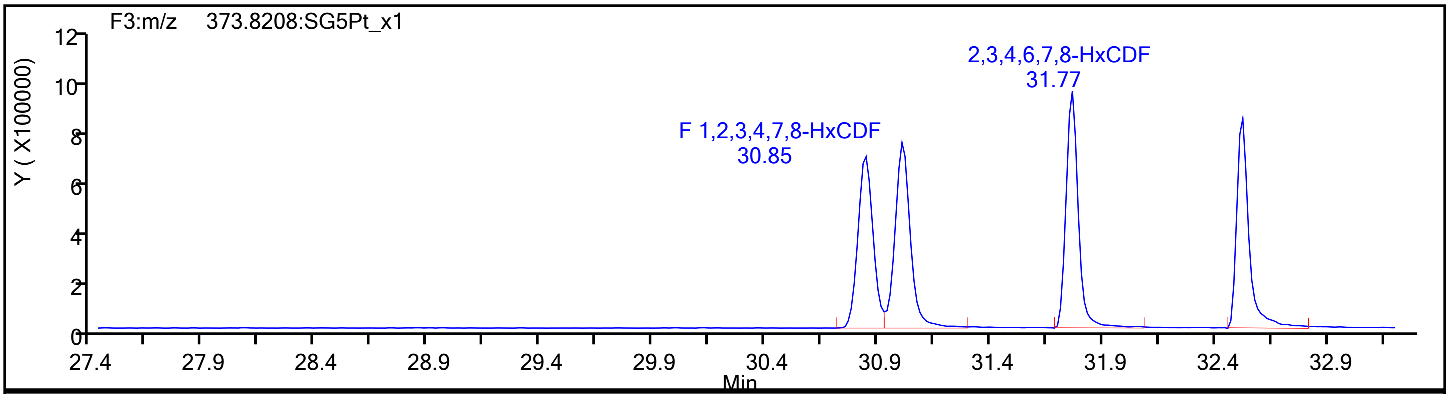

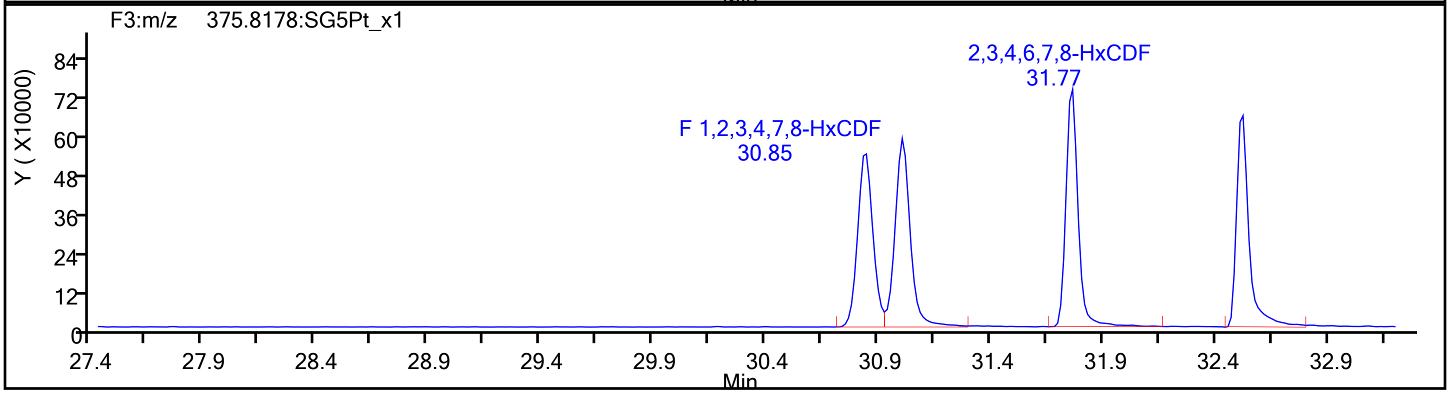

HxCDF Standards

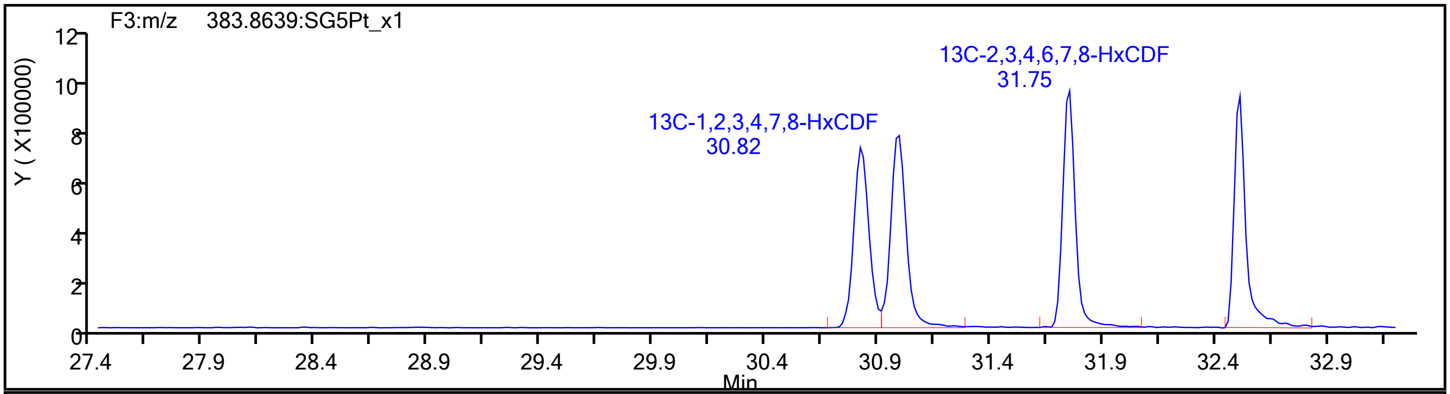

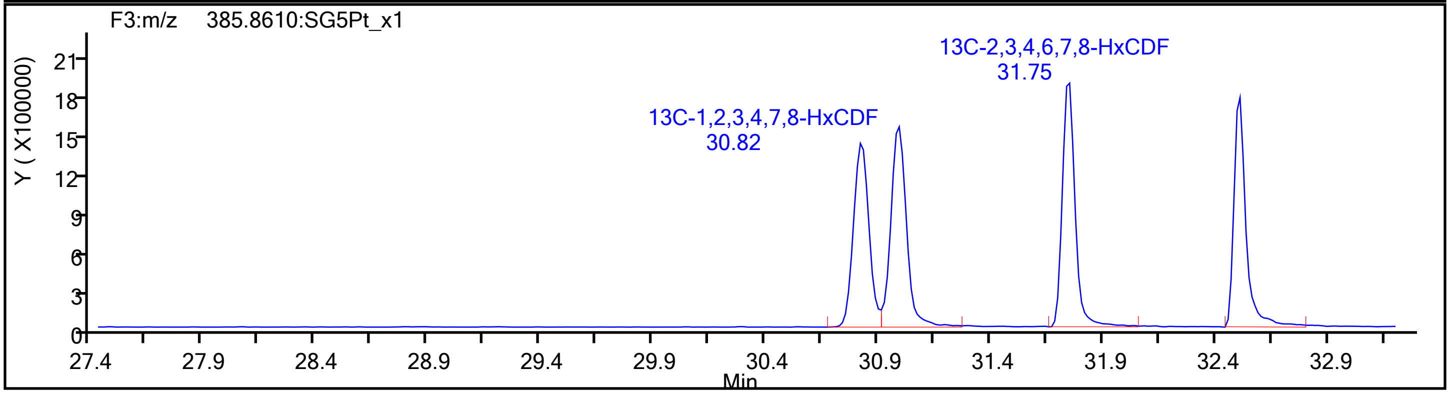

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Eurofins TestAmerica, Sacramento

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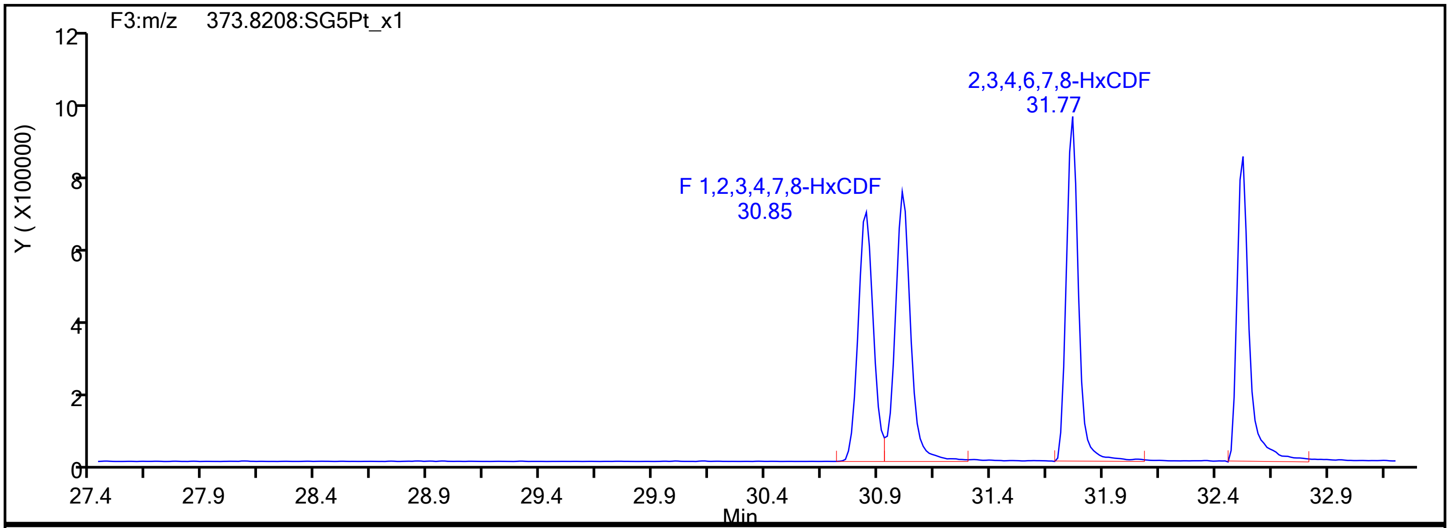

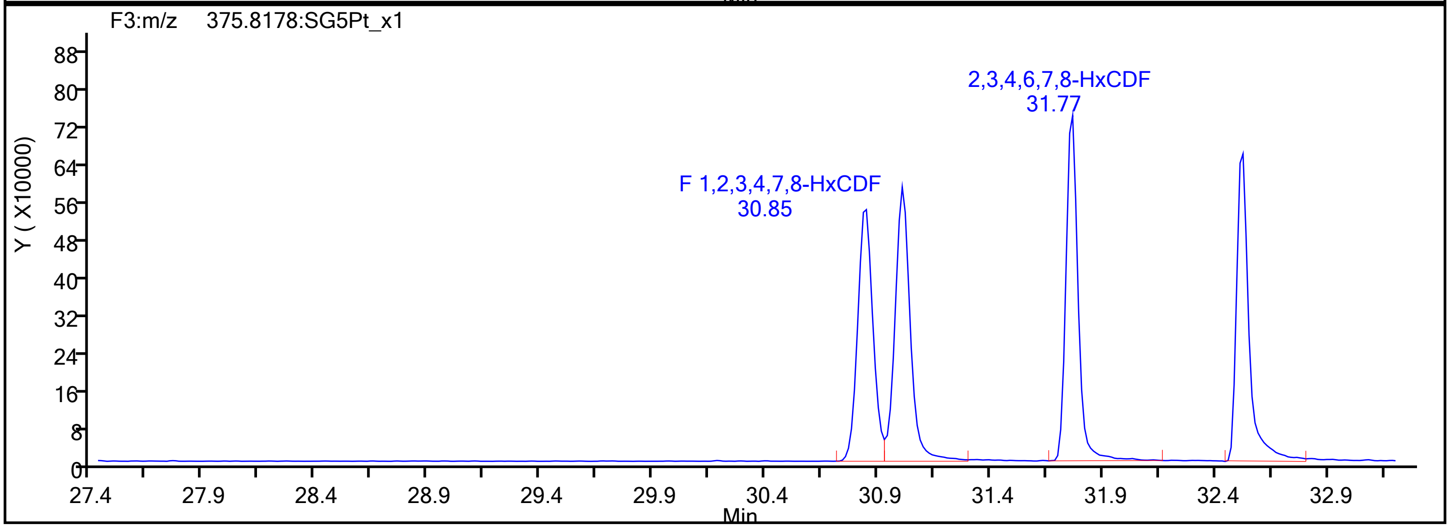

HxCDF Interference Mass

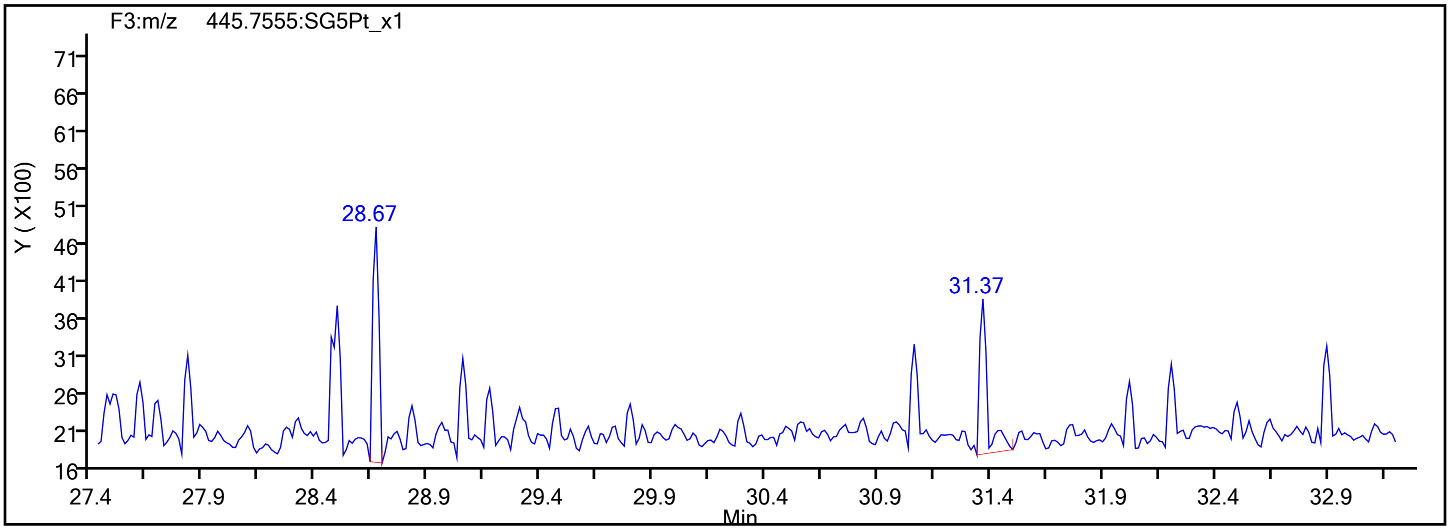

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HxCDD

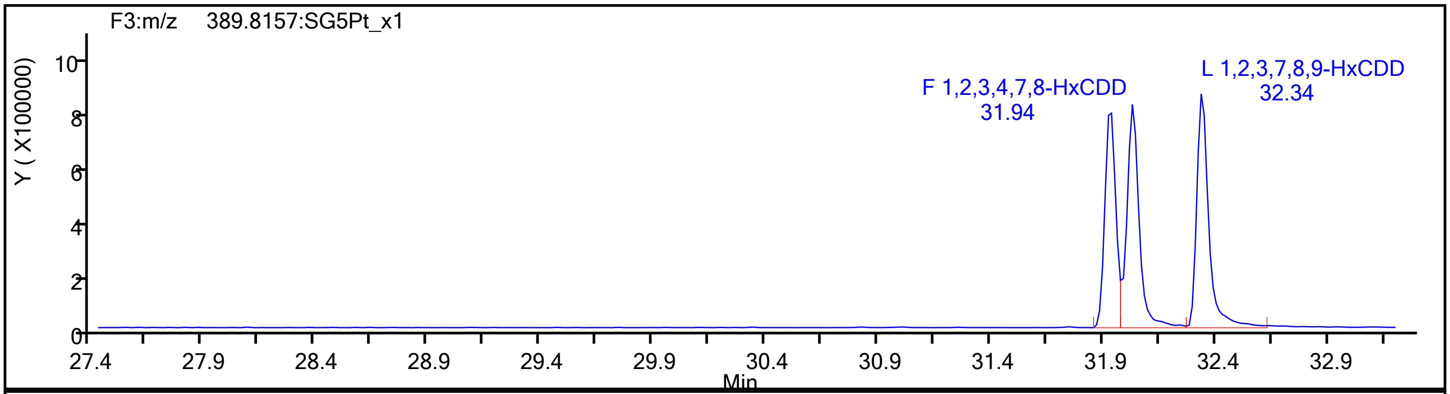

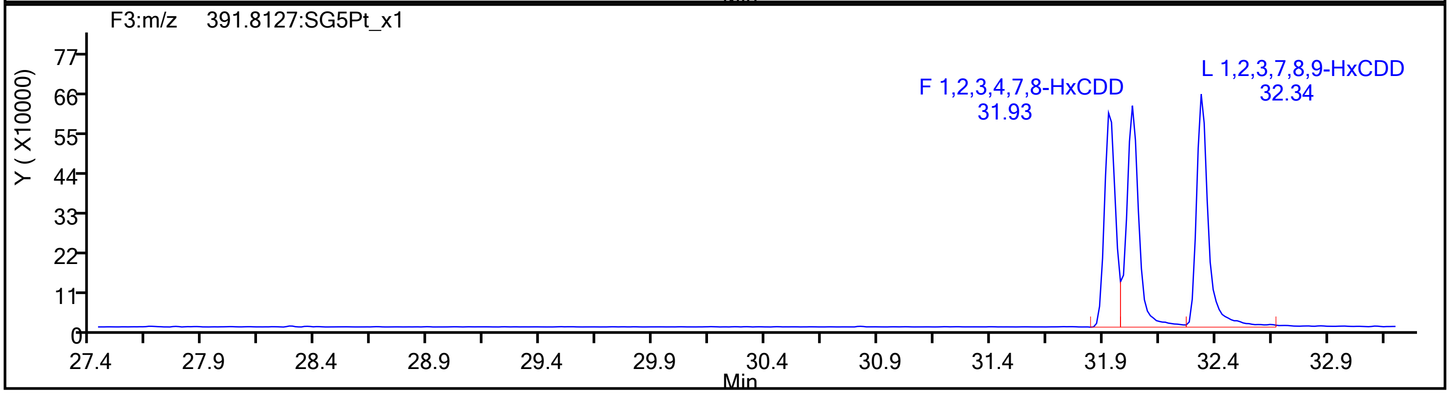

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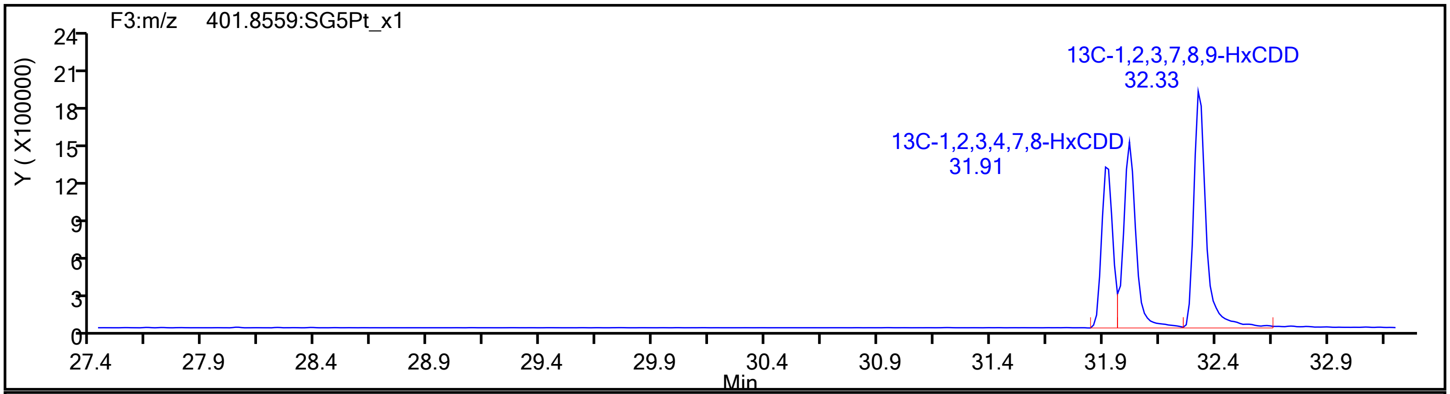

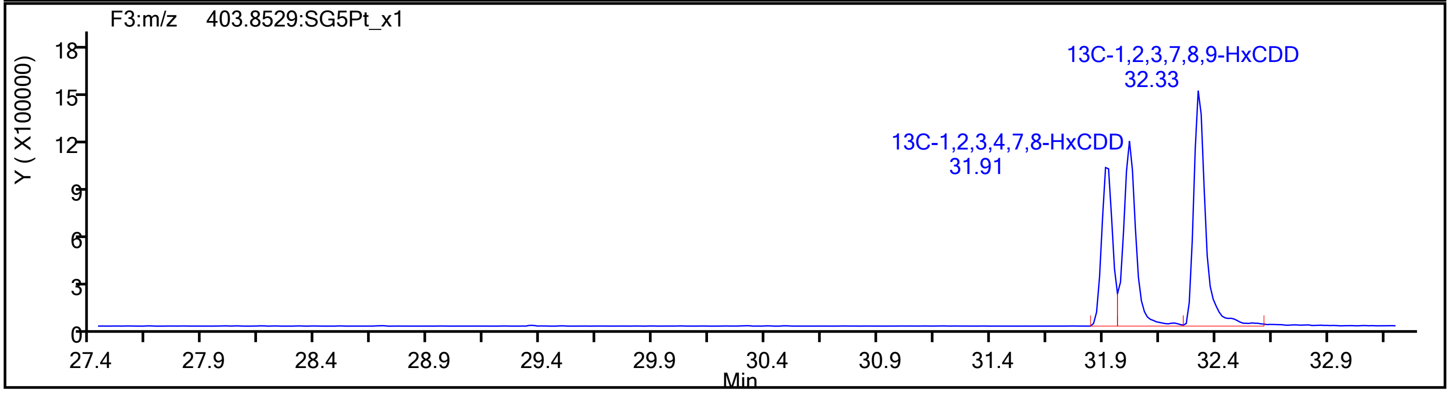

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Eurofins TestAmerica, Sacramento

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HpCDF

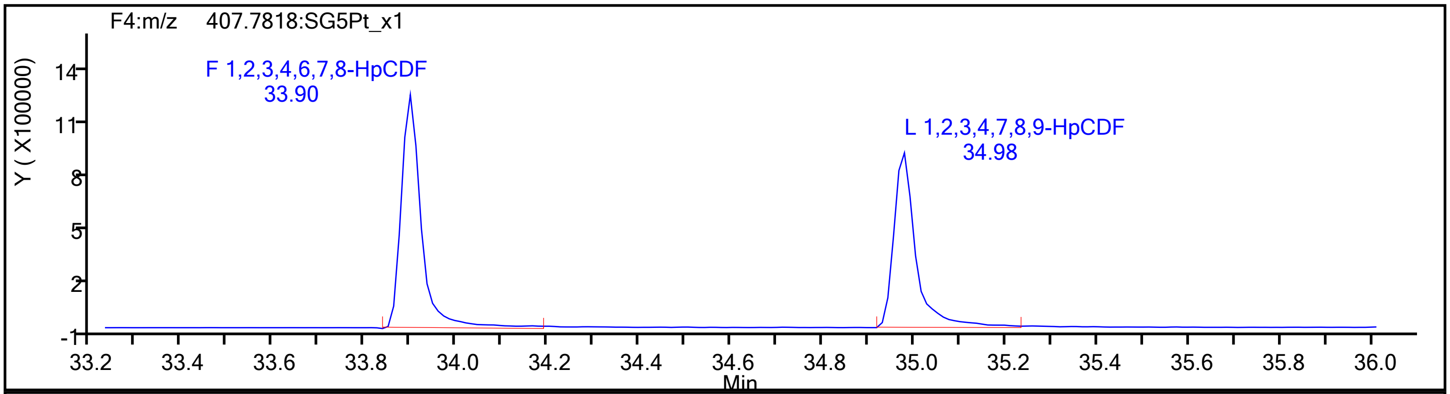

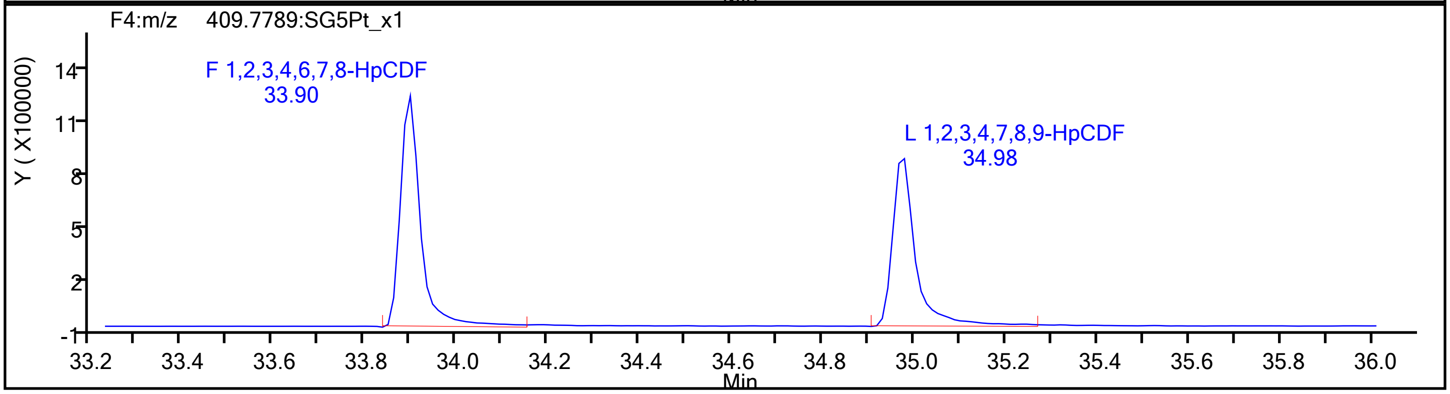

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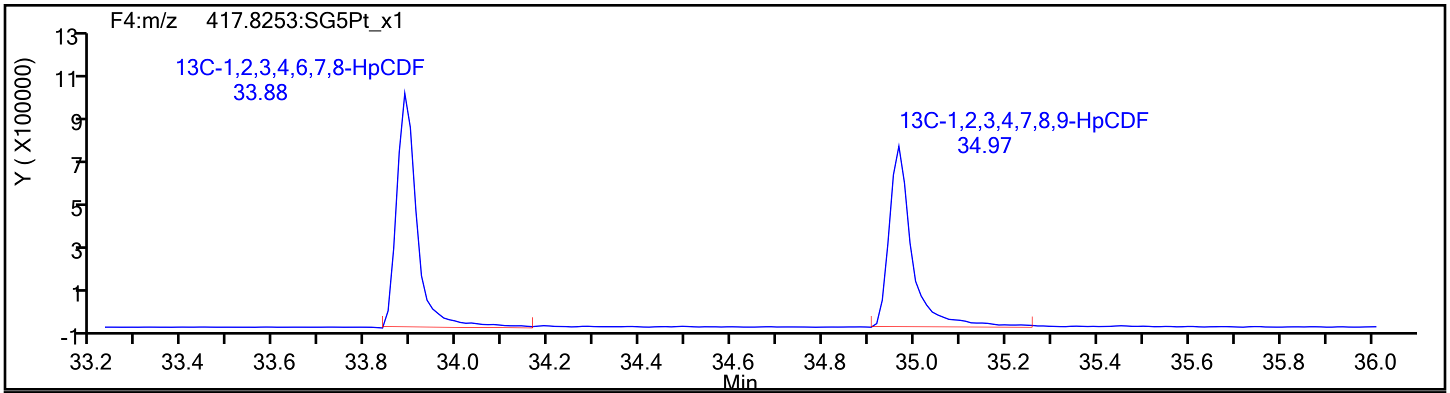

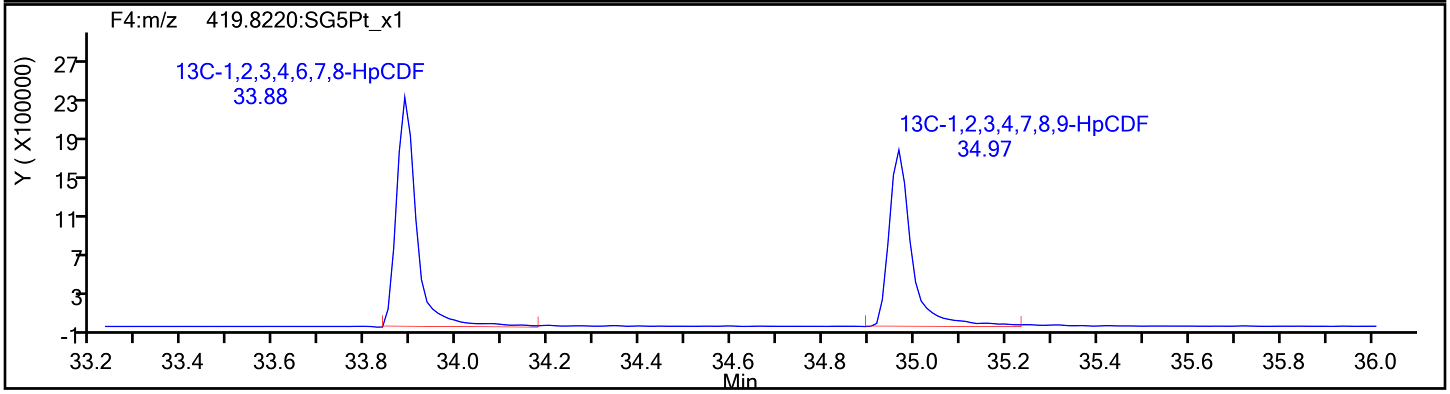

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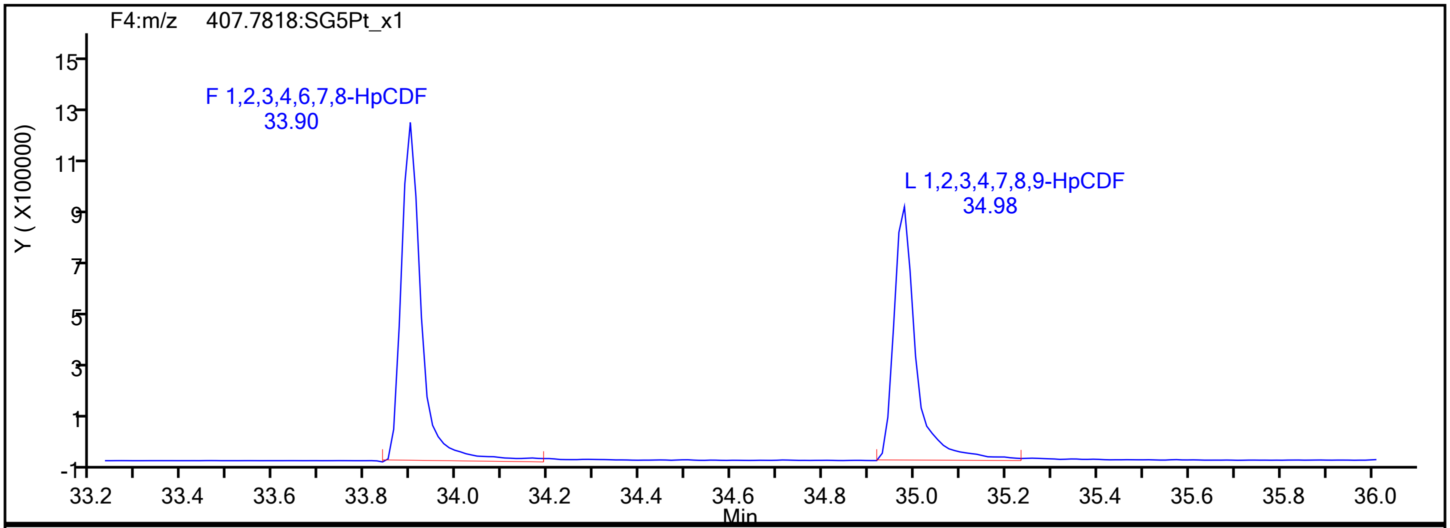

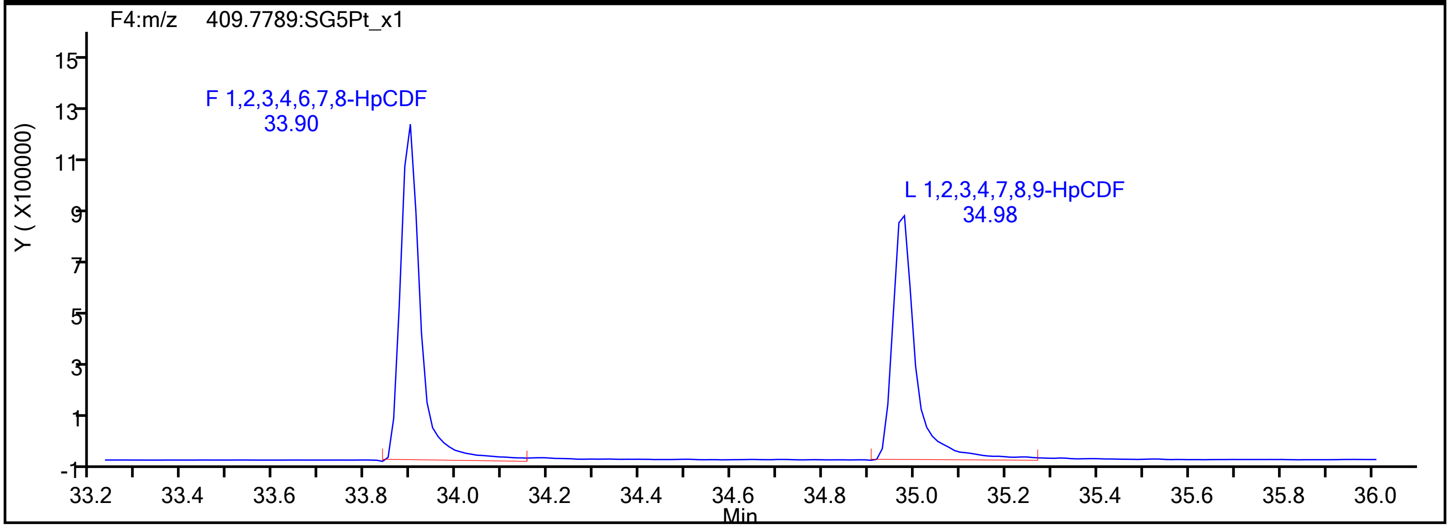

HpCDF Interference Mass

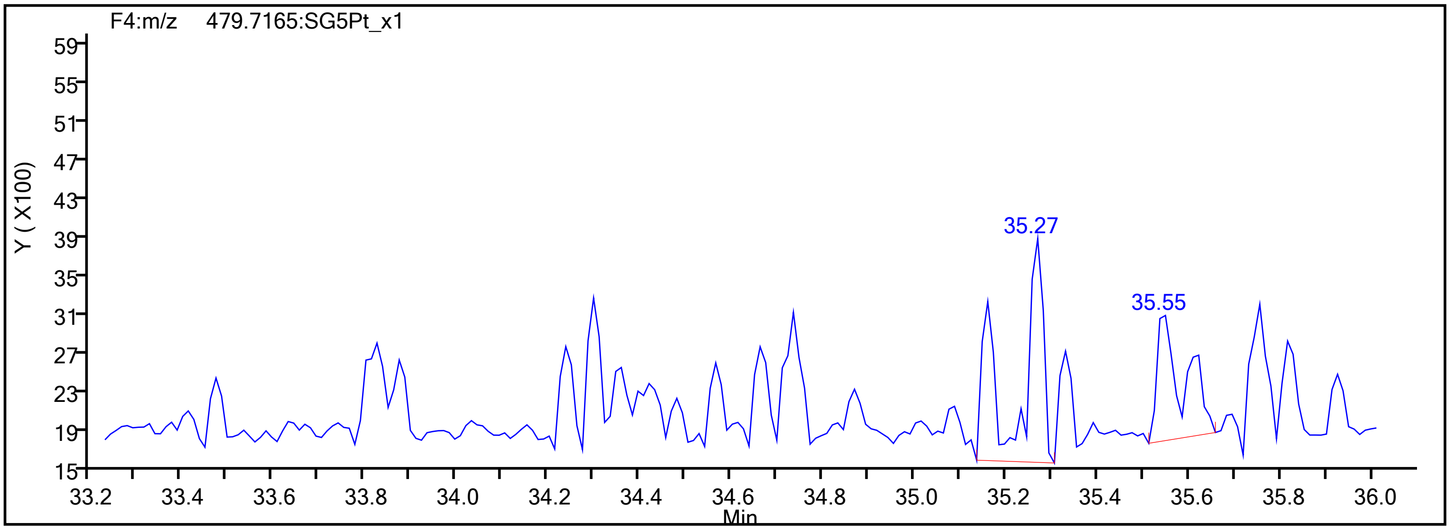

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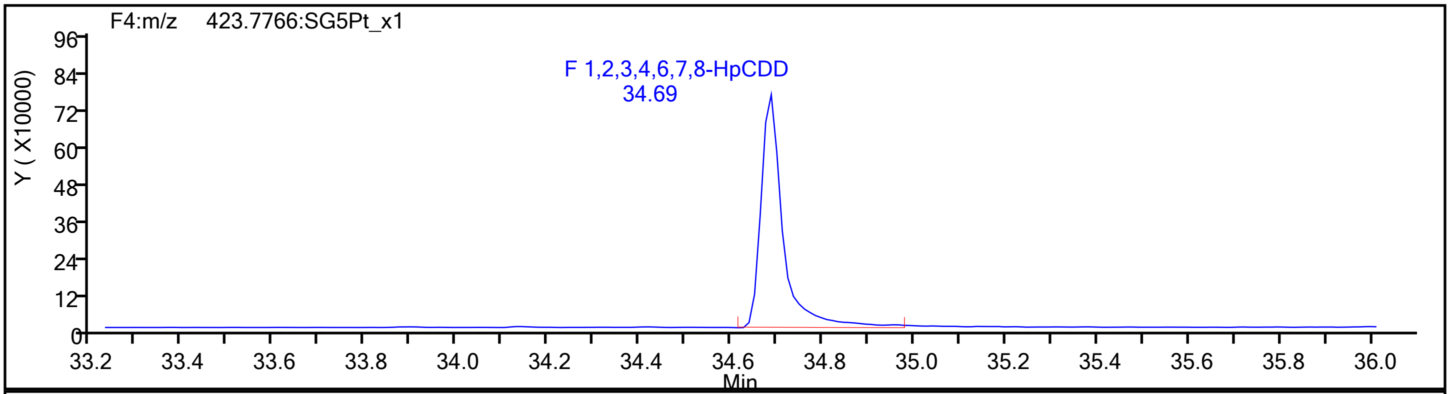

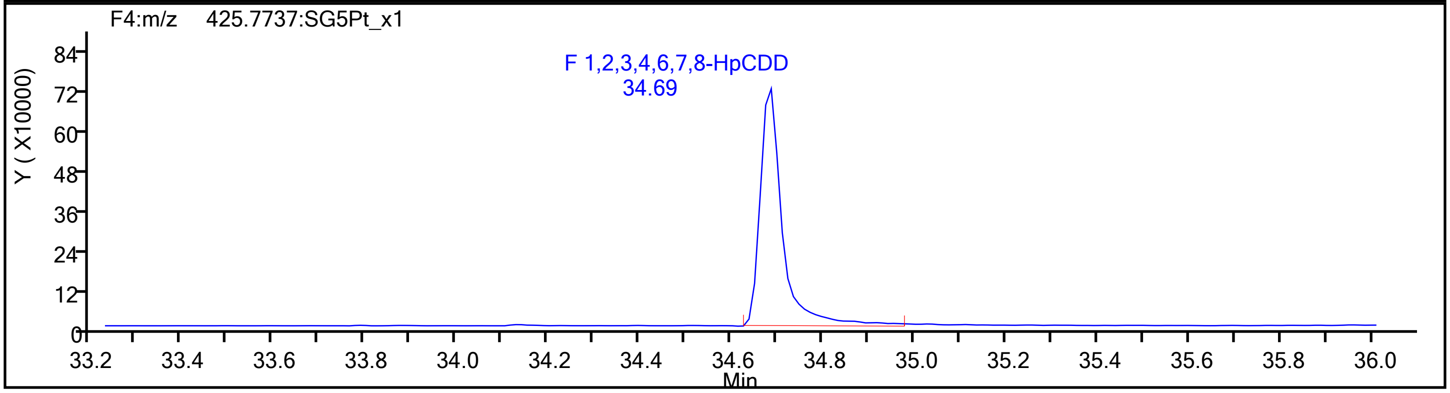

HpCDD Standards

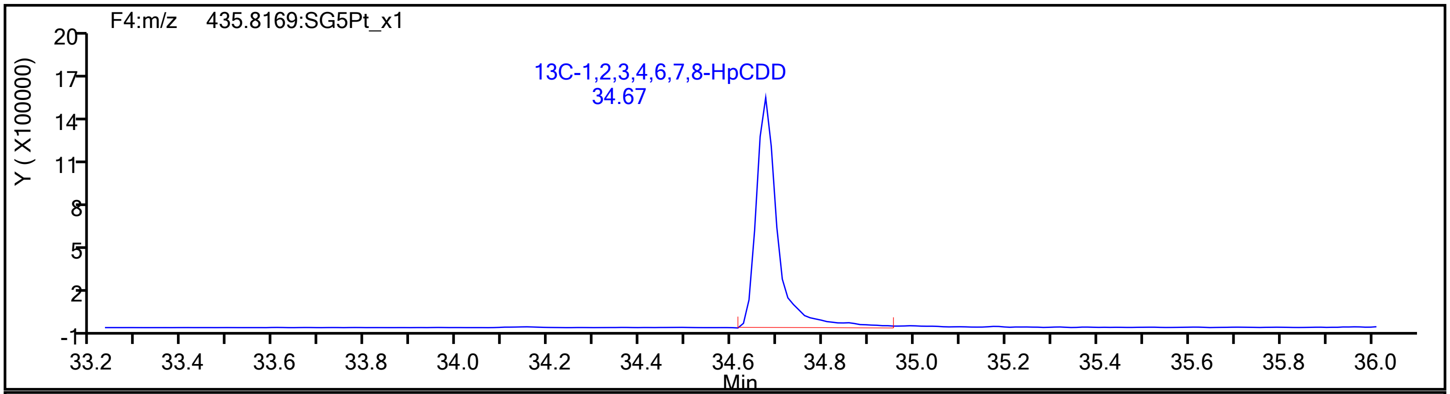

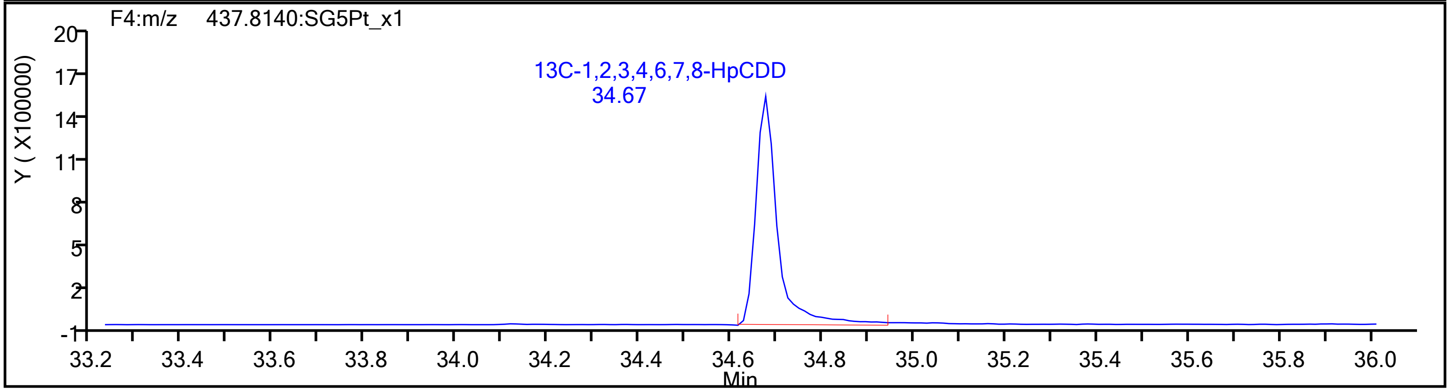

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OCDF

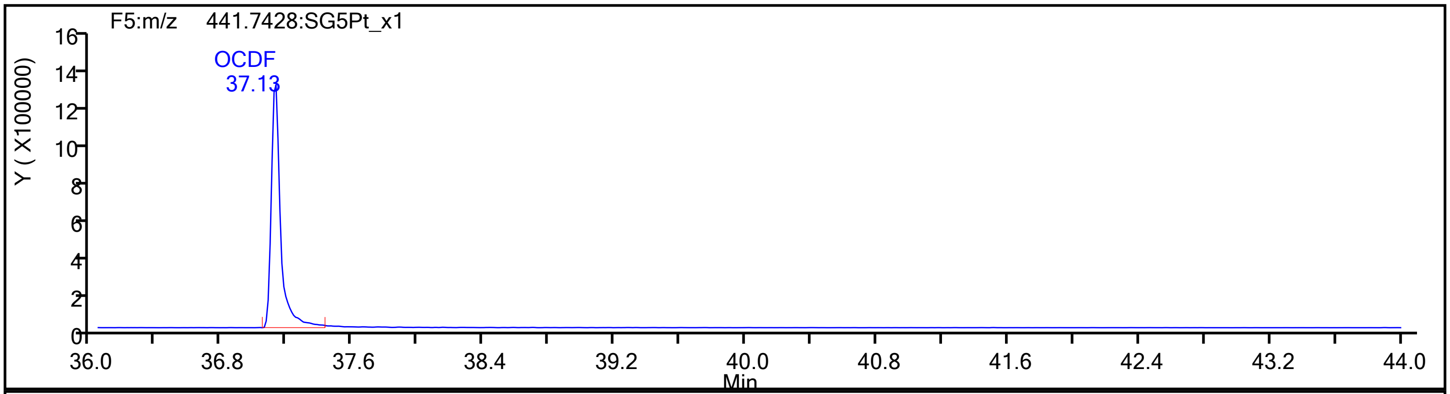

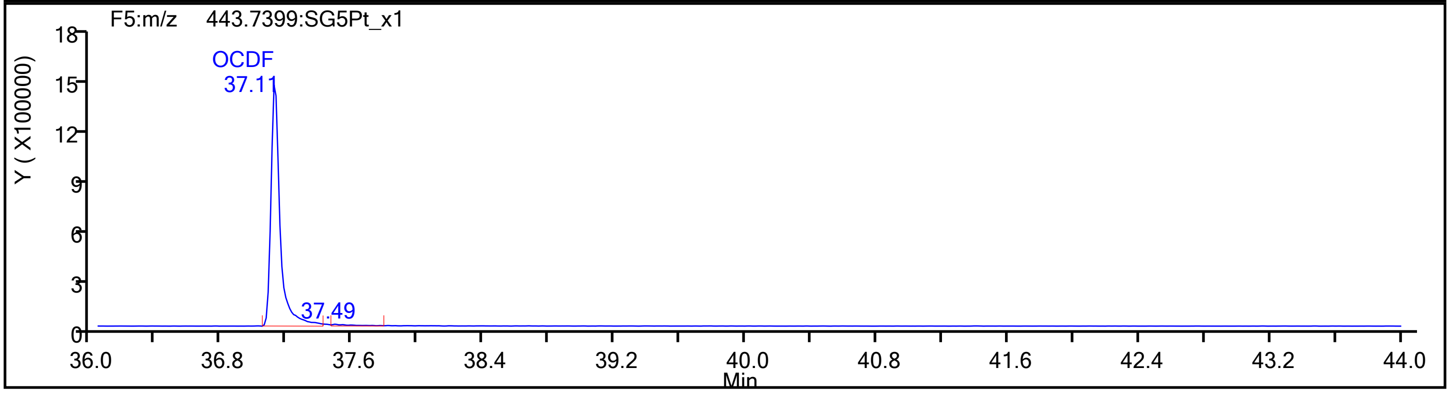

OCDF Standards

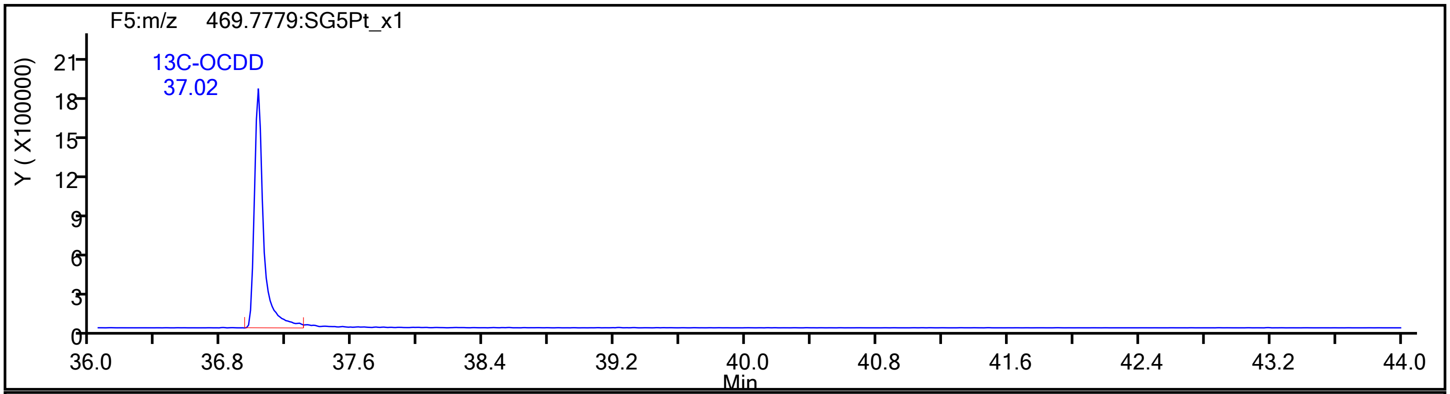

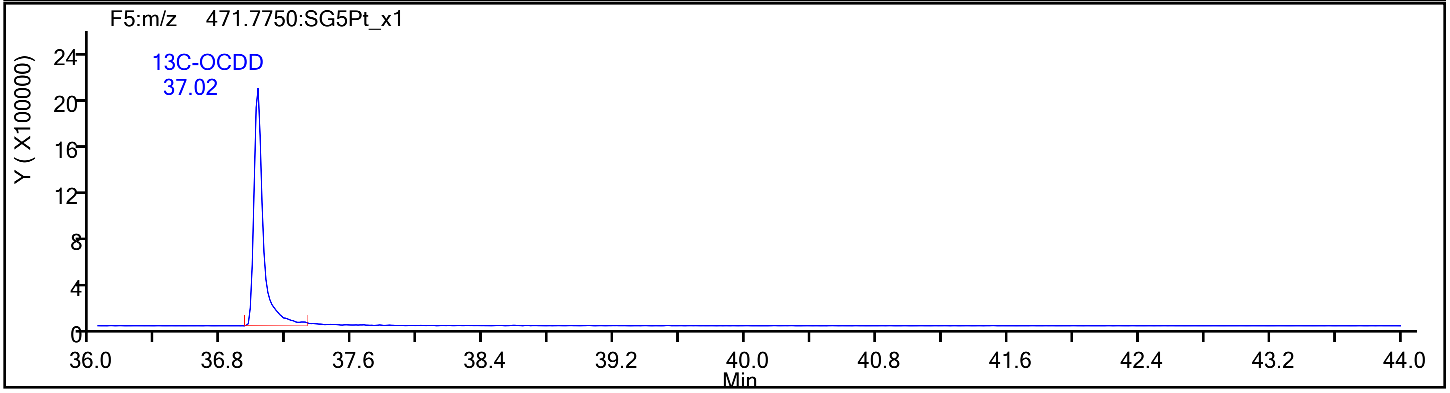

Report Date: 03-Sep-2020 08:46:50 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d
Injection Date: 01-Sep-2020 23:09:31
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

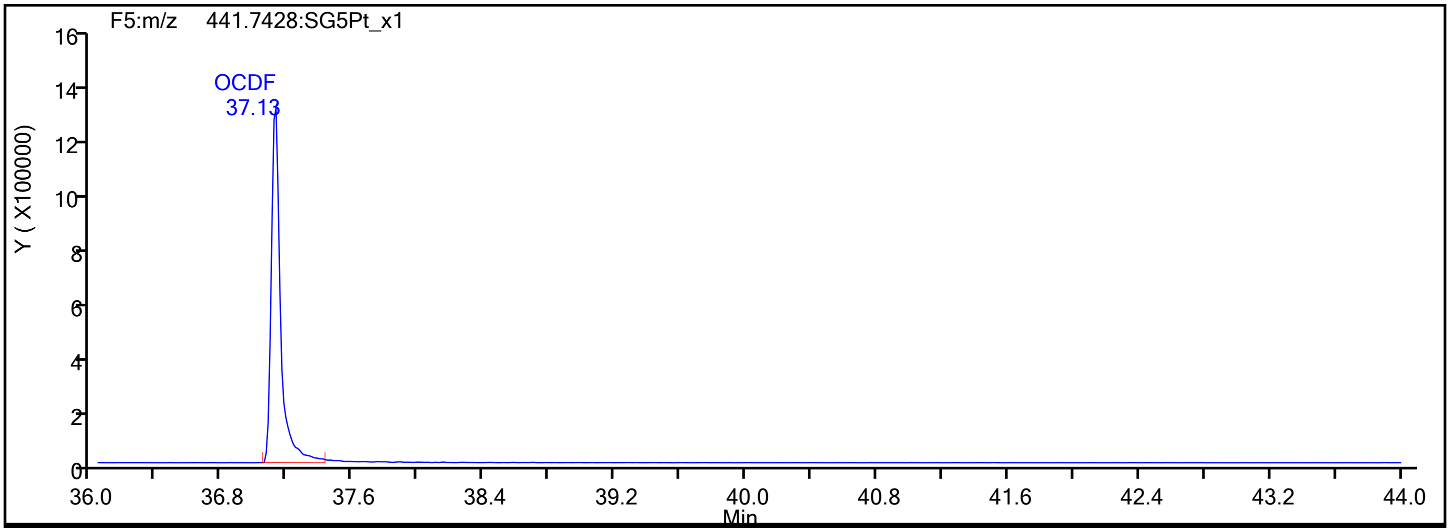

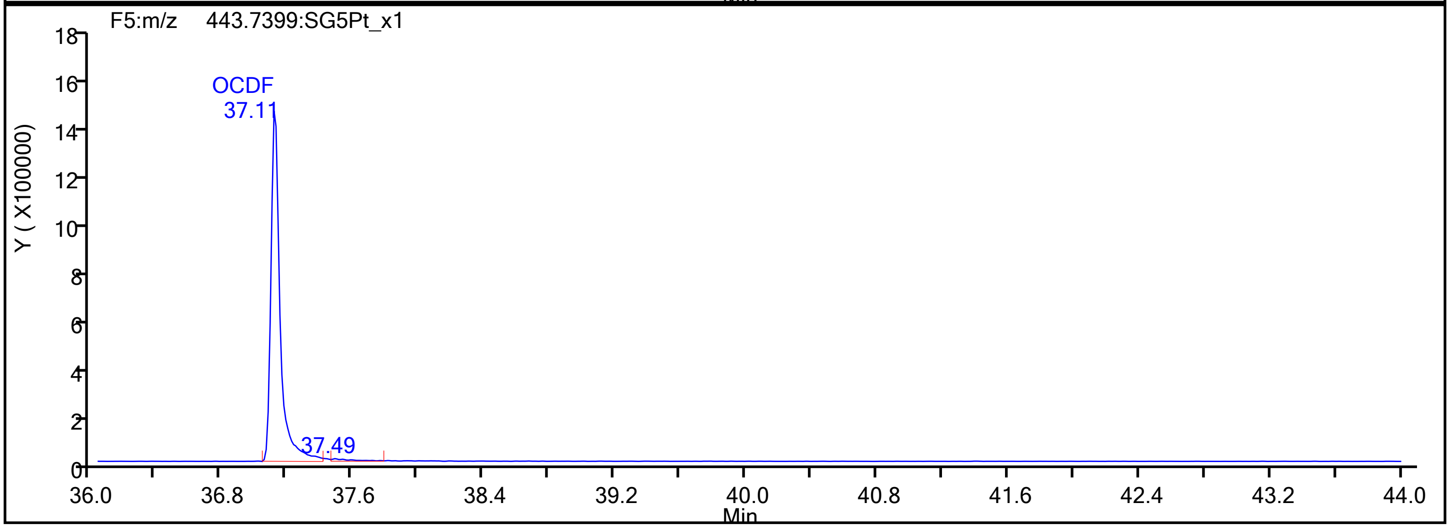

OCDF Interference Mass

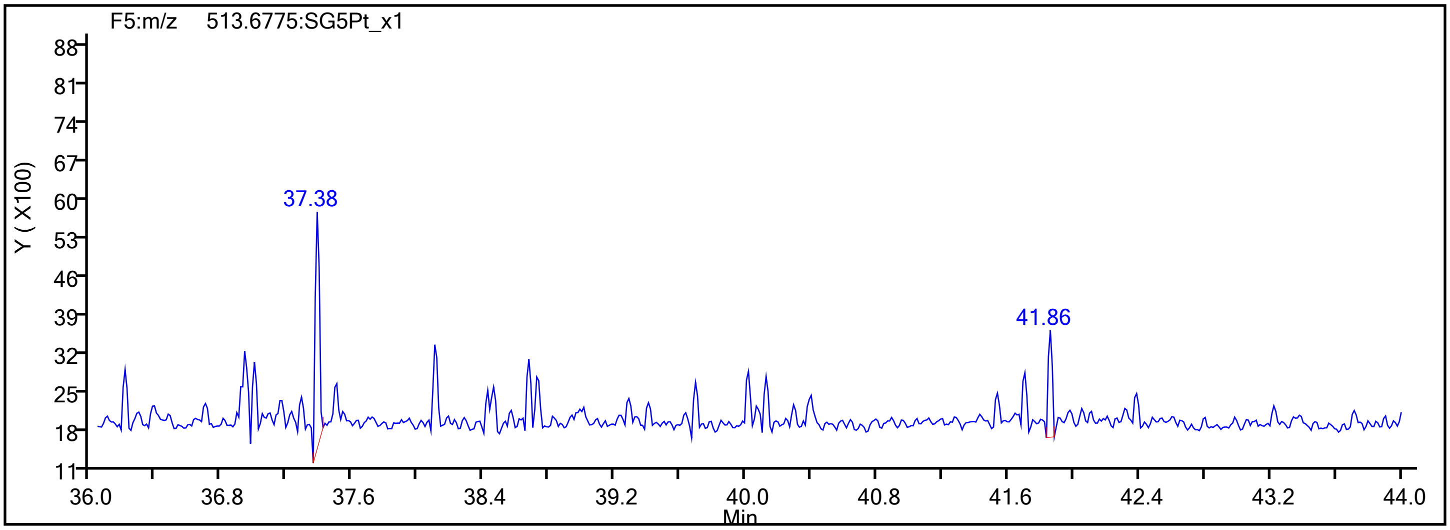

Report Date: 03-Sep-2020 08:46:50   Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d
Injection Date: 01-Sep-2020 23:09:31   Injection Vol: 2.0 ul
Instrument ID: 10D5   Operator ID: ALM
Method: Dioxin_10D5   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 408767   Sample Line#: 5
Column Type: DB-5   Column Dia: 0.32 mm

OCDD

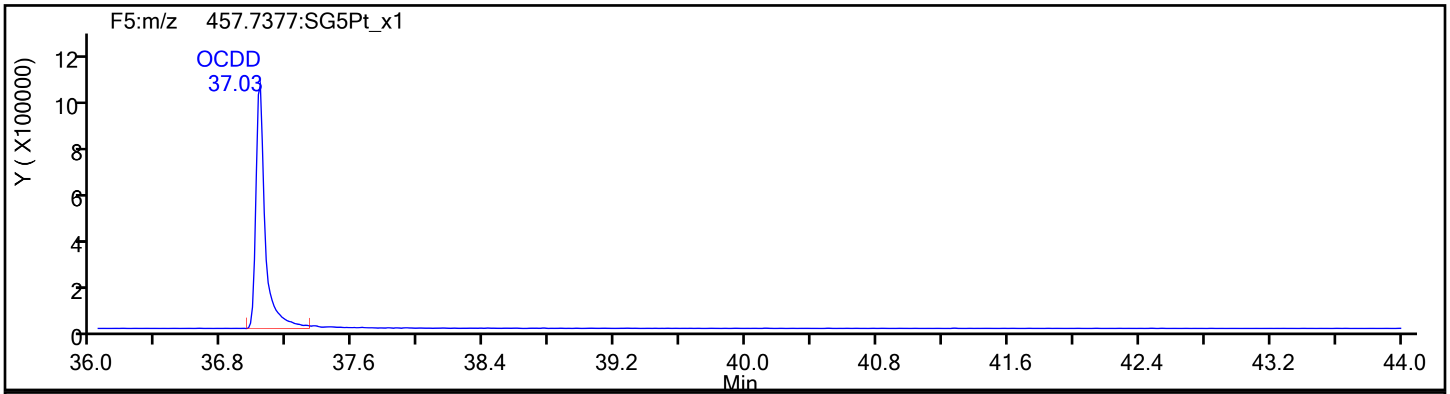

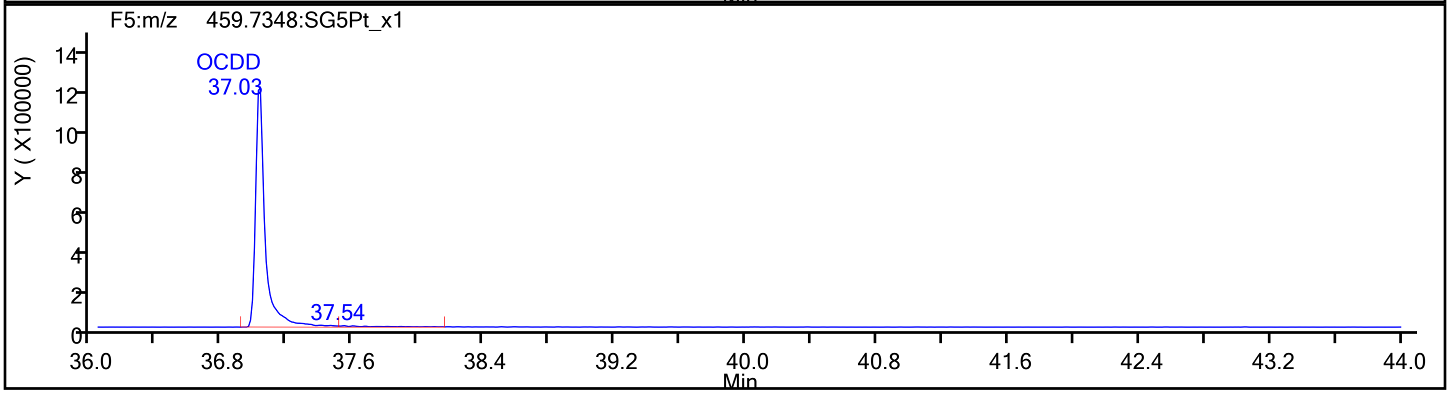

OCDD Standards

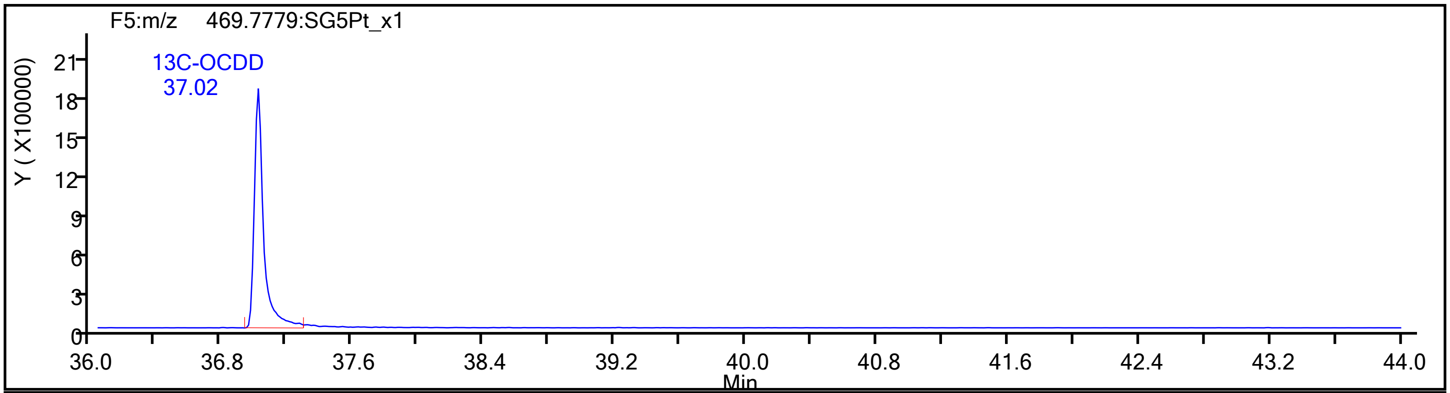

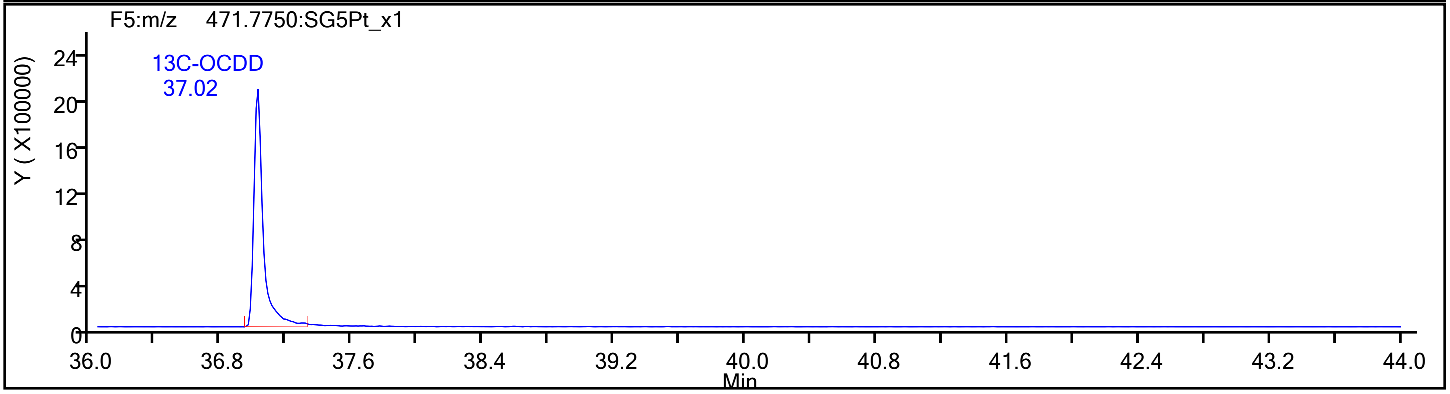

Report Date: 03-Sep-2020 08:46:50 Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d

Injection Date: 01-Sep-2020 23:09:31

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 408767

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

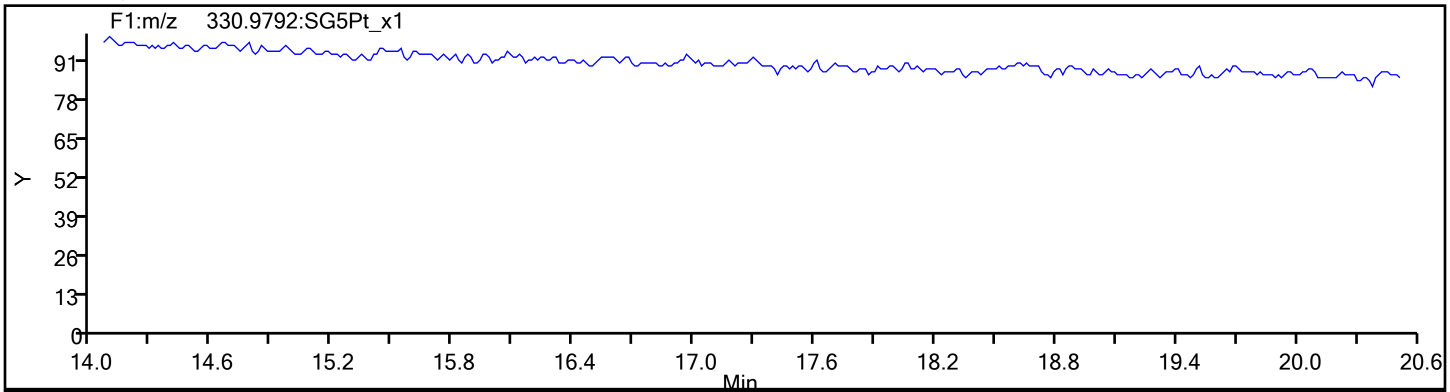

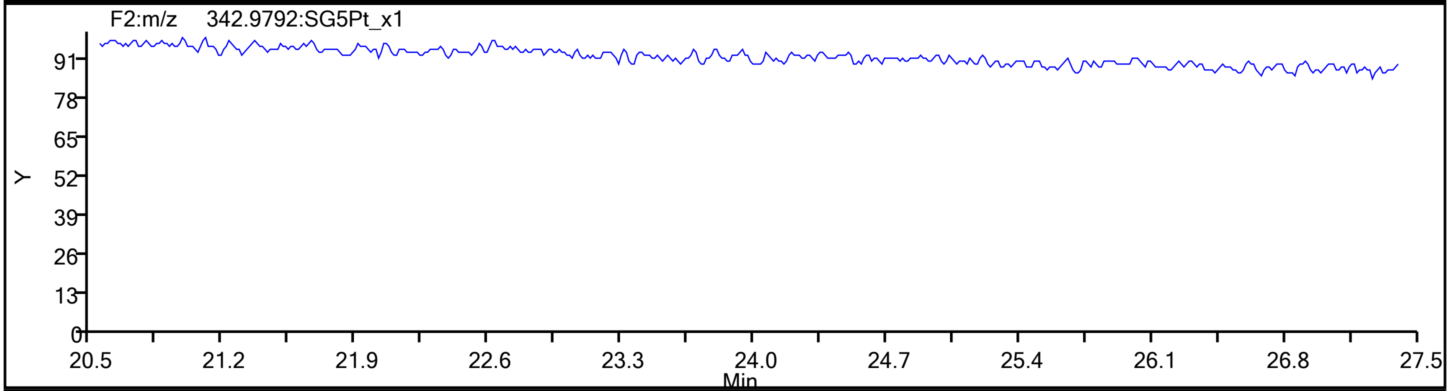

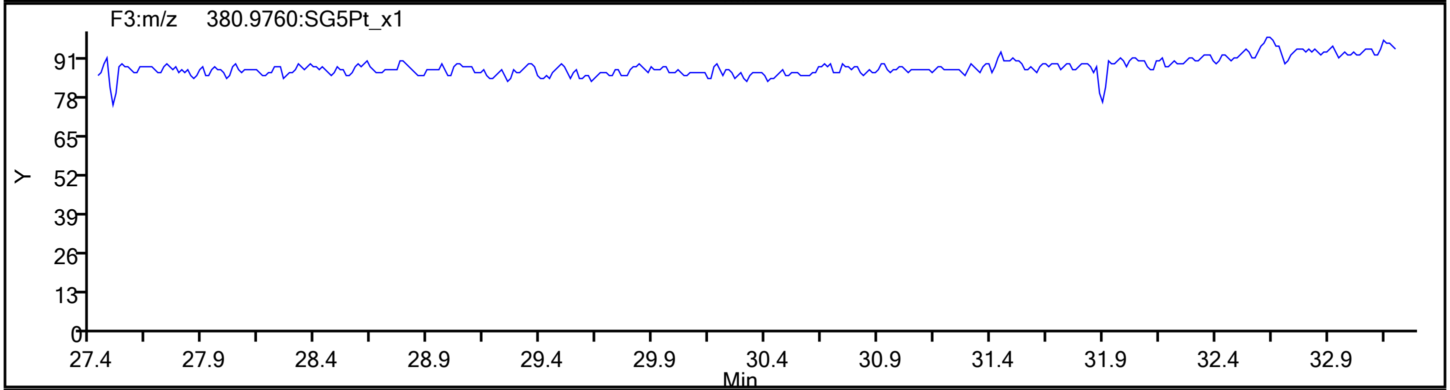

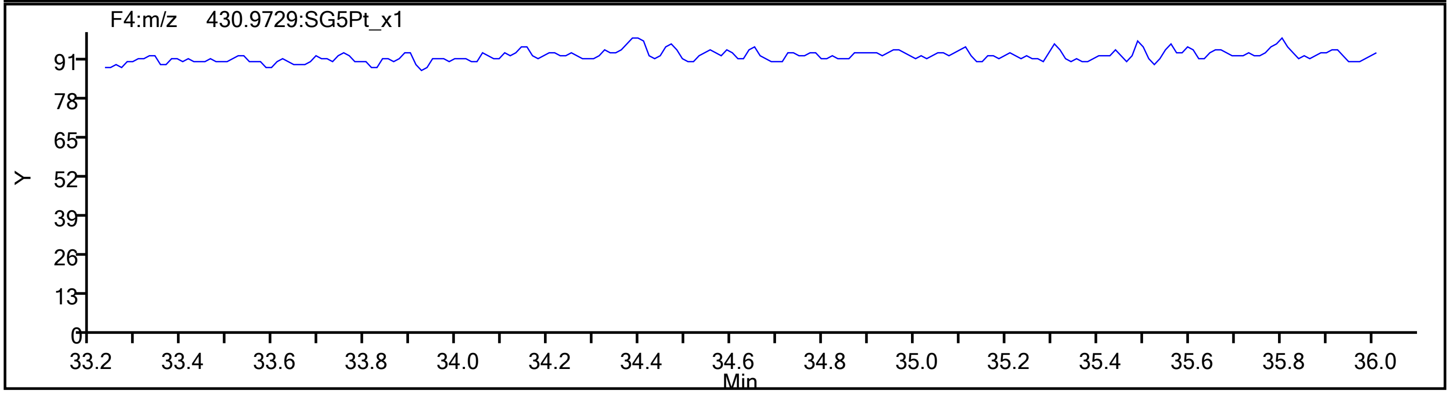

Report Date: 03-Sep-2020 08:46:50
Chrom Revision: 2.3 20-Aug-2020 13:57:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200901-102555.b\01SE2010D5_5.d		
Injection Date:	01-Sep-2020 23:09:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	408767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

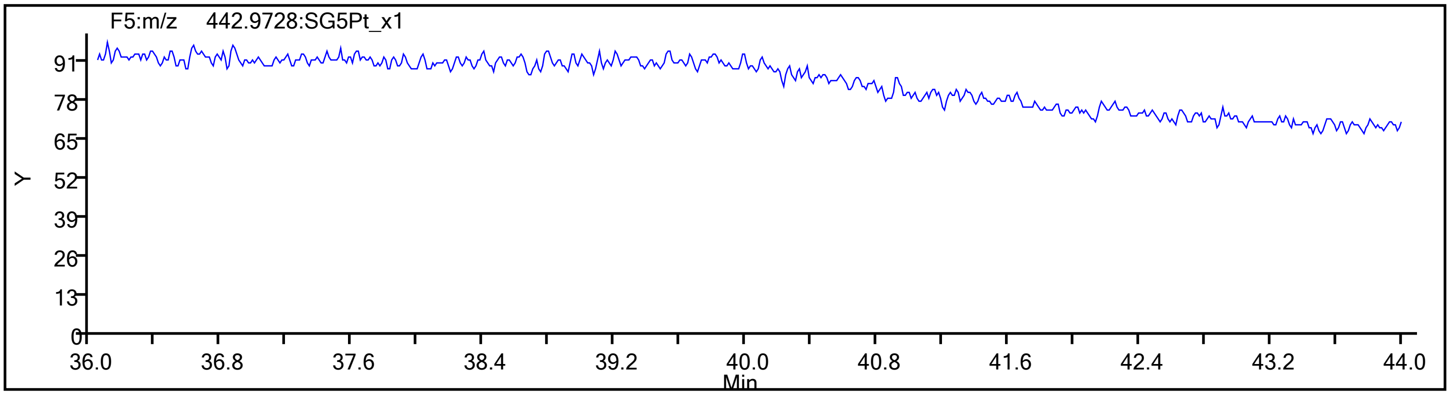

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-64049-1
SDG No.:			
Client Sample ID:		Lab Sample ID:	LCSD 320-412959/3-A
Matrix:	Sediment	Lab File ID:	18se20dfs1_73.d
Analysis Method:	1613B	Date Collected:	
Extract. Method:	HRMS-Sox	Date Extracted:	09/17/2020 05:13
Sample wt/vol:	10(g)	Date Analyzed:	09/20/2020 19:07
Con. Extract Vol.:	20(uL)	Dilution Factor:	1
Injection Volume:	1(uL)	Level: (low/med)	Low
% Moisture:		GPC Cleanup:(Y/N)	N
Analysis Batch No.:	413816	Units:	pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	20.3		1.0	0.11
51207-31-9	2,3,7,8-TCDF	20.6		1.0	0.074
40321-76-4	1,2,3,7,8-PeCDD	101		5.0	0.13
57117-41-6	1,2,3,7,8-PeCDF	101		5.0	0.36
57117-31-4	2,3,4,7,8-PeCDF	98.9		5.0	0.39
39227-28-6	1,2,3,4,7,8-HxCDD	99.2		5.0	0.21
57653-85-7	1,2,3,6,7,8-HxCDD	101		5.0	0.22
19408-74-3	1,2,3,7,8,9-HxCDD	100		5.0	0.20
70648-26-9	1,2,3,4,7,8-HxCDF	100		5.0	0.47
57117-44-9	1,2,3,6,7,8-HxCDF	102		5.0	0.43
72918-21-9	1,2,3,7,8,9-HxCDF	101		5.0	0.36
60851-34-5	2,3,4,6,7,8-HxCDF	102		5.0	0.38
35822-46-9	1,2,3,4,6,7,8-HpCDD	100		5.0	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	99.9		5.0	0.38
55673-89-7	1,2,3,4,7,8,9-HpCDF	98.6		5.0	0.38
3268-87-9	OCDD	204		10	0.19
39001-02-0	OCDF	200		10	0.19
41903-57-5	Total TCDD	20.3		1.0	0.11
30402-14-3	Total TCDF	20.6		1.0	0.074
36088-22-9	Total PeCDD	101		5.0	0.13
30402-15-4	Total PeCDF	200		5.0	0.38
34465-46-8	Total HxCDD	300		5.0	0.21
55684-94-1	Total HxCDF	404		5.0	0.41
37871-00-4	Total HpCDD	100		5.0	0.20
38998-75-3	Total HpCDF	198		5.0	0.38

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-412959/3-A

Matrix: Sediment Lab File ID: 18se20dfs1_73.d

Analysis Method: 1613B Date Collected:

Extract. Method: HRMS-Sox Date Extracted: 09/17/2020 05:13

Sample wt/vol: 10(g) Date Analyzed: 09/20/2020 19:07

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 413816 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		20-175
89059-46-1	13C-2,3,7,8-TCDF	73		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	74		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	74		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	74		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	78		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	76		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	75		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	74		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	75		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	78		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	76		20-186
114423-97-1	13C-OCDD	79		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		31-191

Report Date: 22-Sep-2020 10:47:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d
Lims ID: LCSD 320-412959/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 20-Sep-2020 19:07:00 ALS Bottle#: 0 Worklist Smp#: 63
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-412959/3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 22-Sep-2020 10:47:08 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1059

First Level Reviewer: dadunj Date: 22-Sep-2020 10:47:08

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.105	3179383	0.80	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.186	3707200	0.79	1.5883	73.4	73.4	0.2234	0.2234	73.41	
2,3,7,8-TCDF	19.203	414412	0.79	1.0857	10.3	10.3	0.0371	0.0371	103	
A Non-2,3,7,8-sub-TCDF	18.816						0.0371	0.0702		RQU
S Total TCDF					10.3	10.3	0.0371	0.0371		
D 13C-2,3,7,8-TCDD	20.466	2645388	0.80	1.1194	74.3	74.3	0.1739	0.1739	74.33	
2,3,7,8-TCDD	20.492	290018	0.74	1.0810	10.1	10.1	0.0547	0.0547	101	
$ 37Cl4-2,3,7,8-TCDD	20.492	1393325		1.1468	38.2	38.2	0.0444	0.0444	95.54	
A Non-2,3,7,8-sub-TCDD	19.624						0.0547	0.0547		
S Total TCDD					10.1	10.1	0.0547	0.0547		
D 13C-1,2,3,7,8-PeCDF	26.258	3456929	1.61	1.4782	73.6	73.6	0.2739	0.2739	73.56	
1,2,3,7,8-PeCDF	26.284	1836037	1.57	1.0547	50.4	50.4	0.1808	0.1808	101	
D 13C-2,3,4,7,8-PeCDF	27.716	3276626	1.58	1.3912	74.1	74.1	0.2910	0.2910	74.08	
2,3,4,7,8-PeCDF	27.741	1788279	1.56	1.1035	49.5	49.5	0.1973	0.1973	98.91	
A F1 PeCDFs	23.607						0.0111	0.0111		
A Non-2,3,7,8-sub-PeCDF	26.996						0.1884	0.4678		U
S Total PeCDF					99.8	99.8	0.1891	0.1891		
D 13C-1,2,3,7,8-PeCDD	28.499	2206627	1.58	0.9415	73.7	73.7	0.0945	0.0945	73.72	
1,2,3,7,8-PeCDD	28.516	1194136	1.57	1.0680	50.7	50.7	0.0652	0.0652	101	
A Non-2,3,7,8-sub-PeCDD	27.361						0.0652	0.0652		
S Total PeCDD					50.7	50.7	0.0652	0.0652		
D 13C-1,2,3,4,7,8-HxCDF	34.143	2791247	0.54	1.1378	75.3	75.3	0.3193	0.3193	75.30	
1,2,3,4,7,8-HxCDF	34.159	1765791	1.25	1.2643	50.0	50.0	0.2371	0.2371	100	
D 13C-1,2,3,6,7,8-HxCDF	34.319	3233218	0.53	1.3173	75.3	75.3	0.2758	0.2758	75.34	
1,2,3,6,7,8-HxCDF	34.345	2015868	1.26	1.2230	51.0	51.0	0.2125	0.2125	102	
D 13C-2,3,4,6,7,8-HxCDF	35.229	3054304	0.52	1.2457	75.3	75.3	0.2916	0.2916	75.26	
2,3,4,6,7,8-HxCDF	35.254	1932944	1.26	1.2464	50.8	50.8	0.1915	0.1915	102	
D 13C-1,2,3,7,8,9-HxCDF	36.190	2869178	0.52	1.1840	74.4	74.4	0.3068	0.3068	74.38	
1,2,3,7,8,9-HxCDF	36.207	1823676	1.27	1.2638	50.3	50.3	0.1805	0.1805	101	
A Non-2,3,7,8-sub-HxCDF	34.215						0.2032	0.2032		
S Total HxCDF					202.1	202.1	0.2054	0.2054		
* 13C-1,2,3,7,8,9-HxCDD	35.988	3258044	1.29	2.9E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.465	2154483	1.25	0.8477	78.0	78.0	0.1968	0.1968	78.01	
1,2,3,4,7,8-HxCDD	35.482	1235405	1.25	1.1561	49.6	49.6	0.1070	0.1070	99.20	
D 13C-1,2,3,6,7,8-HxCDD	35.592	2471530	1.29	0.9979	76.0	76.0	0.1672	0.1672	76.02	
1,2,3,6,7,8-HxCDD	35.608	1281453	1.25	1.0284	50.4	50.4	0.1090	0.1090	101	
1,2,3,7,8,9-HxCDD	35.996	1369342	1.25	1.1789	50.2	50.2	0.0998	0.0998	100	
A Non-2,3,7,8-sub-HxCDD	34.670						0.1049	0.1049		
S Total HxCDD					150.2	150.2	0.1053	0.1053		
D 13C-1,2,3,4,6,7,8-HpCDF	38.103	2441869	0.46	0.9884	75.8	75.8	0.3653	0.3653	75.83	
1,2,3,4,6,7,8-HpCDF	38.111	1836799	1.04	1.5064	49.9	49.9	0.1904	0.1904	99.87	
D 13C-1,2,3,4,7,8,9-HpCDF	39.400	2287366	0.46	0.9203	76.3	76.3	0.3923	0.3923	76.29	
1,2,3,4,7,8,9-HpCDF	39.408	1640761	1.03	1.4548	49.3	49.3	0.1915	0.1915	98.61	
A Non-2,3,7,8-sub-HpCDF	38.760						0.1909	0.1909		
S Total HpCDF					99.2	99.2	0.1909	0.1909		
D 13C-1,2,3,4,6,7,8-HpCDD	39.088	2415840	1.05	0.9556	77.6	77.6	0.1936	0.1936	77.59	
1,2,3,4,6,7,8-HpCDD	39.097	1291483	1.05	1.0640	50.2	50.2	0.1007	0.1007	100	
A Non-2,3,7,8-sub-HpCDD	38.875						0.1007	0.2862		U
S Total HpCDD					50.2	50.2	0.1007	0.1007		
D 13C-OCDD	41.541	3798797	0.88	0.7420	157.1	157.1	0.1750	0.1750	78.57	
OCDF	41.634	2710767	0.92	1.4296	99.8	99.8	0.0960	0.0960	99.83	
OCDD	41.549	2185032	0.90	1.1293	101.9	101.9	0.0937	0.0937	102	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d
Lims ID: LCSD 320-412959/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 20-Sep-2020 19:07:00 ALS Bottle#: 0 Worklist Smp#: 63
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-412959/3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 22-Sep-2020 10:47:08 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1059

First Level Reviewer: dadunj Date: 22-Sep-2020 10:47:08

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.105	20.128	-1		1413070	214585	242	605	887		
333.9338	20.105	20.128	-1		1766313	270810	136	340	1991	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.186	19.208	-1	0.954	1632487	248388	469	1172	530		
317.9389	19.186	19.208	-1	0.954	2074713	309517	220	550	1407	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.203	19.225	-1	1.001	183293	26261	31	77	847		
305.8987	19.203	19.225	-1	1.001	231119	33737	59	147	572	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.532	18.816	-17	0.966	1229	287	31	77	9		
305.8987	18.524	18.816	-17	0.966	1950	268	59	147	5	0.63(0.65-0.89)	
	Empc Correction				1596	372	59	147	6		
13C-2,3,7,8-TCDD											
331.9368	20.466	20.489	-1	1.018	1175422	167112	242	605	691		
333.9338	20.466	20.489	-1	1.018	1469966	204985	136	340	1507	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.492	20.515	-1	1.001	123515	18392	61	152	302		
321.8936	20.501	20.515	-1	1.002	166503	22339	27	67	827	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.492	20.515	-1	1.019	1393325	193478	99	247	1954		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.624						61	152			
321.8936	19.624						27	67			
13C-1,2,3,7,8-PeCDF											
351.9000	26.258	26.266	0	1.306	2133200	358844	461	1152	778		
353.8970	26.267	26.266	0	1.306	1323729	221699	325	812	682	1.61(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.284	26.283	0	1.001	1120512	190714	259	647	736		
341.8567	26.275	26.283	0	1.001	715525	122244	184	460	664	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.716	27.723	0	1.379	2005180	310022	461	1152	672		
353.8970	27.716	27.723	0	1.379	1271446	198280	325	812	610	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.741	27.740	0	1.001	1090029	170991	259	647	660		
341.8567	27.733	27.740	0	1.001	698250	109266	184	460	594	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.607						3	7			
341.8567	23.607						23	57			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	26.857	26.996	-8	1.023	9855	1576	259	647	6		
341.8567	26.865	26.996	-8	1.023	7139	919	184	460	5	1.38(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.499	28.498	0	1.417	1352670	201547	103	257	1957		
369.8919	28.491	28.498	0	1.417	853957	131617	70	175	1880	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.516	28.523	0	1.001	729115	109705	60	150	1828		
357.8516	28.516	28.523	0	1.001	465021	70230	33	82	2128	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.361						60	150			
357.8516	27.361						33	82			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.143	34.135	0	0.949	976134	199297	384	960	519		
385.8610	34.143	34.135	0	0.949	1815113	363404	802	2005	453	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.159	34.160	0	1.000	981369	201116	380	950	529		
375.8178	34.159	34.160	0	1.000	784422	160289	295	737	543	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.319	34.329	-1	0.954	1119048	224726	384	960	585		
385.8610	34.328	34.329	0	0.954	2114170	424378	802	2005	529	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.345	34.345	0	1.001	1124761	220914	380	950	581		
375.8178	34.336	34.345	-1	1.000	891107	175460	295	737	595	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.229	35.229	0	0.979	1046672	237860	384	960	619		
385.8610	35.229	35.229	0	0.979	2007632	469077	802	2005	585	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.254	35.246	0	1.001	1078831	249176	380	950	656		
375.8178	35.246	35.246	0	1.000	854113	195585	295	737	663	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.190	36.181	1	1.006	986168	257156	384	960	670		
385.8610	36.190	36.181	1	1.006	1883010	482391	802	2005	601	0.52(0.43-0.59)	

Report Date: 22-Sep-2020 10:47:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.207	36.198	1	1.000	1021429	251229	380	950	661		
375.8178	36.198	36.198	0	1.000	802247	199924	295	737	678	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.215						380	950			
375.8178	34.215						295	737			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.988	35.979	0		1834347	457193	304	760	1504		
403.8529	35.988	35.979	0		1423697	359065	241	602	1490	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.465	35.457	0	0.985	1198833	304510	304	760	1002		
403.8529	35.465	35.457	0	0.985	955650	245228	241	602	1018	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.482	35.474	0	1.000	687182	172965	146	365	1185		
391.8127	35.482	35.474	0	1.000	548223	138656	126	315	1100	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.592	35.583	0	0.989	1391905	336278	304	760	1106		
403.8529	35.592	35.583	0	0.989	1079625	270140	241	602	1121	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.608	35.600	0	1.000	710980	171479	146	365	1175		
391.8127	35.608	35.600	0	1.000	570473	134763	126	315	1070	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.996	35.988	1	1.015	760170	191343	146	365	1311		
391.8127	35.996	35.988	1	1.015	609172	153626	126	315	1219	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.670						146	365			
391.8127	34.670						126	315			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.103	38.085	1	1.059	768400	240082	400	1000	600		
419.8220	38.103	38.085	1	1.059	1673469	525377	779	1947	674	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.111	38.102	1	1.000	934607	296727	448	1120	662		
409.7788	38.111	38.102	1	1.000	902192	287334	430	1075	668	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.400	39.382	1	1.095	721821	249785	400	1000	624		
419.8220	39.400	39.382	1	1.095	1565545	538136	779	1947	691	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.408	39.399	1	1.000	833791	283169	448	1120	632		
409.7788	39.408	39.399	1	1.000	806970	274378	430	1075	638	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.760						448	1120			
409.7788	38.760						430	1075			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.088	39.079	1	1.086	1238913	429355	310	775	1385		
437.8140	39.088	39.079	1	1.086	1176927	403247	294	735	1372	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.097	39.088	1	1.000	660167	227857	186	465	1225		
425.7737	39.097	39.088	1	1.000	631316	217313	171	427	1271	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											U
423.7767	38.439	38.875	-26	0.983	3829	1267	186	465	7		
425.7737	38.431	38.875	-27	0.983	3528	1158	171	427	7	1.09(0.88-1.20)	
13C-OCDD											
469.7780	41.541	41.533	0	1.154	1783288	595285	202	505	2947		
471.7750	41.541	41.533	0	1.154	2015509	661140	222	555	2978	0.88(0.76-1.02)	
OCDF											
441.7428	41.634	41.625	0	1.002	1302081	416195	151	377	2756		
443.7399	41.634	41.625	0	1.002	1408686	450780	194	485	2324	0.92(0.76-1.02)	
OCDD											
457.7377	41.549	41.541	0	1.000	1032785	336746	131	327	2571		
459.7348	41.549	41.541	0	1.000	1152247	373737	135	337	2768	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d
Lims ID: LCSD 320-412959/3-A
Client ID:
Inject. Date: 20-Sep-2020 19:07:00 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413816 Lims Sample ID: 63

Non-2,3,7,8-sub-TCDF, RT: 18.816

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	3707200	557905

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	3707200	557905

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.532	1229	287	1950	268	0.0790	0.63	RQ
18.532	1229	287	1596	372	0.0702		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Lims ID:	LCSD 320-412959/3-A		
Client ID:			
Inject. Date:	20-Sep-2020 19:07:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413816	Lims Sample ID:	63

Non-2,3,7,8-sub-PeCDF, RT: 26.996

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	3456929	580543
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	3276626	508302

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	3366777	544422

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.857	9855	1576	7139	919	0.4678	1.38	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Lims ID:	LCSD 320-412959/3-A		
Client ID:			
Inject. Date:	20-Sep-2020 19:07:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413816	Lims Sample ID:	63

Non-2,3,7,8-sub-HpCDD, RT: 38.875

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2415840	832602

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	2415840	832602

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.439	3829	1267	3528	1158	0.2862	1.09	

Compound is Marked ND

Report Date: 22-Sep-2020 10:47:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Injection Date:	20-Sep-2020 19:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

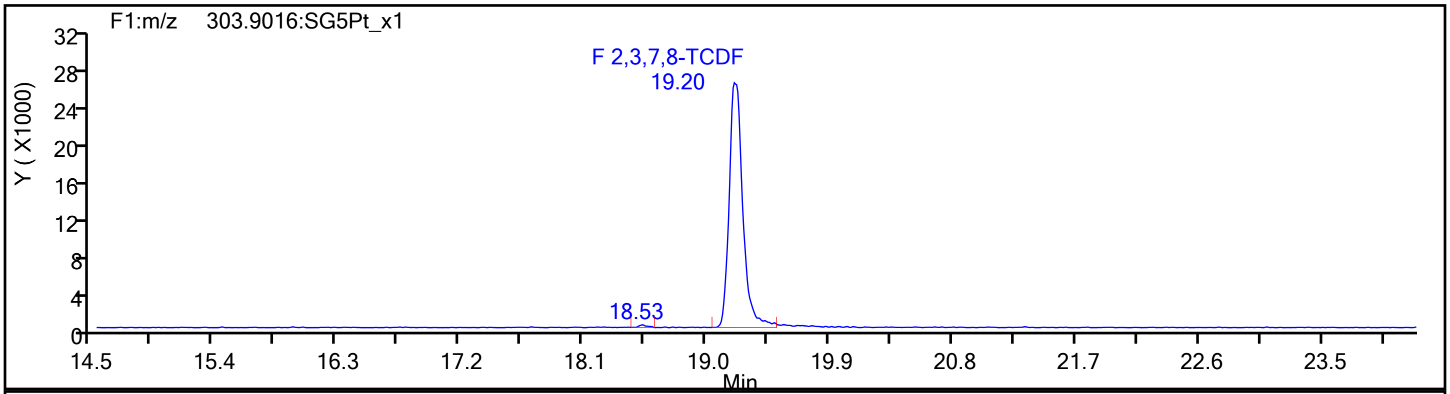

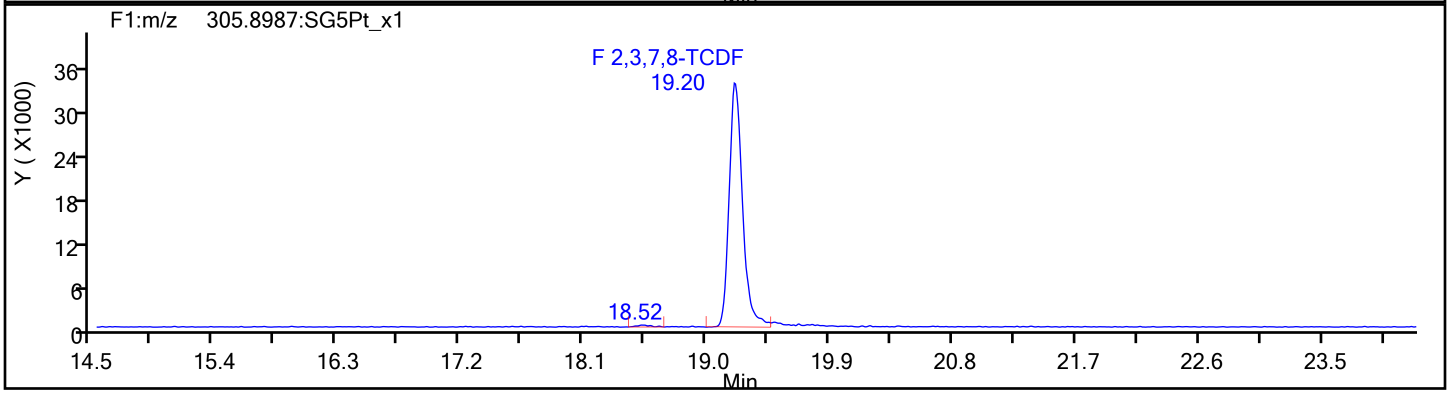

TCDF Standards

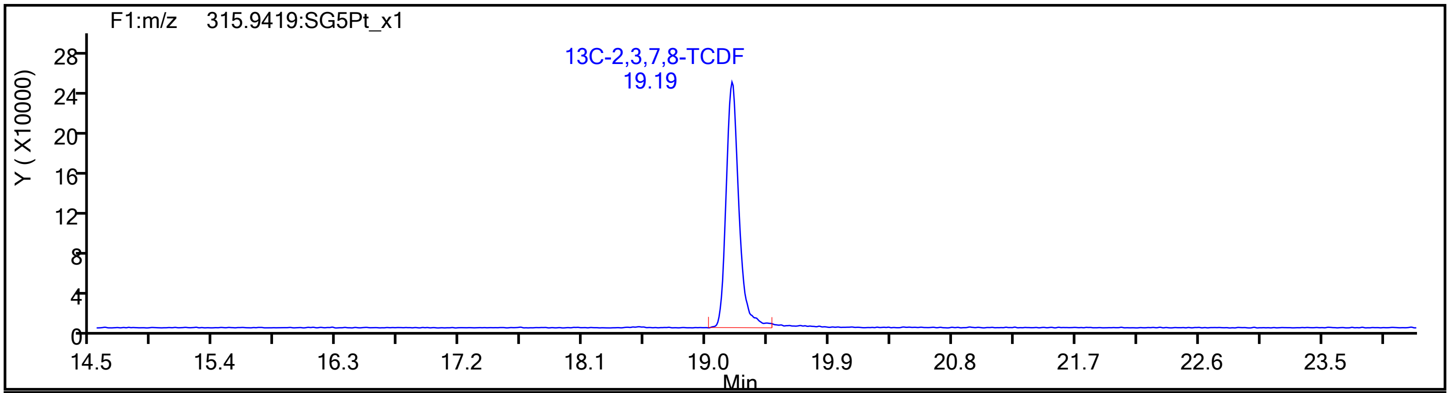

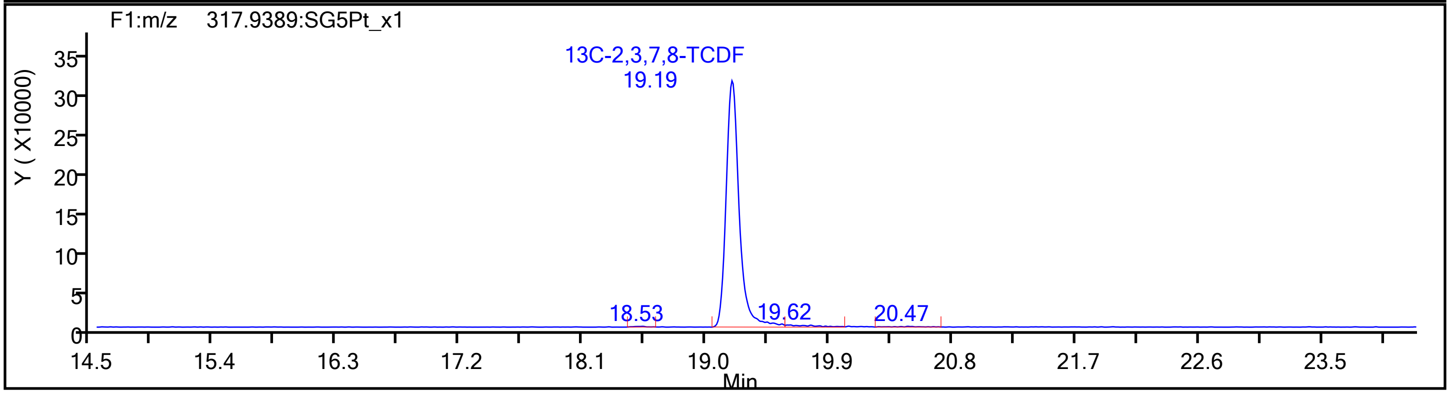

Report Date: 22-Sep-2020 10:47:08 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Injection Date:	20-Sep-2020 19:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

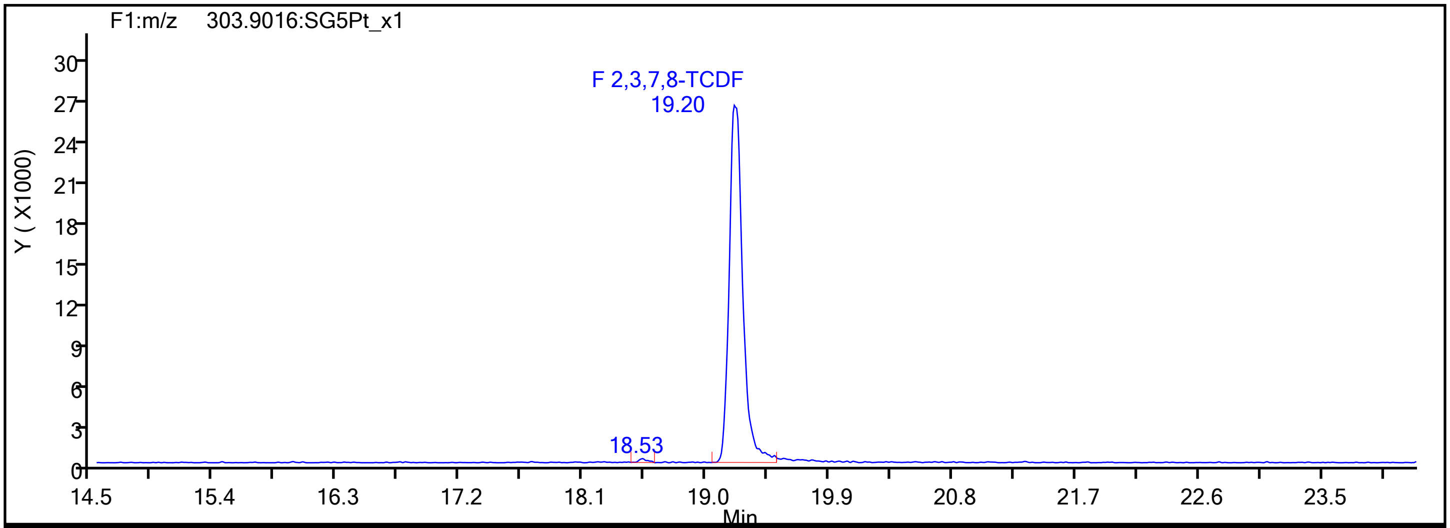

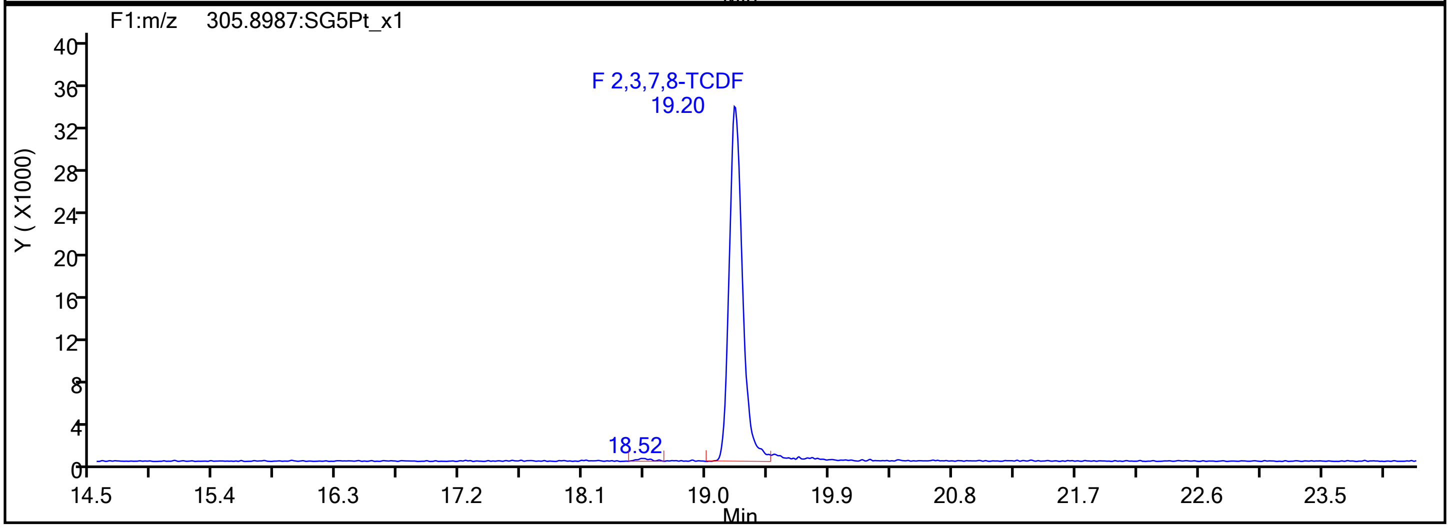

TCDF Interference Mass

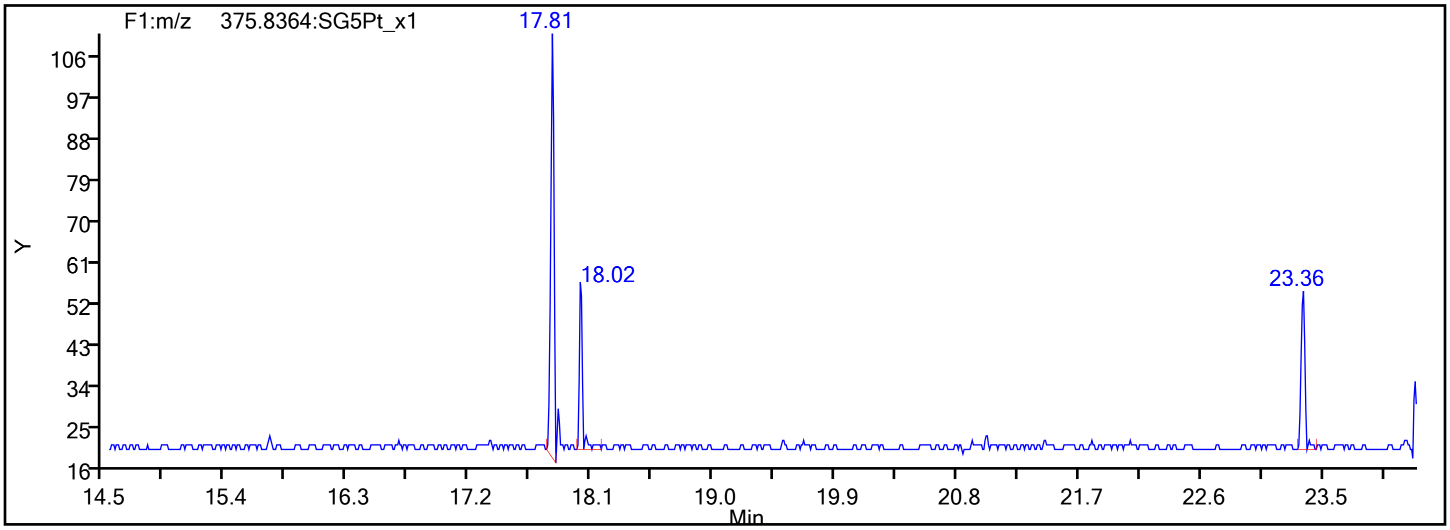

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Injection Date:	20-Sep-2020 19:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

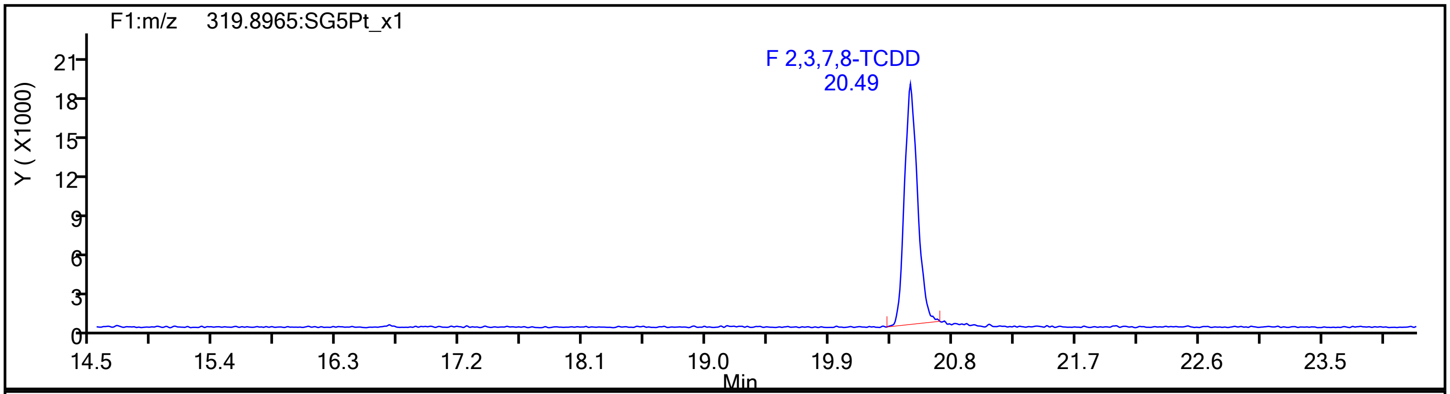

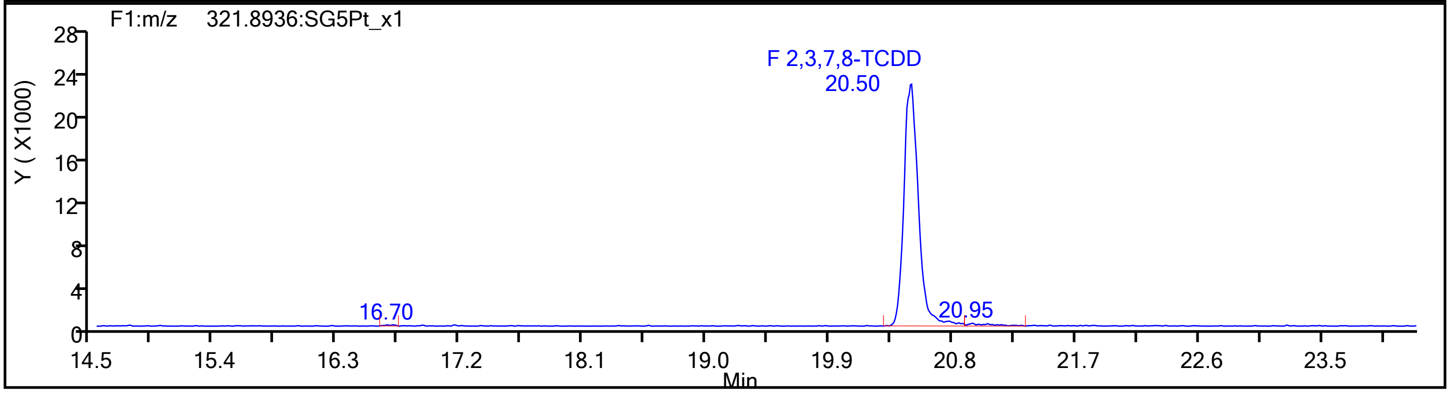

TCDD Standards

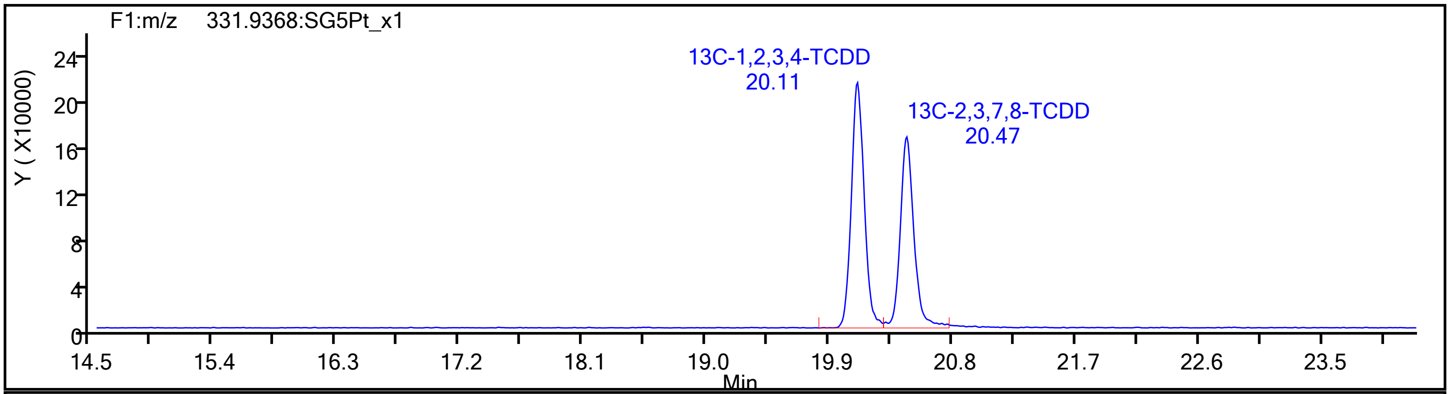

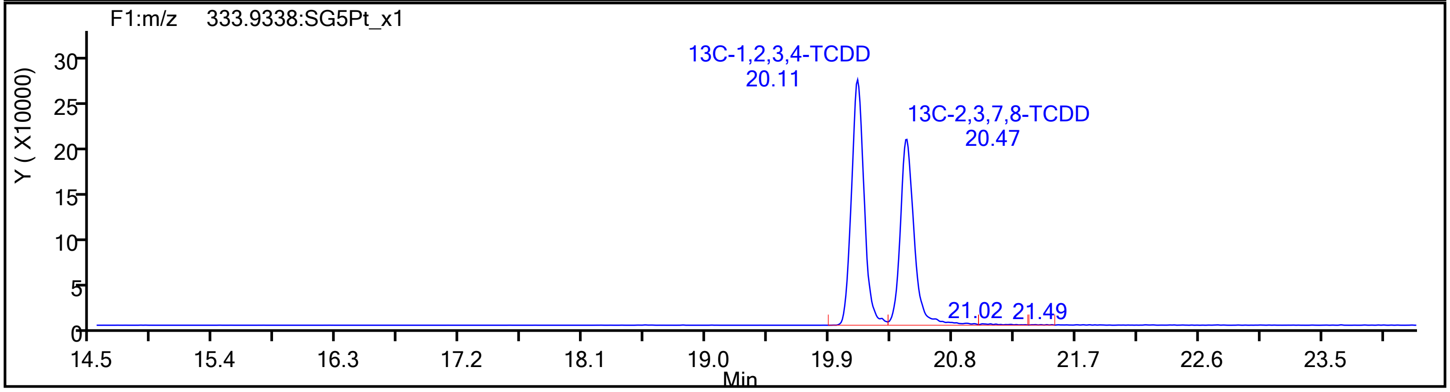

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Injection Date:	20-Sep-2020 19:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

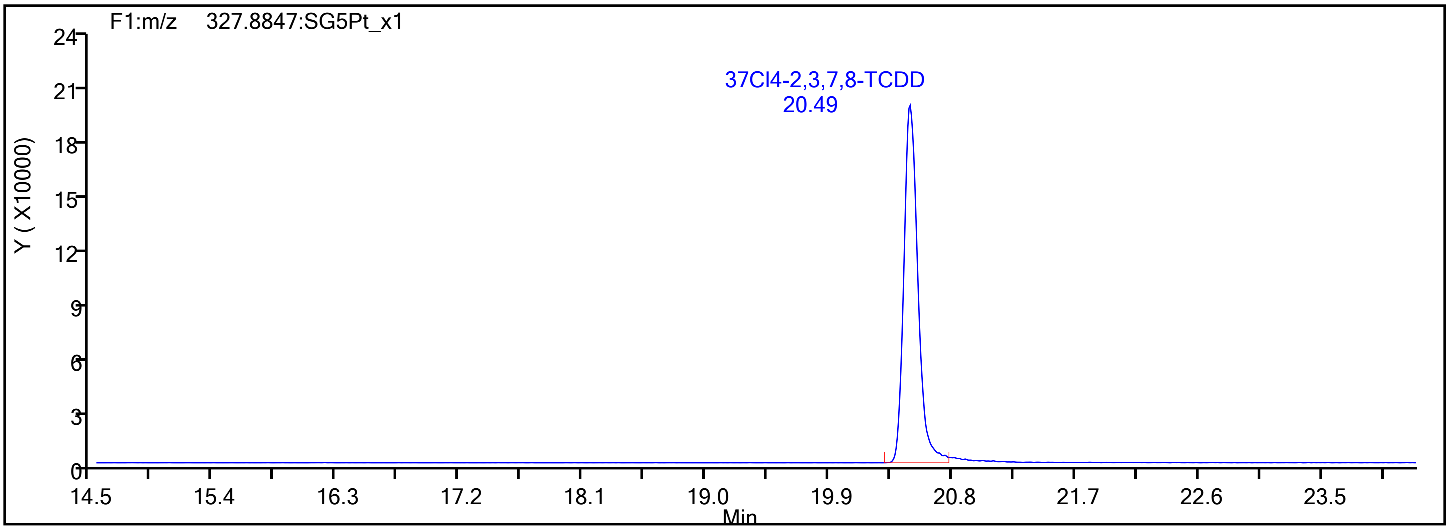

37Cl4-TCDD Standards

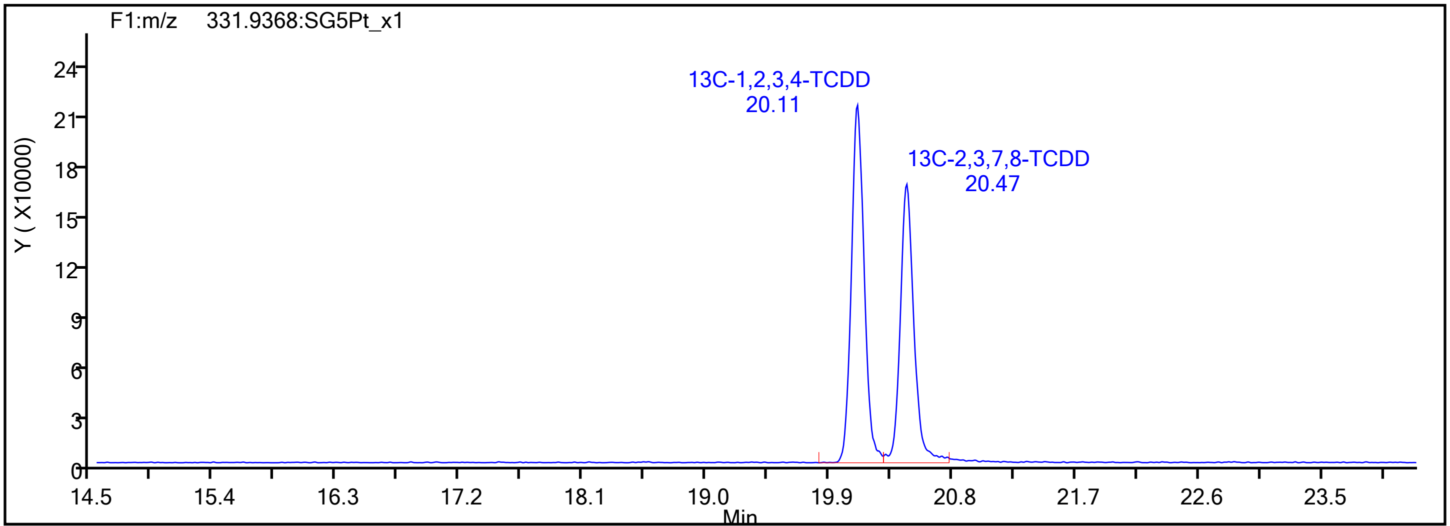

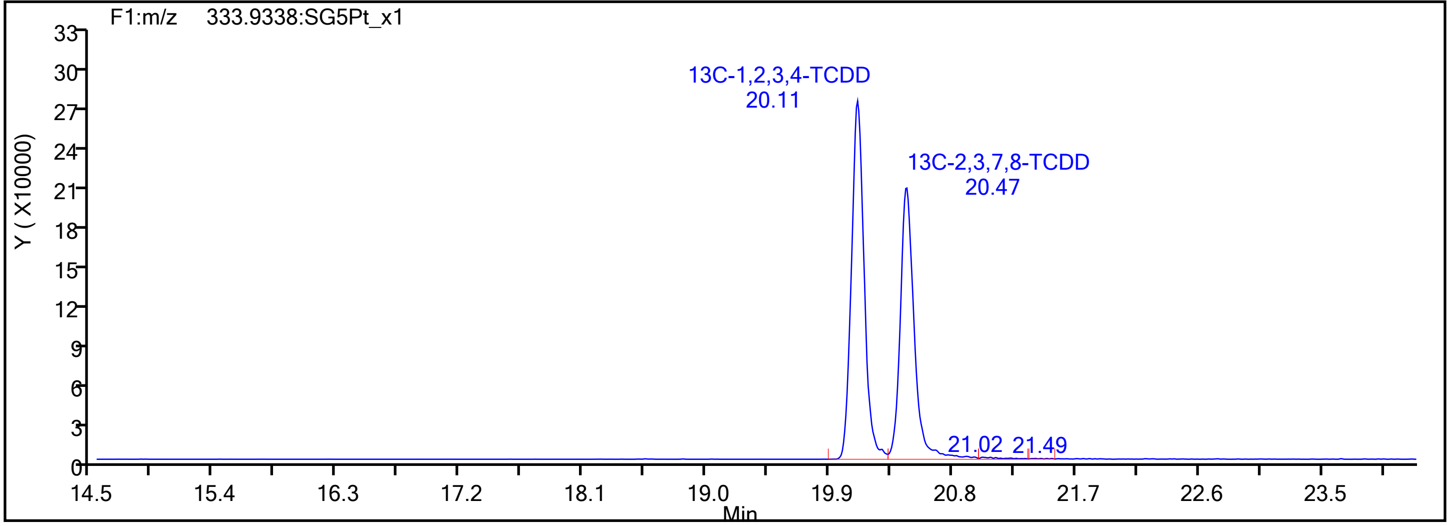

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Injection Date:	20-Sep-2020 19:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

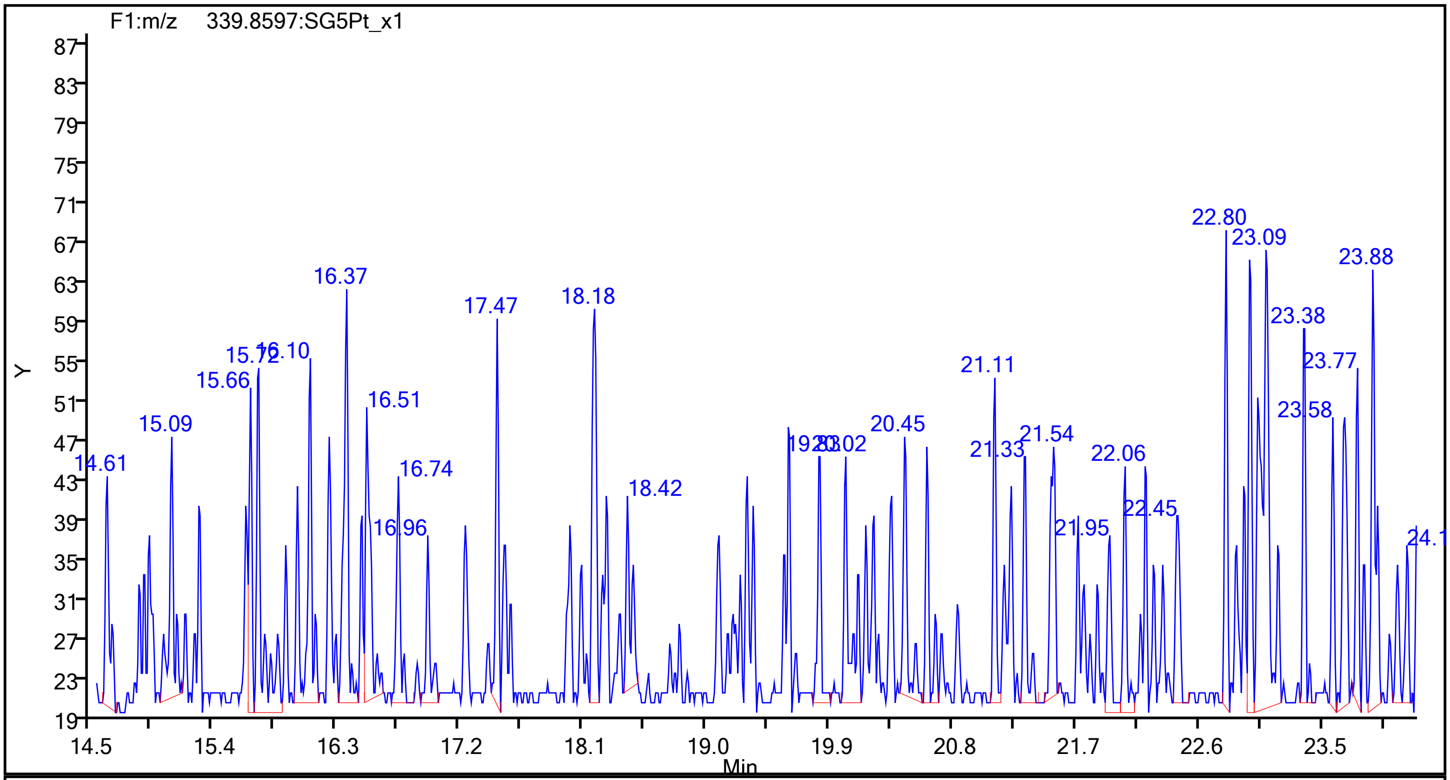

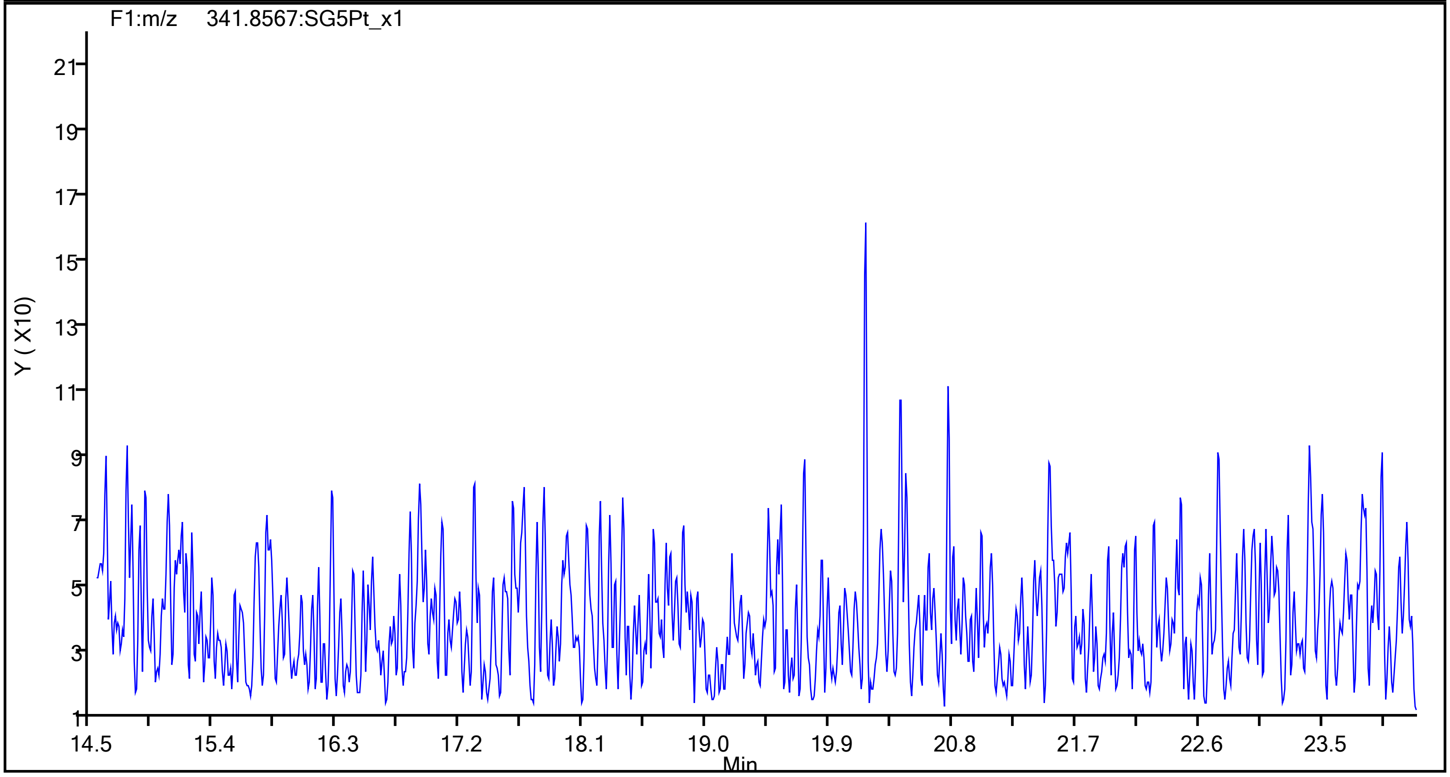

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
Injection Date:	20-Sep-2020 19:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

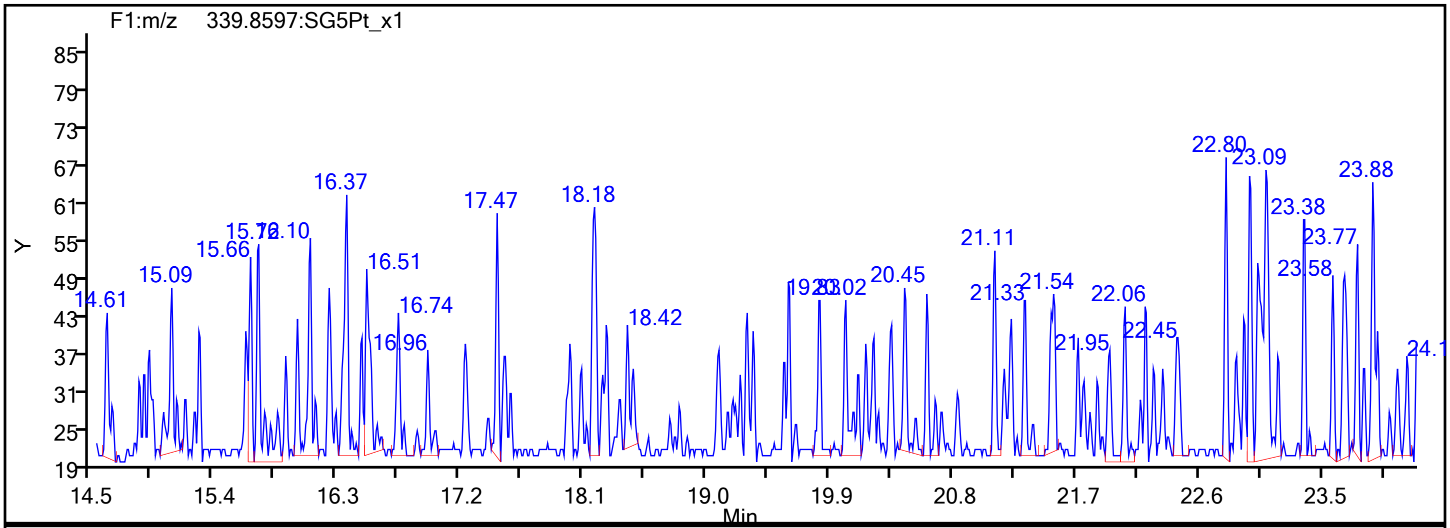

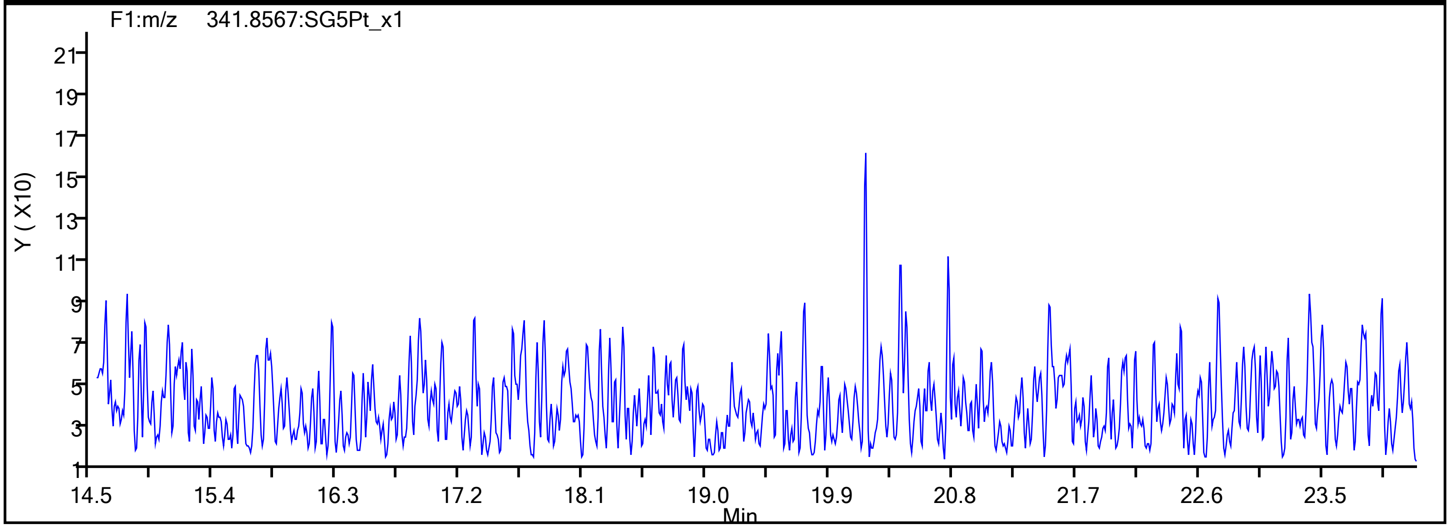

F1 PeCDFs Interference Mass

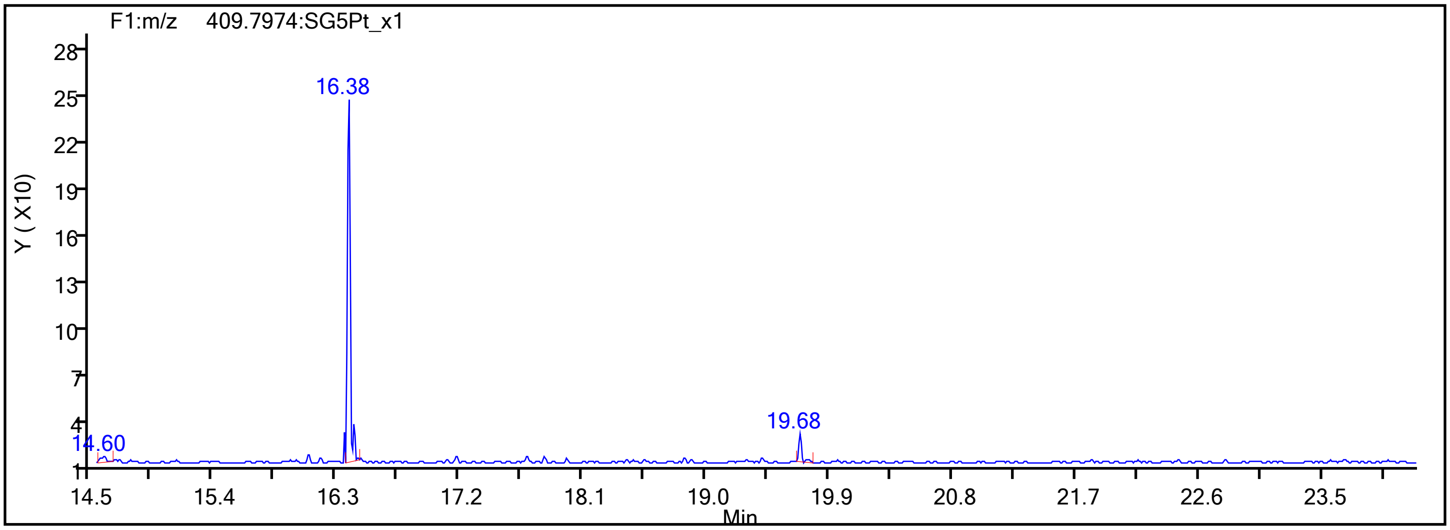

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413816	Sample Line#:	63
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

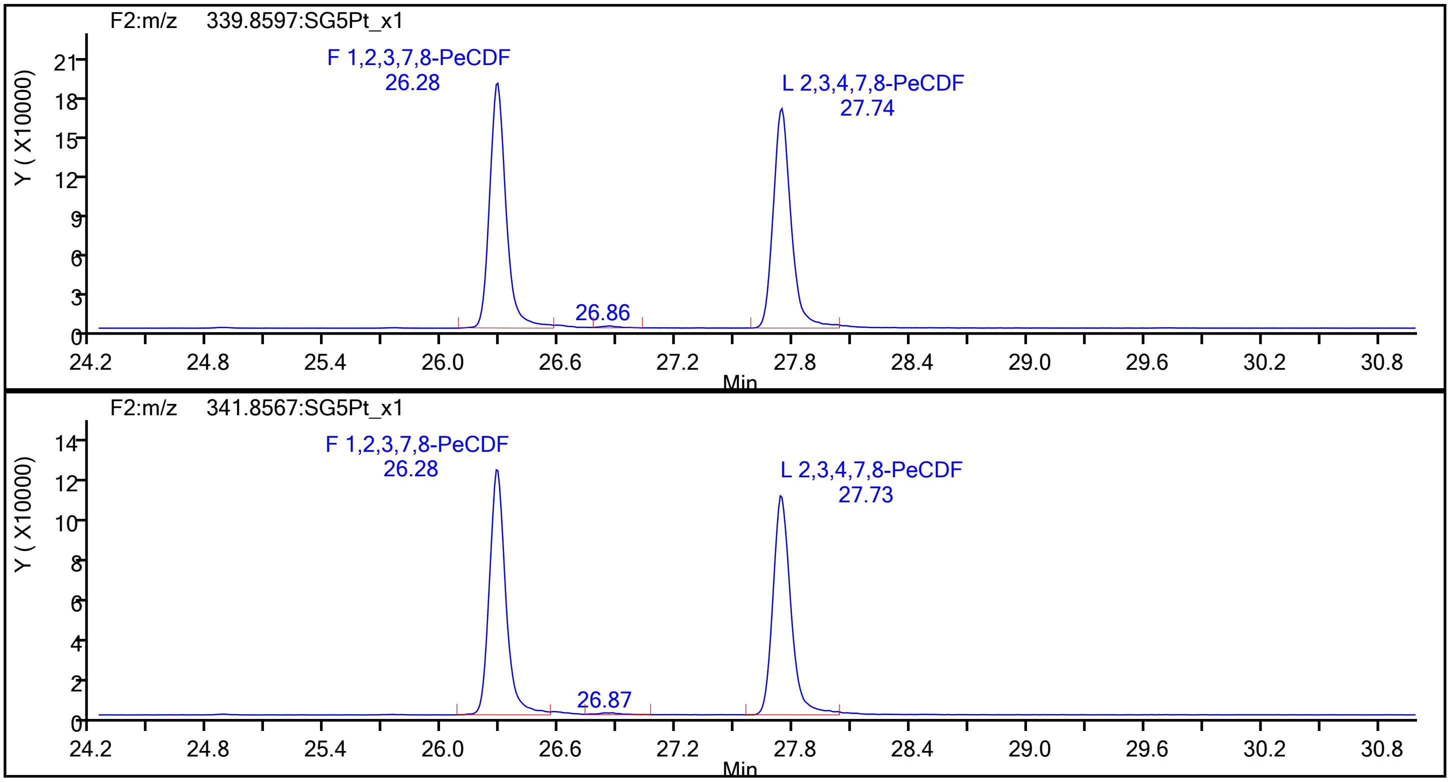

PeCDF Standards

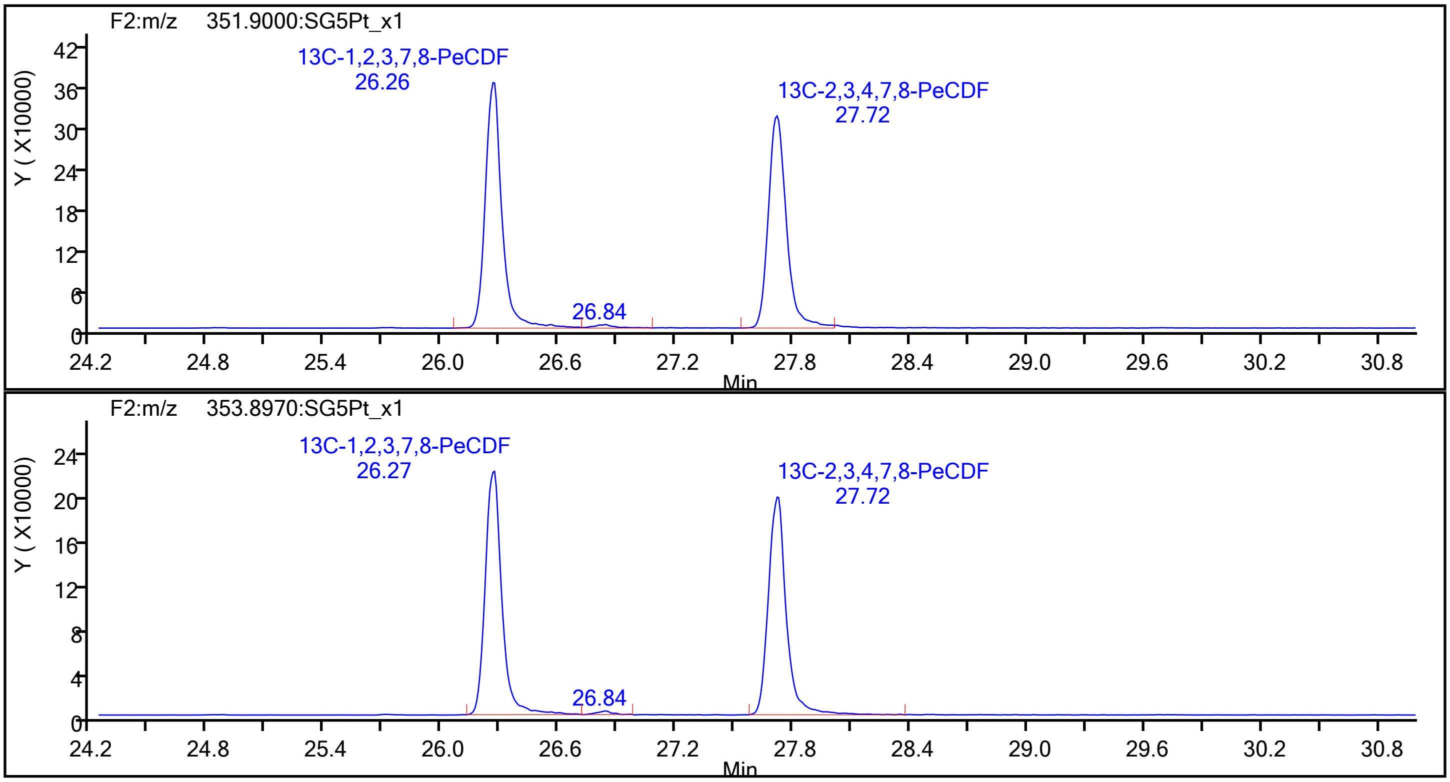

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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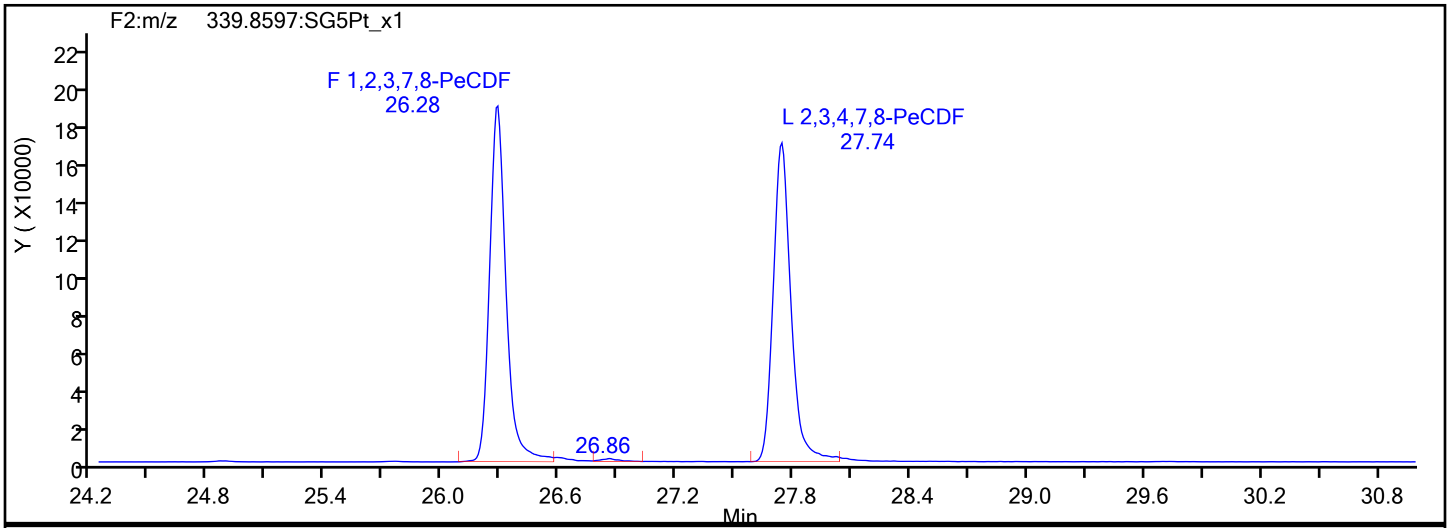

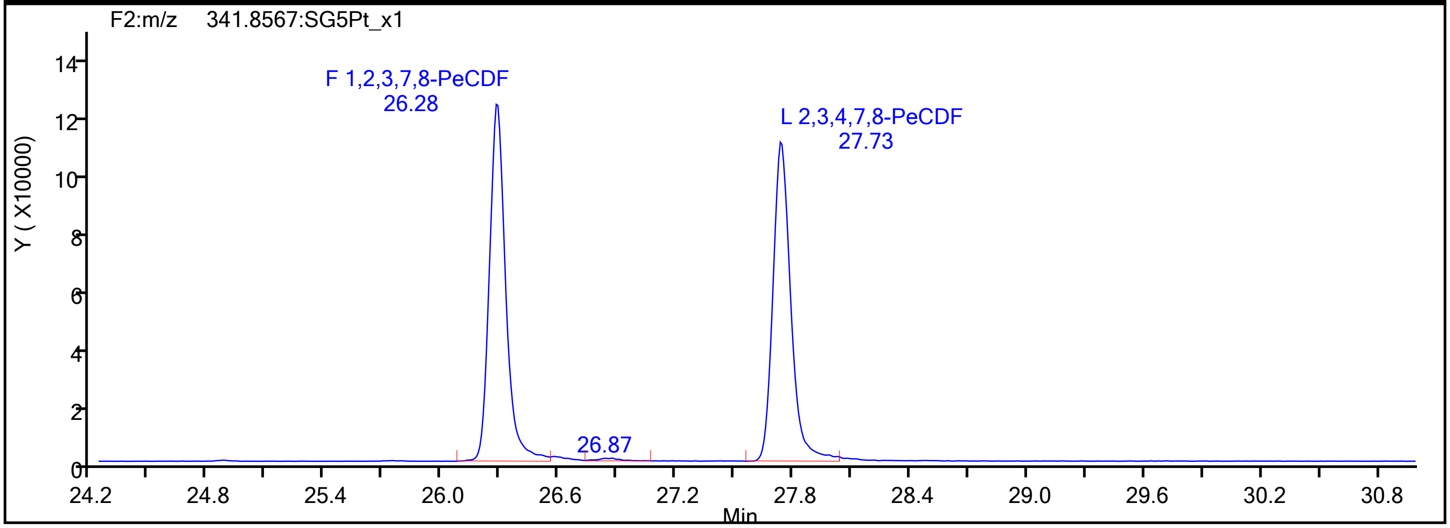

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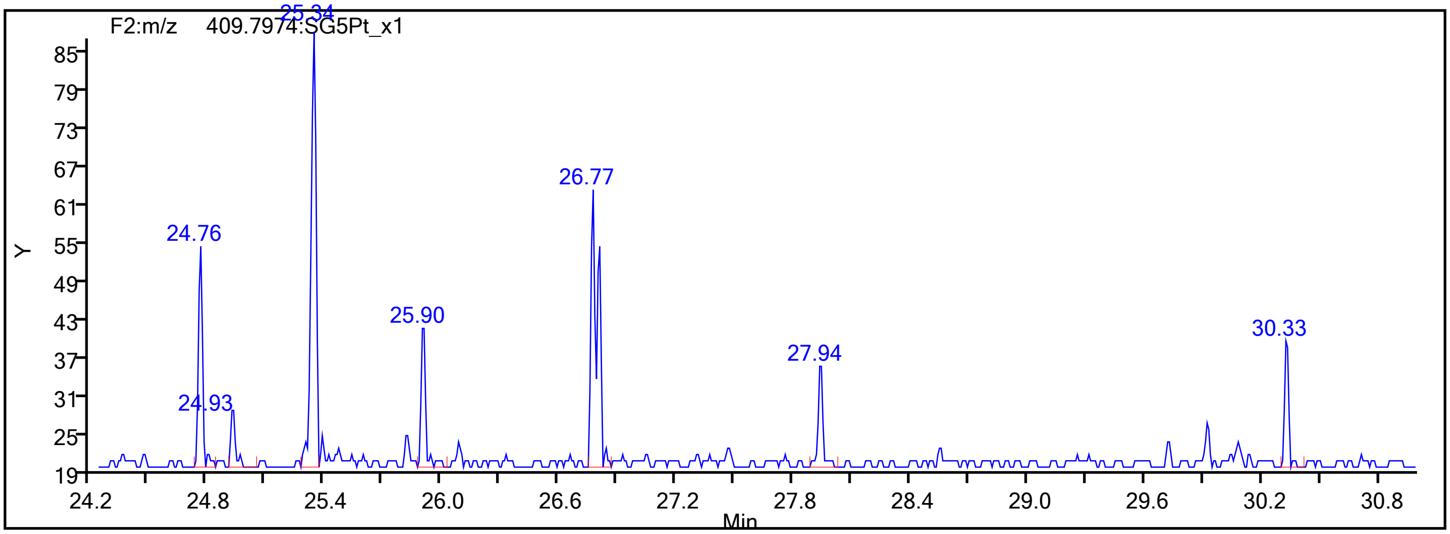

Report Date: 22-Sep-2020 10:47:09　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDD

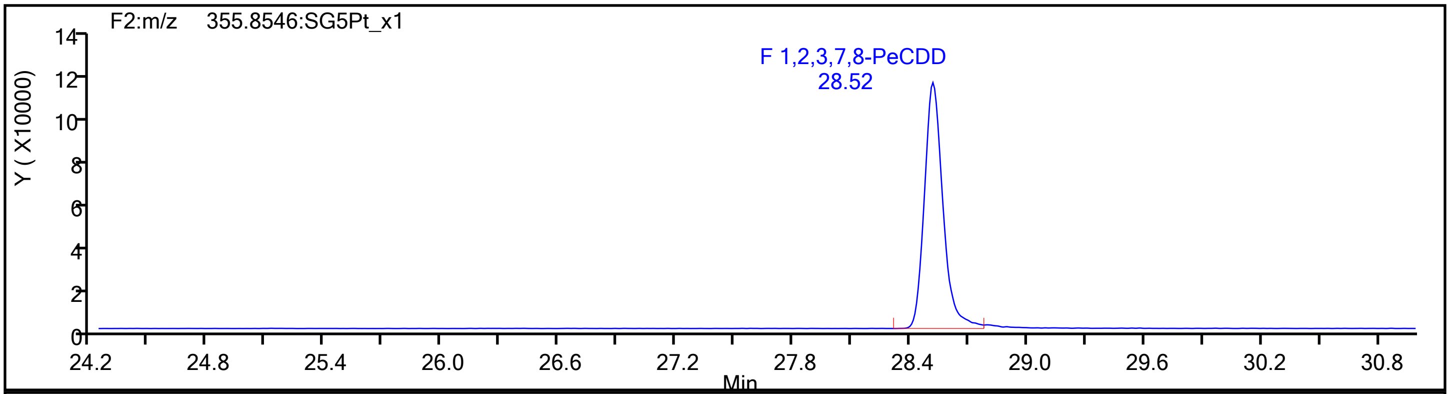

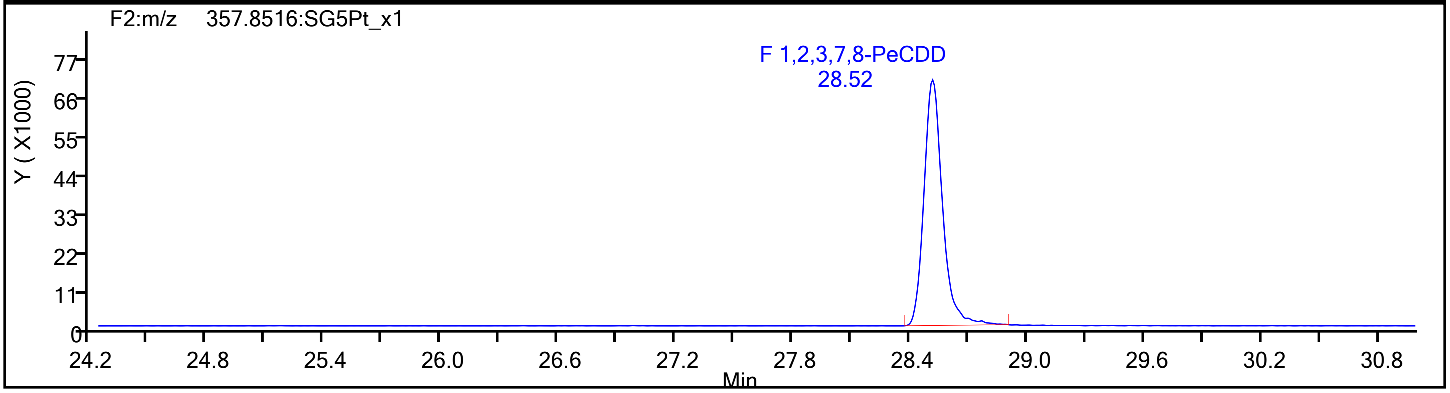

PeCDD Standards

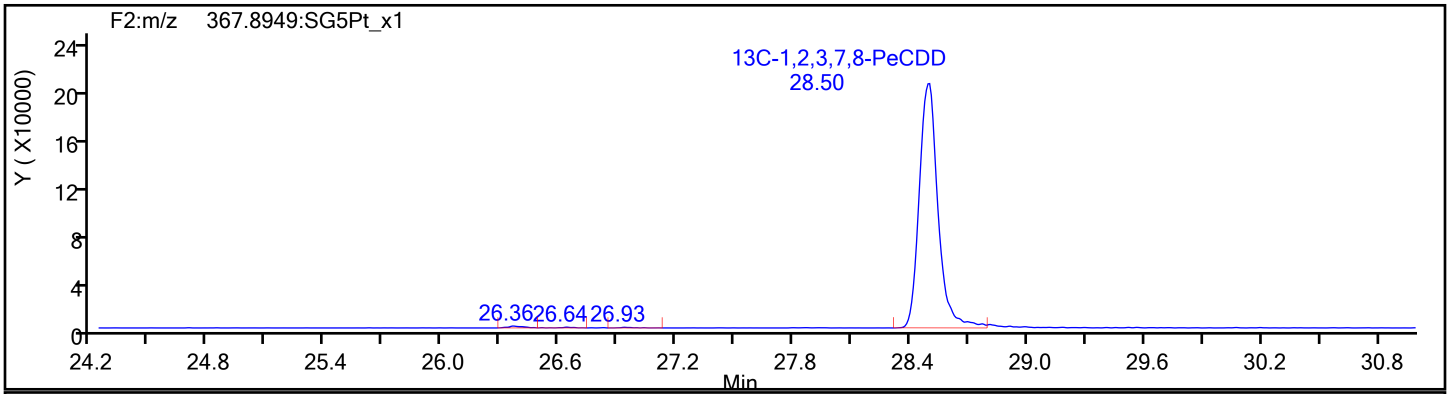

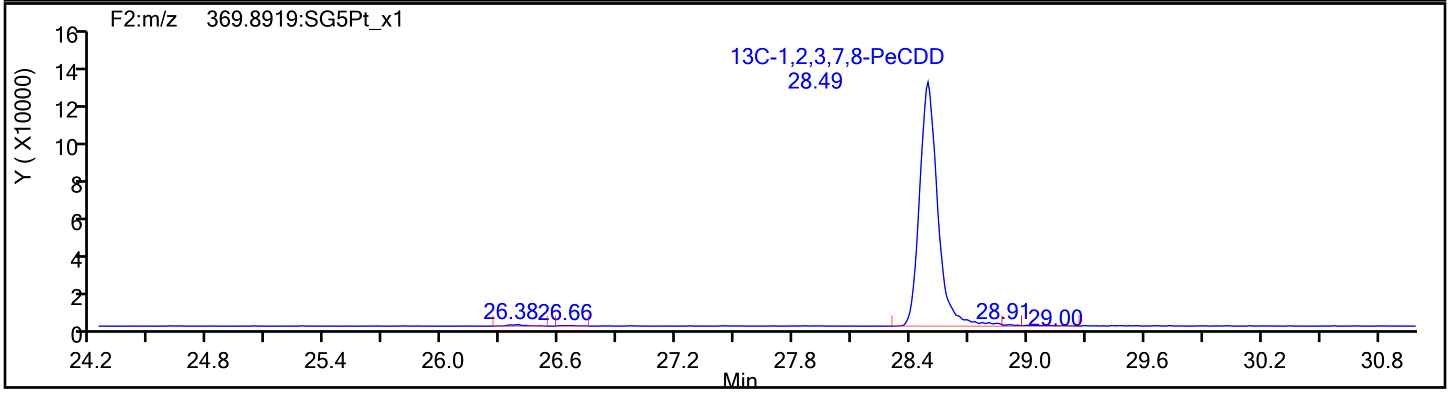

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

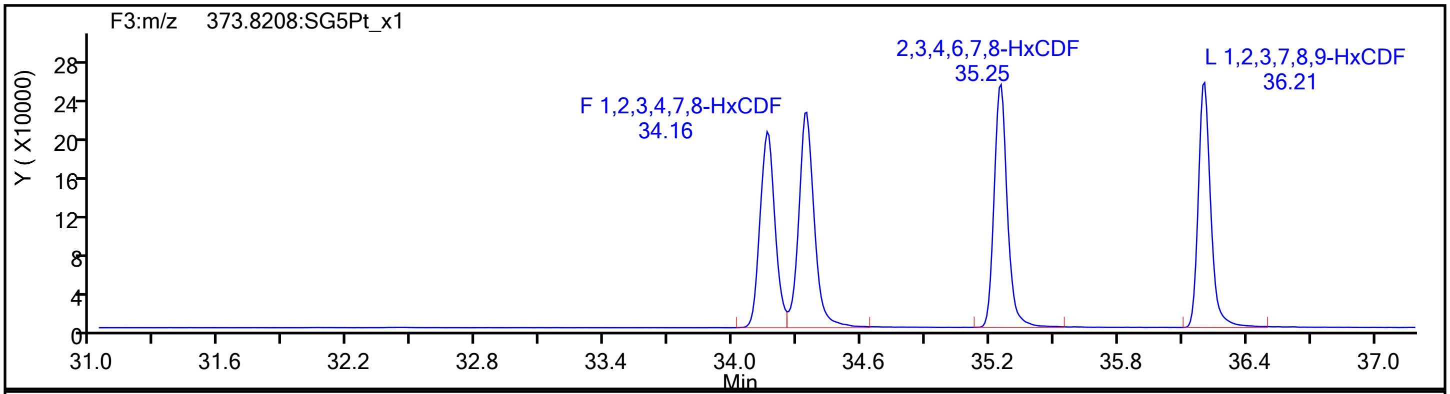

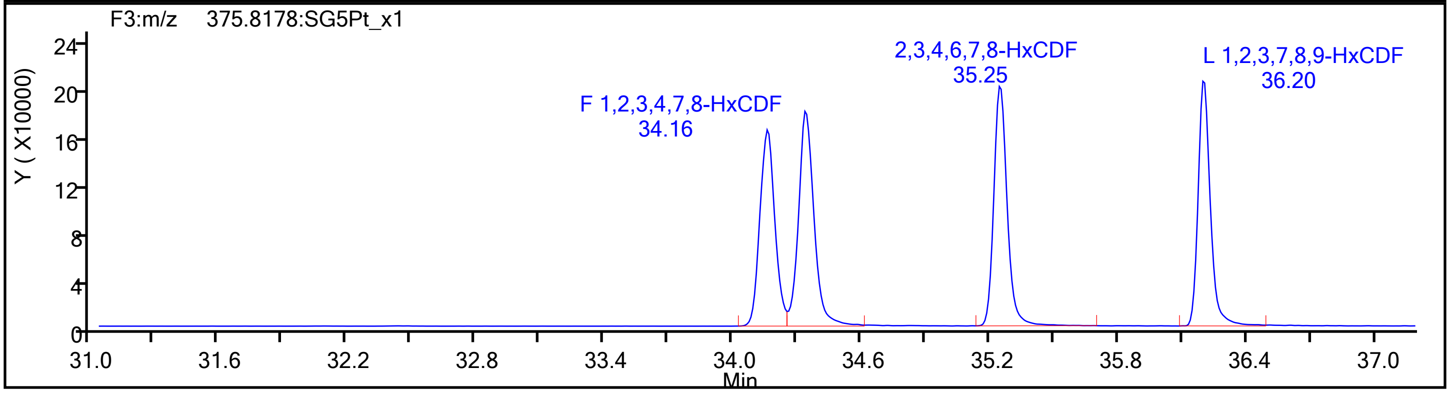

HxCDF Standards

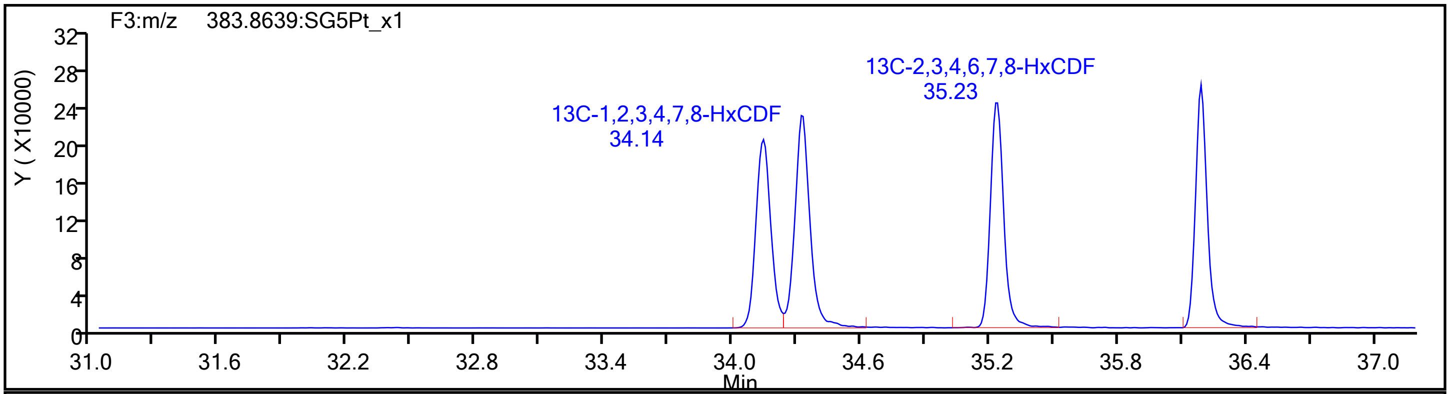

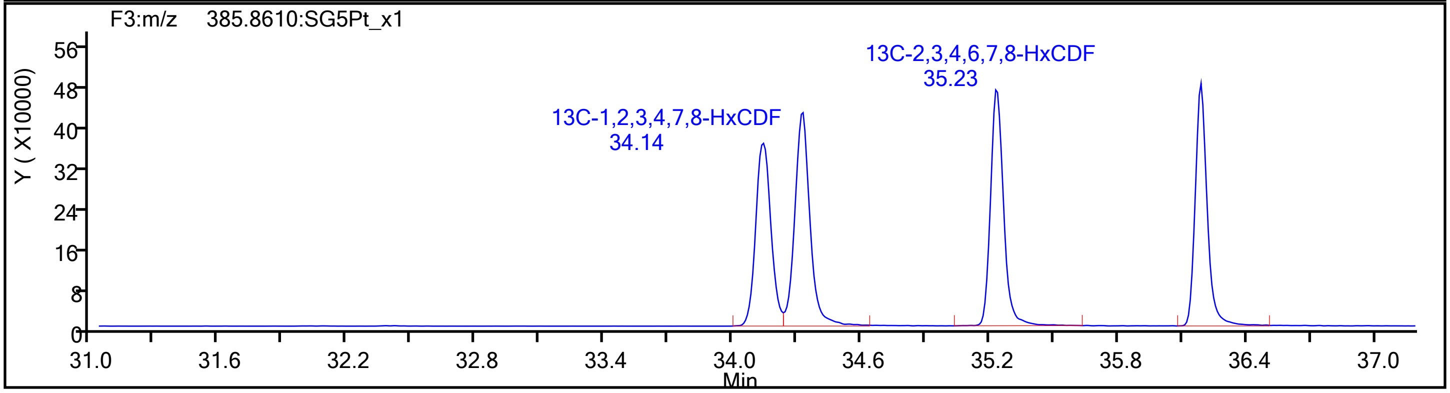

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200918-103621.b\18se20dfs1_73.d		
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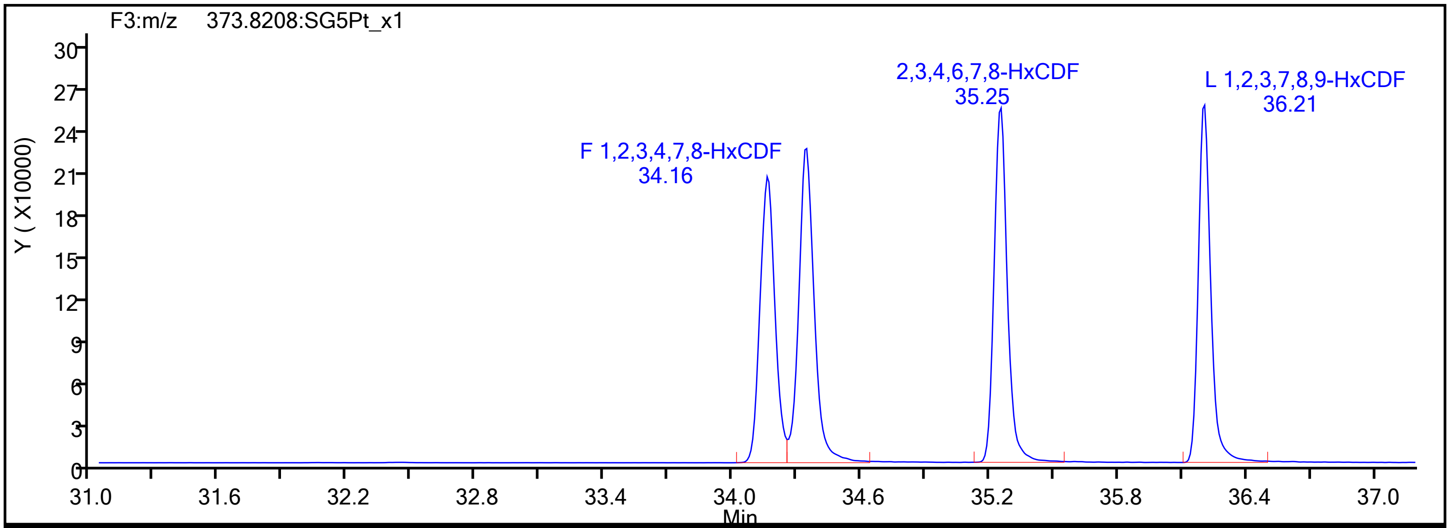

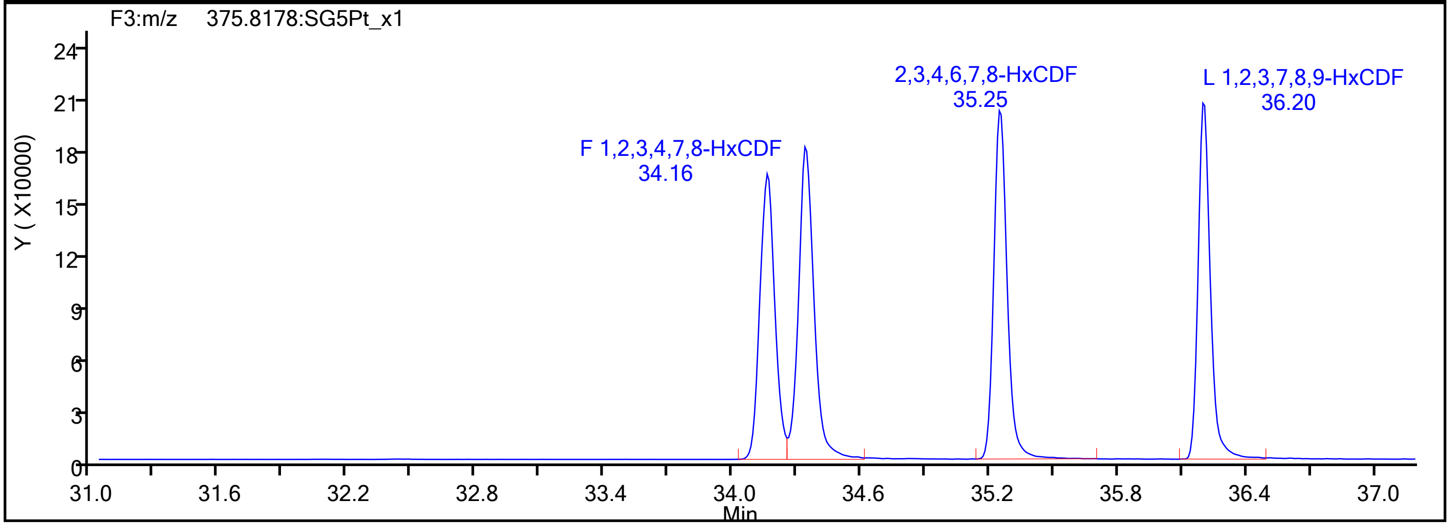

HxCDF Interference Mass

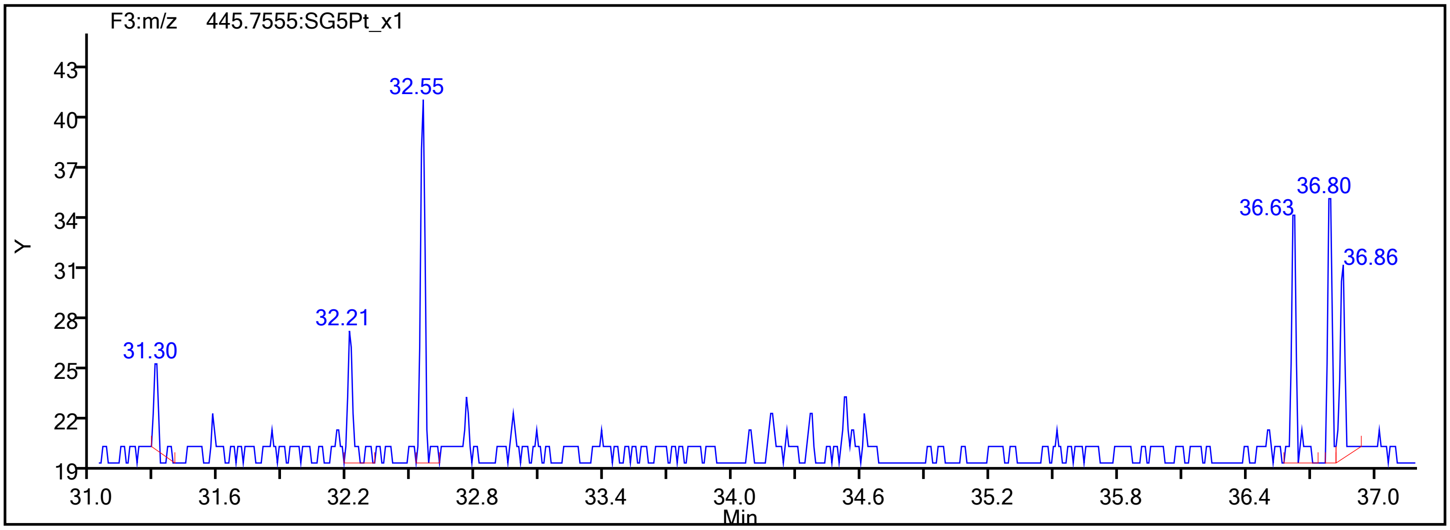

Report Date: 22-Sep-2020 10:47:09 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HxCDD

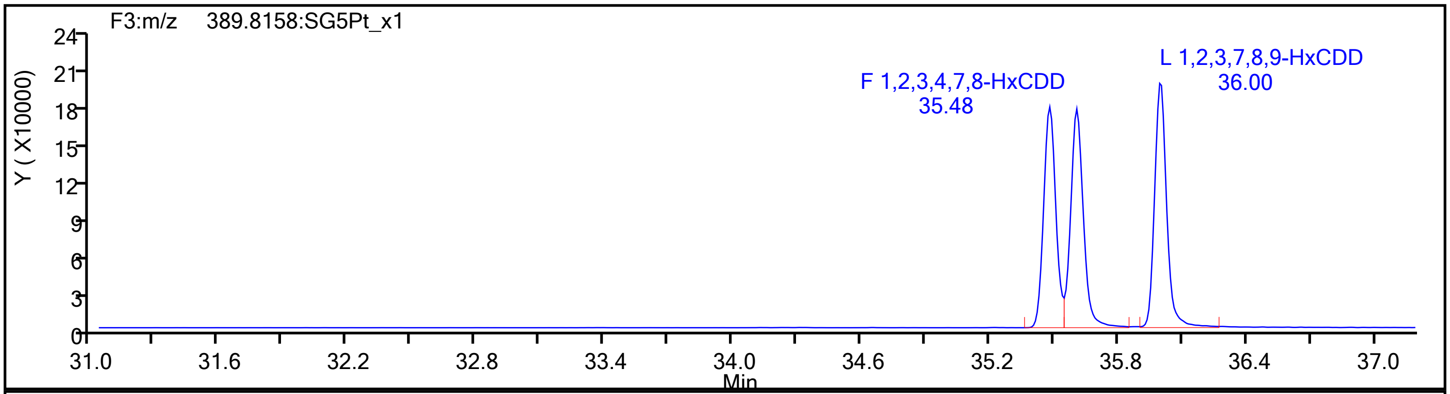

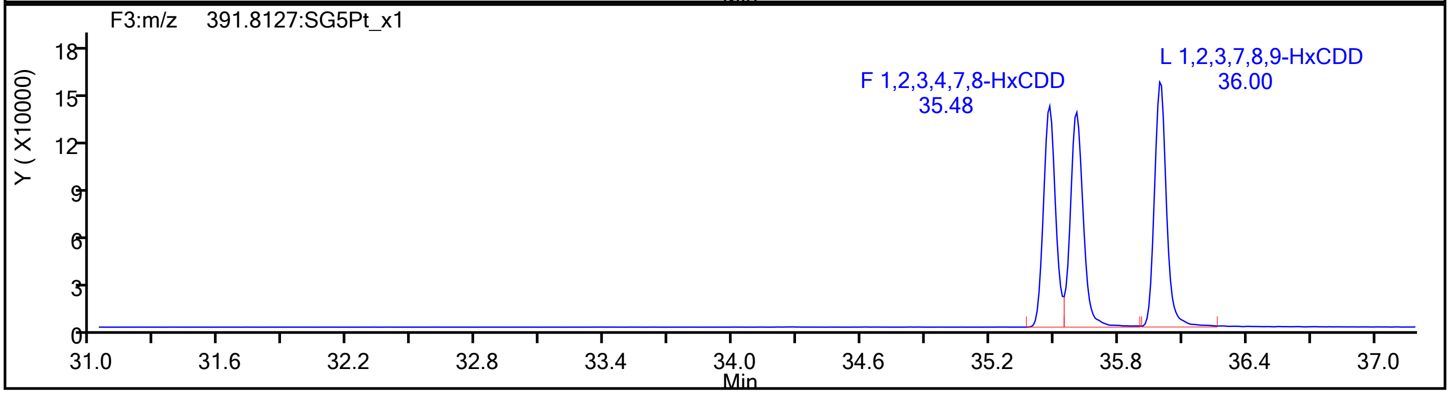

HxCDD Standards

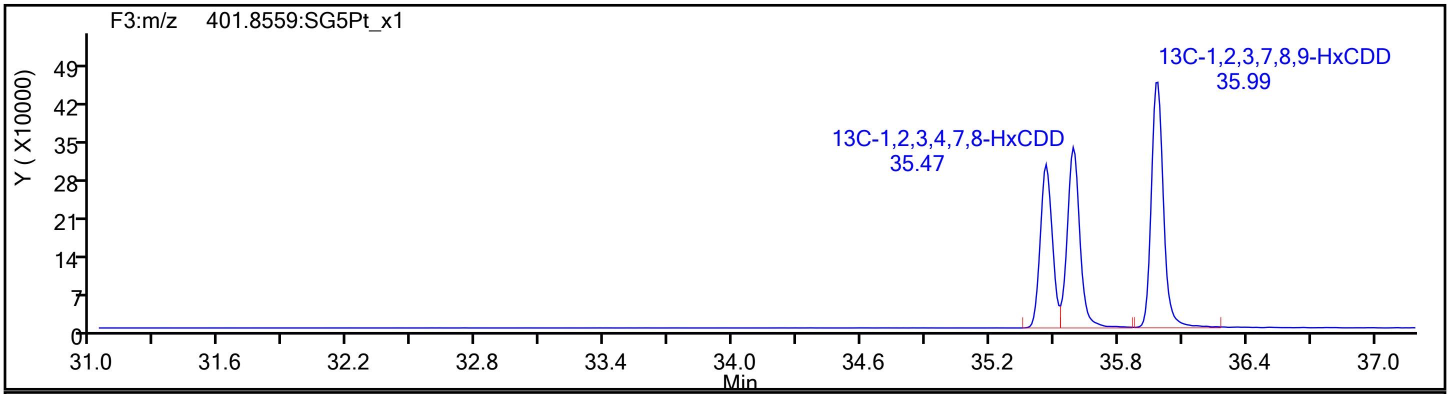

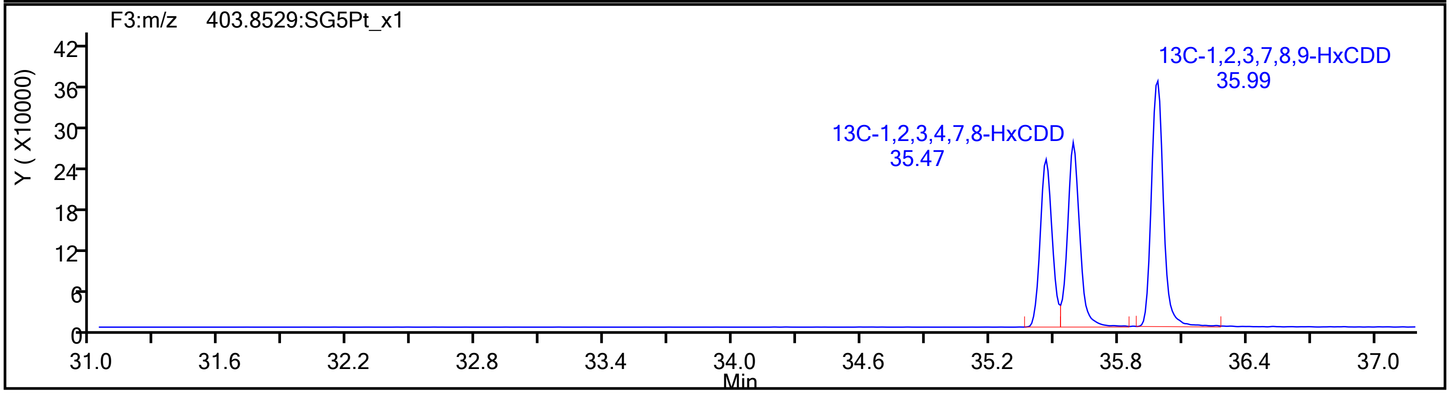

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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HpCDF

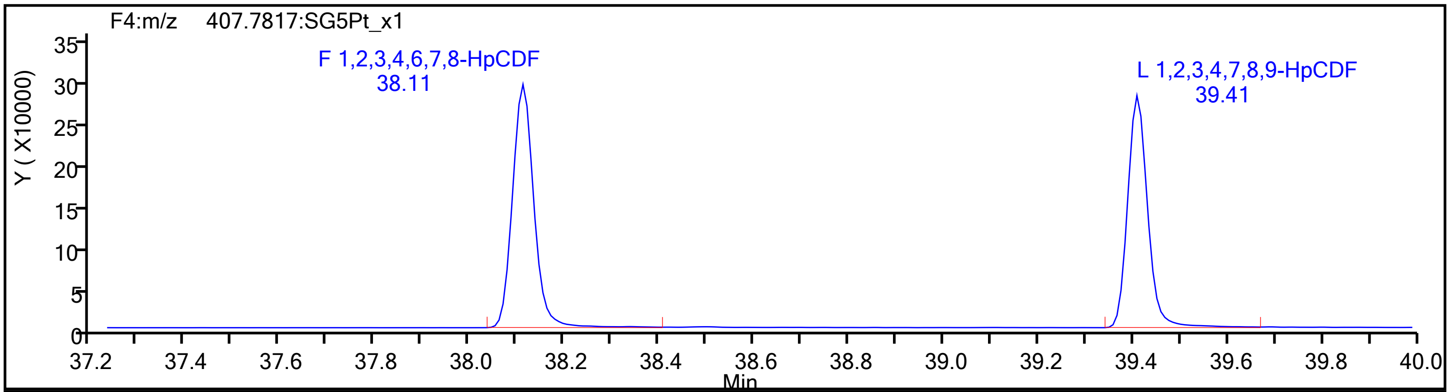

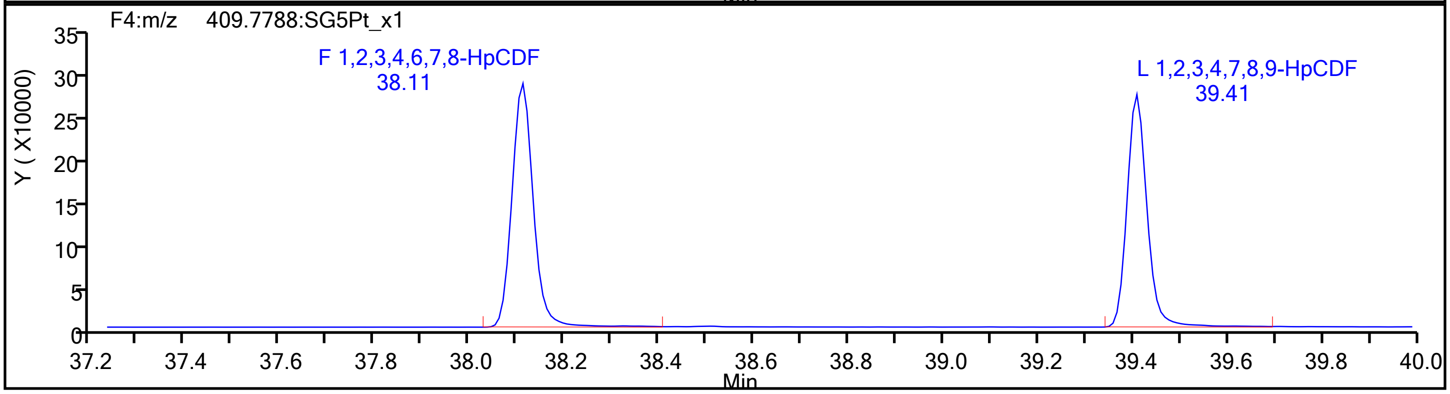

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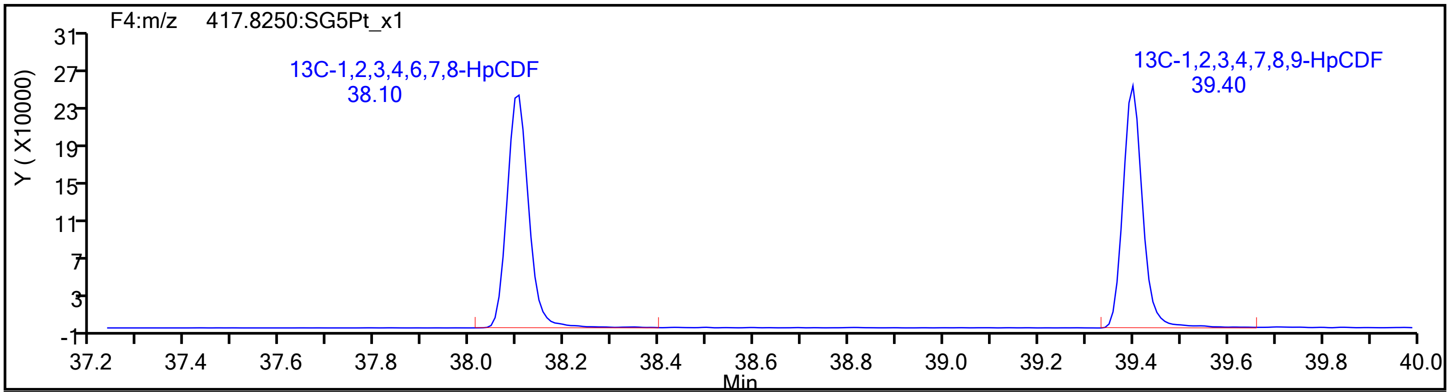

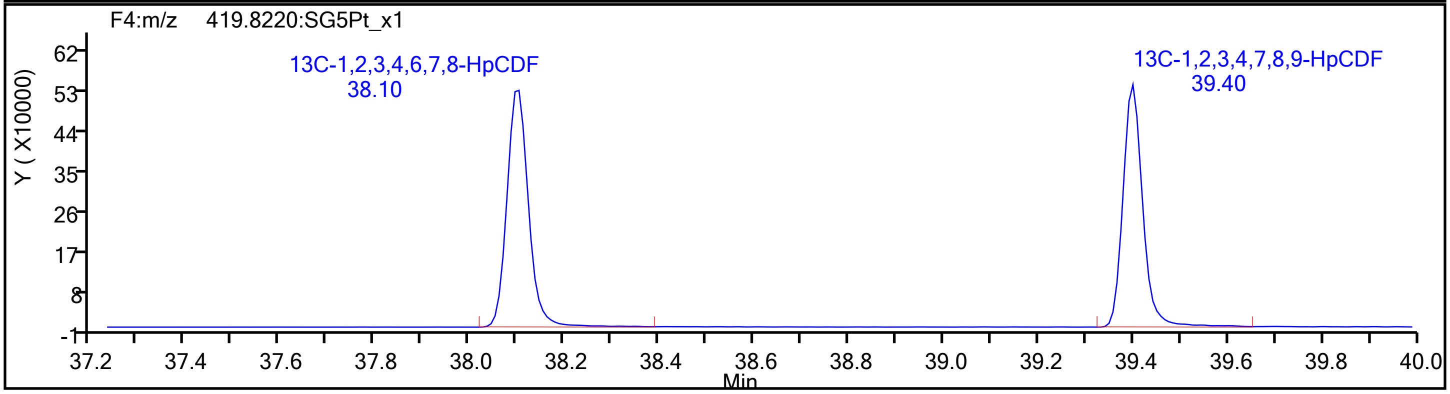

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Eurofins TestAmerica, Sacramento

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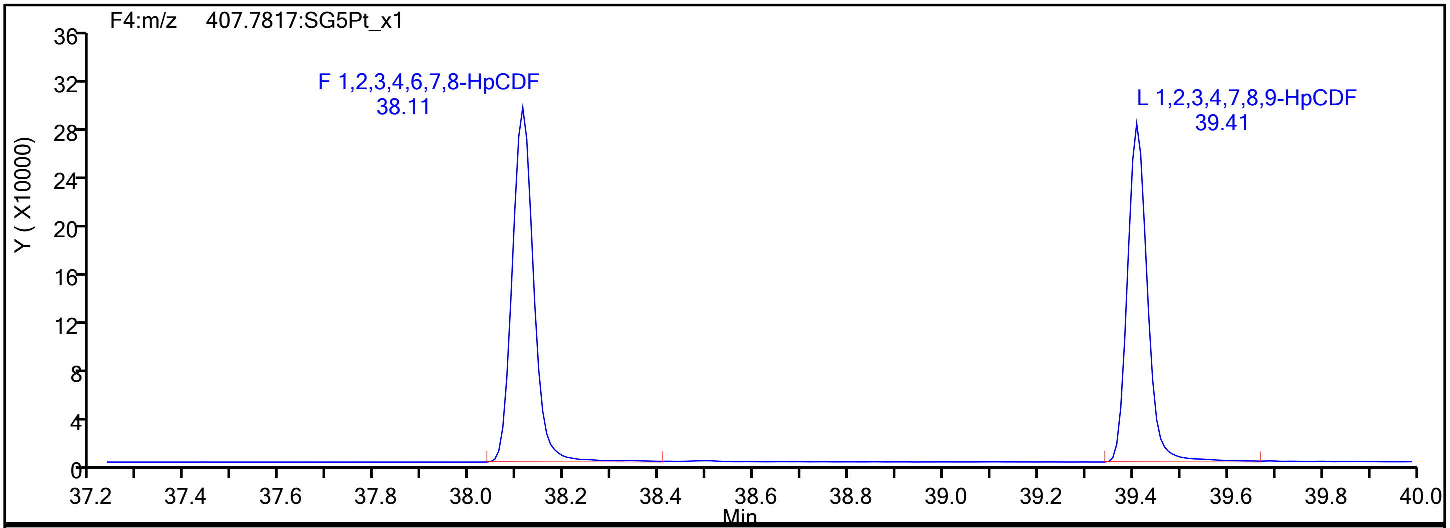

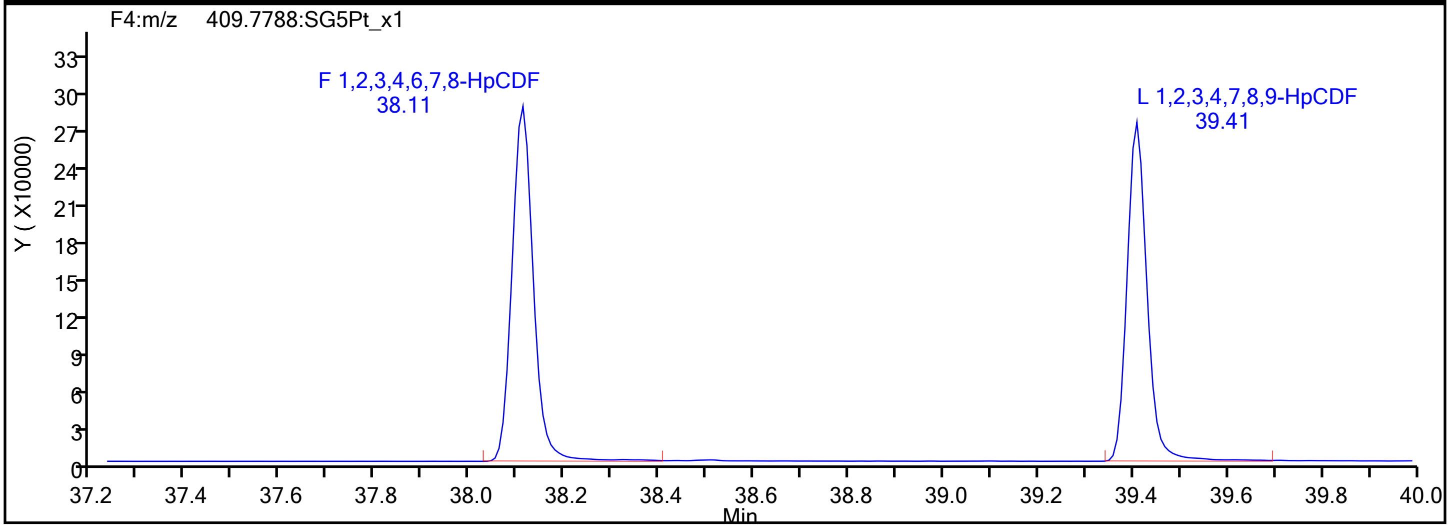

HpCDF Interference Mass

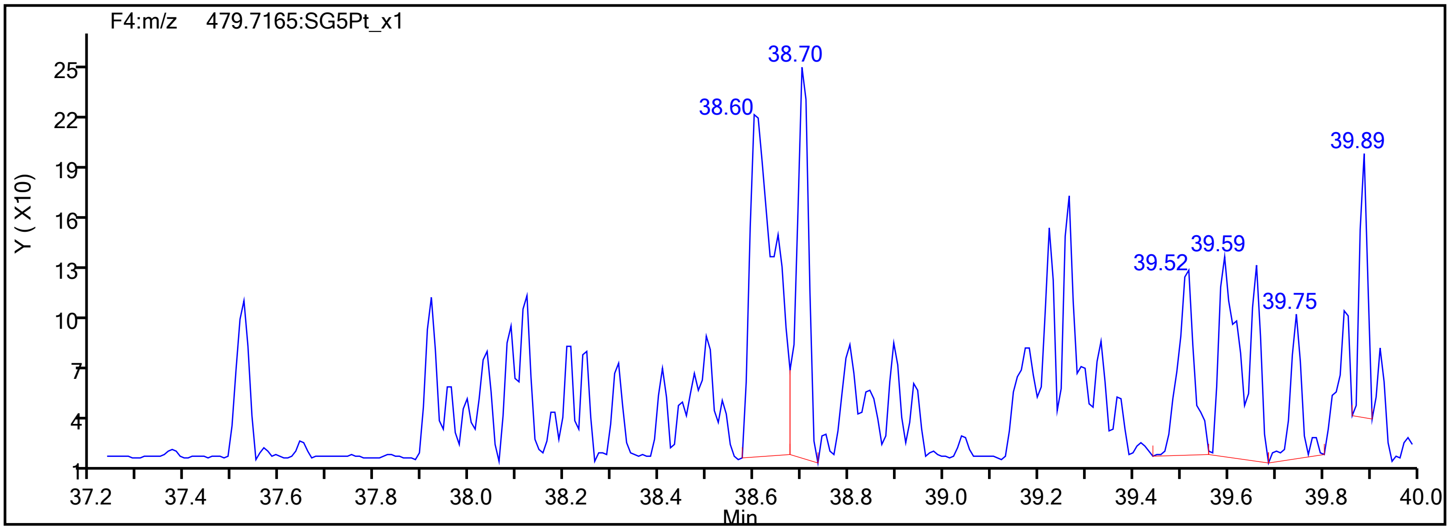

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Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 19:07:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816

Sample Line#: 63

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Column Dia: 0.32 mm

HpCDD

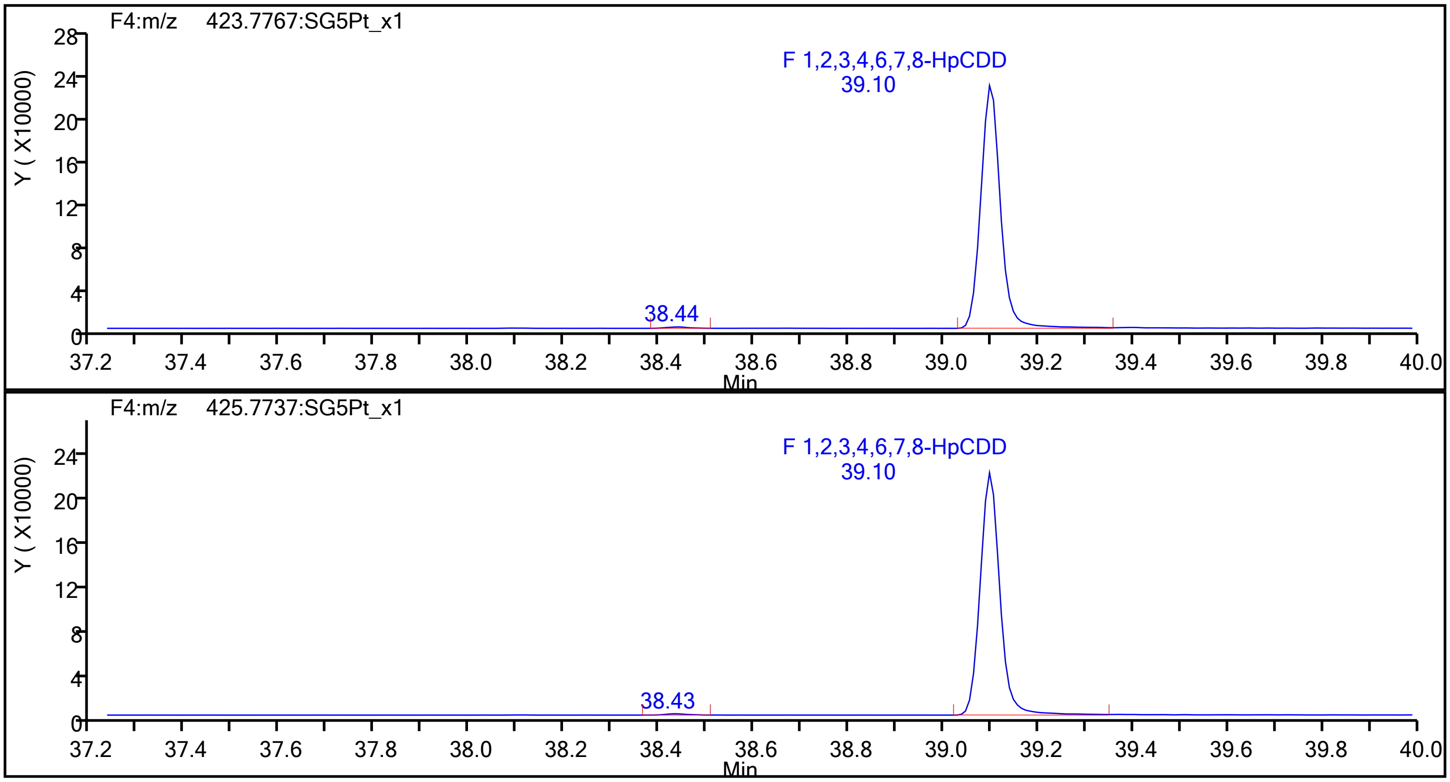

HpCDD Standards

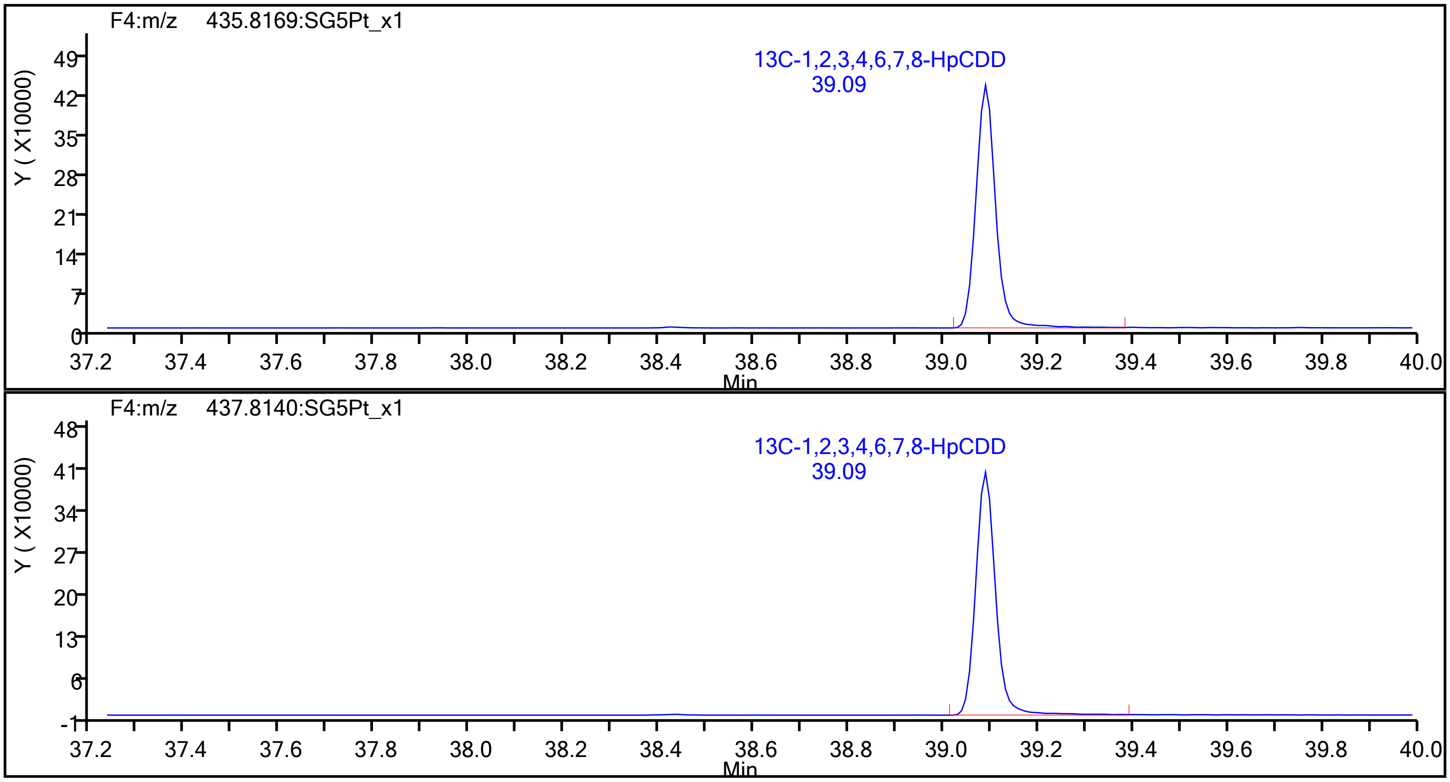

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 413816
Sample Line#: 63
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Column Dia: 0.32 mm

OCDF

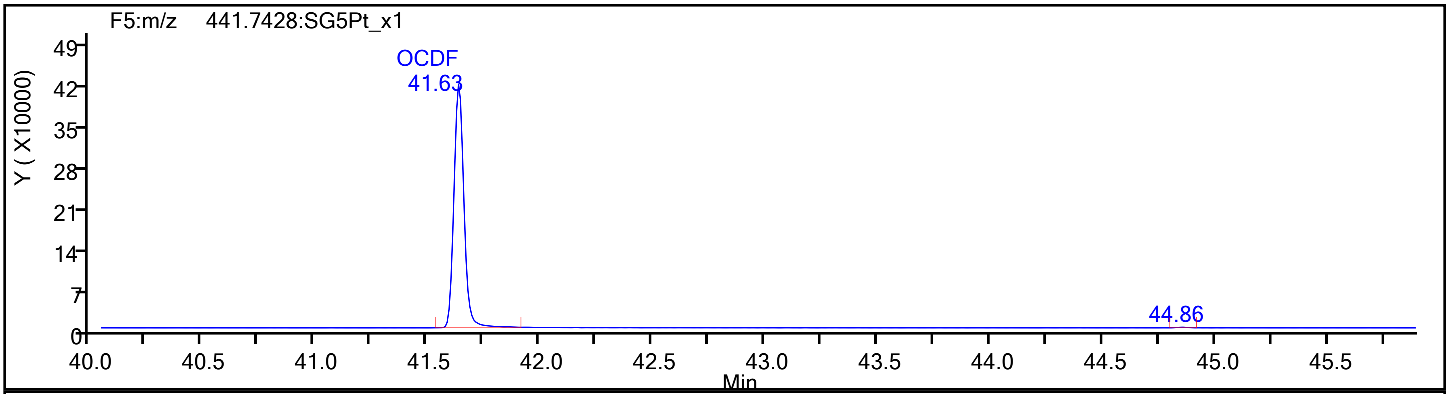

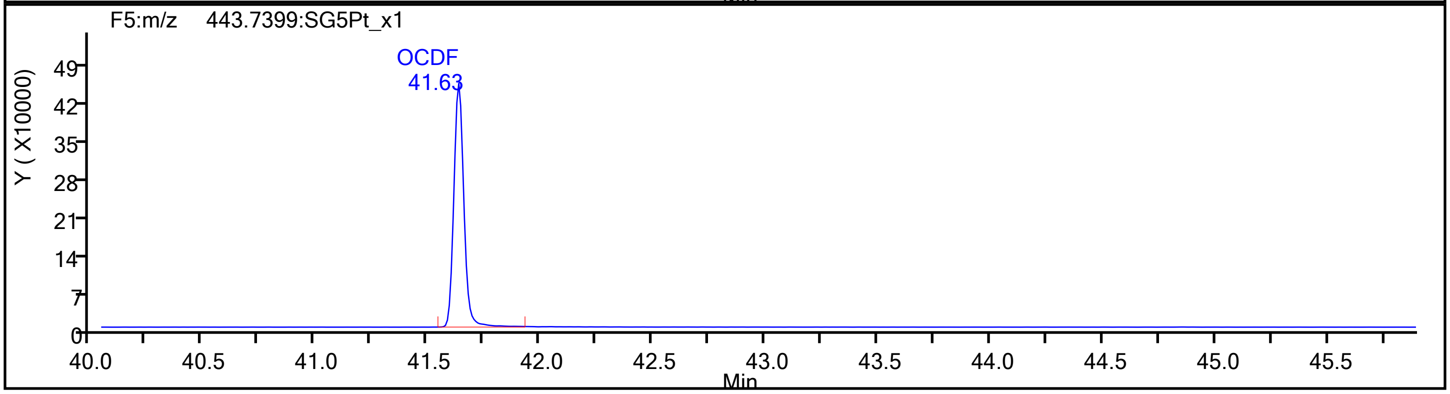

OCDF Standards

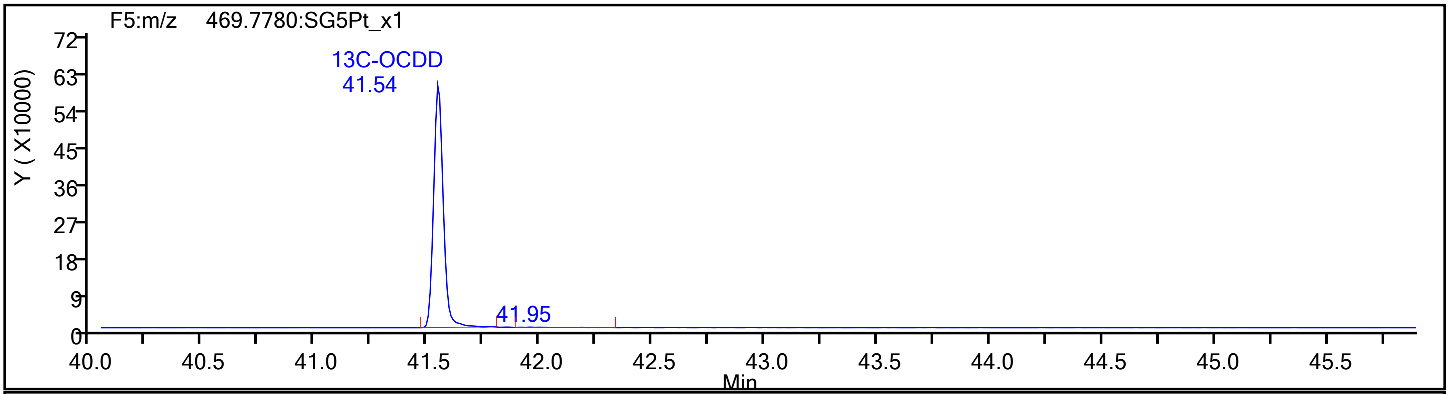

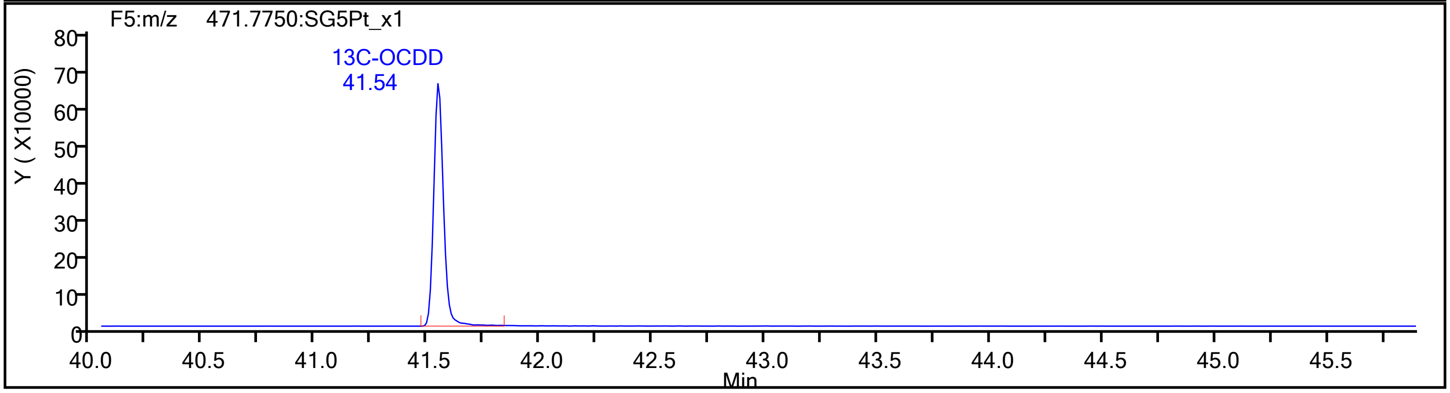

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Eurofins TestAmerica, Sacramento

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OCDF

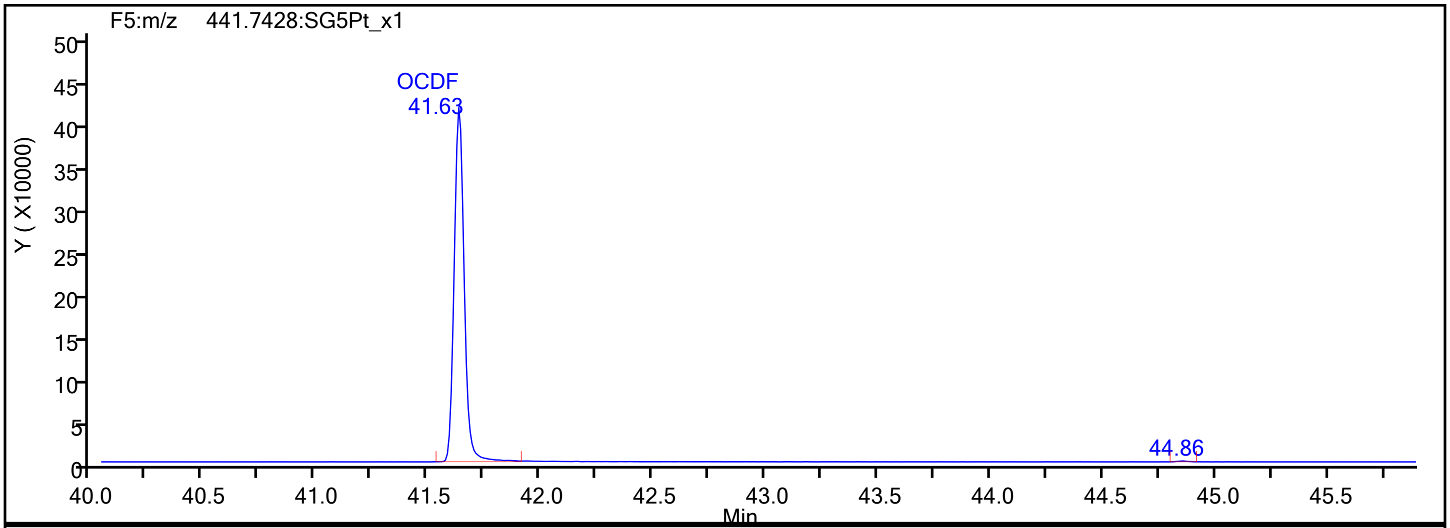

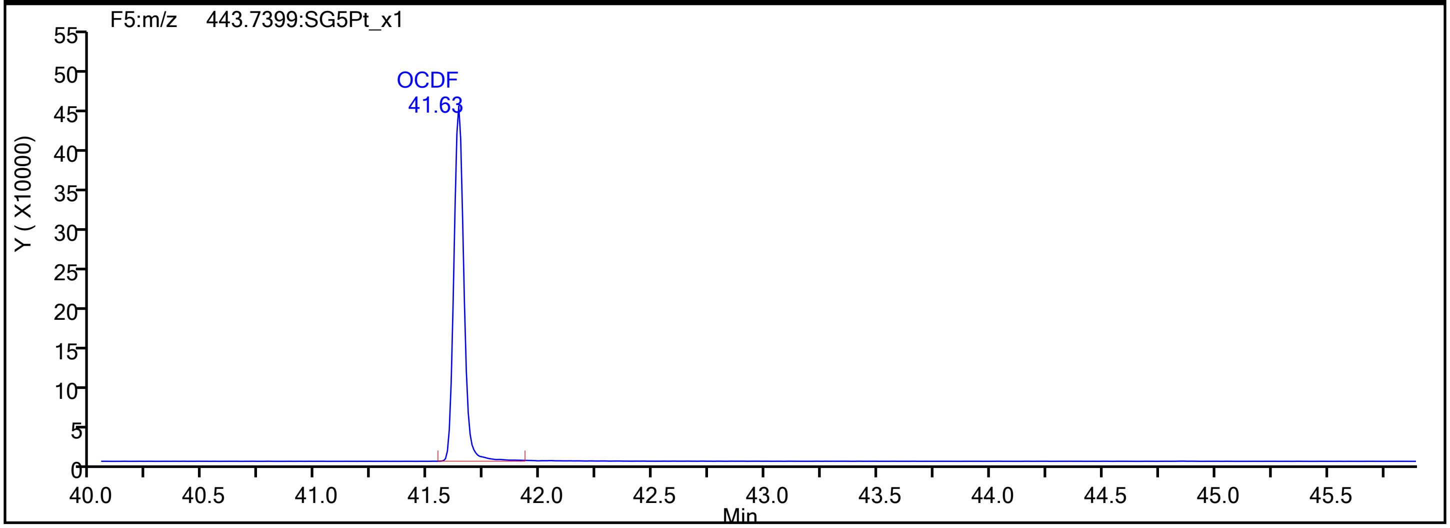

OCDF Interference Mass

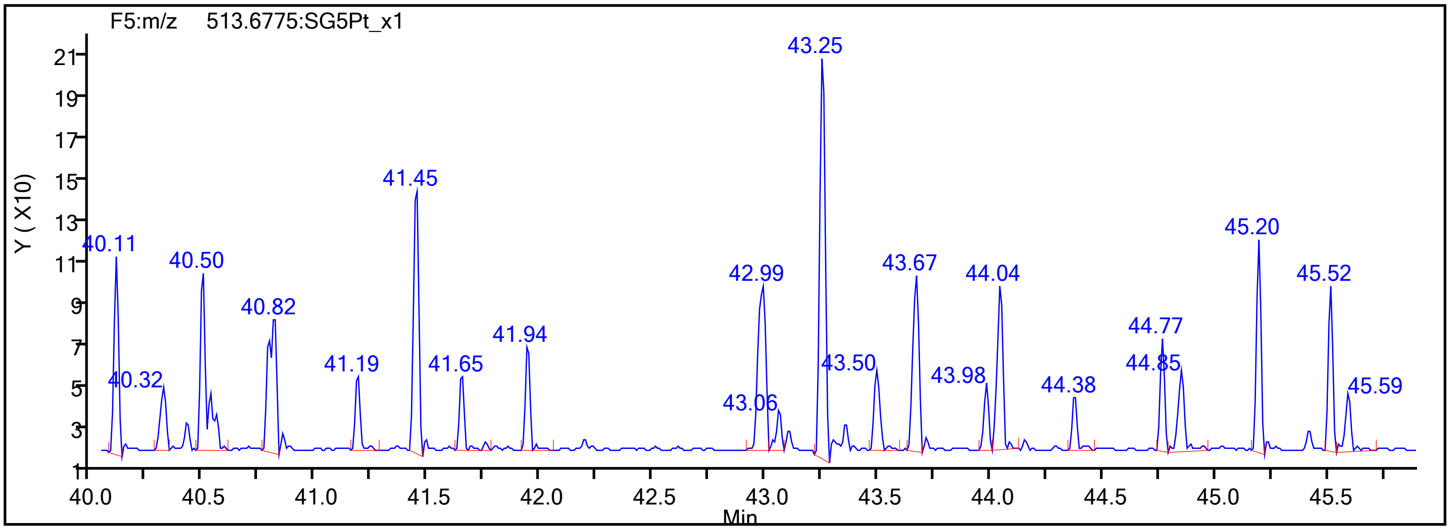

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Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 19:07:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413816

Sample Line#: 63

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

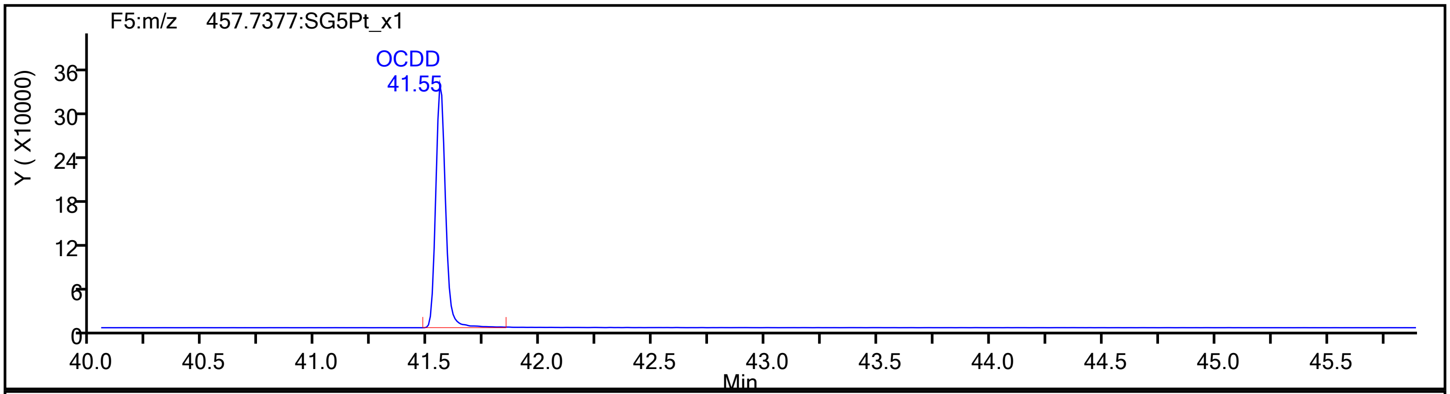

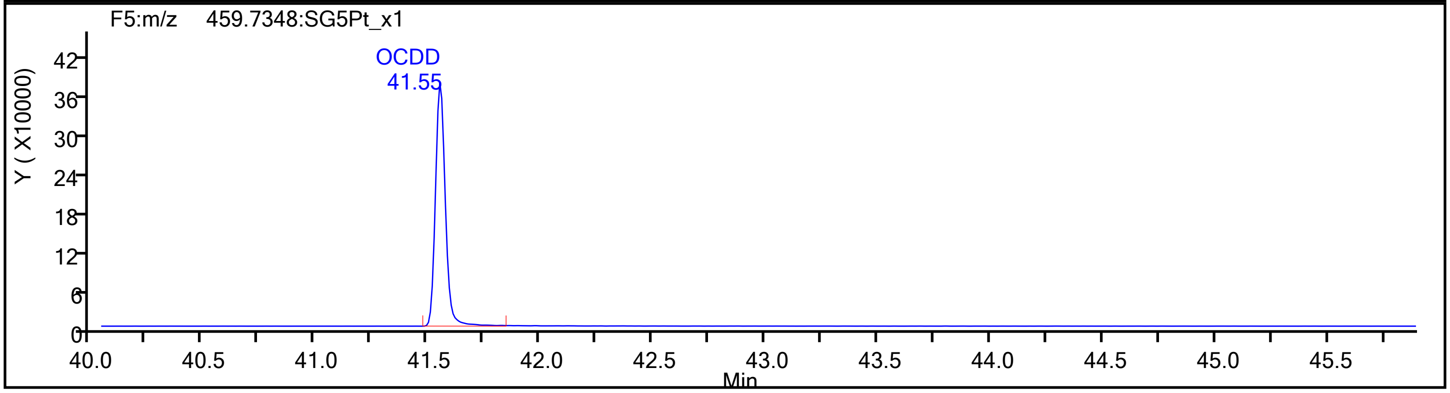

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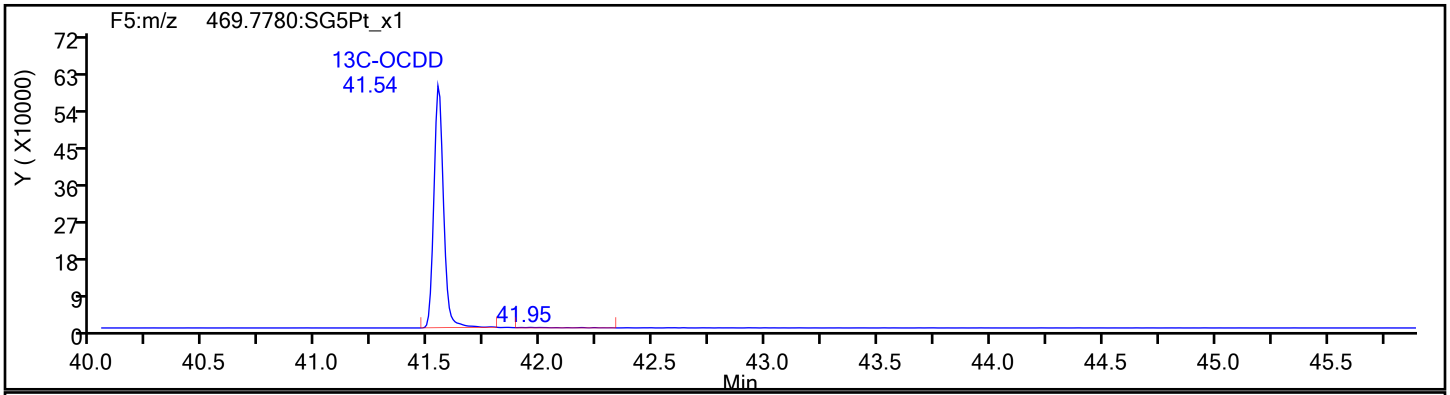

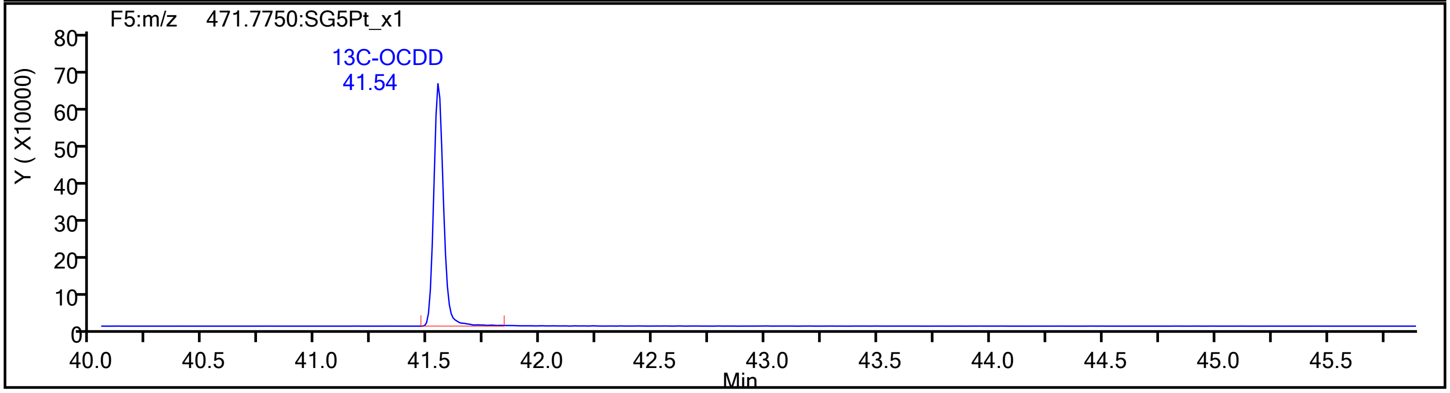

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Eurofins TestAmerica, Sacramento

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Injection Date: 20-Sep-2020 19:07:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

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Client ID:

Worklist#: 413816 Sample Line#: 63

Column Type: DB-5 Column Dia: 0.32 mm

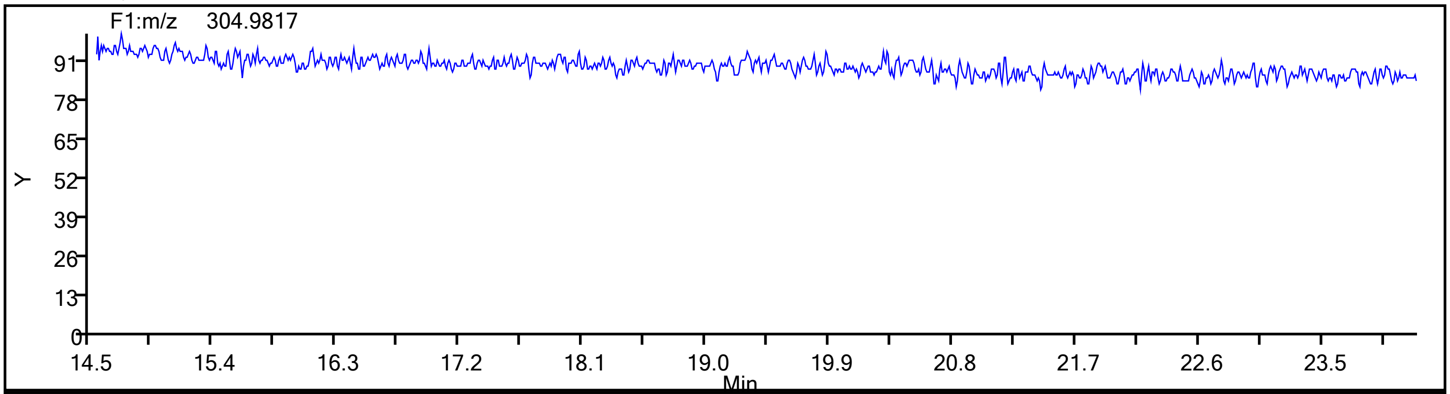

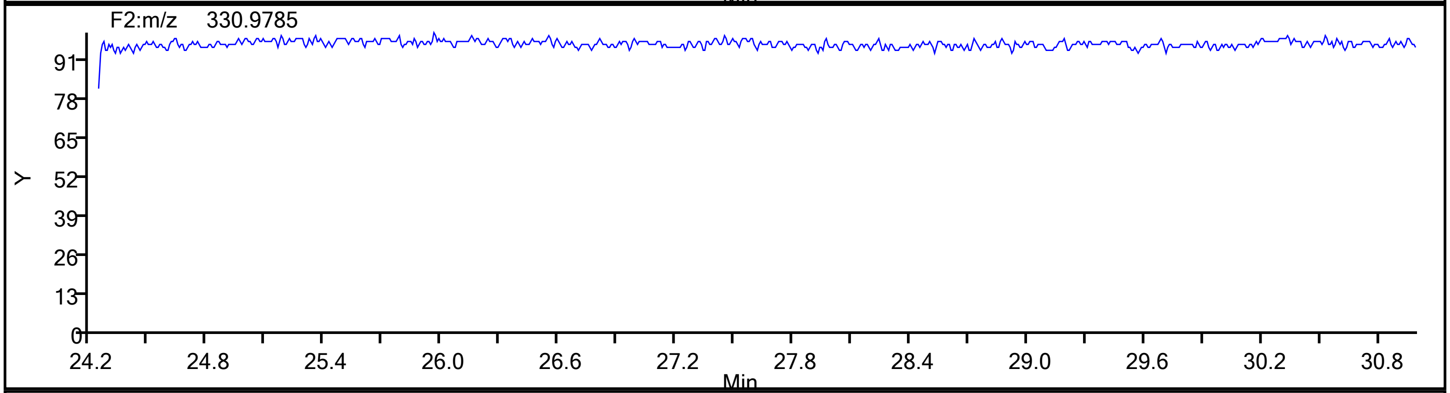

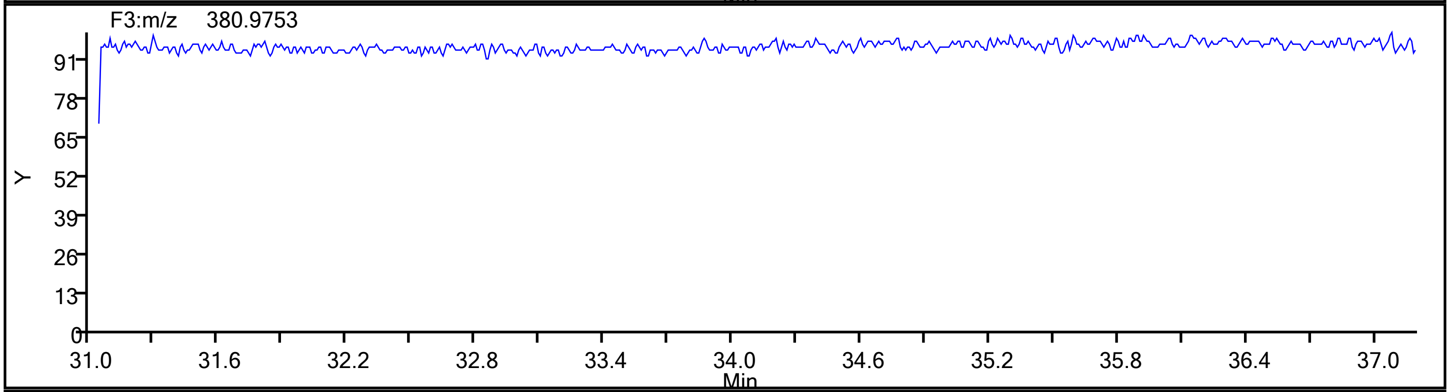

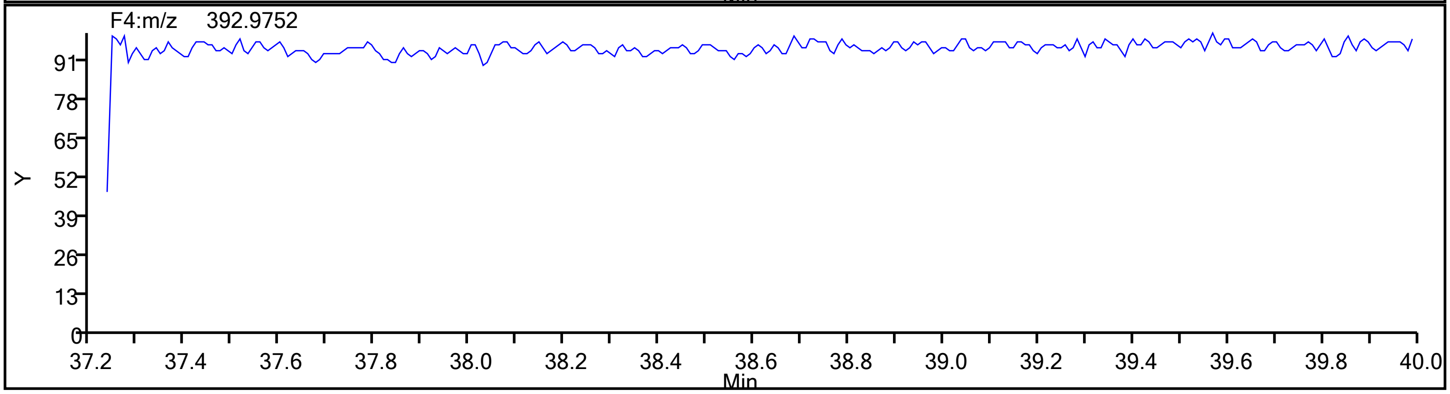

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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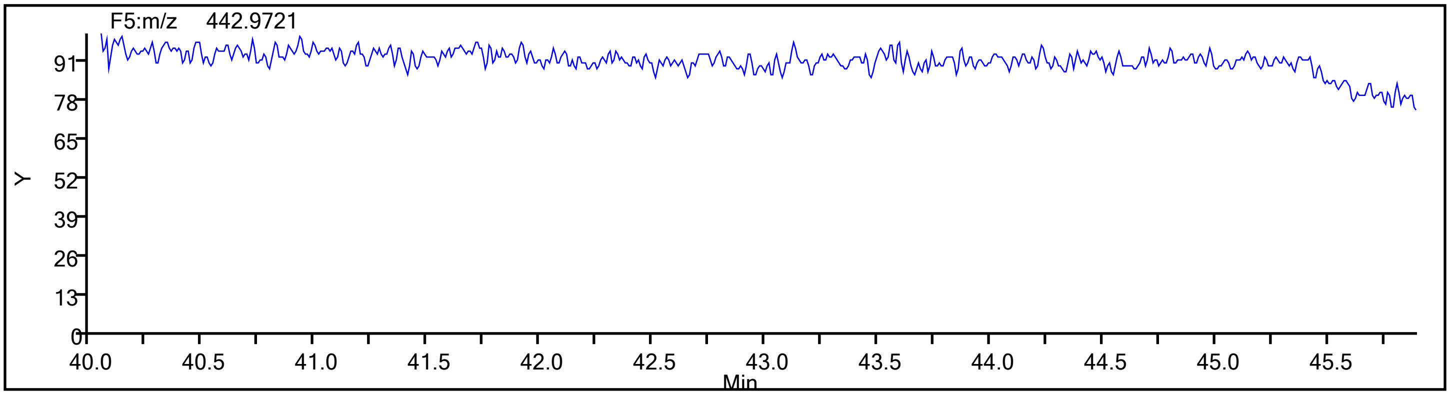

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: 10D5 Start Date: 06/27/2020 13:12

Analysis Batch Number: 390253 End Date: 06/27/2020 19:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-390253/1		06/27/2020 13:12	1	27JN20A10D5_1.d	DB-5 0.32(mm)
IC 320-390253/3		06/27/2020 14:42	1	27JN20A10D5_3.d	DB-5 0.32(mm)
IC 320-390253/4		06/27/2020 15:28	1	27JN20A10D5_4.d	DB-5 0.32(mm)
IC 320-390253/5		06/27/2020 16:13	1	27JN20A10D5_5.d	DB-5 0.32(mm)
IC 320-390253/6		06/27/2020 16:58	1	27JN20A10D5_6.d	DB-5 0.32(mm)
IC 320-390253/7		06/27/2020 17:43	1	27JN20A10D5_7.d	DB-5 0.32(mm)
ICV 320-390253/9		06/27/2020 19:24	1	27JN20A10D5_9.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: 10D5 Start Date: 09/01/2020 19:56

Analysis Batch Number: 408767 End Date: 09/02/2020 05:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-408767/1		09/01/2020 19:56	1	01SE2010D5_1.d	DB-5 0.32(mm)
CCV 320-408767/2		09/01/2020 20:41	1	01SE2010D5_2.d	DB-5 0.32(mm)
MB 320-407683/1-A		09/01/2020 21:39	1	01SE2010D5_3.d	DB-5 0.32(mm)
LCS 320-407683/2-A		09/01/2020 22:24	1	01SE2010D5_4.d	DB-5 0.32(mm)
LCSD 320-407683/3-A		09/01/2020 23:09	1	01SE2010D5_5.d	DB-5 0.32(mm)
ZZZZZ		09/02/2020 00:39	1		DB-5 0.32(mm)
ZZZZZ		09/02/2020 01:24	1		DB-5 0.32(mm)
ZZZZZ		09/02/2020 02:09	1		DB-5 0.32(mm)
320-64049-1	11215702-GW-Tank#1	09/02/2020 04:34	1	01SE2010D5_12.d	DB-5 0.32(mm)
320-64049-2	11215702-GW-Tank#2	09/02/2020 05:19	1	01SE2010D5_13.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Start Date: 09/17/2020 11:37

Analysis Batch Number: 413255 End Date: 09/17/2020 18:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-413255/1		09/17/2020 11:37	1	17se20dfs1_2.d	DB-5 0.32(mm)
IC 320-413255/3		09/17/2020 13:16	1	17se20dfs1_4.d	DB-5 0.32(mm)
IC 320-413255/4		09/17/2020 14:04	1	17se20dfs1_5.d	DB-5 0.32(mm)
IC 320-413255/5		09/17/2020 14:53	1	17se20dfs1_6.d	DB-5 0.32(mm)
IC 320-413255/6		09/17/2020 15:41	1	17se20dfs1_7.d	DB-5 0.32(mm)
IC 320-413255/7		09/17/2020 16:30	1	17se20dfs1_8.d	DB-5 0.32(mm)
ICV 320-413255/9		09/17/2020 18:07	1	17se20dfs1_10.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Start Date: 09/20/2020 04:24

Analysis Batch Number: 413813 End Date: 09/20/2020 14:45

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-413813/46		09/20/2020 04:24	1	18se20dfs1_53.d	DB-5 0.32(mm)
WDM 320-413813/47		09/20/2020 05:32	1	18se20dfs1_55.d	DB-5 0.32(mm)
320-64049-3	11215702-Soil-Tank#1	09/20/2020 12:00	1	18se20dfs1_63.d	DB-5 0.32(mm)
320-64049-4	11215702-Soil-Tank#2	09/20/2020 12:49	1	18se20dfs1_64.d	DB-5 0.32(mm)
ZZZZZ		09/20/2020 13:37	1		DB-5 0.32(mm)
ZZZZZ		09/20/2020 14:45	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Start Date: 09/20/2020 14:45

Analysis Batch Number: 413816 End Date: 09/20/2020 19:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-413816/58		09/20/2020 14:45	1	18se20dfs1_67.d	DB-5 0.32(mm)
WDM 320-413816/59		09/20/2020 15:53	1	18se20dfs1_69.d	DB-5 0.32(mm)
ZZZZZ		09/20/2020 17:30	1		DB-5 0.32(mm)
LCS 320-412959/2-A		09/20/2020 18:18	1	18se20dfs1_72.d	DB-5 0.32(mm)
LCSD 320-412959/3-A		09/20/2020 19:07	1	18se20dfs1_73.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1   Start Date: 09/21/2020 11:05

Analysis Batch Number: 414413   End Date: 09/21/2020 21:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-414413/1		09/21/2020 11:05	1	21se20dfs1_2.d	DB-5 0.32(mm)
CCV 320-414413/2		09/21/2020 11:55	1	21se20dfs1_3.d	DB-5 0.32(mm)
MB 320-412959/1-A		09/21/2020 14:13	1	21se20dfs1_5.d	DB-5 0.32(mm)
ZZZZZ		09/21/2020 21:49	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: 11D2 Start Date: 09/23/2020 12:02

Analysis Batch Number: 415167 End Date: 09/23/2020 20:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-415167/1		09/23/2020 12:02	1	23SE20A11D2_001.d	DB-225 0.32(mm)
CCV 320-415167/2		09/23/2020 12:40	1	23SE20A11D2_002.d	DB-225 0.32(mm)
320-64049-3 RADL	11215702-Soil-Tank#1 RADL	09/23/2020 20:20	10	23SE20A11D2_014.d	DB-225 0.32(mm)
320-64049-4 RADL	11215702-Soil-Tank#2 RADL	09/23/2020 20:58	20	23SE20A11D2_015.d	DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-64049-1

SDG No.:

Instrument ID: DFS 1 Start Date: 09/23/2020 21:20

Analysis Batch Number: 415261 End Date: 09/24/2020 05:41

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-415261/1		09/23/2020 21:20	1	23se20dfs1_2.d	DB-5 0.32(mm)
CCV 320-415261/2		09/23/2020 22:08	1	23se20dfs1_3.d	DB-5 0.32(mm)
ZZZZZ		09/24/2020 02:27	1		DB-5 0.32(mm)
ZZZZZ		09/24/2020 03:15	1		DB-5 0.32(mm)
320-64049-3 DL	11215702-Soil-Tank#1 DL	09/24/2020 04:52	10	23se20dfs1_11.d	DB-5 0.32(mm)
320-64049-4 DL	11215702-Soil-Tank#2 DL	09/24/2020 05:41	20	23se20dfs1_12.d	DB-5 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-64049-1

SDG No.:

Batch Number: 407683 Batch Start Date: 08/28/20 14:44 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 08/29/20 15:32

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-407683/1		1613B, 1613B				1000 mL	20 uL	SS1 - 1	4
LCS 320-407683/2		1613B, 1613B				1000 mL	20 uL	SS1 - 2	6
LCSD 320-407683/3		1613B, 1613B				1000 mL	20 uL	SS1 - 3	4
320-64049-A-1	11215702-GW-Tank #1	1613B, 1613B	T	1551.1 g	516.16 g	1034.9 mL	20 uL	SS1 - 4	6
320-64049-A-2	11215702-GW-Tank #2	1613B, 1613B	T	1534.2 g	516.22 g	1018 mL	20 uL	SS1 - 5	4

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00437	HRDXNIS 00129	HRDXNSU 00241	HRDXNTA 00121		
MB 320-407683/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-407683/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-407683/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-64049-A-1	11215702-GW-Tank #1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-64049-A-2	11215702-GW-Tank #2	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-64049-1

SDG No.:

Batch Number: 407683 Batch Start Date: 08/28/20 14:44 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 08/29/20 15:32

Batch Notes	
20% DCM:Hexane ID	DH28_00173 mL
65% DCM:Hexane ID	DH6535_00484 mL
Acid Silica Gel ID	SA5644_00646
Acid Alumina ID	Acid_Alumina_00006
Balance ID	QA - 070
C14 ID	tetradecane_00009
Hexane ID	Hexane_00213 mL
IFB Clean Up	RDR 08/29/20
MeCL2 ID	DCM_00238 mL
Na2SO4 ID	Na2SO4_00120
Analyst ID - IDA Reagent Drop	RDR 08/28/20 HRDXNIDA_00437 B1/4 HD05018 1.00 mL
Analyst ID - IDA Reagent Drop Witness	NR 08/28/20
Analyst ID - IS Reagent Drop	RDR 08/29/20 HRDXNIS_00129 B2/4 CN15436 20 uL
Analyst ID - IS Reagent Drop Witness	SR 08/29/20
Analyst ID - SU Reagent Drop	RDR 08/29/20 HRDXNSU_00241 B1/4 HD05018 1.00 mL
Analyst ID - SU Reagent Drop Witness	SR 08/29/20
Analyst ID - TA Reagent Drop	RDR 08/28/20 HRDXNTA_00121 B10/10 CN15436 50 uL
Analyst ID - TA Reagent Drop Witness	NR 08/28/20
Silica Gel ID	SilicaGel_00337
Soxhlet/Soxtherm End	NR 08/28/20
Soxhlet/Soxtherm Start	NR 08/28/20
Storage Box ID	DXN - 177
Toluene ID	Toluene_00070 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-64049-1

SDG No.:

Batch Number: 412959 Batch Start Date: 09/17/20 05:13 Batch Analyst: Chang, Fue

Batch Method: HRMS-Sox Batch End Date: 09/17/20 18:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00438	HRDXNIS 00129
MB 320-412959/1		HRMS-Sox, 1613B		10 g	20 uL	F1	1	1 mL	20 uL
LCS 320-412959/2		HRMS-Sox, 1613B		10 g	20 uL	F2	3	1 mL	20 uL
LCSD 320-412959/3		HRMS-Sox, 1613B		10 g	20 uL	F3	1	1 mL	20 uL
320-64049-A-3	11215702-Soil-Tank#1	HRMS-Sox, 1613B	T	1.16 g	20 uL	F4	3	1 mL	20 uL
320-64049-A-4	11215702-Soil-Tank#2	HRMS-Sox, 1613B	T	1.26 g	20 uL	F5	1	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00241	HRDXNTA 00122				
MB 320-412959/1		HRMS-Sox, 1613B		1 mL					
LCS 320-412959/2		HRMS-Sox, 1613B		1 mL	50 uL				
LCSD 320-412959/3		HRMS-Sox, 1613B		1 mL	50 uL				
320-64049-A-3	11215702-Soil-Tank#1	HRMS-Sox, 1613B	T	1 mL					
320-64049-A-4	11215702-Soil-Tank#2	HRMS-Sox, 1613B	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-64049-1

SDG No.:

Batch Number: 412959 Batch Start Date: 09/17/20 05:13 Batch Analyst: Chang, Fue

Batch Method: HRMS-Sox Batch End Date: 09/17/20 18:00

Batch Notes	
20% DCM:Hexane ID	2075822 mL
65% DCM:Hexane ID	2144518 mL
Acid Silica Gel ID	2160780
Acid Alumina ID	2147898
Balance ID	QA-074
Batch Comment	RX
C14 ID	1983670
Hexane ID	2152203 mL
IFB Clean Up	SR 09/17/2020
Na2SO4 ID	2126776
Analyst ID - IDA Reagent Drop	FC 9/17/20 HD05018 HRDXNIDA_00438 B-1/4 1mL
Analyst ID - IDA Reagent Drop Witness	GLB 09/17/20
Analyst ID - IS Reagent Drop	SR 09/17/20 EH15371 B-2/4 HRDXNIS_00129 20 uL
Analyst ID - IS Reagent Drop Witness	NR 09/17/20
Analyst ID - SU Reagent Drop	SR 09/17/20 HD05018 B-4/4 HRDXNSU_00241 1.0 mL
Analyst ID - SU Reagent Drop Witness	NR 09/17/20
Analyst ID - TA Reagent Drop	FC 9/17/20 EH15371 HRDXNTA_00122 B-2/10 50uL
Analyst ID - TA Reagent Drop Witness	GLB 09/17/20
Silica Gel ID	2146277
Soxhlet/Soxtherm End	9/17/20 9:00
Soxhlet/Soxtherm Start	9/17/20 6:00
Storage Box ID	DXN 181
Toluene ID	2128050 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Sacramento Job Number: 320-64049-1

SDG No.:

Project: San Jacinto River Waste Pits Superfund

Client Sample ID	Lab Sample ID
11215702-Soil-Tank#1	320-64049-3
11215702-Soil-Tank#2	320-64049-4

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 320-64049-1

SDG Number:

Matrix: Sediment Instrument ID: NOEQUIP

Method: D 2216 MDL Date: 01/01/2017 12:44

Analyte	Wavelength/ Mass	RL (%)	MDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Sacrament
Job Number: 320-64049-1
SDG Number:
Matrix: Sediment
Instrument ID: NOEQUIP
Method: D 2216
XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-64049-1
SDG No.:
Instrument ID: NOEQUIP
Analysis Method: D 2216
Start Date: 08/31/2020 16:59
End Date: 08/31/2020 16:59

Lab Sample Id	D/F	Type	Time	Analytes																									
				%Sol	Moist																								
320-64049-4	1	T	16:59	X	X																								
320-64049-4 DU	1	T	16:59	X	X																								
320-64049-3	1	T	16:59	X	X																								
ZZZZZZ			16:59																										
ZZZZZZ			16:59																										
ZZZZZZ			16:59																										
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ZZZZZZ			16:59																										

Prep Types:
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-64049-1

SDG No.:

Batch Number: 408264 Batch Start Date: 08/31/20 16:59 Batch Analyst: Burrick, Kristen D

Batch Method: D 2216 Batch End Date: 09/01/20 10:09

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-64049-A-4	11215702-Soil-Tank#2	D 2216	T	1	1.25 g	8.23 g	5.33 g		
320-64049-A-4 DU	11215702-Soil-Tank#2	D 2216	T	2	1.25 g	9.78 g	5.90 g		
320-64049-A-3	11215702-Soil-Tank#1	D 2216	T	3	1.26 g	8.07 g	6.10 g		

Batch Notes	
Balance ID	QA-068
Date and Time Samples in Desiccator	09/01/2020 08:38
Date and Time Samples out of Desiccator	09/01/2020 10:09
Date samples were placed in the oven	08/31/2020
Oven Temp In	114 Degrees C
Time samples were place in the oven	16:59
Date samples were removed from oven	09/01/2020
Oven Temp Out	112 Degrees C
Time Samples were removed from oven	08:38
Oven ID	Soil Prep #1
Thermometer ID	151969626

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

General Chemistry Raw Data Report

Job ID: 320-64049-1

Batch: 408264
Method: D 2216

Analyst Initials: KDB
Instrument: No Equipment Assigned to The Batch

Lab Sample ID: 320-64049-A-4

Analysis Date: Aug 31, 2020 16:59

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	41.5472779369628	%
Percent Solids	None	1	58.4527220630372	%

Lab Sample ID: 320-64049-A-4 DU

Analysis Date: Aug 31, 2020 16:59

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	45.4865181711606	%
Percent Solids	None	1	54.5134818288394	%

Lab Sample ID: 320-64049-A-3

Analysis Date: Aug 31, 2020 16:59

Analyte	Detector	Dilution	Raw Result	Unit
Percent Moisture	None	1	28.928046989721	%
Percent Solids	None	1	71.071953010279	%

eurofins | Environment Testing
TestAmerica

Eurofins TestAmerica, Sacramento
Balance Calibration Check Log

Balance: QA-068 Logbook # 5844

WEIGHT #1		WEIGHT #2		DATE	INIT	WEIGHT ID	P/F
Working WT Denomination (g)	OBSERVED WEIGHT (g)	Working WT Denomination (g)	OBSERVED WEIGHT (g)				
1.00	0.99	200.00	199.98	08/25/2020	KDB	WT-3	P
1.00	0.99	200.00	199.99	08/26/20	NM	WT-3	P
1.00	0.99	200.00	200.00	08/27/20	KDB	WT-3	P
1.00	1.00	200.00	200.00	08/28/20	NM	WT-3	P
1.00	0.98	200.00	199.99	08/29/20	CG	WT-3	P
1.00	0.99	200.00	200.00	08/30/2020	DM	WT-3	P
1.00	0.99	200.00	199.99	8/31/2020	KB	WT-3	P
1.00	0.99	200.00	200.00	9/1/2020	TL	WT-3	P

1 P= Pass, F= Fail. The observed weight must be within the listed tolerances in order to pass. If calibration check values fall outside acceptance limits, the balance is considered to be out of calibration.
   a) Do not move or use the balance
   b) Attach a sign instructing others not to use the balance (see front of logbook).
   c) Notify the QA department.

2 Balance Tolerances (grams):

Denomination	Range	Denomination	Range
0.500g	N/A	50.0g	49.5g – 50.5g
1.00g	0.990g – 1.01g	100g	99.0g – 101g
2.00g	1.98g – 2.02g	200g	198g – 202g
5.00g	4.95g – 5.05g	500g	495g – 505g
10.0g	9.90g – 10.1g	1000g	990g – 1010g
20.0g	19.8g – 2.02g	2000g	1980g – 2020g

Calibration range is (+/-) 1.0% for top-loading balances. The above tolerances have been rounded to meet balance read out capability.

Shipping and Receiving Documents

GHD

CHAIN OF CUSTODY RECORD

COC NO.: 59847

Address: 2055 Niagara Falls Blvd

PAGE ___ OF ___

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702-NI0402	**Laboratory Name:** Eurofins TestAmerica	**Lab Location:** Sacramento	**SSOW ID:** 11187072-2019-002
Project Name: San Jacinto	**Lab Contact:** Carrie Gamber / Beth Htt		**Cooler No:**
Project Location: Texas			**Carrier:**
GHD Chemistry Contact: Debbie Brennan			**Airbill No:**
Sampler(s): Don Pope			**Total # of Containers:** 4

				Sample Type			Analysis Requested (See Back of COC for Definitions)														
Item	**Sample Identification** (Containers for each sample may be combined on one line)	**Date** (mm/dd/yy)	**Time** (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins and Furans												Total Containers/sample	MS/MSD Request	**Comments/ Special Instructions:**
	Preservation - (See back of COC for abbreviations)																				
1	11215702-GW-Tank #1	8/26/20	13:00	WG			x												1		Attn to: Carrie Gamber
2	11215702-GW-Tank #2	8/26/20	14:00	WG			x												1		412-963-2428
3	11215702-Soil-Tank #1	8/26/20	13:00	SO			x												1		
4	11215702-Soil-Tank #2	8/26/20	14:00	SO			x												1		
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

320-64049 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week Other:

Notes/ Special Requirements:

8.4 cor 8.9

	Relinquished By	Company	Date	Time		Received By	Company	Date	Time
1.	Don Pope	GHD	8/26/20	15:15	1.		ETASAC	8/27/20	1000
2.					2.				
3.					3.				

The Chain Of Custody is a Legal Document – All Fields Must Be Completed Accurately

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

GHD

CHAIN OF CUSTODY RECORD

COC NO.: 59847

Address: 2055 Niagara Falls Blvd

PAGE ___ OF ___

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702-NI0402	Laboratory Name: Eurofins TestAmerica	Lab Location: Sacramento	SSOW ID: 11187072-2019-002
Project Name: San Jacinto	Lab Contact: Carrie Gamber / Beth Hitt		Cooler No:
Project Location: Texas	SAMPLE TYPE	ANALYSIS REQUESTED (See Back of COC for Definitions)	Carrier:
GHD Chemistry Contact: Debbie Brennan			Airbill No:
Sampler(s): Don Pope			Total # of Containers: 4

PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins and Furans	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	11215702-GW-Tank#1	8/26/20	13:00	WG			X	1		Attn to: Carrie Gamber
2	11215702-GW-Tank#2	8/26/20	14:00	WG			X	1		412-963-2428
3	11215702-Soil-Tank#1	8/26/20	13:00	SO			X	1		
4	11215702-Soil-Tank#2	8/26/20	14:00	SO			X	1		
5										
6										
7										
8										
9										
10										
11										
12										

320-64049 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☒2Week Other:

Notes/ Special Requirements:

8.4 cor 8.9

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. Don Pope	GHD	8/26/20	15:15	1.	EtASac	8/27/20	1000
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

eurofins | **Environment Testing TestAmerica**

Sacramento Sample Receiving Notes

320-64049 Field Sheet

Job:

Tracking # : 4574 5886 6556

[✓ SO] / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: AU7 Corr. Factor: ([✓ +] / -) 0.5 °C

Ice ✓ Wet ____ Gel ____ Other ____

Cooler Custody Seal: —

Cooler ID: ✓

Temp Observed: 8.4 °C Corrected: 8.9 °C

From: Temp Blank ☐ Sample ☒

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☒	☐
Cooler Temperature is acceptable?	☐	☒	☐

Initials: ST Date: 8/27/20

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☒	☐	☐
Samples compromised/tampered with?	☐	☒	☐
Sample containers have legible labels?	☒	☐	☐
Sample custody seal?	☐	☐	☒
Containers are not broken or leaking?	☒	☐	☐
Sample date/times are provided?	☒	☐	☐
Appropriate containers are used?	☒	☐	☐
Sample bottles are completely filled?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒
Samples w/o discrepancies?	☒	☐	☐
Zero headspace?*	☐	☐	☒
Alkalinity has no headspace?	☐	☐	☒
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☒
Multiphasic samples are not present?	☒	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: PR Date: 8/27/20

Notes: samples were on one side of the cooler heavily bubble wrapped. Three large bags of ice were on the other. bubble wrap separated samples from ice ST 8/27/20

Trizma Lot #(s):

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☒	☐	☐
Samples received within hold time?	☒	☐	☐
NCM Filed?	☒	☐	☐
Log Release checked in TALS?	☒	☐	☐

Initials: PR Date: 8/27/20

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 26AUG20
ACTWGT: 38.00 LB MAN
CAD: 68417/CAFE3313
DIMS: 26x15x15 IN

BILL SENDER

TO **SAMPLE CUSTODIAN**
TEST AMERICA/EUROFINS
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215702-NI0402 MANNS (D. POPE)

565C2/7709/05A2

FedEx
Express

E

J191219082001uv

THU - 27 AUG 3:00P
STANDARD OVERNIGHT

TRK# 0201 **4576 5886 6556**

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/20

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-64049-1

Login Number: 64049
List Number: 1
Creator: Thompson, Sarah W

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Environment Testing
America

ANALYTICAL REPORT

Job Number: 320-65130-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
10/20/2020 10:36 AM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
10/20/2020

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

Table of Contents

Table of Contents

Definitions/Glossary

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
X	Surrogate recovery exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-65130-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 09/29/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.0º C and 5.6º C.

The container for the following sample was received broken. The client was contacted and additional volume for this sample was submitted and as reported under separate cover: 11215702-Tank#1-valve-3-2 (320-65130-6).

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector 'noise' at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS
EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Tank#1-T=0 (320-65130-13) and (CCV 320-422778/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Tank#2-T=0 (320-65130-14), 11215702-Tank#2-valve-5-1 (320-65130-18) and (CCV 320-422239/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Tank#2-T=0 (320-65130-14), 11215702-Tank#2-valve-5-1 (320-65130-18), 11215702-Tank#2-valve-3-2 (320-65130-20) and (CCV 320-422080/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Tank#1-valve-2-1 (320-65130-1), 11215702-Tank#1-valve-3-1 (320-65130-2), 11215702-Tank#1-valve-4-1 (320-65130-3), 11215702-Tank#1-valve-5-1 (320-65130-4), 11215702-Tank#1-valve-2-2 (320-65130-5), 11215702-Tank#1-valve-4-2 (320-65130-7), 11215702-Tank#1-valve-5-2 (320-65130-8), 11215702-Tank#1-valve-2-3 (320-65130-9), 11215702-Tank#1-valve-3-3 (320-65130-10), 11215702-Tank#1-valve-4-3 (320-65130-11), 11215702-Tank#1-valve-5-3 (320-65130-12), 11215702-Tank#1-T=0 (320-65130-13) and (CCV 320-421876/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Tank#2-T=0 (320-65130-14), 11215702-Tank#2-valve-2-1 (320-65130-15), 11215702-Tank#2-valve-3-1 (320-65130-16), 11215702-Tank#2-valve-4-1 (320-65130-17), 11215702-Tank#2-valve-2-2 (320-65130-19), 11215702-Tank#2-valve-4-2 (320-65130-21), 11215702-Tank#2-valve-5-2 (320-65130-22) and (CCV 320-421482/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and/or 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Tank#2-valve-3-1 (320-65130-16), 11215702-Tank#2-valve-4-1 (320-65130-17), 11215702-Tank#2-valve-5-1 (320-65130-18), 11215702-Tank#2-valve-2-2 (320-65130-19), 11215702-Tank#2-valve-3-2 (320-65130-20), 11215702-Tank#2-valve-4-2 (320-65130-21), 11215702-Tank#2-valve-5-2 (320-65130-22), (CCV 320-420640/14), (LCS 320-417971/2-A), (LCSD 320-417971/3-A) and (MB 320-417971/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Tank#2-T=0 (320-65130-14), 11215702-Tank#2-valve-2-1 (320-65130-15) and (CCV 320-421107/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 11215702-Tank#1-T=0 (320-65130-13) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.02-Tank#2-T=0 (320-65130-14)[10X], 11215702-Tank#2-T=0 (320-65130-14)[70X], 11215702-Tank#2-valve-5-1 (320-65130-18)[10X] and 11215702-Tank#2-valve-3-2 (320-65130-20)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 11215702-Tank#1-valve-5-1 (320-65130-4) and 11215702-Tank#1-valve-3-3 (320-65130-10) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 11215702-Tank#2-T=0 (320-65130-14) and 11215702-Tank#2-valve-2-1 (320-65130-15) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

Several samples required dilution.

Ion abundance ratio is outside criteria for the Isotope Dilution Analyte (IDA 13C-2,3,7,8-TCDF) associated with the following samples: 11215702-Tank#2-T=0 (320-65130-14). The theoretical area for the IDA was used to quantitate recovery and target concentration.

The concentration of one or more analytes associated with the following sample exceeded the instrument calibration range: 11215702-Tank#2-T=0 (320-65130-14). These analytes have been qualified; however, the peaks did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The surrogate recovery for 37Cl4-2,3,7,8-TCDD was high and outside criteria in this sample: 11215702-Tank#2-T=0 (320-65130-14) and DL. The surrogate is used to assess clean up procedures and is not used in the quantitation of any analytes so there is no adverse affect on the data as a result of this anomaly.

Several analytes were detected in method blank MB 320-417490/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes were detected in method blank MB 320-417971/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

The column performance standard mix (CPSM) associated with batch 320-420113 exceeded the 25% valley resolution requirement for 2,3,7,8-TCDD on the DB-5 column analysis. The associated samples were non-detect.

Detection Summary

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#1-valve-2-1

Lab Sample ID: 320-65130-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	94		9.6	0.82	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	3.2	J B	48	0.44	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	17	J B	48	0.41	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	7.8	J B	48	0.47	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	4.5	J B	48	0.69	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	3.3	J q B	48	0.72	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.8	J B	48	0.65	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	29	J B	48	0.65	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	8.9	J B	48	0.67	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.4	J q B	48	0.52	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	15	J B	48	0.25	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	10	J B	48	0.20	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	6.8	J B	48	0.23	pg/L	1		1613B	Total/NA
OCDD	130	B	96	0.39	pg/L	1		1613B	Total/NA
OCDF	15	J B	96	0.24	pg/L	1		1613B	Total/NA
Total TCDD	100	B	9.6	0.82	pg/L	1		1613B	Total/NA
Total TCDF	460	B	9.6	1.4	pg/L	1		1613B	Total/NA
Total PeCDD	3.2	J B	48	0.44	pg/L	1		1613B	Total/NA
Total PeCDF	34	J q B	48	0.44	pg/L	1		1613B	Total/NA
Total HxCDD	11	J q B	48	0.68	pg/L	1		1613B	Total/NA
Total HxCDF	42	J q B	48	0.64	pg/L	1		1613B	Total/NA
Total HpCDD	24	J B	48	0.25	pg/L	1		1613B	Total/NA
Total HpCDF	19	J B	48	0.21	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	230	B	9.6	1.1	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-3-1

Lab Sample ID: 320-65130-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	170		9.5	1.0	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	4.1	J B	48	0.55	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	20	J B	48	0.56	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	13	J B	48	0.64	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.4	J q B	48	0.75	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	3.1	J B	48	0.80	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.7	J B	48	0.71	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	34	J B	48	0.66	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	11	J B	48	0.68	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.7	J B	48	0.51	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	3.3	J q B	48	0.72	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	19	J B	48	0.34	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	15	J B	48	0.21	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	7.8	J B	48	0.22	pg/L	1		1613B	Total/NA
OCDD	240	B	95	0.55	pg/L	1		1613B	Total/NA
OCDF	14	J B	95	0.31	pg/L	1		1613B	Total/NA
Total TCDD	190	q B	9.5	1.0	pg/L	1		1613B	Total/NA
Total TCDF	870	q B	9.5	2.5	pg/L	1		1613B	Total/NA
Total PeCDD	4.1	J B	48	0.55	pg/L	1		1613B	Total/NA
Total PeCDF	47	J B	48	0.60	pg/L	1		1613B	Total/NA
Total HxCDD	9.2	J q B	48	0.75	pg/L	1		1613B	Total/NA
Total HxCDF	57	q B	48	0.64	pg/L	1		1613B	Total/NA
Total HpCDD	33	J B	48	0.34	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank#1-valve-3-1 (Continued)
Lab Sample ID: 320-65130-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HpCDF	26	J B	48	0.22	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	430	B	9.5	1.9	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-4-1
Lab Sample ID: 320-65130-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	17	q	9.5	0.56	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	2.4	J B	48	0.35	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	1.6	J q B	48	0.39	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	3.7	J B	48	0.39	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	1.4	J B	48	0.41	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	3.4	J B	48	0.20	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.8	J B	48	0.19	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.51	J q B	48	0.20	pg/L	1		1613B	Total/NA
OCDD	37	J B	95	0.39	pg/L	1		1613B	Total/NA
OCDF	1.4	J q B	95	0.25	pg/L	1		1613B	Total/NA
Total TCDD	24	q B	9.5	0.56	pg/L	1		1613B	Total/NA
Total TCDF	110	q B	9.5	0.68	pg/L	1		1613B	Total/NA
Total PeCDF	4.6	J q B	48	0.37	pg/L	1		1613B	Total/NA
Total HxCDF	5.1	J B	48	0.40	pg/L	1		1613B	Total/NA
Total HpCDD	6.2	J q B	48	0.20	pg/L	1		1613B	Total/NA
Total HpCDF	2.3	J q B	48	0.19	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	51	B	9.5	0.86	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-5-1
Lab Sample ID: 320-65130-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1100		9.6	4.5	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	11	J B	48	0.56	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	120	B	48	1.1	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	79	B	48	1.3	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.6	J B	48	0.74	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.7	J B	48	0.78	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	200	B	48	1.0	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	52	B	48	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.8	J B	48	0.83	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	6.1	J B	48	1.2	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	51	B	48	0.69	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	63	B	48	0.35	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	21	J B	48	0.38	pg/L	1		1613B	Total/NA
OCDD	760	B	96	2.9	pg/L	1		1613B	Total/NA
OCDF	32	J B	96	0.25	pg/L	1		1613B	Total/NA
Total TCDD	1200	B	9.6	4.5	pg/L	1		1613B	Total/NA
Total TCDF	6300	G q B	16	16	pg/L	1		1613B	Total/NA
Total PeCDD	13	J q B	48	0.56	pg/L	1		1613B	Total/NA
Total PeCDF	320	q B	48	1.2	pg/L	1		1613B	Total/NA
Total HxCDD	12	J B	48	0.74	pg/L	1		1613B	Total/NA
Total HxCDF	300	q B	48	1.0	pg/L	1		1613B	Total/NA
Total HpCDD	100	B	48	0.69	pg/L	1		1613B	Total/NA
Total HpCDF	110	B	48	0.37	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	3300	B	9.6	3.3	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc. Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#1-valve-2-2 Lab Sample ID: 320-65130-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	24		10	0.44	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	2.4	J q B	51	0.31	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	1.5	J q B	51	0.35	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	4.7	J B	51	0.33	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.49	J q B	51	0.26	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	2.4	J B	51	0.19	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.6	J q B	51	0.16	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.85	J B	51	0.16	pg/L	1		1613B	Total/NA
OCDD	28	J B	100	0.29	pg/L	1		1613B	Total/NA
OCDF	1.5	J q B	100	0.18	pg/L	1		1613B	Total/NA
Total TCDD	30	B	10	0.44	pg/L	1		1613B	Total/NA
Total TCDF	120	q B	10	0.58	pg/L	1		1613B	Total/NA
Total PeCDF	4.9	J q B	51	0.33	pg/L	1		1613B	Total/NA
Total HxCDF	5.2	J q B	51	0.32	pg/L	1		1613B	Total/NA
Total HpCDD	4.7	J B	51	0.19	pg/L	1		1613B	Total/NA
Total HpCDF	2.9	J q B	51	0.16	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	64	B	10	0.98	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-4-2 Lab Sample ID: 320-65130-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	370		10	1.5	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	4.5	J B	51	0.54	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	38	J B	51	0.62	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	24	J B	51	0.65	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.2	J q B	51	0.63	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	65	B	51	0.66	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	17	J B	51	0.64	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	2.6	J B	51	0.53	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	3.2	J B	51	0.73	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	18	J B	51	0.42	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	22	J B	51	0.26	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	8.9	J B	51	0.29	pg/L	1		1613B	Total/NA
OCDD	280	B	100	0.86	pg/L	1		1613B	Total/NA
OCDF	14	J B	100	0.25	pg/L	1		1613B	Total/NA
Total TCDD	400	B	10	1.5	pg/L	1		1613B	Total/NA
Total TCDF	2000	B	10	5.3	pg/L	1		1613B	Total/NA
Total PeCDD	5.8	J B	51	0.54	pg/L	1		1613B	Total/NA
Total PeCDF	99	q B	51	0.63	pg/L	1		1613B	Total/NA
Total HxCDD	3.6	J q B	51	0.67	pg/L	1		1613B	Total/NA
Total HxCDF	99	B	51	0.64	pg/L	1		1613B	Total/NA
Total HpCDD	34	J B	51	0.42	pg/L	1		1613B	Total/NA
Total HpCDF	39	J B	51	0.28	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	1000	B	10	1.7	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-5-2 Lab Sample ID: 320-65130-8

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	590		10	2.1	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	5.4	J B	51	0.57	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	68	B	51	0.98	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	39	J B	51	1.1	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank#1-valve-5-2 (Continued) Lab Sample ID: 320-65130-8

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.9	J B	51	0.70	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	100	B	51	0.81	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	24	J B	51	0.79	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	2.6	J q B	51	0.89	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	25	J B	51	0.51	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	27	J B	51	0.32	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	10	J B	51	0.35	pg/L	1		1613B	Total/NA
OCDD	400	B	100	0.64	pg/L	1		1613B	Total/NA
OCDF	15	J B	100	0.29	pg/L	1		1613B	Total/NA
Total TCDD	650	q B	10	2.1	pg/L	1		1613B	Total/NA
Total TCDF	3300	q B	10	9.1	pg/L	1		1613B	Total/NA
Total PeCDD	5.4	J B	51	0.57	pg/L	1		1613B	Total/NA
Total PeCDF	170	q B	51	1.1	pg/L	1		1613B	Total/NA
Total HxCDD	5.4	J q B	51	0.71	pg/L	1		1613B	Total/NA
Total HxCDF	140	q B	51	0.78	pg/L	1		1613B	Total/NA
Total HpCDD	49	J B	51	0.51	pg/L	1		1613B	Total/NA
Total HpCDF	47	J B	51	0.33	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	1700	B	10	1.9	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-2-3 Lab Sample ID: 320-65130-9

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	82		10	0.96	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	9.8	J q B	51	0.78	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	5.7	J B	51	0.90	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.6	J B	51	0.97	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	17	J B	51	0.74	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	4.8	J B	51	0.75	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	1.8	J q B	51	0.63	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	7.8	J B	51	0.41	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	6.4	J q B	51	0.37	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	3.2	J B	51	0.39	pg/L	1		1613B	Total/NA
OCDD	89	J q B	100	0.68	pg/L	1		1613B	Total/NA
OCDF	7.7	J q B	100	0.40	pg/L	1		1613B	Total/NA
Total TCDD	87	q B	10	0.96	pg/L	1		1613B	Total/NA
Total TCDF	410	q B	10	1.8	pg/L	1		1613B	Total/NA
Total PeCDF	21	J q B	51	0.84	pg/L	1		1613B	Total/NA
Total HxCDD	2.6	J B	51	0.95	pg/L	1		1613B	Total/NA
Total HxCDF	27	J q B	51	0.76	pg/L	1		1613B	Total/NA
Total HpCDD	13	J q B	51	0.41	pg/L	1		1613B	Total/NA
Total HpCDF	12	J q B	51	0.38	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	230	B	10	1.6	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-3-3 Lab Sample ID: 320-65130-10

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1600		10	7.0	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	16	J B	51	0.88	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	180	B	51	1.7	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	120	B	51	2.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.5	J q B	51	1.0	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	2.5	J q B	51	1.1	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank#1-valve-3-3 (Continued) Lab Sample ID: 320-65130-10

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8,9-HxCDD	1.9	J q B	51	0.95	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	270	B	51	1.5	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	68	B	51	1.6	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	6.5	J B	51	1.2	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	9.0	J B	51	1.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	64	B	51	0.80	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	80	B	51	0.64	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	31	J B	51	0.71	pg/L	1		1613B	Total/NA
OCDD	1000	B	100	3.5	pg/L	1		1613B	Total/NA
OCDF	55	J B	100	0.44	pg/L	1		1613B	Total/NA
Total TCDD	1700	B	10	7.0	pg/L	1		1613B	Total/NA
Total TCDF	9100	G q B	25	25	pg/L	1		1613B	Total/NA
Total PeCDD	16	J B	51	0.88	pg/L	1		1613B	Total/NA
Total PeCDF	480	B	51	1.8	pg/L	1		1613B	Total/NA
Total HxCDD	15	J q B	51	1.0	pg/L	1		1613B	Total/NA
Total HxCDF	390	q B	51	1.5	pg/L	1		1613B	Total/NA
Total HpCDD	130	B	51	0.80	pg/L	1		1613B	Total/NA
Total HpCDF	140	B	51	0.67	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	4800	B	51	11	pg/L	5		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-4-3 Lab Sample ID: 320-65130-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	240		10	1.5	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	2.6	J B	51	0.65	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	33	J B	51	0.86	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	18	J B	51	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.6	J B q	51	1.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	60	B	51	1.3	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	16	J B	51	1.3	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	13	J B	51	0.45	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	17	J B	51	0.46	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	8.1	J B	51	0.55	pg/L	1		1613B	Total/NA
OCDD	200	B	100	0.66	pg/L	1		1613B	Total/NA
OCDF	11	J B	100	0.39	pg/L	1		1613B	Total/NA
Total TCDD	260	B	10	1.5	pg/L	1		1613B	Total/NA
Total TCDF	1400	B q	10	5.2	pg/L	1		1613B	Total/NA
Total PeCDD	3.3	J B q	51	0.65	pg/L	1		1613B	Total/NA
Total PeCDF	74	B q	51	0.96	pg/L	1		1613B	Total/NA
Total HxCDD	1.6	J B q	51	1.1	pg/L	1		1613B	Total/NA
Total HxCDF	76	B	51	1.2	pg/L	1		1613B	Total/NA
Total HpCDD	28	J B	51	0.45	pg/L	1		1613B	Total/NA
Total HpCDF	31	J B	51	0.50	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	630	B	10	1.6	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#1-valve-5-3 Lab Sample ID: 320-65130-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	510		10	2.2	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	5.1	J B q	51	0.62	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	52	B	51	0.76	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	32	J B	51	0.86	pg/L	1		1613B	Total/NA

## Client Sample ID: 11215702-Tank#1-valve-5-3 (Continued)	Lab Sample ID: 320-65130-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	3.4	J B	51	0.73	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	2.9	J B	51	0.80	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.4	J B	51	0.70	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	90	B	51	0.74	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	23	J B	51	0.80	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.9	J B	51	0.58	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	25	J B	51	0.47	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	46	J B	51	0.37	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	16	J B	51	0.40	pg/L	1		1613B	Total/NA
OCDD	300	B	100	1.2	pg/L	1		1613B	Total/NA
OCDF	62	J B	100	0.39	pg/L	1		1613B	Total/NA
Total TCDD	550	B	10	2.2	pg/L	1		1613B	Total/NA
Total TCDF	2900	B q	10	5.0	pg/L	1		1613B	Total/NA
Total PeCDD	6.4	J B q	51	0.62	pg/L	1		1613B	Total/NA
Total PeCDF	130	B q	51	0.81	pg/L	1		1613B	Total/NA
Total HxCDD	10	J B	51	0.74	pg/L	1		1613B	Total/NA
Total HxCDF	130	B q	51	0.75	pg/L	1		1613B	Total/NA
Total HpCDD	46	J B	51	0.47	pg/L	1		1613B	Total/NA
Total HpCDF	74	B	51	0.39	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	1400	B	10	4.1	pg/L	1		1613B	Total/NA

## Client Sample ID: 11215702-Tank#1-T=0	Lab Sample ID: 320-65130-13

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	850	B	48	14	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	10000	B G	110	110	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	6600	B G	77	77	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	22	J B	48	6.5	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	110	B	48	6.1	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	49	B	48	5.8	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	17000	B G	70	70	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	4300	B G	59	59	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	320	B	48	44	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	490	B G	79	79	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	3700	B	48	36	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	5300	B	48	28	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	1900	B	48	25	pg/L	1		1613B	Total/NA
OCDF	2800	B	96	1.7	pg/L	1		1613B	Total/NA
Total PeCDD	1000	B	48	14	pg/L	1		1613B	Total/NA
Total PeCDF	27000	B G	93	93	pg/L	1		1613B	Total/NA
Total HxCDD	950	B	48	6.1	pg/L	1		1613B	Total/NA
Total HxCDF	30000	B G	63	63	pg/L	1		1613B	Total/NA
Total HpCDD	7300	B	48	36	pg/L	1		1613B	Total/NA
Total HpCDF	9400	B	48	26	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	86000		380	370	pg/L	40		1613B	Total/NA
OCDD - DL	51000	B	3800	120	pg/L	40		1613B	Total/NA
Total TCDD - DL	94000	B	380	370	pg/L	40		1613B	Total/NA
Total TCDF - DL	500000	G q B	1100	1100	pg/L	40		1613B	Total/NA
2,3,7,8-TCDF - RA	150000	B	960	120	pg/L	100		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client Sample ID: 11215702-Tank#2-T=0

Lab Sample ID: 320-65130-14

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	2100		480	67	pg/L	10		1613B	Total/NA
1,2,3,7,8-PeCDF	24000		480	180	pg/L	10		1613B	Total/NA
2,3,4,7,8-PeCDF	15000		480	160	pg/L	10		1613B	Total/NA
1,2,3,4,7,8-HxCDD	38	J B	480	10	pg/L	10		1613B	Total/NA
1,2,3,6,7,8-HxCDD	210	J	480	14	pg/L	10		1613B	Total/NA
1,2,3,7,8,9-HxCDD	70	J q	480	11	pg/L	10		1613B	Total/NA
1,2,3,4,7,8-HxCDF	39000		480	61	pg/L	10		1613B	Total/NA
1,2,3,6,7,8-HxCDF	9600		480	53	pg/L	10		1613B	Total/NA
1,2,3,7,8,9-HxCDF	650	B	480	47	pg/L	10		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1100		480	52	pg/L	10		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	5200		480	30	pg/L	10		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	12000	B	480	66	pg/L	10		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	3900	B	480	63	pg/L	10		1613B	Total/NA
OCDD	74000	B	960	76	pg/L	10		1613B	Total/NA
OCDF	7200	B	960	22	pg/L	10		1613B	Total/NA
Total TCDD	190000	G	260	260	pg/L	10		1613B	Total/NA
Total TCDF	1200000	G B	3300	3300	pg/L	10		1613B	Total/NA
Total PeCDD	2100		480	67	pg/L	10		1613B	Total/NA
Total PeCDF	54000		480	170	pg/L	10		1613B	Total/NA
Total HxCDD	1200	q B	480	12	pg/L	10		1613B	Total/NA
Total HxCDF	59000	B	480	53	pg/L	10		1613B	Total/NA
Total HpCDD	10000		480	30	pg/L	10		1613B	Total/NA
Total HpCDF	20000	B	480	65	pg/L	10		1613B	Total/NA
2,3,7,8-TCDD - DL	180000		670	360	pg/L	70		1613B	Total/NA
2,3,7,8-TCDF - RA	6500	B	96	88	pg/L	10		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-2-1

Lab Sample ID: 320-65130-15

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1200		9.6	4.7	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	13	J q	48	1.2	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	120		48	1.8	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	87		48	2.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.6	J B	48	0.54	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	270		48	1.4	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	75		48	1.2	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.9	J q B	48	1.1	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	9.0	J	48	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	33	J	48	0.73	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	100	B	48	0.66	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	37	J B	48	0.64	pg/L	1		1613B	Total/NA
OCDD	780	B	96	1.0	pg/L	1		1613B	Total/NA
OCDF	83	J B	96	1.0	pg/L	1		1613B	Total/NA
Total TCDD	1300		9.6	4.7	pg/L	1		1613B	Total/NA
Total TCDF	6600	G q B	17	17	pg/L	1		1613B	Total/NA
Total PeCDD	13	J q	48	1.2	pg/L	1		1613B	Total/NA
Total PeCDF	330	q	48	1.9	pg/L	1		1613B	Total/NA
Total HxCDD	7.0	J q B	48	0.65	pg/L	1		1613B	Total/NA
Total HxCDF	400	q B	48	1.2	pg/L	1		1613B	Total/NA
Total HpCDD	73		48	0.73	pg/L	1		1613B	Total/NA
Total HpCDF	170	B	48	0.65	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client Sample ID: 11215702-Tank#2-valve-2-1 (Continued) Lab Sample ID: 320-65130-15

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF - RA	3100	B	9.6	4.2	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1200		9.6	3.8	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	16	J	48	1.2	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	120		48	1.3	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	87		48	1.5	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	5.1	J B	48	0.41	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	3.0	J q	48	0.51	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.8	J	48	0.42	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	270		48	1.1	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	71		48	1.0	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	7.2	J B	48	0.83	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	11	J	48	0.84	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	40	J	48	0.52	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	110	B	48	0.52	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	40	J B	48	0.55	pg/L	1		1613B	Total/NA
OCDD	780	B	96	0.87	pg/L	1		1613B	Total/NA
OCDF	78	J B	96	0.77	pg/L	1		1613B	Total/NA
Total TCDD	1300	q	9.6	3.8	pg/L	1		1613B	Total/NA
Total TCDF	6100	B G	16	16	pg/L	1		1613B	Total/NA
Total PeCDD	16	J	48	1.2	pg/L	1		1613B	Total/NA
Total PeCDF	330	q	48	1.4	pg/L	1		1613B	Total/NA
Total HxCDD	15	J B q	48	0.45	pg/L	1		1613B	Total/NA
Total HxCDF	390	B	48	0.94	pg/L	1		1613B	Total/NA
Total HpCDD	85		48	0.52	pg/L	1		1613B	Total/NA
Total HpCDF	180	B	48	0.53	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	3400	B	9.6	4.6	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-4-1 Lab Sample ID: 320-65130-17

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1100		9.7	4.1	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	13	J	48	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	110		48	1.4	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	78		48	1.6	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.6	J q B	48	0.27	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.6	J q	48	0.32	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.4	J q	48	0.27	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	240		48	1.2	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	61		48	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	5.4	J B	48	0.93	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	8.1	J	48	0.91	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	33	J	48	0.56	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	88	B	48	0.48	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	32	J B	48	0.49	pg/L	1		1613B	Total/NA
OCDD	670	B	97	0.89	pg/L	1		1613B	Total/NA
OCDF	59	J B	97	0.71	pg/L	1		1613B	Total/NA
Total TCDD	1100		9.7	4.1	pg/L	1		1613B	Total/NA
Total TCDF	5900	G B	11	11	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-4-1 (Continued) Lab Sample ID: 320-65130-17

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total PeCDD	13	J	48	1.1	pg/L	1		1613B	Total/NA
Total PeCDF	290		48	1.5	pg/L	1		1613B	Total/NA
Total HxCDD	7.9	J q B	48	0.29	pg/L	1		1613B	Total/NA
Total HxCDF	350	B	48	1.0	pg/L	1		1613B	Total/NA
Total HpCDD	71		48	0.56	pg/L	1		1613B	Total/NA
Total HpCDF	150	B	48	0.49	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	3100	B	9.7	3.6	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-5-1 Lab Sample ID: 320-65130-18

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	52		48	1.7	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	510		48	5.1	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	330		48	5.6	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	5.9	J B	48	0.49	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	8.2	J q	48	0.62	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	5.0	J q	48	0.51	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	910		48	3.6	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	230		48	3.2	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	18	J B	48	2.6	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	28	J	48	2.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	130		48	0.91	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	290	B	48	1.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	100	B	48	1.1	pg/L	1		1613B	Total/NA
OCDD	2100	B	96	2.1	pg/L	1		1613B	Total/NA
OCDF	170	B	96	0.93	pg/L	1		1613B	Total/NA
Total TCDD	5600	G	9.7	9.7	pg/L	1		1613B	Total/NA
Total TCDF	28000	G B	62	62	pg/L	1		1613B	Total/NA
Total PeCDD	52		48	1.7	pg/L	1		1613B	Total/NA
Total PeCDF	1300		48	5.3	pg/L	1		1613B	Total/NA
Total HxCDD	30	J q B	48	0.54	pg/L	1		1613B	Total/NA
Total HxCDF	1300	B	48	3.1	pg/L	1		1613B	Total/NA
Total HpCDD	280		48	0.91	pg/L	1		1613B	Total/NA
Total HpCDF	490	B	48	1.1	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	5400		96	30	pg/L	10		1613B	Total/NA
2,3,7,8-TCDF - RA	15000	B	96	23	pg/L	10		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-2-2 Lab Sample ID: 320-65130-19

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	850		9.6	3.7	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	9.5	J	48	1.4	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	83		48	1.7	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	64		48	1.9	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.9	J B	48	0.36	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	190		48	1.5	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	48		48	1.4	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.8	J B	48	1.1	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	5.5	J	48	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	27	J	48	0.56	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	73	B	48	0.49	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	25	J B	48	0.50	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank#2-valve-2-2 (Continued) Lab Sample ID: 320-65130-19

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	560	B	96	0.76	pg/L	1		1613B	Total/NA
OCDF	51	J B	96	0.79	pg/L	1		1613B	Total/NA
Total TCDD	910		9.6	3.7	pg/L	1		1613B	Total/NA
Total TCDF	4400	q B	9.6	8.3	pg/L	1		1613B	Total/NA
Total PeCDD	9.5	J	48	1.4	pg/L	1		1613B	Total/NA
Total PeCDF	230	q	48	1.8	pg/L	1		1613B	Total/NA
Total HxCDD	1.9	J B	48	0.39	pg/L	1		1613B	Total/NA
Total HxCDF	260	B	48	1.3	pg/L	1		1613B	Total/NA
Total HpCDD	59		48	0.56	pg/L	1		1613B	Total/NA
Total HpCDF	120	B	48	0.50	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	2400	B	9.6	3.9	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-3-2 Lab Sample ID: 320-65130-20

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1400		9.6	5.3	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	14	J	48	1.3	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	140		48	1.6	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	100		48	1.8	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.1	J q B	48	0.32	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	2.0	J	48	0.40	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	300		48	1.6	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	77		48	1.4	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	5.1	J B	48	1.2	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	9.0	J	48	1.2	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	42	J	48	0.64	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	110	B	48	0.63	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	38	J B	48	0.67	pg/L	1		1613B	Total/NA
OCDD	810	B	96	1.0	pg/L	1		1613B	Total/NA
OCDF	79	J B	96	0.82	pg/L	1		1613B	Total/NA
Total TCDD	1500	q	9.6	5.3	pg/L	1		1613B	Total/NA
Total TCDF	7200	G B	19	19	pg/L	1		1613B	Total/NA
Total PeCDD	14	J	48	1.3	pg/L	1		1613B	Total/NA
Total PeCDF	380	q	48	1.7	pg/L	1		1613B	Total/NA
Total HxCDD	6.9	J q B	48	0.35	pg/L	1		1613B	Total/NA
Total HxCDF	440	B	48	1.3	pg/L	1		1613B	Total/NA
Total HpCDD	92		48	0.64	pg/L	1		1613B	Total/NA
Total HpCDF	180	B	48	0.65	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	3800	B	48	15	pg/L	5		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-4-2 Lab Sample ID: 320-65130-21

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	940		9.5	4.5	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	11	J	48	1.3	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	92		48	1.3	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	66		48	1.4	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.0	J B	48	0.38	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.9	J	48	0.37	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	210		48	1.1	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	55		48	1.0	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	4.2	J q B	48	0.85	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-4-2 (Continued) Lab Sample ID: 320-65130-21

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	8.0	J	48	0.90	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	30	J	48	0.58	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	84	B	48	0.55	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	30	J B	48	0.56	pg/L	1		1613B	Total/NA
OCDD	600	B	95	0.85	pg/L	1		1613B	Total/NA
OCDF	54	J B	95	0.84	pg/L	1		1613B	Total/NA
Total TCDD	1000		9.5	4.5	pg/L	1		1613B	Total/NA
Total TCDF	5000	G B	14	14	pg/L	1		1613B	Total/NA
Total PeCDD	11	J	48	1.3	pg/L	1		1613B	Total/NA
Total PeCDF	250	q	48	1.4	pg/L	1		1613B	Total/NA
Total HxCDD	8.6	J q B	48	0.39	pg/L	1		1613B	Total/NA
Total HxCDF	310	q B	48	0.98	pg/L	1		1613B	Total/NA
Total HpCDD	65		48	0.58	pg/L	1		1613B	Total/NA
Total HpCDF	140	B	48	0.55	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	2500	B	9.5	3.7	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-valve-5-2 Lab Sample ID: 320-65130-22

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1300		9.5	4.1	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	13	J	48	1.3	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	120		48	1.6	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	88		48	1.9	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.4	J B	48	0.33	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.5	J	48	0.41	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.84	J q	48	0.34	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	260		48	1.3	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	67		48	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	4.8	J B	48	0.98	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	7.6	J	48	0.96	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	35	J	48	0.65	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	97	B	48	0.51	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	34	J B	48	0.54	pg/L	1		1613B	Total/NA
OCDD	690	B	95	0.81	pg/L	1		1613B	Total/NA
OCDF	64	J B	95	0.78	pg/L	1		1613B	Total/NA
Total TCDD	1400		9.5	4.1	pg/L	1		1613B	Total/NA
Total TCDF	6500	B q G	17	17	pg/L	1		1613B	Total/NA
Total PeCDD	13	J	48	1.3	pg/L	1		1613B	Total/NA
Total PeCDF	340	q	48	1.7	pg/L	1		1613B	Total/NA
Total HxCDD	7.5	J B q	48	0.36	pg/L	1		1613B	Total/NA
Total HxCDF	370	B	48	1.1	pg/L	1		1613B	Total/NA
Total HpCDD	79		48	0.65	pg/L	1		1613B	Total/NA
Total HpCDF	160	B	48	0.52	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	3500	B	9.5	4.9	pg/L	1		1613B	Total/NA

Client Sample Results

Client Sample ID: 11215702-Tank#1-valve-2-1

Lab Sample ID: 320-65130-1

Date Collected: 09/11/20 12:30
Date Received: 09/29/20 10:15
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**94**		9.6	0.82	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,7,8-PeCDD	**3.2**	**J B**	48	0.44	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,7,8-PeCDF	**17**	**J B**	48	0.41	pg/L		10/01/20 08:42	10/09/20 03:28	1
2,3,4,7,8-PeCDF	**7.8**	**J B**	48	0.47	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,4,7,8-HxCDD	**4.5**	**J B**	48	0.69	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,6,7,8-HxCDD	**3.3**	**J q B**	48	0.72	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,7,8,9-HxCDD	**2.8**	**J B**	48	0.65	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,4,7,8-HxCDF	**29**	**J B**	48	0.65	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,6,7,8-HxCDF	**8.9**	**J B**	48	0.67	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,7,8,9-HxCDF	**3.4**	**J q B**	48	0.52	pg/L		10/01/20 08:42	10/09/20 03:28	1
2,3,4,6,7,8-HxCDF	ND		48	0.74	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	48	0.25	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,4,6,7,8-HpCDF	**10**	**J B**	48	0.20	pg/L		10/01/20 08:42	10/09/20 03:28	1
1,2,3,4,7,8,9-HpCDF	**6.8**	**J B**	48	0.23	pg/L		10/01/20 08:42	10/09/20 03:28	1
OCDD	**130**	**B**	96	0.39	pg/L		10/01/20 08:42	10/09/20 03:28	1
OCDF	**15**	**J B**	96	0.24	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total TCDD	**100**	**B**	9.6	0.82	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total TCDF	**460**	**B**	9.6	1.4	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total PeCDD	**3.2**	**J B**	48	0.44	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total PeCDF	**34**	**J q B**	48	0.44	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total HxCDD	**11**	**J q B**	48	0.68	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total HxCDF	**42**	**J q B**	48	0.64	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total HpCDD	**24**	**J B**	48	0.25	pg/L		10/01/20 08:42	10/09/20 03:28	1
Total HpCDF	**19**	**J B**	48	0.21	pg/L		10/01/20 08:42	10/09/20 03:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*25 - 164*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-2,3,7,8-TCDF	*81*		*24 - 169*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-2,3,4,7,8-PeCDF	*71*		*21 - 178*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,4,7,8-HxCDD	*85*		*32 - 141*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,4,7,8-HxCDF	*74*		*26 - 152*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,6,7,8-HxCDF	*76*		*26 - 123*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,7,8,9-HxCDF	*77*		*29 - 147*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-2,3,4,6,7,8-HxCDF	*76*		*28 - 136*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*80*		*23 - 140*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*26 - 138*	*10/01/20 08:42*	*10/09/20 03:28*	*1*
13C-OCDD	*89*		*17 - 157*	*10/01/20 08:42*	*10/09/20 03:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*10/01/20 08:42*	*10/09/20 03:28*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**230**	**B**	9.6	1.1	pg/L		10/01/20 08:42	10/13/20 23:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*85*		*24 - 169*	*10/01/20 08:42*	*10/13/20 23:32*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#1-valve-2-1
Lab Sample ID: 320-65130-1

Date Collected: 09/11/20 12:30
Matrix: Water
Date Received: 09/29/20 10:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*119*		*35 - 197*	*10/01/20 08:42*	*10/13/20 23:32*	*1*

Client Sample ID: 11215702-Tank#1-valve-3-1
Lab Sample ID: 320-65130-2

Date Collected: 09/11/20 12:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**170**		9.5	1.0	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,7,8-PeCDD	**4.1**	**J B**	48	0.55	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,7,8-PeCDF	**20**	**J B**	48	0.56	pg/L		10/01/20 08:42	10/09/20 04:15	1
2,3,4,7,8-PeCDF	**13**	**J B**	48	0.64	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,4,7,8-HxCDD	**3.4**	**J q B**	48	0.75	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,6,7,8-HxCDD	**3.1**	**J B**	48	0.80	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,7,8,9-HxCDD	**2.7**	**J B**	48	0.71	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,4,7,8-HxCDF	**34**	**J B**	48	0.66	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,6,7,8-HxCDF	**11**	**J B**	48	0.68	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,7,8,9-HxCDF	**3.7**	**J B**	48	0.51	pg/L		10/01/20 08:42	10/09/20 04:15	1
2,3,4,6,7,8-HxCDF	**3.3**	**J q B**	48	0.72	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,4,6,7,8-HpCDD	**19**	**J B**	48	0.34	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,4,6,7,8-HpCDF	**15**	**J B**	48	0.21	pg/L		10/01/20 08:42	10/09/20 04:15	1
1,2,3,4,7,8,9-HpCDF	**7.8**	**J B**	48	0.22	pg/L		10/01/20 08:42	10/09/20 04:15	1
OCDD	**240**	**B**	95	0.55	pg/L		10/01/20 08:42	10/09/20 04:15	1
OCDF	**14**	**J B**	95	0.31	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total TCDD	**190**	**q B**	9.5	1.0	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total TCDF	**870**	**q B**	9.5	2.5	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total PeCDD	**4.1**	**J B**	48	0.55	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total PeCDF	**47**	**J B**	48	0.60	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total HxCDD	**9.2**	**J q B**	48	0.75	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total HxCDF	**57**	**q B**	48	0.64	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total HpCDD	**33**	**J B**	48	0.34	pg/L		10/01/20 08:42	10/09/20 04:15	1
Total HpCDF	**26**	**J B**	48	0.22	pg/L		10/01/20 08:42	10/09/20 04:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*25 - 164*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-2,3,7,8-TCDF	*79*		*24 - 169*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*28 - 130*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,4,7,8-HxCDF	*77*		*26 - 152*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,6,7,8-HxCDF	*75*		*26 - 123*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 147*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*82*		*23 - 140*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*85*		*26 - 138*	*10/01/20 08:42*	*10/09/20 04:15*	*1*
13C-OCDD	*95*		*17 - 157*	*10/01/20 08:42*	*10/09/20 04:15*	*1*

Client Sample ID: 11215702-Tank#1-valve-3-1

Lab Sample ID: 320-65130-2

Date Collected: 09/11/20 12:30

Date Received: 09/29/20 10:15

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*10/01/20 08:42*	*10/09/20 04:15*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**430**	**B**	9.5	1.9	pg/L		10/01/20 08:42	10/14/20 00:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*83*		*24 - 169*	*10/01/20 08:42*	*10/14/20 00:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*116*		*35 - 197*	*10/01/20 08:42*	*10/14/20 00:10*	*1*

Client Sample ID: 11215702-Tank#1-valve-4-1

Lab Sample ID: 320-65130-3

Date Collected: 09/11/20 12:30

Date Received: 09/29/20 10:15

Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**17**	**q**	9.5	0.56	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,7,8-PeCDD	ND		48	0.47	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,7,8-PeCDF	**2.4**	**J B**	48	0.35	pg/L		10/01/20 08:42	10/09/20 05:03	1
2,3,4,7,8-PeCDF	**1.6**	**J q B**	48	0.39	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,4,7,8-HxCDD	ND		48	0.63	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,6,7,8-HxCDD	ND		48	0.68	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,7,8,9-HxCDD	ND		48	0.60	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,4,7,8-HxCDF	**3.7**	**J B**	48	0.39	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,6,7,8-HxCDF	**1.4**	**J B**	48	0.41	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,7,8,9-HxCDF	ND		48	0.32	pg/L		10/01/20 08:42	10/09/20 05:03	1
2,3,4,6,7,8-HxCDF	ND		48	0.47	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,4,6,7,8-HpCDD	**3.4**	**J B**	48	0.20	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,4,6,7,8-HpCDF	**1.8**	**J B**	48	0.19	pg/L		10/01/20 08:42	10/09/20 05:03	1
1,2,3,4,7,8,9-HpCDF	**0.51**	**J q B**	48	0.20	pg/L		10/01/20 08:42	10/09/20 05:03	1
OCDD	**37**	**J B**	95	0.39	pg/L		10/01/20 08:42	10/09/20 05:03	1
OCDF	**1.4**	**J q B**	95	0.25	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total TCDD	**24**	**q B**	9.5	0.56	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total TCDF	**110**	**q B**	9.5	0.68	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total PeCDD	ND		48	0.47	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total PeCDF	**4.6**	**J q B**	48	0.37	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total HxCDD	ND		48	0.68	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total HxCDF	**5.1**	**J B**	48	0.40	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total HpCDD	**6.2**	**J q B**	48	0.20	pg/L		10/01/20 08:42	10/09/20 05:03	1
Total HpCDF	**2.3**	**J q B**	48	0.19	pg/L		10/01/20 08:42	10/09/20 05:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*25 - 164*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,7,8-PeCDF	*74*		*24 - 185*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-2,3,4,7,8-PeCDF	*74*		*21 - 178*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*90*		*32 - 141*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,6,7,8-HxCDD	*91*		*28 - 130*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,4,7,8-HxCDF	*81*		*26 - 152*	*10/01/20 08:42*	*10/09/20 05:03*	*1*

Client Sample ID: 11215702-Tank#1-valve-4-1 Lab Sample ID: 320-65130-3

Date Collected: 09/11/20 12:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*29 - 147*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*78*		*28 - 136*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*23 - 140*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*85*		*28 - 143*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*82*		*26 - 138*	*10/01/20 08:42*	*10/09/20 05:03*	*1*
13C-OCDD	*94*		*17 - 157*	*10/01/20 08:42*	*10/09/20 05:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*10/01/20 08:42*	*10/09/20 05:03*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**51**	**B**	9.5	0.86	pg/L		10/01/20 08:42	10/13/20 21:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*91*		*24 - 169*	*10/01/20 08:42*	*10/13/20 21:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*119*		*35 - 197*	*10/01/20 08:42*	*10/13/20 21:37*	*1*

Client Sample ID: 11215702-Tank#1-valve-5-1 Lab Sample ID: 320-65130-4

Date Collected: 09/11/20 12:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1100**		9.6	4.5	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,7,8-PeCDD	**11**	**J B**	48	0.56	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,7,8-PeCDF	**120**	**B**	48	1.1	pg/L		10/01/20 08:42	10/09/20 05:51	1
2,3,4,7,8-PeCDF	**79**	**B**	48	1.3	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,4,7,8-HxCDD	**1.6**	**J B**	48	0.74	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,6,7,8-HxCDD	**1.7**	**J B**	48	0.78	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,7,8,9-HxCDD	ND		48	0.69	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,4,7,8-HxCDF	**200**	**B**	48	1.0	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,6,7,8-HxCDF	**52**	**B**	48	1.1	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,7,8,9-HxCDF	**3.8**	**J B**	48	0.83	pg/L		10/01/20 08:42	10/09/20 05:51	1
2,3,4,6,7,8-HxCDF	**6.1**	**J B**	48	1.2	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,4,6,7,8-HpCDD	**51**	**B**	48	0.69	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,4,6,7,8-HpCDF	**63**	**B**	48	0.35	pg/L		10/01/20 08:42	10/09/20 05:51	1
1,2,3,4,7,8,9-HpCDF	**21**	**J B**	48	0.38	pg/L		10/01/20 08:42	10/09/20 05:51	1
OCDD	**760**	**B**	96	2.9	pg/L		10/01/20 08:42	10/09/20 05:51	1
OCDF	**32**	**J B**	96	0.25	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total TCDD	**1200**	**B**	9.6	4.5	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total TCDF	**6300**	**G q B**	16	16	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total PeCDD	**13**	**J q B**	48	0.56	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total PeCDF	**320**	**q B**	48	1.2	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total HxCDD	**12**	**J B**	48	0.74	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total HxCDF	**300**	**q B**	48	1.0	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total HpCDD	**100**	**B**	48	0.69	pg/L		10/01/20 08:42	10/09/20 05:51	1
Total HpCDF	**110**	**B**	48	0.37	pg/L		10/01/20 08:42	10/09/20 05:51	1

Client Sample ID: 11215702-Tank#1-valve-5-1

Lab Sample ID: 320-65130-4

Date Collected: 09/11/20 12:30
Matrix: Water
Date Received: 09/29/20 10:15

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-2,3,7,8-TCDF	*79*		*24 - 169*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,7,8-PeCDD	*81*		*25 - 181*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,7,8-PeCDF	*74*		*24 - 185*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,4,7,8-HxCDD	*82*		*32 - 141*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,6,7,8-HxCDD	*83*		*28 - 130*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,4,7,8-HxCDF	*77*		*26 - 152*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,6,7,8-HxCDF	*75*		*26 - 123*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 147*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-2,3,4,6,7,8-HxCDF	*75*		*28 - 136*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*28 - 143*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*26 - 138*	*10/01/20 08:42*	*10/09/20 05:51*	*1*
13C-OCDD	*91*		*17 - 157*	*10/01/20 08:42*	*10/09/20 05:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*	*10/01/20 08:42*	*10/09/20 05:51*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**3300**	**B**	9.6	3.3	pg/L		10/01/20 08:42	10/14/20 03:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*10/01/20 08:42*	*10/14/20 03:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*117*		*35 - 197*	*10/01/20 08:42*	*10/14/20 03:22*	*1*

Client Sample ID: 11215702-Tank#1-valve-2-2

Lab Sample ID: 320-65130-5

Date Collected: 09/11/20 13:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**24**		10	0.44	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,7,8-PeCDD	ND		51	0.44	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,7,8-PeCDF	**2.4**	**J q B**	51	0.31	pg/L		10/01/20 08:42	10/09/20 06:38	1
2,3,4,7,8-PeCDF	**1.5**	**J q B**	51	0.35	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,4,7,8-HxCDD	ND		51	0.55	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,6,7,8-HxCDD	ND		51	0.62	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,7,8,9-HxCDD	ND		51	0.54	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,4,7,8-HxCDF	**4.7**	**J B**	51	0.33	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,6,7,8-HxCDF	ND		51	0.34	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,7,8,9-HxCDF	**0.49**	**J q B**	51	0.26	pg/L		10/01/20 08:42	10/09/20 06:38	1
2,3,4,6,7,8-HxCDF	ND		51	0.37	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,4,6,7,8-HpCDD	**2.4**	**J B**	51	0.19	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,4,6,7,8-HpCDF	**1.6**	**J q B**	51	0.16	pg/L		10/01/20 08:42	10/09/20 06:38	1
1,2,3,4,7,8,9-HpCDF	**0.85**	**J B**	51	0.16	pg/L		10/01/20 08:42	10/09/20 06:38	1
OCDD	**28**	**J B**	100	0.29	pg/L		10/01/20 08:42	10/09/20 06:38	1
OCDF	**1.5**	**J q B**	100	0.18	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total TCDD	**30**	**B**	10	0.44	pg/L		10/01/20 08:42	10/09/20 06:38	1

Client Sample ID: 11215702-Tank#1-valve-2-2 Lab Sample ID: 320-65130-5

Date Collected: 09/11/20 13:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	**120**	**q B**	10	0.58	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total PeCDD	ND		51	0.44	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total PeCDF	**4.9**	**J q B**	51	0.33	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total HxCDD	ND		51	0.62	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total HxCDF	**5.2**	**J q B**	51	0.32	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total HpCDD	**4.7**	**J B**	51	0.19	pg/L		10/01/20 08:42	10/09/20 06:38	1
Total HpCDF	**2.9**	**J q B**	51	0.16	pg/L		10/01/20 08:42	10/09/20 06:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*25 - 164*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,4,7,8-HxCDD	*90*		*32 - 141*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,6,7,8-HxCDD	*92*		*28 - 130*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*26 - 152*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*29 - 147*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-2,3,4,6,7,8-HxCDF	*80*		*28 - 136*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*23 - 140*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*28 - 143*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*85*		*26 - 138*	*10/01/20 08:42*	*10/09/20 06:38*	*1*
13C-OCDD	*101*		*17 - 157*	*10/01/20 08:42*	*10/09/20 06:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*10/01/20 08:42*	*10/09/20 06:38*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**64**	**B**	10	0.98	pg/L		10/01/20 08:42	10/13/20 22:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*89*		*24 - 169*	*10/01/20 08:42*	*10/13/20 22:15*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*120*		*35 - 197*	*10/01/20 08:42*	*10/13/20 22:15*	*1*

Client Sample ID: 11215702-Tank#1-valve-4-2 Lab Sample ID: 320-65130-7

Date Collected: 09/11/20 13:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**370**		10	1.5	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,7,8-PeCDD	**4.5**	**J B**	51	0.54	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,7,8-PeCDF	**38**	**J B**	51	0.62	pg/L		10/01/20 08:42	10/09/20 07:26	1
2,3,4,7,8-PeCDF	**24**	**J B**	51	0.65	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,4,7,8-HxCDD	ND		51	0.66	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,6,7,8-HxCDD	ND		51	0.72	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,7,8,9-HxCDD	**1.2**	**J q B**	51	0.63	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,4,7,8-HxCDF	**65**	**B**	51	0.66	pg/L		10/01/20 08:42	10/09/20 07:26	1

Client Sample Results

Client Sample ID: 11215702-Tank#1-valve-4-2

Lab Sample ID: 320-65130-7

Date Collected: 09/11/20 13:30

Matrix: Water

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,6,7,8-HxCDF	**17**	**J B**	51	0.64	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,7,8,9-HxCDF	**2.6**	**J B**	51	0.53	pg/L		10/01/20 08:42	10/09/20 07:26	1
2,3,4,6,7,8-HxCDF	**3.2**	**J B**	51	0.73	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,4,6,7,8-HpCDD	**18**	**J B**	51	0.42	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,4,6,7,8-HpCDF	**22**	**J B**	51	0.26	pg/L		10/01/20 08:42	10/09/20 07:26	1
1,2,3,4,7,8,9-HpCDF	**8.9**	**J B**	51	0.29	pg/L		10/01/20 08:42	10/09/20 07:26	1
OCDD	**280**	**B**	100	0.86	pg/L		10/01/20 08:42	10/09/20 07:26	1
OCDF	**14**	**J B**	100	0.25	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total TCDD	**400**	**B**	10	1.5	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total TCDF	**2000**	**B**	10	5.3	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total PeCDD	**5.8**	**J B**	51	0.54	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total PeCDF	**99**	**q B**	51	0.63	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total HxCDD	**3.6**	**J q B**	51	0.67	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total HxCDF	**99**	**B**	51	0.64	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total HpCDD	**34**	**J B**	51	0.42	pg/L		10/01/20 08:42	10/09/20 07:26	1
Total HpCDF	**39**	**J B**	51	0.28	pg/L		10/01/20 08:42	10/09/20 07:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*25 - 164*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,4,7,8-HxCDD	*93*		*32 - 141*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*28 - 130*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,4,7,8-HxCDF	*80*		*26 - 152*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,7,8,9-HxCDF	*79*		*29 - 147*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-2,3,4,6,7,8-HxCDF	*81*		*28 - 136*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*23 - 140*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*26 - 138*	*10/01/20 08:42*	*10/09/20 07:26*	*1*
13C-OCDD	*96*		*17 - 157*	*10/01/20 08:42*	*10/09/20 07:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*10/01/20 08:42*	*10/09/20 07:26*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**1000**	**B**	10	1.7	pg/L		10/01/20 08:42	10/14/20 01:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*88*		*24 - 169*	*10/01/20 08:42*	*10/14/20 01:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*121*		*35 - 197*	*10/01/20 08:42*	*10/14/20 01:27*	*1*

Client Sample ID: 11215702-Tank#1-valve-5-2

Lab Sample ID: 320-65130-8

Date Collected: 09/11/20 13:30
Date Received: 09/29/20 10:15
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**590**		10	2.1	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,7,8-PeCDD	**5.4**	**J B**	51	0.57	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,7,8-PeCDF	**68**	**B**	51	0.98	pg/L		10/01/20 08:42	10/09/20 08:13	1
2,3,4,7,8-PeCDF	**39**	**J B**	51	1.1	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,4,7,8-HxCDD	**1.9**	**J B**	51	0.70	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,6,7,8-HxCDD	ND		51	0.75	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,7,8,9-HxCDD	ND		51	0.67	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,4,7,8-HxCDF	**100**	**B**	51	0.81	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,6,7,8-HxCDF	**24**	**J B**	51	0.79	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,7,8,9-HxCDF	ND		51	0.63	pg/L		10/01/20 08:42	10/09/20 08:13	1
2,3,4,6,7,8-HxCDF	**2.6**	**J q B**	51	0.89	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,4,6,7,8-HpCDD	**25**	**J B**	51	0.51	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,4,6,7,8-HpCDF	**27**	**J B**	51	0.32	pg/L		10/01/20 08:42	10/09/20 08:13	1
1,2,3,4,7,8,9-HpCDF	**10**	**J B**	51	0.35	pg/L		10/01/20 08:42	10/09/20 08:13	1
OCDD	**400**	**B**	100	0.64	pg/L		10/01/20 08:42	10/09/20 08:13	1
OCDF	**15**	**J B**	100	0.29	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total TCDD	**650**	**q B**	10	2.1	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total TCDF	**3300**	**q B**	10	9.1	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total PeCDD	**5.4**	**J B**	51	0.57	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total PeCDF	**170**	**q B**	51	1.1	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total HxCDD	**5.4**	**J q B**	51	0.71	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total HxCDF	**140**	**q B**	51	0.78	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total HpCDD	**49**	**J B**	51	0.51	pg/L		10/01/20 08:42	10/09/20 08:13	1
Total HpCDF	**47**	**J B**	51	0.33	pg/L		10/01/20 08:42	10/09/20 08:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*25 - 164*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-2,3,7,8-TCDF	*78*		*24 - 169*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*90*		*32 - 141*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*28 - 130*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*74*		*26 - 152*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*77*		*26 - 123*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 147*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*79*		*28 - 136*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*23 - 140*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*26 - 138*	*10/01/20 08:42*	*10/09/20 08:13*	*1*
13C-OCDD	*88*		*17 - 157*	*10/01/20 08:42*	*10/09/20 08:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*10/01/20 08:42*	*10/09/20 08:13*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**1700**	**B**	10	1.9	pg/L		10/01/20 08:42	10/14/20 02:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*83*		*24 - 169*	*10/01/20 08:42*	*10/14/20 02:05*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-65130-1

Client Sample ID: 11215702-Tank#1-valve-5-2

Lab Sample ID: 320-65130-8

Date Collected: 09/11/20 13:30
Date Received: 09/29/20 10:15

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*117*		*35 - 197*	*10/01/20 08:42*	*10/14/20 02:05*	*1*

Client Sample ID: 11215702-Tank#1-valve-2-3

Lab Sample ID: 320-65130-9

Date Collected: 09/11/20 14:30
Date Received: 09/29/20 10:15

Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**82**		10	0.96	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,7,8-PeCDD	ND		51	0.71	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,7,8-PeCDF	**9.8**	**J q B**	51	0.78	pg/L		10/01/20 08:42	10/09/20 09:01	1
2,3,4,7,8-PeCDF	**5.7**	**J B**	51	0.90	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,4,7,8-HxCDD	**2.6**	**J B**	51	0.97	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,6,7,8-HxCDD	ND		51	0.98	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,7,8,9-HxCDD	ND		51	0.90	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,4,7,8-HxCDF	**17**	**J B**	51	0.74	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,6,7,8-HxCDF	**4.8**	**J B**	51	0.75	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,7,8,9-HxCDF	**1.8**	**J q B**	51	0.63	pg/L		10/01/20 08:42	10/09/20 09:01	1
2,3,4,6,7,8-HxCDF	ND		51	0.92	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,4,6,7,8-HpCDD	**7.8**	**J B**	51	0.41	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,4,6,7,8-HpCDF	**6.4**	**J q B**	51	0.37	pg/L		10/01/20 08:42	10/09/20 09:01	1
1,2,3,4,7,8,9-HpCDF	**3.2**	**J B**	51	0.39	pg/L		10/01/20 08:42	10/09/20 09:01	1
OCDD	**89**	**J q B**	100	0.68	pg/L		10/01/20 08:42	10/09/20 09:01	1
OCDF	**7.7**	**J q B**	100	0.40	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total TCDD	**87**	**q B**	10	0.96	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total TCDF	**410**	**q B**	10	1.8	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total PeCDD	ND		51	0.71	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total PeCDF	**21**	**J q B**	51	0.84	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total HxCDD	**2.6**	**J B**	51	0.95	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total HxCDF	**27**	**J q B**	51	0.76	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total HpCDD	**13**	**J q B**	51	0.41	pg/L		10/01/20 08:42	10/09/20 09:01	1
Total HpCDF	**12**	**J q B**	51	0.38	pg/L		10/01/20 08:42	10/09/20 09:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*25 - 164*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,7,8-PeCDD	*73*		*25 - 181*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-2,3,4,7,8-PeCDF	*60*		*21 - 178*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*72*		*32 - 141*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,4,7,8-HxCDF	*68*		*26 - 152*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,6,7,8-HxCDF	*68*		*26 - 123*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*29 - 147*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-2,3,4,6,7,8-HxCDF	*66*		*28 - 136*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*28 - 143*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*67*		*26 - 138*	*10/01/20 08:42*	*10/09/20 09:01*	*1*
13C-OCDD	*75*		*17 - 157*	*10/01/20 08:42*	*10/09/20 09:01*	*1*

Client Sample ID: 11215702-Tank#1-valve-2-3

Lab Sample ID: 320-65130-9

Date Collected: 09/11/20 14:30
Matrix: Water
Date Received: 09/29/20 10:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*10/01/20 08:42*	*10/09/20 09:01*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**230**	**B**	10	1.6	pg/L		10/01/20 08:42	10/13/20 22:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*75*		*24 - 169*	*10/01/20 08:42*	*10/13/20 22:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*117*		*35 - 197*	*10/01/20 08:42*	*10/13/20 22:54*	*1*

Client Sample ID: 11215702-Tank#1-valve-3-3

Lab Sample ID: 320-65130-10

Date Collected: 09/11/20 14:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1600**		10	7.0	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,7,8-PeCDD	**16**	**J B**	51	0.88	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,7,8-PeCDF	**180**	**B**	51	1.7	pg/L		10/01/20 08:42	10/09/20 09:49	1
2,3,4,7,8-PeCDF	**120**	**B**	51	2.0	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,4,7,8-HxCDD	**2.5**	**J q B**	51	1.0	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,6,7,8-HxCDD	**2.5**	**J q B**	51	1.1	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,7,8,9-HxCDD	**1.9**	**J q B**	51	0.95	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,4,7,8-HxCDF	**270**	**B**	51	1.5	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,6,7,8-HxCDF	**68**	**B**	51	1.6	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,7,8,9-HxCDF	**6.5**	**J B**	51	1.2	pg/L		10/01/20 08:42	10/09/20 09:49	1
2,3,4,6,7,8-HxCDF	**9.0**	**J B**	51	1.8	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,4,6,7,8-HpCDD	**64**	**B**	51	0.80	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,4,6,7,8-HpCDF	**80**	**B**	51	0.64	pg/L		10/01/20 08:42	10/09/20 09:49	1
1,2,3,4,7,8,9-HpCDF	**31**	**J B**	51	0.71	pg/L		10/01/20 08:42	10/09/20 09:49	1
OCDD	**1000**	**B**	100	3.5	pg/L		10/01/20 08:42	10/09/20 09:49	1
OCDF	**55**	**J B**	100	0.44	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total TCDD	**1700**	**B**	10	7.0	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total TCDF	**9100**	**G q B**	25	25	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total PeCDD	**16**	**J B**	51	0.88	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total PeCDF	**480**	**B**	51	1.8	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total HxCDD	**15**	**J q B**	51	1.0	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total HxCDF	**390**	**q B**	51	1.5	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total HpCDD	**130**	**B**	51	0.80	pg/L		10/01/20 08:42	10/09/20 09:49	1
Total HpCDF	**140**	**B**	51	0.67	pg/L		10/01/20 08:42	10/09/20 09:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-2,3,4,7,8-PeCDF	*67*		*21 - 178*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,4,7,8-HxCDD	*79*		*32 - 141*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*28 - 130*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,4,7,8-HxCDF	*72*		*26 - 152*	*10/01/20 08:42*	*10/09/20 09:49*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#1-valve-3-3
Lab Sample ID: 320-65130-10

Date Collected: 09/11/20 14:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 147*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-2,3,4,6,7,8-HxCDF	*70*		*28 - 136*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*69*		*23 - 140*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*74*		*28 - 143*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*65*		*26 - 138*	*10/01/20 08:42*	*10/09/20 09:49*	*1*
13C-OCDD	*82*		*17 - 157*	*10/01/20 08:42*	*10/09/20 09:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*10/01/20 08:42*	*10/09/20 09:49*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**4800**	**B**	51	11	pg/L		10/01/20 08:42	10/14/20 04:00	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*10/01/20 08:42*	*10/14/20 04:00*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*120*		*35 - 197*	*10/01/20 08:42*	*10/14/20 04:00*	*5*

Client Sample ID: 11215702-Tank#1-valve-4-3
Lab Sample ID: 320-65130-11

Date Collected: 09/11/20 14:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**240**		10	1.5	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,7,8-PeCDD	**2.6**	**J B**	51	0.65	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,7,8-PeCDF	**33**	**J B**	51	0.86	pg/L		10/01/20 08:42	10/09/20 15:27	1
2,3,4,7,8-PeCDF	**18**	**J B**	51	1.1	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,4,7,8-HxCDD	**1.6**	**J B q**	51	1.0	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,6,7,8-HxCDD	ND		51	1.1	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,7,8,9-HxCDD	ND		51	1.0	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,4,7,8-HxCDF	**60**	**B**	51	1.3	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,6,7,8-HxCDF	**16**	**J B**	51	1.3	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,7,8,9-HxCDF	ND		51	0.97	pg/L		10/01/20 08:42	10/09/20 15:27	1
2,3,4,6,7,8-HxCDF	ND		51	1.3	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,4,6,7,8-HpCDD	**13**	**J B**	51	0.45	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,4,6,7,8-HpCDF	**17**	**J B**	51	0.46	pg/L		10/01/20 08:42	10/09/20 15:27	1
1,2,3,4,7,8,9-HpCDF	**8.1**	**J B**	51	0.55	pg/L		10/01/20 08:42	10/09/20 15:27	1
OCDD	**200**	**B**	100	0.66	pg/L		10/01/20 08:42	10/09/20 15:27	1
OCDF	**11**	**J B**	100	0.39	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total TCDD	**260**	**B**	10	1.5	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total TCDF	**1400**	**B q**	10	5.2	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total PeCDD	**3.3**	**J B q**	51	0.65	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total PeCDF	**74**	**B q**	51	0.96	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total HxCDD	**1.6**	**J B q**	51	1.1	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total HxCDF	**76**	**B**	51	1.2	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total HpCDD	**28**	**J B**	51	0.45	pg/L		10/01/20 08:42	10/09/20 15:27	1
Total HpCDF	**31**	**J B**	51	0.50	pg/L		10/01/20 08:42	10/09/20 15:27	1

Client Sample ID: 11215702-Tank#1-valve-4-3 Lab Sample ID: 320-65130-11

Date Collected: 09/11/20 14:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*86*		*25 - 164*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,7,8-PeCDF	*63*		*24 - 185*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-2,3,4,7,8-PeCDF	*58*		*21 - 178*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,6,7,8-HxCDD	*96*		*28 - 130*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,4,7,8-HxCDF	*66*		*26 - 152*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,7,8,9-HxCDF	*75*		*29 - 147*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-2,3,4,6,7,8-HxCDF	*78*		*28 - 136*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*72*		*23 - 140*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*28 - 143*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*67*		*26 - 138*	*10/01/20 08:42*	*10/09/20 15:27*	*1*
13C-OCDD	*75*		*17 - 157*	*10/01/20 08:42*	*10/09/20 15:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*103*		*35 - 197*	*10/01/20 08:42*	*10/09/20 15:27*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**630**	**B**	10	1.6	pg/L		10/01/20 08:42	10/14/20 00:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*88*		*24 - 169*	*10/01/20 08:42*	*10/14/20 00:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*121*		*35 - 197*	*10/01/20 08:42*	*10/14/20 00:48*	*1*

Client Sample ID: 11215702-Tank#1-valve-5-3 Lab Sample ID: 320-65130-12

Date Collected: 09/11/20 14:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**510**		10	2.2	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,7,8-PeCDD	**5.1**	**J B q**	51	0.62	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,7,8-PeCDF	**52**	**B**	51	0.76	pg/L		10/01/20 08:42	10/09/20 16:15	1
2,3,4,7,8-PeCDF	**32**	**J B**	51	0.86	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,4,7,8-HxCDD	**3.4**	**J B**	51	0.73	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,6,7,8-HxCDD	**2.9**	**J B**	51	0.80	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,7,8,9-HxCDD	**2.4**	**J B**	51	0.70	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,4,7,8-HxCDF	**90**	**B**	51	0.74	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,6,7,8-HxCDF	**23**	**J B**	51	0.80	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,7,8,9-HxCDF	**3.9**	**J B**	51	0.58	pg/L		10/01/20 08:42	10/09/20 16:15	1
2,3,4,6,7,8-HxCDF	ND		51	0.86	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,4,6,7,8-HpCDD	**25**	**J B**	51	0.47	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,4,6,7,8-HpCDF	**46**	**J B**	51	0.37	pg/L		10/01/20 08:42	10/09/20 16:15	1
1,2,3,4,7,8,9-HpCDF	**16**	**J B**	51	0.40	pg/L		10/01/20 08:42	10/09/20 16:15	1
OCDD	**300**	**B**	100	1.2	pg/L		10/01/20 08:42	10/09/20 16:15	1
OCDF	**62**	**J B**	100	0.39	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total TCDD	**550**	**B**	10	2.2	pg/L		10/01/20 08:42	10/09/20 16:15	1

Client Sample ID: 11215702-Tank#1-valve-5-3 Lab Sample ID: 320-65130-12

Date Collected: 09/11/20 14:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	**2900**	**B q**	10	5.0	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total PeCDD	**6.4**	**J B q**	51	0.62	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total PeCDF	**130**	**B q**	51	0.81	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total HxCDD	**10**	**J B**	51	0.74	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total HxCDF	**130**	**B q**	51	0.75	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total HpCDD	**46**	**J B**	51	0.47	pg/L		10/01/20 08:42	10/09/20 16:15	1
Total HpCDF	**74**	**B**	51	0.39	pg/L		10/01/20 08:42	10/09/20 16:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-2,3,7,8-TCDF	*81*		*24 - 169*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,7,8-PeCDD	*78*		*25 - 181*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-2,3,4,7,8-PeCDF	*69*		*21 - 178*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,4,7,8-HxCDD	*91*		*32 - 141*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,6,7,8-HxCDD	*90*		*28 - 130*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,4,7,8-HxCDF	*77*		*26 - 152*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,6,7,8-HxCDF	*75*		*26 - 123*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*29 - 147*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-2,3,4,6,7,8-HxCDF	*76*		*28 - 136*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*23 - 140*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*85*		*28 - 143*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*82*		*26 - 138*	*10/01/20 08:42*	*10/09/20 16:15*	*1*
13C-OCDD	*99*		*17 - 157*	*10/01/20 08:42*	*10/09/20 16:15*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*10/01/20 08:42*	*10/09/20 16:15*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**1400**	**B**	10	4.1	pg/L		10/01/20 08:42	10/14/20 02:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*87*		*24 - 169*	*10/01/20 08:42*	*10/14/20 02:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*120*		*35 - 197*	*10/01/20 08:42*	*10/14/20 02:43*	*1*

Client Sample ID: 11215702-Tank#1-T=0 Lab Sample ID: 320-65130-13

Date Collected: 09/11/20 11:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**850**	**B**	48	14	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,7,8-PeCDF	**10000**	**B G**	110	110	pg/L		10/01/20 08:42	10/09/20 17:03	1
2,3,4,7,8-PeCDF	**6600**	**B G**	77	77	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,4,7,8-HxCDD	**22**	**J B**	48	6.5	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,6,7,8-HxCDD	**110**	**B**	48	6.1	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,7,8,9-HxCDD	**49**	**B**	48	5.8	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,4,7,8-HxCDF	**17000**	**B G**	70	70	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,6,7,8-HxCDF	**4300**	**B G**	59	59	pg/L		10/01/20 08:42	10/09/20 17:03	1

Client Sample ID: 11215702-Tank#1-T=0

Lab Sample ID: 320-65130-13

Date Collected: 09/11/20 11:30
Date Received: 09/29/20 10:15
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDF	**320**	**B**	48	44	pg/L		10/01/20 08:42	10/09/20 17:03	1
2,3,4,6,7,8-HxCDF	**490**	**B G**	79	79	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,4,6,7,8-HpCDD	**3700**	**B**	48	36	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,4,6,7,8-HpCDF	**5300**	**B**	48	28	pg/L		10/01/20 08:42	10/09/20 17:03	1
1,2,3,4,7,8,9-HpCDF	**1900**	**B**	48	25	pg/L		10/01/20 08:42	10/09/20 17:03	1
OCDF	**2800**	**B**	96	1.7	pg/L		10/01/20 08:42	10/09/20 17:03	1
Total PeCDD	**1000**	**B**	48	14	pg/L		10/01/20 08:42	10/09/20 17:03	1
Total PeCDF	**27000**	**B G**	93	93	pg/L		10/01/20 08:42	10/09/20 17:03	1
Total HxCDD	**950**	**B**	48	6.1	pg/L		10/01/20 08:42	10/09/20 17:03	1
Total HxCDF	**30000**	**B G**	63	63	pg/L		10/01/20 08:42	10/09/20 17:03	1
Total HpCDD	**7300**	**B**	48	36	pg/L		10/01/20 08:42	10/09/20 17:03	1
Total HpCDF	**9400**	**B**	48	26	pg/L		10/01/20 08:42	10/09/20 17:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*101*		*25 - 181*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*24 - 185*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-2,3,4,7,8-PeCDF	*84*		*21 - 178*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*56*		*32 - 141*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,6,7,8-HxCDD	*56*		*28 - 130*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,4,7,8-HxCDF	*53*		*26 - 152*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,6,7,8-HxCDF	*50*		*26 - 123*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*51*		*29 - 147*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*52*		*28 - 136*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*46*		*23 - 140*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*42*		*28 - 143*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*46*		*26 - 138*	*10/01/20 08:42*	*10/09/20 17:03*	*1*
13C-OCDD	*42*		*17 - 157*	*10/01/20 08:42*	*10/09/20 17:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*87*		*35 - 197*	*10/01/20 08:42*	*10/09/20 17:03*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**86000**		380	370	pg/L		10/01/20 08:42	10/17/20 02:29	40
OCDD	**51000**	**B**	3800	120	pg/L		10/01/20 08:42	10/17/20 02:29	40
Total TCDD	**94000**	**B**	380	370	pg/L		10/01/20 08:42	10/17/20 02:29	40
Total TCDF	**500000**	**G q B**	1100	1100	pg/L		10/01/20 08:42	10/17/20 02:29	40

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*10/01/20 08:42*	*10/17/20 02:29*	*40*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*10/01/20 08:42*	*10/17/20 02:29*	*40*
13C-OCDD	*48*		*17 - 157*	*10/01/20 08:42*	*10/17/20 02:29*	*40*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*131*		*35 - 197*	*10/01/20 08:42*	*10/17/20 02:29*	*40*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**150000**	**B**	960	120	pg/L		10/01/20 08:42	10/14/20 04:38	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*99*		*24 - 169*	*10/01/20 08:42*	*10/14/20 04:38*	*100*

Client Sample ID: 11215702-Tank#1-T=0
Lab Sample ID: 320-65130-13

Date Collected: 09/11/20 11:30
Matrix: Water
Date Received: 09/29/20 10:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*10/01/20 08:42*	*10/14/20 04:38*	*100*

Client Sample ID: 11215702-Tank#2-T=0
Lab Sample ID: 320-65130-14

Date Collected: 09/09/20 09:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**2100**		480	67	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,7,8-PeCDF	**24000**		480	180	pg/L		10/02/20 08:26	10/12/20 17:22	10
2,3,4,7,8-PeCDF	**15000**		480	160	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,4,7,8-HxCDD	**38**	**J B**	480	10	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,6,7,8-HxCDD	**210**	**J**	480	14	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,7,8,9-HxCDD	**70**	**J q**	480	11	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,4,7,8-HxCDF	**39000**		480	61	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,6,7,8-HxCDF	**9600**		480	53	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,7,8,9-HxCDF	**650**	**B**	480	47	pg/L		10/02/20 08:26	10/12/20 17:22	10
2,3,4,6,7,8-HxCDF	**1100**		480	52	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,4,6,7,8-HpCDD	**5200**		480	30	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,4,6,7,8-HpCDF	**12000**	**B**	480	66	pg/L		10/02/20 08:26	10/12/20 17:22	10
1,2,3,4,7,8,9-HpCDF	**3900**	**B**	480	63	pg/L		10/02/20 08:26	10/12/20 17:22	10
OCDD	**74000**	**B**	960	76	pg/L		10/02/20 08:26	10/12/20 17:22	10
OCDF	**7200**	**B**	960	22	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total TCDD	**190000**	**G**	260	260	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total TCDF	**1200000**	**G B**	3300	3300	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total PeCDD	**2100**		480	67	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total PeCDF	**54000**		480	170	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total HxCDD	**1200**	**q B**	480	12	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total HxCDF	**59000**	**B**	480	53	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total HpCDD	**10000**		480	30	pg/L		10/02/20 08:26	10/12/20 17:22	10
Total HpCDF	**20000**	**B**	480	65	pg/L		10/02/20 08:26	10/12/20 17:22	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*115*		*25 - 164*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-2,3,7,8-TCDF	*106*		*24 - 169*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,7,8-PeCDD	*66*		*25 - 181*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-2,3,4,7,8-PeCDF	*82*		*21 - 178*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,4,7,8-HxCDD	*110*		*32 - 141*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,6,7,8-HxCDD	*94*		*28 - 130*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,4,7,8-HxCDF	*100*		*26 - 152*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,6,7,8-HxCDF	*99*		*26 - 123*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,7,8,9-HxCDF	*101*		*29 - 147*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-2,3,4,6,7,8-HxCDF	*97*		*28 - 136*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,4,6,7,8-HpCDD	*83*		*23 - 140*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,4,6,7,8-HpCDF	*85*		*28 - 143*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-1,2,3,4,7,8,9-HpCDF	*98*		*26 - 138*	*10/02/20 08:26*	*10/12/20 17:22*	*10*
13C-OCDD	*97*		*17 - 157*	*10/02/20 08:26*	*10/12/20 17:22*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*218*	*X*	*35 - 197*	*10/02/20 08:26*	*10/12/20 17:22*	*10*

Client Sample ID: 11215702-Tank#2-T=0

Lab Sample ID: 320-65130-14

Date Collected: 09/09/20 09:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**180000**		670	360	pg/L		10/02/20 08:26	10/15/20 20:21	70

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*111*		*25 - 164*	*10/02/20 08:26*	*10/15/20 20:21*	*70*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*239*	*X*	*35 - 197*	*10/02/20 08:26*	*10/15/20 20:21*	*70*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**6500**	**B**	96	88	pg/L		10/02/20 08:26	10/12/20 23:38	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*117*	*q*	*24 - 169*	*10/02/20 08:26*	*10/12/20 23:38*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*37*		*35 - 197*	*10/02/20 08:26*	*10/12/20 23:38*	*10*

Client Sample ID: 11215702-Tank#2-valve-2-1

Lab Sample ID: 320-65130-15

Date Collected: 09/10/20 09:30
Matrix: Water
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1200**		9.6	4.7	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,7,8-PeCDD	**13**	**J q**	48	1.2	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,7,8-PeCDF	**120**		48	1.8	pg/L		10/02/20 08:26	10/12/20 16:34	1
2,3,4,7,8-PeCDF	**87**		48	2.0	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,4,7,8-HxCDD	**1.6**	**J B**	48	0.54	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,6,7,8-HxCDD	ND		48	0.81	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,7,8,9-HxCDD	ND		48	0.60	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,4,7,8-HxCDF	**270**		48	1.4	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,6,7,8-HxCDF	**75**		48	1.2	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,7,8,9-HxCDF	**3.9**	**J q B**	48	1.1	pg/L		10/02/20 08:26	10/12/20 16:34	1
2,3,4,6,7,8-HxCDF	**9.0**	**J**	48	1.1	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,4,6,7,8-HpCDD	**33**	**J**	48	0.73	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,4,6,7,8-HpCDF	**100**	**B**	48	0.66	pg/L		10/02/20 08:26	10/12/20 16:34	1
1,2,3,4,7,8,9-HpCDF	**37**	**J B**	48	0.64	pg/L		10/02/20 08:26	10/12/20 16:34	1
OCDD	**780**	**B**	96	1.0	pg/L		10/02/20 08:26	10/12/20 16:34	1
OCDF	**83**	**J B**	96	1.0	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total TCDD	**1300**		9.6	4.7	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total TCDF	**6600**	**G q B**	17	17	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total PeCDD	**13**	**J q**	48	1.2	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total PeCDF	**330**	**q**	48	1.9	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total HxCDD	**7.0**	**J q B**	48	0.65	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total HxCDF	**400**	**q B**	48	1.2	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total HpCDD	**73**		48	0.73	pg/L		10/02/20 08:26	10/12/20 16:34	1
Total HpCDF	**170**	**B**	48	0.65	pg/L		10/02/20 08:26	10/12/20 16:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*25 - 164*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-2,3,7,8-TCDF	*85*		*24 - 169*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,7,8-PeCDD	*66*		*25 - 181*	*10/02/20 08:26*	*10/12/20 16:34*	*1*

Client Sample ID: 11215702-Tank#2-valve-2-1 Lab Sample ID: 320-65130-15

Date Collected: 09/10/20 09:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDF	*75*		*24 - 185*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,4,7,8-HxCDD	*114*		*32 - 141*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,4,7,8-HxCDF	*93*		*26 - 152*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,6,7,8-HxCDF	*90*		*26 - 123*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,7,8,9-HxCDF	*91*		*29 - 147*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-2,3,4,6,7,8-HxCDF	*94*		*28 - 136*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*82*		*23 - 140*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*28 - 143*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*89*		*26 - 138*	*10/02/20 08:26*	*10/12/20 16:34*	*1*
13C-OCDD	*97*		*17 - 157*	*10/02/20 08:26*	*10/12/20 16:34*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*10/02/20 08:26*	*10/12/20 16:34*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**3100**	**B**	9.6	4.2	pg/L		10/02/20 08:26	10/12/20 21:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*92*		*24 - 169*	*10/02/20 08:26*	*10/12/20 21:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*10/02/20 08:26*	*10/12/20 21:05*	*1*

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

Date Collected: 09/10/20 09:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1200**		9.6	3.8	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,7,8-PeCDD	**16**	**J**	48	1.2	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,7,8-PeCDF	**120**		48	1.3	pg/L		10/02/20 08:26	10/10/20 10:09	1
2,3,4,7,8-PeCDF	**87**		48	1.5	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,4,7,8-HxCDD	**5.1**	**J B**	48	0.41	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,6,7,8-HxCDD	**3.0**	**J q**	48	0.51	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,7,8,9-HxCDD	**2.8**	**J**	48	0.42	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,4,7,8-HxCDF	**270**		48	1.1	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,6,7,8-HxCDF	**71**		48	1.0	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,7,8,9-HxCDF	**7.2**	**J B**	48	0.83	pg/L		10/02/20 08:26	10/10/20 10:09	1
2,3,4,6,7,8-HxCDF	**11**	**J**	48	0.84	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,4,6,7,8-HpCDD	**40**	**J**	48	0.52	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,4,6,7,8-HpCDF	**110**	**B**	48	0.52	pg/L		10/02/20 08:26	10/10/20 10:09	1
1,2,3,4,7,8,9-HpCDF	**40**	**J B**	48	0.55	pg/L		10/02/20 08:26	10/10/20 10:09	1
OCDD	**780**	**B**	96	0.87	pg/L		10/02/20 08:26	10/10/20 10:09	1
OCDF	**78**	**J B**	96	0.77	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total TCDD	**1300**	**q**	9.6	3.8	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total TCDF	**6100**	**B G**	16	16	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total PeCDD	**16**	**J**	48	1.2	pg/L		10/02/20 08:26	10/10/20 10:09	1

Client Sample Results

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	330	q	48	1.4	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total HxCDD	15	J B q	48	0.45	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total HxCDF	390	B	48	0.94	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total HpCDD	85		48	0.52	pg/L		10/02/20 08:26	10/10/20 10:09	1
Total HpCDF	180	B	48	0.53	pg/L		10/02/20 08:26	10/10/20 10:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*24 - 185*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-2,3,4,7,8-PeCDF	*75*		*21 - 178*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,4,7,8-HxCDD	*100*		*32 - 141*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,4,7,8-HxCDF	*71*		*26 - 152*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,6,7,8-HxCDF	*71*		*26 - 123*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,7,8,9-HxCDF	*72*		*29 - 147*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-2,3,4,6,7,8-HxCDF	*74*		*28 - 136*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*82*		*23 - 140*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*82*		*28 - 143*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*26 - 138*	*10/02/20 08:26*	*10/10/20 10:09*	*1*
13C-OCDD	*77*		*17 - 157*	*10/02/20 08:26*	*10/10/20 10:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*10/02/20 08:26*	*10/10/20 10:09*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	3400	B	9.6	4.6	pg/L		10/02/20 08:26	10/12/20 21:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*10/02/20 08:26*	*10/12/20 21:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*10/02/20 08:26*	*10/12/20 21:43*	*1*

Client Sample ID: 11215702-Tank#2-valve-4-1 Lab Sample ID: 320-65130-17

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1100		9.7	4.1	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,7,8-PeCDD	13	J	48	1.1	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,7,8-PeCDF	110		48	1.4	pg/L		10/02/20 08:26	10/10/20 10:57	1
2,3,4,7,8-PeCDF	78		48	1.6	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,4,7,8-HxCDD	2.6	J q B	48	0.27	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,6,7,8-HxCDD	1.6	J q	48	0.32	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,7,8,9-HxCDD	1.4	J q	48	0.27	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,4,7,8-HxCDF	240		48	1.2	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,6,7,8-HxCDF	61		48	1.1	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,7,8,9-HxCDF	5.4	J B	48	0.93	pg/L		10/02/20 08:26	10/10/20 10:57	1

Client Sample ID: 11215702-Tank#2-valve-4-1 Lab Sample ID: 320-65130-17

Date Collected: 09/10/20 09:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	**8.1**	**J**	48	0.91	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,4,6,7,8-HpCDD	**33**	**J**	48	0.56	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,4,6,7,8-HpCDF	**88**	**B**	48	0.48	pg/L		10/02/20 08:26	10/10/20 10:57	1
1,2,3,4,7,8,9-HpCDF	**32**	**J B**	48	0.49	pg/L		10/02/20 08:26	10/10/20 10:57	1
OCDD	**670**	**B**	97	0.89	pg/L		10/02/20 08:26	10/10/20 10:57	1
OCDF	**59**	**J B**	97	0.71	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total TCDD	**1100**		9.7	4.1	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total TCDF	**5900**	**G B**	11	11	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total PeCDD	**13**	**J**	48	1.1	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total PeCDF	**290**		48	1.5	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total HxCDD	**7.9**	**J q B**	48	0.29	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total HxCDF	**350**	**B**	48	1.0	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total HpCDD	**71**		48	0.56	pg/L		10/02/20 08:26	10/10/20 10:57	1
Total HpCDF	**150**	**B**	48	0.49	pg/L		10/02/20 08:26	10/10/20 10:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*25 - 164*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*24 - 185*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-2,3,4,7,8-PeCDF	*76*		*21 - 178*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,4,7,8-HxCDD	*104*		*32 - 141*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,6,7,8-HxCDD	*93*		*28 - 130*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,6,7,8-HxCDF	*74*		*26 - 123*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,7,8,9-HxCDF	*75*		*29 - 147*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*83*		*23 - 140*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*28 - 143*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*81*		*26 - 138*	*10/02/20 08:26*	*10/10/20 10:57*	*1*
13C-OCDD	*80*		*17 - 157*	*10/02/20 08:26*	*10/10/20 10:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*10/02/20 08:26*	*10/10/20 10:57*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**3100**	**B**	9.7	3.6	pg/L		10/02/20 08:26	10/12/20 19:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*90*		*24 - 169*	*10/02/20 08:26*	*10/12/20 19:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*10/02/20 08:26*	*10/12/20 19:10*	*1*

Client Sample ID: 11215702-Tank#2-valve-5-1 Lab Sample ID: 320-65130-18

Date Collected: 09/10/20 09:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**52**		48	1.7	pg/L		10/02/20 08:26	10/10/20 11:45	1

Client Sample ID: 11215702-Tank#2-valve-5-1 Lab Sample ID: 320-65130-18

Date Collected: 09/10/20 09:30 **Matrix: Water**

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDF	510		48	5.1	pg/L		10/02/20 08:26	10/10/20 11:45	1
2,3,4,7,8-PeCDF	330		48	5.6	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,4,7,8-HxCDD	5.9	J B	48	0.49	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,6,7,8-HxCDD	8.2	J q	48	0.62	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,7,8,9-HxCDD	5.0	J q	48	0.51	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,4,7,8-HxCDF	910		48	3.6	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,6,7,8-HxCDF	230		48	3.2	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,7,8,9-HxCDF	18	J B	48	2.6	pg/L		10/02/20 08:26	10/10/20 11:45	1
2,3,4,6,7,8-HxCDF	28	J	48	2.8	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,4,6,7,8-HpCDD	130		48	0.91	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,4,6,7,8-HpCDF	290	B	48	1.0	pg/L		10/02/20 08:26	10/10/20 11:45	1
1,2,3,4,7,8,9-HpCDF	100	B	48	1.1	pg/L		10/02/20 08:26	10/10/20 11:45	1
OCDD	2100	B	96	2.1	pg/L		10/02/20 08:26	10/10/20 11:45	1
OCDF	170	B	96	0.93	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total TCDD	5600	G	9.7	9.7	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total TCDF	28000	G B	62	62	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total PeCDD	52		48	1.7	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total PeCDF	1300		48	5.3	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total HxCDD	30	J q B	48	0.54	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total HxCDF	1300	B	48	3.1	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total HpCDD	280		48	0.91	pg/L		10/02/20 08:26	10/10/20 11:45	1
Total HpCDF	490	B	48	1.1	pg/L		10/02/20 08:26	10/10/20 11:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*25 - 164*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-2,3,4,7,8-PeCDF	*71*		*21 - 178*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,4,7,8-HxCDD	*91*		*32 - 141*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*28 - 130*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,4,7,8-HxCDF	*67*		*26 - 152*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,6,7,8-HxCDF	*66*		*26 - 123*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,7,8,9-HxCDF	*69*		*29 - 147*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-2,3,4,6,7,8-HxCDF	*70*		*28 - 136*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*75*		*28 - 143*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*26 - 138*	*10/02/20 08:26*	*10/10/20 11:45*	*1*
13C-OCDD	*70*		*17 - 157*	*10/02/20 08:26*	*10/10/20 11:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*10/02/20 08:26*	*10/10/20 11:45*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	5400		96	30	pg/L		10/02/20 08:26	10/15/20 21:09	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*10/02/20 08:26*	*10/15/20 21:09*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*10/02/20 08:26*	*10/15/20 21:09*	*10*

Client Sample ID: 11215702-Tank#2-valve-5-1 Lab Sample ID: 320-65130-18

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**15000**	**B**	96	23	pg/L		10/02/20 08:26	10/14/20 17:07	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*10/02/20 08:26*	*10/14/20 17:07*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*109*		*35 - 197*	*10/02/20 08:26*	*10/14/20 17:07*	*10*

Client Sample ID: 11215702-Tank#2-valve-2-2 Lab Sample ID: 320-65130-19

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**850**		9.6	3.7	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,7,8-PeCDD	**9.5**	**J**	48	1.4	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,7,8-PeCDF	**83**		48	1.7	pg/L		10/02/20 08:26	10/10/20 12:33	1
2,3,4,7,8-PeCDF	**64**		48	1.9	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,4,7,8-HxCDD	**1.9**	**J B**	48	0.36	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,6,7,8-HxCDD	ND		48	0.44	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,7,8,9-HxCDD	ND		48	0.36	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,4,7,8-HxCDF	**190**		48	1.5	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,6,7,8-HxCDF	**48**		48	1.4	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,7,8,9-HxCDF	**3.8**	**J B**	48	1.1	pg/L		10/02/20 08:26	10/10/20 12:33	1
2,3,4,6,7,8-HxCDF	**5.5**	**J**	48	1.1	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,4,6,7,8-HpCDD	**27**	**J**	48	0.56	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,4,6,7,8-HpCDF	**73**	**B**	48	0.49	pg/L		10/02/20 08:26	10/10/20 12:33	1
1,2,3,4,7,8,9-HpCDF	**25**	**J B**	48	0.50	pg/L		10/02/20 08:26	10/10/20 12:33	1
OCDD	**560**	**B**	96	0.76	pg/L		10/02/20 08:26	10/10/20 12:33	1
OCDF	**51**	**J B**	96	0.79	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total TCDD	**910**		9.6	3.7	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total TCDF	**4400**	**q B**	9.6	8.3	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total PeCDD	**9.5**	**J**	48	1.4	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total PeCDF	**230**	**q**	48	1.8	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total HxCDD	**1.9**	**J B**	48	0.39	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total HxCDF	**260**	**B**	48	1.3	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total HpCDD	**59**		48	0.56	pg/L		10/02/20 08:26	10/10/20 12:33	1
Total HpCDF	**120**	**B**	48	0.50	pg/L		10/02/20 08:26	10/10/20 12:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*67*		*25 - 164*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,7,8-PeCDD	*66*		*25 - 181*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,4,7,8-HxCDD	*86*		*32 - 141*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,6,7,8-HxCDD	*77*		*28 - 130*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,4,7,8-HxCDF	*62*		*26 - 152*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,7,8,9-HxCDF	*64*		*29 - 147*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-2,3,4,6,7,8-HxCDF	*66*		*28 - 136*	*10/02/20 08:26*	*10/10/20 12:33*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*73*		*23 - 140*	*10/02/20 08:26*	*10/10/20 12:33*	*1*

Client Sample ID: 11215702-Tank#2-valve-2-2

Lab Sample ID: 320-65130-19

Date Collected: 09/11/20 09:30

Matrix: Water

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,6,7,8-HpCDF	73		28 - 143	10/02/20 08:26	10/10/20 12:33	1
13C-1,2,3,4,7,8,9-HpCDF	71		26 - 138	10/02/20 08:26	10/10/20 12:33	1
13C-OCDD	70		17 - 157	10/02/20 08:26	10/10/20 12:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	10/02/20 08:26	10/10/20 12:33	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**2400**	**B**	9.6	3.9	pg/L		10/02/20 08:26	10/12/20 18:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	73		24 - 169	10/02/20 08:26	10/12/20 18:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	111		35 - 197	10/02/20 08:26	10/12/20 18:31	1

Client Sample ID: 11215702-Tank#2-valve-3-2

Lab Sample ID: 320-65130-20

Date Collected: 09/11/20 09:30

Matrix: Water

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1400**		9.6	5.3	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,7,8-PeCDD	**14**	**J**	48	1.3	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,7,8-PeCDF	**140**		48	1.6	pg/L		10/02/20 08:26	10/10/20 13:20	1
2,3,4,7,8-PeCDF	**100**		48	1.8	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,4,7,8-HxCDD	**2.1**	**J q B**	48	0.32	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,6,7,8-HxCDD	**2.0**	**J**	48	0.40	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,7,8,9-HxCDD	ND		48	0.33	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,4,7,8-HxCDF	**300**		48	1.6	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,6,7,8-HxCDF	**77**		48	1.4	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,7,8,9-HxCDF	**5.1**	**J B**	48	1.2	pg/L		10/02/20 08:26	10/10/20 13:20	1
2,3,4,6,7,8-HxCDF	**9.0**	**J**	48	1.2	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,4,6,7,8-HpCDD	**42**	**J**	48	0.64	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,4,6,7,8-HpCDF	**110**	**B**	48	0.63	pg/L		10/02/20 08:26	10/10/20 13:20	1
1,2,3,4,7,8,9-HpCDF	**38**	**J B**	48	0.67	pg/L		10/02/20 08:26	10/10/20 13:20	1
OCDD	**810**	**B**	96	1.0	pg/L		10/02/20 08:26	10/10/20 13:20	1
OCDF	**79**	**J B**	96	0.82	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total TCDD	**1500**	**q**	9.6	5.3	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total TCDF	**7200**	**G B**	19	19	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total PeCDD	**14**	**J**	48	1.3	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total PeCDF	**380**	**q**	48	1.7	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total HxCDD	**6.9**	**J q B**	48	0.35	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total HxCDF	**440**	**B**	48	1.3	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total HpCDD	**92**		48	0.64	pg/L		10/02/20 08:26	10/10/20 13:20	1
Total HpCDF	**180**	**B**	48	0.65	pg/L		10/02/20 08:26	10/10/20 13:20	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	71		25 - 164	10/02/20 08:26	10/10/20 13:20	1
13C-2,3,7,8-TCDF	68		24 - 169	10/02/20 08:26	10/10/20 13:20	1
13C-1,2,3,7,8-PeCDD	71		25 - 181	10/02/20 08:26	10/10/20 13:20	1

Client Sample Results

Client Sample ID: 11215702-Tank#2-valve-3-2 Lab Sample ID: 320-65130-20

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,4,7,8-HxCDD	*91*		*32 - 141*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*28 - 130*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,4,7,8-HxCDF	*64*		*26 - 152*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*26 - 123*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,7,8,9-HxCDF	*68*		*29 - 147*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-2,3,4,6,7,8-HxCDF	*69*		*28 - 136*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*28 - 143*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*26 - 138*	*10/02/20 08:26*	*10/10/20 13:20*	*1*
13C-OCDD	*76*		*17 - 157*	*10/02/20 08:26*	*10/10/20 13:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*10/02/20 08:26*	*10/10/20 13:20*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**3800**	**B**	48	15	pg/L		10/02/20 08:26	10/14/20 16:28	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*10/02/20 08:26*	*10/14/20 16:28*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*110*		*35 - 197*	*10/02/20 08:26*	*10/14/20 16:28*	*5*

Client Sample ID: 11215702-Tank#2-valve-4-2 Lab Sample ID: 320-65130-21

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**940**		9.5	4.5	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,7,8-PeCDD	**11**	**J**	48	1.3	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,7,8-PeCDF	**92**		48	1.3	pg/L		10/02/20 08:26	10/10/20 14:08	1
2,3,4,7,8-PeCDF	**66**		48	1.4	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,4,7,8-HxCDD	**3.0**	**J B**	48	0.38	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,6,7,8-HxCDD	ND		48	0.43	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,7,8,9-HxCDD	**1.9**	**J**	48	0.37	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,4,7,8-HxCDF	**210**		48	1.1	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,6,7,8-HxCDF	**55**		48	1.0	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,7,8,9-HxCDF	**4.2**	**J q B**	48	0.85	pg/L		10/02/20 08:26	10/10/20 14:08	1
2,3,4,6,7,8-HxCDF	**8.0**	**J**	48	0.90	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,4,6,7,8-HpCDD	**30**	**J**	48	0.58	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,4,6,7,8-HpCDF	**84**	**B**	48	0.55	pg/L		10/02/20 08:26	10/10/20 14:08	1
1,2,3,4,7,8,9-HpCDF	**30**	**J B**	48	0.56	pg/L		10/02/20 08:26	10/10/20 14:08	1
OCDD	**600**	**B**	95	0.85	pg/L		10/02/20 08:26	10/10/20 14:08	1
OCDF	**54**	**J B**	95	0.84	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total TCDD	**1000**		9.5	4.5	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total TCDF	**5000**	**G B**	14	14	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total PeCDD	**11**	**J**	48	1.3	pg/L		10/02/20 08:26	10/10/20 14:08	1

Client Sample ID: 11215702-Tank#2-valve-4-2 Lab Sample ID: 320-65130-21

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	250	q	48	1.4	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total HxCDD	8.6	J q B	48	0.39	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total HxCDF	310	q B	48	0.98	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total HpCDD	65		48	0.58	pg/L		10/02/20 08:26	10/10/20 14:08	1
Total HpCDF	140	B	48	0.55	pg/L		10/02/20 08:26	10/10/20 14:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-2,3,7,8-TCDF	*59*		*24 - 169*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,7,8-PeCDF	*64*		*24 - 185*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-2,3,4,7,8-PeCDF	*62*		*21 - 178*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,4,7,8-HxCDD	*76*		*32 - 141*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*28 - 130*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,4,7,8-HxCDF	*61*		*26 - 152*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,6,7,8-HxCDF	*62*		*26 - 123*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,7,8,9-HxCDF	*62*		*29 - 147*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-2,3,4,6,7,8-HxCDF	*64*		*28 - 136*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*23 - 140*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*71*		*28 - 143*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*70*		*26 - 138*	*10/02/20 08:26*	*10/10/20 14:08*	*1*
13C-OCDD	*70*		*17 - 157*	*10/02/20 08:26*	*10/10/20 14:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*85*		*35 - 197*	*10/02/20 08:26*	*10/10/20 14:08*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	2500	B	9.5	3.7	pg/L		10/02/20 08:26	10/12/20 20:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*10/02/20 08:26*	*10/12/20 20:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*10/02/20 08:26*	*10/12/20 20:26*	*1*

Client Sample ID: 11215702-Tank#2-valve-5-2 Lab Sample ID: 320-65130-22

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1300		9.5	4.1	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,7,8-PeCDD	13	J	48	1.3	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,7,8-PeCDF	120		48	1.6	pg/L		10/02/20 08:26	10/10/20 14:56	1
2,3,4,7,8-PeCDF	88		48	1.9	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,4,7,8-HxCDD	2.4	J B	48	0.33	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,6,7,8-HxCDD	1.5	J	48	0.41	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,7,8,9-HxCDD	0.84	J q	48	0.34	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,4,7,8-HxCDF	260		48	1.3	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,6,7,8-HxCDF	67		48	1.1	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,7,8,9-HxCDF	4.8	J B	48	0.98	pg/L		10/02/20 08:26	10/10/20 14:56	1

Client Sample ID: 11215702-Tank#2-valve-5-2

Lab Sample ID: 320-65130-22

Date Collected: 09/11/20 09:30

Matrix: Water

Date Received: 09/29/20 10:15

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	**7.6**	**J**	48	0.96	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,4,6,7,8-HpCDD	**35**	**J**	48	0.65	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,4,6,7,8-HpCDF	**97**	**B**	48	0.51	pg/L		10/02/20 08:26	10/10/20 14:56	1
1,2,3,4,7,8,9-HpCDF	**34**	**J B**	48	0.54	pg/L		10/02/20 08:26	10/10/20 14:56	1
OCDD	**690**	**B**	95	0.81	pg/L		10/02/20 08:26	10/10/20 14:56	1
OCDF	**64**	**J B**	95	0.78	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total TCDD	**1400**		9.5	4.1	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total TCDF	**6500**	**B q G**	17	17	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total PeCDD	**13**	**J**	48	1.3	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total PeCDF	**340**	**q**	48	1.7	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total HxCDD	**7.5**	**J B q**	48	0.36	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total HxCDF	**370**	**B**	48	1.1	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total HpCDD	**79**		48	0.65	pg/L		10/02/20 08:26	10/10/20 14:56	1
Total HpCDF	**160**	**B**	48	0.52	pg/L		10/02/20 08:26	10/10/20 14:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,7,8-PeCDD	*69*		*25 - 181*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-2,3,4,7,8-PeCDF	*69*		*21 - 178*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,4,7,8-HxCDD	*91*		*32 - 141*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,4,7,8-HxCDF	*64*		*26 - 152*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-2,3,4,6,7,8-HxCDF	*69*		*28 - 136*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*28 - 143*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*26 - 138*	*10/02/20 08:26*	*10/10/20 14:56*	*1*
13C-OCDD	*77*		*17 - 157*	*10/02/20 08:26*	*10/10/20 14:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*10/02/20 08:26*	*10/10/20 14:56*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**3500**	**B**	9.5	4.9	pg/L		10/02/20 08:26	10/12/20 23:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*74*		*24 - 169*	*10/02/20 08:26*	*10/12/20 23:00*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*10/02/20 08:26*	*10/12/20 23:00*	*1*

Toxicity Summary

Client Sample ID: 11215702-Tank#1-valve-2-1

Lab Sample ID: 320-65130-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**94**		9.6	0.82	pg/L	1	**94**	1613B
1,2,3,7,8-PeCDD	**3.2**	**J B**	48	0.44	pg/L	1	**3.2**	1613B
1,2,3,7,8-PeCDF	**17**	**J B**	48	0.41	pg/L	0.03	**0.51**	1613B
2,3,4,7,8-PeCDF	**7.8**	**J B**	48	0.47	pg/L	0.3	**2.3**	1613B
1,2,3,4,7,8-HxCDD	**4.5**	**J B**	48	0.69	pg/L	0.1	**0.45**	1613B
1,2,3,6,7,8-HxCDD	**3.3**	**J q B**	48	0.72	pg/L	0.1	**0.33**	1613B
1,2,3,7,8,9-HxCDD	**2.8**	**J B**	48	0.65	pg/L	0.1	**0.28**	1613B
1,2,3,4,7,8-HxCDF	**29**	**J B**	48	0.65	pg/L	0.1	**2.9**	1613B
1,2,3,6,7,8-HxCDF	**8.9**	**J B**	48	0.67	pg/L	0.1	**0.89**	1613B
1,2,3,7,8,9-HxCDF	**3.4**	**J q B**	48	0.52	pg/L	0.1	**0.34**	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.74	pg/L	0.1	0.037	1613B
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	48	0.25	pg/L	0.01	**0.15**	1613B
1,2,3,4,6,7,8-HpCDF	**10**	**J B**	48	0.20	pg/L	0.01	**0.10**	1613B
1,2,3,4,7,8,9-HpCDF	**6.8**	**J B**	48	0.23	pg/L	0.01	**0.068**	1613B
OCDD	**130**	**B**	96	0.39	pg/L	0.0003	**0.039**	1613B
OCDF	**15**	**J B**	96	0.24	pg/L	0.0003	**0.0045**	1613B
2,3,7,8-TCDF - RA	**230**	**B**	9.6	1.1	pg/L	0.1	**23**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		130	TEQ

Client Sample ID: 11215702-Tank#1-valve-3-1

Lab Sample ID: 320-65130-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**170**		9.5	1.0	pg/L	1	**170**	1613B
1,2,3,7,8-PeCDD	**4.1**	**J B**	48	0.55	pg/L	1	**4.1**	1613B
1,2,3,7,8-PeCDF	**20**	**J B**	48	0.56	pg/L	0.03	**0.60**	1613B
2,3,4,7,8-PeCDF	**13**	**J B**	48	0.64	pg/L	0.3	**3.9**	1613B
1,2,3,4,7,8-HxCDD	**3.4**	**J q B**	48	0.75	pg/L	0.1	**0.34**	1613B
1,2,3,6,7,8-HxCDD	**3.1**	**J B**	48	0.80	pg/L	0.1	**0.31**	1613B
1,2,3,7,8,9-HxCDD	**2.7**	**J B**	48	0.71	pg/L	0.1	**0.27**	1613B
1,2,3,4,7,8-HxCDF	**34**	**J B**	48	0.66	pg/L	0.1	**3.4**	1613B
1,2,3,6,7,8-HxCDF	**11**	**J B**	48	0.68	pg/L	0.1	**1.1**	1613B
1,2,3,7,8,9-HxCDF	**3.7**	**J B**	48	0.51	pg/L	0.1	**0.37**	1613B
2,3,4,6,7,8-HxCDF	**3.3**	**J q B**	48	0.72	pg/L	0.1	**0.33**	1613B
1,2,3,4,6,7,8-HpCDD	**19**	**J B**	48	0.34	pg/L	0.01	**0.19**	1613B
1,2,3,4,6,7,8-HpCDF	**15**	**J B**	48	0.21	pg/L	0.01	**0.15**	1613B
1,2,3,4,7,8,9-HpCDF	**7.8**	**J B**	48	0.22	pg/L	0.01	**0.078**	1613B
OCDD	**240**	**B**	95	0.55	pg/L	0.0003	**0.072**	1613B
OCDF	**14**	**J B**	95	0.31	pg/L	0.0003	**0.0042**	1613B
2,3,7,8-TCDF - RA	**430**	**B**	9.5	1.9	pg/L	0.1	**43**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#1-valve-3-1 (Continued) Lab Sample ID: 320-65130-2

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		230	TEQ

Client Sample ID: 11215702-Tank#1-valve-4-1 Lab Sample ID: 320-65130-3

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**17**	**q**	9.5	0.56	pg/L	1	**17**	1613B
1,2,3,7,8-PeCDD	ND		48	0.47	pg/L	1	0.24	1613B
1,2,3,7,8-PeCDF	**2.4**	**J B**	48	0.35	pg/L	0.03	**0.072**	1613B
2,3,4,7,8-PeCDF	**1.6**	**J q B**	48	0.39	pg/L	0.3	**0.48**	1613B
1,2,3,4,7,8-HxCDD	ND		48	0.63	pg/L	0.1	0.032	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.68	pg/L	0.1	0.034	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.60	pg/L	0.1	0.030	1613B
1,2,3,4,7,8-HxCDF	**3.7**	**J B**	48	0.39	pg/L	0.1	**0.37**	1613B
1,2,3,6,7,8-HxCDF	**1.4**	**J B**	48	0.41	pg/L	0.1	**0.14**	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.32	pg/L	0.1	0.016	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.47	pg/L	0.1	0.024	1613B
1,2,3,4,6,7,8-HpCDD	**3.4**	**J B**	48	0.20	pg/L	0.01	**0.034**	1613B
1,2,3,4,6,7,8-HpCDF	**1.8**	**J B**	48	0.19	pg/L	0.01	**0.018**	1613B
1,2,3,4,7,8,9-HpCDF	**0.51**	**J q B**	48	0.20	pg/L	0.01	**0.0051**	1613B
OCDD	**37**	**J B**	95	0.39	pg/L	0.0003	**0.011**	1613B
OCDF	**1.4**	**J q B**	95	0.25	pg/L	0.0003	**0.00042**	1613B
2,3,7,8-TCDF - RA	**51**	**B**	9.5	0.86	pg/L	0.1	**5.1**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		24	TEQ

Client Sample ID: 11215702-Tank#1-valve-5-1 Lab Sample ID: 320-65130-4

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**1100**		9.6	4.5	pg/L	1	**1100**	1613B
1,2,3,7,8-PeCDD	**11**	**J B**	48	0.56	pg/L	1	**11**	1613B
1,2,3,7,8-PeCDF	**120**	**B**	48	1.1	pg/L	0.03	**3.6**	1613B
2,3,4,7,8-PeCDF	**79**	**B**	48	1.3	pg/L	0.3	**24**	1613B
1,2,3,4,7,8-HxCDD	**1.6**	**J B**	48	0.74	pg/L	0.1	**0.16**	1613B
1,2,3,6,7,8-HxCDD	**1.7**	**J B**	48	0.78	pg/L	0.1	**0.17**	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.69	pg/L	0.1	0.035	1613B
1,2,3,4,7,8-HxCDF	**200**	**B**	48	1.0	pg/L	0.1	**20**	1613B
1,2,3,6,7,8-HxCDF	**52**	**B**	48	1.1	pg/L	0.1	**5.2**	1613B
1,2,3,7,8,9-HxCDF	**3.8**	**J B**	48	0.83	pg/L	0.1	**0.38**	1613B
2,3,4,6,7,8-HxCDF	**6.1**	**J B**	48	1.2	pg/L	0.1	**0.61**	1613B
1,2,3,4,6,7,8-HpCDD	**51**	**B**	48	0.69	pg/L	0.01	**0.51**	1613B

TEF Reference:
WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#1-valve-5-1 (Continued) Lab Sample ID: 320-65130-4

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,6,7,8-HpCDF	**63**	**B**	48	0.35	pg/L	0.01	**0.63**	1613B
1,2,3,4,7,8,9-HpCDF	**21**	**J B**	48	0.38	pg/L	0.01	**0.21**	1613B
OCDD	**760**	**B**	96	2.9	pg/L	0.0003	**0.23**	1613B
OCDF	**32**	**J B**	96	0.25	pg/L	0.0003	**0.0096**	1613B
2,3,7,8-TCDF - RA	**3300**	**B**	9.6	3.3	pg/L	0.1	**330**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1500	TEQ

Client Sample ID: 11215702-Tank#1-valve-2-2 Lab Sample ID: 320-65130-5

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**24**		10	0.44	pg/L	1	**24**	1613B
1,2,3,7,8-PeCDD	ND		51	0.44	pg/L	1	0.22	1613B
1,2,3,7,8-PeCDF	**2.4**	**J q B**	51	0.31	pg/L	0.03	**0.072**	1613B
2,3,4,7,8-PeCDF	**1.5**	**J q B**	51	0.35	pg/L	0.3	**0.45**	1613B
1,2,3,4,7,8-HxCDD	ND		51	0.55	pg/L	0.1	0.028	1613B
1,2,3,6,7,8-HxCDD	ND		51	0.62	pg/L	0.1	0.031	1613B
1,2,3,7,8,9-HxCDD	ND		51	0.54	pg/L	0.1	0.027	1613B
1,2,3,4,7,8-HxCDF	**4.7**	**J B**	51	0.33	pg/L	0.1	**0.47**	1613B
1,2,3,6,7,8-HxCDF	ND		51	0.34	pg/L	0.1	0.017	1613B
1,2,3,7,8,9-HxCDF	**0.49**	**J q B**	51	0.26	pg/L	0.1	**0.049**	1613B
2,3,4,6,7,8-HxCDF	ND		51	0.37	pg/L	0.1	0.019	1613B
1,2,3,4,6,7,8-HpCDD	**2.4**	**J B**	51	0.19	pg/L	0.01	**0.024**	1613B
1,2,3,4,6,7,8-HpCDF	**1.6**	**J q B**	51	0.16	pg/L	0.01	**0.016**	1613B
1,2,3,4,7,8,9-HpCDF	**0.85**	**J B**	51	0.16	pg/L	0.01	**0.0085**	1613B
OCDD	**28**	**J B**	100	0.29	pg/L	0.0003	**0.0084**	1613B
OCDF	**1.5**	**J q B**	100	0.18	pg/L	0.0003	**0.00045**	1613B
2,3,7,8-TCDF - RA	**64**	**B**	10	0.98	pg/L	0.1	**6.4**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		32	TEQ

Client Sample ID: 11215702-Tank#1-valve-4-2 Lab Sample ID: 320-65130-7

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**370**		10	1.5	pg/L	1	**370**	1613B
1,2,3,7,8-PeCDD	**4.5**	**J B**	51	0.54	pg/L	1	**4.5**	1613B
1,2,3,7,8-PeCDF	**38**	**J B**	51	0.62	pg/L	0.03	**1.1**	1613B
2,3,4,7,8-PeCDF	**24**	**J B**	51	0.65	pg/L	0.3	**7.2**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#1-valve-4-2 (Continued) Lab Sample ID: 320-65130-7

						WHO 2005	
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,4,7,8-HxCDD	ND		51	0.66	pg/L	0.1	0.033	1613B
1,2,3,6,7,8-HxCDD	ND		51	0.72	pg/L	0.1	0.036	1613B
1,2,3,7,8,9-HxCDD	1.2	J q B	51	0.63	pg/L	0.1	0.12	1613B
1,2,3,4,7,8-HxCDF	65	B	51	0.66	pg/L	0.1	6.5	1613B
1,2,3,6,7,8-HxCDF	17	J B	51	0.64	pg/L	0.1	1.7	1613B
1,2,3,7,8,9-HxCDF	2.6	J B	51	0.53	pg/L	0.1	0.26	1613B
2,3,4,6,7,8-HxCDF	3.2	J B	51	0.73	pg/L	0.1	0.32	1613B
1,2,3,4,6,7,8-HpCDD	18	J B	51	0.42	pg/L	0.01	0.18	1613B
1,2,3,4,6,7,8-HpCDF	22	J B	51	0.26	pg/L	0.01	0.22	1613B
1,2,3,4,7,8,9-HpCDF	8.9	J B	51	0.29	pg/L	0.01	0.089	1613B
OCDD	280	B	100	0.86	pg/L	0.0003	0.084	1613B
OCDF	14	J B	100	0.25	pg/L	0.0003	0.0042	1613B
2,3,7,8-TCDF - RA	1000	B	10	1.7	pg/L	0.1	100	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		490	TEQ

Client Sample ID: 11215702-Tank#1-valve-5-2 Lab Sample ID: 320-65130-8

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	590		10	2.1	pg/L	1	590	1613B
1,2,3,7,8-PeCDD	5.4	J B	51	0.57	pg/L	1	5.4	1613B
1,2,3,7,8-PeCDF	68	B	51	0.98	pg/L	0.03	2.0	1613B
2,3,4,7,8-PeCDF	39	J B	51	1.1	pg/L	0.3	12	1613B
1,2,3,4,7,8-HxCDD	1.9	J B	51	0.70	pg/L	0.1	0.19	1613B
1,2,3,6,7,8-HxCDD	ND		51	0.75	pg/L	0.1	0.038	1613B
1,2,3,7,8,9-HxCDD	ND		51	0.67	pg/L	0.1	0.034	1613B
1,2,3,4,7,8-HxCDF	100	B	51	0.81	pg/L	0.1	10	1613B
1,2,3,6,7,8-HxCDF	24	J B	51	0.79	pg/L	0.1	2.4	1613B
1,2,3,7,8,9-HxCDF	ND		51	0.63	pg/L	0.1	0.032	1613B
2,3,4,6,7,8-HxCDF	2.6	J q B	51	0.89	pg/L	0.1	0.26	1613B
1,2,3,4,6,7,8-HpCDD	25	J B	51	0.51	pg/L	0.01	0.25	1613B
1,2,3,4,6,7,8-HpCDF	27	J B	51	0.32	pg/L	0.01	0.27	1613B
1,2,3,4,7,8,9-HpCDF	10	J B	51	0.35	pg/L	0.01	0.10	1613B
OCDD	400	B	100	0.64	pg/L	0.0003	0.12	1613B
OCDF	15	J B	100	0.29	pg/L	0.0003	0.0045	1613B
2,3,7,8-TCDF - RA	1700	B	10	1.9	pg/L	0.1	170	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		790	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client Sample ID: 11215702-Tank#1-valve-2-3 Lab Sample ID: 320-65130-9

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	**82**		10	0.96	pg/L	1	**82**	1613B
1,2,3,7,8-PeCDD	ND		51	0.71	pg/L	1	0.36	1613B
1,2,3,7,8-PeCDF	**9.8**	**J q B**	51	0.78	pg/L	0.03	**0.29**	1613B
2,3,4,7,8-PeCDF	**5.7**	**J B**	51	0.90	pg/L	0.3	**1.7**	1613B
1,2,3,4,7,8-HxCDD	**2.6**	**J B**	51	0.97	pg/L	0.1	**0.26**	1613B
1,2,3,6,7,8-HxCDD	ND		51	0.98	pg/L	0.1	0.049	1613B
1,2,3,7,8,9-HxCDD	ND		51	0.90	pg/L	0.1	0.045	1613B
1,2,3,4,7,8-HxCDF	**17**	**J B**	51	0.74	pg/L	0.1	**1.7**	1613B
1,2,3,6,7,8-HxCDF	**4.8**	**J B**	51	0.75	pg/L	0.1	**0.48**	1613B
1,2,3,7,8,9-HxCDF	**1.8**	**J q B**	51	0.63	pg/L	0.1	**0.18**	1613B
2,3,4,6,7,8-HxCDF	ND		51	0.92	pg/L	0.1	0.046	1613B
1,2,3,4,6,7,8-HpCDD	**7.8**	**J B**	51	0.41	pg/L	0.01	**0.078**	1613B
1,2,3,4,6,7,8-HpCDF	**6.4**	**J q B**	51	0.37	pg/L	0.01	**0.064**	1613B
1,2,3,4,7,8,9-HpCDF	**3.2**	**J B**	51	0.39	pg/L	0.01	**0.032**	1613B
OCDD	**89**	**J q B**	100	0.68	pg/L	0.0003	**0.027**	1613B
OCDF	**7.7**	**J q B**	100	0.40	pg/L	0.0003	**0.0023**	1613B
2,3,7,8-TCDF - RA	**230**	**B**	10	1.6	pg/L	0.1	**23**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		110	TEQ

Client Sample ID: 11215702-Tank#1-valve-3-3 Lab Sample ID: 320-65130-10

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	**1600**		10	7.0	pg/L	1	**1600**	1613B
1,2,3,7,8-PeCDD	**16**	**J B**	51	0.88	pg/L	1	**16**	1613B
1,2,3,7,8-PeCDF	**180**	**B**	51	1.7	pg/L	0.03	**5.4**	1613B
2,3,4,7,8-PeCDF	**120**	**B**	51	2.0	pg/L	0.3	**36**	1613B
1,2,3,4,7,8-HxCDD	**2.5**	**J q B**	51	1.0	pg/L	0.1	**0.25**	1613B
1,2,3,6,7,8-HxCDD	**2.5**	**J q B**	51	1.1	pg/L	0.1	**0.25**	1613B
1,2,3,7,8,9-HxCDD	**1.9**	**J q B**	51	0.95	pg/L	0.1	**0.19**	1613B
1,2,3,4,7,8-HxCDF	**270**	**B**	51	1.5	pg/L	0.1	**27**	1613B
1,2,3,6,7,8-HxCDF	**68**	**B**	51	1.6	pg/L	0.1	**6.8**	1613B
1,2,3,7,8,9-HxCDF	**6.5**	**J B**	51	1.2	pg/L	0.1	**0.65**	1613B
2,3,4,6,7,8-HxCDF	**9.0**	**J B**	51	1.8	pg/L	0.1	**0.90**	1613B
1,2,3,4,6,7,8-HpCDD	**64**	**B**	51	0.80	pg/L	0.01	**0.64**	1613B
1,2,3,4,6,7,8-HpCDF	**80**	**B**	51	0.64	pg/L	0.01	**0.80**	1613B
1,2,3,4,7,8,9-HpCDF	**31**	**J B**	51	0.71	pg/L	0.01	**0.31**	1613B
OCDD	**1000**	**B**	100	3.5	pg/L	0.0003	**0.30**	1613B
OCDF	**55**	**J B**	100	0.44	pg/L	0.0003	**0.017**	1613B
2,3,7,8-TCDF - RA	**4800**	**B**	51	11	pg/L	0.1	**480**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#1-valve-3-3 (Continued) Lab Sample ID: 320-65130-10

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		2200	TEQ

Client Sample ID: 11215702-Tank#1-valve-4-3 Lab Sample ID: 320-65130-11

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**240**		10	1.5	pg/L	1	**240**	1613B
1,2,3,7,8-PeCDD	**2.6**	**J B**	51	0.65	pg/L	1	**2.6**	1613B
1,2,3,7,8-PeCDF	**33**	**J B**	51	0.86	pg/L	0.03	**0.99**	1613B
2,3,4,7,8-PeCDF	**18**	**J B**	51	1.1	pg/L	0.3	**5.4**	1613B
1,2,3,4,7,8-HxCDD	**1.6**	**J B q**	51	1.0	pg/L	0.1	**0.16**	1613B
1,2,3,6,7,8-HxCDD	ND		51	1.1	pg/L	0.1	0.055	1613B
1,2,3,7,8,9-HxCDD	ND		51	1.0	pg/L	0.1	0.050	1613B
1,2,3,4,7,8-HxCDF	**60**	**B**	51	1.3	pg/L	0.1	**6.0**	1613B
1,2,3,6,7,8-HxCDF	**16**	**J B**	51	1.3	pg/L	0.1	**1.6**	1613B
1,2,3,7,8,9-HxCDF	ND		51	0.97	pg/L	0.1	0.049	1613B
2,3,4,6,7,8-HxCDF	ND		51	1.3	pg/L	0.1	0.065	1613B
1,2,3,4,6,7,8-HpCDD	**13**	**J B**	51	0.45	pg/L	0.01	**0.13**	1613B
1,2,3,4,6,7,8-HpCDF	**17**	**J B**	51	0.46	pg/L	0.01	**0.17**	1613B
1,2,3,4,7,8,9-HpCDF	**8.1**	**J B**	51	0.55	pg/L	0.01	**0.081**	1613B
OCDD	**200**	**B**	100	0.66	pg/L	0.0003	**0.060**	1613B
OCDF	**11**	**J B**	100	0.39	pg/L	0.0003	**0.0033**	1613B
2,3,7,8-TCDF - RA	**630**	**B**	10	1.6	pg/L	0.1	**63**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		320	TEQ

Client Sample ID: 11215702-Tank#1-valve-5-3 Lab Sample ID: 320-65130-12

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**510**		10	2.2	pg/L	1	**510**	1613B
1,2,3,7,8-PeCDD	**5.1**	**J B q**	51	0.62	pg/L	1	**5.1**	1613B
1,2,3,7,8-PeCDF	**52**	**B**	51	0.76	pg/L	0.03	**1.6**	1613B
2,3,4,7,8-PeCDF	**32**	**J B**	51	0.86	pg/L	0.3	**9.6**	1613B
1,2,3,4,7,8-HxCDD	**3.4**	**J B**	51	0.73	pg/L	0.1	**0.34**	1613B
1,2,3,6,7,8-HxCDD	**2.9**	**J B**	51	0.80	pg/L	0.1	**0.29**	1613B
1,2,3,7,8,9-HxCDD	**2.4**	**J B**	51	0.70	pg/L	0.1	**0.24**	1613B
1,2,3,4,7,8-HxCDF	**90**	**B**	51	0.74	pg/L	0.1	**9.0**	1613B
1,2,3,6,7,8-HxCDF	**23**	**J B**	51	0.80	pg/L	0.1	**2.3**	1613B
1,2,3,7,8,9-HxCDF	**3.9**	**J B**	51	0.58	pg/L	0.1	**0.39**	1613B
2,3,4,6,7,8-HxCDF	ND		51	0.86	pg/L	0.1	0.043	1613B
1,2,3,4,6,7,8-HpCDD	**25**	**J B**	51	0.47	pg/L	0.01	**0.25**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client Sample ID: 11215702-Tank#1-valve-5-3 (Continued) Lab Sample ID: 320-65130-12

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,4,6,7,8-HpCDF	**46**	**J B**	51	0.37	pg/L	0.01	**0.46**	1613B
1,2,3,4,7,8,9-HpCDF	**16**	**J B**	51	0.40	pg/L	0.01	**0.16**	1613B
OCDD	**300**	**B**	100	1.2	pg/L	0.0003	**0.090**	1613B
OCDF	**62**	**J B**	100	0.39	pg/L	0.0003	**0.019**	1613B
2,3,7,8-TCDF - RA	**1400**	**B**	10	4.1	pg/L	0.1	**140**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		680	TEQ

Client Sample ID: 11215702-Tank#1-T=0 Lab Sample ID: 320-65130-13

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,7,8-PeCDD	**850**	**B**	48	14	pg/L	1	**850**	1613B
1,2,3,7,8-PeCDF	**10000**	**B G**	110	110	pg/L	0.03	**300**	1613B
2,3,4,7,8-PeCDF	**6600**	**B G**	77	77	pg/L	0.3	**2000**	1613B
1,2,3,4,7,8-HxCDD	**22**	**J B**	48	6.5	pg/L	0.1	**2.2**	1613B
1,2,3,6,7,8-HxCDD	**110**	**B**	48	6.1	pg/L	0.1	**11**	1613B
1,2,3,7,8,9-HxCDD	**49**	**B**	48	5.8	pg/L	0.1	**4.9**	1613B
1,2,3,4,7,8-HxCDF	**17000**	**B G**	70	70	pg/L	0.1	**1700**	1613B
1,2,3,6,7,8-HxCDF	**4300**	**B G**	59	59	pg/L	0.1	**430**	1613B
1,2,3,7,8,9-HxCDF	**320**	**B**	48	44	pg/L	0.1	**32**	1613B
2,3,4,6,7,8-HxCDF	**490**	**B G**	79	79	pg/L	0.1	**49**	1613B
1,2,3,4,6,7,8-HpCDD	**3700**	**B**	48	36	pg/L	0.01	**37**	1613B
1,2,3,4,6,7,8-HpCDF	**5300**	**B**	48	28	pg/L	0.01	**53**	1613B
1,2,3,4,7,8,9-HpCDF	**1900**	**B**	48	25	pg/L	0.01	**19**	1613B
OCDF	**2800**	**B**	96	1.7	pg/L	0.0003	**0.84**	1613B
2,3,7,8-TCDD - DL	**86000**		380	370	pg/L	1	**86000**	1613B
OCDD - DL	**51000**	**B**	3800	120	pg/L	0.0003	**15**	1613B
2,3,7,8-TCDF - RA	**150000**	**B**	960	120	pg/L	0.1	**15000**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		110000	TEQ

Client Sample ID: 11215702-Tank#2-T=0 Lab Sample ID: 320-65130-14

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,7,8-PeCDD	**2100**		480	67	pg/L	1	**2100**	1613B
1,2,3,7,8-PeCDF	**24000**		480	180	pg/L	0.03	**720**	1613B
2,3,4,7,8-PeCDF	**15000**		480	160	pg/L	0.3	**4500**	1613B
1,2,3,4,7,8-HxCDD	**38**	**J B**	480	10	pg/L	0.1	**3.8**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#2-T=0 (Continued) Lab Sample ID: 320-65130-14

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,6,7,8-HxCDD	**210**	**J**	480	14	pg/L	0.1	**21**	1613B
1,2,3,7,8,9-HxCDD	**70**	**J q**	480	11	pg/L	0.1	**7.0**	1613B
1,2,3,4,7,8-HxCDF	**39000**		480	61	pg/L	0.1	**3900**	1613B
1,2,3,6,7,8-HxCDF	**9600**		480	53	pg/L	0.1	**960**	1613B
1,2,3,7,8,9-HxCDF	**650**	**B**	480	47	pg/L	0.1	**65**	1613B
2,3,4,6,7,8-HxCDF	**1100**		480	52	pg/L	0.1	**110**	1613B
1,2,3,4,6,7,8-HpCDD	**5200**		480	30	pg/L	0.01	**52**	1613B
1,2,3,4,6,7,8-HpCDF	**12000**	**B**	480	66	pg/L	0.01	**120**	1613B
1,2,3,4,7,8,9-HpCDF	**3900**	**B**	480	63	pg/L	0.01	**39**	1613B
OCDD	**74000**	**B**	960	76	pg/L	0.0003	**22**	1613B
OCDF	**7200**	**B**	960	22	pg/L	0.0003	**2.2**	1613B
2,3,7,8-TCDD - DL	**180000**		670	360	pg/L	1	**180000**	1613B
2,3,7,8-TCDF - RA	**6500**	**B**	96	88	pg/L	0.1	**650**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		190000	TEQ

Client Sample ID: 11215702-Tank#2-valve-2-1 Lab Sample ID: 320-65130-15

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**1200**		9.6	4.7	pg/L	1	**1200**	1613B
1,2,3,7,8-PeCDD	**13**	**J q**	48	1.2	pg/L	1	**13**	1613B
1,2,3,7,8-PeCDF	**120**		48	1.8	pg/L	0.03	**3.6**	1613B
2,3,4,7,8-PeCDF	**87**		48	2.0	pg/L	0.3	**26**	1613B
1,2,3,4,7,8-HxCDD	**1.6**	**J B**	48	0.54	pg/L	0.1	**0.16**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.81	pg/L	0.1	0.041	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.60	pg/L	0.1	0.030	1613B
1,2,3,4,7,8-HxCDF	**270**		48	1.4	pg/L	0.1	**27**	1613B
1,2,3,6,7,8-HxCDF	**75**		48	1.2	pg/L	0.1	**7.5**	1613B
1,2,3,7,8,9-HxCDF	**3.9**	**J q B**	48	1.1	pg/L	0.1	**0.39**	1613B
2,3,4,6,7,8-HxCDF	**9.0**	**J**	48	1.1	pg/L	0.1	**0.90**	1613B
1,2,3,4,6,7,8-HpCDD	**33**	**J**	48	0.73	pg/L	0.01	**0.33**	1613B
1,2,3,4,6,7,8-HpCDF	**100**	**B**	48	0.66	pg/L	0.01	**1.0**	1613B
1,2,3,4,7,8,9-HpCDF	**37**	**J B**	48	0.64	pg/L	0.01	**0.37**	1613B
OCDD	**780**	**B**	96	1.0	pg/L	0.0003	**0.23**	1613B
OCDF	**83**	**J B**	96	1.0	pg/L	0.0003	**0.025**	1613B
2,3,7,8-TCDF - RA	**3100**	**B**	9.6	4.2	pg/L	0.1	**310**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1600	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client: GHD Services Inc. Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**1200**		9.6	3.8	pg/L	1	**1200**	1613B
1,2,3,7,8-PeCDD	**16**	**J**	48	1.2	pg/L	1	**16**	1613B
1,2,3,7,8-PeCDF	**120**		48	1.3	pg/L	0.03	**3.6**	1613B
2,3,4,7,8-PeCDF	**87**		48	1.5	pg/L	0.3	**26**	1613B
1,2,3,4,7,8-HxCDD	**5.1**	**J B**	48	0.41	pg/L	0.1	**0.51**	1613B
1,2,3,6,7,8-HxCDD	**3.0**	**J q**	48	0.51	pg/L	0.1	**0.30**	1613B
1,2,3,7,8,9-HxCDD	**2.8**	**J**	48	0.42	pg/L	0.1	**0.28**	1613B
1,2,3,4,7,8-HxCDF	**270**		48	1.1	pg/L	0.1	**27**	1613B
1,2,3,6,7,8-HxCDF	**71**		48	1.0	pg/L	0.1	**7.1**	1613B
1,2,3,7,8,9-HxCDF	**7.2**	**J B**	48	0.83	pg/L	0.1	**0.72**	1613B
2,3,4,6,7,8-HxCDF	**11**	**J**	48	0.84	pg/L	0.1	**1.1**	1613B
1,2,3,4,6,7,8-HpCDD	**40**	**J**	48	0.52	pg/L	0.01	**0.40**	1613B
1,2,3,4,6,7,8-HpCDF	**110**	**B**	48	0.52	pg/L	0.01	**1.1**	1613B
1,2,3,4,7,8,9-HpCDF	**40**	**J B**	48	0.55	pg/L	0.01	**0.40**	1613B
OCDD	**780**	**B**	96	0.87	pg/L	0.0003	**0.23**	1613B
OCDF	**78**	**J B**	96	0.77	pg/L	0.0003	**0.023**	1613B
2,3,7,8-TCDF - RA	**3400**	**B**	9.6	4.6	pg/L	0.1	**340**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1600	TEQ

Client Sample ID: 11215702-Tank#2-valve-4-1 Lab Sample ID: 320-65130-17

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**1100**		9.7	4.1	pg/L	1	**1100**	1613B
1,2,3,7,8-PeCDD	**13**	**J**	48	1.1	pg/L	1	**13**	1613B
1,2,3,7,8-PeCDF	**110**		48	1.4	pg/L	0.03	**3.3**	1613B
2,3,4,7,8-PeCDF	**78**		48	1.6	pg/L	0.3	**23**	1613B
1,2,3,4,7,8-HxCDD	**2.6**	**J q B**	48	0.27	pg/L	0.1	**0.26**	1613B
1,2,3,6,7,8-HxCDD	**1.6**	**J q**	48	0.32	pg/L	0.1	**0.16**	1613B
1,2,3,7,8,9-HxCDD	**1.4**	**J q**	48	0.27	pg/L	0.1	**0.14**	1613B
1,2,3,4,7,8-HxCDF	**240**		48	1.2	pg/L	0.1	**24**	1613B
1,2,3,6,7,8-HxCDF	**61**		48	1.1	pg/L	0.1	**6.1**	1613B
1,2,3,7,8,9-HxCDF	**5.4**	**J B**	48	0.93	pg/L	0.1	**0.54**	1613B
2,3,4,6,7,8-HxCDF	**8.1**	**J**	48	0.91	pg/L	0.1	**0.81**	1613B
1,2,3,4,6,7,8-HpCDD	**33**	**J**	48	0.56	pg/L	0.01	**0.33**	1613B
1,2,3,4,6,7,8-HpCDF	**88**	**B**	48	0.48	pg/L	0.01	**0.88**	1613B
1,2,3,4,7,8,9-HpCDF	**32**	**J B**	48	0.49	pg/L	0.01	**0.32**	1613B
OCDD	**670**	**B**	97	0.89	pg/L	0.0003	**0.20**	1613B
OCDF	**59**	**J B**	97	0.71	pg/L	0.0003	**0.018**	1613B
2,3,7,8-TCDF - RA	**3100**	**B**	9.7	3.6	pg/L	0.1	**310**	1613B

TEF Reference:
WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#2-valve-4-1 (Continued) Lab Sample ID: 320-65130-17

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1500	TEQ

Client Sample ID: 11215702-Tank#2-valve-5-1 Lab Sample ID: 320-65130-18

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**52**		48	1.7	pg/L	1	**52**	1613B
1,2,3,7,8-PeCDF	**510**		48	5.1	pg/L	0.03	**15**	1613B
2,3,4,7,8-PeCDF	**330**		48	5.6	pg/L	0.3	**99**	1613B
1,2,3,4,7,8-HxCDD	**5.9**	**J B**	48	0.49	pg/L	0.1	**0.59**	1613B
1,2,3,6,7,8-HxCDD	**8.2**	**J q**	48	0.62	pg/L	0.1	**0.82**	1613B
1,2,3,7,8,9-HxCDD	**5.0**	**J q**	48	0.51	pg/L	0.1	**0.50**	1613B
1,2,3,4,7,8-HxCDF	**910**		48	3.6	pg/L	0.1	**91**	1613B
1,2,3,6,7,8-HxCDF	**230**		48	3.2	pg/L	0.1	**23**	1613B
1,2,3,7,8,9-HxCDF	**18**	**J B**	48	2.6	pg/L	0.1	**1.8**	1613B
2,3,4,6,7,8-HxCDF	**28**	**J**	48	2.8	pg/L	0.1	**2.8**	1613B
1,2,3,4,6,7,8-HpCDD	**130**		48	0.91	pg/L	0.01	**1.3**	1613B
1,2,3,4,6,7,8-HpCDF	**290**	**B**	48	1.0	pg/L	0.01	**2.9**	1613B
1,2,3,4,7,8,9-HpCDF	**100**	**B**	48	1.1	pg/L	0.01	**1.0**	1613B
OCDD	**2100**	**B**	96	2.1	pg/L	0.0003	**0.63**	1613B
OCDF	**170**	**B**	96	0.93	pg/L	0.0003	**0.051**	1613B
2,3,7,8-TCDD - DL	**5400**		96	30	pg/L	1	**5400**	1613B
2,3,7,8-TCDF - RA	**15000**	**B**	96	23	pg/L	0.1	**1500**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		7200	TEQ

Client Sample ID: 11215702-Tank#2-valve-2-2 Lab Sample ID: 320-65130-19

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**850**		9.6	3.7	pg/L	1	**850**	1613B
1,2,3,7,8-PeCDD	**9.5**	**J**	48	1.4	pg/L	1	**9.5**	1613B
1,2,3,7,8-PeCDF	**83**		48	1.7	pg/L	0.03	**2.5**	1613B
2,3,4,7,8-PeCDF	**64**		48	1.9	pg/L	0.3	**19**	1613B
1,2,3,4,7,8-HxCDD	**1.9**	**J B**	48	0.36	pg/L	0.1	**0.19**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.44	pg/L	0.1	0.022	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.36	pg/L	0.1	0.018	1613B
1,2,3,4,7,8-HxCDF	**190**		48	1.5	pg/L	0.1	**19**	1613B
1,2,3,6,7,8-HxCDF	**48**		48	1.4	pg/L	0.1	**4.8**	1613B
1,2,3,7,8,9-HxCDF	**3.8**	**J B**	48	1.1	pg/L	0.1	**0.38**	1613B
2,3,4,6,7,8-HxCDF	**5.5**	**J**	48	1.1	pg/L	0.1	**0.55**	1613B
1,2,3,4,6,7,8-HpCDD	**27**	**J**	48	0.56	pg/L	0.01	**0.27**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank#2-valve-2-2 (Continued) Lab Sample ID: 320-65130-19

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,6,7,8-HpCDF	**73**	**B**	48	0.49	pg/L	0.01	**0.73**	1613B
1,2,3,4,7,8,9-HpCDF	**25**	**J B**	48	0.50	pg/L	0.01	**0.25**	1613B
OCDD	**560**	**B**	96	0.76	pg/L	0.0003	**0.17**	1613B
OCDF	**51**	**J B**	96	0.79	pg/L	0.0003	**0.015**	1613B
2,3,7,8-TCDF - RA	**2400**	**B**	9.6	3.9	pg/L	0.1	**240**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1100	TEQ

Client Sample ID: 11215702-Tank#2-valve-3-2 Lab Sample ID: 320-65130-20

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**1400**		9.6	5.3	pg/L	1	**1400**	1613B
1,2,3,7,8-PeCDD	**14**	**J**	48	1.3	pg/L	1	**14**	1613B
1,2,3,7,8-PeCDF	**140**		48	1.6	pg/L	0.03	**4.2**	1613B
2,3,4,7,8-PeCDF	**100**		48	1.8	pg/L	0.3	**30**	1613B
1,2,3,4,7,8-HxCDD	**2.1**	**J q B**	48	0.32	pg/L	0.1	**0.21**	1613B
1,2,3,6,7,8-HxCDD	**2.0**	**J**	48	0.40	pg/L	0.1	**0.20**	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.33	pg/L	0.1	0.017	1613B
1,2,3,4,7,8-HxCDF	**300**		48	1.6	pg/L	0.1	**30**	1613B
1,2,3,6,7,8-HxCDF	**77**		48	1.4	pg/L	0.1	**7.7**	1613B
1,2,3,7,8,9-HxCDF	**5.1**	**J B**	48	1.2	pg/L	0.1	**0.51**	1613B
2,3,4,6,7,8-HxCDF	**9.0**	**J**	48	1.2	pg/L	0.1	**0.90**	1613B
1,2,3,4,6,7,8-HpCDD	**42**	**J**	48	0.64	pg/L	0.01	**0.42**	1613B
1,2,3,4,6,7,8-HpCDF	**110**	**B**	48	0.63	pg/L	0.01	**1.1**	1613B
1,2,3,4,7,8,9-HpCDF	**38**	**J B**	48	0.67	pg/L	0.01	**0.38**	1613B
OCDD	**810**	**B**	96	1.0	pg/L	0.0003	**0.24**	1613B
OCDF	**79**	**J B**	96	0.82	pg/L	0.0003	**0.024**	1613B
2,3,7,8-TCDF - RA	**3800**	**B**	48	15	pg/L	0.1	**380**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1900	TEQ

Client Sample ID: 11215702-Tank#2-valve-4-2 Lab Sample ID: 320-65130-21

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**940**		9.5	4.5	pg/L	1	**940**	1613B
1,2,3,7,8-PeCDD	**11**	**J**	48	1.3	pg/L	1	**11**	1613B
1,2,3,7,8-PeCDF	**92**		48	1.3	pg/L	0.03	**2.8**	1613B
2,3,4,7,8-PeCDF	**66**		48	1.4	pg/L	0.3	**20**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client Sample ID: 11215702-Tank#2-valve-4-2 (Continued)

Lab Sample ID: 320-65130-21

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,7,8-HxCDD	**3.0**	**J B**	48	0.38	pg/L	0.1	**0.30**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.43	pg/L	0.1	0.022	1613B
1,2,3,7,8,9-HxCDD	**1.9**	**J**	48	0.37	pg/L	0.1	**0.19**	1613B
1,2,3,4,7,8-HxCDF	**210**		48	1.1	pg/L	0.1	**21**	1613B
1,2,3,6,7,8-HxCDF	**55**		48	1.0	pg/L	0.1	**5.5**	1613B
1,2,3,7,8,9-HxCDF	**4.2**	**J q B**	48	0.85	pg/L	0.1	**0.42**	1613B
2,3,4,6,7,8-HxCDF	**8.0**	**J**	48	0.90	pg/L	0.1	**0.80**	1613B
1,2,3,4,6,7,8-HpCDD	**30**	**J**	48	0.58	pg/L	0.01	**0.30**	1613B
1,2,3,4,6,7,8-HpCDF	**84**	**B**	48	0.55	pg/L	0.01	**0.84**	1613B
1,2,3,4,7,8,9-HpCDF	**30**	**J B**	48	0.56	pg/L	0.01	**0.30**	1613B
OCDD	**600**	**B**	95	0.85	pg/L	0.0003	**0.18**	1613B
OCDF	**54**	**J B**	95	0.84	pg/L	0.0003	**0.016**	1613B
2,3,7,8-TCDF - RA	**2500**	**B**	9.5	3.7	pg/L	0.1	**250**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1300	TEQ

Client Sample ID: 11215702-Tank#2-valve-5-2

Lab Sample ID: 320-65130-22

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**1300**		9.5	4.1	pg/L	1	**1300**	1613B
1,2,3,7,8-PeCDD	**13**	**J**	48	1.3	pg/L	1	**13**	1613B
1,2,3,7,8-PeCDF	**120**		48	1.6	pg/L	0.03	**3.6**	1613B
2,3,4,7,8-PeCDF	**88**		48	1.9	pg/L	0.3	**26**	1613B
1,2,3,4,7,8-HxCDD	**2.4**	**J B**	48	0.33	pg/L	0.1	**0.24**	1613B
1,2,3,6,7,8-HxCDD	**1.5**	**J**	48	0.41	pg/L	0.1	**0.15**	1613B
1,2,3,7,8,9-HxCDD	**0.84**	**J q**	48	0.34	pg/L	0.1	**0.084**	1613B
1,2,3,4,7,8-HxCDF	**260**		48	1.3	pg/L	0.1	**26**	1613B
1,2,3,6,7,8-HxCDF	**67**		48	1.1	pg/L	0.1	**6.7**	1613B
1,2,3,7,8,9-HxCDF	**4.8**	**J B**	48	0.98	pg/L	0.1	**0.48**	1613B
2,3,4,6,7,8-HxCDF	**7.6**	**J**	48	0.96	pg/L	0.1	**0.76**	1613B
1,2,3,4,6,7,8-HpCDD	**35**	**J**	48	0.65	pg/L	0.01	**0.35**	1613B
1,2,3,4,6,7,8-HpCDF	**97**	**B**	48	0.51	pg/L	0.01	**0.97**	1613B
1,2,3,4,7,8,9-HpCDF	**34**	**J B**	48	0.54	pg/L	0.01	**0.34**	1613B
OCDD	**690**	**B**	95	0.81	pg/L	0.0003	**0.21**	1613B
OCDF	**64**	**J B**	95	0.78	pg/L	0.0003	**0.019**	1613B
2,3,7,8-TCDF - RA	**3500**	**B**	9.5	4.9	pg/L	0.1	**350**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1700	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc. Job ID: 320-65130-1

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Surrogate Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-65130-1	11215702-Tank#1-valve-2-1	98
320-65130-1 - RA	11215702-Tank#1-valve-2-1	119
320-65130-2	11215702-Tank#1-valve-3-1	97
320-65130-2 - RA	11215702-Tank#1-valve-3-1	116
320-65130-3	11215702-Tank#1-valve-4-1	100
320-65130-3 - RA	11215702-Tank#1-valve-4-1	119
320-65130-4	11215702-Tank#1-valve-5-1	99
320-65130-4 - RA	11215702-Tank#1-valve-5-1	117
320-65130-5	11215702-Tank#1-valve-2-2	98
320-65130-5 - RA	11215702-Tank#1-valve-2-2	120
320-65130-7	11215702-Tank#1-valve-4-2	96
320-65130-7 - RA	11215702-Tank#1-valve-4-2	121
320-65130-8	11215702-Tank#1-valve-5-2	95
320-65130-8 - RA	11215702-Tank#1-valve-5-2	117
320-65130-9	11215702-Tank#1-valve-2-3	96
320-65130-9 - RA	11215702-Tank#1-valve-2-3	117
320-65130-10	11215702-Tank#1-valve-3-3	101
320-65130-10 - RA	11215702-Tank#1-valve-3-3	120
320-65130-11	11215702-Tank#1-valve-4-3	103
320-65130-11 - RA	11215702-Tank#1-valve-4-3	121
320-65130-12	11215702-Tank#1-valve-5-3	97
320-65130-12 - RA	11215702-Tank#1-valve-5-3	120
320-65130-13	11215702-Tank#1-T=0	87
320-65130-13 - RA	11215702-Tank#1-T=0	95
320-65130-13 - DL	11215702-Tank#1-T=0	131
320-65130-14	11215702-Tank#2-T=0	218 X
320-65130-14 - RA	11215702-Tank#2-T=0	37
320-65130-14 - DL	11215702-Tank#2-T=0	239 X
320-65130-15	11215702-Tank#2-valve-2-1	90
320-65130-15 - RA	11215702-Tank#2-valve-2-1	102
320-65130-16	11215702-Tank#2-valve-3-1	90
320-65130-16 - RA	11215702-Tank#2-valve-3-1	102
320-65130-17	11215702-Tank#2-valve-4-1	94
320-65130-17 - RA	11215702-Tank#2-valve-4-1	111
320-65130-18	11215702-Tank#2-valve-5-1	93
320-65130-18 - RA	11215702-Tank#2-valve-5-1	109
320-65130-18 - DL	11215702-Tank#2-valve-5-1	94
320-65130-19	11215702-Tank#2-valve-2-2	92
320-65130-19 - RA	11215702-Tank#2-valve-2-2	111
320-65130-20	11215702-Tank#2-valve-3-2	95
320-65130-20 - RA	11215702-Tank#2-valve-3-2	110
320-65130-21	11215702-Tank#2-valve-4-2	85
320-65130-21 - RA	11215702-Tank#2-valve-4-2	101
320-65130-22	11215702-Tank#2-valve-5-2	95
320-65130-22 - RA	11215702-Tank#2-valve-5-2	111
MB 320-417490/1-A	Method Blank	102
MB 320-417971/1-A	Method Blank	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-417490/2-A	Lab Control Sample	100
LCS 320-417971/2-A	Lab Control Sample	93
LCSD 320-417490/3-A	Lab Control Sample Dup	109
LCSD 320-417971/3-A	Lab Control Sample Dup	89

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (25-164)**	**TCDF (24-169)**	**PeCDD (25-181)**	**PeCDF (24-185)**	**PeCF (21-178)**	**HxCDD (32-141)**	**HxDD (28-130)**	**HxCDF (26-152)**
320-65130-1	11215702-Tank#1-valve-2-1	78	81	80	72	71	85	86	74
320-65130-1 - RA	11215702-Tank#1-valve-2-1		85						
320-65130-2	11215702-Tank#1-valve-3-1	80	79	80	72	70	84	88	77
320-65130-2 - RA	11215702-Tank#1-valve-3-1		83						
320-65130-3	11215702-Tank#1-valve-4-1	83	84	85	74	74	90	91	81
320-65130-3 - RA	11215702-Tank#1-valve-4-1		91						
320-65130-4	11215702-Tank#1-valve-5-1	77	79	81	74	68	82	83	77
320-65130-4 - RA	11215702-Tank#1-valve-5-1		84						
320-65130-5	11215702-Tank#1-valve-2-2	82	76	77	71	70	90	92	79
320-65130-5 - RA	11215702-Tank#1-valve-2-2		89						
320-65130-7	11215702-Tank#1-valve-4-2	78	77	74	68	70	93	89	80
320-65130-7 - RA	11215702-Tank#1-valve-4-2		88						
320-65130-8	11215702-Tank#1-valve-5-2	76	78	76	69	68	90	88	74
320-65130-8 - RA	11215702-Tank#1-valve-5-2		83						
320-65130-9	11215702-Tank#1-valve-2-3	73	66	73	62	60	72	78	68
320-65130-9 - RA	11215702-Tank#1-valve-2-3		75						
320-65130-10	11215702-Tank#1-valve-3-3	74	73	76	69	67	79	79	72
320-65130-10 - RA	11215702-Tank#1-valve-3-3		77						
320-65130-11	11215702-Tank#1-valve-4-3	86	80	80	63	58	84	96	66
320-65130-11 - RA	11215702-Tank#1-valve-4-3		88						
320-65130-12	11215702-Tank#1-valve-5-3	77	81	78	68	69	91	90	77
320-65130-12 - RA	11215702-Tank#1-valve-5-3		87						
320-65130-13	11215702-Tank#1-T=0			101	73	84	56	56	53
320-65130-13 - RA	11215702-Tank#1-T=0		99						
320-65130-13 - DL	11215702-Tank#1-T=0	70	67						
320-65130-14	11215702-Tank#2-T=0	115	106	66	82	82	110	94	100
320-65130-14 - RA	11215702-Tank#2-T=0		117 q						
320-65130-14 - DL	11215702-Tank#2-T=0	111							
320-65130-15	11215702-Tank#2-valve-2-1	76	85	66	75	73	114	86	93
320-65130-15 - RA	11215702-Tank#2-valve-2-1		92						
320-65130-16	11215702-Tank#2-valve-3-1	75	70	74	76	75	100	86	71
320-65130-16 - RA	11215702-Tank#2-valve-3-1		84						
320-65130-17	11215702-Tank#2-valve-4-1	78	71	76	79	76	104	93	73
320-65130-17 - RA	11215702-Tank#2-valve-4-1		90						
320-65130-18	11215702-Tank#2-valve-5-1	73	71	70	72	71	91	79	67
320-65130-18 - RA	11215702-Tank#2-valve-5-1		82						
320-65130-18 - DL	11215702-Tank#2-valve-5-1	71							
320-65130-19	11215702-Tank#2-valve-2-2	67	62	66	67	66	86	77	62
320-65130-19 - RA	11215702-Tank#2-valve-2-2		73						
320-65130-20	11215702-Tank#2-valve-3-2	71	68	71	72	70	91	79	64
320-65130-20 - RA	11215702-Tank#2-valve-3-2		77						
320-65130-21	11215702-Tank#2-valve-4-2	63	59	61	64	62	76	71	61
320-65130-21 - RA	11215702-Tank#2-valve-4-2		70						
320-65130-22	11215702-Tank#2-valve-5-2	69	66	69	71	69	91	78	64
320-65130-22 - RA	11215702-Tank#2-valve-5-2		74						
MB 320-417490/1-A	Method Blank	91	81	79	70	69	87	95	71
MB 320-417971/1-A	Method Blank	75	71	80	79	78	91	89	69

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)
320-65130-1	11215702-Tank#1-valve-2-1	76	77	76	80	80	80	89
320-65130-1 - RA	11215702-Tank#1-valve-2-1							
320-65130-2	11215702-Tank#1-valve-3-1	75	76	77	82	80	85	95
320-65130-2 - RA	11215702-Tank#1-valve-3-1							
320-65130-3	11215702-Tank#1-valve-4-1	80	80	78	88	85	82	94
320-65130-3 - RA	11215702-Tank#1-valve-4-1							
320-65130-4	11215702-Tank#1-valve-5-1	75	76	75	76	78	75	91
320-65130-4 - RA	11215702-Tank#1-valve-5-1							
320-65130-5	11215702-Tank#1-valve-2-2	80	83	80	89	86	85	101
320-65130-5 - RA	11215702-Tank#1-valve-2-2							
320-65130-7	11215702-Tank#1-valve-4-2	80	79	81	86	83	79	96
320-65130-7 - RA	11215702-Tank#1-valve-4-2							
320-65130-8	11215702-Tank#1-valve-5-2	77	76	79	84	80	77	88
320-65130-8 - RA	11215702-Tank#1-valve-5-2							
320-65130-9	11215702-Tank#1-valve-2-3	68	65	66	75	68	67	75
320-65130-9 - RA	11215702-Tank#1-valve-2-3							
320-65130-10	11215702-Tank#1-valve-3-3	69	71	70	69	74	65	82
320-65130-10 - RA	11215702-Tank#1-valve-3-3							
320-65130-11	11215702-Tank#1-valve-4-3	69	75	78	72	77	67	75
320-65130-11 - RA	11215702-Tank#1-valve-4-3							
320-65130-12	11215702-Tank#1-valve-5-3	75	80	76	86	85	82	99
320-65130-12 - RA	11215702-Tank#1-valve-5-3							
320-65130-13	11215702-Tank#1-T=0	50	51	52	46	42	46	42
320-65130-13 - RA	11215702-Tank#1-T=0							
320-65130-13 - DL	11215702-Tank#1-T=0							48
320-65130-14	11215702-Tank#2-T=0	99	101	97	83	85	98	97
320-65130-14 - RA	11215702-Tank#2-T=0							
320-65130-14 - DL	11215702-Tank#2-T=0							
320-65130-15	11215702-Tank#2-valve-2-1	90	91	94	82	84	89	97
320-65130-15 - RA	11215702-Tank#2-valve-2-1							
320-65130-16	11215702-Tank#2-valve-3-1	71	72	74	82	82	80	77
320-65130-16 - RA	11215702-Tank#2-valve-3-1							
320-65130-17	11215702-Tank#2-valve-4-1	74	75	77	83	84	81	80
320-65130-17 - RA	11215702-Tank#2-valve-4-1							
320-65130-18	11215702-Tank#2-valve-5-1	66	69	70	75	75	74	70
320-65130-18 - RA	11215702-Tank#2-valve-5-1							
320-65130-18 - DL	11215702-Tank#2-valve-5-1							
320-65130-19	11215702-Tank#2-valve-2-2	65	64	66	73	73	71	70
320-65130-19 - RA	11215702-Tank#2-valve-2-2							
320-65130-20	11215702-Tank#2-valve-3-2	67	68	69	75	77	73	76
320-65130-20 - RA	11215702-Tank#2-valve-3-2							
320-65130-21	11215702-Tank#2-valve-4-2	62	62	64	70	71	70	70
320-65130-21 - RA	11215702-Tank#2-valve-4-2							
320-65130-22	11215702-Tank#2-valve-5-2	65	66	69	75	77	74	77
320-65130-22 - RA	11215702-Tank#2-valve-5-2							
MB 320-417490/1-A	Method Blank	78	74	77	72	70	69	60
MB 320-417971/1-A	Method Blank	74	75	77	81	83	76	76

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD

TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (20-175)**	**TCDF (22-152)**	**PeCDD (21-227)**	**PeCDF (21-192)**	**PeCF (13-328)**	**HxCDD (21-193)**	**HxDD (25-163)**	**HxCDF (19-202)**
LCS 320-417490/2-A	Lab Control Sample	80	79	77	68	69	92	91	77
LCS 320-417971/2-A	Lab Control Sample	67	65	74	73	73	89	80	62
LCSD 320-417490/3-A	Lab Control Sample Dup	96	94	92	81	85	104	101	88
LCSD 320-417971/3-A	Lab Control Sample Dup	66	63	72	71	71	93	81	62

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HxDF (21-159)**	**HxCF (17-205)**	**13CHxCF (22-176)**	**HpCDD (26-166)**	**HpCDF (21-158)**	**HpCDF2 (20-186)**	**OCDD (13-199)**
LCS 320-417490/2-A	Lab Control Sample	76	83	77	84	79	83	100
LCS 320-417971/2-A	Lab Control Sample	63	69	68	73	73	71	74
LCSD 320-417490/3-A	Lab Control Sample Dup	86	94	90	96	91	90	112
LCSD 320-417971/3-A	Lab Control Sample Dup	65	67	69	76	75	74	71

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-417490/1-A
Matrix: Water
Analysis Batch: 420113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417490

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.69	pg/L		10/01/20 08:42	10/08/20 11:56	1
2,3,7,8-TCDF	1.04	J	10	0.43	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,7,8-PeCDD	4.60	J q	50	1.1	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,7,8-PeCDF	3.77	J	50	0.71	pg/L		10/01/20 08:42	10/08/20 11:56	1
2,3,4,7,8-PeCDF	4.04	J	50	0.79	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,4,7,8-HxCDD	8.52	J	50	1.8	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,6,7,8-HxCDD	6.23	J q	50	1.8	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,7,8,9-HxCDD	6.41	J	50	1.6	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,4,7,8-HxCDF	6.57	J	50	1.4	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,6,7,8-HxCDF	7.55	J	50	1.5	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,7,8,9-HxCDF	8.65	J	50	1.1	pg/L		10/01/20 08:42	10/08/20 11:56	1
2,3,4,6,7,8-HxCDF	6.98	J	50	1.5	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,4,6,7,8-HpCDD	9.88	J	50	0.53	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,4,6,7,8-HpCDF	9.01	J q	50	0.72	pg/L		10/01/20 08:42	10/08/20 11:56	1
1,2,3,4,7,8,9-HpCDF	10.1	J	50	0.77	pg/L		10/01/20 08:42	10/08/20 11:56	1
OCDD	27.3	J	100	0.74	pg/L		10/01/20 08:42	10/08/20 11:56	1
OCDF	21.0	J	100	0.74	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total TCDD	5.57	J	10	0.69	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total TCDF	1.04	J	10	0.43	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total PeCDD	4.60	J q	50	1.1	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total PeCDF	7.81	J	50	0.75	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total HxCDD	21.2	J q	50	1.7	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total HxCDF	29.8	J	50	1.4	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total HpCDD	9.88	J	50	0.53	pg/L		10/01/20 08:42	10/08/20 11:56	1
Total HpCDF	19.1	J q	50	0.74	pg/L		10/01/20 08:42	10/08/20 11:56	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*91*		*25 - 164*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-2,3,7,8-TCDF	*81*		*24 - 169*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*25 - 181*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-2,3,4,7,8-PeCDF	*69*		*21 - 178*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,4,7,8-HxCDD	*87*		*32 - 141*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,6,7,8-HxCDD	*95*		*28 - 130*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,4,7,8-HxCDF	*71*		*26 - 152*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*26 - 123*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*72*		*23 - 140*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*70*		*28 - 143*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*69*		*26 - 138*	*10/01/20 08:42*	*10/08/20 11:56*	*1*
13C-OCDD	*60*		*17 - 157*	*10/01/20 08:42*	*10/08/20 11:56*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*10/01/20 08:42*	*10/08/20 11:56*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-417490/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 420113
Prep Batch: 417490

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	218		pg/L		109	67 - 158
2,3,7,8-TCDF	200	223		pg/L		111	75 - 158
1,2,3,7,8-PeCDD	1000	969		pg/L		97	70 - 142
1,2,3,7,8-PeCDF	1000	985		pg/L		98	80 - 134
2,3,4,7,8-PeCDF	1000	1010		pg/L		101	68 - 160
1,2,3,4,7,8-HxCDD	1000	958		pg/L		96	70 - 164
1,2,3,6,7,8-HxCDD	1000	955		pg/L		95	76 - 134
1,2,3,7,8,9-HxCDD	1000	847		pg/L		85	64 - 162
1,2,3,4,7,8-HxCDF	1000	998		pg/L		100	72 - 134
1,2,3,6,7,8-HxCDF	1000	1010		pg/L		101	84 - 130
1,2,3,7,8,9-HxCDF	1000	1010		pg/L		101	78 - 130
2,3,4,6,7,8-HxCDF	1000	1010		pg/L		101	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	952		pg/L		95	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	1010		pg/L		101	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	1020		pg/L		102	78 - 138
OCDD	2000	1850		pg/L		92	78 - 144
OCDF	2000	1780		pg/L		89	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*80*		*20 - 175*
13C-2,3,7,8-TCDF	*79*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*77*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*68*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*69*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*92*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*91*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*77*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*76*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*83*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*77*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*20 - 186*
13C-OCDD	*100*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*100*		*31 - 191*

Lab Sample ID: LCSD 320-417490/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 420113
Prep Batch: 417490

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	214		pg/L		107	67 - 158	2	50
2,3,7,8-TCDF	200	214		pg/L		107	75 - 158	4	50
1,2,3,7,8-PeCDD	1000	968		pg/L		97	70 - 142	0	50
1,2,3,7,8-PeCDF	1000	994		pg/L		99	80 - 134	1	50
2,3,4,7,8-PeCDF	1000	989		pg/L		99	68 - 160	2	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-417490/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 420113 **Prep Batch: 417490**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	956		pg/L		96	70 - 164	0	50
1,2,3,6,7,8-HxCDD	1000	938		pg/L		94	76 - 134	2	50
1,2,3,7,8,9-HxCDD	1000	877		pg/L		88	64 - 162	4	50
1,2,3,4,7,8-HxCDF	1000	988		pg/L		99	72 - 134	1	50
1,2,3,6,7,8-HxCDF	1000	999		pg/L		100	84 - 130	1	50
1,2,3,7,8,9-HxCDF	1000	993		pg/L		99	78 - 130	2	50
2,3,4,6,7,8-HxCDF	1000	996		pg/L		100	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD	1000	930		pg/L		93	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF	1000	970		pg/L		97	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF	1000	1020		pg/L		102	78 - 138	0	50
OCDD	2000	1880		pg/L		94	78 - 144	2	50
OCDF	2000	1820		pg/L		91	63 - 170	2	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*96*		*20 - 175*
13C-2,3,7,8-TCDF	*94*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*92*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*81*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*85*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*104*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*101*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*88*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*86*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*94*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*90*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*96*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*91*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*90*		*20 - 186*
13C-OCDD	*112*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*109*		*31 - 191*

Lab Sample ID: MB 320-417971/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 420640 **Prep Batch: 417971**

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	1.8	pg/L		10/02/20 08:26	10/10/20 07:46	1
2,3,7,8-TCDF	5.58	J	10	1.3	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,7,8-PeCDD	ND		50	1.9	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,7,8-PeCDF	ND		50	0.72	pg/L		10/02/20 08:26	10/10/20 07:46	1
2,3,4,7,8-PeCDF	ND		50	0.80	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,4,7,8-HxCDD	2.15	J	50	0.37	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,6,7,8-HxCDD	ND		50	0.42	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,7,8,9-HxCDD	ND		50	0.37	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,4,7,8-HxCDF	ND		50	0.59	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,6,7,8-HxCDF	ND		50	0.50	pg/L		10/02/20 08:26	10/10/20 07:46	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-417971/1-A
Matrix: Water
Analysis Batch: 420640

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 417971

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDF	0.913	J	50	0.42	pg/L		10/02/20 08:26	10/10/20 07:46	1
2,3,4,6,7,8-HxCDF	ND		50	0.42	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,4,6,7,8-HpCDD	ND		50	0.51	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,4,6,7,8-HpCDF	1.95	J	50	0.23	pg/L		10/02/20 08:26	10/10/20 07:46	1
1,2,3,4,7,8,9-HpCDF	1.33	J q	50	0.25	pg/L		10/02/20 08:26	10/10/20 07:46	1
OCDD	4.35	J q	100	0.41	pg/L		10/02/20 08:26	10/10/20 07:46	1
OCDF	2.61	J q	100	1.0	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total TCDD	ND		10	1.8	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total TCDF	5.58	J	10	1.3	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total PeCDD	ND		50	1.9	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total PeCDF	ND		50	0.80	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total HxCDD	2.15	J	50	0.39	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total HxCDF	0.913	J	50	0.48	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total HpCDD	ND		50	0.51	pg/L		10/02/20 08:26	10/10/20 07:46	1
Total HpCDF	3.28	J q	50	0.24	pg/L		10/02/20 08:26	10/10/20 07:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*24 - 185*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-2,3,4,7,8-PeCDF	*78*		*21 - 178*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,4,7,8-HxCDD	*91*		*32 - 141*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*28 - 130*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*26 - 152*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,6,7,8-HxCDF	*74*		*26 - 123*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,7,8,9-HxCDF	*75*		*29 - 147*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*23 - 140*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*26 - 138*	*10/02/20 08:26*	*10/10/20 07:46*	*1*
13C-OCDD	*76*		*17 - 157*	*10/02/20 08:26*	*10/10/20 07:46*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*91*		*35 - 197*	*10/02/20 08:26*	*10/10/20 07:46*	*1*

Lab Sample ID: LCS 320-417971/2-A
Matrix: Water
Analysis Batch: 420640

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 417971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	216		pg/L		108	67 - 158
2,3,7,8-TCDF	200	218		pg/L		109	75 - 158
1,2,3,7,8-PeCDD	1000	1070		pg/L		107	70 - 142
1,2,3,7,8-PeCDF	1000	1010		pg/L		101	80 - 134
2,3,4,7,8-PeCDF	1000	1040		pg/L		104	68 - 160
1,2,3,4,7,8-HxCDD	1000	1050		pg/L		105	70 - 164
1,2,3,6,7,8-HxCDD	1000	998		pg/L		100	76 - 134

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-417971/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 420640 **Prep Batch: 417971**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8,9-HxCDD	1000	860		pg/L		86	64 - 162
1,2,3,4,7,8-HxCDF	1000	1030		pg/L		103	72 - 134
1,2,3,6,7,8-HxCDF	1000	1050		pg/L		105	84 - 130
1,2,3,7,8,9-HxCDF	1000	1020		pg/L		102	78 - 130
2,3,4,6,7,8-HxCDF	1000	1030		pg/L		103	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	1010		pg/L		101	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	971		pg/L		97	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	993		pg/L		99	78 - 138
OCDD	2000	1880		pg/L		94	78 - 144
OCDF	2000	1800		pg/L		90	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*67*		*20 - 175*
13C-2,3,7,8-TCDF	*65*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*74*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*73*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*73*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*89*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*80*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*62*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*63*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*69*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*68*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*73*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*73*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*71*		*20 - 186*
13C-OCDD	*74*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*93*		*31 - 191*

Lab Sample ID: LCSD 320-417971/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 420640 **Prep Batch: 417971**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	207		pg/L		103	67 - 158	4	50
2,3,7,8-TCDF	200	211		pg/L		105	75 - 158	3	50
1,2,3,7,8-PeCDD	1000	1050		pg/L		105	70 - 142	2	50
1,2,3,7,8-PeCDF	1000	1030		pg/L		103	80 - 134	2	50
2,3,4,7,8-PeCDF	1000	1020		pg/L		102	68 - 160	1	50
1,2,3,4,7,8-HxCDD	1000	1060		pg/L		106	70 - 164	1	50
1,2,3,6,7,8-HxCDD	1000	993		pg/L		99	76 - 134	0	50
1,2,3,7,8,9-HxCDD	1000	846		pg/L		85	64 - 162	2	50
1,2,3,4,7,8-HxCDF	1000	1030		pg/L		103	72 - 134	0	50
1,2,3,6,7,8-HxCDF	1000	1040		pg/L		104	84 - 130	1	50
1,2,3,7,8,9-HxCDF	1000	1010		pg/L		101	78 - 130	1	50
2,3,4,6,7,8-HxCDF	1000	1030		pg/L		103	70 - 156	1	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-417971/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 420640 **Prep Batch: 417971**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD			1000	1020		pg/L		102	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			1000	978		pg/L		98	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			1000	976		pg/L		98	78 - 138	2	50
OCDD			2000	1900		pg/L		95	78 - 144	1	50
OCDF			2000	1810		pg/L		90	63 - 170	1	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*66*		*20 - 175*
13C-2,3,7,8-TCDF	*63*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*72*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*71*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*71*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*93*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*81*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*62*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*65*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*67*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*69*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*75*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*20 - 186*
13C-OCDD	*71*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*89*		*31 - 191*

Specialty Organics

Prep Batch: 417490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-1 - RA	11215702-Tank#1-valve-2-1	Total/NA	Water	1613B	
320-65130-1	11215702-Tank#1-valve-2-1	Total/NA	Water	1613B	
320-65130-2 - RA	11215702-Tank#1-valve-3-1	Total/NA	Water	1613B	
320-65130-2	11215702-Tank#1-valve-3-1	Total/NA	Water	1613B	
320-65130-3 - RA	11215702-Tank#1-valve-4-1	Total/NA	Water	1613B	
320-65130-3	11215702-Tank#1-valve-4-1	Total/NA	Water	1613B	
320-65130-4 - RA	11215702-Tank#1-valve-5-1	Total/NA	Water	1613B	
320-65130-4	11215702-Tank#1-valve-5-1	Total/NA	Water	1613B	
320-65130-5 - RA	11215702-Tank#1-valve-2-2	Total/NA	Water	1613B	
320-65130-5	11215702-Tank#1-valve-2-2	Total/NA	Water	1613B	
320-65130-7 - RA	11215702-Tank#1-valve-4-2	Total/NA	Water	1613B	
320-65130-7	11215702-Tank#1-valve-4-2	Total/NA	Water	1613B	
320-65130-8 - RA	11215702-Tank#1-valve-5-2	Total/NA	Water	1613B	
320-65130-8	11215702-Tank#1-valve-5-2	Total/NA	Water	1613B	
320-65130-9 - RA	11215702-Tank#1-valve-2-3	Total/NA	Water	1613B	
320-65130-9	11215702-Tank#1-valve-2-3	Total/NA	Water	1613B	
320-65130-10 - RA	11215702-Tank#1-valve-3-3	Total/NA	Water	1613B	
320-65130-10	11215702-Tank#1-valve-3-3	Total/NA	Water	1613B	
320-65130-11 - RA	11215702-Tank#1-valve-4-3	Total/NA	Water	1613B	
320-65130-11	11215702-Tank#1-valve-4-3	Total/NA	Water	1613B	
320-65130-12 - RA	11215702-Tank#1-valve-5-3	Total/NA	Water	1613B	
320-65130-12	11215702-Tank#1-valve-5-3	Total/NA	Water	1613B	
320-65130-13 - RA	11215702-Tank#1-T=0	Total/NA	Water	1613B	
320-65130-13	11215702-Tank#1-T=0	Total/NA	Water	1613B	
320-65130-13 - DL	11215702-Tank#1-T=0	Total/NA	Water	1613B	
MB 320-417490/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-417490/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-417490/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Prep Batch: 417971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-14 - RA	11215702-Tank#2-T=0	Total/NA	Water	1613B	
320-65130-14	11215702-Tank#2-T=0	Total/NA	Water	1613B	
320-65130-14 - DL	11215702-Tank#2-T=0	Total/NA	Water	1613B	
320-65130-15 - RA	11215702-Tank#2-valve-2-1	Total/NA	Water	1613B	
320-65130-15	11215702-Tank#2-valve-2-1	Total/NA	Water	1613B	
320-65130-16 - RA	11215702-Tank#2-valve-3-1	Total/NA	Water	1613B	
320-65130-16	11215702-Tank#2-valve-3-1	Total/NA	Water	1613B	
320-65130-17 - RA	11215702-Tank#2-valve-4-1	Total/NA	Water	1613B	
320-65130-17	11215702-Tank#2-valve-4-1	Total/NA	Water	1613B	
320-65130-18 - RA	11215702-Tank#2-valve-5-1	Total/NA	Water	1613B	
320-65130-18 - DL	11215702-Tank#2-valve-5-1	Total/NA	Water	1613B	
320-65130-18	11215702-Tank#2-valve-5-1	Total/NA	Water	1613B	
320-65130-19 - RA	11215702-Tank#2-valve-2-2	Total/NA	Water	1613B	
320-65130-19	11215702-Tank#2-valve-2-2	Total/NA	Water	1613B	
320-65130-20 - RA	11215702-Tank#2-valve-3-2	Total/NA	Water	1613B	
320-65130-20	11215702-Tank#2-valve-3-2	Total/NA	Water	1613B	
320-65130-21 - RA	11215702-Tank#2-valve-4-2	Total/NA	Water	1613B	
320-65130-21	11215702-Tank#2-valve-4-2	Total/NA	Water	1613B	
320-65130-22 - RA	11215702-Tank#2-valve-5-2	Total/NA	Water	1613B	
320-65130-22	11215702-Tank#2-valve-5-2	Total/NA	Water	1613B	

Specialty Organics (Continued)

Prep Batch: 417971 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-417971/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-417971/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-417971/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 420113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-417490/1-A	Method Blank	Total/NA	Water	1613B	417490
LCS 320-417490/2-A	Lab Control Sample	Total/NA	Water	1613B	417490
LCSD 320-417490/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	417490

Analysis Batch: 420482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-1	11215702-Tank#1-valve-2-1	Total/NA	Water	1613B	417490
320-65130-2	11215702-Tank#1-valve-3-1	Total/NA	Water	1613B	417490
320-65130-3	11215702-Tank#1-valve-4-1	Total/NA	Water	1613B	417490
320-65130-4	11215702-Tank#1-valve-5-1	Total/NA	Water	1613B	417490
320-65130-5	11215702-Tank#1-valve-2-2	Total/NA	Water	1613B	417490
320-65130-7	11215702-Tank#1-valve-4-2	Total/NA	Water	1613B	417490
320-65130-8	11215702-Tank#1-valve-5-2	Total/NA	Water	1613B	417490
320-65130-9	11215702-Tank#1-valve-2-3	Total/NA	Water	1613B	417490
320-65130-10	11215702-Tank#1-valve-3-3	Total/NA	Water	1613B	417490

Analysis Batch: 420483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-11	11215702-Tank#1-valve-4-3	Total/NA	Water	1613B	417490
320-65130-12	11215702-Tank#1-valve-5-3	Total/NA	Water	1613B	417490
320-65130-13	11215702-Tank#1-T=0	Total/NA	Water	1613B	417490

Analysis Batch: 420640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-16	11215702-Tank#2-valve-3-1	Total/NA	Water	1613B	417971
320-65130-17	11215702-Tank#2-valve-4-1	Total/NA	Water	1613B	417971
320-65130-18	11215702-Tank#2-valve-5-1	Total/NA	Water	1613B	417971
320-65130-19	11215702-Tank#2-valve-2-2	Total/NA	Water	1613B	417971
320-65130-20	11215702-Tank#2-valve-3-2	Total/NA	Water	1613B	417971
320-65130-21	11215702-Tank#2-valve-4-2	Total/NA	Water	1613B	417971
320-65130-22	11215702-Tank#2-valve-5-2	Total/NA	Water	1613B	417971
MB 320-417971/1-A	Method Blank	Total/NA	Water	1613B	417971
LCS 320-417971/2-A	Lab Control Sample	Total/NA	Water	1613B	417971
LCSD 320-417971/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	417971

Analysis Batch: 421107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-14	11215702-Tank#2-T=0	Total/NA	Water	1613B	417971
320-65130-15	11215702-Tank#2-valve-2-1	Total/NA	Water	1613B	417971

Analysis Batch: 421482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-14 - RA	11215702-Tank#2-T=0	Total/NA	Water	1613B	417971
320-65130-15 - RA	11215702-Tank#2-valve-2-1	Total/NA	Water	1613B	417971
320-65130-16 - RA	11215702-Tank#2-valve-3-1	Total/NA	Water	1613B	417971

Specialty Organics (Continued)

Analysis Batch: 421482 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-17 - RA	11215702-Tank#2-valve-4-1	Total/NA	Water	1613B	417971
320-65130-19 - RA	11215702-Tank#2-valve-2-2	Total/NA	Water	1613B	417971
320-65130-21 - RA	11215702-Tank#2-valve-4-2	Total/NA	Water	1613B	417971
320-65130-22 - RA	11215702-Tank#2-valve-5-2	Total/NA	Water	1613B	417971

Analysis Batch: 421876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-1 - RA	11215702-Tank#1-valve-2-1	Total/NA	Water	1613B	417490
320-65130-2 - RA	11215702-Tank#1-valve-3-1	Total/NA	Water	1613B	417490
320-65130-3 - RA	11215702-Tank#1-valve-4-1	Total/NA	Water	1613B	417490
320-65130-4 - RA	11215702-Tank#1-valve-5-1	Total/NA	Water	1613B	417490
320-65130-5 - RA	11215702-Tank#1-valve-2-2	Total/NA	Water	1613B	417490
320-65130-7 - RA	11215702-Tank#1-valve-4-2	Total/NA	Water	1613B	417490
320-65130-8 - RA	11215702-Tank#1-valve-5-2	Total/NA	Water	1613B	417490
320-65130-9 - RA	11215702-Tank#1-valve-2-3	Total/NA	Water	1613B	417490
320-65130-10 - RA	11215702-Tank#1-valve-3-3	Total/NA	Water	1613B	417490
320-65130-11 - RA	11215702-Tank#1-valve-4-3	Total/NA	Water	1613B	417490
320-65130-12 - RA	11215702-Tank#1-valve-5-3	Total/NA	Water	1613B	417490
320-65130-13 - RA	11215702-Tank#1-T=0	Total/NA	Water	1613B	417490

Analysis Batch: 422080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-18 - RA	11215702-Tank#2-valve-5-1	Total/NA	Water	1613B	417971
320-65130-20 - RA	11215702-Tank#2-valve-3-2	Total/NA	Water	1613B	417971

Analysis Batch: 422239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-14 - DL	11215702-Tank#2-T=0	Total/NA	Water	1613B	417971
320-65130-18 - DL	11215702-Tank#2-valve-5-1	Total/NA	Water	1613B	417971

Analysis Batch: 422778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65130-13 - DL	11215702-Tank#1-T=0	Total/NA	Water	1613B	417490

Lab Chronicle

Client Sample ID: 11215702-Tank#1-valve-2-1

Lab Sample ID: 320-65130-1

Date Collected: 09/11/20 12:30

Matrix: Water

Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/13/20 23:32	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 03:28	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-3-1

Lab Sample ID: 320-65130-2

Date Collected: 09/11/20 12:30

Matrix: Water

Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/14/20 00:10	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 04:15	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-4-1

Lab Sample ID: 320-65130-3

Date Collected: 09/11/20 12:30

Matrix: Water

Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/13/20 21:37	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 05:03	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-5-1

Lab Sample ID: 320-65130-4

Date Collected: 09/11/20 12:30

Matrix: Water

Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/14/20 03:22	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 05:51	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-2-2

Lab Sample ID: 320-65130-5

Date Collected: 09/11/20 13:30

Matrix: Water

Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/13/20 22:15	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 06:38	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-4-2 Lab Sample ID: 320-65130-7

Date Collected: 09/11/20 13:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/14/20 01:27	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 07:26	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-5-2 Lab Sample ID: 320-65130-8

Date Collected: 09/11/20 13:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/14/20 02:05	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 08:13	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-2-3 Lab Sample ID: 320-65130-9

Date Collected: 09/11/20 14:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/13/20 22:54	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 09:01	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-3-3 Lab Sample ID: 320-65130-10

Date Collected: 09/11/20 14:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	5	421876	10/14/20 04:00	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420482	10/09/20 09:49	AS	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-4-3 Lab Sample ID: 320-65130-11

Date Collected: 09/11/20 14:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/14/20 00:48	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420483	10/09/20 15:27	ALM	TAL SAC

Client Sample ID: 11215702-Tank#1-valve-5-3 Lab Sample ID: 320-65130-12

Date Collected: 09/11/20 14:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421876	10/14/20 02:43	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420483	10/09/20 16:15	ALM	TAL SAC

Client Sample ID: 11215702-Tank#1-T=0 Lab Sample ID: 320-65130-13

Date Collected: 09/11/20 11:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	100	421876	10/14/20 04:38	KSS	TAL SAC
Total/NA	Prep	1613B			417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420483	10/09/20 17:03	ALM	TAL SAC
Total/NA	Prep	1613B	DL		417490	10/01/20 08:42	RDR	TAL SAC
Total/NA	Analysis	1613B	DL	40	422778	10/17/20 02:29	AS	TAL SAC

Client Sample ID: 11215702-Tank#2-T=0 Lab Sample ID: 320-65130-14

Date Collected: 09/09/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	10	421482	10/12/20 23:38	AS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		10	421107	10/12/20 17:22	AS	TAL SAC
Total/NA	Prep	1613B	DL		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	DL	70	422239	10/15/20 20:21	AS	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-2-1 Lab Sample ID: 320-65130-15

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421482	10/12/20 21:05	AS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	421107	10/12/20 16:34	AS	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421482	10/12/20 21:43	AS	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 10:09	ALM	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-4-1 Lab Sample ID: 320-65130-17

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421482	10/12/20 19:10	AS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 10:57	ALM	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-5-1 Lab Sample ID: 320-65130-18

Date Collected: 09/10/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	10	422080	10/14/20 17:07	KSS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 11:45	ALM	TAL SAC
Total/NA	Prep	1613B	DL		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	DL	10	422239	10/15/20 21:09	AS	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-2-2 Lab Sample ID: 320-65130-19

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421482	10/12/20 18:31	AS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 12:33	ALM	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-3-2 Lab Sample ID: 320-65130-20

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	5	422080	10/14/20 16:28	KSS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 13:20	ALM	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-4-2 Lab Sample ID: 320-65130-21

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421482	10/12/20 20:26	AS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 14:08	ALM	TAL SAC

Client Sample ID: 11215702-Tank#2-valve-5-2 Lab Sample ID: 320-65130-22

Date Collected: 09/11/20 09:30 **Matrix: Water**
Date Received: 09/29/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B	RA	1	421482	10/12/20 23:00	AS	TAL SAC
Total/NA	Prep	1613B			417971	10/02/20 08:26	RDR	TAL SAC
Total/NA	Analysis	1613B		1	420640	10/10/20 14:56	ALM	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	**Program**	**Identification Number**	**Expiration Date**
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc.
Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc. Job ID: 320-65130-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65130-1	11215702-Tank#1-valve-2-1	Water	09/11/20 12:30	09/29/20 10:15	
320-65130-2	11215702-Tank#1-valve-3-1	Water	09/11/20 12:30	09/29/20 10:15	
320-65130-3	11215702-Tank#1-valve-4-1	Water	09/11/20 12:30	09/29/20 10:15	
320-65130-4	11215702-Tank#1-valve-5-1	Water	09/11/20 12:30	09/29/20 10:15	
320-65130-5	11215702-Tank#1-valve-2-2	Water	09/11/20 13:30	09/29/20 10:15	
320-65130-7	11215702-Tank#1-valve-4-2	Water	09/11/20 13:30	09/29/20 10:15	
320-65130-8	11215702-Tank#1-valve-5-2	Water	09/11/20 13:30	09/29/20 10:15	
320-65130-9	11215702-Tank#1-valve-2-3	Water	09/11/20 14:30	09/29/20 10:15	
320-65130-10	11215702-Tank#1-valve-3-3	Water	09/11/20 14:30	09/29/20 10:15	
320-65130-11	11215702-Tank#1-valve-4-3	Water	09/11/20 14:30	09/29/20 10:15	
320-65130-12	11215702-Tank#1-valve-5-3	Water	09/11/20 14:30	09/29/20 10:15	
320-65130-13	11215702-Tank#1-T=0	Water	09/11/20 11:30	09/29/20 10:15	
320-65130-14	11215702-Tank#2-T=0	Water	09/09/20 09:30	09/29/20 10:15	
320-65130-15	11215702-Tank#2-valve-2-1	Water	09/10/20 09:30	09/29/20 10:15	
320-65130-16	11215702-Tank#2-valve-3-1	Water	09/10/20 09:30	09/29/20 10:15	
320-65130-17	11215702-Tank#2-valve-4-1	Water	09/10/20 09:30	09/29/20 10:15	
320-65130-18	11215702-Tank#2-valve-5-1	Water	09/10/20 09:30	09/29/20 10:15	
320-65130-19	11215702-Tank#2-valve-2-2	Water	09/11/20 09:30	09/29/20 10:15	
320-65130-20	11215702-Tank#2-valve-3-2	Water	09/11/20 09:30	09/29/20 10:15	
320-65130-21	11215702-Tank#2-valve-4-2	Water	09/11/20 09:30	09/29/20 10:15	
320-65130-22	11215702-Tank#2-valve-5-2	Water	09/11/20 09:30	09/29/20 10:15	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 421482

Lab Sample ID: 320-65130-14 RA Client Sample ID: 11215702-Tank#2-T=0 RA

Date Analyzed: 10/12/20 23:38 Lab File ID: 12OC20A11D2_014.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
37Cl4-2,3,7,8-TCDD	14.84	Retention Time Shift	stephensk	10/15/20 13:18
2,3,7,8-TCDF	16.29	Poor chromatography	stephensk	10/15/20 13:17

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 421876

Lab Sample ID: 320-65130-3 RA Client Sample ID: 11215702-Tank#1-valve-4-1 RA

Date Analyzed: 10/13/20 21:37 Lab File ID: 13OC20A11D2_004.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.07	Poor chromatography	stephensk	10/14/20 17:33

Lab Sample ID: 320-65130-5 RA Client Sample ID: 11215702-Tank#1-valve-2-2 RA

Date Analyzed: 10/13/20 22:15 Lab File ID: 13OC20A11D2_005.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.07	Poor chromatography	stephensk	10/14/20 17:33

Lab Sample ID: 320-65130-13 RA Client Sample ID: 11215702-Tank#1-T=0 RA

Date Analyzed: 10/14/20 04:38 Lab File ID: 13OC20A11D2_015.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
37Cl4-2,3,7,8-TCDD	14.69	Wrong peak	stephensk	10/14/20 17:38
13C-2,3,7,8-TCDF	16.05	Wrong peak	stephensk	10/14/20 17:37
2,3,7,8-TCDF	16.08	Wrong peak	stephensk	10/14/20 17:37

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 419031

Lab Sample ID: WDM 320-419031/1 Client Sample ID:

Date Analyzed: 09/23/20 09:18 Lab File ID: 23SE203D5_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,7-TCDF	15.54	Peak assignment corrected	arghestanis	10/06/20 11:19
1,2,3,7-TCDD	16.04	Peak assignment corrected	arghestanis	10/06/20 11:19
1,2,3,9-TCDF	16.26	Peak assignment corrected	arghestanis	10/06/20 11:19
1,2,3,9-TCDD	16.28	Peak assignment corrected	arghestanis	10/06/20 11:19
1,2,8,9-TCDD	17.06	Peak assignment corrected	arghestanis	10/06/20 11:19
1,2,8,9-TCDF	17.06	Peak assignment corrected	arghestanis	10/06/20 11:19
1,3,4,6,8-PeCDF	17.32	Peak assignment corrected	arghestanis	10/06/20 11:19
1,2,4,7,9-PeCDD	18.81	Peak assignment corrected	arghestanis	10/06/20 11:20
1,2,3,8,9-PeCDD	22.33	Peak assignment corrected	arghestanis	10/06/20 11:20
1,2,3,8,9-PeCDF	22.51	Peak assignment corrected	arghestanis	10/06/20 11:20
1,2,3,4,6,8-HxCDF	24.43	Peak assignment corrected	arghestanis	10/06/20 11:20
1,2,4,6,7,9-HxCDD	25.73	Peak assignment corrected	arghestanis	10/06/20 11:20
1,2,3,4,6,7-HxCDD	30.08	Peak assignment corrected	arghestanis	10/06/20 11:20
1,2,3,4,8,9-HxCDF	30.62	Peak assignment corrected	arghestanis	10/06/20 11:20

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 419031

Lab Sample ID: IC 320-419031/3 Client Sample ID:

Date Analyzed: 10/05/20 17:35 Lab File ID: 05OC203D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	15.95	Peak assignment corrected	arghestanis	10/08/20 14:27
13C-1,2,3,4,7,8-HxCDD	29.09	Peak assignment corrected	arghestanis	10/08/20 14:37
13C-1,2,3,6,7,8-HxCDD	29.38	Peak assignment corrected	arghestanis	10/08/20 14:37

Lab Sample ID: IC 320-419031/4 Client Sample ID:

Date Analyzed: 10/05/20 18:22 Lab File ID: 05OC203D5_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	15.95	Peak assignment corrected	arghestanis	10/08/20 14:27
13C-1,2,3,4,7,8-HxCDD	29.10	Peak assignment corrected	arghestanis	10/08/20 14:28
13C-1,2,3,6,7,8-HxCDD	29.36	Peak assignment corrected	arghestanis	10/08/20 14:32

Lab Sample ID: IC 320-419031/5 Client Sample ID:

Date Analyzed: 10/05/20 19:10 Lab File ID: 05OC203D5_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	15.95	Peak assignment corrected	arghestanis	10/08/20 14:26
13C-1,2,3,4,7,8-HxCDD	29.09	Peak assignment corrected	arghestanis	10/08/20 14:26
13C-1,2,3,6,7,8-HxCDD	29.36	Peak assignment corrected	arghestanis	10/08/20 14:33

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 419031

Lab Sample ID: IC 320-419031/6 Client Sample ID:

Date Analyzed: 10/05/20 19:57 Lab File ID: 05OC203D5_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	15.95	Peak assignment corrected	arghestanis	10/08/20 14:30
13C-1,2,3,4,7,8-HxCDD	29.09	Peak assignment corrected	arghestanis	10/08/20 14:30
13C-1,2,3,6,7,8-HxCDD	29.36	Peak assignment corrected	arghestanis	10/08/20 14:33

Lab Sample ID: IC 320-419031/7 Client Sample ID:

Date Analyzed: 10/05/20 20:45 Lab File ID: 05OC203D5_8.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDD	29.09	Peak assignment corrected	arghestanis	10/08/20 14:30
13C-1,2,3,6,7,8-HxCDD	29.36	Peak assignment corrected	arghestanis	10/08/20 14:34

Lab Sample ID: ICV 320-419031/9 Client Sample ID:

Date Analyzed: 10/05/20 22:30 Lab File ID: 05OC203D5_10.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDD	29.09	Peak assignment corrected	arghestanis	10/08/20 14:43
13C-1,2,3,6,7,8-HxCDD	29.36	Peak assignment corrected	arghestanis	10/08/20 14:43

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420113

Lab Sample ID: WDM 320-420113/1 Client Sample ID:

Date Analyzed: 10/08/20 08:53 Lab File ID: 08OC203D5_1.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7-TCDD	16.02	Poor chromatography	arghestanis	10/09/20 09:34
2,3,7,8-TCDD	16.13	Poor chromatography	arghestanis	10/09/20 09:34

Lab Sample ID: CCV 320-420113/2 Client Sample ID:

Date Analyzed: 10/08/20 09:51 Lab File ID: 08OC203D5_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDD	29.06	Peak assignment corrected	messecara	10/08/20 23:38
13C-1,2,3,6,7,8-HxCDD	29.33	Peak assignment corrected	messecara	10/08/20 23:38

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420113

Lab Sample ID: MB 320-417490/1-A Client Sample ID:

Date Analyzed: 10/08/20 11:56 Lab File ID: 08OC203D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,7,8-TCDF	15.51	Baseline	ruangyotsakuld	10/13/20 08:39
2,3,7,8-TCDF	15.52	Baseline	ruangyotsakuld	10/13/20 08:38
1,2,3,7,8-PeCDF	19.75	Baseline	ruangyotsakuld	10/13/20 08:38
13C-1,2,3,7,8-PeCDF	19.75	Baseline	ruangyotsakuld	10/13/20 08:39
13C-2,3,4,7,8-PeCDF	20.87	Peak assignment corrected	ruangyotsakuld	10/13/20 08:59
13C-1,2,3,7,8-PeCDD	21.49	Baseline	ruangyotsakuld	10/13/20 08:40
1,2,3,7,8-PeCDD	21.51	Baseline	ruangyotsakuld	10/13/20 08:39
13C-1,2,3,4,7,8-HxCDF	26.81	Baseline	ruangyotsakuld	10/13/20 08:40
1,2,3,4,7,8-HxCDF	26.88	Baseline	ruangyotsakuld	10/13/20 08:39
13C-1,2,3,6,7,8-HxCDF	27.09	Baseline	ruangyotsakuld	10/13/20 08:40
1,2,3,6,7,8-HxCDF	27.12	Baseline	ruangyotsakuld	10/13/20 08:40
13C-2,3,4,6,7,8-HxCDF	28.66	Baseline	ruangyotsakuld	10/13/20 08:41
13C-1,2,3,4,7,8-HxCDD	29.16	Baseline	ruangyotsakuld	10/13/20 08:41
1,2,3,4,7,8-HxCDD	29.18	Baseline	ruangyotsakuld	10/13/20 08:41
13C-1,2,3,6,7,8-HxCDD	29.42	Baseline	ruangyotsakuld	10/13/20 08:42
1,2,3,6,7,8-HxCDD	29.49	Baseline	ruangyotsakuld	10/13/20 08:42
13C-1,2,3,7,8,9-HxCDF	30.46	Baseline	ruangyotsakuld	10/13/20 08:41

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420113

Lab Sample ID: MB 320-417490/1-A Client Sample ID:

Date Analyzed: 10/08/20 11:56 Lab File ID: 08OC203D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,6,7,8-HpCDF	32.57	Baseline	ruangyotsakuld	10/13/20 08:42
13C-1,2,3,4,6,7,8-HpCDD	33.42	Baseline	ruangyotsakuld	10/13/20 08:43
1,2,3,4,6,7,8-HpCDD	33.43	Baseline	ruangyotsakuld	10/13/20 08:44
13C-1,2,3,4,7,8,9-HpCDF	33.67	Baseline	ruangyotsakuld	10/13/20 08:43
13C-OCDD	35.58	Baseline	ruangyotsakuld	10/13/20 08:43
OCDD	35.58	Baseline	ruangyotsakuld	10/13/20 08:44
OCDF	35.65	Baseline	ruangyotsakuld	10/13/20 08:43

Lab Sample ID: LCS 320-417490/2-A Client Sample ID:

Date Analyzed: 10/08/20 12:44 Lab File ID: 08OC203D5_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDD	29.05	Peak assignment corrected	ruangyotsakuld	10/13/20 08:45
13C-1,2,3,6,7,8-HxCDD	29.34	Peak assignment corrected	ruangyotsakuld	10/13/20 08:45

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420113

Lab Sample ID: LCSD 320-417490/3-A Client Sample ID:

Date Analyzed: 10/08/20 13:31 Lab File ID: 08OC203D5_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDD	29.05	Peak assignment corrected	ruangyotsakuld	10/13/20 08:45
13C-1,2,3,6,7,8-HxCDD	29.33	Peak assignment corrected	ruangyotsakuld	10/13/20 08:45

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420482

Lab Sample ID: CCV 320-420482/9 Client Sample ID:

Date Analyzed: 10/09/20 01:52 Lab File ID: 08OC20A3D5_9.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDD	29.04	Peak assignment corrected	shardaa	10/12/20 17:59
13C-1,2,3,6,7,8-HxCDD	29.32	Peak assignment corrected	shardaa	10/12/20 18:00

Lab Sample ID: 320-65130-1 Client Sample ID: 11215702-Tank#1-valve-2-1

Date Analyzed: 10/09/20 03:28 Lab File ID: 08OC20A3D5_11.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/13/20 11:27
2,3,4,7,8-PeCDF	20.83	Split Peak	dadunj	10/13/20 11:27
1,2,3,7,8-PeCDD	21.46	Baseline	dadunj	10/13/20 11:27
1,2,3,4,7,8-HxCDF	26.76	Split Peak	dadunj	10/13/20 11:28
1,2,3,6,7,8-HxCDF	27.01	Split Peak	dadunj	10/13/20 11:28
13C-1,2,3,4,7,8-HxCDD	29.04	Peak assignment corrected	shardaa	10/12/20 17:55
1,2,3,4,7,8-HxCDD	29.05	Baseline	dadunj	10/13/20 11:29
13C-1,2,3,6,7,8-HxCDD	29.32	Peak assignment corrected	shardaa	10/12/20 17:59
1,2,3,6,7,8-HxCDD	29.33	Baseline	dadunj	10/13/20 11:29
1,2,3,7,8,9-HxCDF	30.42	Split Peak	dadunj	10/13/20 11:28
1,2,3,4,7,8,9-HpCDF	33.64	Split Peak	dadunj	10/13/20 11:29

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420482

Lab Sample ID: 320-65130-2 Client Sample ID: 11215702-Tank#1-valve-3-1

Date Analyzed: 10/09/20 04:15 Lab File ID: 08OC20A3D5_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	16.10	Split Peak	dadunj	10/13/20 11:32
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/13/20 11:32
1,2,3,7,8-PeCDD	21.45	Baseline	dadunj	10/13/20 11:33
2,3,4,6,7,8-HxCDF	28.56	Split Peak	dadunj	10/13/20 11:33
13C-1,2,3,4,7,8-HxCDD	29.04	Peak assignment corrected	shardaa	10/12/20 17:56
13C-1,2,3,6,7,8-HxCDD	29.32	Peak assignment corrected	shardaa	10/12/20 17:59
1,2,3,6,7,8-HxCDD	29.33	Baseline	dadunj	10/13/20 11:33
1,2,3,7,8,9-HxCDD	30.10	Baseline	dadunj	10/13/20 11:33
OCDF	35.63	Split Peak	dadunj	10/13/20 11:34

Lab Sample ID: 320-65130-3 Client Sample ID: 11215702-Tank#1-valve-4-1

Date Analyzed: 10/09/20 05:03 Lab File ID: 08OC20A3D5_13.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDD		Invalid Compound ID	dadunj	10/13/20 11:38
1,2,3,7,8-PeCDF	19.70	Split Peak	dadunj	10/13/20 11:37
2,3,4,7,8-PeCDF	20.82	Baseline	dadunj	10/13/20 11:37
1,2,3,6,7,8-HxCDF	27.01	Baseline	dadunj	10/13/20 11:38
13C-1,2,3,4,7,8-HxCDD	29.04	Peak assignment corrected	shardaa	10/12/20 17:56
13C-1,2,3,6,7,8-HxCDD	29.30	Peak assignment corrected	shardaa	10/12/20 17:58
1,2,3,4,6,7,8-HpCDD	33.40	Split Peak	dadunj	10/13/20 11:39
1,2,3,4,7,8,9-HpCDF	33.65	Split Peak	dadunj	10/13/20 11:39
OCDF	35.63	Baseline	dadunj	10/13/20 11:39

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420482

Lab Sample ID: 320-65130-4 Client Sample ID: 11215702-Tank#1-valve-5-1

Date Analyzed: 10/09/20 05:51 Lab File ID: 08OC20A3D5_14.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	16.10	Baseline	dadunj	10/13/20 11:42
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/13/20 11:42
13C-1,2,3,4,7,8-HxCDD	29.04	Peak assignment corrected	shardaa	10/12/20 17:56
13C-1,2,3,6,7,8-HxCDD	29.30	Peak assignment corrected	shardaa	10/12/20 17:58
1,2,3,6,7,8-HxCDD	29.32	Baseline	dadunj	10/13/20 11:44

Lab Sample ID: 320-65130-5 Client Sample ID: 11215702-Tank#1-valve-2-2

Date Analyzed: 10/09/20 06:38 Lab File ID: 08OC20A3D5_15.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDD		Invalid Compound ID	dadunj	10/13/20 12:17
1,2,3,6,7,8-HxCDF		Invalid Compound ID	dadunj	10/13/20 11:49
1,2,3,7,8-PeCDD		Invalid Compound ID	dadunj	10/13/20 11:48
2,3,4,6,7,8-HxCDF		Invalid Compound ID	dadunj	10/13/20 11:49
1,2,3,7,8-PeCDF	19.70	Split Peak	dadunj	10/13/20 11:48
13C-1,2,3,4,7,8-HxCDD	29.02	Peak assignment corrected	shardaa	10/12/20 17:57
13C-1,2,3,6,7,8-HxCDD	29.30	Peak assignment corrected	shardaa	10/12/20 17:58
1,2,3,7,8,9-HxCDF	30.41	Split Peak	dadunj	10/13/20 11:49
1,2,3,4,6,7,8-HpCDF	32.55	Split Peak	dadunj	10/13/20 12:17
1,2,3,4,6,7,8-HpCDD	33.40	Split Peak	dadunj	10/13/20 12:18
1,2,3,4,7,8,9-HpCDF	33.64	Split Peak	dadunj	10/13/20 12:17
OCDD	35.56	Split Peak	dadunj	10/13/20 12:19
OCDF	35.63	Split Peak	dadunj	10/13/20 12:19

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420482

Lab Sample ID: 320-65130-7 Client Sample ID: 11215702-Tank#1-valve-4-2

Date Analyzed: 10/09/20 07:26 Lab File ID: 08OC20A3D5_16.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	10/13/20 12:24
2,3,7,8-TCDD	16.10	Split Peak	dadunj	10/13/20 12:23
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/13/20 12:23
1,2,3,7,8-PeCDD	21.43	Baseline	dadunj	10/13/20 12:24
13C-1,2,3,4,7,8-HxCDD	29.02	Peak assignment corrected	shardaa	10/12/20 17:57
13C-1,2,3,6,7,8-HxCDD	29.30	Peak assignment corrected	shardaa	10/12/20 17:58
1,2,3,4,6,7,8-HpCDD	33.40	Baseline	dadunj	10/13/20 12:25

Lab Sample ID: 320-65130-8 Client Sample ID: 11215702-Tank#1-valve-5-2

Date Analyzed: 10/09/20 08:13 Lab File ID: 08OC20A3D5_17.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDF		Invalid Compound ID	dadunj	10/13/20 12:29
1,2,3,7,8-PeCDF	19.70	Split Peak	dadunj	10/13/20 12:28
1,2,3,7,8-PeCDD	21.43	Split Peak	dadunj	10/13/20 12:29
2,3,4,6,7,8-HxCDF	28.54	Split Peak	dadunj	10/13/20 12:29
13C-1,2,3,4,7,8-HxCDD	29.01	Peak assignment corrected	shardaa	10/12/20 17:57
1,2,3,4,7,8-HxCDD	29.06	Baseline	dadunj	10/13/20 12:30
13C-1,2,3,6,7,8-HxCDD	29.29	Peak assignment corrected	shardaa	10/12/20 17:58
1,2,3,4,6,7,8-HpCDD	33.40	Split Peak	dadunj	10/13/20 12:31

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420482

Lab Sample ID: 320-65130-9 Client Sample ID: 11215702-Tank#1-valve-2-3

Date Analyzed: 10/09/20 09:01 Lab File ID: 08OC20A3D5_18.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,6,7,8-HxCDF		Invalid Compound ID	dadunj	10/13/20 12:34
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/13/20 12:33
2,3,4,7,8-PeCDF	20.83	Baseline	dadunj	10/13/20 12:34
1,2,3,6,7,8-HxCDF	27.01	Baseline	dadunj	10/13/20 12:45
13C-1,2,3,4,7,8-HxCDD	29.02	Peak assignment corrected	shardaa	10/12/20 17:57
13C-1,2,3,6,7,8-HxCDD	29.29	Peak assignment corrected	shardaa	10/12/20 17:57
1,2,3,4,6,7,8-HpCDF	32.54	Baseline	dadunj	10/13/20 12:43
1,2,3,4,6,7,8-HpCDD	33.40	Baseline	dadunj	10/13/20 12:43
1,2,3,4,7,8,9-HpCDF	33.64	Split Peak	dadunj	10/13/20 12:43
OCDF	35.62	Split Peak	dadunj	10/13/20 12:44

Lab Sample ID: 320-65130-10 Client Sample ID: 11215702-Tank#1-valve-3-3

Date Analyzed: 10/09/20 09:49 Lab File ID: 08OC20A3D5_19.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/13/20 12:47
1,2,3,7,8-PeCDD	21.43	Split Peak	dadunj	10/13/20 12:48
1,2,3,4,7,8-HxCDD	29.01	Split Peak	dadunj	10/13/20 12:49
13C-1,2,3,4,7,8-HxCDD	29.01	Peak assignment corrected	shardaa	10/12/20 18:01
13C-1,2,3,6,7,8-HxCDD	29.28	Peak assignment corrected	shardaa	10/12/20 18:01
1,2,3,6,7,8-HxCDD	29.36	Split Peak	dadunj	10/13/20 12:48
1,2,3,7,8,9-HxCDD	30.09	Split Peak	dadunj	10/13/20 12:49
1,2,3,7,8,9-HxCDF	30.42	Invalid Compound ID	dadunj	10/13/20 12:48

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420483

Lab Sample ID: CCV 320-420483/2 Client Sample ID:

Date Analyzed: 10/09/20 13:52 Lab File ID: 09OC203D5_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,4,7,8-PeCDF	20.81	Peak assignment corrected	messecara	10/13/20 00:01
13C-1,2,3,4,7,8-HxCDF	26.71	Peak assignment corrected	messecara	10/13/20 00:01
13C-1,2,3,4,7,8-HxCDD	29.01	Peak assignment corrected	messecara	10/13/20 00:01
13C-1,2,3,6,7,8-HxCDD	29.29	Peak assignment corrected	messecara	10/13/20 01:54
13C-1,2,3,4,7,8,9-HpCDF	33.64	Peak assignment corrected	messecara	10/13/20 00:01

Lab Sample ID: 320-65130-11 Client Sample ID: 11215702-Tank#1-valve-4-3

Date Analyzed: 10/09/20 15:27 Lab File ID: 09OC203D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDF		Invalid Compound ID	dadunj	10/14/20 08:30
2,3,4,6,7,8-HxCDF		Invalid Compound ID	dadunj	10/14/20 08:29
1,2,3,7,8-PeCDD	21.45	Baseline	dadunj	10/14/20 08:29
13C-1,2,3,4,7,8-HxCDD	29.06	Peak assignment corrected	messecara	10/13/20 00:02
13C-1,2,3,6,7,8-HxCDD	29.34	Peak assignment corrected	messecara	10/13/20 02:09
1,2,3,4,6,7,8-HpCDF	32.56	Split Peak	dadunj	10/14/20 08:30
1,2,3,4,6,7,8-HpCDD	33.41	Split Peak	dadunj	10/14/20 08:31
OCDF	35.63	Invalid Compound ID	dadunj	10/14/20 08:31

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Analysis Batch Number: 420483

Lab Sample ID: 320-65130-12 Client Sample ID: 11215702-Tank#1-valve-5-3

Date Analyzed: 10/09/20 16:15 Lab File ID: 09OC203D5_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,6,7,8-HxCDF		Invalid Compound ID	dadunj	10/14/20 08:35
2,3,7,8-TCDD	16.10	Assign Peak	krenns	10/16/20 06:41
1,2,3,7,8-PeCDF	19.71	Split Peak	dadunj	10/14/20 08:35
13C-1,2,3,4,7,8-HxCDD	29.02	Peak assignment corrected	messecara	10/13/20 00:03
13C-1,2,3,6,7,8-HxCDD	29.30	Peak assignment corrected	messecara	10/13/20 02:08
1,2,3,6,7,8-HxCDD	29.33	Split Peak	dadunj	10/14/20 08:36
1,2,3,7,8,9-HxCDD	30.08	Split Peak	dadunj	10/14/20 08:36

Lab Sample ID: 320-65130-13 Client Sample ID: 11215702-Tank#1-T=0

Date Analyzed: 10/09/20 17:03 Lab File ID: 09OC203D5_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	20.10	Peak assignment corrected	messecara	10/13/20 00:07
2,3,4,7,8-PeCDF	21.17	Peak assignment corrected	messecara	10/13/20 00:06
1,2,3,7,8-PeCDD	21.76	Split Peak	dadunj	10/14/20 08:55
1,2,3,4,7,8-HxCDF	27.09	Peak assignment corrected	messecara	10/13/20 00:16
1,2,3,6,7,8-HxCDF	27.35	Peak assignment corrected	messecara	10/13/20 00:16
13C-2,3,4,6,7,8-HxCDF	28.89	Peak assignment corrected	messecara	10/13/20 00:16
2,3,4,6,7,8-HxCDF	28.92	Split Peak	dadunj	10/14/20 08:55
1,2,3,4,7,8-HxCDD	29.40	Split Peak	dadunj	10/14/20 08:56
1,2,3,6,7,8-HxCDD	29.65	Peak assignment corrected	messecara	10/13/20 00:17
1,2,3,7,8,9-HxCDD	30.29	Peak assignment corrected	messecara	10/13/20 00:17
1,2,3,7,8,9-HxCDF	30.58	Split Peak	dadunj	10/14/20 08:56

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 413255

Lab Sample ID: IC 320-413255/3 Client Sample ID:

Date Analyzed: 09/17/20 13:16 Lab File ID: 17se20dfs1_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	19.23	Poor chromatography	shardaa	09/17/20 18:30
2,3,7,8-TCDD	20.51	Peak Tail	shardaa	09/17/20 18:29

Lab Sample ID: IC 320-413255/4 Client Sample ID:

Date Analyzed: 09/17/20 14:04 Lab File ID: 17se20dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	20.54	Incomplete Integration	shardaa	09/17/20 18:36

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 420640

Lab Sample ID: CCV 320-420640/14 Client Sample ID:

Date Analyzed: 10/10/20 05:03 Lab File ID: 09oc20dfs1_16.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	19.72	Peak assignment corrected	messecara	10/10/20 22:55

Lab Sample ID: MB 320-417971/1-A Client Sample ID:

Date Analyzed: 10/10/20 07:46 Lab File ID: 09oc20dfs1_20.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDF		Invalid Compound ID	dadunj	10/12/20 09:06
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	10/12/20 09:07
2,3,7,8-TCDF	18.80	Baseline	dadunj	10/12/20 09:06
1,2,3,4,7,8-HxCDD	35.23	Split Peak	dadunj	10/12/20 09:07
1,2,3,7,8,9-HxCDF	35.97	Split Peak	dadunj	10/12/20 09:07
1,2,3,4,6,7,8-HpCDF	37.91	Split Peak	dadunj	10/12/20 09:07
1,2,3,4,7,8,9-HpCDF	39.24	Split Peak	dadunj	10/12/20 09:08
OCDD	41.36	Split Peak	dadunj	10/12/20 09:08
OCDF	41.45	Split Peak	dadunj	10/12/20 09:08

Lab Sample ID: LCSD 320-417971/3-A Client Sample ID:

Date Analyzed: 10/10/20 09:21 Lab File ID: 09oc20dfs1_22.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	18.80	Baseline	dadunj	10/12/20 09:12
2,3,7,8-TCDD	20.05	Split Peak	dadunj	10/12/20 09:12

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 420640

Lab Sample ID: 320-65130-16 Client Sample ID: 11215702-Tank#2-valve-3-1

Date Analyzed: 10/10/20 10:09 Lab File ID: 09oc20dfs1_23.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	25.91	Split Peak	dadunj	10/12/20 09:14
1,2,3,7,8-PeCDD	28.12	Split Peak	dadunj	10/12/20 09:14
1,2,3,7,8,9-HxCDD	35.76	Split Peak	dadunj	10/12/20 09:15
1,2,3,7,8,9-HxCDF	35.97	Invalid Compound ID	dadunj	10/12/20 09:14

Lab Sample ID: 320-65130-17 Client Sample ID: 11215702-Tank#2-valve-4-1

Date Analyzed: 10/10/20 10:57 Lab File ID: 09oc20dfs1_24.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDD	28.09	Split Peak	dadunj	10/12/20 09:18
1,2,3,6,7,8-HxCDD	35.35	Split Peak	dadunj	10/12/20 09:18
1,2,3,7,8,9-HxCDD	35.76	Baseline	dadunj	10/12/20 09:18

Lab Sample ID: 320-65130-18 Client Sample ID: 11215702-Tank#2-valve-5-1

Date Analyzed: 10/10/20 11:45 Lab File ID: 09oc20dfs1_25.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDD	35.77	Split Peak	dadunj	10/12/20 09:21

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 420640

Lab Sample ID: 320-65130-19 Client Sample ID: 11215702-Tank#2-valve-2-2

Date Analyzed: 10/10/20 12:33 Lab File ID: 09oc20dfs1_26.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	10/12/20 09:27
1,2,3,7,8,9-HxCDD		Invalid Compound ID	dadunj	10/12/20 09:27
2,3,7,8-TCDD	20.03	Split Peak	dadunj	10/12/20 09:23
1,2,3,7,8-PeCDF	25.90	Split Peak	dadunj	10/12/20 09:23
1,2,3,7,8-PeCDD	28.09	Baseline	dadunj	10/12/20 09:26
2,3,4,6,7,8-HxCDF	34.97	Split Peak	dadunj	10/12/20 09:26
1,2,3,4,7,8-HxCDD	35.22	Split Peak	dadunj	10/12/20 09:27

Lab Sample ID: 320-65130-20 Client Sample ID: 11215702-Tank#2-valve-3-2

Date Analyzed: 10/10/20 13:20 Lab File ID: 09oc20dfs1_27.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDD		Invalid Compound ID	dadunj	10/12/20 09:30
1,2,3,7,8-PeCDF	25.92	Split Peak	dadunj	10/12/20 09:29
1,2,3,7,8-PeCDD	28.09	Split Peak	dadunj	10/12/20 09:30
1,2,3,6,7,8-HxCDD	35.39	Split Peak	dadunj	10/12/20 09:30
1,2,3,4,6,7,8-HpCDF	37.92	Split Peak	dadunj	10/12/20 09:31

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 420640

Lab Sample ID: 320-65130-21 Client Sample ID: 11215702-Tank#2-valve-4-2

Date Analyzed: 10/10/20 14:08 Lab File ID: 09oc20dfs1_28.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	10/12/20 09:34
1,2,3,7,8-PeCDF	25.90	Split Peak	dadunj	10/12/20 09:32
2,3,4,7,8-PeCDF	27.32	Split Peak	dadunj	10/12/20 09:32
1,2,3,7,8-PeCDD	28.10	Split Peak	dadunj	10/12/20 09:33
1,2,3,4,7,8-HxCDD	35.20	Split Peak	dadunj	10/12/20 09:34
1,2,3,7,8,9-HxCDD	35.74	Baseline	dadunj	10/12/20 09:34
OCDF	41.43	Baseline	dadunj	10/12/20 09:35

Lab Sample ID: 320-65130-22 Client Sample ID: 11215702-Tank#2-valve-5-2

Date Analyzed: 10/10/20 14:56 Lab File ID: 09oc20dfs1_29.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,7,8-PeCDF	27.34	Baseline	dadunj	10/12/20 09:37
1,2,3,7,8-PeCDD	28.10	Split Peak	dadunj	10/12/20 09:37
1,2,3,4,7,8-HxCDD	35.20	Split Peak	dadunj	10/12/20 09:38
1,2,3,6,7,8-HxCDD	35.33	Split Peak	dadunj	10/12/20 09:38
1,2,3,7,8,9-HxCDD	35.74	Split Peak	dadunj	10/12/20 09:38
1,2,3,4,6,7,8-HpCDF	37.91	Split Peak	dadunj	10/12/20 09:39
OCDF	41.44	Split Peak	dadunj	10/12/20 09:39

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 421107

Lab Sample ID: 320-65130-15 Client Sample ID: 11215702-Tank#2-valve-2-1

Date Analyzed: 10/12/20 16:34 Lab File ID: 12oc20dfs1_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	10/14/20 10:43
2,3,7,8-TCDD	20.01	Split Peak	dadunj	10/14/20 10:41
1,2,3,7,8-PeCDF	25.89	Split Peak	dadunj	10/14/20 10:41
1,2,3,7,8-PeCDD	28.10	Baseline	dadunj	10/14/20 10:42

Lab Sample ID: 320-65130-14 Client Sample ID: 11215702-Tank#2-T=0

Date Analyzed: 10/12/20 17:22 Lab File ID: 12oc20dfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,7,8-TCDF	18.92	Split Peak	dadunj	10/14/20 10:48
2,3,7,8-TCDF	18.92	Peak assignment corrected	shardaa	10/13/20 10:38
13C-2,3,7,8-TCDD	20.18	Peak assignment corrected	shardaa	10/13/20 10:39
2,3,7,8-TCDD	20.22	Peak assignment corrected	shardaa	10/13/20 10:39
1,2,3,7,8-PeCDF	26.04	Peak assignment corrected	shardaa	10/13/20 10:39
1,2,3,4,7,8-HxCDD	35.23	Invalid Compound ID	dadunj	10/14/20 10:47
1,2,3,6,7,8-HxCDD	35.38	Split Peak	dadunj	10/14/20 10:47

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25	Wellington Labs, Lot 13PAR0418			(Purchased Reagent)		2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
HRDXNIC_00046	01/31/21	09/11/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00438	01/31/21	09/14/20	Acetone, Lot 0000234648	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL2_00030	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00122	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL3_00028	01/31/21	09/11/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00122	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00095	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL5_00031	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30	CIL, Lot ER01062015			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL6_00027	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00242	09/18/21	09/18/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 kss

(pg 1/6)

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
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Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

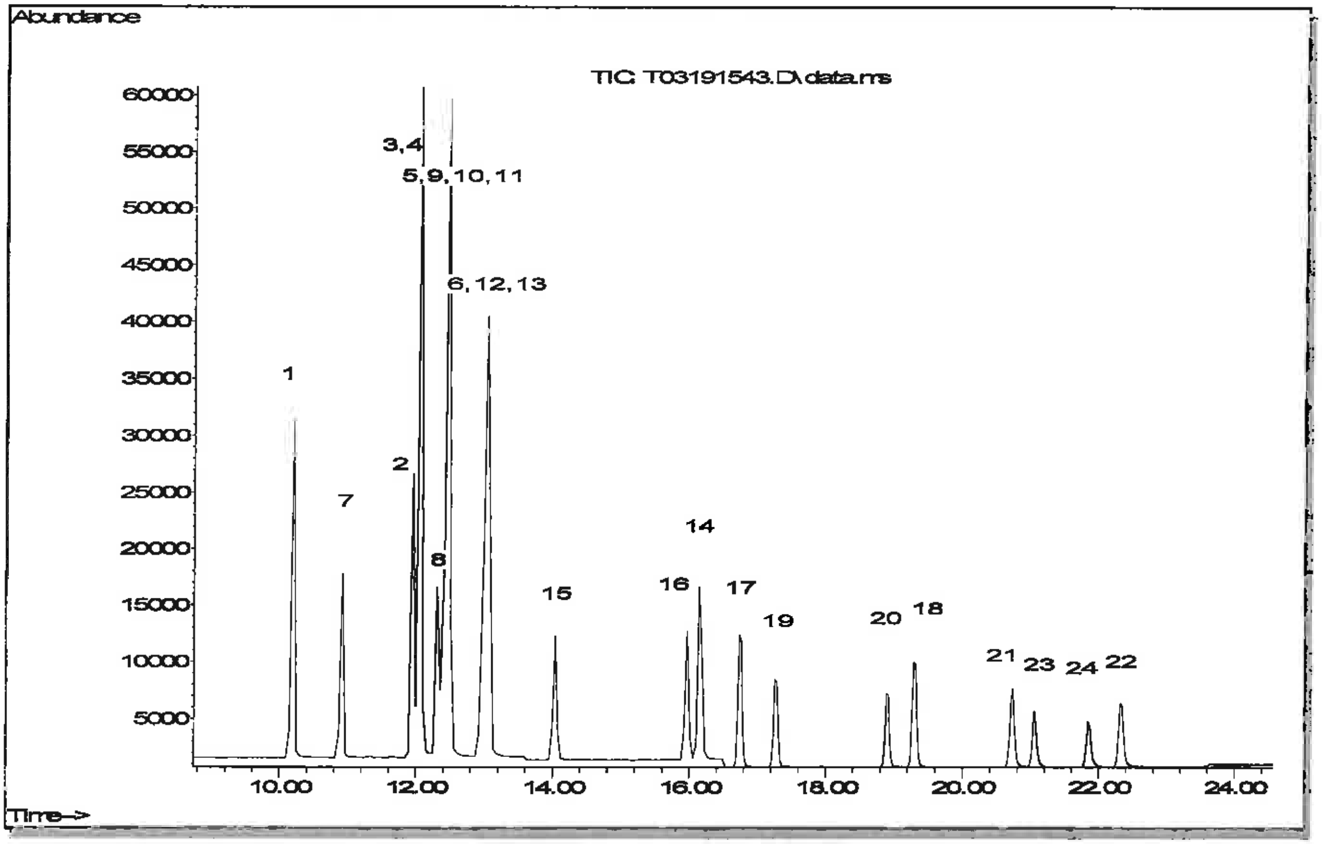

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNCP_00041

rec 7/29/20 sxv

Cerilliant®
Analytical Reference Standards
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CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

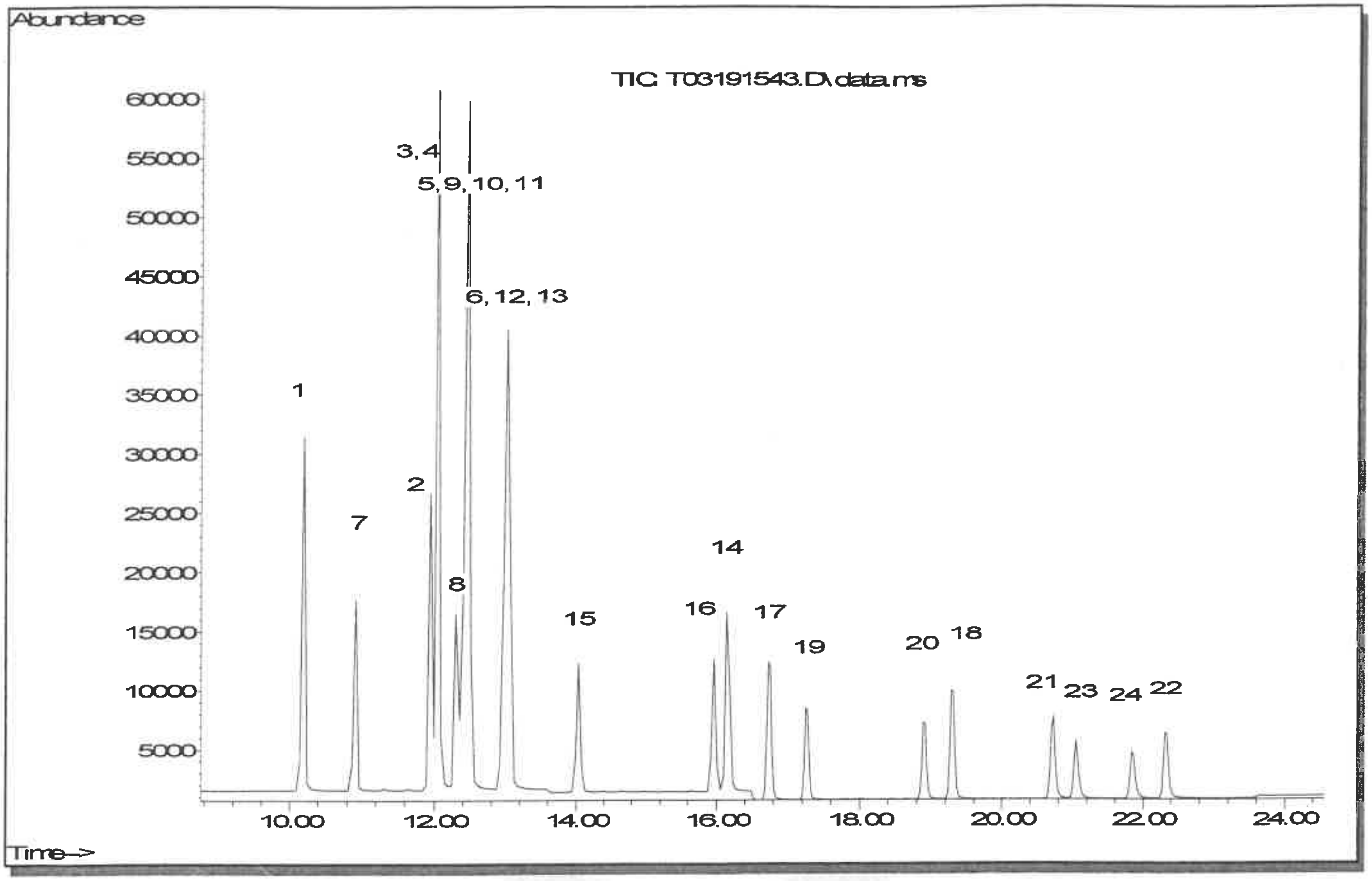

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00398

8280 I#24
Received 11-14-19
GWG

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Revision 00
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Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

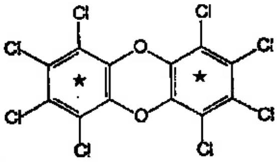

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	**Solution Purity**	**Certified Concentration**
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 70°C to 200°C at 40°C/min
200°C to 280°C at 10°C/min hold 15 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 3
Linearity (r): 0.997

Neat Material Data

Compound Name: Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER04041601
Chemical Formula: $^{13}C_{12}Cl_8O_2$
CAS Number: 114423-97-1
Molecular Weight: 471.66

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

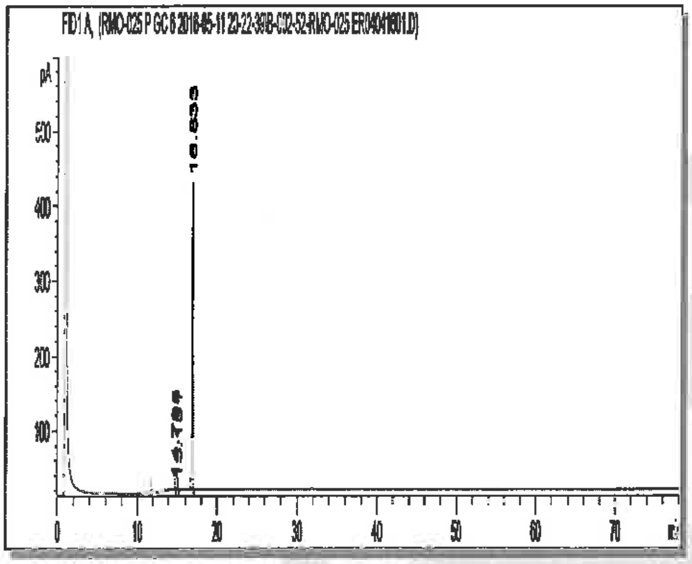

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14 80	12 12	3.62	0.61
2	15 15	4 72	1.32	0.24
3	16 83	1980 56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : Octachlorodibenzo-p-dioxin-13C12
Lot Number             : ER04041601
Instrument             : Agilent GCMS
Operator               : ECM(SCIUFFRE)
Date Reported          : Wed May 04 13:45:40 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
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Total Ion Chromatogram

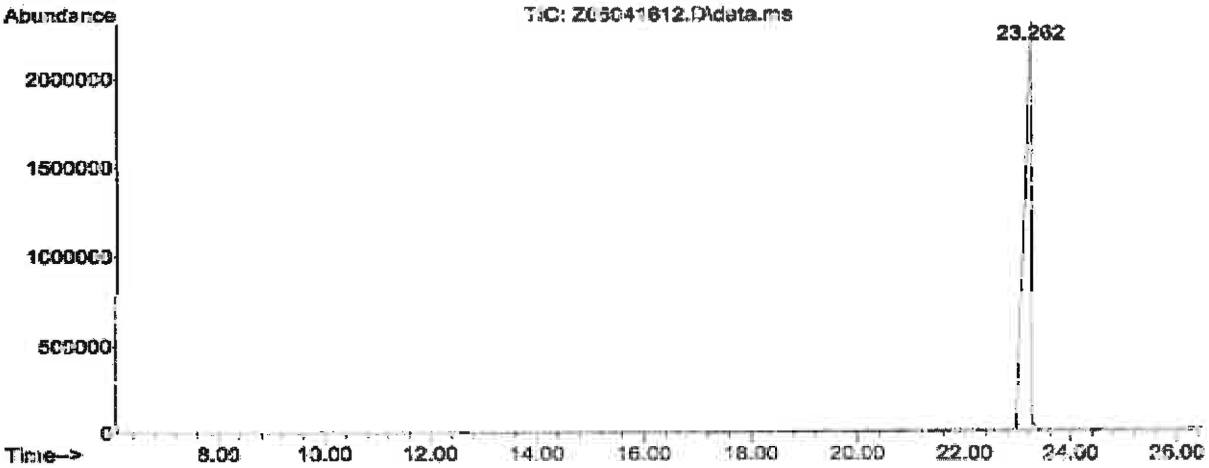

Mass Spectrum

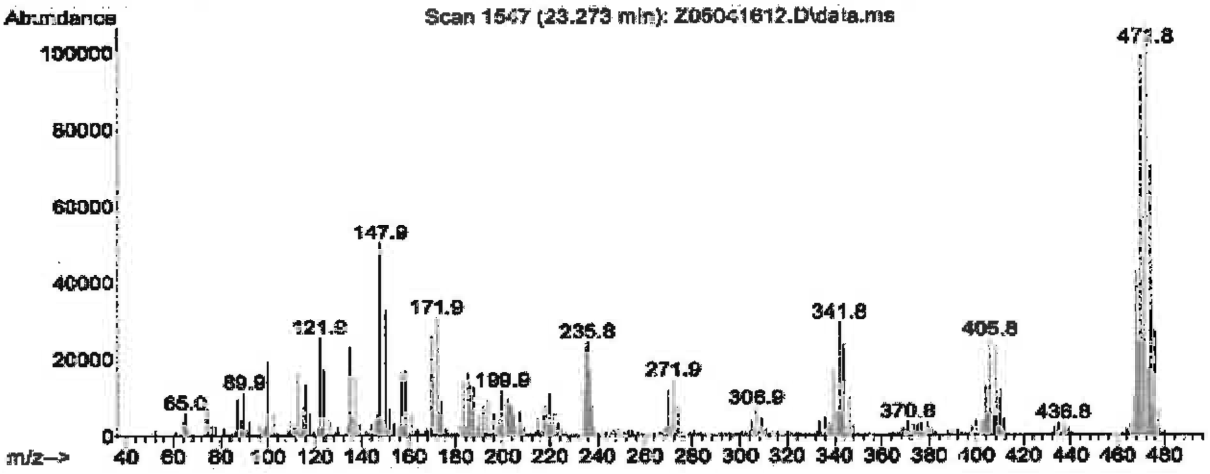

Reagent

HRDXNIDA_00407

Recvd 11-26-19

Cerilliant
Analytical Reference Standards
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Revision 00
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Certificate of Analysis

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15195
ISO 9001
GMP/GLP

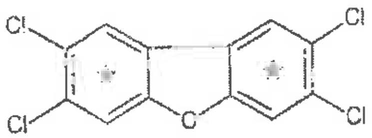

Catalog Number: EF-904
Solution Lot: ER09131601
Expiration Date: September 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

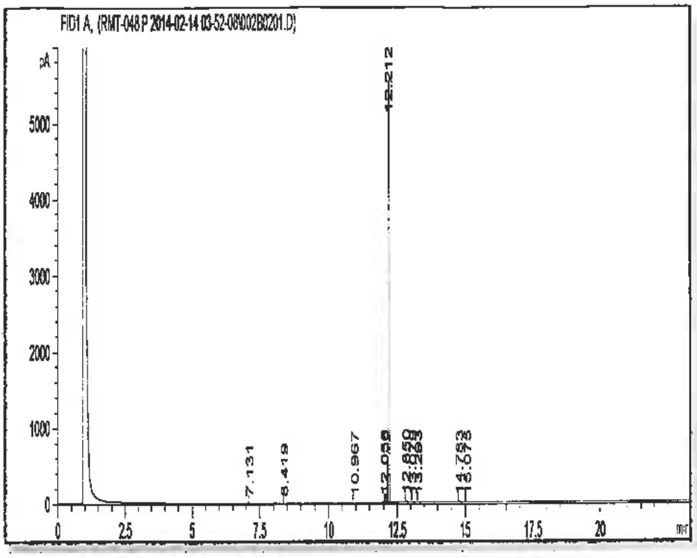

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

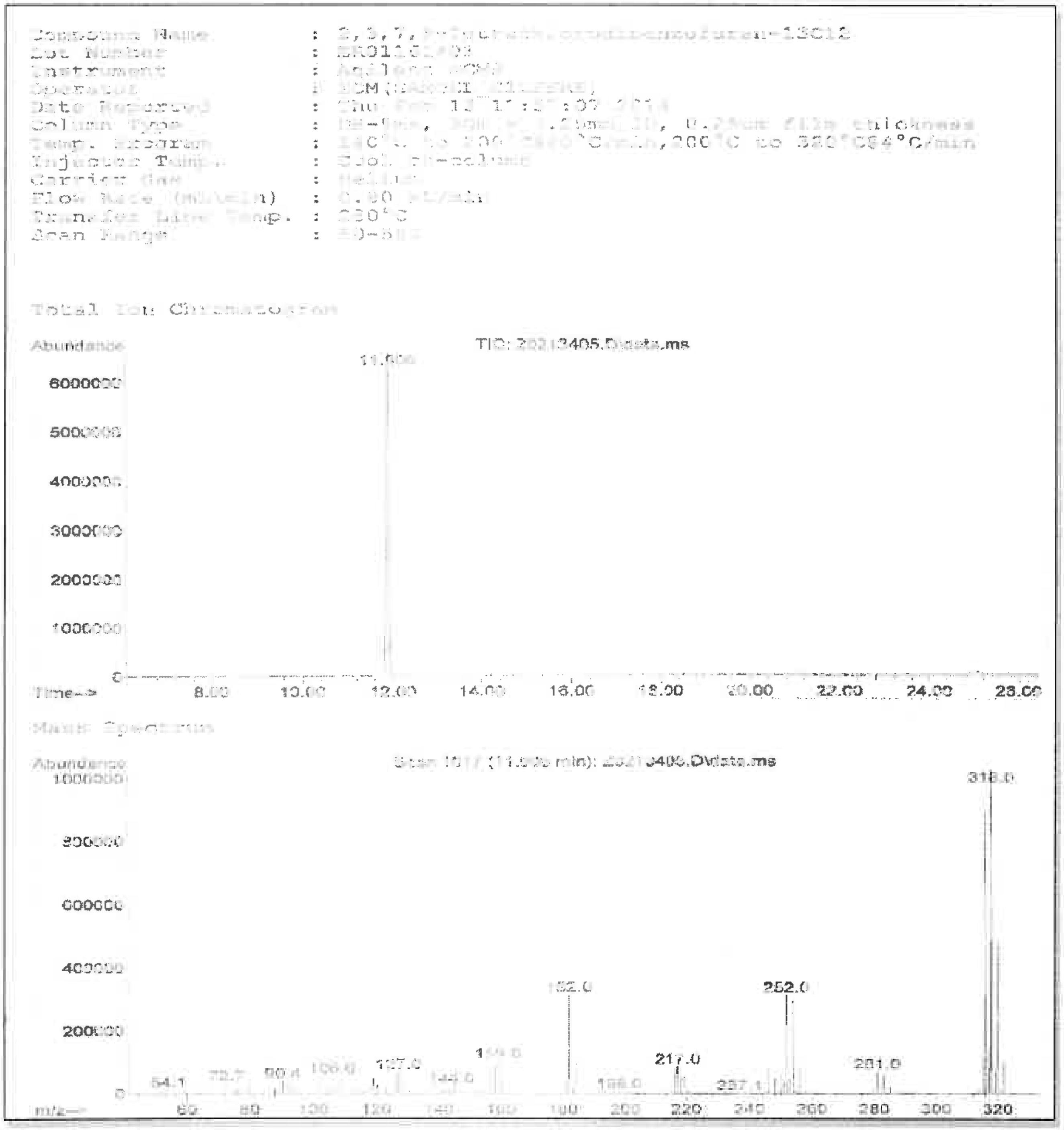

```
Compound Name          : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number             : ER01101-03
Instrument             : Agilent GCMS
Operator               : SCM([illegible])
Date Reported          : Thu Feb 13 11:57:07 2014
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 150°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL/min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 12-21-16

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Revision 01
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

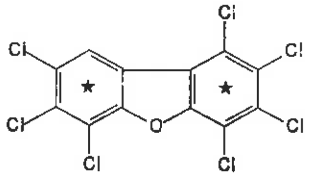

Catalog Number:	EF-974
Solution Lot:	ER08101404
Expiration Date:	November 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

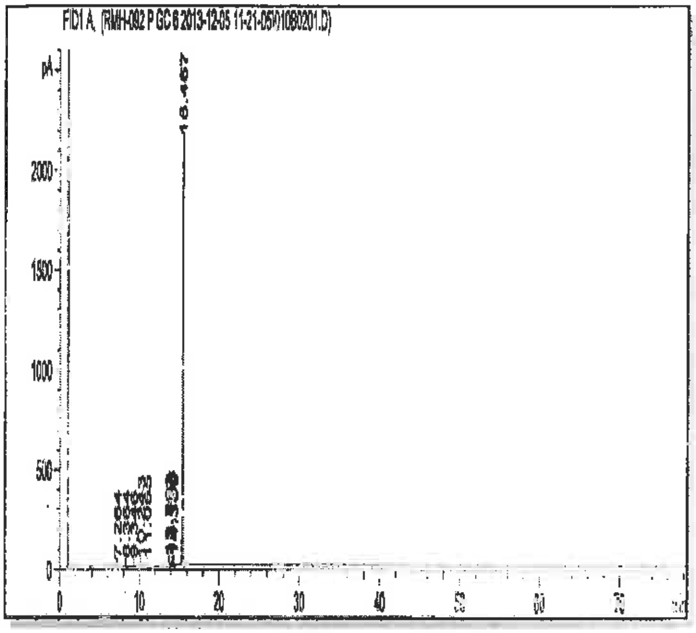

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 μm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

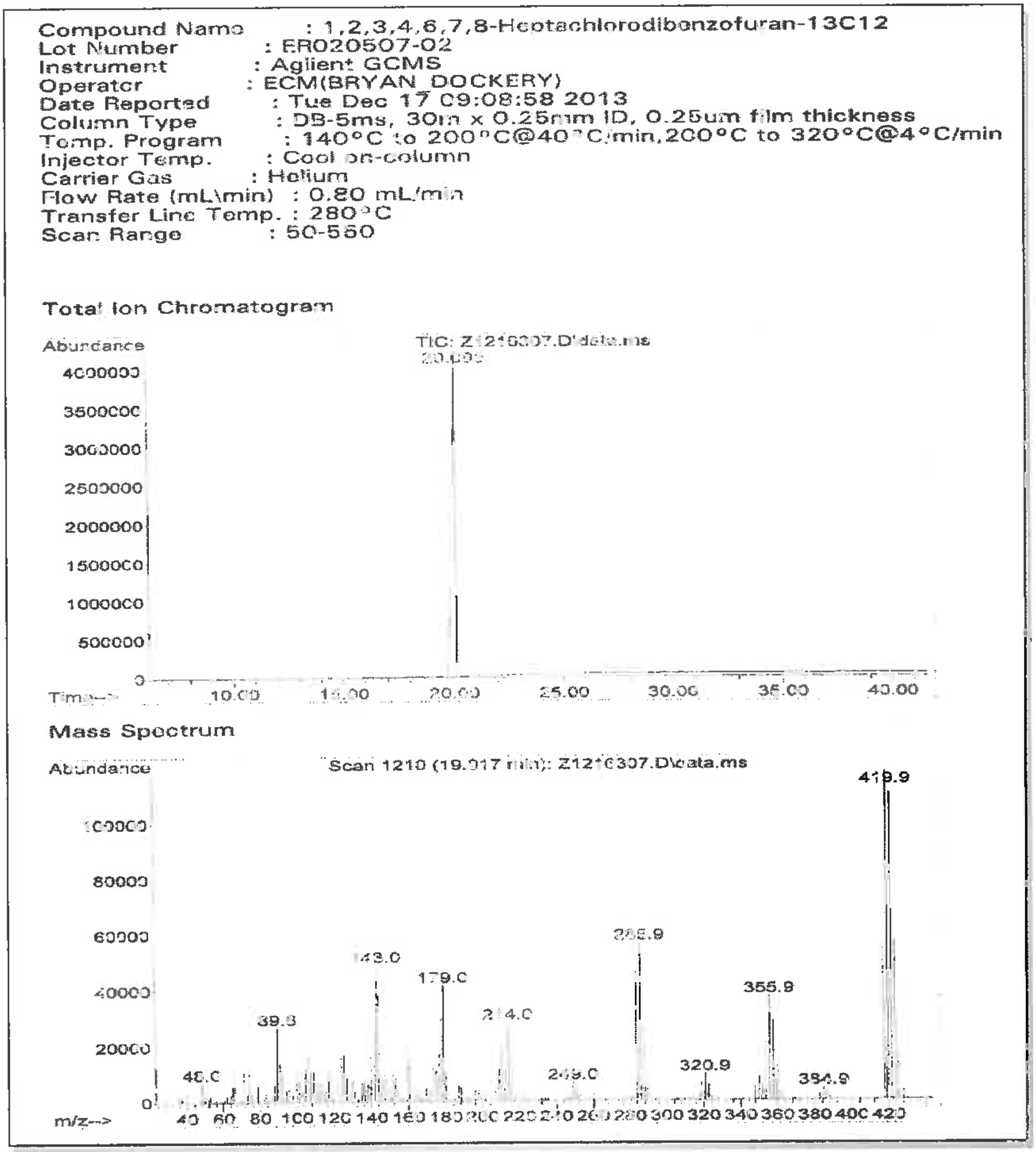

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Aglient GCMS
Operator : ECM(BRYAN DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-26-19

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

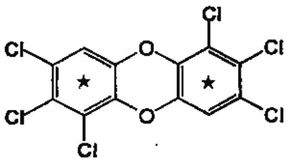

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager	***April 19, 2018*** Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

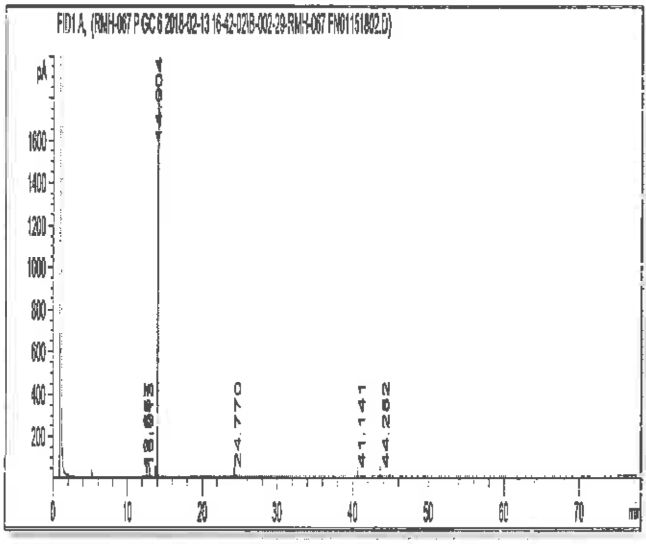

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Data File Name:	RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument:	GC#6
Sample Name:	FN01151802
Acquired:	February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

Spectral and Physical Data (cont.)

GC/MS

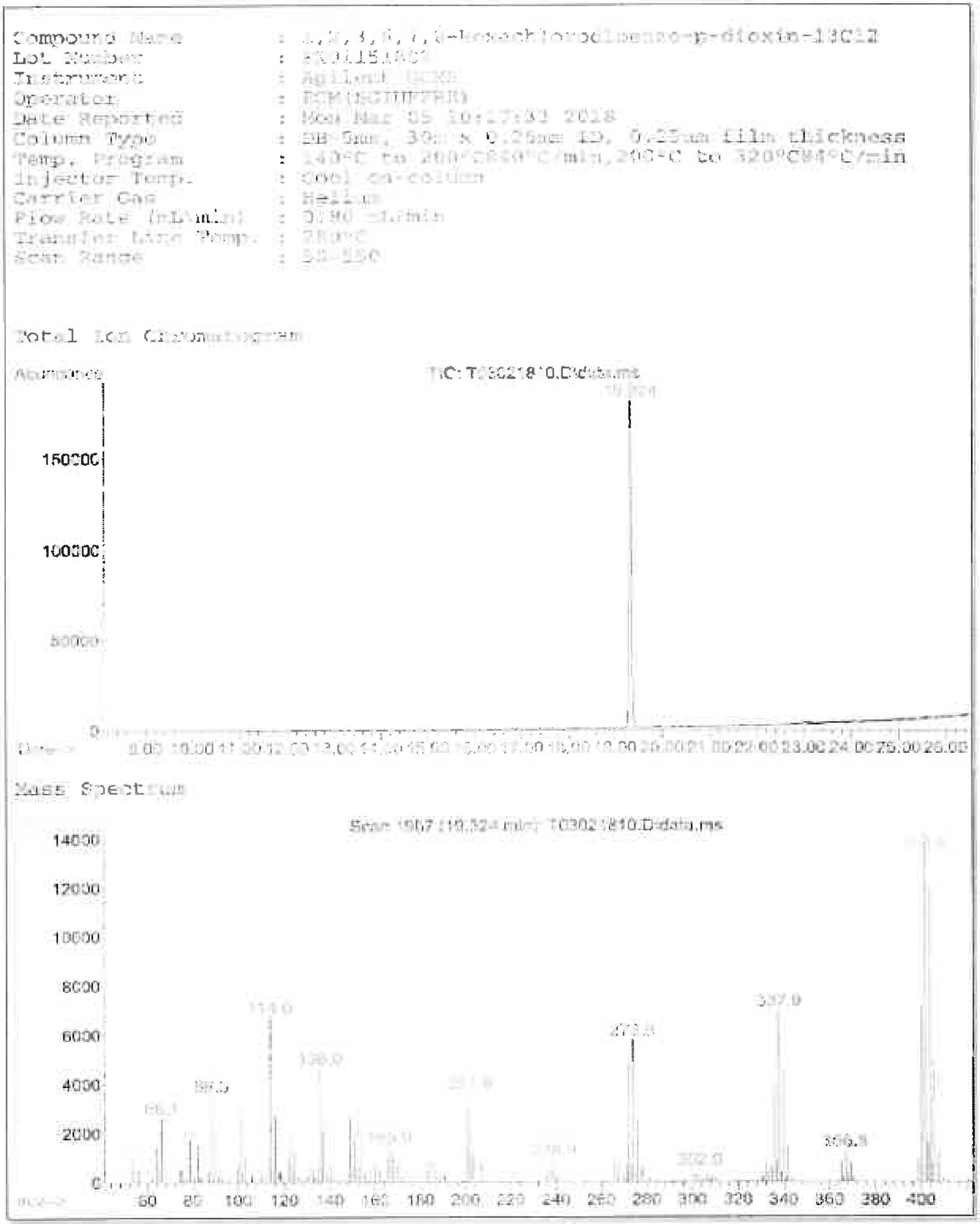

Compound Name : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent GCMS
Operator : ECM(SCHUFFER)
Date Reported : Mon Mar 05 10:17:31 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp. : cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.90 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00410

Rec'ed 11-21-16

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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

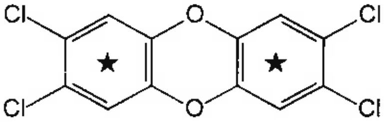

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER01201405

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 76523-40-5
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

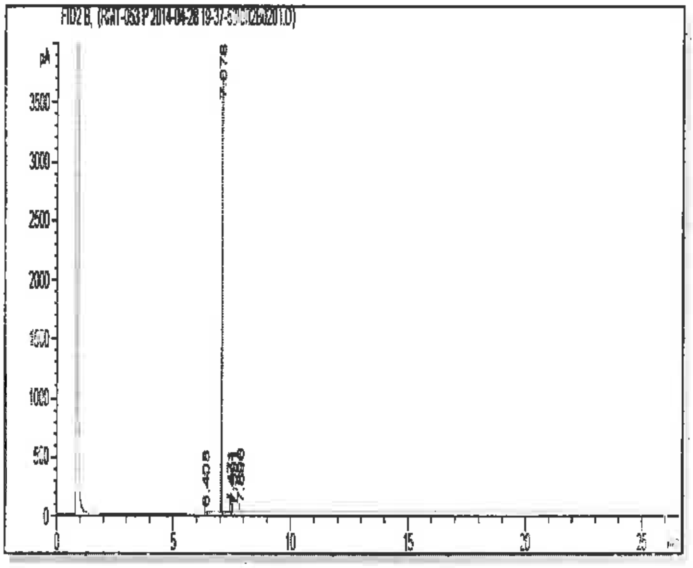

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

Spectral and Physical Data (cont.)

GC/MS

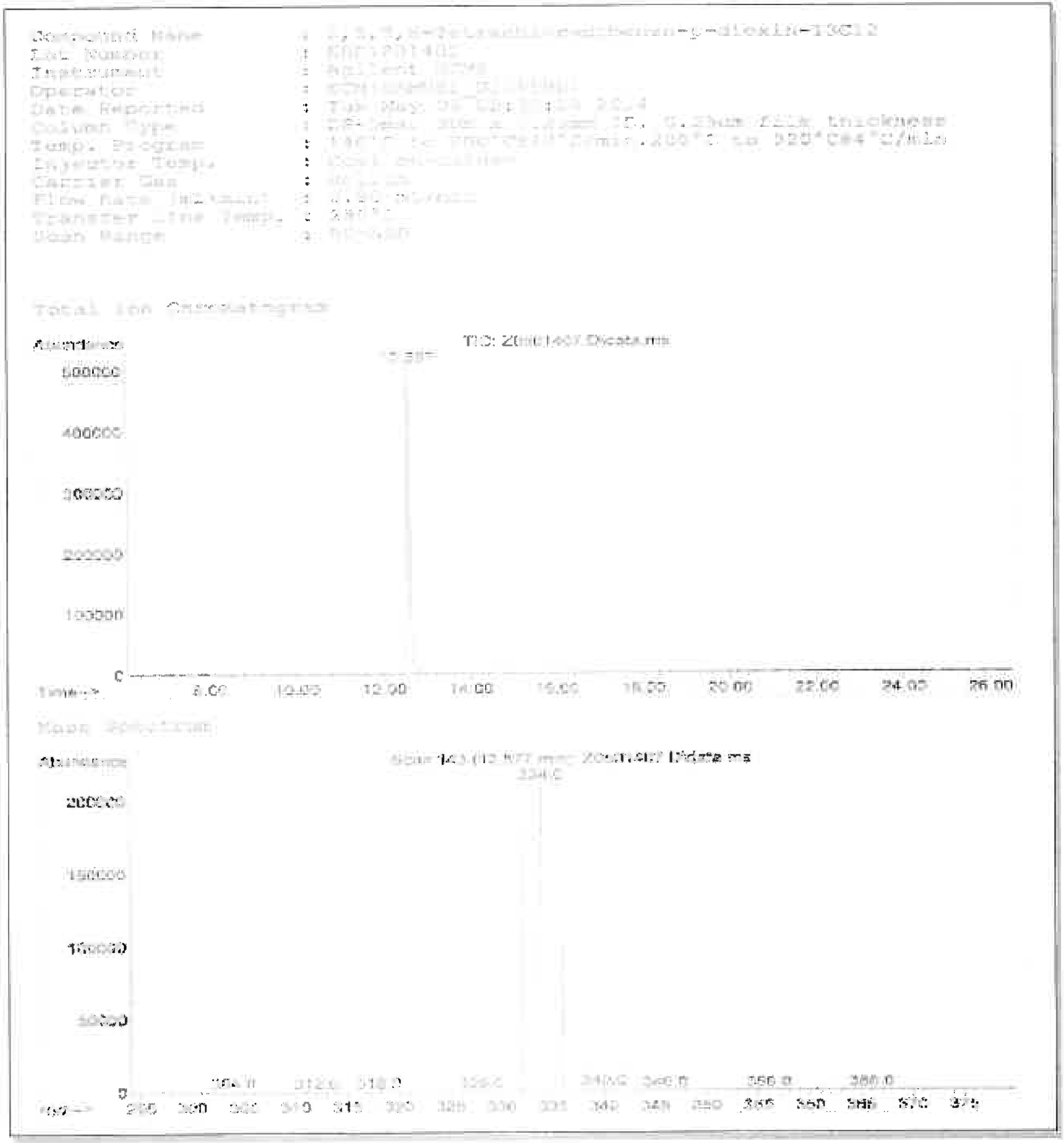

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent [illegible]
Operator : [illegible]
Date Reported : [illegible] 2014
Column Type : [illegible] film thickness
Temp. Program : [illegible]
Injector Temp. : [illegible]
Carrier Gas : [illegible]
Flow Rate [illegible] : [illegible]
Transfer Line Temp. : [illegible]
Scan Range : [illegible]

Total Ion Chromatogram

Reagent

HRDXNIDA_00417

r: 3/30/20

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ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

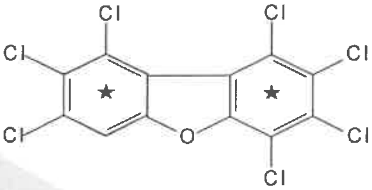

Catalog Number: EF-988
Solution Lot: ER04251601
Expiration Date: May 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER04041602

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-94-0
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

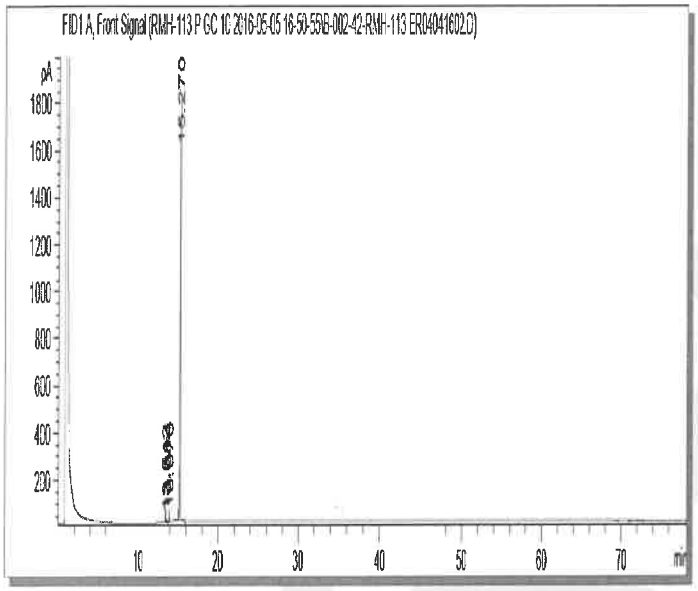

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

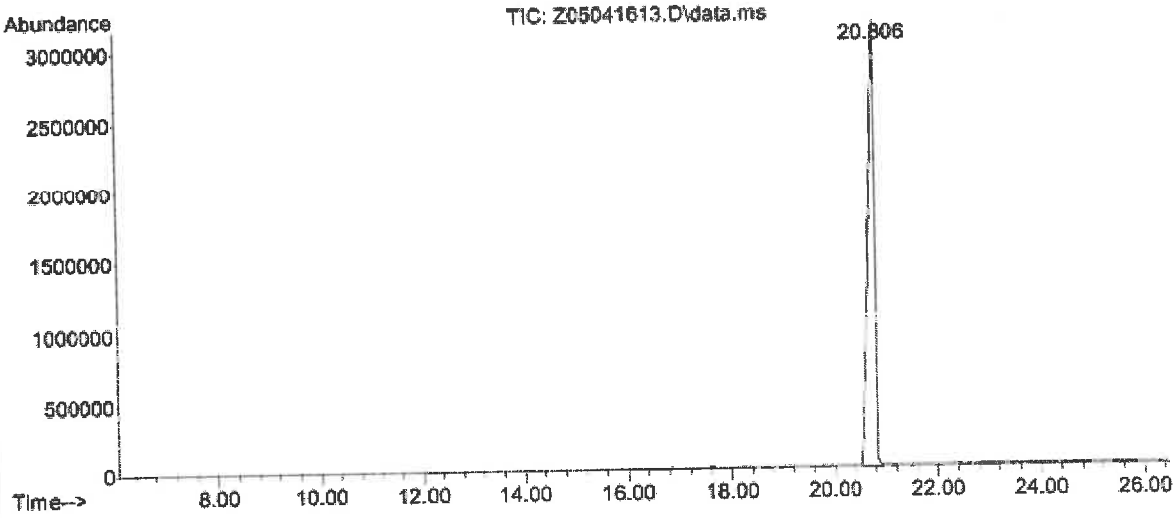

Mass Spectrum

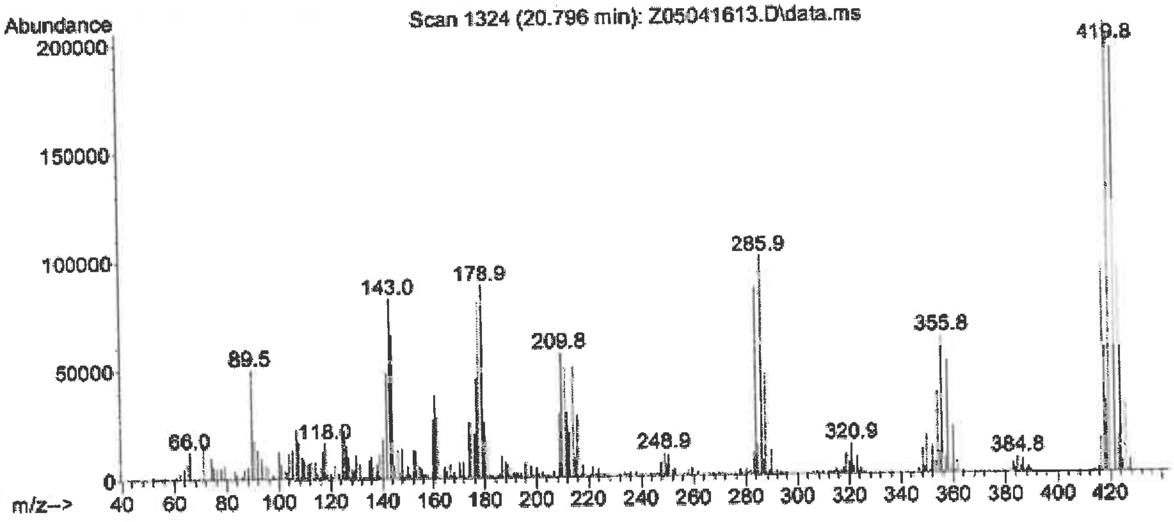

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/30/20 SAN

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ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

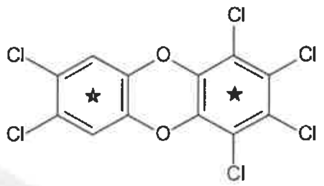

Catalog Number: ED-946
Solution Lot: ER04211601
Expiration Date: June 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER011008-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-80-4
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

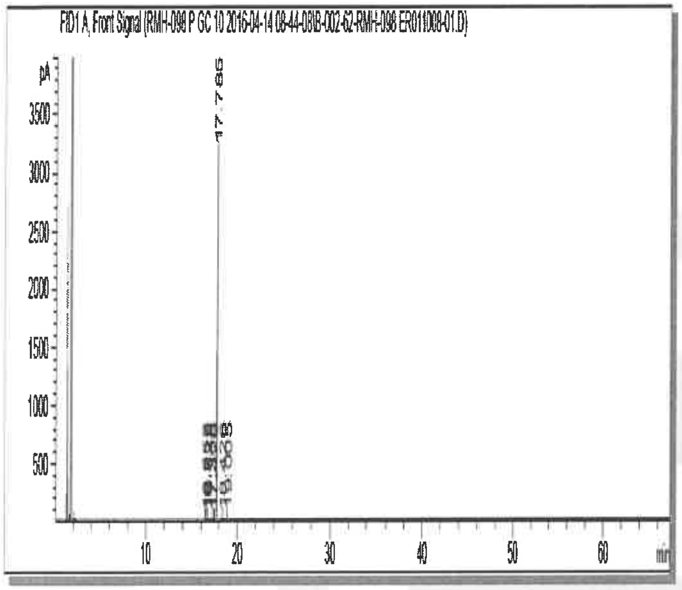

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

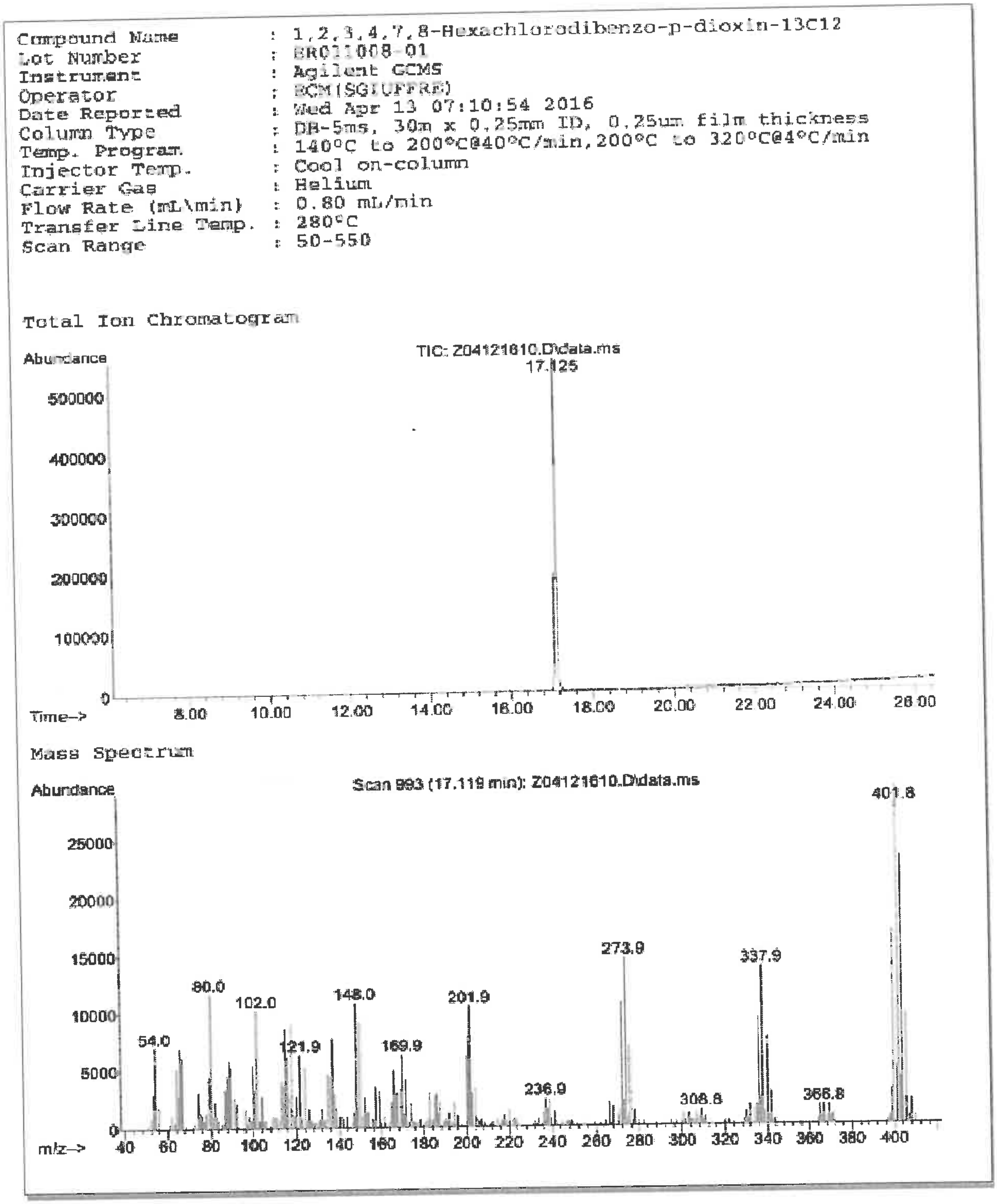

```
Compound Name           : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number              : ER011008-01
Instrument              : Agilent GCMS
Operator                : BCM(SGIUFFRE)
Date Reported           : Wed Apr 13 07:10:54 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SK✓

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Revision 00
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Cerilliant Quality
ISO GUIDE 34
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ISO 13485
ISO 15194
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1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

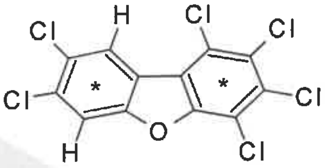

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601
Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

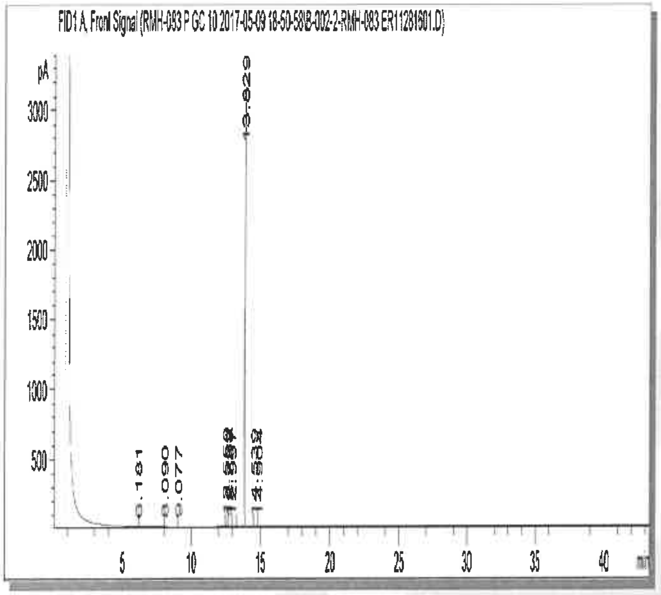

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

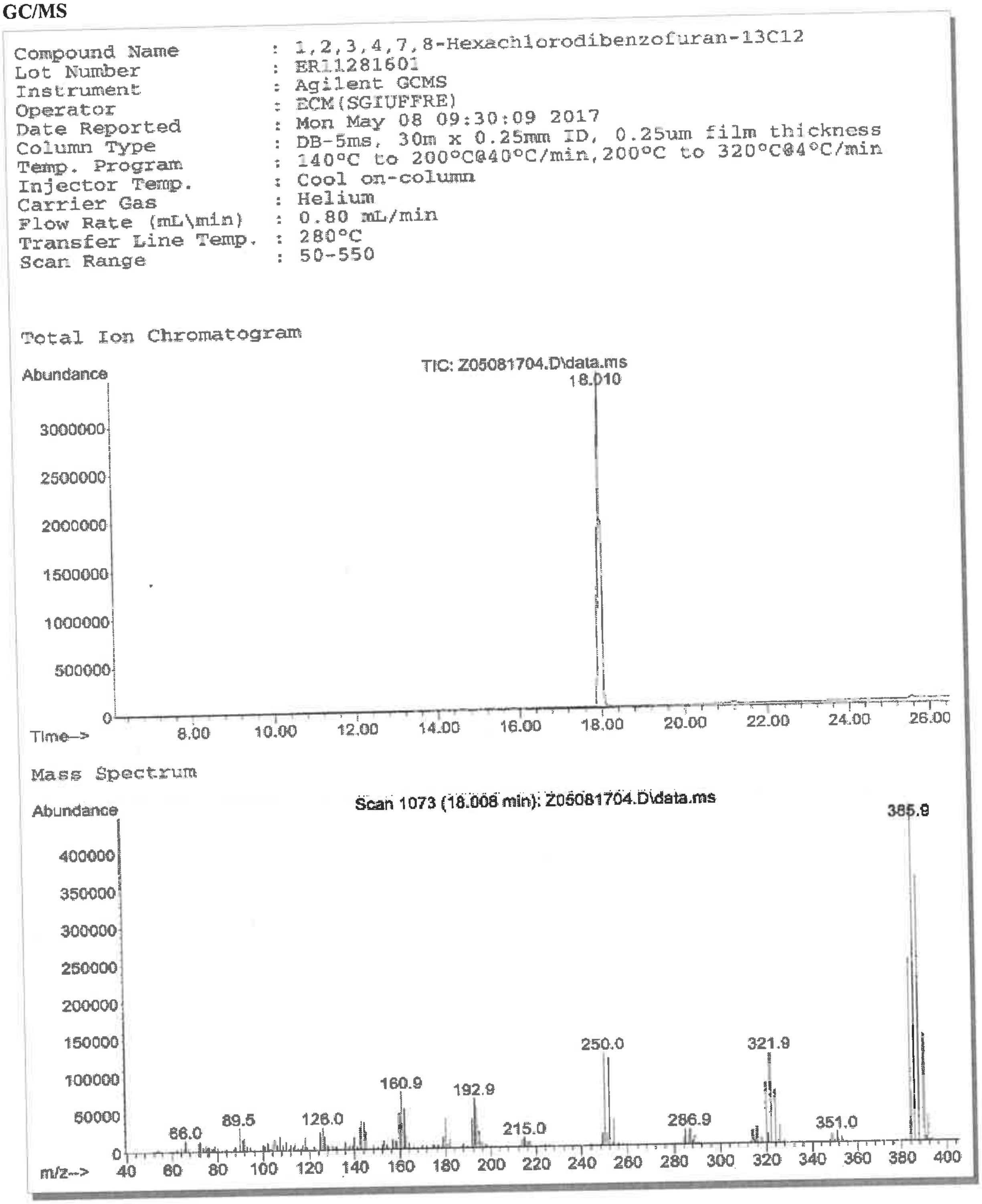

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

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ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

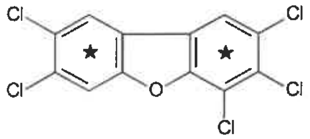

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

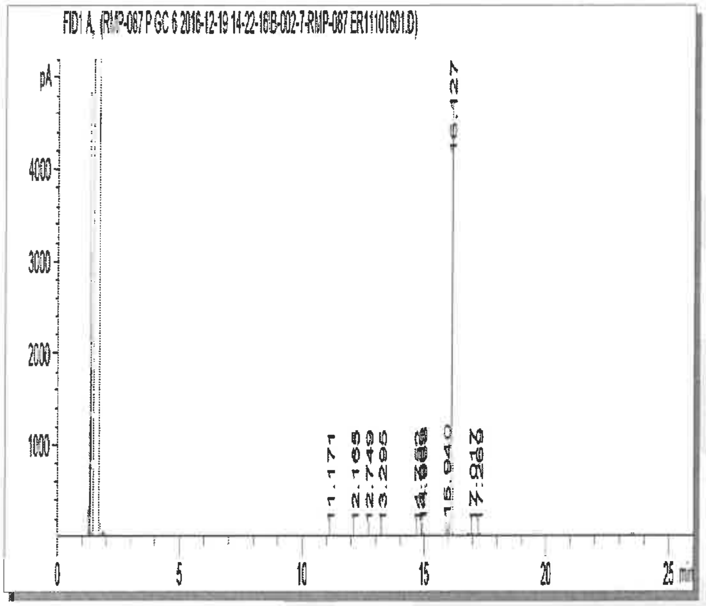

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

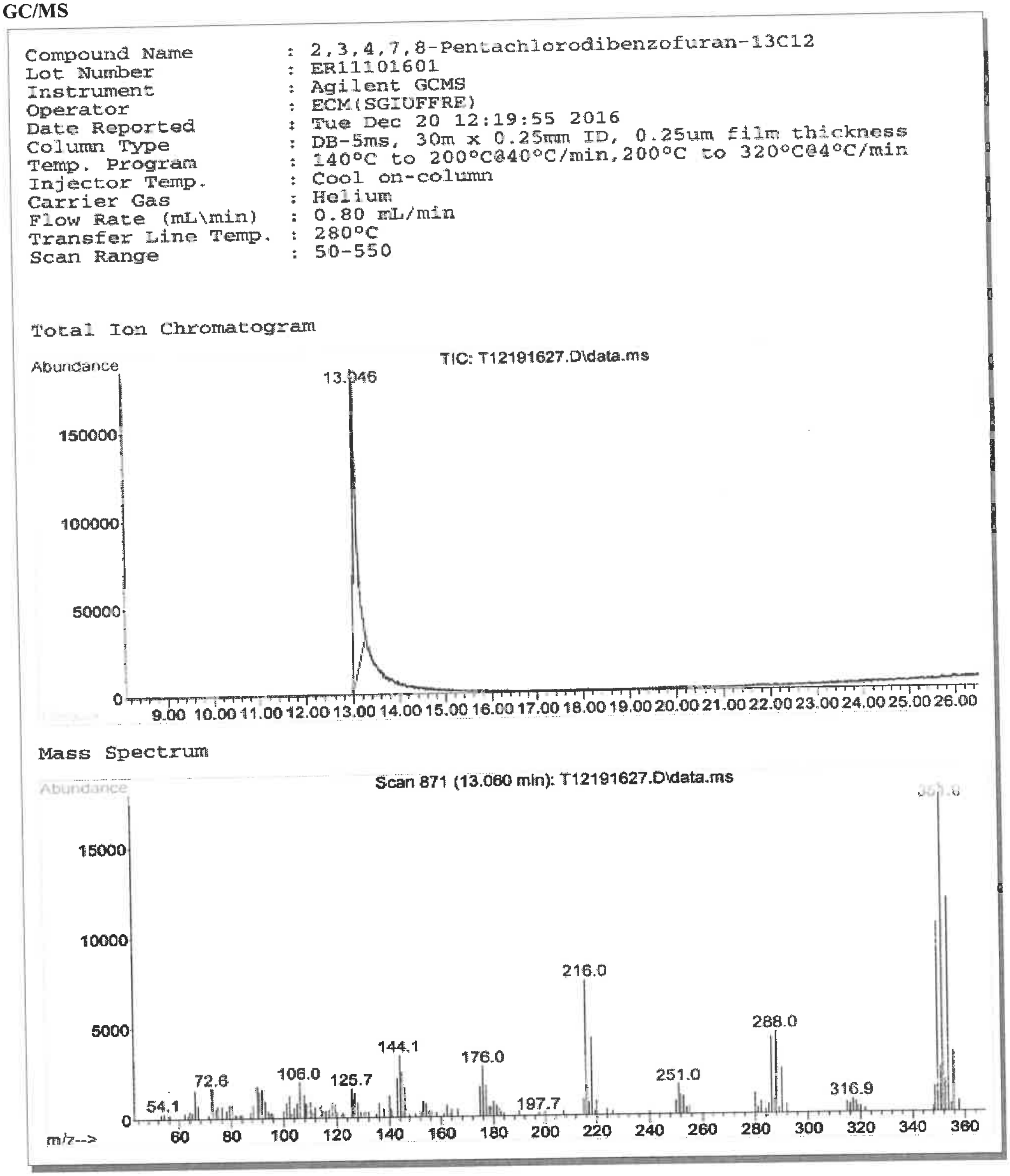

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 02
Page 1 of 5

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34 CERTIFICATE AR1353
ISO/IEC 17025 CERTIFICATE AT1352
ISO 9001:2008 CERTIFICATE 3854

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-952
Solution Lot: ER012111-01
Expiration Date: January 2021
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

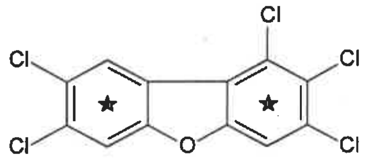

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Crtieria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3OCl_5$
CAS Number: 109719-77-9
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

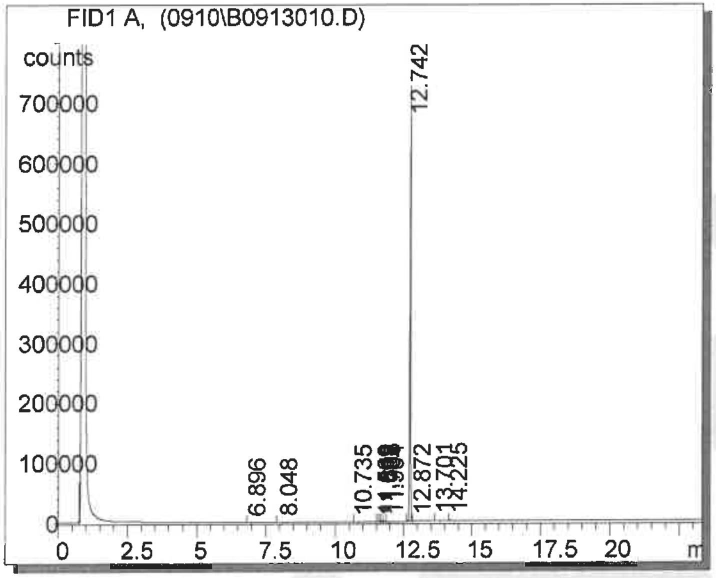

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

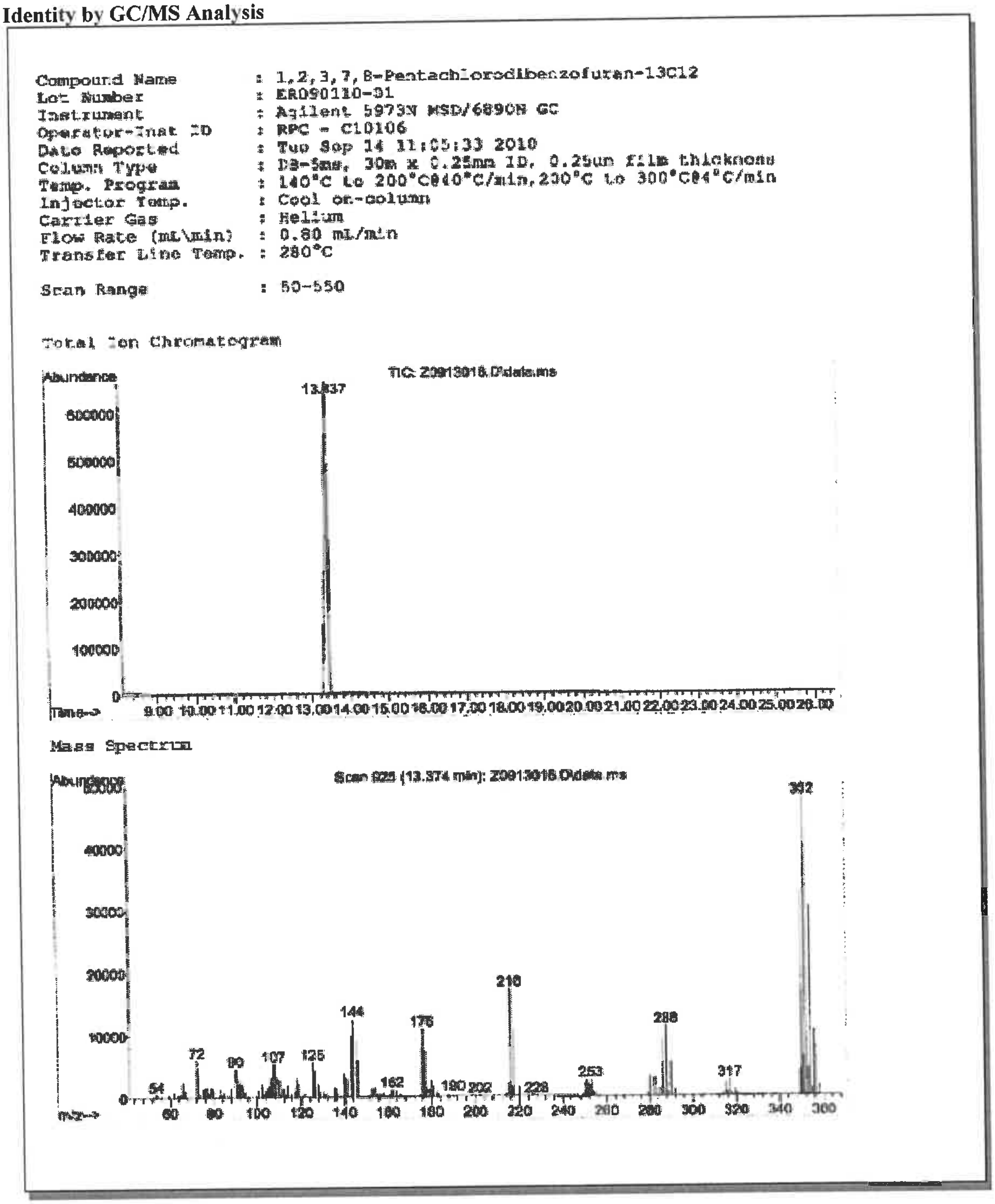

Compound Name : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER090110-01
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst ID : RPC - C10106
Date Reported : Tue Sep 14 11:05:33 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@10°C/min,230°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C

Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

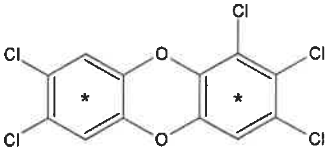

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403

Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

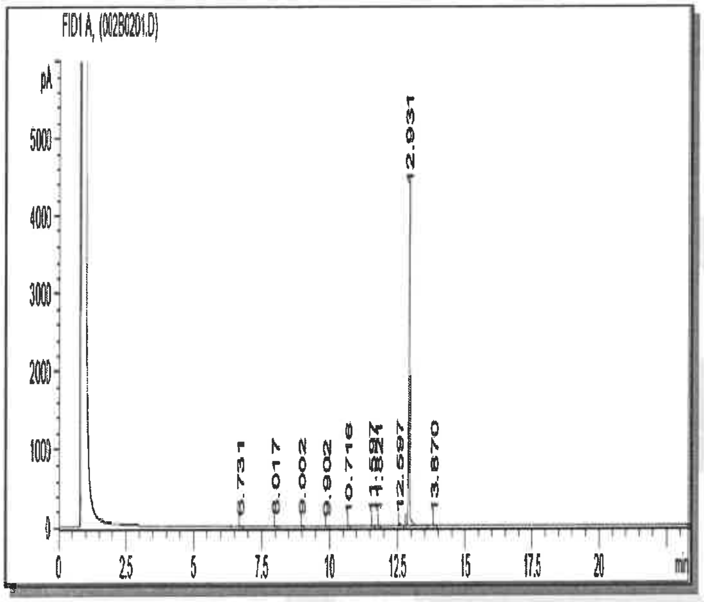

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

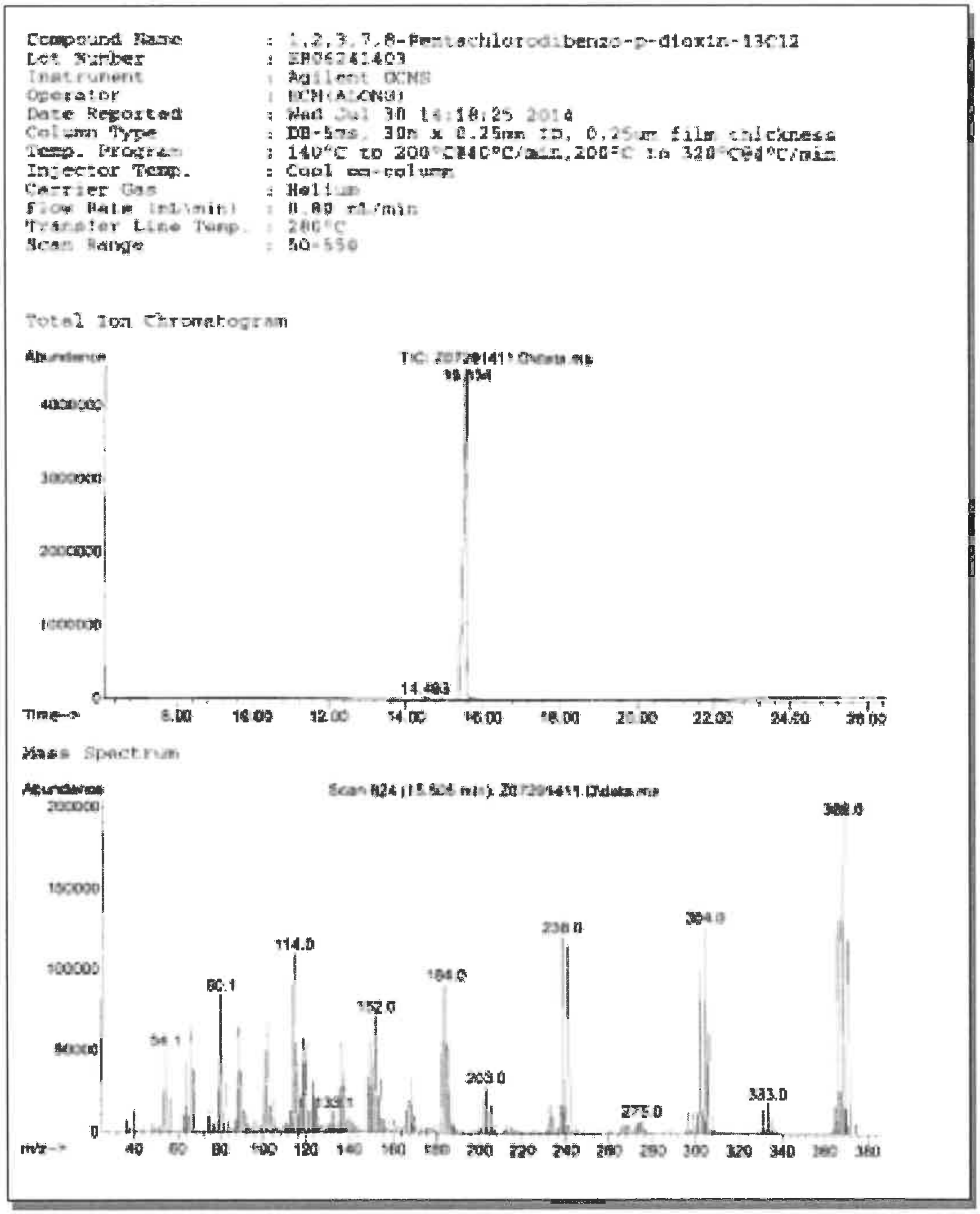

```
Compound Name            : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number               : ER06241403
Instrument               : Agilent GCMS
Operator                 : HCM(ALONG)
Date Reported            : Wed Jul 30 14:18:25 2014
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (mL/min)       : 0.80 ml/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

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Analytical Reference Standards
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

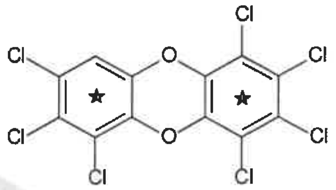

Catalog Number: ED-972
Solution Lot: ER09271601
Expiration Date: October 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	0.999

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER100110-01
Chemical Formula:	$^{13}C_{12}HCl_7O_2$
CAS Number:	109719-83-7
Molecular Weight:	437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

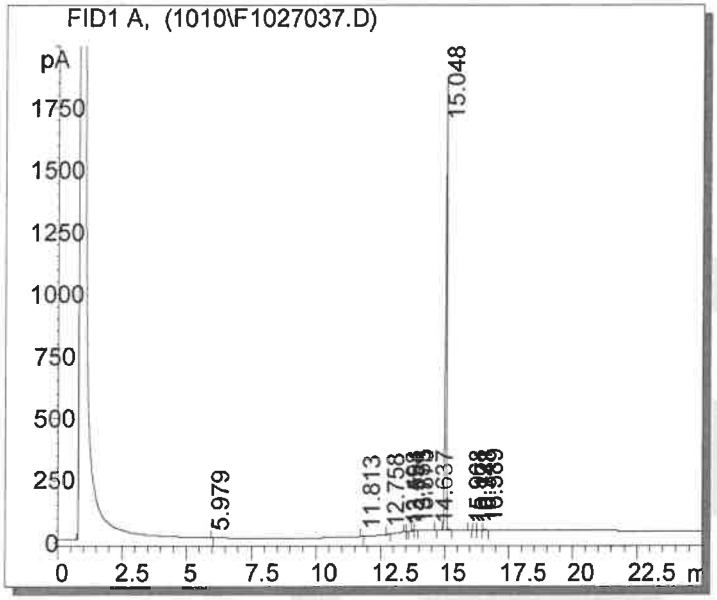

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

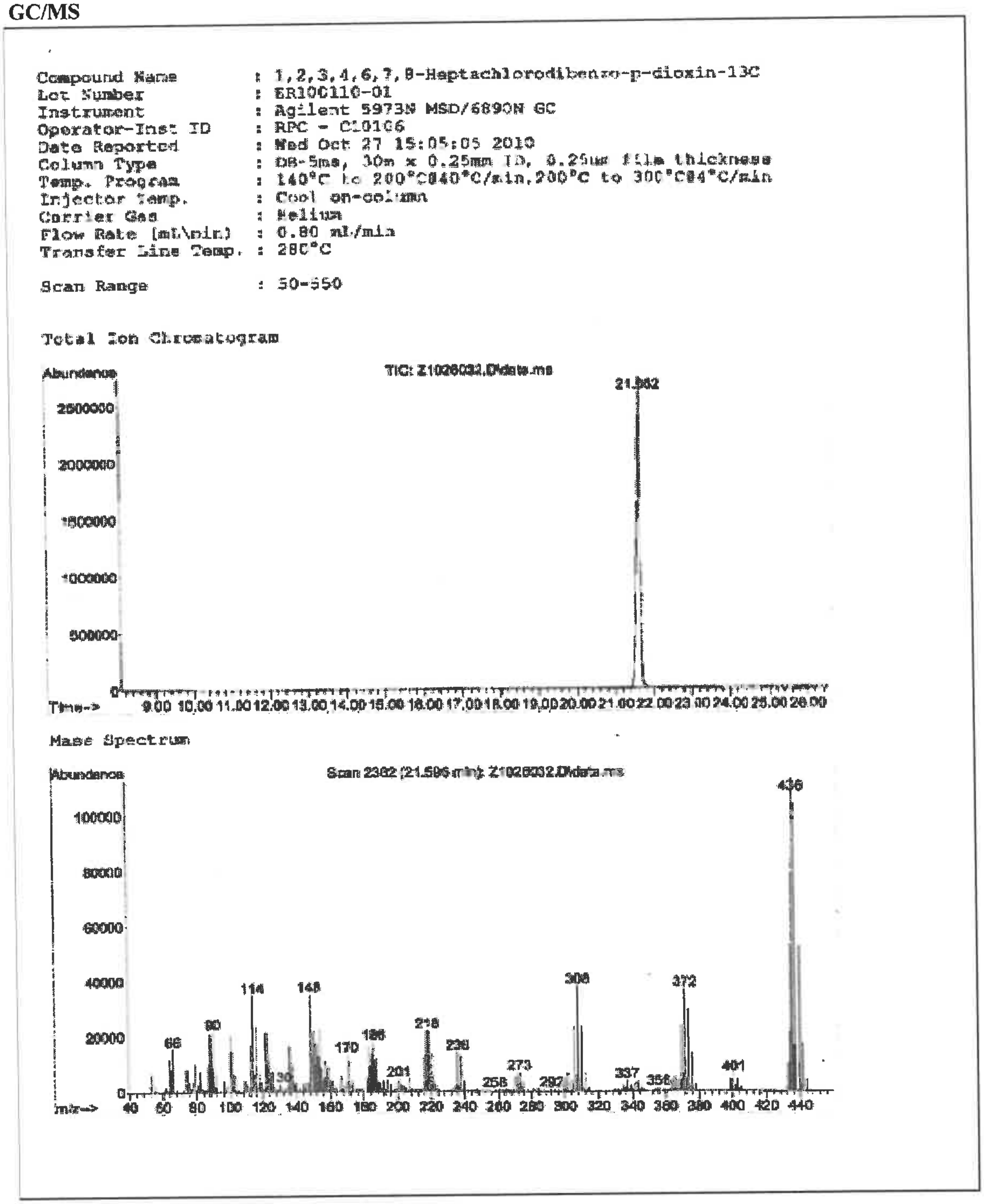

```
Compound Name         : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number            : ER10C110-01
Instrument            : Agilent 5973N MSD/6890N GC
Operator-Inst ID      : RPC - C10106
Date Reported         : Wed Oct 27 15:05:05 2010
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C

Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

r: 4/21/20 SW

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Revision 0
Page 1 of 5

Cerilliant Quality
- ISO 17034
- ISO/IEC 17025
- ISO 13485
- ISO 14001
- ISO 9001

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

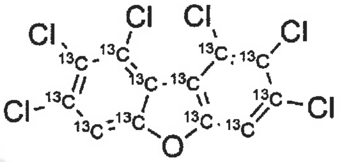

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03
Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

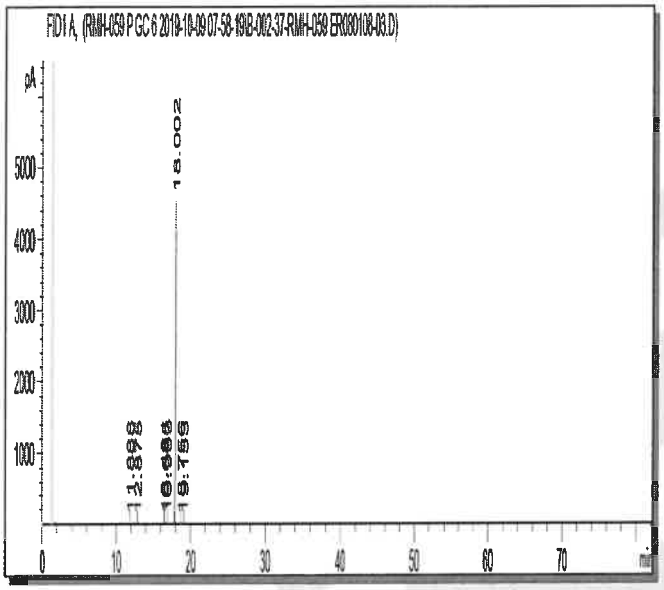

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER080108-03
Acquired:	October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

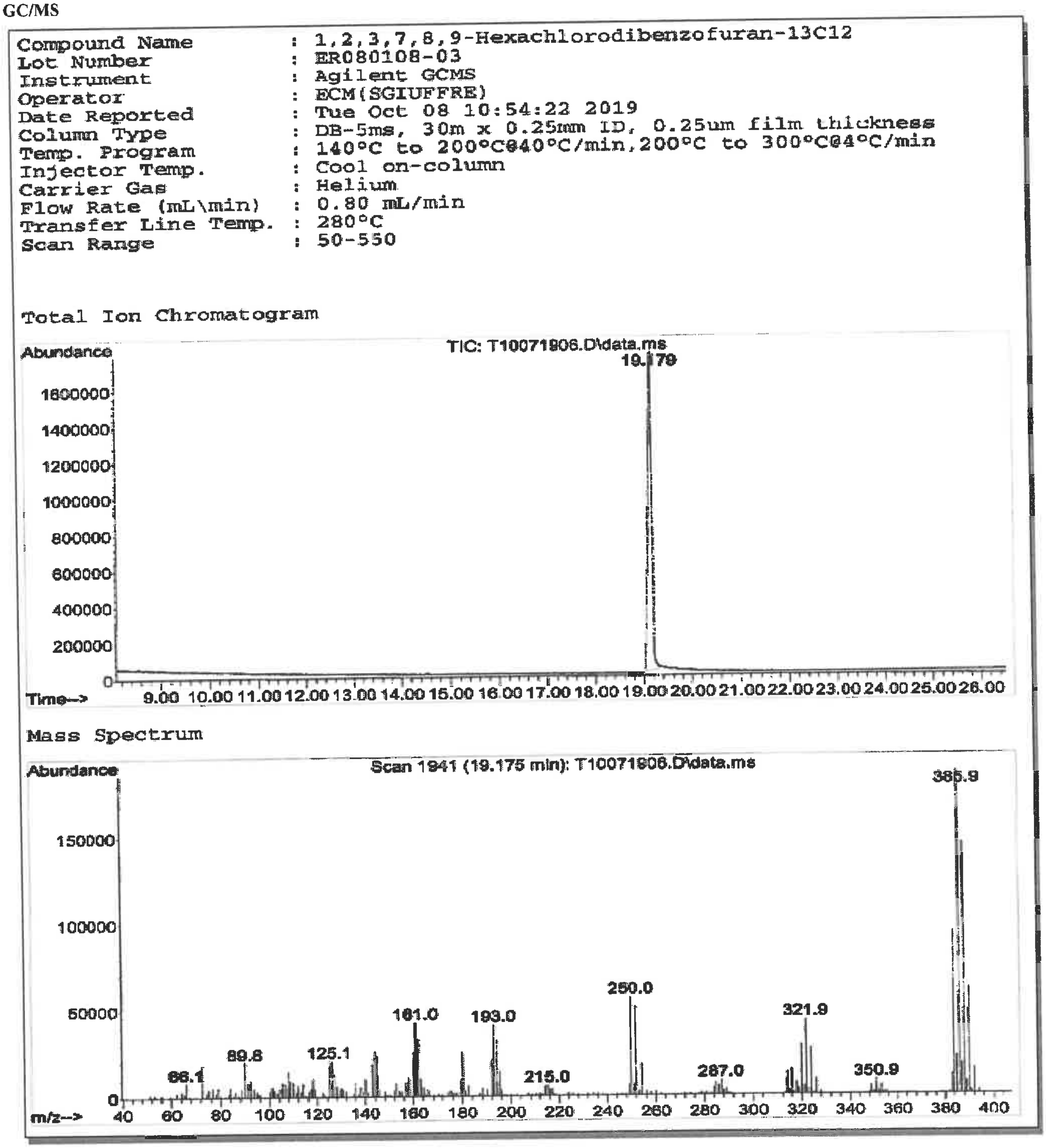

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number : ER080108-03
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Oct 08 10:54:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skj

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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

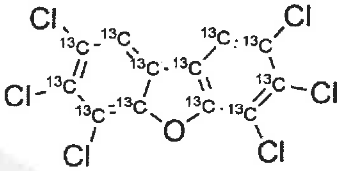

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER09051801

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-05-1
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

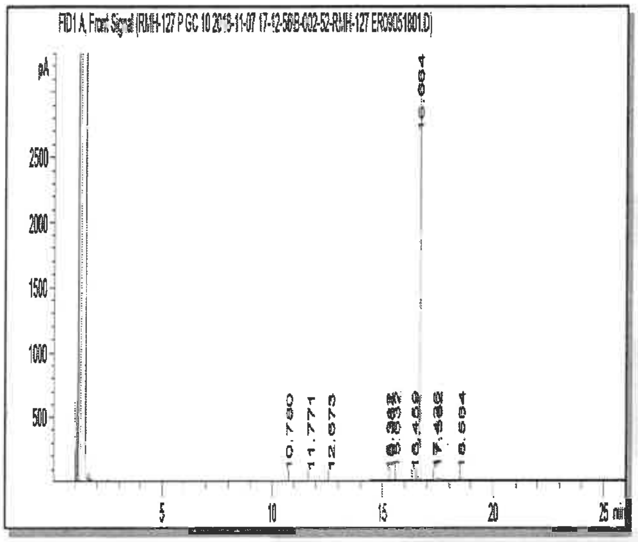

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

]

Spectral and Physical Data (cont.)

GC/MS

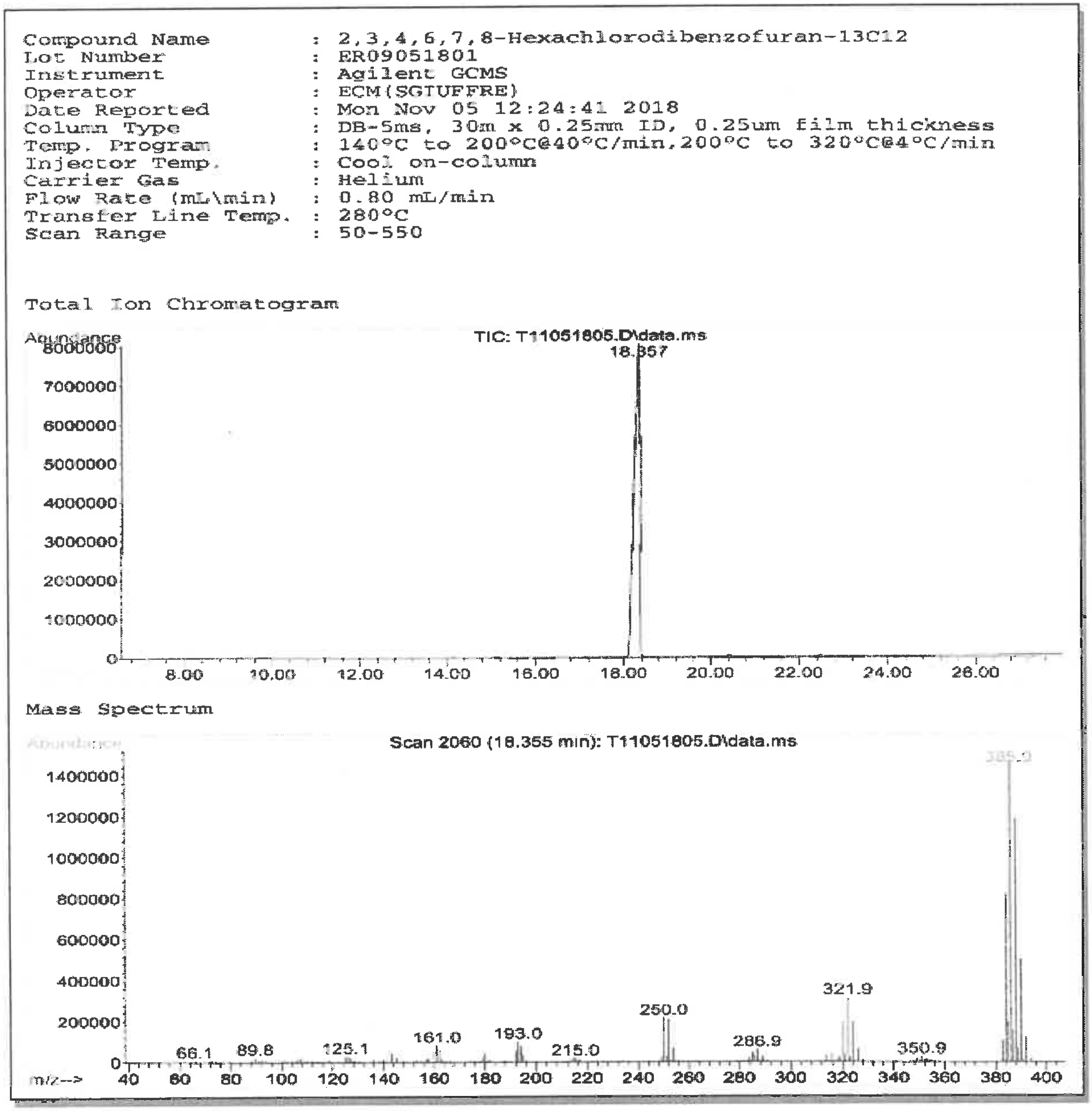

Compound Name : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER09051801
Instrument : Agilent GCMS
Operator : ECM(SGTUFFRE)
Date Reported : Mon Nov 05 12:24:41 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20SKW

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Revision 0
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

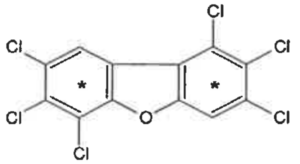

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER051607-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-03-9
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

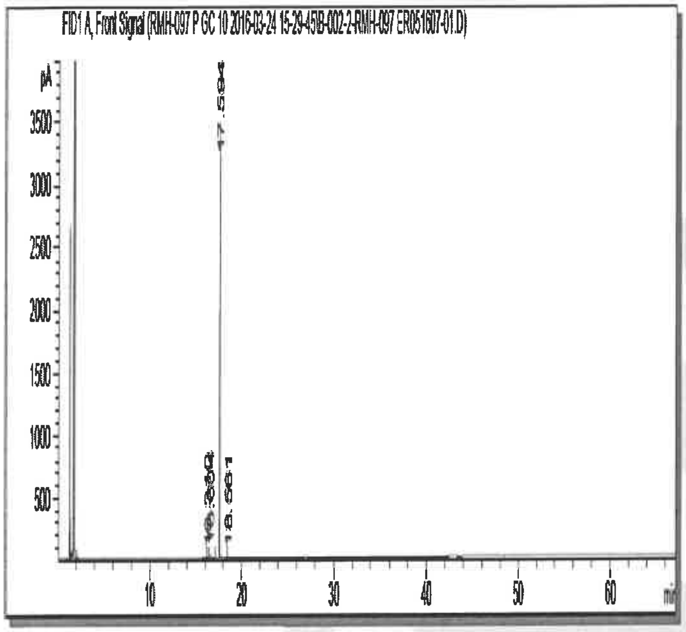

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 50 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument:	GC#10
Sample Name:	ER051607-01
Acquired:	March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER051607-01
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Fri Mar 18 07:08:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

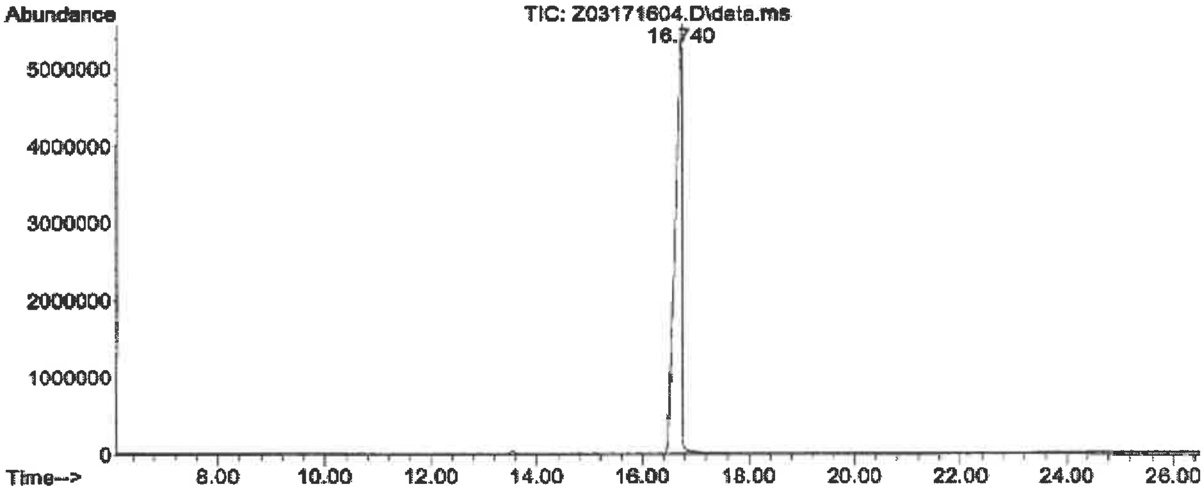

Mass Spectrum

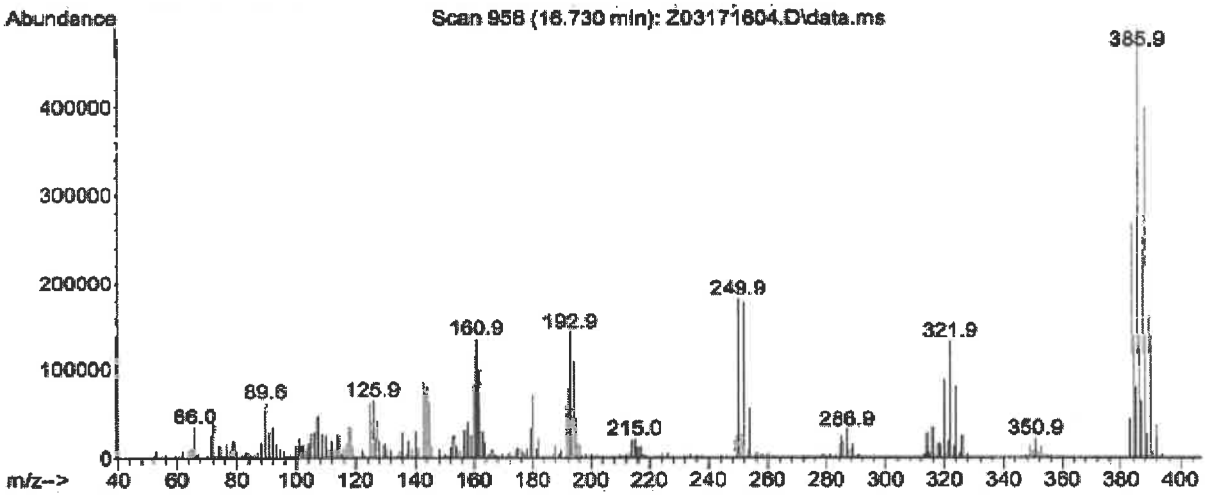

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

Rec'. 3/26/20 saw

Cerilliant
Analytical Reference Standards
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

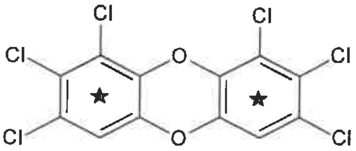

Catalog Number: ED-996
Solution Lot: ER08221601
Expiration Date: September 2026
Solvent: n-Nonane:Toluene (80:20)
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER110510-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-82-6
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

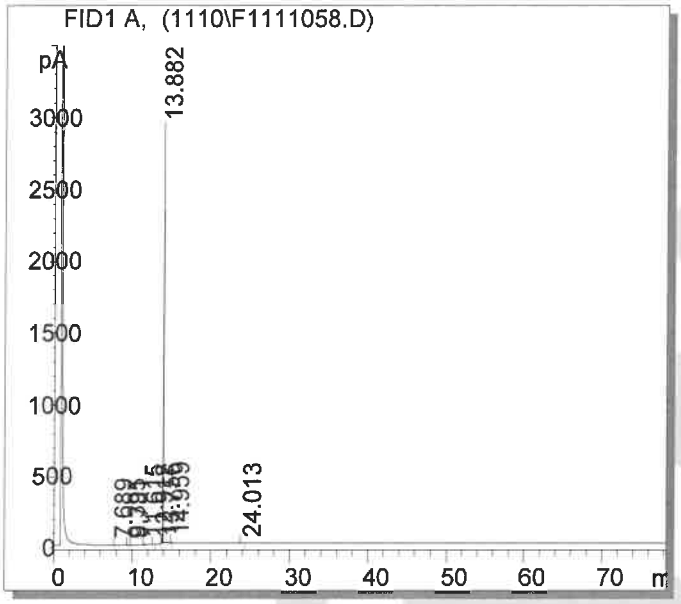

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

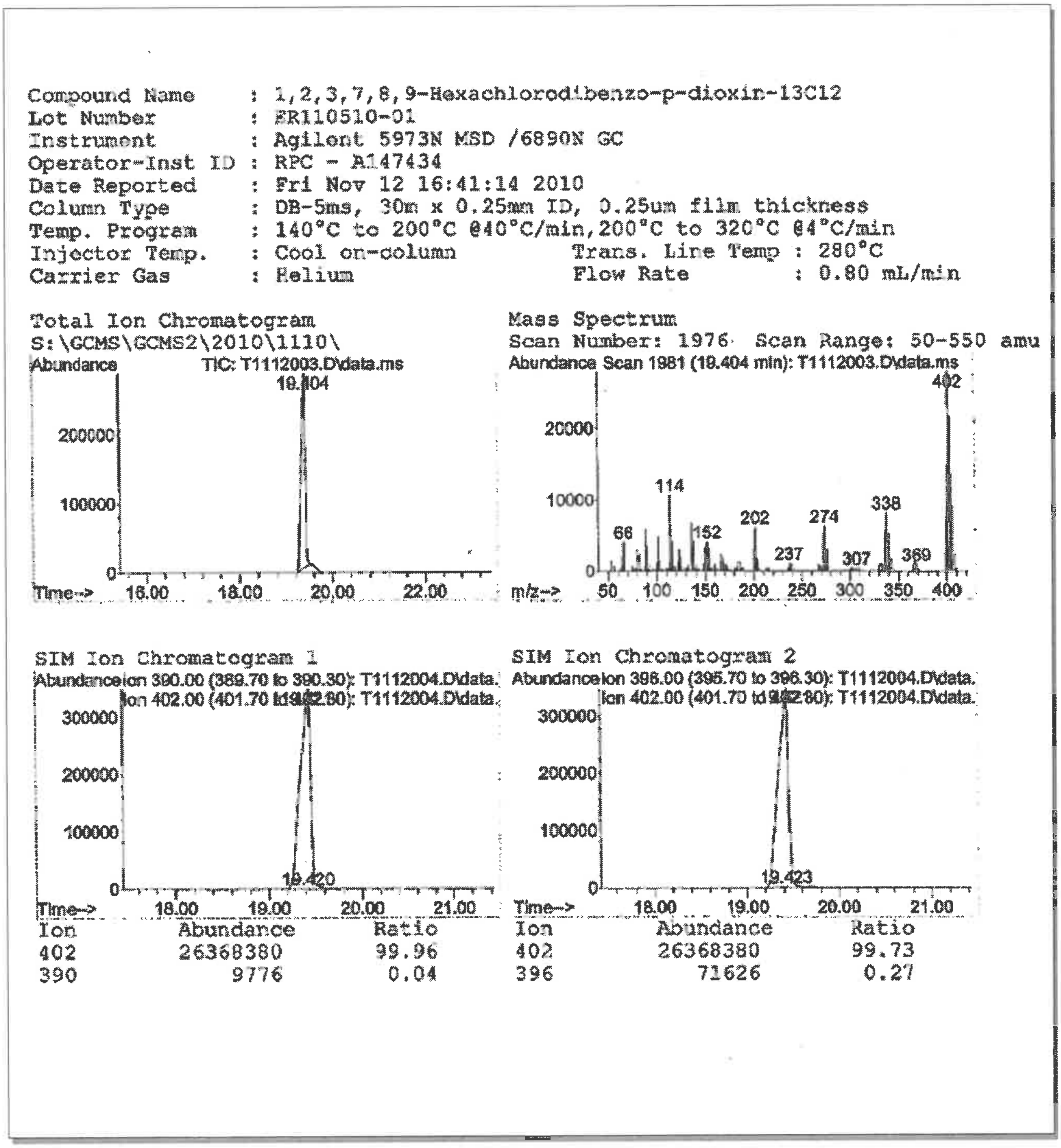

```
Compound Name       : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number          : ER110510-01
Instrument          : Agilent 5973N MSD /6890N GC
Operator-Inst ID    : RPC - A147434
Date Reported       : Fri Nov 12 16:41:14 2010
Column Type         : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program       : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.      : Cool on-column          Trans. Line Temp : 280°C
Carrier Gas         : Helium                  Flow Rate        : 0.80 mL/min
```

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

SIM Ion Chromatogram 2

```
Ion       Abundance       Ratio        Ion       Abundance       Ratio
402       26368380        99.96        402       26368380        99.73
390           9776         0.04        396          71626         0.27
```

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKW

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

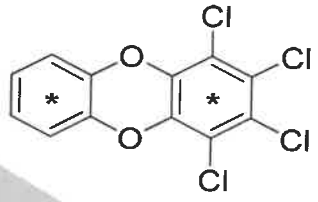

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

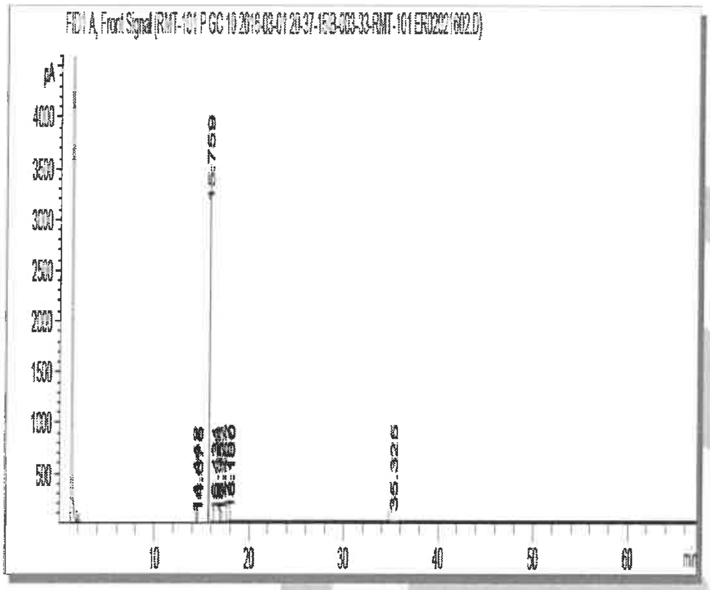

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

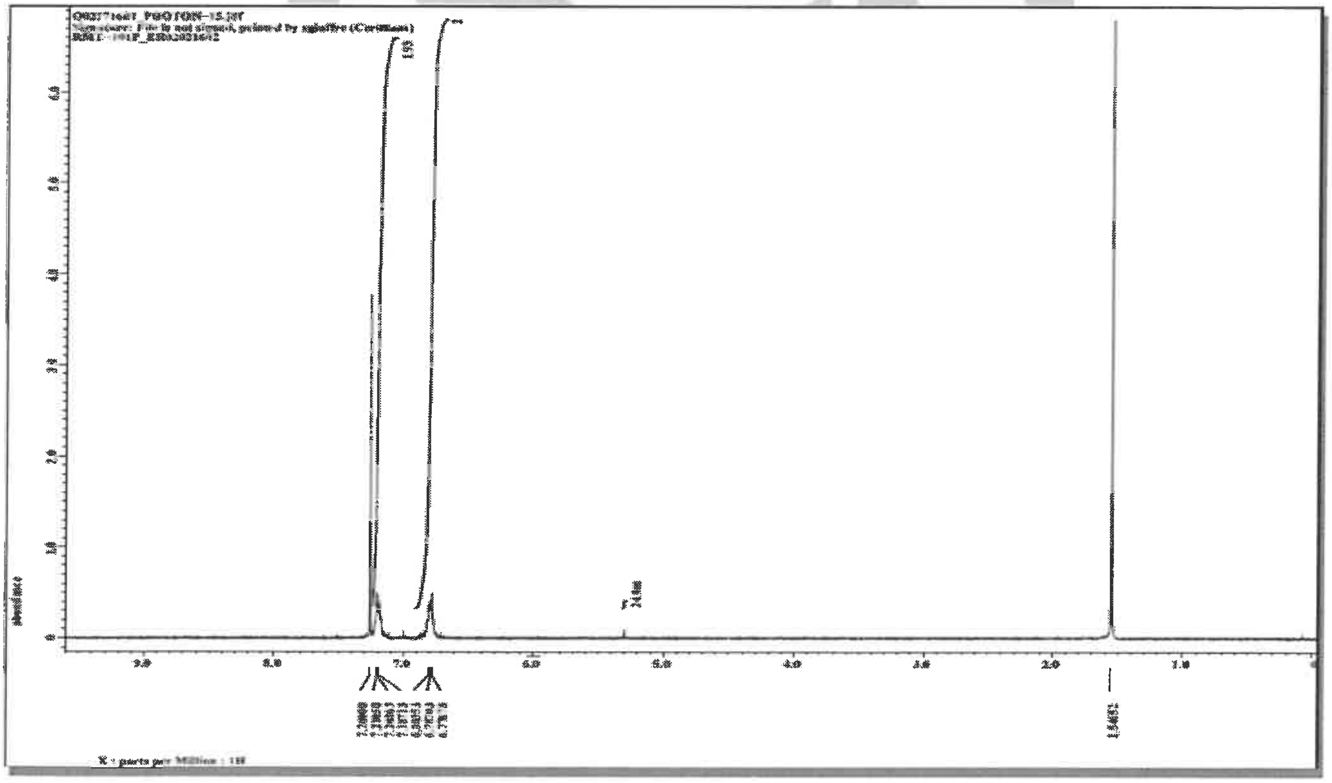

Spectral and Physical Data (cont.)

GC/MS

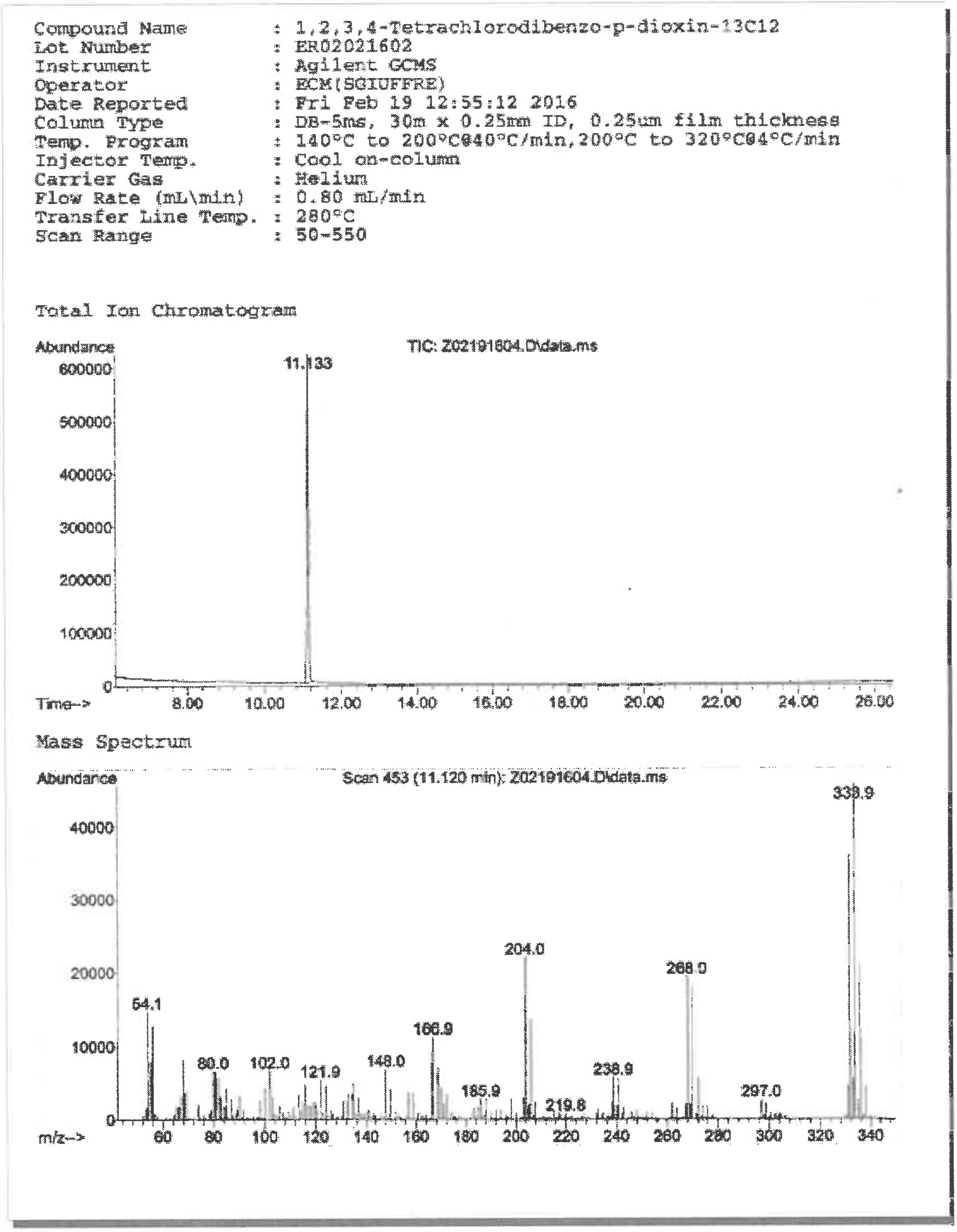

```
Compound Name         : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number            : ER02021602
Instrument            : Agilent GCMS
Operator              : ECM(SGIUFFRE)
Date Reported         : Fri Feb 19 12:55:12 2016
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

②

P: 4/2/19 SKJ

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF Precision and Recovery Stock Solution

PRODUCT CODE: EPA-1613PAR
LOT NUMBER: 13PAR0418
SOLVENT(S): Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy) 04/11/2018
LAST TESTED: (mm/dd/yyyy) 04/12/2018
EXPIRY DATE: (mm/dd/yyyy) 03/01/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1,x_2,...x_n)) = \sqrt{\sum_{i=1}^{n} u(y,x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

**For additional information or assistance concerning this or any other products from Wellington Laboratories Inc.,
please visit our website at www.well-labs.com or contact us directly at info@well-labs.com**

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

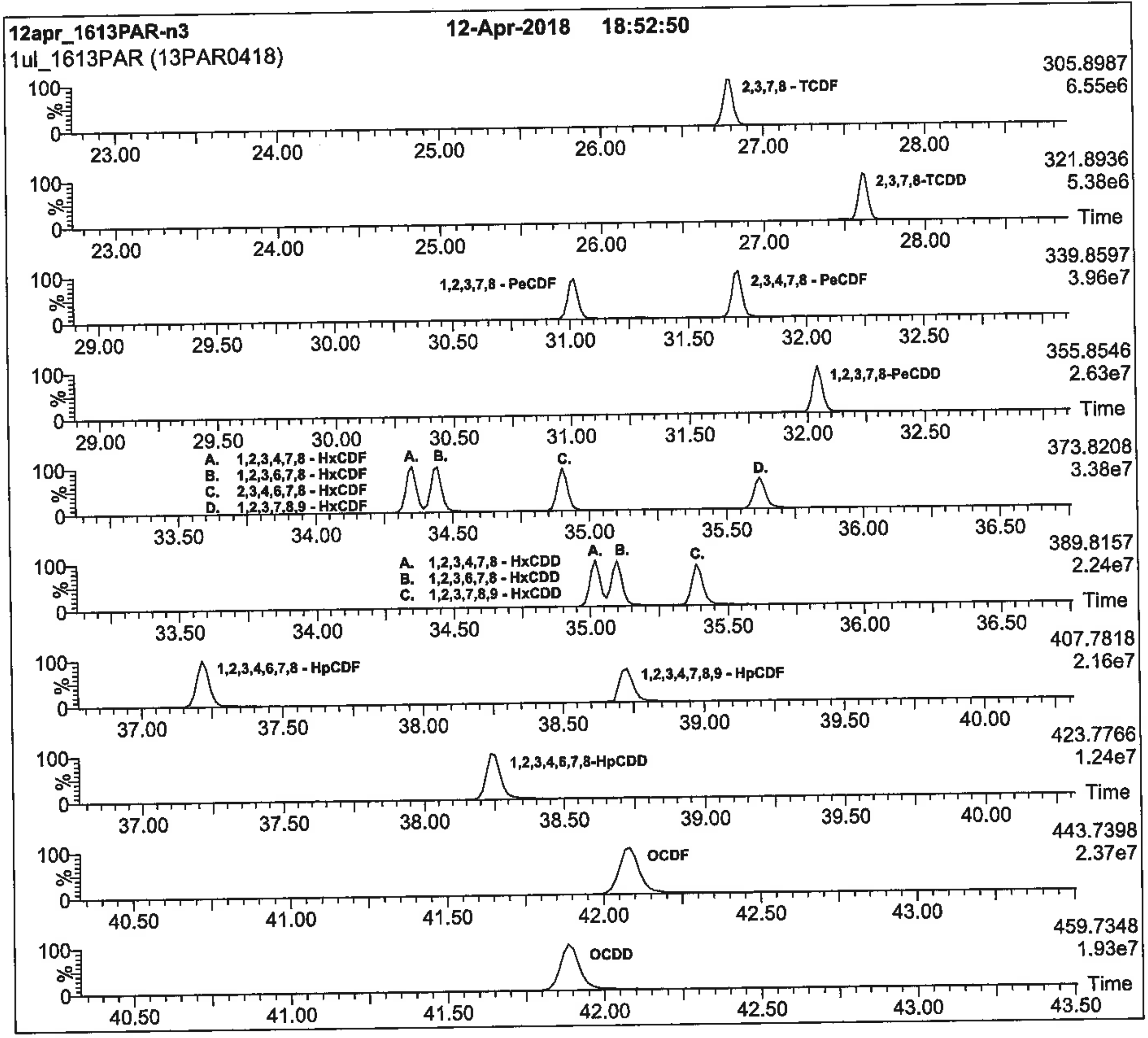

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min
Injector: 280 °C (Splitless Injection)
Ionization: EI+
Detector: 280 °C
SIR at 10,000 mass resolving power

Oven: 150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min, 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

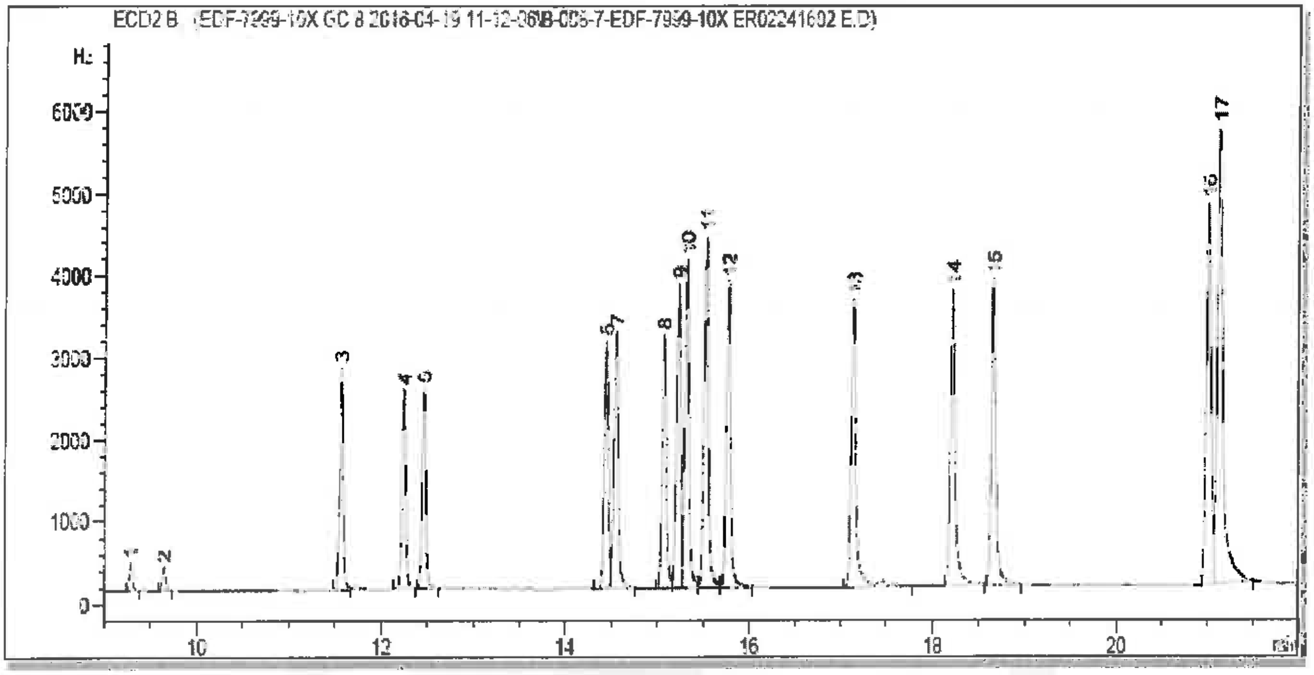

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

r: 4/30/15 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

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Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

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1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
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1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
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OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

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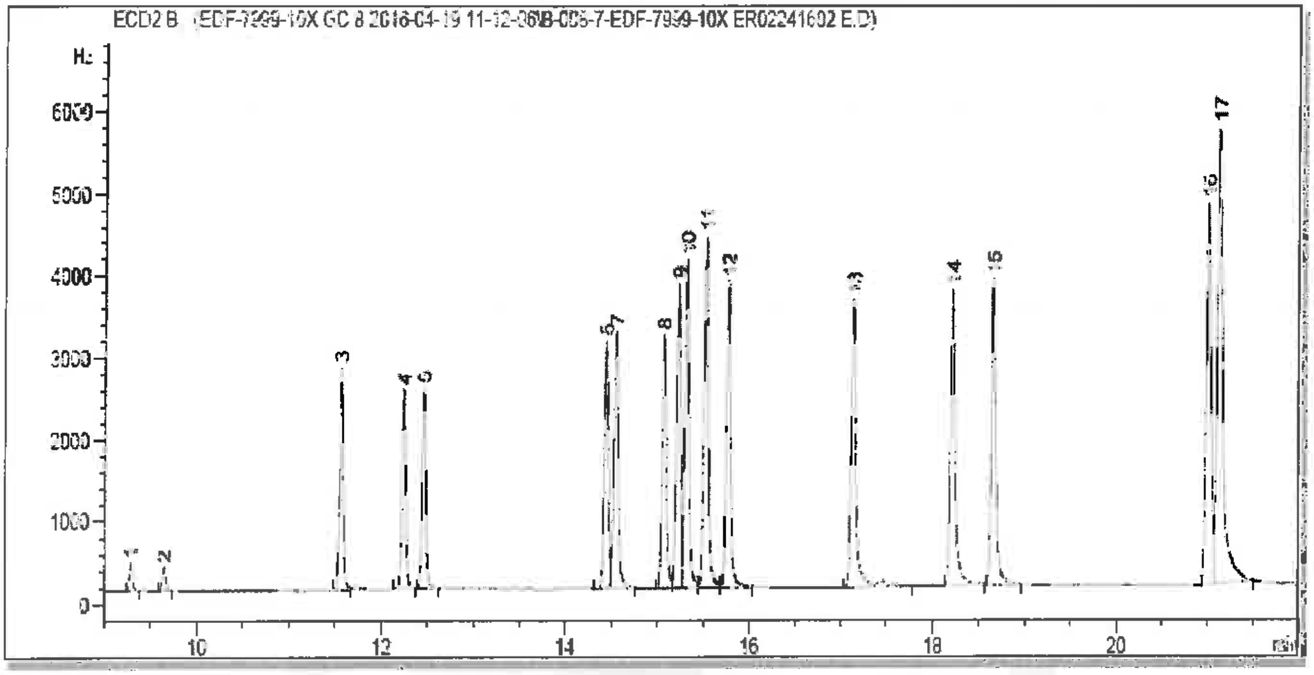

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
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11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
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13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #	13CHxCF #	HxCDD #
11215702-Tank#1-T=0	320-65130-13	87	73	84	101	53	50	52	56

	QC LIMITS
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank#1-T=0	320-65130-13	56	51	42	46	46	42

	QC LIMITS
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDD	#	37TCDD	#
11215702-Tank#2-T=0 DL	320-65130-14 DL	111		239	X
11215702-Tank#2-valve-5-1 DL	320-65130-18 DL	71		94	

	QC LIMITS
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-417490/2-A	79	80	100	68	69	77	77	76
	LCS 320-417971/2-A	65	67	93	73	73	74	62	63
	LCSD 320-417490/3-A	94	96	109	81	85	92	88	86
	LCSD 320-417971/3-A	63	66	89	71	71	72	62	65

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-417490/2-A	77	92	91	83	79	84	83	100
	LCS 320-417971/2-A	68	89	80	69	73	73	71	74
	LCSD 320-417490/3-A	90	104	101	94	91	96	90	112
	LCSD 320-417971/3-A	69	93	81	67	75	76	74	71

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Tank#1-valve-2-1 RA	320-65130-1 RA	85	119
11215702-Tank#1-valve-3-1 RA	320-65130-2 RA	83	116
11215702-Tank#1-valve-4-1 RA	320-65130-3 RA	91	119
11215702-Tank#1-valve-5-1 RA	320-65130-4 RA	84	117
11215702-Tank#1-valve-2-2 RA	320-65130-5 RA	89	120
11215702-Tank#1-valve-4-2 RA	320-65130-7 RA	88	121
11215702-Tank#1-valve-5-2 RA	320-65130-8 RA	83	117
11215702-Tank#1-valve-2-3 RA	320-65130-9 RA	75	117
11215702-Tank#1-valve-3-3 RA	320-65130-10 RA	77	120
11215702-Tank#1-valve-4-3 RA	320-65130-11 RA	88	121
11215702-Tank#1-valve-5-3 RA	320-65130-12 RA	87	120
11215702-Tank#1-T=0 RA	320-65130-13 RA	99	95
11215702-Tank#2-T=0 RA	320-65130-14 RA	117 q	37
11215702-Tank#2-valve-2-1 RA	320-65130-15 RA	92	102
11215702-Tank#2-valve-3-1 RA	320-65130-16 RA	84	102
11215702-Tank#2-valve-4-1 RA	320-65130-17 RA	90	111
11215702-Tank#2-valve-5-1 RA	320-65130-18 RA	82	109
11215702-Tank#2-valve-2-2 RA	320-65130-19 RA	73	111
11215702-Tank#2-valve-3-2 RA	320-65130-20 RA	77	110
11215702-Tank#2-valve-4-2 RA	320-65130-21 RA	70	101
11215702-Tank#2-valve-5-2 RA	320-65130-22 RA	74	111

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	OCDD #
11215702-Tank#1-T=0 DL	320-65130-13 DL	67	70	131	48

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-65130-1
SDG No.:			
Matrix:	Water	Level:	Low
GC Column (1):	DB-5	ID:	0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Tank#1-valve-2-1	320-65130-1	81	78	98	72	71	80	74	76
11215702-Tank#1-valve-3-1	320-65130-2	79	80	97	72	70	80	77	75
11215702-Tank#1-valve-4-1	320-65130-3	84	83	100	74	74	85	81	80
11215702-Tank#1-valve-5-1	320-65130-4	79	77	99	74	68	81	77	75
11215702-Tank#1-valve-2-2	320-65130-5	76	82	98	71	70	77	79	80
11215702-Tank#1-valve-4-2	320-65130-7	77	78	96	68	70	74	80	80
11215702-Tank#1-valve-5-2	320-65130-8	78	76	95	69	68	76	74	77
11215702-Tank#1-valve-2-3	320-65130-9	66	73	96	62	60	73	68	68
11215702-Tank#1-valve-3-3	320-65130-10	73	74	101	69	67	76	72	69
11215702-Tank#1-valve-4-3	320-65130-11	80	86	103	63	58	80	66	69
11215702-Tank#1-valve-5-3	320-65130-12	81	77	97	68	69	78	77	75
11215702-Tank#2-T=0	320-65130-14	106	115	218 X	82	82	66	100	99
11215702-Tank#2-valve-2-1	320-65130-15	85	76	90	75	73	66	93	90
11215702-Tank#2-valve-3-1	320-65130-16	70	75	90	76	75	74	71	71
11215702-Tank#2-valve-4-1	320-65130-17	71	78	94	79	76	76	73	74
11215702-Tank#2-valve-5-1	320-65130-18	71	73	93	72	71	70	67	66
11215702-Tank#2-valve-2-2	320-65130-19	62	67	92	67	66	66	62	65
11215702-Tank#2-valve-3-2	320-65130-20	68	71	95	72	70	71	64	67
11215702-Tank#2-valve-4-2	320-65130-21	59	63	85	64	62	61	61	62
11215702-Tank#2-valve-5-2	320-65130-22	66	69	95	71	69	69	64	65
	MB 320-417490/1-A	81	91	102	70	69	79	71	78
	MB 320-417971/1-A	71	75	91	79	78	80	69	74

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank#1-valve-2-1	320-65130-1	76	85	86	77	80	80	80	89
11215702-Tank#1-valve-3-1	320-65130-2	77	84	88	76	80	82	85	95
11215702-Tank#1-valve-4-1	320-65130-3	78	90	91	80	85	88	82	94
11215702-Tank#1-valve-5-1	320-65130-4	75	82	83	76	78	76	75	91
11215702-Tank#1-valve-2-2	320-65130-5	80	90	92	83	86	89	85	101
11215702-Tank#1-valve-4-2	320-65130-7	81	93	89	79	83	86	79	96
11215702-Tank#1-valve-5-2	320-65130-8	79	90	88	76	80	84	77	88
11215702-Tank#1-valve-2-3	320-65130-9	66	72	78	65	68	75	67	75
11215702-Tank#1-valve-3-3	320-65130-10	70	79	79	71	74	69	65	82
11215702-Tank#1-valve-4-3	320-65130-11	78	84	96	75	77	72	67	75
11215702-Tank#1-valve-5-3	320-65130-12	76	91	90	80	85	86	82	99
11215702-Tank#2-T=0	320-65130-14	97	110	94	101	85	83	98	97
11215702-Tank#2-valve-2-1	320-65130-15	94	114	86	91	84	82	89	97
11215702-Tank#2-valve-3-1	320-65130-16	74	100	86	72	82	82	80	77
11215702-Tank#2-valve-4-1	320-65130-17	77	104	93	75	84	83	81	80
11215702-Tank#2-valve-5-1	320-65130-18	70	91	79	69	75	75	74	70
11215702-Tank#2-valve-2-2	320-65130-19	66	86	77	64	73	73	71	70
11215702-Tank#2-valve-3-2	320-65130-20	69	91	79	68	77	75	73	76
11215702-Tank#2-valve-4-2	320-65130-21	64	76	71	62	71	70	70	70
11215702-Tank#2-valve-5-2	320-65130-22	69	91	78	66	77	75	74	77
	MB 320-417490/1-A	77	87	95	74	70	72	69	60
	MB 320-417971/1-A	77	91	89	75	83	81	76	76

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 08OC203D5_5.d

Lab ID: LCS 320-417490/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	218	109	67-158	
2,3,7,8-TCDF	200	223	111	75-158	
1,2,3,7,8-PeCDD	1000	969	97	70-142	
1,2,3,7,8-PeCDF	1000	985	98	80-134	
2,3,4,7,8-PeCDF	1000	1010	101	68-160	
1,2,3,4,7,8-HxCDD	1000	958	96	70-164	
1,2,3,6,7,8-HxCDD	1000	955	95	76-134	
1,2,3,7,8,9-HxCDD	1000	847	85	64-162	
1,2,3,4,7,8-HxCDF	1000	998	100	72-134	
1,2,3,6,7,8-HxCDF	1000	1010	101	84-130	
1,2,3,7,8,9-HxCDF	1000	1010	101	78-130	
2,3,4,6,7,8-HxCDF	1000	1010	101	70-156	
1,2,3,4,6,7,8-HpCDD	1000	952	95	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1010	101	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1020	102	78-138	
OCDD	2000	1850	92	78-144	
OCDF	2000	1780	89	63-170	
13C-2,3,7,8-TCDD	2000	1610	80	20-175	
13C-2,3,7,8-TCDF	2000	1580	79	22-152	
13C-1,2,3,7,8-PeCDD	2000	1540	77	21-227	
13C-1,2,3,7,8-PeCDF	2000	1360	68	21-192	
13C-2,3,4,7,8-PeCDF	2000	1380	69	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1850	92	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1810	91	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1530	77	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1520	76	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1650	83	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1530	77	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1680	84	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1570	79	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1660	83	20-186	
13C-OCDD	4000	4000	100	13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 09oc20dfs1_21.d

Lab ID: LCS 320-417971/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	216	108	67-158	
2,3,7,8-TCDF	200	218	109	75-158	
1,2,3,7,8-PeCDD	1000	1070	107	70-142	
1,2,3,7,8-PeCDF	1000	1010	101	80-134	
2,3,4,7,8-PeCDF	1000	1040	104	68-160	
1,2,3,4,7,8-HxCDD	1000	1050	105	70-164	
1,2,3,6,7,8-HxCDD	1000	998	100	76-134	
1,2,3,7,8,9-HxCDD	1000	860	86	64-162	
1,2,3,4,7,8-HxCDF	1000	1030	103	72-134	
1,2,3,6,7,8-HxCDF	1000	1050	105	84-130	
1,2,3,7,8,9-HxCDF	1000	1020	102	78-130	
2,3,4,6,7,8-HxCDF	1000	1030	103	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1010	101	70-140	
1,2,3,4,6,7,8-HpCDF	1000	971	97	82-122	
1,2,3,4,7,8,9-HpCDF	1000	993	99	78-138	
OCDD	2000	1880	94	78-144	
OCDF	2000	1800	90	63-170	
13C-2,3,7,8-TCDD	2000	1330	67	20-175	
13C-2,3,7,8-TCDF	2000	1290	65	22-152	
13C-1,2,3,7,8-PeCDD	2000	1470	74	21-227	
13C-1,2,3,7,8-PeCDF	2000	1460	73	21-192	
13C-2,3,4,7,8-PeCDF	2000	1450	73	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1790	89	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1610	80	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1240	62	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1250	63	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1380	69	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1350	68	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1470	73	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1460	73	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1430	71	20-186	
13C-OCDD	4000	2950	74	13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 08OC203D5_6.d

Lab ID: LCSD 320-417490/3-A Client ID:

	SPIKE ADDED	LCSD CONCENTRATION	LCSD %	%	QC LIMITS		#
COMPOUND	(pg/L)	(pg/L)	REC	RPD	RPD	REC	
2,3,7,8-TCDD	200	214	107	2	50	67-158	
2,3,7,8-TCDF	200	214	107	4	50	75-158	
1,2,3,7,8-PeCDD	1000	968	97	0	50	70-142	
1,2,3,7,8-PeCDF	1000	994	99	1	50	80-134	
2,3,4,7,8-PeCDF	1000	989	99	2	50	68-160	
1,2,3,4,7,8-HxCDD	1000	956	96	0	50	70-164	
1,2,3,6,7,8-HxCDD	1000	938	94	2	50	76-134	
1,2,3,7,8,9-HxCDD	1000	877	88	4	50	64-162	
1,2,3,4,7,8-HxCDF	1000	988	99	1	50	72-134	
1,2,3,6,7,8-HxCDF	1000	999	100	1	50	84-130	
1,2,3,7,8,9-HxCDF	1000	993	99	2	50	78-130	
2,3,4,6,7,8-HxCDF	1000	996	100	2	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	930	93	2	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	970	97	4	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1020	102	0	50	78-138	
OCDD	2000	1880	94	2	50	78-144	
OCDF	2000	1820	91	2	50	63-170	
13C-2,3,7,8-TCDD	2000	1930	96			20-175	
13C-2,3,7,8-TCDF	2000	1880	94			22-152	
13C-1,2,3,7,8-PeCDD	2000	1840	92			21-227	
13C-1,2,3,7,8-PeCDF	2000	1620	81			21-192	
13C-2,3,4,7,8-PeCDF	2000	1700	85			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	2090	104			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	2020	101			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1760	88			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1720	86			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1890	94			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1800	90			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1920	96			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1830	91			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1810	90			20-186	
13C-OCDD	4000	4470	112			13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 09oc20dfs1_22.d

Lab ID: LCSD 320-417971/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	207	103	4	50	67-158	
2,3,7,8-TCDF	200	211	105	3	50	75-158	
1,2,3,7,8-PeCDD	1000	1050	105	2	50	70-142	
1,2,3,7,8-PeCDF	1000	1030	103	2	50	80-134	
2,3,4,7,8-PeCDF	1000	1020	102	1	50	68-160	
1,2,3,4,7,8-HxCDD	1000	1060	106	1	50	70-164	
1,2,3,6,7,8-HxCDD	1000	993	99	0	50	76-134	
1,2,3,7,8,9-HxCDD	1000	846	85	2	50	64-162	
1,2,3,4,7,8-HxCDF	1000	1030	103	0	50	72-134	
1,2,3,6,7,8-HxCDF	1000	1040	104	1	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1010	101	1	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1030	103	1	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1020	102	1	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	978	98	1	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	976	98	2	50	78-138	
OCDD	2000	1900	95	1	50	78-144	
OCDF	2000	1810	90	1	50	63-170	
13C-2,3,7,8-TCDD	2000	1330	66			20-175	
13C-2,3,7,8-TCDF	2000	1260	63			22-152	
13C-1,2,3,7,8-PeCDD	2000	1450	72			21-227	
13C-1,2,3,7,8-PeCDF	2000	1410	71			21-192	
13C-2,3,4,7,8-PeCDF	2000	1420	71			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1850	93			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1620	81			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1250	62			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1310	65			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1350	67			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1370	69			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1510	76			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1500	75			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1480	74			20-186	
13C-OCDD	4000	2850	71			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab File ID: 08OC203D5_4.d Lab Sample ID: MB 320-417490/1-A

Matrix: Water Date Extracted: 10/01/2020 08:42

Instrument ID: 3D5 Date Analyzed: 10/08/2020 11:56

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-417490/2-A	08OC203D5_5.d	10/08/2020 12:44
	LCSD 320-417490/3-A	08OC203D5_6.d	10/08/2020 13:31
11215702-Tank#1-valve-2-1	320-65130-1	08OC20A3D5_11.d	10/09/2020 03:28
11215702-Tank#1-valve-3-1	320-65130-2	08OC20A3D5_12.d	10/09/2020 04:15
11215702-Tank#1-valve-4-1	320-65130-3	08OC20A3D5_13.d	10/09/2020 05:03
11215702-Tank#1-valve-5-1	320-65130-4	08OC20A3D5_14.d	10/09/2020 05:51
11215702-Tank#1-valve-2-2	320-65130-5	08OC20A3D5_15.d	10/09/2020 06:38
11215702-Tank#1-valve-4-2	320-65130-7	08OC20A3D5_16.d	10/09/2020 07:26
11215702-Tank#1-valve-5-2	320-65130-8	08OC20A3D5_17.d	10/09/2020 08:13
11215702-Tank#1-valve-2-3	320-65130-9	08OC20A3D5_18.d	10/09/2020 09:01
11215702-Tank#1-valve-3-3	320-65130-10	08OC20A3D5_19.d	10/09/2020 09:49
11215702-Tank#1-valve-4-3	320-65130-11	09OC203D5_4.d	10/09/2020 15:27
11215702-Tank#1-valve-5-3	320-65130-12	09OC203D5_5.d	10/09/2020 16:15
11215702-Tank#1-T=0	320-65130-13	09OC203D5_6.d	10/09/2020 17:03
11215702-Tank#1-valve-4-1 RA	320-65130-3 RA	13OC20A11D2_004.d	10/13/2020 21:37
11215702-Tank#1-valve-2-2 RA	320-65130-5 RA	13OC20A11D2_005.d	10/13/2020 22:15
11215702-Tank#1-valve-2-3 RA	320-65130-9 RA	13OC20A11D2_006.d	10/13/2020 22:54
11215702-Tank#1-valve-2-1 RA	320-65130-1 RA	13OC20A11D2_007.d	10/13/2020 23:32
11215702-Tank#1-valve-3-1 RA	320-65130-2 RA	13OC20A11D2_008.d	10/14/2020 00:10
11215702-Tank#1-valve-4-3 RA	320-65130-11 RA	13OC20A11D2_009.d	10/14/2020 00:48
11215702-Tank#1-valve-4-2 RA	320-65130-7 RA	13OC20A11D2_010.d	10/14/2020 01:27
11215702-Tank#1-valve-5-2 RA	320-65130-8 RA	13OC20A11D2_011.d	10/14/2020 02:05

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Lab File ID: 08OC203D5_4.d   Lab Sample ID: MB 320-417490/1-A

Matrix: Water   Date Extracted: 10/01/2020 08:42

Instrument ID: 3D5   Date Analyzed: 10/08/2020 11:56

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Tank#1-valve-5-3 RA	320-65130-12 RA	13OC20A11D2_012.d	10/14/2020 02:43
11215702-Tank#1-valve-5-1 RA	320-65130-4 RA	13OC20A11D2_013.d	10/14/2020 03:22
11215702-Tank#1-valve-3-3 RA	320-65130-10 RA	13OC20A11D2_014.d	10/14/2020 04:00
11215702-Tank#1-T=0 RA	320-65130-13 RA	13OC20A11D2_015.d	10/14/2020 04:38
11215702-Tank#1-T=0 DL	320-65130-13 DL	16oc20adfs1_13.d	10/17/2020 02:29

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab File ID: 09oc20dfs1_20.d Lab Sample ID: MB 320-417971/1-A

Matrix: Water Date Extracted: 10/02/2020 08:26

Instrument ID: DFS 1 Date Analyzed: 10/10/2020 07:46

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-417971/2-A	09oc20dfs1_21.d	10/10/2020 08:34
	LCSD 320-417971/3-A	09oc20dfs1_22.d	10/10/2020 09:21
11215702-Tank#2-valve-3-1	320-65130-16	09oc20dfs1_23.d	10/10/2020 10:09
11215702-Tank#2-valve-4-1	320-65130-17	09oc20dfs1_24.d	10/10/2020 10:57
11215702-Tank#2-valve-5-1	320-65130-18	09oc20dfs1_25.d	10/10/2020 11:45
11215702-Tank#2-valve-2-2	320-65130-19	09oc20dfs1_26.d	10/10/2020 12:33
11215702-Tank#2-valve-3-2	320-65130-20	09oc20dfs1_27.d	10/10/2020 13:20
11215702-Tank#2-valve-4-2	320-65130-21	09oc20dfs1_28.d	10/10/2020 14:08
11215702-Tank#2-valve-5-2	320-65130-22	09oc20dfs1_29.d	10/10/2020 14:56
11215702-Tank#2-valve-2-1	320-65130-15	12oc20dfs1_6.d	10/12/2020 16:34
11215702-Tank#2-T=0	320-65130-14	12oc20dfs1_7.d	10/12/2020 17:22
11215702-Tank#2-valve-2-2 RA	320-65130-19 RA	12OC20A11D2_006.d	10/12/2020 18:31
11215702-Tank#2-valve-4-1 RA	320-65130-17 RA	12OC20A11D2_007.d	10/12/2020 19:10
11215702-Tank#2-valve-4-2 RA	320-65130-21 RA	12OC20A11D2_009.d	10/12/2020 20:26
11215702-Tank#2-valve-2-1 RA	320-65130-15 RA	12OC20A11D2_010.d	10/12/2020 21:05
11215702-Tank#2-valve-3-1 RA	320-65130-16 RA	12OC20A11D2_011.d	10/12/2020 21:43
11215702-Tank#2-valve-5-2 RA	320-65130-22 RA	12OC20A11D2_013.d	10/12/2020 23:00
11215702-Tank#2-T=0 RA	320-65130-14 RA	12OC20A11D2_014.d	10/12/2020 23:38
11215702-Tank#2-valve-3-2 RA	320-65130-20 RA	14OC2011D2_009.d	10/14/2020 16:28
11215702-Tank#2-valve-5-1 RA	320-65130-18 RA	14OC2011D2_010.d	10/14/2020 17:07
11215702-Tank#2-T=0 DL	320-65130-14 DL	15oc20dfs1_12.d	10/15/2020 20:21
11215702-Tank#2-valve-5-1 DL	320-65130-18 DL	15oc20dfs1_13.d	10/15/2020 21:09

FORM IV 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-2-1	Lab Sample ID: 320-65130-1
Matrix: Water	Lab File ID: 08OC20A3D5_11.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1042.8(mL)	Date Analyzed: 10/09/2020 03:28
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	94		9.6	0.82
40321-76-4	1,2,3,7,8-PeCDD	3.2	J B	48	0.44
57117-41-6	1,2,3,7,8-PeCDF	17	J B	48	0.41
57117-31-4	2,3,4,7,8-PeCDF	7.8	J B	48	0.47
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J B	48	0.69
57653-85-7	1,2,3,6,7,8-HxCDD	3.3	J q B	48	0.72
19408-74-3	1,2,3,7,8,9-HxCDD	2.8	J B	48	0.65
70648-26-9	1,2,3,4,7,8-HxCDF	29	J B	48	0.65
57117-44-9	1,2,3,6,7,8-HxCDF	8.9	J B	48	0.67
72918-21-9	1,2,3,7,8,9-HxCDF	3.4	J q B	48	0.52
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.74
35822-46-9	1,2,3,4,6,7,8-HpCDD	15	J B	48	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	10	J B	48	0.20
55673-89-7	1,2,3,4,7,8,9-HpCDF	6.8	J B	48	0.23
3268-87-9	OCDD	130	B	96	0.39
39001-02-0	OCDF	15	J B	96	0.24
41903-57-5	Total TCDD	100	B	9.6	0.82
30402-14-3	Total TCDF	460	B	9.6	1.4
36088-22-9	Total PeCDD	3.2	J B	48	0.44
30402-15-4	Total PeCDF	34	J q B	48	0.44
34465-46-8	Total HxCDD	11	J q B	48	0.68
55684-94-1	Total HxCDF	42	J q B	48	0.64
37871-00-4	Total HpCDD	24	J B	48	0.25
38998-75-3	Total HpCDF	19	J B	48	0.21

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-2-1   Lab Sample ID: 320-65130-1

Matrix: Water   Lab File ID: 08OC20A3D5_11.d

Analysis Method: 1613B   Date Collected: 09/11/2020 12:30

Extract. Method: 1613B   Date Extracted: 10/01/2020 08:42

Sample wt/vol: 1042.8(mL)   Date Analyzed: 10/09/2020 03:28

Con. Extract Vol.: 20(uL)   Dilution Factor: 1

Injection Volume: 2(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420482   Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	78		25-164
89059-46-1	13C-2,3,7,8-TCDF	81		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	80		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	72		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	71		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	85		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	76		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	77		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	76		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	80		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		26-138
114423-97-1	13C-OCDD	89		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		35-197

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Lims ID: 320-65130-A-1-A
Client ID: 11215702-Tank#1-valve-2-1
Sample Type: Client
Inject. Date: 09-Oct-2020 03:28:10 ALS Bottle#: 8 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-1-A 320-65130-A-1-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:30:49 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:55:38

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	322144458	0.79	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	386223515	0.80	1.4844	80.8	80.8	0.2111	0.2111	80.77	
2,3,7,8-TCDF	15.492	52042557	0.80	0.9534	14.1	14.1	0.0737	0.0737		
A Non-2,3,7,8-sub-TCDF	15.227	35794745	0.82	0.9534	9.721	9.721	0.0737	6.169		
S Total TCDF					23.9	23.9	0.0737	0.0737		
D 13C-2,3,7,8-TCDD	16.081	271555794	0.80	1.0875	77.5	77.5	0.2184	0.2184	77.52	
2,3,7,8-TCDD	16.097	13560946	0.81	1.0205	4.894	4.894	0.0427	0.0427		
$ 37Cl4-2,3,7,8-TCDD	16.097	141174006		1.1216	39.1	39.1	0.0783	0.0783	97.68	
A Non-2,3,7,8-sub-TCDD	15.620	1359910	0.83	1.0205	0.4907	0.4907	0.0427	0.3956		
S Total TCDD					5.384	5.384	0.0427	0.0427		
D 13C-1,2,3,7,8-PeCDF	19.700	322191557	1.57	1.3943	71.7	71.7	0.1801	0.1801	71.73	
1,2,3,7,8-PeCDF	19.714	3057878	1.45	1.0794	0.8793	0.8793	0.0213	0.0213		M
D 13C-2,3,4,7,8-PeCDF	20.805	304425370	1.57	1.3370	70.7	70.7	0.1878	0.1878	70.68	
2,3,4,7,8-PeCDF	20.832	1366393	1.42	1.0966	0.4093	0.4093	0.0243	0.0243		M
A F1 PeCDFs	17.730						0.0144	0.0144		RQU
A Non-2,3,7,8-sub-PeCDF	20.349	1588531	1.55	1.0880	0.4888	0.4660	0.0227	0.2280		RQM
S Total PeCDF					1.777	1.755	0.0228	0.0228		RQ
D 13C-1,2,3,7,8-PeCDD	21.418	218948164	1.60	0.8475	80.2	80.2	0.1003	0.1003	80.19	
1,2,3,7,8-PeCDD	21.459	419928	1.33	1.1397	0.1683	0.1683	0.0228	0.0228		M
A Non-2,3,7,8-sub-PeCDD	20.518						0.0228	0.0268		U
S Total PeCDD					0.1683	0.1683	0.0228	0.0228		
D 13C-1,2,3,4,7,8-HxCDF	26.719	250855958	0.53	1.3065	74.4	74.4	0.3657	0.3657	74.43	
1,2,3,4,7,8-HxCDF	26.759	4714294	1.31	1.2552	1.497	1.497	0.0337	0.0337		M
D 13C-1,2,3,6,7,8-HxCDF	26.999	278204157	0.53	1.4213	75.9	75.9	0.3361	0.3361	75.88	
1,2,3,6,7,8-HxCDF	27.012	1557109	1.22	1.2102	0.4625	0.4625	0.0348	0.0348		Ma
D 13C-2,3,4,6,7,8-HxCDF	28.544	256336567	0.53	1.3142	75.6	75.6	0.3635	0.3635	75.61	
2,3,4,6,7,8-HxCDF	28.597						0.0387	0.0387		
D 13C-1,2,3,7,8,9-HxCDF	30.381	263327645	0.52	1.3204	77.3	77.3	0.3618	0.3618	77.30	
1,2,3,7,8,9-HxCDF	30.421	568934	1.24	1.2319	0.1972	0.1754	0.0271	0.0271		RQM
A Non-2,3,7,8-sub-HxCDF	27.465	216897	1.24	1.2289	0.0737	0.0673	0.0330	0.0673		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					2.231	2.202	0.0336	0.0336		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.075	257976791	1.24	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.036	189127185	1.28	0.8660	84.7	84.7	0.3143	0.3143	84.65	a
1,2,3,4,7,8-HxCDD	29.049	553068	1.26	1.2535	0.2333	0.2333	0.0358	0.0358		Ma
D 13C-1,2,3,6,7,8-HxCDD	29.316	218810973	1.25	0.9827	86.3	86.3	0.2770	0.2770	86.31	a
1,2,3,6,7,8-HxCDD	29.329	418372	1.24	1.1117	0.1873	0.1720	0.0375	0.0375		RQM
1,2,3,7,8,9-HxCDD	30.088	389467	1.17	1.2852	0.1486	0.1486	0.0336	0.0336		
A Non-2,3,7,8-sub-HxCDD	27.931						0.0355	0.0355		
S Total HxCDD					0.5692	0.5538	0.0356	0.0356		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	194753262	0.44	0.9410	80.2	80.2	0.9623	0.9623	80.22	
1,2,3,4,6,7,8-HpCDF	32.547	1497471	1.10	1.4783	0.5201	0.5201	0.0106	0.0106		
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	180143259	0.45	0.8751	79.8	79.8	1.035	1.035	79.80	
1,2,3,4,7,8,9-HpCDF	33.641	883530	0.95	1.3784	0.3558	0.3558	0.0118	0.0118		M
A Non-2,3,7,8-sub-HpCDF	33.100	292627	0.90	1.4284	0.1093	0.1093	0.0112	0.1093		M
S Total HpCDF					0.9852	0.9852	0.0112	0.0112		
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	187753171	1.03	0.9049	80.4	80.4	1.321	1.321	80.43	
1,2,3,4,6,7,8-HpCDD	33.398	1601173	1.02	1.0862	0.7851	0.7851	0.0131	0.0131		
A Non-2,3,7,8-sub-HpCDD	33.339	985559	1.04	1.0862	0.4833	0.4833	0.0131	0.4833		
S Total HpCDD					1.268	1.268	0.0131	0.0131		
D 13C-OCDD	35.558	266947504	0.91	0.5783	178.9	178.9	0.8508	0.8508	89.47	
OCDF	35.630	1815642	0.92	1.7248	0.7887	0.7887	0.0123	0.0123		
OCDD	35.558	11646363	0.93	1.2576	6.938	6.938	0.0205	0.0205		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Lims ID: 320-65130-A-1-A
Client ID: 11215702-Tank#1-valve-2-1
Sample Type: Client
Inject. Date: 09-Oct-2020 03:28:10 ALS Bottle#: 8 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-1-A 320-65130-A-1-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:30:49 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:55:38

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		141974057	40771567	46796	116990	871		
333.9339	15.915	15.930	-1		180170401	51803758	41144	102860	1259	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	171834740	47353267	62846	157115	753		
317.9389	15.477	15.477	0	0.972	214388775	59928423	53183	132957	1127	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	23138758	6331606	15656	39140	404		
305.8987	15.492	15.507	-1	1.001	28903799	7766015	14509	36272	535	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	14.297	15.227	-56	0.924	325841	102895	15656	39140	7		
305.8987	14.297	15.227	-56	0.924	467538	136681	14509	36272	9	0.70(0.65-0.89)	
303.9016	14.539	15.227	-41	0.939	641765	175330	15656	39140	11		
305.8987	14.539	15.227	-41	0.939	787112	175435	14509	36272	12	0.82(0.65-0.89)	
303.9016	14.736	15.227	-29	0.952	664553	179118	15656	39140	11		
305.8987	14.736	15.227	-29	0.952	879672	214643	14509	36272	15	0.76(0.65-0.89)	
303.9016	14.932	15.227	-18	0.965	1001342	285308	15656	39140	18		
305.8987	14.932	15.227	-18	0.965	1301013	331101	14509	36272	23	0.77(0.65-0.89)	
303.9016	15.174	15.227	-3	0.980	10456385	2913245	15656	39140	186		
305.8987	15.174	15.227	-3	0.980	12261003	3290068	14509	36272	227	0.85(0.65-0.89)	
303.9016	15.855	15.227	38	1.024	1593833	403148	15656	39140	26		
305.8987	15.855	15.227	38	1.024	1894193	471428	14509	36272	32	0.84(0.65-0.89)	
303.9016	17.019	15.227	107	1.100	1410252	357864	15656	39140	23		
305.8987	17.019	15.227	107	1.100	2110243	528210	14509	36272	36	0.67(0.65-0.89)	

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.010	120645437	31641005	46796	116990	676		
333.9339	16.081	16.081	0	1.010	150910357	39603717	41144	102860	963	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.097	0	1.001	6070447	1624608	7146	17865	227		
321.8936	16.097	16.097	0	1.001	7490499	2026932	5274	13185	384	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	141174006	37560264	32537	81342	1154		
A Non-2,3,7,8-sub-TCDD											
319.8965	14.222	15.620	-84	0.884	110385	27598	7146	17865	4		
321.8936	14.222	15.620	-84	0.884	153242	45928	5274	13185	9	0.72(0.65-0.89)	
319.8965	16.399	15.620	47	1.020	507806	133337	7146	17865	19		
321.8936	16.399	15.620	47	1.020	588477	154782	5274	13185	29	0.86(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.700	19.700	0	1.238	196976109	39570968	56096	140240	705		
353.8970	19.700	19.700	0	1.238	125215448	25013257	36886	92215	678	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.714	19.727	-1	1.001	1809132	327366	2763	6907	118		M
341.8567	19.714	19.727	-1	1.001	1248746	266268	3185	7962	84	1.45(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	185900372	34102445	56096	140240	608		
353.8970	20.805	20.818	-1	1.307	118524998	21733157	36886	92215	589	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	20.832	20.846	-1	1.001	800828	161732	2763	6907	59		M
341.8567	20.832	20.846	-1	1.001	565565	99898	3185	7962	31	1.42(1.32-1.78)	
A F1 PeCDFs											U
339.8597	17.276	17.730	-27	0.877	26216	10283	1462	3655	7		
341.8567	17.276	17.730	-27	0.877	38895	12435	2299	5747	5	0.67(1.32-1.78)	
	Empc Correction				16913	6634	2299	5747	3		
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	18.596	20.349	-105	0.944	467463	100575	2763	6907	36		
341.8567	18.596	20.349	-105	0.944	309653	60379	3185	7962	19	1.51(1.32-1.78)	
339.8597	20.150	20.349	-12	1.023	320283	62475	2763	6907	23		
341.8567	20.164	20.349	-11	1.024	217003	42424	3185	7962	13	1.48(1.32-1.78)	
339.8597	21.118	20.349	46	1.072	166628	32237	2763	6907	12		
341.8567	21.118	20.349	46	1.072	185090	28097	3185	7962	9	0.90(1.32-1.78)	M
	Empc Correction				107501	20798	3185	7962	7		
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.432	-1	1.346	134639340	23923117	18222	45555	1313		
369.8919	21.418	21.432	-1	1.346	84308824	15240163	13270	33175	1148	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	21.459	21.459	0	1.002	239674	47804	2720	6800	18		M
357.8516	21.432	21.459	-2	1.001	180254	29999	1347	3367	22	1.33(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	18.732	20.518	-107	0.875	41983	9478	2720	6800	3		
357.8516	18.786	20.518	-104	0.877	24981	7861	1347	3367	6	1.68(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.733	-1	0.888	87216531	11913905	25125	62812	474		
385.8610	26.719	26.733	-1	0.888	163639427	23221924	51864	129660	448	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	26.759	26.759	0	1.001	2669215	372273	3743	9357	99		M
375.8178	26.759	26.759	0	1.001	2045079	300658	2203	5507	136	1.31(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.999	27.012	-1	0.898	96879967	12259601	25125	62812	488		
385.8610	26.999	27.012	-1	0.898	181324190	23043185	51864	129660	444	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											Ma
373.8208	27.012	27.039	-2	1.000	854330	108206	3743	9357	29		M
375.8178	27.026	27.039	-1	1.001	702779	88185	2203	5507	40	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.570	-2	0.949	88835871	11156233	25125	62812	444		
385.8610	28.544	28.570	-2	0.949	167500696	20395595	51864	129660	393	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.597						3743	9357			
375.8178	28.597						2203	5507			
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.010	90206739	15221862	25125	62812	606		
385.8610	30.394	30.394	0	1.011	173120906	29251990	51864	129660	564	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	30.421	30.408	1	1.001	314946	71049	3743	9357	19		
375.8178	30.408	30.408	0	1.001	324719	61746	2203	5507	28	0.97(1.05-1.43)	M
	Empc Correction				253988	57297	2203	5507	26		
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.695	27.465	-166	0.924	120068	23710	3743	9357	6		
375.8178	24.669	27.465	-167	0.923	117304	20323	2203	5507	9	1.02(1.05-1.43)	
	Empc Correction				96829	19120	2203	5507	9		
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.088	-1		143054888	22325364	25221	63052	885		
403.8529	30.075	30.088	-1		114921903	17963320	18647	46617	963	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.036	29.036	0	0.965	106076195	12623628	25221	63052	501		a
403.8529	29.036	29.036	0	0.965	83050990	10098657	18647	46617	542	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											Ma
389.8157	29.049	29.076	-2	1.000	308400	43473	1888	4720	23		M
391.8127	29.063	29.076	-1	1.001	244668	39171	2195	5487	18	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.316	29.316	0	0.975	121654788	13848328	25221	63052	549		a
403.8529	29.316	29.316	0	0.975	97156185	10658278	18647	46617	572	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8157	29.329	29.356	-2	1.000	231599	25021	1888	4720	13		M
391.8127	29.302	29.356	-3	1.000	224100	24883	2195	5487	11	1.03(1.05-1.43)	M
	Empc Correction				186773	20178	2195	5487	9		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8157	30.088	30.101	-1	1.036	209938	40554	1888	4720	21		
391.8127	30.088	30.101	-1	1.036	179529	29794	2195	5487	14	1.17(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						1888	4720			
391.8127	27.931						2195	5487			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.547	-1	1.082	59324569	20232586	40464	101160	500		
419.8220	32.535	32.547	-1	1.082	135428693	45438128	105478	263695	431	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	784137	243700	2047	5117	119		
409.7789	32.547	32.547	0	1.000	713334	229839	2059	5147	112	1.10(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.119	55708818	19522553	40464	101160	482		
419.8220	33.629	33.641	-1	1.118	124434441	43438115	105478	263695	412	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	33.641	33.653	-1	1.000	431093	149848	2047	5117	73		M
409.7789	33.641	33.653	-1	1.000	452437	167059	2059	5147	81	0.95(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7818	32.888	33.100	-13	1.011	138632	48489	2047	5117	24		M
409.7789	32.888	33.100	-13	1.011	153995	54069	2059	5147	26	0.90(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.110	95418144	36986144	96197	240492	384		
437.8140	33.386	33.398	-1	1.110	92335027	35435760	96460	241150	367	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.398	33.398	0	1.000	807986	307588	1743	4357	176		
425.7737	33.398	33.398	0	1.000	793187	292061	2370	5925	123	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	32.851	33.339	-29	0.984	502509	154271	1743	4357	89		
425.7737	32.839	33.339	-30	0.984	483050	162595	2370	5925	69	1.04(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.558	0	1.182	127442283	41327776	70224	175560	589		
471.7750	35.546	35.558	-1	1.182	139505221	44553675	9061	22652	4917	0.91(0.76-1.02)	
OCDF											
441.7428	35.630	35.630	0	1.002	872356	284615	1540	3850	185		
443.7399	35.630	35.630	0	1.002	943286	308417	2092	5230	147	0.92(0.76-1.02)	
OCDD											
457.7377	35.558	35.570	-1	1.000	5625617	1894311	2266	5665	836		
459.7348	35.558	35.570	-1	1.000	6020746	2037217	2159	5397	944	0.93(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Lims ID:	320-65130-A-1-A		
Client ID:	11215702-Tank#1-valve-2-1		
Inject. Date:	09-Oct-2020 03:28:10	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	386223515	107281690

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	386223515	107281690

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	325841	102895	467538	136681	0.2155	0.70	
14.539	641765	175330	787112	175435	0.3880	0.82	
14.736	664553	179118	879672	214643	0.4194	0.76	
14.932	1001342	285308	1301013	331101	0.6253	0.77	
15.174	10456385	2913245	12261003	3290068	6.17	0.85	
15.855	1593833	403148	1894193	471428	0.9473	0.84	
17.019	1410252	357864	2110243	528210	0.9561	0.67	
Signal Totals:							
	16093971	4416908	19700774	5147566			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	35794745	9564474				0.82	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 9.721 = (35794745 * 100.000) / (386223515 * 0.953)

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Lims ID: 320-65130-A-1-A
Client ID: 11215702-Tank#1-valve-2-1
Inject. Date: 09-Oct-2020 03:28:10 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 11

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	271555794	71244722

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	271555794	71244722

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.222	110385	27598	153242	45928	0.0951	0.72	
16.399	507806	133337	588477	154782	0.3956	0.86	
Signal Totals:							
	618191	160935	741719	200710			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1359910	361645				0.83	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4907 = (1359910 * 100.000) / (271555794 * 1.020)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Lims ID: 320-65130-A-1-A
Client ID: 11215702-Tank#1-valve-2-1
Inject. Date: 09-Oct-2020 03:28:10
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 11

F1 PeCDFs, RT: 17.730

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	322191557	64584225
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	304425370	55835602

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	313308463	60209913

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.276	26216	10283	38895	12435	0.0191	0.67	RQ
17.276	26216	10283	16913	6634	0.0127		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Lims ID:	320-65130-A-1-A		
Client ID:	11215702-Tank#1-valve-2-1		
Inject. Date:	09-Oct-2020 03:28:10	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	322191557	64584225
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	304425370	55835602

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	313308463	60209913

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	467463	100575	309653	60379	0.2280	1.51	
20.150	320283	62475	217003	42424	0.1576	1.48	
21.118	166628	32237	185090	28097	0.1032	0.90	RQM
21.118	166628	32237	107501	20798	0.0804		Empc Correction
Signal Totals:							
	954374	195287	634157	123601			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1666120	326187				1.34	RQM
	1588531	318888					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4888 = (1666120 * 100.000) / (313308463 * 1.088)
Empc Amount: 0.4660 = (1588531 * 100.000) / (313308463 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Lims ID:	320-65130-A-1-A		
Client ID:	11215702-Tank#1-valve-2-1		
Inject. Date:	09-Oct-2020 03:28:10	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDD, RT: 20.518

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	218948164	39163280

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	218948164	39163280

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.732	41983	9478	24981	7861	0.0268	1.68	

Compound is Marked ND

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Lims ID: 320-65130-A-1-A
Client ID: 11215702-Tank#1-valve-2-1
Inject. Date: 09-Oct-2020 03:28:10 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 11

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	250855958	35135829
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	278204157	35302786
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	256336567	31551828
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	263327645	44473852

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	262181081	36616073

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.695	120068	23710	117304	20323	0.0737	1.02	RQ
24.695	120068	23710	96829	19120	0.0673		Empc Correction
Signal Totals:							
	120068	23710	96829	19120			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	237372	44033				1.02	RQ
	216897	42830					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0737 = (237372 * 100.000) / (262181081 * 1.229)
Empc Amount: 0.0673 = (216897 * 100.000) / (262181081 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Lims ID:	320-65130-A-1-A		
Client ID:	11215702-Tank#1-valve-2-1		
Inject. Date:	09-Oct-2020 03:28:10	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	194753262	65670714
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	180143259	62960668

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	187448260	64315691

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.888	138632	48489	153995	54069	0.1093	0.90	M
Signal Totals:							
	138632	48489	153995	54069			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	292627	102558				0.90	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1093 = (292627 * 100.000) / (187448260 * 1.428)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Lims ID:	320-65130-A-1-A		
Client ID:	11215702-Tank#1-valve-2-1		
Inject. Date:	09-Oct-2020 03:28:10	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	187753171	72421904

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	187753171	72421904

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	502509	154271	483050	162595	0.4833	1.04	
Signal Totals:							
	502509	154271	483050	162595			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	985559	316866				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.4833 = (985559 * 100.000) / (187753171 * 1.086)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	19.71
Area:	1277475
Amount:	0.894263
Amount Units:	pg/ul

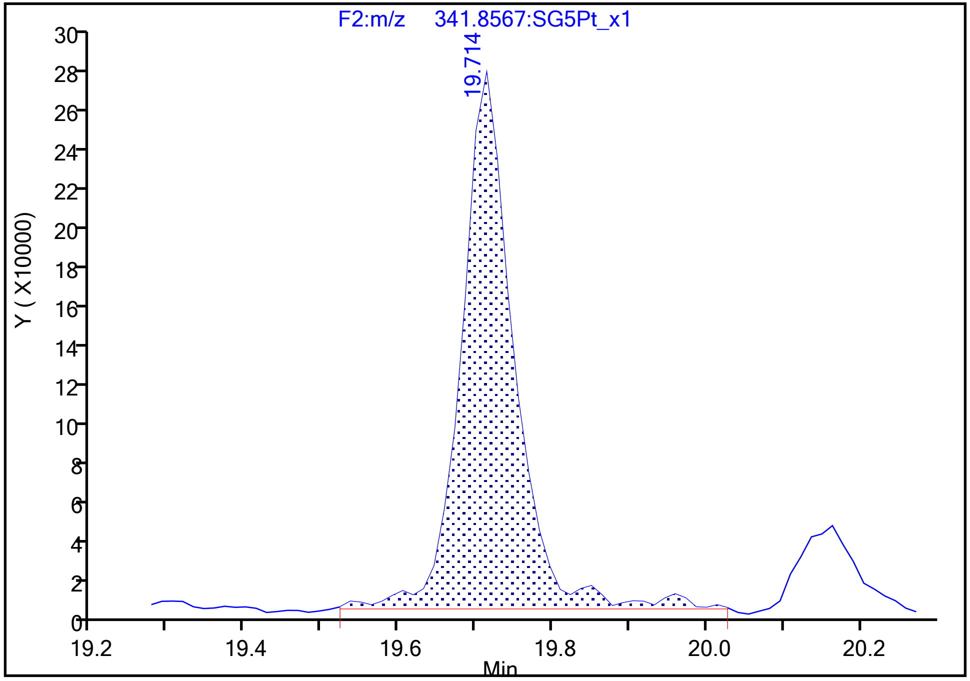

Manual Integration Results

RT:	19.71
Area:	1248746
Amount:	0.879303
Amount Units:	pg/ul

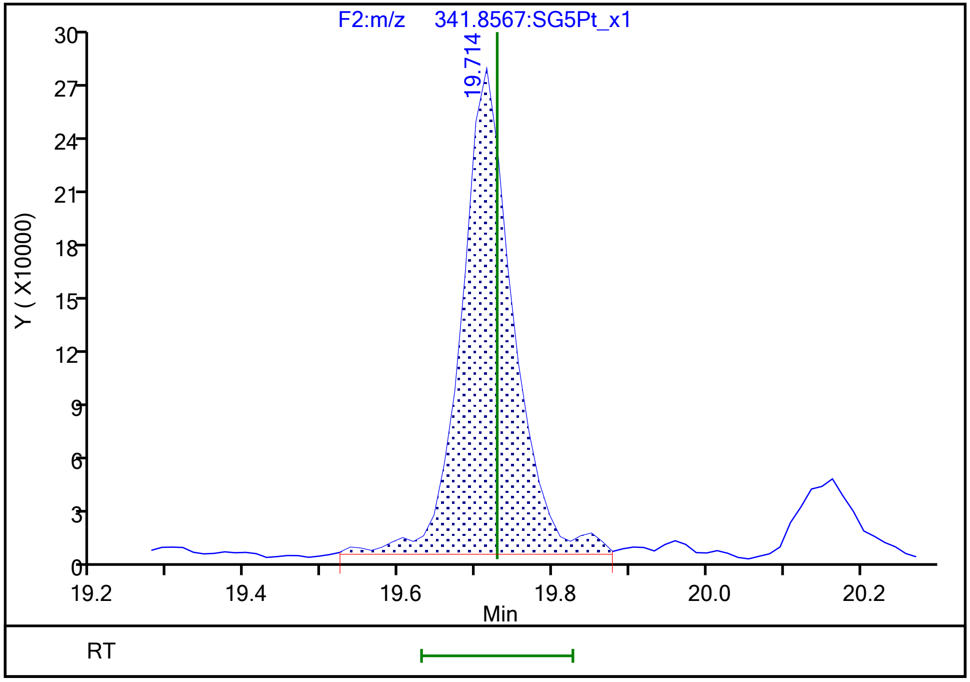

Reviewer: dadunj, 13-Oct-2020 11:27:02

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT: 19.71
Area: 1832430
Amount: 0.894263
Amount Units: pg/ul

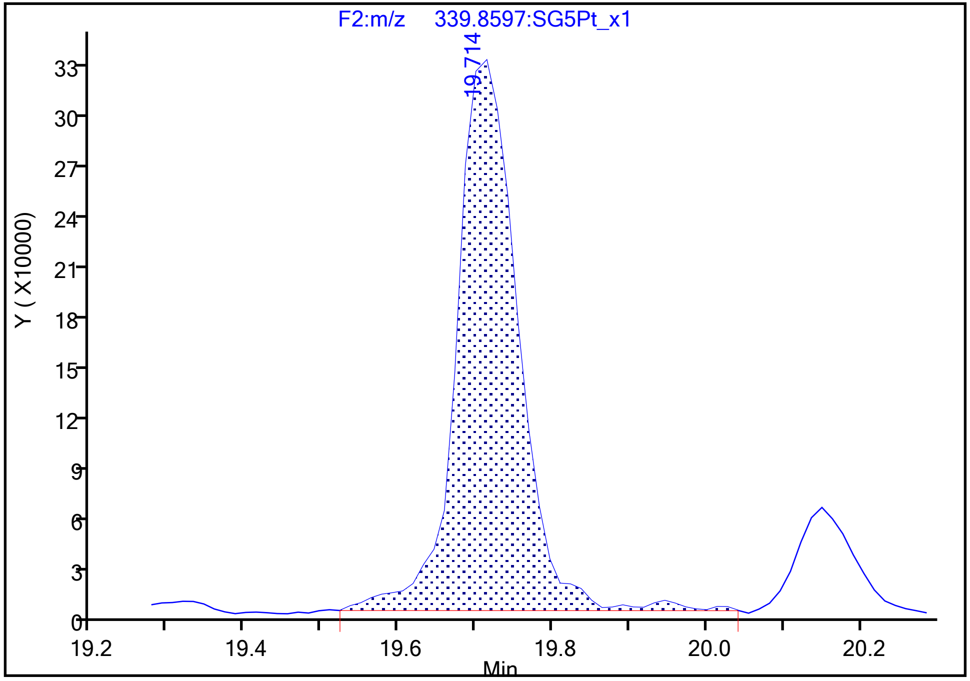

Manual Integration Results

RT: 19.71
Area: 1809132
Amount: 0.879303
Amount Units: pg/ul

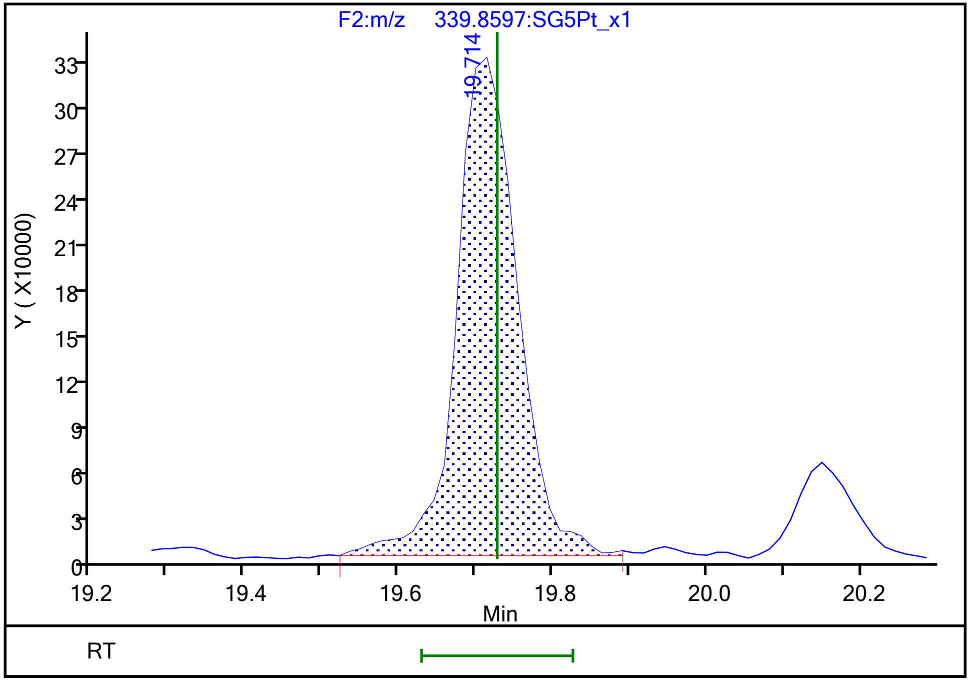

Reviewer: dadunj, 13-Oct-2020 11:27:03

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

Processing Integration Results

RT:	20.83
Area:	824468
Amount:	0.416374
Amount Units:	pg/ul

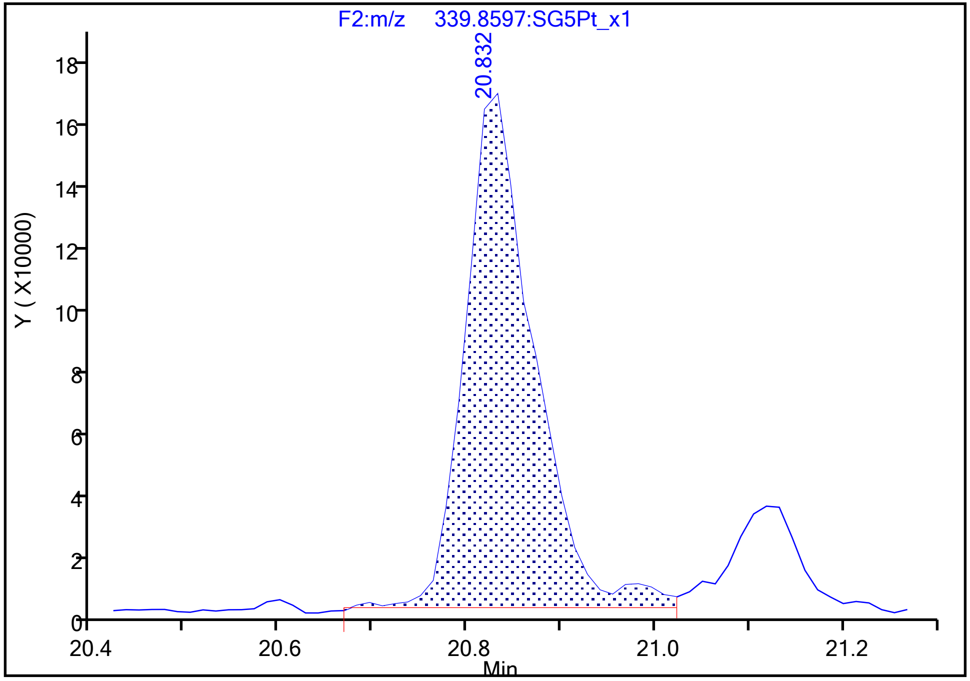

Manual Integration Results

RT:	20.83
Area:	800828
Amount:	0.409293
Amount Units:	pg/ul

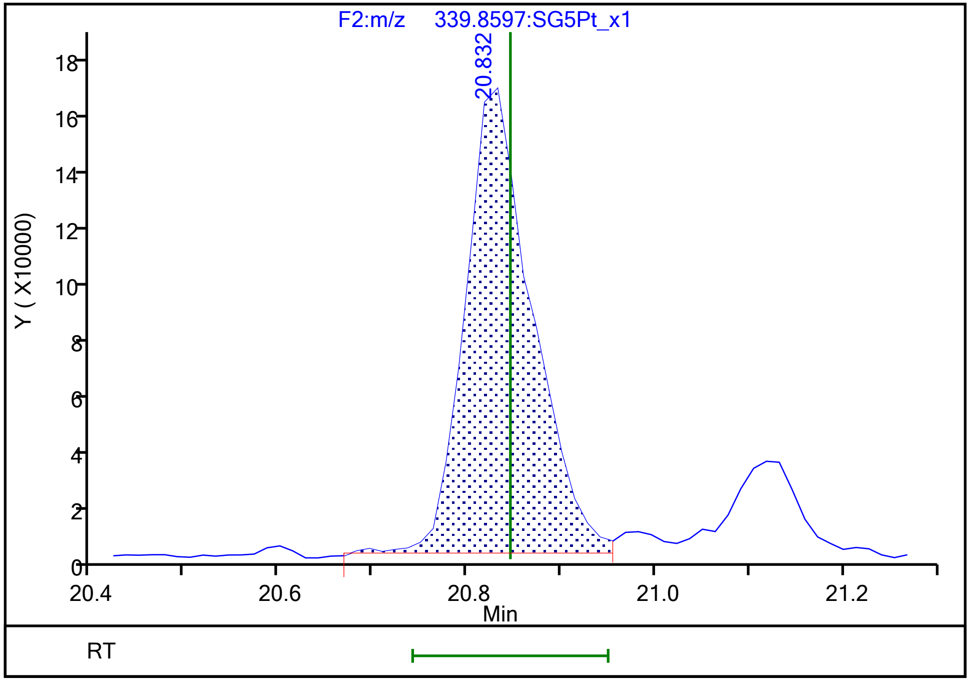

Reviewer: dadunj, 13-Oct-2020 11:27:07

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (18.23- 22.47)

Signal: 2

RT = 21.118 Area = 225261

Processing Integration Results

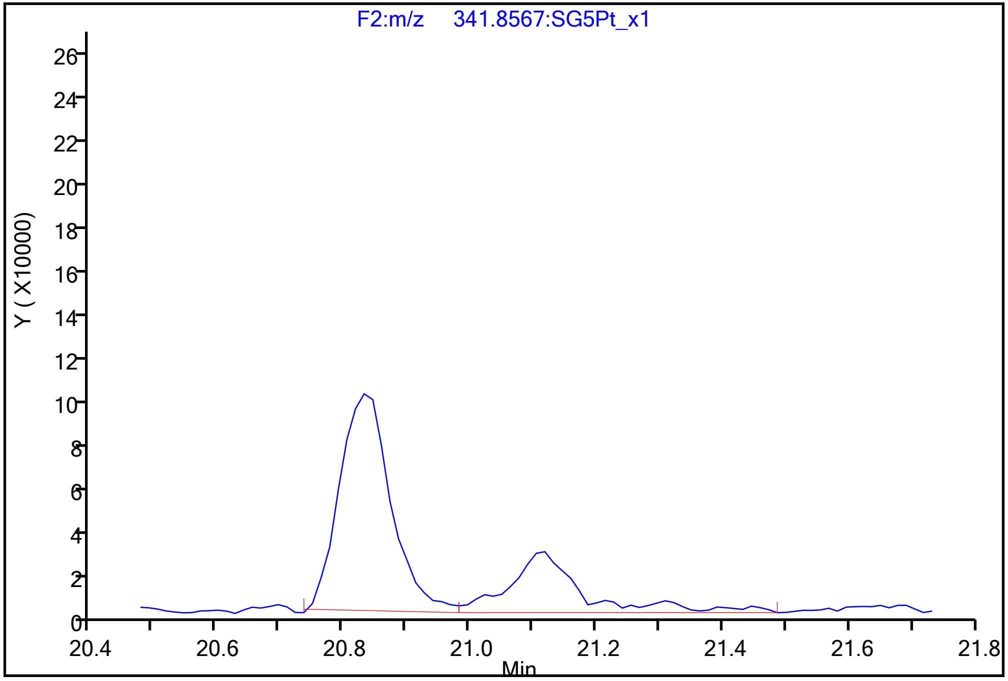

RT = 21.118 Area = 185090 M

Manual Integration Results

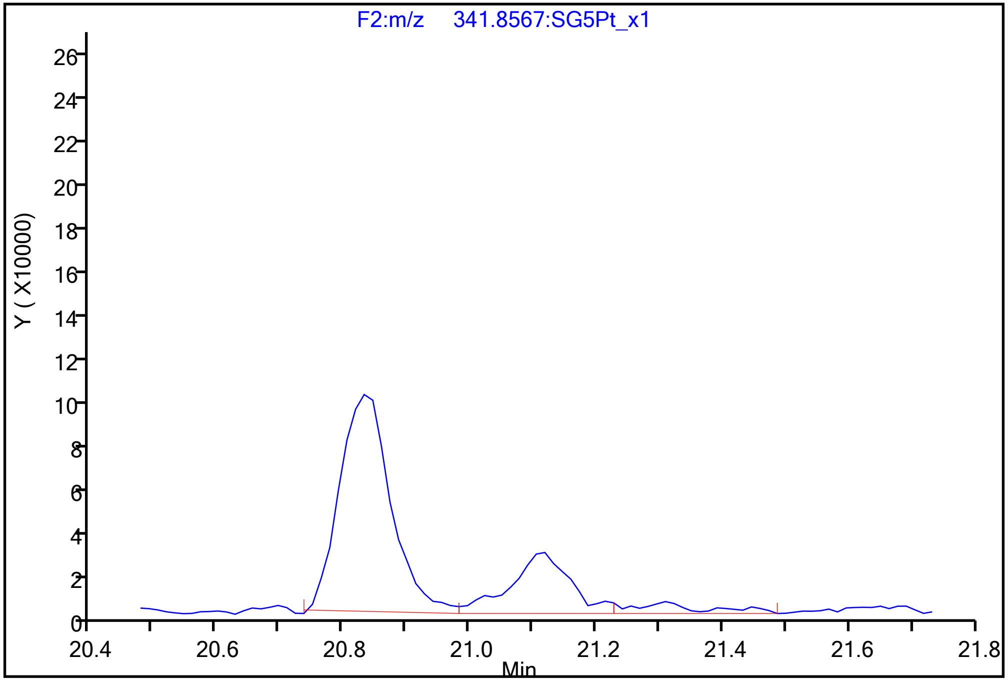

Reviewer: dadunj, 13-Oct-2020 11:27:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Instrument ID: 3D5
Lims ID: 320-65130-A-1-A
Lab Sample ID: 320-65130-1
Client ID: 11215702-Tank#1-valve-2-1
Operator ID: ALM
ALS Bottle#: 8
Worklist Smp#: 11
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT: 21.46
Area: 242340
Amount: 0.169359
Amount Units: pg/ul

Processing Integration Results

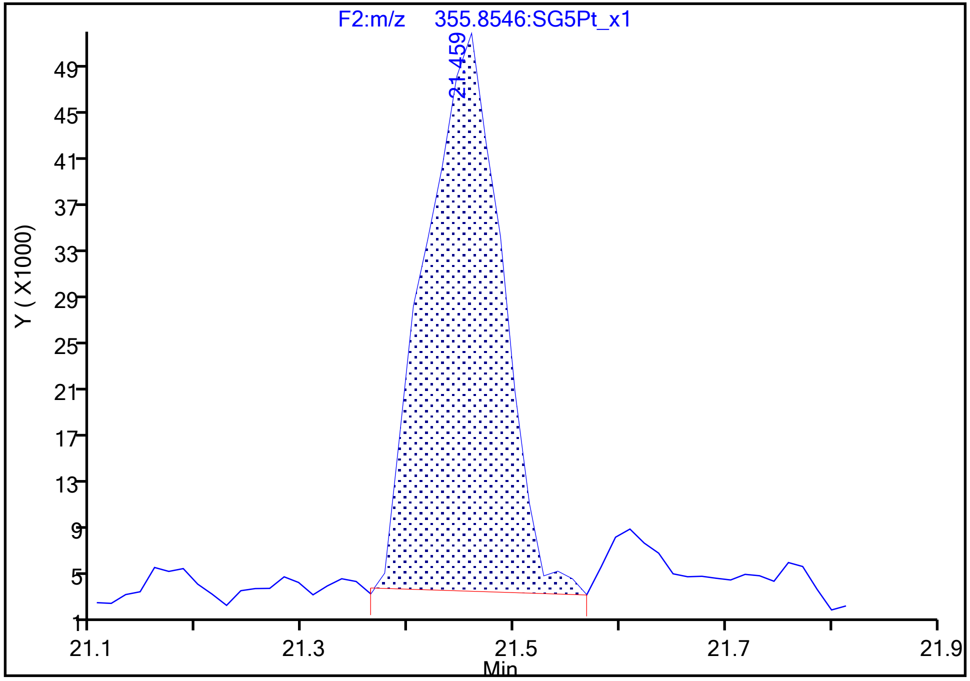

RT: 21.46
Area: 239674
Amount: 0.168290
Amount Units: pg/ul

Manual Integration Results

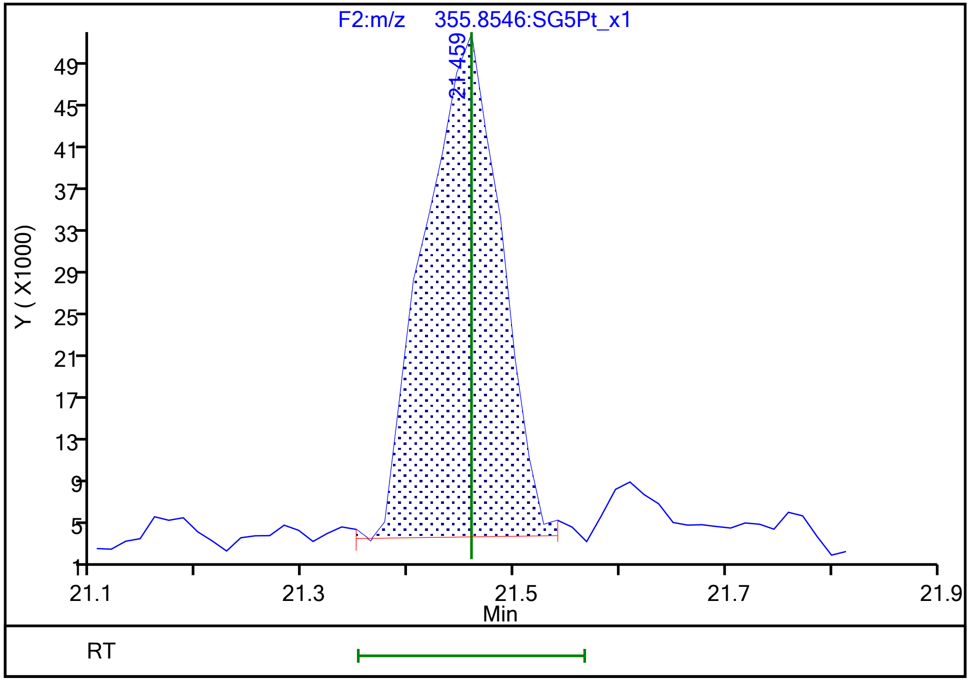

Reviewer: dadunj, 13-Oct-2020 11:27:39

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Processing Integration Results

RT:	26.76
Area:	2688558
Amount:	1.516799
Amount Units:	pg/ul

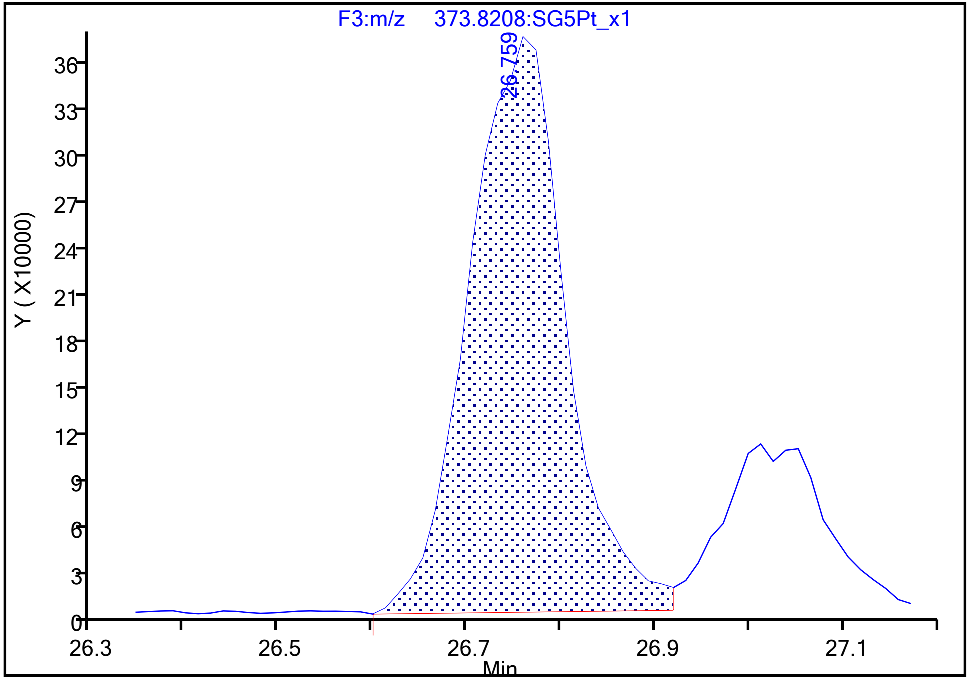

Manual Integration Results

RT:	26.76
Area:	2669215
Amount:	1.497162
Amount Units:	pg/ul

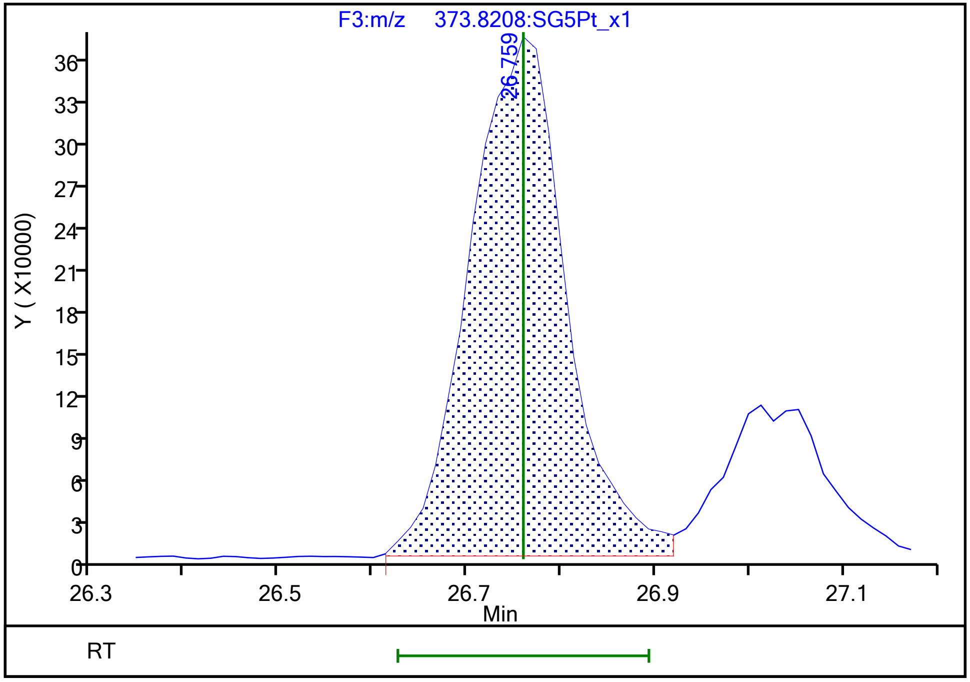

Reviewer: dadunj, 13-Oct-2020 11:28:23

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 2

Processing Integration Results

RT:	26.76
Area:	2087570
Amount:	1.516799
Amount Units:	pg/ul

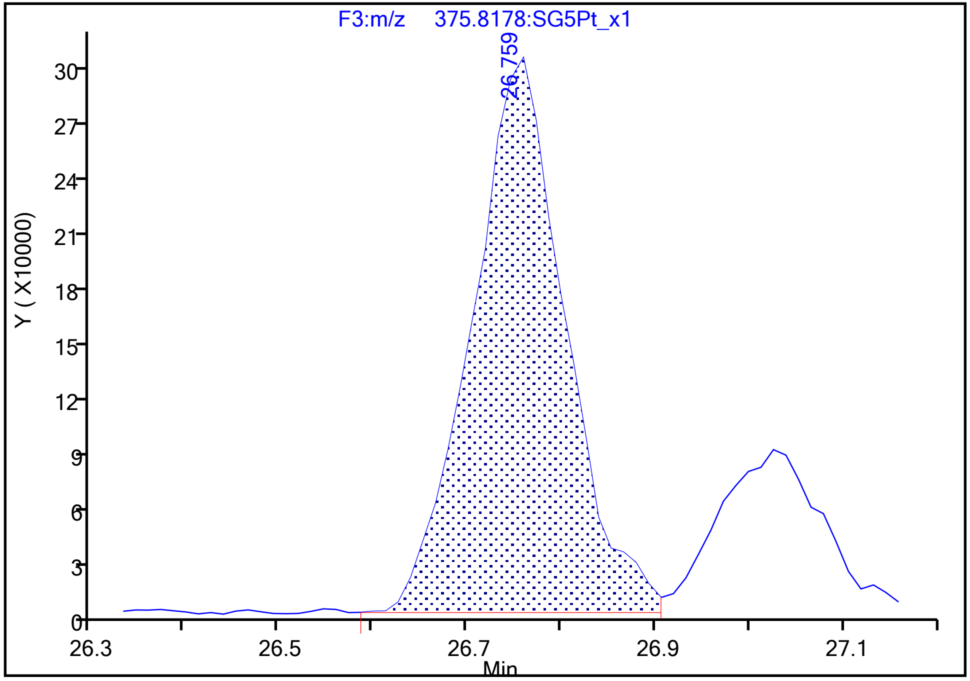

Manual Integration Results

RT:	26.76
Area:	2045079
Amount:	1.497162
Amount Units:	pg/ul

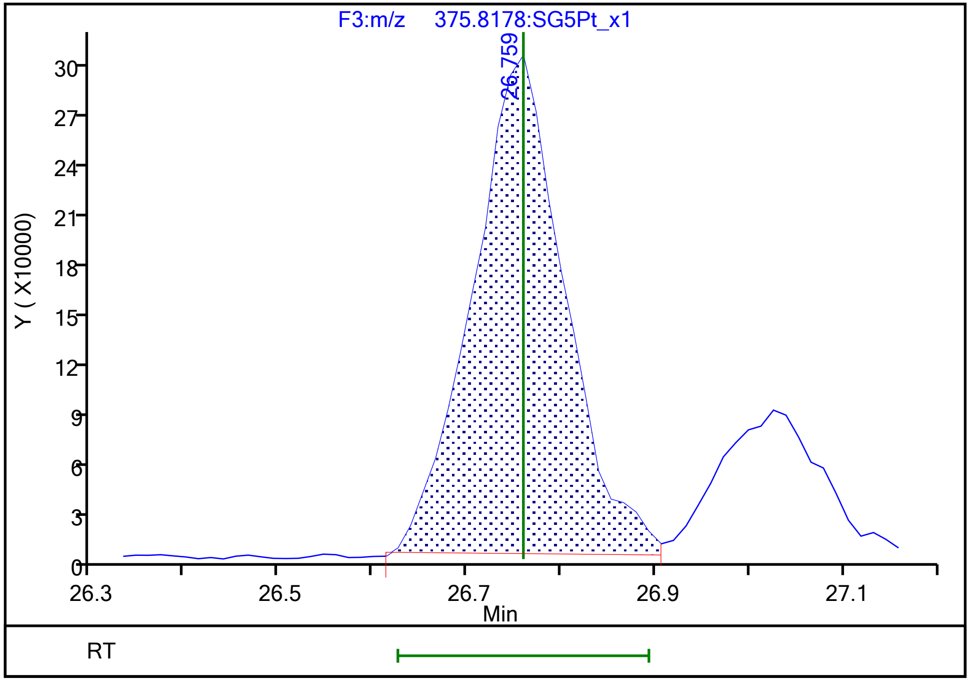

Reviewer: dadunj, 13-Oct-2020 11:28:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Processing Integration Results

RT:	27.03
Area:	723025
Amount:	0.443416
Amount Units:	pg/ul

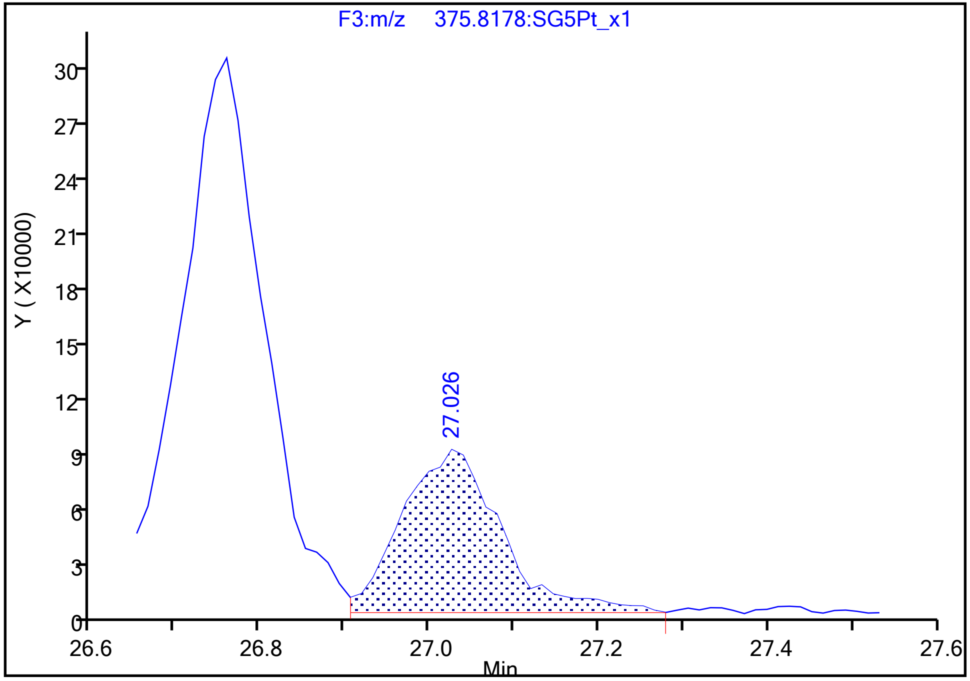

Manual Integration Results

RT:	27.03
Area:	702779
Amount:	0.462486
Amount Units:	pg/ul

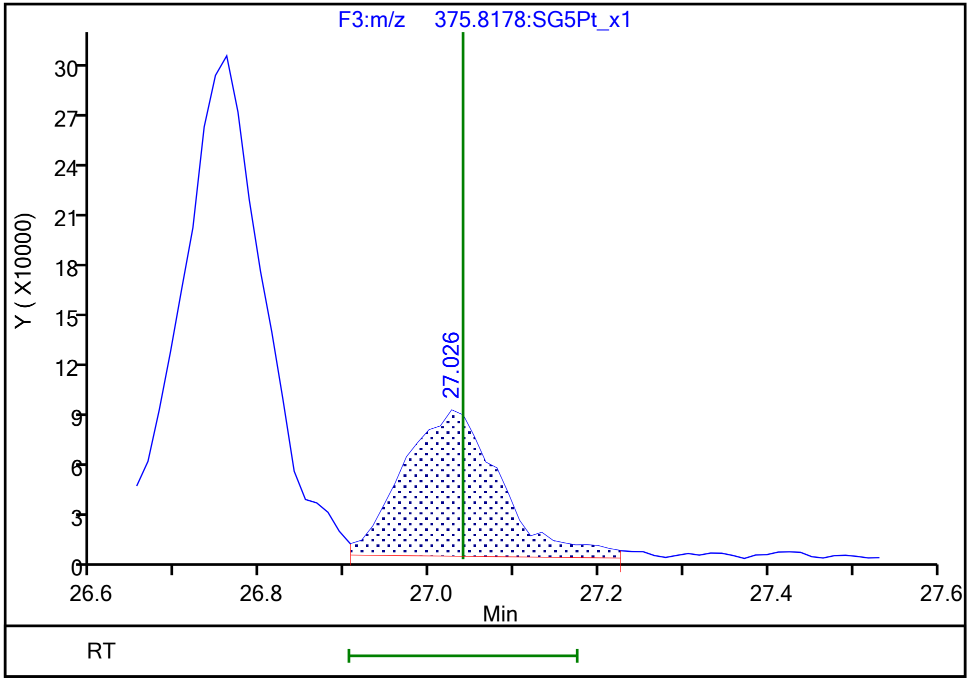

Reviewer: dadunj, 13-Oct-2020 11:28:20

Audit Action: Manually Integrated Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT:	27.01
Area:	769880
Amount:	0.443416
Amount Units:	pg/ul

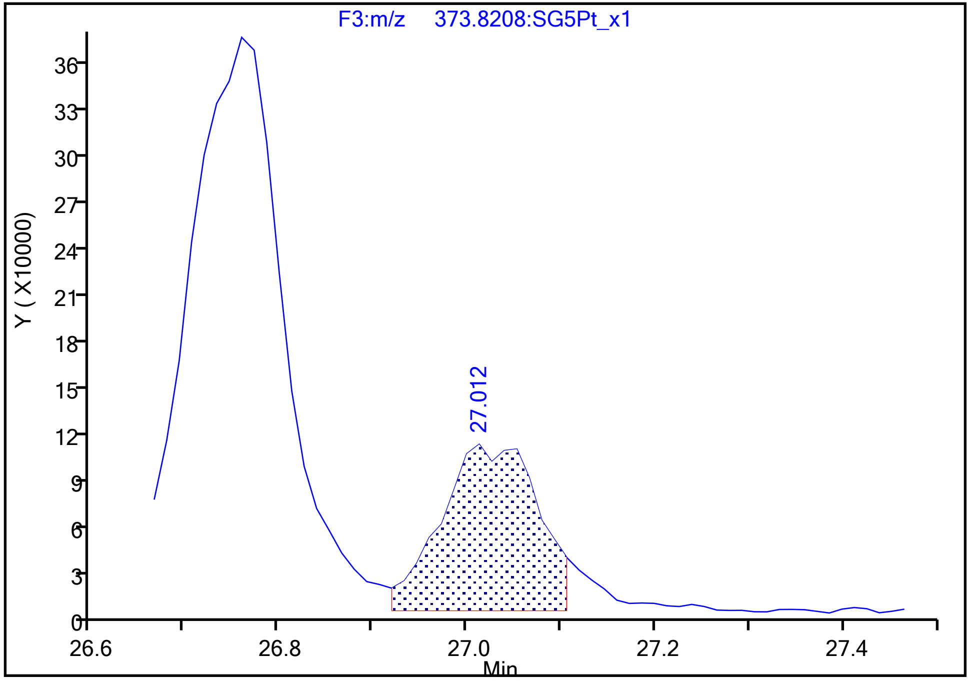

Manual Integration Results

RT:	27.01
Area:	854330
Amount:	0.462486
Amount Units:	pg/ul

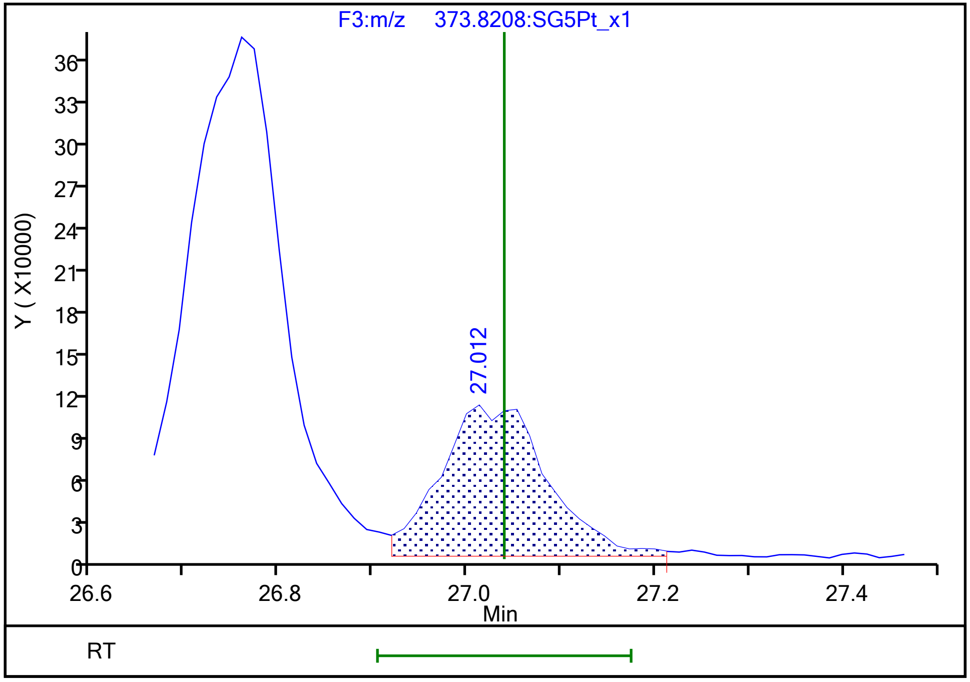

Reviewer: dadunj, 13-Oct-2020 11:28:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT: 30.41
Area: 476043
Amount: 0.243836
Amount Units: pg/ul

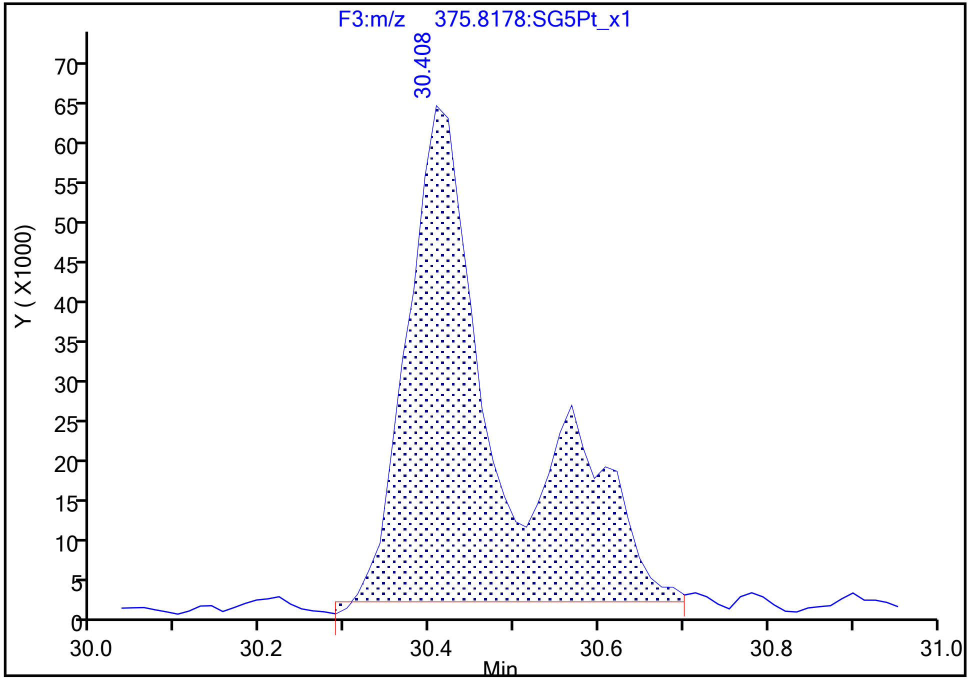

Manual Integration Results

RT: 30.41
Area: 324719
Amount: 0.197188
Amount Units: pg/ul

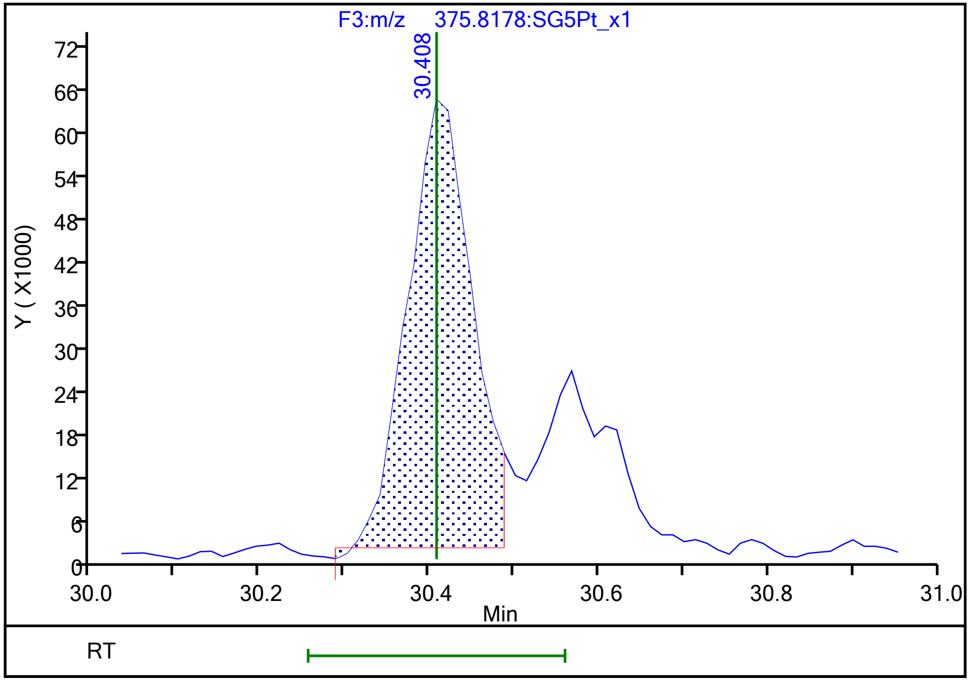

Reviewer: dadunj, 13-Oct-2020 11:28:42

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.04

Processing Integration Results

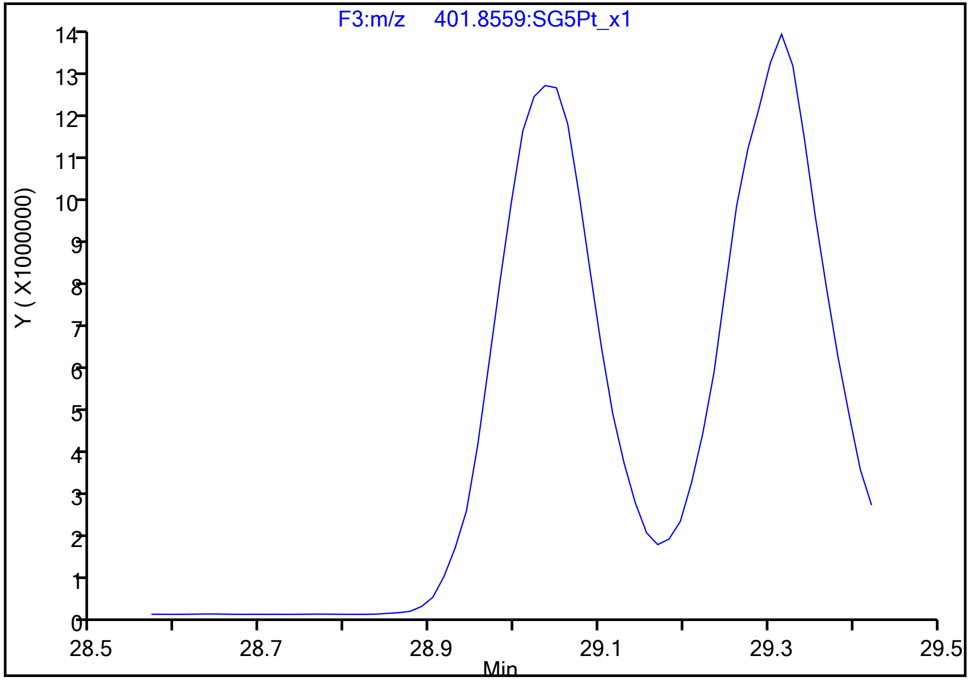

RT: 29.04
Area: 106076195
Amount: 84.653296
Amount Units: pg/ul

Manual Integration Results

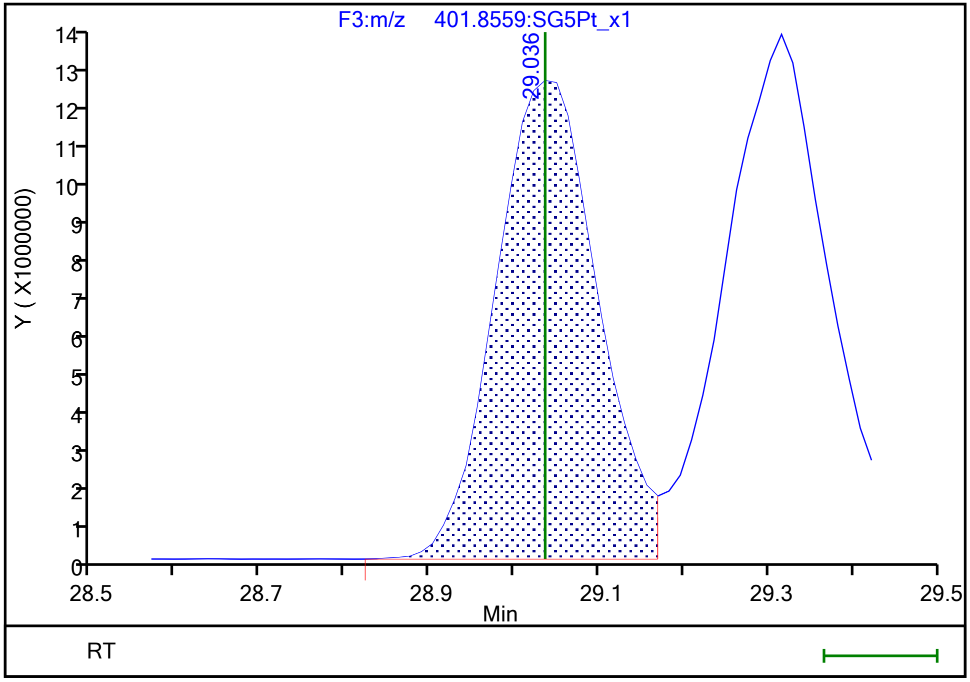

Reviewer: shardaa, 12-Oct-2020 17:55:11
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Instrument ID: 3D5
Lims ID: 320-65130-A-1-A
Lab Sample ID: 320-65130-1
Client ID: 11215702-Tank#1-valve-2-1
Operator ID: ALM
ALS Bottle#: 8
Worklist Smp#: 11
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 29.06
Area: 259514
Amount: 0.238097
Amount Units: pg/ul

Processing Integration Results

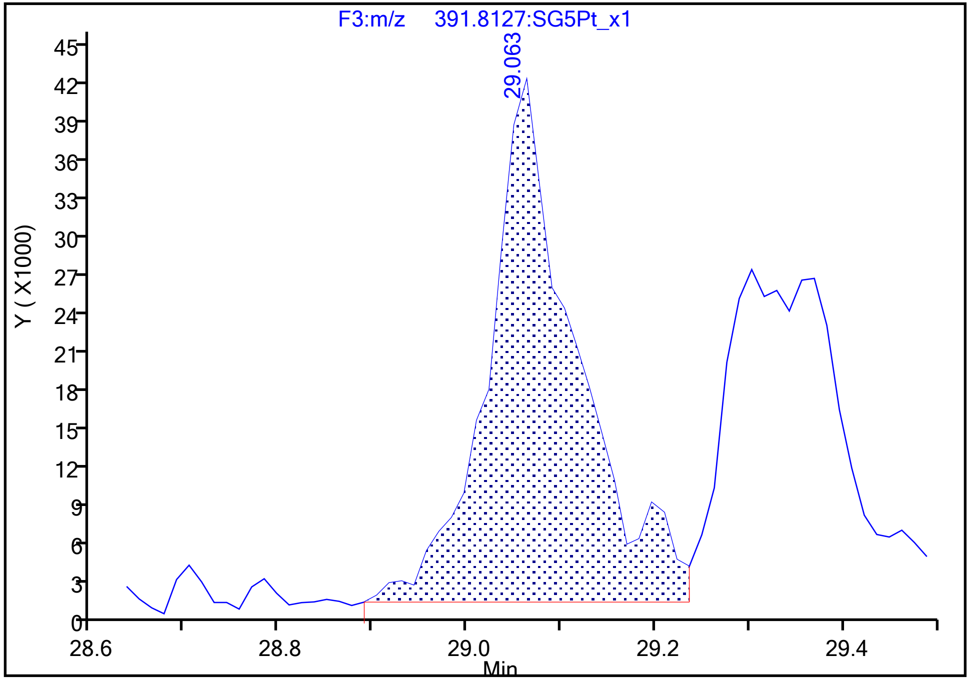

RT: 29.06
Area: 244668
Amount: 0.233290
Amount Units: pg/ul

Manual Integration Results

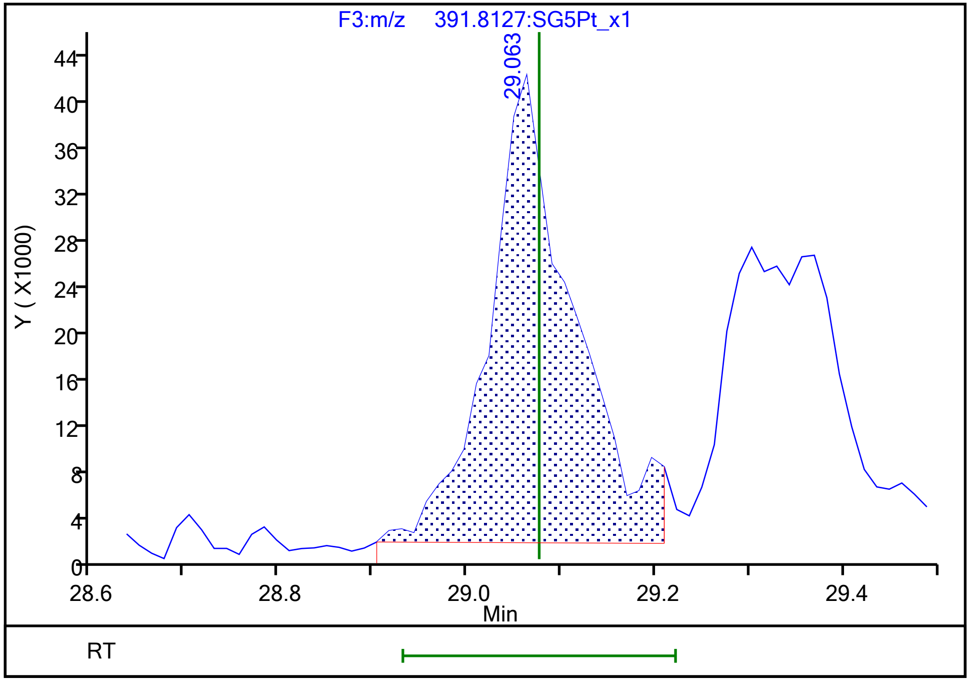

Reviewer: dadunj, 13-Oct-2020 11:29:11
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 29.05
Area: 304952
Amount: 0.238097
Amount Units: pg/ul

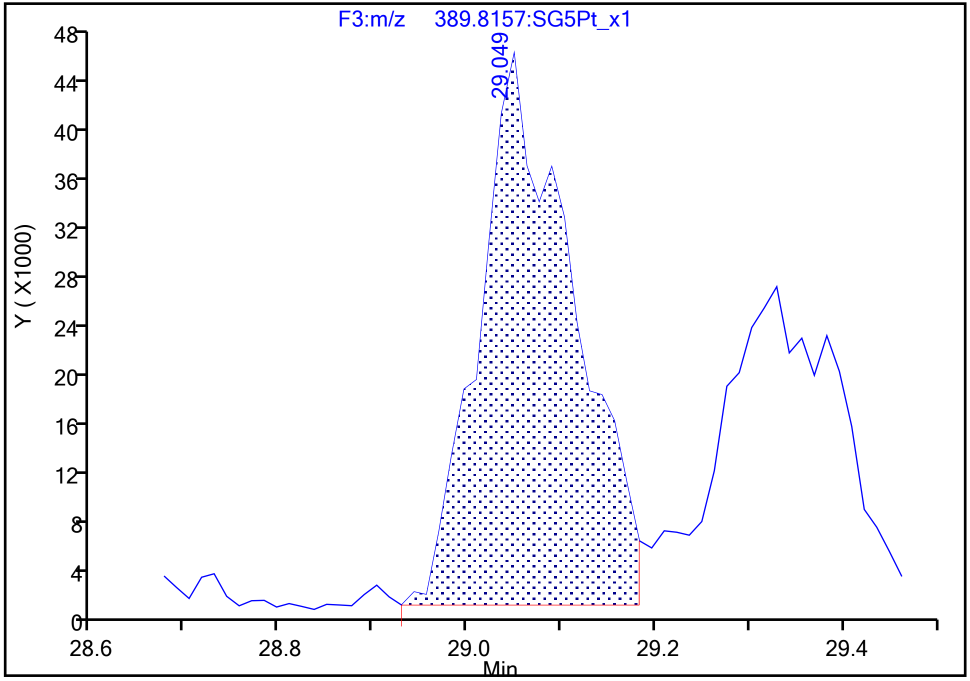

Manual Integration Results

RT: 29.05
Area: 308400
Amount: 0.233290
Amount Units: pg/ul

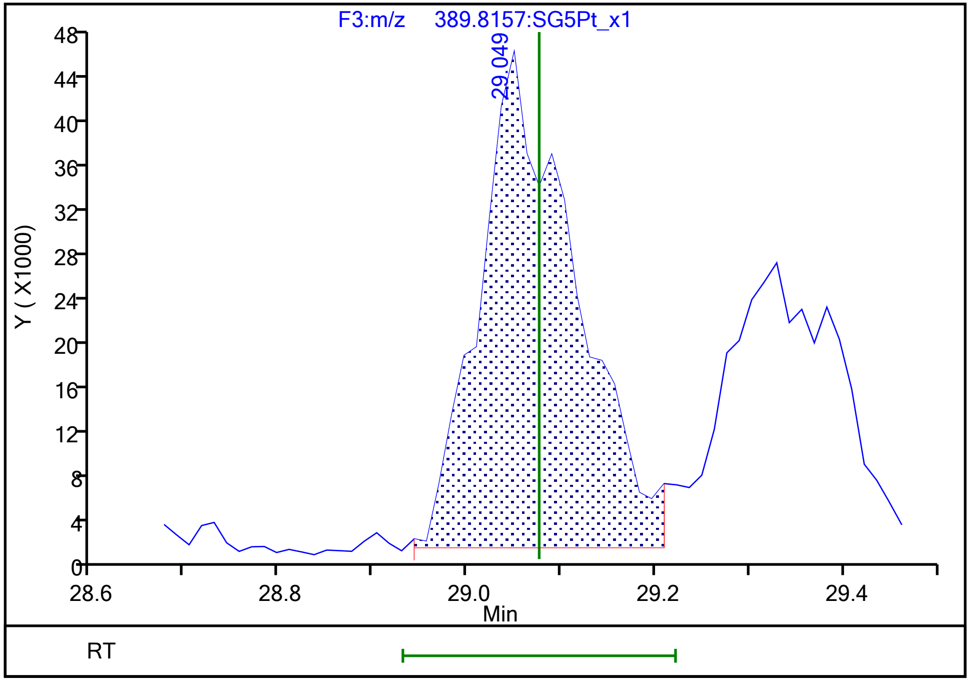

Reviewer: dadunj, 13-Oct-2020 11:29:29

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 11:30:49

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Instrument ID: 3D5
Lims ID: 320-65130-A-1-A
Lab Sample ID: 320-65130-1
Client ID: 11215702-Tank#1-valve-2-1
Operator ID: ALM
ALS Bottle#: 8
Worklist Smp#: 11
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT: 30.07
Area: 143054888
Amount: 101.7609
Amount Units: pg/ul

Processing Integration Results

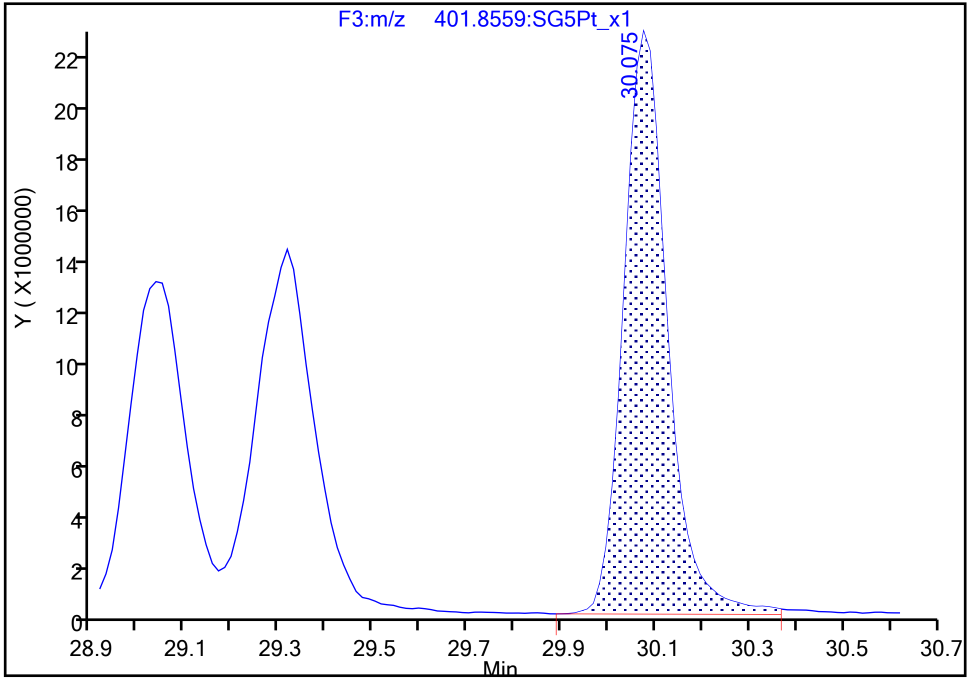

RT: 29.32
Area: 121654788
Amount: 86.311642
Amount Units: pg/ul

Manual Integration Results

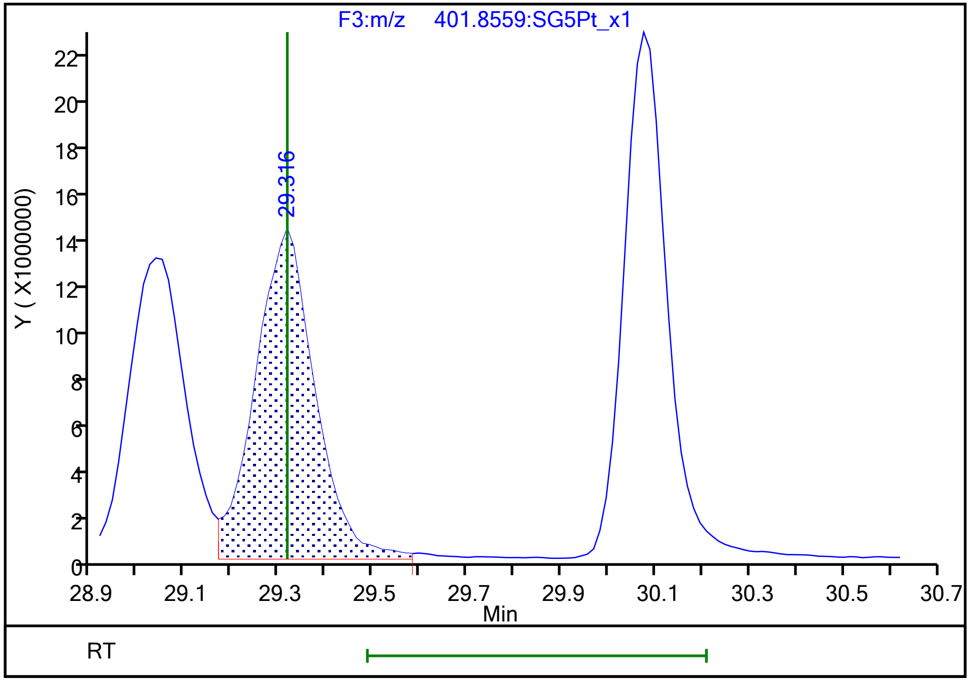

Reviewer: shardaa, 12-Oct-2020 17:59:10

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 11:30:49

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1
Client ID:	11215702-Tank#1-valve-2-1		
Operator ID:	ALM	ALS Bottle#:	8 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT:	29.33
Area:	249650
Amount:	0.196794
Amount Units:	pg/ul

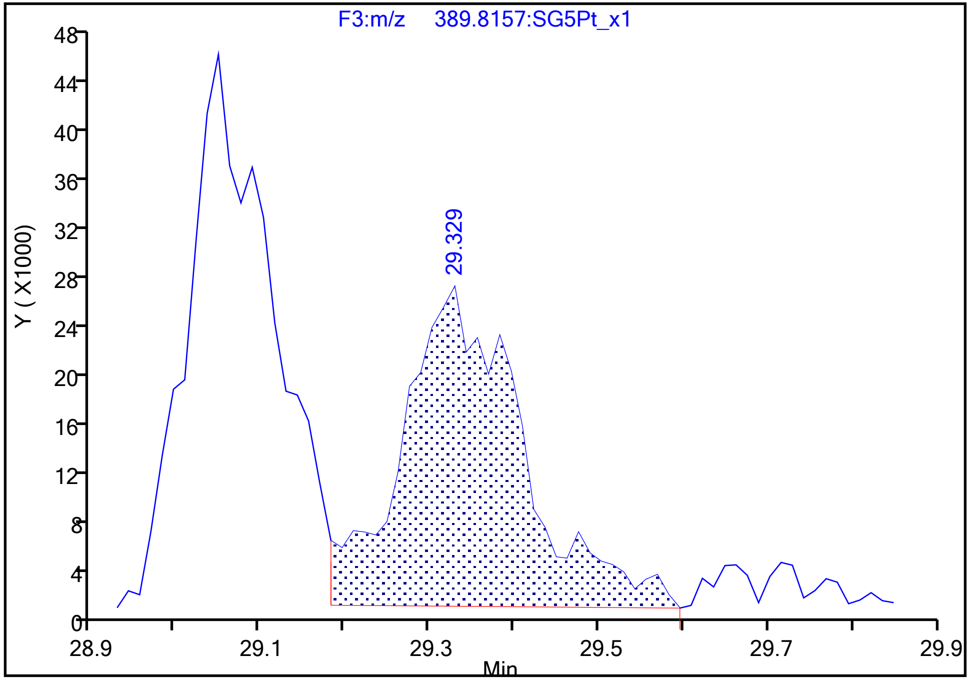

Manual Integration Results

RT:	29.33
Area:	231599
Amount:	0.187334
Amount Units:	pg/ul

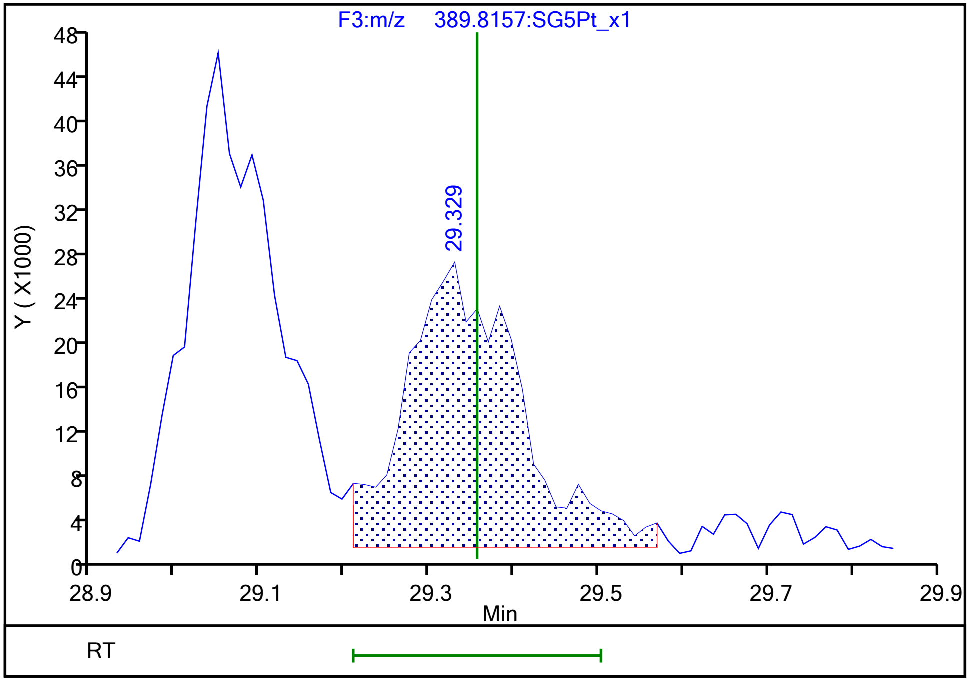

Reviewer: dadunj, 13-Oct-2020 11:29:22

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Report Date: 13-Oct-2020 11:30:49

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Instrument ID: 3D5
Lims ID: 320-65130-A-1-A
Lab Sample ID: 320-65130-1
Client ID: 11215702-Tank#1-valve-2-1
Operator ID: ALM
ALS Bottle#: 8
Worklist Smp#: 11
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

RT: 29.30
Area: 229059
Amount: 0.196794
Amount Units: pg/ul

Processing Integration Results

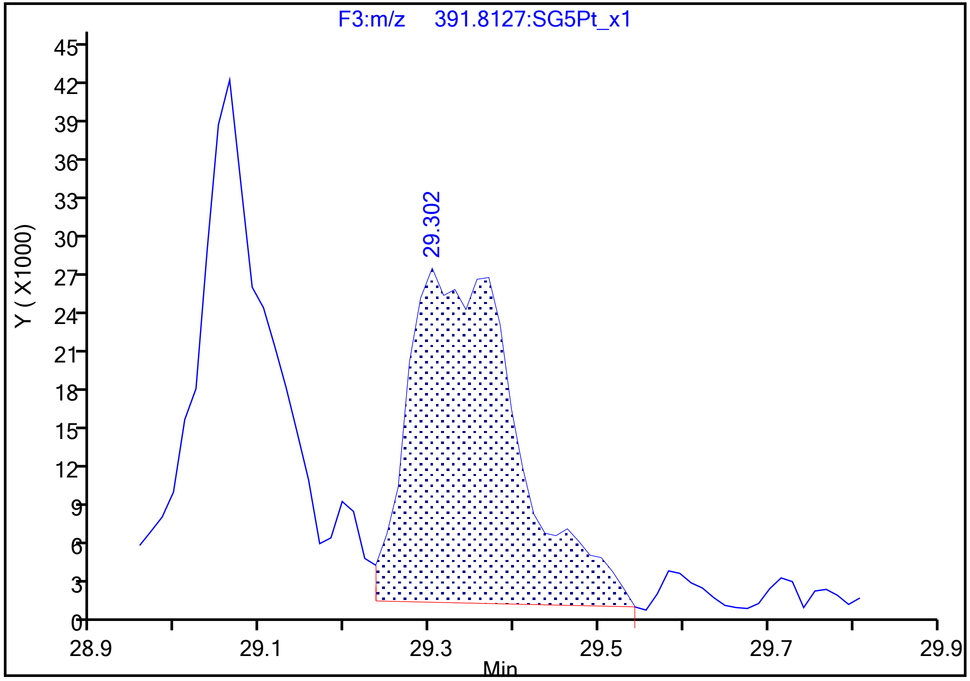

RT: 29.30
Area: 224100
Amount: 0.187334
Amount Units: pg/ul

Manual Integration Results

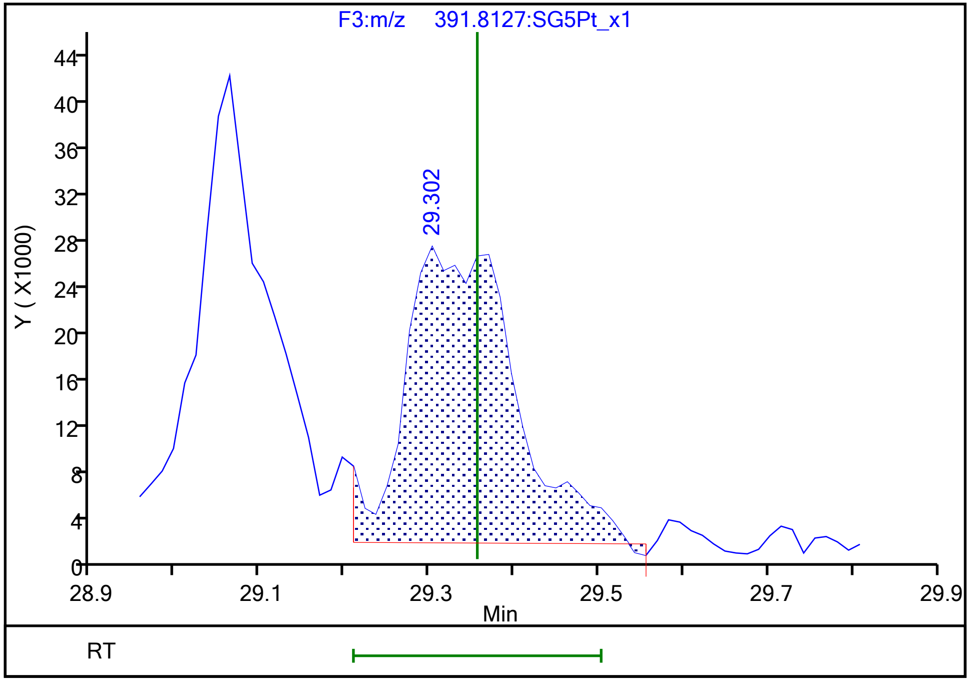

Reviewer: dadunj, 13-Oct-2020 11:29:25
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

RT: 33.64
Area: 454230
Amount: 0.367844
Amount Units: pg/ul

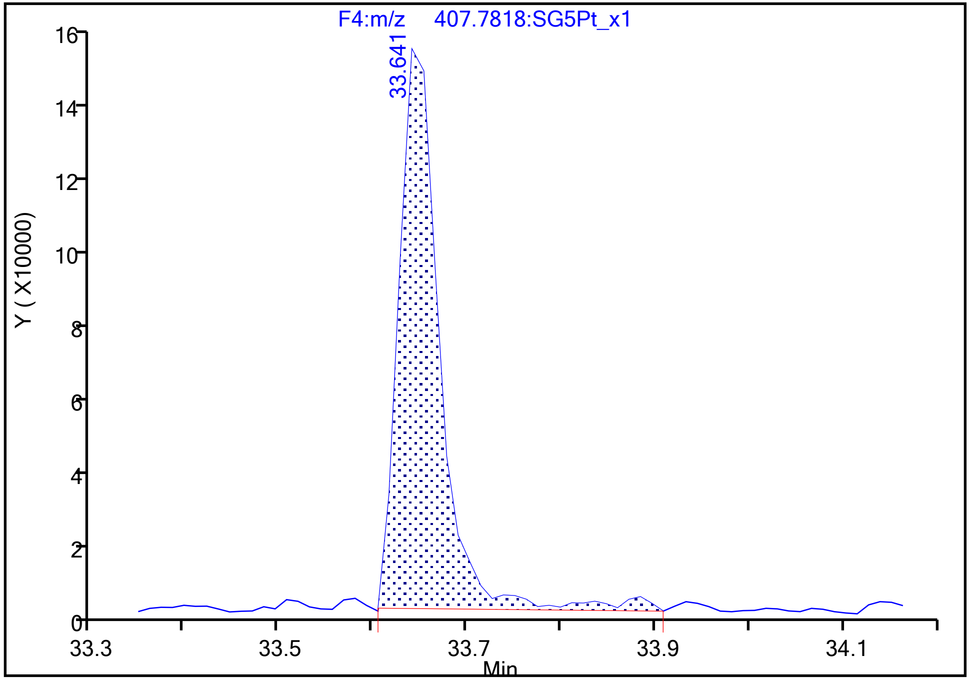

Manual Integration Results

RT: 33.64
Area: 431093
Amount: 0.355817
Amount Units: pg/ul

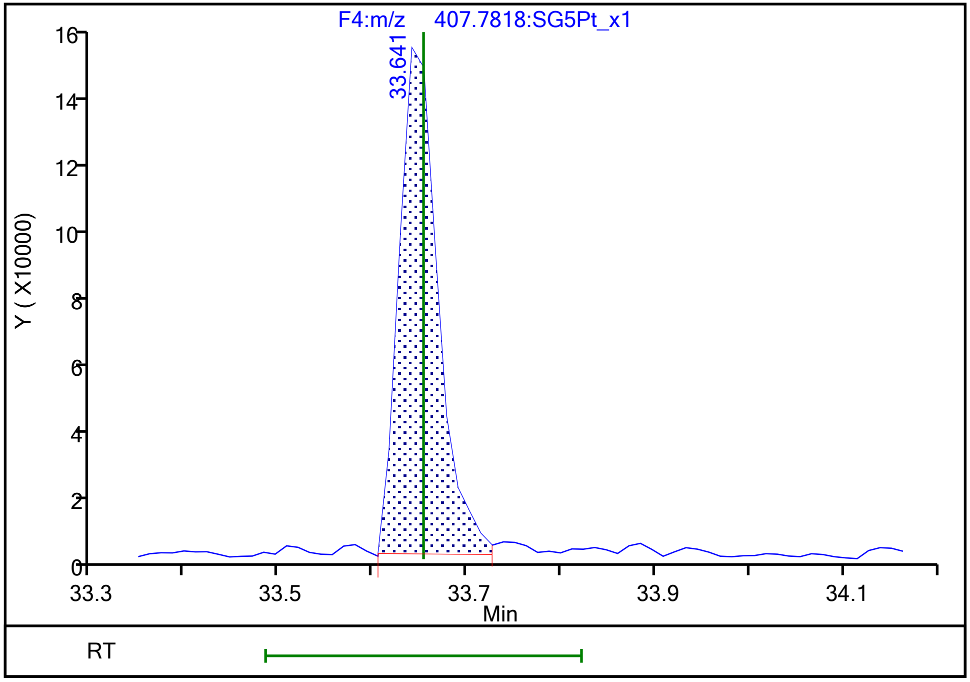

Reviewer: dadunj, 13-Oct-2020 11:29:44

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT:	33.64
Area:	459164
Amount:	0.367844
Amount Units:	pg/ul

Processing Integration Results

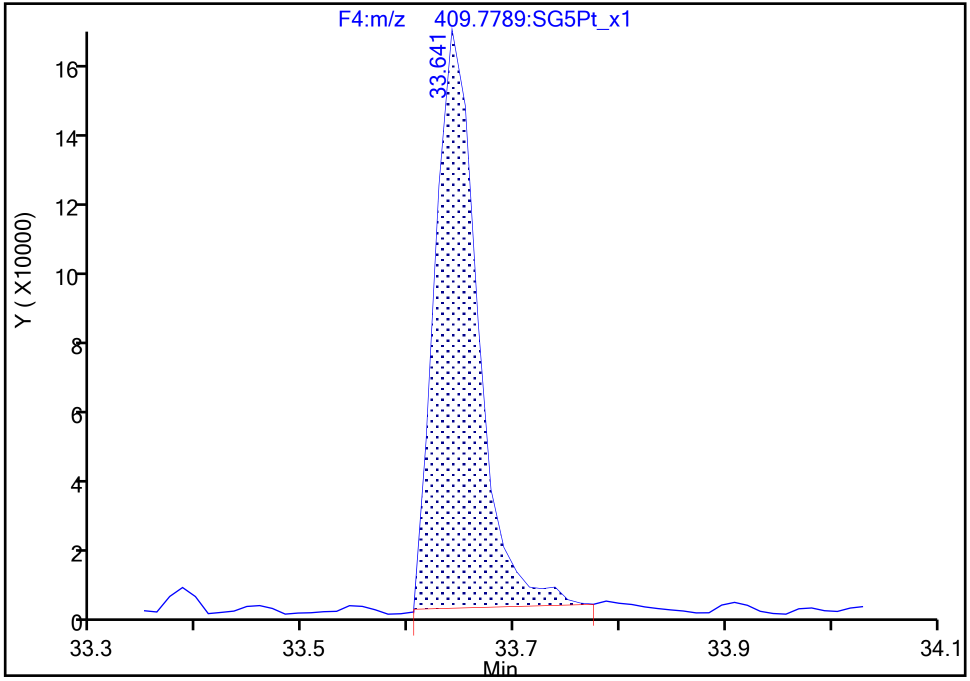

RT:	33.64
Area:	452437
Amount:	0.355817
Amount Units:	pg/ul

Manual Integration Results

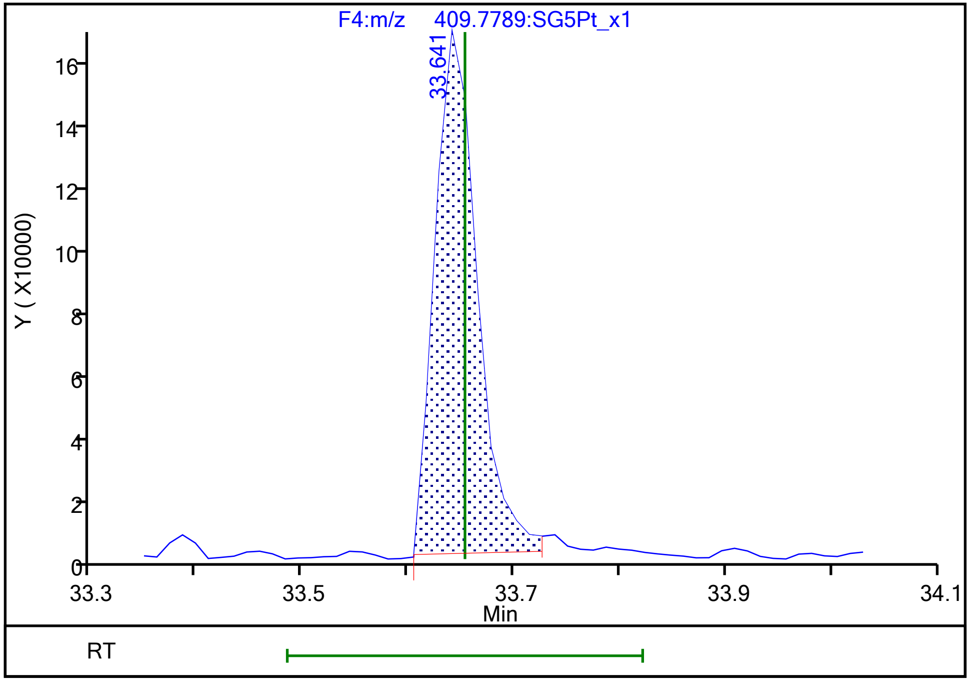

Reviewer: dadunj, 13-Oct-2020 11:29:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d				
Injection Date:	09-Oct-2020 03:28:10	Instrument ID:	3D5		
Lims ID:	320-65130-A-1-A	Lab Sample ID:	320-65130-1		
Client ID:	11215702-Tank#1-valve-2-1				
Operator ID:	ALM	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7818, RT: (32.52- 33.68)

Signal: 1

Processing Integration Results

RT = 32.888 Area = 170071

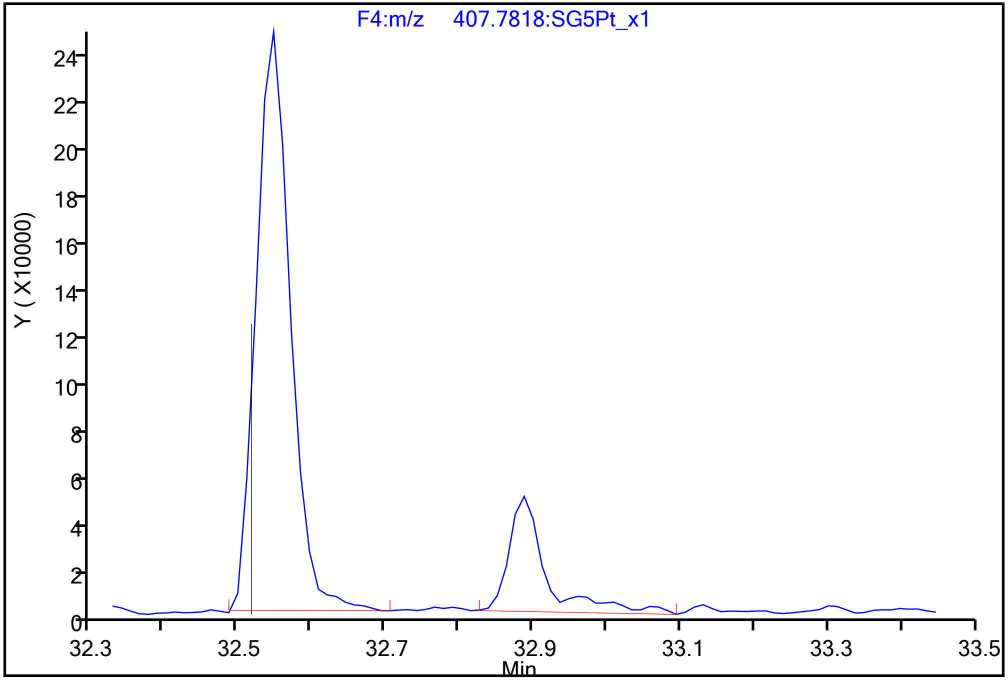

Manual Integration Results

RT = 32.888 Area = 138632 M

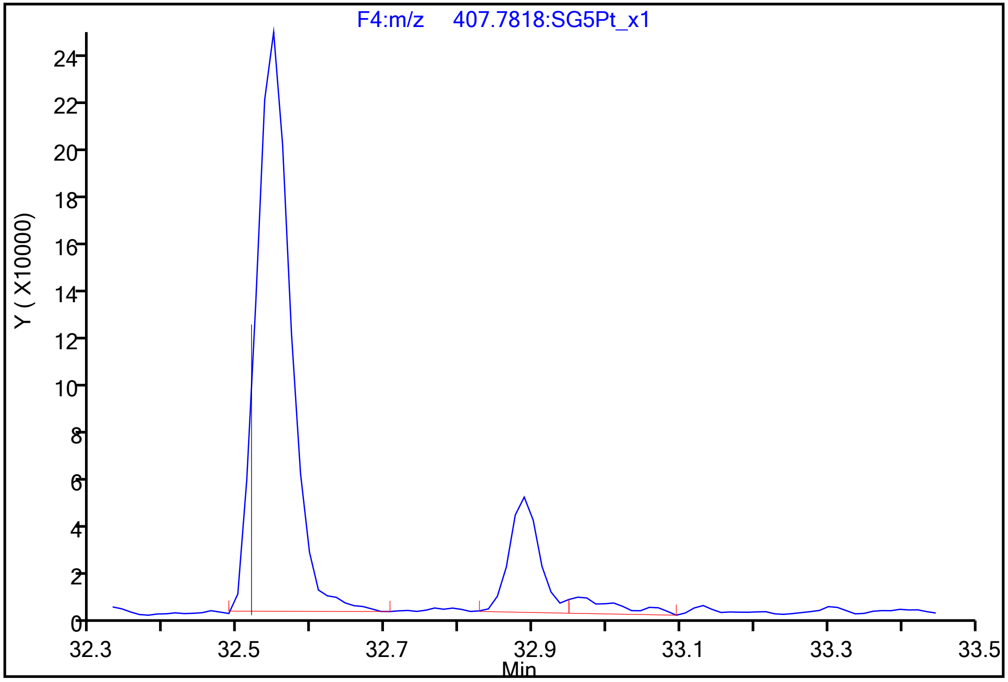

Reviewer: dadunj, 13-Oct-2020 11:29:56

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d

Injection Date: 09-Oct-2020 03:28:10

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-1

Worklist#: 420482

Sample Line#: 11

Column Type:

Column Dia:

TCDF

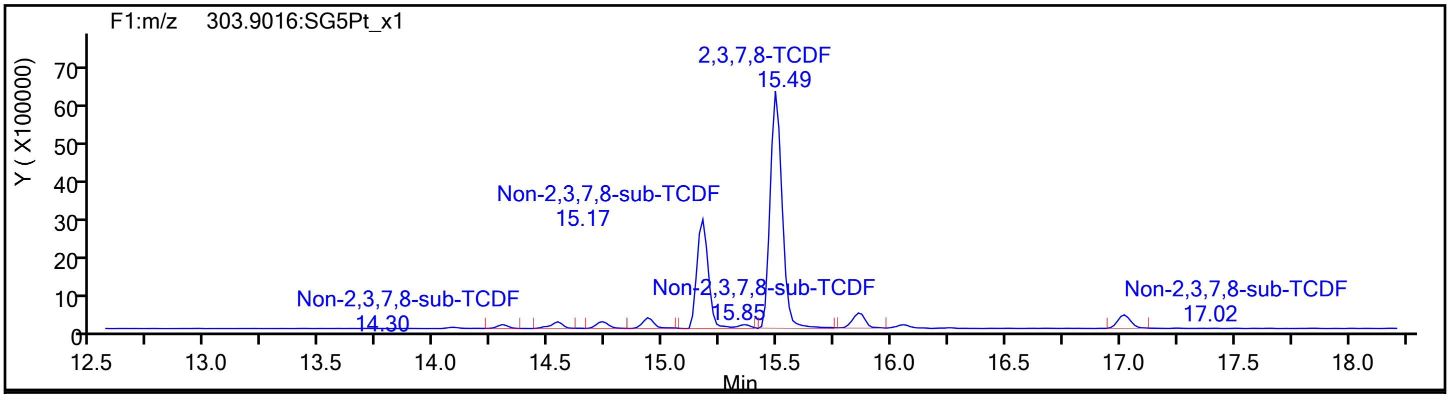

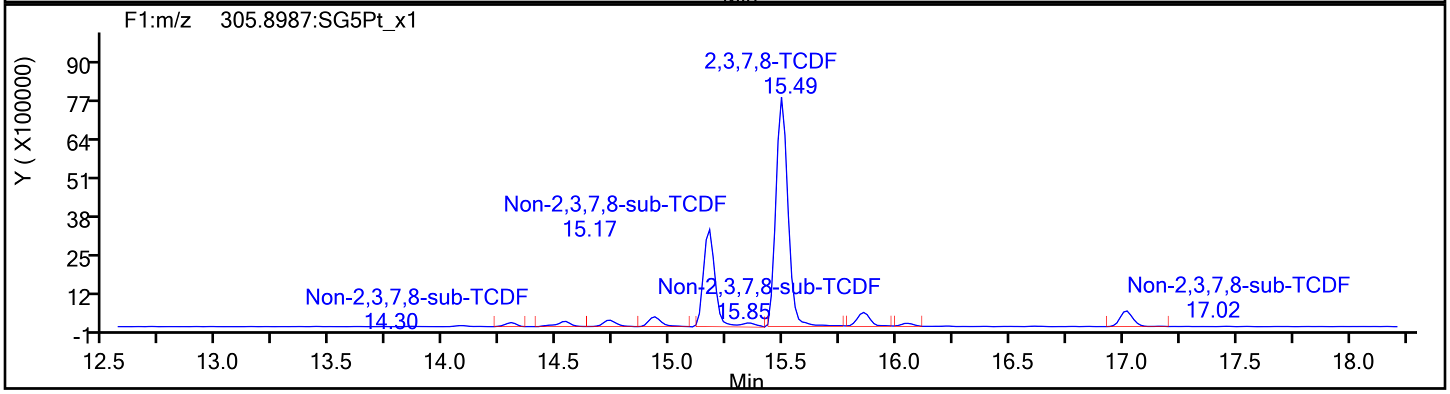

TCDF Standards

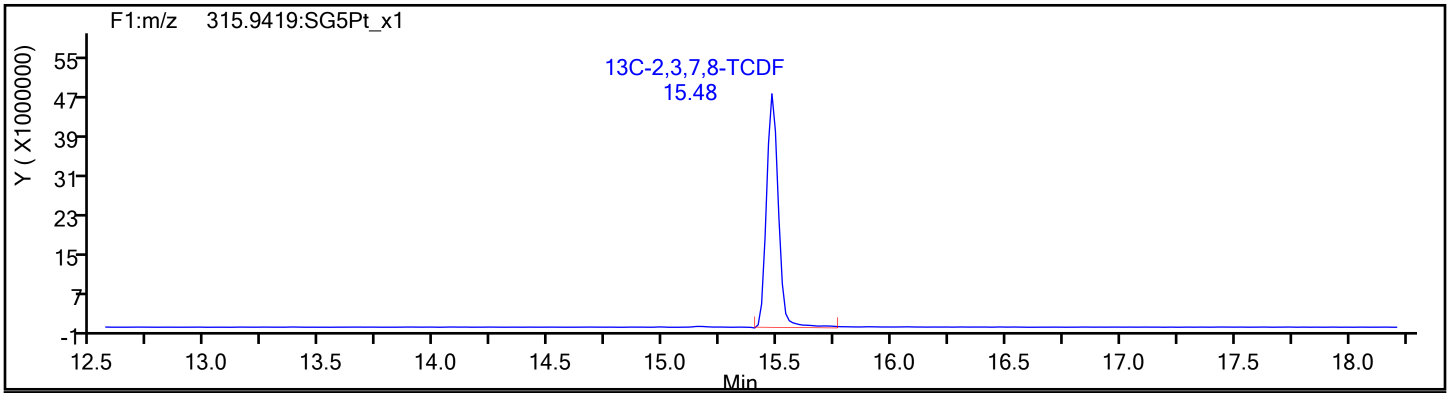

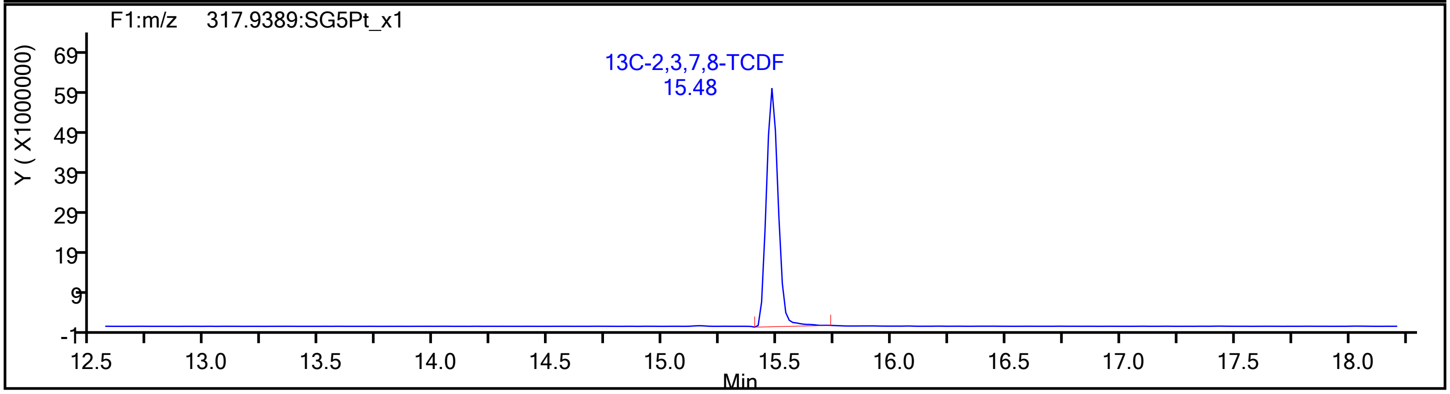

Report Date: 13-Oct-2020 11:30:49
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482
Sample Line#: 11
Column Type:
Column Dia:

TCDF

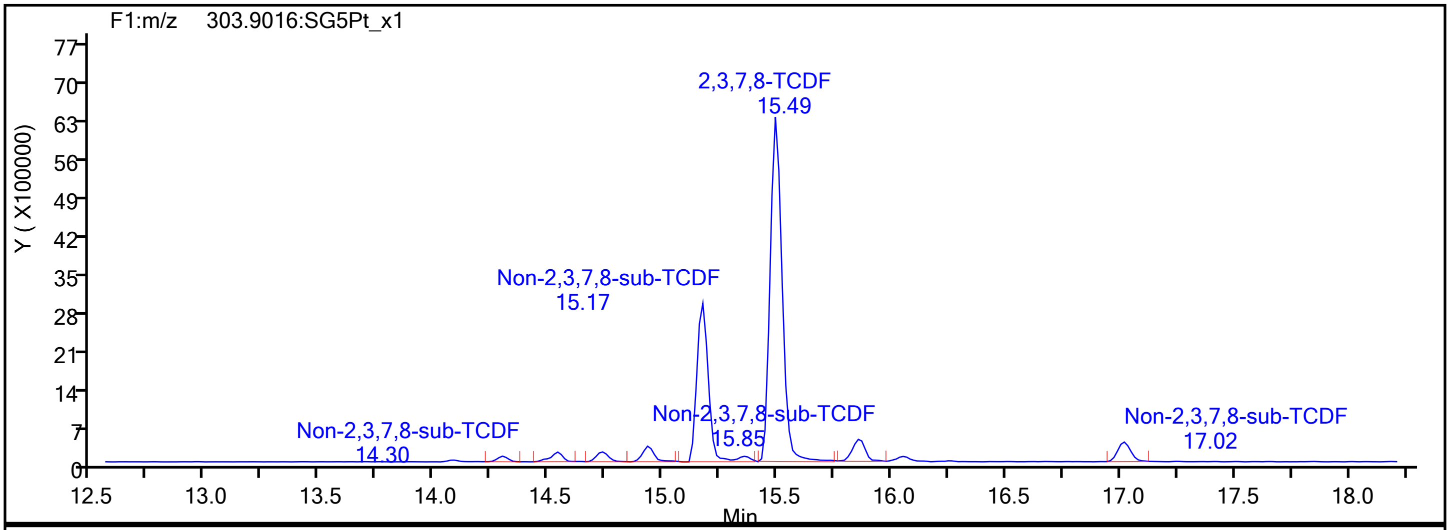

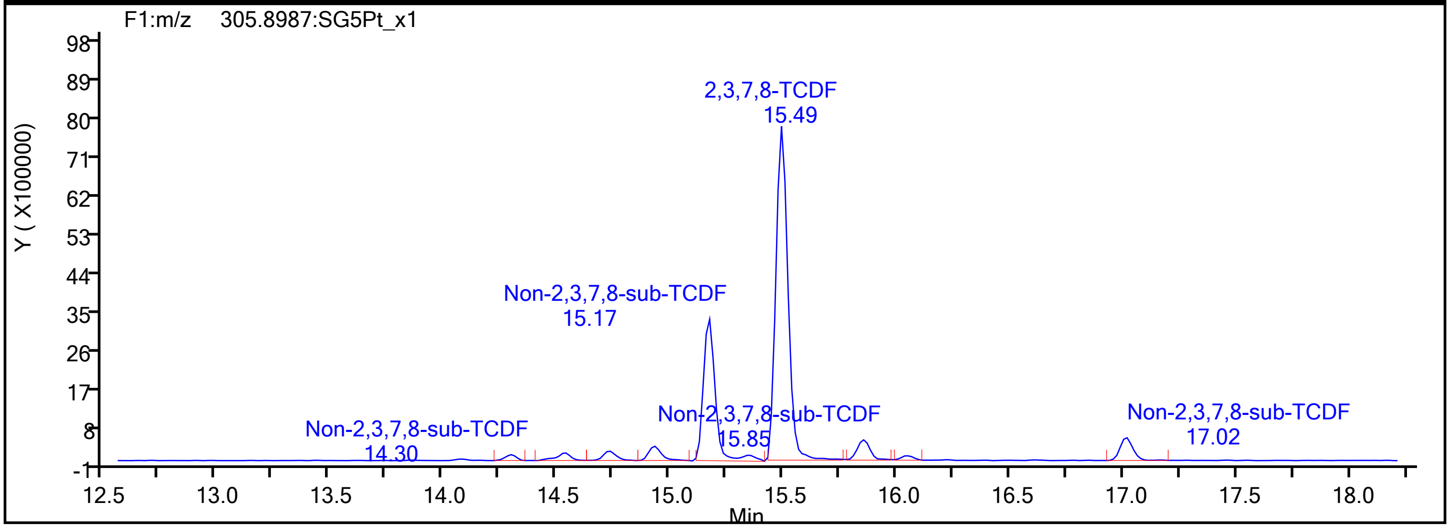

TCDF Interference Mass

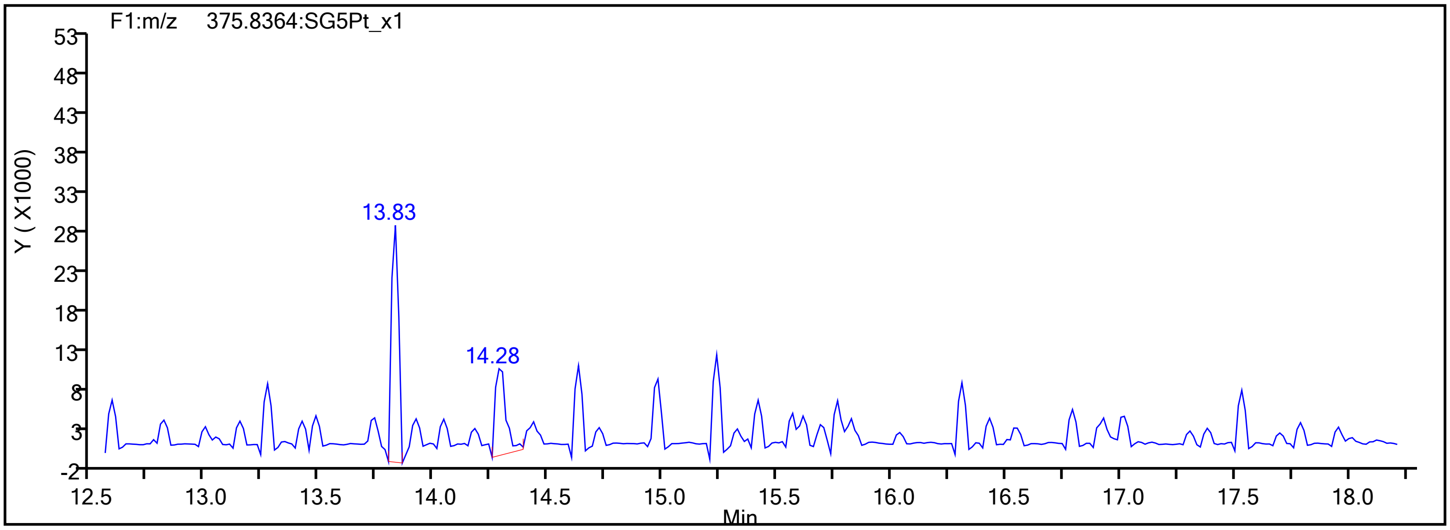

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

TCDD

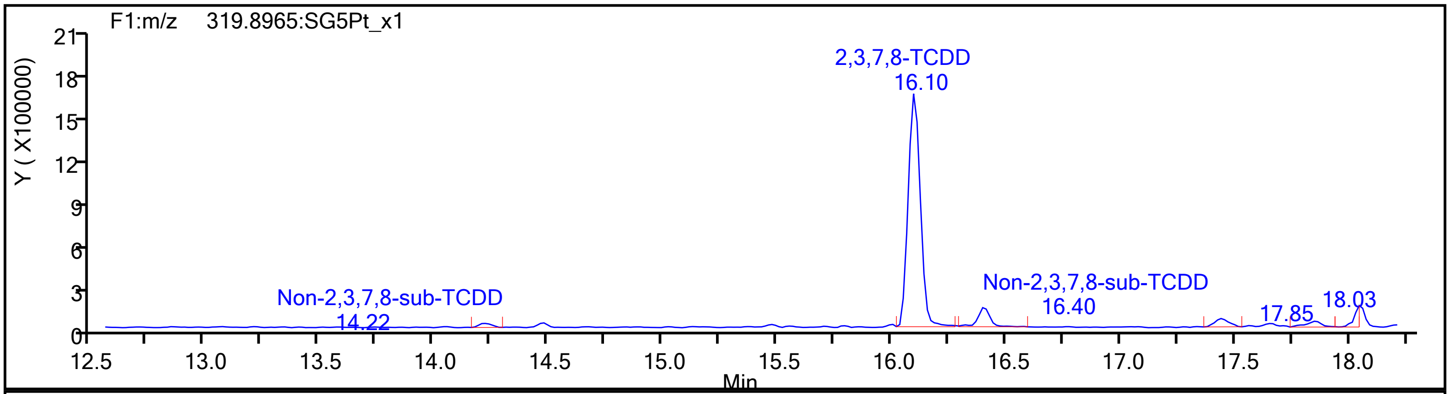

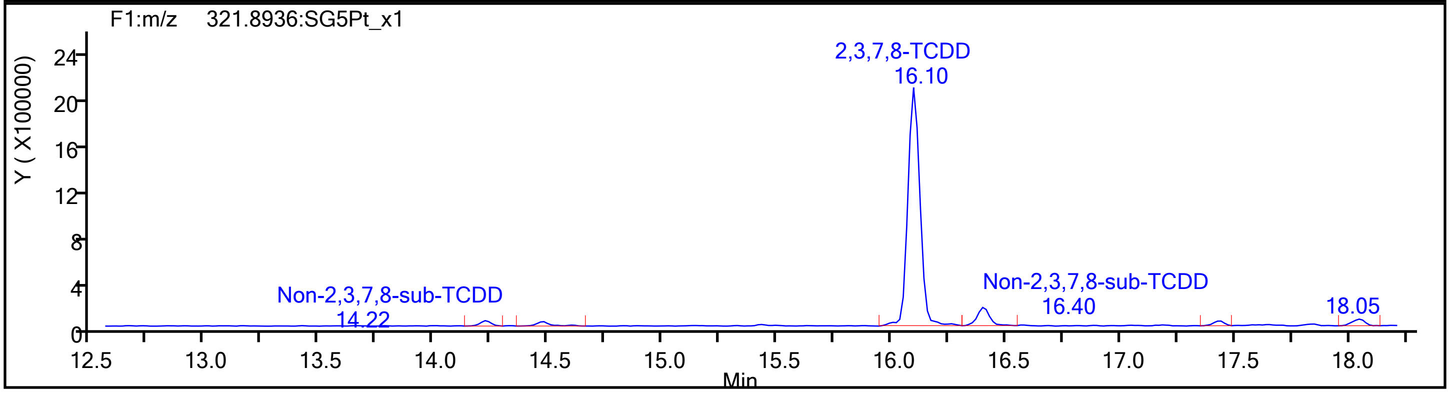

TCDD Standards

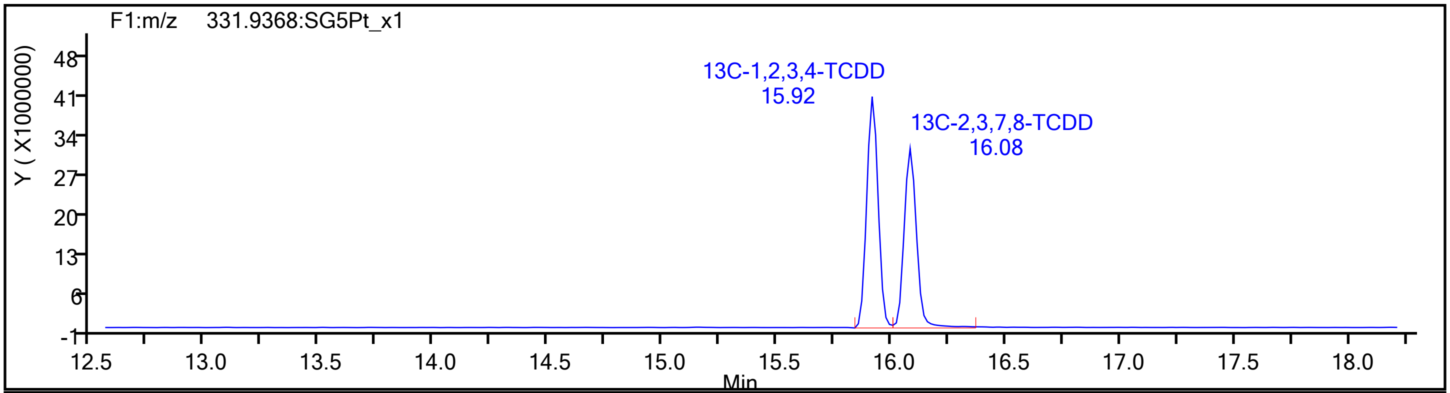

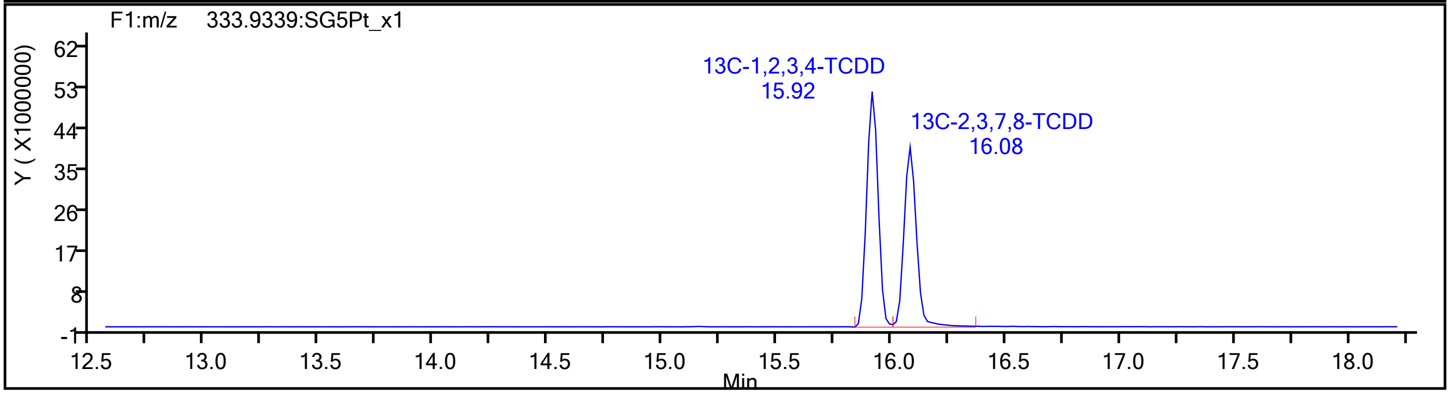

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

37Cl4-TCDD

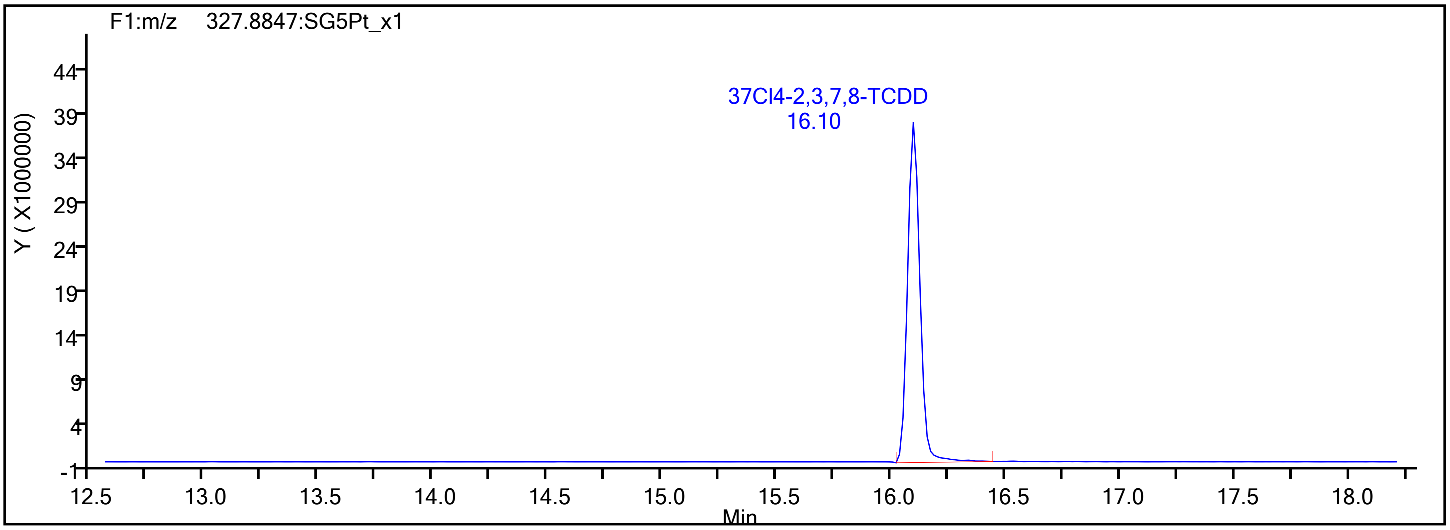

37Cl4-TCDD Standards

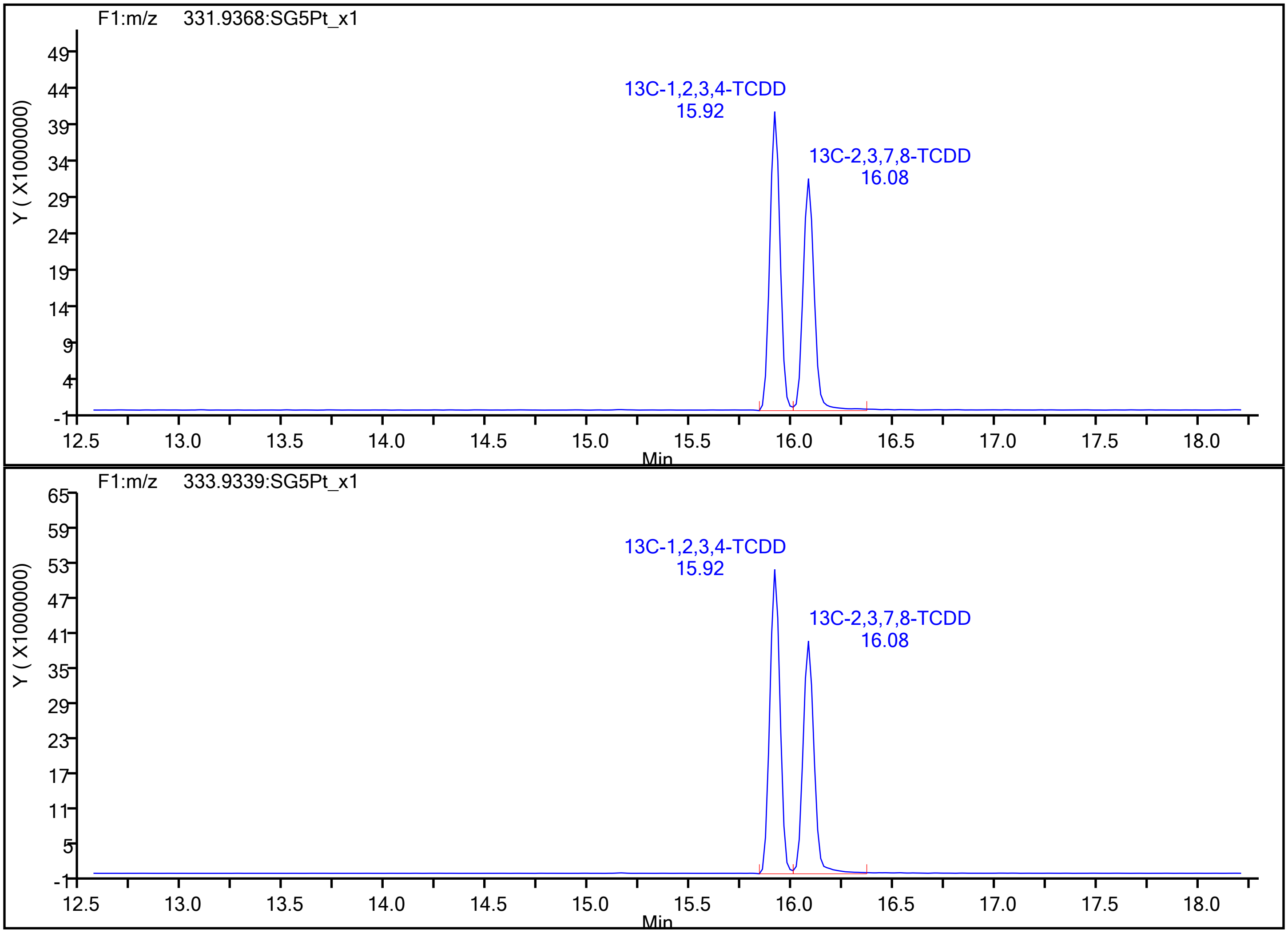

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482 Sample Line#: 11
Column Type: Column Dia:

PeCDF

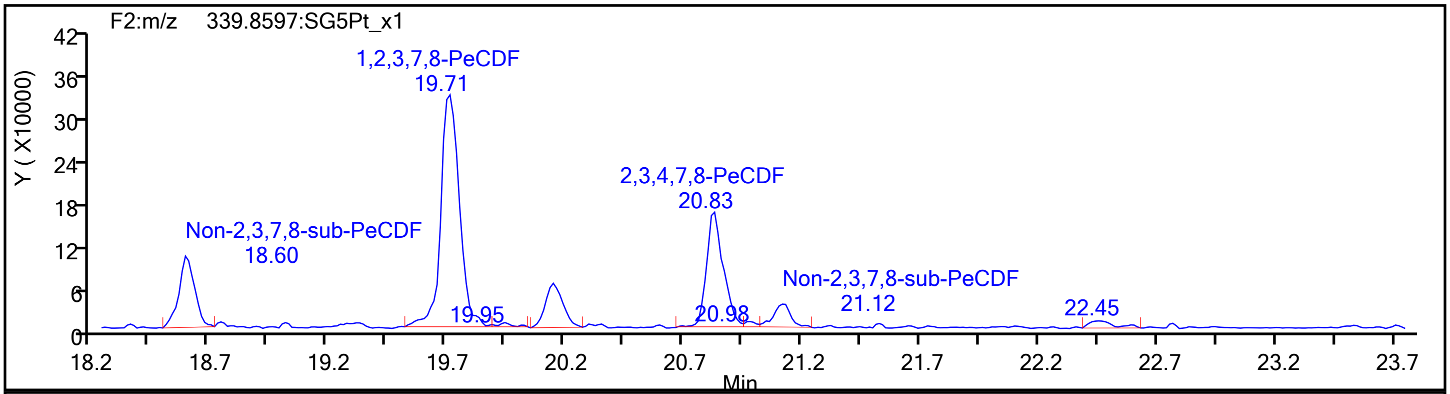

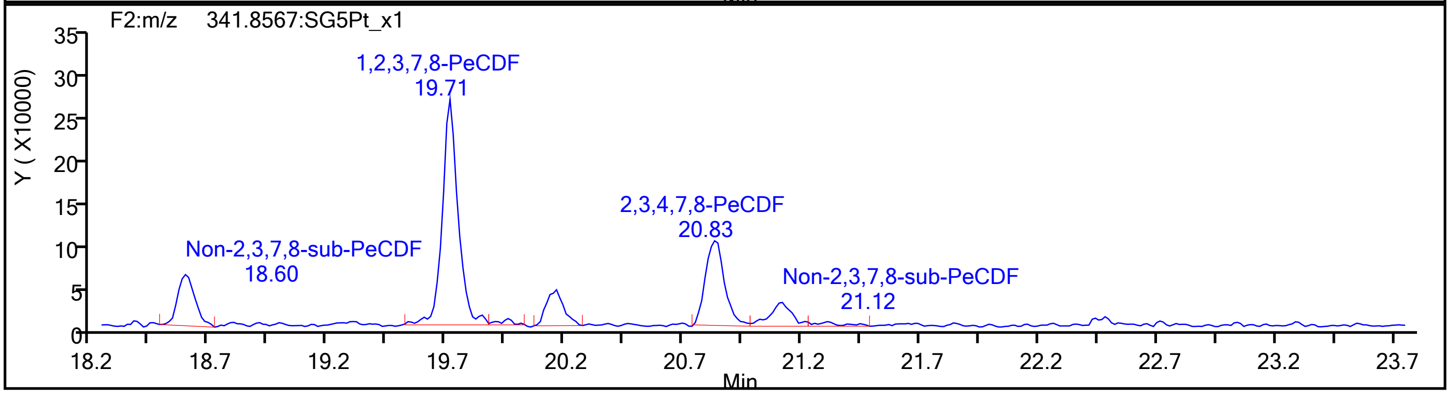

PeCDF Standards

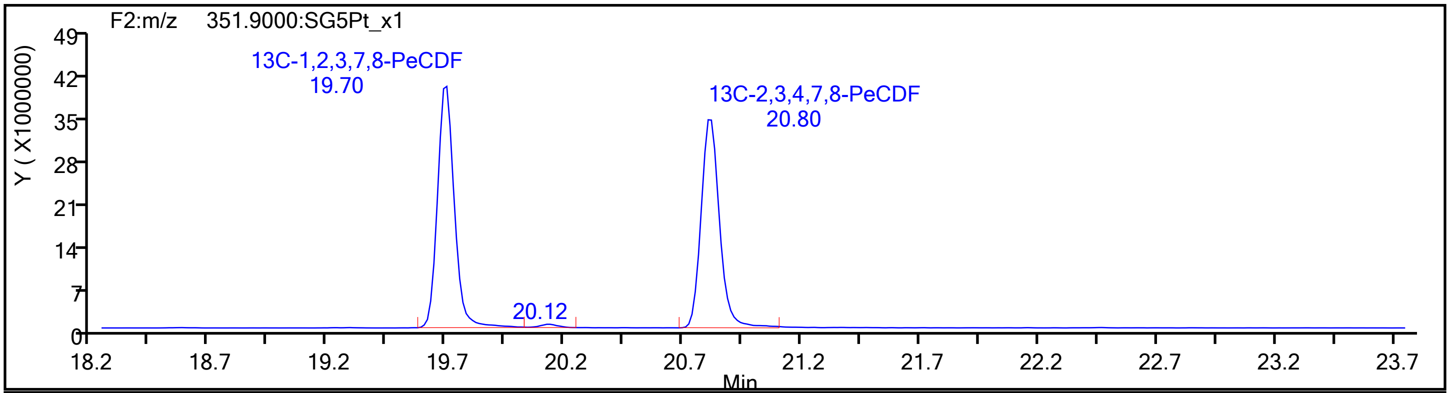

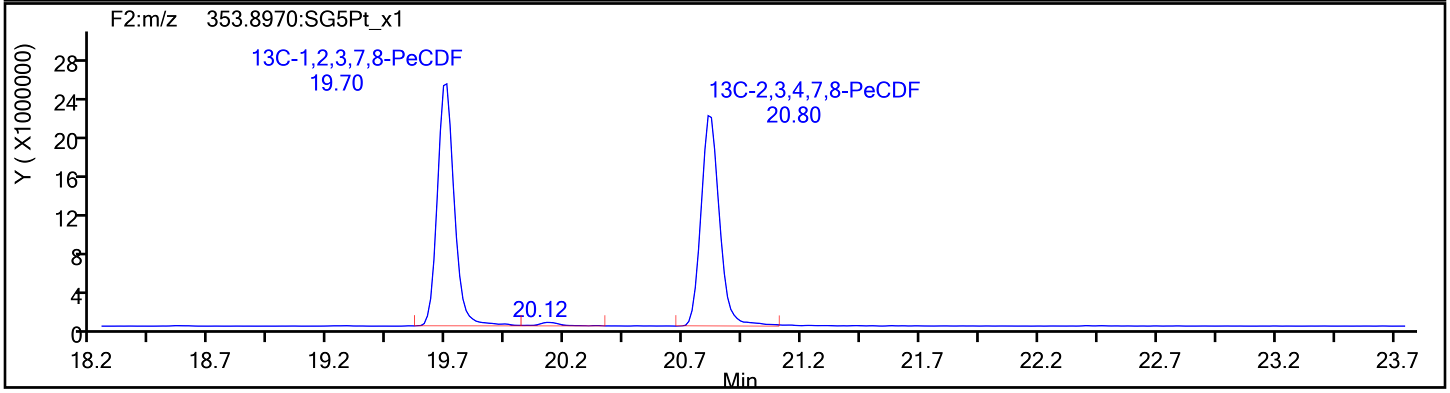

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

PeCDF

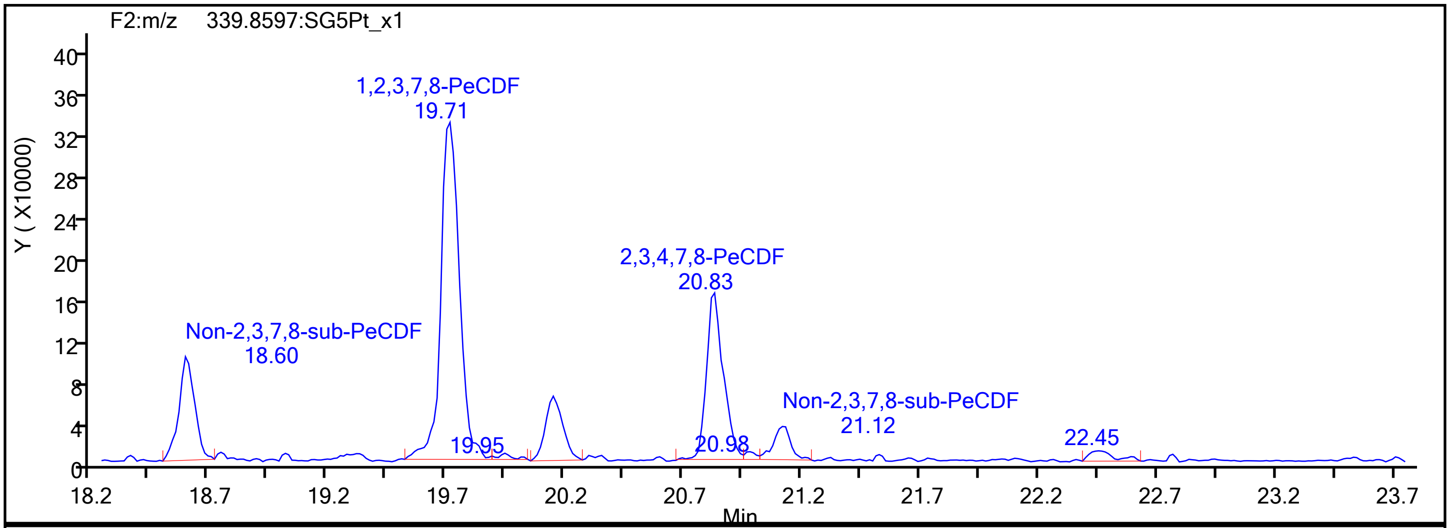

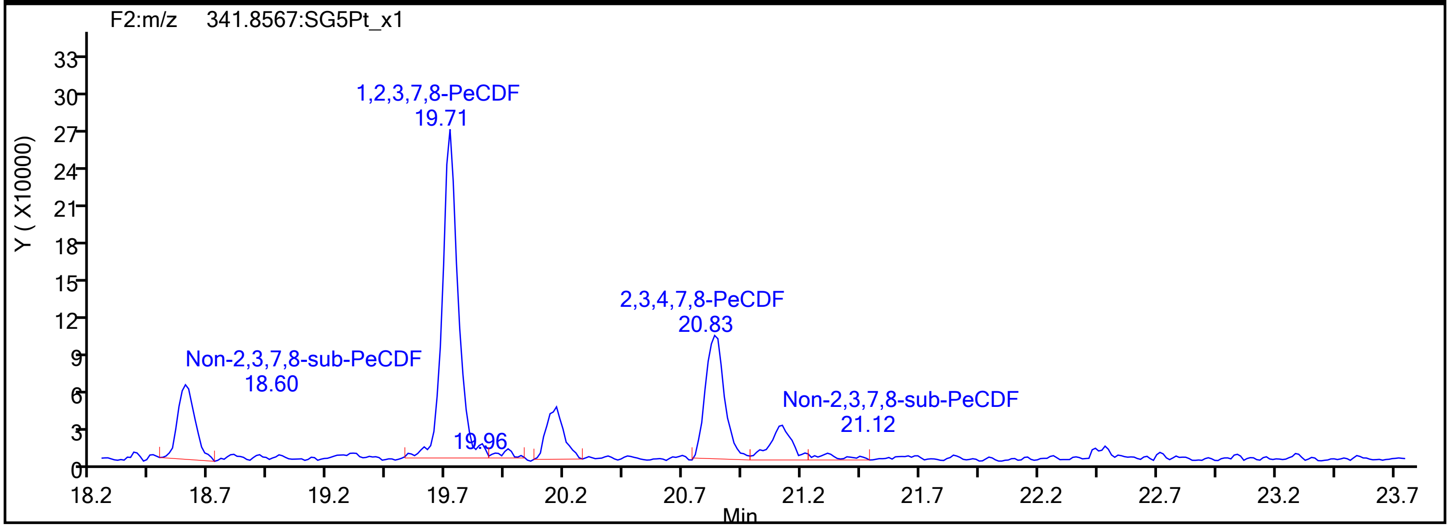

PeCDF Interference Mass

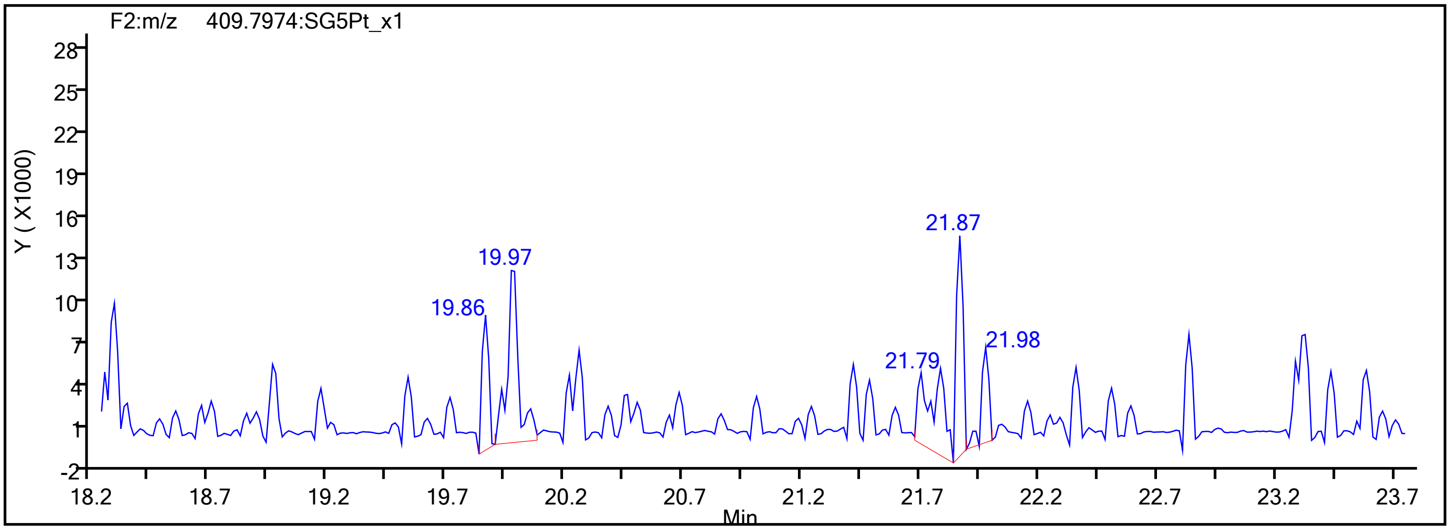

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

PeCDD

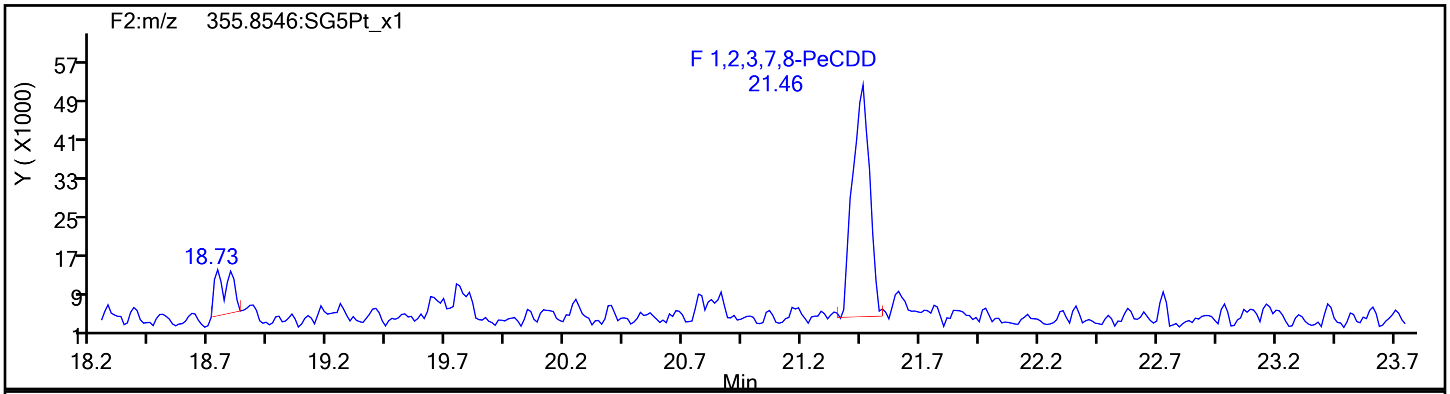

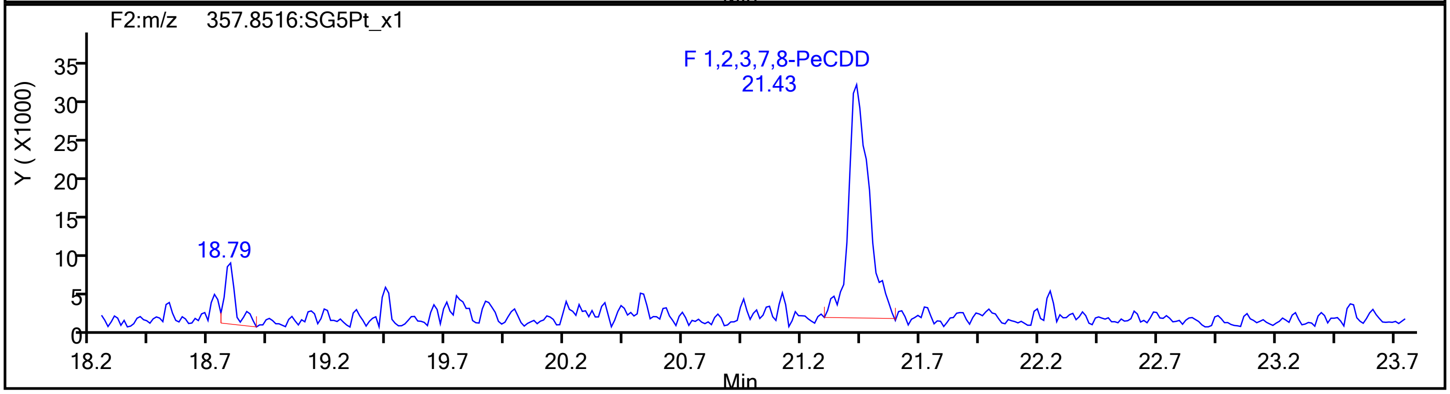

PeCDD Standards

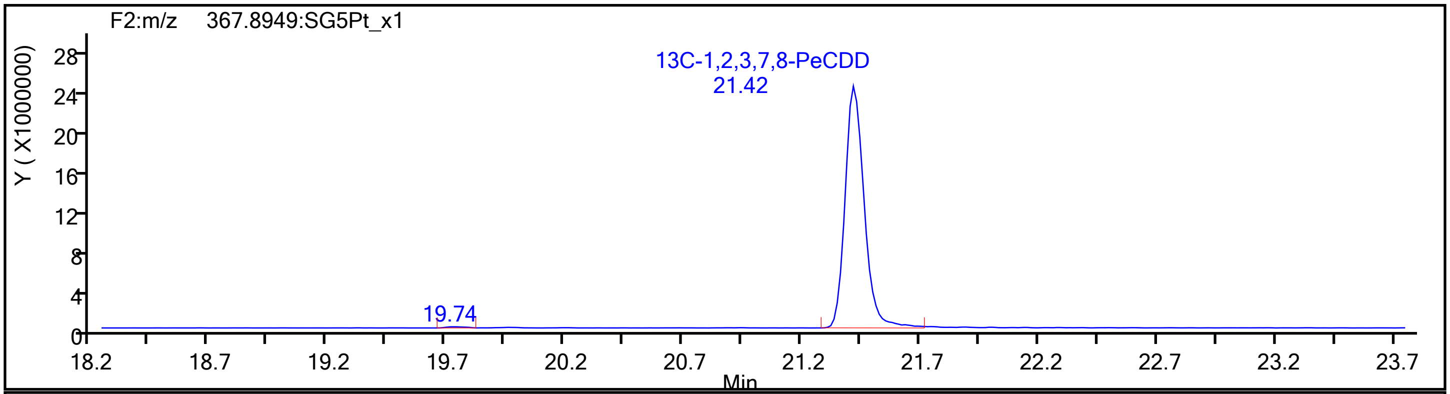

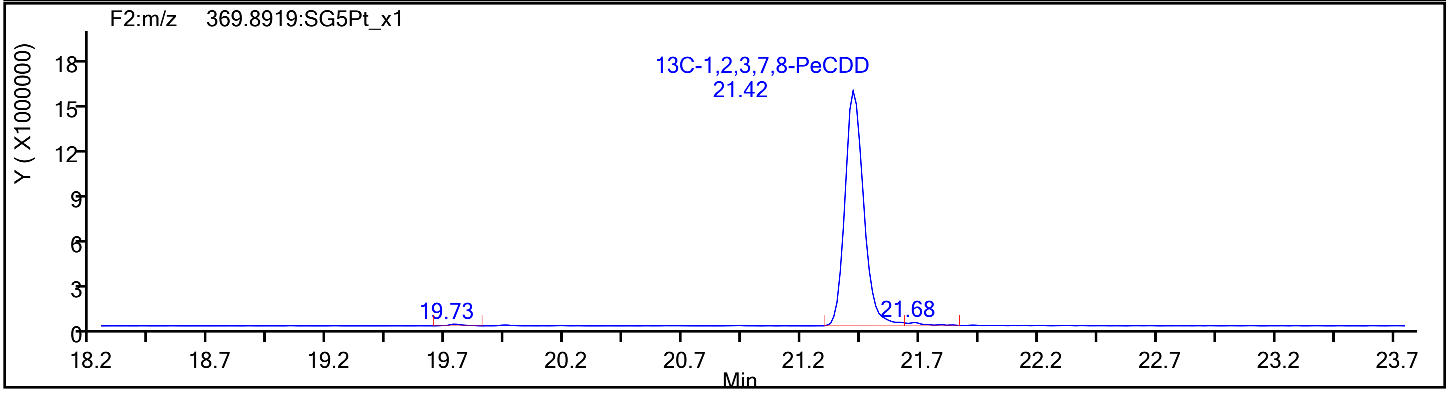

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482 Sample Line#: 11
Column Type: Column Dia:

HxCDF

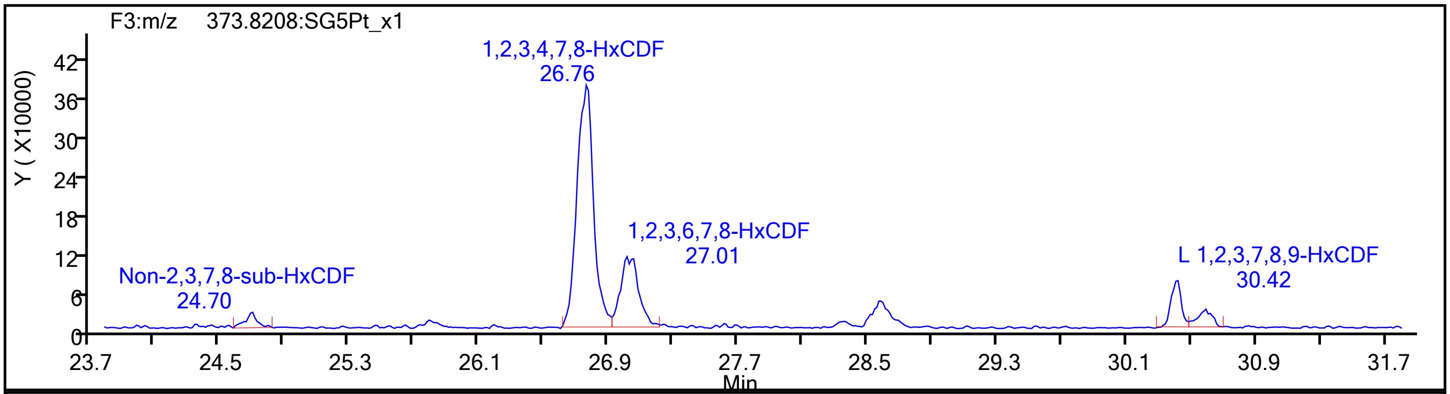

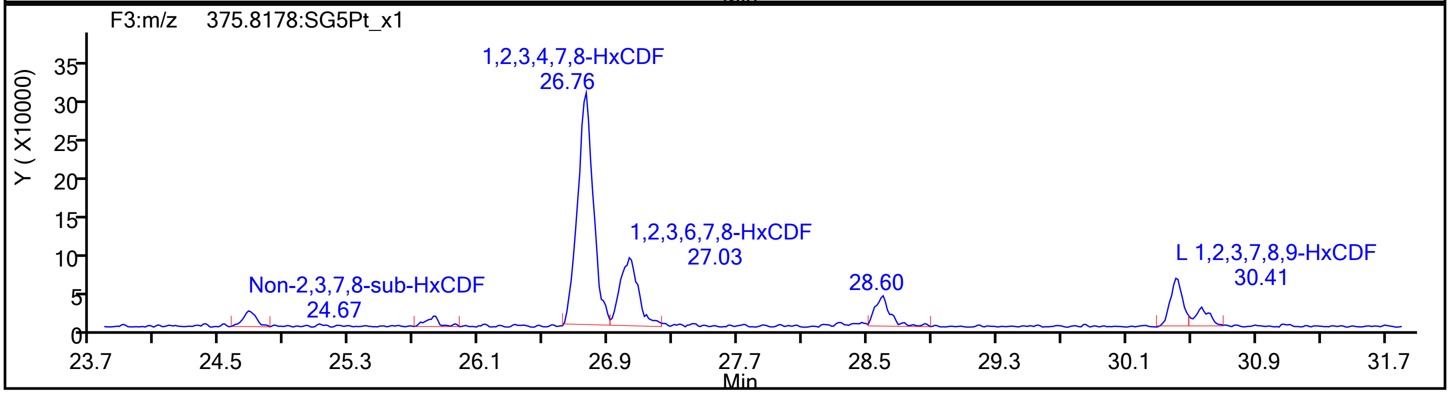

HxCDF Standards

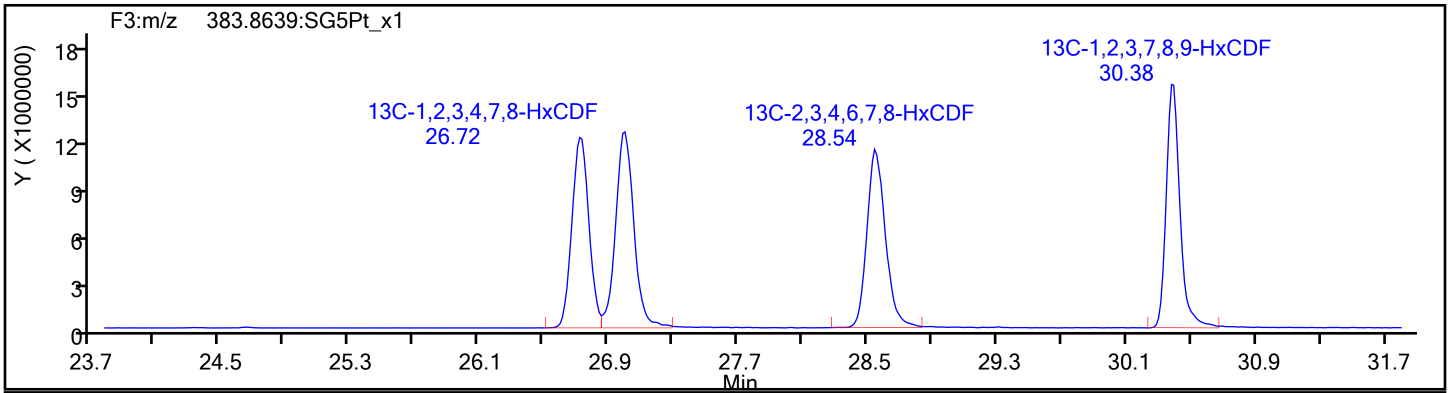

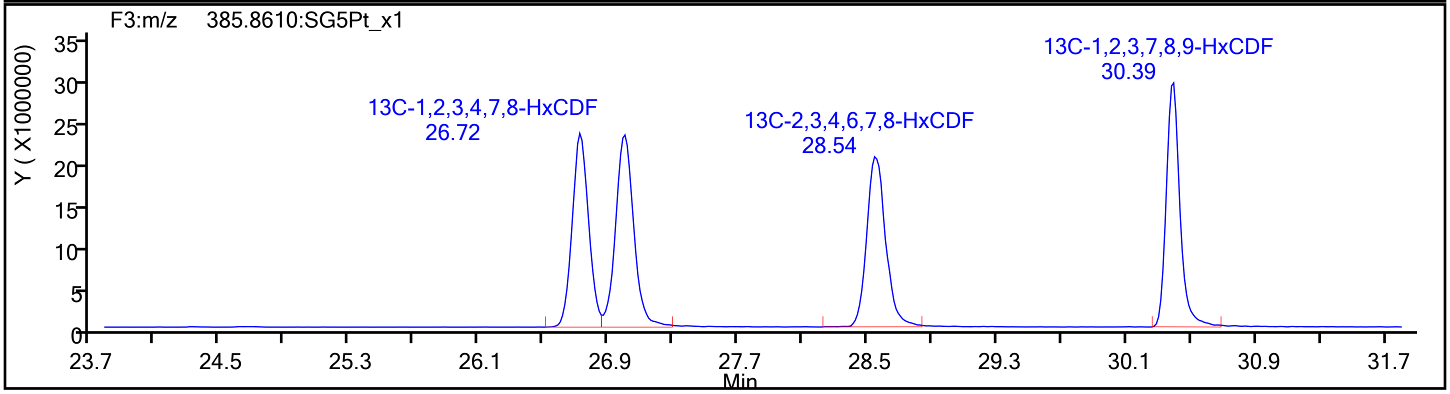

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d

Injection Date: 09-Oct-2020 03:28:10
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482
Sample Line#: 11
Column Type:
Column Dia:

HxCDF

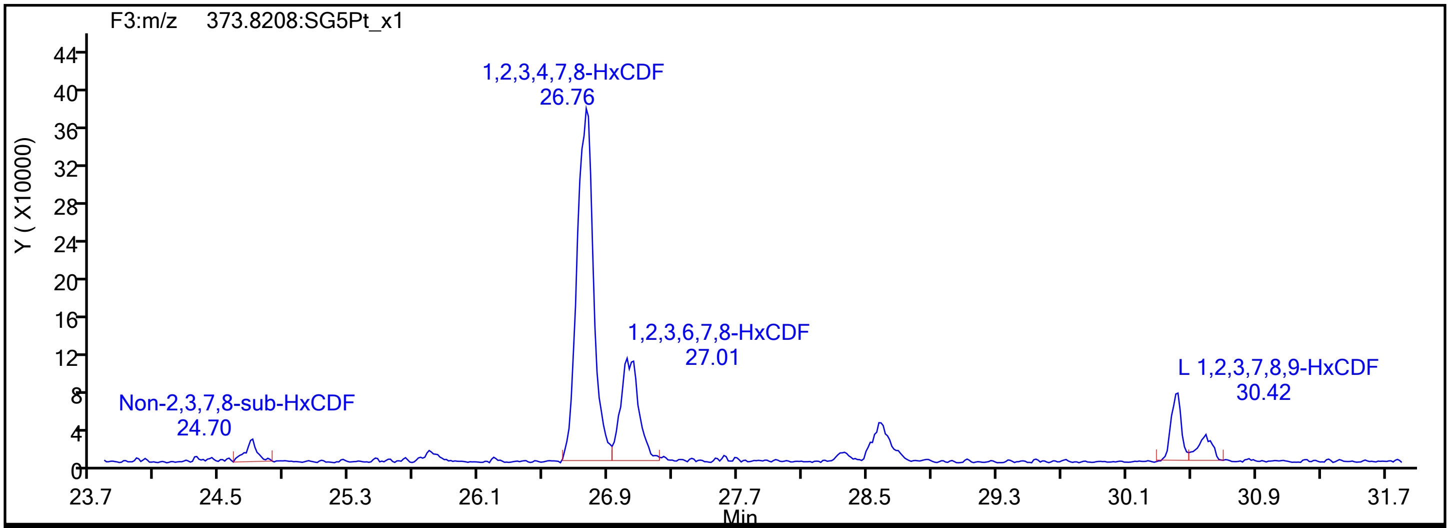

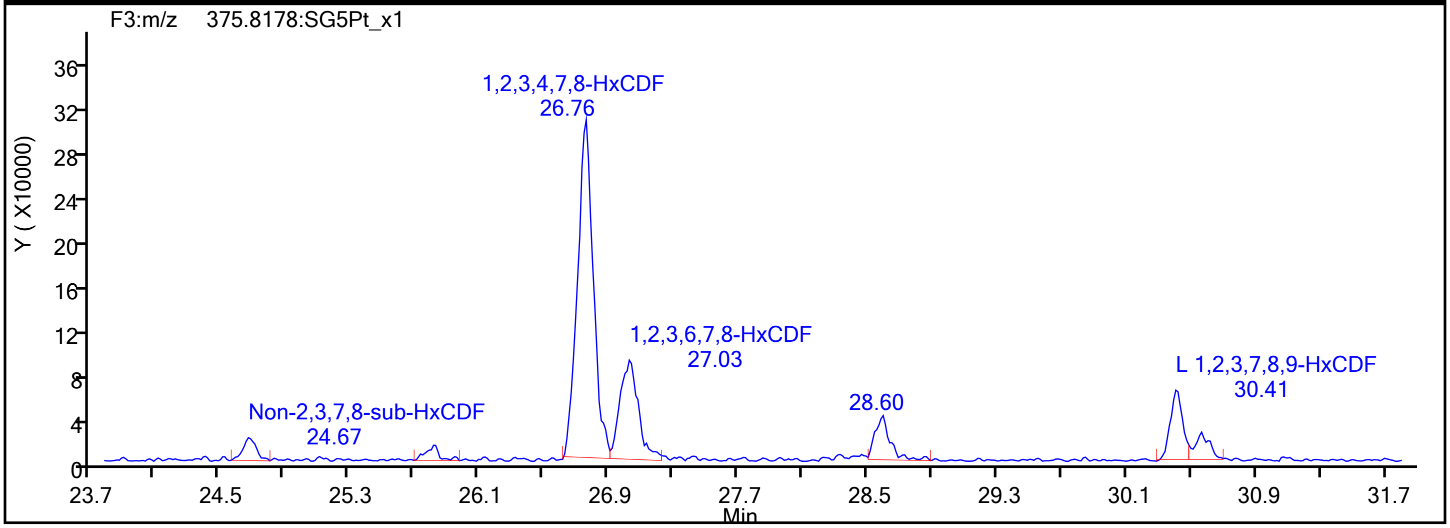

HxCDF Interference Mass

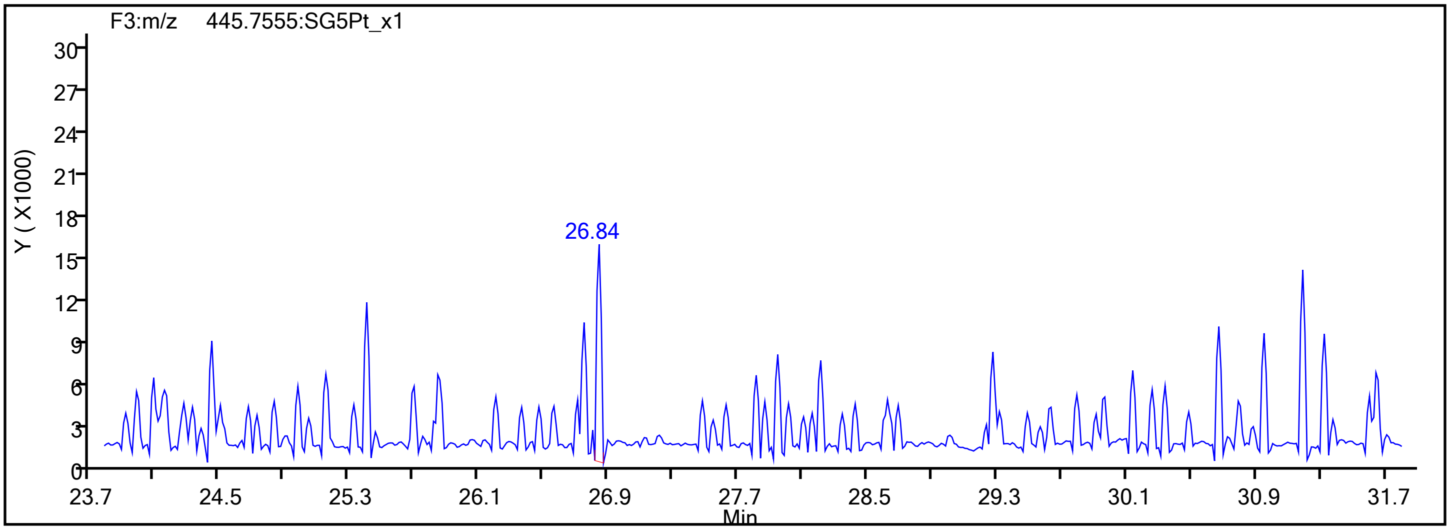

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d

Injection Date: 09-Oct-2020 03:28:10 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-1

Worklist#: 420482 Sample Line#: 11

Column Type: Column Dia:

HxCDD

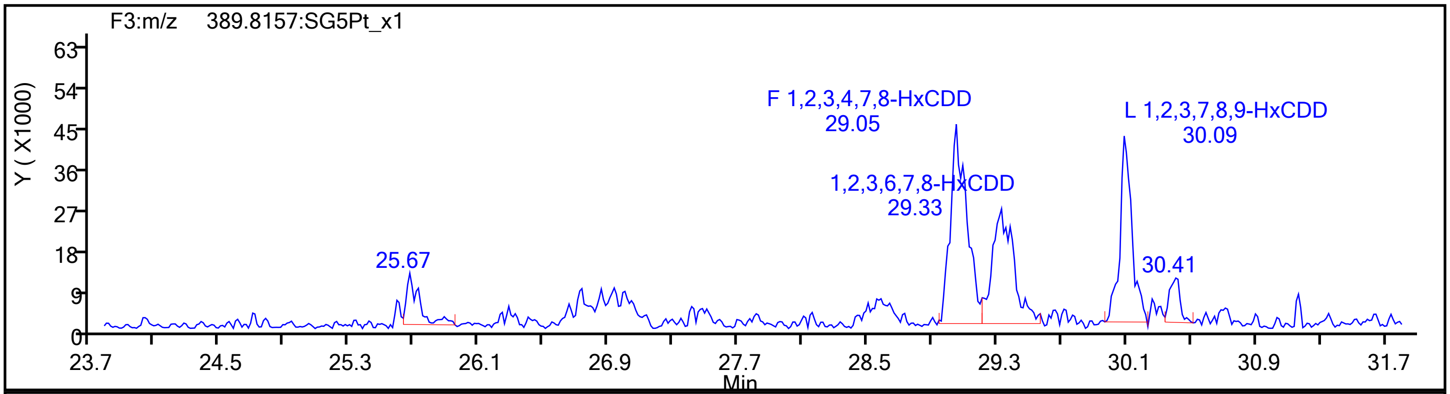

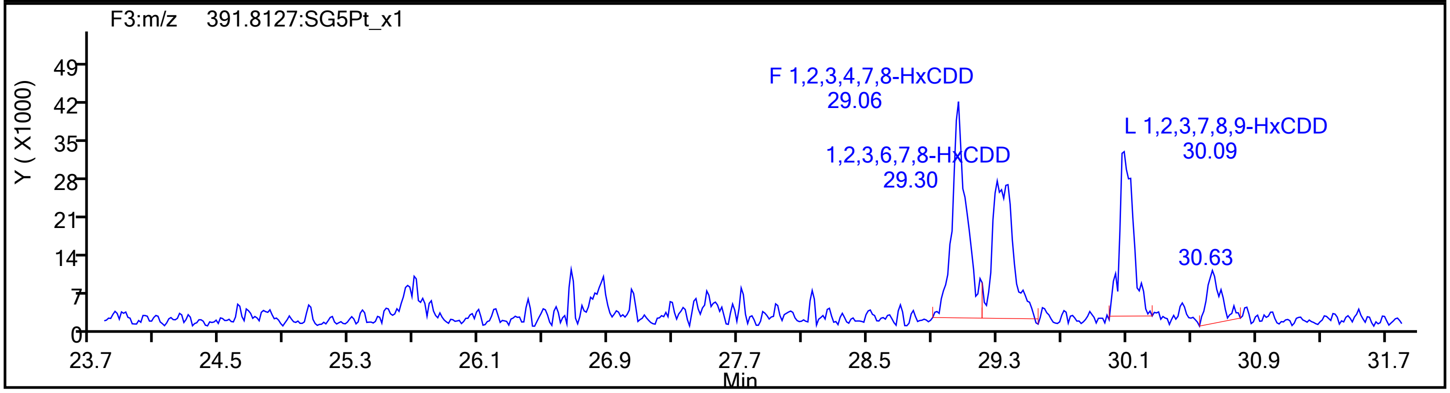

HxCDD Standards

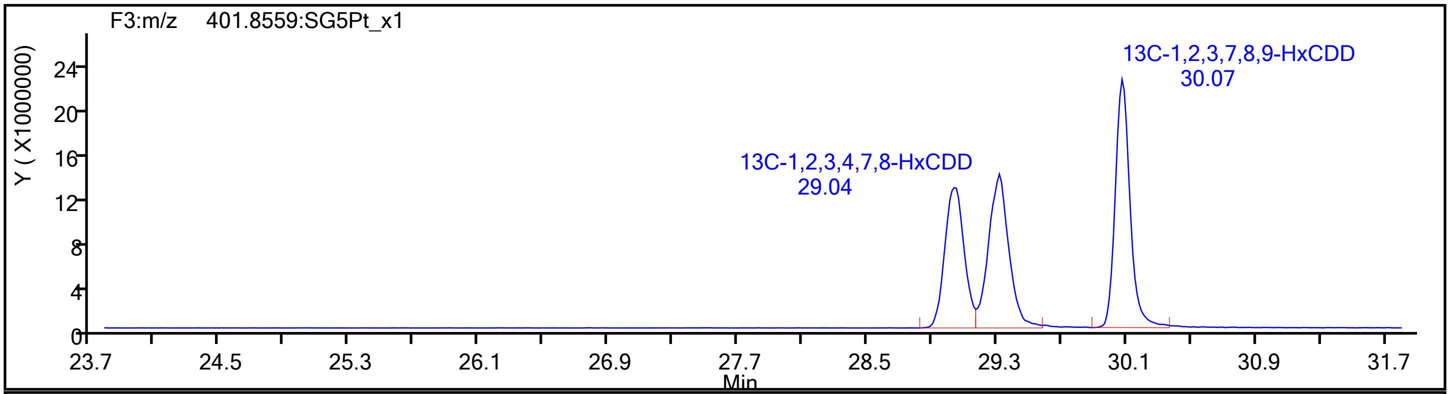

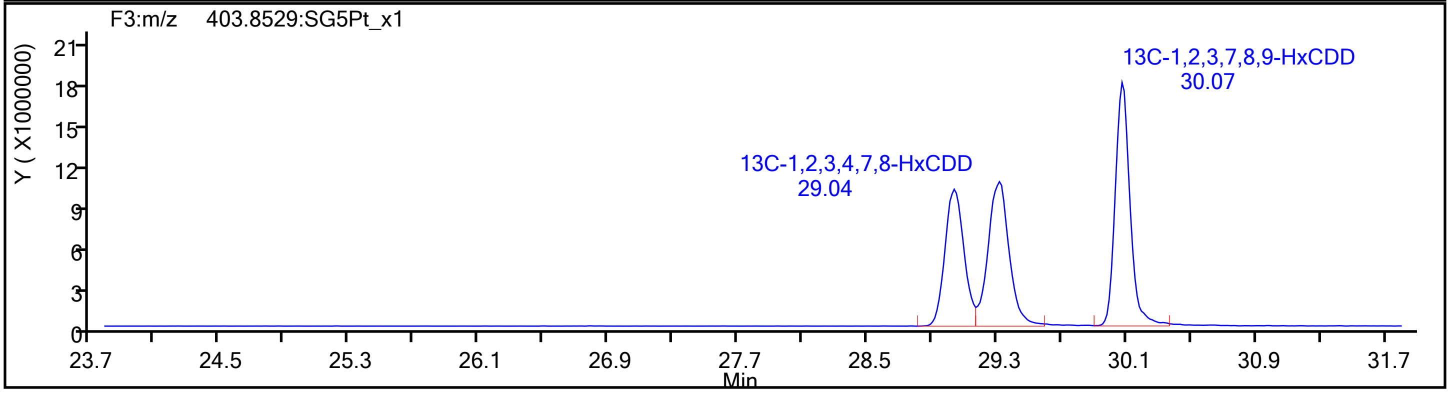

Report Date: 13-Oct-2020 11:30:49
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482
Sample Line#: 11
Column Type:
Column Dia:

HpCDF

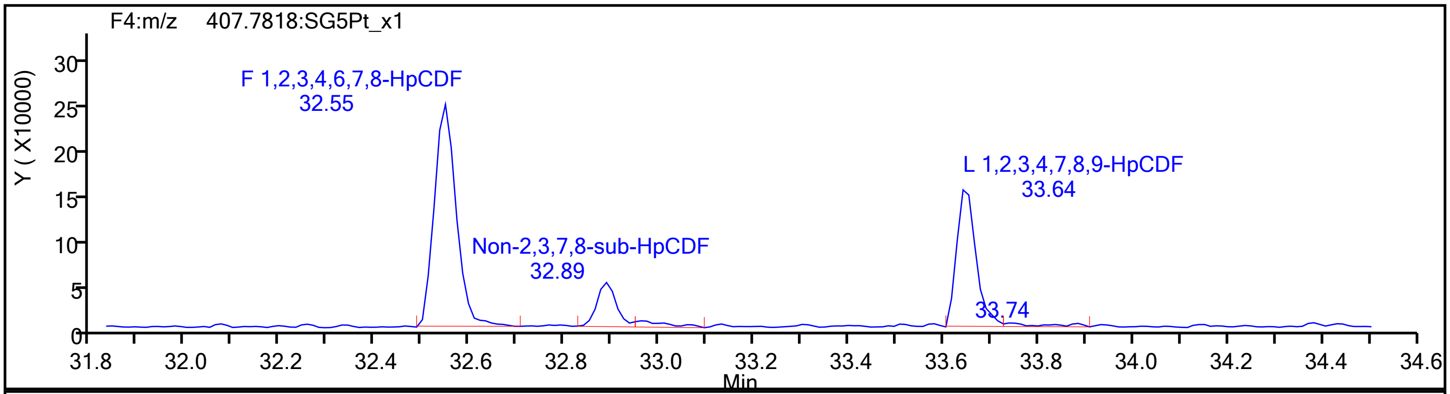

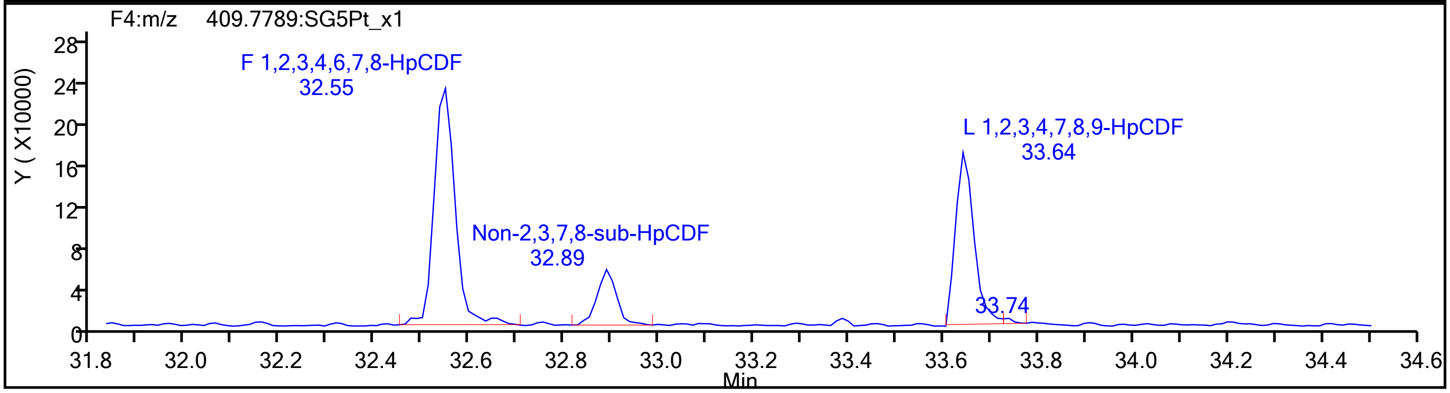

HpCDF Standards

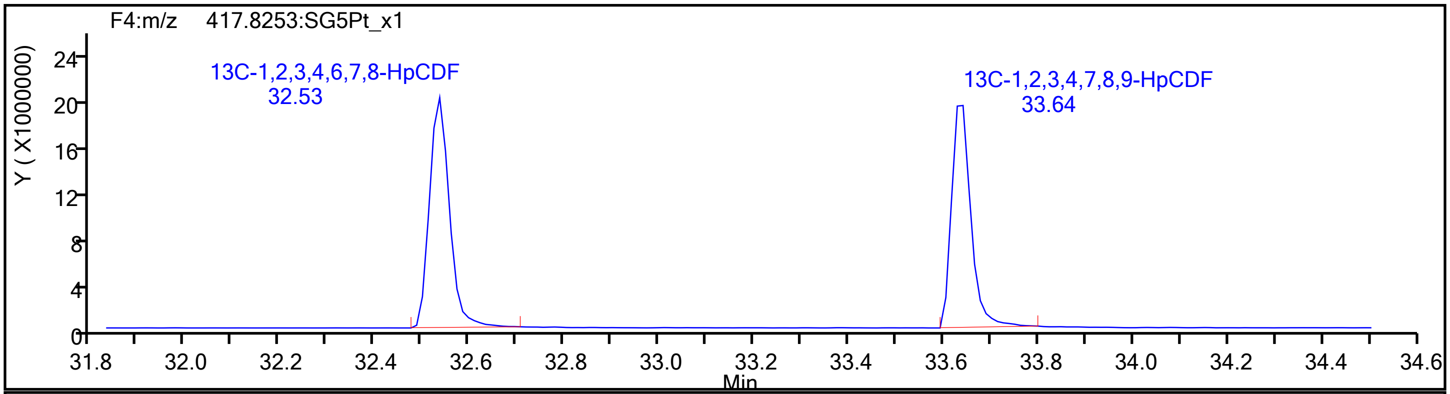

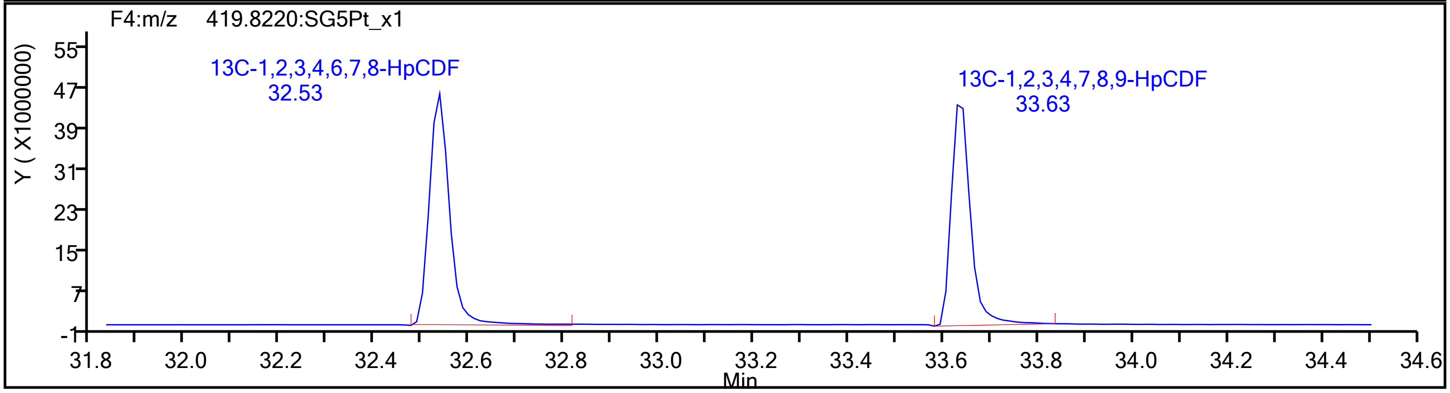

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482
Sample Line#: 11
Column Type:
Column Dia:

HpCDF

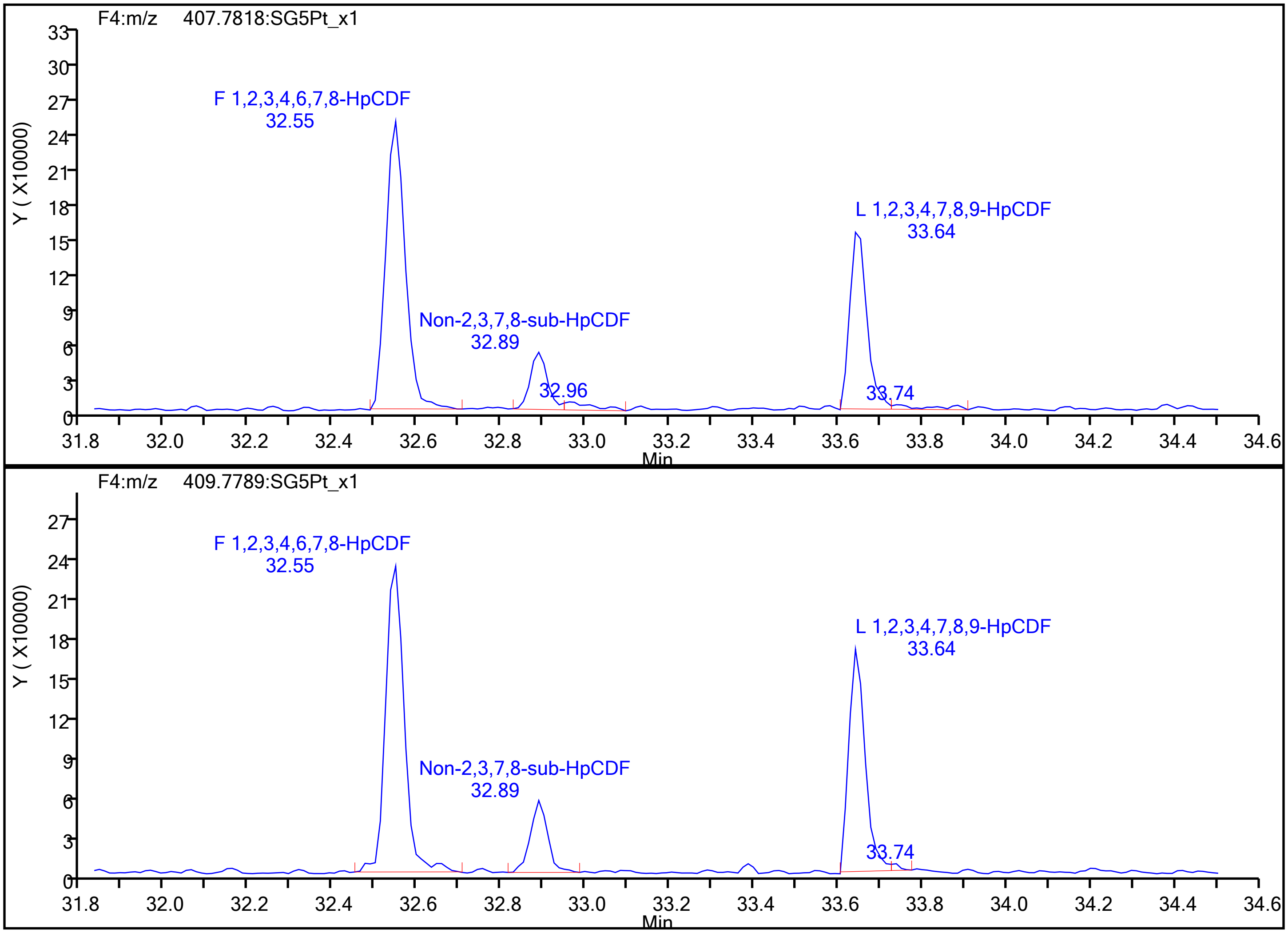

HpCDF Interference Mass

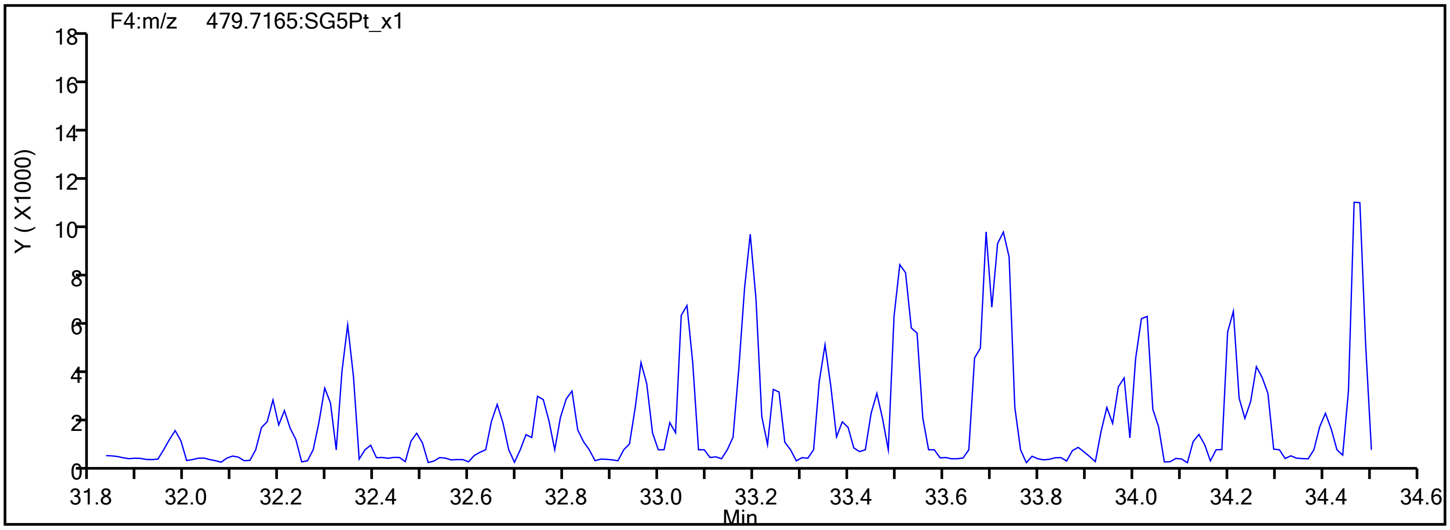

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

HpCDD

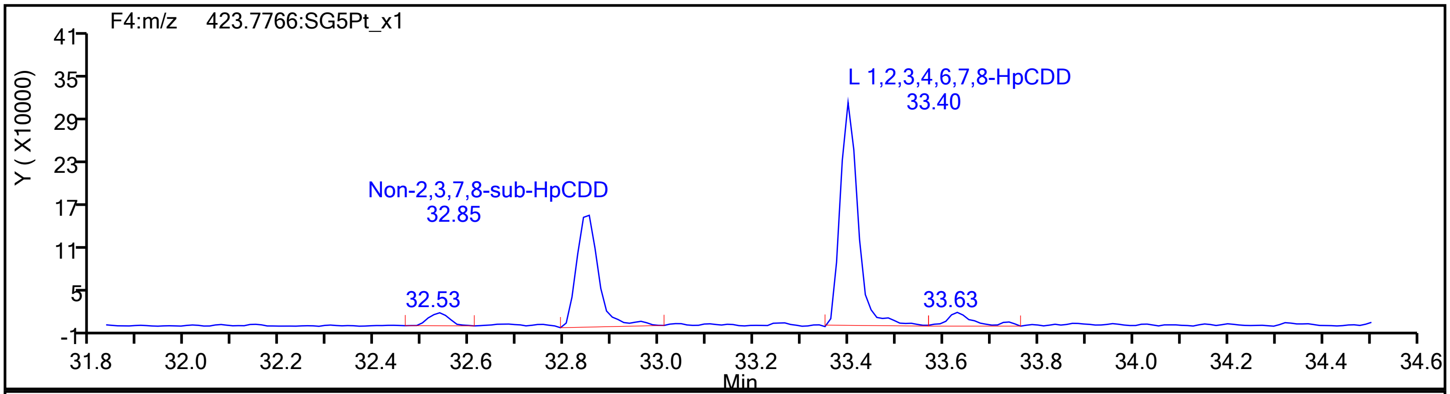

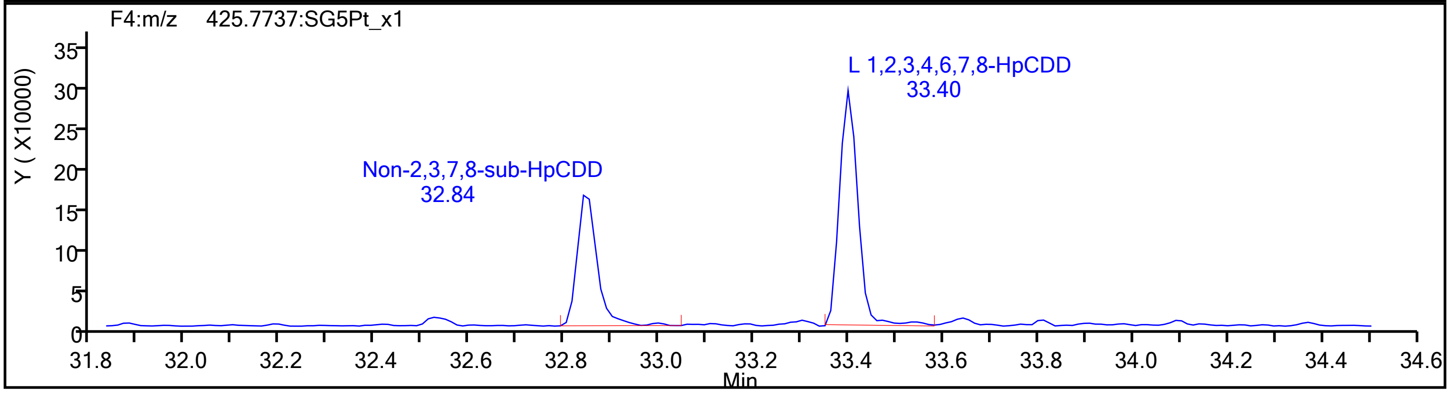

HpCDD Standards

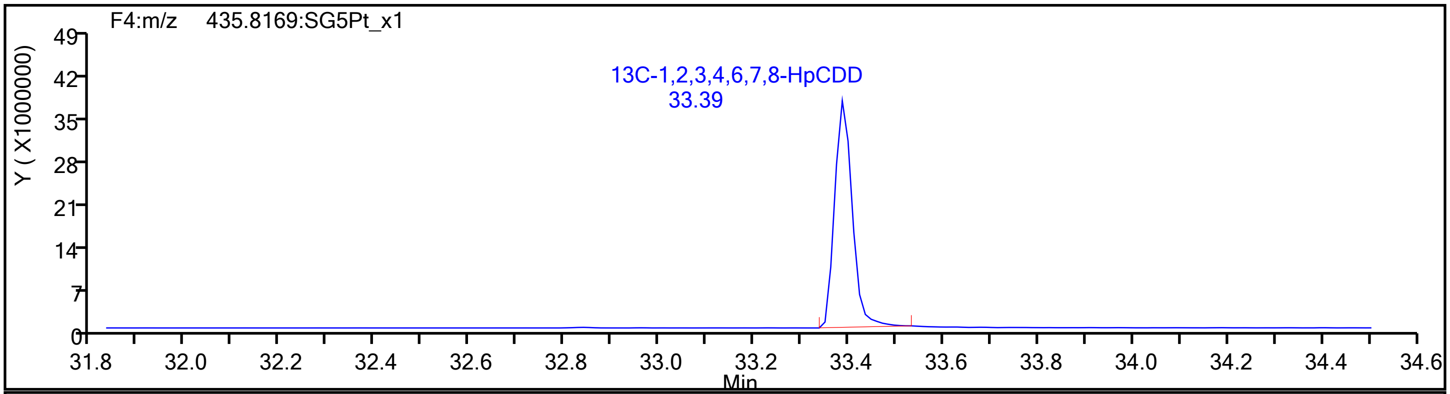

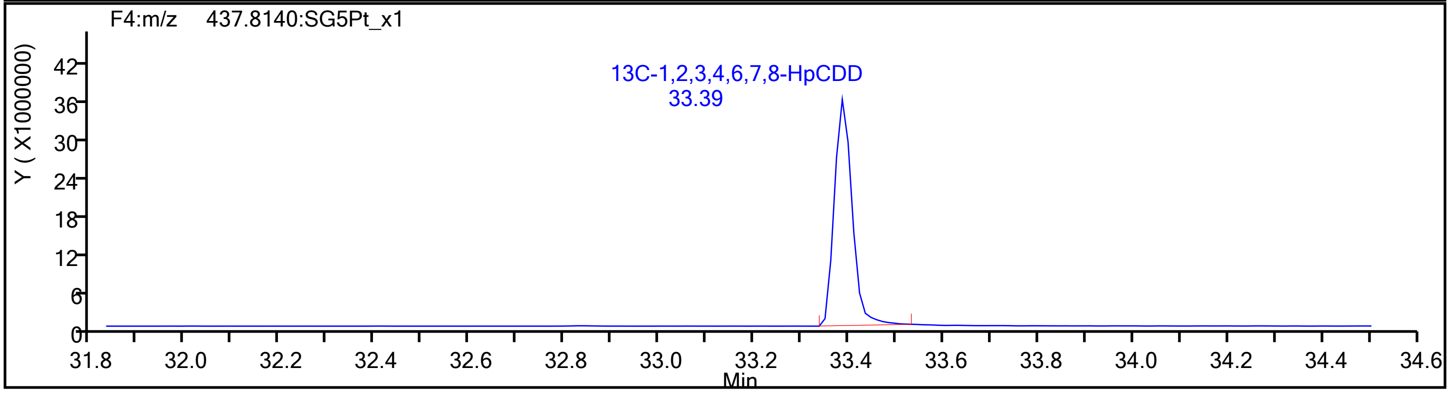

Report Date: 13-Oct-2020 11:30:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

OCDF

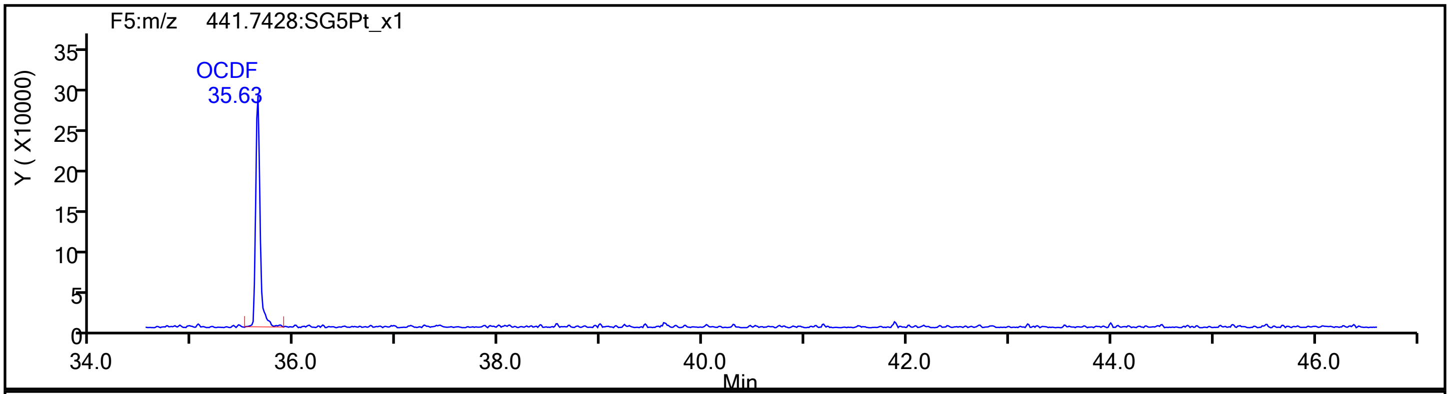

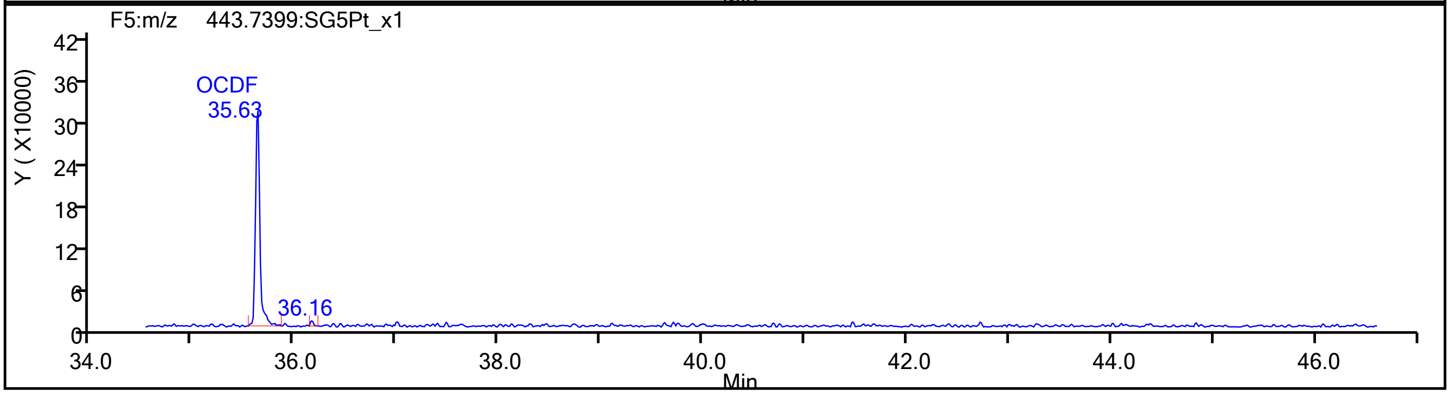

OCDF Standards

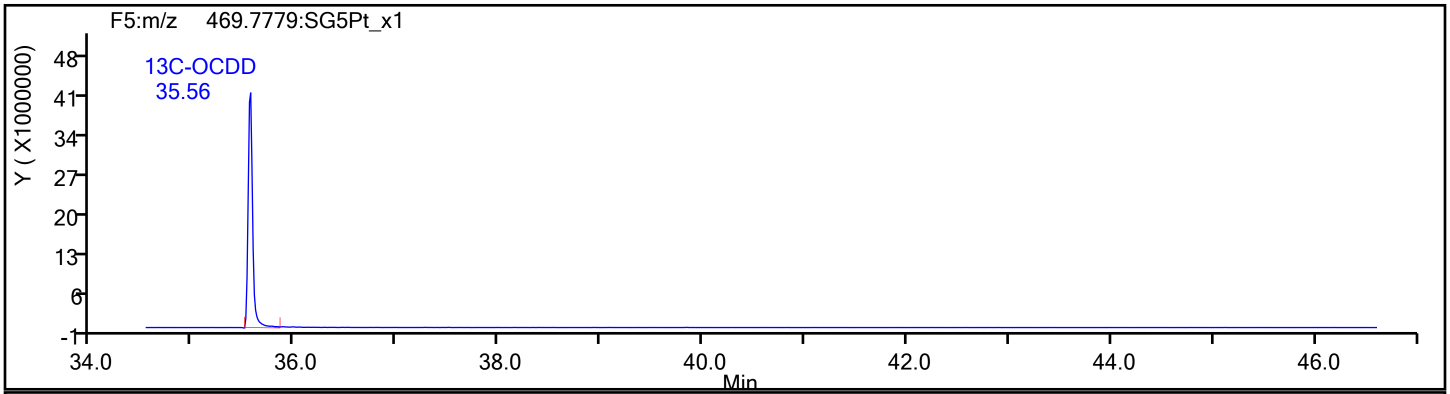

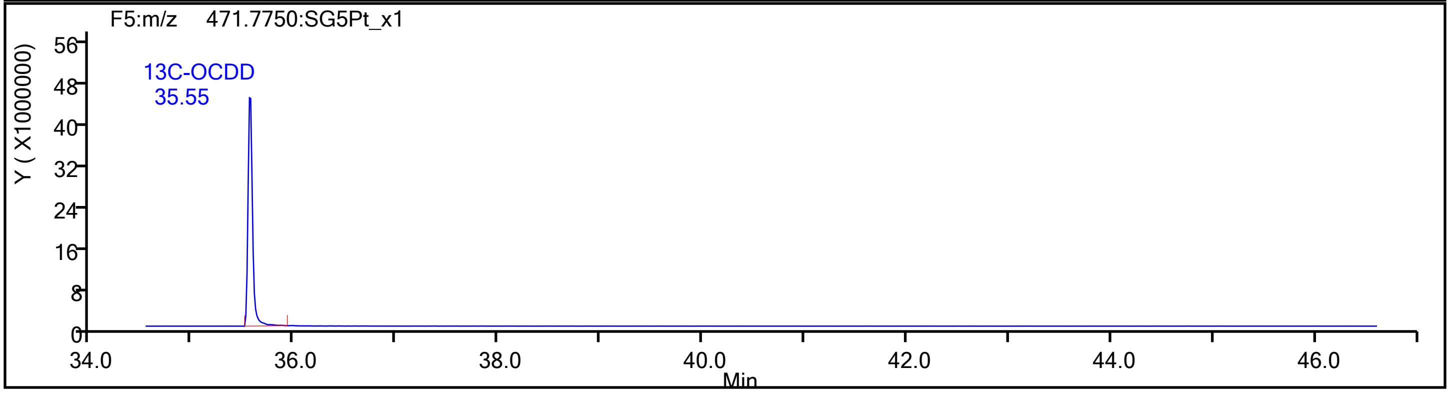

Report Date: 13-Oct-2020 11:30:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d

Injection Date: 09-Oct-2020 03:28:10
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482
Sample Line#: 11
Column Type:
Column Dia:

OCDF

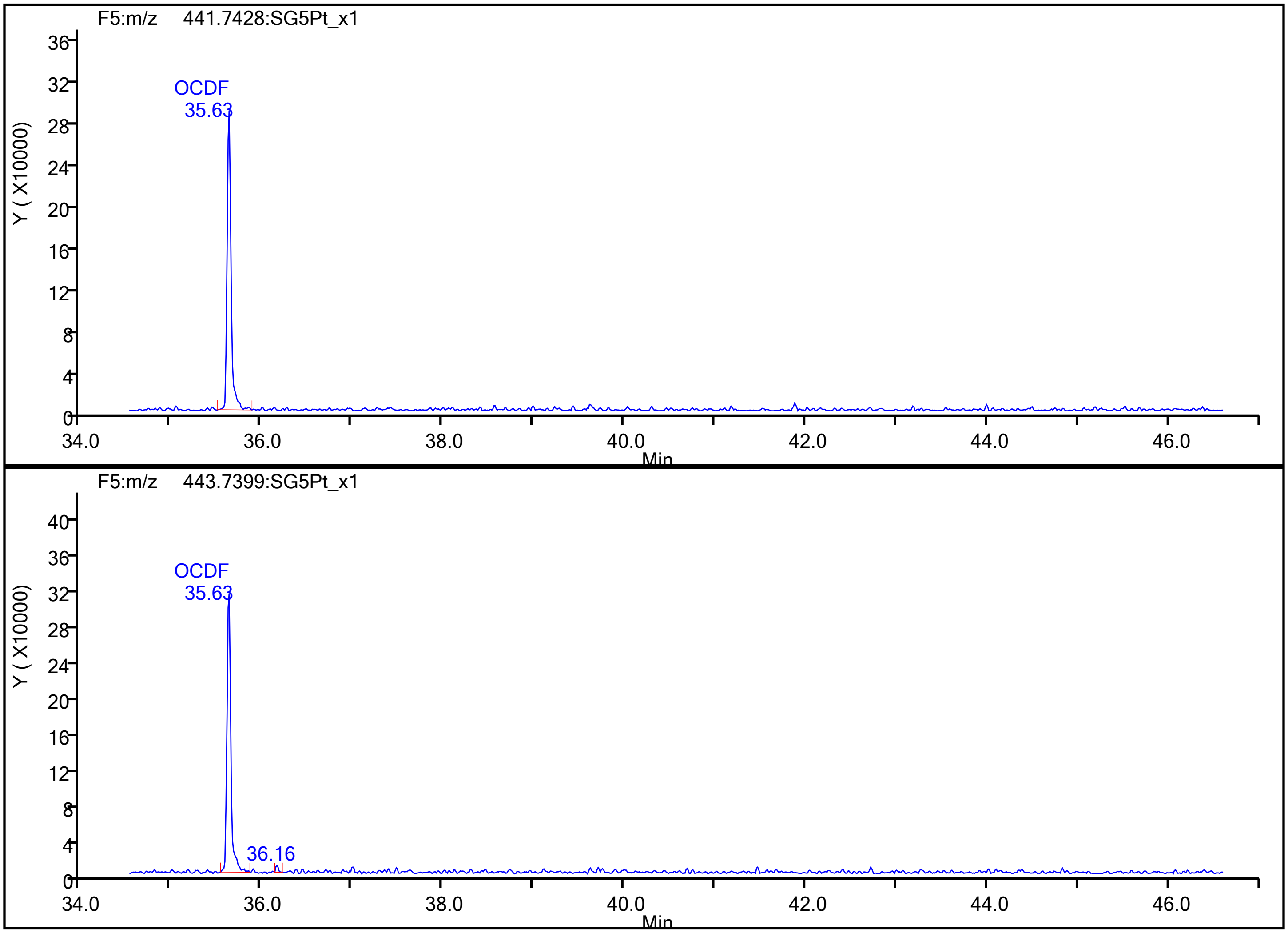

OCDF Interference Mass

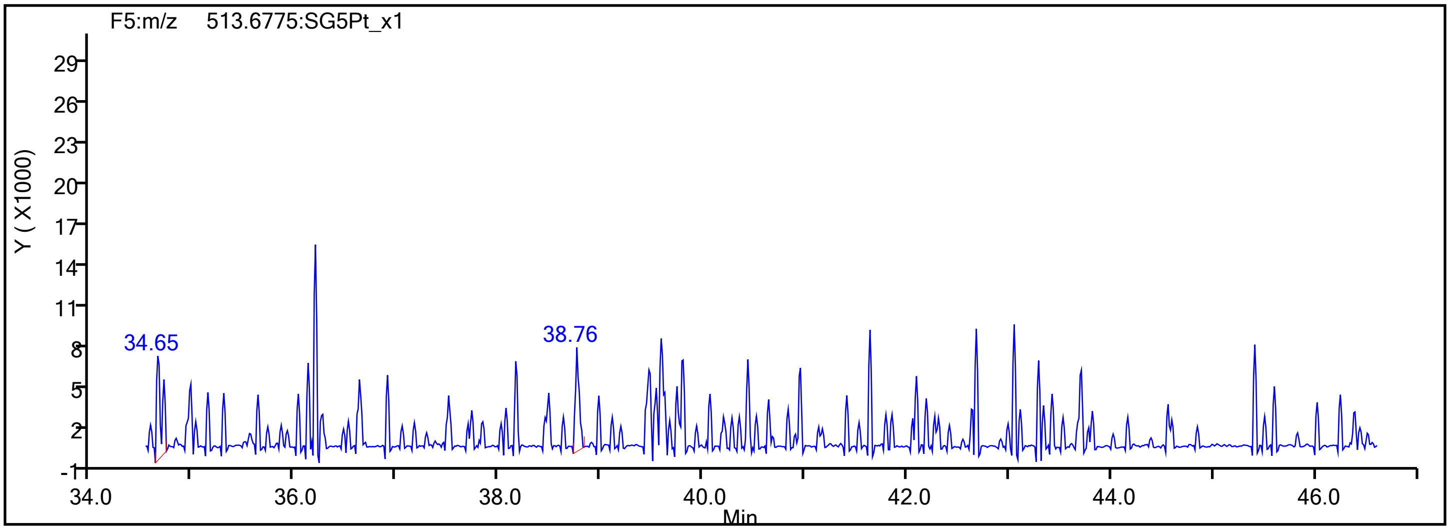

Report Date: 13-Oct-2020 11:30:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

OCDD

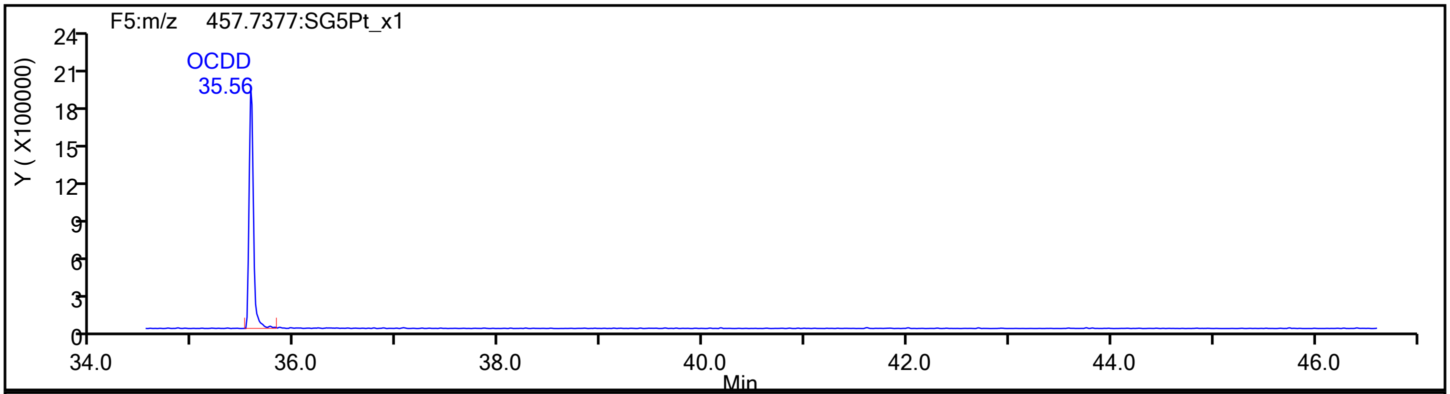

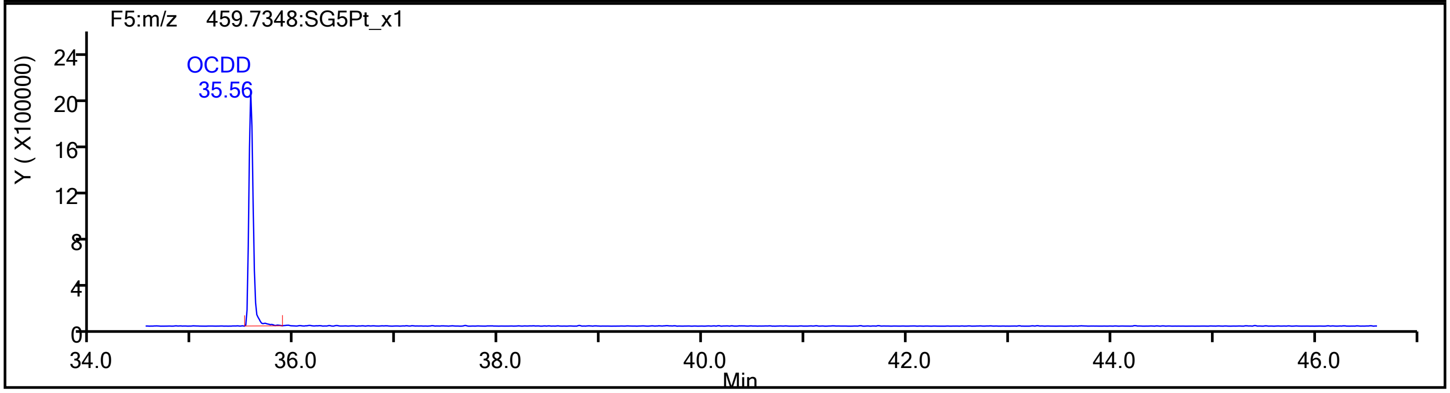

OCDD Standards

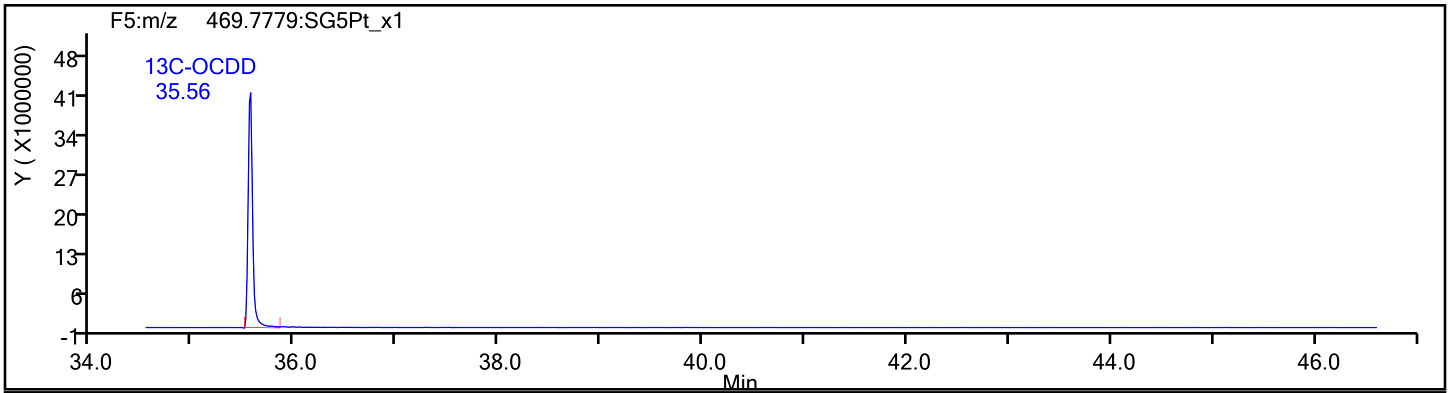

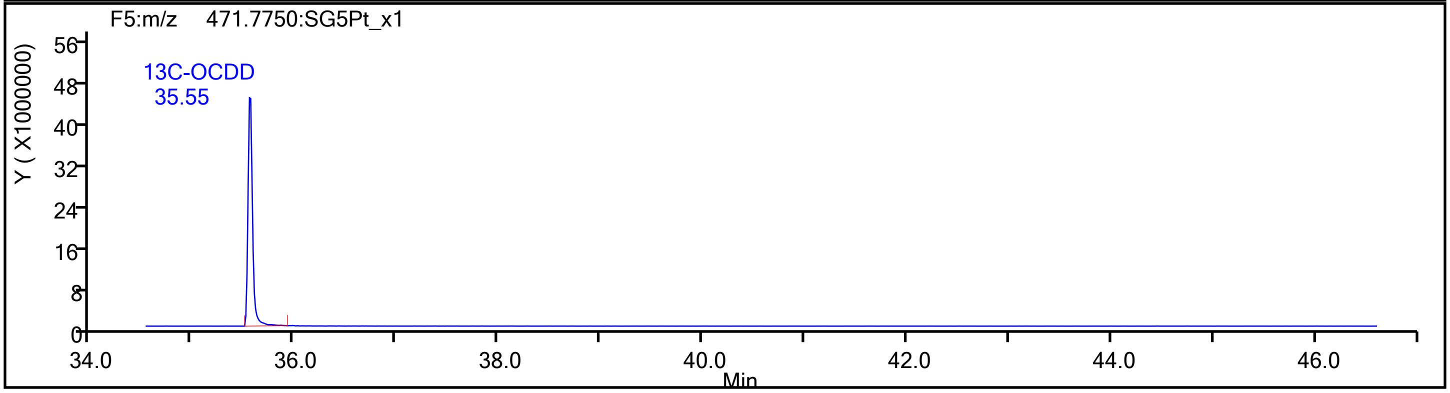

Report Date: 13-Oct-2020 11:30:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d		
Injection Date:	09-Oct-2020 03:28:10	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	420482	Sample Line#:	11
Column Type:		Column Dia:	

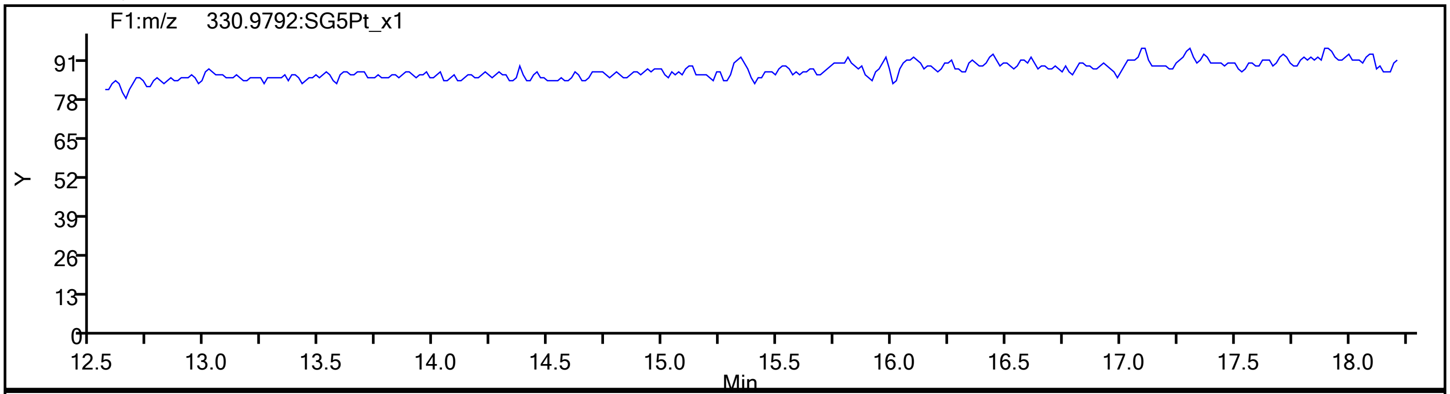

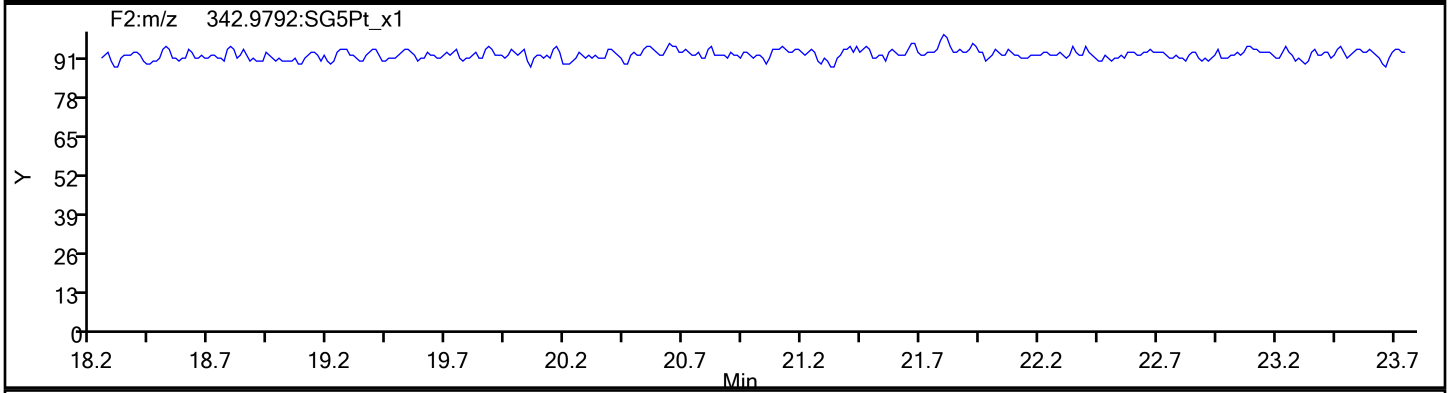

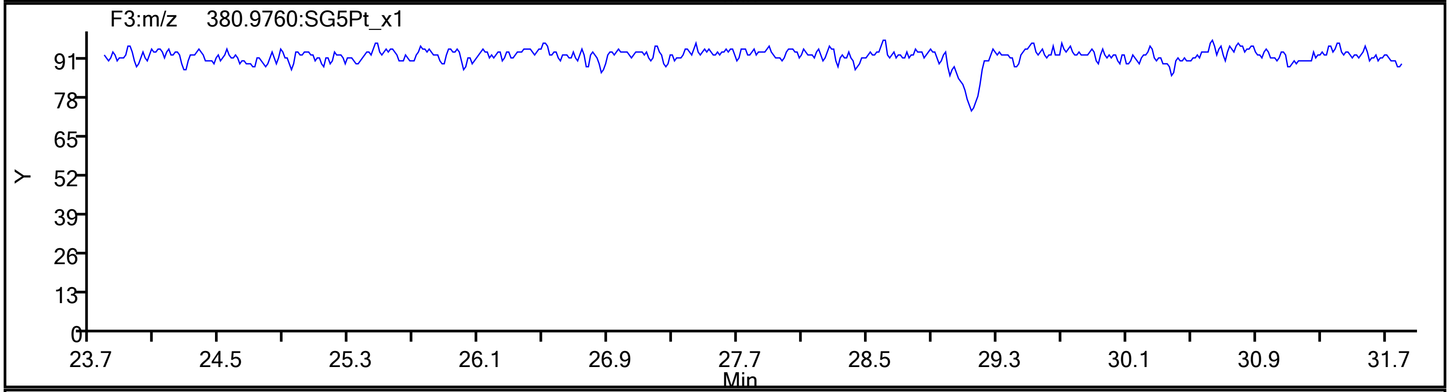

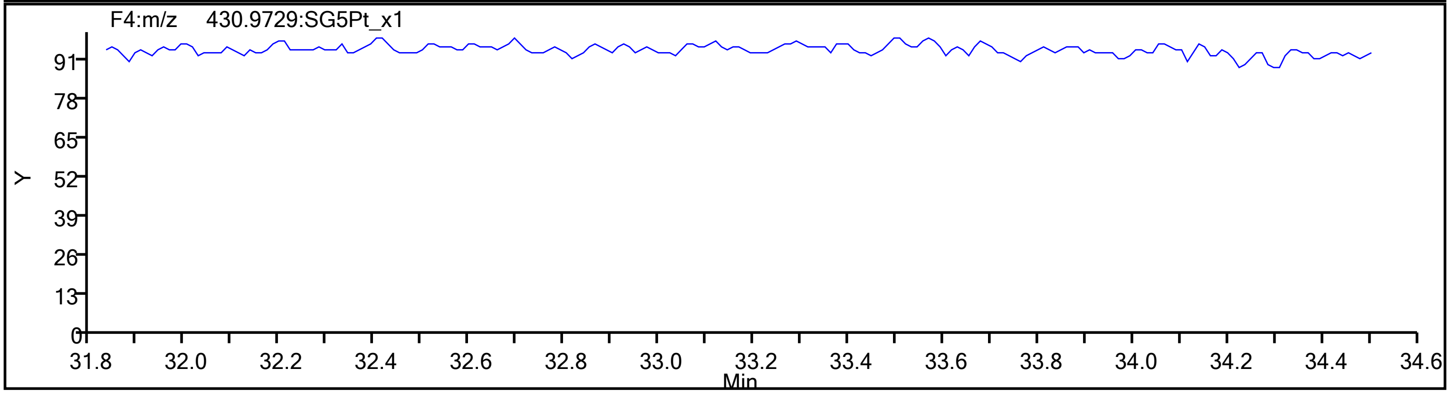

Report Date: 13-Oct-2020 11:30:50

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_11.d
Injection Date: 09-Oct-2020 03:28:10
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 420482
Sample Line#: 11
Column Type:
Column Dia:

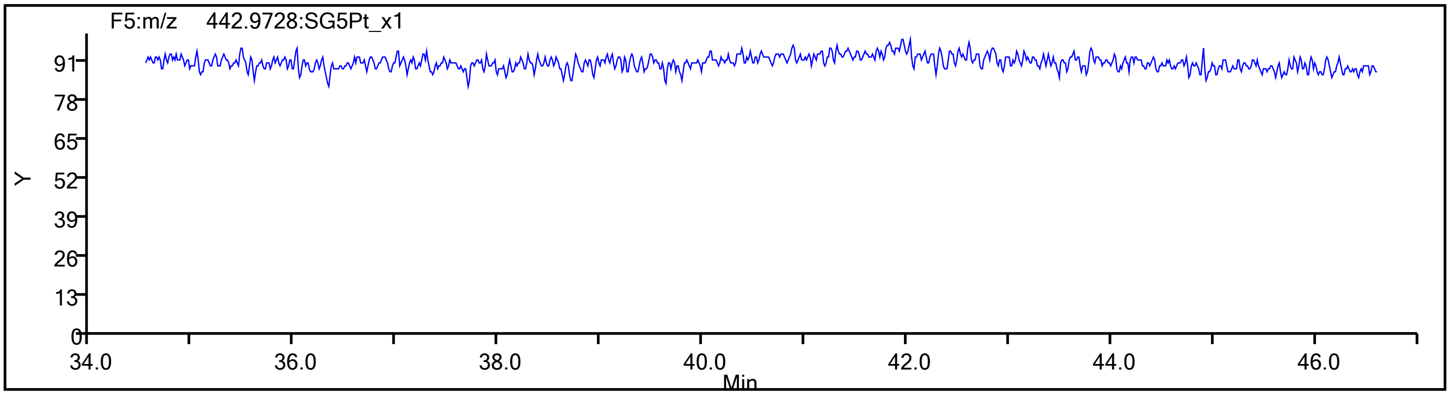

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#1-valve-2-1 RA
Lab Sample ID: 320-65130-1 RA
Matrix: Water
Lab File ID: 13OC20A11D2_007.d
Analysis Method: 1613B
Date Collected: 09/11/2020 12:30
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1042.8(mL)
Date Analyzed: 10/13/2020 23:32
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 421876
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	230	B	9.6	1.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	85		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	119		35-197

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_007.d
Lims ID: 320-65130-A-1-A
Client ID: 11215702-Tank#1-valve-2-1
Sample Type: Client
Inject. Date: 13-Oct-2020 23:32:19 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:34:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.929	77697298	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.054	103896604	0.81	1.5708	85.1	85.1	0.3445	0.3445	85.13	
2,3,7,8-TCDF	16.081	12175359	0.80	0.9943	11.8	11.8	0.0583	0.0583		
D 13C-2,3,7,8-TCDD	14.682	62114779	0.82	0.9834	81.3	81.3	0.6525	0.6525	81.30	
2,3,7,8-TCDD	14.695	3480800	0.71	1.2822	4.370	4.370	0.1814	0.1814		
$ 37Cl4-2,3,7,8-TCDD	14.695	36794318		0.9945	47.6	47.6	0.0766	0.0766	119	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_007.d				
Lims ID:	320-65130-A-1-A				
Client ID:	11215702-Tank#1-valve-2-1				
Sample Type:	Client				
Inject. Date:	13-Oct-2020 23:32:19	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-1-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:34:39		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.929	14.928	0		35090005	8824378	26633	66582	331		
333.9339	14.929	14.928	0		42607293	10712277	23507	58767	456	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.054	16.067	-1	1.075	46476046	10937047	28048	70120	390		
317.9389	16.054	16.067	-1	1.075	57420558	13718377	14242	35605	963	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.081	16.081	0	1.002	5427271	1263690	2672	6680	473		
305.8987	16.067	16.081	-1	1.001	6748088	1612598	3043	7607	530	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.682	14.681	0	0.983	28058219	7216589	26633	66582	271		
333.9339	14.682	14.681	0	0.983	34056560	8888581	23507	58767	378	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.695	14.709	-1	1.001	1451134	325544	7107	17767	46		
321.8936	14.695	14.709	-1	1.001	2029666	465960	7879	19697	59	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.695	14.709	-1	0.984	36794318	9392743	5954	14885	1578		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_007.d
Injection Date: 13-Oct-2020 23:32:19
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-1
Worklist#: 421876
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

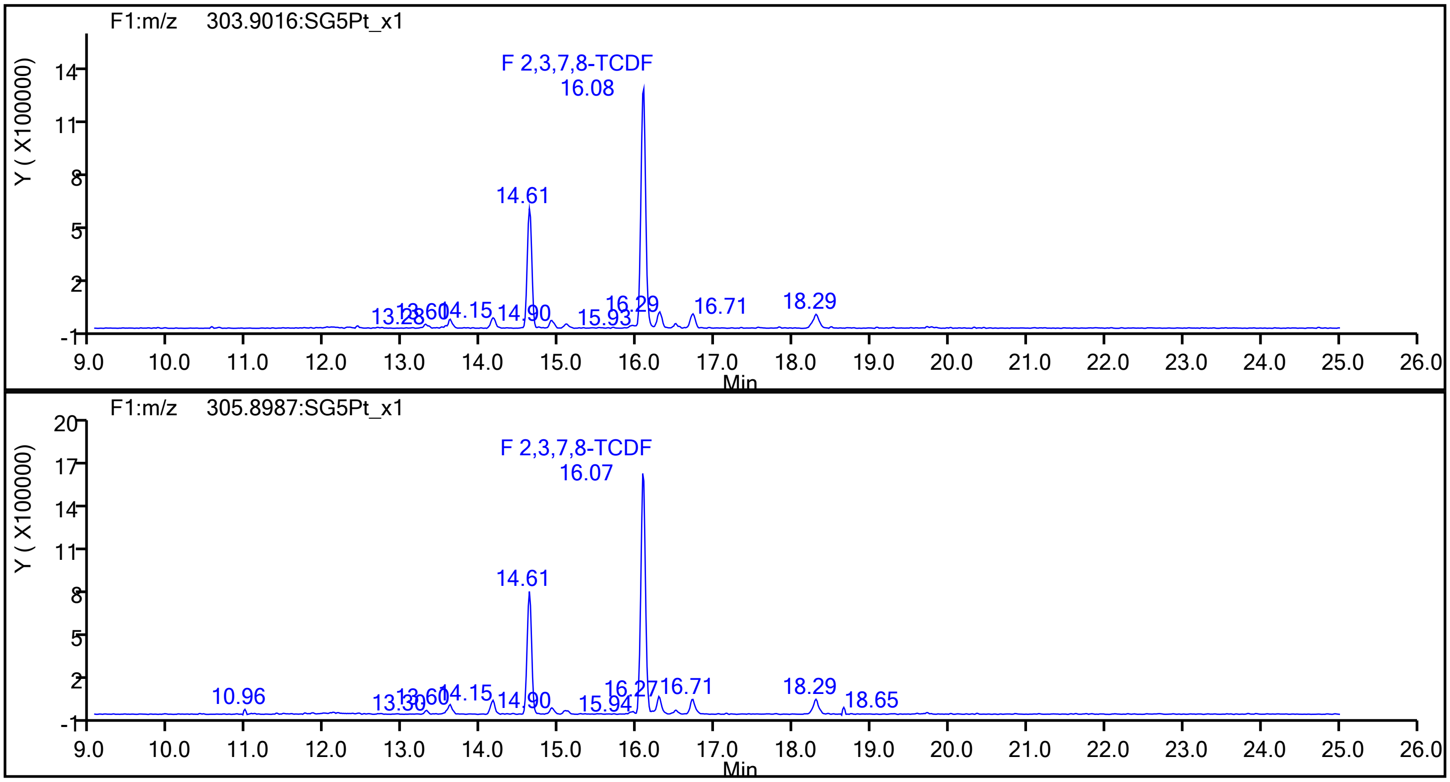

TCDF Standards

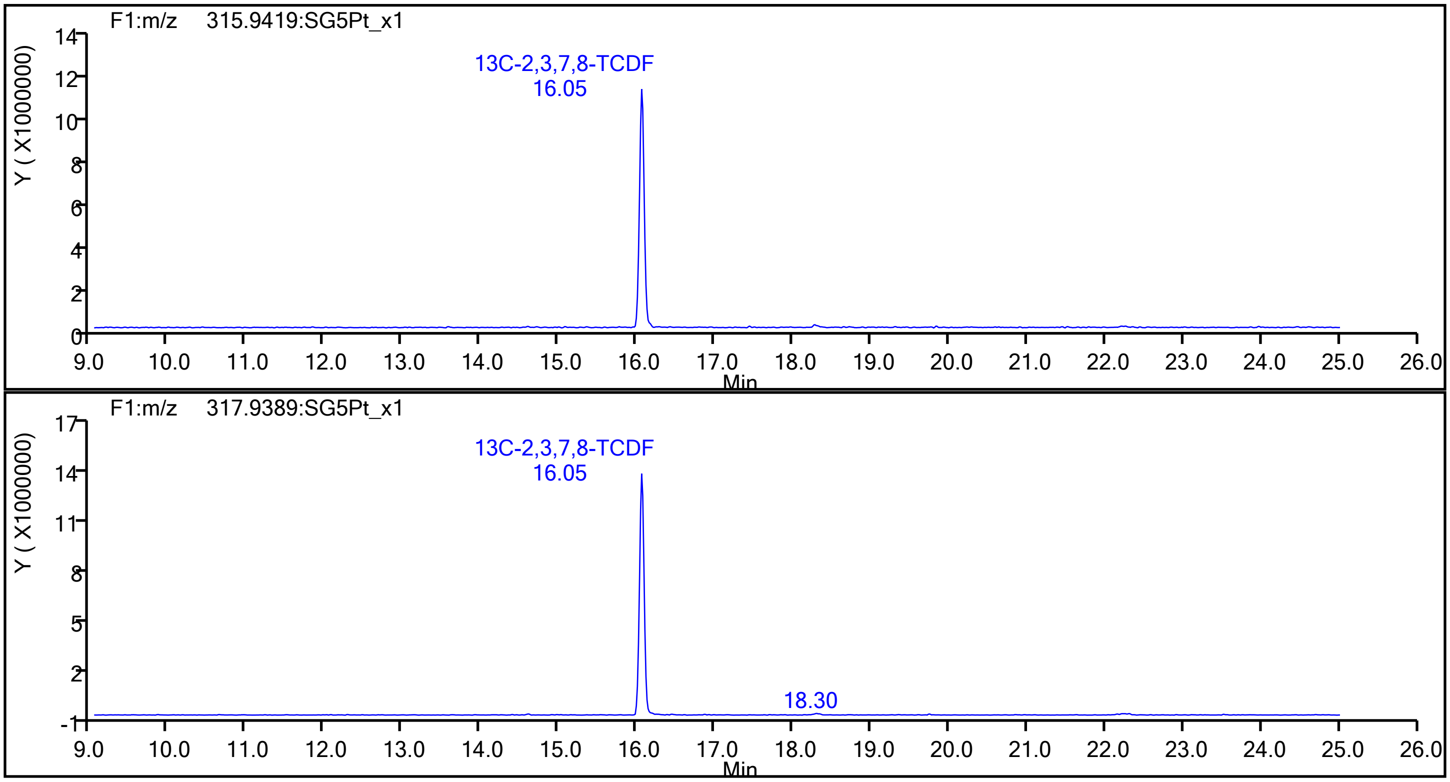

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_007.d

Injection Date:	13-Oct-2020 23:32:19	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	421876	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

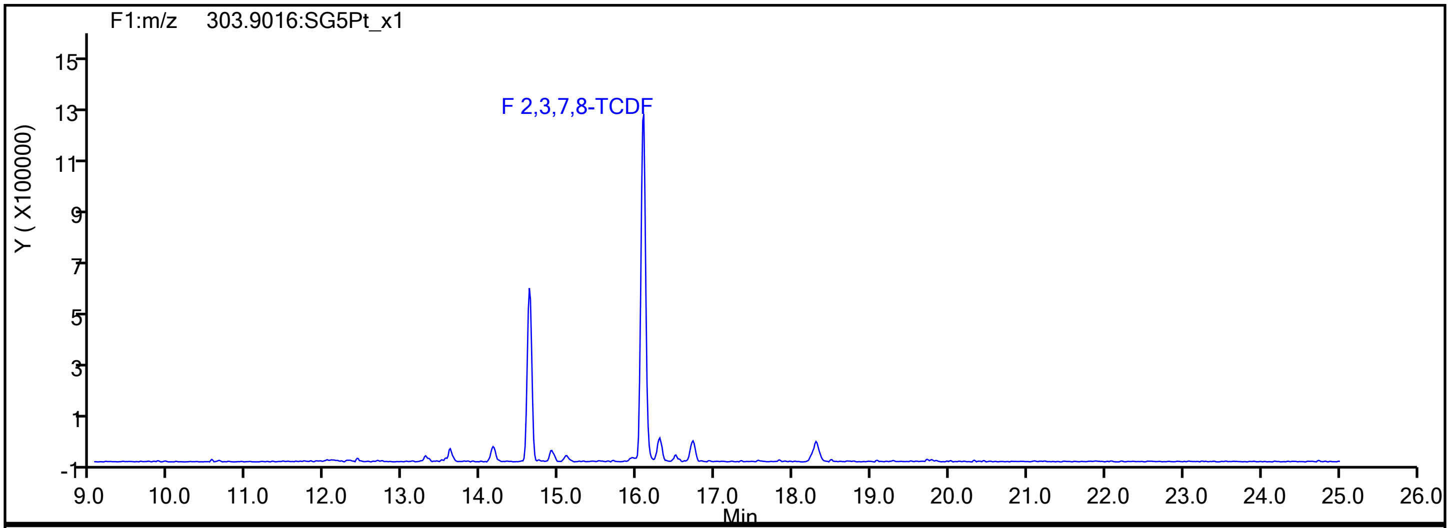

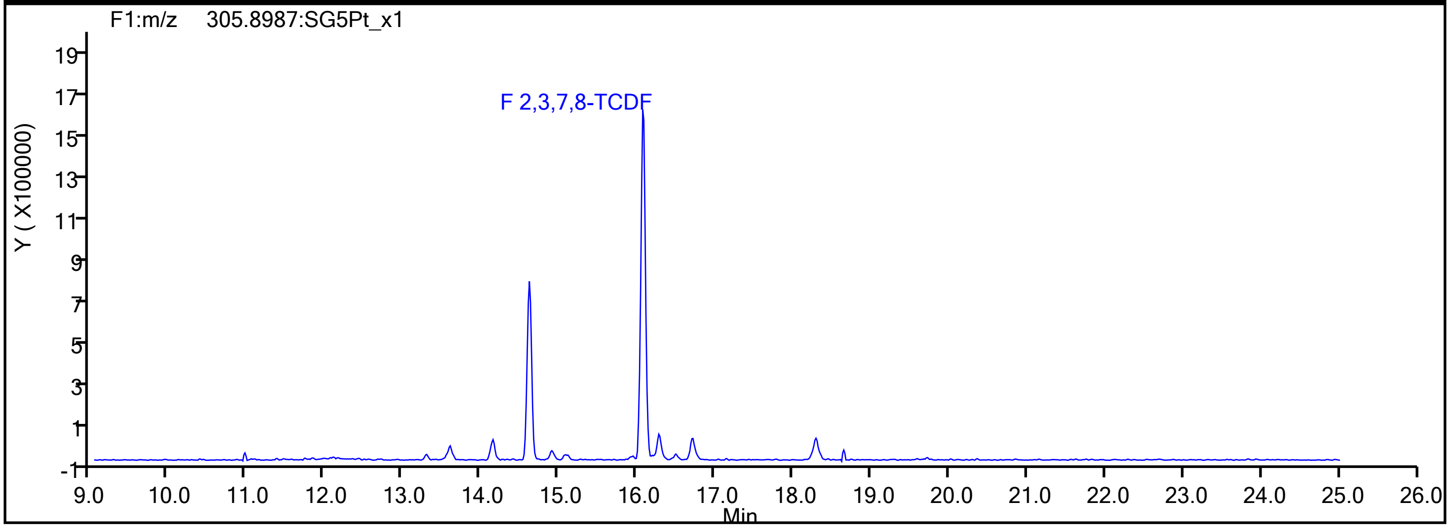

TCDF Interference Mass

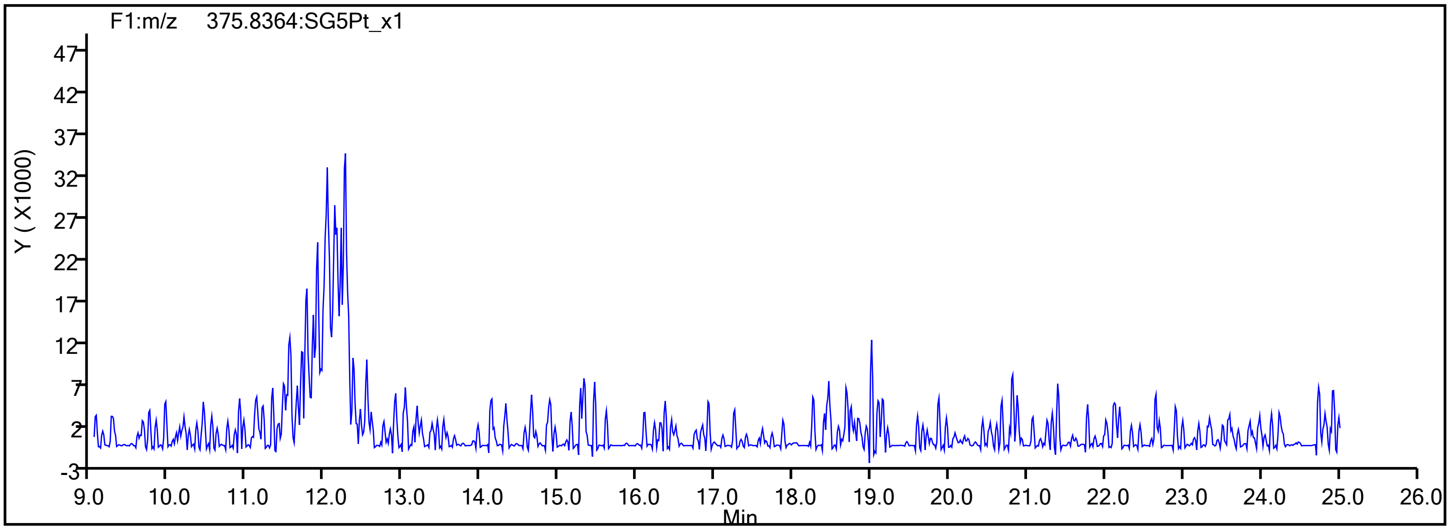

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_007.d

Injection Date: 13-Oct-2020 23:32:19

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-1

Worklist#: 421876

Sample Line#: 7

Column Type: DB-225

Column Dia: 0.32 mm

37Cl4-TCDD

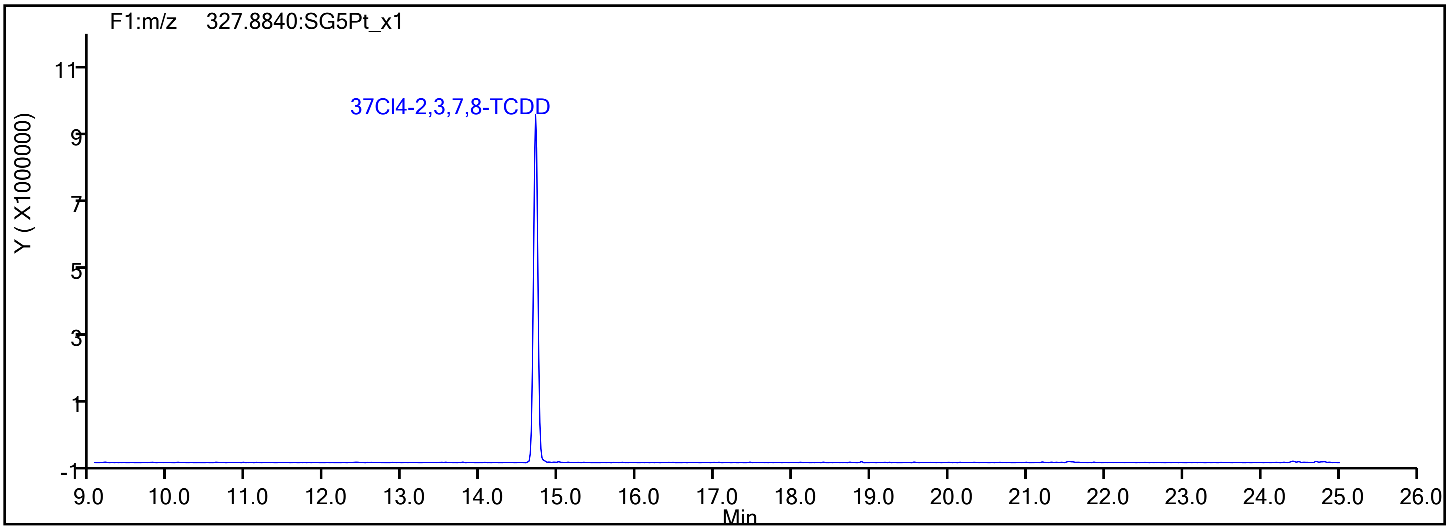

37Cl4-TCDD Standards

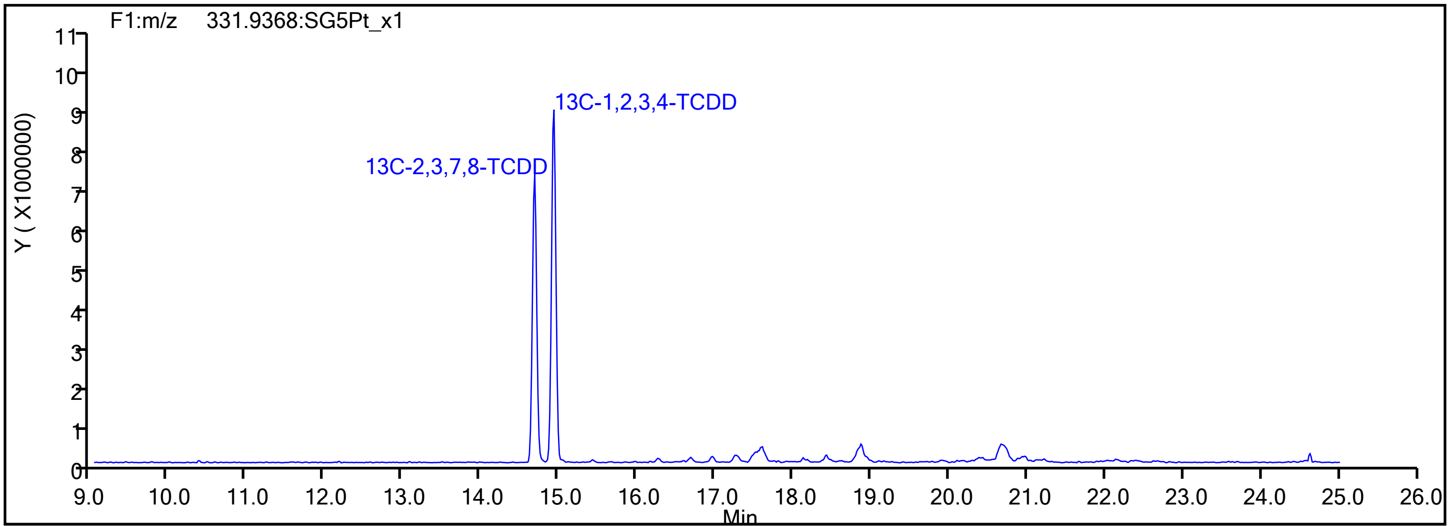

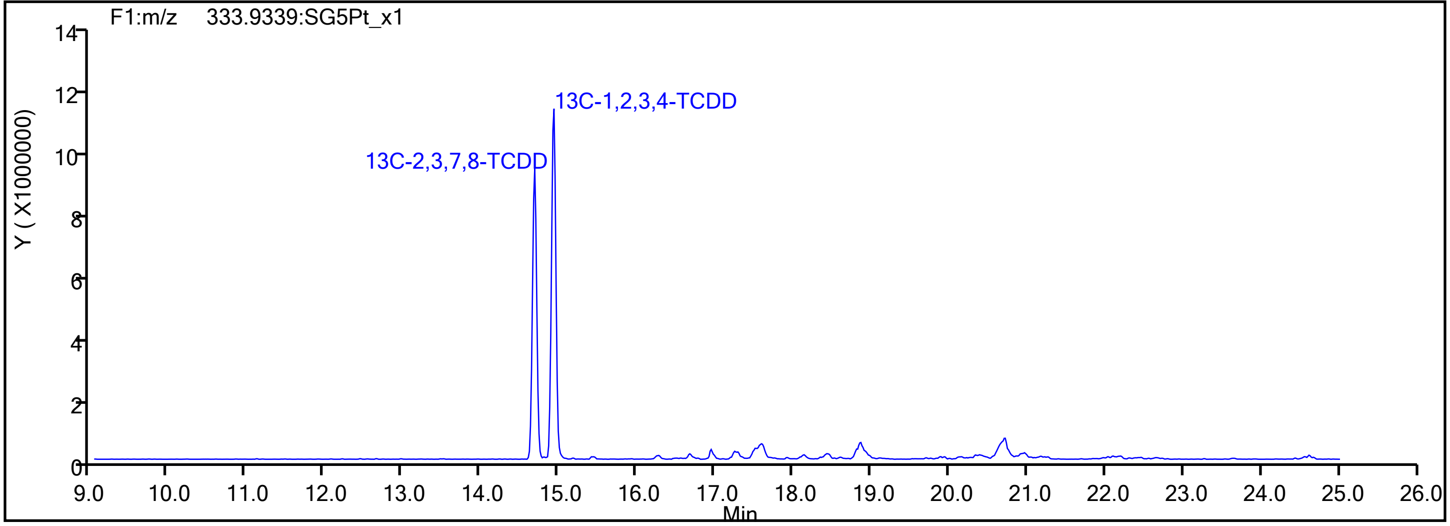

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_007.d		
Injection Date:	13-Oct-2020 23:32:19	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-1		
Worklist#:	421876	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

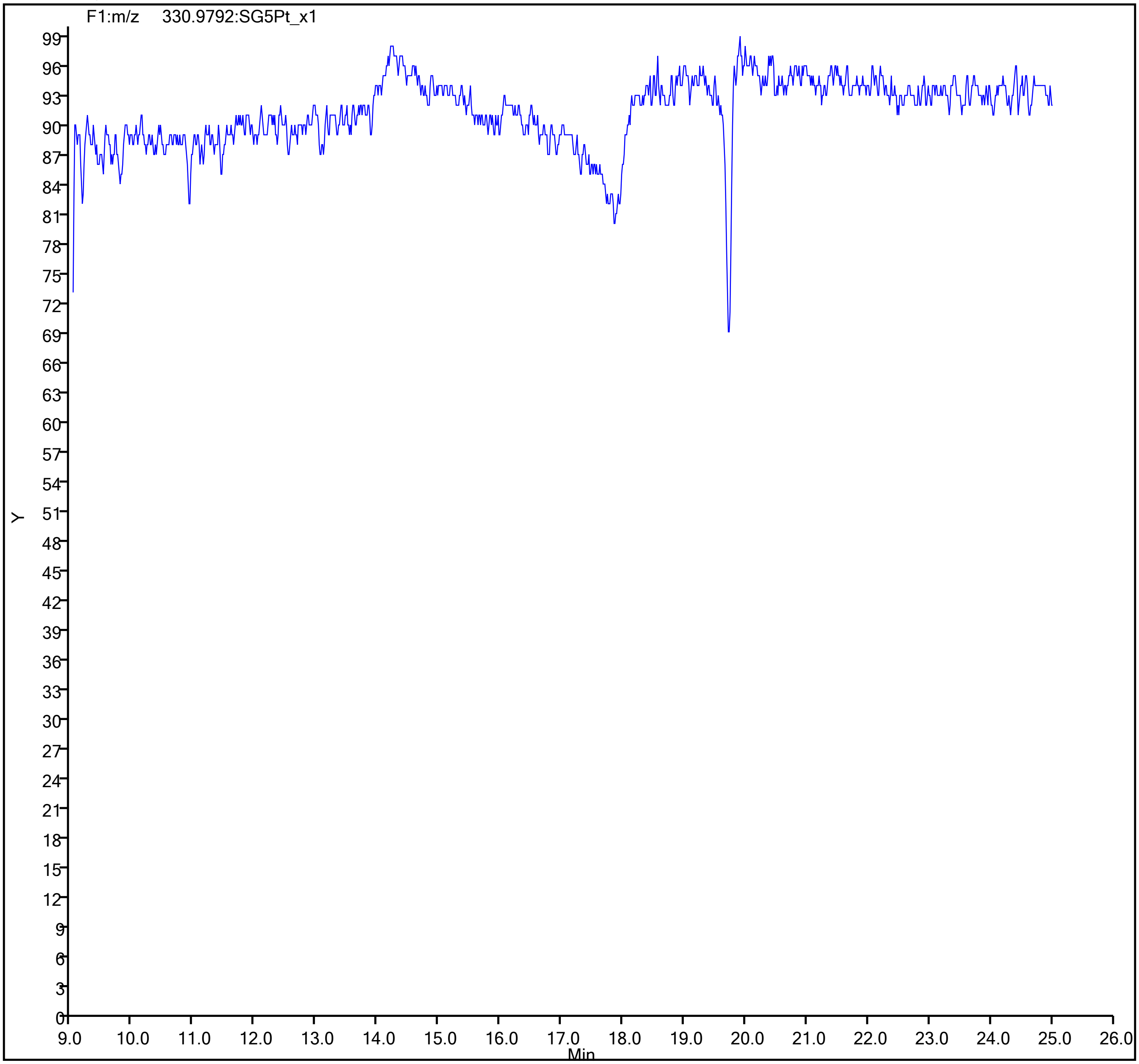

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-3-1	Lab Sample ID: 320-65130-2
Matrix: Water	Lab File ID: 08OC20A3D5_12.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1047.9(mL)	Date Analyzed: 10/09/2020 04:15
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	170		9.5	1.0
40321-76-4	1,2,3,7,8-PeCDD	4.1	J B	48	0.55
57117-41-6	1,2,3,7,8-PeCDF	20	J B	48	0.56
57117-31-4	2,3,4,7,8-PeCDF	13	J B	48	0.64
39227-28-6	1,2,3,4,7,8-HxCDD	3.4	J q B	48	0.75
57653-85-7	1,2,3,6,7,8-HxCDD	3.1	J B	48	0.80
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J B	48	0.71
70648-26-9	1,2,3,4,7,8-HxCDF	34	J B	48	0.66
57117-44-9	1,2,3,6,7,8-HxCDF	11	J B	48	0.68
72918-21-9	1,2,3,7,8,9-HxCDF	3.7	J B	48	0.51
60851-34-5	2,3,4,6,7,8-HxCDF	3.3	J q B	48	0.72
35822-46-9	1,2,3,4,6,7,8-HpCDD	19	J B	48	0.34
67562-39-4	1,2,3,4,6,7,8-HpCDF	15	J B	48	0.21
55673-89-7	1,2,3,4,7,8,9-HpCDF	7.8	J B	48	0.22
3268-87-9	OCDD	240	B	95	0.55
39001-02-0	OCDF	14	J B	95	0.31
41903-57-5	Total TCDD	190	q B	9.5	1.0
30402-14-3	Total TCDF	870	q B	9.5	2.5
36088-22-9	Total PeCDD	4.1	J B	48	0.55
30402-15-4	Total PeCDF	47	J B	48	0.60
34465-46-8	Total HxCDD	9.2	J q B	48	0.75
55684-94-1	Total HxCDF	57	q B	48	0.64
37871-00-4	Total HpCDD	33	J B	48	0.34
38998-75-3	Total HpCDF	26	J B	48	0.22

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-3-1	Lab Sample ID: 320-65130-2
Matrix: Water	Lab File ID: 08OC20A3D5_12.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1047.9(mL)	Date Analyzed: 10/09/2020 04:15
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		25-164
89059-46-1	13C-2,3,7,8-TCDF	79		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	80		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	72		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	84		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	88		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	75		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	76		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	77		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	82		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	85		26-138
114423-97-1	13C-OCDD	95		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	97		35-197

Report Date: 13-Oct-2020 11:36:15 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Lims ID: 320-65130-A-2-A
Client ID: 11215702-Tank#1-valve-3-1
Sample Type: Client
Inject. Date: 09-Oct-2020 04:15:46 ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-2-A 320-65130-A-2-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:36:15 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:56:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	280469088	0.78	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	330079620	0.81	1.4844	79.3	79.3	0.2571	0.2571	79.28	
2,3,7,8-TCDF	15.492	83468071	0.82	0.9534	26.5	26.5	0.1309	0.1309		
A Non-2,3,7,8-sub-TCDF	15.227	59394966	0.77	0.9534	19.0	18.9	0.1309	11.5		RQMa
S Total TCDF					45.5	45.4	0.1309	0.1309		RQ
D 13C-2,3,7,8-TCDD	16.081	243041044	0.77	1.0875	79.7	79.7	0.2277	0.2277	79.69	
2,3,7,8-TCDD	16.097	22163171	0.73	1.0205	8.936	8.936	0.0546	0.0546		M
$ 37Cl4-2,3,7,8-TCDD	16.097	121872359		1.1216	38.7	38.7	0.1151	0.1151	96.85	
A Non-2,3,7,8-sub-TCDD	15.620	2096791	0.77	1.0205	0.8575	0.8454	0.0546	0.7420		RQ
S Total TCDD					9.794	9.782	0.0546	0.0546		RQ
D 13C-1,2,3,7,8-PeCDF	19.686	280897883	1.56	1.3943	71.8	71.8	0.1912	0.1912	71.83	
1,2,3,7,8-PeCDF	19.714	3104370	1.50	1.0794	1.024	1.024	0.0291	0.0291		M
D 13C-2,3,4,7,8-PeCDF	20.805	262960148	1.56	1.3370	70.1	70.1	0.1995	0.1995	70.13	
2,3,4,7,8-PeCDF	20.832	1961094	1.53	1.0966	0.6801	0.6801	0.0335	0.0335		
A F1 PeCDFs	17.730						0.0157	0.0395		U
A Non-2,3,7,8-sub-PeCDF	20.349	2306991	1.46	1.0880	0.7798	0.7798	0.0312	0.3914		
S Total PeCDF					2.484	2.484	0.0313	0.0313		
D 13C-1,2,3,7,8-PeCDD	21.418	190201398	1.56	0.8475	80.0	80.0	0.0899	0.0899	80.01	
1,2,3,7,8-PeCDD	21.445	469480	1.54	1.1397	0.2166	0.2166	0.0289	0.0289		M
A Non-2,3,7,8-sub-PeCDD	20.518						0.0289	0.0289		
S Total PeCDD					0.2166	0.2166	0.0289	0.0289		
D 13C-1,2,3,4,7,8-HxCDF	26.719	215584492	0.54	1.3065	76.6	76.6	0.3743	0.3743	76.59	
1,2,3,4,7,8-HxCDF	26.746	4786139	1.24	1.2552	1.769	1.769	0.0343	0.0343		
D 13C-1,2,3,6,7,8-HxCDF	26.986	230475250	0.54	1.4213	75.3	75.3	0.3441	0.3441	75.27	
1,2,3,6,7,8-HxCDF	26.999	1575398	1.16	1.2102	0.5648	0.5648	0.0354	0.0354		
D 13C-2,3,4,6,7,8-HxCDF	28.544	217285743	0.53	1.3142	76.7	76.7	0.3721	0.3721	76.74	
2,3,4,6,7,8-HxCDF	28.557	463080	1.24	1.2182	0.1911	0.1749	0.0377	0.0377		RQM
D 13C-1,2,3,7,8,9-HxCDF	30.381	216793046	0.53	1.3204	76.2	76.2	0.3704	0.3704	76.21	
1,2,3,7,8,9-HxCDF	30.408	517175	1.40	1.2319	0.1936	0.1936	0.0265	0.0265		
A Non-2,3,7,8-sub-HxCDF	27.465	747821	1.24	1.2289	0.3026	0.2766	0.0329	0.1214		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					3.021	2.979	0.0335	0.0335		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.075	215442523	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.036	156541986	1.24	0.8660	83.9	83.9	0.3509	0.3509	83.90	a
1,2,3,4,7,8-HxCDD	29.063	350181	1.24	1.2535	0.1968	0.1785	0.0392	0.0392		RQ
D 13C-1,2,3,6,7,8-HxCDD	29.316	186927564	1.24	0.9827	88.3	88.3	0.3093	0.3093	88.29	a
1,2,3,6,7,8-HxCDD	29.329	338898	1.30	1.1117	0.1631	0.1631	0.0417	0.0417		M
1,2,3,7,8,9-HxCDD	30.101	314272	1.33	1.2852	0.1424	0.1424	0.0371	0.0371		M
A Non-2,3,7,8-sub-HxCDD	27.931						0.0392	0.0519		RQU
S Total HxCDD					0.5023	0.4839	0.0394	0.0394		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	163085264	0.46	0.9410	80.4	80.4	1.262	1.262	80.44	
1,2,3,4,6,7,8-HpCDF	32.547	1847132	1.18	1.4783	0.7661	0.7661	0.0110	0.0110		
D 13C-1,2,3,4,7,8,9-HpCDF	33.629	160112528	0.45	0.8751	84.9	84.9	1.357	1.357	84.93	
1,2,3,4,7,8,9-HpCDF	33.641	897765	0.97	1.3784	0.4068	0.4068	0.0117	0.0117		
A Non-2,3,7,8-sub-HpCDF	33.100	478912	1.09	1.4284	0.2075	0.2075	0.0113	0.2075		
S Total HpCDF					1.380	1.380	0.0113	0.0113		
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	159586092	1.04	0.9049	81.9	81.9	1.266	1.266	81.86	
1,2,3,4,6,7,8-HpCDD	33.398	1722583	1.01	1.0862	0.994	0.994	0.0180	0.0180		
A Non-2,3,7,8-sub-HpCDD	33.339	1298372	0.95	1.0862	0.7490	0.7490	0.0180	0.7490		M
S Total HpCDD					1.743	1.743	0.0180	0.0180		
D 13C-OCDD	35.546	237796753	0.88	0.5783	190.9	190.9	0.4521	0.4521	95.44	
OCDF	35.630	1552772	0.81	1.7248	0.7572	0.7572	0.0164	0.0164		M
OCDD	35.558	18605048	0.90	1.2576	12.4	12.4	0.0287	0.0287		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 11:36:15 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Lims ID: 320-65130-A-2-A
Client ID: 11215702-Tank#1-valve-3-1
Sample Type: Client
Inject. Date: 09-Oct-2020 04:15:46 ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-2-A 320-65130-A-2-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:36:15 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:56:19

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		123261474	35439299	57548	143870	616		
333.9339	15.915	15.930	-1		157207614	45449550	22580	56450	2013	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	147788084	40664353	38001	95002	1070		
317.9389	15.477	15.477	0	0.972	182291536	50549387	85476	213690	591	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	37620544	10373837	18411	46027	563		
305.8987	15.492	15.507	-1	1.001	45847527	12276637	27117	67792	453	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	14.297	15.227	-56	0.924	565474	179524	18411	46027	10		
305.8987	14.297	15.227	-56	0.924	716259	207842	27117	67792	8	0.79(0.65-0.89)	
303.9016	14.524	15.227	-42	0.938	1149995	286512	18411	46027	16		
305.8987	14.539	15.227	-41	0.939	1385215	349884	27117	67792	13	0.83(0.65-0.89)	
303.9016	14.736	15.227	-29	0.952	1049307	269139	18411	46027	15		
305.8987	14.736	15.227	-29	0.952	1327801	365247	27117	67792	13	0.79(0.65-0.89)	
303.9016	14.932	15.227	-18	0.965	1669052	459716	18411	46027	25		
305.8987	14.932	15.227	-18	0.965	2231998	610567	27117	67792	23	0.75(0.65-0.89)	
303.9016	15.174	15.227	-3	0.980	15140456	4338759	18411	46027	236		
305.8987	15.174	15.227	-3	0.980	21065913	6020440	27117	67792	222	0.72(0.65-0.89)	
303.9016	15.341	15.227	7	0.991	662344	188635	18411	46027	10		
305.8987	15.341	15.227	7	0.991	1186131	245240	27117	67792	9	0.56(0.65-0.89)	
	Empc Correction				860187	244980	27117	67792	9		
303.9016	15.855	15.227	38	1.024	2337399	592149	18411	46027	32		
305.8987	15.855	15.227	38	1.024	2922333	742628	27117	67792	27	0.80(0.65-0.89)	M

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	16.051	15.227	49	1.037	405103	94877	18411	46027	5		M
305.8987	16.036	15.227	48	1.036	643248	166607	27117	67792	6	0.63(0.65-0.89)	
	Empc Correction				526107	123216	27117	67792	5		
303.9016	17.019	15.227	107	1.100	2424017	560864	18411	46027	30		
305.8987	17.004	15.227	106	1.099	2956006	670109	27117	67792	25	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.010	106113793	28476756	57548	143870	495		
333.9339	16.081	16.081	0	1.010	136927251	35772836	22580	56450	1584	0.77(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	16.097	16.097	0	1.001	9378362	2638956	7251	18127	364		
321.8936	16.097	16.097	0	1.001	12784809	3500894	7061	17652	496	0.73(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	121872359	32789263	41789	104472	785		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	14.222	15.620	-84	0.884	141670	41591	7251	18127	6		
	Empc Correction				111628	32913	7251	18127	5		
321.8936	14.222	15.620	-84	0.884	144972	42745	7061	17652	6	0.98(0.65-0.89)	
319.8965	16.399	15.620	47	1.020	752080	163734	7251	18127	23		
321.8936	16.399	15.620	47	1.020	1088111	259256	7061	17652	37	0.69(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	171307333	34565506	52310	130775	661		
353.8970	19.686	19.700	-1	1.237	109590550	21967942	33971	84927	647	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.714	19.727	-1	1.001	1861633	370097	3306	8265	112		M
341.8567	19.714	19.727	-1	1.001	1242737	247165	3807	9517	65	1.50(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	160126644	29641784	52310	130775	567		
353.8970	20.805	20.818	-1	1.307	102833504	18723954	33971	84927	551	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.846	-1	1.001	1187127	242486	3306	8265	73		
341.8567	20.818	20.846	-2	1.001	773967	151071	3807	9517	40	1.53(1.32-1.78)	
A F1 PeCDFs											U
339.8597	17.397	17.730	-20	0.884	70806	9198	1495	3737	6		
341.8567	17.276	17.730	-27	0.878	46062	7707	2093	5232	4	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	18.596	20.349	-105	0.945	671622	139194	3306	8265	42		
341.8567	18.596	20.349	-105	0.945	486354	102954	3807	9517	27	1.38(1.32-1.78)	
339.8597	20.150	20.349	-12	1.024	427063	86543	3306	8265	26		
341.8567	20.164	20.349	-11	1.024	298048	56363	3807	9517	15	1.43(1.32-1.78)	
339.8597	21.104	20.349	45	1.072	268797	41788	3306	8265	13		
341.8567	21.118	20.349	46	1.073	155107	31623	3807	9517	8	1.73(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.432	-1	1.346	115900976	20540335	15751	39377	1304		
369.8919	21.418	21.432	-1	1.346	74300422	13175962	8903	22257	1480	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	21.445	21.459	-1	1.001	285003	51331	2834	7085	18		M
357.8516	21.432	21.459	-2	1.001	184477	36273	1611	4027	23	1.54(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.518						2834	7085			
357.8516	20.518						1611	4027			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.733	-1	0.888	75352675	10327517	22872	57180	452		
385.8610	26.719	26.733	-1	0.888	140231817	18915616	40619	101547	466	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.746	26.759	-1	1.001	2650455	370745	2953	7382	126		
375.8178	26.733	26.759	-2	1.000	2135684	278388	2087	5217	133	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	27.012	-2	0.897	81246732	10253762	22872	57180	448		
385.8610	26.986	27.012	-2	0.897	149228518	19166043	40619	101547	472	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	26.999	27.039	-2	1.000	846543	104591	2953	7382	35		
375.8178	27.012	27.039	-2	1.001	728855	85747	2087	5217	41	1.16(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.570	-2	0.949	75157937	9627071	22872	57180	421		
385.8610	28.544	28.570	-2	0.949	142127806	17793276	40619	101547	438	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQM
373.8208	28.557	28.597	-2	1.000	256348	30487	2953	7382	10		
375.8178	28.557	28.597	-2	1.000	249399	32334	2087	5217	15	1.03(1.05-1.43)	M
	Empc Correction				206732	24586	2087	5217	12		
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.010	74854872	13098889	22872	57180	573		
385.8610	30.381	30.394	-1	1.010	141938174	25490250	40619	101547	628	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.408	30.408	0	1.001	301703	56505	2953	7382	19		
375.8178	30.408	30.408	0	1.001	215472	34055	2087	5217	16	1.40(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.669	27.465	-167	0.923	229443	37991	2953	7382	13		
	Empc Correction				181717	29454	2953	7382	10		
375.8178	24.682	27.465	-167	0.924	146546	23754	2087	5217	11	1.57(1.05-1.43)	
373.8208	25.787	27.465	-100	0.965	89164	12241	2953	7382	4		
375.8178	25.761	27.465	-102	0.964	69099	8716	2087	5217	4	1.29(1.05-1.43)	
373.8208	30.567	27.465	186	1.144	144646	30277	2953	7382	10		
375.8178	30.554	27.465	185	1.144	139355	22179	2087	5217	11	1.04(1.05-1.43)	
	Empc Correction				116649	24416	2087	5217	12		
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.088	-1		120145288	18212389	23166	57915	786		
403.8529	30.075	30.088	-1		95297235	14244450	16289	40722	874	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.036	29.036	0	0.965	86614170	10932711	23166	57915	472		a
403.8529	29.036	29.036	0	0.965	69927816	8749313	16289	40722	537	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDD											RQ
389.8157	29.063	29.076	-1	1.001	229835	28507	1694	4235	17		
	Empc Correction				193850	29671	1694	4235	18		
391.8127	29.049	29.076	-2	1.000	156331	23929	2174	5435	11	1.47(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.316	29.316	0	0.975	103526211	11441280	23166	57915	494		a
403.8529	29.302	29.316	-1	0.974	83401353	9393171	16289	40722	577	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8157	29.329	29.356	-2	1.000	191568	29468	1694	4235	17		
391.8127	29.329	29.356	-2	1.000	147330	22155	2174	5435	10	1.30(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8157	30.101	30.101	0	1.037	179603	29433	1694	4235	17		M
391.8127	30.101	30.101	0	1.037	134669	18887	2174	5435	9	1.33(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											U
389.8157	25.694	27.931	-134	0.876	60027	8451	1694	4235	5		
391.8127	25.654	27.931	-136	0.875	73460	9389	2174	5435	4	0.82(1.05-1.43)	
	Empc Correction				48408	6815	2174	5435	3		
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.547	-1	1.082	51284373	17374031	49752	124380	349		
419.8220	32.535	32.547	-1	1.082	111800891	37479657	104381	260952	359	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	998571	302897	1957	4892	155		
409.7789	32.547	32.547	0	1.000	848561	268149	1613	4032	166	1.18(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.629	33.641	-1	1.118	49519329	17072223	49752	124380	343		
419.8220	33.629	33.641	-1	1.118	110593199	38453137	104381	260952	368	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.641	33.653	-1	1.000	442265	157459	1957	4892	80		
409.7789	33.641	33.653	-1	1.000	455500	162797	1613	4032	101	0.97(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.887	33.100	-13	1.011	250175	88213	1957	4892	45		
409.7789	32.887	33.100	-13	1.011	228737	82101	1613	4032	51	1.09(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.110	81214895	31203214	78088	195220	400		
437.8140	33.386	33.398	-1	1.110	78371197	30366323	70642	176605	430	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.398	33.398	0	1.000	867579	322719	2776	6940	116		
425.7737	33.398	33.398	0	1.000	855004	309976	2027	5067	153	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											M
423.7766	32.851	33.339	-29	0.984	634040	210588	2776	6940	76		M
425.7737	32.839	33.339	-30	0.984	664332	223421	2027	5067	110	0.95(0.88-1.20)	M
13C-OCDD											
469.7779	35.546	35.558	-1	1.182	111474006	35788377	18723	46807	1911		
471.7750	35.546	35.558	-1	1.182	126322747	40965715	15222	38055	2691	0.88(0.76-1.02)	
OCDF											M
441.7428	35.630	35.630	0	1.002	693858	227607	2011	5027	113		M
443.7399	35.618	35.630	-1	1.002	858914	290511	2322	5805	125	0.81(0.76-1.02)	M

Report Date: 13-Oct-2020 11:36:15 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	35.558	35.570	-1	1.000	8791038	2918967	2541	6352	1149		
459.7348	35.558	35.570	-1	1.000	9814010	3308255	2995	7487	1105	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 11:36:15 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Lims ID:	320-65130-A-2-A		
Client ID:	11215702-Tank#1-valve-3-1		
Inject. Date:	09-Oct-2020 04:15:46	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	330079620	91213740

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	330079620	91213740

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	565474	179524	716259	207842	0.4073	0.79	
14.524	1149995	286512	1385215	349884	0.8056	0.83	
14.736	1049307	269139	1327801	365247	0.7554	0.79	
14.932	1669052	459716	2231998	610567	1.24	0.75	
15.174	15140456	4338759	21065913	6020440	11.5	0.72	
15.341	662344	188635	1186131	245240	0.5874	0.56	RQ
15.341	662344	188635	860187	244980	0.4838		Empc Correction
15.855	2337399	592149	2922333	742628	1.67	0.80	M
16.051	405103	94877	643248	166607	0.3331	0.63	RQMa
16.051	405103	94877	526107	123216	0.2959		Empc Correction
17.019	2424017	560864	2956006	670109	1.71	0.82	
Signal Totals:							
	25403147	6970175	33991819	9334913			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59838051	16348739				0.74	RQMa
	59394966	16305088					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 19.015 = (59838051 * 100.000) / (330079620 * 0.953)
Empc Amount: 18.874 = (59394966 * 100.000) / (330079620 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Lims ID:	320-65130-A-2-A		
Client ID:	11215702-Tank#1-valve-3-1		
Inject. Date:	09-Oct-2020 04:15:46	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	243041044	64249592

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	243041044	64249592

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.222	141670	41591	144972	42745	0.1156	0.98	RQ
14.222	111628	32913	144972	42745	0.1035		Empc Correction
16.399	752080	163734	1088111	259256	0.7420	0.69	
Signal Totals:							
	863708	196647	1233083	302001			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2126833	507326				0.72	RQ
	2096791	498648					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.8575 = (2126833 * 100.000) / (243041044 * 1.020)
Empc Amount: 0.8454 = (2096791 * 100.000) / (243041044 * 1.020)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 11:36:15 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Lims ID:	320-65130-A-2-A		
Client ID:	11215702-Tank#1-valve-3-1		
Inject. Date:	09-Oct-2020 04:15:46	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	12

F1 PeCDFs, RT: 17.730

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	280897883	56533448
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	262960148	48365738

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	271929015	52449593

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.397	70806	9198	46062	7707	0.0395	1.54	

Compound is Marked ND

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Lims ID: 320-65130-A-2-A
Client ID: 11215702-Tank#1-valve-3-1
Inject. Date: 09-Oct-2020 04:15:46 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 12

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	280897883	56533448
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	262960148	48365738

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	271929015	52449593

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	671622	139194	486354	102954	0.3914	1.38	
20.150	427063	86543	298048	56363	0.2451	1.43	
21.104	268797	41788	155107	31623	0.1433	1.73	
Signal Totals:							
	1367482	267525	939509	190940			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2306991	458465				1.46	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7798 = (2306991 * 100.000) / (271929015 * 1.088)

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Lims ID: 320-65130-A-2-A
Client ID: 11215702-Tank#1-valve-3-1
Inject. Date: 09-Oct-2020 04:15:46 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 12

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	215584492	29243133
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	230475250	29419805
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	217285743	27420347
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	216793046	38589139

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	220034632	31168106

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.669	229443	37991	146546	23754	0.1391	1.57	RQ
24.669	181717	29454	146546	23754	0.1214		Empc Correction
25.787	89164	12241	69099	8716	0.0585	1.29	
30.567	144646	30277	139355	22179	0.1050	1.04	RQ
30.567	144646	30277	116649	24416	0.0966		Empc Correction
Signal Totals:							
	415527	71972	332294	56886			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	818253	135158				1.30	RQ
	747821	128858					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3026 = (818253 * 100.000) / (220034632 * 1.229)
Empc Amount: 0.2766 = (747821 * 100.000) / (220034632 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Lims ID: 320-65130-A-2-A
Client ID: 11215702-Tank#1-valve-3-1
Inject. Date: 09-Oct-2020 04:15:46
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 12

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	156541986	19682024
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	186927564	20834451
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	171734775	20258237

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.694	60027	8451	73460	9389	0.0639	0.82	RQ
25.694	60027	8451	48408	6815	0.0519		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Lims ID: 320-65130-A-2-A
Client ID: 11215702-Tank#1-valve-3-1
Inject. Date: 09-Oct-2020 04:15:46
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 12

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	163085264	54853688
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	160112528	55525360

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	161598896	55189524

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.887	250175	88213	228737	82101	0.2075	1.09	
Signal Totals:							
	250175	88213	228737	82101			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	478912	170314				1.09	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2075 = (478912 * 100.000) / (161598896 * 1.428)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Lims ID:	320-65130-A-2-A		
Client ID:	11215702-Tank#1-valve-3-1		
Inject. Date:	09-Oct-2020 04:15:46	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	159586092	61569537

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	159586092	61569537

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	634040	210588	664332	223421	0.7490	0.95	M
Signal Totals:							
	634040	210588	664332	223421			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1298372	434009				0.95	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7490 = (1298372 * 100.000) / (159586092 * 1.086)

QC Flag Legend

Review Flags
M - Manually Integrated

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Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (13.41- 17.05)

Signal: 2

Processing Integration Results

RT = 15.855 Area = 3565261

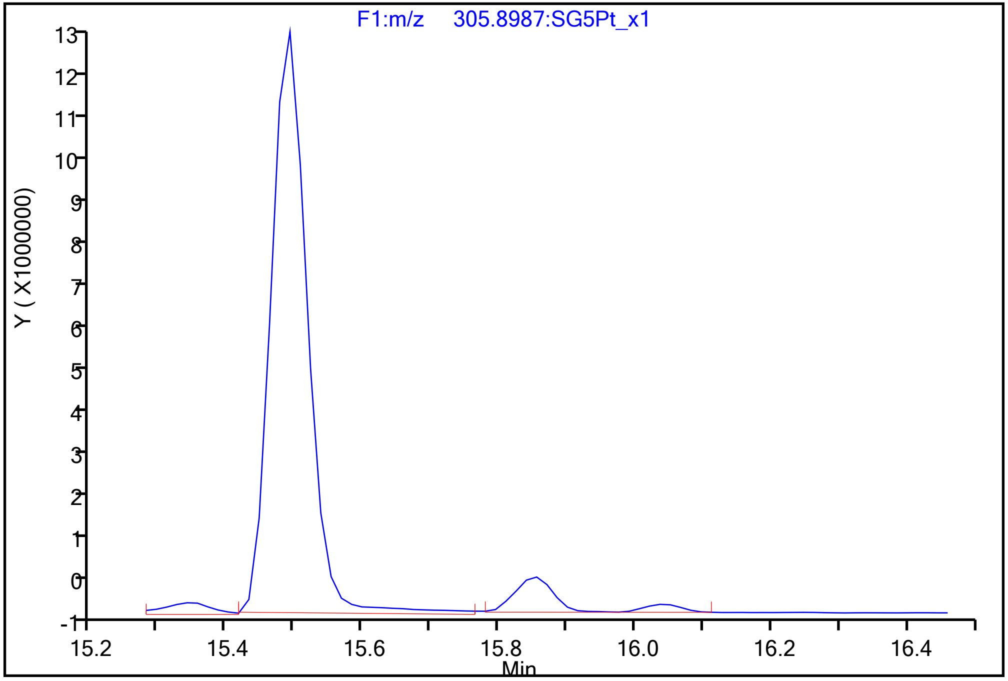

Manual Integration Results

RT = 15.855 Area = 2922333 M

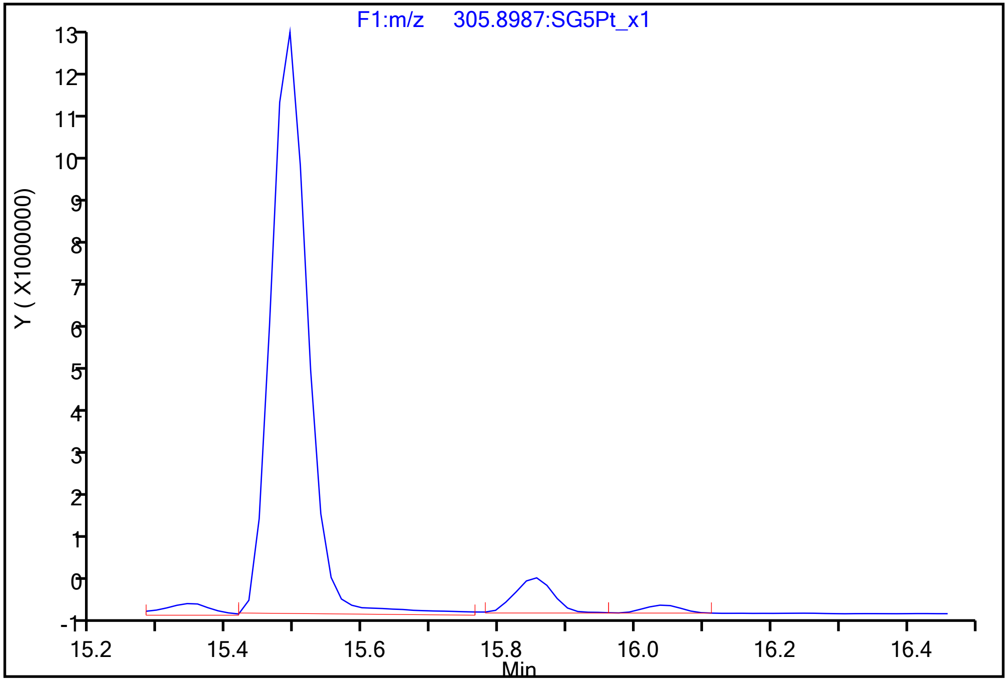

Reviewer: dadunj, 13-Oct-2020 11:31:30

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.05)

Signal: 1

Processing Integration Results

RT = 16.051 Area = 405103

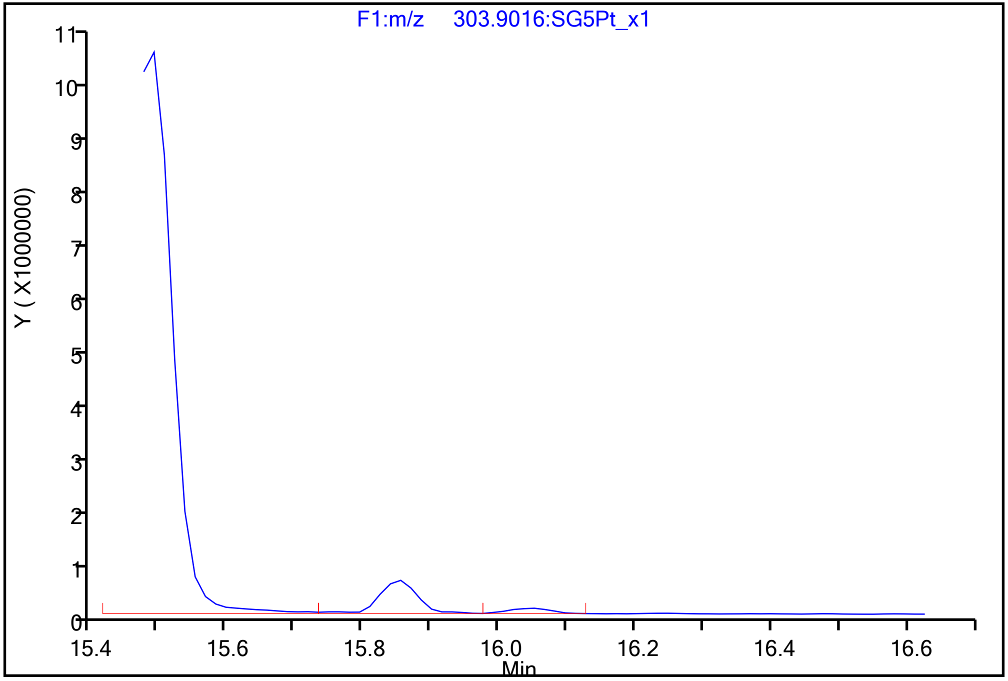

Manual Integration Results

RT = 16.051 Area = 405103

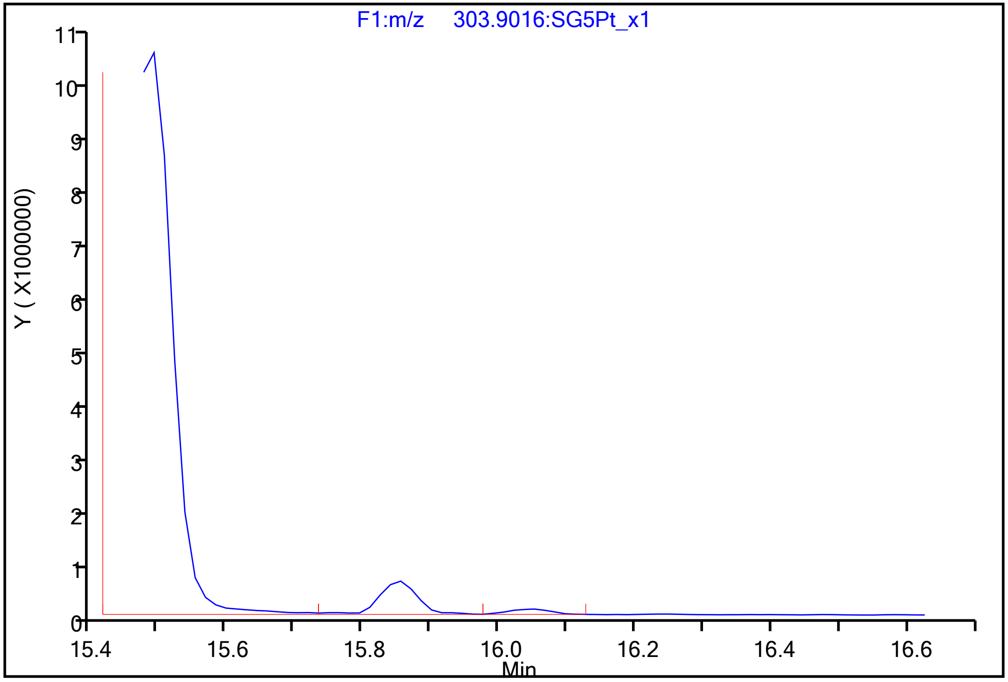

Reviewer: dadunj, 13-Oct-2020 11:31:32

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:36:16

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2
Client ID:	11215702-Tank#1-valve-3-1		
Operator ID:	ALM	ALS Bottle#:	9 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT:	16.10
Area:	12891130
Amount:	8.979033
Amount Units:	pg/ul

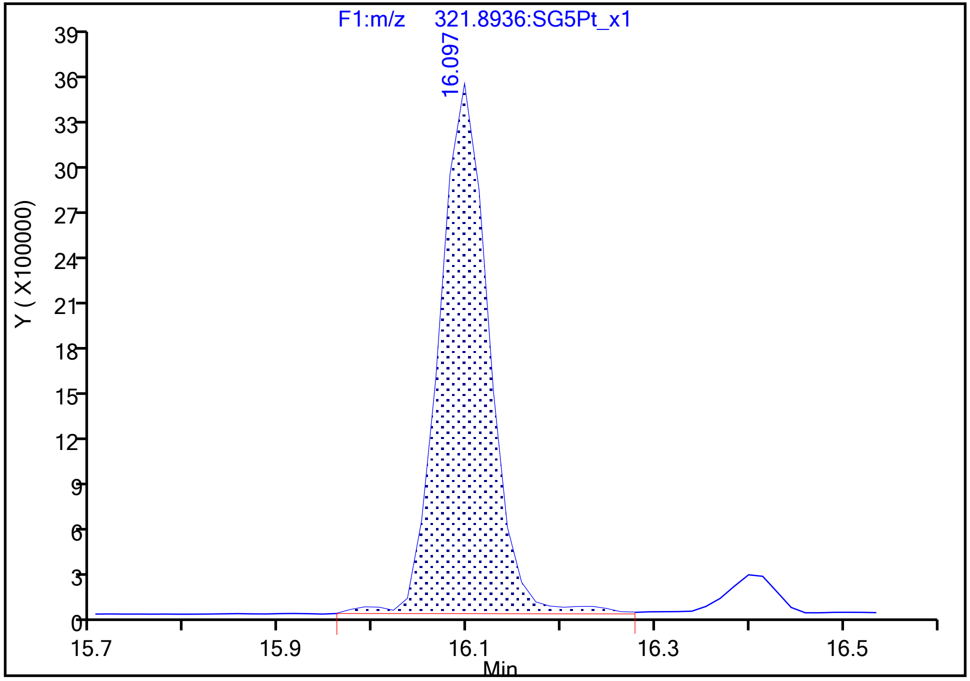

Manual Integration Results

RT:	16.10
Area:	12784809
Amount:	8.936164
Amount Units:	pg/ul

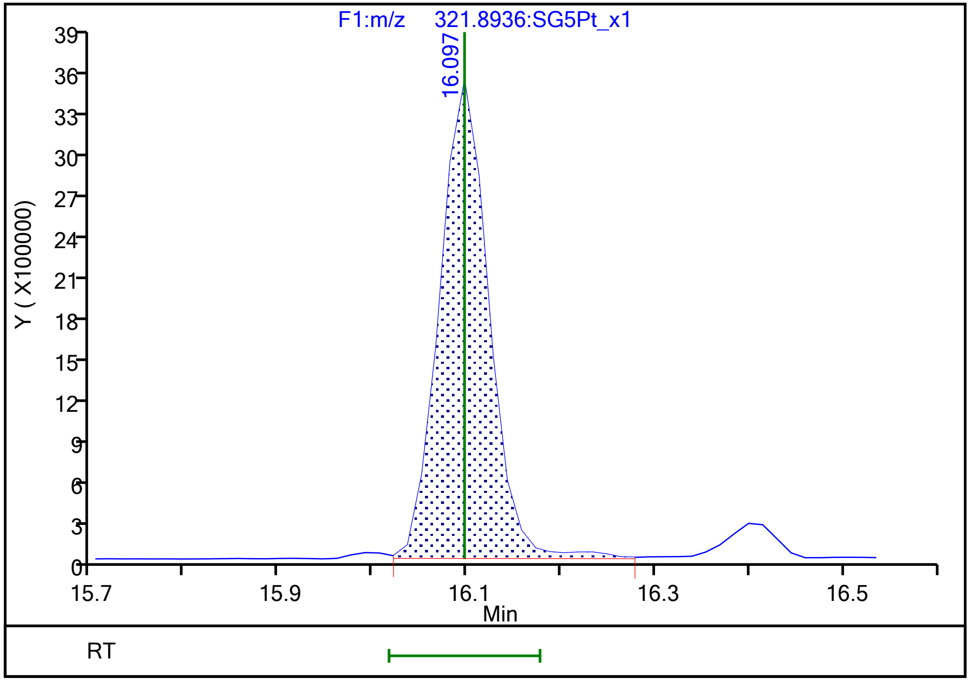

Reviewer: dadunj, 13-Oct-2020 11:32:32

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2
Client ID:	11215702-Tank#1-valve-3-1		
Operator ID:	ALM	ALS Bottle#:	9 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	19.71
Area:	1984005
Amount:	1.064261
Amount Units:	pg/ul

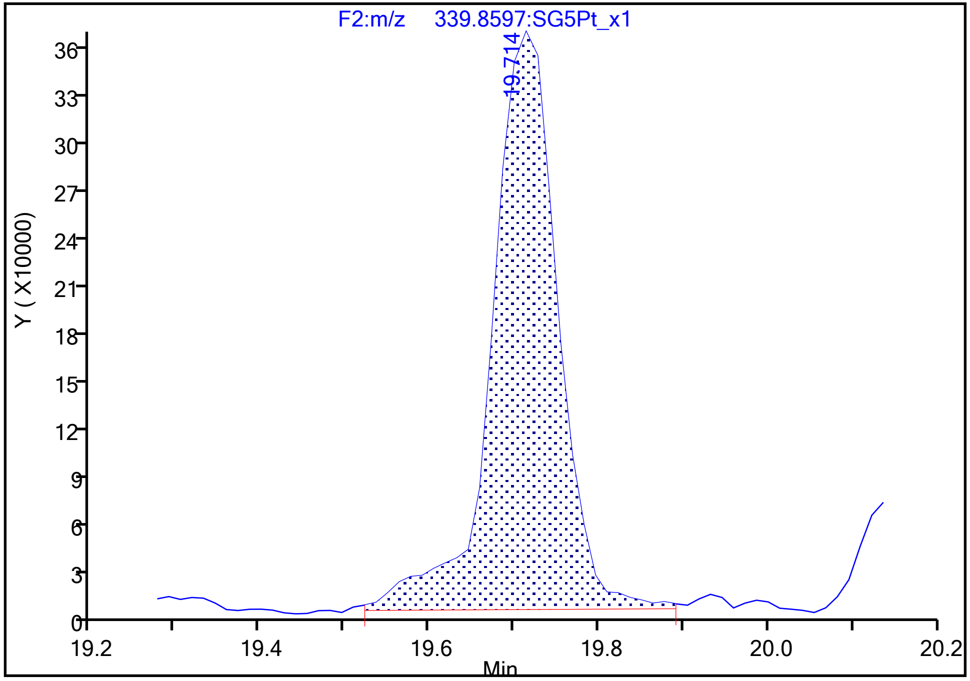

Manual Integration Results

RT:	19.71
Area:	1861633
Amount:	1.023900
Amount Units:	pg/ul

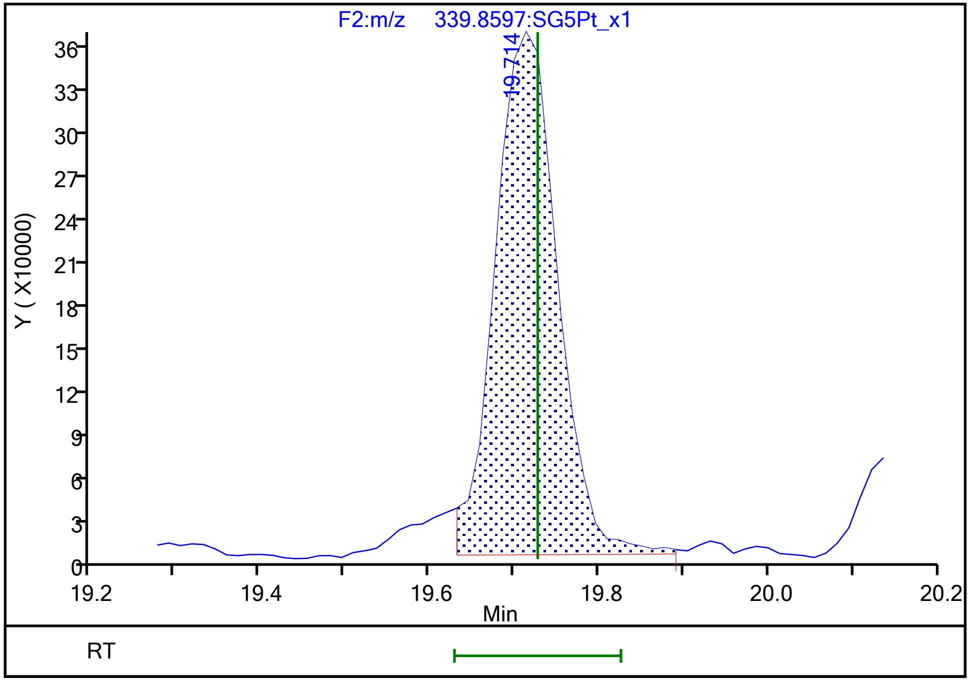

Reviewer: dadunj, 13-Oct-2020 11:32:41

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT:	21.45
Area:	286459
Amount:	0.216760
Amount Units:	pg/ul

Processing Integration Results

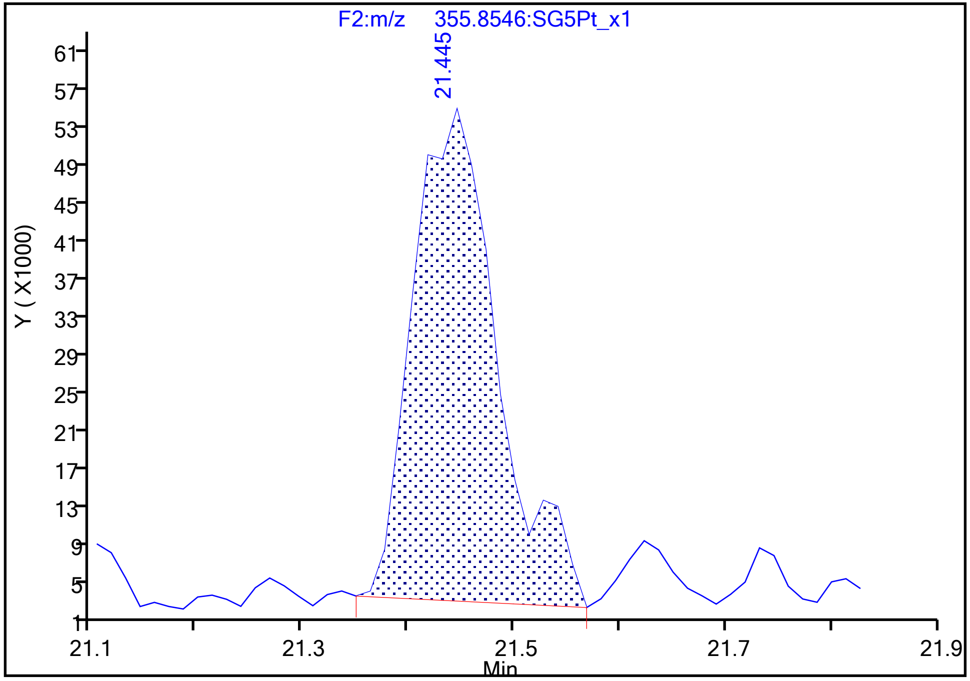

RT:	21.45
Area:	285003
Amount:	0.216585
Amount Units:	pg/ul

Manual Integration Results

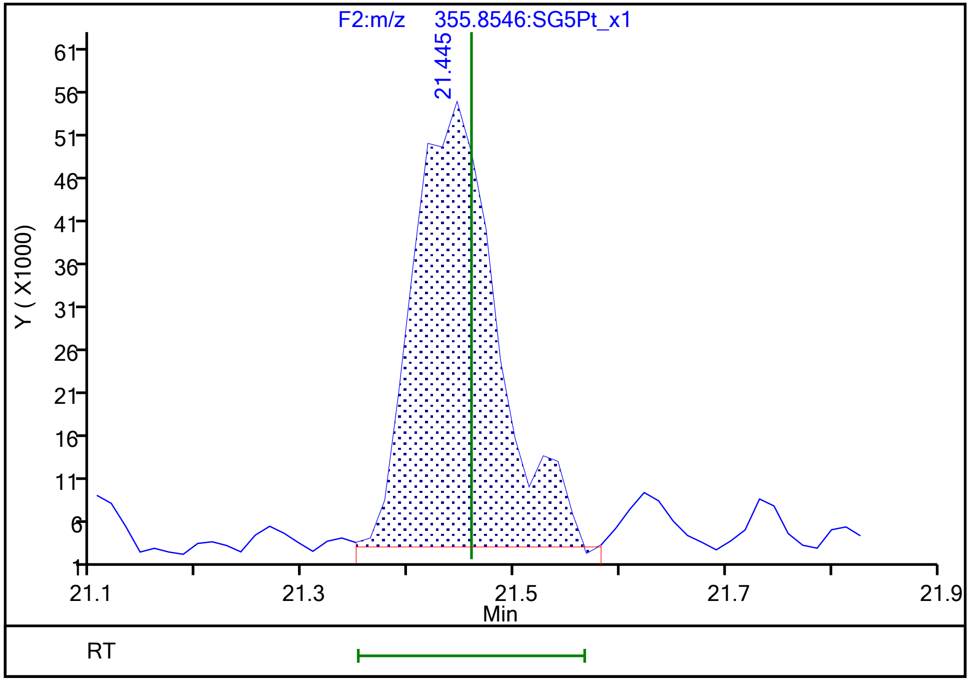

Reviewer: dadunj, 13-Oct-2020 11:33:06

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2
Client ID:	11215702-Tank#1-valve-3-1		
Operator ID:	ALM	ALS Bottle#:	9 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT:	21.43
Area:	183401
Amount:	0.216760
Amount Units:	pg/ul

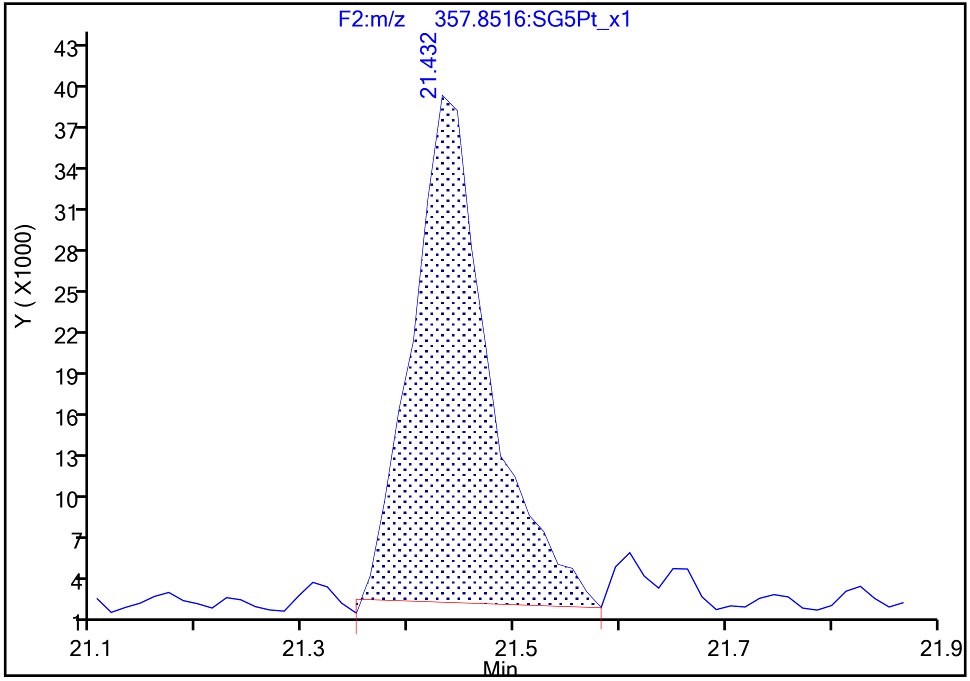

Manual Integration Results

RT:	21.43
Area:	184477
Amount:	0.216585
Amount Units:	pg/ul

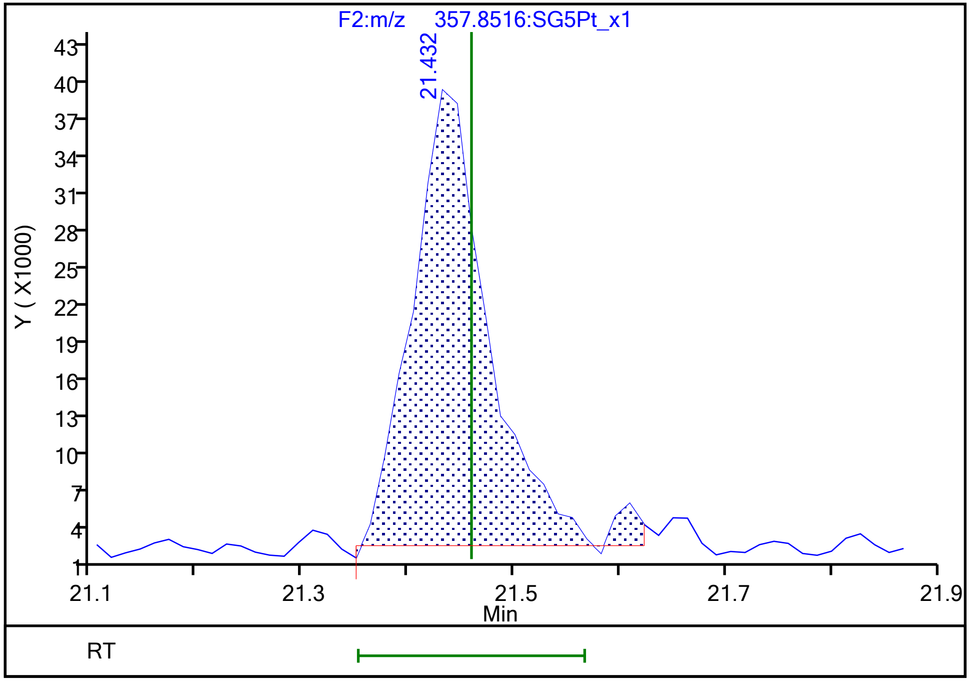

Reviewer: dadunj, 13-Oct-2020 11:33:11

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT: 28.56
Area: 281067
Amount: 0.203025
Amount Units: pg/ul

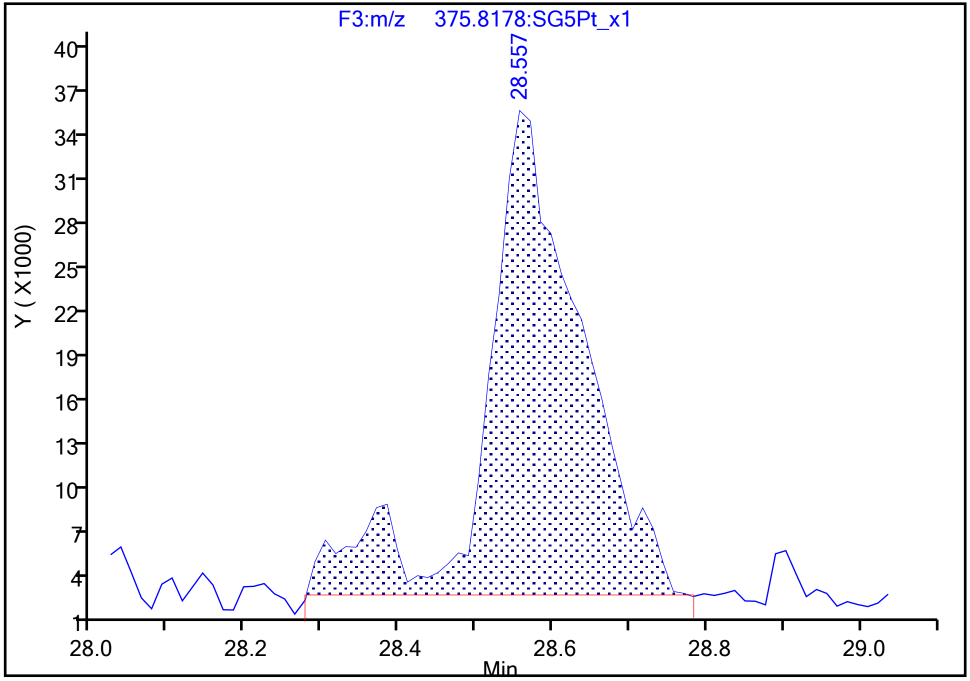

Manual Integration Results

RT: 28.56
Area: 249399
Amount: 0.191062
Amount Units: pg/ul

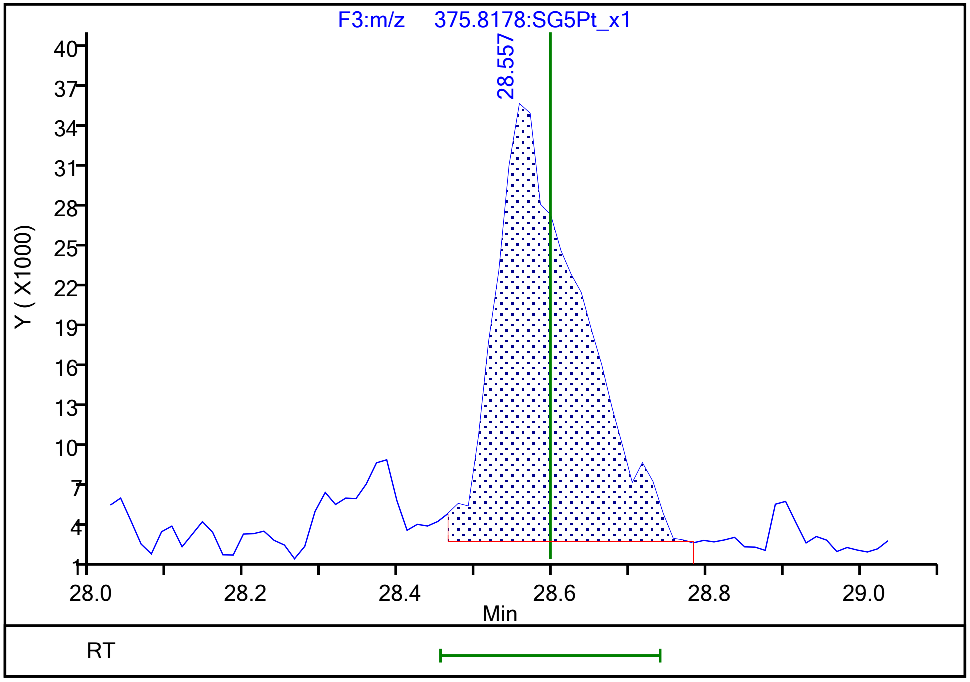

Reviewer: dadunj, 13-Oct-2020 11:33:26

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.04

Processing Integration Results

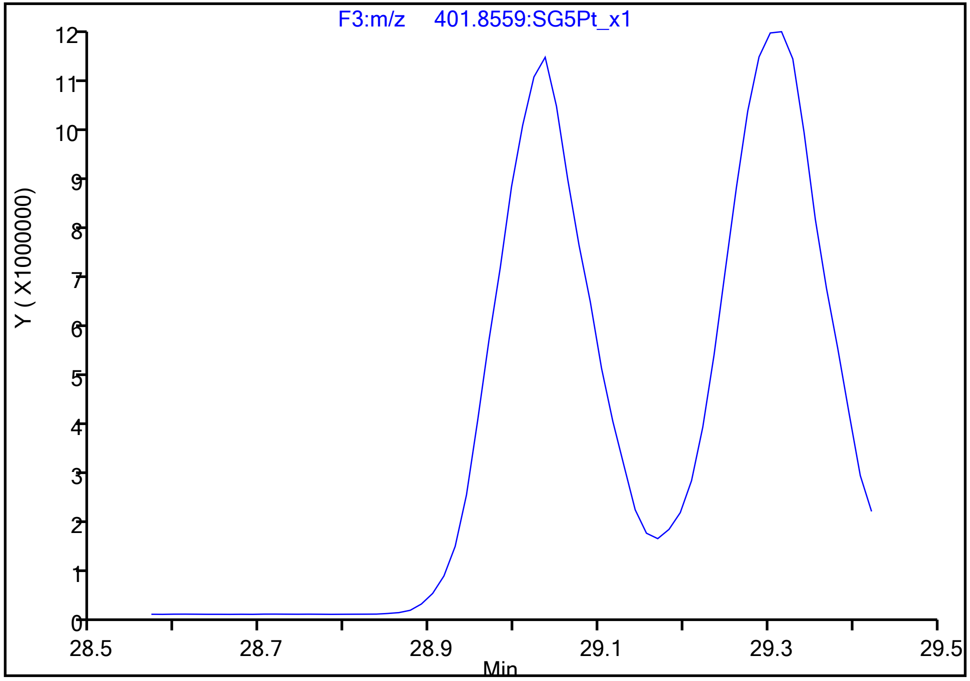

Manual Integration Results

RT: 29.04
Area: 86614170
Amount: 83.901545
Amount Units: pg/ul

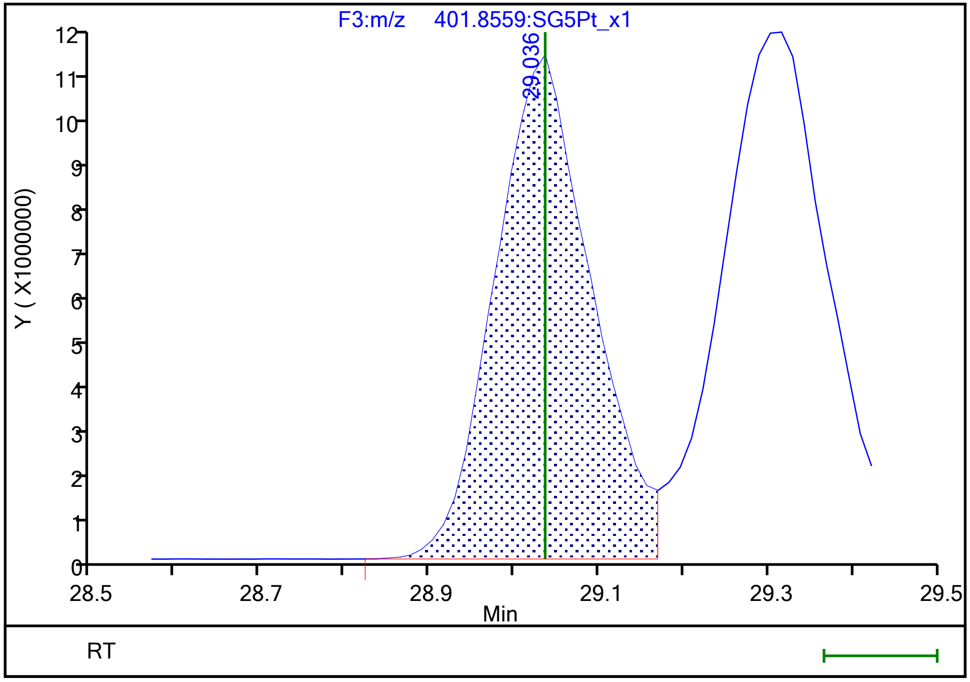

Reviewer: shardaa, 12-Oct-2020 17:56:10
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.07
Area:	120145288
Amount:	101.7609
Amount Units:	pg/ul

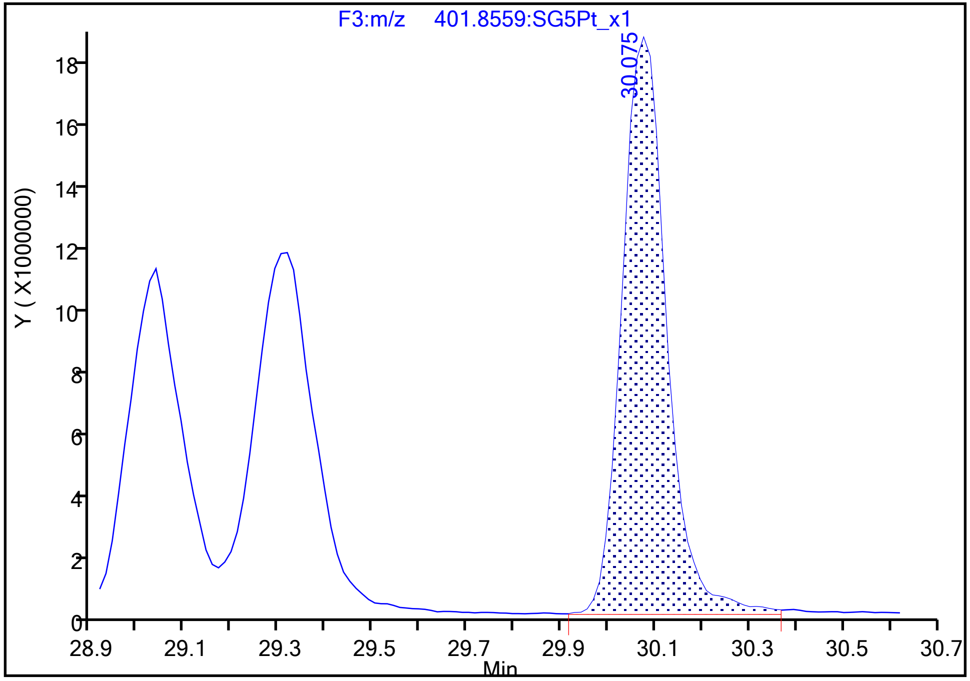

Manual Integration Results

RT:	29.32
Area:	103526211
Amount:	88.292301
Amount Units:	pg/ul

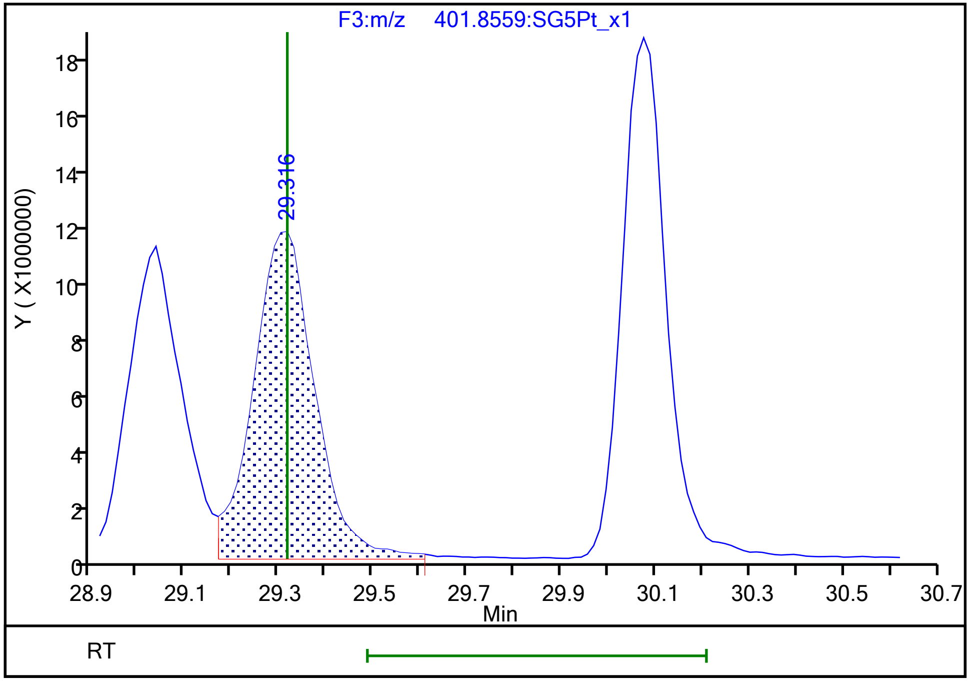

Reviewer: shardaa, 12-Oct-2020 17:59:02

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2
Client ID:	11215702-Tank#1-valve-3-1		
Operator ID:	ALM	ALS Bottle#:	9 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT: 29.33
Area: 149109
Amount: 0.163937
Amount Units: pg/ul

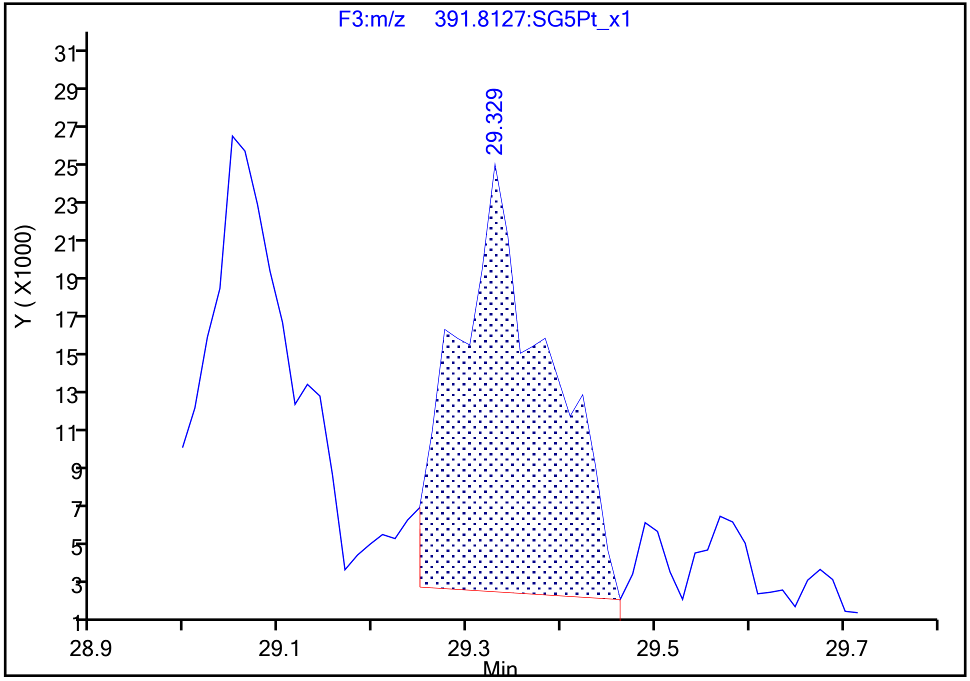

Manual Integration Results

RT: 29.33
Area: 147330
Amount: 0.163081
Amount Units: pg/ul

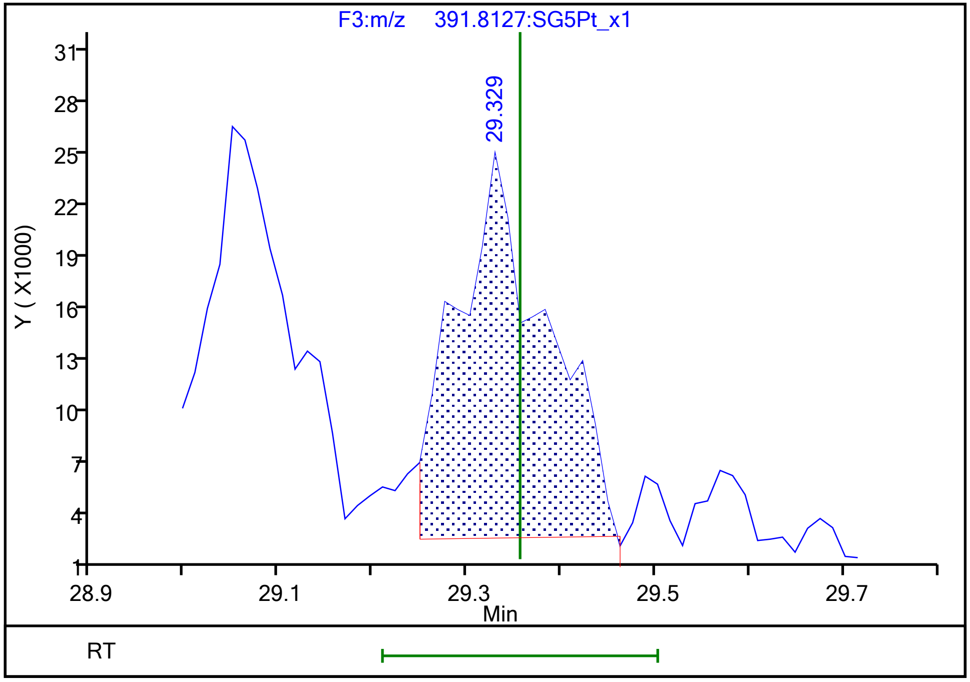

Reviewer: dadunj, 13-Oct-2020 11:33:49

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46 Instrument ID: 3D5
Lims ID: 320-65130-A-2-A Lab Sample ID: 320-65130-2
Client ID: 11215702-Tank#1-valve-3-1
Operator ID: ALM ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F3:HRSIR

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT: 30.10
Area: 137467
Amount: 0.157541
Amount Units: pg/ul

Processing Integration Results

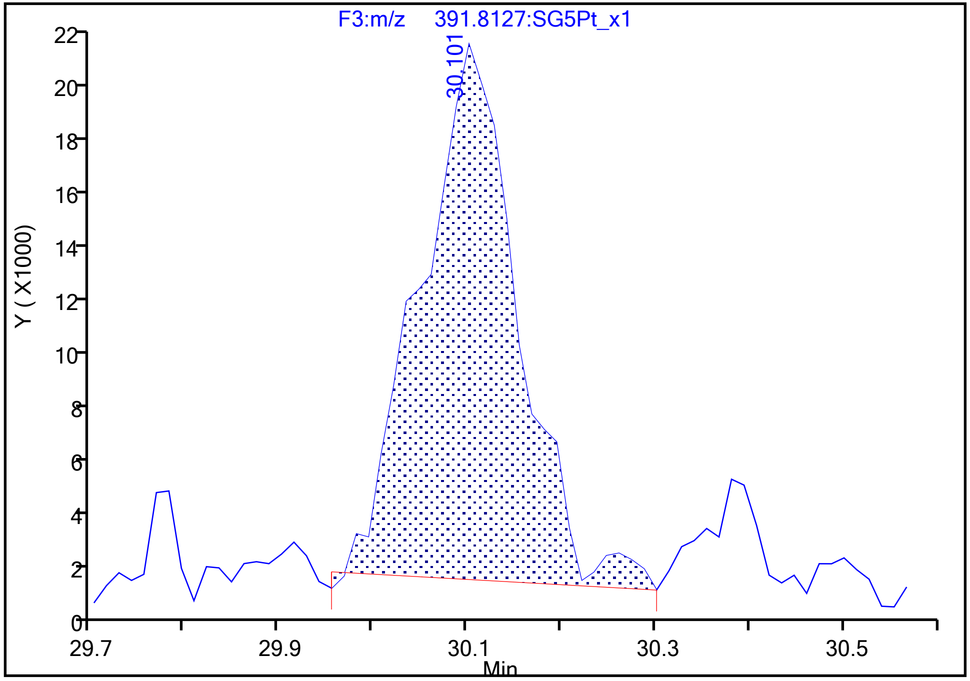

RT: 30.10
Area: 134669
Amount: 0.142387
Amount Units: pg/ul

Manual Integration Results

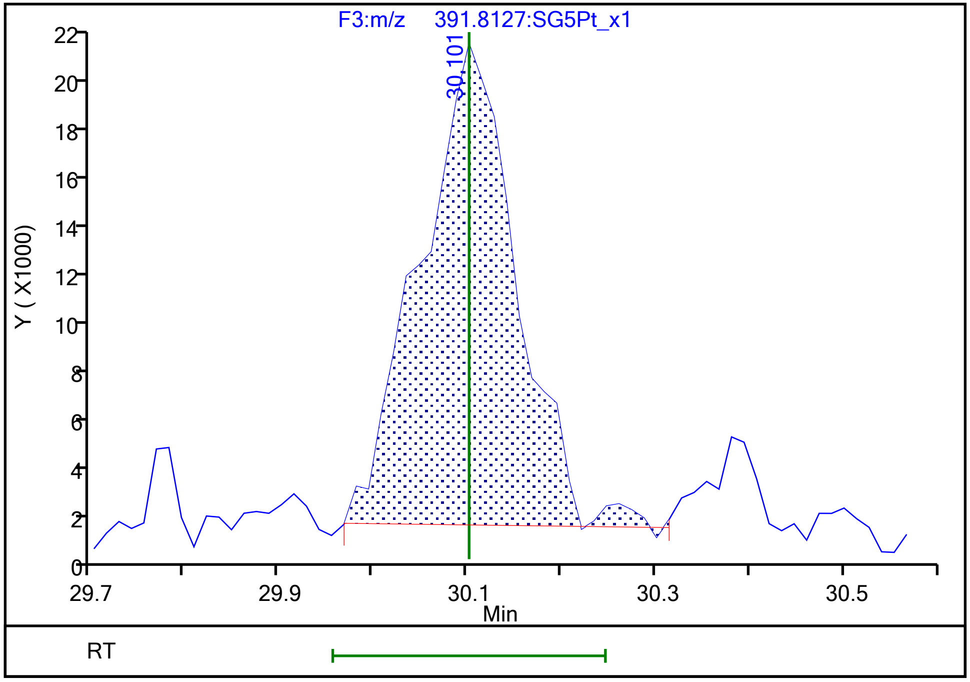

Reviewer: dadunj, 13-Oct-2020 11:33:55
Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT: 30.10
Area: 210253
Amount: 0.157541
Amount Units: pg/ul

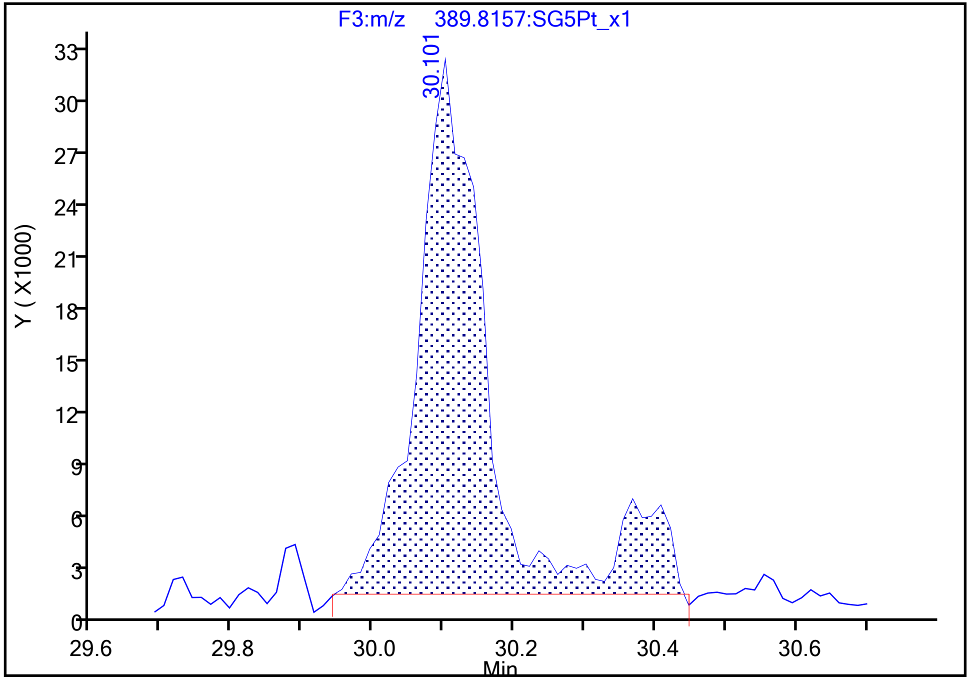

Manual Integration Results

RT: 30.10
Area: 179603
Amount: 0.142387
Amount Units: pg/ul

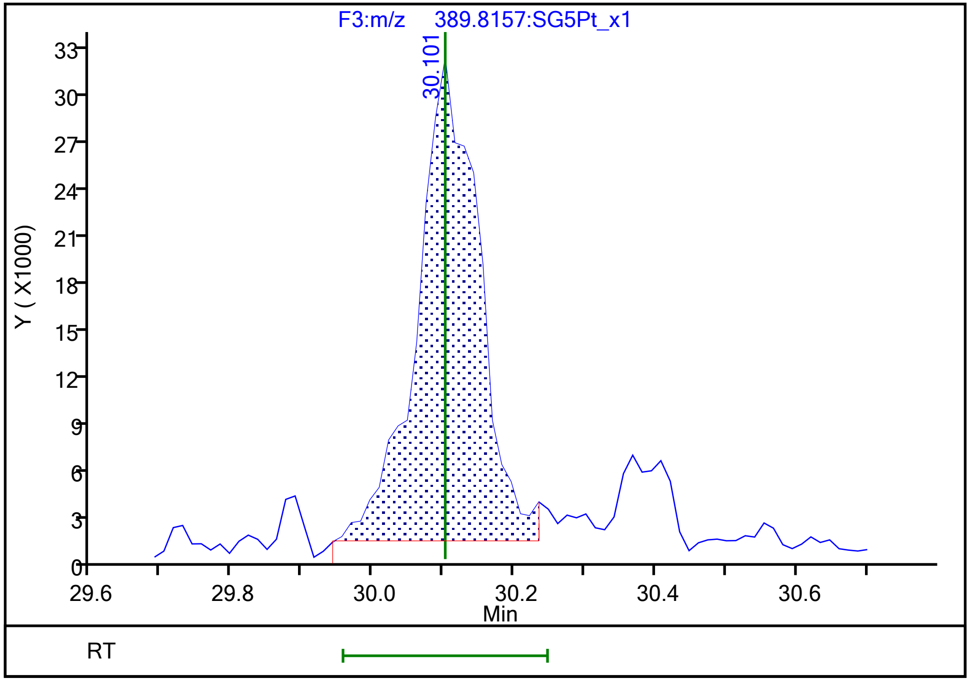

Reviewer: dadunj, 13-Oct-2020 11:33:59

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46
Instrument ID: 3D5
Lims ID: 320-65130-A-2-A
Lab Sample ID: 320-65130-2
Client ID: 11215702-Tank#1-valve-3-1
Operator ID: ALM
ALS Bottle#: 9
Worklist Smp#: 12
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F4:HRSIR

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (32.98- 33.70)

Signal: 1

Processing Integration Results

RT = 32.851 Area = 705837

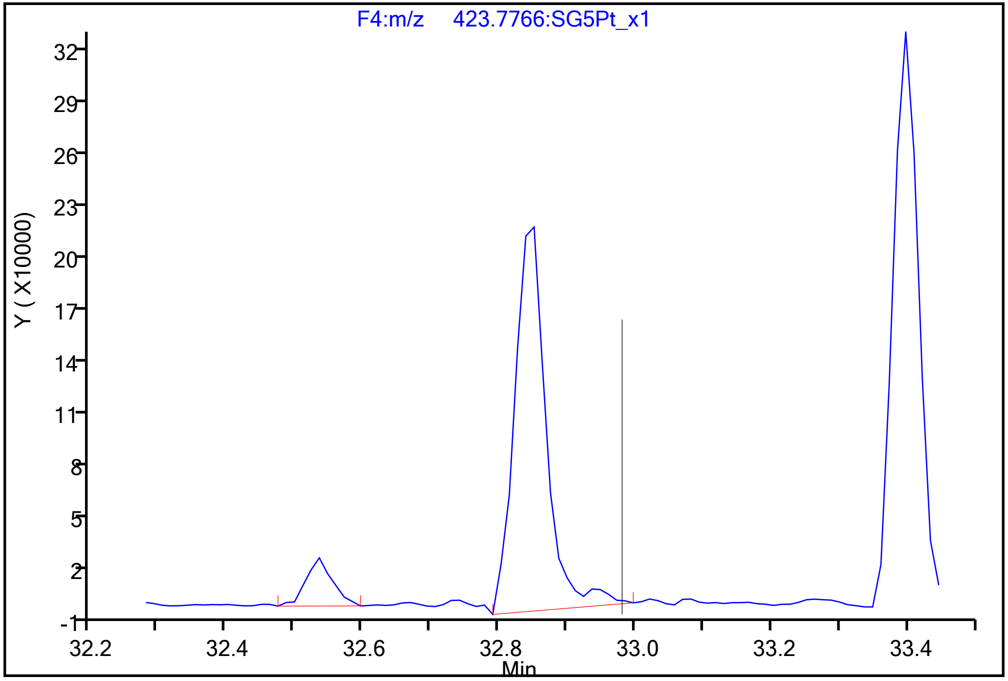

Manual Integration Results

RT = 32.851 Area = 634040 M

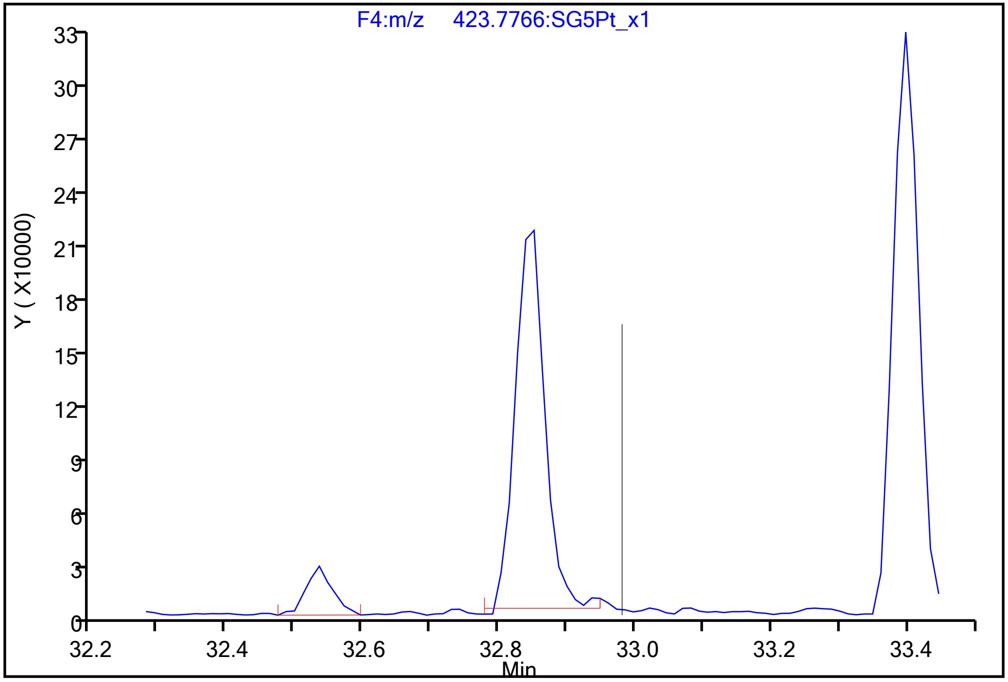

Reviewer: dadunj, 13-Oct-2020 11:34:34

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2
Client ID:	11215702-Tank#1-valve-3-1		
Operator ID:	ALM	ALS Bottle#:	9 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F4:HRSIR

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (32.98- 33.70)

Signal: 2

Processing Integration Results

RT = 32.839 Area = 703718

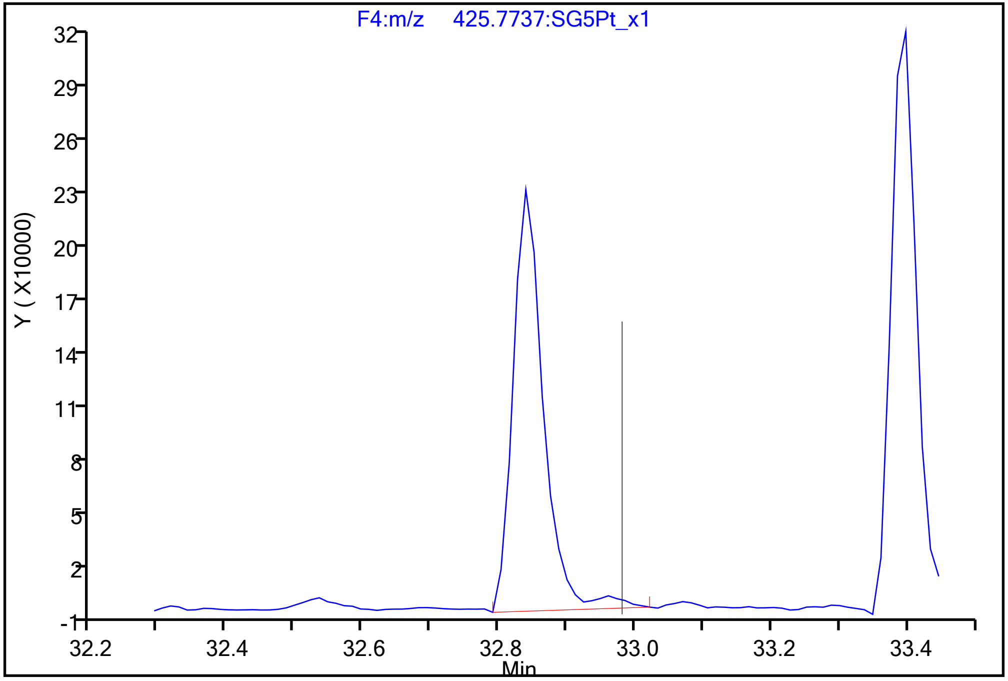

Manual Integration Results

RT = 32.839 Area = 664332 M

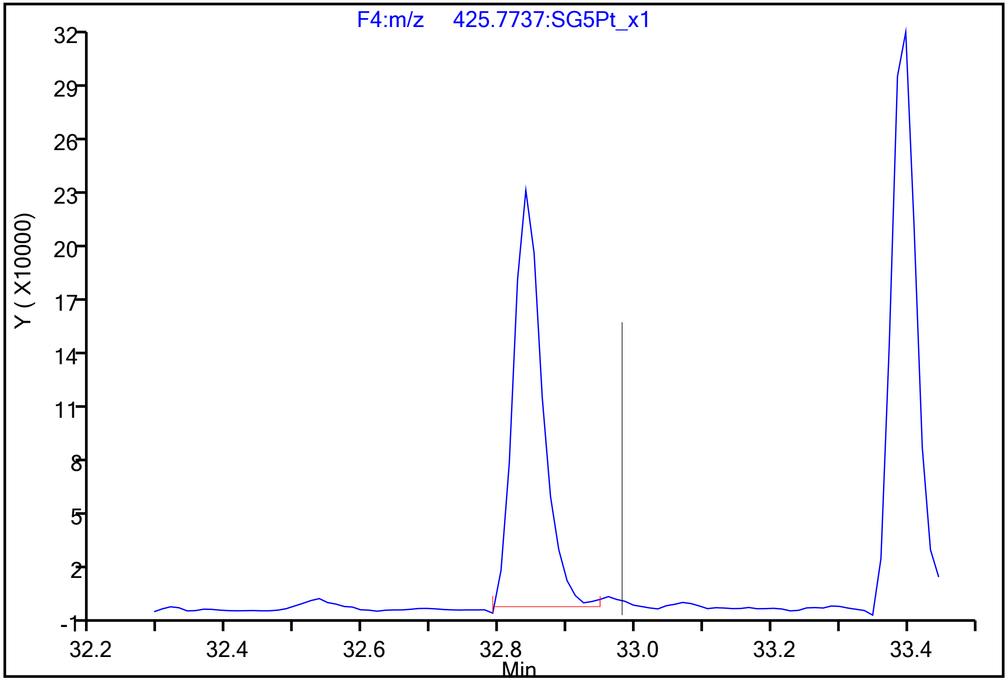

Reviewer: dadunj, 13-Oct-2020 11:34:38

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

Processing Integration Results

RT: 35.62
Area: 899633
Amount: 0.784572
Amount Units: pg/ul

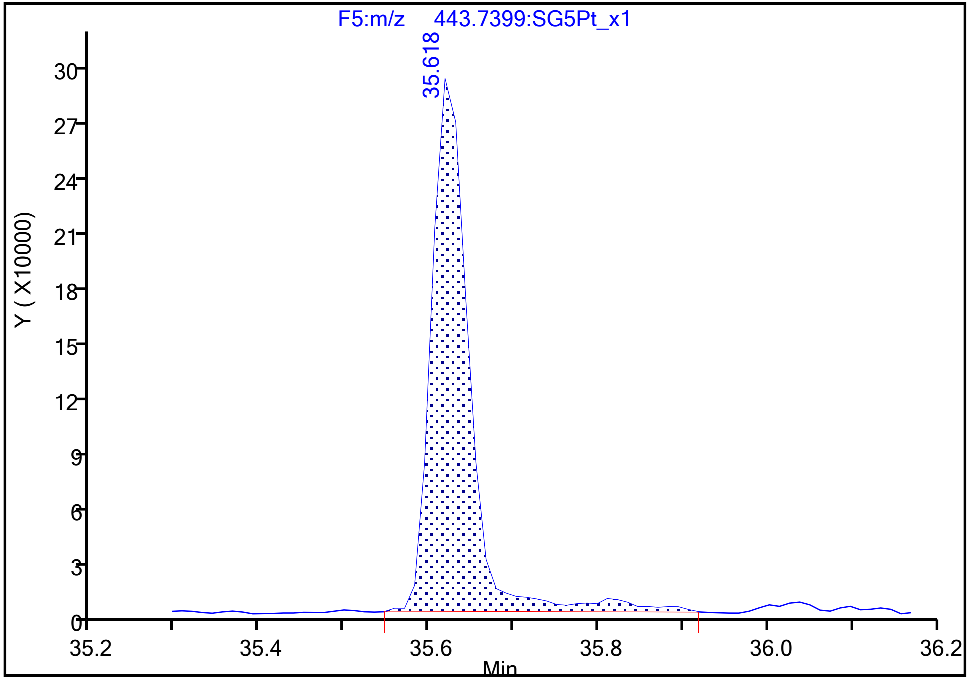

Manual Integration Results

RT: 35.62
Area: 858914
Amount: 0.757168
Amount Units: pg/ul

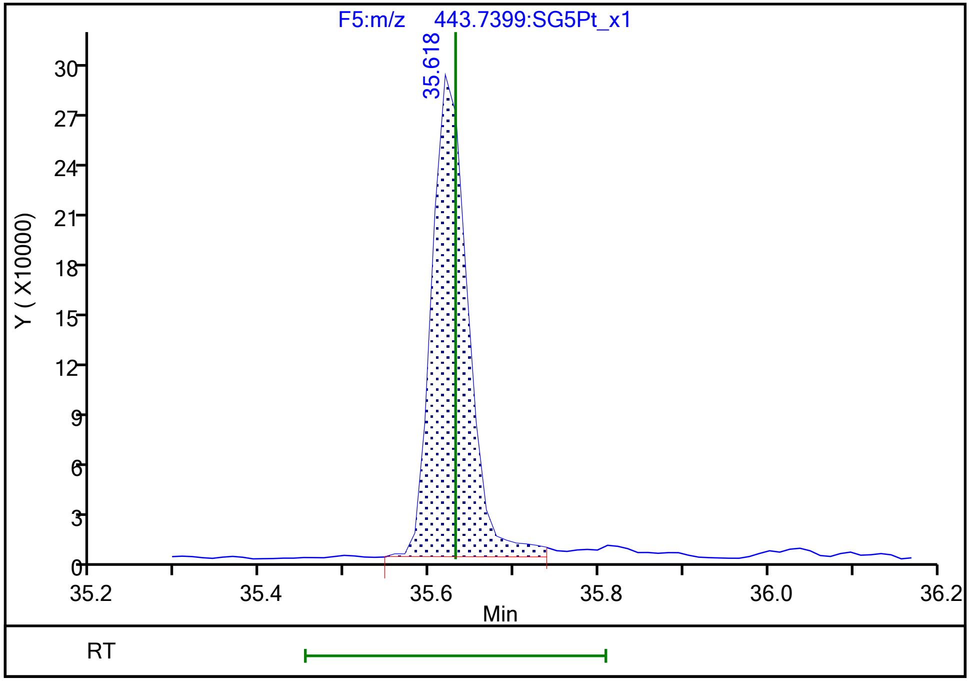

Reviewer: dadunj, 13-Oct-2020 11:34:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d				
Injection Date:	09-Oct-2020 04:15:46	Instrument ID:	3D5		
Lims ID:	320-65130-A-2-A	Lab Sample ID:	320-65130-2		
Client ID:	11215702-Tank#1-valve-3-1				
Operator ID:	ALM	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT:	35.63
Area:	709338
Amount:	0.784572
Amount Units:	pg/ul

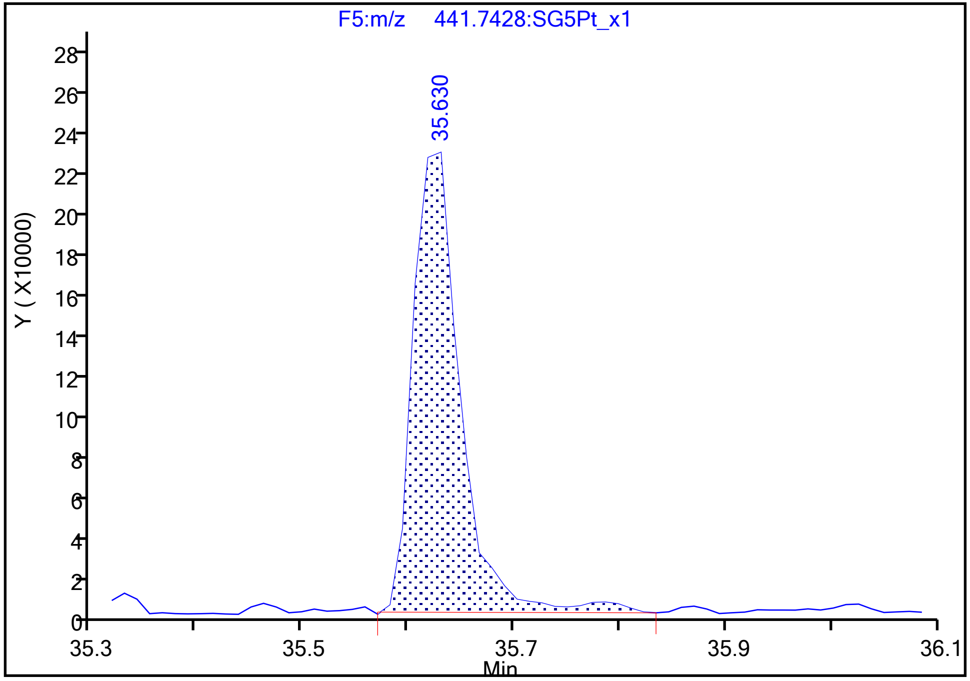

Manual Integration Results

RT:	35.63
Area:	693858
Amount:	0.757168
Amount Units:	pg/ul

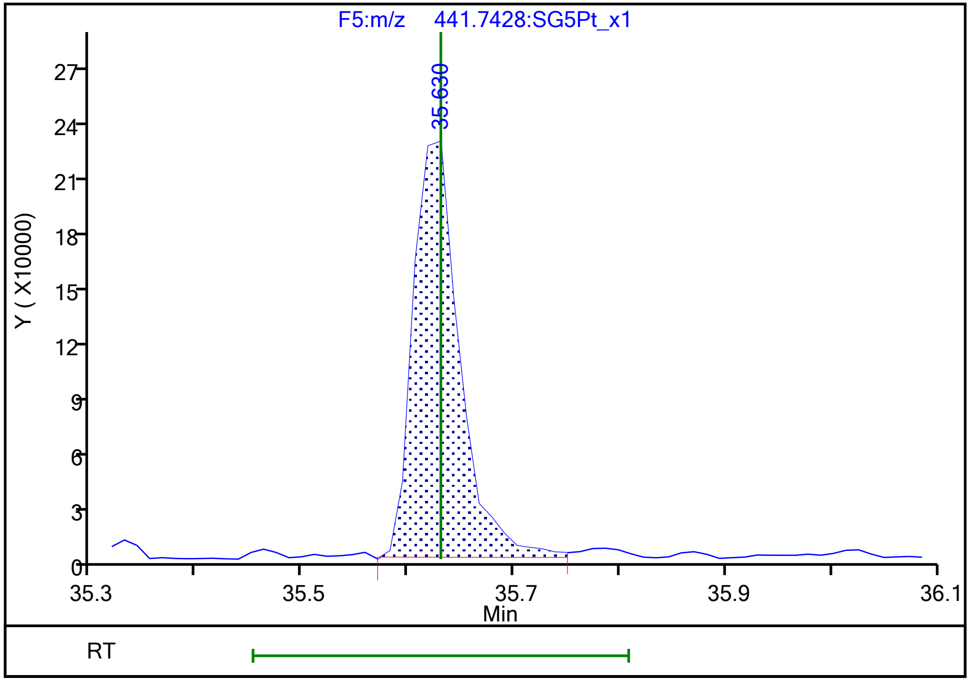

Reviewer: dadunj, 13-Oct-2020 11:34:50

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482
Sample Line#: 12
Column Type:
Column Dia:

TCDF

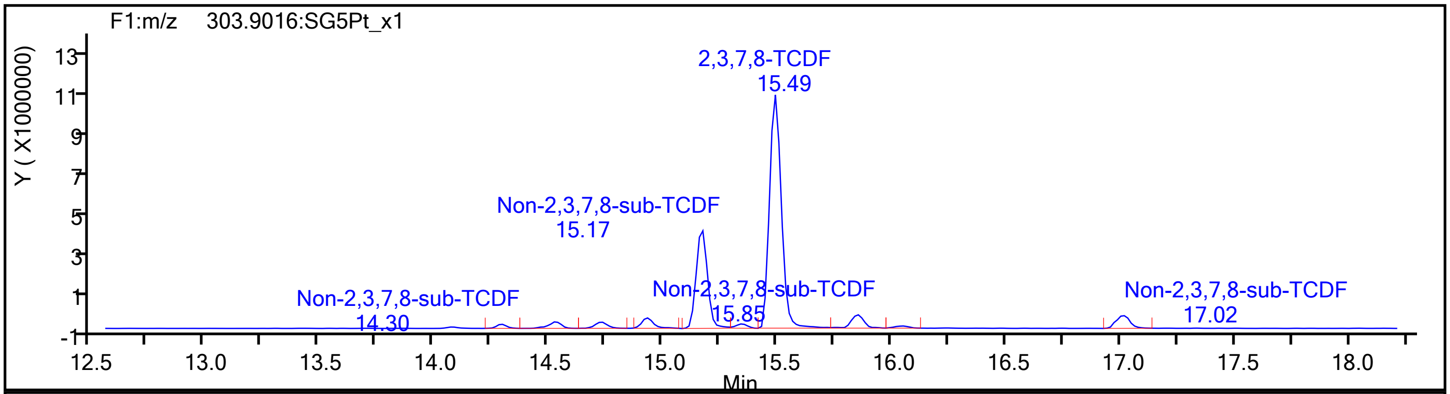

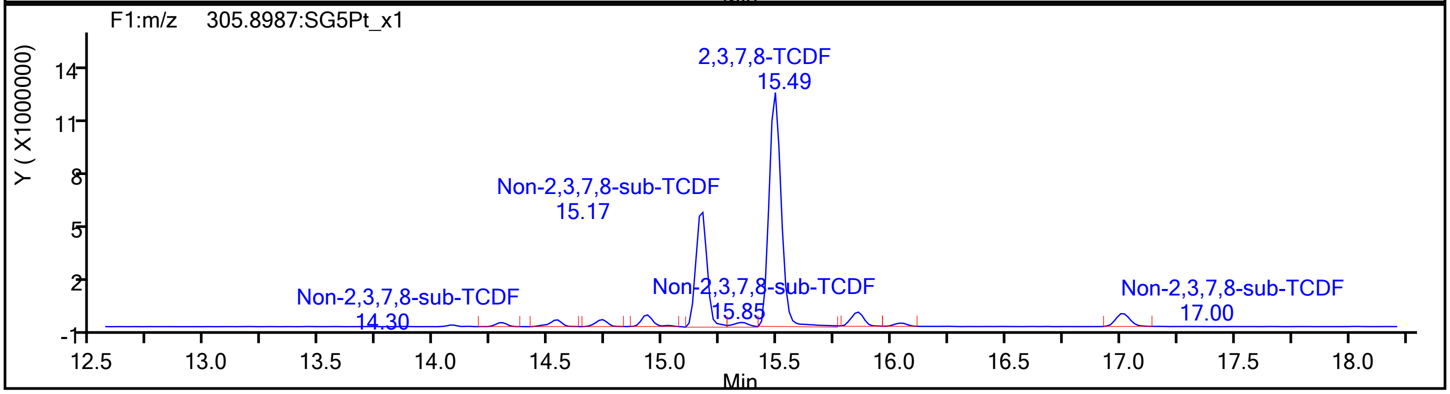

TCDF Standards

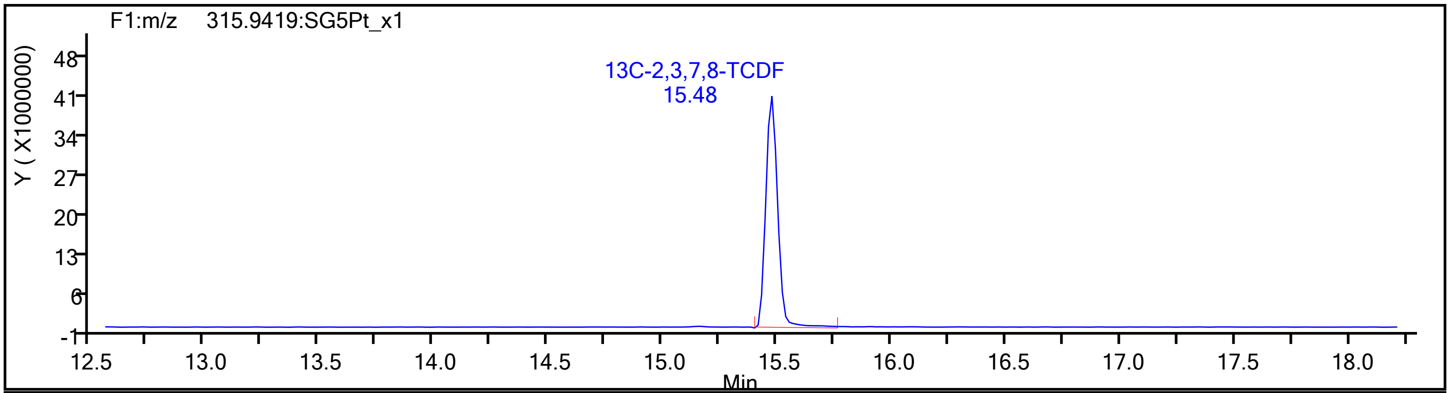

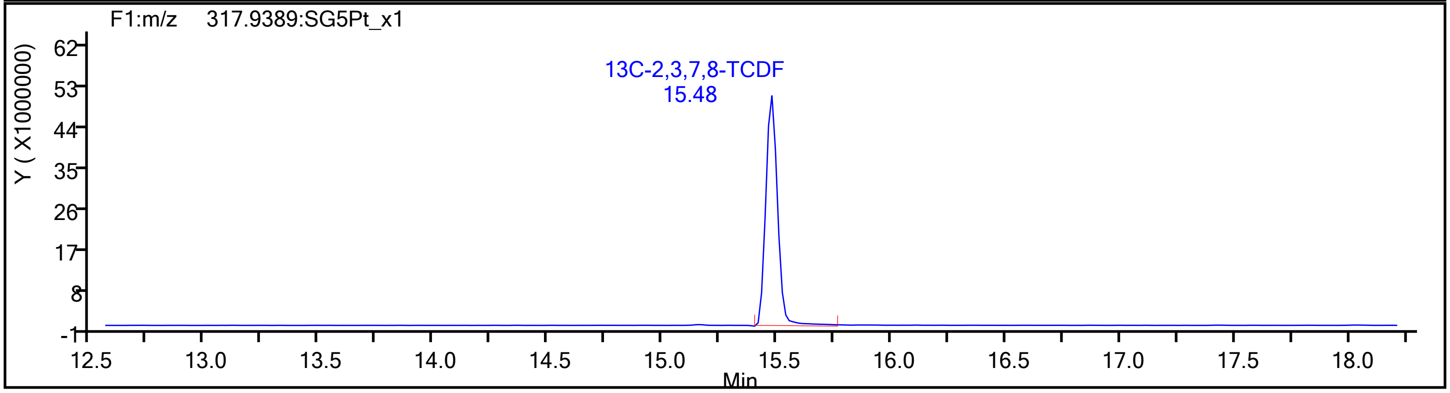

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Injection Date: 09-Oct-2020 04:15:46

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 420482

Sample Line#: 12

Column Type:

Column Dia:

TCDF

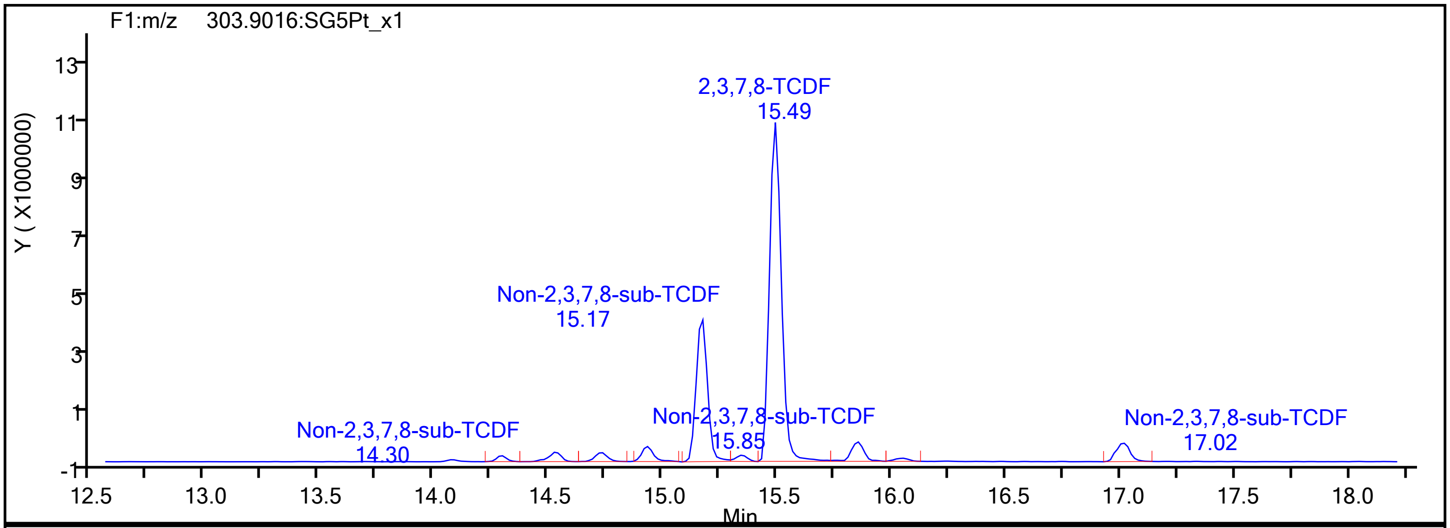

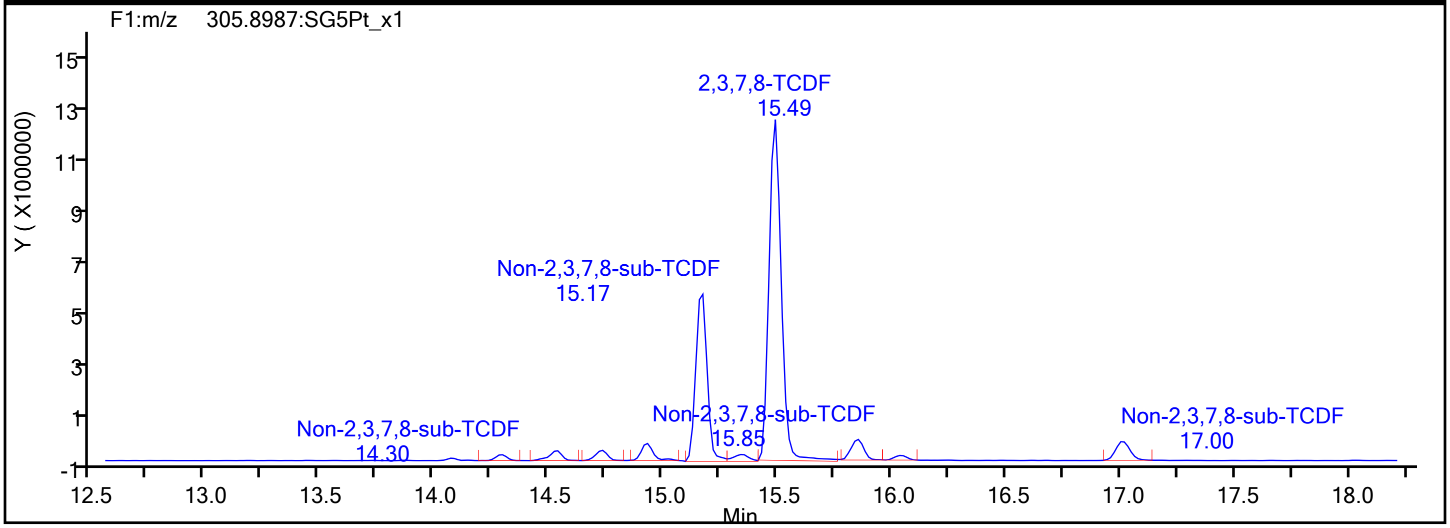

TCDF Interference Mass

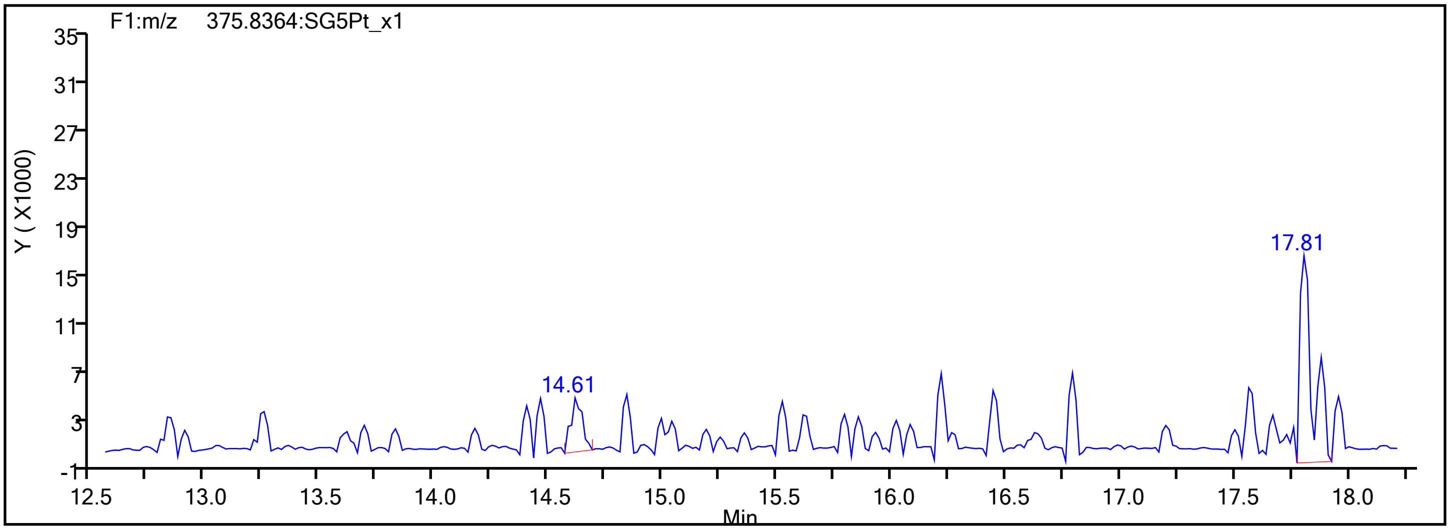

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482 Sample Line#: 12
Column Type: Column Dia:

TCDD

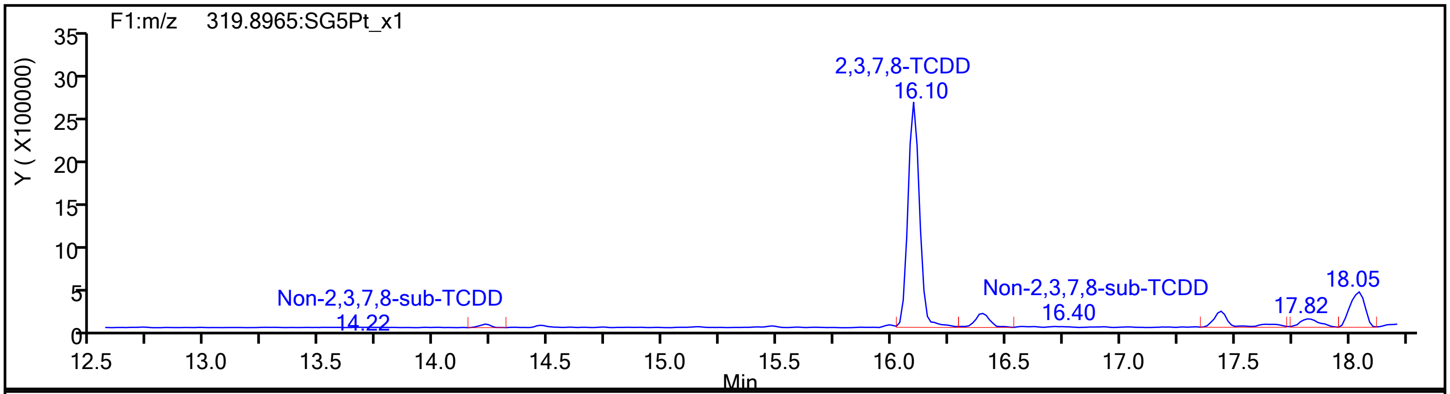

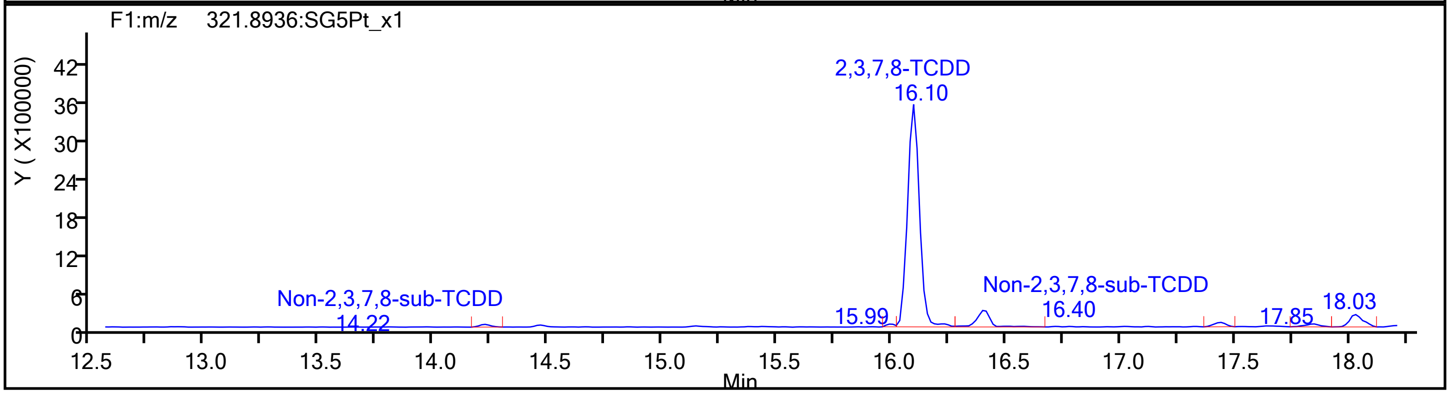

TCDD Standards

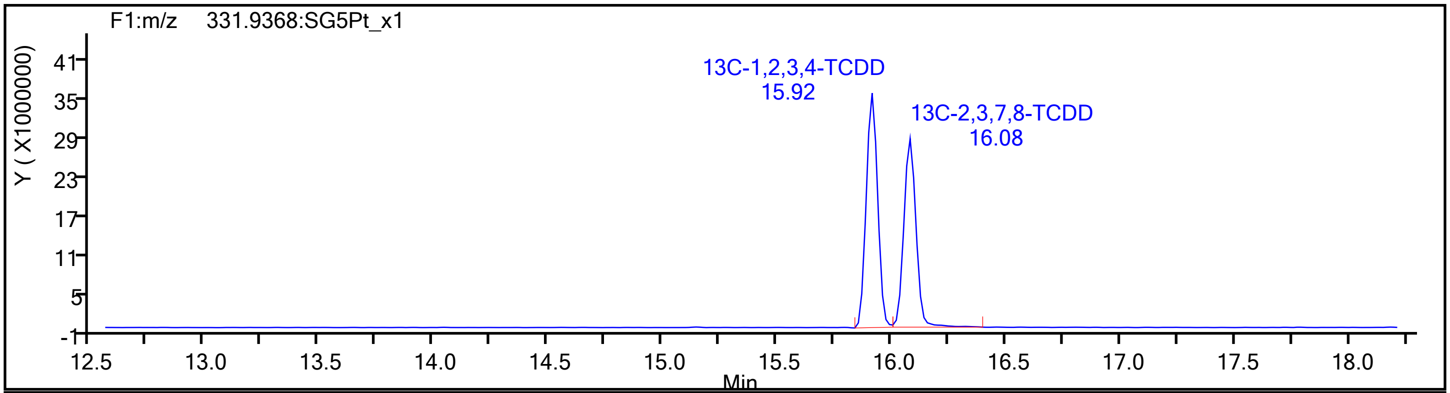

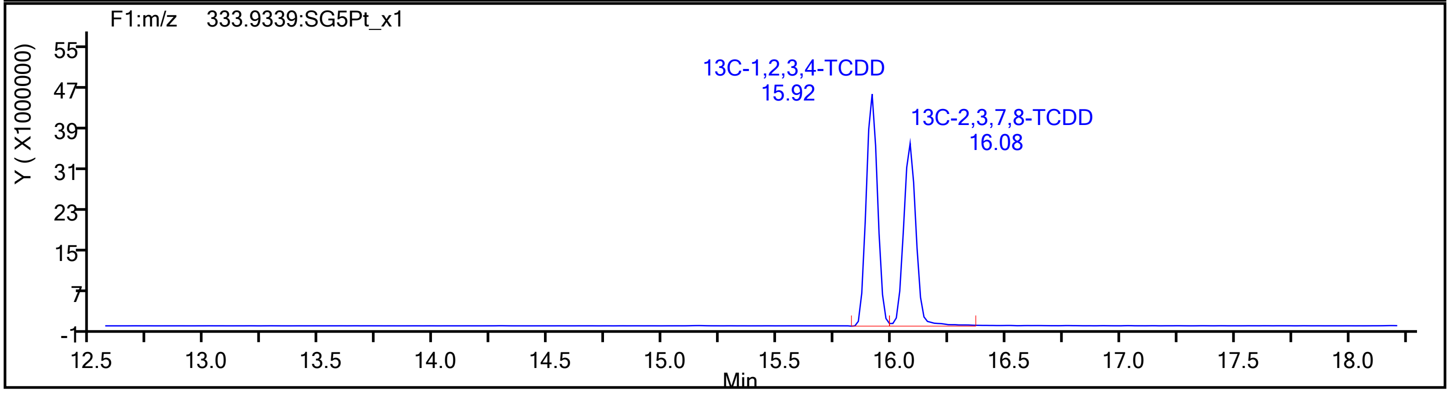

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Injection Date: 09-Oct-2020 04:15:46

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 420482

Sample Line#: 12

Column Type:

Column Dia:

37Cl4-TCDD

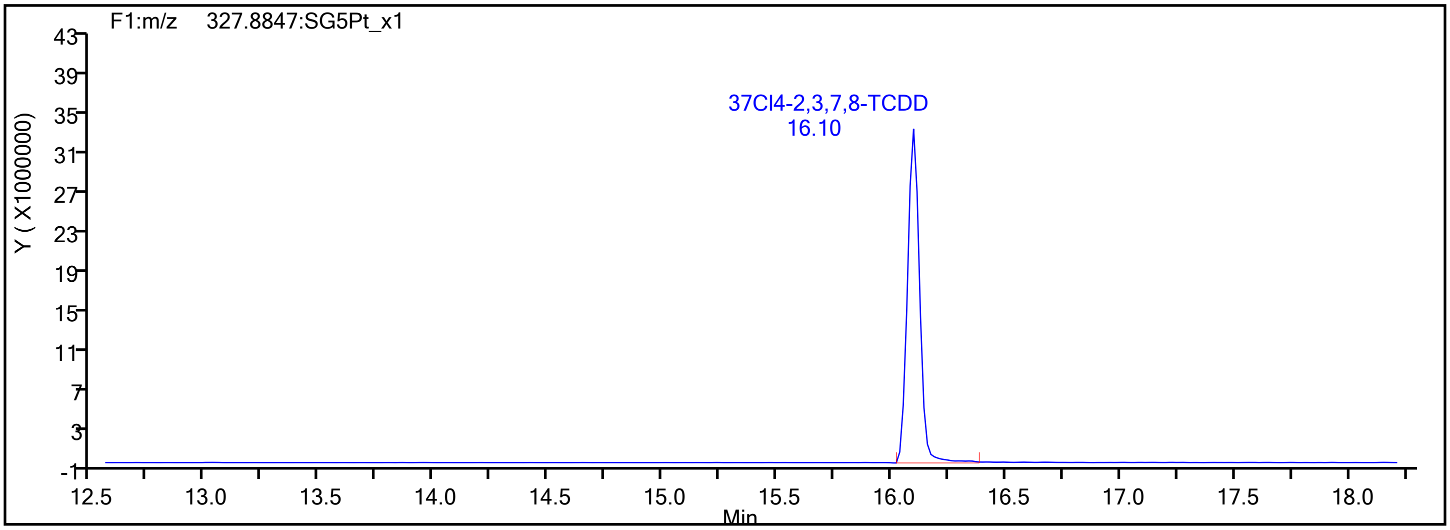

37Cl4-TCDD Standards

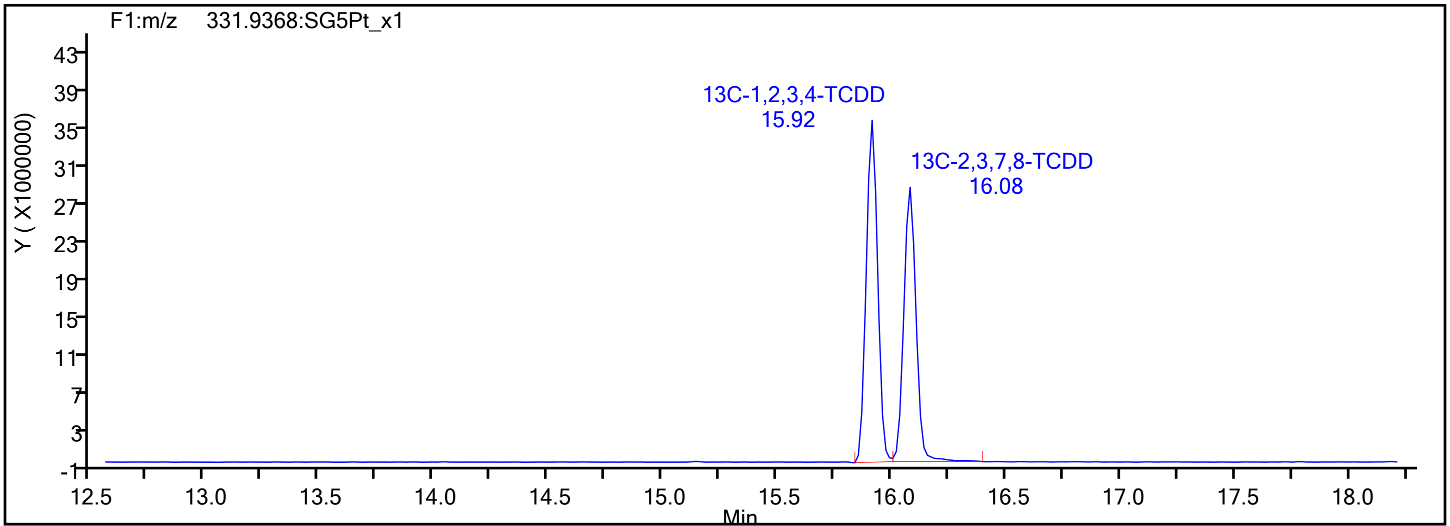

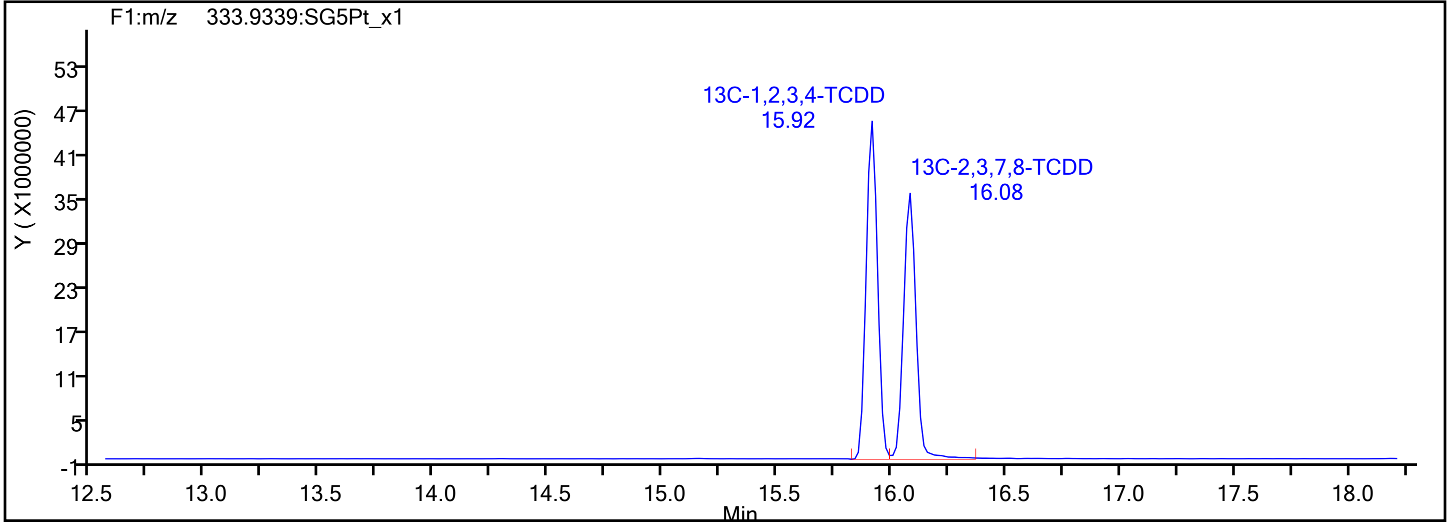

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482
Sample Line#: 12
Column Type:
Column Dia:

PeCDF

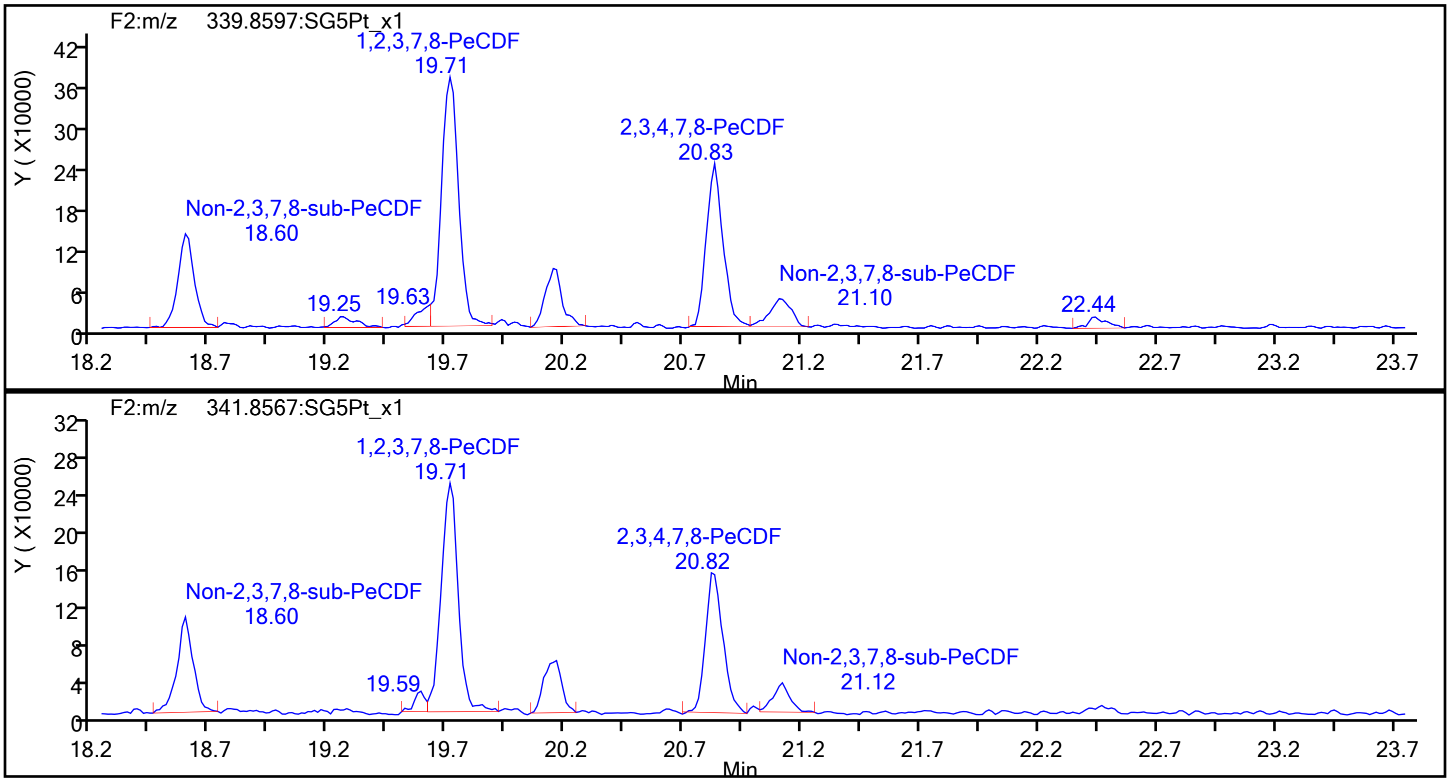

PeCDF Standards

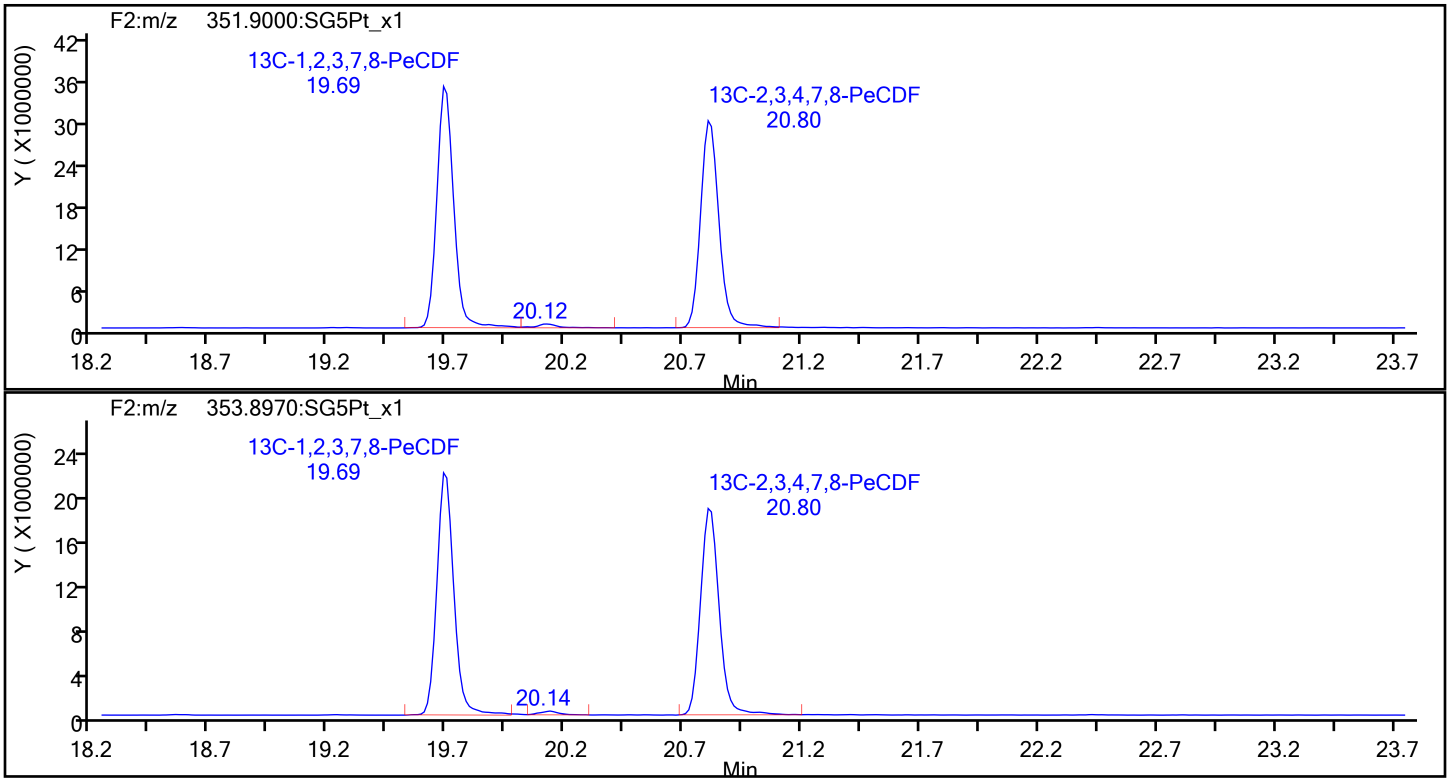

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Injection Date: 09-Oct-2020 04:15:46

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 420482

Sample Line#: 12

Column Type:

Column Dia:

PeCDF

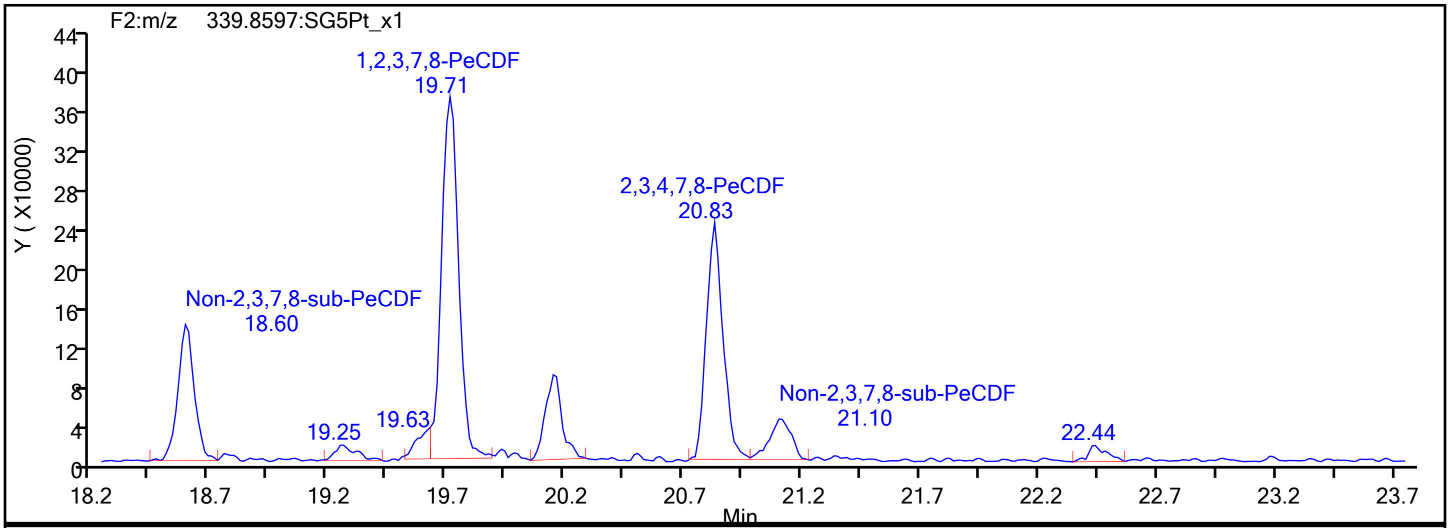

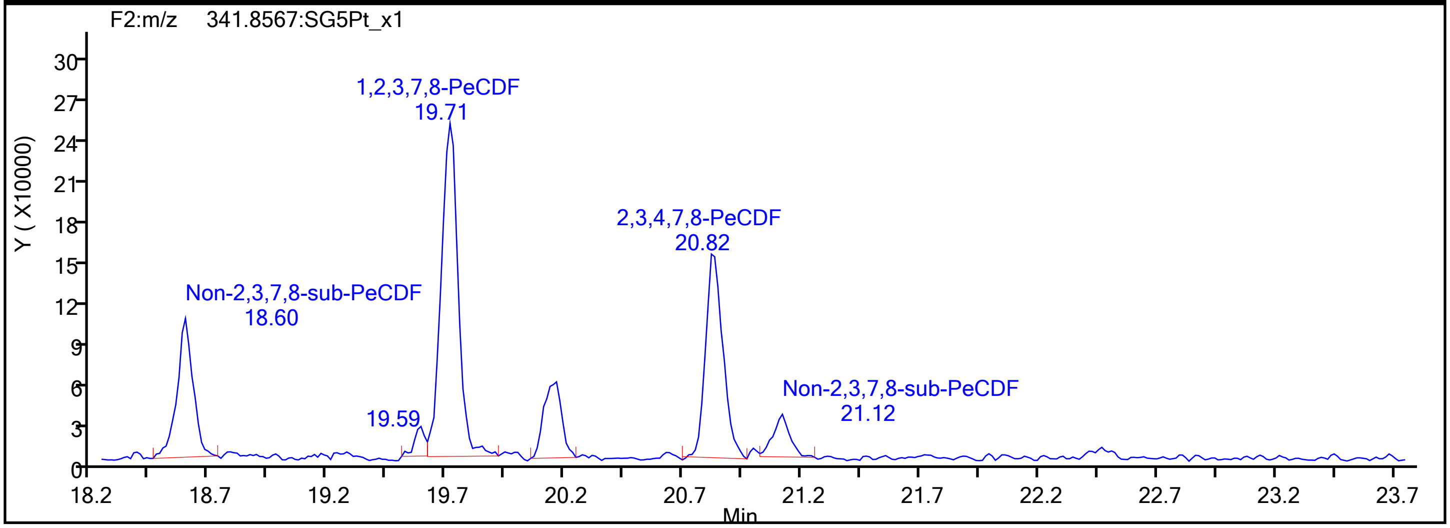

PeCDF Interference Mass

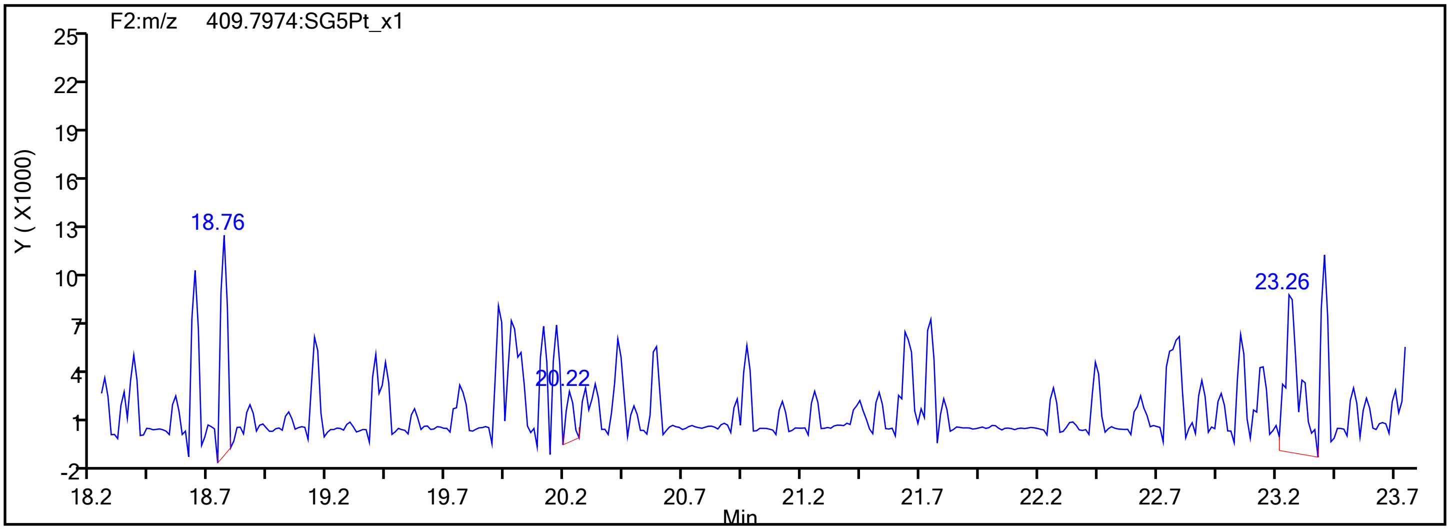

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	420482	Sample Line#:	12
Column Type:		Column Dia:	

PeCDD

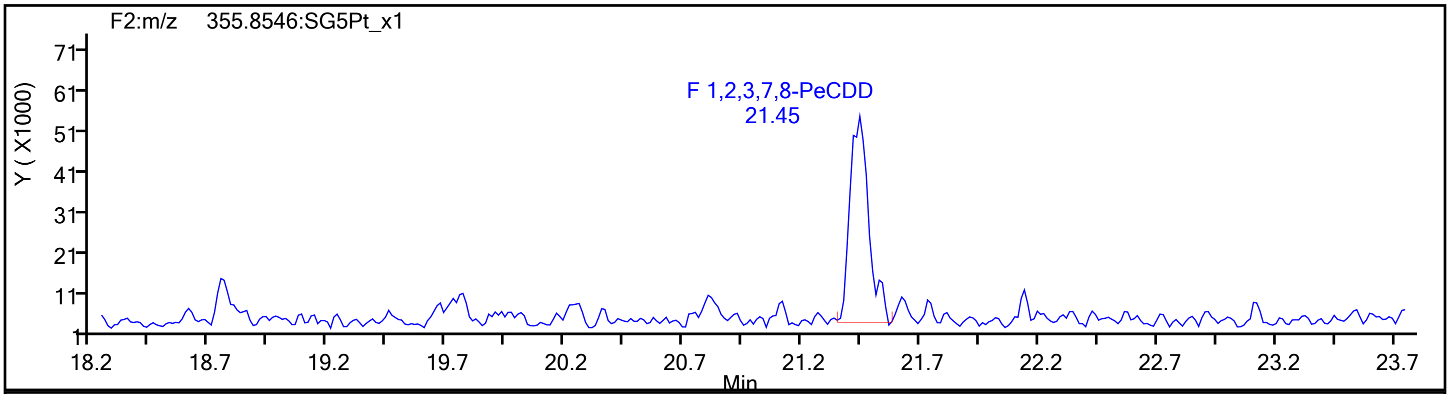

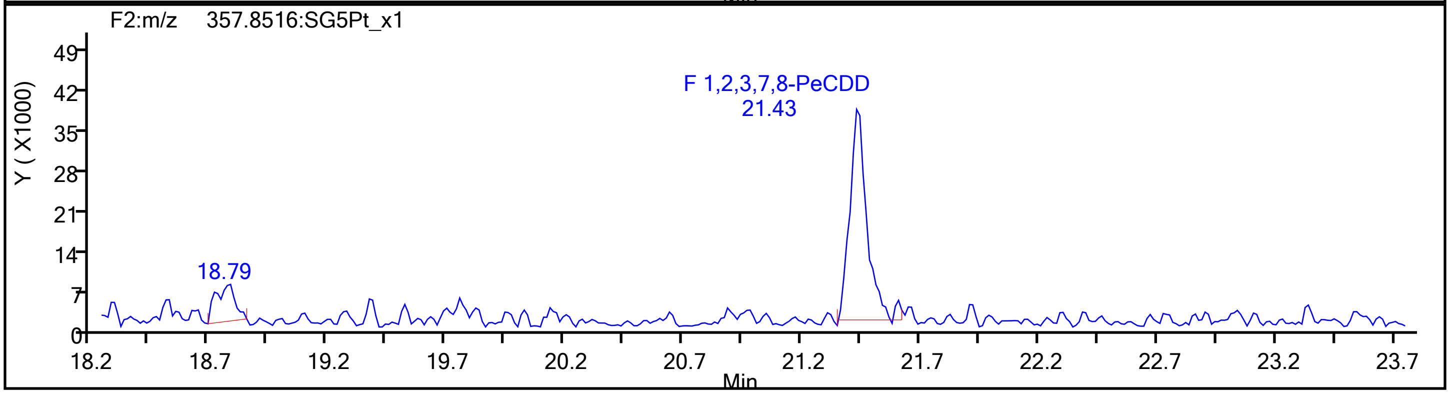

PeCDD Standards

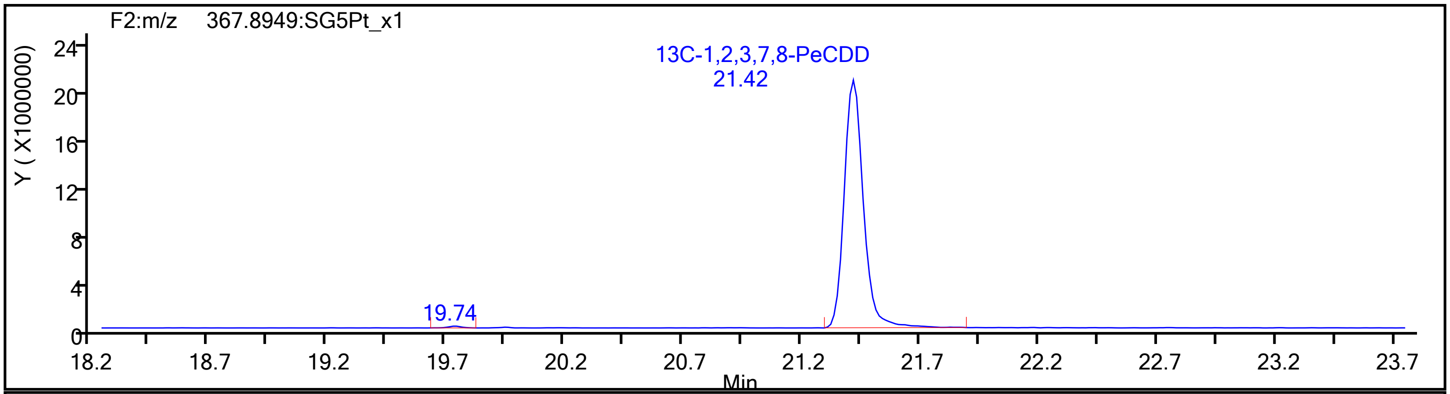

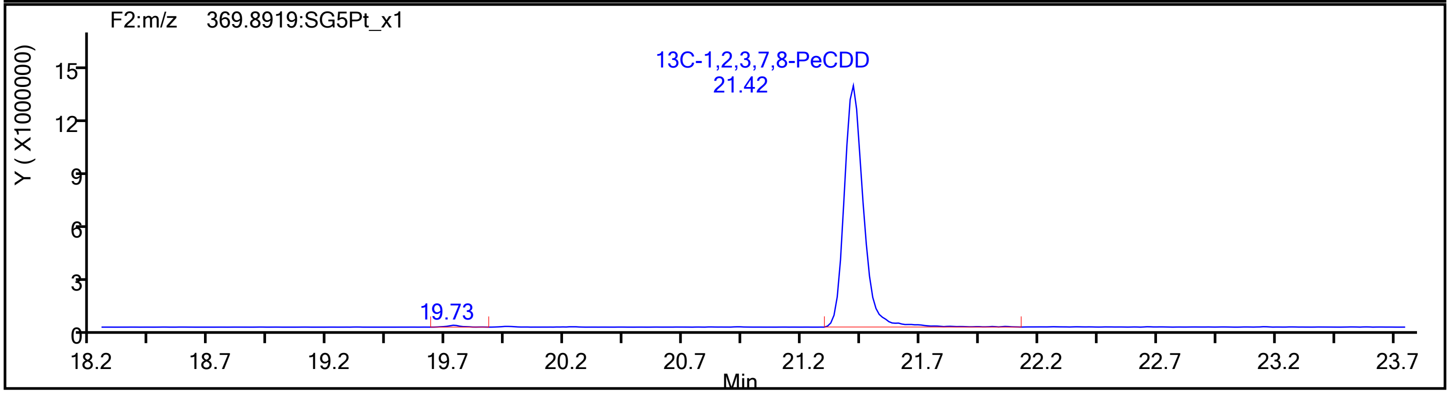

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	420482	Sample Line#:	12
Column Type:		Column Dia:	

HxCDF

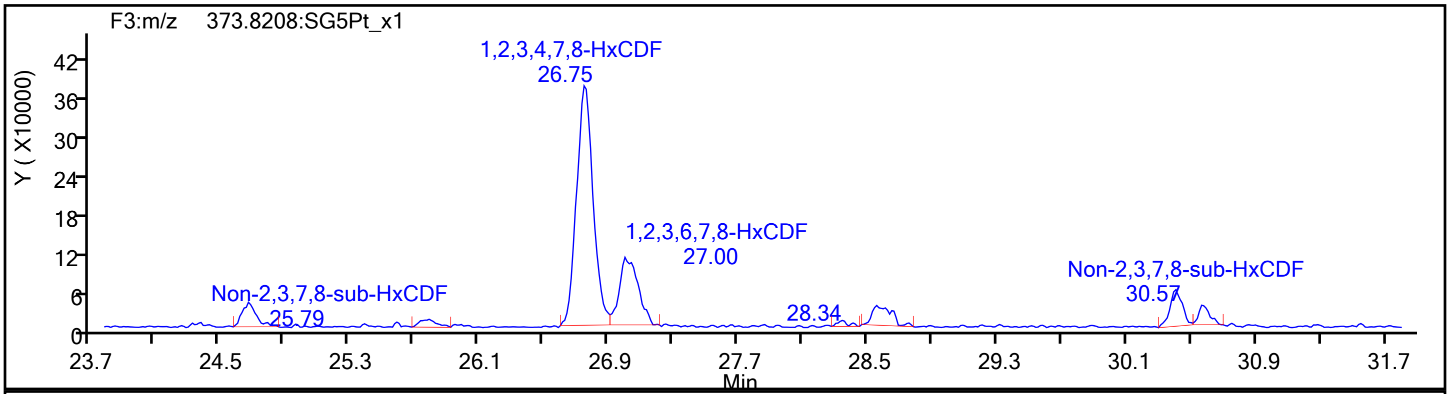

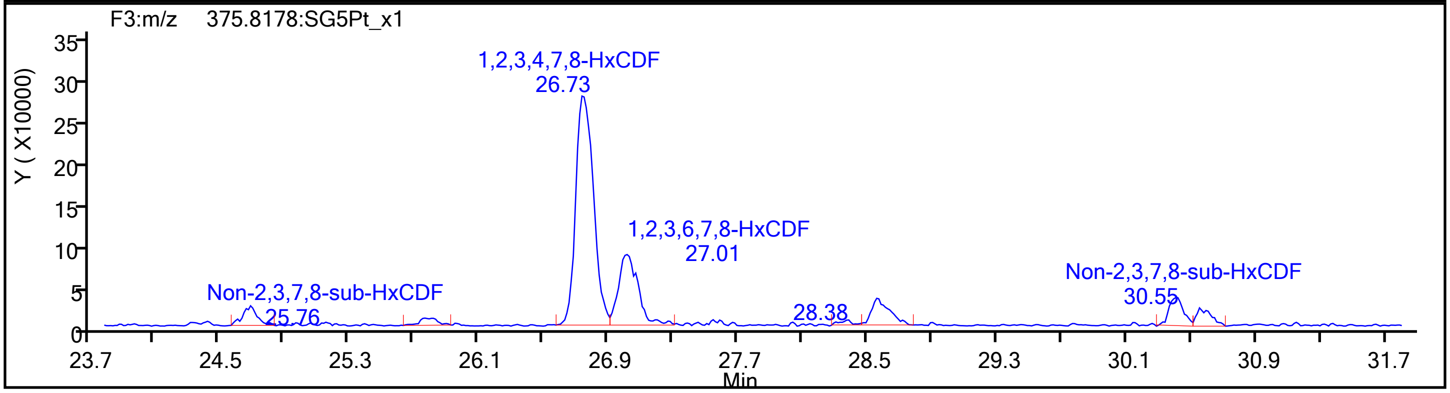

HxCDF Standards

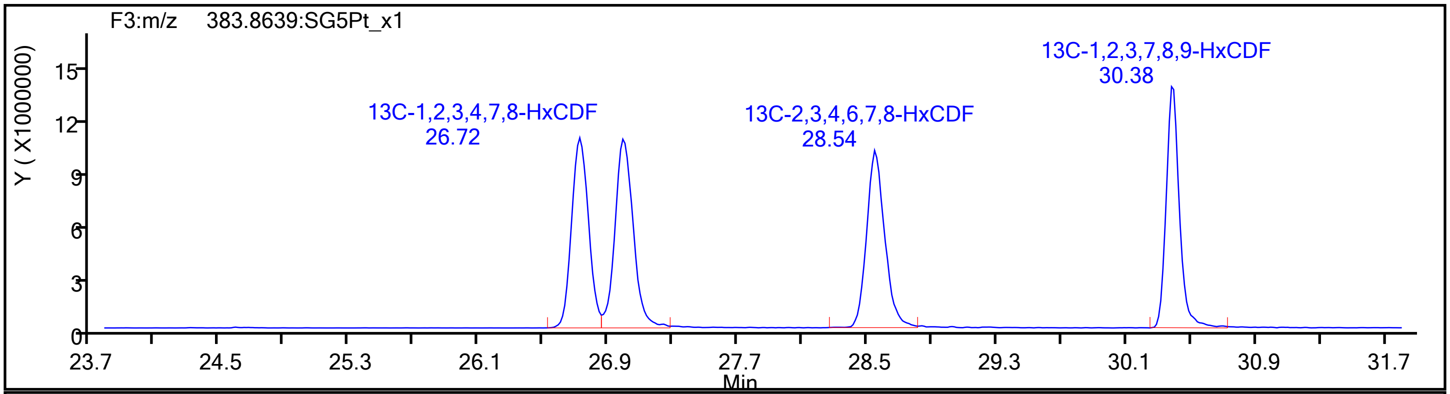

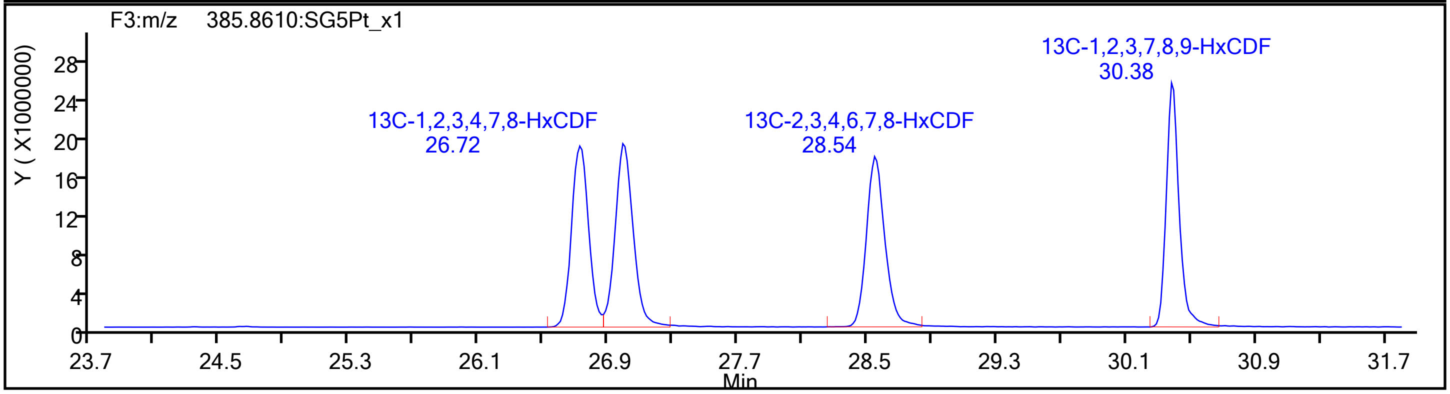

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482 Sample Line#: 12
Column Type: Column Dia:

HxCDF

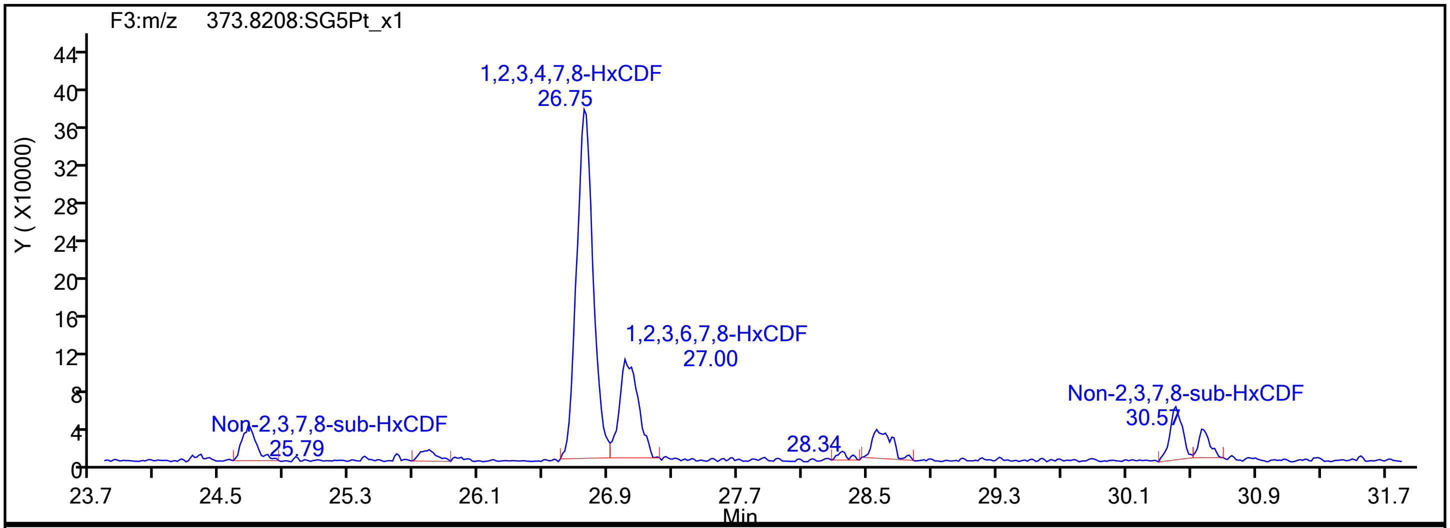

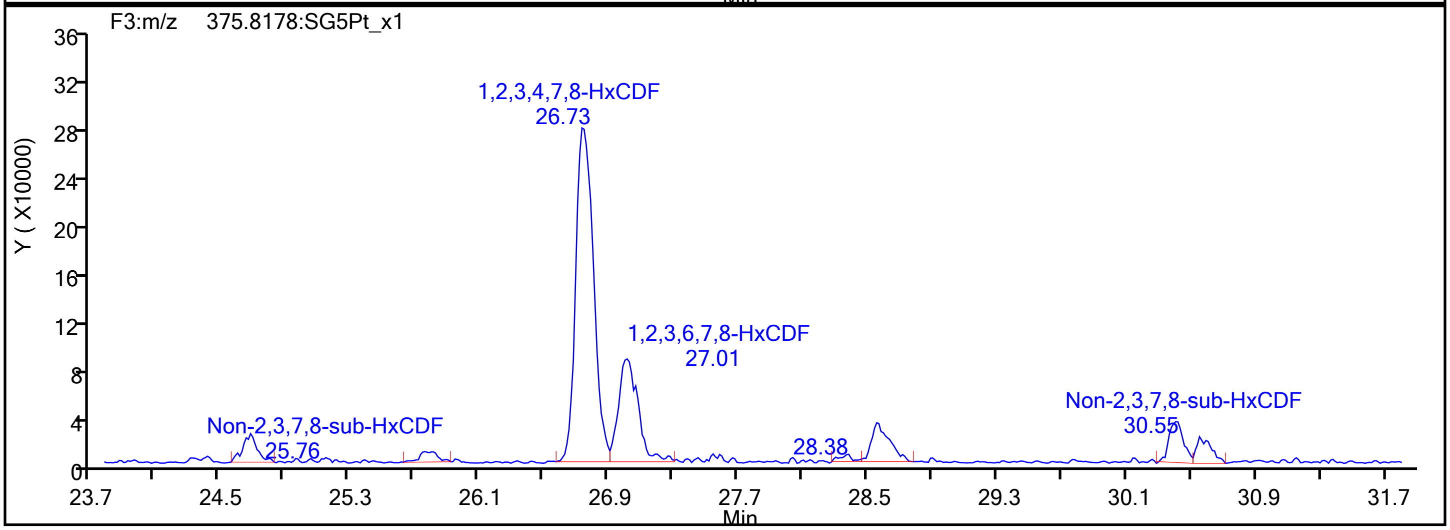

HxCDF Interference Mass

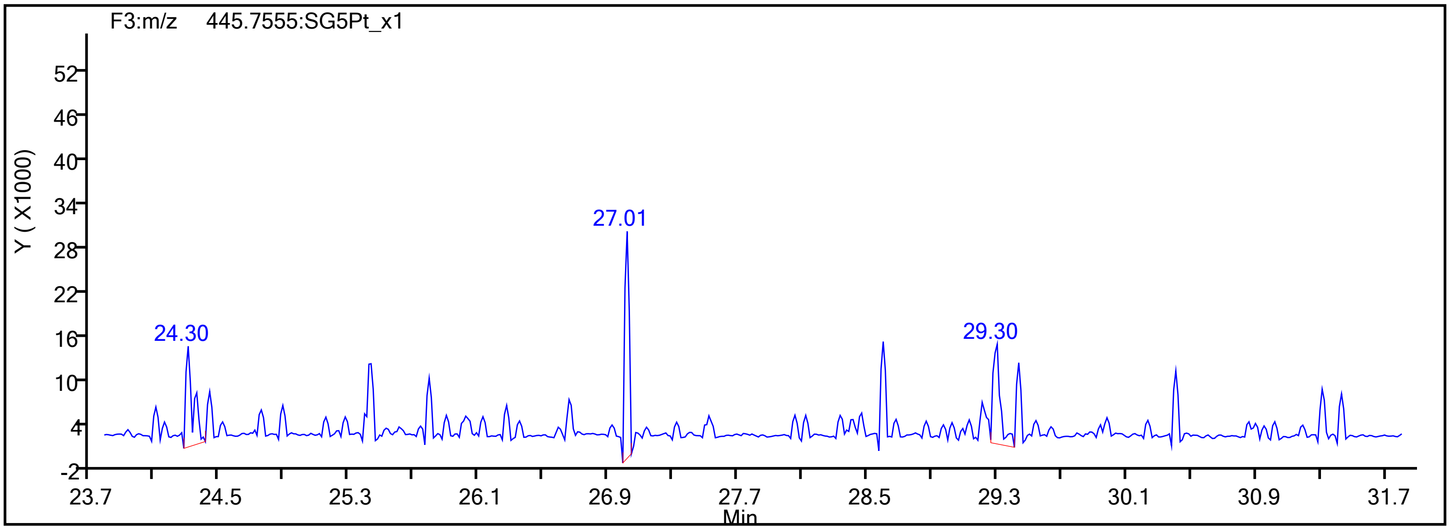

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 04:15:46
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482
Sample Line#: 12
Column Type:
Column Dia:

HxCDD

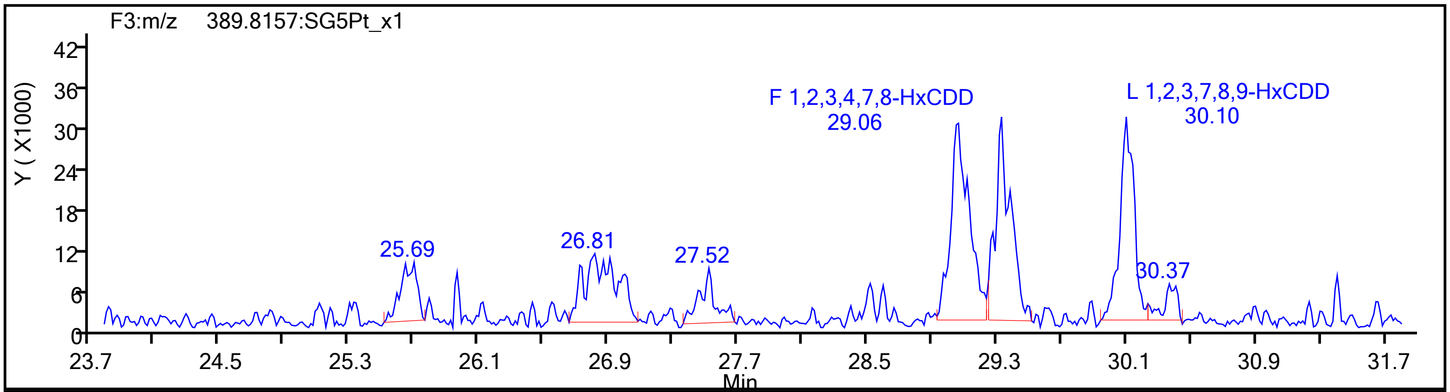

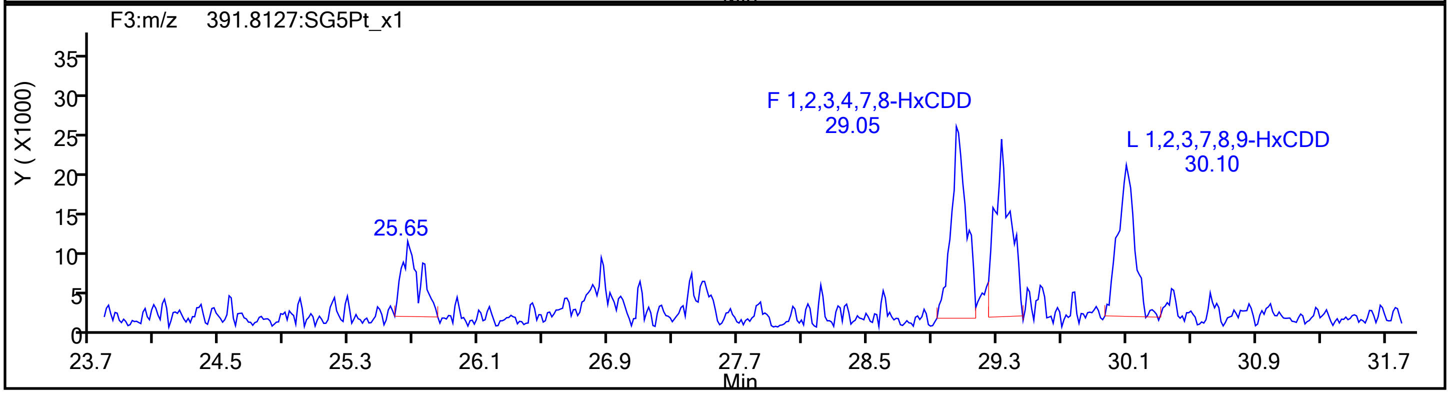

HxCDD Standards

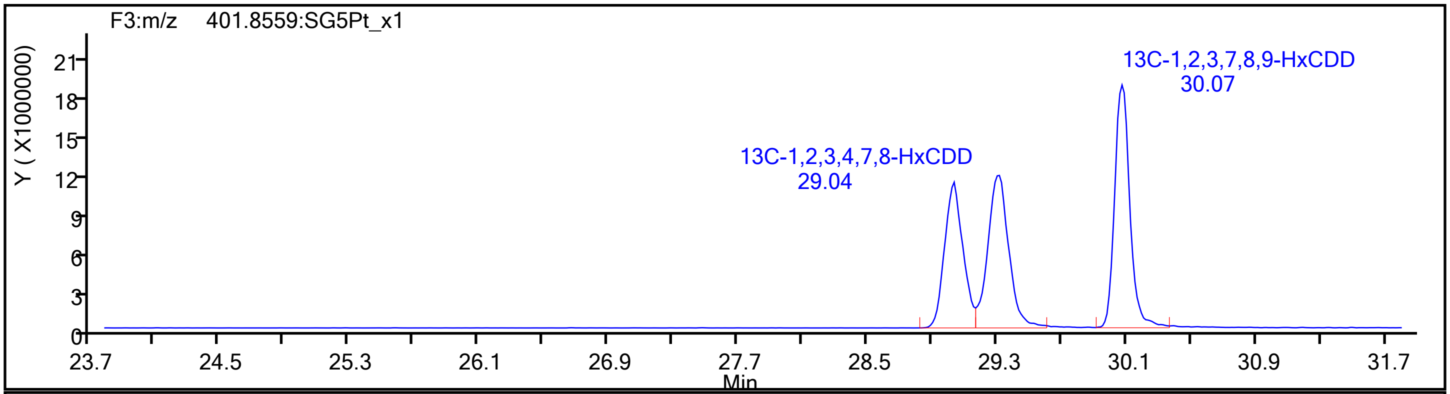

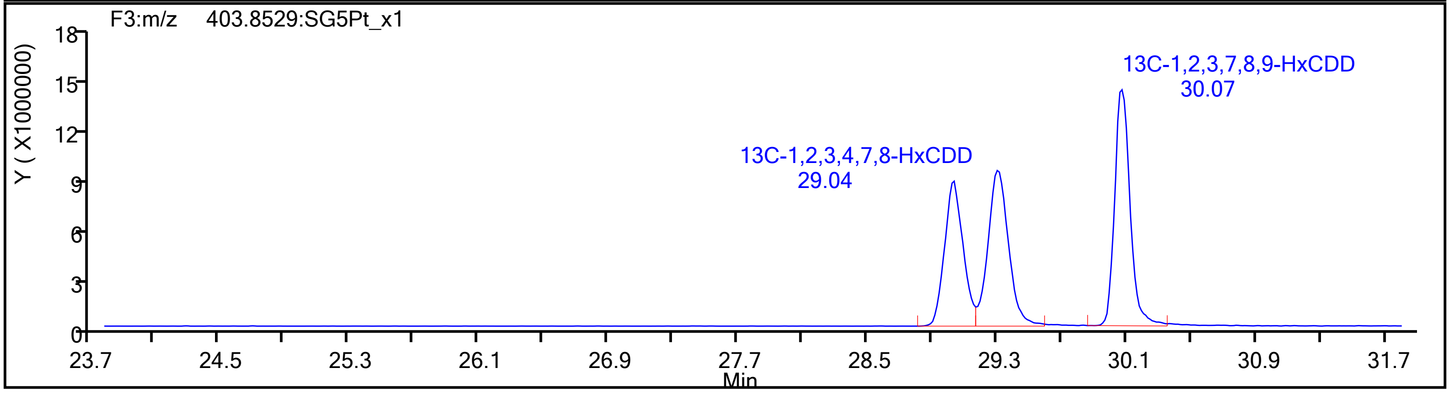

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
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Injection Date: 09-Oct-2020 04:15:46 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482 Sample Line#: 12
Column Type: Column Dia:

HpCDF

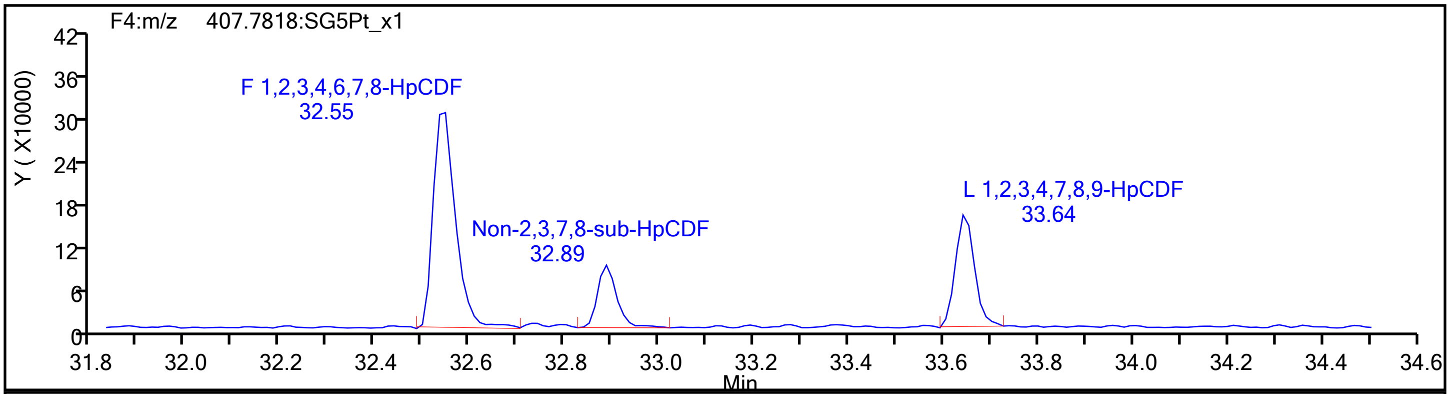

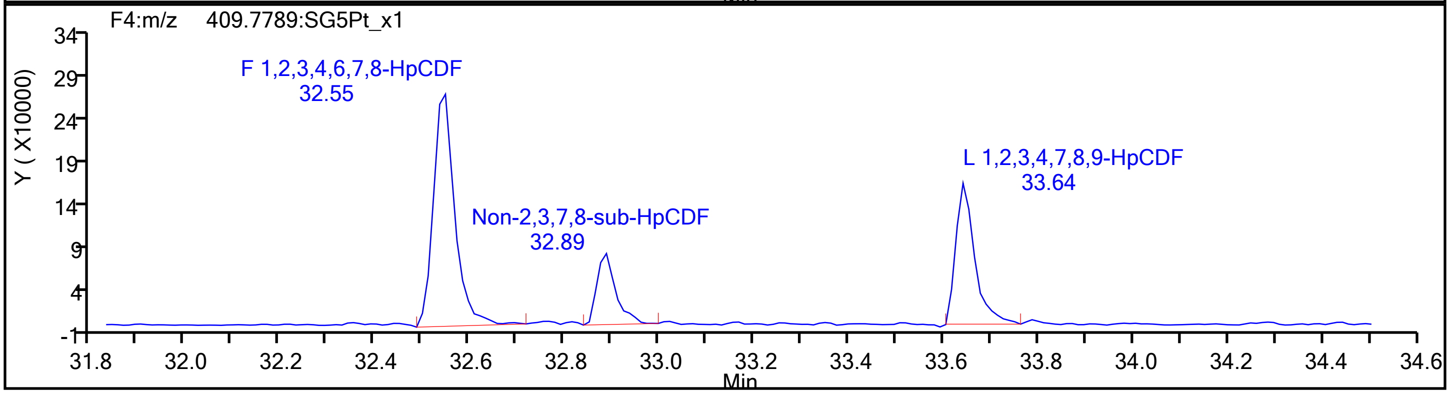

HpCDF Standards

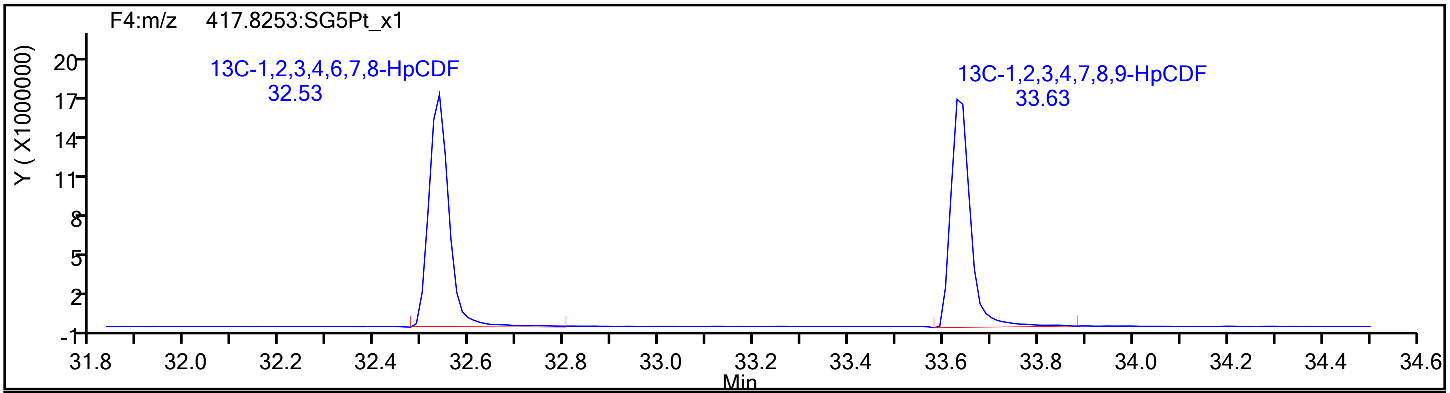

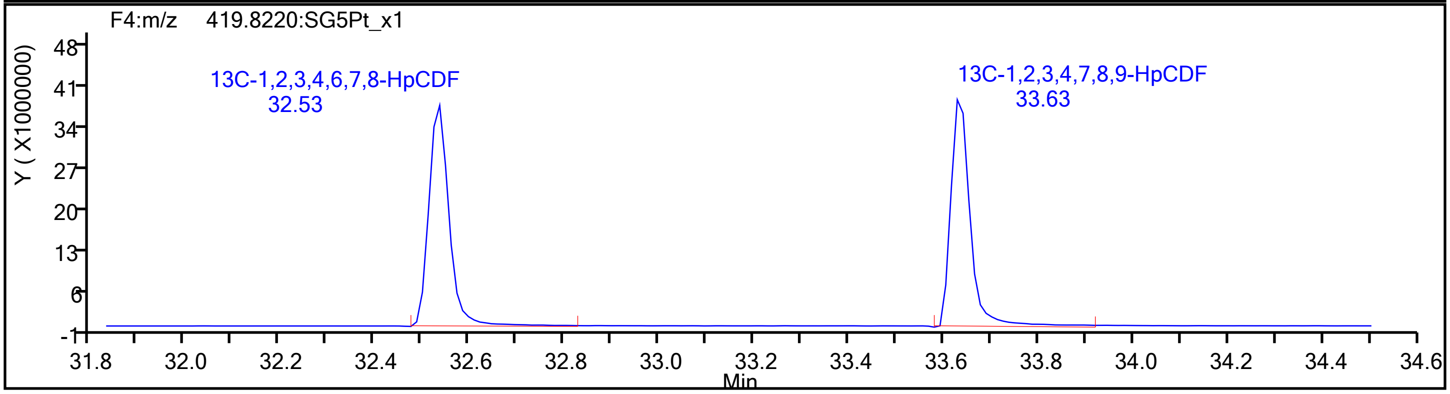

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Injection Date: 09-Oct-2020 04:15:46 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 420482 Sample Line#: 12

Column Type: Column Dia:

HpCDF

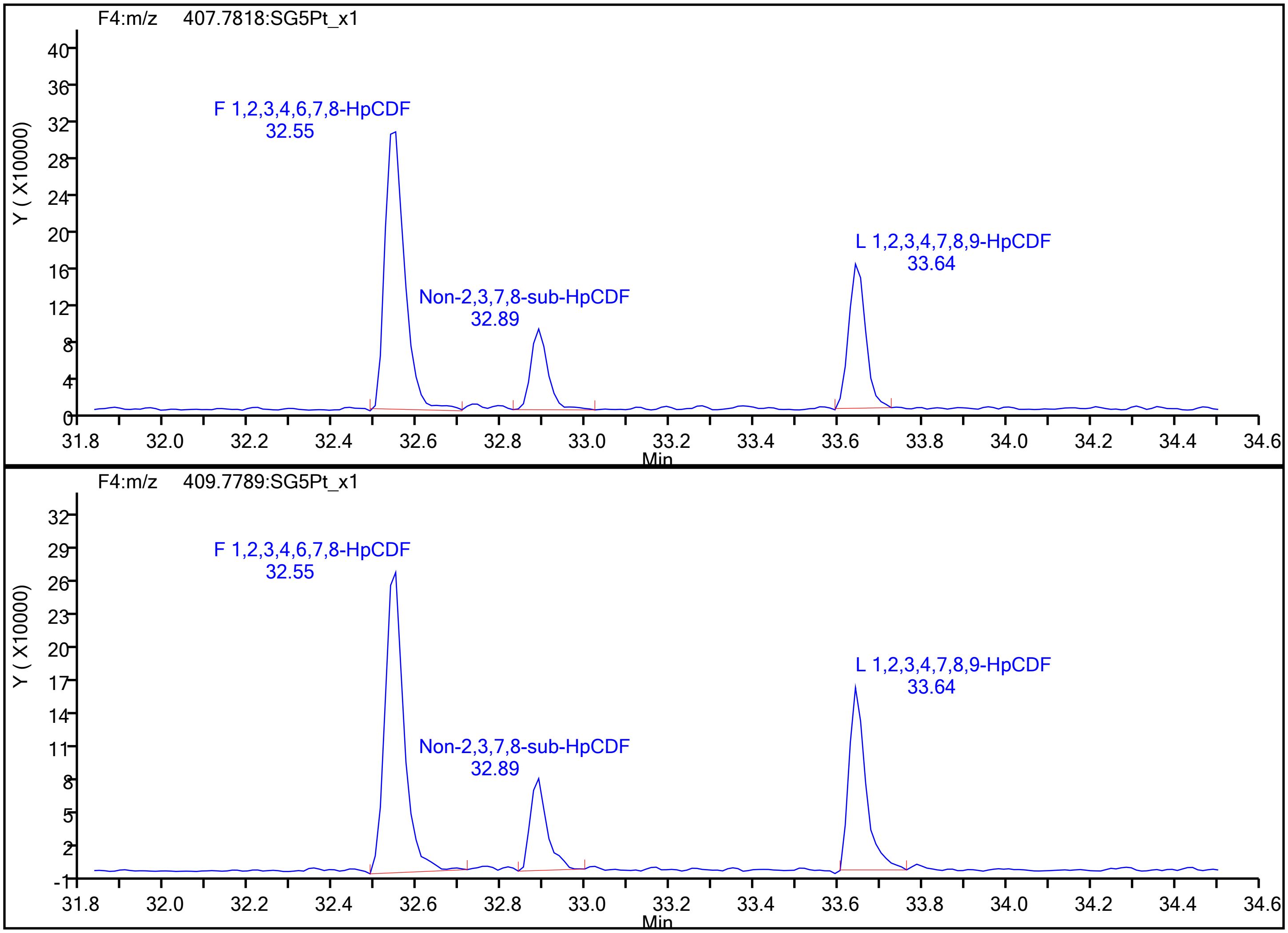

HpCDF Interference Mass

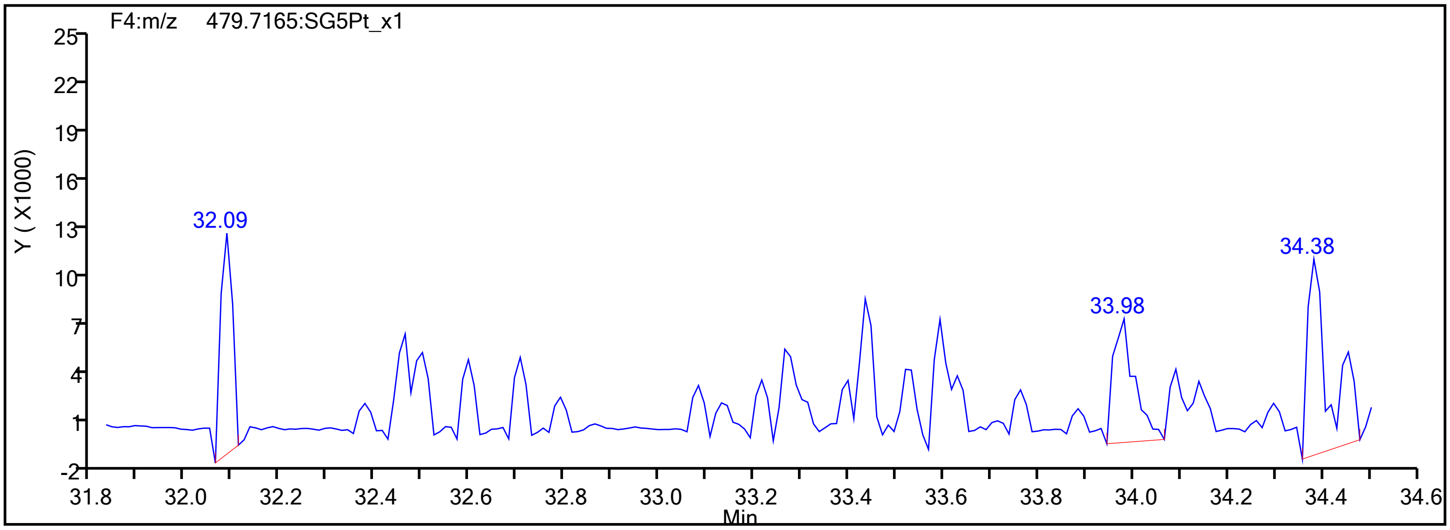

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	420482	Sample Line#:	12
Column Type:		Column Dia:	

HpCDD

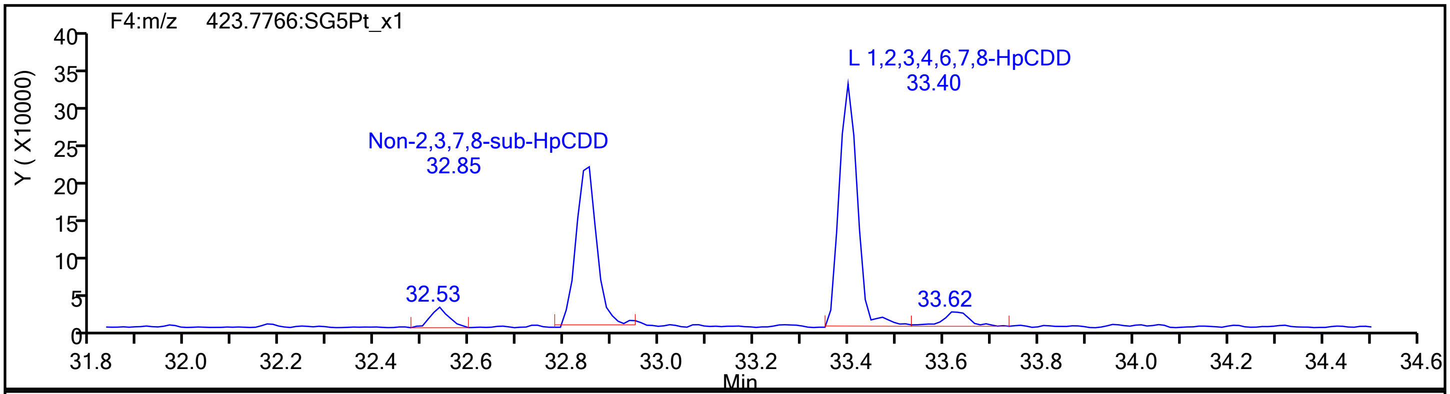

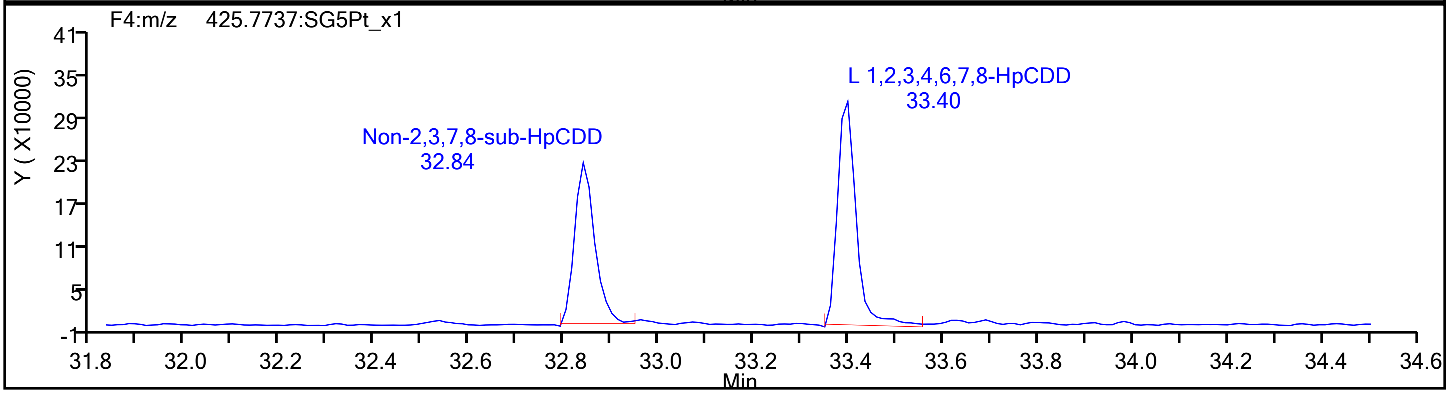

HpCDD Standards

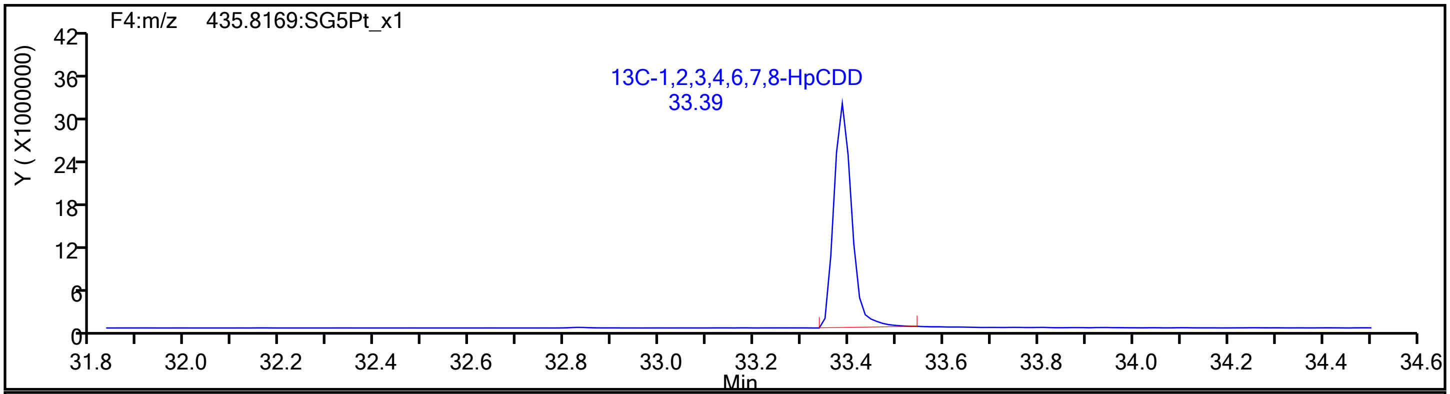

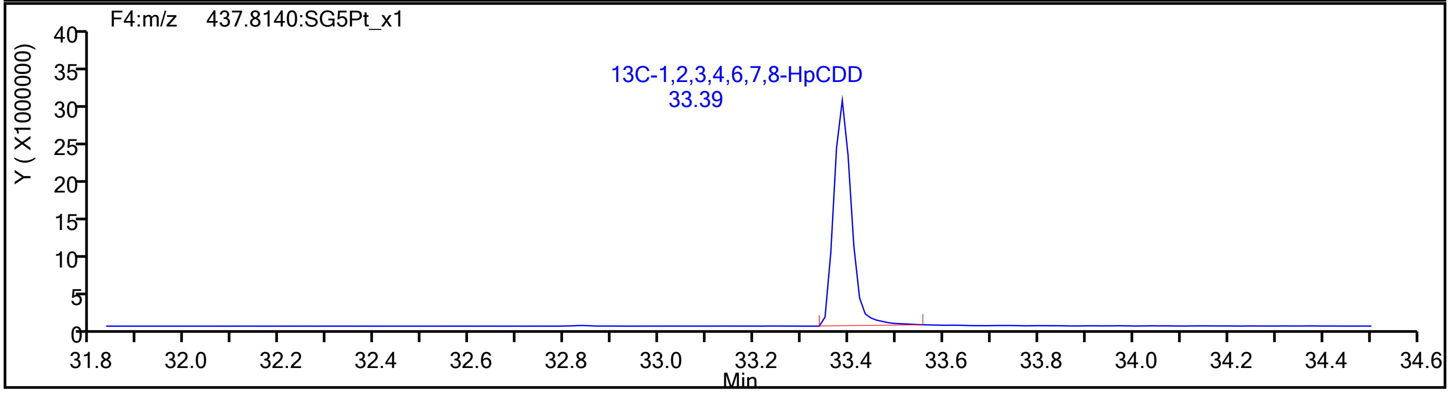

Report Date: 13-Oct-2020 11:36:16　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Injection Date: 09-Oct-2020 04:15:46　　Injection Vol: 2.0 ul

Instrument ID: 3D5　　Operator ID: ALM

Method: Dioxin_3D5　　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 420482　　Sample Line#: 12

Column Type:　　Column Dia:

OCDF

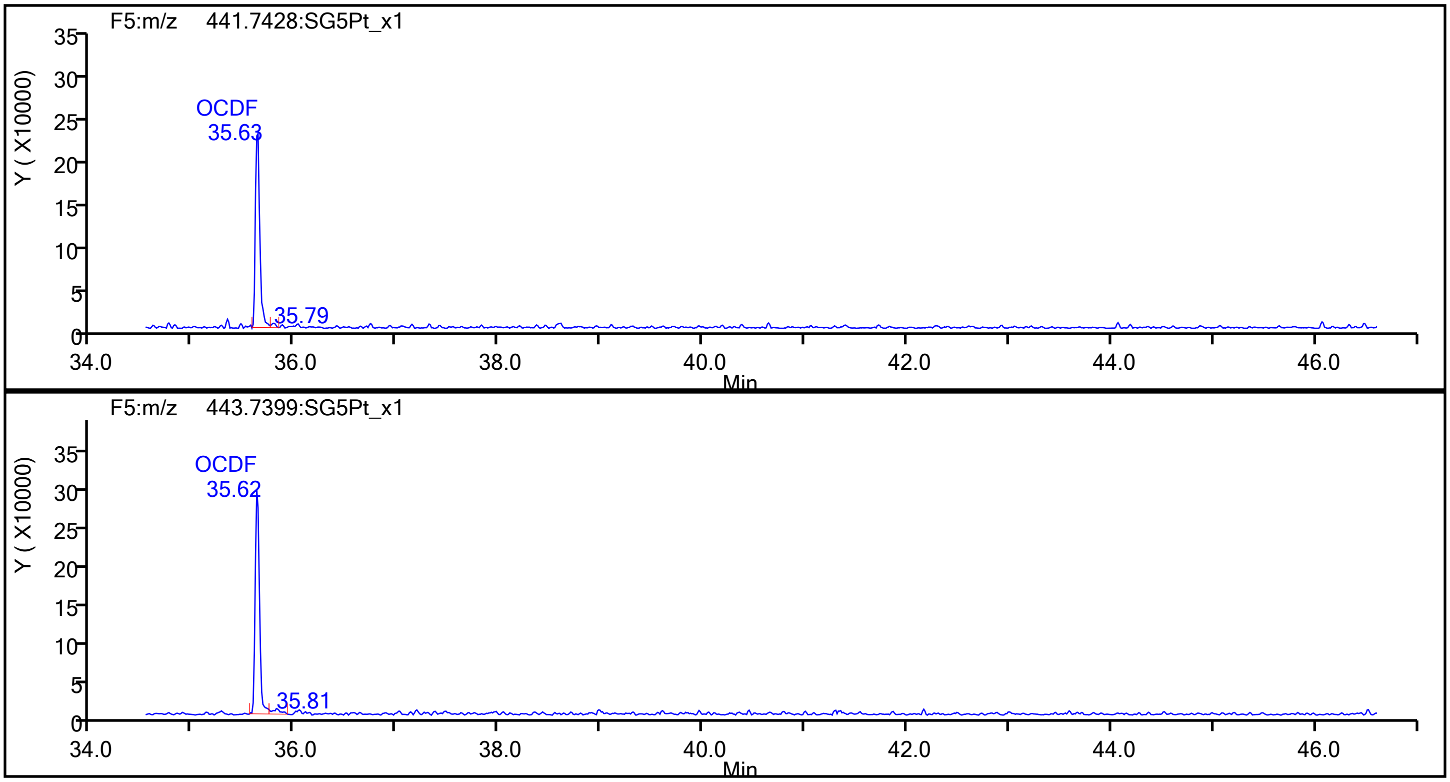

OCDF Standards

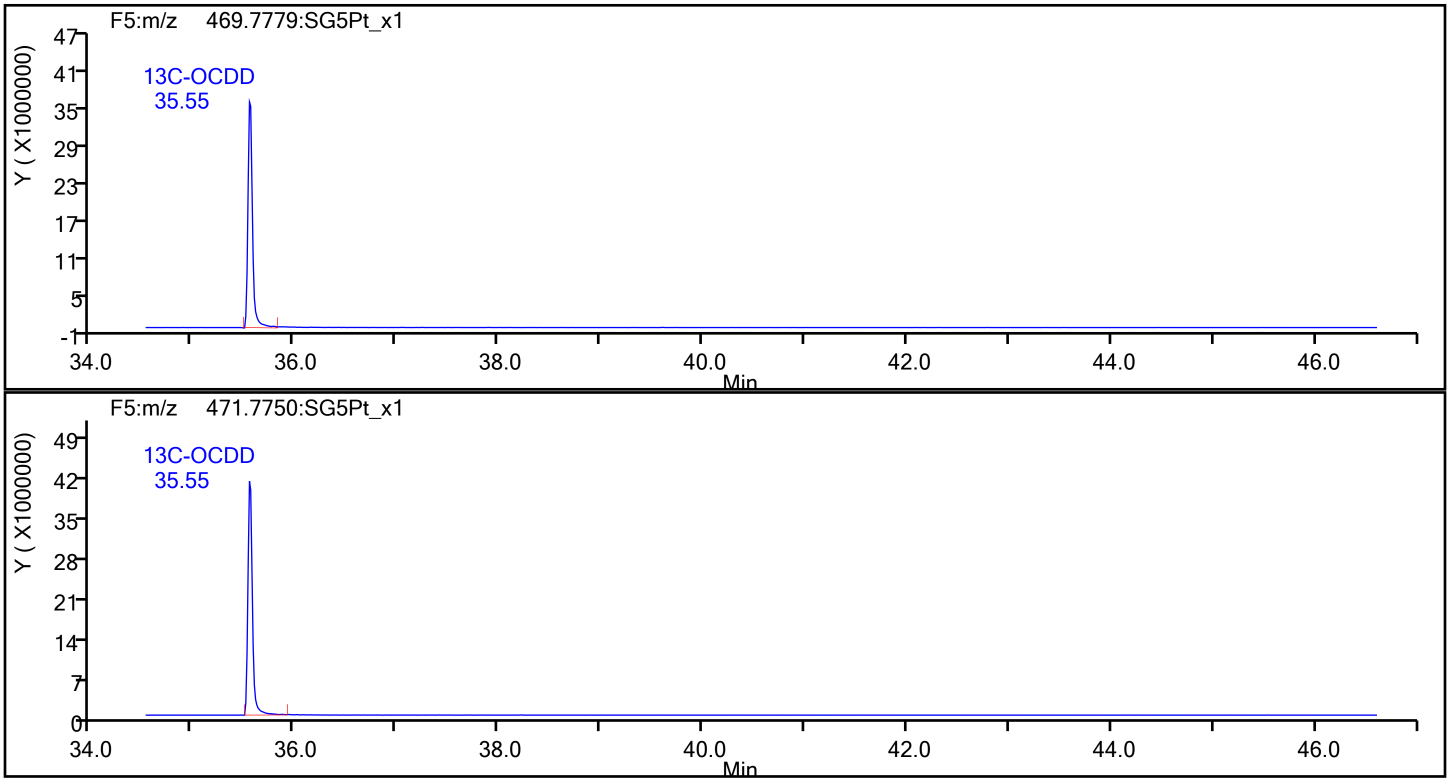

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	420482	Sample Line#:	12
Column Type:		Column Dia:	

OCDF

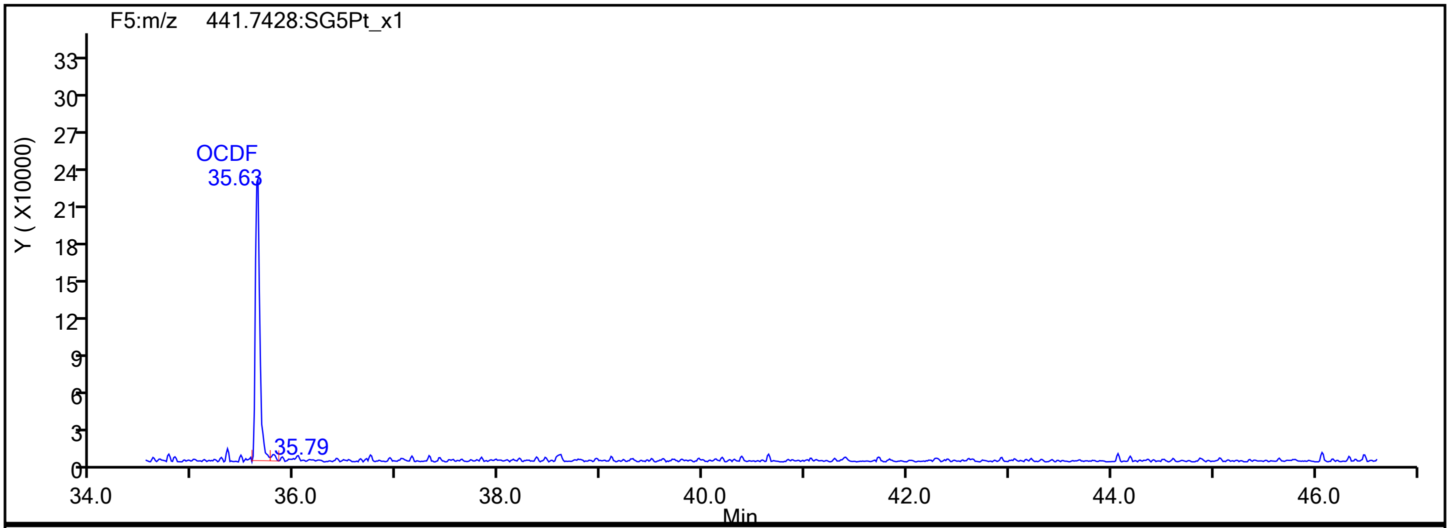

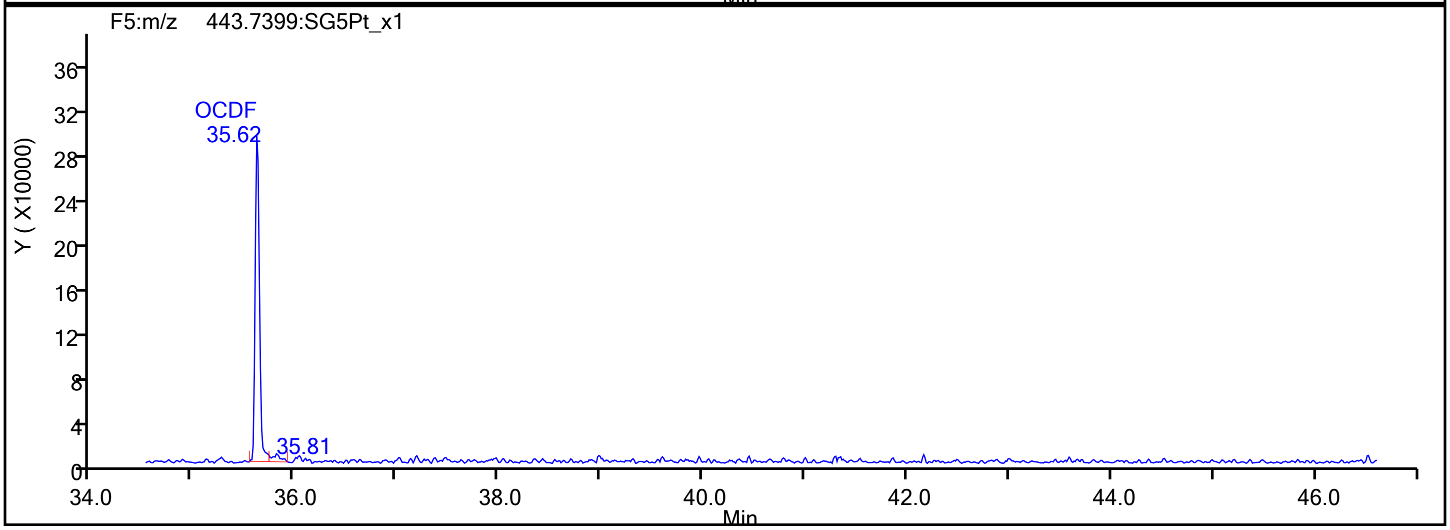

OCDF Interference Mass

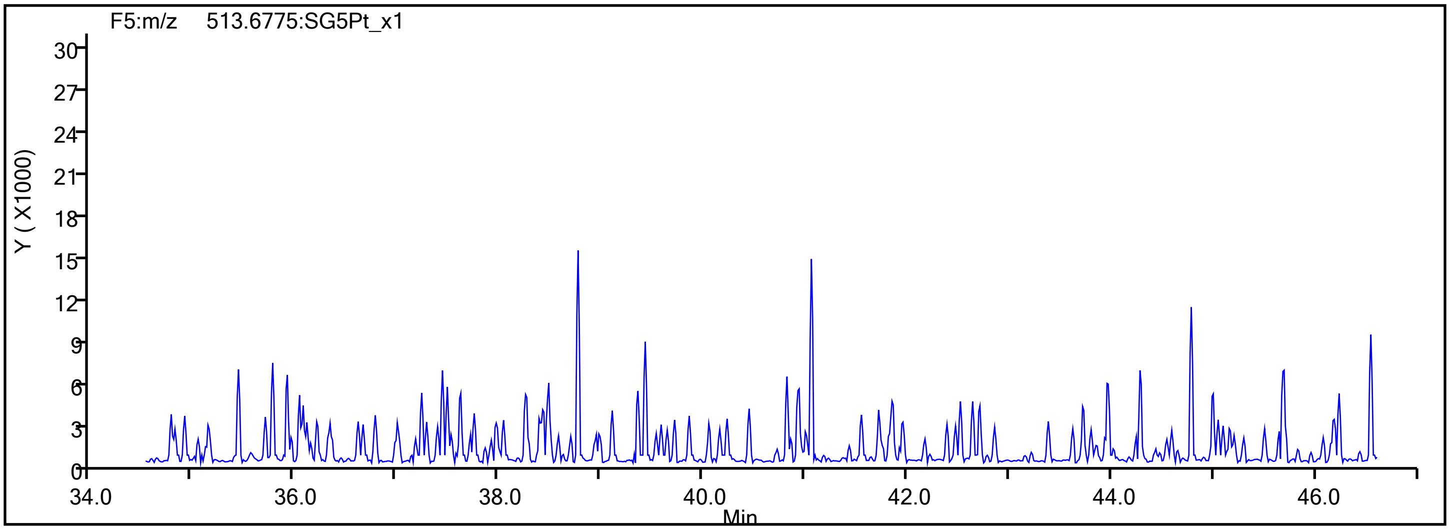

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d

Injection Date: 09-Oct-2020 04:15:46

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 420482

Sample Line#: 12

Column Type:

Column Dia:

OCDD

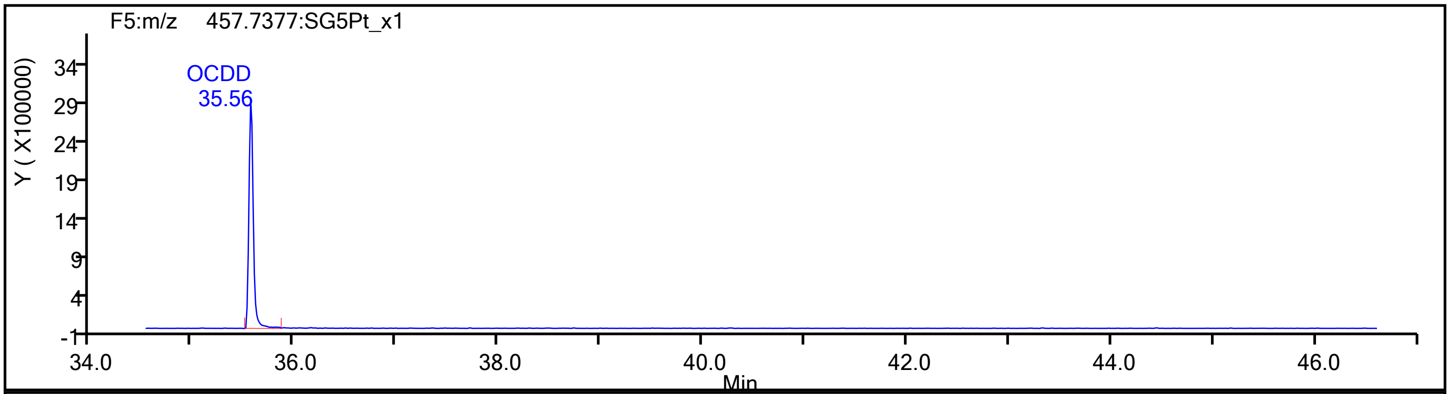

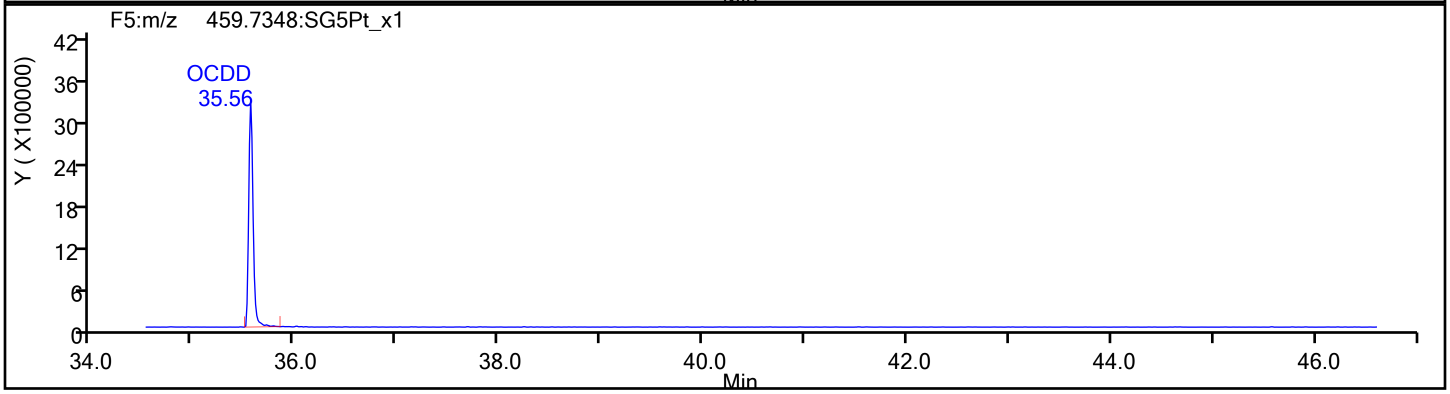

OCDD Standards

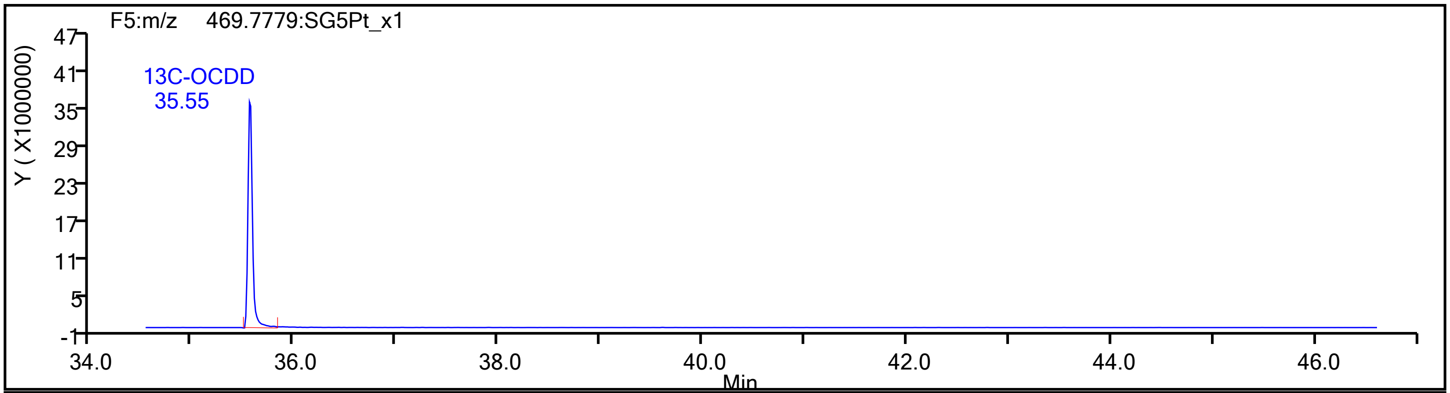

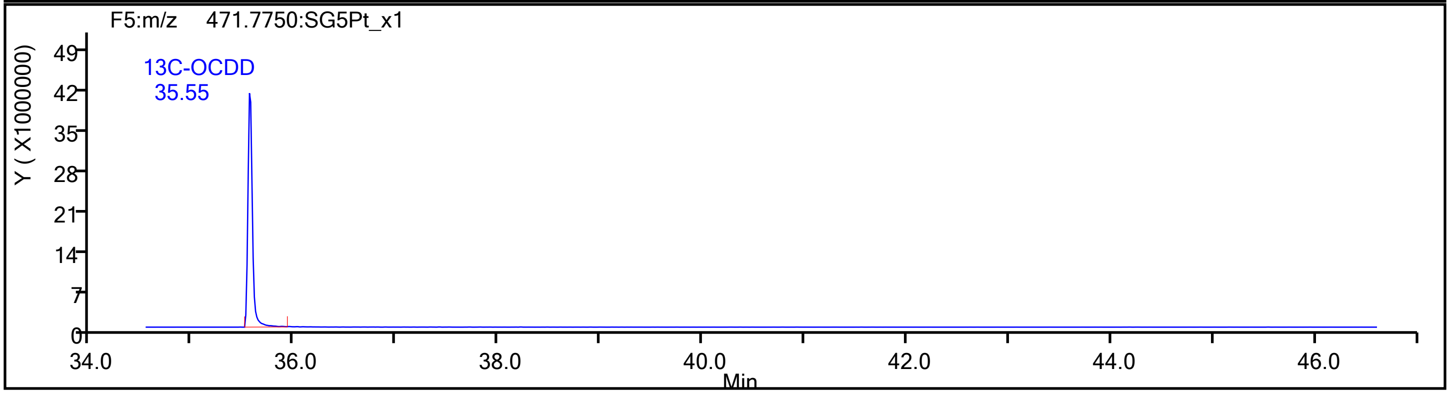

Report Date: 13-Oct-2020 11:36:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d
Injection Date: 09-Oct-2020 04:15:46
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 420482
Sample Line#: 12
Column Type:
Column Dia:

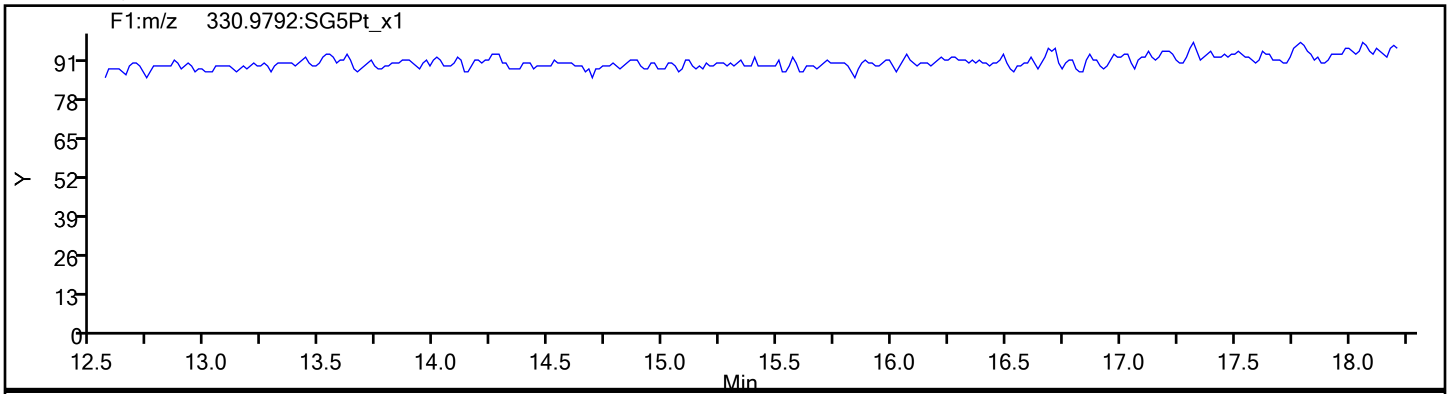

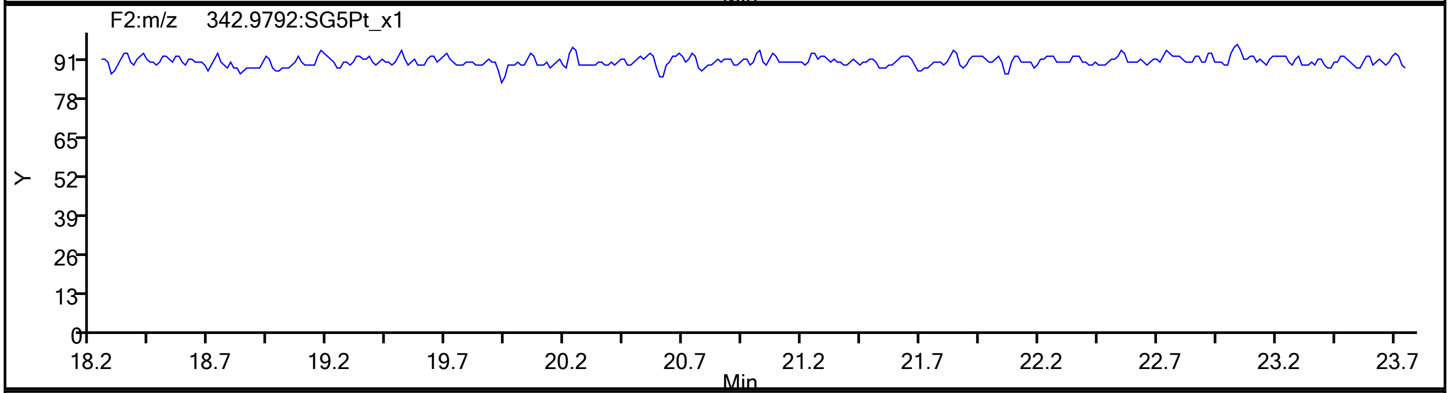

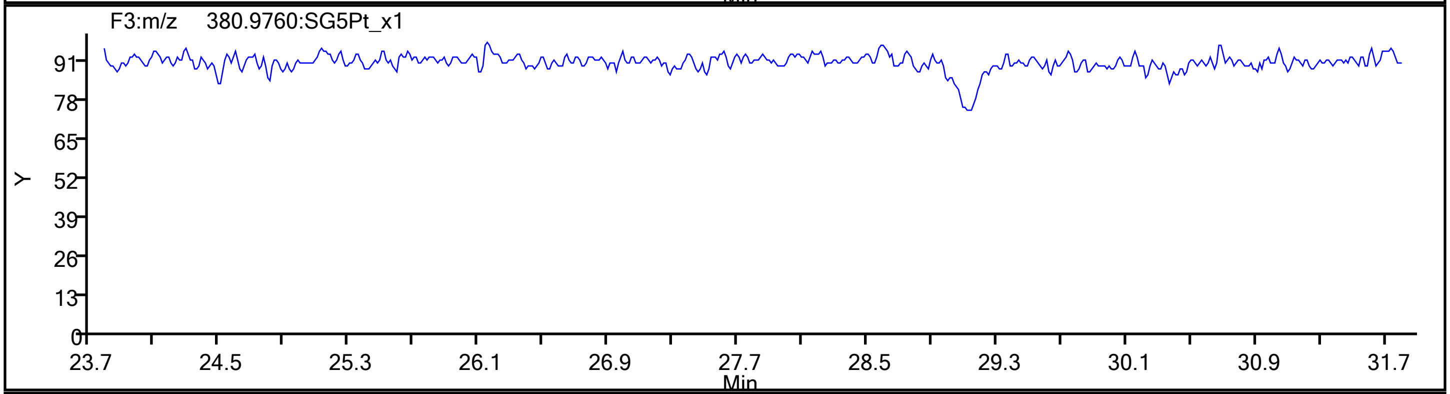

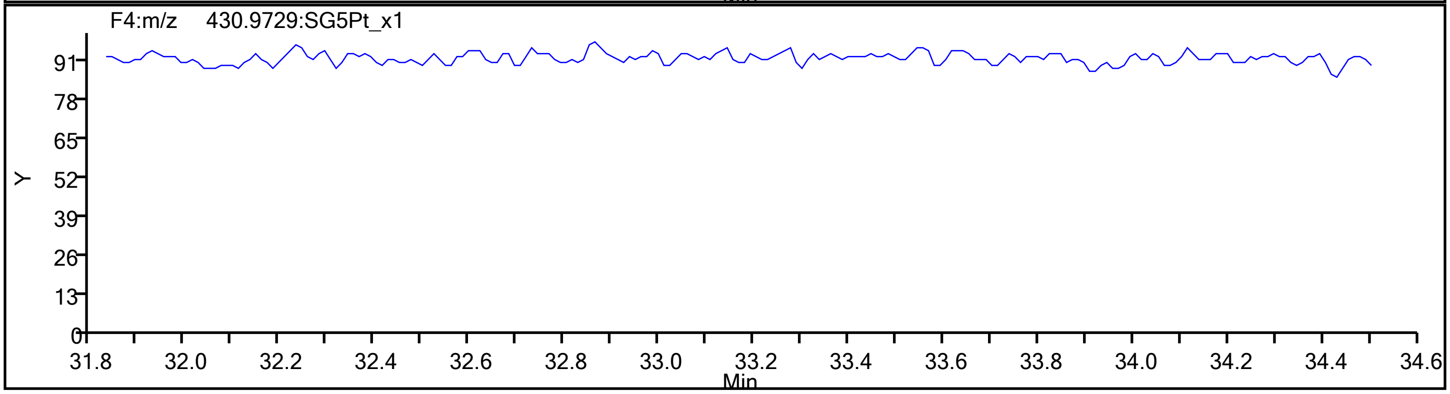

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_12.d		
Injection Date:	09-Oct-2020 04:15:46	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	420482	Sample Line#:	12
Column Type:		Column Dia:	

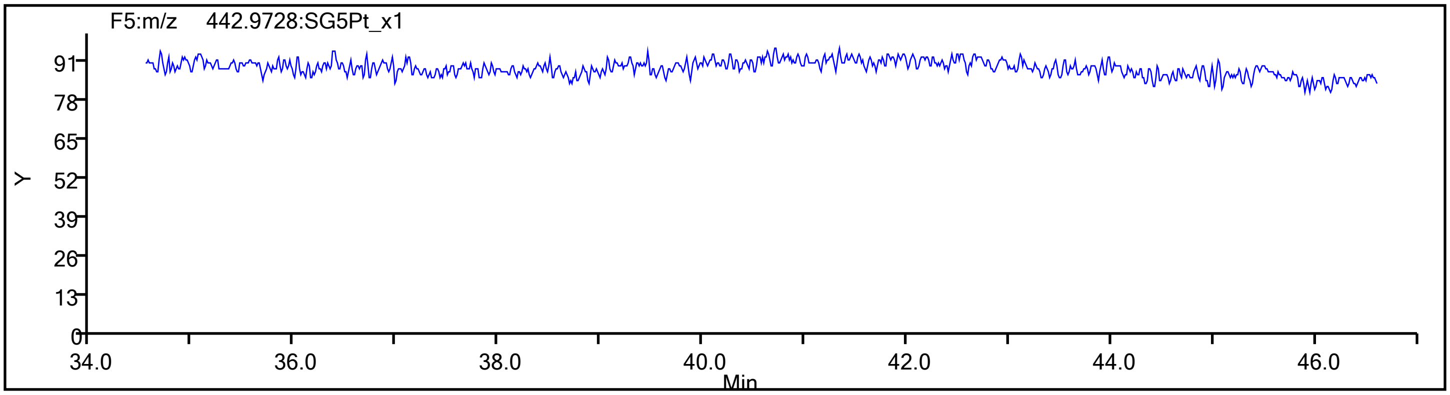

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-3-1 RA Lab Sample ID: 320-65130-2 RA

Matrix: Water Lab File ID: 13OC20A11D2_008.d

Analysis Method: 1613B Date Collected: 09/11/2020 12:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 1047.9(mL) Date Analyzed: 10/14/2020 00:10

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421876 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	430	B	9.5	1.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	83		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	116		35-197

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_008.d				
Lims ID:	320-65130-A-2-A				
Client ID:	11215702-Tank#1-valve-3-1				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 00:10:37	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-2-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:34:49

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.928	70114741	0.84	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.066	91636035	0.79	1.5708	83.2	83.2	0.3652	0.3652	83.20	
2,3,7,8-TCDF	16.080	20528245	0.78	0.9943	22.5	22.5	0.0993	0.0993		
D 13C-2,3,7,8-TCDD	14.681	55101546	0.82	0.9834	79.9	79.9	0.9015	0.9015	79.92	
2,3,7,8-TCDD	14.708	5696474	0.77	1.2822	8.063	8.063	0.1807	0.1807		
$ 37Cl4-2,3,7,8-TCDD	14.694	32304876		0.9945	46.3	46.3	0.1238	0.1238	116	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_008.d				
Lims ID:	320-65130-A-2-A				
Client ID:	11215702-Tank#1-valve-3-1				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 00:10:37	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-2-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:34:49		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.928	14.928	0		32020181	7877069	31781	79452	248		
333.9339	14.928	14.928	0		38094560	9634135	30311	75777	318	0.84(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.066	16.067	0	1.076	40326710	9618877	23818	59545	404		
317.9389	16.066	16.067	0	1.076	51309325	12033650	16366	40915	735	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.080	16.081	0	1.001	8963086	2162053	3100	7750	697		
305.8987	16.080	16.081	0	1.001	11565159	2731558	5453	13632	501	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.681	14.681	0	0.983	24824744	6050280	31781	79452	190		
333.9339	14.681	14.681	0	0.983	30276802	7754874	30311	75777	256	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.708	14.709	0	1.002	2478051	614530	4678	11695	131		
321.8936	14.708	14.709	0	1.002	3218423	784828	8114	20285	97	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.694	14.709	-1	0.984	32304876	7831712	8627	21567	908		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_008.d
Injection Date: 14-Oct-2020 00:10:37 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-1
Worklist#: 421876 Sample Line#: 8
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

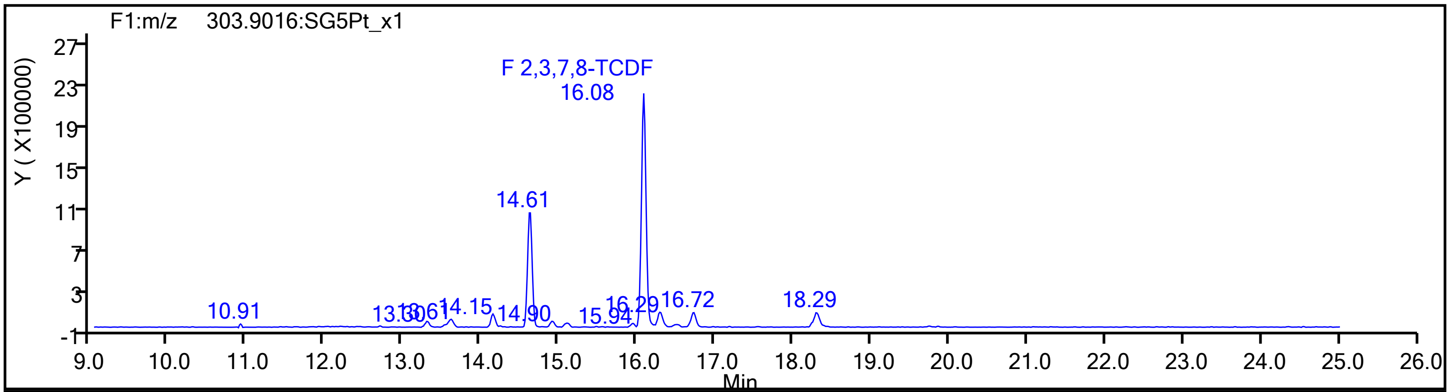

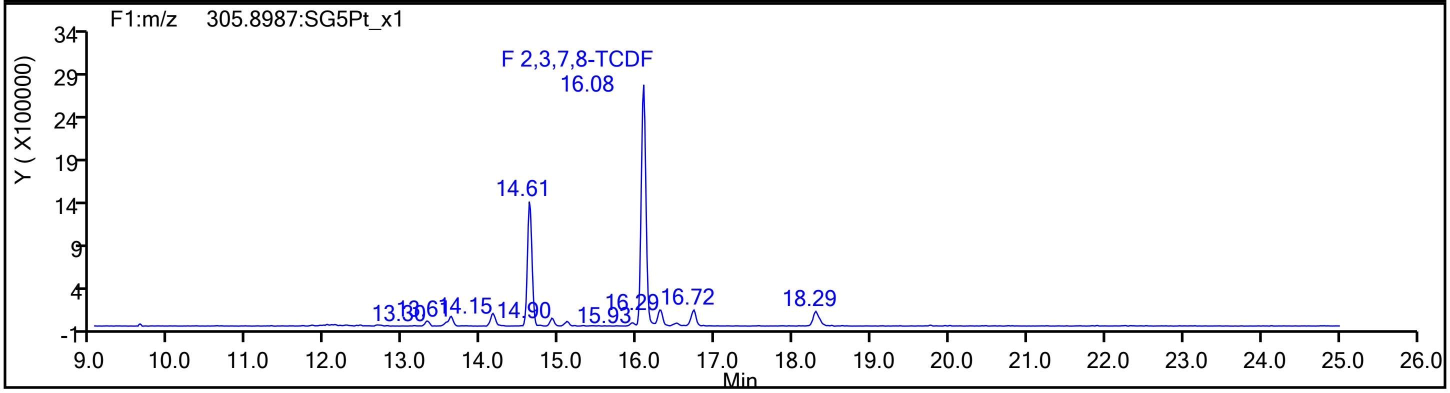

TCDF Standards

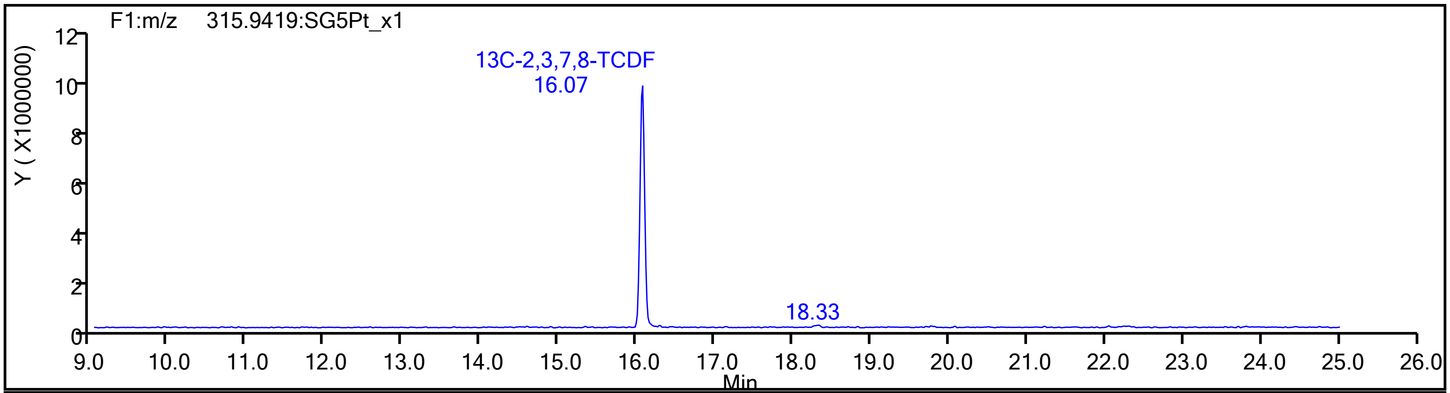

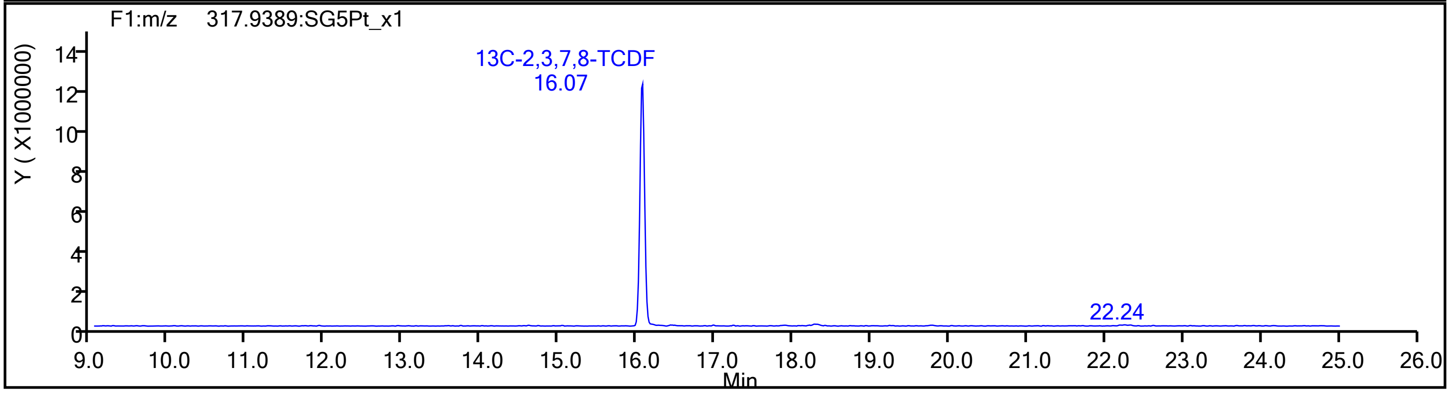

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_008.d

Injection Date: 14-Oct-2020 00:10:37

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-1

Worklist#: 421876

Sample Line#: 8

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

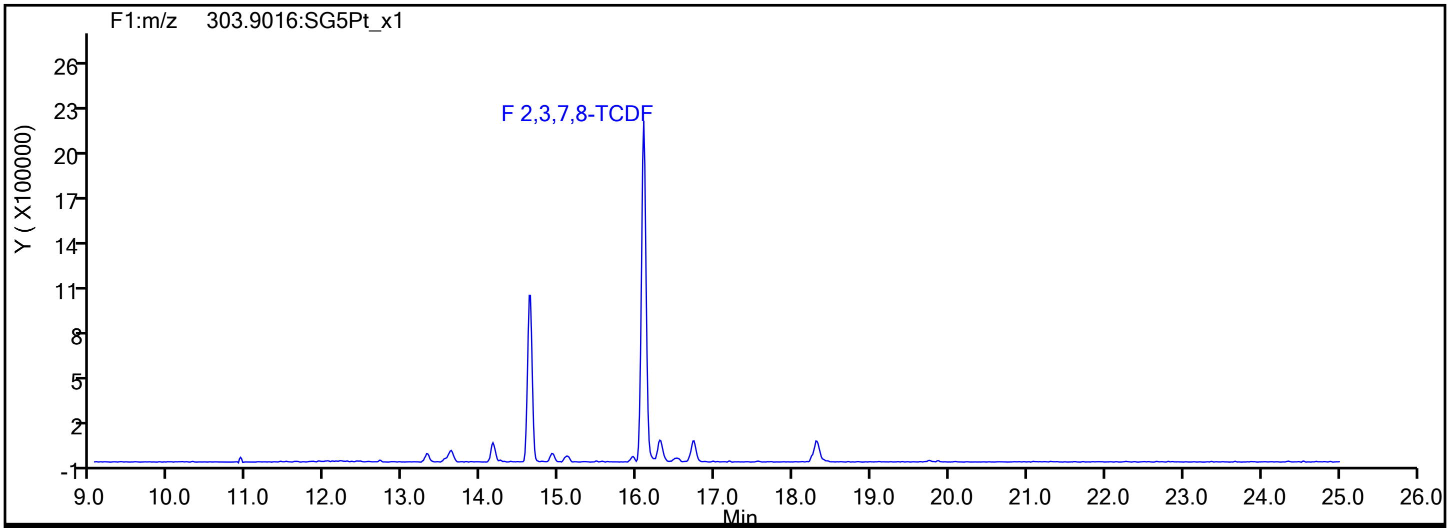

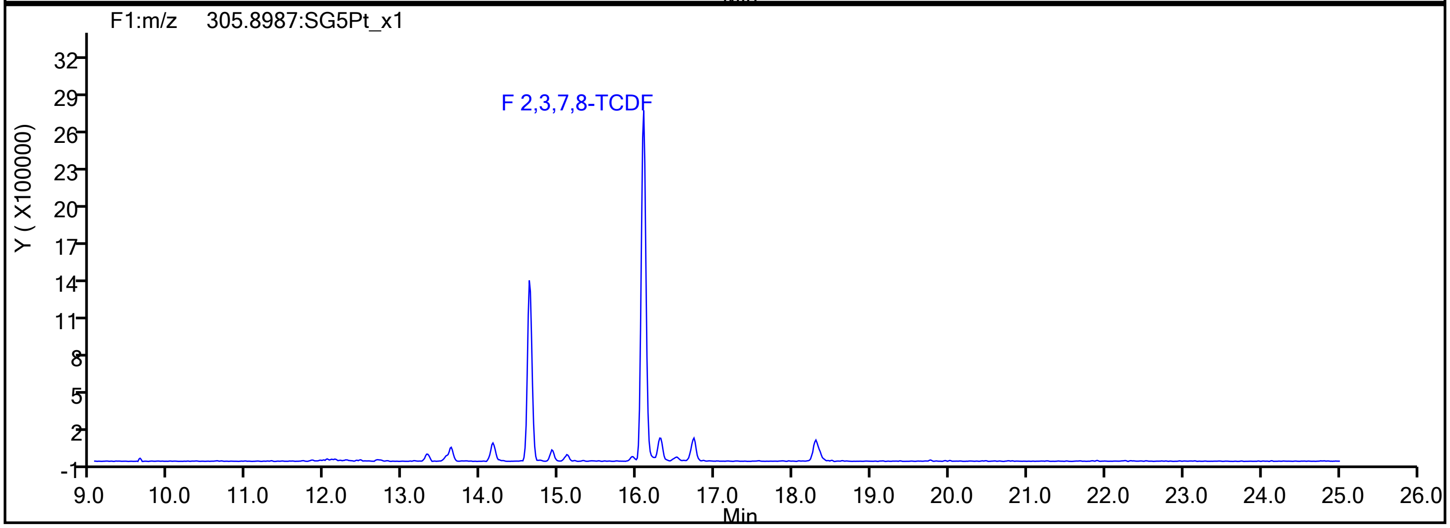

TCDF Interference Mass

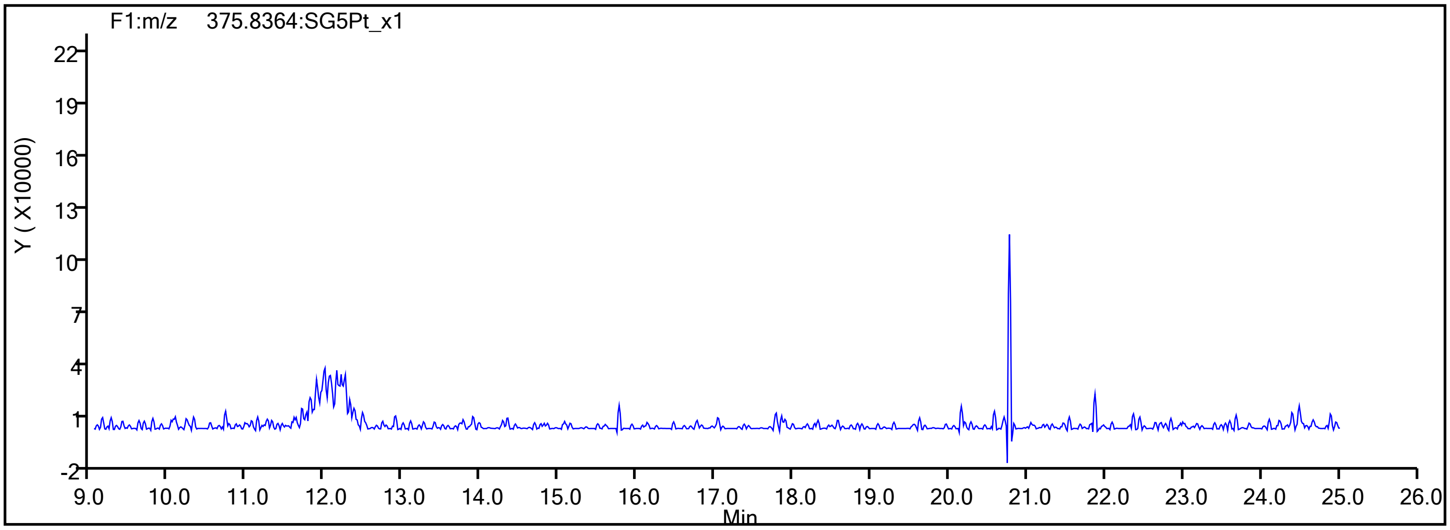

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_008.d		
Injection Date:	14-Oct-2020 00:10:37	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	421876	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

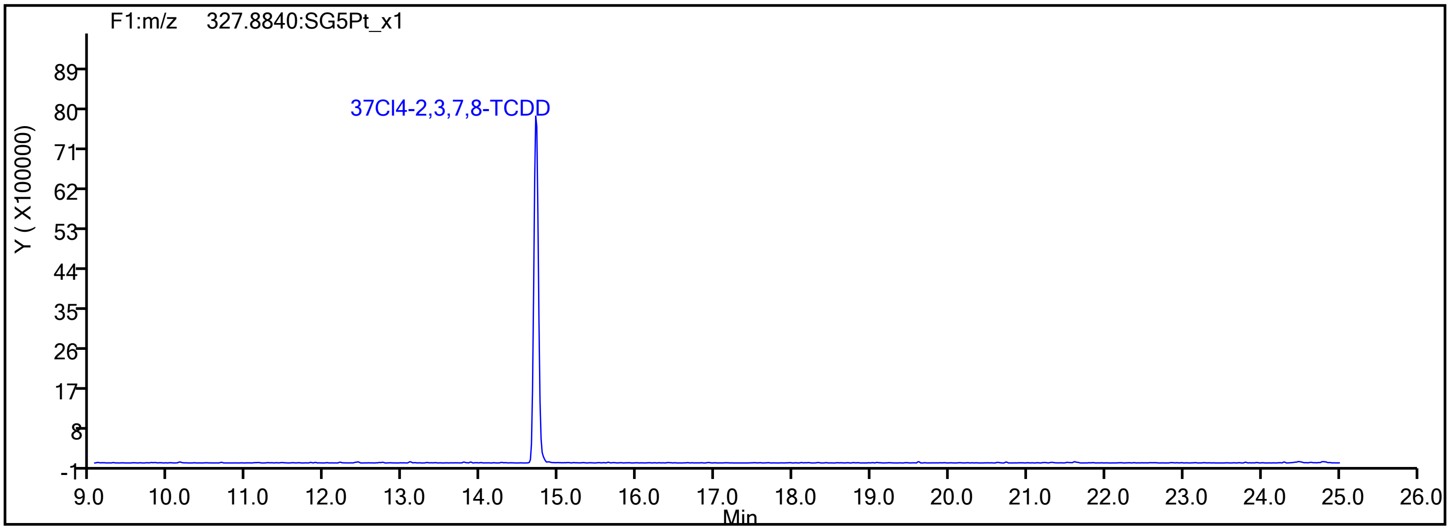

37Cl4-TCDD Standards

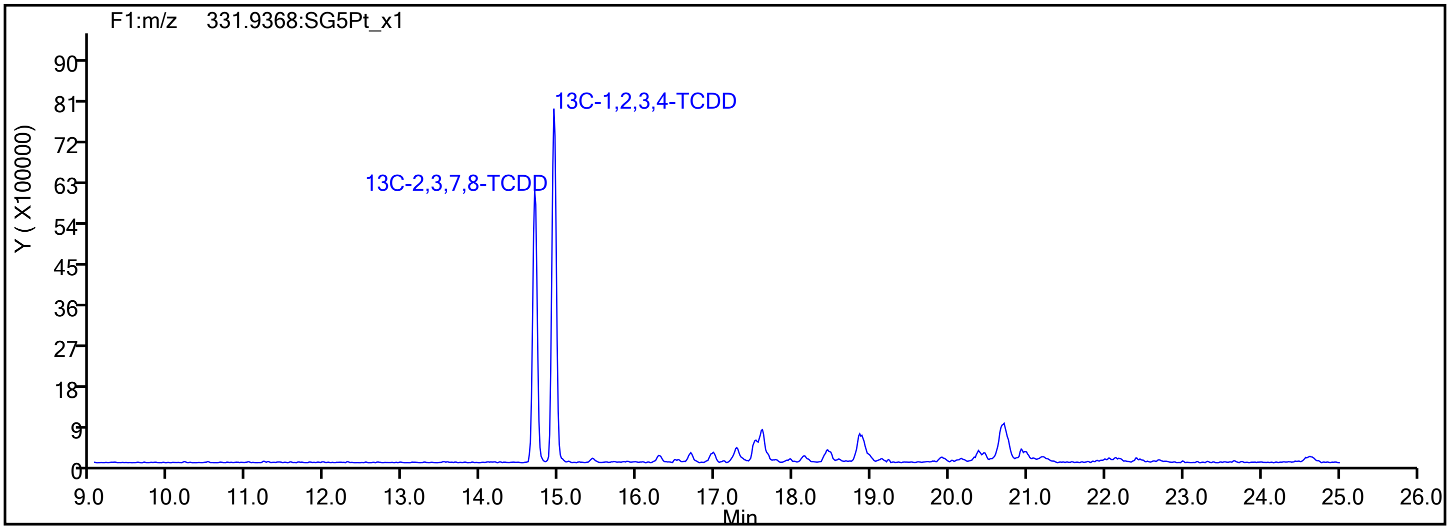

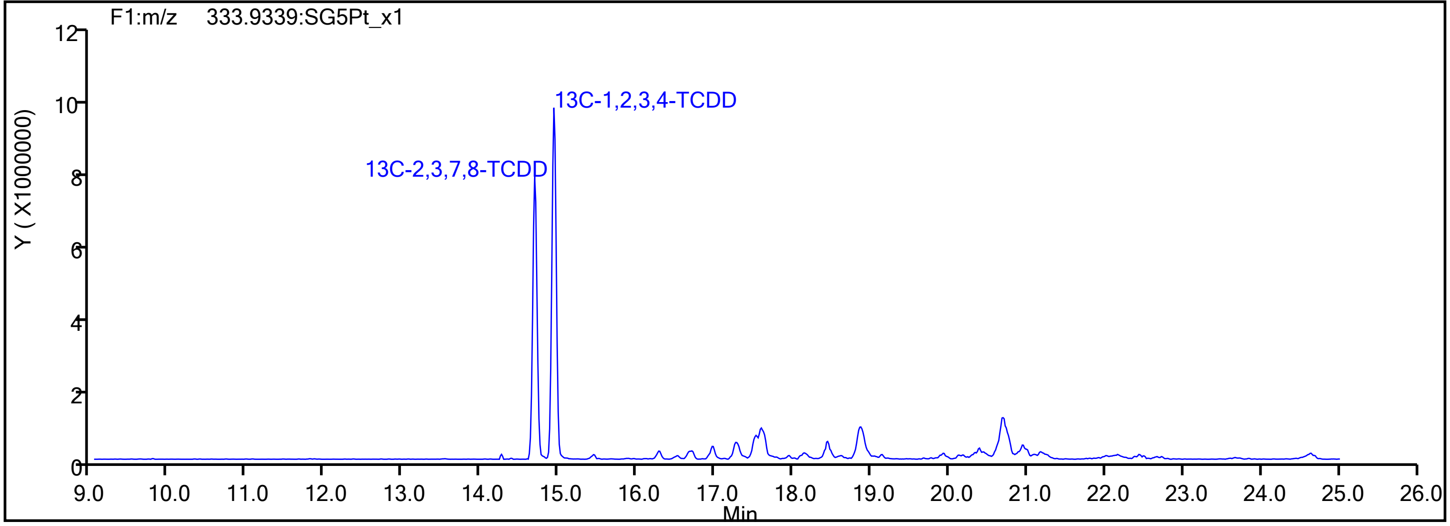

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_008.d		
Injection Date:	14-Oct-2020 00:10:37	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-1		
Worklist#:	421876	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

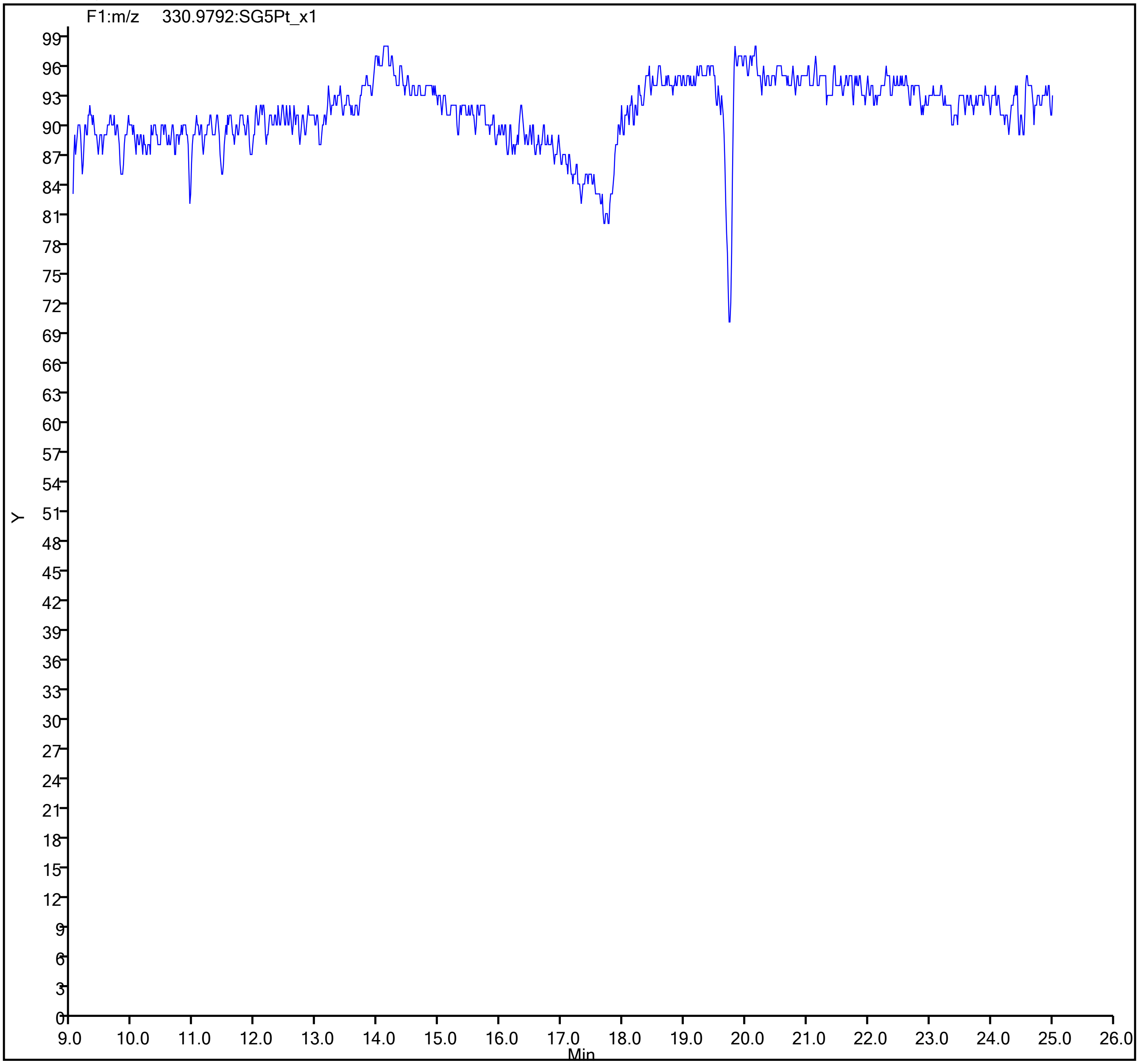

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-4-1
Lab Sample ID: 320-65130-3

Matrix: Water
Lab File ID: 08OC20A3D5_13.d

Analysis Method: 1613B
Date Collected: 09/11/2020 12:30

Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42

Sample wt/vol: 1049.1(mL)
Date Analyzed: 10/09/2020 05:03

Con. Extract Vol.: 20(uL)
Dilution Factor: 1

Injection Volume: 2(uL)
Level: (low/med) Low

% Moisture:
GPC Cleanup:(Y/N) N

Analysis Batch No.: 420482
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	17	q	9.5	0.56
40321-76-4	1,2,3,7,8-PeCDD	ND		48	0.47
57117-41-6	1,2,3,7,8-PeCDF	2.4	J B	48	0.35
57117-31-4	2,3,4,7,8-PeCDF	1.6	J q B	48	0.39
39227-28-6	1,2,3,4,7,8-HxCDD	ND		48	0.63
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.68
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.60
70648-26-9	1,2,3,4,7,8-HxCDF	3.7	J B	48	0.39
57117-44-9	1,2,3,6,7,8-HxCDF	1.4	J B	48	0.41
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.32
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.47
35822-46-9	1,2,3,4,6,7,8-HpCDD	3.4	J B	48	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.8	J B	48	0.19
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.51	J q B	48	0.20
3268-87-9	OCDD	37	J B	95	0.39
39001-02-0	OCDF	1.4	J q B	95	0.25
41903-57-5	Total TCDD	24	q B	9.5	0.56
30402-14-3	Total TCDF	110	q B	9.5	0.68
36088-22-9	Total PeCDD	ND		48	0.47
30402-15-4	Total PeCDF	4.6	J q B	48	0.37
34465-46-8	Total HxCDD	ND		48	0.68
55684-94-1	Total HxCDF	5.1	J B	48	0.40
37871-00-4	Total HpCDD	6.2	J q B	48	0.20
38998-75-3	Total HpCDF	2.3	J q B	48	0.19

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-4-1 Lab Sample ID: 320-65130-3

Matrix: Water Lab File ID: 08OC20A3D5_13.d

Analysis Method: 1613B Date Collected: 09/11/2020 12:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 1049.1(mL) Date Analyzed: 10/09/2020 05:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420482 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		25-164
89059-46-1	13C-2,3,7,8-TCDF	84		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	85		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	74		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	74		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	90		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	91		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	80		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	78		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	88		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	85		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	82		26-138
114423-97-1	13C-OCDD	94		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d
Lims ID: 320-65130-A-3-A
Client ID: 11215702-Tank#1-valve-4-1
Sample Type: Client
Inject. Date: 09-Oct-2020 05:03:22 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-3-A 320-65130-A-3-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:40:50 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:56:44

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	249335835	0.77	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	310760430	0.80	1.4844	84.0	84.0	0.3120	0.3120	83.96	
2,3,7,8-TCDF	15.492	9755963	0.75	0.9534	3.293	3.293	0.0355	0.0355		
A Non-2,3,7,8-sub-TCDF	15.227	7284365	0.77	0.9534	2.508	2.459	0.0355	1.496		RQM
S Total TCDF					5.801	5.751	0.0355	0.0355		RQ
D 13C-2,3,7,8-TCDD	16.081	226116602	0.78	1.0875	83.4	83.4	0.2173	0.2173	83.39	
2,3,7,8-TCDD	16.097	2107734	0.77	1.0205	1.043	0.9134	0.0296	0.0296		RQ
$ 37Cl4-2,3,7,8-TCDD	16.097	111309649		1.1216	39.8	39.8	0.1352	0.1352	99.50	
A Non-2,3,7,8-sub-TCDD	15.620	793921	0.77	1.0205	0.3516	0.3441	0.0296	0.1565		RQ
S Total TCDD					1.394	1.258	0.0296	0.0296		RQ
D 13C-1,2,3,7,8-PeCDF	19.686	257413188	1.59	1.3943	74.0	74.0	0.2295	0.2295	74.04	
1,2,3,7,8-PeCDF	19.700	352313	1.45	1.0794	0.1268	0.1268	0.0186	0.0186		M
D 13C-2,3,4,7,8-PeCDF	20.805	246993007	1.59	1.3370	74.1	74.1	0.2393	0.2393	74.09	
2,3,4,7,8-PeCDF	20.818	223096	1.55	1.0966	0.0904	0.0824	0.0207	0.0207		RQM
A F1 PeCDFs	17.730						0.0169	0.0169		
A Non-2,3,7,8-sub-PeCDF	20.349	81898	1.55	1.0880	0.0496	0.0298	0.0196	0.0298		RQ
S Total PeCDF					0.2668	0.2390	0.0196	0.0196		RQ
D 13C-1,2,3,7,8-PeCDD	21.418	180548849	1.61	0.8475	85.4	85.4	0.1327	0.1327	85.44	
1,2,3,7,8-PeCDD	21.500						0.0244	0.0244		U
A Non-2,3,7,8-sub-PeCDD	20.518						0.0244	0.0244		U
S Total PeCDD							0.0244	0.0244		
D 13C-1,2,3,4,7,8-HxCDF	26.719	214553753	0.53	1.3065	81.4	81.4	0.4177	0.4177	81.36	
1,2,3,4,7,8-HxCDF	26.773	524987	1.18	1.2552	0.1949	0.1949	0.0202	0.0202		
D 13C-1,2,3,6,7,8-HxCDF	26.999	229549796	0.54	1.4213	80.0	80.0	0.3839	0.3839	80.01	
1,2,3,6,7,8-HxCDF	27.012	203816	1.10	1.2102	0.0734	0.0734	0.0214	0.0214		M
D 13C-2,3,4,6,7,8-HxCDF	28.544	205907063	0.53	1.3142	77.6	77.6	0.4152	0.4152	77.62	
2,3,4,6,7,8-HxCDF	28.597						0.0246	0.0246		
D 13C-1,2,3,7,8,9-HxCDF	30.381	212257207	0.53	1.3204	79.6	79.6	0.4133	0.4133	79.63	
1,2,3,7,8,9-HxCDF	30.408						0.0170	0.0170		
A Non-2,3,7,8-sub-HxCDF	27.465						0.0205	0.0205		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					0.2683	0.2683	0.0208	0.0208		
* 13C-1,2,3,7,8,9-HxCDD	30.075	201856477	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.036	156615501	1.27	0.8660	89.6	89.6	0.3248	0.3248	89.59	a
1,2,3,4,7,8-HxCDD	29.076						0.0331	0.0331		
D 13C-1,2,3,6,7,8-HxCDD	29.302	180215382	1.25	0.9827	90.9	90.9	0.2863	0.2863	90.85	a
1,2,3,6,7,8-HxCDD	29.356						0.0356	0.0356		
1,2,3,7,8,9-HxCDD	30.101						0.0315	0.0315		
A Non-2,3,7,8-sub-HxCDD	27.931						0.0333	0.0333		
S Total HxCDD							0.0356	0.0356		
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	161070277	0.45	0.9410	84.8	84.8	2.487	2.487	84.79	
1,2,3,4,6,7,8-HpCDF	32.559	221935	1.16	1.4783	0.0932	0.0932	0.0099	0.0099		
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	144883641	0.46	0.8751	82.0	82.0	2.675	2.675	82.02	
1,2,3,4,7,8,9-HpCDF	33.653	53935	1.04	1.3784	0.0417	0.0270	0.0105	0.0105		RQM
A Non-2,3,7,8-sub-HpCDF	33.100						0.0102	0.0102		
S Total HpCDF					0.1349	0.1202	0.0102	0.0102		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	160852396	1.06	0.9049	88.1	88.1	0.9656	0.9656	88.06	
1,2,3,4,6,7,8-HpCDD	33.398	308695	1.01	1.0862	0.1767	0.1767	0.0105	0.0105		M
A Non-2,3,7,8-sub-HpCDD	33.339	261797	1.04	1.0862	0.1657	0.1498	0.0105	0.1498		RQa
S Total HpCDD					0.3424	0.3265	0.0105	0.0105		RQ
D 13C-OCDD	35.558	218977730	0.90	0.5783	187.6	187.6	1.466	1.466	93.80	
OCDF	35.630	140434	0.89	1.7248	0.0803	0.0744	0.0132	0.0132		RQM
OCDD	35.558	2676297	0.87	1.2576	1.944	1.944	0.0204	0.0204		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d
Lims ID: 320-65130-A-3-A
Client ID: 11215702-Tank#1-valve-4-1
Sample Type: Client
Inject. Date: 09-Oct-2020 05:03:22 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-3-A 320-65130-A-3-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:40:50 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:56:44

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		108731491	31118017	30034	75085	1036		
333.9339	15.915	15.930	-1		140604344	39761572	36967	92417	1076	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	137908177	37112297	61103	152757	607		
317.9389	15.477	15.477	0	0.972	172852253	47549179	70183	175457	678	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	4177555	1063101	4472	11180	238		
305.8987	15.492	15.507	-1	1.001	5578408	1443064	6990	17475	206	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQM
303.9016	14.297	15.227	-56	0.924	161922	46649	4472	11180	10		
	Empc Correction				138000	40904	4472	11180	9		
305.8987	14.297	15.227	-56	0.924	179221	53123	6990	17475	8	0.90(0.65-0.89)	
303.9016	14.539	15.227	-41	0.939	135015	39158	4472	11180	9		
305.8987	14.524	15.227	-42	0.938	244452	60501	6990	17475	9	0.55(0.65-0.89)	
	Empc Correction				175344	50854	6990	17475	7		
303.9016	14.736	15.227	-29	0.952	170972	44604	4472	11180	10		
305.8987	14.736	15.227	-29	0.952	276541	62716	6990	17475	9	0.62(0.65-0.89)	
	Empc Correction				222041	57927	6990	17475	8		
303.9016	14.948	15.227	-17	0.966	255875	64579	4472	11180	14		
305.8987	14.932	15.227	-18	0.965	295558	63986	6990	17475	9	0.87(0.65-0.89)	
303.9016	15.174	15.227	-3	0.980	2038017	559829	4472	11180	125		M
305.8987	15.174	15.227	-3	0.980	2393624	668080	6990	17475	96	0.85(0.65-0.89)	
303.9016	15.855	15.227	38	1.024	286146	72899	4472	11180	16		
305.8987	15.855	15.227	38	1.024	333977	77769	6990	17475	11	0.86(0.65-0.89)	

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.019	15.227	107	1.100	295364	59556	4472	11180	13		
305.8987	17.019	15.227	107	1.100	365211	96353	6990	17475	14	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.010	99137661	25462314	30034	75085	848		
333.9339	16.081	16.081	0	1.010	126978941	32207025	36967	92417	871	0.78(0.65-0.89)	
2,3,7,8-TCDD											RQ
319.8965	16.097	16.097	0	1.001	916924	255509	3727	9317	69		
321.8936	16.097	16.097	0	1.001	1488847	400398	3241	8102	124	0.62(0.65-0.89)	
	Empc Correction				1190810	331829	3241	8102	102		
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	111309649	28969544	43007	107517	674		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	14.222	15.620	-84	0.884	144754	44203	3727	9317	12		
321.8936	14.222	15.620	-84	0.884	216257	59955	3241	8102	18	0.67(0.65-0.89)	
319.8965	14.464	15.620	-69	0.899	101156	26923	3727	9317	7		
	Empc Correction				83886	25428	3727	9317	7		
321.8936	14.464	15.620	-69	0.899	108943	33024	3241	8102	10	0.93(0.65-0.89)	
319.8965	16.399	15.620	47	1.020	105820	18044	3727	9317	5		
321.8936	16.384	15.620	46	1.019	134261	27335	3241	8102	8	0.79(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	158169489	31651493	54334	135835	583		
353.8970	19.686	19.700	-1	1.237	99243699	19666138	36389	90972	540	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.700	19.727	-2	1.001	208441	39884	1888	4720	21		M
341.8567	19.714	19.727	-1	1.001	143872	33028	2226	5565	15	1.45(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	151707465	27958332	54334	135835	515		
353.8970	20.805	20.818	-1	1.307	95285542	17340075	36389	90972	477	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											RQM
339.8597	20.818	20.846	-2	1.001	157307	27931	1888	4720	15		M
	Empc Correction				135607	25554	1888	4720	14		
341.8567	20.818	20.846	-2	1.001	87489	16487	2226	5565	7	1.80(1.32-1.78)	M
A F1 PeCDFs											
339.8597	17.730						1427	3567			
341.8567	17.730						2125	5312			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	18.595	20.349	-105	0.945	104111	24587	1888	4720	13		
	Empc Correction				49781	11917	1888	4720	6		
341.8567	18.595	20.349	-105	0.945	32117	7689	2226	5565	3	3.24(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.432	-1	1.346	111283187	19606392	18696	46740	1049		
369.8919	21.418	21.432	-1	1.346	69265662	11699113	13194	32985	887	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											U
355.8546	21.459						1879	4697			
357.8516	21.459						1606	4015			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											U
355.8546	20.518						1879	4697			
357.8516	20.518						1606	4015			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.733	-1	0.888	74768499	10574519	25677	64192	412		
385.8610	26.719	26.733	-1	0.888	139785254	19530144	43377	108442	450	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.773	26.759	1	1.002	283786	41984	1776	4440	24		
375.8178	26.733	26.759	-2	1.000	241201	34678	1282	3205	27	1.18(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.999	27.012	-1	0.898	80378870	10122554	25677	64192	394		
385.8610	26.986	27.012	-2	0.897	149170926	19347083	43377	108442	446	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											M
373.8208	27.012	27.039	-2	1.000	106865	13195	1776	4440	7		M
375.8178	27.052	27.039	1	1.002	96951	13755	1282	3205	11	1.10(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.570	-2	0.949	71250952	8807399	25677	64192	343		
385.8610	28.544	28.570	-2	0.949	134656111	16655442	43377	108442	384	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.597						1776	4440			
375.8178	28.597						1282	3205			
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.010	73404136	12545302	25677	64192	489		
385.8610	30.381	30.394	-1	1.010	138853071	23919881	43377	108442	551	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.408						1776	4440			
375.8178	30.408						1282	3205			
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.465						1776	4440			
375.8178	27.465						1282	3205			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.088	-1		112466736	17561214	19442	48605	903		
403.8529	30.075	30.088	-1		89389741	14075539	16159	40397	871	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.036	29.036	0	0.965	87540909	10773543	19442	48605	554		a
403.8529	29.036	29.036	0	0.965	69074592	8302156	16159	40397	514	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.076						1509	3772			
391.8127	29.076						1654	4135			
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.302	29.316	-1	0.974	100026500	11130128	19442	48605	572		a
403.8529	29.302	29.316	-1	0.974	80188882	8846267	16159	40397	547	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.356						1509	3772			
391.8127	29.356						1654	4135			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8157	30.101						1509	3772			
391.8127	30.101						1654	4135			
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						1509	3772			
391.8127	27.931						1654	4135			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.547	-1	1.082	50225846	16649304	98504	246260	169		
419.8220	32.535	32.547	-1	1.082	110844431	37022684	197693	494232	187	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.547	1	1.001	119401	40158	1980	4950	20		
409.7789	32.547	32.547	0	1.000	102534	36163	1165	2912	31	1.16(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.119	45676493	17126955	98504	246260	174		
419.8220	33.641	33.641	0	1.119	99207148	36977348	197693	494232	187	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQM
407.7818	33.653	33.653	0	1.000	56842	22316	1980	4950	11		M
	Empc Correction				27496	10350	1980	4950	5		
409.7789	33.641	33.653	-1	1.000	26439	9952	1165	2912	9	2.15(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.100						1980	4950			
409.7789	33.100						1165	2912			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.110	82646175	30926175	56378	140945	549		
437.8140	33.386	33.398	-1	1.110	78206221	29487324	54195	135487	544	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.398	33.398	0	1.000	155079	50307	1465	3662	34		M
425.7737	33.398	33.398	0	1.000	153616	60256	1291	3227	47	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											RQa
423.7766	32.851	33.339	-29	0.984	161165	56958	1465	3662	39		a
	Empc Correction				133465	43834	1465	3662	30		
425.7737	32.851	33.339	-29	0.984	128332	42149	1291	3227	33	1.26(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.558	0	1.182	103877428	33406563	52416	131040	637		
471.7750	35.558	35.558	0	1.182	115100302	37424240	54835	137087	682	0.90(0.76-1.02)	
OCDF											RQM
441.7428	35.630	35.630	0	1.002	77291	25221	1195	2987	21		
	Empc Correction				66130	23695	1195	2987	20		
443.7399	35.630	35.630	0	1.002	74304	26624	2040	5100	13	1.04(0.76-1.02)	M
OCDD											
457.7377	35.558	35.570	-1	1.000	1241702	425296	1443	3607	295		
459.7348	35.558	35.570	-1	1.000	1434595	469967	2184	5460	215	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Lims ID:	320-65130-A-3-A		
Client ID:	11215702-Tank#1-valve-4-1		
Inject. Date:	09-Oct-2020 05:03:22	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	13

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	310760430	84661476

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	310760430	84661476

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	161922	46649	179221	53123	0.1151	0.90	RQ
14.297	138000	40904	179221	53123	0.1071		Empc Correction
14.539	135015	39158	244452	60501	0.1281	0.55	RQ
14.539	135015	39158	175344	50854	0.1048		Empc Correction
14.736	170972	44604	276541	62716	0.1510	0.62	RQ
14.736	170972	44604	222041	57927	0.1327		Empc Correction
14.948	255875	64579	295558	63986	0.1861	0.87	
15.174	2038017	559829	2393624	668080	1.50	0.85	M
15.855	286146	72899	333977	77769	0.2093	0.86	
17.019	295364	59556	365211	96353	0.2230	0.81	
Signal Totals:							
	3319389	881529	3964976	1068092			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7431895	1969802				0.82	RQM
	7284365	1949621					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.508 = (7431895 * 100.000) / (310760430 * 0.953)
Empc Amount: 2.459 = (7284365 * 100.000) / (310760430 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d
Lims ID: 320-65130-A-3-A
Client ID: 11215702-Tank#1-valve-4-1
Inject. Date: 09-Oct-2020 05:03:22
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 13

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	226116602	57669339

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	226116602	57669339

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.222	144754	44203	216257	59955	0.1565	0.67	
14.464	101156	26923	108943	33024	0.0911	0.93	RQ
14.464	83886	25428	108943	33024	0.0836		Empc Correction
16.399	105820	18044	134261	27335	0.1040	0.79	
Signal Totals:							
	334460	87675	459461	120314			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	811191	209484				0.77	RQ
	793921	207989					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3516 = (811191 * 100.000) / (226116602 * 1.020)
Empc Amount: 0.3441 = (793921 * 100.000) / (226116602 * 1.020)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d
Lims ID: 320-65130-A-3-A
Client ID: 11215702-Tank#1-valve-4-1
Inject. Date: 09-Oct-2020 05:03:22
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 13

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	257413188	51317631
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	246993007	45298407

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	252203097	48308019

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.595	104111	24587	32117	7689	0.0496	3.24	RQ
18.595	49781	11917	32117	7689	0.0298		Empc Correction
Signal Totals:							
	49781	11917	32117	7689			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	136228	32276				3.24	RQ
	81898	19606					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0496 = (136228 * 100.000) / (252203097 * 1.088)
Empc Amount: 0.0298 = (81898 * 100.000) / (252203097 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Lims ID:	320-65130-A-3-A		
Client ID:	11215702-Tank#1-valve-4-1		
Inject. Date:	09-Oct-2020 05:03:22	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	13

Non-2,3,7,8-sub-PeCDD, RT: 20.518

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	180548849	31305505

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	180548849	31305505

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Lims ID:	320-65130-A-3-A		
Client ID:	11215702-Tank#1-valve-4-1		
Inject. Date:	09-Oct-2020 05:03:22	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	160852396	60413499

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	160852396	60413499

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	161165	56958	128332	42149	0.1657	1.26	RQa
32.851	133465	43834	128332	42149	0.1498		Empc Correction
Signal Totals:							
	133465	43834	128332	42149			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	289497	99107				1.26	RQa
	261797	85983					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1657 = (289497 * 100.000) / (160852396 * 1.086)
Empc Amount: 0.1498 = (261797 * 100.000) / (160852396 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Report Date: 13-Oct-2020 11:40:50

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.05)

Signal: 1

Processing Integration Results

RT = 15.174 Area = 2138695

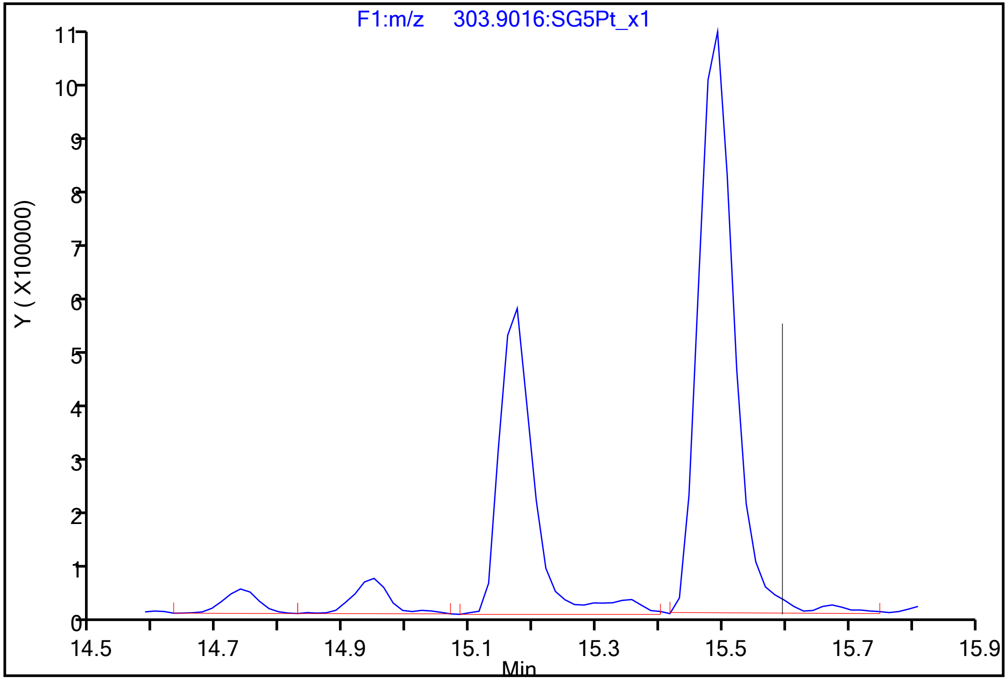

Manual Integration Results

RT = 15.174 Area = 2038017 M

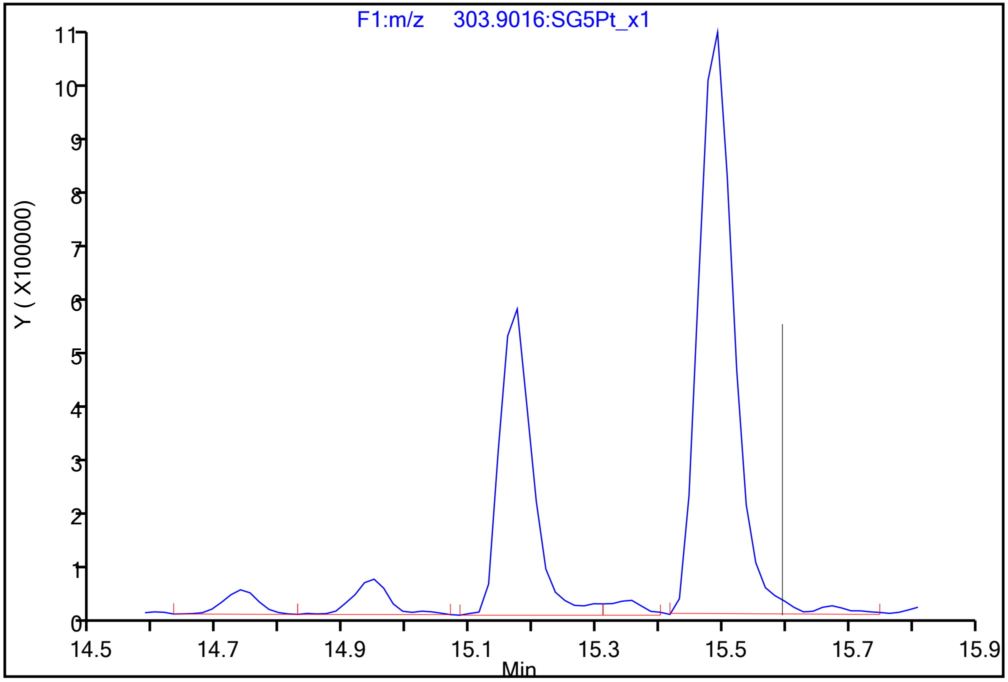

Reviewer: dadunj, 13-Oct-2020 11:36:35

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d				
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5		
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3		
Client ID:	11215702-Tank#1-valve-4-1				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT: 19.70
Area: 244214
Amount: 0.150403
Amount Units: pg/ul

Processing Integration Results

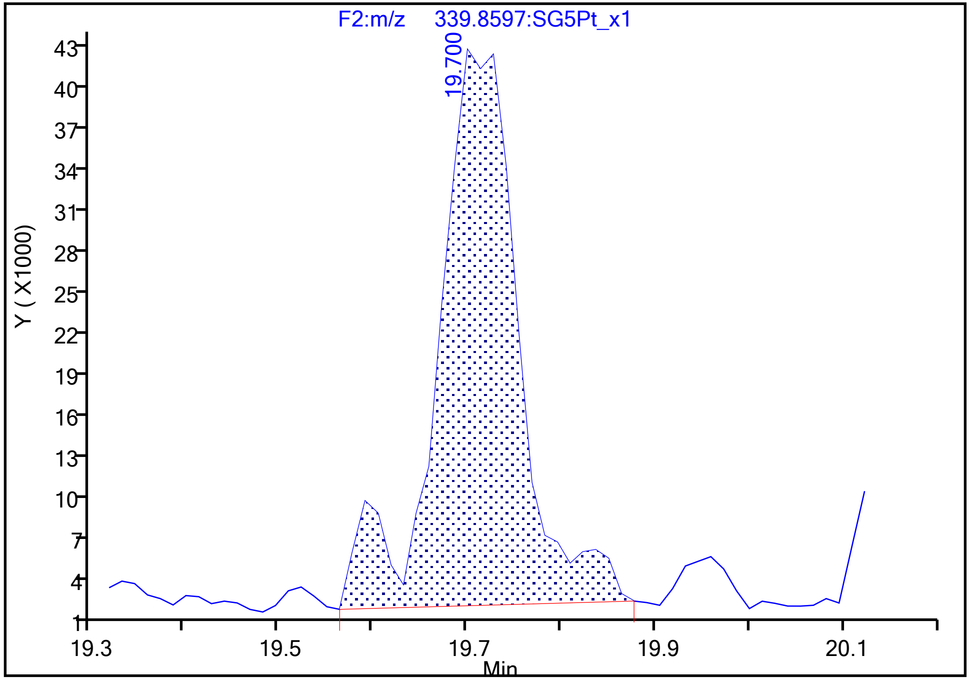

RT: 19.70
Area: 208441
Amount: 0.126803
Amount Units: pg/ul

Manual Integration Results

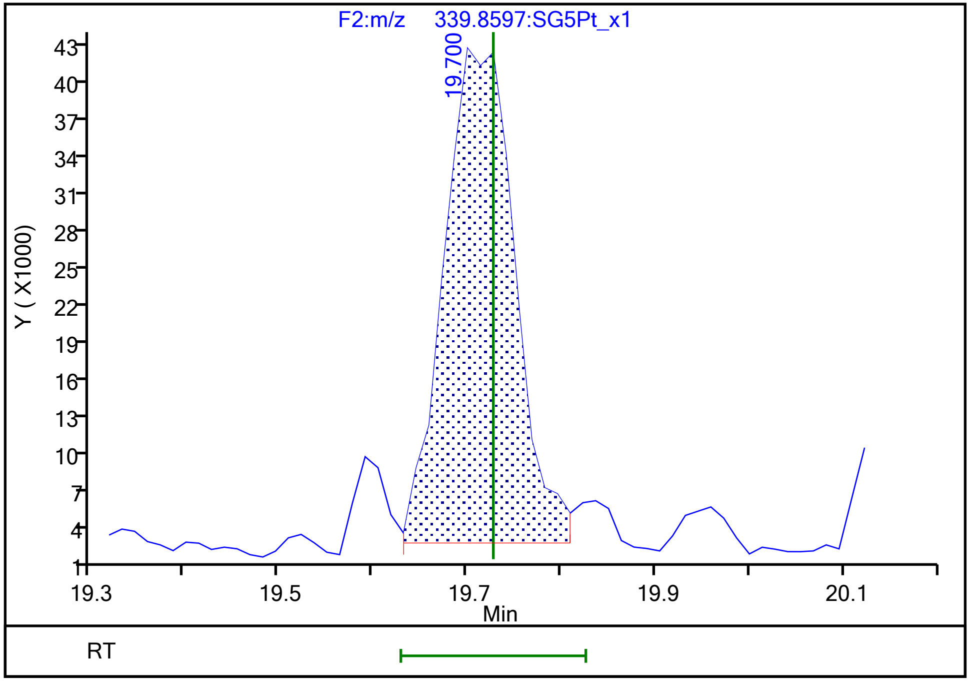

Reviewer: dadunj, 13-Oct-2020 11:37:32
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d				
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5		
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3		
Client ID:	11215702-Tank#1-valve-4-1				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	19.71
Area:	173670
Amount:	0.150403
Amount Units:	pg/ul

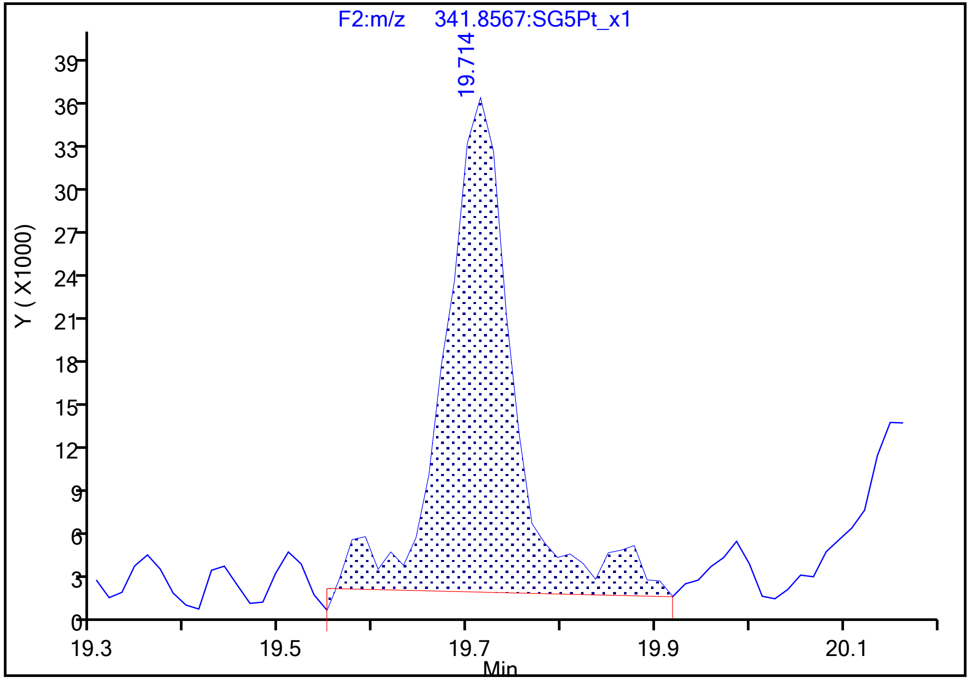

Manual Integration Results

RT:	19.71
Area:	143872
Amount:	0.126803
Amount Units:	pg/ul

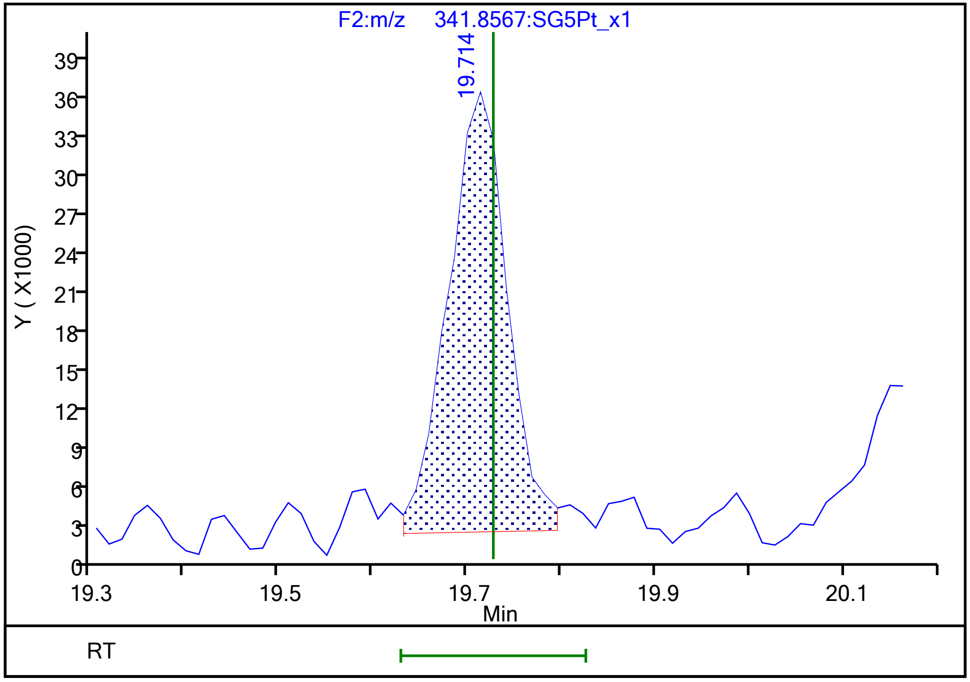

Reviewer: dadunj, 13-Oct-2020 11:37:33

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d

Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5		
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3		
Client ID:	11215702-Tank#1-valve-4-1				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

Processing Integration Results

RT:	20.82
Area:	155396
Amount:	0.095390
Amount Units:	pg/ul

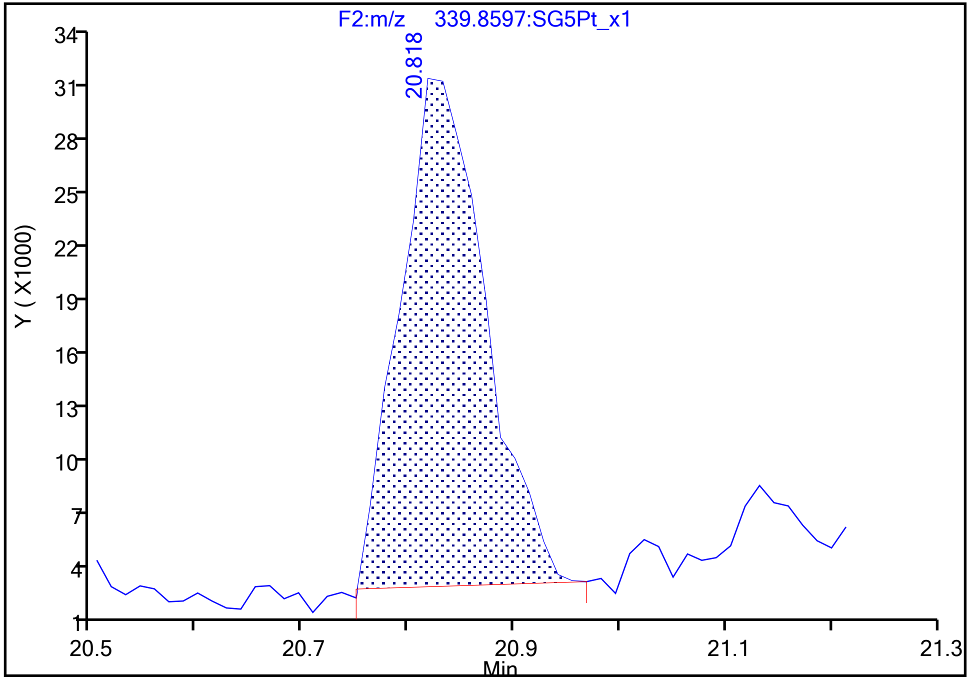

Manual Integration Results

RT:	20.82
Area:	157307
Amount:	0.090377
Amount Units:	pg/ul

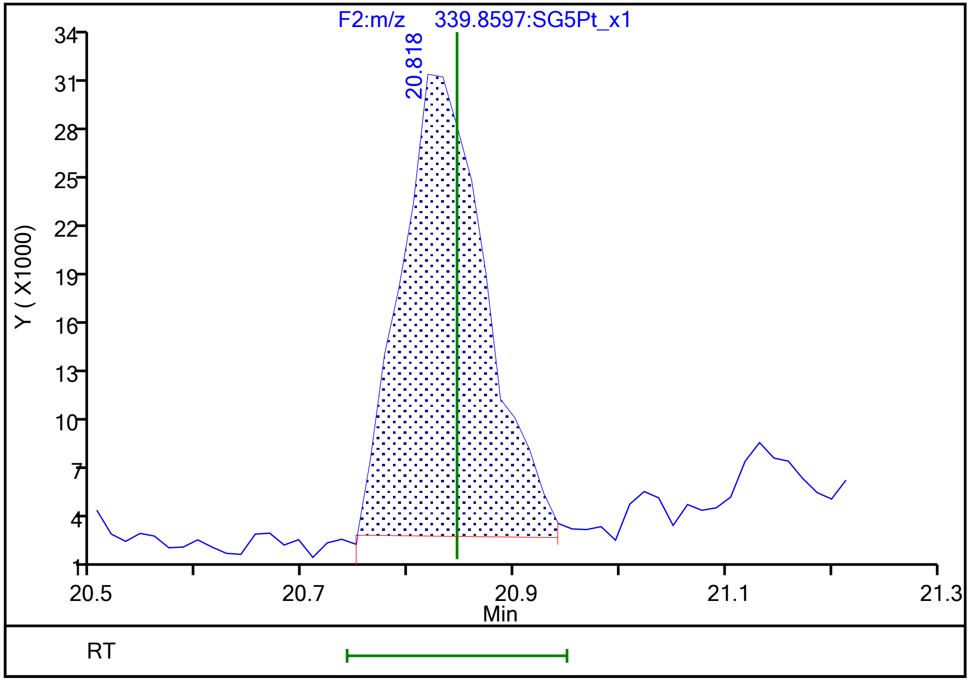

Reviewer: dadunj, 13-Oct-2020 11:37:48

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 2

Processing Integration Results

RT:	20.82
Area:	102978
Amount:	0.095390
Amount Units:	pg/ul

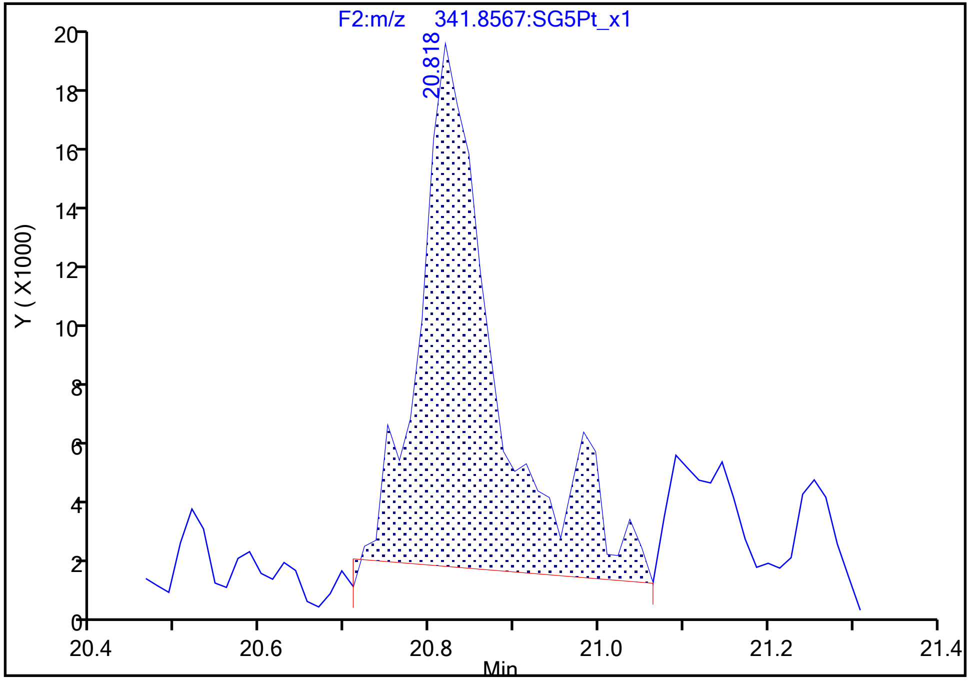

Manual Integration Results

RT:	20.82
Area:	87489
Amount:	0.090377
Amount Units:	pg/ul

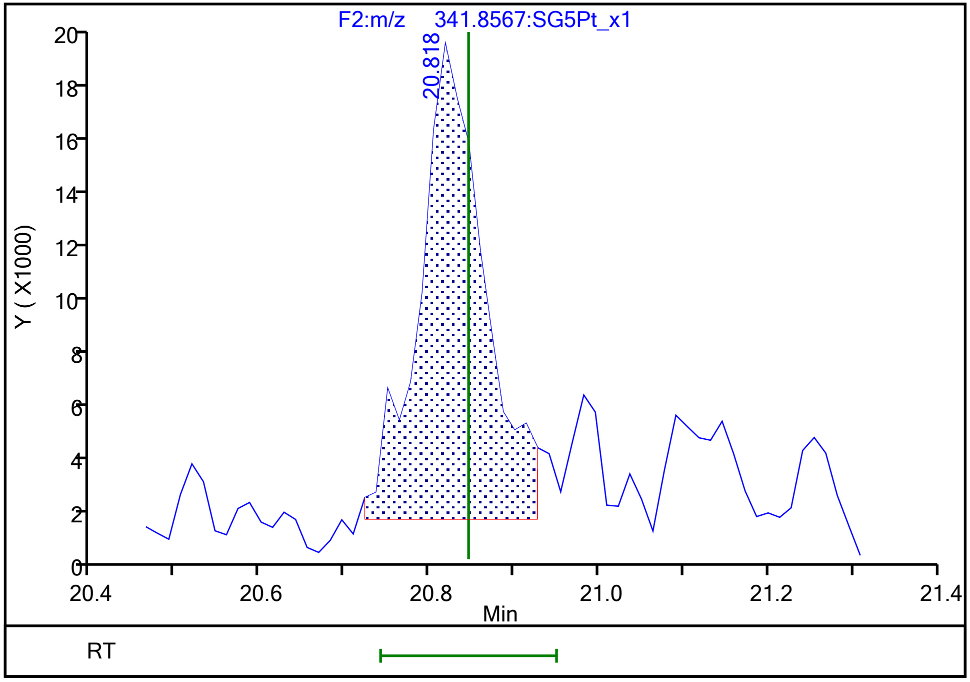

Reviewer: dadunj, 13-Oct-2020 11:38:00

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 11:40:50　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:	ALM	ALS Bottle#:	10　　Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

RT:	27.01
Area:	109452
Amount:	0.074299
Amount Units:	pg/ul

Processing Integration Results

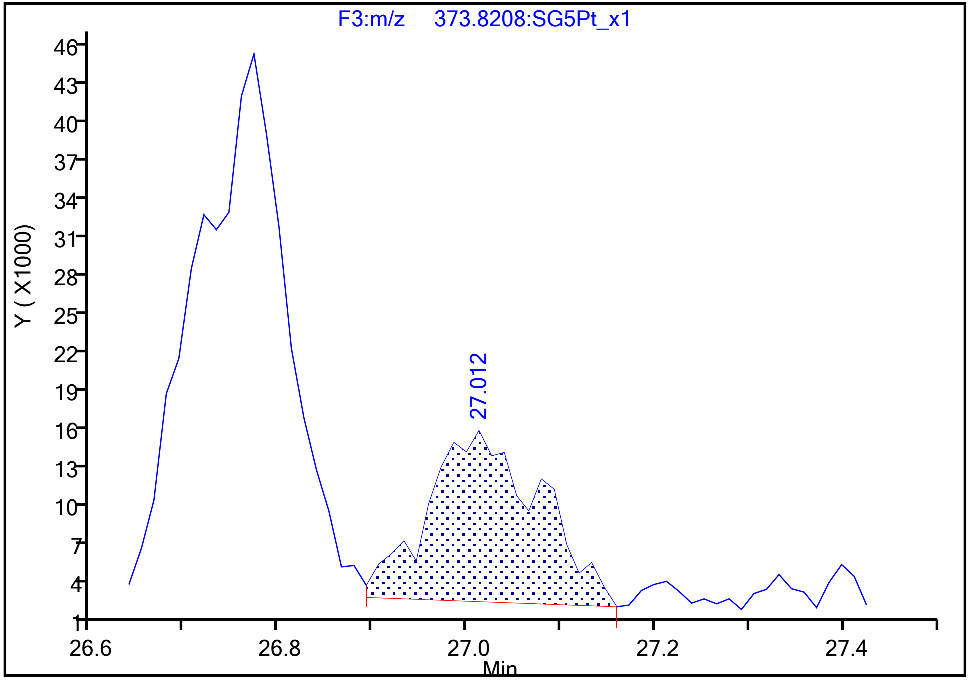

RT:	27.01
Area:	106865
Amount:	0.073368
Amount Units:	pg/ul

Manual Integration Results

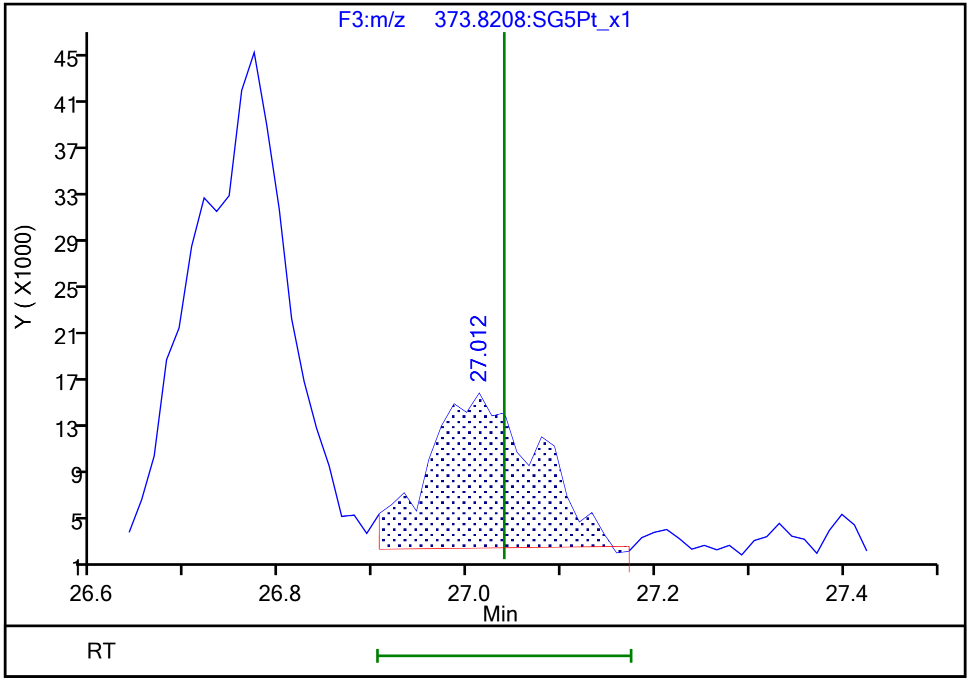

Reviewer: dadunj, 13-Oct-2020 11:38:41

Audit Action: Manually Integrated　　Audit Reason: Baseline

Report Date: 13-Oct-2020 11:40:50

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d

Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5		
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3		
Client ID:	11215702-Tank#1-valve-4-1				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.04

Processing Integration Results

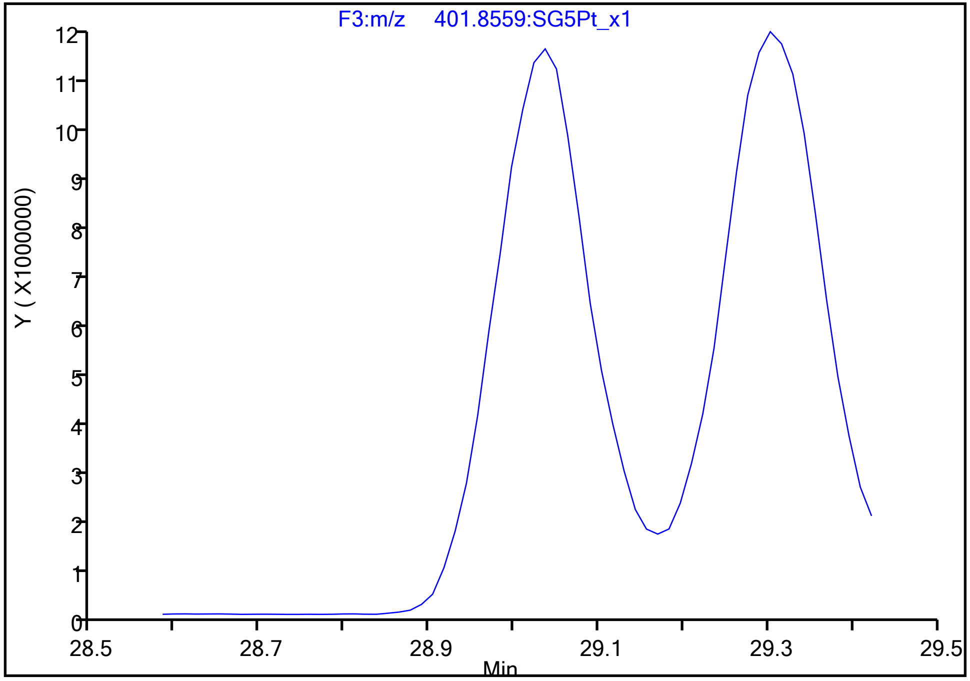

RT:	29.04
Area:	87540909
Amount:	89.590632
Amount Units:	pg/ul

Manual Integration Results

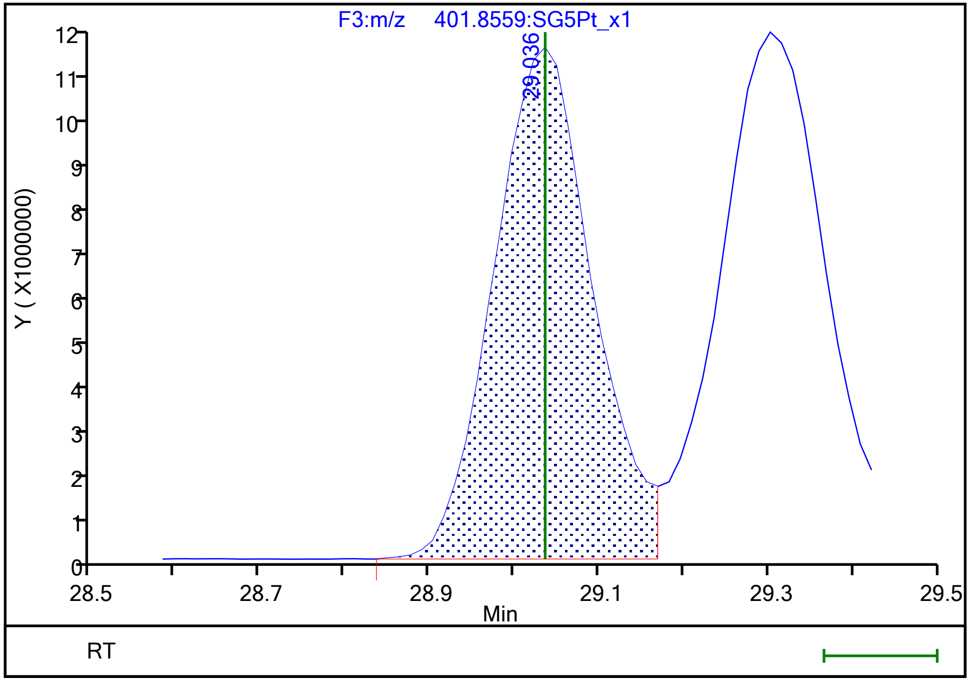

Reviewer: shardaa, 12-Oct-2020 17:56:35

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d				
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5		
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3		
Client ID:	11215702-Tank#1-valve-4-1				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT:	30.07
Area:	112466736
Amount:	101.7609
Amount Units:	pg/ul

Processing Integration Results

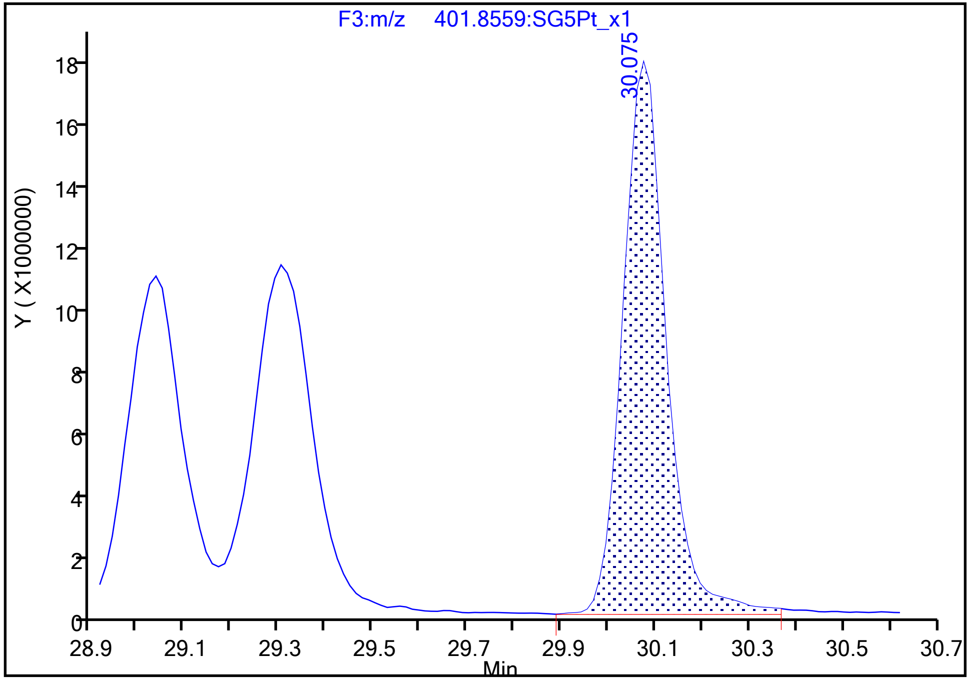

RT:	29.30
Area:	100026500
Amount:	90.851078
Amount Units:	pg/ul

Manual Integration Results

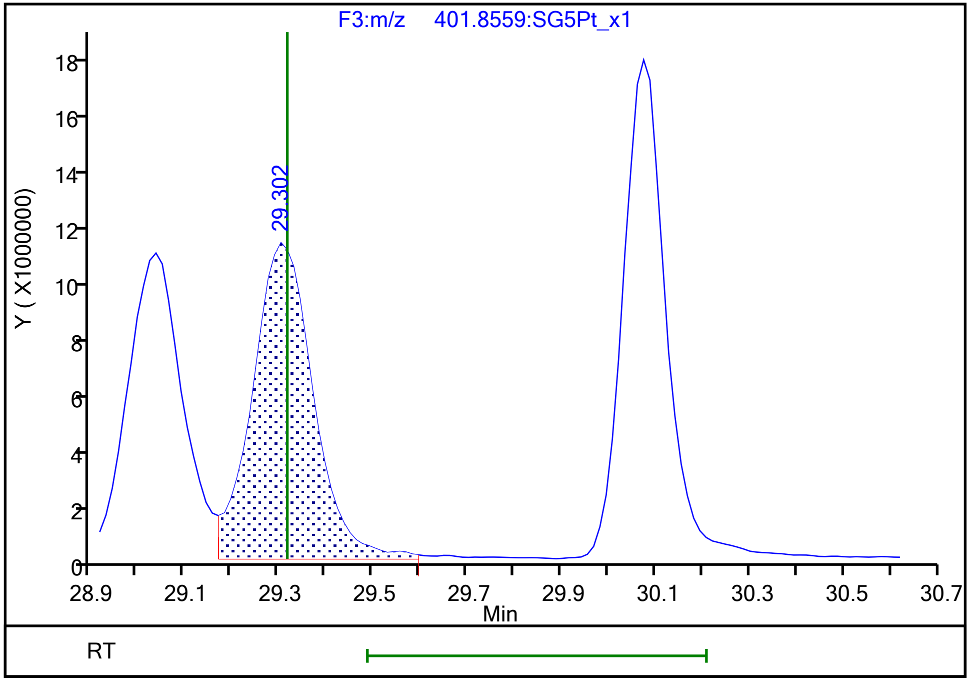

Reviewer: shardaa, 12-Oct-2020 17:58:52

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d				
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5		
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3		
Client ID:	11215702-Tank#1-valve-4-1				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT: 33.64
Area: 33411
Amount: 0.047419
Amount Units: pg/ul

Processing Integration Results

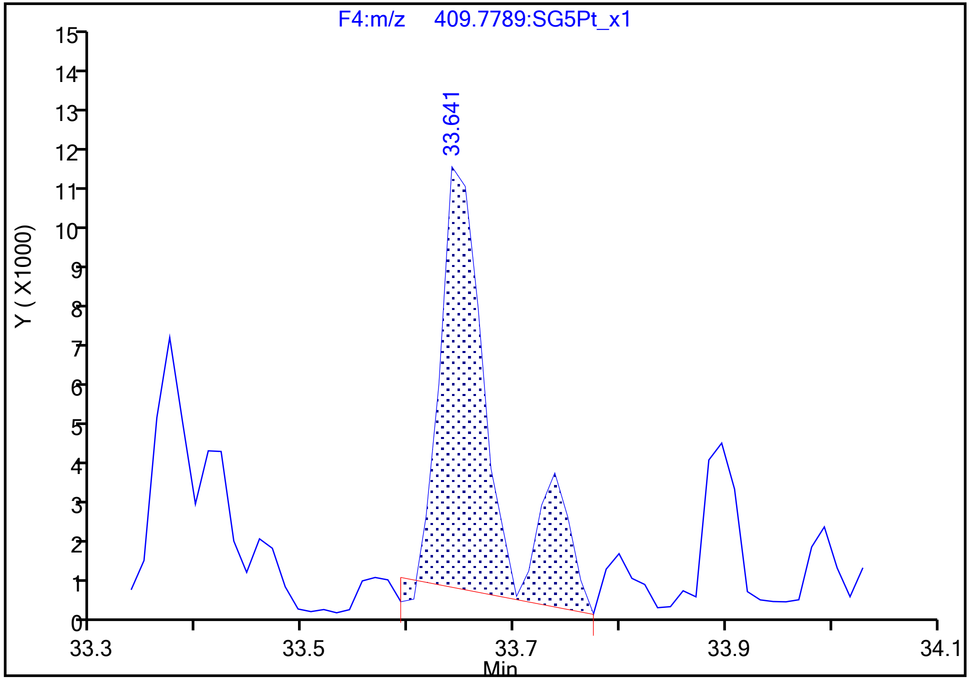

RT: 33.64
Area: 26439
Amount: 0.041701
Amount Units: pg/ul

Manual Integration Results

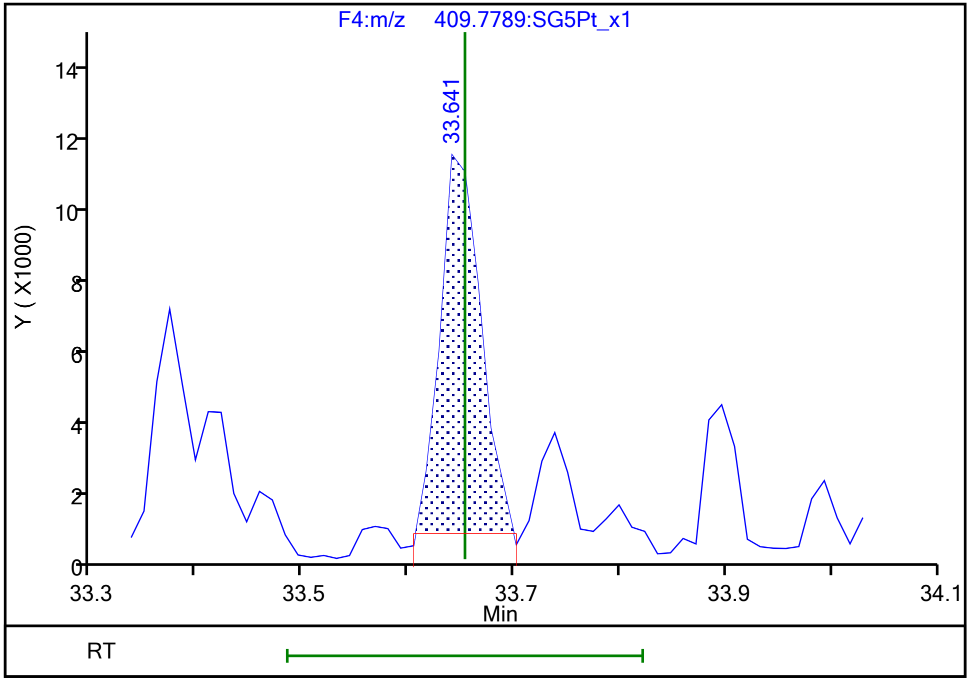

Reviewer: dadunj, 13-Oct-2020 11:39:08
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F4:HRSIR

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

RT:	33.65
Area:	61289
Amount:	0.047419
Amount Units:	pg/ul

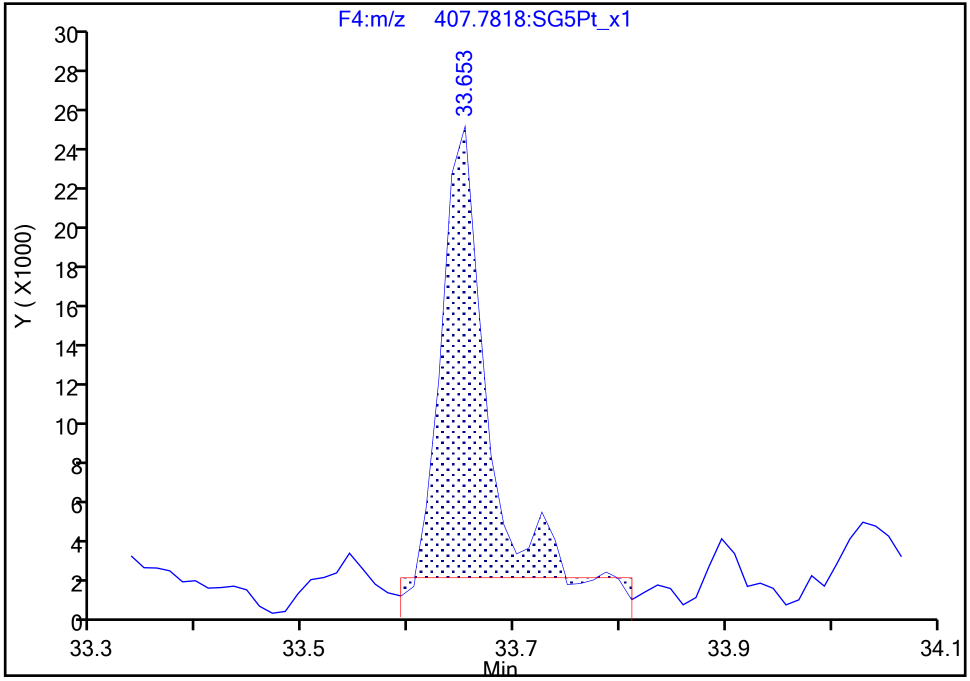

Manual Integration Results

RT:	33.65
Area:	56842
Amount:	0.041701
Amount Units:	pg/ul

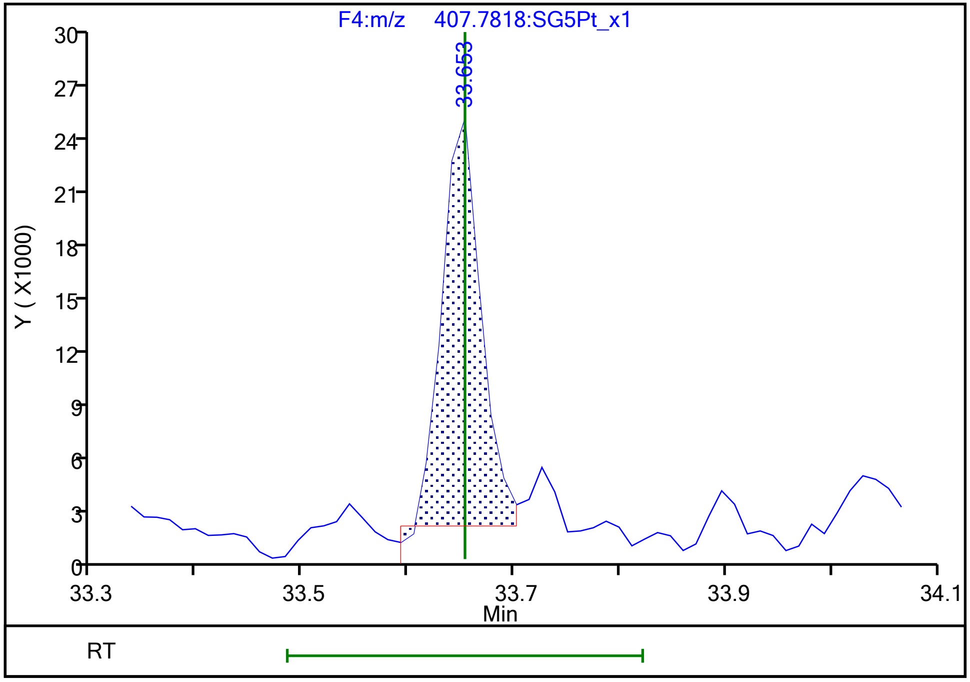

Reviewer: dadunj, 13-Oct-2020 11:39:15

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 33.40
Area: 160959
Amount: 0.180044
Amount Units: pg/ul

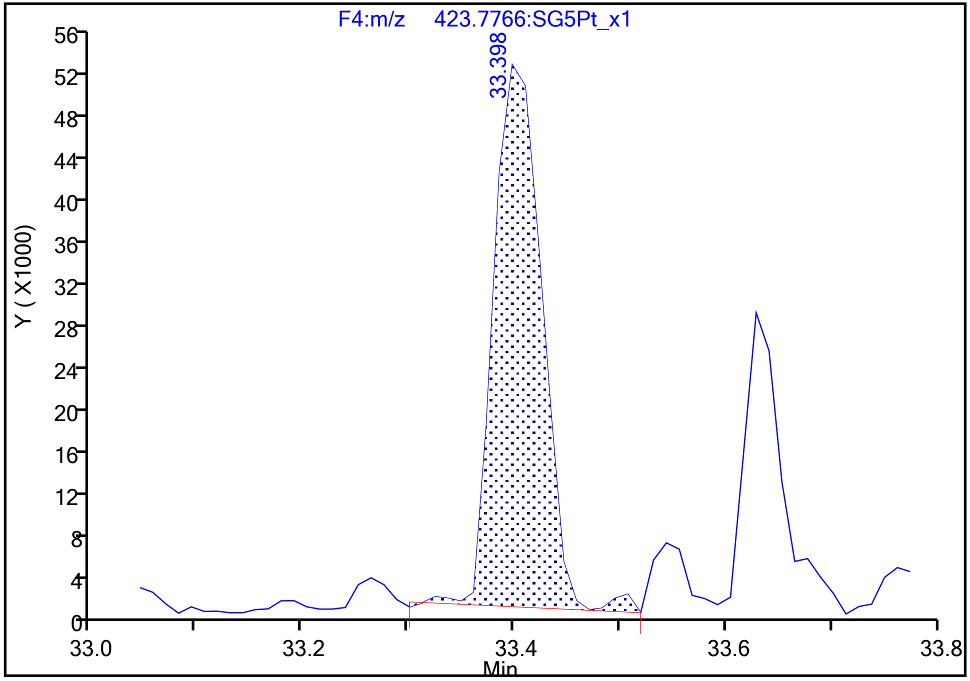

Manual Integration Results

RT: 33.40
Area: 155079
Amount: 0.176678
Amount Units: pg/ul

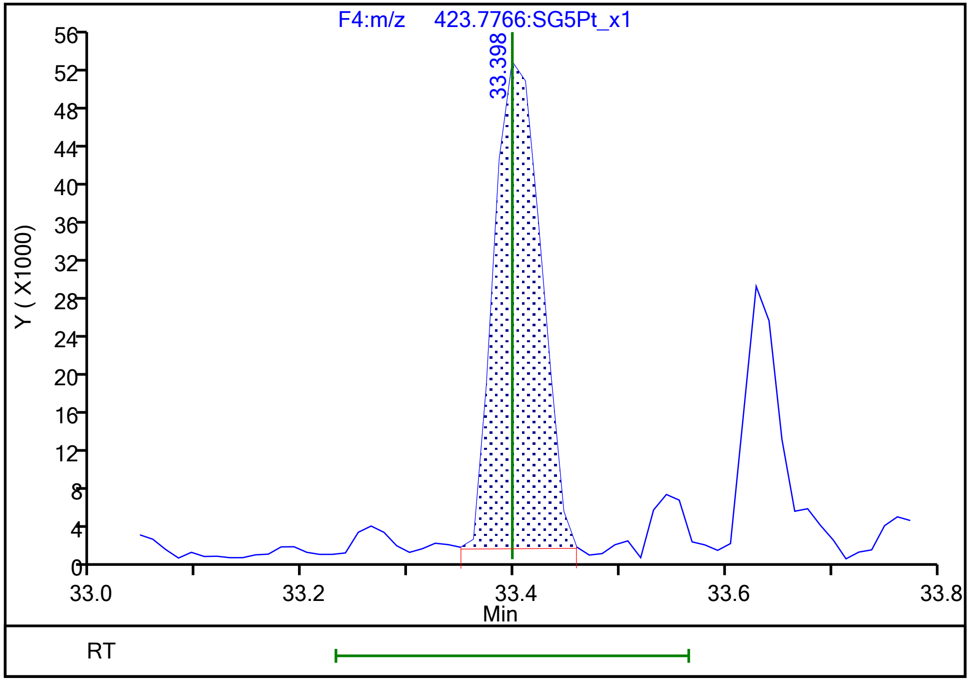

Reviewer: dadunj, 13-Oct-2020 11:39:35
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:40:50

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Instrument ID:	3D5
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 2

RT:	35.63
Area:	86918
Amount:	0.086954
Amount Units:	pg/ul

Processing Integration Results

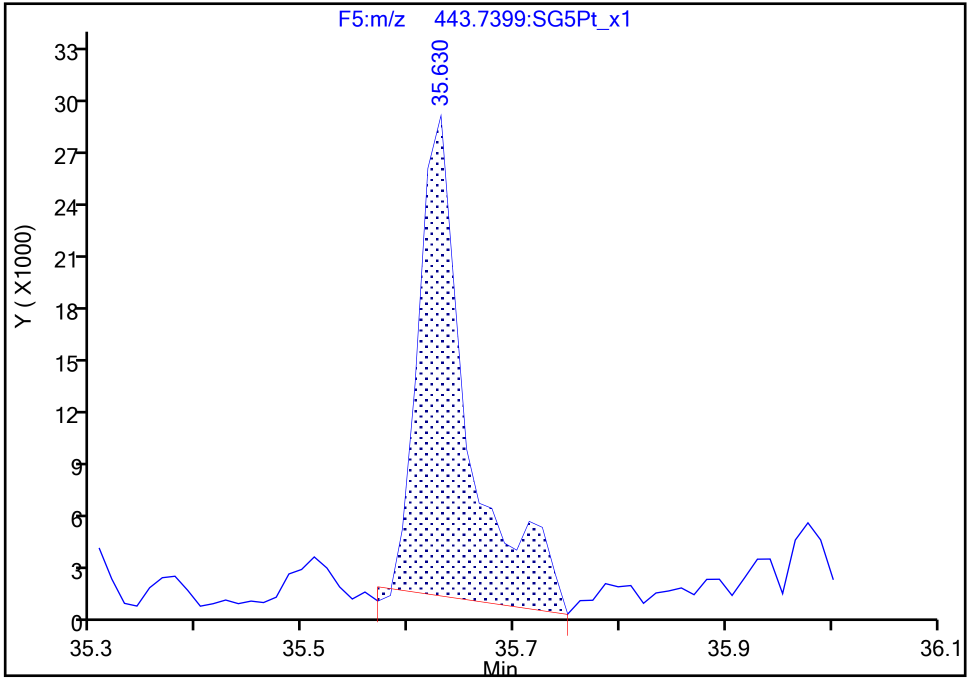

RT:	35.63
Area:	74304
Amount:	0.080274
Amount Units:	pg/ul

Manual Integration Results

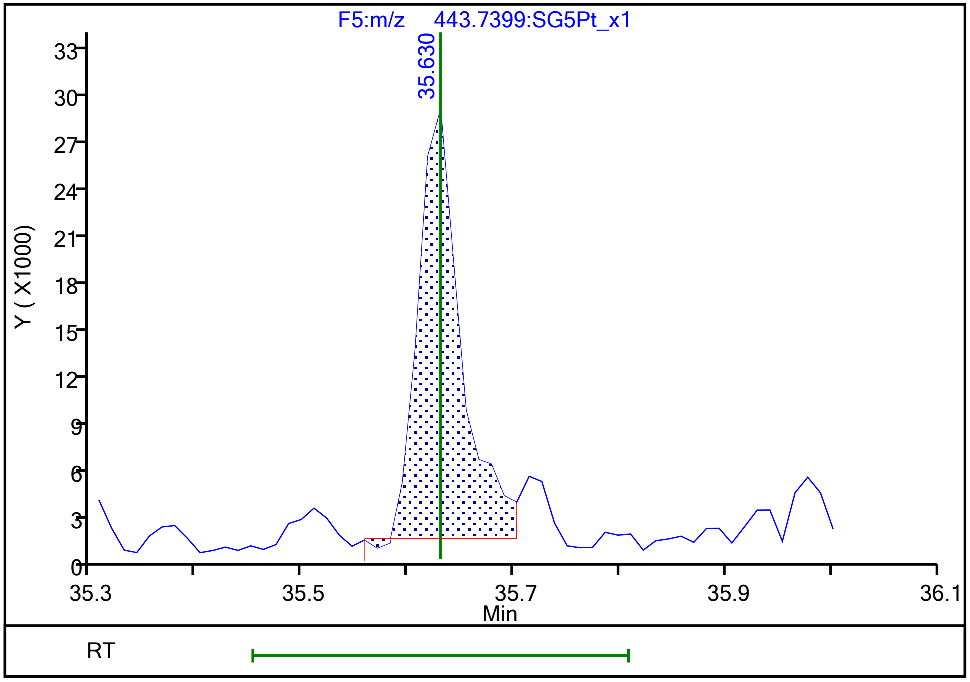

Reviewer: dadunj, 13-Oct-2020 11:39:58

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d

Injection Date: 09-Oct-2020 05:03:22 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-4-1

Worklist#: 420482 Sample Line#: 13

Column Type: Column Dia:

TCDF

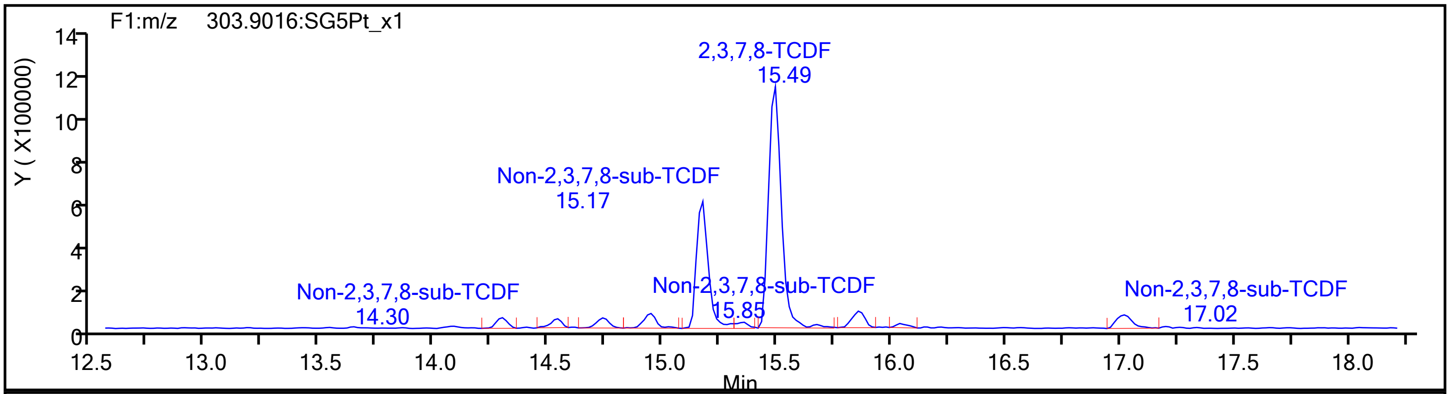

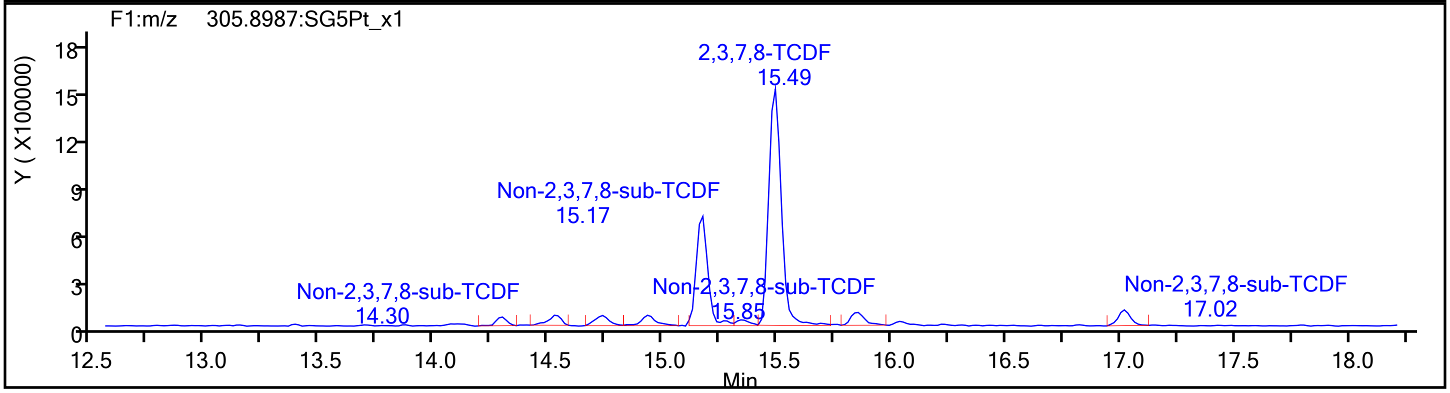

TCDF Standards

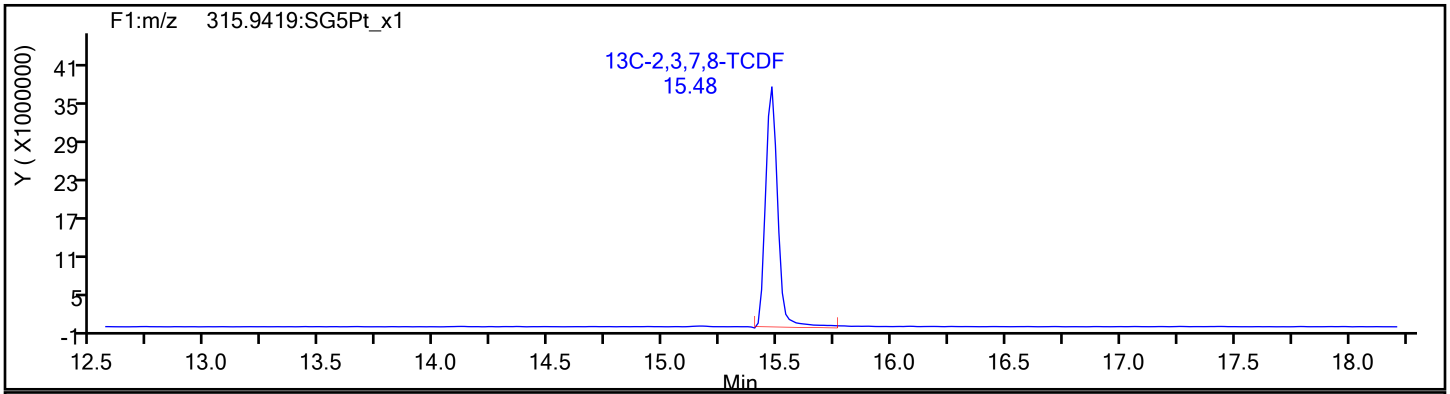

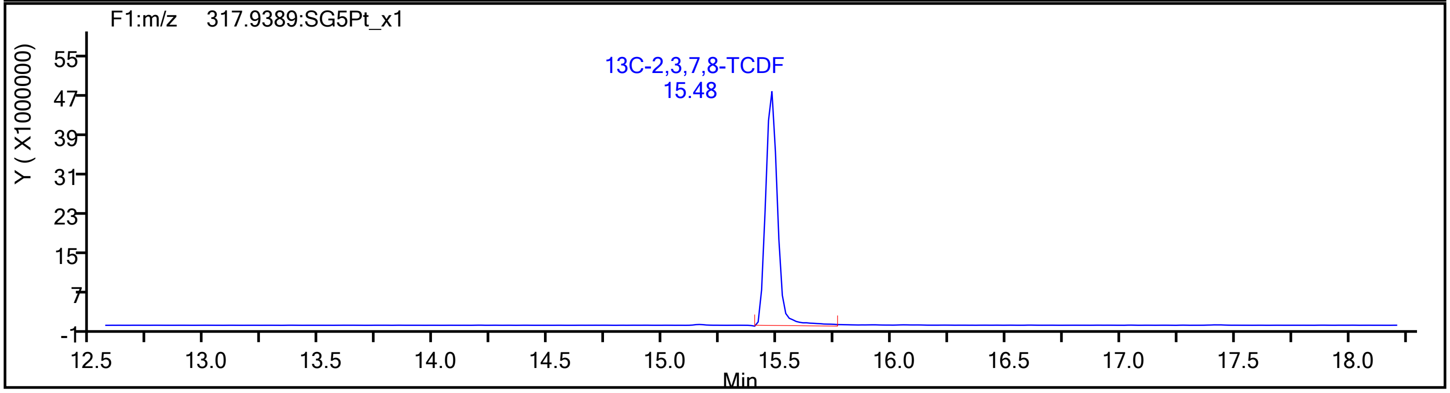

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-1		
Worklist#:	420482	Sample Line#:	13
Column Type:		Column Dia:	

TCDF

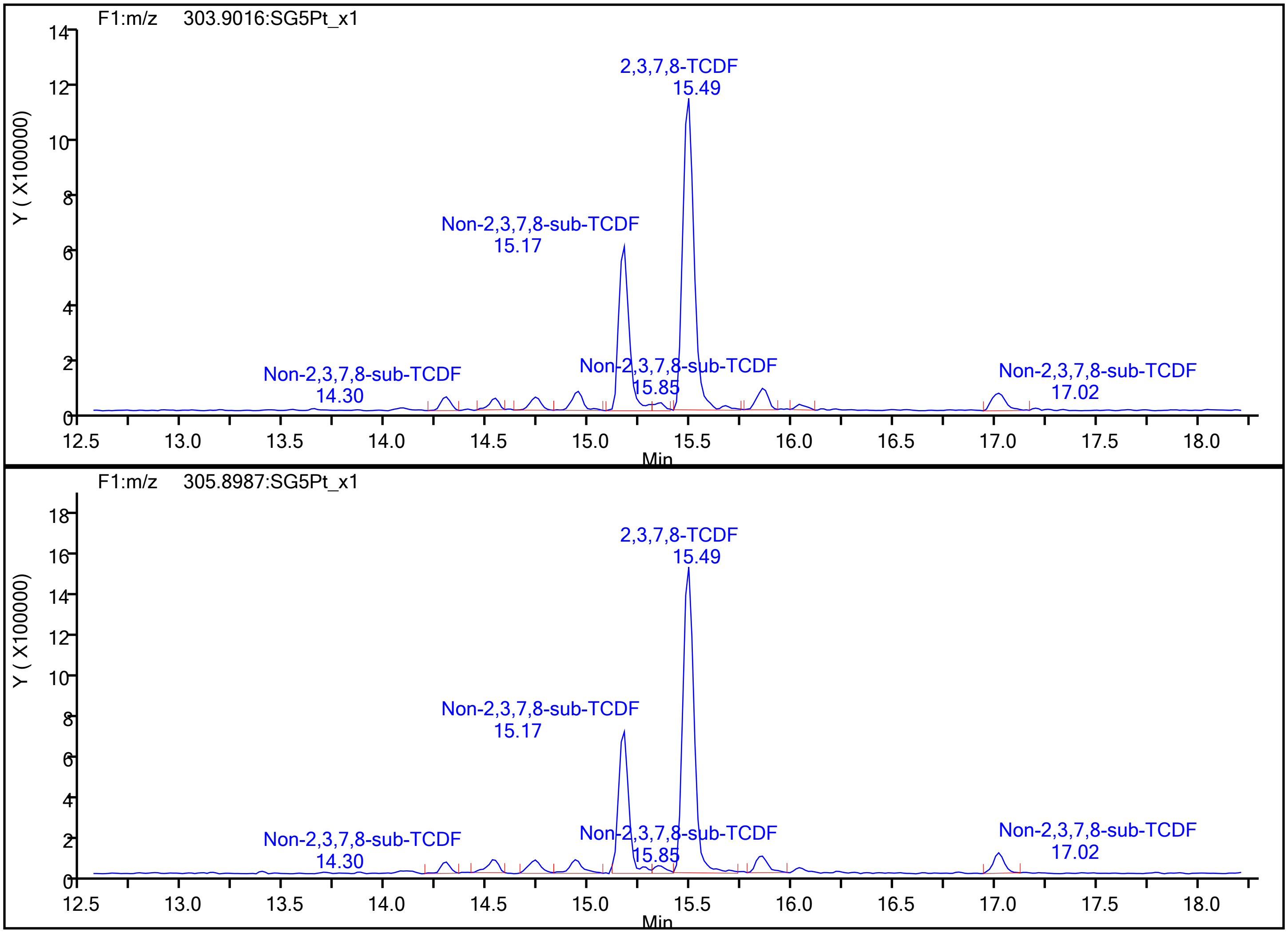

TCDF Interference Mass

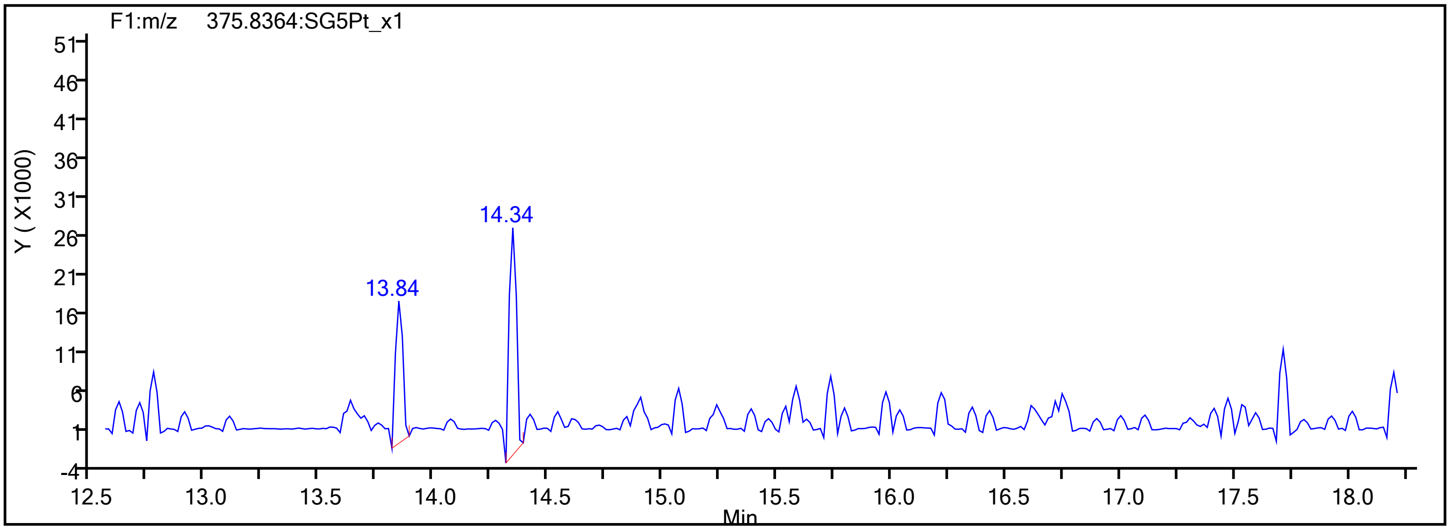

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d		
Injection Date:	09-Oct-2020 05:03:22	Injection Vol:	2.0 ul
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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-1		
Worklist#:	420482	Sample Line#:	13
Column Type:		Column Dia:	

TCDD

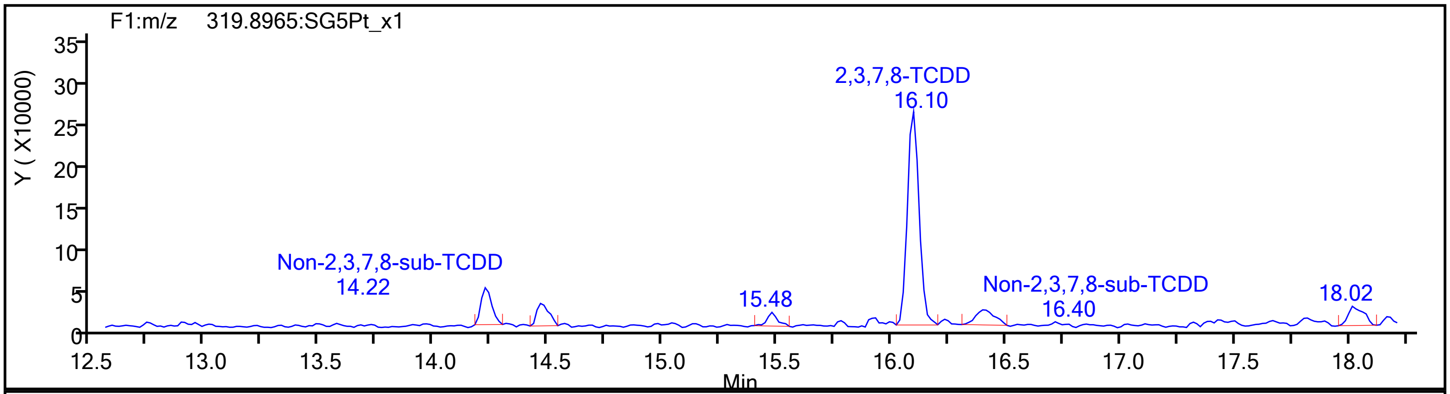

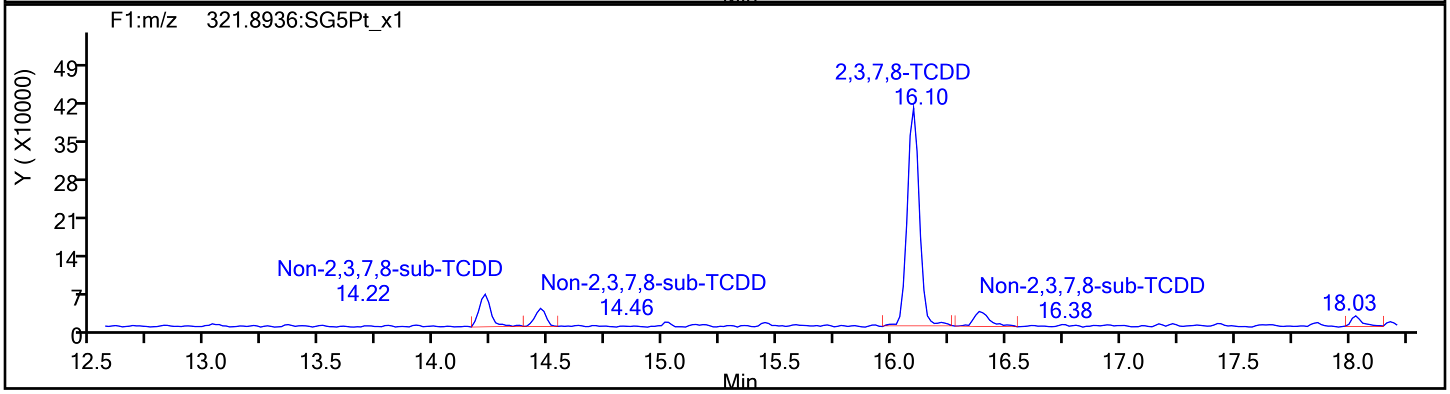

TCDD Standards

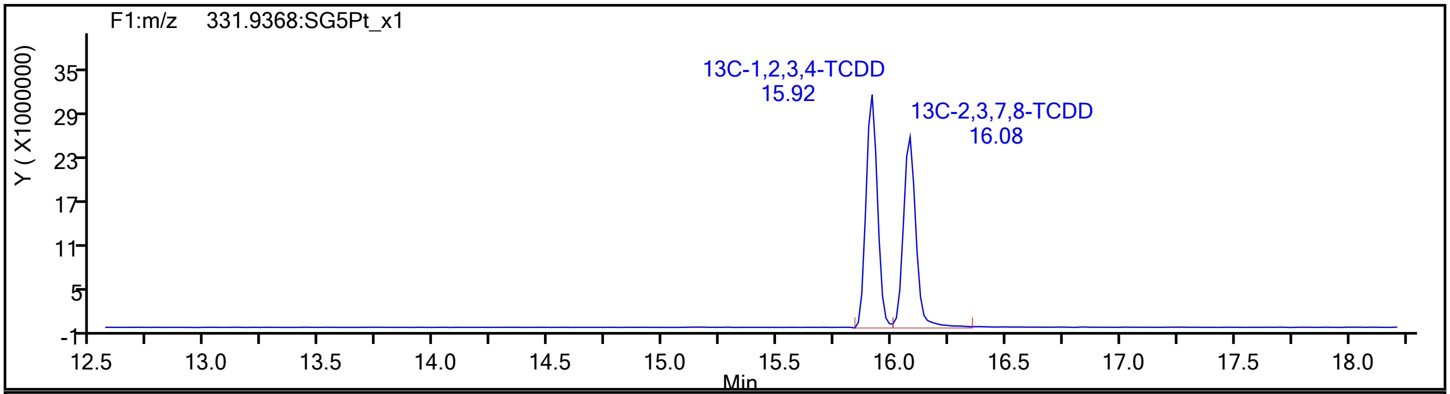

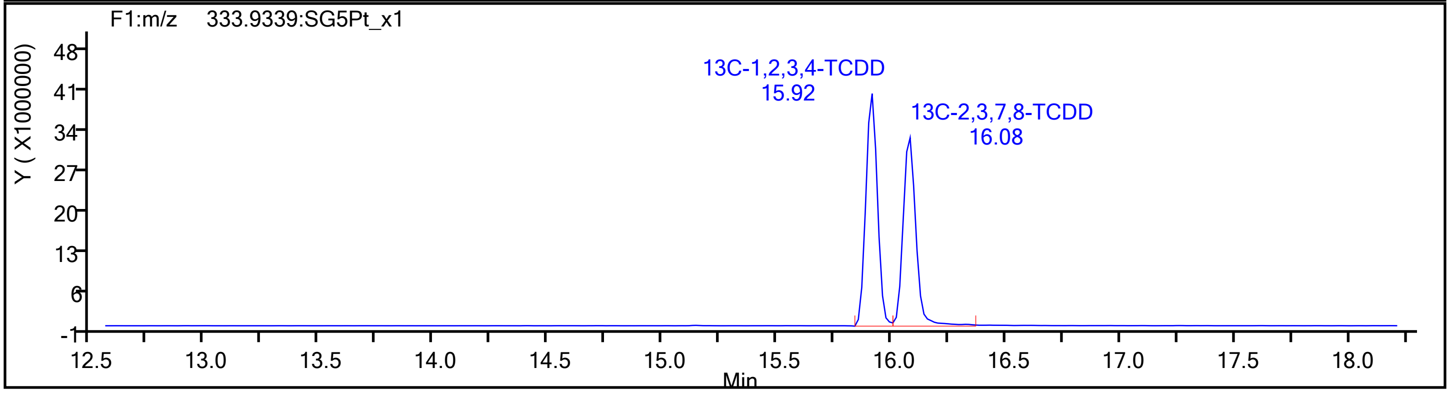

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

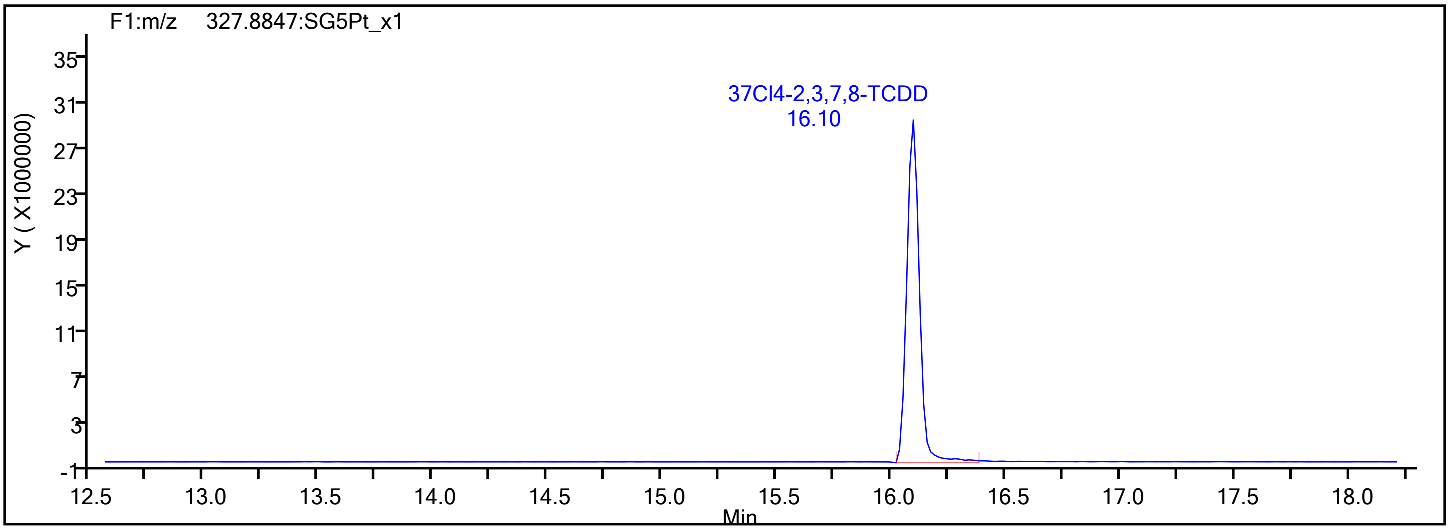

37Cl4-TCDD Standards

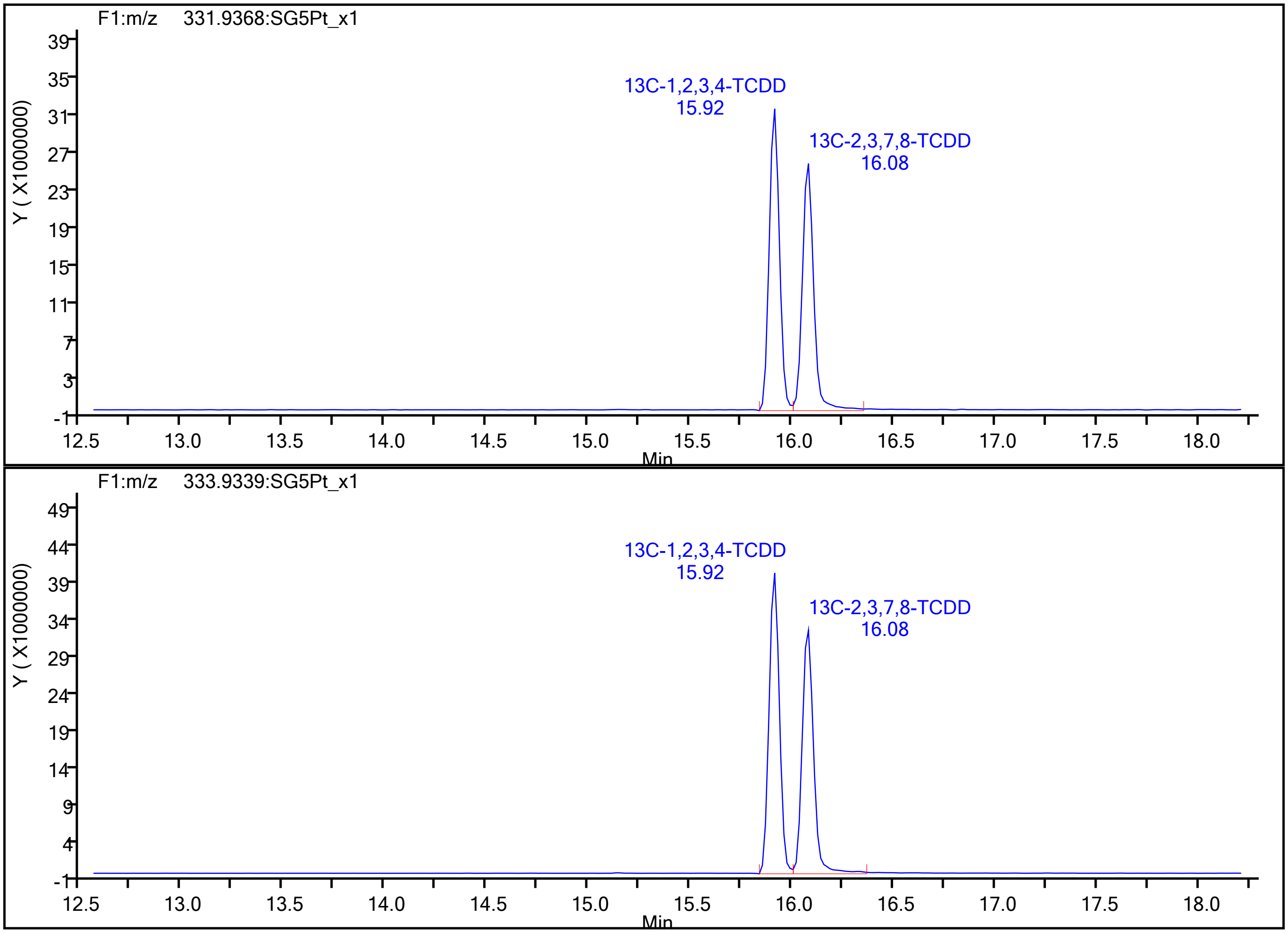

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Eurofins TestAmerica, Sacramento

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Operator ID: ALM

Method: Dioxin_3D5

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Worklist#: 420482

Sample Line#: 13

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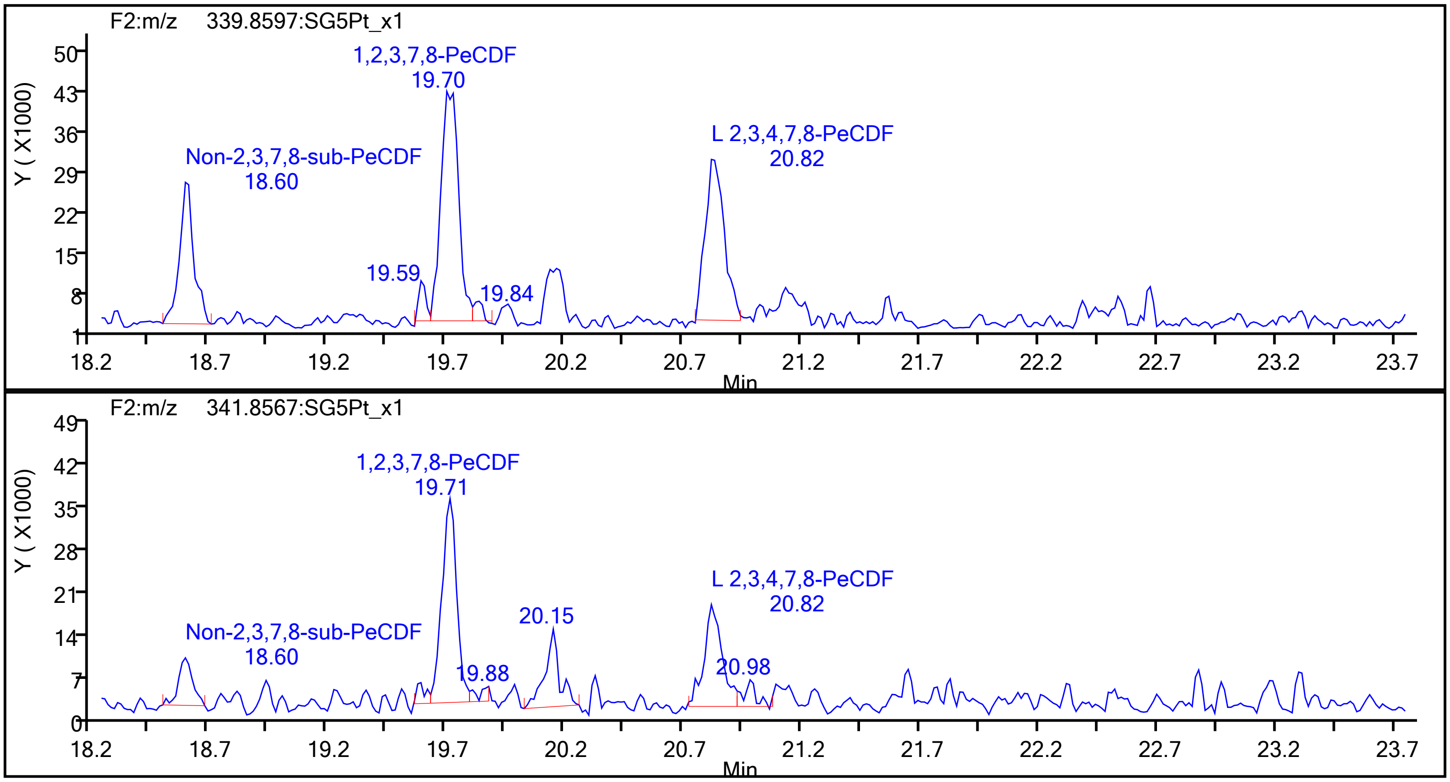

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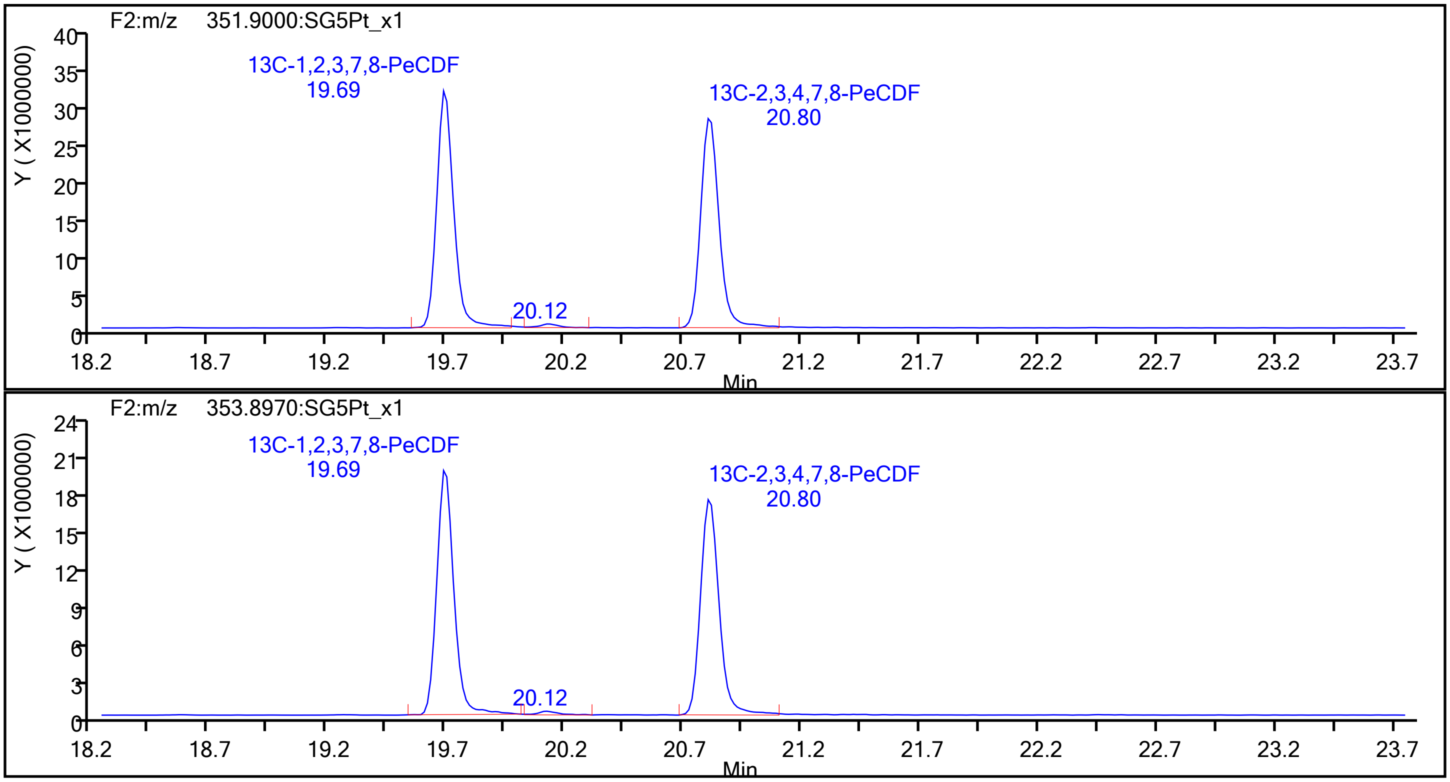

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Eurofins TestAmerica, Sacramento

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Column Dia:

PeCDF

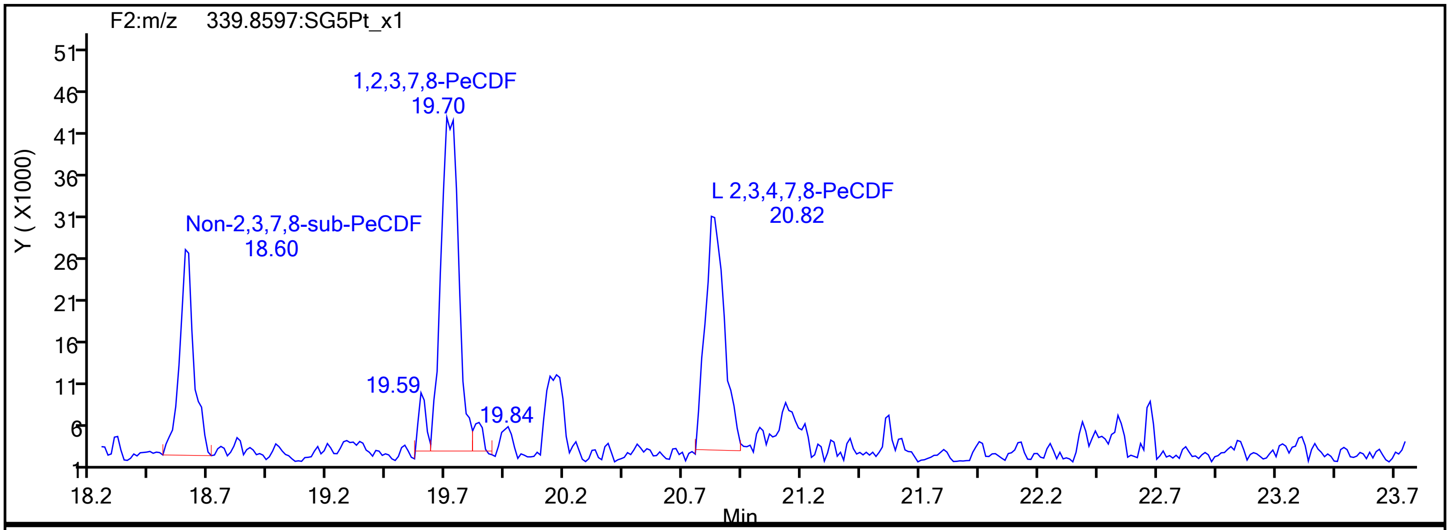

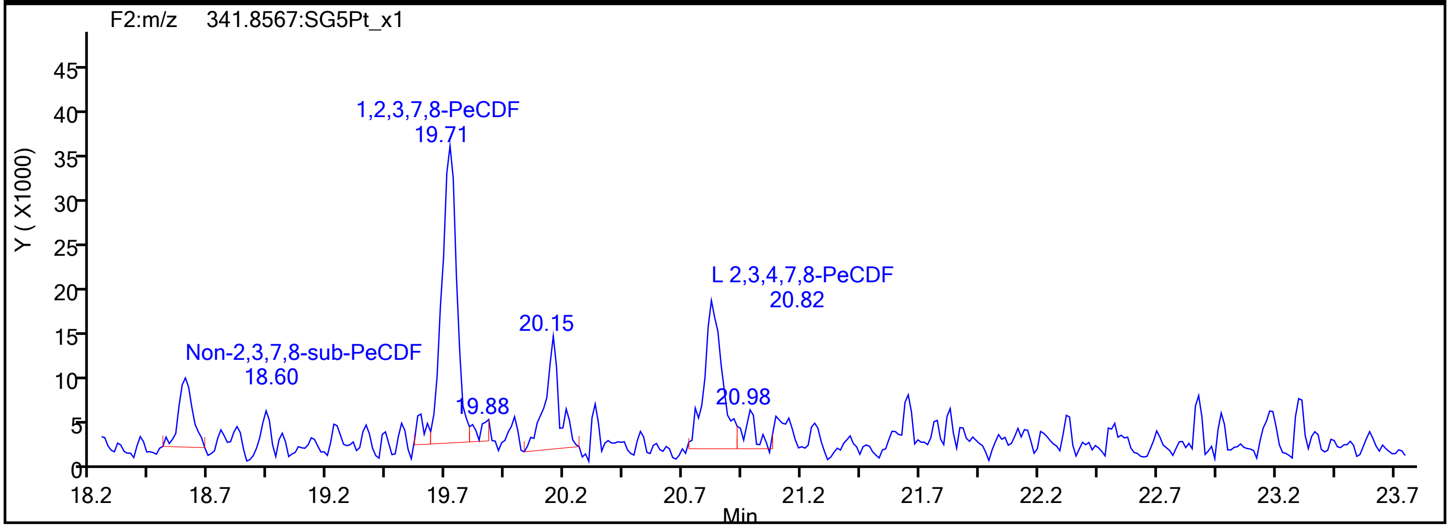

PeCDF Interference Mass

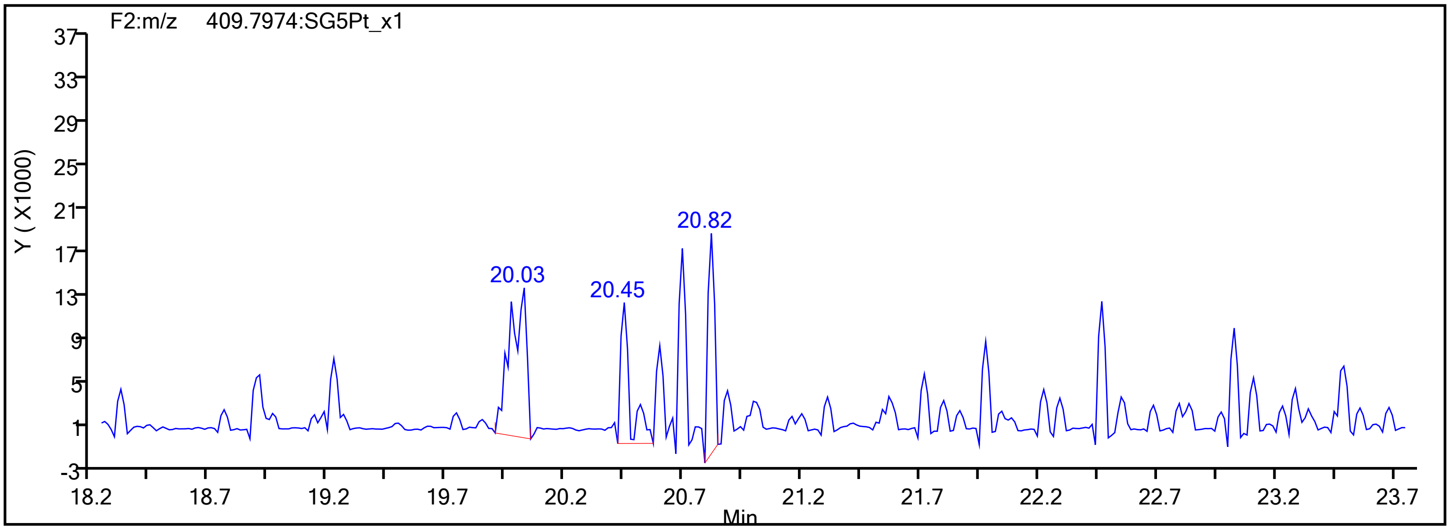

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 05:03:22 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-4-1

Worklist#: 420482 Sample Line#: 13

Column Type: Column Dia:

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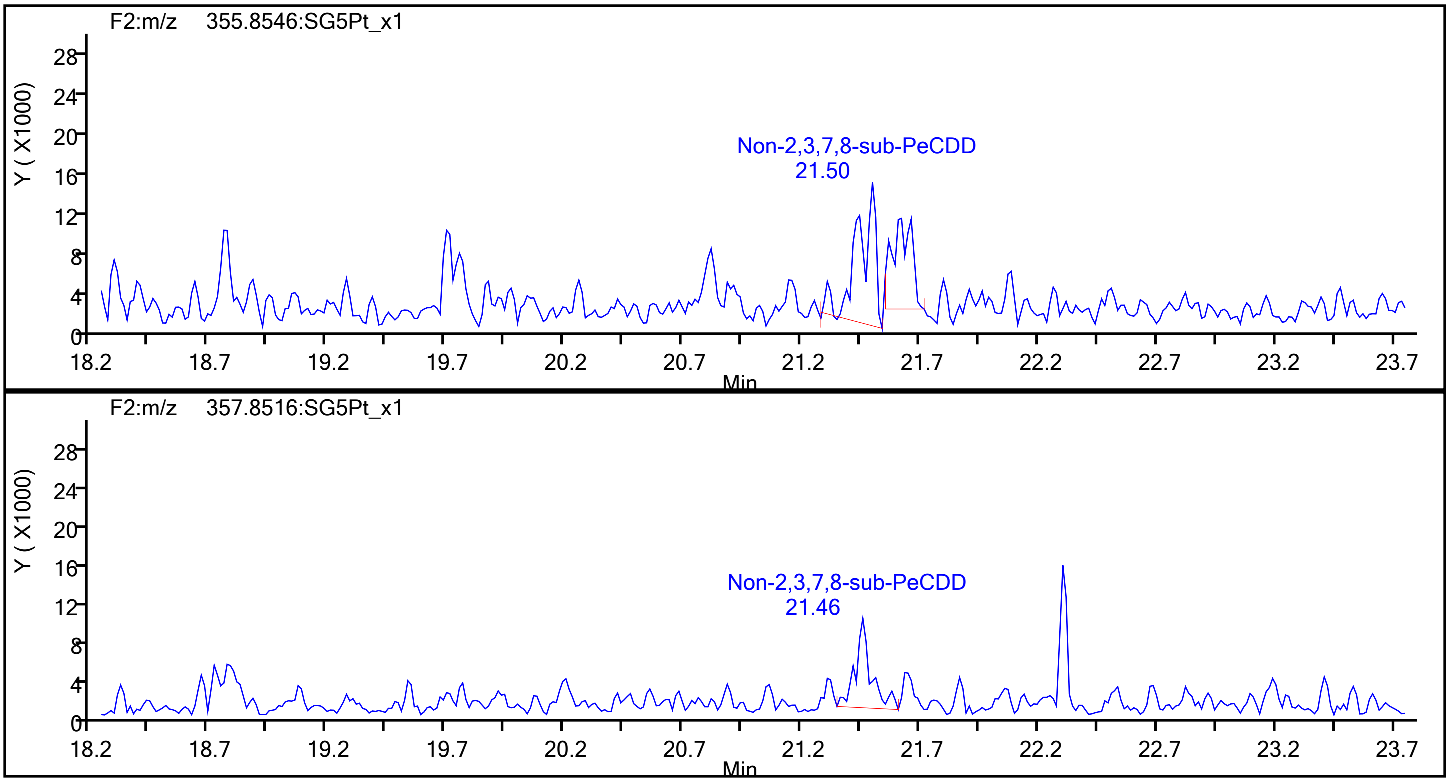

PeCDD Standards

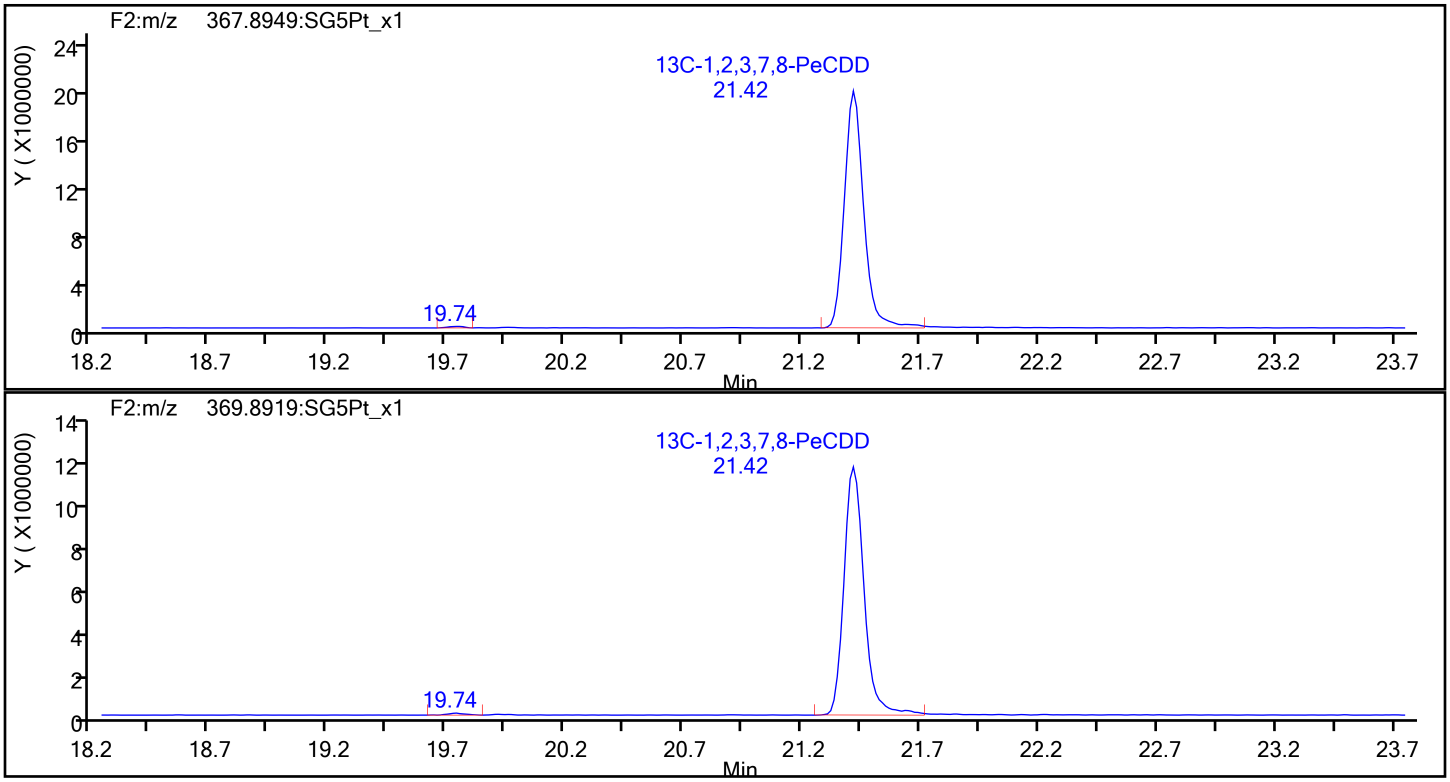

Report Date: 13-Oct-2020 11:40:50
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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HxCDF

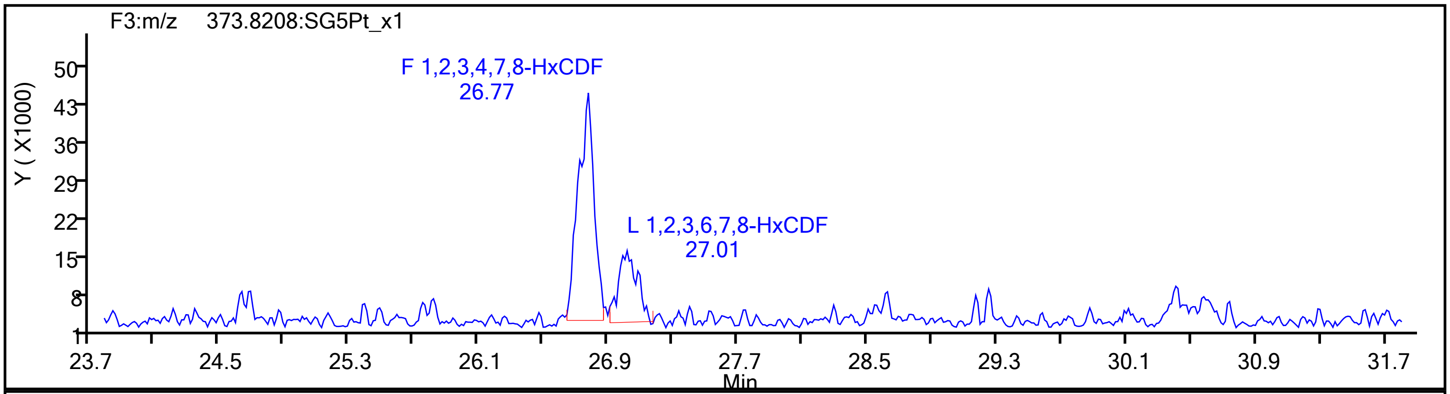

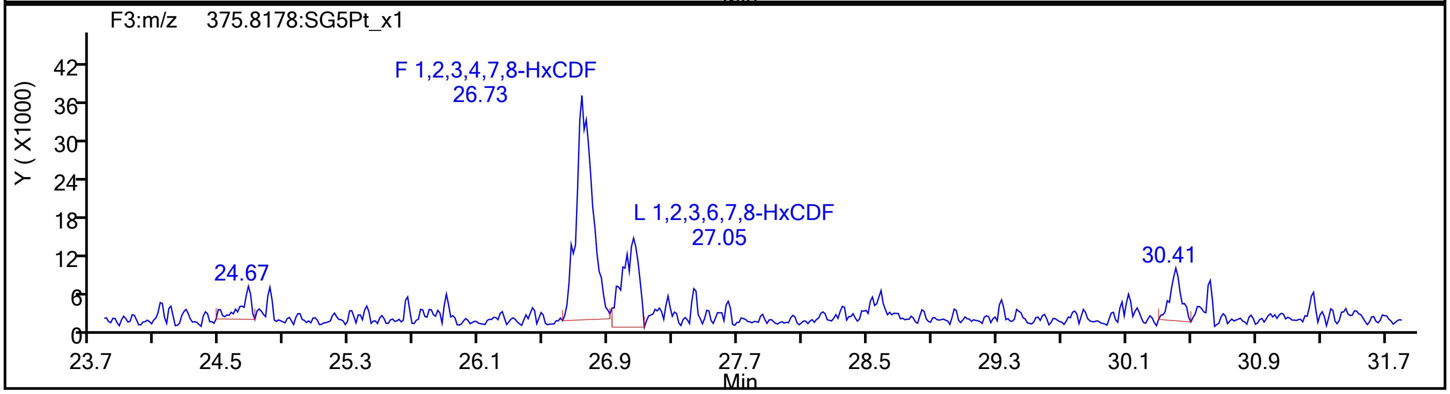

HxCDF Standards

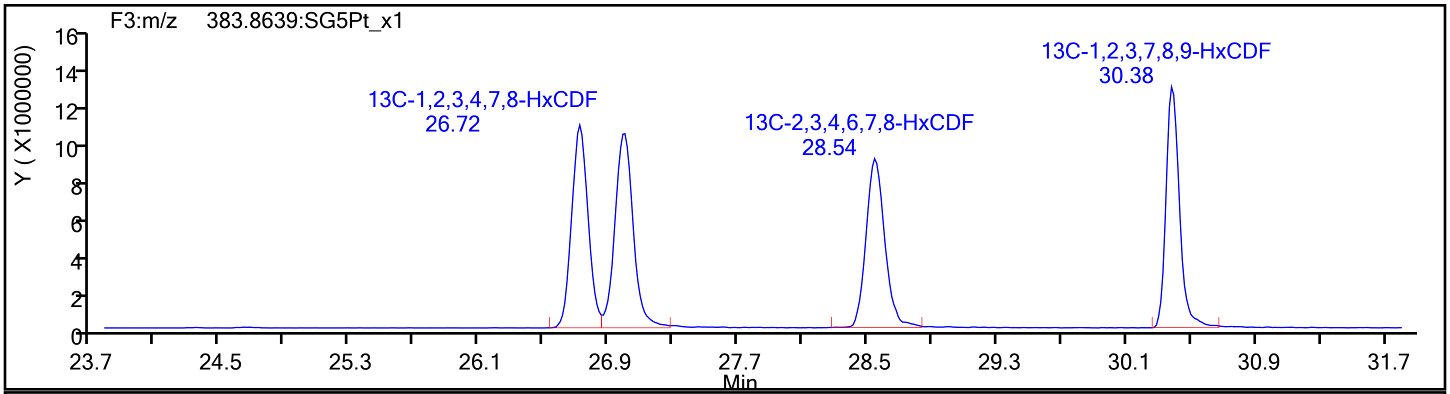

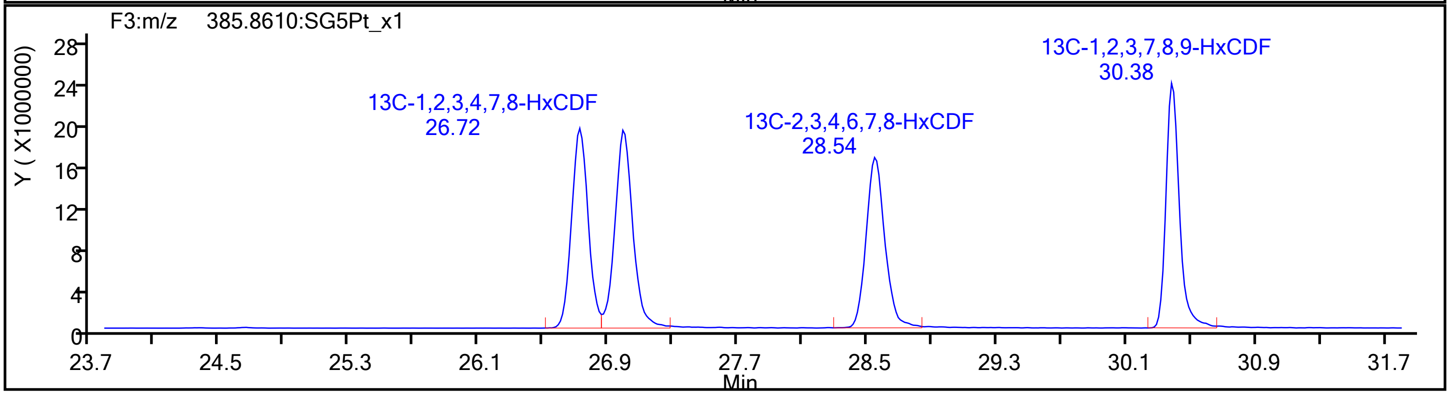

Report Date: 13-Oct-2020 11:40:50 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Column Type:		Column Dia:	

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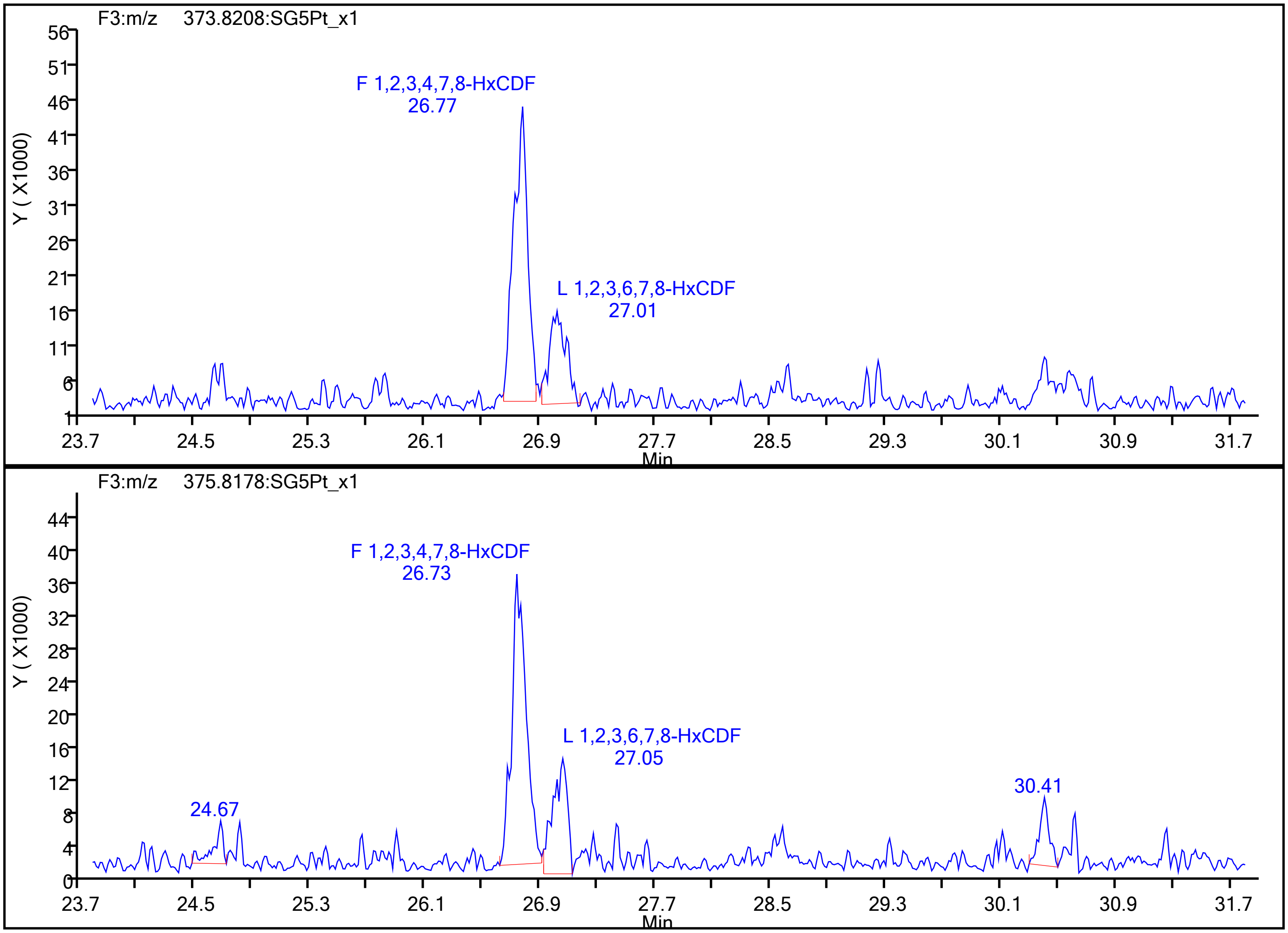

HxCDF Interference Mass

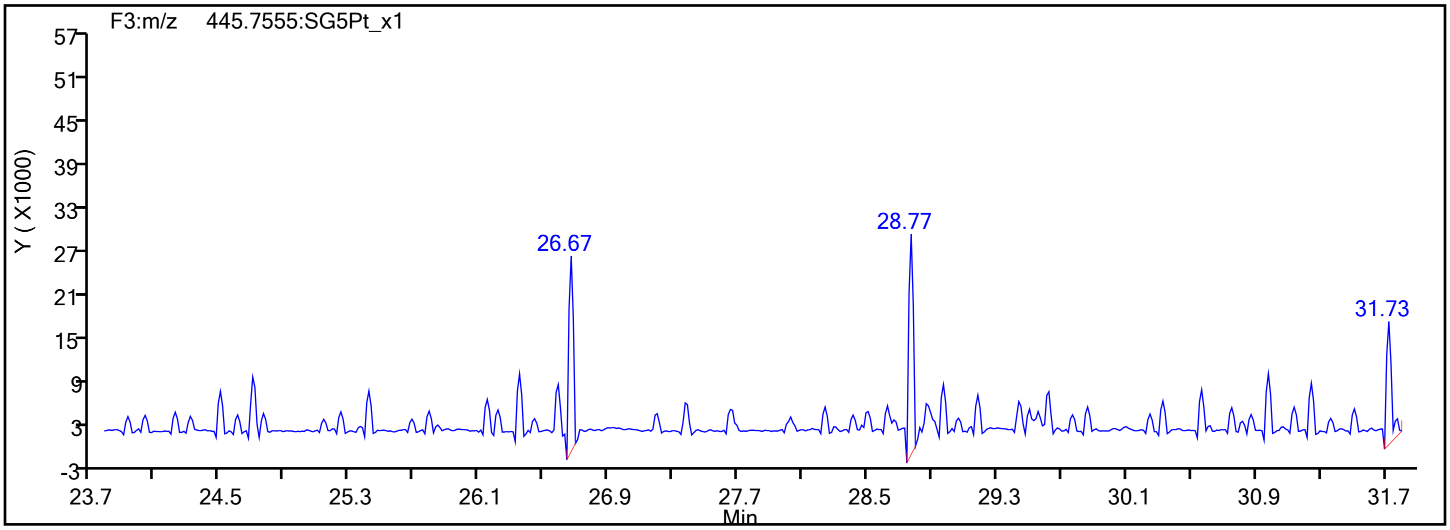

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Eurofins TestAmerica, Sacramento

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HxCDD

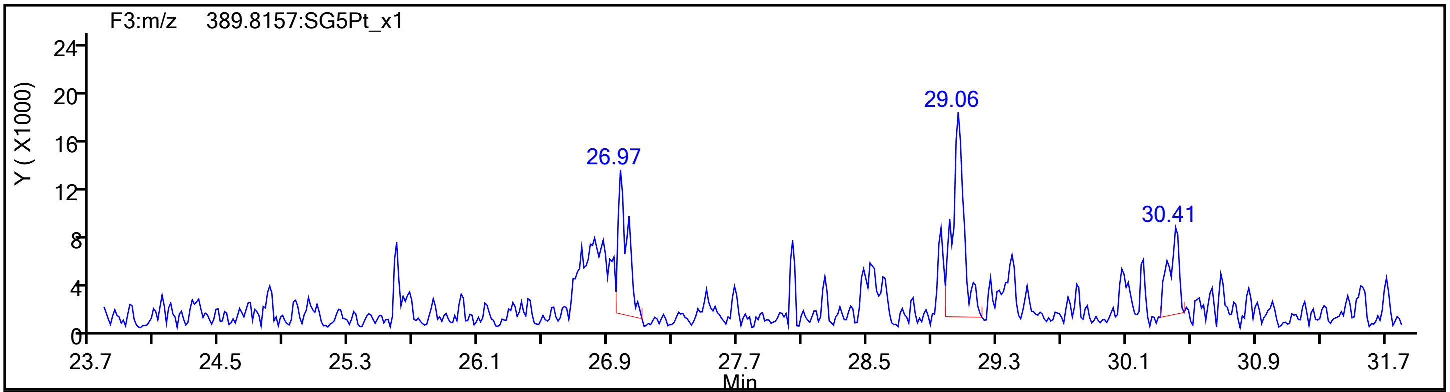

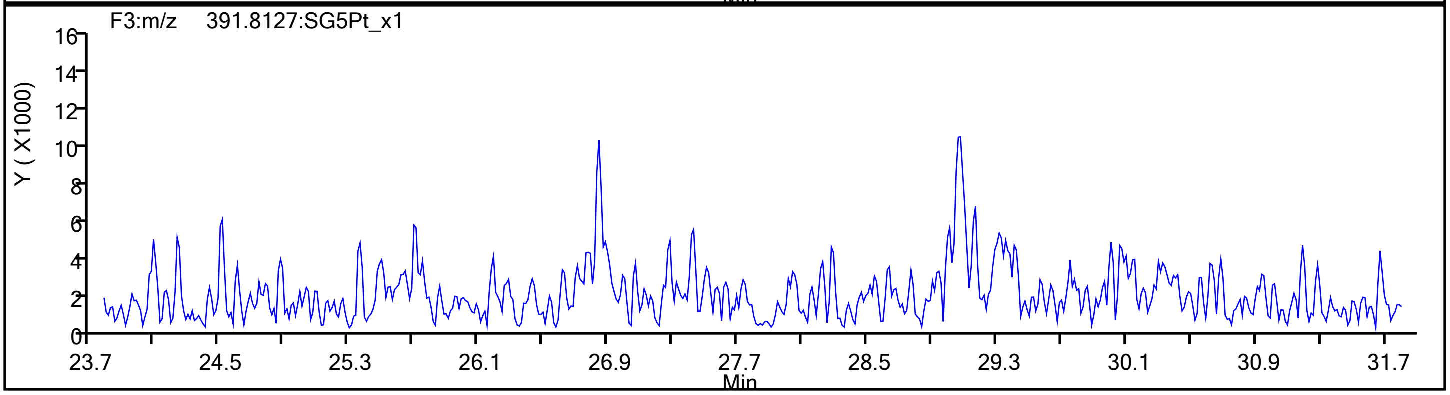

HxCDD Standards

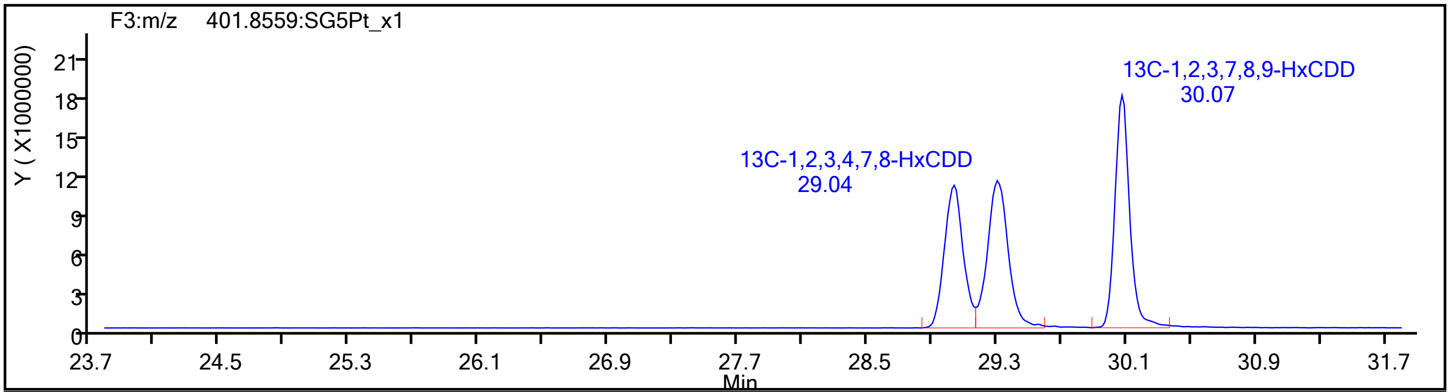

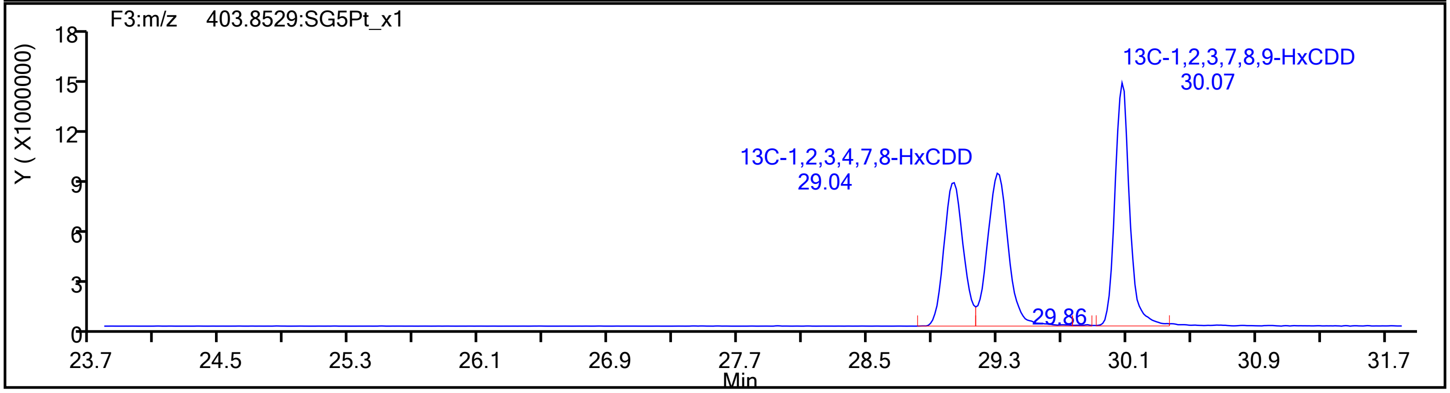

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
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HpCDF

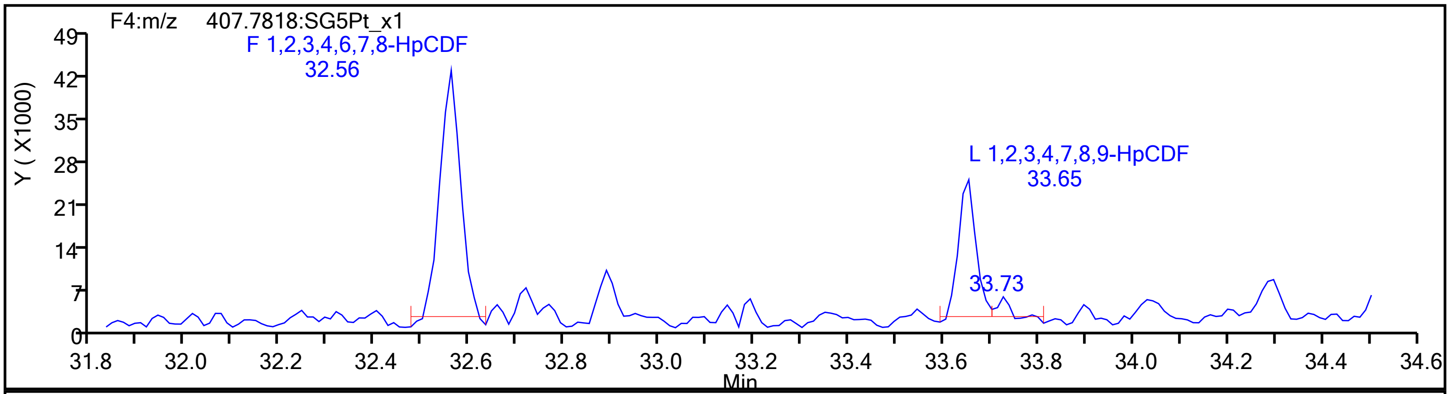

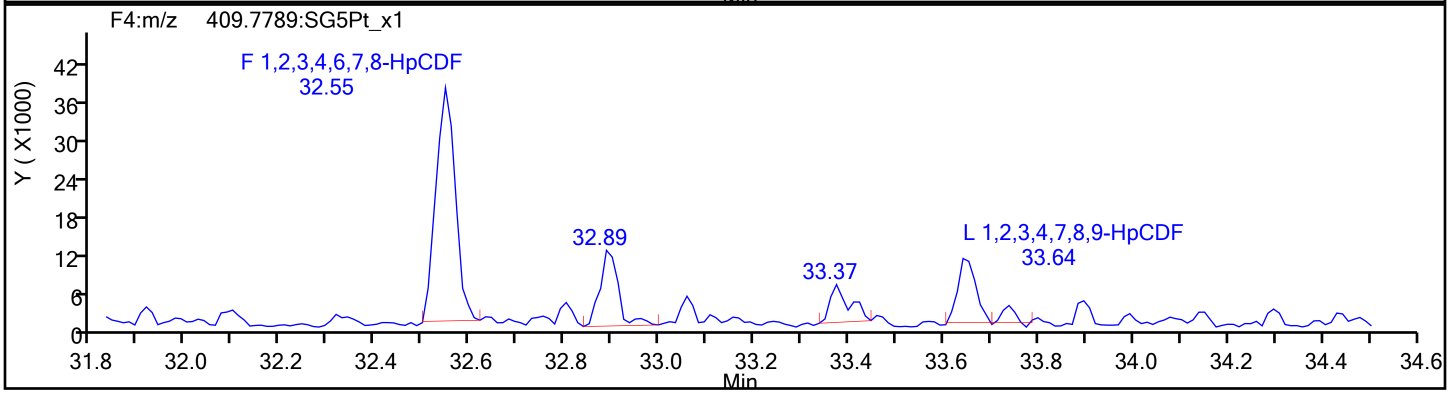

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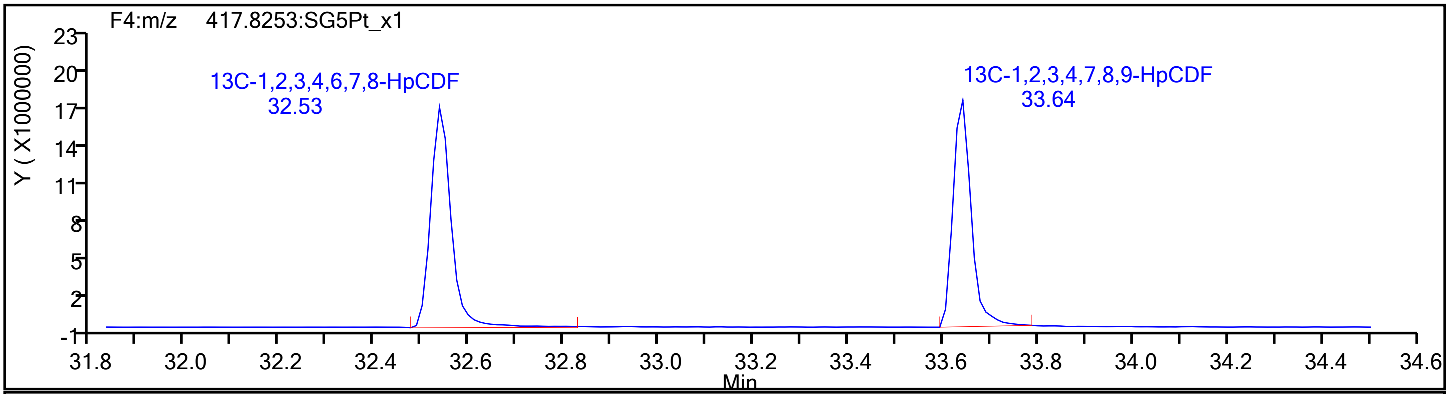

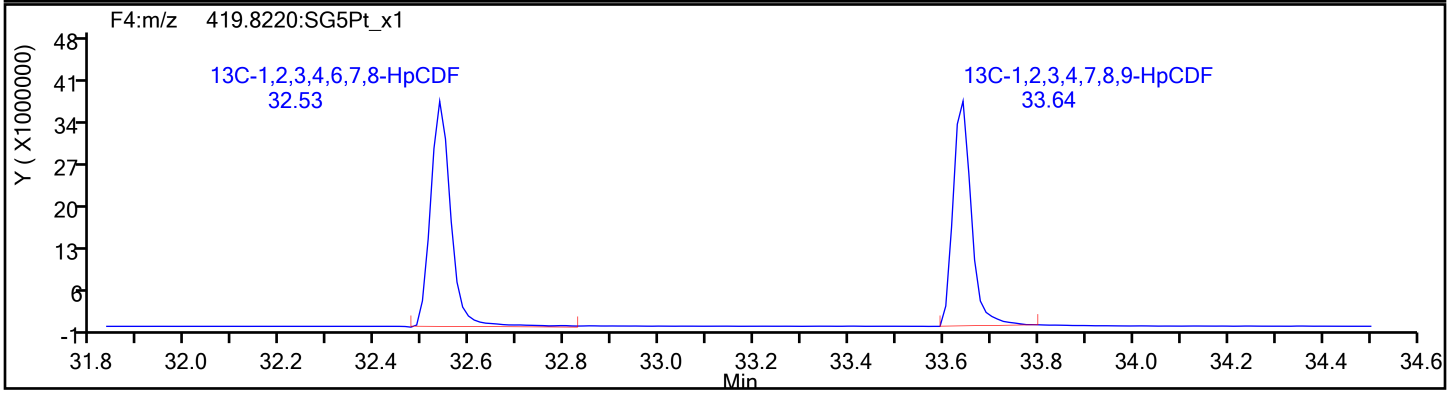

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Eurofins TestAmerica, Sacramento

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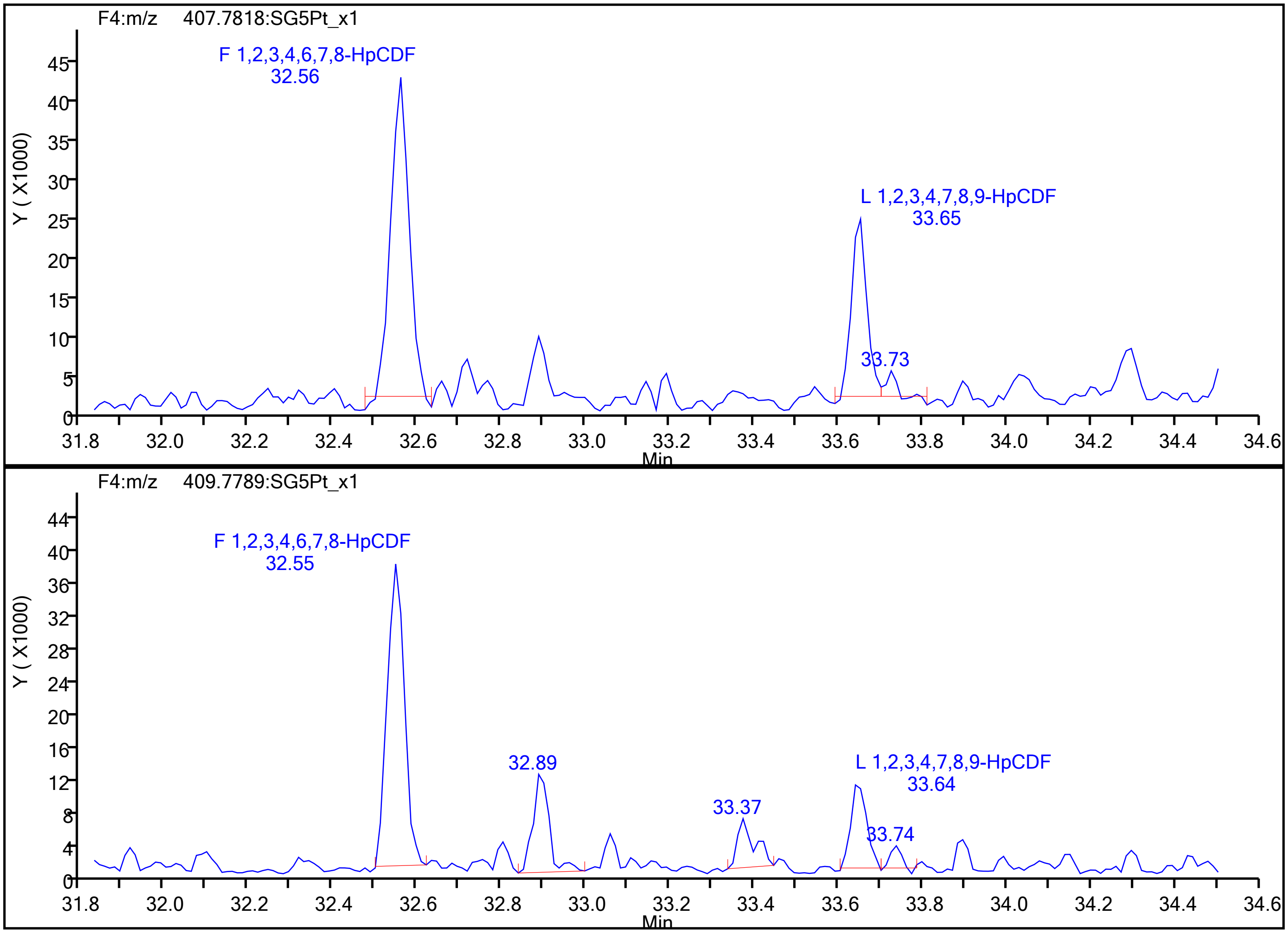

HpCDF Interference Mass

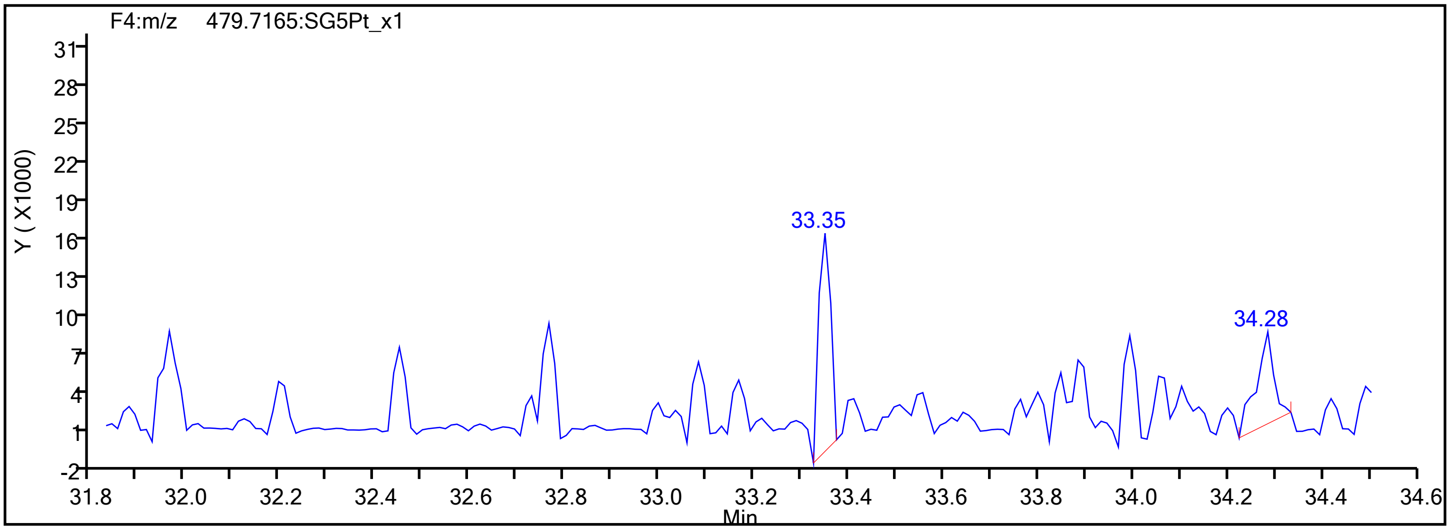

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HpCDD

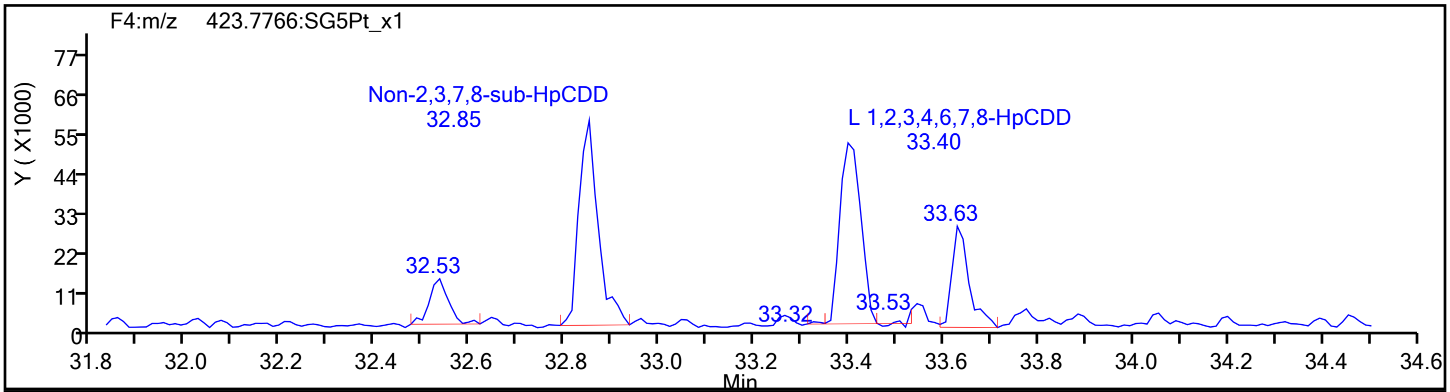

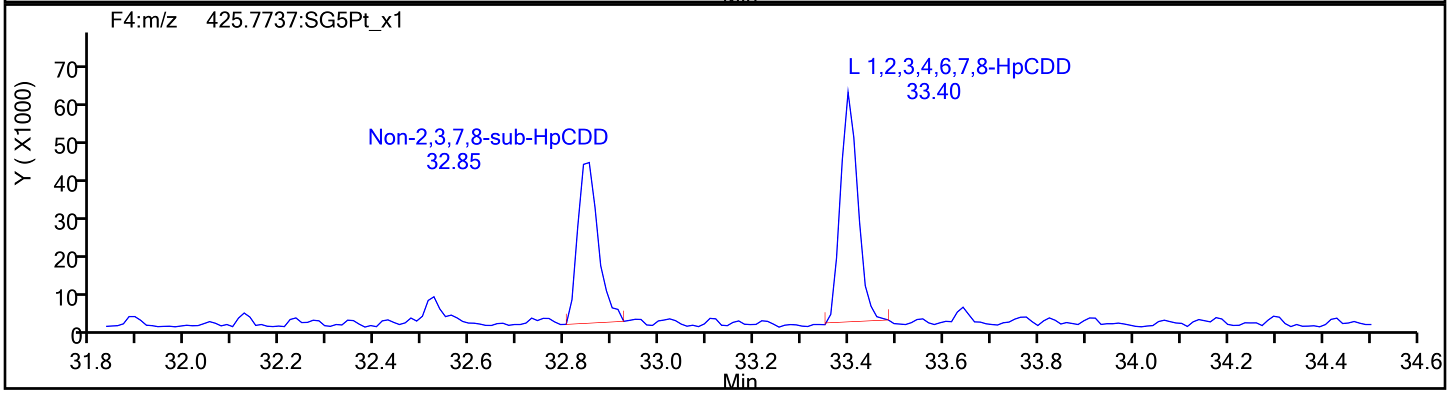

HpCDD Standards

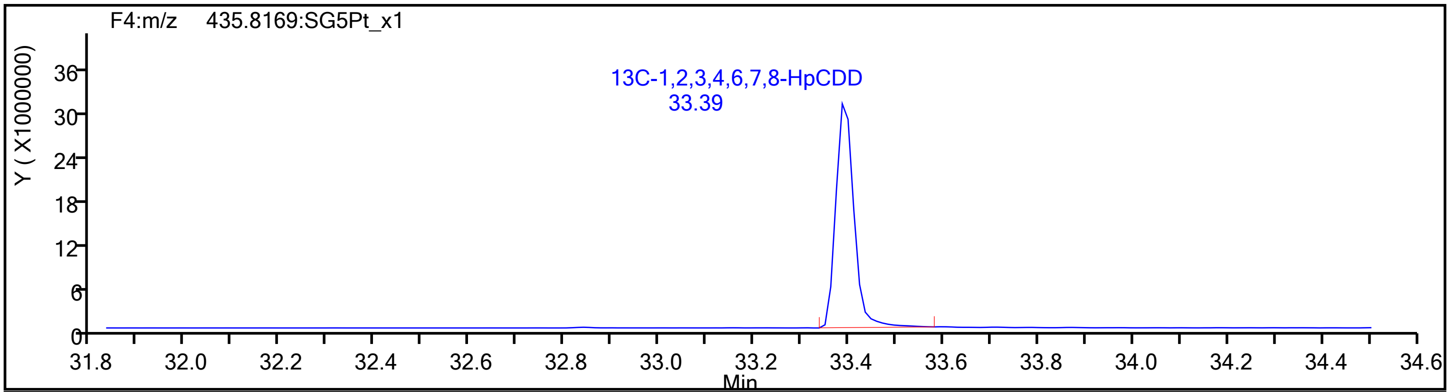

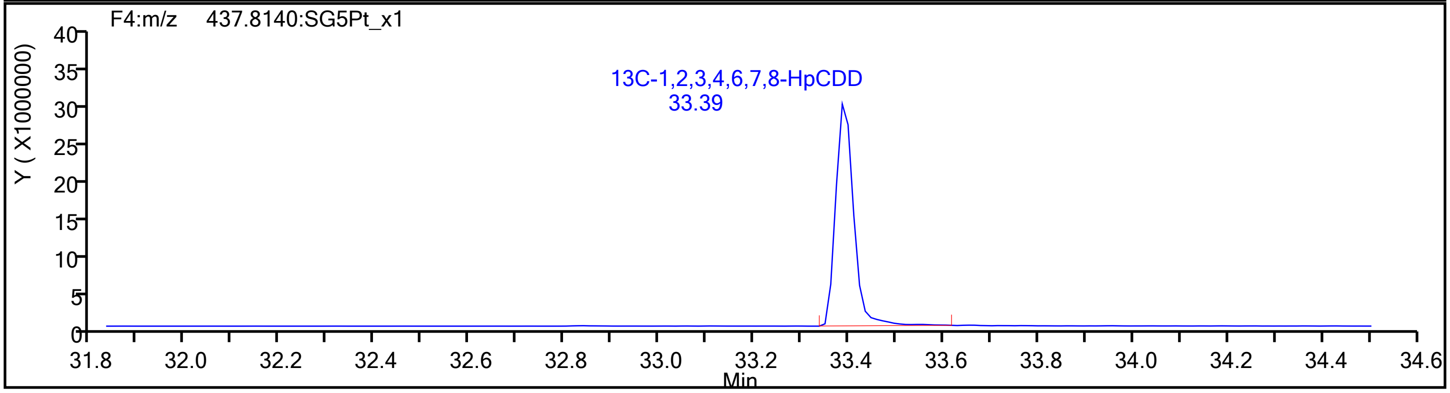

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Eurofins TestAmerica, Sacramento

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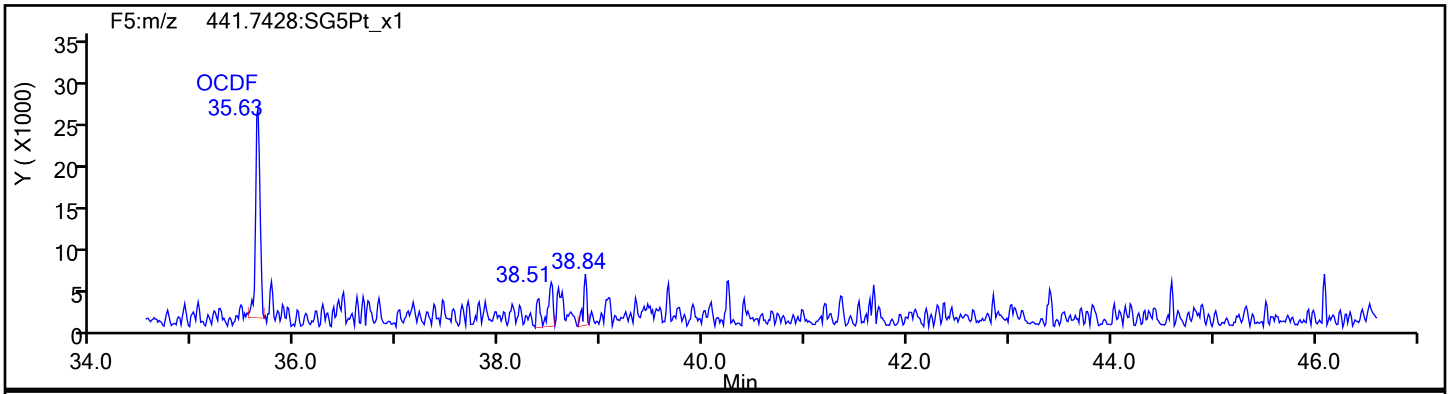

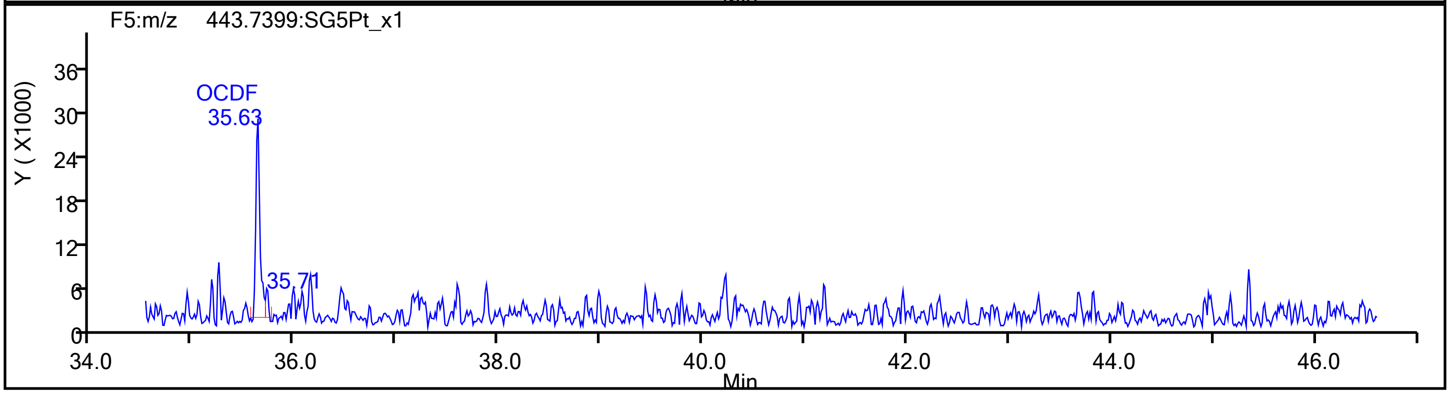

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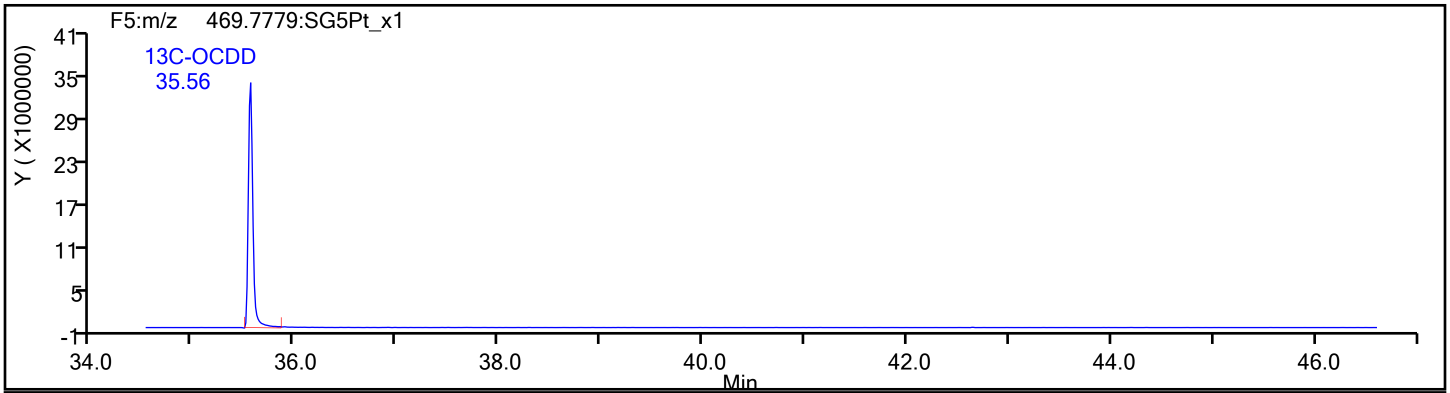

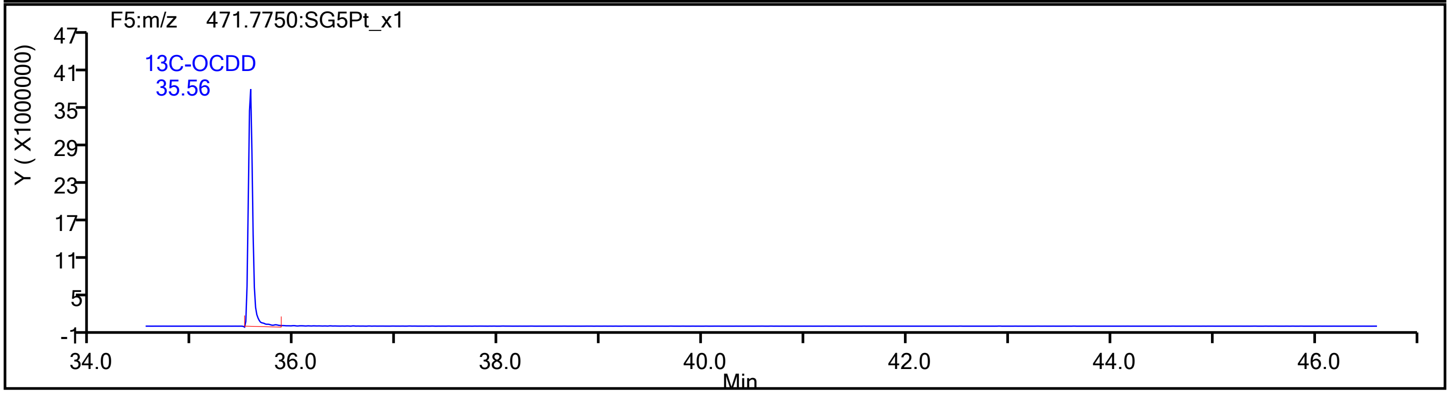

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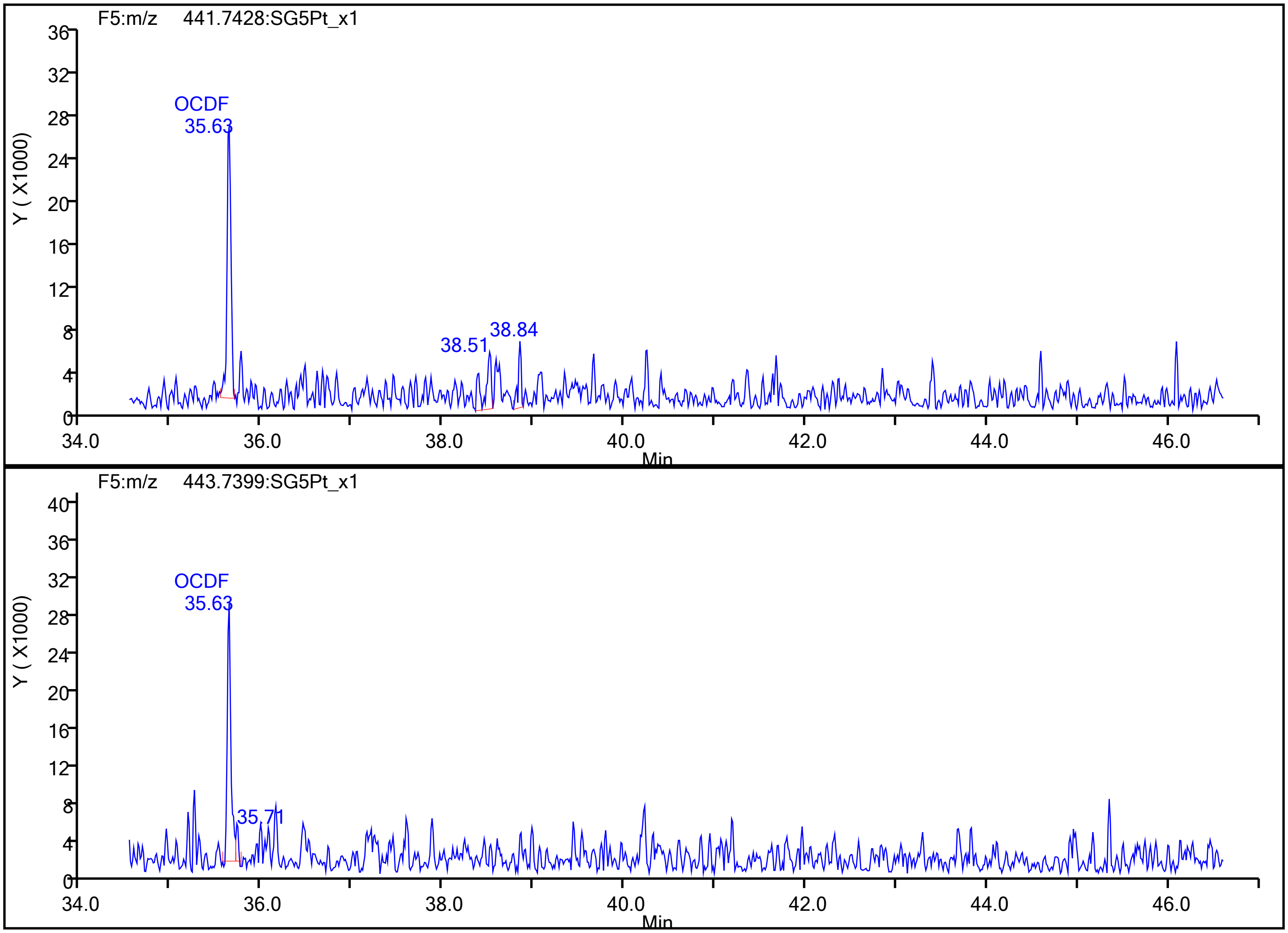

OCDF Interference Mass

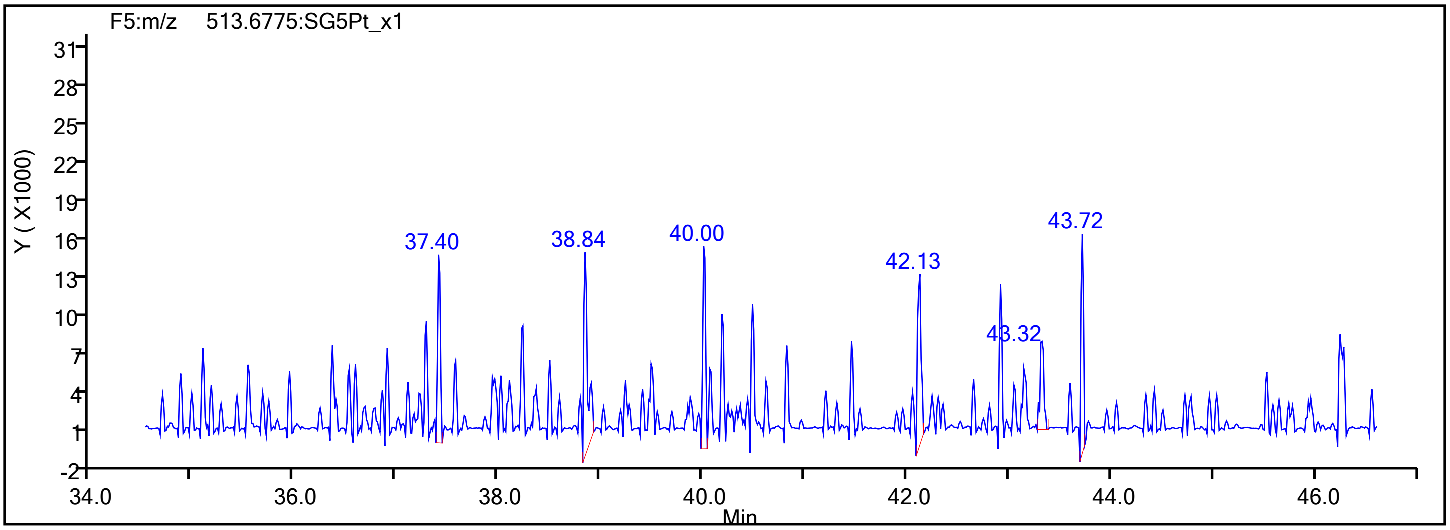

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Eurofins TestAmerica, Sacramento

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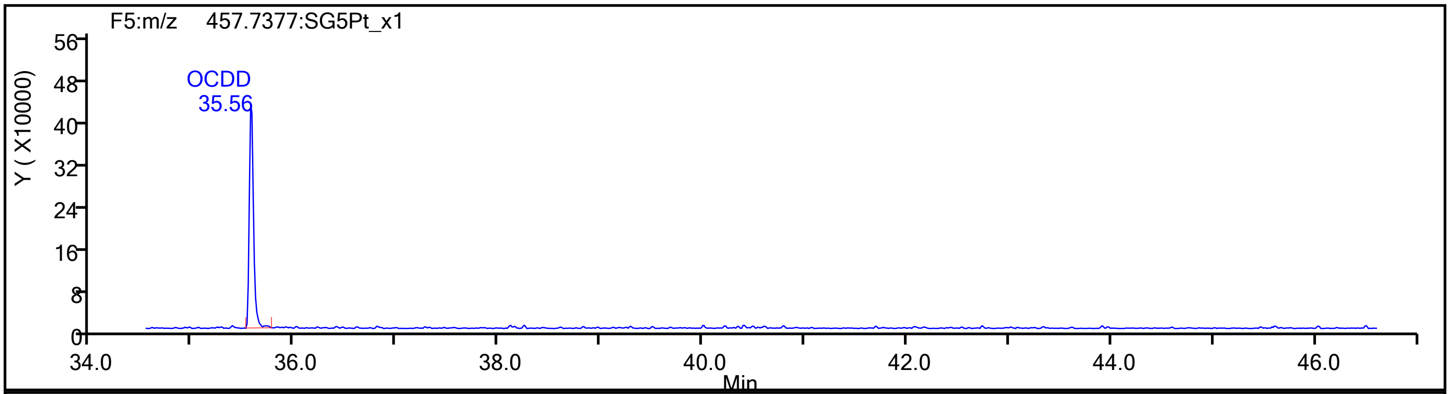

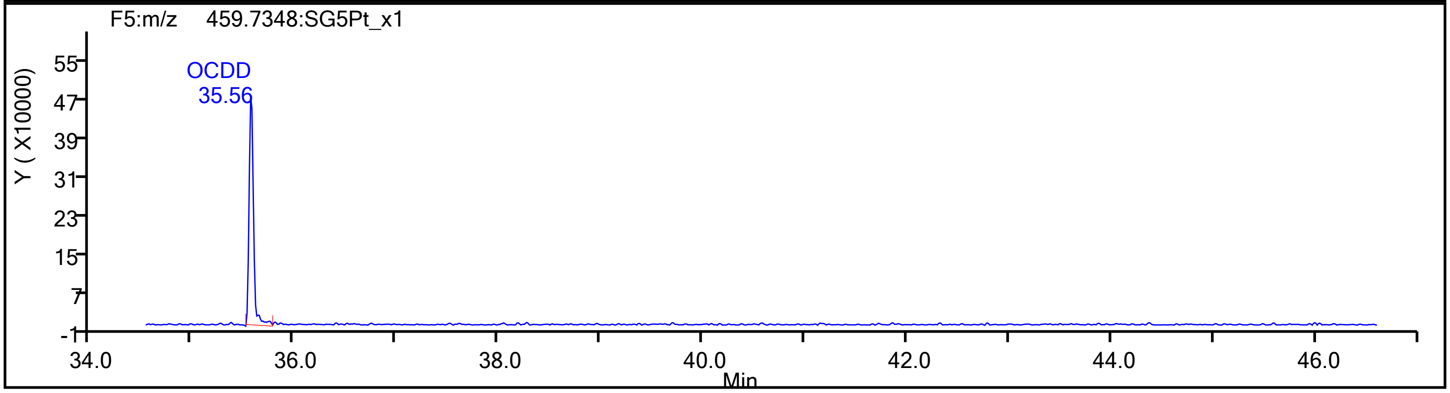

OCDD Standards

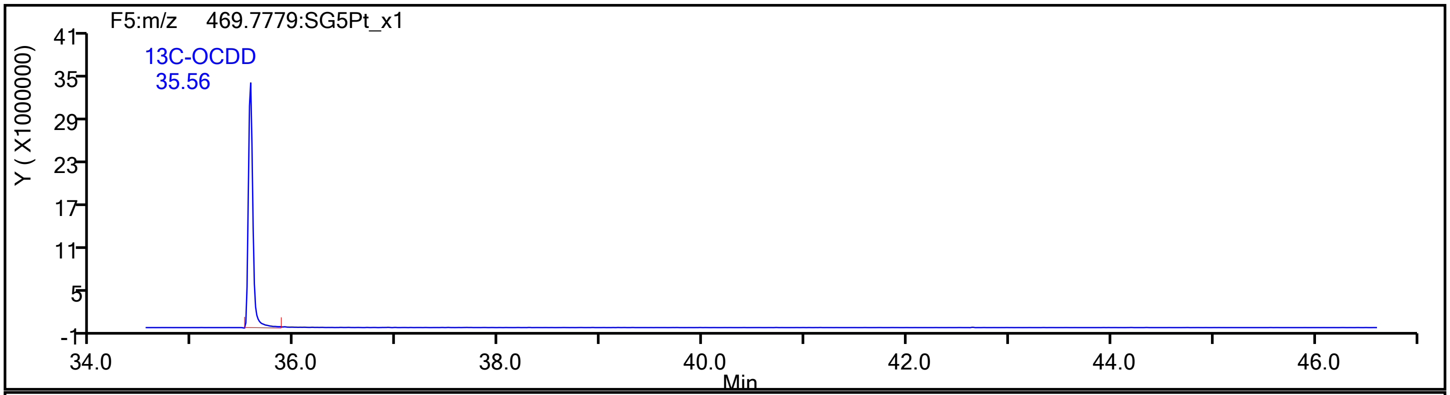

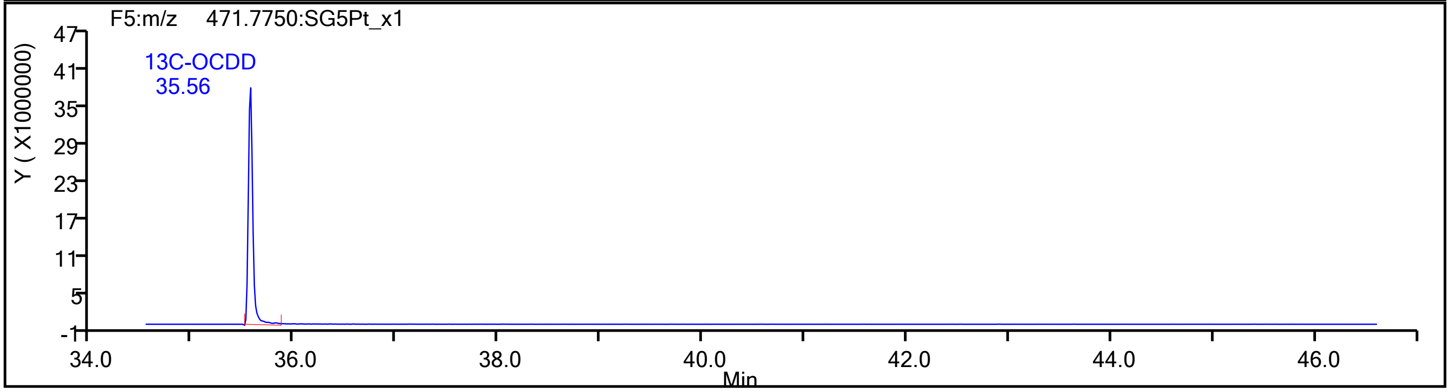

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Eurofins TestAmerica, Sacramento

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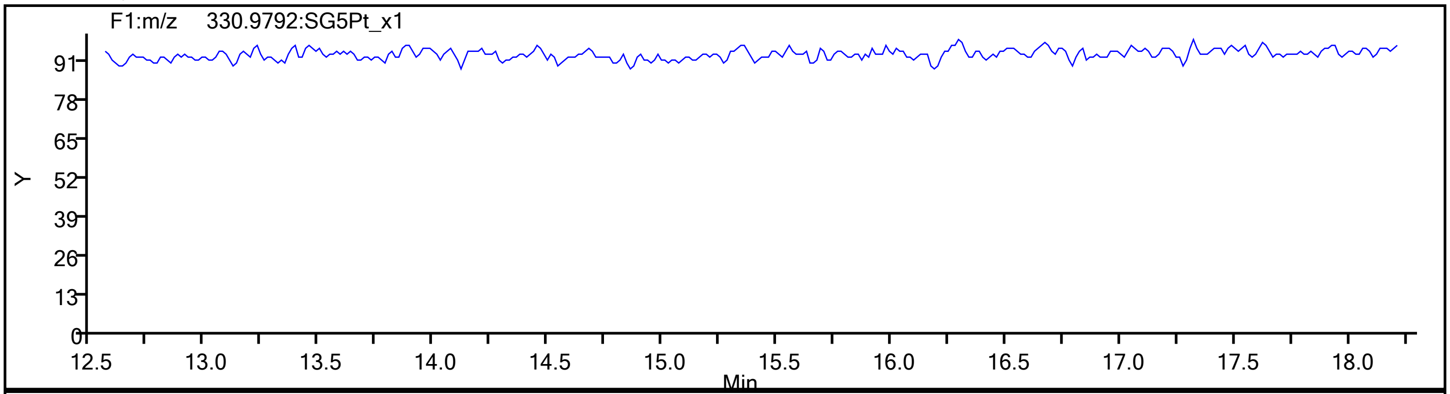

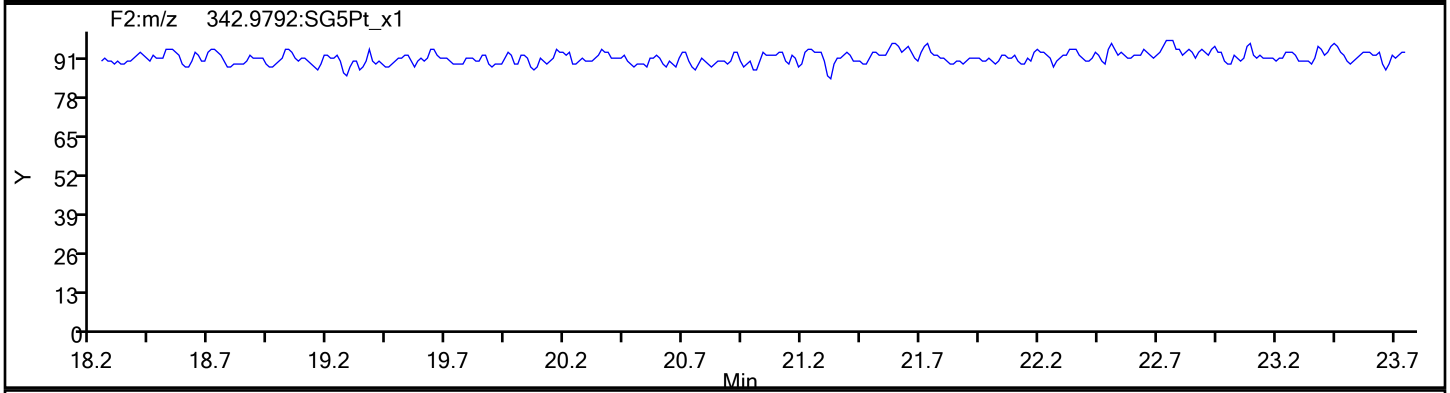

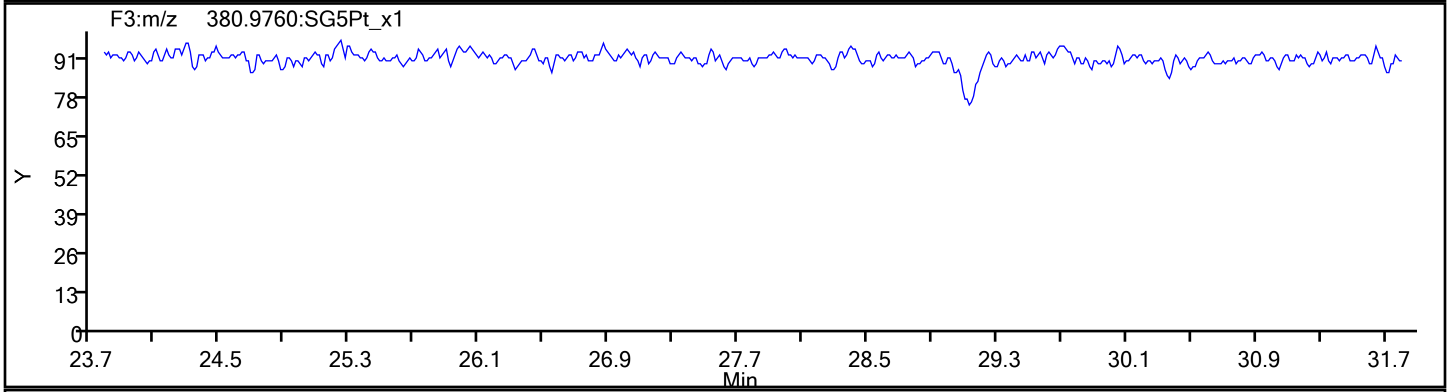

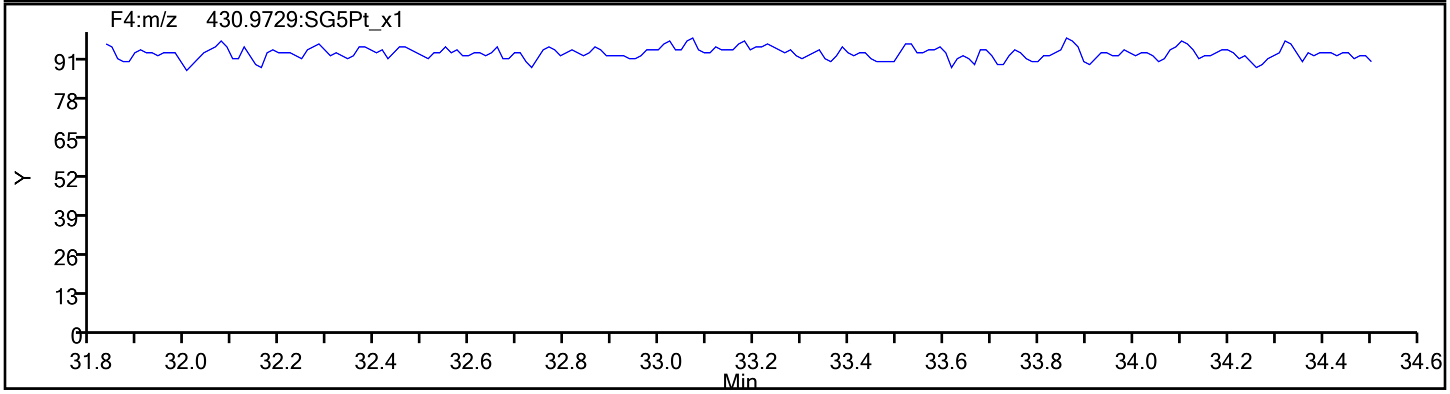

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_13.d
Injection Date: 09-Oct-2020 05:03:22 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-1
Worklist#: 420482 Sample Line#: 13
Column Type: Column Dia:

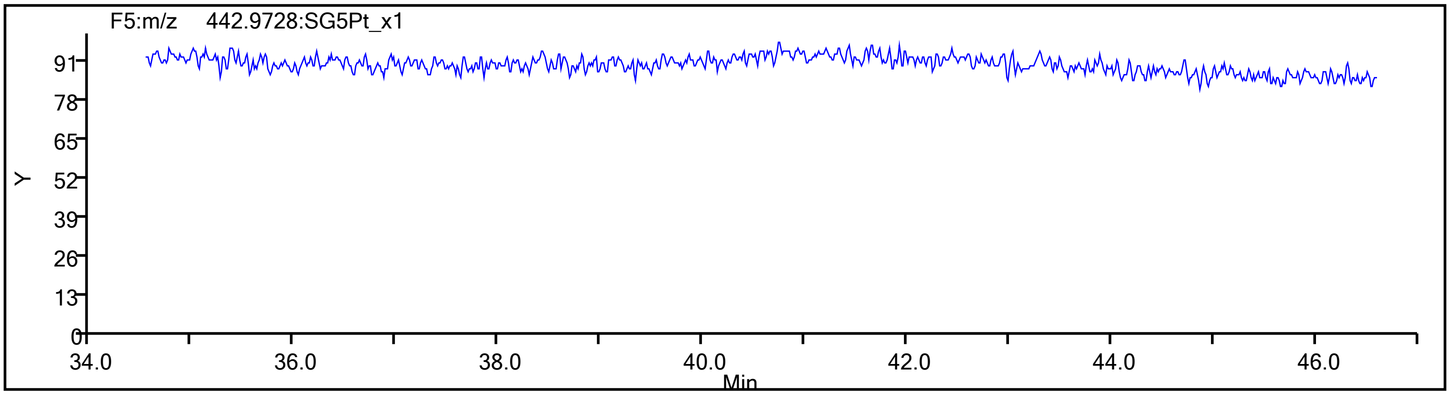

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-4-1 RA	Lab Sample ID: 320-65130-3 RA
Matrix: Water	Lab File ID: 13OC20A11D2_004.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1049.1(mL)	Date Analyzed: 10/13/2020 21:37
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421876	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	51	B	9.5	0.86

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	119		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d				
Lims ID:	320-65130-A-3-A				
Client ID:	11215702-Tank#1-valve-4-1				
Sample Type:	Client				
Inject. Date:	13-Oct-2020 21:37:25	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-3-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:33:11

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.927	75270640	0.80	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.052	107038210	0.80	1.5708	90.5	90.5	0.3575	0.3575	90.53	
2,3,7,8-TCDF	16.066	2826306	0.79	0.9943	2.656	2.656	0.0451	0.0451		M
D 13C-2,3,7,8-TCDD	14.667	64616571	0.82	0.9834	87.3	87.3	0.4225	0.4225	87.30	
2,3,7,8-TCDD	14.694	805086	0.68	1.2822	0.9717	0.9717	0.0918	0.0918		
$ 37Cl4-2,3,7,8-TCDD	14.694	35626093		0.9945	47.6	47.6	0.0874	0.0874	119	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags
Review Flags
M - Manually Integrated

Report Date: 14-Oct-2020 17:38:53 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d				
Lims ID:	320-65130-A-3-A				
Client ID:	11215702-Tank#1-valve-4-1				
Sample Type:	Client				
Inject. Date:	13-Oct-2020 21:37:25	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-3-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:33:11		

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.927	14.928	0		33388126	8270460	16561	41402	499		
333.9339	14.914	14.928	-1		41882514	10160015	14071	35177	722	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.052	16.067	-1	1.075	47643274	11438375	26299	65747	435		
317.9389	16.052	16.067	-1	1.075	59394936	14278817	15099	37747	946	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.066	16.081	-1	1.001	1247338	301431	1903	4757	158		M
305.8987	16.066	16.081	-1	1.001	1578968	382859	2705	6762	142	0.79(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	14.667	14.681	-1	0.983	29186110	7215112	16561	41402	436		
333.9339	14.680	14.681	0	0.983	35430461	8977587	14071	35177	638	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.694	14.709	-1	1.002	326899	78246	4578	11445	17		
321.8936	14.694	14.709	-1	1.002	478187	126817	3044	7610	42	0.68(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.694	14.709	-1	0.984	35626093	9218236	6408	16020	1439		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 14-Oct-2020 17:38:53 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d

Injection Date: 13-Oct-2020 21:37:25 Instrument ID: 11D2

Lims ID: 320-65130-A-3-A Lab Sample ID: 320-65130-3

Client ID: 11215702-Tank#1-valve-4-1

Operator ID: ALS Bottle#: 0 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Column: DB-225 (0.32 mm) Detector F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT: 16.07
Area: 1270052
Amount: 2.727128
Amount Units: pg/ul

Processing Integration Results

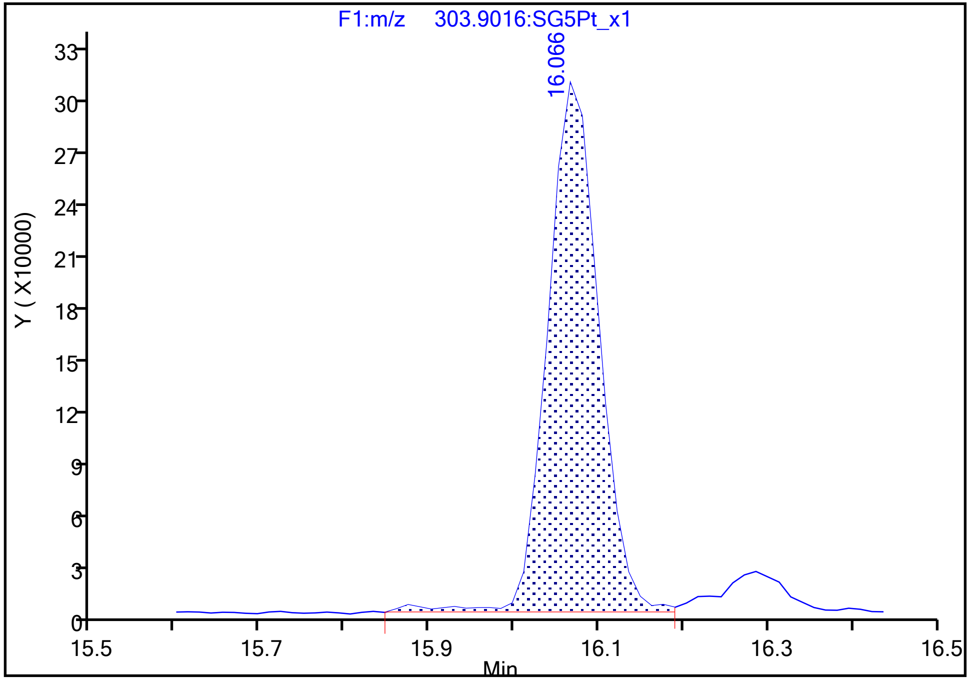

RT: 16.07
Area: 1247338
Amount: 2.655673
Amount Units: pg/ul

Manual Integration Results

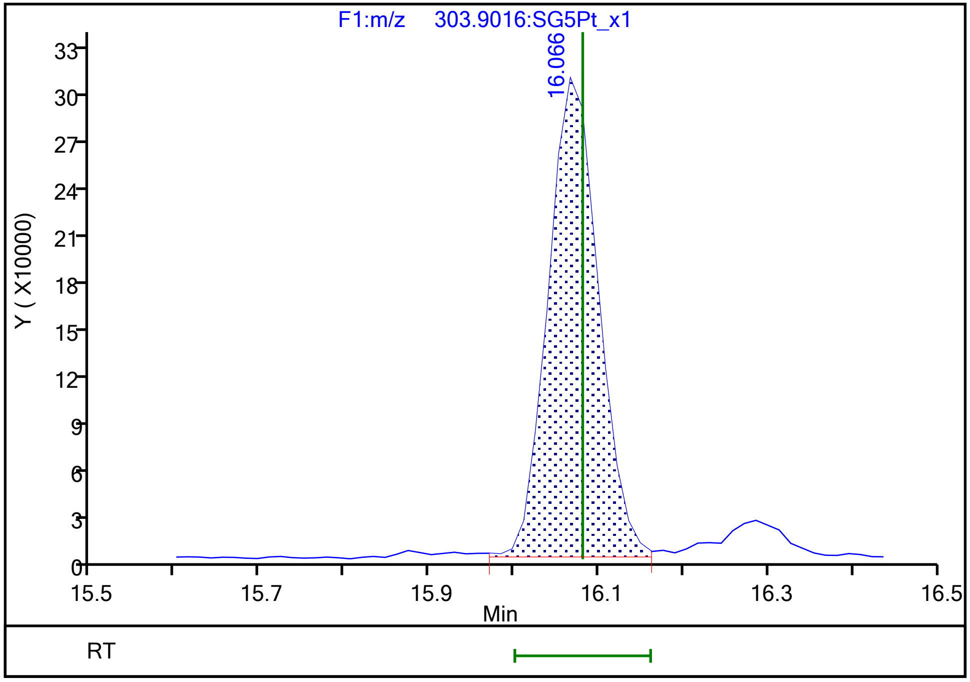

Reviewer: stephensk, 14-Oct-2020 17:33:04

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 14-Oct-2020 17:38:53 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d		
Injection Date:	13-Oct-2020 21:37:25	Instrument ID:	11D2
Lims ID:	320-65130-A-3-A	Lab Sample ID:	320-65130-3
Client ID:	11215702-Tank#1-valve-4-1		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	16.07
Area:	1632300
Amount:	2.727128
Amount Units:	pg/ul

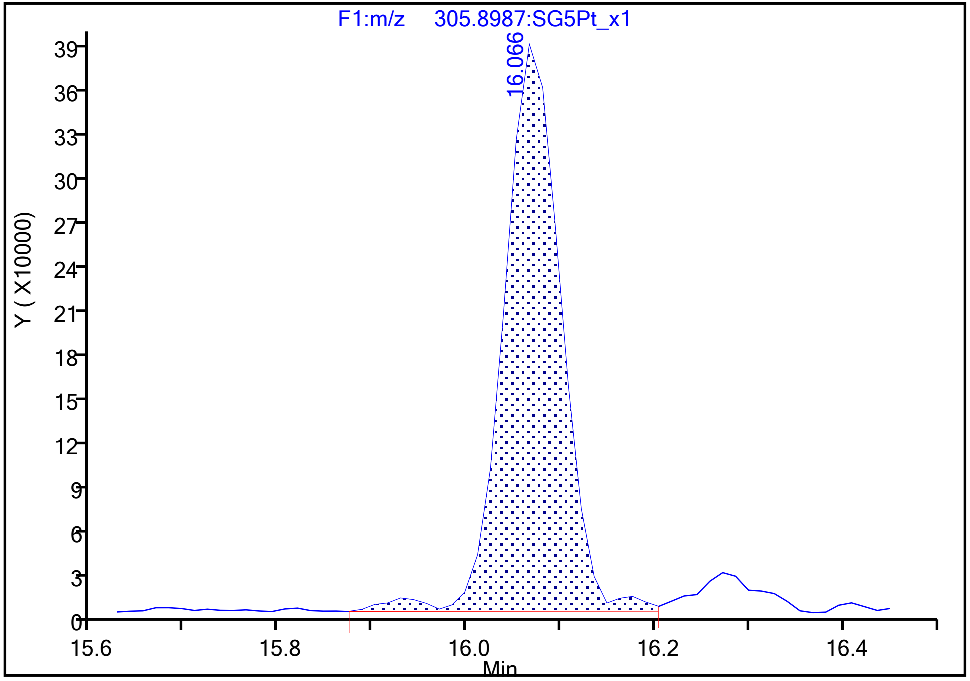

Manual Integration Results

RT:	16.07
Area:	1578968
Amount:	2.655673
Amount Units:	pg/ul

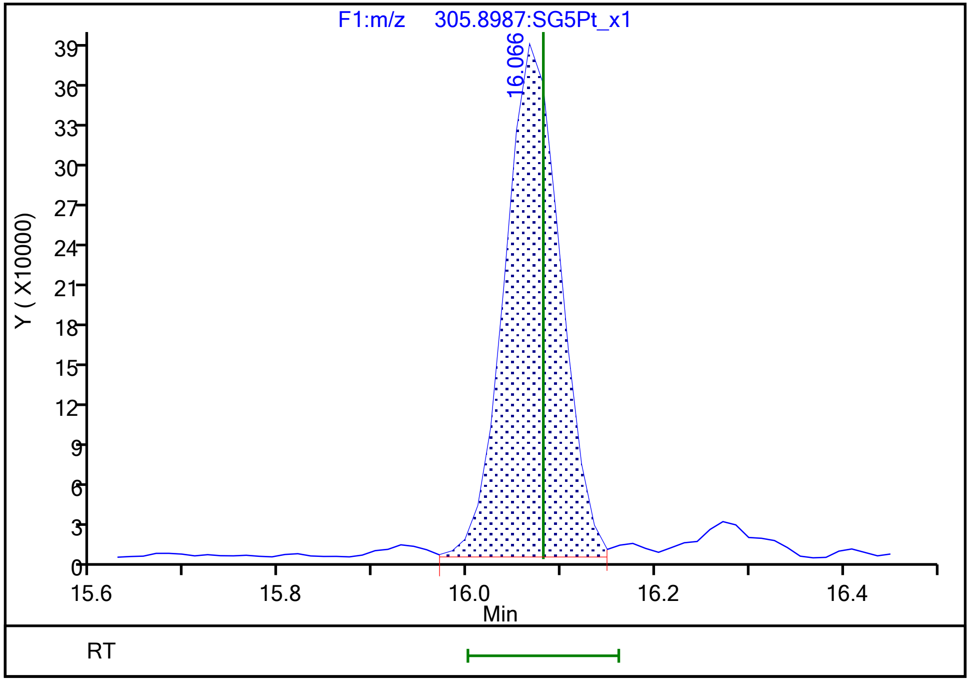

Reviewer: stephensk, 14-Oct-2020 17:33:05

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 14-Oct-2020 17:38:53
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d
Injection Date: 13-Oct-2020 21:37:25
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-1
Worklist#: 421876
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

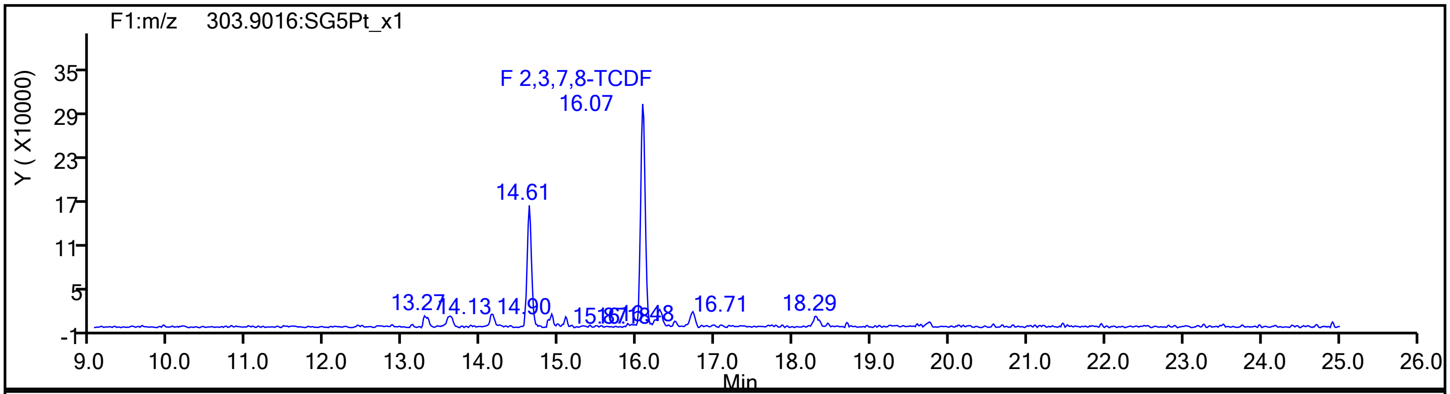

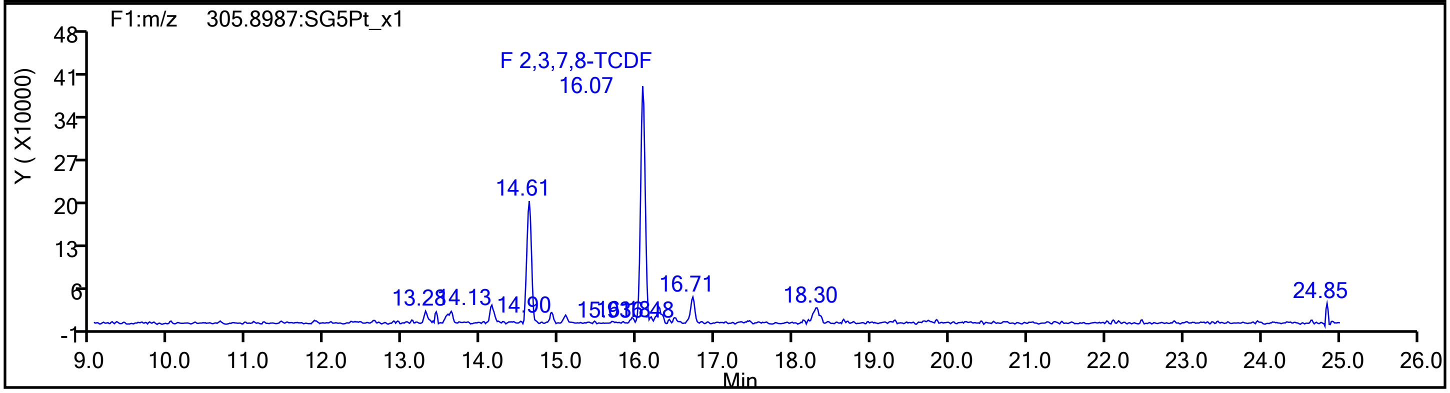

TCDF Standards

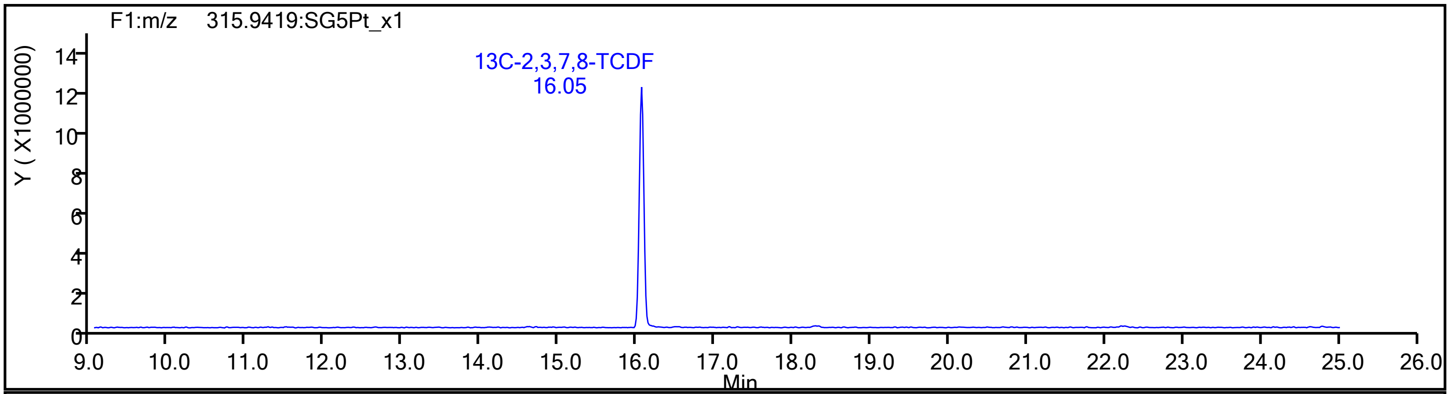

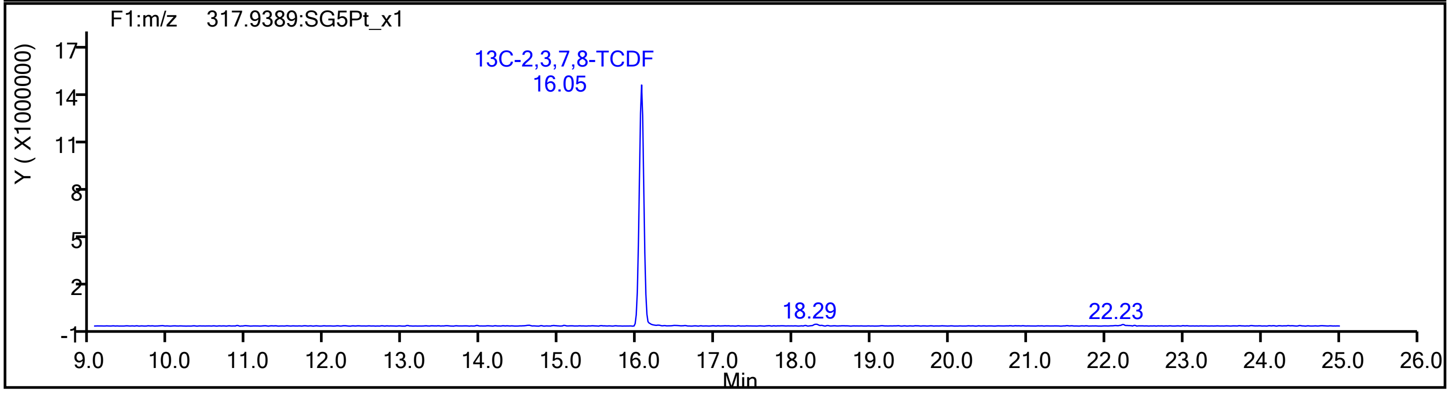

Report Date: 14-Oct-2020 17:38:53 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d		
Injection Date:	13-Oct-2020 21:37:25	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-1		
Worklist#:	421876	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

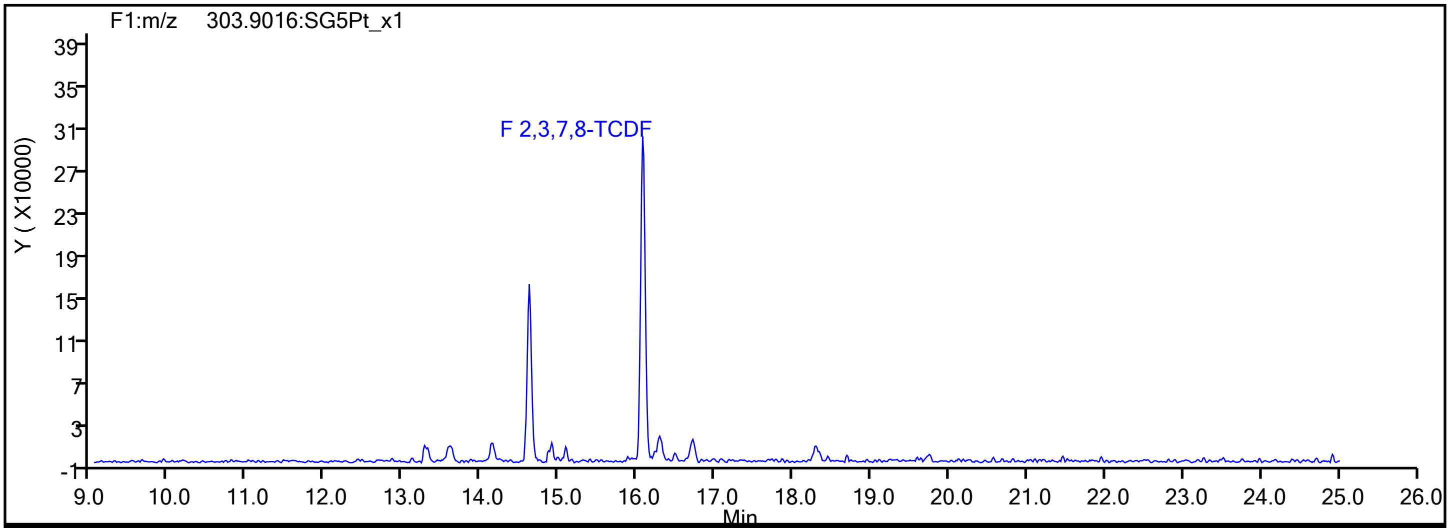

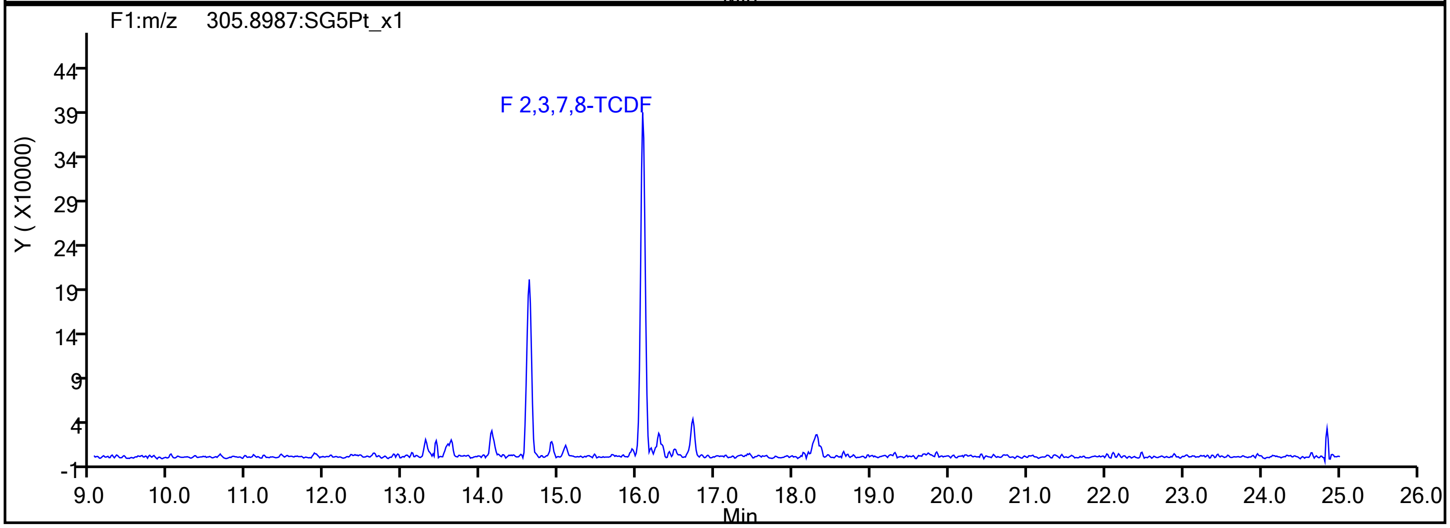

TCDF Interference Mass

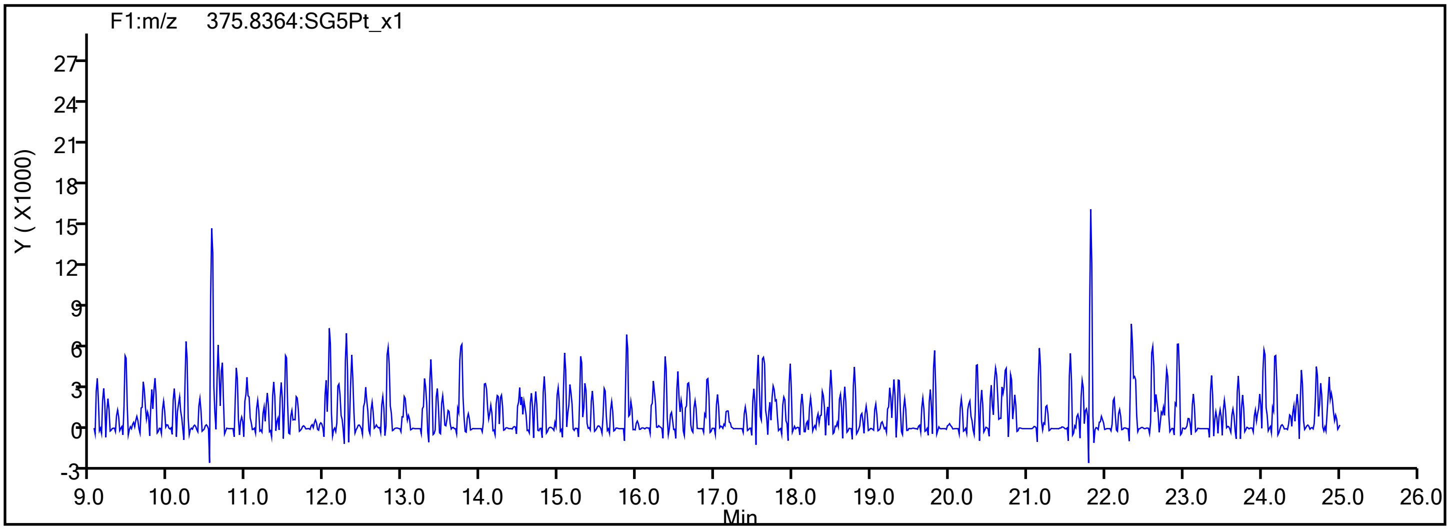

Report Date: 14-Oct-2020 17:38:53 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d		
Injection Date:	13-Oct-2020 21:37:25	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-1		
Worklist#:	421876	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

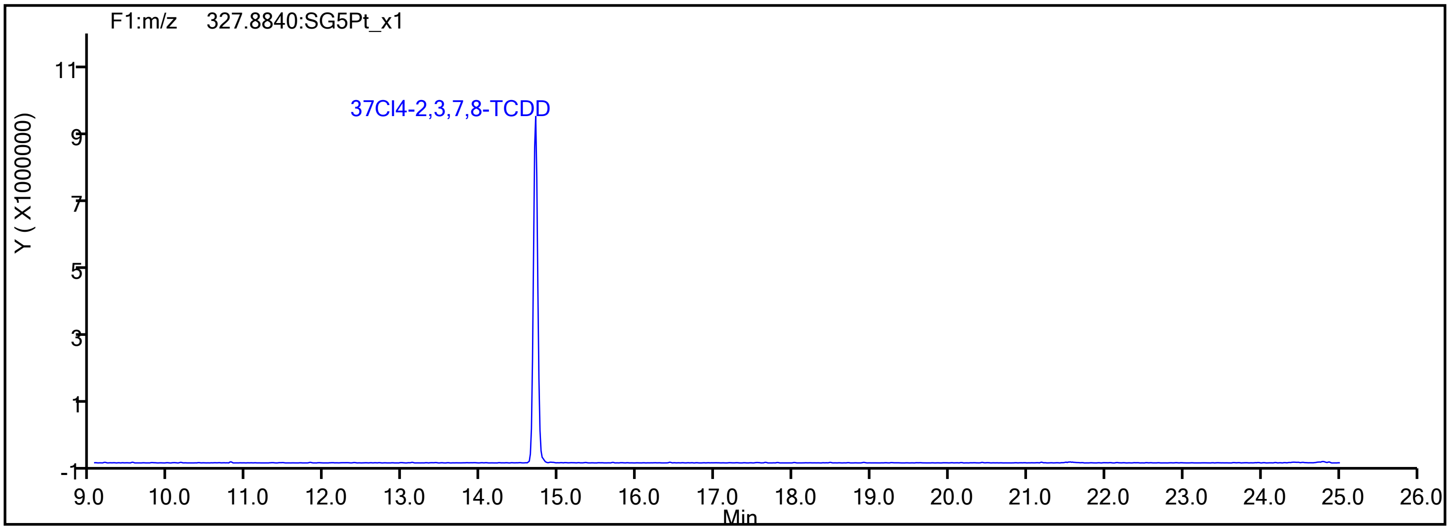

37Cl4-TCDD Standards

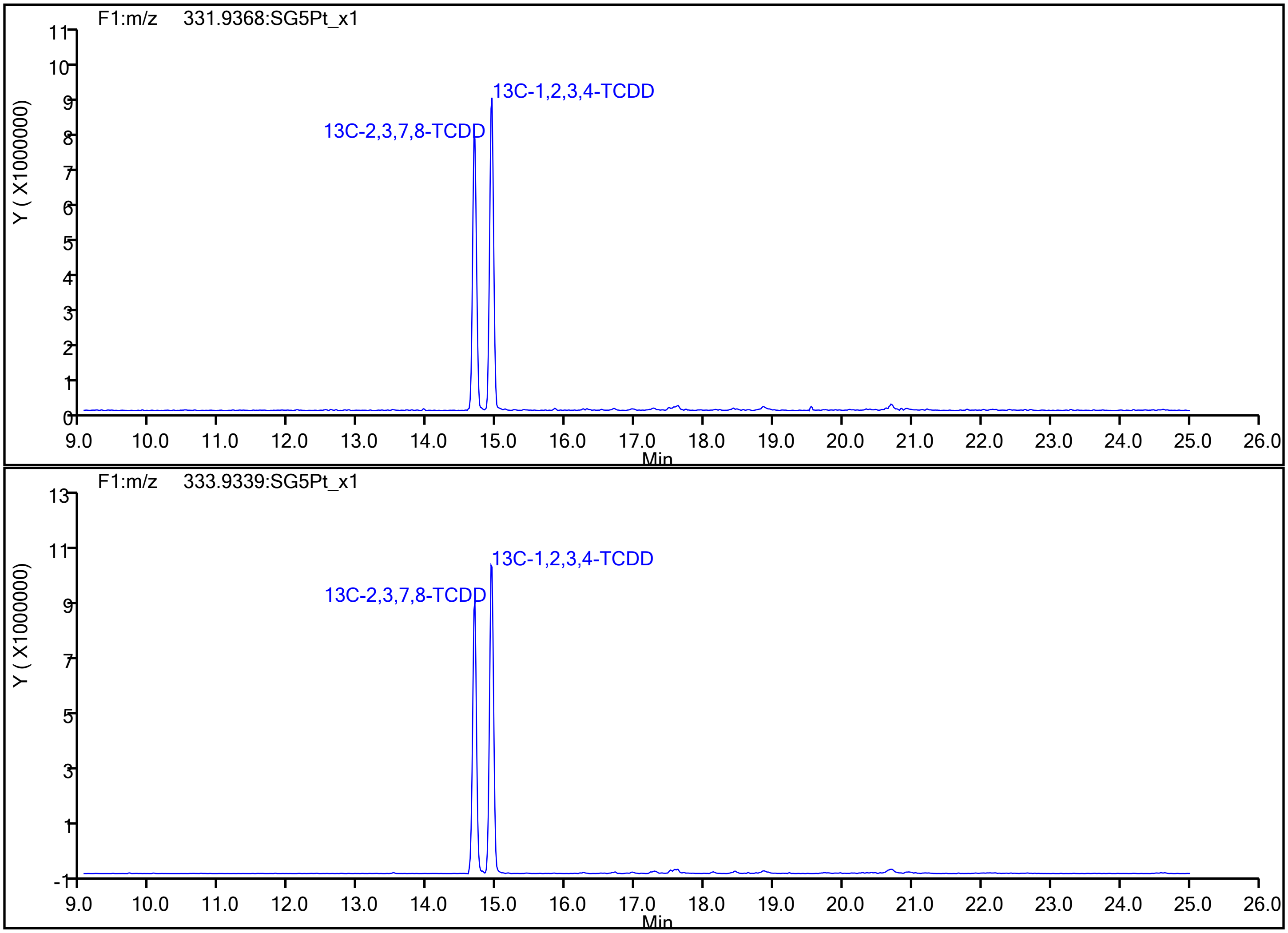

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_004.d		
Injection Date:	13-Oct-2020 21:37:25	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-1		
Worklist#:	421876	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

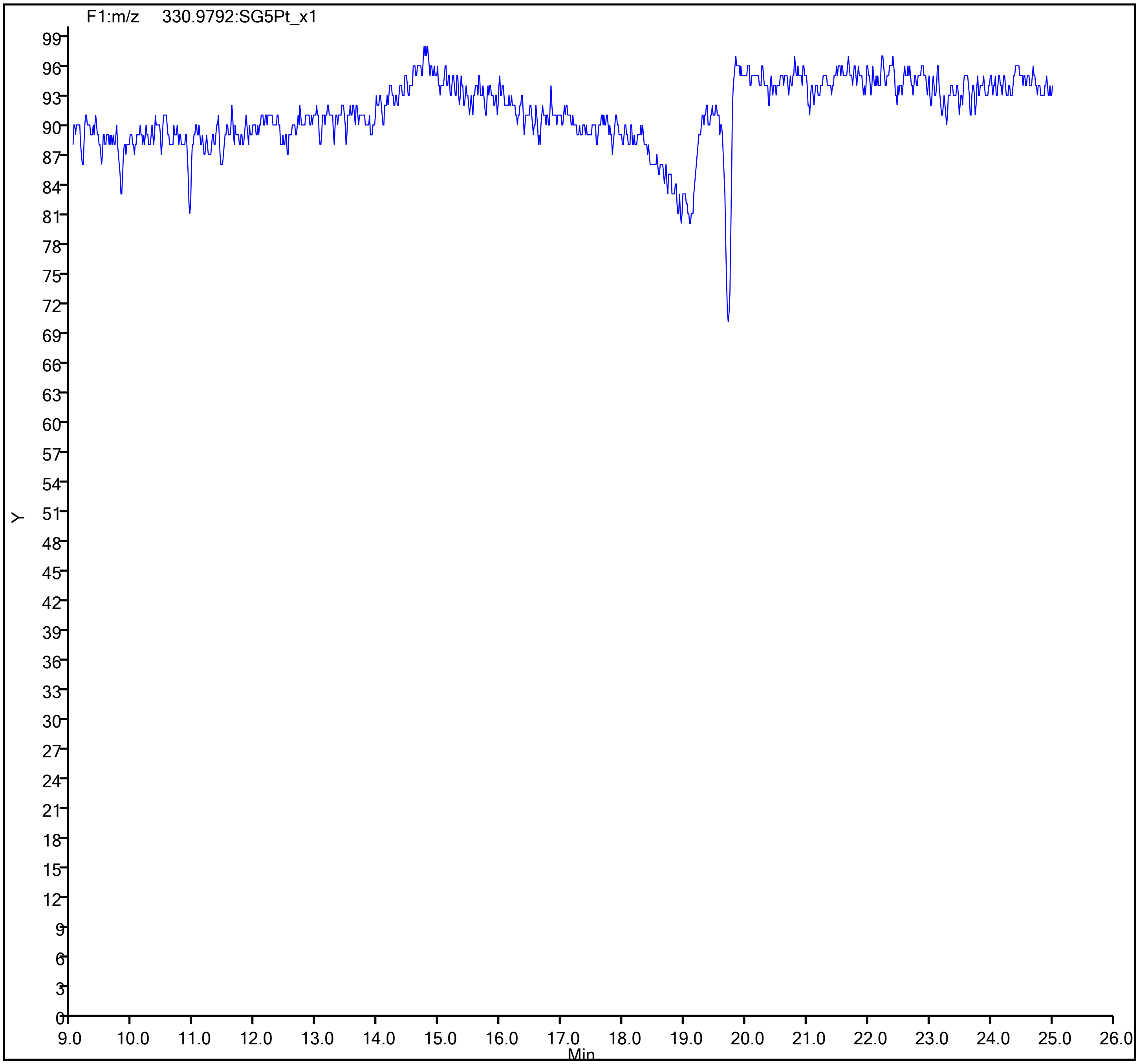

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-5-1	Lab Sample ID: 320-65130-4
Matrix: Water	Lab File ID: 08OC20A3D5_14.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1044.3(mL)	Date Analyzed: 10/09/2020 05:51
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1100		9.6	4.5
40321-76-4	1,2,3,7,8-PeCDD	11	J B	48	0.56
57117-41-6	1,2,3,7,8-PeCDF	120	B	48	1.1
57117-31-4	2,3,4,7,8-PeCDF	79	B	48	1.3
39227-28-6	1,2,3,4,7,8-HxCDD	1.6	J B	48	0.74
57653-85-7	1,2,3,6,7,8-HxCDD	1.7	J B	48	0.78
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.69
70648-26-9	1,2,3,4,7,8-HxCDF	200	B	48	1.0
57117-44-9	1,2,3,6,7,8-HxCDF	52	B	48	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	3.8	J B	48	0.83
60851-34-5	2,3,4,6,7,8-HxCDF	6.1	J B	48	1.2
35822-46-9	1,2,3,4,6,7,8-HpCDD	51	B	48	0.69
67562-39-4	1,2,3,4,6,7,8-HpCDF	63	B	48	0.35
55673-89-7	1,2,3,4,7,8,9-HpCDF	21	J B	48	0.38
3268-87-9	OCDD	760	B	96	2.9
39001-02-0	OCDF	32	J B	96	0.25
41903-57-5	Total TCDD	1200	B	9.6	4.5
30402-14-3	Total TCDF	6300	G q B	16	16
36088-22-9	Total PeCDD	13	J q B	48	0.56
30402-15-4	Total PeCDF	320	q B	48	1.2
34465-46-8	Total HxCDD	12	J B	48	0.74
55684-94-1	Total HxCDF	300	q B	48	1.0
37871-00-4	Total HpCDD	100	B	48	0.69
38998-75-3	Total HpCDF	110	B	48	0.37

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-5-1	Lab Sample ID: 320-65130-4
Matrix: Water	Lab File ID: 08OC20A3D5_14.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1044.3(mL)	Date Analyzed: 10/09/2020 05:51
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	77		25-164
89059-46-1	13C-2,3,7,8-TCDF	79		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	81		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	74		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	68		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	82		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	83		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	75		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	76		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	75		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	75		26-138
114423-97-1	13C-OCDD	91		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	99		35-197

Report Date: 13-Oct-2020 11:47:13 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Lims ID:	320-65130-A-4-A				
Client ID:	11215702-Tank#1-valve-5-1				
Sample Type:	Client				
Inject. Date:	09-Oct-2020 05:51:00	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-4-A 320-65130-A-4-A				
Misc. Info.:	08OC20A3D5				
Operator ID:	ALM	Instrument ID:	3D5		
Method:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	13-Oct-2020 11:47:13	Calib Date:	05-Oct-2020 20:45:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Column 1 :		Det: F1:HRSIR			
Process Host:	CTX1637				
First Level Reviewer: shardaa		Date:	12-Oct-2020 17:56:55		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	293214426	0.77	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	345930451	0.84	1.4844	79.5	79.5	0.2725	0.2725	79.48	
2,3,7,8-TCDF	15.492	638534711	0.82	0.9534	193.6	193.6	0.8222	0.8222		
A Non-2,3,7,8-sub-TCDF	15.227	439523562	0.77	0.9534	134.4	133.3	0.8222	81.1		RQ
S Total TCDF					328.0	326.9	0.8222	0.8222		RQ
D 13C-2,3,7,8-TCDD	16.081	246618202	0.77	1.0875	77.3	77.3	0.3108	0.3108	77.34	
2,3,7,8-TCDD	16.097	148117592	0.80	1.0205	58.9	58.9	0.2336	0.2336		M
$ 37Cl4-2,3,7,8-TCDD	16.097	130368331		1.1216	39.6	39.6	0.1168	0.1168	99.10	
A Non-2,3,7,8-sub-TCDD	15.620	15210662	0.72	1.0205	6.044	6.044	0.2336	5.579		Ma
S Total TCDD					64.9	64.9	0.2336	0.2336		
D 13C-1,2,3,7,8-PeCDF	19.686	302995119	1.57	1.3943	74.1	74.1	0.1674	0.1674	74.11	
1,2,3,7,8-PeCDF	19.714	20690866	1.42	1.0794	6.327	6.327	0.0573	0.0573		M
D 13C-2,3,4,7,8-PeCDF	20.805	265577783	1.55	1.3370	67.7	67.7	0.1745	0.1745	67.75	
2,3,4,7,8-PeCDF	20.832	12025807	1.62	1.0966	4.129	4.129	0.0680	0.0680		
A F1 PeCDFs	17.730	223156	1.55	1.0880	0.0804	0.0721	0.0131	0.0721		RQ
A Non-2,3,7,8-sub-PeCDF	20.349	18346055	1.55	1.0880	5.954	5.931	0.0621	2.446		RQ
S Total PeCDF					16.5	16.5	0.0626	0.0626		RQ
D 13C-1,2,3,7,8-PeCDD	21.418	200732843	1.59	0.8475	80.8	80.8	0.1152	0.1152	80.77	
1,2,3,7,8-PeCDD	21.445	1263096	1.73	1.1397	0.5521	0.5521	0.0290	0.0290		
A Non-2,3,7,8-sub-PeCDD	20.518	295494	1.55	1.1397	0.1666	0.1292	0.0290	0.0789		RQM
S Total PeCDD					0.7187	0.6813	0.0290	0.0290		RQ
D 13C-1,2,3,4,7,8-HxCDF	26.719	238749596	0.53	1.3065	76.5	76.5	0.3024	0.3024	76.54	
1,2,3,4,7,8-HxCDF	26.746	31639762	1.18	1.2552	10.6	10.6	0.0539	0.0539		
D 13C-1,2,3,6,7,8-HxCDF	26.986	253996328	0.53	1.4213	74.9	74.9	0.2780	0.2780	74.85	
1,2,3,6,7,8-HxCDF	27.025	8314188	1.18	1.2102	2.705	2.705	0.0567	0.0567		
D 13C-2,3,4,6,7,8-HxCDF	28.544	236314521	0.53	1.3142	75.3	75.3	0.3007	0.3007	75.31	
2,3,4,6,7,8-HxCDF	28.544	915559	1.39	1.2182	0.3180	0.3180	0.0624	0.0624		
D 13C-1,2,3,7,8,9-HxCDF	30.381	239130868	0.53	1.3204	75.9	75.9	0.2992	0.2992	75.85	
1,2,3,7,8,9-HxCDF	30.408	576846	1.21	1.2319	0.1958	0.1958	0.0434	0.0434		
A Non-2,3,7,8-sub-HxCDF	27.465	5695948	1.24	1.2289	1.926	1.915	0.0532	0.6981		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					15.7	15.7	0.0541	0.0541		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.075	238754338	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.036	169972351	1.23	0.8660	82.2	82.2	0.2810	0.2810	82.20	a
1,2,3,4,7,8-HxCDD	29.063	172817	1.23	1.2535	0.0811	0.0811	0.0385	0.0385		
D 13C-1,2,3,6,7,8-HxCDD	29.302	195439905	1.25	0.9827	83.3	83.3	0.2476	0.2476	83.30	a
1,2,3,6,7,8-HxCDD	29.316	190876	1.15	1.1117	0.0879	0.0879	0.0405	0.0405		M
1,2,3,7,8,9-HxCDD	30.101						0.0363	0.0363		
A Non-2,3,7,8-sub-HxCDD	27.931	1008334	1.09	1.2168	0.4536	0.4536	0.0383	0.2378		M
S Total HxCDD					0.6225	0.6225	0.0384	0.0384		
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	174274320	0.44	0.9410	77.6	77.6	0.9288	0.9288	77.57	
1,2,3,4,6,7,8-HpCDF	32.547	8481302	1.10	1.4783	3.292	3.292	0.0183	0.0183		
D 13C-1,2,3,4,7,8,9-HpCDF	33.629	155800043	0.46	0.8751	74.6	74.6	0.999	0.999	74.57	
1,2,3,4,7,8,9-HpCDF	33.641	2364304	0.97	1.3784	1.101	1.101	0.0199	0.0199		
A Non-2,3,7,8-sub-HpCDF	33.100	2902395	1.08	1.4284	1.231	1.231	0.0191	1.231		
S Total HpCDF					5.624	5.624	0.0191	0.0191		
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	165106073	1.05	0.9049	76.4	76.4	1.634	1.634	76.42	
1,2,3,4,6,7,8-HpCDD	33.398	4775084	1.04	1.0862	2.663	2.663	0.0361	0.0361		
A Non-2,3,7,8-sub-HpCDD	33.339	4881775	1.10	1.0862	2.722	2.722	0.0361	2.722		
S Total HpCDD					5.385	5.385	0.0361	0.0361		
D 13C-OCDD	35.546	249932673	0.90	0.5783	181.0	181.0	0.4746	0.4746	90.51	
OCDF	35.618	3559514	0.83	1.7248	1.651	1.651	0.0130	0.0130		
OCDD	35.558	62244829	0.88	1.2576	39.6	39.6	0.1502	0.1502		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d
Lims ID: 320-65130-A-4-A
Client ID: 11215702-Tank#1-valve-5-1
Sample Type: Client
Inject. Date: 09-Oct-2020 05:51:00 ALS Bottle#: 11 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-4-A 320-65130-A-4-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 11:47:13 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:56:55

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		127899562	35589810	49427	123567	720		
333.9339	15.915	15.930	-1		165314864	46516864	61581	153952	755	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	158163877	45015571	48284	120710	932		
317.9389	15.477	15.477	0	0.972	187766574	55131442	84545	211362	652	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	287513726	81790229	180445	451112	453		
305.8987	15.492	15.507	-1	1.001	351020985	98363910	133568	333920	736	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	14.297	15.227	-56	0.924	6920416	2191055	180445	451112	12		
305.8987	14.297	15.227	-56	0.924	8754677	2540986	133568	333920	19	0.79(0.65-0.89)	
303.9016	14.539	15.227	-41	0.939	10578278	2516624	180445	451112	14		
	Empc Correction				6788046	2243125	180445	451112	12		
305.8987	14.524	15.227	-42	0.938	8815645	2913150	133568	333920	22	1.20(0.65-0.89)	
303.9016	14.736	15.227	-29	0.952	8194945	2349980	180445	451112	13		
305.8987	14.736	15.227	-29	0.952	10929396	3007878	133568	333920	23	0.75(0.65-0.89)	
303.9016	14.932	15.227	-18	0.965	9886135	2822547	180445	451112	16		
305.8987	14.932	15.227	-18	0.965	15052413	4234901	133568	333920	32	0.66(0.65-0.89)	
303.9016	15.159	15.227	-4	0.979	116899459	34412663	180445	451112	191		
305.8987	15.159	15.227	-4	0.979	150654866	44940089	133568	333920	336	0.78(0.65-0.89)	
303.9016	15.341	15.227	7	0.991	6253200	1520182	180445	451112	8		
305.8987	15.341	15.227	7	0.991	8070099	1948979	133568	333920	15	0.77(0.65-0.89)	
303.9016	15.855	15.227	38	1.024	18182674	5013112	180445	451112	28		
305.8987	15.840	15.227	37	1.023	22233778	6155369	133568	333920	46	0.82(0.65-0.89)	

Report Date: 13-Oct-2020 11:47:13 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.004	15.227	106	1.099	17799466	4368407	180445	451112	24		
305.8987	17.004	15.227	106	1.099	24088347	6179980	133568	333920	46	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.010	107131740	29745612	49427	123567	602		
333.9339	16.081	16.081	0	1.010	139486462	37416239	61581	153952	608	0.77(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	16.097	16.097	0	1.001	65776522	18185515	39003	97507	466		M
321.8936	16.097	16.097	0	1.001	82341070	22792435	25042	62605	910	0.80(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	130368331	35390043	43035	107587	822		
A Non-2,3,7,8-sub-TCDD											Ma
319.8965	16.006	15.620	23	0.995	498081	216043	39003	97507	6		M
321.8936	16.006	15.620	23	0.995	671385	268542	25042	62605	11	0.74(0.65-0.89)	
319.8965	16.399	15.620	47	1.020	5866421	1592635	39003	97507	41		
321.8936	16.399	15.620	47	1.020	8174775	2050923	25042	62605	82	0.72(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	185096841	38261547	45956	114890	833		
353.8970	19.686	19.700	-1	1.237	117898278	24271584	30682	76705	791	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.714	19.727	-1	1.001	12139985	2654452	8926	22315	297		M
341.8567	19.714	19.727	-1	1.001	8550881	1818527	6538	16345	278	1.42(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	161557162	31610075	45956	114890	688		
353.8970	20.805	20.818	-1	1.307	104020621	20236636	30682	76705	660	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.846	-1	1.001	7428235	1486259	8926	22315	167		
341.8567	20.832	20.846	-1	1.001	4597572	860833	6538	16345	132	1.62(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	17.291	17.730	-26	0.878	135644	42256	1405	3512	30		
341.8567	17.291	17.730	-26	0.878	113117	21916	1852	4630	12	1.20(1.32-1.78)	
	Empc Correction				87512	27261	1852	4630	15		
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	18.596	20.349	-105	0.945	4465295	1014837	8926	22315	114		
341.8567	18.596	20.349	-105	0.945	3101142	653455	6538	16345	100	1.44(1.32-1.78)	
339.8597	19.604	20.349	-45	0.996	877024	230689	8926	22315	26		
341.8567	19.604	20.349	-45	0.996	633185	161162	6538	16345	25	1.39(1.32-1.78)	
339.8597	20.136	20.349	-13	1.023	3558447	739727	8926	22315	83		
341.8567	20.136	20.349	-13	1.023	2135523	431080	6538	16345	66	1.67(1.32-1.78)	
339.8597	21.118	20.349	46	1.073	1631227	280808	8926	22315	31		
341.8567	21.104	20.349	45	1.072	1160698	207190	6538	16345	32	1.41(1.32-1.78)	
339.8597	22.427	20.349	124	1.139	476254	86004	8926	22315	10		
341.8567	22.455	20.349	126	1.141	377325	64061	6538	16345	10	1.26(1.32-1.78)	
	Empc Correction				307260	55486	6538	16345	8		
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.432	-1	1.346	123109055	22201805	19538	48845	1136		
369.8919	21.418	21.432	-1	1.346	77623788	14330537	12541	31352	1143	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											
355.8546	21.445	21.459	-1	1.001	800433	152911	2809	7022	54		
357.8516	21.432	21.459	-2	1.001	462663	91508	2024	5060	45	1.73(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQM
355.8546	18.759	20.518	-105	0.876	109770	20059	2809	7022	7		M
357.8516	18.759	20.518	-105	0.876	128370	32539	2024	5060	16	0.86(1.32-1.78)	
	Empc Correction				70819	12941	2024	5060	6		
355.8546	19.754	20.518	-46	0.922	97925	23505	2809	7022	8		M
	Empc Correction				69844	19178	2809	7022	7		
357.8516	19.754	20.518	-46	0.922	45061	12373	2024	5060	6	2.17(1.32-1.78)	M
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.733	-1	0.888	83158069	11802797	20011	50027	590		
385.8610	26.706	26.733	-2	0.888	155591527	21715479	39721	99302	547	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.746	26.759	-1	1.001	17114549	2452068	4326	10815	567		
375.8178	26.746	26.759	-1	1.001	14525213	2060499	4750	11875	434	1.18(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	27.012	-2	0.897	88429675	11483957	20011	50027	574		
385.8610	26.986	27.012	-2	0.897	165566653	21596517	39721	99302	544	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.025	27.039	-1	1.001	4505639	592483	4326	10815	137		
375.8178	27.012	27.039	-2	1.001	3808549	473673	4750	11875	100	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.570	-2	0.949	81906879	10695805	20011	50027	534		
385.8610	28.544	28.570	-2	0.949	154407642	19169483	39721	99302	483	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.544	28.597	-3	1.000	532363	66777	4326	10815	15		
375.8178	28.570	28.597	-2	1.001	383196	58408	4750	11875	12	1.39(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.010	82604926	14589130	20011	50027	729		
385.8610	30.381	30.394	-1	1.010	156525942	27808431	39721	99302	700	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.408	30.408	0	1.001	316295	63821	4326	10815	15		
375.8178	30.408	30.408	0	1.001	260551	56171	4750	11875	12	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.336	27.465	-187	0.911	86972	17783	4326	10815	4		
375.8178	24.323	27.465	-188	0.910	104550	18466	4750	11875	4	0.83(1.05-1.43)	
	Empc Correction				70138	14341	4750	11875	3		
373.8208	24.669	27.465	-167	0.923	1072411	170188	4326	10815	39		
375.8178	24.669	27.465	-167	0.923	1003971	157041	4750	11875	33	1.07(1.05-1.43)	
373.8208	25.787	27.465	-100	0.965	629920	85508	4326	10815	20		
375.8178	25.761	27.465	-102	0.964	493847	70877	4750	11875	15	1.28(1.05-1.43)	
373.8208	28.357	27.465	53	1.061	314512	42371	4326	10815	10		
375.8178	28.344	27.465	53	1.061	250938	35990	4750	11875	8	1.25(1.05-1.43)	
373.8208	30.594	27.465	187	1.145	949090	155786	4326	10815	36		
375.8178	30.567	27.465	186	1.144	824149	183432	4750	11875	39	1.15(1.05-1.43)	

Report Date: 13-Oct-2020 11:47:13 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.088	-1		133279410	21270428	20198	50495	1053		
403.8529	30.075	30.088	-1		105474928	16521548	16585	41462	996	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.036	29.036	0	0.965	93779370	11443499	20198	50495	567		a
403.8529	29.036	29.036	0	0.965	76192981	9359429	16585	41462	564	1.23(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.063	29.076	-1	1.001	95420	12940	2210	5525	6		
391.8127	29.063	29.076	-1	1.001	77397	12149	1809	4522	7	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.302	29.316	-1	0.974	108389762	12244296	20198	50495	606		a
403.8529	29.302	29.316	-1	0.974	87050143	10082563	16585	41462	608	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8157	29.316	29.356	-2	1.000	101975	14032	2210	5525	6		M
391.8127	29.356	29.356	0	1.002	88901	11266	1809	4522	6	1.15(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.101						2210	5525			
391.8127	30.101						1809	4522			
A Non-2,3,7,8-sub-HxCDD											M
389.8157	25.641	27.931	-137	0.875	273289	40411	2210	5525	18		M
391.8127	25.654	27.931	-136	0.875	255423	39405	1809	4522	22	1.07(1.05-1.43)	
389.8157	27.465	27.931	-28	0.937	251436	35768	2210	5525	16		
391.8127	27.438	27.931	-30	0.936	228186	29342	1809	4522	16	1.10(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.547	-1	1.082	53469842	18528331	35189	87972	527		
419.8220	32.535	32.547	-1	1.082	120804478	40702545	96933	242332	420	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	4436745	1502910	3692	9230	407		
409.7789	32.535	32.547	-1	1.000	4044557	1332773	2728	6820	489	1.10(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.629	33.641	-1	1.118	49173027	18203504	35189	87972	517		
419.8220	33.629	33.641	-1	1.118	106627016	40207385	96933	242332	415	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.641	33.653	-1	1.000	1166170	449869	3692	9230	122		
409.7789	33.641	33.653	-1	1.000	1198134	438622	2728	6820	161	0.97(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.875	33.100	-13	1.010	1506287	522608	3692	9230	142		
409.7789	32.875	33.100	-13	1.010	1396108	497064	2728	6820	182	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.110	84743590	33309902	108395	270987	307		
437.8140	33.386	33.398	-1	1.110	80362483	31653783	115070	287675	275	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.398	33.398	0	1.000	2432338	971666	6072	15180	160		
425.7737	33.398	33.398	0	1.000	2342746	925923	4117	10292	225	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDD											
423.7766	32.839	33.339	-30	0.984	2555336	886047	6072	15180	146		
425.7737	32.839	33.339	-30	0.984	2326439	842058	4117	10292	205	1.10(0.88-1.20)	
13C-OCDD											
469.7779	35.546	35.558	-1	1.182	118497685	37649331	18363	45907	2050		
471.7750	35.546	35.558	-1	1.182	131434988	43549888	23126	57815	1883	0.90(0.76-1.02)	
OCDF											
441.7428	35.618	35.630	-1	1.002	1618852	542884	1543	3857	352		
443.7399	35.618	35.630	-1	1.002	1940662	679134	2098	5245	324	0.83(0.76-1.02)	
OCDD											
457.7377	35.558	35.570	-1	1.000	29184151	9623328	22503	56257	428		
459.7348	35.558	35.570	-1	1.000	33060678	11027821	8167	20417	1350	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d
Lims ID: 320-65130-A-4-A
Client ID: 11215702-Tank#1-valve-5-1
Inject. Date: 09-Oct-2020 05:51:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 14

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	345930451	100147013

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	345930451	100147013

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	6920416	2191055	8754677	2540986	4.75	0.79	
14.539	10578278	2516624	8815645	2913150	5.88	1.20	RQ
14.539	6788046	2243125	8815645	2913150	4.73		Empc Correction
14.736	8194945	2349980	10929396	3007878	5.80	0.75	
14.932	9886135	2822547	15052413	4234901	7.56	0.66	
15.159	116899459	34412663	150654866	44940089	81.1	0.78	
15.341	6253200	1520182	8070099	1948979	4.34	0.77	
15.855	18182674	5013112	22233778	6155369	12.3	0.82	
17.004	17799466	4368407	24088347	6179980	12.7	0.74	
Signal Totals:							
	190924341	54921071	248599221	71921332			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	443313794	127115902				0.78	RQ
	439523562	126842403					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 134.416 = (443313794 * 100.000) / (345930451 * 0.953)
Empc Amount: 133.266 = (439523562 * 100.000) / (345930451 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Lims ID:	320-65130-A-4-A		
Client ID:	11215702-Tank#1-valve-5-1		
Inject. Date:	09-Oct-2020 05:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	14

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	246618202	67161851

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	246618202	67161851

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.006	498081	216043	671385	268542	0.4647	0.74	Ma
16.399	5866421	1592635	8174775	2050923	5.58	0.72	
Signal Totals:							
	6364502	1808678	8846160	2319465			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15210662	4128143				0.72	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.044 = (15210662 * 100.000) / (246618202 * 1.020)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Lims ID:	320-65130-A-4-A		
Client ID:	11215702-Tank#1-valve-5-1		
Inject. Date:	09-Oct-2020 05:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	14

F1 PeCDFs, RT: 17.730

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	302995119	62533131
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	265577783	51846711

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	284286451	57189921

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.291	135644	42256	113117	21916	0.0804	1.20	RQ
17.291	135644	42256	87512	27261	0.0721		Empc Correction
Signal Totals:							
	135644	42256	87512	27261			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	248761	64172				1.20	RQ
	223156	69517					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0804 = (248761 * 100.000) / (284286451 * 1.088)
Empc Amount: 0.0721 = (223156 * 100.000) / (284286451 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Lims ID:	320-65130-A-4-A		
Client ID:	11215702-Tank#1-valve-5-1		
Inject. Date:	09-Oct-2020 05:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	14

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	302995119	62533131
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	265577783	51846711

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	284286451	57189921

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	4465295	1014837	3101142	653455	2.45	1.44	
19.604	877024	230689	633185	161162	0.4883	1.39	
20.136	3558447	739727	2135523	431080	1.84	1.67	
21.118	1631227	280808	1160698	207190	0.9027	1.41	
22.427	476254	86004	377325	64061	0.2760	1.26	RQ
22.427	476254	86004	307260	55486	0.2533		Empc Correction
Signal Totals:							
	11008247	2352065	7337808	1508373			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18416120	3869013				1.49	RQ
	18346055	3860438					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.954 = (18416120 * 100.000) / (284286451 * 1.088)
Empc Amount: 5.931 = (18346055 * 100.000) / (284286451 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 11:47:13 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Lims ID:	320-65130-A-4-A		
Client ID:	11215702-Tank#1-valve-5-1		
Inject. Date:	09-Oct-2020 05:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	14

Non-2,3,7,8-sub-PeCDD, RT: 20.518

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	200732843	36532342

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	200732843	36532342

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.759	109770	20059	128370	32539	0.1041	0.86	RQM
18.759	109770	20059	70819	12941	0.0789		Empc Correction
19.754	97925	23505	45061	12373	0.0625	2.17	RQM
19.754	69844	19178	45061	12373	0.0502		Empc Correction
Signal Totals:							
	179614	39237	115880	25314			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	381126	88476				1.20	RQM
	295494	64551					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1666 = (381126 * 100.000) / (200732843 * 1.140)
Empc Amount: 0.1292 = (295494 * 100.000) / (200732843 * 1.140)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 13-Oct-2020 11:47:13   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d
Lims ID: 320-65130-A-4-A
Client ID: 11215702-Tank#1-valve-5-1
Inject. Date: 09-Oct-2020 05:51:00   Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5   Operator: ALM
Lims Batch ID: 420482   Lims Sample ID: 14

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF   IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	238749596	33518276
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	253996328	33080474
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	236314521	29865288
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	239130868	42397561

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	242047828	34715399

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.336	86972	17783	104550	18466	0.0644	0.83	RQ
24.336	86972	17783	70138	14341	0.0528		Empc Correction
24.669	1072411	170188	1003971	157041	0.6981	1.07	
25.787	629920	85508	493847	70877	0.3778	1.28	
28.357	314512	42371	250938	35990	0.1901	1.25	
30.594	949090	155786	824149	183432	0.5961	1.15	
Signal Totals:							
	3052905	471636	2643043	461681			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5730360	937442				1.14	RQ
	5695948	933317					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.926 = (5730360 * 100.000) / (242047828 * 1.229)
Empc Amount: 1.915 = (5695948 * 100.000) / (242047828 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Lims ID:	320-65130-A-4-A		
Client ID:	11215702-Tank#1-valve-5-1		
Inject. Date:	09-Oct-2020 05:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	14

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	169972351	20802928
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	195439905	22326859
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	182706128	21564893

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.641	273289	40411	255423	39405	0.2378	1.07	M
27.465	251436	35768	228186	29342	0.2157	1.10	
Signal Totals:							
	524725	76179	483609	68747			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1008334	144926				1.09	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4536 = (1008334 * 100.000) / (182706128 * 1.217)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Lims ID:	320-65130-A-4-A		
Client ID:	11215702-Tank#1-valve-5-1		
Inject. Date:	09-Oct-2020 05:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	14

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	174274320	59230876
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	155800043	58410889

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	165037181	58820882

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.875	1506287	522608	1396108	497064	1.23	1.08	
Signal Totals:							
	1506287	522608	1396108	497064			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2902395	1019672				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.231 = (2902395 * 100.000) / (165037181 * 1.428)

Report Date: 13-Oct-2020 11:47:13 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d
Lims ID: 320-65130-A-4-A
Client ID: 11215702-Tank#1-valve-5-1
Inject. Date: 09-Oct-2020 05:51:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 14

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	165106073	64963685

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	165106073	64963685

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.839	2555336	886047	2326439	842058	2.72	1.10	
Signal Totals:							
	2555336	886047	2326439	842058			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4881775	1728105				1.10	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.722 = (4881775 * 100.000) / (165106073 * 1.086)

Report Date: 13-Oct-2020 11:47:13 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	16.10
Area:	66223325
Amount:	59.205267
Amount Units:	pg/ul

Processing Integration Results

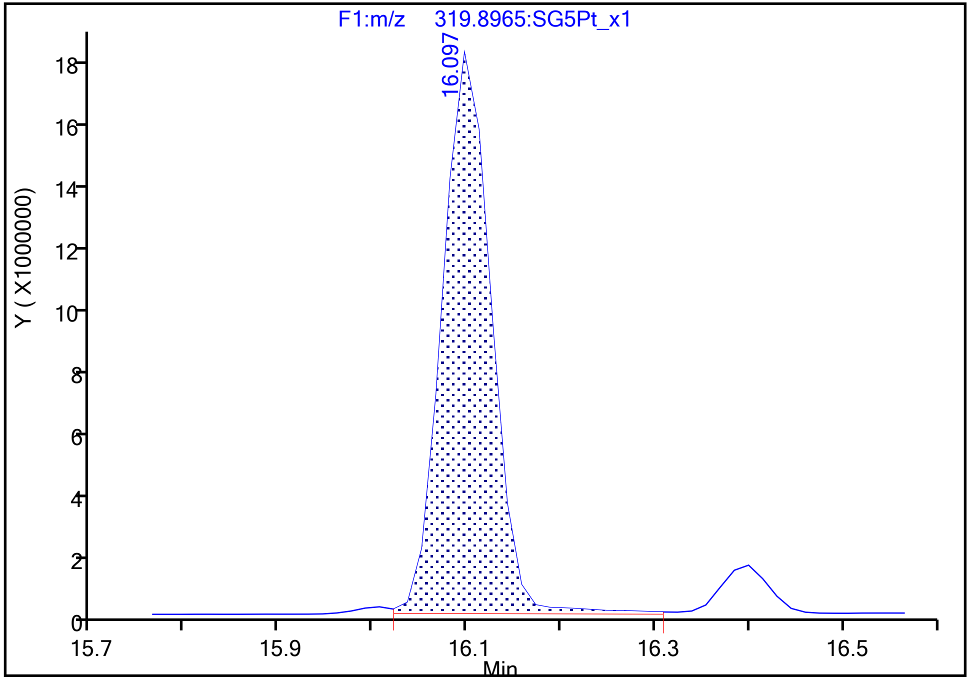

RT:	16.10
Area:	65776522
Amount:	58.854595
Amount Units:	pg/ul

Manual Integration Results

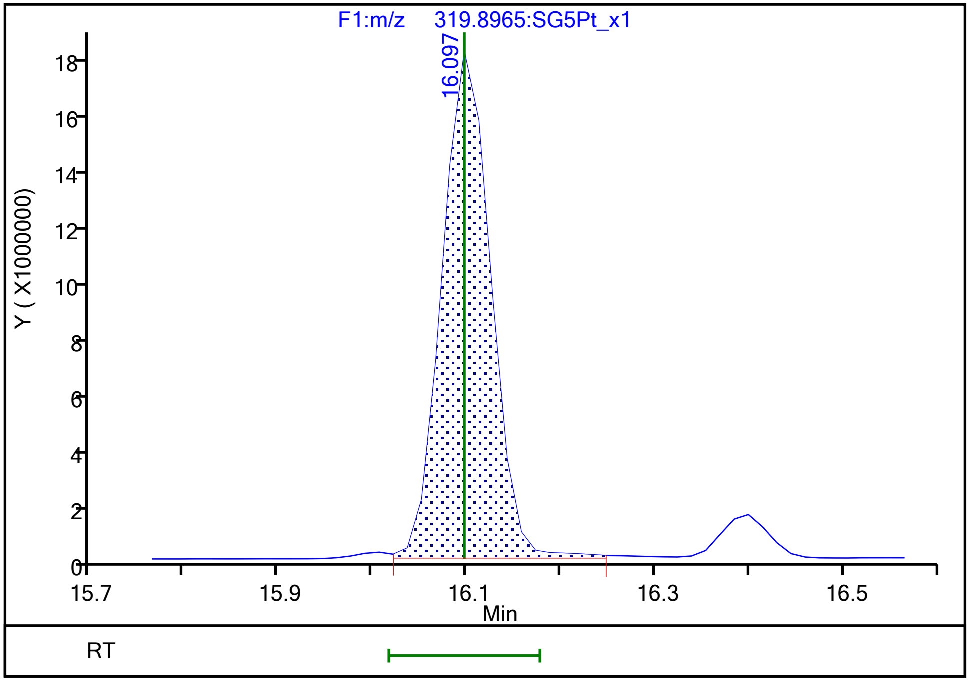

Reviewer: dadunj, 13-Oct-2020 11:42:14

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4
Client ID:	11215702-Tank#1-valve-5-1		
Operator ID:	ALM	ALS Bottle#:	11 Worklist Smp#: 14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT:	16.10
Area:	82776793
Amount:	59.205267
Amount Units:	pg/ul

Processing Integration Results

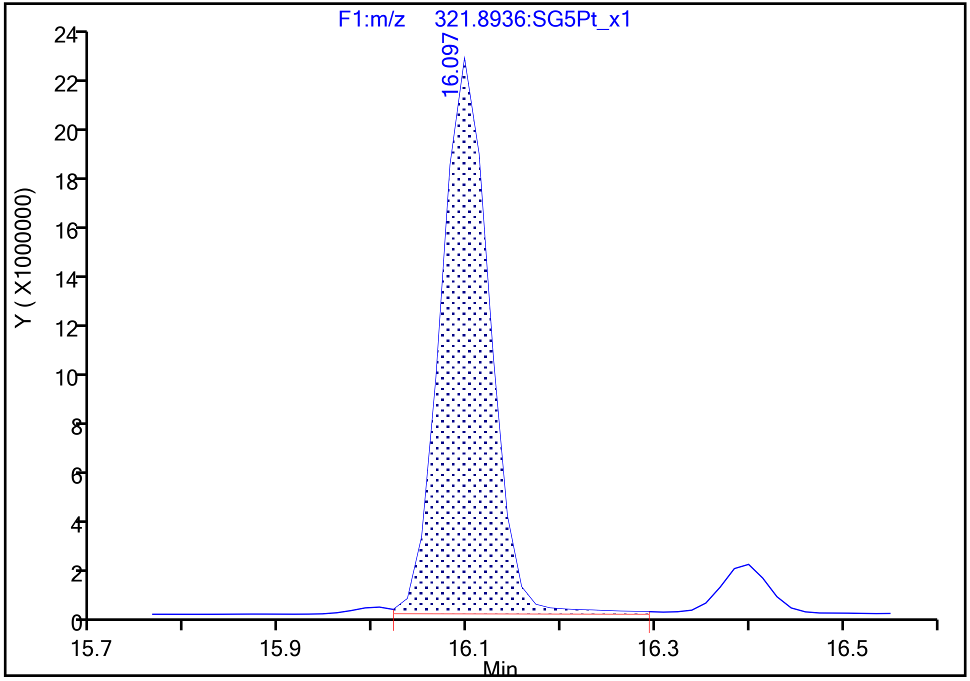

RT:	16.10
Area:	82341070
Amount:	58.854595
Amount Units:	pg/ul

Manual Integration Results

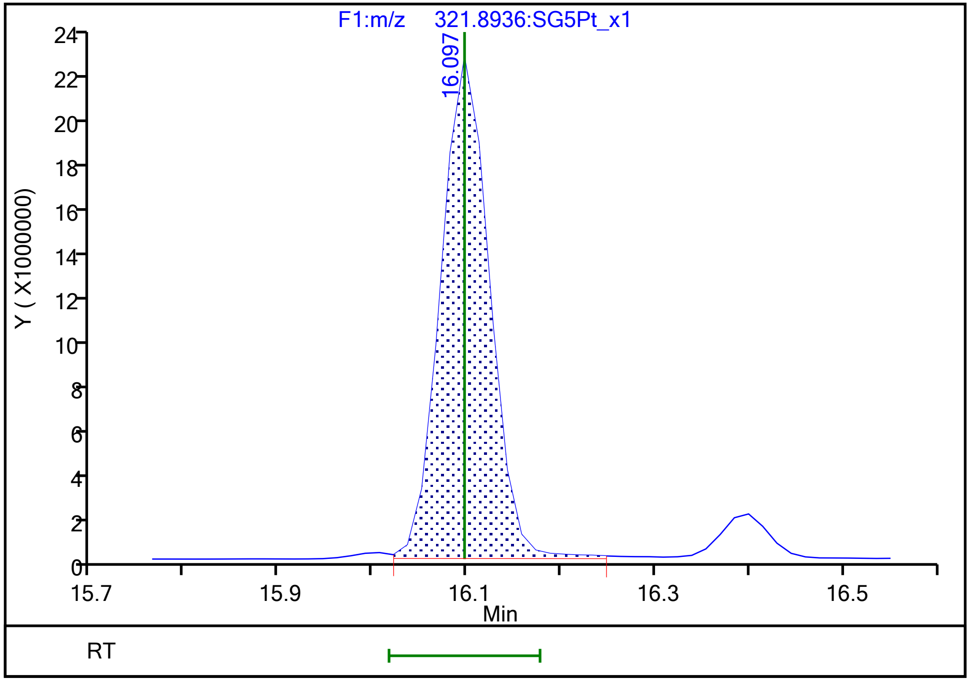

Reviewer: dadunj, 13-Oct-2020 11:42:15

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (14.19- 17.05)

Signal: 1

Processing Integration Results

RT = 16.006 Area = 607921

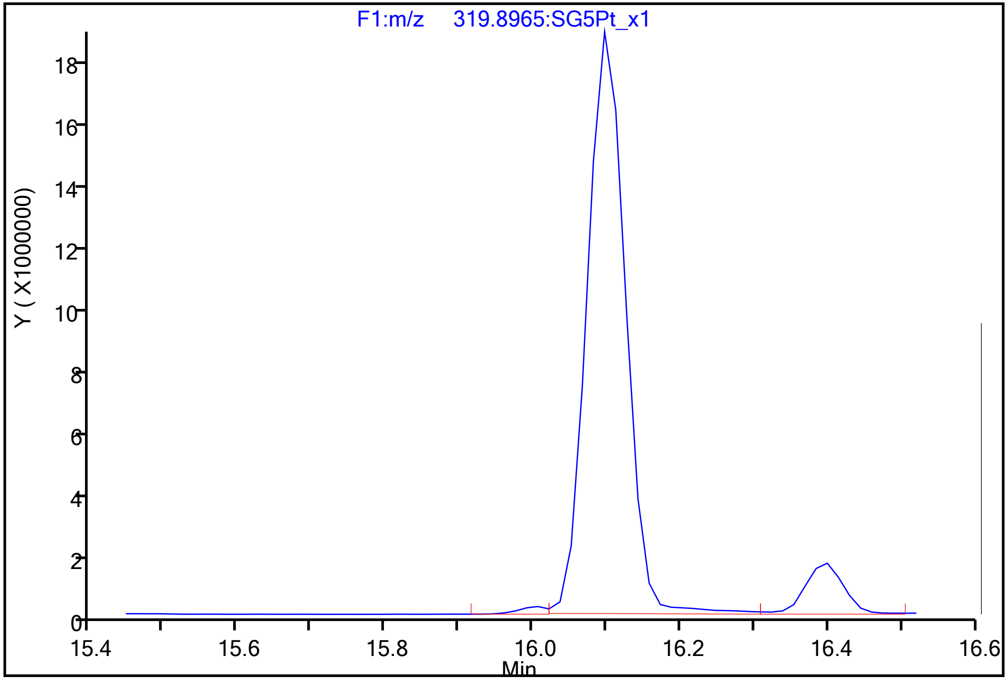

Manual Integration Results

RT = 16.006 Area = 498081 M

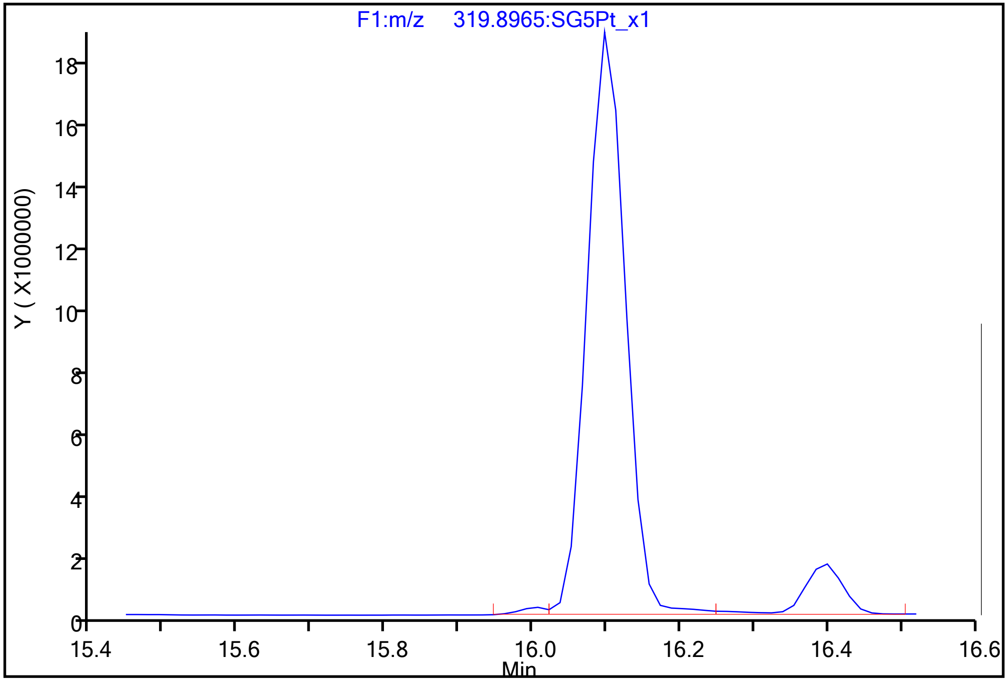

Reviewer: dadunj, 13-Oct-2020 11:42:43

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT: 19.71
Area: 12345631
Amount: 6.389556
Amount Units: pg/ul

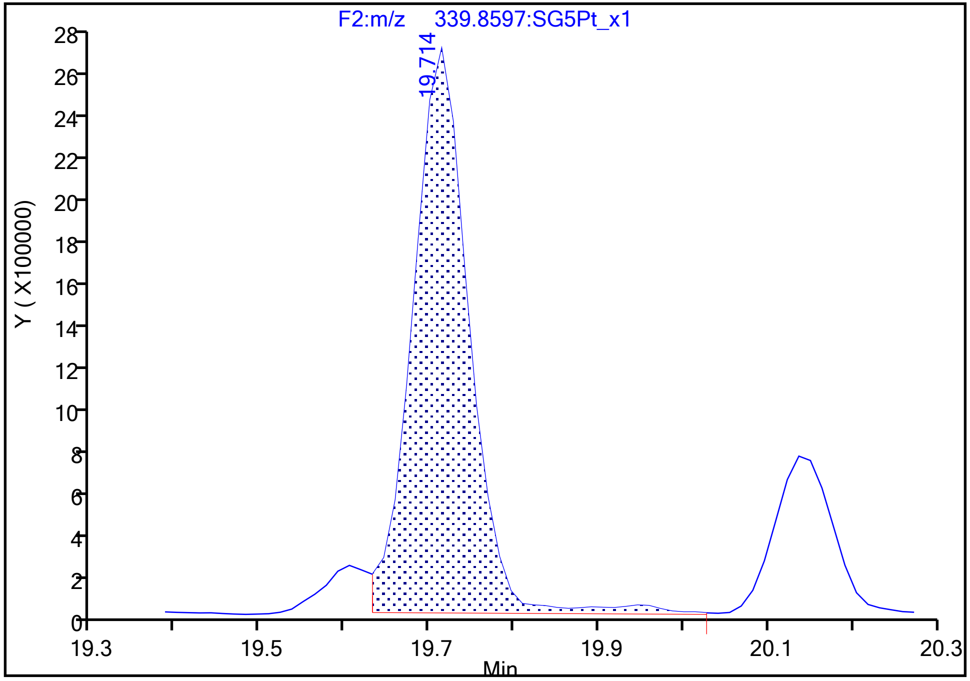

Manual Integration Results

RT: 19.71
Area: 12139985
Amount: 6.326675
Amount Units: pg/ul

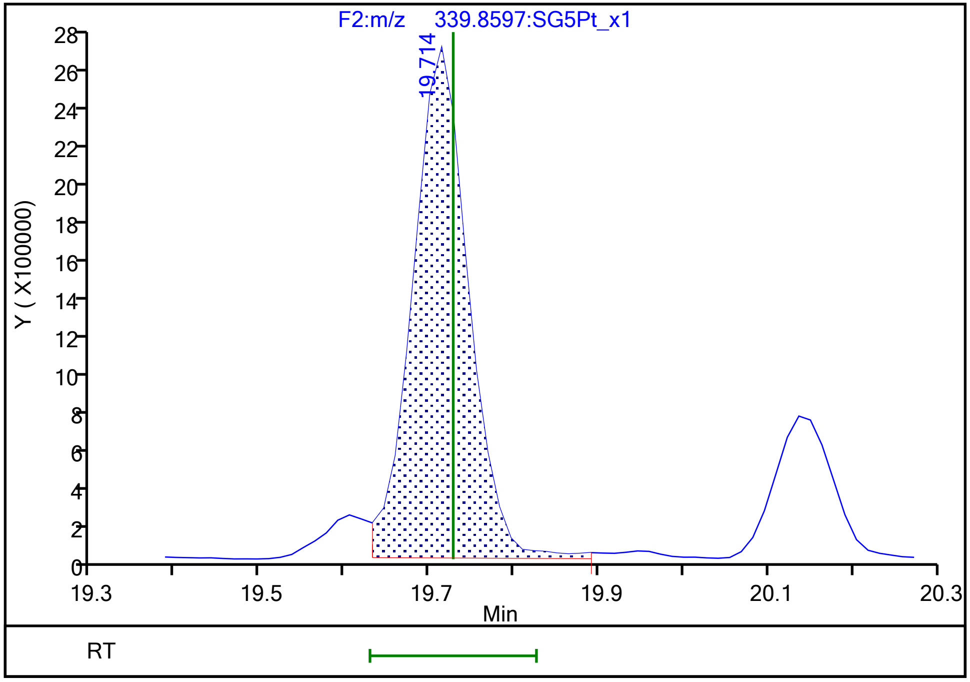

Reviewer: dadunj, 13-Oct-2020 11:42:58

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 11:47:13

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDD, Signal: 1, m/z: 355.8546, RT: (18.74- 22.29)

Signal: 1

Processing Integration Results

RT = 18.759 Area = 140705

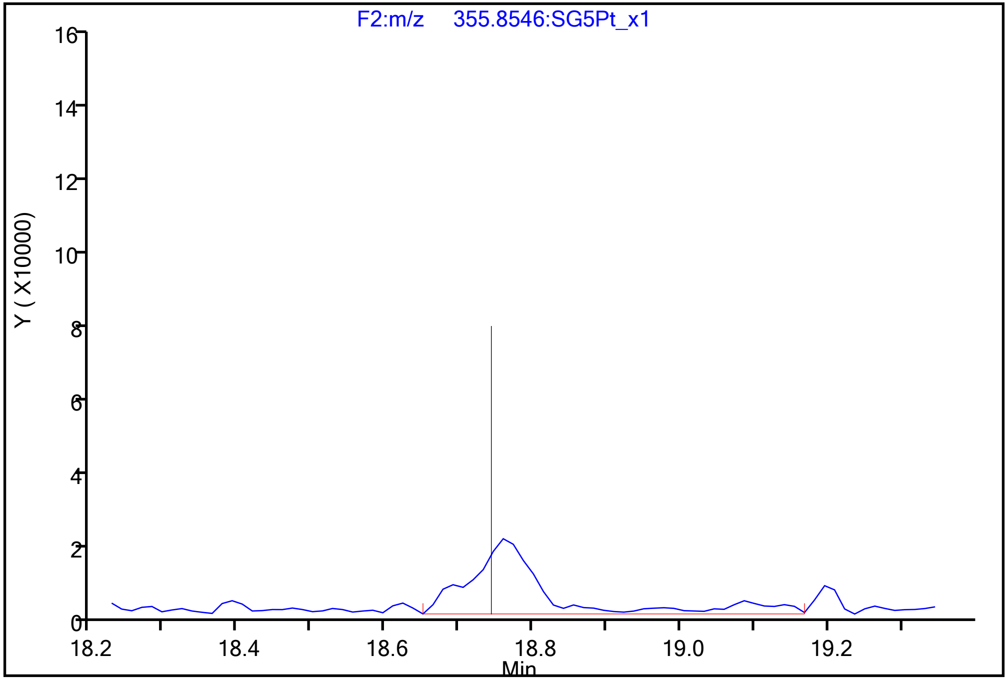

Manual Integration Results

RT = 18.759 Area = 109770 M

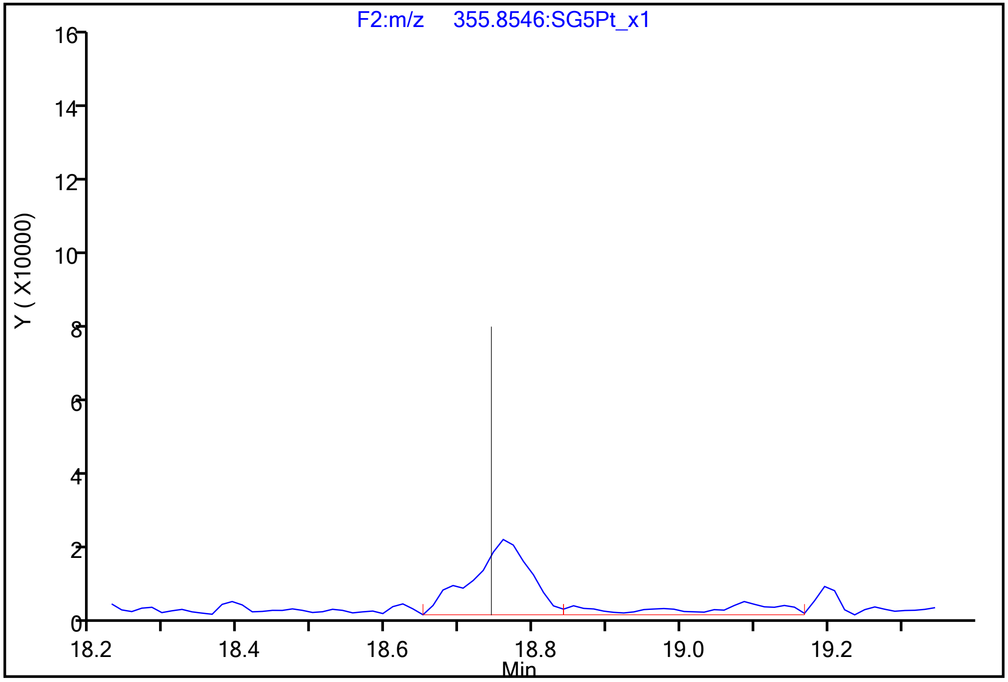

Reviewer: dadunj, 13-Oct-2020 11:43:51

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDD, Signal: 1, m/z: 355.8546, RT: (18.74- 22.29)

Signal: 1

Processing Integration Results

RT = 19.754 Area = 112650

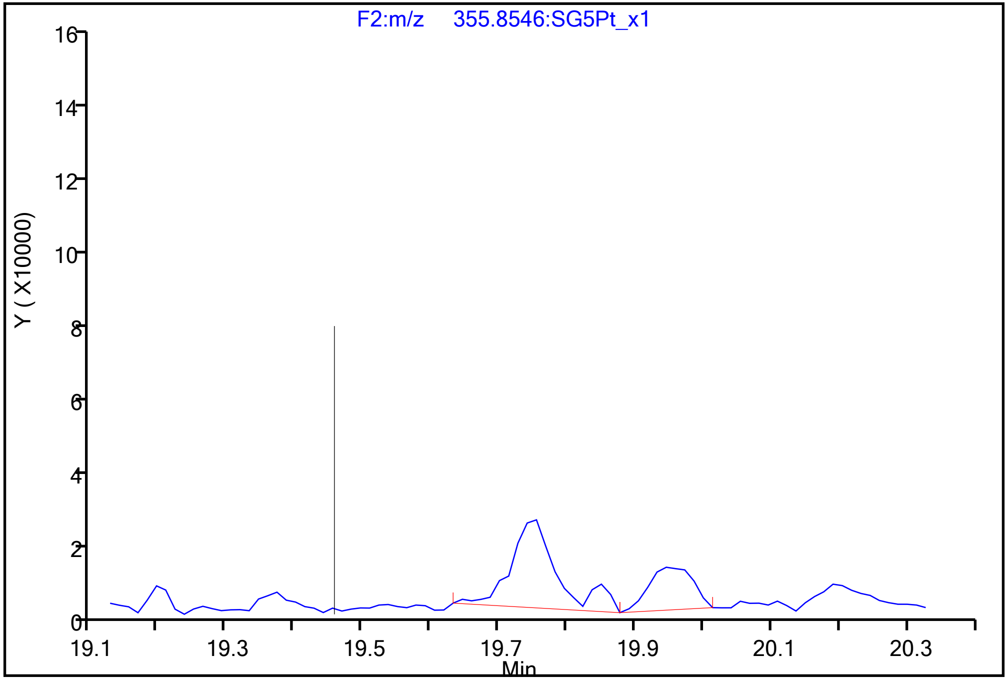

Manual Integration Results

RT = 19.754 Area = 97925 M

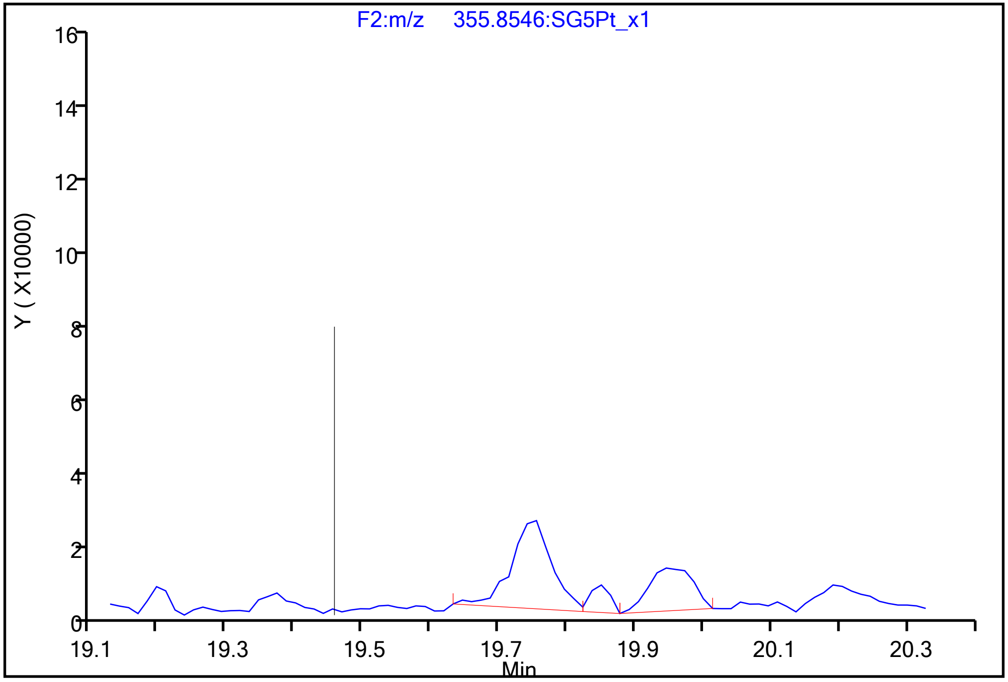

Reviewer: dadunj, 13-Oct-2020 11:43:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDD, Signal: 2, m/z: 357.8516, RT: (18.74- 22.29)

Signal: 2

Processing Integration Results

RT = 19.754 Area = 72198

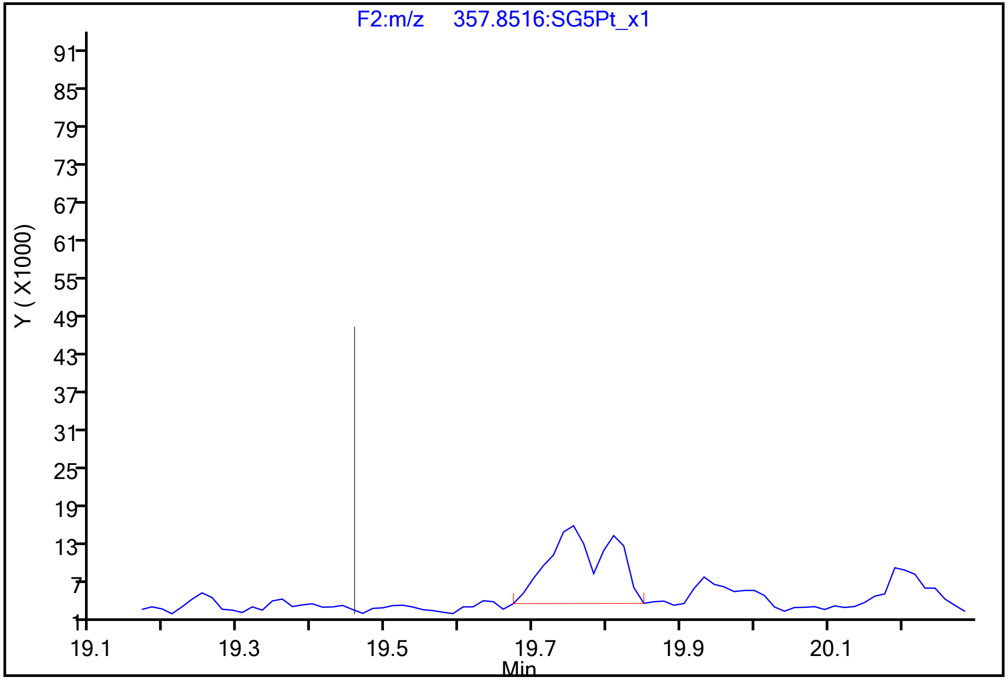

Manual Integration Results

RT = 19.754 Area = 45061 M

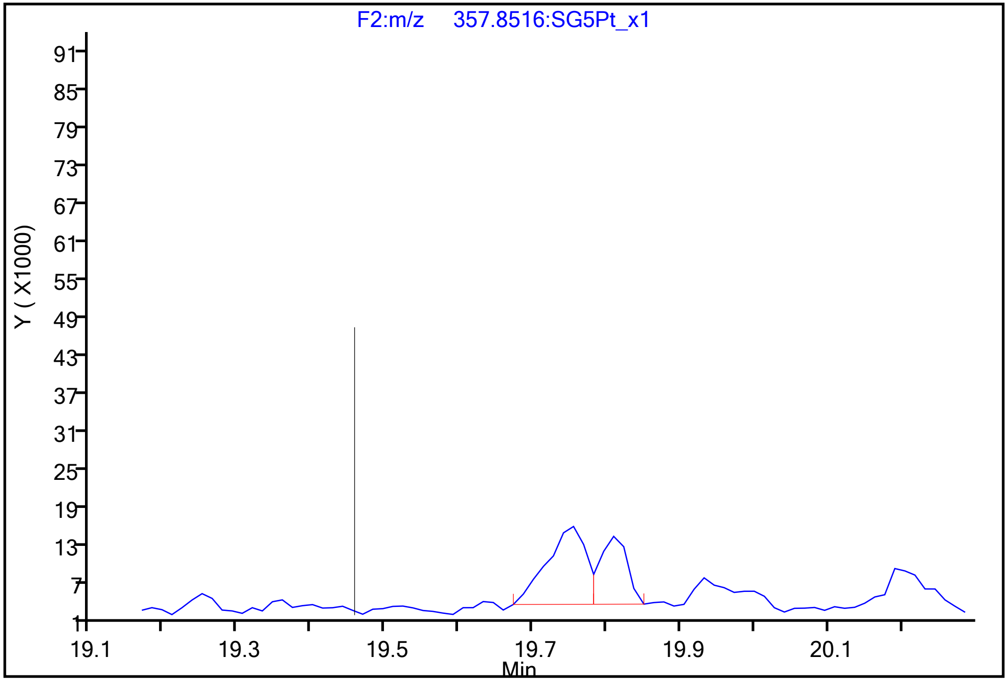

Reviewer: dadunj, 13-Oct-2020 11:43:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.04

Processing Integration Results

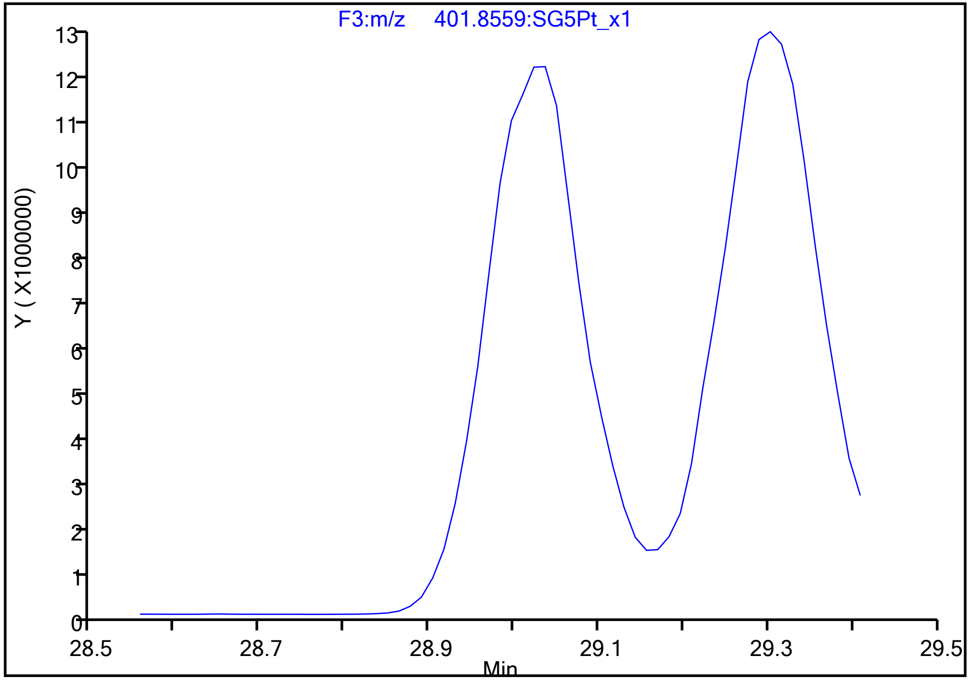

Manual Integration Results

RT: 29.04
Area: 93779370
Amount: 82.204872
Amount Units: pg/ul

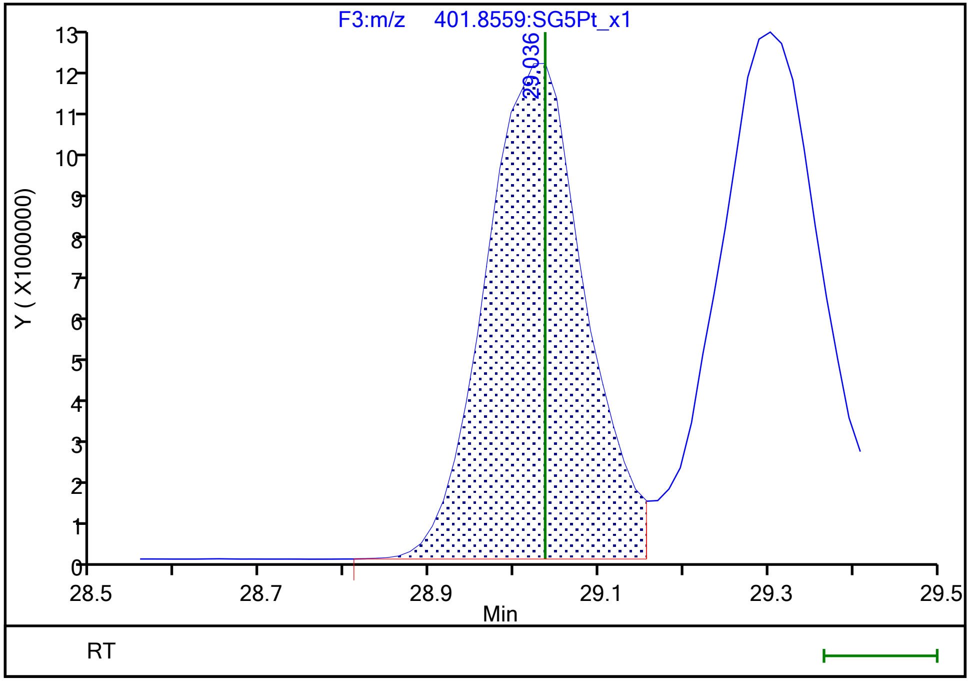

Reviewer: shardaa, 12-Oct-2020 17:56:50
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d				
Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.07
Area:	133279410
Amount:	101.7609
Amount Units:	pg/ul

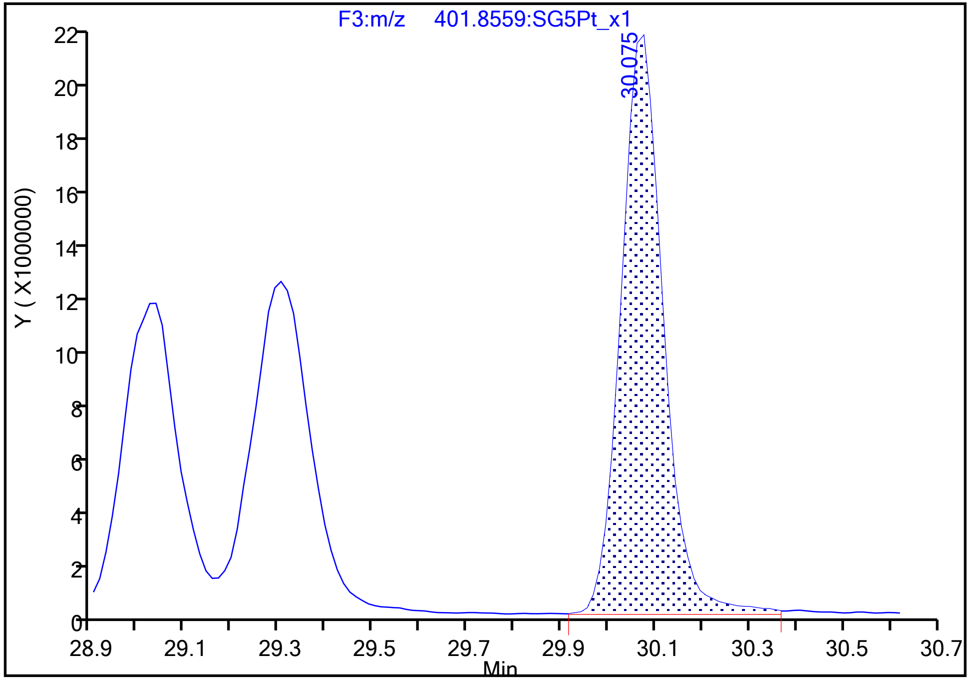

Manual Integration Results

RT:	29.30
Area:	108389762
Amount:	83.299595
Amount Units:	pg/ul

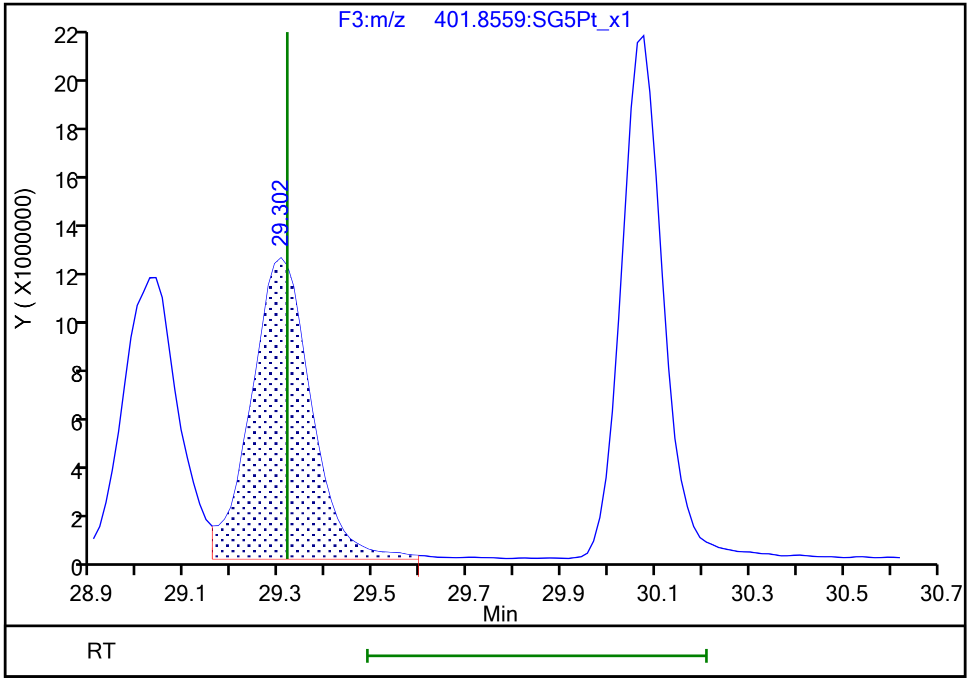

Reviewer: shardaa, 12-Oct-2020 17:58:42

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 11:47:14

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT:	29.32
Area:	108799
Amount:	0.090992
Amount Units:	pg/ul

Processing Integration Results

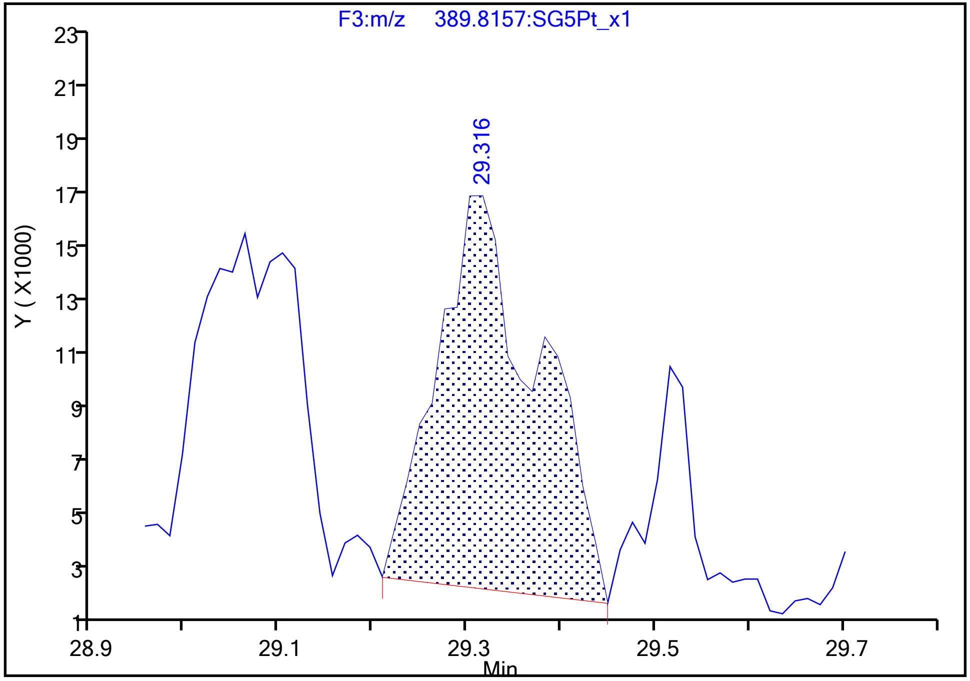

RT:	29.32
Area:	101975
Amount:	0.087851
Amount Units:	pg/ul

Manual Integration Results

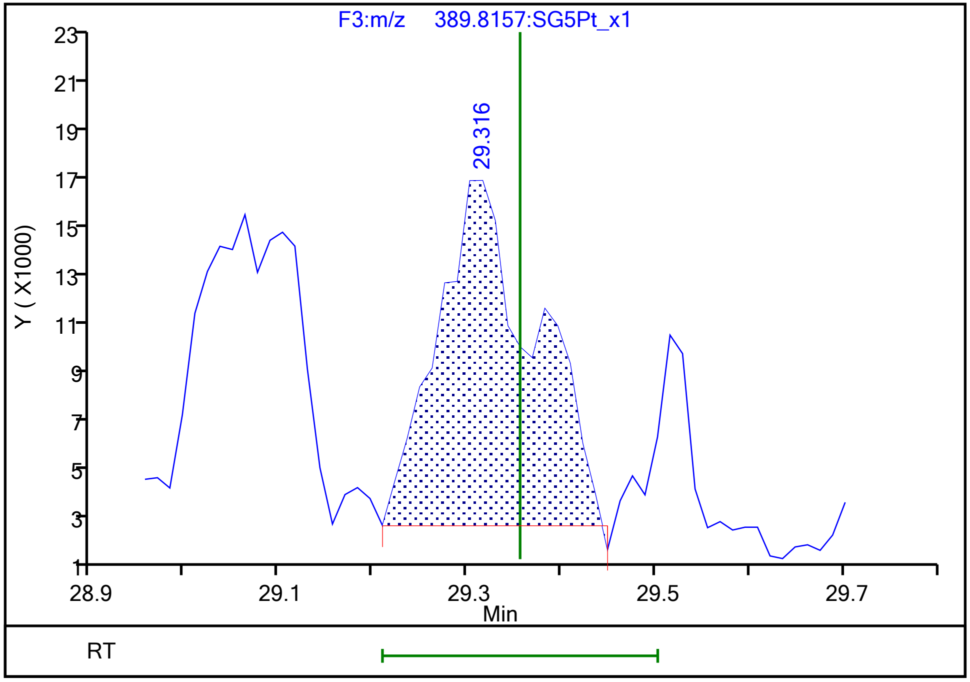

Reviewer: dadunj, 13-Oct-2020 11:44:25

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Injection Date:	09-Oct-2020 05:51:00	Instrument ID:	3D5		
Lims ID:	320-65130-A-4-A	Lab Sample ID:	320-65130-4		
Client ID:	11215702-Tank#1-valve-5-1				
Operator ID:	ALM	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

RT = 25.641 Area = 278143

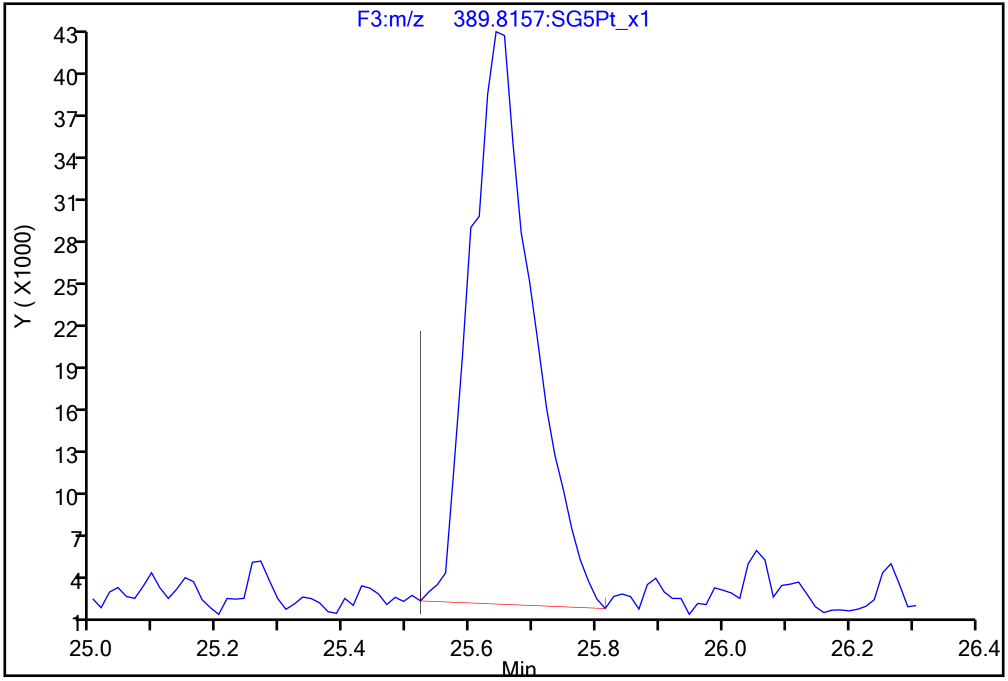

Manual Integration Results

RT = 25.641 Area = 273289 M

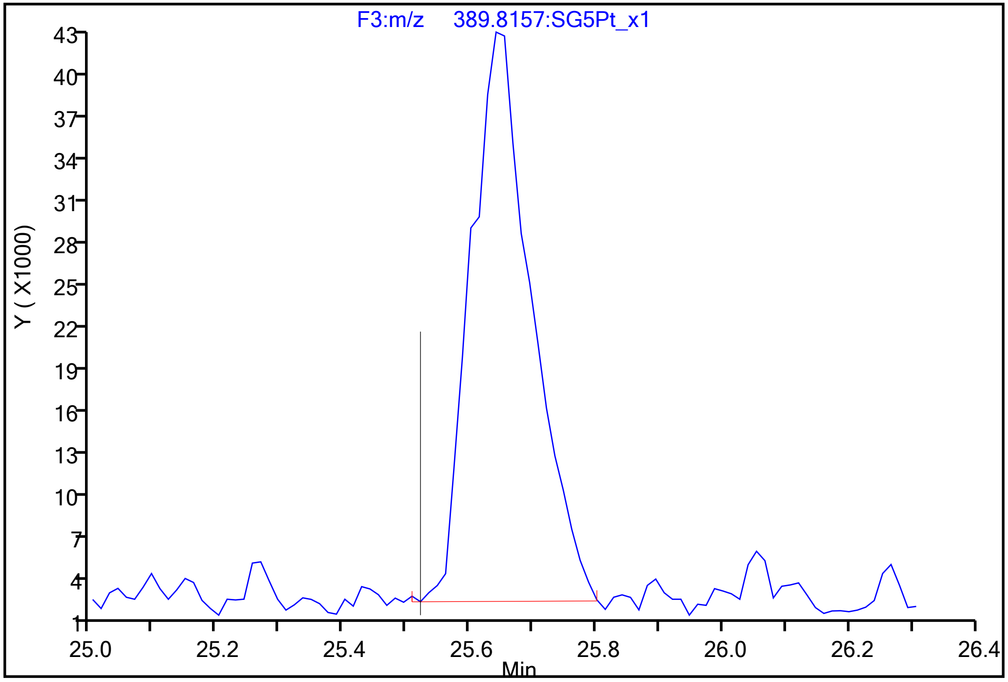

Reviewer: dadunj, 13-Oct-2020 11:44:37

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

TCDF

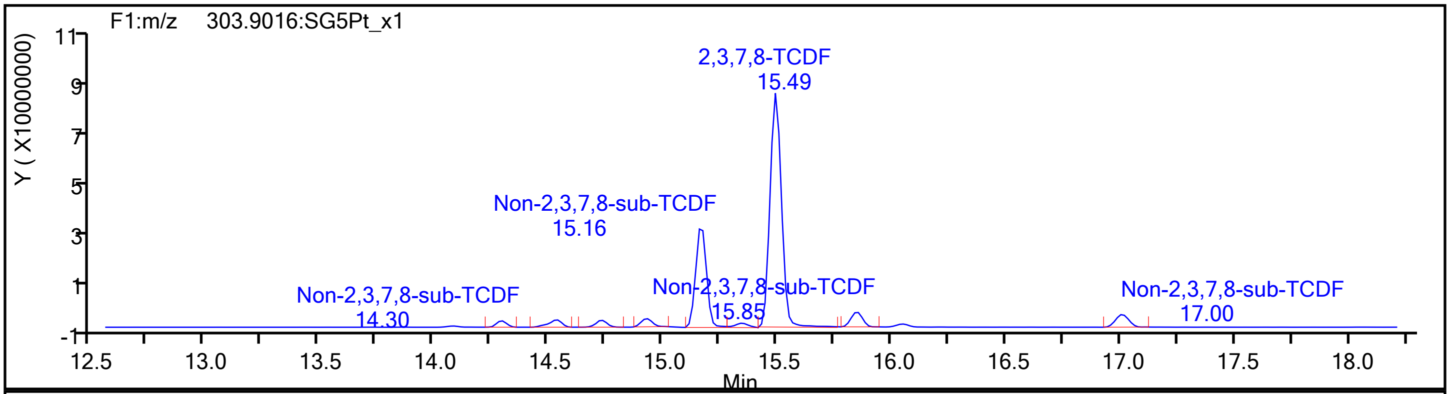

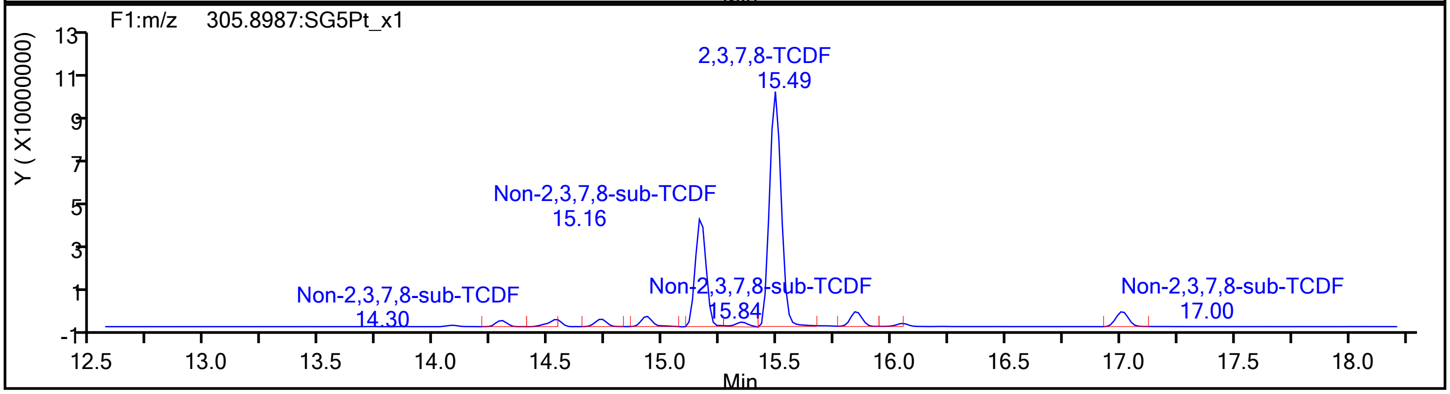

TCDF Standards

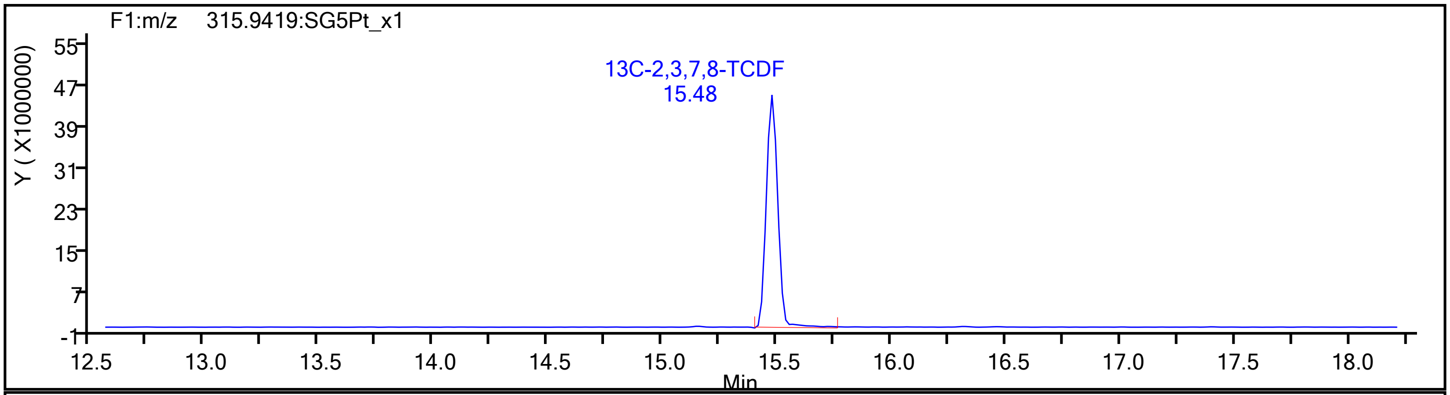

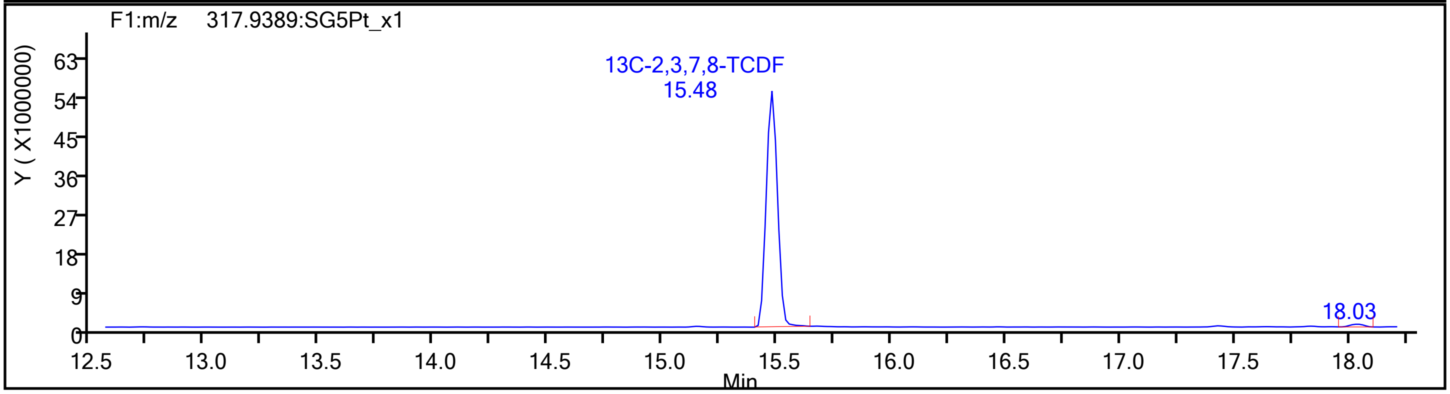

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d
Injection Date: 09-Oct-2020 05:51:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-1
Worklist#: 420482
Sample Line#: 14
Column Type:
Column Dia:

TCDF

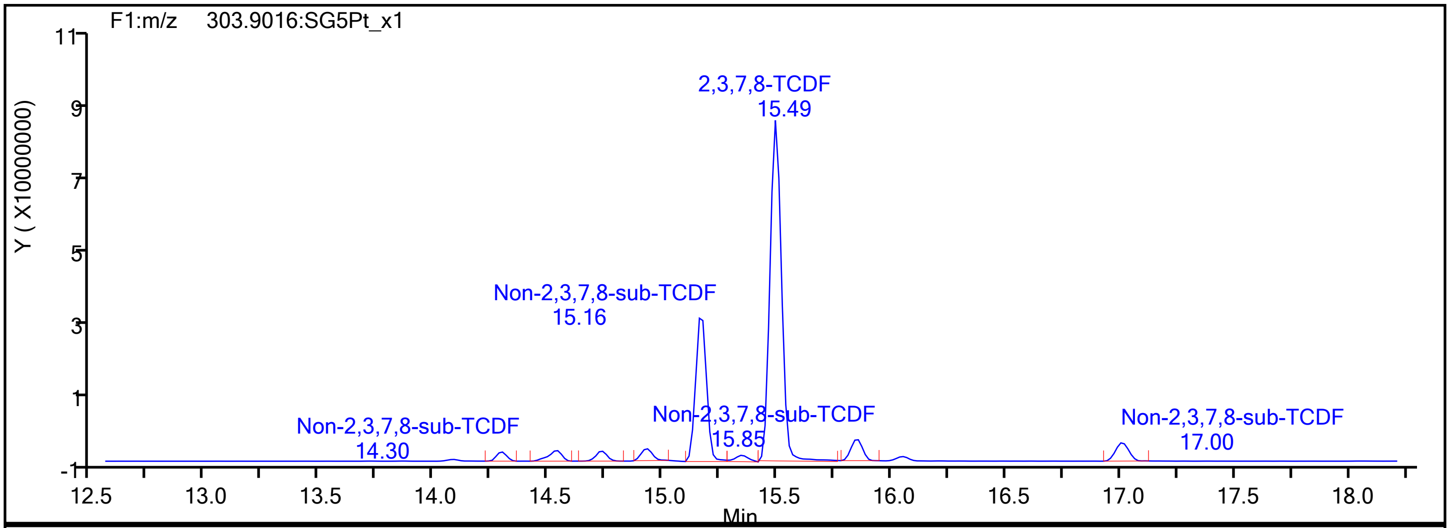

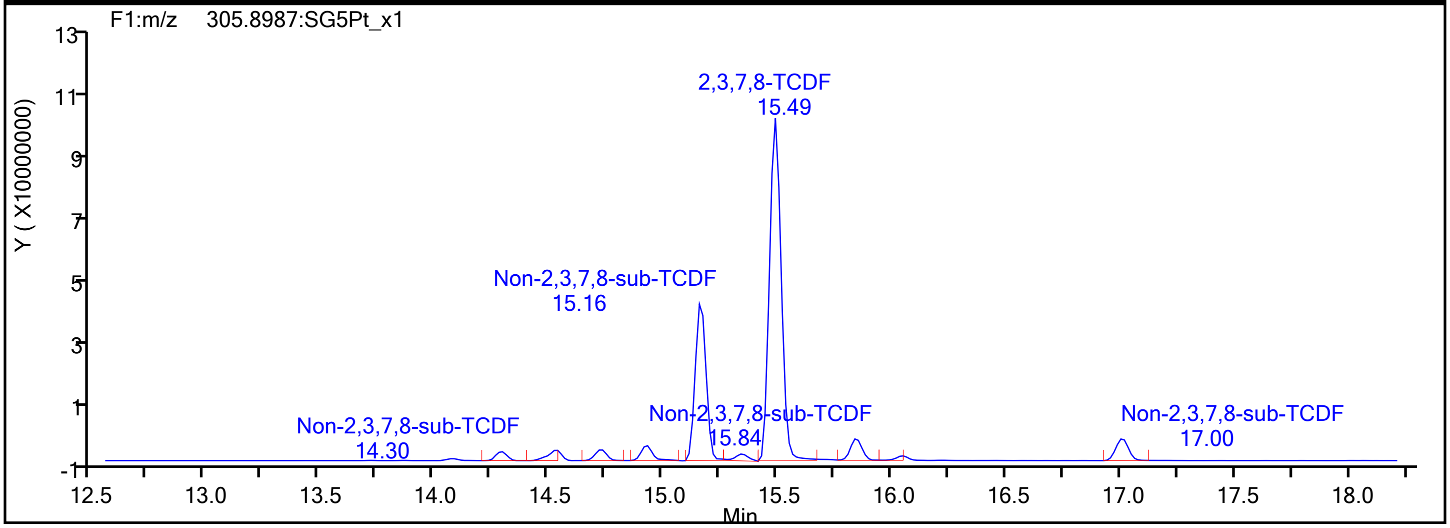

TCDF Interference Mass

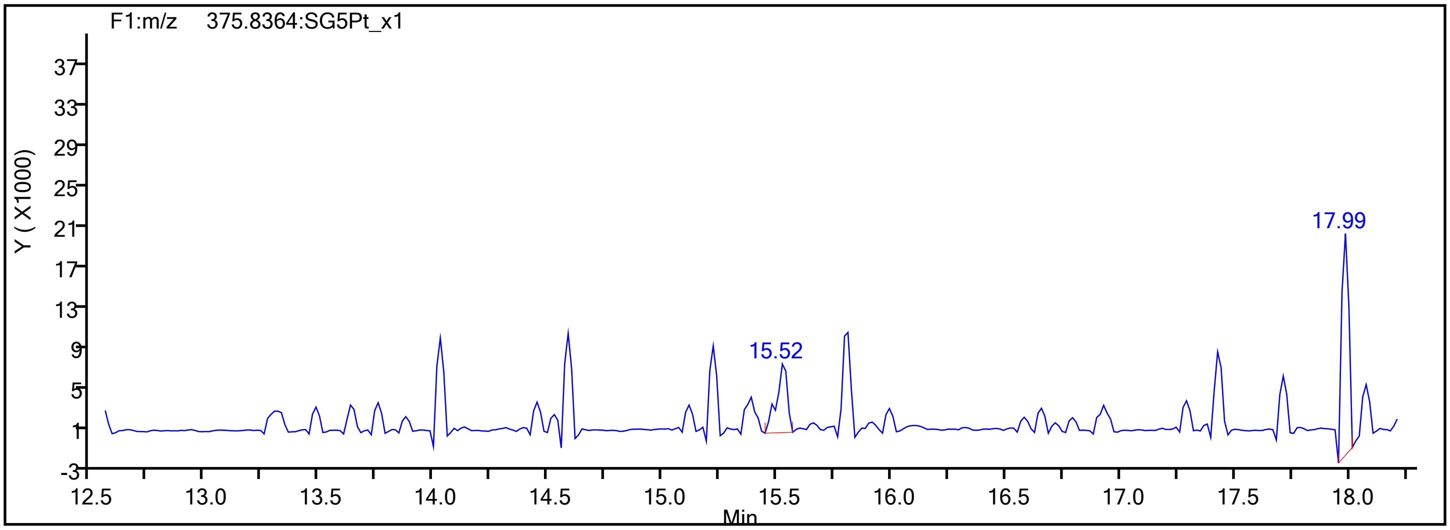

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Injection Date: 09-Oct-2020 05:51:00 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-1

Worklist#: 420482 Sample Line#: 14

Column Type: Column Dia:

TCDD

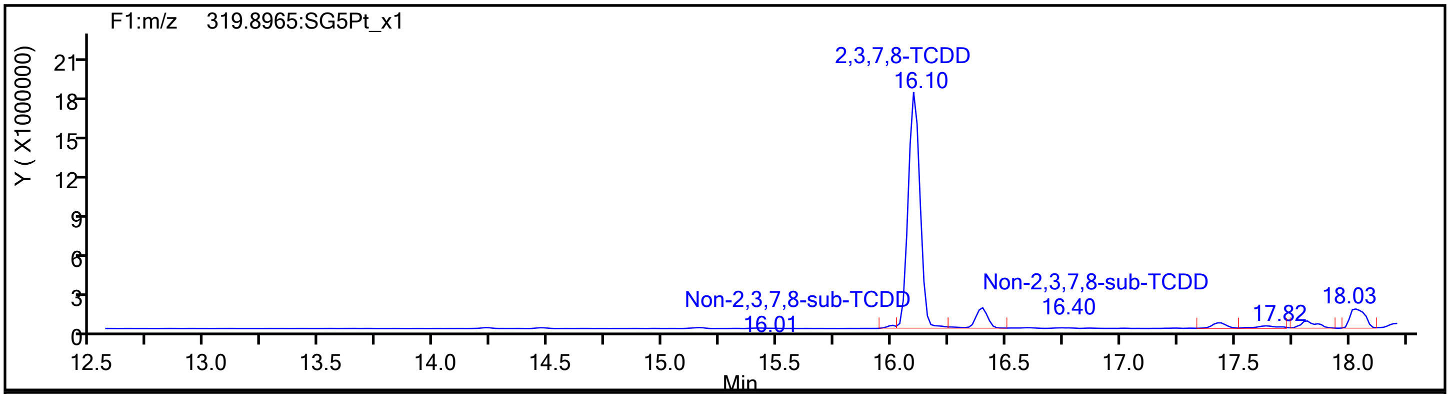

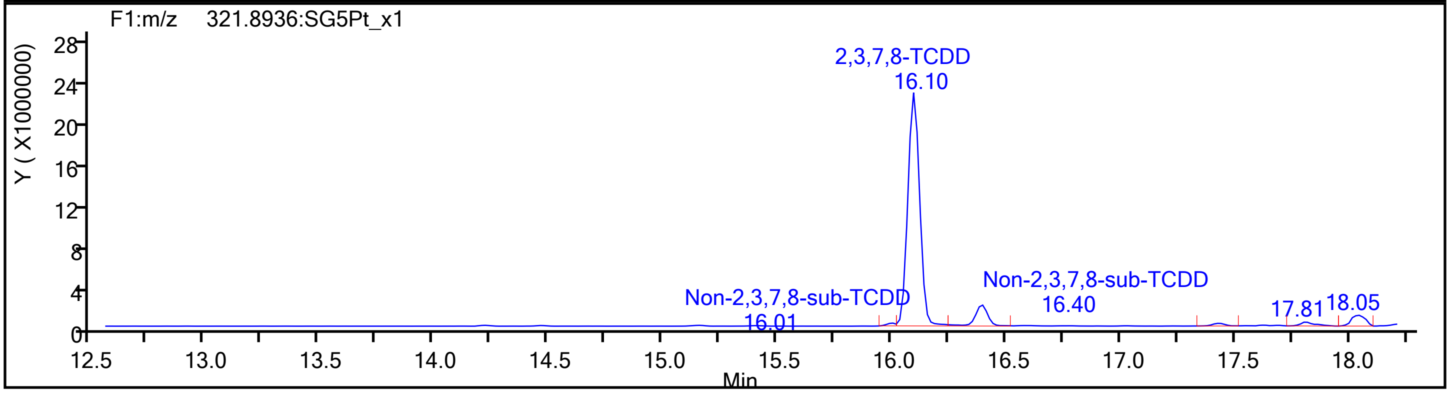

TCDD Standards

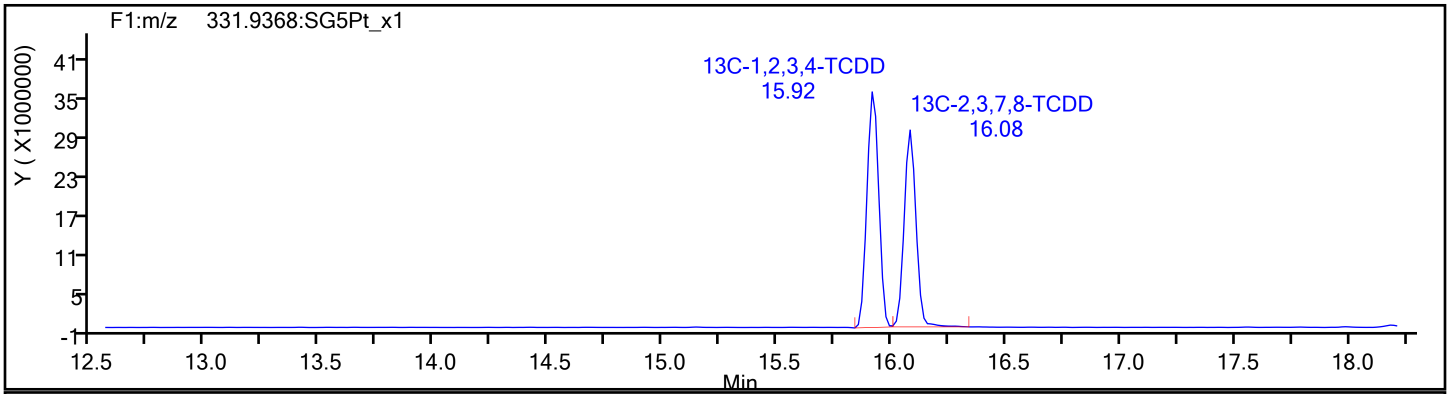

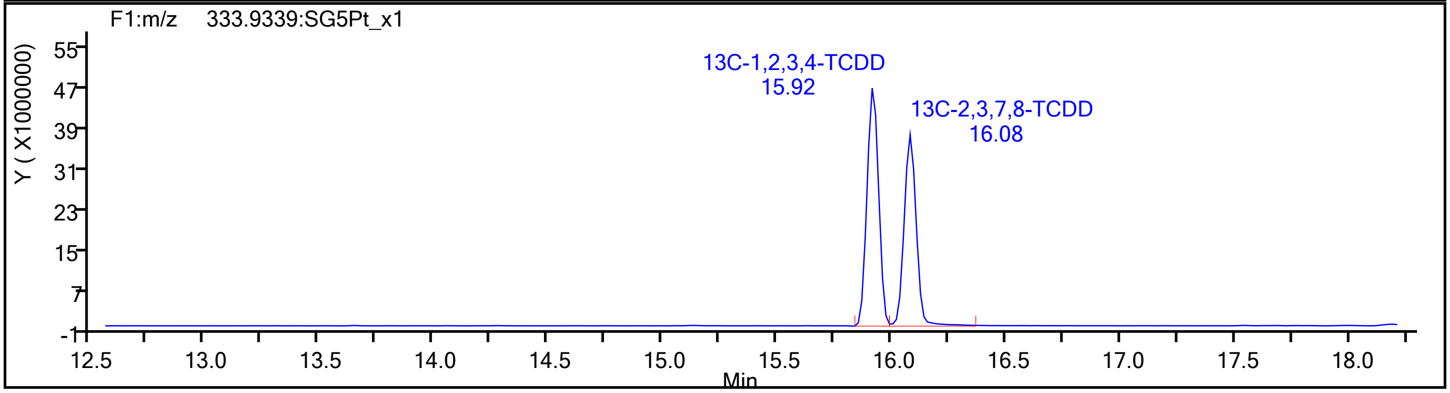

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

37Cl4-TCDD

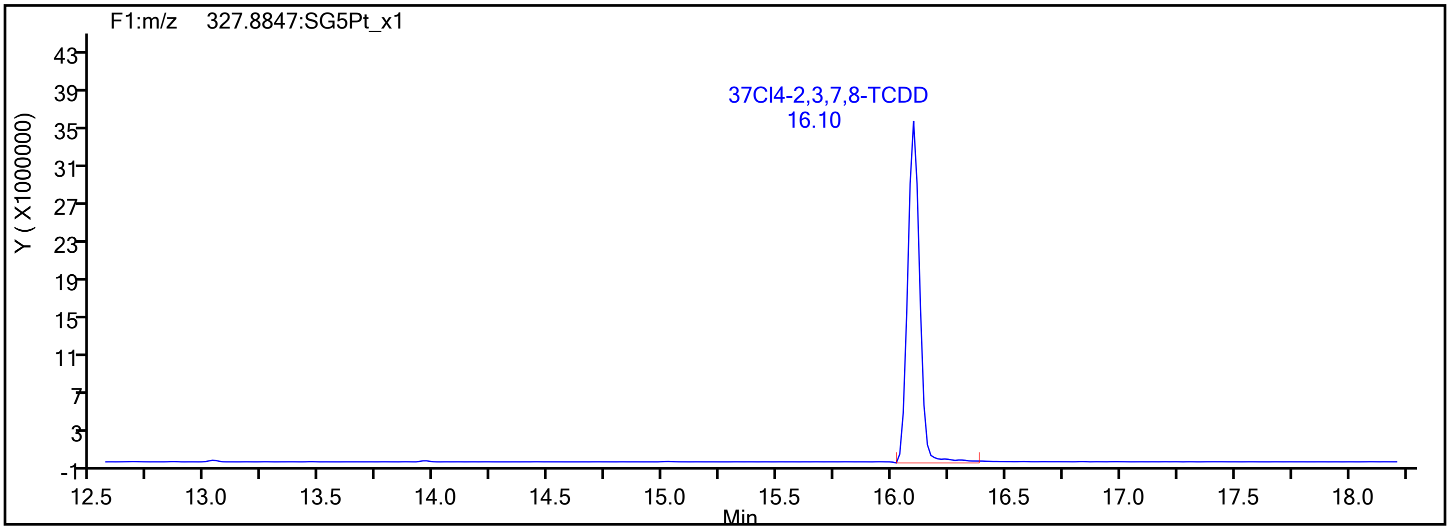

37Cl4-TCDD Standards

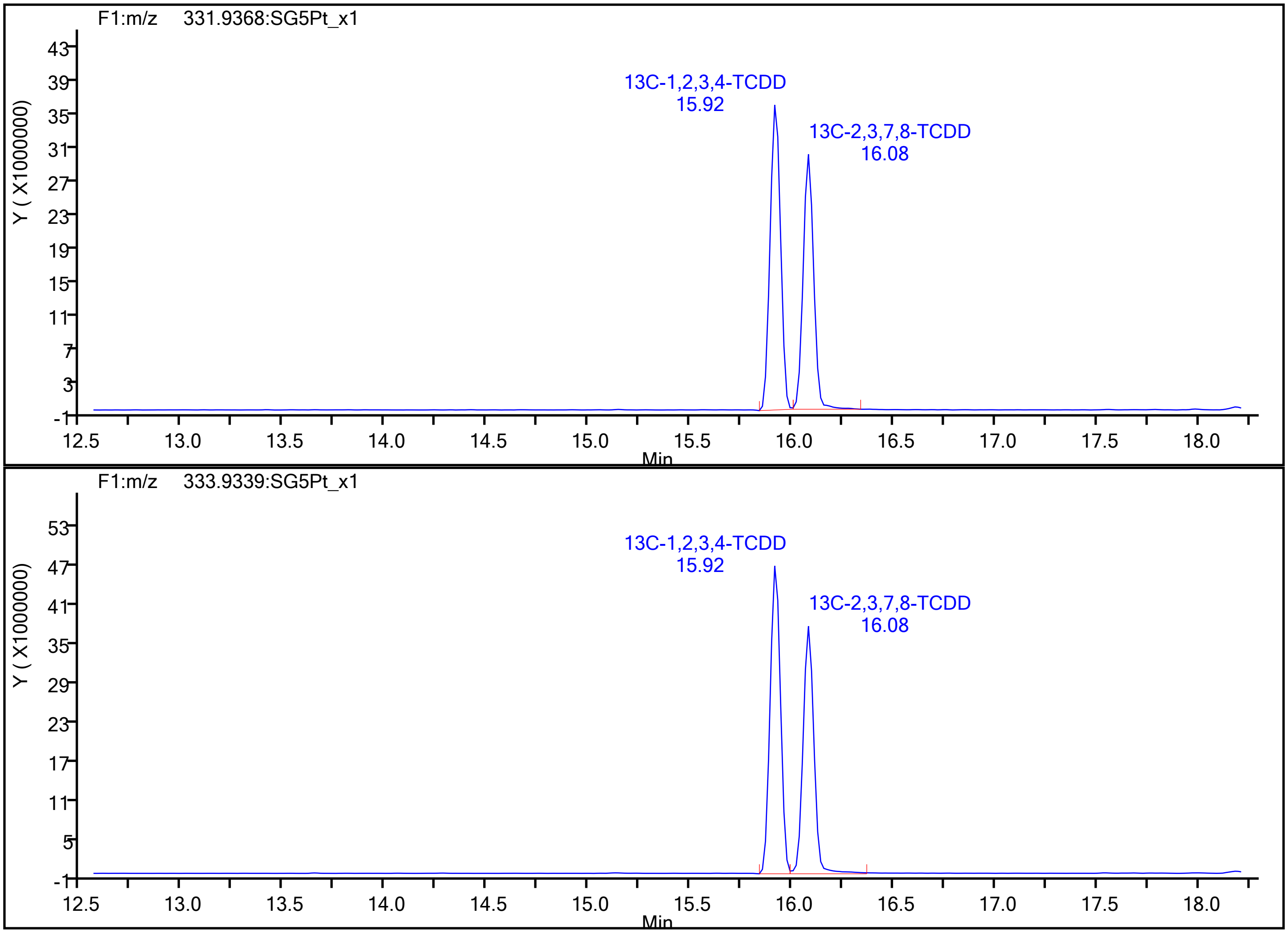

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 05:51:00 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-1
Worklist#: 420482 Sample Line#: 14
Column Type: Column Dia:

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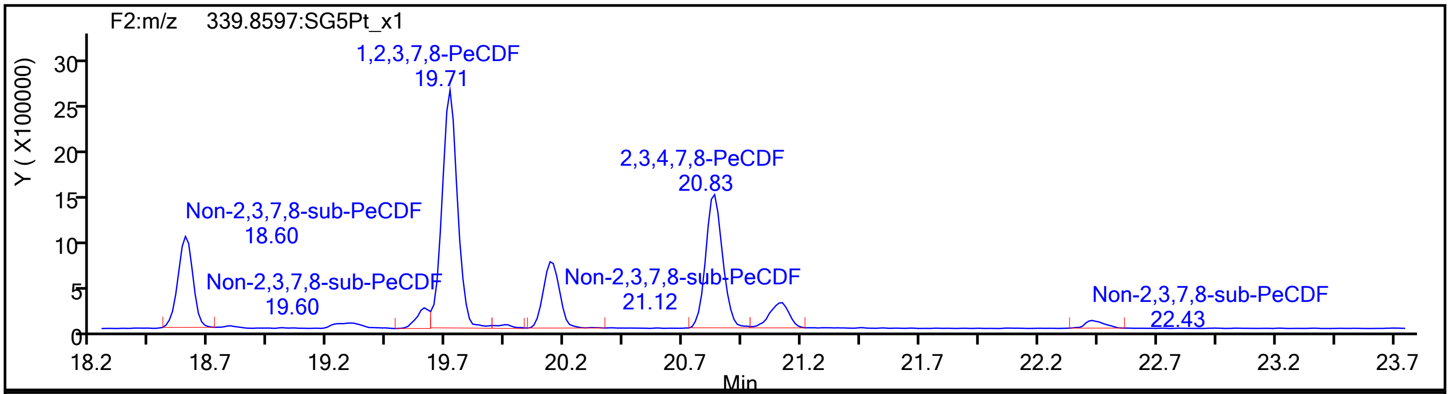

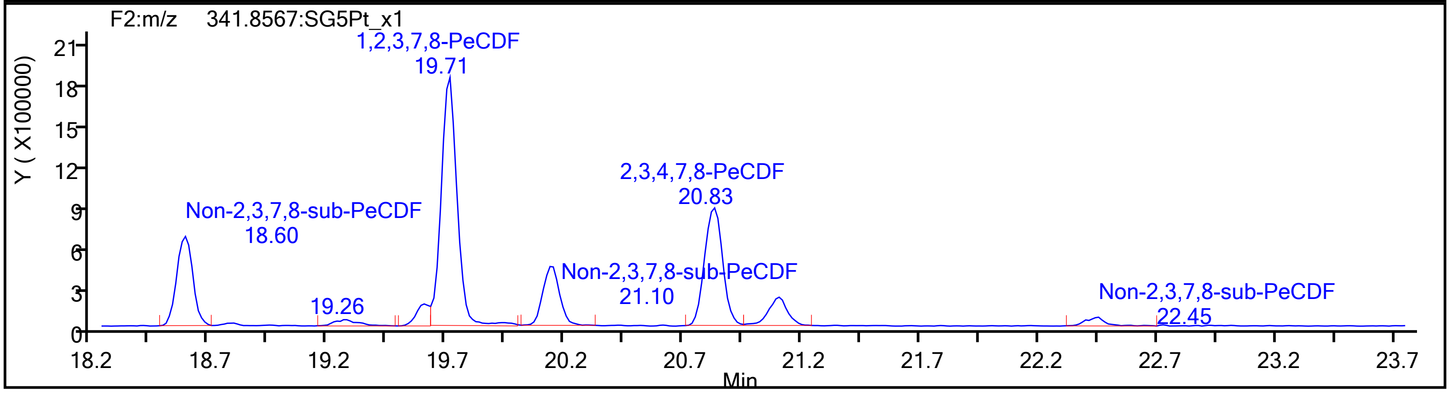

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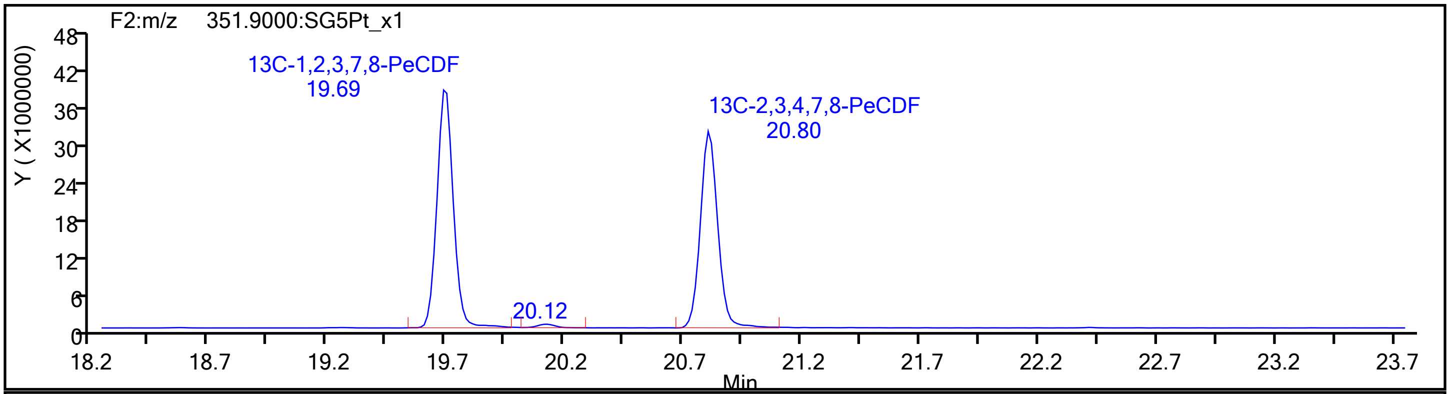

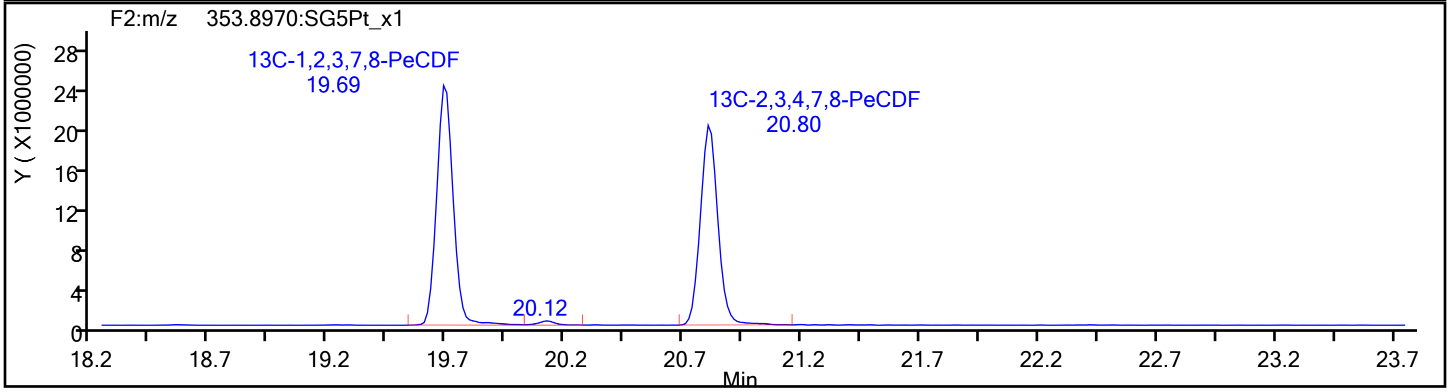

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

PeCDF

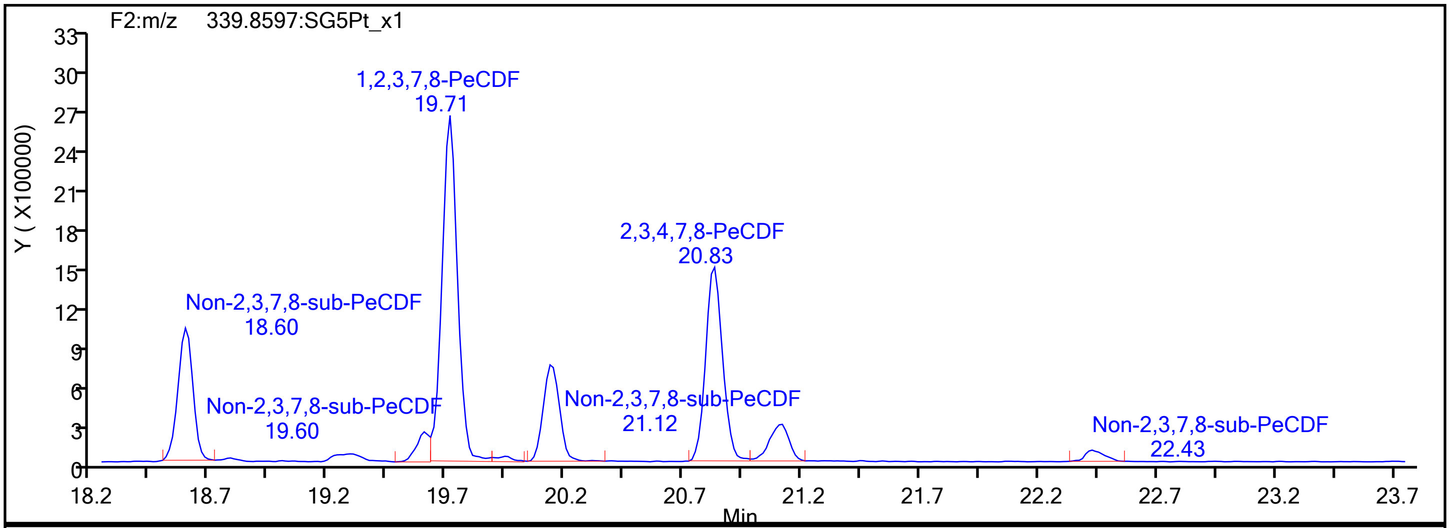

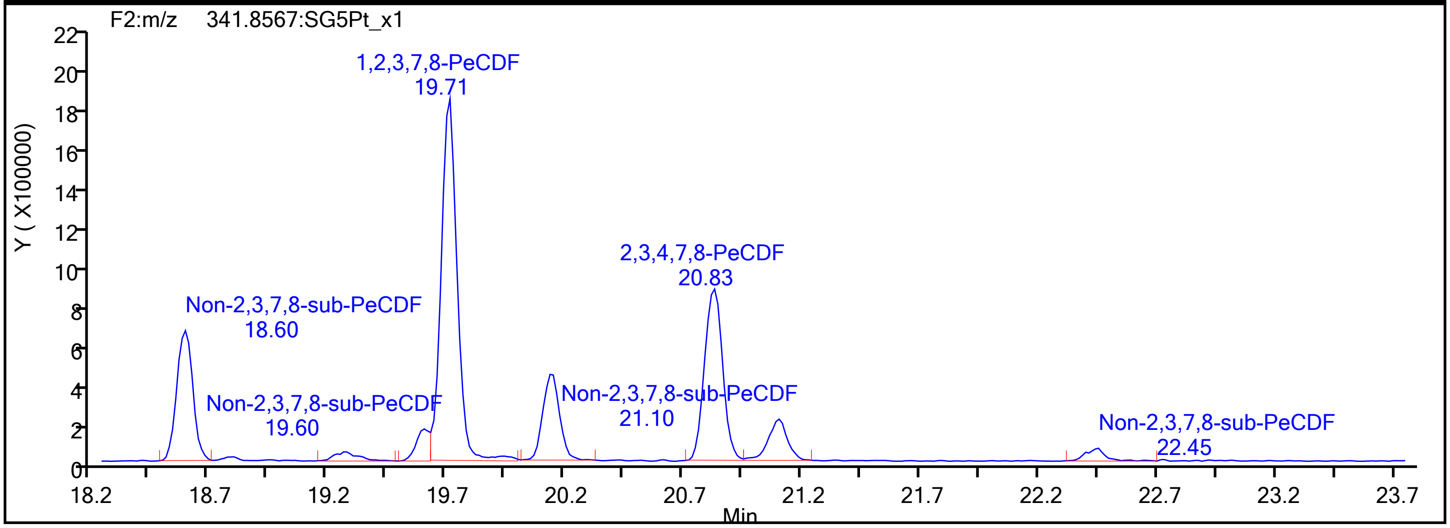

PeCDF Interference Mass

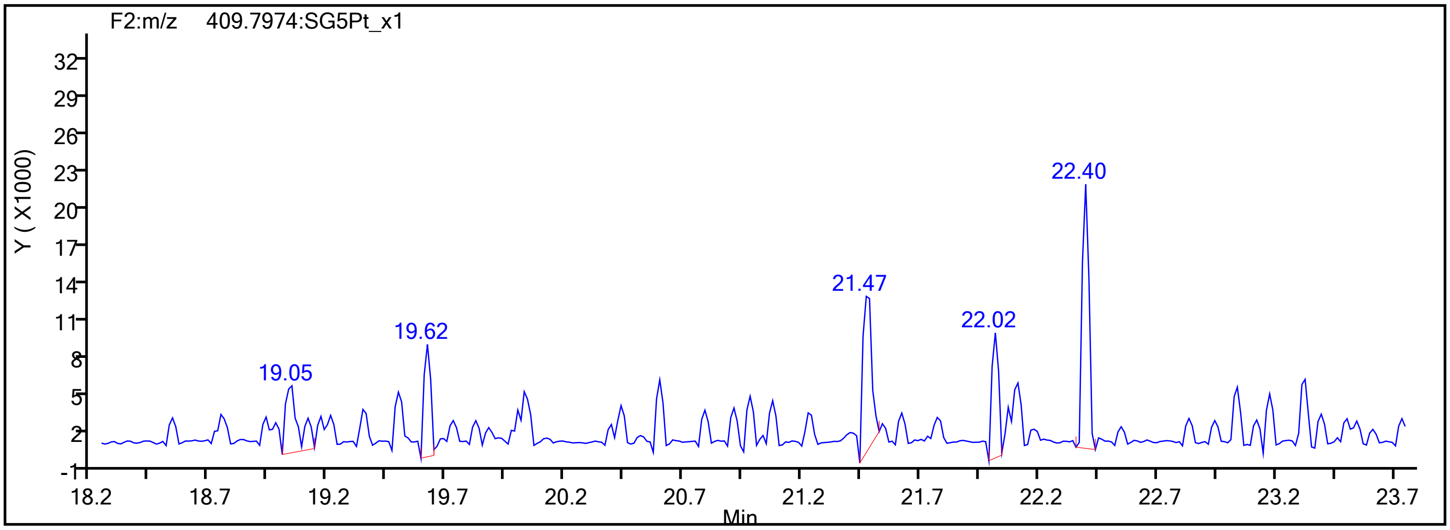

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Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

PeCDD

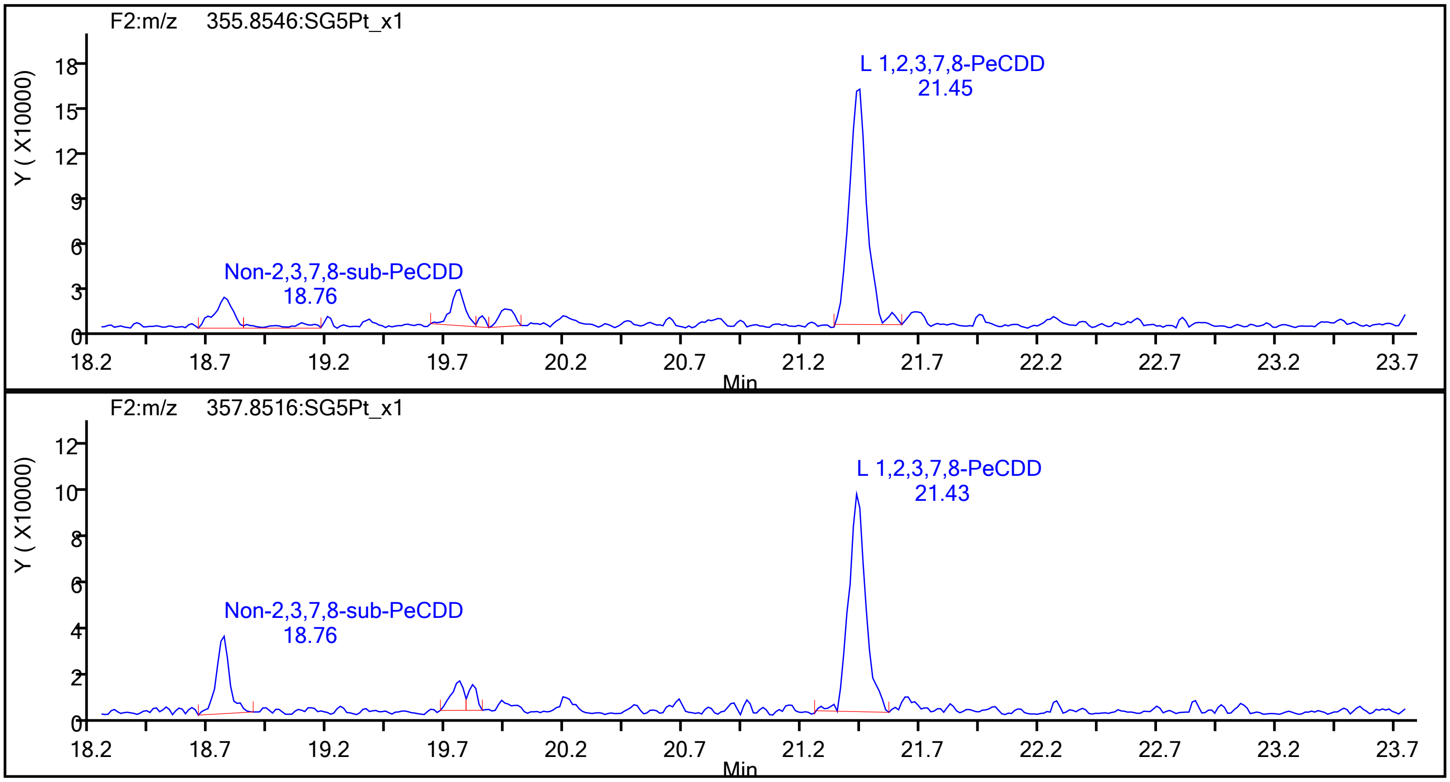

PeCDD Standards

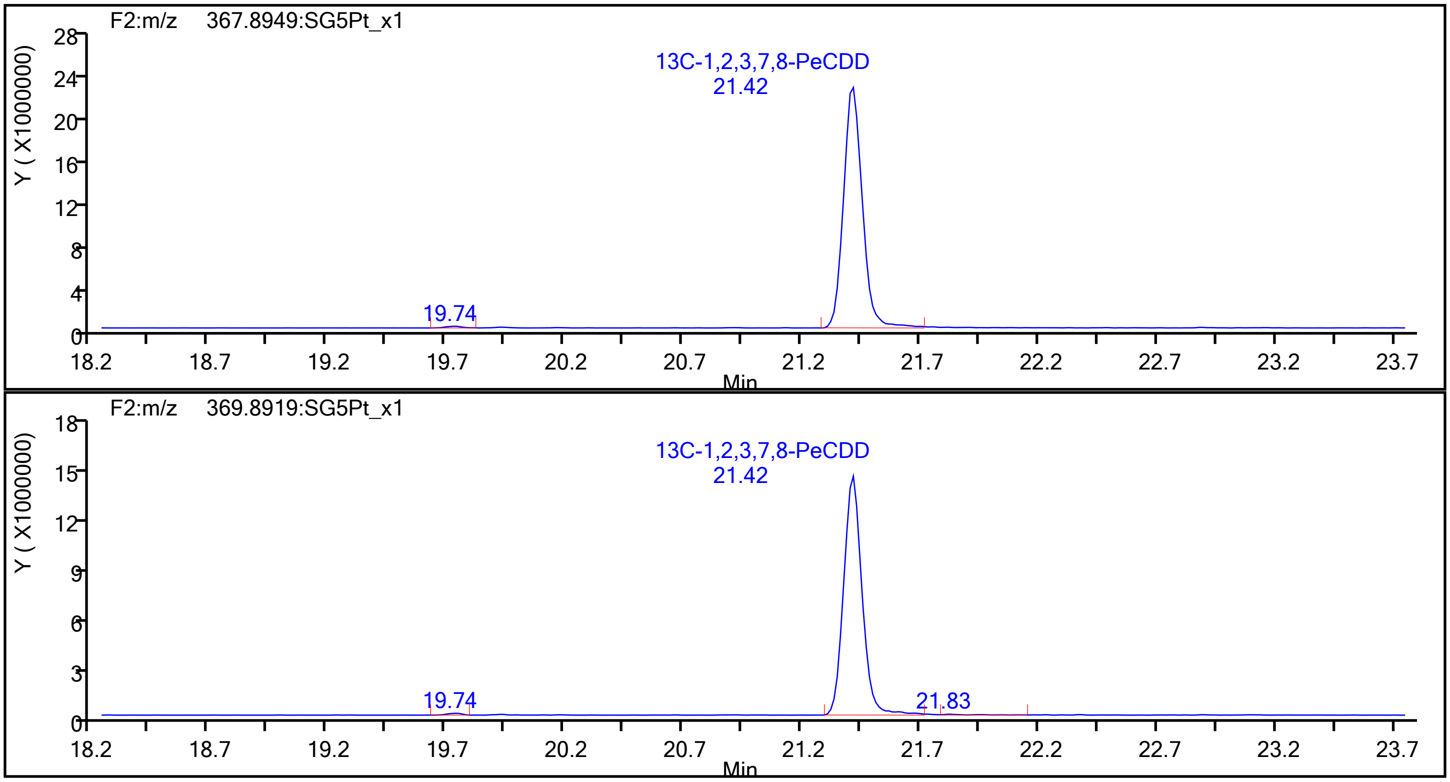

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

HxCDF

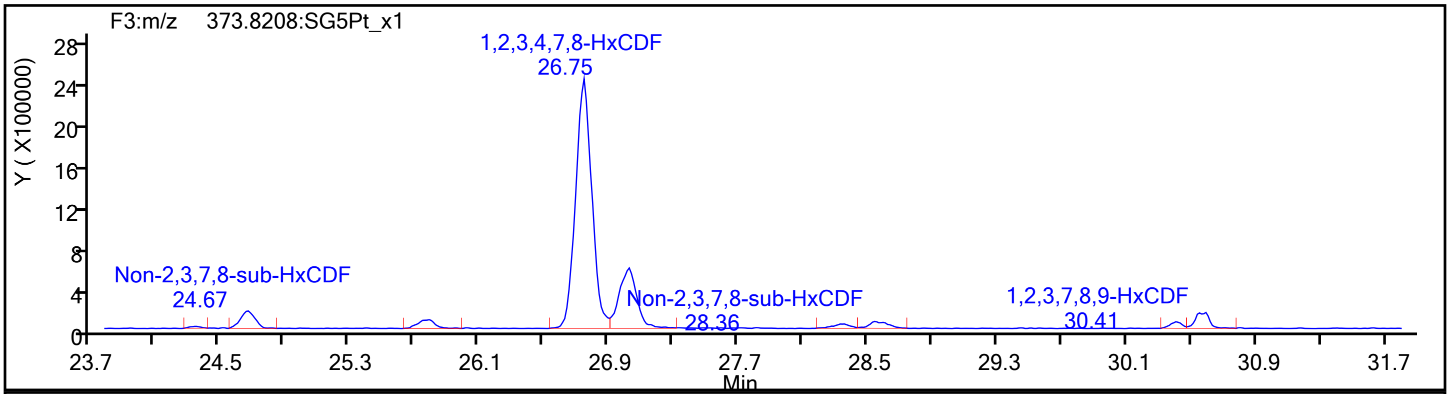

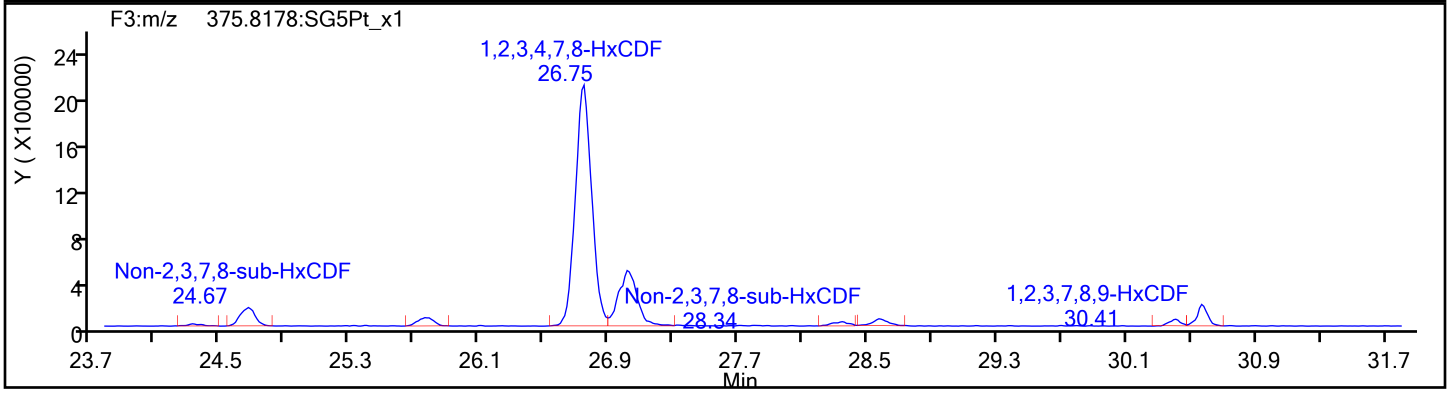

HxCDF Standards

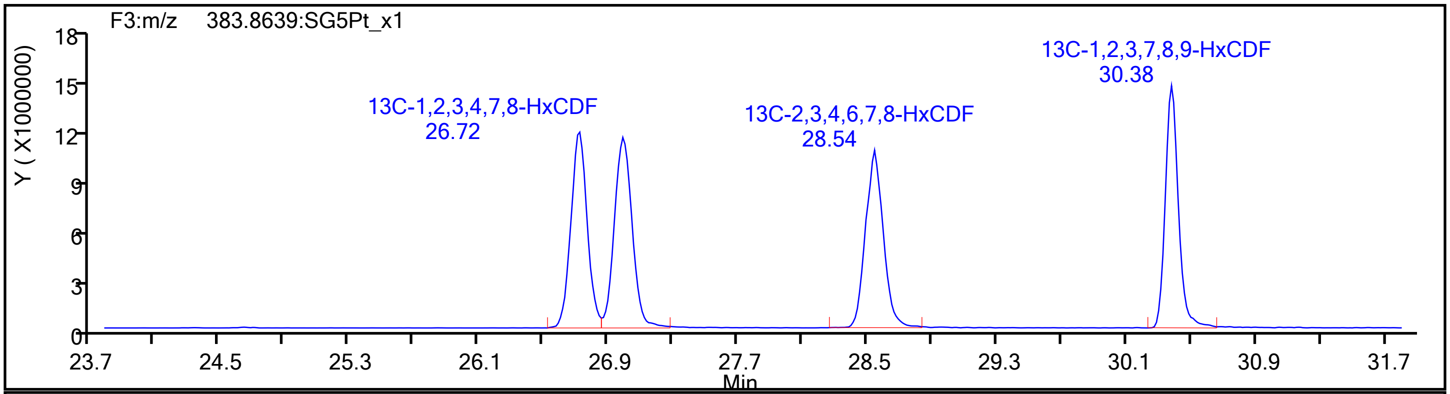

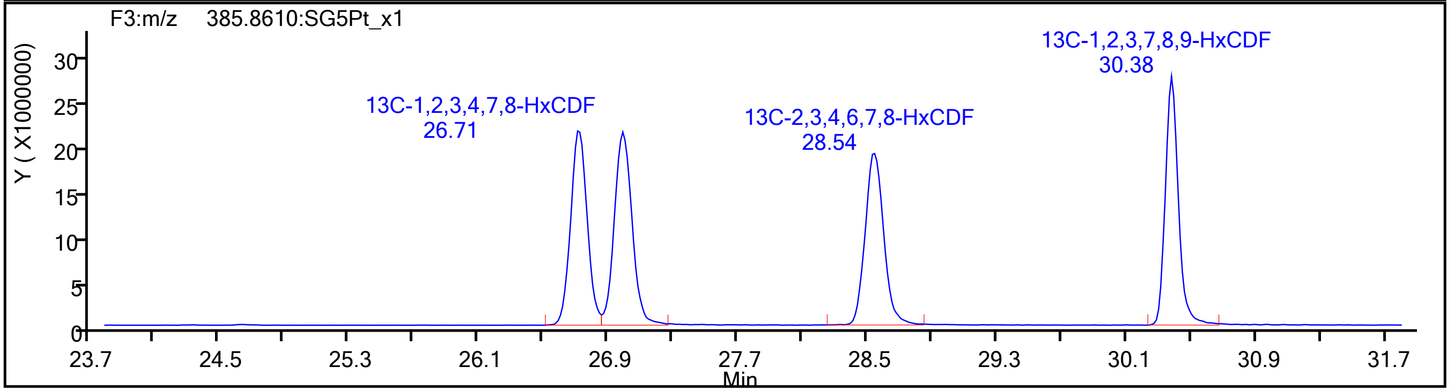

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d

Injection Date: 09-Oct-2020 05:51:00

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-1

Worklist#: 420482

Sample Line#: 14

Column Type:

Column Dia:

HxCDF

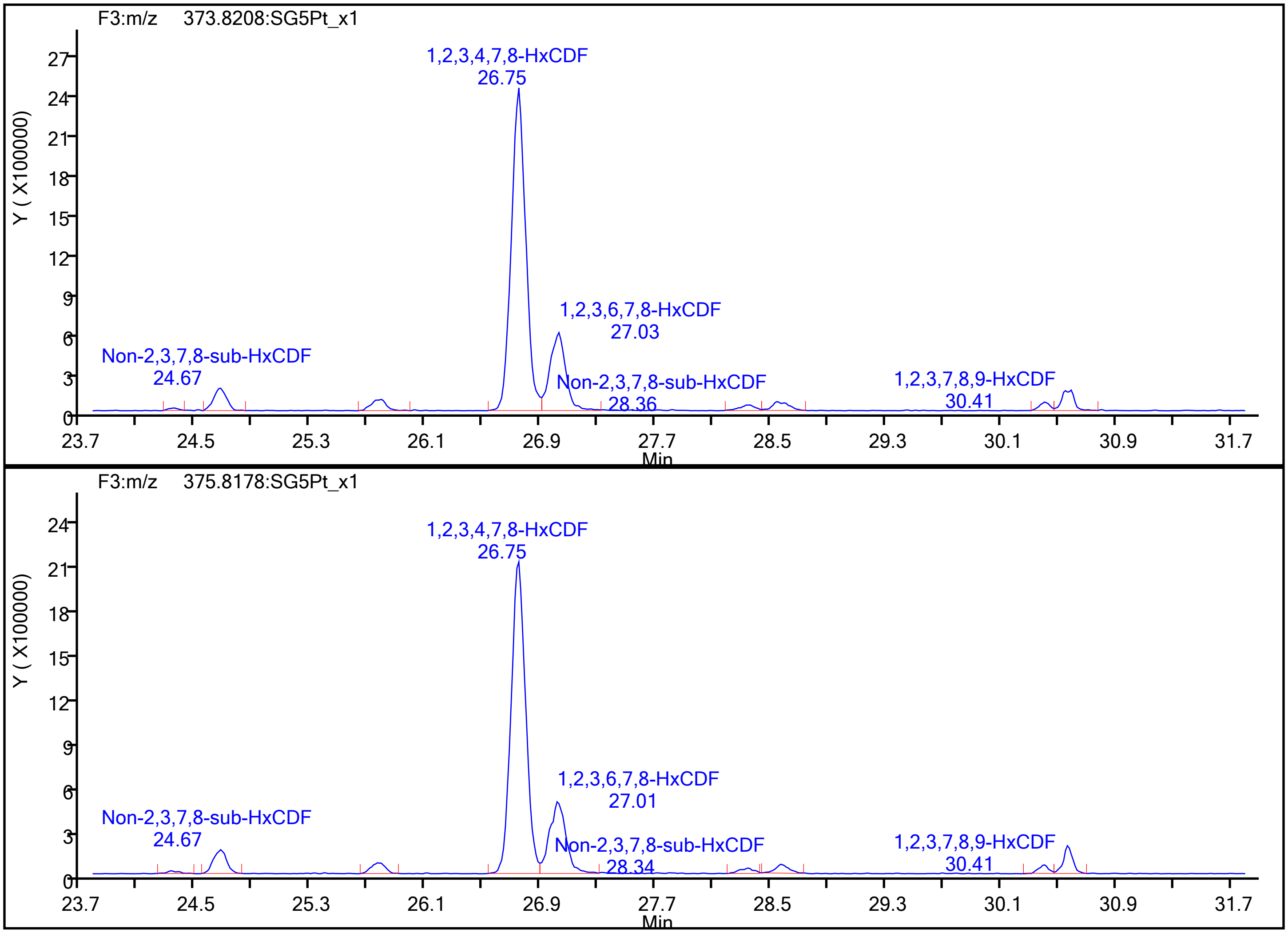

HxCDF Interference Mass

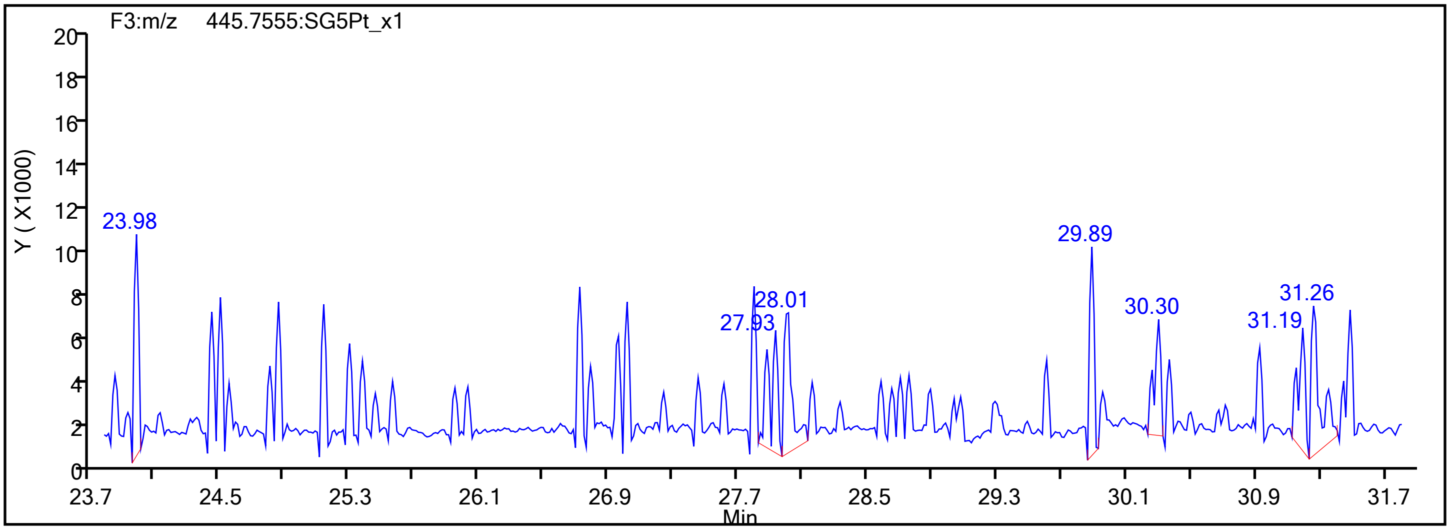

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 05:51:00
Injection Vol: 2.0 ul

Instrument ID: 3D5
Operator ID: ALM

Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-1

Worklist#: 420482
Sample Line#: 14

Column Type:
Column Dia:

HxCDD

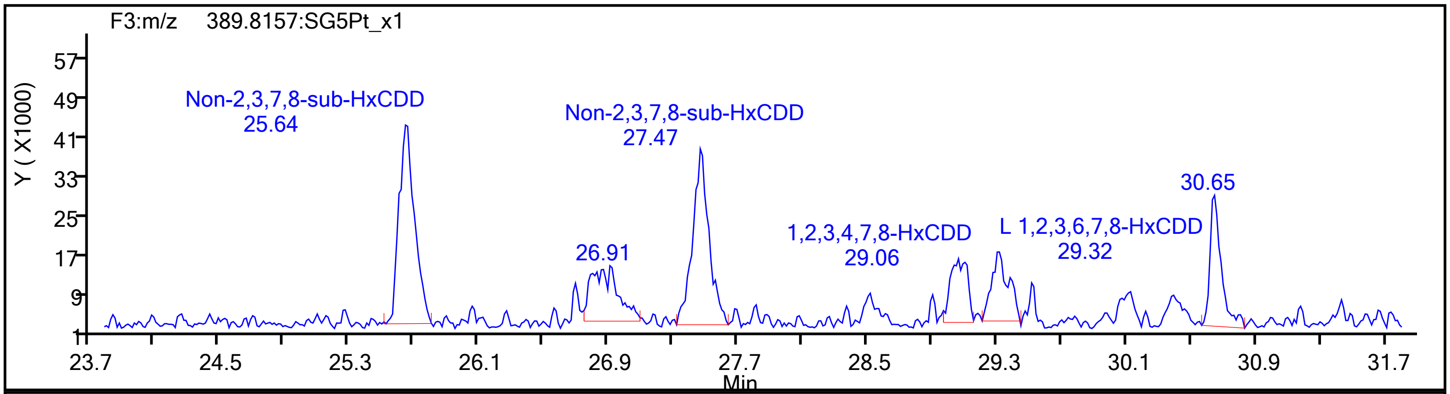

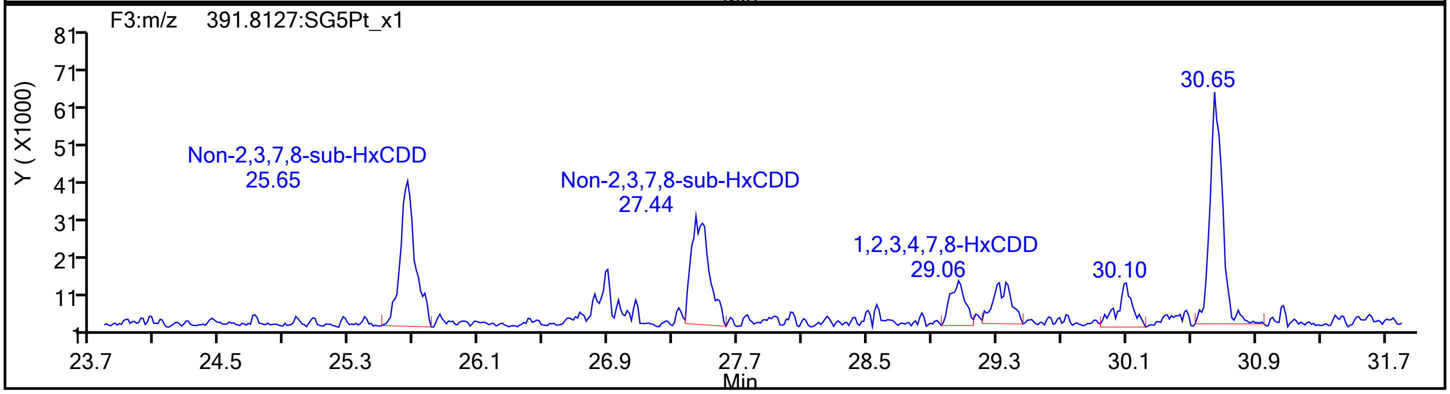

HxCDD Standards

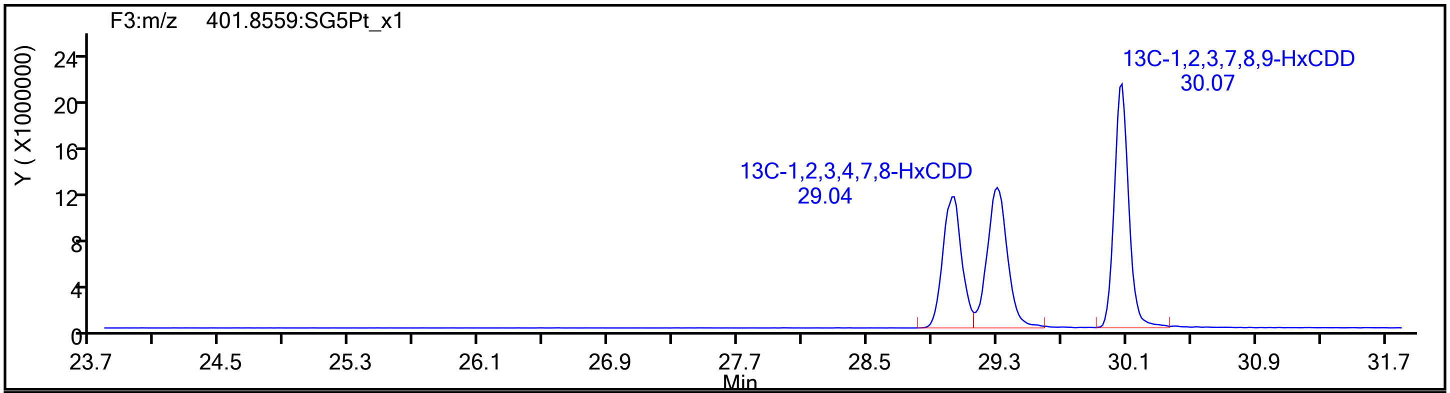

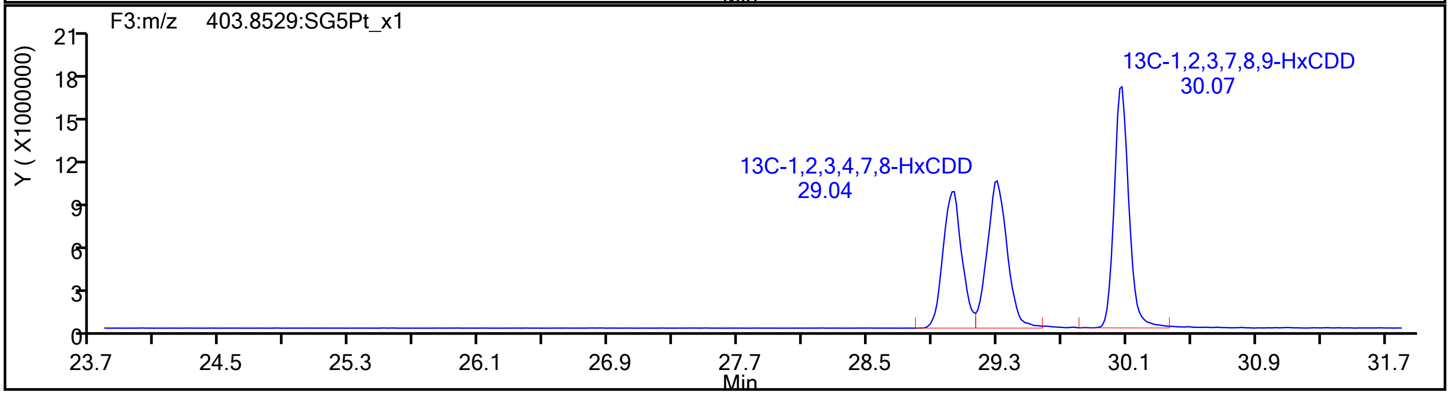

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Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

HpCDF

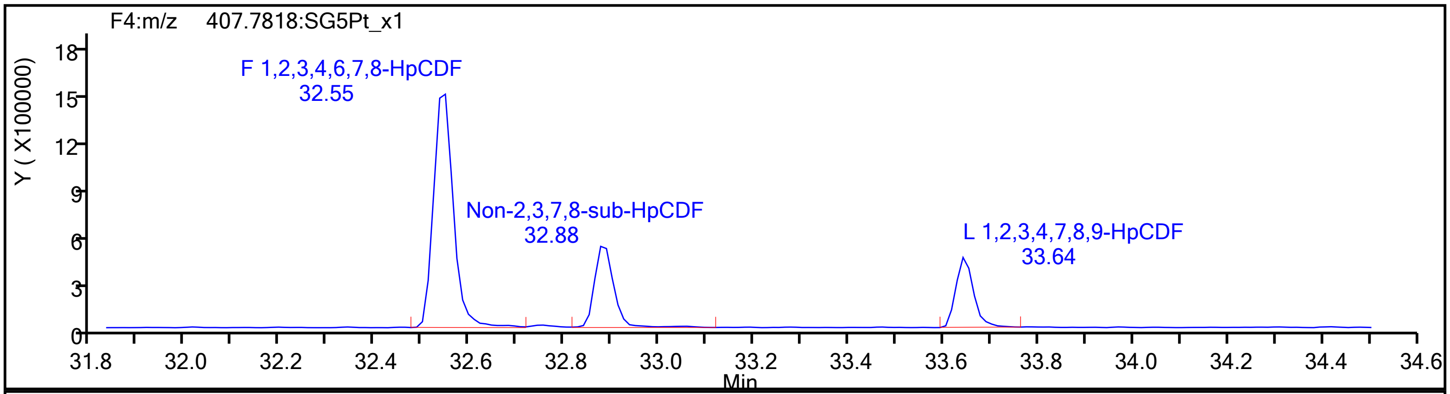

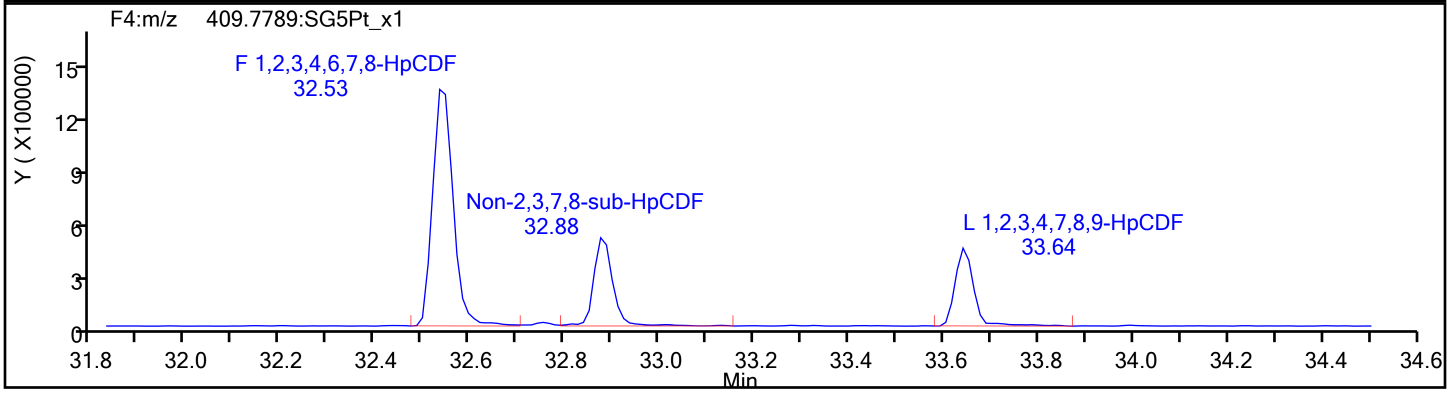

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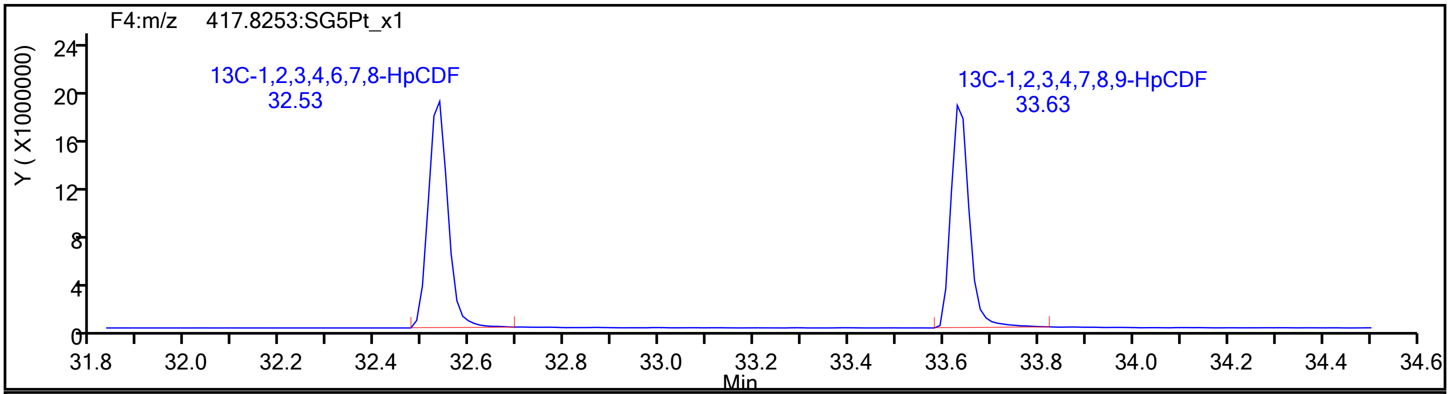

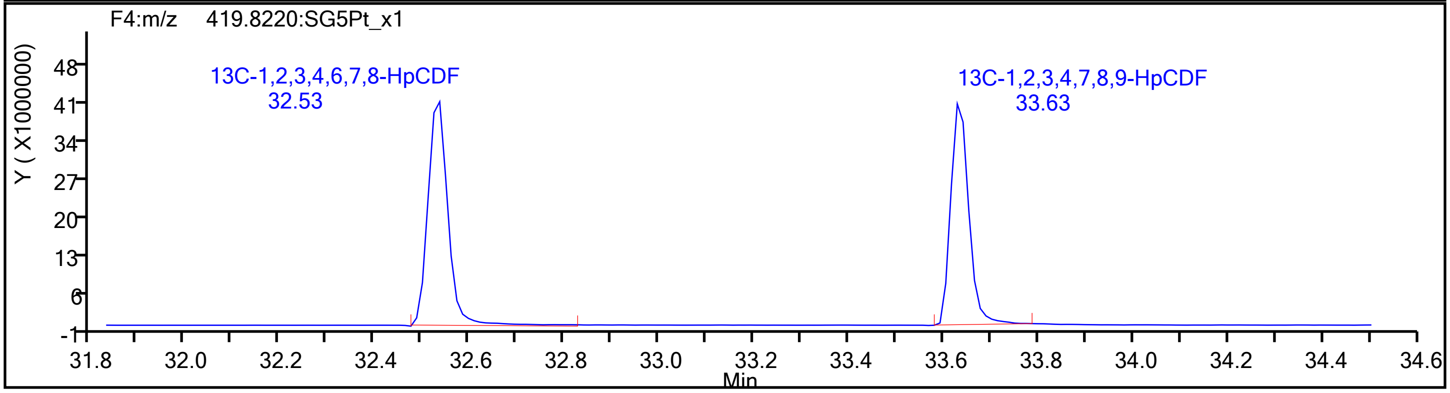

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 05:51:00 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-1

Worklist#: 420482 Sample Line#: 14

Column Type: Column Dia:

HpCDF

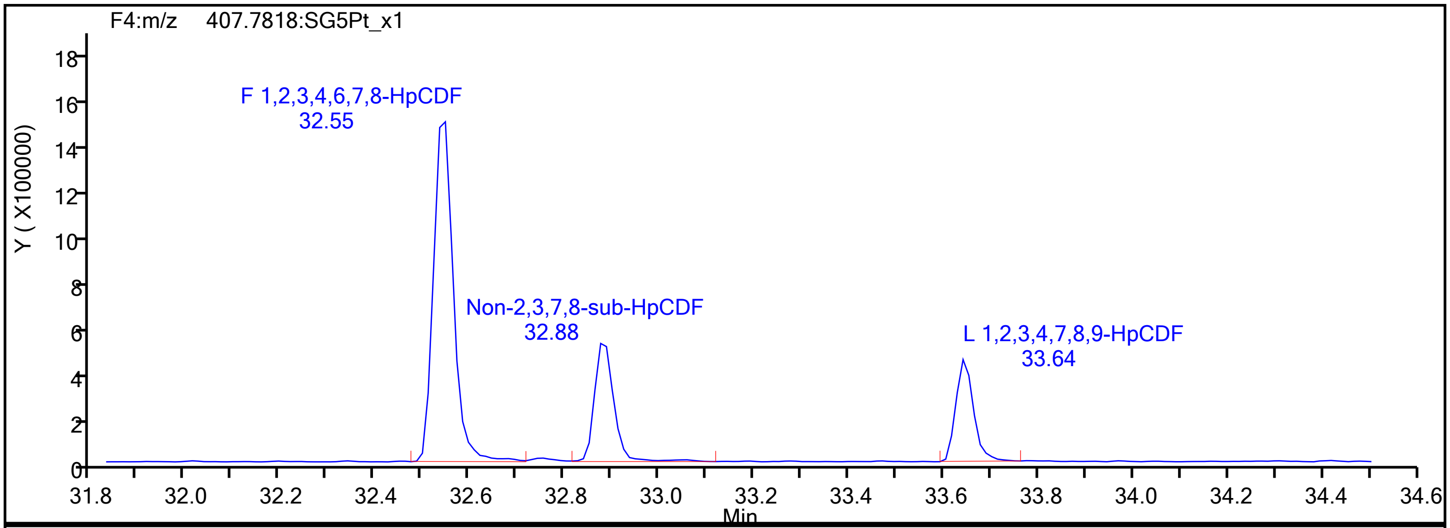

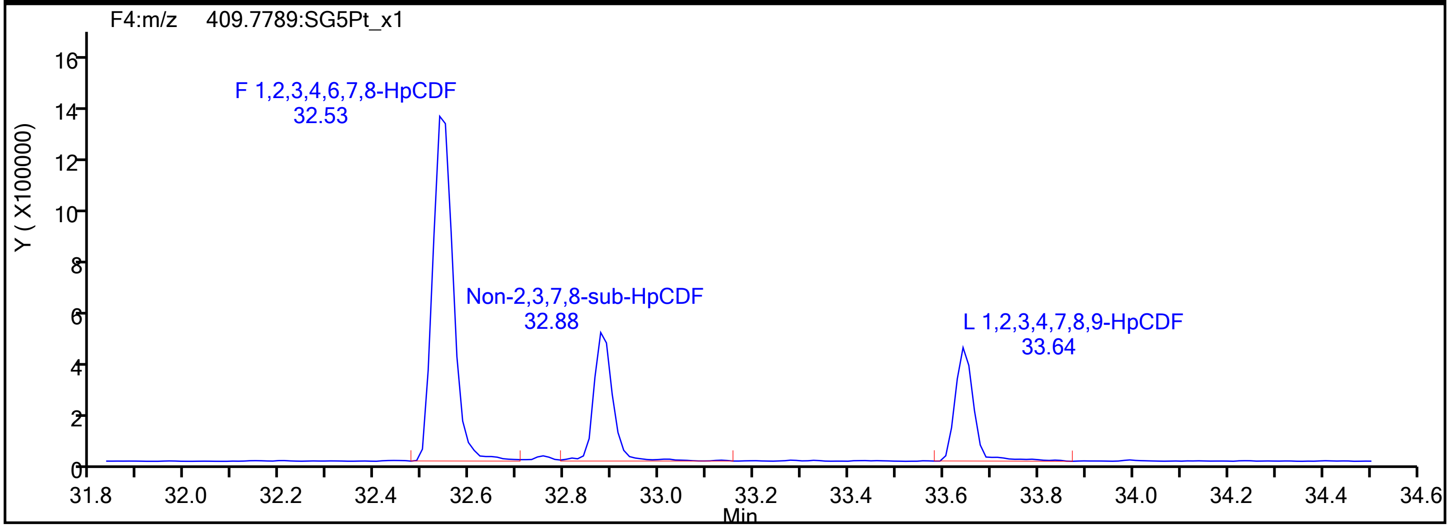

HpCDF Interference Mass

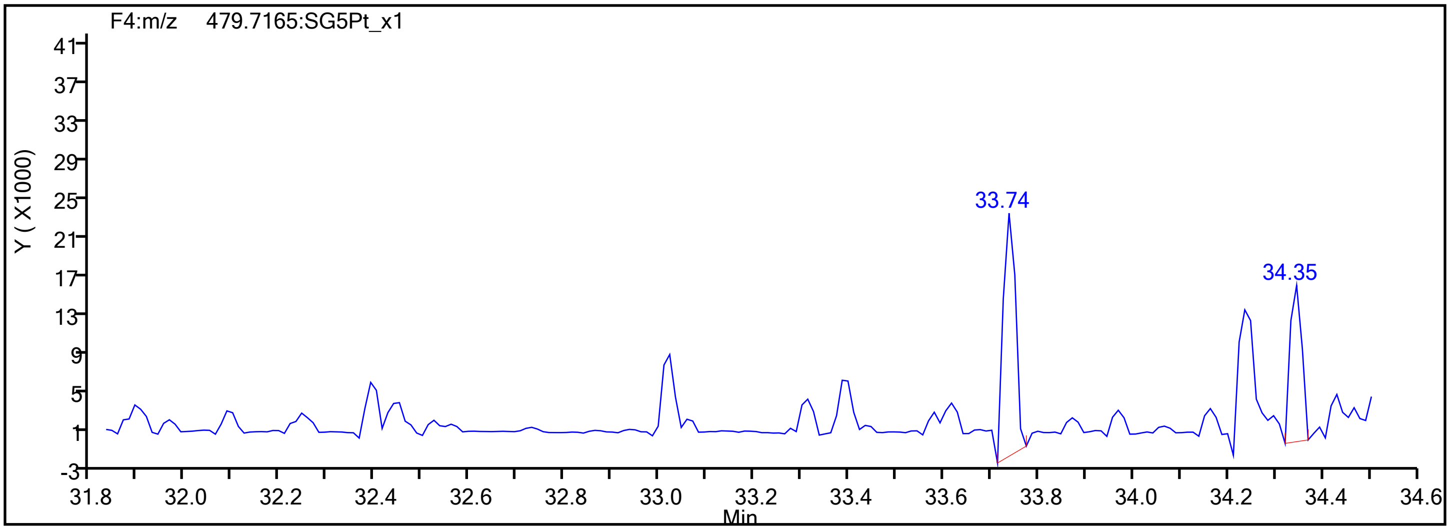

Report Date: 13-Oct-2020 11:47:14   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

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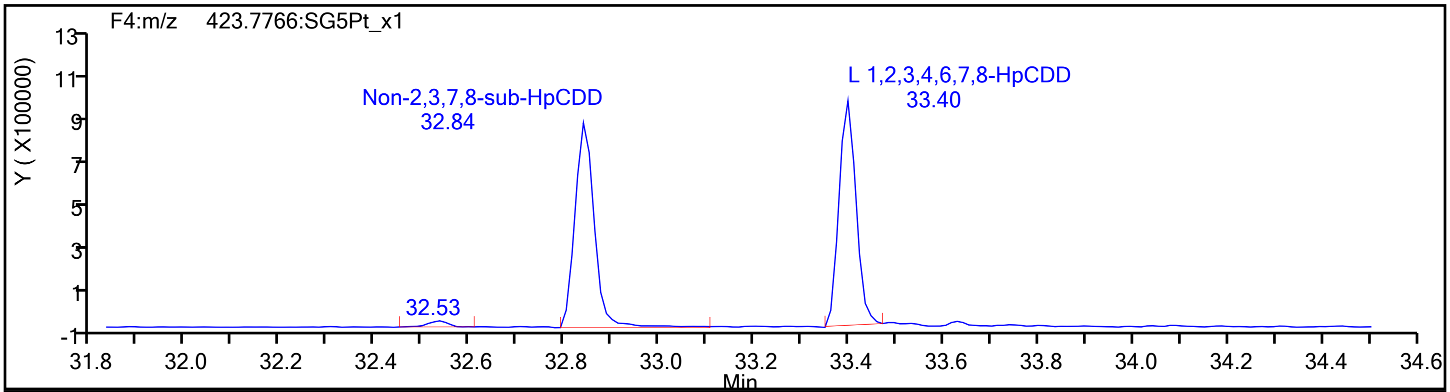

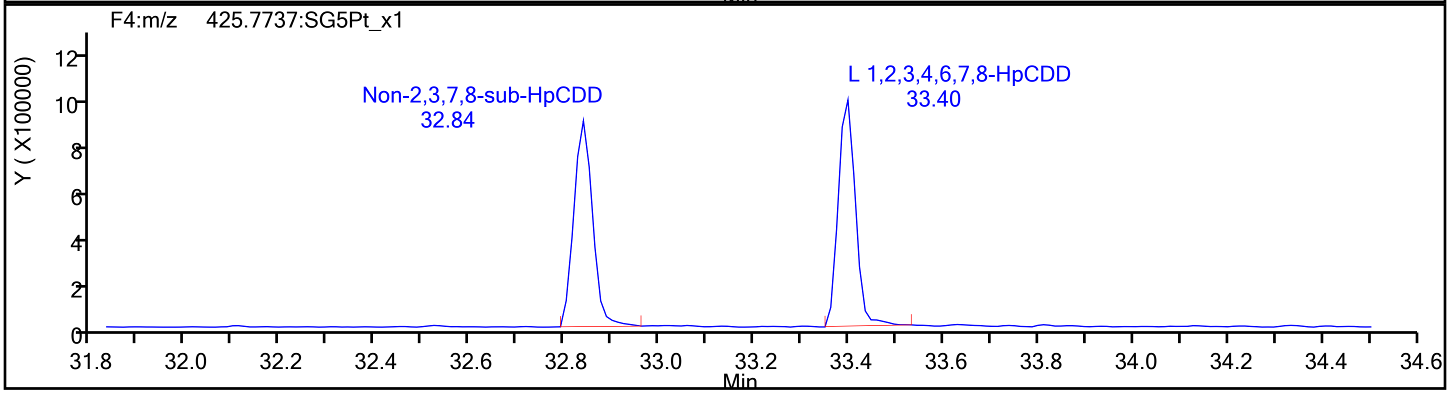

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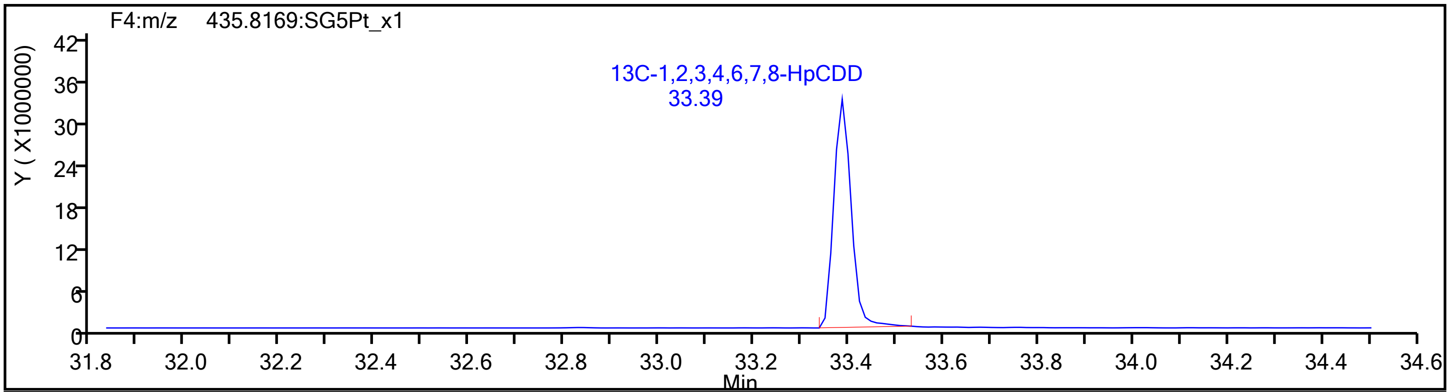

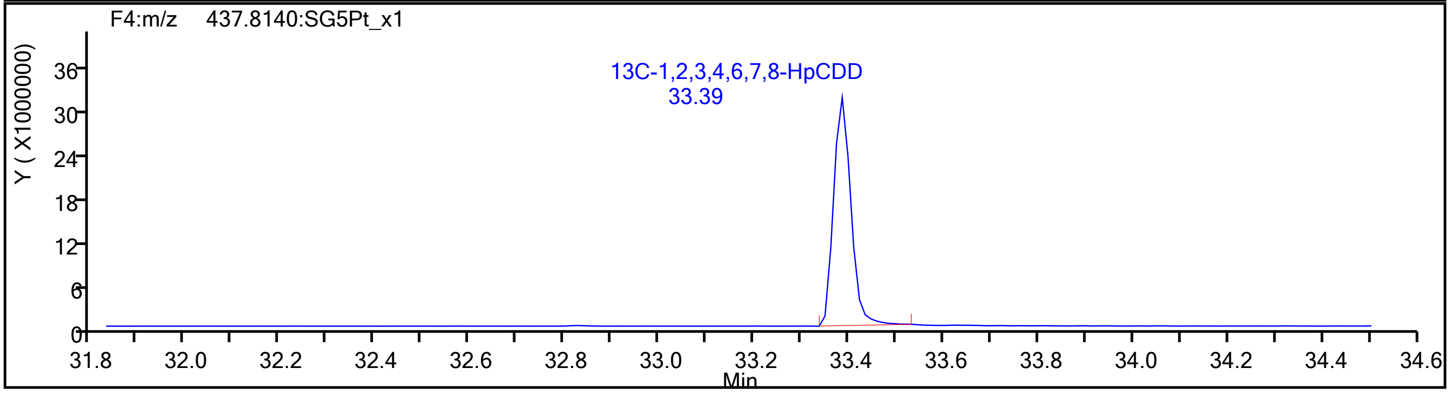

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 05:51:00

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-1

Worklist#: 420482

Sample Line#: 14

Column Type:

Column Dia:

OCDF

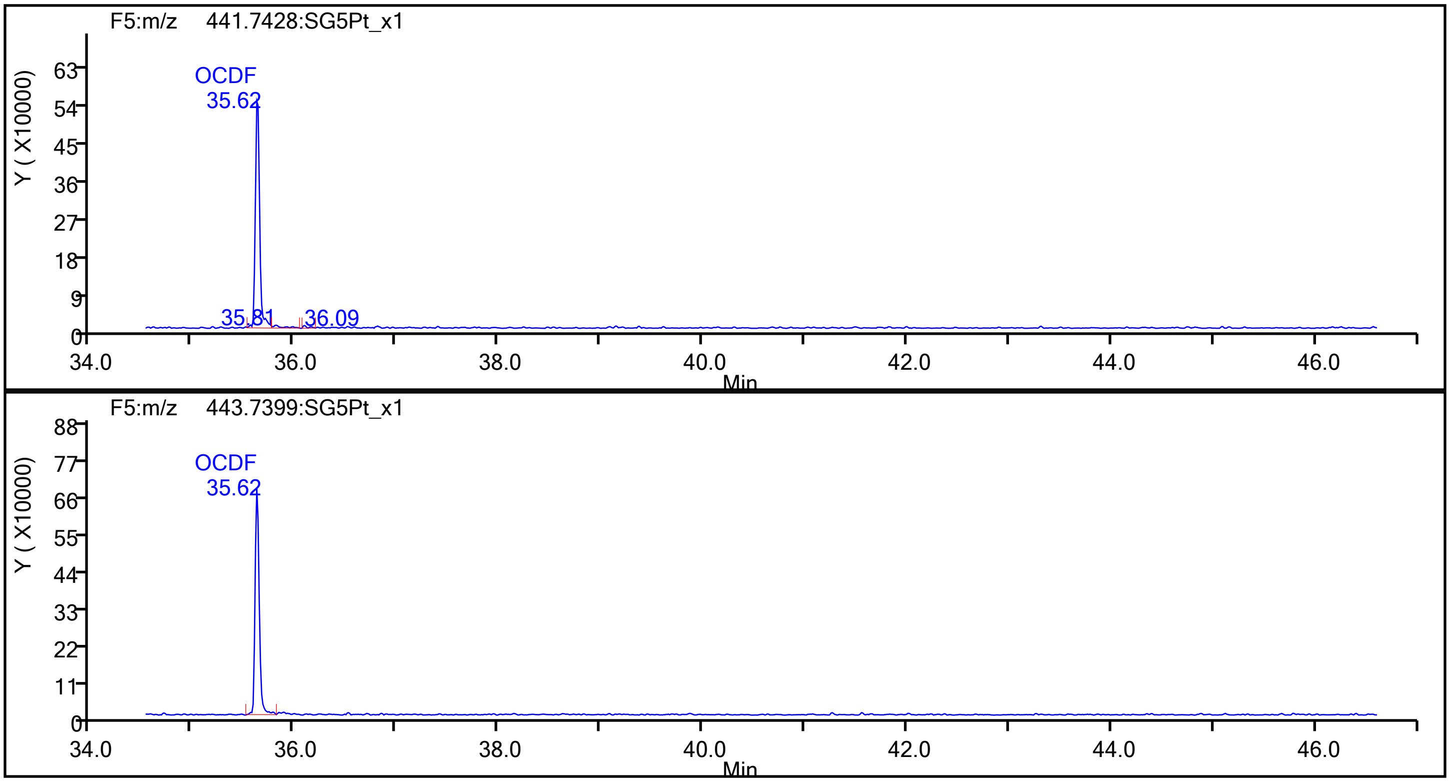

OCDF Standards

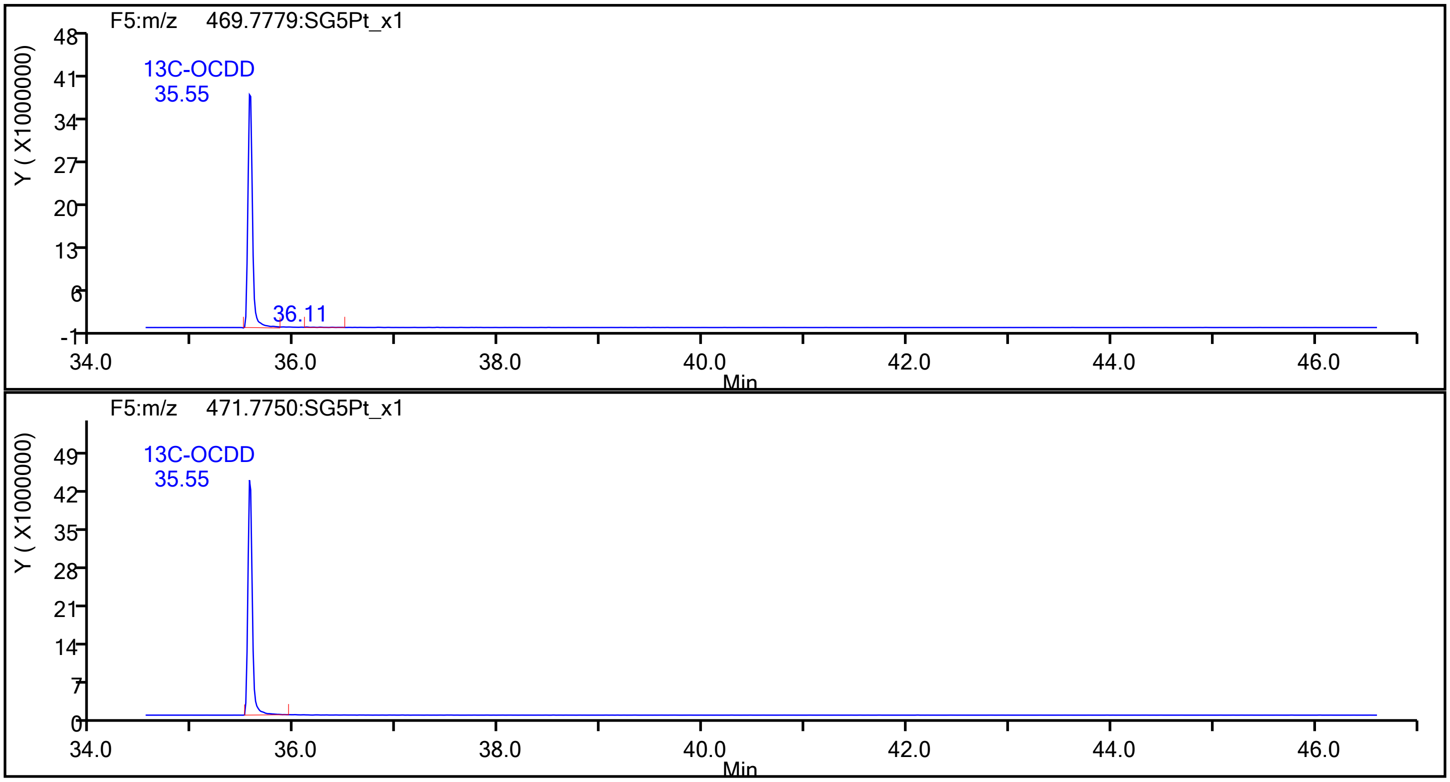

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
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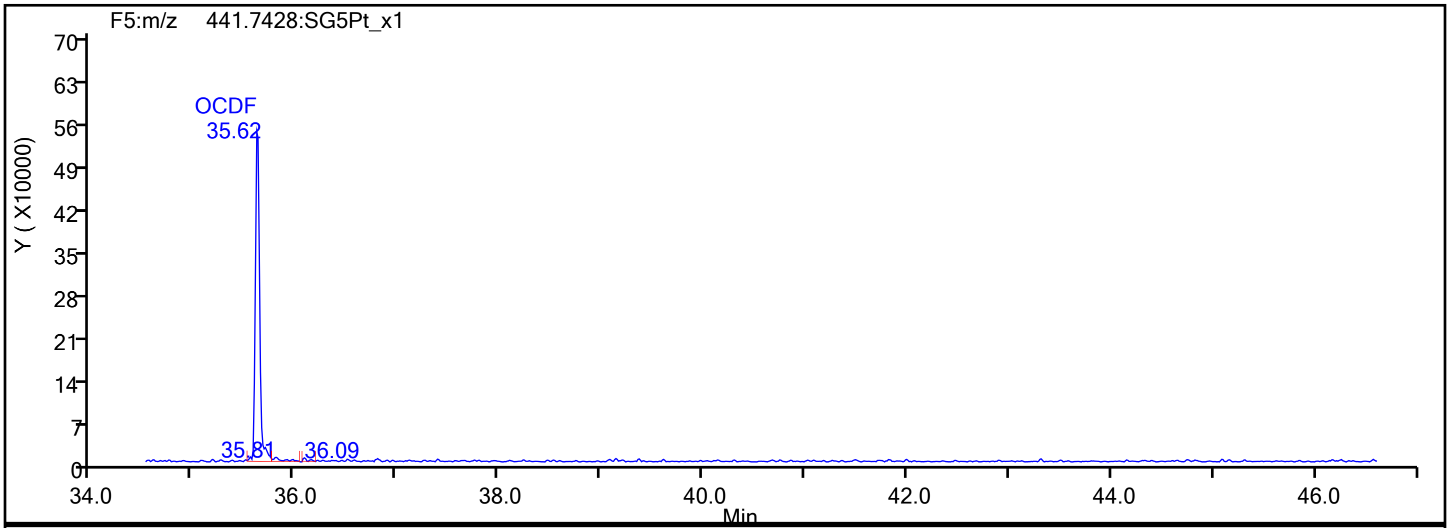

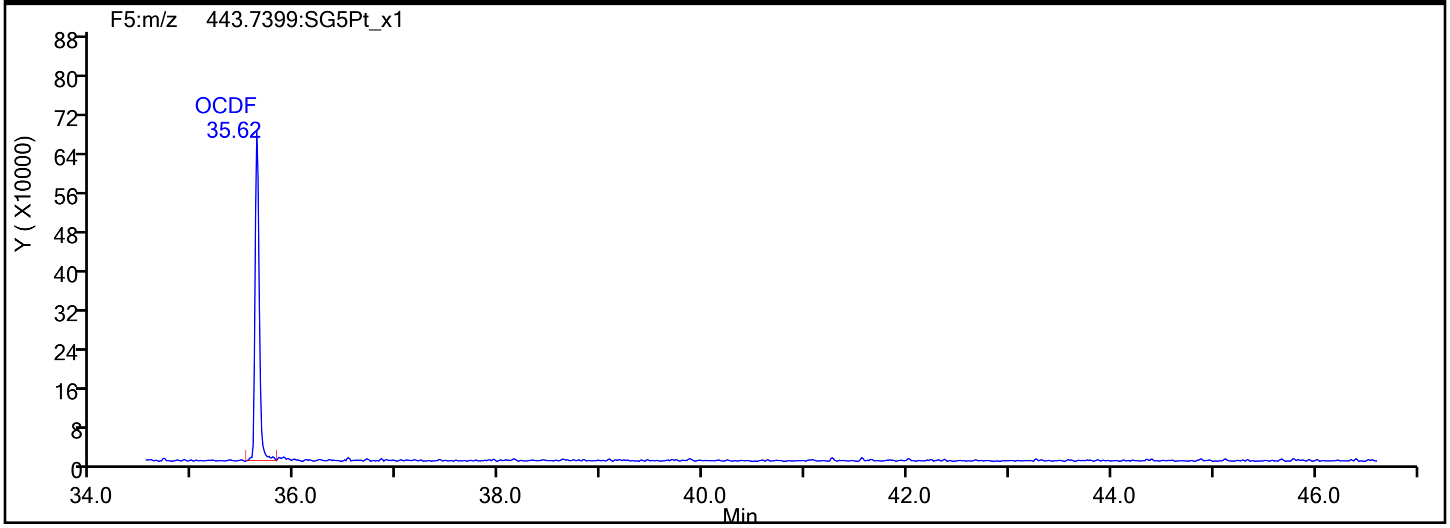

OCDF Interference Mass

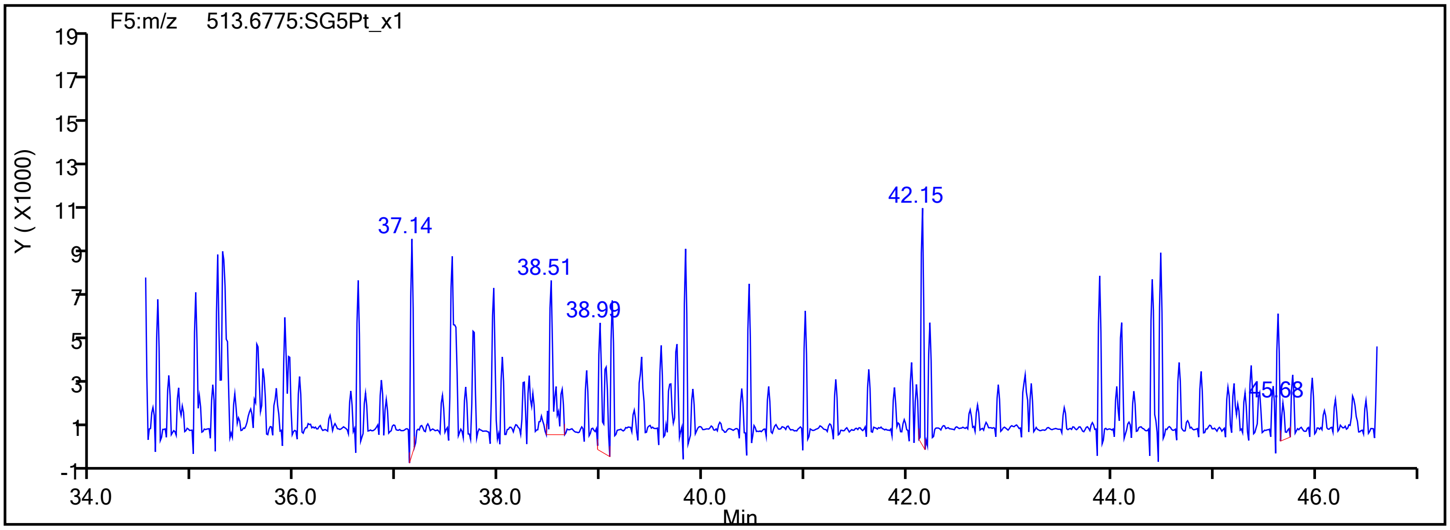

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Eurofins TestAmerica, Sacramento

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Worklist#:	420482	Sample Line#:	14
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OCDD

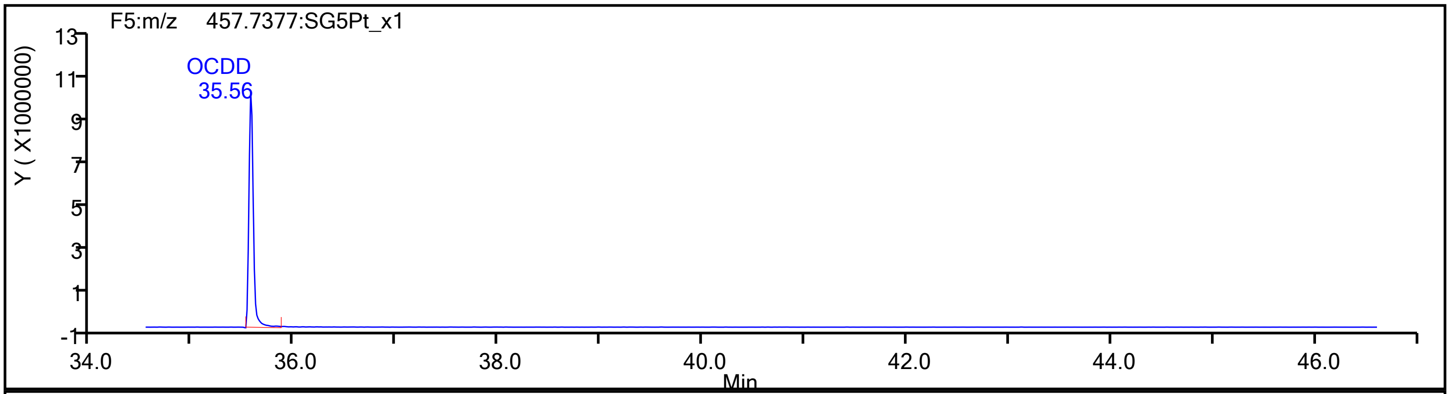

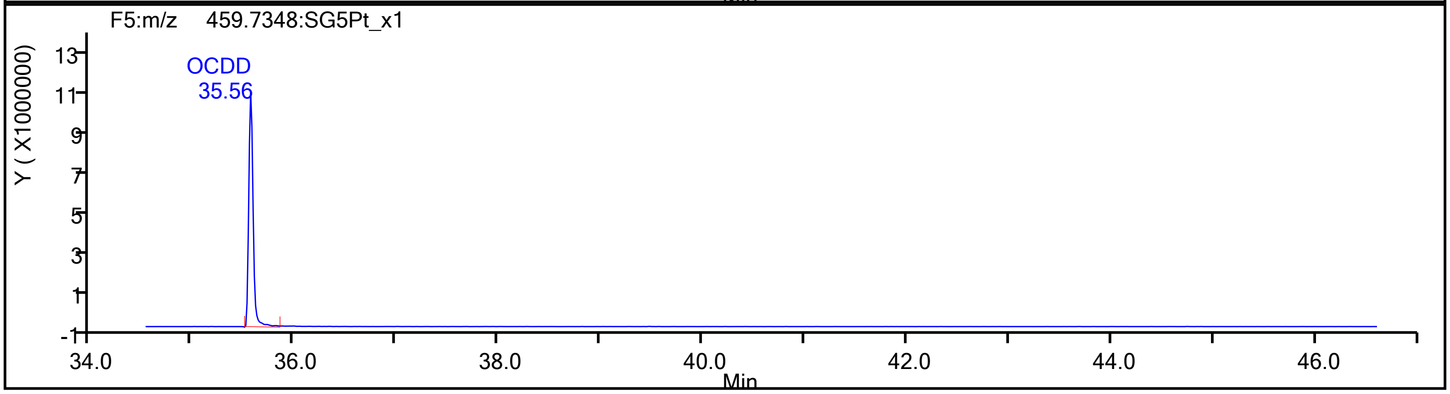

OCDD Standards

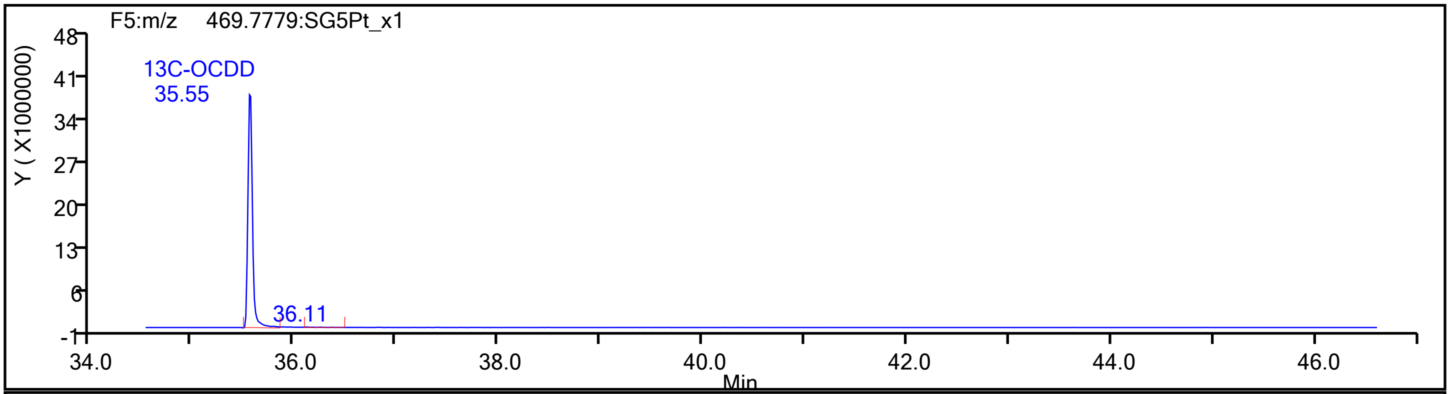

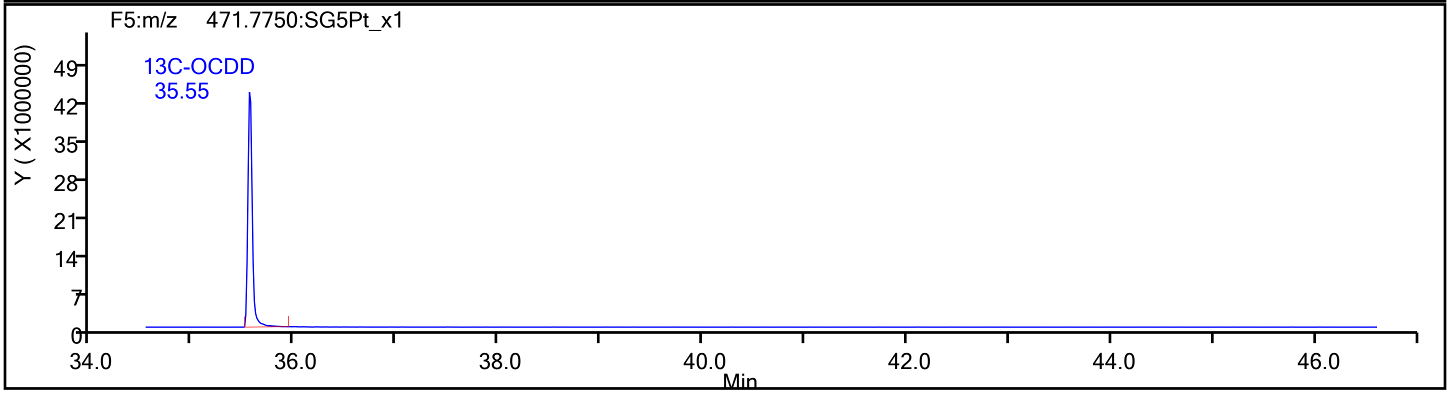

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

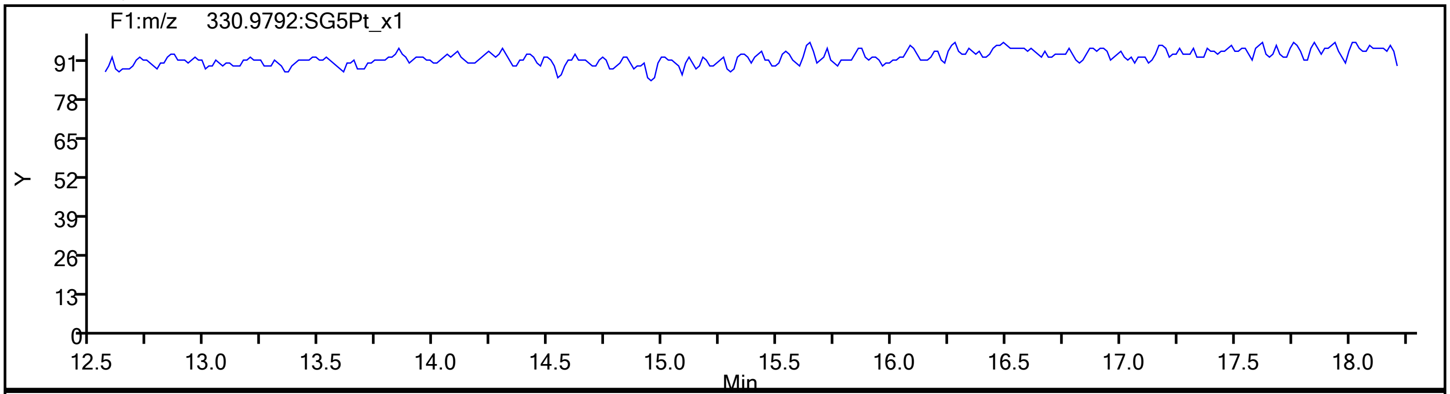

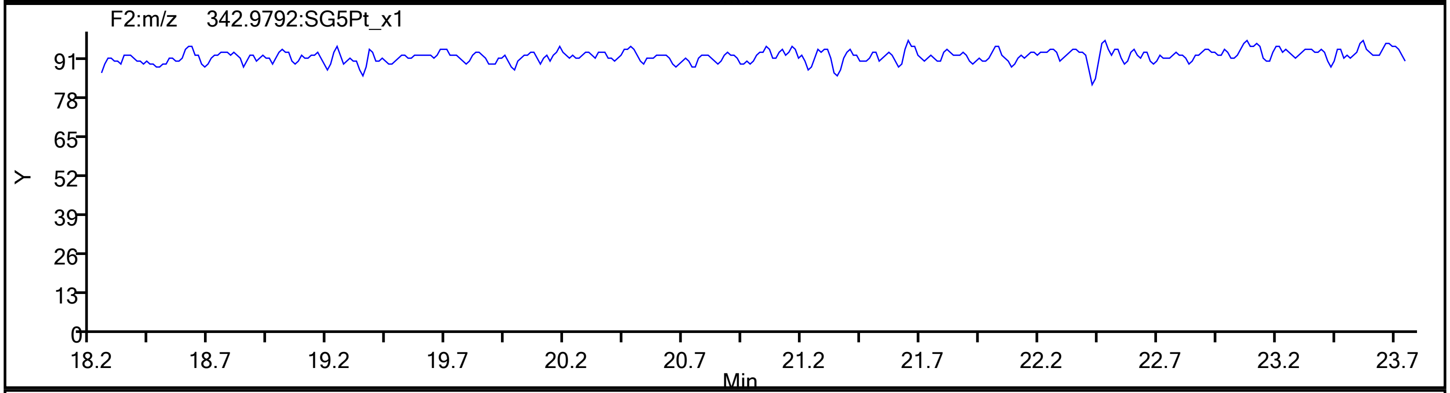

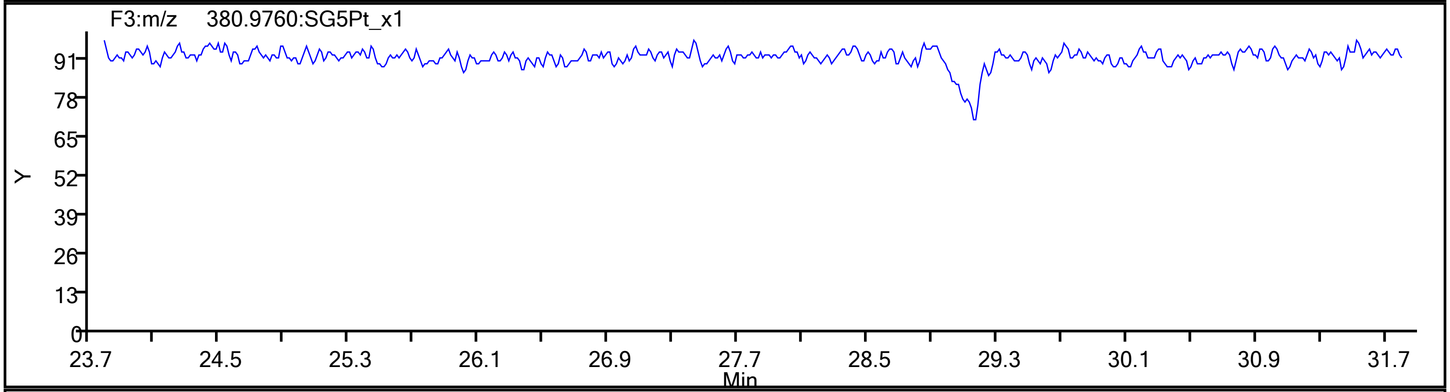

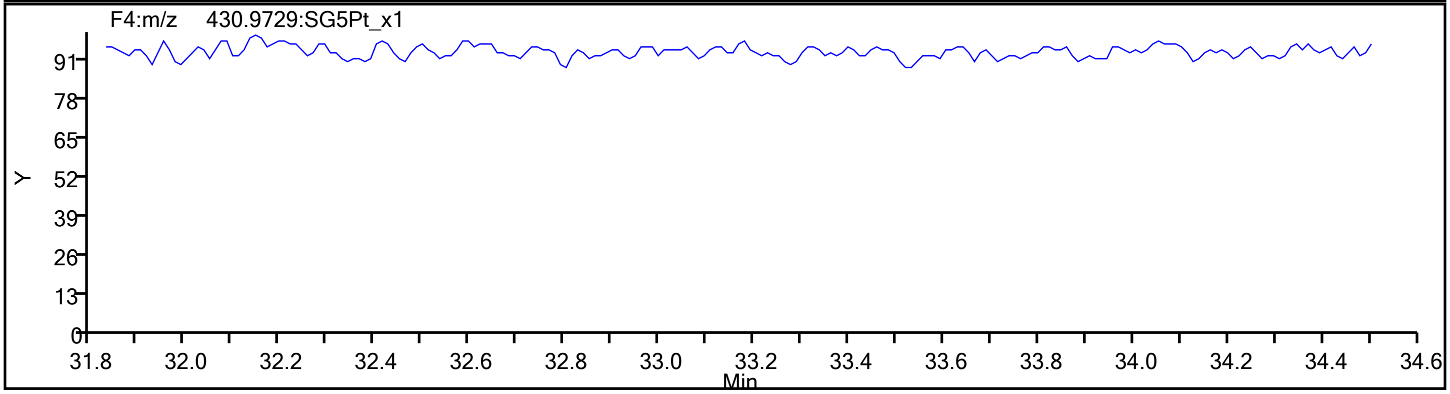

Report Date: 13-Oct-2020 11:47:14 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_14.d		
Injection Date:	09-Oct-2020 05:51:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	420482	Sample Line#:	14
Column Type:		Column Dia:	

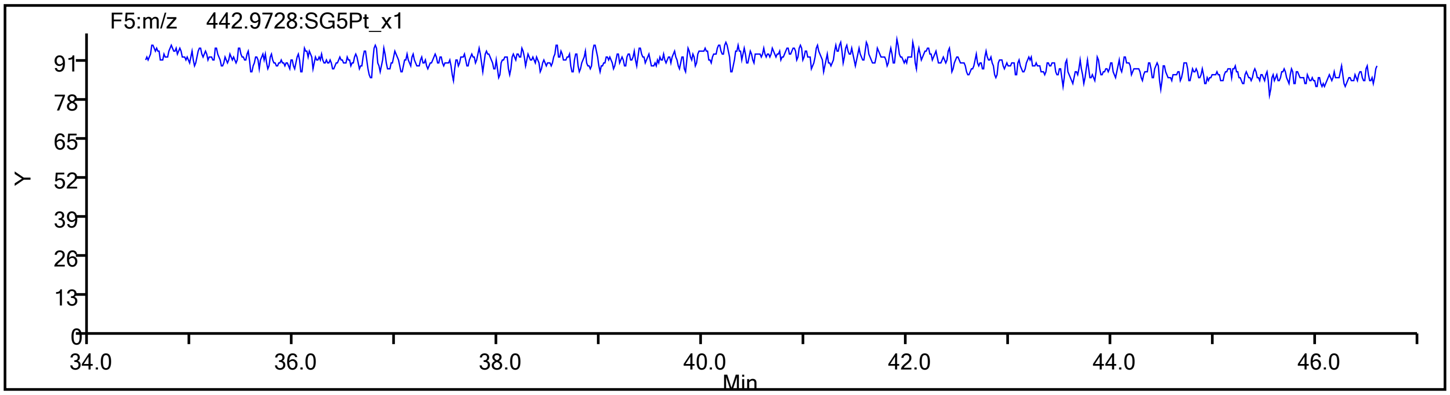

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-5-1 RA	Lab Sample ID: 320-65130-4 RA
Matrix: Water	Lab File ID: 13OC20A11D2_013.d
Analysis Method: 1613B	Date Collected: 09/11/2020 12:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1044.3(mL)	Date Analyzed: 10/14/2020 03:22
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421876	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	3300	B	9.6	3.3

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	84		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	117		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_013.d				
Lims ID:	320-65130-A-4-A				
Client ID:	11215702-Tank#1-valve-5-1				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 03:22:07	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-4-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:35:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.913	72096291	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.038	95491672	0.77	1.5708	84.3	84.3	0.5035	0.5035	84.32	
2,3,7,8-TCDF	16.066	163499327	0.77	0.9943	172.2	172.2	0.1698	0.1698		
D 13C-2,3,7,8-TCDD	14.666	54955724	0.82	0.9834	77.5	77.5	2.047	2.047	77.52	
2,3,7,8-TCDD	14.694	42068694	0.77	1.2822	59.7	59.7	0.1922	0.1922		
$ 37Cl4-2,3,7,8-TCDD	14.680	33557407		0.9945	46.8	46.8	0.1129	0.1129	117	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_013.d				
Lims ID:	320-65130-A-4-A				
Client ID:	11215702-Tank#1-valve-5-1				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 03:22:07	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-4-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:35:40		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.913	14.928	-1		32168702	8339964	81398	203495	102		
333.9339	14.913	14.928	-1		39927589	10333568	68968	172420	150	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.038	16.067	-2	1.075	41681938	9481846	34516	86290	275		
317.9389	16.038	16.067	-2	1.075	53809734	12309212	24562	61405	501	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.066	16.081	-1	1.002	71116156	16547428	6450	16125	2565		
305.8987	16.066	16.081	-1	1.002	92383171	21248548	8265	20662	2571	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.666	14.681	-1	0.983	24759012	6190601	81398	203495	76		
333.9339	14.666	14.681	-1	0.983	30196712	7808739	68968	172420	113	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.694	14.709	-1	1.002	18361838	4529835	7562	18905	599		
321.8936	14.680	14.709	-2	1.001	23706856	5868234	6240	15600	940	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.680	14.709	-2	0.984	33557407	8471533	8387	20967	1010		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_013.d
Injection Date: 14-Oct-2020 03:22:07 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-1
Worklist#: 421876 Sample Line#: 13
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

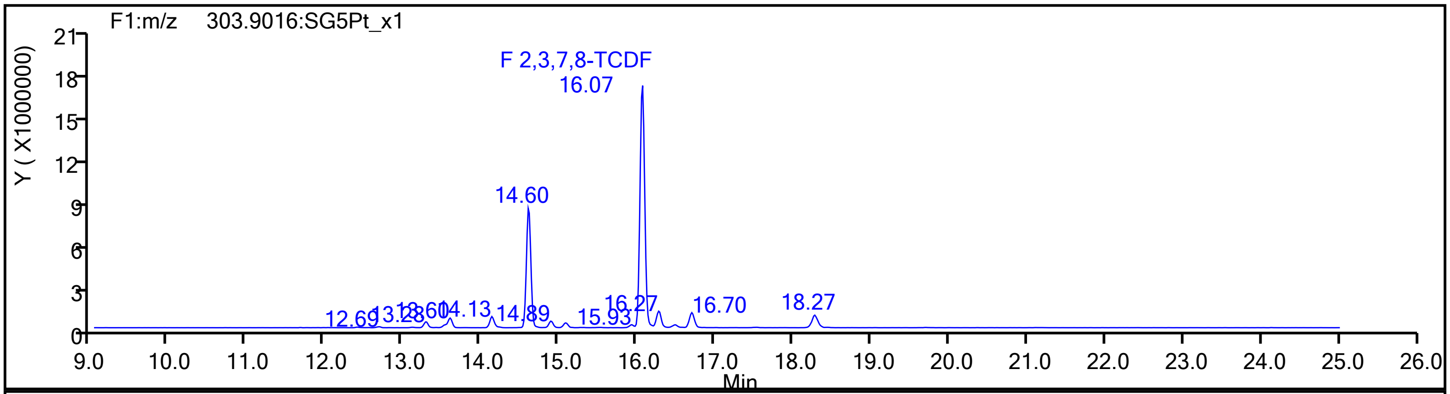

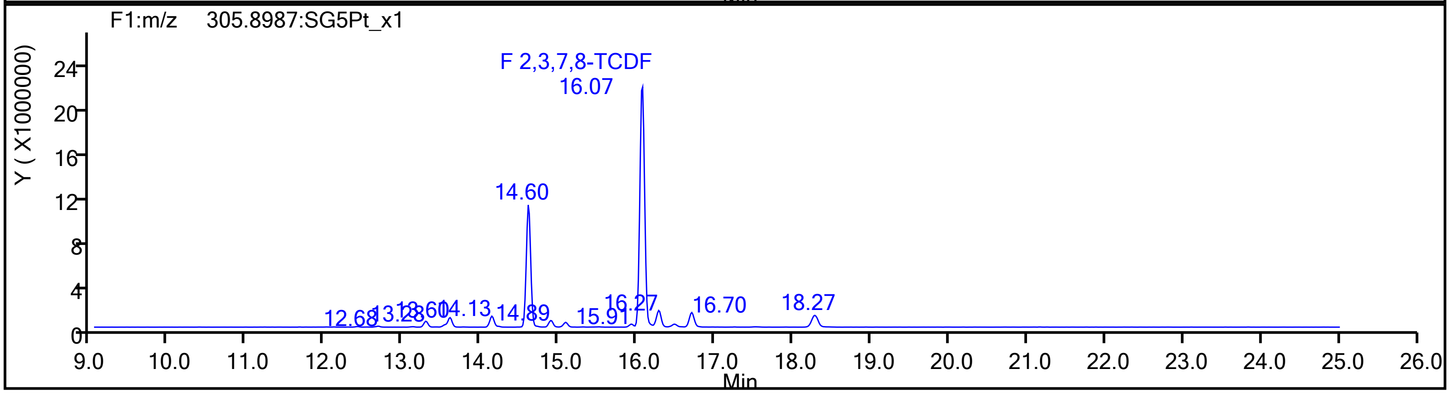

TCDF Standards

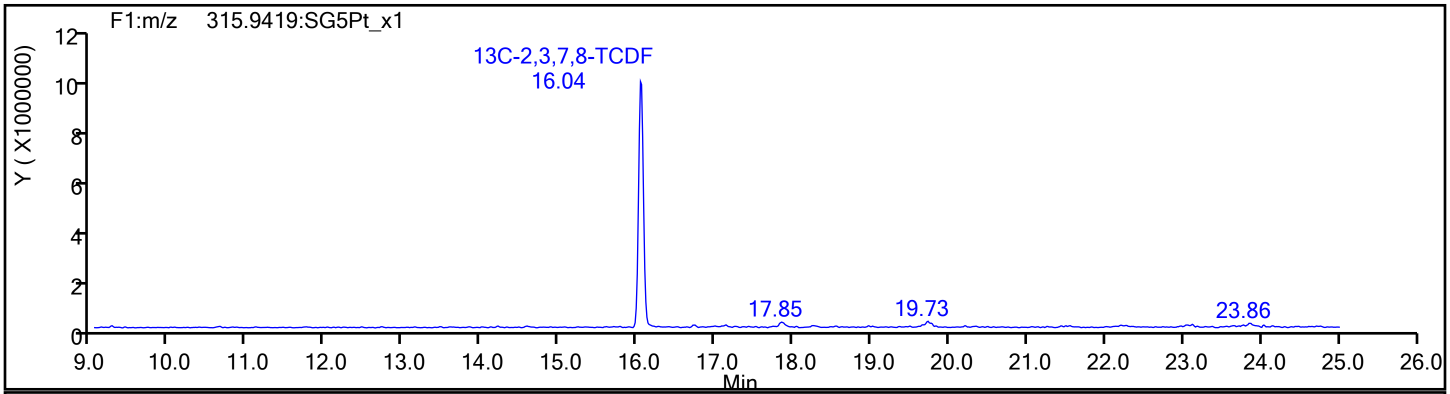

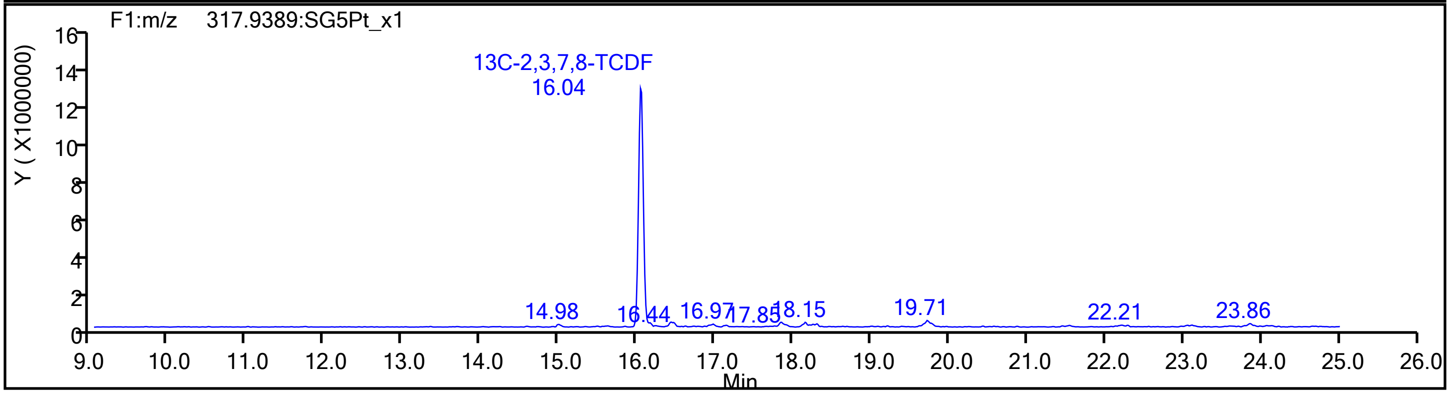

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_013.d		
Injection Date:	14-Oct-2020 03:22:07	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	421876	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

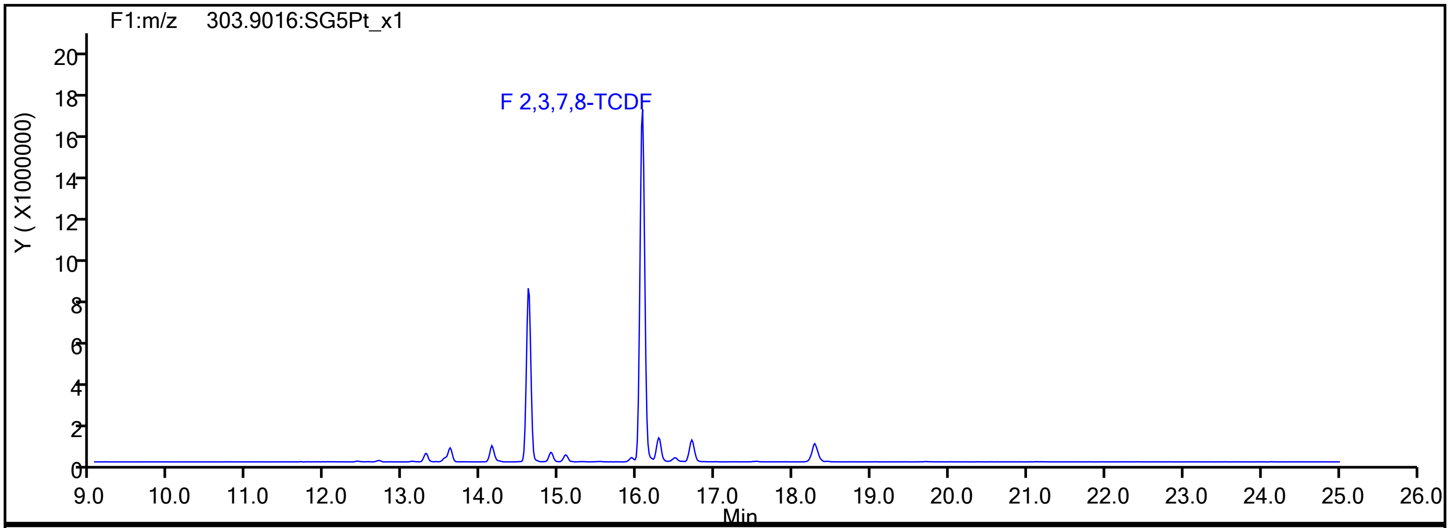

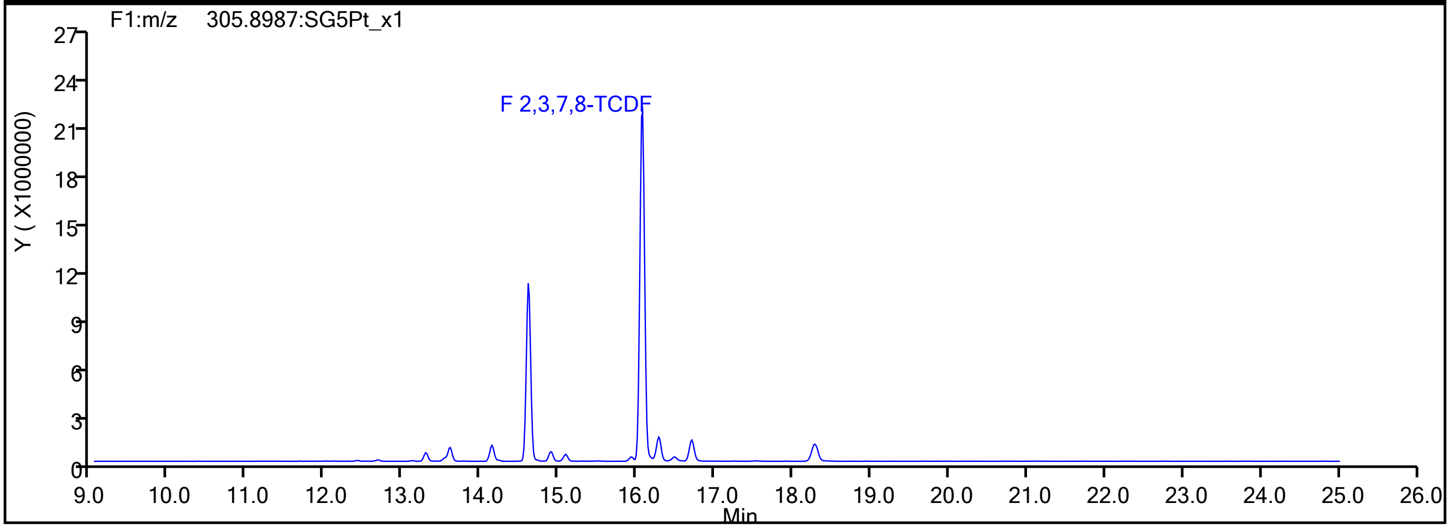

TCDF Interference Mass

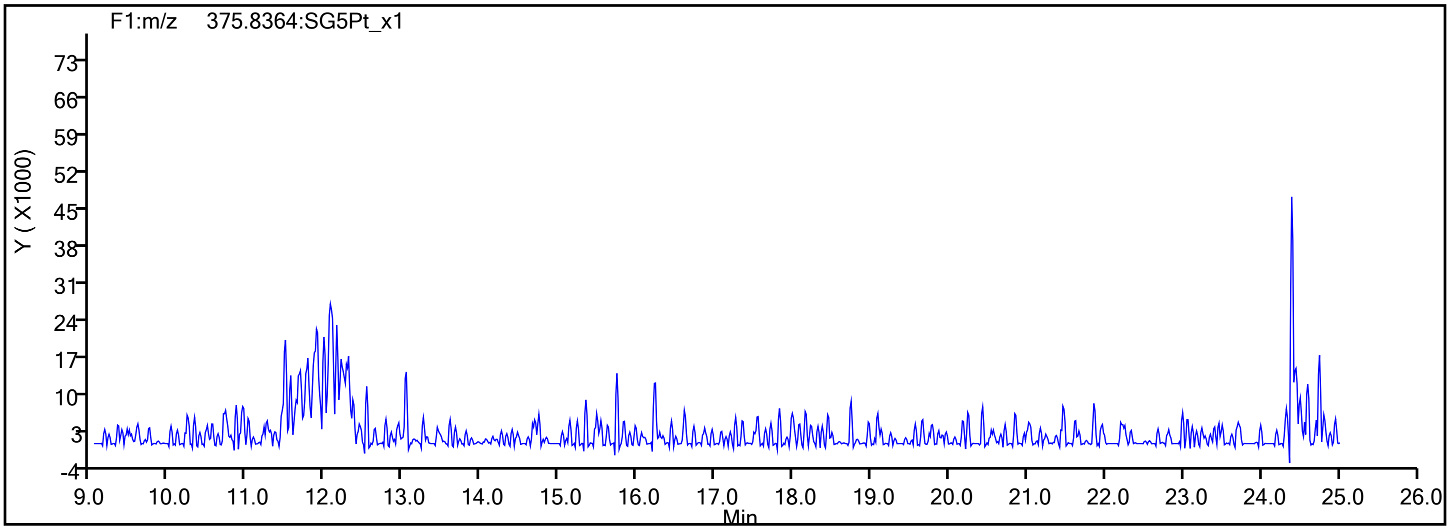

Report Date: 14-Oct-2020 17:38:59

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_013.d		
Injection Date:	14-Oct-2020 03:22:07	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	421876	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

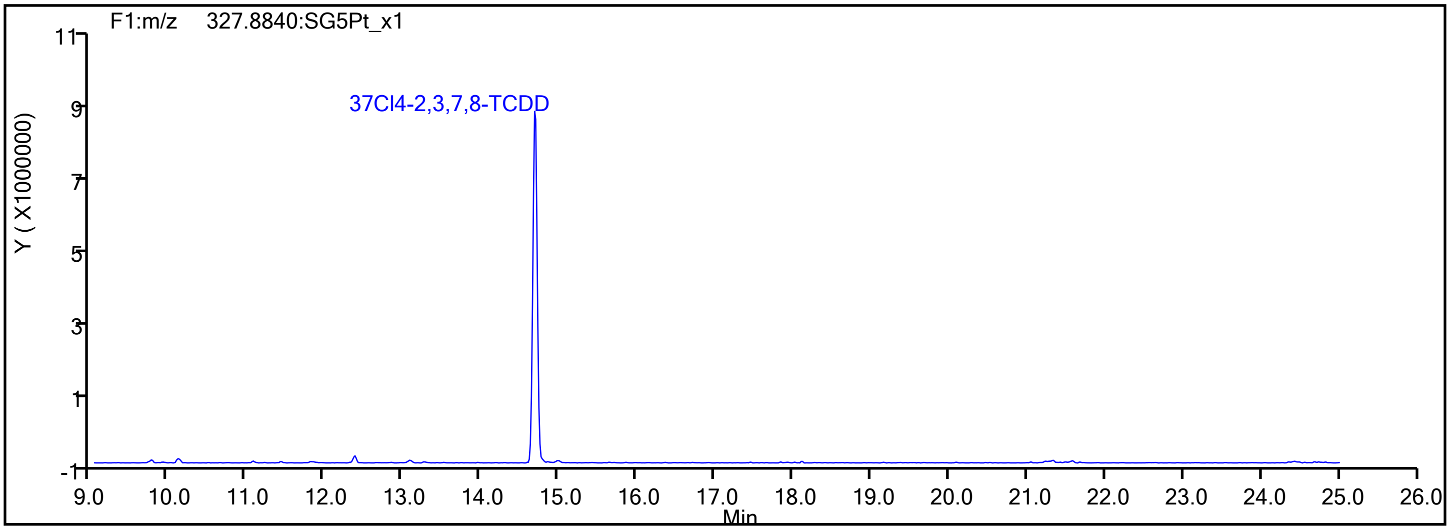

37Cl4-TCDD Standards

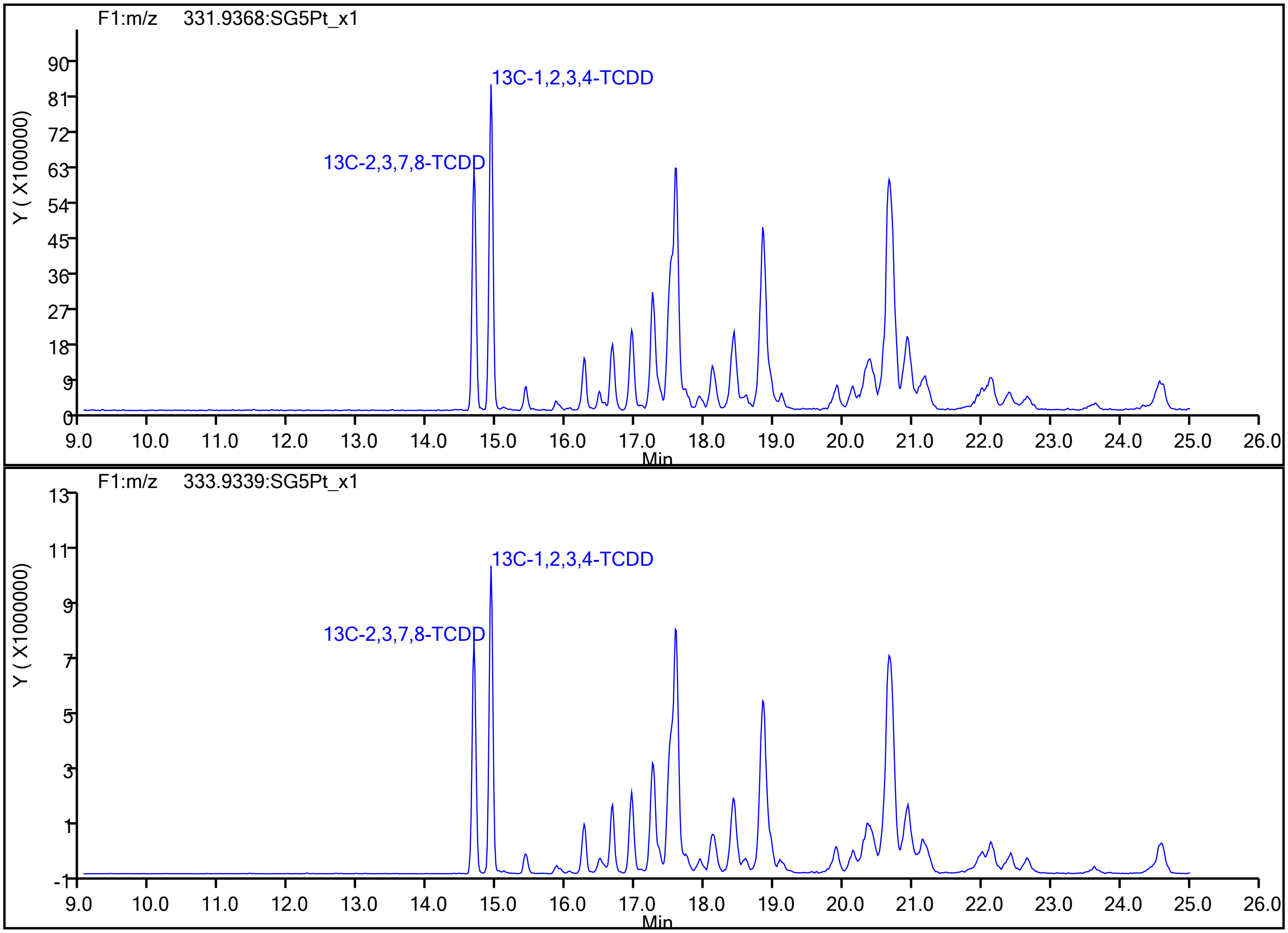

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_013.d		
Injection Date:	14-Oct-2020 03:22:07	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-1		
Worklist#:	421876	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-2-2 Lab Sample ID: 320-65130-5

Matrix: Water Lab File ID: 08OC20A3D5_15.d

Analysis Method: 1613B Date Collected: 09/11/2020 13:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 975.6(mL) Date Analyzed: 10/09/2020 06:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420482 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	24		10	0.44
40321-76-4	1,2,3,7,8-PeCDD	ND		51	0.44
57117-41-6	1,2,3,7,8-PeCDF	2.4	J q B	51	0.31
57117-31-4	2,3,4,7,8-PeCDF	1.5	J q B	51	0.35
39227-28-6	1,2,3,4,7,8-HxCDD	ND		51	0.55
57653-85-7	1,2,3,6,7,8-HxCDD	ND		51	0.62
19408-74-3	1,2,3,7,8,9-HxCDD	ND		51	0.54
70648-26-9	1,2,3,4,7,8-HxCDF	4.7	J B	51	0.33
57117-44-9	1,2,3,6,7,8-HxCDF	ND		51	0.34
72918-21-9	1,2,3,7,8,9-HxCDF	0.49	J q B	51	0.26
60851-34-5	2,3,4,6,7,8-HxCDF	ND		51	0.37
35822-46-9	1,2,3,4,6,7,8-HpCDD	2.4	J B	51	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.6	J q B	51	0.16
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.85	J B	51	0.16
3268-87-9	OCDD	28	J B	100	0.29
39001-02-0	OCDF	1.5	J q B	100	0.18
41903-57-5	Total TCDD	30	B	10	0.44
30402-14-3	Total TCDF	120	q B	10	0.58
36088-22-9	Total PeCDD	ND		51	0.44
30402-15-4	Total PeCDF	4.9	J q B	51	0.33
34465-46-8	Total HxCDD	ND		51	0.62
55684-94-1	Total HxCDF	5.2	J q B	51	0.32
37871-00-4	Total HpCDD	4.7	J B	51	0.19
38998-75-3	Total HpCDF	2.9	J q B	51	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#1-valve-2-2
Lab Sample ID: 320-65130-5
Matrix: Water
Lab File ID: 08OC20A3D5_15.d
Analysis Method: 1613B
Date Collected: 09/11/2020 13:30
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 975.6(mL)
Date Analyzed: 10/09/2020 06:38
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		25-164
89059-46-1	13C-2,3,7,8-TCDF	76		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	77		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	71		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	90		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	92		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	83		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	80		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	86		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	85		26-138
114423-97-1	13C-OCDD	101		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		35-197

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Sample Type: Client
Inject. Date: 09-Oct-2020 06:38:38 ALS Bottle#: 12 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-5-A 320-65130-A-5-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:21:37 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:57:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	289986167	0.79	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	329200413	0.74	1.4844	76.5	76.5	0.2278	0.2278	76.48	
2,3,7,8-TCDF	15.492	10227712	0.71	0.9534	3.259	3.259	0.0283	0.0283		
A Non-2,3,7,8-sub-TCDF	15.227	8364874	0.77	0.9534	2.721	2.665	0.0283	1.711		RQ
S Total TCDF					5.980	5.924	0.0283	0.0283		RQ
D 13C-2,3,7,8-TCDD	16.082	259179135	0.80	1.0875	82.2	82.2	0.3041	0.3041	82.19	
2,3,7,8-TCDD	16.097	3129413	0.78	1.0205	1.183	1.183	0.0216	0.0216		
$ 37Cl4-2,3,7,8-TCDD	16.097	127338723		1.1216	39.1	39.1	0.0438	0.0438	97.87	
A Non-2,3,7,8-sub-TCDD	15.620	718777	0.78	1.0205	0.2718	0.2718	0.0216	0.0973		
S Total TCDD					1.455	1.455	0.0216	0.0216		
D 13C-1,2,3,7,8-PeCDF	19.686	286761364	1.55	1.3943	70.9	70.9	0.1974	0.1974	70.92	
1,2,3,7,8-PeCDF	19.700	365853	1.55	1.0794	0.1293	0.1182	0.0152	0.0152		RQM
D 13C-2,3,4,7,8-PeCDF	20.805	272714805	1.57	1.3370	70.3	70.3	0.2058	0.2058	70.34	
2,3,4,7,8-PeCDF	20.832	214989	1.55	1.0966	0.0824	0.0719	0.0171	0.0171		RQ
A F1 PeCDFs	17.730						0.0122	0.0122		
A Non-2,3,7,8-sub-PeCDF	20.349	141929	1.36	1.0880	0.0466	0.0466	0.0160	0.0466		M
S Total PeCDF					0.2583	0.2367	0.0161	0.0161		RQ
D 13C-1,2,3,7,8-PeCDD	21.418	189635958	1.56	0.8475	77.2	77.2	0.1127	0.1127	77.16	
1,2,3,7,8-PeCDD	21.459						0.0215	0.0215		RQU
A Non-2,3,7,8-sub-PeCDD	20.518						0.0215	0.0215		U
S Total PeCDD							0.0215	0.0215		
D 13C-1,2,3,4,7,8-HxCDF	26.706	230050119	0.54	1.3065	78.9	78.9	0.4035	0.4035	78.91	
1,2,3,4,7,8-HxCDF	26.733	664330	1.25	1.2552	0.2301	0.2301	0.0160	0.0160		
D 13C-1,2,3,6,7,8-HxCDF	26.986	252286957	0.52	1.4213	79.5	79.5	0.3709	0.3709	79.55	
1,2,3,6,7,8-HxCDF	27.012						0.0165	0.0165		RQU
D 13C-2,3,4,6,7,8-HxCDF	28.530	233808645	0.53	1.3142	79.7	79.7	0.4011	0.4011	79.73	
2,3,4,6,7,8-HxCDF	28.583						0.0182	0.0182		U
D 13C-1,2,3,7,8,9-HxCDF	30.381	244609865	0.51	1.3204	83.0	83.0	0.3992	0.3992	83.01	
1,2,3,7,8,9-HxCDF	30.408	71836	1.24	1.2319	0.0272	0.0238	0.0127	0.0127		RQM
A Non-2,3,7,8-sub-HxCDF	27.465						0.0156	0.0156		U

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					0.2573	0.2539	0.0158	0.0158		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.062	223149464	1.25	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.023	174832239	1.29	0.8660	90.5	90.5	0.3264	0.3264	90.47	a
1,2,3,4,7,8-HxCDD	29.049						0.0269	0.0269		U
D 13C-1,2,3,6,7,8-HxCDD	29.302	201717684	1.24	0.9827	92.0	92.0	0.2876	0.2876	91.99	a
1,2,3,6,7,8-HxCDD	29.356						0.0301	0.0301		
1,2,3,7,8,9-HxCDD	30.101						0.0261	0.0261		
A Non-2,3,7,8-sub-HxCDD	27.931						0.0276	0.0276		U
S Total HxCDD							0.0301	0.0301		
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	179637754	0.46	0.9410	85.5	85.5	1.262	1.262	85.54	
1,2,3,4,6,7,8-HpCDF	32.547	209795	1.04	1.4783	0.0914	0.0790	0.007644	0.007644		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	33.629	166080779	0.46	0.8751	85.0	85.0	1.358	1.358	85.05	
1,2,3,4,7,8,9-HpCDF	33.641	94718	0.99	1.3784	0.0414	0.0414	0.007813	0.007813		M
A Non-2,3,7,8-sub-HpCDF	33.100	47585	1.04	1.4284	0.0240	0.0193	0.007721	0.0193		RQM
S Total HpCDF					0.1568	0.1396	0.007728	0.007728		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	179648601	1.10	0.9049	89.0	89.0	2.142	2.142	88.97	
1,2,3,4,6,7,8-HpCDD	33.398	230850	0.96	1.0862	0.1183	0.1183	0.009367	0.009367		M
A Non-2,3,7,8-sub-HpCDD	33.339	220028	1.07	1.0862	0.1128	0.1128	0.009367	0.1128		M
S Total HpCDD					0.2311	0.2311	0.009367	0.009367		
D 13C-OCDD	35.546	261554816	0.92	0.5783	202.7	202.7	1.563	1.563	101	
OCDF	35.630	162805	0.89	1.7248	0.0813	0.0722	0.008724	0.008724		RQM
OCDD	35.558	2230030	0.90	1.2576	1.356	1.356	0.0143	0.0143		M
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Lims ID:	320-65130-A-5-A				
Client ID:	11215702-Tank#1-valve-2-2				
Sample Type:	Client				
Inject. Date:	09-Oct-2020 06:38:38	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-5-A 320-65130-A-5-A				
Misc. Info.:	08OC20A3D5				
Operator ID:	ALM	Instrument ID:	3D5		
Method:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	13-Oct-2020 12:21:37	Calib Date:	05-Oct-2020 20:45:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Column 1 :		Det: F1:HRSIR			
Process Host:	CTX1637				

First Level Reviewer: shardaa Date: 12-Oct-2020 17:57:06

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		128419038	36765463	27779	69447	1323		
333.9339	15.915	15.930	-1		161567129	45851695	81501	203752	563	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	140351236	39519045	60311	150777	655		
317.9389	15.477	15.477	0	0.972	188849177	51515527	51447	128617	1001	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	4254668	1125137	5022	12555	224		
305.8987	15.492	15.507	-1	1.001	5973044	1510173	4811	12027	314	0.71(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	14.539	15.227	-41	0.939	186951	43205	5022	12555	9		
305.8987	14.524	15.227	-42	0.938	230819	62372	4811	12027	13	0.81(0.65-0.89)	
303.9016	14.736	15.227	-29	0.952	192334	51447	5022	12555	10		
	Empc Correction				156488	39276	5022	12555	8		
305.8987	14.736	15.227	-29	0.952	203232	51009	4811	12027	11	0.95(0.65-0.89)	
303.9016	14.932	15.227	-18	0.965	196106	51300	5022	12555	10		
305.8987	14.932	15.227	-18	0.965	300879	77625	4811	12027	16	0.65(0.65-0.89)	
303.9016	15.174	15.227	-3	0.980	2385541	680415	5022	12555	135		
305.8987	15.174	15.227	-3	0.980	2985259	847005	4811	12027	176	0.80(0.65-0.89)	
303.9016	15.356	15.227	8	0.992	117109	38154	5022	12555	8		
	Empc Correction				90893	27126	5022	12555	5		
305.8987	15.341	15.227	7	0.991	118043	35229	4811	12027	7	0.99(0.65-0.89)	
303.9016	15.855	15.227	38	1.024	330273	91440	5022	12555	18		
305.8987	15.855	15.227	38	1.024	436842	106493	4811	12027	22	0.76(0.65-0.89)	
303.9016	16.051	15.227	49	1.037	70359	18094	5022	12555	4		
305.8987	16.051	15.227	49	1.037	145186	33029	4811	12027	7	0.48(0.65-0.89)	
	Empc Correction				91375	23498	4811	12027	5		

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.004	15.227	106	1.099	311968	82939	5022	12555	17		
	Empc Correction				253105	64872	5022	12555	13		
305.8987	17.019	15.227	107	1.100	328709	84250	4811	12027	18	0.95(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.082	16.081	0	1.010	114819151	29468110	27779	69447	1061		
333.9339	16.082	16.081	0	1.010	144359984	37333161	81501	203752	458	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.097	0	1.001	1370417	378122	3145	7862	120		
321.8936	16.097	16.097	0	1.001	1758996	465037	2750	6875	169	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	127338723	32906529	16243	40607	2026		
A Non-2,3,7,8-sub-TCDD											
319.8965	14.222	15.620	-84	0.884	93565	31250	3145	7862	10		
321.8936	14.222	15.620	-84	0.884	124307	39772	2750	6875	14	0.75(0.65-0.89)	
319.8965	14.464	15.620	-69	0.899	110413	29231	3145	7862	9		
321.8936	14.464	15.620	-69	0.899	133169	37839	2750	6875	14	0.83(0.65-0.89)	
319.8965	16.399	15.620	47	1.020	111174	33285	3145	7862	11		
321.8936	16.384	15.620	46	1.019	146149	30946	2750	6875	11	0.76(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	174092531	36203256	54700	136750	662		
353.8970	19.686	19.700	-1	1.237	112668833	23202426	36246	90615	640	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											RQM
339.8597	19.700	19.727	-2	1.001	256741	55931	1374	3435	41		M
	Empc Correction				222381	47795	1374	3435	35		
341.8567	19.714	19.727	-1	1.001	143472	30836	2512	6280	12	1.79(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	166636832	31777546	54700	136750	581		
353.8970	20.805	20.818	-1	1.307	106077973	20143940	36246	90615	556	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											RQ
339.8597	20.832	20.846	-1	1.001	130680	23417	1374	3435	17		
341.8567	20.818	20.846	-2	1.001	115685	23837	2512	6280	9	1.13(1.32-1.78)	
	Empc Correction				84309	15107	2512	6280	6		
A F1 PeCDFs											
339.8597	17.730						1227	3067			
341.8567	17.730						1728	4320			
A Non-2,3,7,8-sub-PeCDF											M
339.8597	18.596	20.349	-105	0.945	81707	16970	1374	3435	12		M
341.8567	18.596	20.349	-105	0.945	60222	17380	2512	6280	7	1.36(1.32-1.78)	M
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.432	-1	1.346	115679762	20071589	18504	46260	1085		
369.8919	21.404	21.432	-2	1.345	73956196	12923111	13062	32655	989	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											RQU
355.8546	21.459						2270	5675			
357.8516	21.459						967	2417			

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											U
355.8546	20.518						2270	5675			
357.8516	20.518						967	2417			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.706	26.733	-2	0.888	80439657	11417531	25173	62932	454		
385.8610	26.706	26.733	-2	0.888	149610462	21094141	46946	117365	449	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.733	26.759	-2	1.001	368673	48948	1329	3322	37		
375.8178	26.759	26.759	0	1.002	295657	42833	1280	3200	33	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	27.012	-2	0.898	86575165	11145866	25173	62932	443		
385.8610	26.972	27.012	-2	0.897	165711792	21447610	46946	117365	457	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQU
373.8208	27.039						1329	3322			
375.8178	27.039						1280	3200			
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.530	28.570	-2	0.949	81023034	10179720	25173	62932	404		
385.8610	28.530	28.570	-2	0.949	152785611	19261278	46946	117365	410	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											U
373.8208	28.597						1329	3322			
375.8178	28.597						1280	3200			
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.011	82769508	13857596	25173	62932	550		
385.8610	30.381	30.394	-1	1.011	161840357	27851643	46946	117365	593	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	30.408	30.408	0	1.001	49874	8852	1329	3322	7		
	Empc Correction				39766	10313	1329	3322	8		
375.8178	30.381	30.408	-2	1.000	32070	8317	1280	3200	6	1.56(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											U
373.8208	27.465						1329	3322			
375.8178	27.465						1280	3200			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.062	30.088	-2		124138475	19023214	20403	51007	932		
403.8529	30.062	30.088	-2		99010989	15180483	18266	45665	831	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.023	29.036	-1	0.965	98366496	12261682	20403	51007	601		a
403.8529	29.023	29.036	-1	0.965	76465743	9492249	18266	45665	520	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											U
389.8157	29.076						1363	3407			
391.8127	29.076						1572	3930			
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.302	29.316	-1	0.975	111742497	12174252	20403	51007	597		a
403.8529	29.302	29.316	-1	0.975	89975187	9785706	18266	45665	536	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.356						1363	3407			
391.8127	29.356						1572	3930			

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Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8157	30.101						1363	3407			
391.8127	30.101						1572	3930			
A Non-2,3,7,8-sub-HxCDD											U
389.8157	27.931						1363	3407			
391.8127	27.931						1572	3930			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.547	-1	1.082	56366517	18355873	46355	115887	396		
419.8220	32.535	32.547	-1	1.082	123271237	40270883	116177	290442	347	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7818	32.547	32.547	0	1.000	140002	42198	1364	3410	31		M
	Empc Correction				106954	36688	1364	3410	27		
409.7789	32.535	32.547	-1	1.000	102841	35277	1286	3215	27	1.36(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.629	33.641	-1	1.119	52231061	19068534	46355	115887	411		
419.8220	33.629	33.641	-1	1.119	113849718	42450003	116177	290442	365	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	33.641	33.653	-1	1.000	47192	21942	1364	3410	16		M
409.7789	33.641	33.653	-1	1.000	47526	19668	1286	3215	15	0.99(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											RQM
407.7818	32.887	33.100	-13	1.011	35877	11955	1364	3410	9		
	Empc Correction				24259	9008	1364	3410	7		
409.7789	32.875	33.100	-13	1.010	23326	8662	1286	3215	7	1.54(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.111	94303367	34557965	121580	303950	284		
437.8140	33.386	33.398	-1	1.111	85345234	32619184	143636	359090	227	1.10(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.398	33.398	0	1.000	113318	44664	1309	3272	34		M
425.7737	33.386	33.398	-1	1.000	117532	45545	1425	3562	32	0.96(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											M
423.7766	32.851	33.339	-29	0.984	113535	37822	1309	3272	29		M
425.7737	32.839	33.339	-30	0.984	106493	39835	1425	3562	28	1.07(0.88-1.20)	M
13C-OCDD											
469.7779	35.546	35.558	-1	1.182	125402518	40161841	18042	45105	2226		
471.7750	35.546	35.558	-1	1.182	136152298	43975925	105648	264120	416	0.92(0.76-1.02)	
OCDF											RQM
441.7428	35.630	35.630	0	1.002	76665	25863	992	2480	26		M
443.7399	35.618	35.630	-1	1.002	106722	30489	1540	3850	20	0.72(0.76-1.02)	M
	Empc Correction				86140	29059	1540	3850	19		
OCDD											M
457.7377	35.558	35.570	-1	1.000	1054070	375689	1294	3235	290		M
459.7348	35.558	35.570	-1	1.000	1175960	418867	1741	4352	241	0.90(0.76-1.02)	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Lims ID:	320-65130-A-5-A		
Client ID:	11215702-Tank#1-valve-2-2		
Inject. Date:	09-Oct-2020 06:38:38	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	15

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	329200413	91034572

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	329200413	91034572

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.539	186951	43205	230819	62372	0.1331	0.81	
14.736	192334	51447	203232	51009	0.1260	0.95	RQ
14.736	156488	39276	203232	51009	0.1146		Empc Correction
14.932	196106	51300	300879	77625	0.1583	0.65	
15.174	2385541	680415	2985259	847005	1.71	0.80	
15.356	117109	38154	118043	35229	0.0749	0.99	RQ
15.356	90893	27126	118043	35229	0.0666		Empc Correction
15.855	330273	91440	436842	106493	0.2444	0.76	
16.051	70359	18094	145186	33029	0.0687	0.48	RQ
16.051	70359	18094	91375	23498	0.0515		Empc Correction
17.004	311968	82939	328709	84250	0.2041	0.95	RQ
17.004	253105	64872	328709	84250	0.1854		Empc Correction
Signal Totals:							
	3669716	1015728	4695158	1287481			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8539610	2354006				0.80	RQ
	8364874	2303209					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 2.721 = (8539610 * 100.000) / (329200413 * 0.953)

Empc Amount: 2.665 = (8364874 * 100.000) / (329200413 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Inject. Date: 09-Oct-2020 06:38:38 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 15

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	259179135	66801271

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	259179135	66801271

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.222	93565	31250	124307	39772	0.0824	0.75	
14.464	110413	29231	133169	37839	0.0921	0.83	
16.399	111174	33285	146149	30946	0.0973	0.76	
Signal Totals:							
	315152	93766	403625	108557			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	718777	202323				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2718 = (718777 * 100.000) / (259179135 * 1.020)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Inject. Date: 09-Oct-2020 06:38:38
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 15

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	286761364	59405682
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	272714805	51921486

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	279738084	55663584

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	81707	16970	60222	17380	0.0466	1.36	M
Signal Totals:							
	81707	16970	60222	17380			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	141929	34350				1.36	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0466 = (141929 * 100.000) / (279738084 * 1.088)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Inject. Date: 09-Oct-2020 06:38:38 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 15

Non-2,3,7,8-sub-PeCDD, RT: 20.518

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	189635958	32994700

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	189635958	32994700

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Inject. Date: 09-Oct-2020 06:38:38 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 15

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	230050119	32511672
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	252286957	32593476
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	233808645	29440998
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	244609865	41709239

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	240188896	34063846

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Lims ID:	320-65130-A-5-A		
Client ID:	11215702-Tank#1-valve-2-2		
Inject. Date:	09-Oct-2020 06:38:38	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	15

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	174832239	21753931
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	201717684	21959958
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	188274961	21856944

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Inject. Date: 09-Oct-2020 06:38:38 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 15

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	179637754	58626756
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	166080779	61518537

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	172859266	60072646

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.887	35877	11955	23326	8662	0.0240	1.54	RQM
32.887	24259	9008	23326	8662	0.0193		Empc Correction
Signal Totals:							
	24259	9008	23326	8662			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59203	20617				1.54	RQM
	47585	17670					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0240 = (59203 * 100.000) / (172859266 * 1.428)
Empc Amount: 0.0193 = (47585 * 100.000) / (172859266 * 1.428)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Inject. Date: 09-Oct-2020 06:38:38
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 15

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	179648601	67177149

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	179648601	67177149

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	113535	37822	106493	39835	0.1128	1.07	M
Signal Totals:							
	113535	37822	106493	39835			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	220028	77657				1.07	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1128 = (220028 * 100.000) / (179648601 * 1.086)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5
Client ID:	11215702-Tank#1-valve-2-2		
Operator ID:	ALM	ALS Bottle#:	12 Worklist Smp#: 15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT: 19.70
Area: 297519
Amount: 0.143858
Amount Units: pg/ul

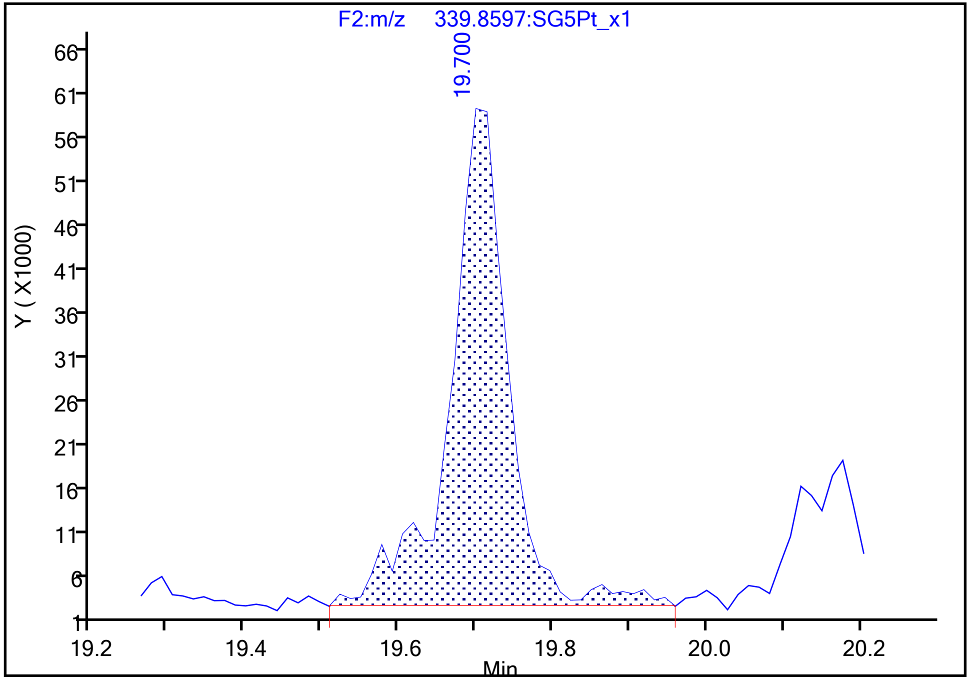

Manual Integration Results

RT: 19.70
Area: 256741
Amount: 0.129301
Amount Units: pg/ul

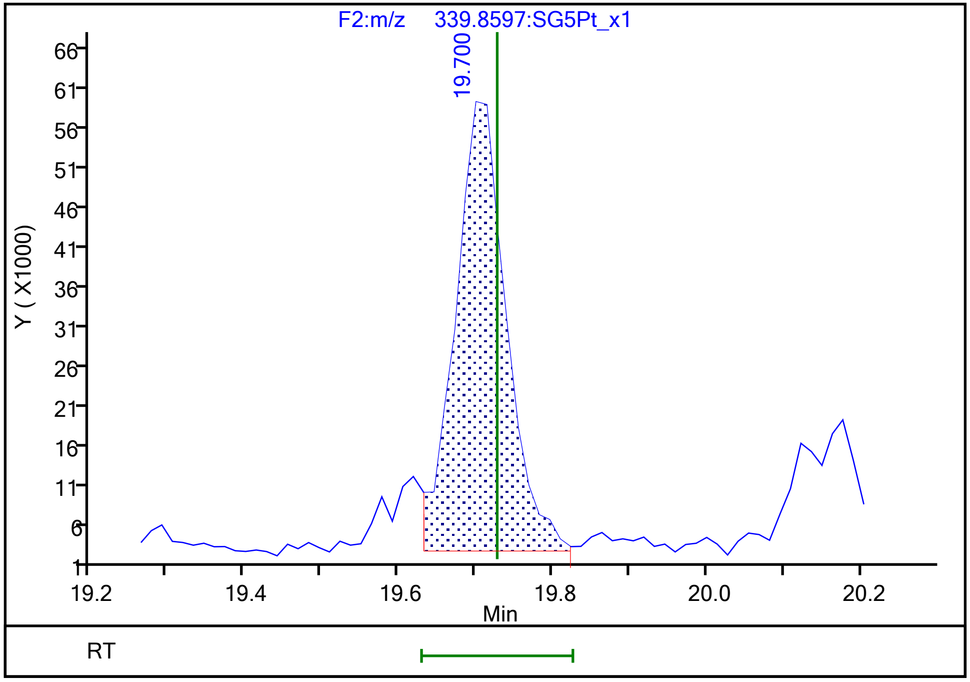

Reviewer: dadunj, 13-Oct-2020 11:48:26

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5
Client ID:	11215702-Tank#1-valve-2-2		
Operator ID:	ALM	ALS Bottle#:	12 Worklist Smp#: 15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	19.71
Area:	147750
Amount:	0.143858
Amount Units:	pg/ul

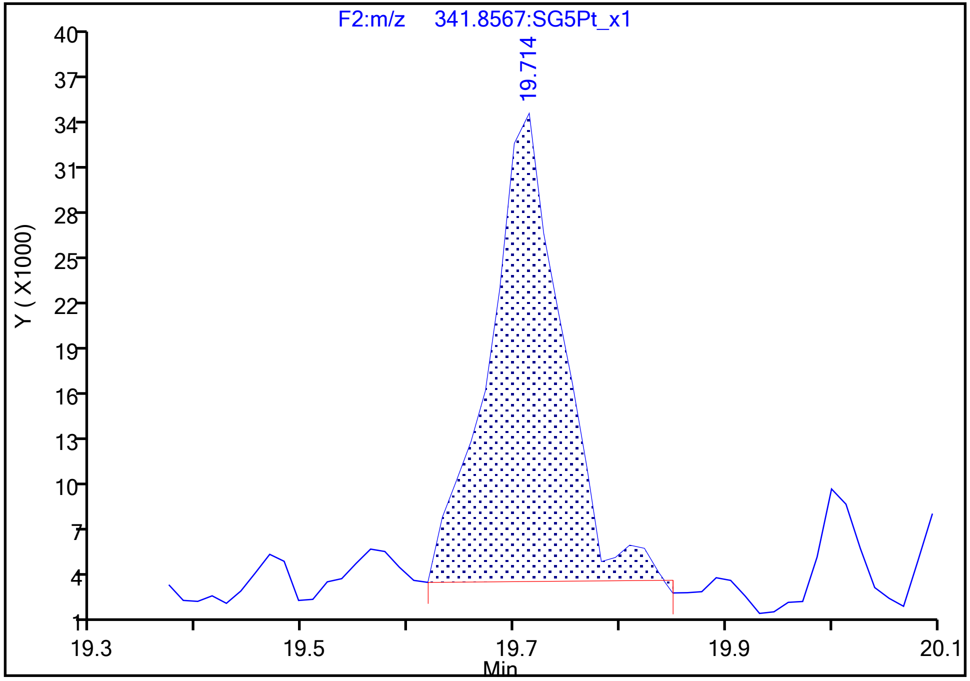

Manual Integration Results

RT:	19.71
Area:	143472
Amount:	0.129301
Amount Units:	pg/ul

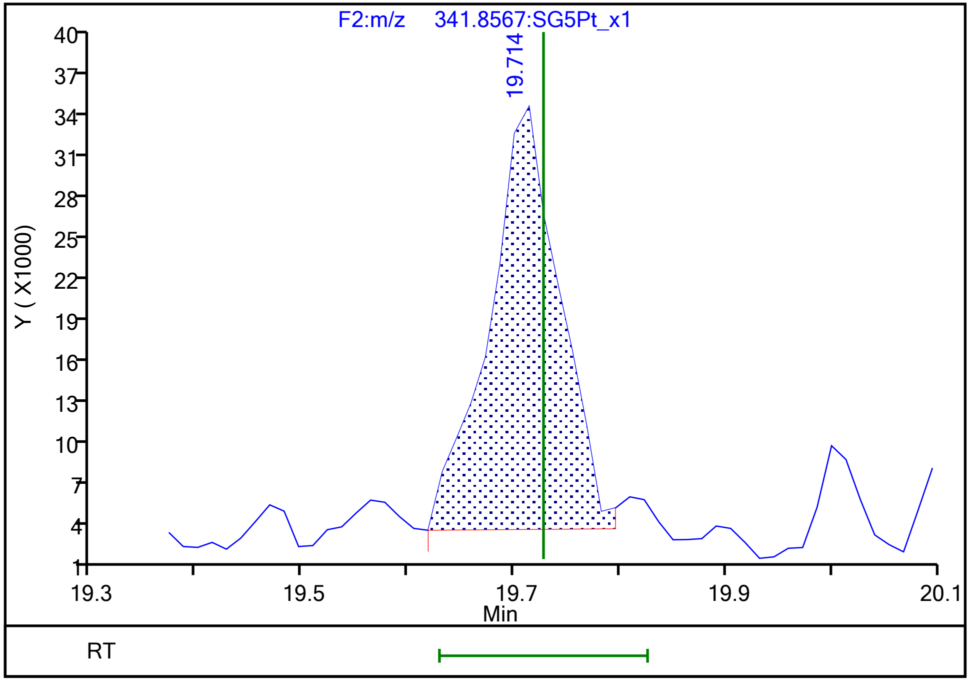

Reviewer: dadunj, 13-Oct-2020 11:48:28

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (18.23- 22.47)

Signal: 1

Processing Integration Results

RT = 18.596 Area = 102229

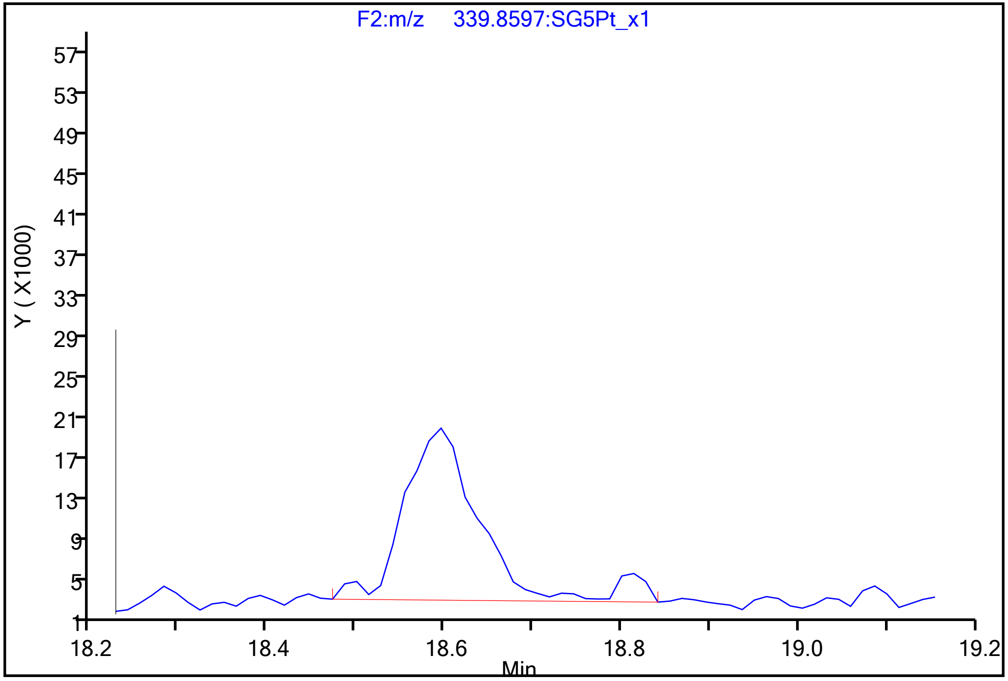

Manual Integration Results

RT = 18.596 Area = 81707 M

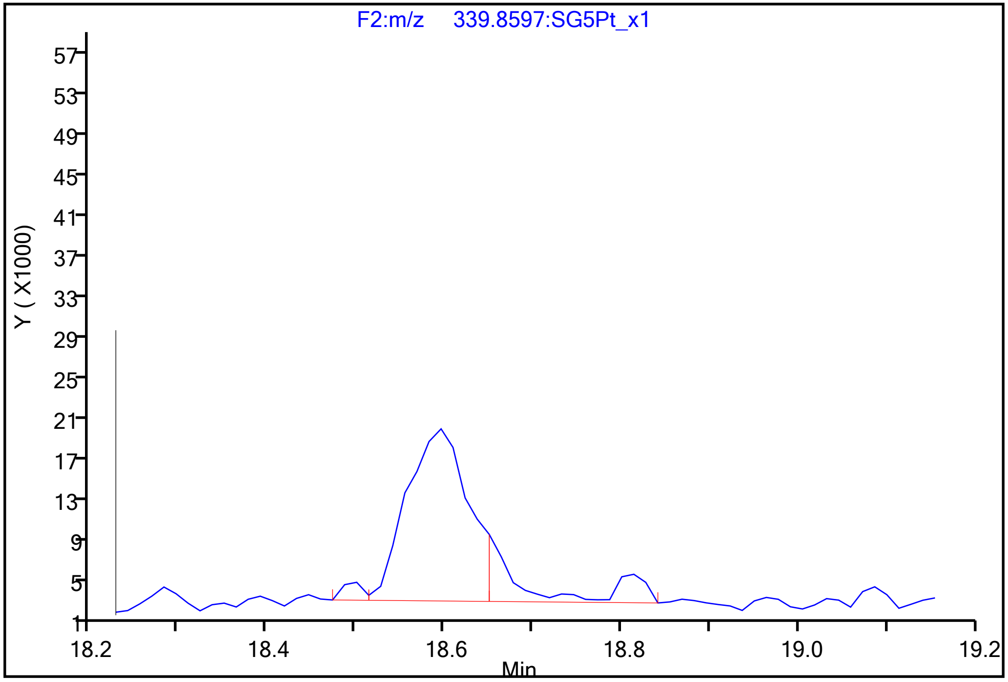

Reviewer: dadunj, 13-Oct-2020 11:48:52

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Injection Date: 09-Oct-2020 06:38:38 Instrument ID: 3D5
Lims ID: 320-65130-A-5-A Lab Sample ID: 320-65130-5
Client ID: 11215702-Tank#1-valve-2-2
Operator ID: ALM ALS Bottle#: 12 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F2:HRSIR

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (18.23- 22.47)

Signal: 2

Processing Integration Results

RT = 18.596 Area = 72395

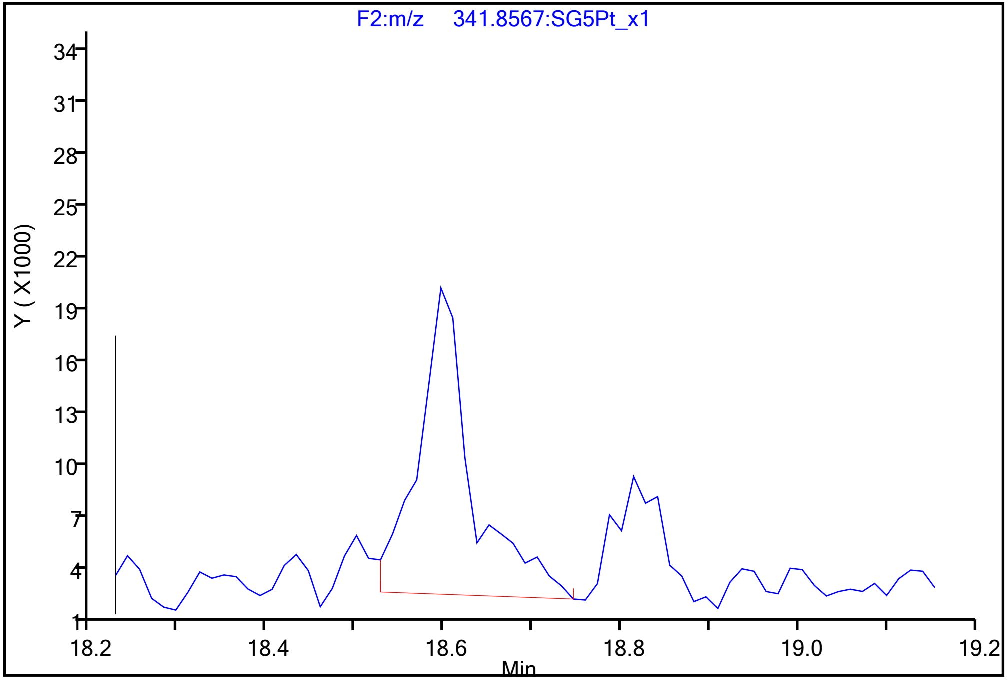

Manual Integration Results

RT = 18.596 Area = 60222 M

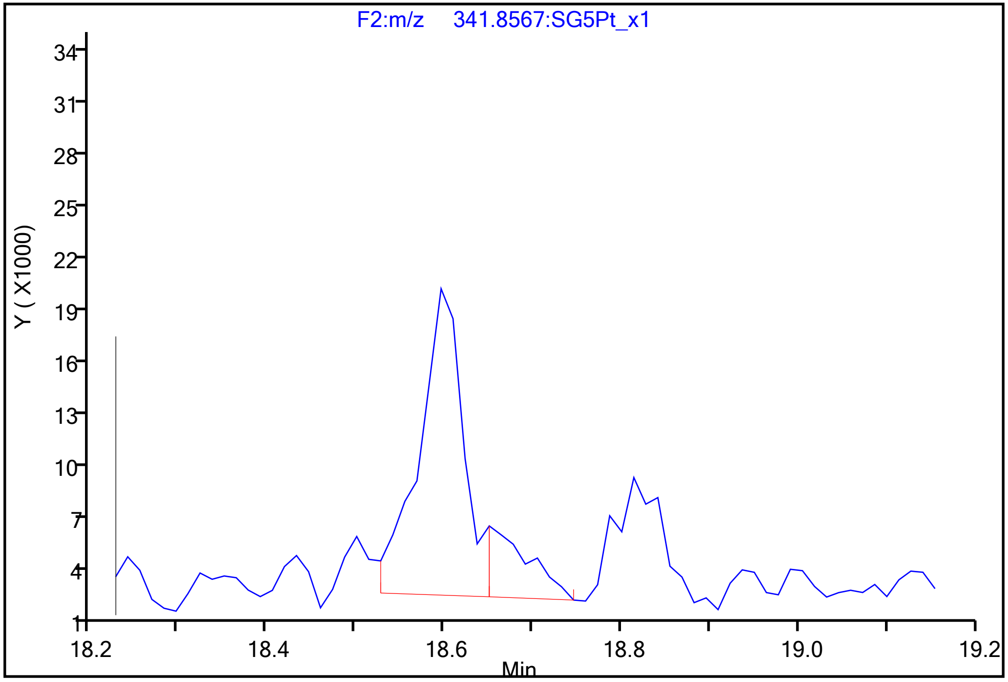

Reviewer: dadunj, 13-Oct-2020 11:48:40
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Injection Date: 09-Oct-2020 06:38:38
Instrument ID: 3D5
Lims ID: 320-65130-A-5-A
Lab Sample ID: 320-65130-5
Client ID: 11215702-Tank#1-valve-2-2
Operator ID: ALM
ALS Bottle#: 12
Worklist Smp#: 15
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT: 30.38
Area: 48616
Amount: 0.032685
Amount Units: pg/ul

Processing Integration Results

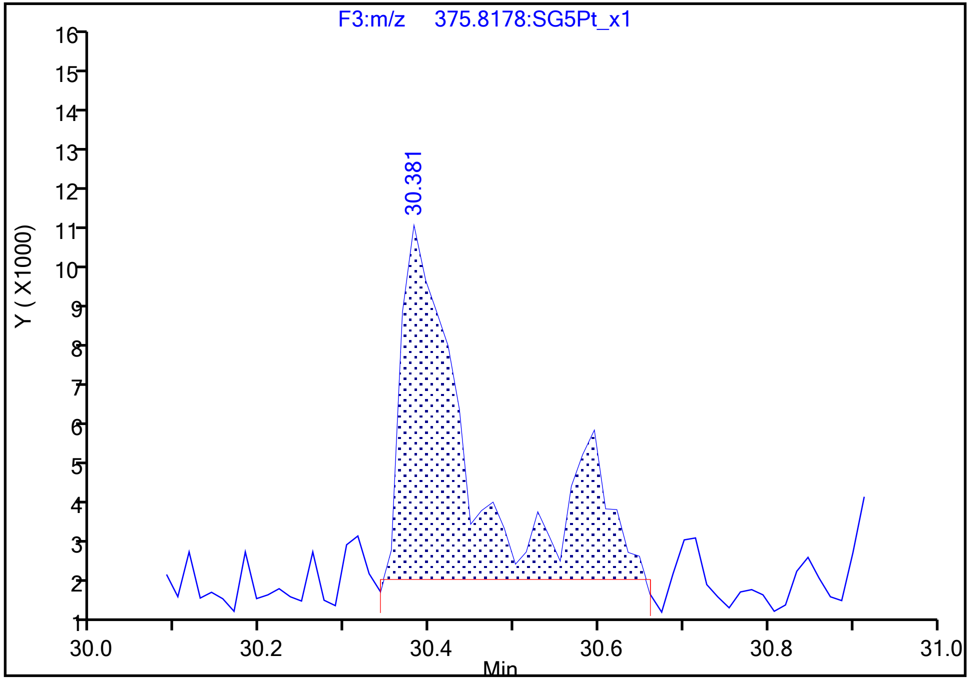

RT: 30.38
Area: 32070
Amount: 0.027194
Amount Units: pg/ul

Manual Integration Results

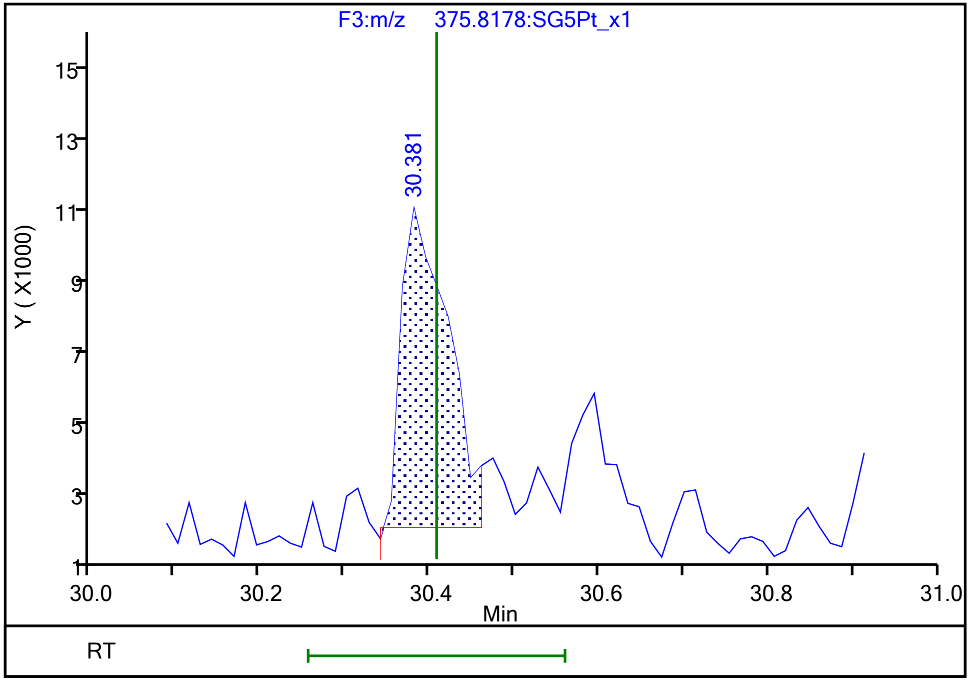

Reviewer: dadunj, 13-Oct-2020 11:49:19

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.04

Processing Integration Results

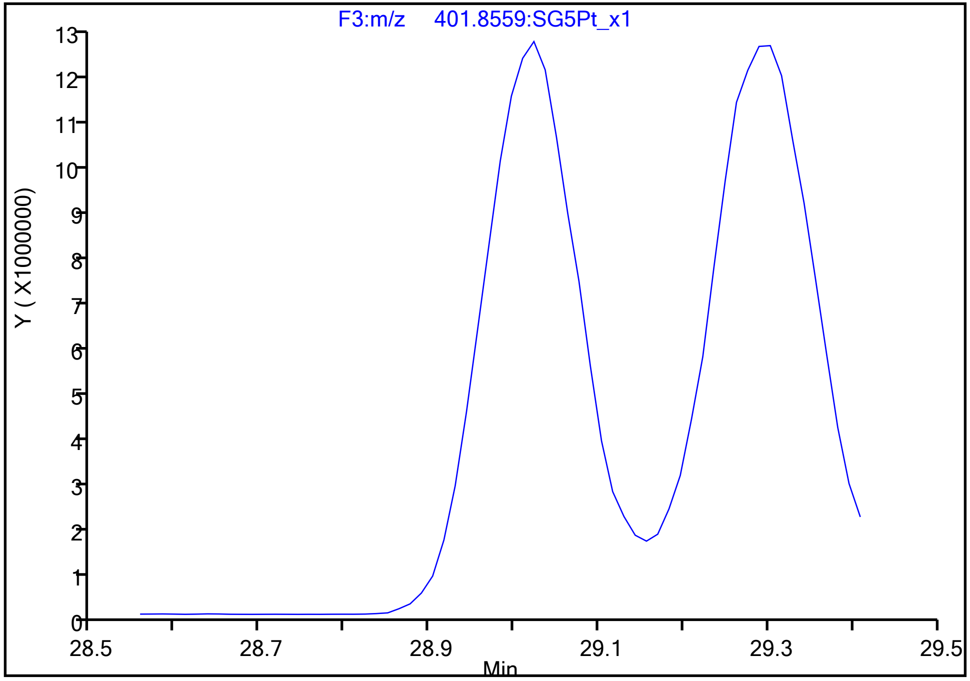

RT: 29.02

Area: 98366496

Amount: 90.468256

Amount Units: pg/ul

Manual Integration Results

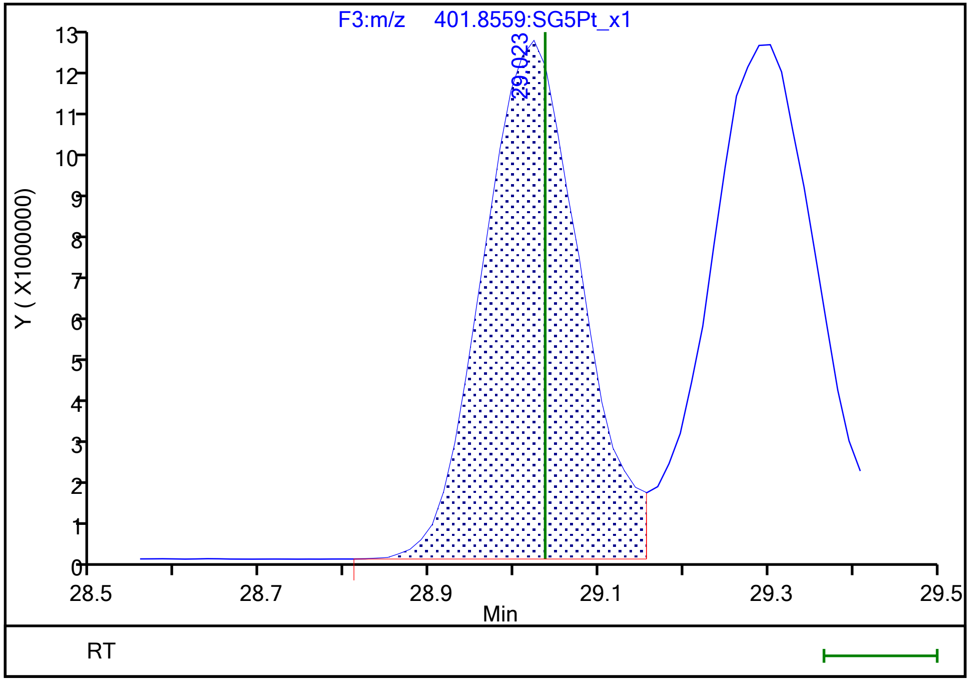

Reviewer: shardaa, 12-Oct-2020 17:57:00

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT: 30.06
Area: 124138475
Amount: 101.7609
Amount Units: pg/ul

Processing Integration Results

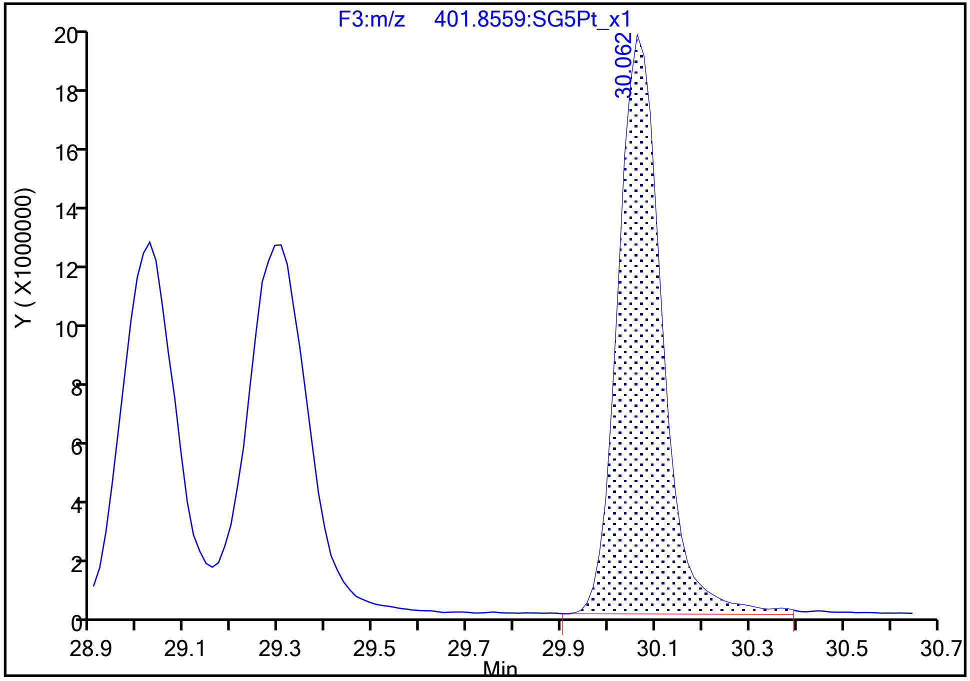

RT: 29.30
Area: 111742497
Amount: 91.987548
Amount Units: pg/ul

Manual Integration Results

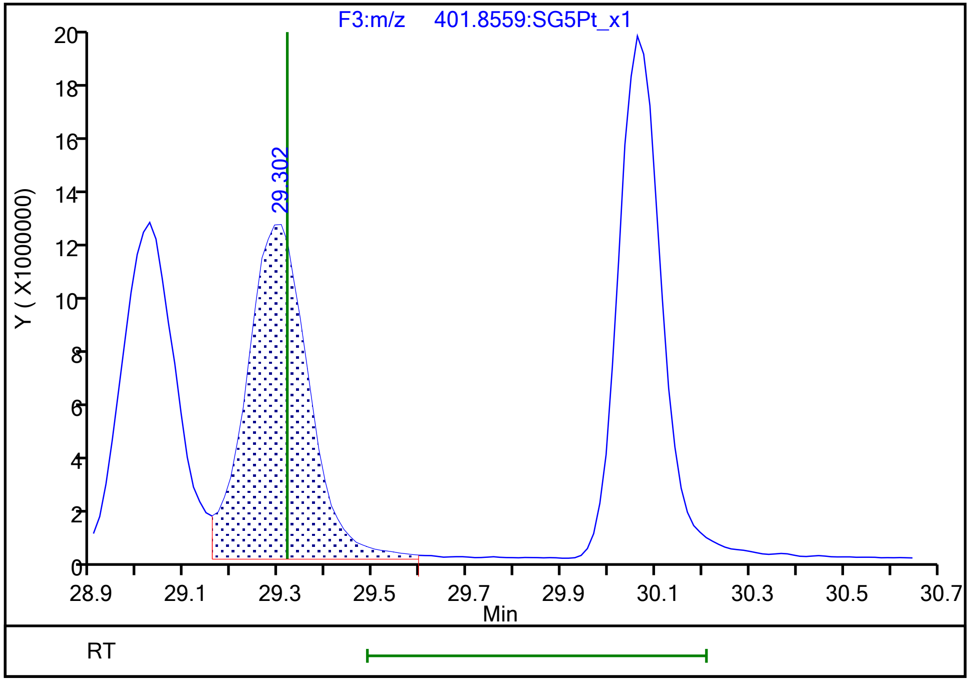

Reviewer: shardaa, 12-Oct-2020 17:58:34

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 32.53
Area: 106916
Amount: 0.093168
Amount Units: pg/ul

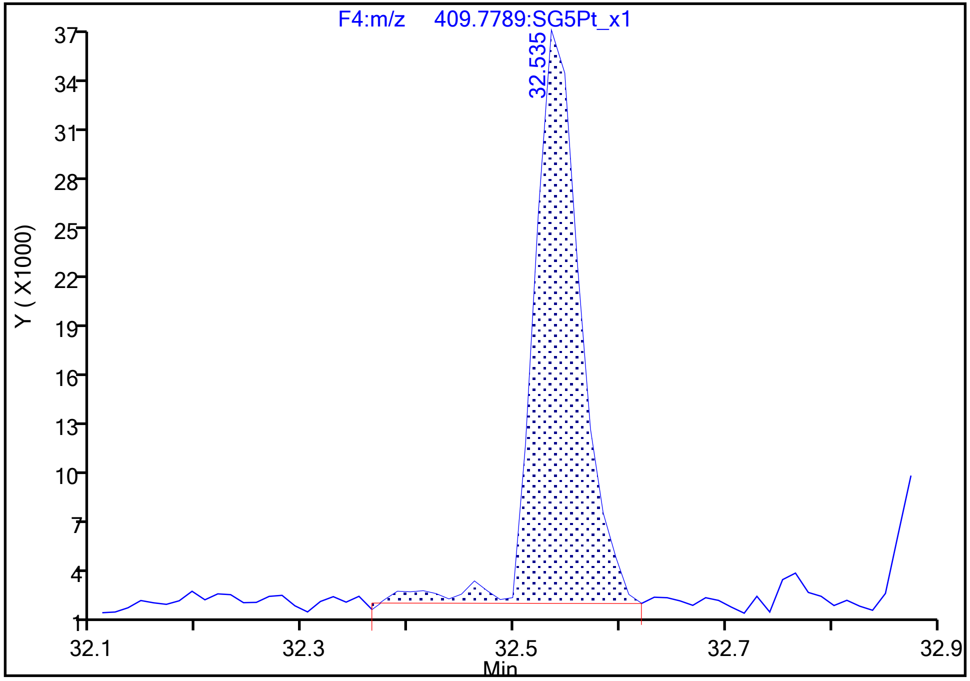

Manual Integration Results

RT: 32.53
Area: 102841
Amount: 0.091443
Amount Units: pg/ul

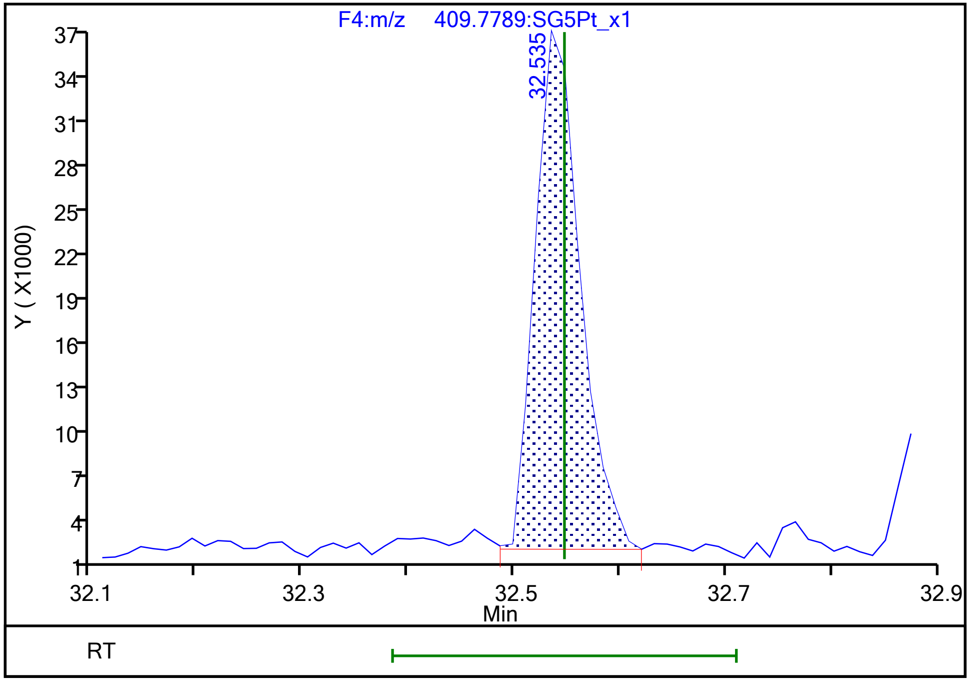

Reviewer: dadunj, 13-Oct-2020 12:17:38

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Injection Date: 09-Oct-2020 06:38:38
Instrument ID: 3D5
Lims ID: 320-65130-A-5-A
Lab Sample ID: 320-65130-5
Client ID: 11215702-Tank#1-valve-2-2
Operator ID: ALM
ALS Bottle#: 12
Worklist Smp#: 15
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT: 32.55
Area: 140508
Amount: 0.093168
Amount Units: pg/ul

Processing Integration Results

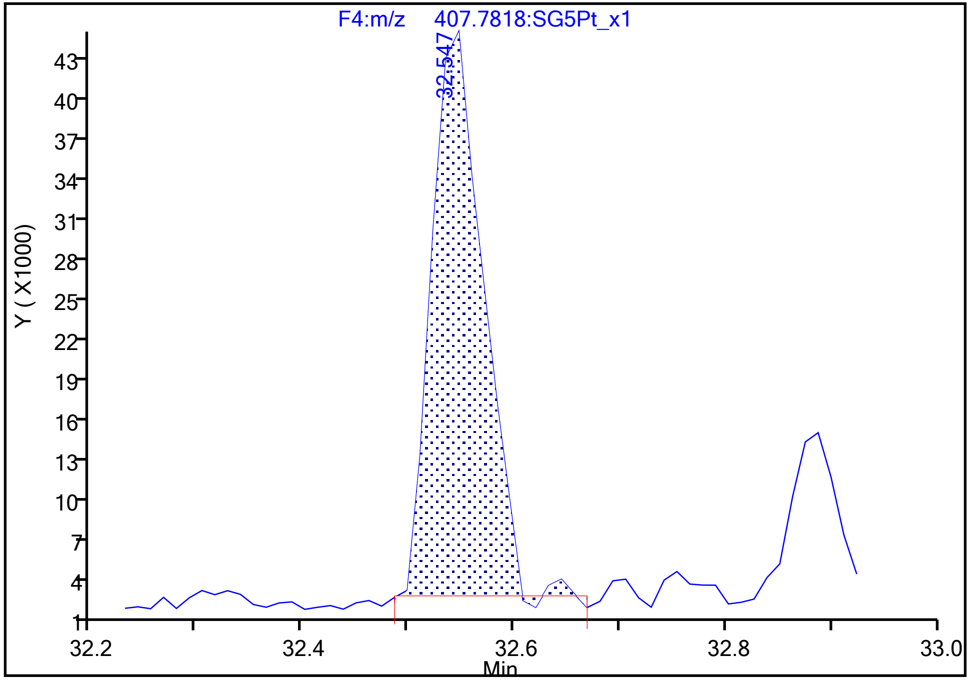

RT: 32.55
Area: 140002
Amount: 0.091443
Amount Units: pg/ul

Manual Integration Results

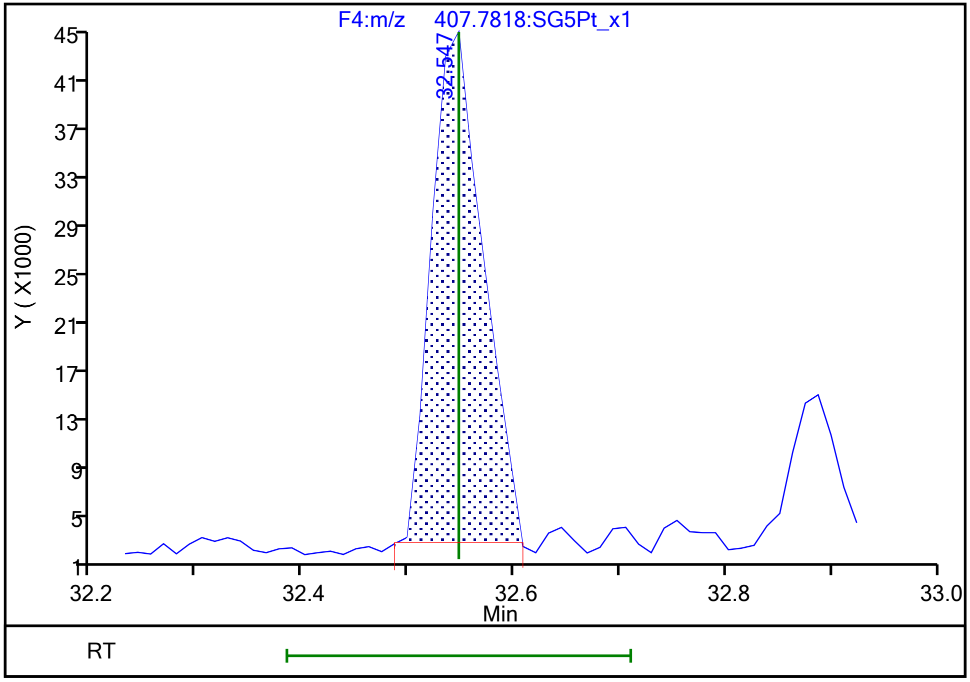

Reviewer: dadunj, 13-Oct-2020 12:17:42
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT:	33.64
Area:	50631
Amount:	0.045357
Amount Units:	pg/ul

Processing Integration Results

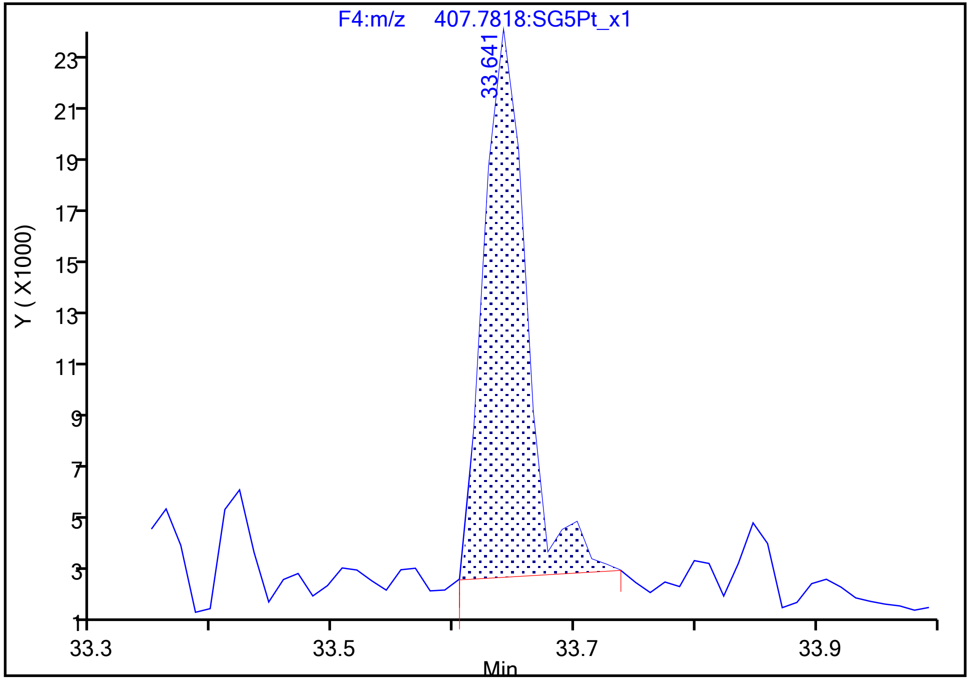

RT:	33.64
Area:	47192
Amount:	0.041375
Amount Units:	pg/ul

Manual Integration Results

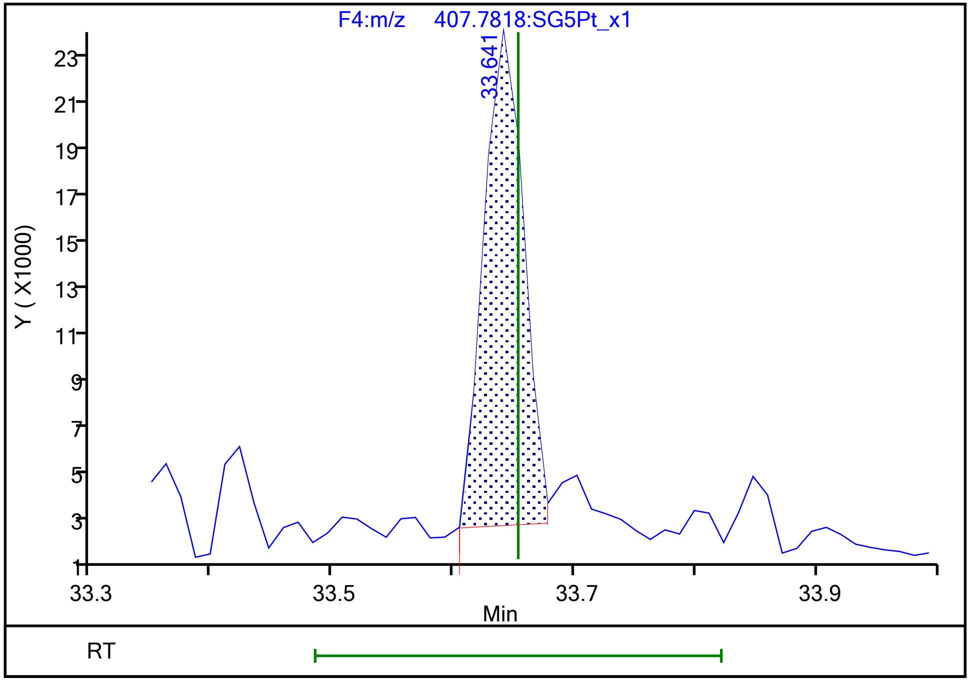

Reviewer: dadunj, 13-Oct-2020 12:17:46

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Injection Date: 09-Oct-2020 06:38:38
Instrument ID: 3D5
Lims ID: 320-65130-A-5-A
Lab Sample ID: 320-65130-5
Client ID: 11215702-Tank#1-valve-2-2
Operator ID: ALM
ALS Bottle#: 12
Worklist Smp#: 15
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F4:HRSIR

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT: 33.64
Area: 53204
Amount: 0.045357
Amount Units: pg/ul

Processing Integration Results

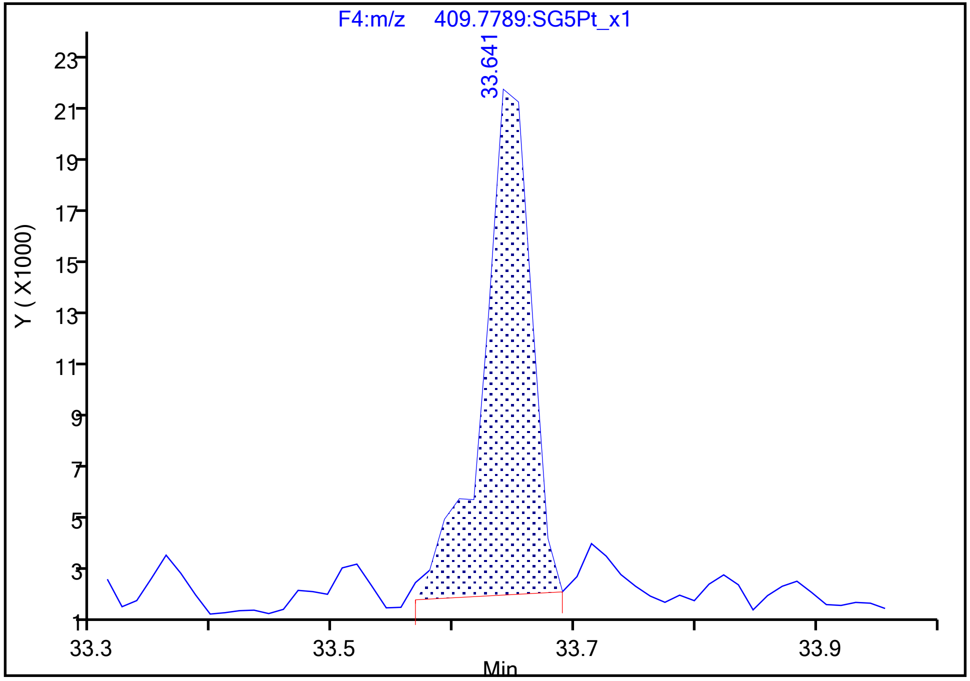

RT: 33.64
Area: 47526
Amount: 0.041375
Amount Units: pg/ul

Manual Integration Results

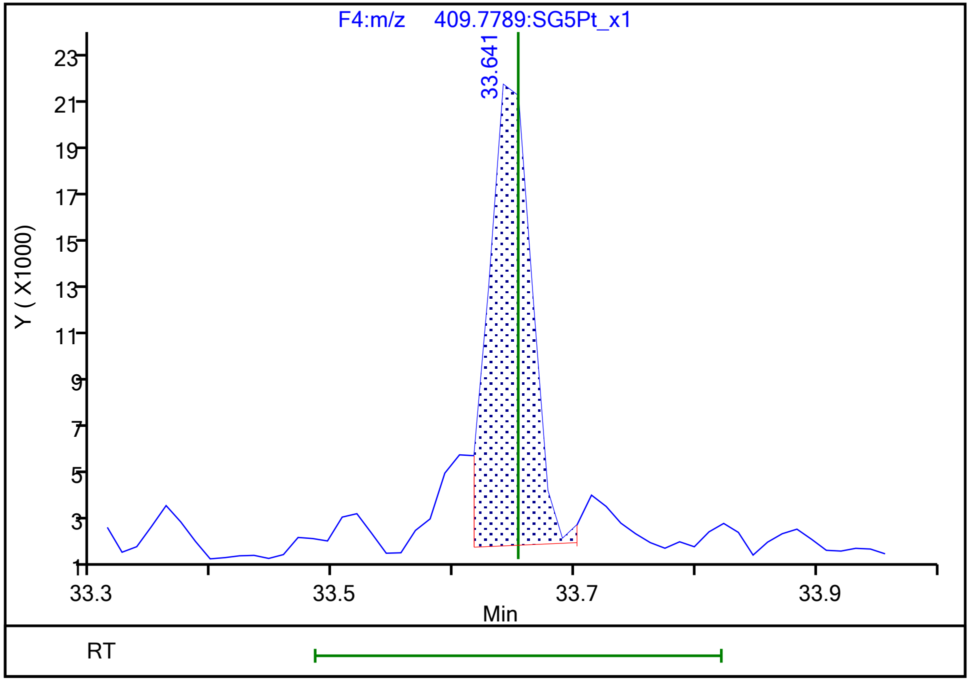

Reviewer: dadunj, 13-Oct-2020 12:18:01
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d
Injection Date: 09-Oct-2020 06:38:38
Instrument ID: 3D5
Lims ID: 320-65130-A-5-A
Lab Sample ID: 320-65130-5
Client ID: 11215702-Tank#1-valve-2-2
Operator ID: ALM
ALS Bottle#: 12
Worklist Smp#: 15
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F4:HRSIR

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7789, RT: (32.52- 33.68)

Signal: 2

RT = 32.875 Area = 29005

Processing Integration Results

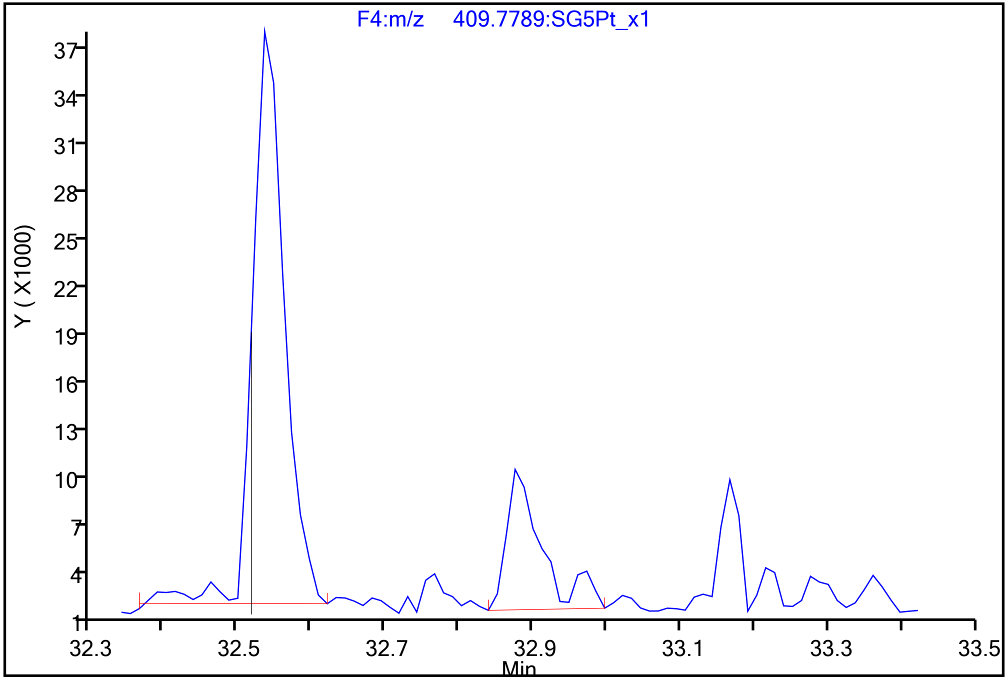

RT = 32.875 Area = 23326 M

Manual Integration Results

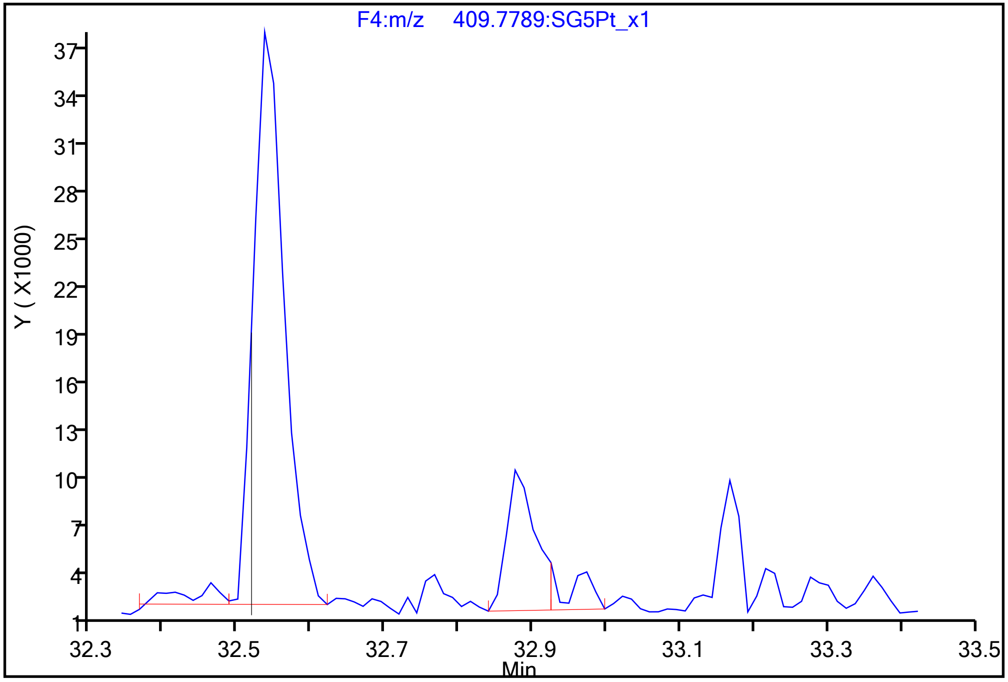

Reviewer: dadunj, 13-Oct-2020 12:18:05

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	33.40
Area:	129634
Amount:	0.126662
Amount Units:	pg/ul

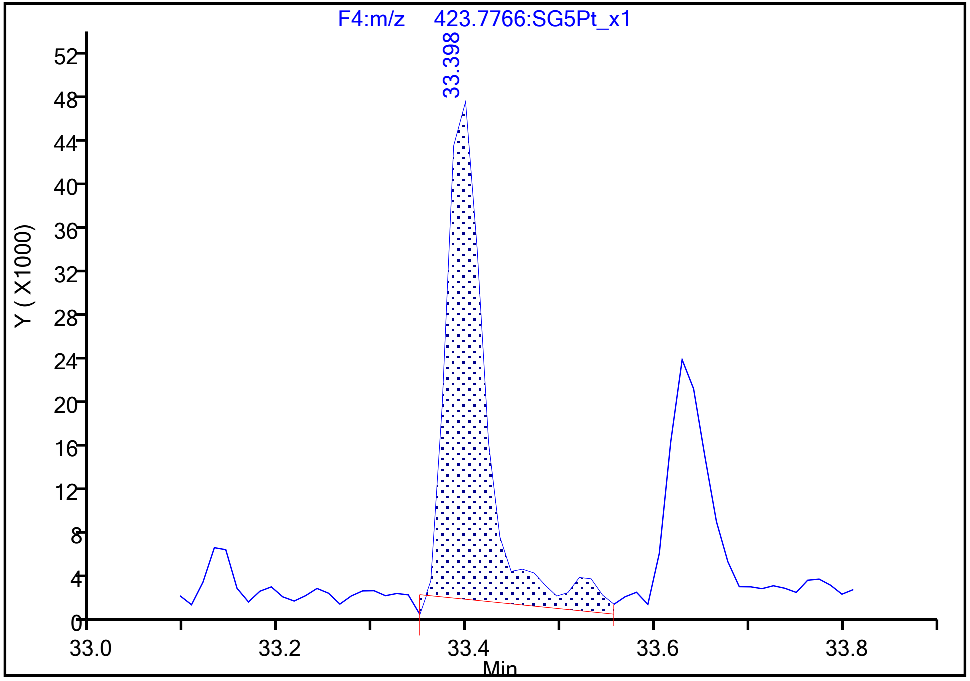

Manual Integration Results

RT:	33.40
Area:	113318
Amount:	0.118301
Amount Units:	pg/ul

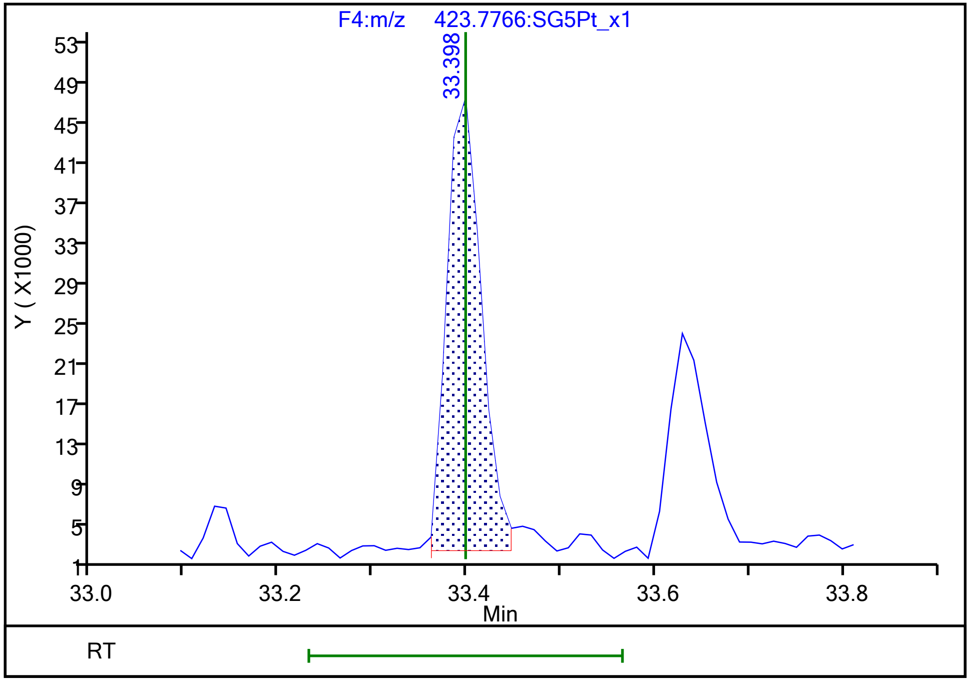

Reviewer: dadunj, 13-Oct-2020 12:18:19

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (32.98- 33.70)

Signal: 1

Processing Integration Results

RT = 32.851 Area = 144290

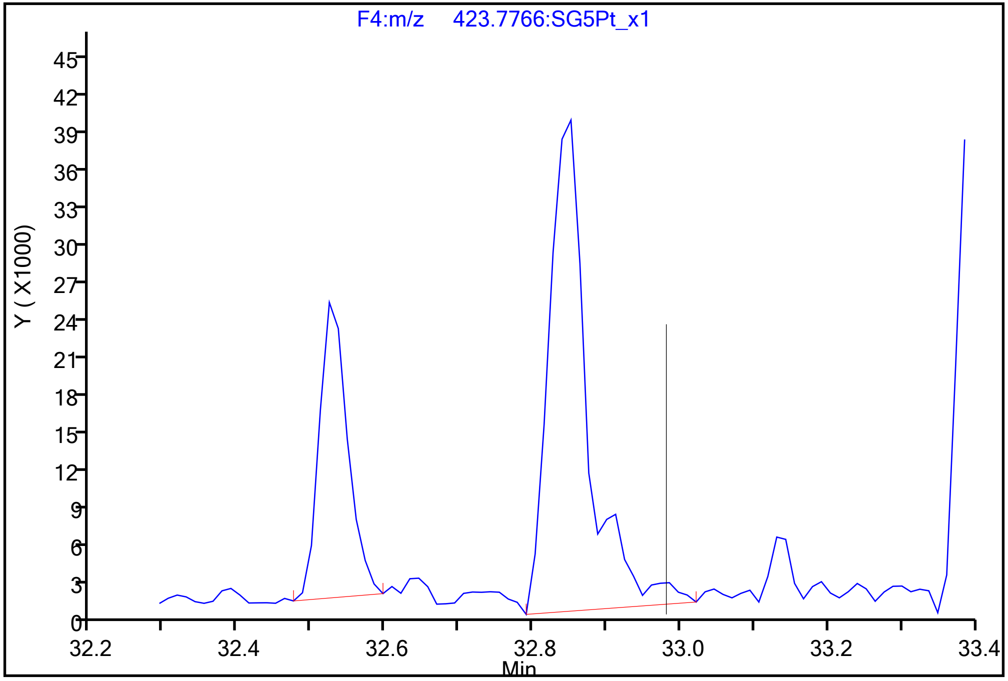

Manual Integration Results

RT = 32.851 Area = 113535 M

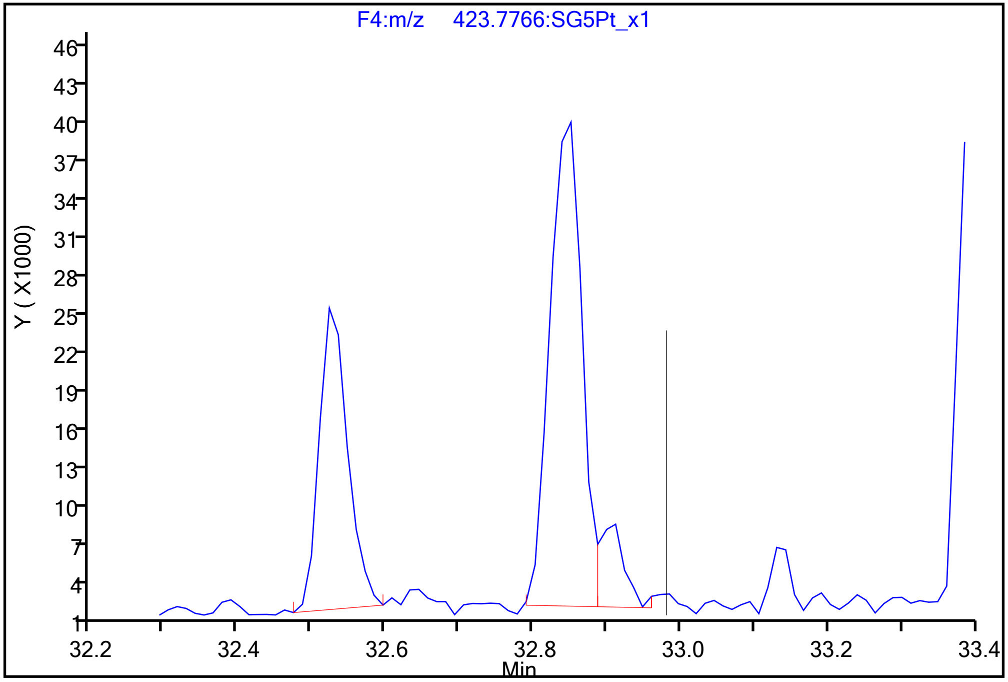

Reviewer: dadunj, 13-Oct-2020 12:18:50

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5
Client ID:	11215702-Tank#1-valve-2-2		
Operator ID:	ALM	ALS Bottle#:	12 Worklist Smp#: 15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F4:HRSIR

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (32.98- 33.70)

Signal: 2

Processing Integration Results

RT = 32.839 Area = 112899

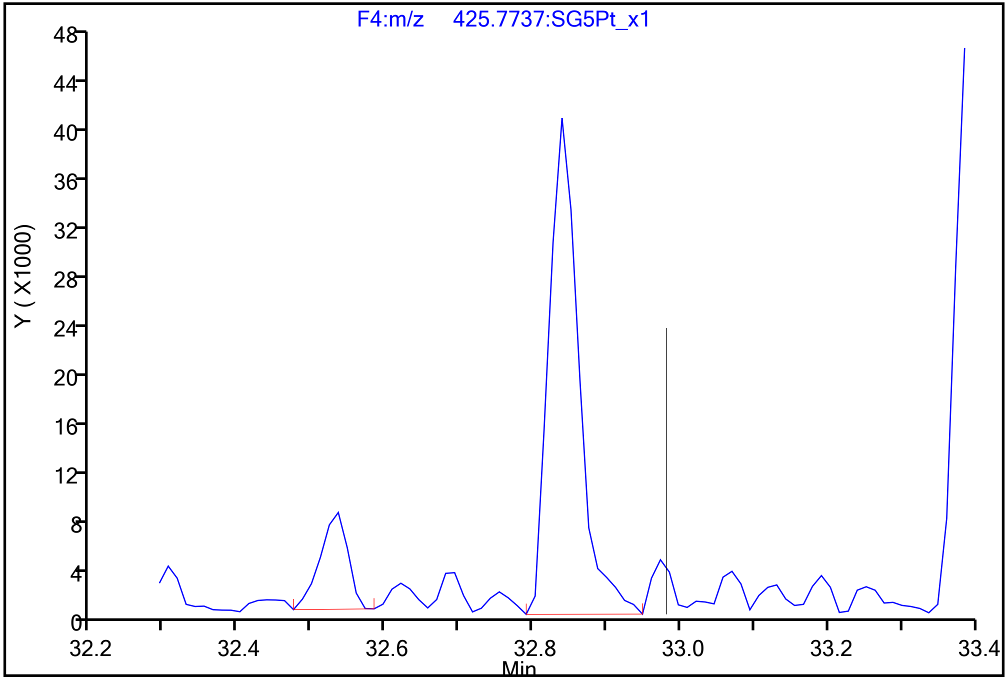

Manual Integration Results

RT = 32.839 Area = 106493 M

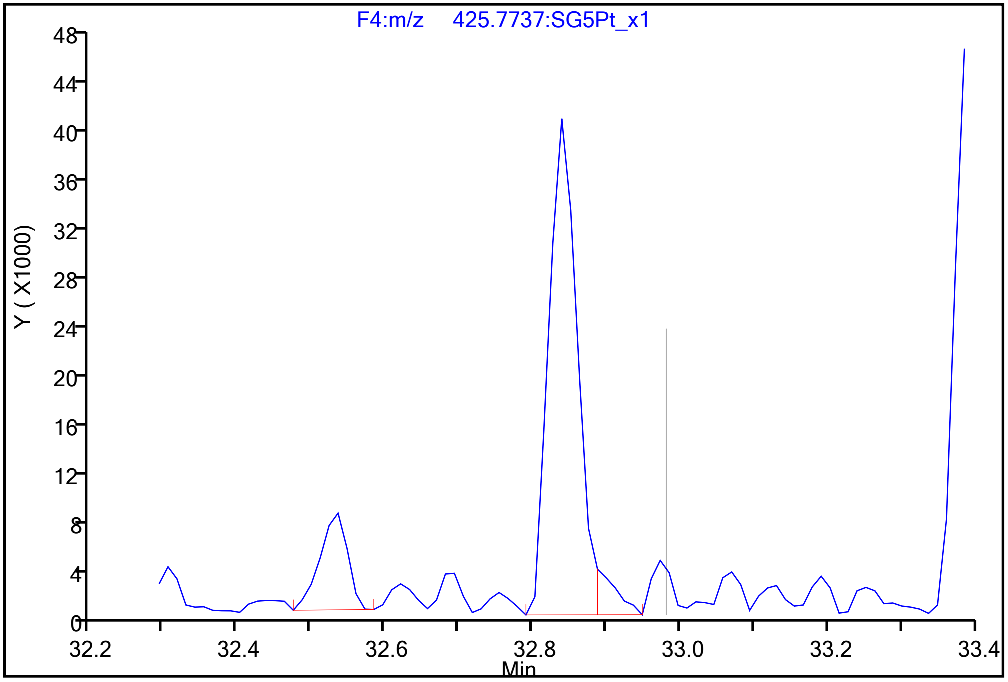

Reviewer: dadunj, 13-Oct-2020 12:18:58

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5
Client ID:	11215702-Tank#1-valve-2-2		
Operator ID:	ALM	ALS Bottle#:	12 Worklist Smp#: 15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 2

RT: 35.62
Area: 117453
Amount: 0.087314
Amount Units: pg/ul

Processing Integration Results

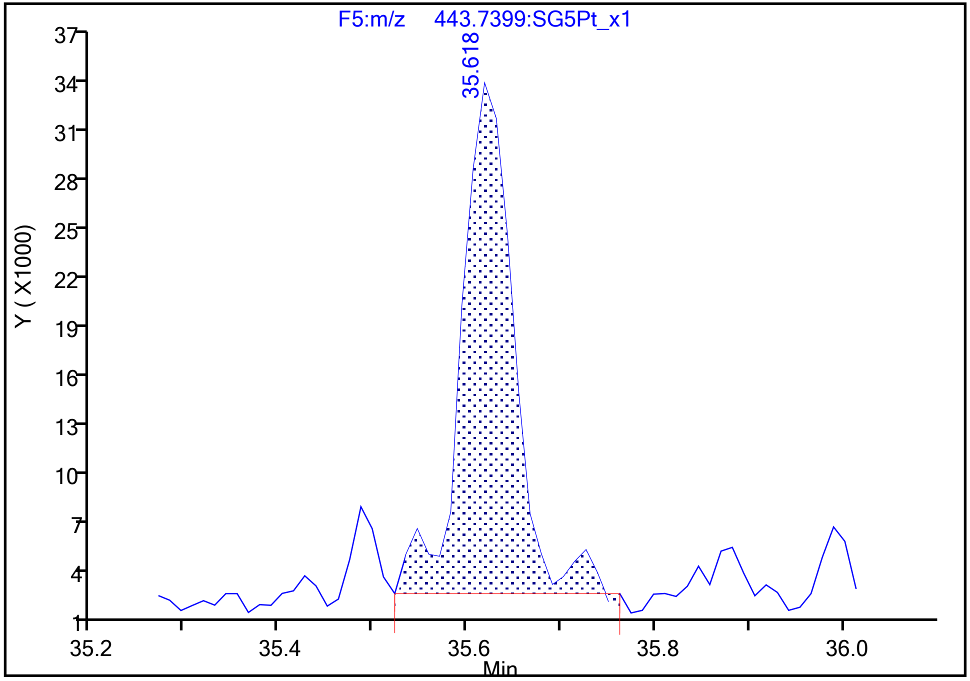

RT: 35.62
Area: 106722
Amount: 0.081301
Amount Units: pg/ul

Manual Integration Results

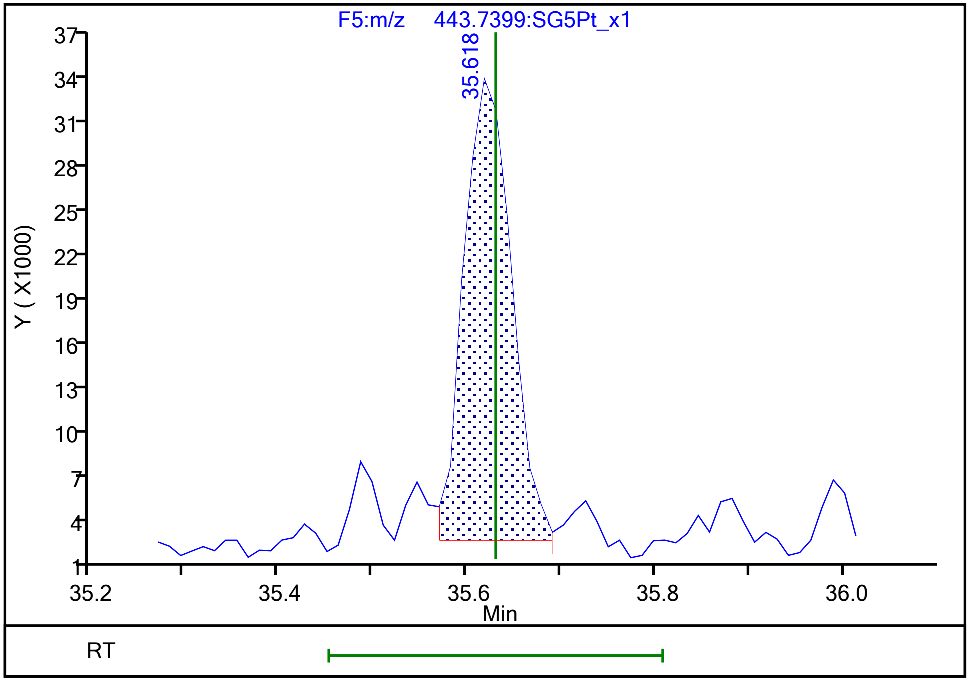

Reviewer: dadunj, 13-Oct-2020 12:19:08

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 1

RT:	35.63
Area:	79498
Amount:	0.087314
Amount Units:	pg/ul

Processing Integration Results

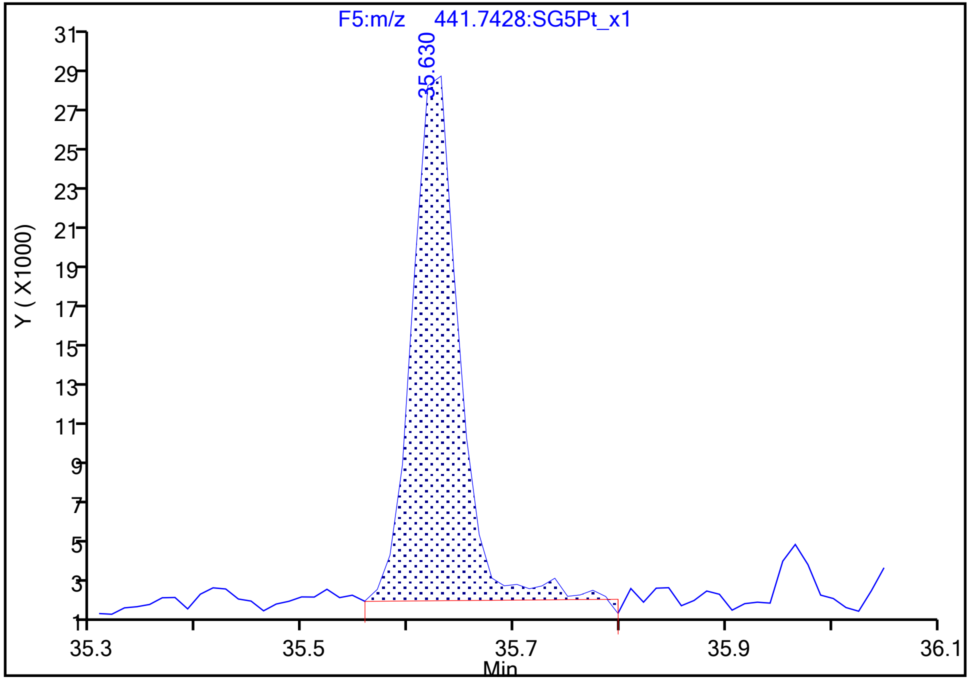

RT:	35.63
Area:	76665
Amount:	0.081301
Amount Units:	pg/ul

Manual Integration Results

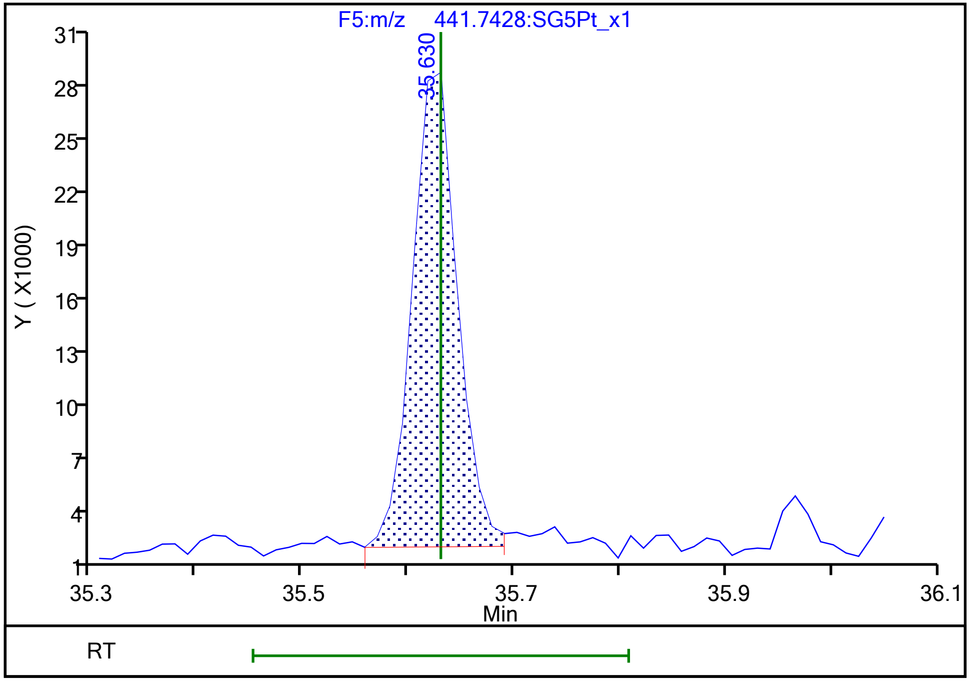

Reviewer: dadunj, 13-Oct-2020 12:19:09

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d				
Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT:	35.56
Area:	1113256
Amount:	1.418048
Amount Units:	pg/ul

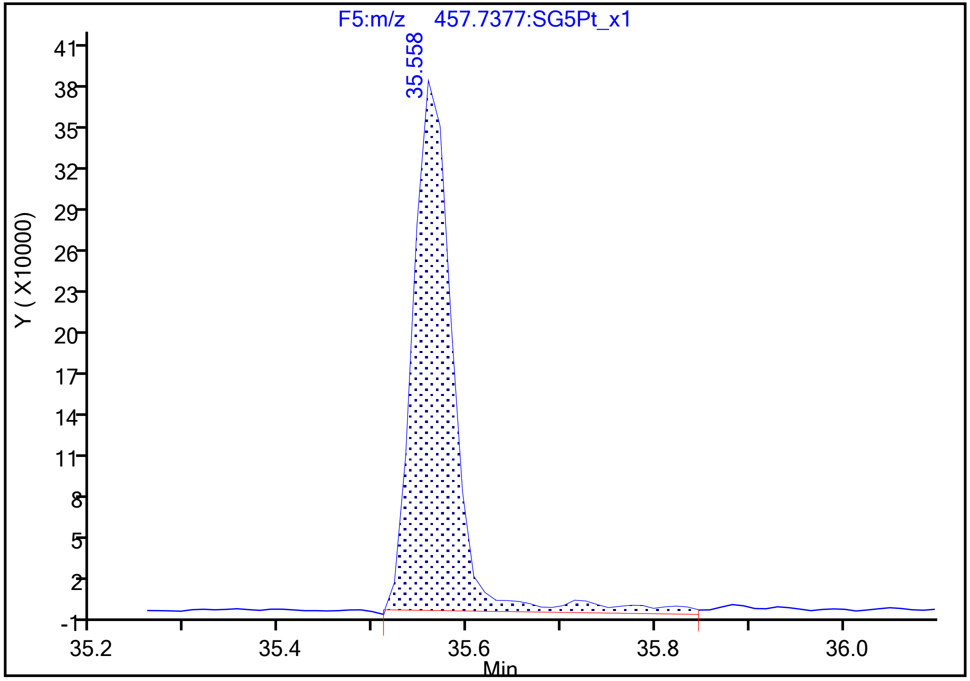

Manual Integration Results

RT:	35.56
Area:	1054070
Amount:	1.355943
Amount Units:	pg/ul

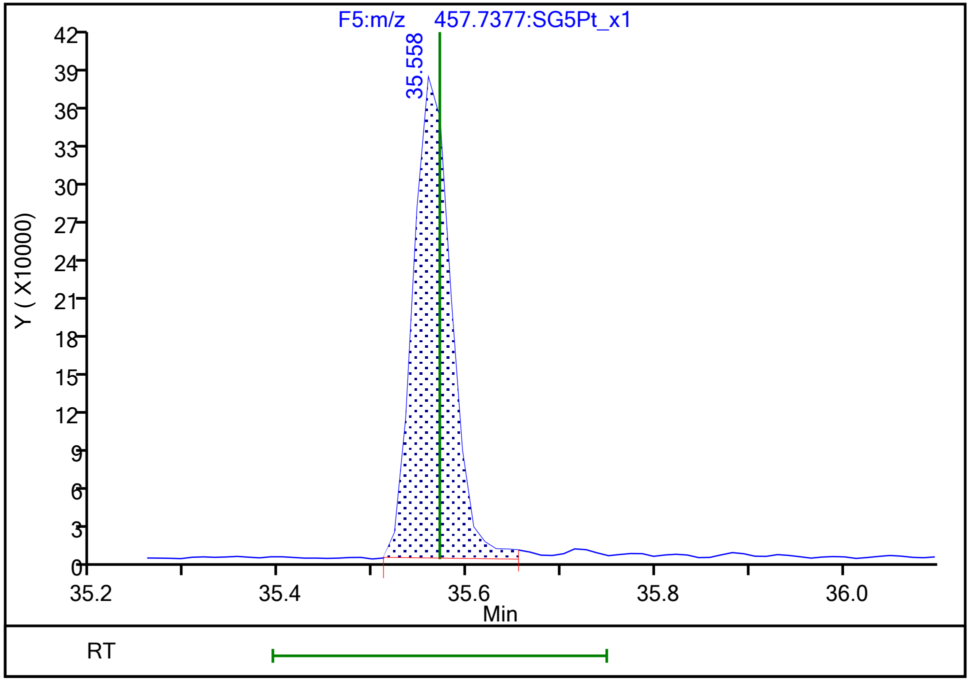

Reviewer: dadunj, 13-Oct-2020 12:19:13

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d

Injection Date:	09-Oct-2020 06:38:38	Instrument ID:	3D5		
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5		
Client ID:	11215702-Tank#1-valve-2-2				
Operator ID:	ALM	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 2

RT:	35.56
Area:	1218913
Amount:	1.418048
Amount Units:	pg/ul

Processing Integration Results

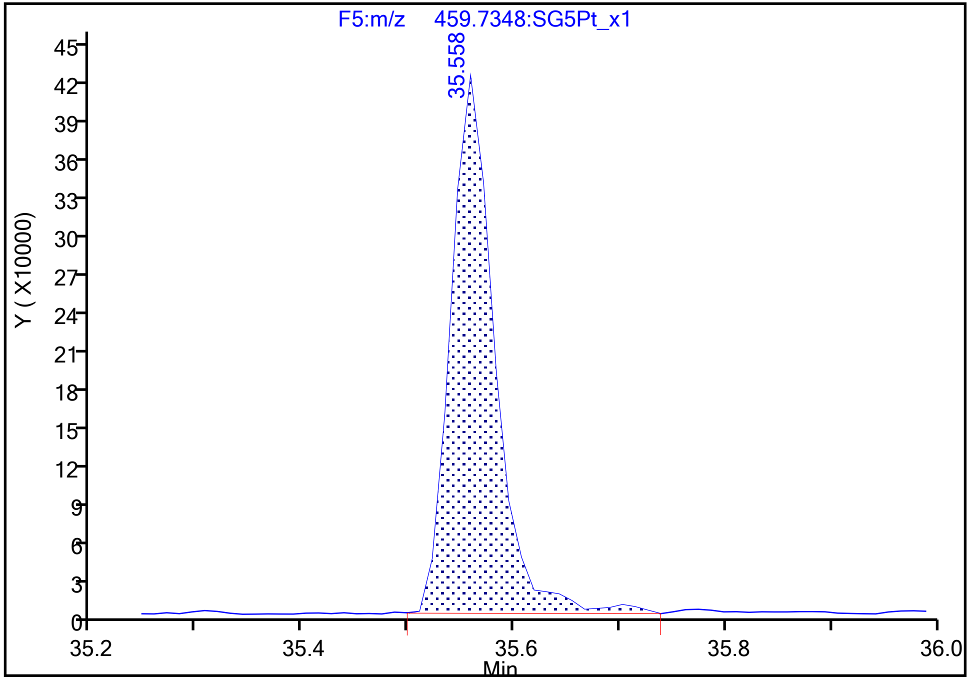

RT:	35.56
Area:	1175960
Amount:	1.355943
Amount Units:	pg/ul

Manual Integration Results

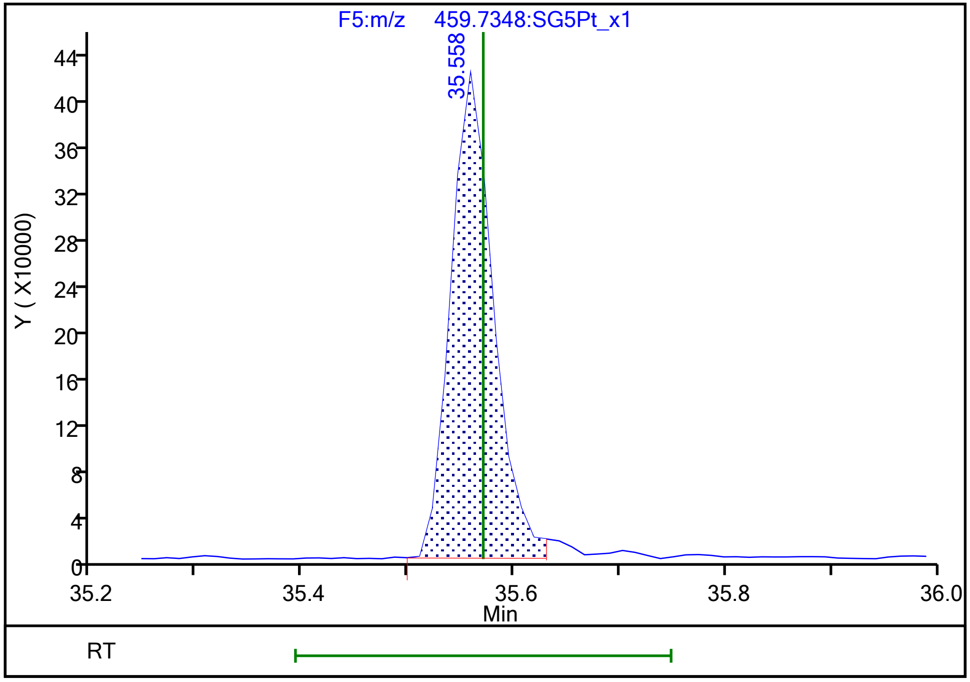

Reviewer: dadunj, 13-Oct-2020 12:19:14

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-2		
Worklist#:	420482	Sample Line#:	15
Column Type:		Column Dia:	

TCDF

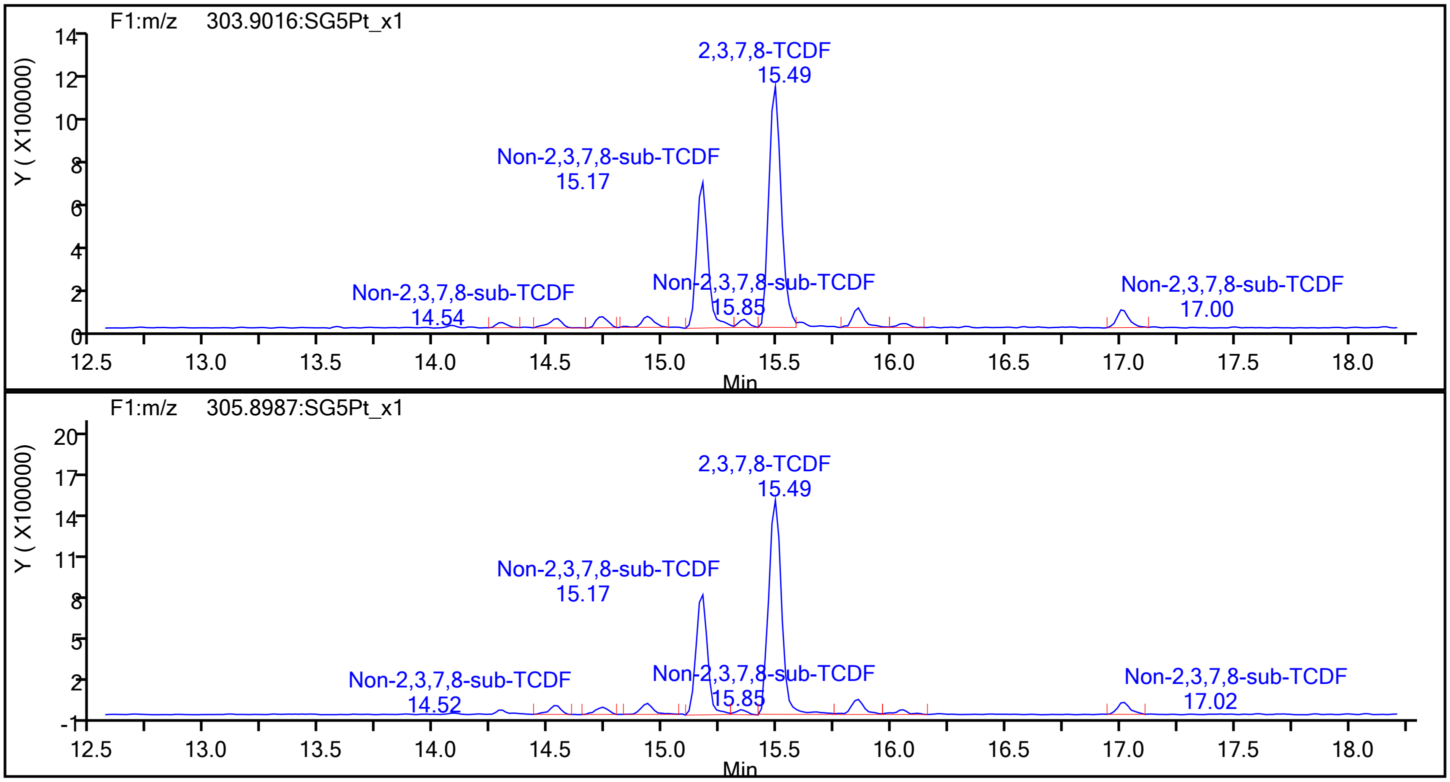

TCDF Standards

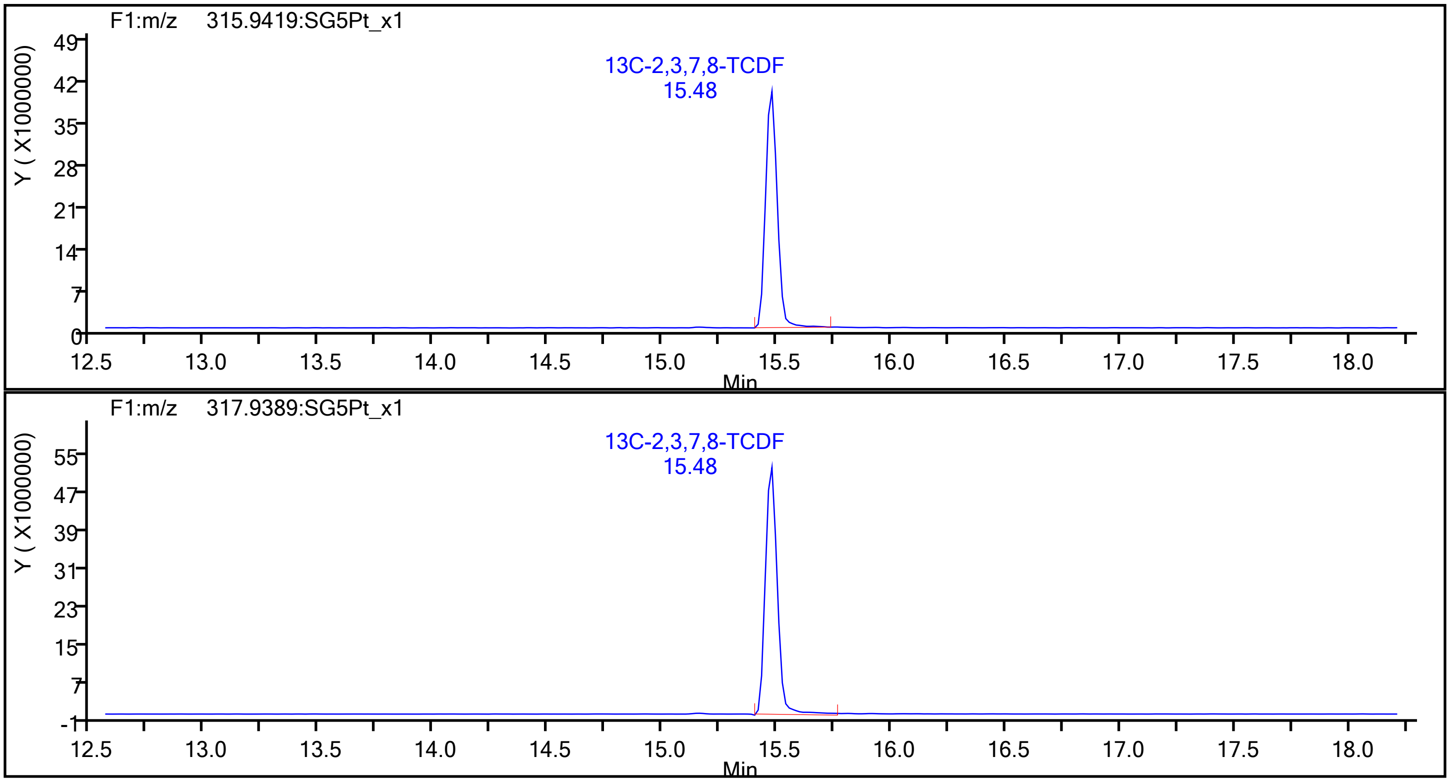

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-2		
Worklist#:	420482	Sample Line#:	15
Column Type:		Column Dia:	

TCDF

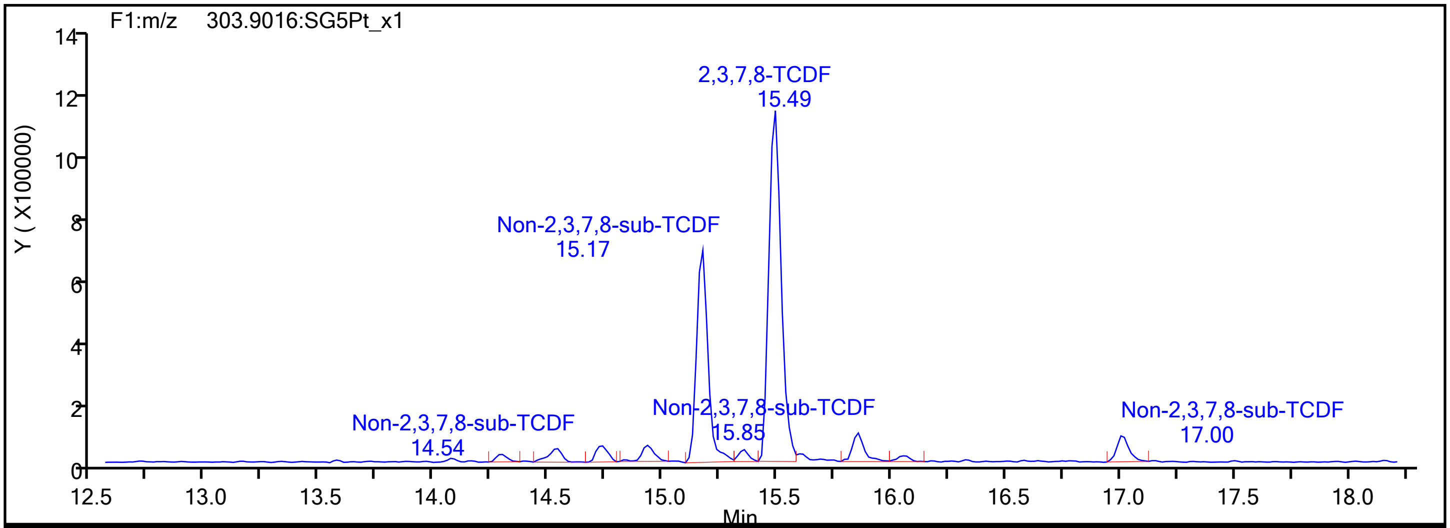

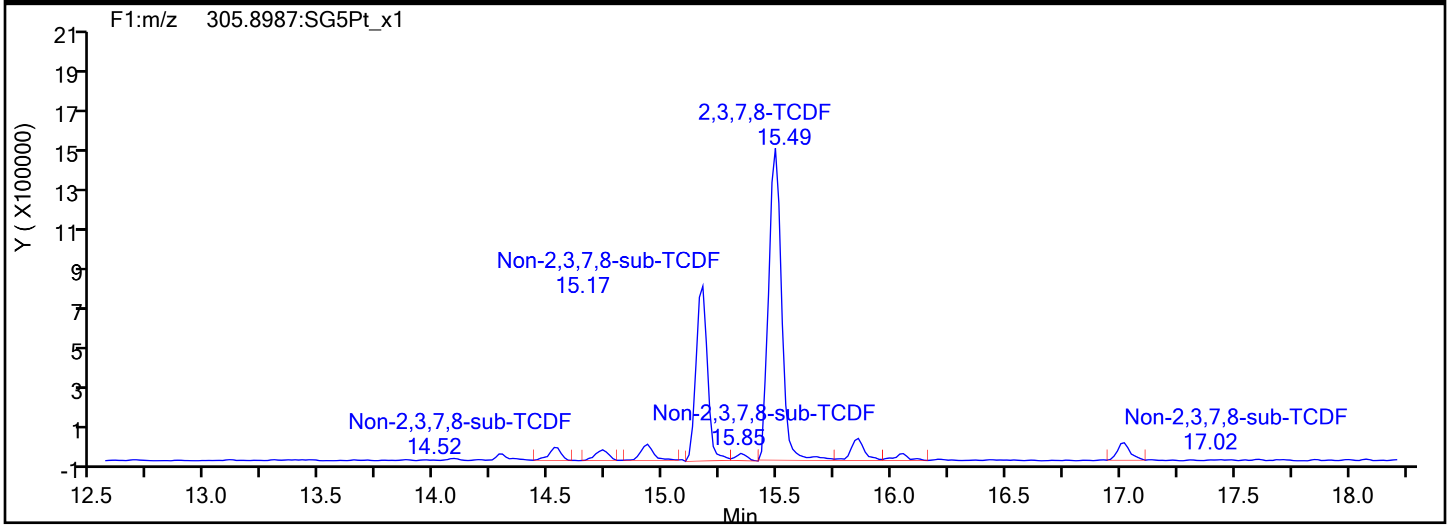

TCDF Interference Mass

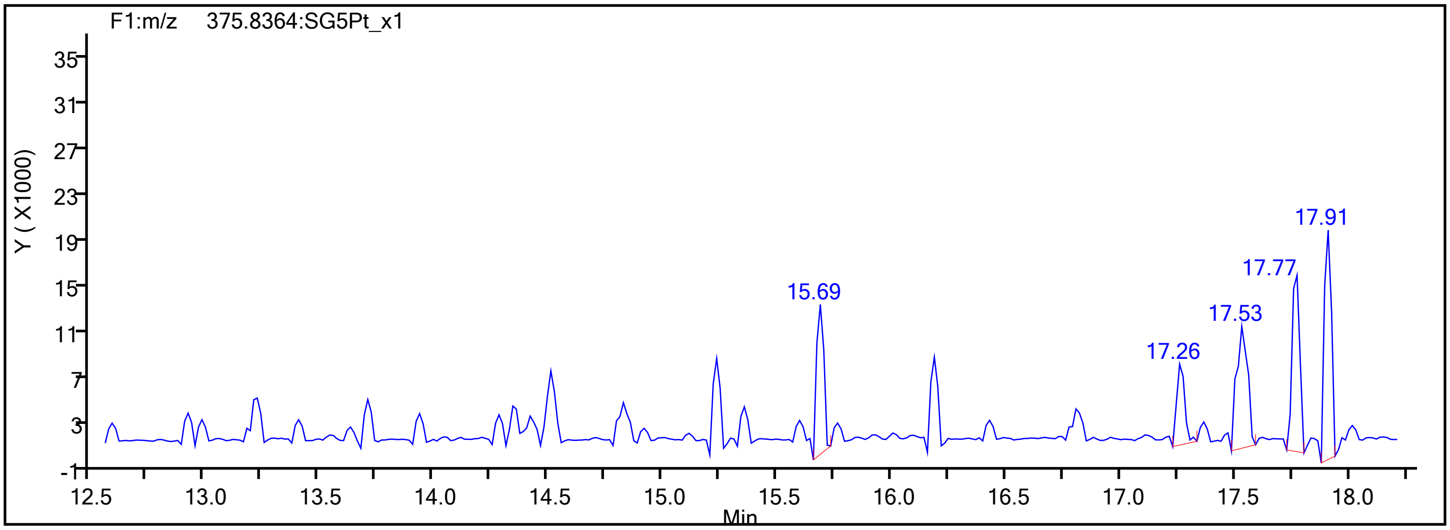

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d		
Injection Date:	09-Oct-2020 06:38:38	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-2		
Worklist#:	420482	Sample Line#:	15
Column Type:		Column Dia:	

TCDD

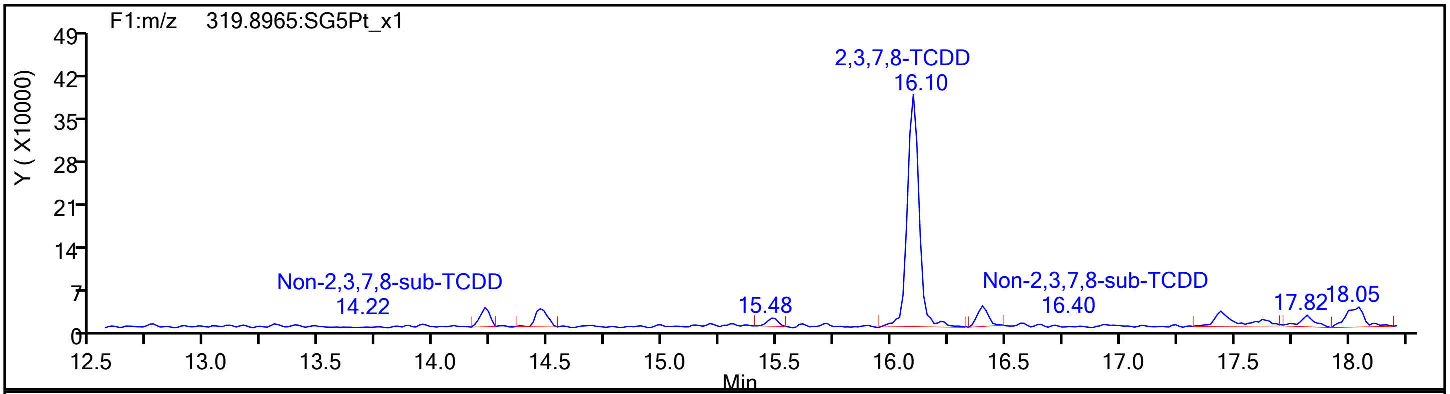

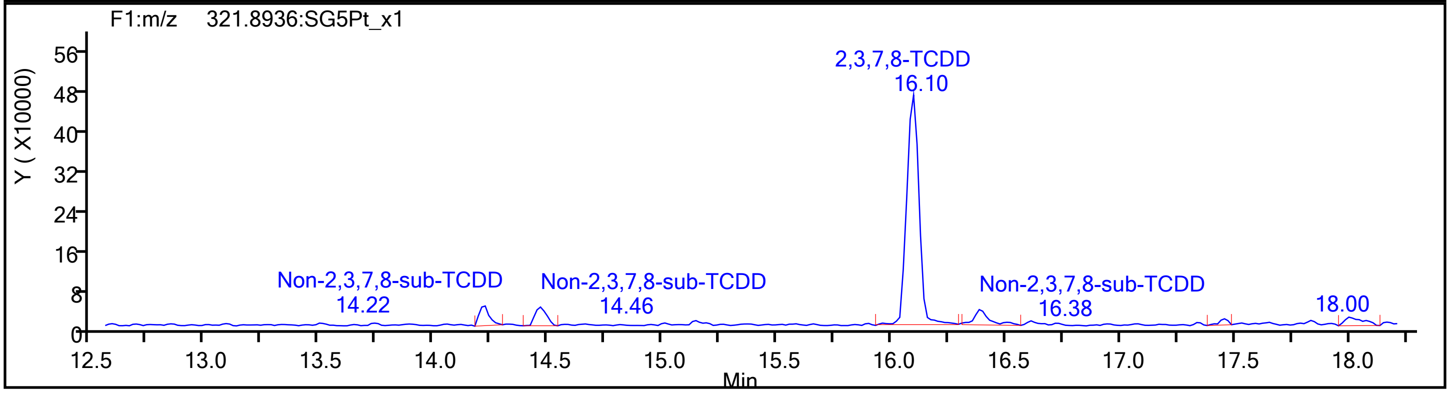

TCDD Standards

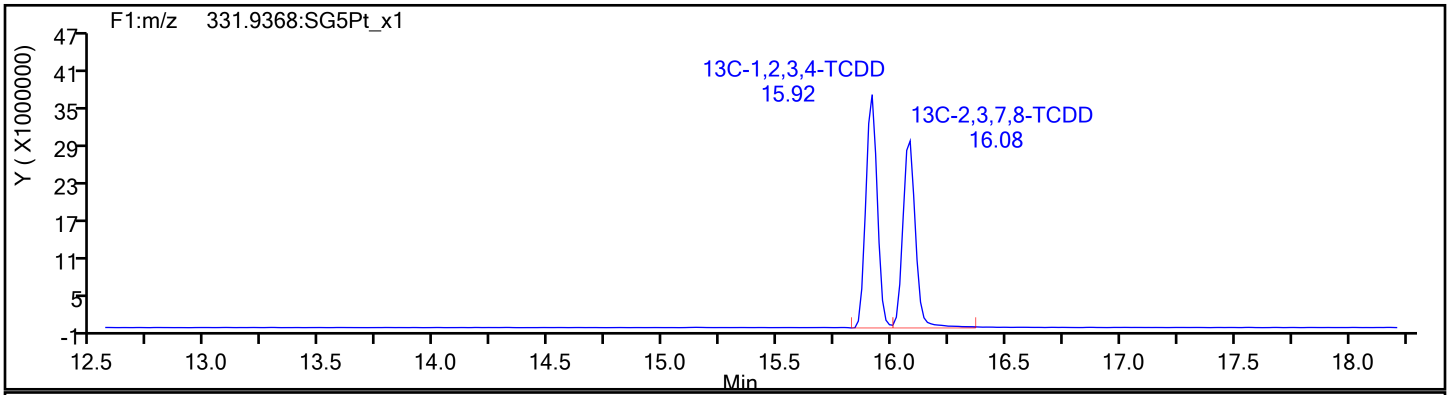

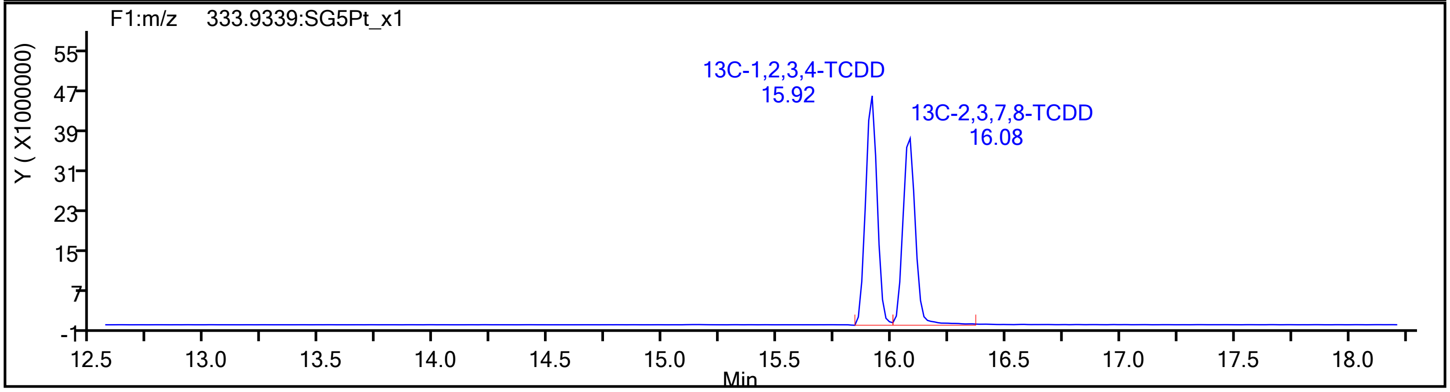

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Eurofins TestAmerica, Sacramento

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Column Type:		Column Dia:	

37Cl4-TCDD

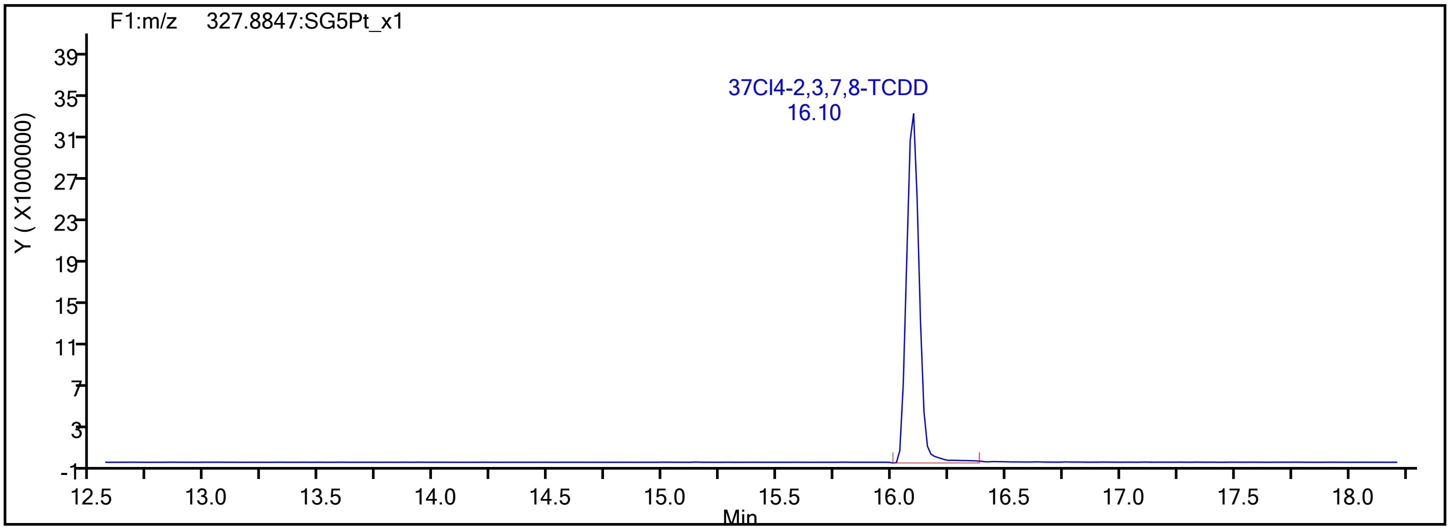

37Cl4-TCDD Standards

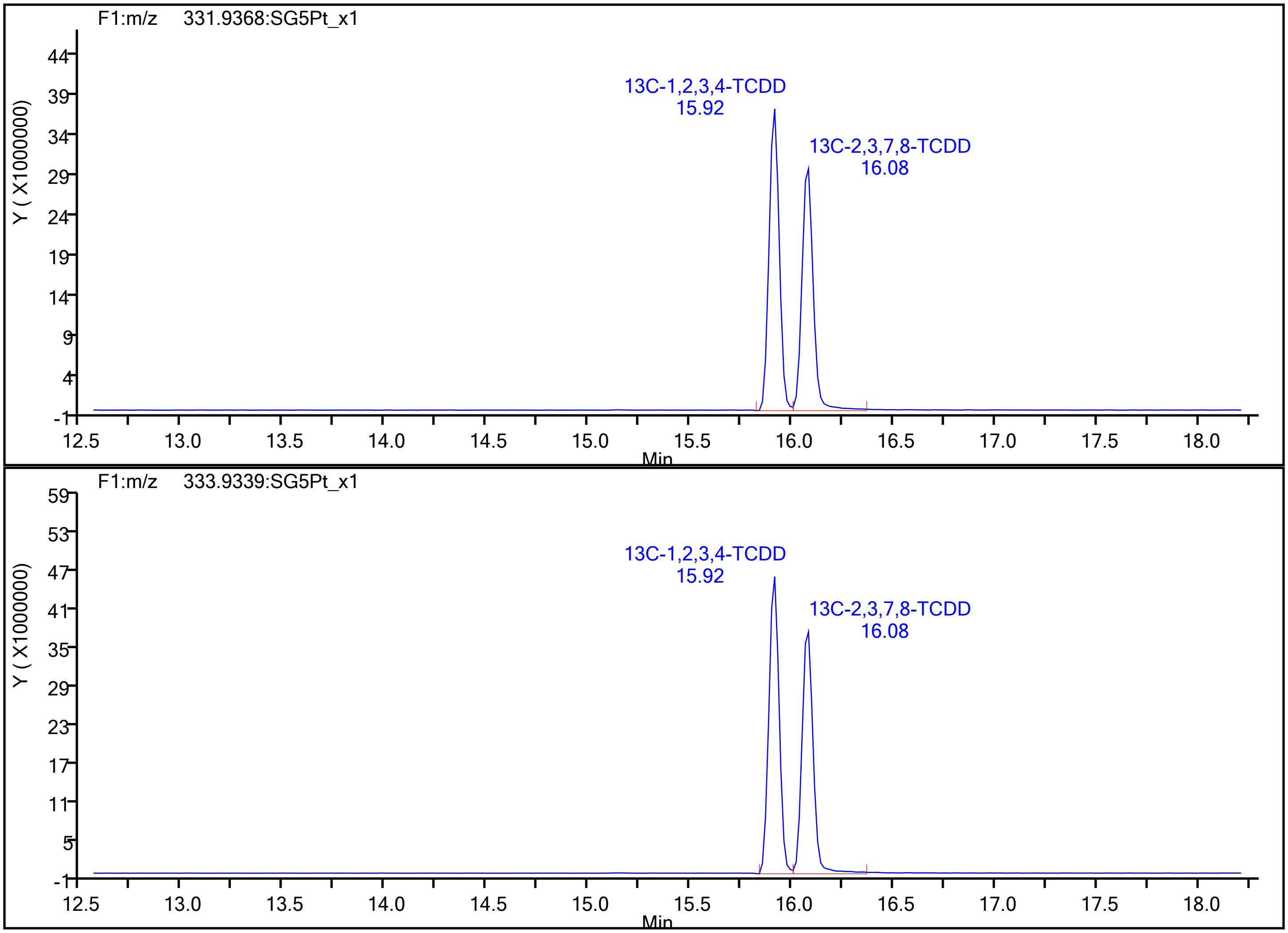

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Eurofins TestAmerica, Sacramento

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PeCDF

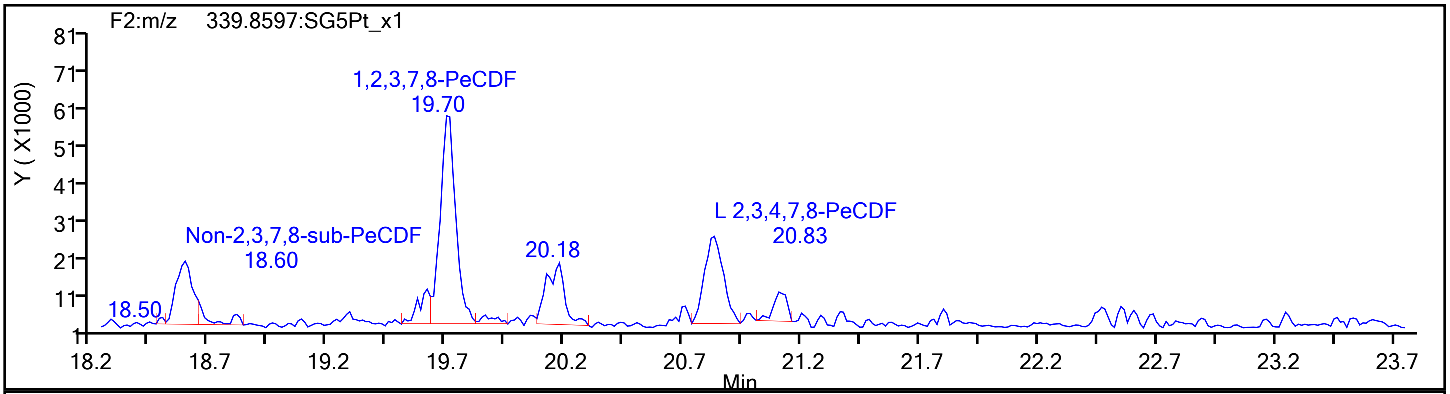

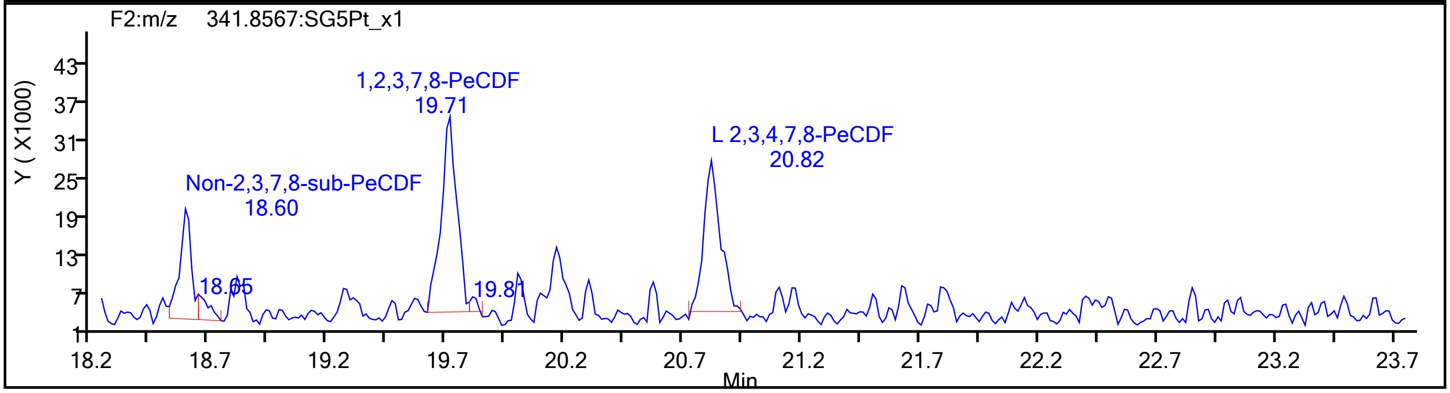

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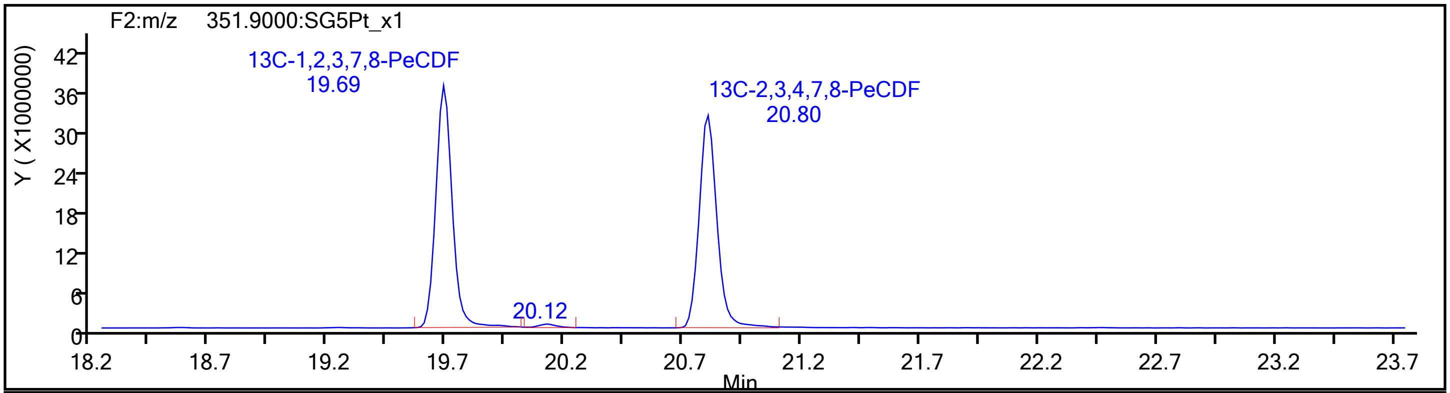

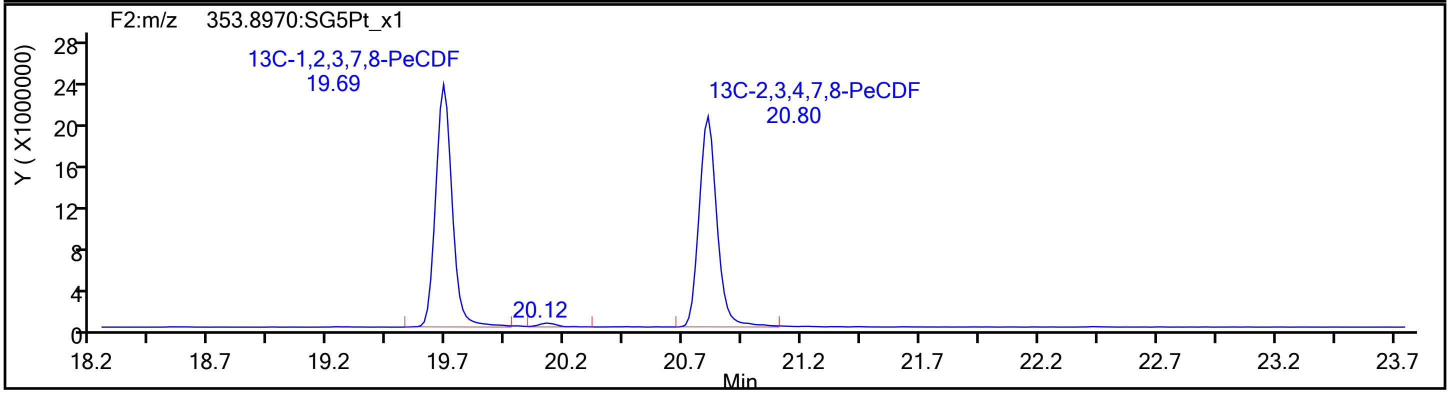

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	420482	Sample Line#:	15
Column Type:		Column Dia:	

PeCDF

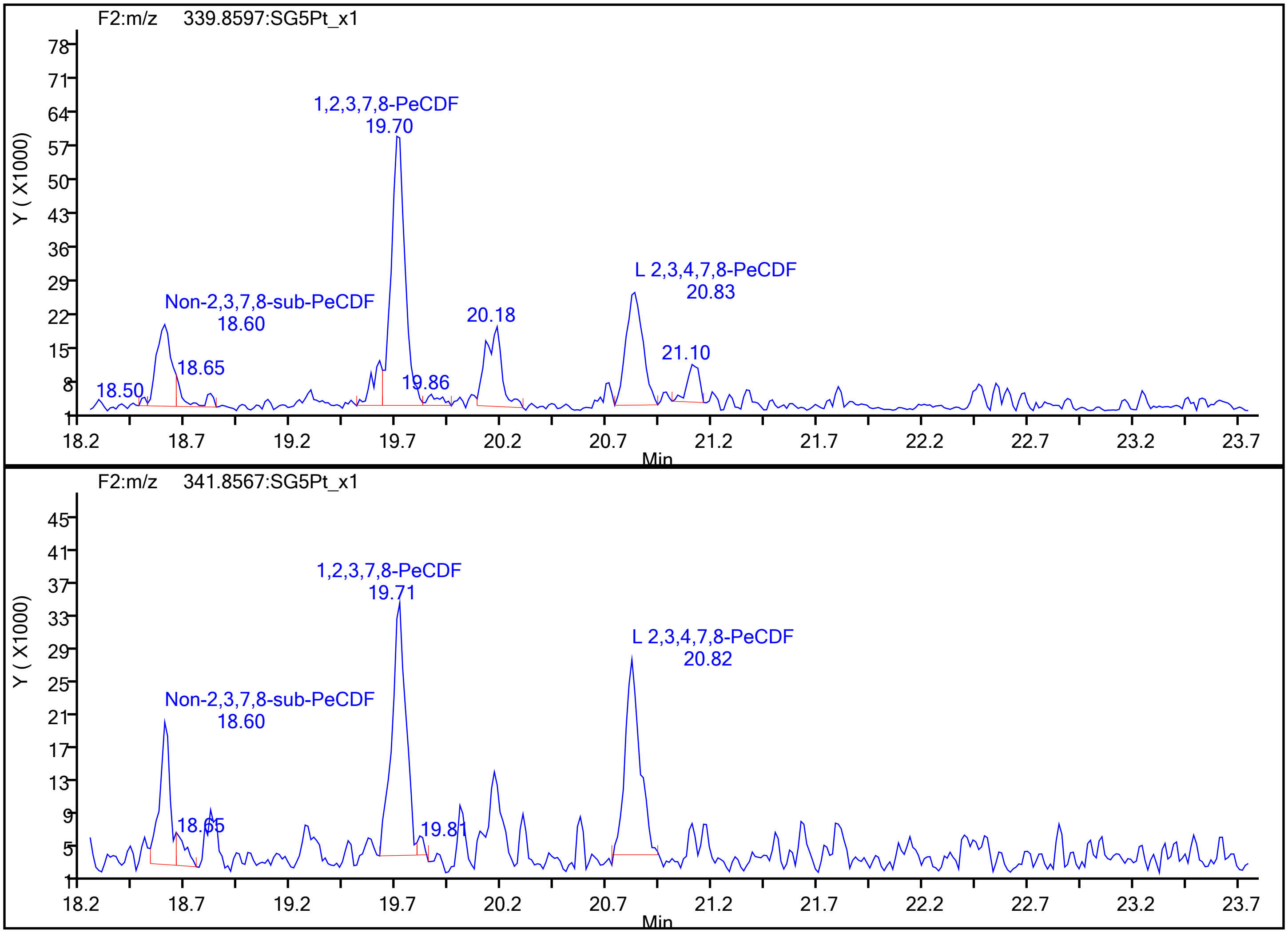

PeCDF Interference Mass

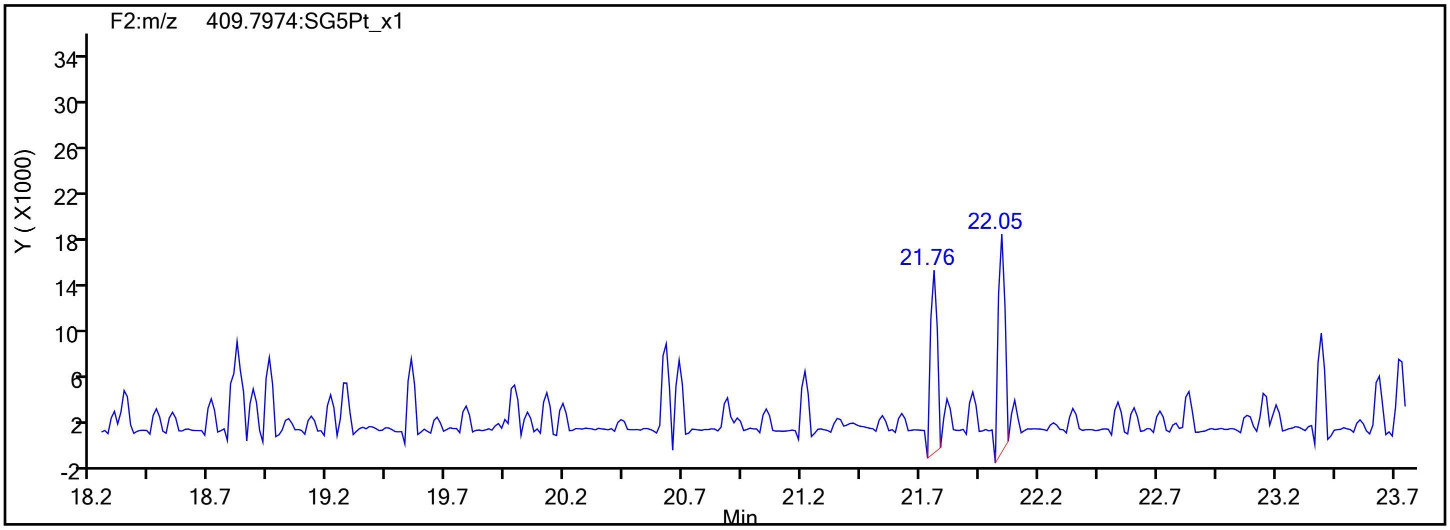

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 06:38:38 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-2

Worklist#: 420482 Sample Line#: 15

Column Type: Column Dia:

PeCDD

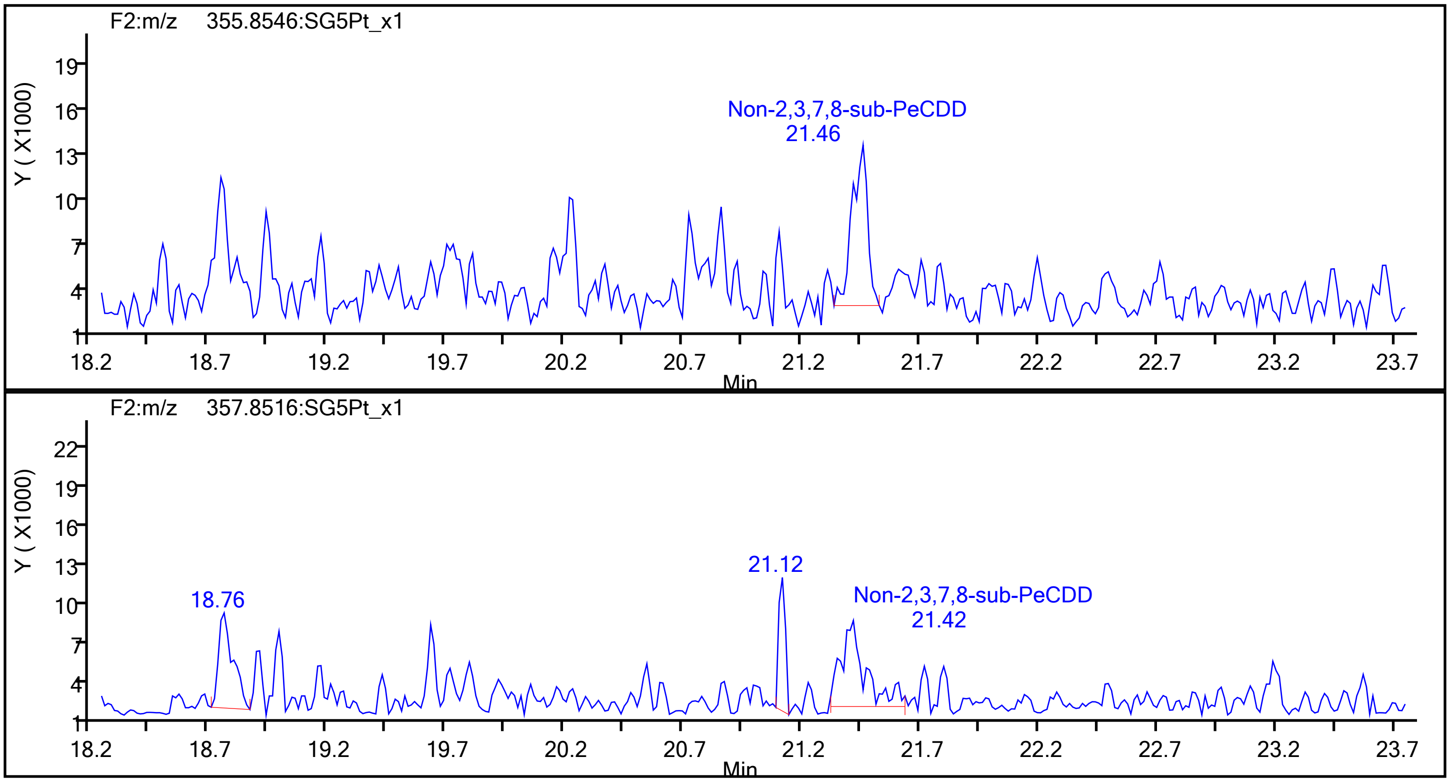

PeCDD Standards

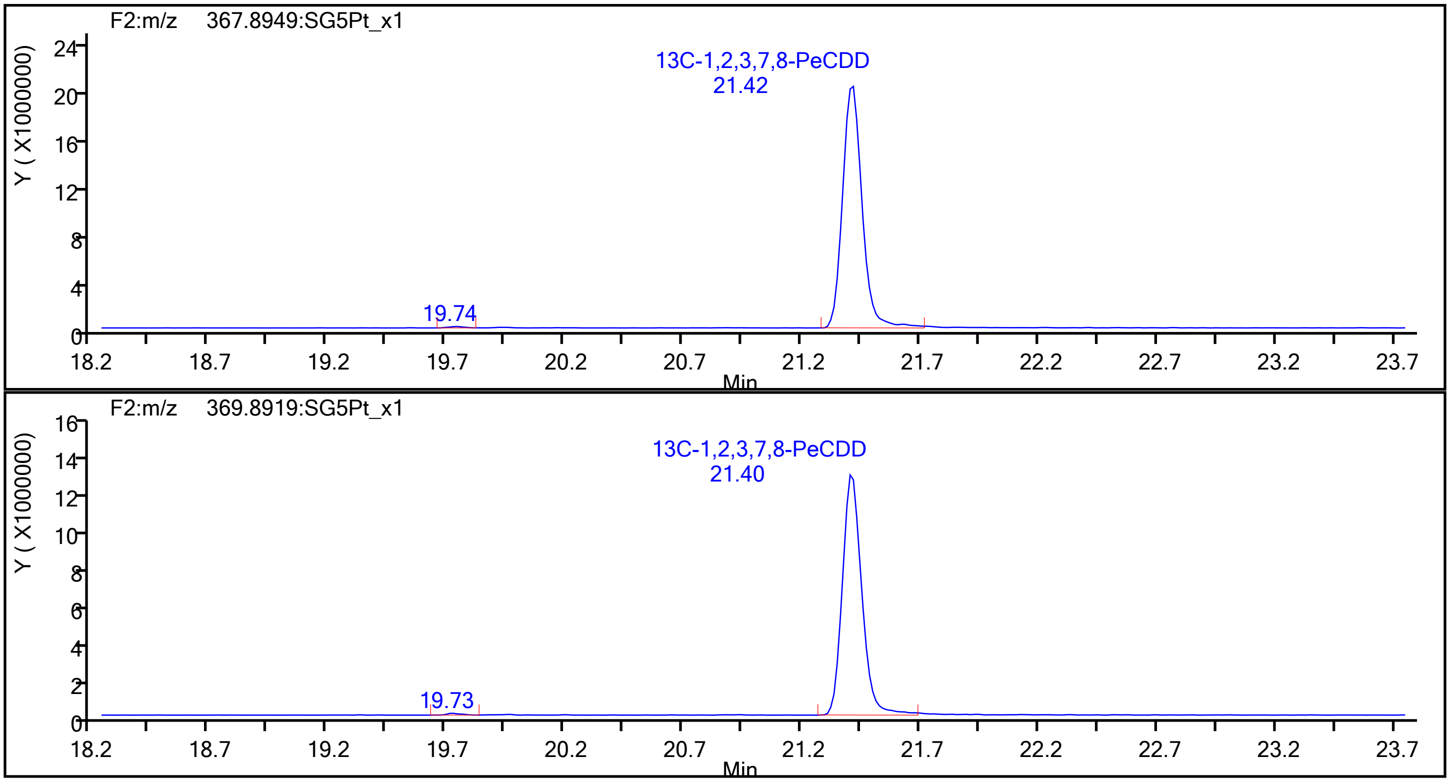

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Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-2
Worklist#: 420482
Sample Line#: 15
Column Type:
Column Dia:

HxCDF

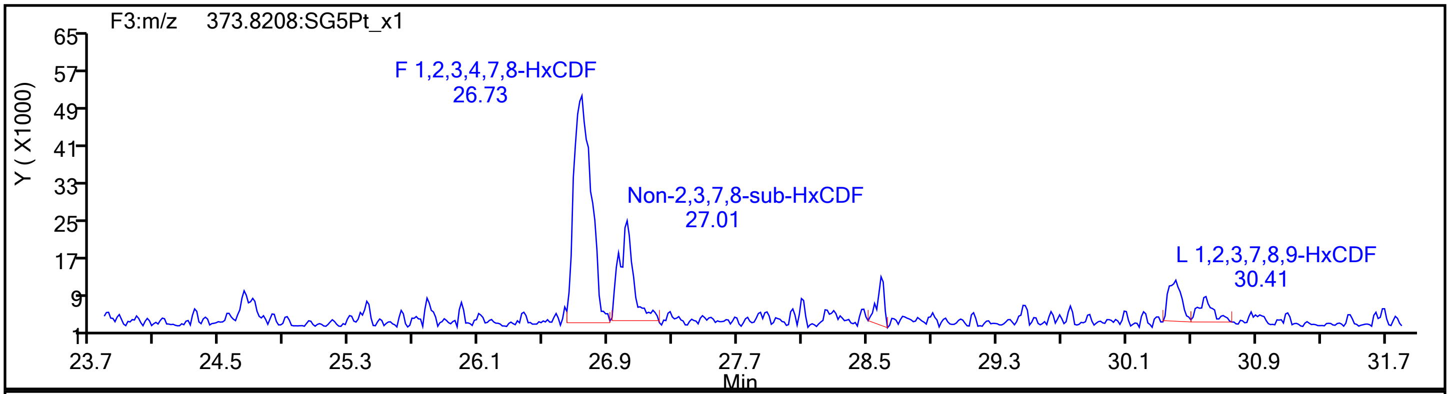

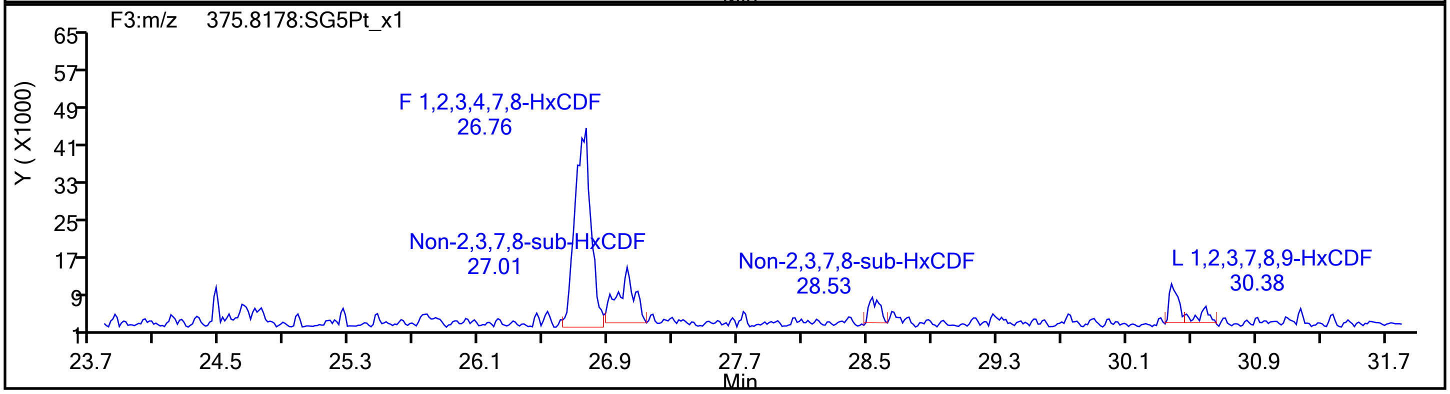

HxCDF Standards

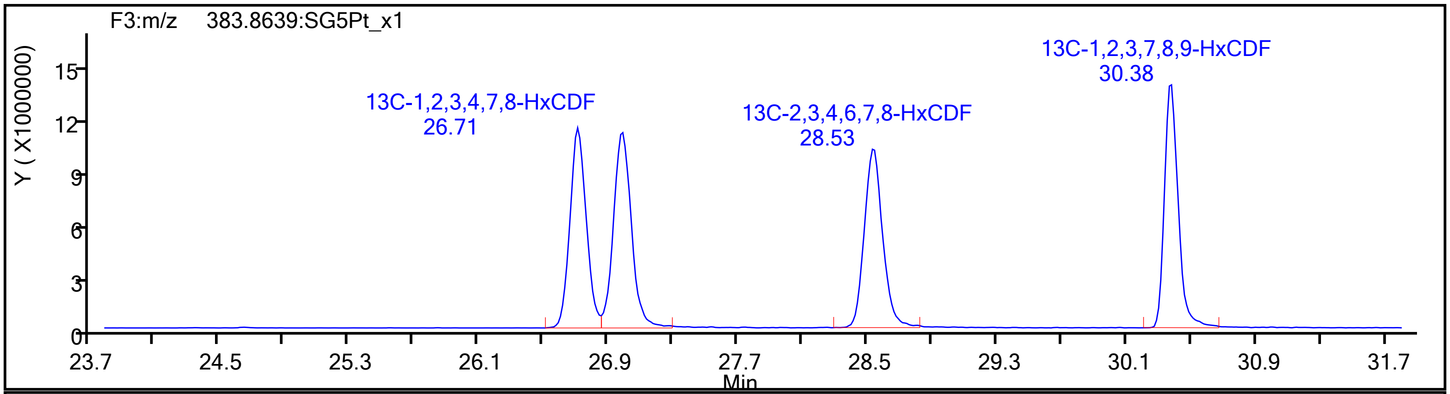

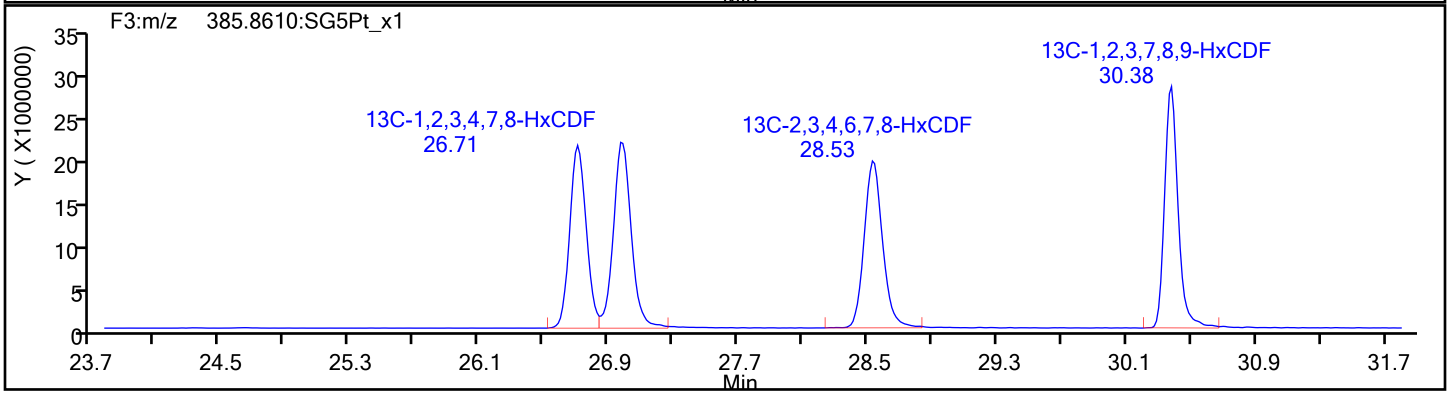

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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Column Type:		Column Dia:	

HxCDF

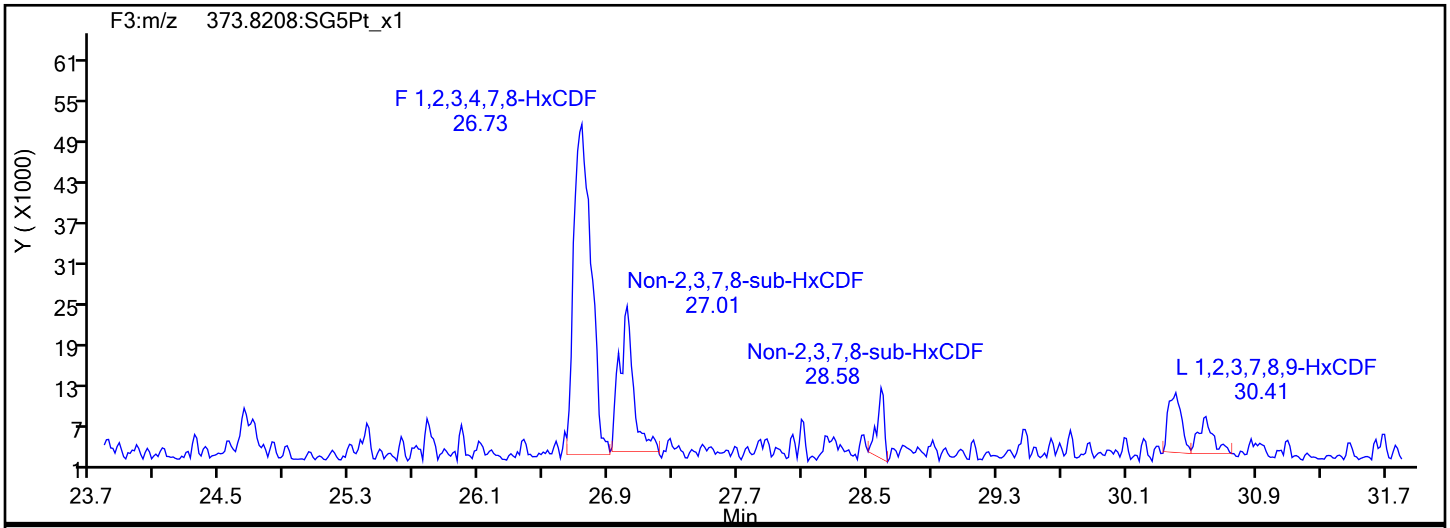

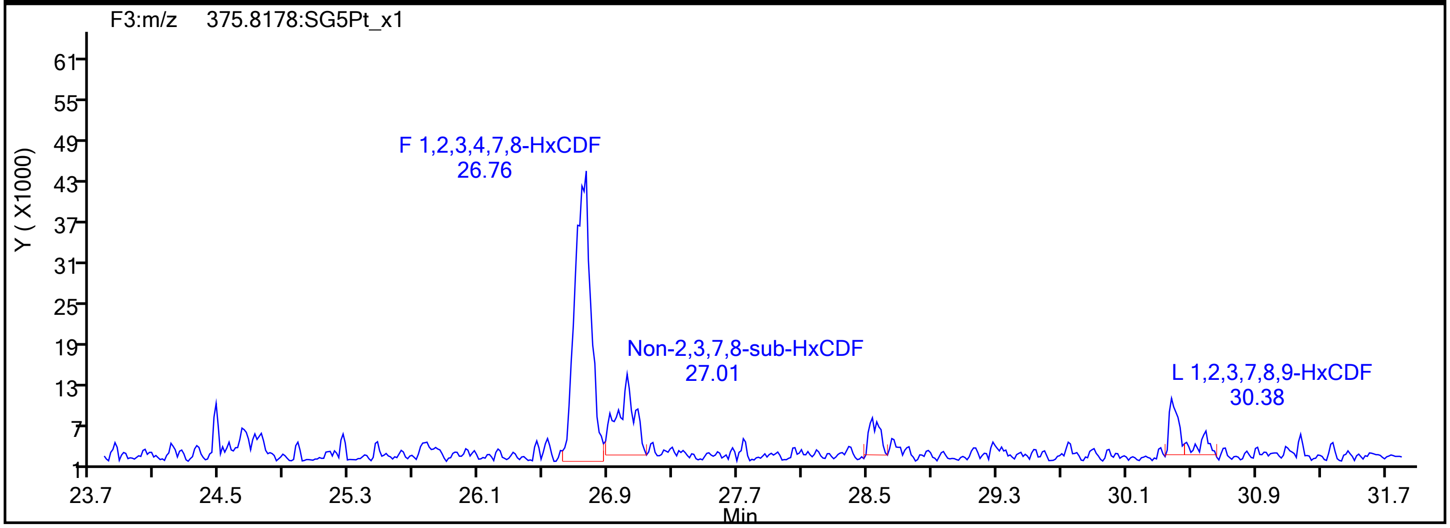

HxCDF Interference Mass

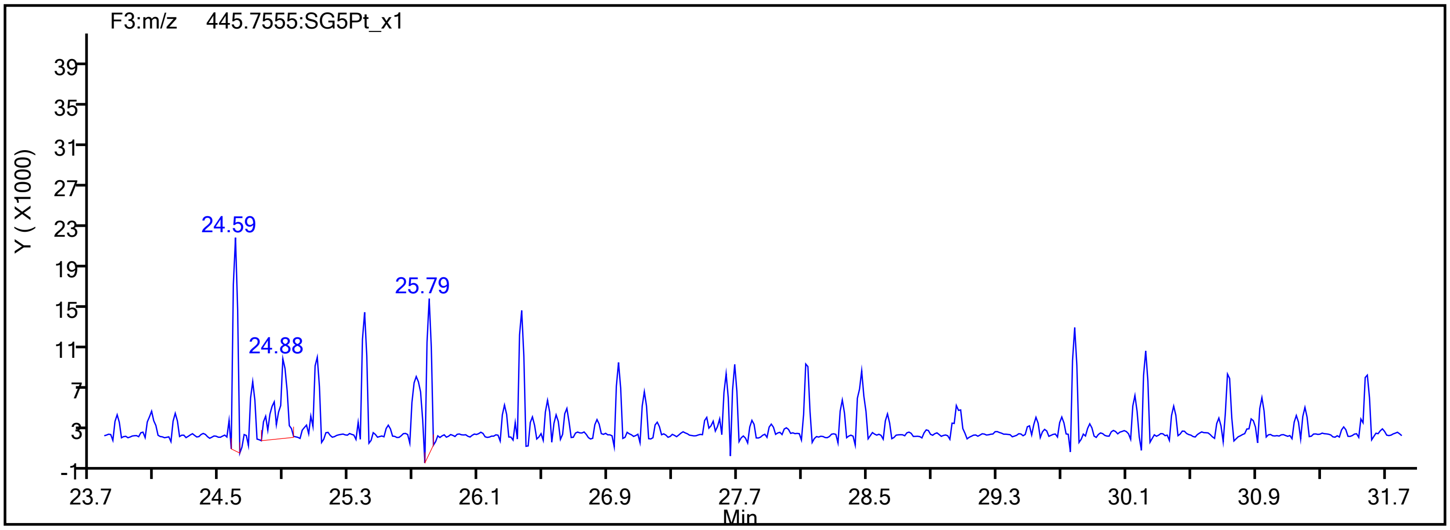

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Injection Date: 09-Oct-2020 06:38:38 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-2

Worklist#: 420482 Sample Line#: 15

Column Type: Column Dia:

HxCDD

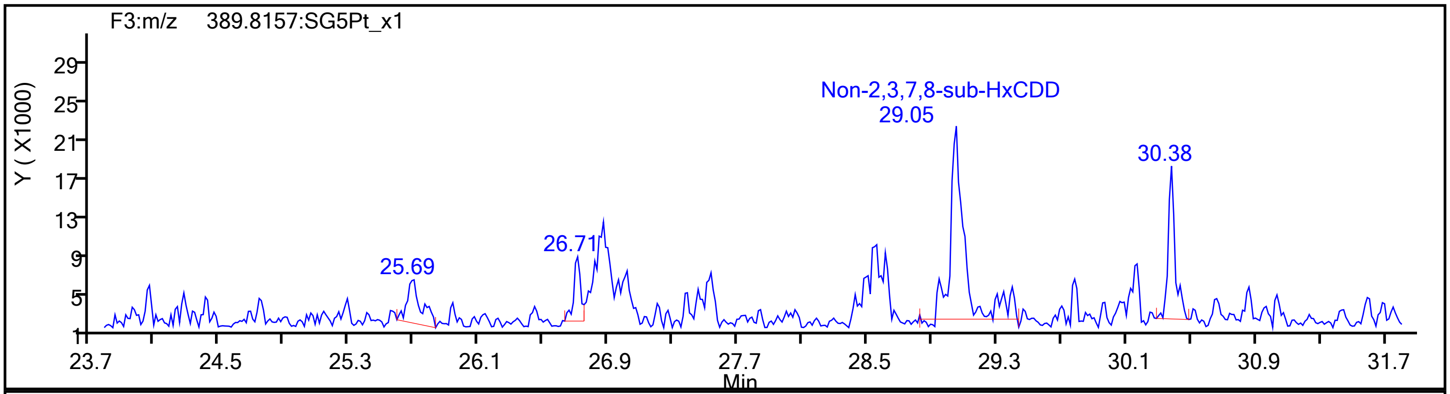

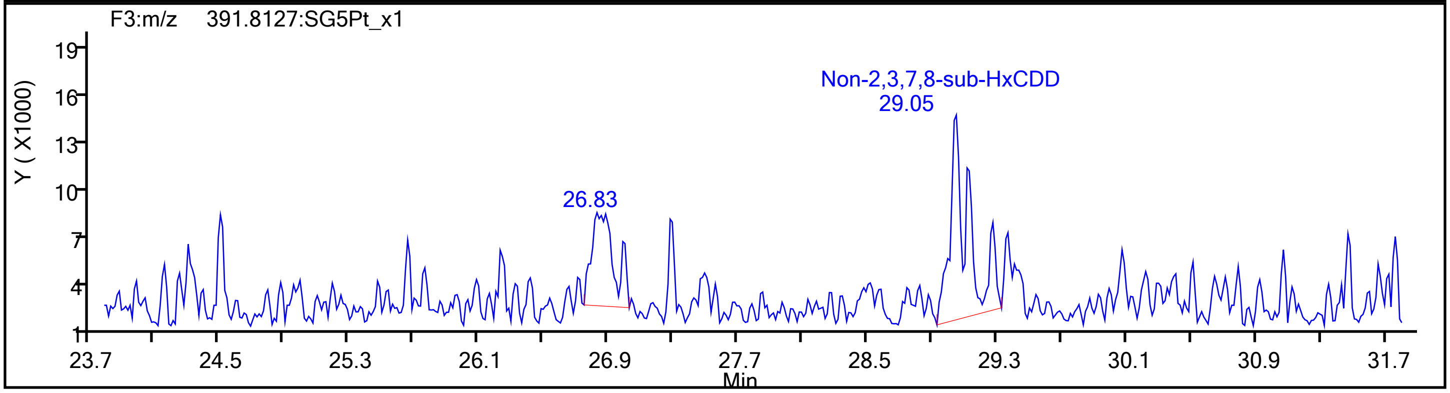

HxCDD Standards

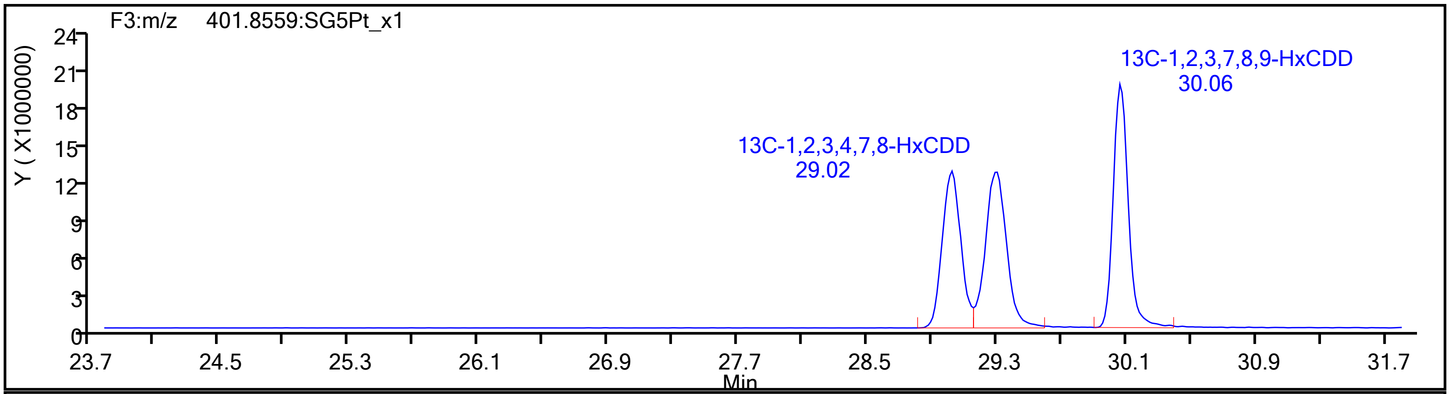

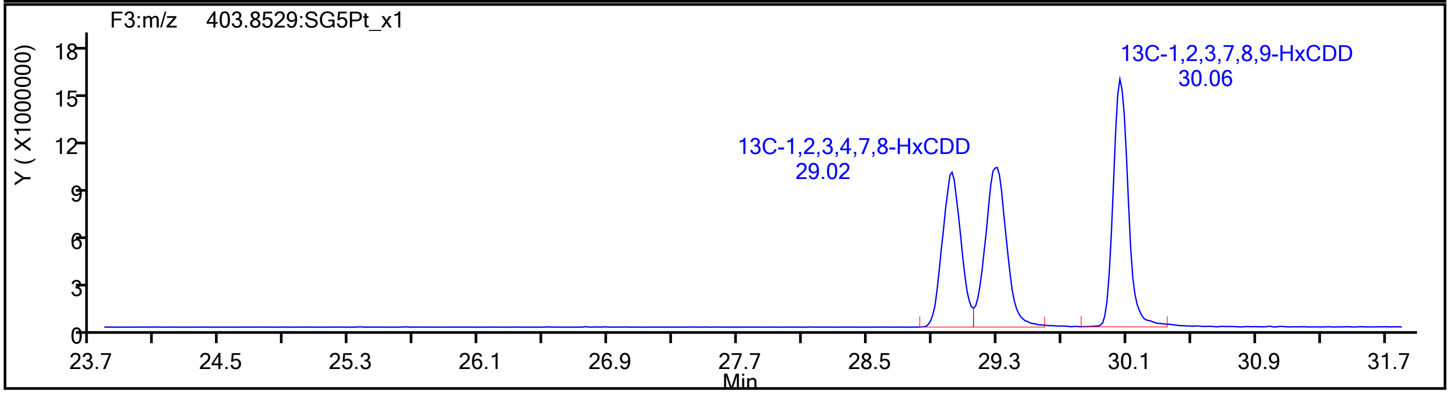

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Eurofins TestAmerica, Sacramento

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Operator ID: ALM
Method: Dioxin_3D5
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Sample Line#: 15
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Column Dia:

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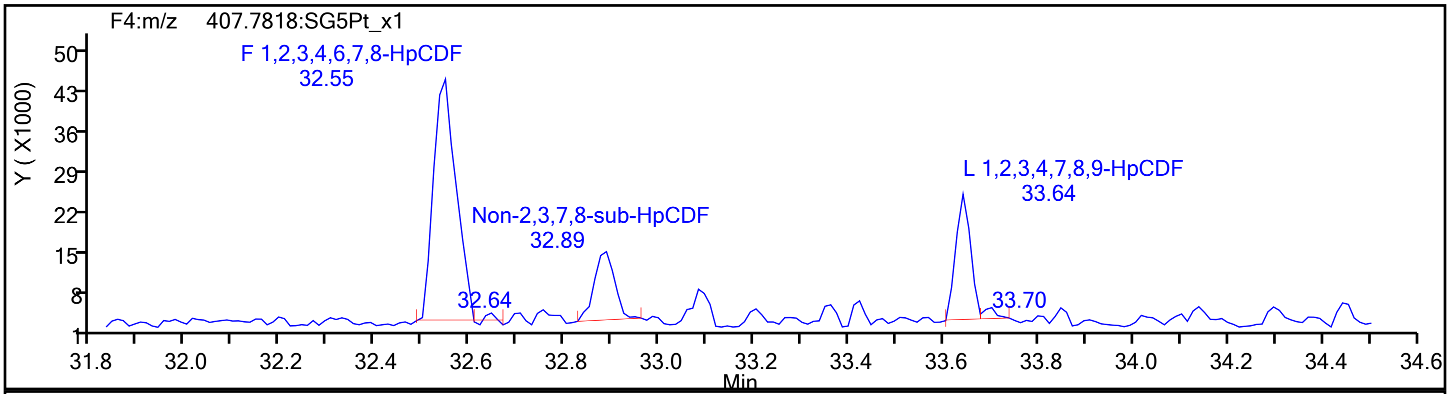

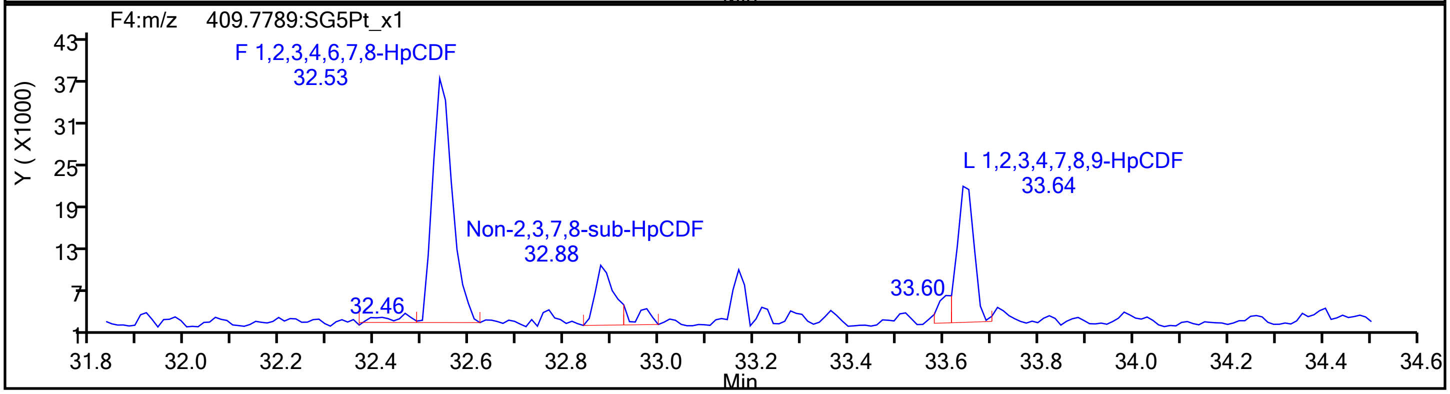

HpCDF Standards

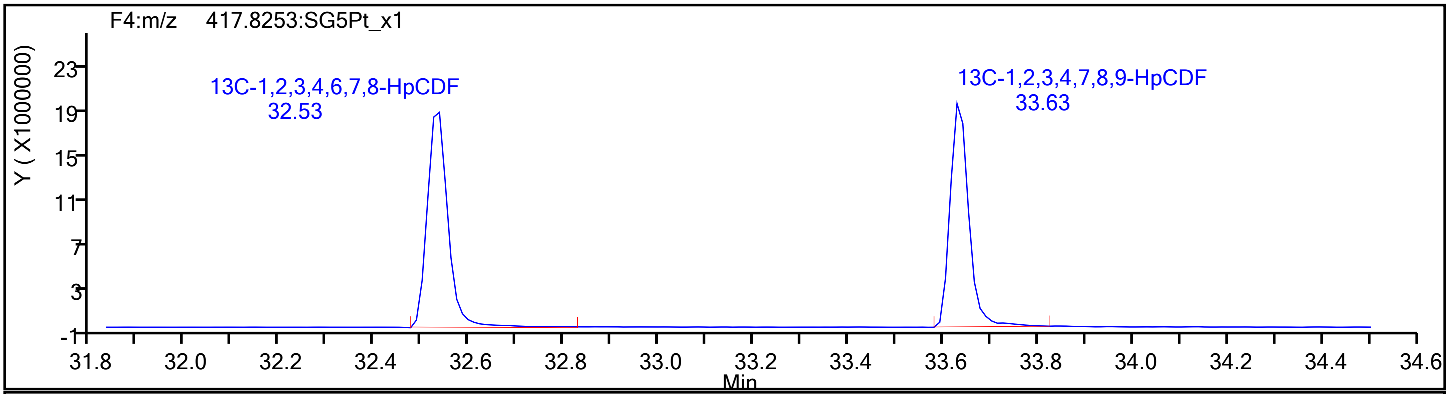

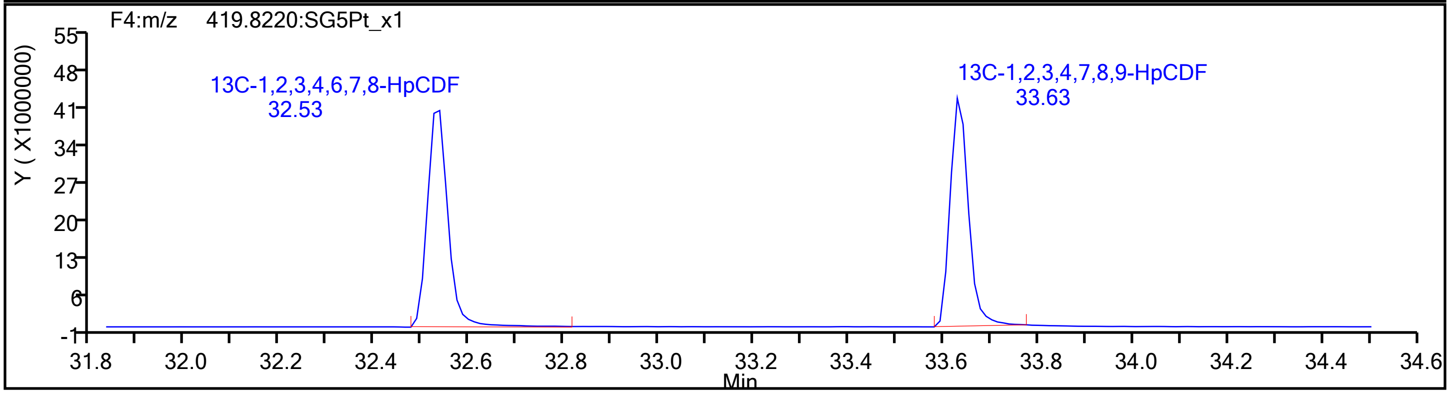

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Eurofins TestAmerica, Sacramento

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Worklist#: 420482　　Sample Line#: 15
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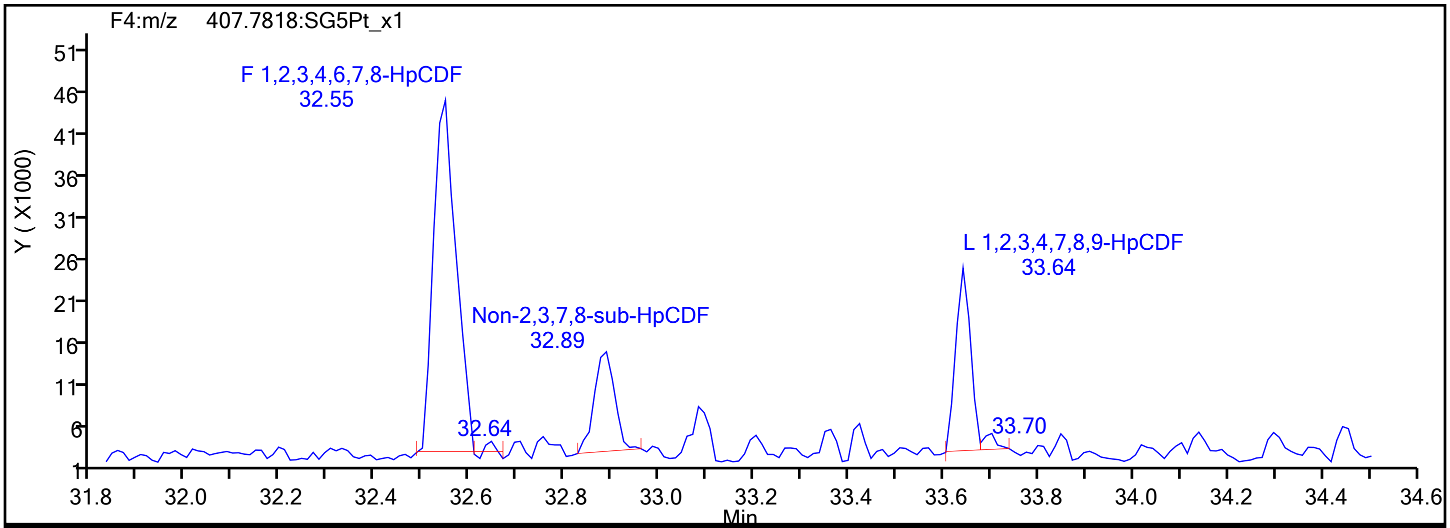

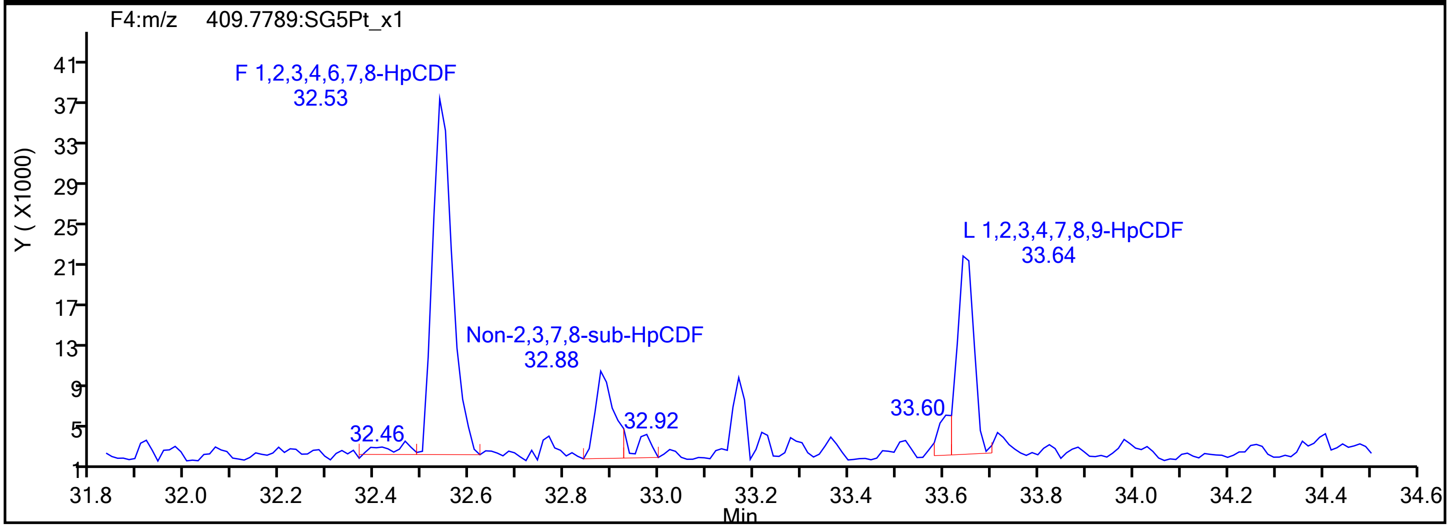

HpCDF Interference Mass

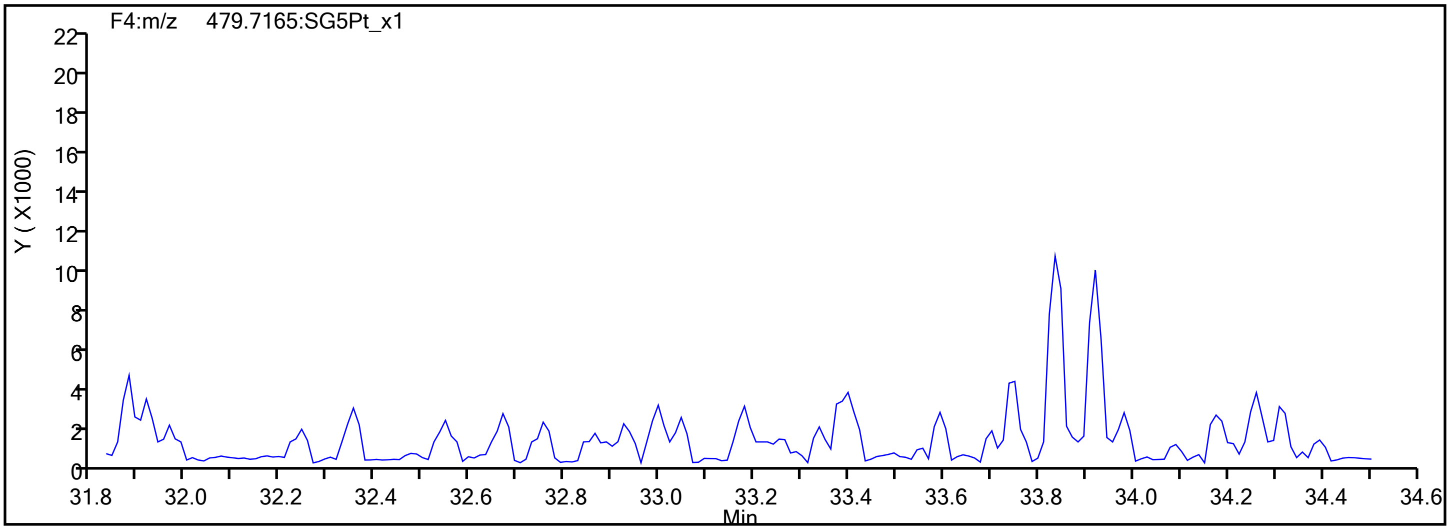

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 06:38:38 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

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Column Type: Column Dia:

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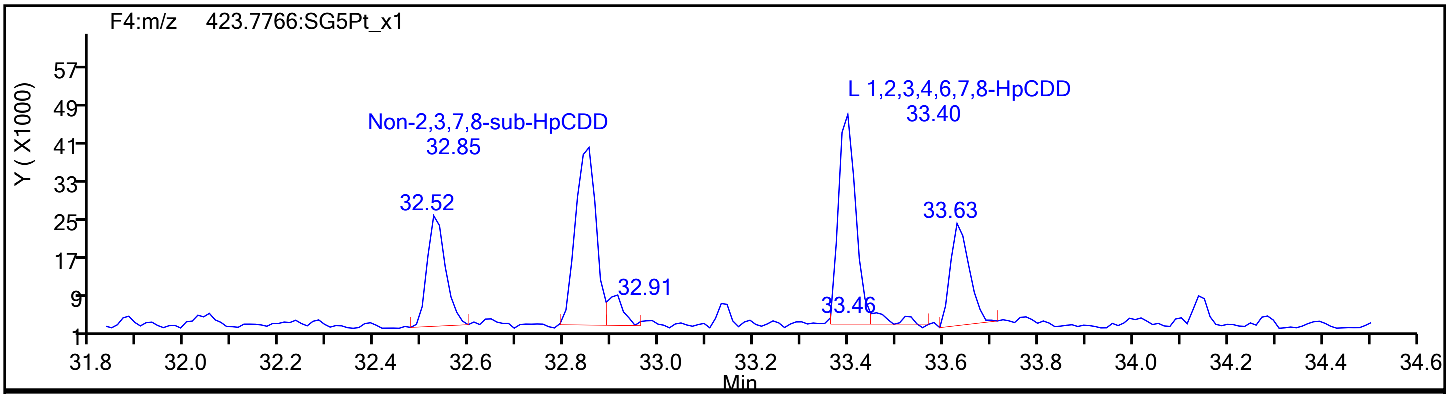

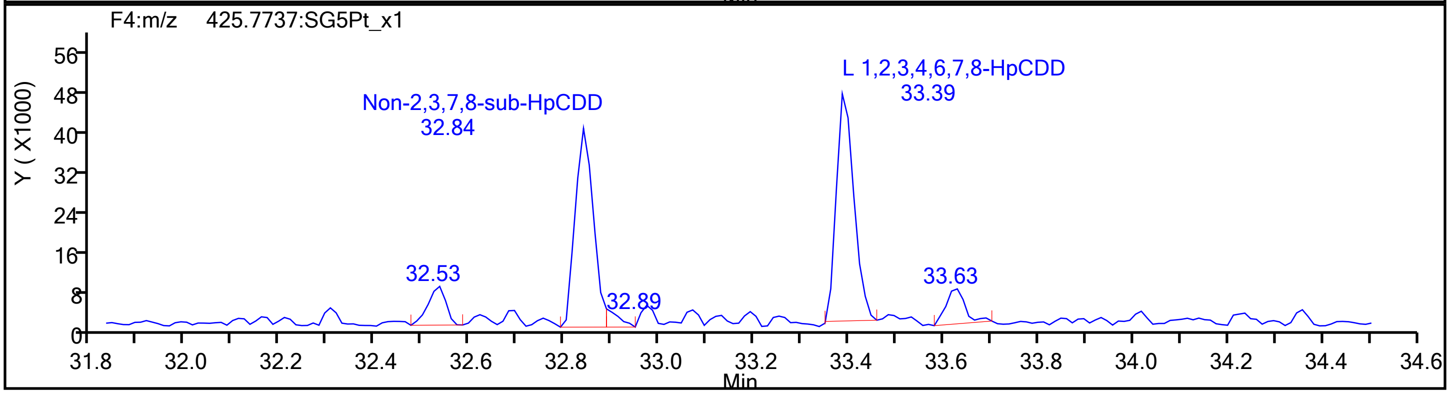

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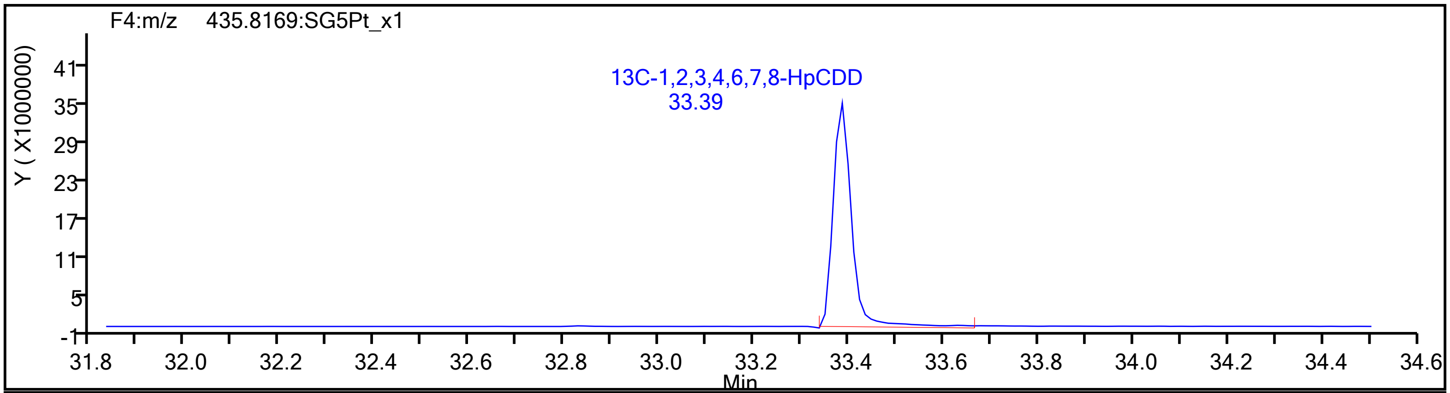

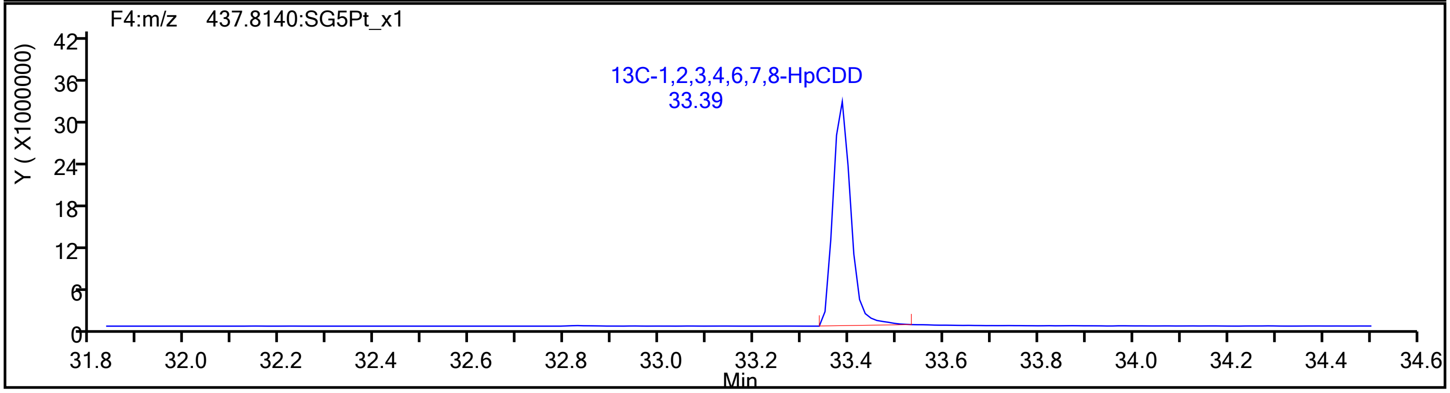

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Worklist#: 420482 Sample Line#: 15
Column Type: Column Dia:

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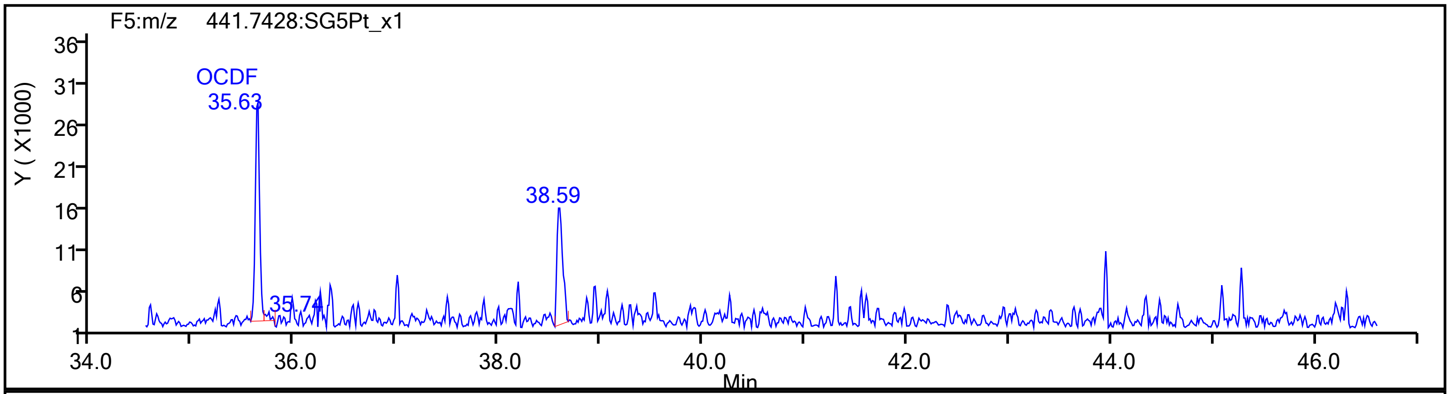

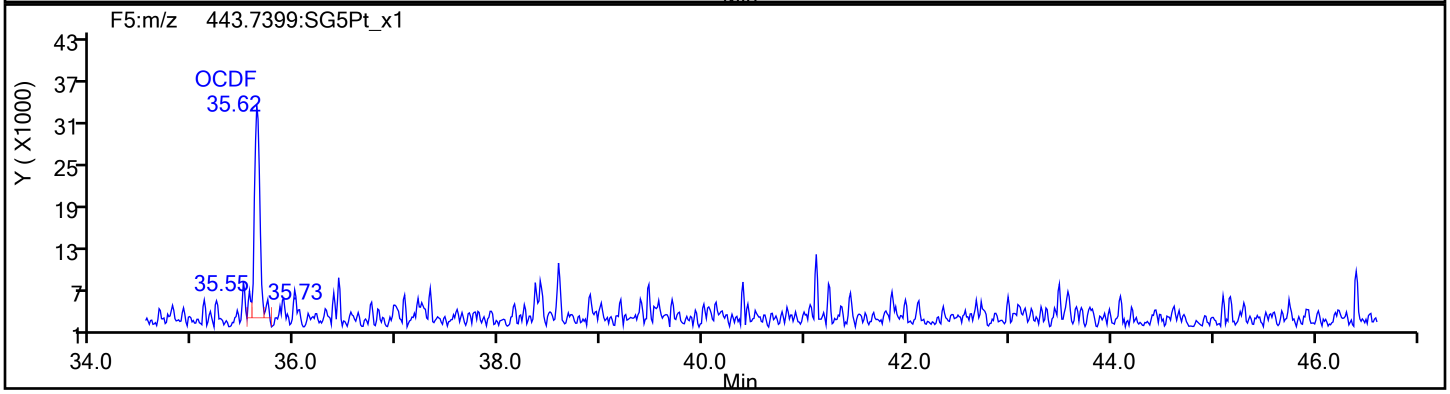

OCDF Standards

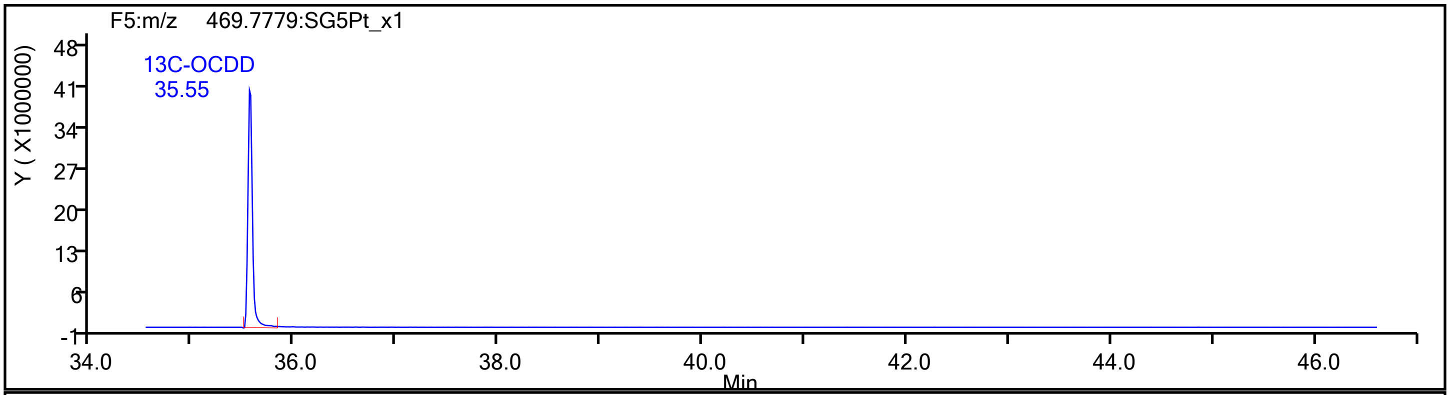

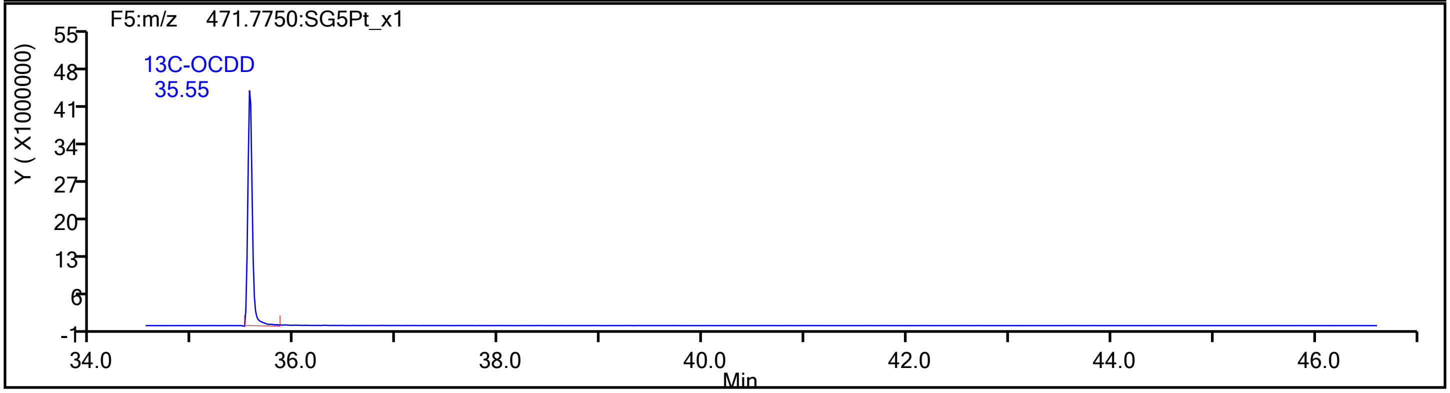

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 06:38:38 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

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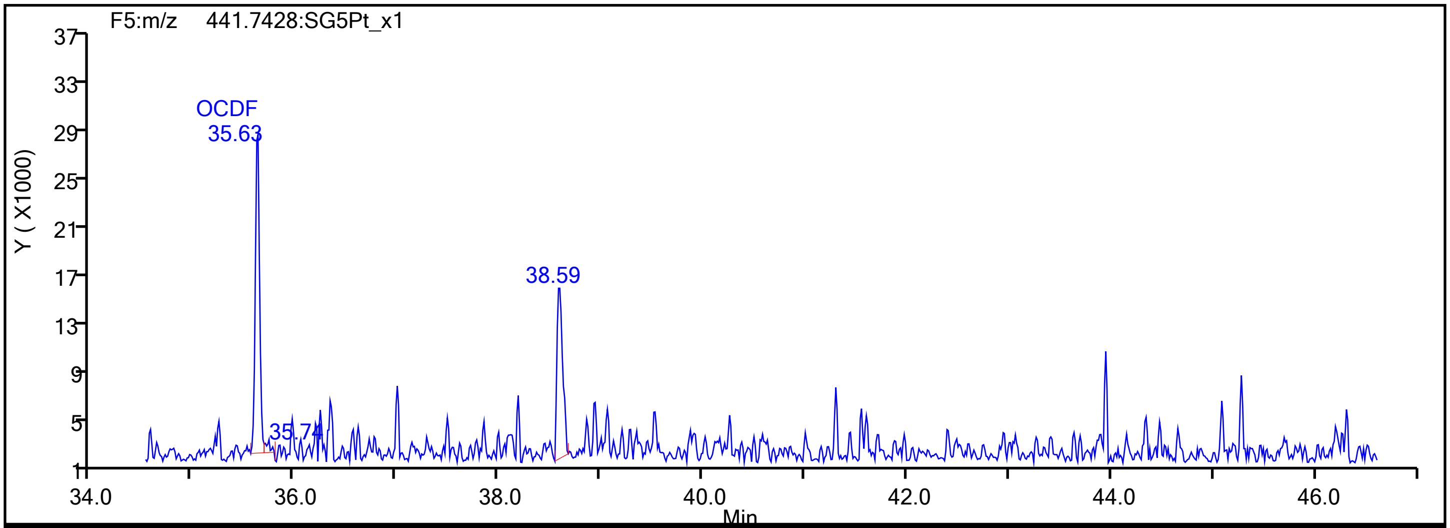

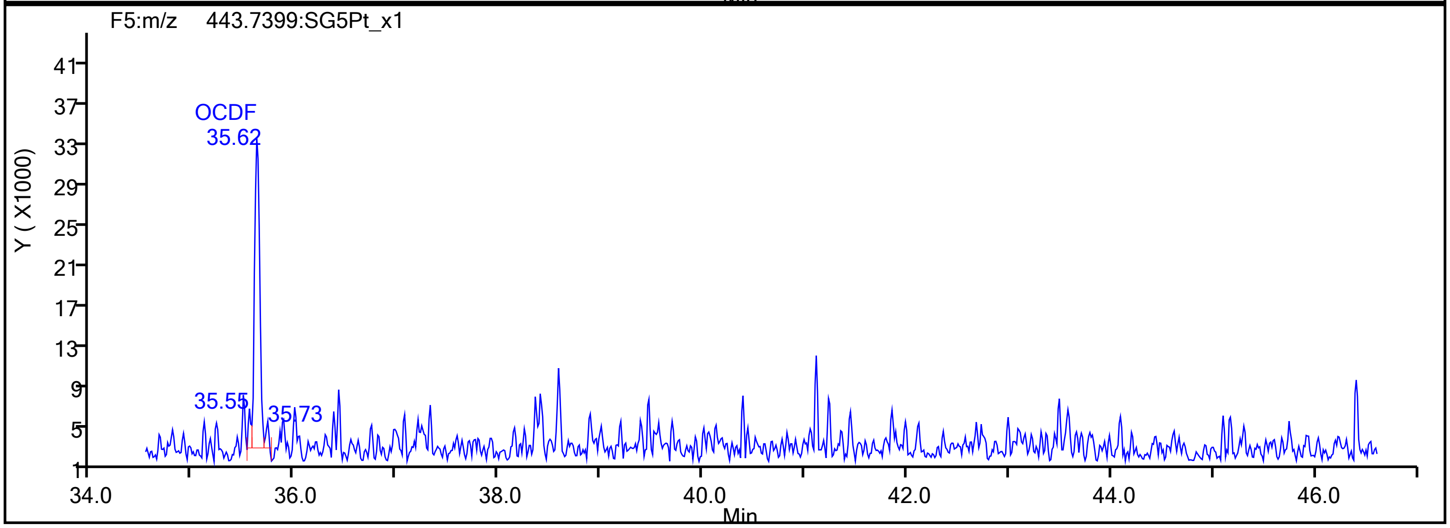

OCDF Interference Mass

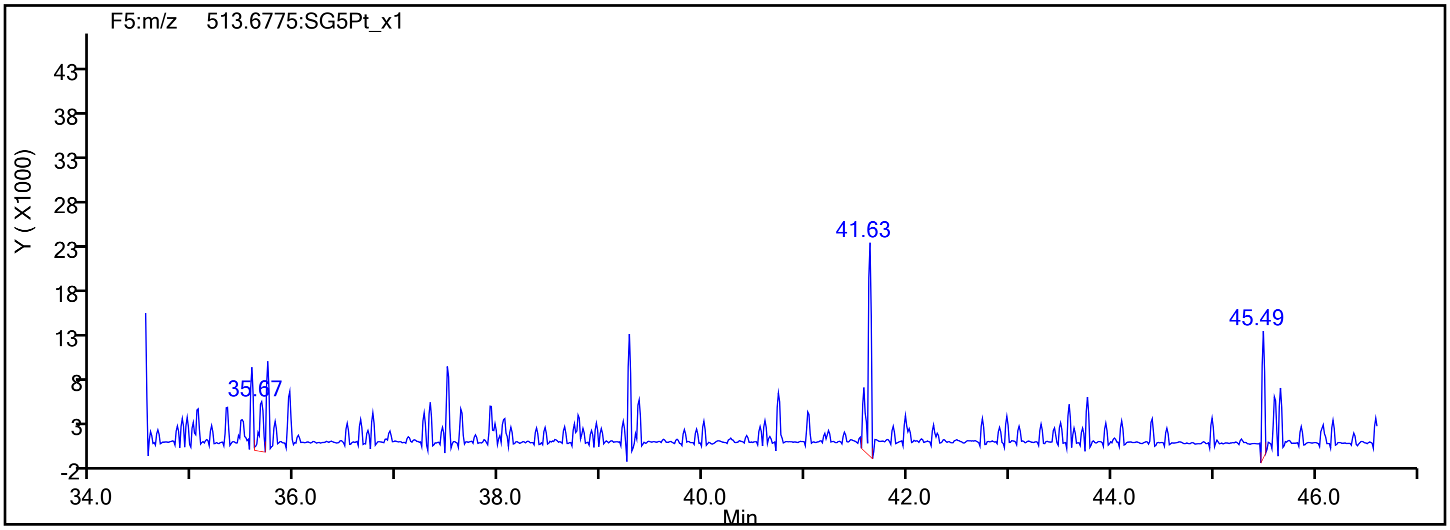

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 06:38:38 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-2

Worklist#: 420482 Sample Line#: 15

Column Type: Column Dia:

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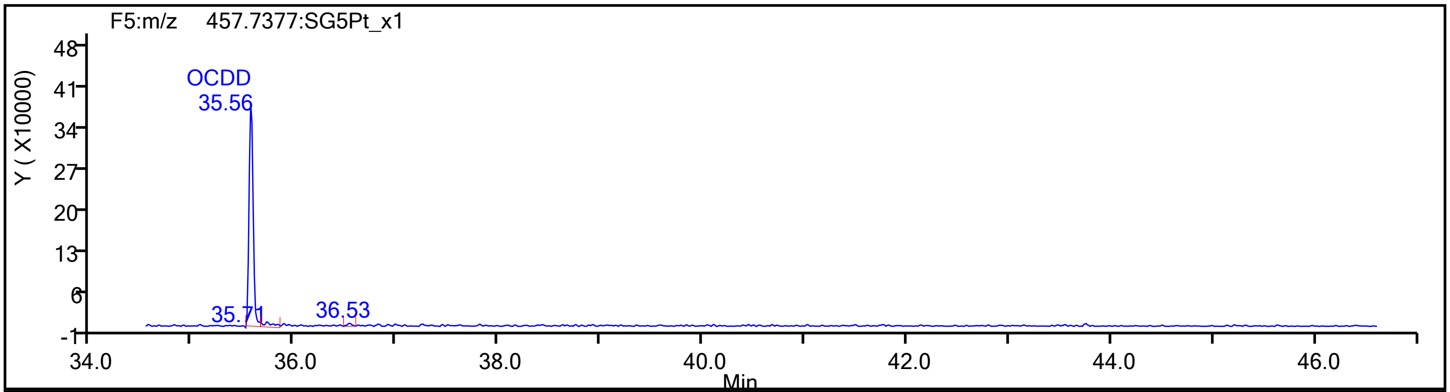

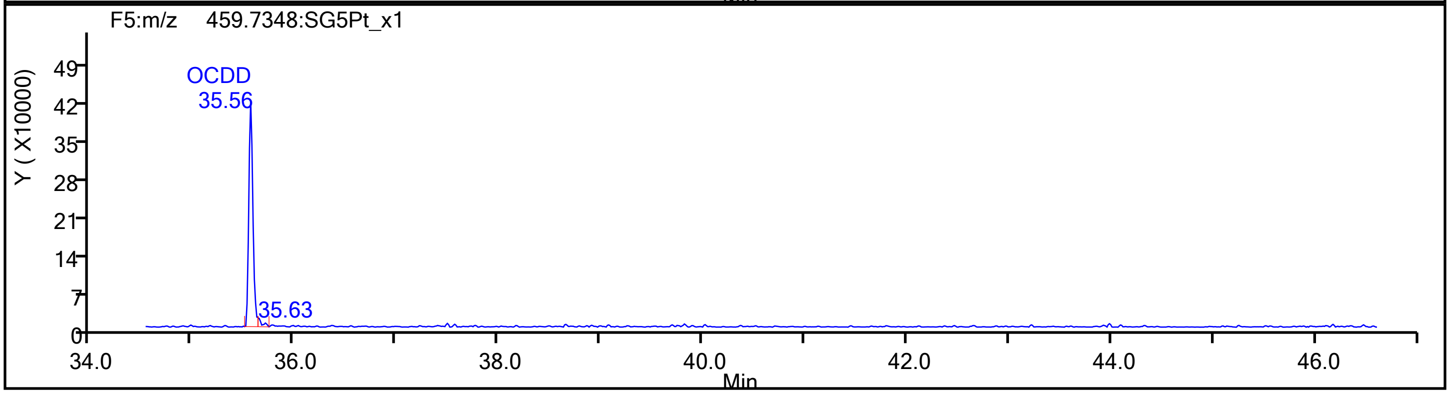

OCDD Standards

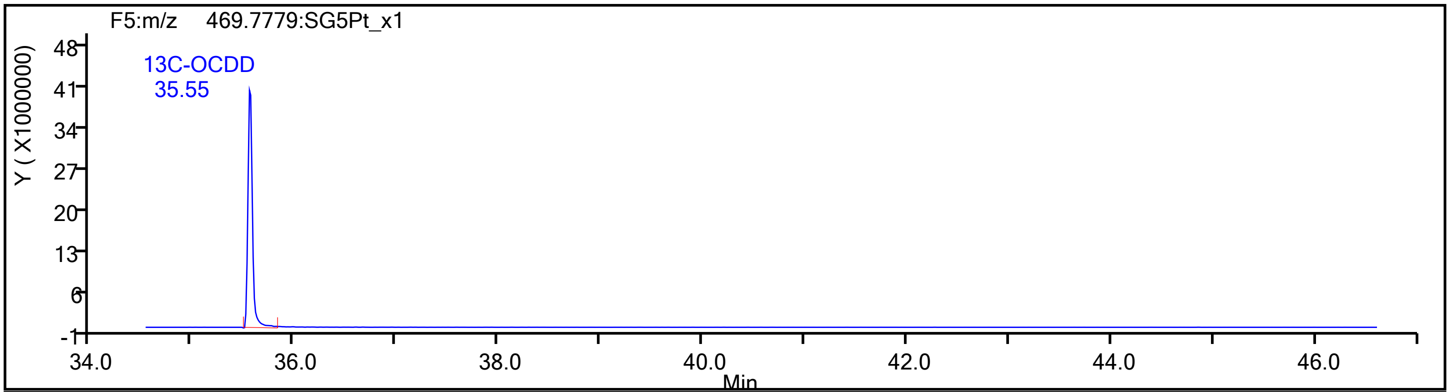

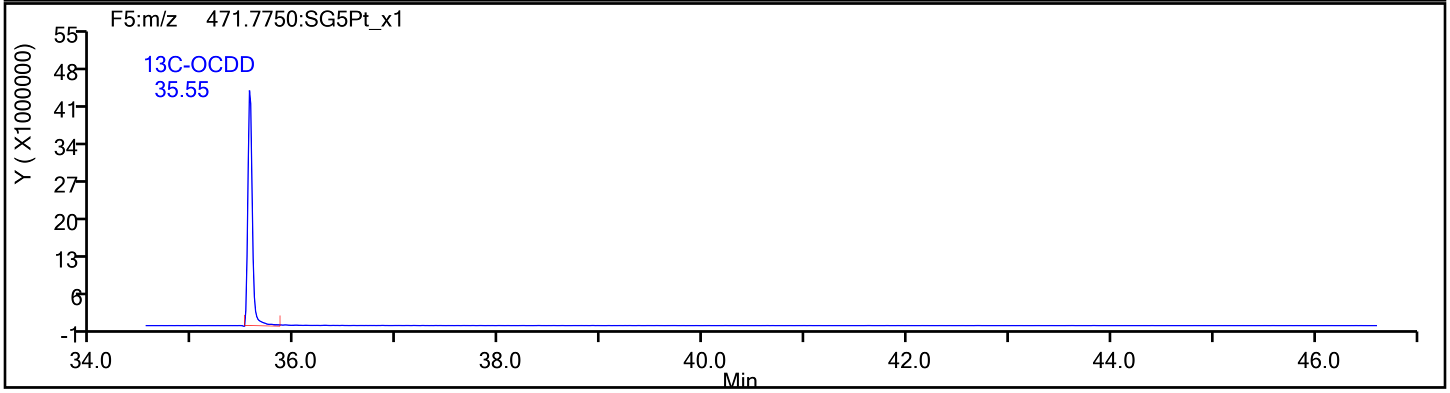

Report Date: 13-Oct-2020 12:21:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d

Injection Date: 09-Oct-2020 06:38:38

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-2

Worklist#: 420482

Sample Line#: 15

Column Type:

Column Dia:

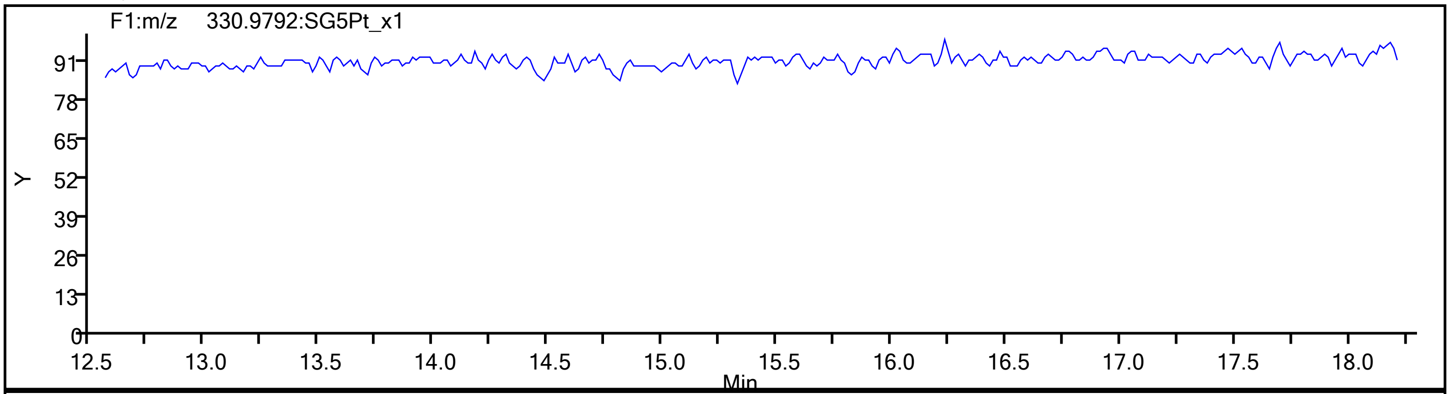

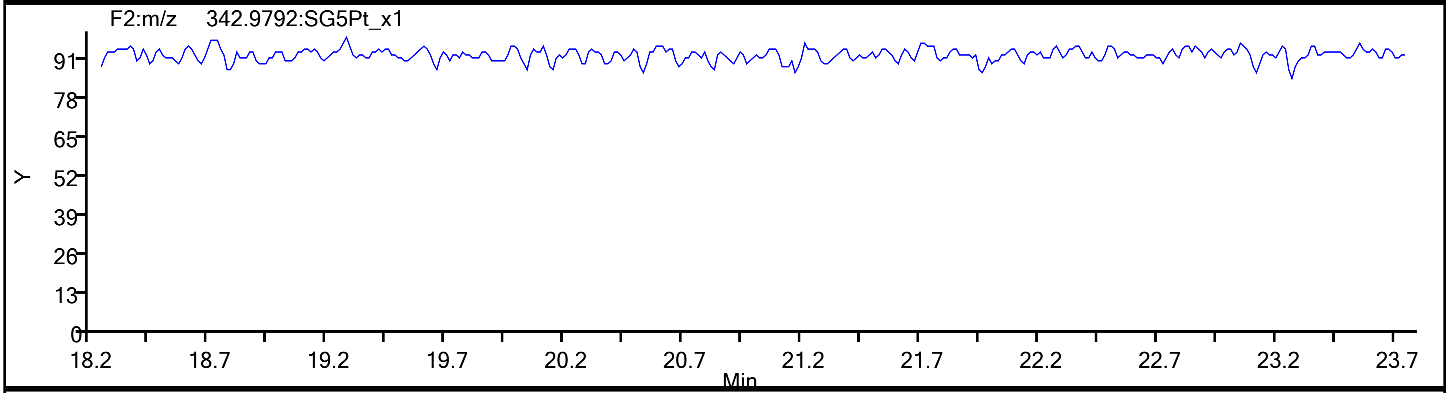

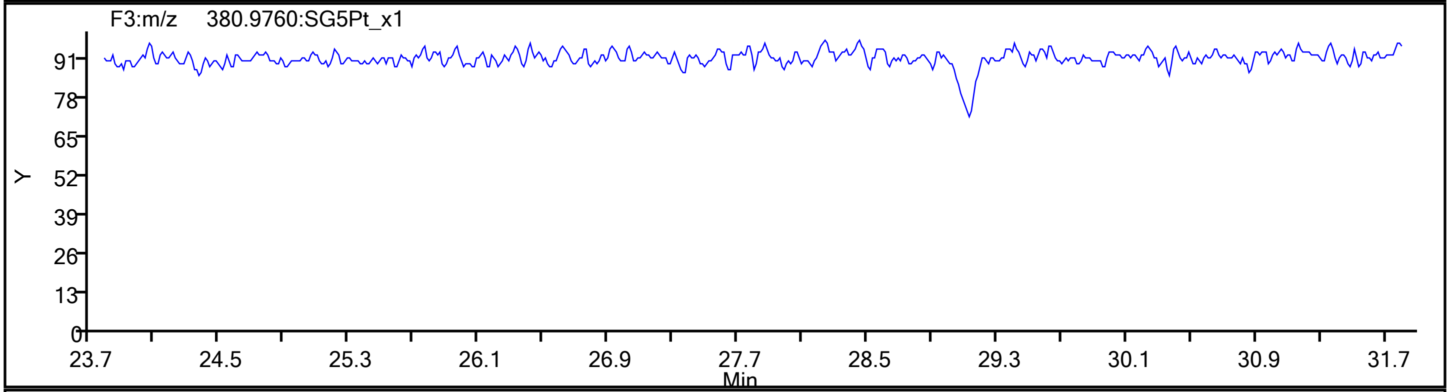

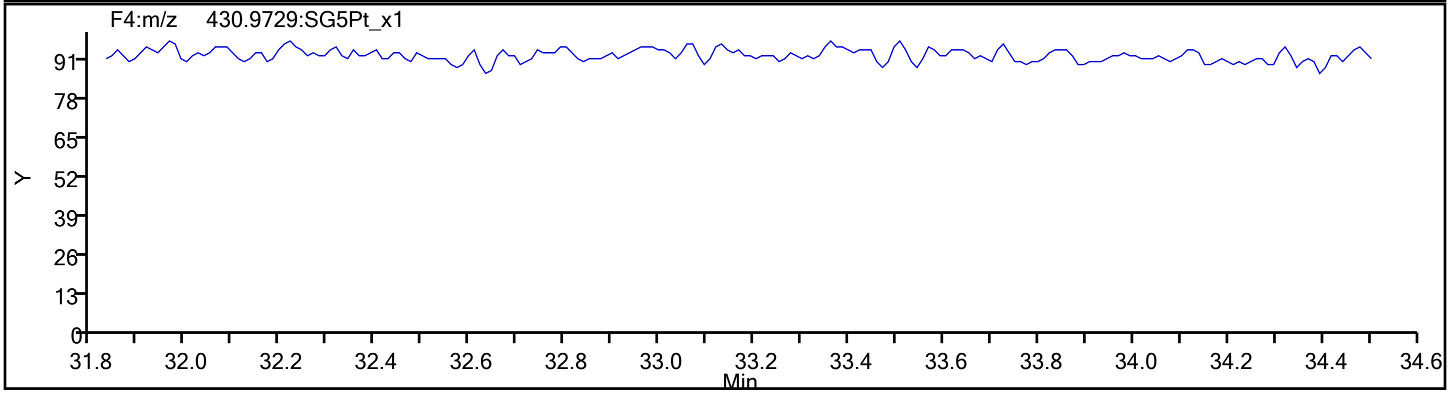

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_15.d

Injection Date:	09-Oct-2020 06:38:38	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-2		
Worklist#:	420482	Sample Line#:	15
Column Type:		Column Dia:	

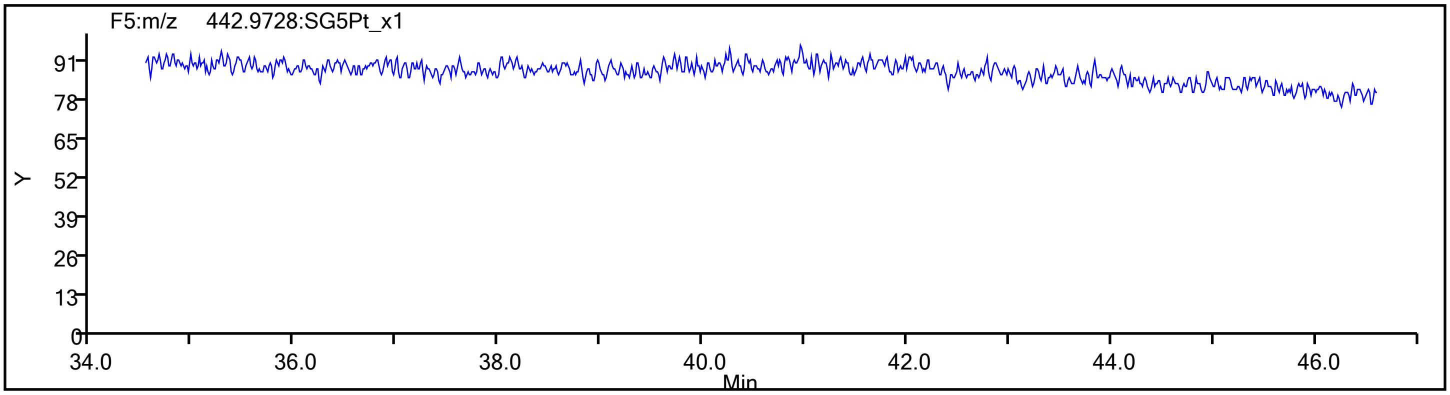

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-2-2 RA Lab Sample ID: 320-65130-5 RA

Matrix: Water Lab File ID: 13OC20A11D2_005.d

Analysis Method: 1613B Date Collected: 09/11/2020 13:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 975.6(mL) Date Analyzed: 10/13/2020 22:15

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421876 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	64	B	10	0.98

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	89		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	120		35-197

Report Date: 14-Oct-2020 17:38:54 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d				
Lims ID:	320-65130-A-5-A				
Client ID:	11215702-Tank#1-valve-2-2				
Sample Type:	Client				
Inject. Date:	13-Oct-2020 22:15:43	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-5-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:34:05

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.917	76933257	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.055	107753530	0.79	1.5708	89.2	89.2	0.3222	0.3222	89.17	
2,3,7,8-TCDF	16.069	3322386	0.78	0.9943	3.101	3.101	0.0479	0.0479		M
D 13C-2,3,7,8-TCDD	14.670	64344192	0.83	0.9834	85.1	85.1	0.4059	0.4059	85.05	
2,3,7,8-TCDD	14.697	936026	0.79	1.2822	1.135	1.135	0.1514	0.1514		
$ 37Cl4-2,3,7,8-TCDD	14.697	36872778		0.9945	48.2	48.2	0.0850	0.0850	120	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 14-Oct-2020 17:38:54 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d
Lims ID: 320-65130-A-5-A
Client ID: 11215702-Tank#1-valve-2-2
Sample Type: Client
Inject. Date: 13-Oct-2020 22:15:43 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-5-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:34:05

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.917	14.928	-1		33962592	8693469	18273	45682	476		
333.9339	14.917	14.928	-1		42970665	10745152	12766	31915	842	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.055	16.067	-1	1.076	47403315	10881369	25056	62640	434		
317.9389	16.055	16.067	-1	1.076	60350215	14327308	14297	35742	1002	0.79(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.069	16.081	-1	1.001	1451819	310142	1967	4917	158		M
305.8987	16.069	16.081	-1	1.001	1870567	445039	2837	7092	157	0.78(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	14.670	14.681	-1	0.983	29222830	7148454	18273	45682	391		
333.9339	14.670	14.681	-1	0.983	35121362	8779141	12766	31915	688	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.697	14.709	-1	1.002	412533	105192	4441	11102	24		
321.8936	14.697	14.709	-1	1.002	523493	124417	7923	19807	16	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.697	14.709	-1	0.985	36872778	9046232	6572	16430	1376		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d		
Injection Date:	13-Oct-2020 22:15:43	Instrument ID:	11D2
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5
Client ID:	11215702-Tank#1-valve-2-2		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	16.07
Area:	1494358
Amount:	3.131382
Amount Units:	pg/ul

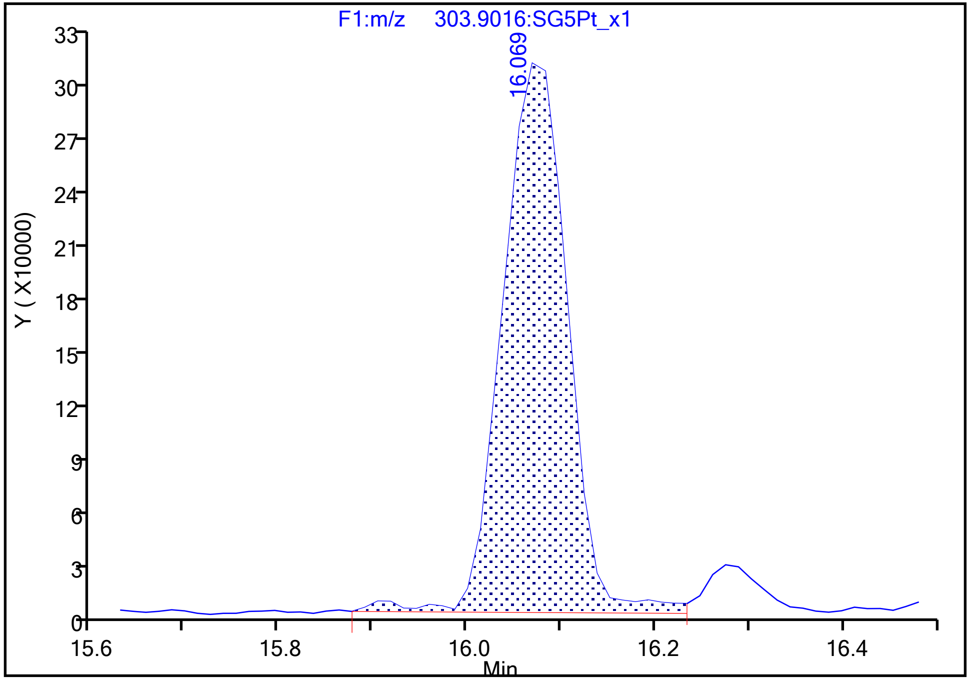

Manual Integration Results

RT:	16.07
Area:	1451819
Amount:	3.101079
Amount Units:	pg/ul

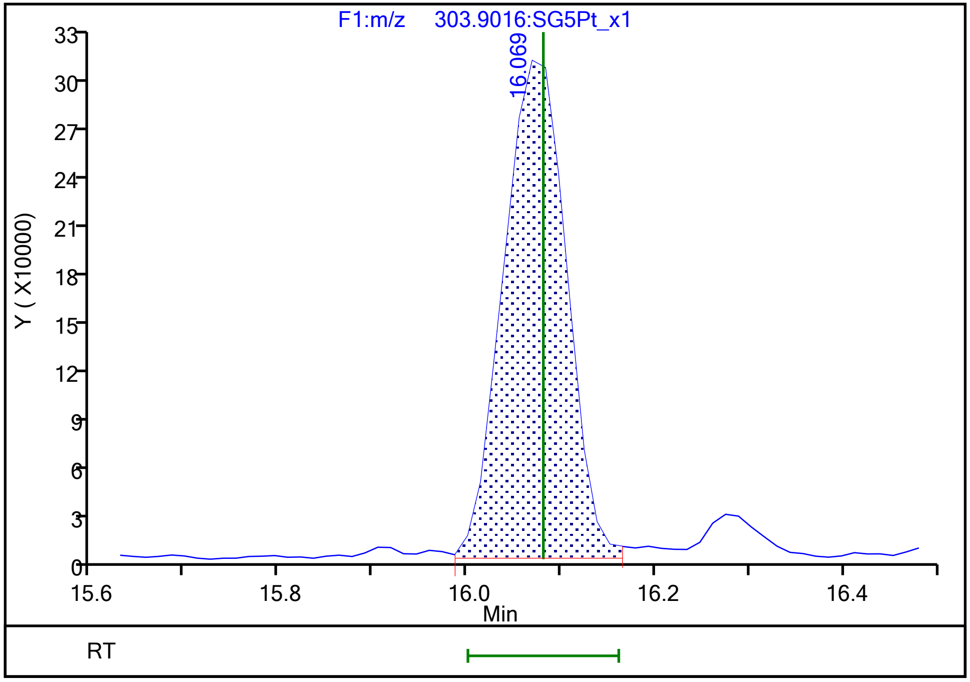

Reviewer: stephensk, 14-Oct-2020 17:33:42

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d		
Injection Date:	13-Oct-2020 22:15:43	Instrument ID:	11D2
Lims ID:	320-65130-A-5-A	Lab Sample ID:	320-65130-5
Client ID:	11215702-Tank#1-valve-2-2		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	16.07
Area:	1860494
Amount:	3.131382
Amount Units:	pg/ul

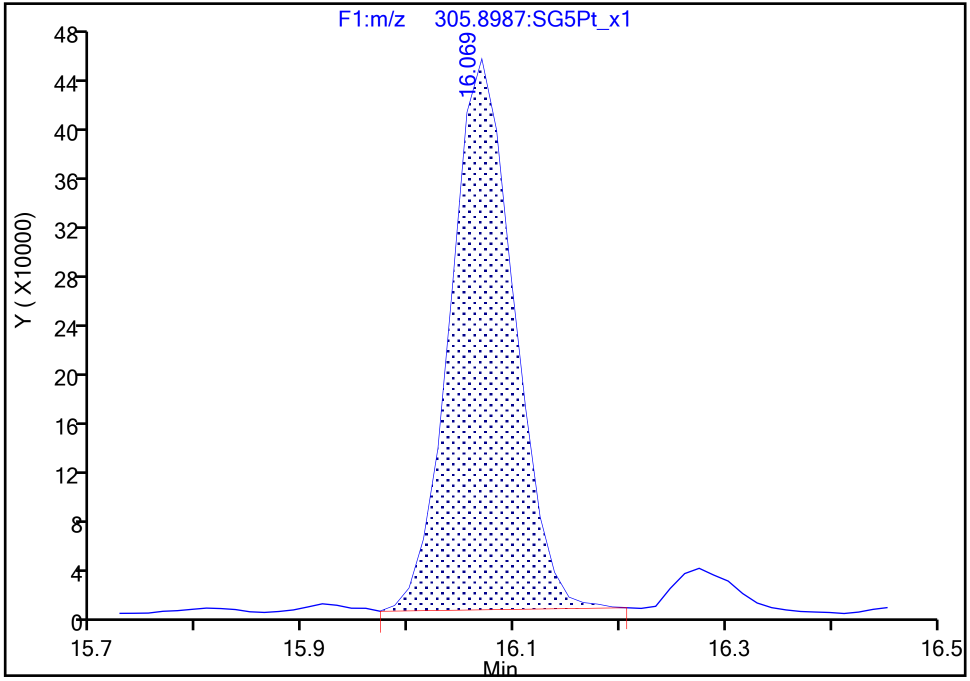

Manual Integration Results

RT:	16.07
Area:	1870567
Amount:	3.101079
Amount Units:	pg/ul

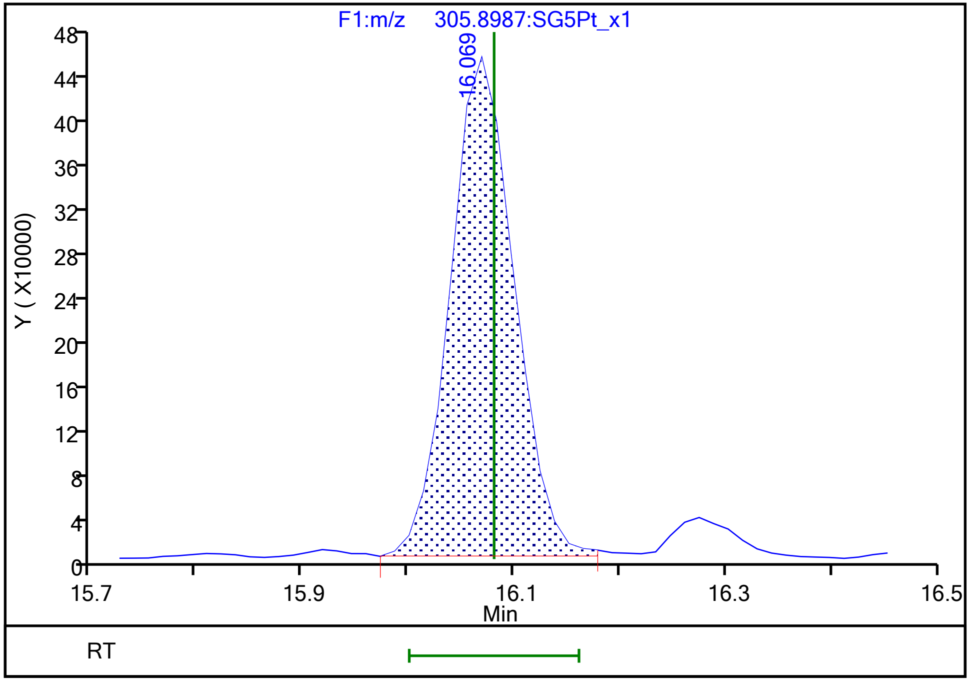

Reviewer: stephensk, 14-Oct-2020 17:33:58

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 14-Oct-2020 17:38:54 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d
Injection Date: 13-Oct-2020 22:15:43
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-2
Worklist#: 421876
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

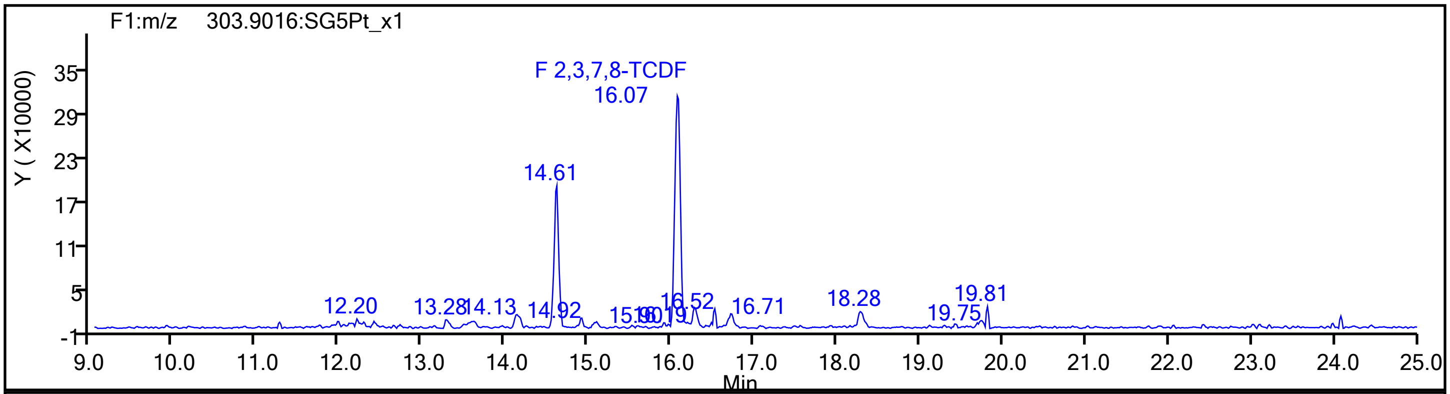

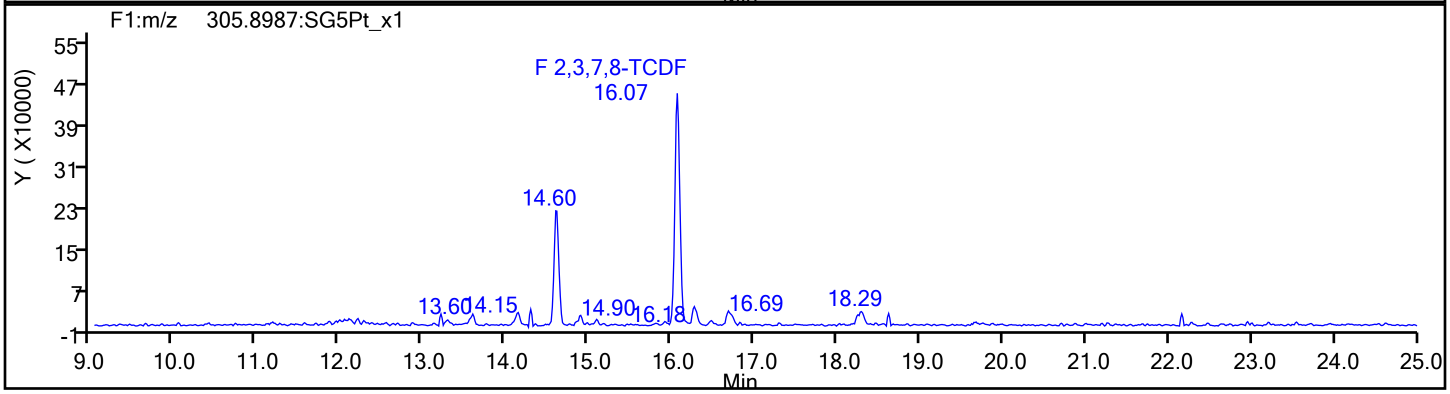

TCDF Standards

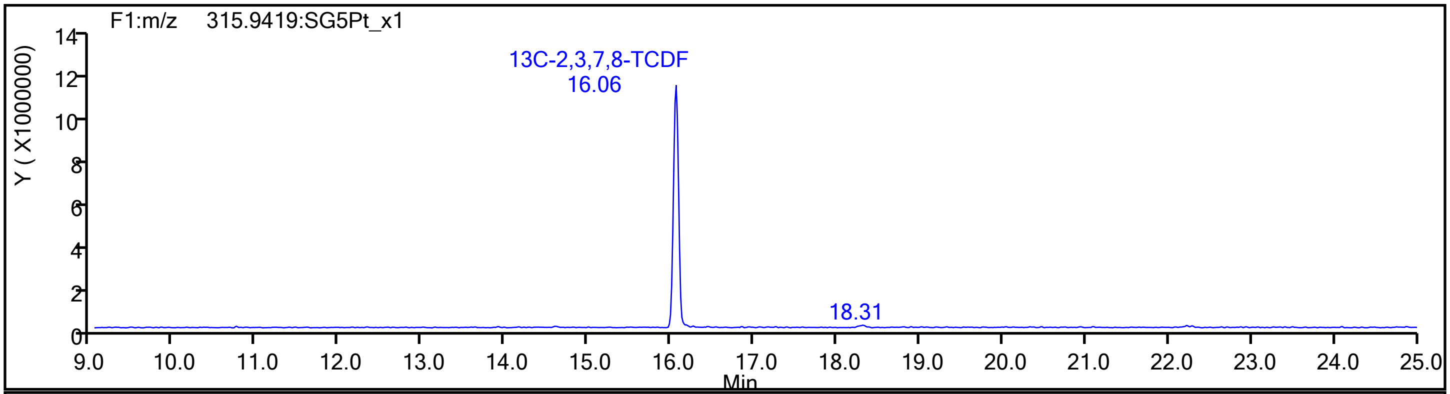

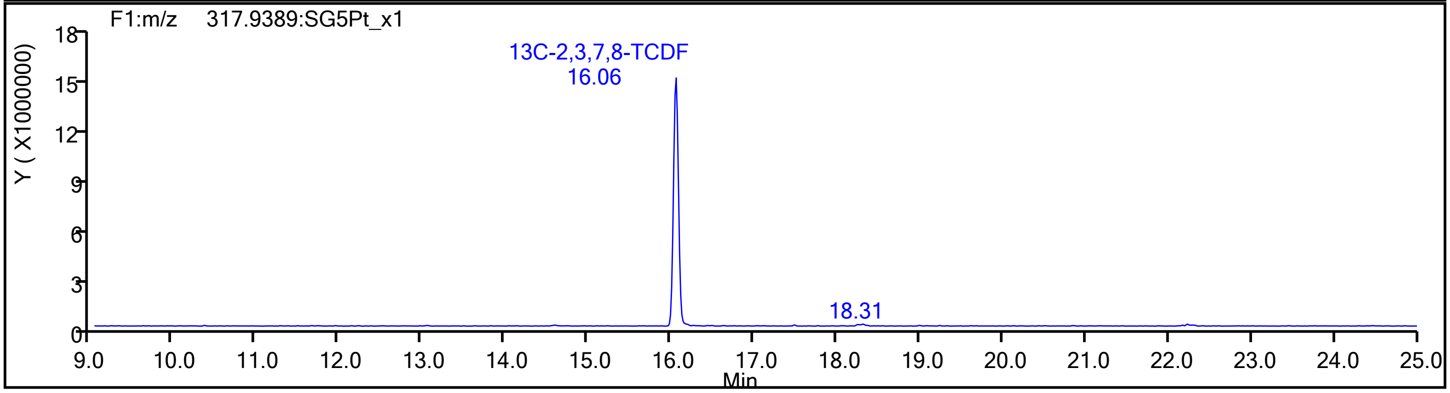

Report Date: 14-Oct-2020 17:38:54 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d		
Injection Date:	13-Oct-2020 22:15:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-2		
Worklist#:	421876	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

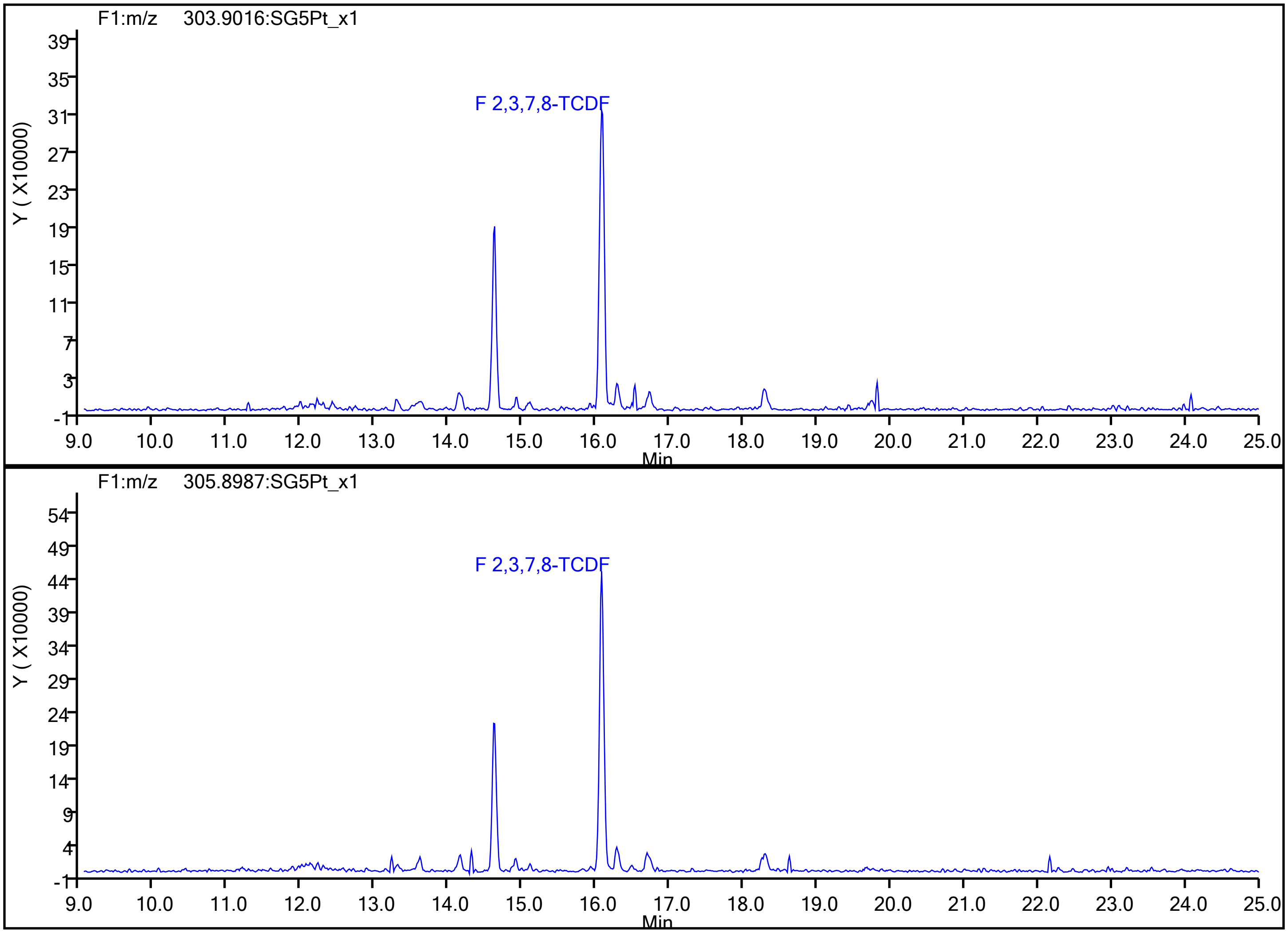

TCDF Interference Mass

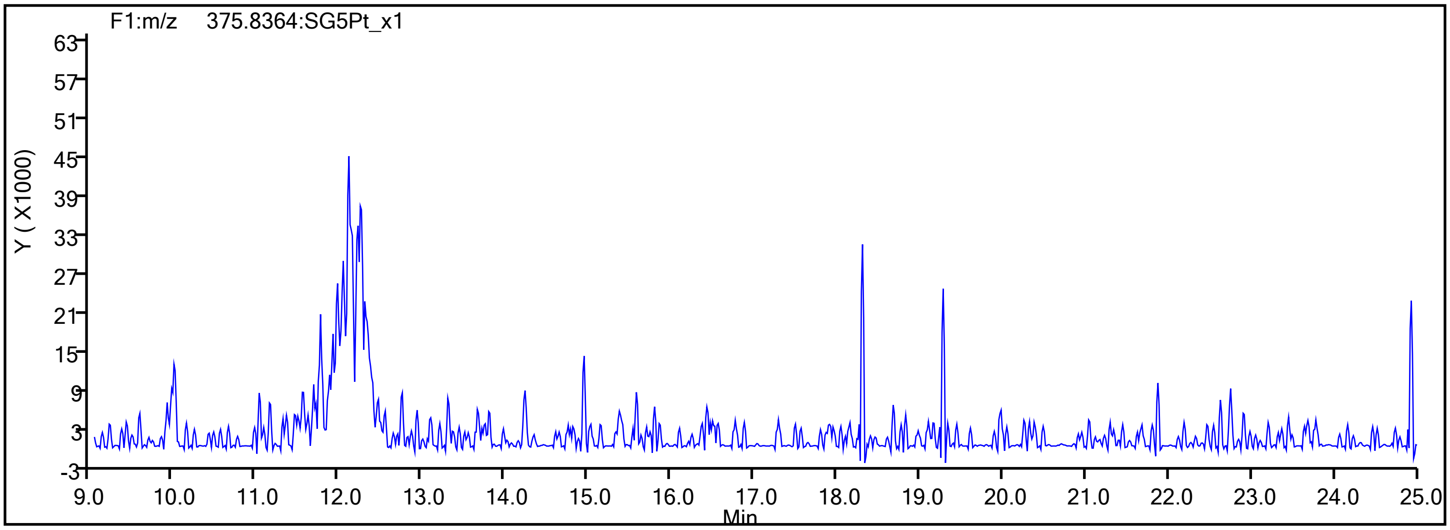

Report Date: 14-Oct-2020 17:38:54 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d
Injection Date: 13-Oct-2020 22:15:43
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-2
Worklist#: 421876
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

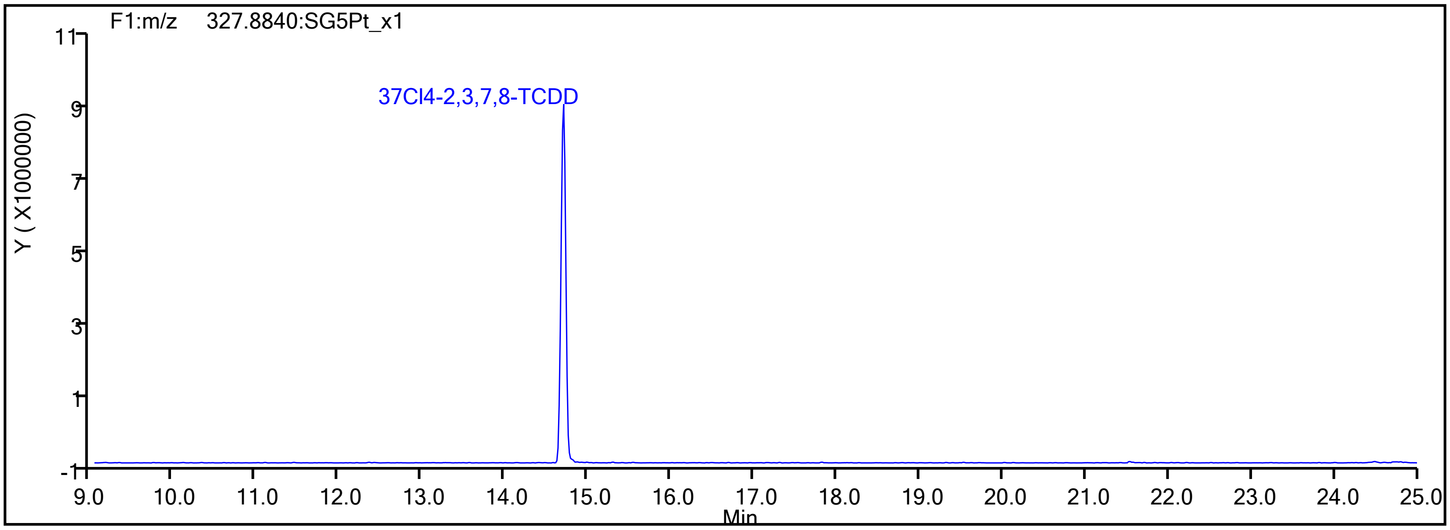

37Cl4-TCDD Standards

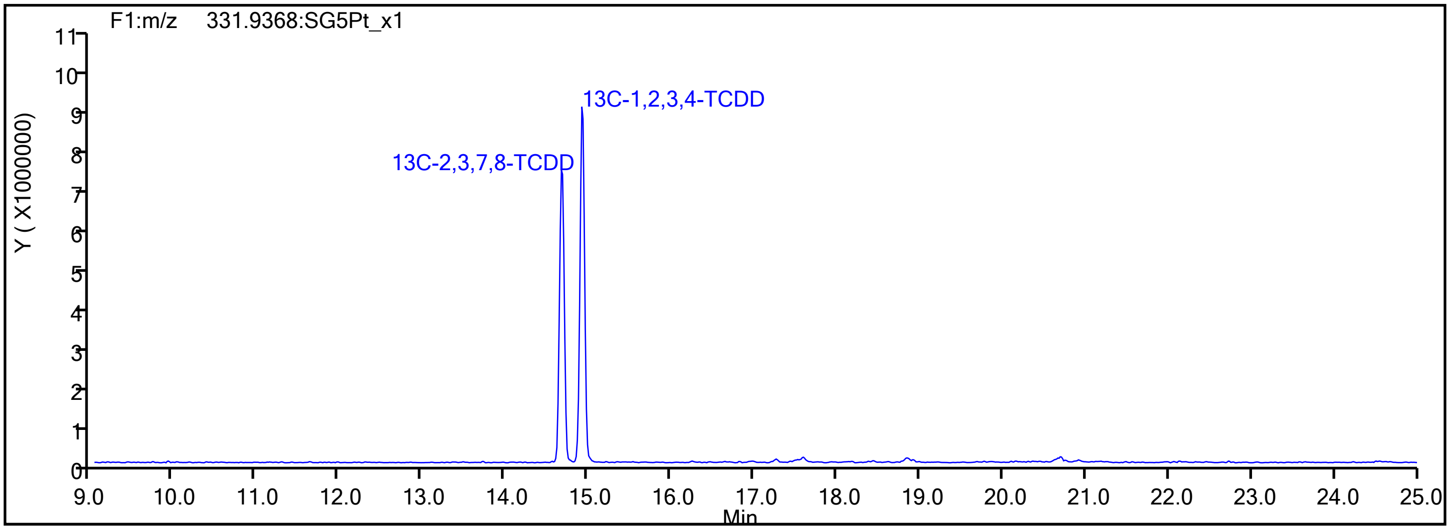

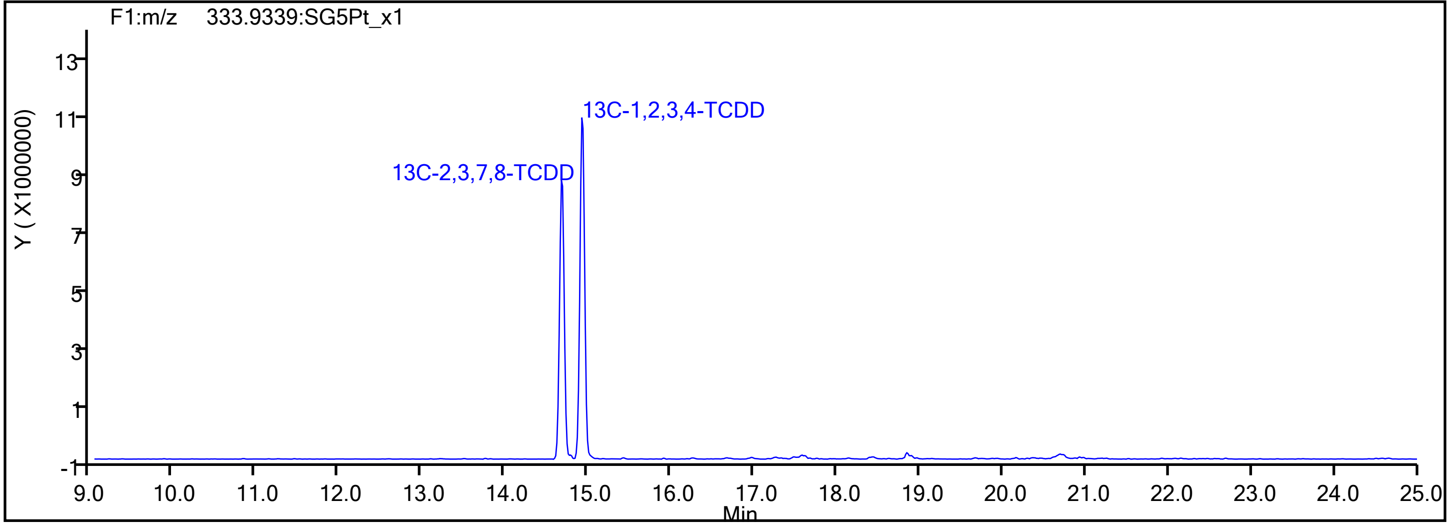

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_005.d		
Injection Date:	13-Oct-2020 22:15:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-2		
Worklist#:	421876	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

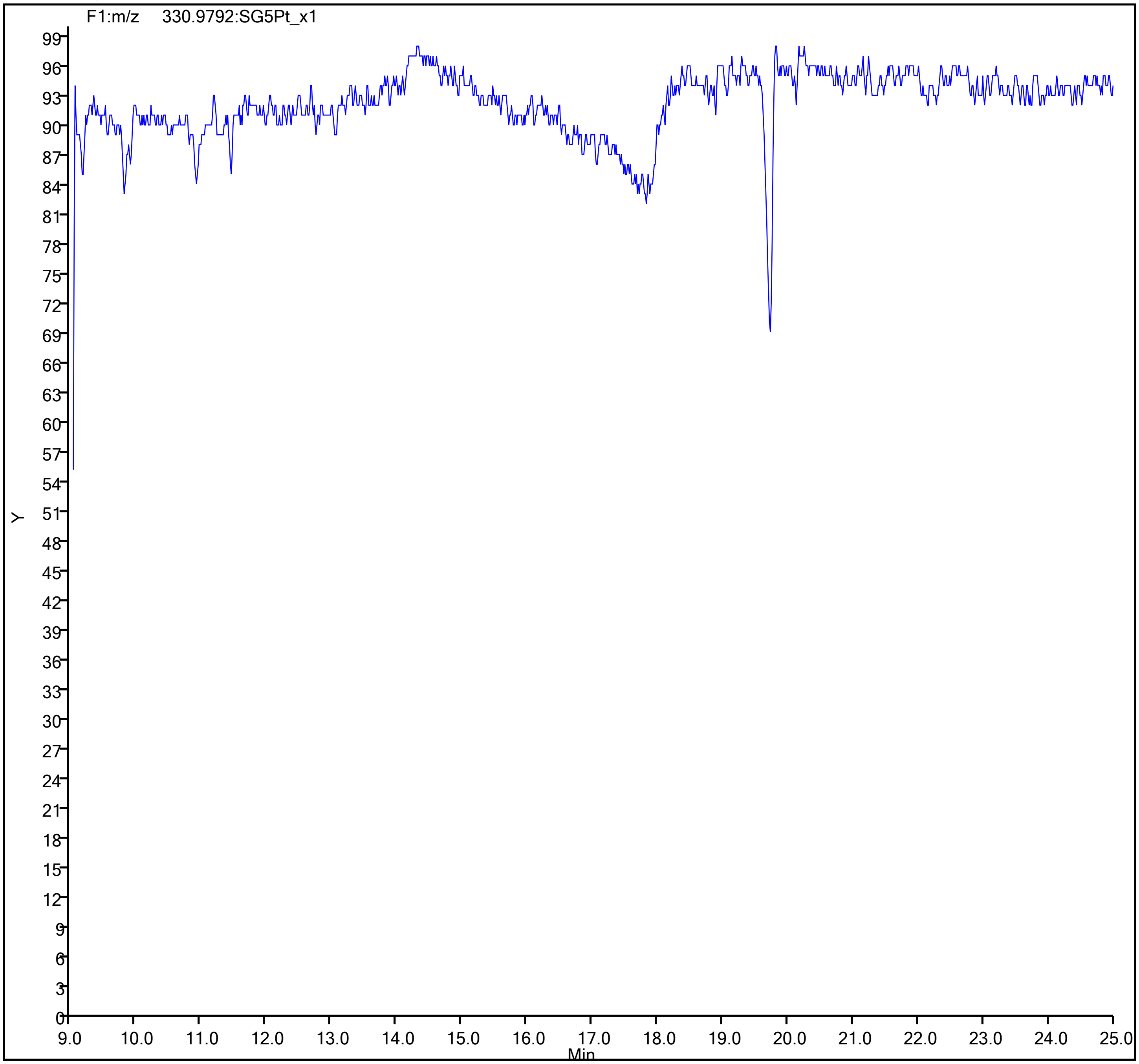

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-4-2	Lab Sample ID: 320-65130-7
Matrix: Water	Lab File ID: 08OC20A3D5_16.d
Analysis Method: 1613B	Date Collected: 09/11/2020 13:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 980.8(mL)	Date Analyzed: 10/09/2020 07:26
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	370		10	1.5
40321-76-4	1,2,3,7,8-PeCDD	4.5	J B	51	0.54
57117-41-6	1,2,3,7,8-PeCDF	38	J B	51	0.62
57117-31-4	2,3,4,7,8-PeCDF	24	J B	51	0.65
39227-28-6	1,2,3,4,7,8-HxCDD	ND		51	0.66
57653-85-7	1,2,3,6,7,8-HxCDD	ND		51	0.72
19408-74-3	1,2,3,7,8,9-HxCDD	1.2	J q B	51	0.63
70648-26-9	1,2,3,4,7,8-HxCDF	65	B	51	0.66
57117-44-9	1,2,3,6,7,8-HxCDF	17	J B	51	0.64
72918-21-9	1,2,3,7,8,9-HxCDF	2.6	J B	51	0.53
60851-34-5	2,3,4,6,7,8-HxCDF	3.2	J B	51	0.73
35822-46-9	1,2,3,4,6,7,8-HpCDD	18	J B	51	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	22	J B	51	0.26
55673-89-7	1,2,3,4,7,8,9-HpCDF	8.9	J B	51	0.29
3268-87-9	OCDD	280	B	100	0.86
39001-02-0	OCDF	14	J B	100	0.25
41903-57-5	Total TCDD	400	B	10	1.5
30402-14-3	Total TCDF	2000	B	10	5.3
36088-22-9	Total PeCDD	5.8	J B	51	0.54
30402-15-4	Total PeCDF	99	q B	51	0.63
34465-46-8	Total HxCDD	3.6	J q B	51	0.67
55684-94-1	Total HxCDF	99	B	51	0.64
37871-00-4	Total HpCDD	34	J B	51	0.42
38998-75-3	Total HpCDF	39	J B	51	0.28

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-4-2	Lab Sample ID: 320-65130-7
Matrix: Water	Lab File ID: 08OC20A3D5_16.d
Analysis Method: 1613B	Date Collected: 09/11/2020 13:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 980.8(mL)	Date Analyzed: 10/09/2020 07:26
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	78		25-164
89059-46-1	13C-2,3,7,8-TCDF	77		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	74		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	68		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	93		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	89		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	80		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	79		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	81		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	79		26-138
114423-97-1	13C-OCDD	96		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 13-Oct-2020 12:27:22 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Lims ID: 320-65130-A-7-A
Client ID: 11215702-Tank#1-valve-4-2
Sample Type: Client
Inject. Date: 09-Oct-2020 07:26:14 ALS Bottle#: 13 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-7-A 320-65130-A-7-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:27:22 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:57:16

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	257117935	0.80	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	295359426	0.78	1.4844	77.4	77.4	0.2062	0.2062	77.39	
2,3,7,8-TCDF	15.492	163870453	0.75	0.9534	58.2	58.2	0.2576	0.2576		
A Non-2,3,7,8-sub-TCDF	15.227	110945535	0.80	0.9534	39.4	39.4	0.2576	23.3		
S Total TCDF					97.6	97.6	0.2576	0.2576		
D 13C-2,3,7,8-TCDD	16.082	218502520	0.79	1.0875	78.1	78.1	0.2885	0.2885	78.15	
2,3,7,8-TCDD	16.097	40340799	0.75	1.0205	18.1	18.1	0.0756	0.0756		M
$ 37Cl4-2,3,7,8-TCDD	16.097	111226461		1.1216	38.6	38.6	0.1016	0.1016	96.42	
A Non-2,3,7,8-sub-TCDD	15.620	3281554	0.67	1.0205	1.472	1.472	0.0756	1.472		
S Total TCDD					19.6	19.6	0.0756	0.0756		
D 13C-1,2,3,7,8-PeCDF	19.686	245318399	1.56	1.3943	68.4	68.4	0.1753	0.1753	68.43	
1,2,3,7,8-PeCDF	19.714	4937929	1.39	1.0794	1.865	1.865	0.0302	0.0302		M
D 13C-2,3,4,7,8-PeCDF	20.805	239983934	1.56	1.3370	69.8	69.8	0.1828	0.1828	69.81	
2,3,4,7,8-PeCDF	20.832	3141954	1.67	1.0966	1.194	1.194	0.0318	0.0318		
A F1 PeCDFs	17.730						0.0148	0.0148		
A Non-2,3,7,8-sub-PeCDF	20.349	4781413	1.55	1.0880	1.833	1.811	0.0310	0.7522		RQ
S Total PeCDF					4.892	4.870	0.0310	0.0310		RQ
D 13C-1,2,3,7,8-PeCDD	21.418	161288979	1.53	0.8475	74.0	74.0	0.0938	0.0938	74.01	
1,2,3,7,8-PeCDD	21.432	403177	1.45	1.1397	0.2193	0.2193	0.0264	0.0264		M
A Non-2,3,7,8-sub-PeCDD	20.518	122658	1.37	1.1397	0.0667	0.0667	0.0264	0.0667		
S Total PeCDD					0.2861	0.2861	0.0264	0.0264		
D 13C-1,2,3,4,7,8-HxCDF	26.719	196286847	0.53	1.3065	80.3	80.3	0.3566	0.3566	80.28	
1,2,3,4,7,8-HxCDF	26.759	7865510	1.21	1.2552	3.192	3.192	0.0324	0.0324		
D 13C-1,2,3,6,7,8-HxCDF	26.986	212375214	0.53	1.4213	79.8	79.8	0.3278	0.3278	79.84	
1,2,3,6,7,8-HxCDF	26.999	2152561	1.16	1.2102	0.8375	0.8375	0.0315	0.0315		
D 13C-2,3,4,6,7,8-HxCDF	28.544	199419587	0.53	1.3142	81.1	81.1	0.3545	0.3545	81.08	
2,3,4,6,7,8-HxCDF	28.583	379439	1.11	1.2182	0.1562	0.1562	0.0359	0.0359		
D 13C-1,2,3,7,8,9-HxCDF	30.381	195256227	0.52	1.3204	79.0	79.0	0.3529	0.3529	79.01	
1,2,3,7,8,9-HxCDF	30.434	311119	1.09	1.2319	0.1293	0.1293	0.0259	0.0259		
A Non-2,3,7,8-sub-HxCDF	27.465	1339159	1.17	1.2289	0.5426	0.5426	0.0310	0.2290		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					4.858	4.858	0.0314	0.0314		
* 13C-1,2,3,7,8,9-HxCDD	30.075	187149232	1.23	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.023	150531676	1.25	0.8660	92.9	92.9	0.3166	0.3166	92.88	a
1,2,3,4,7,8-HxCDD	29.076						0.0322	0.0322		
D 13C-1,2,3,6,7,8-HxCDD	29.303	164132556	1.26	0.9827	89.2	89.2	0.2790	0.2790	89.25	a
1,2,3,6,7,8-HxCDD	29.343						0.0352	0.0352		U
1,2,3,7,8,9-HxCDD	30.088	117279	1.24	1.2852	0.0653	0.0580	0.0310	0.0310		RQ
A Non-2,3,7,8-sub-HxCDD	27.931	222963	1.24	1.2168	0.1275	0.1165	0.0327	0.0616		RQM
S Total HxCDD					0.1928	0.1745	0.0328	0.0328		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	146608439	0.45	0.9410	83.2	83.2	2.186	2.186	83.25	
1,2,3,4,6,7,8-HpCDF	32.547	2360770	1.07	1.4783	1.089	1.089	0.0130	0.0130		
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	129747116	0.45	0.8751	79.2	79.2	2.350	2.350	79.22	
1,2,3,4,7,8,9-HpCDF	33.641	779865	1.17	1.3784	0.4361	0.4361	0.0142	0.0142		
A Non-2,3,7,8-sub-HpCDF	33.100	719337	1.18	1.4284	0.3645	0.3645	0.0136	0.3645		
S Total HpCDF					1.890	1.890	0.0136	0.0136		
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	145812107	1.05	0.9049	86.1	86.1	0.7087	0.7087	86.10	
1,2,3,4,6,7,8-HpCDD	33.398	1393208	1.06	1.0862	0.8796	0.8796	0.0205	0.0205		M
A Non-2,3,7,8-sub-HpCDD	33.339	1264533	0.94	1.0862	0.7984	0.7984	0.0205	0.7984		a
S Total HpCDD					1.678	1.678	0.0205	0.0205		
D 13C-OCDD	35.558	207448246	0.92	0.5783	191.7	191.7	1.033	1.033	95.84	
OCDF	35.630	1241653	0.92	1.7248	0.6940	0.6940	0.0120	0.0120		
OCDD	35.570	17797377	0.93	1.2576	13.6	13.6	0.0422	0.0422		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Lims ID: 320-65130-A-7-A
Client ID: 11215702-Tank#1-valve-4-2
Sample Type: Client
Inject. Date: 09-Oct-2020 07:26:14 ALS Bottle#: 13 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-7-A 320-65130-A-7-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:27:22 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:57:16

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		113954392	32369660	44622	111555	725		
333.9339	15.915	15.930	-1		143163543	41046301	47497	118742	864	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	129256039	37521048	36224	90560	1036		
317.9389	15.477	15.477	0	0.972	166103387	47388300	53680	134200	883	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	70122998	19323391	41284	103210	468		
305.8987	15.492	15.507	-1	1.001	93747455	25954677	42114	105285	616	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	14.297	15.227	-56	0.924	1302790	415384	41284	103210	10		
305.8987	14.297	15.227	-56	0.924	1662858	531942	42114	105285	13	0.78(0.65-0.89)	
303.9016	14.539	15.227	-41	0.939	2388735	614521	41284	103210	15		
305.8987	14.539	15.227	-41	0.939	3096071	799434	42114	105285	19	0.77(0.65-0.89)	
303.9016	14.736	15.227	-29	0.952	2138503	605189	41284	103210	15		
305.8987	14.736	15.227	-29	0.952	2957431	805553	42114	105285	19	0.72(0.65-0.89)	
303.9016	14.932	15.227	-18	0.965	2929103	753386	41284	103210	18		
305.8987	14.932	15.227	-18	0.965	3797468	1045193	42114	105285	25	0.77(0.65-0.89)	
303.9016	15.174	15.227	-3	0.980	29926602	8286052	41284	103210	201		
305.8987	15.159	15.227	-4	0.979	35571769	9827195	42114	105285	233	0.84(0.65-0.89)	
303.9016	15.341	15.227	7	0.991	1294644	352563	41284	103210	9		
305.8987	15.341	15.227	7	0.991	1832215	449171	42114	105285	11	0.71(0.65-0.89)	
303.9016	15.855	15.227	38	1.024	4092688	1084273	41284	103210	26		
305.8987	15.855	15.227	38	1.024	5790104	1605522	42114	105285	38	0.71(0.65-0.89)	

Report Date: 13-Oct-2020 12:27:22 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	16.051	15.227	49	1.037	925691	235228	41284	103210	6		
305.8987	16.051	15.227	49	1.037	1308282	321507	42114	105285	8	0.71(0.65-0.89)	
303.9016	17.004	15.227	106	1.099	4265561	1043960	41284	103210	25		
305.8987	17.004	15.227	106	1.099	5665020	1404680	42114	105285	33	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.082	16.081	0	1.010	96397397	25834225	44622	111555	579		
333.9339	16.082	16.081	0	1.010	122105123	32546722	47497	118742	685	0.79(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	16.097	16.097	0	1.001	17325534	4720747	9311	23277	507		
321.8936	16.097	16.097	0	1.001	23015265	6490585	8701	21752	746	0.75(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	111226461	30395066	33457	83642	908		
A Non-2,3,7,8-sub-TCDD											
319.8965	16.399	15.620	47	1.020	1320459	355292	9311	23277	38		
321.8936	16.399	15.620	47	1.020	1961095	456604	8701	21752	52	0.67(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	149640085	30369836	42928	107320	707		
353.8970	19.686	19.700	-1	1.237	95678314	19412109	28834	72085	673	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.714	19.727	-1	1.001	2875173	546249	3485	8712	157		M
341.8567	19.714	19.727	-1	1.001	2062756	442181	3011	7527	147	1.39(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	146224842	28257771	42928	107320	658		
353.8970	20.805	20.818	-1	1.307	93759092	18239071	28834	72085	633	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.846	-1	1.001	1966185	361189	3485	8712	104		
341.8567	20.832	20.846	-1	1.001	1175769	221143	3011	7527	73	1.67(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.730						1080	2700			
341.8567	17.730						2031	5077			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	18.596	20.349	-105	0.945	1194944	270429	3485	8712	78		
341.8567	18.596	20.349	-105	0.945	790841	183633	3011	7527	61	1.51(1.32-1.78)	
339.8597	19.605	20.349	-45	0.996	261032	65671	3485	8712	19		
	Empc Correction				202140	52837	3485	8712	15		
341.8567	19.577	20.349	-46	0.994	130413	34089	3011	7527	11	2.00(1.32-1.78)	
339.8597	20.136	20.349	-13	1.023	916830	192085	3485	8712	55		
341.8567	20.136	20.349	-13	1.023	524829	100954	3011	7527	34	1.75(1.32-1.78)	
339.8597	21.105	20.349	45	1.072	466992	81019	3485	8712	23		
341.8567	21.091	20.349	44	1.071	343762	52693	3011	7527	18	1.36(1.32-1.78)	
339.8597	22.441	20.349	125	1.140	119904	21987	3485	8712	6		
341.8567	22.455	20.349	126	1.141	90758	15842	3011	7527	5	1.32(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.432	-1	1.346	97662193	17072522	13776	34440	1239		
369.8919	21.418	21.432	-1	1.346	63626786	11341722	9577	23942	1184	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	21.432	21.459	-2	1.001	238891	44773	2062	5155	22		M
357.8516	21.432	21.459	-2	1.001	164286	33867	1354	3385	25	1.45(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											
355.8546	18.718	20.518	-108	0.874	70901	13710	2062	5155	7		
357.8516	18.773	20.518	-105	0.876	51757	10544	1354	3385	8	1.37(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.733	-1	0.888	67995182	9231433	19785	49462	467		
385.8610	26.719	26.733	-1	0.888	128291665	17217122	35774	89435	481	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.759	26.759	0	1.001	4314135	605983	2352	5880	258		
375.8178	26.733	26.759	-2	1.000	3551375	498624	1957	4892	255	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	27.012	-2	0.897	73978365	9952358	19785	49462	503		
385.8610	26.986	27.012	-2	0.897	138396849	18306170	35774	89435	512	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	26.999	27.039	-2	1.000	1155493	145295	2352	5880	62		
375.8178	27.012	27.039	-2	1.001	997068	153524	1957	4892	78	1.16(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.570	-2	0.949	68789449	8463361	19785	49462	428		
385.8610	28.544	28.570	-2	0.949	130630138	16159701	35774	89435	452	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.583	28.597	-1	1.001	199889	26165	2352	5880	11		
375.8178	28.557	28.597	-2	1.000	179550	25937	1957	4892	13	1.11(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.010	66463716	11216833	19785	49462	567		
385.8610	30.381	30.394	-1	1.010	128792511	22526041	35774	89435	630	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.434	30.408	2	1.002	162499	29438	2352	5880	13		
375.8178	30.395	30.408	-1	1.000	148620	32397	1957	4892	17	1.09(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	24.669	27.465	-167	0.923	295713	47669	2352	5880	20		
375.8178	24.656	27.465	-168	0.923	269409	41332	1957	4892	21	1.10(1.05-1.43)	
373.8208	25.774	27.465	-101	0.965	187767	29695	2352	5880	13		
375.8178	25.774	27.465	-101	0.965	155346	28787	1957	4892	15	1.21(1.05-1.43)	
373.8208	30.594	27.465	187	1.145	237459	42212	2352	5880	18		
375.8178	30.594	27.465	187	1.145	193465	44328	1957	4892	23	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.088	-1		103165812	16301746	17128	42820	952		
403.8529	30.075	30.088	-1		83983420	13507702	15565	38912	868	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.023	29.036	-1	0.965	83529924	10133512	17128	42820	592		a
403.8529	29.023	29.036	-1	0.965	67001752	8105989	15565	38912	521	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.076						1171	2927			
391.8127	29.076						1778	4445			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.303	29.316	-1	0.974	91379796	10583404	17128	42820	618		a
403.8529	29.303	29.316	-1	0.974	72752760	8233698	15565	38912	529	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											U
389.8157	29.356						1171	2927			
391.8127	29.356						1778	4445			
1,2,3,7,8,9-HxCDD											RQ
389.8157	30.088	30.101	-1	1.037	79748	13514	1171	2927	12		
	Empc Correction				64922	11585	1171	2927	10		
391.8127	30.101	30.101	0	1.037	52357	9343	1778	4445	5	1.52(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQM
389.8157	25.681	27.931	-135	0.876	62197	11086	1171	2927	9		M
391.8127	25.628	27.931	-138	0.875	55688	10488	1778	4445	6	1.12(1.05-1.43)	M
389.8157	27.425	27.931	-30	0.936	79244	12075	1171	2927	10		M
	Empc Correction				58168	10275	1171	2927	9		
391.8127	27.478	27.931	-27	0.938	46910	8287	1778	4445	5	1.69(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.547	-1	1.082	45301959	15234292	70807	177017	215		
419.8220	32.535	32.547	-1	1.082	101306480	33880373	174453	436132	194	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	1219389	456614	2042	5105	224		
409.7789	32.547	32.547	0	1.000	1141381	390056	1730	4325	225	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.119	40569900	15143518	70807	177017	214		
419.8220	33.641	33.641	0	1.119	89177216	33160112	174453	436132	190	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.641	33.653	-1	1.000	420535	137776	2042	5105	67		
409.7789	33.653	33.653	0	1.000	359330	121642	1730	4325	70	1.17(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.888	33.100	-13	1.011	389239	135433	2042	5105	66		
409.7789	32.888	33.100	-13	1.011	330098	121102	1730	4325	70	1.18(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.110	74773010	27445171	35489	88722	773		
437.8140	33.386	33.398	-1	1.110	71039097	26002709	40977	102442	635	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.398	33.398	0	1.000	715317	281550	2452	6130	115		M
425.7737	33.398	33.398	0	1.000	677891	272005	2312	5780	118	1.06(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											a
423.7766	32.851	33.339	-29	0.984	613048	205704	2452	6130	84		a
425.7737	32.839	33.339	-30	0.984	651485	212444	2312	5780	92	0.94(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.558	0	1.182	99394939	32627674	34146	85365	956		
471.7750	35.558	35.558	0	1.182	108053307	36568380	37050	92625	987	0.92(0.76-1.02)	
OCDF											
441.7428	35.630	35.630	0	1.002	593482	213197	1300	3250	164		
443.7399	35.630	35.630	0	1.002	648171	215423	1568	3920	137	0.92(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	35.570	35.570	0	1.000	8563057	2800302	1710	4275	1638		
459.7348	35.570	35.570	0	1.000	9234320	2986847	5643	14107	529	0.93(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 12:27:22 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d		
Lims ID:	320-65130-A-7-A		
Client ID:	11215702-Tank#1-valve-4-2		
Inject. Date:	09-Oct-2020 07:26:14	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	16

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	295359426	84909348

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	295359426	84909348

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	1302790	415384	1662858	531942	1.05	0.78	
14.539	2388735	614521	3096071	799434	1.95	0.77	
14.736	2138503	605189	2957431	805553	1.81	0.72	
14.932	2929103	753386	3797468	1045193	2.39	0.77	
15.174	29926602	8286052	35571769	9827195	23.3	0.84	
15.341	1294644	352563	1832215	449171	1.11	0.71	
15.855	4092688	1084273	5790104	1605522	3.51	0.71	
16.051	925691	235228	1308282	321507	0.7933	0.71	
17.004	4265561	1043960	5665020	1404680	3.53	0.75	
Signal Totals:							
	49264317	13390556	61681218	16790197			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	110945535	30180753				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 39.399 = (110945535 * 100.000) / (295359426 * 0.953)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d		
Lims ID:	320-65130-A-7-A		
Client ID:	11215702-Tank#1-valve-4-2		
Inject. Date:	09-Oct-2020 07:26:14	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	16

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	218502520	58380947

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	218502520	58380947

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.399	1320459	355292	1961095	456604	1.47	0.67	
Signal Totals:							
	1320459	355292	1961095	456604			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3281554	811896				0.67	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.472 = (3281554 * 100.000) / (218502520 * 1.020)

Report Date: 13-Oct-2020 12:27:22 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Lims ID: 320-65130-A-7-A
Client ID: 11215702-Tank#1-valve-4-2
Inject. Date: 09-Oct-2020 07:26:14 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 16

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	245318399	49781945
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	239983934	46496842

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	242651166	48139393

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	1194944	270429	790841	183633	0.7522	1.51	
19.605	261032	65671	130413	34089	0.1483	2.00	RQ
19.605	202140	52837	130413	34089	0.1260		Empc Correction
20.136	916830	192085	524829	100954	0.5461	1.75	
21.105	466992	81019	343762	52693	0.3071	1.36	
22.441	119904	21987	90758	15842	0.0798	1.32	
Signal Totals:							
	2900810	618357	1880603	387211			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4840305	1018402				1.57	RQ
	4781413	1005568					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.833 = (4840305 * 100.000) / (242651166 * 1.088)
Empc Amount: 1.811 = (4781413 * 100.000) / (242651166 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d		
Lims ID:	320-65130-A-7-A		
Client ID:	11215702-Tank#1-valve-4-2		
Inject. Date:	09-Oct-2020 07:26:14	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	16

Non-2,3,7,8-sub-PeCDD, RT: 20.518

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	161288979	28414244

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	161288979	28414244

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.718	70901	13710	51757	10544	0.0667	1.37	
Signal Totals:							
	70901	13710	51757	10544			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	122658	24254				1.37	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0667 = (122658 * 100.000) / (161288979 * 1.140)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d		
Lims ID:	320-65130-A-7-A		
Client ID:	11215702-Tank#1-valve-4-2		
Inject. Date:	09-Oct-2020 07:26:14	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	16

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	196286847	26448555
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	212375214	28258528
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	199419587	24623062
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	195256227	33742874

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	200834468	28268254

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.669	295713	47669	269409	41332	0.2290	1.10	
25.774	187767	29695	155346	28787	0.1390	1.21	
30.594	237459	42212	193465	44328	0.1746	1.23	
Signal Totals:							
	720939	119576	618220	114447			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1339159	234023				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5426 = (1339159 * 100.000) / (200834468 * 1.229)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d		
Lims ID:	320-65130-A-7-A		
Client ID:	11215702-Tank#1-valve-4-2		
Inject. Date:	09-Oct-2020 07:26:14	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	16

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	150531676	18239501
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	164132556	18817102
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	157332116	18528301

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.681	62197	11086	55688	10488	0.0616	1.12	M
27.425	79244	12075	46910	8287	0.0659	1.69	RQM
27.425	58168	10275	46910	8287	0.0549		Empc Correction
Signal Totals:							
	120365	21361	102598	18775			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	244039	41936				1.38	RQM
	222963	40136					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1275 = (244039 * 100.000) / (157332116 * 1.217)
Empc Amount: 0.1165 = (222963 * 100.000) / (157332116 * 1.217)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Lims ID: 320-65130-A-7-A
Client ID: 11215702-Tank#1-valve-4-2
Inject. Date: 09-Oct-2020 07:26:14
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 16

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	146608439	49114665
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	129747116	48303630

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	138177777	48709147

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.888	389239	135433	330098	121102	0.3645	1.18	
Signal Totals:							
	389239	135433	330098	121102			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	719337	256535				1.18	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3645 = (719337 * 100.000) / (138177777 * 1.428)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d		
Lims ID:	320-65130-A-7-A		
Client ID:	11215702-Tank#1-valve-4-2		
Inject. Date:	09-Oct-2020 07:26:14	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	16

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	145812107	53447880

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	145812107	53447880

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	613048	205704	651485	212444	0.7984	0.94	a
Signal Totals:							
	613048	205704	651485	212444			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1264533	418148				0.94	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7984 = (1264533 * 100.000) / (145812107 * 1.086)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 13-Oct-2020 12:27:22

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d

Injection Date: 09-Oct-2020 07:26:14

Instrument ID: 3D5

Lims ID: 320-65130-A-7-A

Lab Sample ID: 320-65130-7

Client ID: 11215702-Tank#1-valve-4-2

Operator ID: ALM

ALS Bottle#: 13

Worklist Smp#: 16

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 16.10

Area: 23249624

Amount: 18.197119

Amount Units: pg/ul

Processing Integration Results

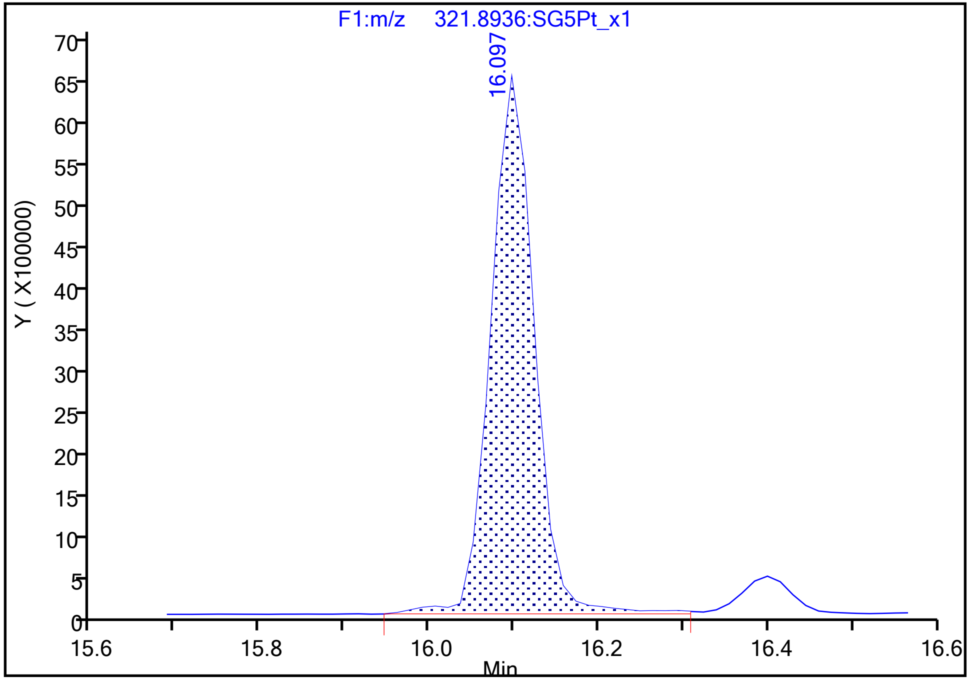

RT: 16.10

Area: 23015265

Amount: 18.092014

Amount Units: pg/ul

Manual Integration Results

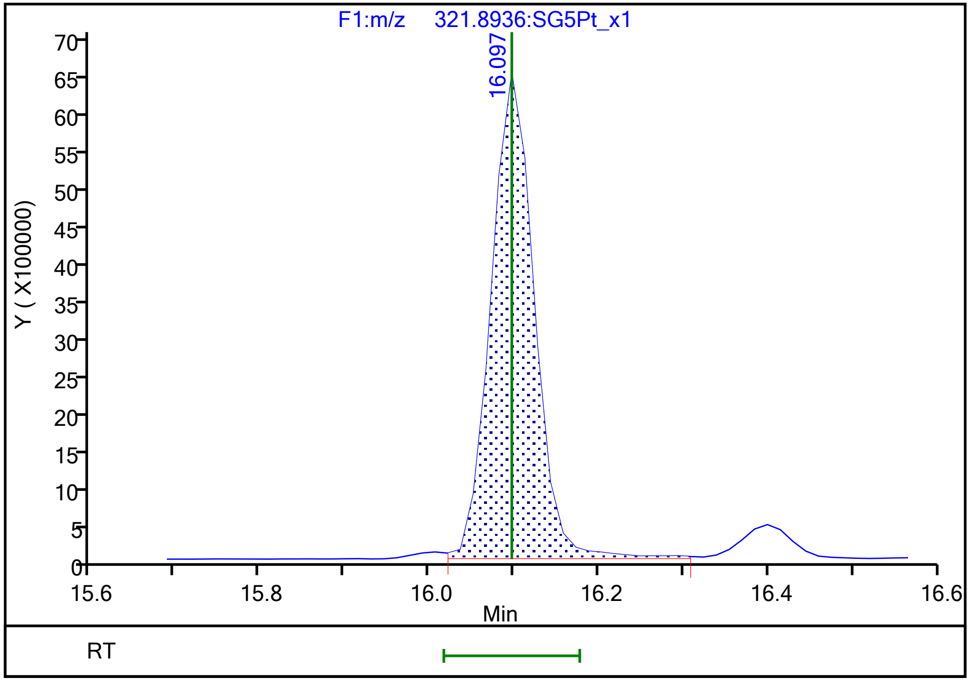

Reviewer: dadunj, 13-Oct-2020 12:23:27

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:27:22 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14 Instrument ID: 3D5
Lims ID: 320-65130-A-7-A Lab Sample ID: 320-65130-7
Client ID: 11215702-Tank#1-valve-4-2
Operator ID: ALM ALS Bottle#: 13 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT: 19.71
Area: 2120490
Amount: 1.920811
Amount Units: pg/ul

Processing Integration Results

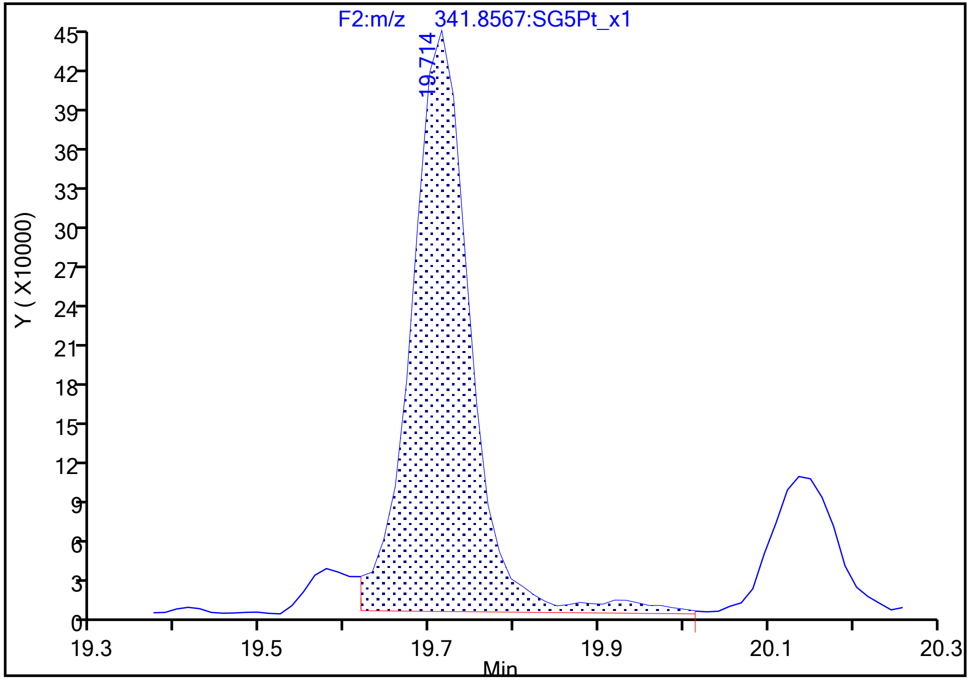

RT: 19.71
Area: 2062756
Amount: 1.864864
Amount Units: pg/ul

Manual Integration Results

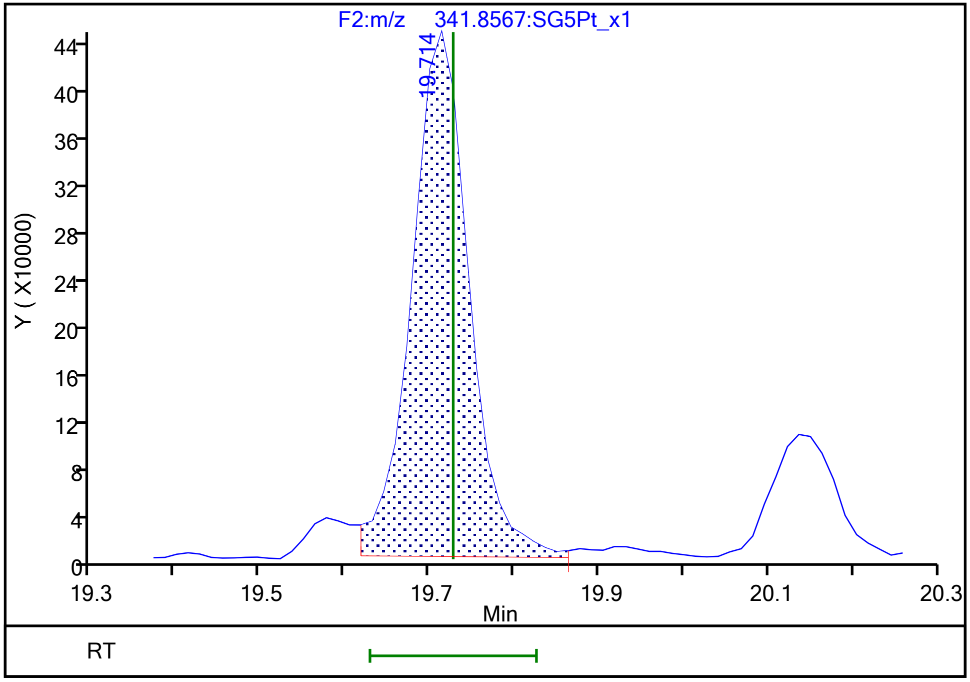

Reviewer: dadunj, 13-Oct-2020 12:23:36
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:27:22
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Instrument ID: 3D5
Lims ID: 320-65130-A-7-A
Lab Sample ID: 320-65130-7
Client ID: 11215702-Tank#1-valve-4-2
Operator ID: ALM
ALS Bottle#: 13
Worklist Smp#: 16
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT: 19.71
Area: 2965580
Amount: 1.920811
Amount Units: pg/ul

Processing Integration Results

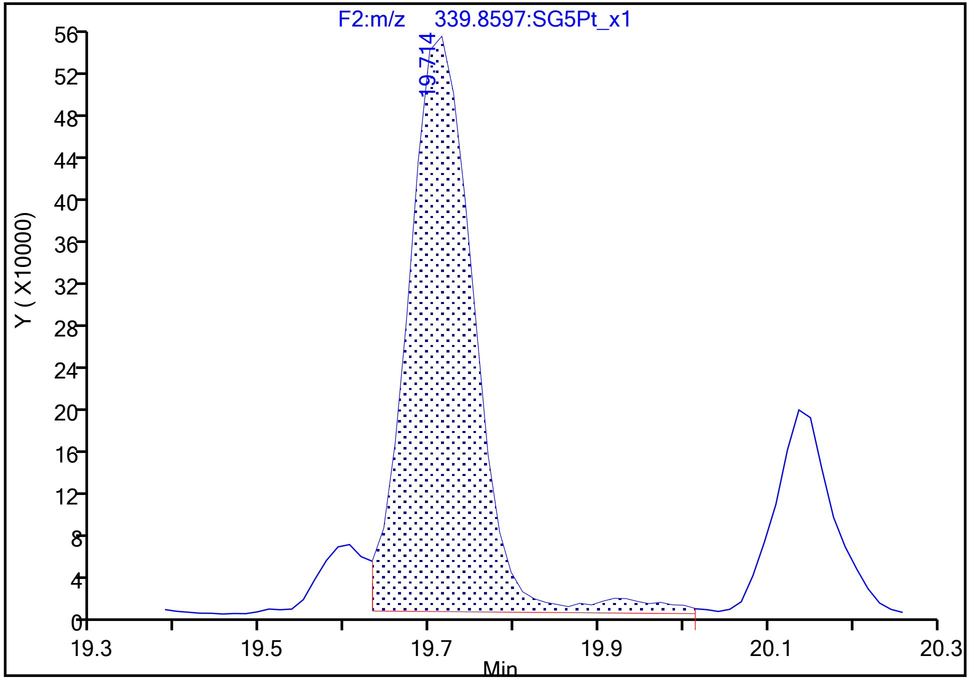

RT: 19.71
Area: 2875173
Amount: 1.864864
Amount Units: pg/ul

Manual Integration Results

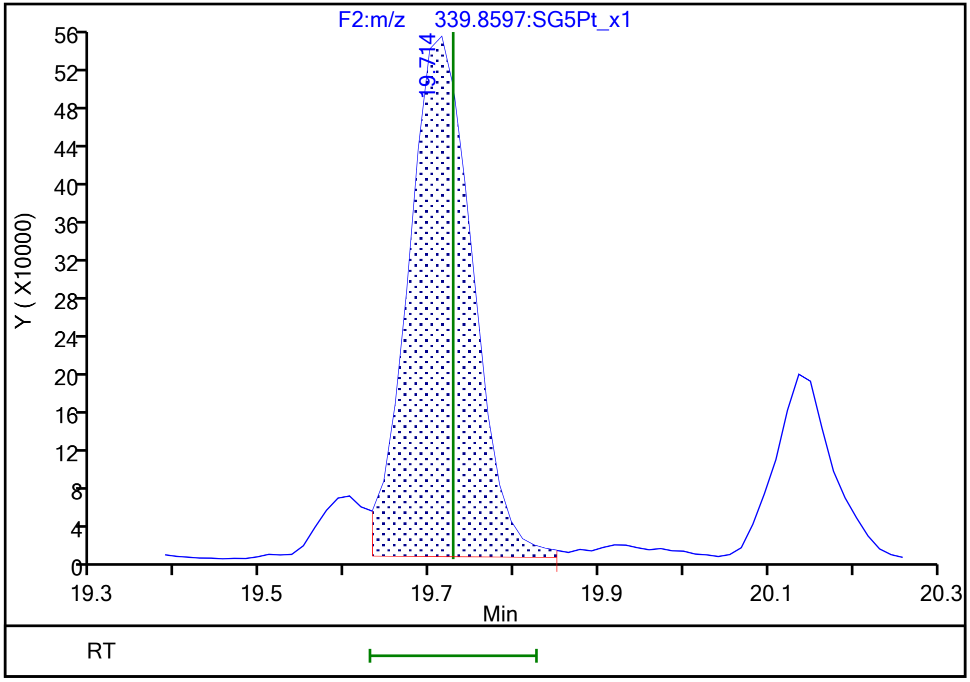

Reviewer: dadunj, 13-Oct-2020 12:23:37
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d				
Injection Date:	09-Oct-2020 07:26:14	Instrument ID:	3D5		
Lims ID:	320-65130-A-7-A	Lab Sample ID:	320-65130-7		
Client ID:	11215702-Tank#1-valve-4-2				
Operator ID:	ALM	ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT:	21.43
Area:	168625
Amount:	0.229688
Amount Units:	pg/ul

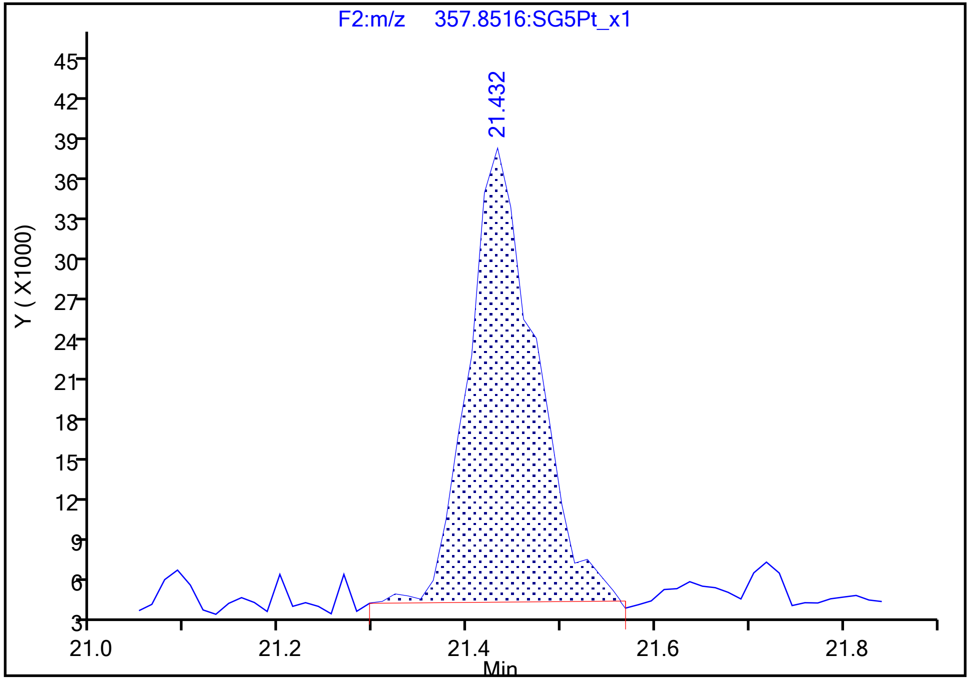

Manual Integration Results

RT:	21.43
Area:	164286
Amount:	0.219339
Amount Units:	pg/ul

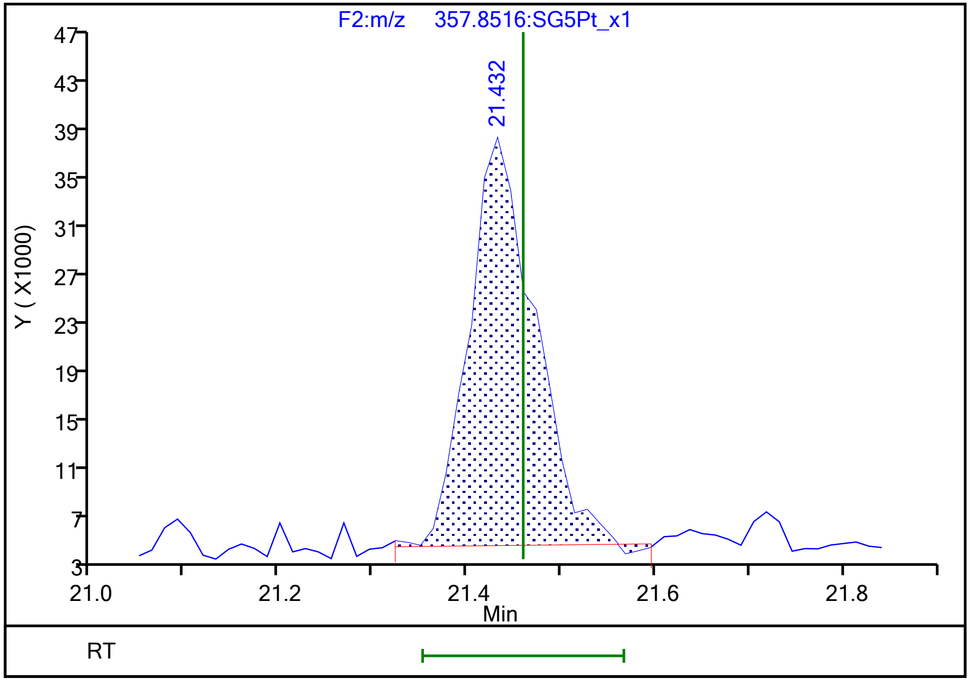

Reviewer: dadunj, 13-Oct-2020 12:24:13

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 12:27:22 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Instrument ID: 3D5
Lims ID: 320-65130-A-7-A
Lab Sample ID: 320-65130-7
Client ID: 11215702-Tank#1-valve-4-2
Operator ID: ALM
ALS Bottle#: 13
Worklist Smp#: 16
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT: 21.43
Area: 253575
Amount: 0.229688
Amount Units: pg/ul

Processing Integration Results

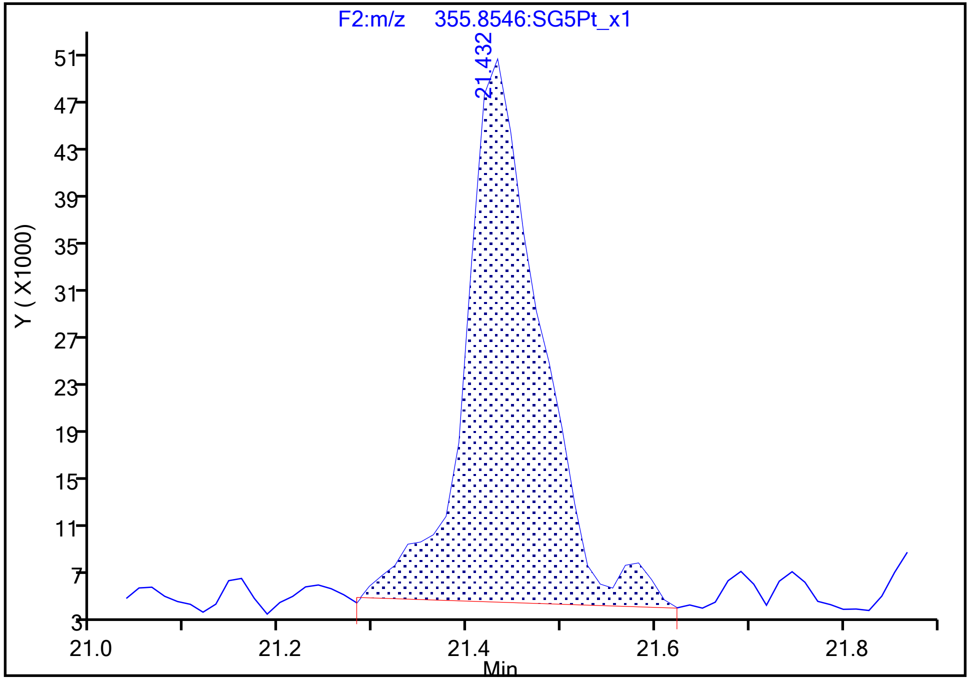

RT: 21.43
Area: 238891
Amount: 0.219339
Amount Units: pg/ul

Manual Integration Results

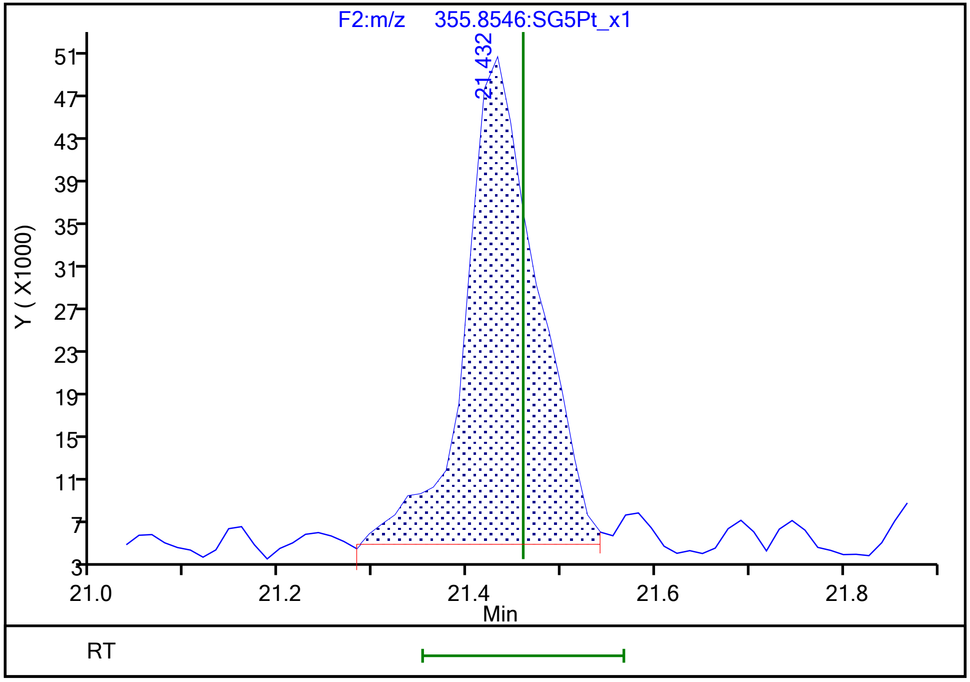

Reviewer: dadunj, 13-Oct-2020 12:26:54

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:27:22

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d

Injection Date:	09-Oct-2020 07:26:14	Instrument ID:	3D5		
Lims ID:	320-65130-A-7-A	Lab Sample ID:	320-65130-7		
Client ID:	11215702-Tank#1-valve-4-2				
Operator ID:	ALM	ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.04

Processing Integration Results

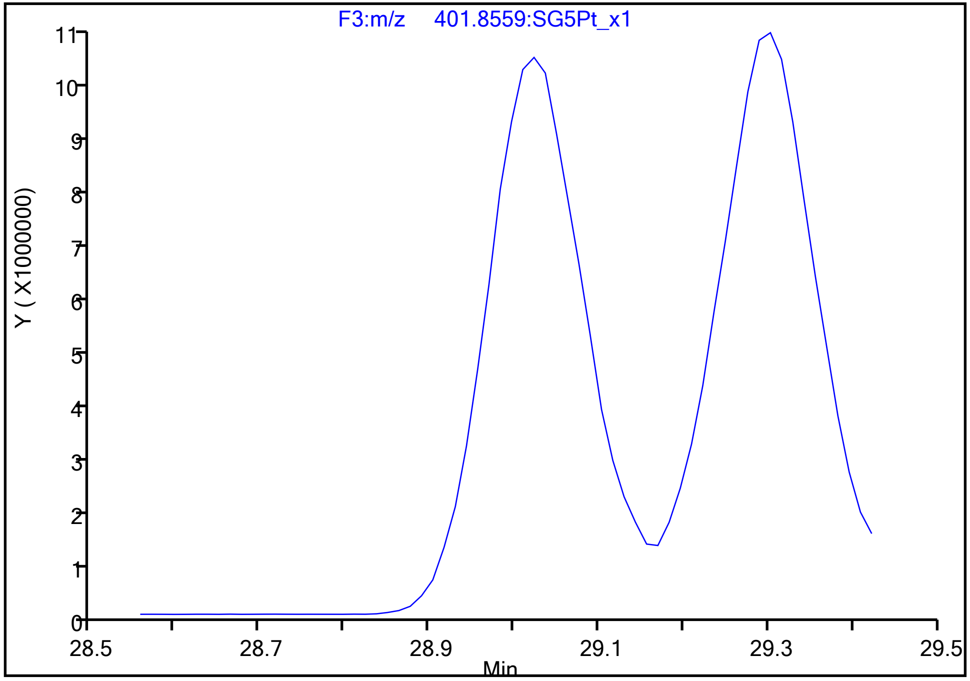

RT: 29.02

Area: 83529924

Amount: 92.877474

Amount Units: pg/ul

Manual Integration Results

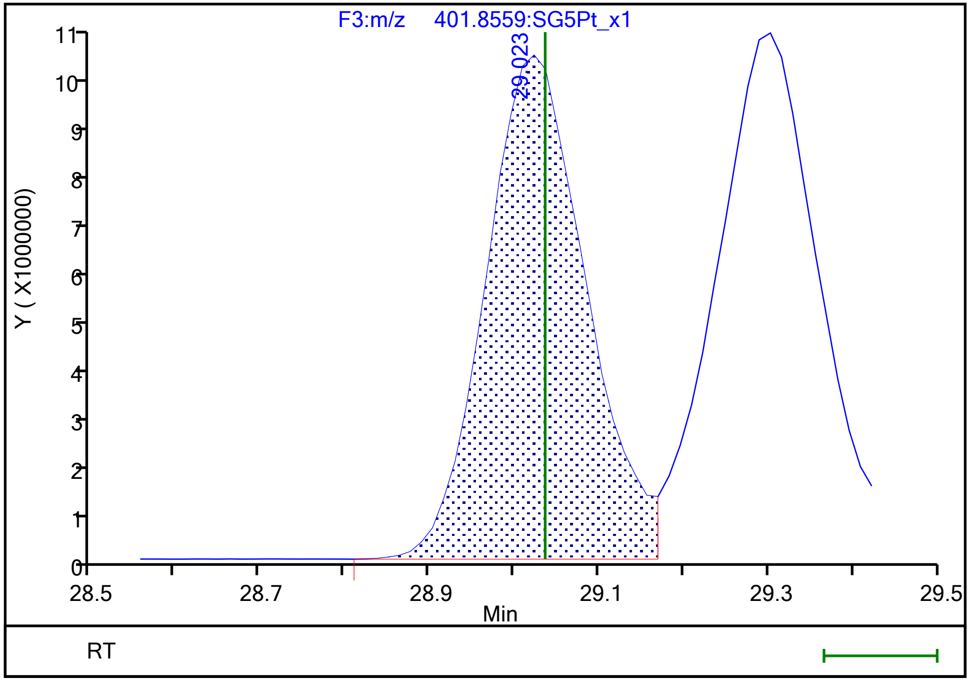

Reviewer: shardaa, 12-Oct-2020 17:57:11

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d				
Injection Date:	09-Oct-2020 07:26:14	Instrument ID:	3D5		
Lims ID:	320-65130-A-7-A	Lab Sample ID:	320-65130-7		
Client ID:	11215702-Tank#1-valve-4-2				
Operator ID:	ALM	ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.07
Area:	103165812
Amount:	101.7609
Amount Units:	pg/ul

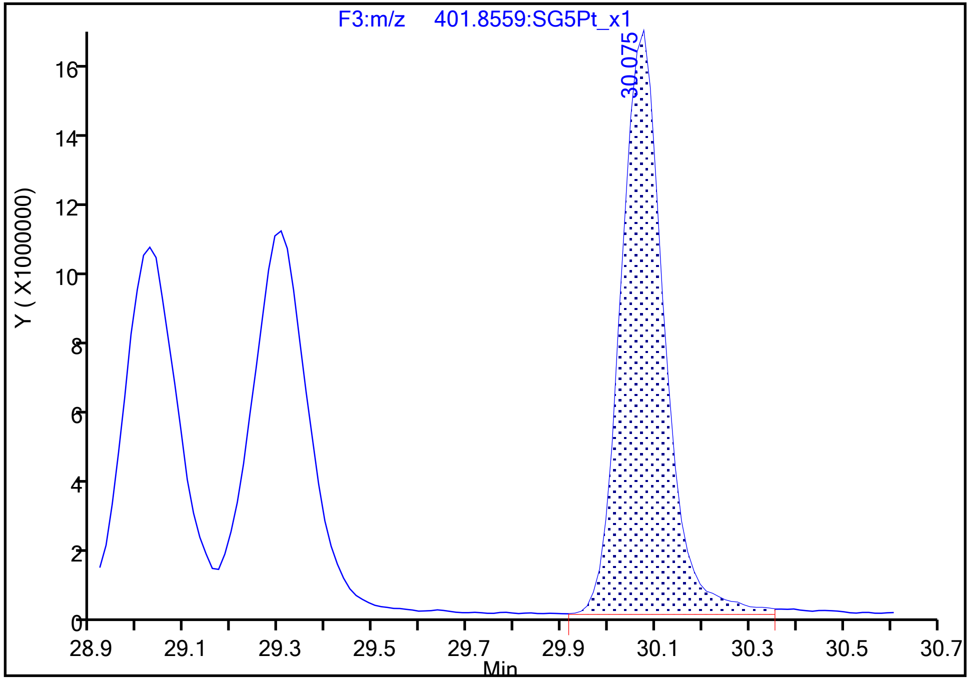

Manual Integration Results

RT:	29.30
Area:	91379796
Amount:	89.245762
Amount Units:	pg/ul

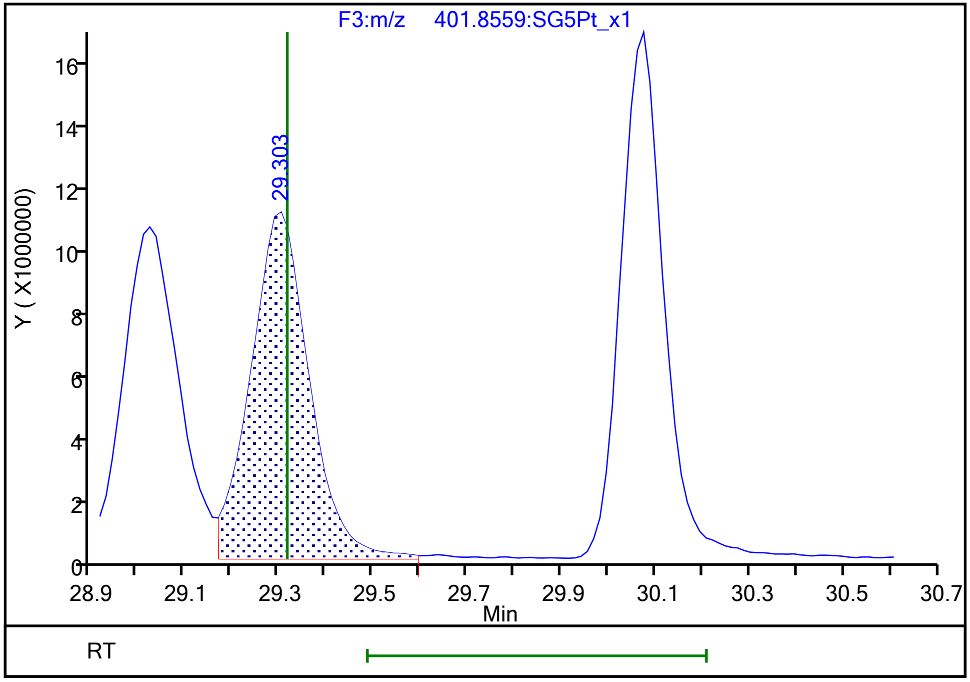

Reviewer: shardaa, 12-Oct-2020 17:58:25

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 12:27:23

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d

Injection Date:	09-Oct-2020 07:26:14	Instrument ID:	3D5		
Lims ID:	320-65130-A-7-A	Lab Sample ID:	320-65130-7		
Client ID:	11215702-Tank#1-valve-4-2				
Operator ID:	ALM	ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

RT = 25.681 Area = 72941

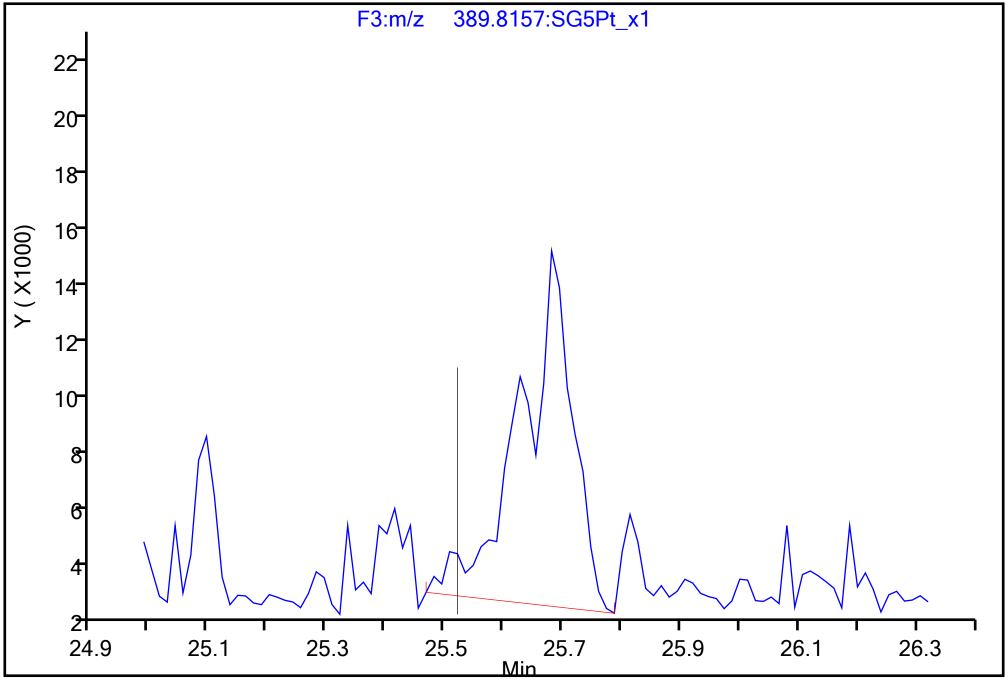

Manual Integration Results

RT = 25.681 Area = 62197 M

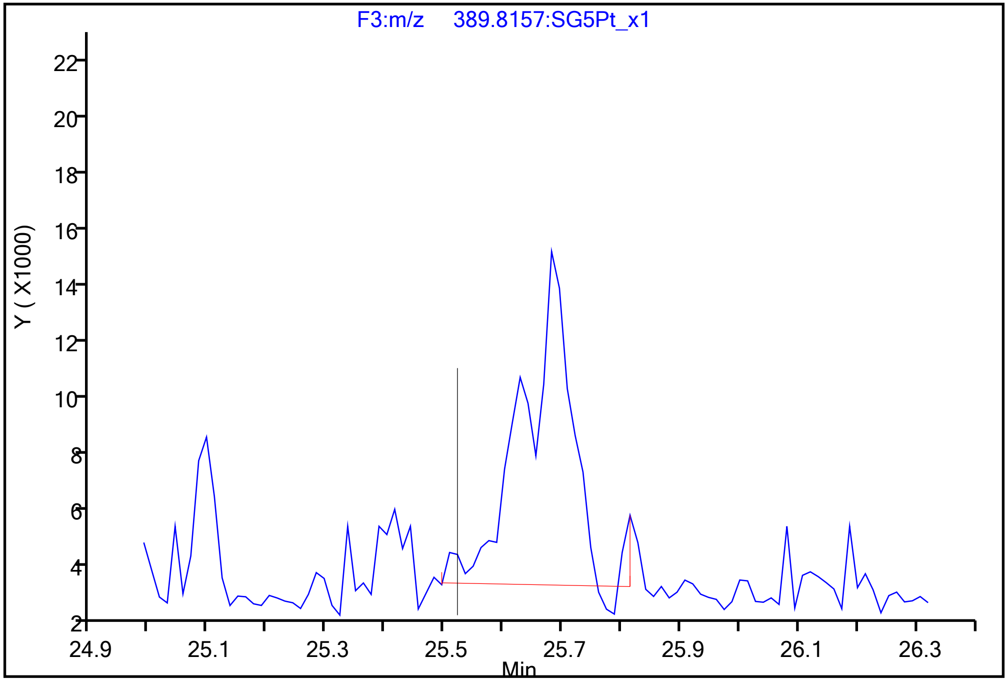

Reviewer: dadunj, 13-Oct-2020 12:25:13

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Instrument ID: 3D5
Lims ID: 320-65130-A-7-A
Lab Sample ID: 320-65130-7
Client ID: 11215702-Tank#1-valve-4-2
Operator ID: ALM
ALS Bottle#: 13
Worklist Smp#: 16
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (25.52- 30.34)

Signal: 2

RT = 25.628 Area = 56363

Processing Integration Results

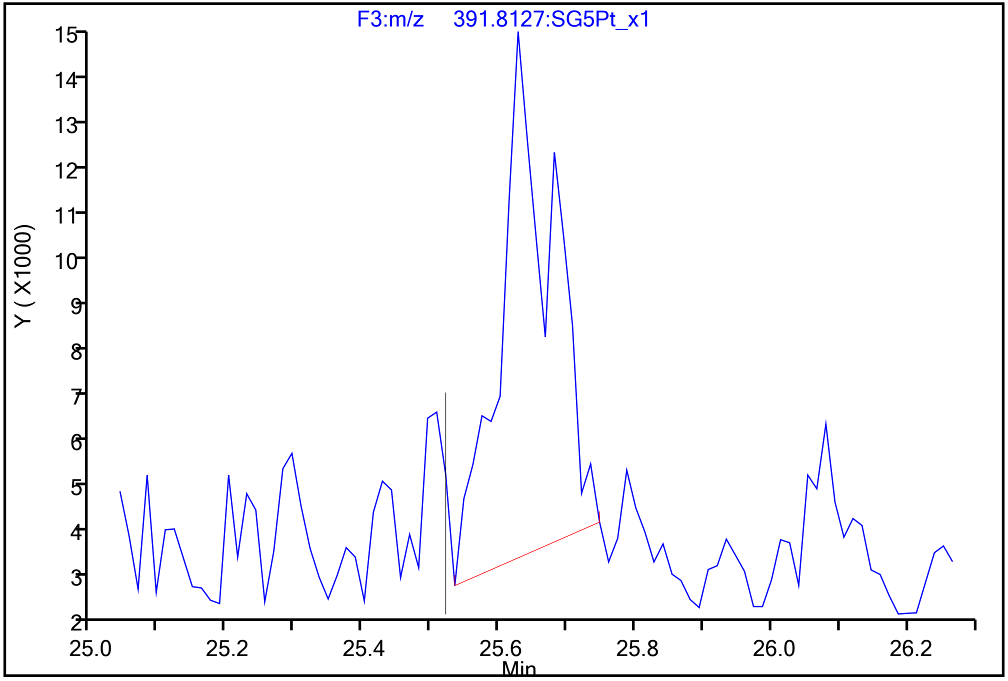

RT = 25.628 Area = 55688 M

Manual Integration Results

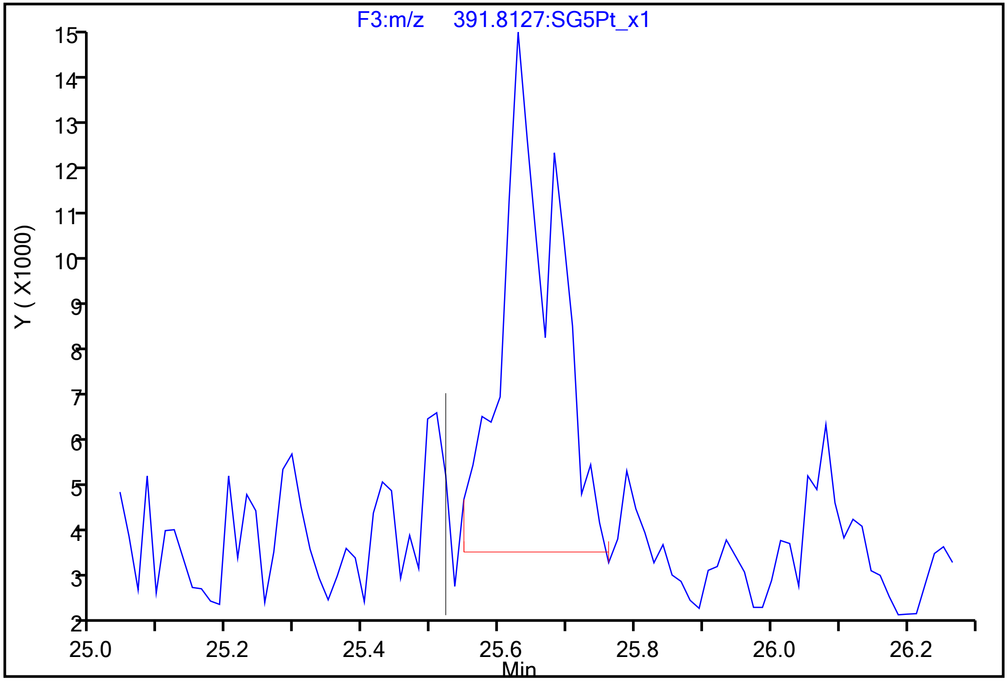

Reviewer: dadunj, 13-Oct-2020 12:25:06

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Instrument ID: 3D5
Lims ID: 320-65130-A-7-A
Lab Sample ID: 320-65130-7
Client ID: 11215702-Tank#1-valve-4-2
Operator ID: ALM
ALS Bottle#: 13
Worklist Smp#: 16
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

RT = 27.425 Area = 86757

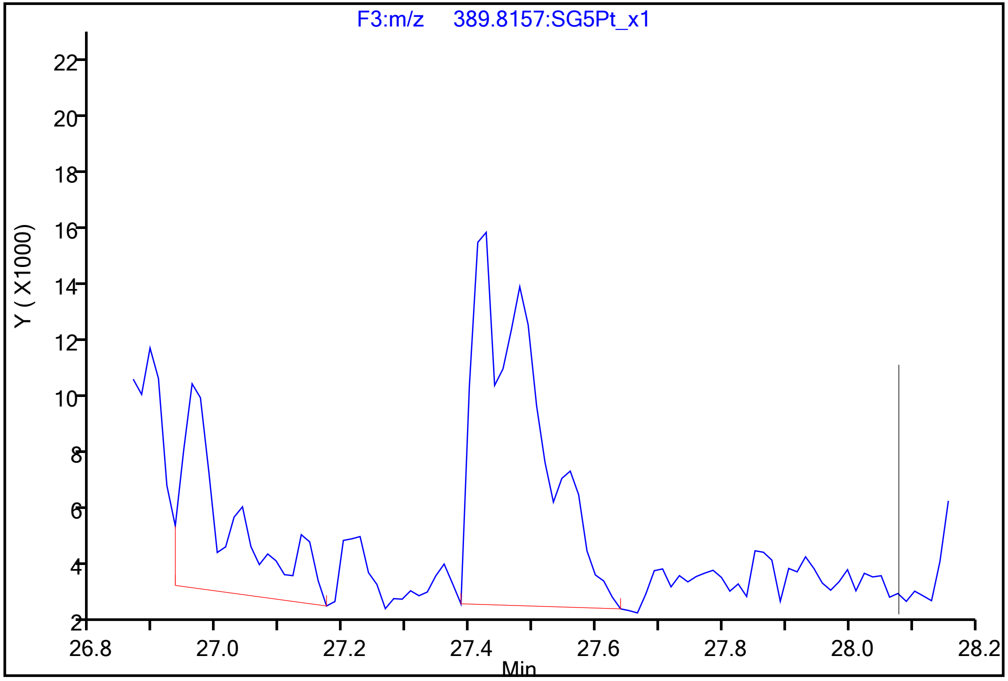

Manual Integration Results

RT = 27.425 Area = 79244 M

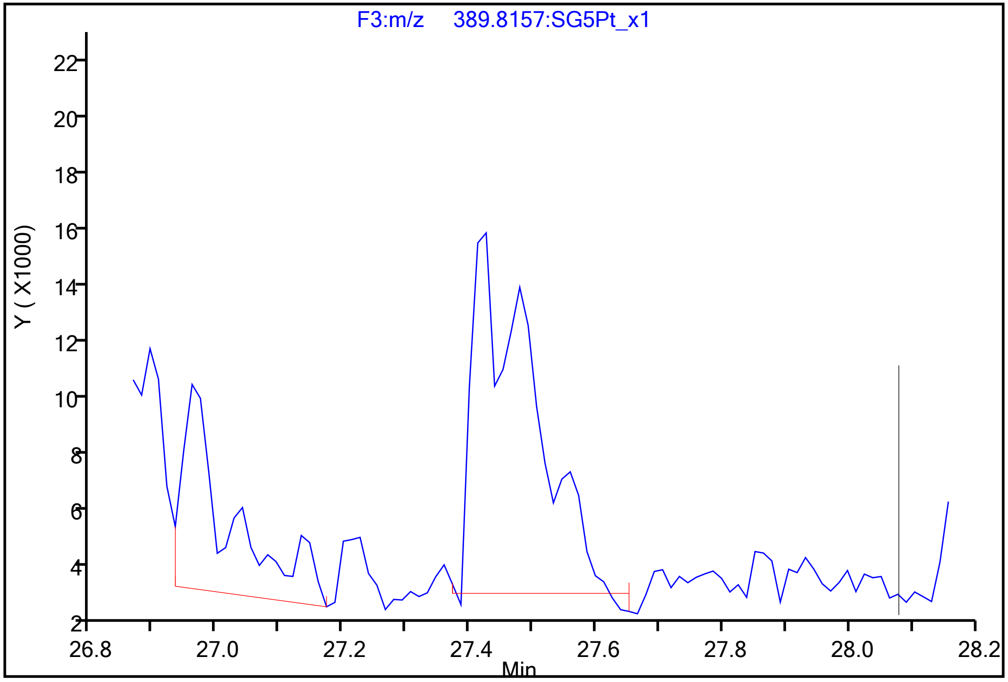

Reviewer: dadunj, 13-Oct-2020 12:25:13
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 13-Oct-2020 12:27:23

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Instrument ID: 3D5
Lims ID: 320-65130-A-7-A
Lab Sample ID: 320-65130-7
Client ID: 11215702-Tank#1-valve-4-2
Operator ID: ALM
ALS Bottle#: 13
Worklist Smp#: 16
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (25.52- 30.34)

Signal: 2

RT = 27.478 Area = 51680

Processing Integration Results

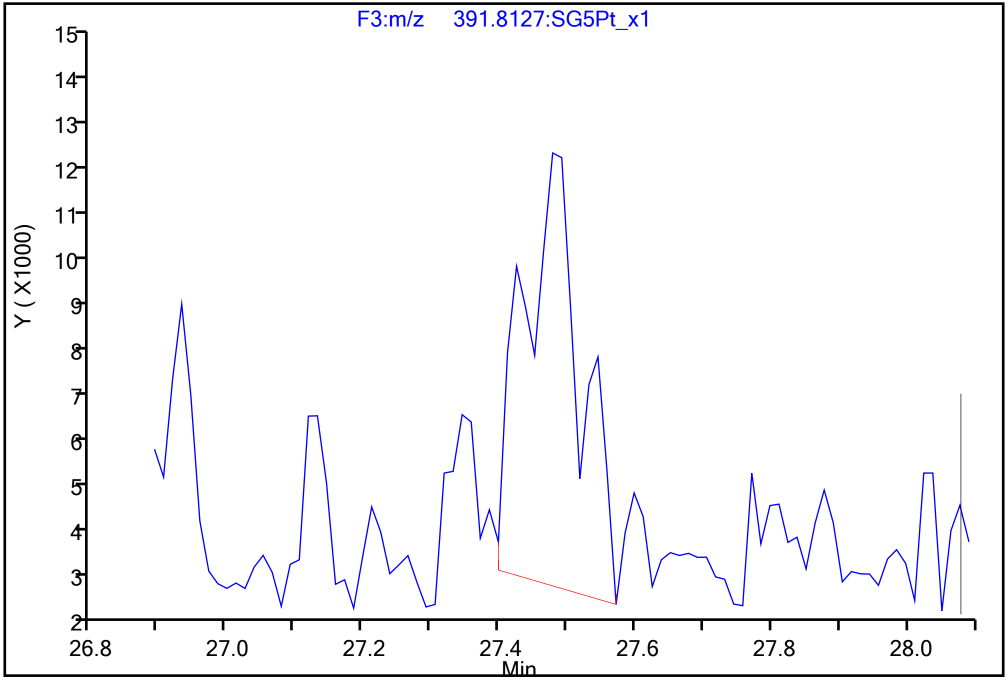

RT = 27.478 Area = 46910 M

Manual Integration Results

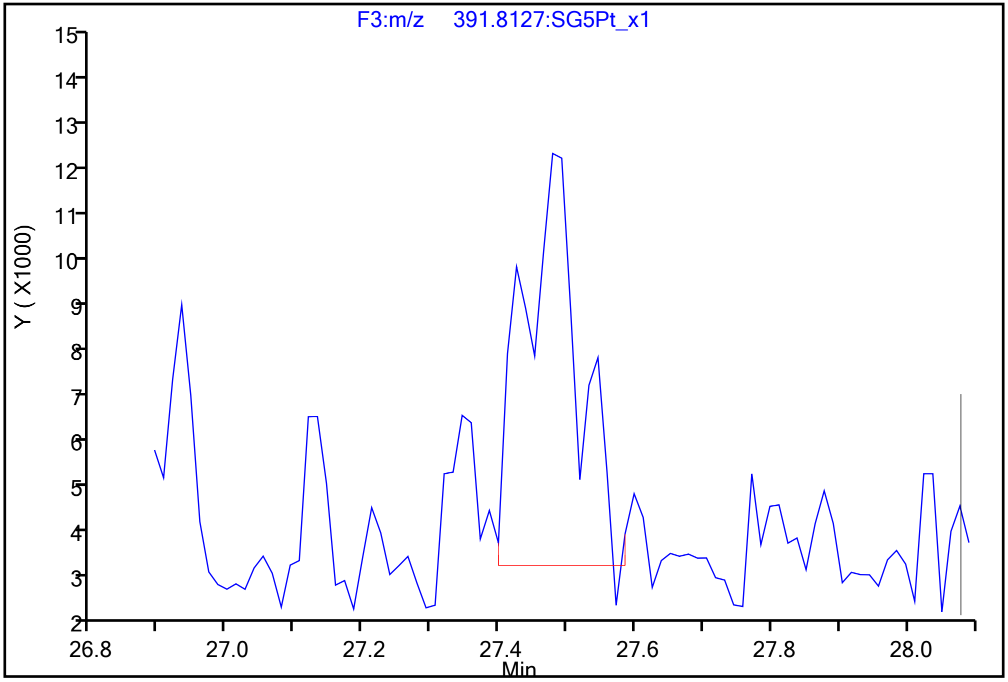

Reviewer: dadunj, 13-Oct-2020 12:25:06

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d				
Injection Date:	09-Oct-2020 07:26:14	Instrument ID:	3D5		
Lims ID:	320-65130-A-7-A	Lab Sample ID:	320-65130-7		
Client ID:	11215702-Tank#1-valve-4-2				
Operator ID:	ALM	ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	33.40
Area:	718774
Amount:	0.893649
Amount Units:	pg/ul

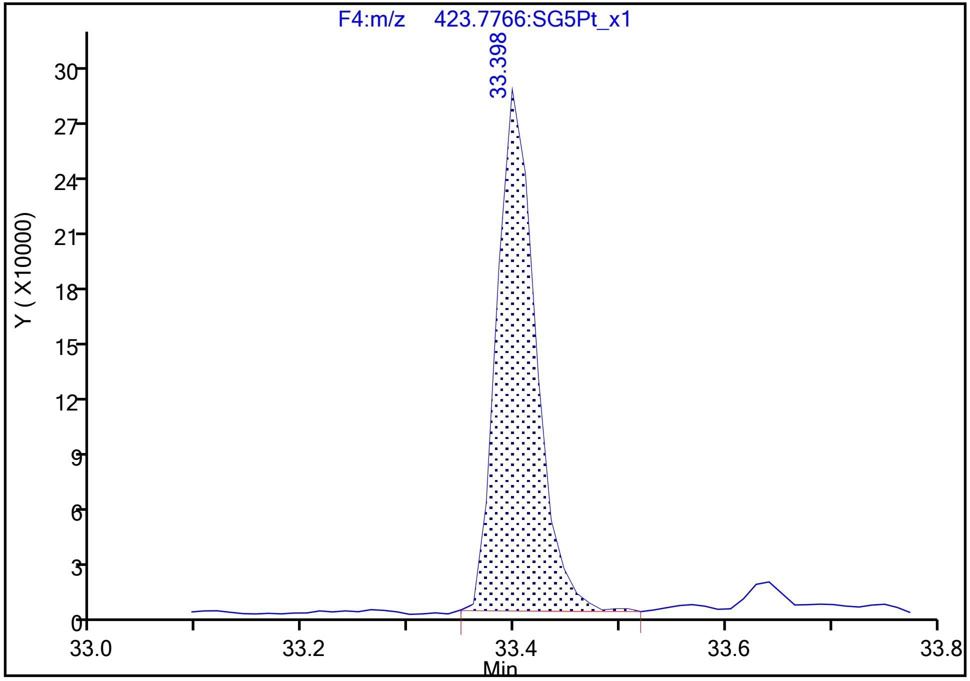

Manual Integration Results

RT:	33.40
Area:	715317
Amount:	0.879637
Amount Units:	pg/ul

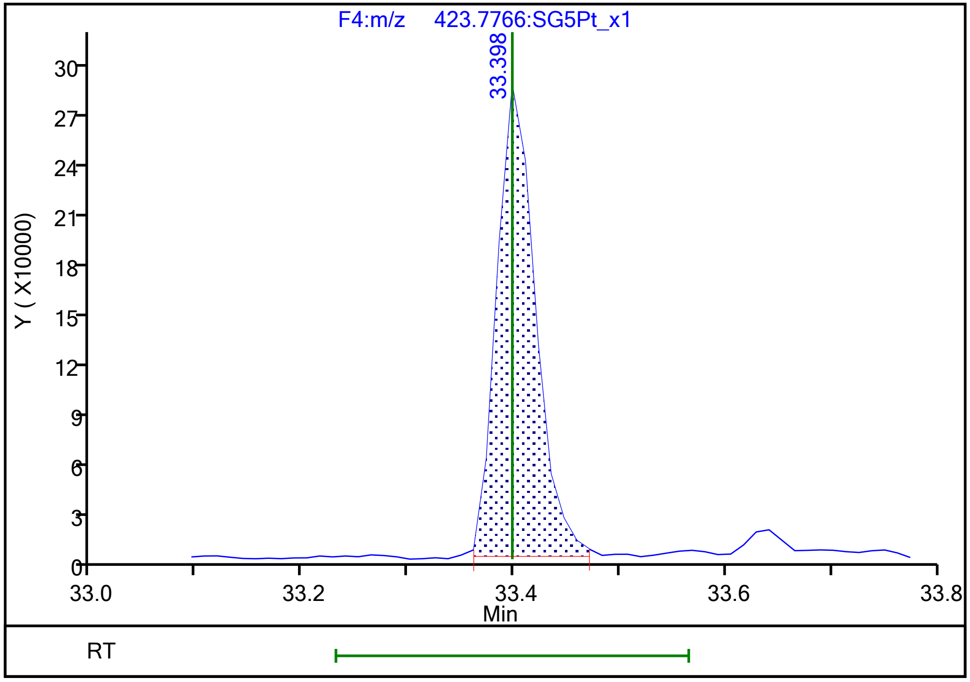

Reviewer: dadunj, 13-Oct-2020 12:25:43

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d				
Injection Date:	09-Oct-2020 07:26:14	Instrument ID:	3D5		
Lims ID:	320-65130-A-7-A	Lab Sample ID:	320-65130-7		
Client ID:	11215702-Tank#1-valve-4-2				
Operator ID:	ALM	ALS Bottle#:	13	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 33.40
Area: 696627
Amount: 0.893649
Amount Units: pg/ul

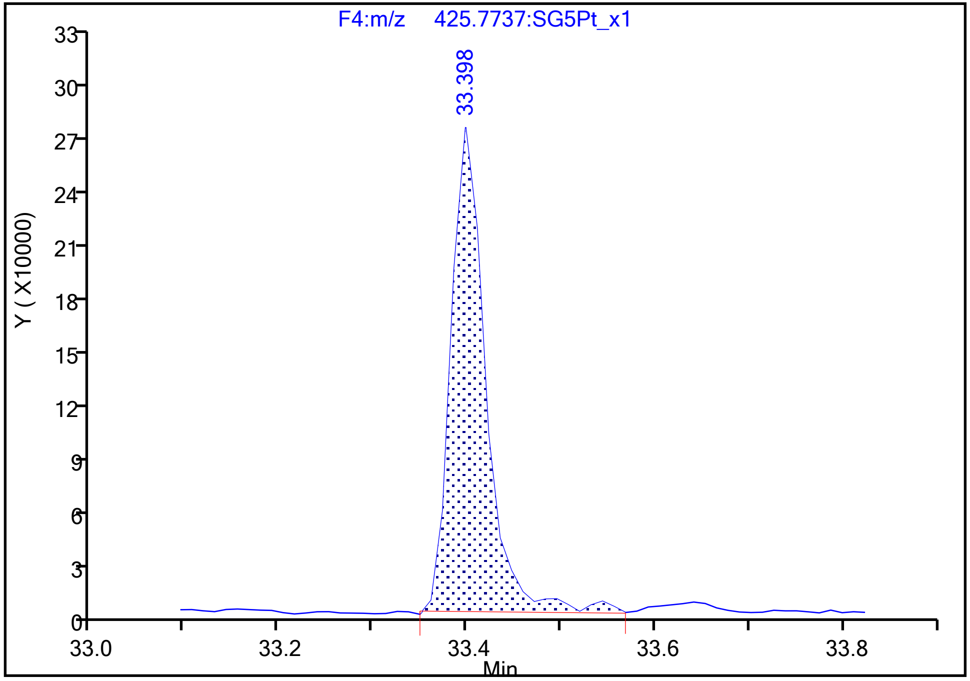

Manual Integration Results

RT: 33.40
Area: 677891
Amount: 0.879637
Amount Units: pg/ul

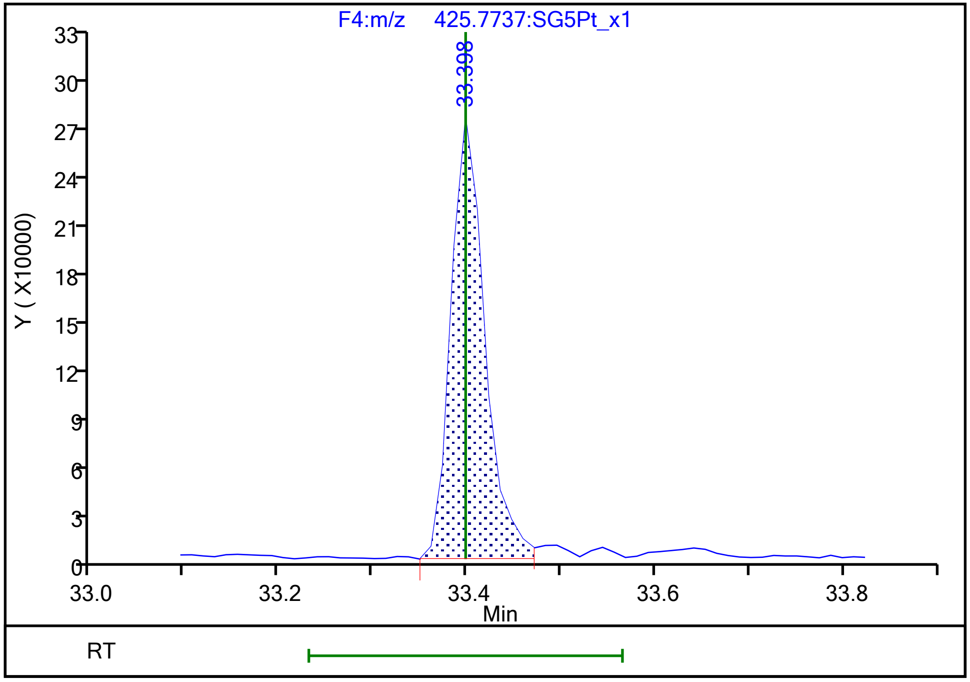

Reviewer: dadunj, 13-Oct-2020 12:25:57

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 420482
Sample Line#: 16
Column Type:
Column Dia:

TCDF

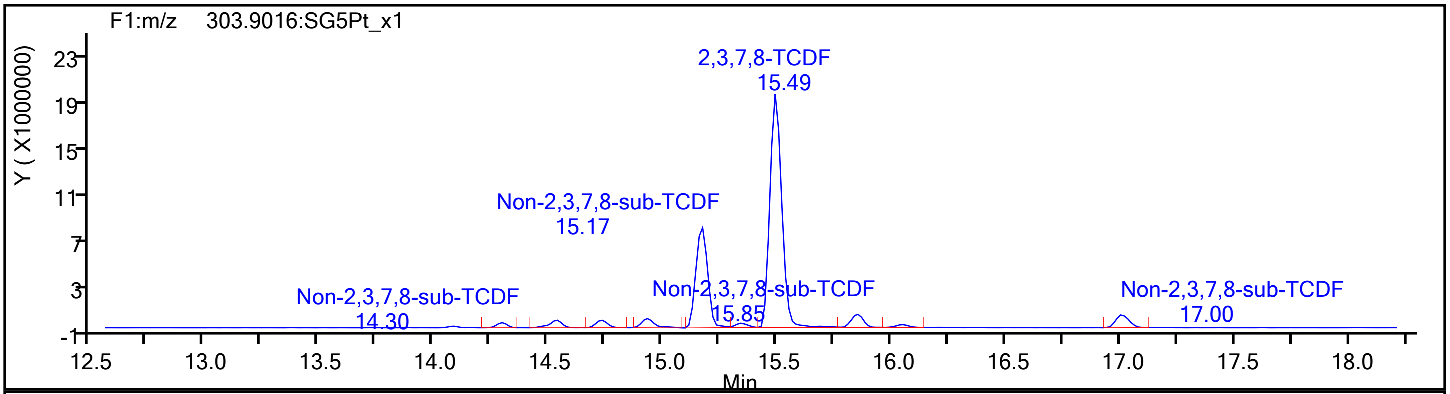

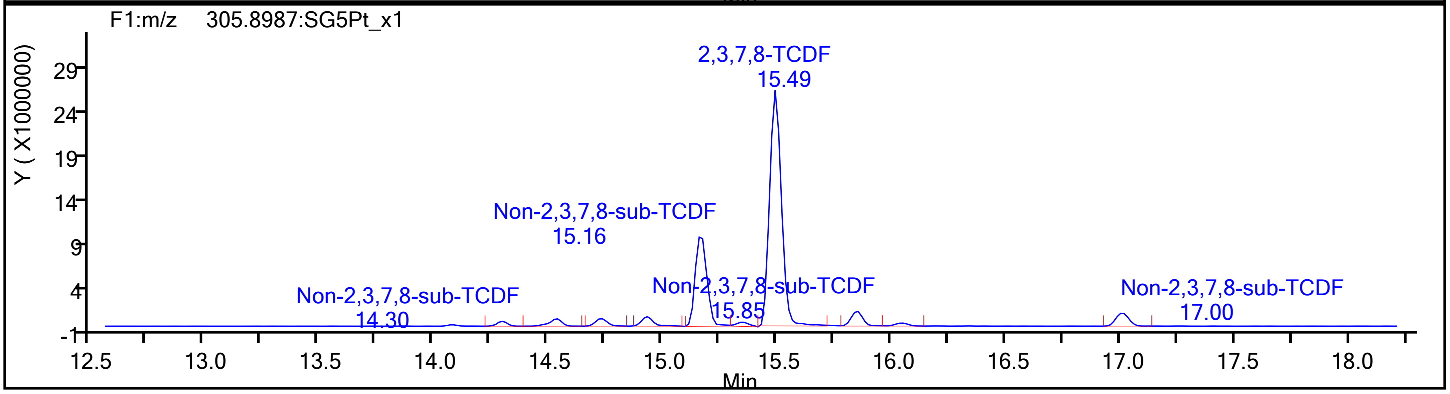

TCDF Standards

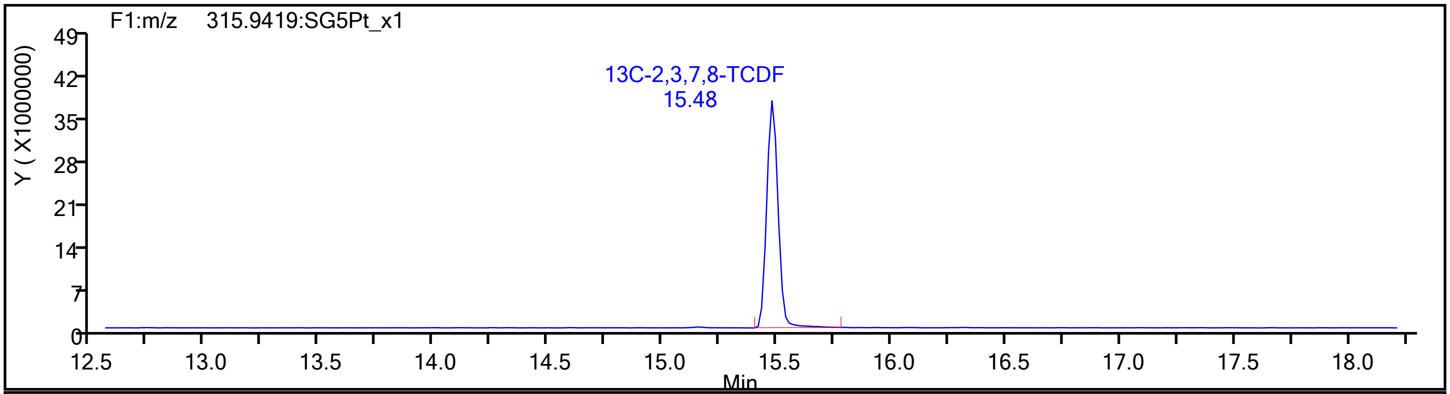

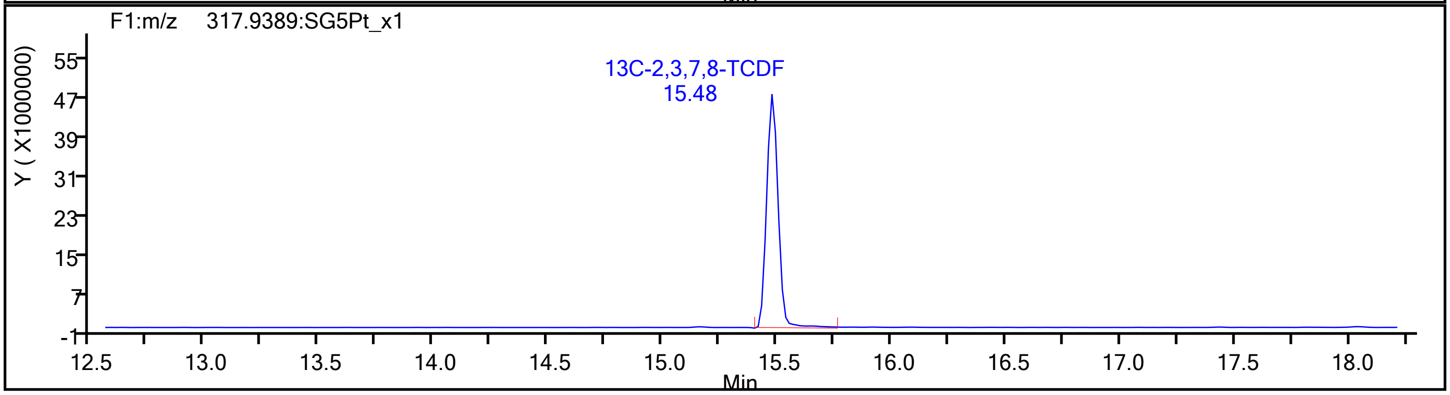

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 420482
Sample Line#: 16
Column Type:
Column Dia:

TCDF

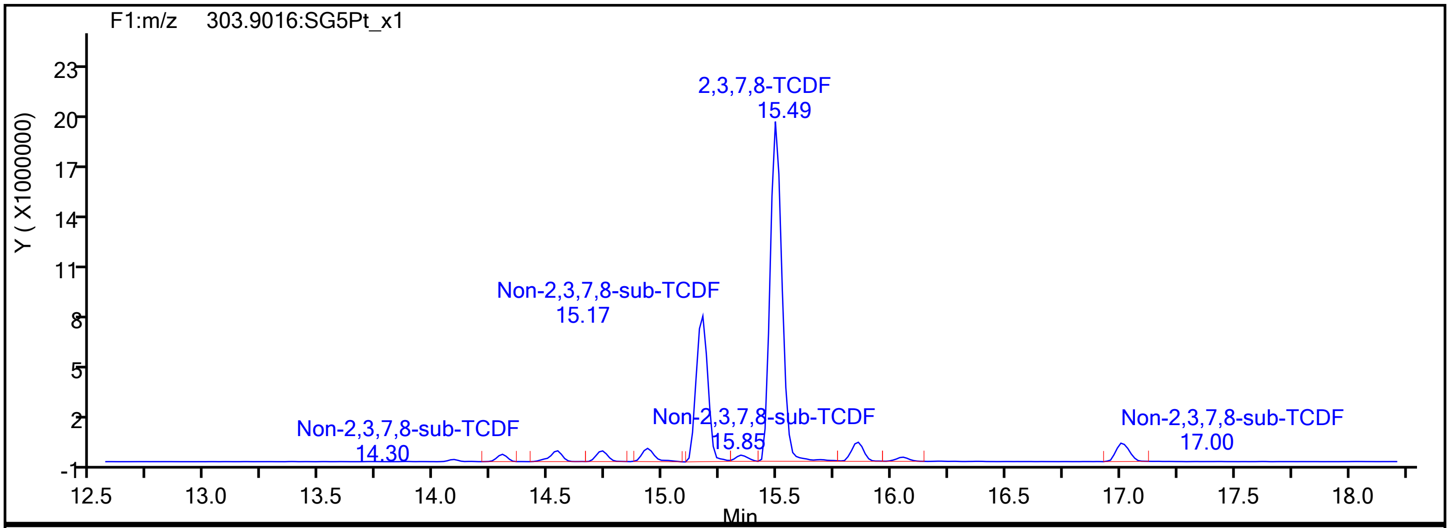

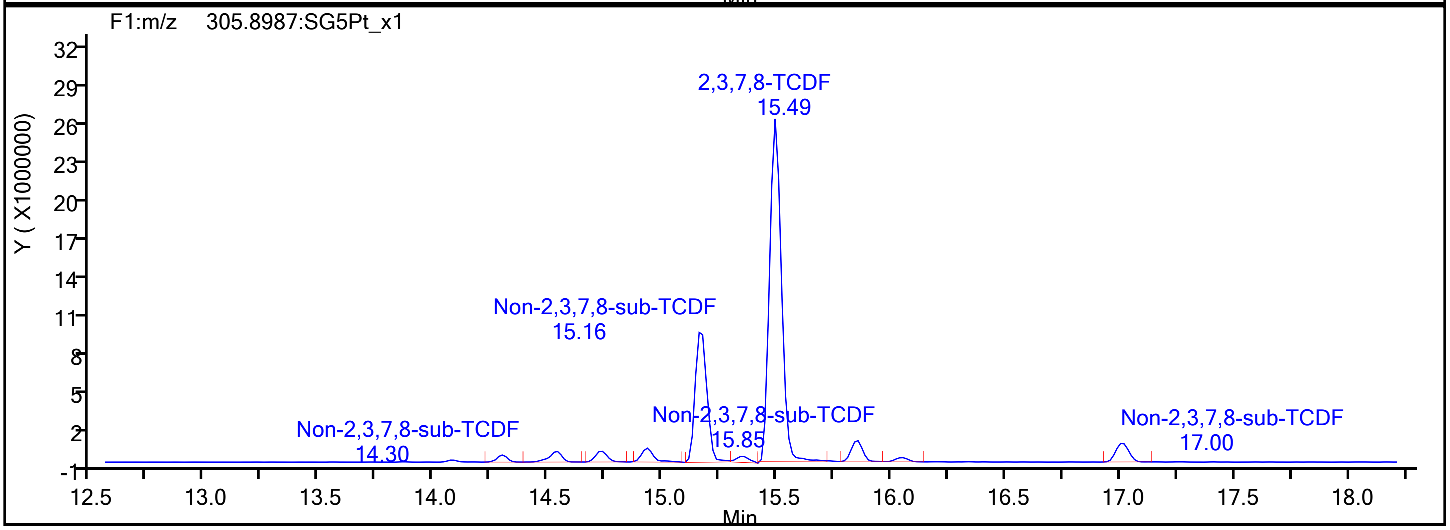

TCDF Interference Mass

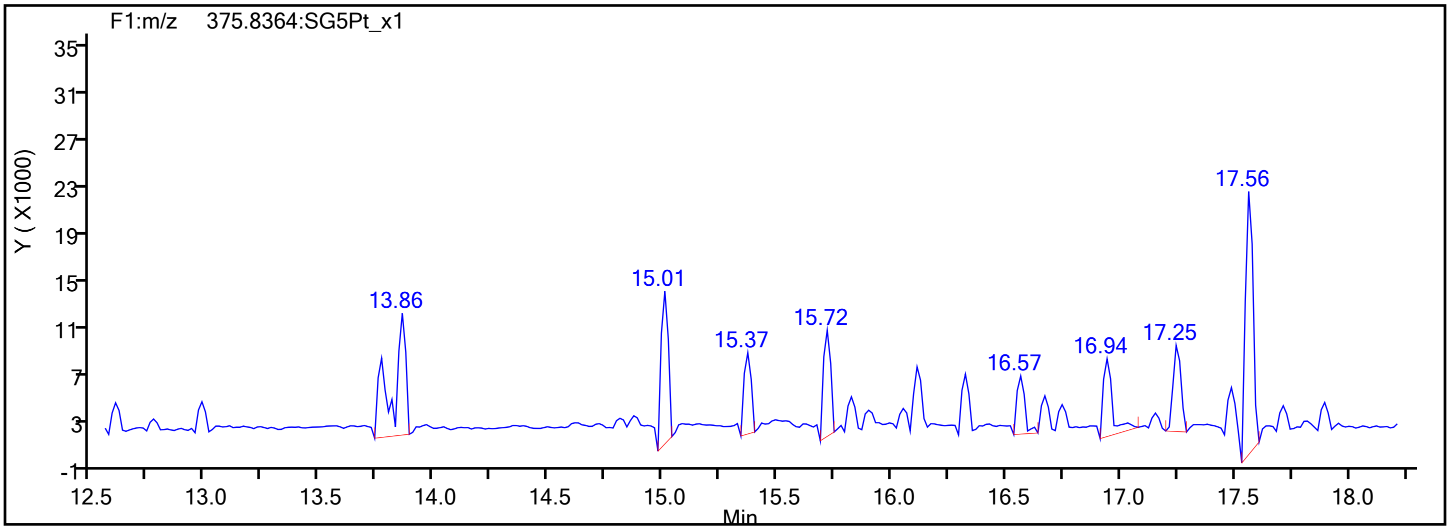

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Injection Vol: 2.0 ul
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Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 420482
Sample Line#: 16
Column Type:
Column Dia:

TCDD

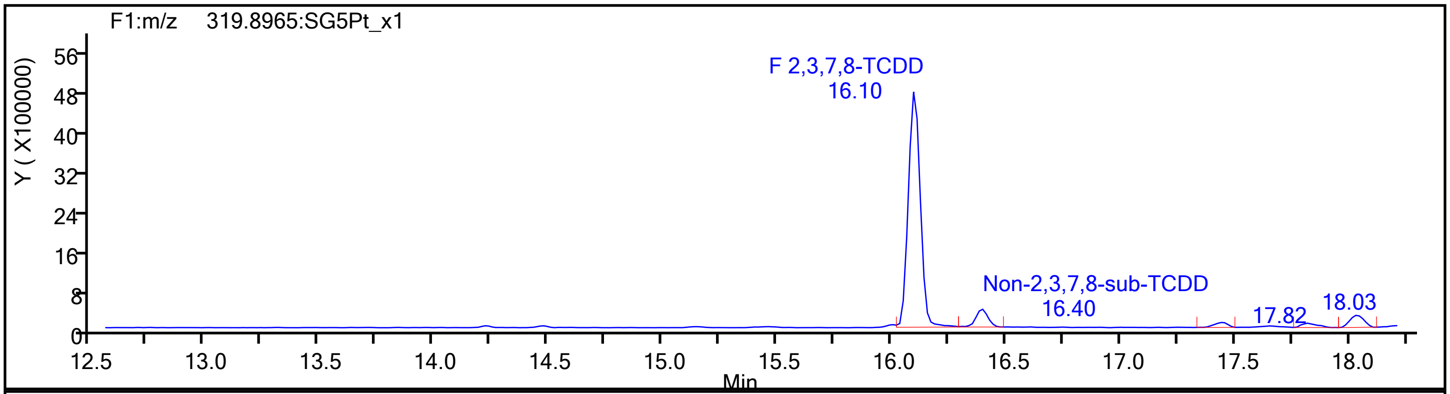

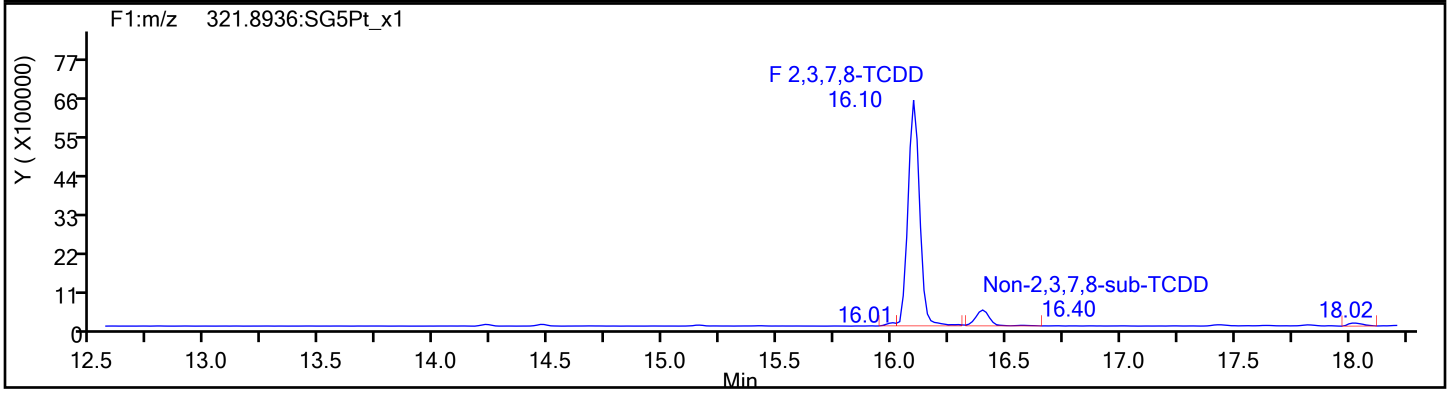

TCDD Standards

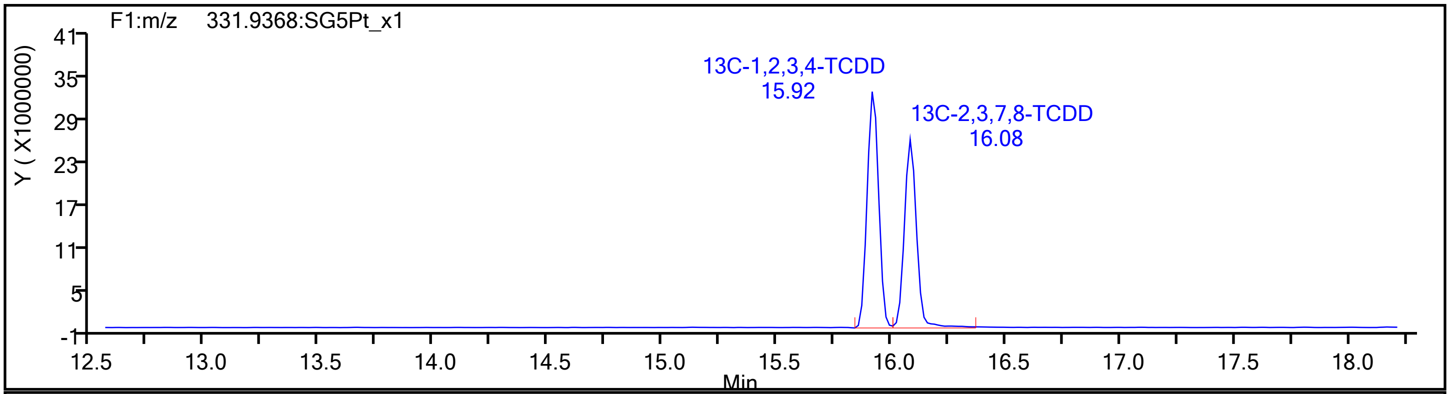

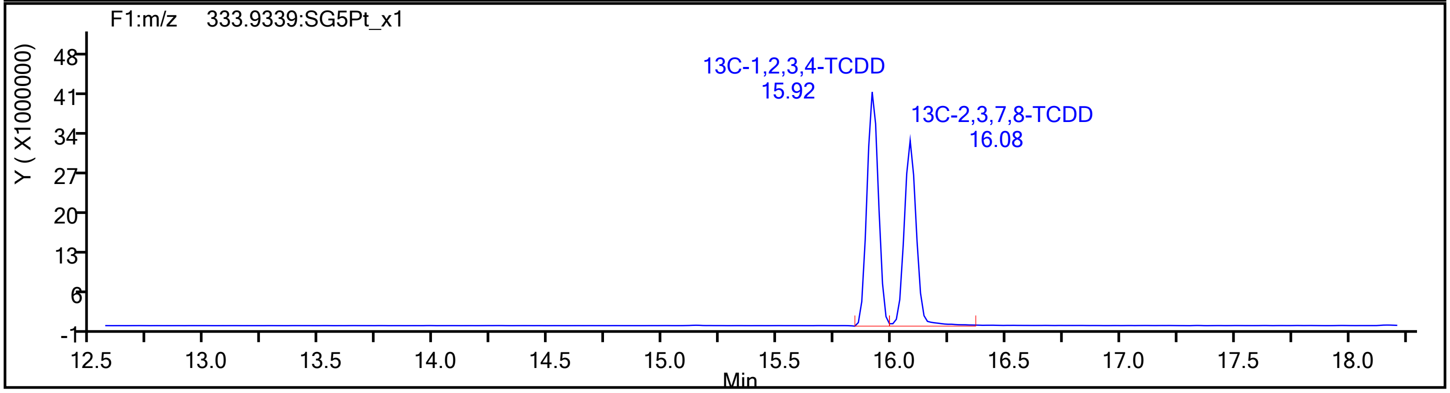

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Worklist#:	420482	Sample Line#:	16
Column Type:		Column Dia:	

37Cl4-TCDD

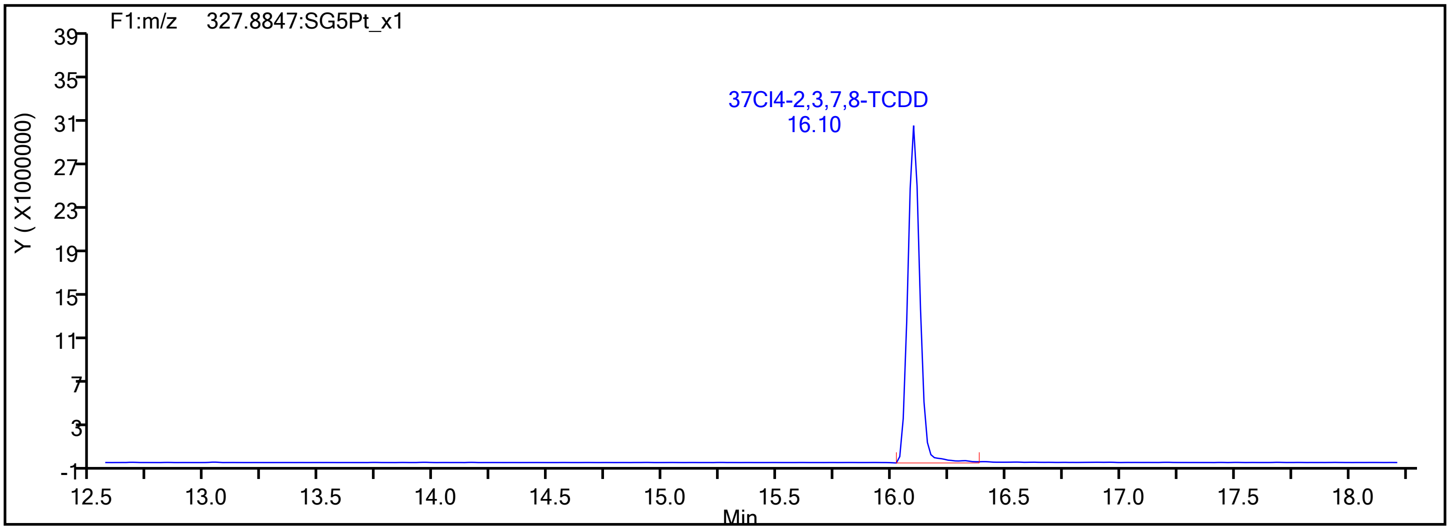

37Cl4-TCDD Standards

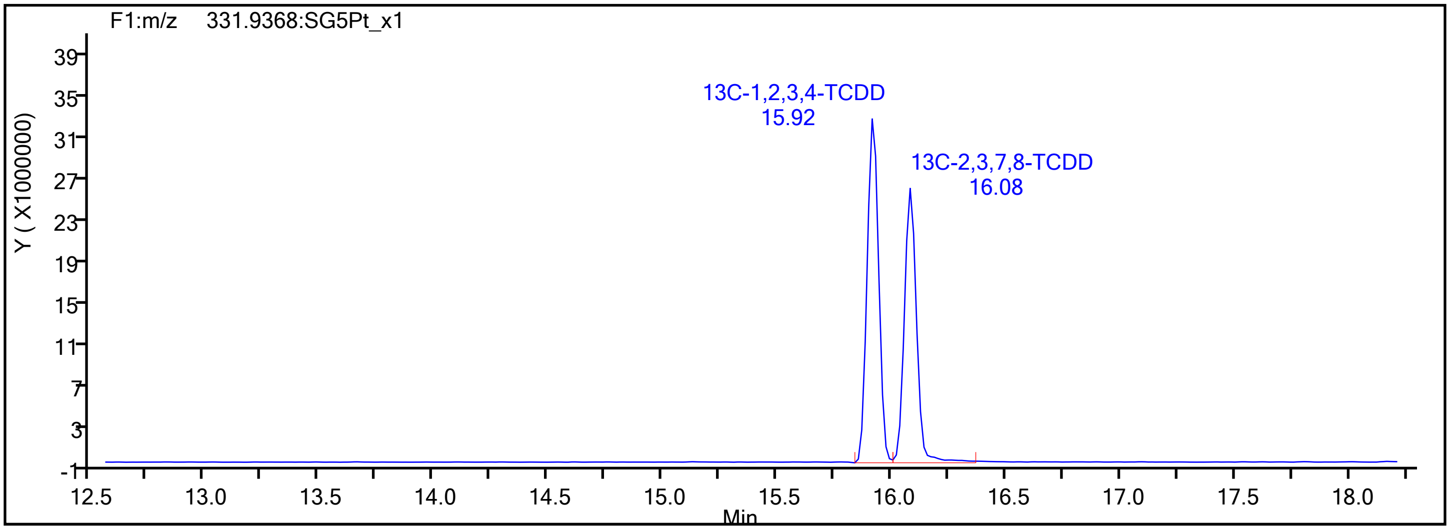

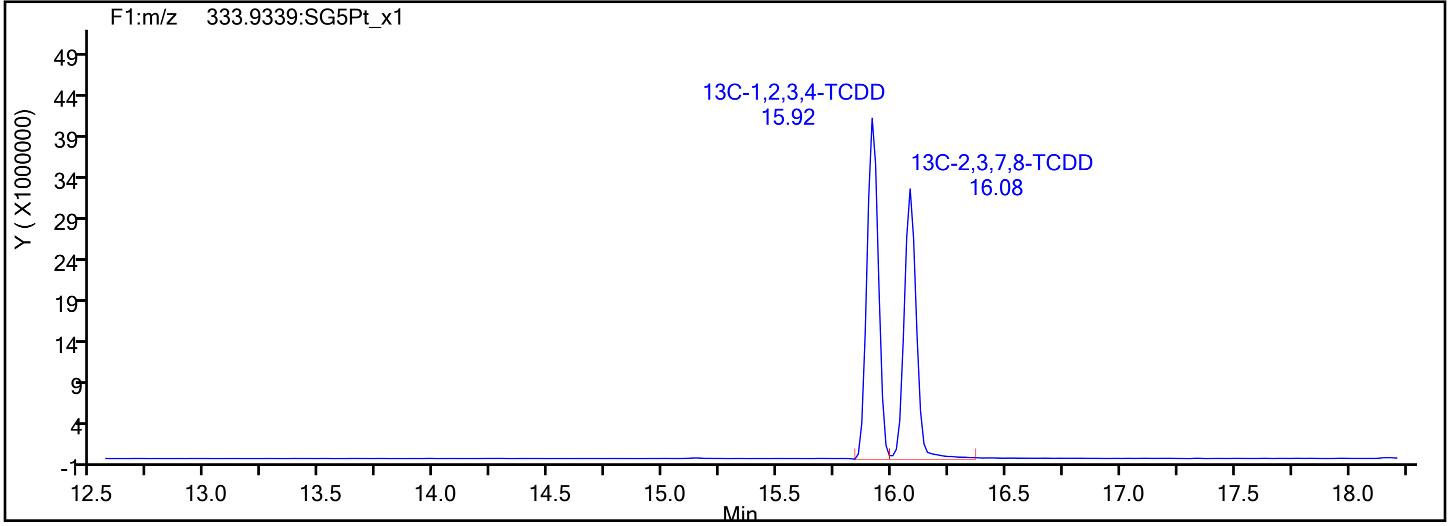

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 07:26:14 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-4-2

Worklist#: 420482 Sample Line#: 16

Column Type: Column Dia:

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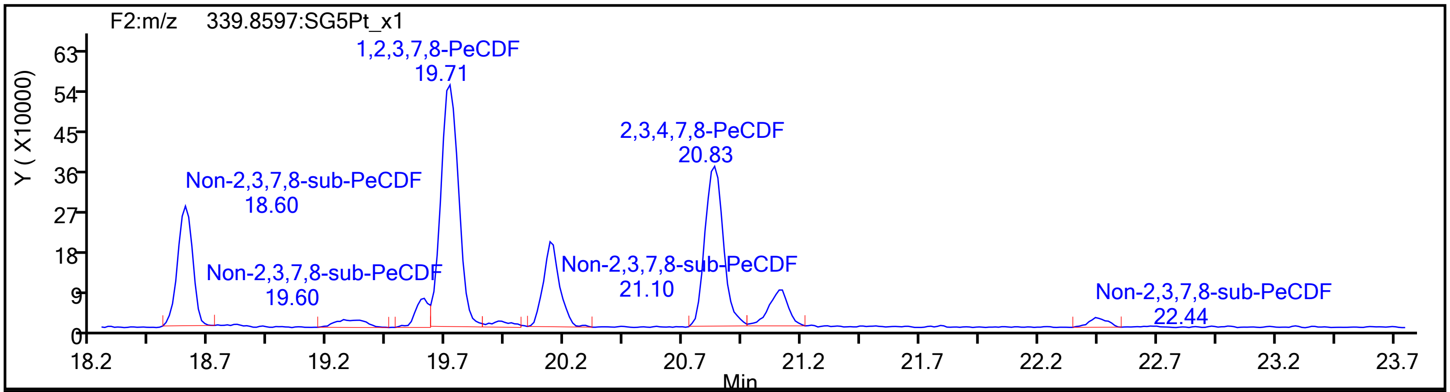

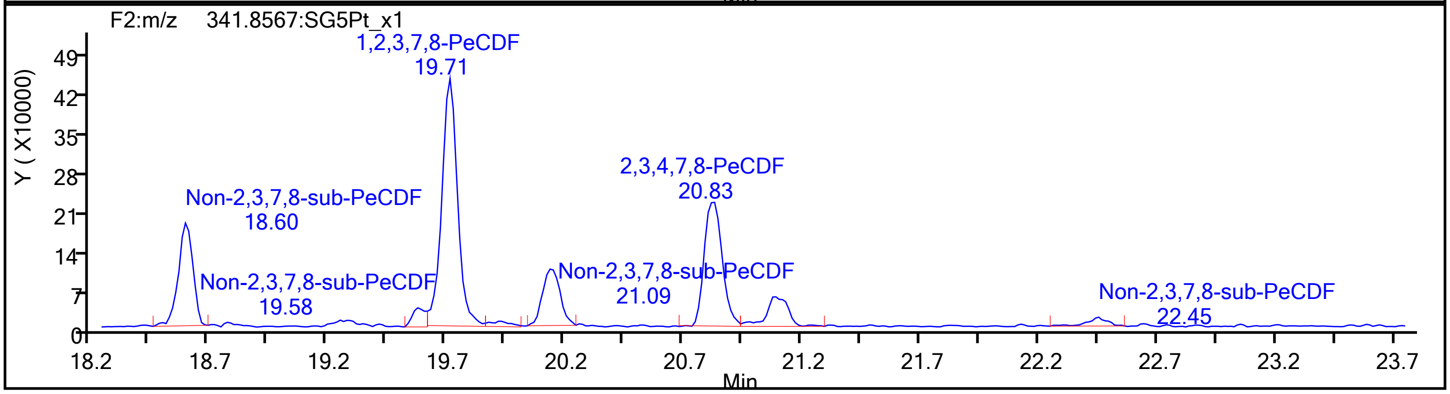

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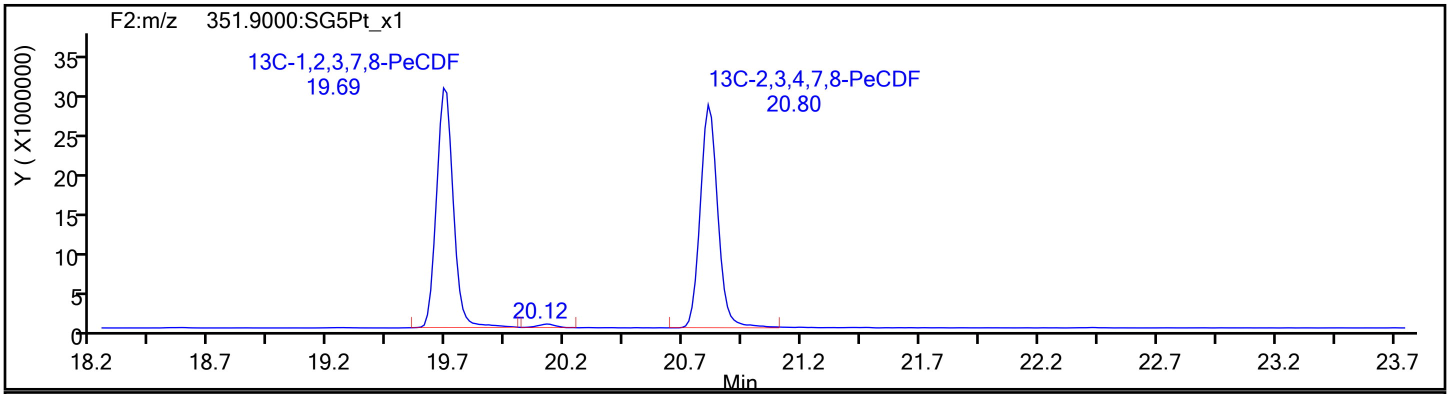

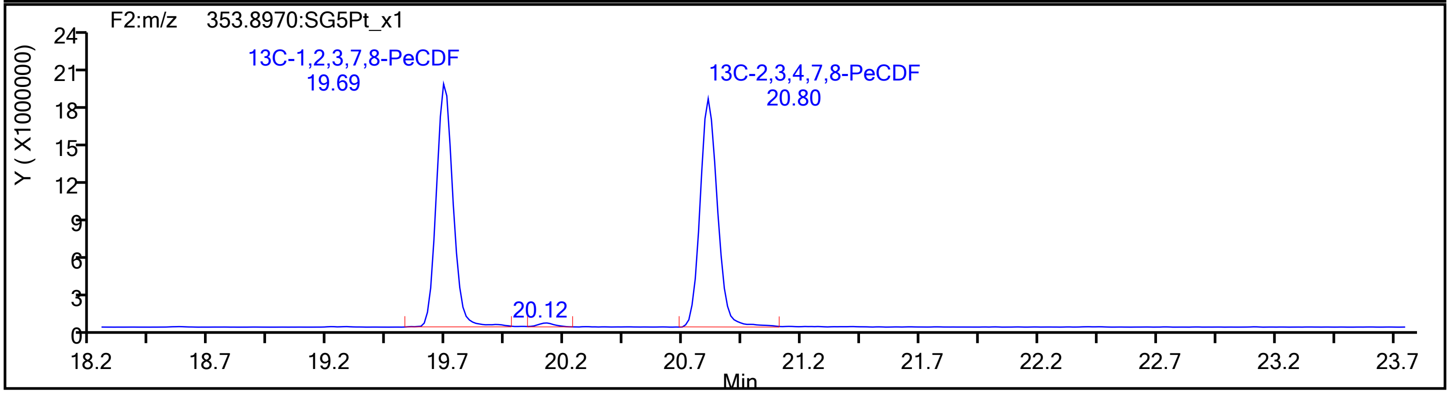

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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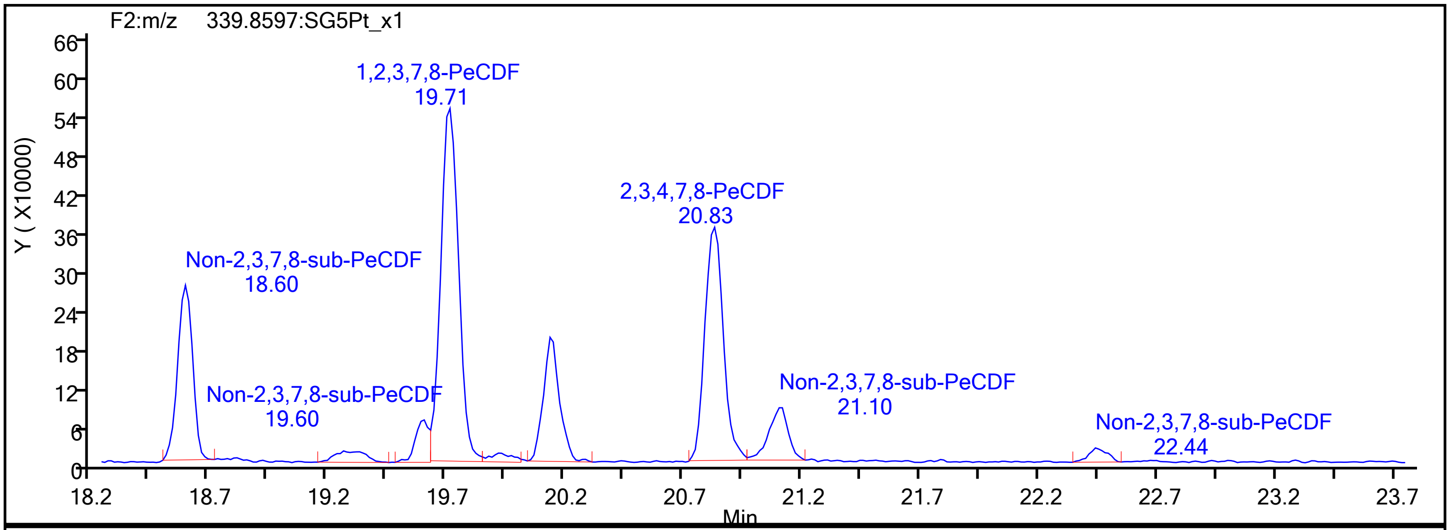

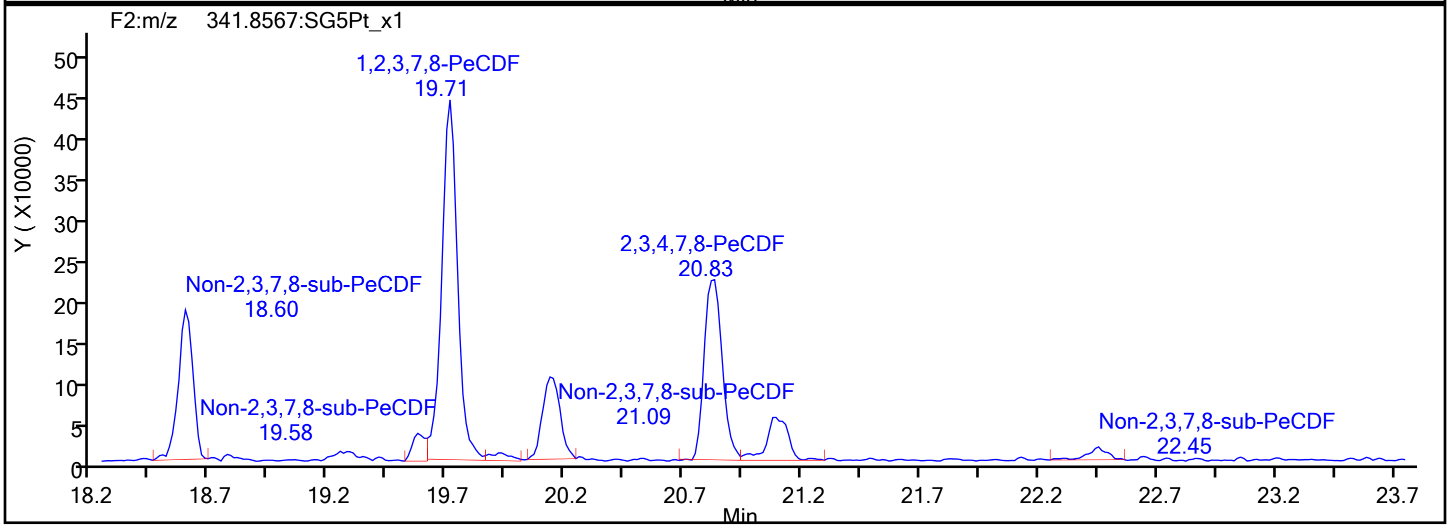

PeCDF Interference Mass

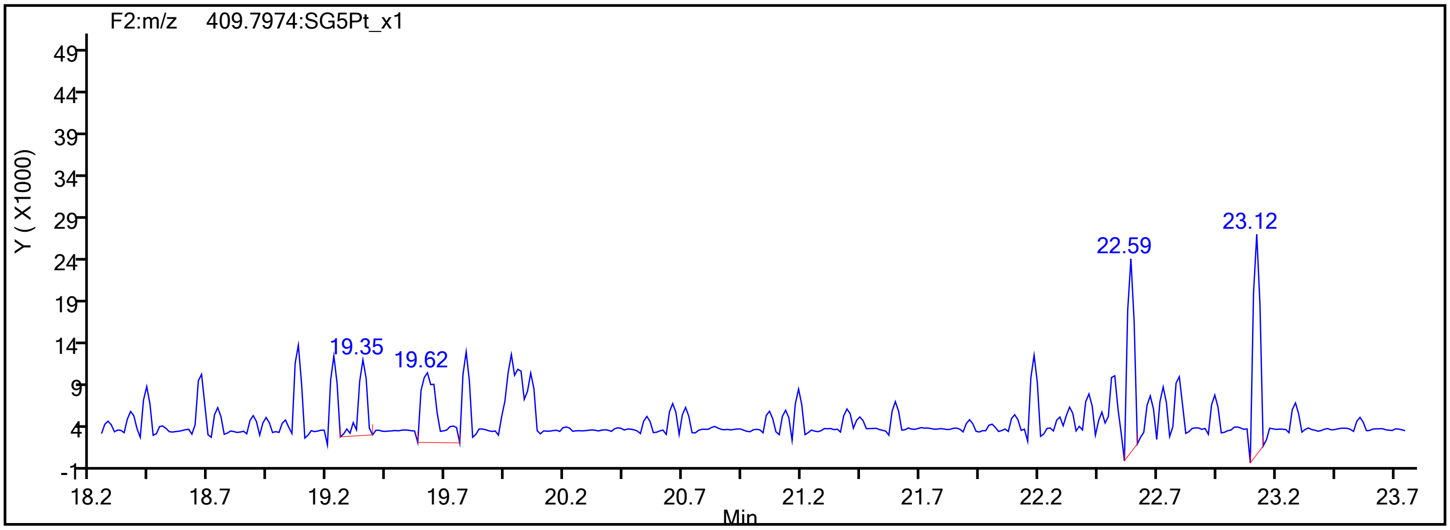

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 07:26:14 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 420482 Sample Line#: 16
Column Type: Column Dia:

PeCDD

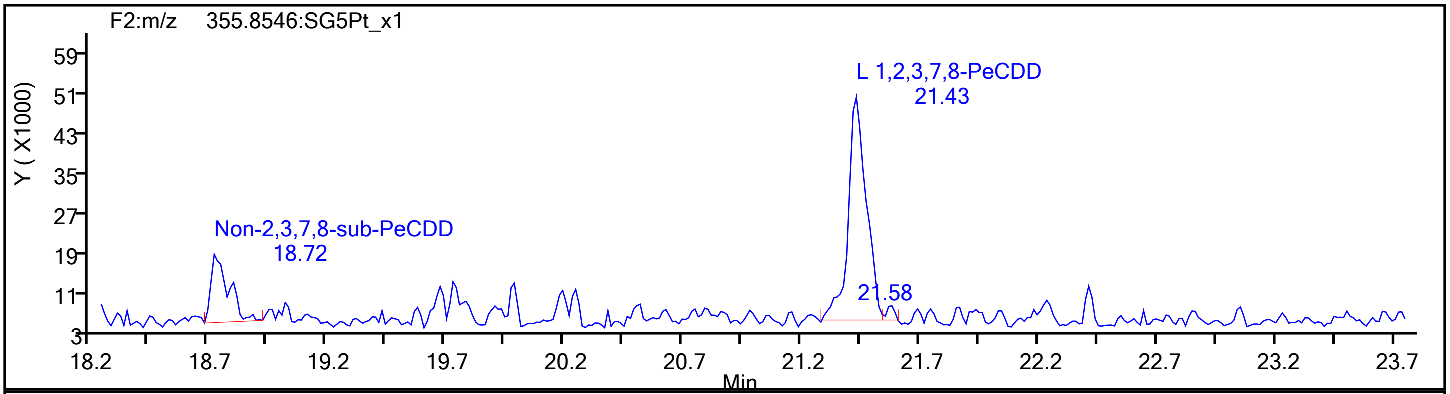

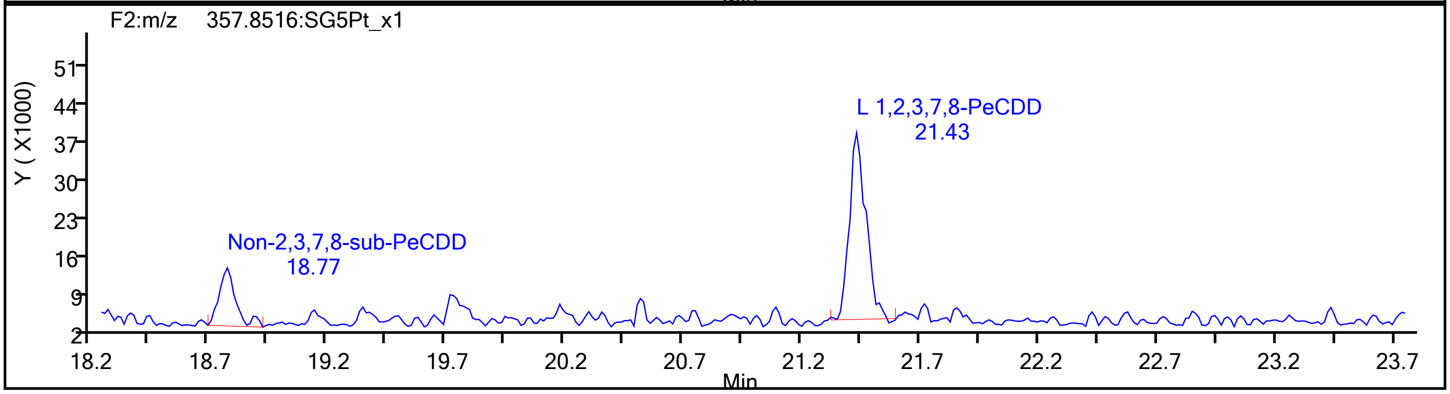

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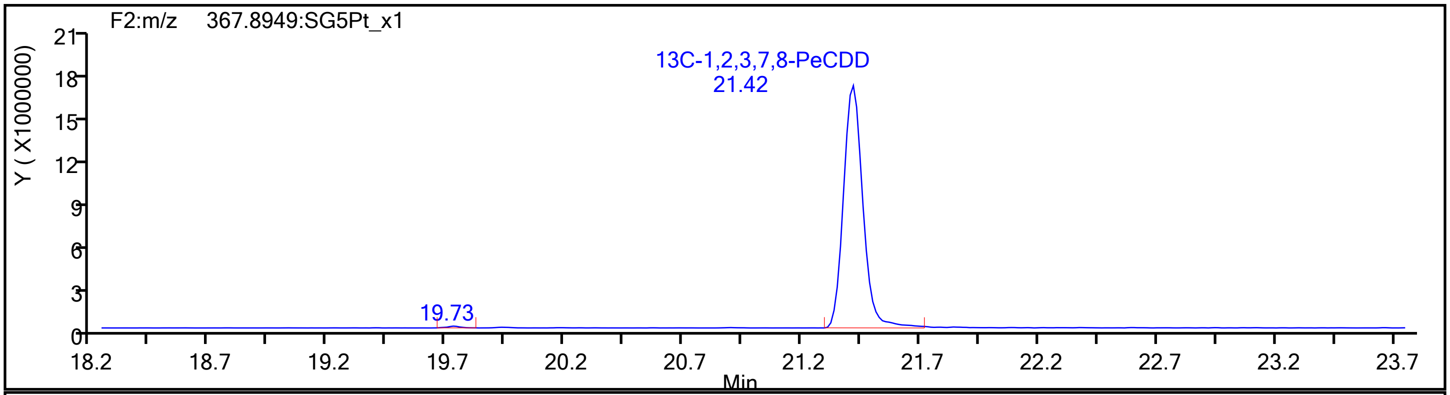

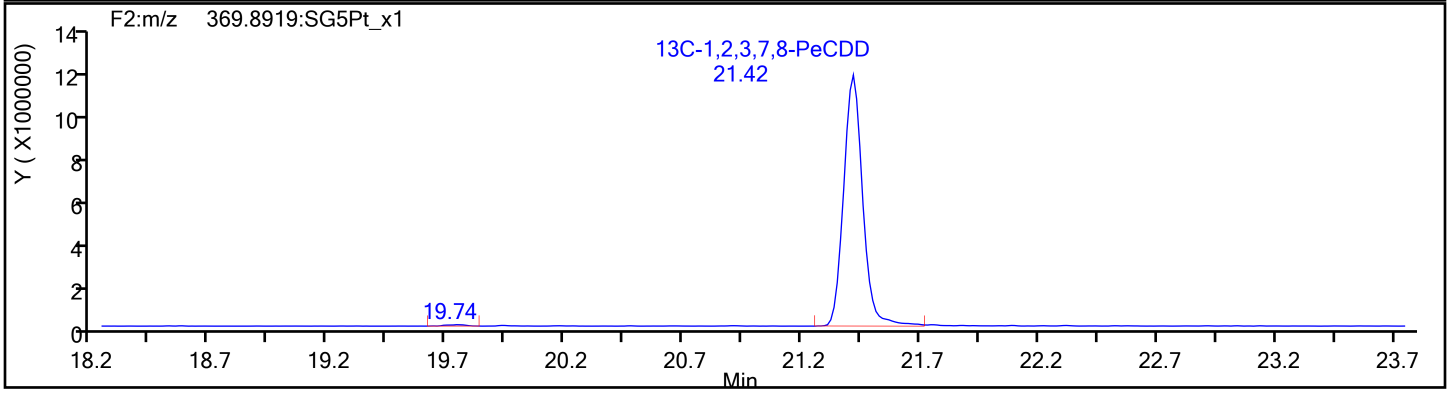

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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Column Type:		Column Dia:	

HxCDF

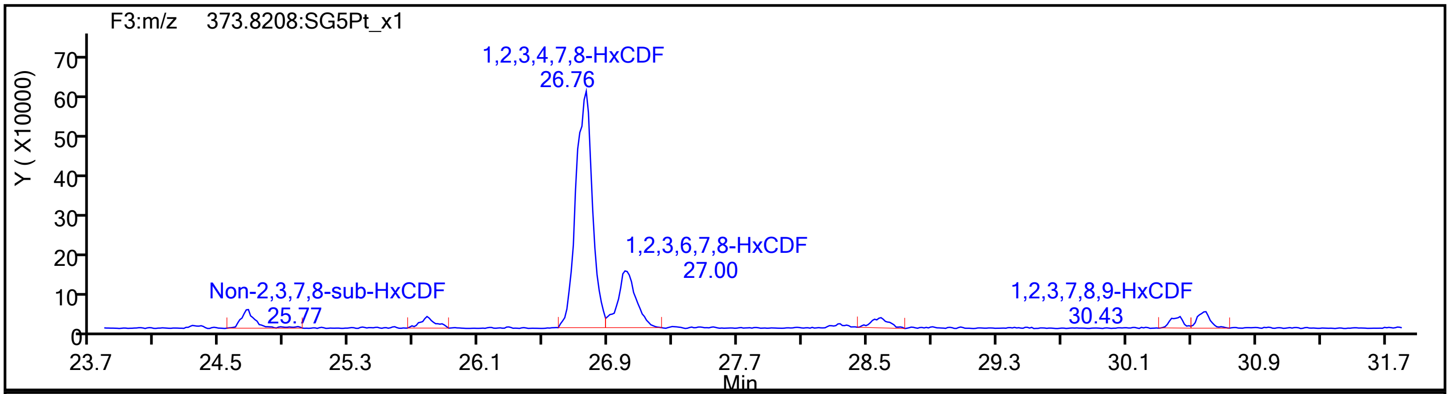

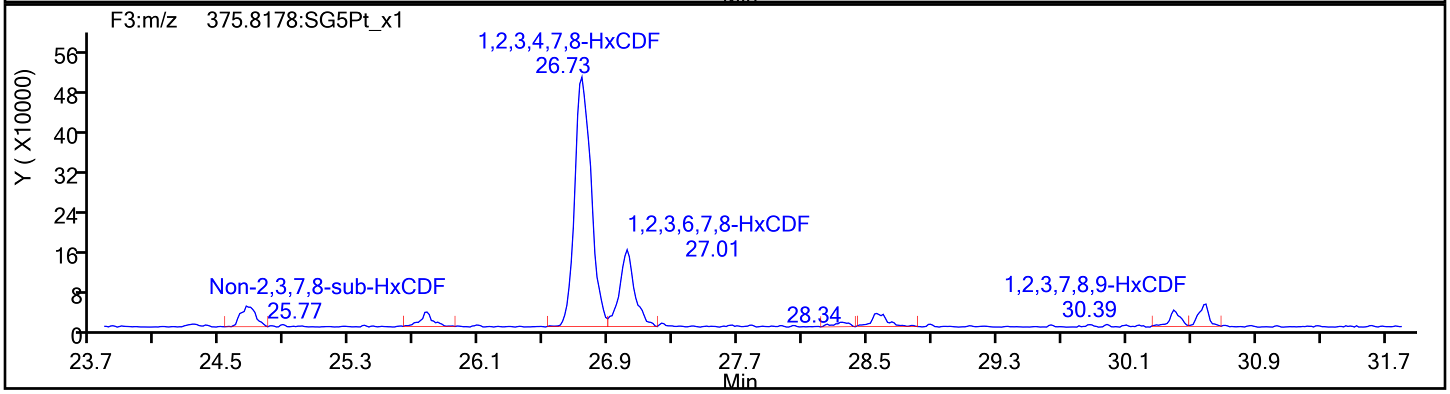

HxCDF Standards

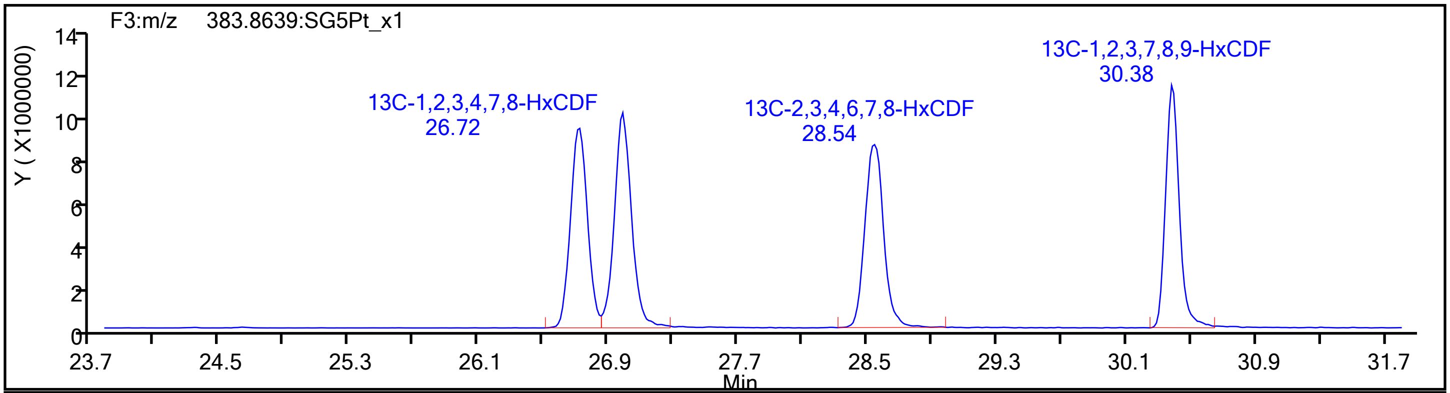

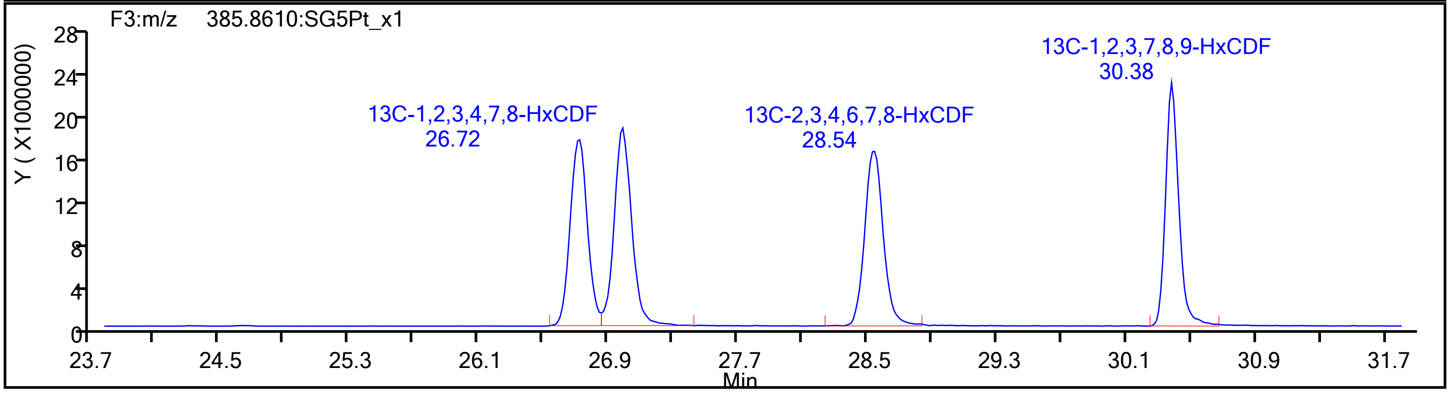

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 07:26:14

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-4-2

Worklist#: 420482

Sample Line#: 16

Column Type:

Column Dia:

HxCDF

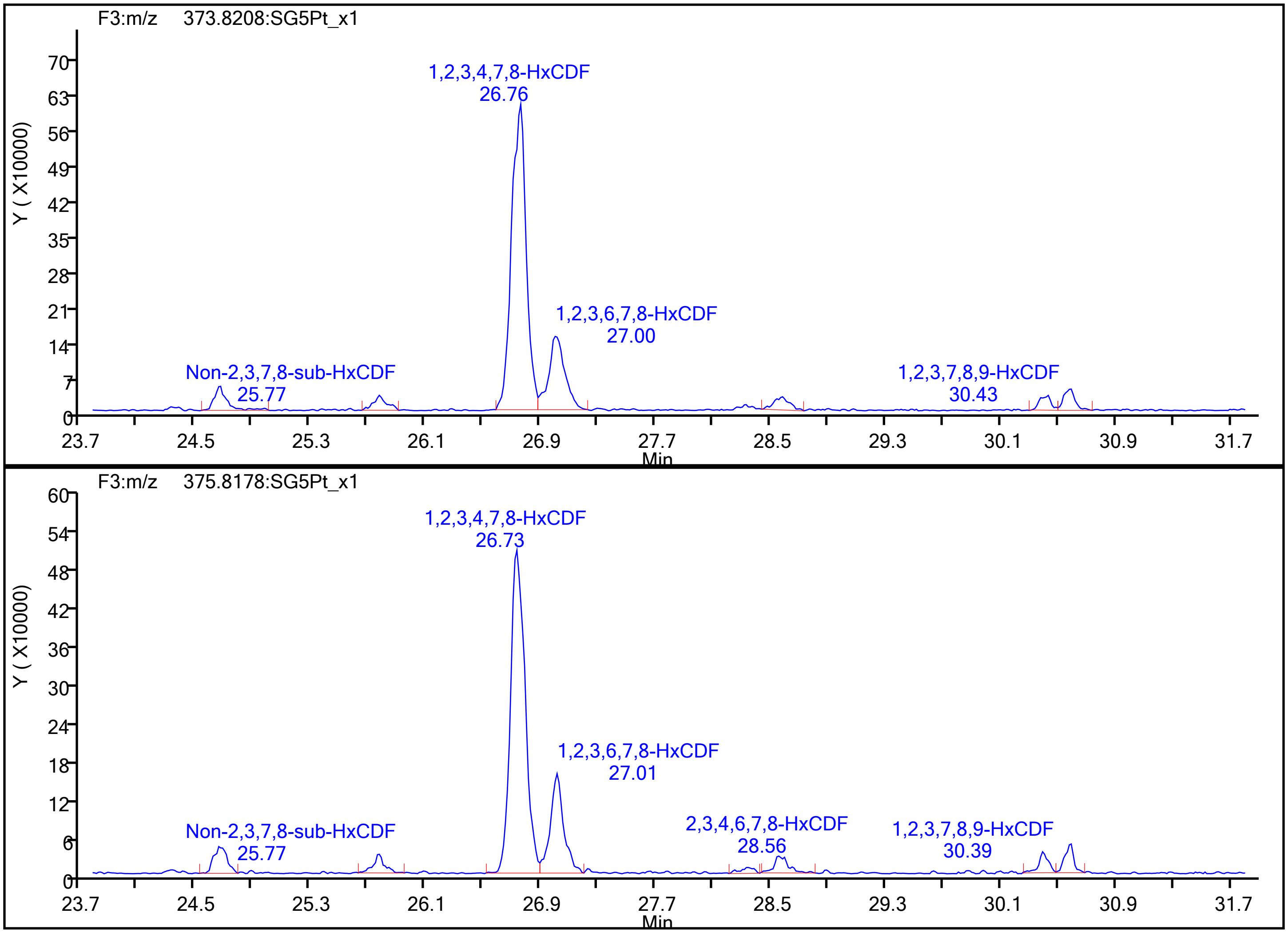

HxCDF Interference Mass

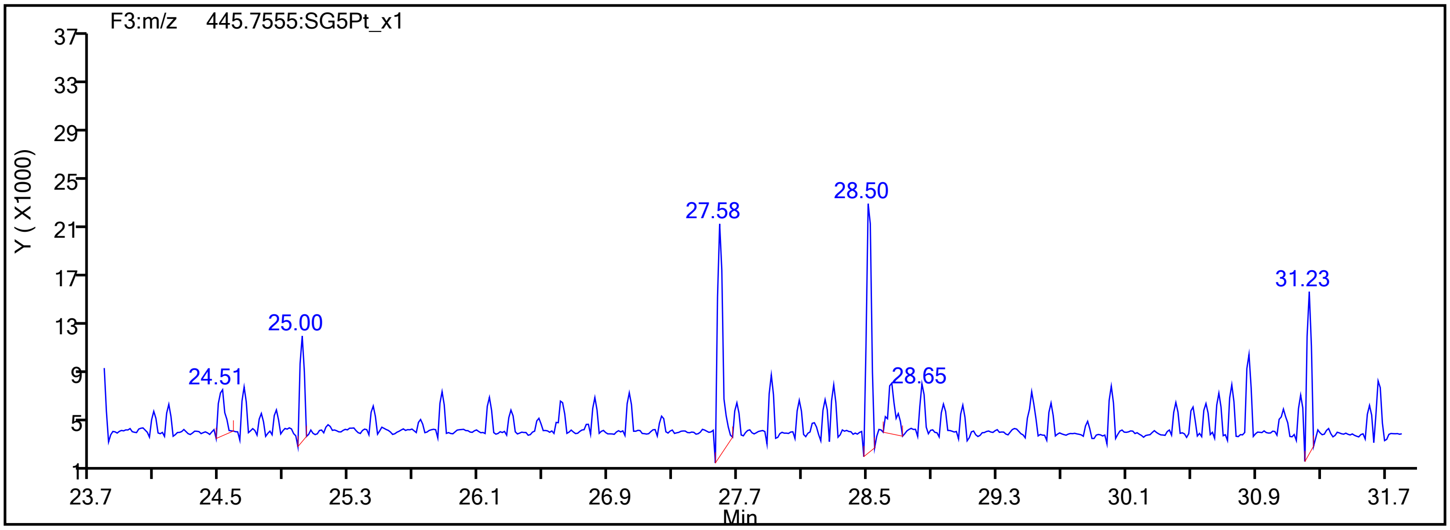

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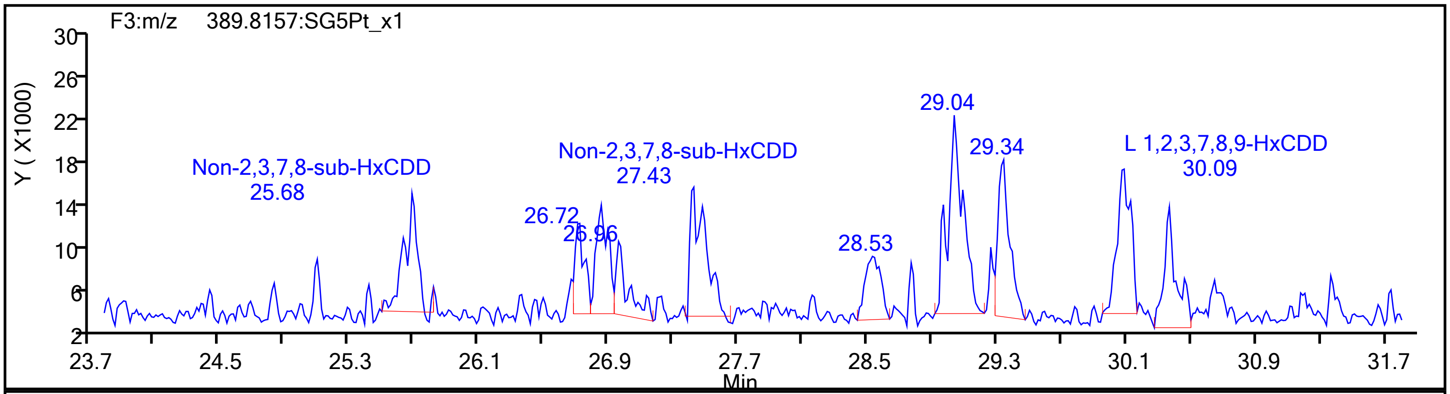

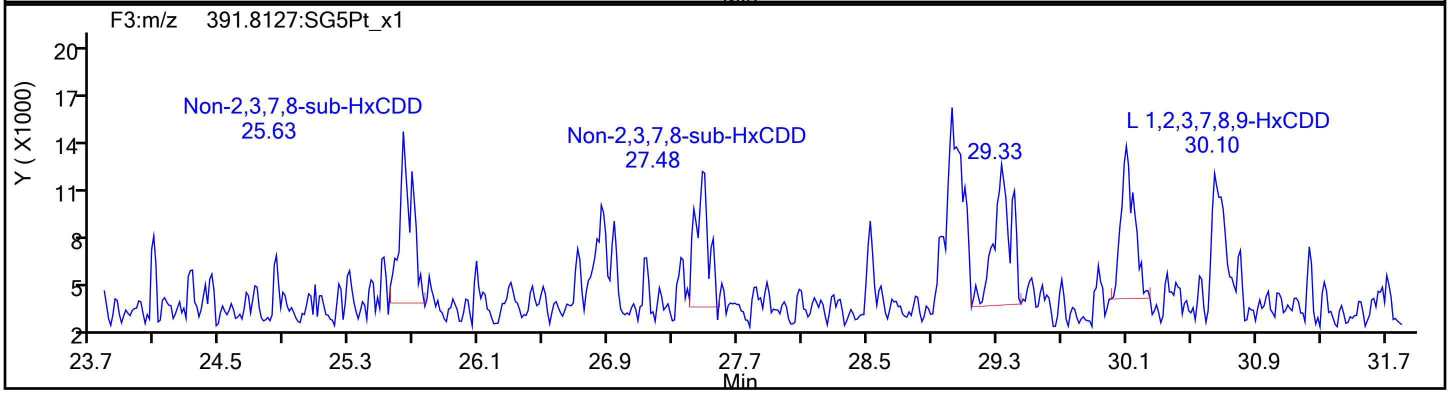

HxCDD Standards

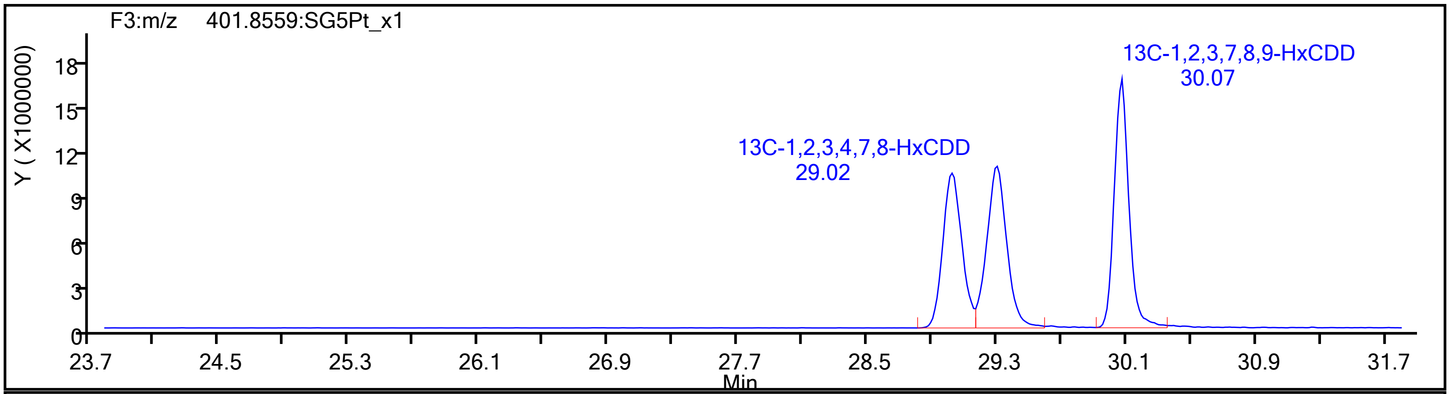

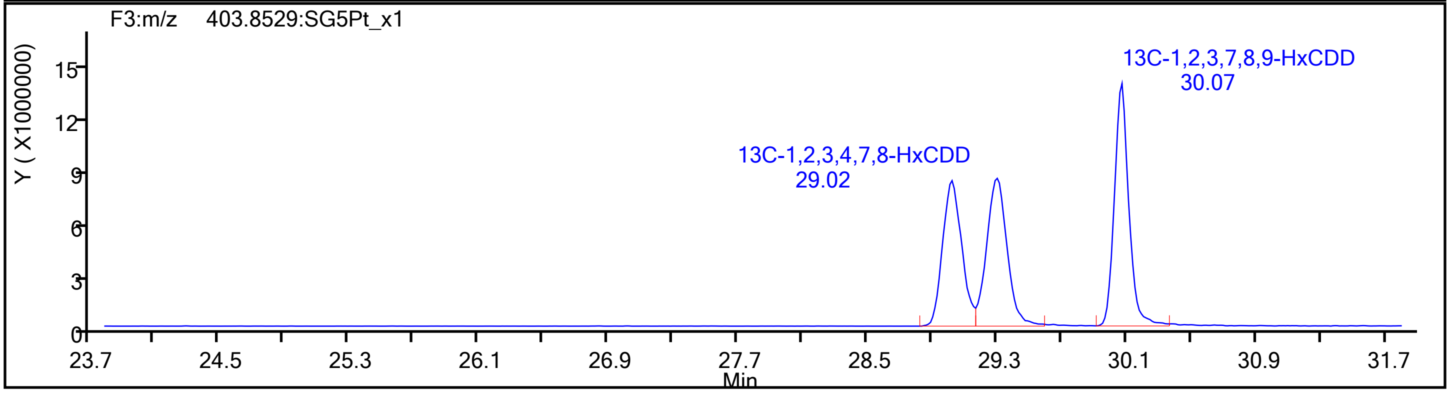

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 07:26:14

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

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Worklist#: 420482

Sample Line#: 16

Column Type:

Column Dia:

HpCDF

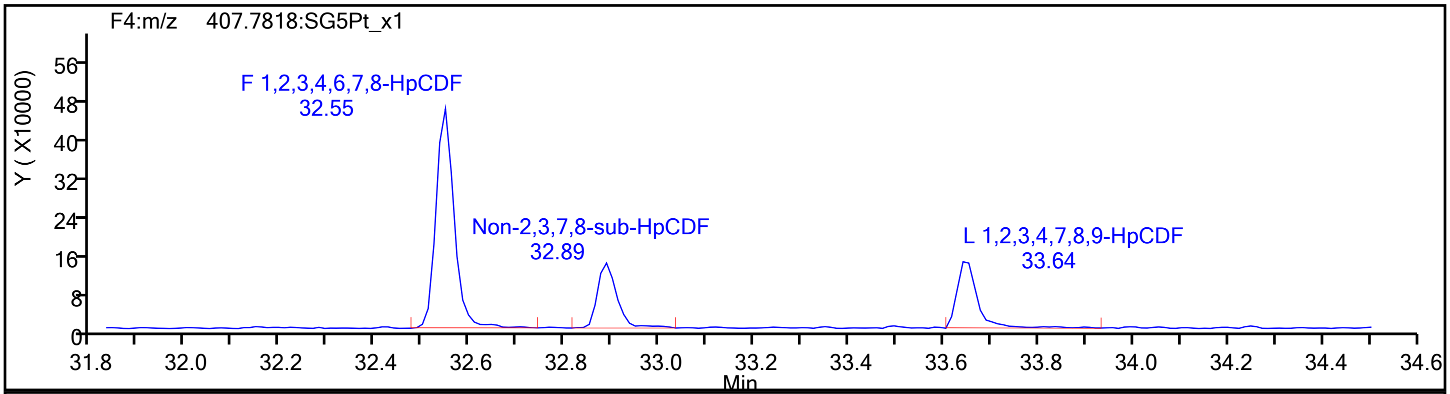

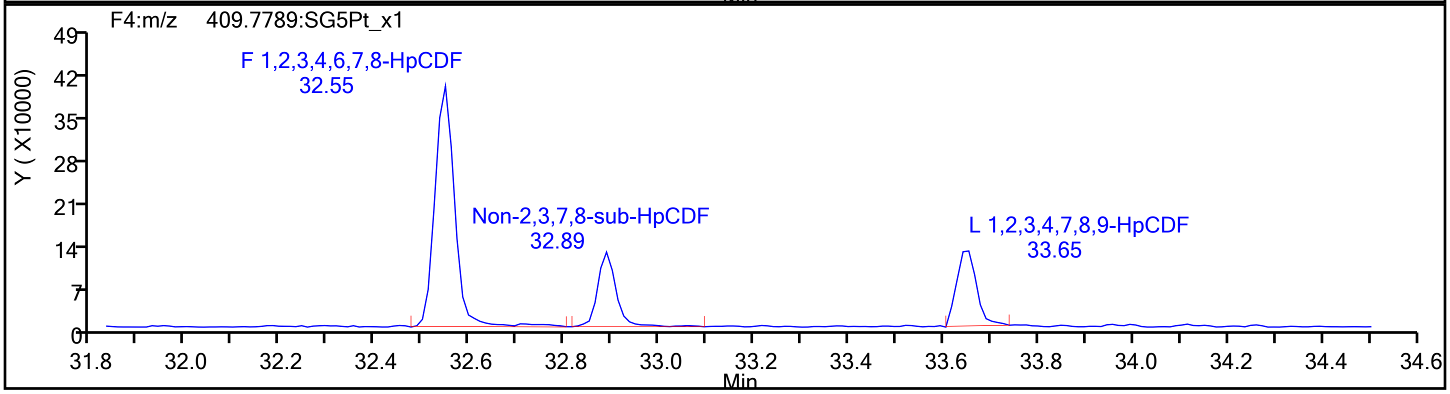

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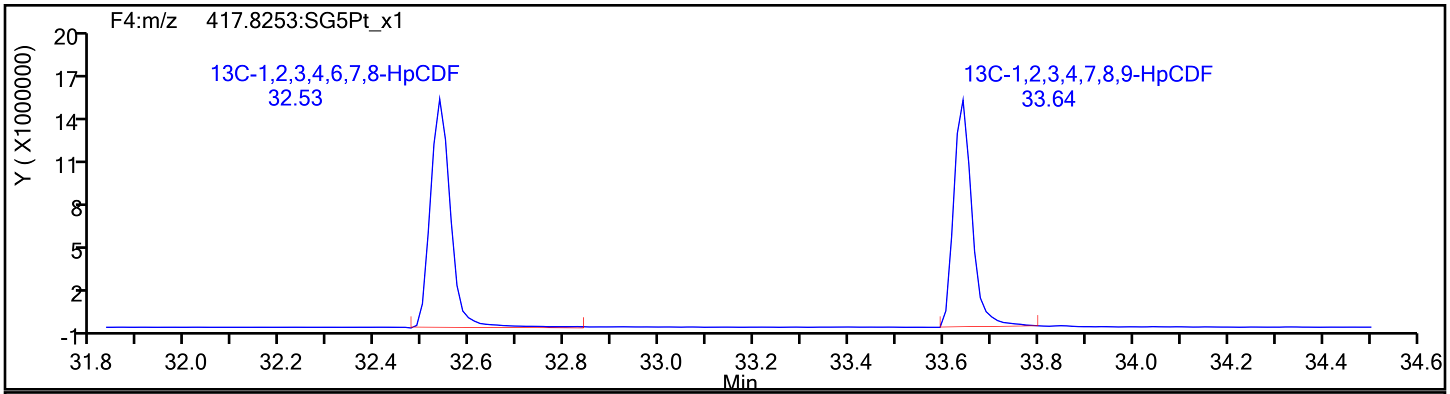

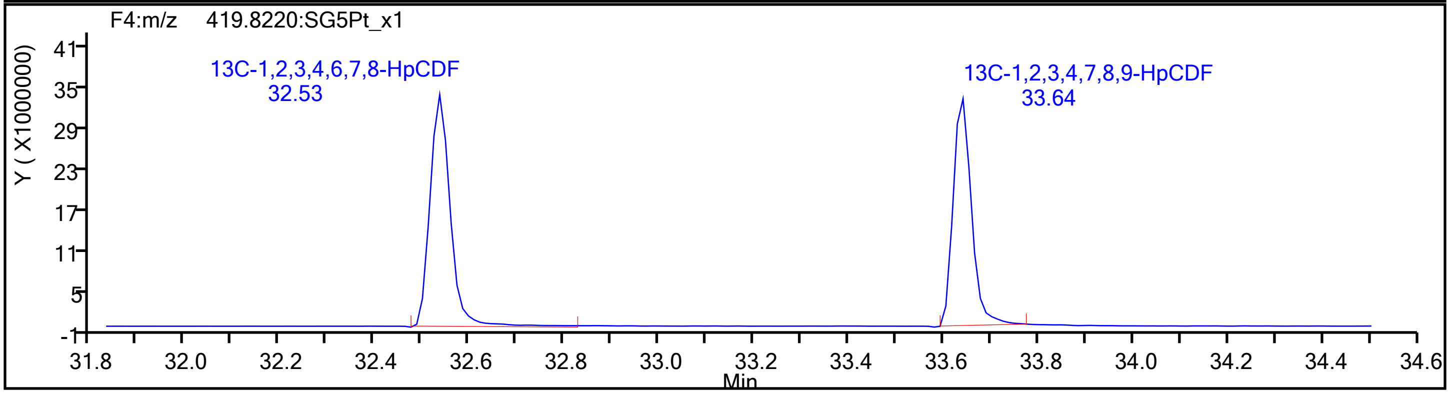

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Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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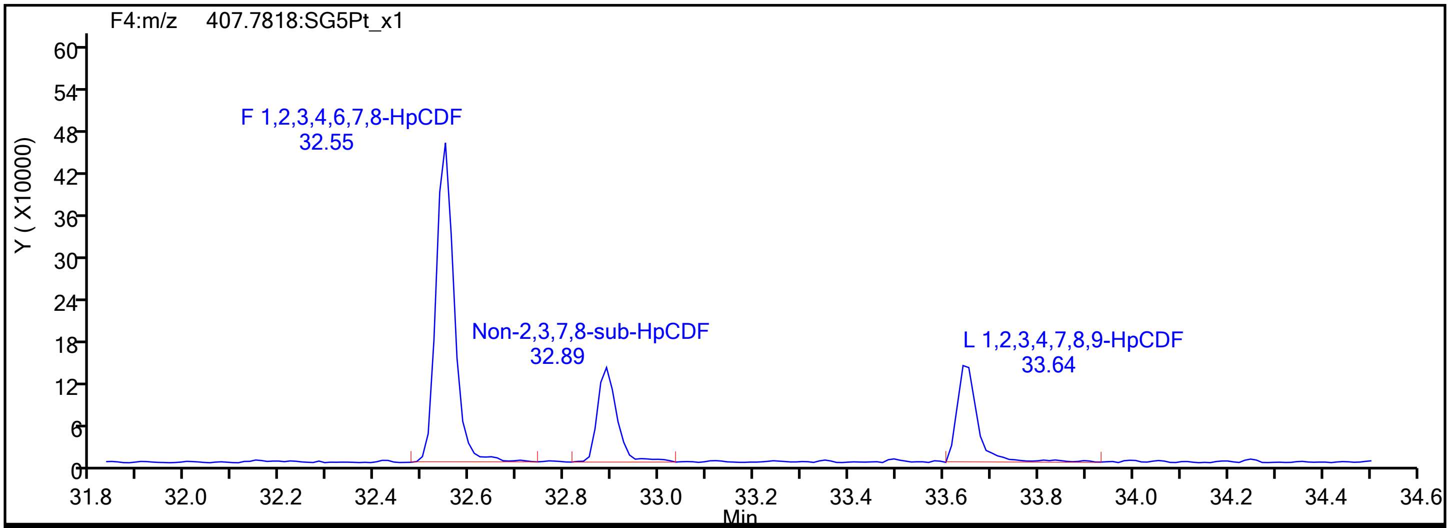

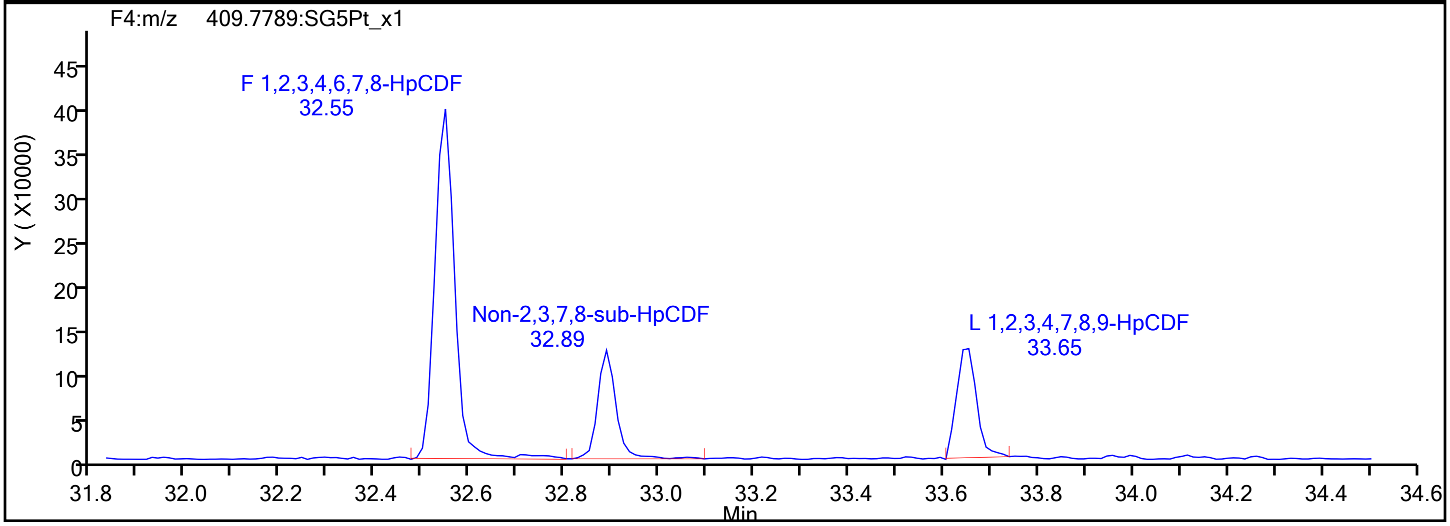

HpCDF Interference Mass

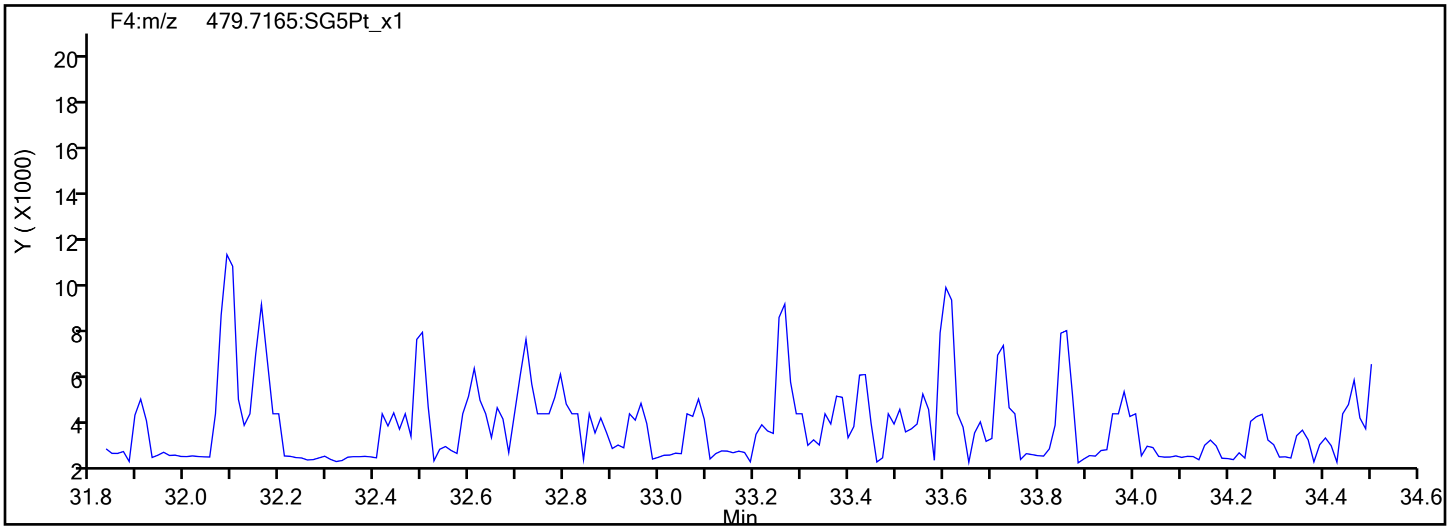

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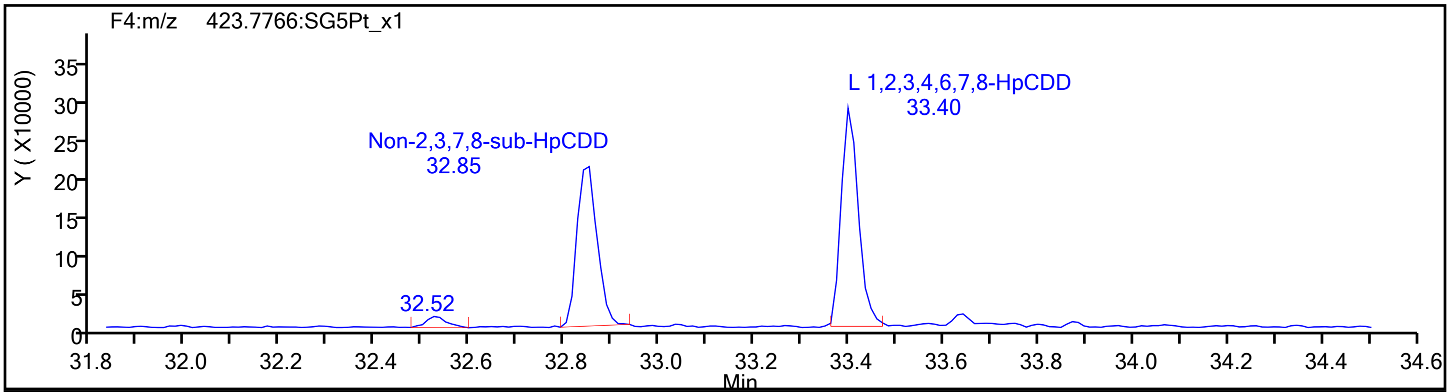

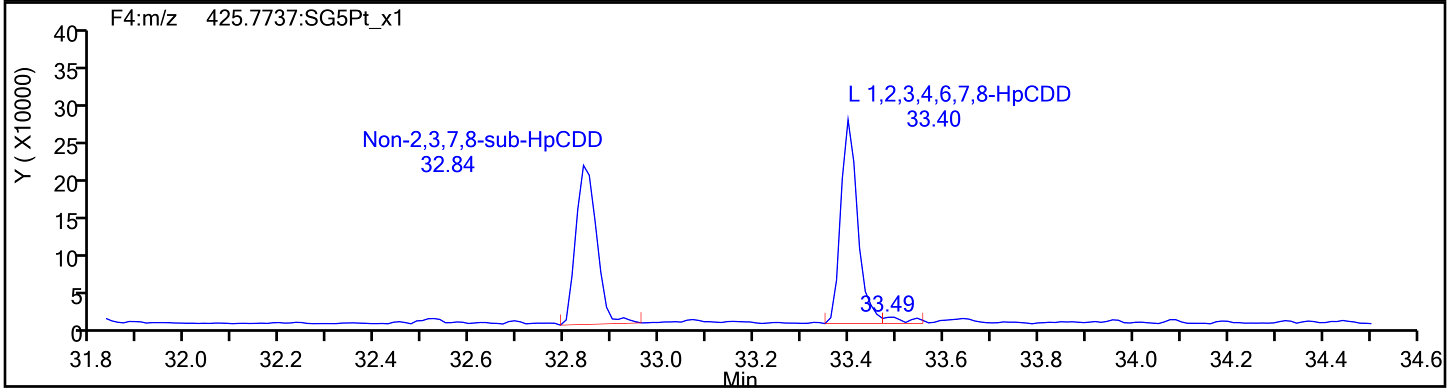

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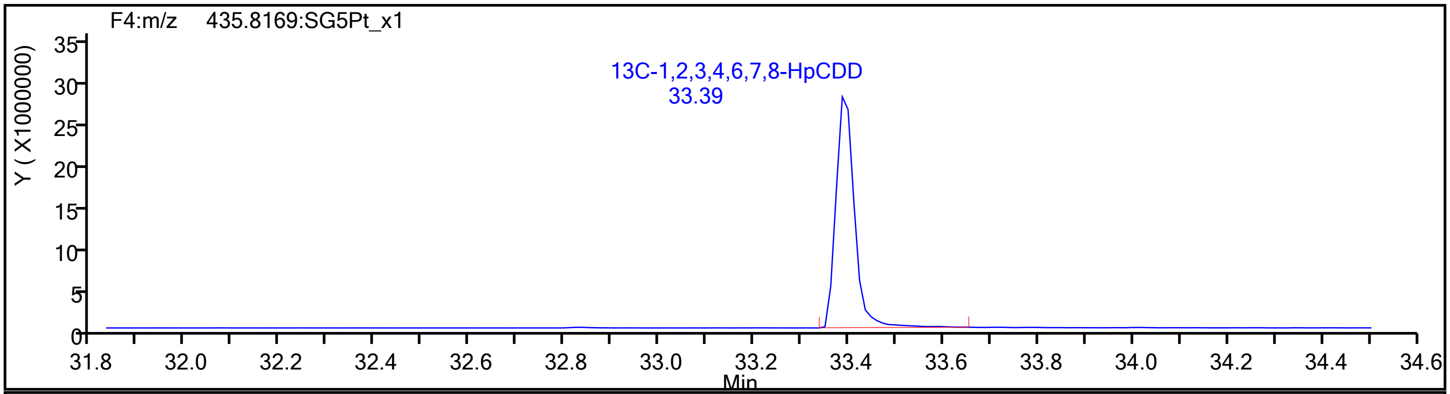

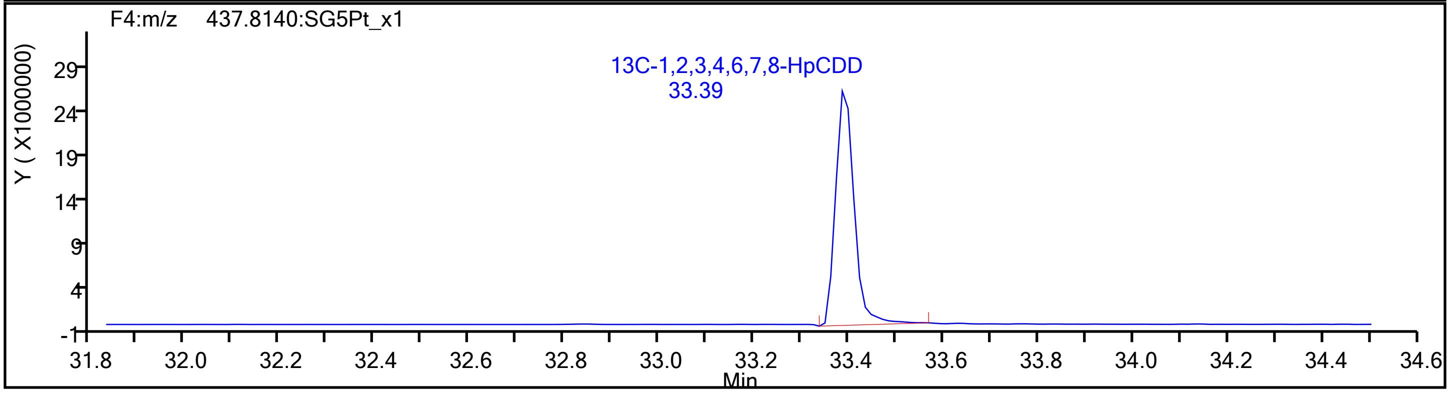

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OCDF

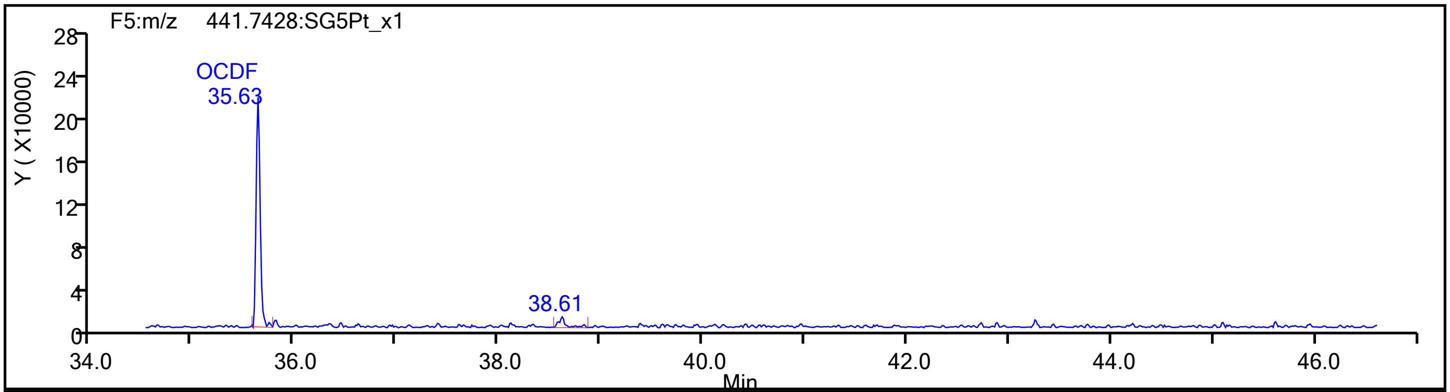

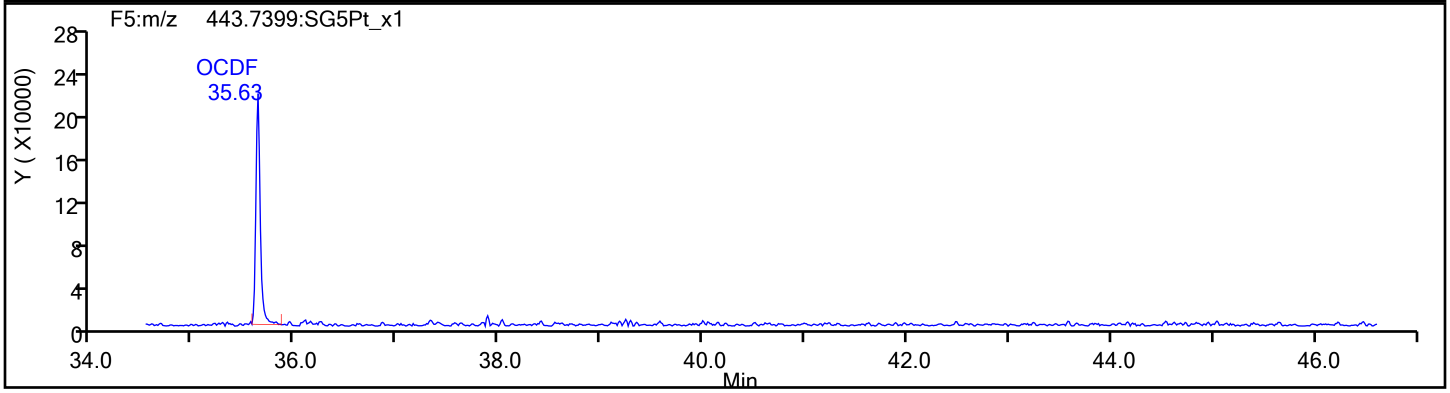

OCDF Standards

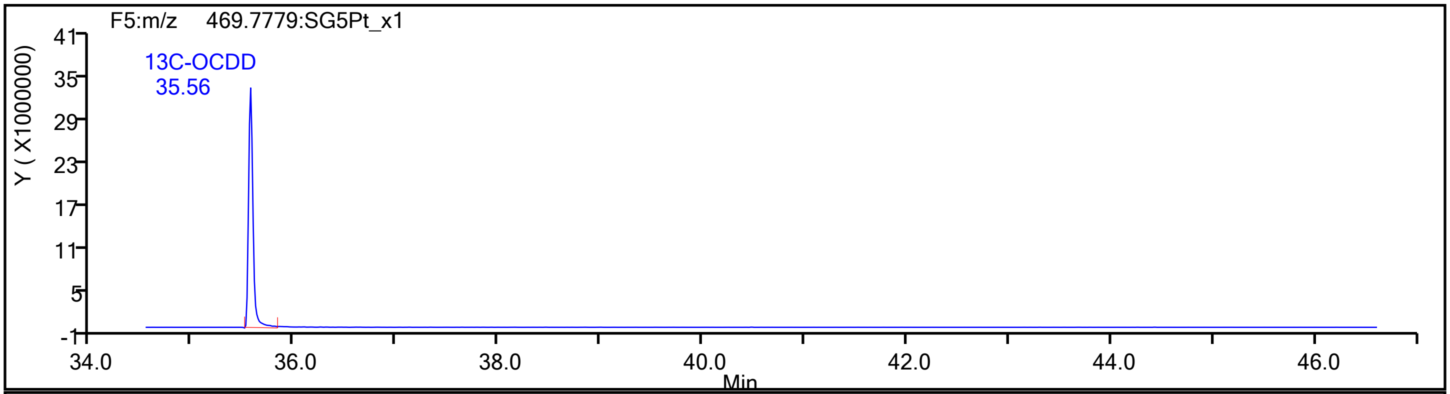

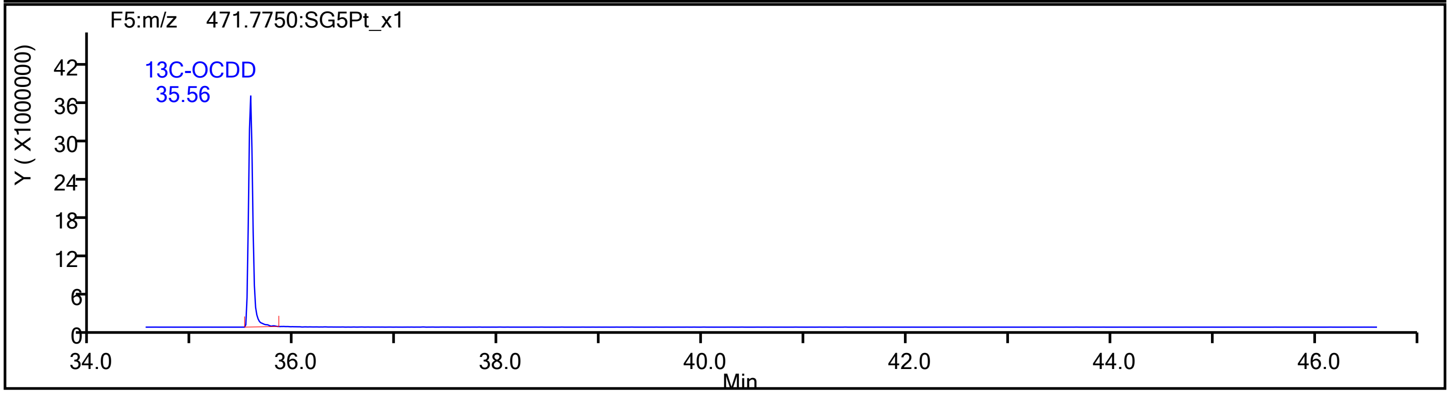

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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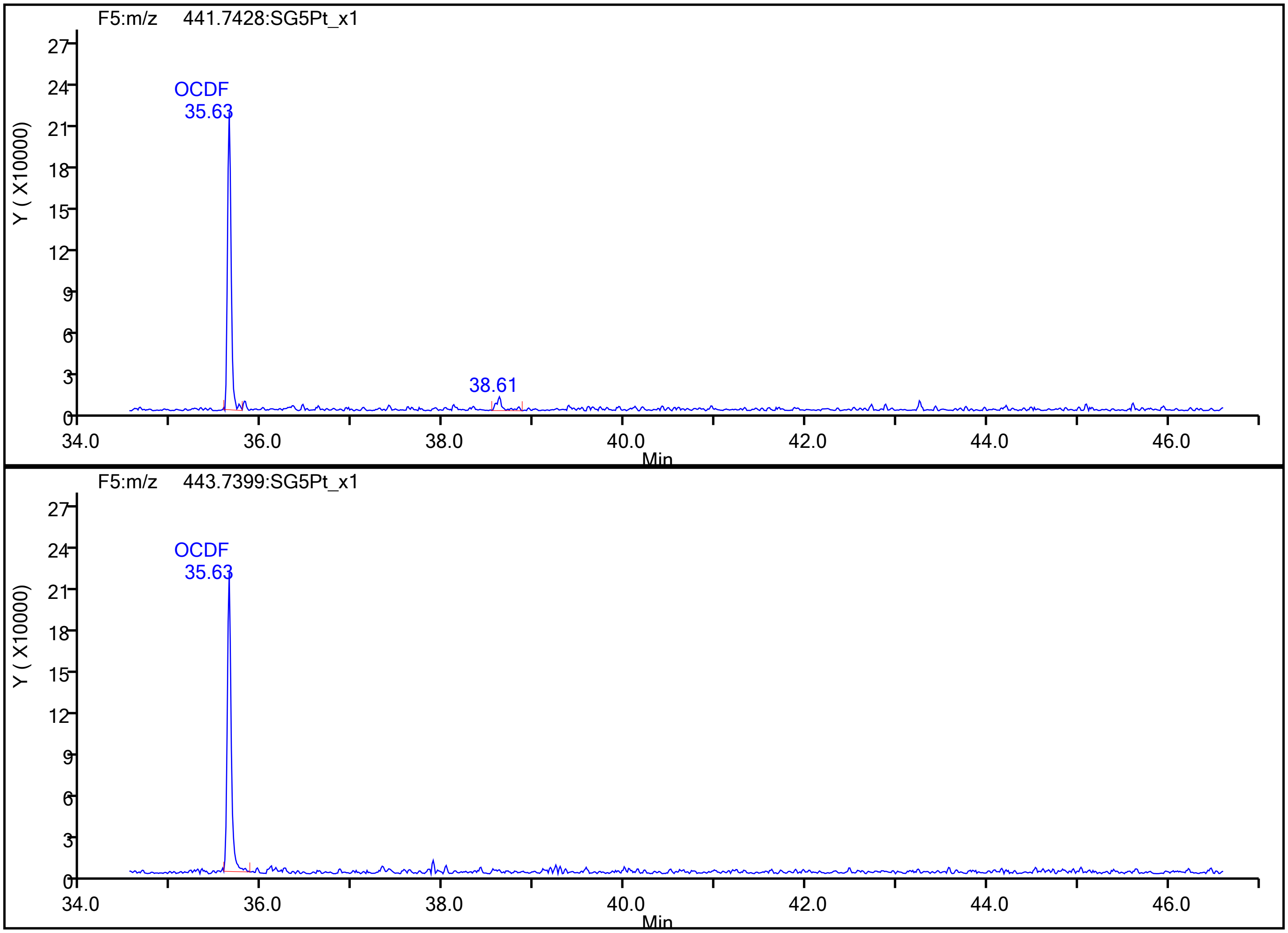

OCDF Interference Mass

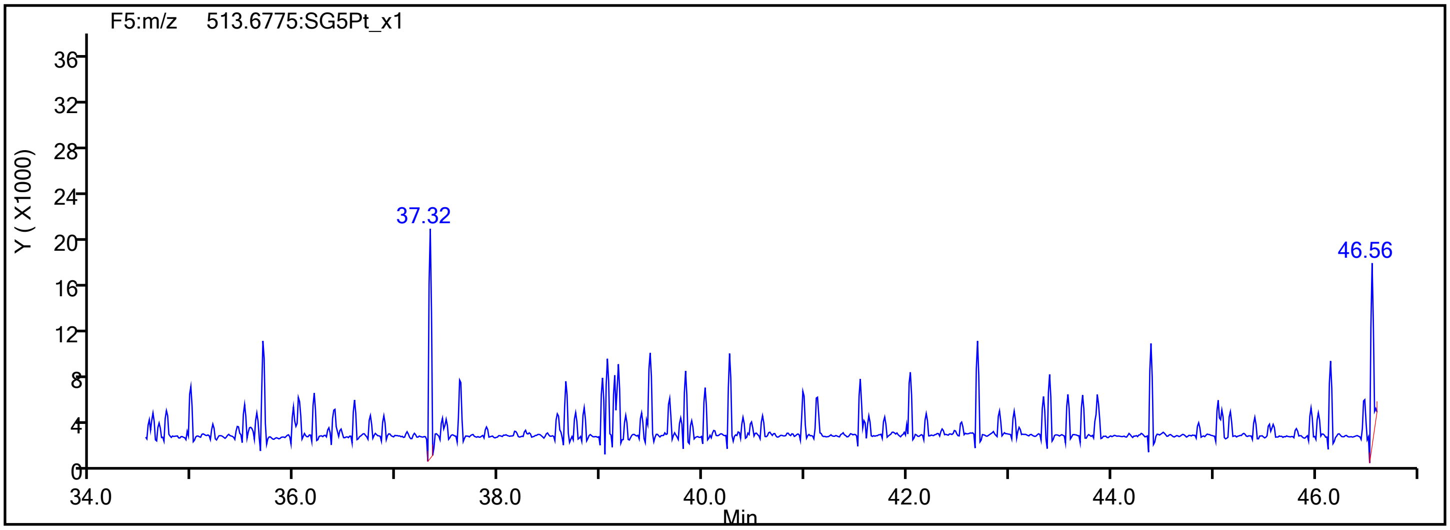

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Eurofins TestAmerica, Sacramento

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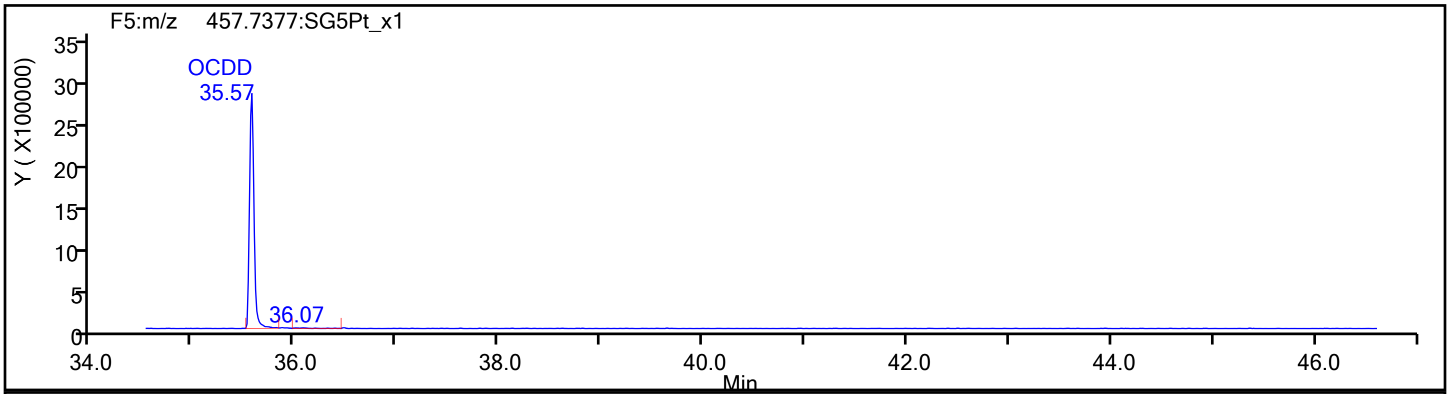

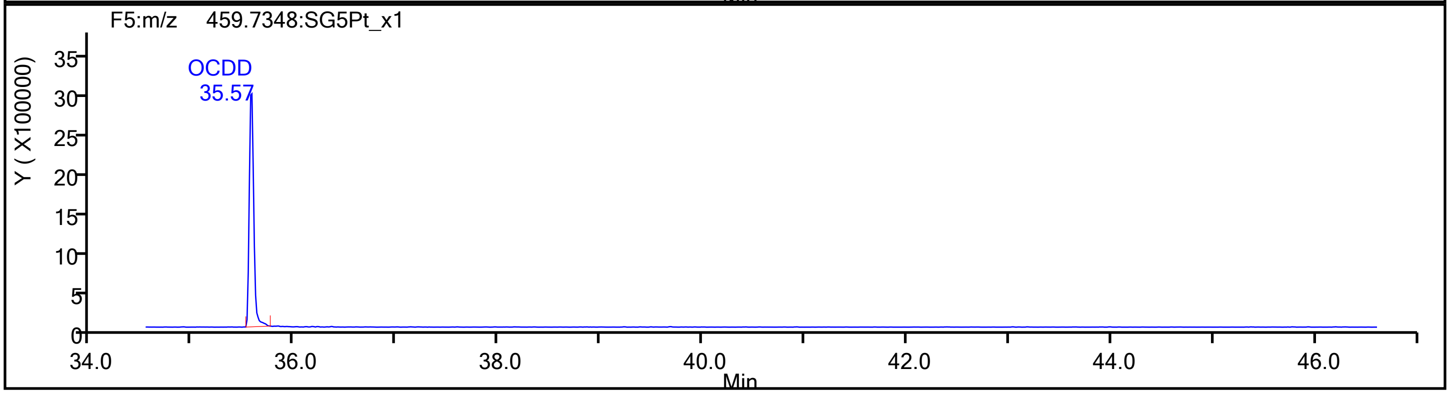

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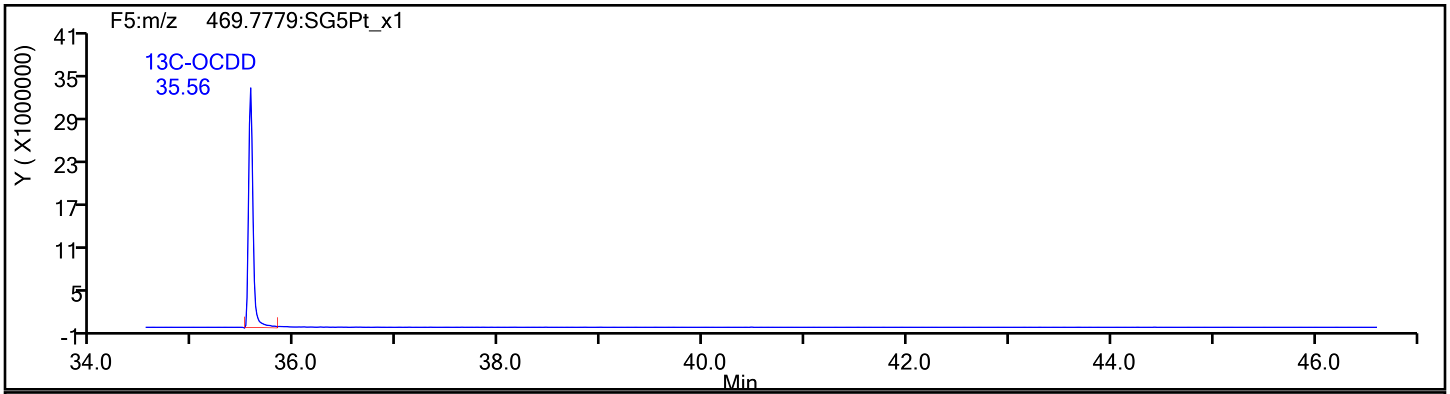

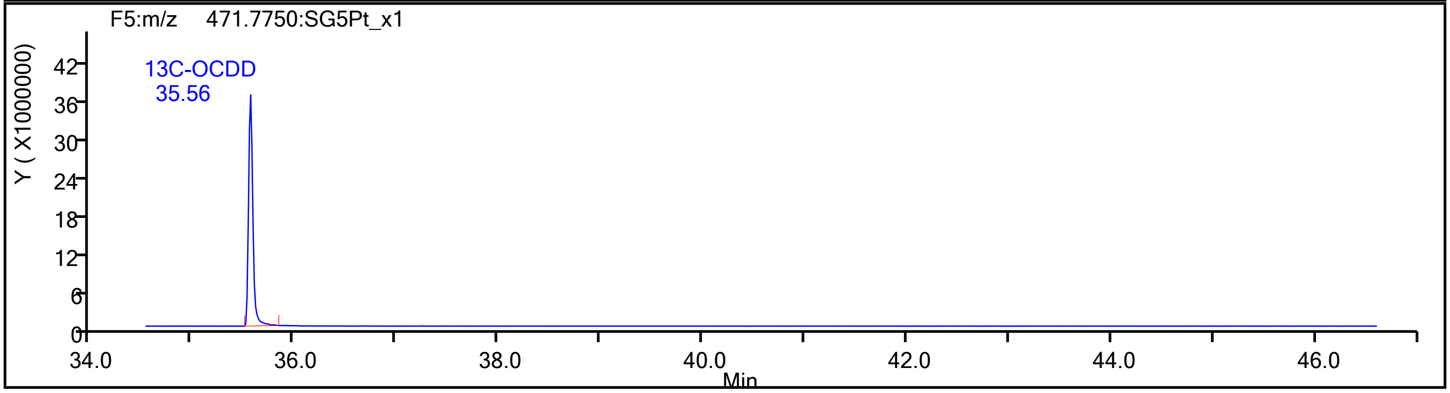

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Client ID:	11215702-Tank#1-valve-4-2		
Worklist#:	420482	Sample Line#:	16
Column Type:		Column Dia:	

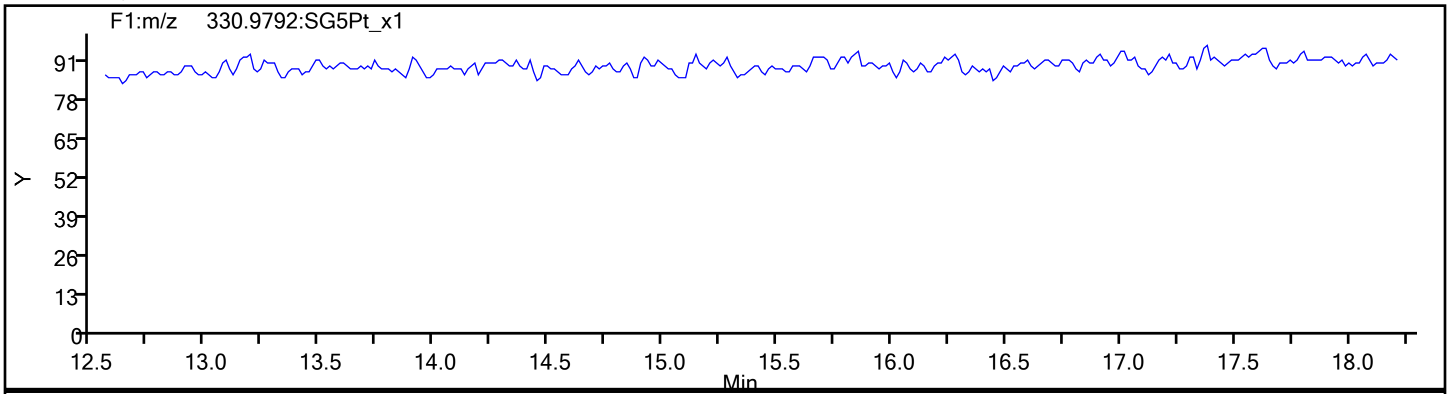

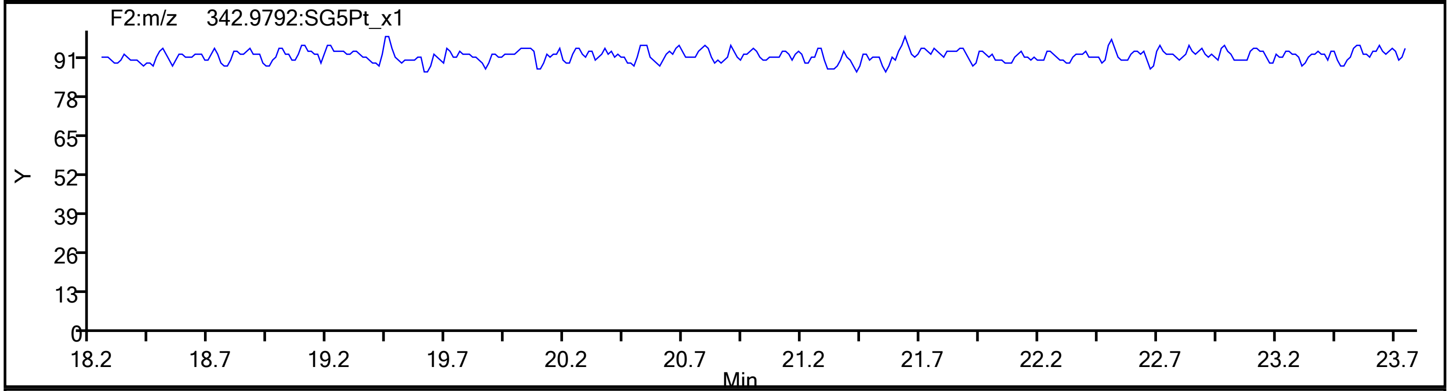

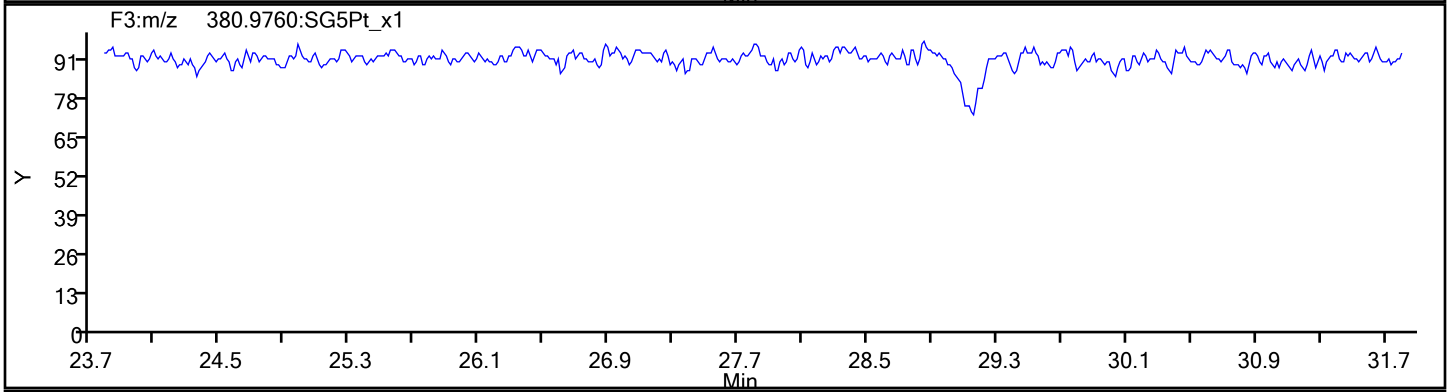

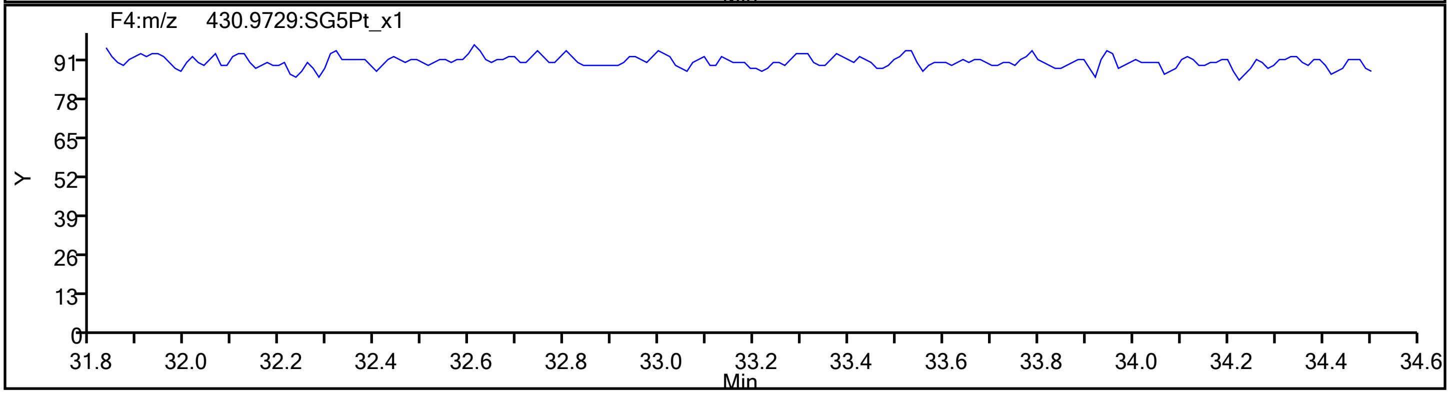

Report Date: 13-Oct-2020 12:27:23 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_16.d
Injection Date: 09-Oct-2020 07:26:14
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 420482
Sample Line#: 16
Column Type:
Column Dia:

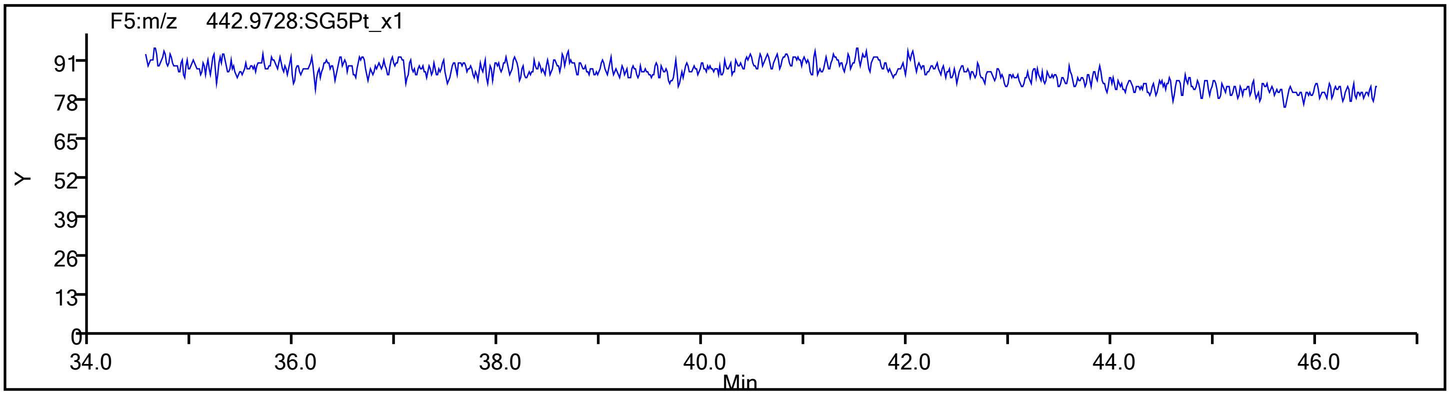

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-4-2 RA

Lab Sample ID: 320-65130-7 RA

Matrix: Water

Lab File ID: 13OC20A11D2_010.d

Analysis Method: 1613B

Date Collected: 09/11/2020 13:30

Extract. Method: 1613B

Date Extracted: 10/01/2020 08:42

Sample wt/vol: 980.8(mL)

Date Analyzed: 10/14/2020 01:27

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 421876

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1000	B	10	1.7

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	88		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	121		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_010.d
Lims ID: 320-65130-A-7-A
Client ID: 11215702-Tank#1-valve-4-2
Sample Type: Client
Inject. Date: 14-Oct-2020 01:27:13 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-7-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:35:09

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.913	68641272	0.83	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.052	94803136	0.79	1.5708	87.9	87.9	0.4130	0.4130	87.93	
2,3,7,8-TCDF	16.065	46827200	0.75	0.9943	49.7	49.7	0.0851	0.0851		
D 13C-2,3,7,8-TCDD	14.680	56024352	0.80	0.9834	83.0	83.0	1.172	1.172	83.00	
2,3,7,8-TCDD	14.693	12659220	0.80	1.2822	17.6	17.6	0.1901	0.1901		
$ 37Cl4-2,3,7,8-TCDD	14.693	32908882		0.9945	48.2	48.2	0.0918	0.0918	121	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_010.d				
Lims ID:	320-65130-A-7-A				
Client ID:	11215702-Tank#1-valve-4-2				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 01:27:13	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-7-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:35:09

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.913	14.928	-1		31088560	7692013	37009	92522	208		
333.9339	14.913	14.928	-1		37552712	9303486	41343	103357	225	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.052	16.067	-1	1.076	41905161	9922776	26285	65712	378		
317.9389	16.052	16.067	-1	1.076	52897975	12102493	17821	44552	679	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.065	16.081	-1	1.001	20077162	4783896	2927	7317	1634		
305.8987	16.065	16.081	-1	1.001	26750038	6287165	4528	11320	1389	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.680	14.681	0	0.984	24856382	6326842	37009	92522	171		
333.9339	14.680	14.681	0	0.984	31167970	7803307	41343	103357	189	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.693	14.709	-1	1.001	5642067	1438845	5264	13160	273		
321.8936	14.693	14.709	-1	1.001	7017153	1739940	8512	21280	204	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.693	14.709	-1	0.985	32908882	8524578	6205	15512	1374		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:57		Chrom Revision: 2.3 13-Oct-2020 12:07:44	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_010.d		
Injection Date:	14-Oct-2020 01:27:13	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-2		
Worklist#:	421876	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

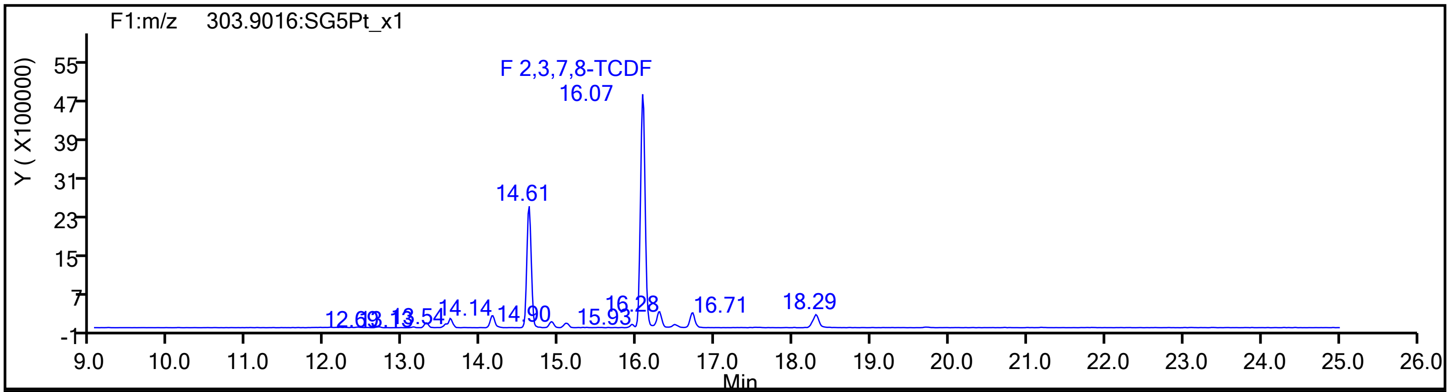

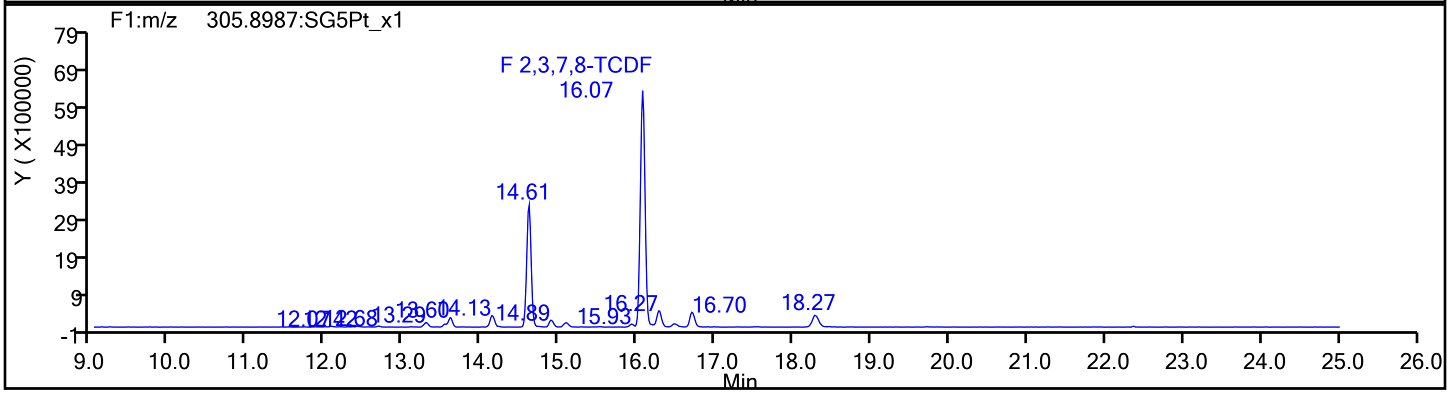

TCDF Standards

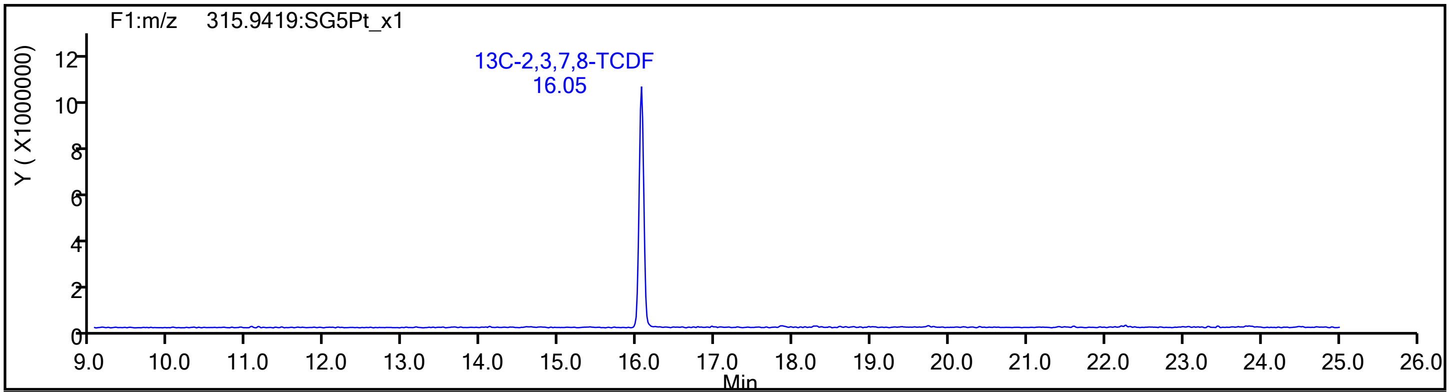

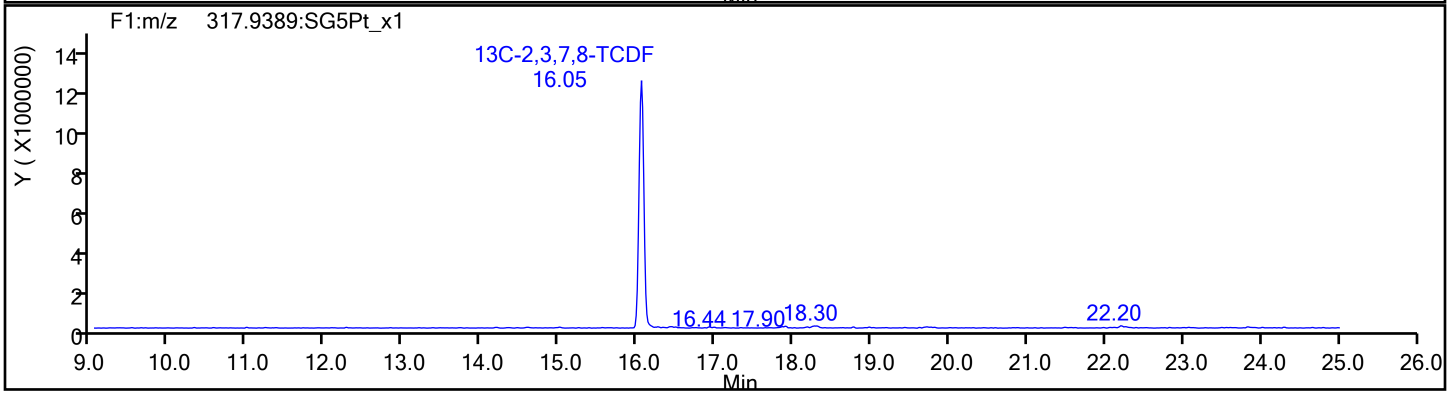

Report Date: 14-Oct-2020 17:38:57
Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_010.d
Injection Date: 14-Oct-2020 01:27:13
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 421876
Sample Line#: 10
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

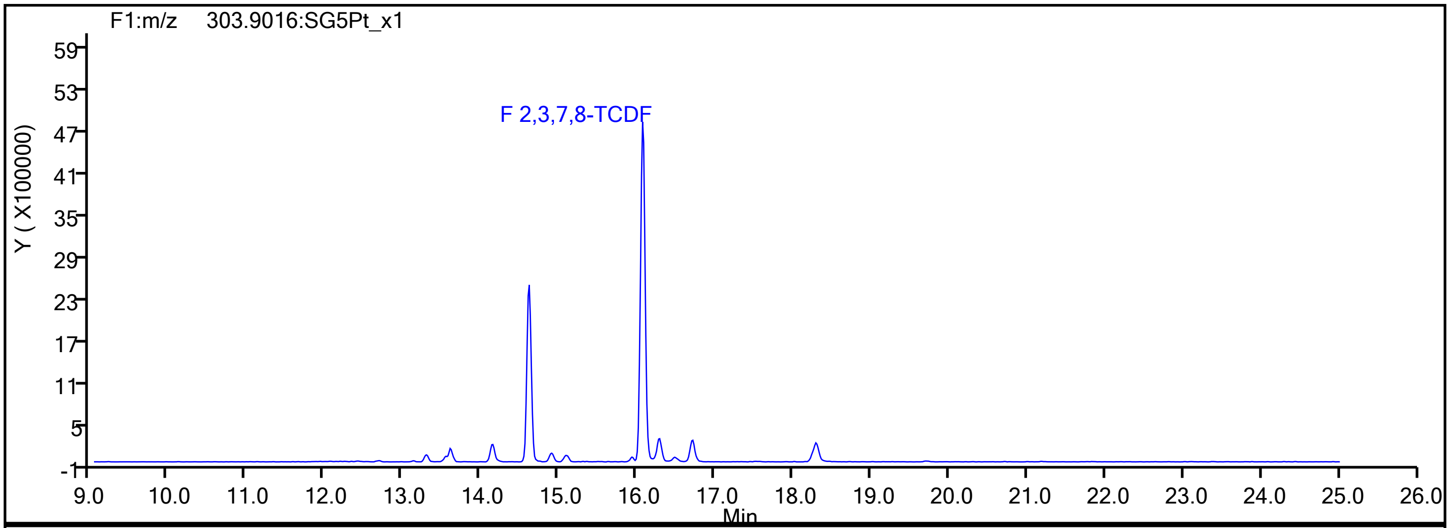

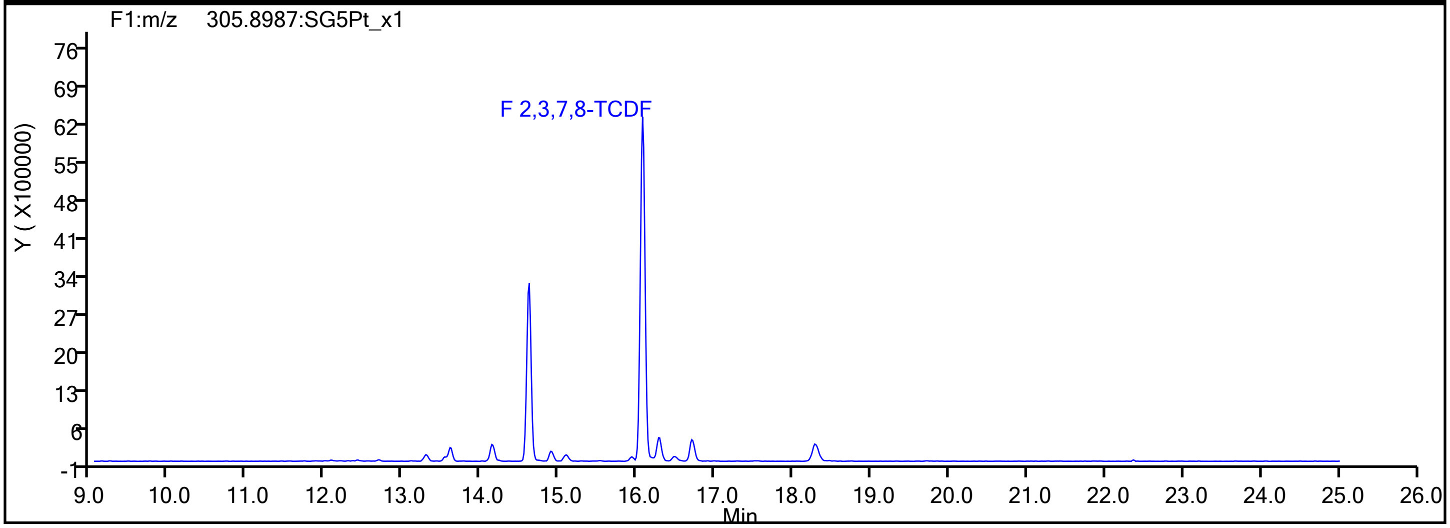

TCDF Interference Mass

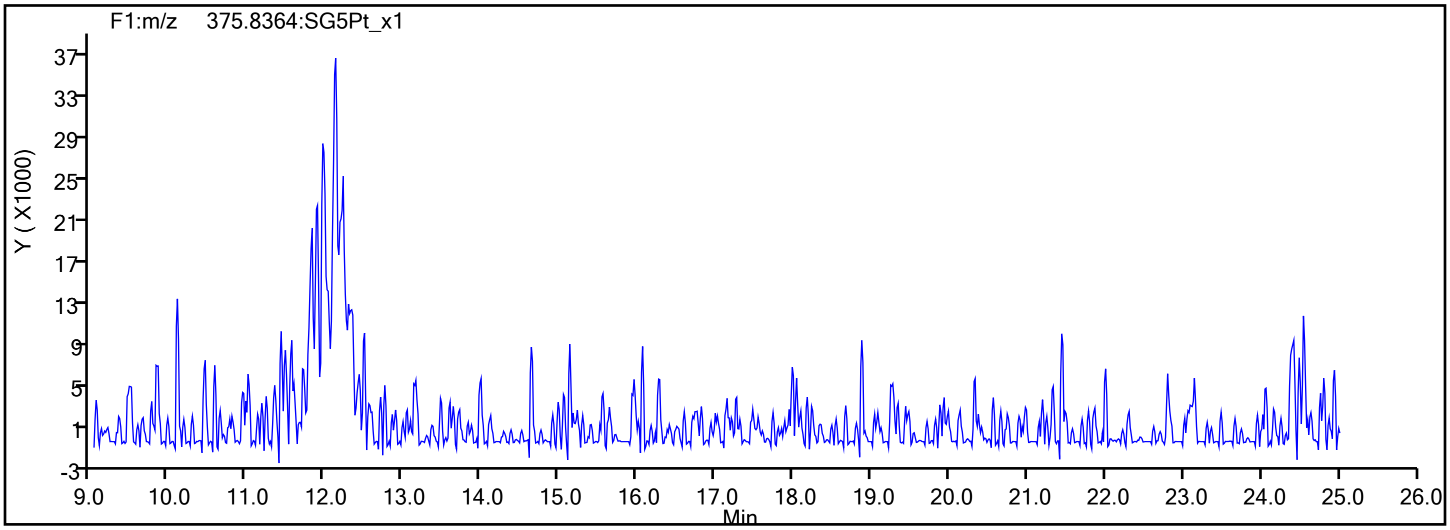

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_010.d
Injection Date: 14-Oct-2020 01:27:13
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-2
Worklist#: 421876
Sample Line#: 10
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

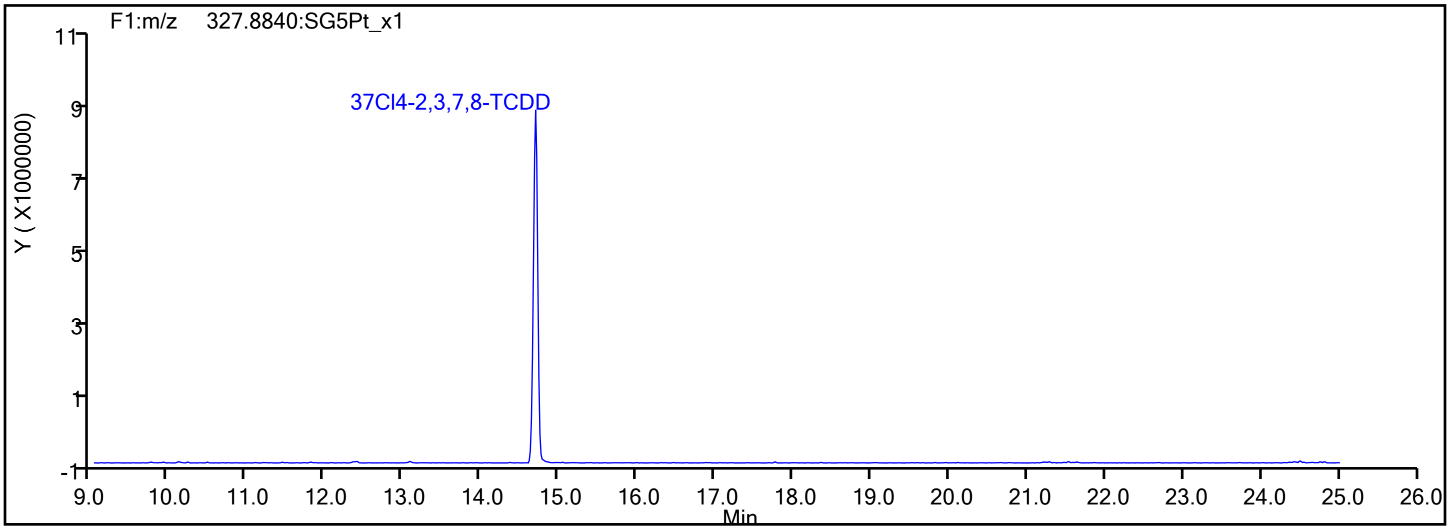

37Cl4-TCDD Standards

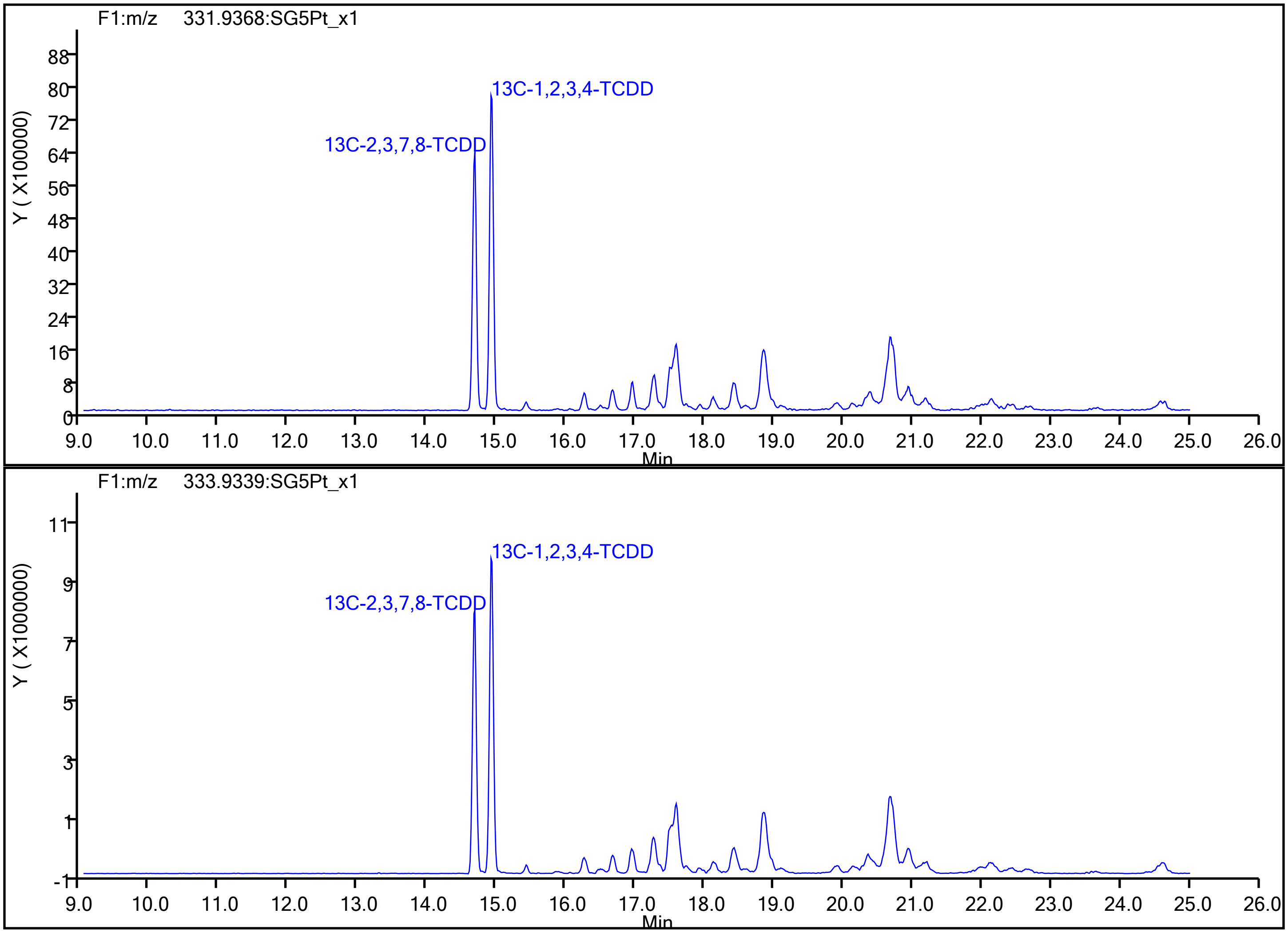

Report Date: 14-Oct-2020 17:38:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_010.d		
Injection Date:	14-Oct-2020 01:27:13	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-2		
Worklist#:	421876	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

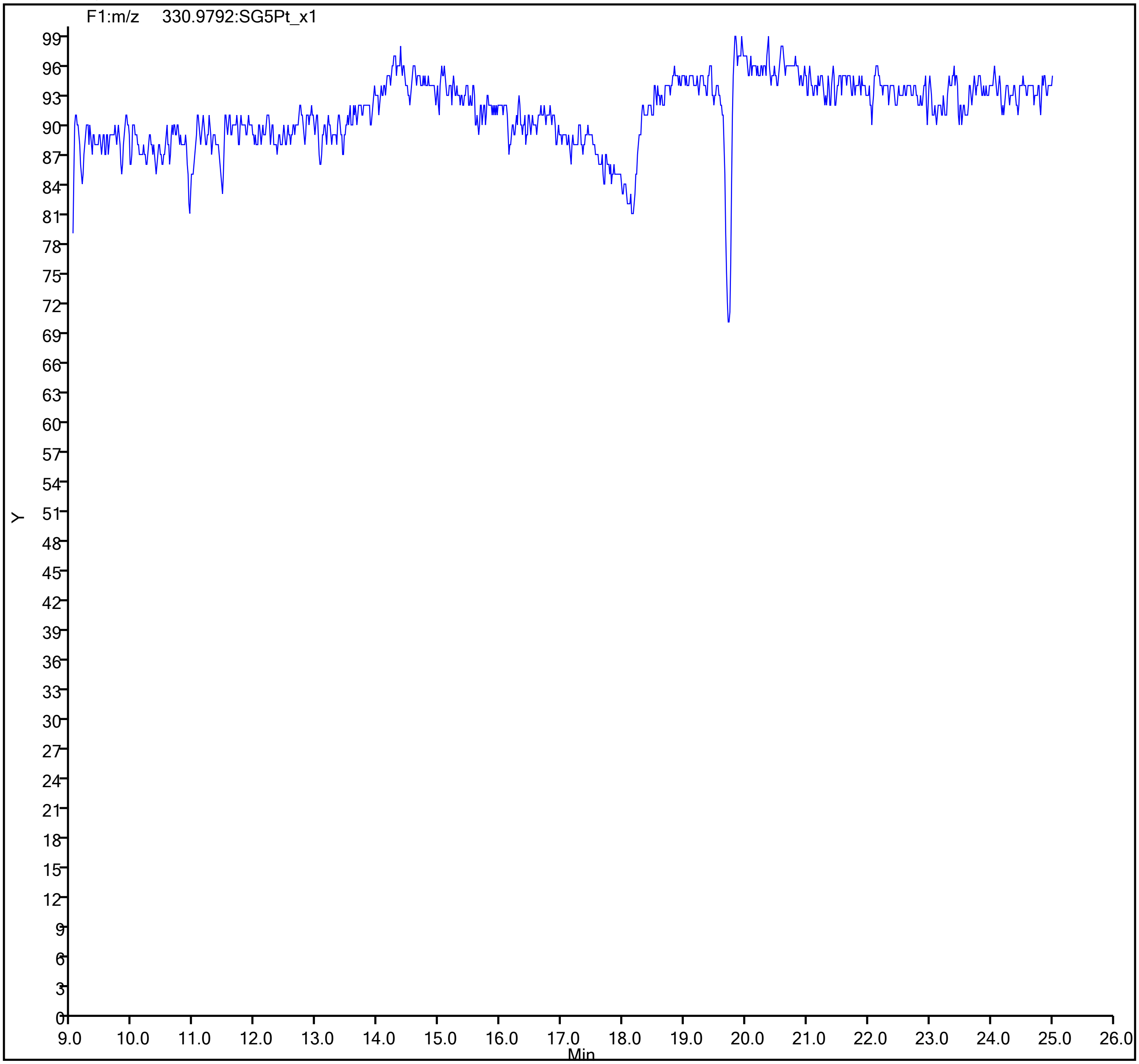

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-5-2	Lab Sample ID: 320-65130-8
Matrix: Water	Lab File ID: 08OC20A3D5_17.d
Analysis Method: 1613B	Date Collected: 09/11/2020 13:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 971.8(mL)	Date Analyzed: 10/09/2020 08:13
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	590		10	2.1
40321-76-4	1,2,3,7,8-PeCDD	5.4	J B	51	0.57
57117-41-6	1,2,3,7,8-PeCDF	68	B	51	0.98
57117-31-4	2,3,4,7,8-PeCDF	39	J B	51	1.1
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J B	51	0.70
57653-85-7	1,2,3,6,7,8-HxCDD	ND		51	0.75
19408-74-3	1,2,3,7,8,9-HxCDD	ND		51	0.67
70648-26-9	1,2,3,4,7,8-HxCDF	100	B	51	0.81
57117-44-9	1,2,3,6,7,8-HxCDF	24	J B	51	0.79
72918-21-9	1,2,3,7,8,9-HxCDF	ND		51	0.63
60851-34-5	2,3,4,6,7,8-HxCDF	2.6	J q B	51	0.89
35822-46-9	1,2,3,4,6,7,8-HpCDD	25	J B	51	0.51
67562-39-4	1,2,3,4,6,7,8-HpCDF	27	J B	51	0.32
55673-89-7	1,2,3,4,7,8,9-HpCDF	10	J B	51	0.35
3268-87-9	OCDD	400	B	100	0.64
39001-02-0	OCDF	15	J B	100	0.29
41903-57-5	Total TCDD	650	q B	10	2.1
30402-14-3	Total TCDF	3300	q B	10	9.1
36088-22-9	Total PeCDD	5.4	J B	51	0.57
30402-15-4	Total PeCDF	170	q B	51	1.1
34465-46-8	Total HxCDD	5.4	J q B	51	0.71
55684-94-1	Total HxCDF	140	q B	51	0.78
37871-00-4	Total HpCDD	49	J B	51	0.51
38998-75-3	Total HpCDF	47	J B	51	0.33

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-5-2 Lab Sample ID: 320-65130-8

Matrix: Water Lab File ID: 08OC20A3D5_17.d

Analysis Method: 1613B Date Collected: 09/11/2020 13:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 971.8(mL) Date Analyzed: 10/09/2020 08:13

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420482 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	76		25-164
89059-46-1	13C-2,3,7,8-TCDF	78		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	76		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	69		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	68		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	90		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	88		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	77		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	76		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	79		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	84		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	77		26-138
114423-97-1	13C-OCDD	88		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d
Lims ID: 320-65130-A-8-A
Client ID: 11215702-Tank#1-valve-5-2
Sample Type: Client
Inject. Date: 09-Oct-2020 08:13:51 ALS Bottle#: 14 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-8-A 320-65130-A-8-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:33:00 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:57:29

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	216186147	0.79	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	249412374	0.79	1.4844	77.7	77.7	0.2628	0.2628	77.72	
2,3,7,8-TCDF	15.492	225544297	0.77	0.9534	94.9	94.9	0.4436	0.4436		
A Non-2,3,7,8-sub-TCDF	15.227	155071133	0.77	0.9534	65.6	65.2	0.4436	39.9		RQ
S Total TCDF					160.4	160.1	0.4436	0.4436		RQ
D 13C-2,3,7,8-TCDD	16.082	179073232	0.80	1.0875	76.2	76.2	0.1715	0.1715	76.17	
2,3,7,8-TCDD	16.097	52494308	0.74	1.0205	28.7	28.7	0.1031	0.1031		
$ 37Cl4-2,3,7,8-TCDD	16.082	92084006		1.1216	38.0	38.0	0.0555	0.0555	94.94	
A Non-2,3,7,8-sub-TCDD	15.620	4914247	0.77	1.0205	2.744	2.689	0.1031	2.451		RQ
S Total TCDD					31.5	31.4	0.1031	0.1031		RQ
D 13C-1,2,3,7,8-PeCDF	19.686	208215485	1.57	1.3943	69.1	69.1	0.1775	0.1775	69.07	
1,2,3,7,8-PeCDF	19.700	7434275	1.48	1.0794	3.308	3.308	0.0474	0.0474		M
D 13C-2,3,4,7,8-PeCDF	20.805	196591468	1.60	1.3370	68.0	68.0	0.1851	0.1851	68.02	
2,3,4,7,8-PeCDF	20.832	4132612	1.52	1.0966	1.917	1.917	0.0555	0.0555		
A F1 PeCDFs	17.730	90905	1.68	1.0880	0.0413	0.0413	0.0176	0.0413		
A Non-2,3,7,8-sub-PeCDF	20.349	6464820	1.55	1.0880	2.962	2.936	0.0511	1.290		RQMa
S Total PeCDF					8.228	8.202	0.0515	0.0515		RQ
D 13C-1,2,3,7,8-PeCDD	21.404	138796521	1.55	0.8475	75.8	75.8	0.1156	0.1156	75.75	
1,2,3,7,8-PeCDD	21.432	418633	1.37	1.1397	0.2647	0.2647	0.0277	0.0277		M
A Non-2,3,7,8-sub-PeCDD	20.518						0.0277	0.0398		RQU
S Total PeCDD					0.2647	0.2647	0.0277	0.0277		
D 13C-1,2,3,4,7,8-HxCDF	26.706	163138800	0.54	1.3065	74.4	74.4	0.3581	0.3581	74.42	
1,2,3,4,7,8-HxCDF	26.719	10269616	1.26	1.2552	5.015	5.015	0.0391	0.0391		
D 13C-1,2,3,6,7,8-HxCDF	26.972	184800159	0.54	1.4213	77.5	77.5	0.3292	0.3292	77.50	
1,2,3,6,7,8-HxCDF	27.012	2596093	1.09	1.2102	1.161	1.161	0.0385	0.0385		
D 13C-2,3,4,6,7,8-HxCDF	28.517	174397159	0.53	1.3142	79.1	79.1	0.3560	0.3560	79.09	
2,3,4,6,7,8-HxCDF	28.544	266003	1.24	1.2182	0.1563	0.1252	0.0434	0.0434		RQM
D 13C-1,2,3,7,8,9-HxCDF	30.368	168013804	0.53	1.3204	75.8	75.8	0.3543	0.3543	75.84	
1,2,3,7,8,9-HxCDF	30.408						0.0308	0.0308		RQU
A Non-2,3,7,8-sub-HxCDF	27.465	1530199	1.24	1.2289	0.8149	0.7215	0.0374	0.3025		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					7.147	7.023	0.0379	0.0379		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.062	167778744	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.010	130371884	1.25	0.8660	89.7	89.7	0.3107	0.3107	89.73	a
1,2,3,4,7,8-HxCDD	29.063	149659	1.27	1.2535	0.0916	0.0916	0.0343	0.0343		M
D 13C-1,2,3,6,7,8-HxCDD	29.289	145469907	1.26	0.9827	88.2	88.2	0.2738	0.2738	88.23	a
1,2,3,6,7,8-HxCDD	29.356						0.0366	0.0366		
1,2,3,7,8,9-HxCDD	30.101						0.0325	0.0325		
A Non-2,3,7,8-sub-HxCDD	27.931	289404	1.24	1.2168	0.2010	0.1724	0.0343	0.0941		RQM
S Total HxCDD					0.2925	0.2640	0.0344	0.0344		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.523	126050206	0.46	0.9410	79.8	79.8	1.412	1.412	79.84	
1,2,3,4,6,7,8-HpCDF	32.547	2476872	1.13	1.4783	1.329	1.329	0.0156	0.0156		
D 13C-1,2,3,4,7,8,9-HpCDF	33.629	112737704	0.49	0.8751	76.8	76.8	1.518	1.518	76.79	
1,2,3,4,7,8,9-HpCDF	33.641	755387	1.07	1.3784	0.4861	0.4861	0.0168	0.0168		
A Non-2,3,7,8-sub-HpCDF	33.100	786698	0.99	1.4284	0.4613	0.4613	0.0162	0.4613		
S Total HpCDF					2.277	2.277	0.0162	0.0162		
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	127102747	1.03	0.9049	83.7	83.7	2.113	2.113	83.72	
1,2,3,4,6,7,8-HpCDD	33.398	1646548	0.96	1.0862	1.193	1.193	0.0247	0.0247		M
A Non-2,3,7,8-sub-HpCDD	33.339	1644666	1.08	1.0862	1.191	1.191	0.0247	1.191		
S Total HpCDD					2.384	2.384	0.0247	0.0247		
D 13C-OCDD	35.546	169882165	0.90	0.5783	175.1	175.1	0.6854	0.6854	87.55	
OCDF	35.618	1050766	0.85	1.7248	0.7172	0.7172	0.0141	0.0141		
OCDD	35.558	20851635	0.90	1.2576	19.5	19.5	0.0309	0.0309		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d
Lims ID: 320-65130-A-8-A
Client ID: 11215702-Tank#1-valve-5-2
Sample Type: Client
Inject. Date: 09-Oct-2020 08:13:51 ALS Bottle#: 14 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-8-A 320-65130-A-8-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:33:00 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:57:29

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		95586595	26911988	24761	61902	1087		
333.9339	15.915	15.930	-1		120599552	33552364	20334	50835	1650	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	109708792	29603698	63172	157930	469		
317.9389	15.462	15.477	-1	0.971	139703582	38008933	31179	77947	1219	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.507	-1	1.001	97894893	25993064	47506	118765	547		
305.8987	15.477	15.507	-2	1.000	127649404	34344448	66877	167192	514	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	14.282	15.227	-57	0.923	2164158	667011	47506	118765	14		
	Empc Correction				1703973	512843	47506	118765	11		
305.8987	14.282	15.227	-57	0.923	2212953	666030	66877	167192	10	0.98(0.65-0.89)	
303.9016	14.524	15.227	-42	0.938	3362761	841672	47506	118765	18		
305.8987	14.524	15.227	-42	0.938	4210311	1060096	66877	167192	16	0.80(0.65-0.89)	
303.9016	14.721	15.227	-30	0.951	2755639	704720	47506	118765	15		
305.8987	14.721	15.227	-30	0.951	3695453	997173	66877	167192	15	0.75(0.65-0.89)	
303.9016	14.917	15.227	-19	0.964	4407820	1262166	47506	118765	27		
305.8987	14.917	15.227	-19	0.964	5684802	1571904	66877	167192	24	0.78(0.65-0.89)	
303.9016	15.159	15.227	-4	0.979	41958866	12935492	47506	118765	272		
305.8987	15.159	15.227	-4	0.979	52895385	16493737	66877	167192	247	0.79(0.65-0.89)	
303.9016	15.341	15.227	7	0.991	1971430	546608	47506	118765	12		
	Empc Correction				1581711	464684	47506	118765	10		
305.8987	15.341	15.227	7	0.991	2054171	603486	66877	167192	9	0.96(0.65-0.89)	
303.9016	15.840	15.227	37	1.023	6468910	1808072	47506	118765	38		
305.8987	15.840	15.227	37	1.023	7464509	2096485	66877	167192	31	0.87(0.65-0.89)	

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.004	15.227	106	1.099	6410641	1741656	47506	118765	37		
305.8987	17.004	15.227	106	1.099	8203228	2155393	66877	167192	32	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.082	16.081	0	1.010	79484239	20178157	24761	61902	815		
333.9339	16.066	16.081	-1	1.009	99588993	25202074	20334	50835	1239	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.097	0	1.001	22393434	6041854	9708	24270	622		
321.8936	16.082	16.097	-1	1.000	30100874	7781078	9388	23470	829	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.082	16.112	-2	1.010	92084006	24301944	15055	37637	1614		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	15.991	15.620	22	0.994	189189	63437	9708	24270	7		
321.8936	15.991	15.620	22	0.994	345835	119299	9388	23470	13	0.55(0.65-0.89)	
	Empc Correction				245700	82385	9388	23470	9		
319.8965	16.384	15.620	46	1.019	1779423	485132	9708	24270	50		
321.8936	16.384	15.620	46	1.019	2699935	660308	9388	23470	70	0.66(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	127073286	26475795	36082	90205	734		
353.8970	19.686	19.700	-1	1.237	81142199	16618437	23784	59460	699	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.700	19.727	-2	1.001	4441936	846754	3644	9110	232		M
341.8567	19.700	19.727	-2	1.001	2992339	635778	5183	12957	123	1.48(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.307	121102205	22415356	36082	90205	621		
353.8970	20.791	20.818	-2	1.306	75489263	13819727	23784	59460	581	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.846	-1	1.001	2492860	471854	3644	9110	129		
341.8567	20.818	20.846	-2	1.001	1639752	330671	5183	12957	64	1.52(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.276	17.730	-27	0.878	56986	11631	1027	2567	11		
341.8567	17.276	17.730	-27	0.878	33919	9412	2012	5030	5	1.68(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	18.582	20.349	-106	0.944	1741757	386990	3644	9110	106		
341.8567	18.582	20.349	-106	0.944	1097910	250138	5183	12957	48	1.59(1.32-1.78)	
339.8597	19.618	20.349	-44	0.997	247528	68613	3644	9110	19		M
341.8567	19.591	20.349	-45	0.995	216900	61144	5183	12957	12	1.14(1.32-1.78)	
	Empc Correction				159695	44266	5183	12957	9		
339.8597	20.136	20.349	-13	1.023	1121356	228952	3644	9110	63		
341.8567	20.136	20.349	-13	1.023	687205	137718	5183	12957	27	1.63(1.32-1.78)	
339.8597	21.091	20.349	44	1.071	618358	117346	3644	9110	32		
341.8567	21.104	20.349	45	1.072	437566	68381	5183	12957	13	1.41(1.32-1.78)	
339.8597	22.414	20.349	124	1.139	216394	28294	3644	9110	8		
341.8567	22.414	20.349	124	1.139	137051	24074	5183	12957	5	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.404	21.432	-2	1.345	84317755	15001671	13139	32847	1142		
369.8919	21.404	21.432	-2	1.345	54478766	9853783	10563	26407	933	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	21.432	21.459	-2	1.001	242104	49618	1907	4767	26		M
357.8516	21.432	21.459	-2	1.001	176529	33182	1232	3080	27	1.37(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											U
355.8546	18.746	20.518	-106	0.876	38265	7495	1907	4767	4		
357.8516	18.759	20.518	-105	0.876	45320	8567	1232	3080	7	0.84(1.32-1.78)	
	Empc Correction				24687	4835	1232	3080	4		
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.706	26.733	-2	0.888	57067868	7964030	17098	42745	466		
385.8610	26.706	26.733	-2	0.888	106070932	14877569	30821	77052	483	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.719	26.759	-2	1.000	5717435	808083	2268	5670	356		
375.8178	26.733	26.759	-2	1.001	4552181	651357	2219	5547	294	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.972	27.012	-2	0.897	64800176	8309078	17098	42745	486		
385.8610	26.972	27.012	-2	0.897	119999983	15762414	30821	77052	511	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.012	27.039	-2	1.001	1354056	179292	2268	5670	79		
375.8178	27.012	27.039	-2	1.001	1242037	163816	2219	5547	74	1.09(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.517	28.570	-3	0.949	60647951	7339881	17098	42745	429		
385.8610	28.517	28.570	-3	0.949	113749208	13873469	30821	77052	450	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQM
373.8208	28.544	28.597	-3	1.001	147252	22120	2268	5670	10		
375.8178	28.570	28.597	-2	1.002	184895	29635	2219	5547	13	0.80(1.05-1.43)	M
	Empc Correction				118751	17838	2219	5547	8		
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.368	30.394	-2	1.010	58012528	10114261	17098	42745	592		
385.8610	30.368	30.394	-2	1.010	110001276	19491400	30821	77052	632	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQU
373.8208	30.408						2268	5670			
375.8178	30.408						2219	5547			
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.669	27.465	-167	0.924	355196	56101	2268	5670	25		
375.8178	24.656	27.465	-168	0.923	366147	62273	2219	5547	28	0.97(1.05-1.43)	
	Empc Correction				286448	45242	2219	5547	20		
373.8208	25.774	27.465	-101	0.965	189024	28093	2268	5670	12		
375.8178	25.747	27.465	-103	0.964	207711	29664	2219	5547	13	0.91(1.05-1.43)	
	Empc Correction				152438	22655	2219	5547	10		
373.8208	30.567	27.465	186	1.145	366000	69404	2268	5670	31		
	Empc Correction				302855	56653	2268	5670	25		
375.8178	30.554	27.465	185	1.144	244238	45688	2219	5547	21	1.50(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.062	30.088	-2		93379716	14286330	14823	37057	964		
403.8529	30.062	30.088	-2		74399028	11317049	12731	31827	889	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.010	29.036	-2	0.965	72410835	8625697	14823	37057	582		a
403.8529	29.010	29.036	-2	0.965	57961049	6982805	12731	31827	548	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	29.063	29.076	-1	1.002	83642	12978	1372	3430	9		M
391.8127	29.063	29.076	-1	1.002	66017	9066	1309	3272	7	1.27(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.289	29.316	-2	0.974	81239469	9254989	14823	37057	624		a
403.8529	29.289	29.316	-2	0.974	64230438	7226138	12731	31827	568	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.356						1372	3430			
391.8127	29.356						1309	3272			
1,2,3,7,8,9-HxCDD											
389.8157	30.101						1372	3430			
391.8127	30.101						1309	3272			
A Non-2,3,7,8-sub-HxCDD											RQM
389.8157	25.667	27.931	-136	0.876	72821	11717	1372	3430	9		M
391.8127	25.628	27.931	-138	0.875	82561	14589	1309	3272	11	0.88(1.05-1.43)	
	Empc Correction				58726	9449	1309	3272	7		
389.8157	27.505	27.931	-26	0.939	111408	15918	1372	3430	12		M
	Empc Correction				87385	13702	1372	3430	10		
391.8127	27.452	27.931	-29	0.937	70472	11050	1309	3272	8	1.58(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.523	32.547	-1	1.082	39736587	13043225	44454	111135	293		
419.8220	32.523	32.547	-1	1.082	86313619	28642152	91616	229040	313	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.001	1312894	446223	2253	5632	198		
409.7789	32.535	32.547	-1	1.000	1163978	415427	1582	3955	263	1.13(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.629	33.641	-1	1.119	37164114	13122328	44454	111135	295		
419.8220	33.629	33.641	-1	1.119	75573590	28298495	91616	229040	309	0.49(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.641	33.653	-1	1.000	389615	148700	2253	5632	66		
409.7789	33.641	33.653	-1	1.000	365772	134848	1582	3955	85	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.875	33.100	-13	1.011	390891	131902	2253	5632	59		
409.7789	32.875	33.100	-13	1.011	395807	135414	1582	3955	86	0.99(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.111	64603378	23626410	85011	212527	278		
437.8140	33.386	33.398	-1	1.111	62499369	22450229	110838	277095	203	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.398	33.398	0	1.000	806867	284421	2813	7032	101		M
425.7737	33.386	33.398	-1	1.000	839681	322004	2129	5322	151	0.96(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7766	32.839	33.339	-30	0.984	855821	292706	2813	7032	104		
425.7737	32.839	33.339	-30	0.984	788845	277489	2129	5322	130	1.08(0.88-1.20)	

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Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-OCDD											
469.7779	35.546	35.558	-1	1.182	80282057	26026616	17642	44105	1475		
471.7750	35.546	35.558	-1	1.182	89600108	28848798	22952	57380	1257	0.90(0.76-1.02)	
OCDF											
441.7428	35.618	35.630	-1	1.002	483457	163157	1152	2880	142		
443.7399	35.618	35.630	-1	1.002	567309	193142	1509	3772	128	0.85(0.76-1.02)	
OCDD											
457.7377	35.558	35.570	-1	1.000	9880661	3372340	2076	5190	1624		
459.7348	35.558	35.570	-1	1.000	10970974	3622780	2194	5485	1651	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	249412374	67612631

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	249412374	67612631

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.282	2164158	667011	2212953	666030	1.84	0.98	RQ
14.282	1703973	512843	2212953	666030	1.65		Empc Correction
14.524	3362761	841672	4210311	1060096	3.18	0.80	
14.721	2755639	704720	3695453	997173	2.71	0.75	
14.917	4407820	1262166	5684802	1571904	4.24	0.78	
15.159	41958866	12935492	52895385	16493737	39.9	0.79	
15.341	1971430	546608	2054171	603486	1.69	0.96	RQ
15.341	1581711	464684	2054171	603486	1.53		Empc Correction
15.840	6468910	1808072	7464509	2096485	5.86	0.87	
17.004	6410641	1741656	8203228	2155393	6.15	0.78	
Signal Totals:							
	68650321	20271305	86420812	25644304			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	155921037	46151701				0.80	RQ
	155071133	45915609					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 65.571 = (155921037 * 100.000) / (249412374 * 0.953)
Empc Amount: 65.214 = (155071133 * 100.000) / (249412374 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	179073232	45380231

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	179073232	45380231

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.991	189189	63437	345835	119299	0.2928	0.55	RQ
15.991	189189	63437	245700	82385	0.2380		Empc Correction
16.384	1779423	485132	2699935	660308	2.45	0.66	
Signal Totals:							
	1968612	548569	2945635	742693			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5014382	1328176				0.65	RQ
	4914247	1291262					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.744 = (5014382 * 100.000) / (179073232 * 1.020)
Empc Amount: 2.689 = (4914247 * 100.000) / (179073232 * 1.020)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

F1 PeCDFs, RT: 17.730

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	208215485	43094232
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	196591468	36235083

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	202403476	39664657

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.276	56986	11631	33919	9412	0.0413	1.68	
Signal Totals:							
	56986	11631	33919	9412			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	90905	21043				1.68	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0413 = (90905 * 100.000) / (202403476 * 1.088)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	208215485	43094232
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	196591468	36235083

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	202403476	39664657

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.582	1741757	386990	1097910	250138	1.29	1.59	
19.618	247528	68613	216900	61144	0.2109	1.14	RQMa
19.618	247528	68613	159695	44266	0.1849		Empc Correction
20.136	1121356	228952	687205	137718	0.8213	1.63	
21.091	618358	117346	437566	68381	0.4795	1.41	
22.414	216394	28294	137051	24074	0.1605	1.58	
Signal Totals:							
	3945393	830195	2519427	524577			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6522025	1371650				1.53	RQMa
	6464820	1354772					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.962 = (6522025 * 100.000) / (202403476 * 1.088)
Empc Amount: 2.936 = (6464820 * 100.000) / (202403476 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

Non-2,3,7,8-sub-PeCDD, RT: 20.518

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	138796521	24855454

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	138796521	24855454

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.746	38265	7495	45320	8567	0.0528	0.84	RQ
18.746	38265	7495	24687	4835	0.0398		Empc Correction

Compound is Marked ND

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d
Lims ID: 320-65130-A-8-A
Client ID: 11215702-Tank#1-valve-5-2
Inject. Date: 09-Oct-2020 08:13:51 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 17

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	163138800	22841599
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	184800159	24071492
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	174397159	21213350
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	168013804	29605661

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	172587480	24433025

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.669	355196	56101	366147	62273	0.3401	0.97	RQ
24.669	355196	56101	286448	45242	0.3025		Empc Correction
25.774	189024	28093	207711	29664	0.1871	0.91	RQ
25.774	189024	28093	152438	22655	0.1610		Empc Correction
30.567	366000	69404	244238	45688	0.2877	1.50	RQ
30.567	302855	56653	244238	45688	0.2580		Empc Correction
Signal Totals:							
	847075	140847	683124	113585			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1728316	291223				1.11	RQ
	1530199	254432					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.8149 = (1728316 * 100.000) / (172587480 * 1.229)
Empc Amount: 0.7215 = (1530199 * 100.000) / (172587480 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d
Lims ID: 320-65130-A-8-A
Client ID: 11215702-Tank#1-valve-5-2
Inject. Date: 09-Oct-2020 08:13:51 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 17

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	130371884	15608502
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	145469907	16481127
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	137920895	16044814

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.667	72821	11717	82561	14589	0.0926	0.88	RQM
25.667	72821	11717	58726	9449	0.0784		Empc Correction
27.505	111408	15918	70472	11050	0.1084	1.58	RQM
27.505	87385	13702	70472	11050	0.0941		Empc Correction
Signal Totals:							
	160206	25419	129198	20499			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	337262	53274				1.20	RQM
	289404	45918					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2010 = (337262 * 100.000) / (137920895 * 1.217)
Empc Amount: 0.1724 = (289404 * 100.000) / (137920895 * 1.217)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	126050206	41685377
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	112737704	41420823

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	119393955	41553100

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.875	390891	131902	395807	135414	0.4613	0.99	
Signal Totals:							
	390891	131902	395807	135414			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	786698	267316				0.99	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4613 = (786698 * 100.000) / (119393955 * 1.428)

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Lims ID:	320-65130-A-8-A		
Client ID:	11215702-Tank#1-valve-5-2		
Inject. Date:	09-Oct-2020 08:13:51	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	17

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	127102747	46076639

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	127102747	46076639

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.839	855821	292706	788845	277489	1.19	1.08	
Signal Totals:							
	855821	292706	788845	277489			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1644666	570195				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1.191 = (1644666 * 100.000) / (127102747 * 1.086)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT:	19.70
Area:	4689232
Amount:	3.417980
Amount Units:	pg/ul

Processing Integration Results

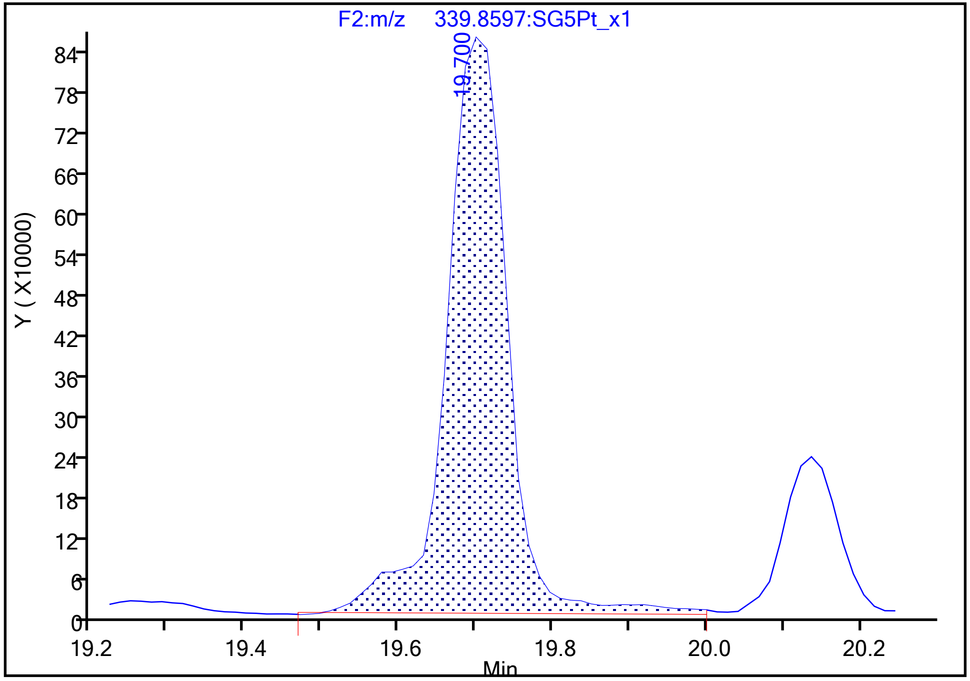

RT:	19.70
Area:	4441936
Amount:	3.307944
Amount Units:	pg/ul

Manual Integration Results

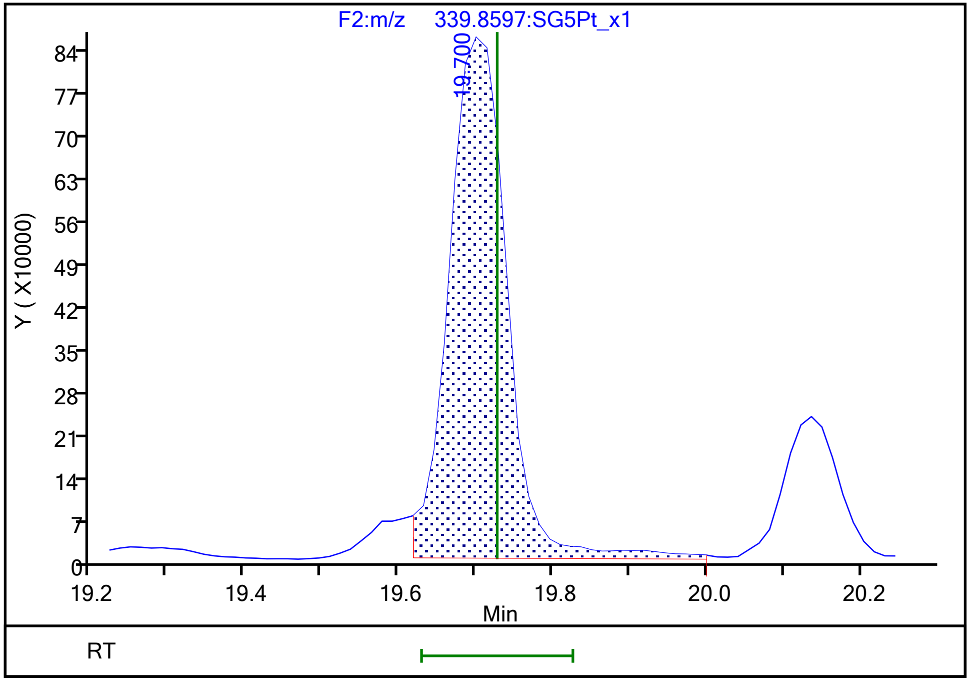

Reviewer: dadunj, 13-Oct-2020 12:28:29

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (18.23- 22.47)

Signal: 1

Processing Integration Results

Not Detected

RT: 18.23- 22.47

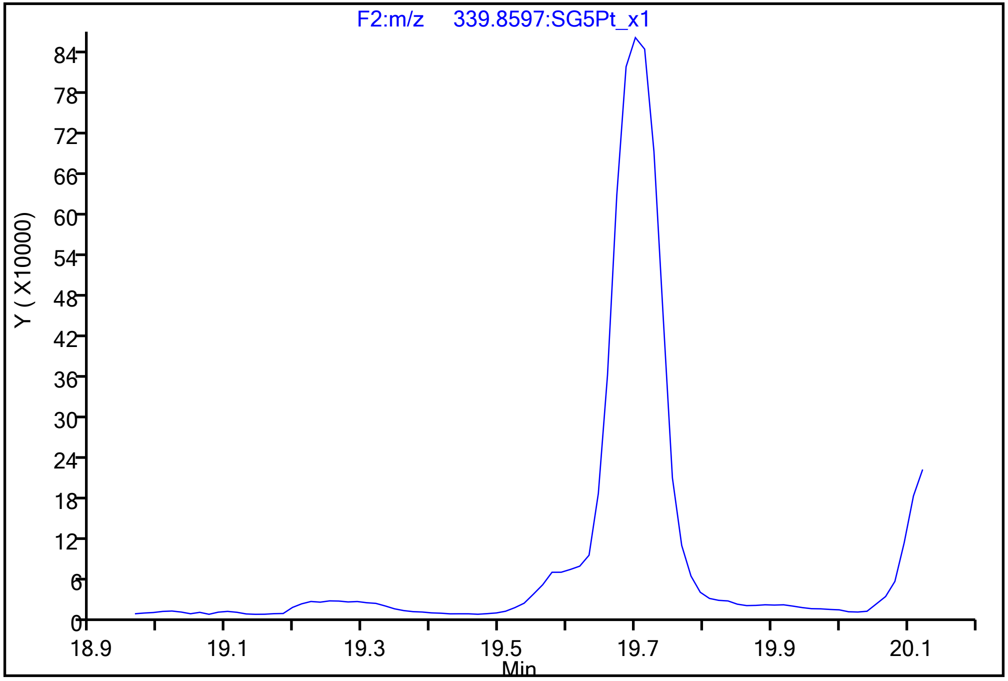

Manual Integration Results

RT = 19.618 Area = 247528 M

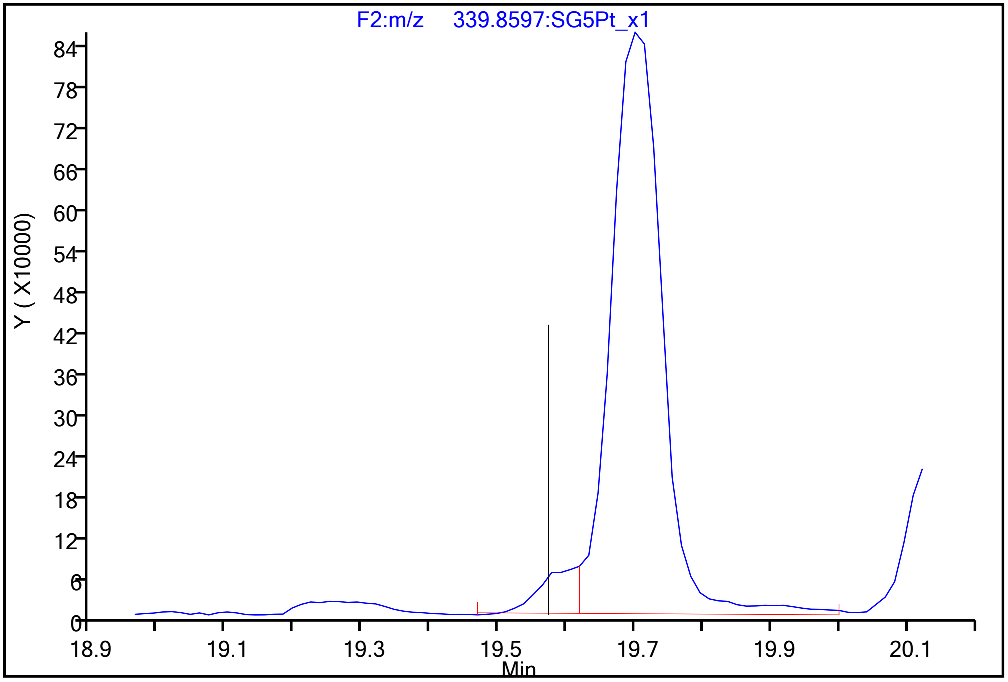

Reviewer: dadunj, 13-Oct-2020 12:28:44

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8
Client ID:	11215702-Tank#1-valve-5-2		
Operator ID:	ALM	ALS Bottle#:	14 Worklist Smp#: 17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	21.43
Area:	275645
Amount:	0.292392
Amount Units:	pg/ul

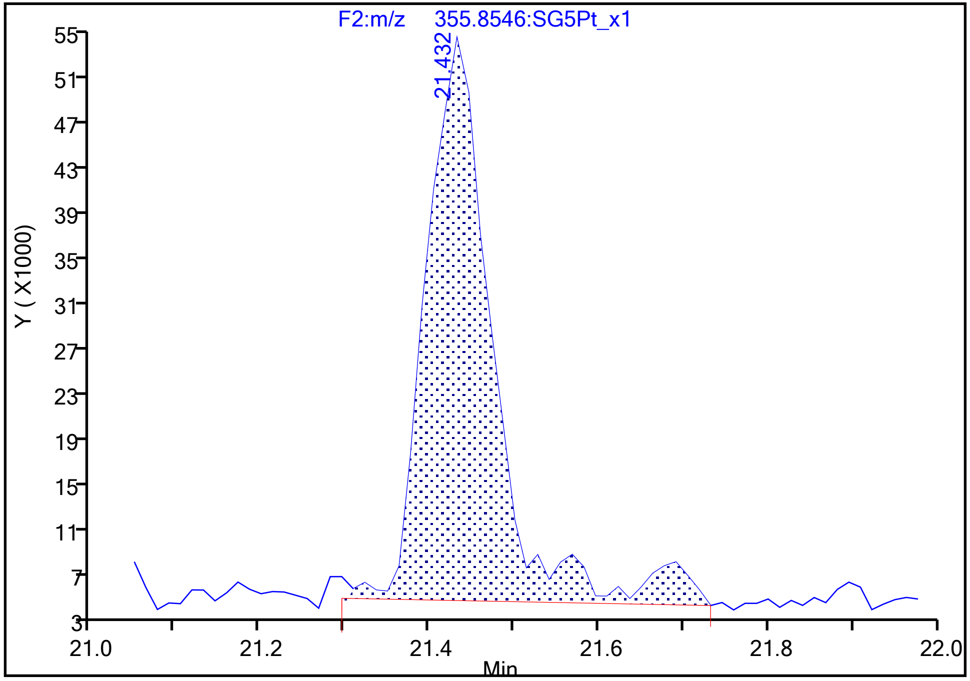

Manual Integration Results

RT:	21.43
Area:	242104
Amount:	0.264655
Amount Units:	pg/ul

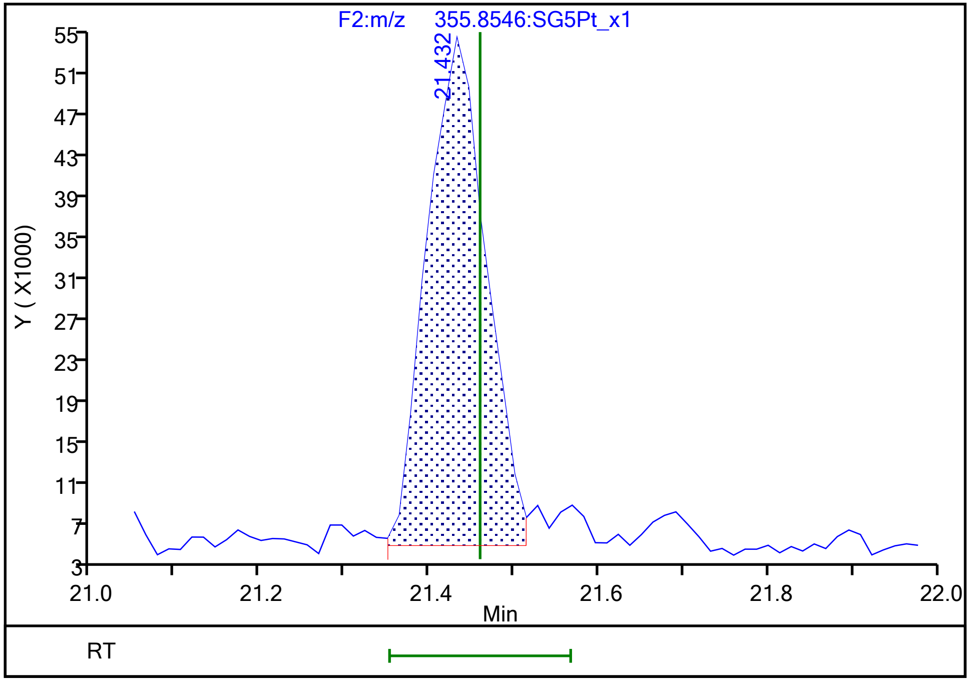

Reviewer: dadunj, 13-Oct-2020 12:29:20

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8
Client ID:	11215702-Tank#1-valve-5-2		
Operator ID:	ALM	ALS Bottle#:	14 Worklist Smp#: 17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

RT: 21.43
Area: 186862
Amount: 0.292392
Amount Units: pg/ul

Processing Integration Results

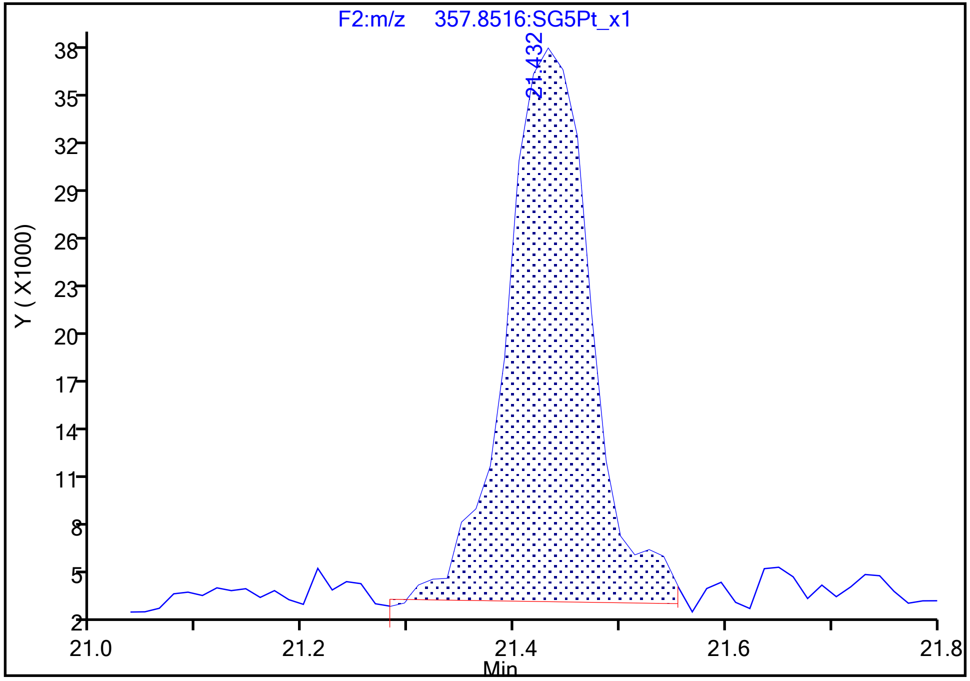

RT: 21.43
Area: 176529
Amount: 0.264655
Amount Units: pg/ul

Manual Integration Results

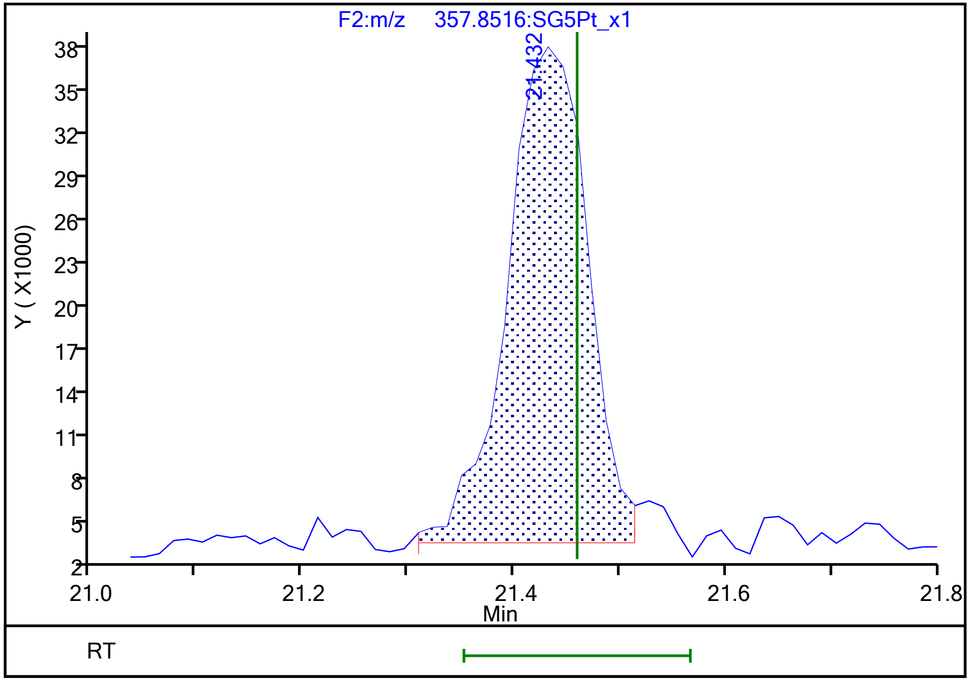

Reviewer: dadunj, 13-Oct-2020 12:29:22

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT:	28.57
Area:	269264
Amount:	0.196049
Amount Units:	pg/ul

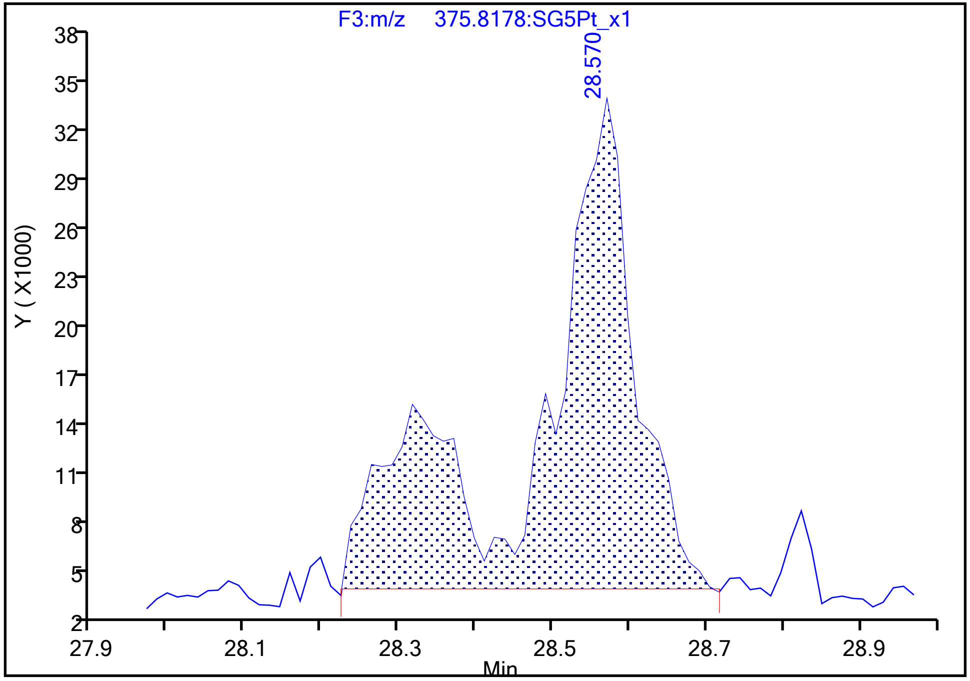

Manual Integration Results

RT:	28.57
Area:	184895
Amount:	0.156337
Amount Units:	pg/ul

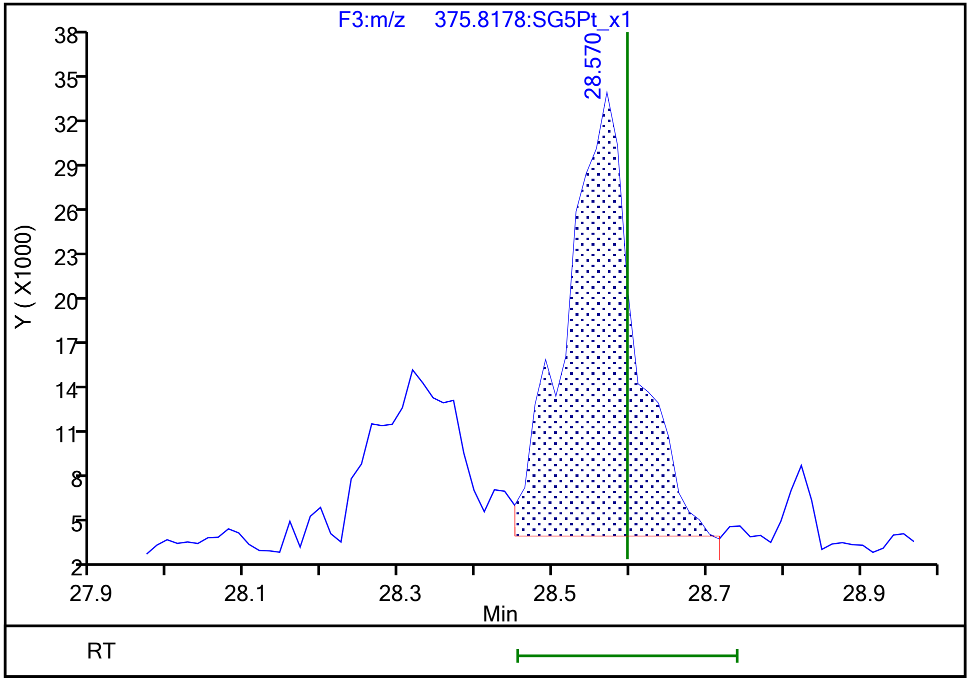

Reviewer: dadunj, 13-Oct-2020 12:29:38

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.04

Processing Integration Results

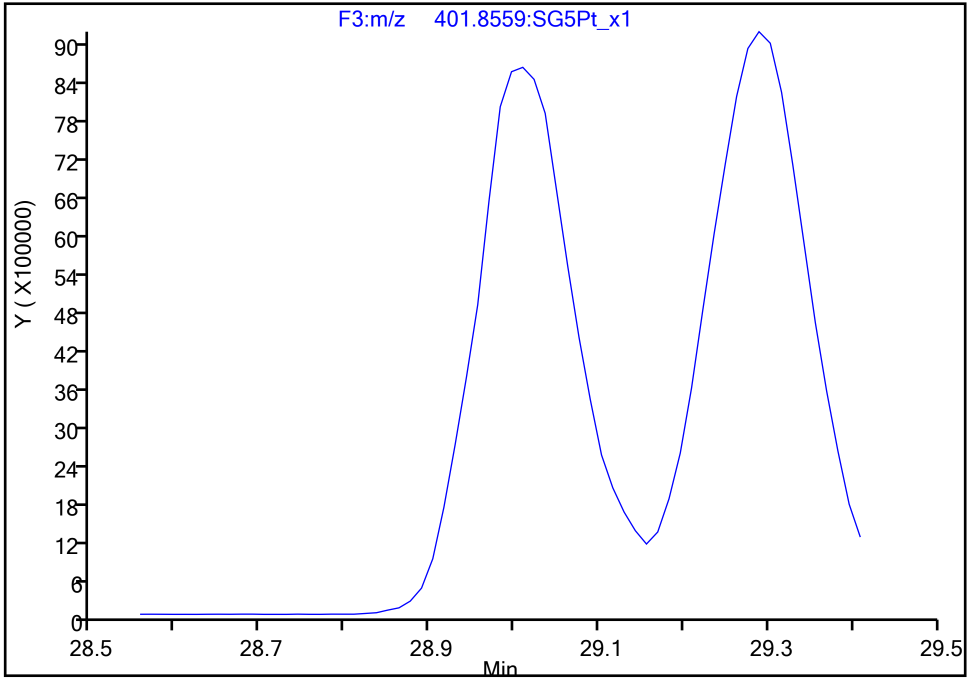

RT: 29.01

Area: 72410835

Amount: 89.725844

Amount Units: pg/ul

Manual Integration Results

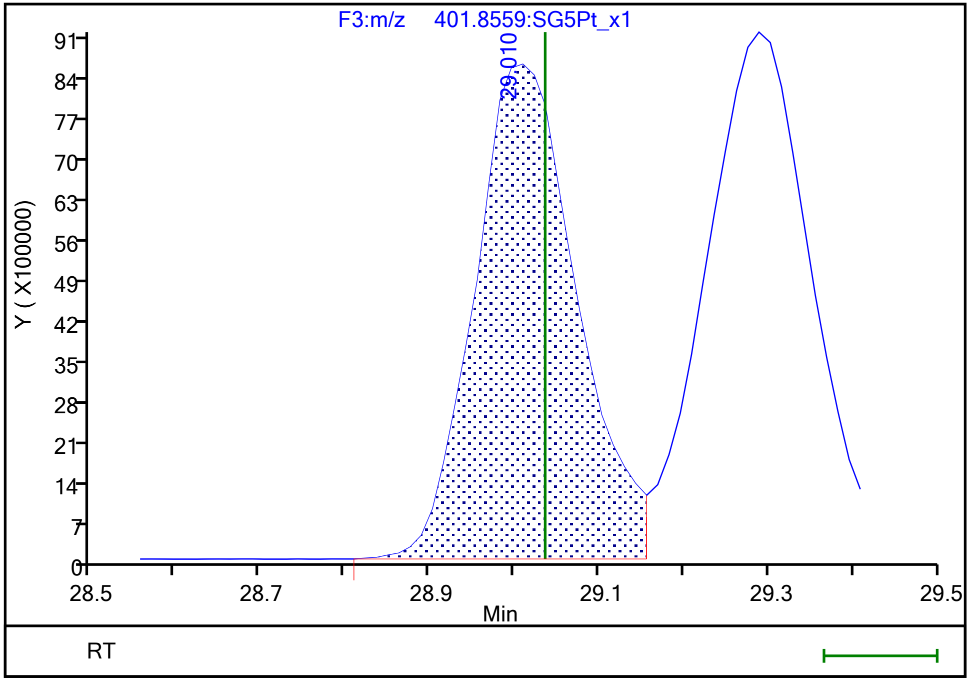

Reviewer: shardaa, 12-Oct-2020 17:57:20

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8
Client ID:	11215702-Tank#1-valve-5-2		
Operator ID:	ALM	ALS Bottle#:	14 Worklist Smp#: 17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 29.06
Area: 83193
Amount: 0.092152
Amount Units: pg/ul

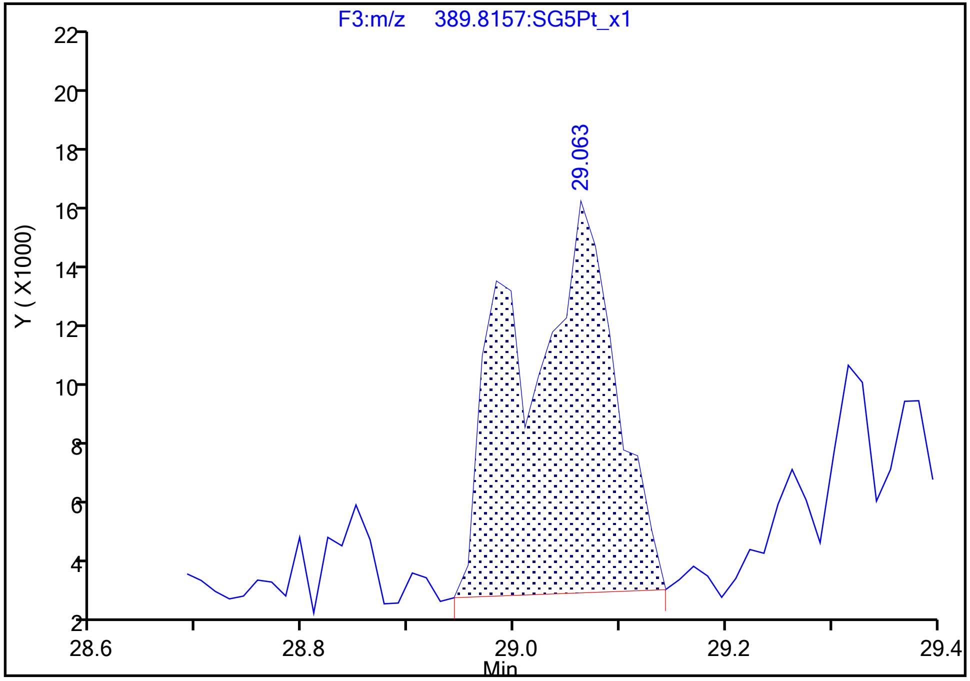

Manual Integration Results

RT: 29.06
Area: 83642
Amount: 0.091578
Amount Units: pg/ul

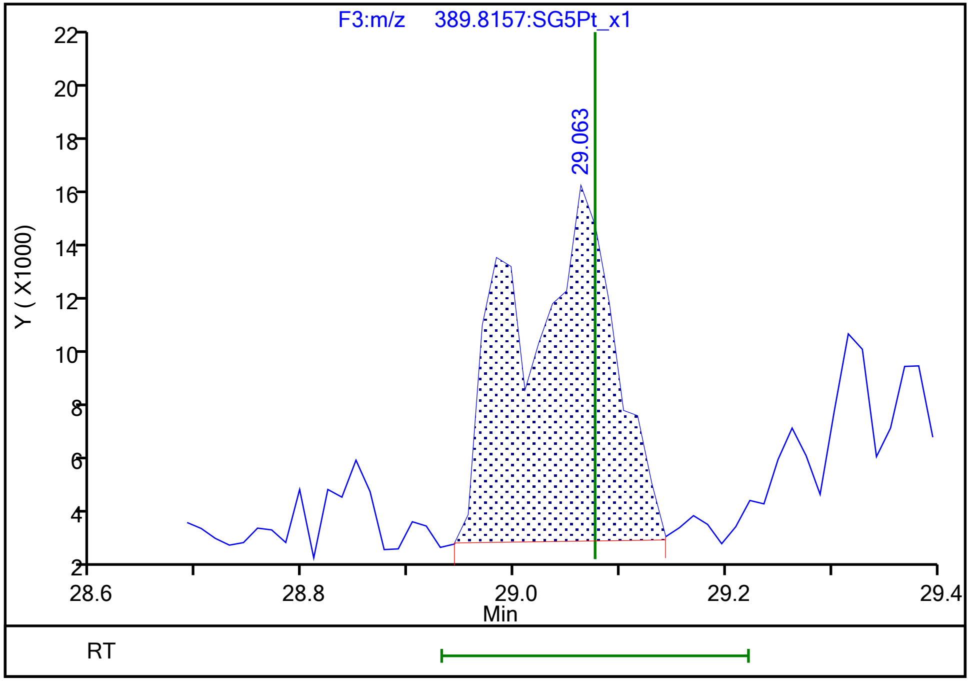

Reviewer: dadunj, 13-Oct-2020 12:30:05

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 12:33:01

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d
Injection Date: 09-Oct-2020 08:13:51
Instrument ID: 3D5
Lims ID: 320-65130-A-8-A
Lab Sample ID: 320-65130-8
Client ID: 11215702-Tank#1-valve-5-2
Operator ID: ALM
ALS Bottle#: 14
Worklist Smp#: 17
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 29.06
Area: 67405
Amount: 0.092152
Amount Units: pg/ul

Processing Integration Results

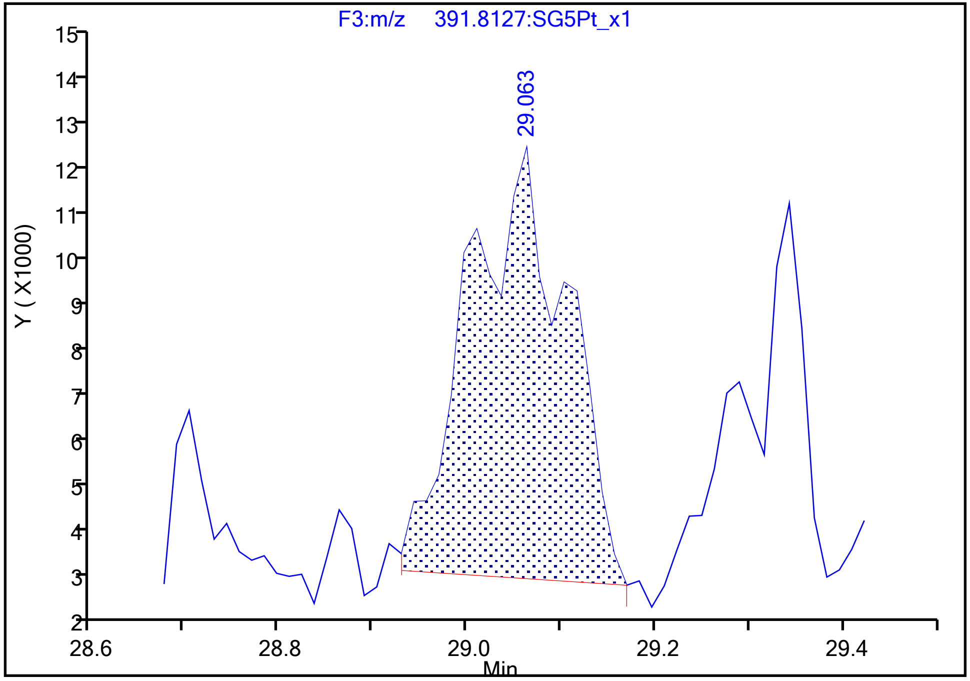

RT: 29.06
Area: 66017
Amount: 0.091578
Amount Units: pg/ul

Manual Integration Results

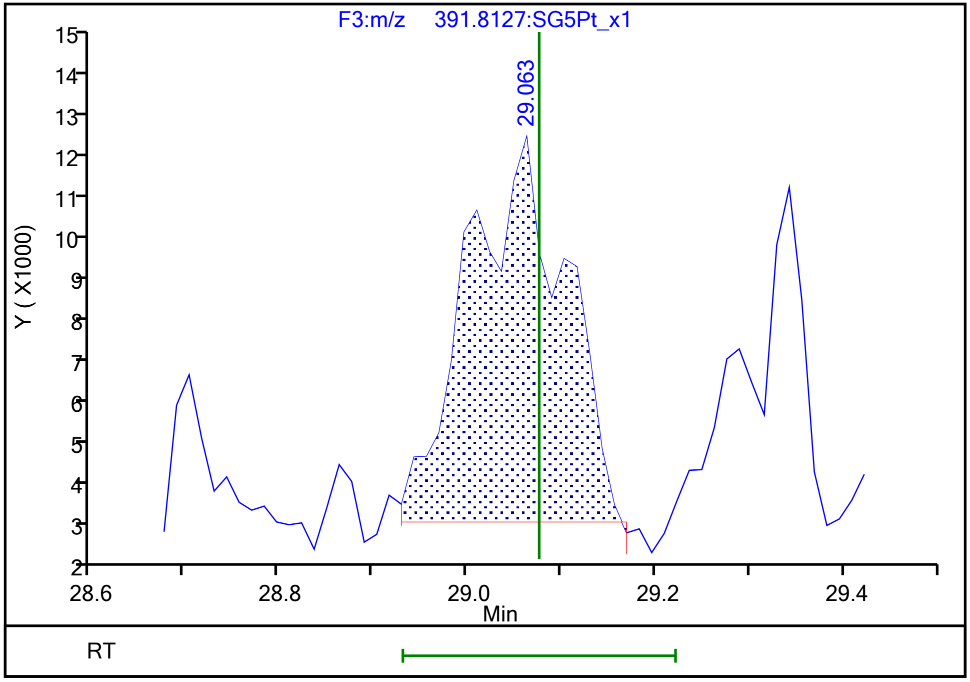

Reviewer: dadunj, 13-Oct-2020 12:30:12

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.06
Area:	93379716
Amount:	101.7609
Amount Units:	pg/ul

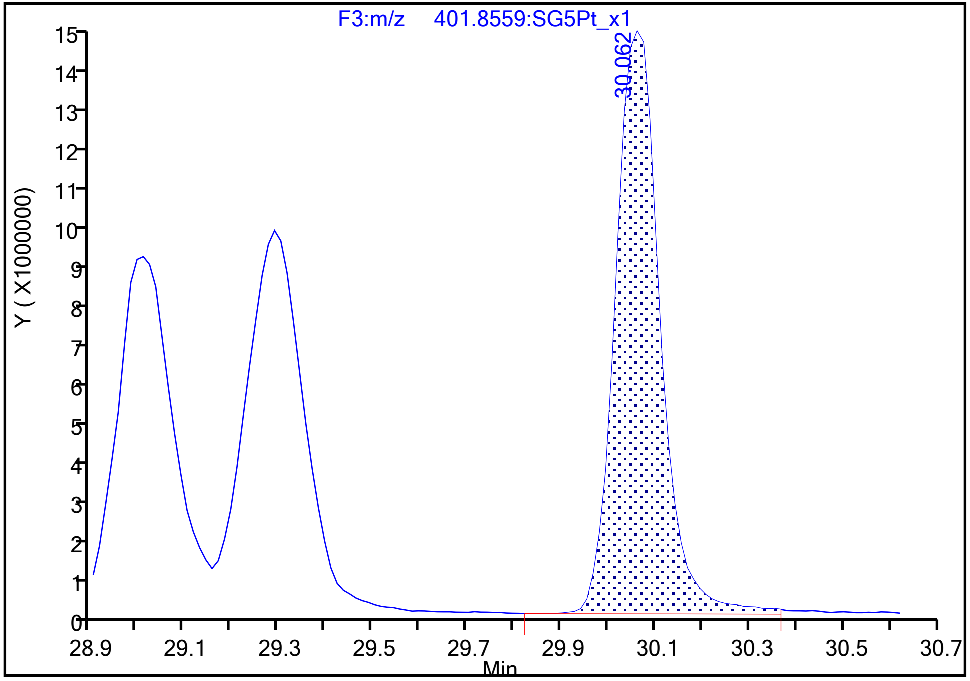

Manual Integration Results

RT:	29.29
Area:	81239469
Amount:	88.230175
Amount Units:	pg/ul

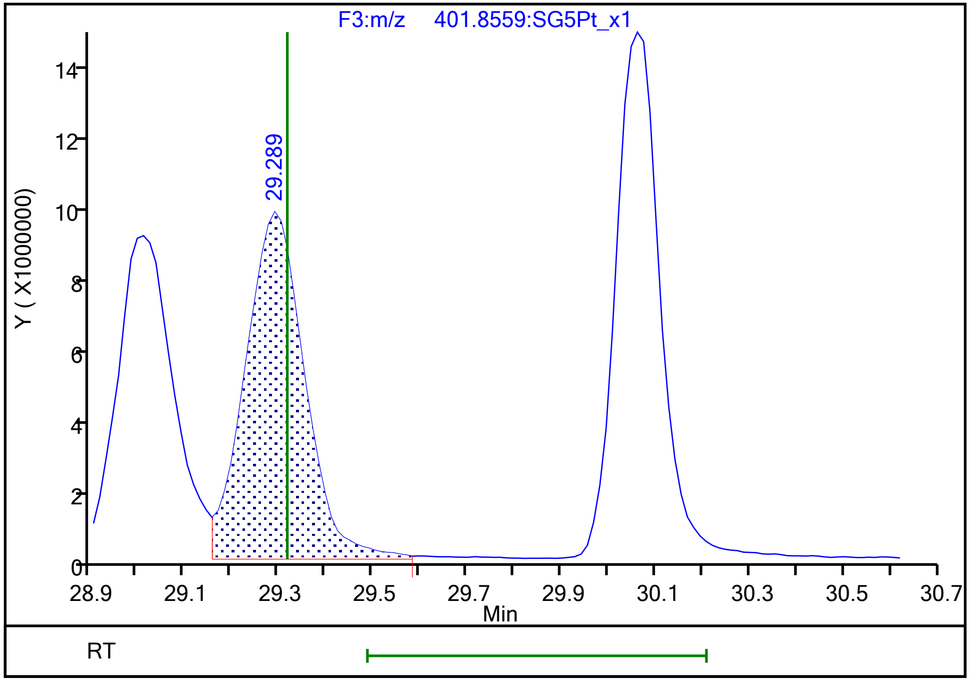

Reviewer: shardaa, 12-Oct-2020 17:58:16

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 12:33:01

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

Not Detected
RT: 25.52- 30.34

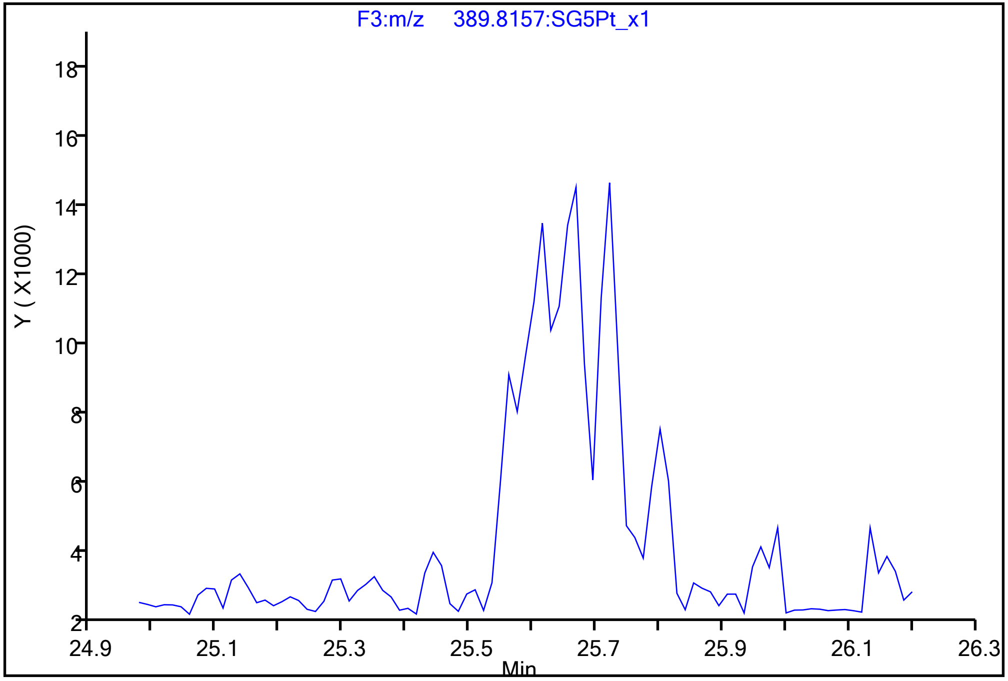

Manual Integration Results

RT = 25.667 Area = 72821 M

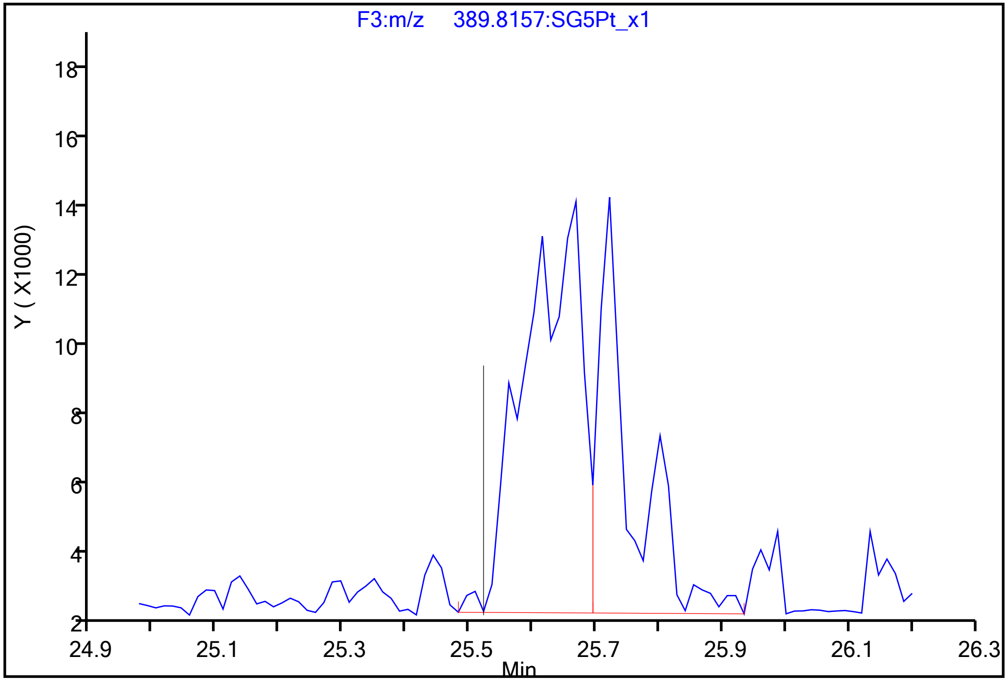

Reviewer: dadunj, 13-Oct-2020 12:31:37

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8
Client ID:	11215702-Tank#1-valve-5-2		
Operator ID:	ALM	ALS Bottle#:	14 Worklist Smp#: 17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

RT = 27.505 Area = 142230

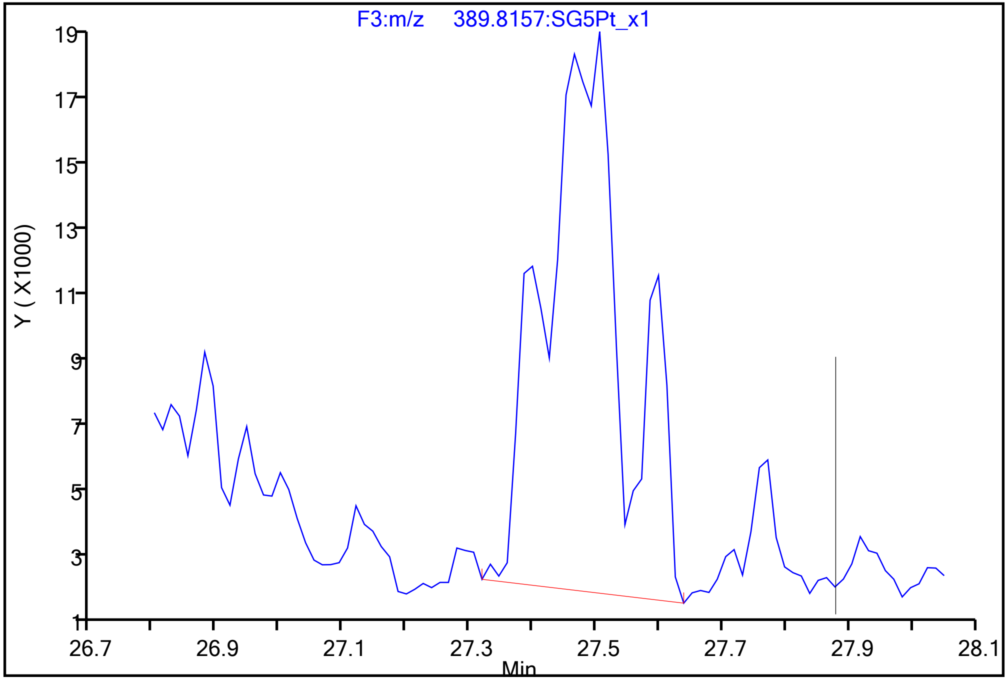

Manual Integration Results

RT = 27.505 Area = 111408 M

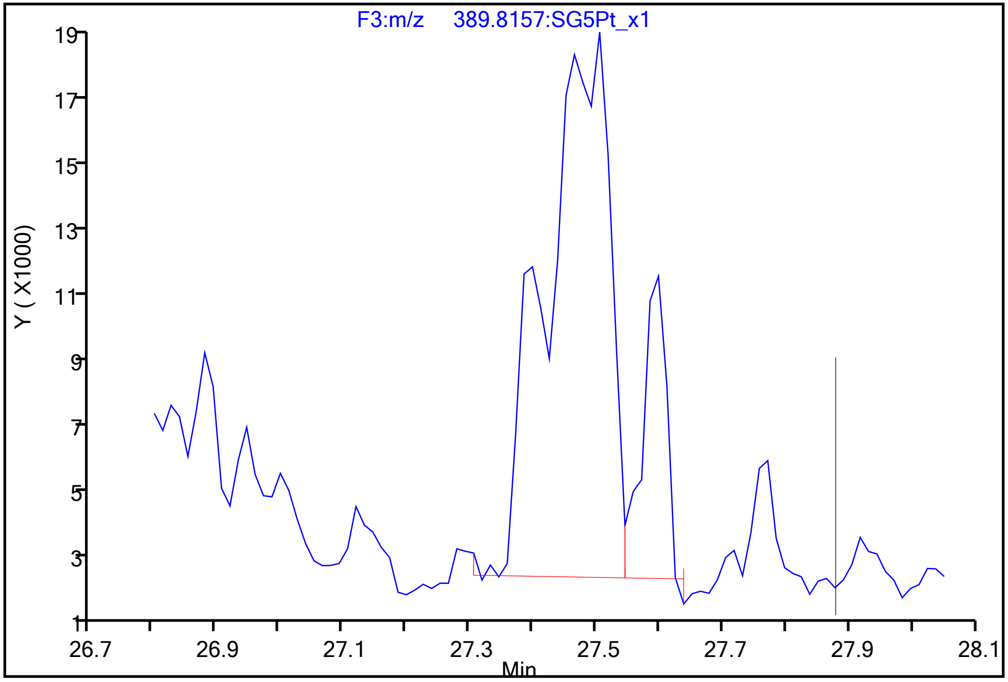

Reviewer: dadunj, 13-Oct-2020 12:31:37

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8
Client ID:	11215702-Tank#1-valve-5-2		
Operator ID:	ALM	ALS Bottle#:	14 Worklist Smp#: 17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (25.52- 30.34)

Signal: 2

Processing Integration Results

RT = 27.452 Area = 81030

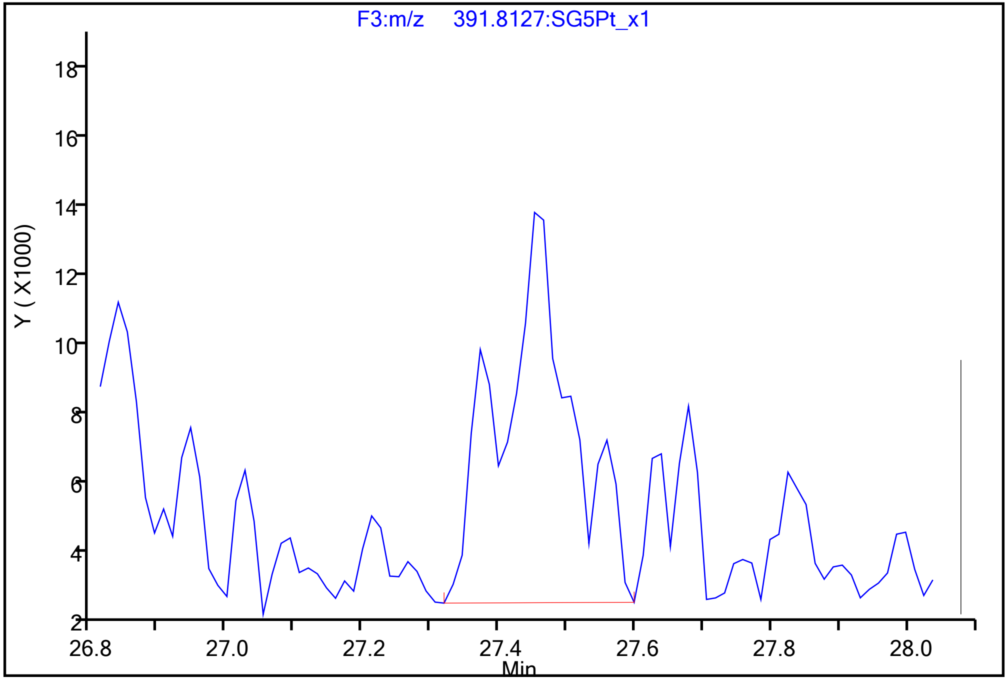

Manual Integration Results

RT = 27.452 Area = 70472 M

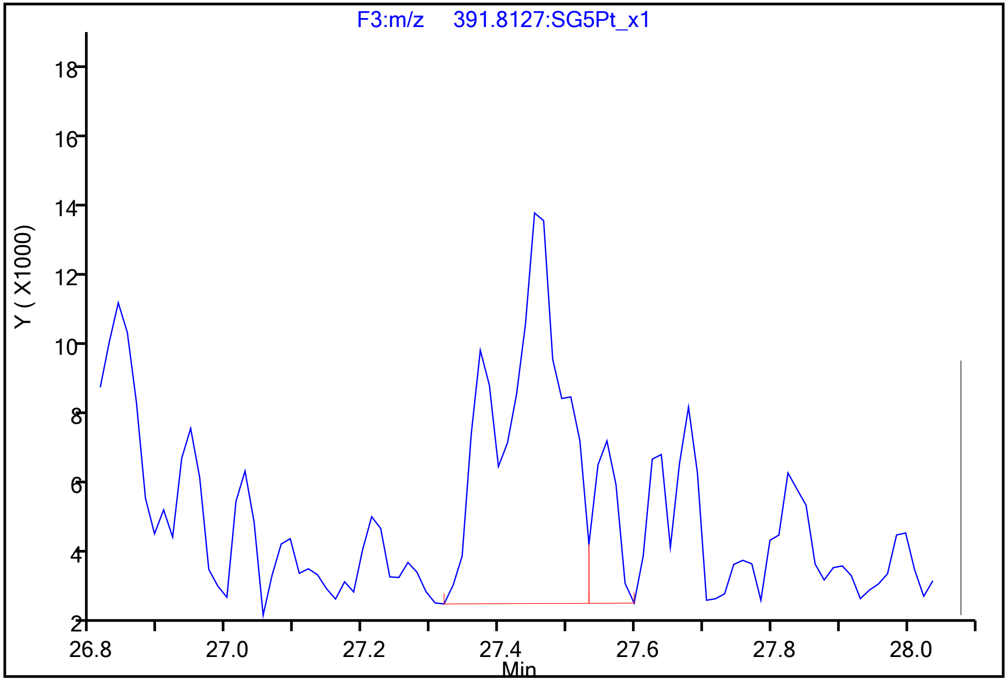

Reviewer: dadunj, 13-Oct-2020 12:31:34

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 12:33:01

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d				
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5		
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8		
Client ID:	11215702-Tank#1-valve-5-2				
Operator ID:	ALM	ALS Bottle#:	14	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

RT:	33.40
Area:	815750
Amount:	1.225194
Amount Units:	pg/ul

Processing Integration Results

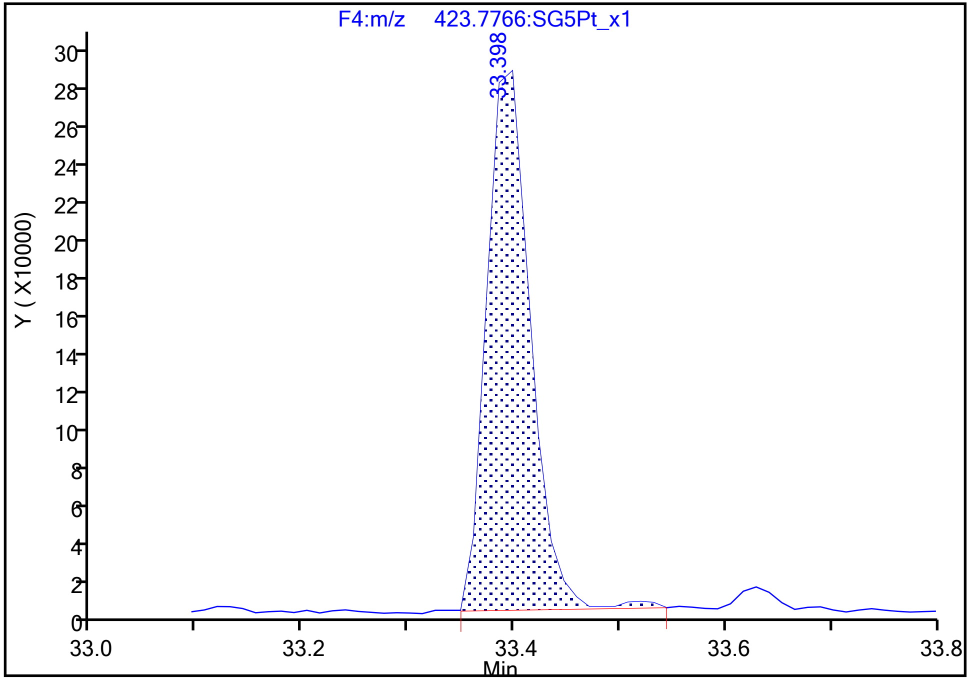

RT:	33.40
Area:	806867
Amount:	1.192616
Amount Units:	pg/ul

Manual Integration Results

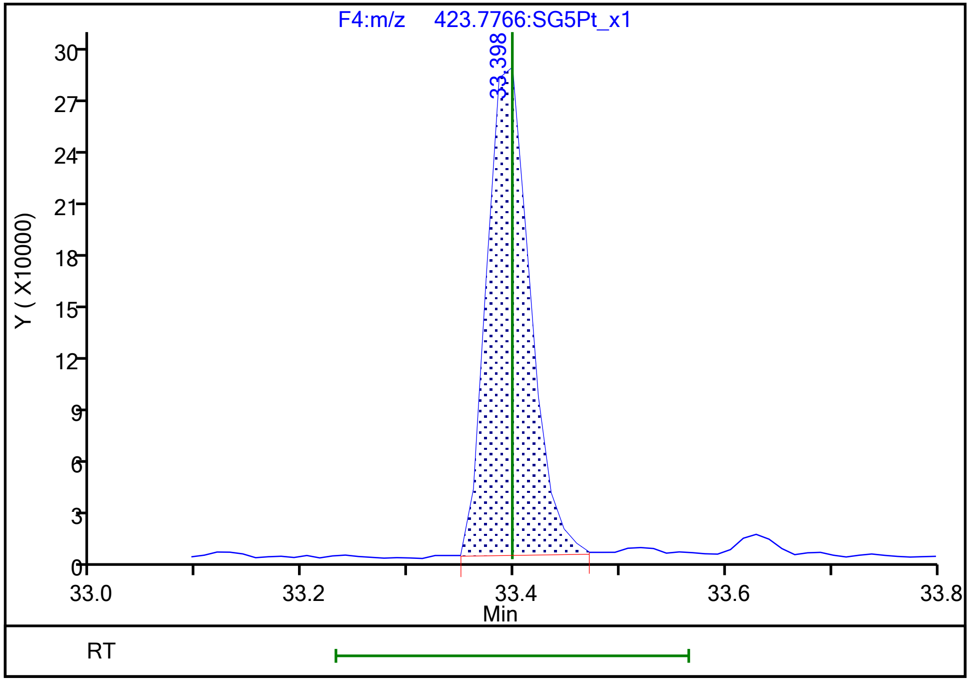

Reviewer: dadunj, 13-Oct-2020 12:31:54

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d		
Injection Date:	09-Oct-2020 08:13:51	Instrument ID:	3D5
Lims ID:	320-65130-A-8-A	Lab Sample ID:	320-65130-8
Client ID:	11215702-Tank#1-valve-5-2		
Operator ID:	ALM	ALS Bottle#:	14 Worklist Smp#: 17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT:	33.39
Area:	875776
Amount:	1.225194
Amount Units:	pg/ul

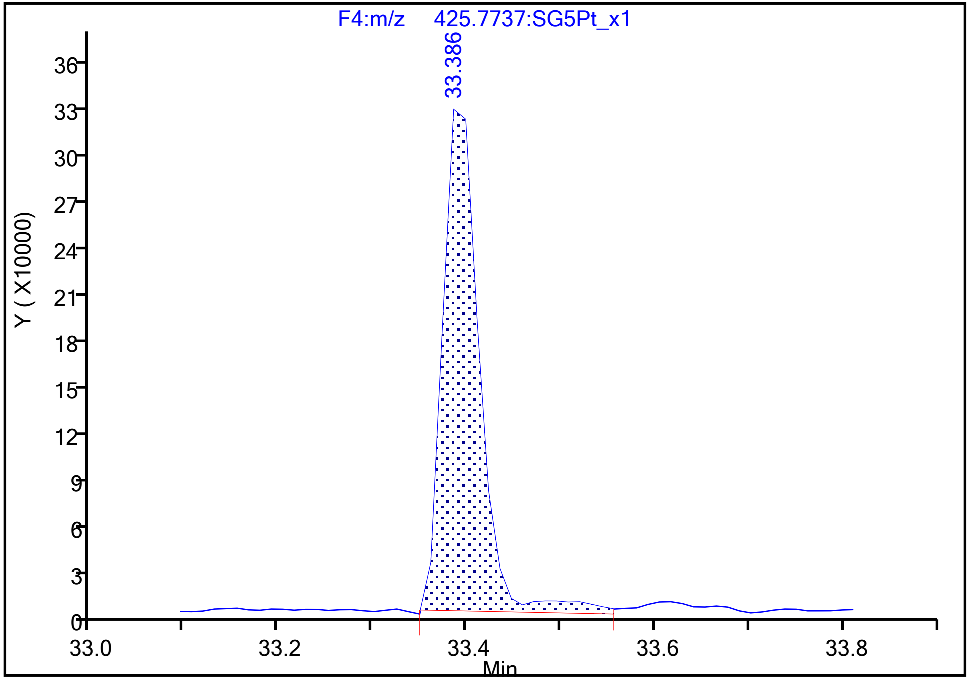

Manual Integration Results

RT:	33.39
Area:	839681
Amount:	1.192616
Amount Units:	pg/ul

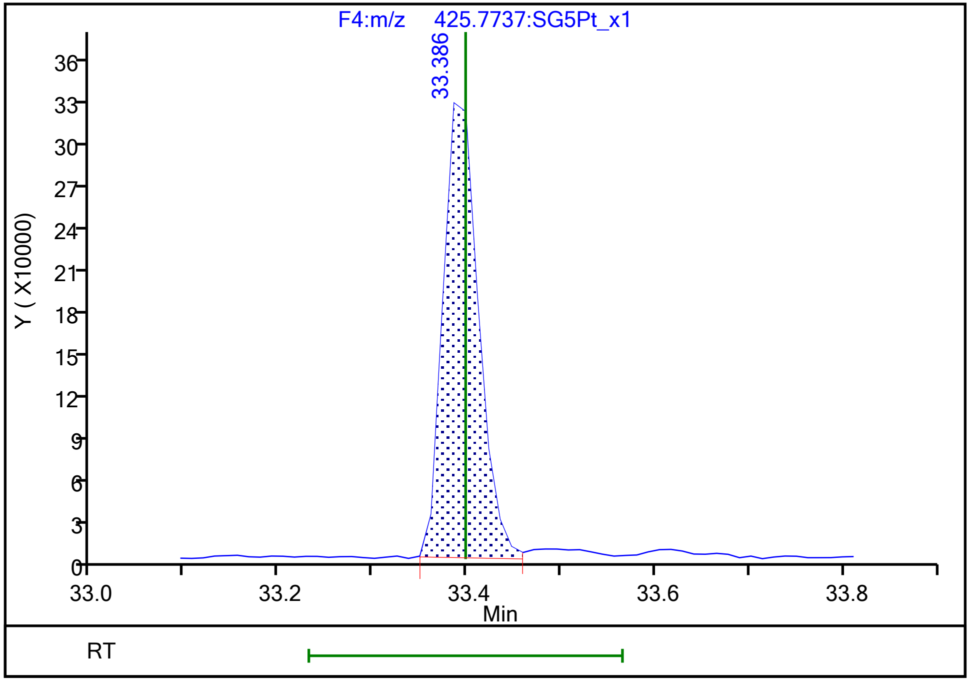

Reviewer: dadunj, 13-Oct-2020 12:31:55

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d

Injection Date: 09-Oct-2020 08:13:51

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-2

Worklist#: 420482

Sample Line#: 17

Column Type:

Column Dia:

TCDF

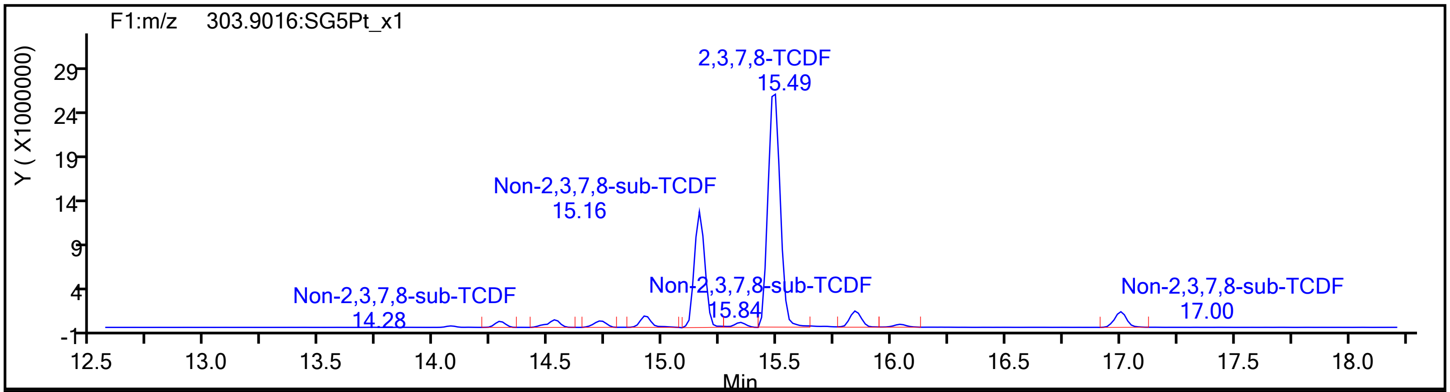

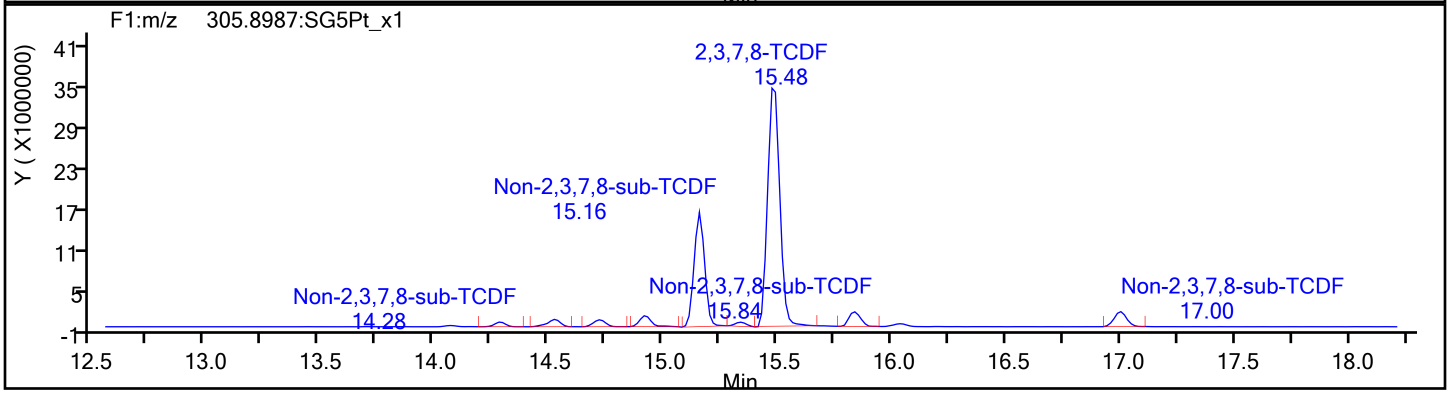

TCDF Standards

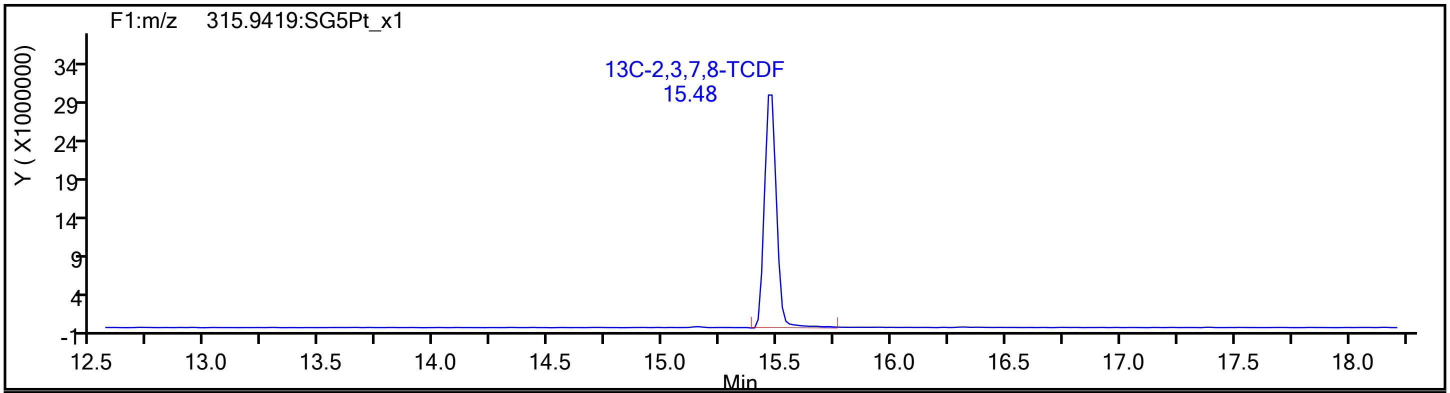

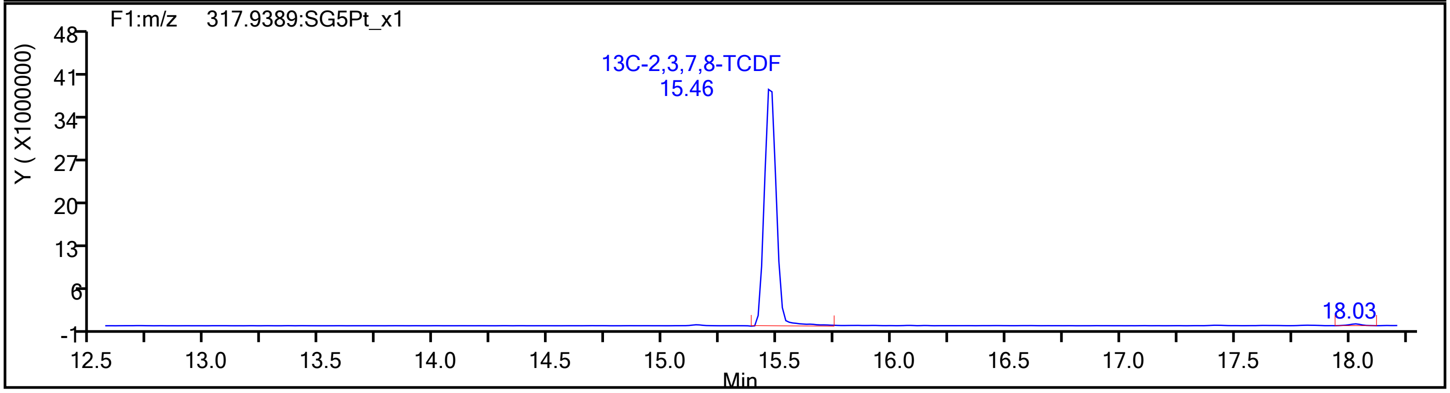

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d

Injection Date: 09-Oct-2020 08:13:51 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-2

Worklist#: 420482 Sample Line#: 17

Column Type: Column Dia:

TCDF

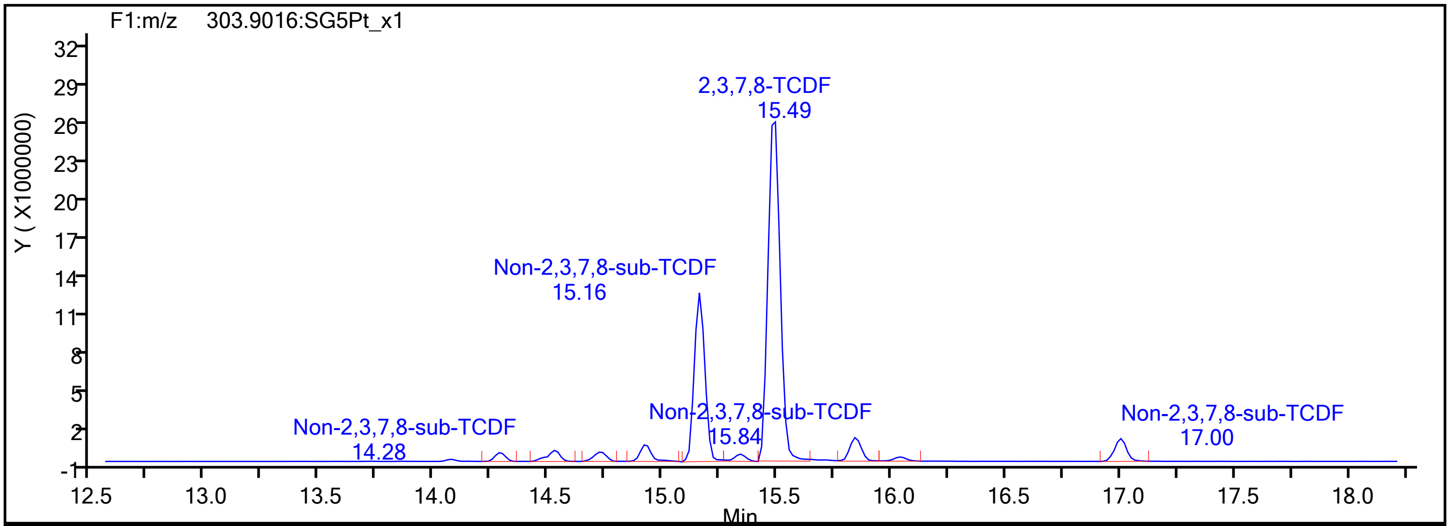

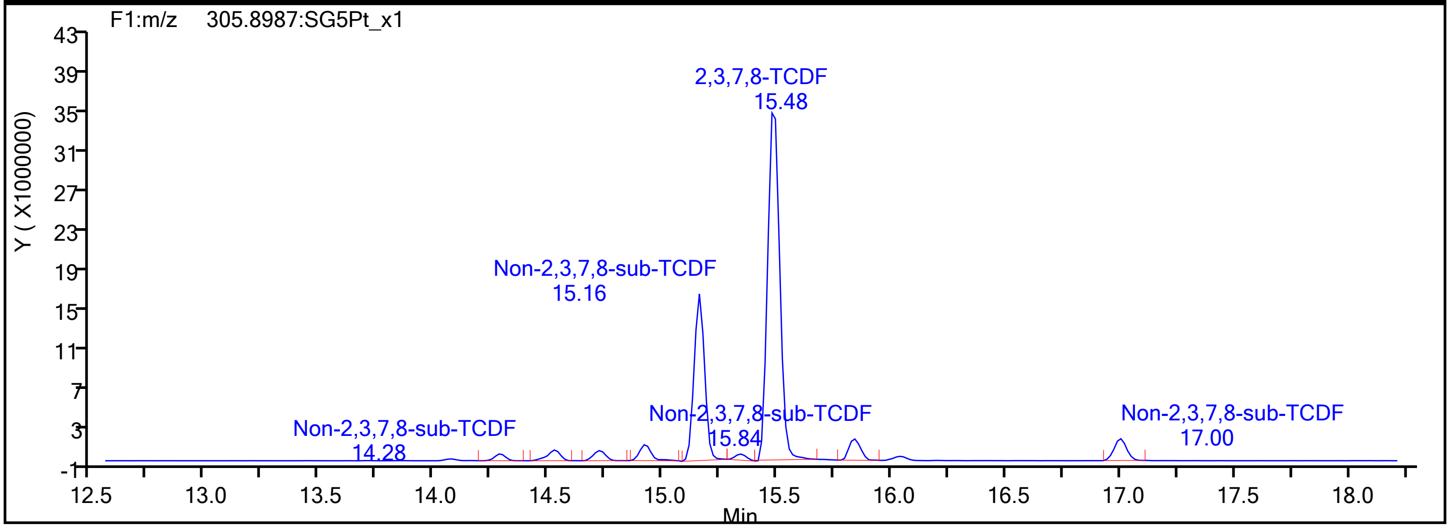

TCDF Interference Mass

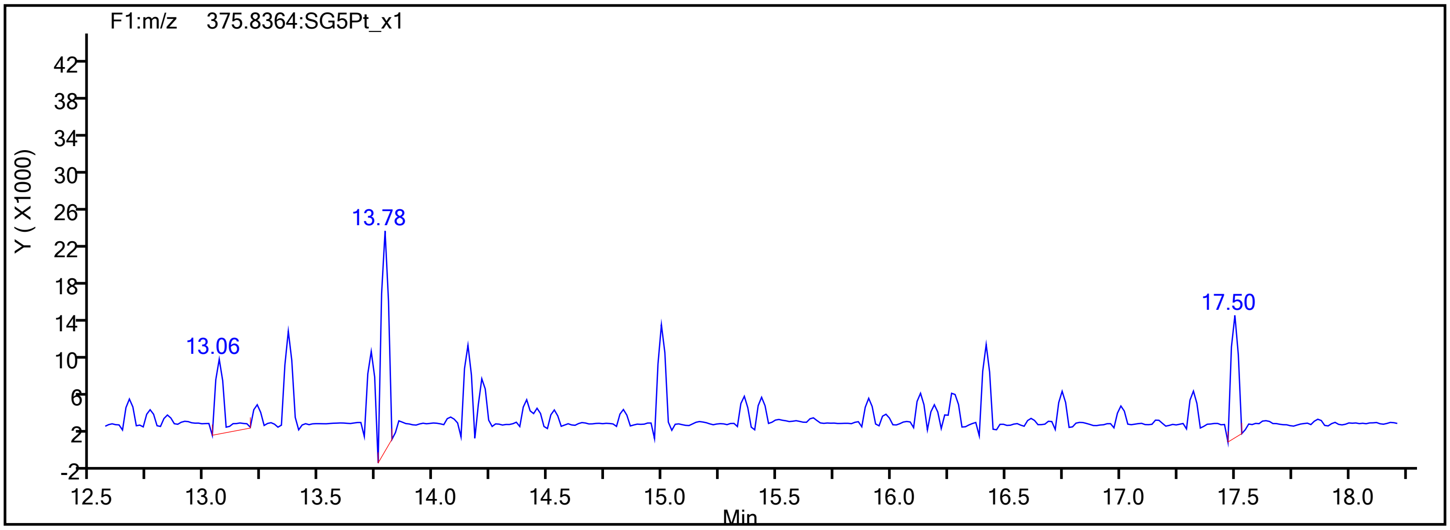

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d

Injection Date: 09-Oct-2020 08:13:51 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-2

Worklist#: 420482 Sample Line#: 17

Column Type: Column Dia:

TCDD

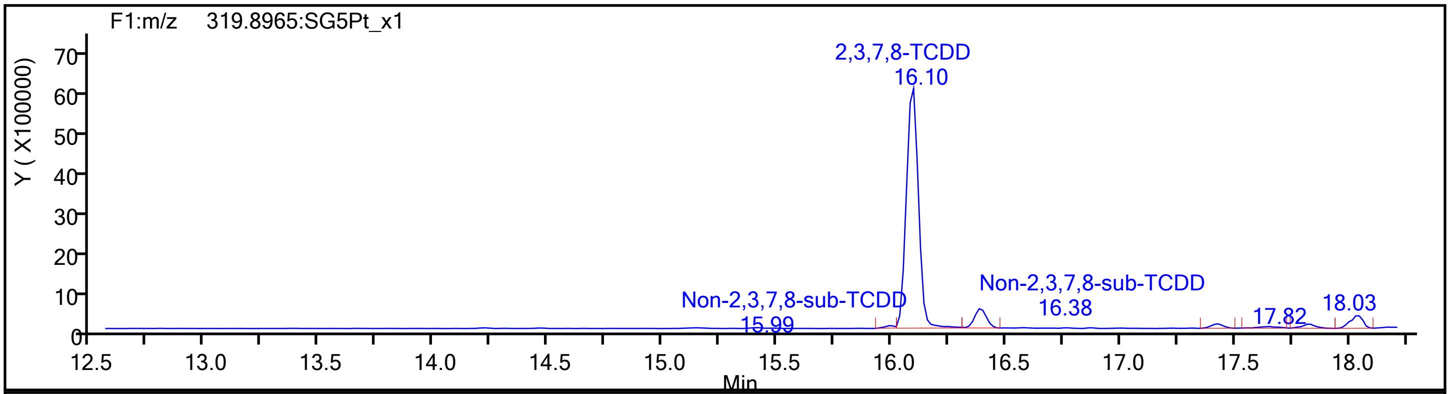

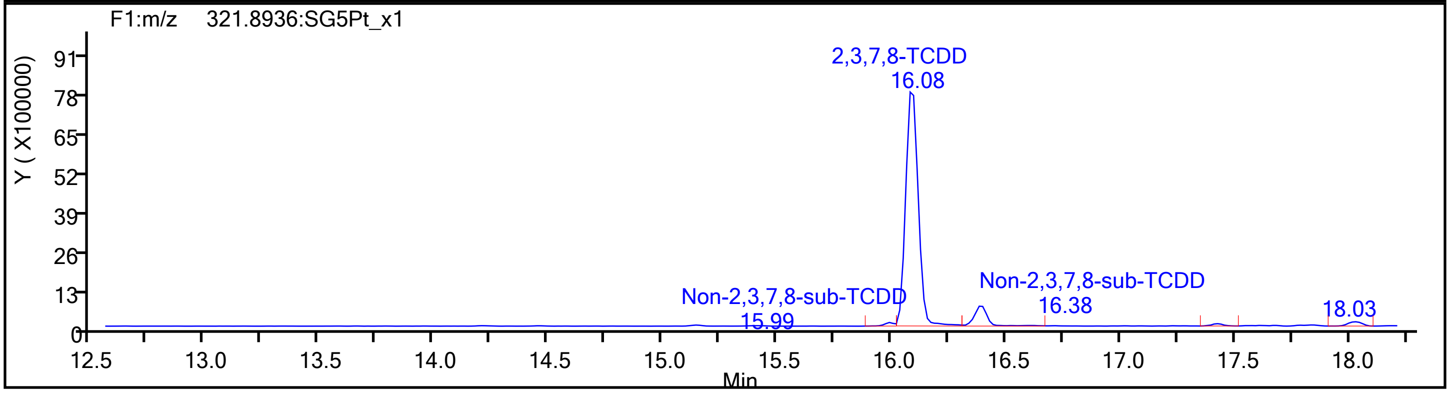

TCDD Standards

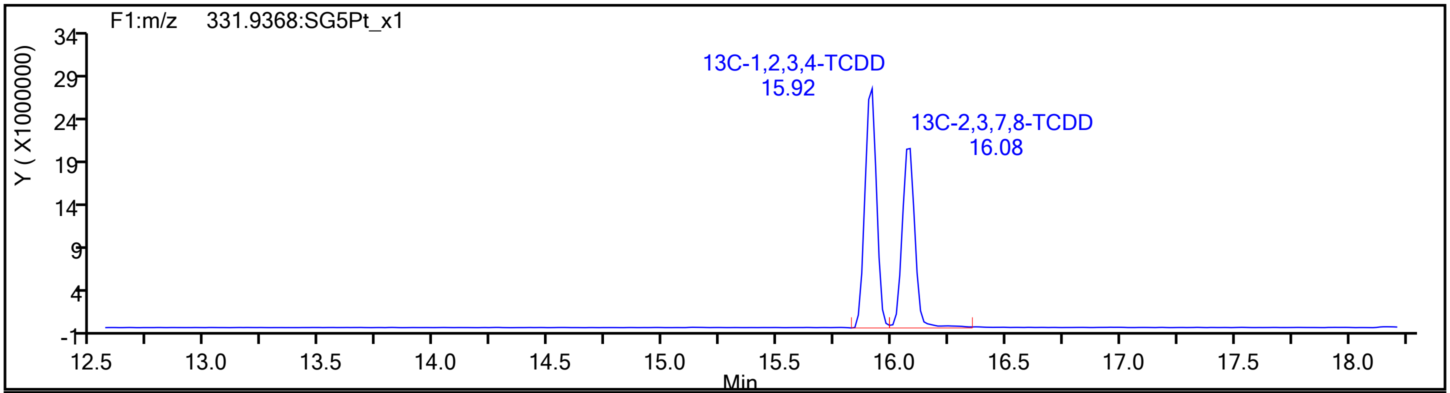

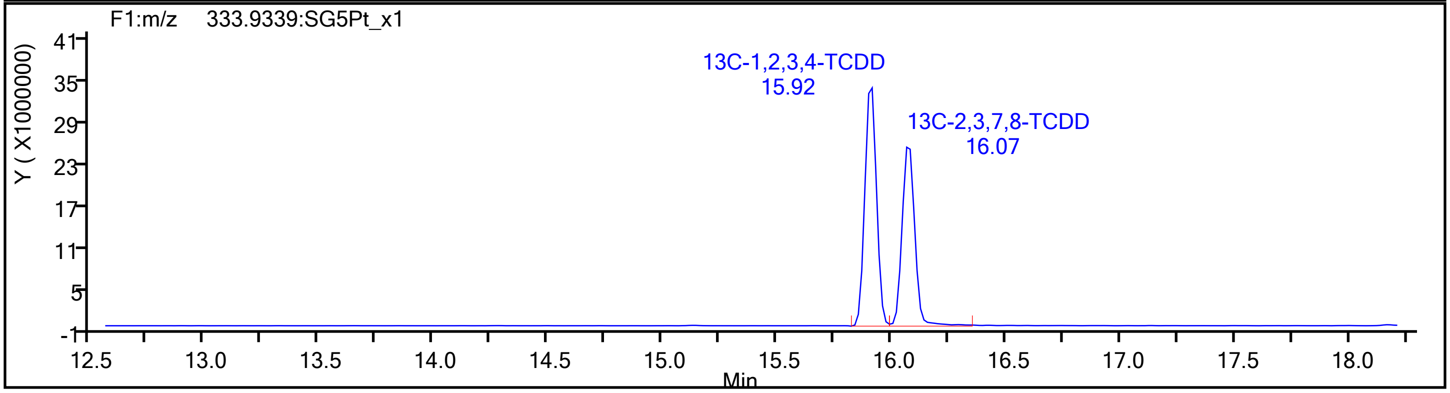

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Eurofins TestAmerica, Sacramento

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Operator ID: ALM
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Limit Group: HR - 1613B - ICAL
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Worklist#: 420482
Sample Line#: 17
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37Cl4-TCDD

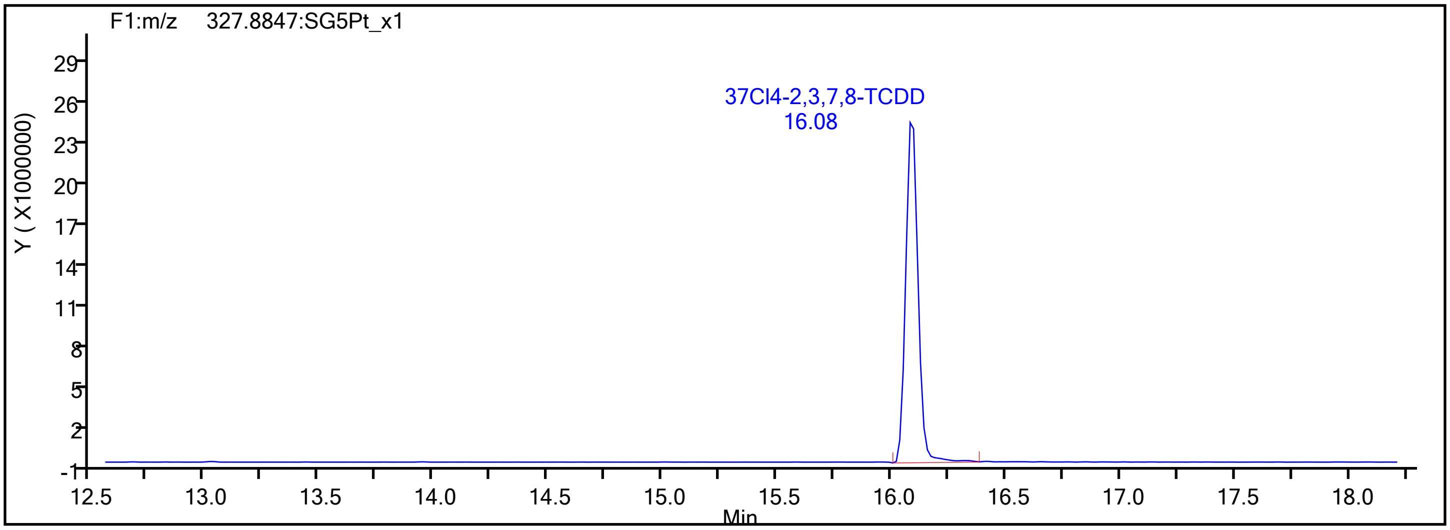

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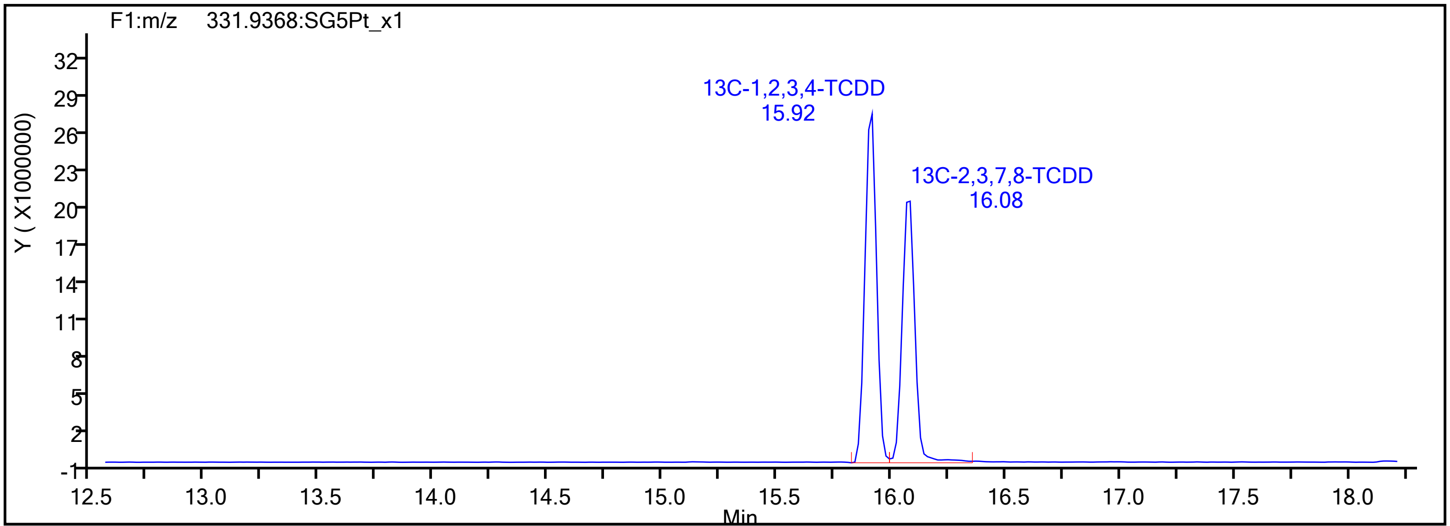

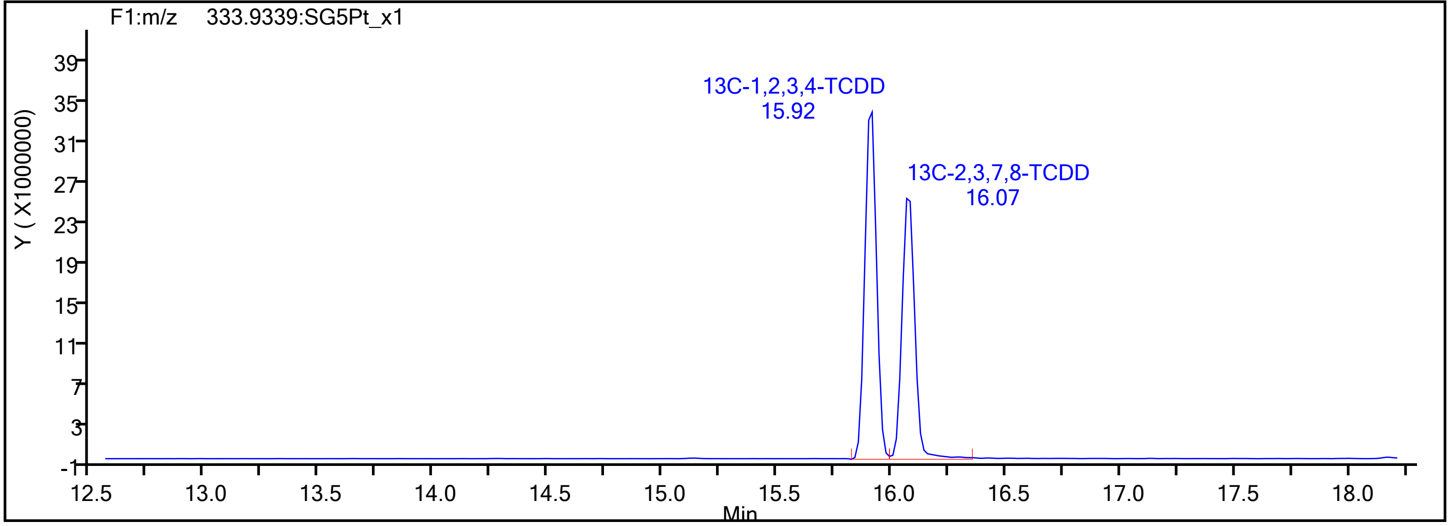

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Eurofins TestAmerica, Sacramento

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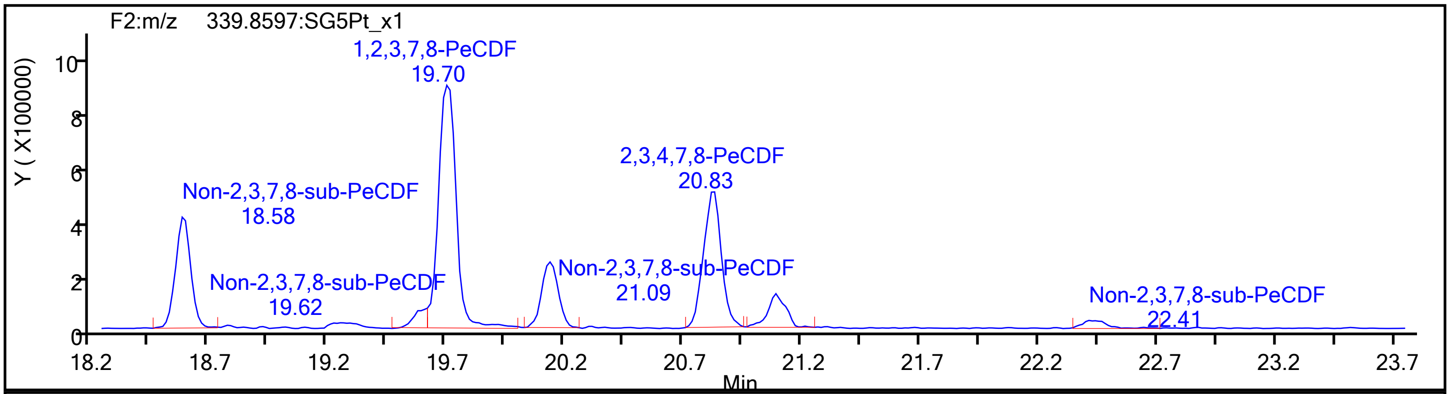

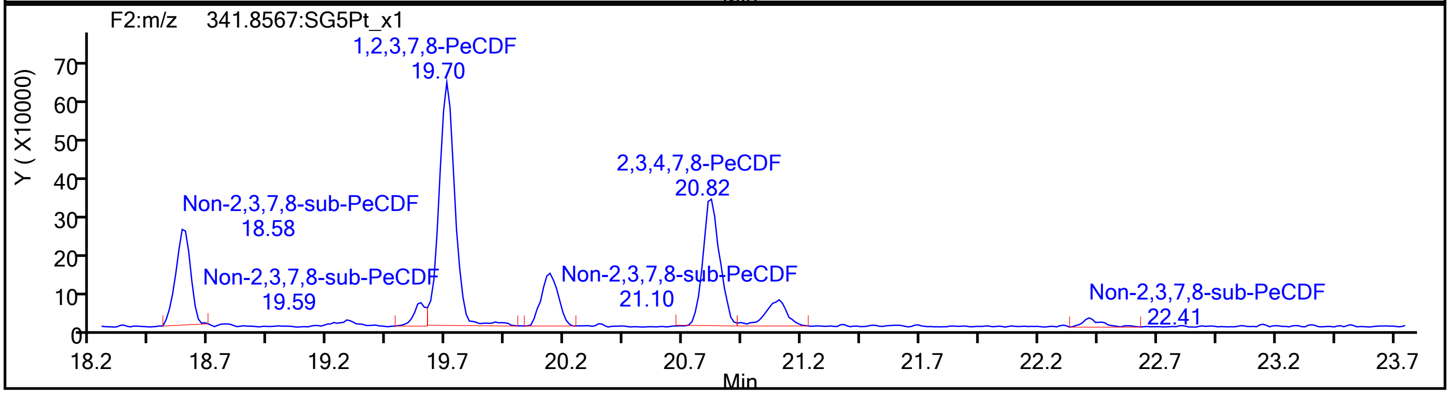

PeCDF Standards

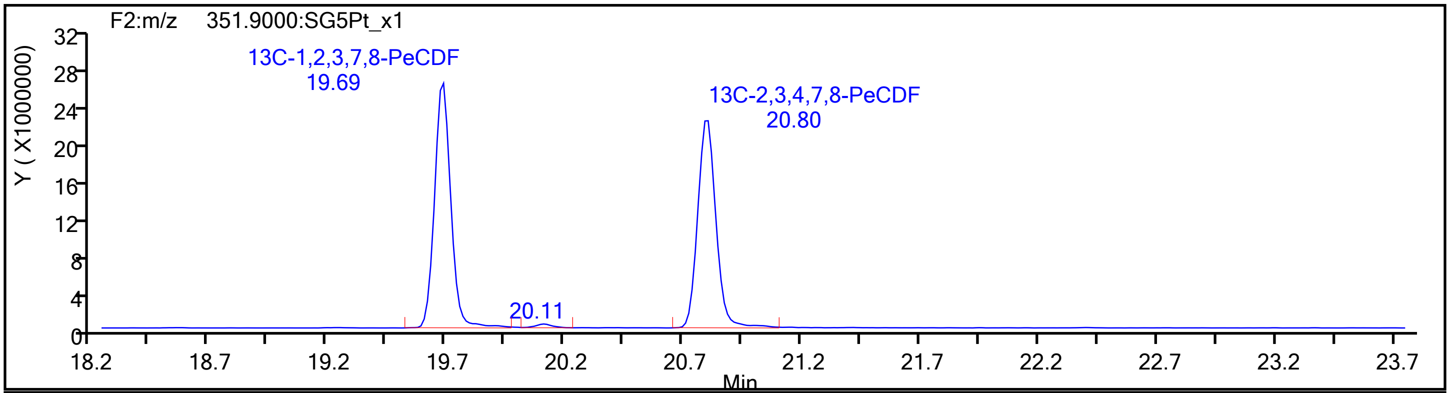

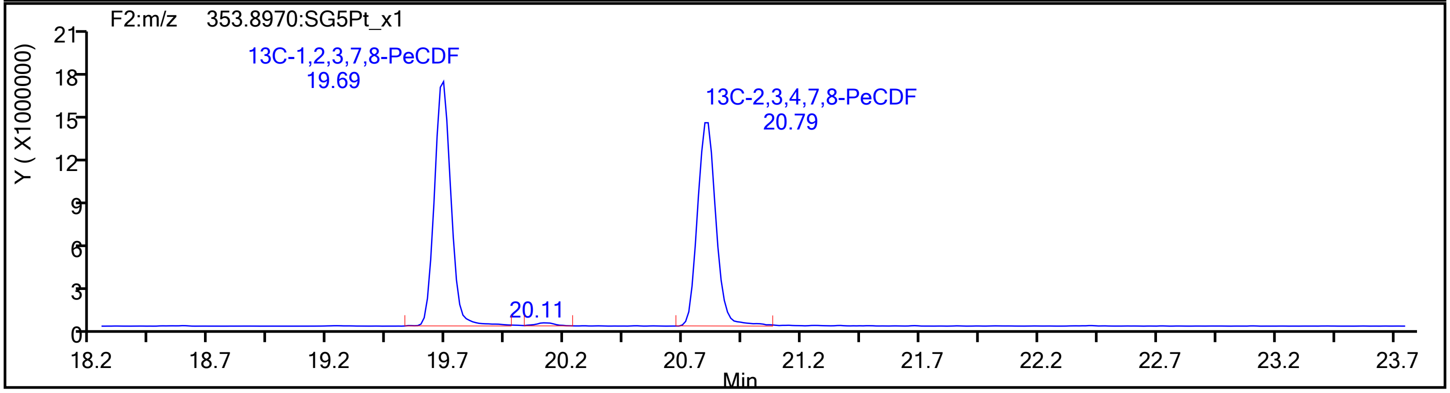

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Eurofins TestAmerica, Sacramento

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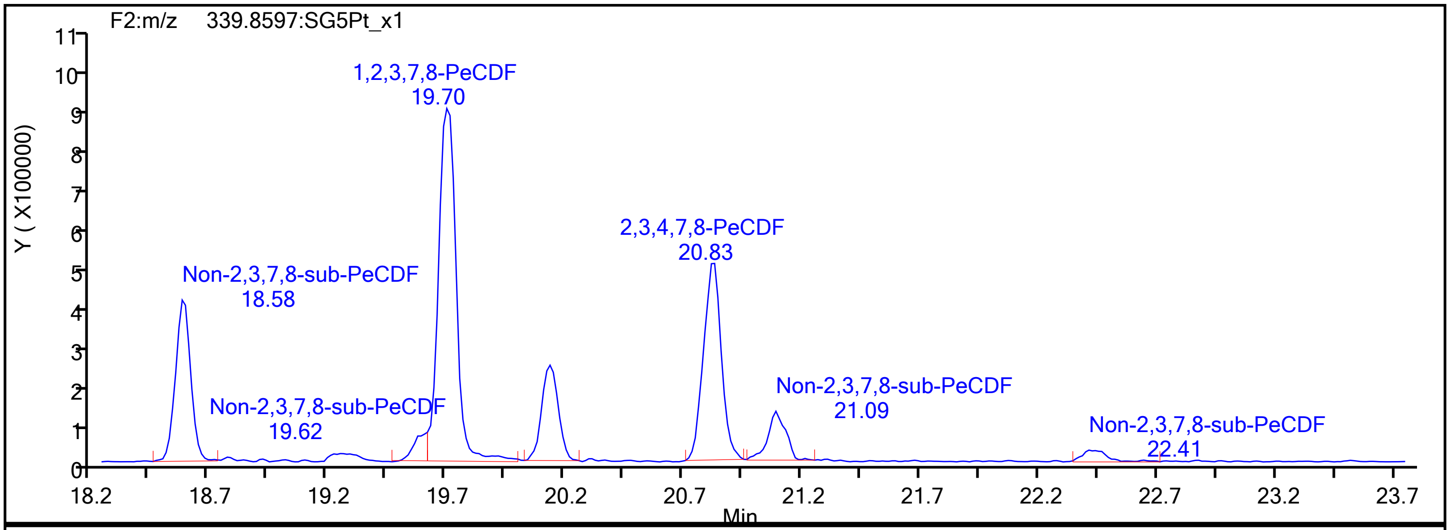

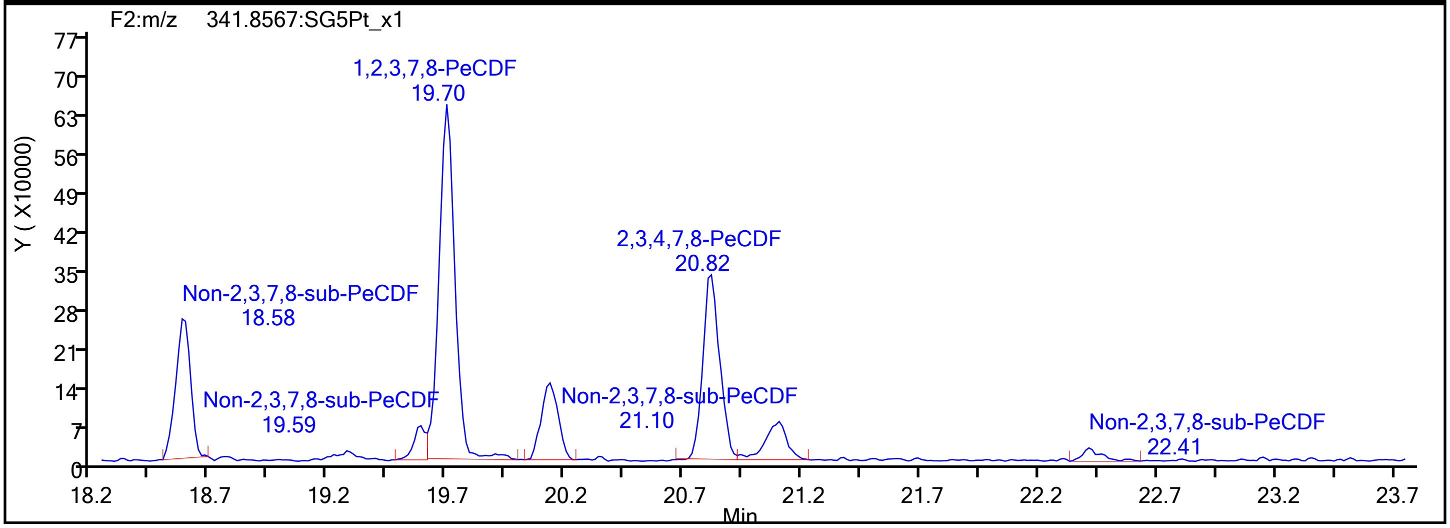

PeCDF Interference Mass

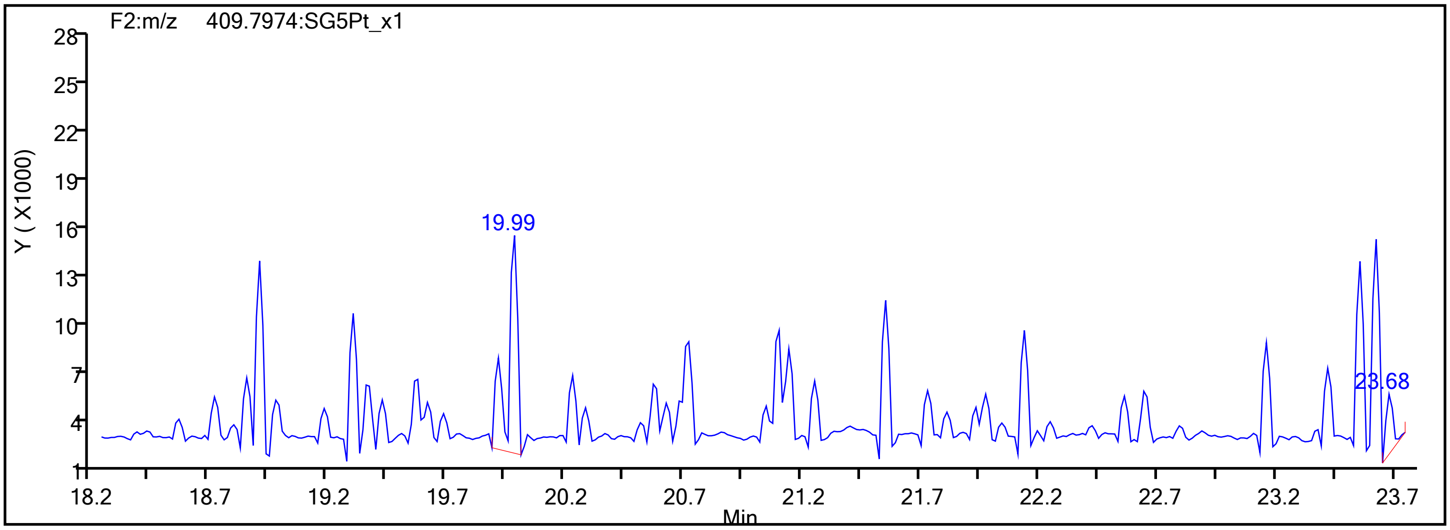

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Eurofins TestAmerica, Sacramento

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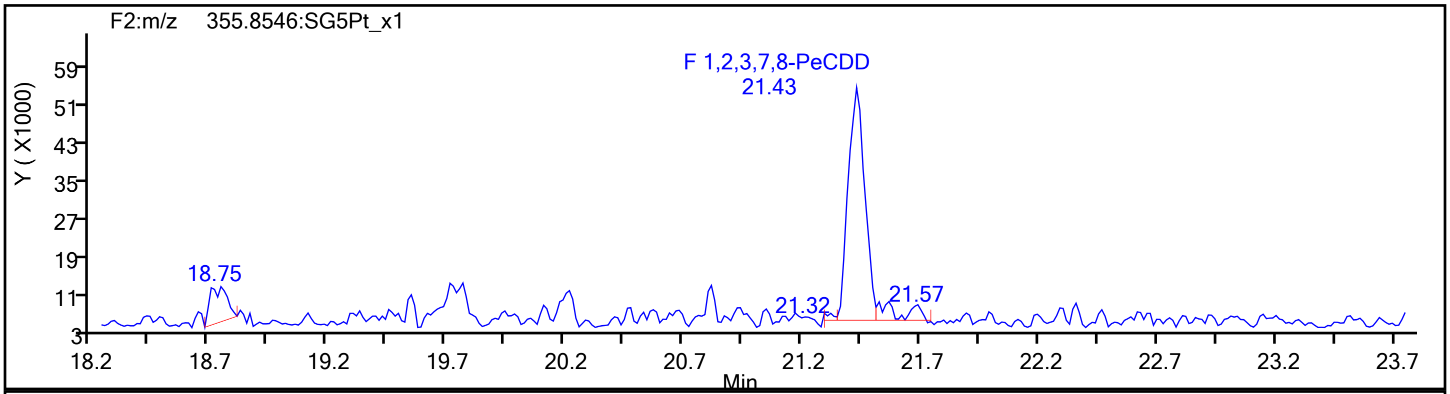

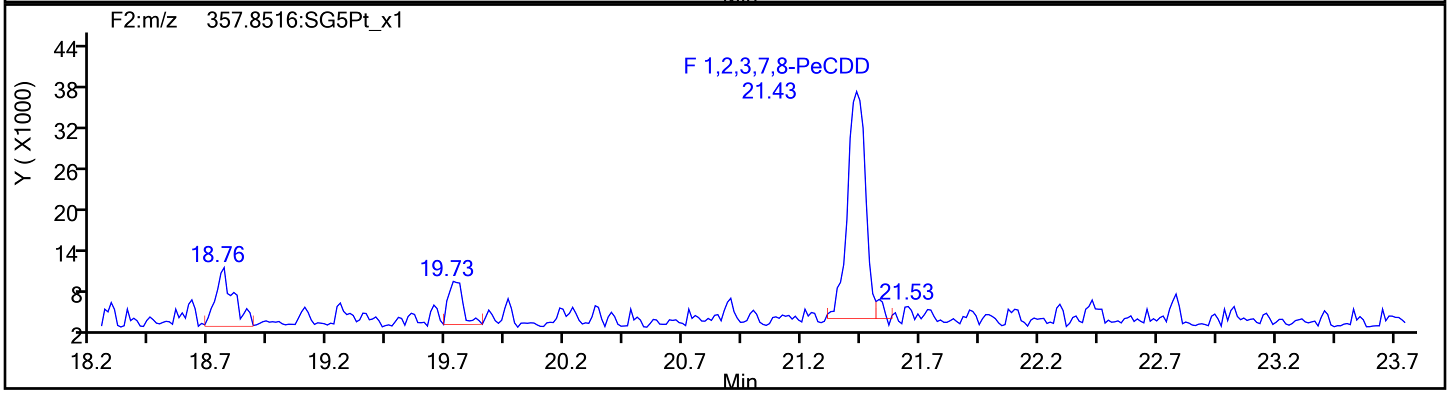

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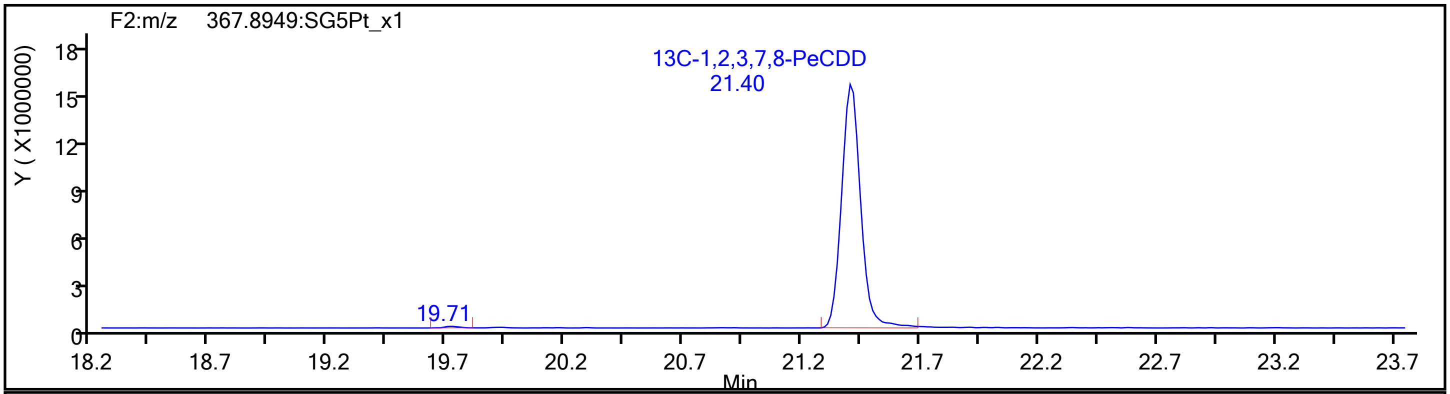

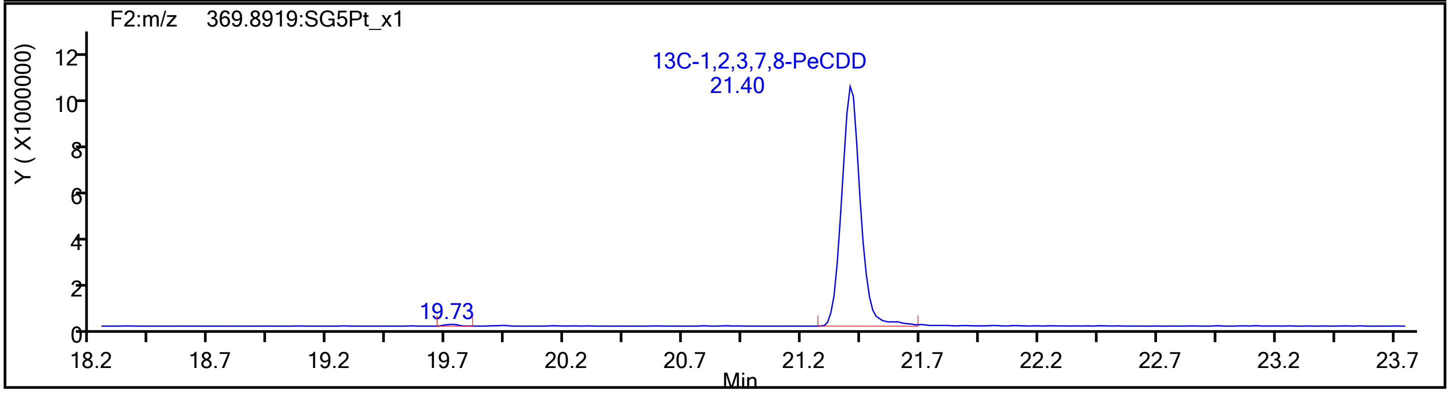

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Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

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HxCDF

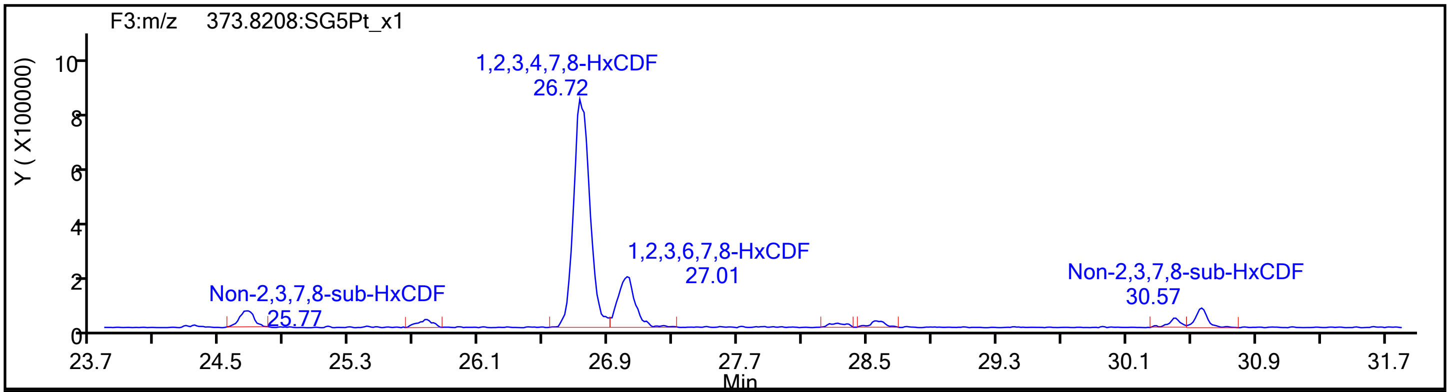

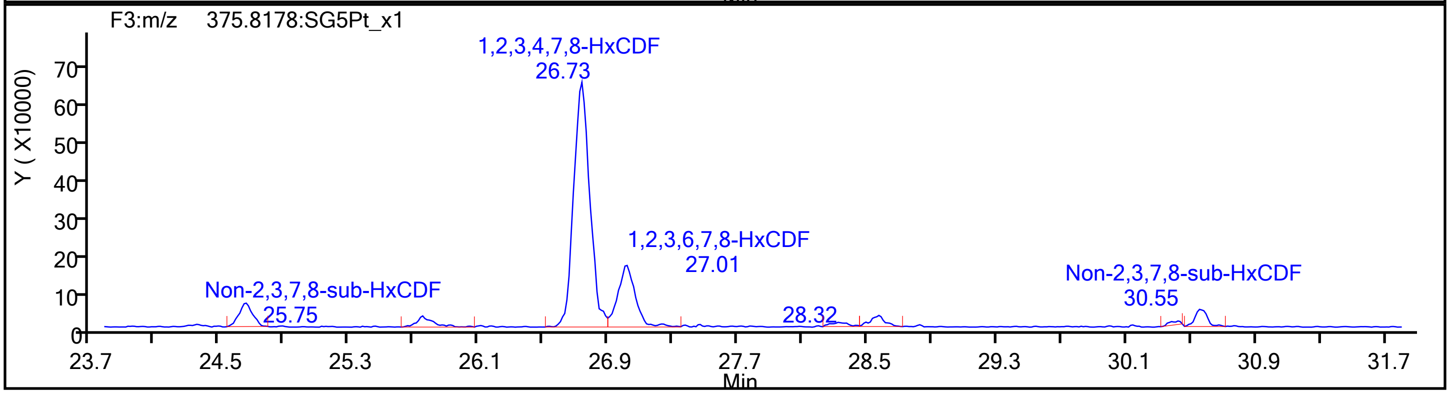

HxCDF Standards

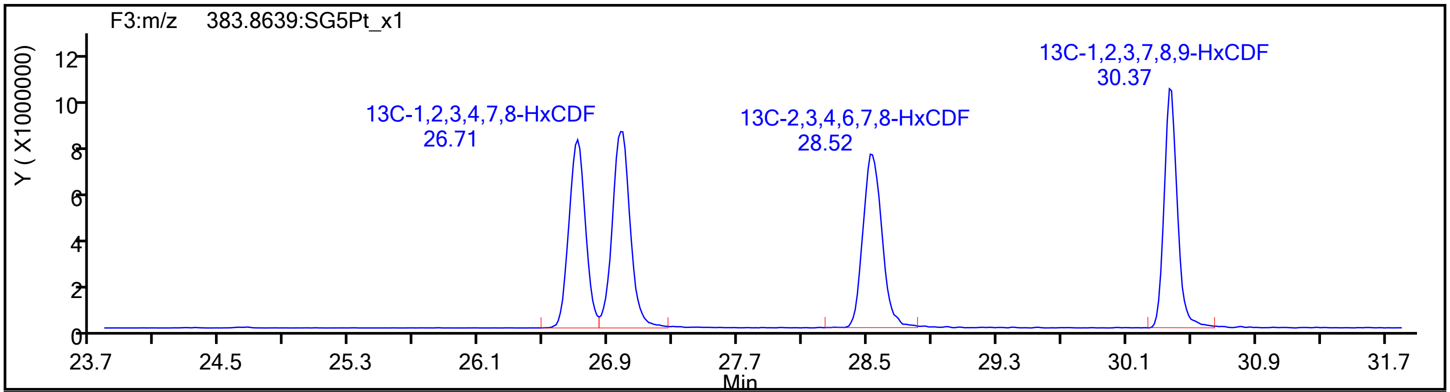

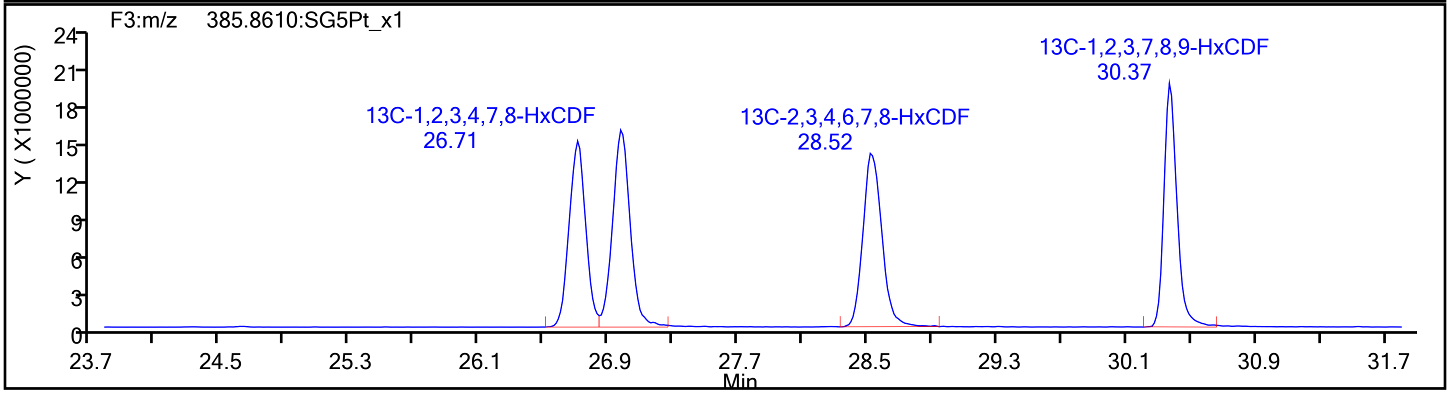

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Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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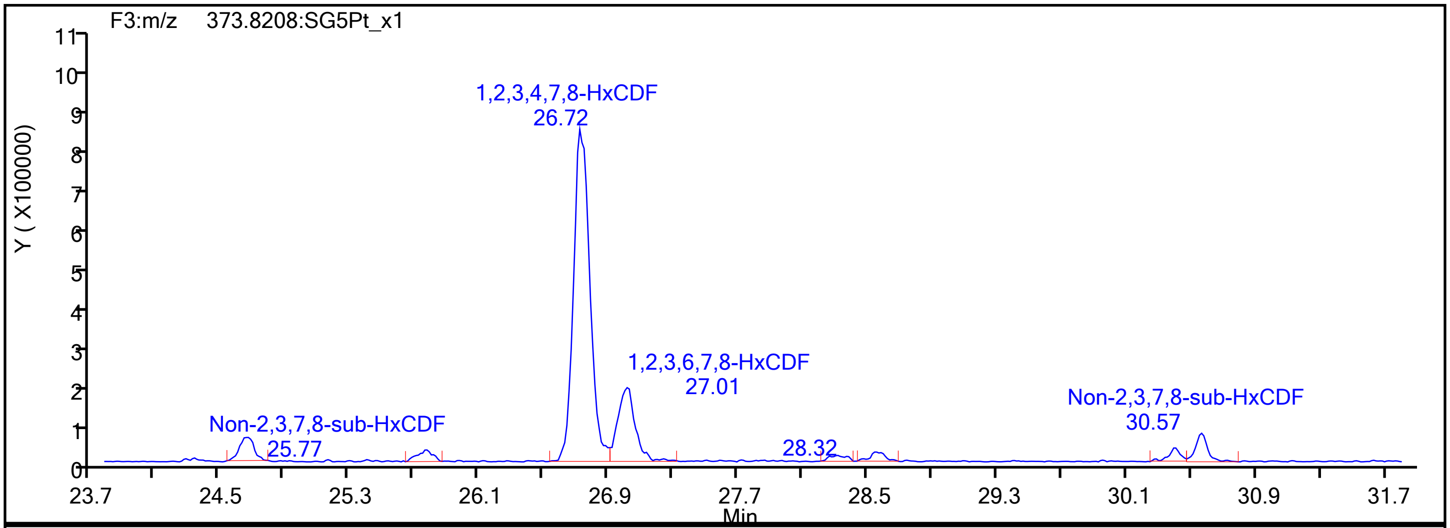

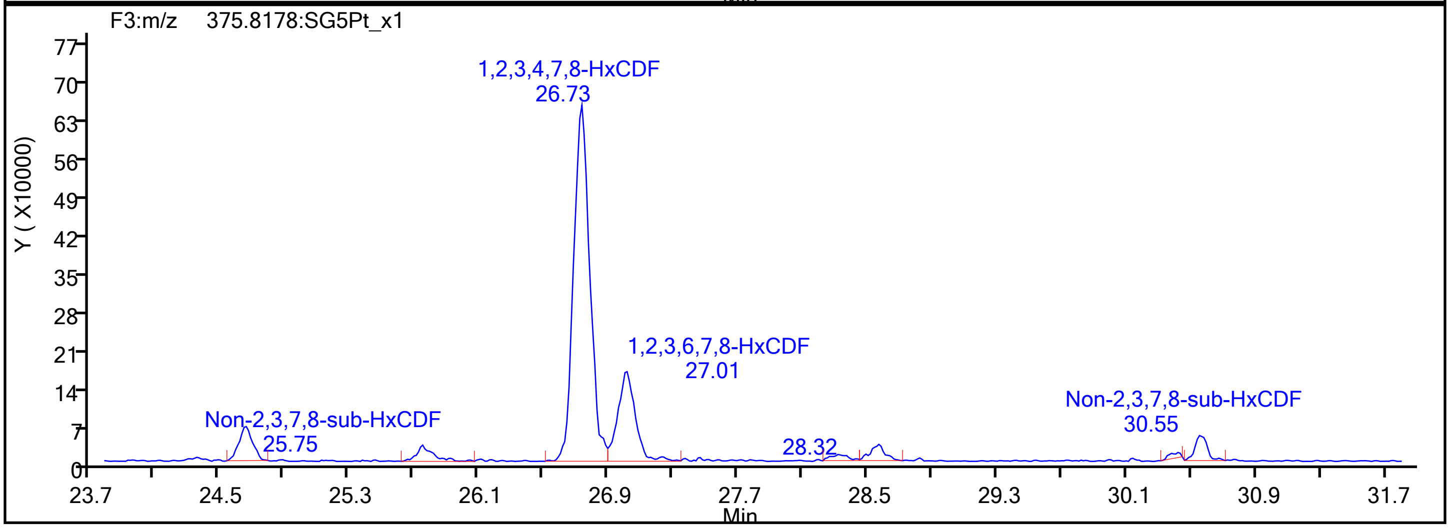

HxCDF Interference Mass

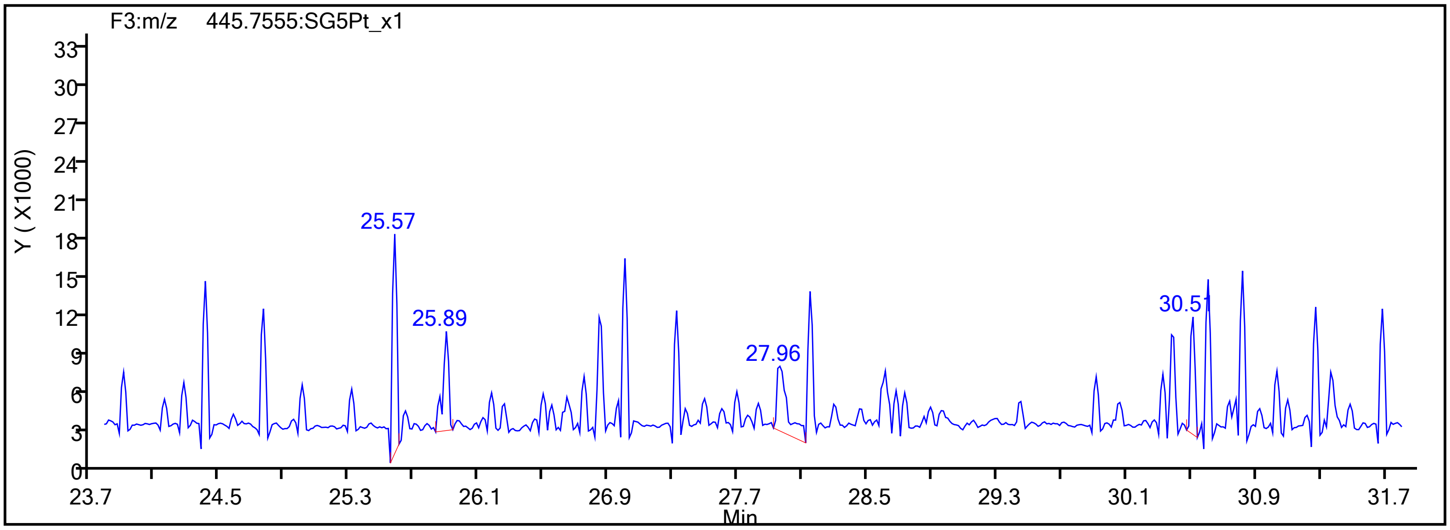

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-2

Worklist#: 420482 Sample Line#: 17

Column Type: Column Dia:

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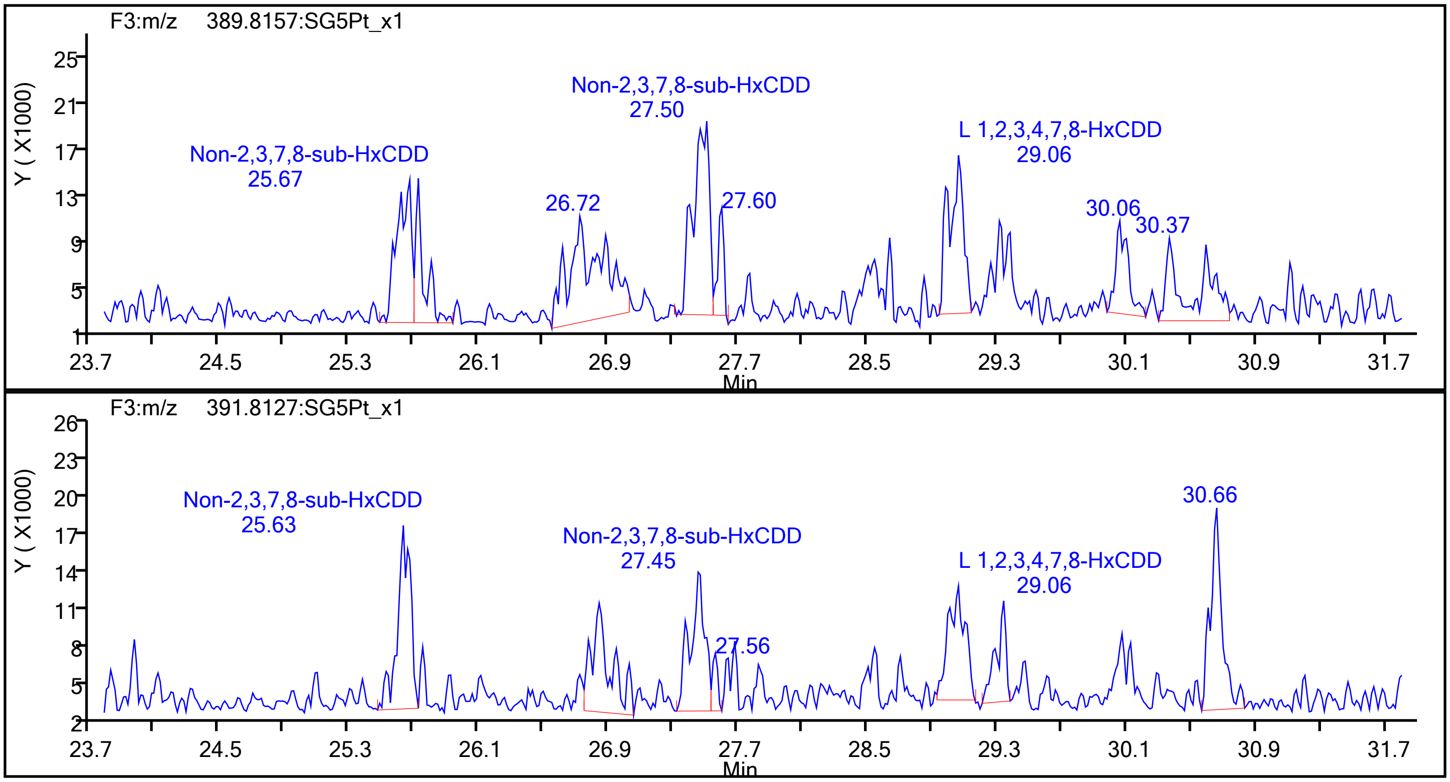

HxCDD Standards

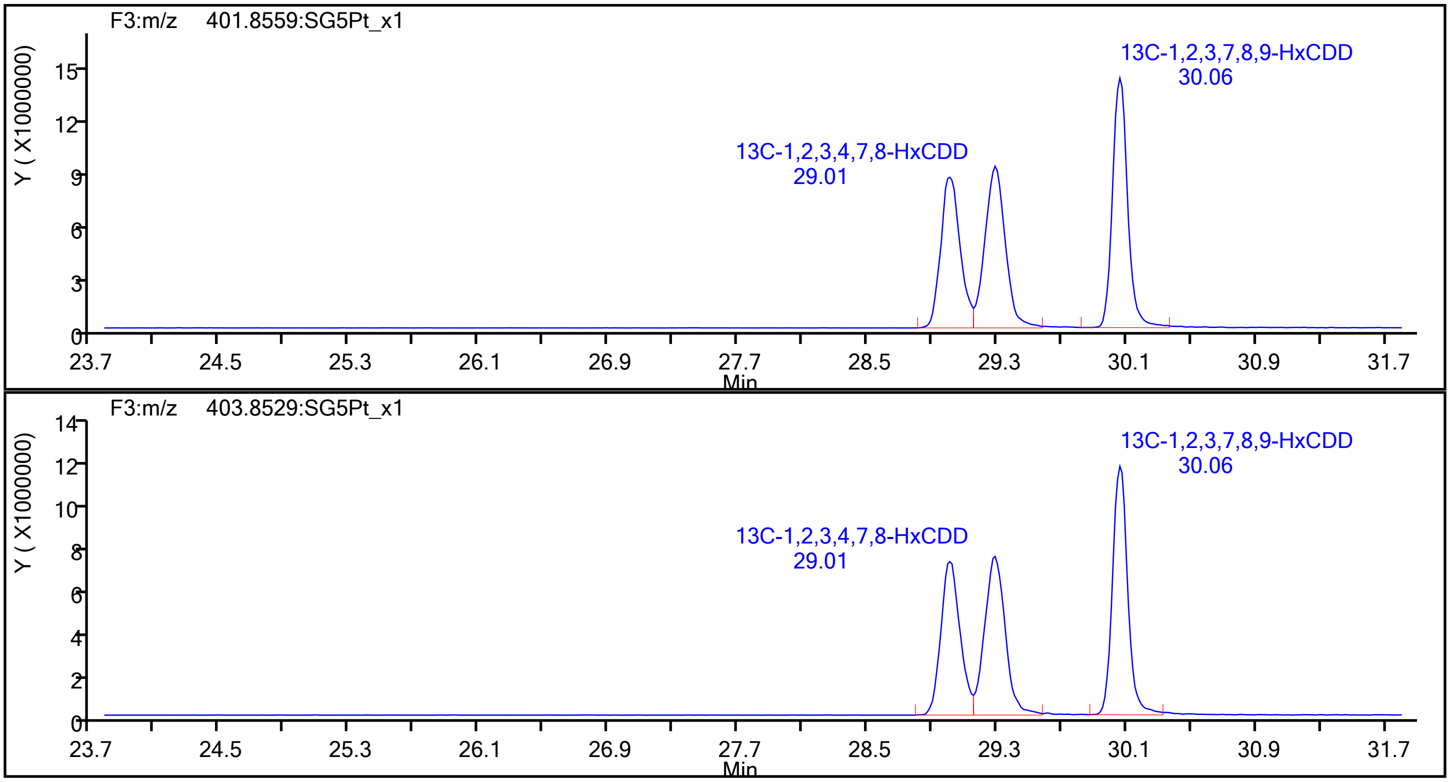

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Eurofins TestAmerica, Sacramento

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HpCDF

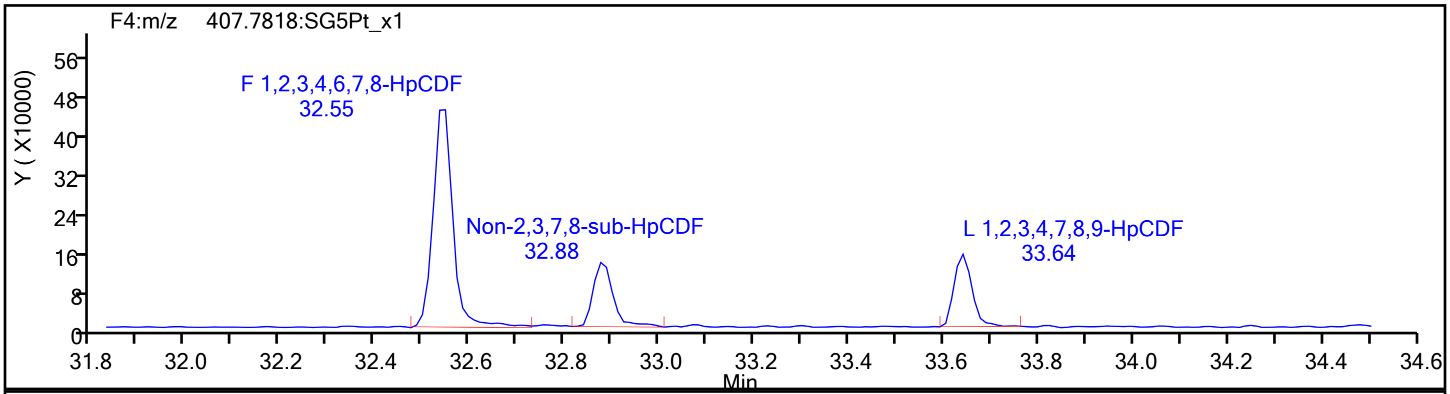

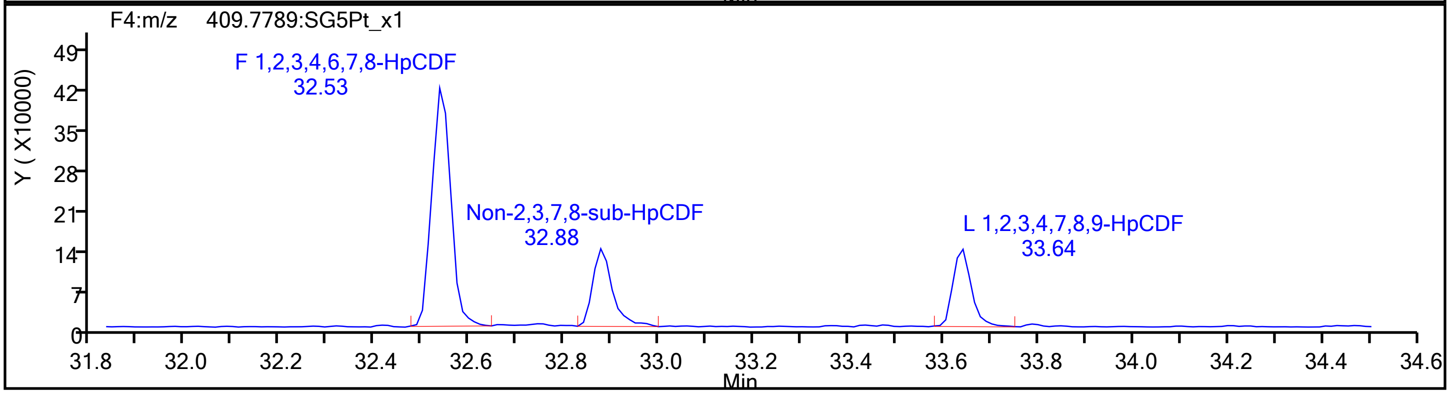

HpCDF Standards

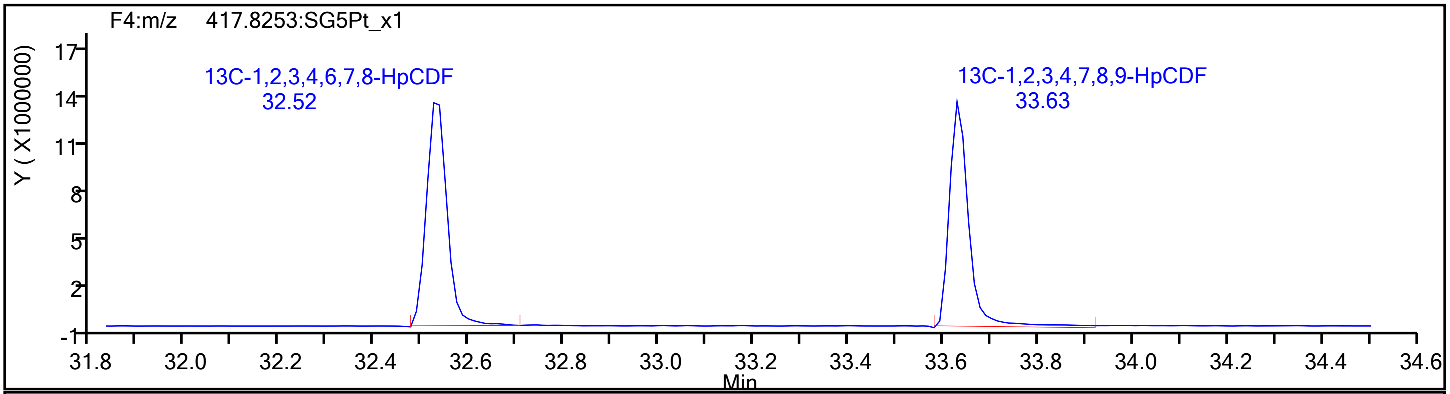

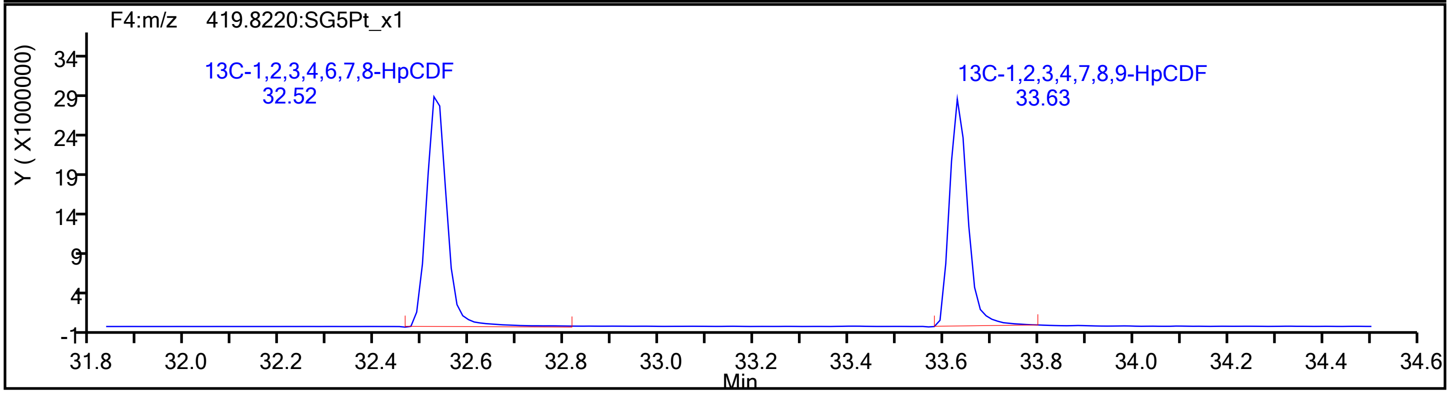

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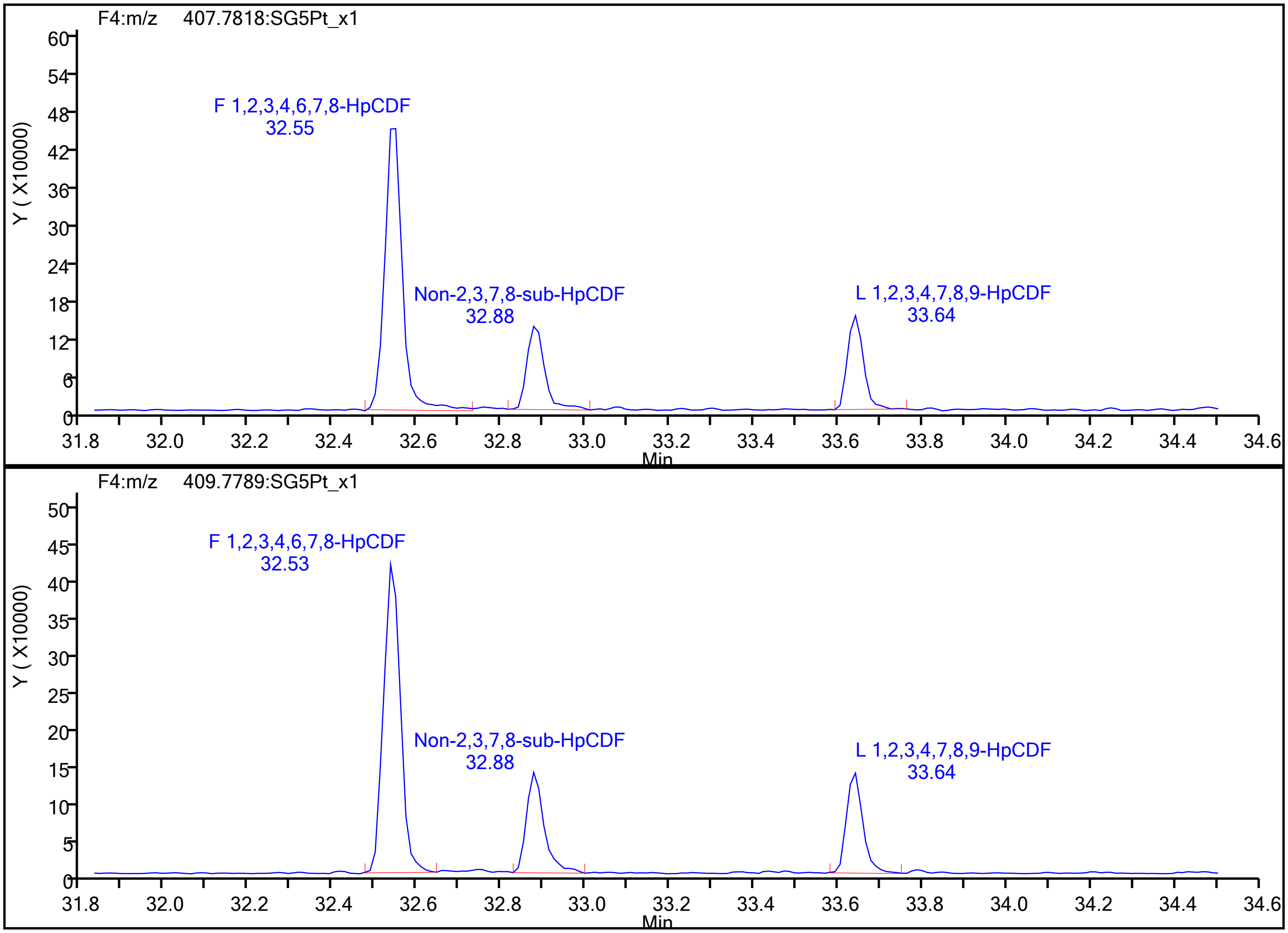

HpCDF Interference Mass

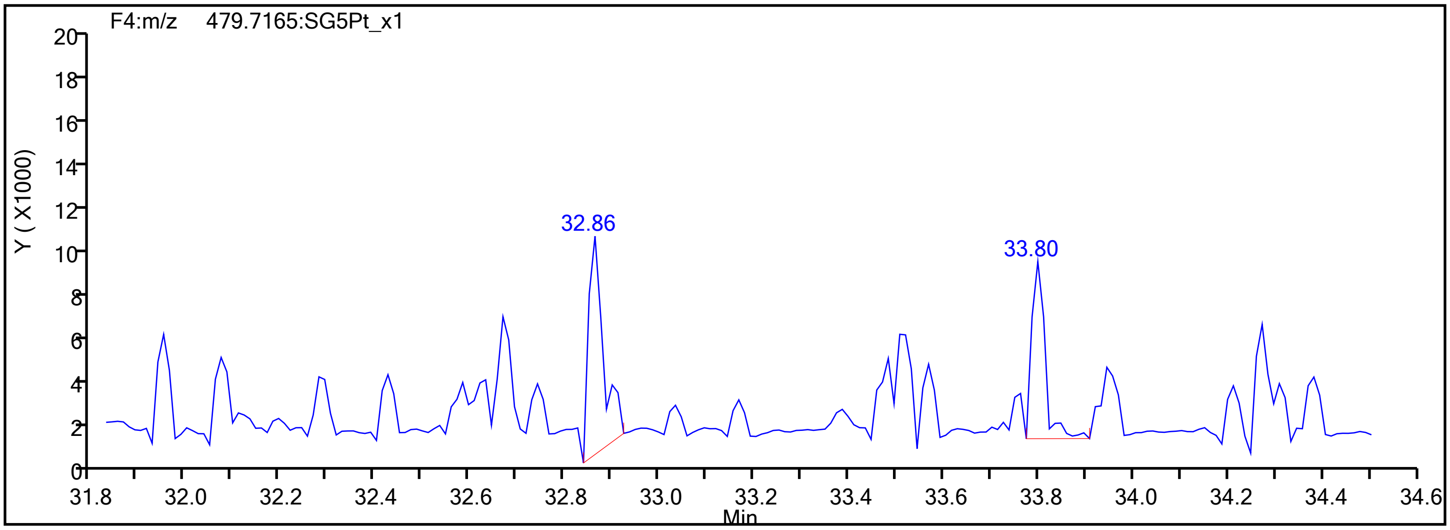

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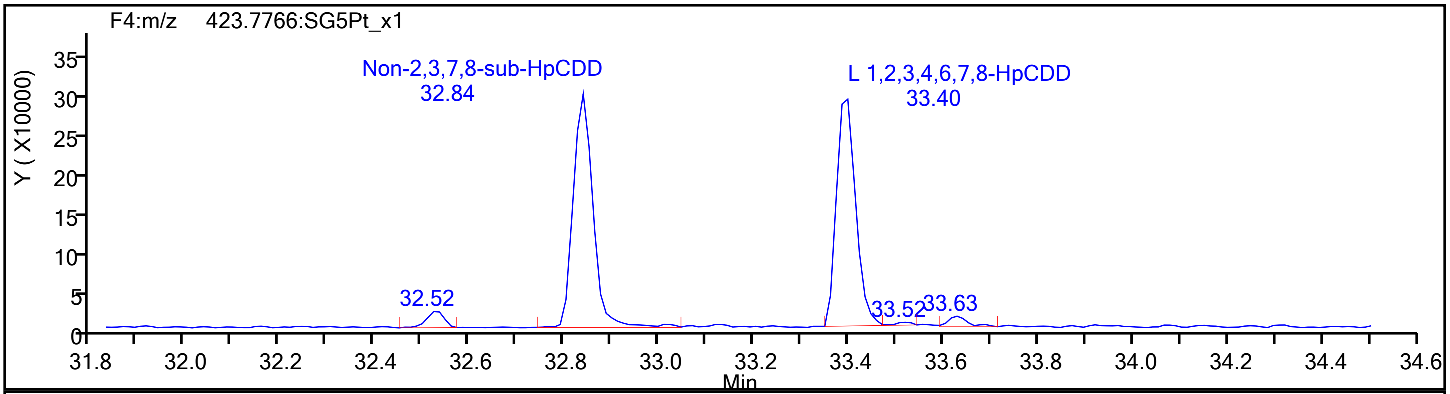

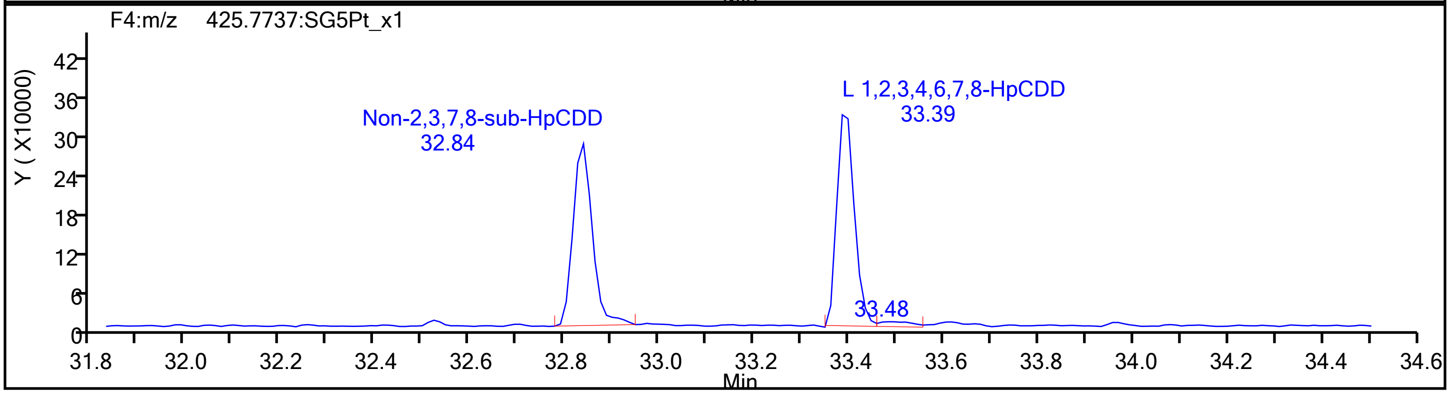

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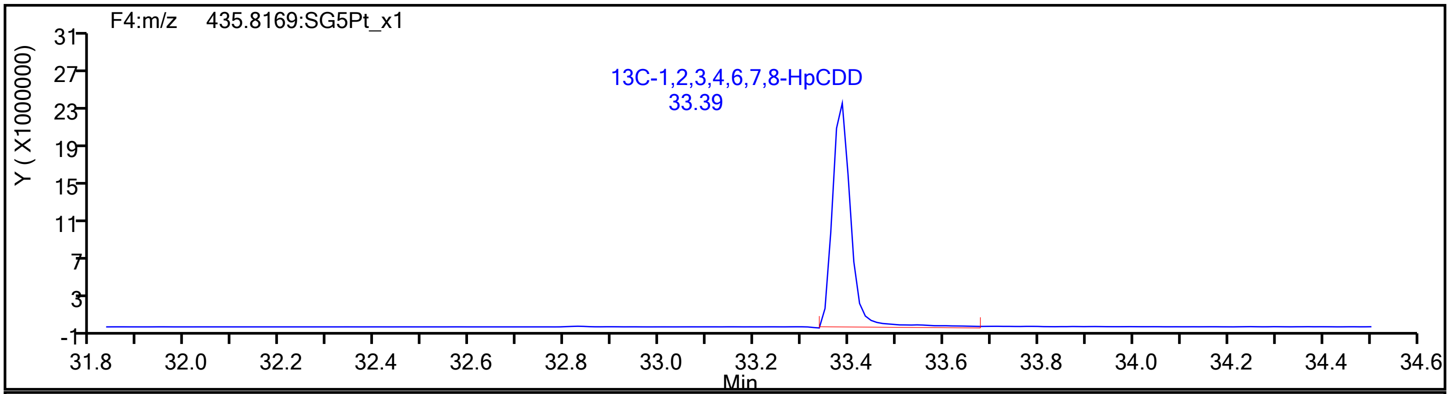

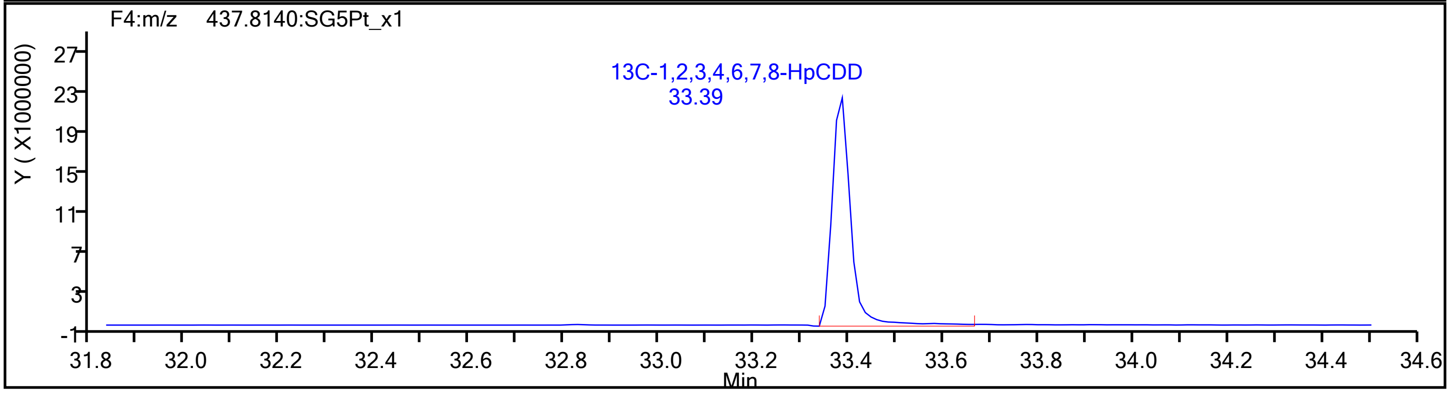

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Eurofins TestAmerica, Sacramento

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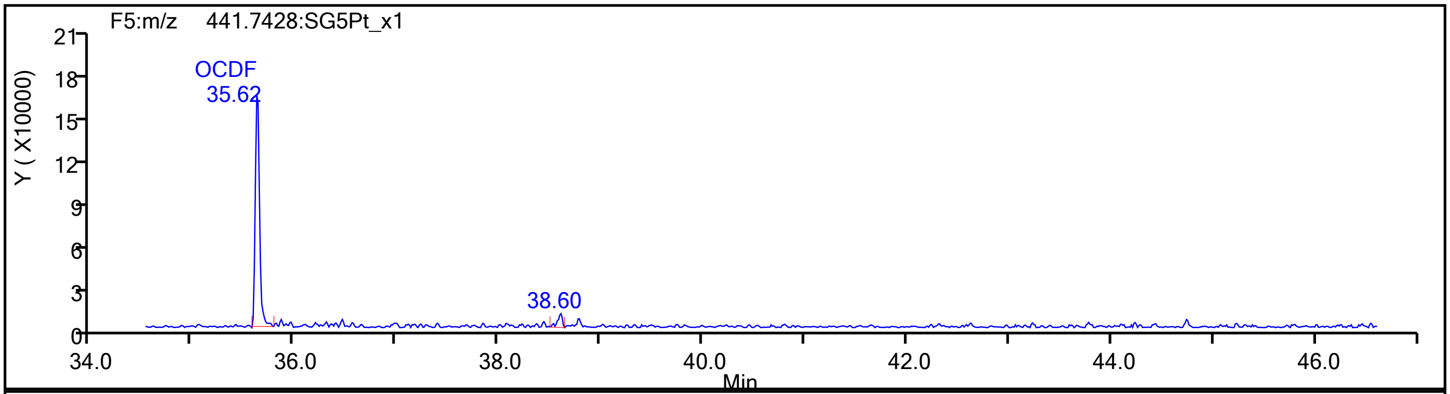

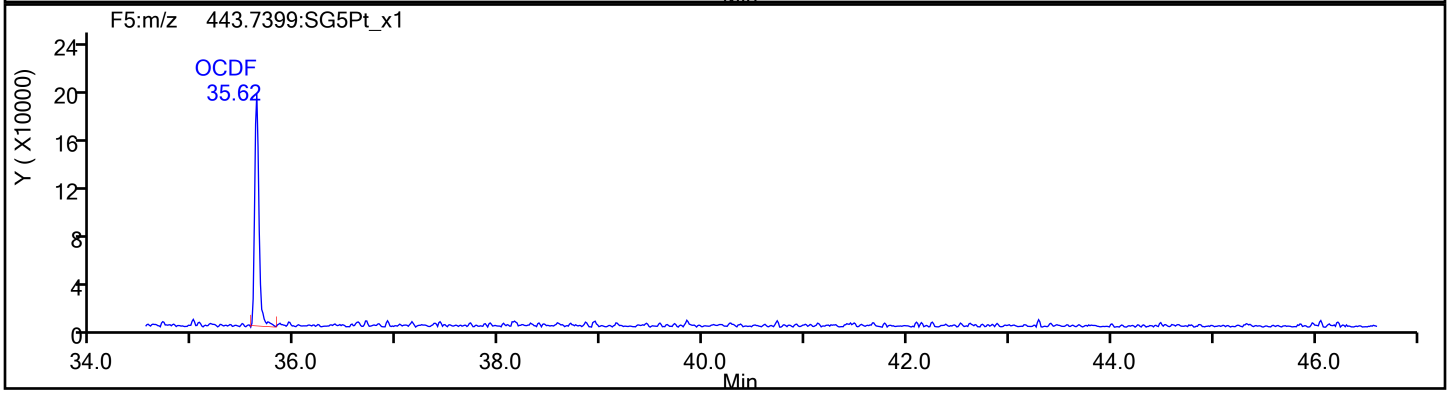

OCDF Standards

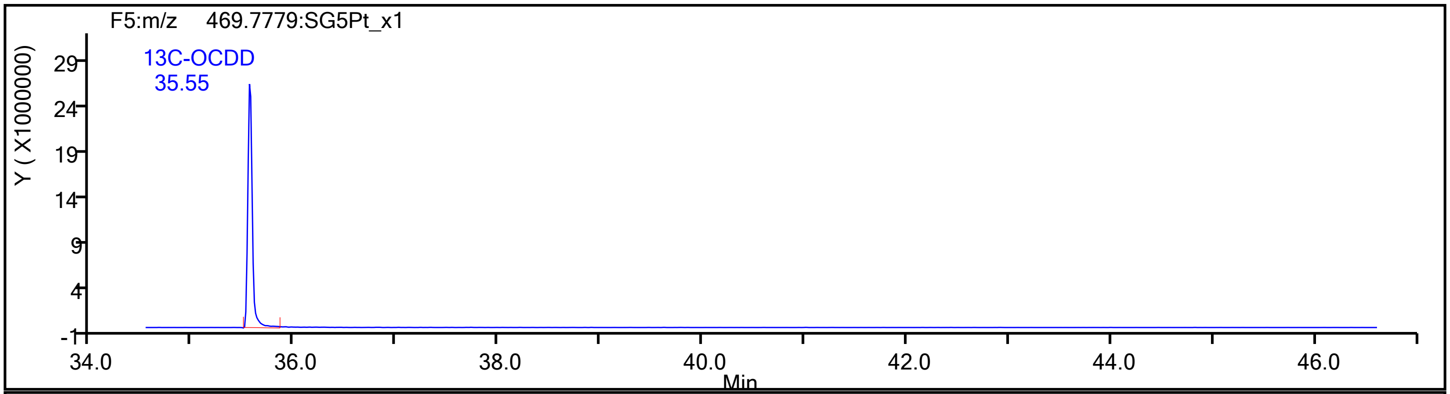

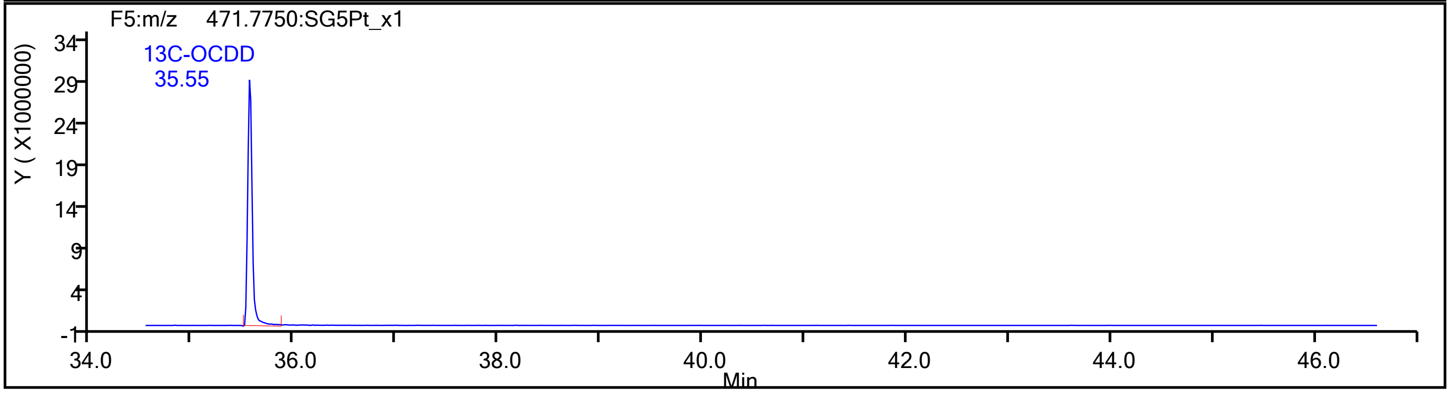

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Eurofins TestAmerica, Sacramento

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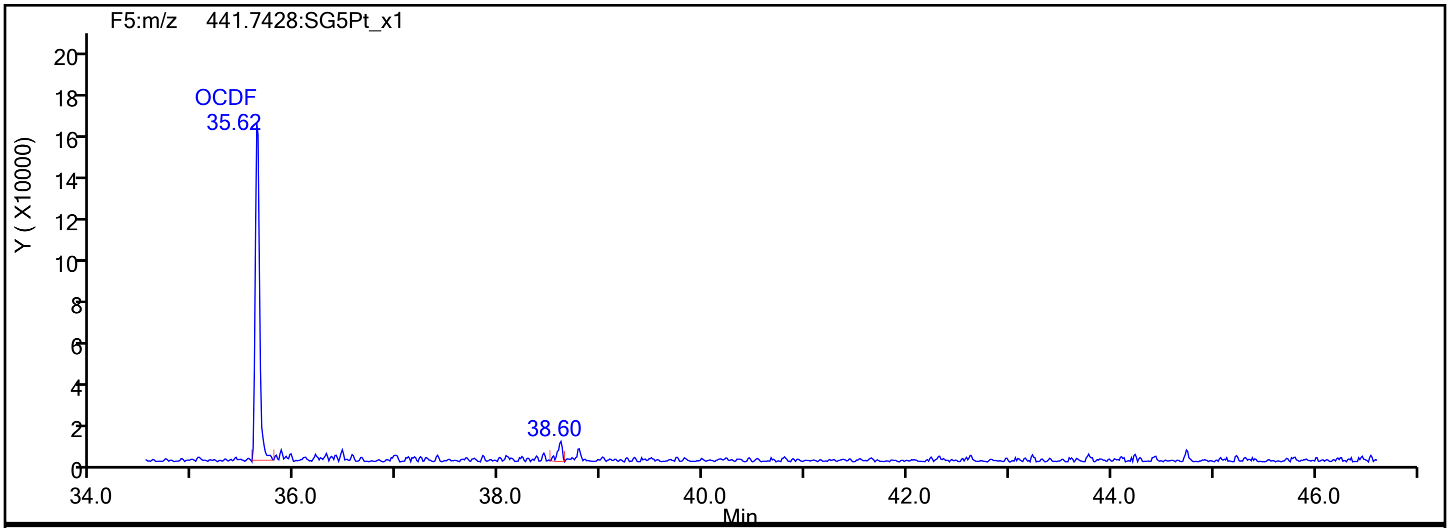

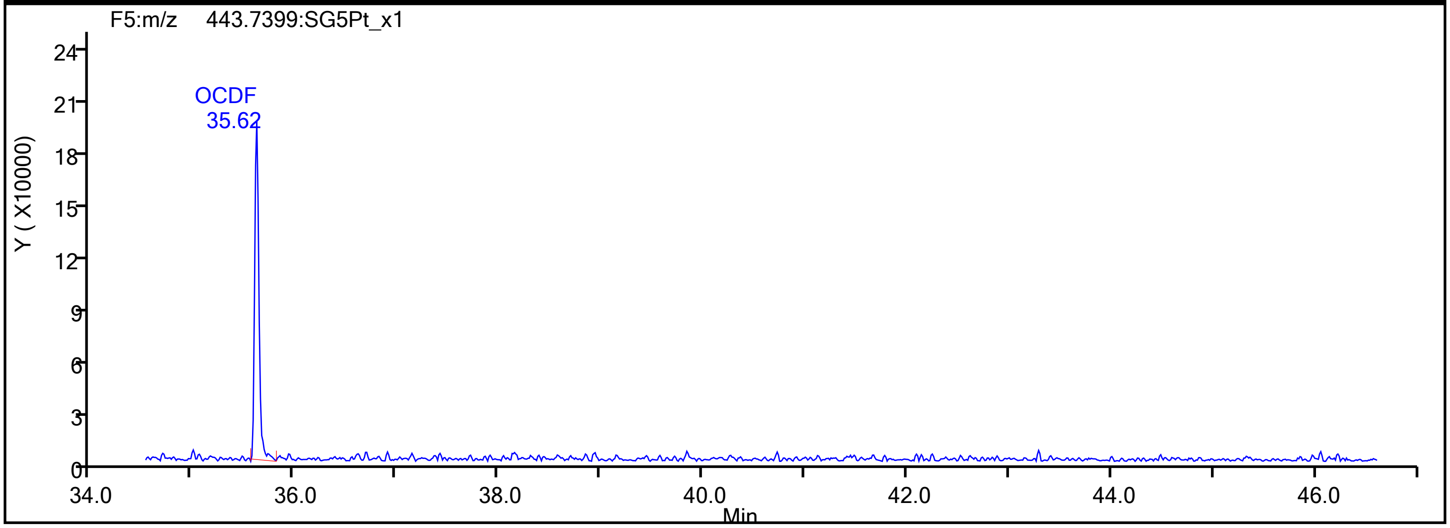

OCDF Interference Mass

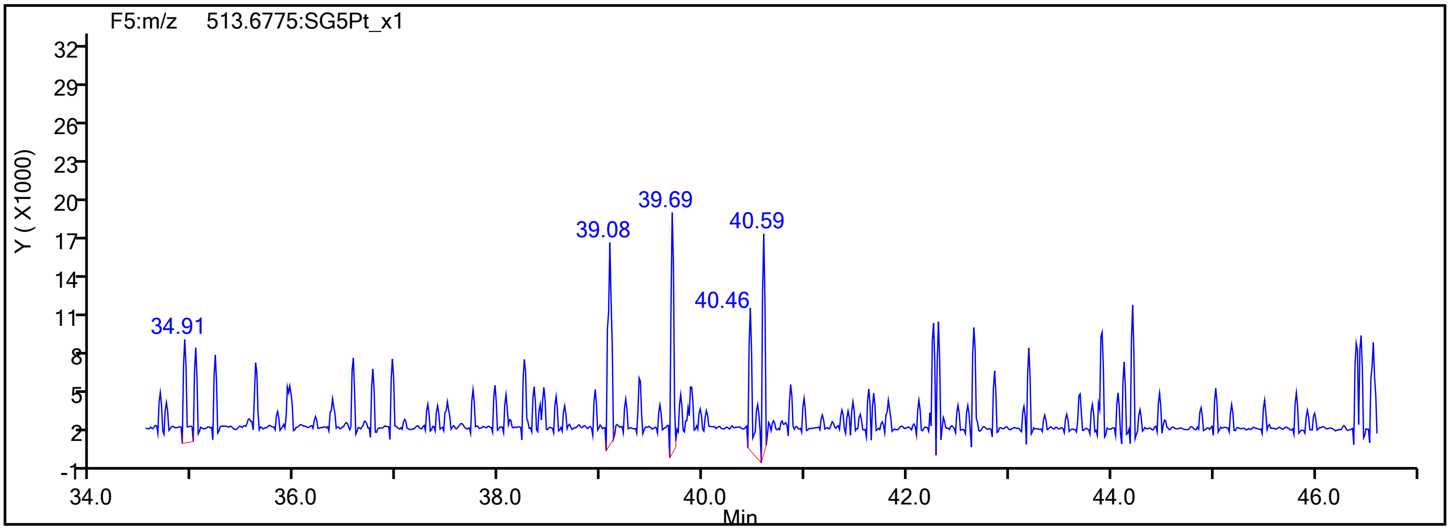

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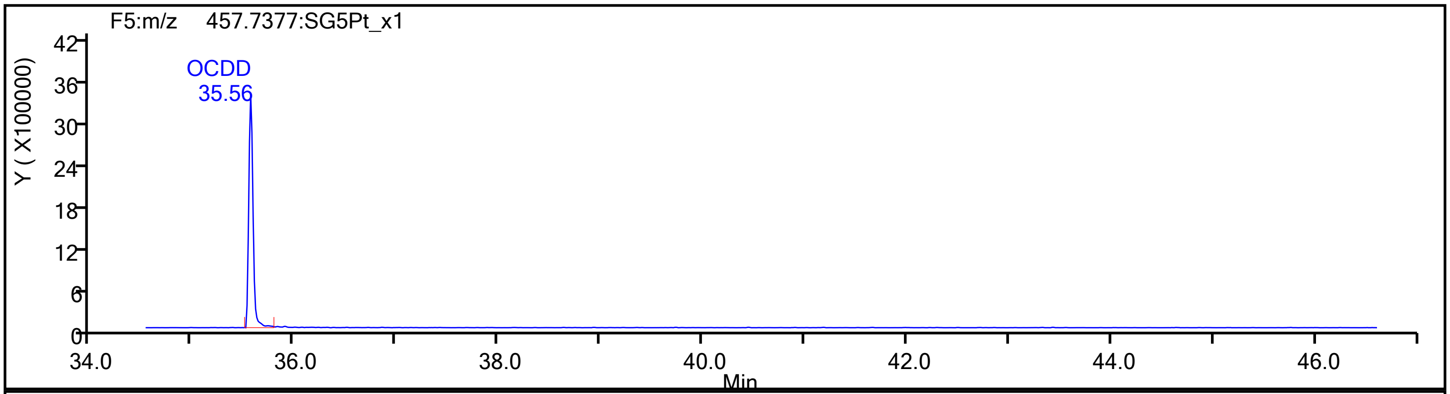

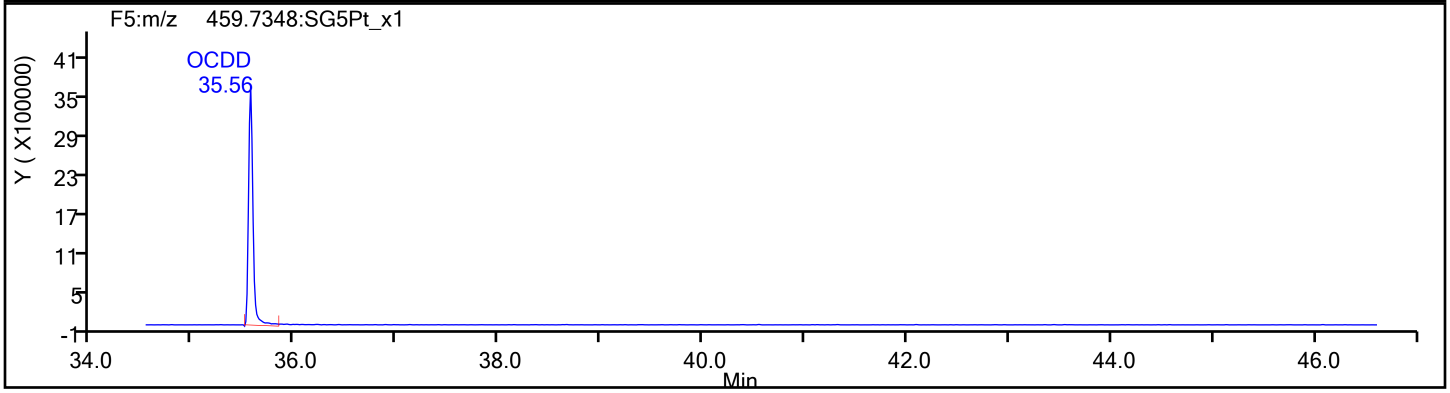

OCDD Standards

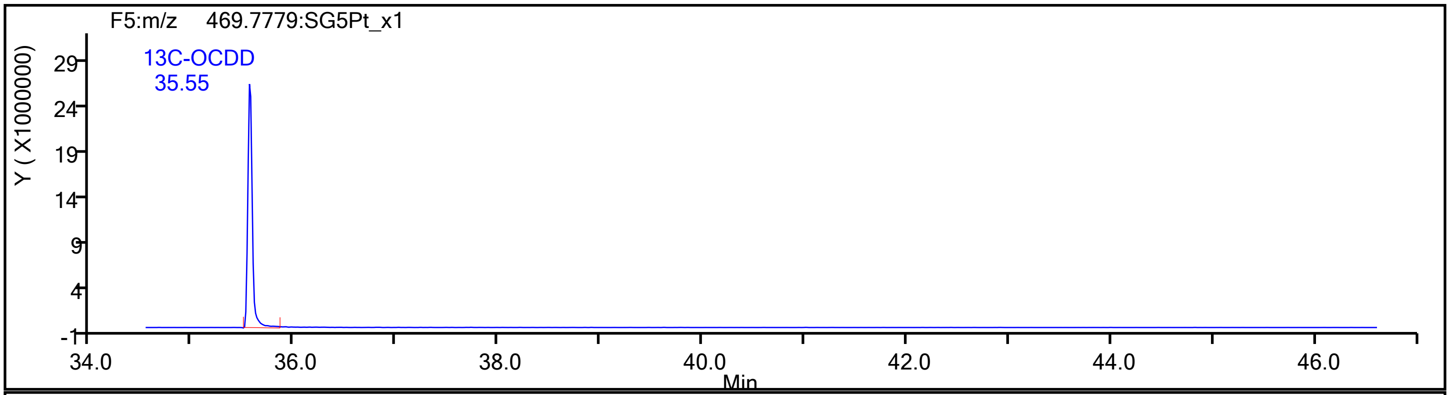

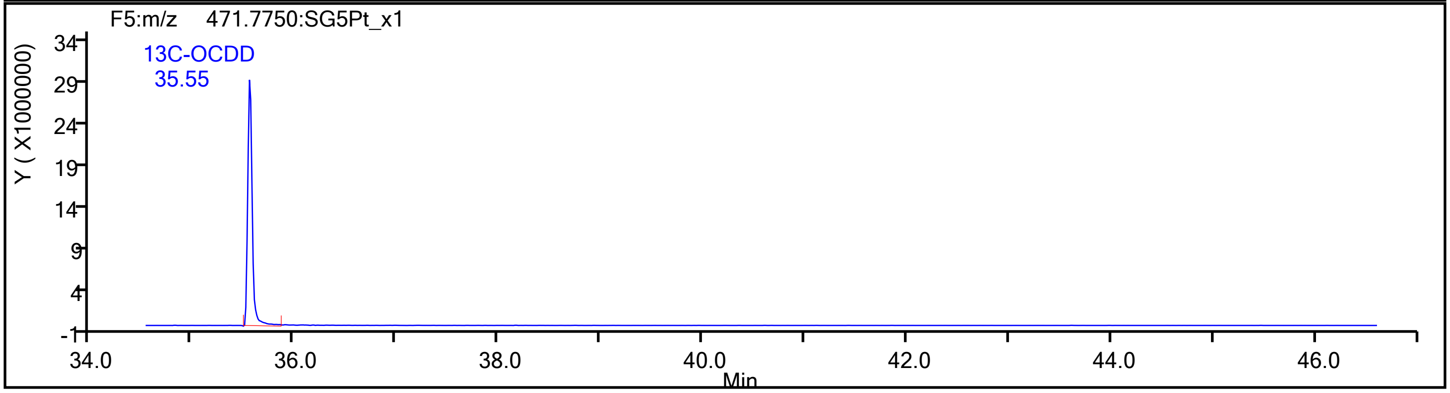

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d

Injection Date: 09-Oct-2020 08:13:51

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-2

Worklist#: 420482

Sample Line#: 17

Column Type:

Column Dia:

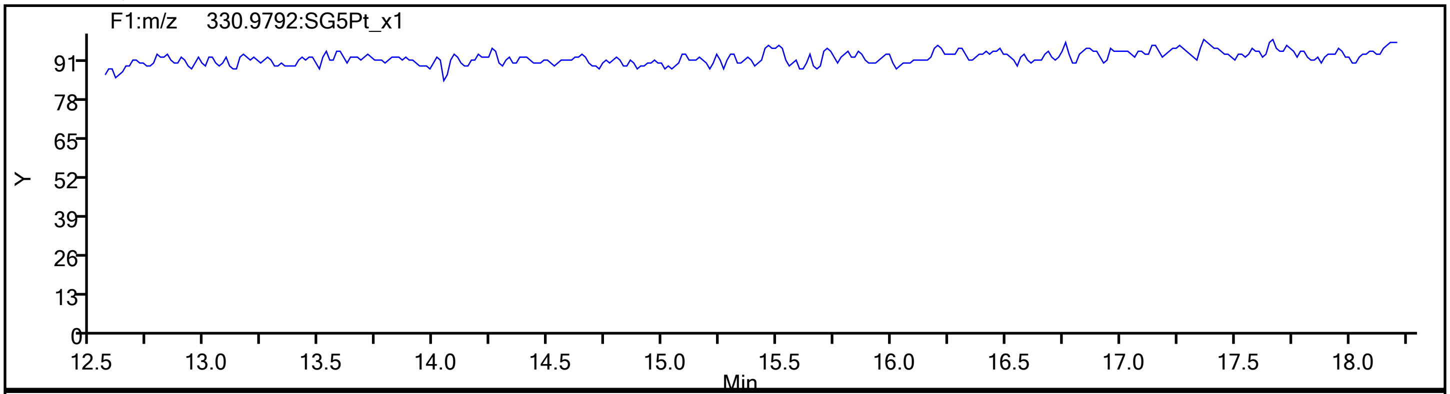

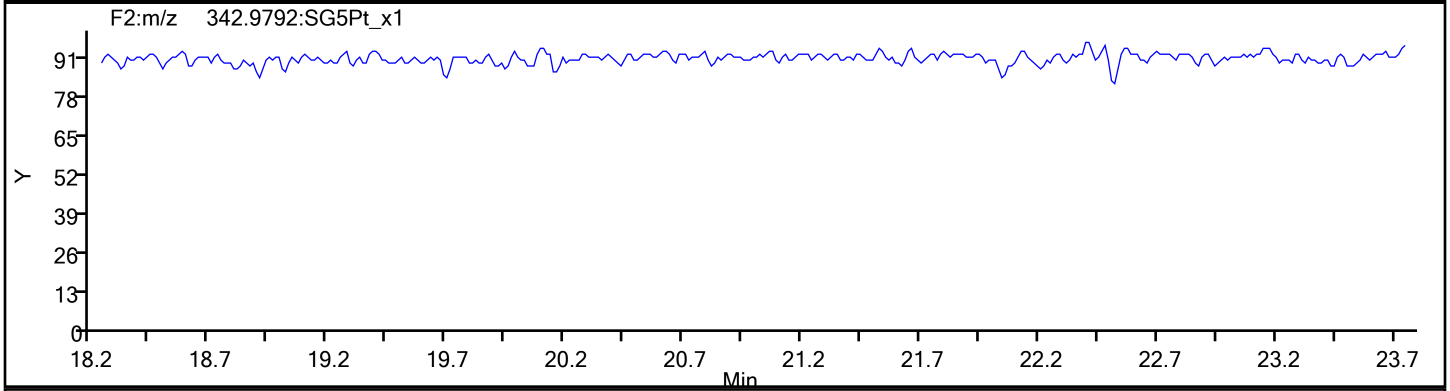

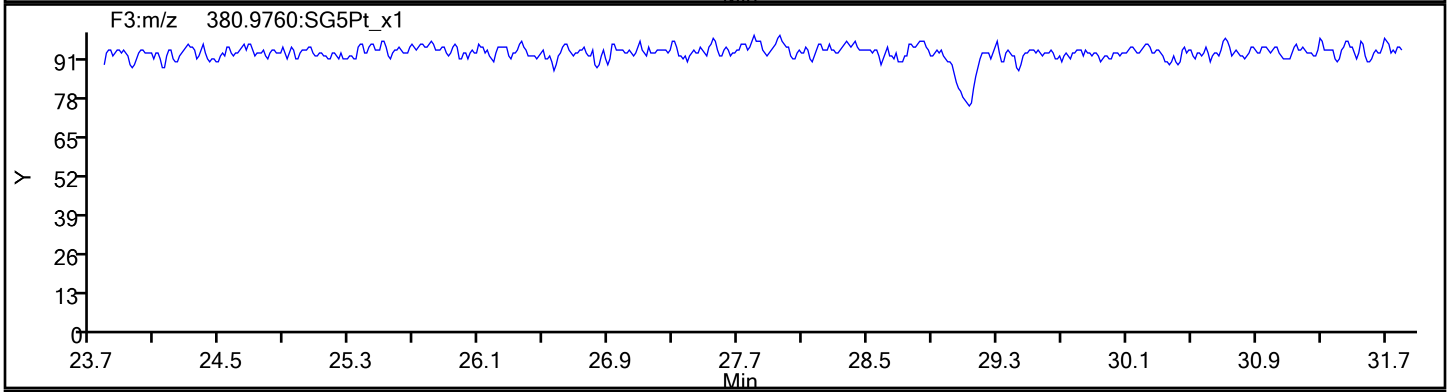

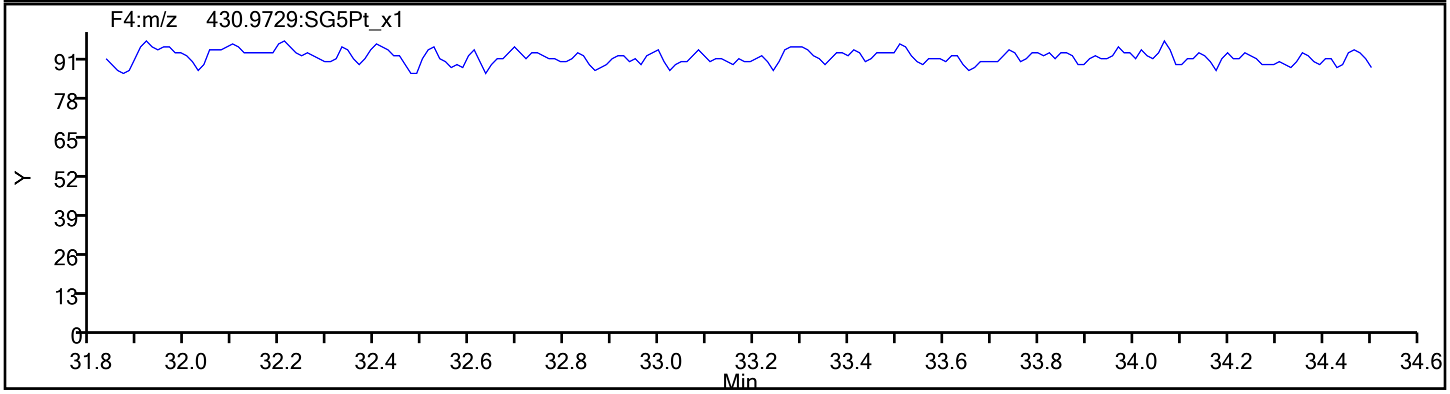

Report Date: 13-Oct-2020 12:33:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_17.d
Injection Date: 09-Oct-2020 08:13:51
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-2
Worklist#: 420482
Sample Line#: 17
Column Type:
Column Dia:

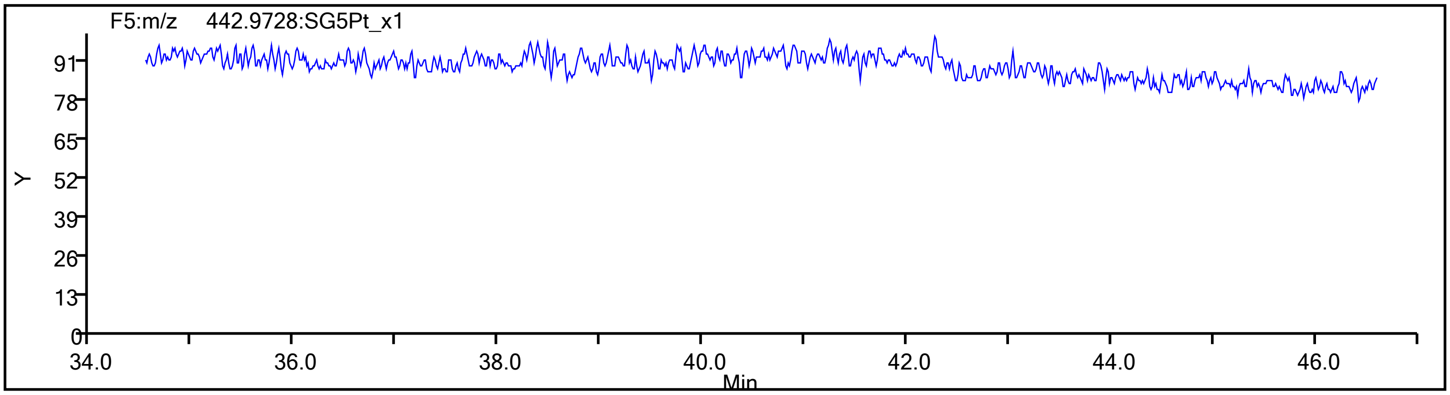

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#1-valve-5-2 RA
Lab Sample ID: 320-65130-8 RA
Matrix: Water
Lab File ID: 13OC20A11D2_011.d
Analysis Method: 1613B
Date Collected: 09/11/2020 13:30
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 971.8(mL)
Date Analyzed: 10/14/2020 02:05
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 421876
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1700	B	10	1.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	83		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	117		35-197

Report Date: 14-Oct-2020 17:38:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_011.d				
Lims ID:	320-65130-A-8-A				
Client ID:	11215702-Tank#1-valve-5-2				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 02:05:31	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-8-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:35:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.913	65307391	0.83	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.052	85600472	0.79	1.5708	83.4	83.4	0.4365	0.4365	83.44	
2,3,7,8-TCDF	16.066	69495159	0.76	0.9943	81.7	81.7	0.0931	0.0931		
D 13C-2,3,7,8-TCDD	14.666	51136378	0.86	0.9834	79.6	79.6	1.519	1.519	79.63	
2,3,7,8-TCDD	14.694	17990148	0.81	1.2822	27.4	27.4	0.1620	0.1620		
$ 37Cl4-2,3,7,8-TCDD	14.680	30276144		0.9945	46.6	46.6	0.1070	0.1070	117	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_011.d				
Lims ID:	320-65130-A-8-A				
Client ID:	11215702-Tank#1-valve-5-2				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 02:05:31	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-8-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:35:20		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.913	14.928	-1		29607419	7319608	48824	122060	150		
333.9339	14.913	14.928	-1		35699972	9028771	48870	122175	185	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.052	16.067	-1	1.076	37880141	8426421	27262	68155	309		
317.9389	16.052	16.067	-1	1.076	47720331	11225546	17572	43930	639	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.066	16.081	-1	1.001	29976621	6907490	3352	8380	2061		
305.8987	16.066	16.081	-1	1.001	39518538	9149353	3928	9820	2329	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.666	14.681	-1	0.983	23612451	5933327	48824	122060	122		
333.9339	14.680	14.681	0	0.984	27523927	6945766	48870	122175	142	0.86(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.694	14.709	-1	1.002	8047533	1964264	5738	14345	342		
321.8936	14.694	14.709	-1	1.002	9942615	2441222	4965	12412	492	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.680	14.709	-2	0.984	30276144	7520035	6956	17390	1081		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_011.d		
Injection Date:	14-Oct-2020 02:05:31	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-2		
Worklist#:	421876	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

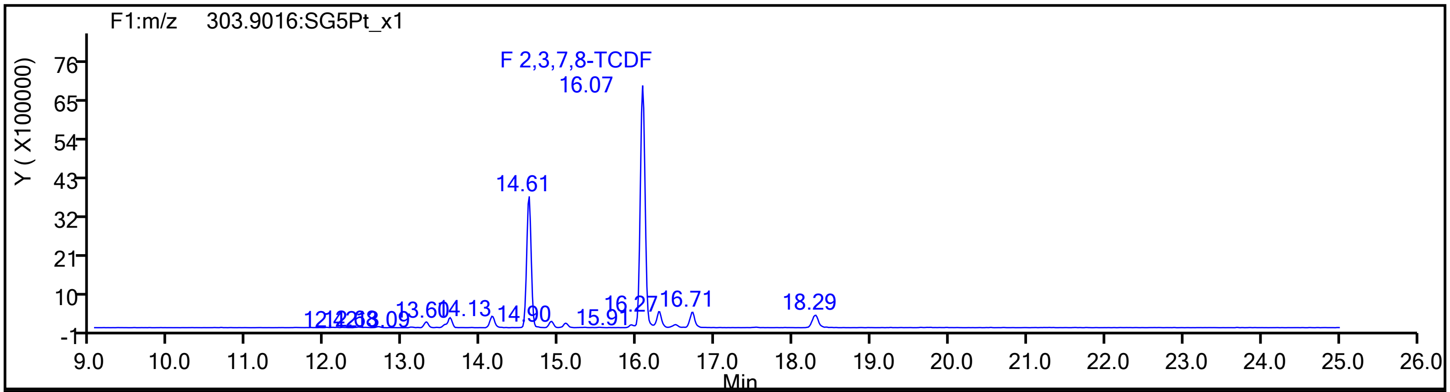

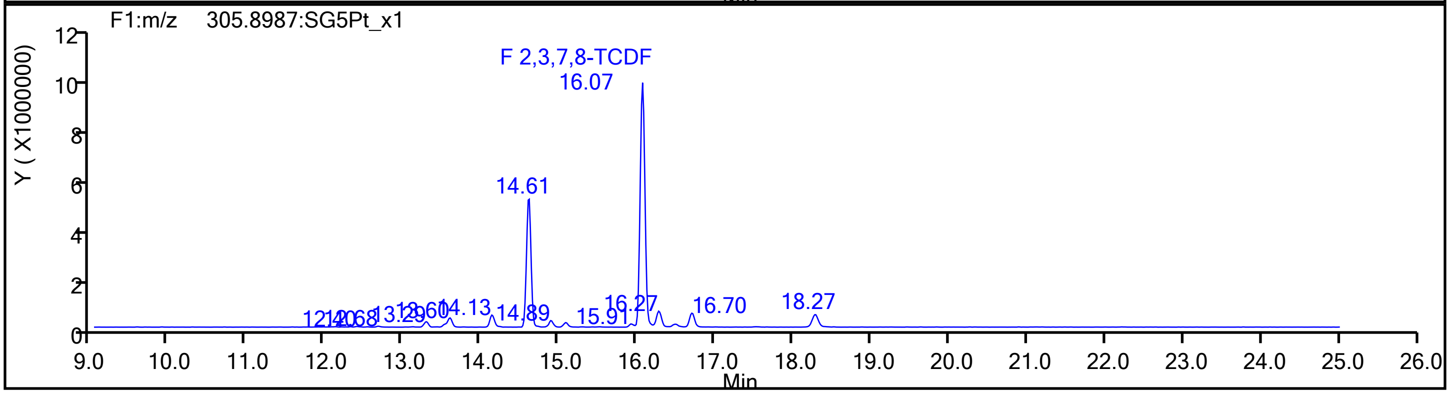

TCDF Standards

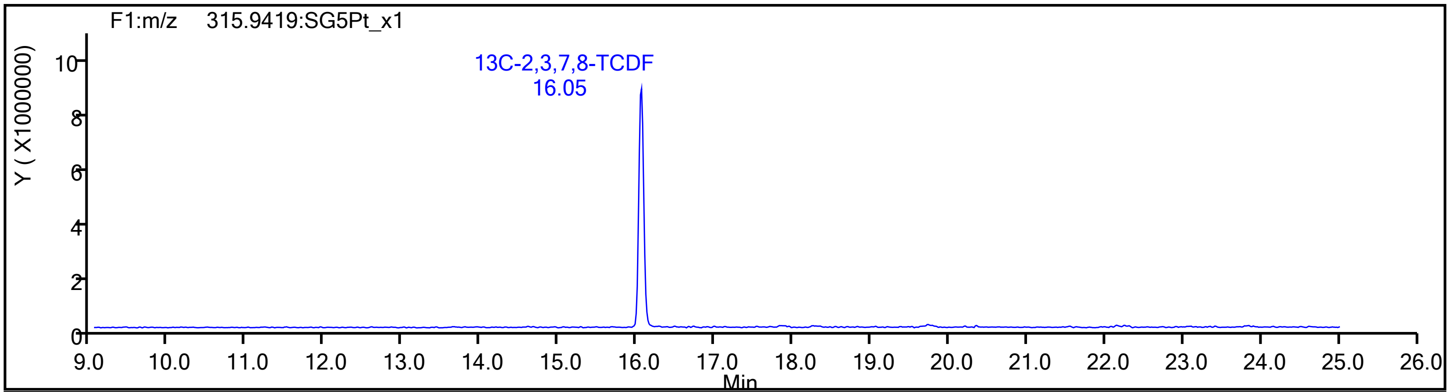

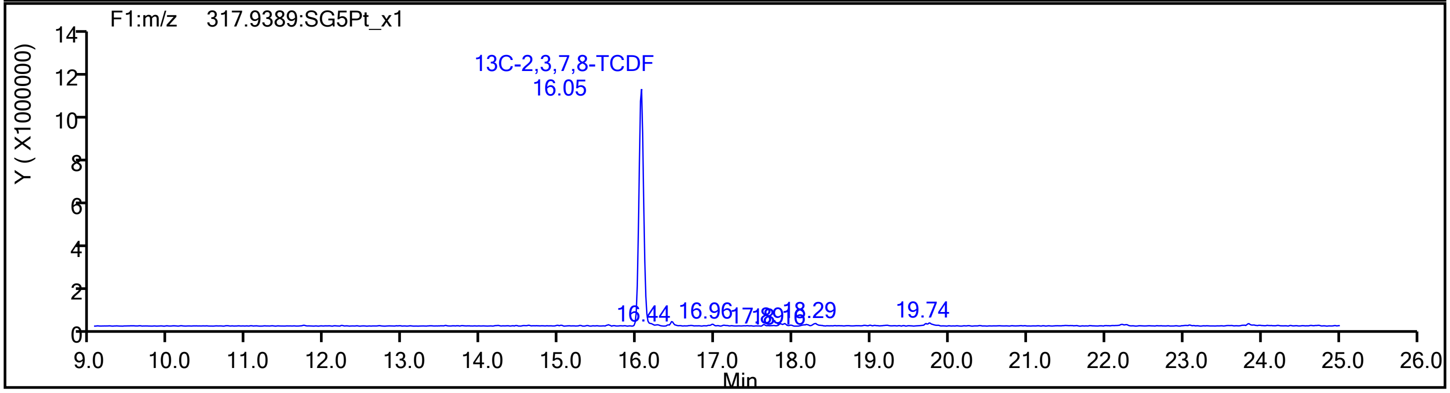

Report Date: 14-Oct-2020 17:38:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_011.d		
Injection Date:	14-Oct-2020 02:05:31	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-2		
Worklist#:	421876	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

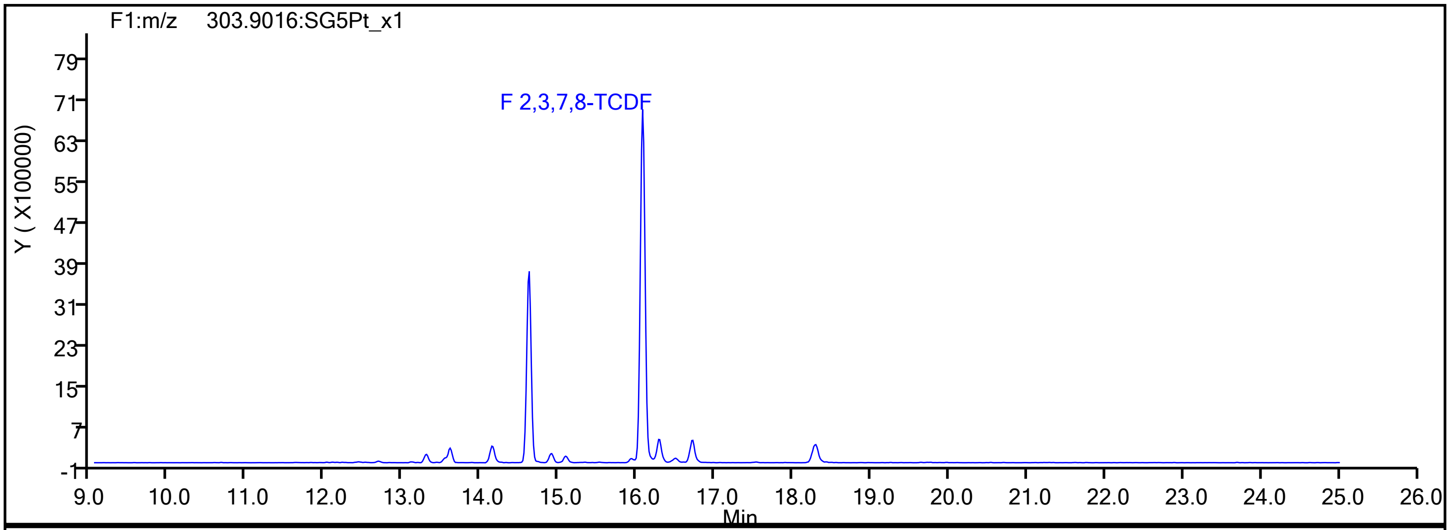

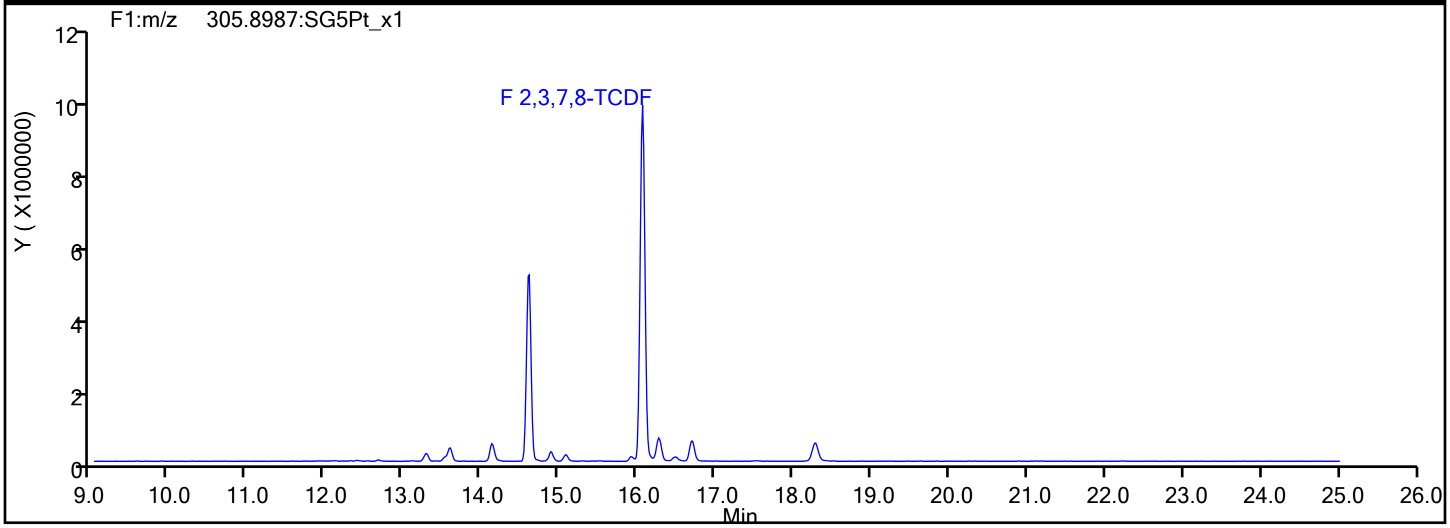

TCDF Interference Mass

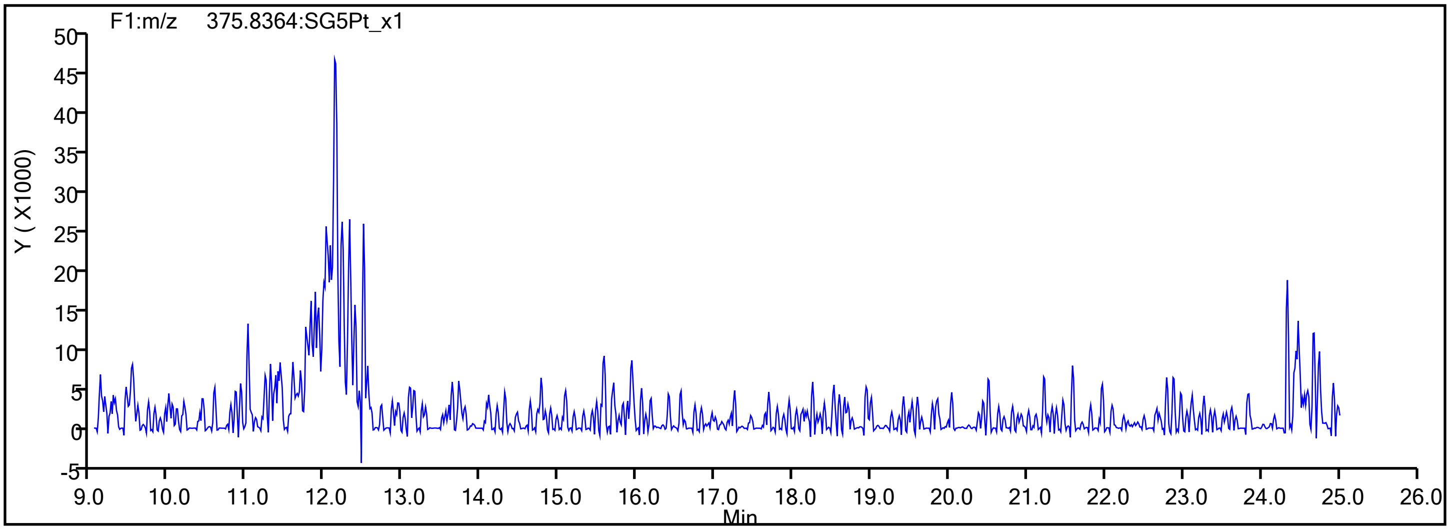

Report Date: 14-Oct-2020 17:38:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_011.d		
Injection Date:	14-Oct-2020 02:05:31	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-2		
Worklist#:	421876	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

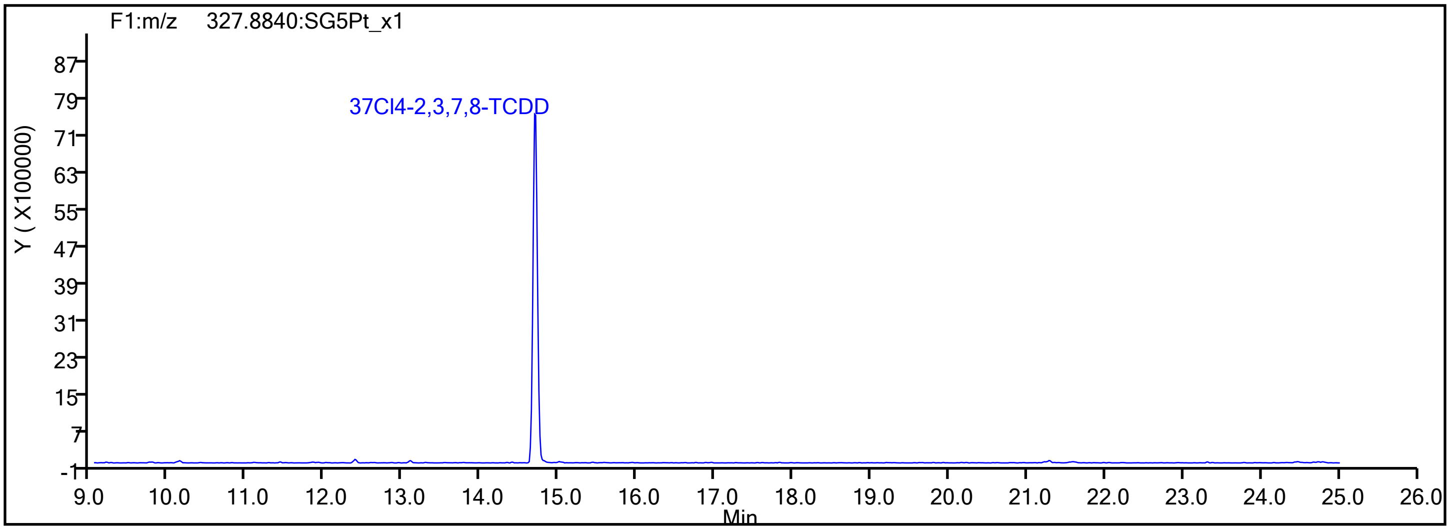

37Cl4-TCDD Standards

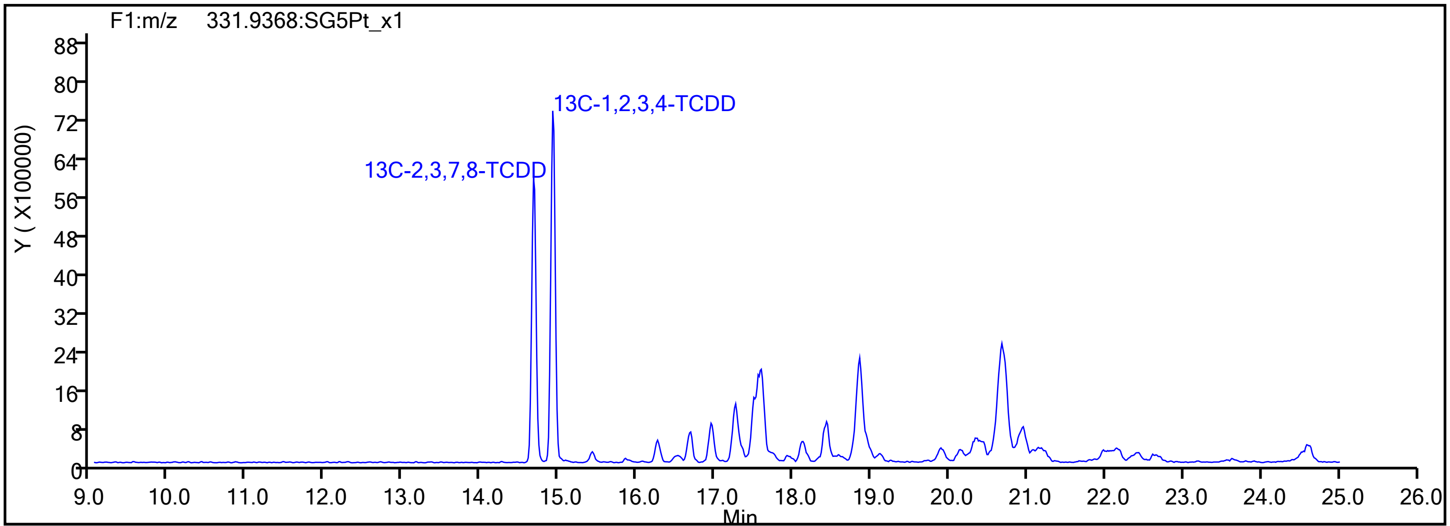

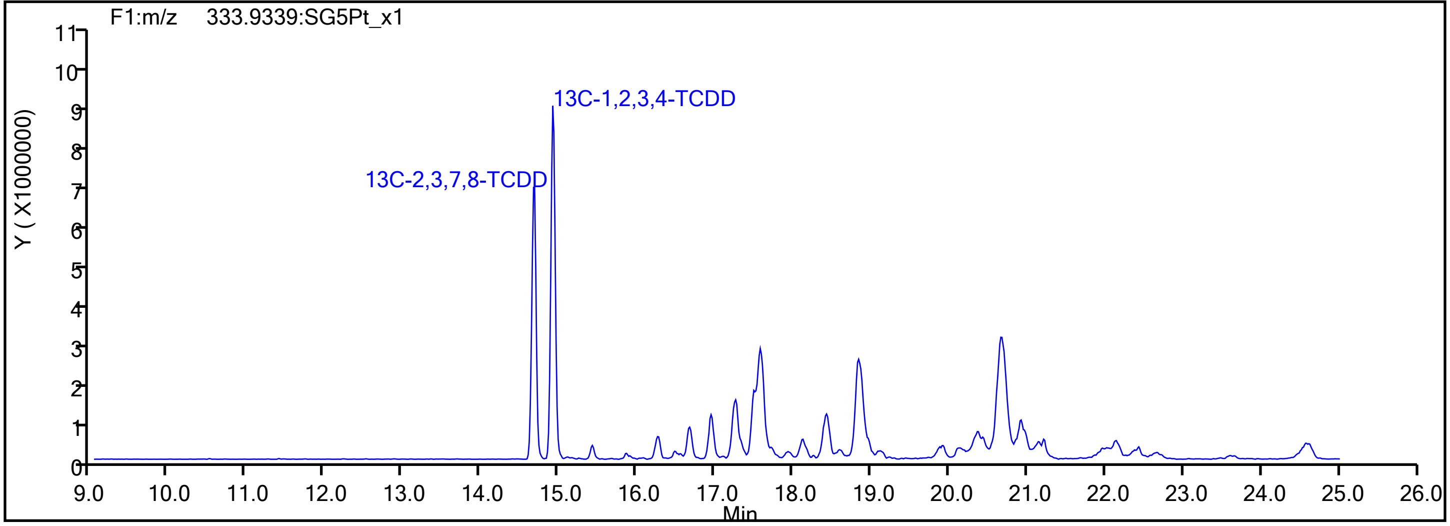

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_011.d		
Injection Date:	14-Oct-2020 02:05:31	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-2		
Worklist#:	421876	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

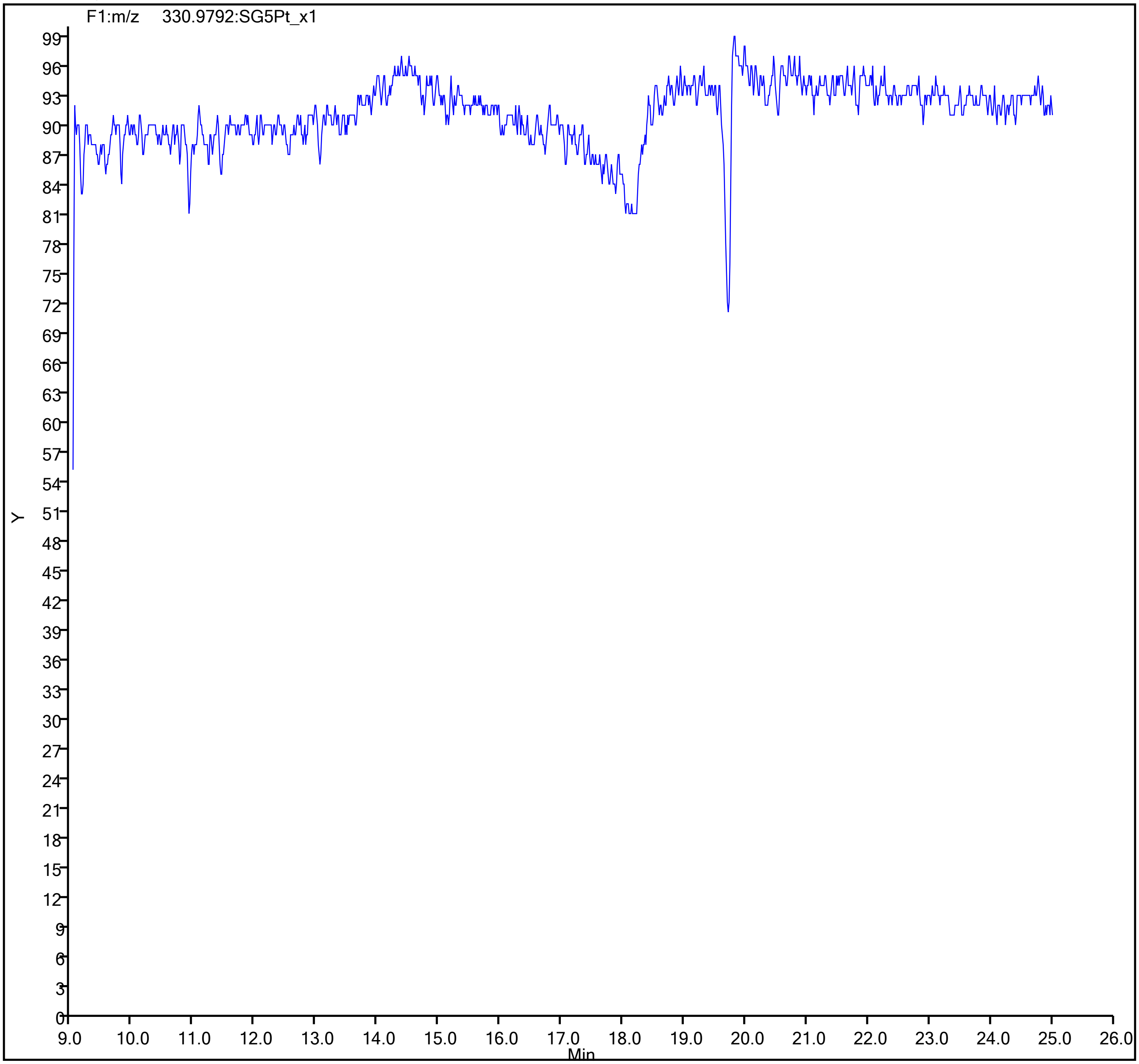

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-2-3	Lab Sample ID: 320-65130-9
Matrix: Water	Lab File ID: 08OC20A3D5_18.d
Analysis Method: 1613B	Date Collected: 09/11/2020 14:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 979.8(mL)	Date Analyzed: 10/09/2020 09:01
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	82		10	0.96
40321-76-4	1,2,3,7,8-PeCDD	ND		51	0.71
57117-41-6	1,2,3,7,8-PeCDF	9.8	J q B	51	0.78
57117-31-4	2,3,4,7,8-PeCDF	5.7	J B	51	0.90
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J B	51	0.97
57653-85-7	1,2,3,6,7,8-HxCDD	ND		51	0.98
19408-74-3	1,2,3,7,8,9-HxCDD	ND		51	0.90
70648-26-9	1,2,3,4,7,8-HxCDF	17	J B	51	0.74
57117-44-9	1,2,3,6,7,8-HxCDF	4.8	J B	51	0.75
72918-21-9	1,2,3,7,8,9-HxCDF	1.8	J q B	51	0.63
60851-34-5	2,3,4,6,7,8-HxCDF	ND		51	0.92
35822-46-9	1,2,3,4,6,7,8-HpCDD	7.8	J B	51	0.41
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.4	J q B	51	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.2	J B	51	0.39
3268-87-9	OCDD	89	J q B	100	0.68
39001-02-0	OCDF	7.7	J q B	100	0.40
41903-57-5	Total TCDD	87	q B	10	0.96
30402-14-3	Total TCDF	410	q B	10	1.8
36088-22-9	Total PeCDD	ND		51	0.71
30402-15-4	Total PeCDF	21	J q B	51	0.84
34465-46-8	Total HxCDD	2.6	J B	51	0.95
55684-94-1	Total HxCDF	27	J q B	51	0.76
37871-00-4	Total HpCDD	13	J q B	51	0.41
38998-75-3	Total HpCDF	12	J q B	51	0.38

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#1-valve-2-3
Lab Sample ID: 320-65130-9
Matrix: Water
Lab File ID: 08OC20A3D5_18.d
Analysis Method: 1613B
Date Collected: 09/11/2020 14:30
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 979.8(mL)
Date Analyzed: 10/09/2020 09:01
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	73		25-164
89059-46-1	13C-2,3,7,8-TCDF	66		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	73		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	62		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	60		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	72		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	68		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	68		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	65		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	66		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	67		26-138
114423-97-1	13C-OCDD	75		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Lims ID: 320-65130-A-9-A
Client ID: 11215702-Tank#1-valve-2-3
Sample Type: Client
Inject. Date: 09-Oct-2020 09:01:29 ALS Bottle#: 15 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-9-A 320-65130-A-9-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:46:09 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 17:58:10

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.900	176247904	0.78	3.1E+06	100.0	100.0				a
D 13C-2,3,7,8-TCDF	15.462	171979406	0.77	1.4844	65.7	65.7	0.3590	0.3590	65.74	
2,3,7,8-TCDF	15.477	18783296	0.77	0.9534	11.5	11.5	0.0899	0.0899		
A Non-2,3,7,8-sub-TCDF	15.227	14130576	0.77	0.9534	8.675	8.618	0.0899	5.580		RQM
S Total TCDF					20.1	20.1	0.0899	0.0899		RQ
D 13C-2,3,7,8-TCDD	16.066	140593935	0.80	1.0875	73.4	73.4	0.2064	0.2064	73.36	
2,3,7,8-TCDD	16.081	5761831	0.70	1.0205	4.016	4.016	0.0469	0.0469		
$ 37Cl4-2,3,7,8-TCDD	16.081	75788401		1.1216	38.3	38.3	0.1341	0.1341	95.84	
A Non-2,3,7,8-sub-TCDD	15.620	379096	0.77	1.0205	0.3048	0.2642	0.0469	0.2642		RQ
S Total TCDD					4.321	4.280	0.0469	0.0469		RQ
D 13C-1,2,3,7,8-PeCDF	19.686	152080494	1.53	1.3943	61.9	61.9	0.2315	0.2315	61.88	
1,2,3,7,8-PeCDF	19.714	789159	1.55	1.0794	0.5170	0.4808	0.0381	0.0381		RQM
D 13C-2,3,4,7,8-PeCDF	20.805	141826106	1.53	1.3370	60.2	60.2	0.2415	0.2415	60.19	
2,3,4,7,8-PeCDF	20.832	436141	1.55	1.0966	0.2804	0.2804	0.0442	0.0442		M
A F1 PeCDFs	17.730						0.0207	0.0207		
A Non-2,3,7,8-sub-PeCDF	20.349	456460	1.55	1.0880	0.2928	0.2855	0.0409	0.1891		RQ
S Total PeCDF					1.090	1.047	0.0411	0.0411		RQ
D 13C-1,2,3,7,8-PeCDD	21.404	109221445	1.56	0.8475	73.1	73.1	0.1300	0.1300	73.12	
1,2,3,7,8-PeCDD	21.459						0.0350	0.0350		
A Non-2,3,7,8-sub-PeCDD	20.518						0.0350	0.0350		
S Total PeCDD							0.0350	0.0350		
D 13C-1,2,3,4,7,8-HxCDF	26.719	125371333	0.55	1.3065	67.5	67.5	0.4057	0.4057	67.53	
1,2,3,4,7,8-HxCDF	26.746	1298100	1.36	1.2552	0.8249	0.8249	0.0361	0.0361		
D 13C-1,2,3,6,7,8-HxCDF	26.986	137196515	0.51	1.4213	67.9	67.9	0.3729	0.3729	67.93	
1,2,3,6,7,8-HxCDF	27.012	392461	1.35	1.2102	0.2364	0.2364	0.0367	0.0367		M
D 13C-2,3,4,6,7,8-HxCDF	28.544	122540672	0.54	1.3142	65.6	65.6	0.4033	0.4033	65.62	
2,3,4,6,7,8-HxCDF	28.583						0.0451	0.0451		RQU
D 13C-1,2,3,7,8,9-HxCDF	30.368	122120070	0.54	1.3204	65.1	65.1	0.4014	0.4014	65.08	
1,2,3,7,8,9-HxCDF	30.394	135065	1.24	1.2319	0.1038	0.0898	0.0310	0.0310		RQ
A Non-2,3,7,8-sub-HxCDF	27.465	240617	1.24	1.2289	0.1668	0.1544	0.0366	0.0926		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					1.332	1.305	0.0372	0.0372		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.062	142103560	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.023	88571033	1.25	0.8660	72.0	72.0	0.3051	0.3051	71.97	a
1,2,3,4,7,8-HxCDD	29.023	143113	1.20	1.2535	0.1289	0.1289	0.0476	0.0476		
D 13C-1,2,3,6,7,8-HxCDD	29.289	109373889	1.27	0.9827	78.3	78.3	0.2689	0.2689	78.32	a
1,2,3,6,7,8-HxCDD	29.356						0.0482	0.0482		
1,2,3,7,8,9-HxCDD	30.101						0.0439	0.0439		
A Non-2,3,7,8-sub-HxCDD	27.931						0.0464	0.0464		
S Total HxCDD					0.1289	0.1289	0.0466	0.0466		
D 13C-1,2,3,4,6,7,8-HpCDF	32.523	90393229	0.47	0.9410	67.6	67.6	1.405	1.405	67.60	
1,2,3,4,6,7,8-HpCDF	32.535	418538	1.04	1.4783	0.3438	0.3132	0.0181	0.0181		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	33.629	83060318	0.45	0.8751	66.8	66.8	1.511	1.511	66.79	
1,2,3,4,7,8,9-HpCDF	33.641	181079	1.08	1.3784	0.1582	0.1582	0.0189	0.0189		M
A Non-2,3,7,8-sub-HpCDF	33.100	115659	1.04	1.4284	0.1058	0.0934	0.0185	0.0934		RQM
S Total HpCDF					0.6077	0.5647	0.0185	0.0185		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	96706052	1.06	0.9049	75.2	75.2	2.572	2.572	75.21	
1,2,3,4,6,7,8-HpCDD	33.398	399442	0.89	1.0862	0.3803	0.3803	0.0201	0.0201		M
A Non-2,3,7,8-sub-HpCDD	33.339	293965	1.04	1.0862	0.3059	0.2798	0.0201	0.2798		RQM
S Total HpCDD					0.6862	0.6601	0.0201	0.0201		RQ
D 13C-OCDD	35.546	123550188	0.92	0.5783	150.3	150.3	0.8628	0.8628	75.17	
OCDF	35.618	400862	0.89	1.7248	0.4150	0.3762	0.0195	0.0195		RQM
OCDD	35.558	3381306	0.89	1.2576	4.723	4.352	0.0335	0.0335		RQ
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Lims ID:	320-65130-A-9-A				
Client ID:	11215702-Tank#1-valve-2-3				
Sample Type:	Client				
Inject. Date:	09-Oct-2020 09:01:29	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-9-A 320-65130-A-9-A				
Misc. Info.:	08OC20A3D5				
Operator ID:	ALM	Instrument ID:	3D5		
Method:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	13-Oct-2020 12:46:09	Calib Date:	05-Oct-2020 20:45:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Column 1 :		Det: F1:HRSIR			
Process Host:	CTX1637				
First Level Reviewer: shardaa		Date:	12-Oct-2020 17:58:10		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	15.900	15.930	-2		76997462	21770135	25515	63787	853		a
333.9339	15.900	15.930	-2		99250442	27917260	19092	47730	1462	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.462	15.477	-1	0.972	75039950	18571541	39276	98190	473		
317.9389	15.462	15.477	-1	0.972	96939456	26091060	66645	166612	391	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.477	15.507	-2	1.001	8159878	2024148	6912	17280	293		
305.8987	15.477	15.507	-2	1.001	10623418	2686904	8393	20982	320	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQM
303.9016	14.282	15.227	-57	0.924	117160	36778	6912	17280	5		
305.8987	14.282	15.227	-57	0.924	208072	59242	8393	20982	7	0.56(0.65-0.89)	
	Empc Correction				152155	47763	8393	20982	6		
303.9016	14.524	15.227	-42	0.939	259673	64492	6912	17280	9		
305.8987	14.539	15.227	-41	0.940	353211	79046	8393	20982	9	0.74(0.65-0.89)	
303.9016	14.721	15.227	-30	0.952	267292	58878	6912	17280	9		
	Empc Correction				229909	71510	6912	17280	10		
305.8987	14.721	15.227	-30	0.952	298584	92871	8393	20982	11	0.90(0.65-0.89)	
303.9016	14.932	15.227	-18	0.966	297528	80834	6912	17280	12		
305.8987	14.932	15.227	-18	0.966	461252	119822	8393	20982	14	0.65(0.65-0.89)	
303.9016	15.159	15.227	-4	0.980	4018569	1188404	6912	17280	172		M
305.8987	15.159	15.227	-4	0.980	5130031	1633804	8393	20982	195	0.78(0.65-0.89)	
303.9016	15.840	15.227	37	1.024	553719	116511	6912	17280	17		
305.8987	15.840	15.227	37	1.024	644335	144934	8393	20982	17	0.86(0.65-0.89)	
303.9016	16.036	15.227	48	1.037	131471	25736	6912	17280	4		
305.8987	16.036	15.227	48	1.037	147223	35768	8393	20982	4	0.89(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.019	15.227	107	1.101	524526	123348	6912	17280	18		
305.8987	17.004	15.227	106	1.100	811230	184039	8393	20982	22	0.65(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.066	16.081	-1	1.010	62393524	15816933	25515	63787	620		
333.9339	16.066	16.081	-1	1.010	78200411	19685245	19092	47730	1031	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.081	16.097	-1	1.001	2364201	598800	3683	9207	163		
321.8936	16.081	16.097	-1	1.001	3397630	900322	3108	7770	290	0.70(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.081	16.112	-2	1.011	75788401	18749912	29899	74747	627		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	16.399	15.620	47	1.021	223056	47159	3683	9207	13		
	Empc Correction				164917	42553	3683	9207	12		
321.8936	16.399	15.620	47	1.021	214179	55264	3108	7770	18	1.04(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.238	92084865	18273982	38161	95402	479		
353.8970	19.686	19.700	-1	1.238	59995629	11709858	25999	64997	450	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											RQM
339.8597	19.714	19.727	-1	1.001	479685	113829	2419	6047	47		M
341.8567	19.714	19.727	-1	1.001	369001	74423	2509	6272	30	1.30(1.32-1.78)	M
	Empc Correction				309474	73438	2509	6272	29		
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.818	-1	1.308	85737518	15419785	38161	95402	404		
353.8970	20.805	20.818	-1	1.308	56088588	9992021	25999	64997	384	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	20.832	20.846	-1	1.001	264887	53782	2419	6047	22		
341.8567	20.818	20.846	-2	1.001	171254	33244	2509	6272	13	1.55(1.32-1.78)	M
A F1 PeCDFs											
339.8597	17.730						889	2222			
341.8567	17.730						1605	4012			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	18.582	20.349	-106	0.944	188303	31983	2419	6047	13		
341.8567	18.582	20.349	-106	0.944	113976	20356	2509	6272	8	1.65(1.32-1.78)	
339.8597	20.150	20.349	-12	1.024	93718	19720	2419	6047	8		
341.8567	20.150	20.349	-12	1.024	72204	16876	2509	6272	7	1.30(1.32-1.78)	
	Empc Correction				60463	12722	2509	6272	5		
13C-1,2,3,7,8-PeCDD											
367.8949	21.404	21.432	-2	1.346	66635522	11240151	12262	30655	917		
369.8919	21.404	21.432	-2	1.346	42585923	7276159	9636	24090	755	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.459						1822	4555			
357.8516	21.459						1130	2825			
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.518						1822	4555			
357.8516	20.518						1130	2825			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.733	-1	0.889	44694994	6108674	15960	39900	383		
385.8610	26.706	26.733	-2	0.888	80676339	11090533	29610	74025	375	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.746	26.759	-1	1.001	747452	101948	1811	4527	56		
375.8178	26.746	26.759	-1	1.001	550648	80546	1308	3270	62	1.36(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	27.012	-2	0.898	46204632	6188855	15960	39900	388		
385.8610	26.972	27.012	-2	0.897	90991883	11369428	29610	74025	384	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											M
373.8208	27.012	27.039	-2	1.001	225402	38634	1811	4527	21		M
375.8178	26.986	27.039	-3	1.000	167059	21423	1308	3270	16	1.35(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.570	-2	0.950	42989221	4978816	15960	39900	312		
385.8610	28.544	28.570	-2	0.950	79551451	9203206	29610	74025	311	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQU
373.8208	28.597						1811	4527			
375.8178	28.597						1308	3270			
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.368	30.394	-2	1.010	42566337	7057550	15960	39900	442		
385.8610	30.368	30.394	-2	1.010	79553733	13382451	29610	74025	452	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQ
373.8208	30.394	30.408	-1	1.001	95912	17471	1811	4527	10		
	Empc Correction				74768	13303	1811	4527	7		
375.8178	30.394	30.408	-1	1.001	60297	10729	1308	3270	8	1.59(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.669	27.465	-167	0.923	79849	11895	1811	4527	7		
375.8178	24.669	27.465	-167	0.923	83691	11166	1308	3270	9	0.95(1.05-1.43)	
	Empc Correction				64394	9592	1308	3270	7		
373.8208	30.528	27.465	183	1.143	51847	8126	1811	4527	4		
375.8178	30.608	27.465	188	1.146	44527	14325	1308	3270	11	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.062	30.088	-2		79251121	12231071	11156	27890	1096		
403.8529	30.062	30.088	-2		62852439	9262533	11561	28902	801	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.023	29.036	-1	0.965	49282421	5994902	11156	27890	537		a
403.8529	29.010	29.036	-2	0.965	39288612	4570257	11561	28902	395	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.023	29.076	-3	1.000	78095	13727	1257	3142	11		
391.8127	29.036	29.076	-2	1.000	65018	9128	1267	3167	7	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.289	29.316	-2	0.974	61116913	6463671	11156	27890	579		a
403.8529	29.289	29.316	-2	0.974	48256976	5323570	11561	28902	460	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.356						1257	3142			
391.8127	29.356						1267	3167			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8157	30.101						1257	3142			
391.8127	30.101						1267	3167			
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						1257	3142			
391.8127	27.931						1267	3167			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.523	32.547	-1	1.082	28932626	9392033	39128	97820	240		
419.8220	32.523	32.547	-1	1.082	61460603	20269543	74560	186400	272	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7818	32.535	32.547	-1	1.000	254260	79708	2072	5180	38		
	Empc Correction				213372	71177	2072	5180	34		
409.7789	32.535	32.547	-1	1.000	205166	68440	1109	2772	62	1.24(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.629	33.641	-1	1.119	25818220	9545693	39128	97820	244		
419.8220	33.629	33.641	-1	1.119	57242098	21031423	74560	186400	282	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	33.641	33.653	-1	1.000	94010	31633	2072	5180	15		M
409.7789	33.629	33.653	-1	1.000	87069	23555	1109	2772	21	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											RQM
407.7818	32.888	33.100	-13	1.011	74314	23487	2072	5180	11		M
	Empc Correction				58963	18996	2072	5180	9		
409.7789	32.888	33.100	-13	1.011	56696	18266	1109	2772	16	1.31(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.111	49686591	16730732	99312	248280	168		
437.8140	33.386	33.398	-1	1.111	47019461	16471132	100795	251987	163	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.398	33.398	0	1.000	188361	66789	1584	3960	42		M
425.7737	33.398	33.398	0	1.000	211081	72183	1320	3300	55	0.89(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											RQM
423.7766	32.839	33.339	-30	0.984	149865	49857	1584	3960	31		M
425.7737	32.839	33.339	-30	0.984	171476	51911	1320	3300	39	0.87(0.88-1.20)	M
	Empc Correction				144100	47939	1320	3300	36		
13C-OCDD											
469.7779	35.546	35.558	-1	1.182	59062081	19208854	25015	62537	768		
471.7750	35.546	35.558	-1	1.182	64488107	20639669	17879	44697	1154	0.92(0.76-1.02)	
OCDF											RQM
441.7428	35.618	35.630	-1	1.002	188766	57119	1045	2612	55		M
443.7399	35.618	35.630	-1	1.002	253385	83889	1640	4100	51	0.74(0.76-1.02)	M
	Empc Correction				212096	64178	1640	4100	39		
OCDD											RQ
457.7377	35.558	35.570	-1	1.000	1879941	608022	1622	4055	375		
	Empc Correction				1592255	503033	1622	4055	310		
459.7348	35.558	35.570	-1	1.000	1789051	565206	1734	4335	326	1.05(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Lims ID: 320-65130-A-9-A
Client ID: 11215702-Tank#1-valve-2-3
Inject. Date: 09-Oct-2020 09:01:29 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 18

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	171979406	44662601

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	171979406	44662601

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.282	117160	36778	208072	59242	0.1984	0.56	RQ
14.282	117160	36778	152155	47763	0.1643		Empc Correction
14.524	259673	64492	353211	79046	0.3738	0.74	
14.721	267292	58878	298584	92871	0.3451	0.90	RQ
14.721	229909	71510	298584	92871	0.3223		Empc Correction
14.932	297528	80834	461252	119822	0.4628	0.65	
15.159	4018569	1188404	5130031	1633804	5.58	0.78	M
15.840	553719	116511	644335	144934	0.7307	0.86	
16.036	131471	25736	147223	35768	0.1700	0.89	
17.019	524526	123348	811230	184039	0.8147	0.65	
Signal Totals:							
	6132555	1707613	7998021	2338047			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14223876	4044507				0.77	RQM
	14130576	4045660					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.675 = (14223876 * 100.000) / (171979406 * 0.953)
Empc Amount: 8.618 = (14130576 * 100.000) / (171979406 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Lims ID: 320-65130-A-9-A
Client ID: 11215702-Tank#1-valve-2-3
Inject. Date: 09-Oct-2020 09:01:29 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 18

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	140593935	35502178

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	140593935	35502178

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.399	223056	47159	214179	55264	0.3048	1.04	RQ
16.399	164917	42553	214179	55264	0.2642		Empc Correction
Signal Totals:							
	164917	42553	214179	55264			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	437235	102423				1.04	RQ
	379096	97817					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3048 = (437235 * 100.000) / (140593935 * 1.020)
Empc Amount: 0.2642 = (379096 * 100.000) / (140593935 * 1.020)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d		
Lims ID:	320-65130-A-9-A		
Client ID:	11215702-Tank#1-valve-2-3		
Inject. Date:	09-Oct-2020 09:01:29	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	18

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	152080494	29983840
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	141826106	25411806

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	146953300	27697823

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.582	188303	31983	113976	20356	0.1891	1.65	
20.150	93718	19720	72204	16876	0.1038	1.30	RQ
20.150	93718	19720	60463	12722	0.0964		Empc Correction
Signal Totals:							
	282021	51703	174439	33078			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	468201	88935				1.51	RQ
	456460	84781					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2928 = (468201 * 100.000) / (146953300 * 1.088)
Empc Amount: 0.2855 = (456460 * 100.000) / (146953300 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Lims ID: 320-65130-A-9-A
Client ID: 11215702-Tank#1-valve-2-3
Inject. Date: 09-Oct-2020 09:01:29 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 18

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	125371333	17199207
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	137196515	17558283
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	122540672	14182022
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	122120070	20440001

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	126807147	17344878

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.669	79849	11895	83691	11166	0.1049	0.95	RQ
24.669	79849	11895	64394	9592	0.0926		Empc Correction
30.528	51847	8126	44527	14325	0.0618	1.16	
Signal Totals:							
	131696	20021	108921	23917			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	259914	45512				1.03	RQ
	240617	43938					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1668 = (259914 * 100.000) / (126807147 * 1.229)
Empc Amount: 0.1544 = (240617 * 100.000) / (126807147 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 12:46:09　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d		
Lims ID:	320-65130-A-9-A		
Client ID:	11215702-Tank#1-valve-2-3		
Inject. Date:	09-Oct-2020 09:01:29	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	18

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF　　IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	90393229	29661576
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	83060318	30577116

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	86726773	30119346

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.888	74314	23487	56696	18266	0.1058	1.31	RQM
32.888	58963	18996	56696	18266	0.0934		Empc Correction
Signal Totals:							
	58963	18996	56696	18266			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	131010	41753				1.31	RQM
	115659	37262					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1058 = (131010 * 100.000) / (86726773 * 1.428)
Empc Amount: 0.0934 = (115659 * 100.000) / (86726773 * 1.428)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Lims ID: 320-65130-A-9-A
Client ID: 11215702-Tank#1-valve-2-3
Inject. Date: 09-Oct-2020 09:01:29 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 18

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	96706052	33201864

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	96706052	33201864

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.839	149865	49857	171476	51911	0.3059	0.87	RQM
32.839	149865	49857	144100	47939	0.2798		Empc Correction
Signal Totals:							
	149865	49857	144100	47939			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	321341	101768				0.87	RQM
	293965	97796					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3059 = (321341 * 100.000) / (96706052 * 1.086)
Empc Amount: 0.2798 = (293965 * 100.000) / (96706052 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.05)

Signal: 1

Processing Integration Results

RT = 15.159 Area = 4212070

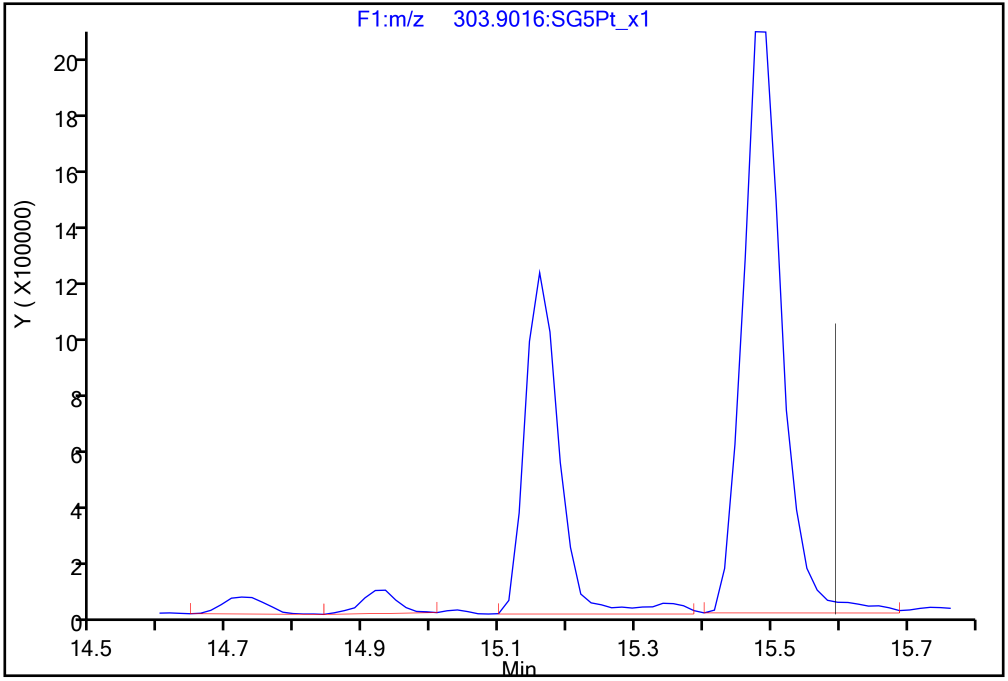

Manual Integration Results

RT = 15.159 Area = 4018569 M

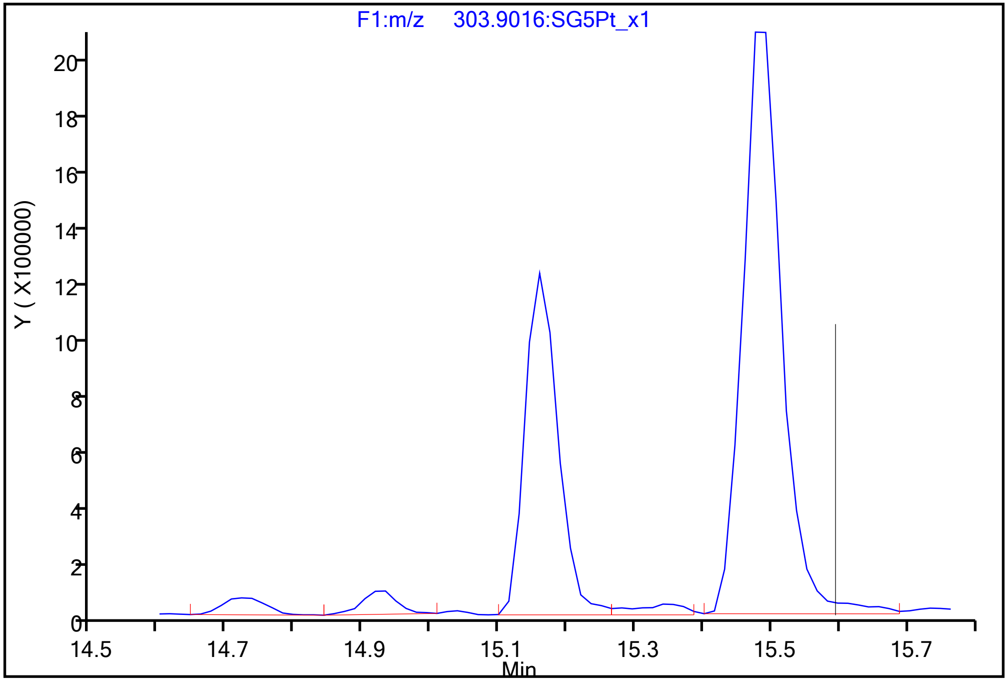

Reviewer: dadunj, 13-Oct-2020 12:33:37

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	19.71
Area:	381217
Amount:	0.531225
Amount Units:	pg/ul

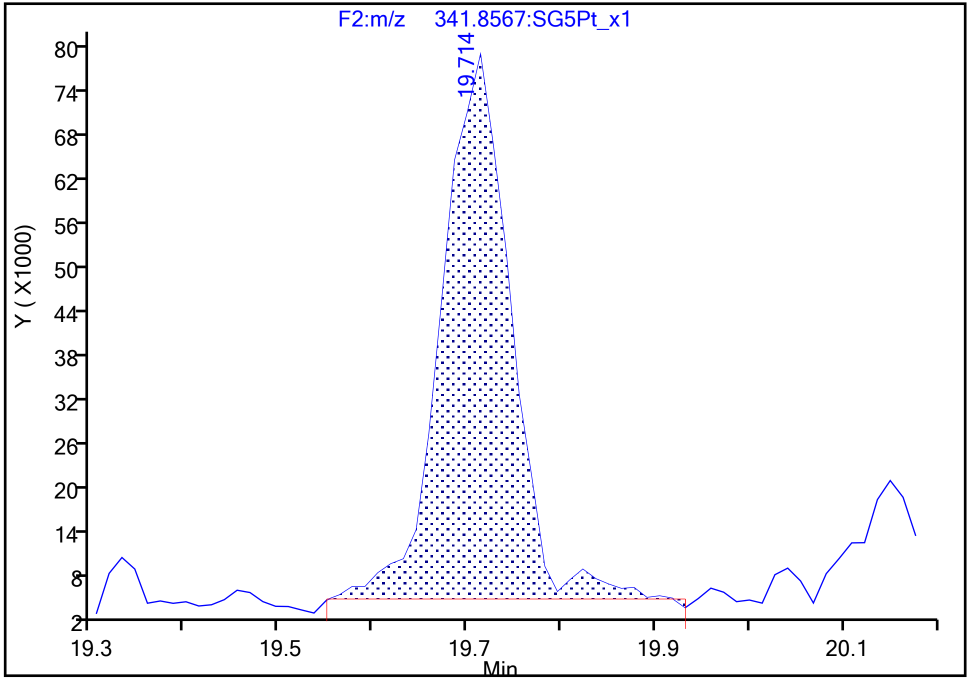

Manual Integration Results

RT:	19.71
Area:	369001
Amount:	0.517018
Amount Units:	pg/ul

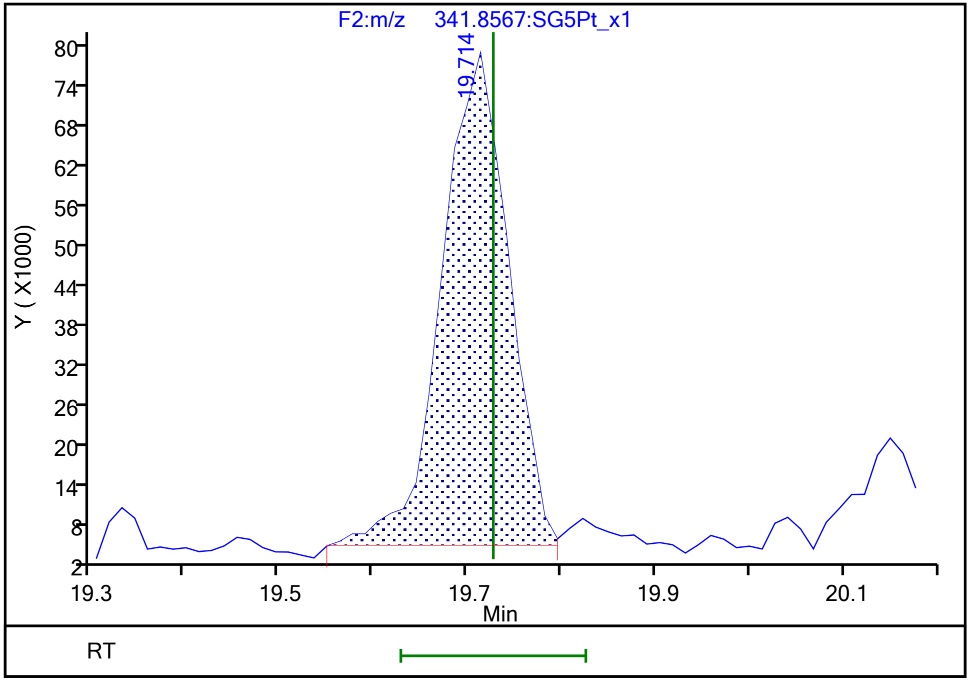

Reviewer: dadunj, 13-Oct-2020 12:33:55

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:46:09

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT:	19.71
Area:	490789
Amount:	0.531225
Amount Units:	pg/ul

Processing Integration Results

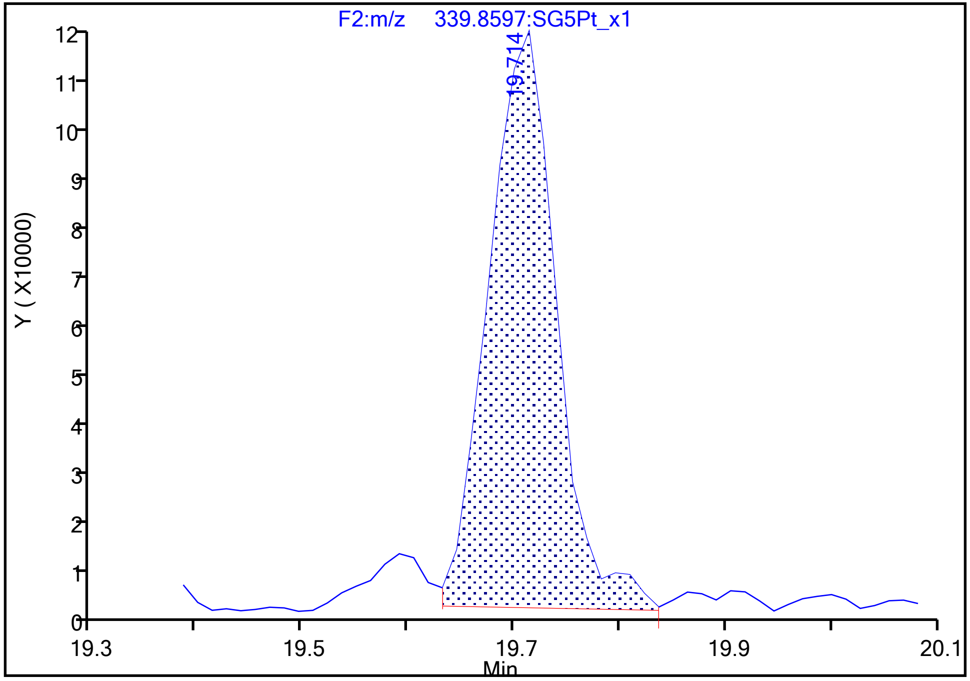

RT:	19.71
Area:	479685
Amount:	0.517018
Amount Units:	pg/ul

Manual Integration Results

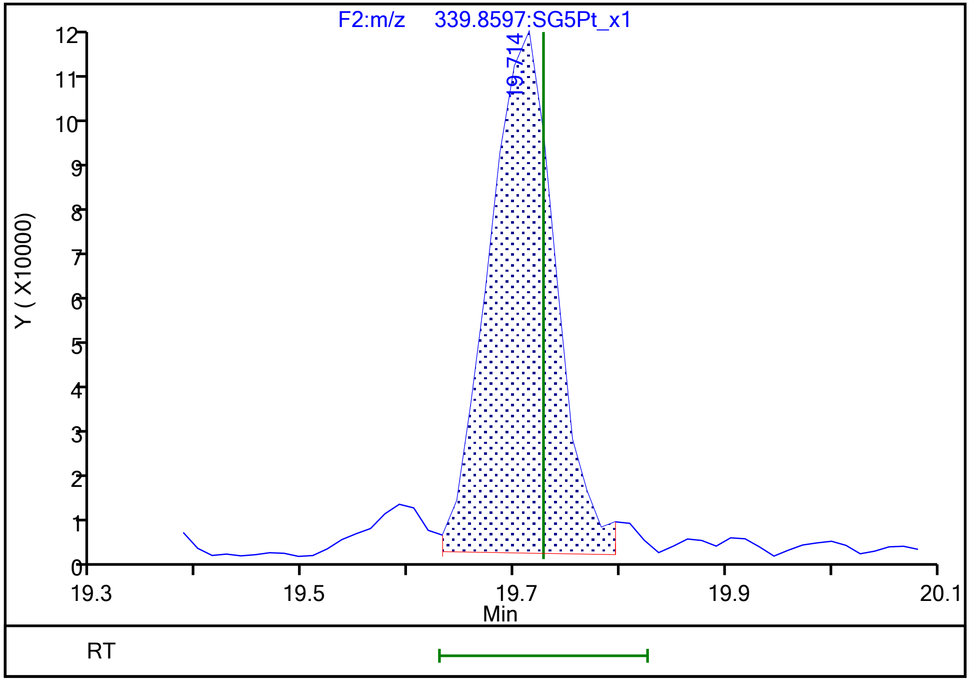

Reviewer: dadunj, 13-Oct-2020 12:33:57

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:46:09

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 2

Processing Integration Results

RT: 20.82

Area: 166698

Amount: 0.277491

Amount Units: pg/ul

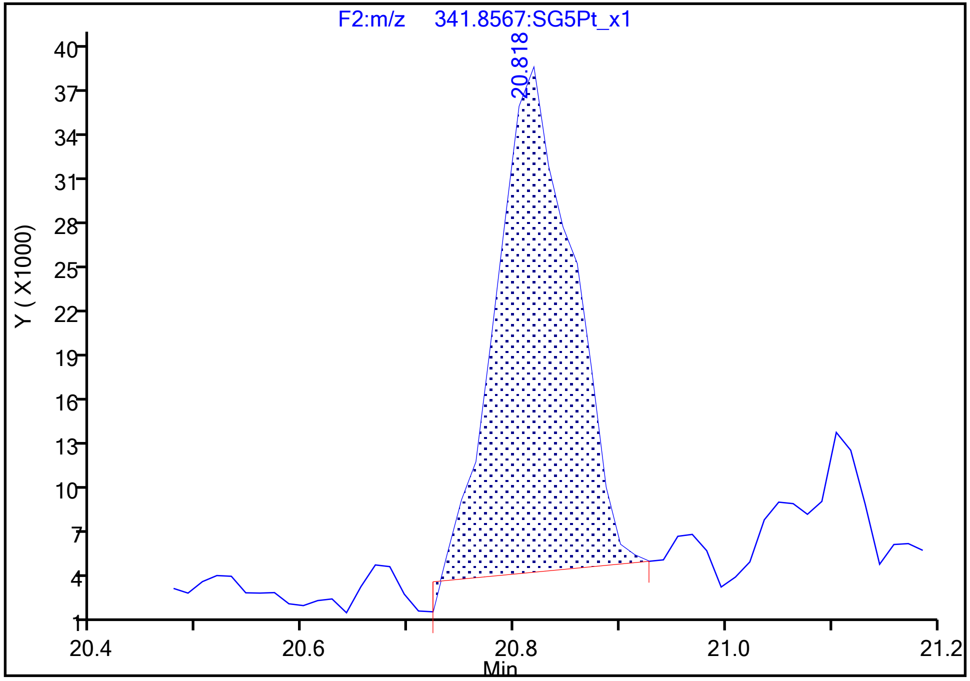

Manual Integration Results

RT: 20.82

Area: 171254

Amount: 0.280421

Amount Units: pg/ul

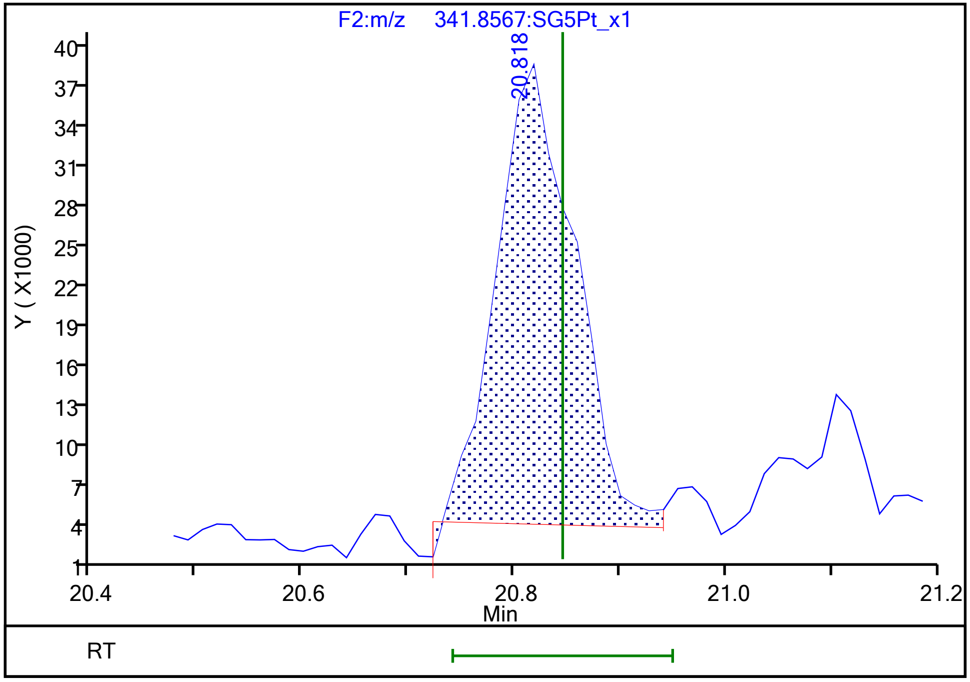

Reviewer: dadunj, 13-Oct-2020 12:34:13

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 13-Oct-2020 12:46:09

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date: 09-Oct-2020 09:01:29

Instrument ID: 3D5

Lims ID: 320-65130-A-9-A

Lab Sample ID: 320-65130-9

Client ID: 11215702-Tank#1-valve-2-3

Operator ID: ALM

ALS Bottle#: 15

Worklist Smp#: 18

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F3:HRSIR

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

RT: 27.01

Area: 228451

Amount: 0.238208

Amount Units: pg/ul

Processing Integration Results

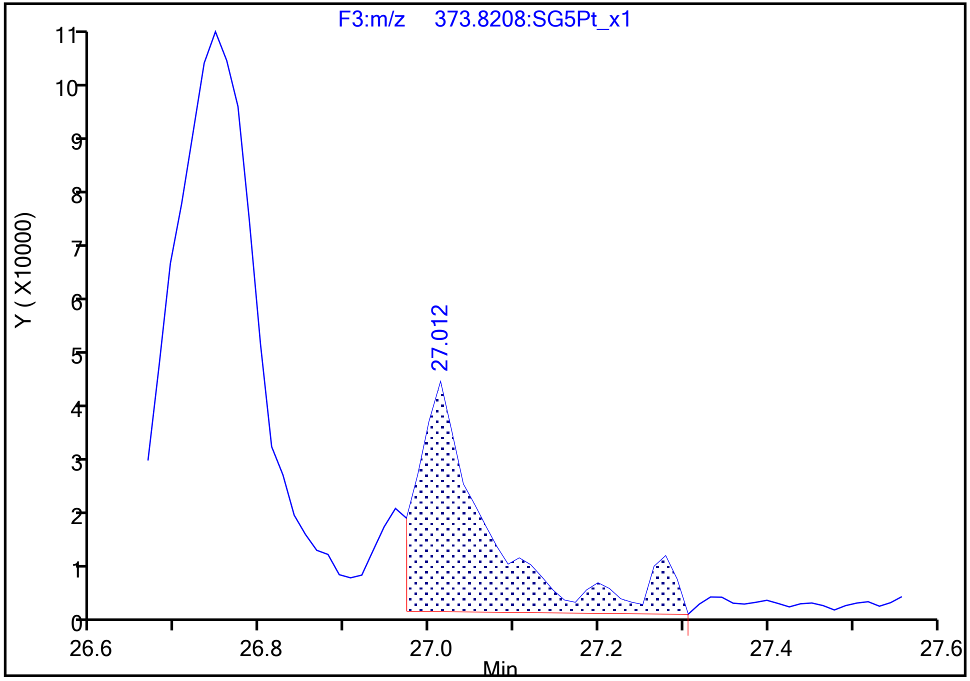

RT: 27.01

Area: 225402

Amount: 0.236372

Amount Units: pg/ul

Manual Integration Results

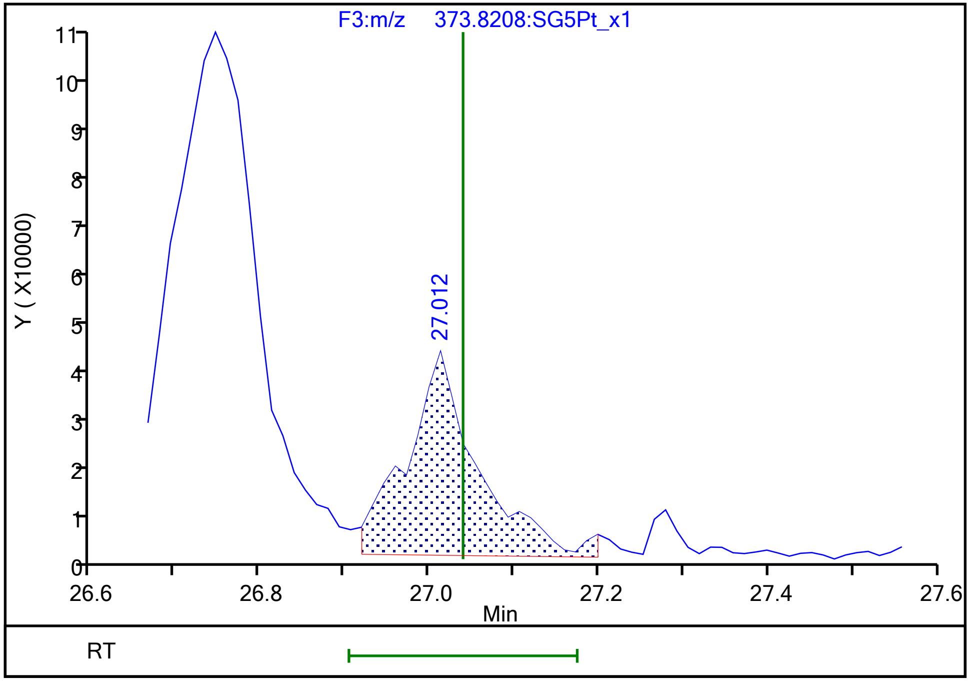

Reviewer: dadunj, 13-Oct-2020 12:45:46

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.04

Processing Integration Results

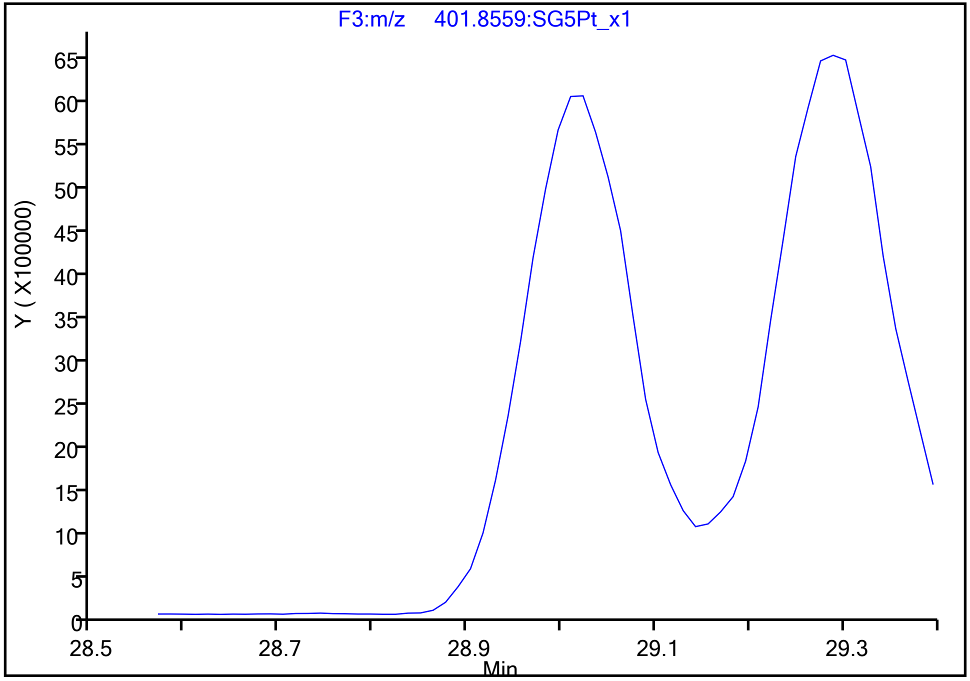

RT: 29.02
Area: 49282421
Amount: 71.970961
Amount Units: pg/ul

Manual Integration Results

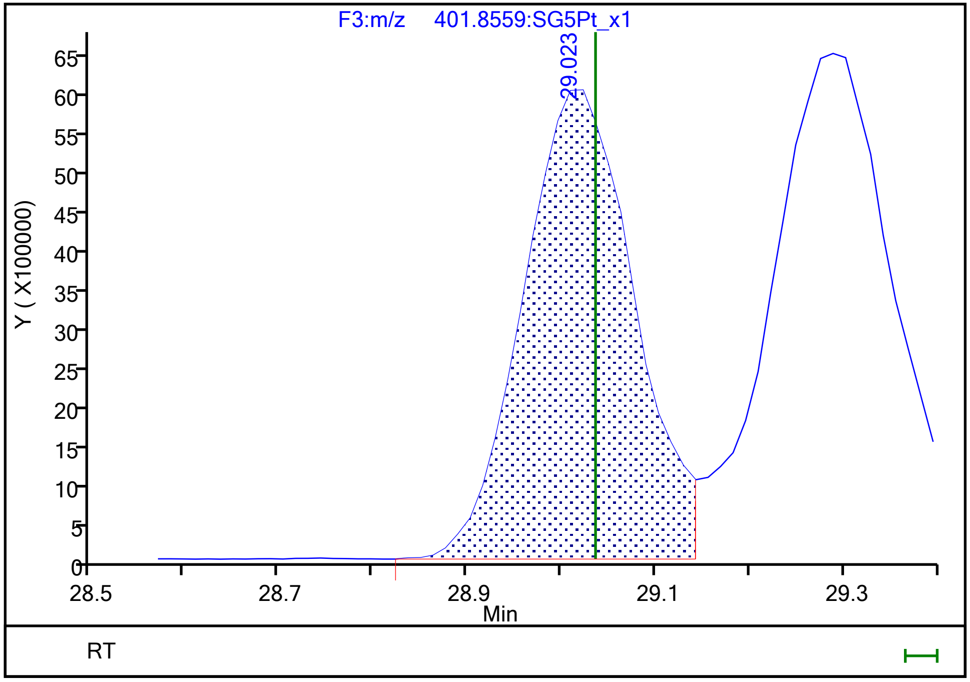

Reviewer: shardaa, 12-Oct-2020 17:57:52
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 12:46:09

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d		
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9
Client ID:	11215702-Tank#1-valve-2-3		
Operator ID:	ALM	ALS Bottle#:	15
		Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.06
Area:	79251121
Amount:	101.7609
Amount Units:	pg/ul

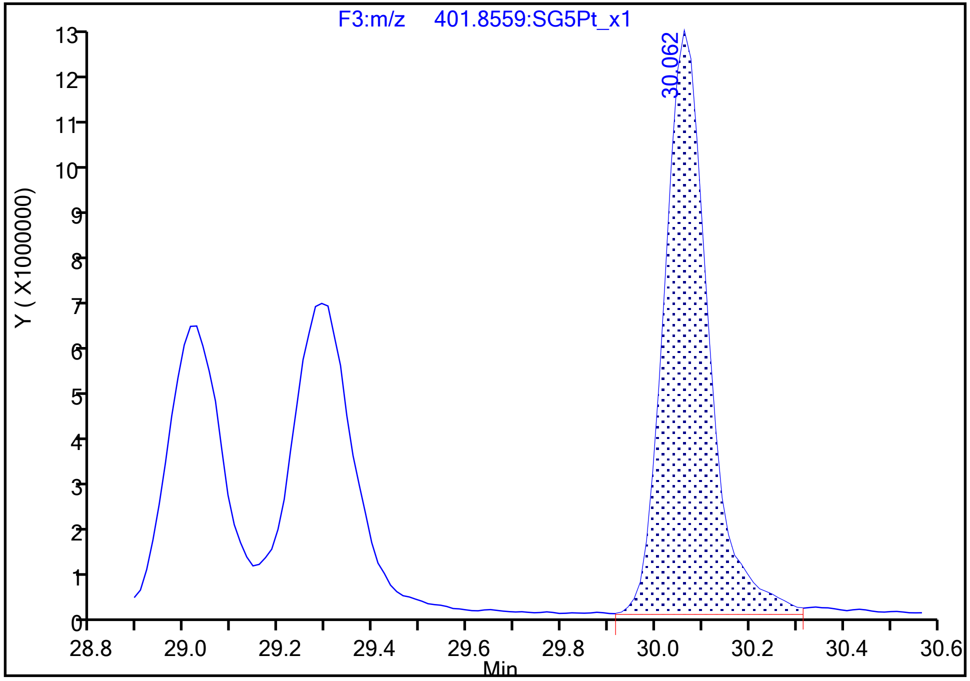

Manual Integration Results

RT:	29.29
Area:	61116913
Amount:	78.323054
Amount Units:	pg/ul

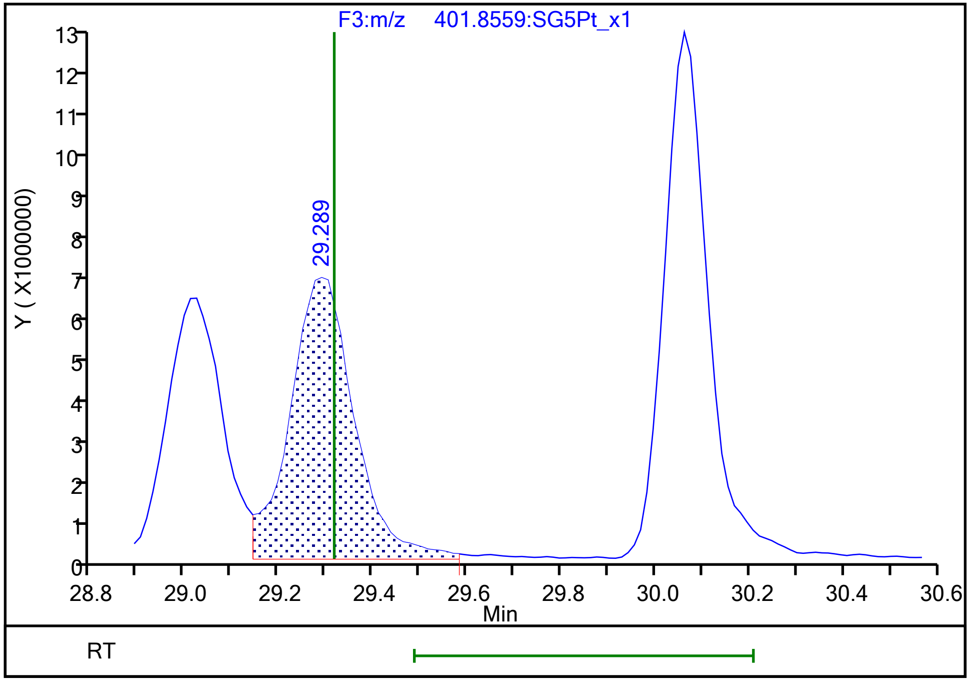

Reviewer: shardaa, 12-Oct-2020 17:57:59

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Injection Date: 09-Oct-2020 09:01:29
Instrument ID: 3D5
Lims ID: 320-65130-A-9-A
Lab Sample ID: 320-65130-9
Client ID: 11215702-Tank#1-valve-2-3
Operator ID: ALM
ALS Bottle#: 15
Worklist Smp#: 18
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 32.53
Area: 197773
Amount: 0.338265
Amount Units: pg/ul

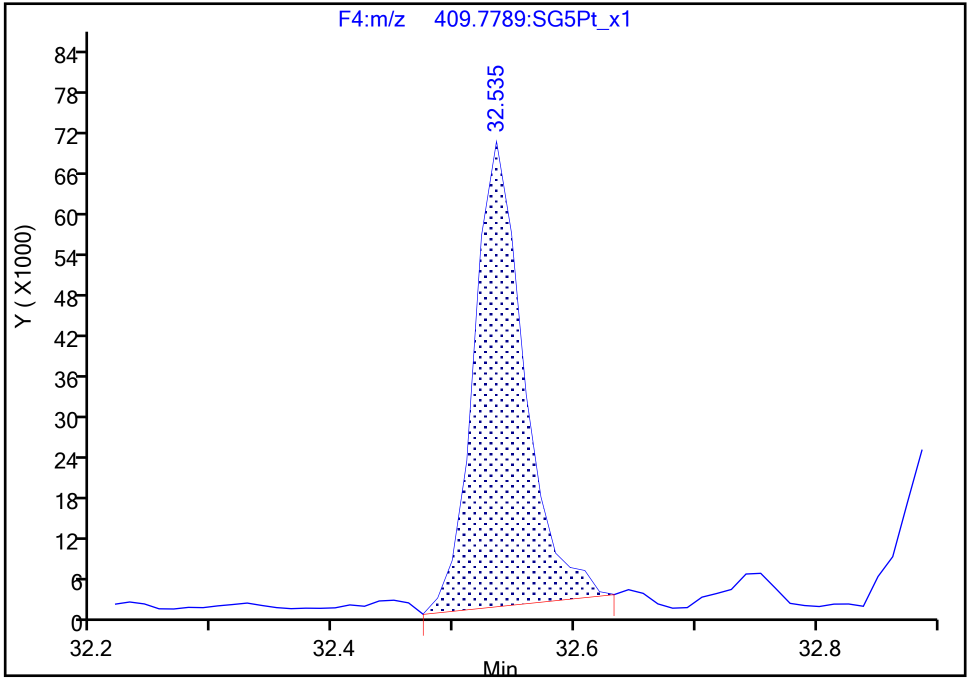

Manual Integration Results

RT: 32.53
Area: 205166
Amount: 0.343797
Amount Units: pg/ul

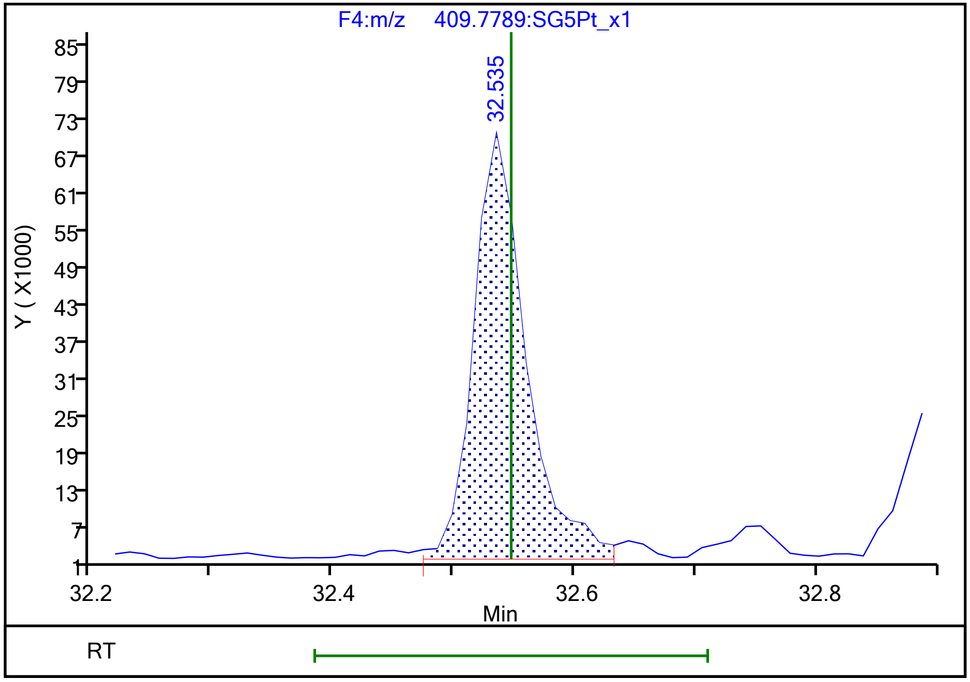

Reviewer: dadunj, 13-Oct-2020 12:43:30
Audit Action: Manually Integrated
Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

RT: 33.64
Area: 111432
Amount: 0.173378
Amount Units: pg/ul

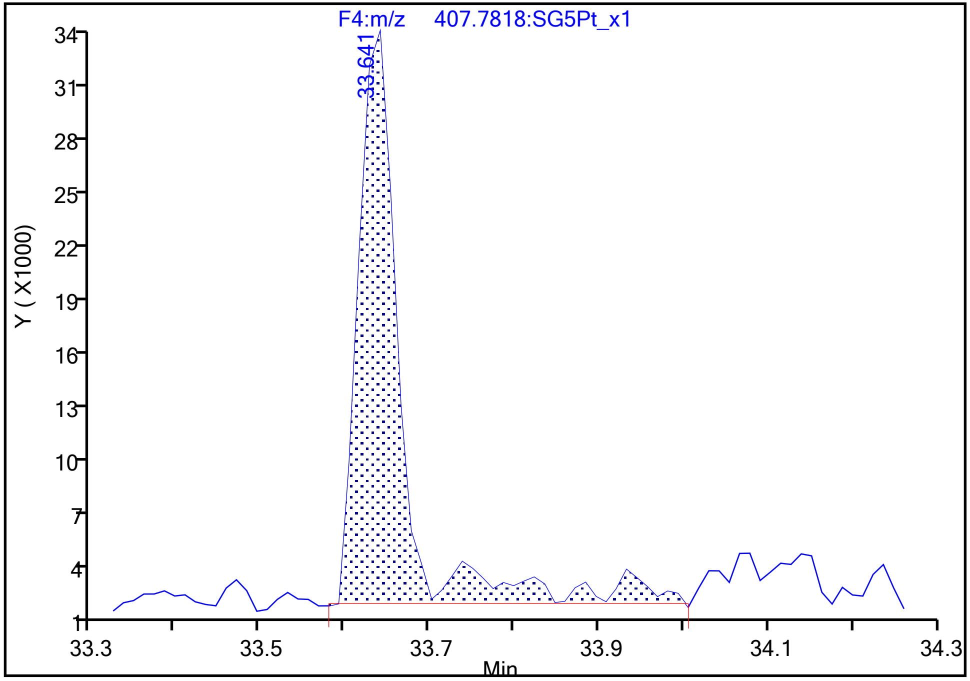

Manual Integration Results

RT: 33.64
Area: 94010
Amount: 0.158161
Amount Units: pg/ul

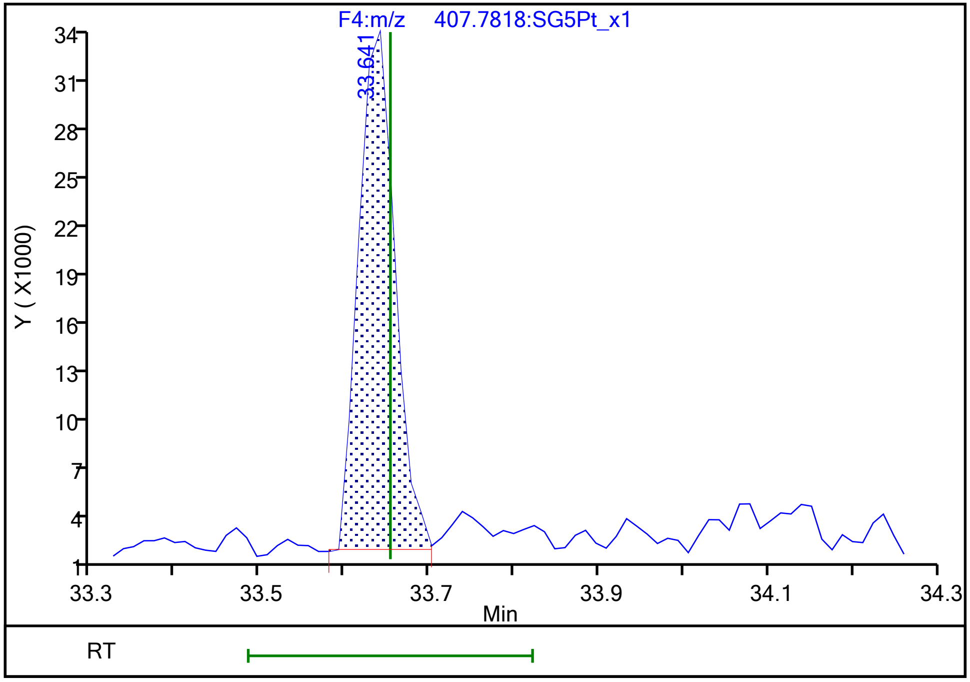

Reviewer: dadunj, 13-Oct-2020 12:43:41

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:46:09

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7818, RT: (32.52- 33.68)

Signal: 1

Processing Integration Results

RT = 32.888 Area = 85345

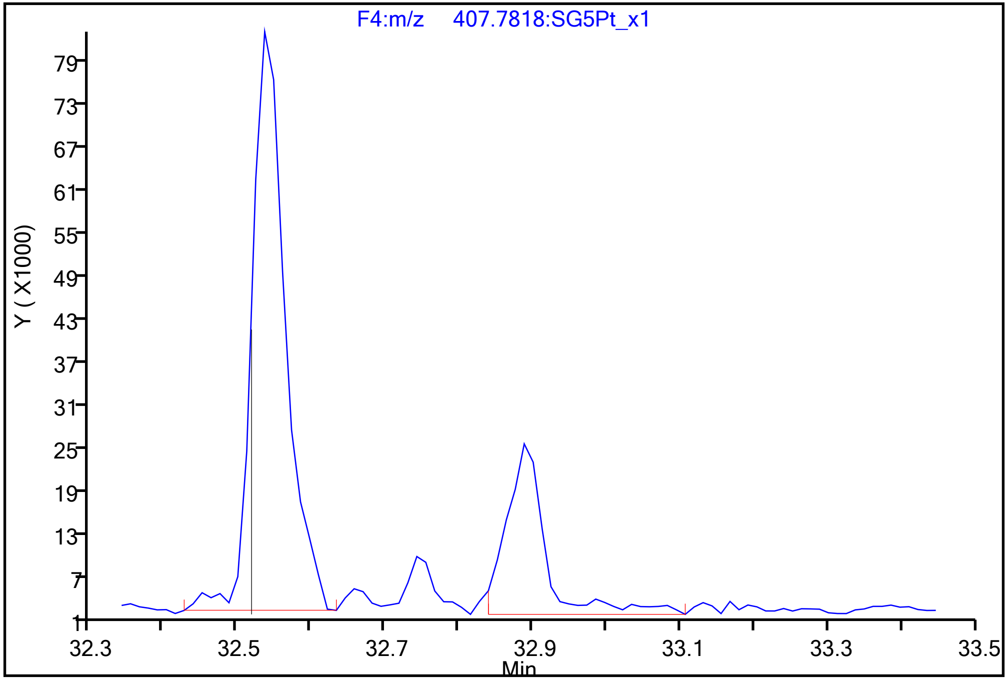

Manual Integration Results

RT = 32.888 Area = 74314 M

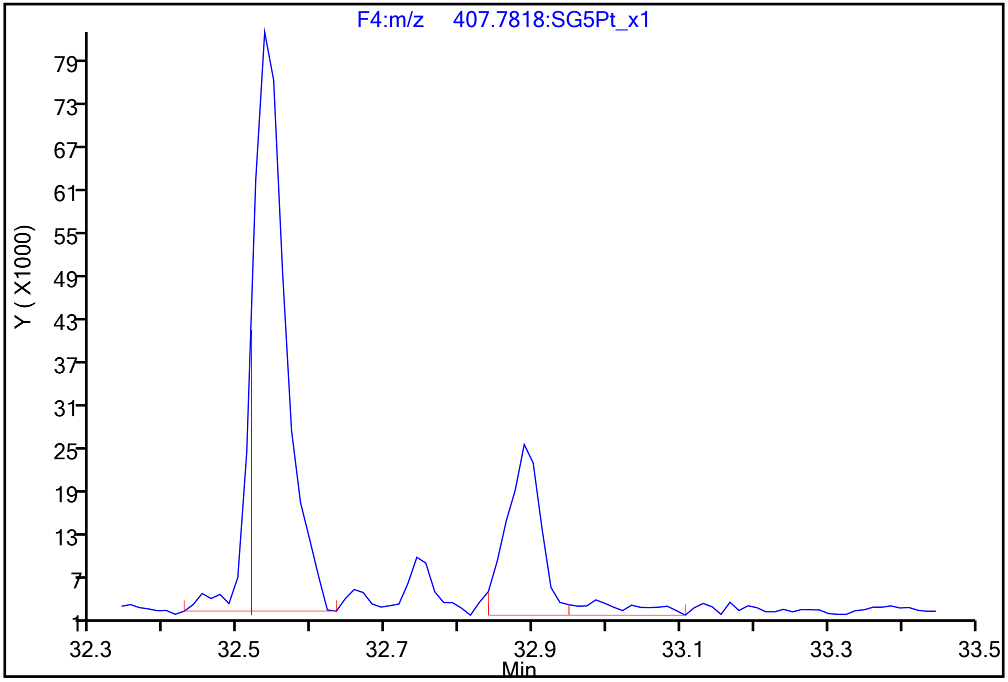

Reviewer: dadunj, 13-Oct-2020 12:43:44

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 33.40
Area: 192377
Amount: 0.378189
Amount Units: pg/ul

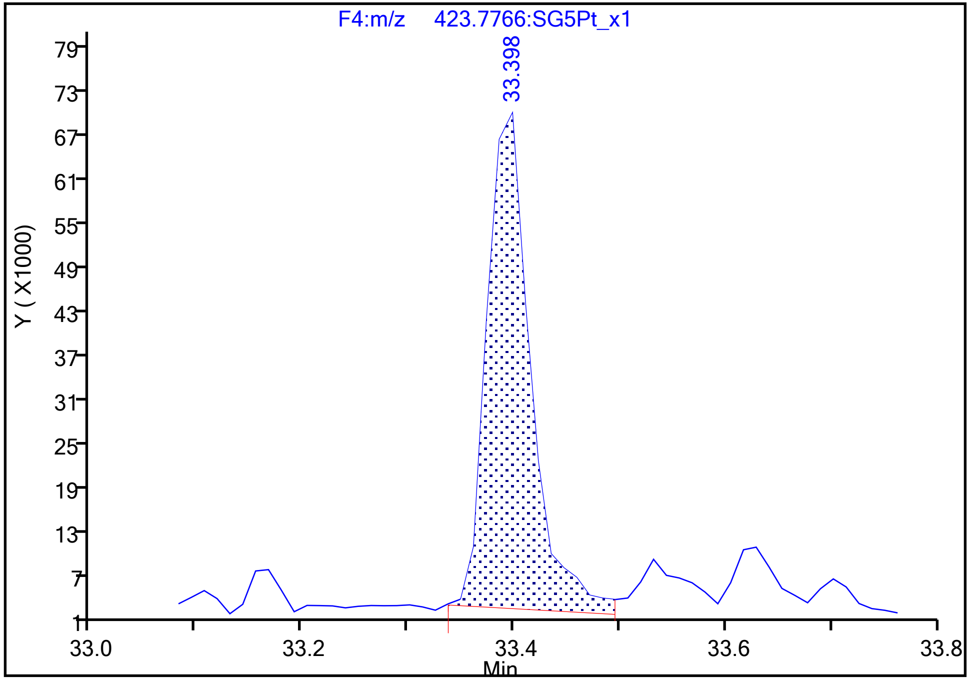

Manual Integration Results

RT: 33.40
Area: 188361
Amount: 0.380260
Amount Units: pg/ul

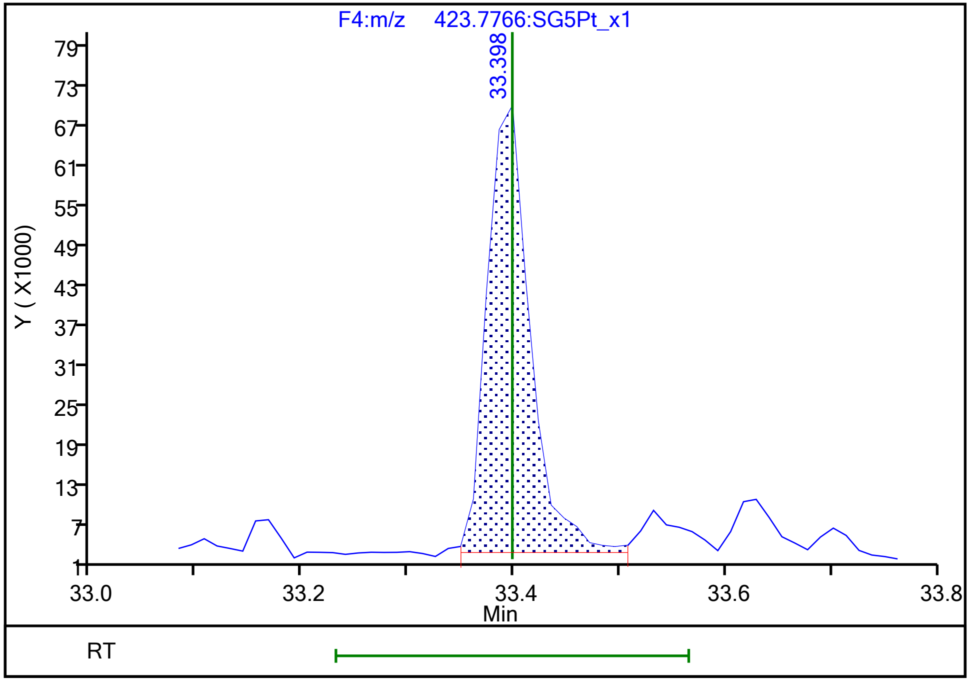

Reviewer: dadunj, 13-Oct-2020 12:43:59

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date: 09-Oct-2020 09:01:29

Instrument ID: 3D5

Lims ID: 320-65130-A-9-A

Lab Sample ID: 320-65130-9

Client ID: 11215702-Tank#1-valve-2-3

Operator ID: ALM

ALS Bottle#: 15

Worklist Smp#: 18

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 33.40

Area: 204889

Amount: 0.378189

Amount Units: pg/ul

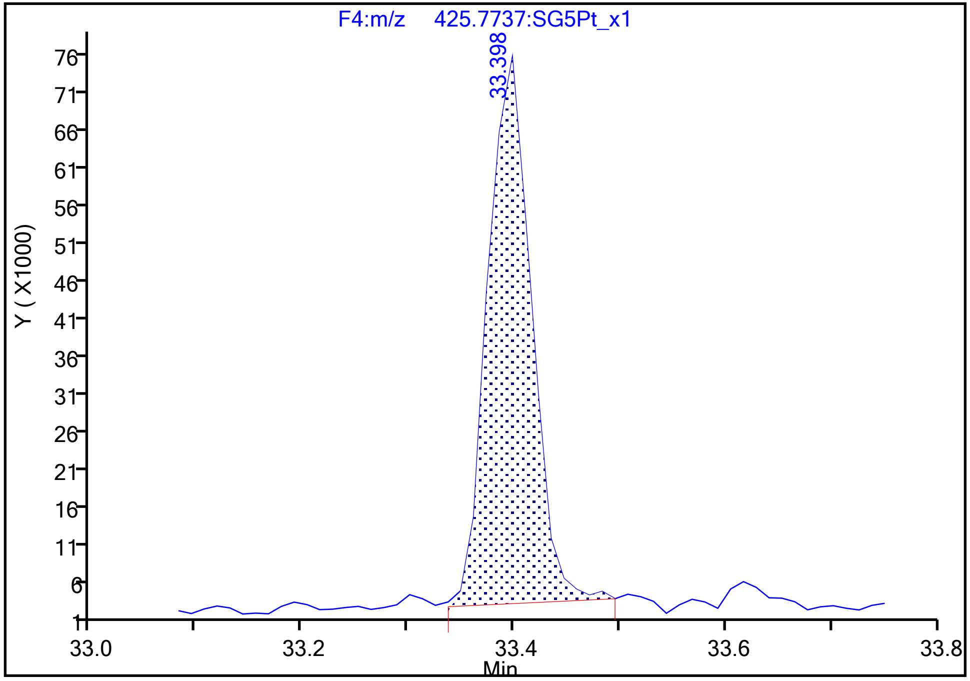

Manual Integration Results

RT: 33.40

Area: 211081

Amount: 0.380260

Amount Units: pg/ul

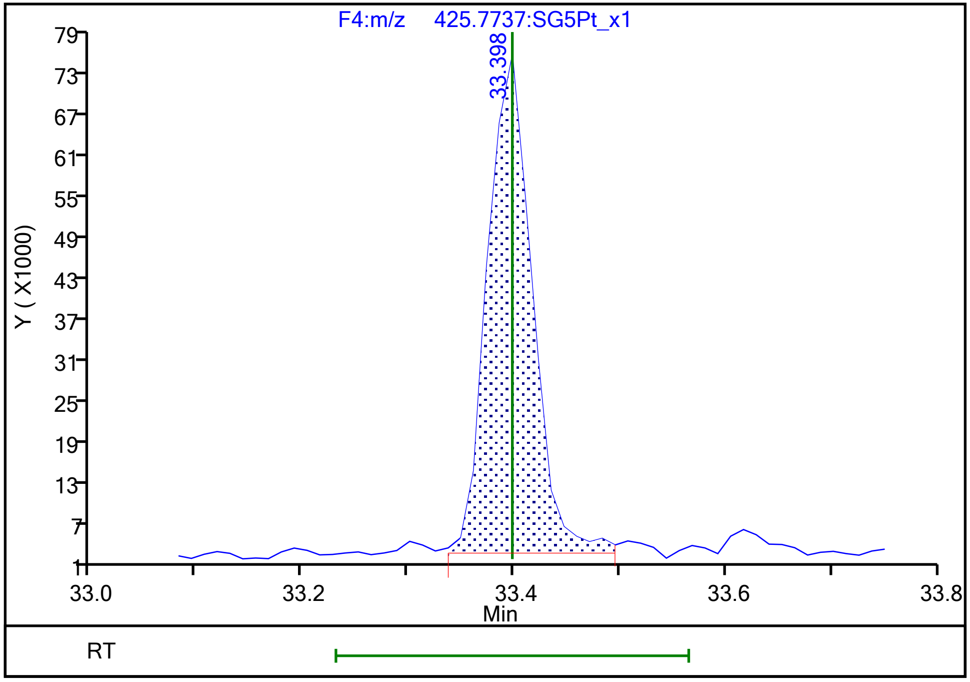

Reviewer: dadunj, 13-Oct-2020 12:44:10

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d				
Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (32.98- 33.70)

Signal: 1

Processing Integration Results

RT = 32.839 Area = 178166

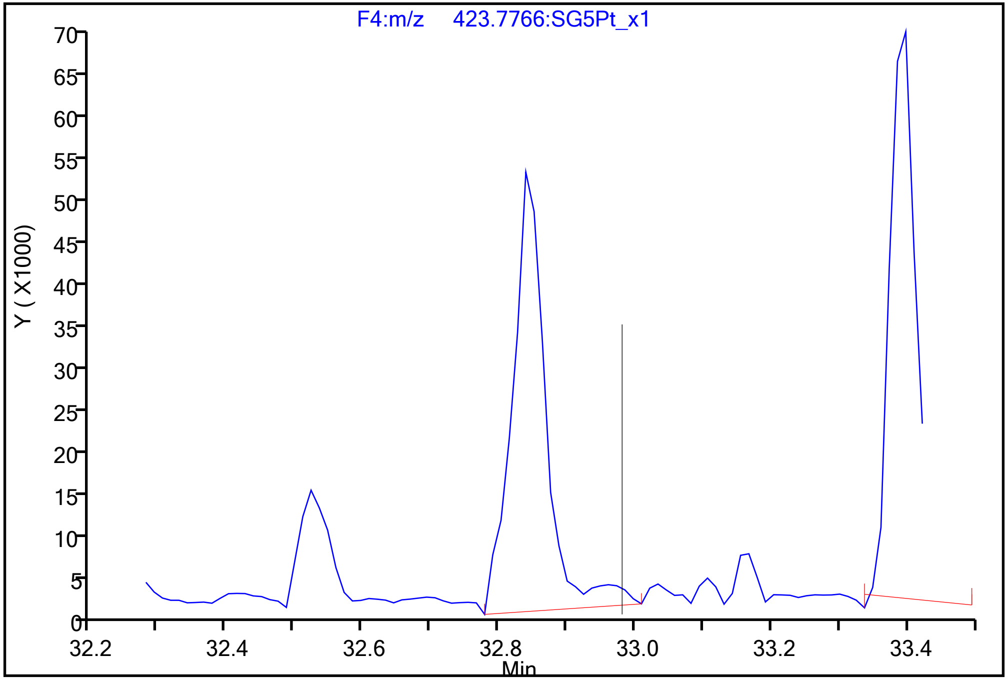

Manual Integration Results

RT = 32.839 Area = 149865 M

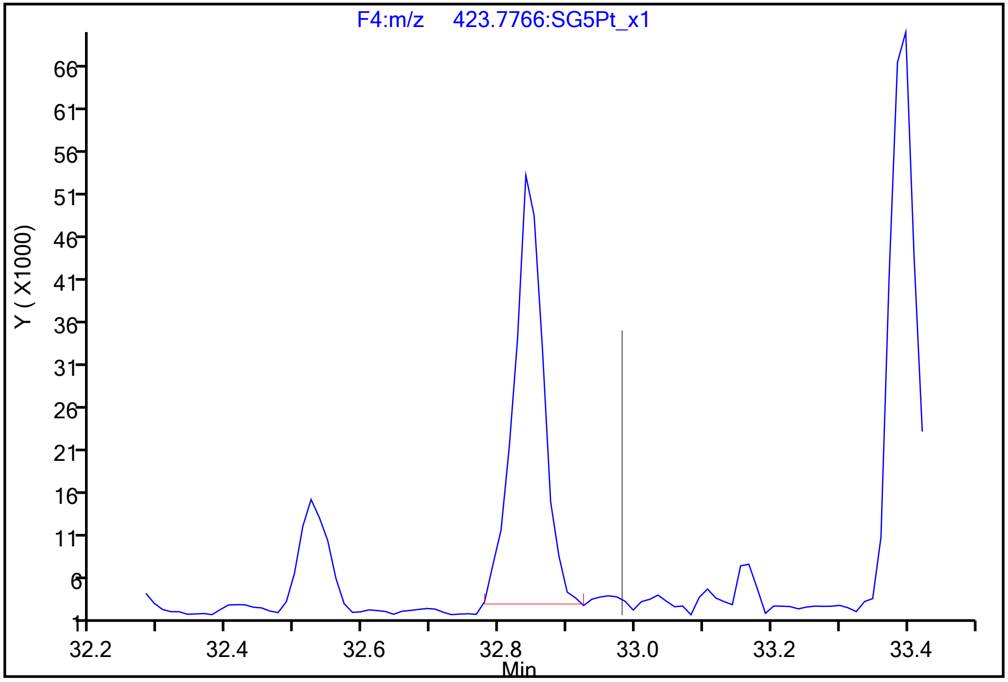

Reviewer: dadunj, 13-Oct-2020 12:44:19

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date:	09-Oct-2020 09:01:29	Instrument ID:	3D5		
Lims ID:	320-65130-A-9-A	Lab Sample ID:	320-65130-9		
Client ID:	11215702-Tank#1-valve-2-3				
Operator ID:	ALM	ALS Bottle#:	15	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (32.98- 33.70)

Signal: 2

Processing Integration Results

RT = 32.839 Area = 179927

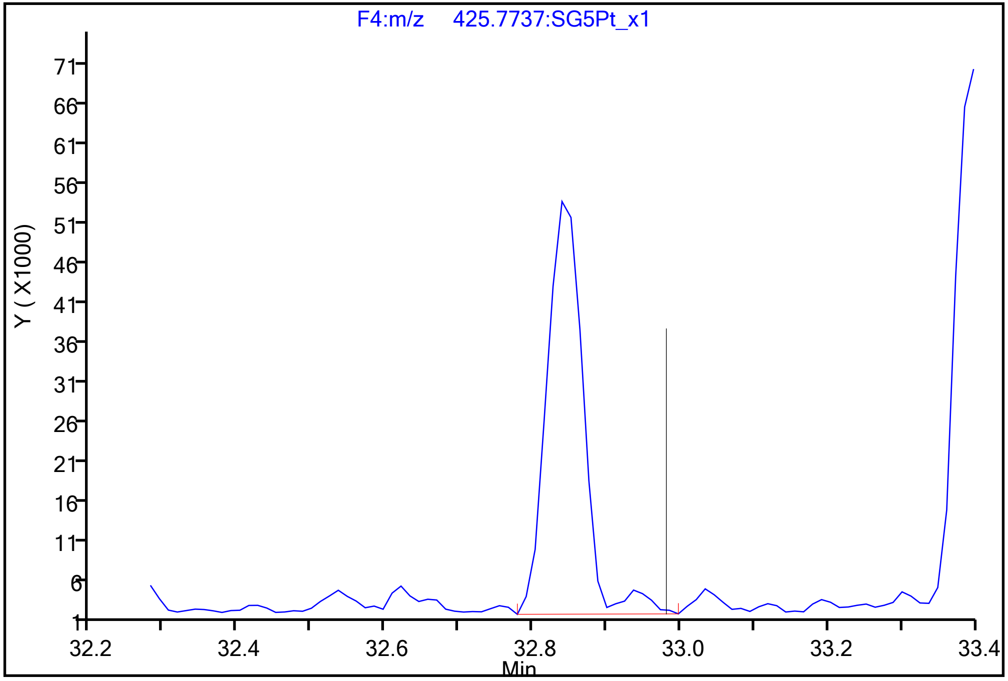

Manual Integration Results

RT = 32.839 Area = 171476 M

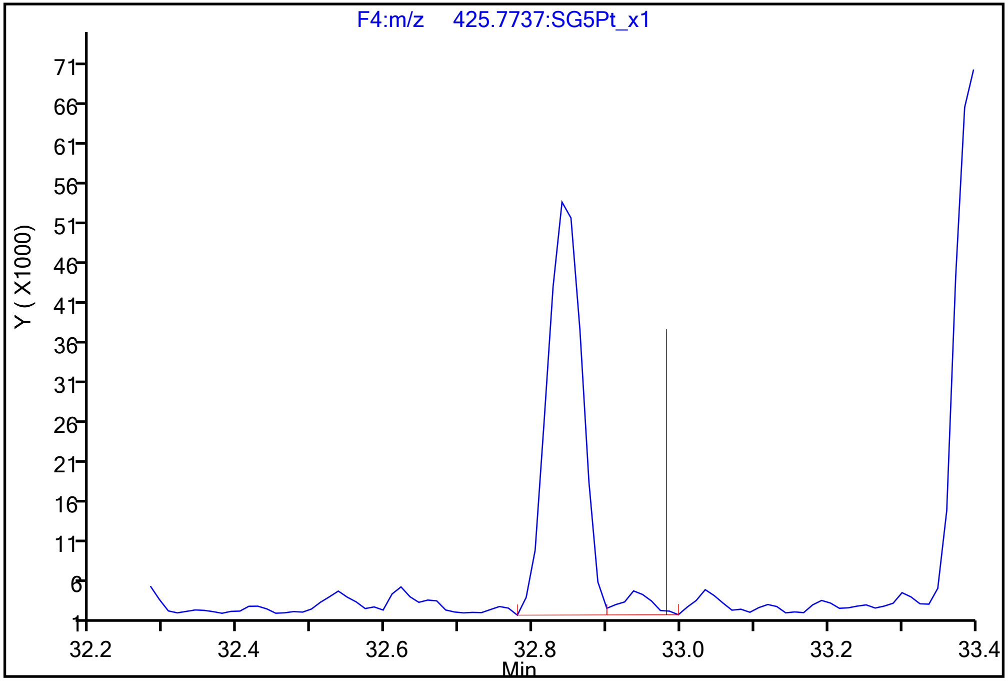

Reviewer: dadunj, 13-Oct-2020 12:44:27

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Injection Date: 09-Oct-2020 09:01:29
Instrument ID: 3D5
Lims ID: 320-65130-A-9-A
Lab Sample ID: 320-65130-9
Client ID: 11215702-Tank#1-valve-2-3
Operator ID: ALM
ALS Bottle#: 15
Worklist Smp#: 18
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 1

RT: 35.62
Area: 195588
Amount: 0.440866
Amount Units: pg/ul

Processing Integration Results

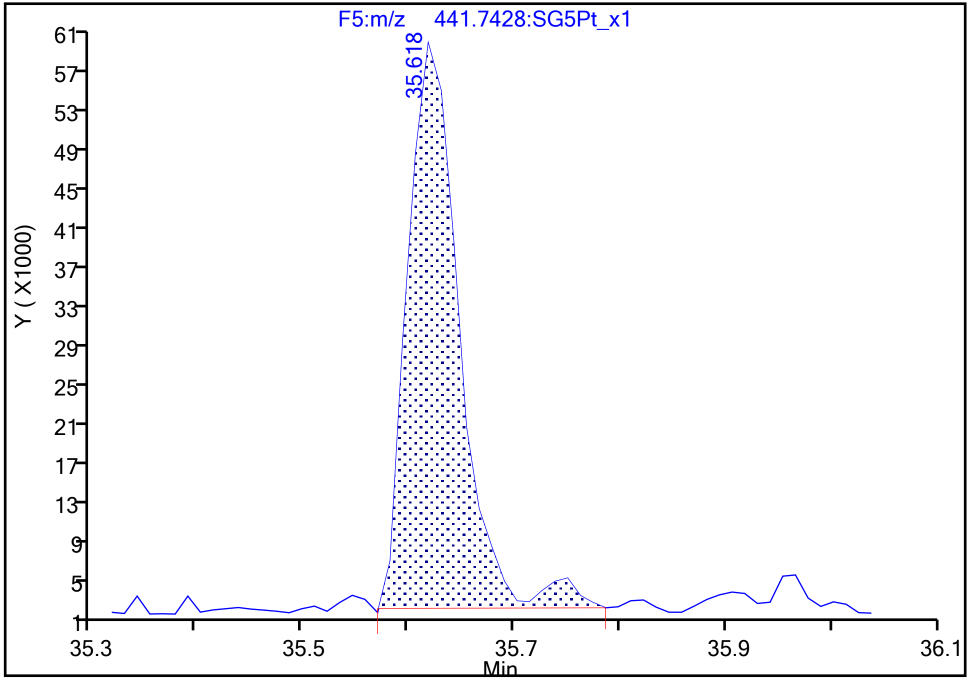

RT: 35.62
Area: 188766
Amount: 0.414971
Amount Units: pg/ul

Manual Integration Results

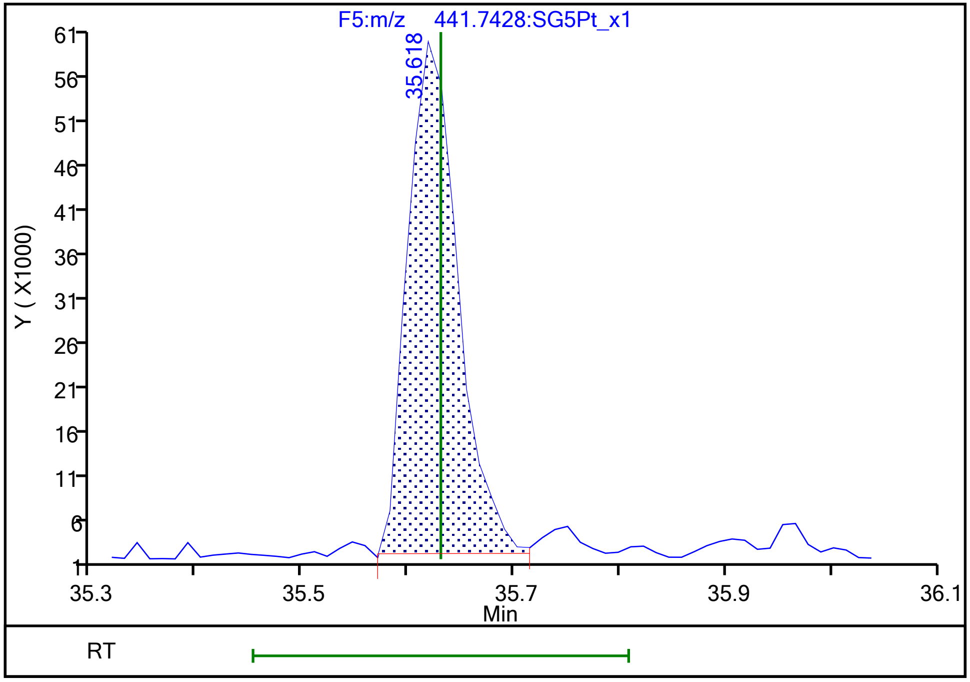

Reviewer: dadunj, 13-Oct-2020 12:44:37
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:46:09
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d
Injection Date: 09-Oct-2020 09:01:29
Instrument ID: 3D5
Lims ID: 320-65130-A-9-A
Lab Sample ID: 320-65130-9
Client ID: 11215702-Tank#1-valve-2-3
Operator ID: ALM
ALS Bottle#: 15
Worklist Smp#: 18
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 2

RT: 35.62
Area: 274154
Amount: 0.440866
Amount Units: pg/ul

Processing Integration Results

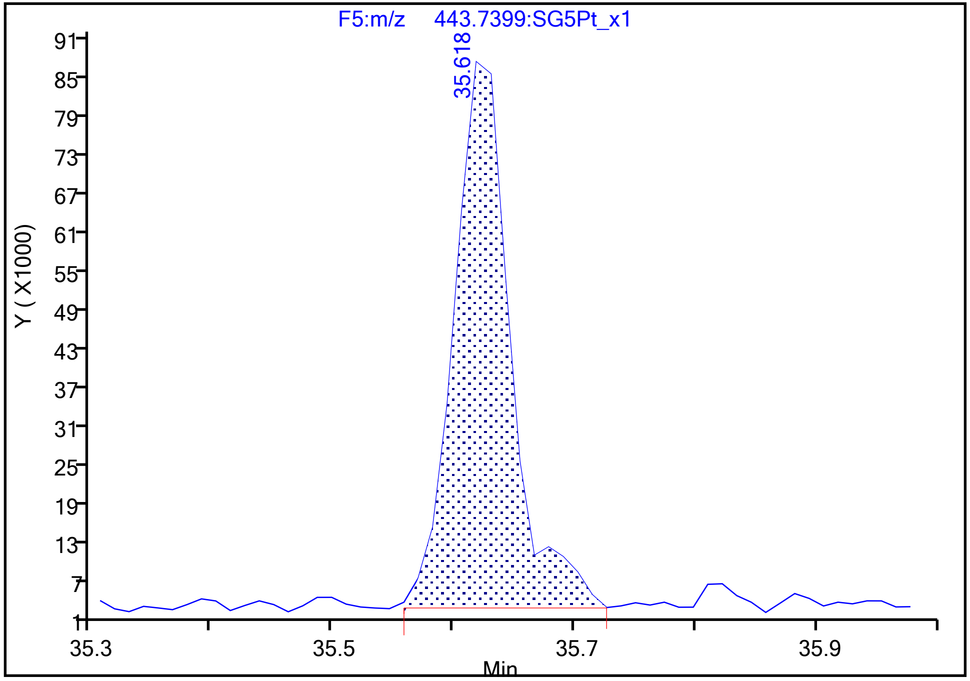

RT: 35.62
Area: 253385
Amount: 0.414971
Amount Units: pg/ul

Manual Integration Results

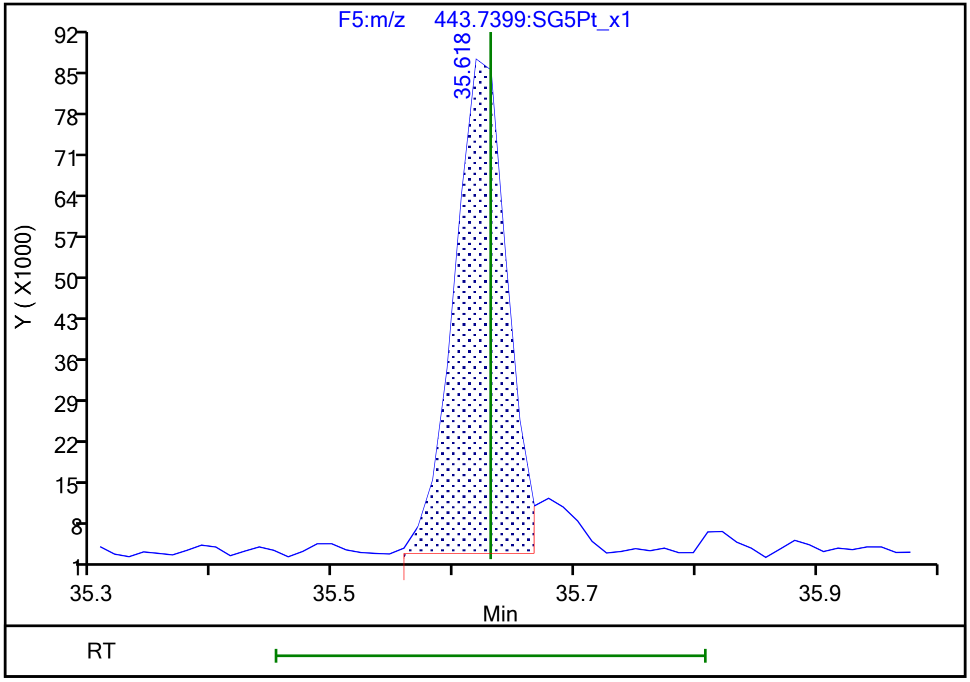

Reviewer: dadunj, 13-Oct-2020 12:44:41
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date: 09-Oct-2020 09:01:29

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482

Sample Line#: 18

Column Type:

Column Dia:

TCDF

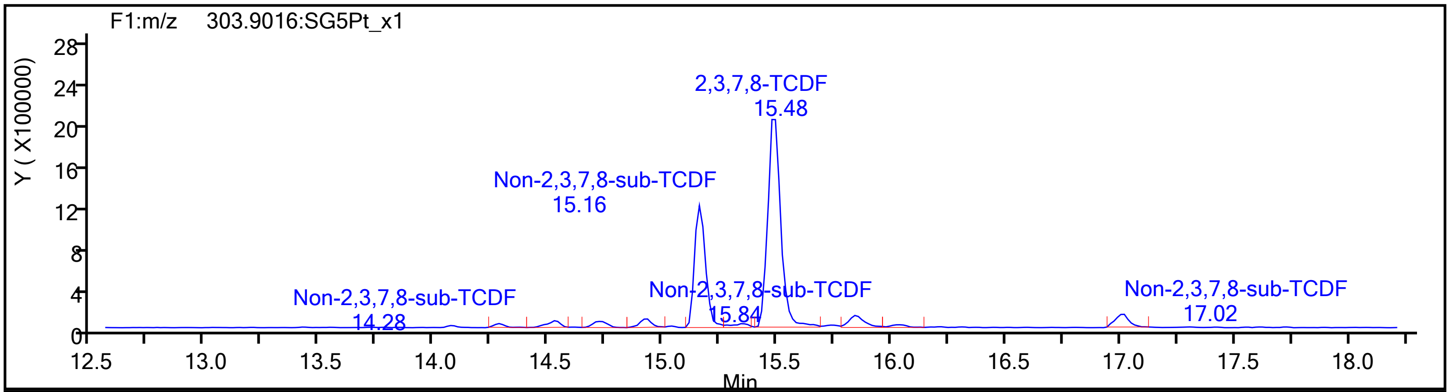

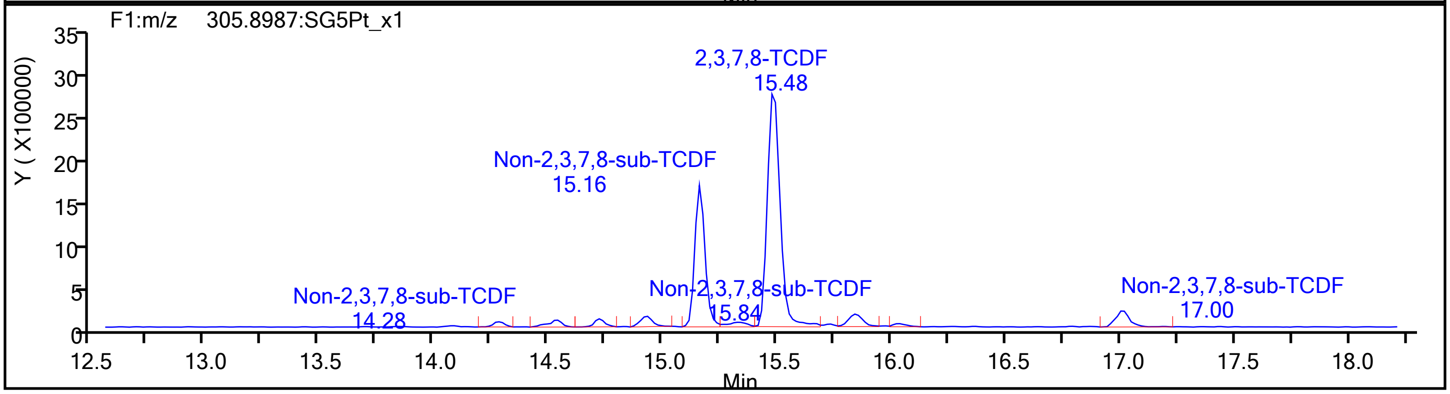

TCDF Standards

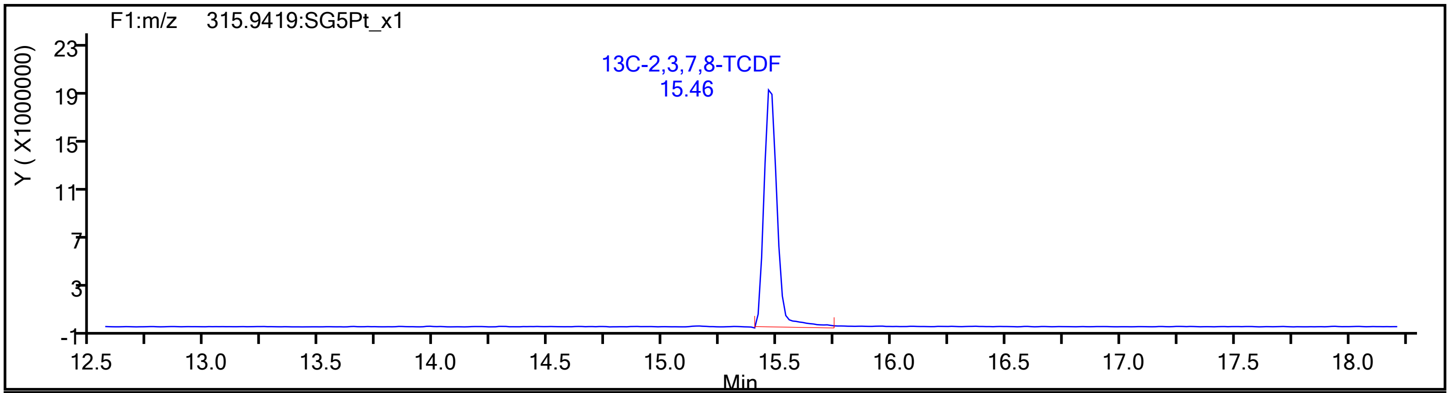

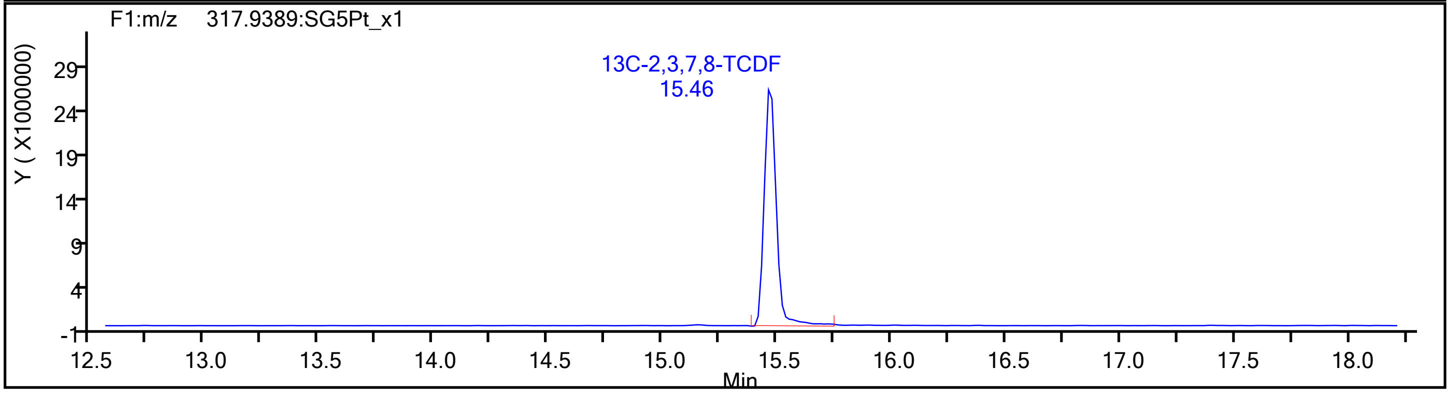

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date: 09-Oct-2020 09:01:29

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482

Sample Line#: 18

Column Type:

Column Dia:

TCDF

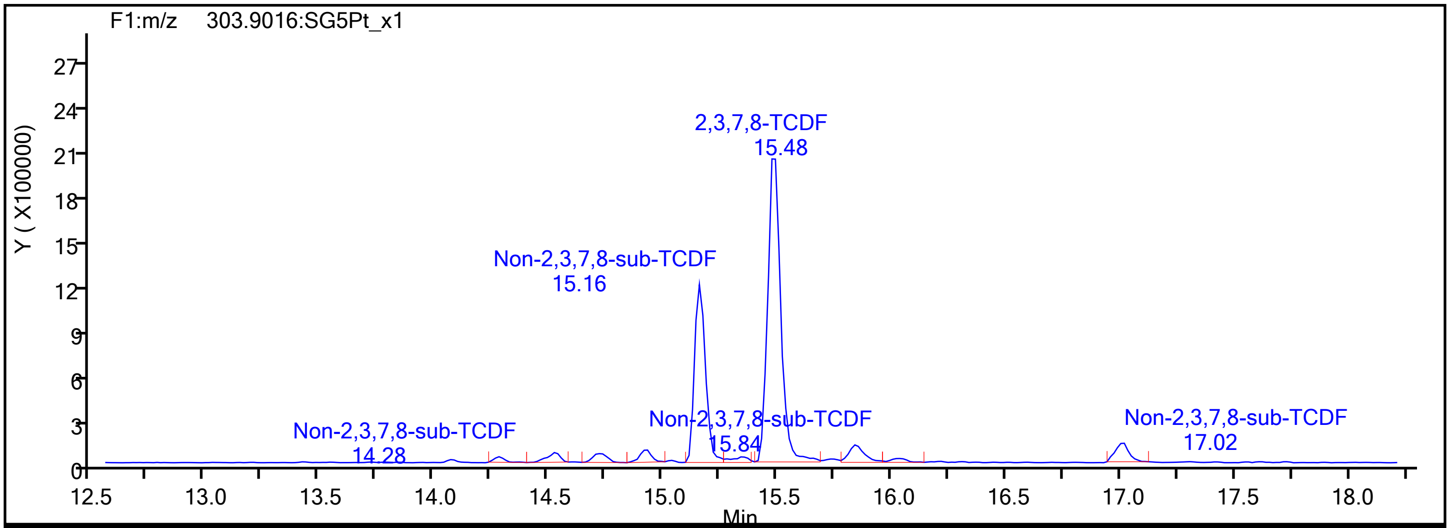

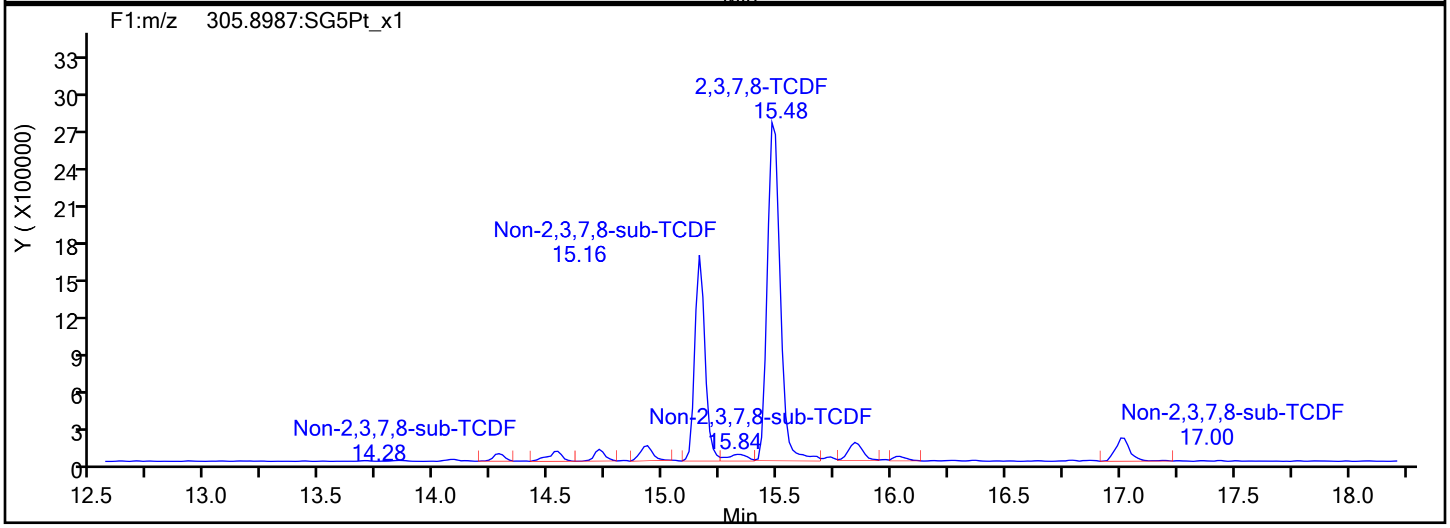

TCDF Interference Mass

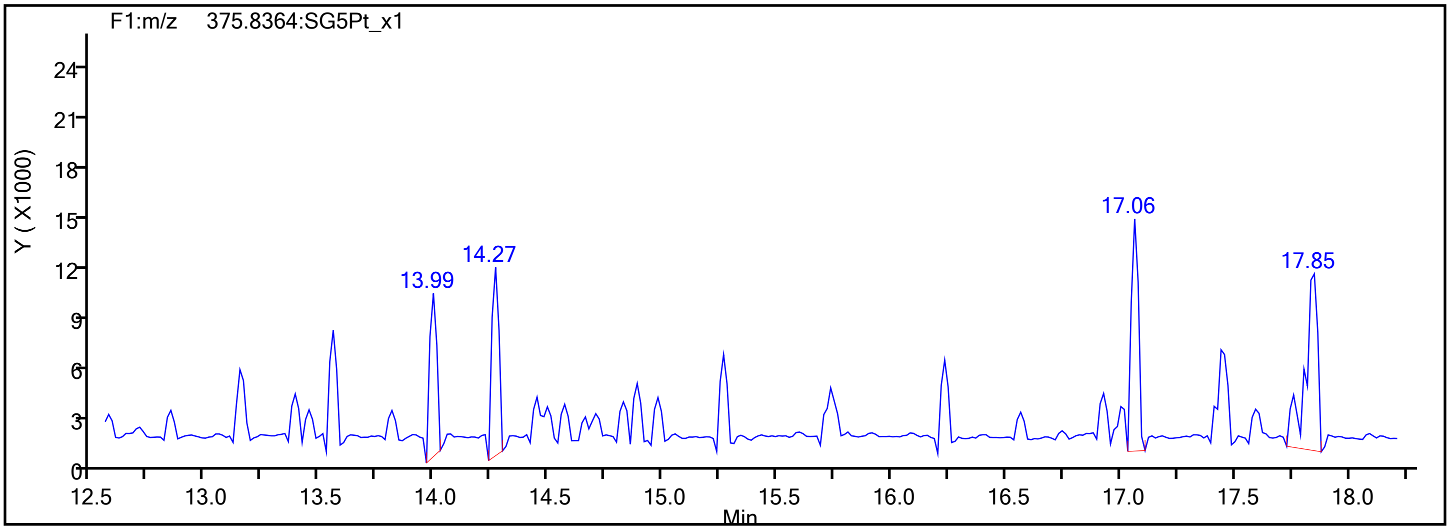

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d		
Injection Date:	09-Oct-2020 09:01:29	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-3		
Worklist#:	420482	Sample Line#:	18
Column Type:		Column Dia:	

TCDD

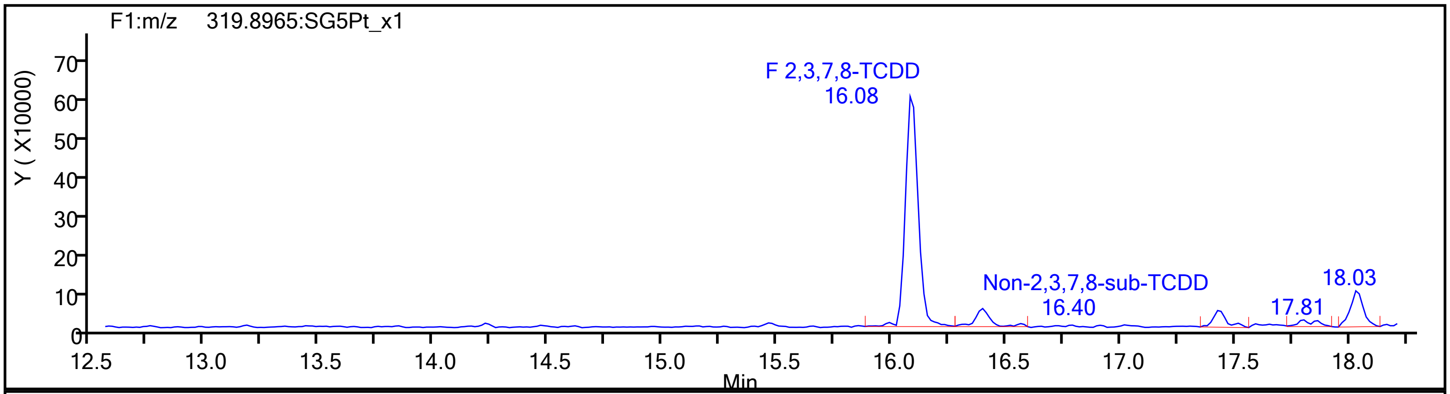

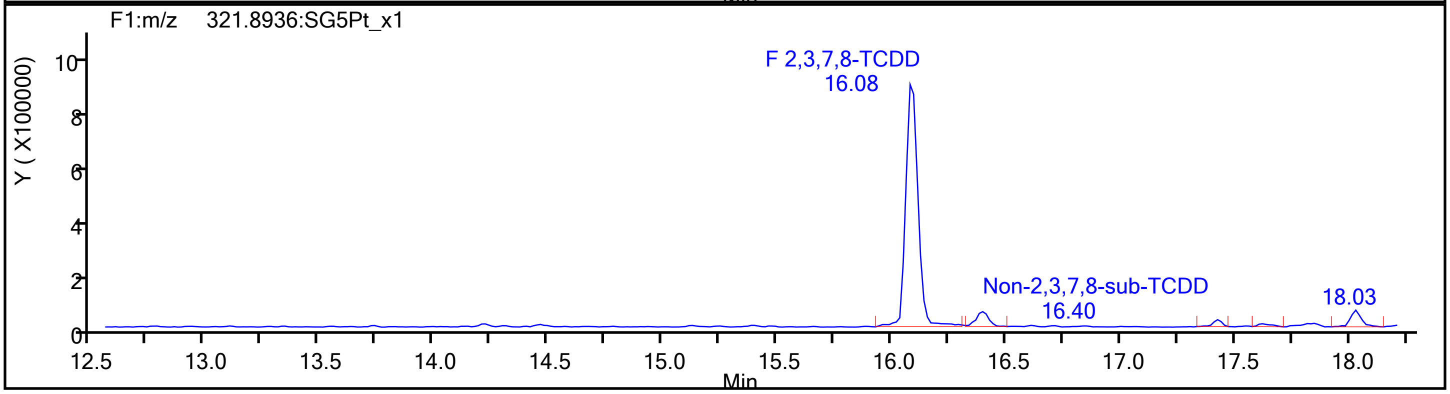

TCDD Standards

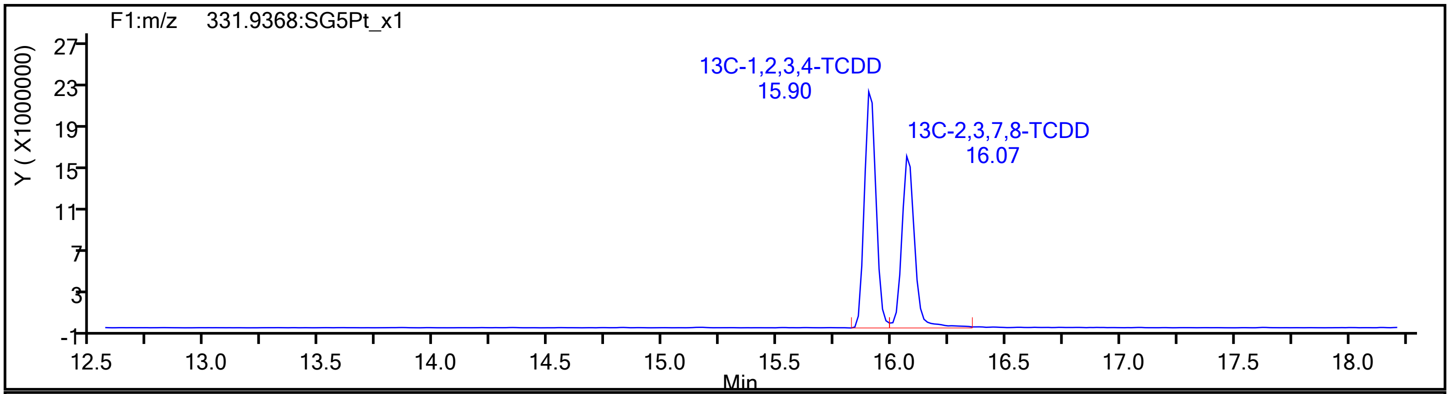

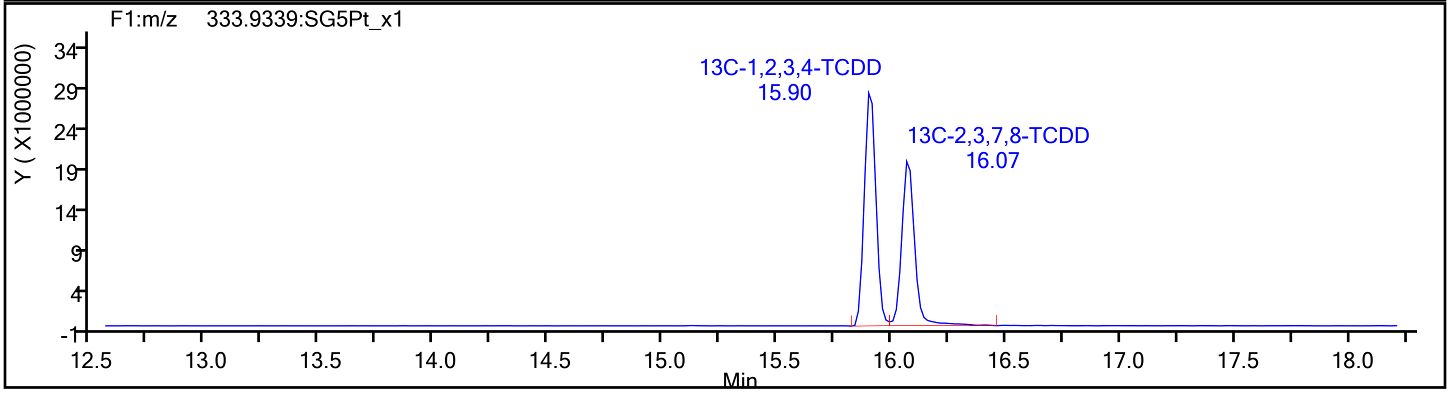

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_18.d

Injection Date: 09-Oct-2020 09:01:29
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-3
Worklist#: 420482
Sample Line#: 18
Column Type:
Column Dia:

37Cl4-TCDD

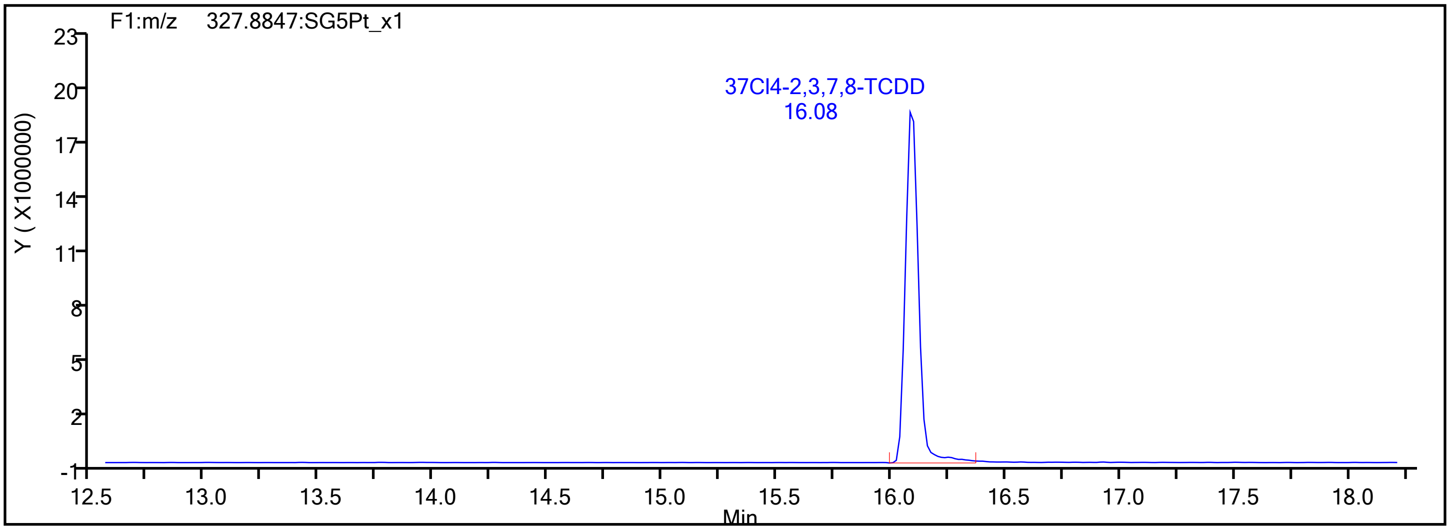

37Cl4-TCDD Standards

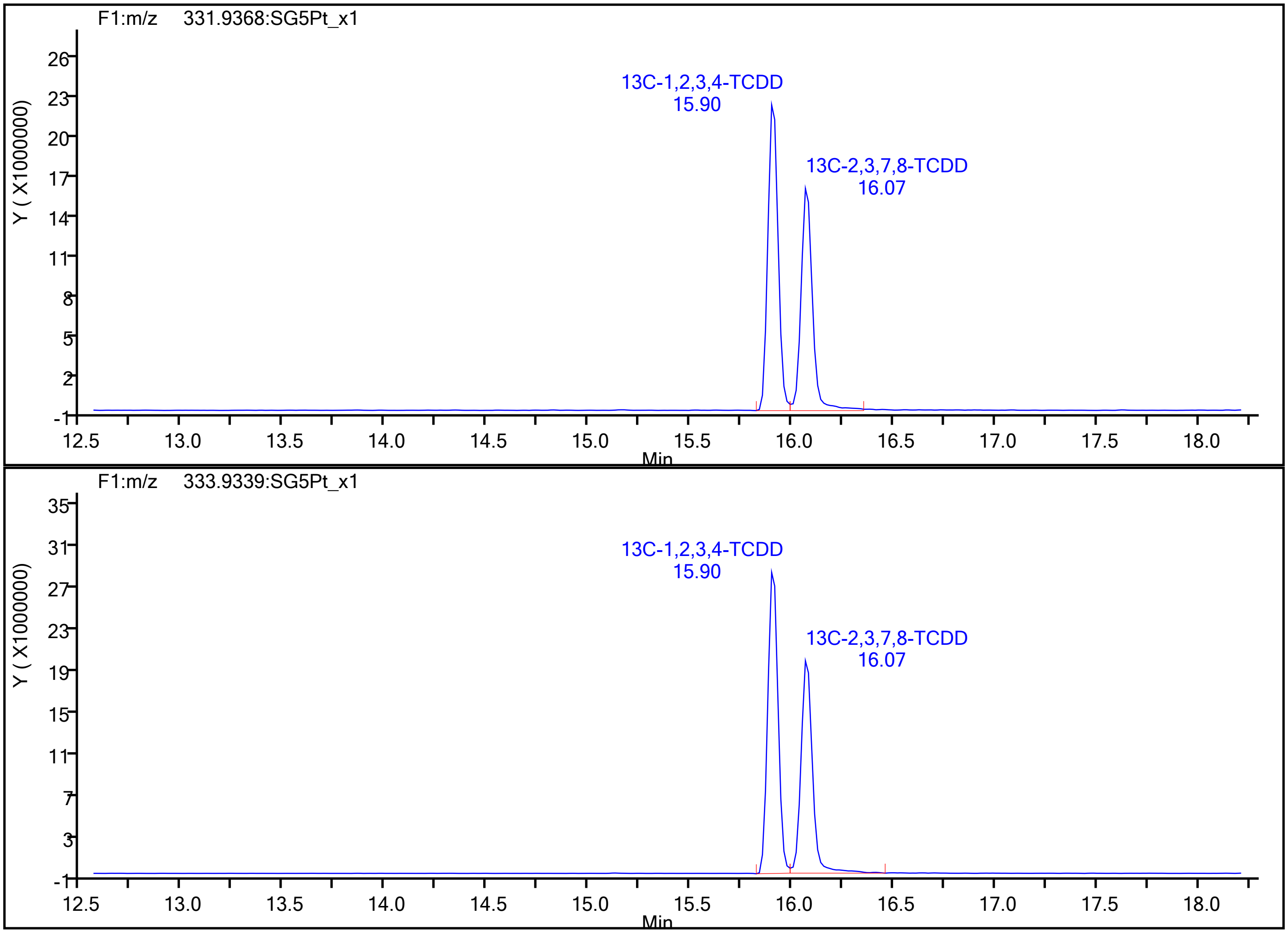

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 09:01:29 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482 Sample Line#: 18

Column Type: Column Dia:

PeCDF

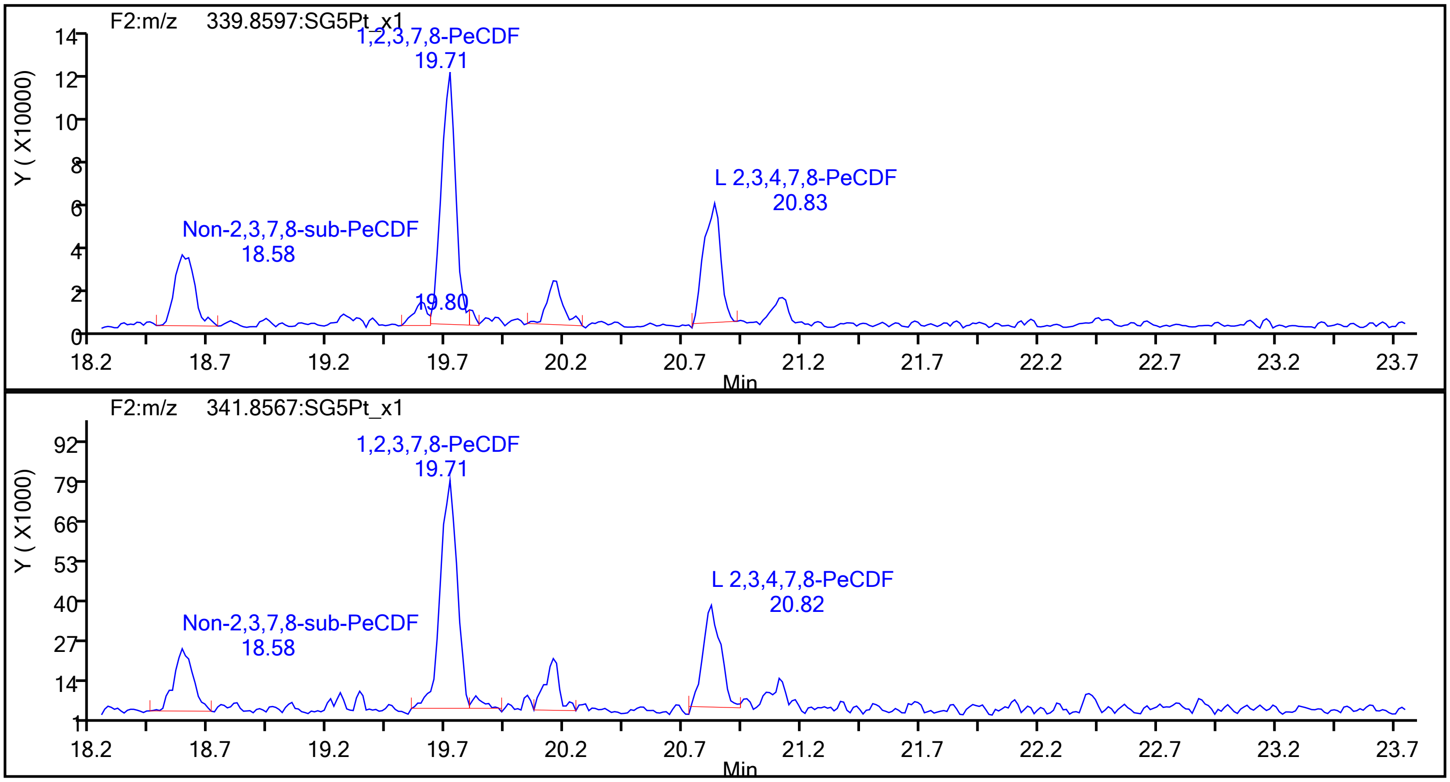

PeCDF Standards

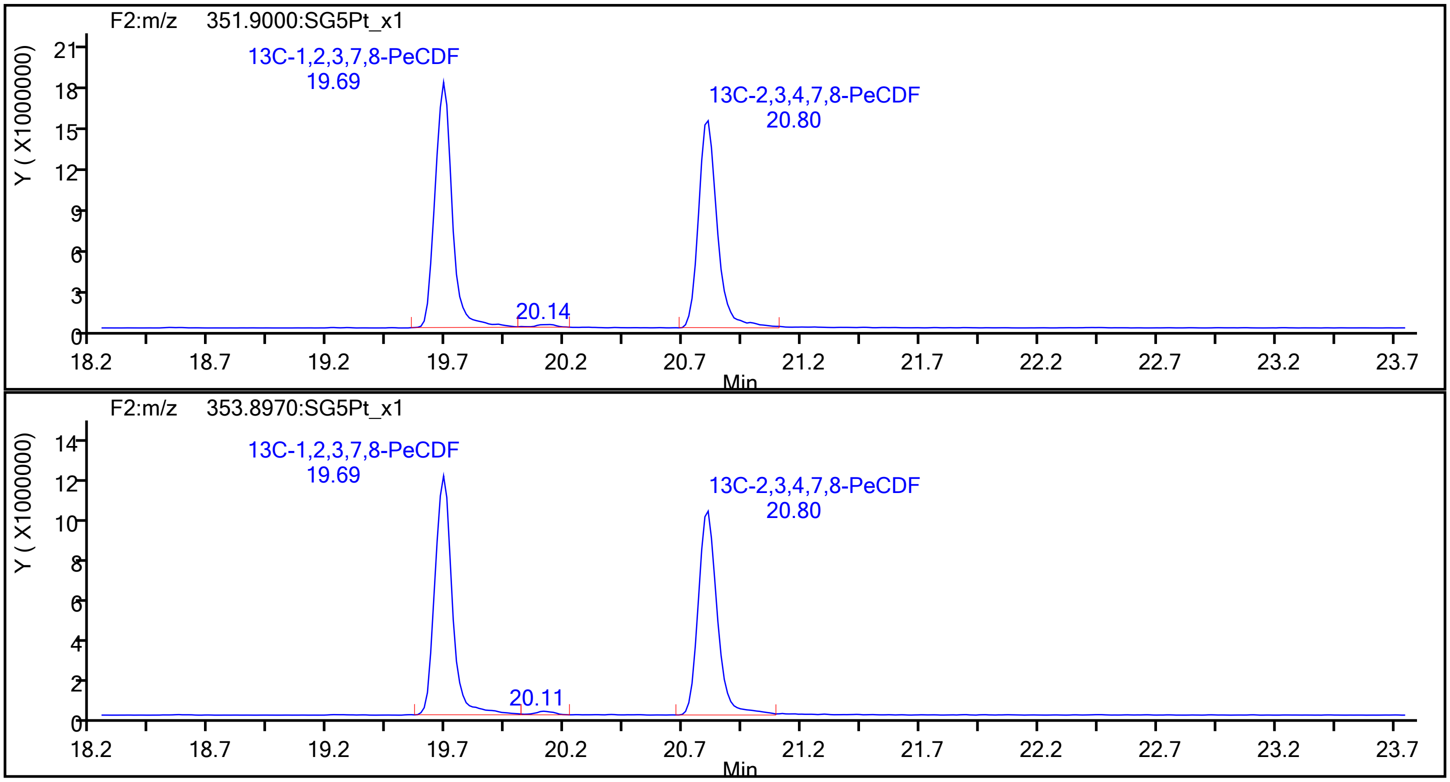

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 09:01:29
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-3
Worklist#: 420482
Sample Line#: 18
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Column Dia:

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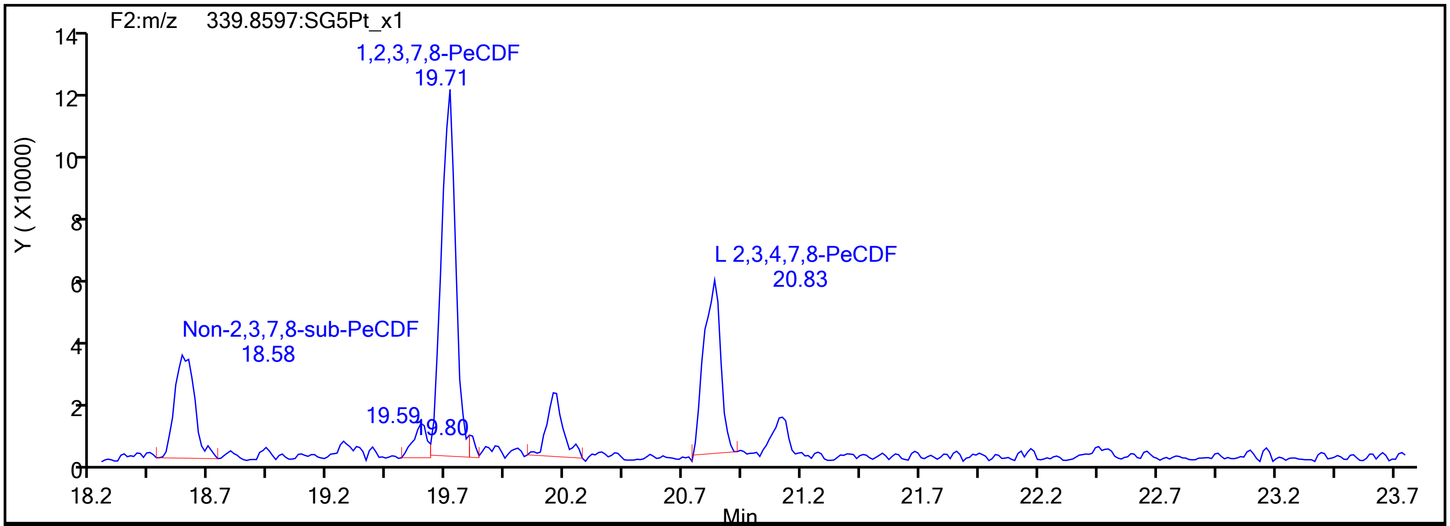

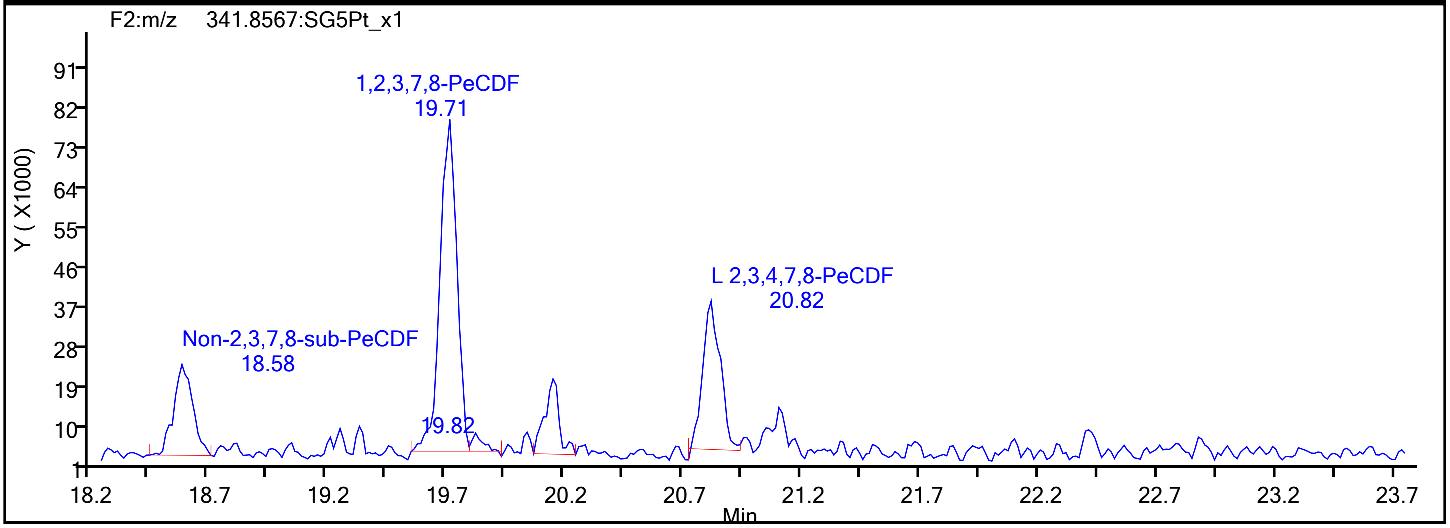

PeCDF Interference Mass

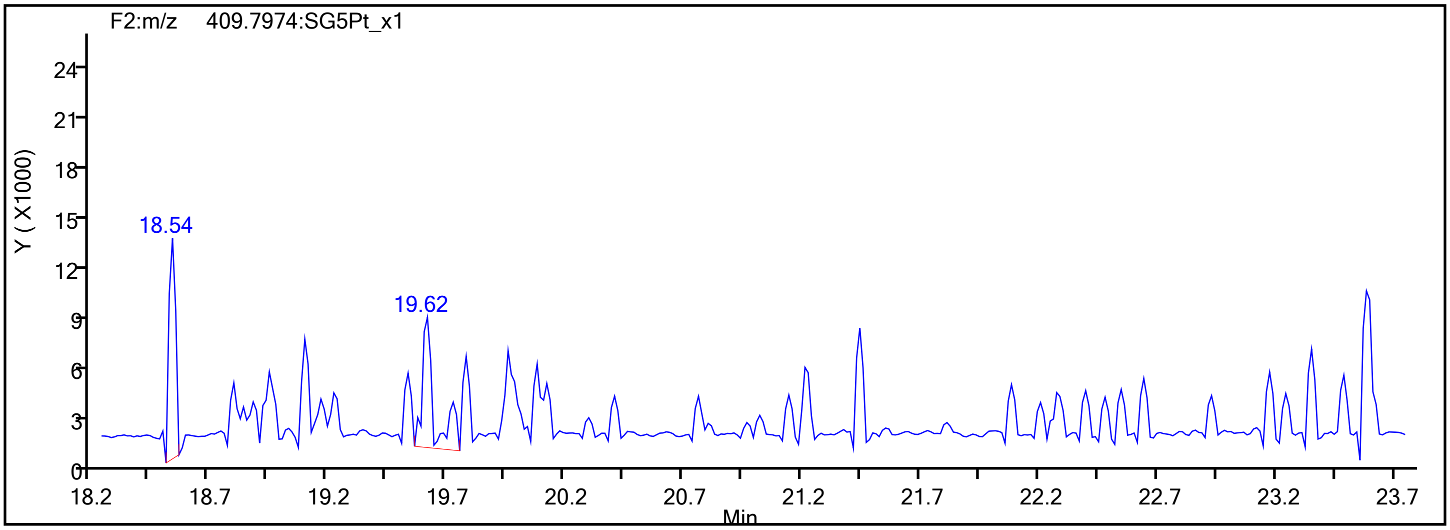

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Eurofins TestAmerica, Sacramento

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Operator ID: ALM

Method: Dioxin_3D5
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Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482
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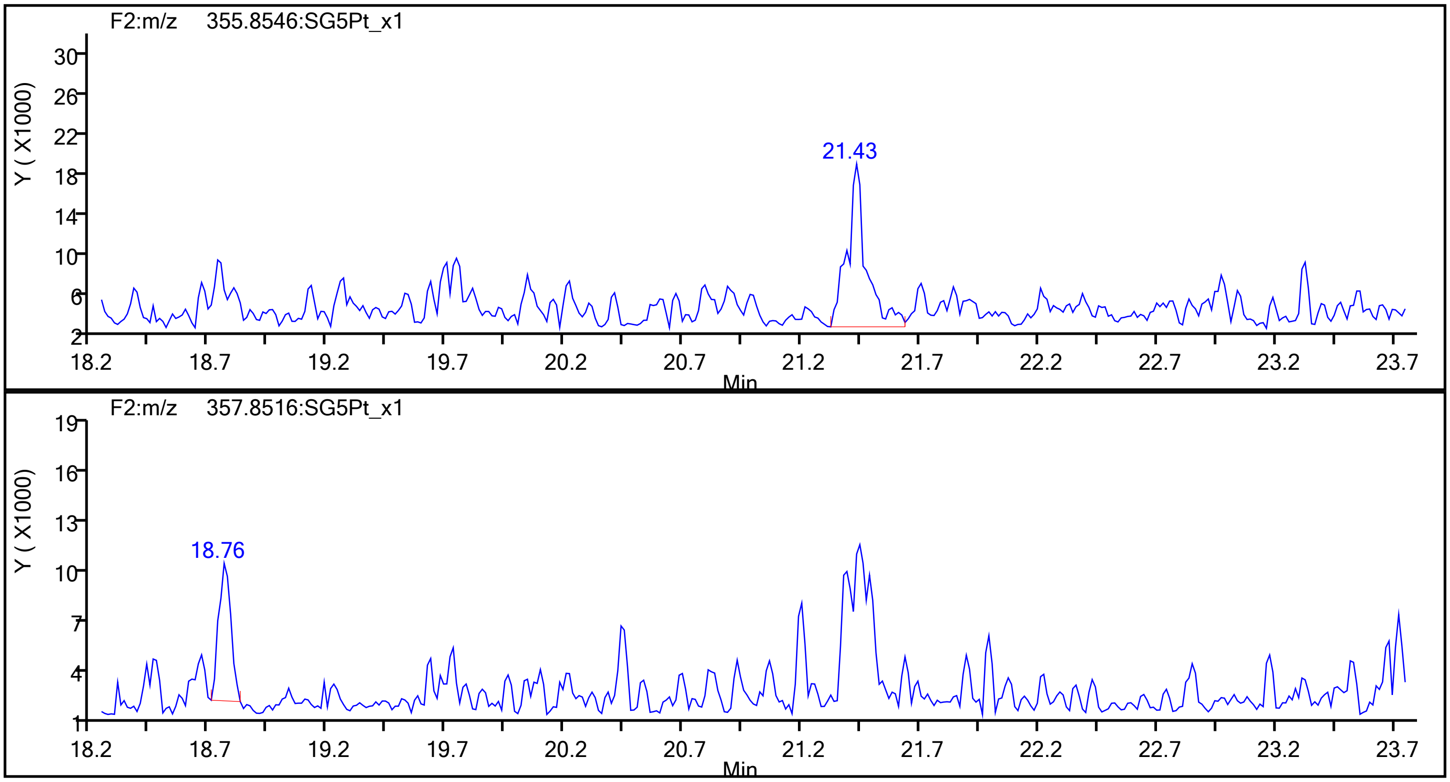

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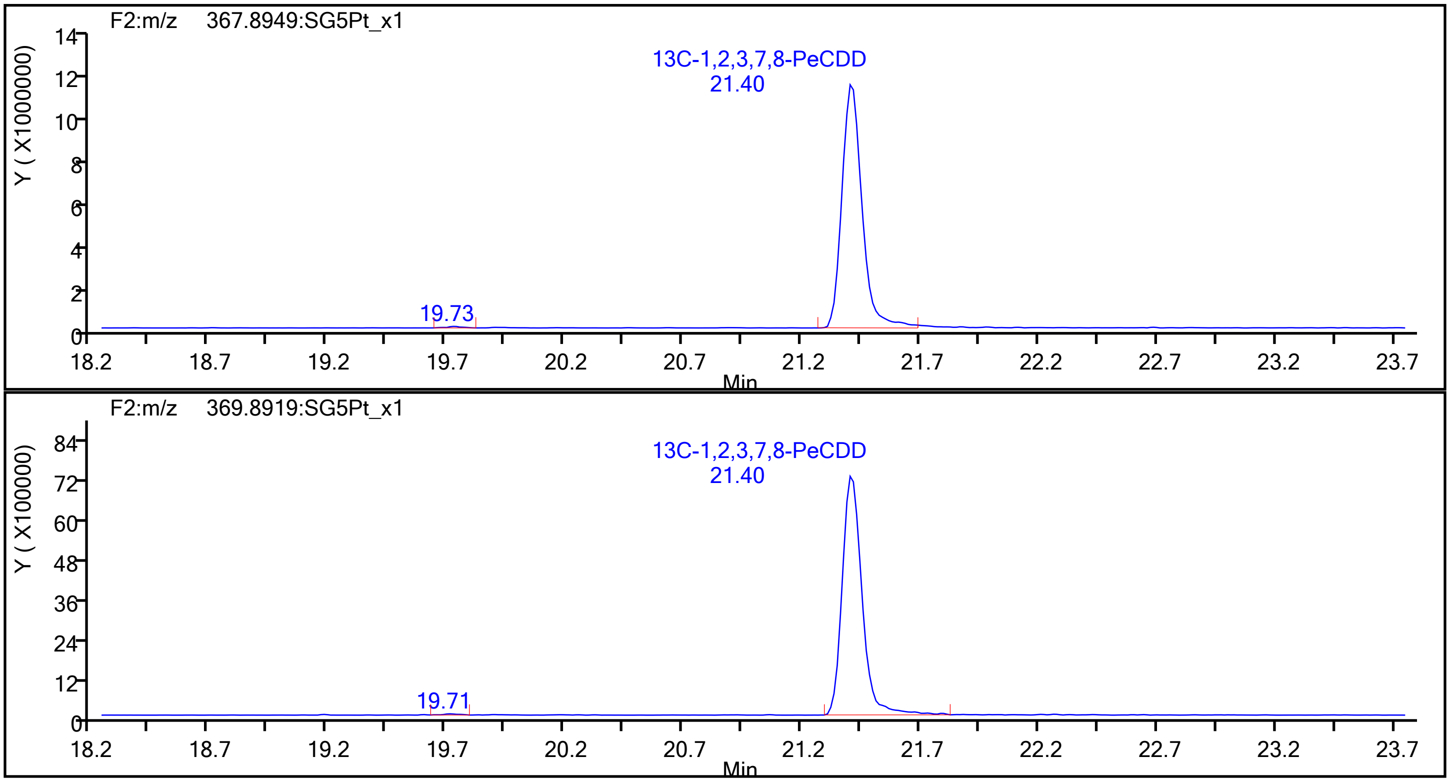

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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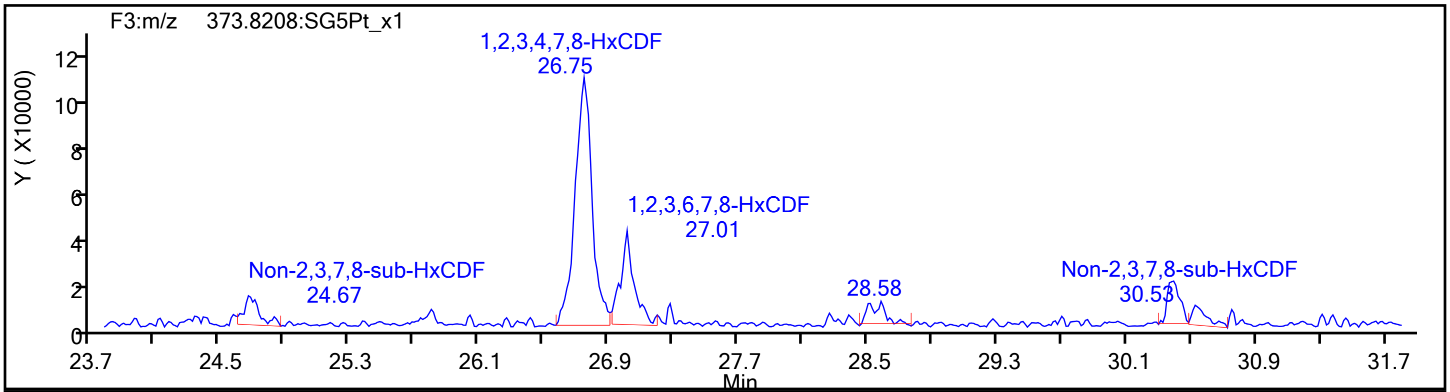

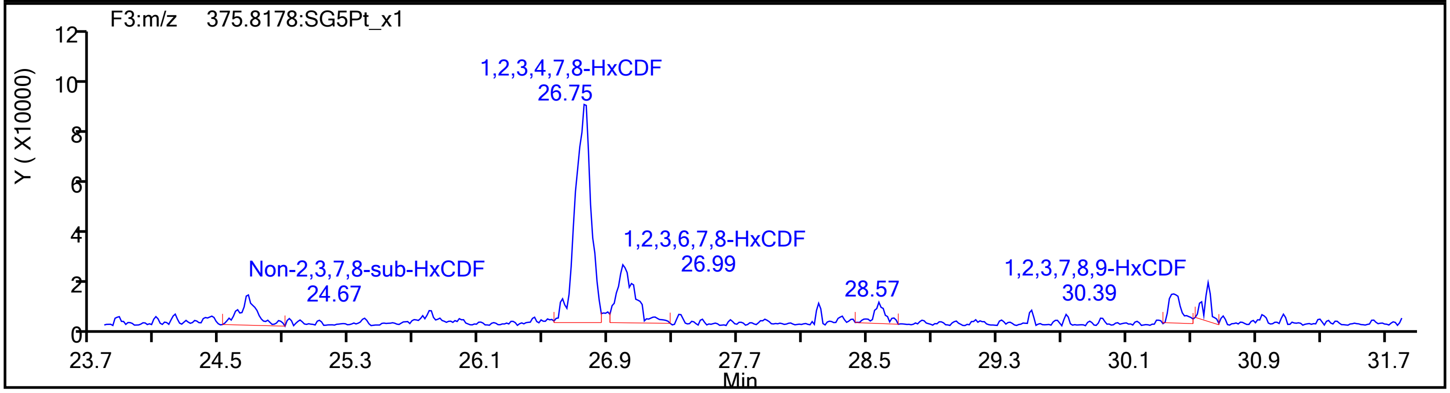

HxCDF Standards

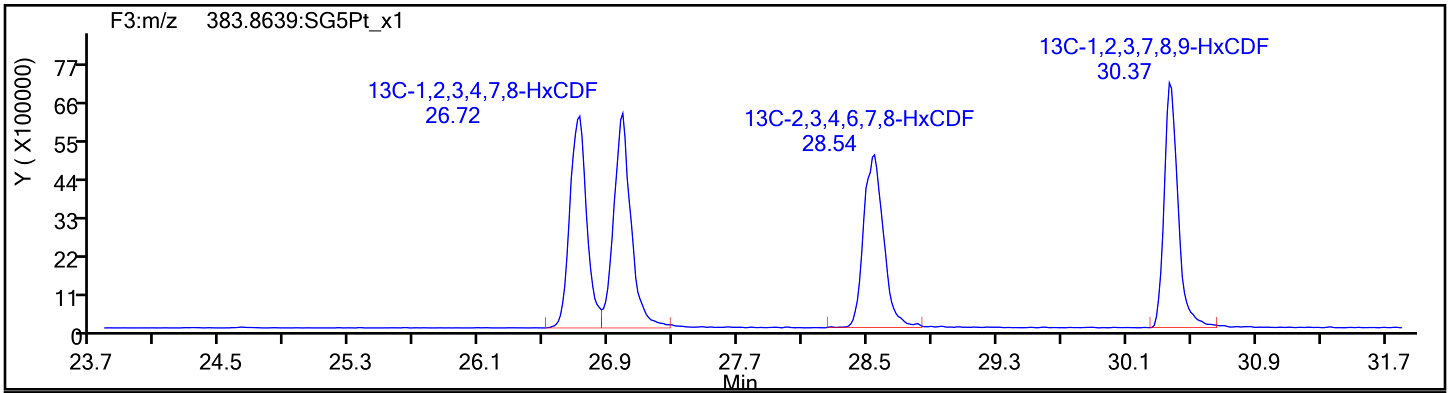

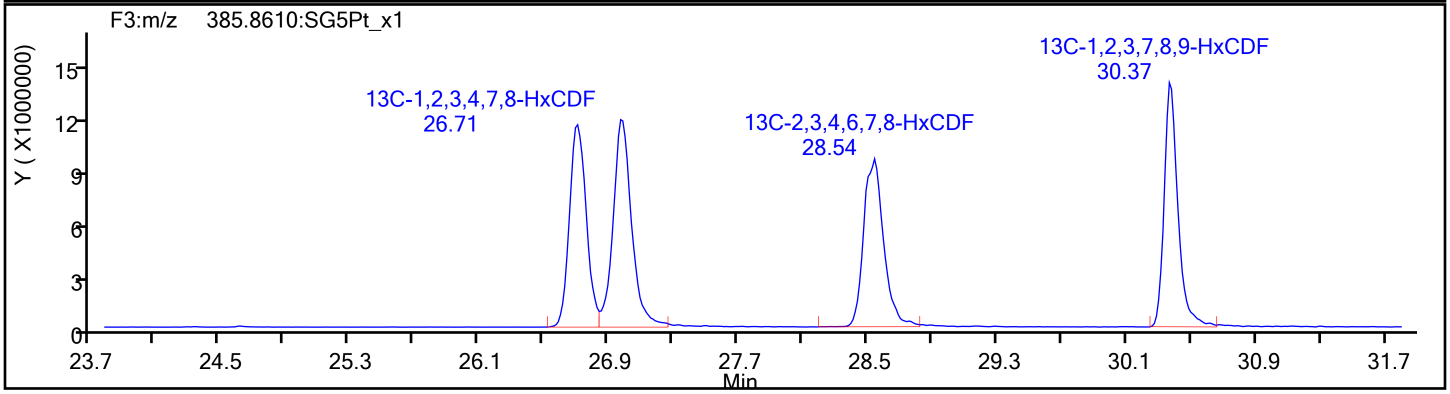

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-3		
Worklist#:	420482	Sample Line#:	18
Column Type:		Column Dia:	

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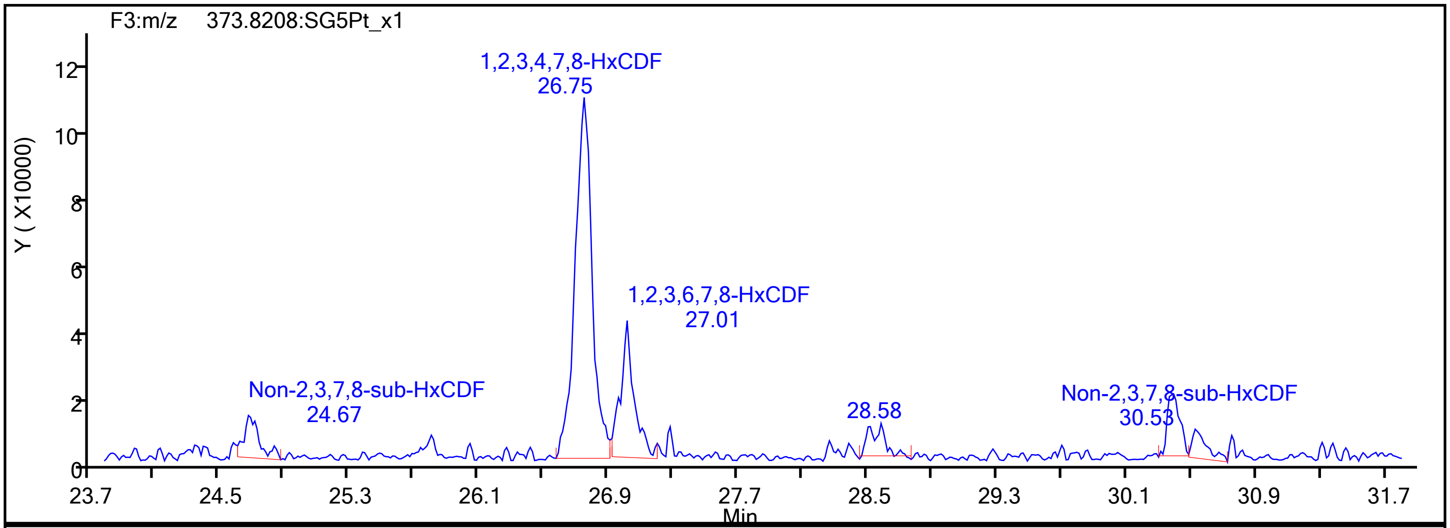

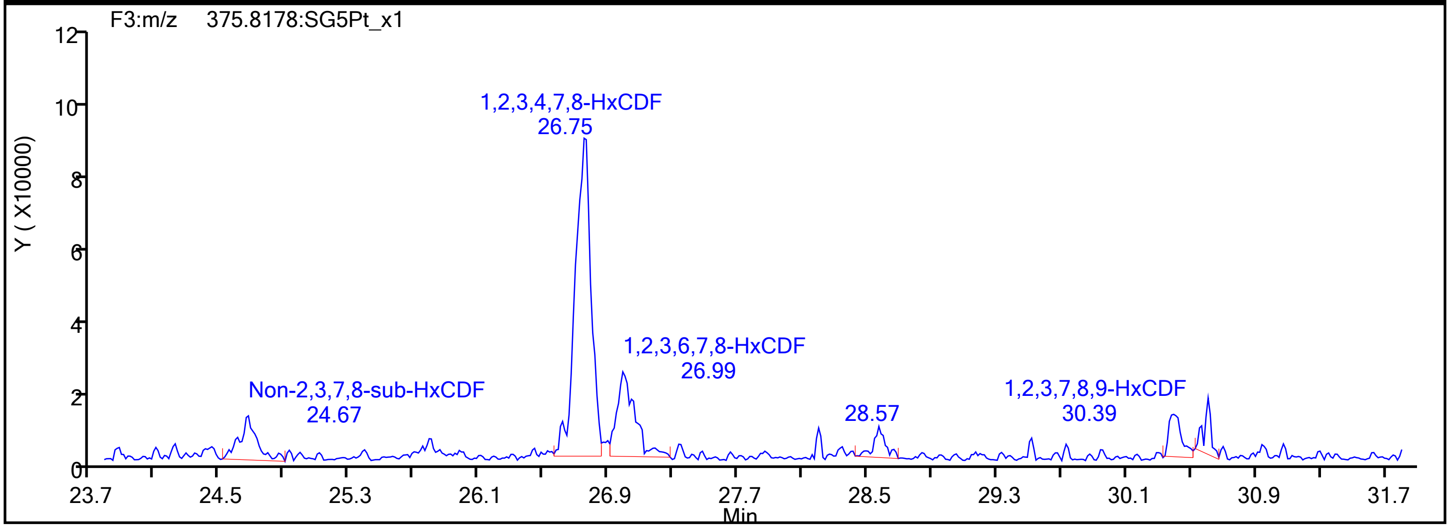

HxCDF Interference Mass

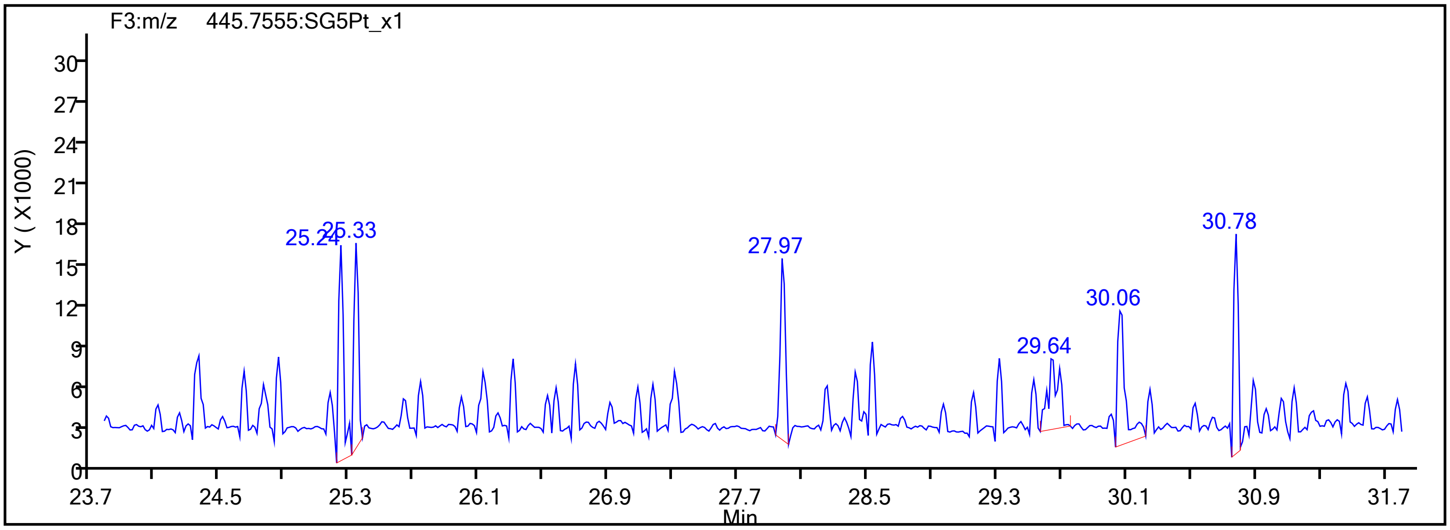

Report Date: 13-Oct-2020 12:46:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 09:01:29 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482 Sample Line#: 18

Column Type: Column Dia:

HxCDD

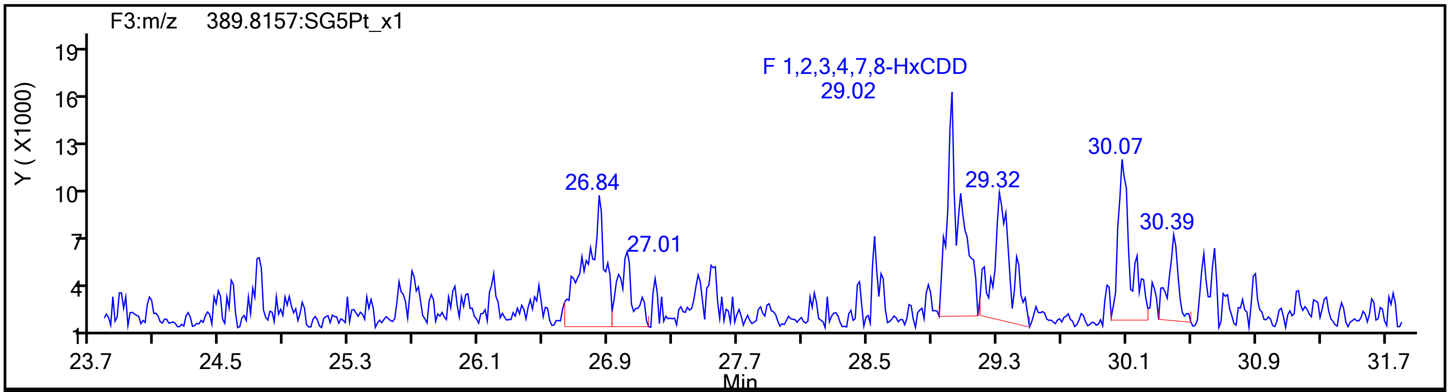

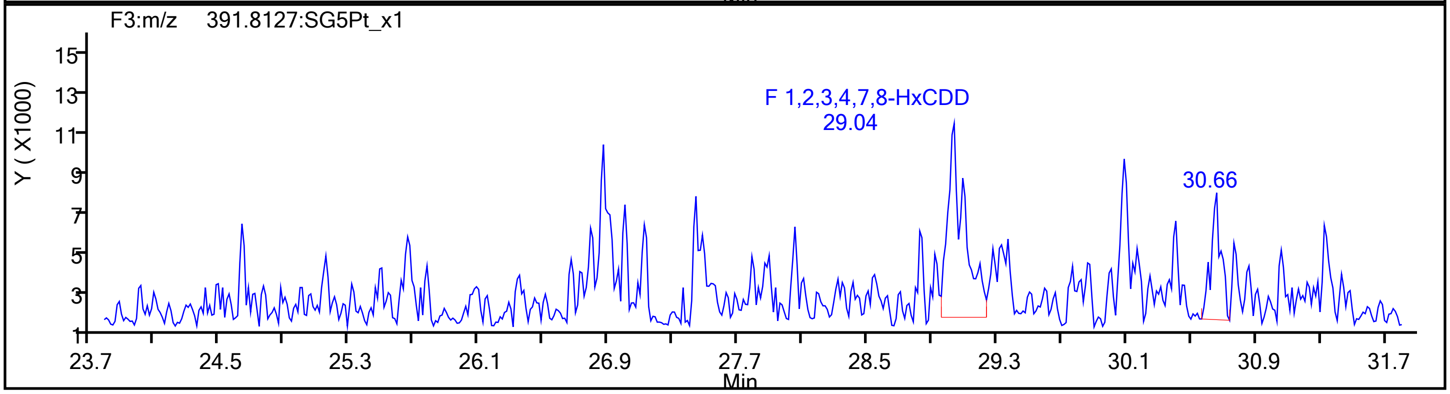

HxCDD Standards

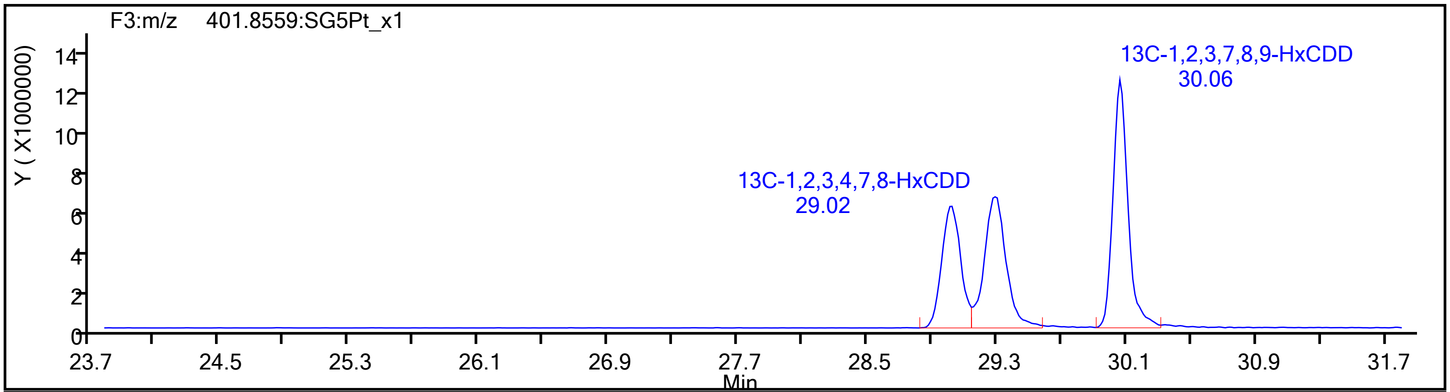

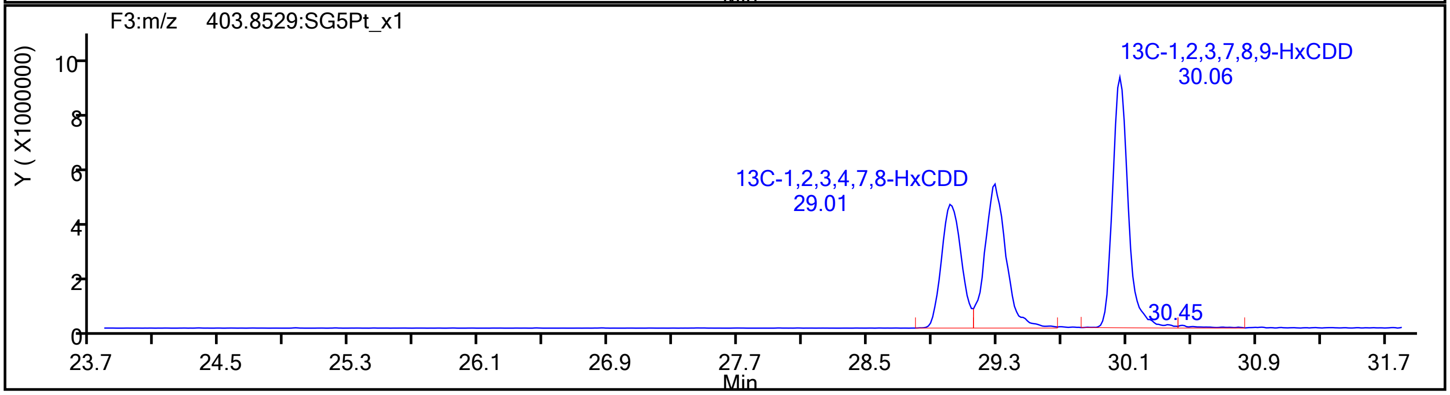

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-3
Worklist#: 420482 Sample Line#: 18
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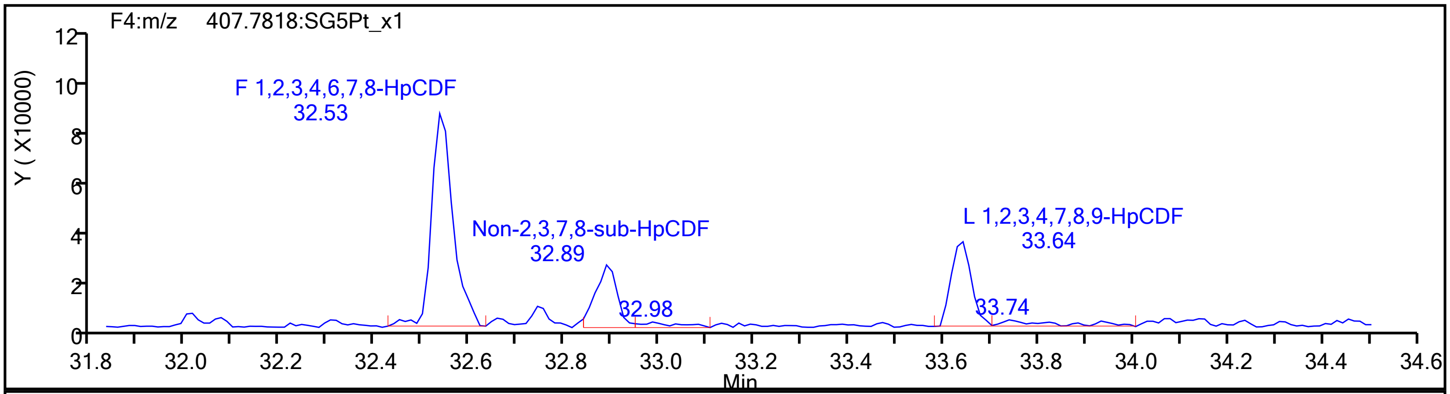

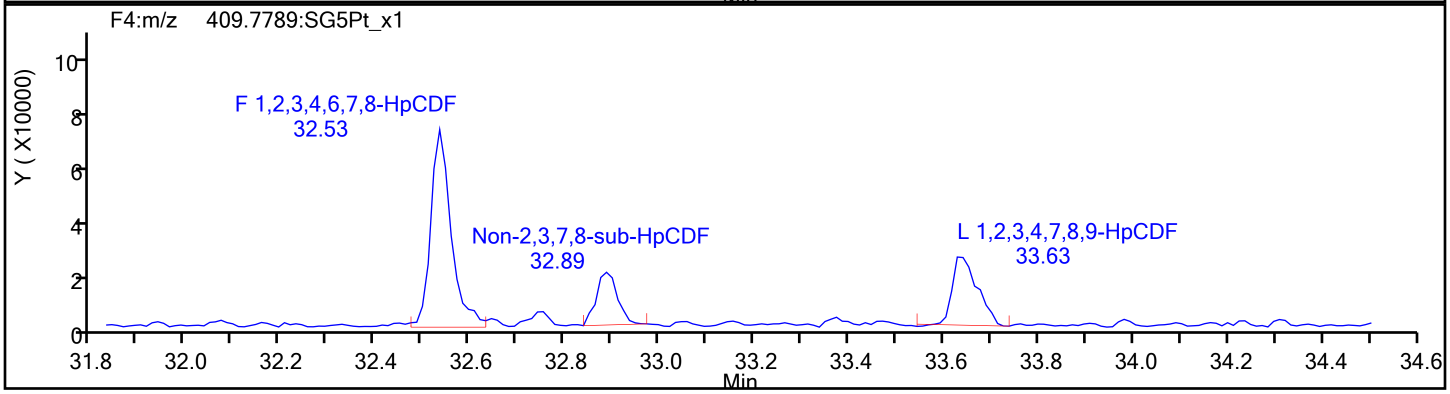

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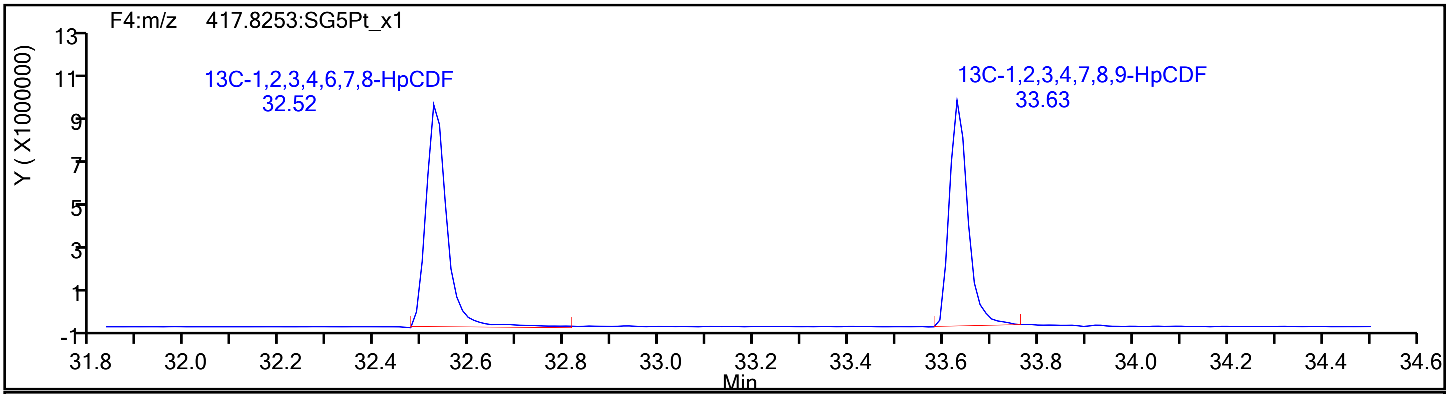

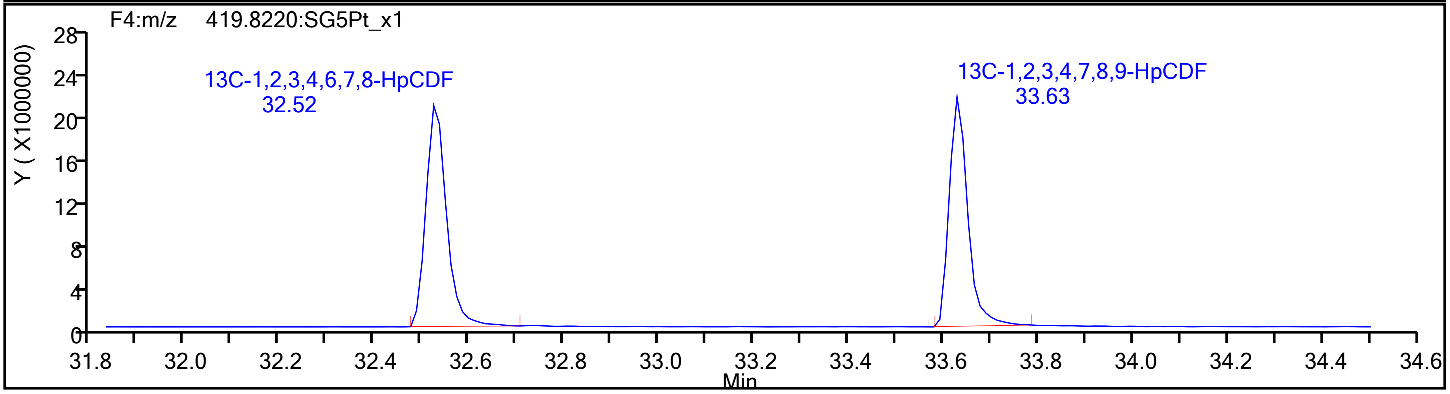

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482 Sample Line#: 18

Column Type: Column Dia:

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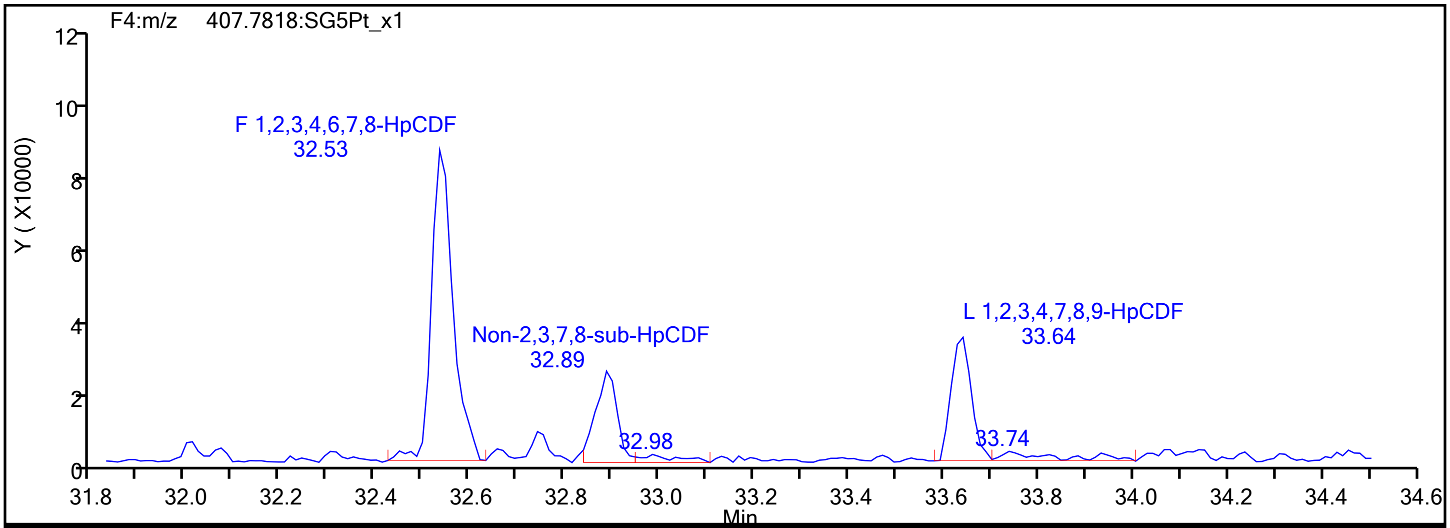

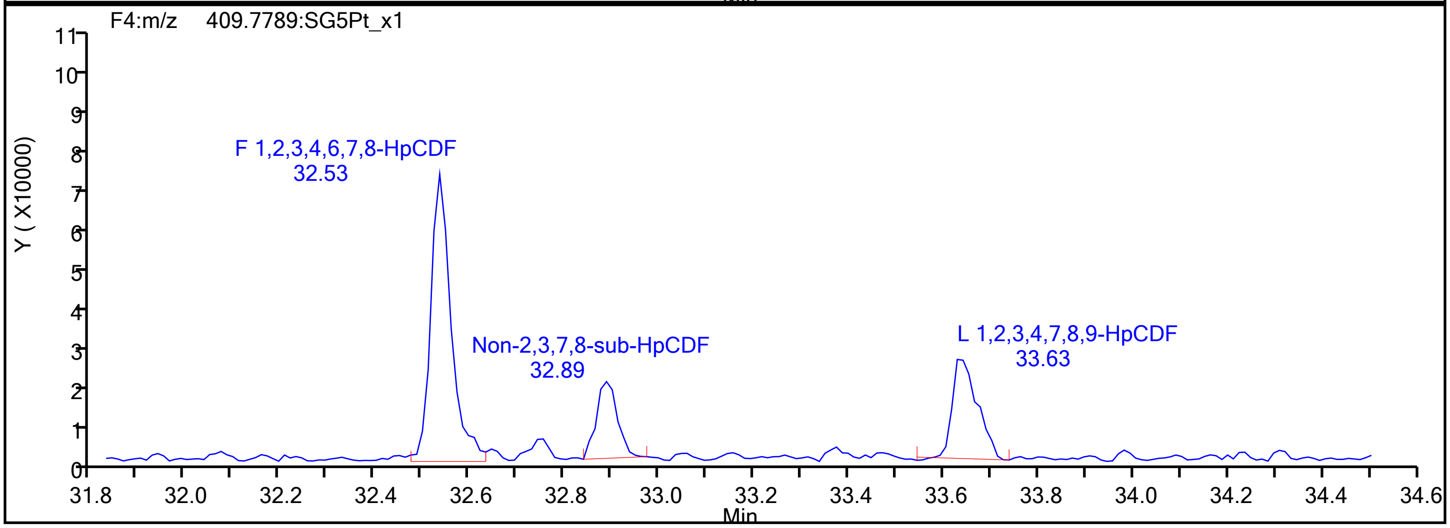

HpCDF Interference Mass

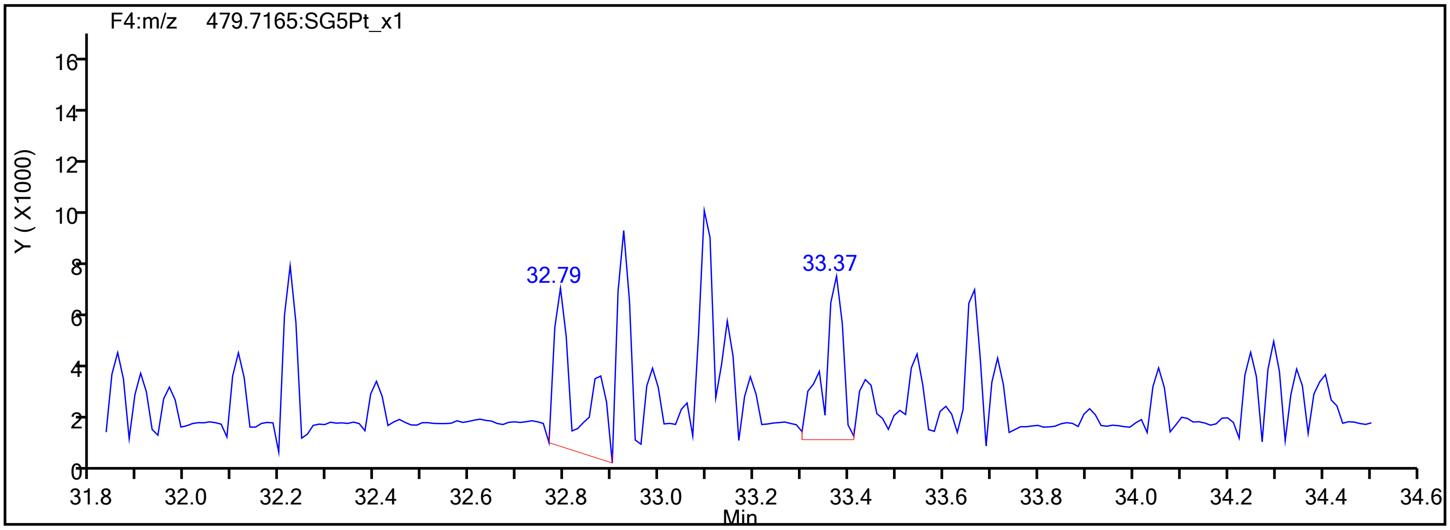

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

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Column Type: Column Dia:

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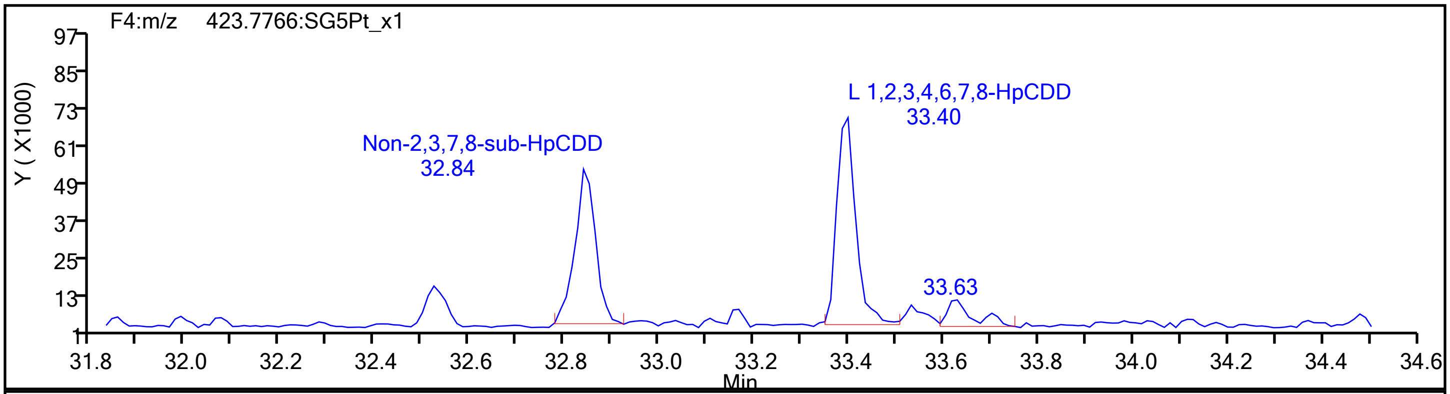

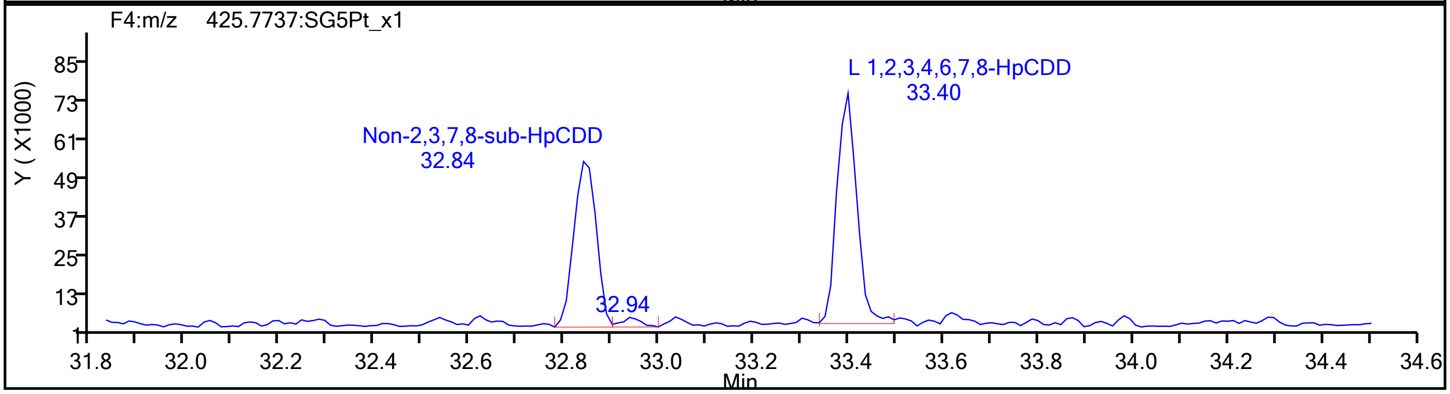

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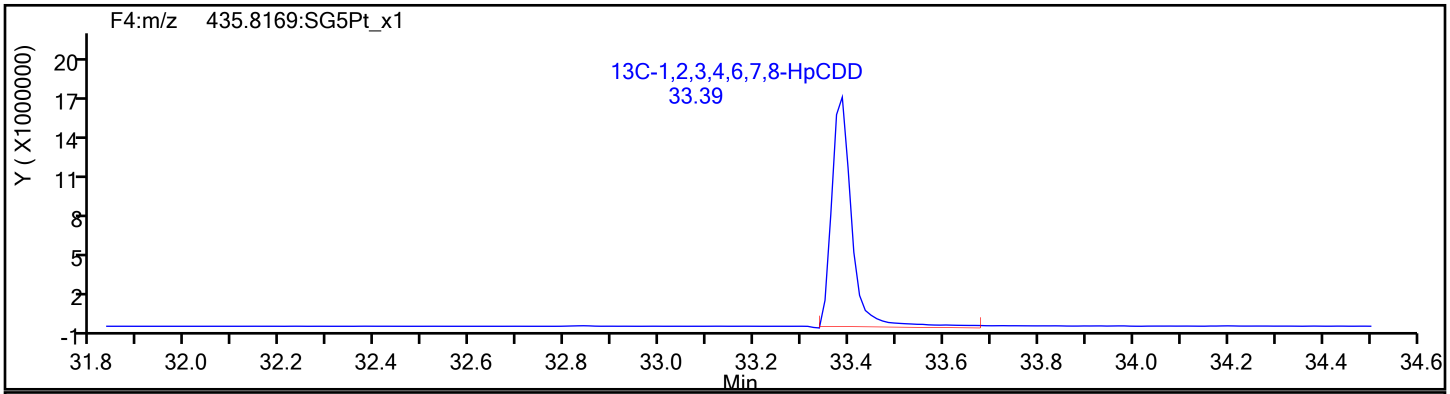

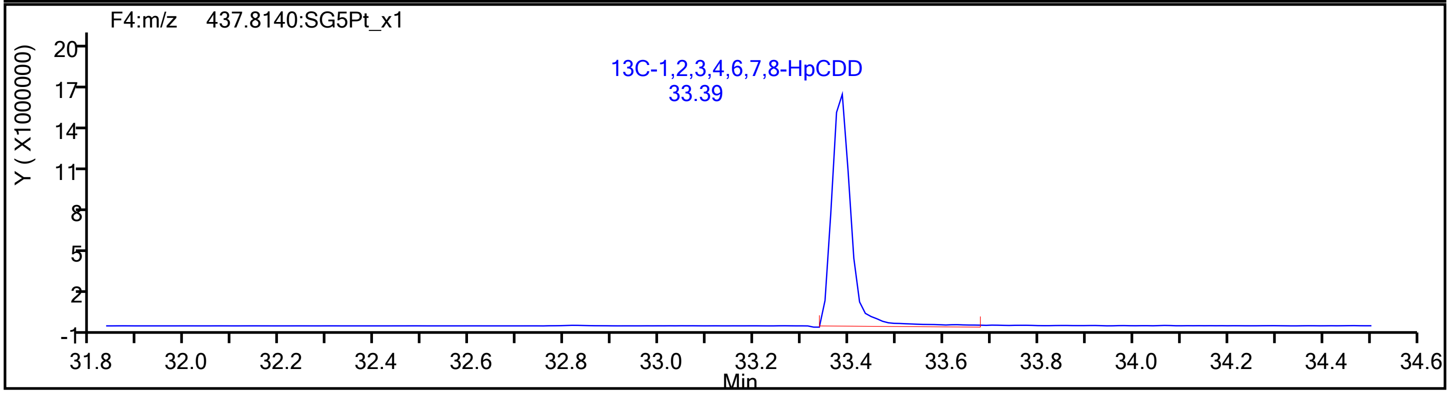

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Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
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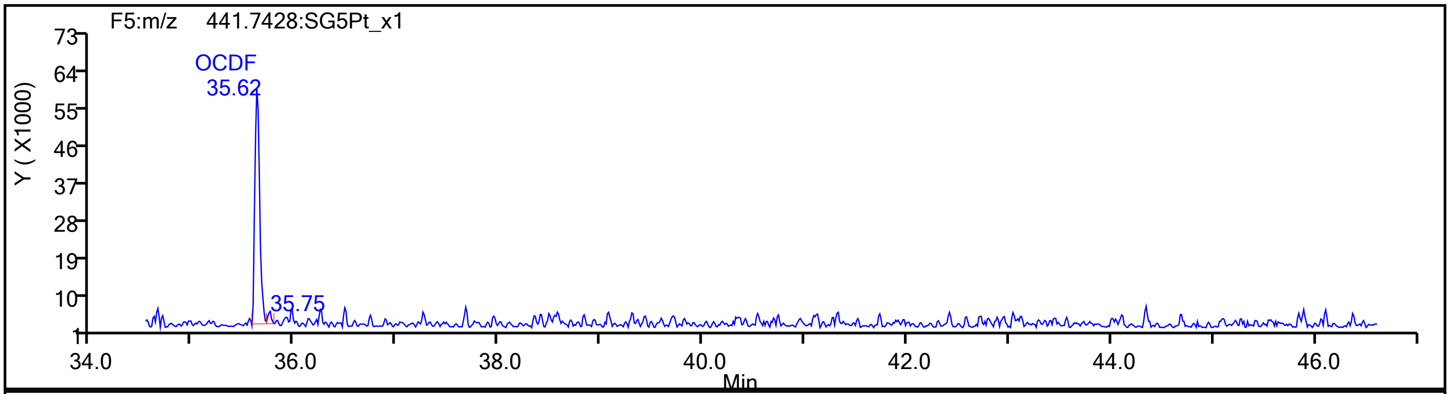

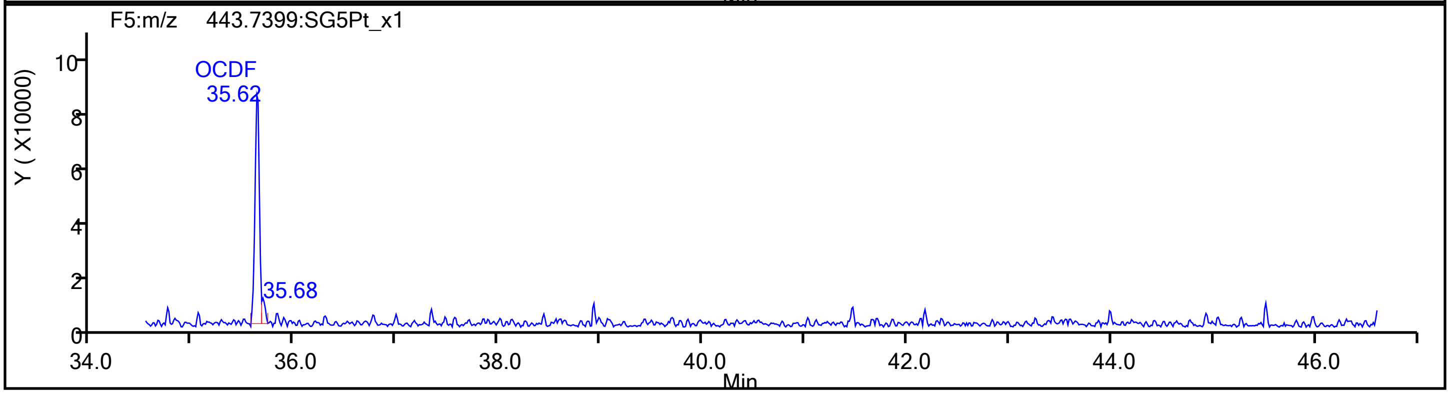

OCDF Standards

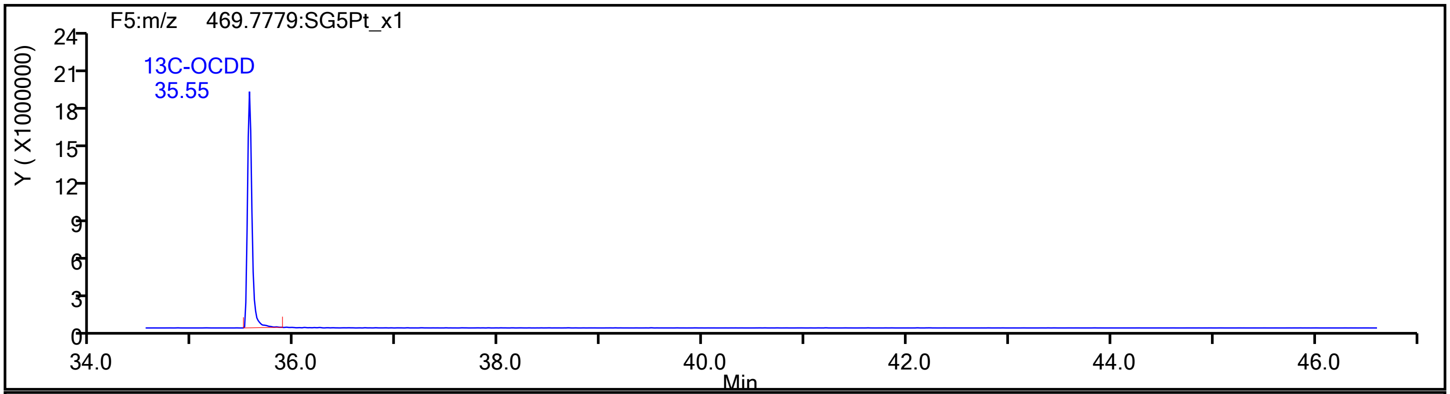

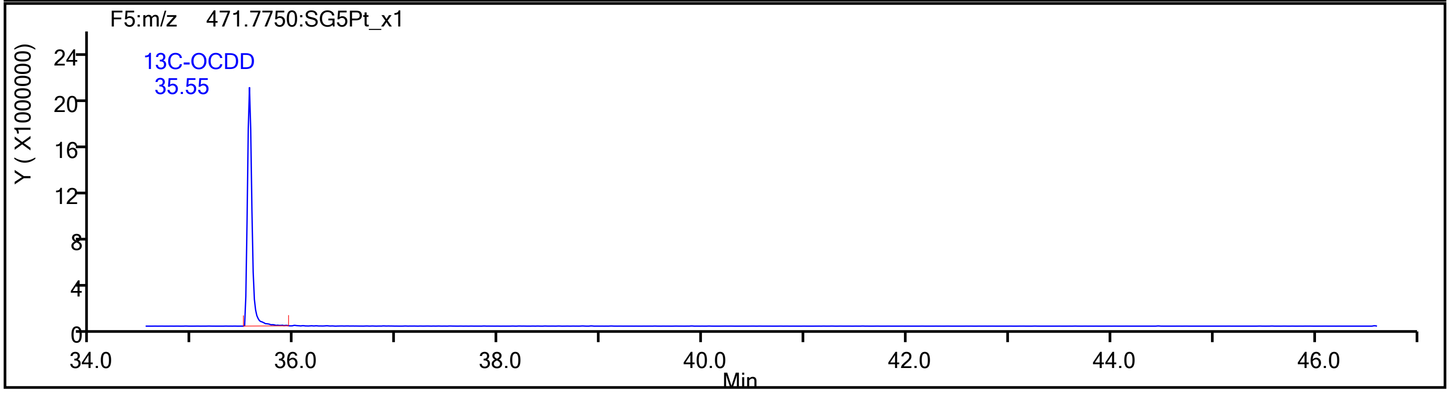

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Eurofins TestAmerica, Sacramento

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Operator ID: ALM
Method: Dioxin_3D5
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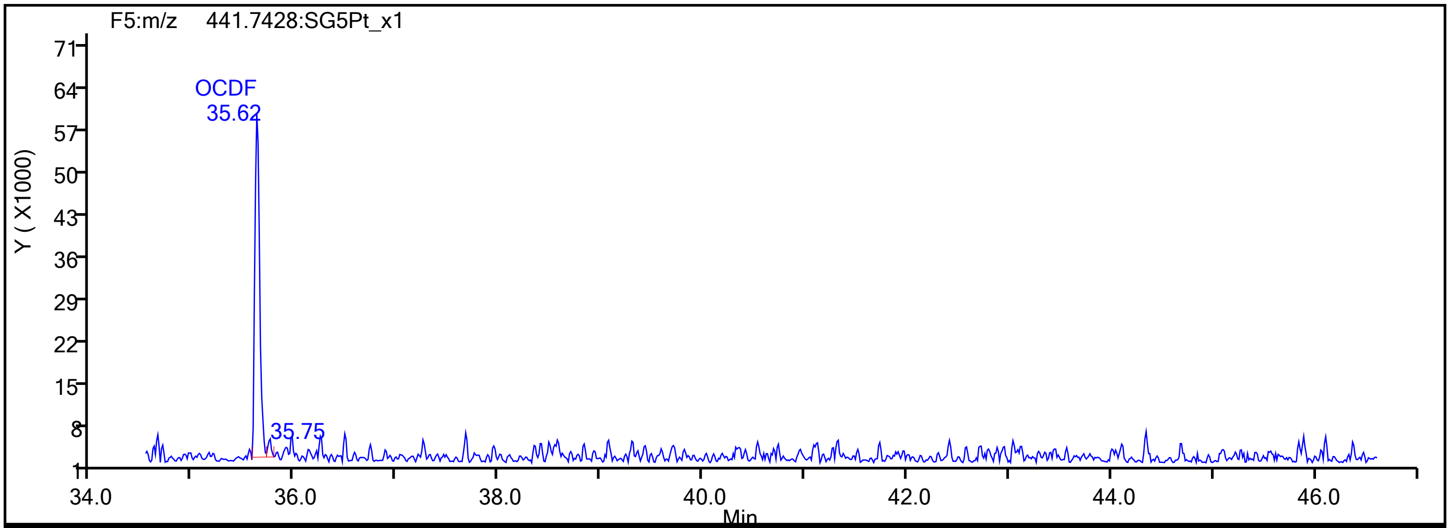

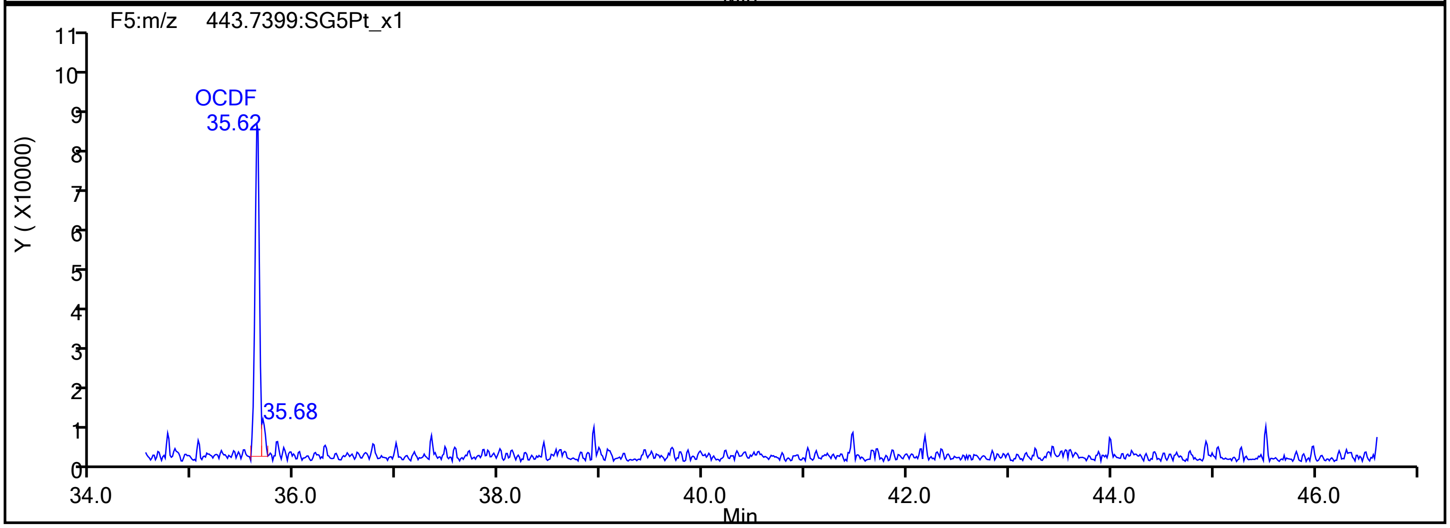

OCDF Interference Mass

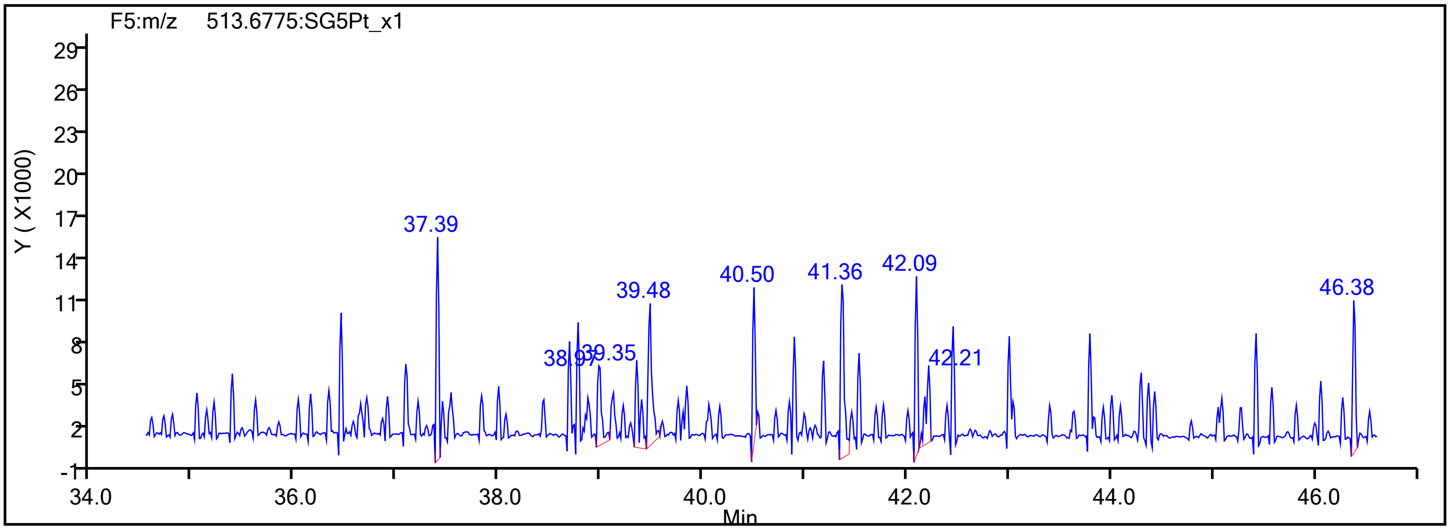

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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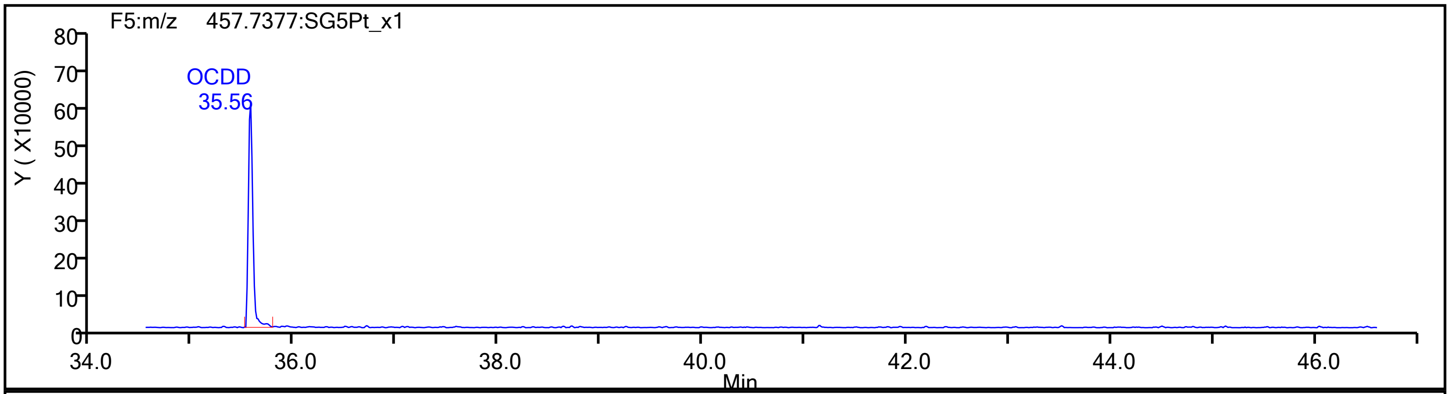

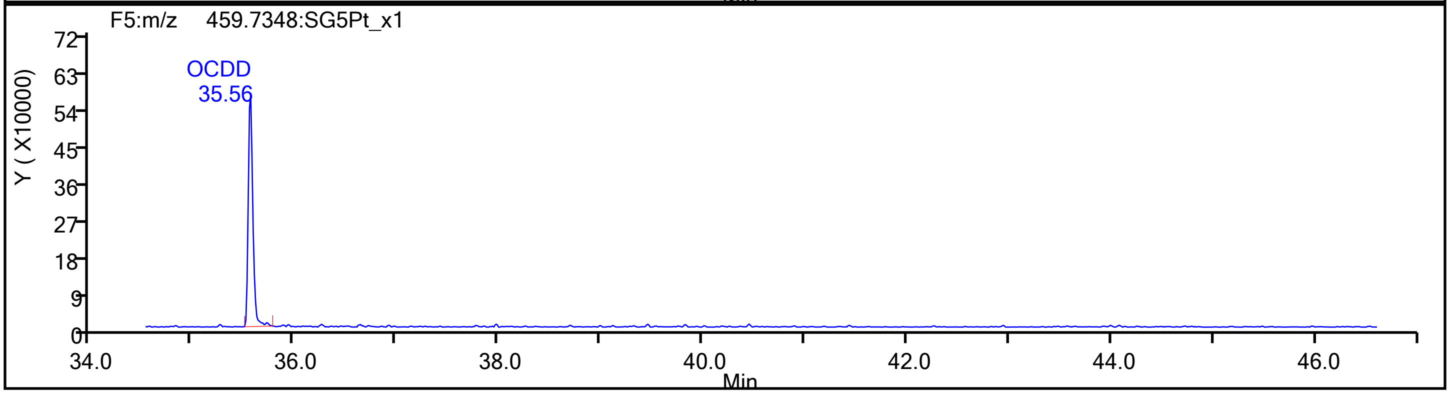

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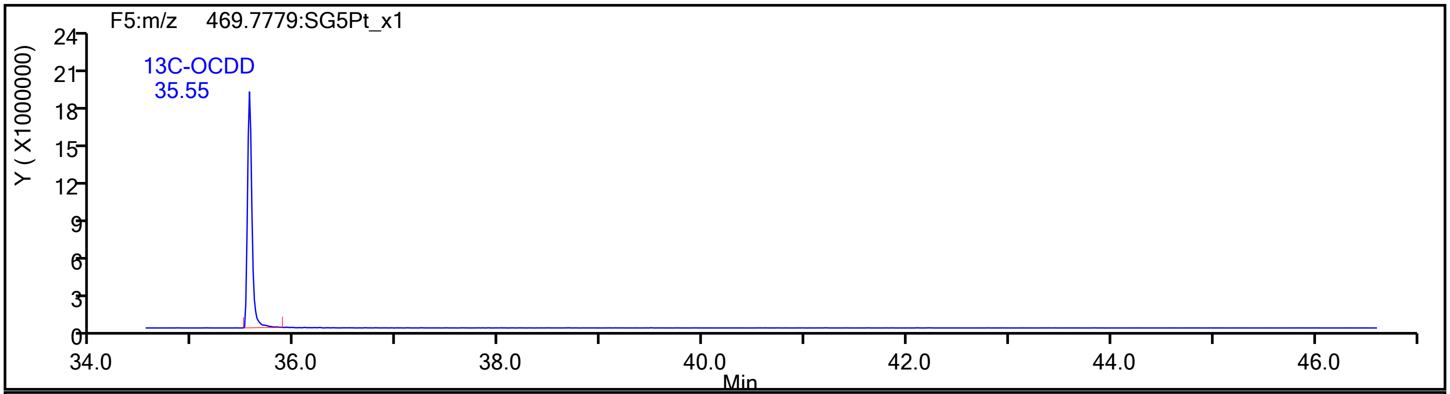

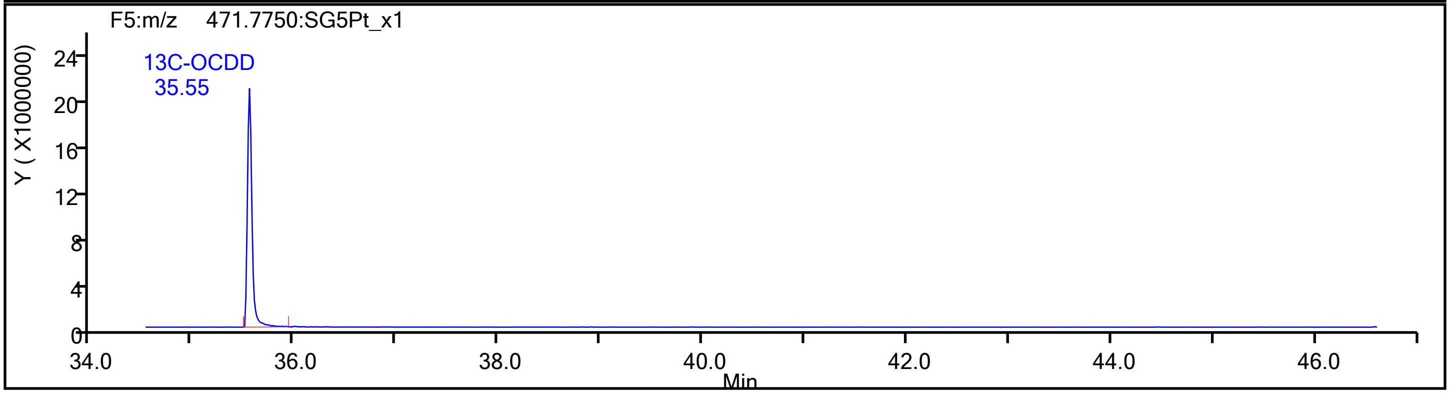

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 09:01:29 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 420482 Sample Line#: 18

Column Type: Column Dia:

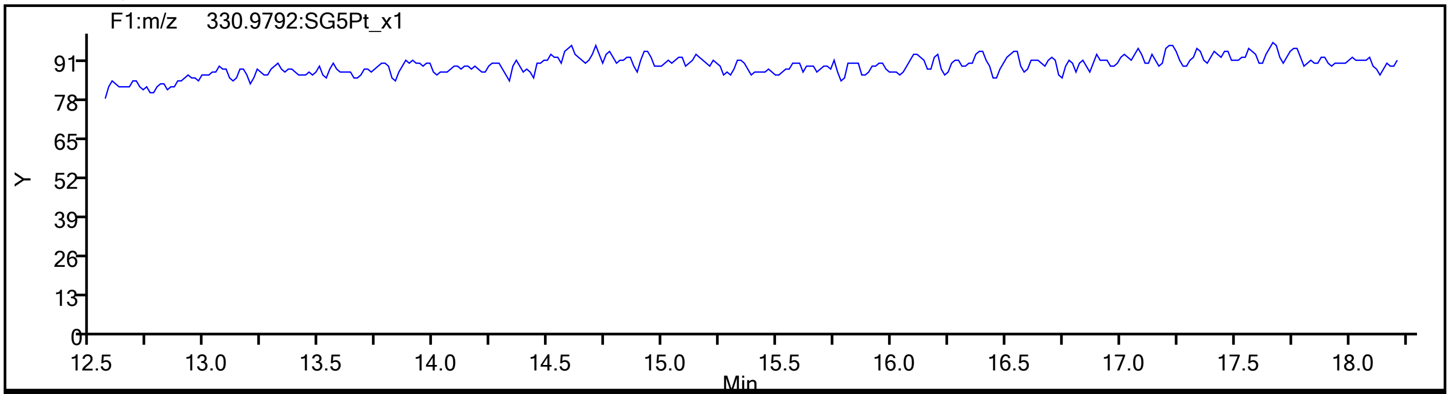

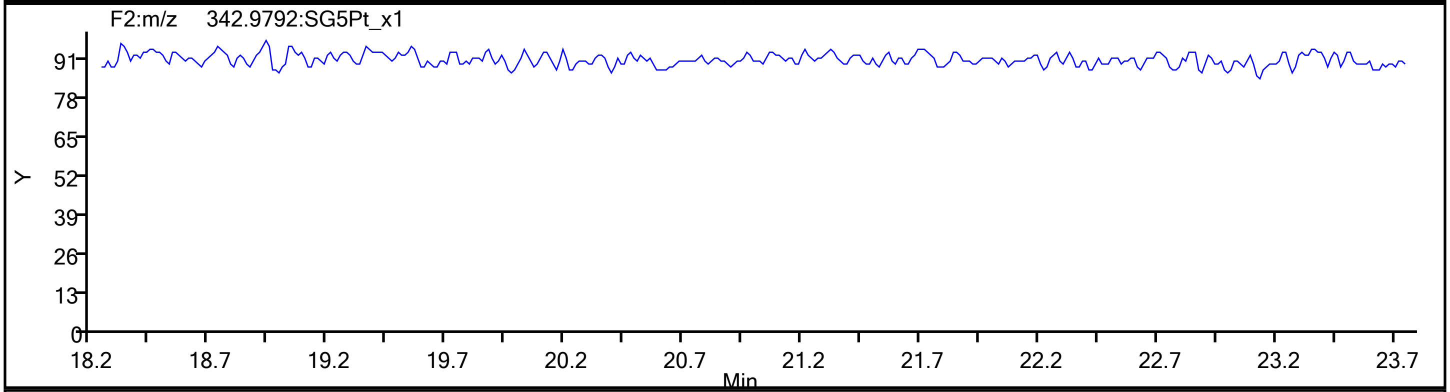

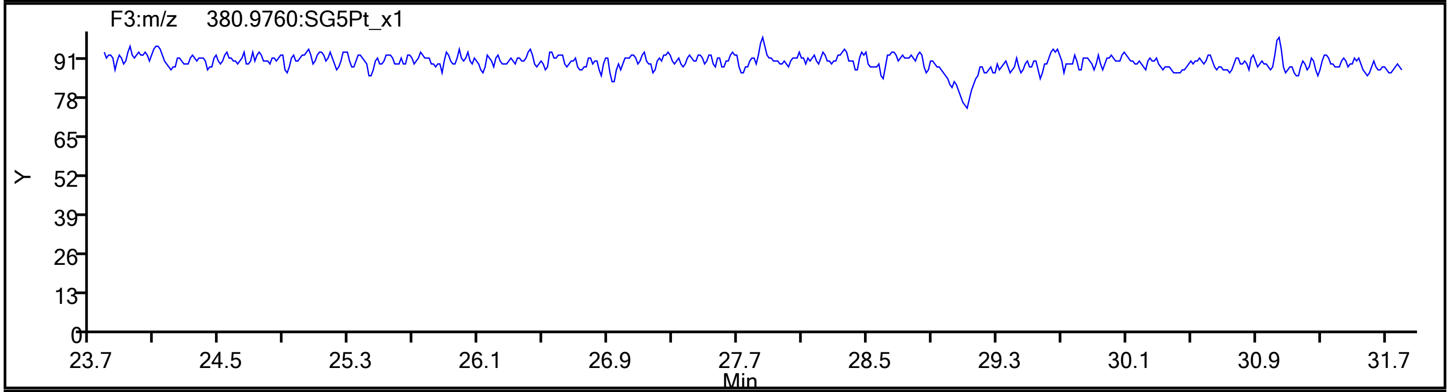

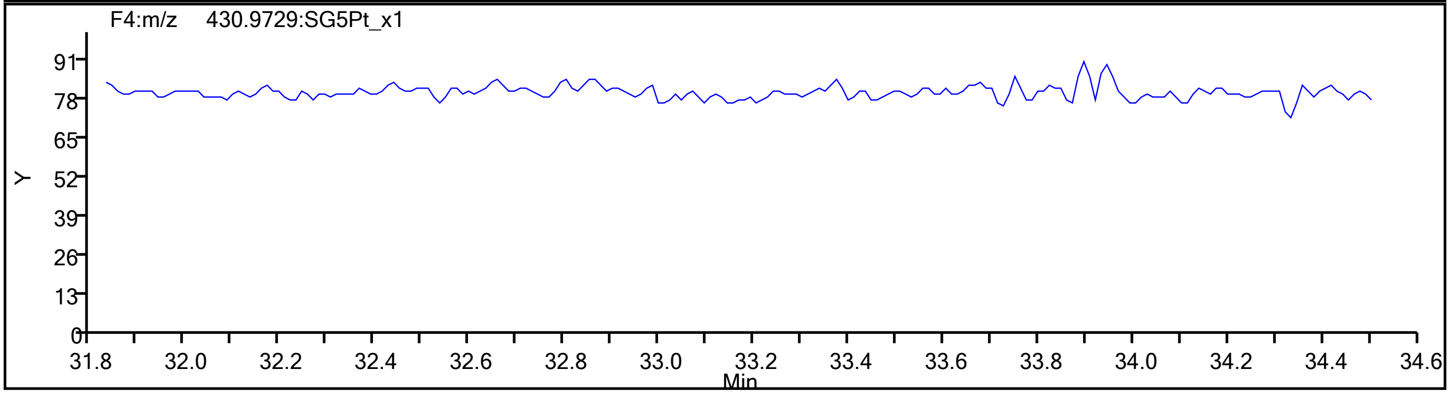

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-3		
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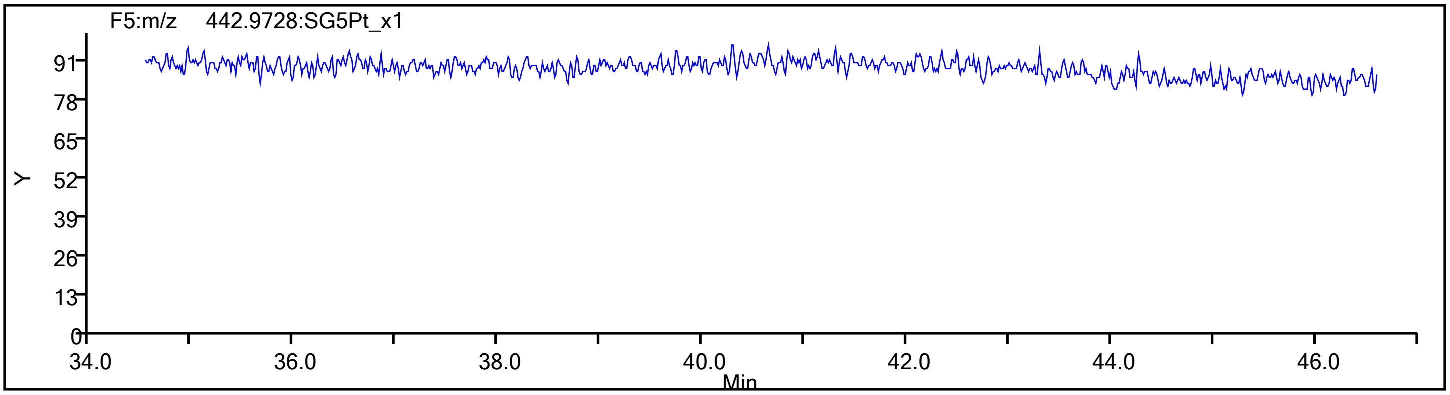

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-2-3 RA	Lab Sample ID: 320-65130-9 RA
Matrix: Water	Lab File ID: 13OC20A11D2_006.d
Analysis Method: 1613B	Date Collected: 09/11/2020 14:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 979.8(mL)	Date Analyzed: 10/13/2020 22:54
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421876	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	230	B	10	1.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	75		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	117		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_006.d
Lims ID: 320-65130-A-9-A
Client ID: 11215702-Tank#1-valve-2-3
Sample Type: Client
Inject. Date: 13-Oct-2020 22:54:01 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-9-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.928	69978155	0.84	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.053	82356992	0.79	1.5708	74.9	74.9	0.4010	0.4010	74.92	
2,3,7,8-TCDF	16.067	9028416	0.74	0.9943	11.0	11.0	0.0799	0.0799		
D 13C-2,3,7,8-TCDD	14.681	50123073	0.86	0.9834	72.8	72.8	0.5917	0.5917	72.84	
2,3,7,8-TCDD	14.695	2546403	0.74	1.2822	3.962	3.962	0.1463	0.1463		
$ 37Cl4-2,3,7,8-TCDD	14.695	32573533		0.9945	46.8	46.8	0.0818	0.0818	117	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Report Date: 14-Oct-2020 17:38:54 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_006.d				
Lims ID:	320-65130-A-9-A				
Client ID:	11215702-Tank#1-valve-2-3				
Sample Type:	Client				
Inject. Date:	13-Oct-2020 22:54:01	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-9-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.928	14.928	0		32009464	8016203	22447	56117	357		
333.9339	14.928	14.928	0		37968691	9481990	18275	45687	519	0.84(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.053	16.067	-1	1.075	36371635	8227494	28184	70460	292		
317.9389	16.053	16.067	-1	1.075	45985357	10523897	15900	39750	662	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.067	16.081	-1	1.001	3850077	892090	2389	5972	373		
305.8987	16.067	16.081	-1	1.001	5178339	1167513	3571	8927	327	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.681	14.681	0	0.983	23188359	5918930	22447	56117	264		
333.9339	14.681	14.681	0	0.983	26934714	6555742	18275	45687	359	0.86(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.695	14.709	-1	1.001	1080604	279851	5812	14530	48		
321.8936	14.695	14.709	-1	1.001	1465799	358086	3551	8877	101	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.695	14.709	-1	0.984	32573533	8361577	5691	14227	1469		

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_006.d

Injection Date: 13-Oct-2020 22:54:01 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-2-3

Worklist#: 421876 Sample Line#: 6

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

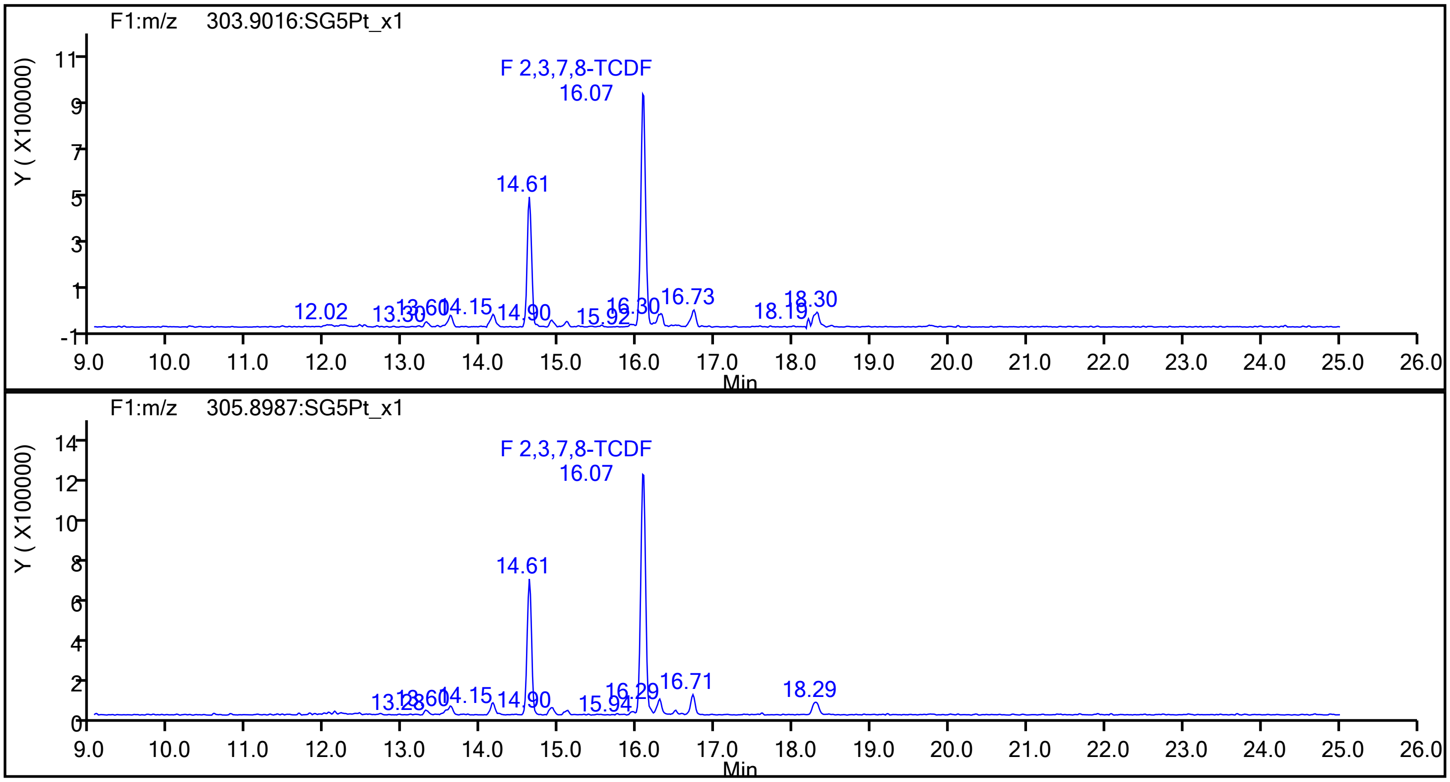

TCDF Standards

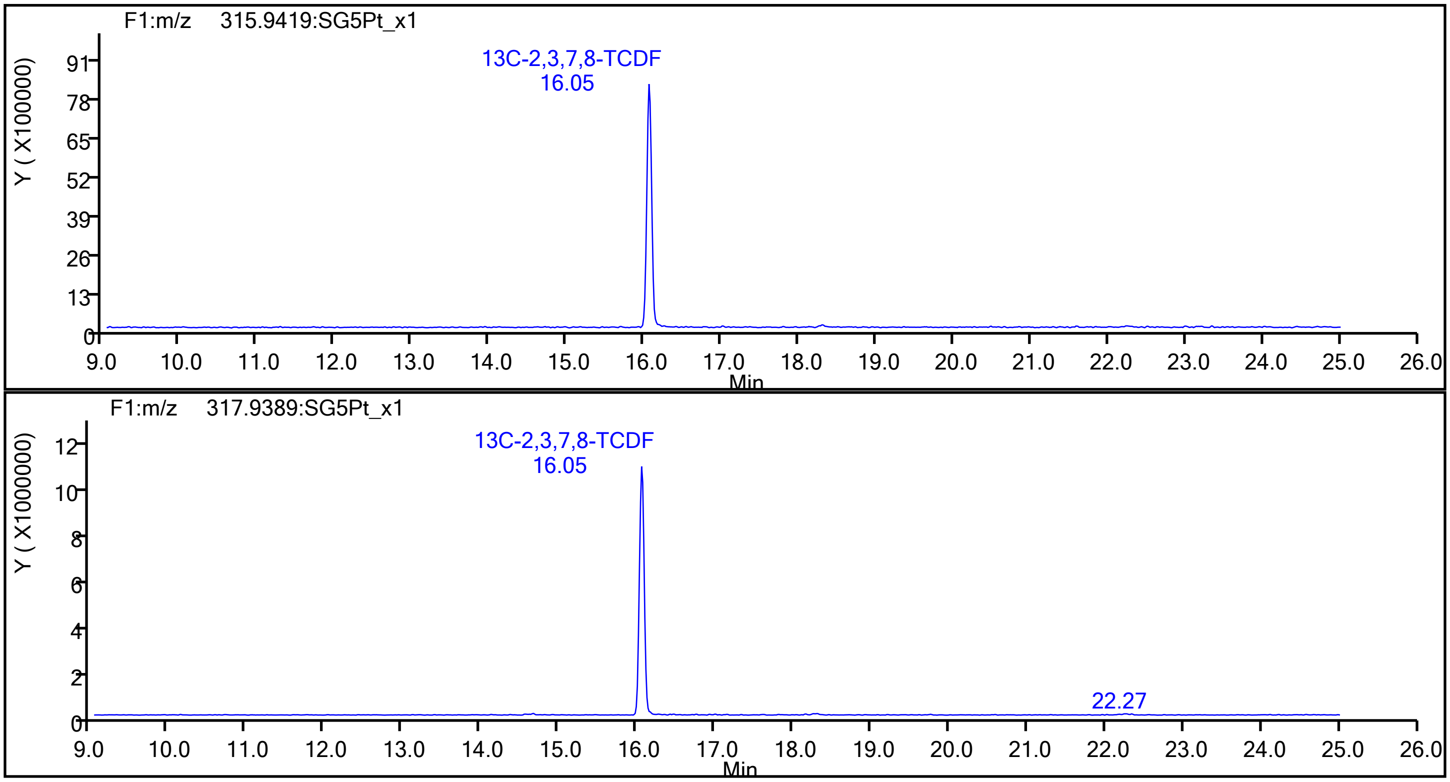

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_006.d		
Injection Date:	13-Oct-2020 22:54:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-3		
Worklist#:	421876	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

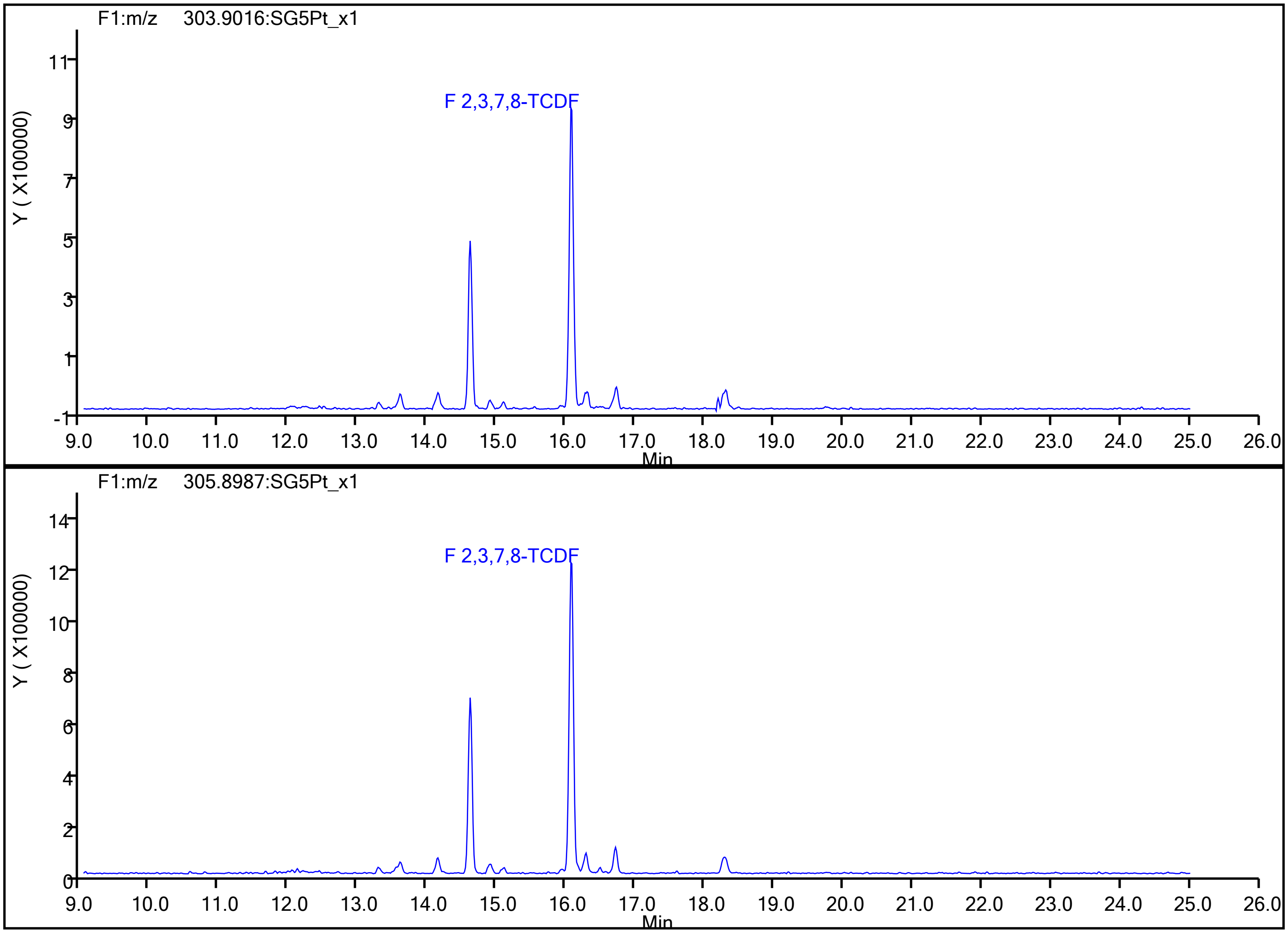

TCDF Interference Mass

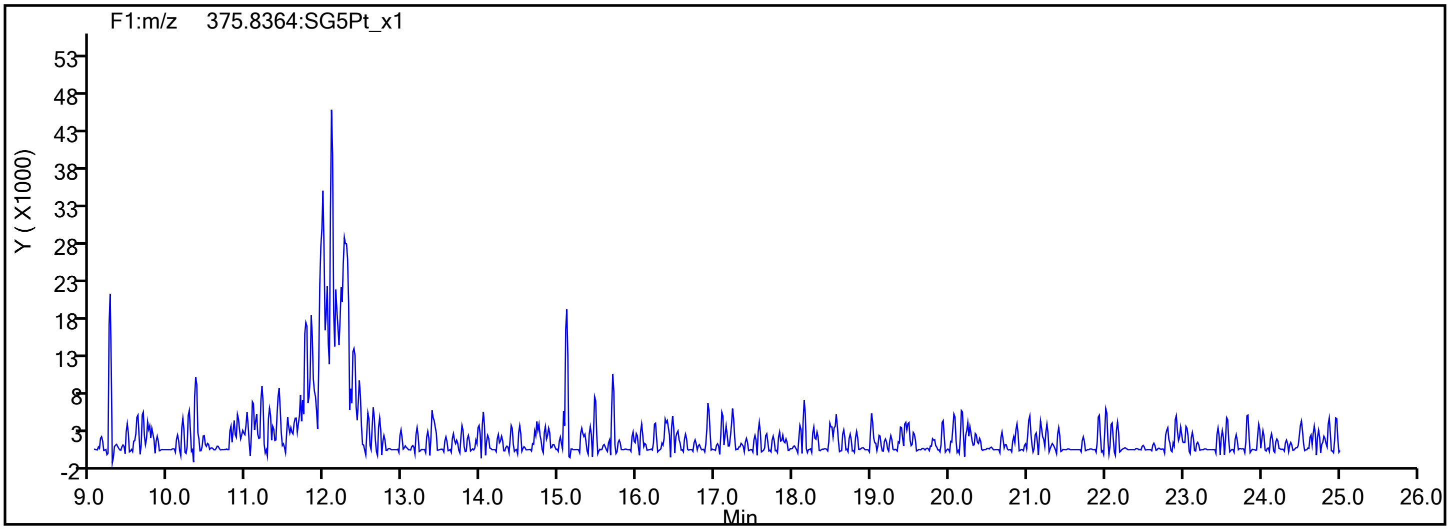

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_006.d
Injection Date: 13-Oct-2020 22:54:01
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-2-3
Worklist#: 421876
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

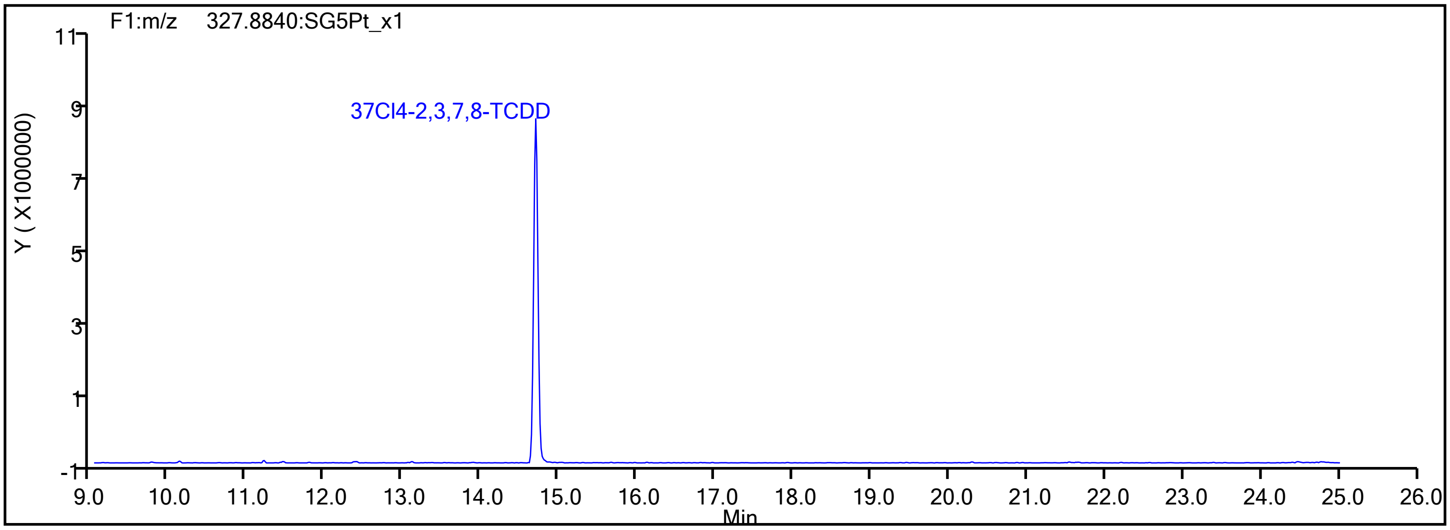

37Cl4-TCDD Standards

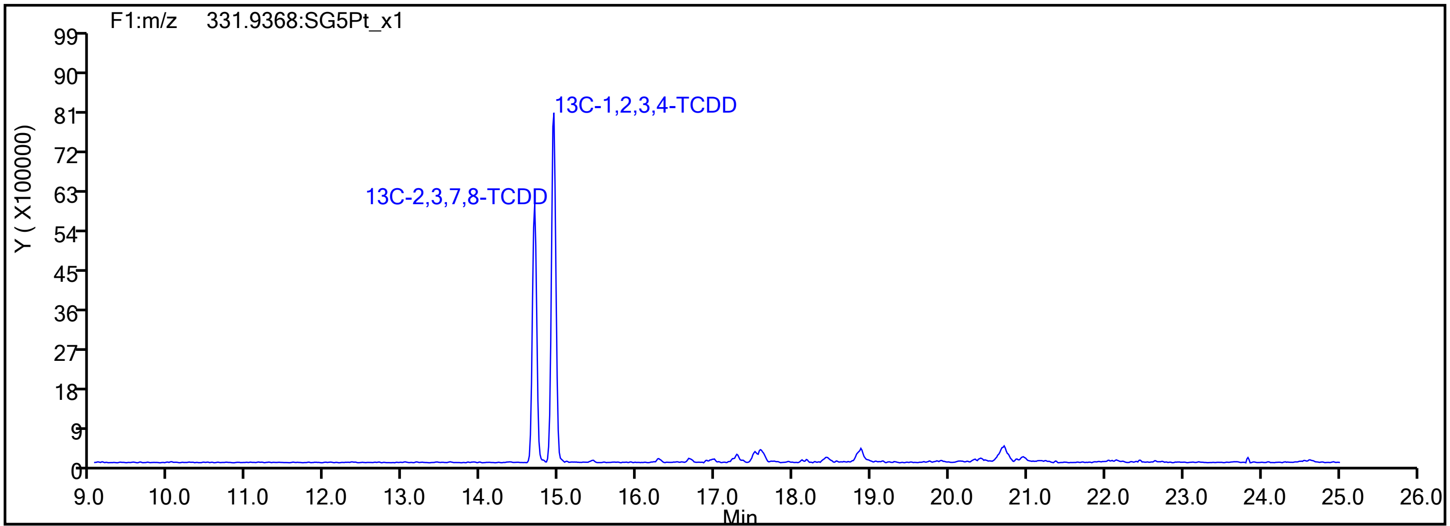

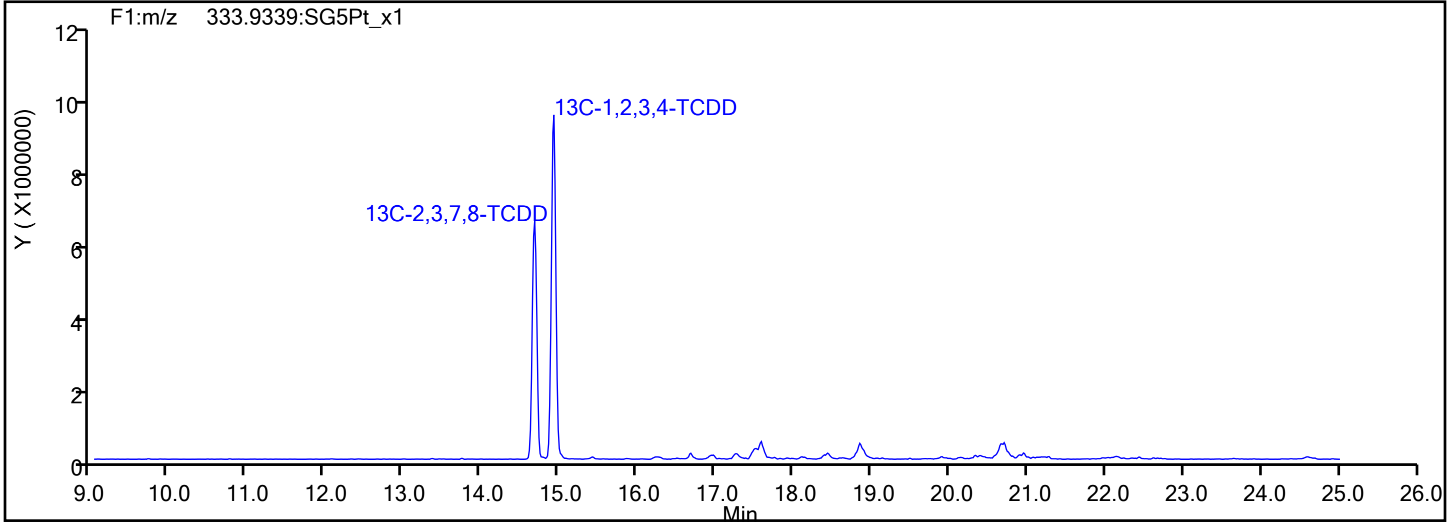

Report Date: 14-Oct-2020 17:38:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_006.d		
Injection Date:	13-Oct-2020 22:54:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-2-3		
Worklist#:	421876	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

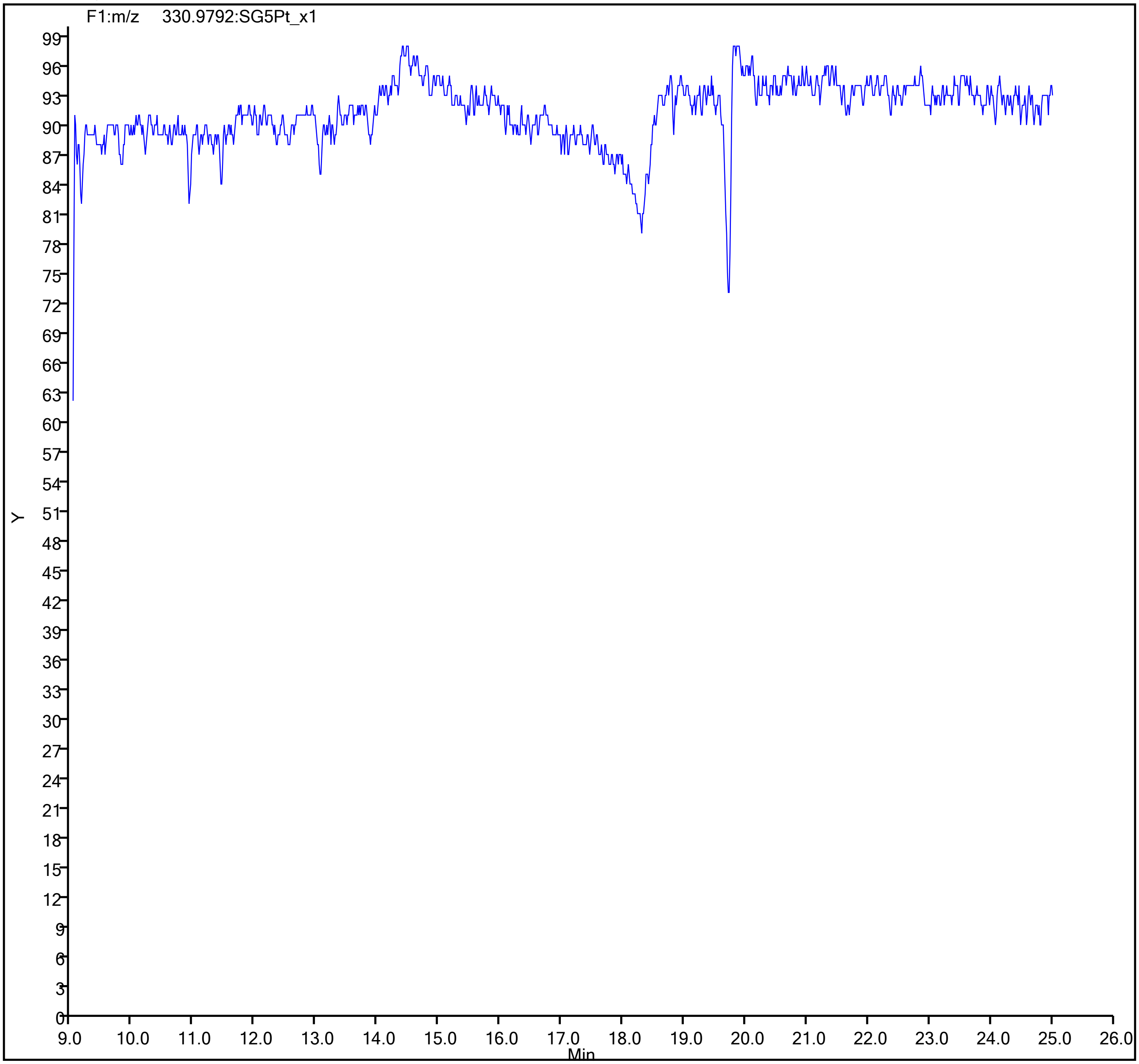

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-3-3 Lab Sample ID: 320-65130-10

Matrix: Water Lab File ID: 08OC20A3D5_19.d

Analysis Method: 1613B Date Collected: 09/11/2020 14:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 974.8(mL) Date Analyzed: 10/09/2020 09:49

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420482 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1600		10	7.0
40321-76-4	1,2,3,7,8-PeCDD	16	J B	51	0.88
57117-41-6	1,2,3,7,8-PeCDF	180	B	51	1.7
57117-31-4	2,3,4,7,8-PeCDF	120	B	51	2.0
39227-28-6	1,2,3,4,7,8-HxCDD	2.5	J q B	51	1.0
57653-85-7	1,2,3,6,7,8-HxCDD	2.5	J q B	51	1.1
19408-74-3	1,2,3,7,8,9-HxCDD	1.9	J q B	51	0.95
70648-26-9	1,2,3,4,7,8-HxCDF	270	B	51	1.5
57117-44-9	1,2,3,6,7,8-HxCDF	68	B	51	1.6
72918-21-9	1,2,3,7,8,9-HxCDF	6.5	J B	51	1.2
60851-34-5	2,3,4,6,7,8-HxCDF	9.0	J B	51	1.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	64	B	51	0.80
67562-39-4	1,2,3,4,6,7,8-HpCDF	80	B	51	0.64
55673-89-7	1,2,3,4,7,8,9-HpCDF	31	J B	51	0.71
3268-87-9	OCDD	1000	B	100	3.5
39001-02-0	OCDF	55	J B	100	0.44
41903-57-5	Total TCDD	1700	B	10	7.0
30402-14-3	Total TCDF	9100	G q B	25	25
36088-22-9	Total PeCDD	16	J B	51	0.88
30402-15-4	Total PeCDF	480	B	51	1.8
34465-46-8	Total HxCDD	15	J q B	51	1.0
55684-94-1	Total HxCDF	390	q B	51	1.5
37871-00-4	Total HpCDD	130	B	51	0.80
38998-75-3	Total HpCDF	140	B	51	0.67

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-3-3	Lab Sample ID: 320-65130-10
Matrix: Water	Lab File ID: 08OC20A3D5_19.d
Analysis Method: 1613B	Date Collected: 09/11/2020 14:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 974.8(mL)	Date Analyzed: 10/09/2020 09:49
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420482	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		25-164
89059-46-1	13C-2,3,7,8-TCDF	73		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	76		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	69		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	67		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	79		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	69		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	71		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	70		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	65		26-138
114423-97-1	13C-OCDD	82		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Sample Type: Client
Inject. Date: 09-Oct-2020 09:49:07 ALS Bottle#: 16 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-10-A 320-65130-A-10-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:50:42 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 18:01:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	194249393	0.78	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	211171700	0.80	1.4844	73.2	73.2	0.3567	0.3567	73.24	
2,3,7,8-TCDF	15.492	529070362	0.84	0.9534	262.8	262.8	1.224	1.224		E
A Non-2,3,7,8-sub-TCDF	15.227	367313819	0.77	0.9534	183.1	182.4	1.224	116.3		RQMa
S Total TCDF					445.9	445.2	1.224	1.224		RQ
D 13C-2,3,7,8-TCDD	16.082	156030542	0.75	1.0875	73.9	73.9	0.2160	0.2160	73.86	
2,3,7,8-TCDD	16.097	124430334	0.75	1.0205	78.1	78.1	0.3392	0.3392		
$ 37Cl4-2,3,7,8-TCDD	16.097	87806335		1.1216	40.3	40.3	0.0648	0.0648	101	
A Non-2,3,7,8-sub-TCDD	15.620	10864742	0.78	1.0205	6.824	6.824	0.3392	6.824		
S Total TCDD					85.0	85.0	0.3392	0.3392		
D 13C-1,2,3,7,8-PeCDF	19.686	186506639	1.58	1.3943	68.9	68.9	0.1693	0.1693	68.86	
1,2,3,7,8-PeCDF	19.714	18080228	1.55	1.0794	8.981	8.981	0.0827	0.0827		M
D 13C-2,3,4,7,8-PeCDF	20.791	173887124	1.58	1.3370	67.0	67.0	0.1765	0.1765	66.96	
2,3,4,7,8-PeCDF	20.818	11074942	1.46	1.0966	5.808	5.808	0.0965	0.0965		
A F1 PeCDFs	17.730	168995	1.65	1.0880	0.0862	0.0862	0.0188	0.0862		M
A Non-2,3,7,8-sub-PeCDF	20.349	16731571	1.50	1.0880	8.534	8.534	0.0890	3.714		Ma
S Total PeCDF					23.4	23.4	0.0896	0.0896		
D 13C-1,2,3,7,8-PeCDD	21.405	124754718	1.61	0.8475	75.8	75.8	0.0977	0.0977	75.78	
1,2,3,7,8-PeCDD	21.432	1113124	1.39	1.1397	0.7829	0.7829	0.0428	0.0428		M
A Non-2,3,7,8-sub-PeCDD	20.518						0.0428	0.0428		
S Total PeCDD					0.7829	0.7829	0.0428	0.0428		
D 13C-1,2,3,4,7,8-HxCDF	26.706	148853253	0.52	1.3065	71.9	71.9	0.3289	0.3289	71.86	
1,2,3,4,7,8-HxCDF	26.719	24815267	1.15	1.2552	13.3	13.3	0.0723	0.0723		
D 13C-1,2,3,6,7,8-HxCDF	26.972	155079969	0.53	1.4213	68.8	68.8	0.3023	0.3023	68.82	
1,2,3,6,7,8-HxCDF	27.012	6211850	1.24	1.2102	3.310	3.310	0.0788	0.0788		
D 13C-2,3,4,6,7,8-HxCDF	28.517	145119789	0.54	1.3142	69.6	69.6	0.3270	0.3270	69.65	
2,3,4,6,7,8-HxCDF	28.544	778042	1.36	1.2182	0.4401	0.4401	0.0877	0.0877		
D 13C-1,2,3,7,8,9-HxCDF	30.381	147822365	0.53	1.3204	70.6	70.6	0.3254	0.3254	70.61	
1,2,3,7,8,9-HxCDF	30.421	580389	1.29	1.2319	0.3187	0.3187	0.0596	0.0596		Ma
A Non-2,3,7,8-sub-HxCDF	27.465	2678894	1.24	1.2289	1.472	1.461	0.0732	0.9014		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					18.8	18.8	0.0746	0.0746		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.048	158543309	1.26	2.8E+06	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	29.010	107919615	1.28	0.8660	78.6	78.6	0.2989	0.2989	78.60	a
1,2,3,4,7,8-HxCDD	29.010	165946	1.24	1.2535	0.1343	0.1227	0.0493	0.0493		RQM
D 13C-1,2,3,6,7,8-HxCDD	29.276	122825795	1.27	0.9827	78.8	78.8	0.2634	0.2634	78.84	a
1,2,3,6,7,8-HxCDD	29.356	169669	1.24	1.1117	0.1390	0.1243	0.0514	0.0514		RQM
1,2,3,7,8,9-HxCDD	30.088	136972	1.24	1.2852	0.1028	0.0924	0.0462	0.0462		RQM
A Non-2,3,7,8-sub-HxCDD	27.931	567851	1.24	1.2168	0.4284	0.4045	0.0488	0.2067		RQM
S Total HxCDD					0.8045	0.7438	0.0489	0.0489		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.523	110254091	0.46	0.9410	73.9	73.9	1.046	1.046	73.90	
1,2,3,4,6,7,8-HpCDF	32.535	6393467	1.02	1.4783	3.923	3.923	0.0311	0.0311		
D 13C-1,2,3,4,7,8,9-HpCDF	33.629	90445478	0.43	0.8751	65.2	65.2	1.124	1.124	65.19	
1,2,3,4,7,8,9-HpCDF	33.641	1891410	1.09	1.3784	1.517	1.517	0.0346	0.0346		
A Non-2,3,7,8-sub-HpCDF	33.100	2178816	0.97	1.4284	1.520	1.520	0.0328	1.520		
S Total HpCDF					6.960	6.960	0.0329	0.0329		
D 13C-1,2,3,4,6,7,8-HpCDD	33.386	98481457	1.06	0.9049	68.6	68.6	1.685	1.685	68.64	
1,2,3,4,6,7,8-HpCDD	33.386	3350438	1.08	1.0862	3.132	3.132	0.0392	0.0392		
A Non-2,3,7,8-sub-HpCDD	33.339	3576350	1.17	1.0862	3.343	3.343	0.0392	3.343		
S Total HpCDD					6.475	6.475	0.0392	0.0392		
D 13C-OCDD	35.546	150384078	0.90	0.5783	164.0	164.0	0.6711	0.6711	82.01	
OCDF	35.618	3485530	0.88	1.7248	2.688	2.688	0.0213	0.0213		
OCDD	35.558	46161329	0.88	1.2576	48.8	48.8	0.1720	0.1720		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Sample Type: Client
Inject. Date: 09-Oct-2020 09:49:07 ALS Bottle#: 16 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-10-A 320-65130-A-10-A
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 12:50:42 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1637

First Level Reviewer: shardaa Date: 12-Oct-2020 18:01:55

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		85315163	24301239	20880	52200	1164		
333.9339	15.915	15.930	-1		108934230	30636979	30736	76840	997	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	93845238	26282564	34860	87150	754		
317.9389	15.477	15.477	0	0.972	117326462	33475757	81503	203757	411	0.80(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	15.492	15.507	-1	1.001	241453169	67329106	101264	253160	665		
305.8987	15.492	15.507	-1	1.001	287617193	77145915	177724	444310	434	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	14.297	15.227	-56	0.924	4022801	1202023	101264	253160	12		
	Empc Correction				3456197	1026661	101264	253160	10		
305.8987	14.282	15.227	-57	0.923	4488568	1333327	177724	444310	8	0.90(0.65-0.89)	
303.9016	14.524	15.227	-42	0.938	6988102	1714015	101264	253160	17		
305.8987	14.524	15.227	-42	0.938	8606683	2238196	177724	444310	13	0.81(0.65-0.89)	
303.9016	14.721	15.227	-30	0.951	6493801	1864840	101264	253160	18		
305.8987	14.721	15.227	-30	0.951	8009524	2262144	177724	444310	13	0.81(0.65-0.89)	
303.9016	14.917	15.227	-19	0.964	8877250	2594052	101264	253160	26		M
305.8987	14.917	15.227	-19	0.964	12021075	3328366	177724	444310	19	0.74(0.65-0.89)	
303.9016	15.159	15.227	-4	0.979	99276660	31093463	101264	253160	307		M
305.8987	15.159	15.227	-4	0.979	134844936	41252774	177724	444310	232	0.74(0.65-0.89)	
303.9016	15.341	15.227	7	0.991	4607673	985049	101264	253160	10		
	Empc Correction				3924414	1041321	101264	253160	10		
305.8987	15.341	15.227	7	0.991	5096642	1352366	177724	444310	8	0.90(0.65-0.89)	
303.9016	15.840	15.227	37	1.023	14162517	3976949	101264	253160	39		
305.8987	15.840	15.227	37	1.023	17672673	5365695	177724	444310	30	0.80(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.004	15.227	106	1.099	14525489	3860860	101264	253160	38		
305.8987	17.004	15.227	106	1.099	18869288	4951653	177724	444310	28	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.082	16.081	0	1.010	67102485	18490648	20880	52200	886		
333.9339	16.082	16.081	0	1.010	88928057	23488049	30736	76840	764	0.75(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.097	0	1.001	53502187	14774947	32072	80180	461		
321.8936	16.097	16.097	0	1.001	70928147	19548207	26054	65135	750	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.112	-1	1.011	87806335	24018681	15961	39902	1505		
A Non-2,3,7,8-sub-TCDD											
319.8965	16.384	15.620	46	1.019	4754404	1297548	32072	80180	40		
321.8936	16.384	15.620	46	1.019	6110338	1609171	26054	65135	62	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.700	-1	1.237	114249307	23885968	31931	79827	748		
353.8970	19.686	19.700	-1	1.237	72257332	14726115	19934	49835	739	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.714	19.727	-1	1.001	10976022	2300014	7727	19317	298		M
341.8567	19.700	19.727	-2	1.001	7104206	1462079	6059	15147	241	1.55(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	20.791	20.818	-2	1.306	106586706	20124774	31931	79827	630		
353.8970	20.805	20.818	-1	1.307	67300418	12445638	19934	49835	624	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.818	20.846	-2	1.001	6573912	1301807	7727	19317	168		
341.8567	20.818	20.846	-2	1.001	4501030	901522	6059	15147	149	1.46(1.32-1.78)	
A F1 PeCDFs											M
339.8597	17.276	17.730	-27	0.878	105302	24941	1086	2715	23		
341.8567	17.276	17.730	-27	0.878	63693	17172	1821	4552	9	1.65(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDF											Ma
339.8597	18.596	20.349	-105	0.945	4348905	1000363	7727	19317	129		
341.8567	18.582	20.349	-106	0.944	2933180	683837	6059	15147	113	1.48(1.32-1.78)	
339.8597	19.604	20.349	-45	0.996	786856	194336	7727	19317	25		M
341.8567	19.604	20.349	-45	0.996	526684	135391	6059	15147	22	1.49(1.32-1.78)	
339.8597	20.150	20.349	-12	1.024	2849237	561408	7727	19317	73		
341.8567	20.136	20.349	-13	1.023	1875952	373832	6059	15147	62	1.52(1.32-1.78)	
339.8597	21.091	20.349	44	1.071	1615540	311307	7727	19317	40		
341.8567	21.091	20.349	44	1.071	1068650	194964	6059	15147	32	1.51(1.32-1.78)	
339.8597	22.427	20.349	124	1.139	438523	78705	7727	19317	10		
341.8567	22.441	20.349	125	1.140	288044	51317	6059	15147	8	1.52(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.405	21.432	-2	1.345	76948803	13698063	10835	27087	1264		
369.8919	21.405	21.432	-2	1.345	47805915	8369956	7369	18422	1136	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	21.432	21.459	-2	1.001	647427	115855	2884	7210	40		
357.8516	21.418	21.459	-2	1.001	465697	93293	1419	3547	66	1.39(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.518						2884	7210			
357.8516	20.518						1419	3547			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.706	26.733	-2	0.889	50885210	7094670	14920	37300	476		
385.8610	26.706	26.733	-2	0.889	97968043	13895139	26499	66247	524	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.719	26.759	-2	1.000	13288918	1776778	3818	9545	465		
375.8178	26.733	26.759	-2	1.001	11526349	1598012	3800	9500	421	1.15(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.972	27.012	-2	0.898	53870387	6856233	14920	37300	460		
385.8610	26.972	27.012	-2	0.898	101209582	13112719	26499	66247	495	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.012	27.039	-2	1.001	3434514	446579	3818	9545	117		
375.8178	27.012	27.039	-2	1.001	2777336	353565	3800	9500	93	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.517	28.570	-3	0.949	51111314	6317399	14920	37300	423		
385.8610	28.517	28.570	-3	0.949	94008475	11515763	26499	66247	435	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.544	28.597	-3	1.001	447892	58777	3818	9545	15		
375.8178	28.544	28.597	-3	1.001	330150	37813	3800	9500	10	1.36(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.394	-1	1.011	50921914	8896718	14920	37300	596		
385.8610	30.368	30.394	-2	1.011	96900451	17026881	26499	66247	643	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	30.421	30.408	1	1.001	327459	68953	3818	9545	18		M
375.8178	30.395	30.408	-1	1.000	252930	49781	3800	9500	13	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.309	27.465	-189	0.910	112562	20461	3818	9545	5		
	Empc Correction				92733	21983	3818	9545	6		
375.8178	24.336	27.465	-187	0.911	74785	17729	3800	9500	5	1.51(1.05-1.43)	
373.8208	24.656	27.465	-168	0.923	883833	142871	3818	9545	37		
375.8178	24.642	27.465	-169	0.923	769073	115971	3800	9500	31	1.15(1.05-1.43)	
373.8208	25.734	27.465	-104	0.964	494632	77031	3818	9545	20		
375.8178	25.761	27.465	-102	0.965	363838	60576	3800	9500	16	1.36(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	30.048	30.088	-2		88451253	13543353	13254	33135	1022		a
403.8529	30.062	30.088	-2		70092056	10553824	11700	29250	902	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.010	29.036	-2	0.965	60662003	7276120	13254	33135	549		a
403.8529	29.010	29.036	-2	0.965	47257612	5614796	11700	29250	480	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8157	29.010	29.076	-4	1.000	91863	16055	1357	3392	12		M
391.8127	29.063	29.076	-1	1.002	89848	15810	1827	4567	9	1.02(1.05-1.43)	M
	Empc Correction				74083	12947	1827	4567	7		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.276	29.316	-2	0.974	68738745	7913953	13254	33135	597		a
403.8529	29.289	29.316	-2	0.975	54087050	6021759	11700	29250	515	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8157	29.356	29.356	0	1.003	93924	15185	1357	3392	11		M
391.8127	29.302	29.356	-3	1.001	95836	15473	1827	4567	8	0.98(1.05-1.43)	M
	Empc Correction				75745	12245	1827	4567	7		
1,2,3,7,8,9-HxCDD											RQM
389.8157	30.088	30.101	-1	1.037	75824	13379	1357	3392	10		M
391.8127	30.062	30.101	-2	1.036	76580	14905	1827	4567	8	0.99(1.05-1.43)	
	Empc Correction				61148	10789	1827	4567	6		
A Non-2,3,7,8-sub-HxCDD											RQM
389.8157	25.628	27.931	-138	0.875	187264	23803	1357	3392	18		M
	Empc Correction				153716	23449	1357	3392	17		
391.8127	25.641	27.931	-137	0.876	123965	18911	1827	4567	10	1.51(1.05-1.43)	M
389.8157	27.438	27.931	-29	0.937	166778	20969	1357	3392	15		M
391.8127	27.425	27.931	-30	0.937	123392	17885	1827	4567	10	1.35(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.523	32.547	-1	1.082	34520290	11422108	34776	86940	328		
419.8220	32.523	32.547	-1	1.082	75733801	25205659	60074	150185	420	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.535	32.547	-1	1.000	3226117	1105375	2860	7150	386		
409.7789	32.535	32.547	-1	1.000	3167350	1103704	3886	9715	284	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.629	33.641	-1	1.119	27385063	10832779	34776	86940	312		
419.8220	33.629	33.641	-1	1.119	63060415	24550400	60074	150185	409	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.641	33.653	-1	1.000	985629	390262	2860	7150	136		
409.7789	33.629	33.653	-1	1.000	905781	342062	3886	9715	88	1.09(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.875	33.100	-13	1.011	1072129	381595	2860	7150	133		
409.7789	32.875	33.100	-13	1.011	1106687	415249	3886	9715	107	0.97(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.386	33.398	-1	1.111	50578339	19577240	81587	203967	240		
437.8140	33.386	33.398	-1	1.111	47903118	18088234	65340	163350	277	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.386	33.398	-1	1.000	1738878	675102	3557	8892	190		
425.7737	33.386	33.398	-1	1.000	1611560	660140	2857	7142	231	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	32.839	33.339	-30	0.984	1925806	635805	3557	8892	179		
425.7737	32.827	33.339	-31	0.983	1650544	533608	2857	7142	187	1.17(0.88-1.20)	
13C-OCDD											
469.7779	35.546	35.558	-1	1.183	71213006	24214655	18854	47135	1284		
471.7750	35.546	35.558	-1	1.183	79171072	26747261	18554	46385	1442	0.90(0.76-1.02)	
OCDF											
441.7428	35.618	35.630	-1	1.002	1628429	556658	1825	4562	305		
443.7399	35.618	35.630	-1	1.002	1857101	617777	1912	4780	323	0.88(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	35.558	35.570	-1	1.000	21569239	7463086	6532	16330	1143		
459.7348	35.558	35.570	-1	1.000	24592090	8154428	15511	38777	526	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 13-Oct-2020 12:50:42 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Inject. Date: 09-Oct-2020 09:49:07 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 19

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	211171700	59758321

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	211171700	59758321

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	4022801	1202023	4488568	1333327	4.23	0.90	RQ
14.297	3456197	1026661	4488568	1333327	3.95		Empc Correction
14.524	6988102	1714015	8606683	2238196	7.75	0.81	
14.721	6493801	1864840	8009524	2262144	7.20	0.81	
14.917	8877250	2594052	12021075	3328366	10.4	0.74	Ma
15.159	99276660	31093463	134844936	41252774	116.3	0.74	M
15.341	4607673	985049	5096642	1352366	4.82	0.90	RQ
15.341	3924414	1041321	5096642	1352366	4.48		Empc Correction
15.840	14162517	3976949	17672673	5365695	15.8	0.80	
17.004	14525489	3860860	18869288	4951653	16.6	0.77	
Signal Totals:							
	157704430	47172161	209609389	62084521			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	368563682	109375772				0.76	RQMa
	367313819	109256682					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 183.064 = (368563682 * 100.000) / (211171700 * 0.953)
Empc Amount: 182.444 = (367313819 * 100.000) / (211171700 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 13-Oct-2020 12:50:42 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Inject. Date: 09-Oct-2020 09:49:07 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 19

Non-2,3,7,8-sub-TCDD, RT: 15.620

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	156030542	41978697

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	156030542	41978697

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.384	4754404	1297548	6110338	1609171	6.82	0.78	
Signal Totals:							
	4754404	1297548	6110338	1609171			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10864742	2906719				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.824 = (10864742 * 100.000) / (156030542 * 1.020)

Report Date: 13-Oct-2020 12:50:42 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Lims ID:	320-65130-A-10-A		
Client ID:	11215702-Tank#1-valve-3-3		
Inject. Date:	09-Oct-2020 09:49:07	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	19

F1 PeCDFs, RT: 17.730

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	186506639	38612083
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	173887124	32570412

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	180196881	35591247

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.276	105302	24941	63693	17172	0.0862	1.65	M
Signal Totals:							
	105302	24941	63693	17172			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	168995	42113				1.65	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0862 = (168995 * 100.000) / (180196881 * 1.088)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Lims ID:	320-65130-A-10-A		
Client ID:	11215702-Tank#1-valve-3-3		
Inject. Date:	09-Oct-2020 09:49:07	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	19

Non-2,3,7,8-sub-PeCDF, RT: 20.349

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	186506639	38612083
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	173887124	32570412

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	180196881	35591247

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	4348905	1000363	2933180	683837	3.71	1.48	
19.604	786856	194336	526684	135391	0.6700	1.49	Ma
20.150	2849237	561408	1875952	373832	2.41	1.52	
21.091	1615540	311307	1068650	194964	1.37	1.51	
22.427	438523	78705	288044	51317	0.3706	1.52	
Signal Totals:							
	10039061	2146119	6692510	1439341			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16731571	3585460				1.50	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.534 = (16731571 * 100.000) / (180196881 * 1.088)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Inject. Date: 09-Oct-2020 09:49:07
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 19

Non-2,3,7,8-sub-HxCDF, RT: 27.465

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	148853253	20989809
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	155079969	19968952
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	145119789	17833162
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	147822365	25923599

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	149218844	21178880

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.309	112562	20461	74785	17729	0.1022	1.51	RQ
24.309	92733	21983	74785	17729	0.0914		Empc Correction
24.656	883833	142871	769073	115971	0.9014	1.15	
25.734	494632	77031	363838	60576	0.4682	1.36	
Signal Totals:							
	1471198	241885	1207696	194276			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2698723	434639				1.23	RQ
	2678894	436161					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.472 = (2698723 * 100.000) / (149218844 * 1.229)
Empc Amount: 1.461 = (2678894 * 100.000) / (149218844 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Inject. Date: 09-Oct-2020 09:49:07 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: ALM
Lims Batch ID: 420482 Lims Sample ID: 19

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	107919615	12890916
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	122825795	13935712
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	115372705	13413314

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.628	187264	23803	123965	18911	0.2217	1.51	RQM
25.628	153716	23449	123965	18911	0.1978		Empc Correction
27.438	166778	20969	123392	17885	0.2067	1.35	M
Signal Totals:							
	320494	44418	247357	36796			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	601399	81568				1.43	RQM
	567851	81214					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4284 = (601399 * 100.000) / (115372705 * 1.217)
Empc Amount: 0.4045 = (567851 * 100.000) / (115372705 * 1.217)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Lims ID:	320-65130-A-10-A		
Client ID:	11215702-Tank#1-valve-3-3		
Inject. Date:	09-Oct-2020 09:49:07	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	19

Non-2,3,7,8-sub-HpCDF, RT: 33.100

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	110254091	36627767
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	90445478	35383179

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	100349784	36005473

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.875	1072129	381595	1106687	415249	1.52	0.97	
Signal Totals:							
	1072129	381595	1106687	415249			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2178816	796844				0.97	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.520 = (2178816 * 100.000) / (100349784 * 1.428)

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Lims ID:	320-65130-A-10-A		
Client ID:	11215702-Tank#1-valve-3-3		
Inject. Date:	09-Oct-2020 09:49:07	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	ALM
Lims Batch ID:	420482	Lims Sample ID:	19

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	98481457	37665474

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	98481457	37665474

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.839	1925806	635805	1650544	533608	3.34	1.17	
Signal Totals:							
	1925806	635805	1650544	533608			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3576350	1169413				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.343 = (3576350 * 100.000) / (98481457 * 1.086)

Report Date: 13-Oct-2020 12:50:43

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d				
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5		
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10		
Client ID:	11215702-Tank#1-valve-3-3				
Operator ID:	ALM	ALS Bottle#:	16	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.05)

Signal: 1

Processing Integration Results

RT = 14.917 Area = 9353619

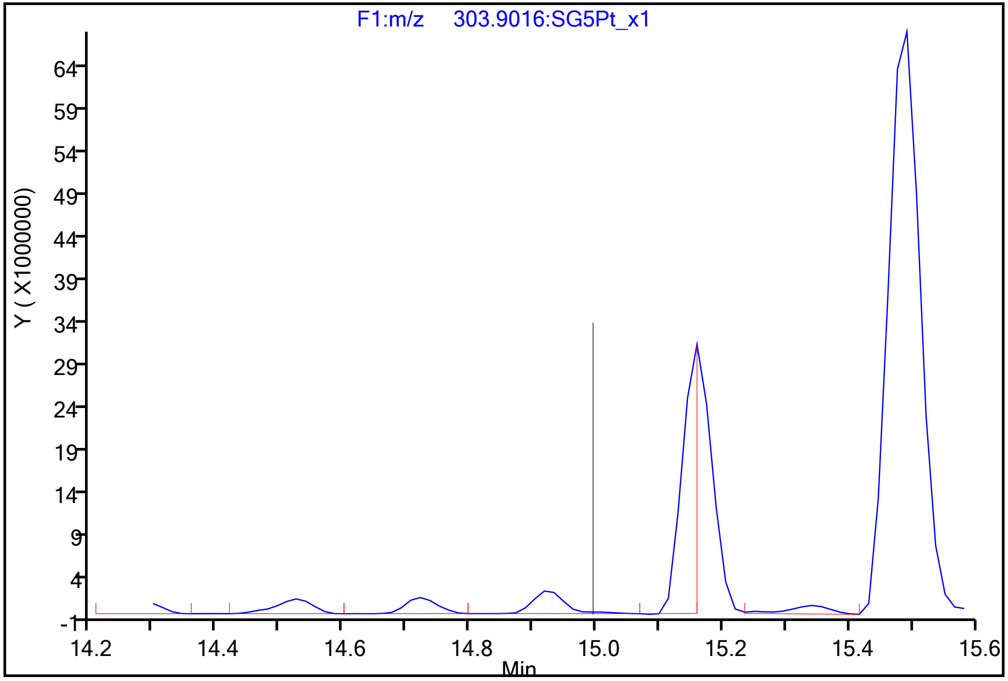

Manual Integration Results

RT = 14.917 Area = 8877250 M

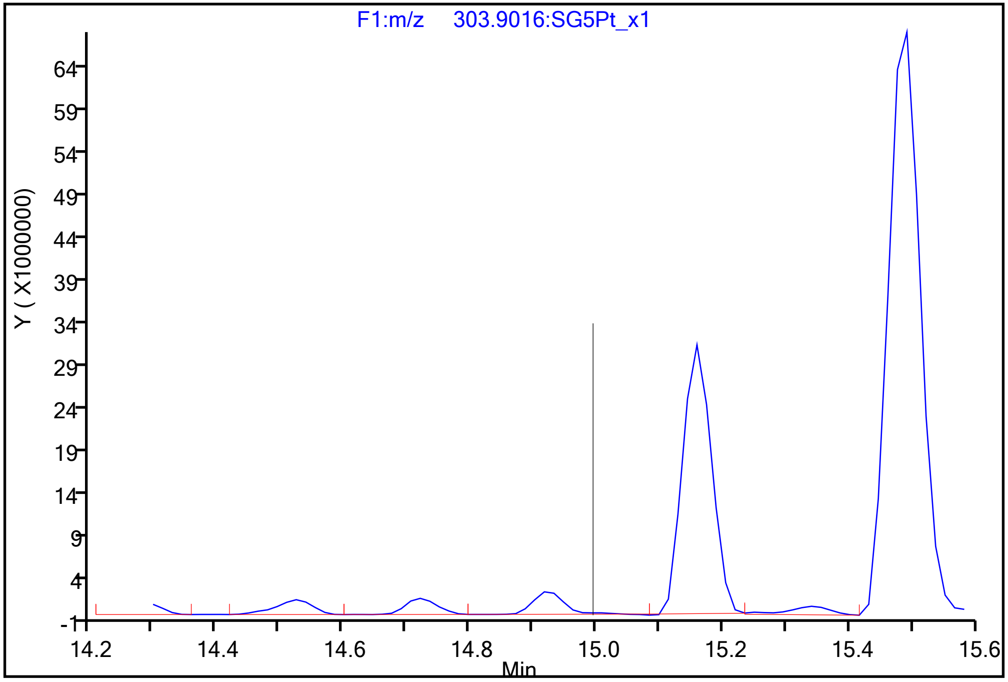

Reviewer: dadunj, 13-Oct-2020 12:47:16

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.05)

Signal: 1

Processing Integration Results

RT = 15.144 Area = 48703655

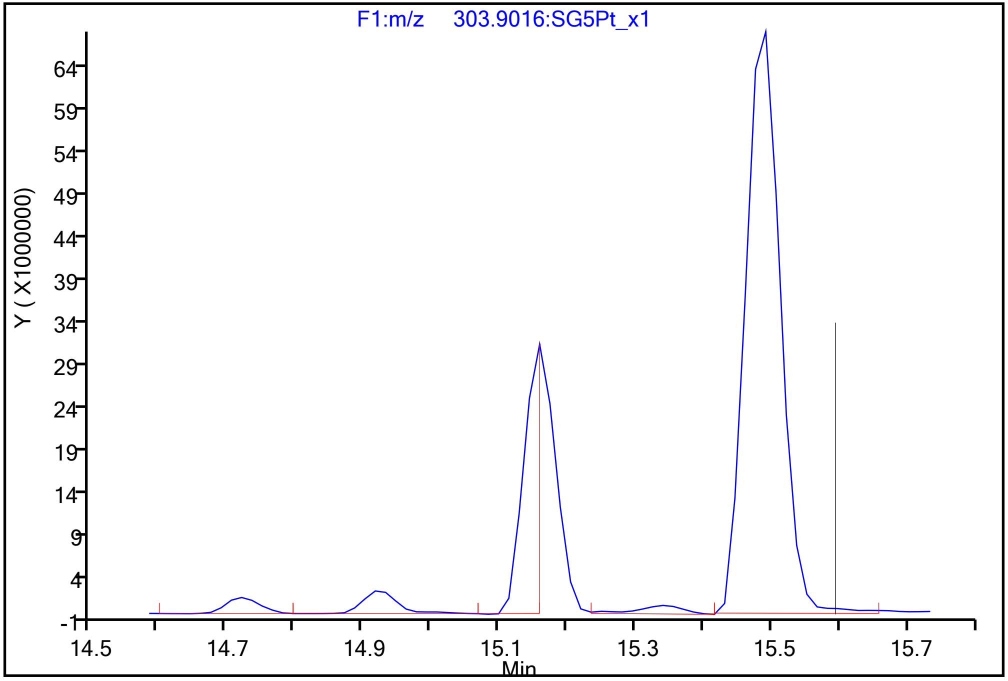

Manual Integration Results

RT = 15.159 Area = 99276660 M

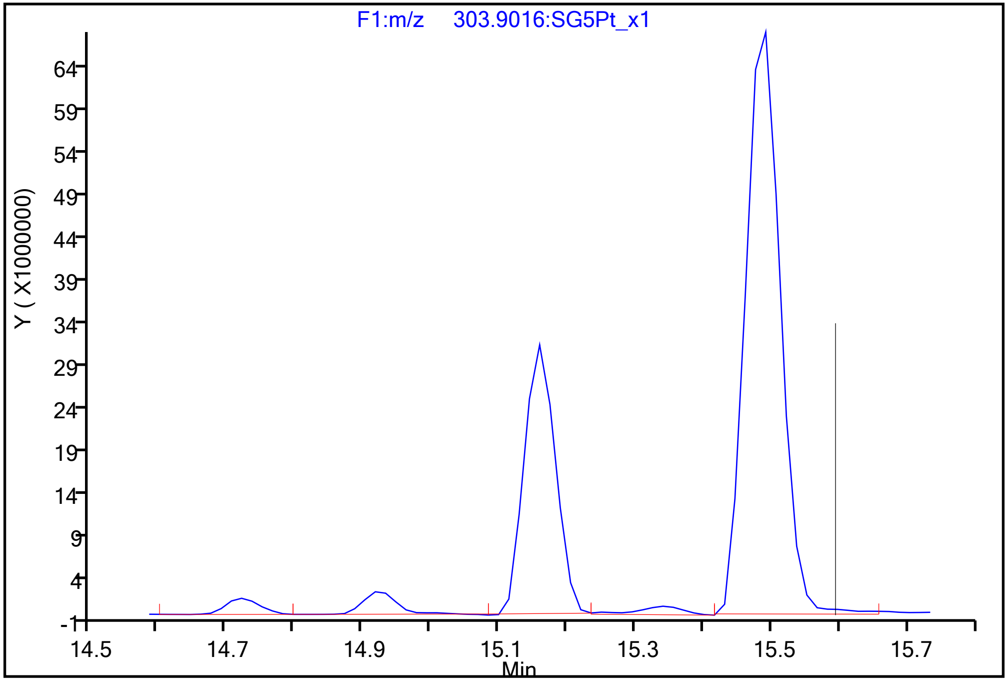

Reviewer: dadunj, 13-Oct-2020 12:47:16

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Report Date: 13-Oct-2020 12:50:43

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d

Injection Date: 09-Oct-2020 09:49:07

Instrument ID: 3D5

Lims ID: 320-65130-A-10-A

Lab Sample ID: 320-65130-10

Client ID: 11215702-Tank#1-valve-3-3

Operator ID: ALM

ALS Bottle#: 16

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT: 19.71

Area: 11235611

Amount: 9.439009

Amount Units: pg/ul

Processing Integration Results

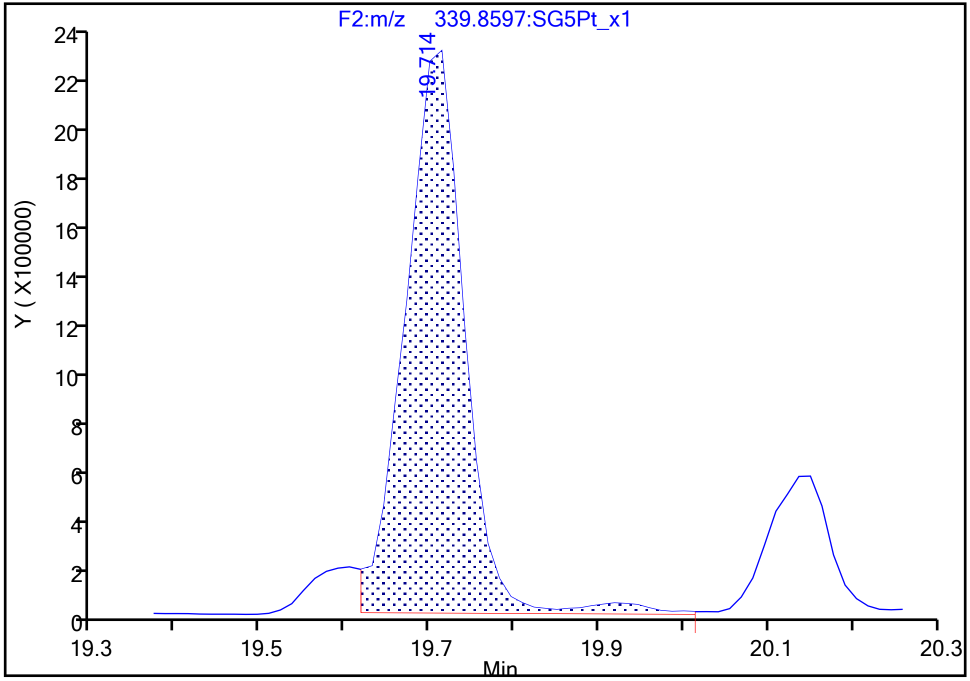

RT: 19.71

Area: 10976022

Amount: 8.981360

Amount Units: pg/ul

Manual Integration Results

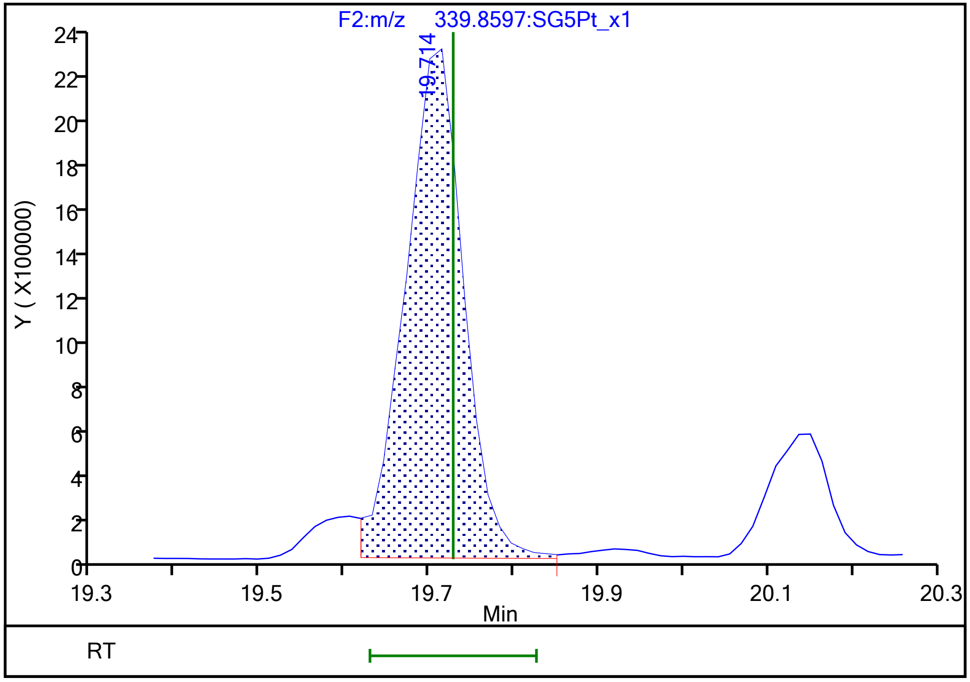

Reviewer: dadunj, 13-Oct-2020 12:47:46

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT: 19.70
Area: 7765903
Amount: 9.439009
Amount Units: pg/ul

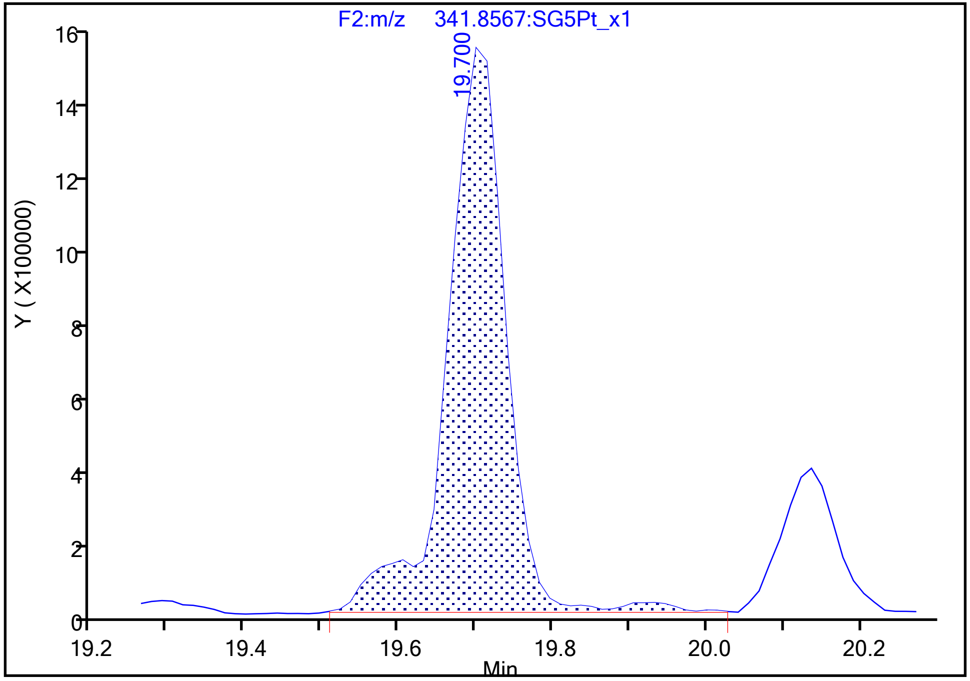

Manual Integration Results

RT: 19.70
Area: 7104206
Amount: 8.981360
Amount Units: pg/ul

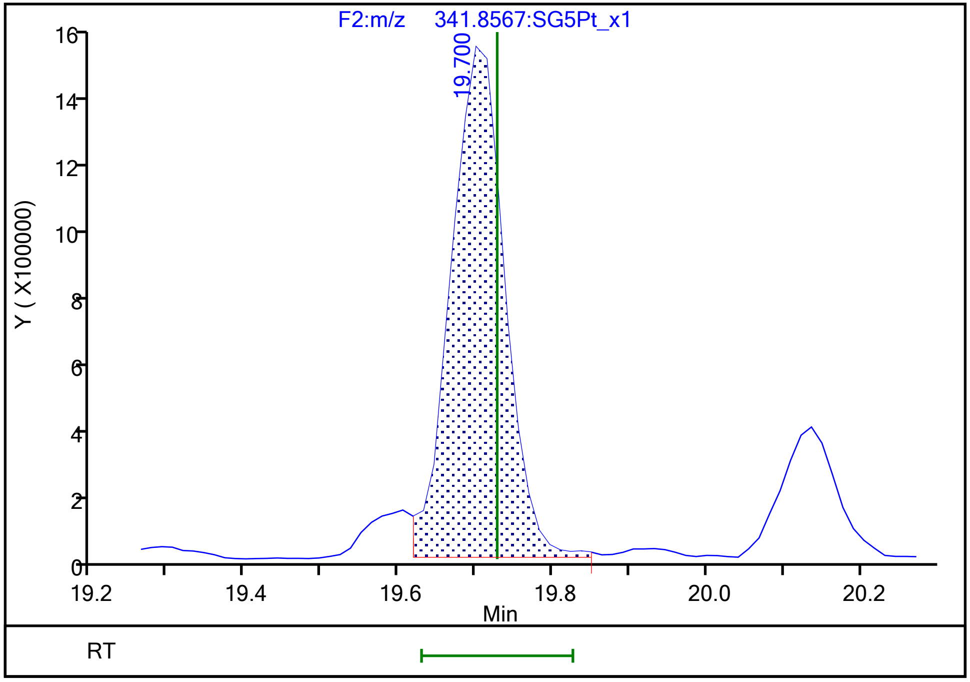

Reviewer: dadunj, 13-Oct-2020 12:47:48

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Injection Date: 09-Oct-2020 09:49:07
Instrument ID: 3D5
Lims ID: 320-65130-A-10-A
Lab Sample ID: 320-65130-10
Client ID: 11215702-Tank#1-valve-3-3
Operator ID: ALM
ALS Bottle#: 16
Worklist Smp#: 19
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F2:HRSIR

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (18.23- 22.47)

Signal: 1

Processing Integration Results

RT = 19.604 Area = 786856

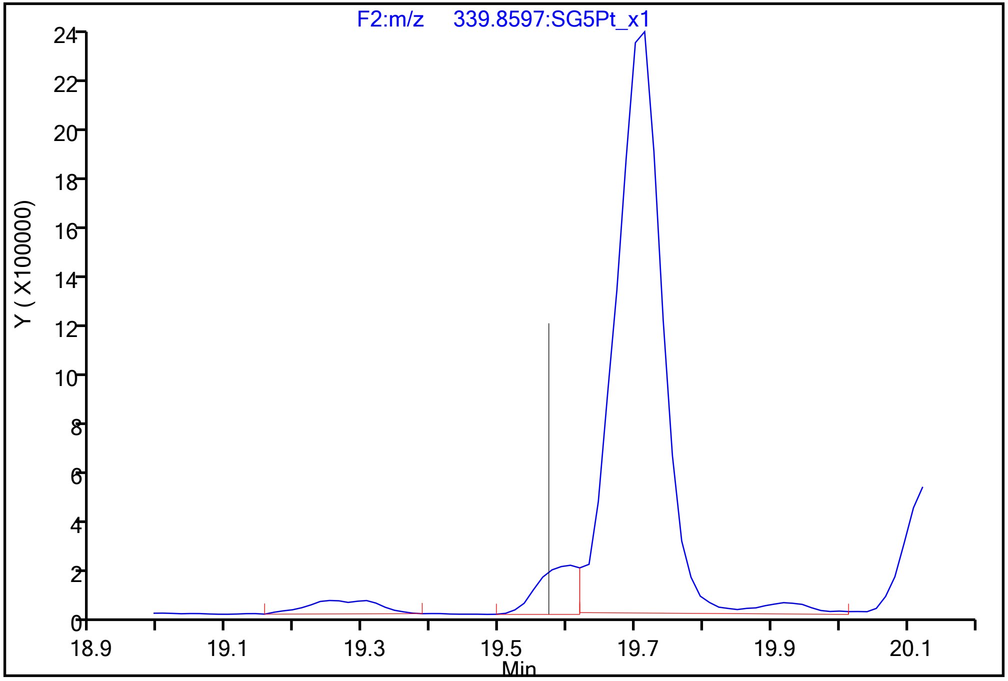

Manual Integration Results

RT = 19.604 Area = 786856

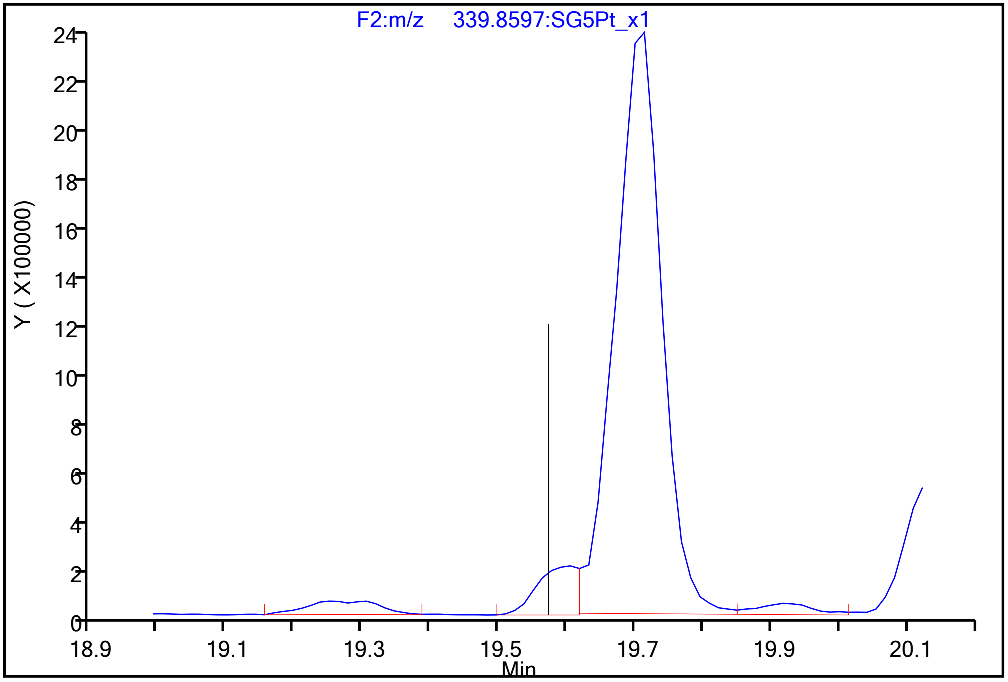

Reviewer: dadunj, 13-Oct-2020 12:48:06

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Injection Date: 09-Oct-2020 09:49:07
Instrument ID: 3D5
Lims ID: 320-65130-A-10-A
Lab Sample ID: 320-65130-10
Client ID: 11215702-Tank#1-valve-3-3
Operator ID: ALM
ALS Bottle#: 16
Worklist Smp#: 19
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT: 21.42
Area: 480944
Amount: 0.793634
Amount Units: pg/ul

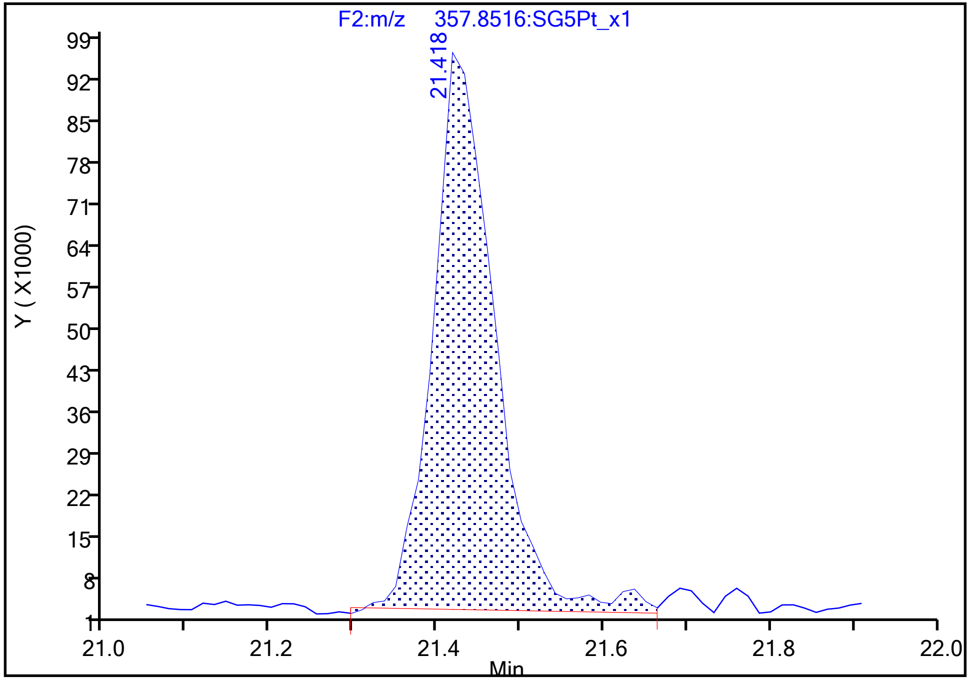

Manual Integration Results

RT: 21.42
Area: 465697
Amount: 0.782910
Amount Units: pg/ul

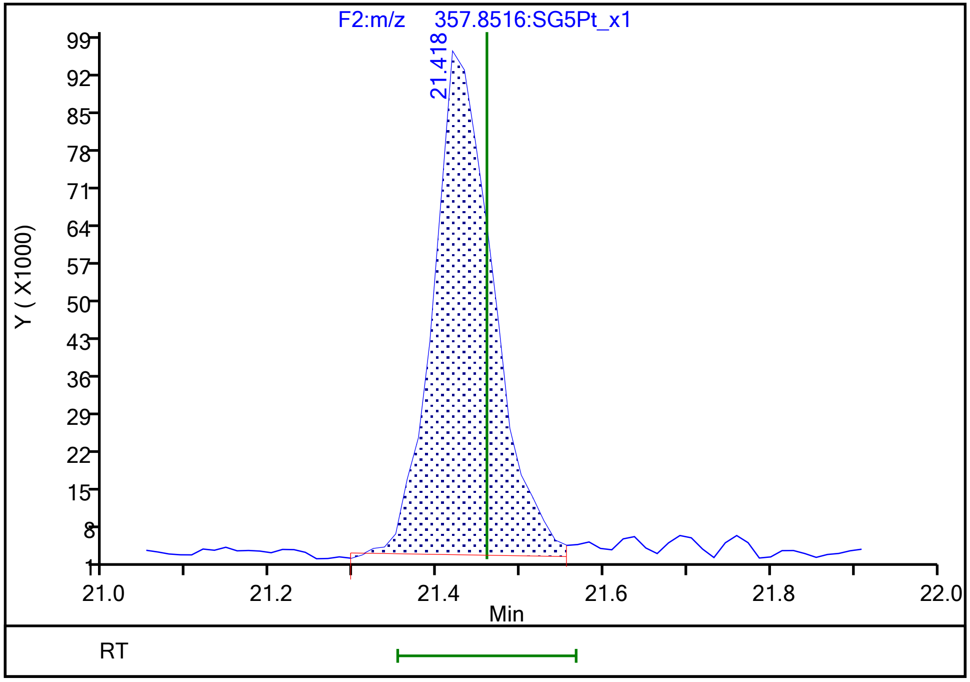

Reviewer: dadunj, 13-Oct-2020 12:48:15
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d

Injection Date: 09-Oct-2020 09:49:07

Instrument ID: 3D5

Lims ID: 320-65130-A-10-A

Lab Sample ID: 320-65130-10

Client ID: 11215702-Tank#1-valve-3-3

Operator ID: ALM

ALS Bottle#: 16

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT: 30.55

Area: 624750

Amount: 0.950097

Amount Units: pg/ul

Processing Integration Results

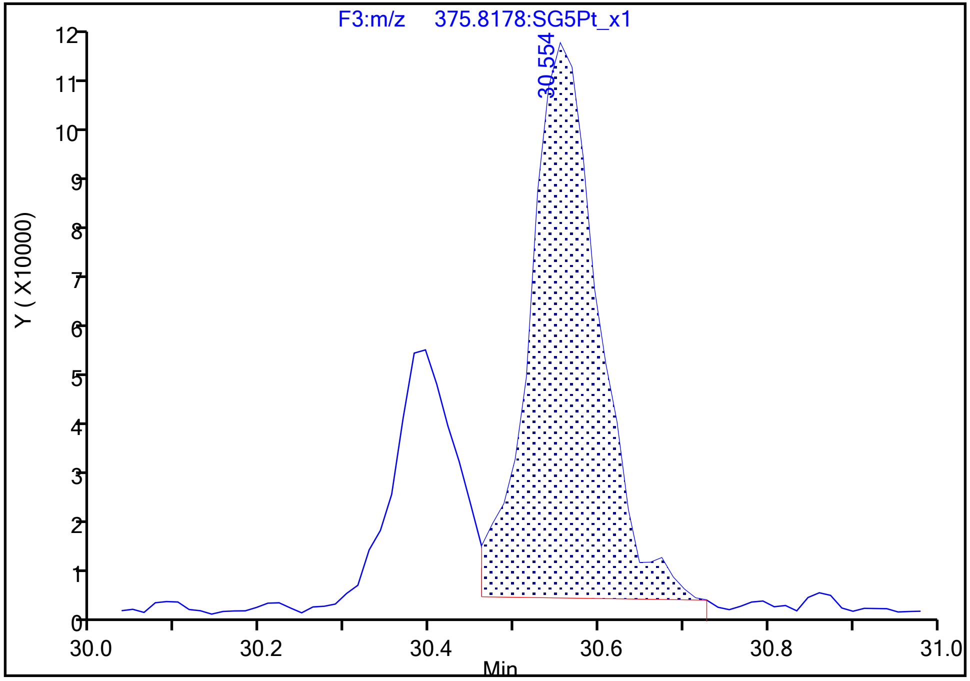

RT: 30.39

Area: 252930

Amount: 0.318716

Amount Units: pg/ul

Manual Integration Results

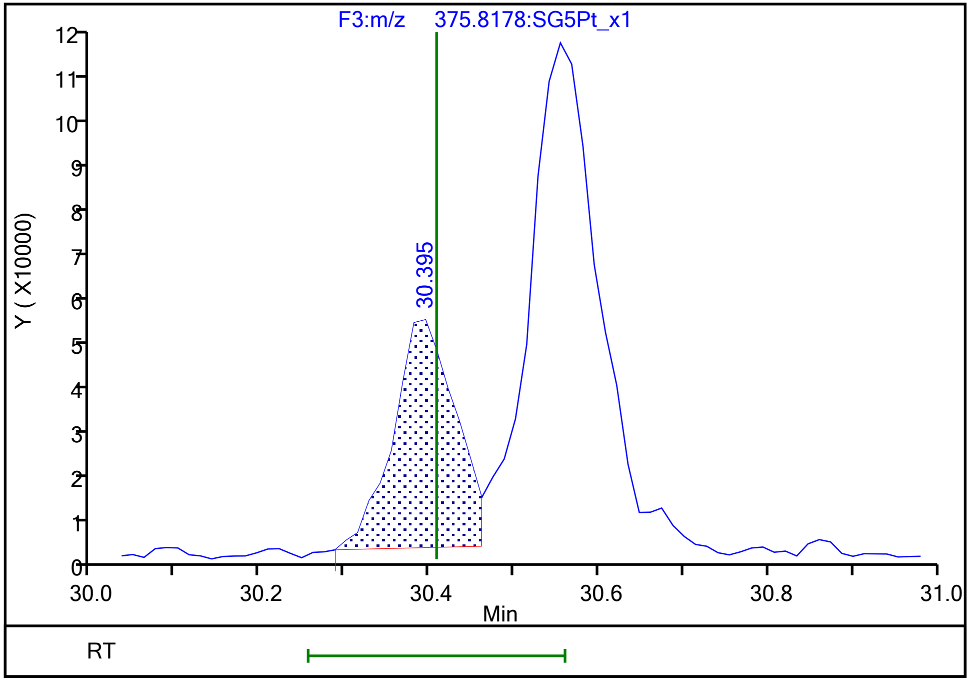

Reviewer: dadunj, 13-Oct-2020 12:48:32

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 3

Processing Integration Results

RT: 30.55
Area: 1730149
Amount: 0.950097
Amount Units: pg/ul

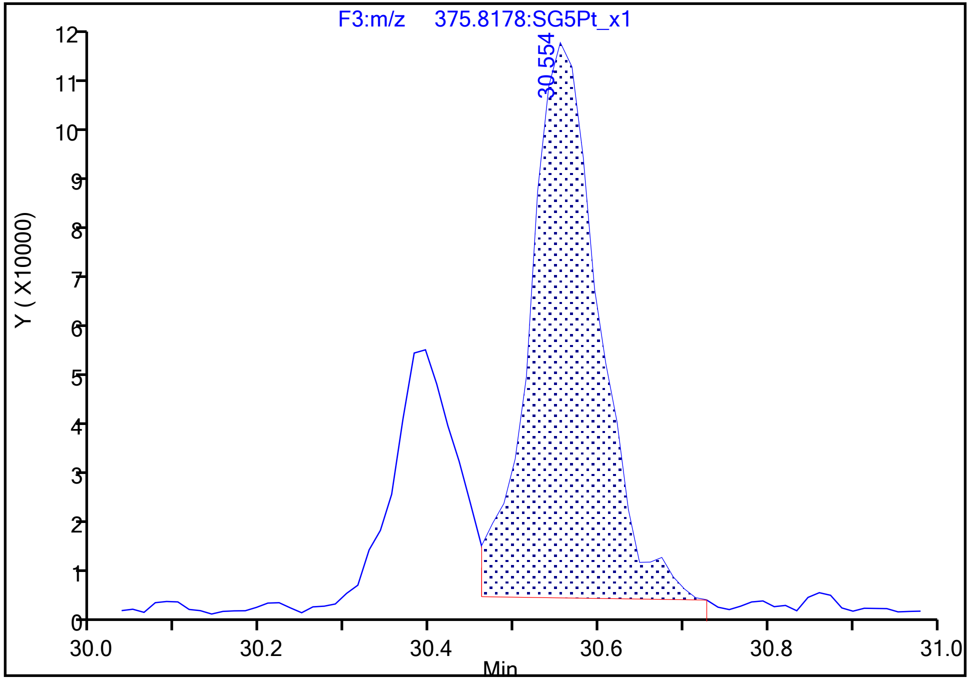

Manual Integration Results

RT: 30.42
Area: 580389
Amount: 0.318716
Amount Units: pg/ul
Reviewer: dadunj, 13-Oct-2020 12:48:32
Audit Action: Marked Compound Undetected
Audit Reason: Invalid Compound ID

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	30.55
Area:	1105399
Amount:	0.950097
Amount Units:	pg/ul

Processing Integration Results

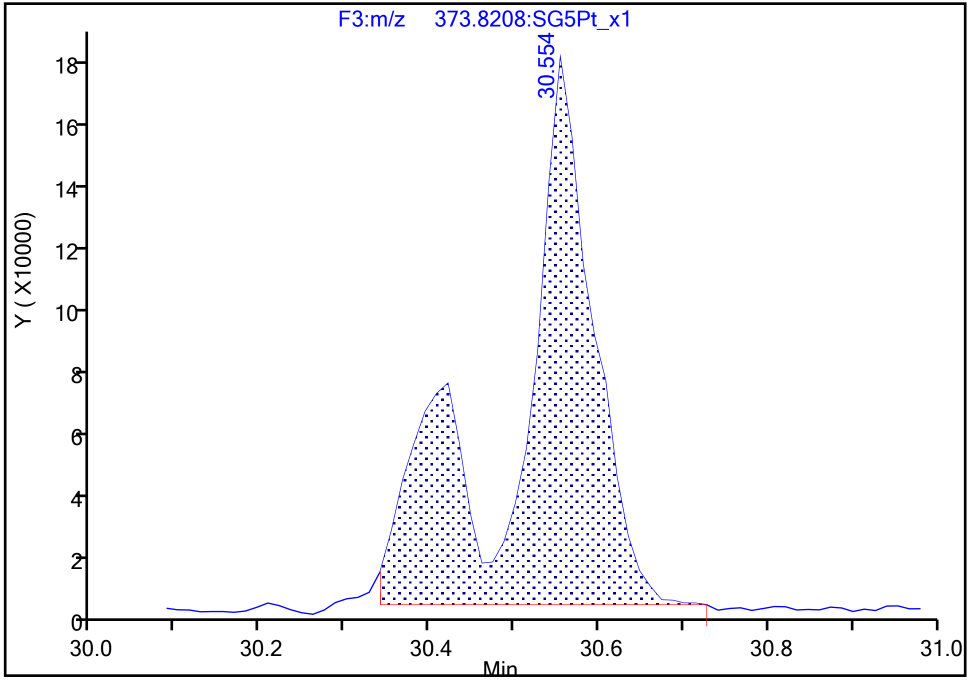

RT:	30.42
Area:	327459
Amount:	0.318716
Amount Units:	pg/ul

Manual Integration Results

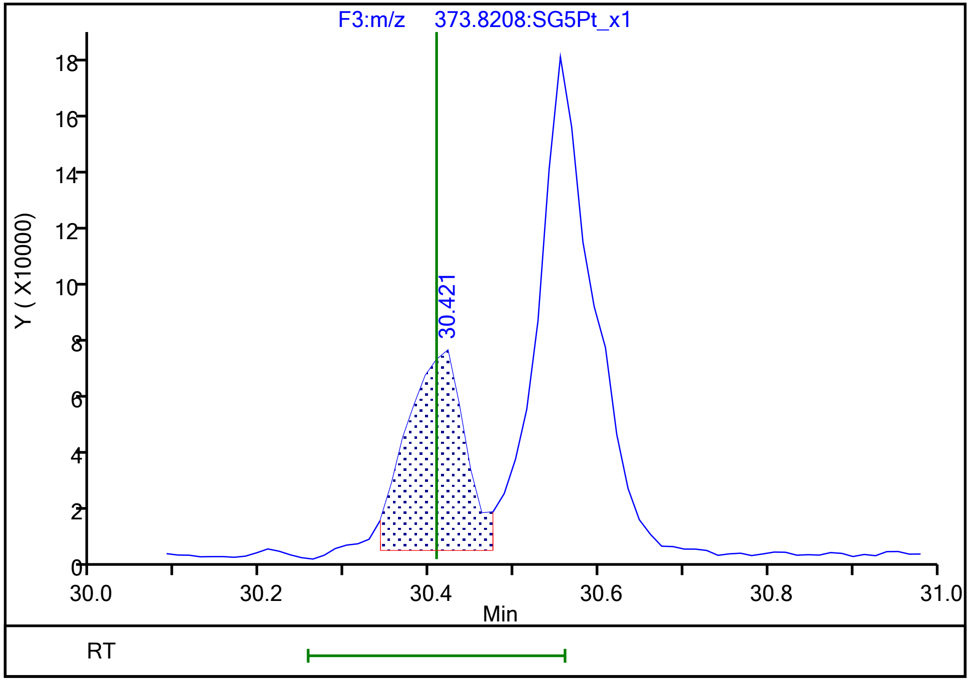

Reviewer: dadunj, 13-Oct-2020 12:48:34

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d				
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5		
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10		
Client ID:	11215702-Tank#1-valve-3-3				
Operator ID:	ALM	ALS Bottle#:	16	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Processing Integration Results

RT: 30.05
Area: 88451253
Amount: 115.4704
Amount Units: pg/ul

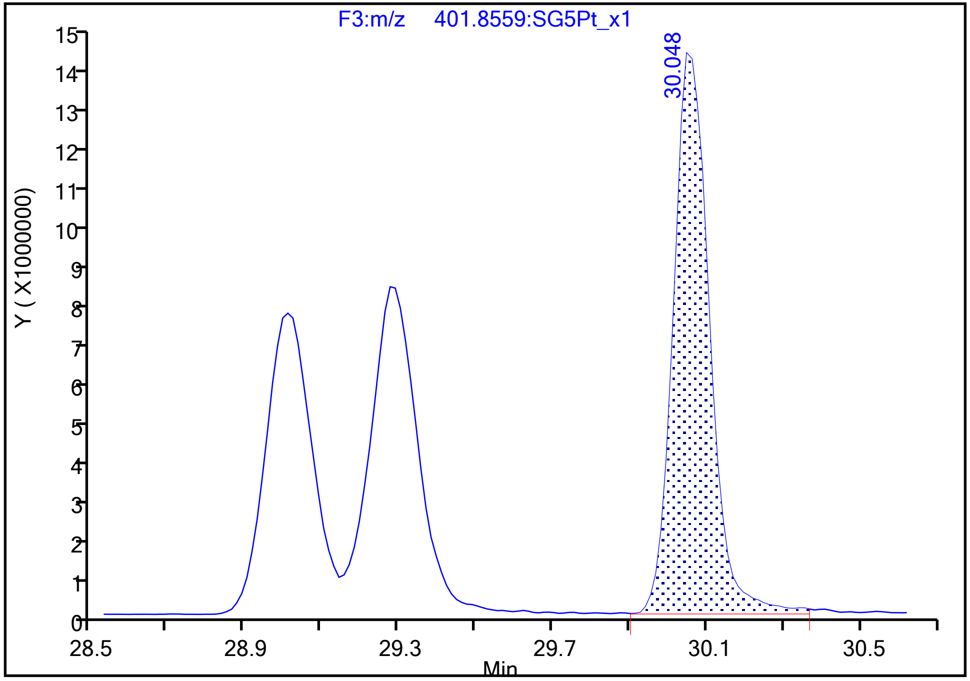

Manual Integration Results

RT: 29.01
Area: 60662003
Amount: 78.600085
Amount Units: pg/ul

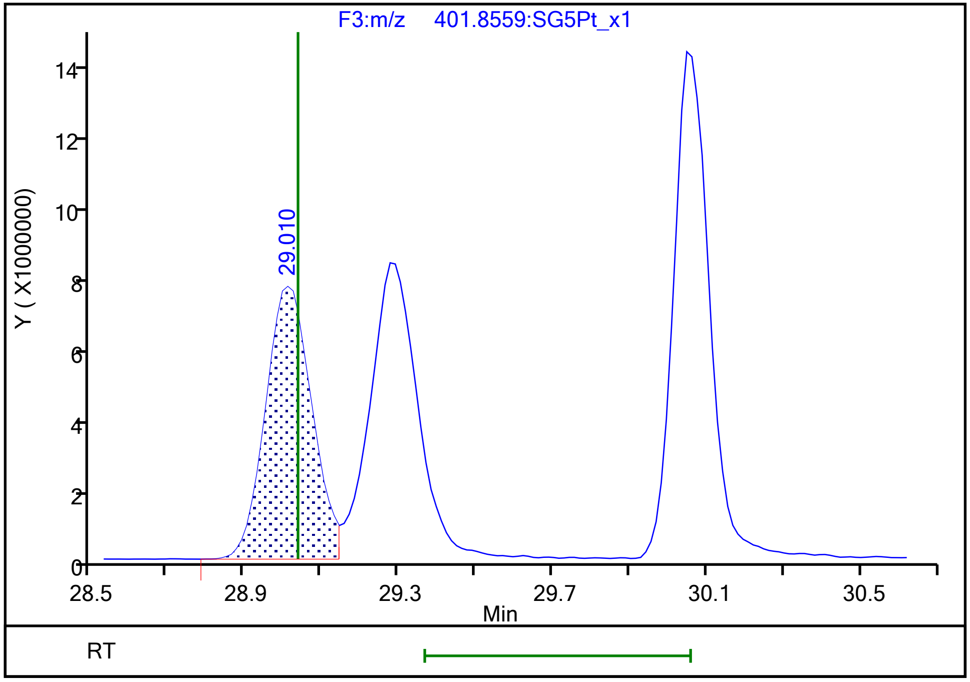

Reviewer: shardaa, 12-Oct-2020 18:01:33
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 12:50:43

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d				
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5		
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10		
Client ID:	11215702-Tank#1-valve-3-3				
Operator ID:	ALM	ALS Bottle#:	16	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 29.06
Area: 101281
Amount: 0.155372
Amount Units: pg/ul

Processing Integration Results

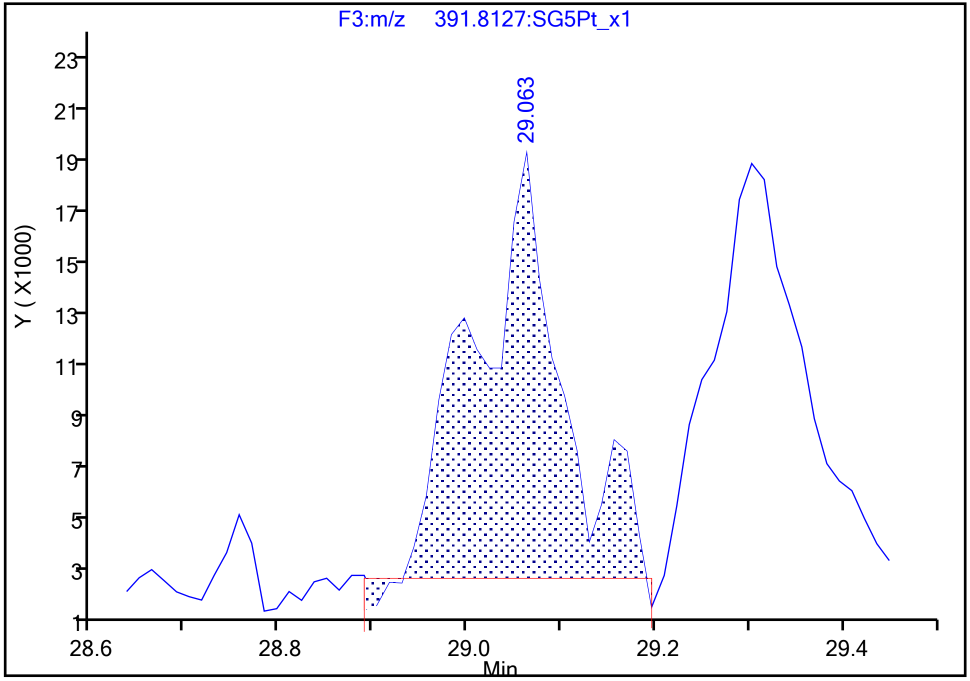

RT: 29.06
Area: 89848
Amount: 0.134323
Amount Units: pg/ul

Manual Integration Results

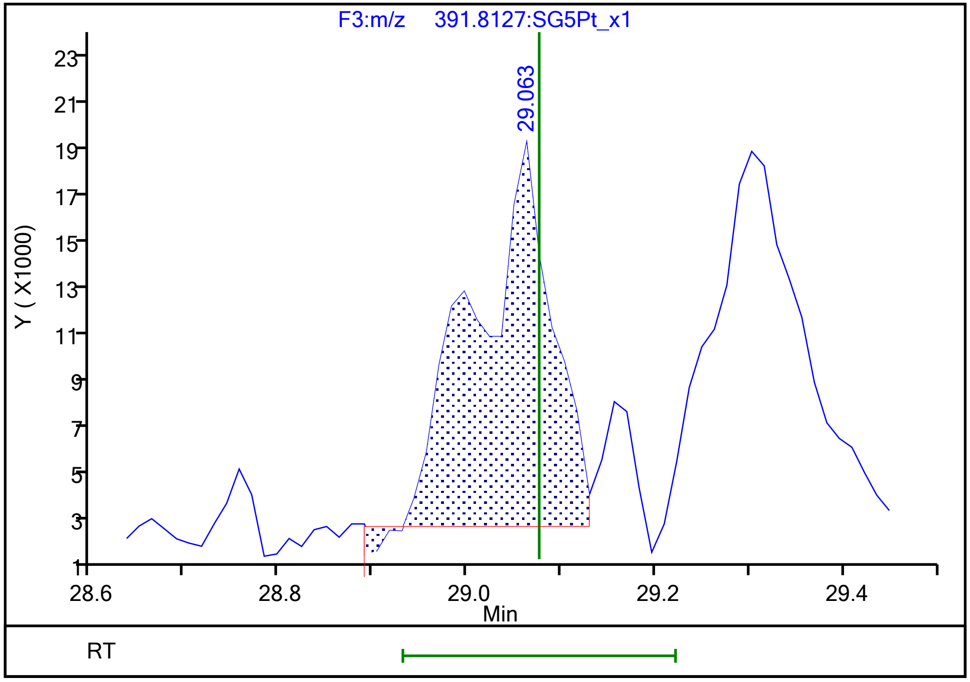

Reviewer: dadunj, 13-Oct-2020 12:49:03

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT:	29.01
Area:	108904
Amount:	0.155372
Amount Units:	pg/ul

Processing Integration Results

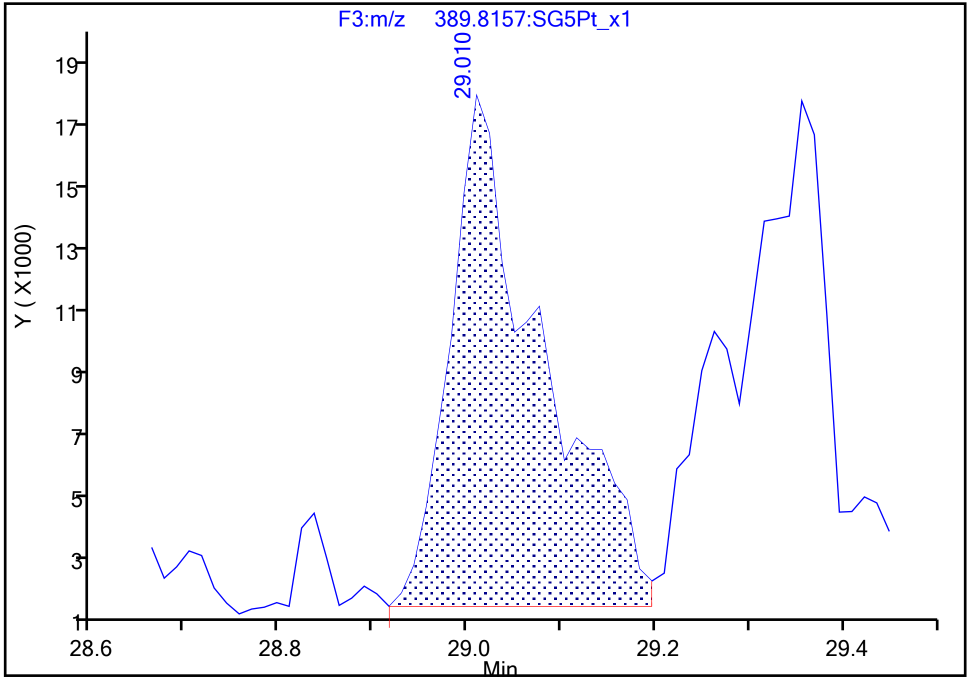

RT:	29.01
Area:	91863
Amount:	0.134323
Amount Units:	pg/ul

Manual Integration Results

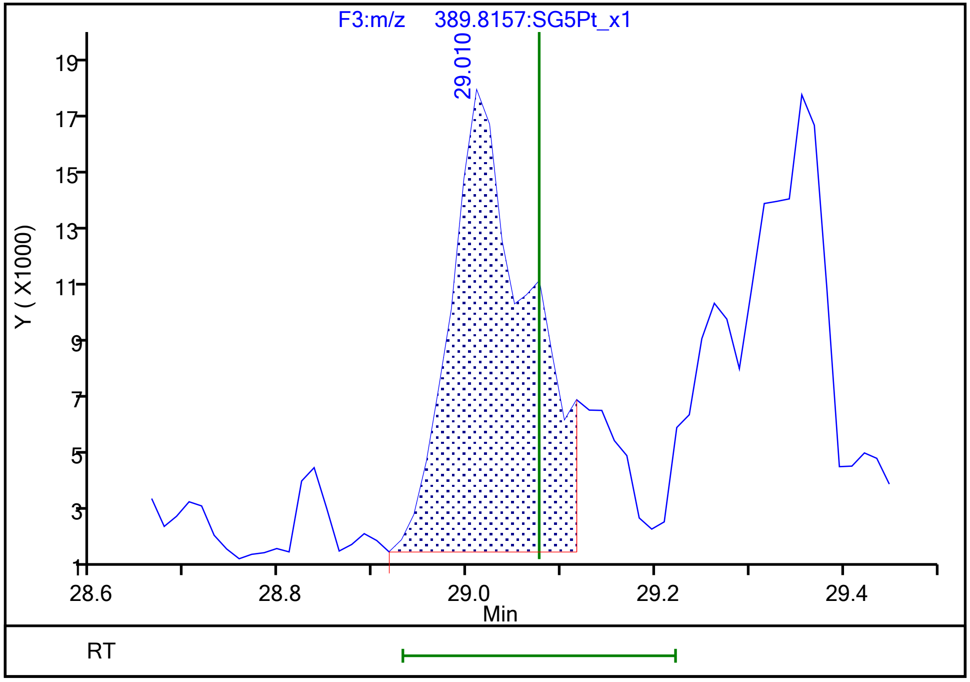

Reviewer: dadunj, 13-Oct-2020 12:49:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.05
Area:	88451253
Amount:	101.7609
Amount Units:	pg/ul

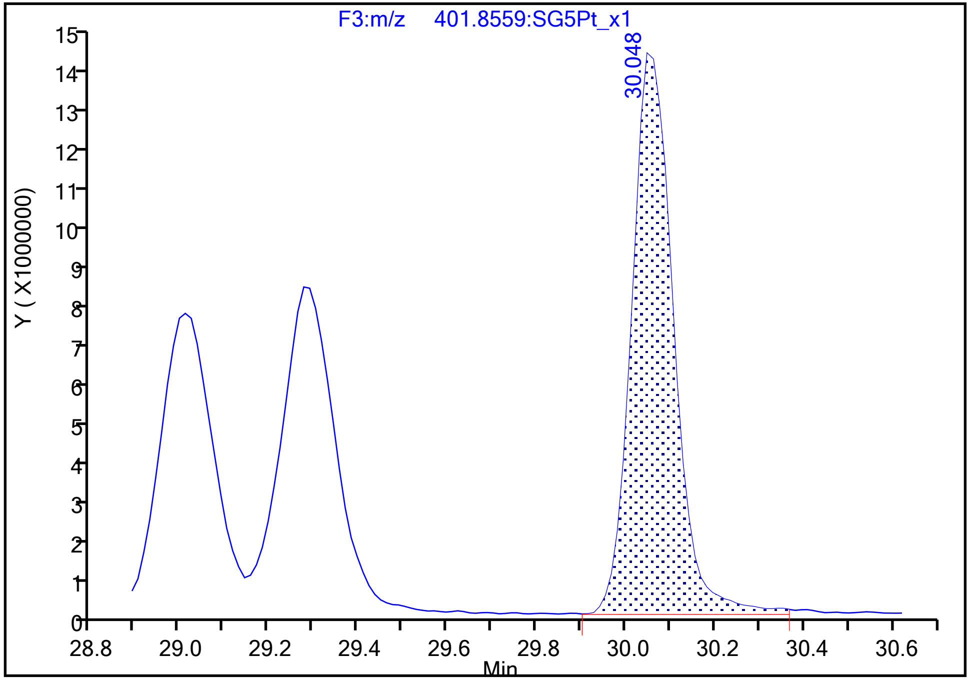

Manual Integration Results

RT:	29.28
Area:	68738745
Amount:	78.835637
Amount Units:	pg/ul

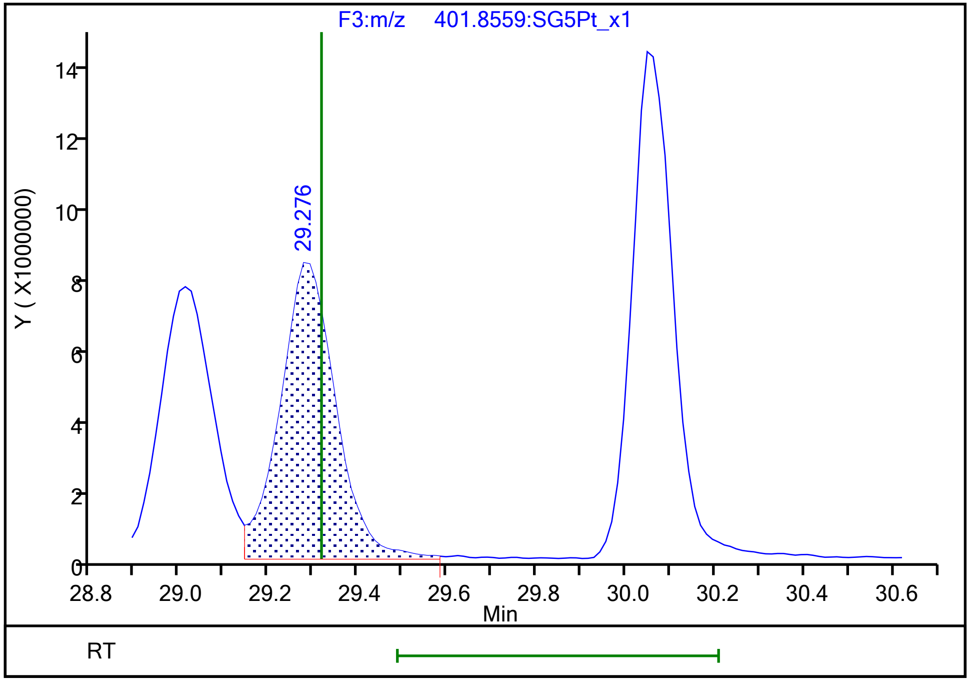

Reviewer: shardaa, 12-Oct-2020 18:01:38

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT: 29.30
Area: 109266
Amount: 0.157022
Amount Units: pg/ul

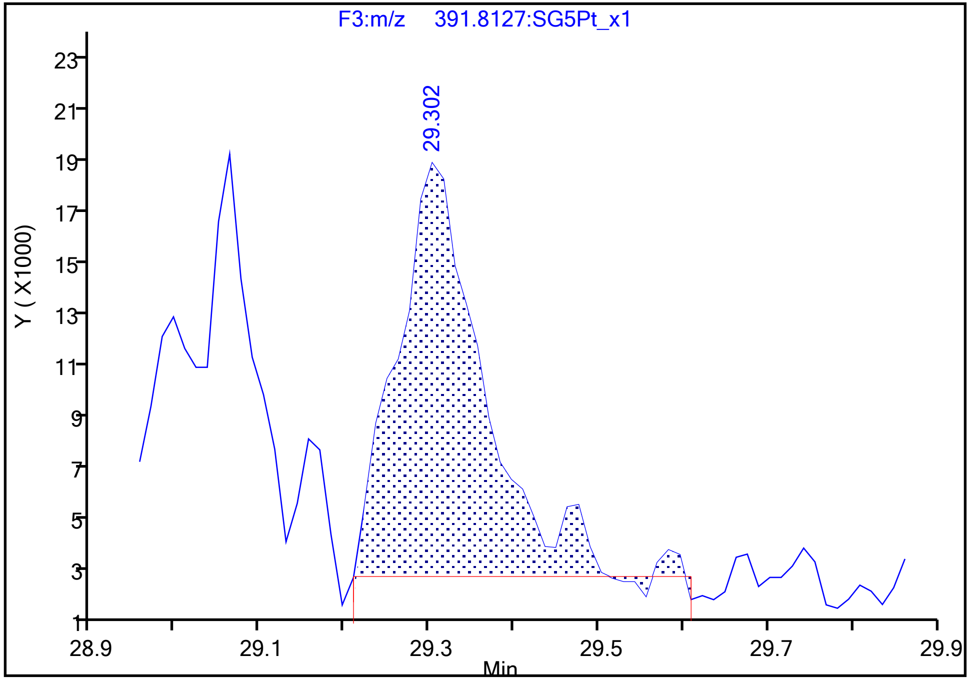

Manual Integration Results

RT: 29.30
Area: 95836
Amount: 0.138971
Amount Units: pg/ul

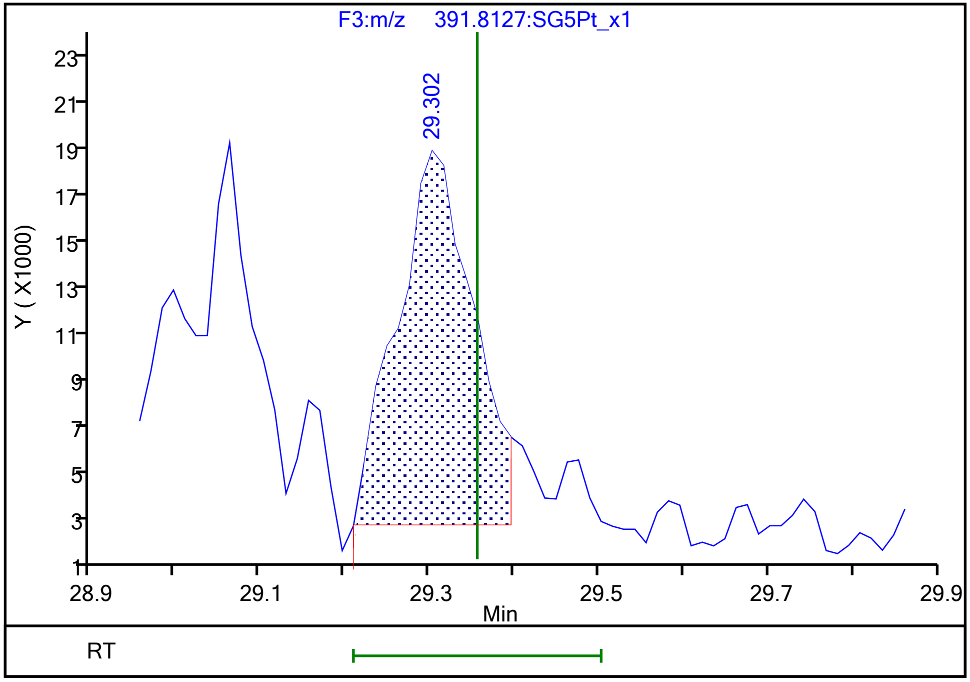

Reviewer: dadunj, 13-Oct-2020 12:48:56

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT:	29.36
Area:	105142
Amount:	0.157022
Amount Units:	pg/ul

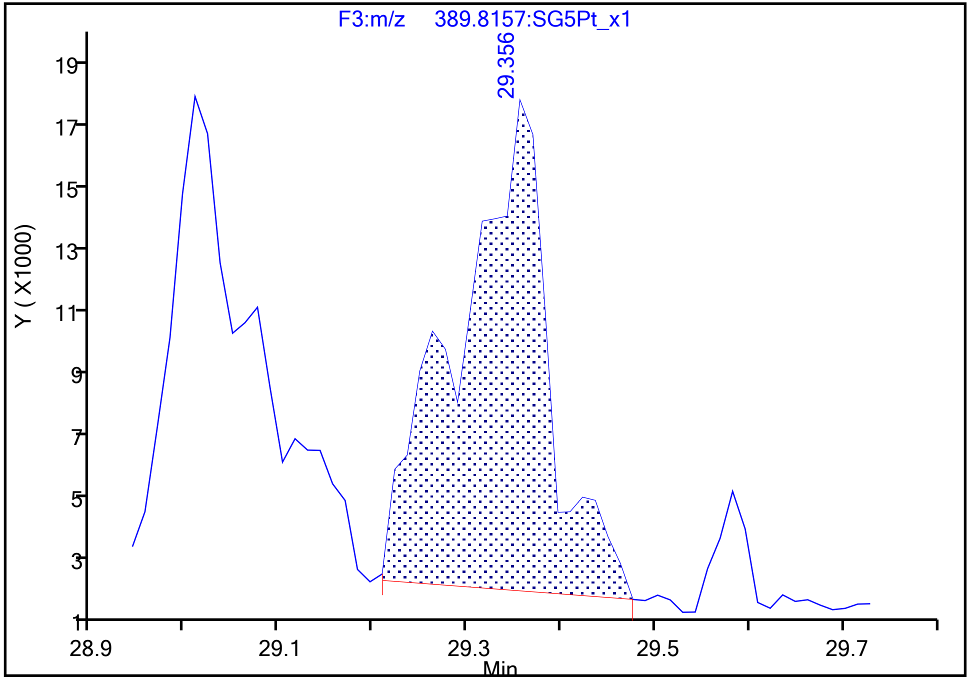

Manual Integration Results

RT:	29.36
Area:	93924
Amount:	0.138971
Amount Units:	pg/ul

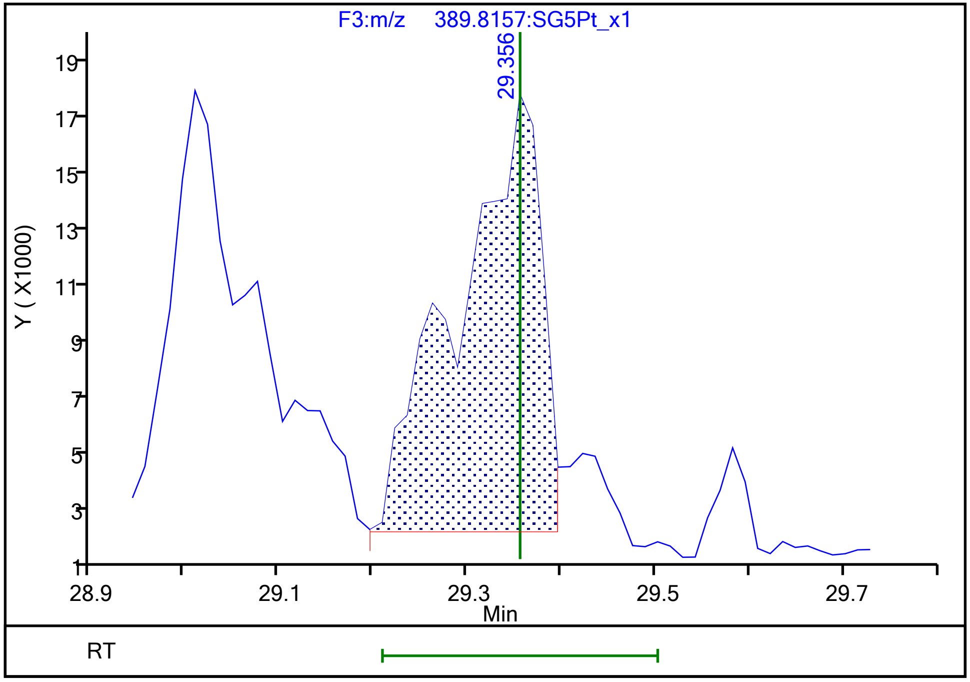

Reviewer: dadunj, 13-Oct-2020 12:48:58

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	30.09
Area:	84600
Amount:	0.108700
Amount Units:	pg/ul

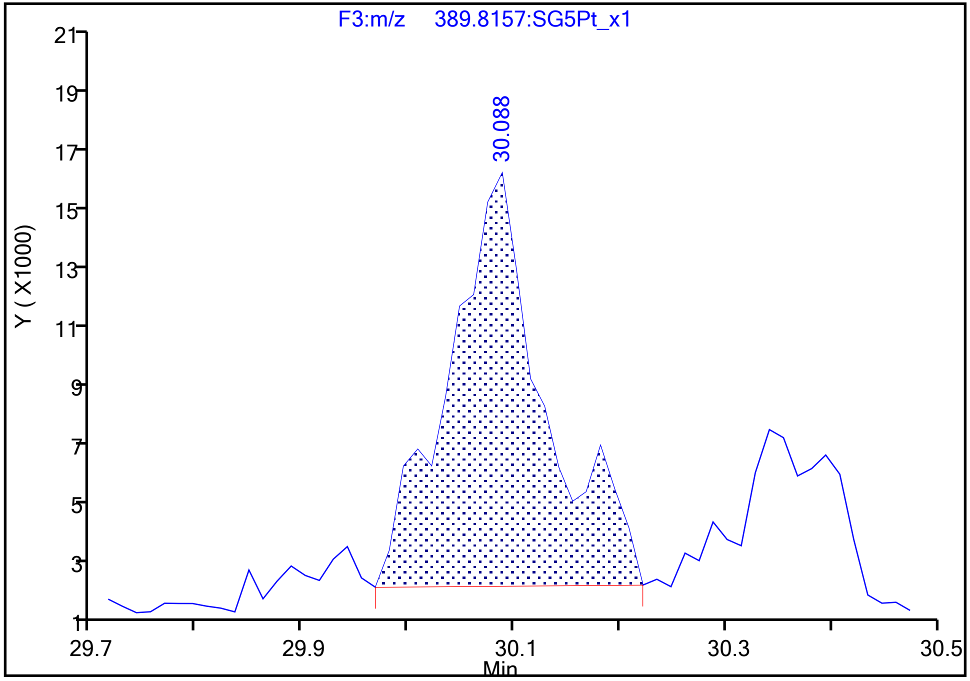

Manual Integration Results

RT:	30.09
Area:	75824
Amount:	0.102782
Amount Units:	pg/ul

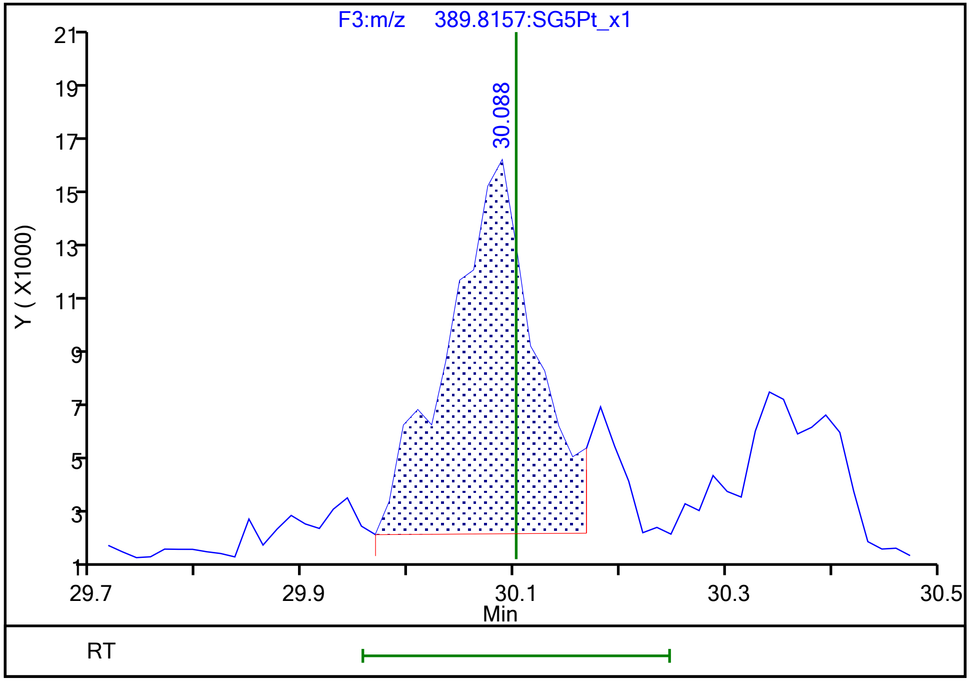

Reviewer: dadunj, 13-Oct-2020 12:49:11

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

RT = 25.628 Area = 199010

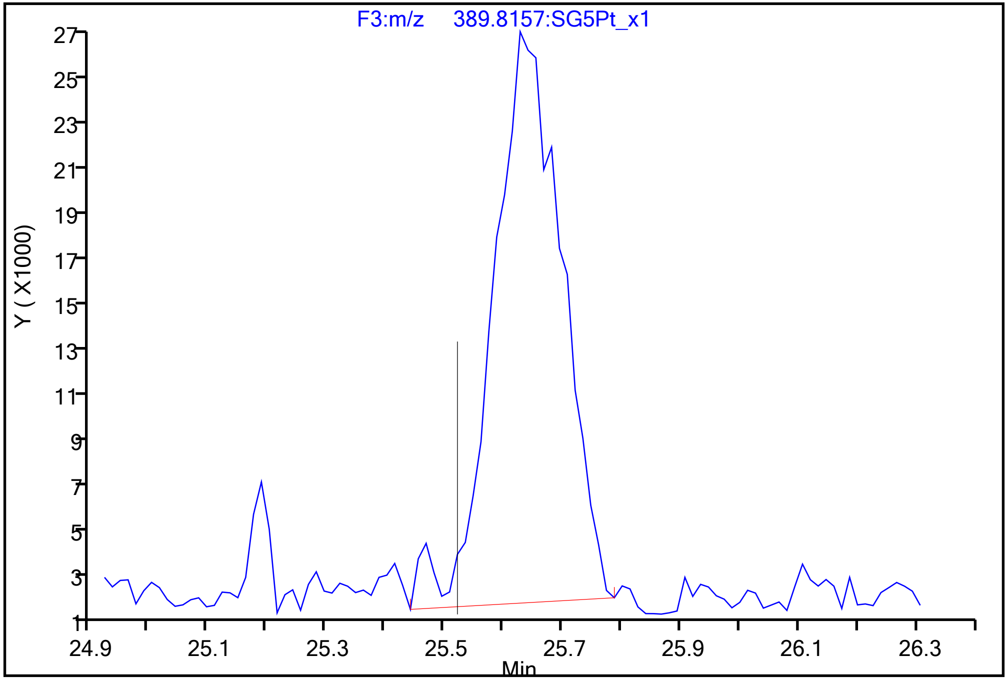

Manual Integration Results

RT = 25.628 Area = 187264 M

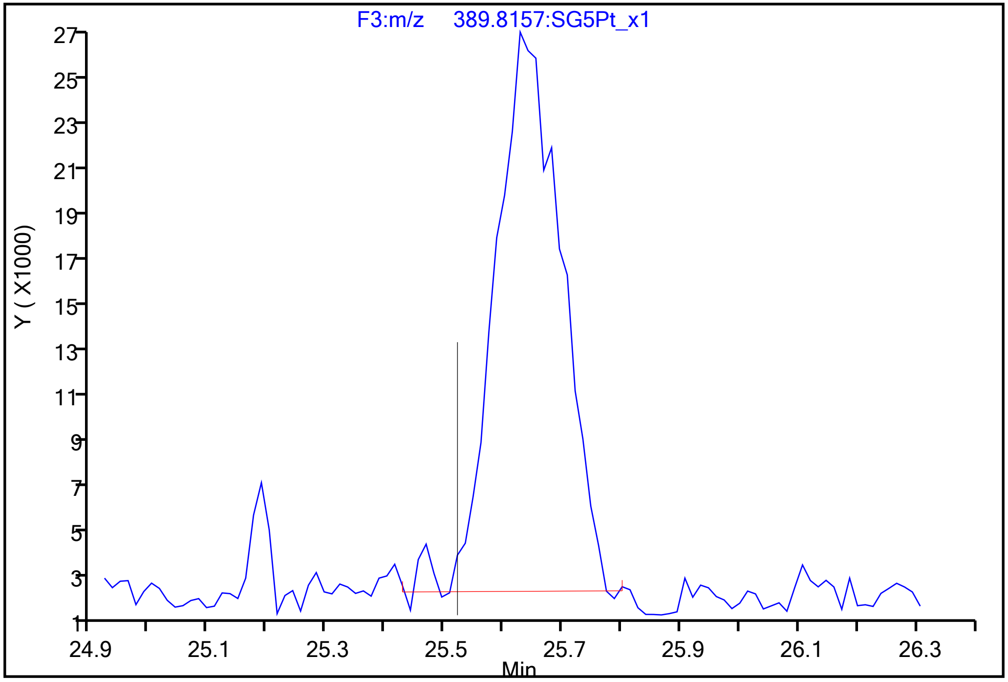

Reviewer: dadunj, 13-Oct-2020 12:49:55

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (25.52- 30.34)

Signal: 2

Processing Integration Results

RT = 25.641 Area = 169580

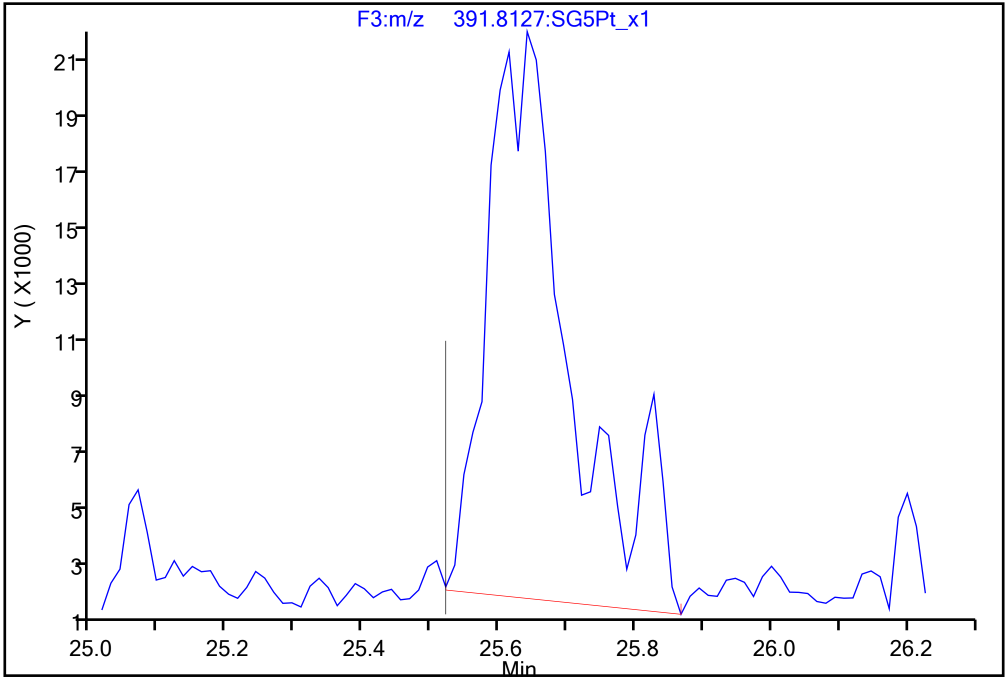

Manual Integration Results

RT = 25.641 Area = 123965 M

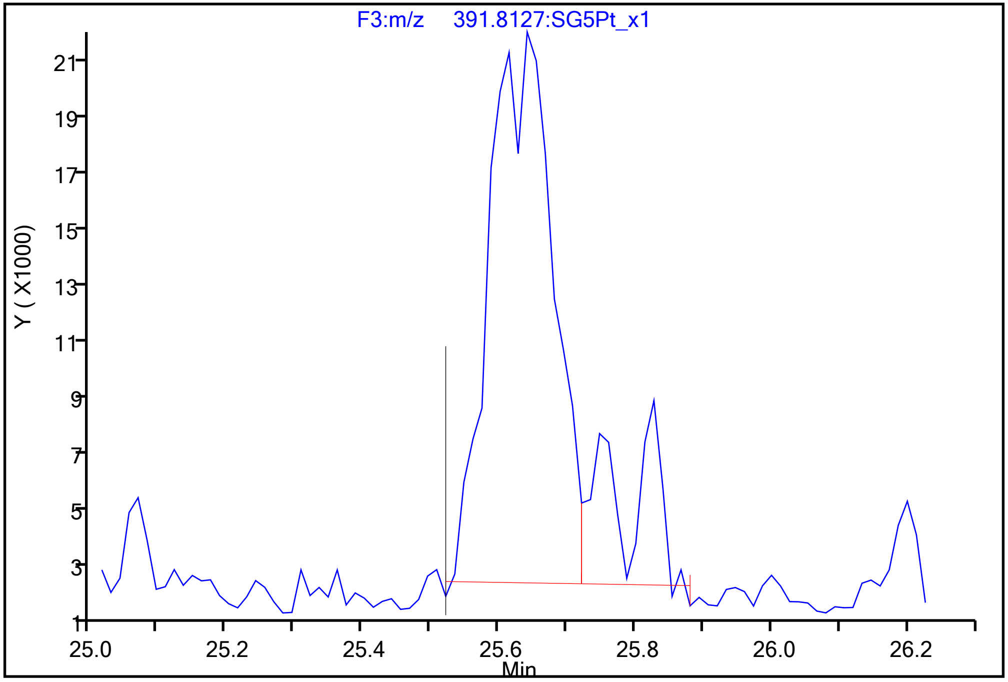

Reviewer: dadunj, 13-Oct-2020 12:49:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8157, RT: (25.52- 30.34)

Signal: 1

Processing Integration Results

RT = 27.438 Area = 174261

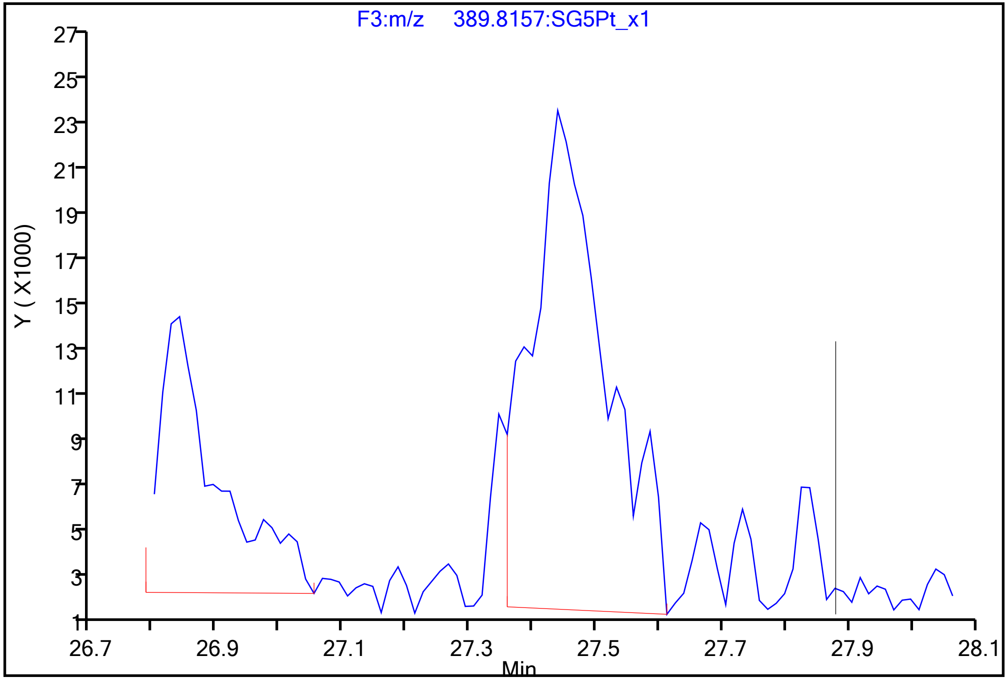

Manual Integration Results

RT = 27.438 Area = 166778 M

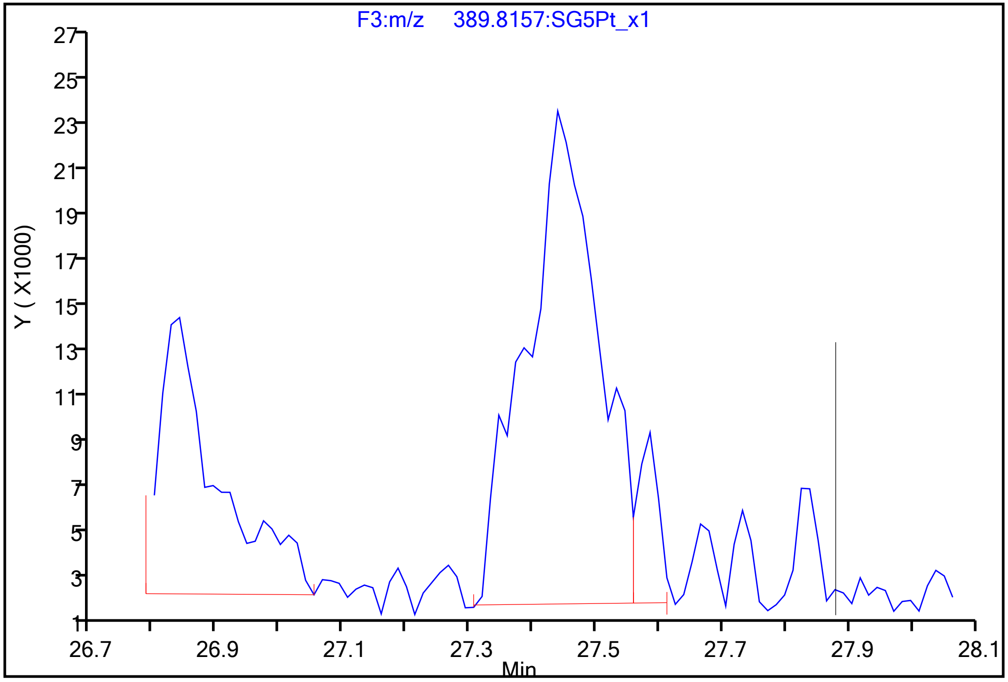

Reviewer: dadunj, 13-Oct-2020 12:49:55

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Instrument ID:	3D5
Lims ID:	320-65130-A-10-A	Lab Sample ID:	320-65130-10
Client ID:	11215702-Tank#1-valve-3-3		
Operator ID:	ALM	ALS Bottle#:	16 Worklist Smp#: 19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (25.52- 30.34)

Signal: 2

Processing Integration Results

RT = 27.425 Area = 142319

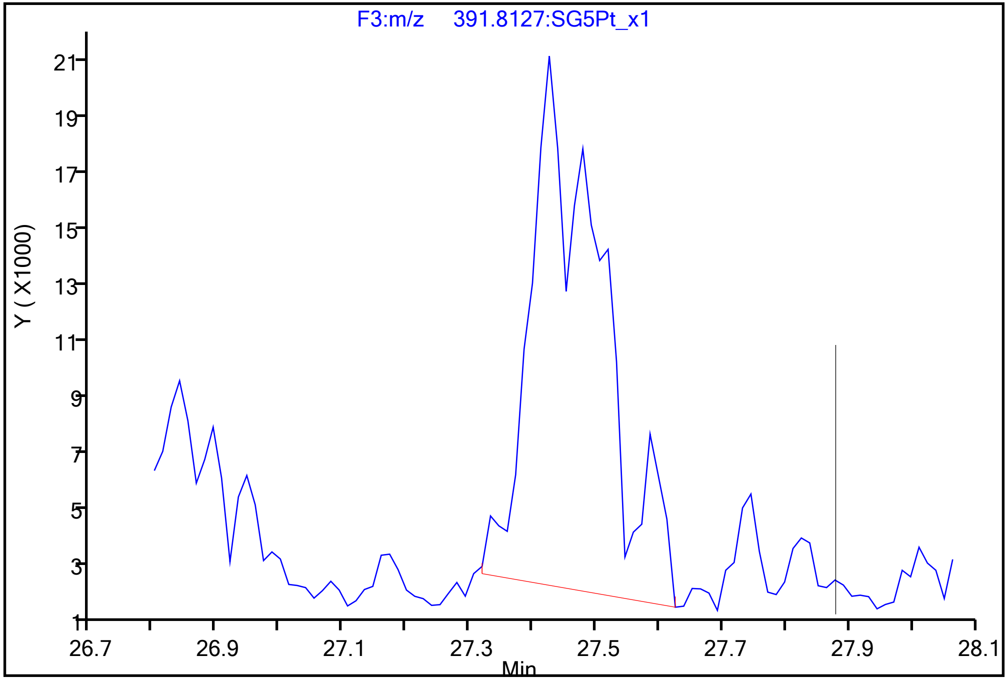

Manual Integration Results

RT = 27.425 Area = 123392 M

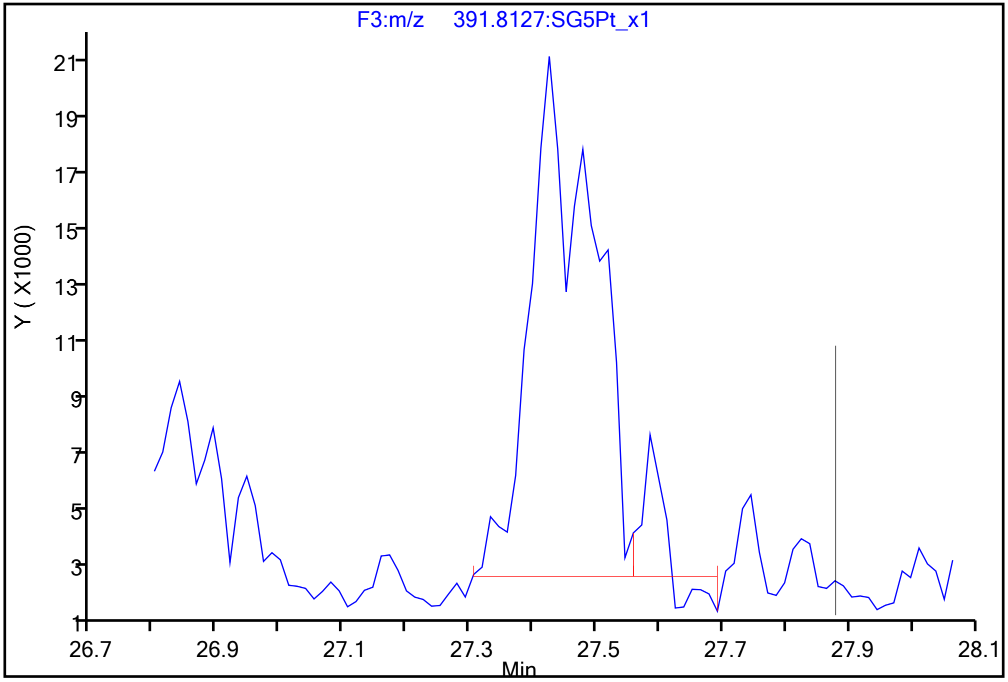

Reviewer: dadunj, 13-Oct-2020 12:49:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-3
Worklist#: 420482
Sample Line#: 19
Column Type:
Column Dia:

TCDF

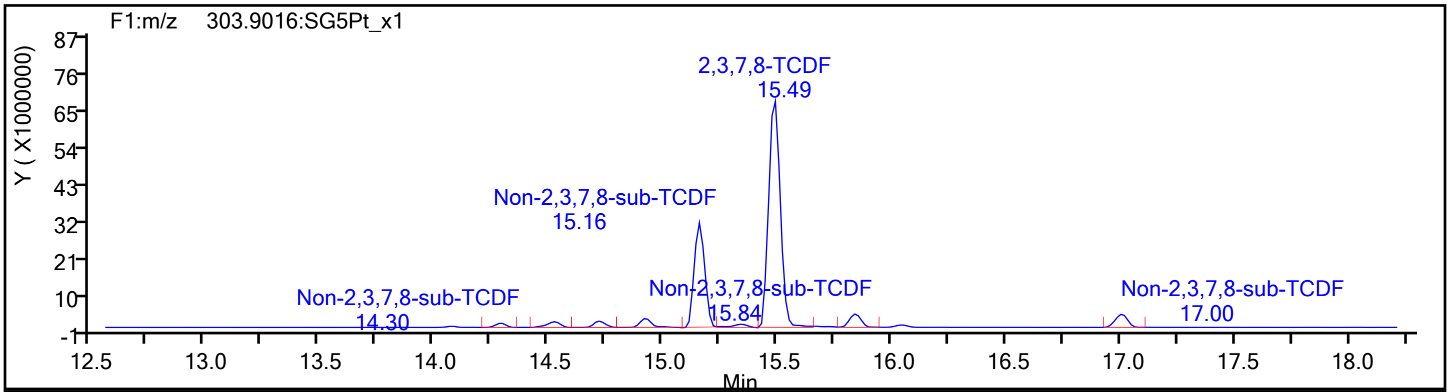

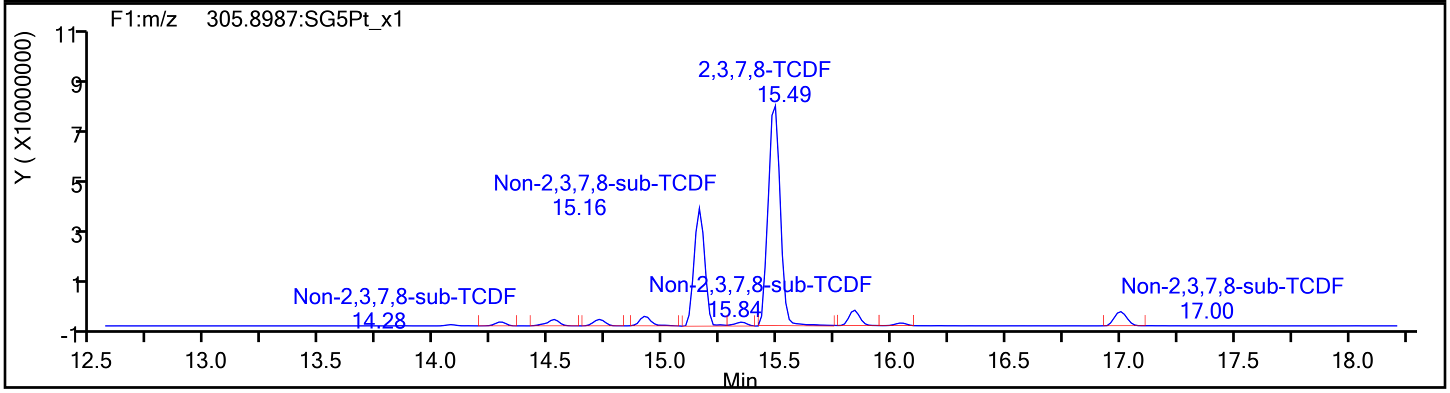

TCDF Standards

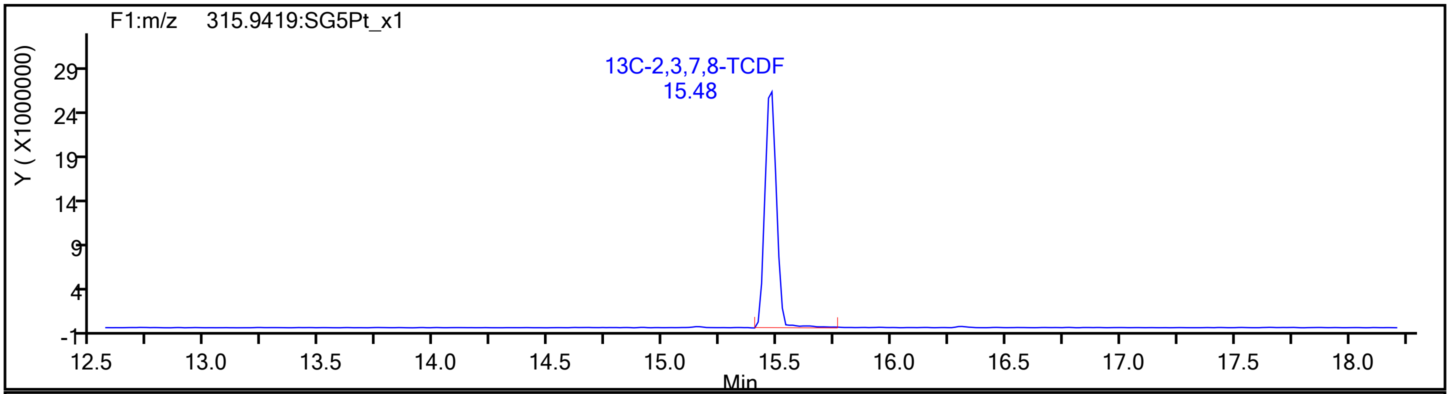

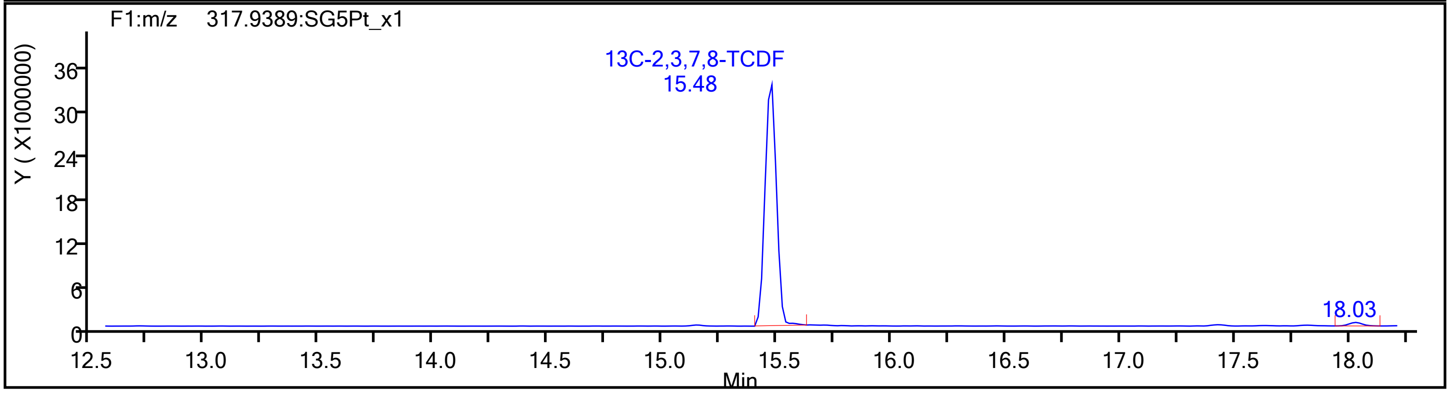

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Eurofins TestAmerica, Sacramento

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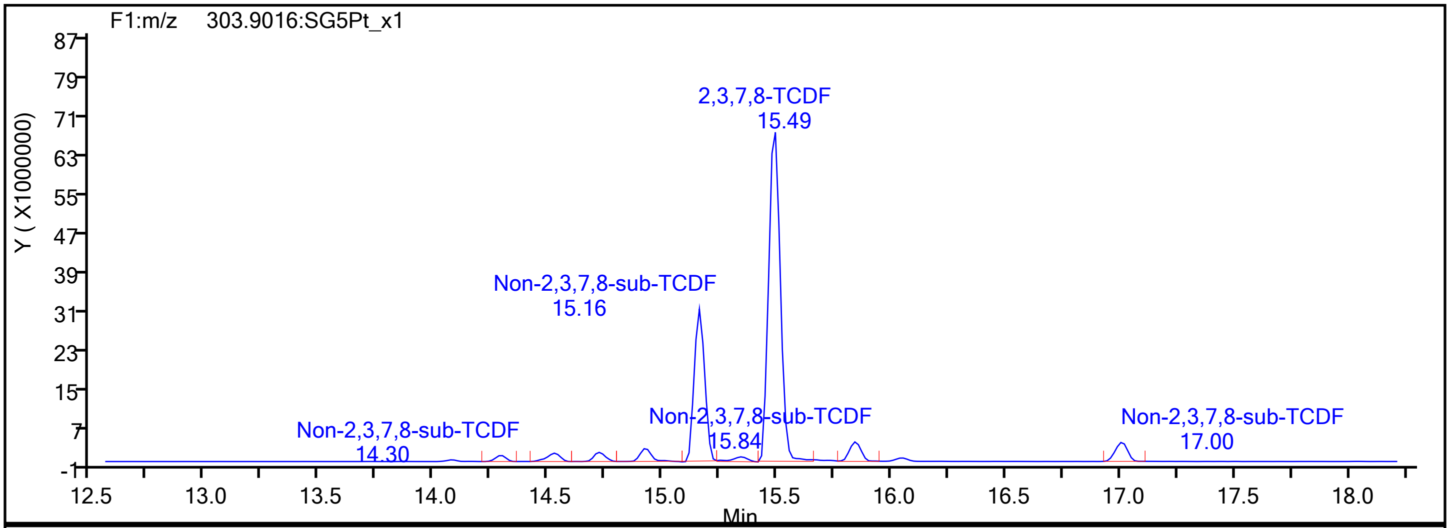

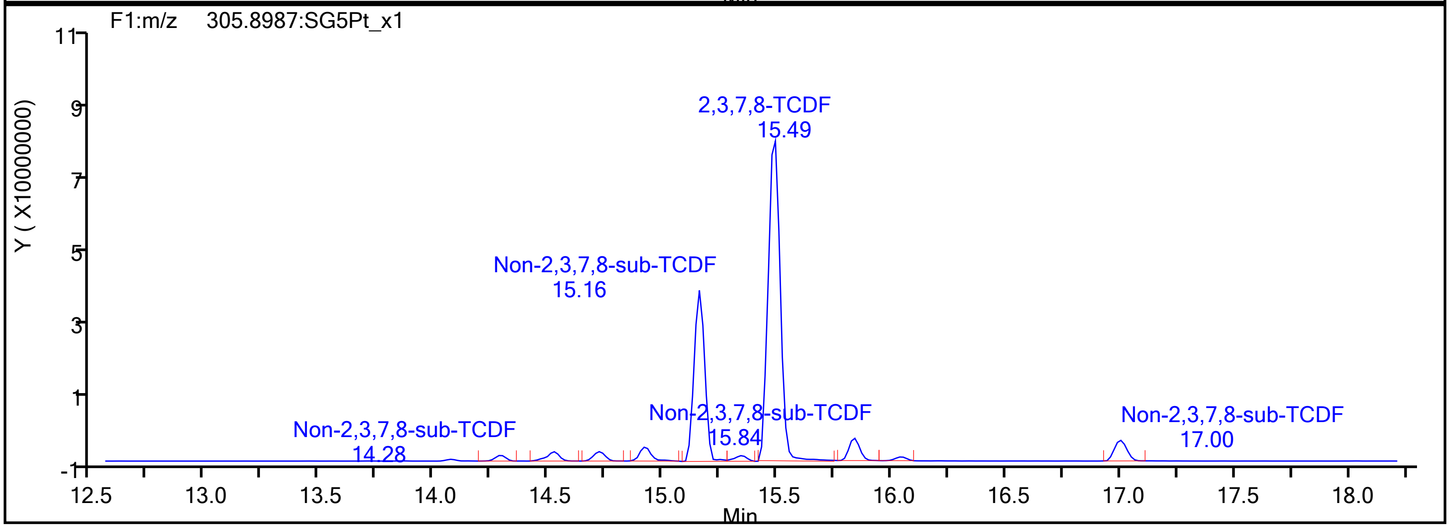

TCDF Interference Mass

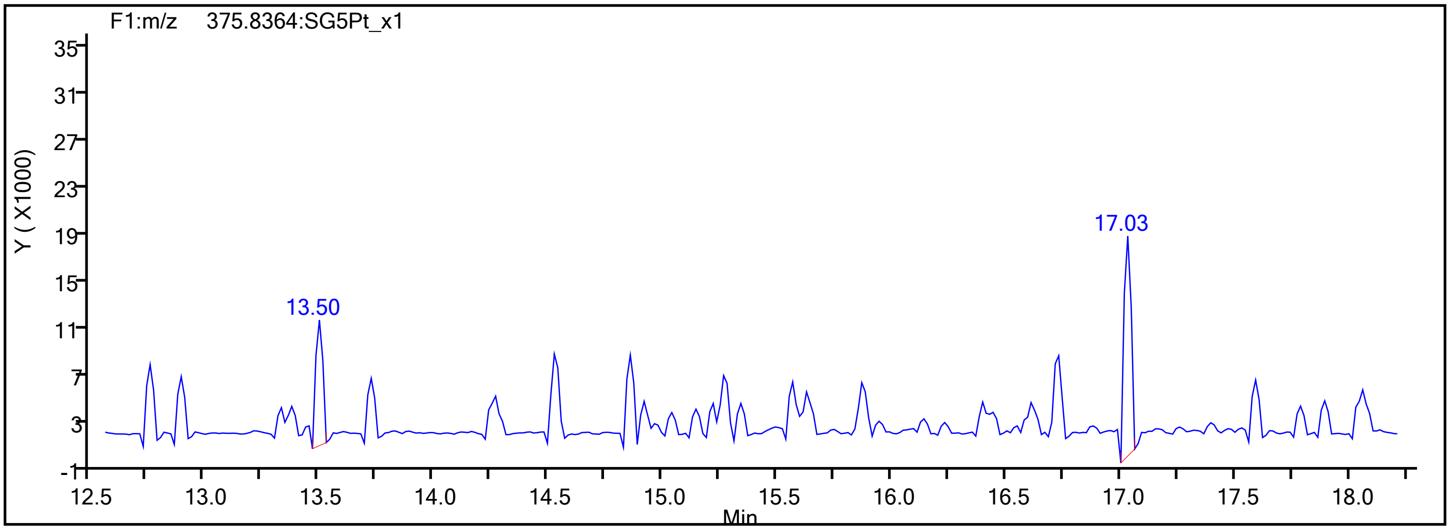

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Eurofins TestAmerica, Sacramento

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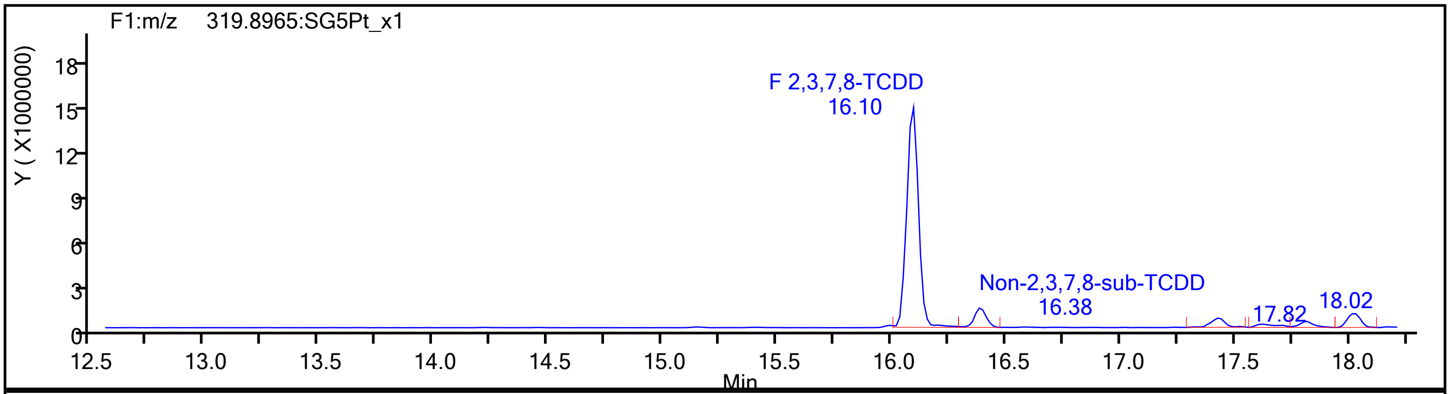

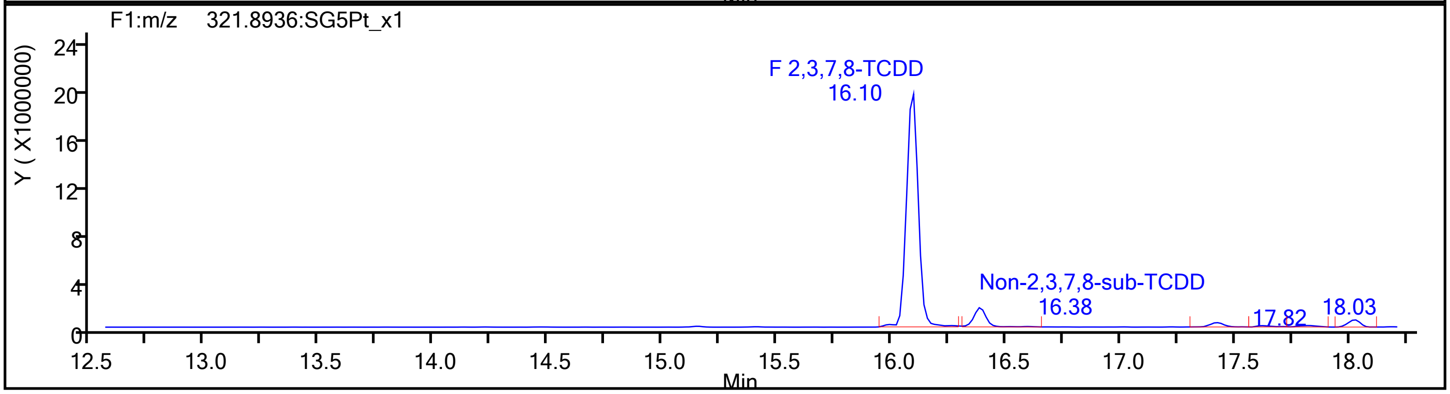

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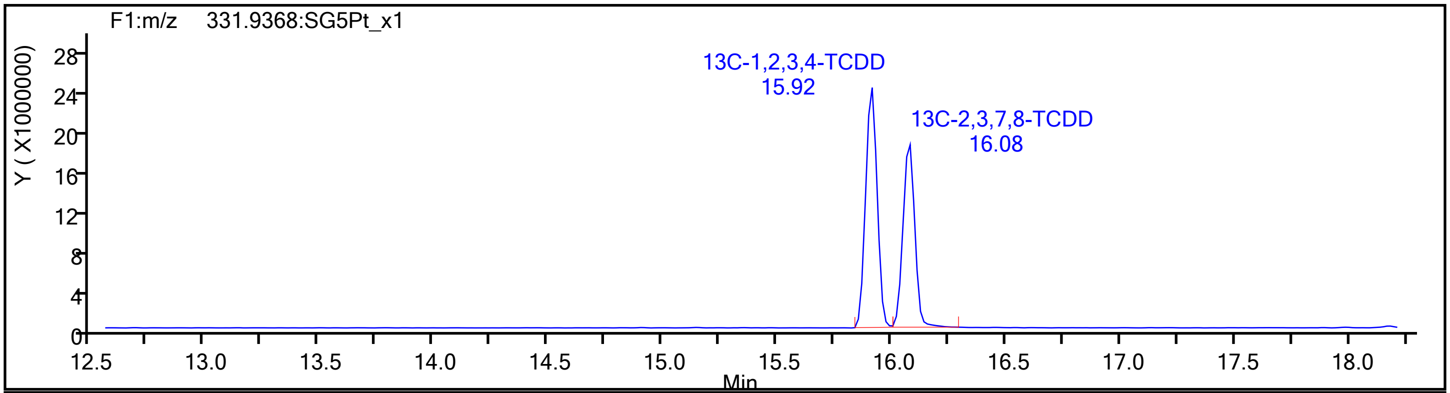

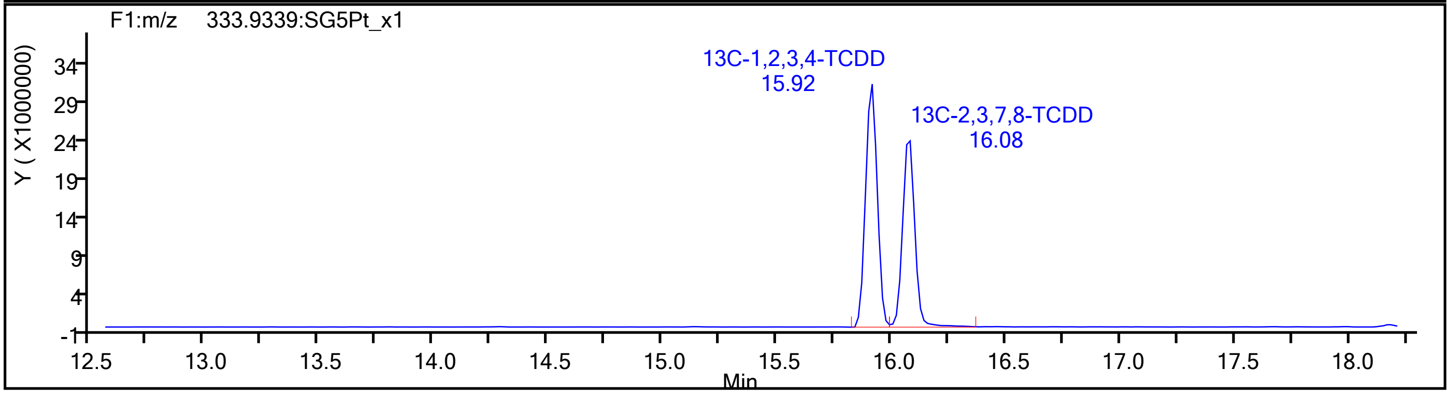

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Worklist#: 420482

Sample Line#: 19

Column Type:

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37Cl4-TCDD

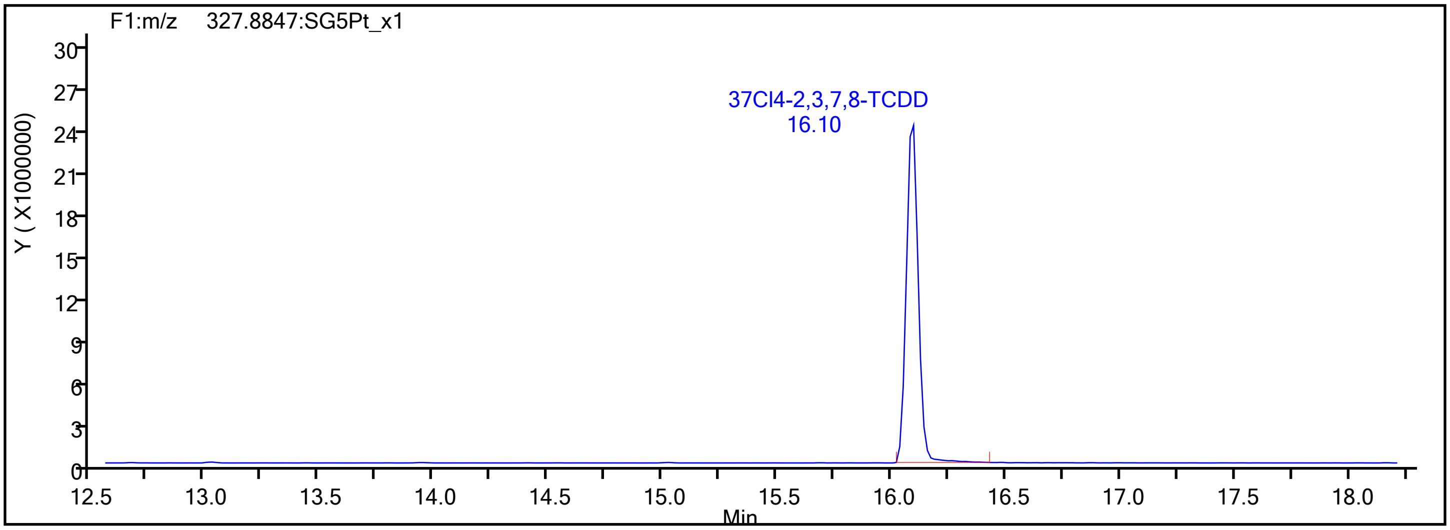

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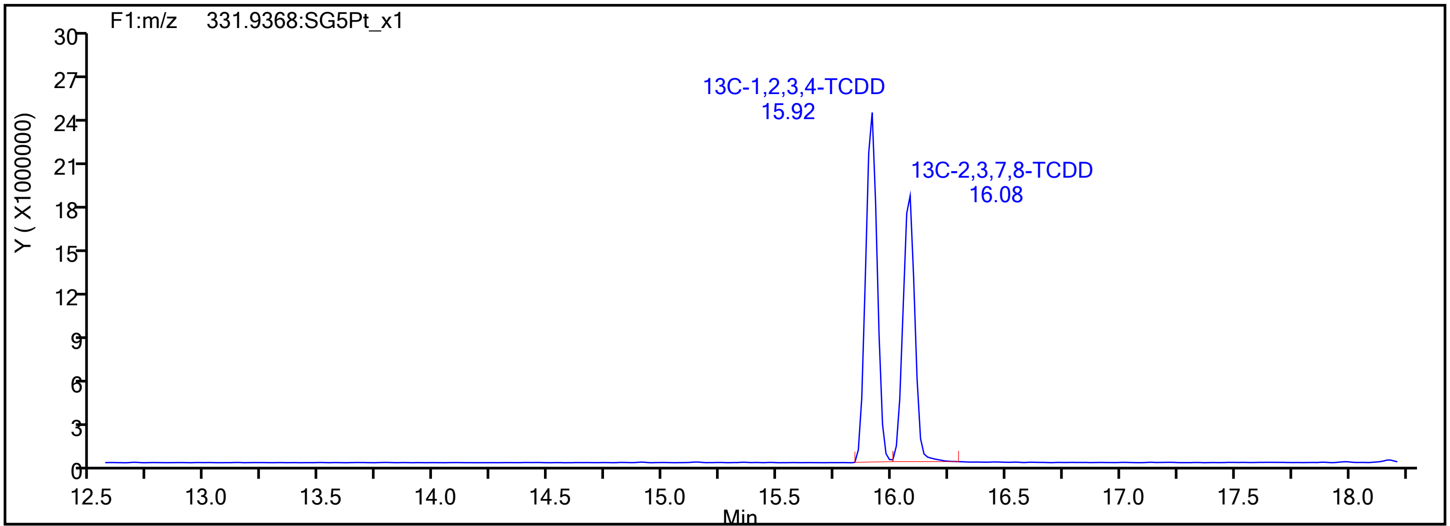

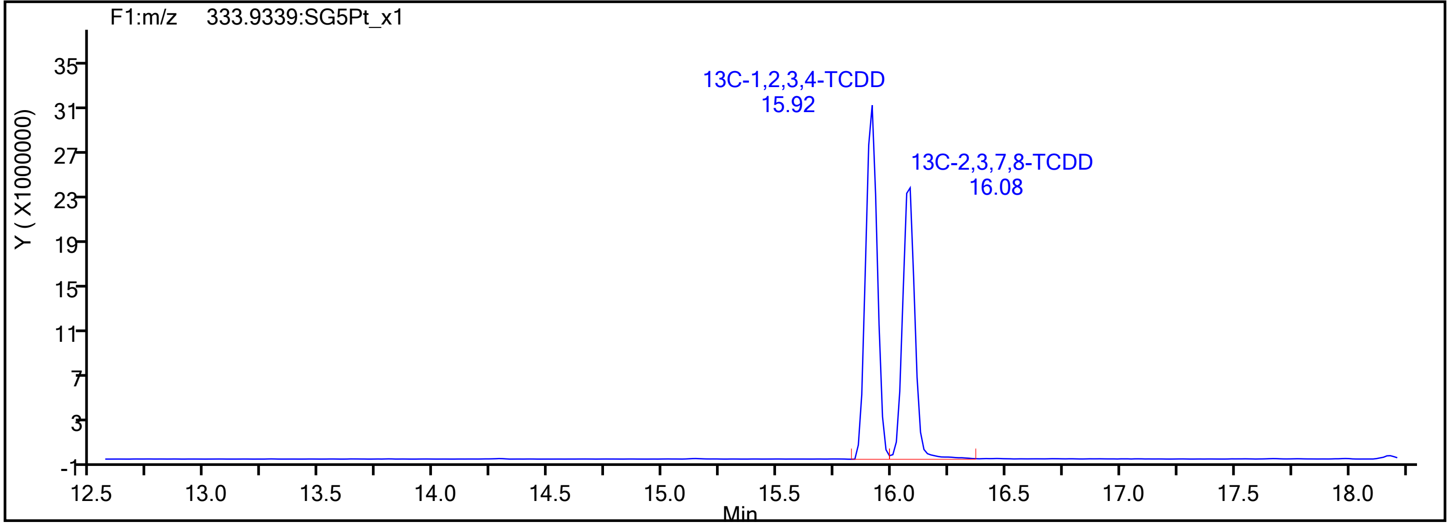

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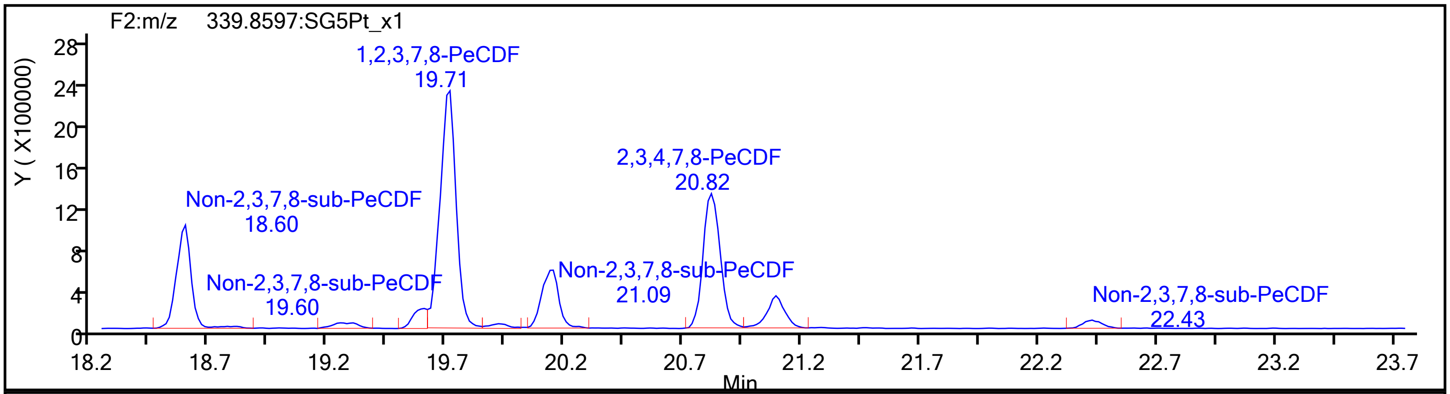

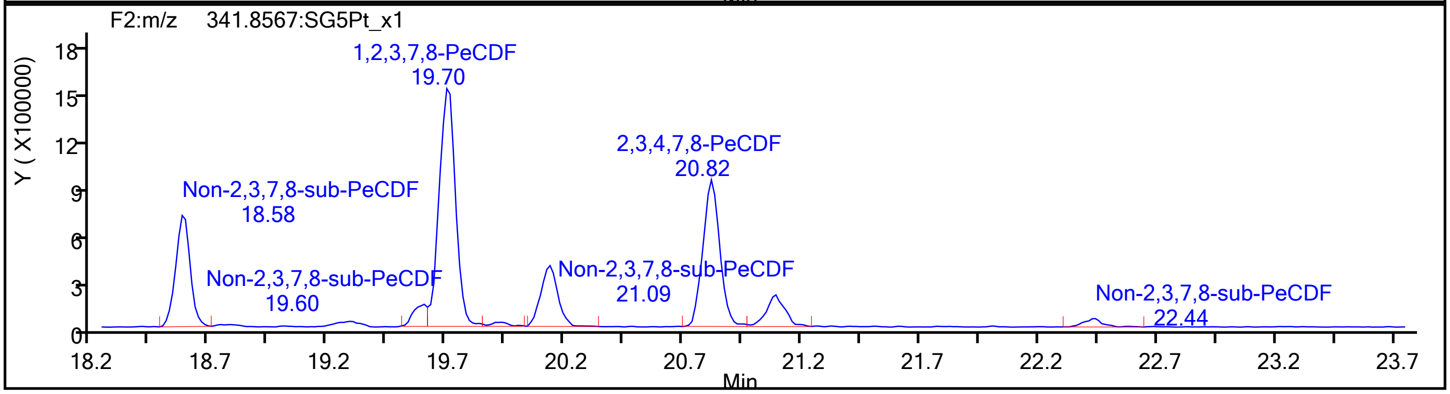

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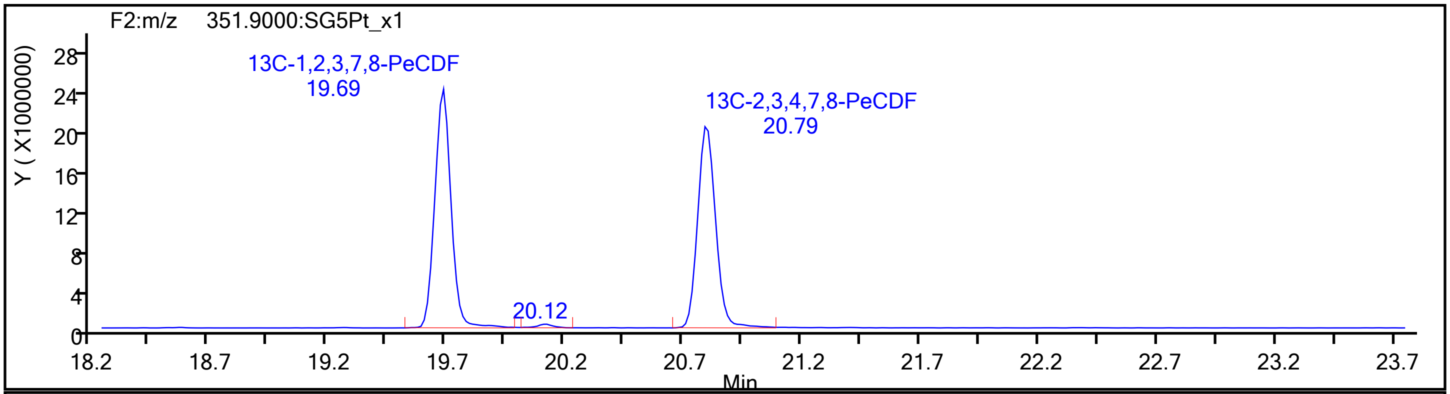

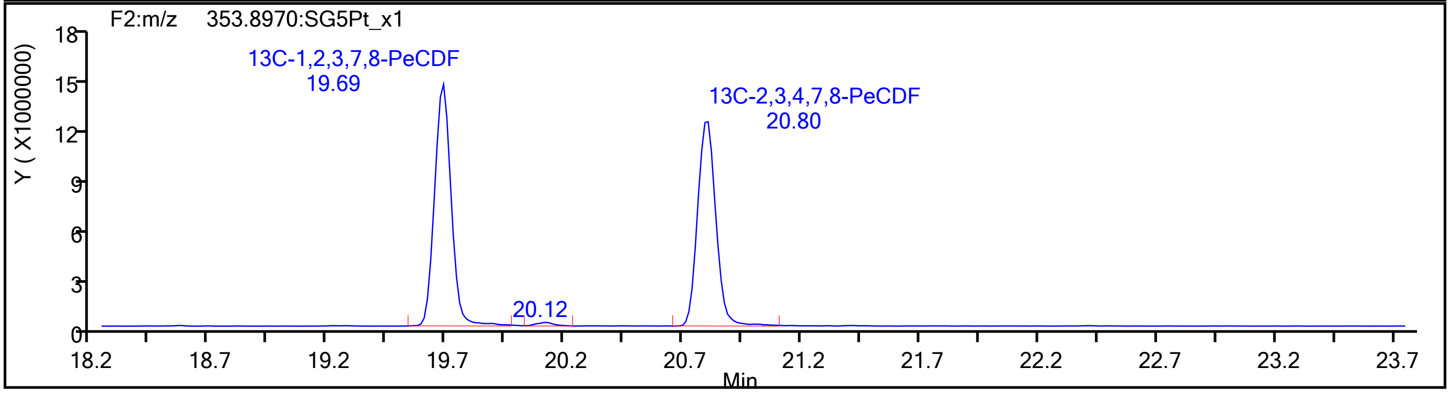

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Eurofins TestAmerica, Sacramento

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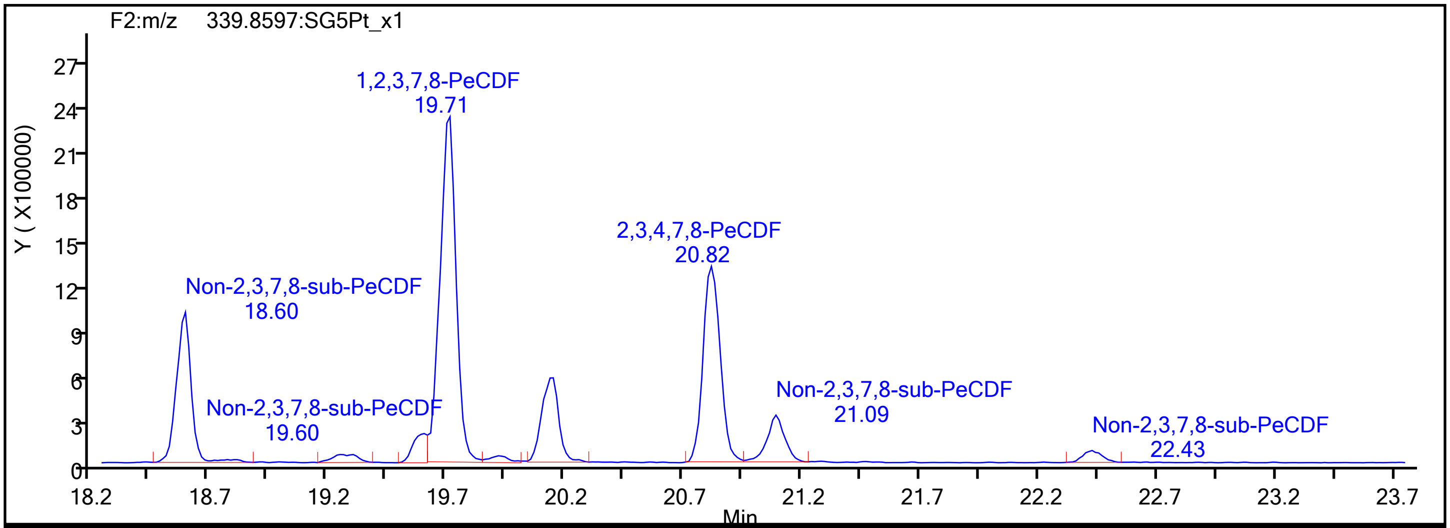

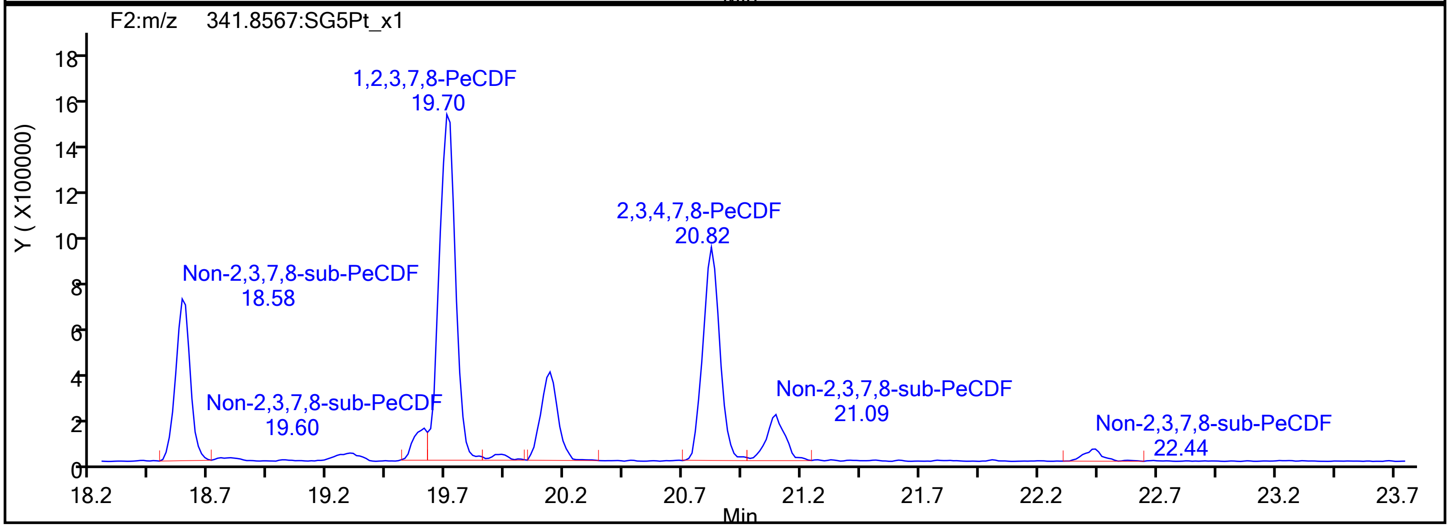

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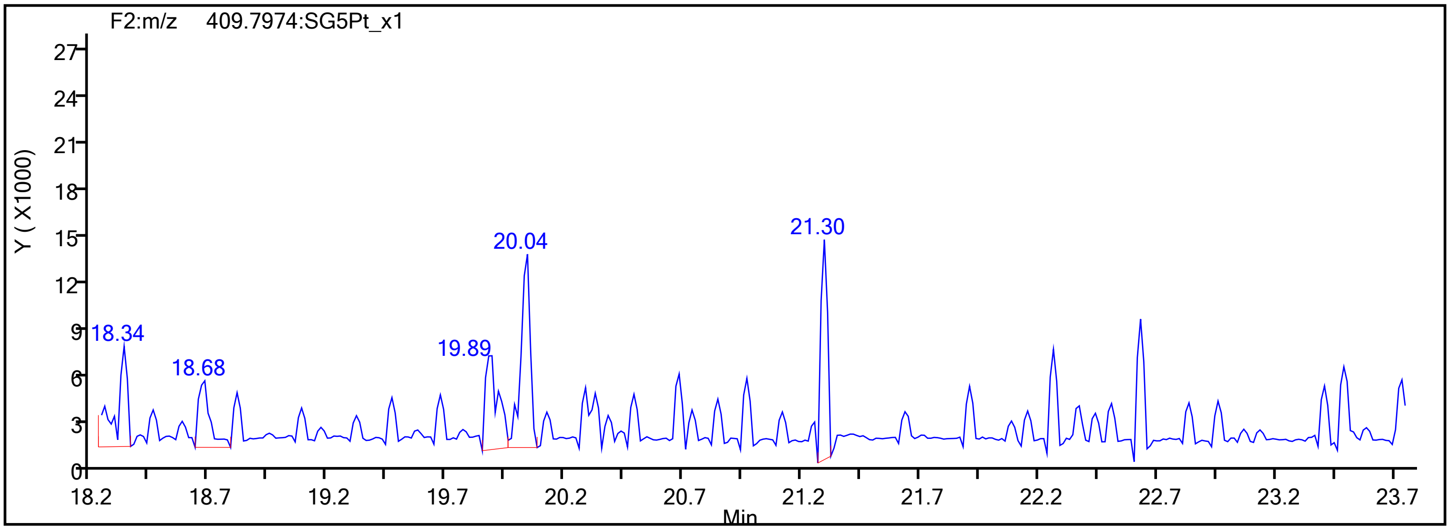

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

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Client ID: 11215702-Tank#1-valve-3-3

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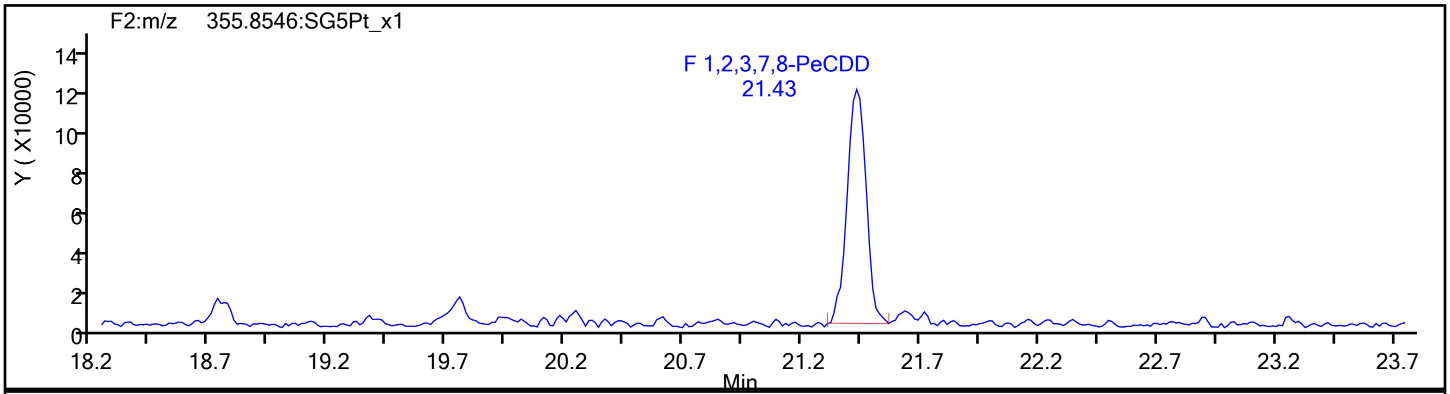

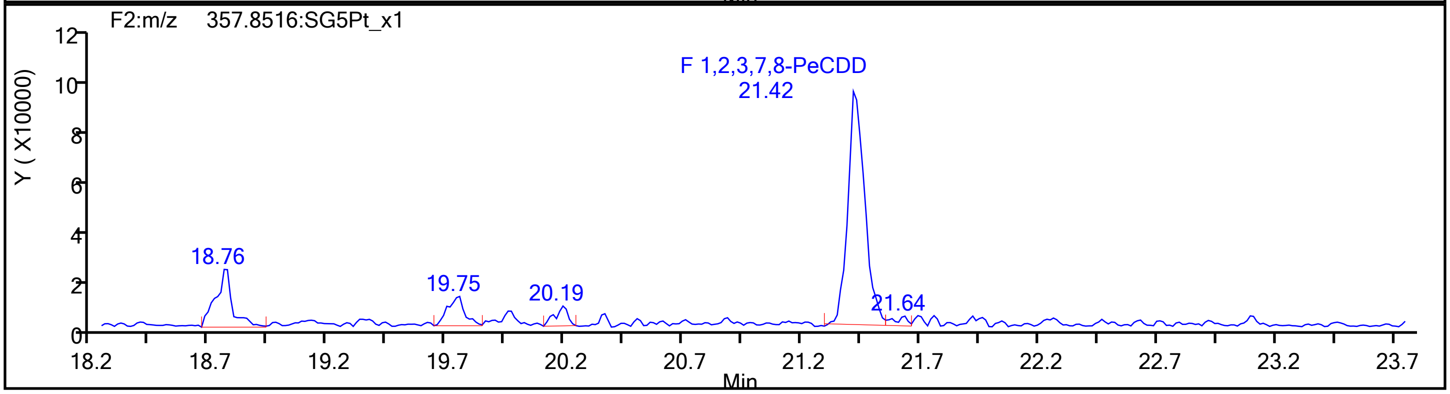

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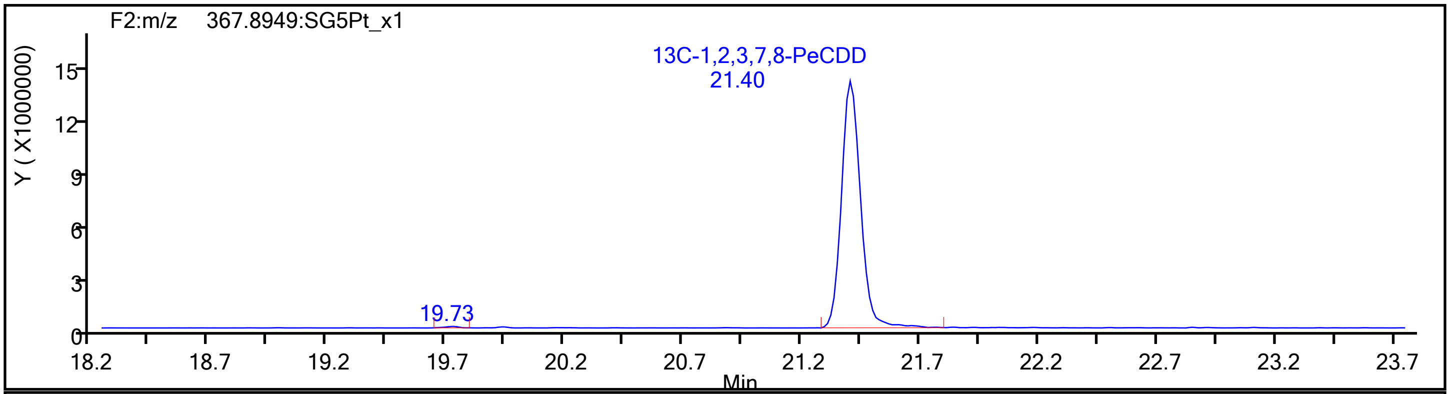

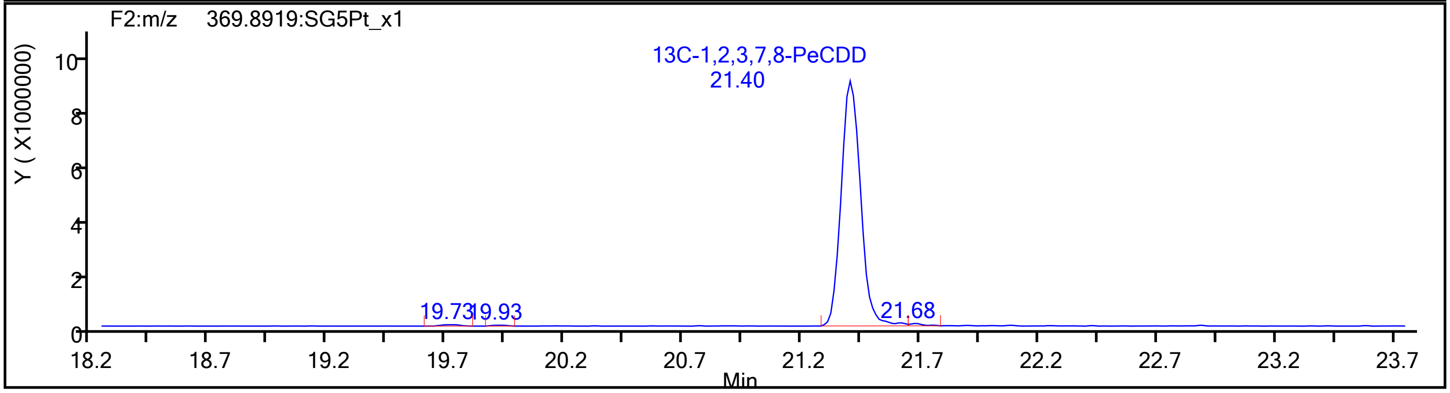

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Eurofins TestAmerica, Sacramento

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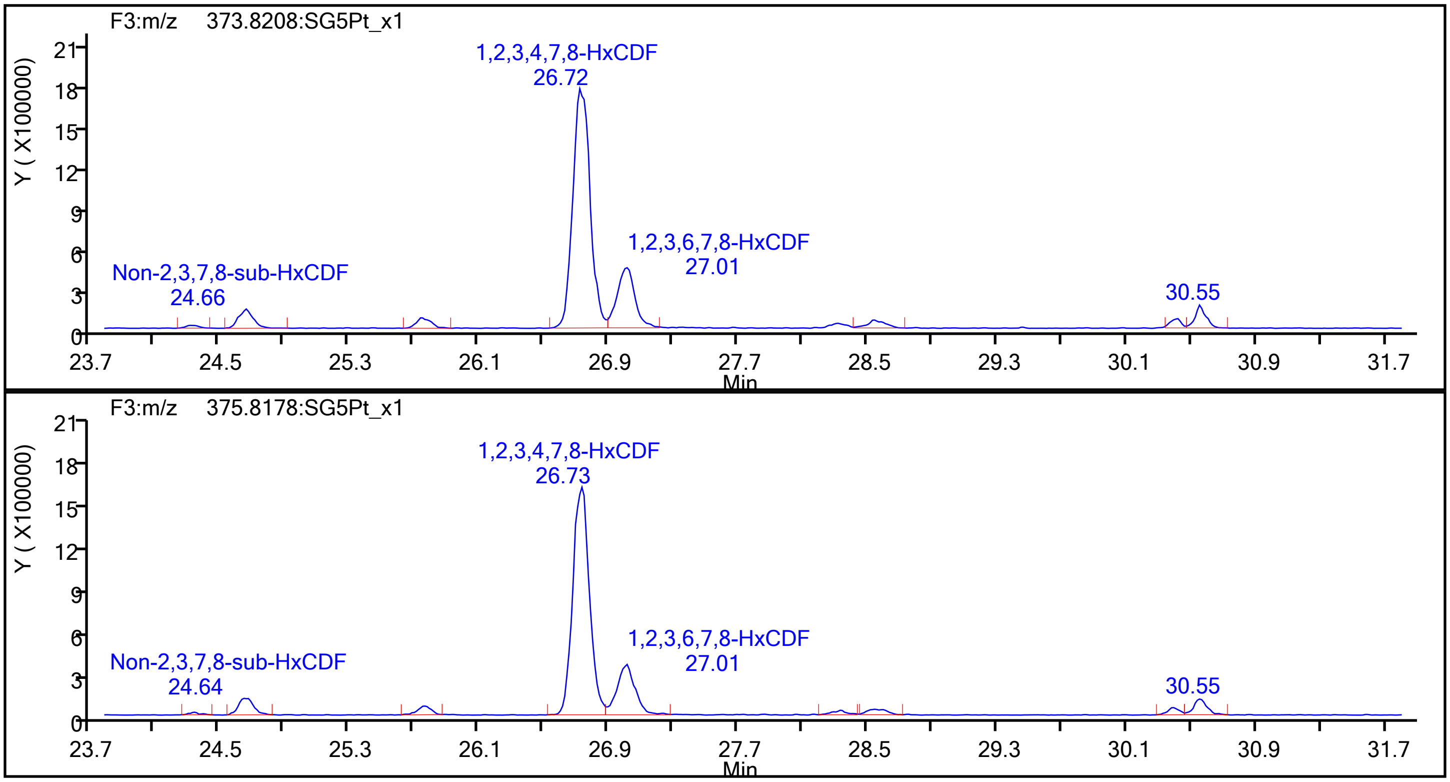

HxCDF Standards

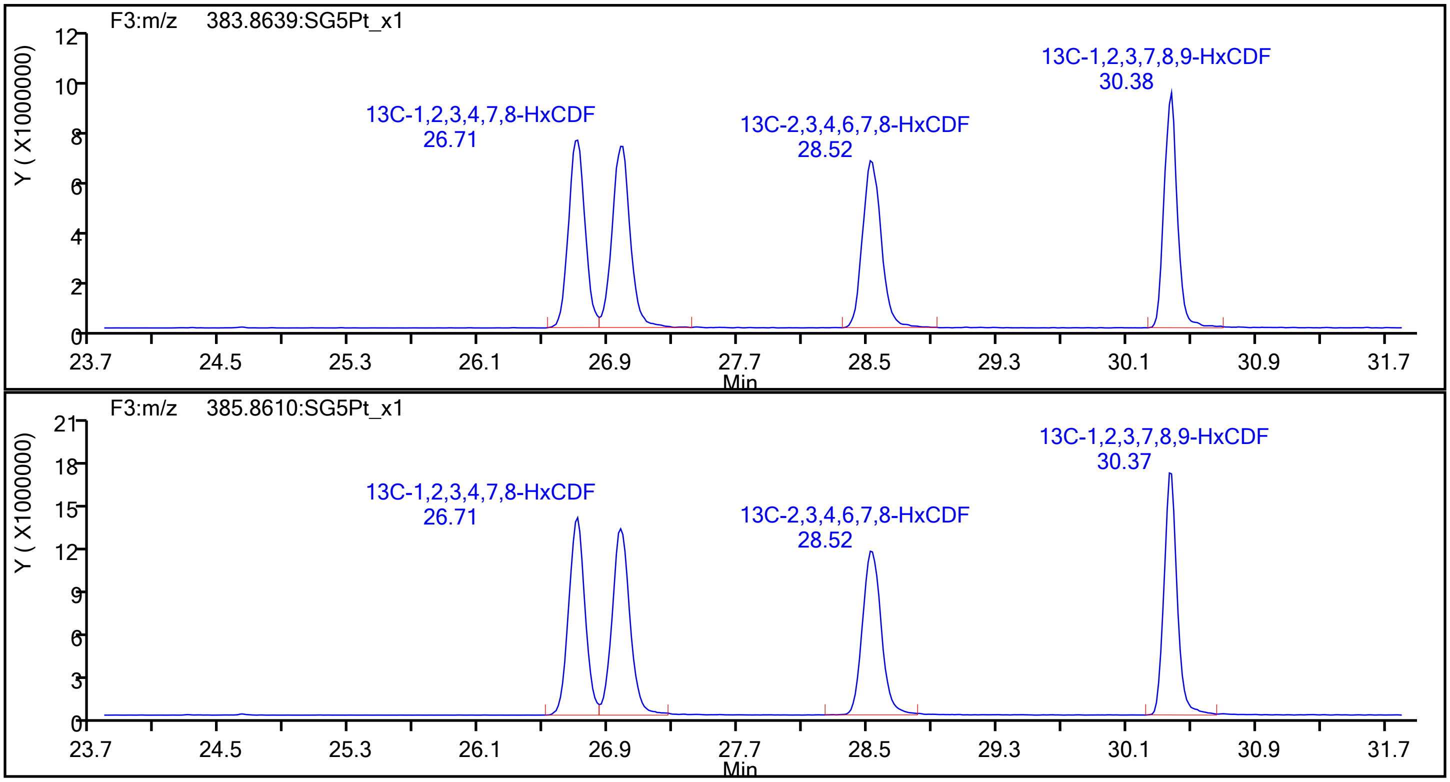

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Eurofins TestAmerica, Sacramento

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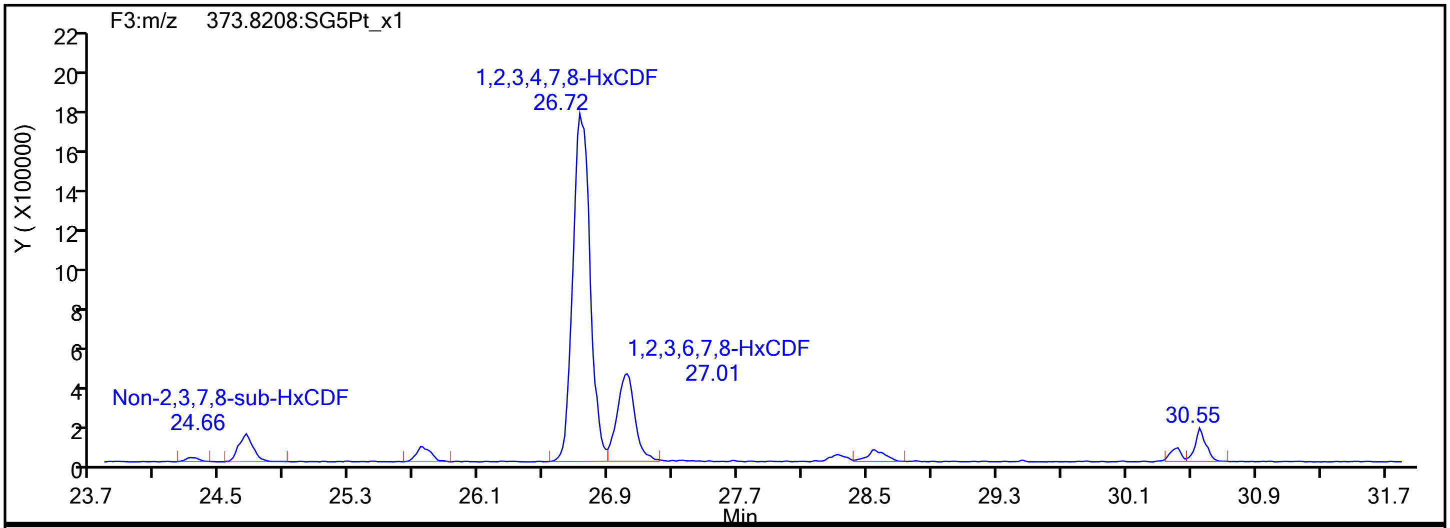

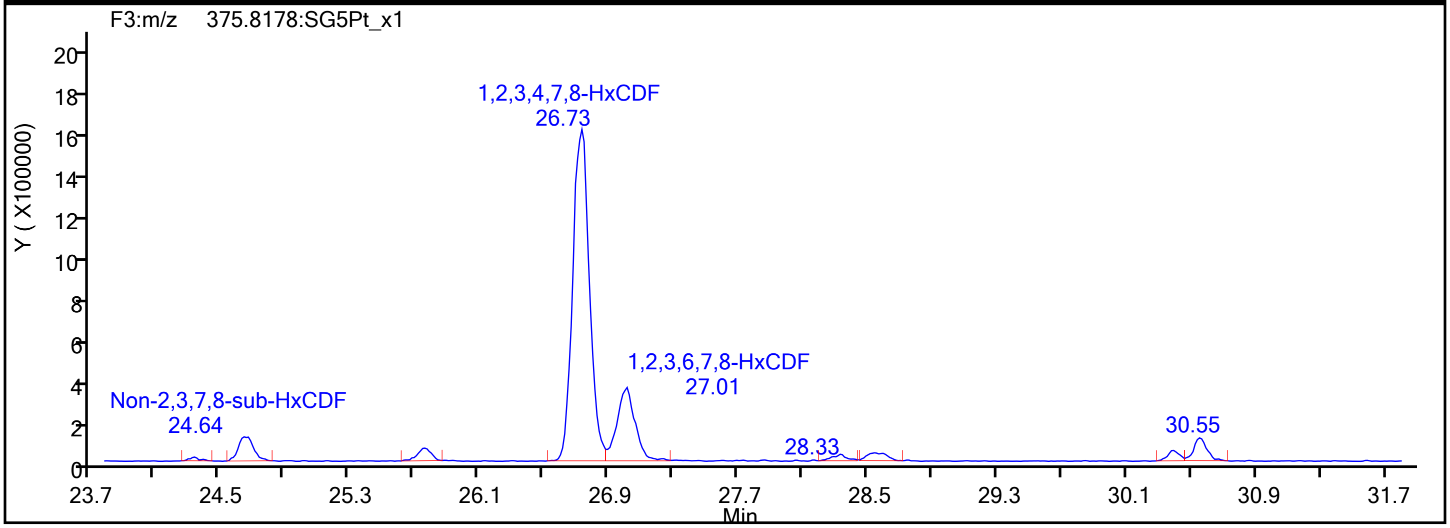

HxCDF Interference Mass

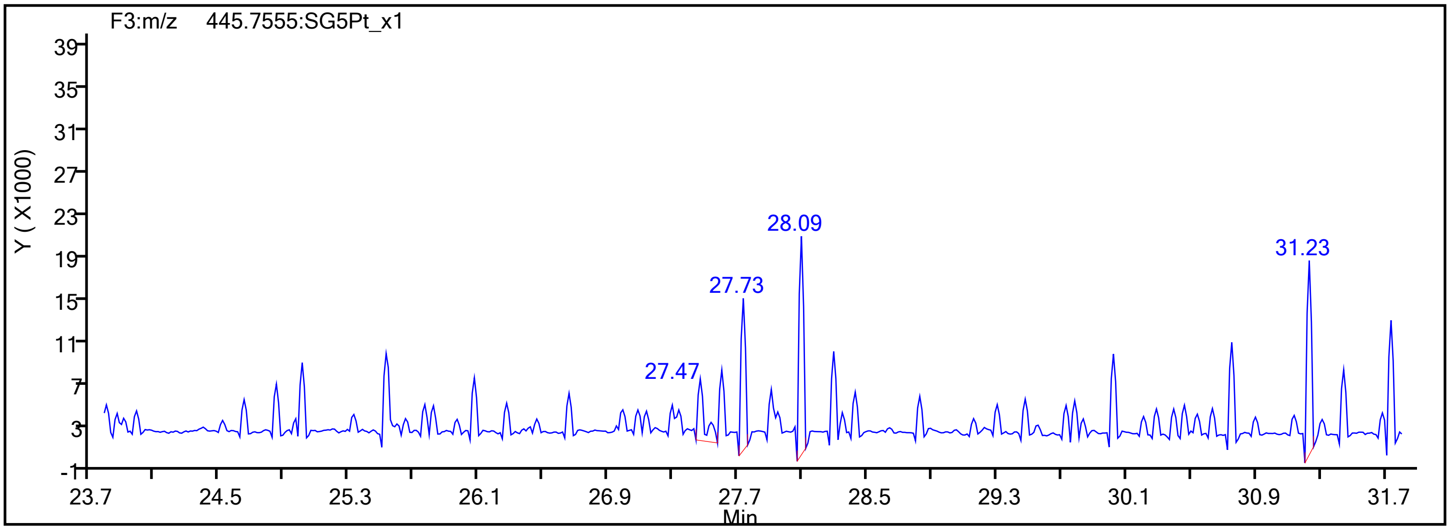

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Worklist#: 420482 Sample Line#: 19
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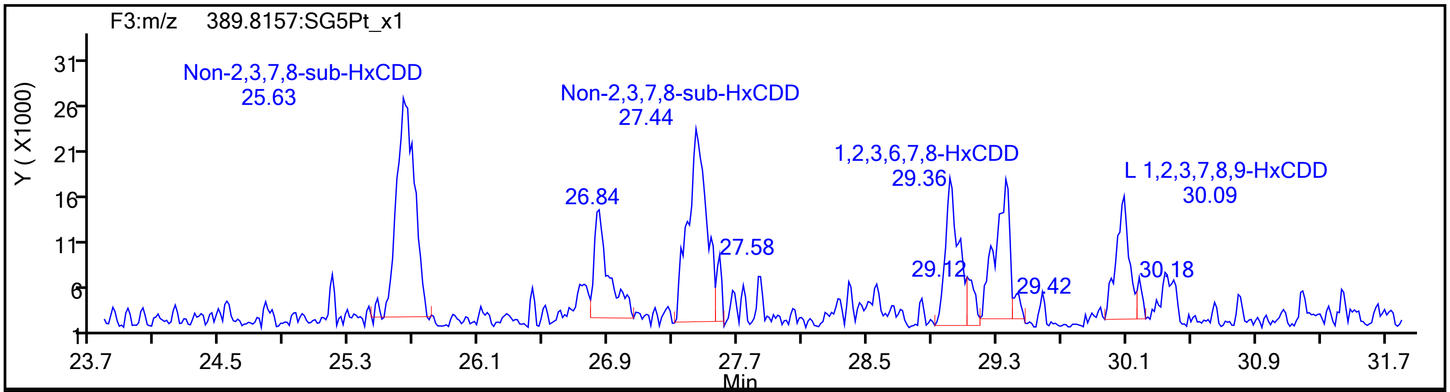

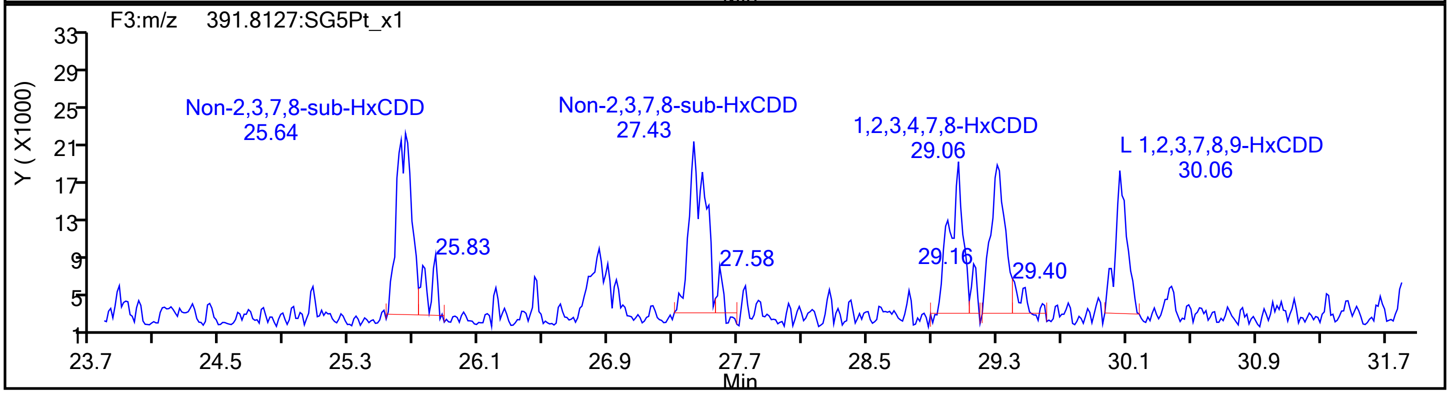

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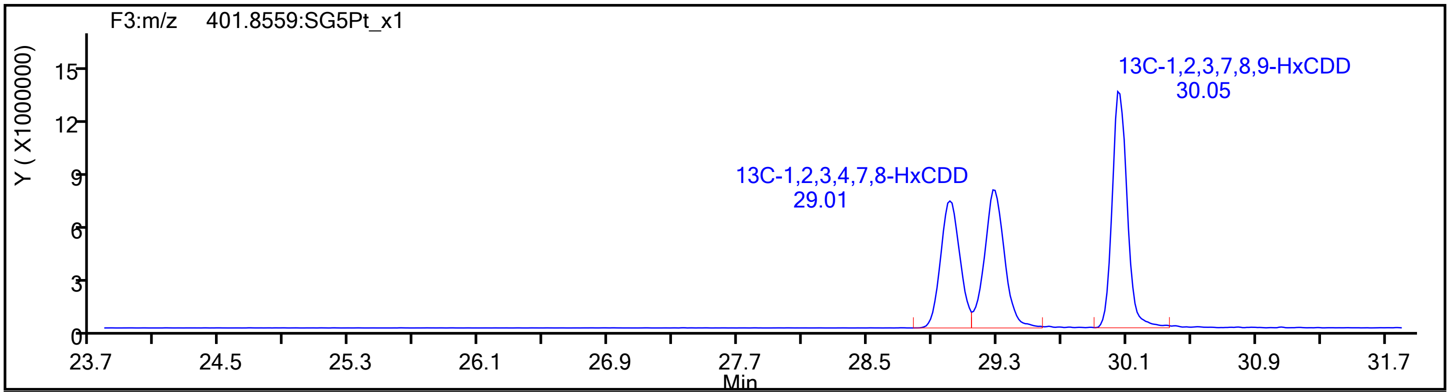

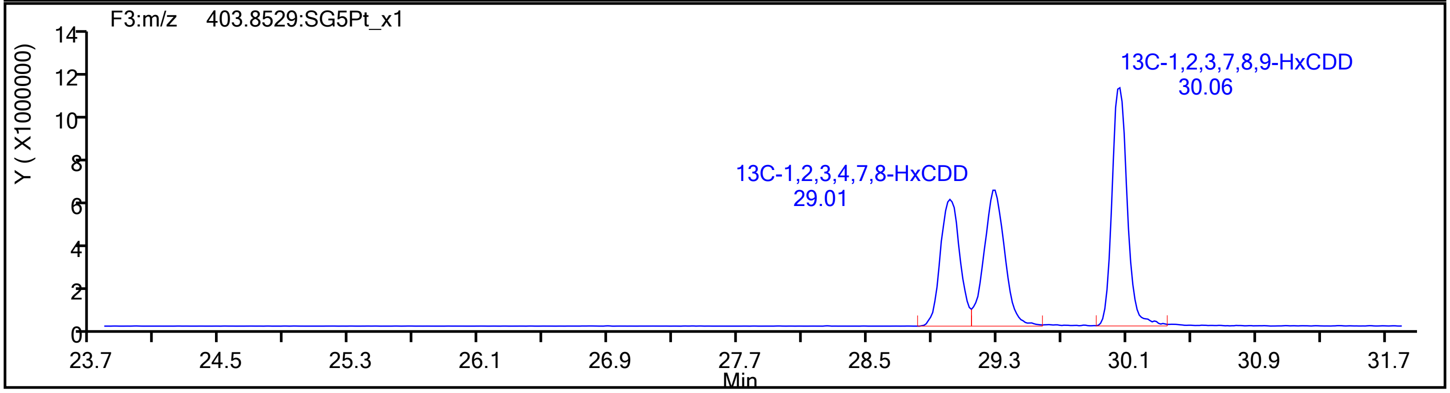

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Eurofins TestAmerica, Sacramento

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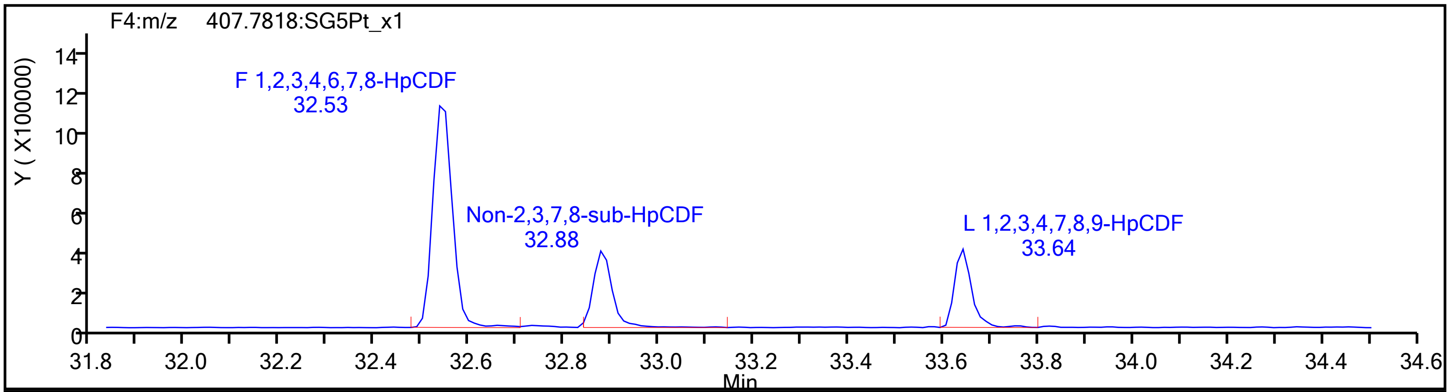

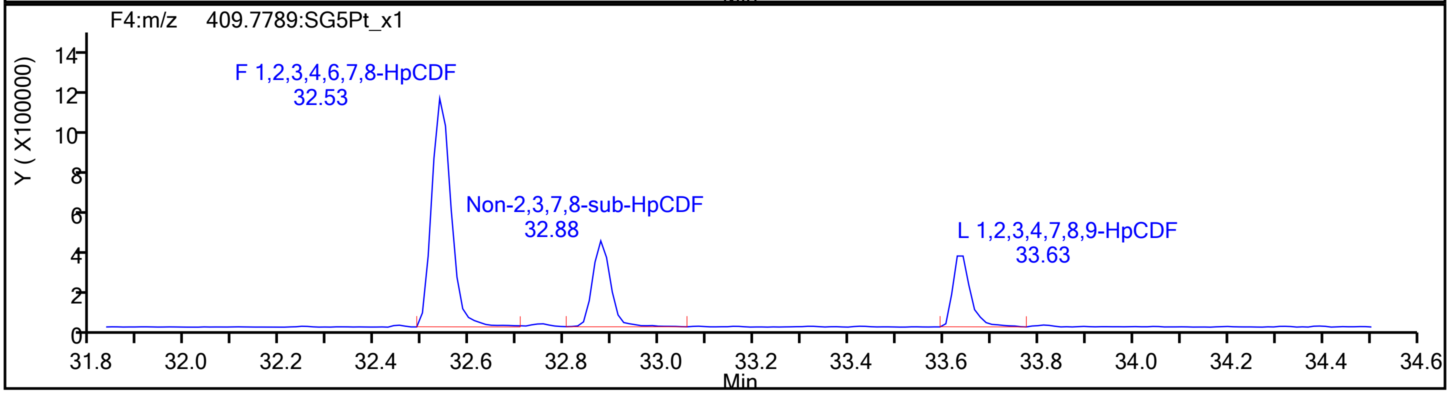

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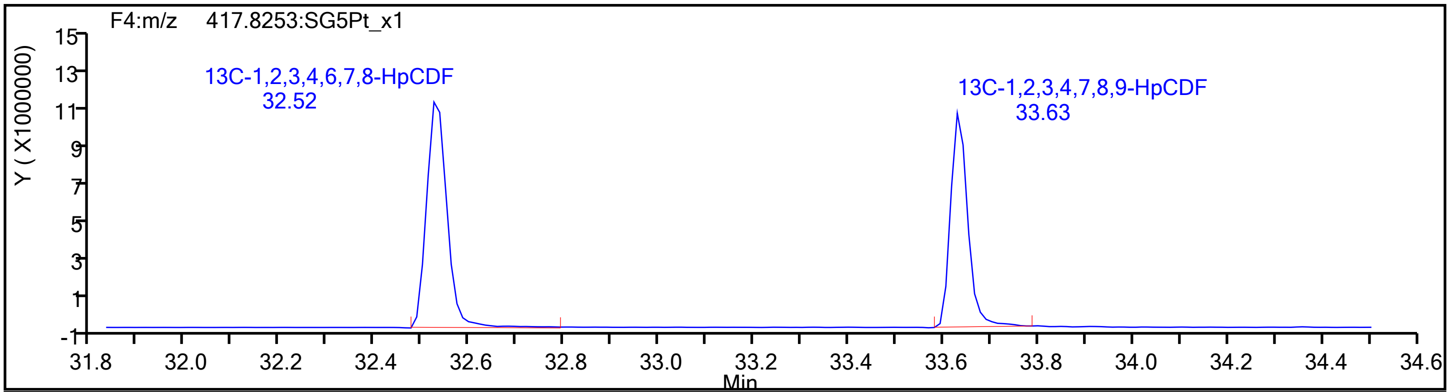

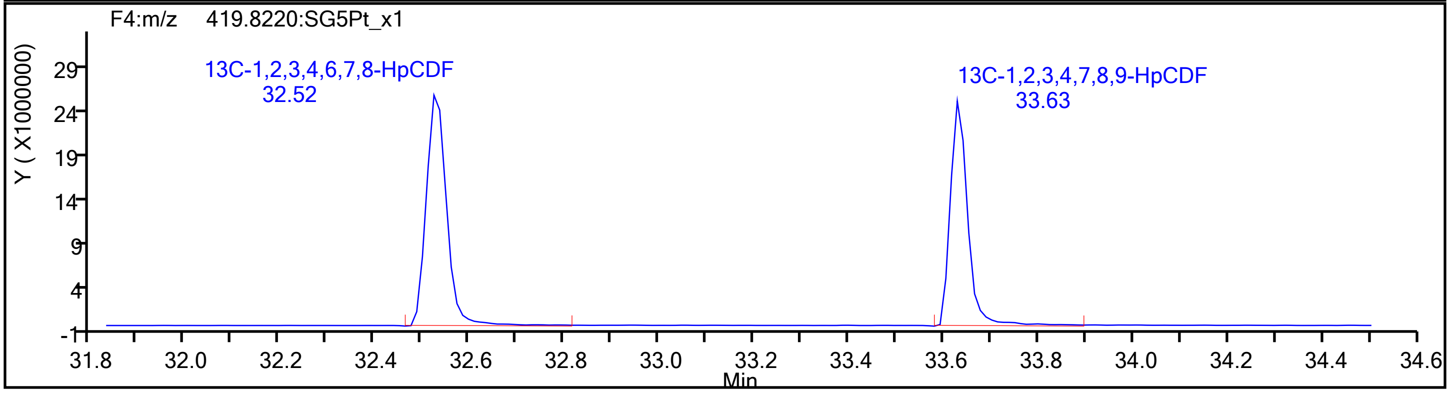

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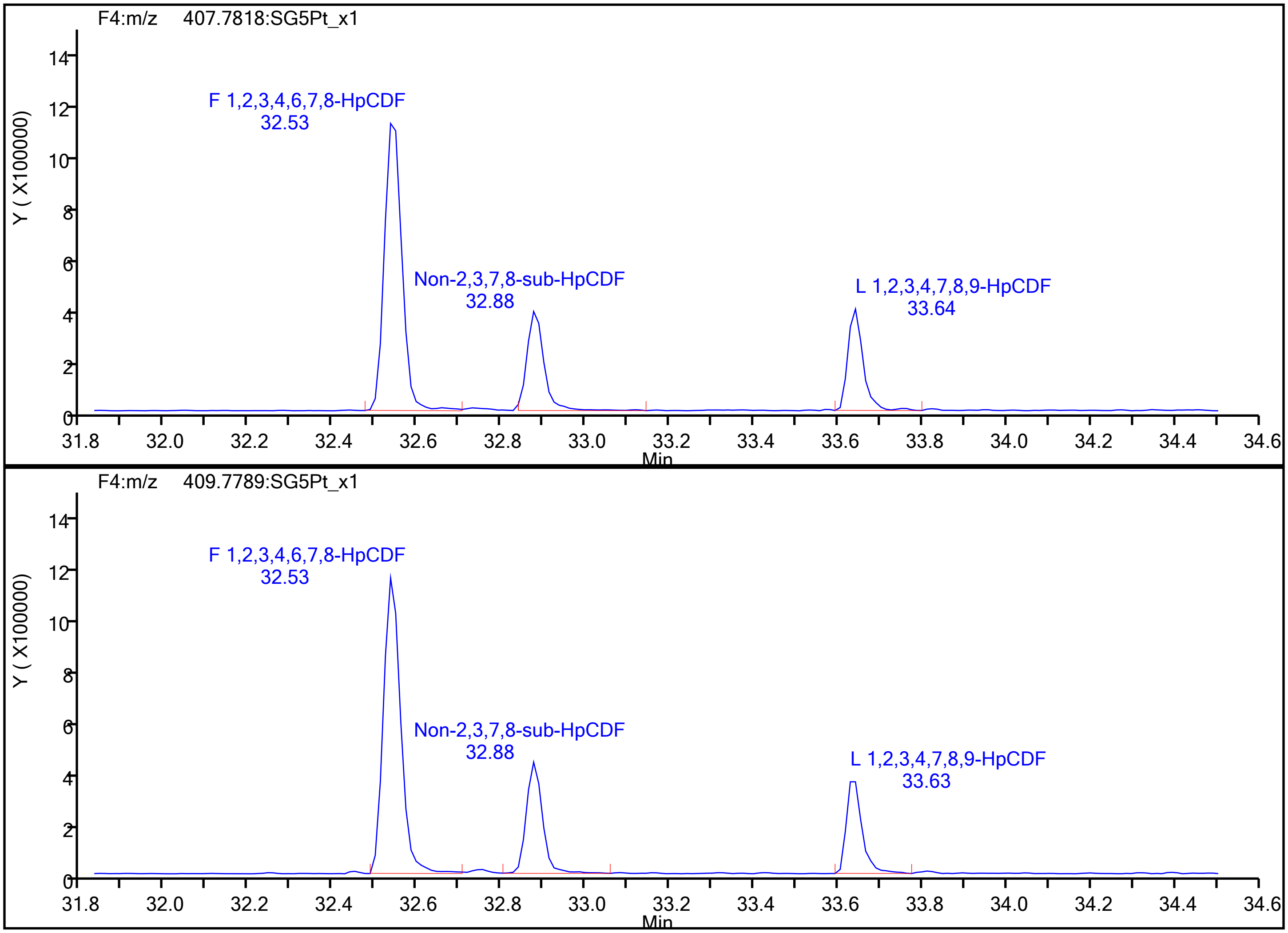

HpCDF Interference Mass

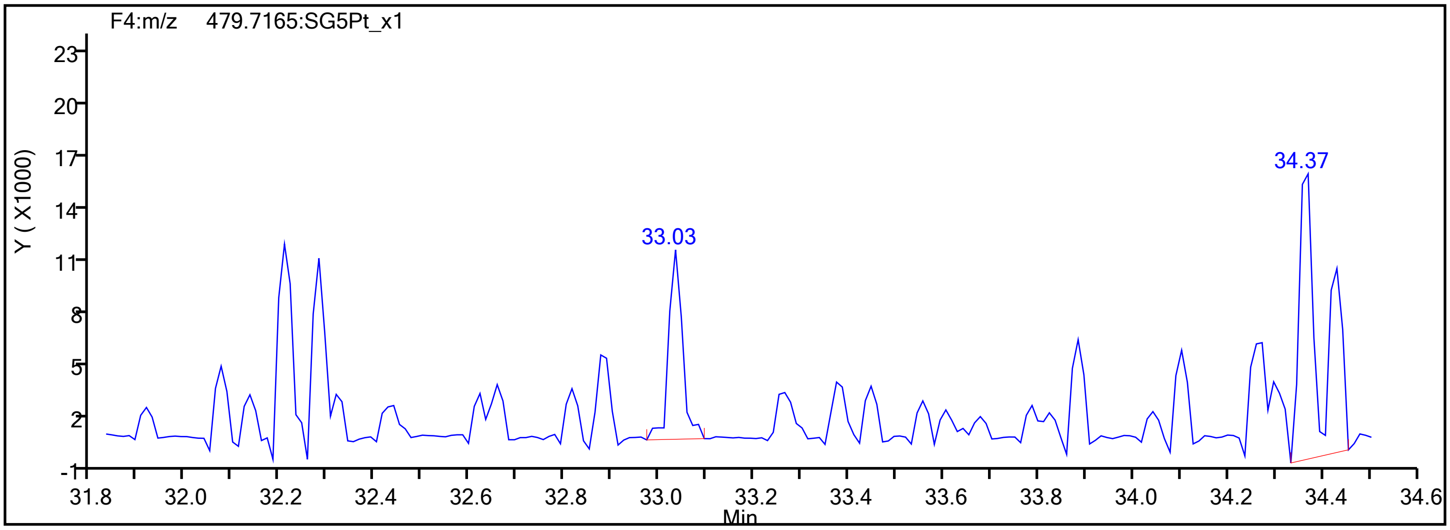

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Eurofins TestAmerica, Sacramento

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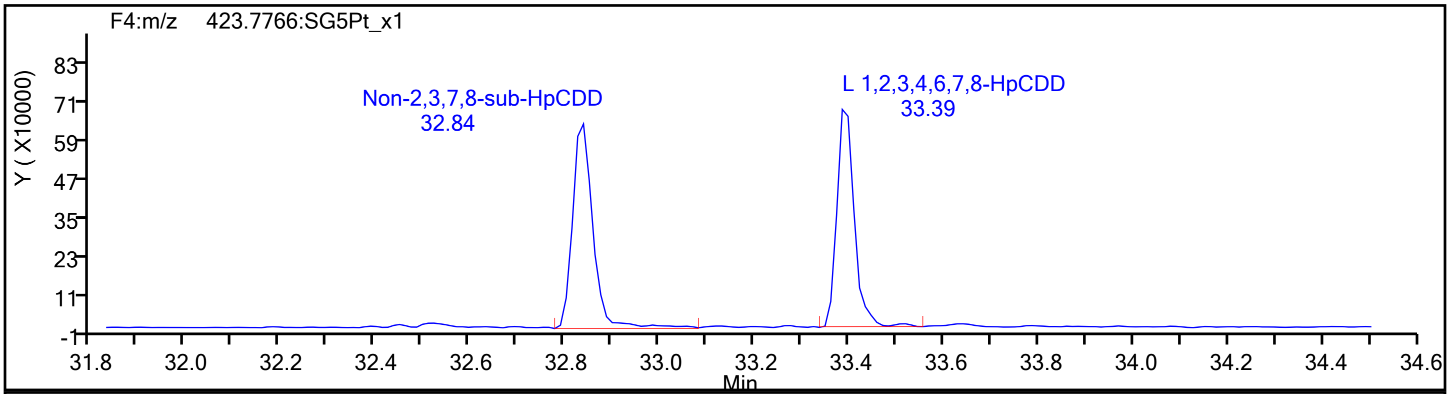

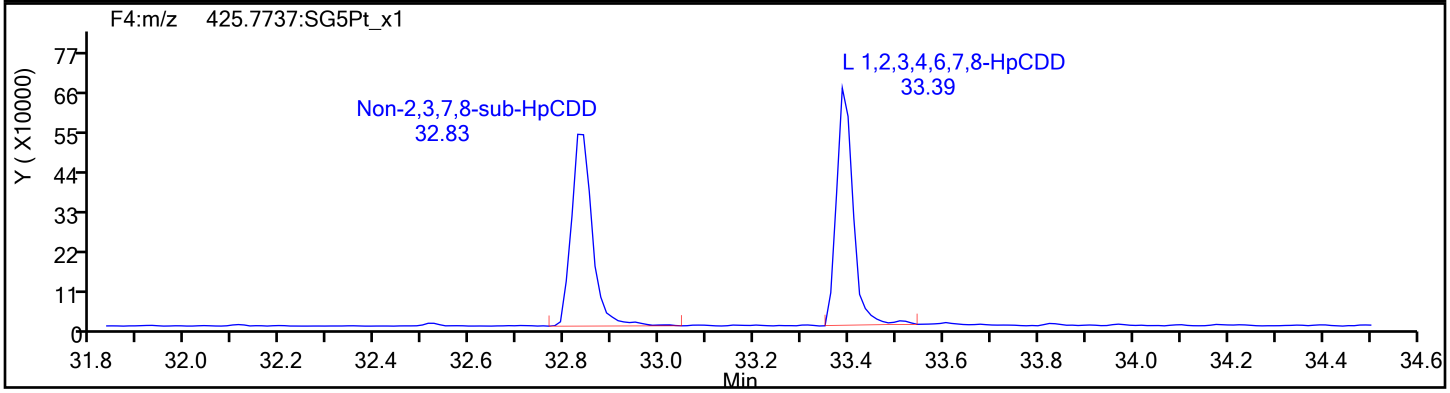

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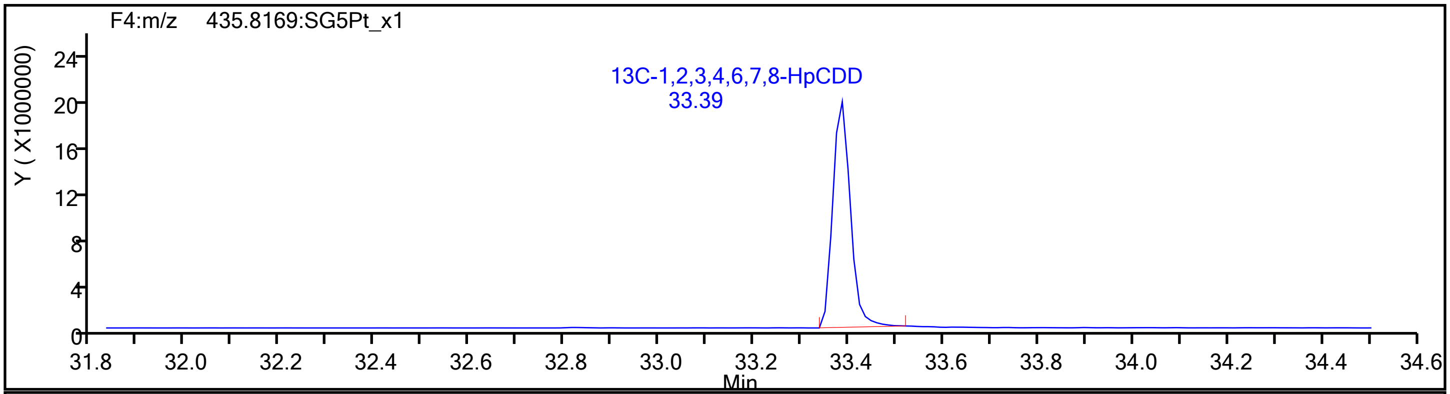

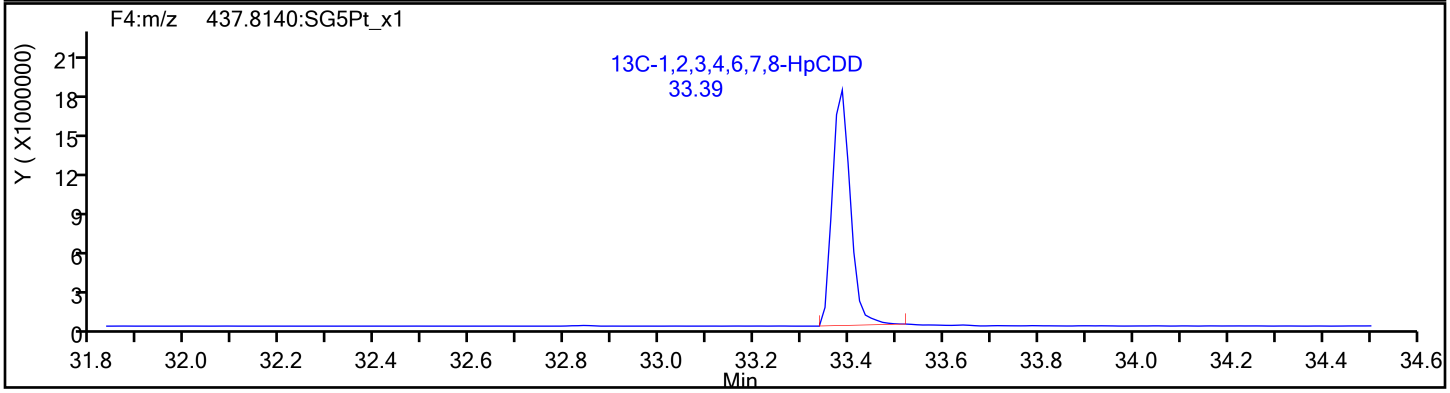

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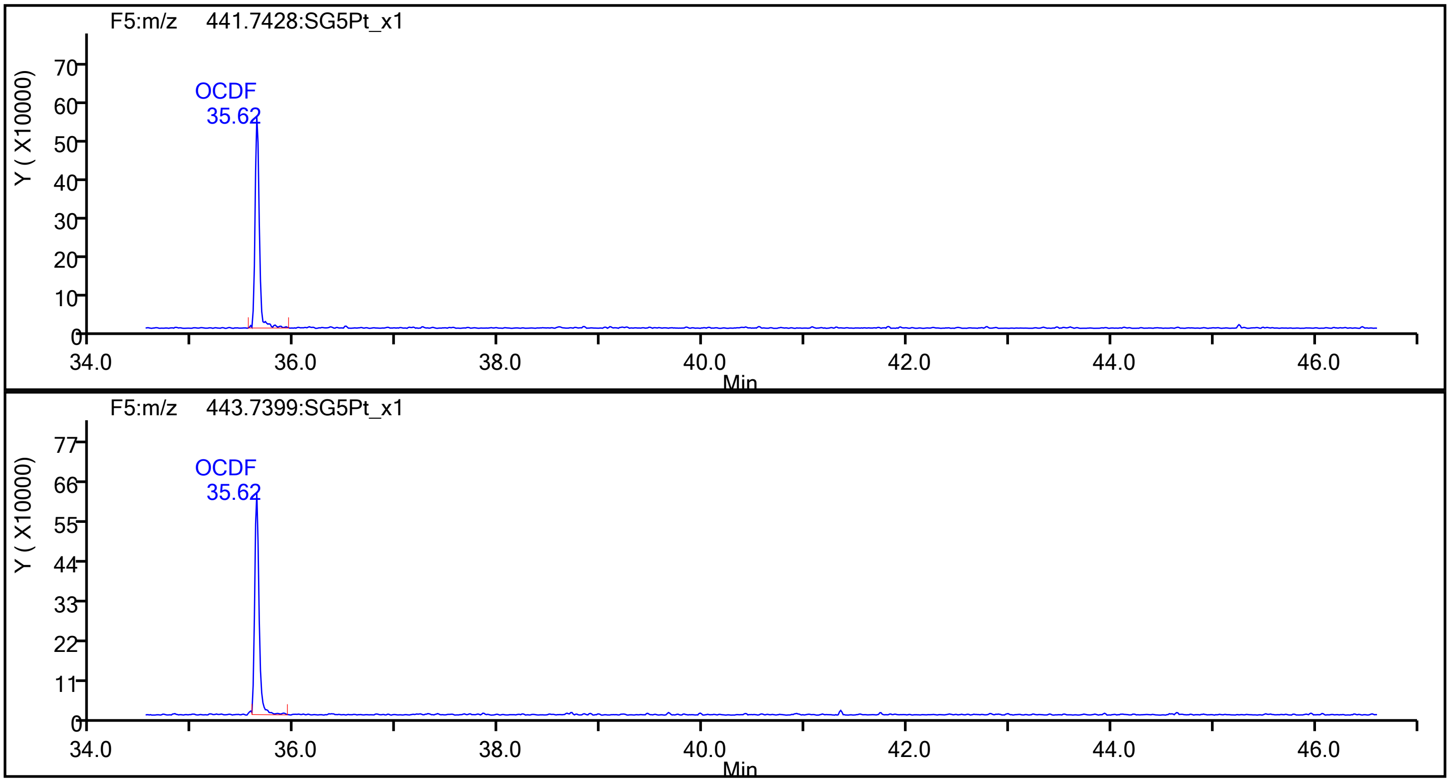

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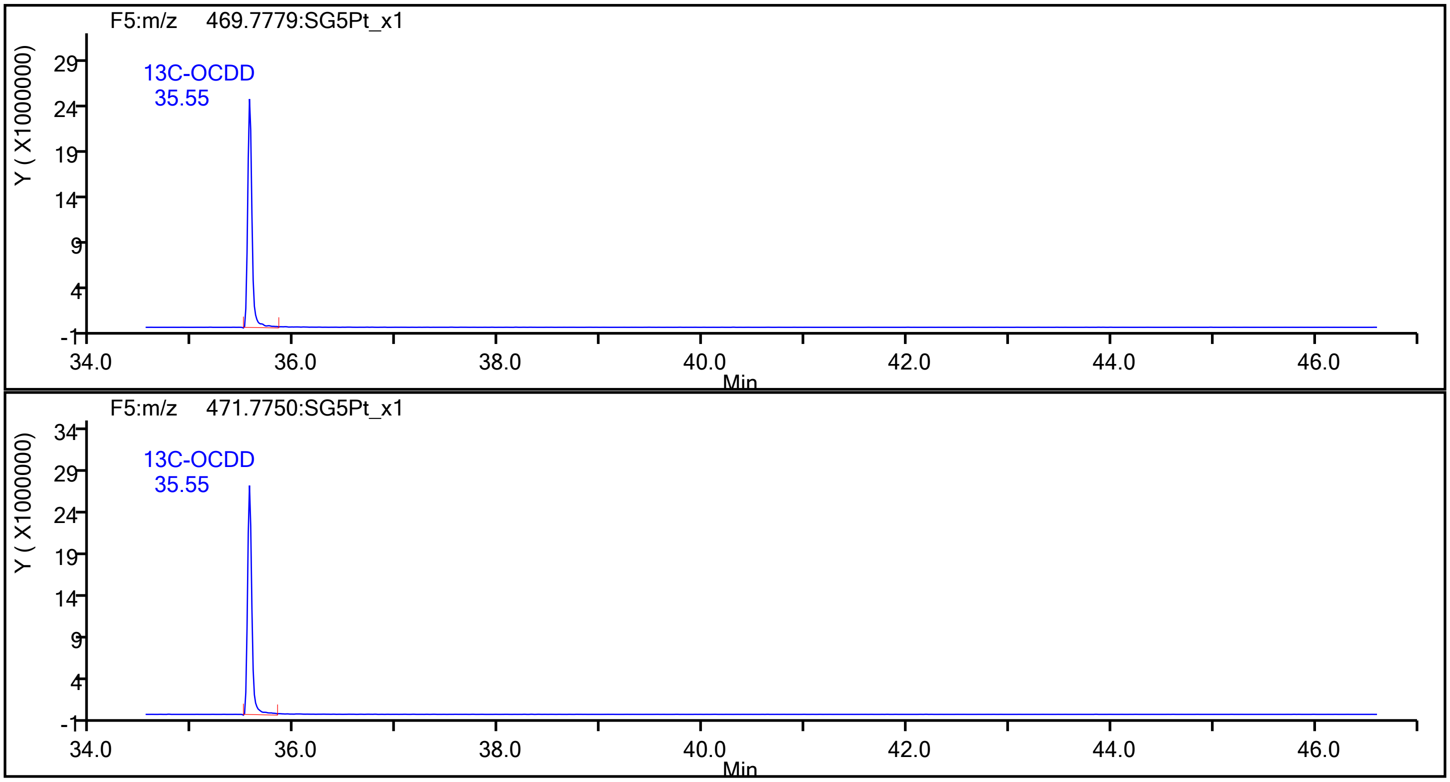

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Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-3
Worklist#: 420482
Sample Line#: 19
Column Type:
Column Dia:

OCDF

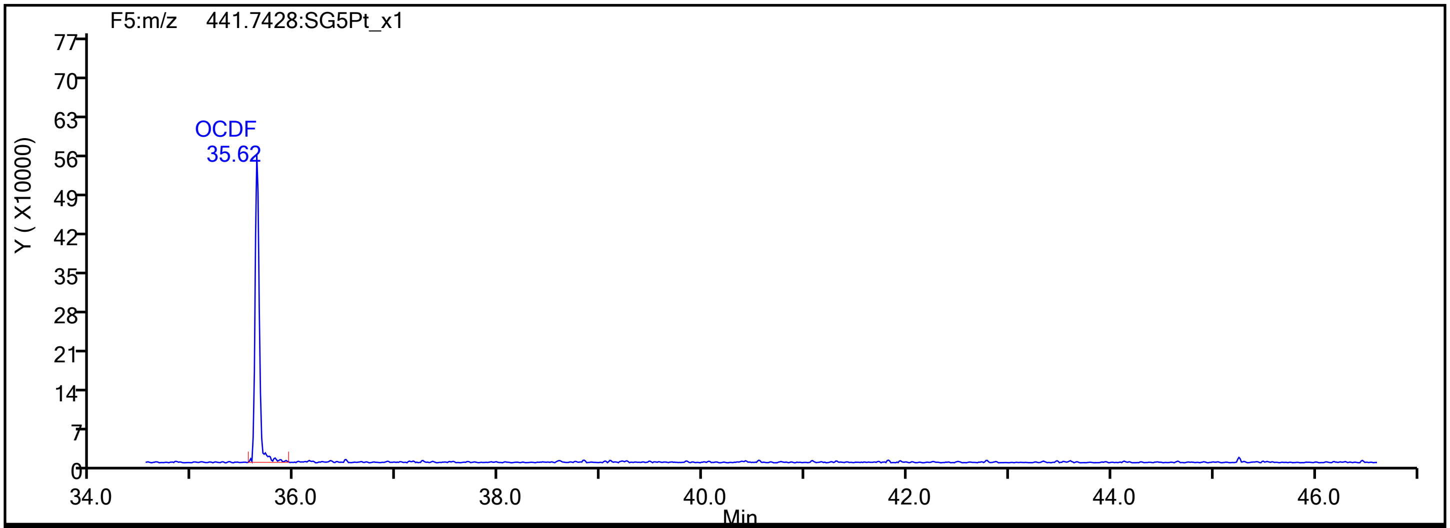

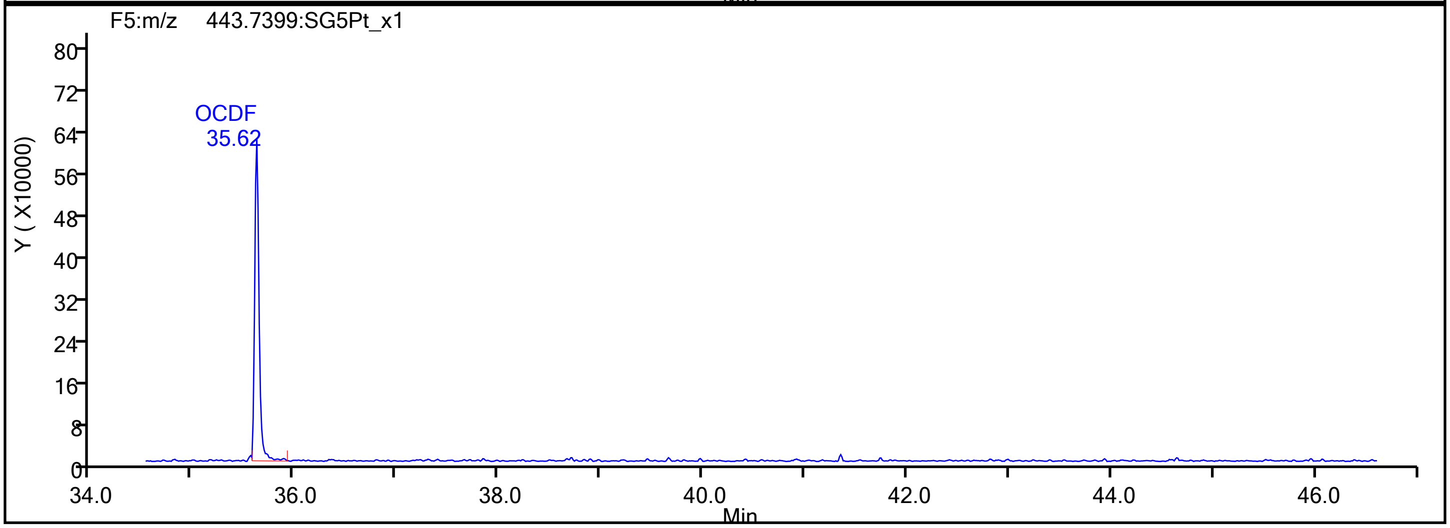

OCDF Interference Mass

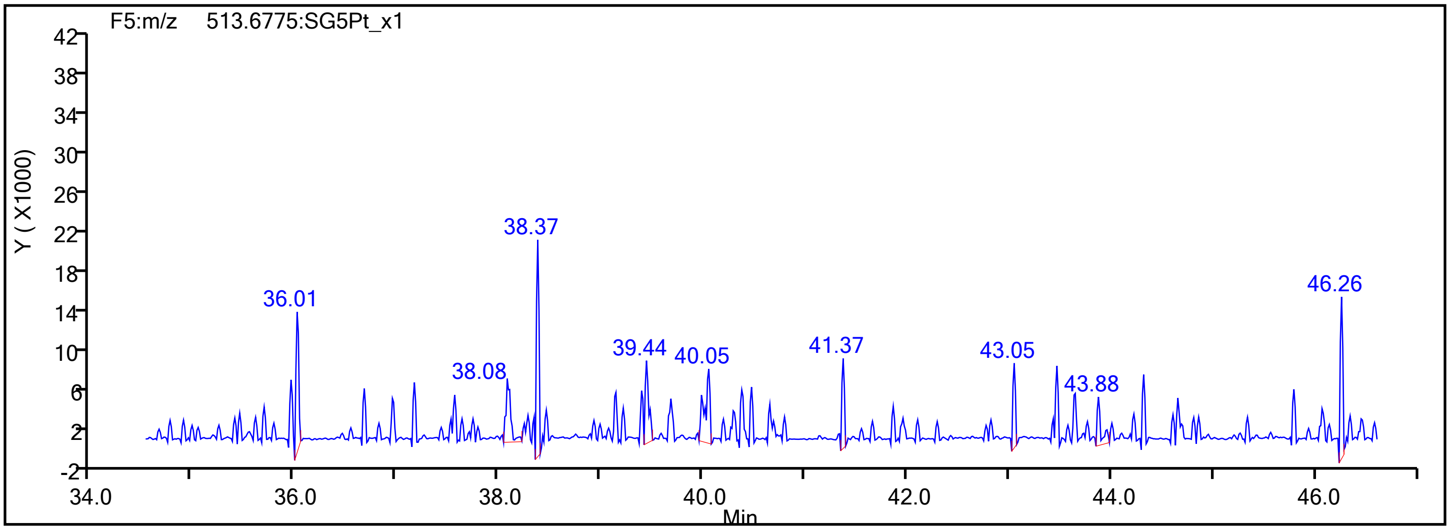

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d

Injection Date: 09-Oct-2020 09:49:07 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-3-3

Worklist#: 420482 Sample Line#: 19

Column Type: Column Dia:

OCDD

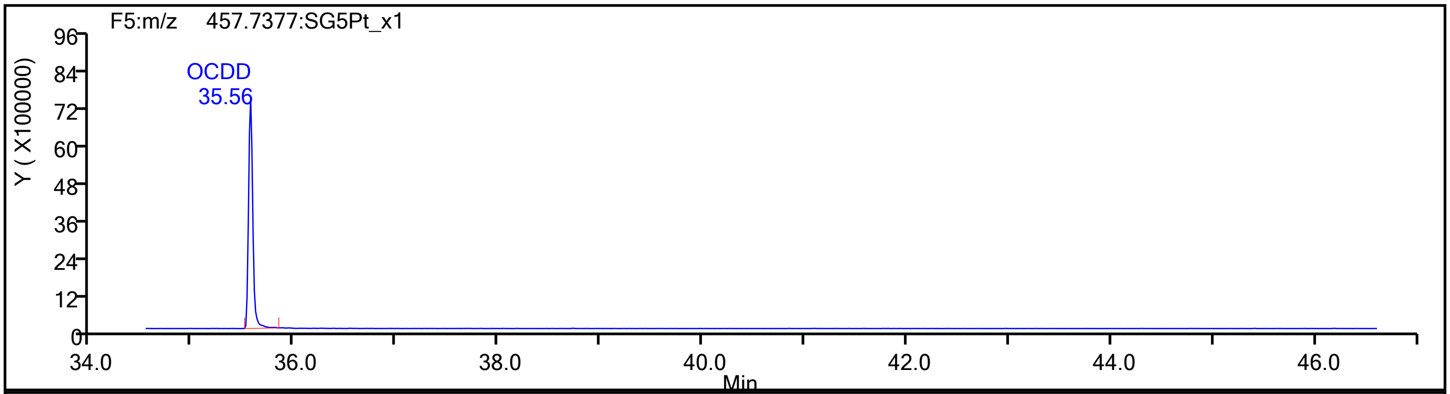

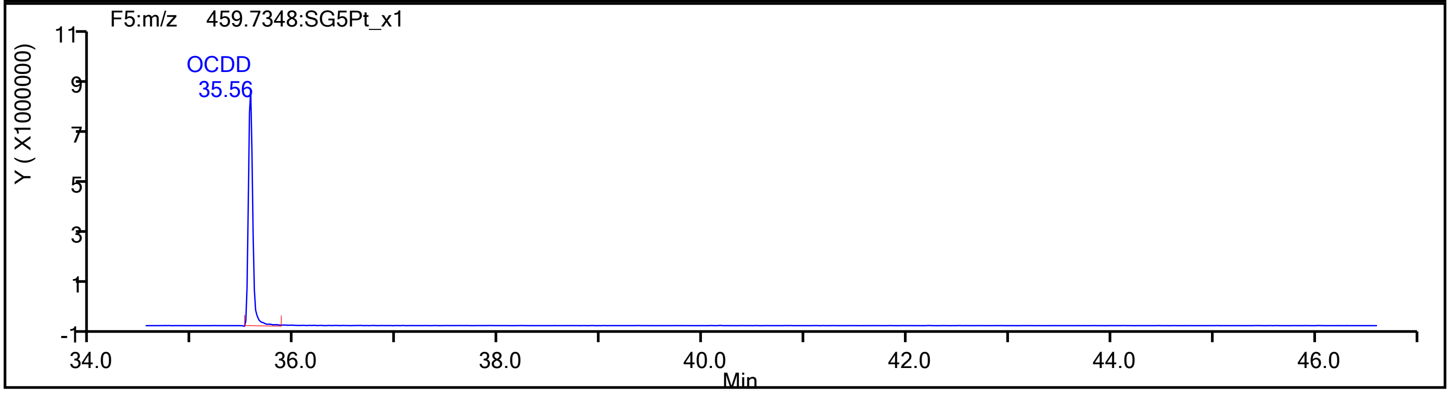

OCDD Standards

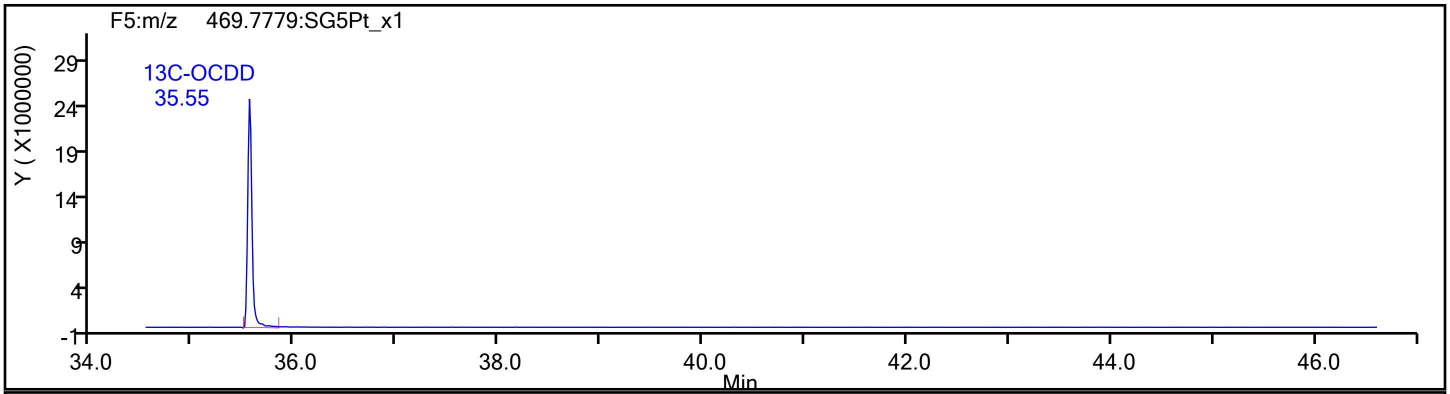

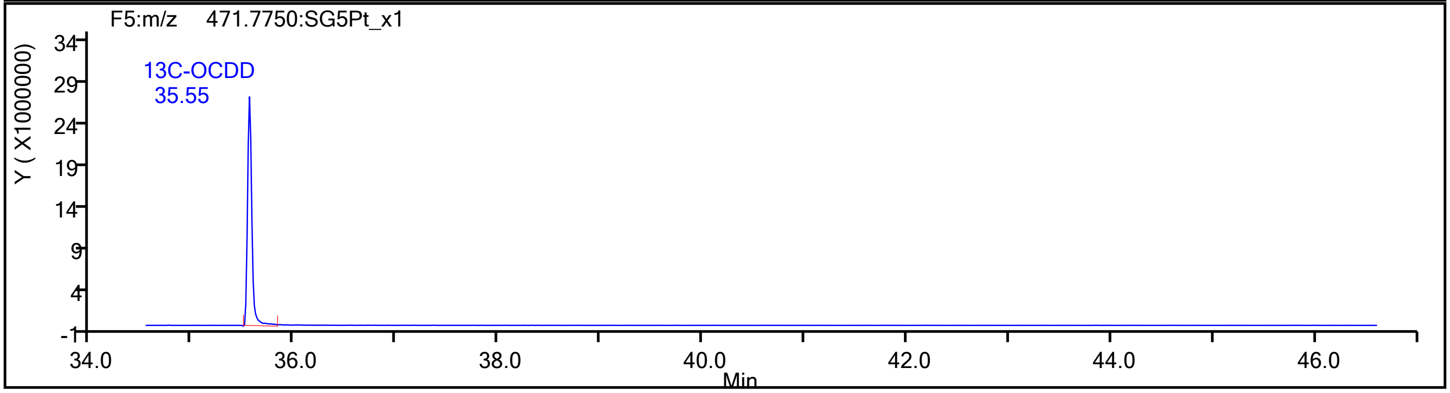

Report Date: 13-Oct-2020 12:50:43
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d
Injection Date: 09-Oct-2020 09:49:07
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-3
Worklist#: 420482
Sample Line#: 19
Column Type:
Column Dia:

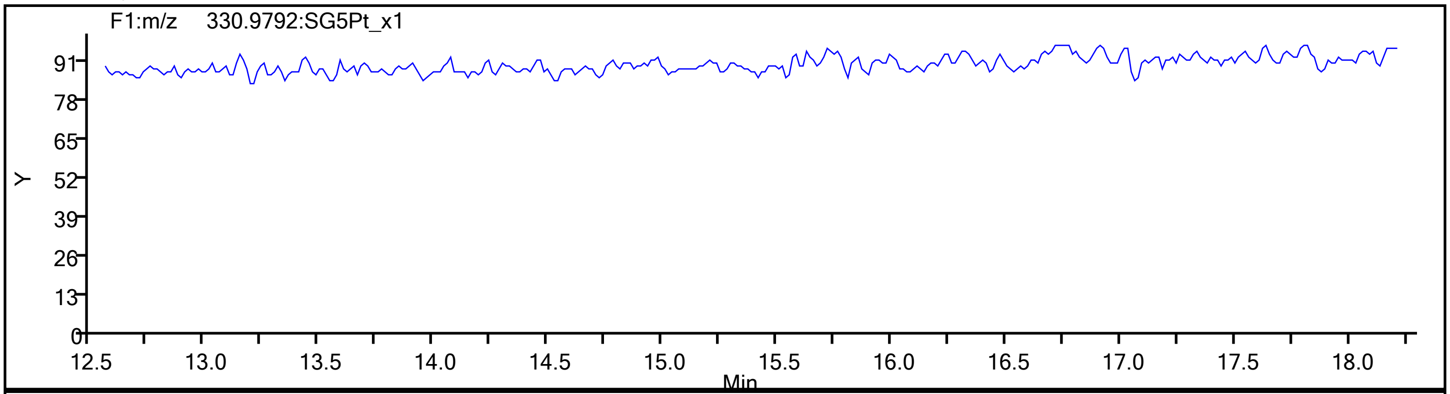

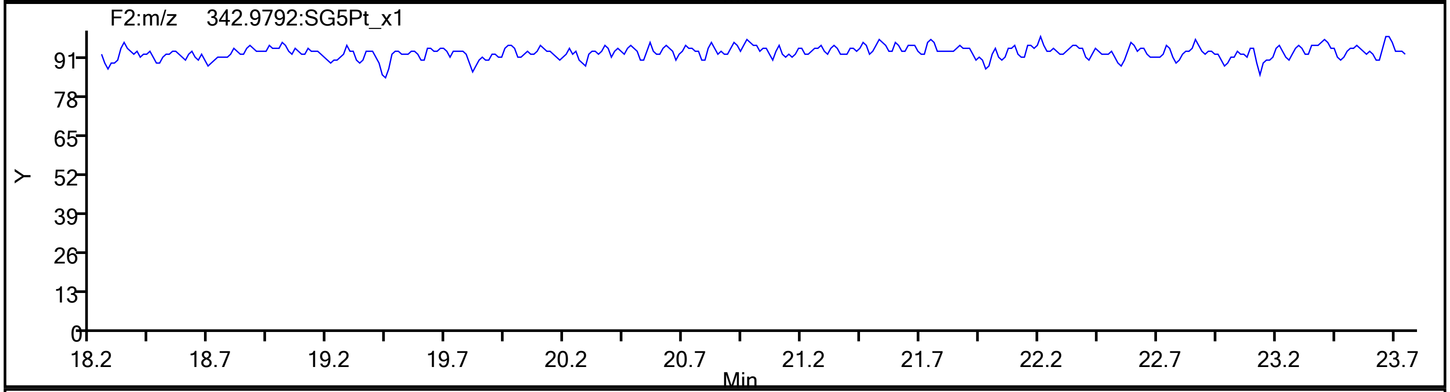

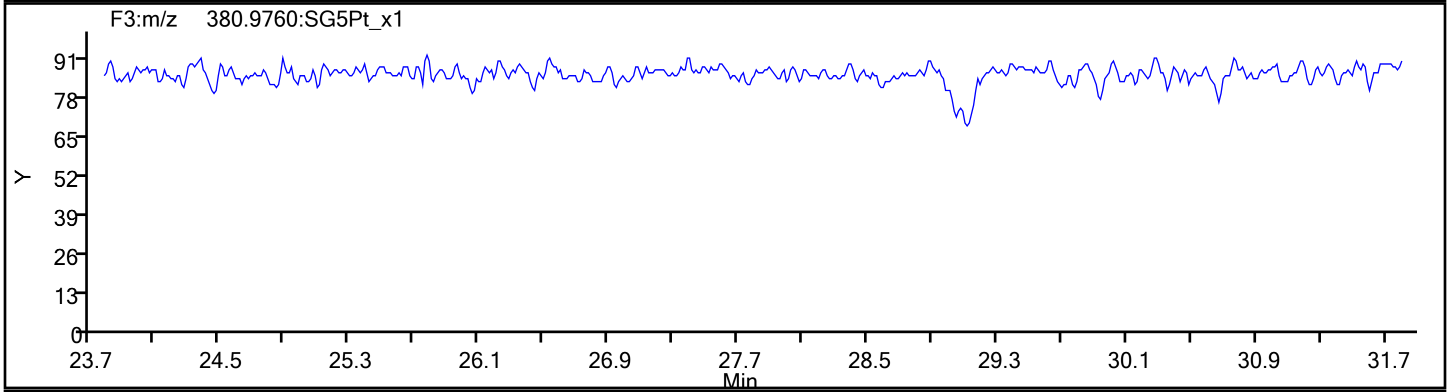

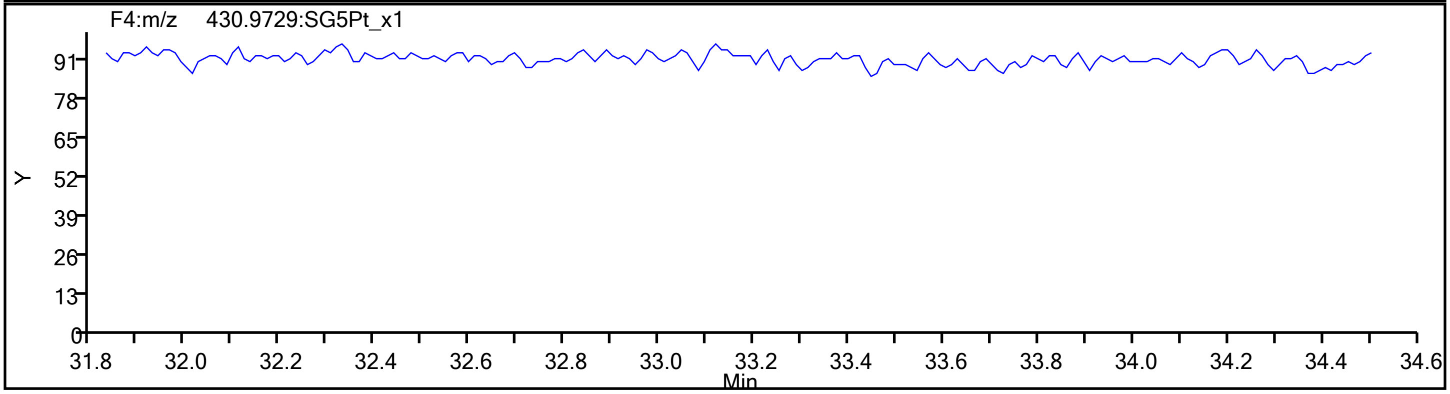

Report Date: 13-Oct-2020 12:50:43 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_19.d		
Injection Date:	09-Oct-2020 09:49:07	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-3		
Worklist#:	420482	Sample Line#:	19
Column Type:		Column Dia:	

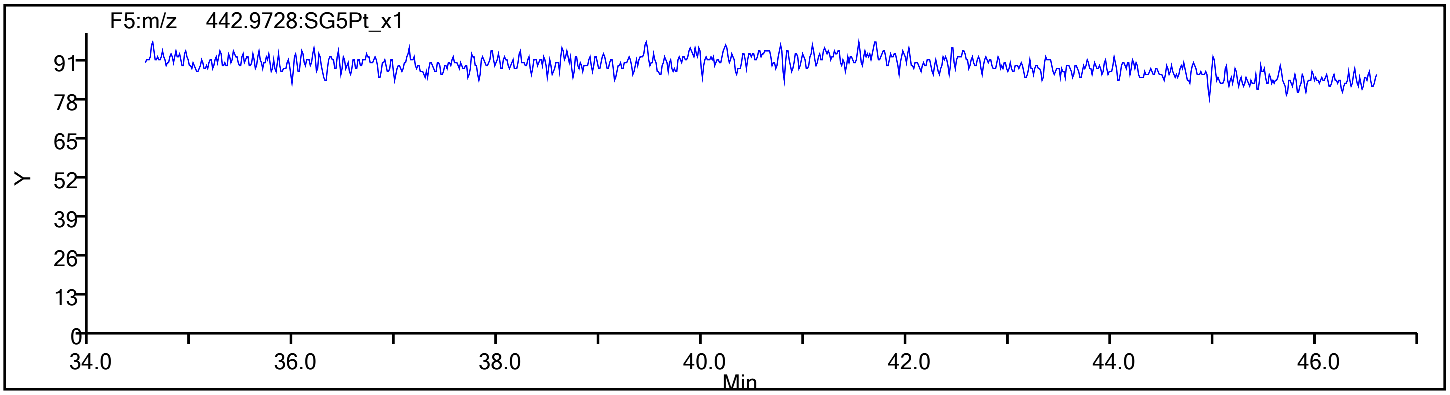

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#1-valve-3-3 RA
Lab Sample ID: 320-65130-10 RA
Matrix: Water
Lab File ID: 13OC20A11D2_014.d
Analysis Method: 1613B
Date Collected: 09/11/2020 14:30
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 974.8(mL)
Date Analyzed: 10/14/2020 04:00
Con. Extract Vol.: 20(uL)
Dilution Factor: 5
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 421876
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	4800	B	51	11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	120		35-197

Report Date: 14-Oct-2020 17:39:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_014.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Sample Type: Client
Inject. Date: 14-Oct-2020 04:00:26 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-65130-A-10-A (5X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:36:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.911	12096661	0.86	1.2E+06	20.0	20.0				M
D 13C-2,3,7,8-TCDF	16.036	14678915	0.79	1.5708	15.5	15.5	0.3896	0.3896	77.25	
2,3,7,8-TCDF	16.063	33840662	0.76	0.9943	46.4	46.4	0.1040	0.1040		
D 13C-2,3,7,8-TCDD	14.678	9039377	0.85	0.9834	15.2	15.2	0.7815	0.7815	75.99	
2,3,7,8-TCDD	14.692	9057328	0.80	1.2822	15.6	15.6	0.1442	0.1442		
$ 37Cl4-2,3,7,8-TCDD	14.692	5794499		0.9945	9.633	9.633	0.0792	0.0792	120	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags
Review Flags
M - Manually Integrated

Report Date: 14-Oct-2020 17:39:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_014.d
Lims ID: 320-65130-A-10-A
Client ID: 11215702-Tank#1-valve-3-3
Sample Type: Client
Inject. Date: 14-Oct-2020 04:00:26 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-65130-A-10-A (5X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:36:26

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											M
331.9368	14.911	14.928	-1		5589130	1422713	29954	74885	47		M
333.9339	14.911	14.928	-1		6507531	1679535	17730	44325	95	0.86(0.65-0.89)	M
13C-2,3,7,8-TCDF											
315.9419	16.036	16.067	-2	1.075	6468777	1450557	25109	62772	58		
317.9389	16.036	16.067	-2	1.075	8210138	1847878	12863	32157	144	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.063	16.081	-1	1.002	14619669	3437060	2747	6867	1251		
305.8987	16.063	16.081	-1	1.002	19220993	4428261	4073	10182	1087	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.678	14.681	0	0.984	4158213	1051706	29954	74885	35		
333.9339	14.678	14.681	0	0.984	4881164	1215663	17730	44325	69	0.85(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.692	14.709	-1	1.001	4014647	971095	4189	10472	232		
321.8936	14.692	14.709	-1	1.001	5042681	1275141	4198	10495	304	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.692	14.709	-1	0.985	5794499	1474149	4888	12220	302		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 14-Oct-2020 17:39:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_014.d

Injection Date: 14-Oct-2020 04:00:26
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-3-3
Worklist#: 421876
Sample Line#: 14
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

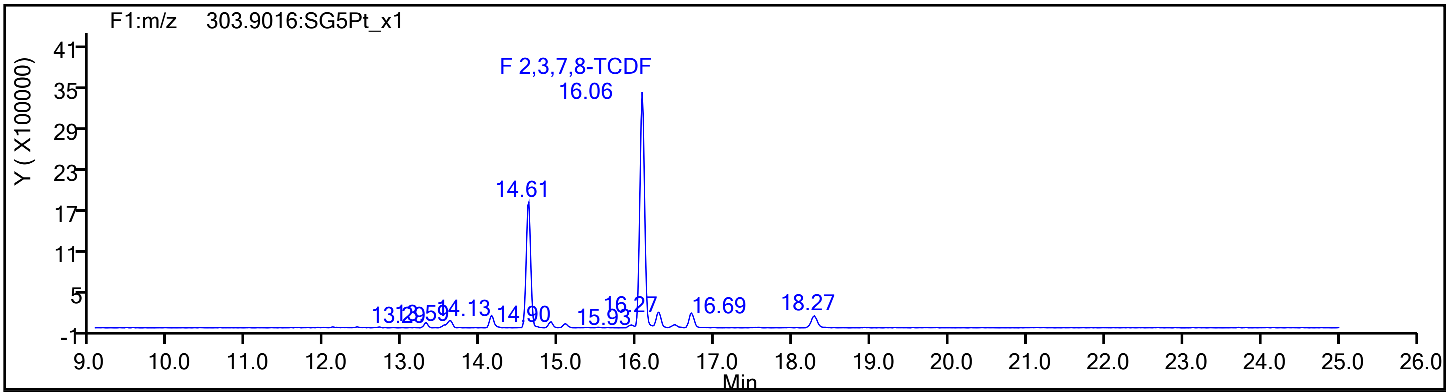

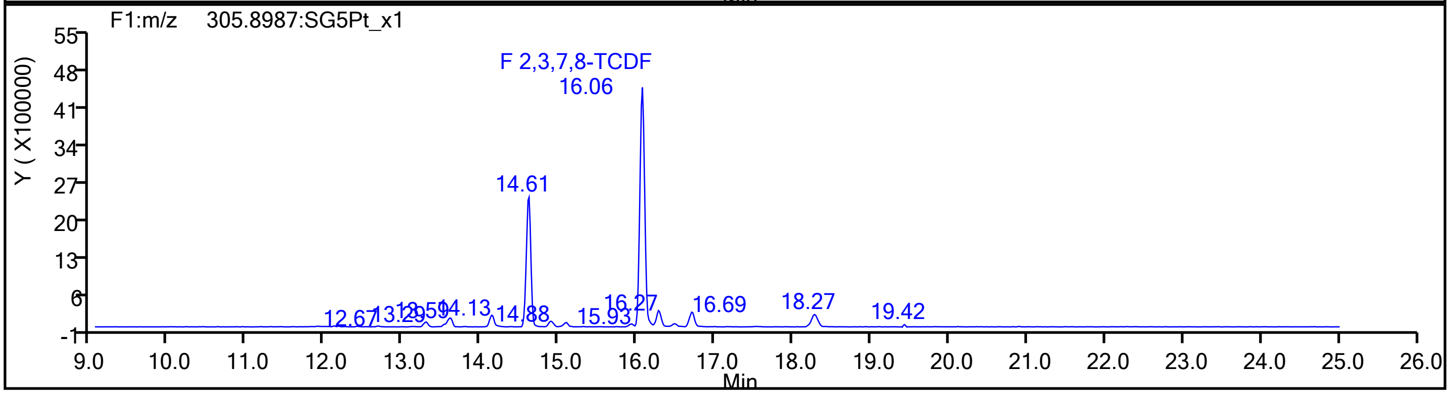

TCDF Standards

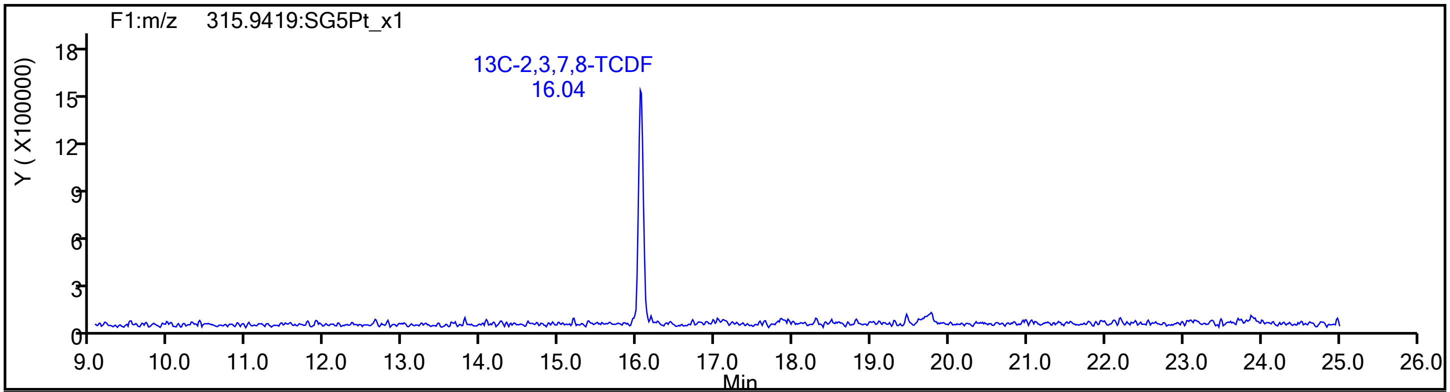

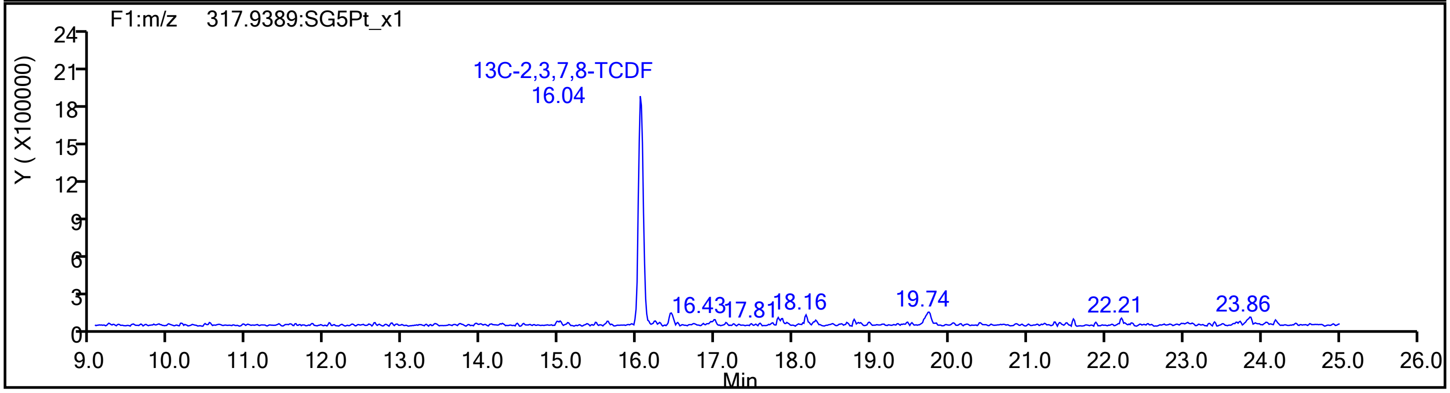

Report Date: 14-Oct-2020 17:39:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_014.d		
Injection Date:	14-Oct-2020 04:00:26	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-3		
Worklist#:	421876	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

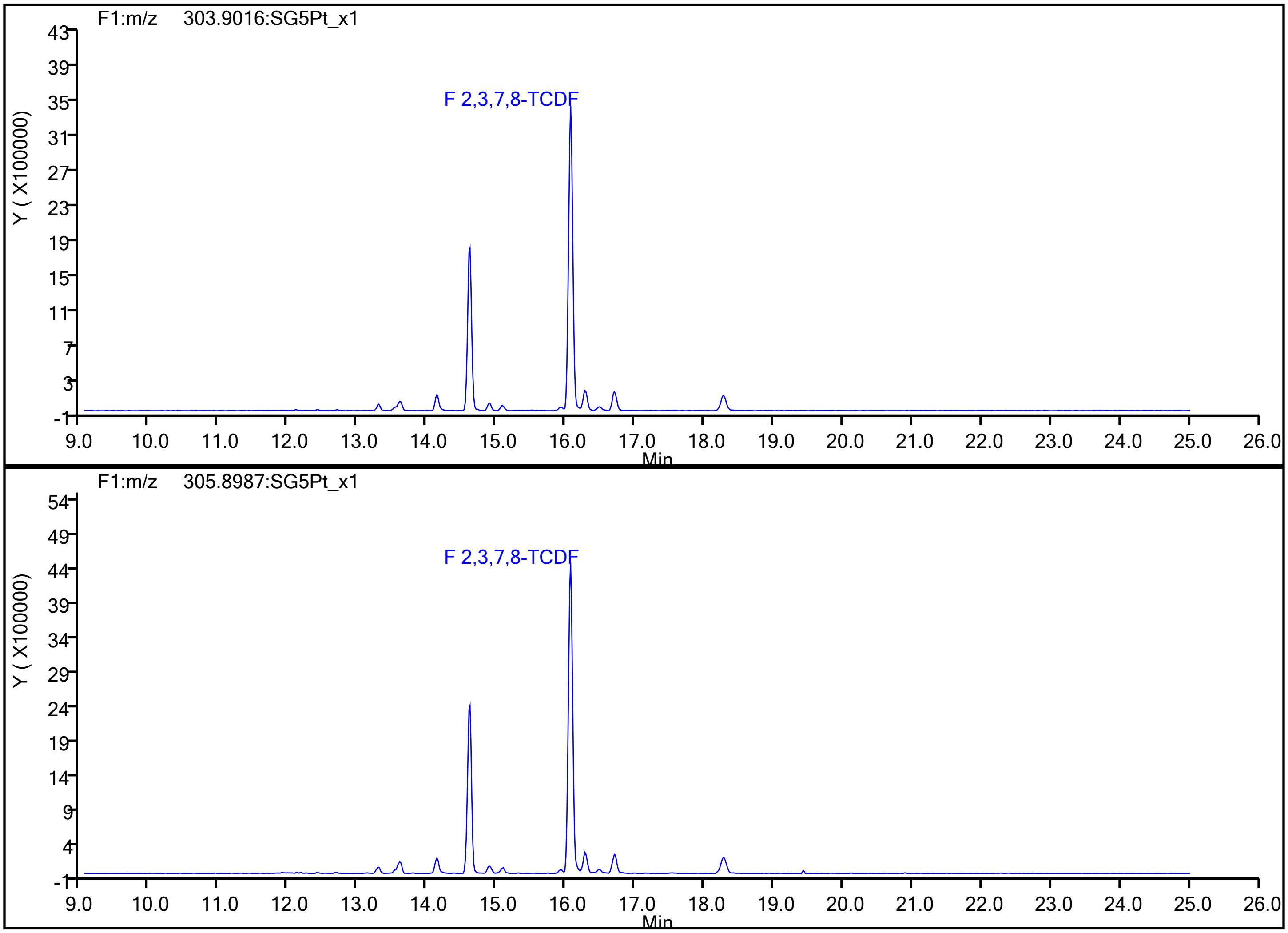

TCDF Interference Mass

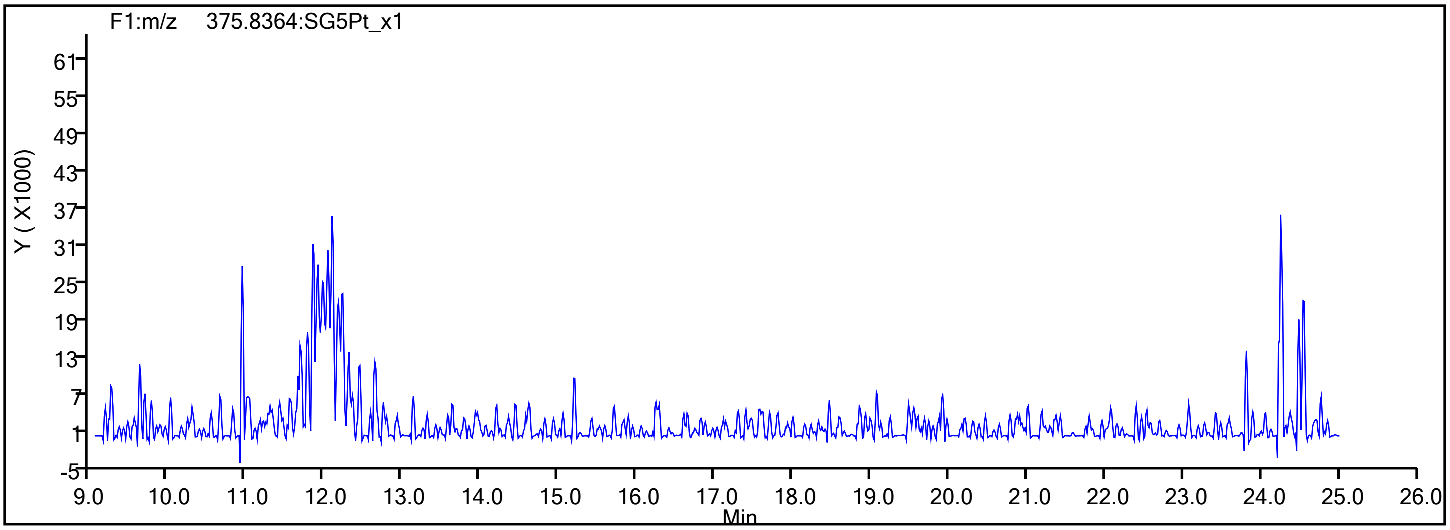

Report Date: 14-Oct-2020 17:39:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_014.d		
Injection Date:	14-Oct-2020 04:00:26	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-3		
Worklist#:	421876	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

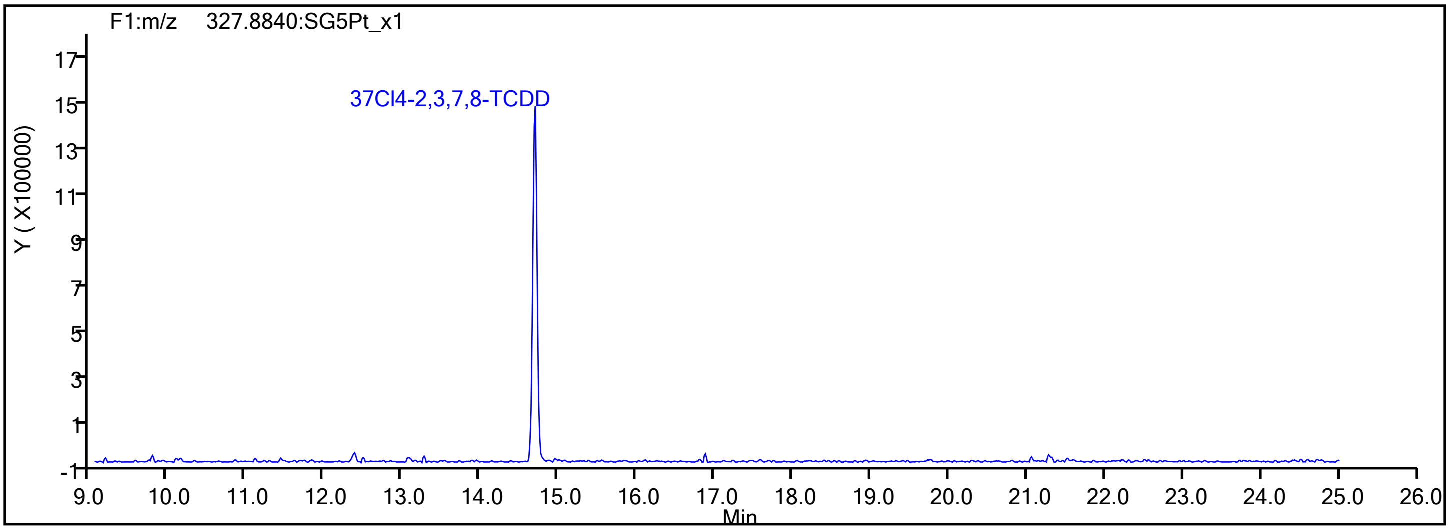

37Cl4-TCDD Standards

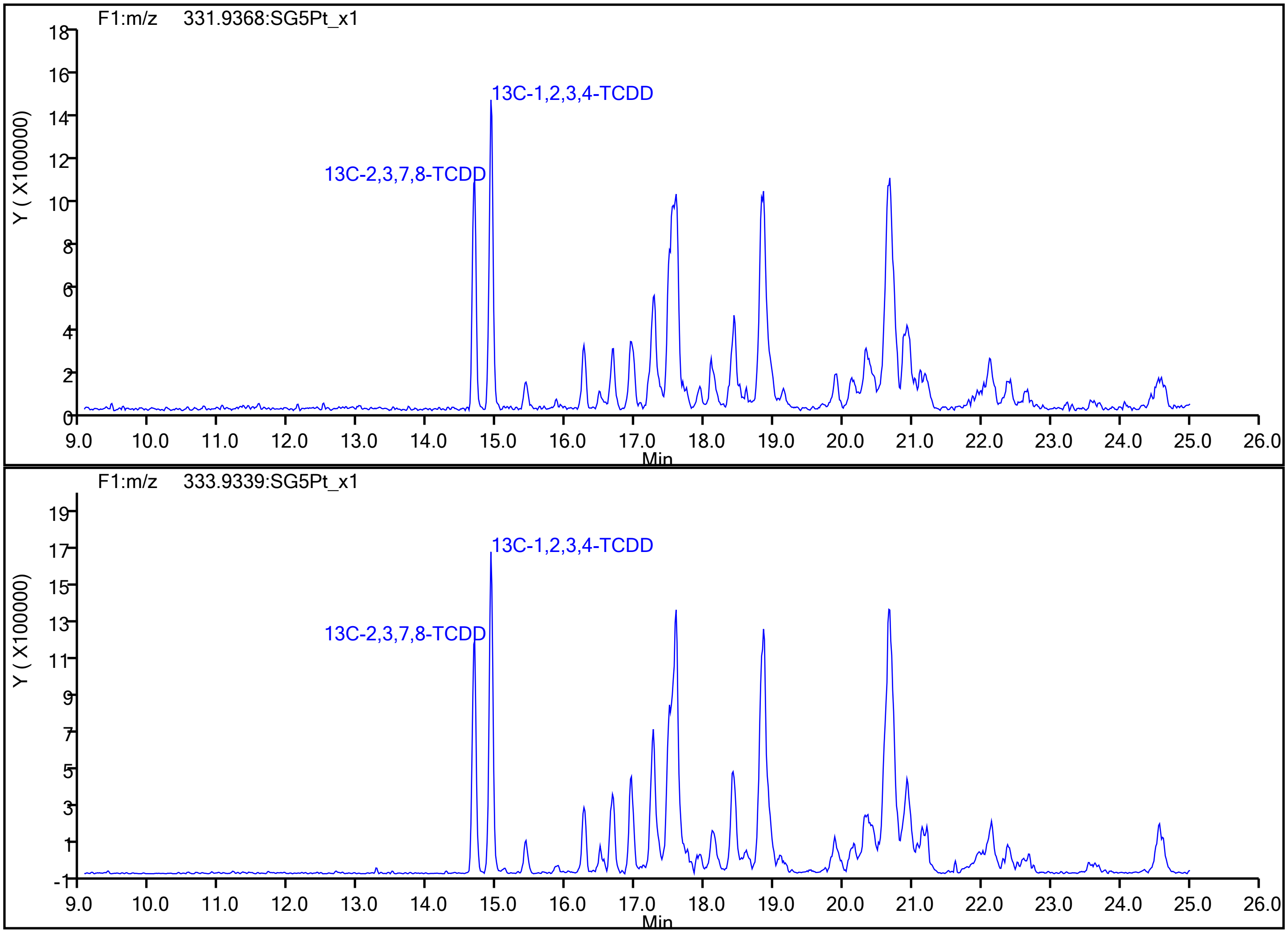

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_014.d		
Injection Date:	14-Oct-2020 04:00:26	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-3-3		
Worklist#:	421876	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

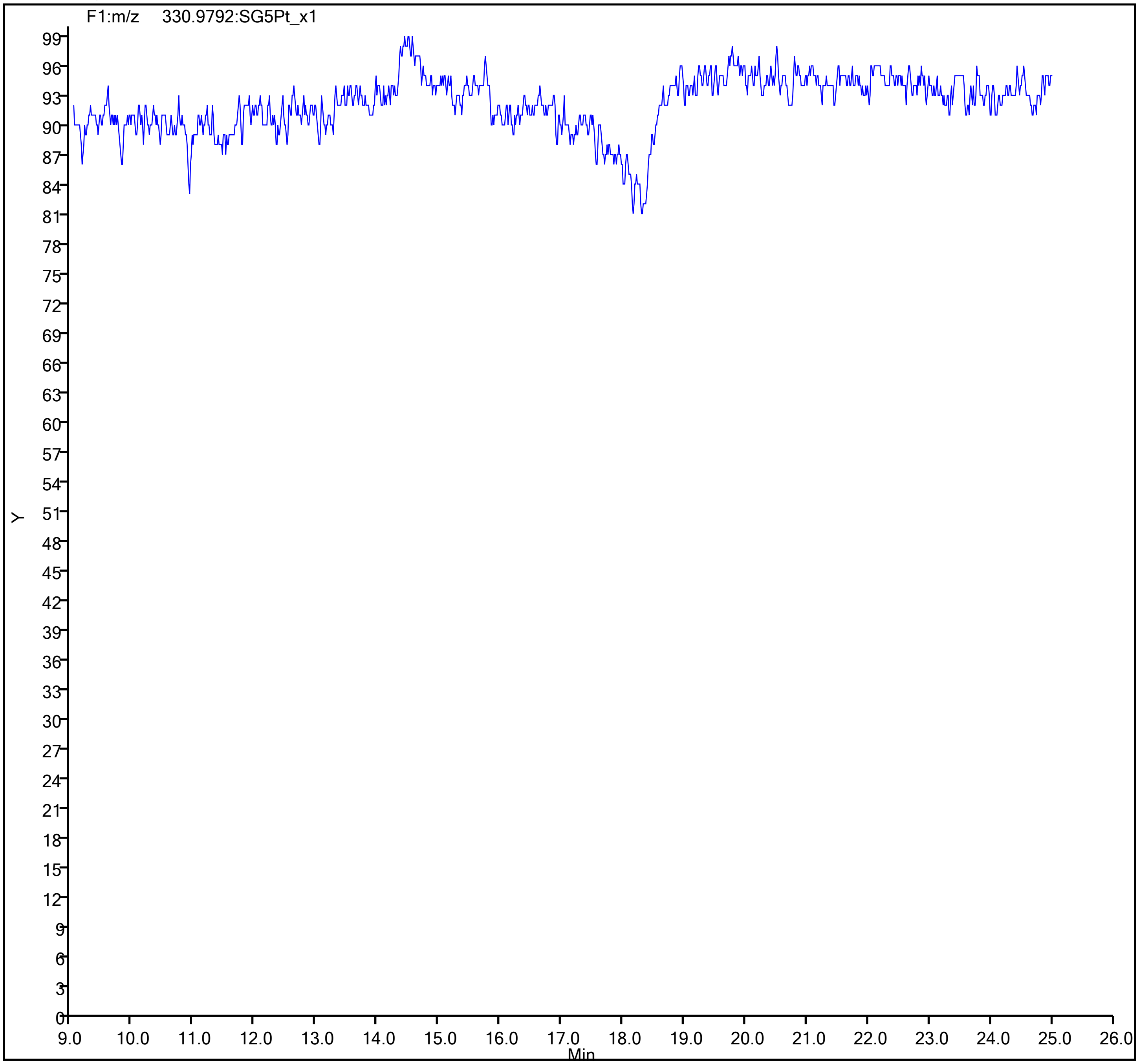

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-4-3 Lab Sample ID: 320-65130-11

Matrix: Water Lab File ID: 09OC203D5_4.d

Analysis Method: 1613B Date Collected: 09/11/2020 14:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 973.2(mL) Date Analyzed: 10/09/2020 15:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420483 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	240		10	1.5
40321-76-4	1,2,3,7,8-PeCDD	2.6	J B	51	0.65
57117-41-6	1,2,3,7,8-PeCDF	33	J B	51	0.86
57117-31-4	2,3,4,7,8-PeCDF	18	J B	51	1.1
39227-28-6	1,2,3,4,7,8-HxCDD	1.6	J B q	51	1.0
57653-85-7	1,2,3,6,7,8-HxCDD	ND		51	1.1
19408-74-3	1,2,3,7,8,9-HxCDD	ND		51	1.0
70648-26-9	1,2,3,4,7,8-HxCDF	60	B	51	1.3
57117-44-9	1,2,3,6,7,8-HxCDF	16	J B	51	1.3
72918-21-9	1,2,3,7,8,9-HxCDF	ND		51	0.97
60851-34-5	2,3,4,6,7,8-HxCDF	ND		51	1.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	13	J B	51	0.45
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	J B	51	0.46
55673-89-7	1,2,3,4,7,8,9-HpCDF	8.1	J B	51	0.55
3268-87-9	OCDD	200	B	100	0.66
39001-02-0	OCDF	11	J B	100	0.39
41903-57-5	Total TCDD	260	B	10	1.5
30402-14-3	Total TCDF	1400	B q	10	5.2
36088-22-9	Total PeCDD	3.3	J B q	51	0.65
30402-15-4	Total PeCDF	74	B q	51	0.96
34465-46-8	Total HxCDD	1.6	J B q	51	1.1
55684-94-1	Total HxCDF	76	B	51	1.2
37871-00-4	Total HpCDD	28	J B	51	0.45
38998-75-3	Total HpCDF	31	J B	51	0.50

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-4-3	Lab Sample ID: 320-65130-11
Matrix: Water	Lab File ID: 09OC203D5_4.d
Analysis Method: 1613B	Date Collected: 09/11/2020 14:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 973.2(mL)	Date Analyzed: 10/09/2020 15:27
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420483	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	86		25-164
89059-46-1	13C-2,3,7,8-TCDF	80		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	80		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	63		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	58		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	84		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	96		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	66		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	69		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	75		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	78		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	67		26-138
114423-97-1	13C-OCDD	75		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	103		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Lims ID: 320-65130-A-11-A
Client ID: 11215702-Tank#1-valve-4-3
Sample Type: Client
Inject. Date: 09-Oct-2020 15:27:48 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-11-A 320-65130-A-11-A
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 08:33:17 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: dadunj Date: 14-Oct-2020 08:33:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	226309501	0.81	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	268906750	0.78	1.4844	80.0	80.0	0.1617	0.1617	80.05	
2,3,7,8-TCDF	15.492	99318993	0.77	0.9534	38.7	38.7	0.2513	0.2513		
A Non-2,3,7,8-sub-TCDF	15.220	72806886	0.77	0.9534	28.5	28.4	0.2513	17.0		RQMa
S Total TCDF					67.3	67.1	0.2513	0.2513		RQ
D 13C-2,3,7,8-TCDD	16.081	211928268	0.77	1.0875	86.1	86.1	0.2356	0.2356	86.11	
2,3,7,8-TCDD	16.097	25590037	0.74	1.0205	11.8	11.8	0.0747	0.0747		
$ 37Cl4-2,3,7,8-TCDD	16.097	104518551		1.1216	41.2	41.2	0.1045	0.1045	103	
A Non-2,3,7,8-sub-TCDD	15.613	2114741	0.82	1.0205	0.9778	0.9778	0.0747	0.9778		
S Total TCDD					12.8	12.8	0.0747	0.0747		
D 13C-1,2,3,7,8-PeCDF	19.700	198494580	1.52	1.3943	62.9	62.9	0.2171	0.2171	62.90	
1,2,3,7,8-PeCDF	19.714	3394505	1.72	1.0794	1.584	1.584	0.0417	0.0417		
D 13C-2,3,4,7,8-PeCDF	20.818	175913453	1.49	1.3370	58.1	58.1	0.2265	0.2265	58.14	
2,3,4,7,8-PeCDF	20.832	1679457	1.58	1.0966	0.8706	0.8706	0.0518	0.0518		
A F1 PeCDFs	17.722						0.0233	0.0233		
A Non-2,3,7,8-sub-PeCDF	20.335	2346880	1.55	1.0880	1.179	1.152	0.0462	0.5595		RQM
S Total PeCDF					3.634	3.607	0.0467	0.0467		RQ
D 13C-1,2,3,7,8-PeCDD	21.432	153796617	1.55	0.8475	80.2	80.2	0.1030	0.1030	80.18	
1,2,3,7,8-PeCDD	21.445	219046	1.72	1.1397	0.1250	0.1250	0.0314	0.0314		M
A Non-2,3,7,8-sub-PeCDD	20.491	61884	1.55	1.1397	0.0708	0.0353	0.0314	0.0353		RQM
S Total PeCDD					0.1958	0.1603	0.0314	0.0314		RQ
D 13C-1,2,3,4,7,8-HxCDF	26.719	140513718	0.53	1.3065	65.6	65.6	0.3966	0.3966	65.63	
1,2,3,4,7,8-HxCDF	26.773	5154628	1.28	1.2552	2.923	2.923	0.0636	0.0636		
D 13C-1,2,3,6,7,8-HxCDF	27.025	160828319	0.53	1.4213	69.1	69.1	0.3646	0.3646	69.05	
1,2,3,6,7,8-HxCDF	27.012	1547966	1.18	1.2102	0.7953	0.7953	0.0637	0.0637		
D 13C-2,3,4,6,7,8-HxCDF	28.570	168228367	0.52	1.3142	78.1	78.1	0.3942	0.3942	78.11	
2,3,4,6,7,8-HxCDF	28.637						0.0624	0.0624		RQU
D 13C-1,2,3,7,8,9-HxCDF	30.408	162831122	0.54	1.3204	75.3	75.3	0.3924	0.3924	75.25	
1,2,3,7,8,9-HxCDF	30.408						0.0471	0.0471		MU
A Non-2,3,7,8-sub-HxCDF	27.432						0.0582	0.0582		U

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					3.718	3.718	0.0592	0.0592		
* 13C-1,2,3,7,8,9-HxCDD	30.101	163871150	1.25	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.063	118703147	1.25	0.8660	83.6	83.6	0.3097	0.3097	83.64	a
1,2,3,4,7,8-HxCDD	29.076	114199	1.24	1.2535	0.0904	0.0767	0.0508	0.0508		RQ
D 13C-1,2,3,6,7,8-HxCDD	29.343	153853029	1.23	0.9827	95.5	95.5	0.2729	0.2729	95.54	a
1,2,3,6,7,8-HxCDD	29.316						0.0553	0.0553		
1,2,3,7,8,9-HxCDD	30.088						0.0487	0.0487		
A Non-2,3,7,8-sub-HxCDD	27.845						0.0514	0.0514		
S Total HxCDD					0.0904	0.0767	0.0516	0.0516		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	118371852	0.45	0.9410	76.8	76.8	1.415	1.415	76.76	
1,2,3,4,6,7,8-HpCDF	32.559	1470637	1.00	1.4783	0.8404	0.8404	0.0222	0.0222		M
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	96719531	0.47	0.8751	67.4	67.4	1.522	1.522	67.45	
1,2,3,4,7,8,9-HpCDF	33.653	527200	0.93	1.3784	0.3954	0.3954	0.0268	0.0268		
A Non-2,3,7,8-sub-HpCDF	33.088	451046	1.10	1.4284	0.2936	0.2936	0.0243	0.2936		M
S Total HpCDF					1.529	1.529	0.0245	0.0245		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	107429812	1.02	0.9049	72.4	72.4	1.920	1.920	72.45	
1,2,3,4,6,7,8-HpCDD	33.410	766544	1.12	1.0862	0.6569	0.6569	0.0219	0.0219		M
A Non-2,3,7,8-sub-HpCDD	33.339	808796	1.06	1.0862	0.6931	0.6931	0.0219	0.6931		a
S Total HpCDD					1.350	1.350	0.0219	0.0219		
D 13C-OCDD	35.558	142520797	0.88	0.5783	150.4	150.4	0.8128	0.8128	75.20	
OCDF	35.630	637658	0.82	1.7248	0.5188	0.5188	0.0191	0.0191		Ma
OCDD	35.570	8616667	0.91	1.2576	9.615	9.615	0.0320	0.0320		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 14-Oct-2020 08:33:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Lims ID: 320-65130-A-11-A
Client ID: 11215702-Tank#1-valve-4-3
Sample Type: Client
Inject. Date: 09-Oct-2020 15:27:48 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-11-A 320-65130-A-11-A
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 08:33:17 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: dadunj Date: 14-Oct-2020 08:33:17

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.900	1		101418221	28580884	26417	66042	1082		
333.9339	15.915	15.900	1		124891280	34983524	38719	96797	904	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.462	1	0.972	117880003	30929113	27645	69112	1119		
317.9389	15.477	15.462	1	0.972	151026747	40294386	33383	83457	1207	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.477	1	1.001	43344204	10994418	30237	75592	364		
305.8987	15.492	15.477	1	1.001	55974789	14358896	38030	95075	378	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	14.297	15.220	-55	0.924	879854	256346	30237	75592	8		
305.8987	14.297	15.220	-55	0.924	1129868	347359	38030	95075	9	0.78(0.65-0.89)	
303.9016	14.539	15.220	-41	0.939	1373282	334406	30237	75592	11		
305.8987	14.539	15.220	-41	0.939	1761287	437801	38030	95075	12	0.78(0.65-0.89)	
303.9016	14.736	15.220	-29	0.952	1210462	320817	30237	75592	11		
305.8987	14.736	15.220	-29	0.952	1487974	388856	38030	95075	10	0.81(0.65-0.89)	
303.9016	14.932	15.220	-17	0.965	1947015	495298	30237	75592	16		
305.8987	14.932	15.220	-17	0.965	2414302	644159	38030	95075	17	0.81(0.65-0.89)	
303.9016	15.174	15.220	-3	0.980	19161611	5468855	30237	75592	181		M
305.8987	15.174	15.220	-3	0.980	24491708	6643054	38030	95075	175	0.78(0.65-0.89)	M
303.9016	15.356	15.220	8	0.992	1198618	259275	30237	75592	9		M
	Empc Correction				1005323	239384	30237	75592	8		
305.8987	15.356	15.220	8	0.992	1305615	310889	38030	95075	8	0.92(0.65-0.89)	
303.9016	15.855	15.220	38	1.024	3200667	809968	30237	75592	27		
305.8987	15.855	15.220	38	1.024	4038308	1084356	38030	95075	29	0.79(0.65-0.89)	

Report Date: 14-Oct-2020 08:33:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	16.051	15.220	50	1.037	722864	178901	30237	75592	6		
	Empc Correction				559167	145822	30237	75592	5		
305.8987	16.051	15.220	50	1.037	726192	189380	38030	95075	5	1.00(0.65-0.89)	
303.9016	17.019	15.220	108	1.100	2672350	636270	30237	75592	21		
305.8987	17.019	15.220	108	1.100	3441901	849343	38030	95075	22	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.081	16.066	1	1.010	92313655	22577611	26417	66042	855		
333.9339	16.081	16.066	1	1.010	119614613	28652844	38719	96797	740	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.081	1	1.001	10899236	2757724	8579	21447	321		
321.8936	16.097	16.081	1	1.001	14690801	3719944	7033	17582	529	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.081	1	1.011	104518551	25784049	29801	74502	865		
A Non-2,3,7,8-sub-TCDD											
319.8965	16.414	15.613	48	1.021	950139	189234	8579	21447	22		
321.8936	16.399	15.613	47	1.020	1164602	244851	7033	17582	35	0.82(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.700	19.673	2	1.238	119868456	21456018	48828	122070	439		
353.8970	19.700	19.673	2	1.238	78626124	14005747	28155	70387	497	1.52(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.714	19.700	1	1.001	2146845	365804	2617	6542	140		
341.8567	19.727	19.700	2	1.001	1247660	203870	3769	9422	54	1.72(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.818	20.791	2	1.308	105233751	16928956	48828	122070	347		
353.8970	20.818	20.791	2	1.308	70679702	11189301	28155	70387	397	1.49(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.805	2	1.001	1028173	151980	2617	6542	58		
341.8567	20.859	20.805	3	1.002	651284	103088	3769	9422	27	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.722						1404	3510			
341.8567	17.722						1824	4560			
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	18.609	20.335	-103	0.945	713891	132292	2617	6542	51		M
341.8567	18.609	20.335	-103	0.945	425699	82536	3769	9422	22	1.68(1.32-1.78)	M
339.8597	20.150	20.335	-11	1.023	442985	77947	2617	6542	30		
341.8567	20.164	20.335	-10	1.024	294588	51763	3769	9422	14	1.50(1.32-1.78)	
339.8597	21.145	20.335	48	1.073	339445	50035	2617	6542	19		
	Empc Correction				285514	40906	2617	6542	16		
341.8567	21.118	20.335	47	1.072	184203	26391	3769	9422	7	1.84(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.432	21.404	2	1.347	93557251	15054600	12587	31467	1196		
369.8919	21.432	21.404	2	1.347	60239366	9740670	9612	24030	1013	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	21.445	21.432	1	1.001	138395	29302	1910	4775	15		M
357.8516	21.459	21.432	2	1.001	80651	15562	1644	4110	9	1.72(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											RQM
355.8546	18.786	20.491	-102	0.877	37616	8241	1910	4775	4		
357.8516	18.759	20.491	-104	0.875	86445	17661	1644	4110	11	0.44(1.32-1.78)	M
	Empc Correction				24268	5316	1644	4110	3		
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.719	26.706	1	0.888	48895947	5673363	14710	36775	386		
385.8610	26.733	26.706	2	0.888	91617771	10811785	27739	69347	390	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.773	26.733	2	1.002	2889394	357004	3029	7572	118		
375.8178	26.773	26.733	2	1.002	2265234	281133	2234	5585	126	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.025	26.986	2	0.898	55879810	6128279	14710	36775	417		
385.8610	27.012	26.986	2	0.897	104948509	10933432	27739	69347	394	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.012	27.012	0	1.000	837138	80918	3029	7572	27		
375.8178	27.039	27.012	2	1.000	710828	71151	2234	5585	32	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.570	28.544	2	0.949	57752271	6059868	14710	36775	412		
385.8610	28.570	28.544	2	0.949	110476096	11241036	27739	69347	405	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQU
373.8208	28.570						3029	7572			
375.8178	28.570						2234	5585			
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.381	2	1.010	57173930	8008846	14710	36775	544		
385.8610	30.408	30.381	2	1.010	105657192	14666895	27739	69347	529	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											MU
373.8208	30.394						3029	7572			
375.8178	30.394						2234	5585			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	27.432						3029	7572			
375.8178	27.432						2234	5585			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.101	30.062	2		91019364	11465897	10878	27195	1054		
403.8529	30.101	30.062	2		72851786	9015830	11096	27740	813	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.063	29.023	2	0.965	65829567	7068611	10878	27195	650		a
403.8529	29.063	29.023	2	0.965	52873580	5610414	11096	27740	506	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8157	29.076	29.049	2	1.000	83541	11754	1526	3815	8		
	Empc Correction				63217	13024	1526	3815	9		
391.8127	29.076	29.049	2	1.000	50982	10504	1706	4265	6	1.64(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.343	29.276	4	0.975	84841322	7308689	10878	27195	672		a
403.8529	29.343	29.276	4	0.975	69011707	5843206	11096	27740	527	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.316						1526	3815			
391.8127	29.316						1706	4265			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8157	30.088						1526	3815			
391.8127	30.088						1706	4265			
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.845						1526	3815			
391.8127	27.845						1706	4265			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.535	1	1.081	36993974	10440962	37883	94707	276		
419.8220	32.547	32.535	1	1.081	81377878	22861487	71239	178097	321	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	32.559	32.547	1	1.000	733551	196492	2046	5115	96		M
409.7789	32.559	32.547	1	1.000	737086	236805	2325	5812	102	1.00(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.629	1	1.118	30943730	9023416	37883	94707	238		
419.8220	33.641	33.629	1	1.118	65775801	20576781	71239	178097	289	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.641	1	1.000	253400	77980	2046	5115	38		
409.7789	33.653	33.641	1	1.000	273800	80520	2325	5812	35	0.93(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7818	32.900	33.088	-11	1.011	235895	70044	2046	5115	34		M
409.7789	32.900	33.088	-11	1.011	215151	57514	2325	5812	25	1.10(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.386	1	1.110	54311962	18566624	60644	151610	306		
437.8140	33.398	33.386	1	1.110	53117850	17943948	81712	204280	220	1.02(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.410	33.398	1	1.000	405725	149423	1875	4687	80		M
425.7737	33.410	33.398	1	1.000	360819	132915	1599	3997	83	1.12(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											a
423.7766	32.851	33.339	-29	0.984	416827	120576	1875	4687	64		a
425.7737	32.851	33.339	-29	0.984	391969	124048	1599	3997	78	1.06(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.546	1	1.181	66860678	21837184	19394	48485	1126		
471.7750	35.558	35.546	1	1.181	75660119	24314910	19115	47787	1272	0.88(0.76-1.02)	
OCDF											Ma
441.7428	35.630	35.618	1	1.002	287434	97156	1247	3117	78		M
443.7399	35.630	35.618	1	1.002	350224	112661	1795	4487	63	0.82(0.76-1.02)	M
OCDD											
457.7377	35.570	35.558	1	1.000	4107704	1287893	1729	4322	745		
459.7348	35.570	35.558	1	1.000	4508963	1433739	1986	4965	722	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Lims ID: 320-65130-A-11-A
Client ID: 11215702-Tank#1-valve-4-3
Inject. Date: 09-Oct-2020 15:27:48
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 420483
Lims Sample ID: 4

Non-2,3,7,8-sub-TCDF, RT: 15.220

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	268906750	71223499

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	268906750	71223499

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	879854	256346	1129868	347359	0.7839	0.78	
14.539	1373282	334406	1761287	437801	1.22	0.78	
14.736	1210462	320817	1487974	388856	1.05	0.81	
14.932	1947015	495298	2414302	644159	1.70	0.81	
15.174	19161611	5468855	24491708	6643054	17.0	0.78	M
15.356	1198618	259275	1305615	310889	0.9768	0.92	RQMa
15.356	1005323	239384	1305615	310889	0.9014		Empc Correction
15.855	3200667	809968	4038308	1084356	2.82	0.79	
16.051	722864	178901	726192	189380	0.5652	1.00	RQ
16.051	559167	145822	726192	189380	0.5014		Empc Correction
17.019	2672350	636270	3441901	849343	2.38	0.78	
Signal Totals:							
	32009731	8707166	40797155	10895197			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	73163878	19655333				0.79	RQMa
	72806886	19602363					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 28.538 = (73163878 * 100.000) / (268906750 * 0.953)
Empc Amount: 28.399 = (72806886 * 100.000) / (268906750 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Lims ID: 320-65130-A-11-A
Client ID: 11215702-Tank#1-valve-4-3
Inject. Date: 09-Oct-2020 15:27:48
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 420483
Lims Sample ID: 4

Non-2,3,7,8-sub-TCDD, RT: 15.613

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	211928268	51230455

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	211928268	51230455

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.414	950139	189234	1164602	244851	0.9778	0.82	
Signal Totals:							
	950139	189234	1164602	244851			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2114741	434085				0.82	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.9778 = (2114741 * 100.000) / (211928268 * 1.020)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Lims ID:	320-65130-A-11-A		
Client ID:	11215702-Tank#1-valve-4-3		
Inject. Date:	09-Oct-2020 15:27:48	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDF, RT: 20.335

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	198494580	35461765
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	175913453	28118257

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	187204016	31790011

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.609	713891	132292	425699	82536	0.5595	1.68	M
20.150	442985	77947	294588	51763	0.3621	1.50	
21.145	339445	50035	184203	26391	0.2571	1.84	RQ
21.145	285514	40906	184203	26391	0.2306		Empc Correction
Signal Totals:							
	1442390	251145	904490	160690			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2400811	420964				1.65	RQM
	2346880	411835					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.179 = (2400811 * 100.000) / (187204016 * 1.088)
Empc Amount: 1.152 = (2346880 * 100.000) / (187204016 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Lims ID: 320-65130-A-11-A
Client ID: 11215702-Tank#1-valve-4-3
Inject. Date: 09-Oct-2020 15:27:48 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 420483 Lims Sample ID: 4

Non-2,3,7,8-sub-PeCDD, RT: 20.491

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	153796617	24795270
Averages:					
	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	153796617	24795270

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.786	37616	8241	86445	17661	0.0708	0.44	RQM
18.786	37616	8241	24268	5316	0.0353		Empc Correction
Signal Totals:							
	37616	8241	24268	5316			
Total Responses:							
	Rx Area	Rx Height			Amount	Ratio	Flags
	124061	25902				0.44	RQM
	61884	13557					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0708 = (124061 * 100.000) / (153796617 * 1.140)
Empc Amount: 0.0353 = (61884 * 100.000) / (153796617 * 1.140)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Lims ID:	320-65130-A-11-A		
Client ID:	11215702-Tank#1-valve-4-3		
Inject. Date:	09-Oct-2020 15:27:48	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDF, RT: 27.432

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	140513718	16485148
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	160828319	17061711
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	168228367	17300904
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	162831122	22675741

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	158100381	18380876

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Lims ID:	320-65130-A-11-A		
Client ID:	11215702-Tank#1-valve-4-3		
Inject. Date:	09-Oct-2020 15:27:48	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDF, RT: 33.088

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	118371852	33302449
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	96719531	29600197

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	107545691	31451323

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.900	235895	70044	215151	57514	0.2936	1.10	M
Signal Totals:							
	235895	70044	215151	57514			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	451046	127558				1.10	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2936 = (451046 * 100.000) / (107545691 * 1.428)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Lims ID:	320-65130-A-11-A		
Client ID:	11215702-Tank#1-valve-4-3		
Inject. Date:	09-Oct-2020 15:27:48	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	107429812	36510572

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	107429812	36510572

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	416827	120576	391969	124048	0.6931	1.06	a
Signal Totals:							
	416827	120576	391969	124048			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	808796	244624				1.06	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6931 = (808796 * 100.000) / (107429812 * 1.086)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.03)

Signal: 1

Processing Integration Results

RT = 15.174 Area = 20360230

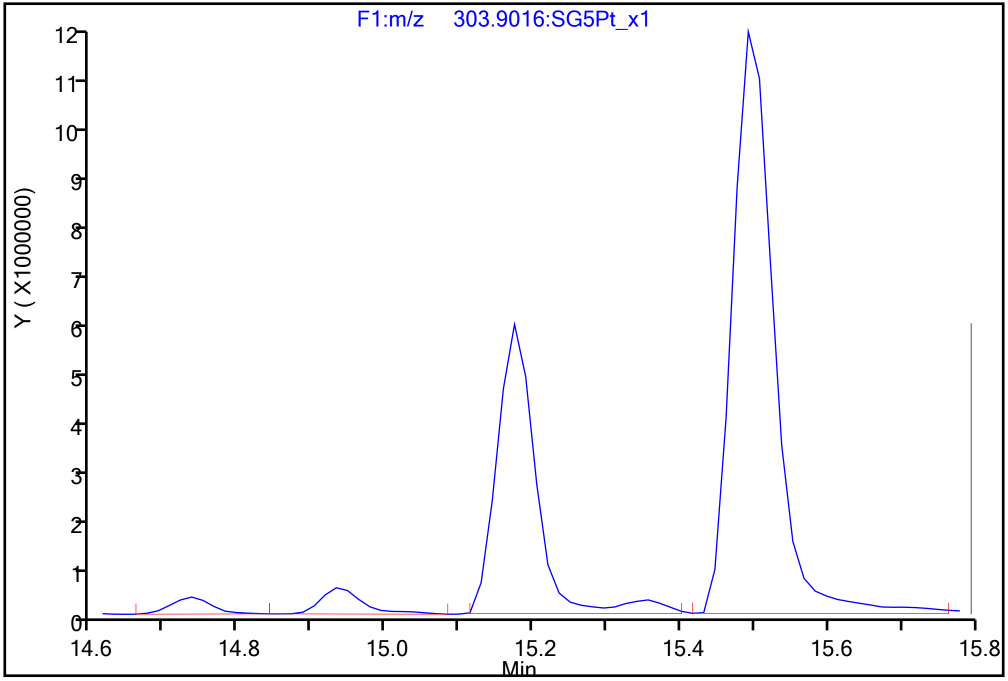

Manual Integration Results

RT = 15.174 Area = 19161611 M

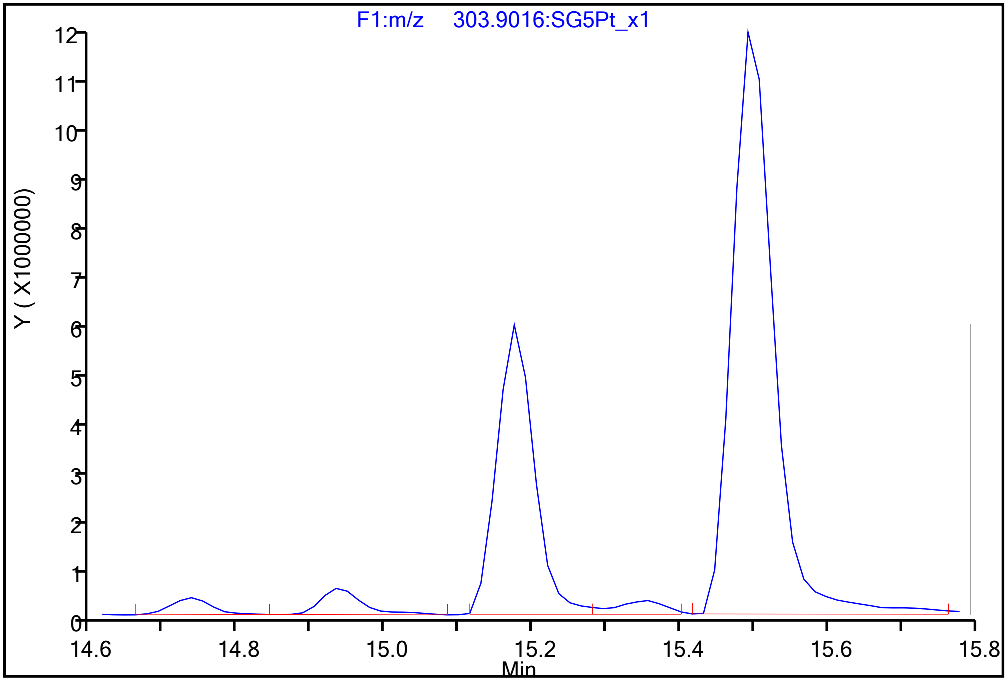

Reviewer: dadunj, 14-Oct-2020 08:27:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (13.41- 17.03)

Signal: 2

Processing Integration Results

RT = 15.174 Area = 25799743

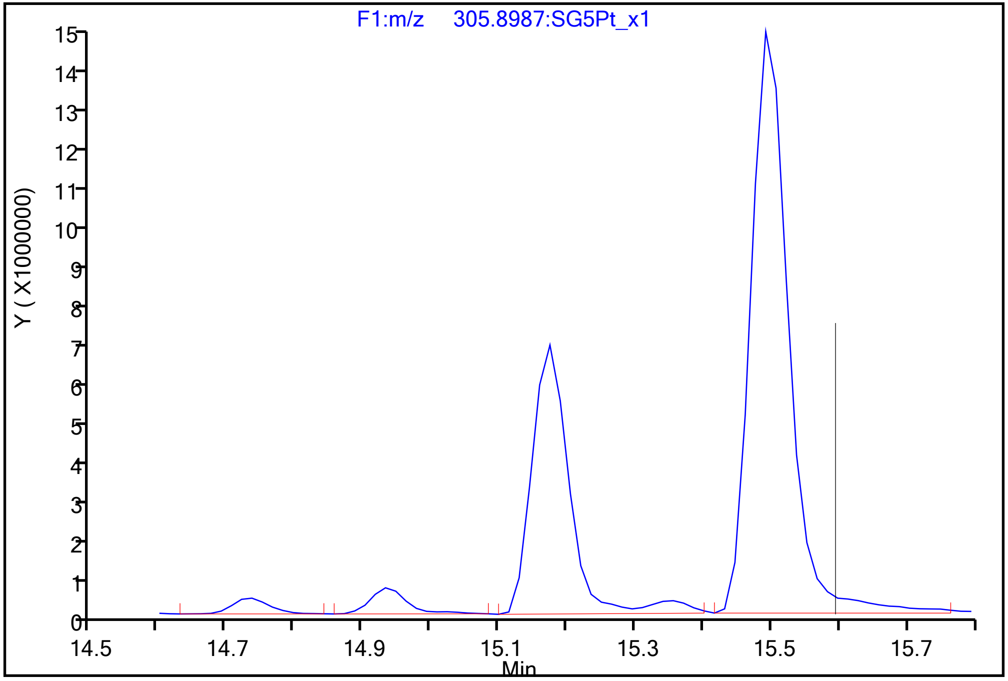

Manual Integration Results

RT = 15.174 Area = 24491708 M

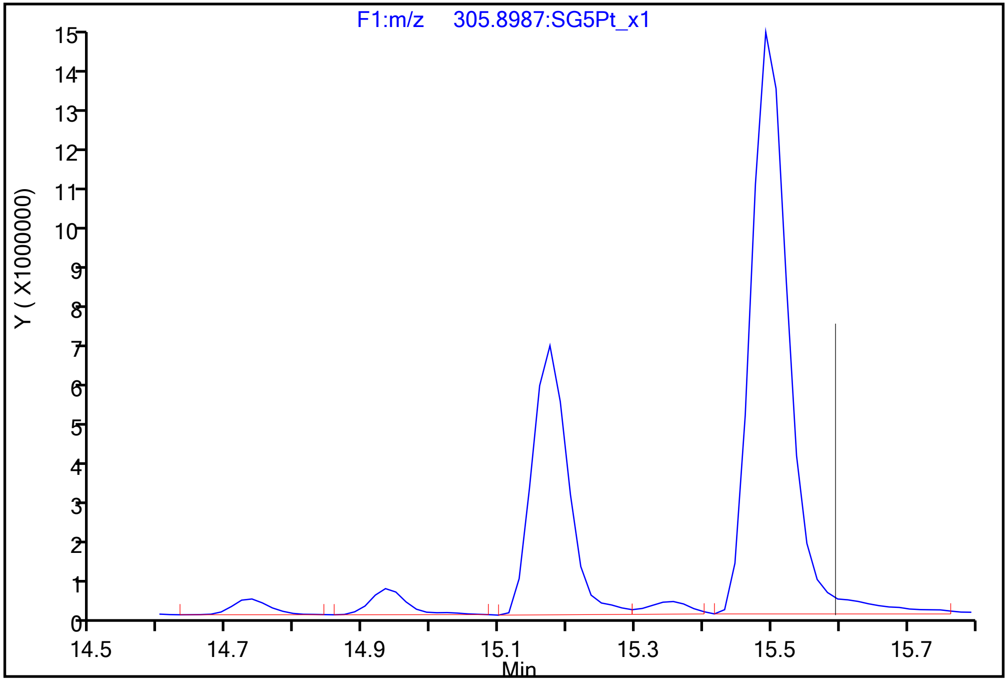

Reviewer: dadunj, 14-Oct-2020 08:27:24

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 08:33:18

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11
Client ID:	11215702-Tank#1-valve-4-3		
Operator ID:	SMA	ALS Bottle#:	4 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.03)

Signal: 1

Processing Integration Results

Not Detected

RT: 13.41- 17.03

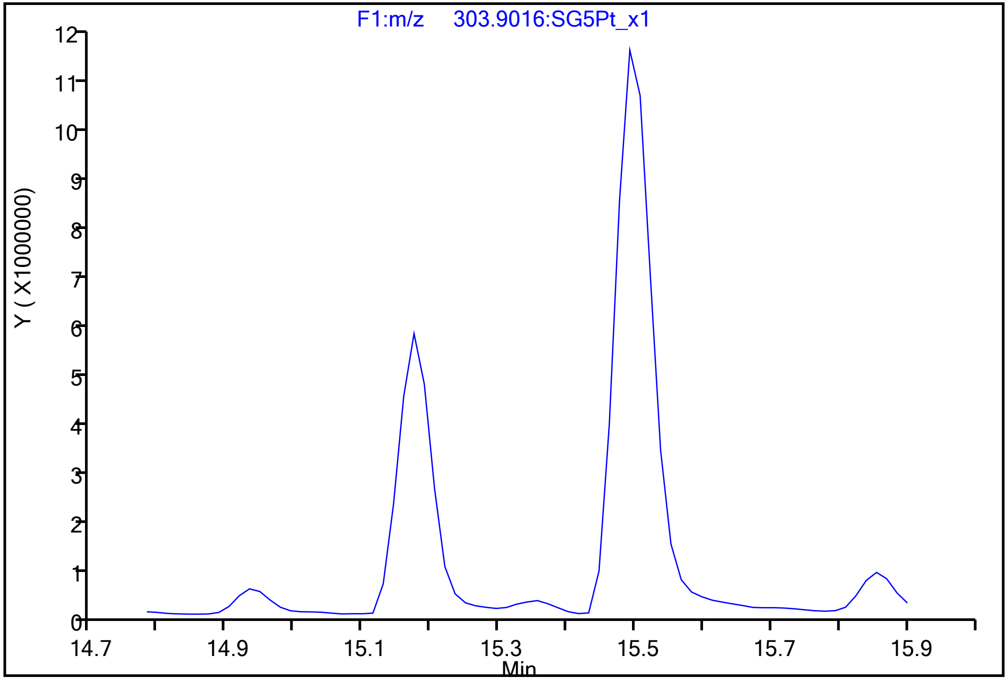

Manual Integration Results

RT = 15.356 Area = 1198618 M

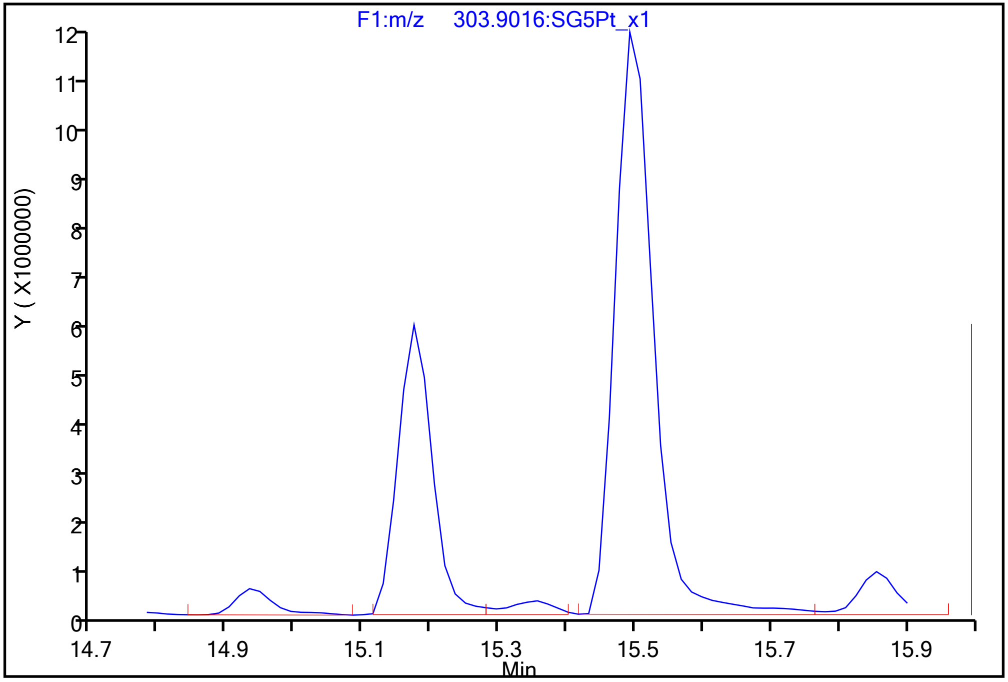

Reviewer: dadunj, 14-Oct-2020 08:27:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (18.23- 22.44)

Signal: 1

Processing Integration Results

RT = 18.609 Area = 760395

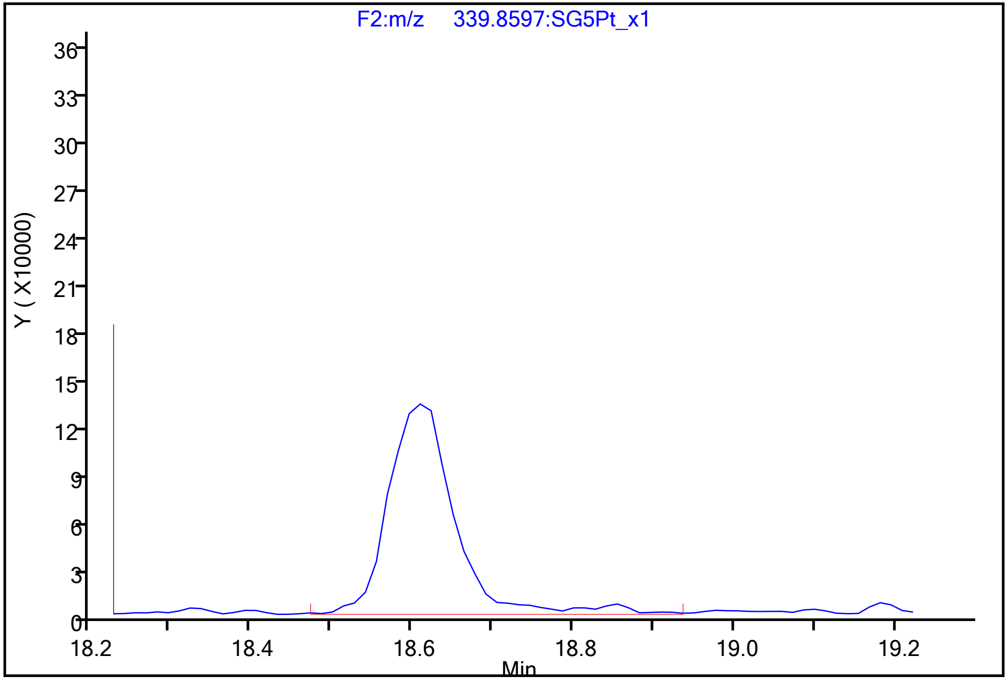

Manual Integration Results

RT = 18.609 Area = 713891 M

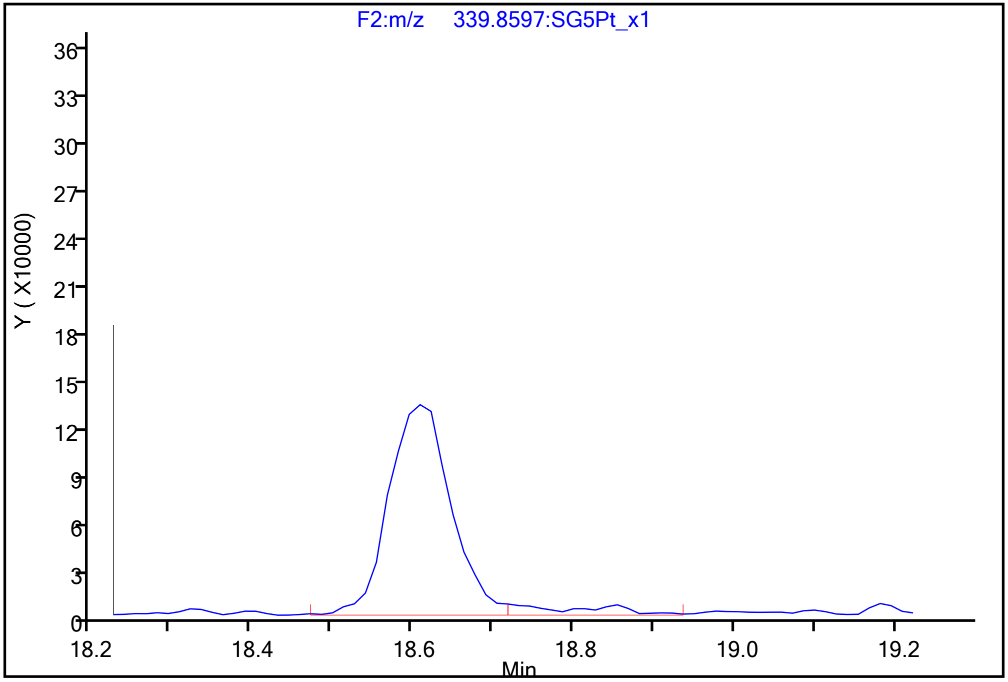

Reviewer: dadunj, 14-Oct-2020 08:29:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (18.23- 22.44)

Signal: 2

Processing Integration Results

RT = 18.609 Area = 442640

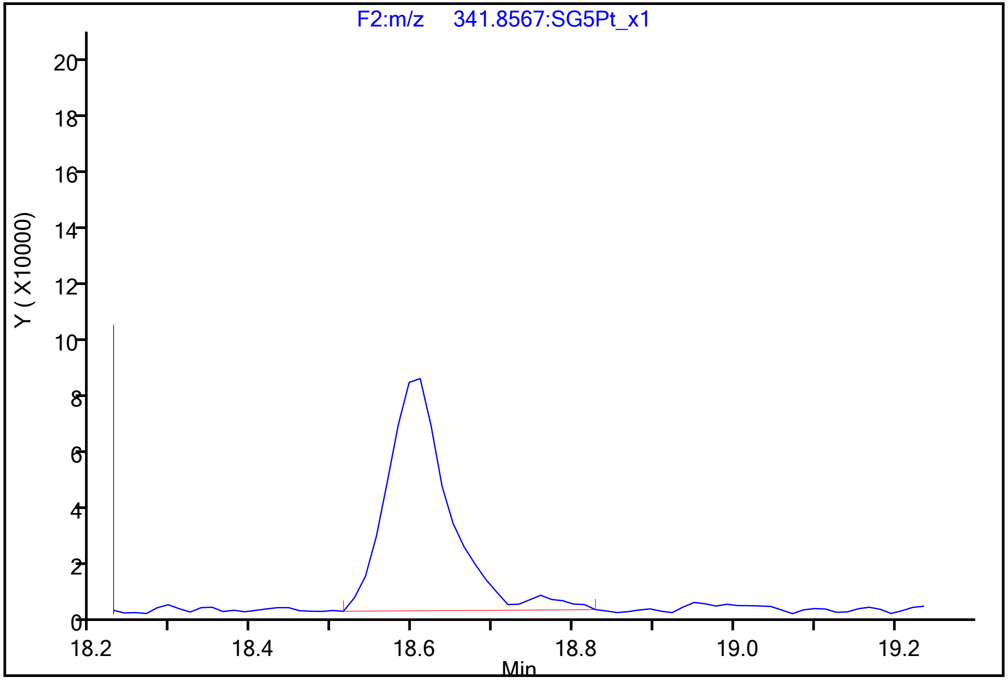

Manual Integration Results

RT = 18.609 Area = 425699 M

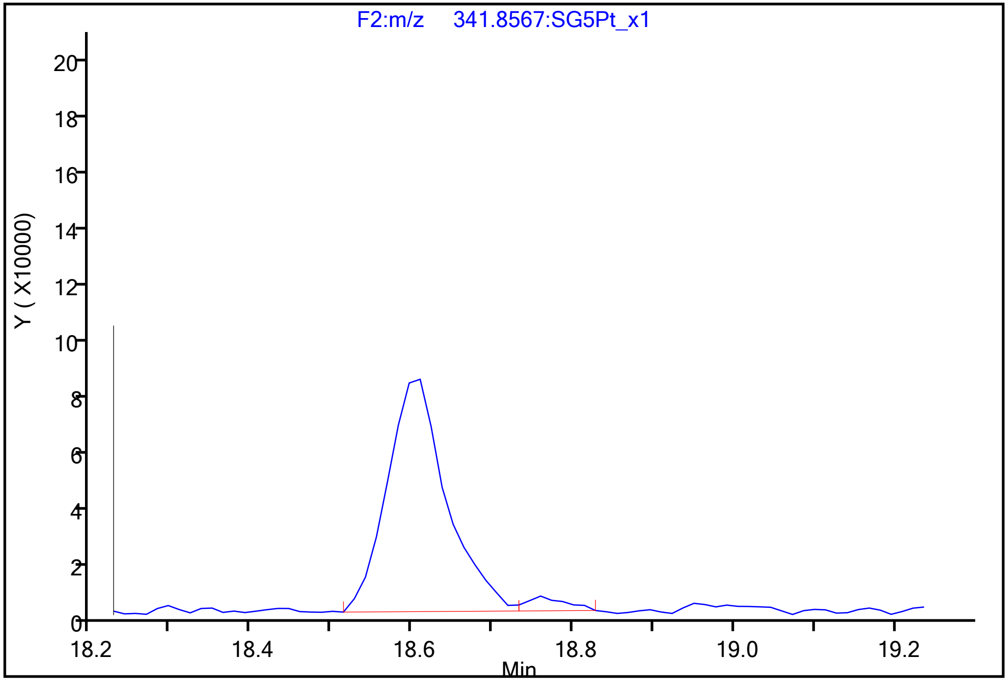

Reviewer: dadunj, 14-Oct-2020 08:29:04

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT:	21.45
Area:	135286
Amount:	0.133373
Amount Units:	pg/ul

Processing Integration Results

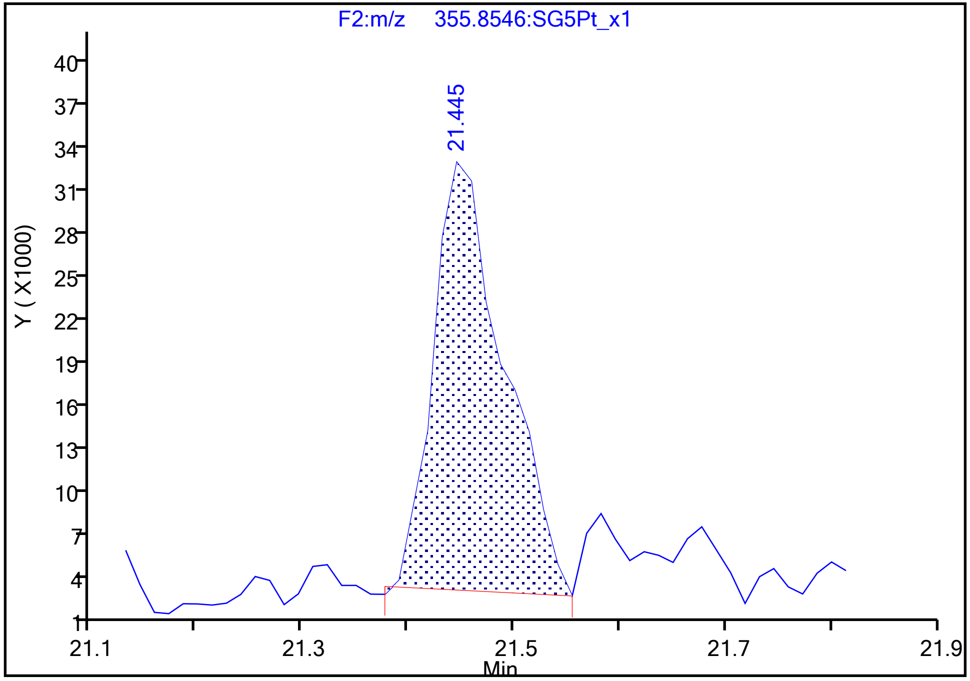

RT:	21.45
Area:	138395
Amount:	0.124972
Amount Units:	pg/ul

Manual Integration Results

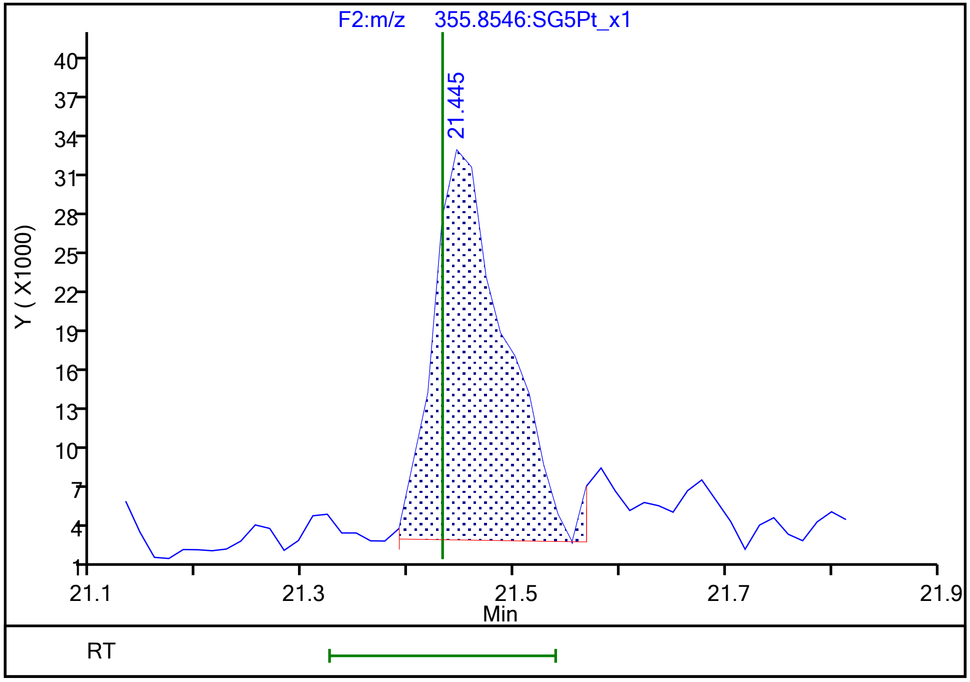

Reviewer: dadunj, 14-Oct-2020 08:29:20

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11
Client ID:	11215702-Tank#1-valve-4-3		
Operator ID:	SMA	ALS Bottle#:	4 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

RT:	21.46
Area:	98485
Amount:	0.133373
Amount Units:	pg/ul

Processing Integration Results

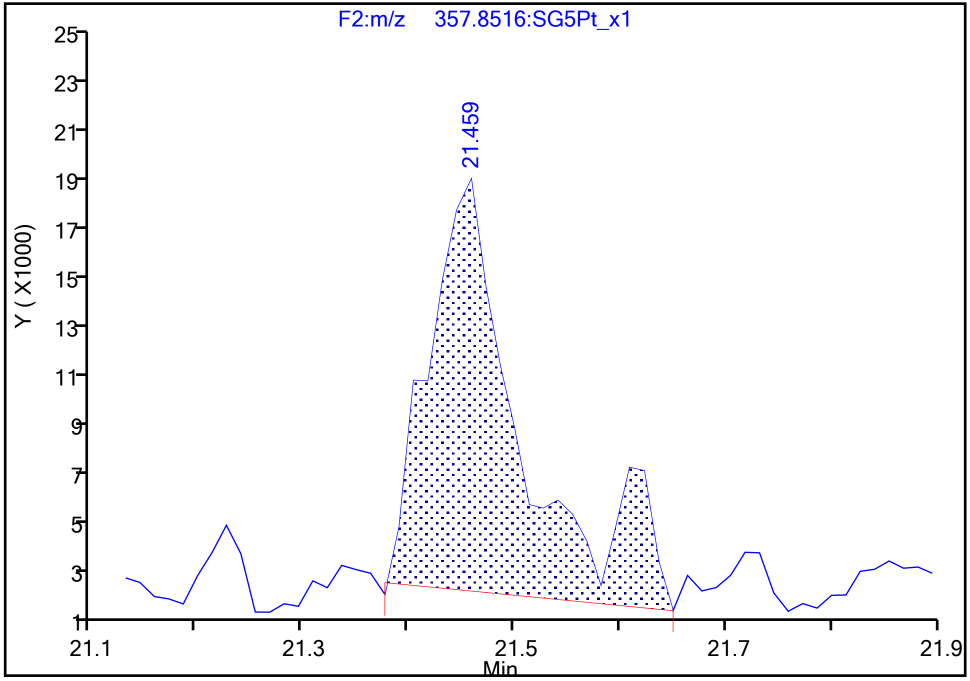

RT:	21.46
Area:	80651
Amount:	0.124972
Amount Units:	pg/ul

Manual Integration Results

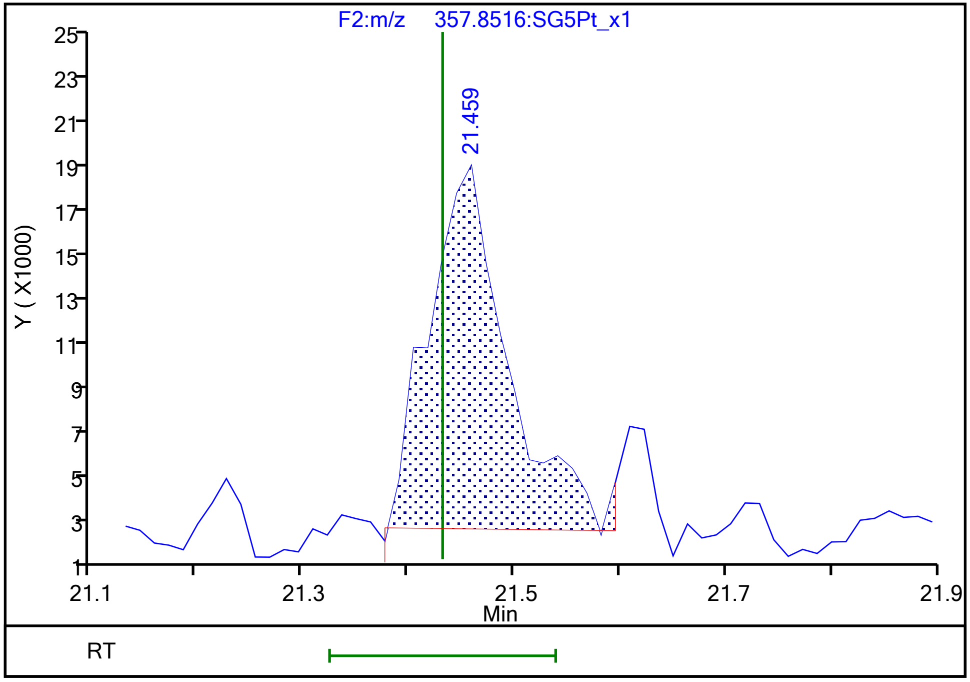

Reviewer: dadunj, 14-Oct-2020 08:29:28

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDD, Signal: 2, m/z: 357.8516, RT: (18.72- 22.27)

Signal: 2

Processing Integration Results

RT = 18.759 Area = 92888

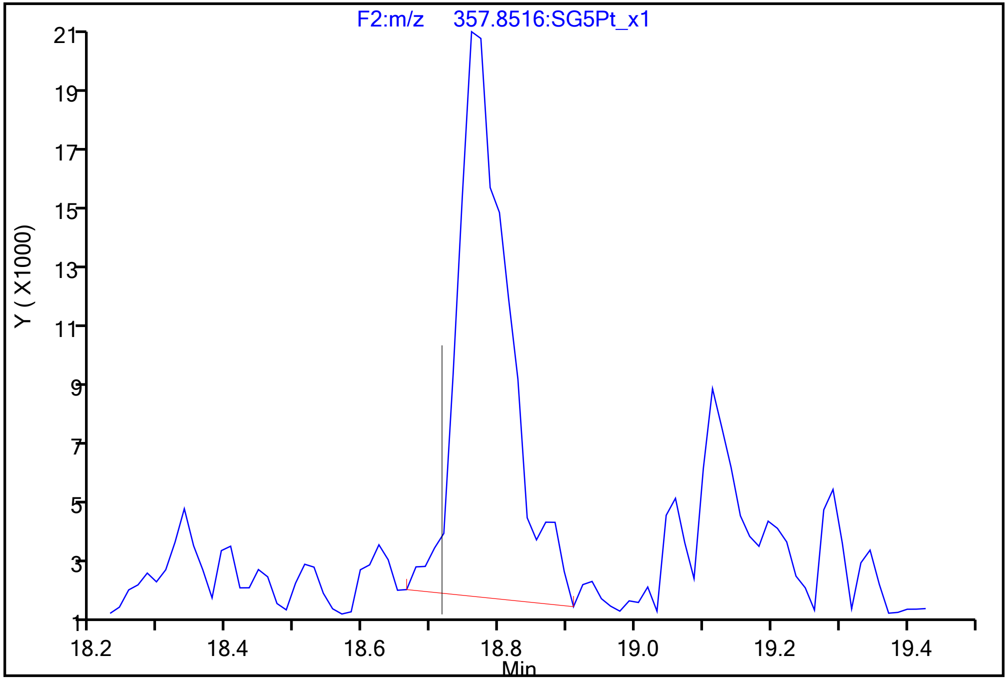

Manual Integration Results

RT = 18.759 Area = 86445 M

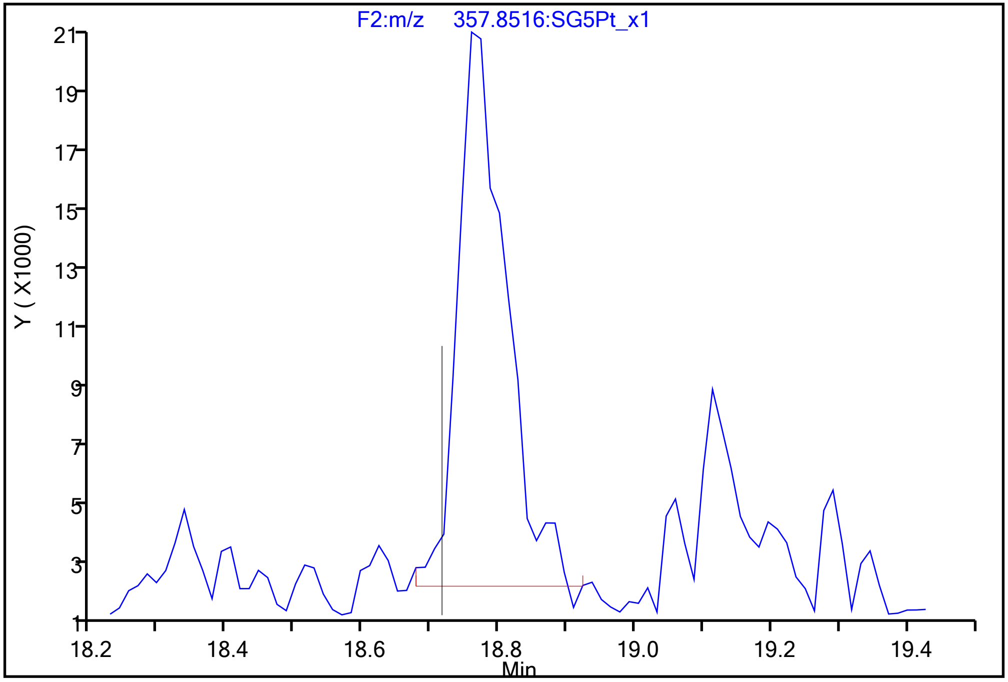

Reviewer: dadunj, 14-Oct-2020 08:29:38

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.02

Processing Integration Results

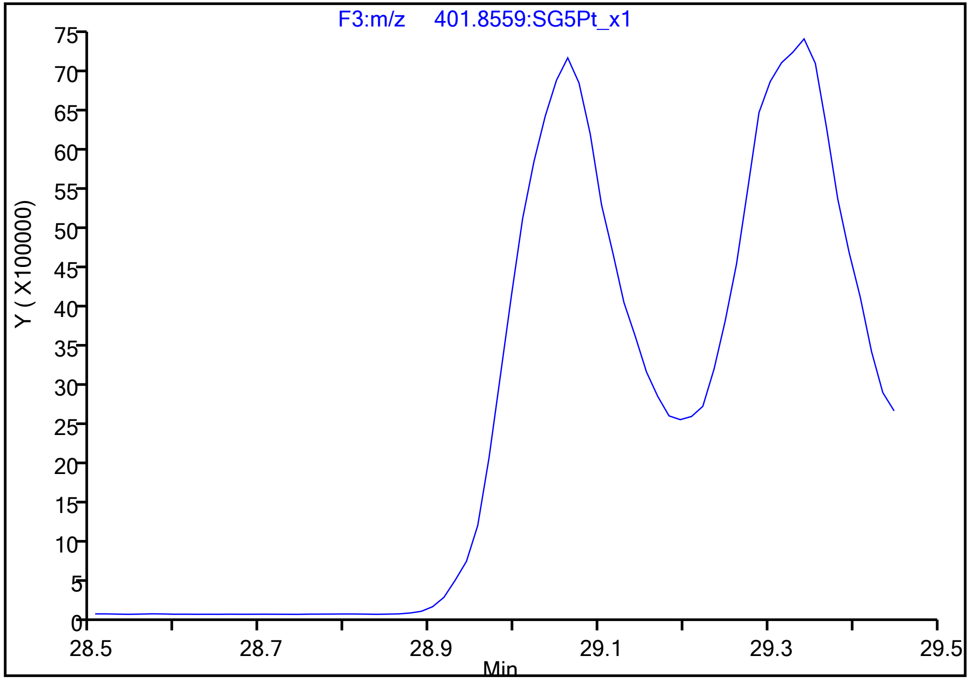

RT: 29.06

Area: 65829567

Amount: 83.643131

Amount Units: pg/ul

Manual Integration Results

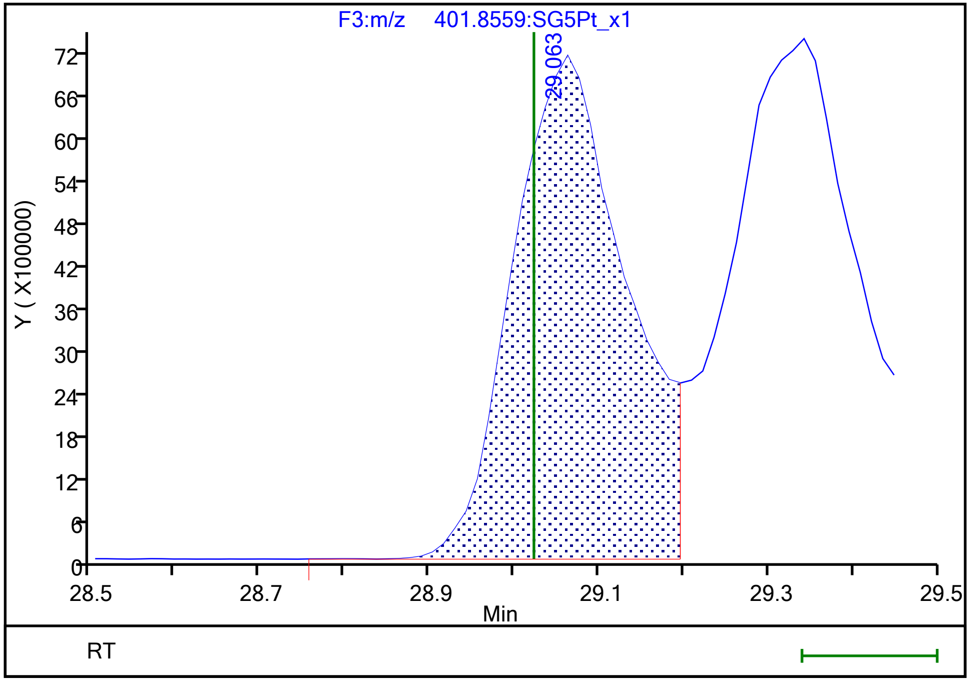

Reviewer: messecara, 13-Oct-2020 00:02:26

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Injection Date: 09-Oct-2020 15:27:48
Instrument ID: 3D5
Lims ID: 320-65130-A-11-A
Lab Sample ID: 320-65130-11
Client ID: 11215702-Tank#1-valve-4-3
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.10
Area:	91019364
Amount:	101.7609
Amount Units:	pg/ul

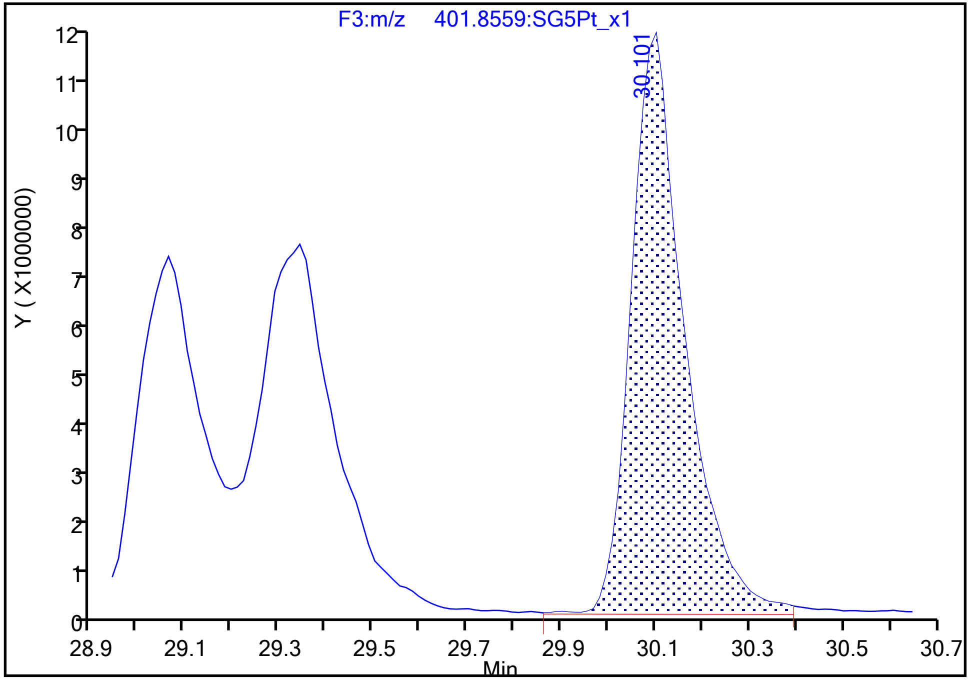

Manual Integration Results

RT:	29.34
Area:	84841322
Amount:	95.539830
Amount Units:	pg/ul

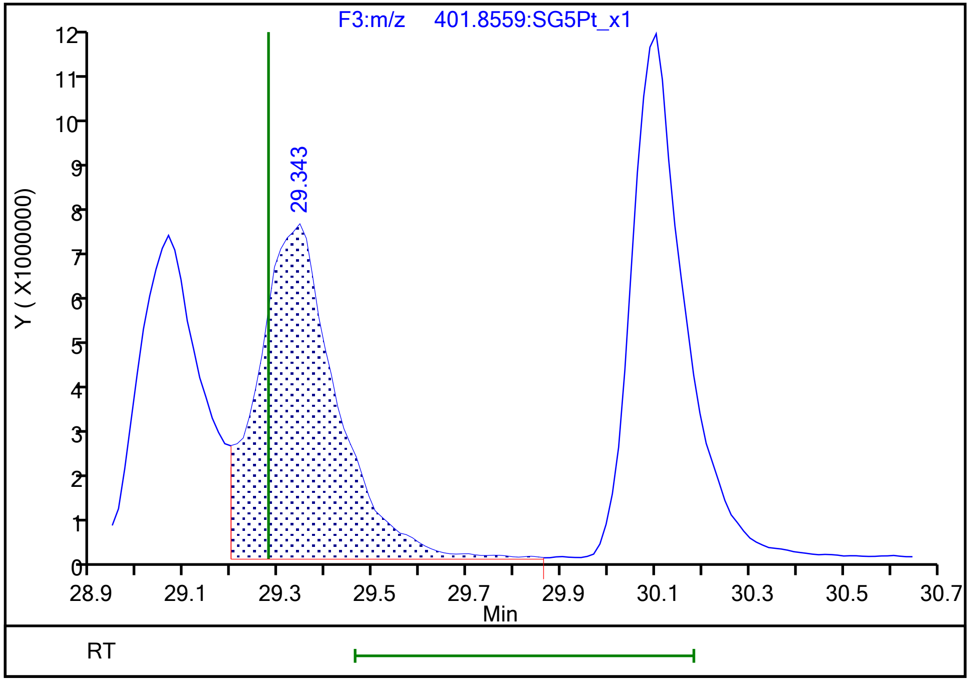

Reviewer: messecara, 13-Oct-2020 02:09:34
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT:	32.56
Area:	764330
Amount:	0.863009
Amount Units:	pg/ul

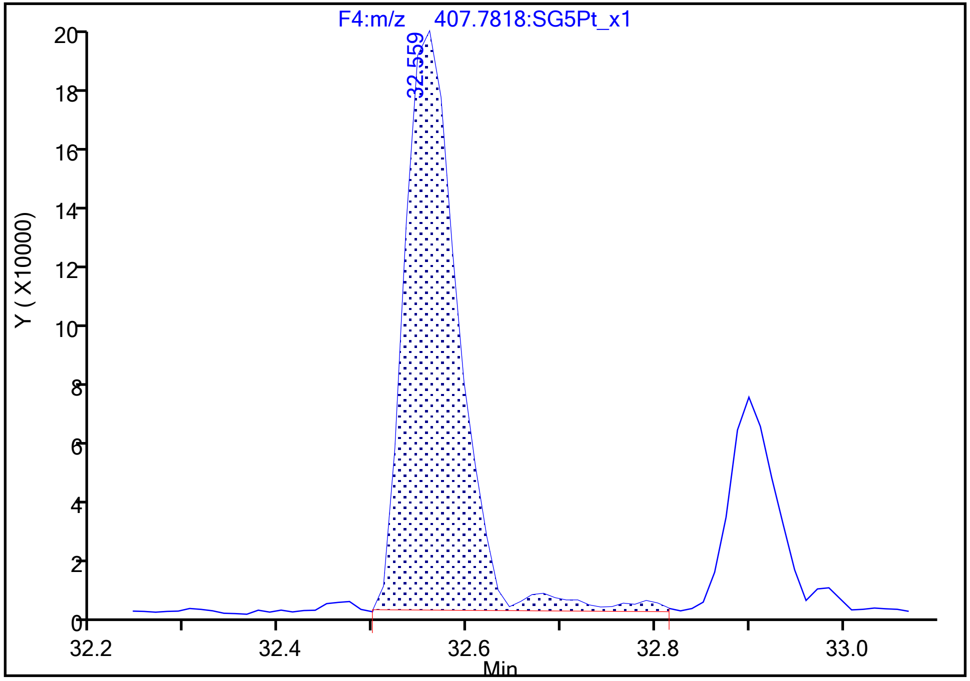

Manual Integration Results

RT:	32.56
Area:	733551
Amount:	0.840388
Amount Units:	pg/ul

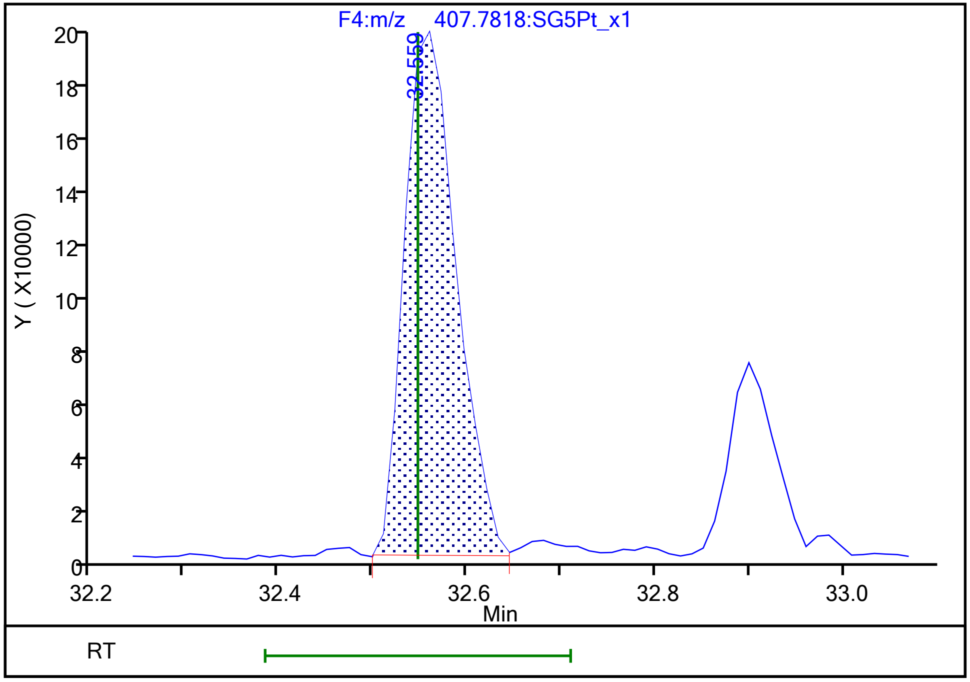

Reviewer: dadunj, 14-Oct-2020 08:30:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT: 32.56
Area: 745892
Amount: 0.863009
Amount Units: pg/ul

Processing Integration Results

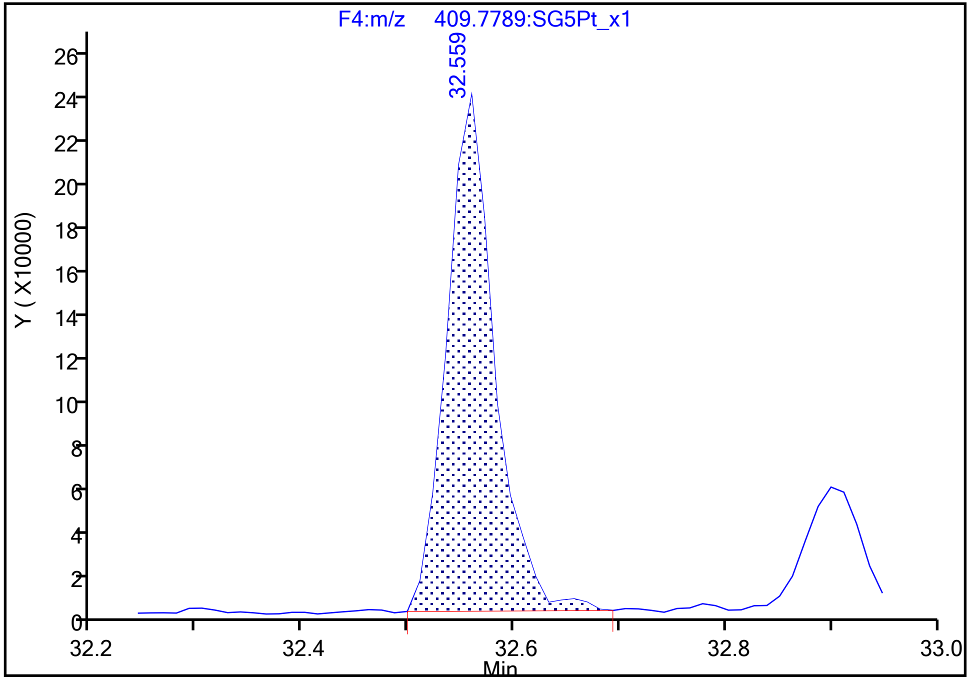

RT: 32.56
Area: 737086
Amount: 0.840388
Amount Units: pg/ul

Manual Integration Results

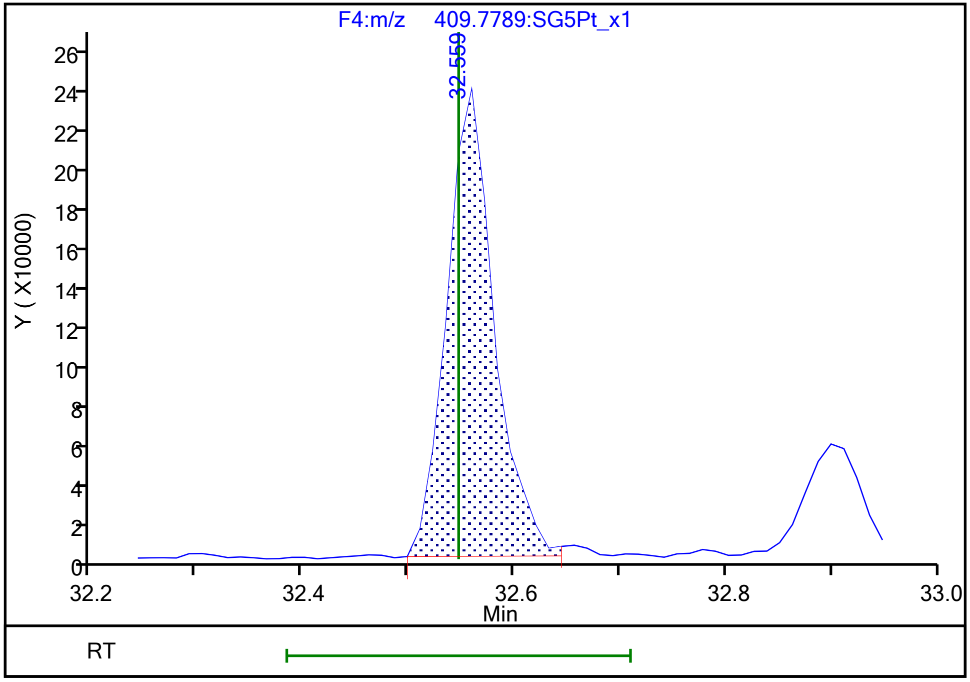

Reviewer: dadunj, 14-Oct-2020 08:31:01

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7818, RT: (32.50- 33.67)

Signal: 1

Processing Integration Results

RT = 32.900 Area = 250104

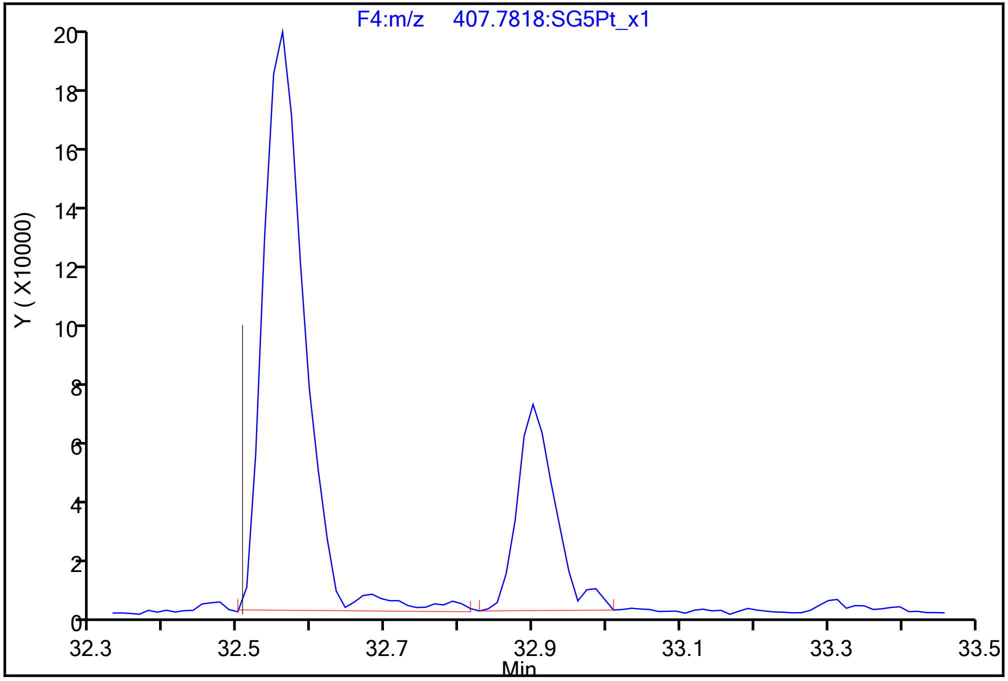

Manual Integration Results

RT = 32.900 Area = 235895 M

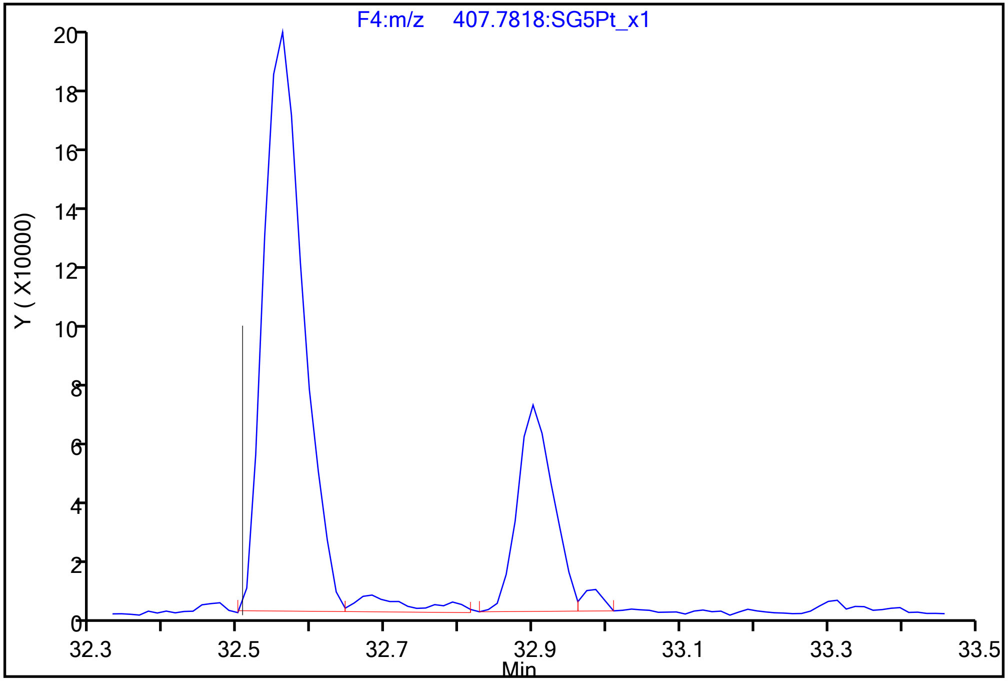

Reviewer: dadunj, 14-Oct-2020 08:31:15

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Injection Date: 09-Oct-2020 15:27:48 Instrument ID: 3D5
Lims ID: 320-65130-A-11-A Lab Sample ID: 320-65130-11
Client ID: 11215702-Tank#1-valve-4-3
Operator ID: SMA ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F4:HRSIR

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7789, RT: (32.50- 33.67)

Signal: 2

Processing Integration Results

RT = 32.900 Area = 247258

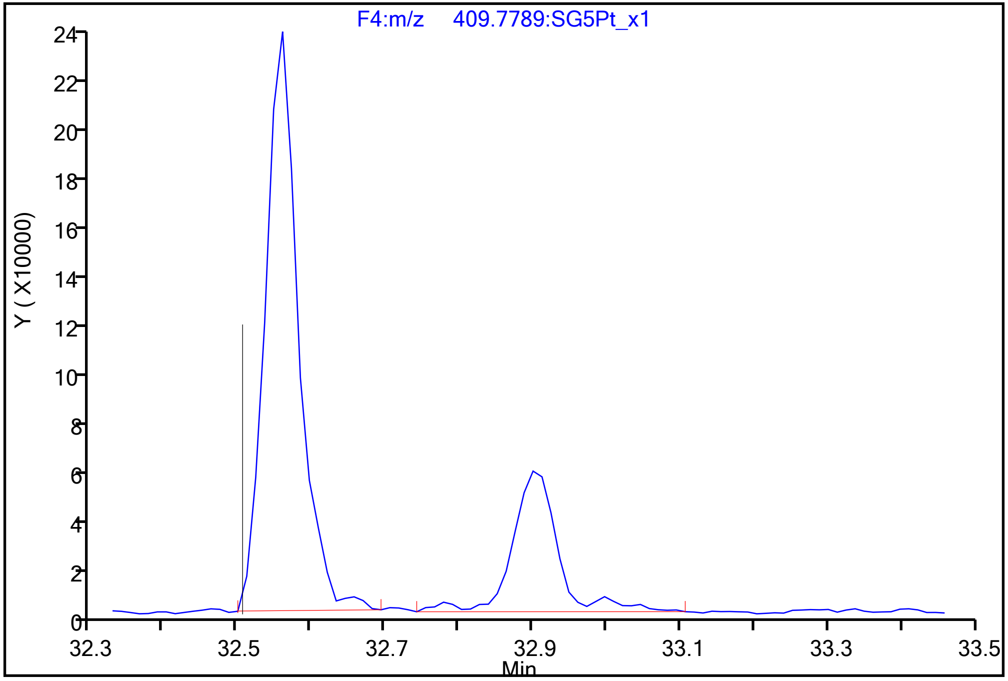

Manual Integration Results

RT = 32.900 Area = 215151 M

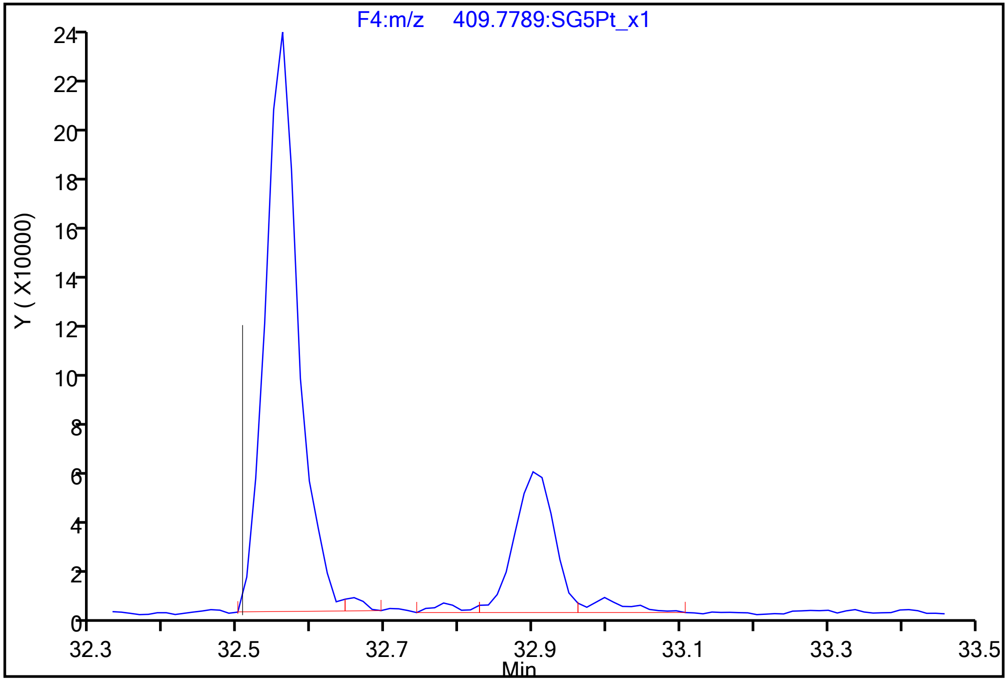

Reviewer: dadunj, 14-Oct-2020 08:31:13

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11
Client ID:	11215702-Tank#1-valve-4-3		
Operator ID:	SMA	ALS Bottle#:	4 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 33.41
Area: 399766
Amount: 0.728778
Amount Units: pg/ul

Processing Integration Results

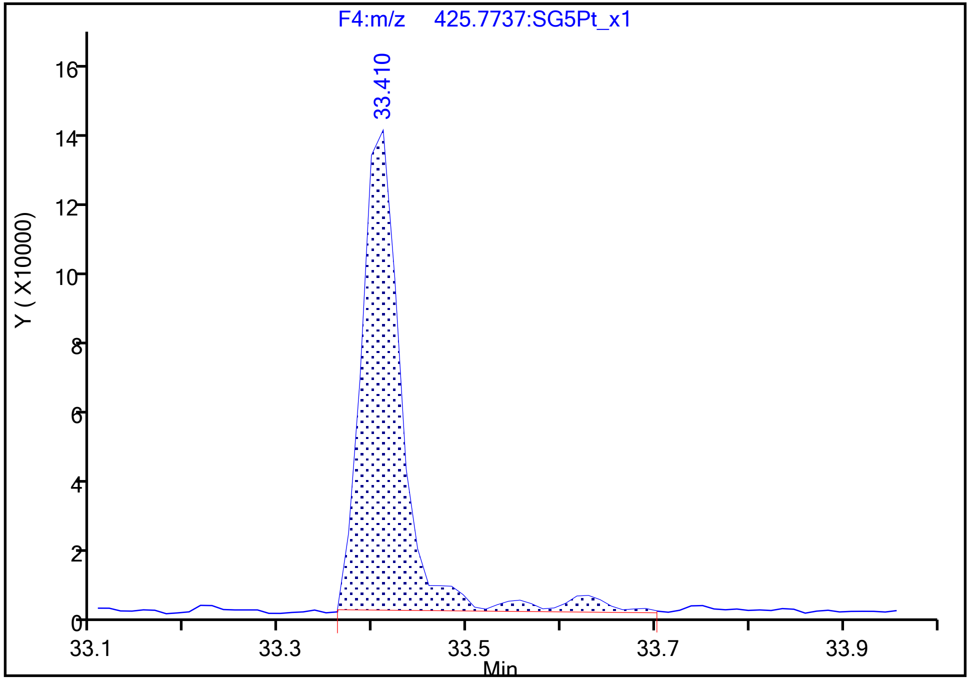

RT: 33.41
Area: 360819
Amount: 0.656891
Amount Units: pg/ul

Manual Integration Results

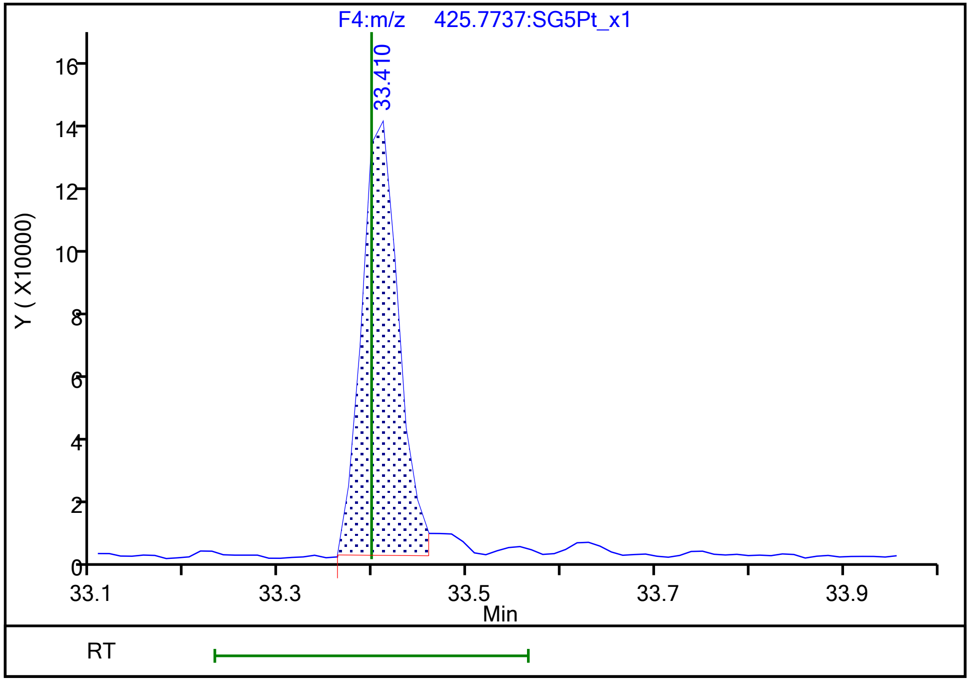

Reviewer: dadunj, 14-Oct-2020 08:31:26

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 33.41
Area: 450665
Amount: 0.728778
Amount Units: pg/ul

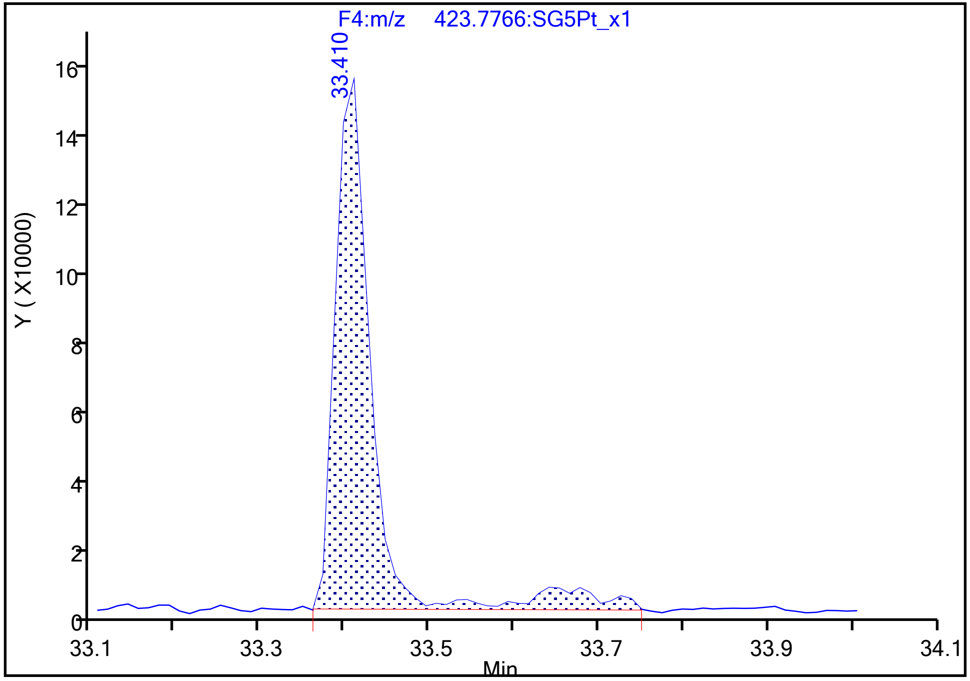

Manual Integration Results

RT: 33.41
Area: 405725
Amount: 0.656891
Amount Units: pg/ul

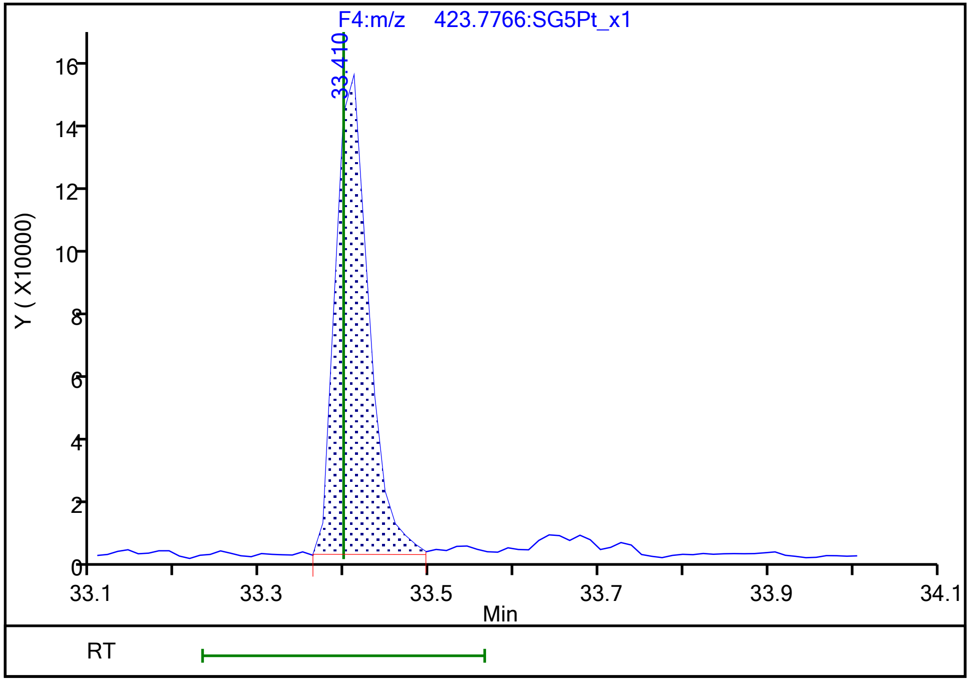

Reviewer: dadunj, 14-Oct-2020 08:31:27

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 3

Processing Integration Results

RT:	35.63
Area:	669513
Amount:	0.544718
Amount Units:	pg/ul

Manual Integration Results

RT:	35.63
Area:	637658
Amount:	0.518800
Amount Units:	pg/ul

Reviewer: dadunj, 14-Oct-2020 08:31:56

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 14-Oct-2020 08:33:18
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Injection Date: 09-Oct-2020 15:27:48
Instrument ID: 3D5
Lims ID: 320-65130-A-11-A
Lab Sample ID: 320-65130-11
Client ID: 11215702-Tank#1-valve-4-3
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 1

RT: 35.63
Area: 307498
Amount: 0.544718
Amount Units: pg/ul

Processing Integration Results

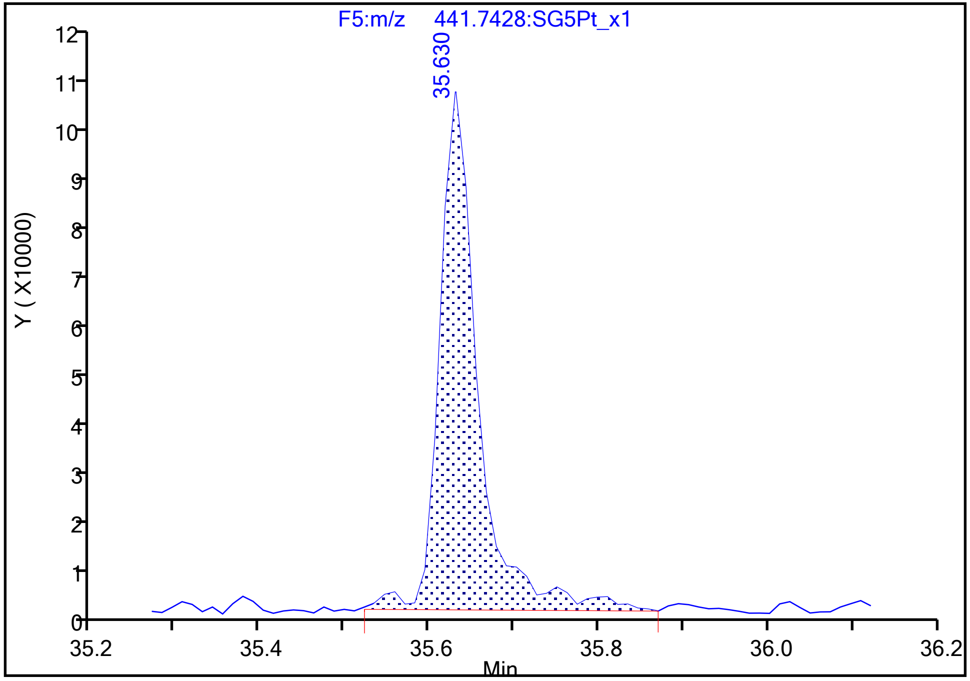

RT: 35.63
Area: 287434
Amount: 0.518800
Amount Units: pg/ul

Manual Integration Results

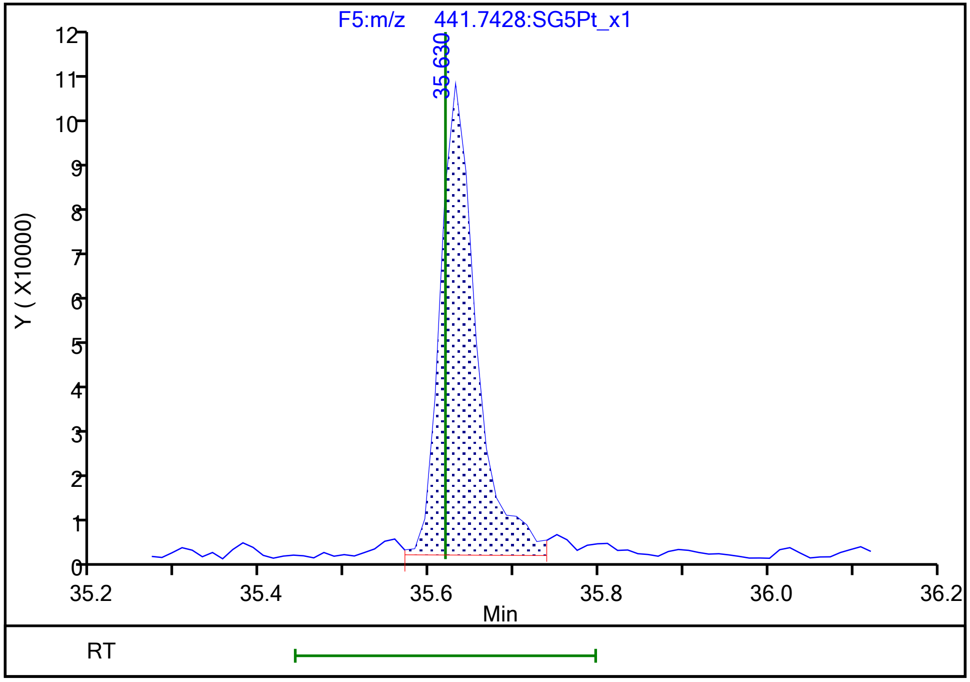

Reviewer: dadunj, 14-Oct-2020 08:32:07
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d				
Injection Date:	09-Oct-2020 15:27:48	Instrument ID:	3D5		
Lims ID:	320-65130-A-11-A	Lab Sample ID:	320-65130-11		
Client ID:	11215702-Tank#1-valve-4-3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

Processing Integration Results

RT: 35.63
Area: 362015
Amount: 0.544718
Amount Units: pg/ul

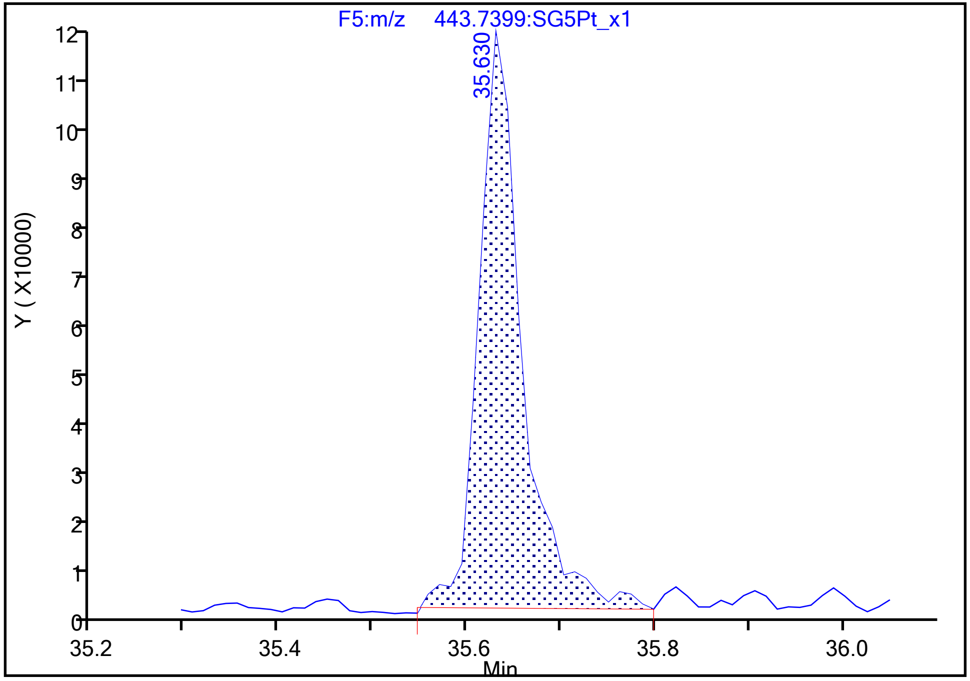

Manual Integration Results

RT: 35.63
Area: 350224
Amount: 0.518800
Amount Units: pg/ul

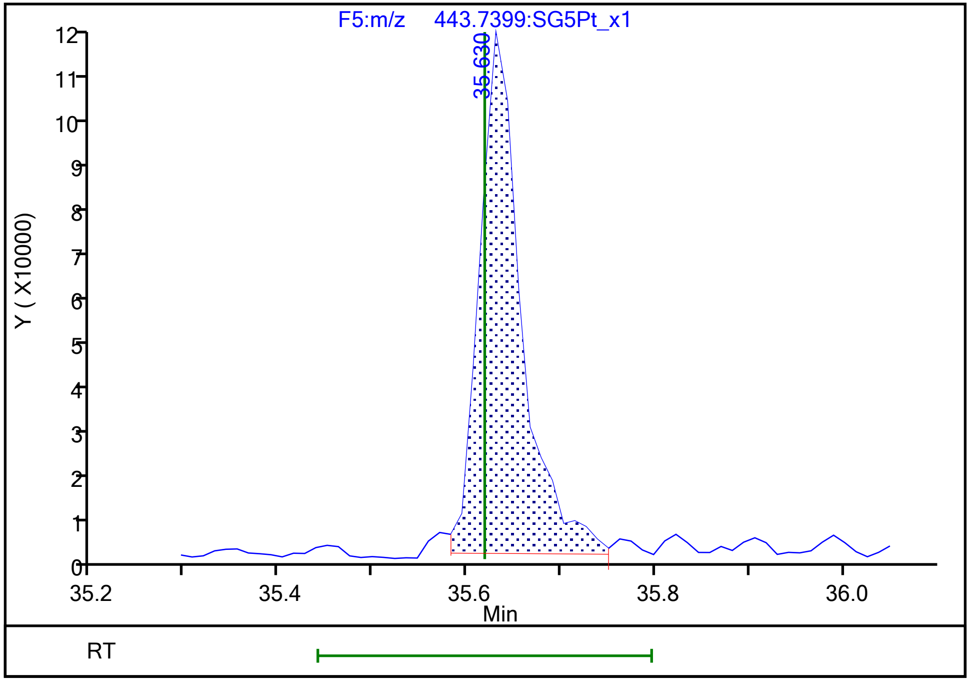

Reviewer: dadunj, 14-Oct-2020 08:32:10

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 08:33:18
Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Injection Date: 09-Oct-2020 15:27:48
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-3
Worklist#: 420483
Sample Line#: 4
Column Type:
Column Dia:

TCDF

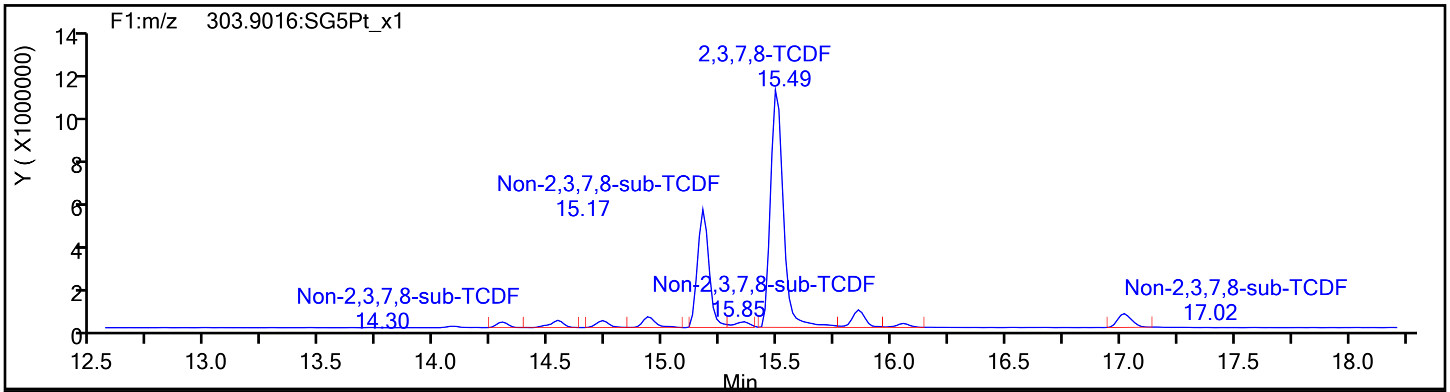

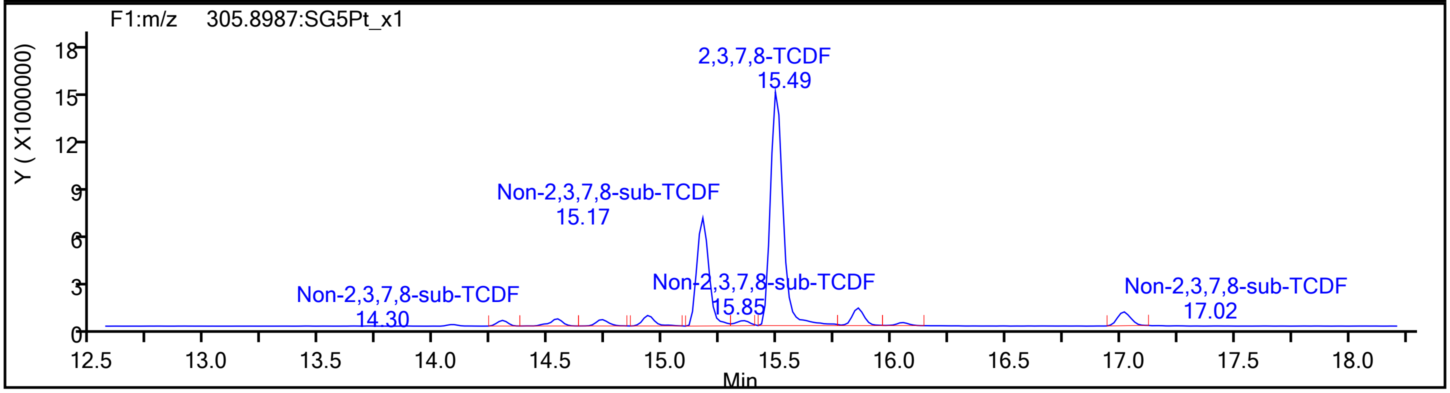

TCDF Standards

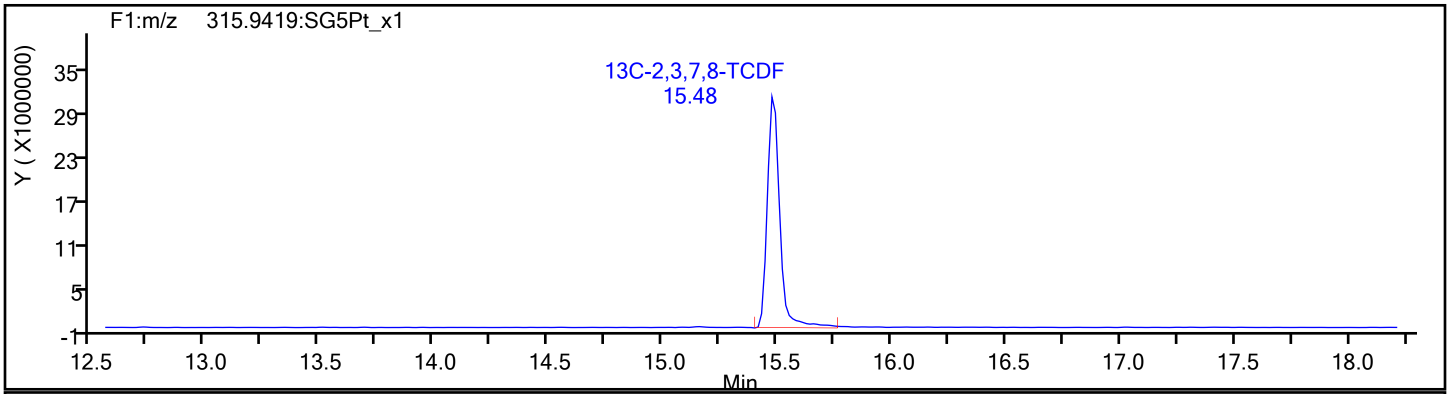

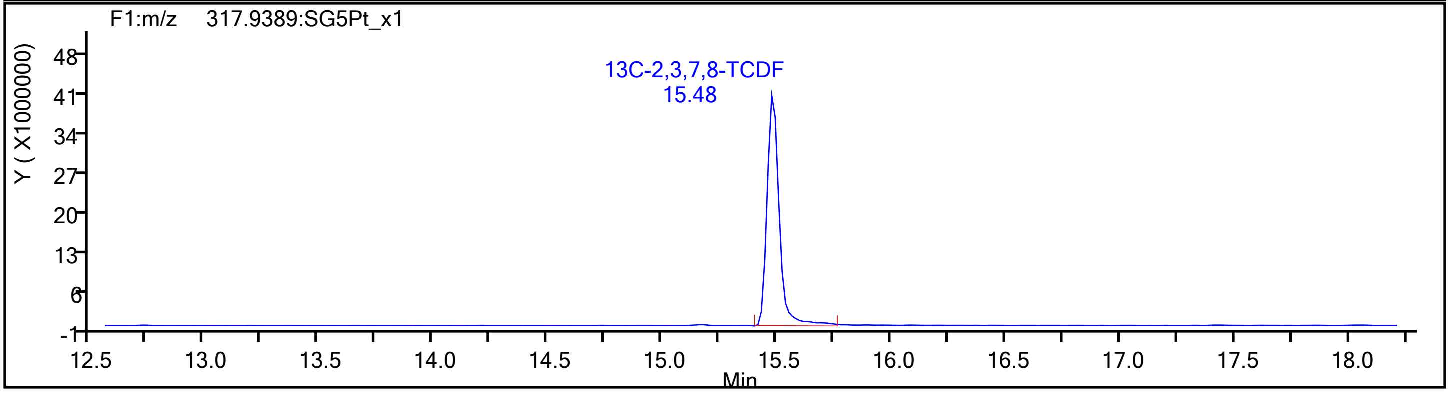

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Client ID:	11215702-Tank#1-valve-4-3		
Worklist#:	420483	Sample Line#:	4
Column Type:		Column Dia:	

TCDF

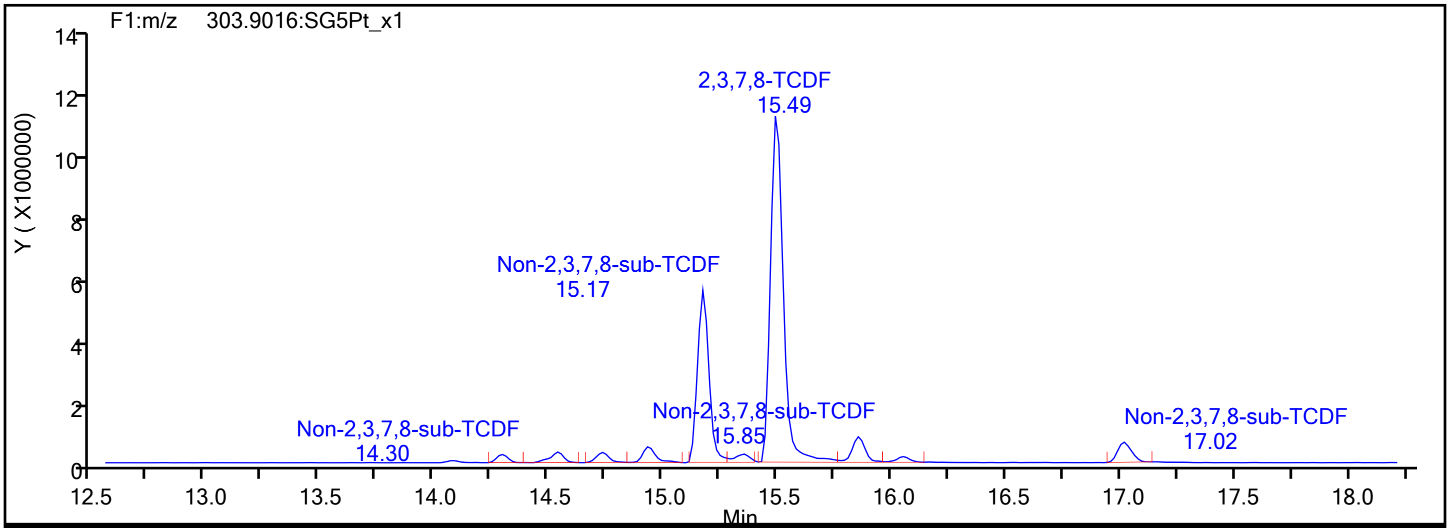

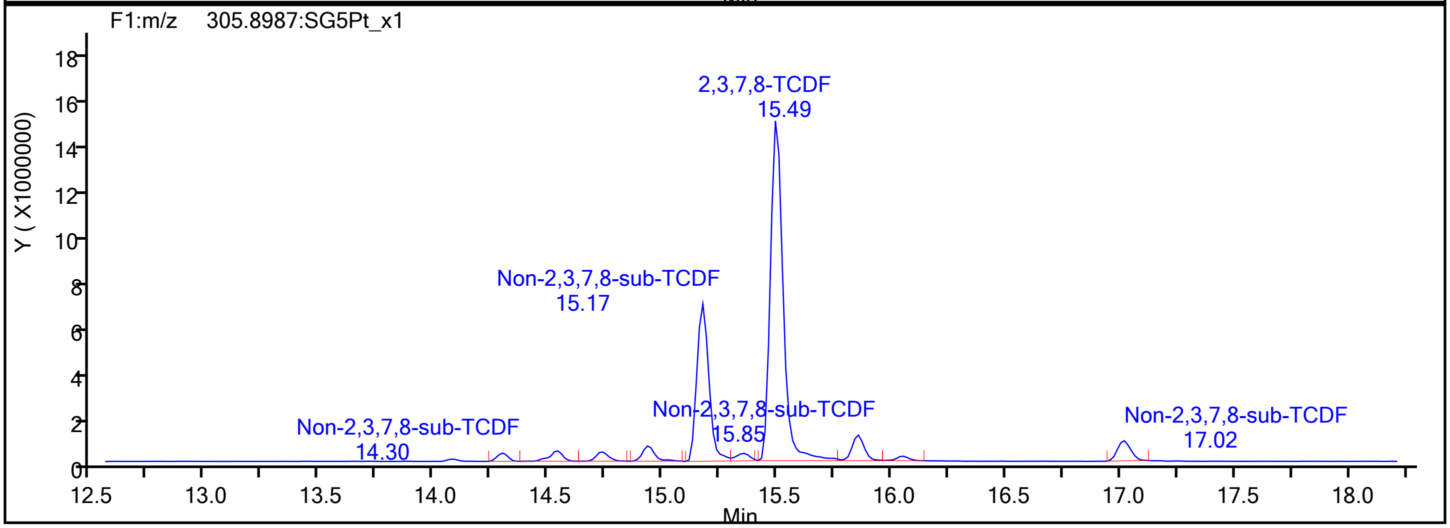

TCDF Interference Mass

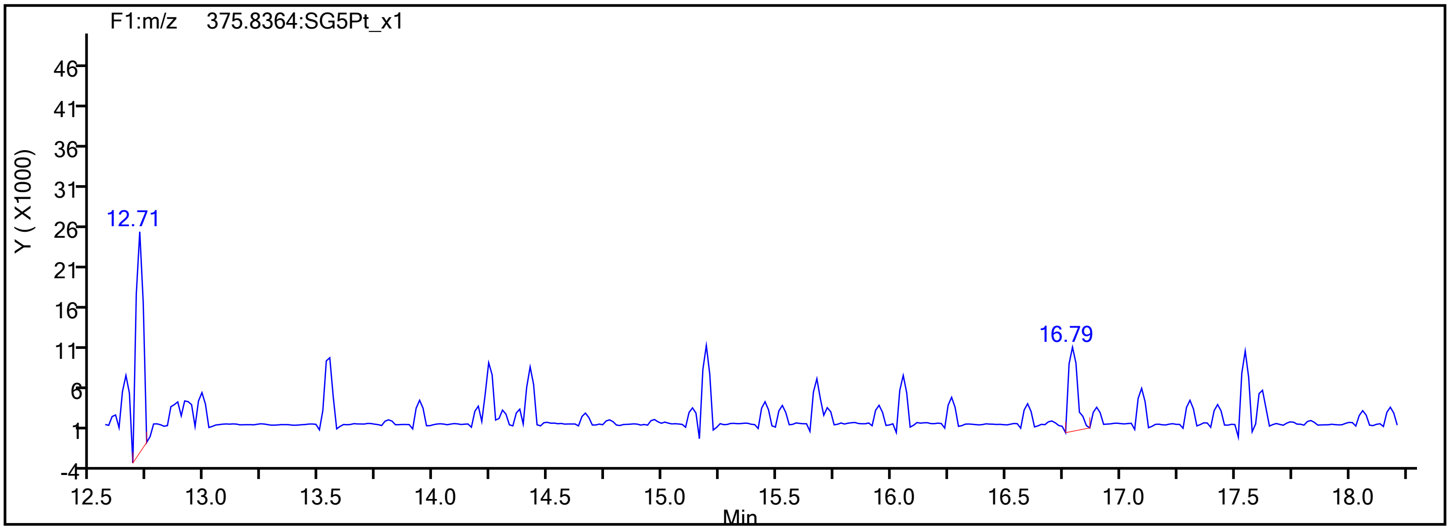

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 15:27:48

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

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Column Type:

Column Dia:

TCDD

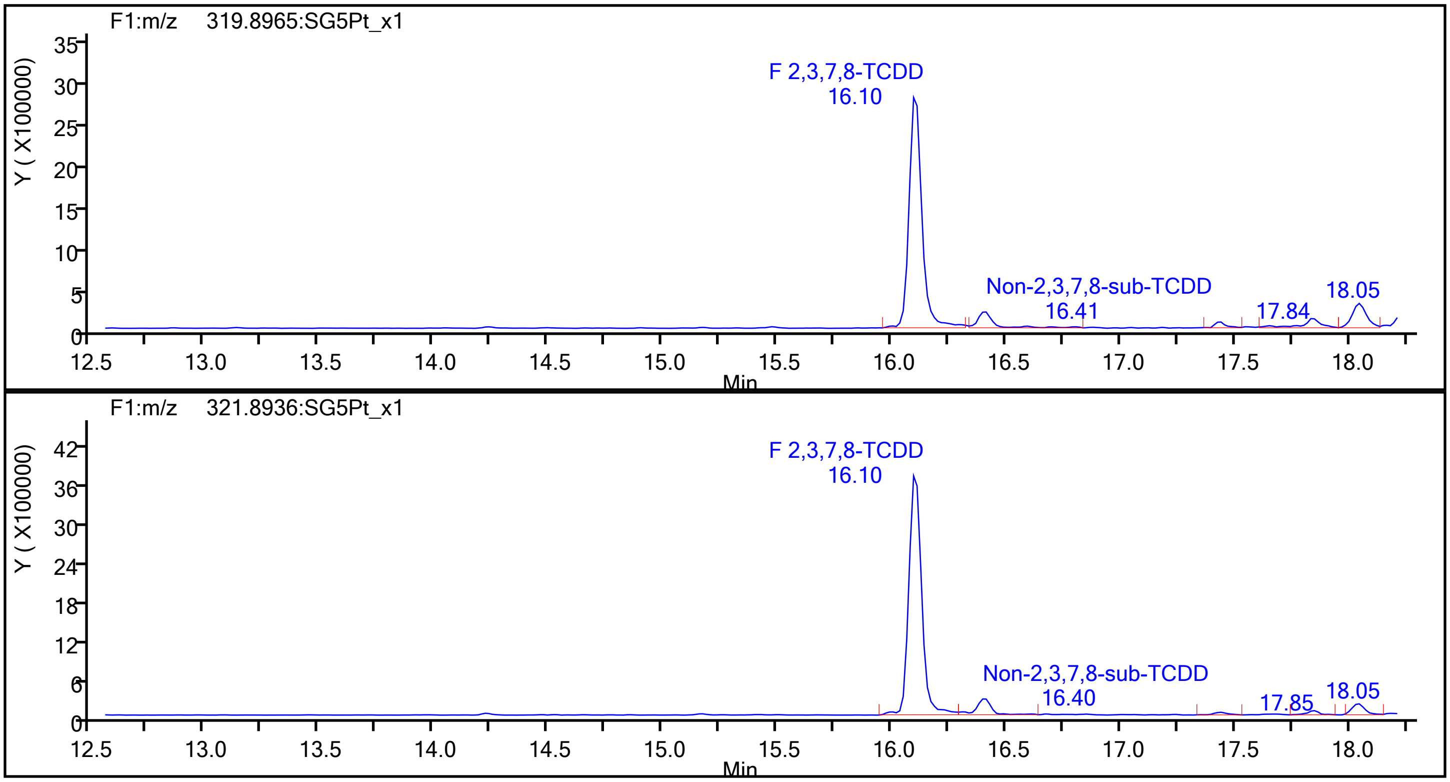

TCDD Standards

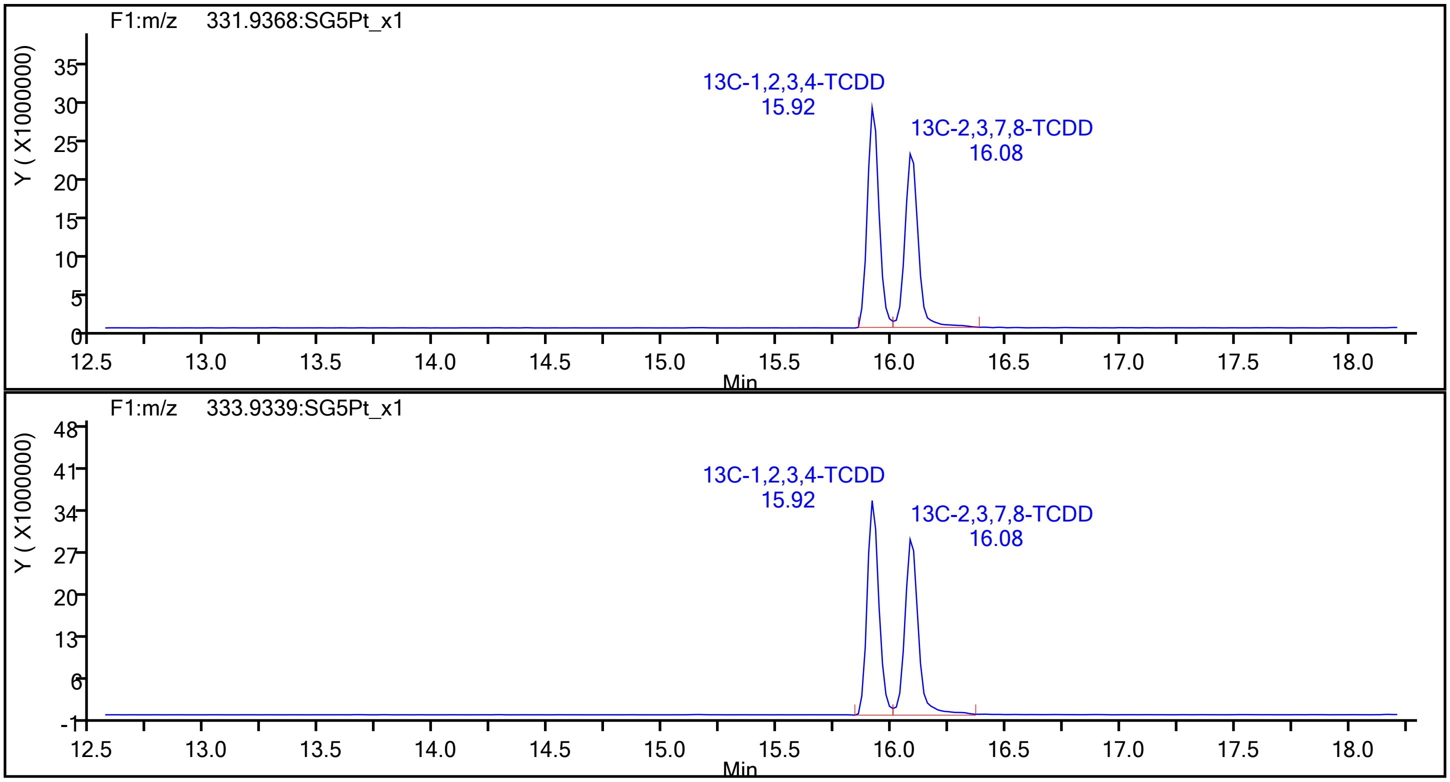

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Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

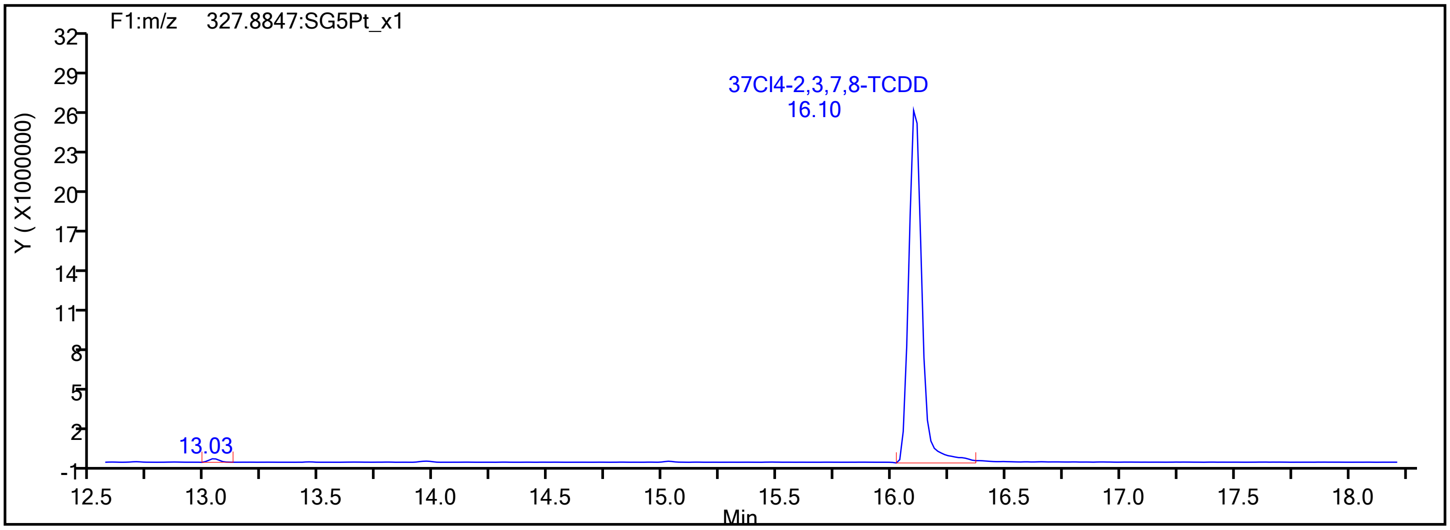

37Cl4-TCDD Standards

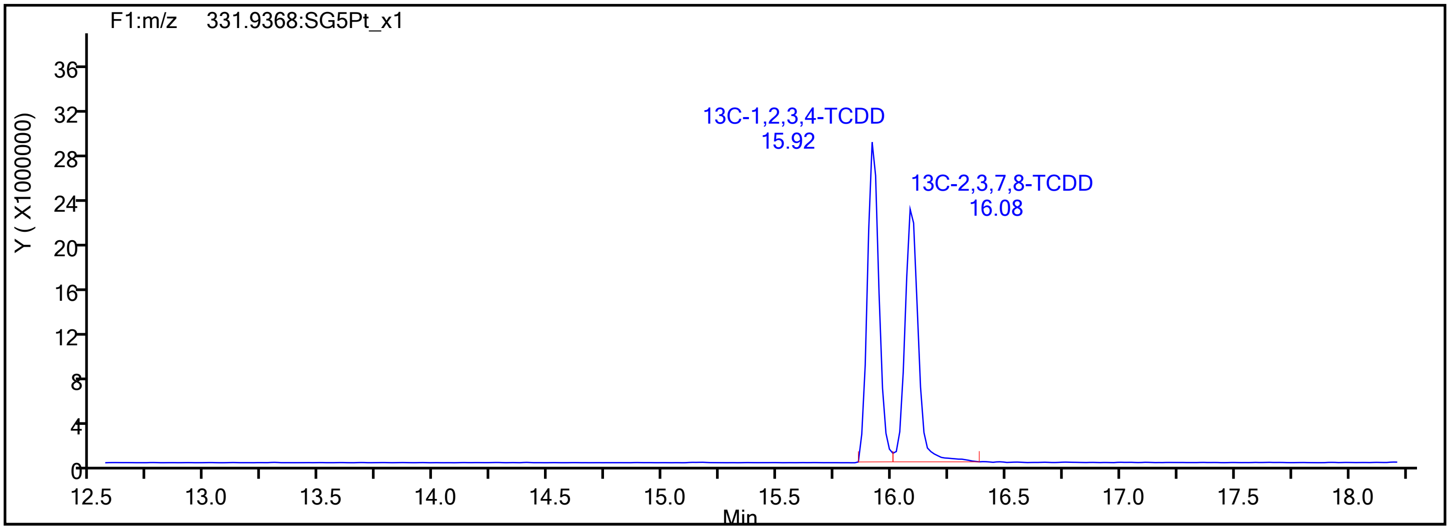

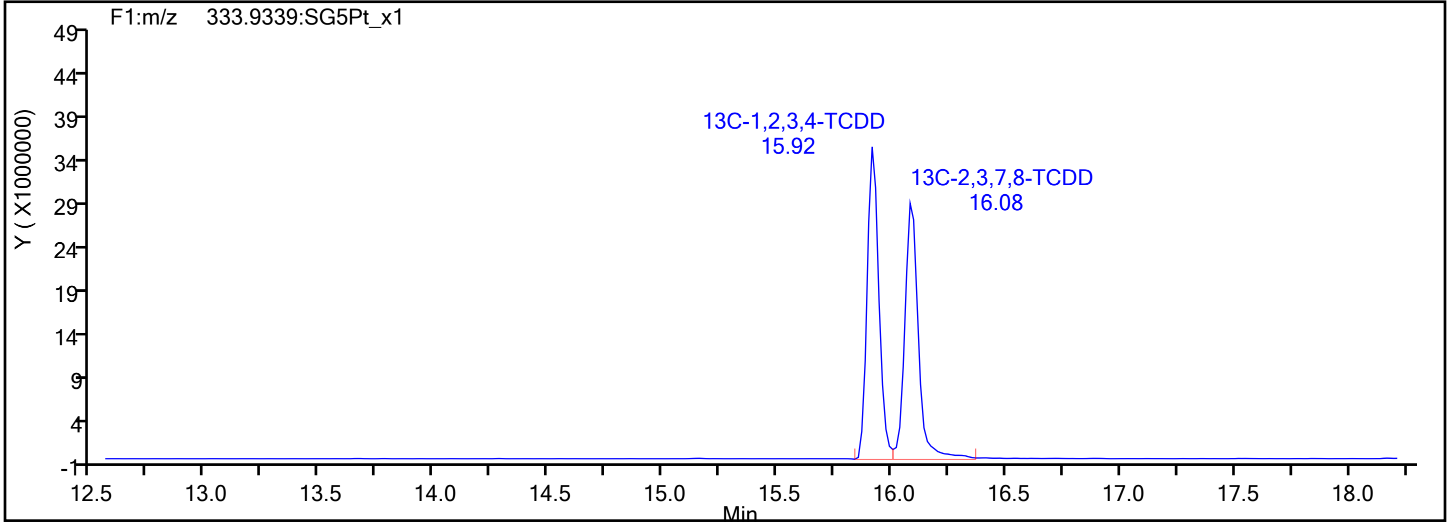

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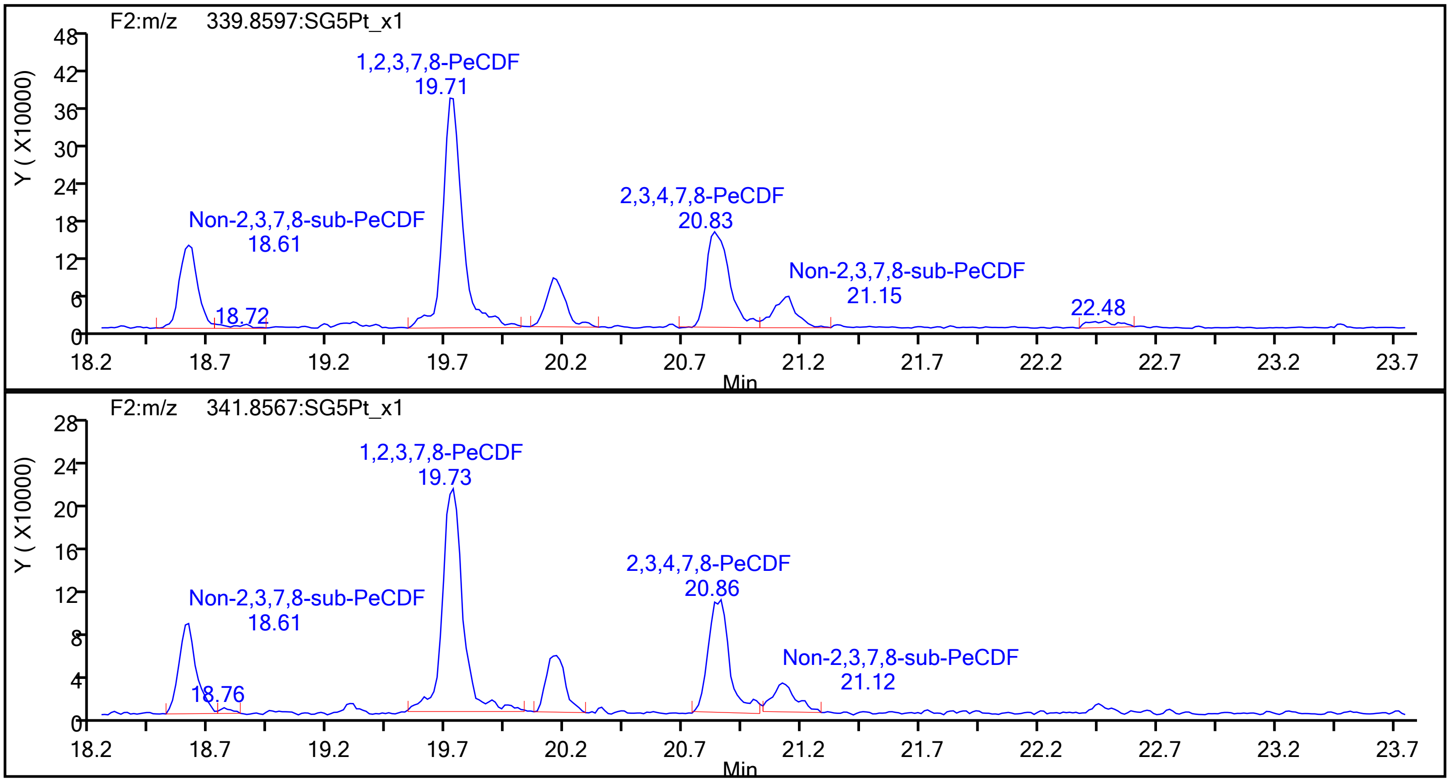

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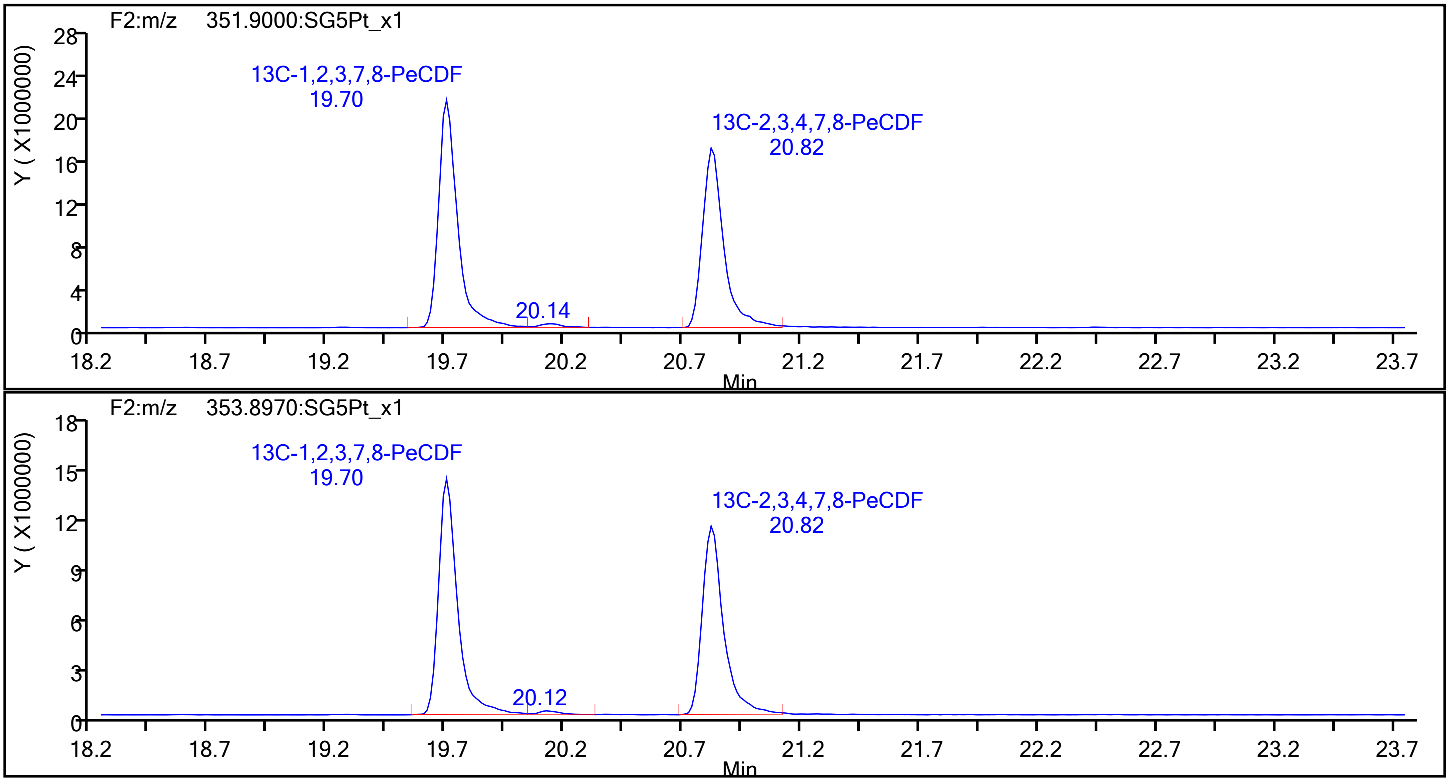

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Eurofins TestAmerica, Sacramento

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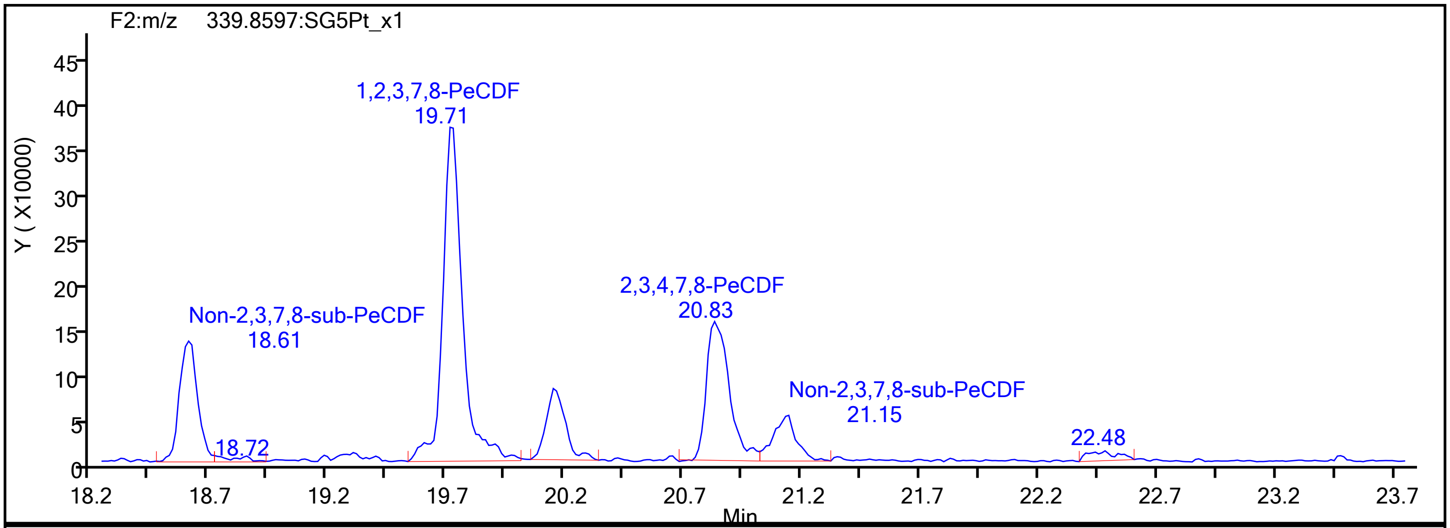

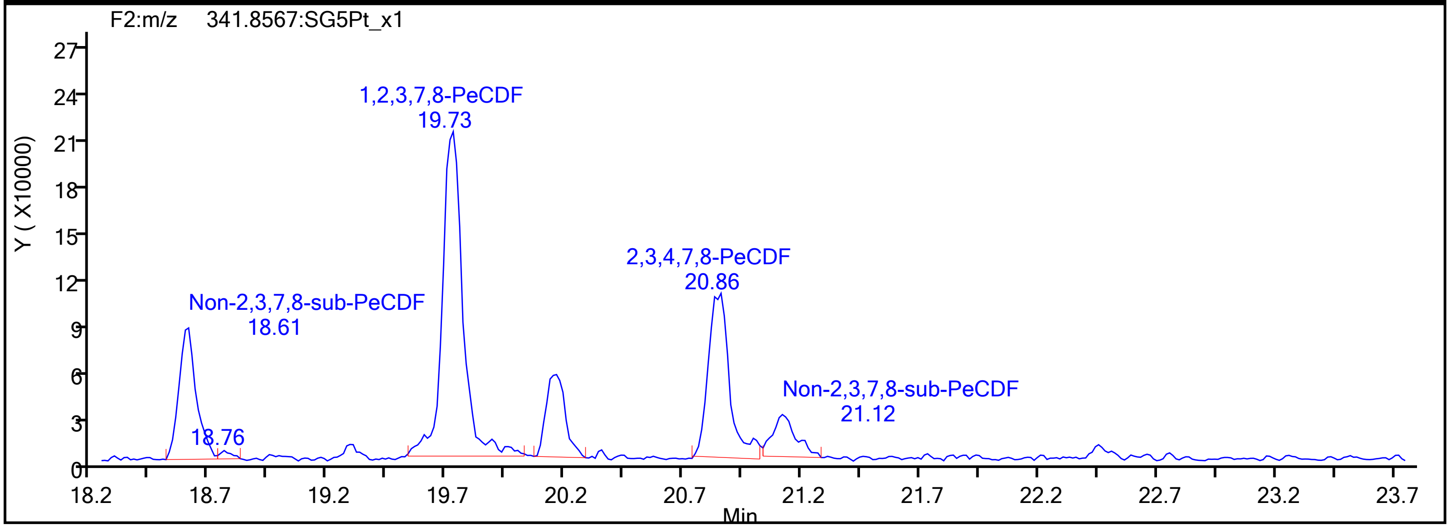

PeCDF Interference Mass

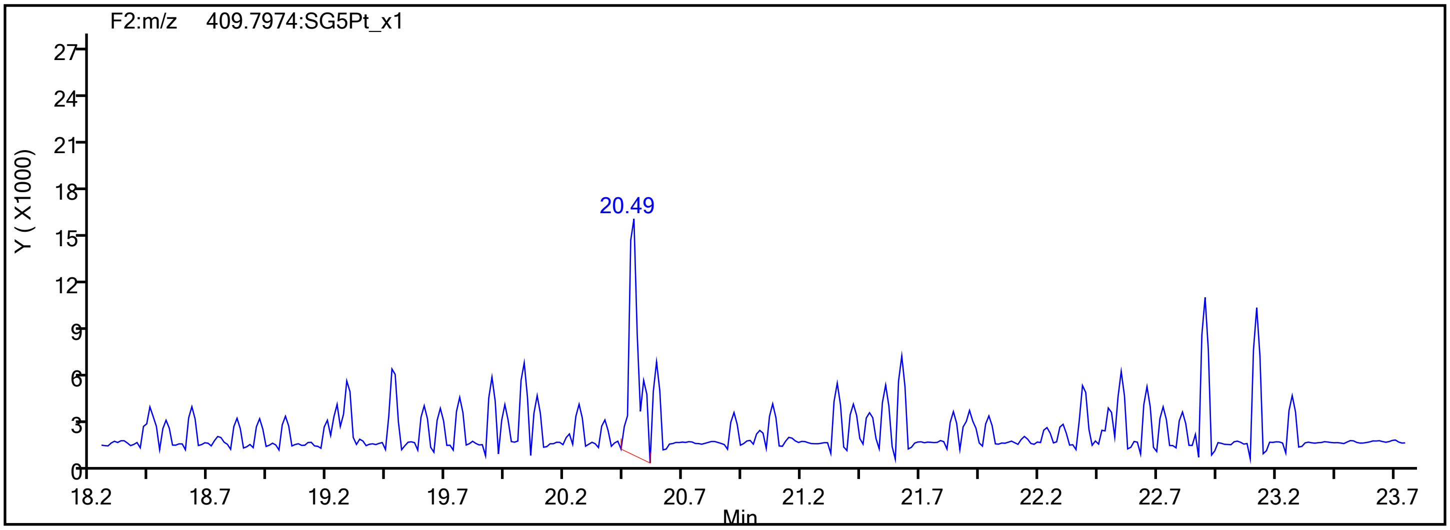

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-3
Worklist#: 420483 Sample Line#: 4
Column Type: Column Dia:

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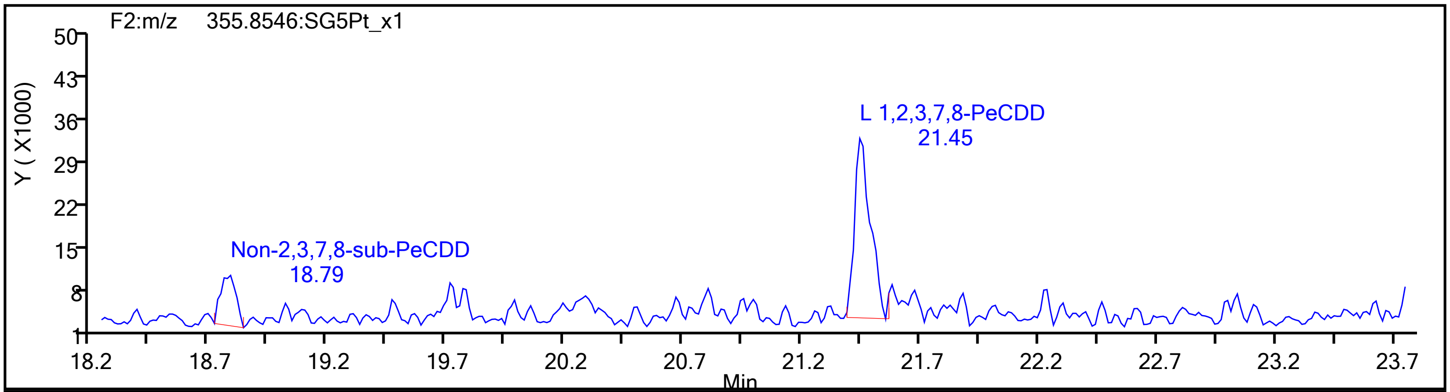

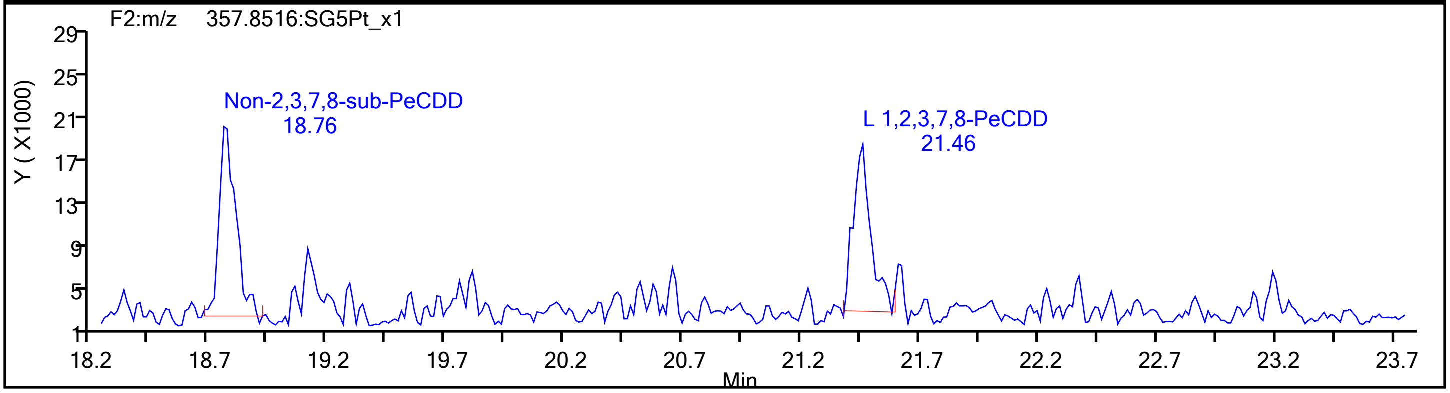

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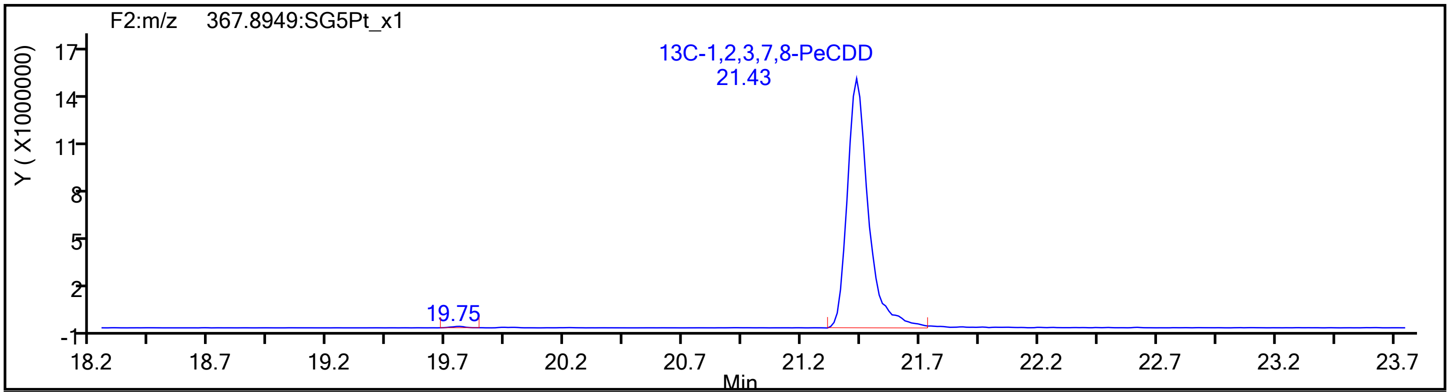

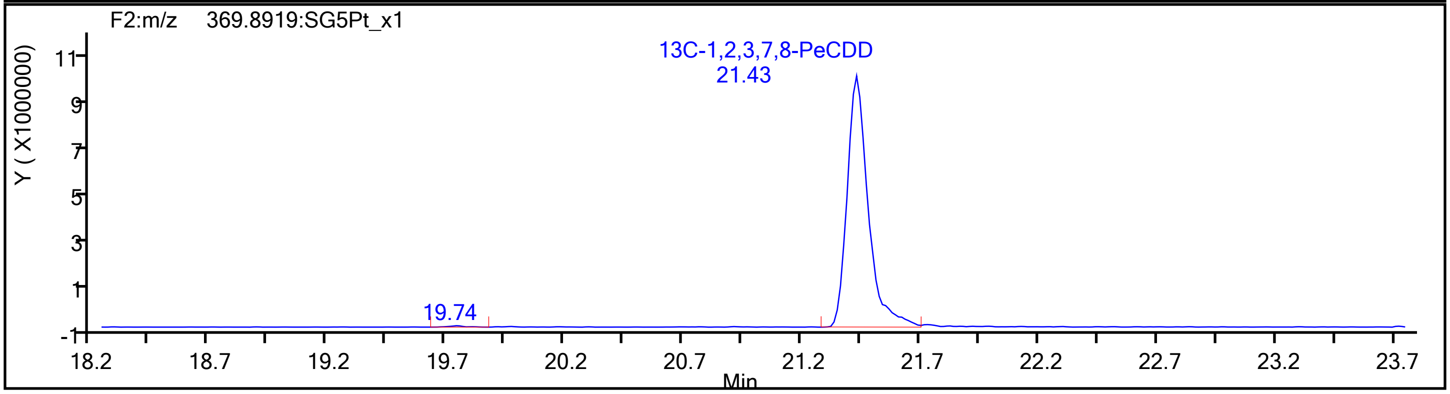

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Eurofins TestAmerica, Sacramento

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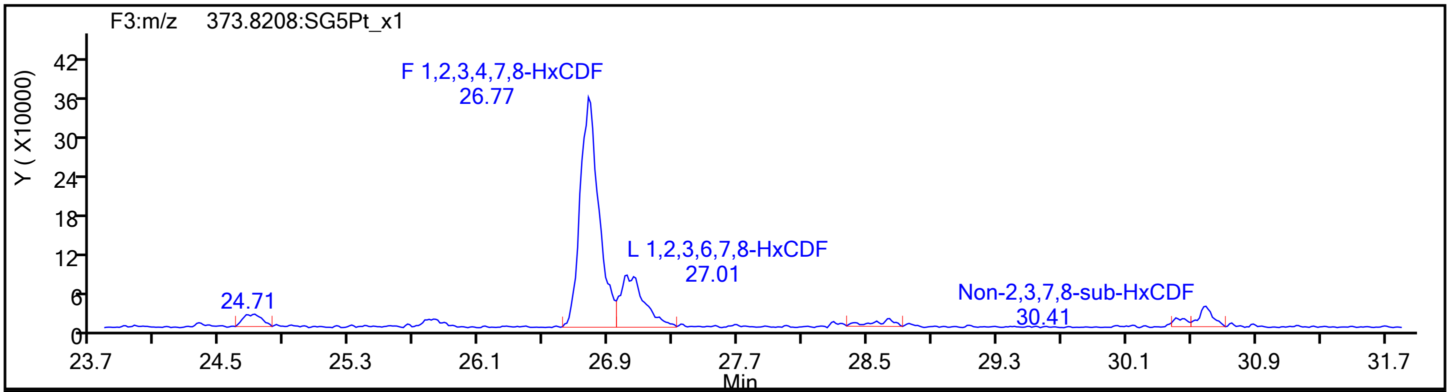

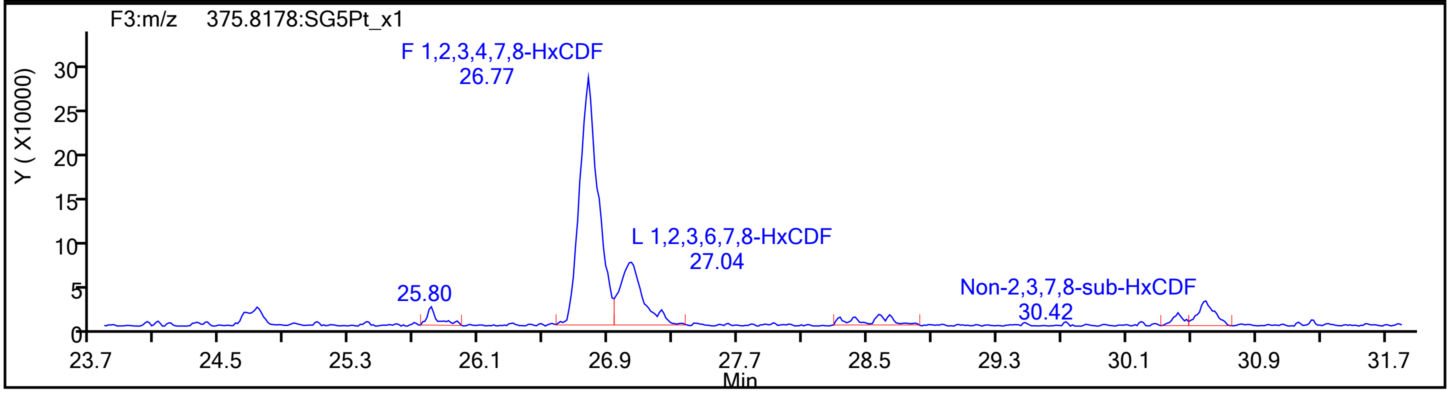

HxCDF Standards

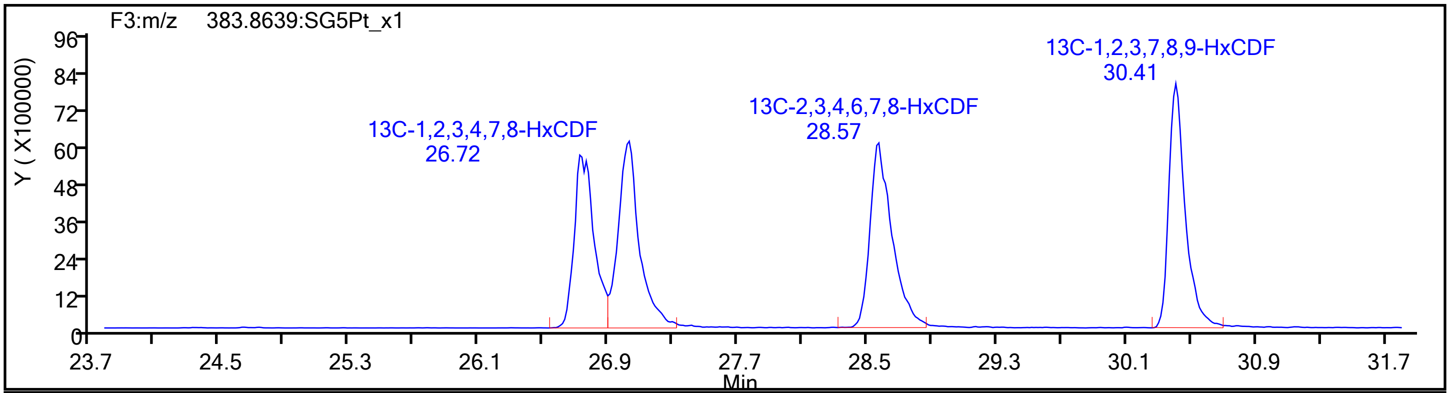

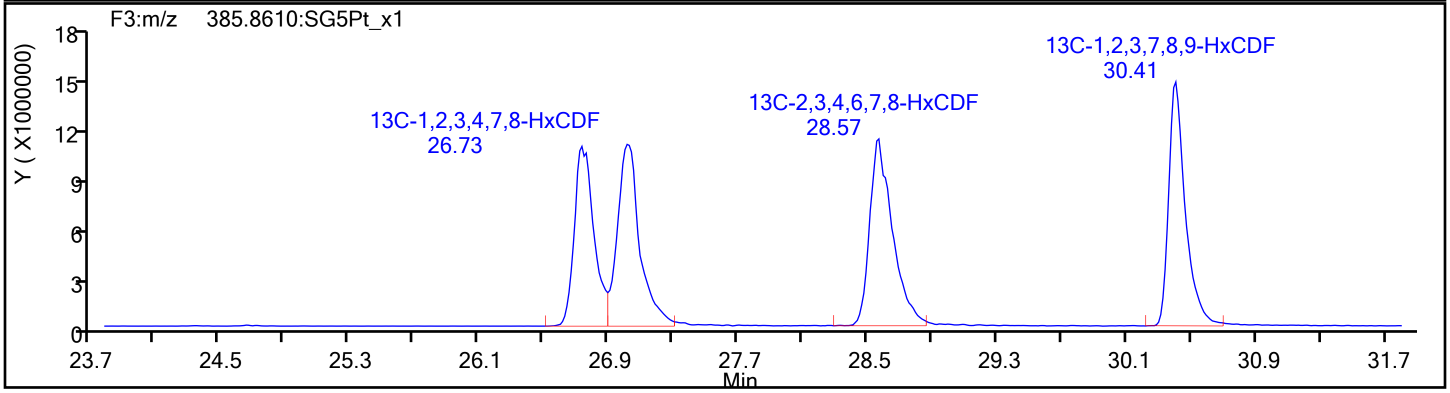

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Eurofins TestAmerica, Sacramento

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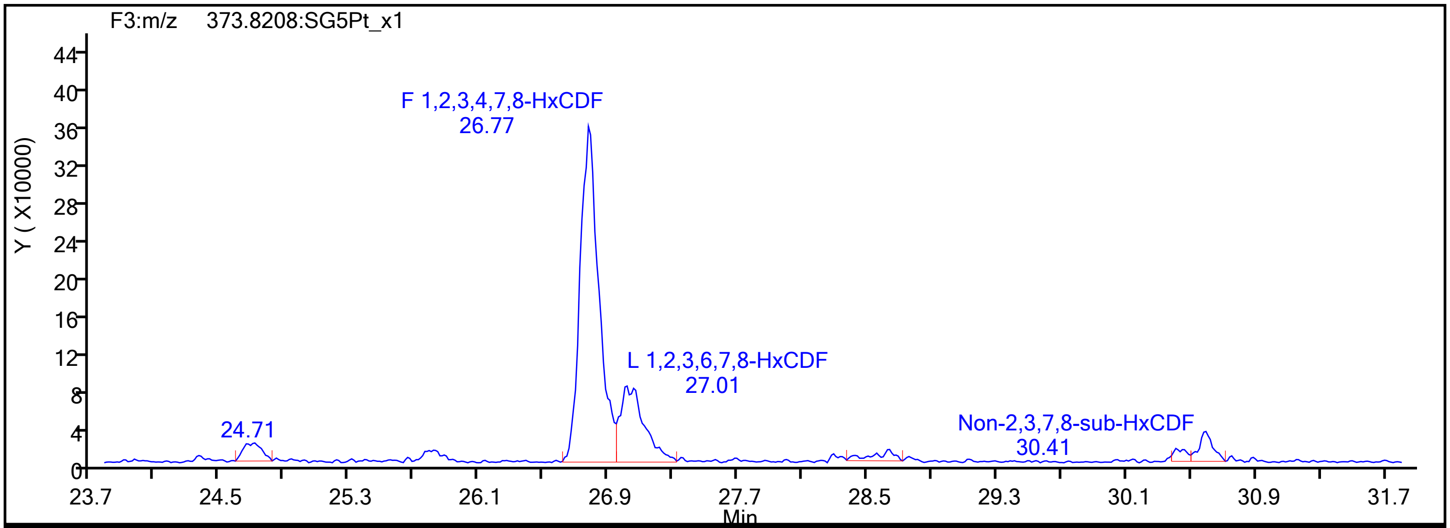

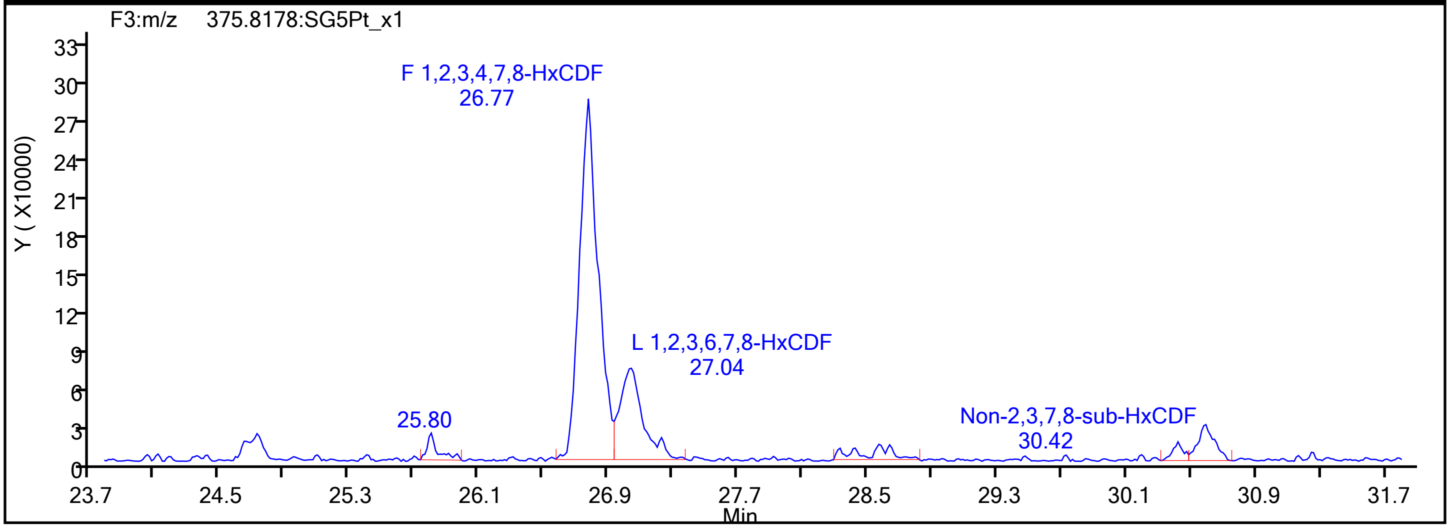

HxCDF Interference Mass

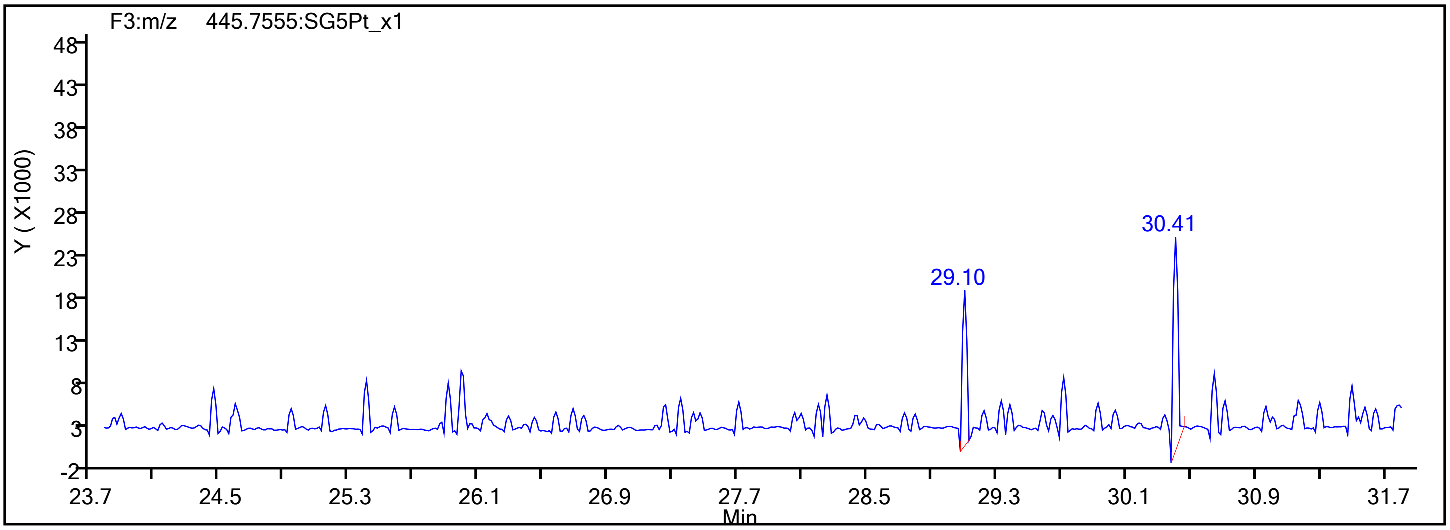

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Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Column Type:		Column Dia:	

HxCDD

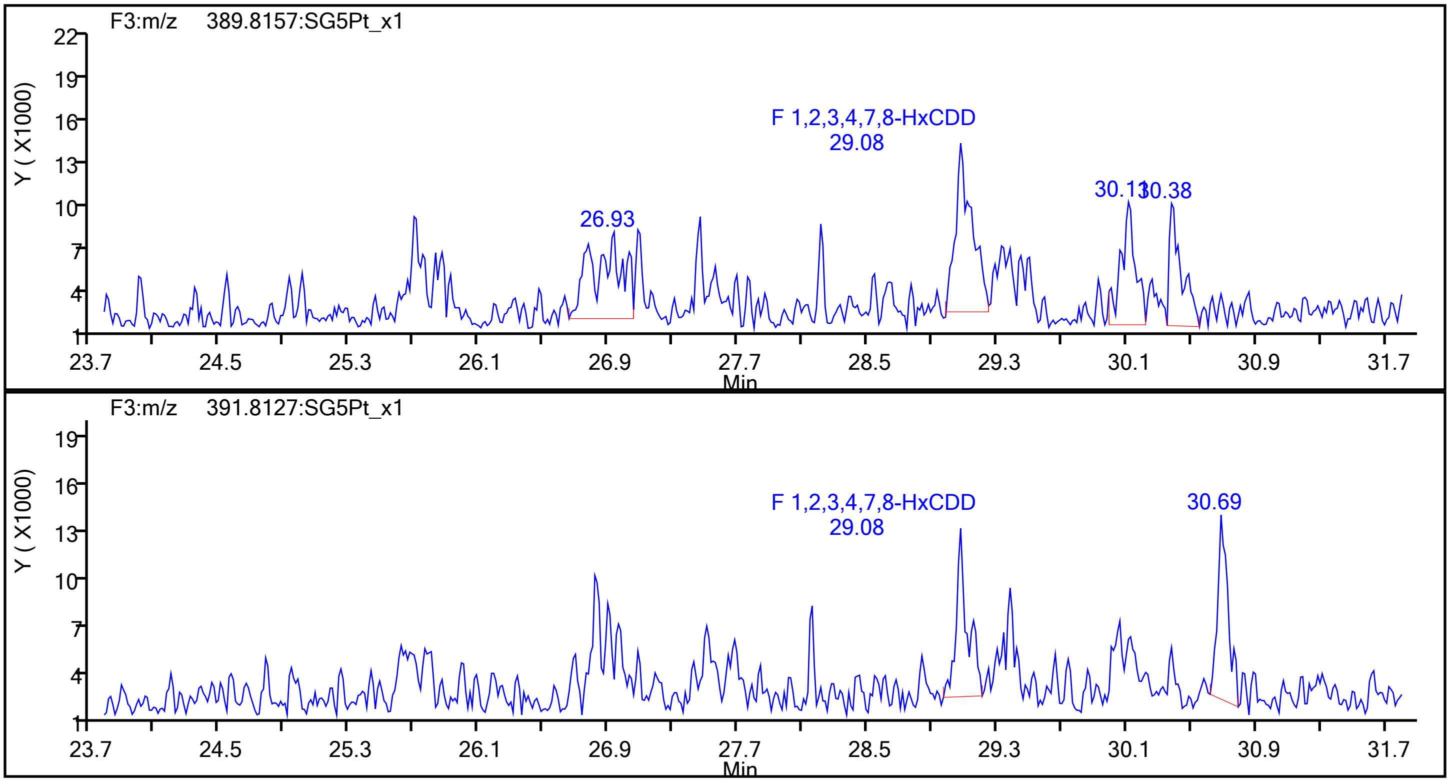

HxCDD Standards

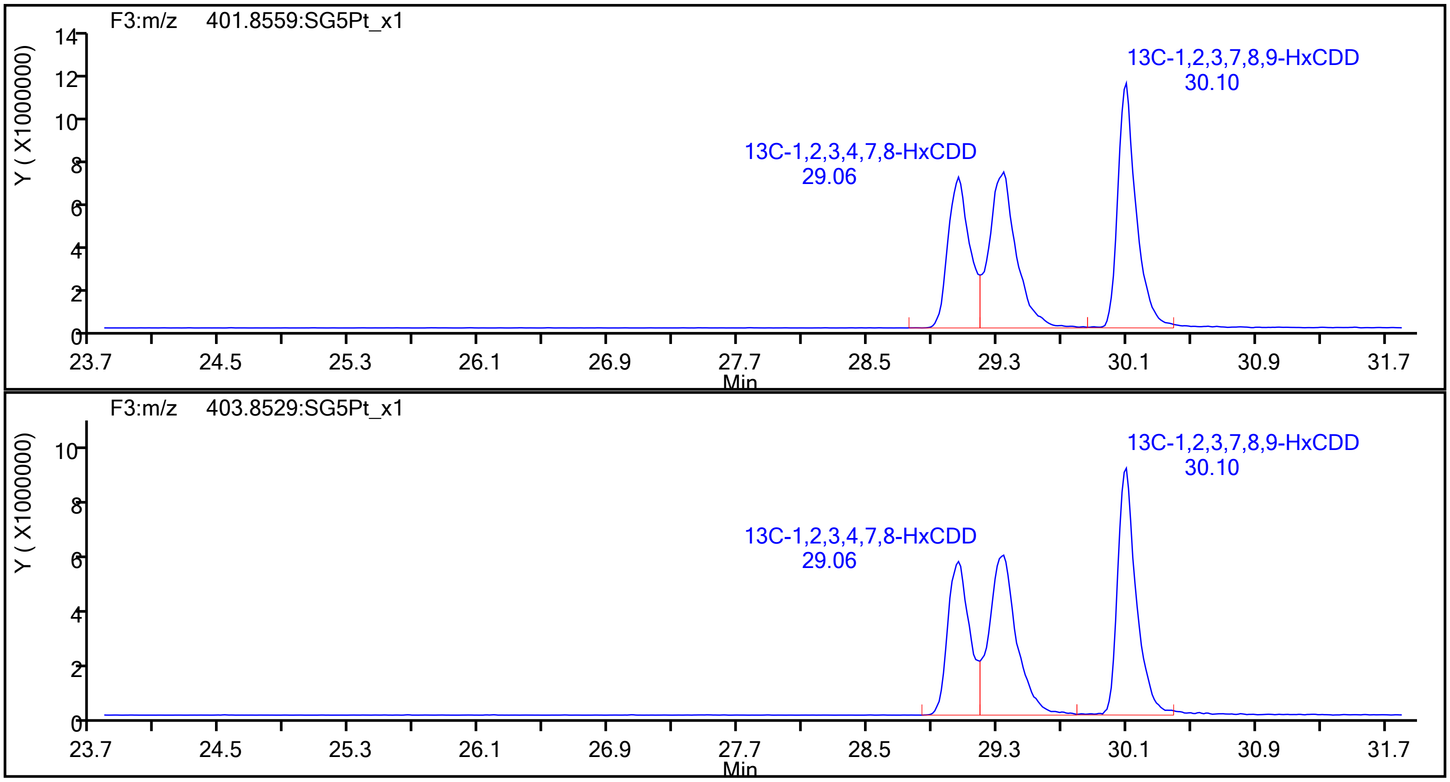

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Eurofins TestAmerica, Sacramento

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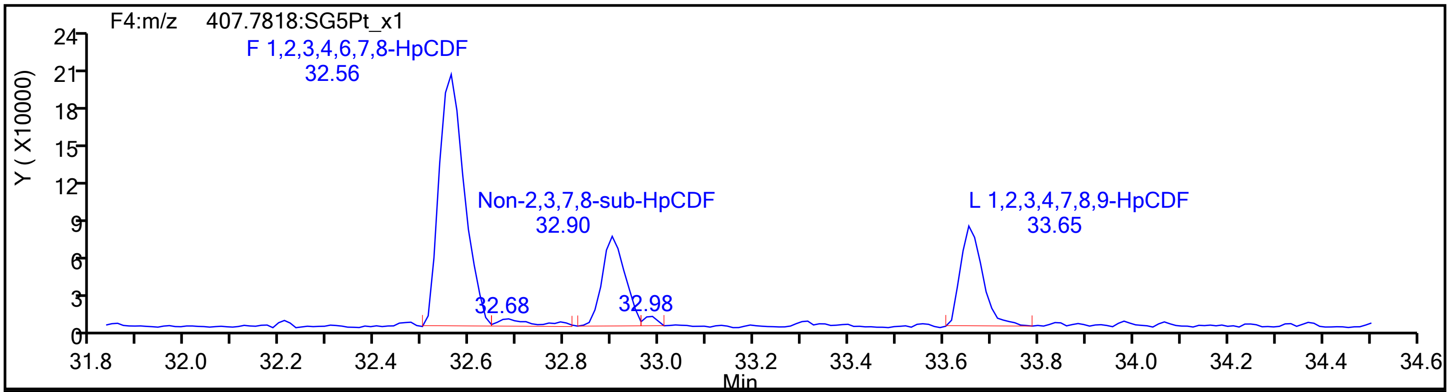

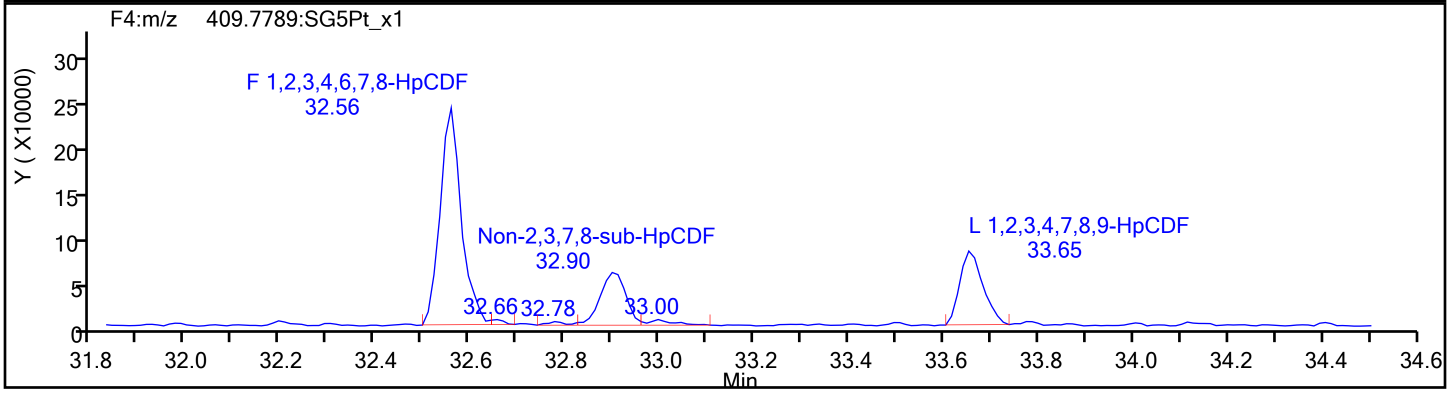

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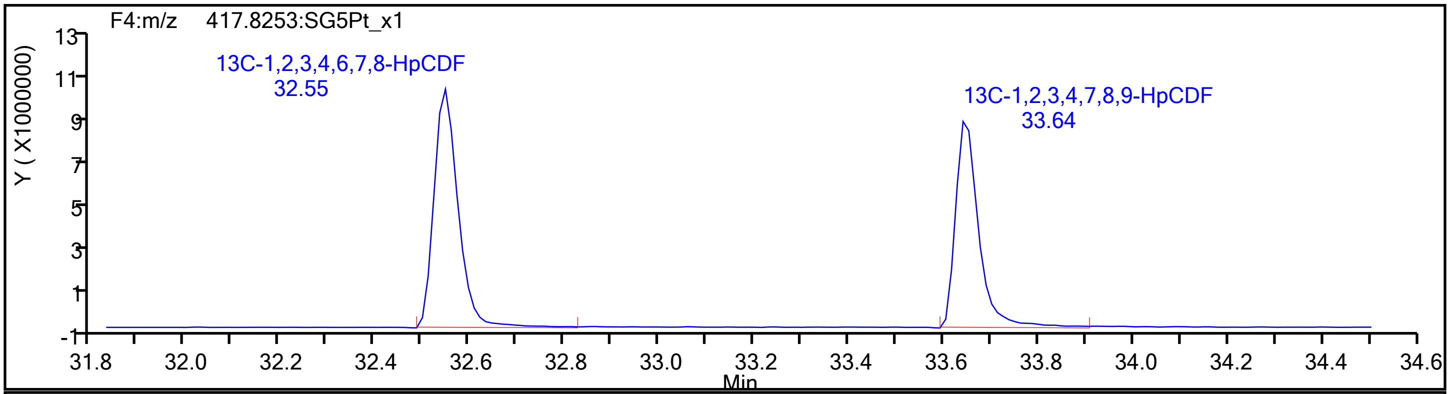

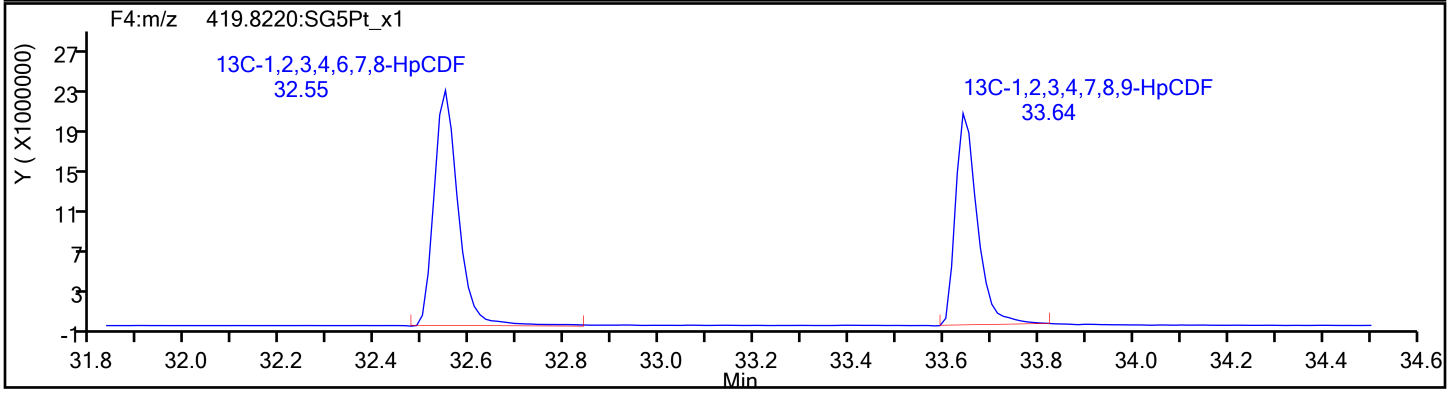

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Eurofins TestAmerica, Sacramento

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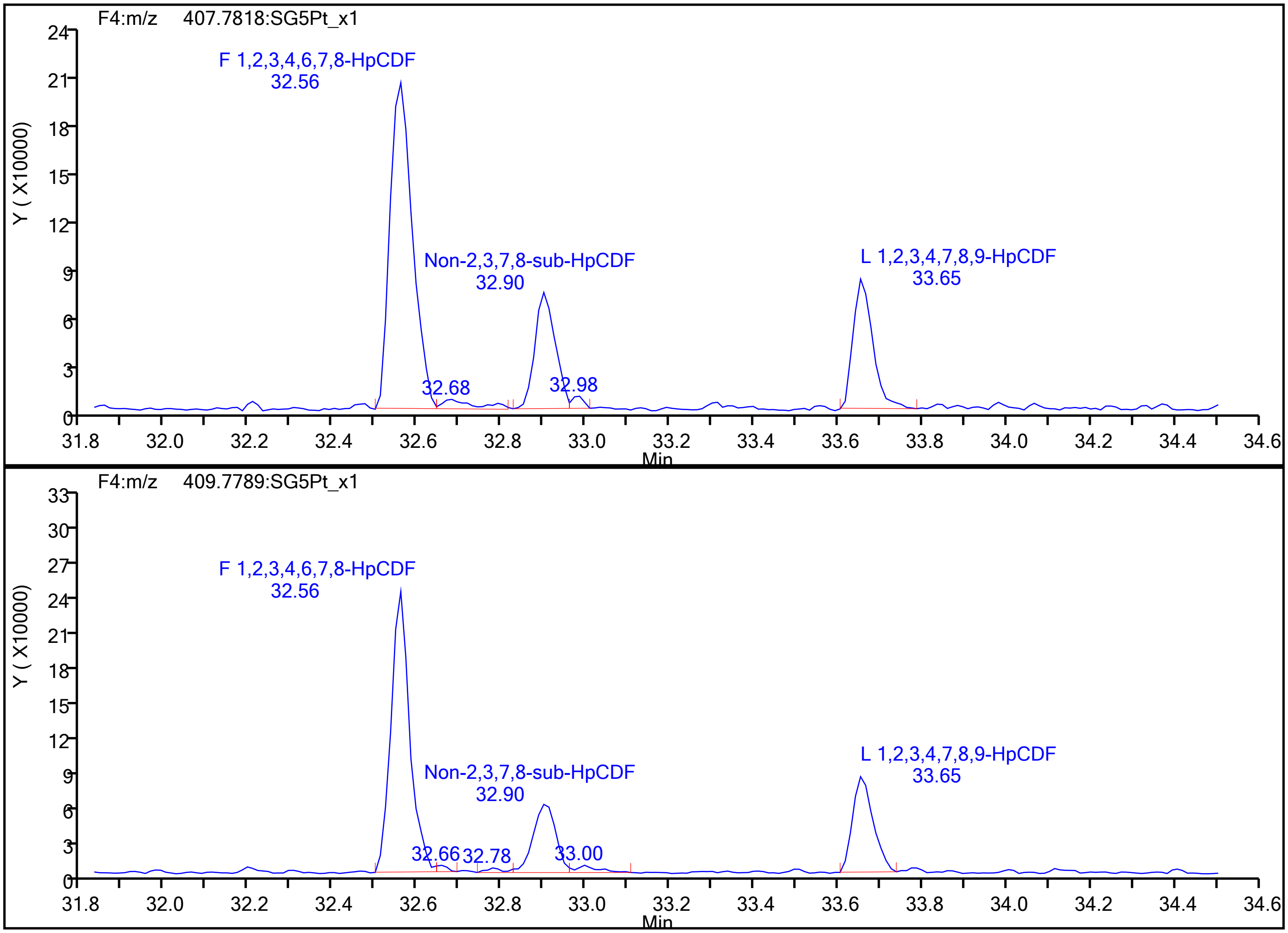

HpCDF Interference Mass

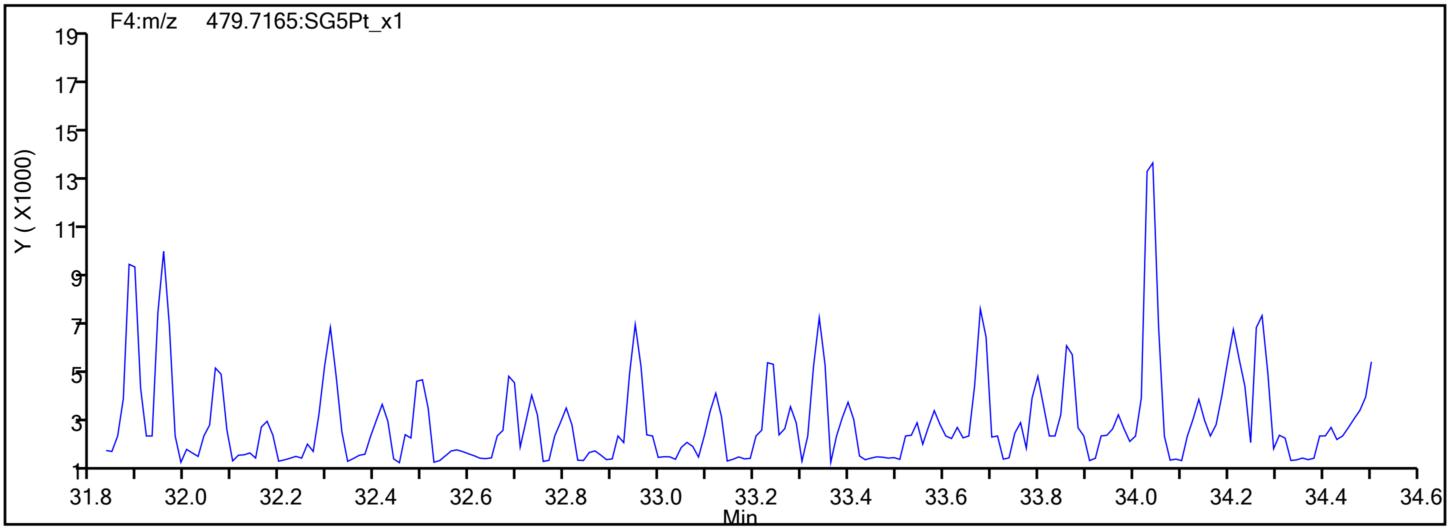

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Eurofins TestAmerica, Sacramento

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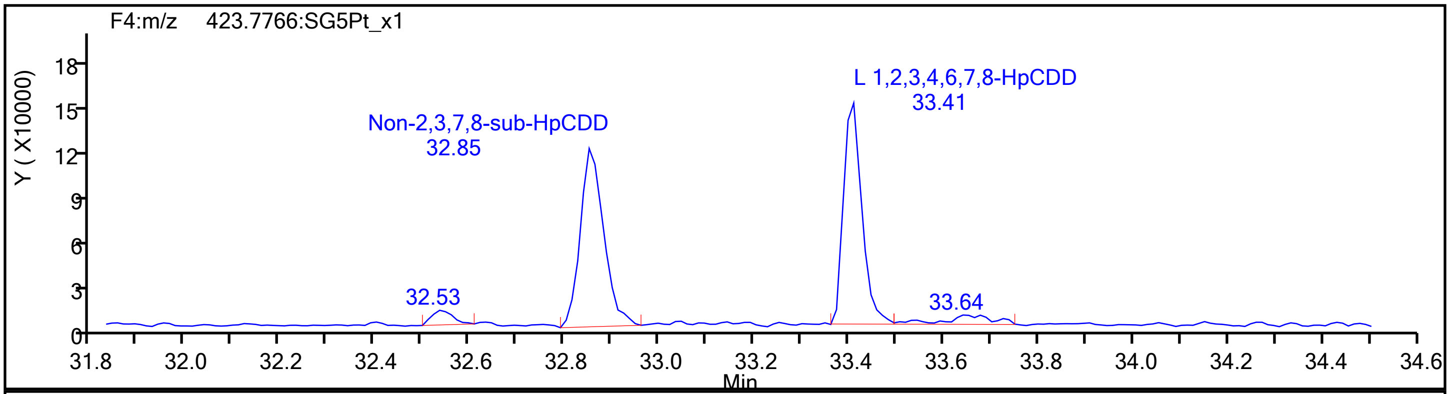

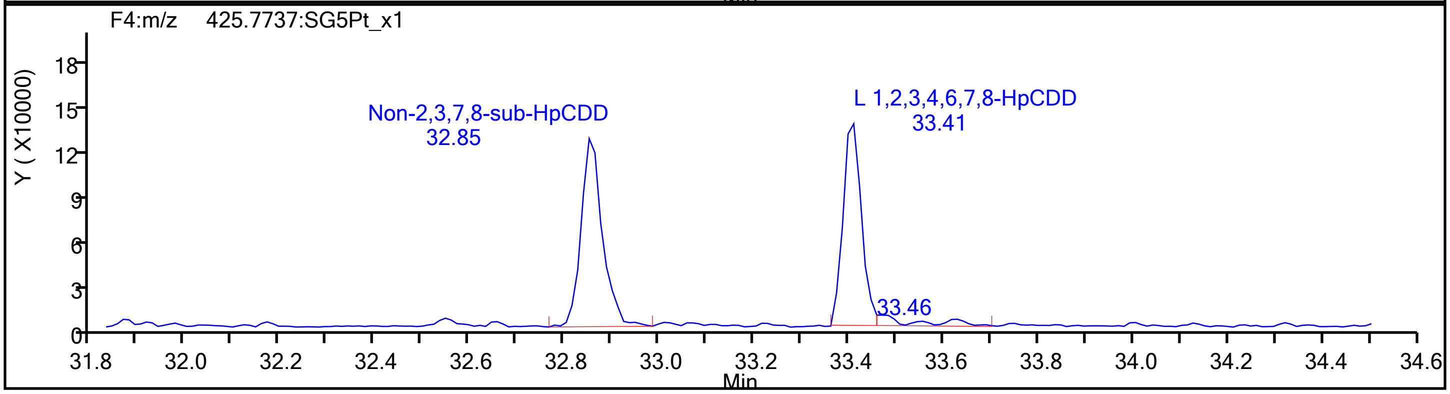

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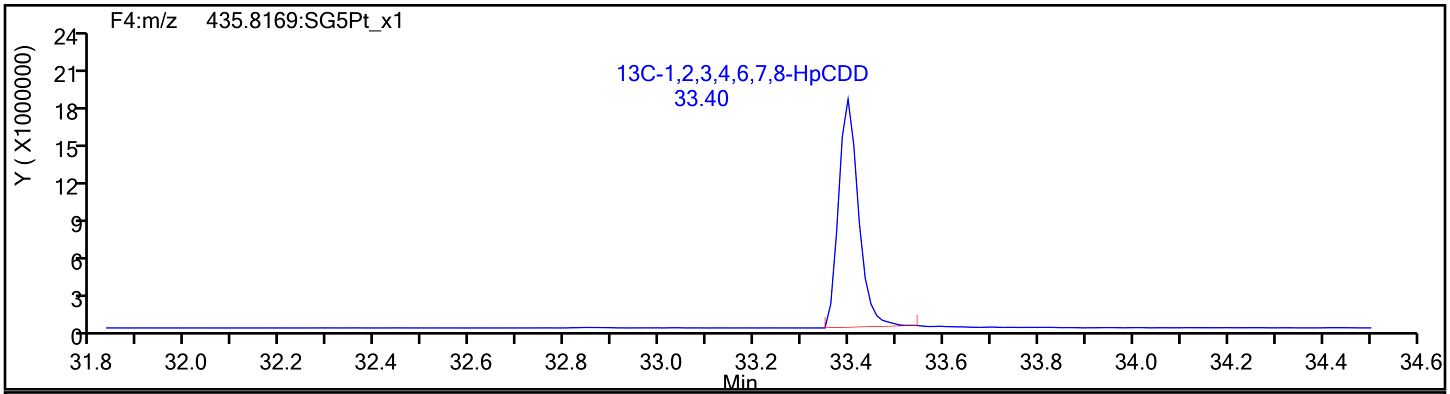

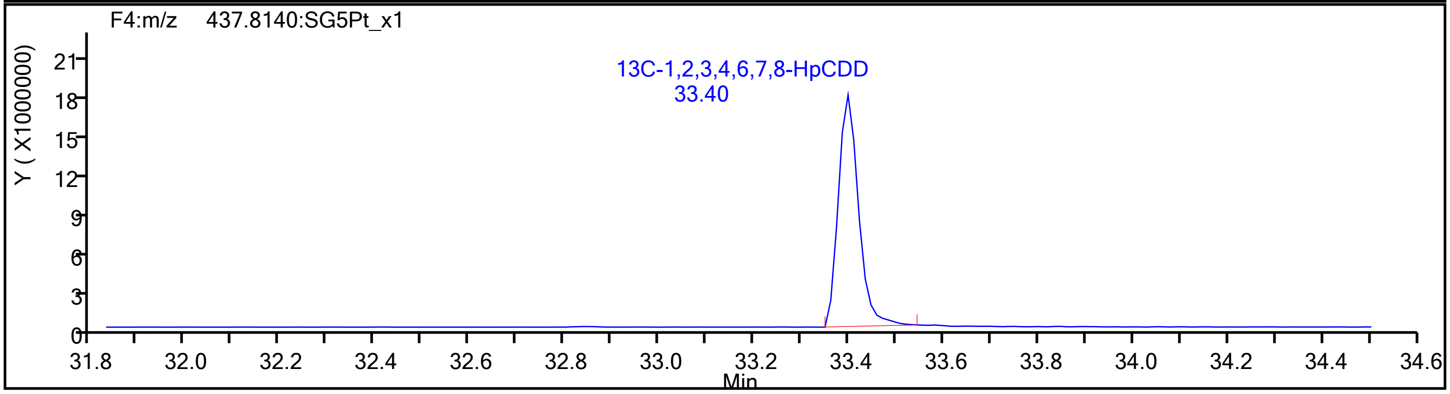

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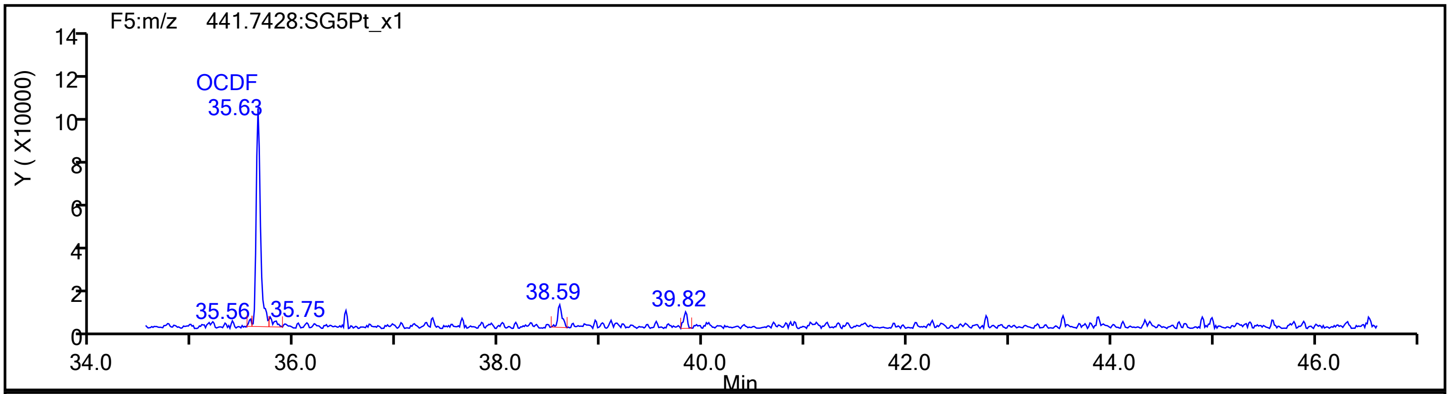

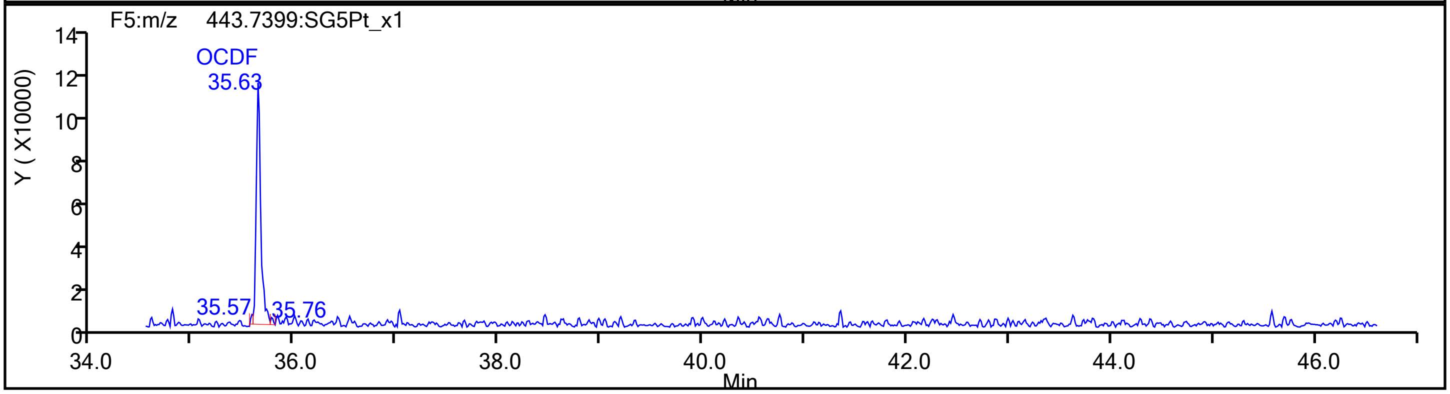

OCDF Standards

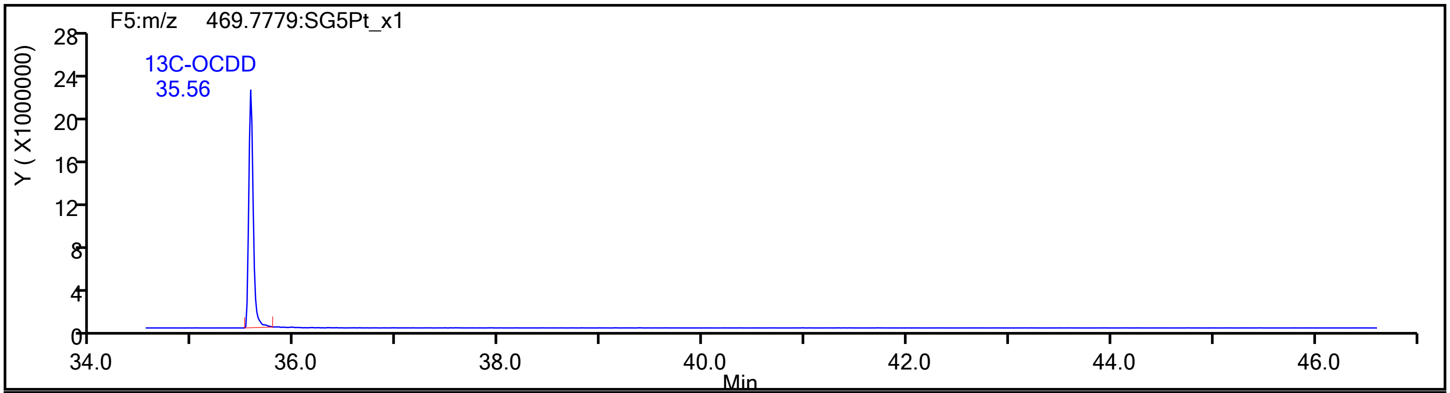

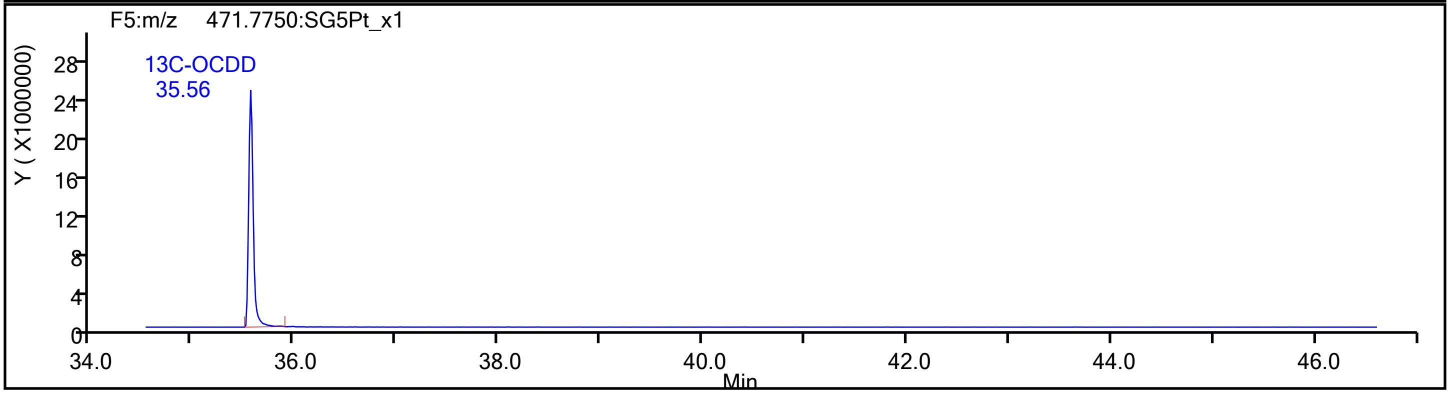

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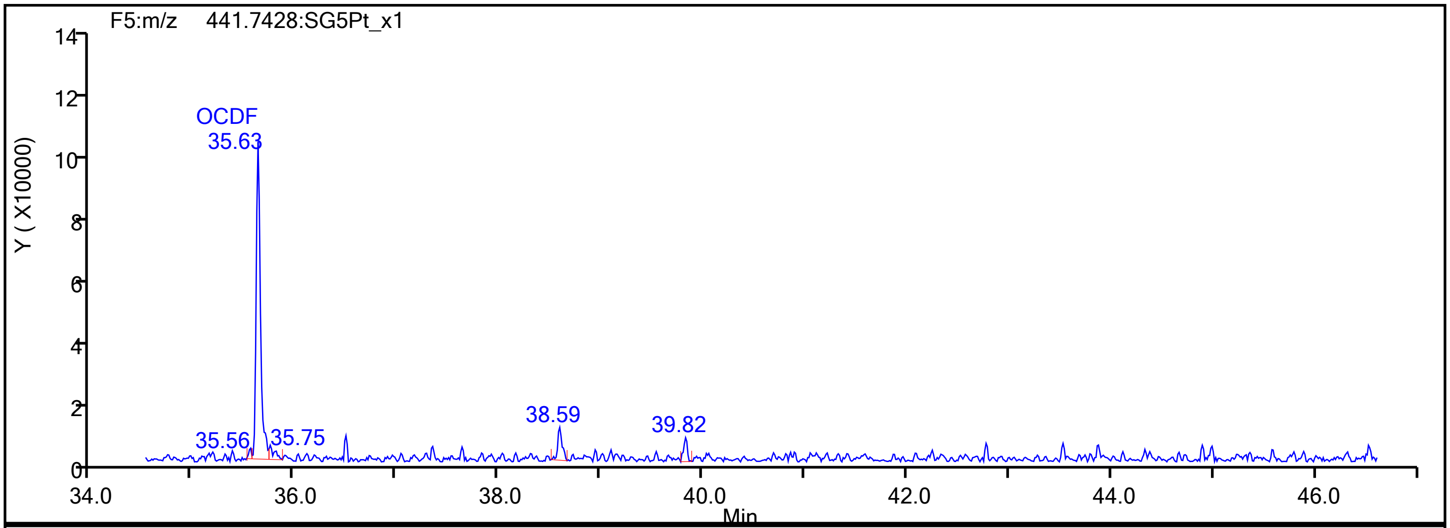

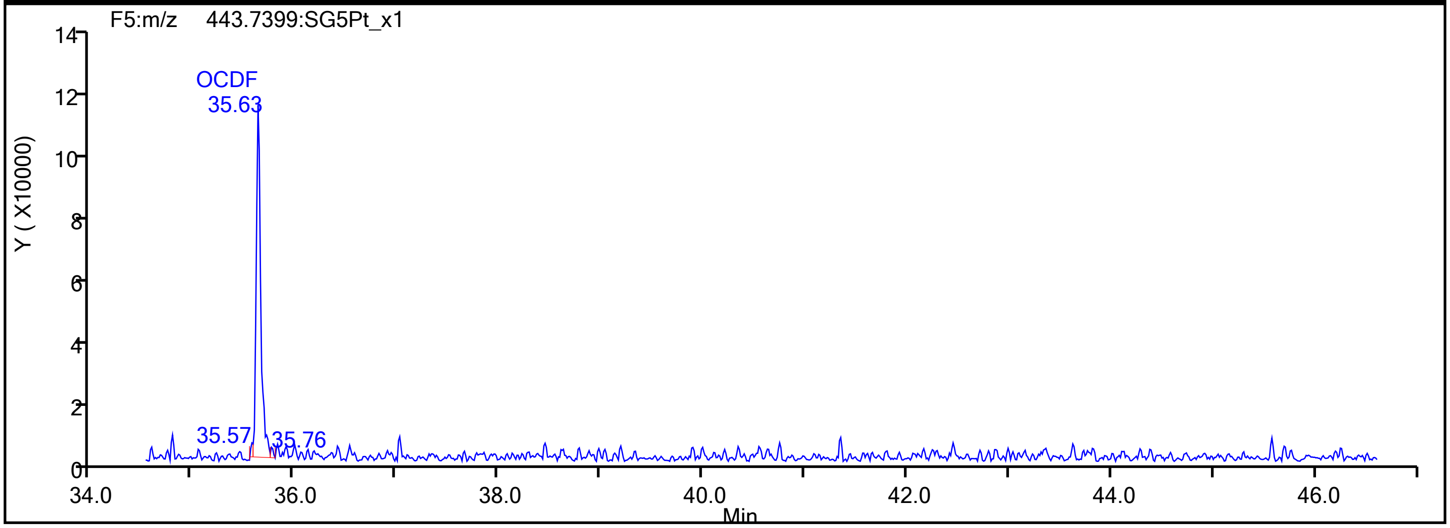

OCDF Interference Mass

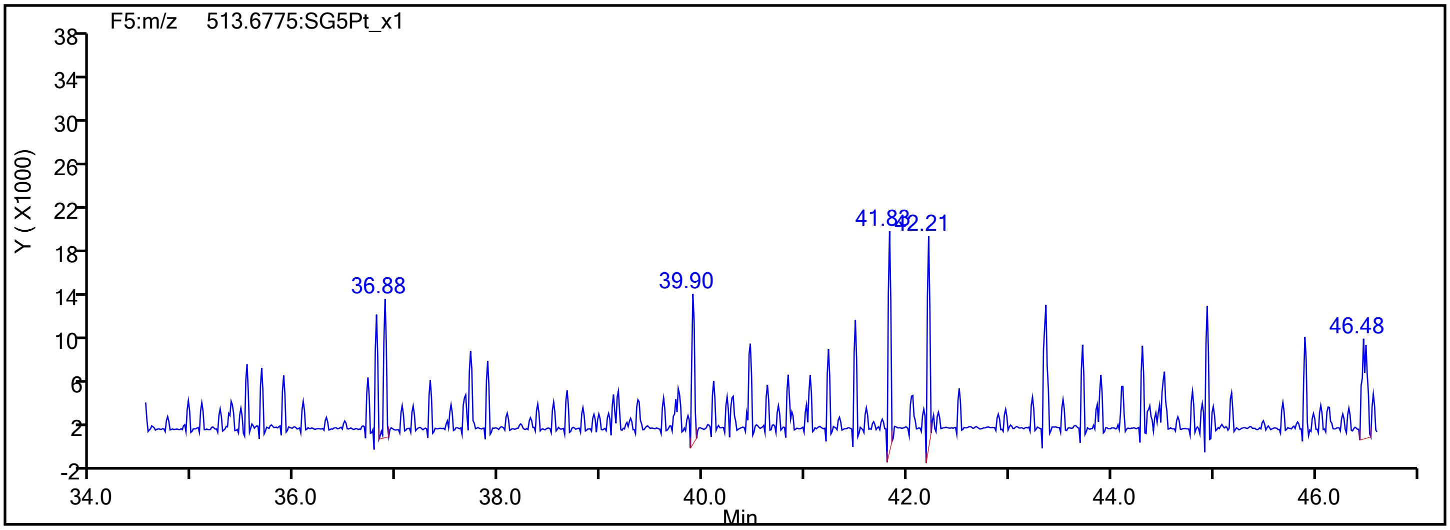

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Column Type:		Column Dia:	

OCDD

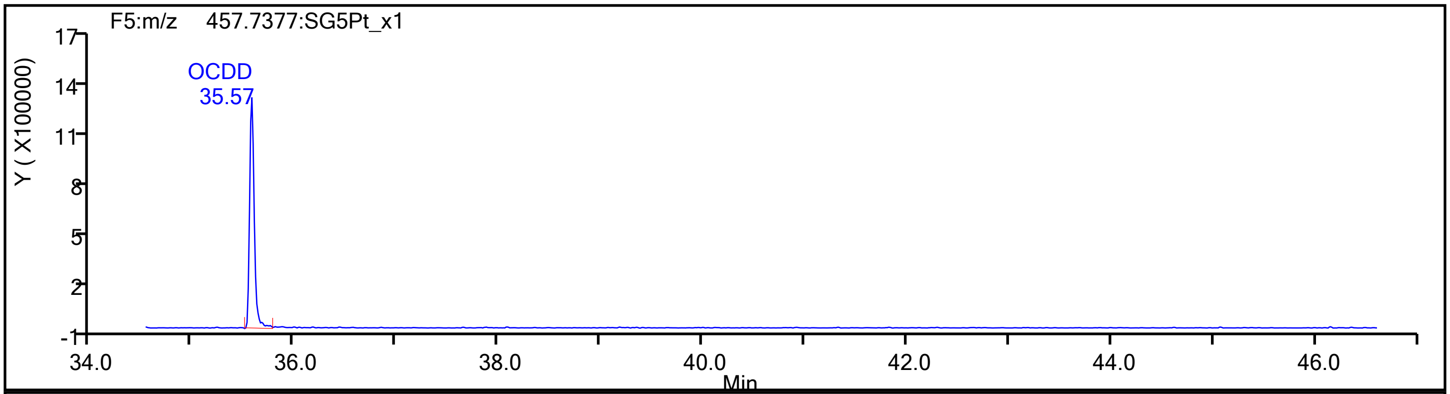

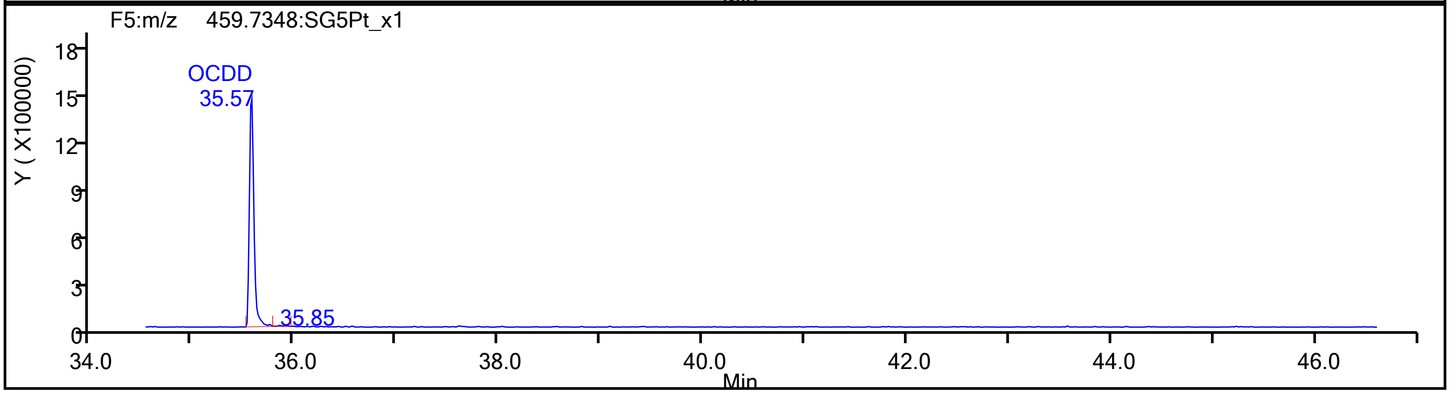

OCDD Standards

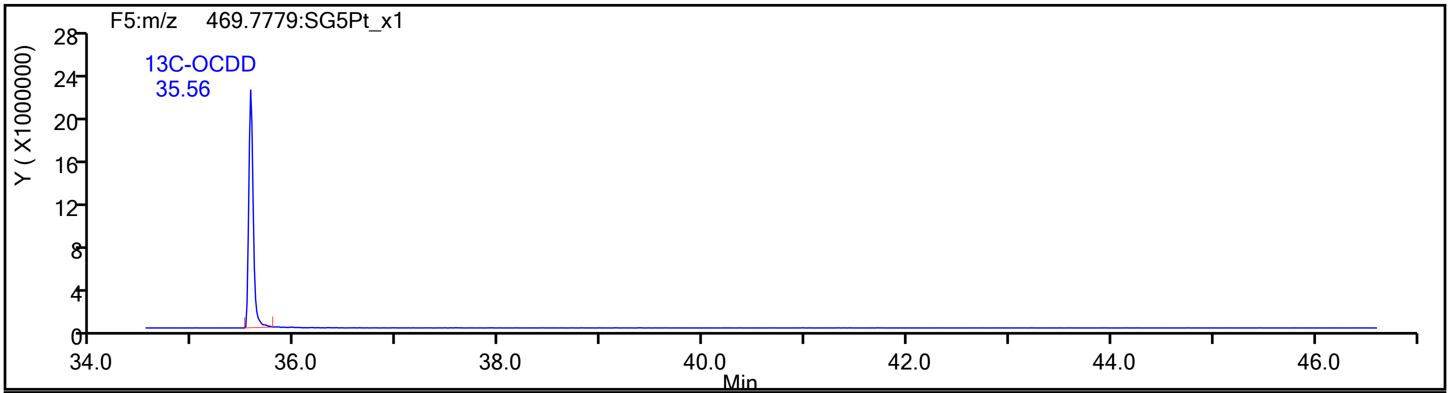

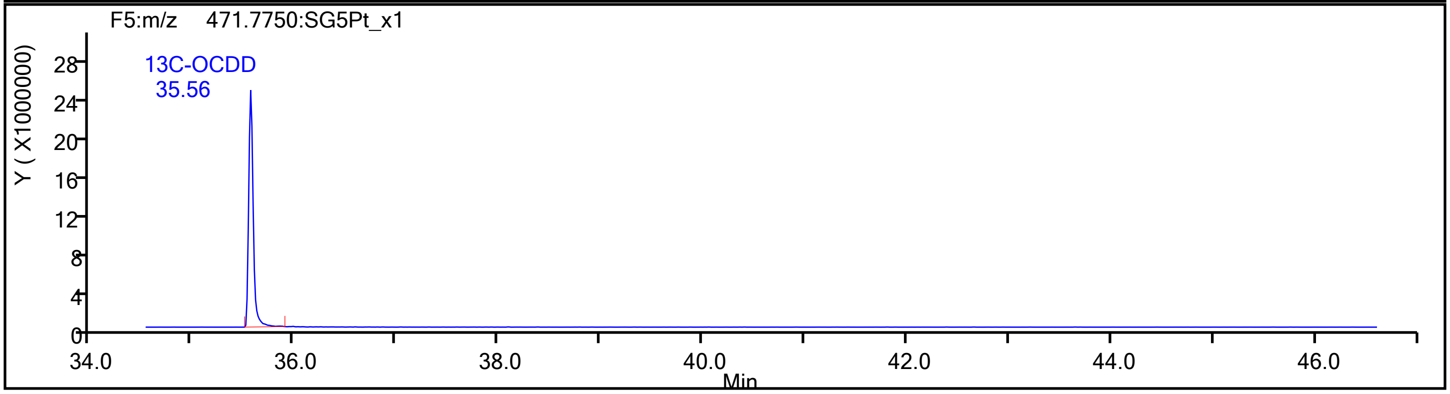

Report Date: 14-Oct-2020 08:33:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d		
Injection Date:	09-Oct-2020 15:27:48	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-3		
Worklist#:	420483	Sample Line#:	4
Column Type:		Column Dia:	

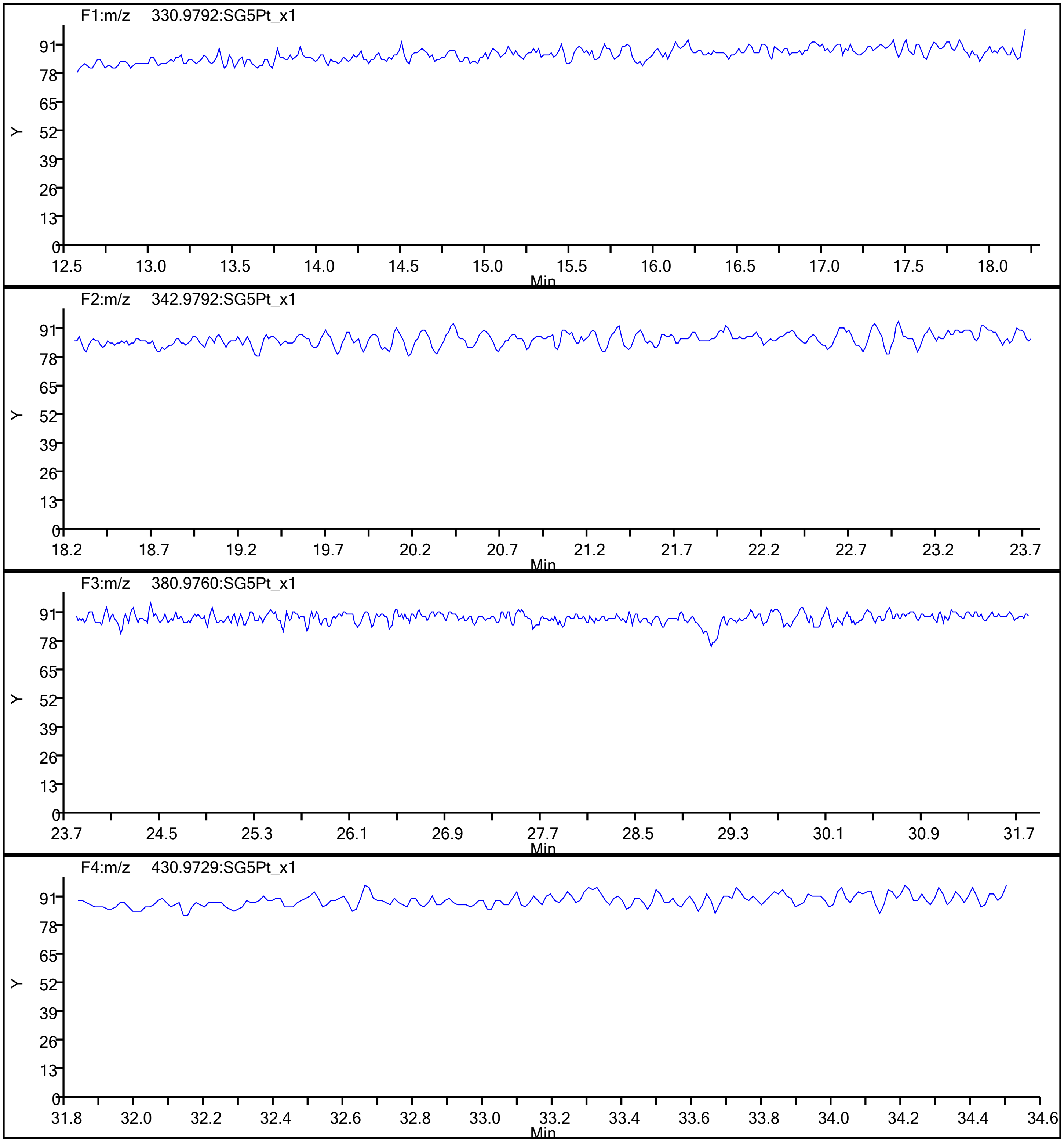

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_4.d
Injection Date: 09-Oct-2020 15:27:48
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-3
Worklist#: 420483
Sample Line#: 4
Column Type:
Column Dia:

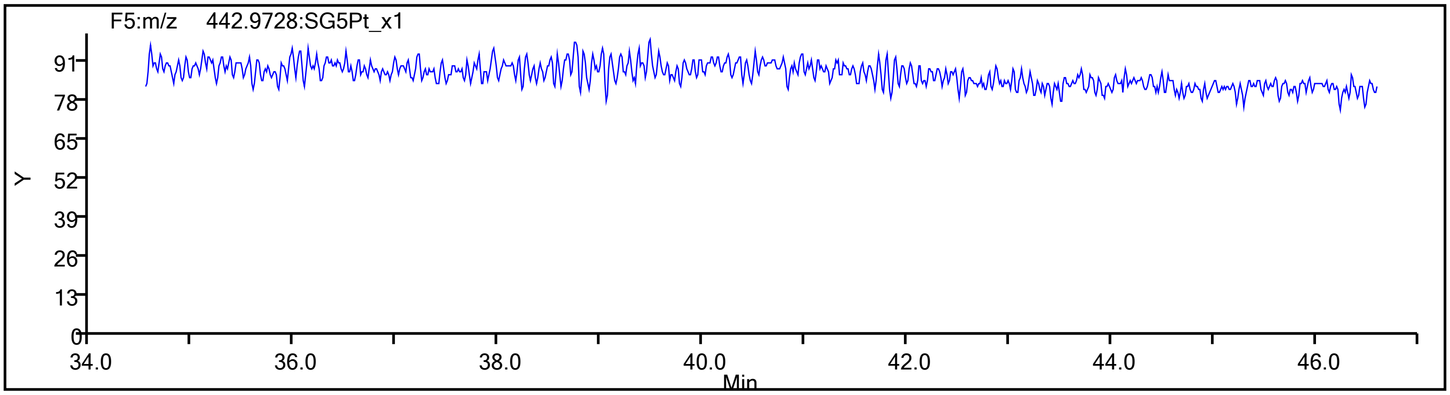

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-4-3 RA Lab Sample ID: 320-65130-11 RA

Matrix: Water Lab File ID: 13OC20A11D2_009.d

Analysis Method: 1613B Date Collected: 09/11/2020 14:30

Extract. Method: 1613B Date Extracted: 10/01/2020 08:42

Sample wt/vol: 973.2(mL) Date Analyzed: 10/14/2020 00:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421876 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	630	B	10	1.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	88		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	121		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_009.d				
Lims ID:	320-65130-A-11-A				
Client ID:	11215702-Tank#1-valve-4-3				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 00:48:54	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-11-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:34:59		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.930	70527796	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.069	97065438	0.80	1.5708	87.6	87.6	0.3480	0.3480	87.62	
2,3,7,8-TCDF	16.083	29474139	0.77	0.9943	30.5	30.5	0.0780	0.0780		
D 13C-2,3,7,8-TCDD	14.683	58155317	0.82	0.9834	83.9	83.9	0.9742	0.9742	83.85	
2,3,7,8-TCDD	14.711	8073510	0.77	1.2822	10.8	10.8	0.1179	0.1179		
$ 37Cl4-2,3,7,8-TCDD	14.697	34042018		0.9945	48.5	48.5	0.1296	0.1296	121	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_009.d
Lims ID: 320-65130-A-11-A
Client ID: 11215702-Tank#1-valve-4-3
Sample Type: Client
Inject. Date: 14-Oct-2020 00:48:54 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-11-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:34:59

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.930	14.928	0		31176084	7713174	33908	84770	227		
333.9339	14.930	14.928	0		39351712	10046811	34148	85370	294	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.069	16.067	0	1.076	43139189	10160968	22721	56802	447		
317.9389	16.055	16.067	-1	1.075	53926249	12615300	16117	40292	783	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.083	16.081	0	1.001	12860924	3085588	2681	6702	1151		
305.8987	16.083	16.081	0	1.001	16613215	3941736	4388	10970	898	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.683	14.681	0	0.983	26152503	6714324	33908	84770	198		
333.9339	14.683	14.681	0	0.983	32002814	8168620	34148	85370	239	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.711	14.709	0	1.002	3506977	886696	4804	12010	185		
321.8936	14.711	14.709	0	1.002	4566533	1089551	4196	10490	260	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.697	14.709	-1	0.984	34042018	8676588	9156	22890	948		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_009.d		
Injection Date:	14-Oct-2020 00:48:54	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-3		
Worklist#:	421876	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

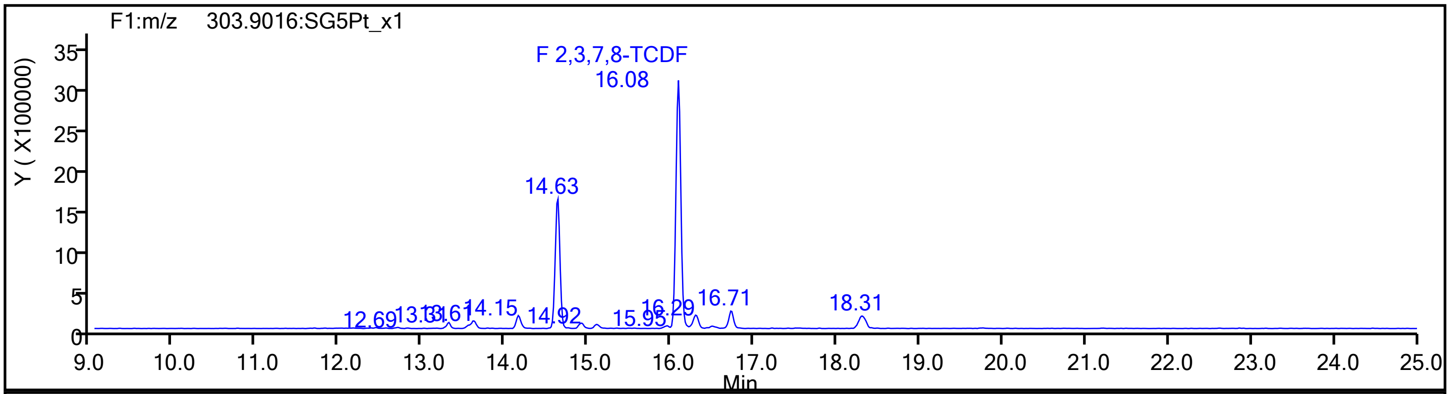

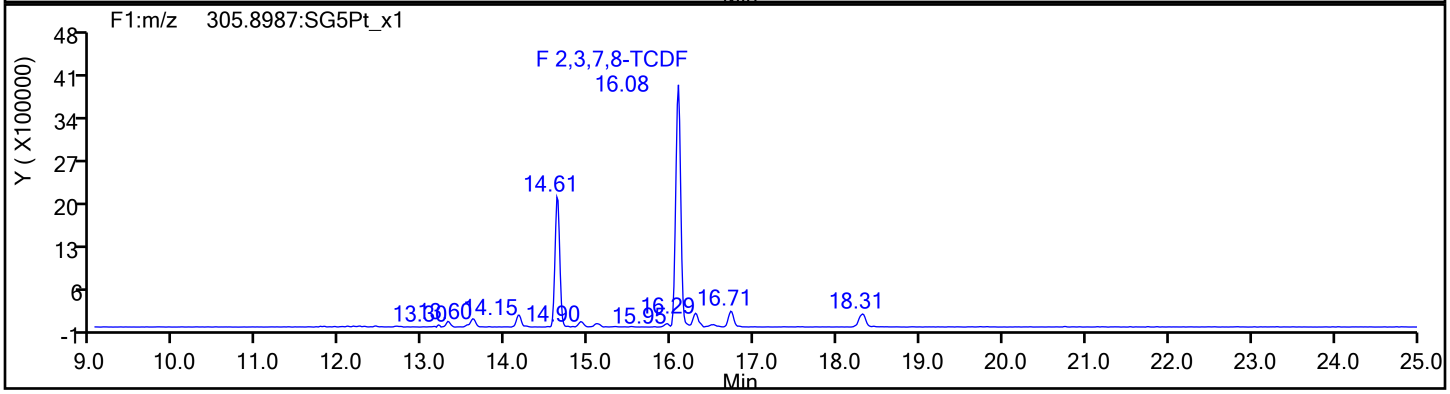

TCDF Standards

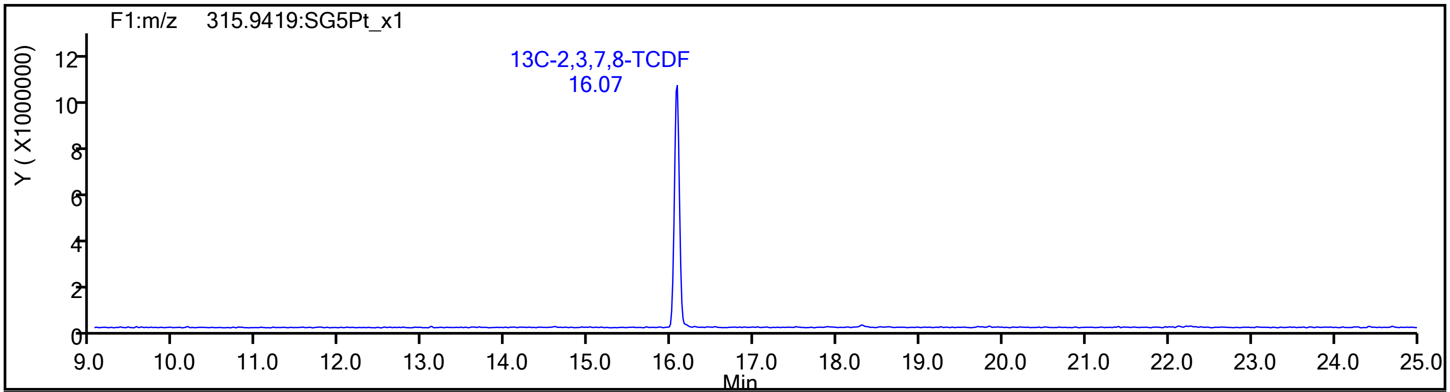

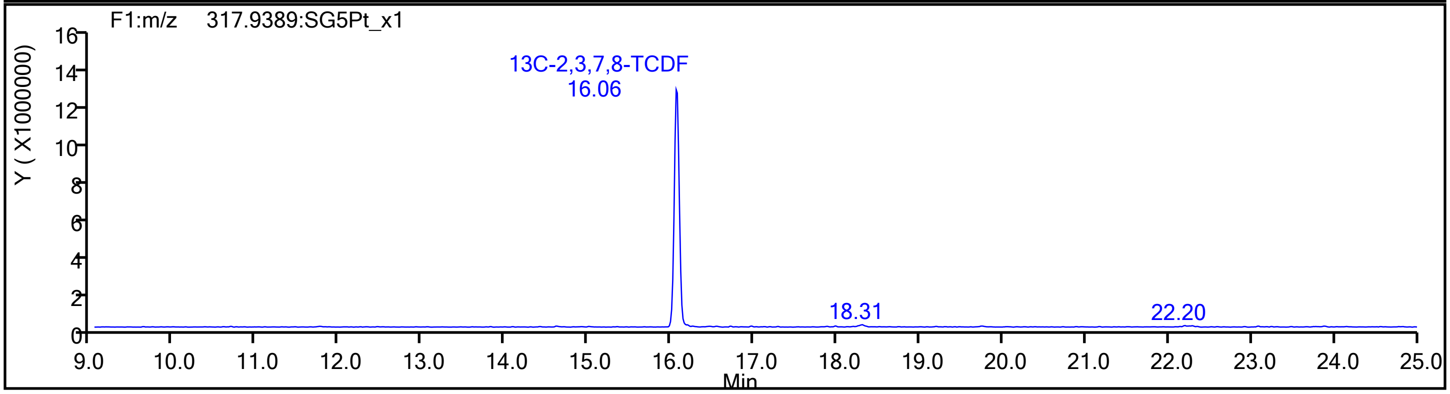

Report Date: 14-Oct-2020 17:38:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_009.d		
Injection Date:	14-Oct-2020 00:48:54	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-3		
Worklist#:	421876	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

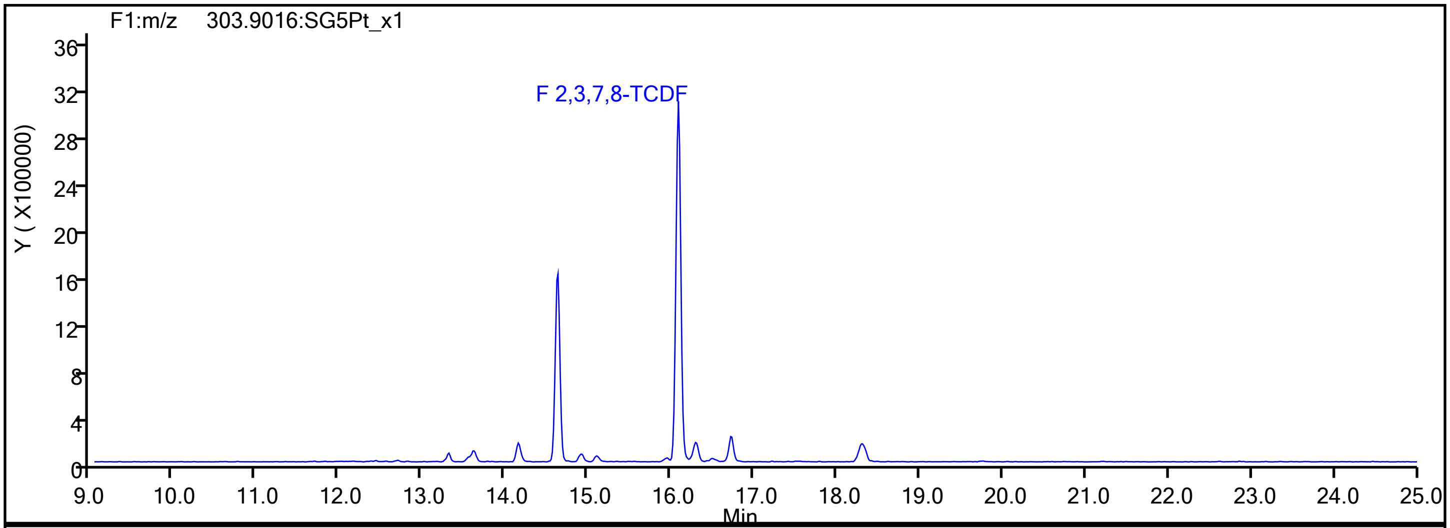

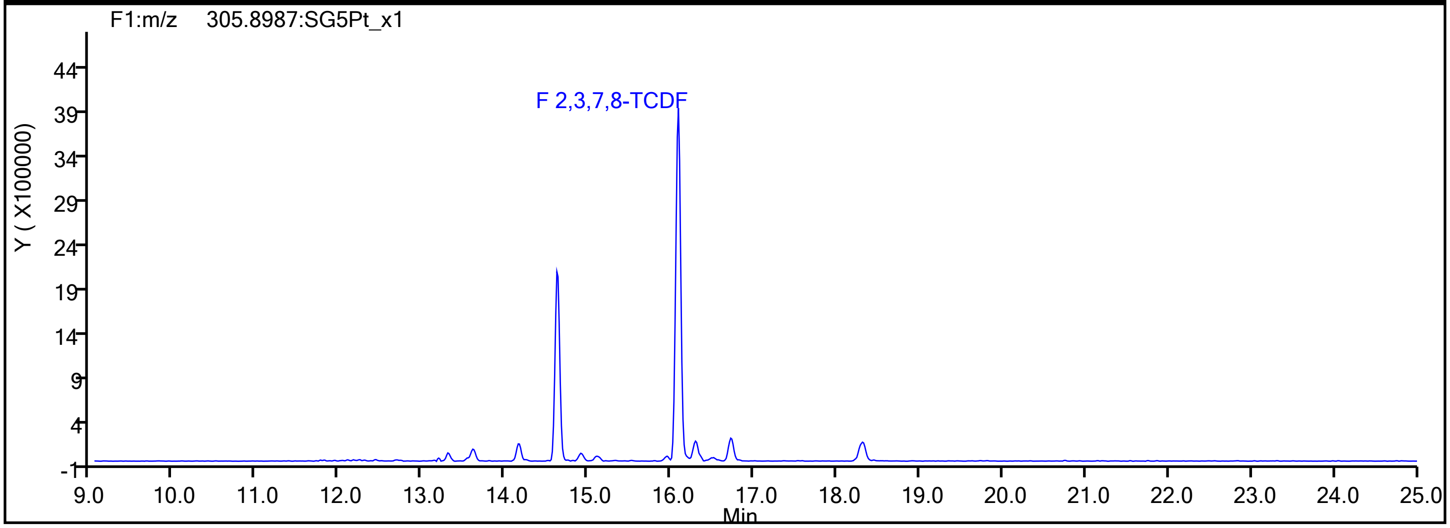

TCDF Interference Mass

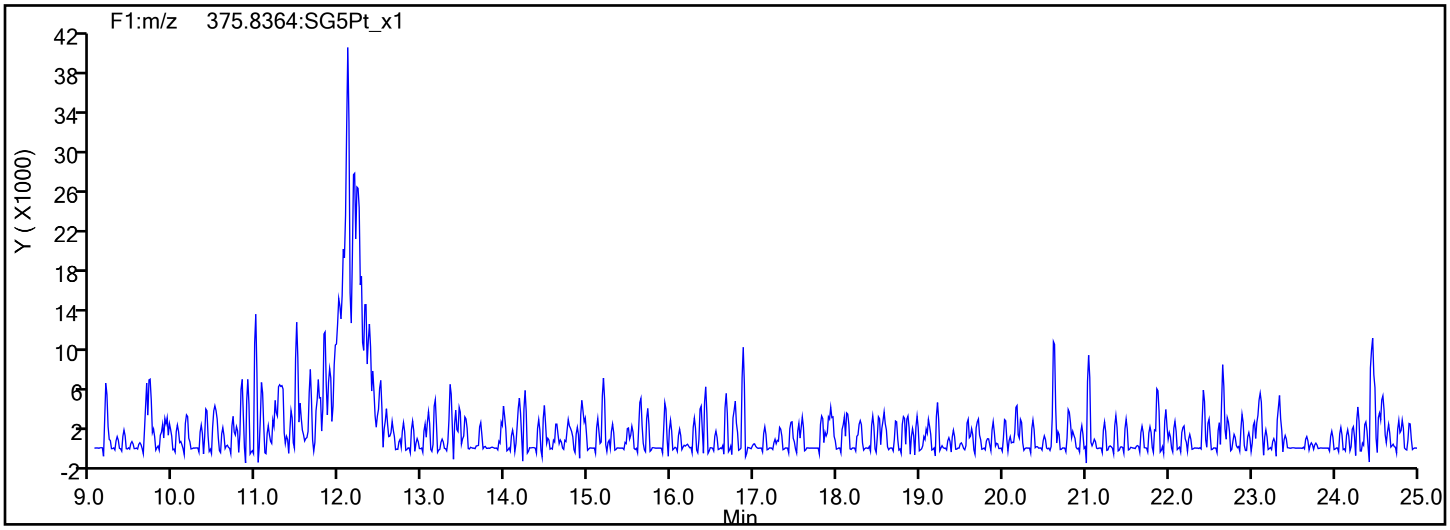

Report Date: 14-Oct-2020 17:38:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_009.d		
Injection Date:	14-Oct-2020 00:48:54	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-4-3		
Worklist#:	421876	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

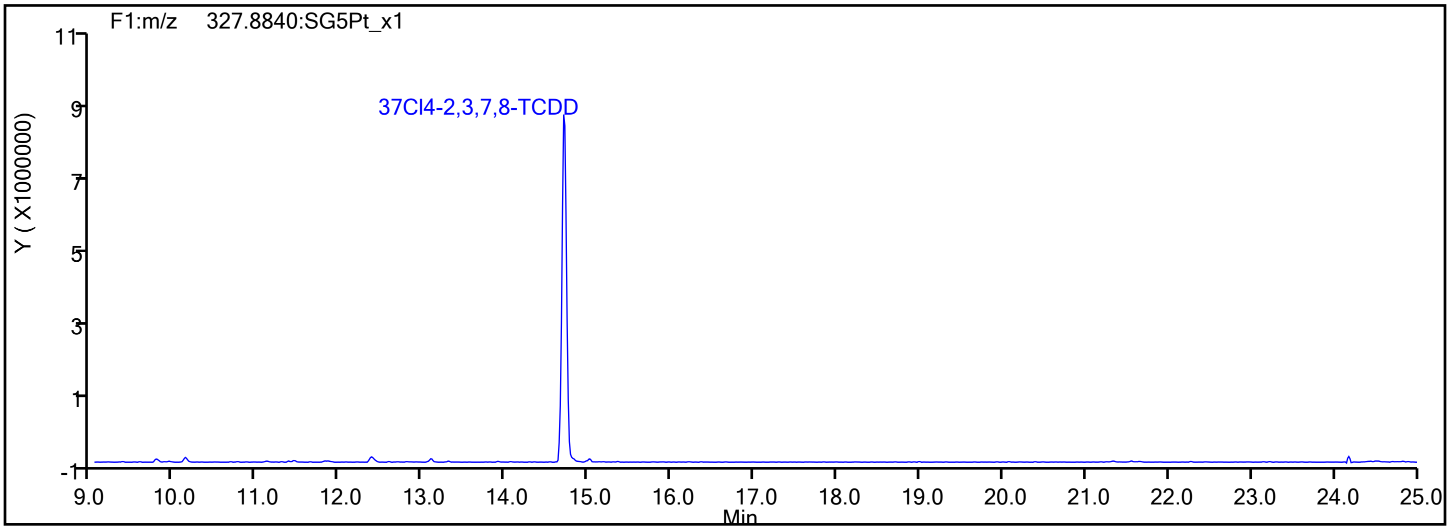

37Cl4-TCDD Standards

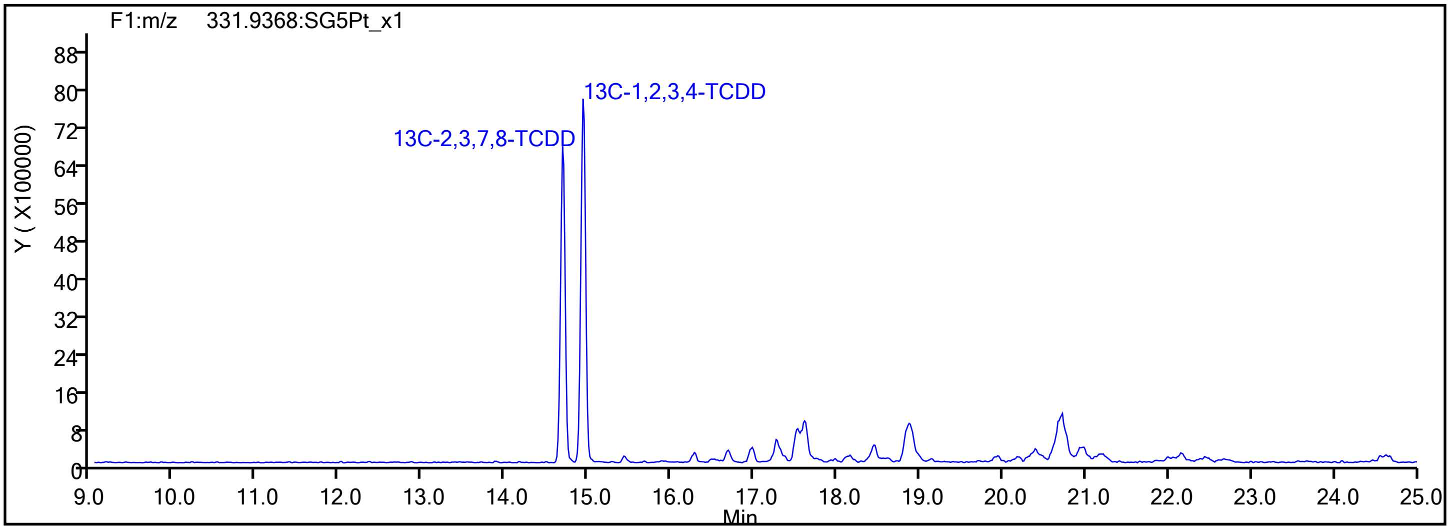

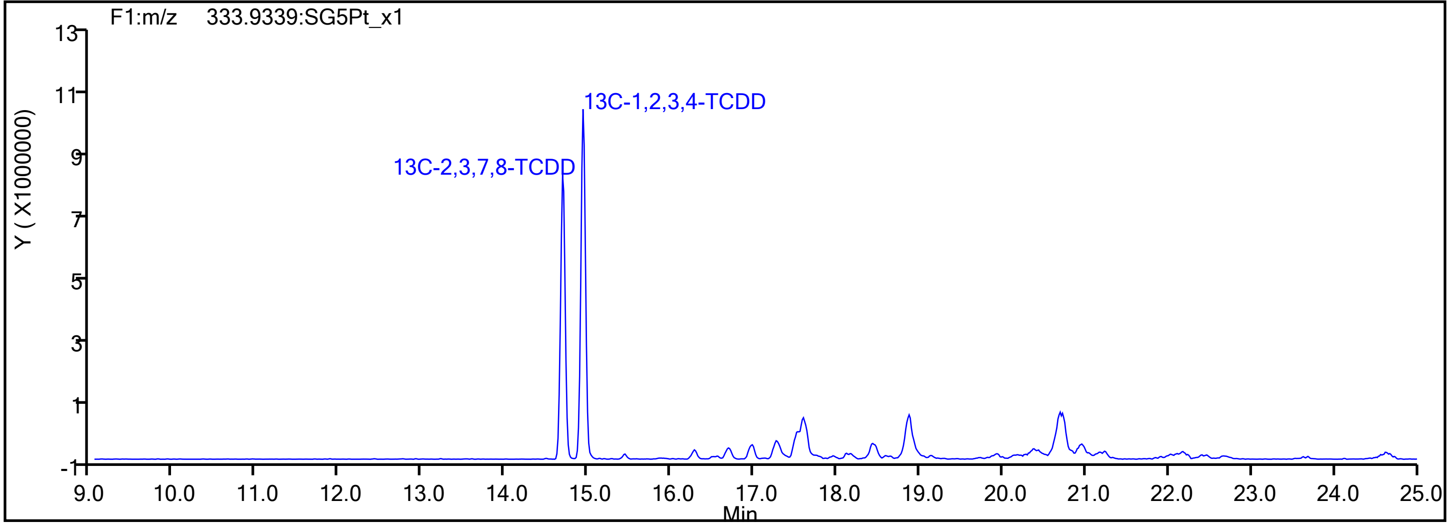

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_009.d
Injection Date: 14-Oct-2020 00:48:54
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-4-3
Worklist#: 421876
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

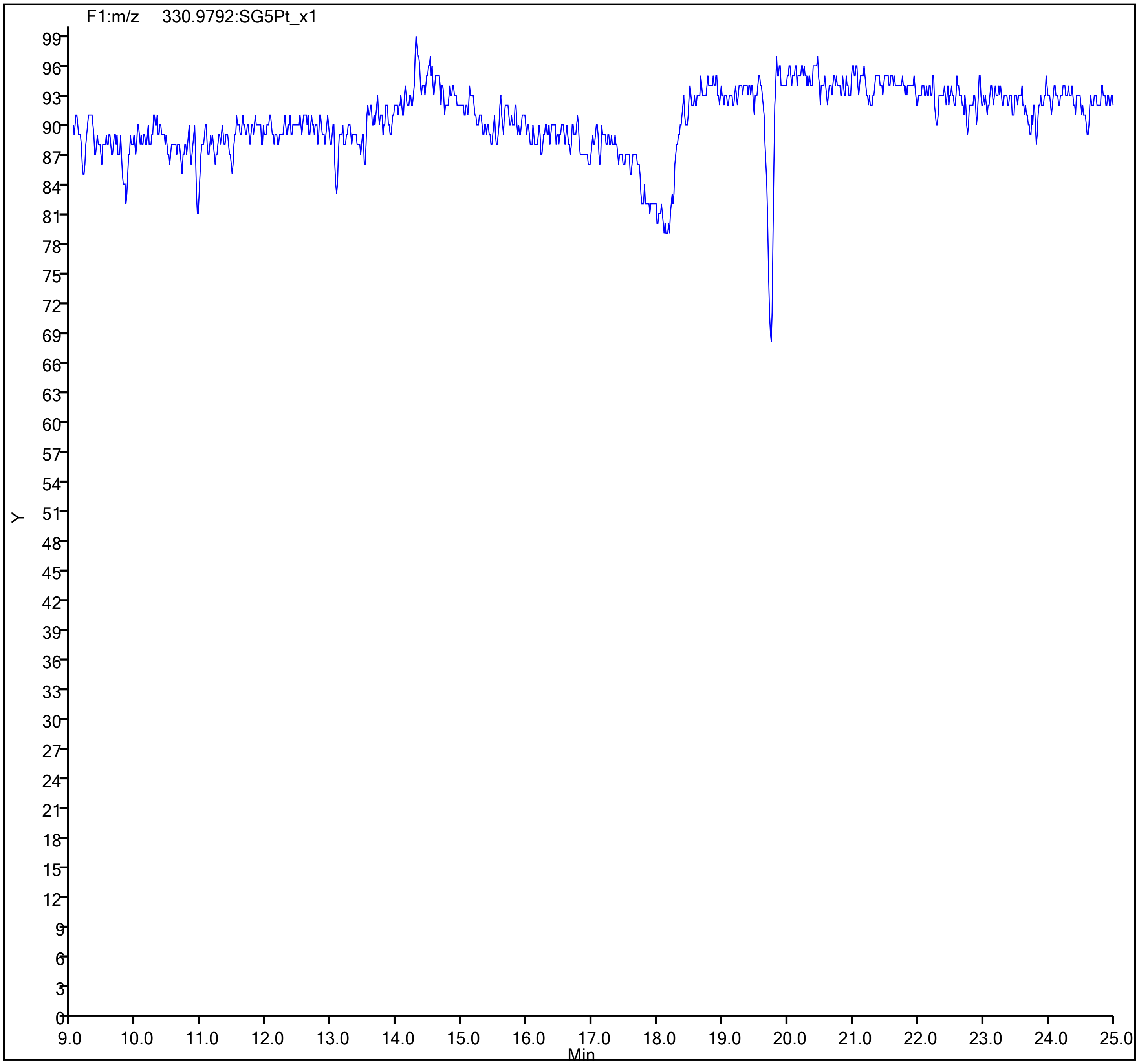

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-5-3	Lab Sample ID: 320-65130-12
Matrix: Water	Lab File ID: 09OC203D5_5.d
Analysis Method: 1613B	Date Collected: 09/11/2020 14:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 982.8(mL)	Date Analyzed: 10/09/2020 16:15
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420483	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	510		10	2.2
40321-76-4	1,2,3,7,8-PeCDD	5.1	J B q	51	0.62
57117-41-6	1,2,3,7,8-PeCDF	52	B	51	0.76
57117-31-4	2,3,4,7,8-PeCDF	32	J B	51	0.86
39227-28-6	1,2,3,4,7,8-HxCDD	3.4	J B	51	0.73
57653-85-7	1,2,3,6,7,8-HxCDD	2.9	J B	51	0.80
19408-74-3	1,2,3,7,8,9-HxCDD	2.4	J B	51	0.70
70648-26-9	1,2,3,4,7,8-HxCDF	90	B	51	0.74
57117-44-9	1,2,3,6,7,8-HxCDF	23	J B	51	0.80
72918-21-9	1,2,3,7,8,9-HxCDF	3.9	J B	51	0.58
60851-34-5	2,3,4,6,7,8-HxCDF	ND		51	0.86
35822-46-9	1,2,3,4,6,7,8-HpCDD	25	J B	51	0.47
67562-39-4	1,2,3,4,6,7,8-HpCDF	46	J B	51	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	16	J B	51	0.40
3268-87-9	OCDD	300	B	100	1.2
39001-02-0	OCDF	62	J B	100	0.39
41903-57-5	Total TCDD	550	B	10	2.2
30402-14-3	Total TCDF	2900	B q	10	5.0
36088-22-9	Total PeCDD	6.4	J B q	51	0.62
30402-15-4	Total PeCDF	130	B q	51	0.81
34465-46-8	Total HxCDD	10	J B	51	0.74
55684-94-1	Total HxCDF	130	B q	51	0.75
37871-00-4	Total HpCDD	46	J B	51	0.47
38998-75-3	Total HpCDF	74	B	51	0.39

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-valve-5-3	Lab Sample ID: 320-65130-12
Matrix: Water	Lab File ID: 09OC203D5_5.d
Analysis Method: 1613B	Date Collected: 09/11/2020 14:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 982.8(mL)	Date Analyzed: 10/09/2020 16:15
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420483	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	77		25-164
89059-46-1	13C-2,3,7,8-TCDF	81		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	78		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	68		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	69		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	91		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	90		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	75		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	80		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	76		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	85		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	82		26-138
114423-97-1	13C-OCDD	99		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	97		35-197

Report Date: 16-Oct-2020 06:43:15 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d
Lims ID: 320-65130-A-12-A
Client ID: 11215702-Tank#1-valve-5-3
Sample Type: Client
Inject. Date: 09-Oct-2020 16:15:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-12-A 320-65130-A-12-A
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 06:43:15 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1617

First Level Reviewer: krenns Date: 16-Oct-2020 06:43:15

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	245905844	0.81	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	295452307	0.81	1.4844	80.9	80.9	0.1849	0.1849	80.94	
2,3,7,8-TCDF	15.492	230931130	0.77	0.9534	82.0	82.0	0.2450	0.2450		
A Non-2,3,7,8-sub-TCDF	15.220	173987656	0.77	0.9534	61.9	61.8	0.2450	34.9		RQMa
S Total TCDF					143.9	143.7	0.2450	0.2450		RQ
D 13C-2,3,7,8-TCDD	16.082	205405350	0.83	1.0875	76.8	76.8	0.2234	0.2234	76.81	
2,3,7,8-TCDD	16.097	52153526	0.79	1.0205	24.9	24.9	0.1060	0.1060		Ma
$ 37Cl4-2,3,7,8-TCDD	16.097	107511983		1.1216	39.0	39.0	0.0827	0.0827	97.45	
A Non-2,3,7,8-sub-TCDD	15.613	4780224	0.80	1.0205	2.281	2.281	0.1060	2.281		Ma
S Total TCDD					27.2	27.2	0.1060	0.1060		
D 13C-1,2,3,7,8-PeCDF	19.686	234232397	1.53	1.3943	68.3	68.3	0.1817	0.1817	68.31	
1,2,3,7,8-PeCDF	19.714	6425573	1.72	1.0794	2.542	2.542	0.0375	0.0375		M
D 13C-2,3,4,7,8-PeCDF	20.805	225541122	1.54	1.3370	68.6	68.6	0.1894	0.1894	68.60	
2,3,4,7,8-PeCDF	20.832	3881230	1.56	1.0966	1.569	1.569	0.0420	0.0420		
A F1 PeCDFs	17.722	147576	1.55	1.0880	0.0658	0.0590	0.0155	0.0590		RQM
A Non-2,3,7,8-sub-PeCDF	20.335	6145097	1.55	1.0880	2.472	2.457	0.0396	1.102		RQMa
S Total PeCDF					6.648	6.627	0.0398	0.0398		RQ
D 13C-1,2,3,7,8-PeCDD	21.418	161850903	1.57	0.8475	77.7	77.7	0.1264	0.1264	77.66	
1,2,3,7,8-PeCDD	21.432	462166	1.55	1.1397	0.2782	0.2506	0.0303	0.0303		RQ
A Non-2,3,7,8-sub-PeCDD	20.491	118084	1.70	1.1397	0.0640	0.0640	0.0303	0.0640		
S Total PeCDD					0.3422	0.3146	0.0303	0.0303		RQ
D 13C-1,2,3,4,7,8-HxCDF	26.706	182456238	0.54	1.3065	77.2	77.2	0.4208	0.4208	77.22	
1,2,3,4,7,8-HxCDF	26.733	10182352	1.25	1.2552	4.446	4.446	0.0365	0.0365		
D 13C-1,2,3,6,7,8-HxCDF	26.986	193307955	0.52	1.4213	75.2	75.2	0.3869	0.3869	75.20	
1,2,3,6,7,8-HxCDF	27.012	2646985	1.18	1.2102	1.131	1.131	0.0392	0.0392		
D 13C-2,3,4,6,7,8-HxCDF	28.530	181703790	0.54	1.3142	76.4	76.4	0.4184	0.4184	76.45	
2,3,4,6,7,8-HxCDF	28.570						0.0424	0.0424		QMU
D 13C-1,2,3,7,8,9-HxCDF	30.381	190565679	0.51	1.3204	79.8	79.8	0.4164	0.4164	79.80	
1,2,3,7,8,9-HxCDF	30.394	446973	1.28	1.2319	0.1904	0.1904	0.0287	0.0287		
A Non-2,3,7,8-sub-HxCDF	27.432	1117983	1.24	1.2289	0.5082	0.4865	0.0360	0.3348		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					6.276	6.254	0.0367	0.0367		RQ
* 13C-1,2,3,7,8,9-HxCDD	30.075	180859670	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.023	141853238	1.28	0.8660	90.6	90.6	0.3394	0.3394	90.57	a
1,2,3,4,7,8-HxCDD	29.103	293814	1.27	1.2535	0.1652	0.1652	0.0358	0.0358		
D 13C-1,2,3,6,7,8-HxCDD	29.302	160544736	1.24	0.9827	90.3	90.3	0.2991	0.2991	90.33	a
1,2,3,6,7,8-HxCDD	29.329	251892	1.41	1.1117	0.1411	0.1411	0.0394	0.0394		M
1,2,3,7,8,9-HxCDD	30.075	224827	1.32	1.2852	0.1157	0.1157	0.0345	0.0345		M
A Non-2,3,7,8-sub-HxCDD	27.845	161196	1.14	1.2168	0.0876	0.0876	0.0364	0.0876		M
S Total HxCDD					0.5097	0.5097	0.0365	0.0365		
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	144003358	0.45	0.9410	84.6	84.6	1.379	1.379	84.61	
1,2,3,4,6,7,8-HpCDF	32.547	4790991	1.07	1.4783	2.250	2.250	0.0181	0.0181		
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	129404572	0.46	0.8751	81.8	81.8	1.483	1.483	81.76	
1,2,3,4,7,8,9-HpCDF	33.653	1442975	1.02	1.3784	0.8090	0.8090	0.0197	0.0197		
A Non-2,3,7,8-sub-HpCDF	33.088	1079150	0.99	1.4284	0.5527	0.5527	0.0189	0.5527		
S Total HpCDF					3.612	3.612	0.0189	0.0189		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	140149404	1.14	0.9049	85.6	85.6	2.543	2.543	85.63	
1,2,3,4,6,7,8-HpCDD	33.410	1871790	1.03	1.0862	1.230	1.230	0.0229	0.0229		
A Non-2,3,7,8-sub-HpCDD	33.339	1588035	1.18	1.0862	1.043	1.043	0.0229	1.043		
S Total HpCDD					2.273	2.273	0.0229	0.0229		
D 13C-OCDD	35.558	206790737	0.93	0.5783	197.7	197.7	0.8897	0.8897	98.86	
OCDF	35.630	5464133	0.84	1.7248	3.064	3.064	0.0192	0.0192		
OCDD	35.570	19465082	0.89	1.2576	15.0	15.0	0.0586	0.0586		
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Oct-2020 06:43:15 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d
Lims ID: 320-65130-A-12-A
Client ID: 11215702-Tank#1-valve-5-3
Sample Type: Client
Inject. Date: 09-Oct-2020 16:15:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-12-A 320-65130-A-12-A
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 06:43:15 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1617

First Level Reviewer: krenns Date: 16-Oct-2020 06:43:15

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.900	1		110166290	31670987	30171	75427	1050		
333.9339	15.915	15.900	1		135739554	38930133	38421	96052	1013	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.462	1	0.972	132403402	37406194	40986	102465	913		
317.9389	15.477	15.462	1	0.972	163048905	46653640	36525	91312	1277	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.477	1	1.001	100509967	26888703	36501	91252	737		
305.8987	15.492	15.477	1	1.001	130421163	35679545	42054	105135	848	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	14.297	15.220	-55	0.924	3348777	1048296	36501	91252	29		
305.8987	14.297	15.220	-55	0.924	3976839	1275259	42054	105135	30	0.84(0.65-0.89)	
303.9016	14.539	15.220	-41	0.939	4457876	1133082	36501	91252	31		M
305.8987	14.539	15.220	-41	0.939	5873526	1444205	42054	105135	34	0.76(0.65-0.89)	
303.9016	14.736	15.220	-29	0.952	3424867	1023455	36501	91252	28		M
305.8987	14.736	15.220	-29	0.952	4325653	1167320	42054	105135	28	0.79(0.65-0.89)	
303.9016	14.932	15.220	-17	0.965	4897970	1376080	36501	91252	38		
305.8987	14.932	15.220	-17	0.965	5931072	1648941	42054	105135	39	0.83(0.65-0.89)	
303.9016	15.174	15.220	-3	0.980	42870262	12547978	36501	91252	344		
305.8987	15.174	15.220	-3	0.980	55369437	15909369	42054	105135	378	0.77(0.65-0.89)	
303.9016	15.341	15.220	7	0.991	2669635	687282	36501	91252	19		
	Empc Correction				2219511	607902	36501	91252	17		
305.8987	15.341	15.220	7	0.991	2882483	789484	42054	105135	19	0.93(0.65-0.89)	
303.9016	15.855	15.220	38	1.024	6473297	1786735	36501	91252	49		
305.8987	15.855	15.220	38	1.024	8339332	2292361	42054	105135	55	0.78(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	16.051	15.220	50	1.037	1588098	382506	36501	91252	10		
305.8987	16.051	15.220	50	1.037	1797452	485827	42054	105135	12	0.88(0.65-0.89)	
303.9016	17.019	15.220	108	1.100	7441766	1851693	36501	91252	51		
305.8987	17.019	15.220	108	1.100	8769438	2151704	42054	105135	51	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.082	16.066	1	1.010	93218144	24350278	30171	75427	807		
333.9339	16.082	16.066	1	1.010	112187206	30484180	38421	96052	793	0.83(0.65-0.89)	
2,3,7,8-TCDD											Ma
319.8965	16.097	16.081	1	1.001	23069747	6077866	12957	32392	469		M
321.8936	16.097	16.081	1	1.001	29083779	7623611	10768	26920	708	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.081	1	1.011	107511983	28449974	26210	65525	1085		
A Non-2,3,7,8-sub-TCDD											Ma
319.8965	16.399	15.613	47	1.020	2125425	513525	12957	32392	40		M
321.8936	16.399	15.613	47	1.020	2654799	631854	10768	26920	59	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.673	1	1.237	141617942	29135695	41126	102815	708		
353.8970	19.686	19.673	1	1.237	92614455	18975808	30403	76007	624	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.714	19.700	1	1.001	4062338	850981	4293	10732	198		M
341.8567	19.714	19.700	1	1.001	2363235	491537	3497	8742	141	1.72(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	20.805	20.791	1	1.307	136848165	25889613	41126	102815	630		
353.8970	20.805	20.791	1	1.307	88692957	16378105	30403	76007	539	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.805	2	1.001	2366815	435307	4293	10732	101		
341.8567	20.818	20.805	1	1.001	1514415	289223	3497	8742	83	1.56(1.32-1.78)	
A F1 PeCDFs											RQM
339.8597	17.291	17.722	-26	0.878	106701	23667	1205	3012	20		M
	Empc Correction				89703	18629	1205	3012	15		
341.8567	17.291	17.722	-26	0.878	57873	12019	1841	4602	7	1.84(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	18.596	20.335	-104	0.945	1695122	358450	4293	10732	83		
341.8567	18.596	20.335	-104	0.945	1060212	239667	3497	8742	69	1.60(1.32-1.78)	
339.8597	19.291	20.335	-63	0.980	165158	25213	4293	10732	6		
341.8567	19.250	20.335	-65	0.978	143821	17757	3497	8742	5	1.15(1.32-1.78)	
	Empc Correction				106553	16266	3497	8742	5		
339.8597	19.604	20.335	-44	0.996	300189	78965	4293	10732	18		M
341.8567	19.604	20.335	-44	0.996	200649	51085	3497	8742	15	1.50(1.32-1.78)	
339.8597	20.150	20.335	-11	1.024	1009832	222811	4293	10732	52		
341.8567	20.150	20.335	-11	1.024	644166	135118	3497	8742	39	1.57(1.32-1.78)	
339.8597	21.118	20.335	47	1.073	580519	109319	4293	10732	25		
341.8567	21.104	20.335	46	1.072	382697	77834	3497	8742	22	1.52(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.404	1	1.346	98890169	17566890	17886	44715	982		
369.8919	21.418	21.404	1	1.346	62960734	10995025	12375	30937	888	1.57(1.32-1.78)	

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Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											RQ
355.8546	21.432	21.432	0	1.001	280925	51452	2186	5465	24		
357.8516	21.445	21.432	1	1.001	232224	51238	1760	4400	29	1.21(1.32-1.78)	
	Empc Correction				181241	33194	1760	4400	19		
A Non-2,3,7,8-sub-PeCDD											
355.8546	18.759	20.491	-104	0.876	74339	16867	2186	5465	8		
357.8516	18.759	20.491	-104	0.876	43745	8306	1760	4400	5	1.70(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.706	26.706	0	0.888	63772882	9046353	23453	58632	386		
385.8610	26.706	26.706	0	0.888	118683356	16444176	38289	95722	429	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.733	26.733	0	1.001	5648956	777569	2337	5842	333		
375.8178	26.719	26.733	-1	1.000	4533396	603947	2335	5837	259	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	26.986	0	0.897	66462030	8472341	23453	58632	361		
385.8610	26.986	26.986	0	0.897	126845925	16118084	38289	95722	421	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.012	27.012	0	1.001	1434912	182891	2337	5842	78		
375.8178	27.026	27.012	1	1.001	1212073	148407	2335	5837	64	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.530	28.544	-1	0.949	63451069	7904633	23453	58632	337		
385.8610	28.530	28.544	-1	0.949	118252721	14731181	38289	95722	385	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											QMU
373.8208	28.570						2337	5842			
375.8178	28.570						2335	5837			
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.381	0	1.010	64748610	11350384	23453	58632	484		
385.8610	30.381	30.381	0	1.010	125817069	21684832	38289	95722	566	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.394	30.394	0	1.000	251190	40255	2337	5842	17		
375.8178	30.381	30.394	-1	1.000	195783	34655	2335	5837	15	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	24.656	27.432	-166	0.923	413004	62686	2337	5842	27		
375.8178	24.656	27.432	-166	0.923	356386	60267	2335	5837	26	1.16(1.05-1.43)	
373.8208	25.774	27.432	-99	0.965	242856	27725	2337	5842	12		
	Empc Correction				192971	30542	2337	5842	13		
375.8178	25.774	27.432	-99	0.965	155622	24631	2335	5837	11	1.56(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.062	1		100951197	15780559	17807	44517	886		
403.8529	30.075	30.062	1		79908473	12293539	15202	38005	809	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.023	29.023	0	0.965	79731455	9758294	17807	44517	548		a
403.8529	29.023	29.023	0	0.965	62121783	7675271	15202	38005	505	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.103	29.049	3	1.003	164537	19800	1527	3817	13		
391.8127	29.036	29.049	-1	1.000	129277	15620	1603	4007	10	1.27(1.05-1.43)	

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Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.302	29.276	2	0.974	88985207	10051792	17807	44517	564		a
403.8529	29.302	29.276	2	0.974	71559529	7832469	15202	38005	515	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8157	29.329	29.316	1	1.001	147445	17919	1527	3817	12		
391.8127	29.329	29.316	1	1.001	104447	17289	1603	4007	11	1.41(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8157	30.075	30.088	-1	1.036	128075	25917	1527	3817	17		M
391.8127	30.115	30.088	2	1.038	96752	13811	1603	4007	9	1.32(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											M
389.8157	25.641	27.845	-132	0.875	85787	14499	1527	3817	9		
391.8127	25.641	27.845	-132	0.875	75409	10409	1603	4007	6	1.14(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.535	0	1.082	44437789	14961429	34363	85907	435		
419.8220	32.535	32.535	0	1.082	99565569	32903176	111371	278427	295	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	2471185	820209	2698	6745	304		
409.7789	32.547	32.547	0	1.000	2319806	801144	2438	6095	329	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.629	1	1.119	40650289	14792098	34363	85907	430		
419.8220	33.641	33.629	1	1.119	88754283	32493704	111371	278427	292	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.641	1	1.000	727365	248973	2698	6745	92		
409.7789	33.653	33.641	1	1.000	715610	259224	2438	6095	106	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.888	33.088	-12	1.011	536304	175227	2698	6745	65		
409.7789	32.888	33.088	-12	1.011	542846	161923	2438	6095	66	0.99(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.386	1	1.110	74667413	26545842	137198	342995	193		
437.8140	33.398	33.386	1	1.110	65481991	24076776	121177	302942	199	1.14(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.398	1	1.000	951838	334079	2770	6925	121		
425.7737	33.398	33.398	0	1.000	919952	333030	2273	5682	147	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	32.851	33.339	-29	0.984	858077	300711	2770	6925	109		
425.7737	32.851	33.339	-29	0.984	729958	256439	2273	5682	113	1.18(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.546	1	1.182	99793773	33009784	32544	81360	1014		
471.7750	35.558	35.546	1	1.182	106996964	35702265	25235	63087	1415	0.93(0.76-1.02)	
OCDF											
441.7428	35.630	35.618	1	1.002	2496863	803832	1962	4905	410		
443.7399	35.630	35.618	1	1.002	2967270	1014662	2587	6467	392	0.84(0.76-1.02)	
OCDD											
457.7377	35.570	35.558	1	1.000	9147939	3165185	4769	11922	664		
459.7348	35.570	35.558	1	1.000	10317143	3352994	5364	13410	625	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Oct-2020 06:43:15 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

Non-2,3,7,8-sub-TCDF, RT: 15.220

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	295452307	84059834

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	295452307	84059834

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.297	3348777	1048296	3976839	1275259	2.60	0.84	
14.539	4457876	1133082	5873526	1444205	3.67	0.76	Ma
14.736	3424867	1023455	4325653	1167320	2.75	0.79	M
14.932	4897970	1376080	5931072	1648941	3.84	0.83	
15.174	42870262	12547978	55369437	15909369	34.9	0.77	
15.341	2669635	687282	2882483	789484	1.97	0.93	RQ
15.341	2219511	607902	2882483	789484	1.81		Empc Correction
15.855	6473297	1786735	8339332	2292361	5.26	0.78	
16.051	1588098	382506	1797452	485827	1.20	0.88	
17.019	7441766	1851693	8769438	2151704	5.76	0.85	
Signal Totals:							
	76722424	21757727	97265232	27164470			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	174437780	49001577				0.79	RQMa
	173987656	48922197					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 61.927 = (174437780 * 100.000) / (295452307 * 0.953)

Empc Amount: 61.767 = (173987656 * 100.000) / (295452307 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

Non-2,3,7,8-sub-TCDD, RT: 15.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	205405350	54834458

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	205405350	54834458

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.399	2125425	513525	2654799	631854	2.28	0.80	Ma
Signal Totals:							
	2125425	513525	2654799	631854			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4780224	1145379				0.80	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.281 = (4780224 * 100.000) / (205405350 * 1.020)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

F1 PeCDFs, RT: 17.722

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	234232397	48111503
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	225541122	42267718

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	229886759	45189610

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.291	106701	23667	57873	12019	0.0658	1.84	RQM
17.291	89703	18629	57873	12019	0.0590		Empc Correction
Signal Totals:							
	89703	18629	57873	12019			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	164574	35686				1.84	RQM
	147576	30648					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0658 = (164574 * 100.000) / (229886759 * 1.088)
Empc Amount: 0.0590 = (147576 * 100.000) / (229886759 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 16-Oct-2020 06:43:15 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d
Lims ID: 320-65130-A-12-A
Client ID: 11215702-Tank#1-valve-5-3
Inject. Date: 09-Oct-2020 16:15:30 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 420483 Lims Sample ID: 5

Non-2,3,7,8-sub-PeCDF, RT: 20.335

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	234232397	48111503
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	225541122	42267718

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	229886759	45189610

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.596	1695122	358450	1060212	239667	1.10	1.60	
19.291	165158	25213	143821	17757	0.1235	1.15	RQ
19.291	165158	25213	106553	16266	0.1086		Empc Correction
19.604	300189	78965	200649	51085	0.2002	1.50	Ma
20.150	1009832	222811	644166	135118	0.6613	1.57	
21.118	580519	109319	382697	77834	0.3851	1.52	
Signal Totals:							
	3750820	794758	2394277	519970			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6182365	1316219				1.54	RQMa
	6145097	1314728					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.472 = (6182365 * 100.000) / (229886759 * 1.088)
Empc Amount: 2.457 = (6145097 * 100.000) / (229886759 * 1.088)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d
Lims ID: 320-65130-A-12-A
Client ID: 11215702-Tank#1-valve-5-3
Inject. Date: 09-Oct-2020 16:15:30
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 420483
Lims Sample ID: 5

Non-2,3,7,8-sub-PeCDD, RT: 20.491

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	161850903	28561915

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	161850903	28561915

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.759	74339	16867	43745	8306	0.0640	1.70	
Signal Totals:							
	74339	16867	43745	8306			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	118084	25173				1.70	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0640 = (118084 * 100.000) / (161850903 * 1.140)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

Non-2,3,7,8-sub-HxCDF, RT: 27.432

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	182456238	25490529
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	193307955	24590425
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	181703790	22635814
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	190565679	33035216

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	187008415	26437996

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.656	413004	62686	356386	60267	0.3348	1.16	
25.774	242856	27725	155622	24631	0.1734	1.56	RQ
25.774	192971	30542	155622	24631	0.1517		Empc Correction
Signal Totals:							
	605975	93228	512008	84898			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1167868	175309				1.28	RQ
	1117983	178126					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5082 = (1167868 * 100.000) / (187008415 * 1.229)
Empc Amount: 0.4865 = (1117983 * 100.000) / (187008415 * 1.229)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

Non-2,3,7,8-sub-HxCDD, RT: 27.845

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	141853238	17433565
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	160544736	17884261
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	151198987	17658913

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.641	85787	14499	75409	10409	0.0876	1.14	
Signal Totals:							
	85787	14499	75409	10409			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	161196	24908				1.14	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0876 = (161196 * 100.000) / (151198987 * 1.217)

Report Date: 16-Oct-2020 06:43:15 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

Non-2,3,7,8-sub-HpCDF, RT: 33.088

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	144003358	47864605
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	129404572	47285802

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	136703965	47575203

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.888	536304	175227	542846	161923	0.5527	0.99	
Signal Totals:							
	536304	175227	542846	161923			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1079150	337150				0.99	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5527 = (1079150 * 100.000) / (136703965 * 1.428)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Lims ID:	320-65130-A-12-A		
Client ID:	11215702-Tank#1-valve-5-3		
Inject. Date:	09-Oct-2020 16:15:30	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	5

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	140149404	50622618

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	140149404	50622618

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.851	858077	300711	729958	256439	1.04	1.18	
Signal Totals:							
	858077	300711	729958	256439			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1588035	557150				1.18	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1.043 = (1588035 * 100.000) / (140149404 * 1.086)

Report Date: 16-Oct-2020 06:43:16

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d

Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.03)

Signal: 1

Processing Integration Results

RT = 14.539 Area = 4678705

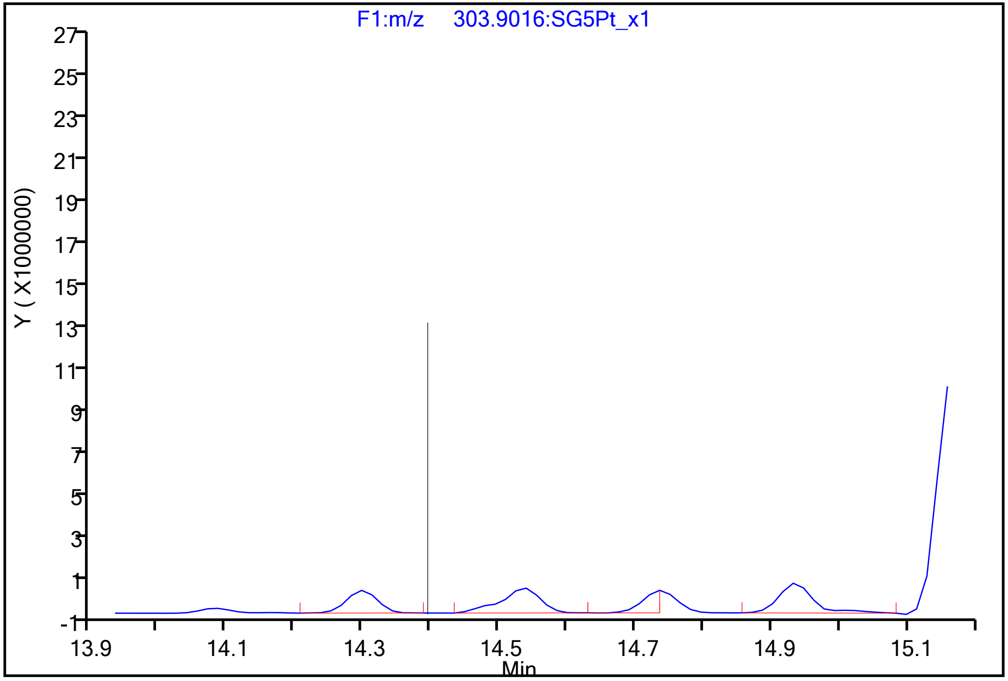

Manual Integration Results

RT = 14.539 Area = 4457876 M

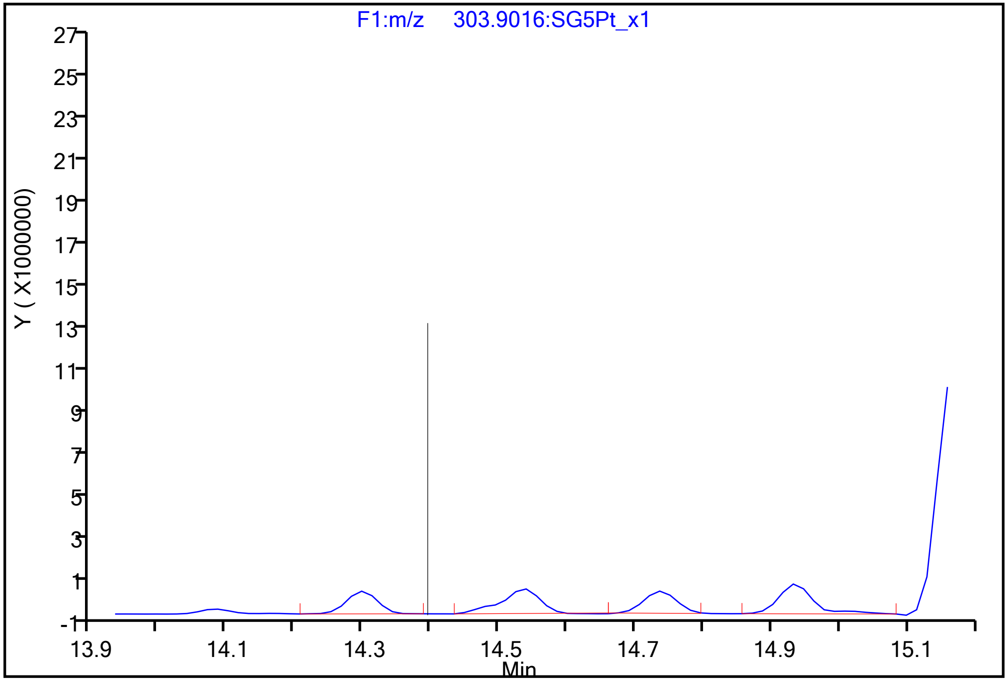

Reviewer: dadunj, 14-Oct-2020 08:34:20

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (13.41- 17.03)

Signal: 1

Processing Integration Results

RT = 14.721 Area = 1781468

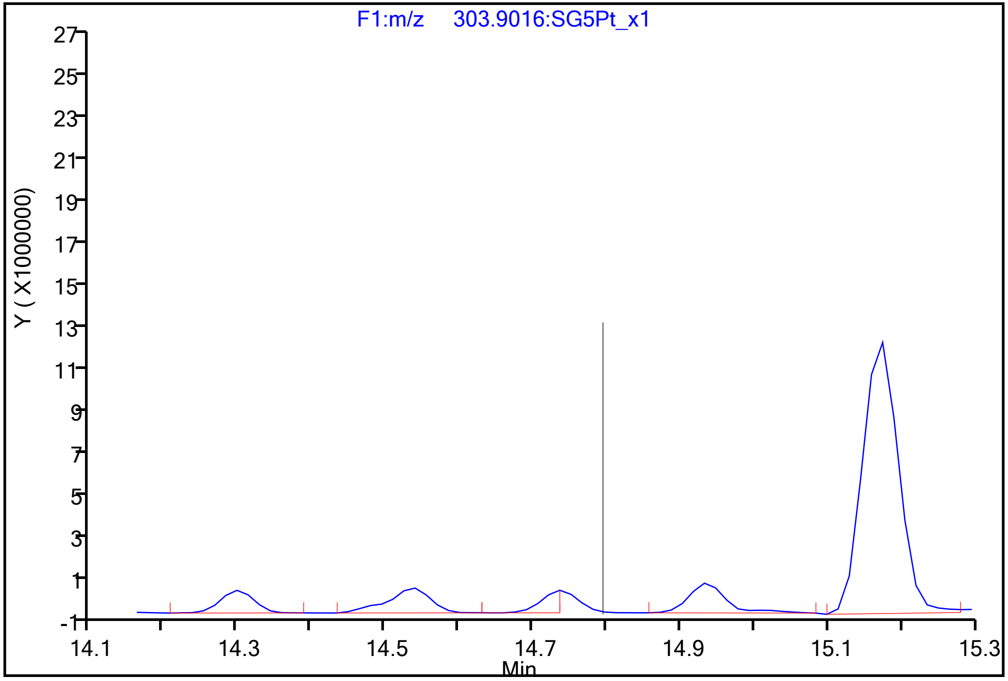

Manual Integration Results

RT = 14.736 Area = 3424867 M

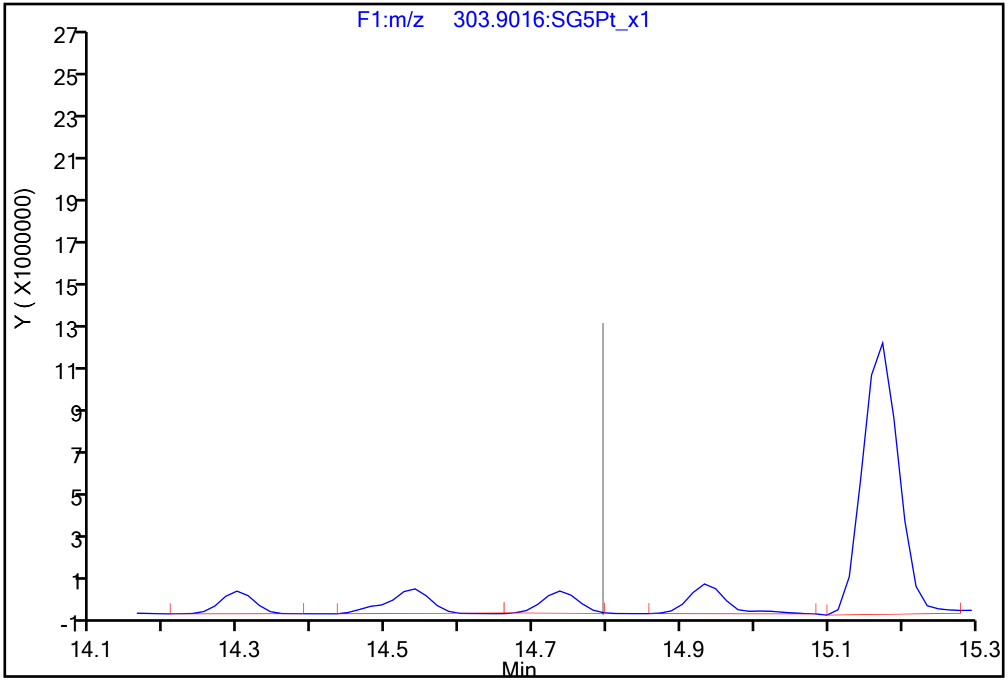

Reviewer: dadunj, 14-Oct-2020 08:34:20

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	16.10
Area:	23021175
Amount:	24.857997
Amount Units:	pg/ul

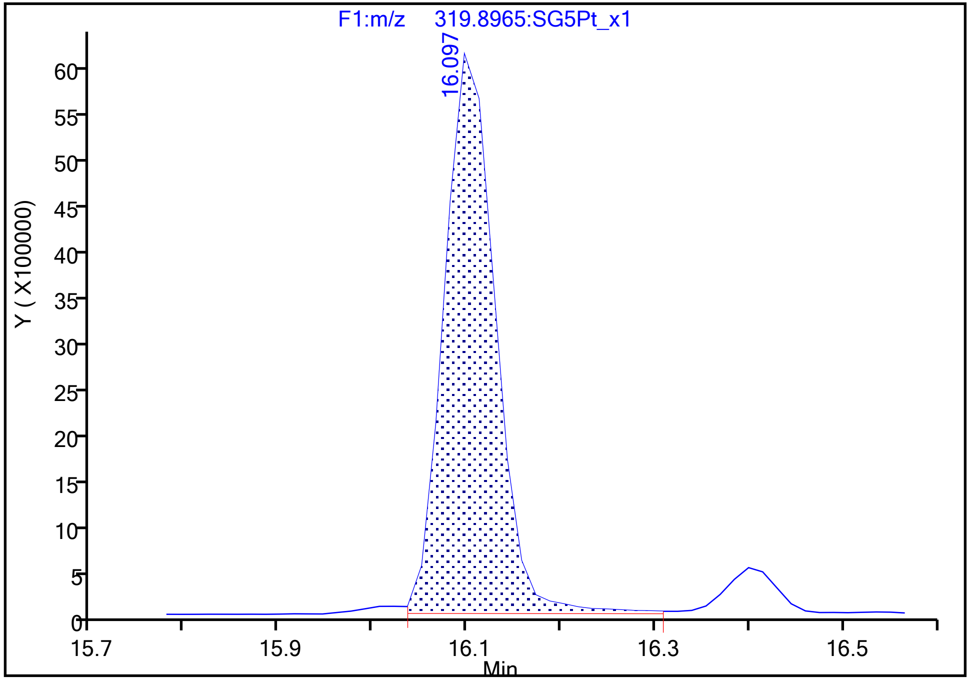

Manual Integration Results

RT:	16.10
Area:	23069747
Amount:	24.881169
Amount Units:	pg/ul

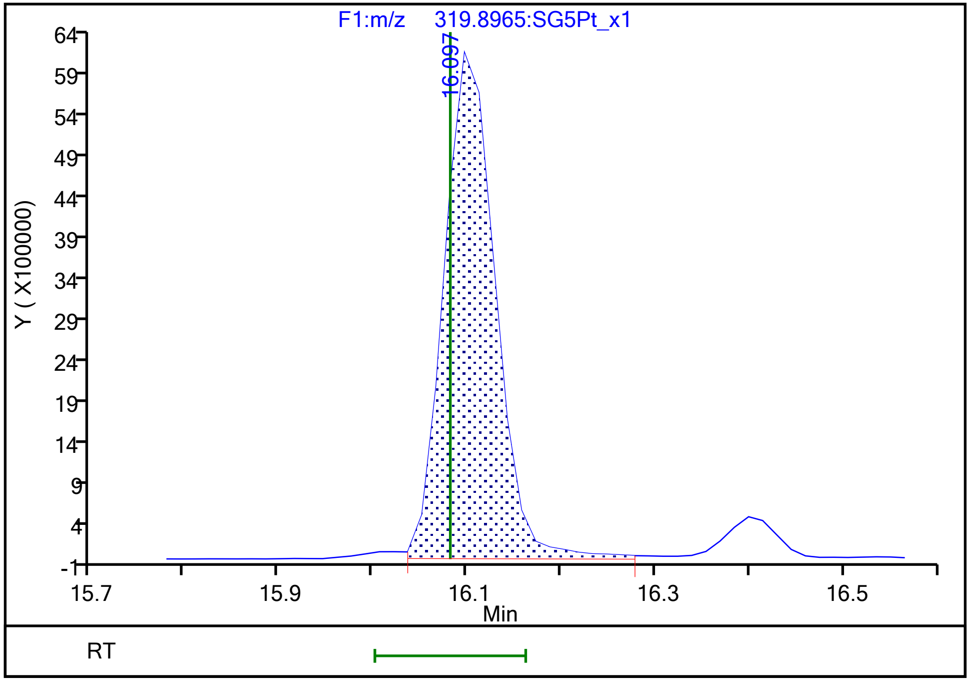

Reviewer: krenns, 16-Oct-2020 06:41:10

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12
Client ID:	11215702-Tank#1-valve-5-3		
Operator ID:	SMA	ALS Bottle#:	5 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (14.19- 17.03)

Signal: 1

Processing Integration Results

RT = 16.399 Area = 1953320

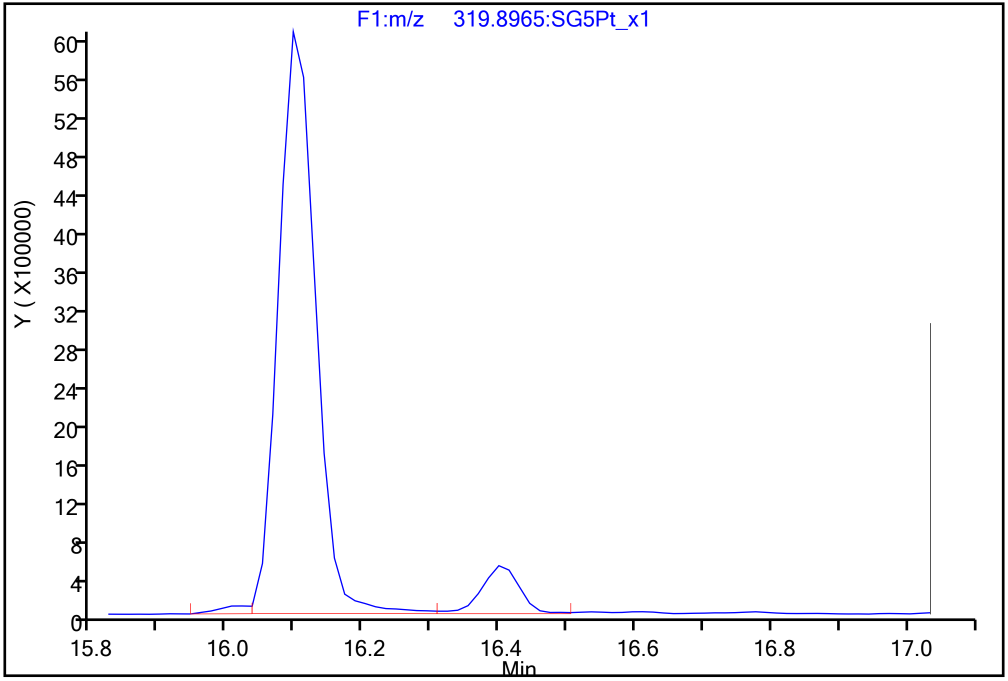

Manual Integration Results

RT = 16.399 Area = 2125425 M

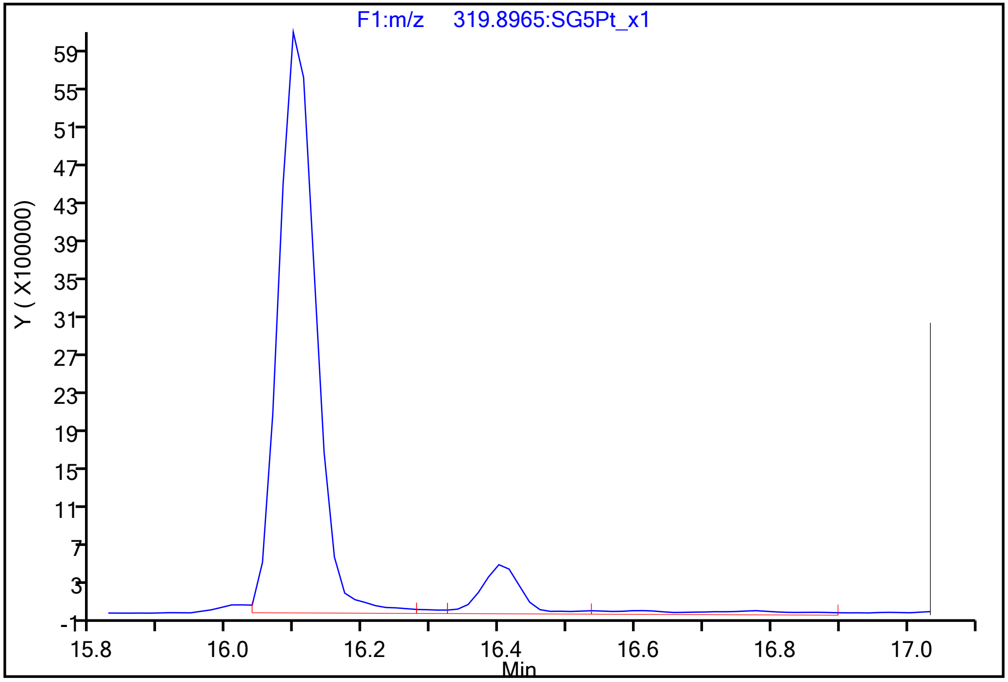

Reviewer: krenns, 16-Oct-2020 06:42:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	19.71
Area:	2621408
Amount:	2.680022
Amount Units:	pg/ul

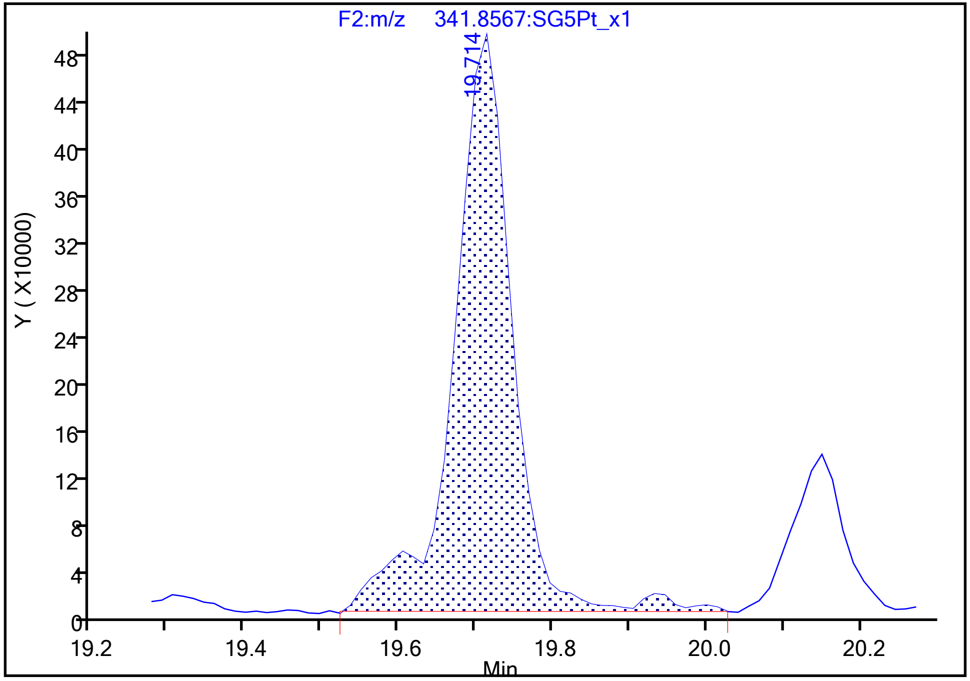

Manual Integration Results

RT:	19.71
Area:	2363235
Amount:	2.541543
Amount Units:	pg/ul

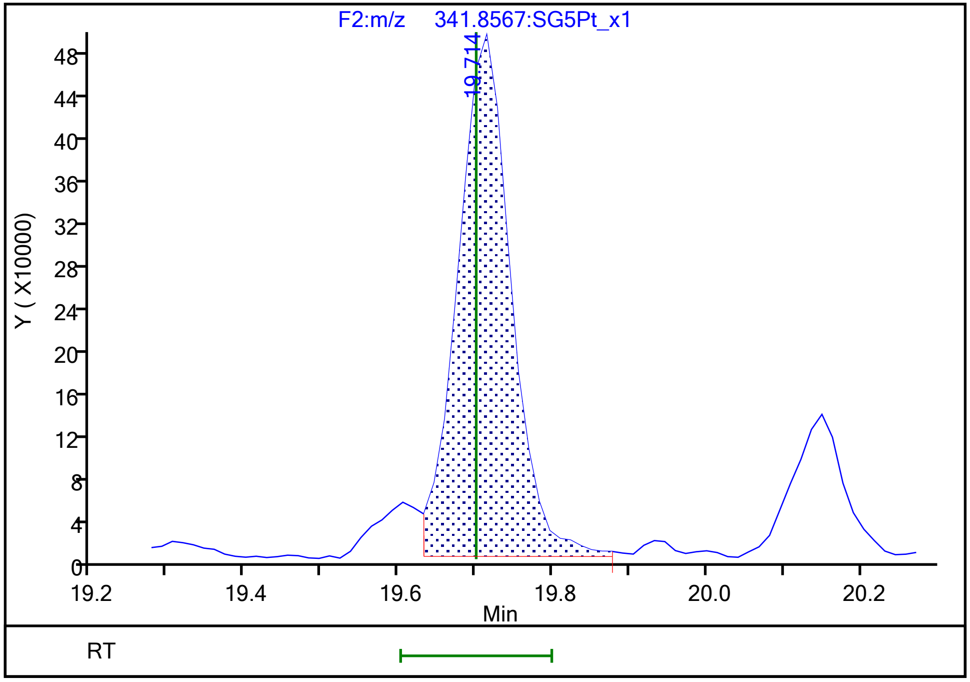

Reviewer: dadunj, 14-Oct-2020 08:35:04

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12
Client ID:	11215702-Tank#1-valve-5-3		
Operator ID:	SMA	ALS Bottle#:	5 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	19.71
Area:	4154270
Amount:	2.680022
Amount Units:	pg/ul

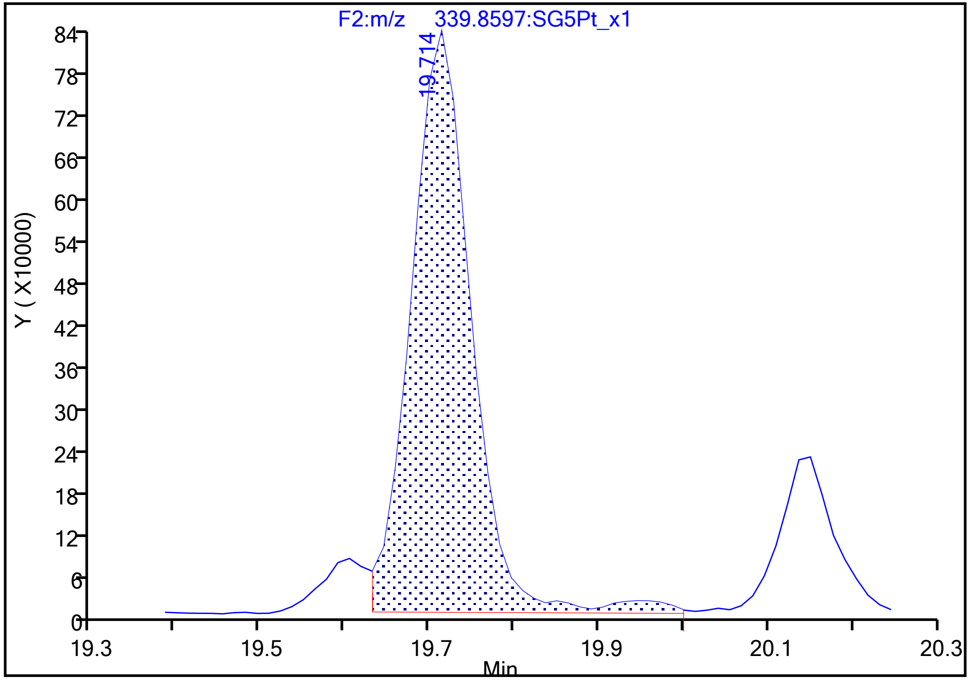

Manual Integration Results

RT:	19.71
Area:	4062338
Amount:	2.541543
Amount Units:	pg/ul

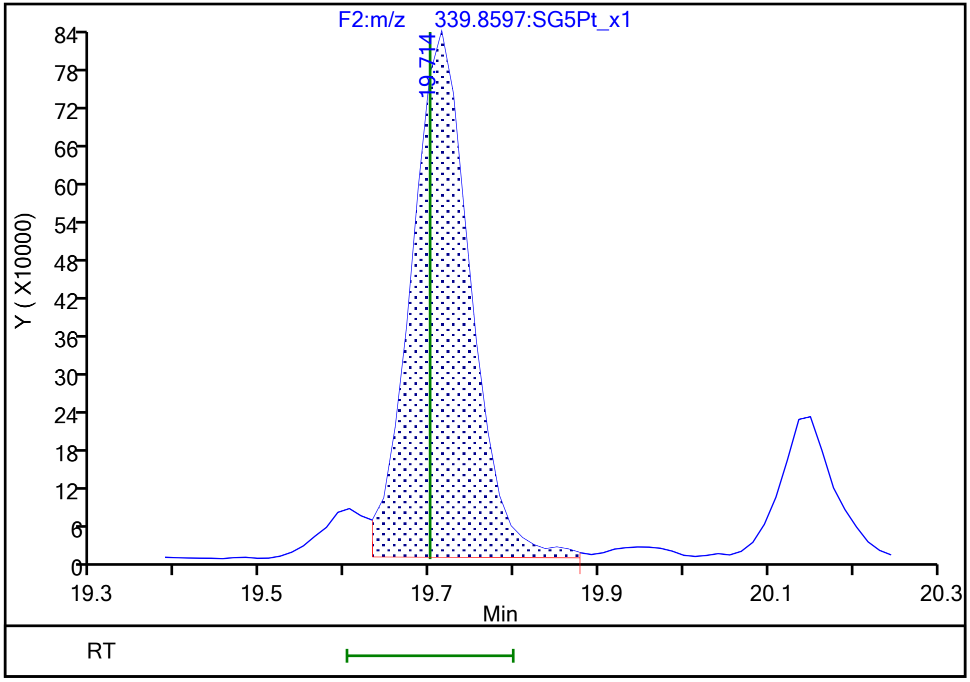

Reviewer: dadunj, 14-Oct-2020 08:35:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (18.23- 22.44)

Signal: 1

Processing Integration Results

RT = 19.604 Area = 300189

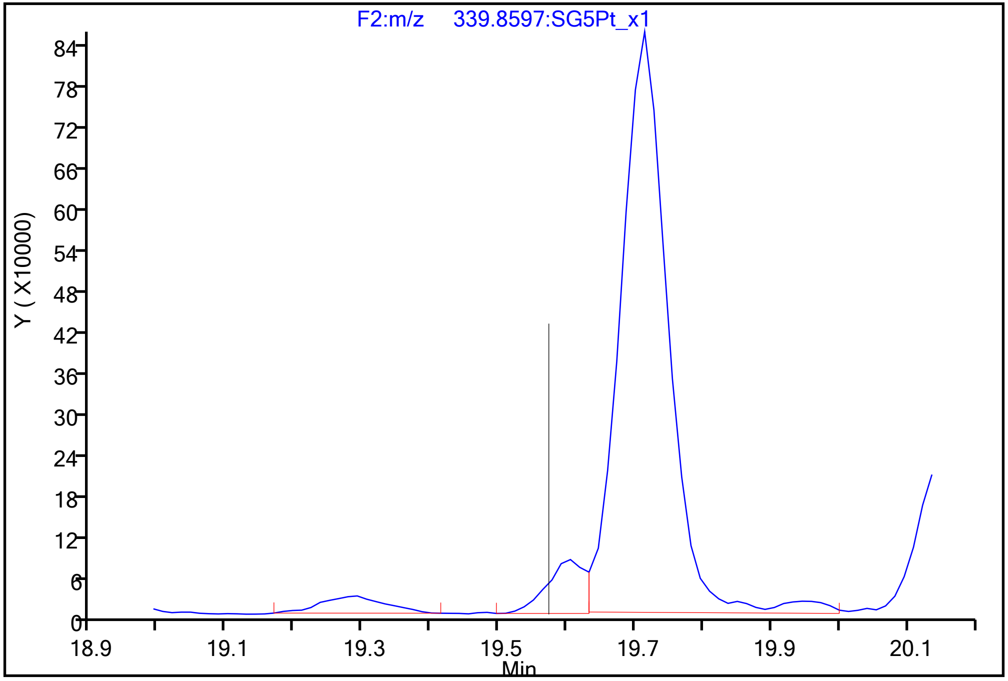

Manual Integration Results

RT = 19.604 Area = 300189

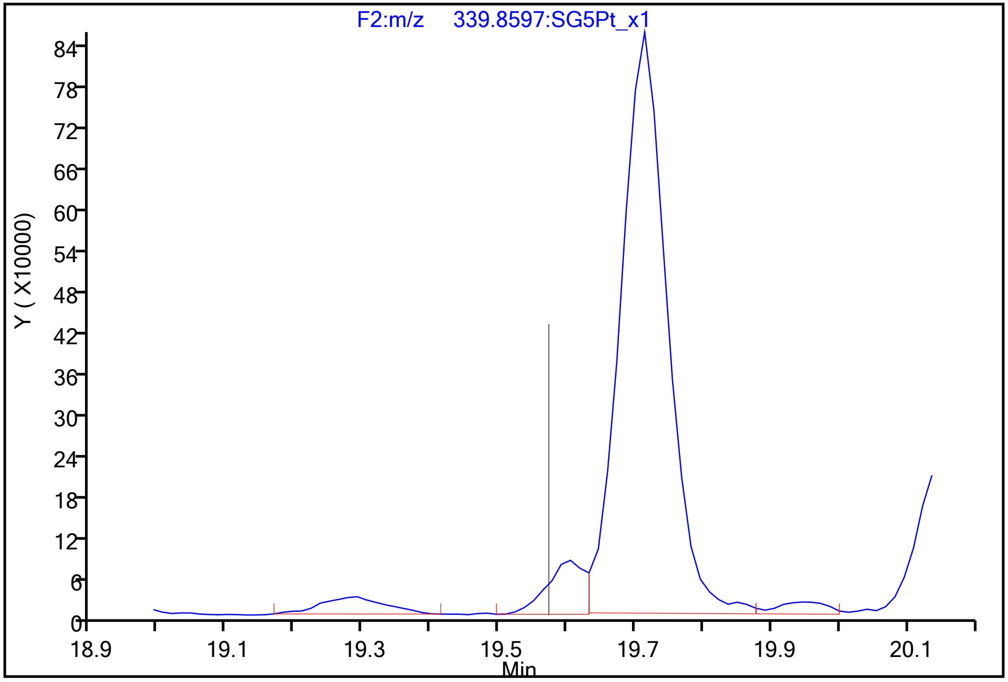

Reviewer: dadunj, 14-Oct-2020 08:35:26

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12
Client ID:	11215702-Tank#1-valve-5-3		
Operator ID:	SMA	ALS Bottle#:	5 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.02

Processing Integration Results

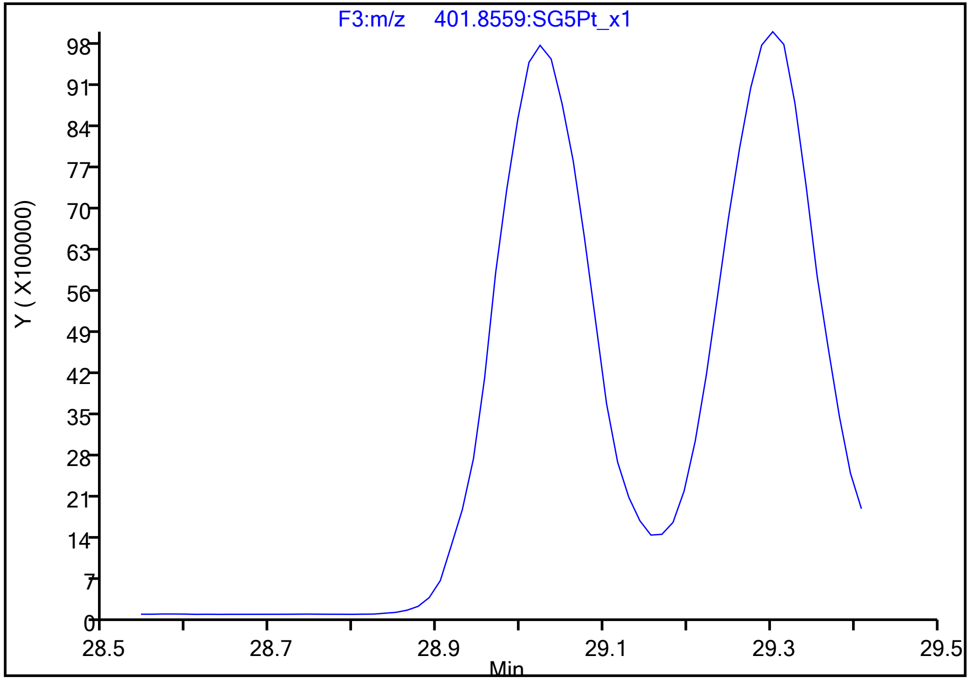

Manual Integration Results

RT: 29.02

Area: 79731455

Amount: 90.566601

Amount Units: pg/ul

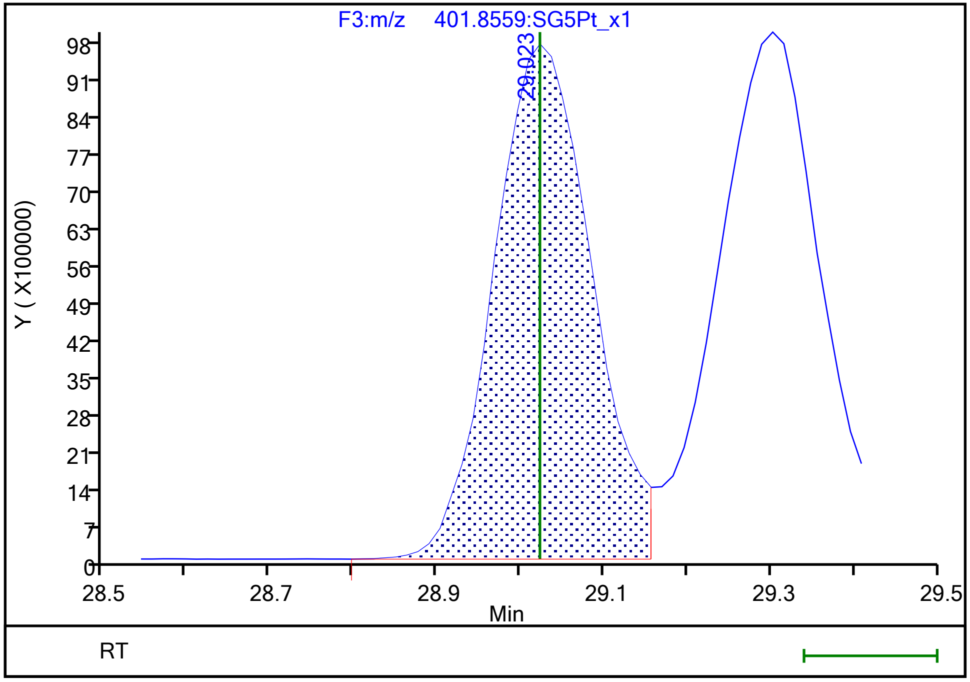

Reviewer: messecara, 13-Oct-2020 00:03:44

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d
Injection Date: 09-Oct-2020 16:15:30
Instrument ID: 3D5
Lims ID: 320-65130-A-12-A
Lab Sample ID: 320-65130-12
Client ID: 11215702-Tank#1-valve-5-3
Operator ID: SMA
ALS Bottle#: 5
Worklist Smp#: 5
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT: 30.07
Area: 100951197
Amount: 101.7609
Amount Units: pg/ul

Processing Integration Results

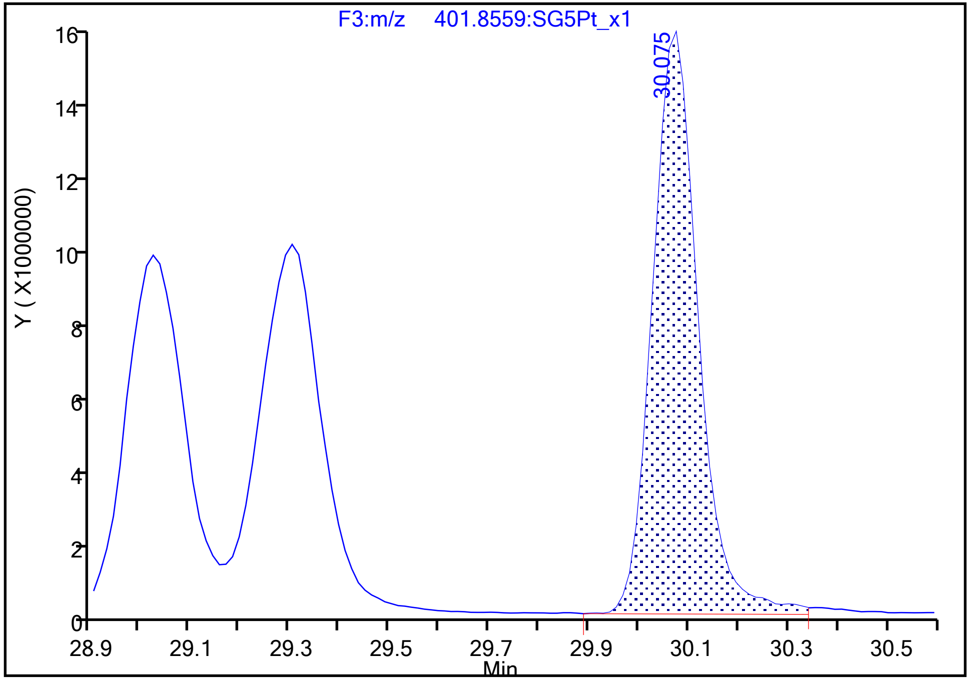

RT: 29.30
Area: 88985207
Amount: 90.330674
Amount Units: pg/ul

Manual Integration Results

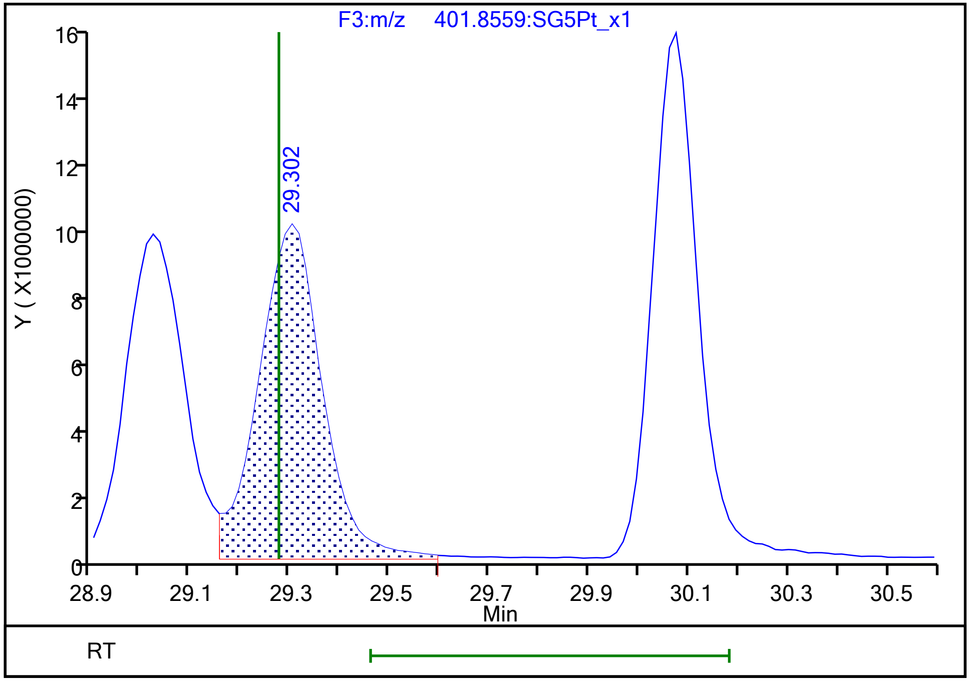

Reviewer: messecara, 13-Oct-2020 02:08:17
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT: 29.33
Area: 118233
Amount: 0.148857
Amount Units: pg/ul

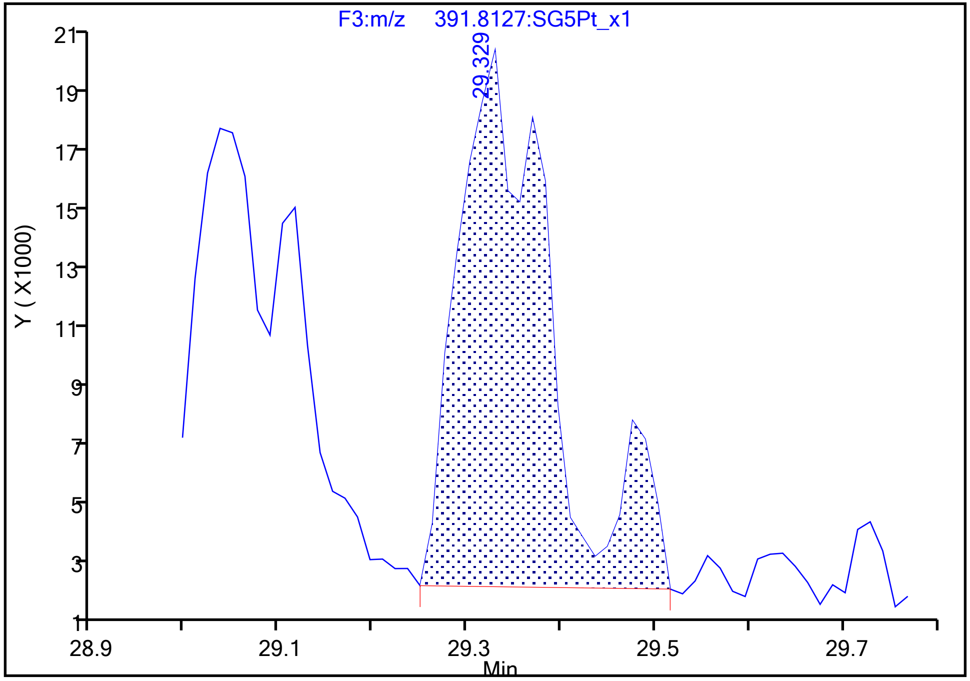

Manual Integration Results

RT: 29.33
Area: 104447
Amount: 0.141132
Amount Units: pg/ul

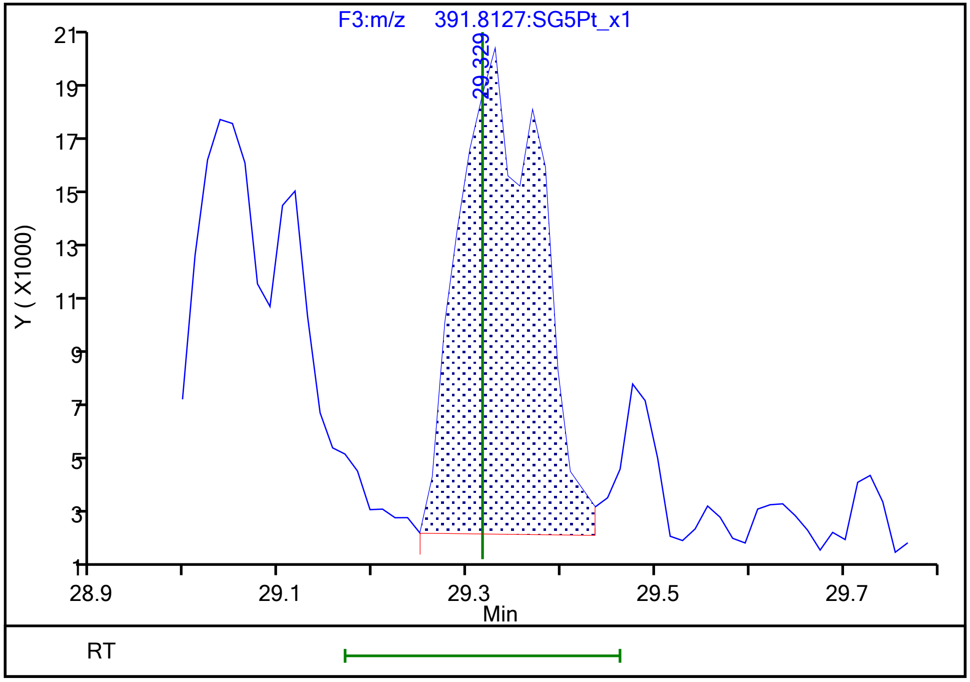

Reviewer: dadunj, 14-Oct-2020 08:36:11

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Oct-2020 06:43:16
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT: 30.11
Area: 112771
Amount: 0.130789
Amount Units: pg/ul

Processing Integration Results

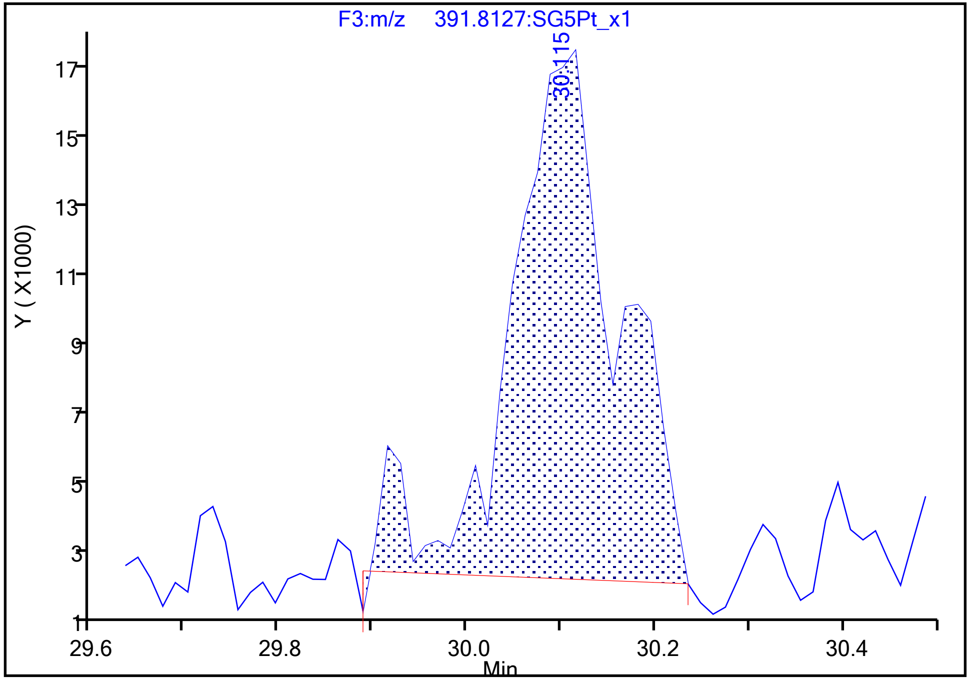

RT: 30.11
Area: 96752
Amount: 0.115697
Amount Units: pg/ul

Manual Integration Results

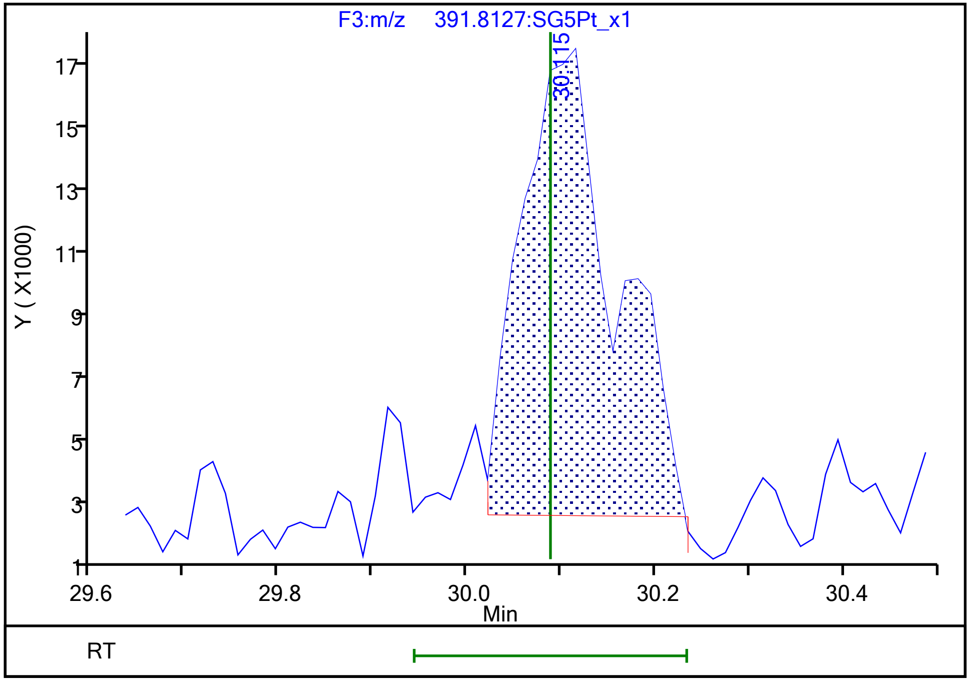

Reviewer: dadunj, 14-Oct-2020 08:36:30
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d				
Injection Date:	09-Oct-2020 16:15:30	Instrument ID:	3D5		
Lims ID:	320-65130-A-12-A	Lab Sample ID:	320-65130-12		
Client ID:	11215702-Tank#1-valve-5-3				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT: 30.07
Area: 141384
Amount: 0.130789
Amount Units: pg/ul

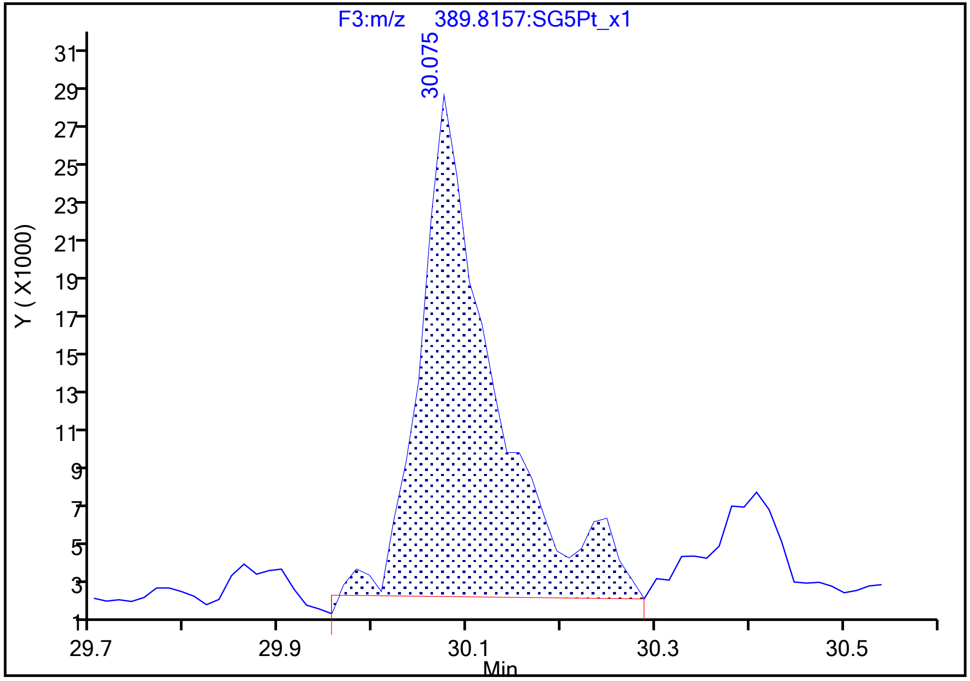

Manual Integration Results

RT: 30.07
Area: 128075
Amount: 0.115697
Amount Units: pg/ul

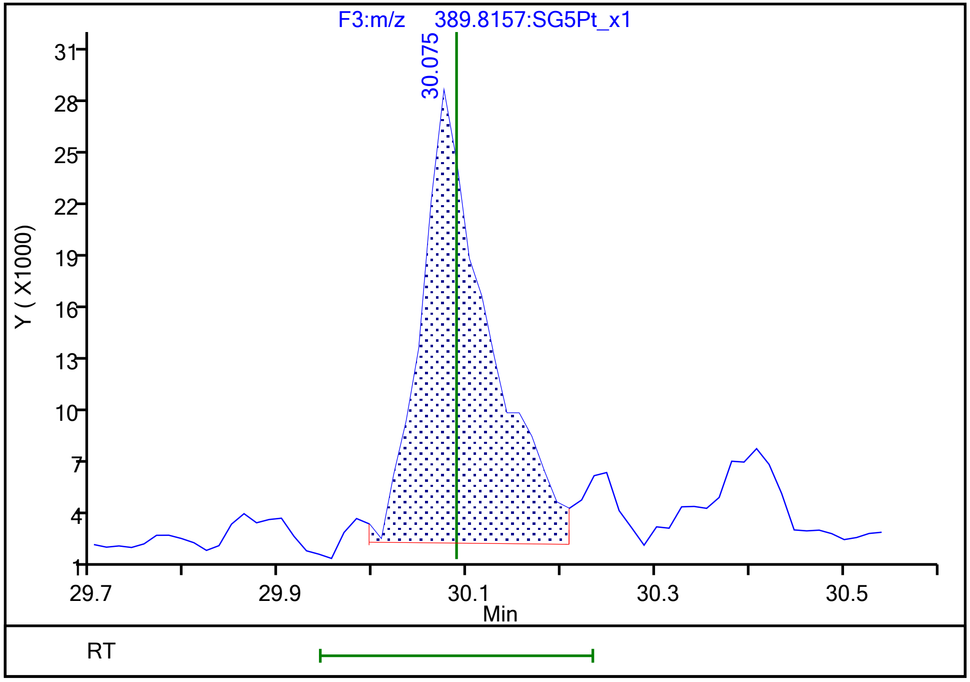

Reviewer: dadunj, 14-Oct-2020 08:36:31

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d

Injection Date: 09-Oct-2020 16:15:30 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-3

Worklist#: 420483 Sample Line#: 5

Column Type: Column Dia:

TCDF

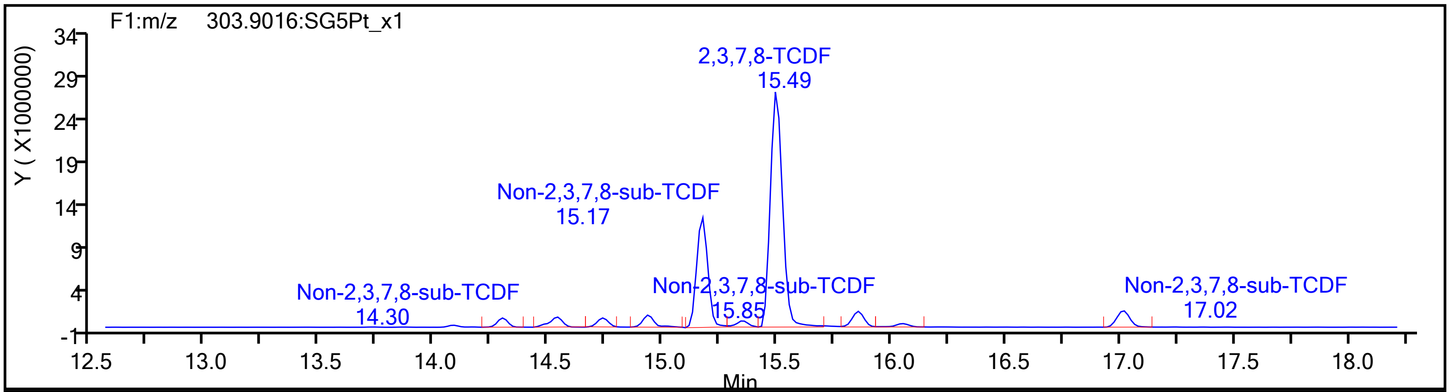

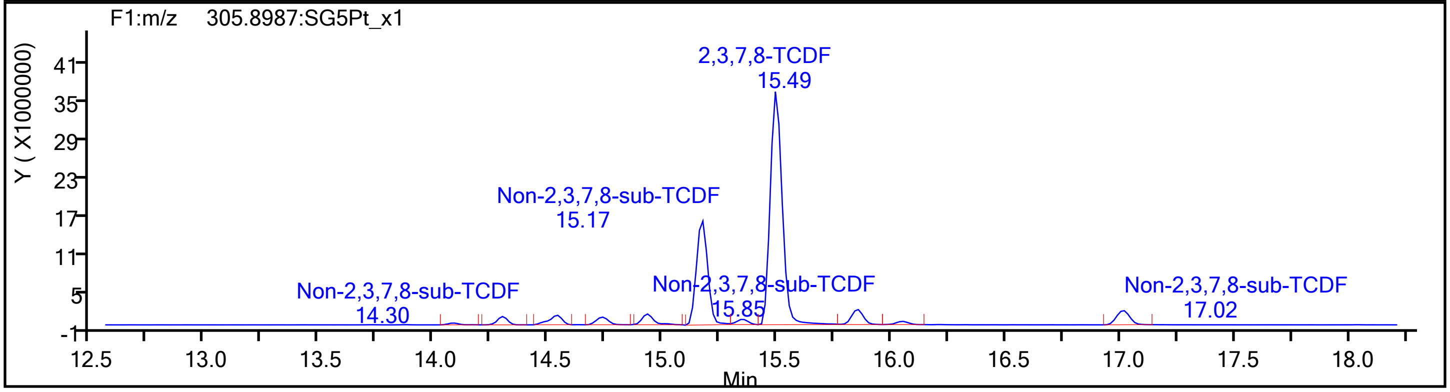

TCDF Standards

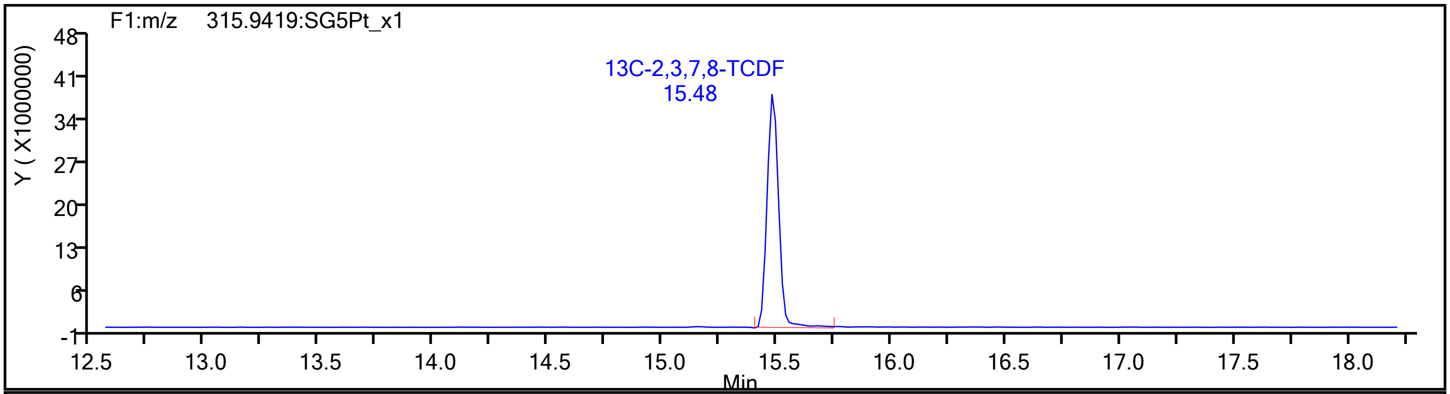

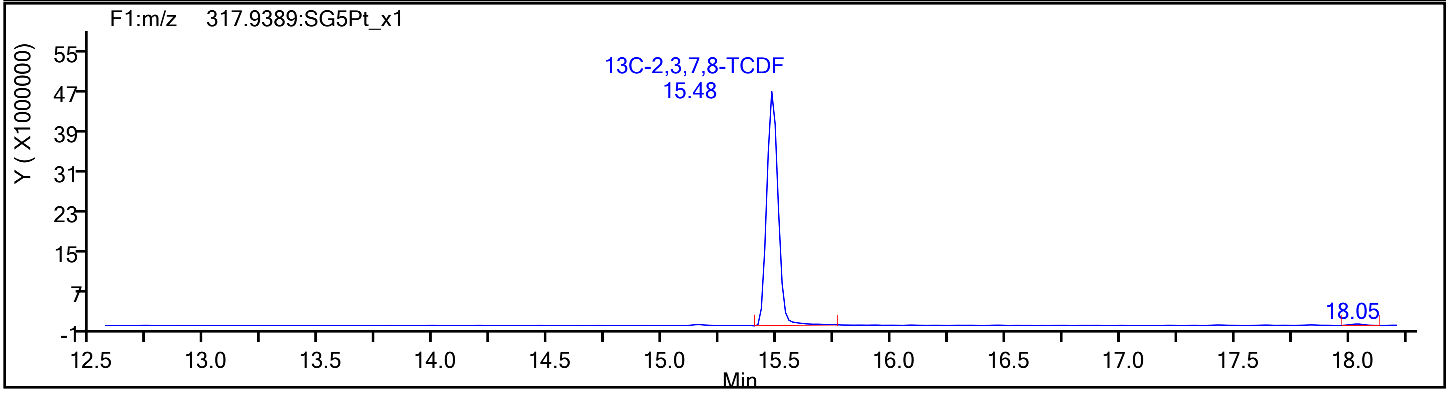

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d
Injection Date: 09-Oct-2020 16:15:30
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-3
Worklist#: 420483
Sample Line#: 5
Column Type:
Column Dia:

TCDF

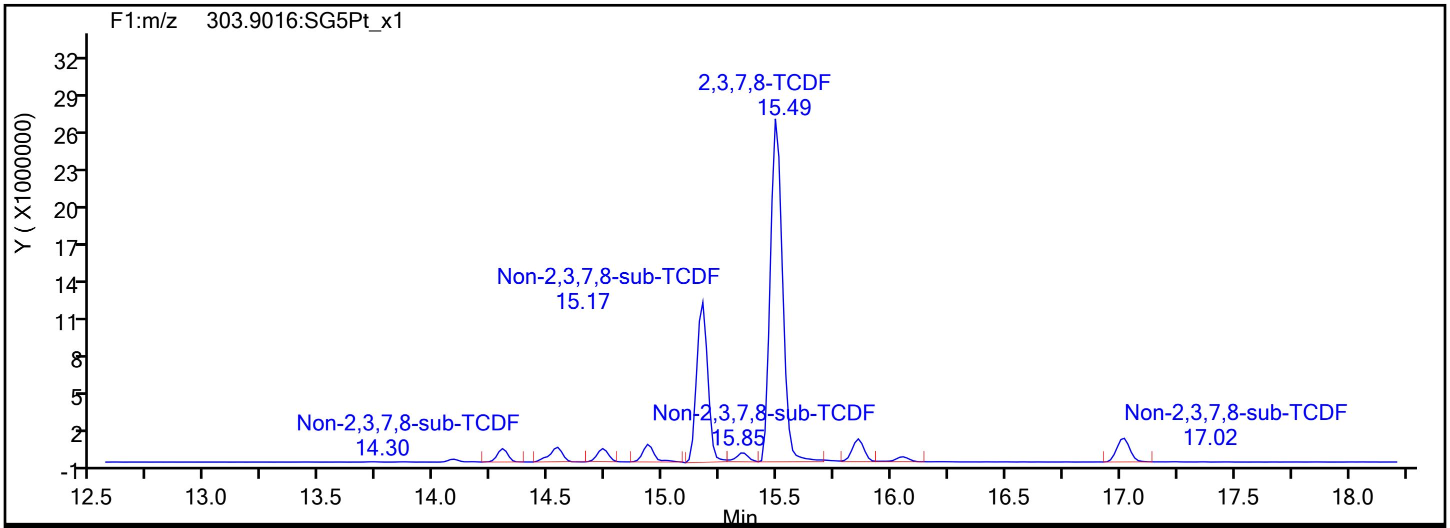

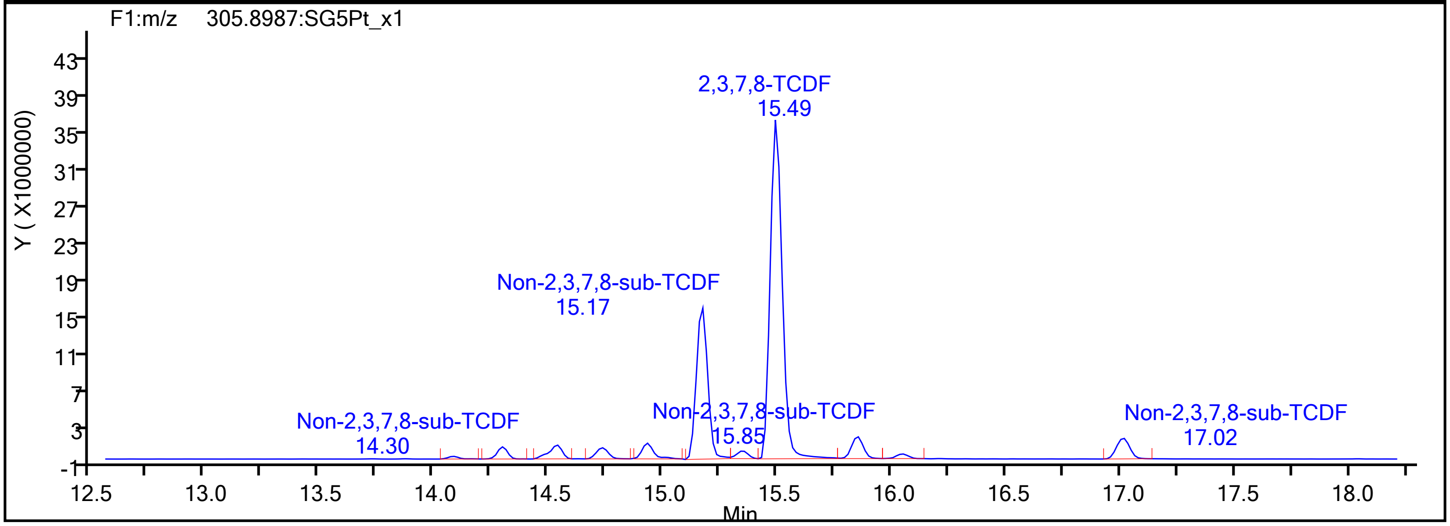

TCDF Interference Mass

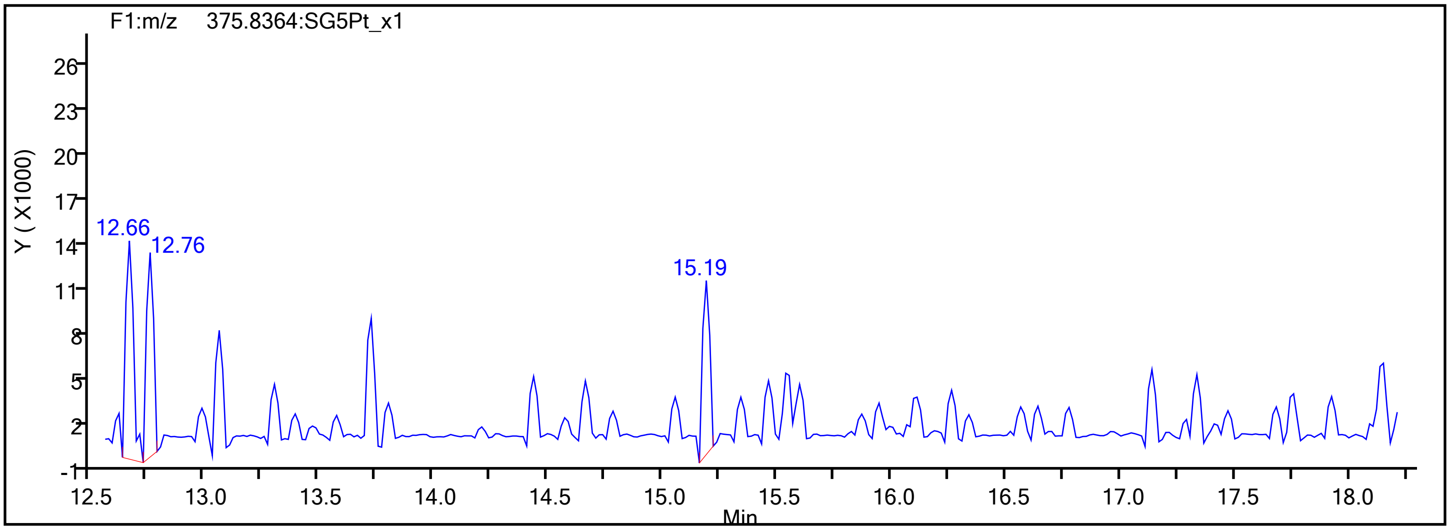

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-3		
Worklist#:	420483	Sample Line#:	5
Column Type:		Column Dia:	

TCDD

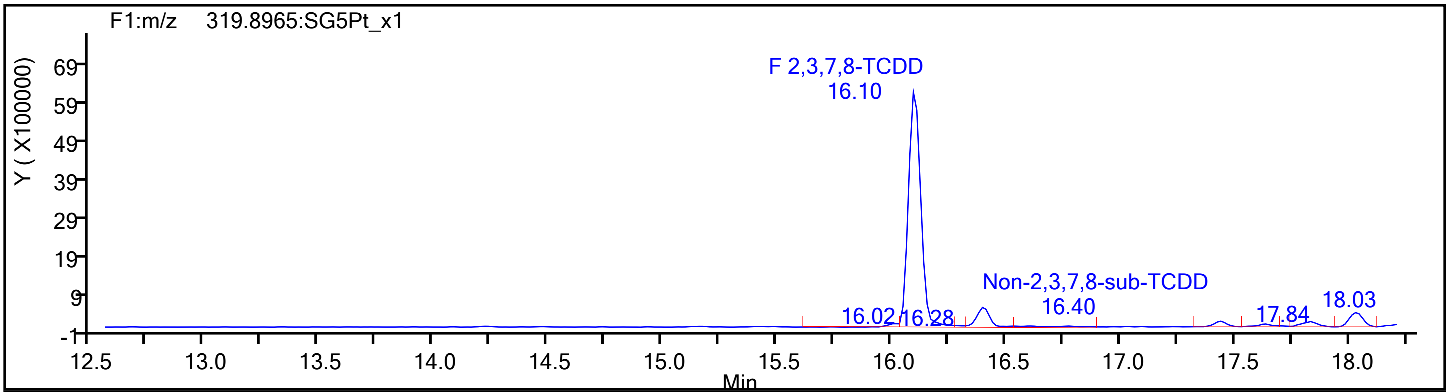

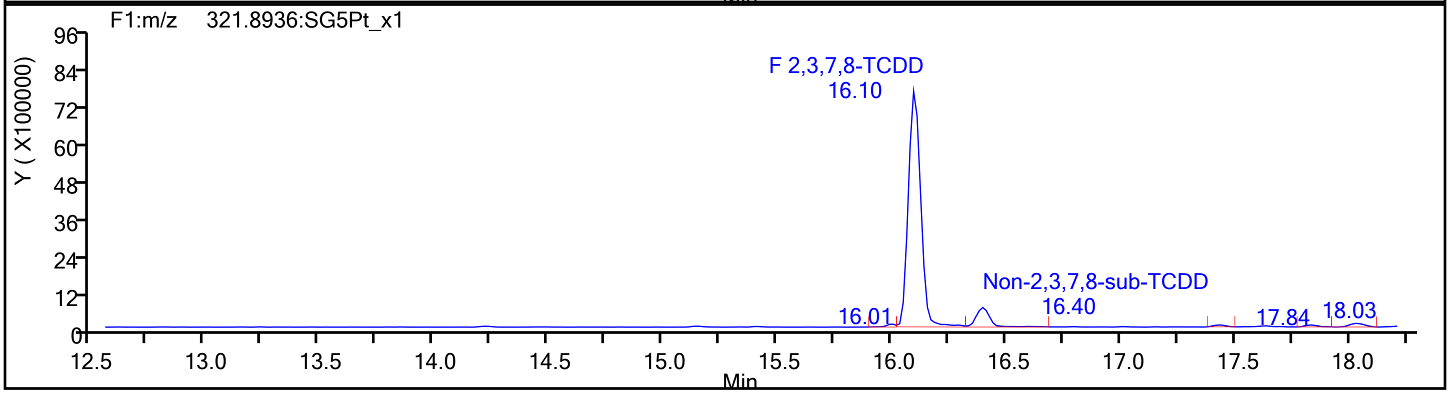

TCDD Standards

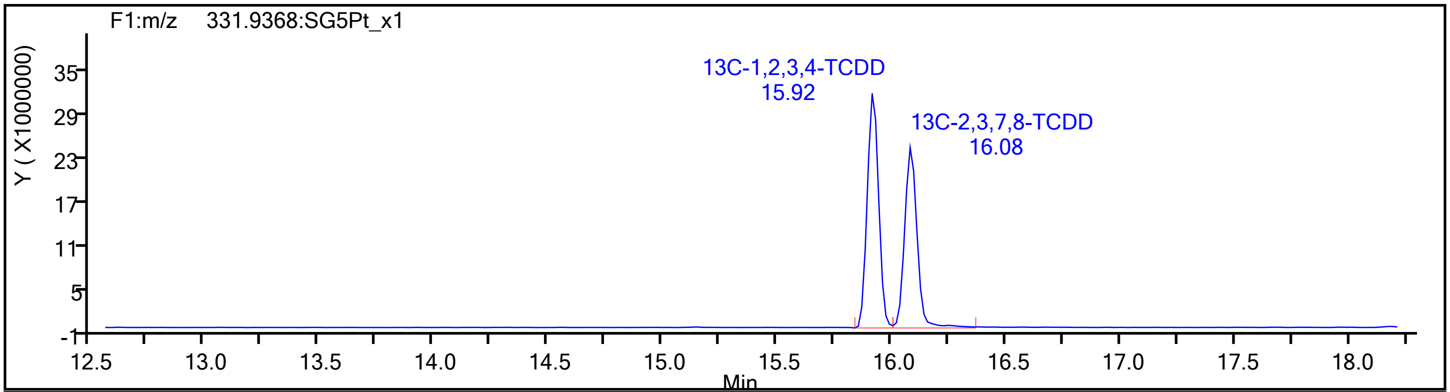

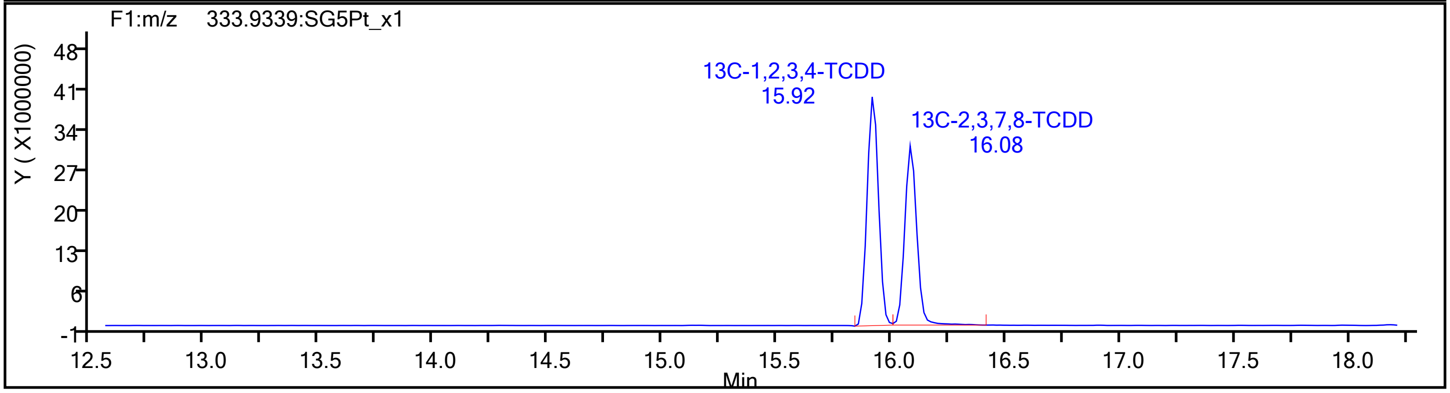

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-3		
Worklist#:	420483	Sample Line#:	5
Column Type:		Column Dia:	

37Cl4-TCDD

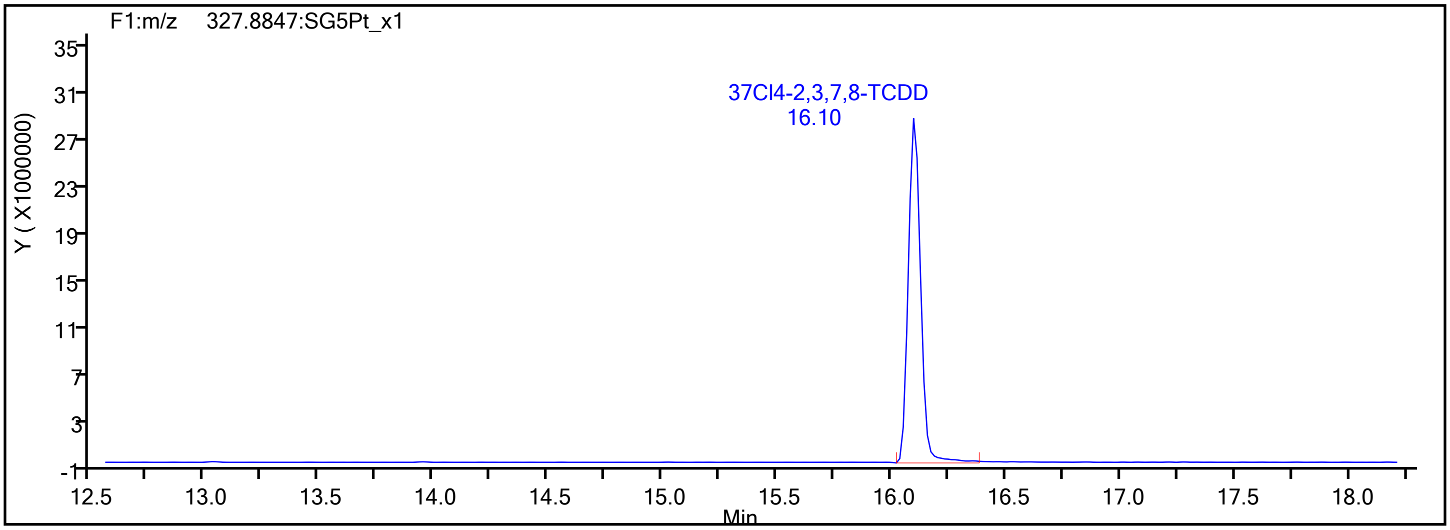

37Cl4-TCDD Standards

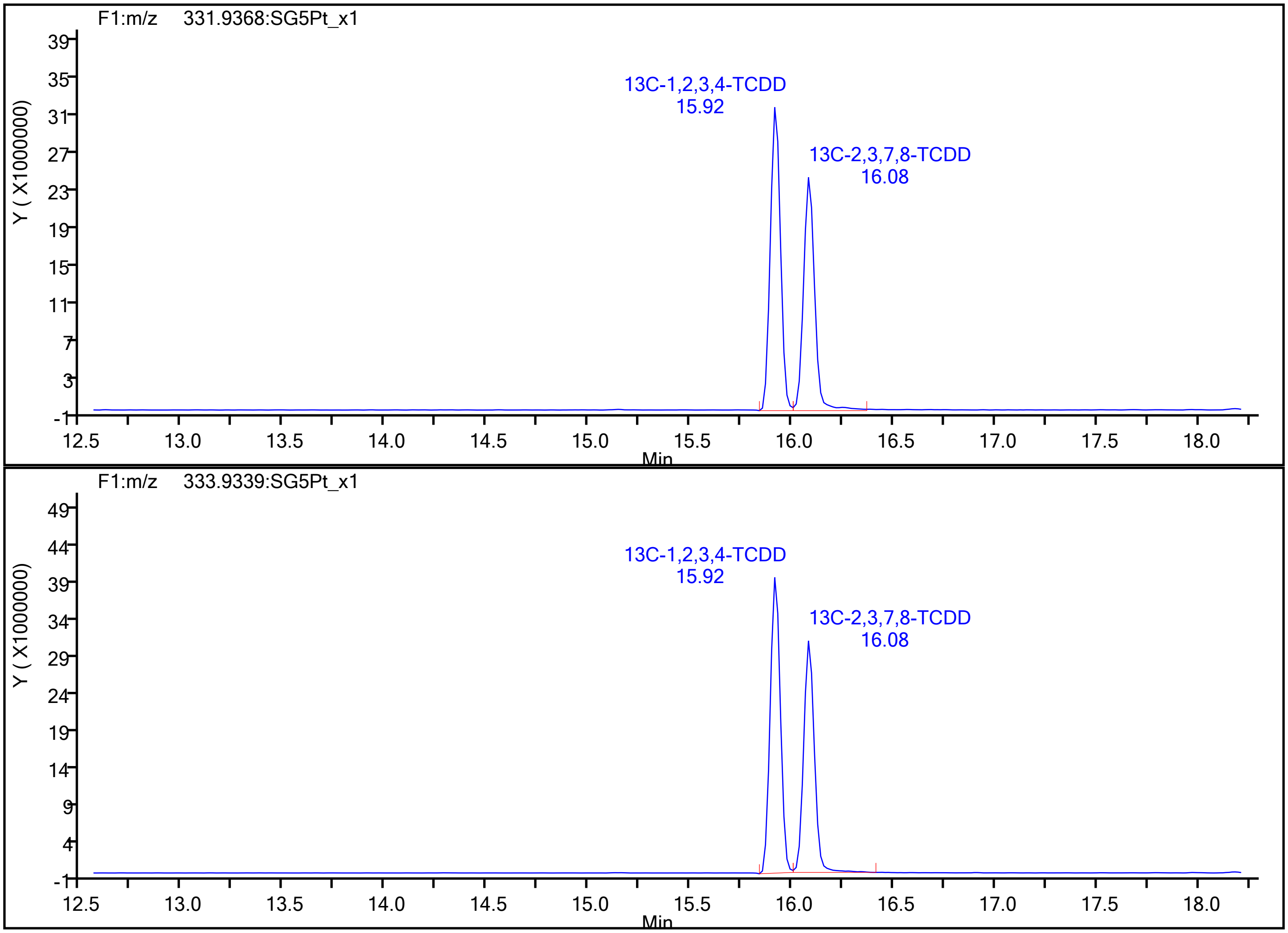

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-3		
Worklist#:	420483	Sample Line#:	5
Column Type:		Column Dia:	

PeCDF

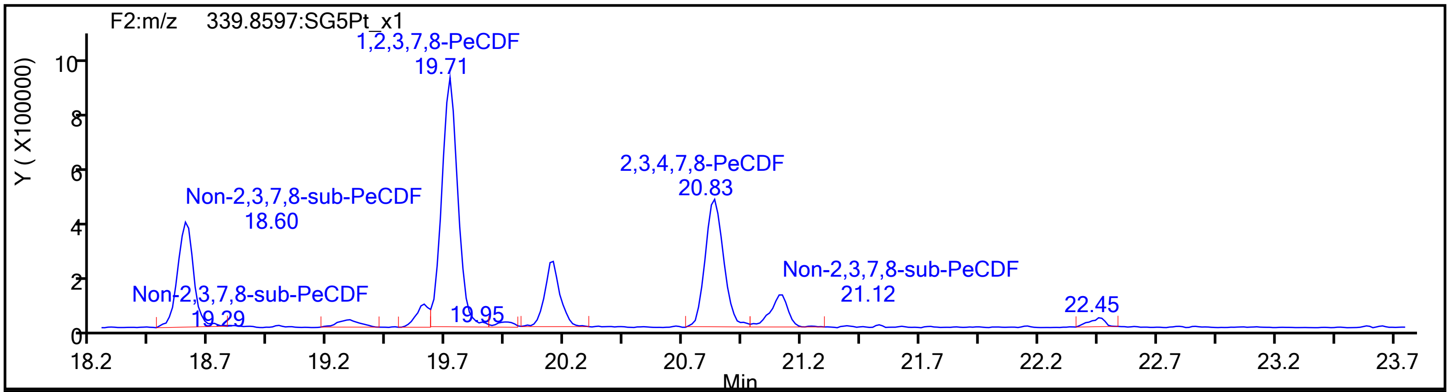

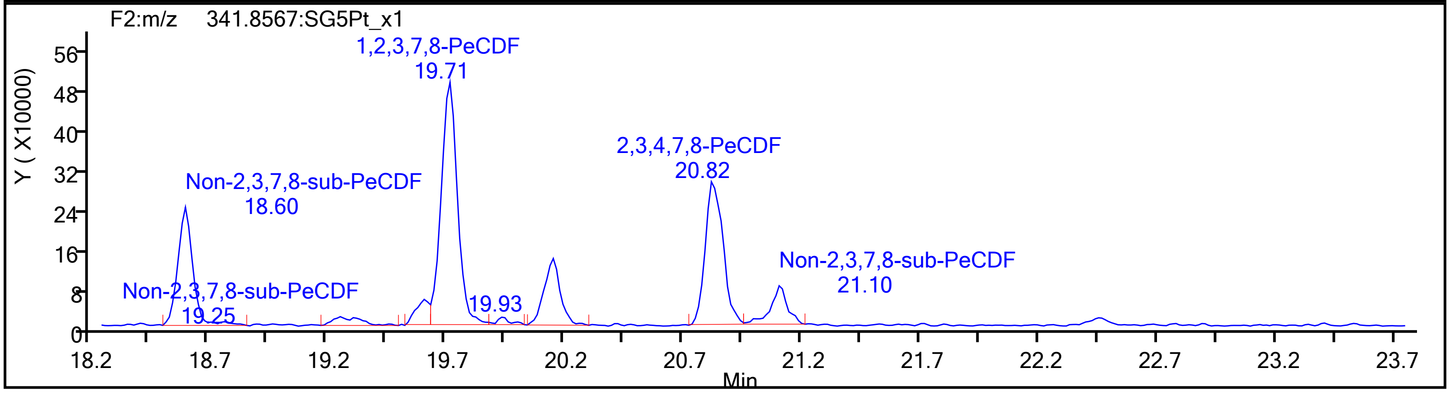

PeCDF Standards

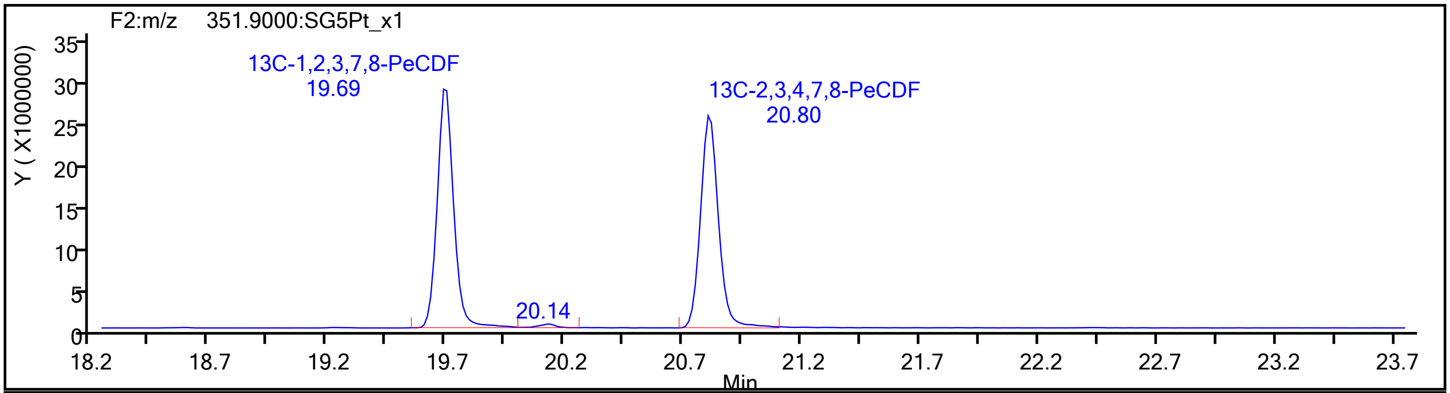

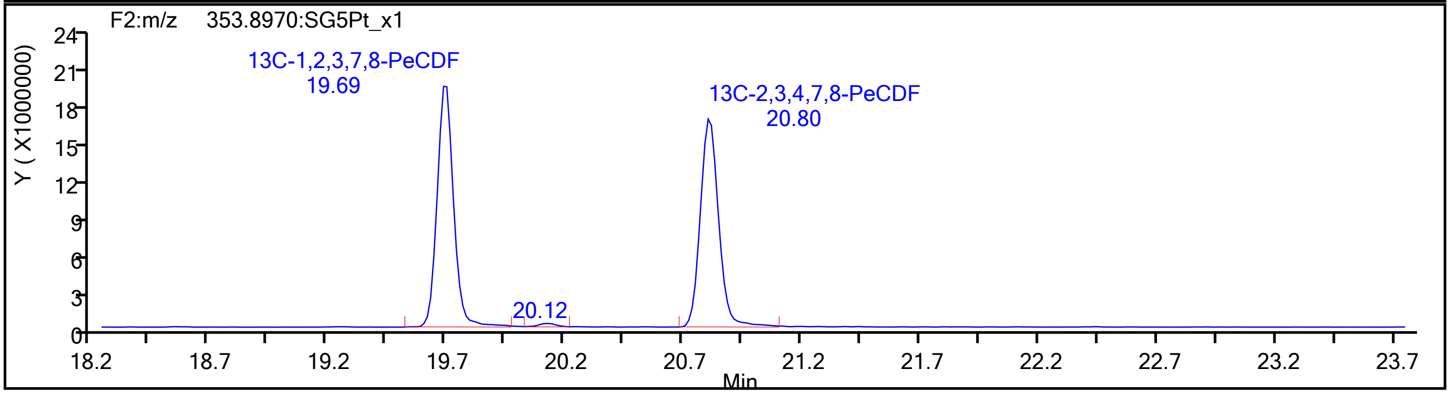

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-3		
Worklist#:	420483	Sample Line#:	5
Column Type:		Column Dia:	

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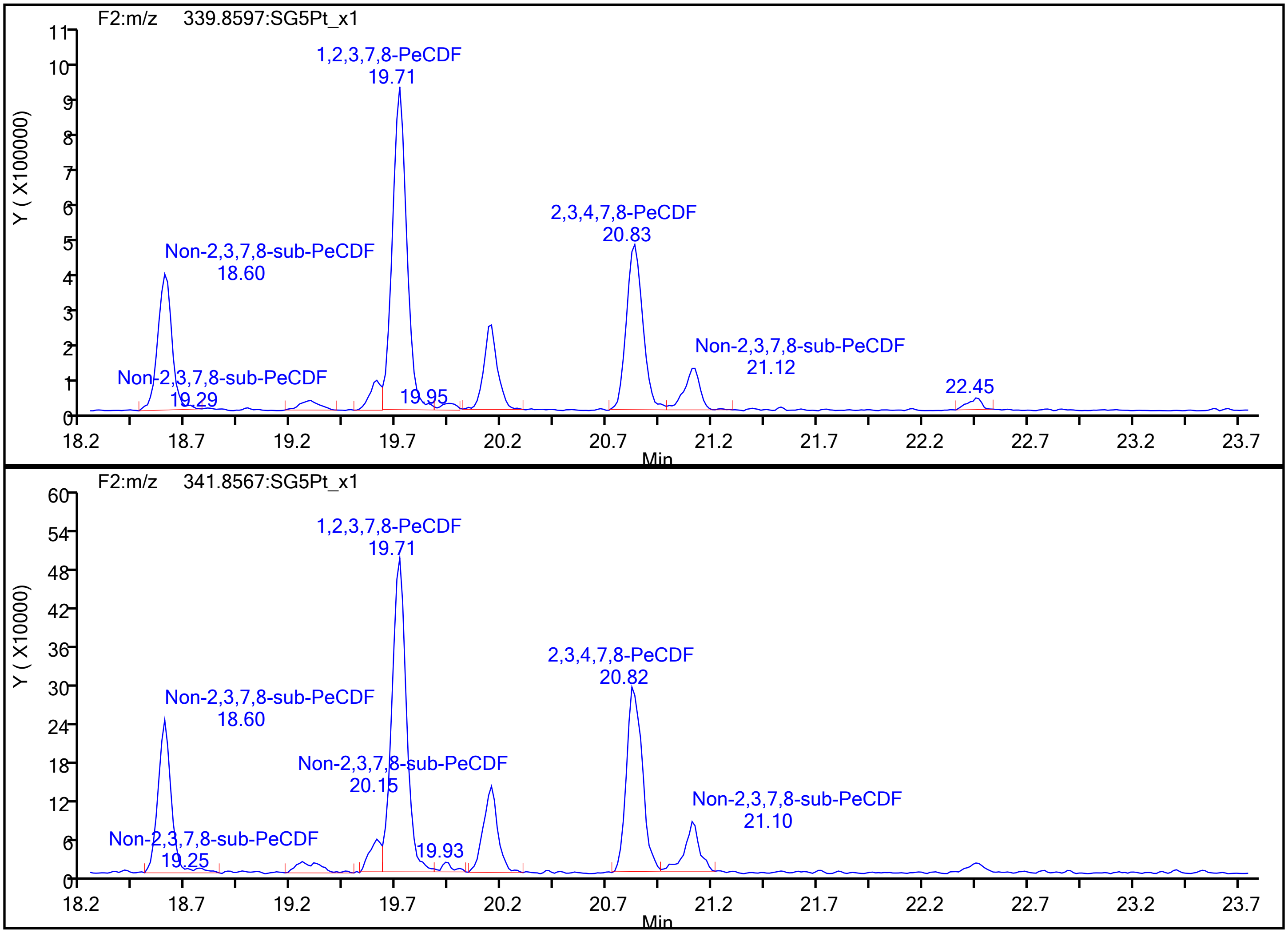

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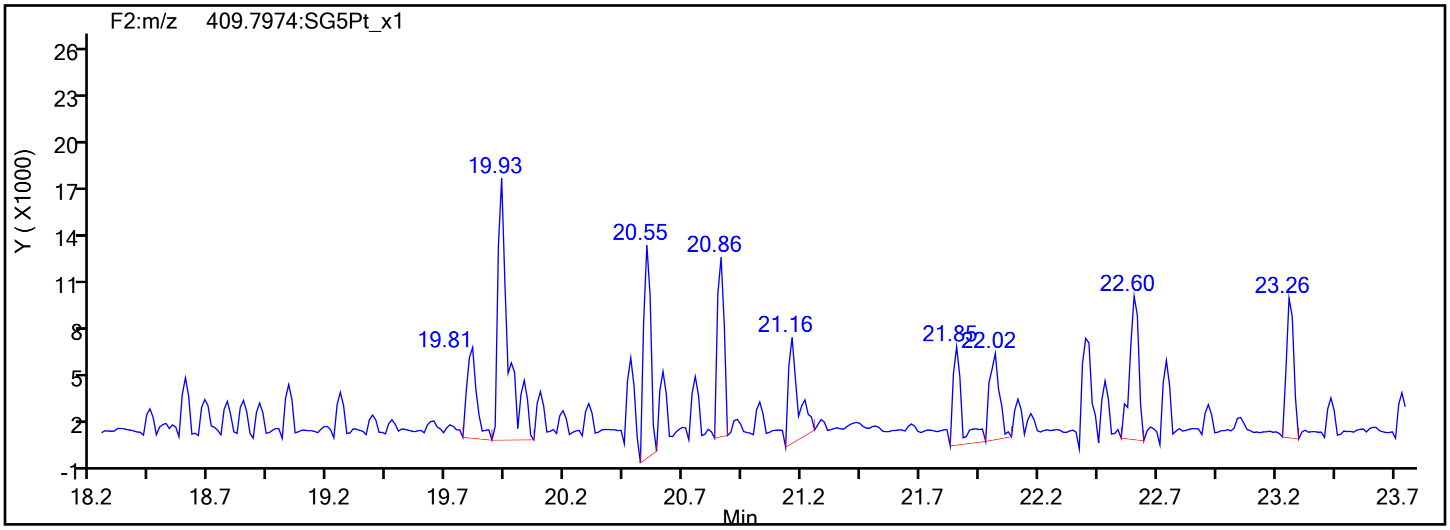

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d		
Injection Date:	09-Oct-2020 16:15:30	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
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Client ID:	11215702-Tank#1-valve-5-3		
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Column Type:		Column Dia:	

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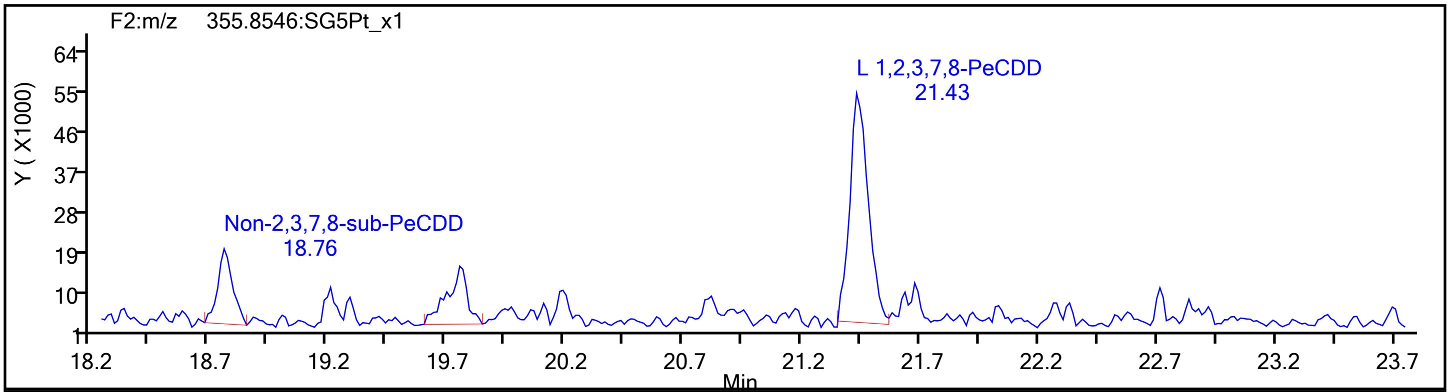

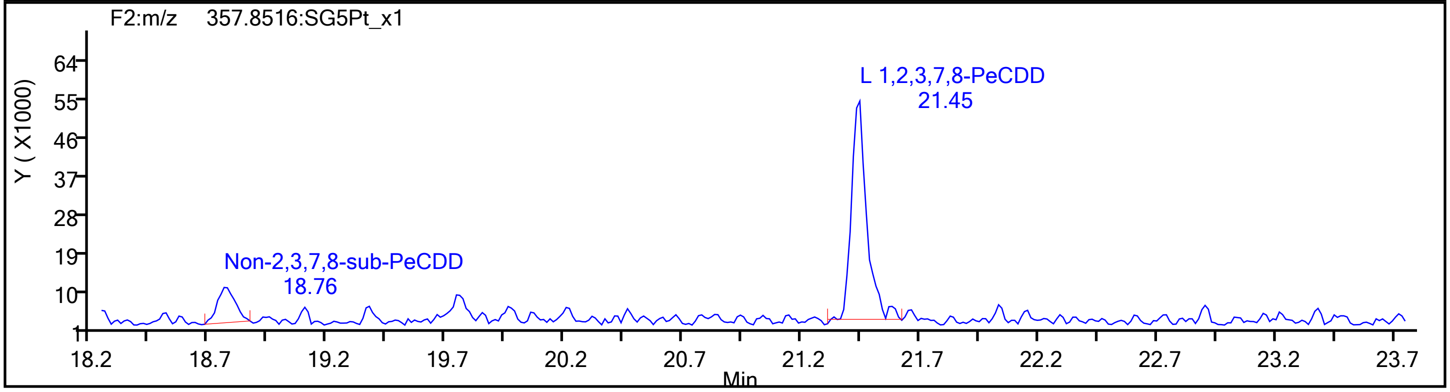

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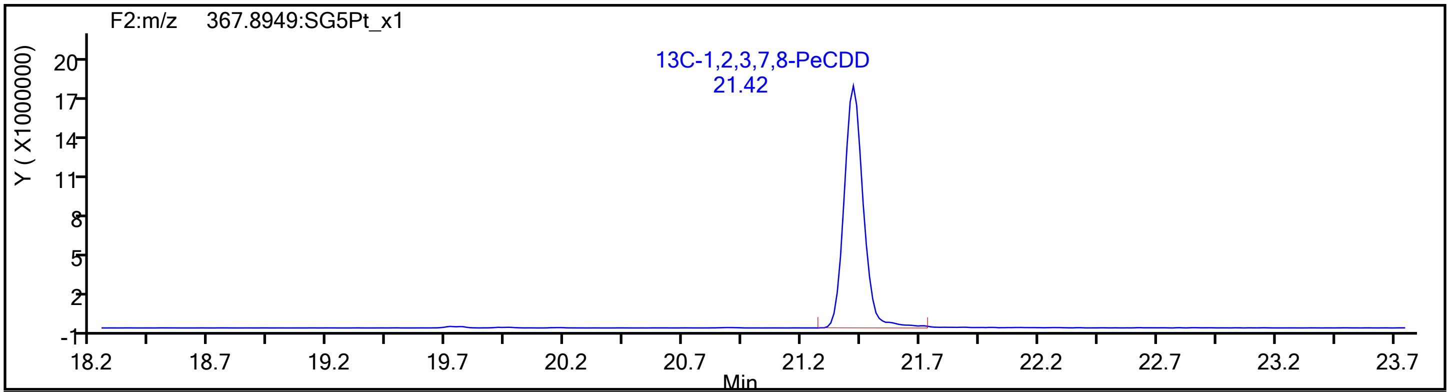

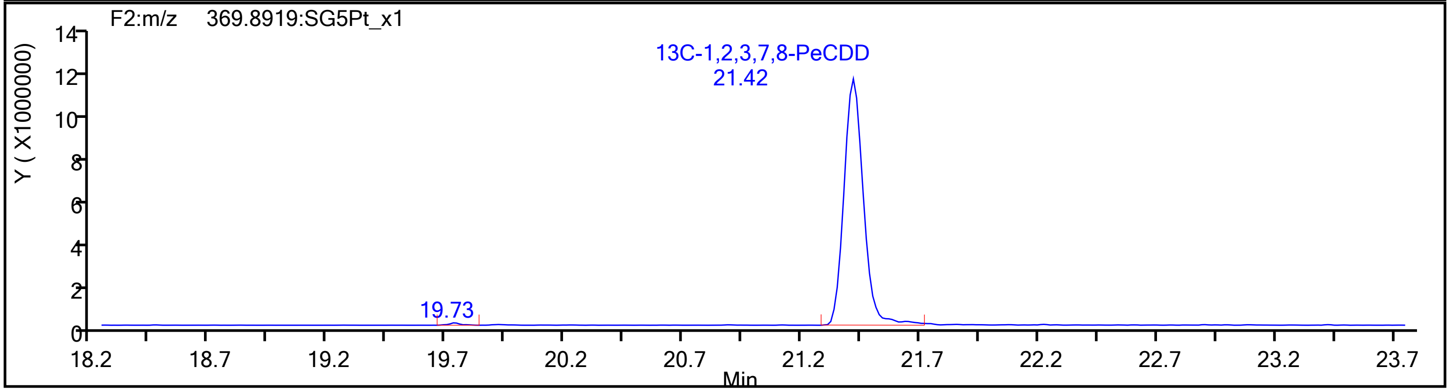

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_5.d

Injection Date: 09-Oct-2020 16:15:30

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-3

Worklist#: 420483

Sample Line#: 5

Column Type:

Column Dia:

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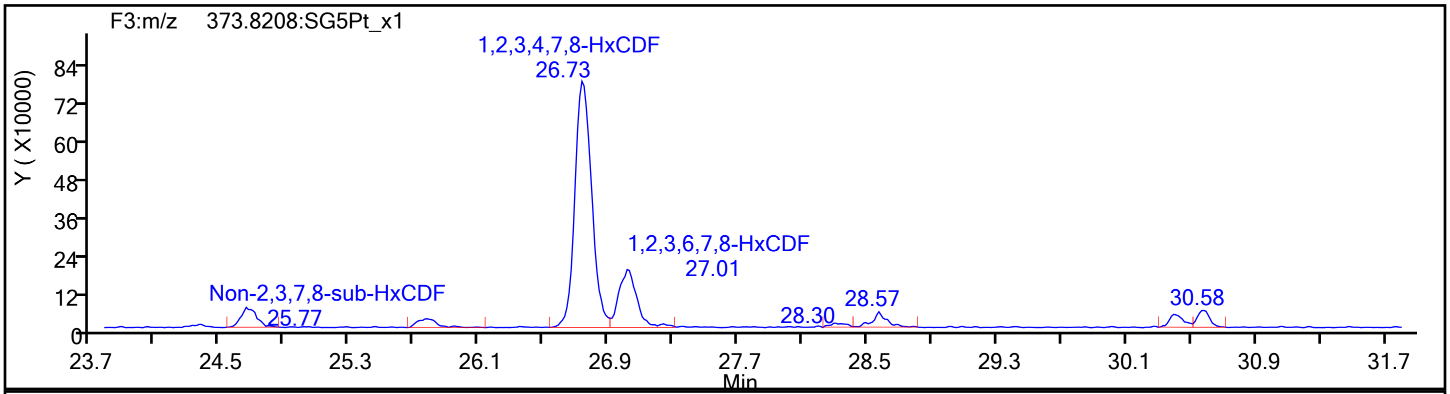

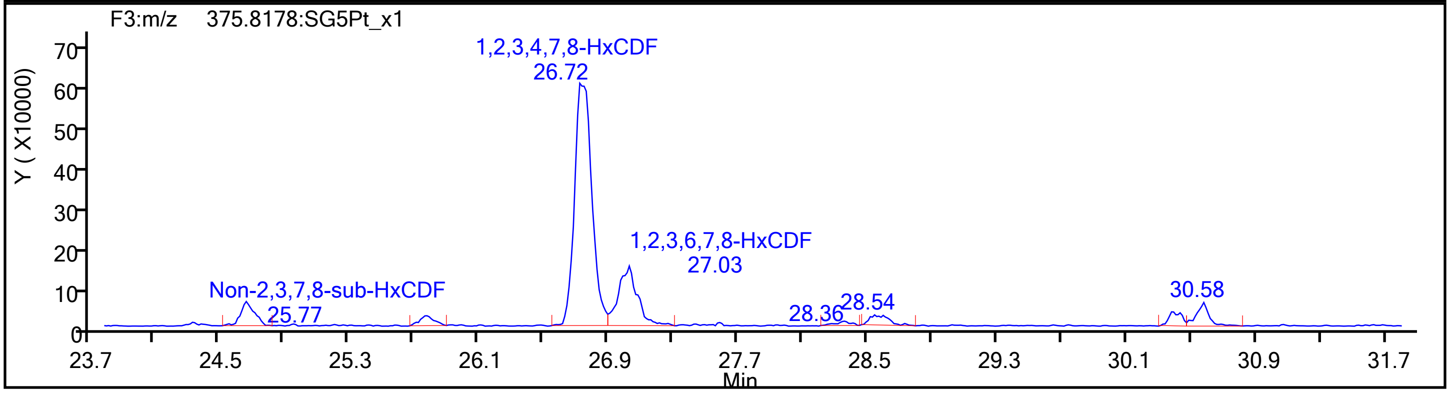

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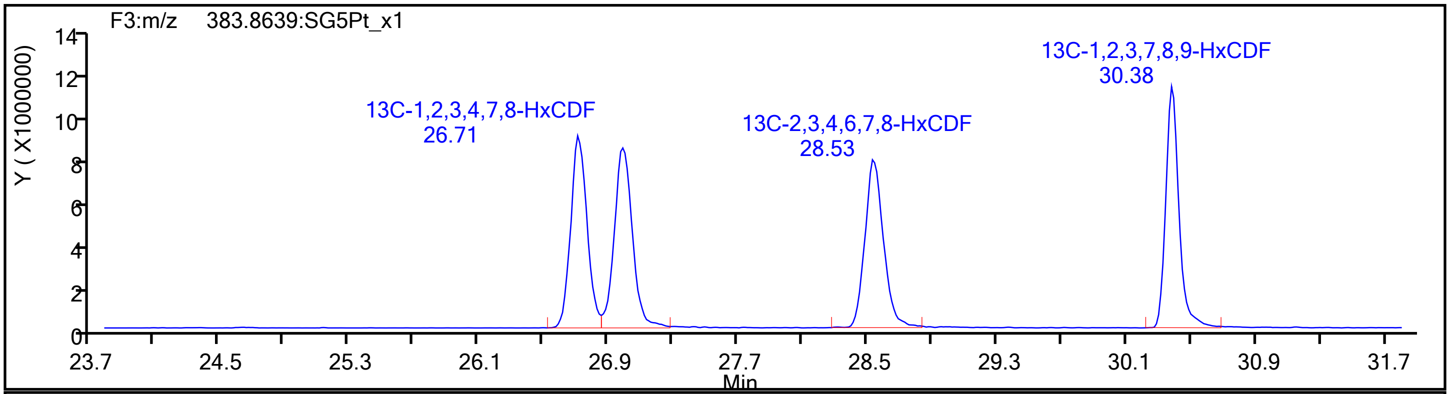

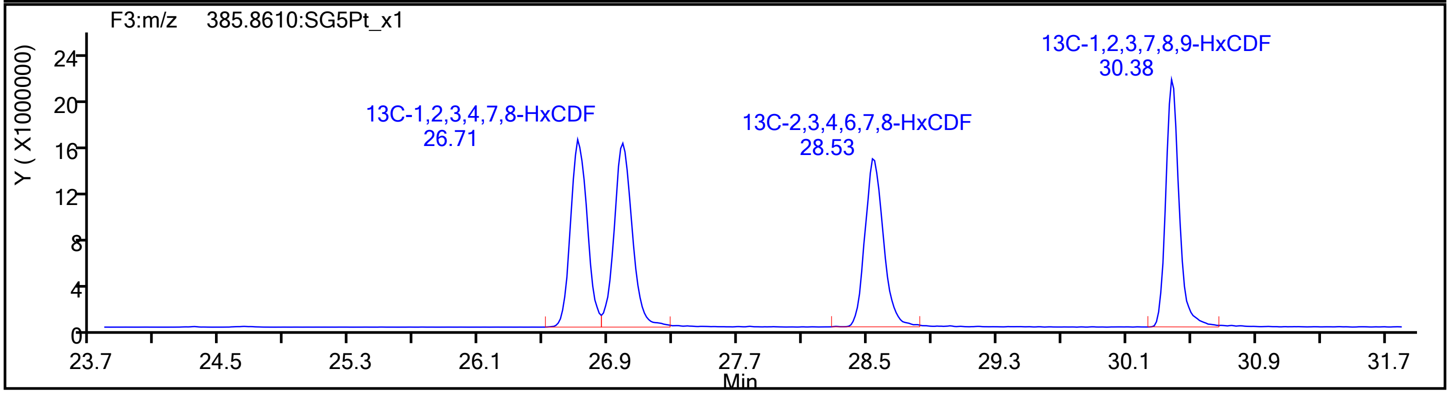

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-3		
Worklist#:	420483	Sample Line#:	5
Column Type:		Column Dia:	

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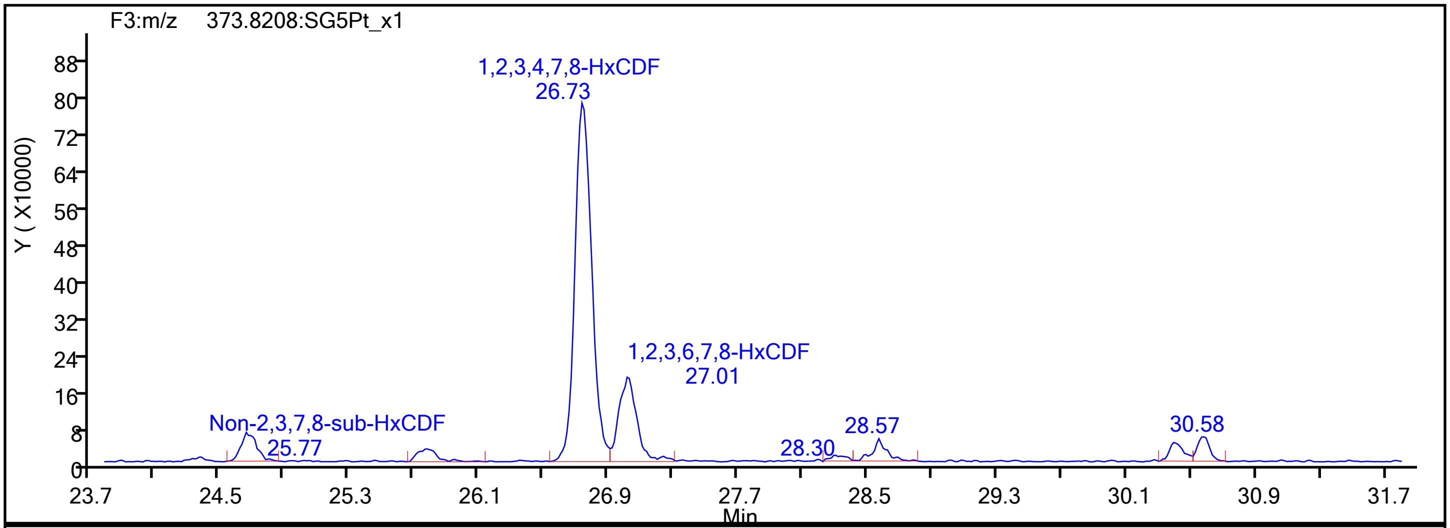

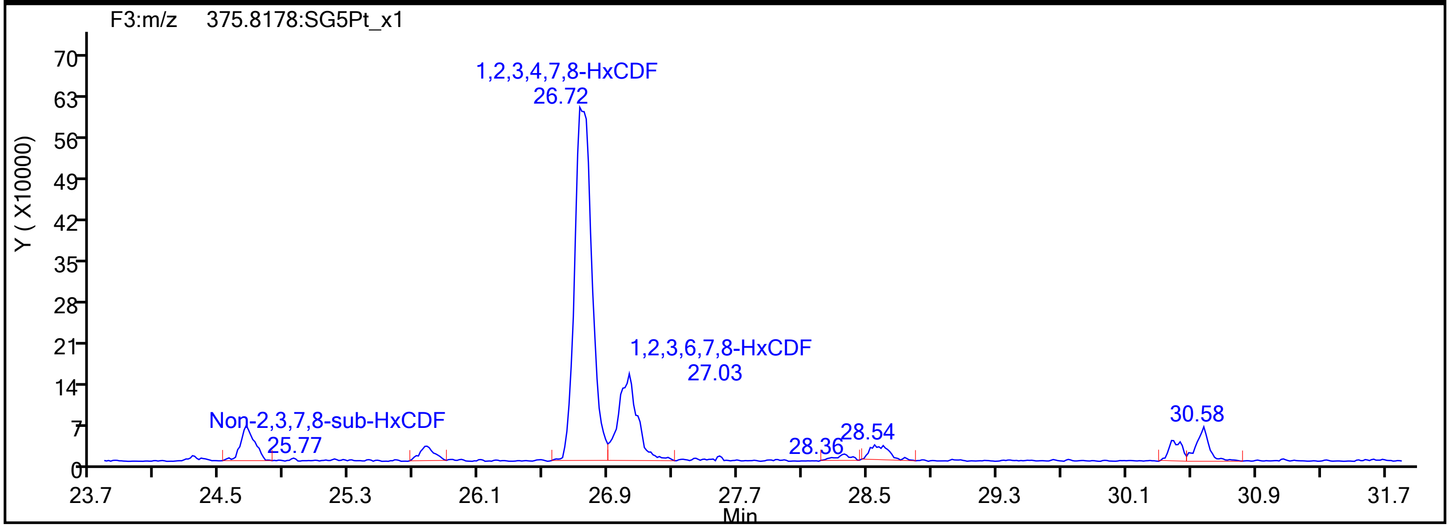

HxCDF Interference Mass

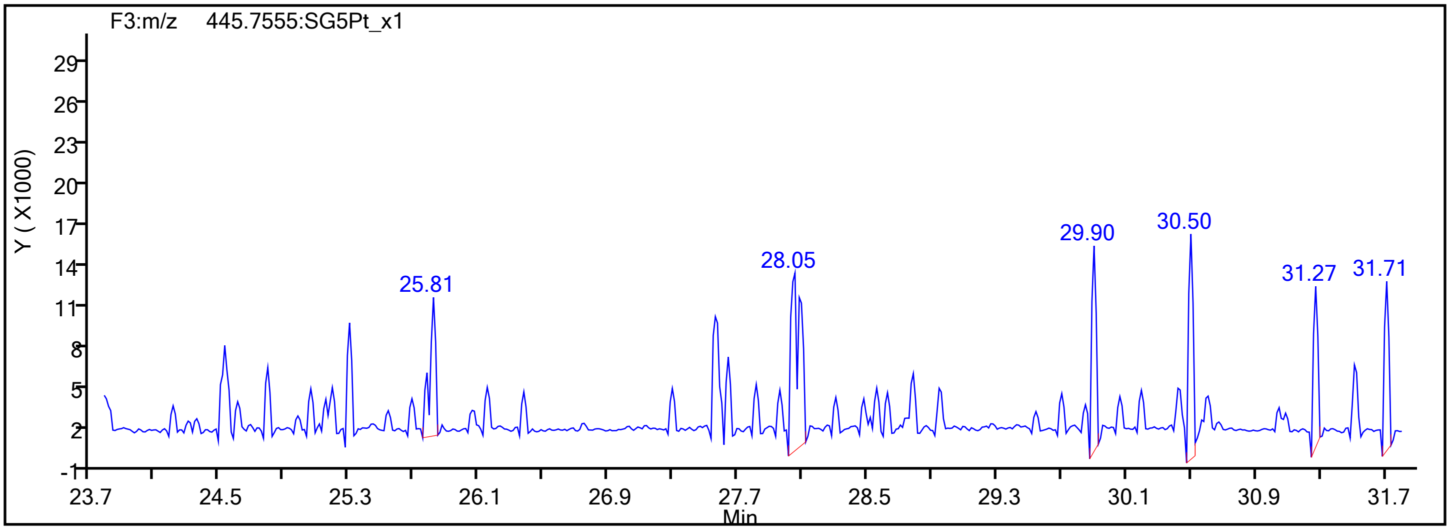

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 16:15:30	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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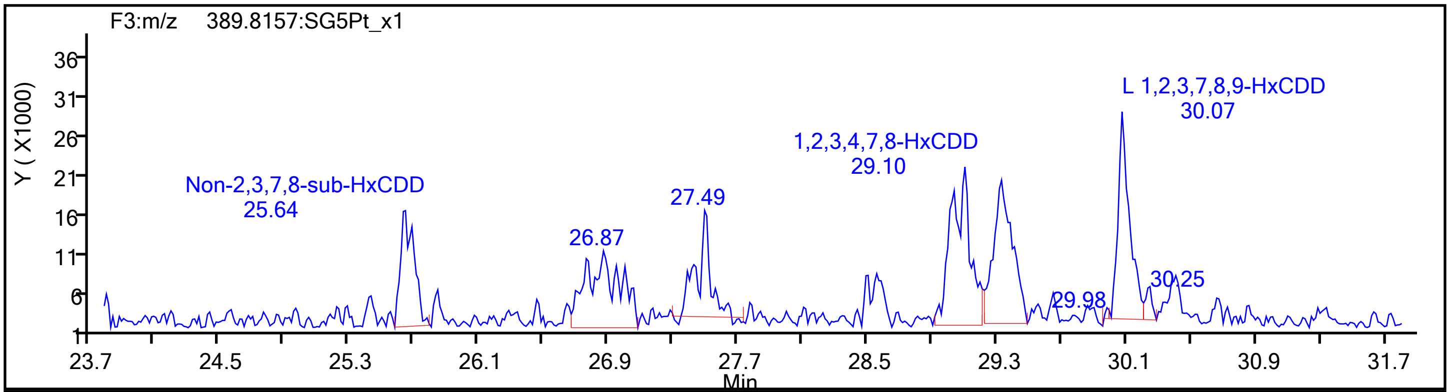

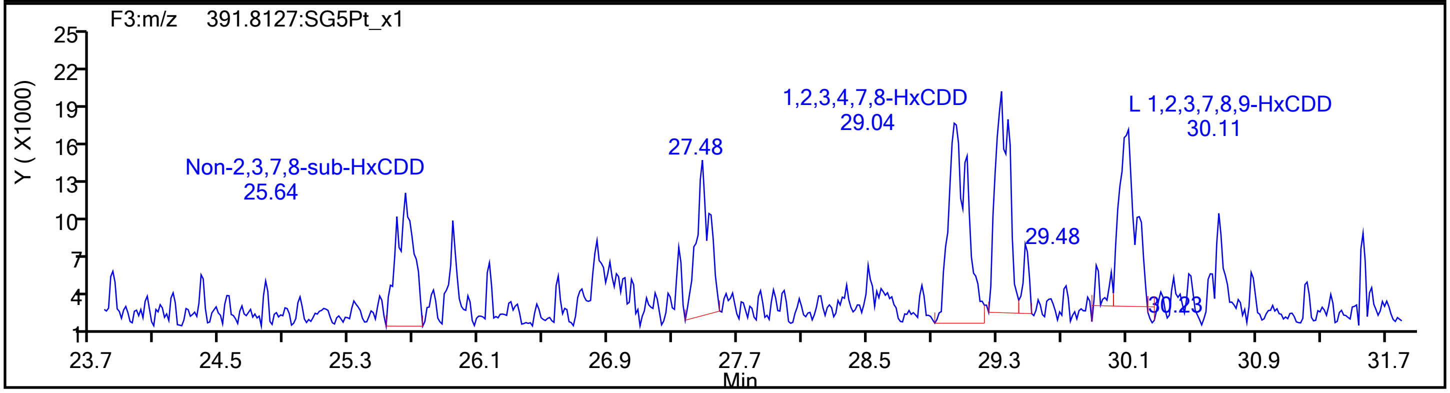

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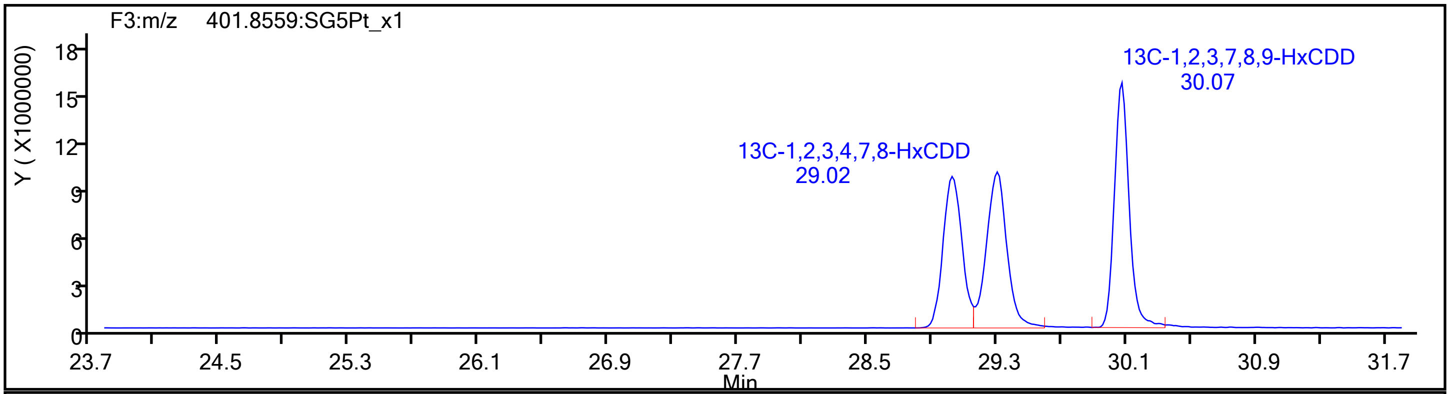

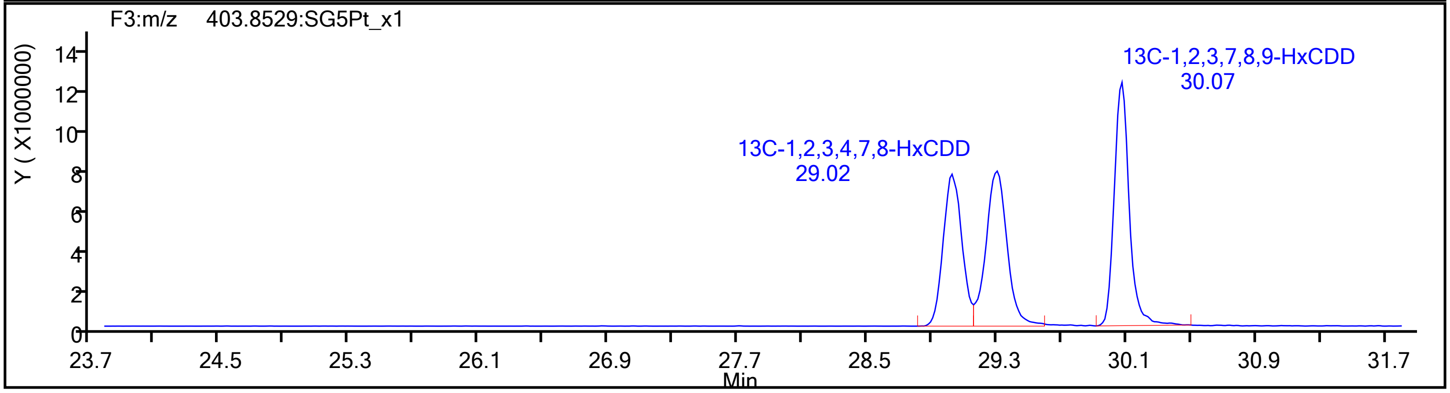

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 16:15:30 Injection Vol: 2.0 ul
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Worklist#: 420483 Sample Line#: 5
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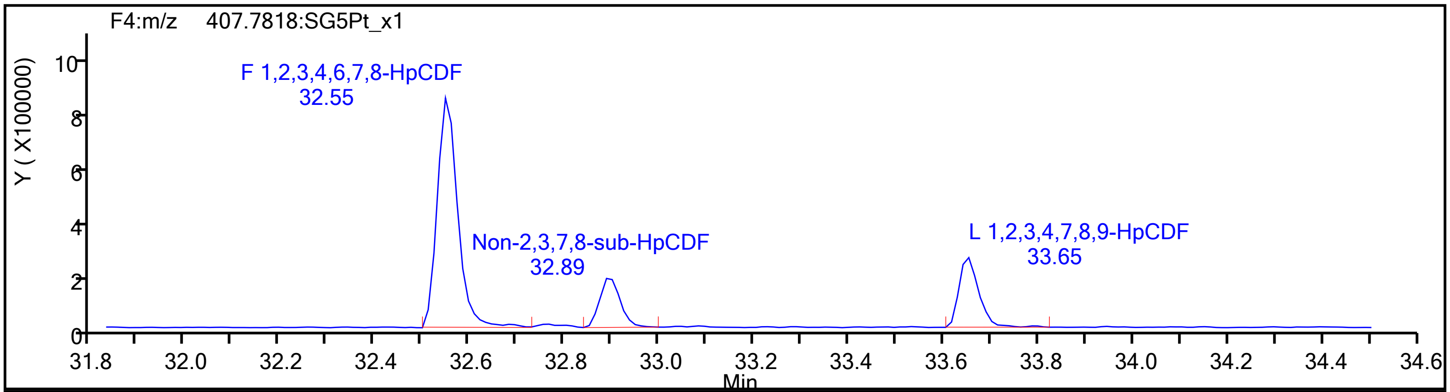

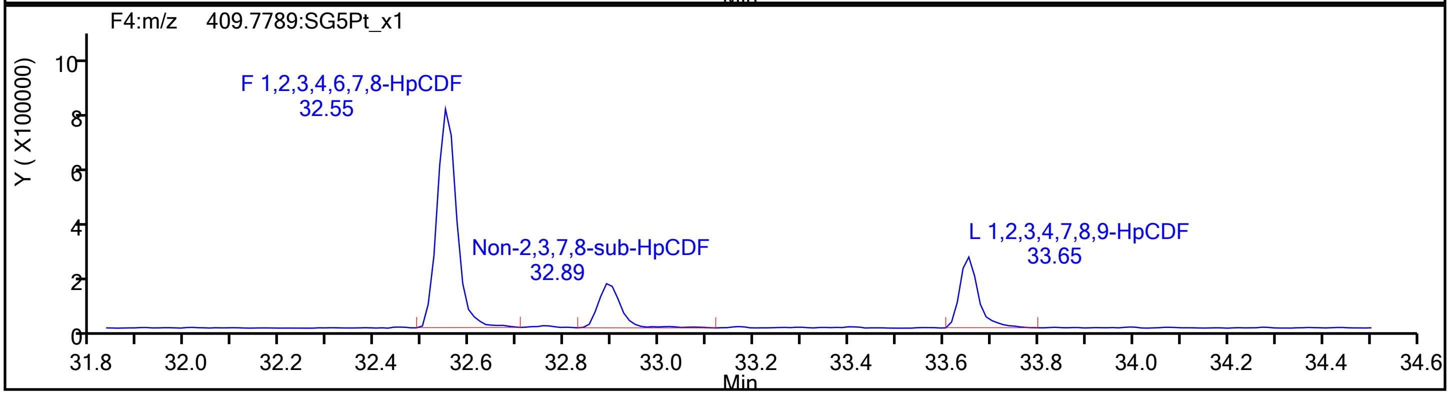

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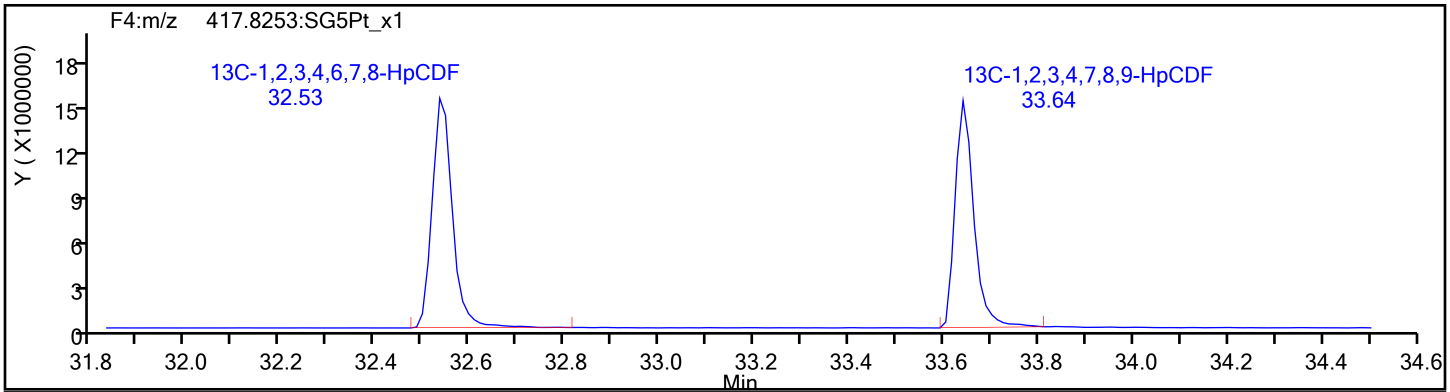

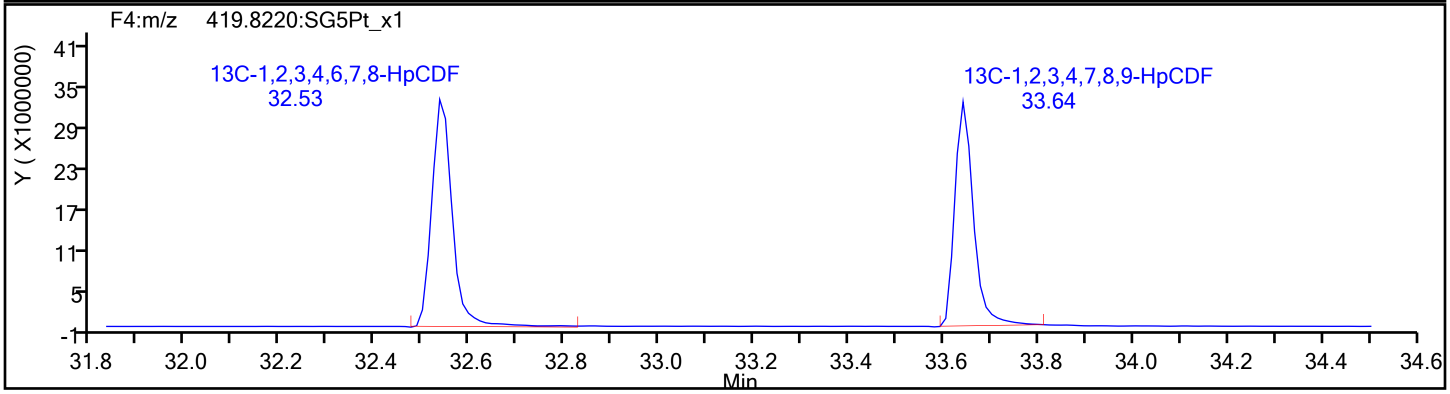

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Eurofins TestAmerica, Sacramento

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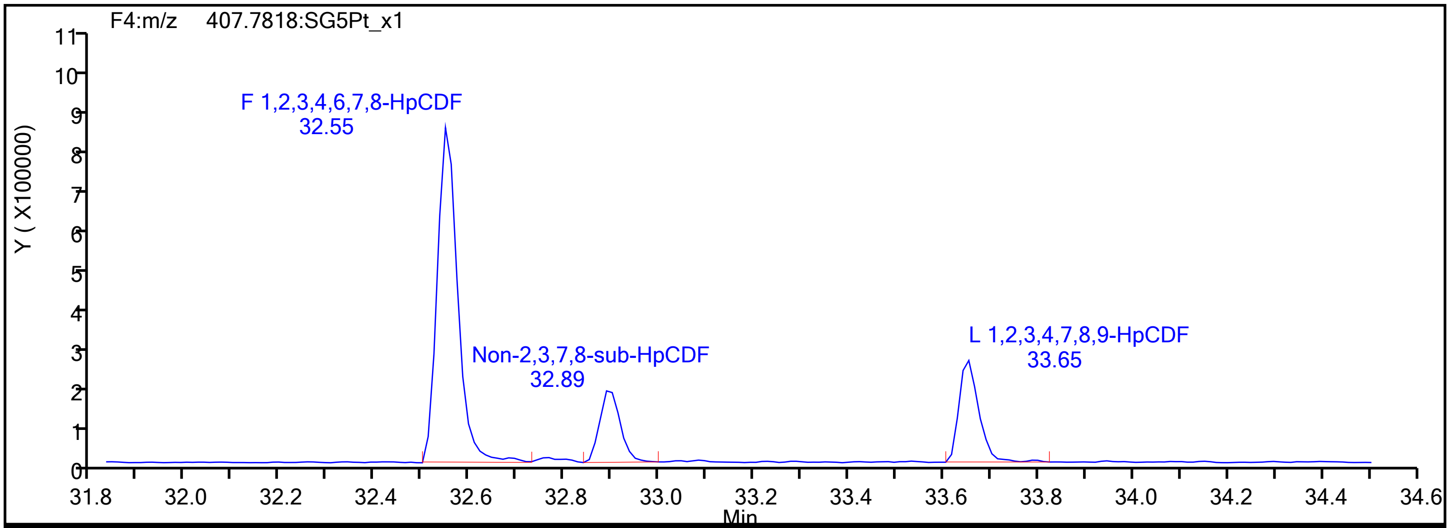

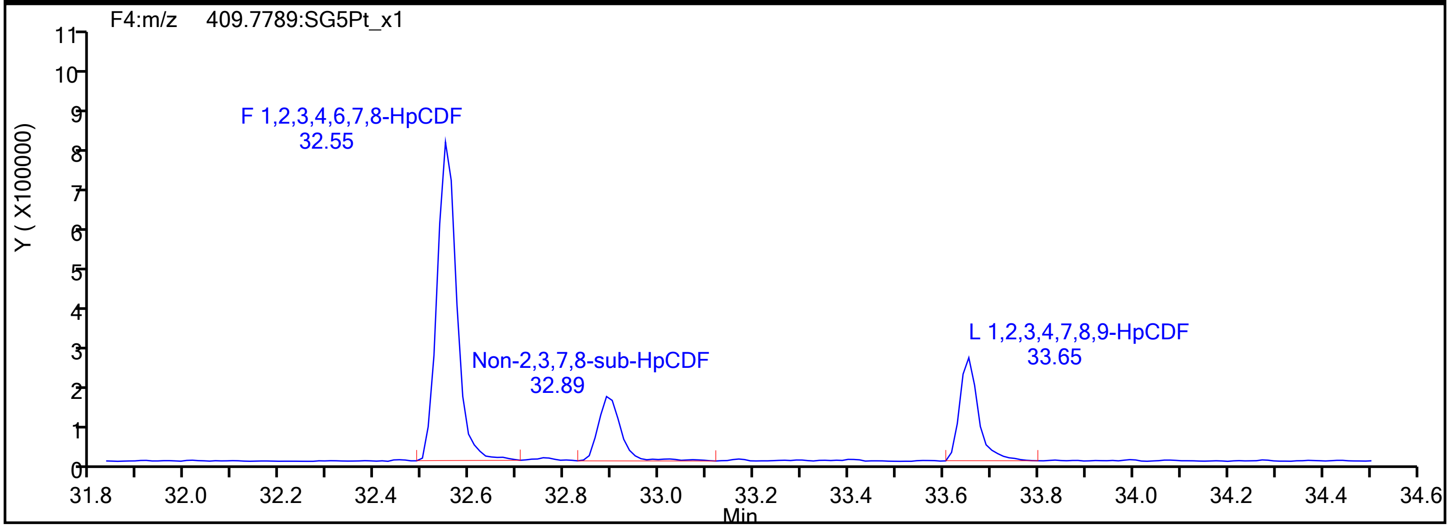

HpCDF Interference Mass

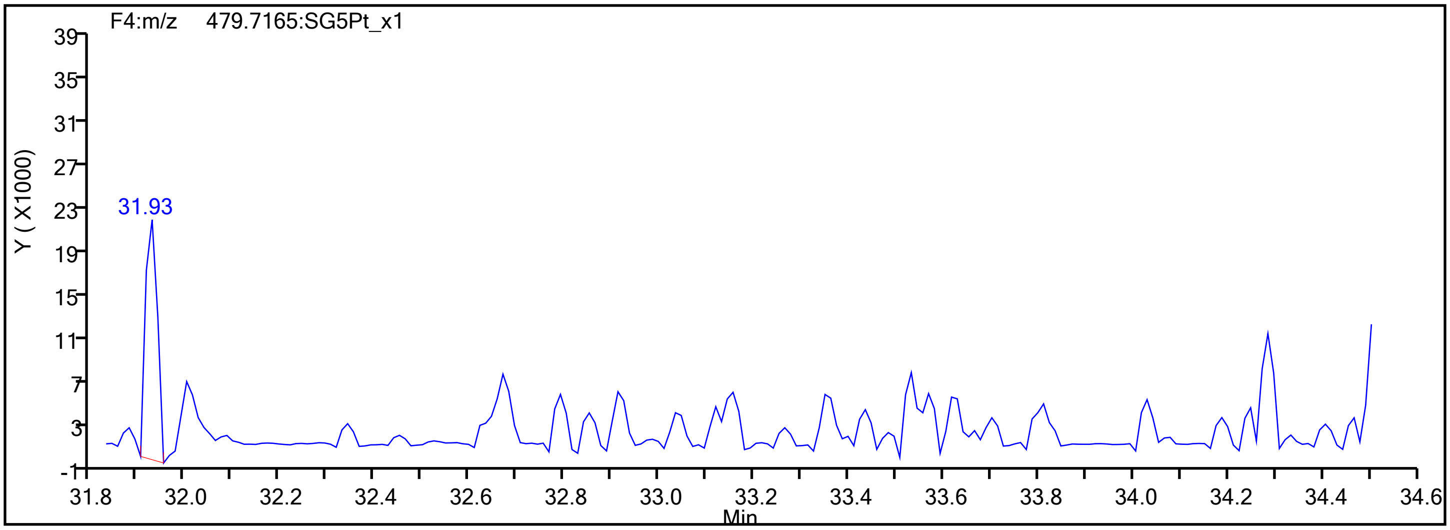

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Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
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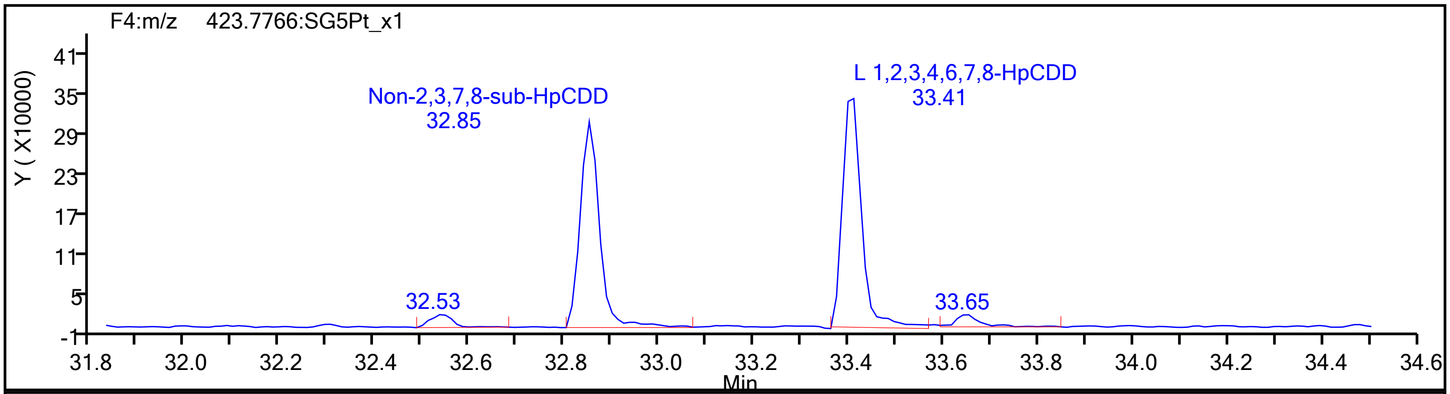

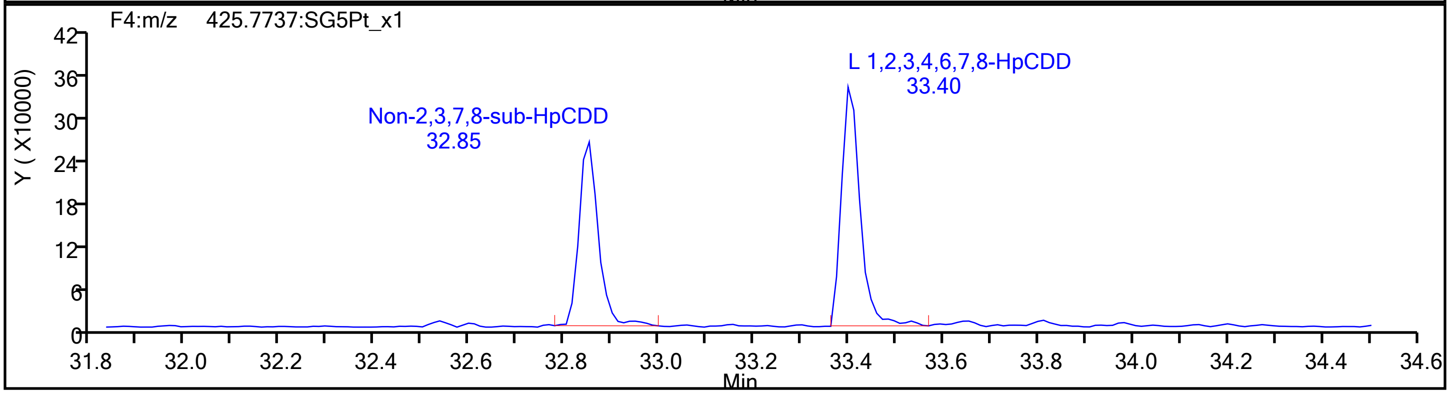

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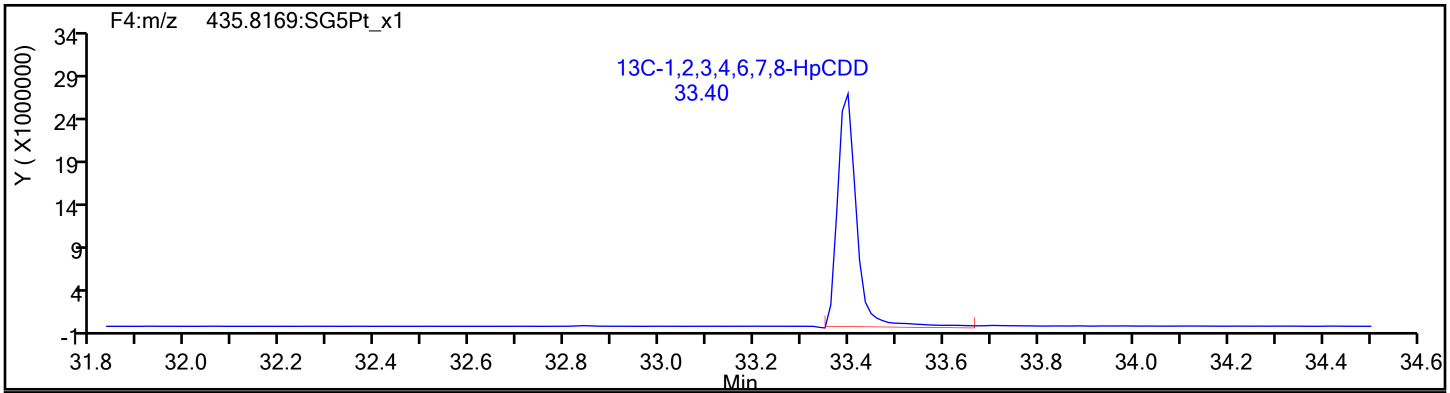

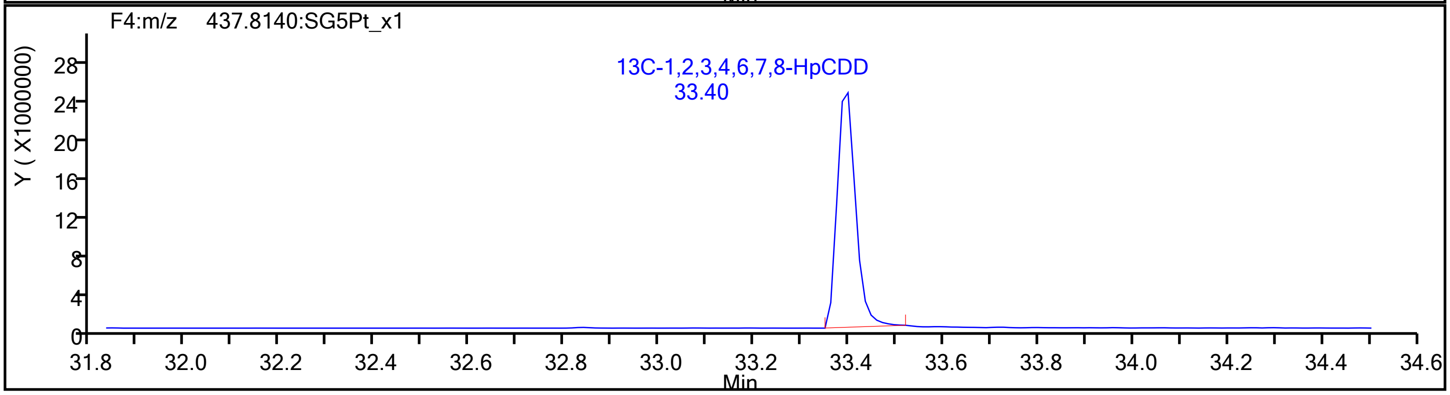

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 16:15:30　　Injection Vol: 2.0 ul

Instrument ID: 3D5　　Operator ID: SMA

Method: Dioxin_3D5　　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-3

Worklist#: 420483　　Sample Line#: 5

Column Type:　　Column Dia:

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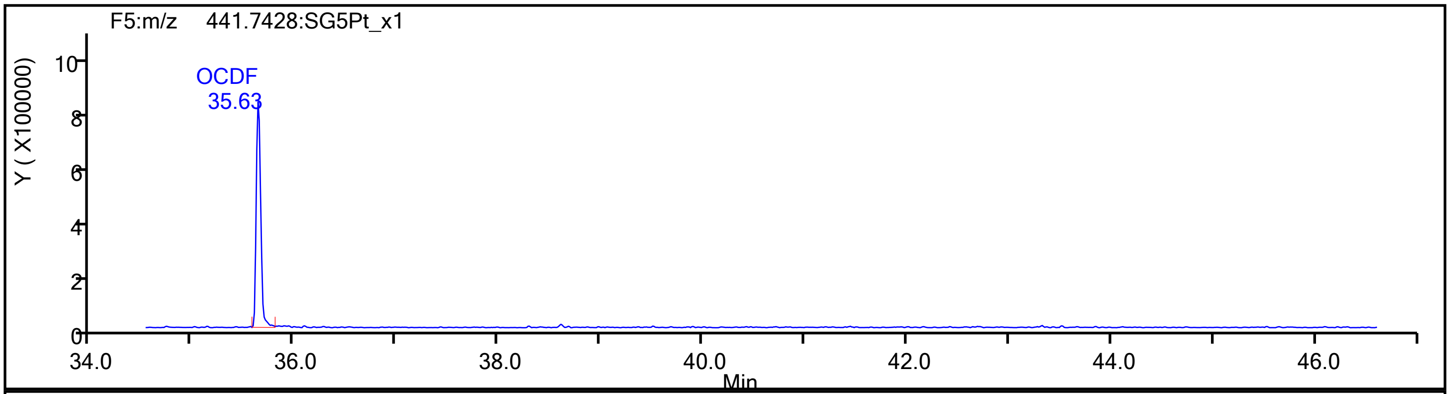

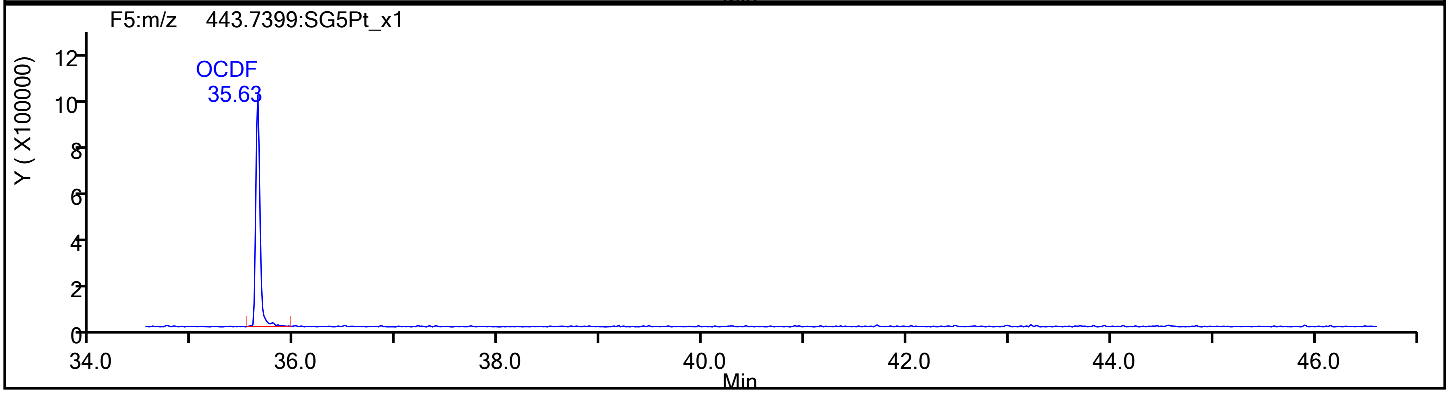

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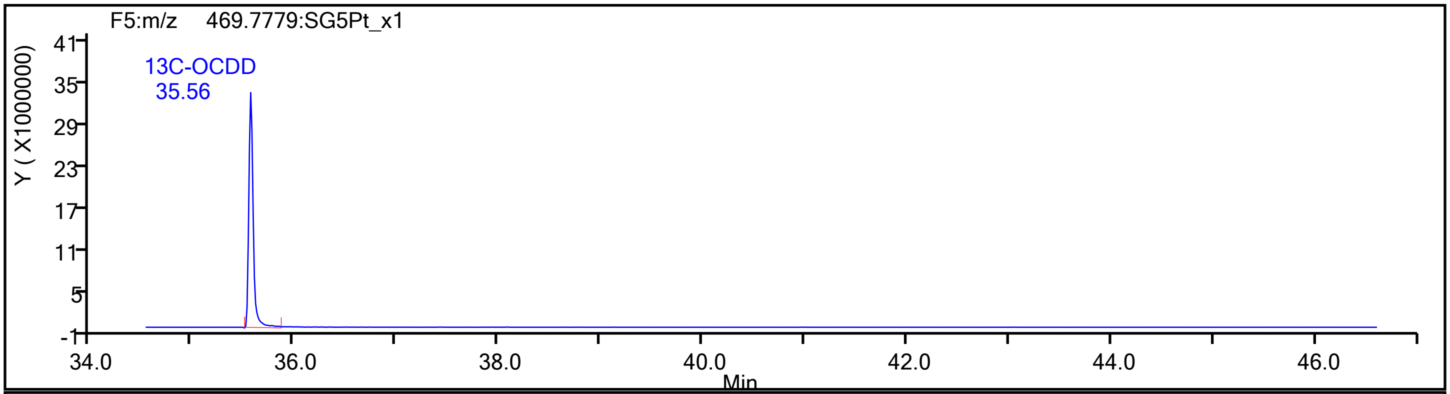

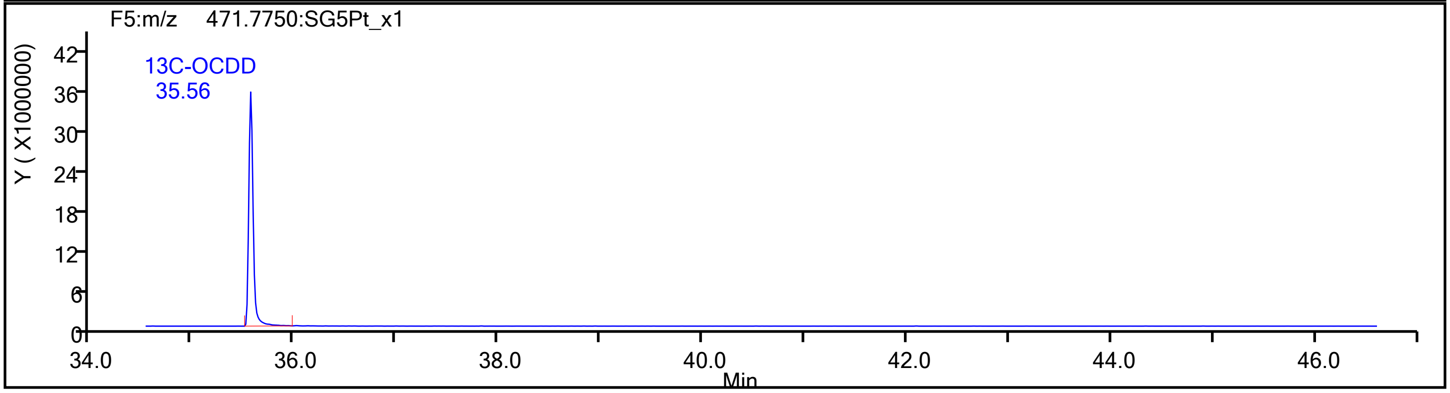

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
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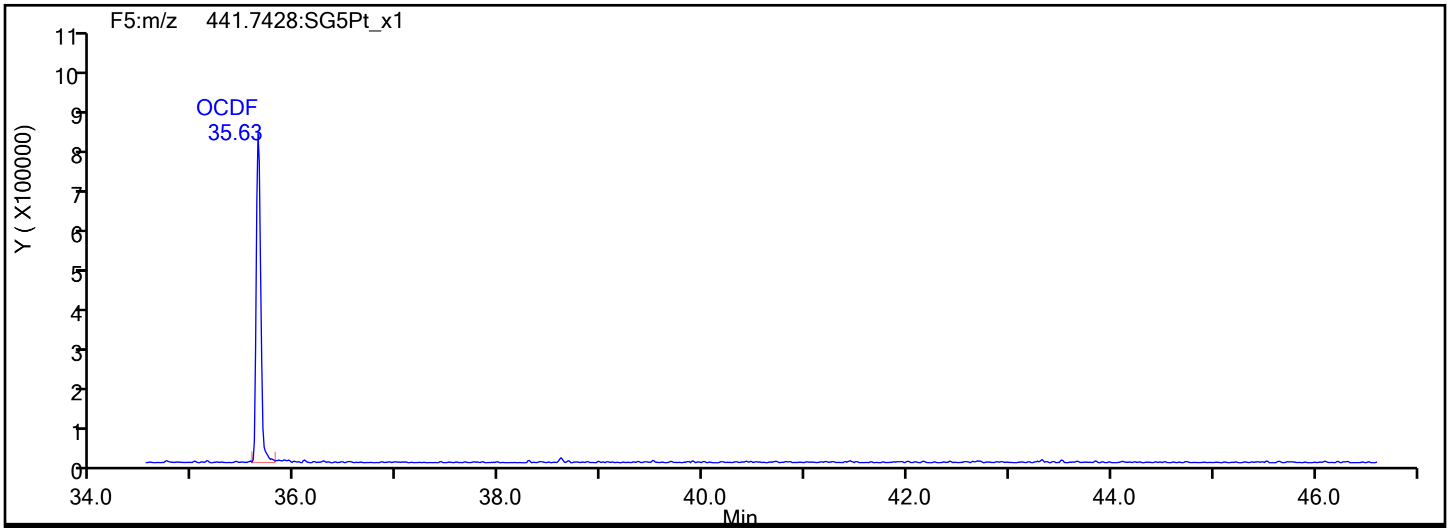

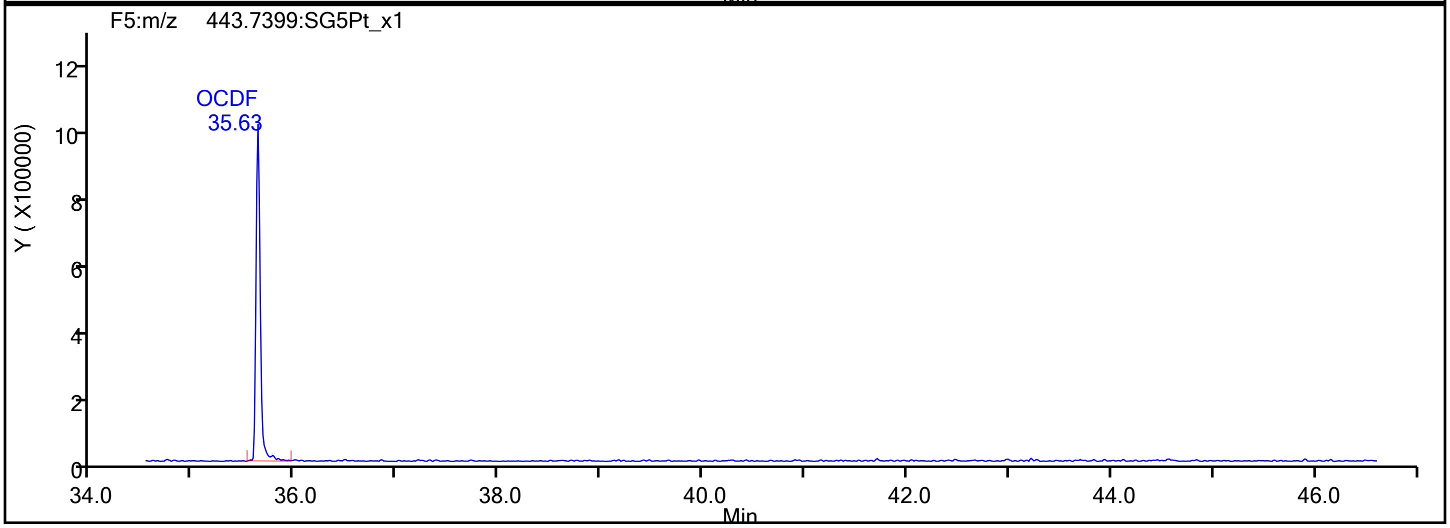

OCDF Interference Mass

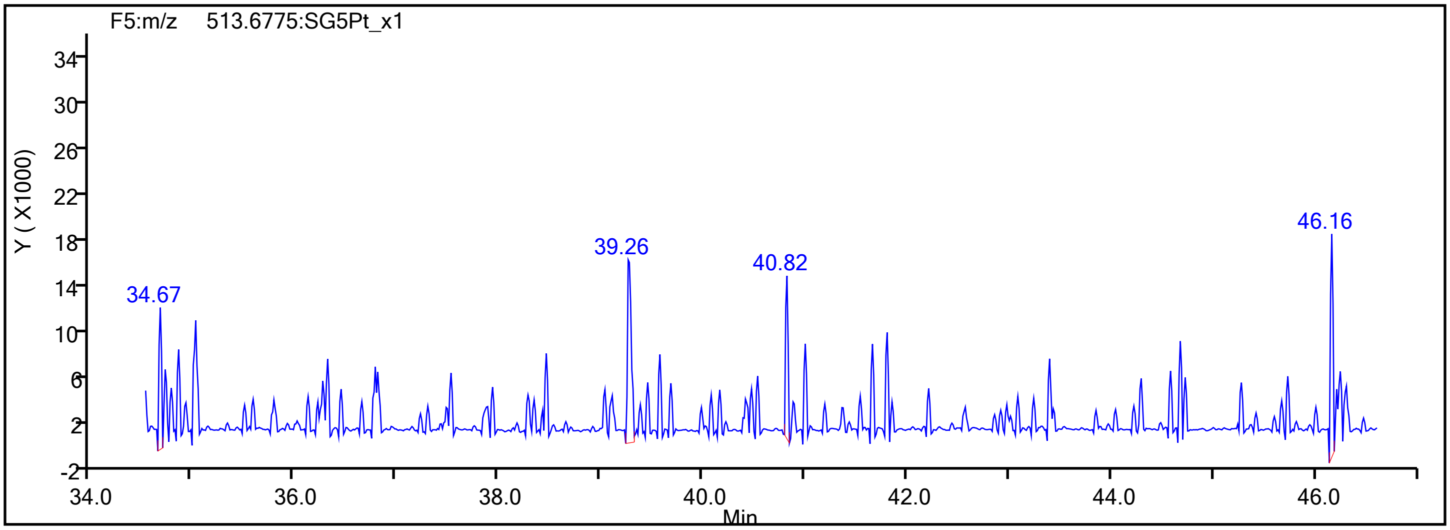

Report Date: 16-Oct-2020 06:43:16 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 16:15:30 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-3
Worklist#: 420483 Sample Line#: 5
Column Type: Column Dia:

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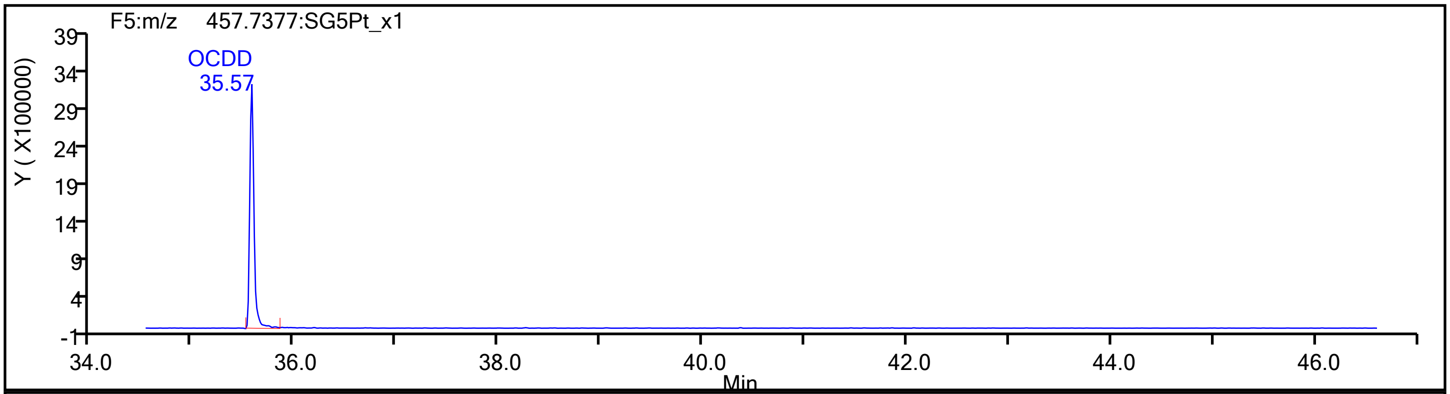

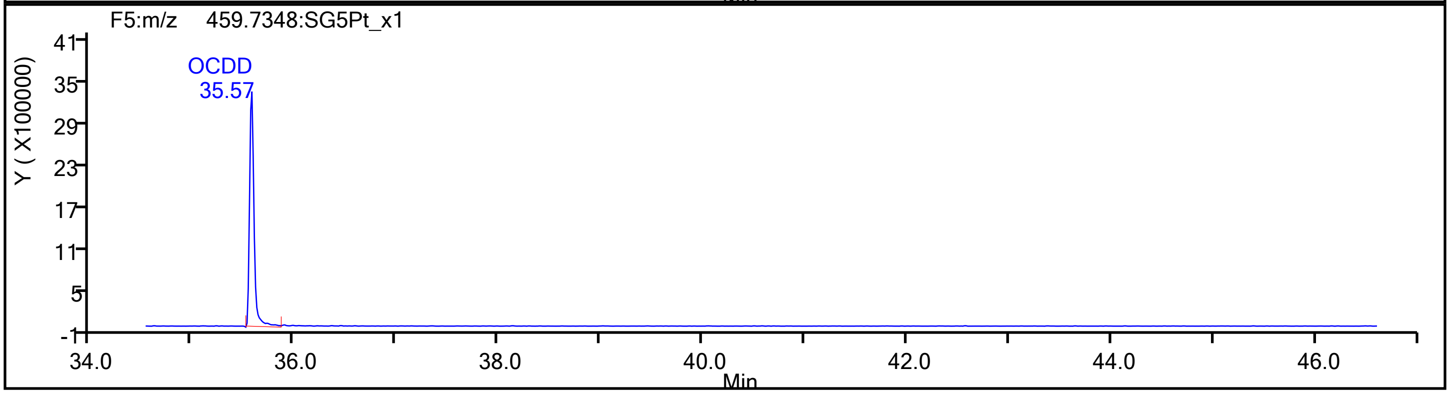

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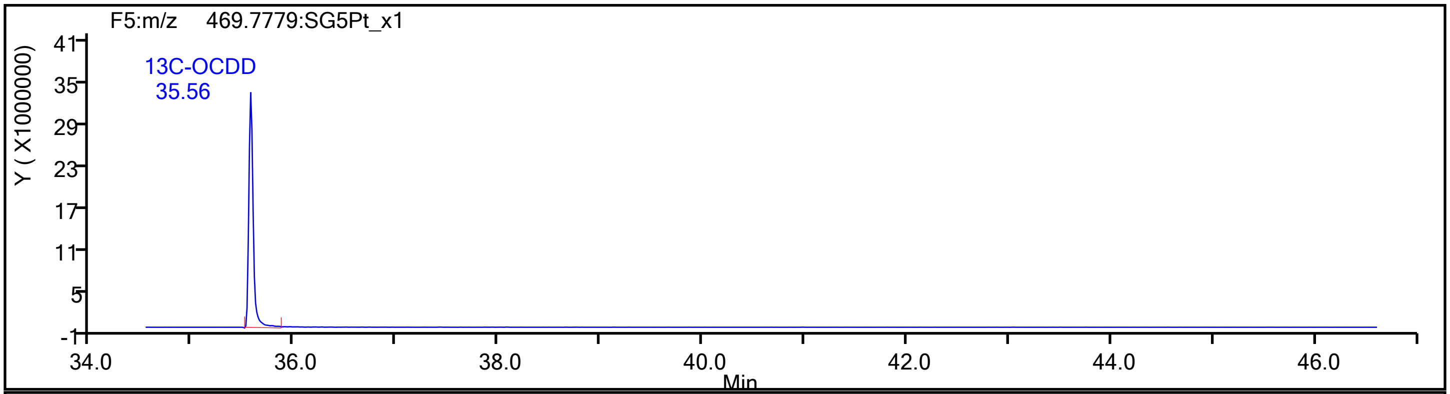

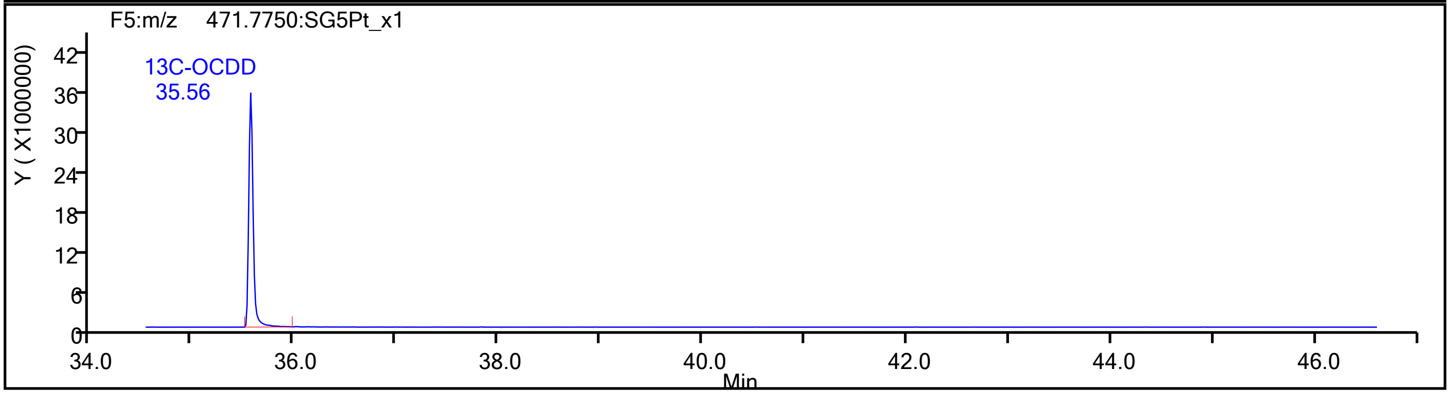

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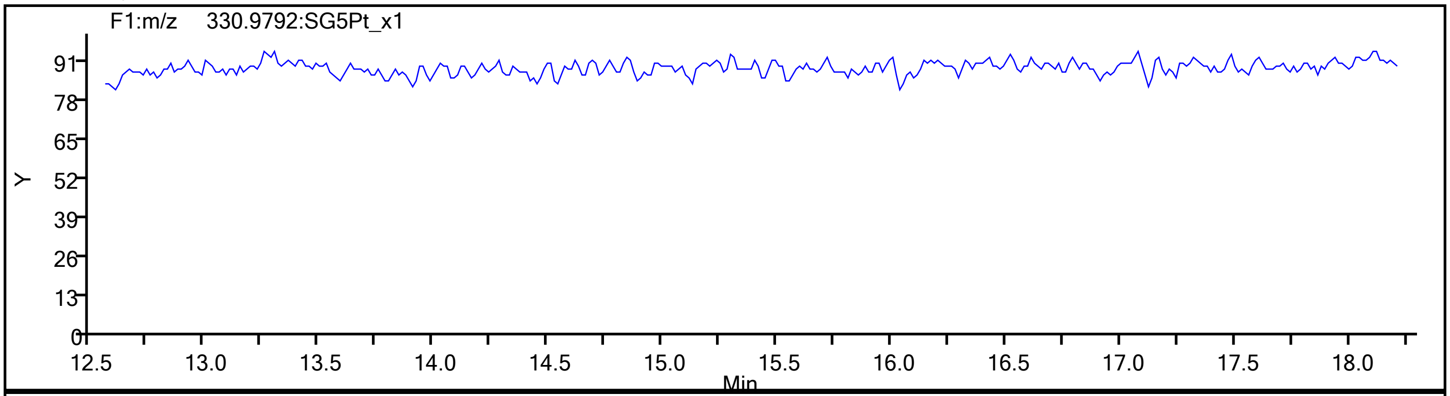

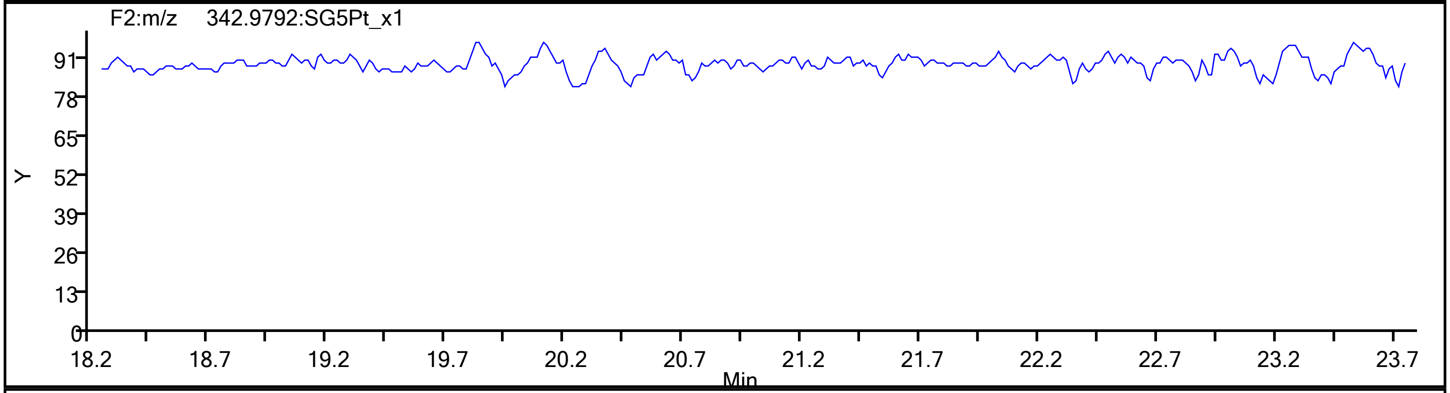

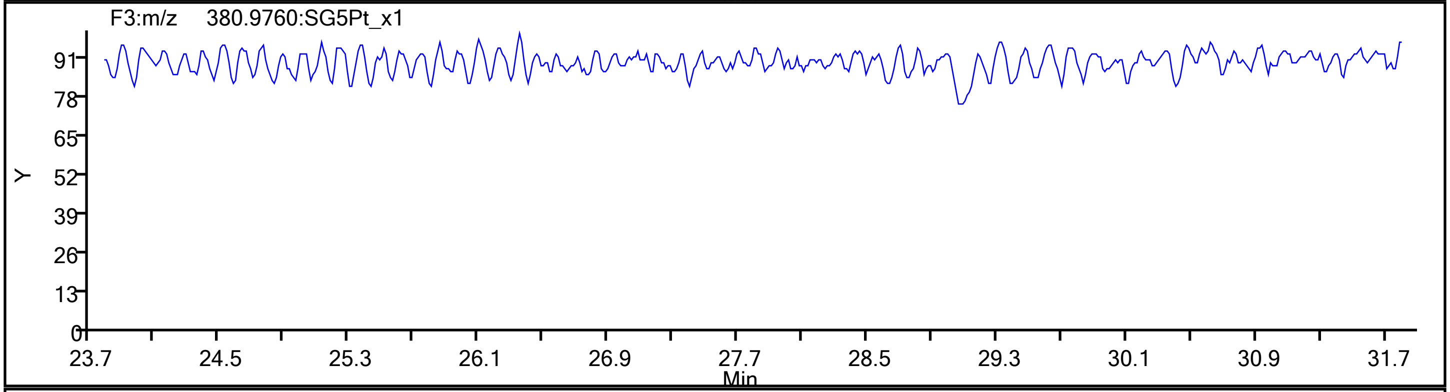

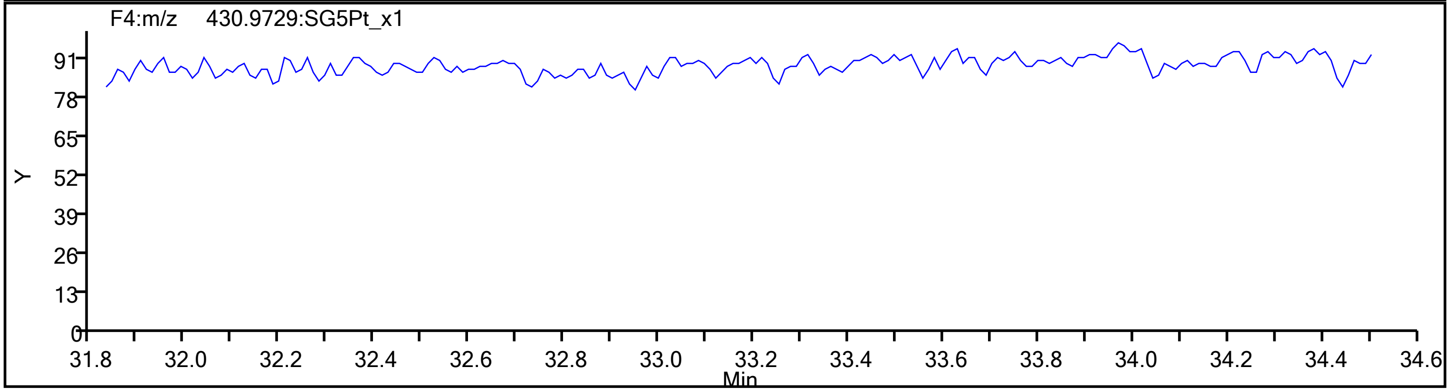

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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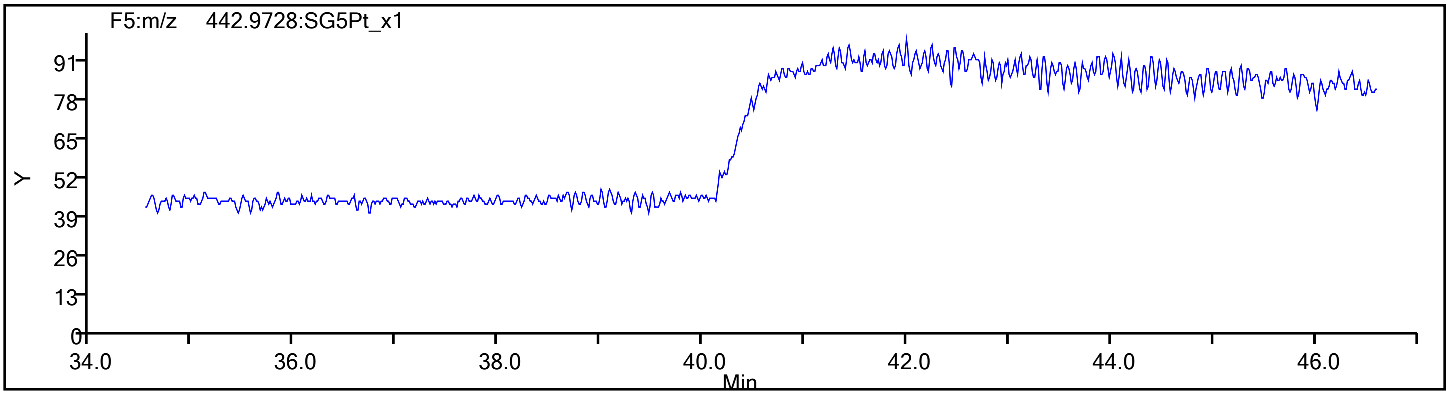

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-valve-5-3 RA

Lab Sample ID: 320-65130-12 RA

Matrix: Water

Lab File ID: 13OC20A11D2_012.d

Analysis Method: 1613B

Date Collected: 09/11/2020 14:30

Extract. Method: 1613B

Date Extracted: 10/01/2020 08:42

Sample wt/vol: 982.8(mL)

Date Analyzed: 10/14/2020 02:43

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 421876

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1400	B	10	4.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	87		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	120		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_012.d				
Lims ID:	320-65130-A-12-A				
Client ID:	11215702-Tank#1-valve-5-3				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 02:43:49	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-12-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:35:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.916	62983940	0.80	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.041	86137288	0.78	1.5708	87.1	87.1	0.5016	0.5016	87.06	
2,3,7,8-TCDF	16.055	57179472	0.76	0.9943	66.8	66.8	0.2024	0.2024		
D 13C-2,3,7,8-TCDD	14.669	51753390	0.79	0.9834	83.6	83.6	1.403	1.403	83.56	
2,3,7,8-TCDD	14.683	14903432	0.79	1.2822	22.5	22.5	0.1595	0.1595		
$ 37Cl4-2,3,7,8-TCDD	14.683	30074541		0.9945	48.0	48.0	0.1367	0.1367	120	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 17:38:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_012.d
Lims ID: 320-65130-A-12-A
Client ID: 11215702-Tank#1-valve-5-3
Sample Type: Client
Inject. Date: 14-Oct-2020 02:43:49 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-12-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:35:30

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.916	14.928	-1		28089369	7280726	43515	108787	167		
333.9339	14.916	14.928	-1		34894571	8631183	44323	110807	195	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.041	16.067	-2	1.075	37768138	8916160	30202	75505	295		
317.9389	16.041	16.067	-2	1.075	48369150	11586539	19951	49877	581	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.055	16.081	-2	1.001	24718470	5811715	8712	21780	667		
305.8987	16.055	16.081	-2	1.001	32461002	7798062	7794	19485	1001	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.669	14.681	-1	0.983	22879495	5730030	43515	108787	132		
333.9339	14.669	14.681	-1	0.983	28873895	7288414	44323	110807	164	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.683	14.709	-2	1.001	6564671	1683834	5728	14320	294		
321.8936	14.683	14.709	-2	1.001	8338761	2097060	4920	12300	426	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.683	14.709	-2	0.984	30074541	7777708	8653	21632	899		

QC Flag Legend

Processing Flags

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_012.d
Injection Date: 14-Oct-2020 02:43:49 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-valve-5-3
Worklist#: 421876 Sample Line#: 12
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

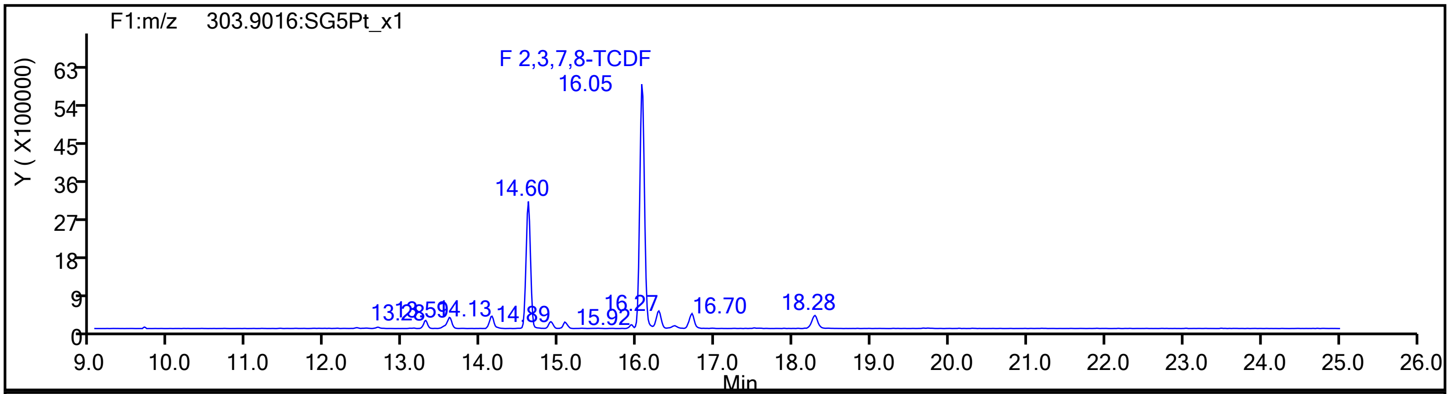

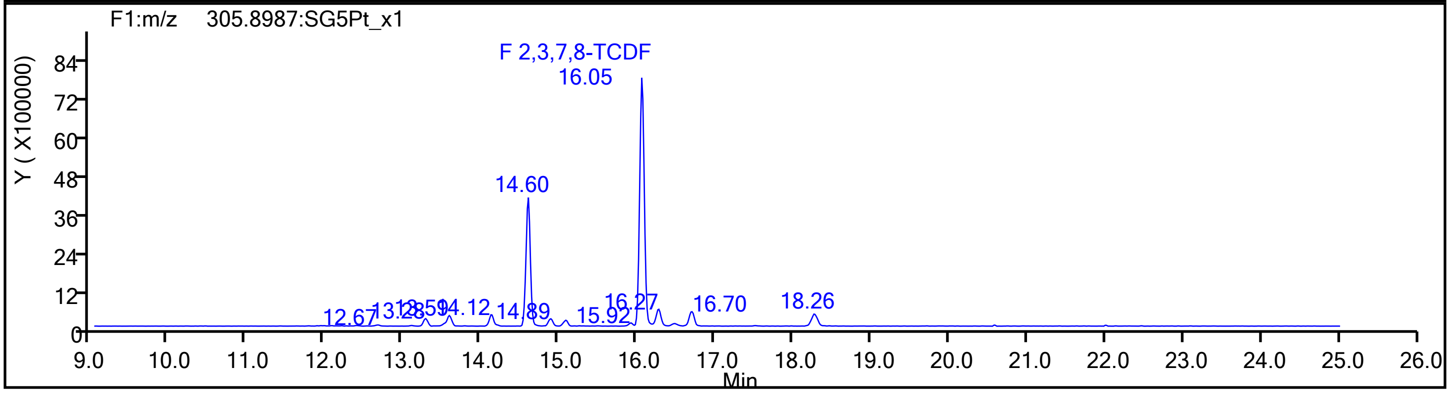

TCDF Standards

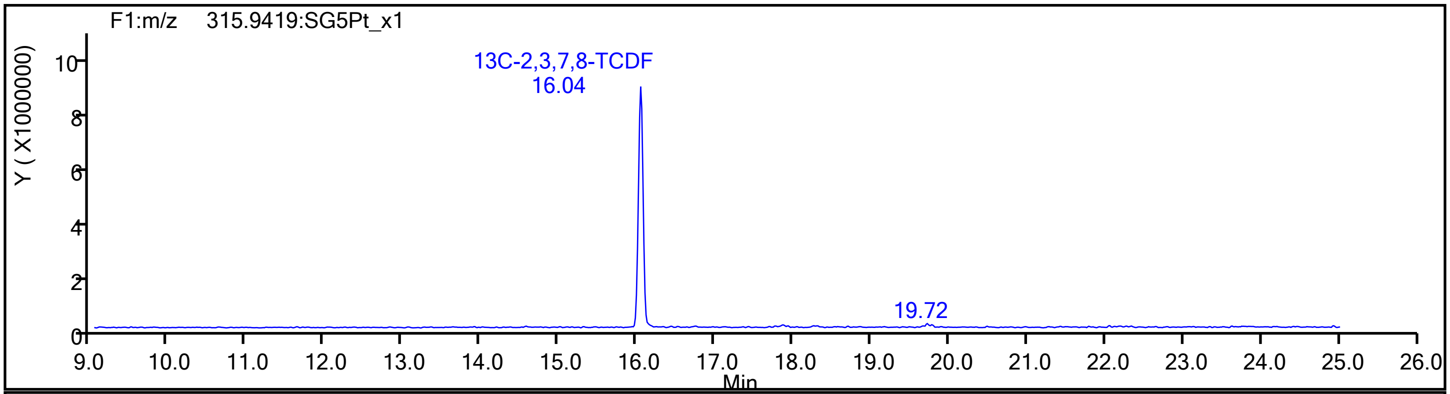

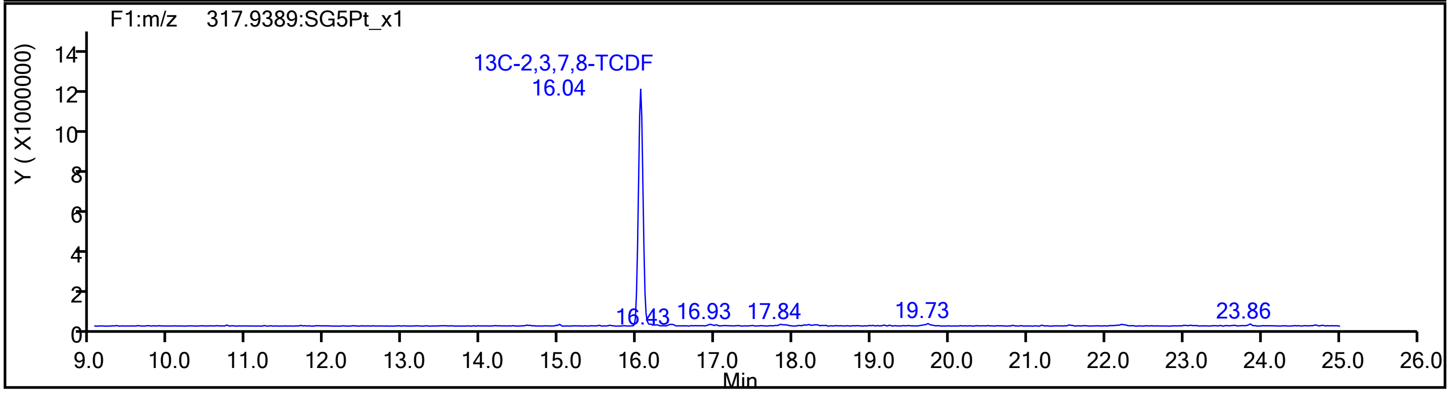

Report Date: 14-Oct-2020 17:38:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_012.d

Injection Date: 14-Oct-2020 02:43:49

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-3

Worklist#: 421876

Sample Line#: 12

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

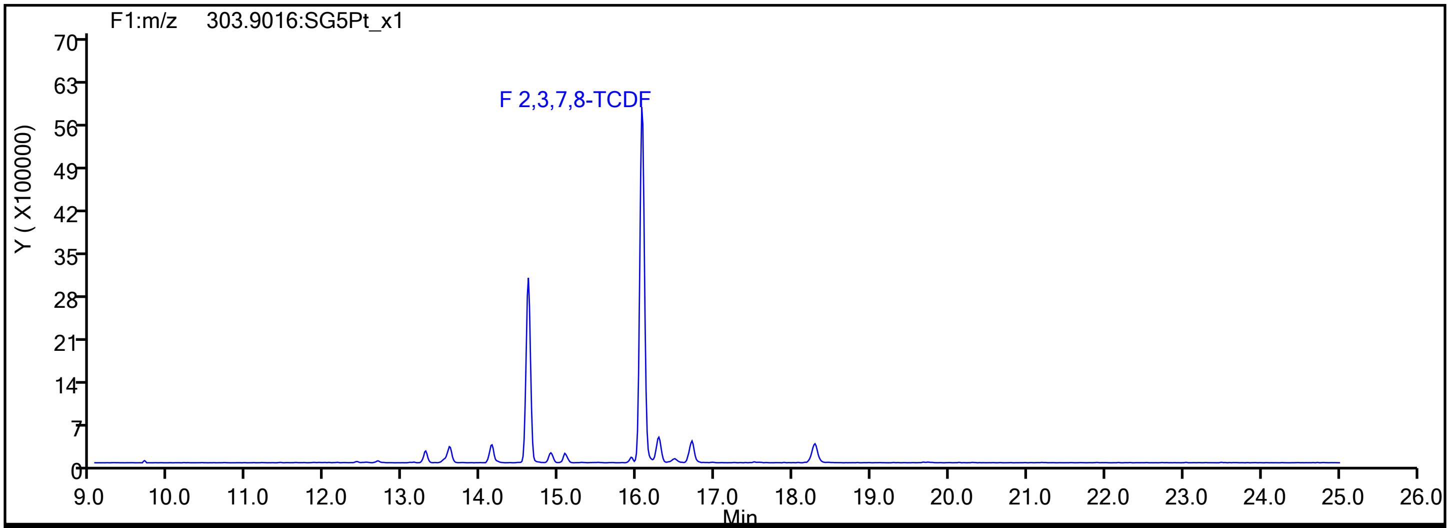

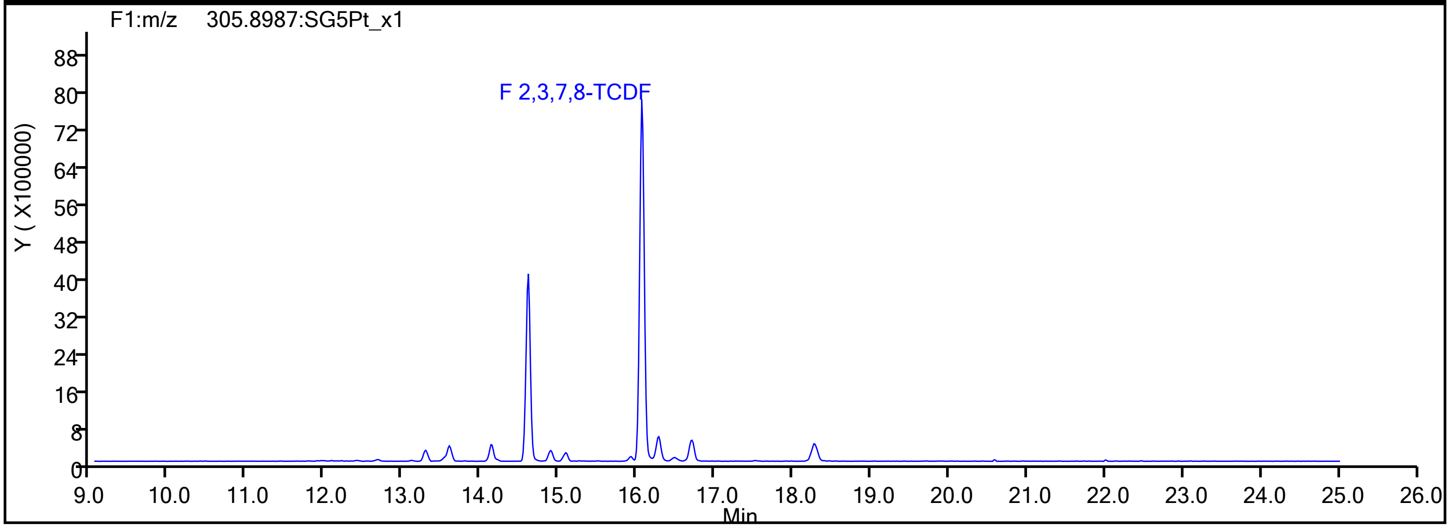

TCDF Interference Mass

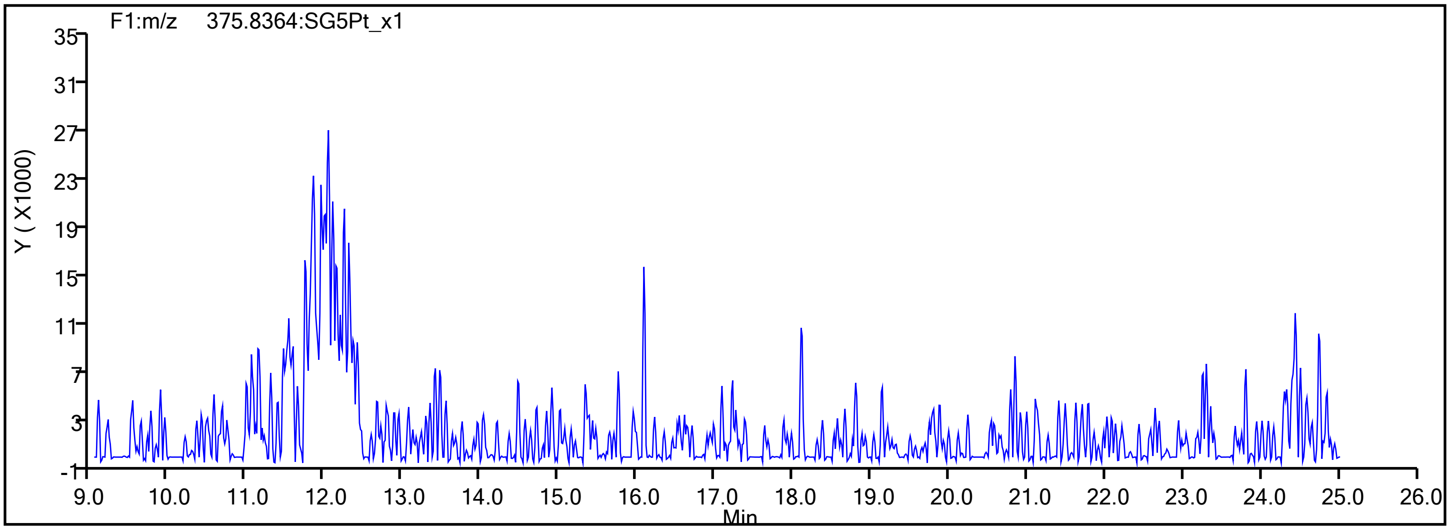

Report Date: 14-Oct-2020 17:38:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_012.d		
Injection Date:	14-Oct-2020 02:43:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-valve-5-3		
Worklist#:	421876	Sample Line#:	12
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

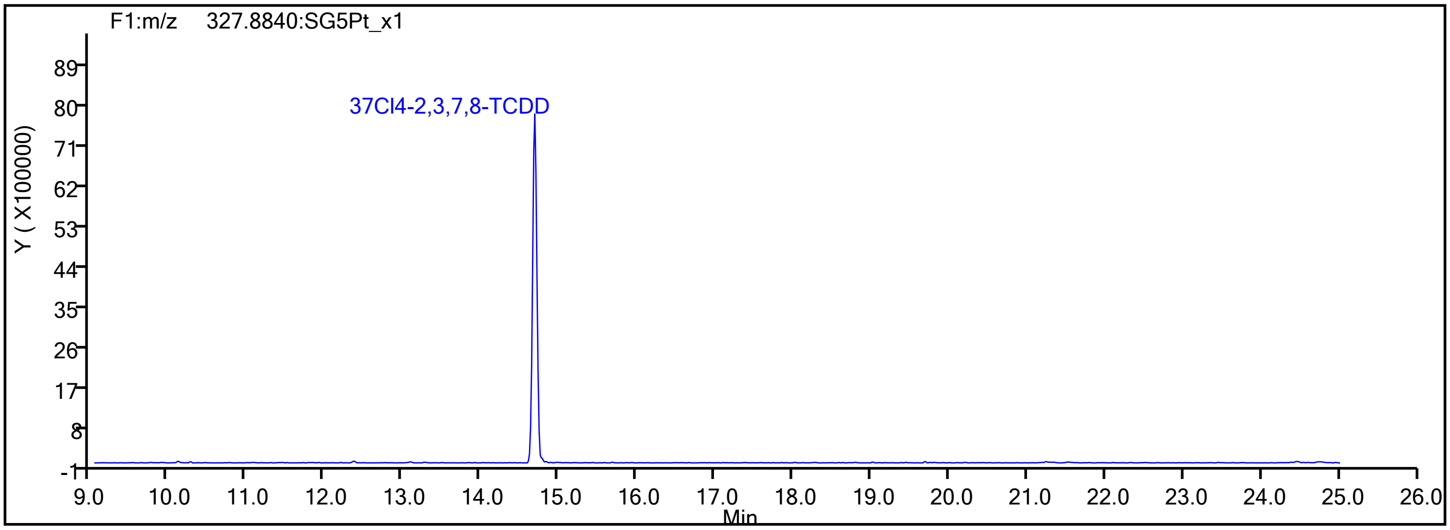

37Cl4-TCDD Standards

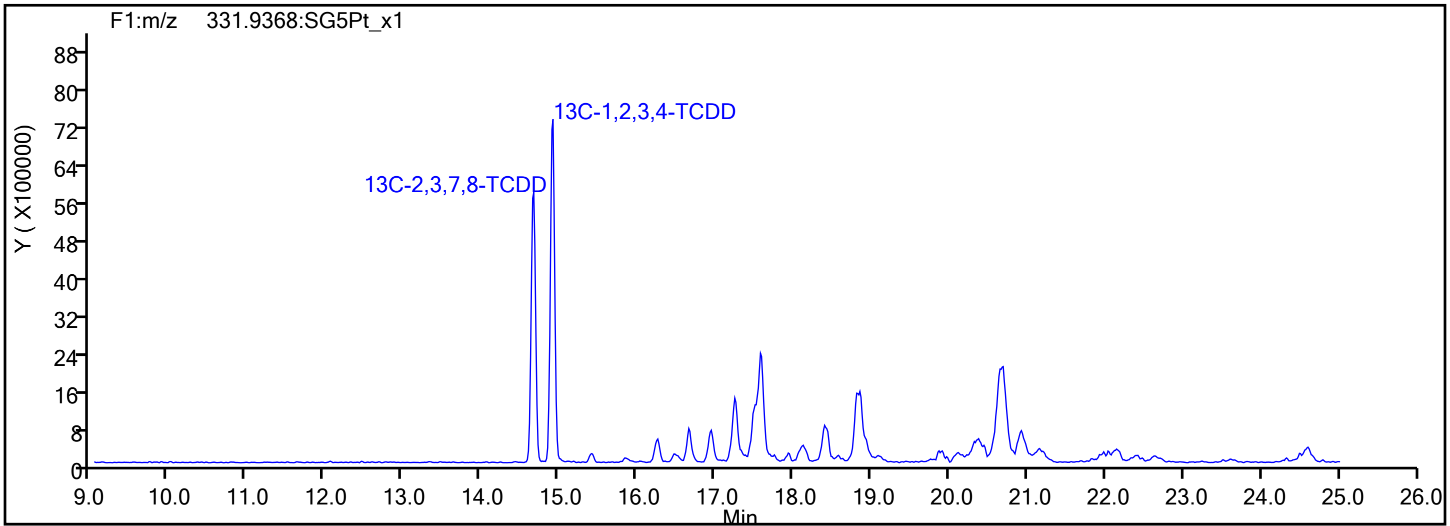

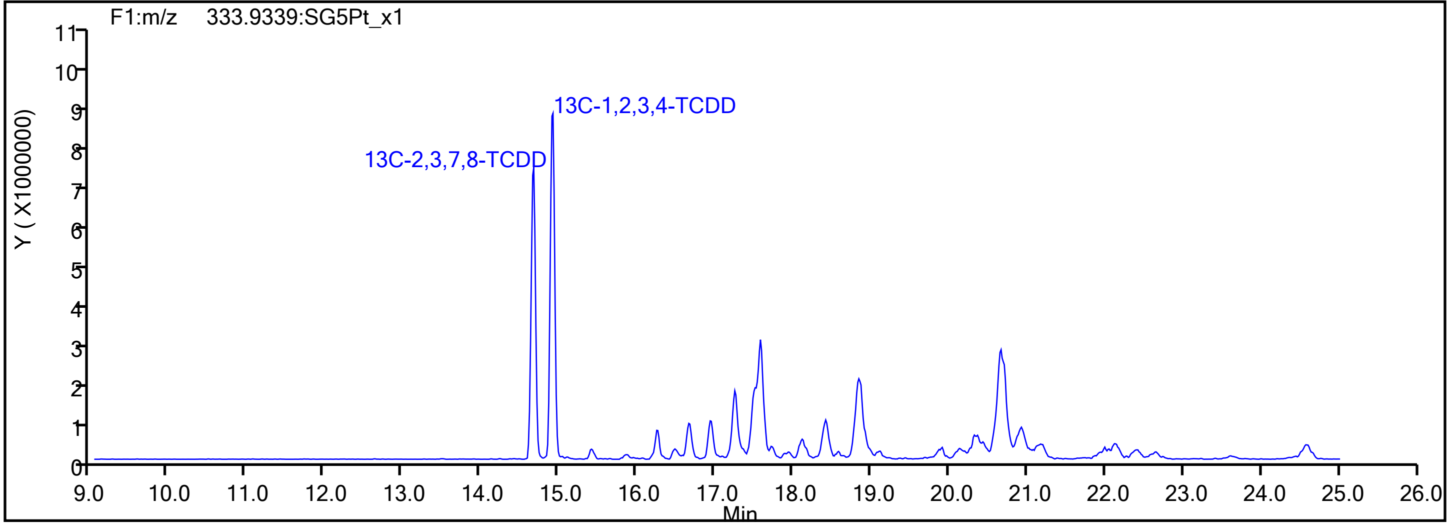

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_012.d

Injection Date: 14-Oct-2020 02:43:49 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-valve-5-3

Worklist#: 421876 Sample Line#: 12

Column Type: DB-225 Column Dia: 0.32 mm

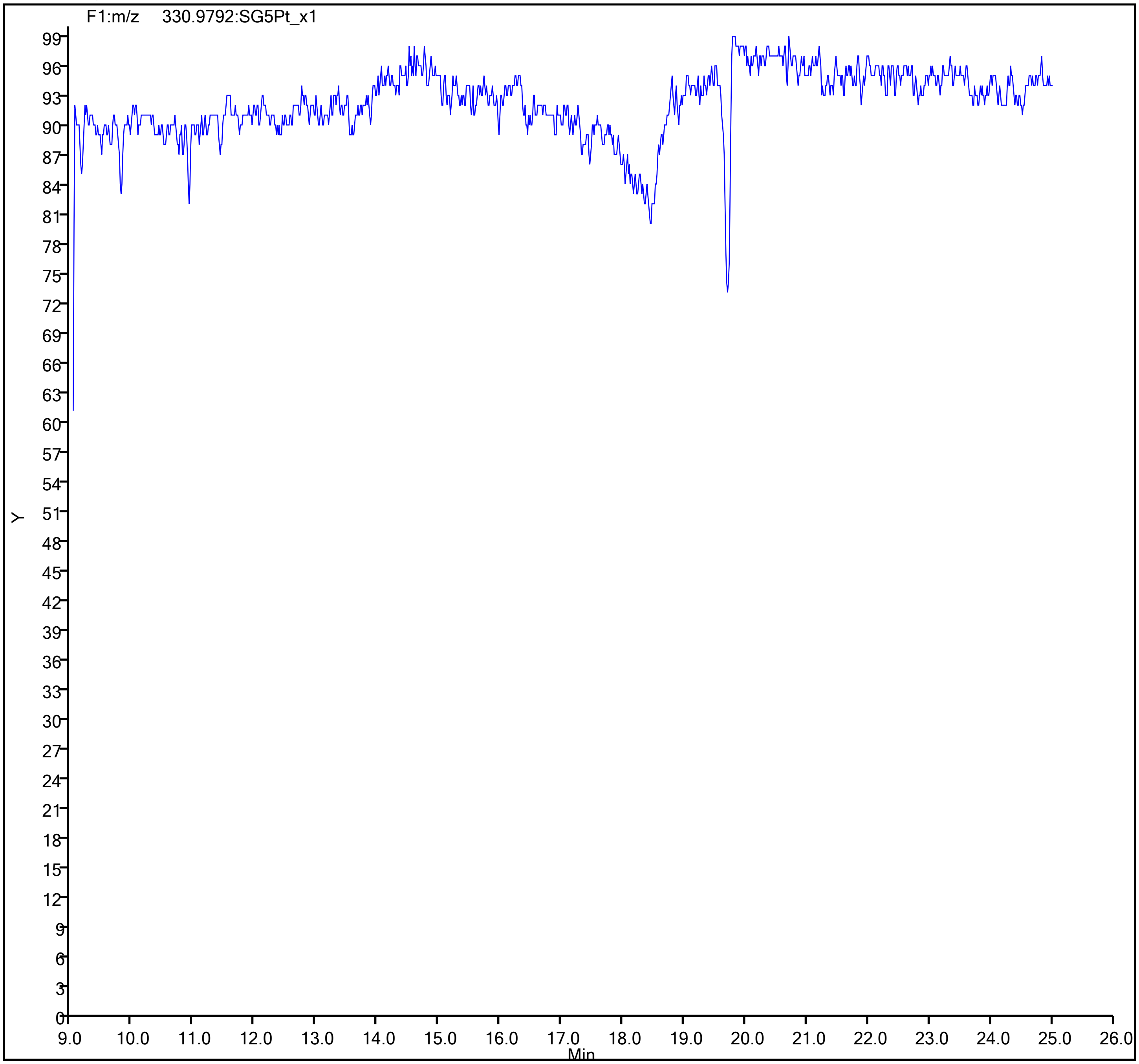

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-T=0	Lab Sample ID: 320-65130-13
Matrix: Water	Lab File ID: 09OC203D5_6.d
Analysis Method: 1613B	Date Collected: 09/11/2020 11:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1040.3(mL)	Date Analyzed: 10/09/2020 17:03
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420483	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	850	B	48	14
57117-41-6	1,2,3,7,8-PeCDF	10000	B G	110	110
57117-31-4	2,3,4,7,8-PeCDF	6600	B G	77	77
39227-28-6	1,2,3,4,7,8-HxCDD	22	J B	48	6.5
57653-85-7	1,2,3,6,7,8-HxCDD	110	B	48	6.1
19408-74-3	1,2,3,7,8,9-HxCDD	49	B	48	5.8
70648-26-9	1,2,3,4,7,8-HxCDF	17000	B G	70	70
57117-44-9	1,2,3,6,7,8-HxCDF	4300	B G	59	59
72918-21-9	1,2,3,7,8,9-HxCDF	320	B	48	44
60851-34-5	2,3,4,6,7,8-HxCDF	490	B G	79	79
35822-46-9	1,2,3,4,6,7,8-HpCDD	3700	B	48	36
67562-39-4	1,2,3,4,6,7,8-HpCDF	5300	B	48	28
55673-89-7	1,2,3,4,7,8,9-HpCDF	1900	B	48	25
39001-02-0	OCDF	2800	B	96	1.7
36088-22-9	Total PeCDD	1000	B	48	14
30402-15-4	Total PeCDF	27000	B G	93	93
34465-46-8	Total HxCDD	950	B	48	6.1
55684-94-1	Total HxCDF	30000	B G	63	63
37871-00-4	Total HpCDD	7300	B	48	36
38998-75-3	Total HpCDF	9400	B	48	26

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-T=0	Lab Sample ID: 320-65130-13
Matrix: Water	Lab File ID: 09OC203D5_6.d
Analysis Method: 1613B	Date Collected: 09/11/2020 11:30
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1040.3(mL)	Date Analyzed: 10/09/2020 17:03
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420483	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
109719-79-1	13C-1,2,3,7,8-PeCDD	101		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	73		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	84		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	56		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	56		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	53		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	50		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	51		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	52		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	46		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	42		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	46		26-138
114423-97-1	13C-OCDD	42		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	87		35-197

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Sample Type: Client
Inject. Date: 09-Oct-2020 17:03:06 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-13-A 320-65130-A-13-A
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 09:01:38 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: stephensk Date: 10-Oct-2020 16:12:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.188	128605694	0.79	3.1E+06	100.0	100.0				a
D 13C-2,3,7,8-TCDF	15.749	105790754	0.82	1.4844	55.4	55.4	2.759	2.759	55.42	
2,3,7,8-TCDF	15.749	11026523502	0.77	0.9534	11831	10932	86.4	86.4		REQa
A Non-2,3,7,8-sub-TCDF	15.220	15640082547	0.77	0.9534	15521	15507	86.4	11160		RQMa
S Total TCDF					27352	26439	86.4	86.4		RQ
D 13C-2,3,7,8-TCDD	16.414	58571992	0.80	1.0875	41.9	41.9	1.540	1.540	41.88	a
2,3,7,8-TCDD	16.429	3135534729	0.79	1.0205	5245.9	5245.9	34.3	34.3		Ea
$ 37Cl4-2,3,7,8-TCDD	16.429	50472671		1.1216	35.0	35.0	1.155	1.155	87.48	
A Non-2,3,7,8-sub-TCDD	15.613	540120242	0.76	1.0205	903.6	903.6	34.3	903.6		
S Total TCDD					6149.6	6149.6	34.3	34.3		
D 13C-1,2,3,7,8-PeCDF	20.068	131340798	1.57	1.3943	73.2	73.2	0.7813	0.7813	73.24	
1,2,3,7,8-PeCDF	20.096	772131724	1.58	1.0794	544.7	544.7	5.668	5.668		a
D 13C-2,3,4,7,8-PeCDF	21.146	143859373	1.56	1.3370	83.7	83.7	0.8148	0.8148	83.67	
2,3,4,7,8-PeCDF	21.173	540919095	1.59	1.0966	342.9	342.9	3.997	3.997		a
A F1 PeCDFs	17.722	5835456	1.50	1.0880	3.898	3.898	0.0837	3.898		
A Non-2,3,7,8-sub-PeCDF	20.335	788140192	1.55	1.0880	526.4	526.4	4.694	210.4		a
S Total PeCDF					1417.9	1417.9	4.832	4.832		
D 13C-1,2,3,7,8-PeCDD	21.746	109702527	1.53	0.8475	100.6	100.6	0.3251	0.3251	101	
1,2,3,7,8-PeCDD	21.759	55161841	1.59	1.1397	44.1	44.1	0.7474	0.7474		Ma
A Non-2,3,7,8-sub-PeCDD	20.491	11063461	1.52	1.1397	8.849	8.849	0.7474	3.304		Ma
S Total PeCDD					53.0	53.0	0.7474	0.7474		
D 13C-1,2,3,4,7,8-HxCDF	27.052	146675342	0.55	1.3065	53.0	53.0	0.2770	0.2770	52.98	
1,2,3,4,7,8-HxCDF	27.092	1664846360	1.24	1.2552	904.3	904.3	3.626	3.626		a
D 13C-1,2,3,6,7,8-HxCDF	27.319	149153313	0.54	1.4213	49.5	49.5	0.2546	0.2546	49.53	
1,2,3,6,7,8-HxCDF	27.345	402013729	1.22	1.2102	222.7	222.7	3.056	3.056		a
D 13C-2,3,4,6,7,8-HxCDF	28.890	144177193	0.53	1.3142	51.8	51.8	0.2754	0.2754	51.78	a
2,3,4,6,7,8-HxCDF	28.916	45047830	1.23	1.2182	25.6	25.6	4.123	4.123		a
D 13C-1,2,3,7,8,9-HxCDF	30.567	143608011	0.52	1.3204	51.3	51.3	0.2741	0.2741	51.33	
1,2,3,7,8,9-HxCDF	30.581	29060726	1.25	1.2319	16.4	16.4	2.314	2.314		a
A Non-2,3,7,8-sub-HxCDF	27.432	711415281	1.22	1.2289	396.8	396.8	3.130	224.2		a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					1565.8	1565.8	3.280	3.280		
* 13C-1,2,3,7,8,9-HxCDD	30.274	211889268	1.27	2.8E+06	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	29.369	102394775	1.26	0.8660	55.8	55.8	0.2335	0.2335	55.80	
1,2,3,4,7,8-HxCDD	29.396	1442353	1.16	1.2535	1.124	1.124	0.3387	0.3387		a
D 13C-1,2,3,6,7,8-HxCDD	29.622	117058191	1.25	0.9827	56.2	56.2	0.2057	0.2057	56.22	
1,2,3,6,7,8-HxCDD	29.649	7781978	1.32	1.1117	5.980	5.980	0.3165	0.3165		a
1,2,3,7,8,9-HxCDD	30.288	3568371	1.23	1.2852	2.530	2.530	0.2994	0.2994		a
A Non-2,3,7,8-sub-HxCDD	27.845	52799269	1.23	1.2168	39.5	39.5	0.3163	19.5		
S Total HxCDD					49.2	49.2	0.3182	0.3182		
D 13C-1,2,3,4,6,7,8-HpCDF	32.608	84089193	0.45	0.9410	42.2	42.2	0.6710	0.6710	42.17	
1,2,3,4,6,7,8-HpCDF	32.608	343725614	1.05	1.4783	276.5	276.5	1.445	1.445		
D 13C-1,2,3,4,7,8,9-HpCDF	33.665	85070152	0.47	0.8751	45.9	45.9	0.7216	0.7216	45.88	
1,2,3,4,7,8,9-HpCDF	33.677	116286221	1.04	1.3784	99.2	99.2	1.285	1.285		
A Non-2,3,7,8-sub-HpCDF	33.088	133936083	1.04	1.4284	110.9	110.9	1.356	110.9		
S Total HpCDF					486.5	486.5	1.365	1.365		
D 13C-1,2,3,4,6,7,8-HpCDD	33.422	87613996	1.04	0.9049	45.7	45.7	0.9285	0.9285	45.69	
1,2,3,4,6,7,8-HpCDD	33.434	181720096	1.05	1.0862	190.9	190.9	1.878	1.878		
A Non-2,3,7,8-sub-HpCDD	33.339	180421594	1.10	1.0862	189.6	189.6	1.878	189.6		
S Total HpCDD					380.5	380.5	1.878	1.878		
D 13C-OCDD	35.582	102994103	0.93	0.5783	84.1	84.1	0.1882	0.1882	42.03	
OCDF	35.654	129232884	0.91	1.7248	145.5	145.5	0.0894	0.0894		
OCDD	35.594	1746078282	0.90	1.2576	2696.2	2696.2	6.134	6.134		E
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Sample Type: Client
Inject. Date: 09-Oct-2020 17:03:06 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-13-A 320-65130-A-13-A
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 09:01:38 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: stephensk Date: 10-Oct-2020 16:12:28

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	16.188	15.900	17		56763484	9395768	53802	134505	175		a
333.9339	16.188	15.900	17		71842210	12048313	89888	224720	134	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.749	15.462	17	0.973	47726709	12970785	144775	361937	90		
317.9389	15.749	15.462	17	0.973	58064045	15810662	206470	516175	77	0.82(0.65-0.89)	
2,3,7,8-TCDF											REQa
303.9016	15.749	15.477	16	1.000	5703137043	1125016264	38644149661035		291		ae
	Empc Correction				4796849243	859923363	38644149661035		223		
305.8987	15.749	15.477	16	1.000	6229674259	1116783630	561566414039160		199	0.92(0.65-0.89)	e
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	14.328	15.220	-53	0.910	31349381	12564746	38644149661035		3		M
305.8987	14.328	15.220	-53	0.910	55432540	18288646	561566414039160		3	0.57(0.65-0.89)	M
	Empc Correction				40713481	16317852	561566414039160		3		
303.9016	14.539	15.220	-41	0.923	164796360	46214386	38644149661035		12		
305.8987	14.539	15.220	-41	0.923	218807643	59881051	561566414039160		11	0.75(0.65-0.89)	
303.9016	14.796	15.220	-25	0.940	241794884	53704210	38644149661035		14		
305.8987	14.796	15.220	-25	0.940	301780652	68971353	561566414039160		12	0.80(0.65-0.89)	
303.9016	14.993	15.220	-14	0.952	230801990	67138003	38644149661035		17		
305.8987	14.993	15.220	-14	0.952	288073856	81232155	561566414039160		14	0.80(0.65-0.89)	
303.9016	15.174	15.220	-3	0.964	448040412	121691062	38644149661035		31		
305.8987	15.174	15.220	-3	0.964	551090203	143931869	561566414039160		26	0.81(0.65-0.89)	
303.9016	15.386	15.220	10	0.977	5197295407	1058160653	38644149661035		274		Me
305.8987	15.386	15.220	10	0.977	6059008541	1098309458	561566414039160		196	0.86(0.65-0.89)	Me
303.9016	15.583	15.220	22	0.989	180869041	32436118	38644149661035		8		M
305.8987	15.583	15.220	22	0.989	213985492	41702643	561566414039160		7	0.85(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	16.112	15.220	53	1.023	535012483	134107095	3864414	9661035	35		M
305.8987	16.112	15.220	53	1.023	695484097	164173669	5615664	14039160	29	0.77(0.65-0.89)	M
303.9016	16.308	15.220	65	1.036	97734382	15294205	3864414	9661035	4		M
305.8987	16.293	15.220	64	1.035	143444242	20738420	5615664	14039160	4	0.68(0.65-0.89)	
13C-2,3,7,8-TCDD											a
331.9368	16.414	16.066	21	1.014	25994694	5697665	53802	134505	106		a
333.9339	16.414	16.066	21	1.014	32577298	6960416	89888	224720	77	0.80(0.65-0.89)	
2,3,7,8-TCDD											Ea
319.8965	16.429	16.081	21	1.001	1382334131	351219850	926109	2315272	379		a
321.8936	16.429	16.081	21	1.001	1753200598	444528804	846483	2116207	525	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.429	16.081	21	1.015	50472671	12567414	111107	277767	113		
A Non-2,3,7,8-sub-TCDD											
319.8965	16.641	15.613	62	1.014	234049250	53629395	926109	2315272	58		
321.8936	16.641	15.613	62	1.014	306070992	66443047	846483	2116207	78	0.76(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	20.068	19.673	24	1.240	80222617	12925255	54128	135320	239		
353.8970	20.068	19.673	24	1.240	51118181	8277438	39311	98277	211	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											a
339.8597	20.096	19.700	24	1.001	473198876	77163294	315703	789257	244		a
341.8567	20.096	19.700	24	1.001	298932848	48626698	203112	507780	239	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	21.146	20.791	21	1.306	87649756	17860193	54128	135320	330		
353.8970	21.146	20.791	21	1.306	56209617	11730113	39311	98277	298	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											a
339.8597	21.173	20.805	22	1.001	332275826	68825845	315703	789257	218		a
341.8567	21.173	20.805	22	1.001	208643269	42621536	203112	507780	210	1.59(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.639	17.722	-5	0.879	3498509	826313	4649	11622	178		
341.8567	17.639	17.722	-5	0.879	2336947	537353	4602	11505	117	1.50(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											a
339.8597	18.950	20.335	-83	0.944	192255992	46036066	315703	789257	146		
341.8567	18.950	20.335	-83	0.944	122725244	28786895	203112	507780	142	1.57(1.32-1.78)	
339.8597	19.659	20.335	-40	0.980	15484920	1972535	315703	789257	6		a
341.8567	19.659	20.335	-40	0.980	10529106	1349511	203112	507780	7	1.47(1.32-1.78)	
339.8597	19.973	20.335	-22	0.995	31197321	10120391	315703	789257	32		
341.8567	19.973	20.335	-22	0.995	20425331	6446677	203112	507780	32	1.53(1.32-1.78)	
339.8597	20.314	20.335	-1	1.012	7147255	2230102	315703	789257	7		
341.8567	20.314	20.335	-1	1.012	4816496	1427142	203112	507780	7	1.48(1.32-1.78)	
339.8597	20.491	20.335	9	1.021	140173580	28522738	315703	789257	90		
341.8567	20.491	20.335	9	1.021	89367619	18200948	203112	507780	90	1.57(1.32-1.78)	
339.8597	21.445	20.335	66	1.069	93343739	16771216	315703	789257	53		
341.8567	21.432	20.335	66	1.068	60673589	10847165	203112	507780	53	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	21.746	21.404	20	1.343	66402883	12492948	14219	35547	879		
369.8919	21.746	21.404	20	1.343	43299644	7913510	9417	23542	840	1.53(1.32-1.78)	
1,2,3,7,8-PeCDD											Ma
355.8546	21.759	21.432	20	1.001	33846423	6313815	29481	73702	214		M
357.8516	21.759	21.432	20	1.001	21315418	3985839	40048	100120	100	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											Ma
355.8546	19.086	20.491	-84	0.878	1557844	279603	29481	73702	9		M
357.8516	19.086	20.491	-84	0.878	1170894	245121	40048	100120	6	1.33(1.32-1.78)	
355.8546	20.123	20.491	-22	0.925	2508329	565374	29481	73702	19		a
357.8516	20.123	20.491	-22	0.925	1622217	372566	40048	100120	9	1.55(1.32-1.78)	
355.8546	20.300	20.491	-11	0.934	1339841	377936	29481	73702	13		a
357.8516	20.300	20.491	-11	0.934	812134	235180	40048	100120	6	1.65(1.32-1.78)	
355.8546	20.559	20.491	4	0.945	1262719	264927	29481	73702	9		M
357.8516	20.559	20.491	4	0.945	789483	165350	40048	100120	4	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	27.052	26.706	21	0.894	51924165	6684692	25255	63137	265		
385.8610	27.066	26.706	22	0.894	94751177	12413810	25776	64440	482	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											a
373.8208	27.092	26.733	22	1.001	922796697	127241455	191020	477550	666		a
375.8178	27.092	26.733	22	1.001	742049663	101850268	156647	391617	650	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.319	26.986	20	0.902	52229104	8215416	25255	63137	325		
385.8610	27.319	26.986	20	0.902	96924209	15285890	25776	64440	593	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											a
373.8208	27.345	27.012	20	1.001	220567962	35126444	191020	477550	184		a
375.8178	27.345	27.012	20	1.001	181445767	29295808	156647	391617	187	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											a
383.8639	28.890	28.544	21	0.954	50007391	5954088	25255	63137	236		a
385.8610	28.890	28.544	21	0.954	94169802	11349238	25776	64440	440	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											a
373.8208	28.916	28.570	21	1.001	24825823	3281172	191020	477550	17		a
375.8178	28.916	28.570	21	1.001	20222007	2734439	156647	391617	17	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.567	30.381	11	1.010	49049309	10508475	25255	63137	416		
385.8610	30.567	30.381	11	1.010	94558702	19984550	25776	64440	775	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											a
373.8208	30.581	30.394	11	1.000	16131078	3659107	191020	477550	19		a
375.8178	30.581	30.394	11	1.000	12929648	2952295	156647	391617	19	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											a
373.8208	25.095	27.432	-140	0.928	51923113	11481666	191020	477550	60		
375.8178	25.095	27.432	-140	0.928	42810486	9250710	156647	391617	59	1.21(1.05-1.43)	
373.8208	26.120	27.432	-79	0.966	35520481	5630330	191020	477550	29		
375.8178	26.120	27.432	-79	0.966	30106548	4674775	156647	391617	30	1.18(1.05-1.43)	
373.8208	27.345	27.432	-5	1.011	220567962	35126444	191020	477550	184		
375.8178	27.345	27.432	-5	1.011	181445767	29295808	156647	391617	187	1.22(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
373.8208	28.916	27.432	89	1.069	24825823	3281172	191020	477550	17		
375.8178	28.916	27.432	89	1.069	20222007	2734439	156647	391617	17	1.23(1.05-1.43)	
373.8208	30.727	27.432	197	1.136	58013625	13074127	191020	477550	68		a
375.8178	30.727	27.432	197	1.136	45979469	10248380	156647	391617	65	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	30.274	30.062	13		118695288	19868070	14882	37205	1335		a
403.8529	30.274	30.062	13		93193980	15382933	13627	34067	1129	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	29.369	29.023	21	0.970	57100332	7057504	14882	37205	474		
403.8529	29.356	29.023	20	0.970	45294443	5653798	13627	34067	415	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											a
389.8157	29.396	29.049	21	1.001	776014	107756	9146	22865	12		a
391.8127	29.409	29.049	22	1.001	666339	88705	12443	31107	7	1.16(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	29.622	29.276	21	0.978	65142164	8518991	14882	37205	572		
403.8529	29.622	29.276	21	0.978	51916027	6818264	13627	34067	500	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											a
389.8157	29.649	29.316	20	1.001	4422851	644618	9146	22865	70		a
391.8127	29.649	29.316	20	1.001	3359127	522153	12443	31107	42	1.32(1.05-1.43)	
1,2,3,7,8,9-HxCDD											a
389.8157	30.288	30.088	12	1.031	1970540	293508	9146	22865	32		a
391.8127	30.288	30.088	12	1.031	1597831	225911	12443	31107	18	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	26.000	27.845	-110	0.878	14449311	2003224	9146	22865	219		
391.8127	26.000	27.845	-110	0.878	11648962	1597903	12443	31107	128	1.24(1.05-1.43)	
389.8157	27.185	27.845	-39	0.918	1795516	285075	9146	22865	31		
391.8127	27.172	27.845	-40	0.917	1306720	211356	12443	31107	17	1.37(1.05-1.43)	
389.8157	27.758	27.845	-5	0.937	12926295	1577972	9146	22865	173		
391.8127	27.758	27.845	-5	0.937	10672465	1307334	12443	31107	105	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.608	32.535	4	1.077	25932992	8766438	22843	57107	384		
419.8220	32.608	32.535	4	1.077	58156201	18995493	66196	165490	287	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.608	32.547	4	1.000	176321243	59933683	122122	305305	491		
409.7789	32.608	32.547	4	1.000	167404371	58848886	115109	287772	511	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.665	33.629	2	1.112	27338455	10636473	22843	57107	466		
419.8220	33.665	33.629	2	1.112	57731697	22841789	66196	165490	345	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.677	33.641	2	1.000	59335208	24118503	122122	305305	197		
409.7789	33.677	33.641	2	1.000	56951013	22785401	115109	287772	198	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	32.936	33.088	-9	1.010	68138175	26066845	122122	305305	213		
409.7789	32.924	33.088	-10	1.010	65797908	24439498	115109	287772	212	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.422	33.386	2	1.104	44685794	16903559	56549	141372	299		
437.8140	33.422	33.386	2	1.104	42928202	16479203	61928	154820	266	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.434	33.398	2	1.000	92982301	35306616	128760	321900	274		
425.7737	33.434	33.398	2	1.000	88737795	33283295	143579	358947	232	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	32.888	33.339	-27	0.984	94368172	36345346	128760	321900	282		
425.7737	32.888	33.339	-27	0.984	86053422	34779643	143579	358947	242	1.10(0.88-1.20)	
13C-OCDD											
469.7779	35.582	35.546	2	1.175	49554246	16947259	7352	18380	2305		
471.7750	35.582	35.546	2	1.175	53439857	18381679	7990	19975	2301	0.93(0.76-1.02)	
OCDF											
441.7428	35.654	35.618	2	1.002	61658580	20477652	4989	12472	4105		
443.7399	35.654	35.618	2	1.002	67574304	22776251	5906	14765	3856	0.91(0.76-1.02)	
OCDD											E
457.7377	35.594	35.558	2	1.000	825906202	292987570	244484	611210	1198		
459.7348	35.594	35.558	2	1.000	920172080	326554109	300610	751525	1086	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
a - User Assigned ID

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDF, RT: 15.220

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	105790754	28781447

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	105790754	28781447

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
14.328	31349381	12564746	55432540	18288646	86.0	0.57	RQM
14.328	31349381	12564746	40713481	16317852	71.4		Empc Correction
14.539	164796360	46214386	218807643	59881051	380.3	0.75	
14.796	241794884	53704210	301780652	68971353	538.9	0.80	
14.993	230801990	67138003	288073856	81232155	514.4	0.80	
15.174	448040412	121691062	551090203	143931869	990.6	0.81	
15.386	5197295407	1058160653	6059008541	1098309458	11160	0.86	M
15.583	180869041	32436118	213985492	41702643	391.5	0.85	Ma
16.112	535012483	134107095	695484097	164173669	1220.0	0.77	M
16.308	97734382	15294205	143444242	20738420	239.1	0.68	Ma
Signal Totals:							
	7127694340	1541310478	8512388207	1695258470			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15654801606	3238539742				0.84	RQMa
	15640082547	3236568948					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 15521 = (15654801606 * 100.000) / (105790754 * 0.953)
Empc Amount: 15507 = (15640082547 * 100.000) / (105790754 * 0.953)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Inject. Date: 09-Oct-2020 17:03:06 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 420483 Lims Sample ID: 6

Non-2,3,7,8-sub-TCDD, RT: 15.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	58571992	12658081

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	58571992	12658081

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.641	234049250	53629395	306070992	66443047	903.6	0.76	
Signal Totals:							
	234049250	53629395	306070992	66443047			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	540120242	120072442				0.76	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 903.648 = (540120242 * 100.000) / (58571992 * 1.020)

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

F1 PeCDFs, RT: 17.722

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	131340798	21202693
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	143859373	29590306

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	137600085	25396499

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.639	3498509	826313	2336947	537353	3.90	1.50	
Signal Totals:							
	3498509	826313	2336947	537353			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5835456	1363666				1.50	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.898 = (5835456 * 100.000) / (137600085 * 1.088)

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

Non-2,3,7,8-sub-PeCDF, RT: 20.335

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	131340798	21202693
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	143859373	29590306

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	137600085	25396499

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
18.950	192255992	46036066	122725244	28786895	210.4	1.57	
19.659	15484920	1972535	10529106	1349511	17.4	1.47	a
19.973	31197321	10120391	20425331	6446677	34.5	1.53	
20.314	7147255	2230102	4816496	1427142	7.99	1.48	
20.491	140173580	28522738	89367619	18200948	153.3	1.57	
21.445	93343739	16771216	60673589	10847165	102.9	1.54	
Signal Totals:							
	479602807	105653048	308537385	67058338			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	788140192	172711386				1.55	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 526.450 = (788140192 * 100.000) / (137600085 * 1.088)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Inject. Date: 09-Oct-2020 17:03:06
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 420483
Lims Sample ID: 6

Non-2,3,7,8-sub-PeCDD, RT: 20.491

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140	D 13C-1,2,3,7,8-PeCDD	100.000	109702527	20406458

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.140		100.000	109702527	20406458

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
19.086	1557844	279603	1170894	245121	2.18	1.33	Ma
20.123	2508329	565374	1622217	372566	3.30	1.55	a
20.300	1339841	377936	812134	235180	1.72	1.65	a
20.559	1262719	264927	789483	165350	1.64	1.60	Ma
Signal Totals:							
	6668733	1487840	4394728	1018217			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11063461	2506057				1.52	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.849 = (11063461 * 100.000) / (109702527 * 1.140)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

Non-2,3,7,8-sub-HxCDF, RT: 27.432

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255	D 13C-1,2,3,4,7,8-HxCDF	100.000	146675342	19098502
1,2,3,6,7,8-HxCDF	1.210	D 13C-1,2,3,6,7,8-HxCDF	100.000	149153313	23501306
2,3,4,6,7,8-HxCDF	1.218	D 13C-2,3,4,6,7,8-HxCDF	100.000	144177193	17303326
1,2,3,7,8,9-HxCDF	1.232	D 13C-1,2,3,7,8,9-HxCDF	100.000	143608011	30493025

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.229		100.000	145903464	22599039

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
25.095	51923113	11481666	42810486	9250710	52.8	1.21	
26.120	35520481	5630330	30106548	4674775	36.6	1.18	
27.345	220567962	35126444	181445767	29295808	224.2	1.22	
28.916	24825823	3281172	20222007	2734439	25.1	1.23	
30.727	58013625	13074127	45979469	10248380	58.0	1.26	a
Signal Totals:							
	390851004	68593739	320564277	56204112			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	711415281	124797851				1.22	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 396.775 = (711415281 * 100.000) / (145903464 * 1.229)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

Non-2,3,7,8-sub-HxCDD, RT: 27.845

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254	D 13C-1,2,3,4,7,8-HxCDD	100.000	102394775	12711302
1,2,3,6,7,8-HxCDD	1.112	D 13C-1,2,3,6,7,8-HxCDD	100.000	117058191	15337255
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		100.000	109726483	14024278

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
26.000	14449311	2003224	11648962	1597903	19.5	1.24	
27.185	1795516	285075	1306720	211356	2.32	1.37	
27.758	12926295	1577972	10672465	1307334	17.7	1.21	
Signal Totals:							
	29171122	3866271	23628147	3116593			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	52799269	6982864				1.23	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 39.545 = (52799269 * 100.000) / (109726483 * 1.217)

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

Non-2,3,7,8-sub-HpCDF, RT: 33.088

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.478	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	84089193	27761931
1,2,3,4,7,8,9-HpCDF	1.378	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	85070152	33478262

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.428		100.000	84579672	30620096

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
32.936	68138175	26066845	65797908	24439498	110.9	1.04	
Signal Totals:							
	68138175	26066845	65797908	24439498			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	133936083	50506343				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 110.864 = (133936083 * 100.000) / (84579672 * 1.428)

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	09-Oct-2020 17:03:06	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	6

Non-2,3,7,8-sub-HpCDD, RT: 33.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.086	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	87613996	33382762

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	87613996	33382762

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
32.888	94368172	36345346	86053422	34779643	189.6	1.10	
Signal Totals:							
	94368172	36345346	86053422	34779643			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	180421594	71124989				1.10	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 189.582 = (180421594 * 100.000) / (87613996 * 1.086)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d				
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	19.66
Area:	15484920
Amount:	18.350184
Amount Units:	pg/ul

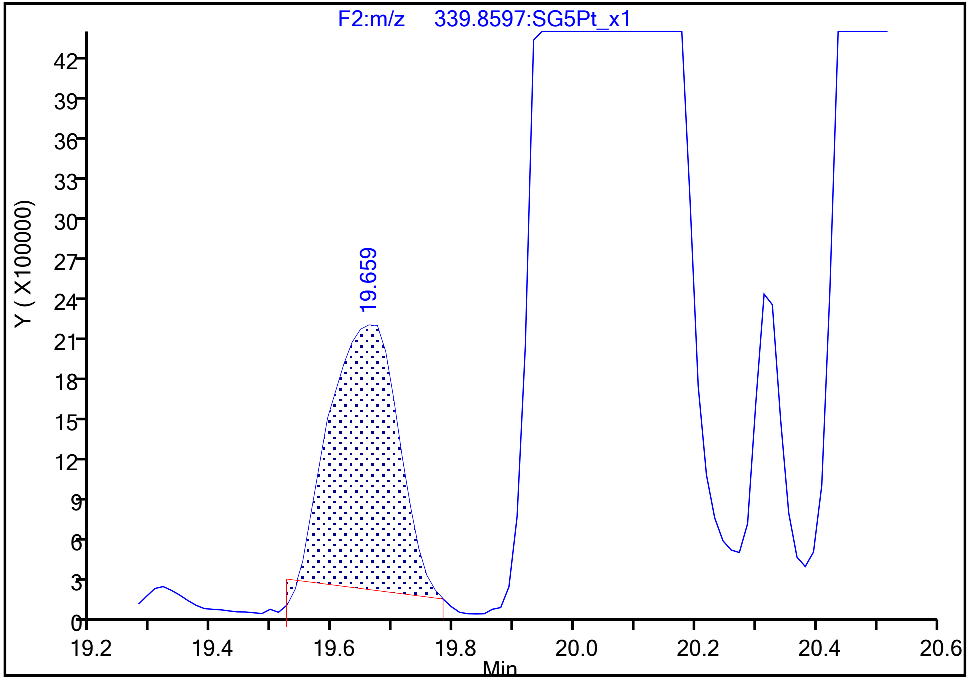

Manual Integration Results

RT:	20.10
Area:	473198876
Amount:	544.6585
Amount Units:	pg/ul

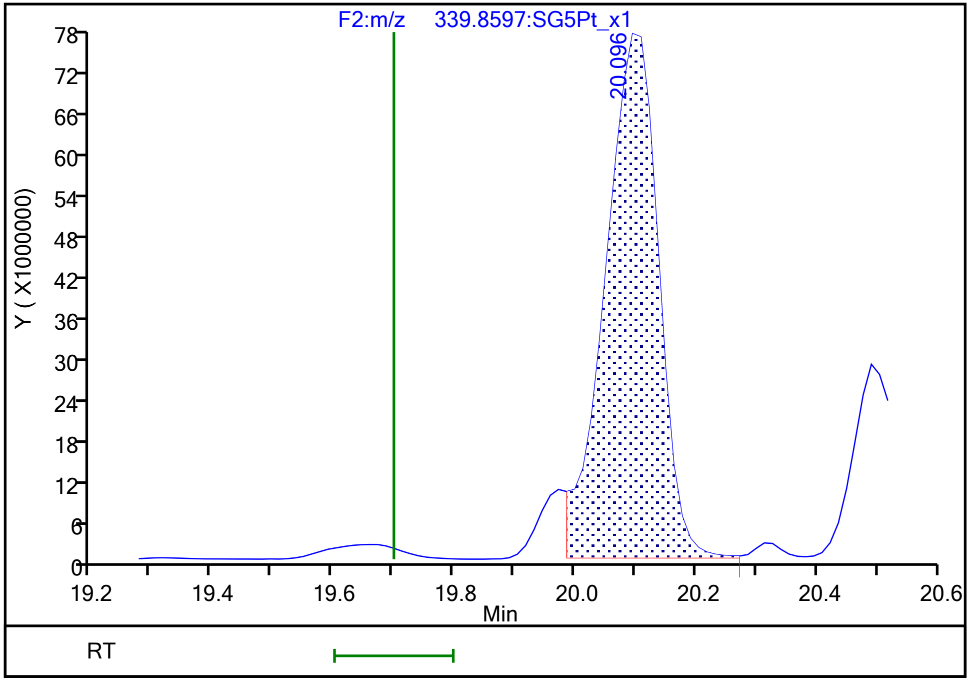

Reviewer: messecara, 13-Oct-2020 00:07:05

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	SMA	ALS Bottle#:	6 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

Not Detected

Expected RT: 20.80

Processing Integration Results

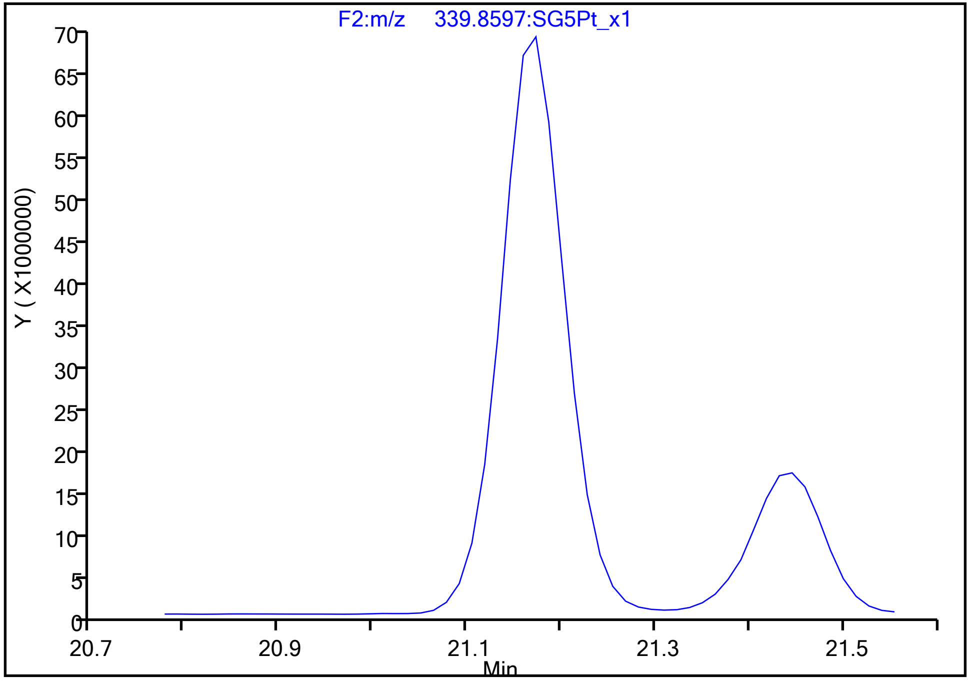

RT: 21.17

Area: 332275826

Amount: 342.8733

Amount Units: pg/ul

Manual Integration Results

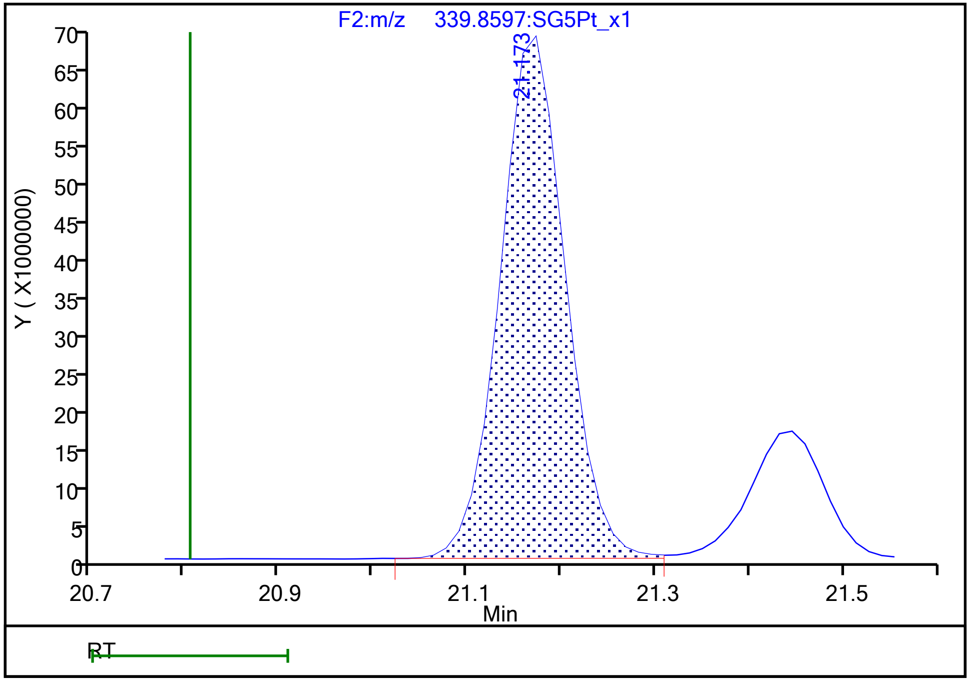

Reviewer: messecara, 13-Oct-2020 00:06:55

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	SMA	ALS Bottle#:	6 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Not Detected
Expected RT: 21.43

Processing Integration Results

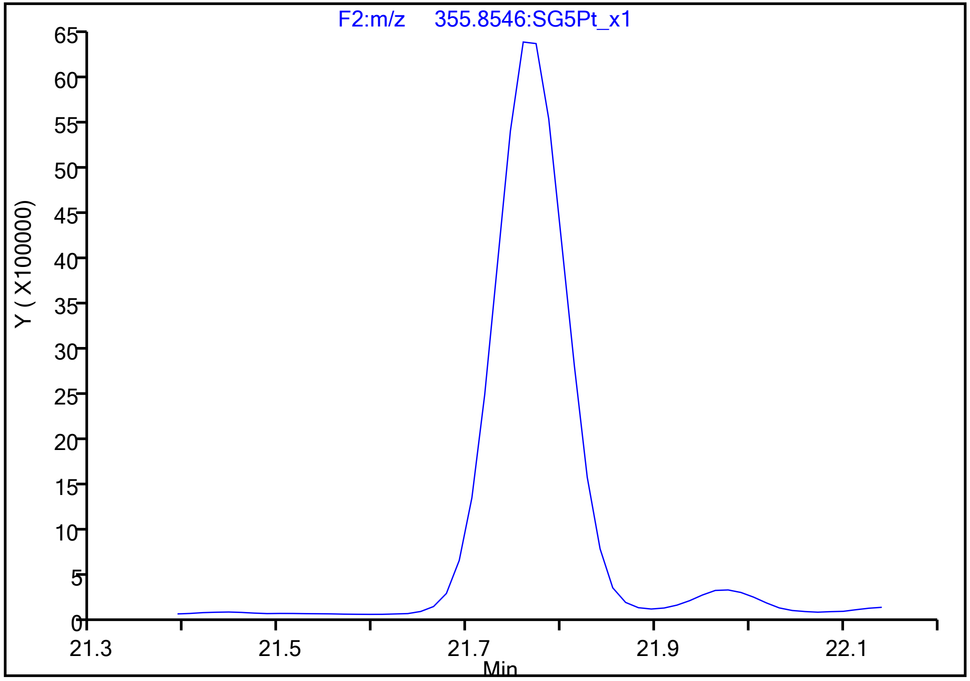

RT:	21.76
Area:	33846423
Amount:	44.121203
Amount Units:	pg/ul

Manual Integration Results

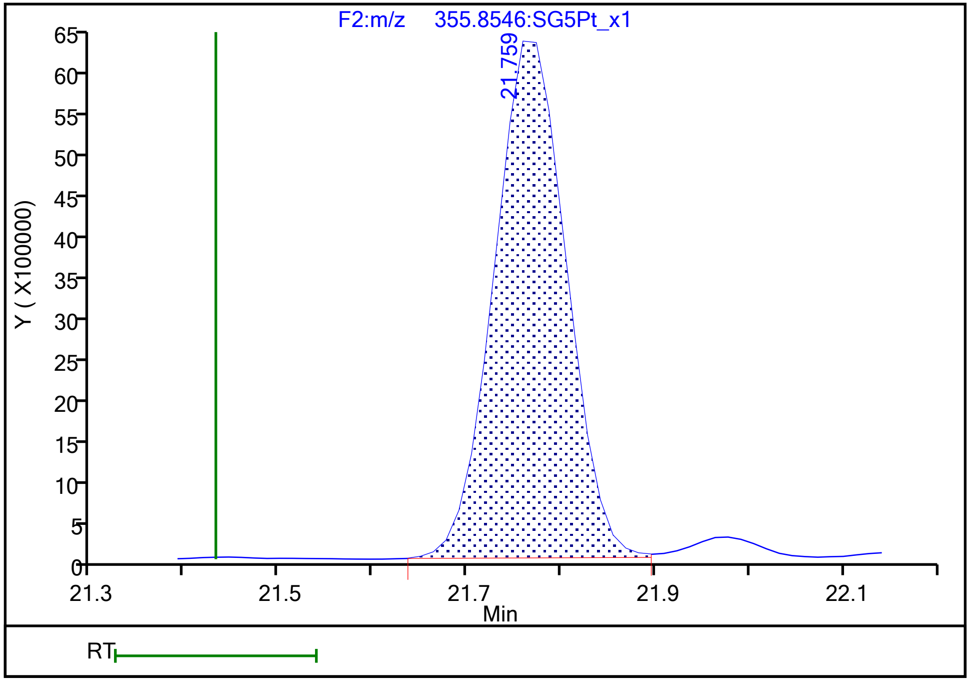

Reviewer: dadunj, 14-Oct-2020 08:55:30
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	SMA	ALS Bottle#:	6 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F2:HRSIR

Non-2,3,7,8-sub-PeCDD, Signal: 1, m/z: 355.8546, RT: (18.72- 22.27)

Signal: 1

Processing Integration Results

RT = 19.086 Area = 1557844

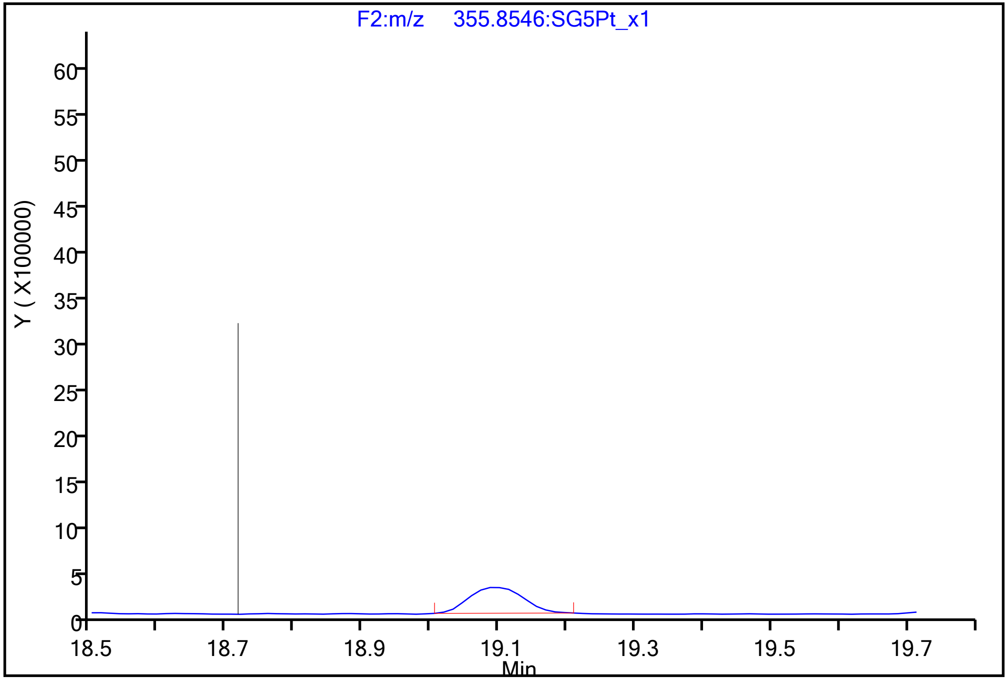

Manual Integration Results

RT = 19.086 Area = 1557844

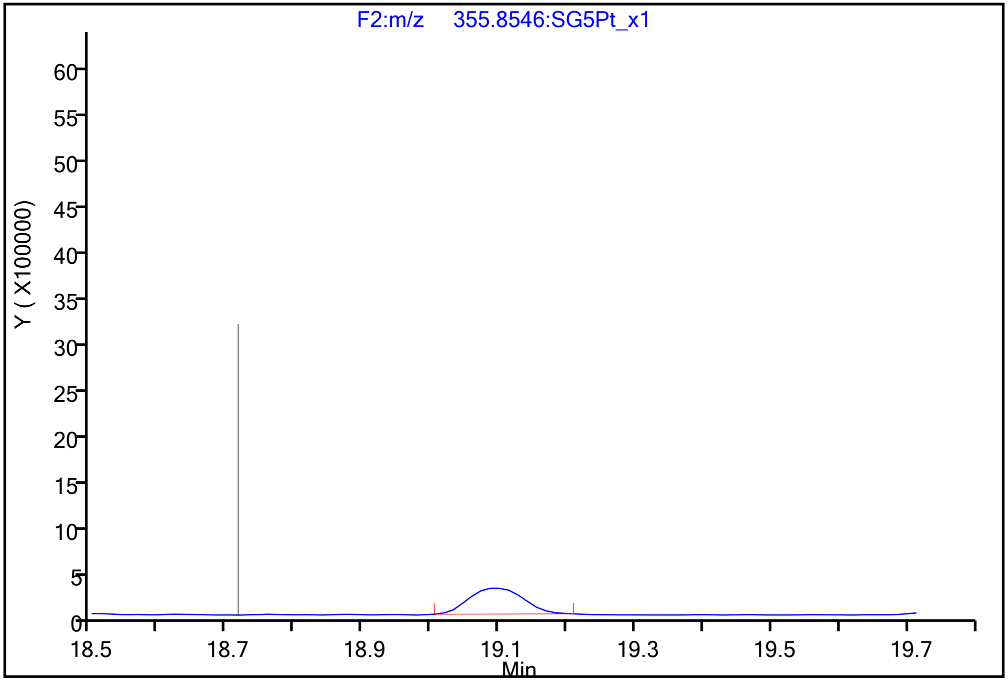

Reviewer: dadunj, 14-Oct-2020 09:00:33

Audit Action: Manually Integrated/Assigned Compound IDAudit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d				
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDD, Signal: 1, m/z: 355.8546, RT: (18.72- 22.27)

Signal: 1

Processing Integration Results

RT = 20.559 Area = 1262719

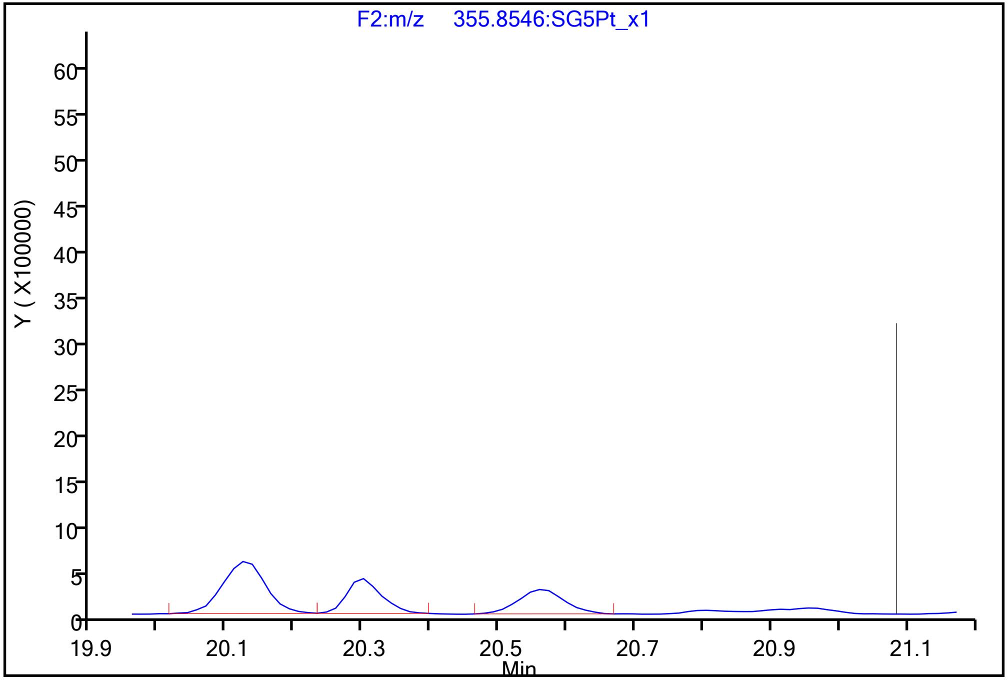

Manual Integration Results

RT = 20.559 Area = 1262719

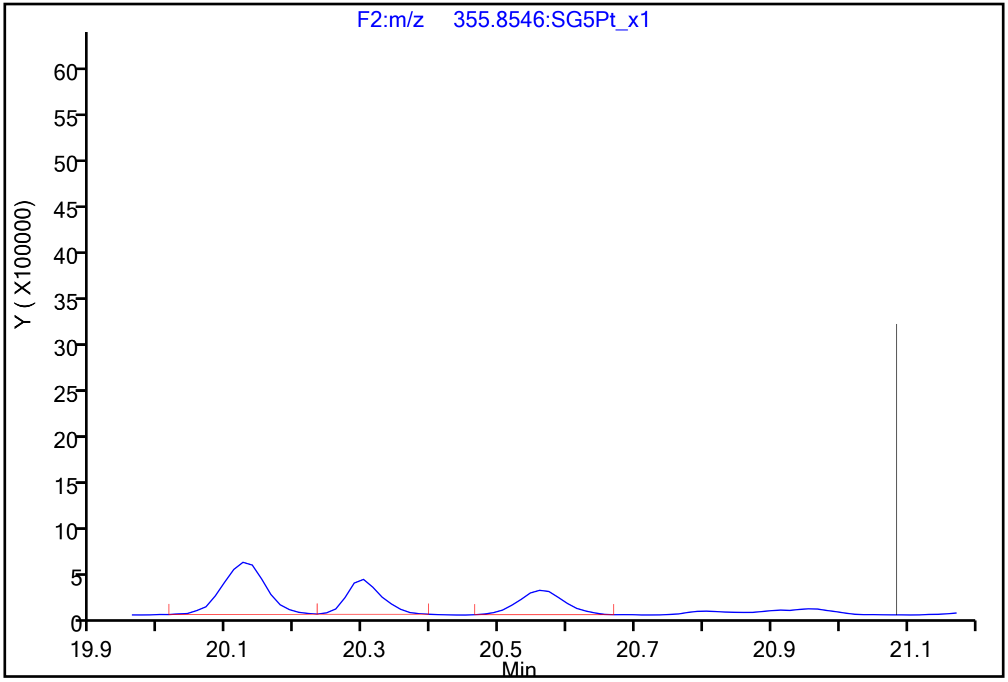

Reviewer: dadunj, 14-Oct-2020 09:00:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d				
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Processing Integration Results

Not Detected
Expected RT: 26.73

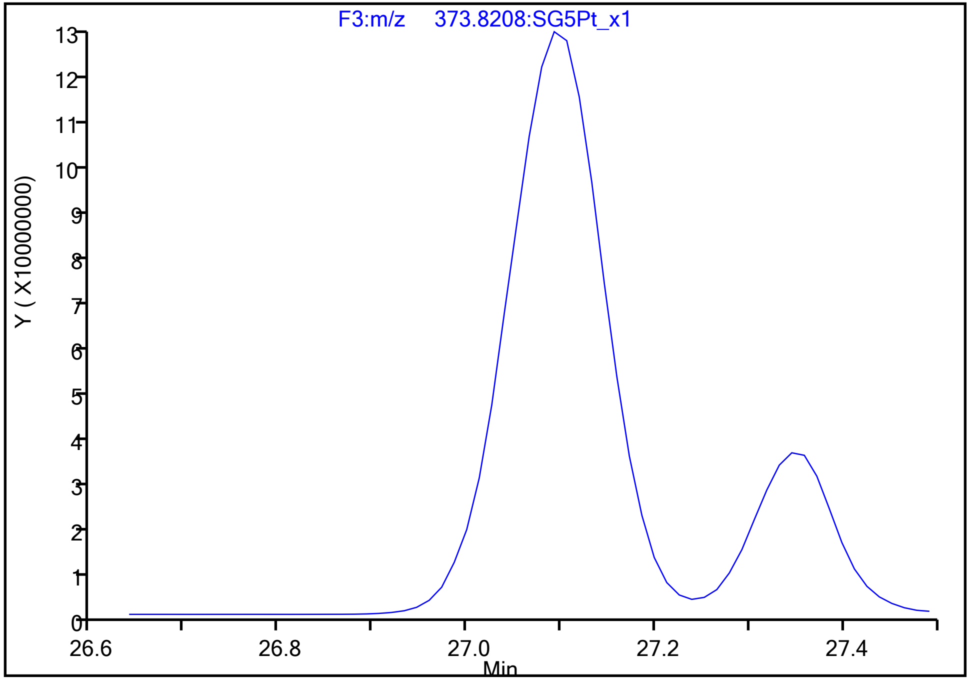

Manual Integration Results

RT:	27.09
Area:	922796697
Amount:	904.2608
Amount Units:	pg/ul

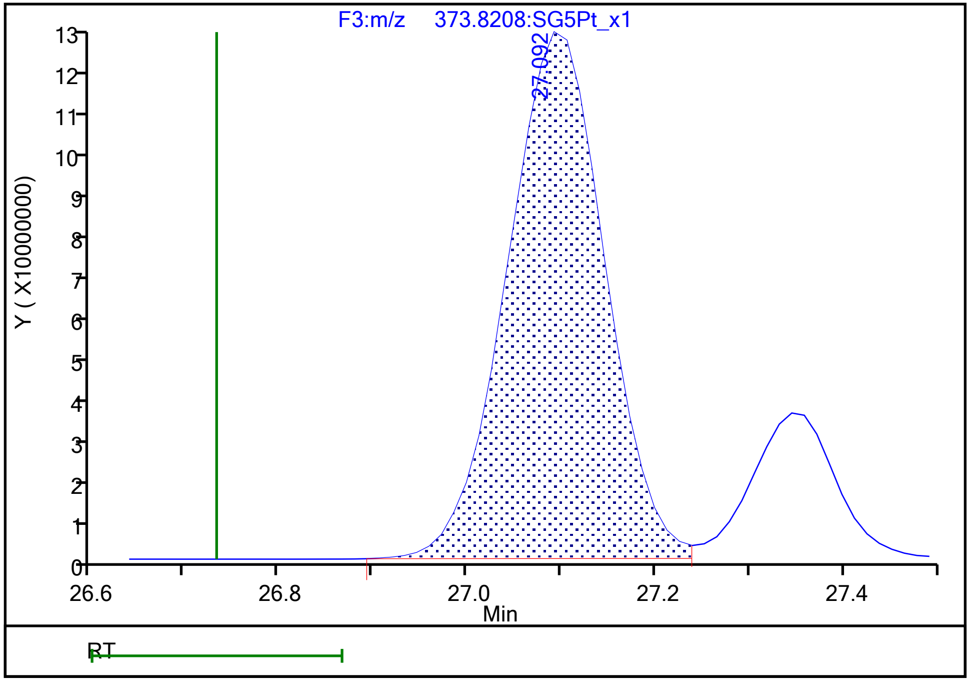

Reviewer: messecara, 13-Oct-2020 00:16:33

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d				
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT:	27.09
Area:	922796697
Amount:	922.3251
Amount Units:	pg/ul

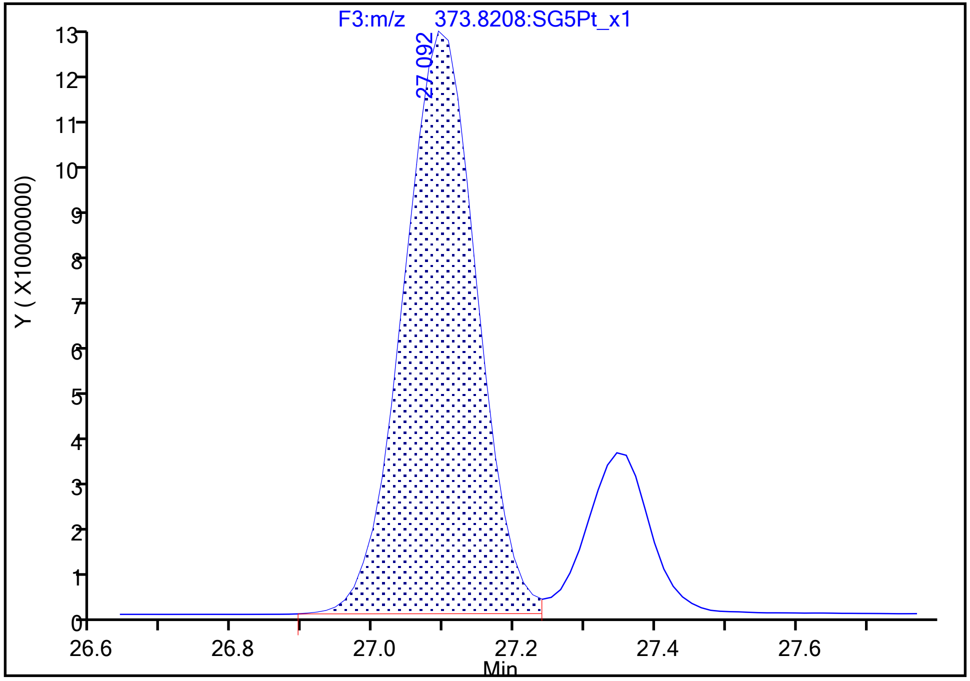

Manual Integration Results

RT:	27.35
Area:	220567962
Amount:	222.7157
Amount Units:	pg/ul

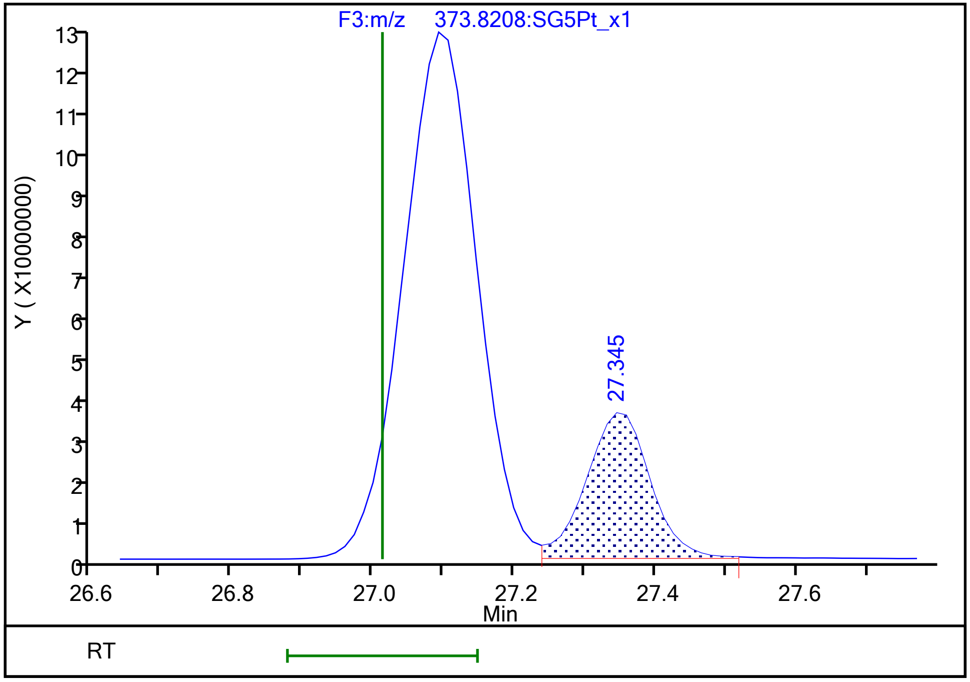

Reviewer: messecara, 13-Oct-2020 00:16:39

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	SMA	ALS Bottle#:	6 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

13C-2,3,4,6,7,8-HxCDF, CAS: 116843-05-1

Signal: 1

Not Detected
Expected RT: 28.54

Processing Integration Results

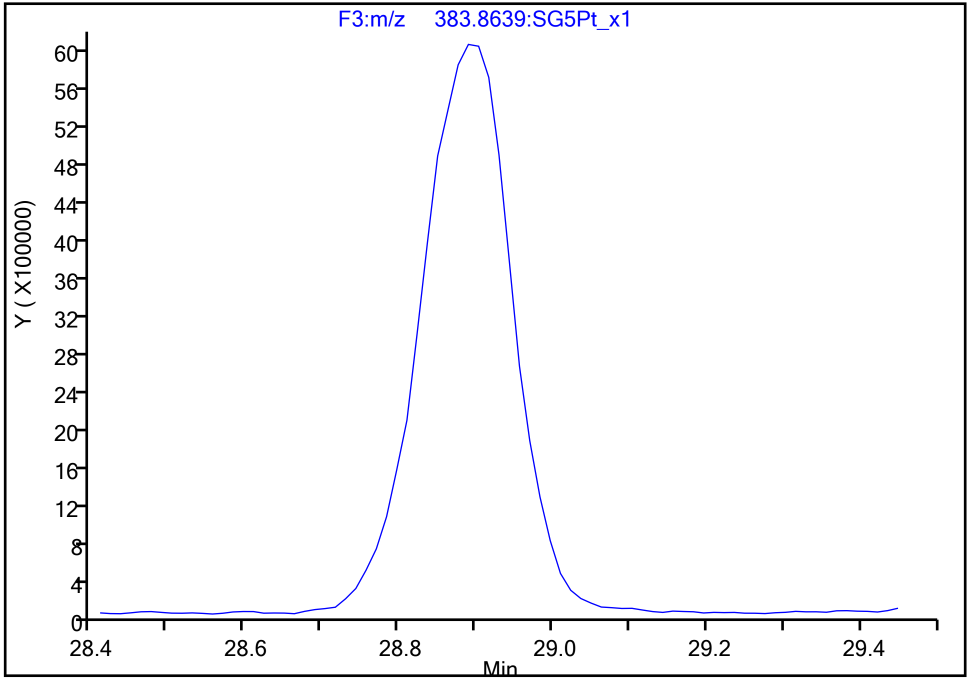

RT: 28.89
Area: 50007391
Amount: 51.775014
Amount Units: pg/ul

Manual Integration Results

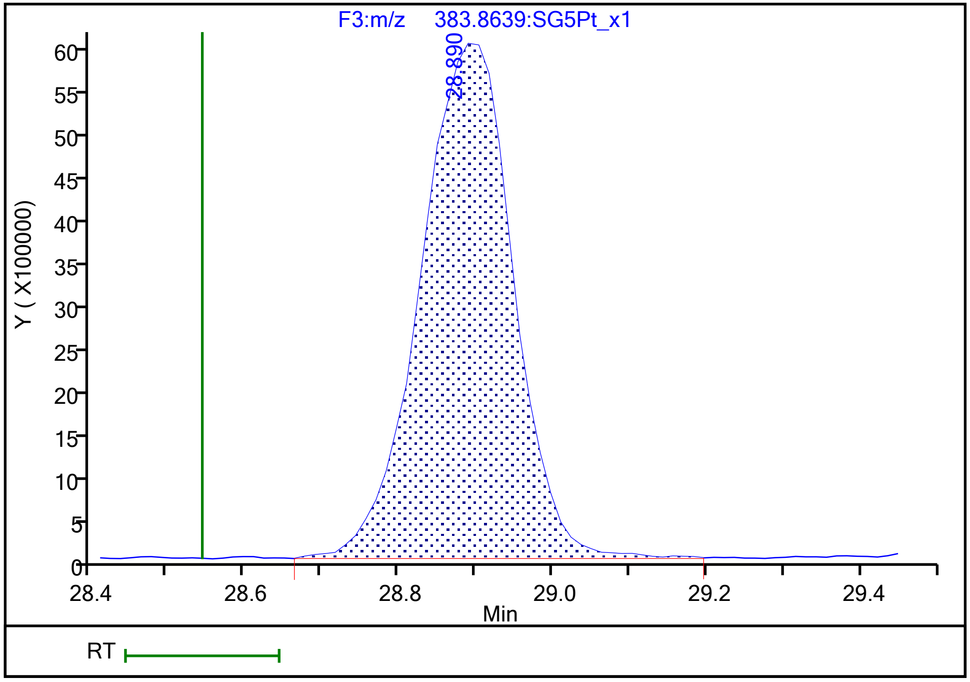

Reviewer: messecara, 13-Oct-2020 00:16:47
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d

Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	28.64
Area:	18838667
Amount:	19.491801
Amount Units:	pg/ul

Processing Integration Results

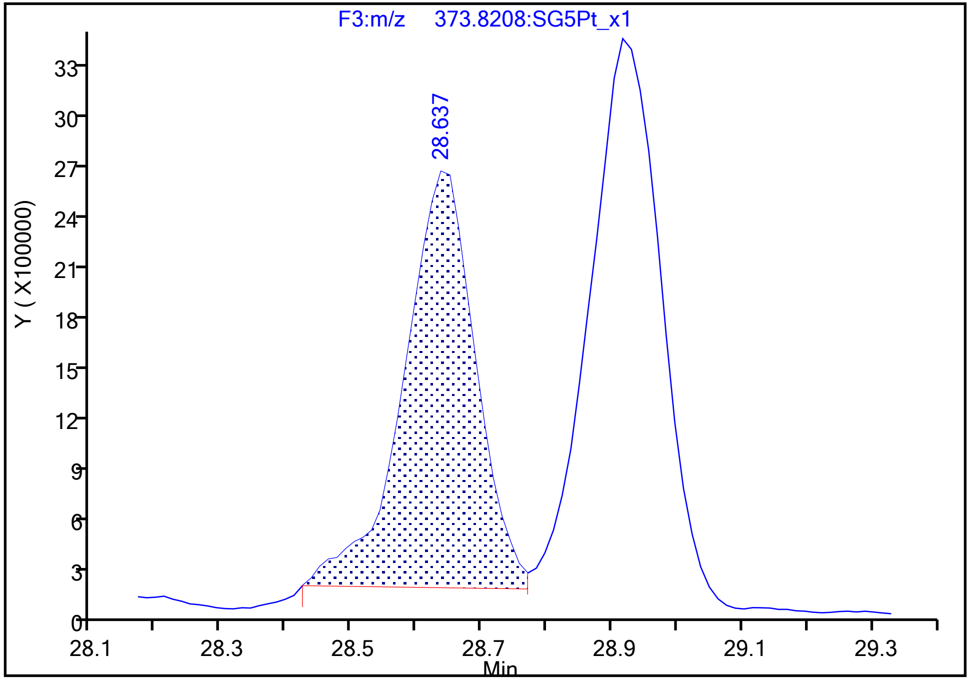

RT:	28.92
Area:	24825823
Amount:	25.647710
Amount Units:	pg/ul

Manual Integration Results

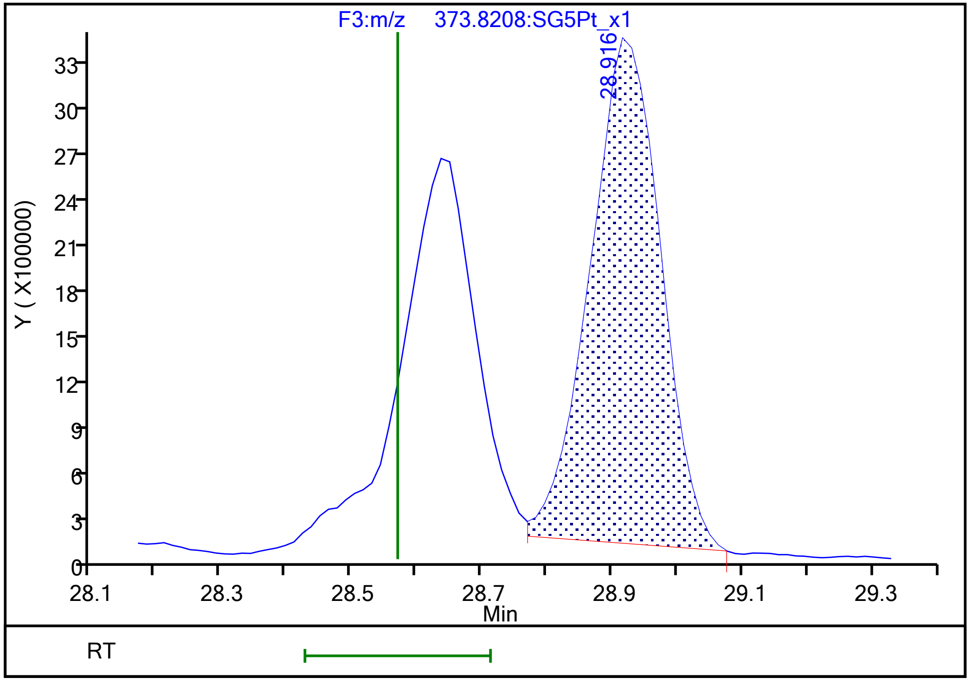

Reviewer: dadunj, 14-Oct-2020 08:55:55

Audit Action: Assigned Compound ID Audit Reason: Split Peak

Report Date: 14-Oct-2020 09:01:39

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d

Injection Date: 09-Oct-2020 17:03:06

Instrument ID: 3D5

Lims ID: 320-65130-A-13-A

Lab Sample ID: 320-65130-13

Client ID: 11215702-Tank#1-T=0

Operator ID: SMA

ALS Bottle#: 6

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F3:HRSIR

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Not Detected

Expected RT: 30.39

Processing Integration Results

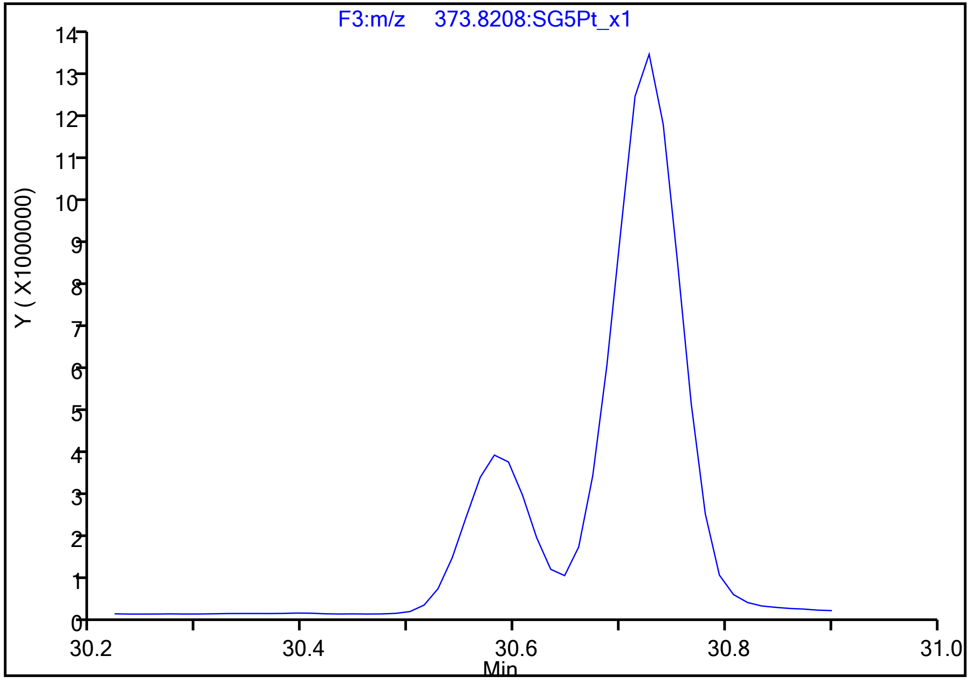

RT: 30.58

Area: 16131078

Amount: 16.426770

Amount Units: pg/ul

Manual Integration Results

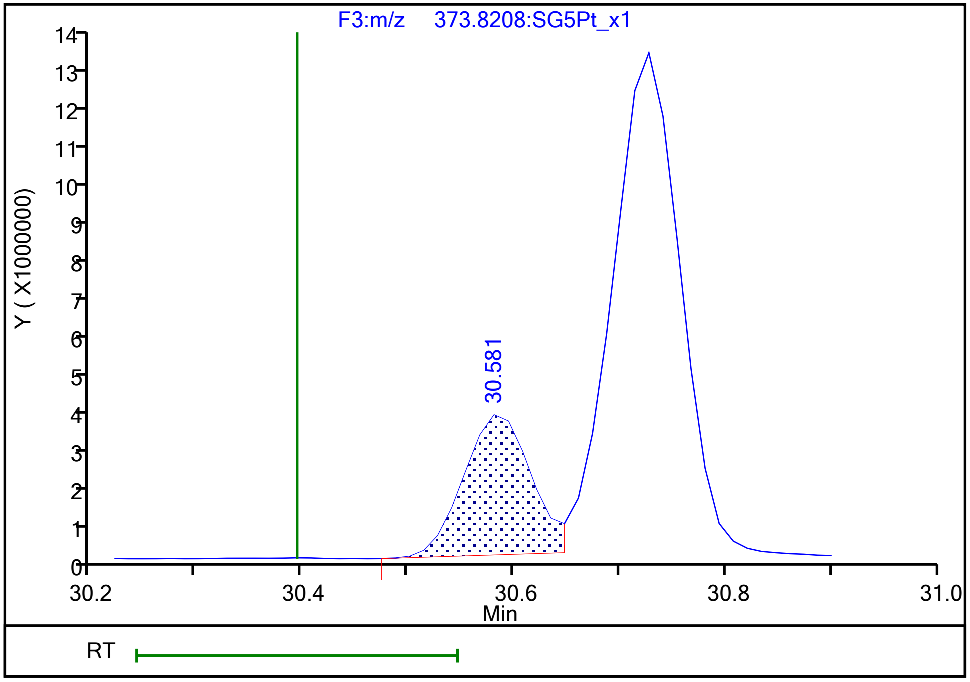

Reviewer: dadunj, 14-Oct-2020 08:56:04

Audit Action: Assigned Compound ID

Audit Reason: Split Peak

Report Date: 14-Oct-2020 09:01:39

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d				
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Not Detected

Expected RT: 29.05

Processing Integration Results

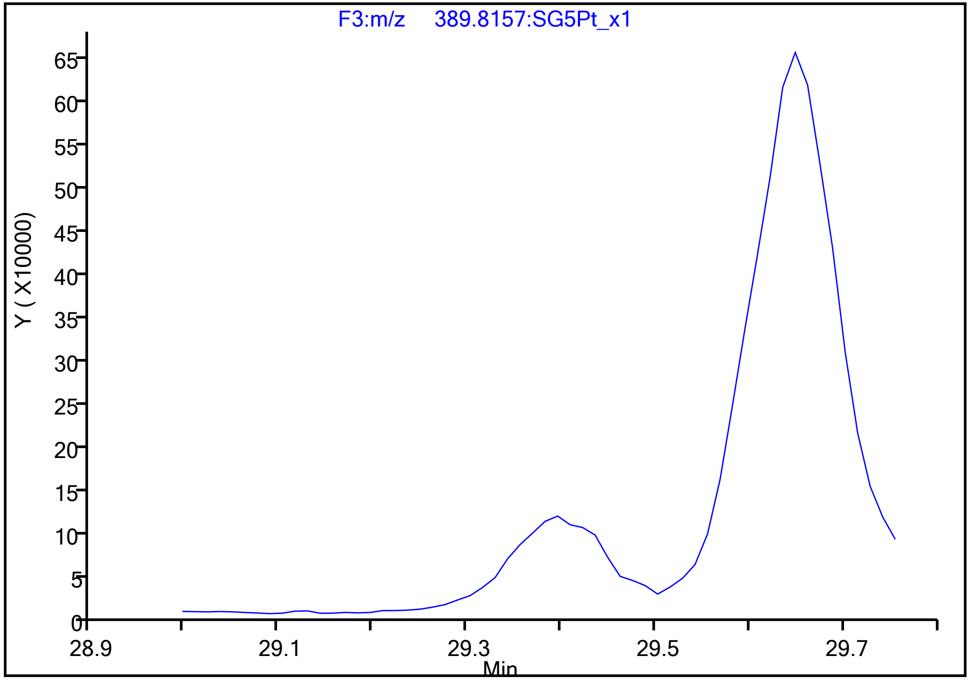

RT: 29.40

Area: 776014

Amount: 1.123737

Amount Units: pg/ul

Manual Integration Results

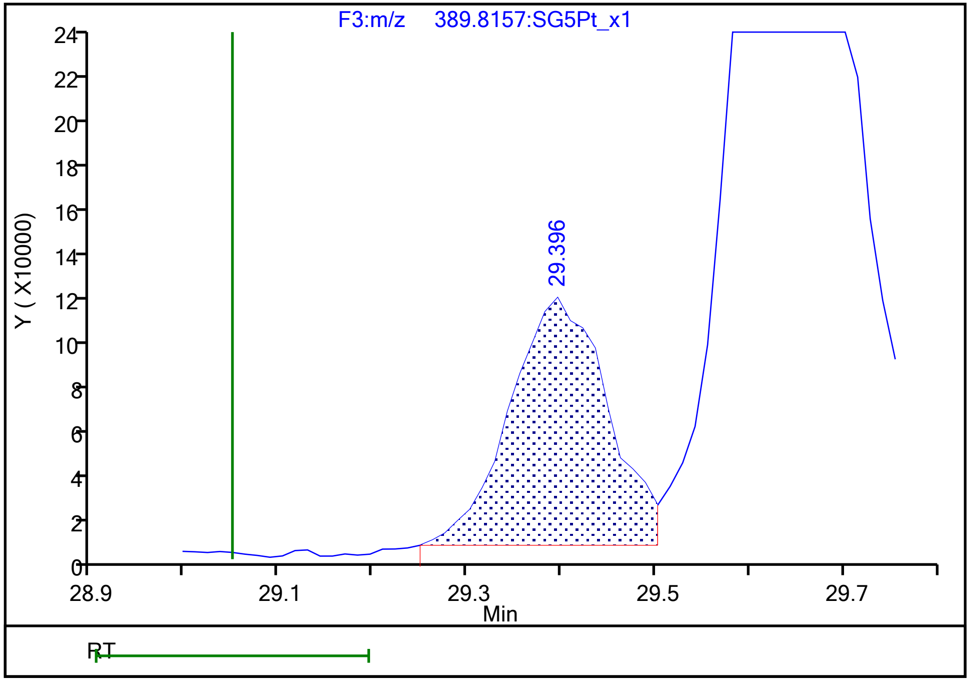

Reviewer: dadunj, 14-Oct-2020 08:56:42

Audit Action: Assigned Compound ID

Audit Reason: Split Peak

Report Date: 14-Oct-2020 09:01:39

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	SMA	ALS Bottle#:	6 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT:	29.40
Area:	776014
Amount:	1.108353
Amount Units:	pg/ul

Processing Integration Results

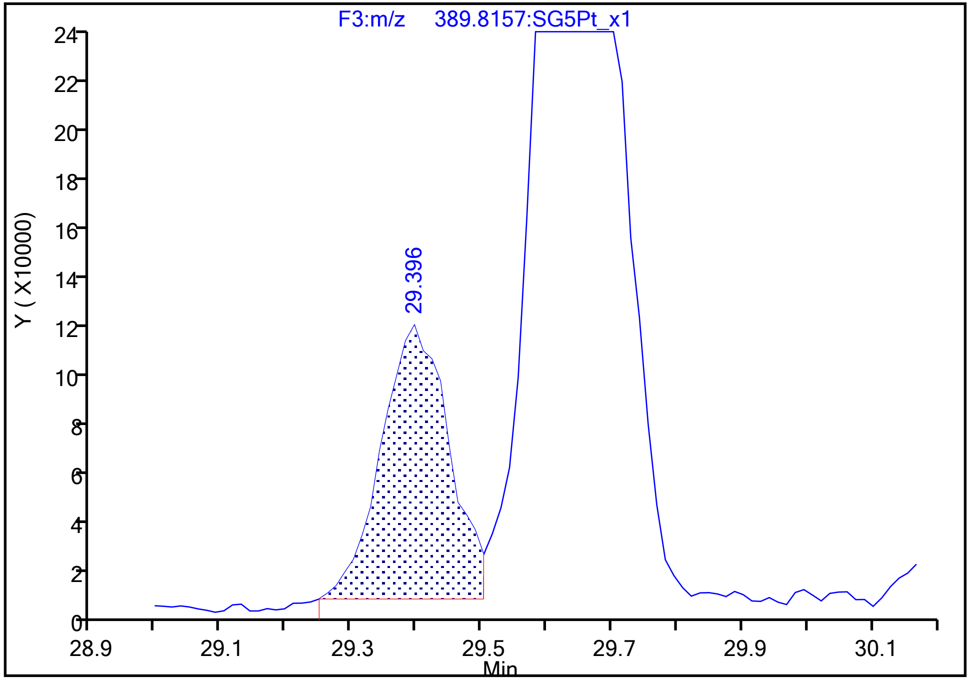

RT:	29.65
Area:	4422851
Amount:	5.979937
Amount Units:	pg/ul

Manual Integration Results

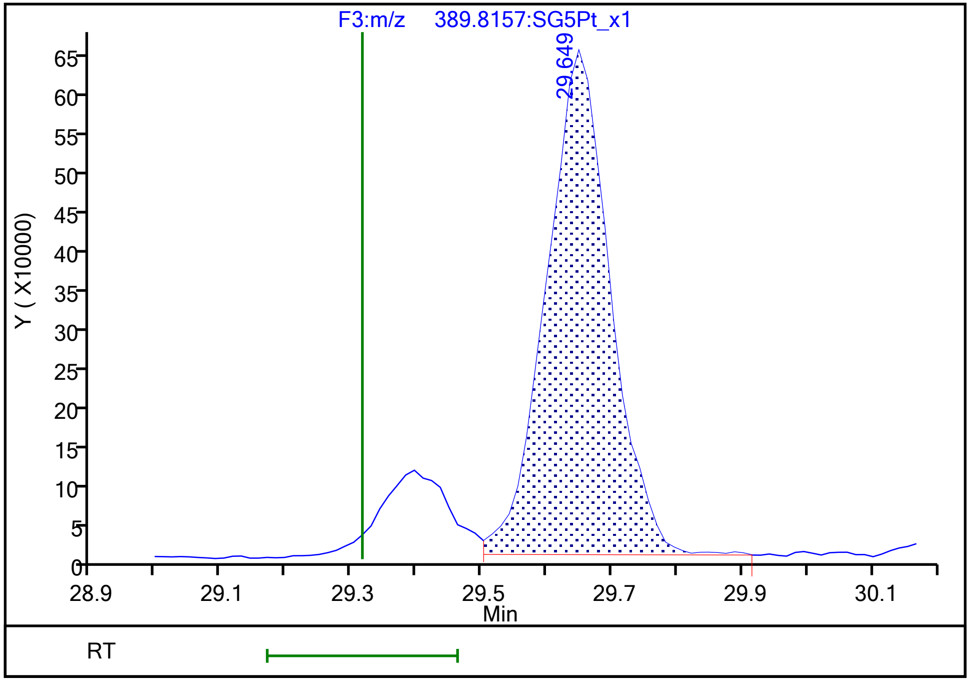

Reviewer: messecara, 13-Oct-2020 00:17:15

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 14-Oct-2020 09:01:39　Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Instrument ID:	3D5
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	SMA	ALS Bottle#:	6　Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Column:		Detector	F3:HRSIR

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

Not Detected

Expected RT: 30.09

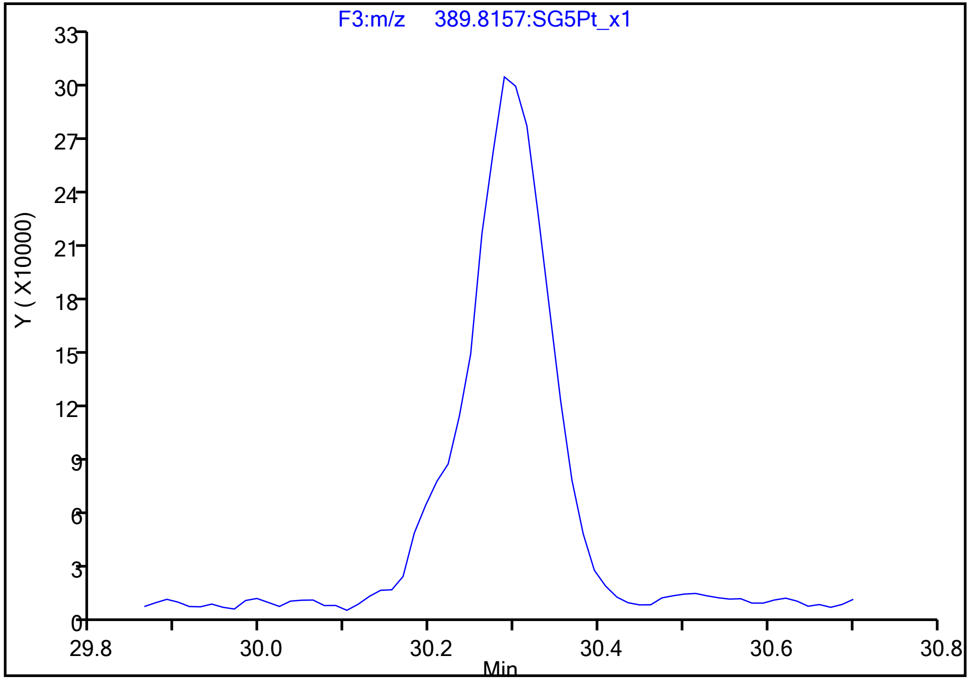

Manual Integration Results

RT: 30.29

Area: 1970540

Amount: 2.530349

Amount Units: pg/ul

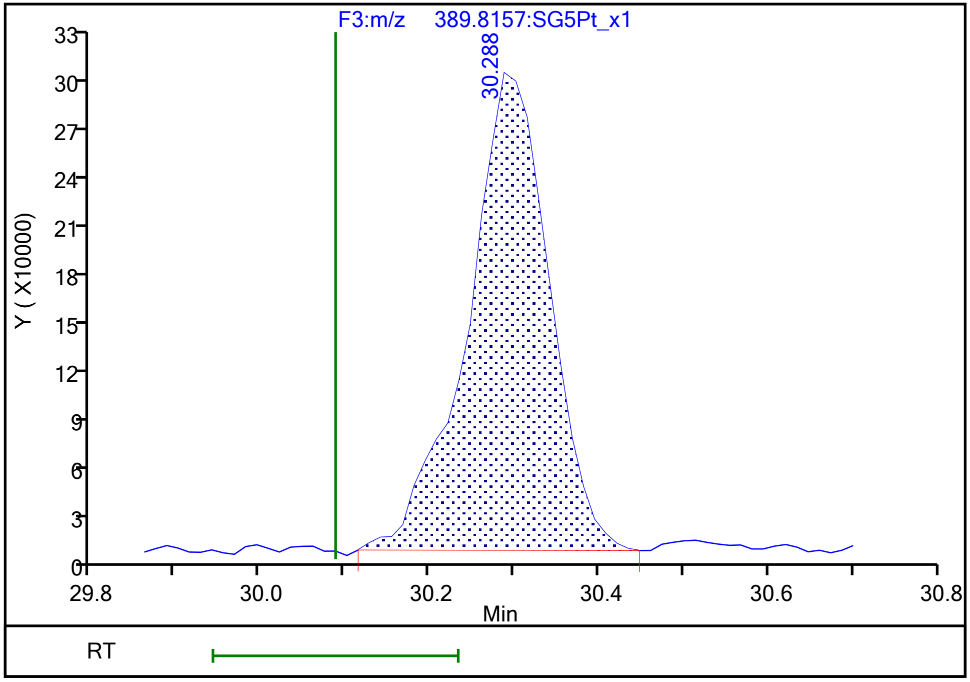

Reviewer: messecara, 13-Oct-2020 00:17:28

Audit Action: Assigned Compound ID　Audit Reason: Peak assignment corrected

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d

Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

37Cl4-TCDD

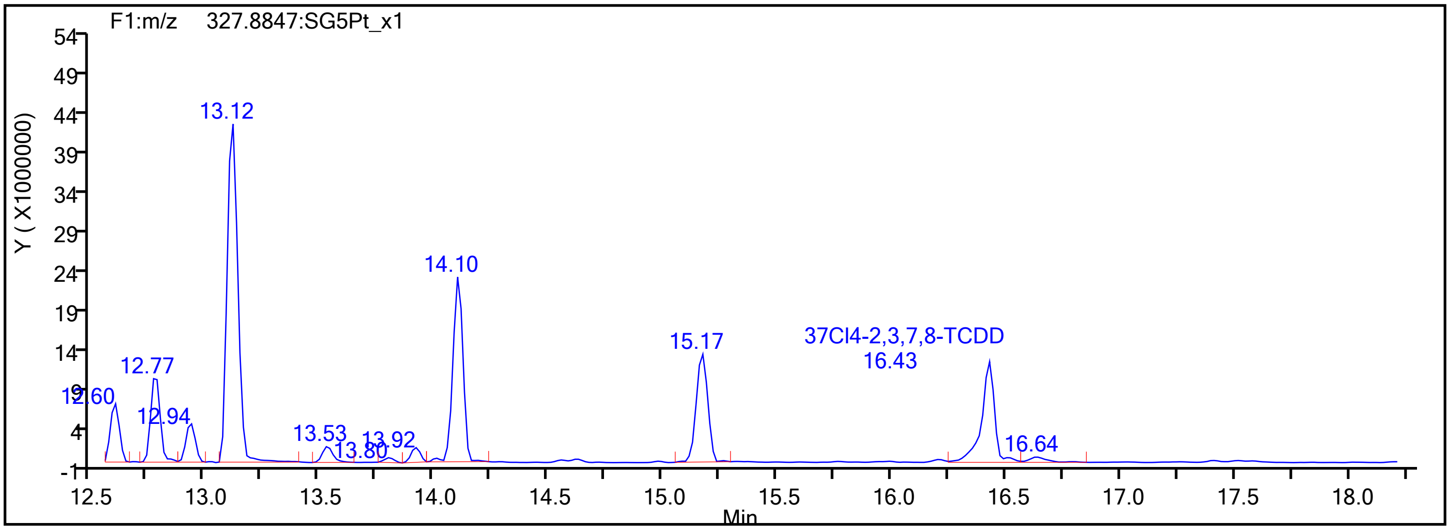

37Cl4-TCDD Standards

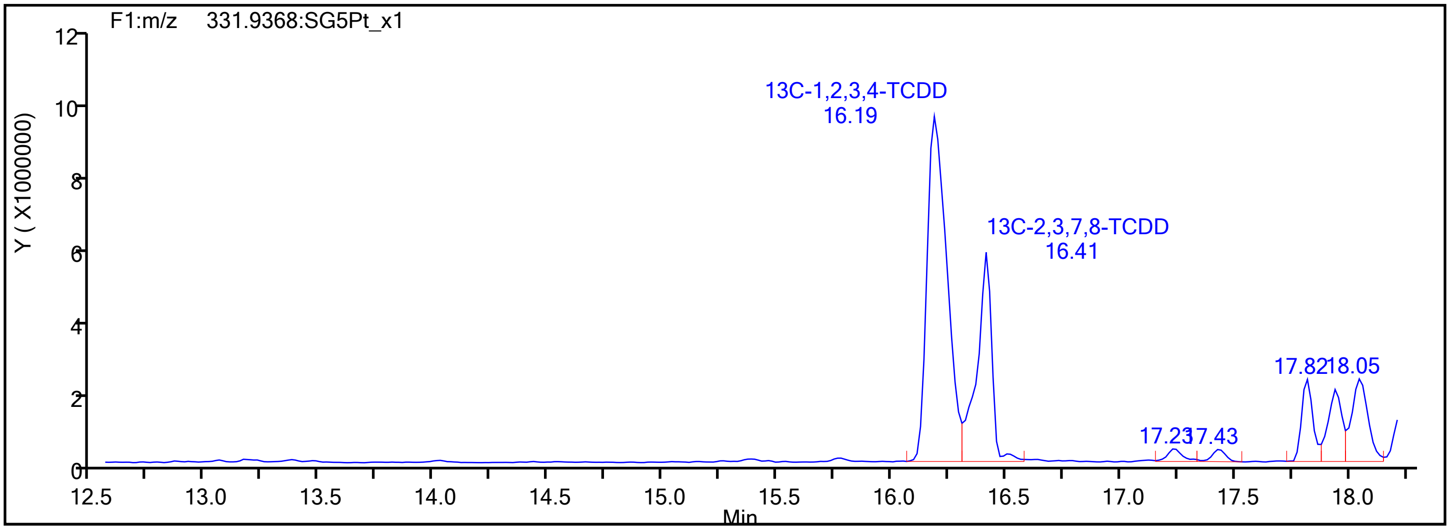

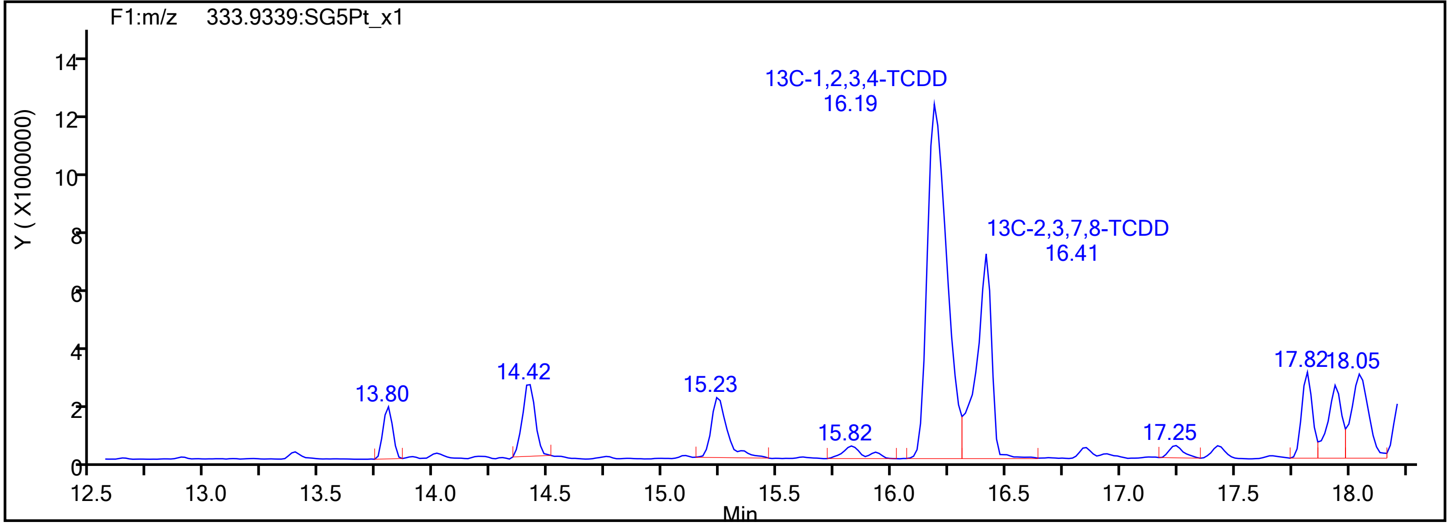

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

PeCDF

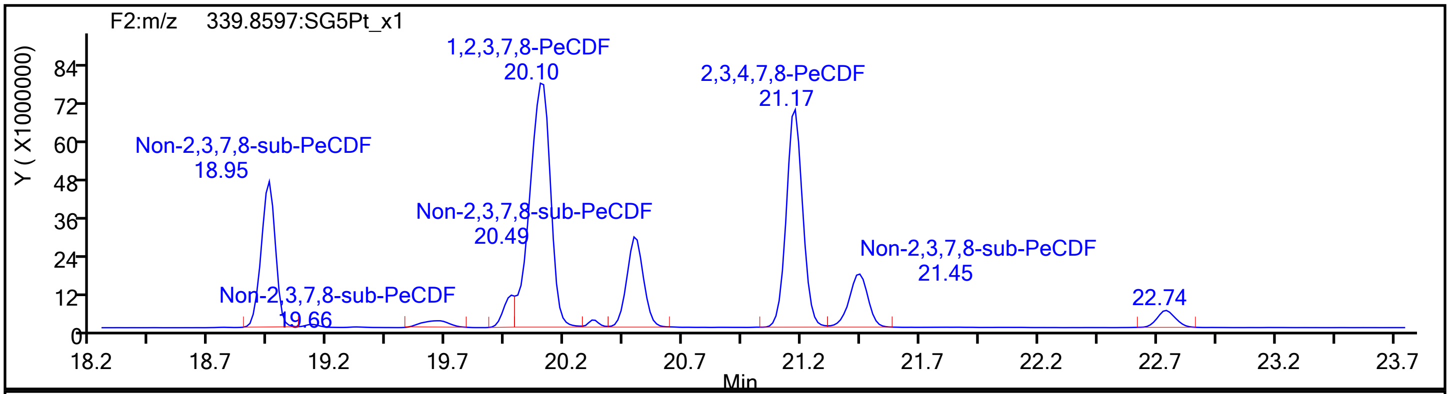

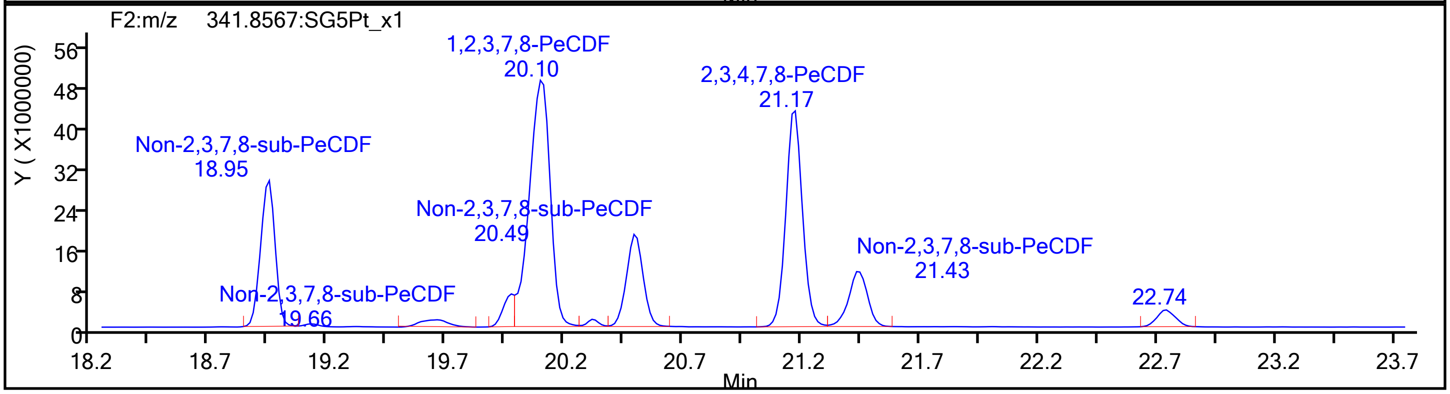

PeCDF Standards

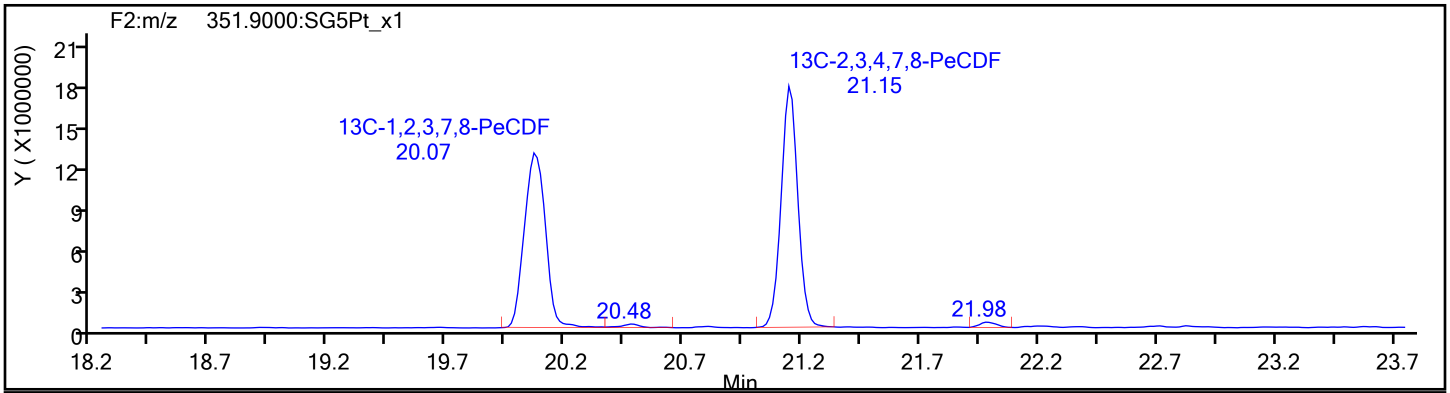

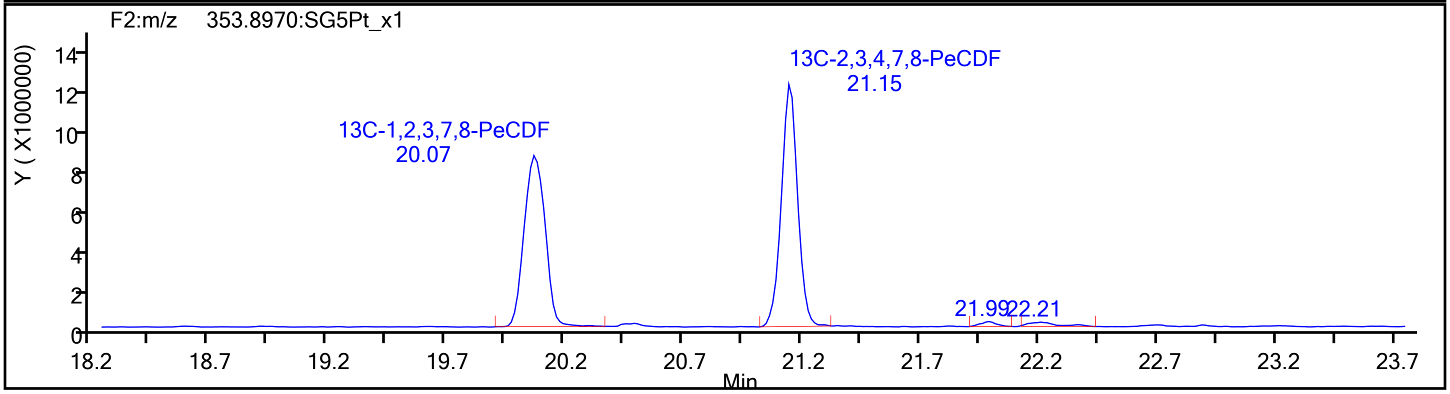

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Injection Date: 09-Oct-2020 17:03:06
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483
Sample Line#: 6
Column Type:
Column Dia:

PeCDF

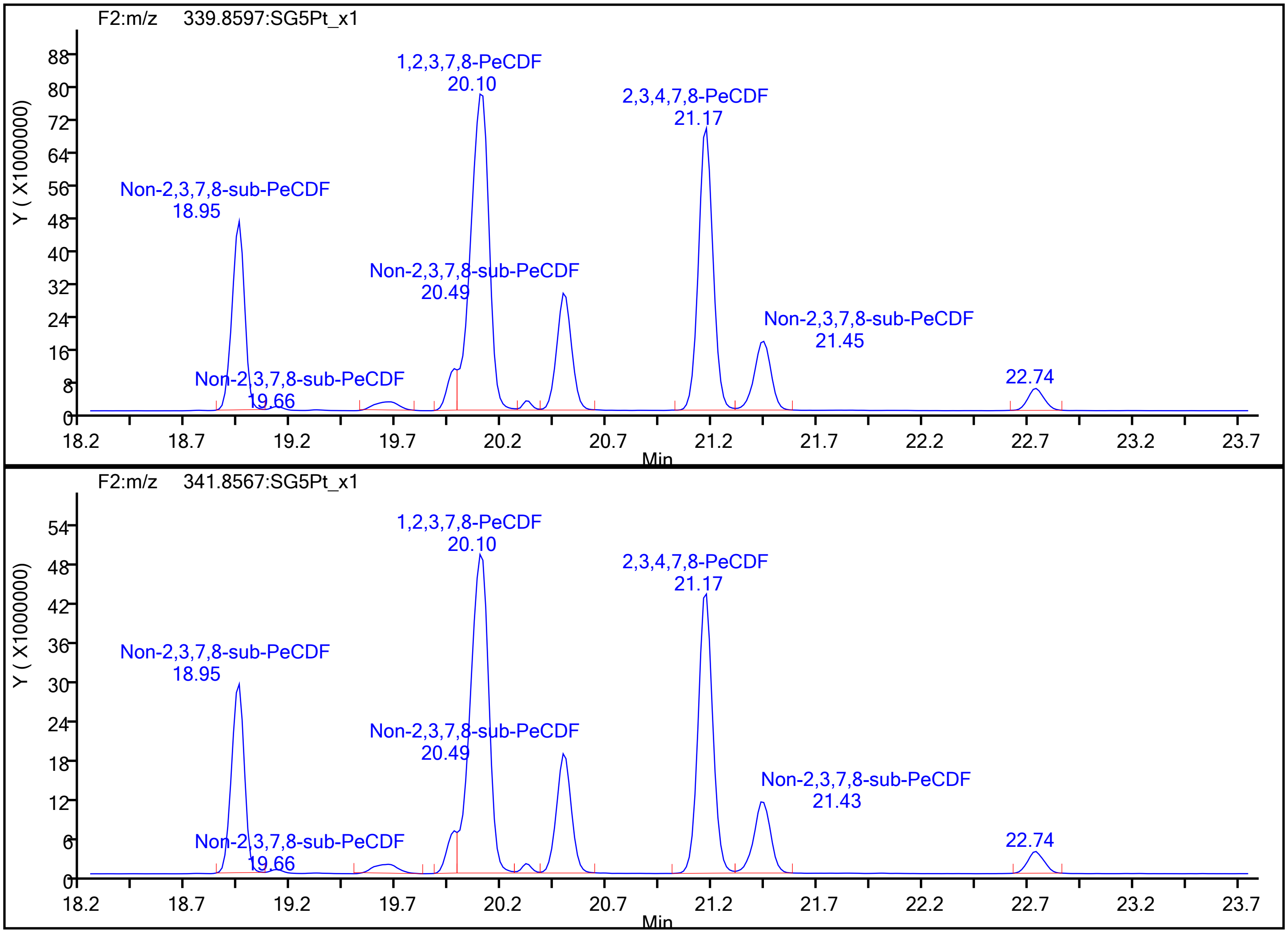

PeCDF Interference Mass

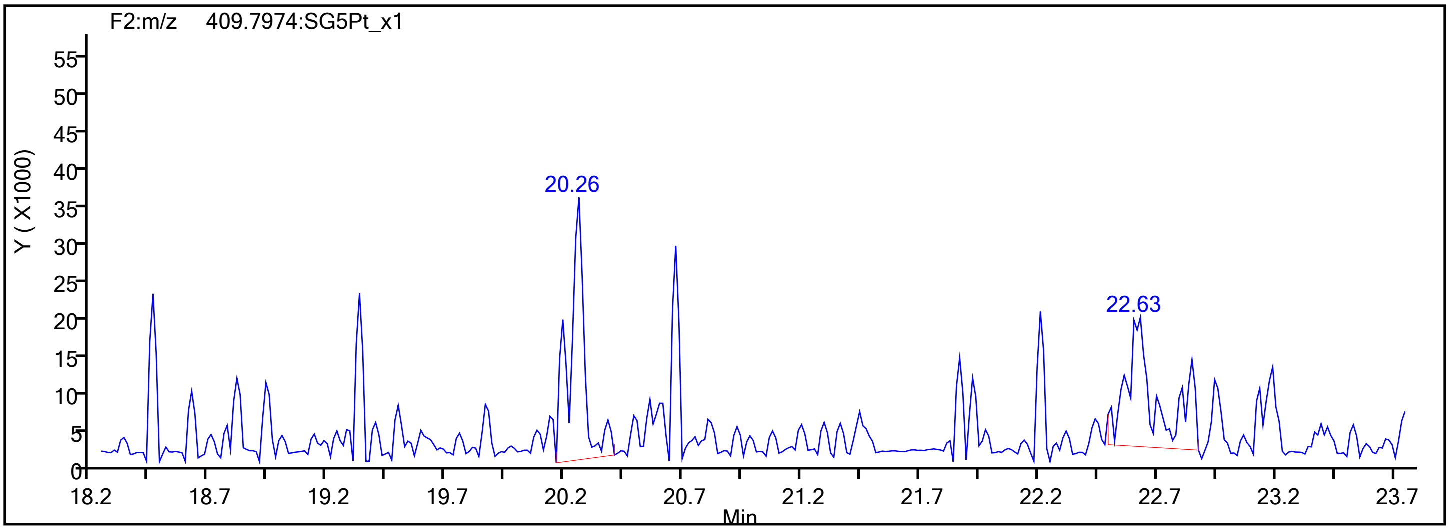

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

PeCDD

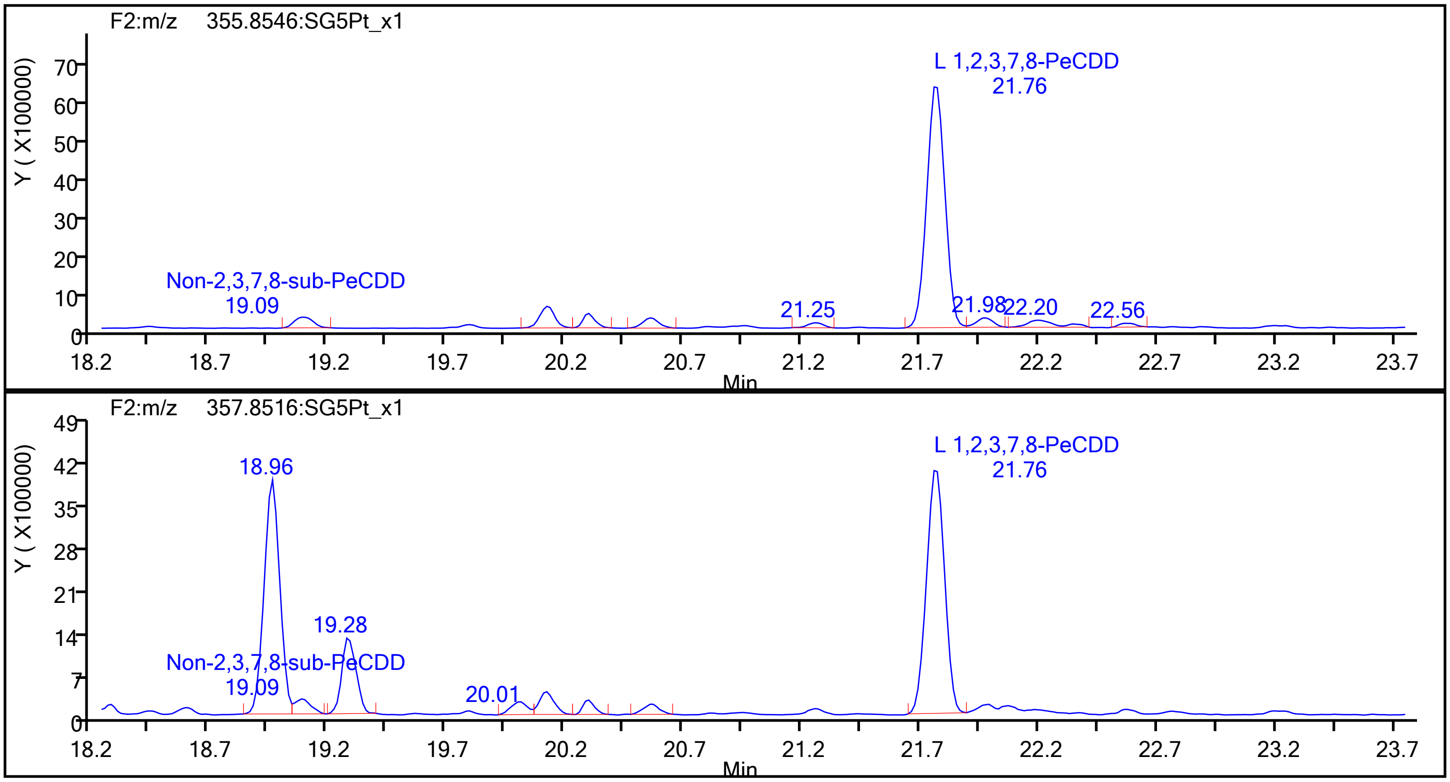

PeCDD Standards

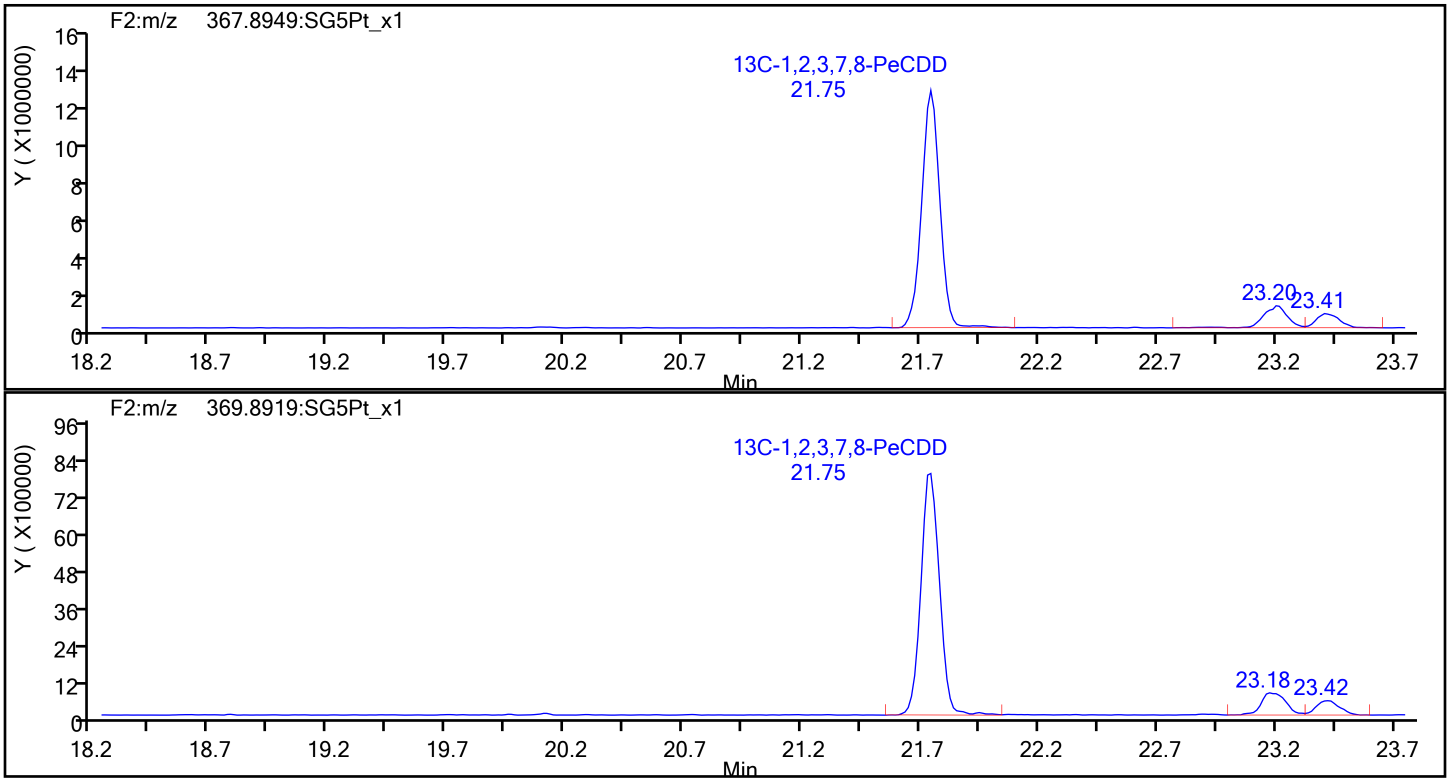

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

HxCDF

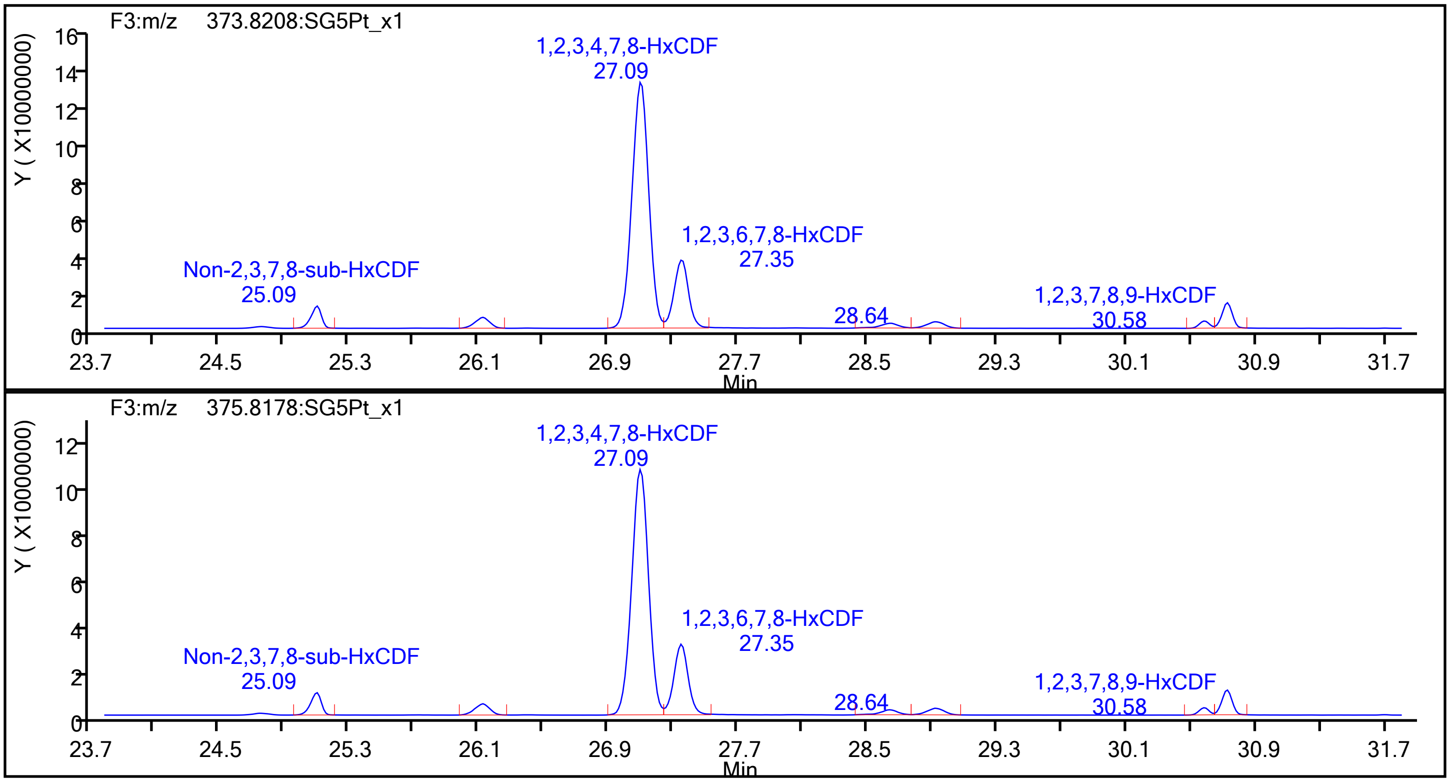

HxCDF Standards

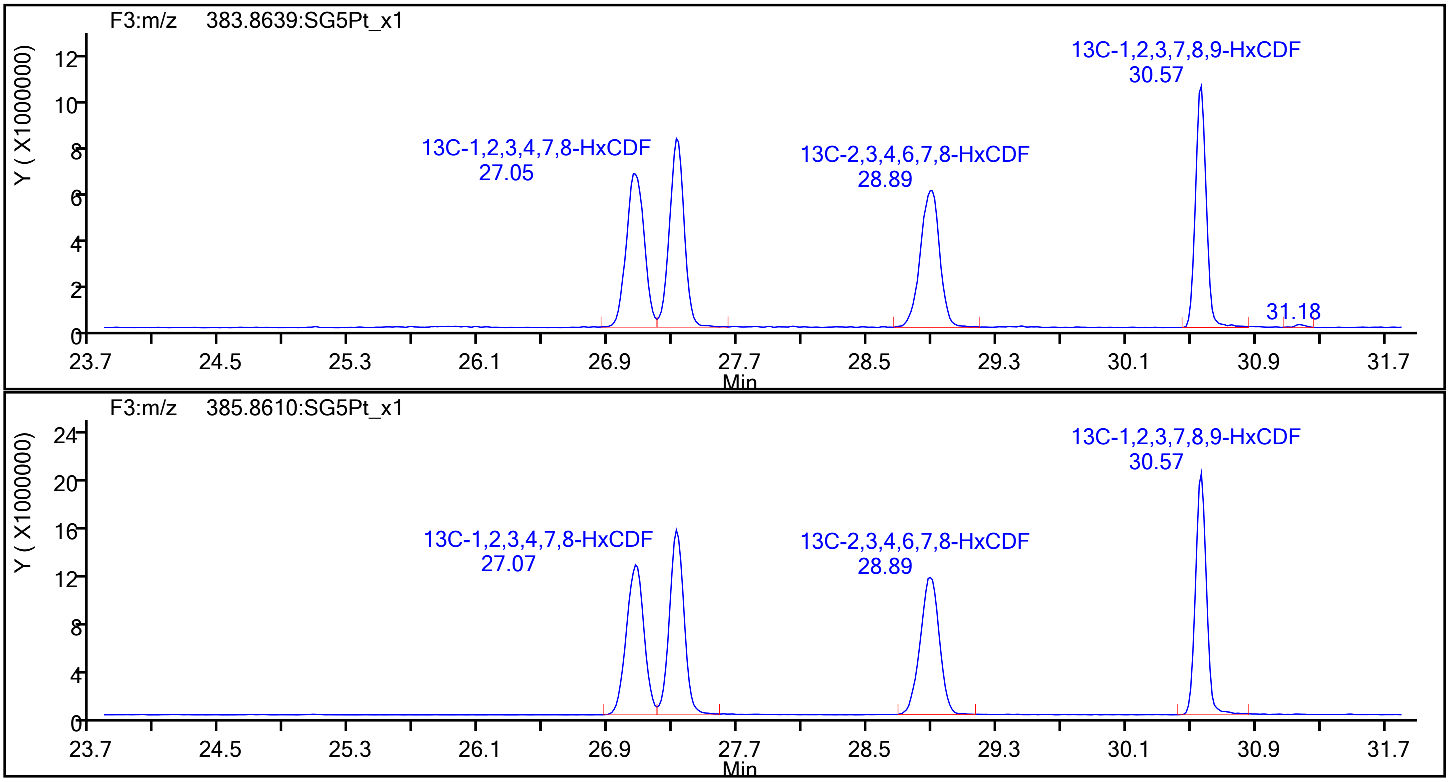

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

HxCDF

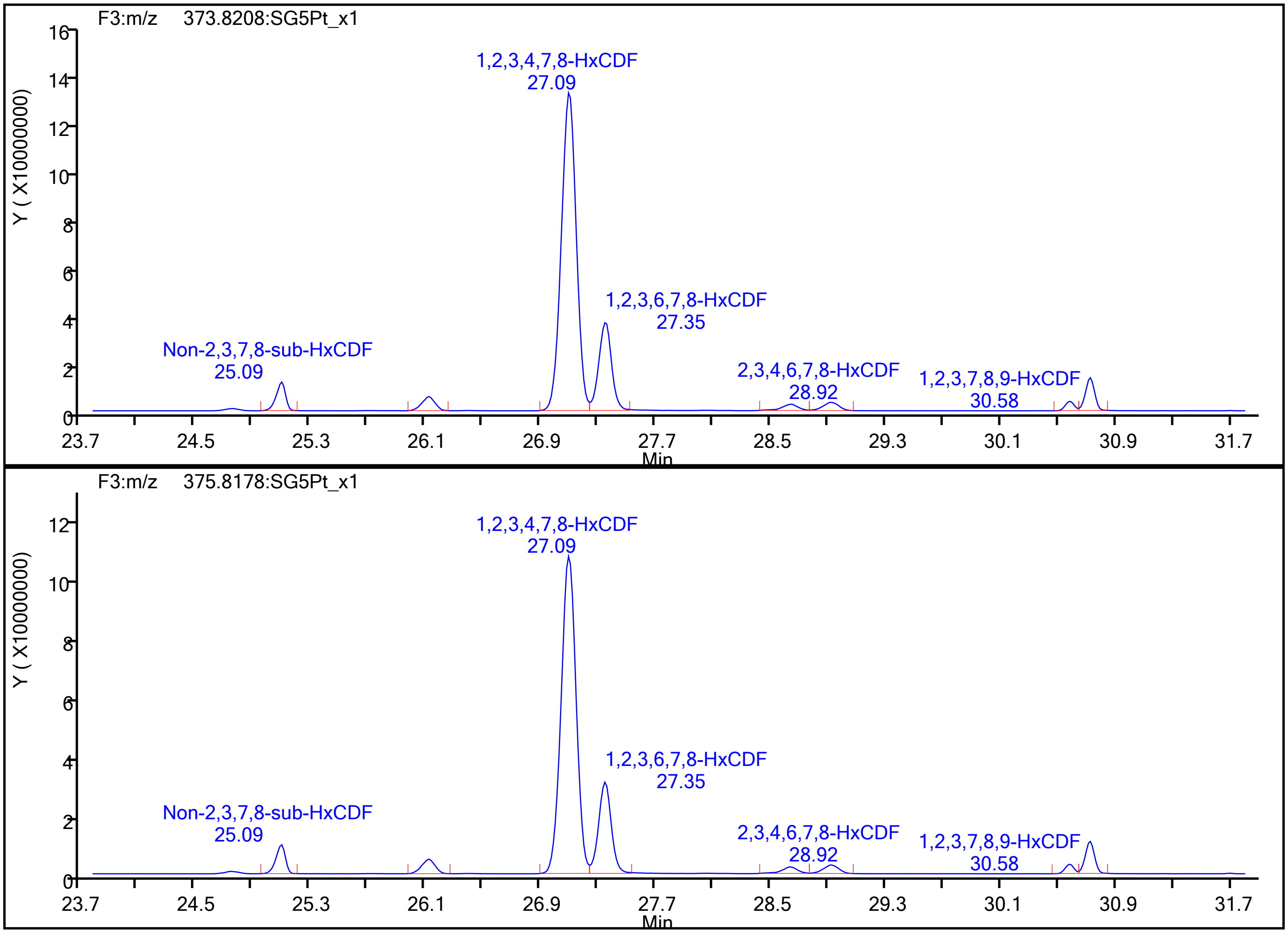

HxCDF Interference Mass

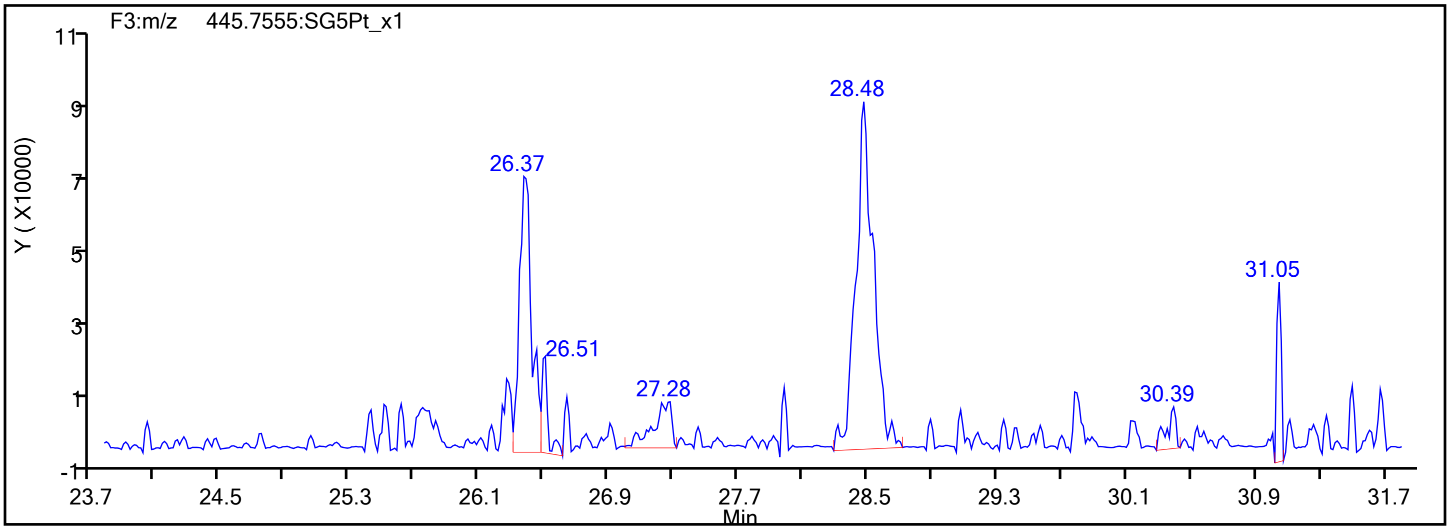

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

HxCDD

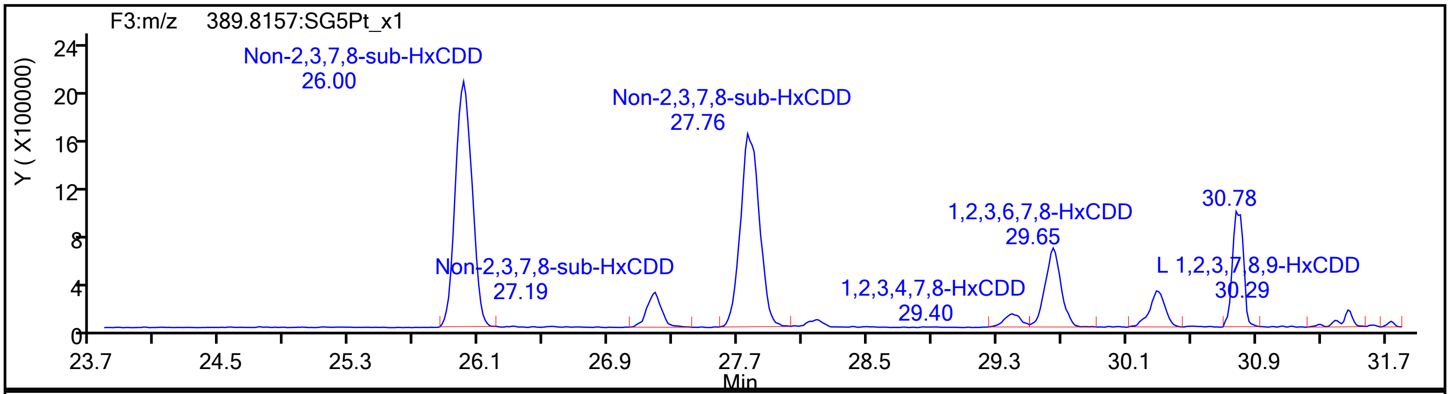

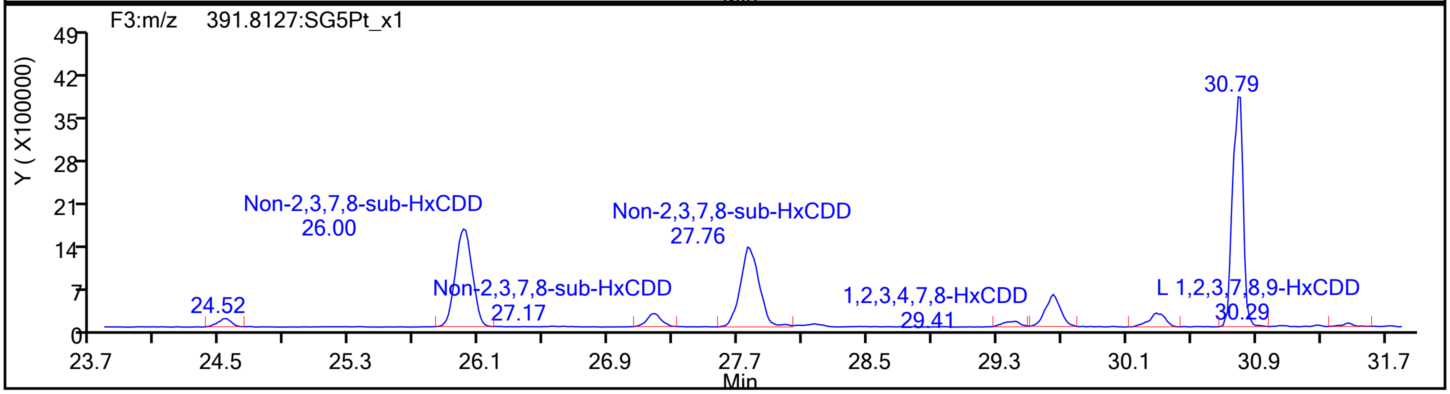

HxCDD Standards

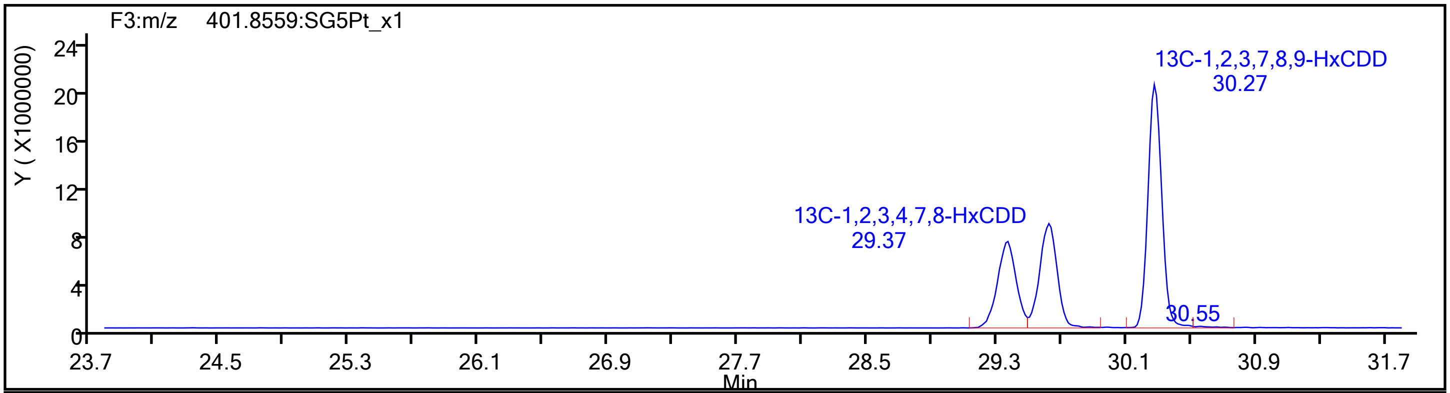

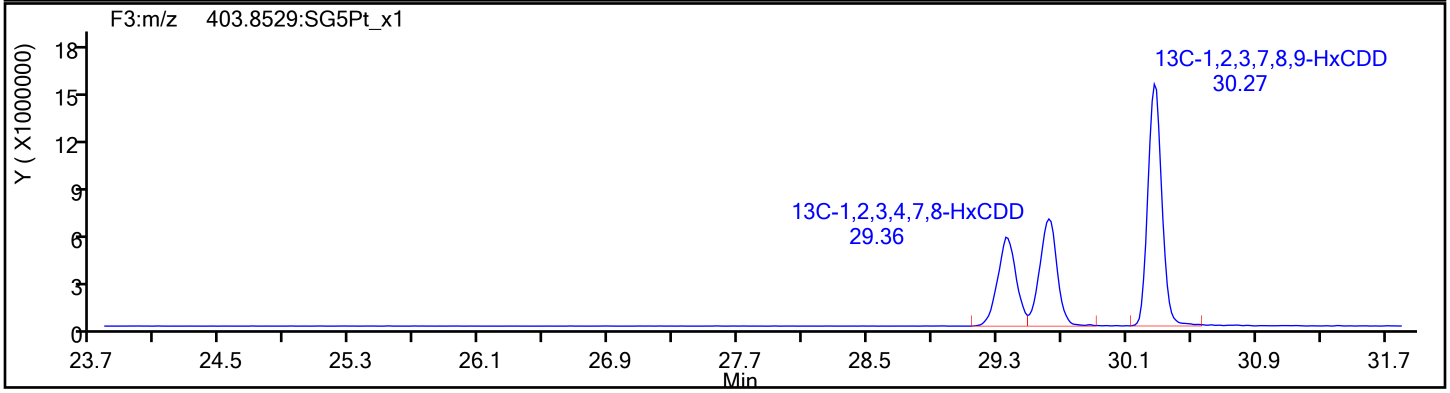

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d

Injection Date: 09-Oct-2020 17:03:06 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-T=0

Worklist#: 420483 Sample Line#: 6

Column Type: Column Dia:

HpCDF

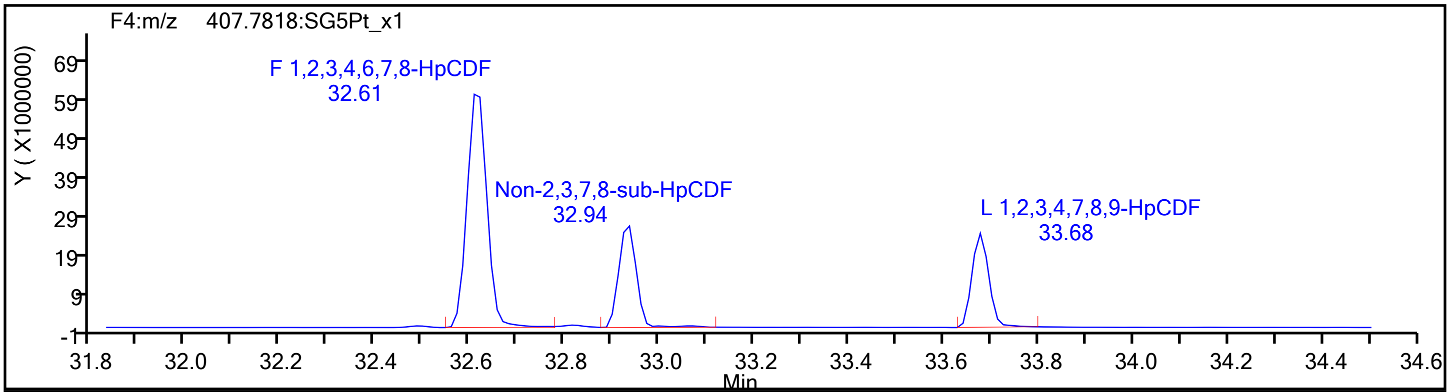

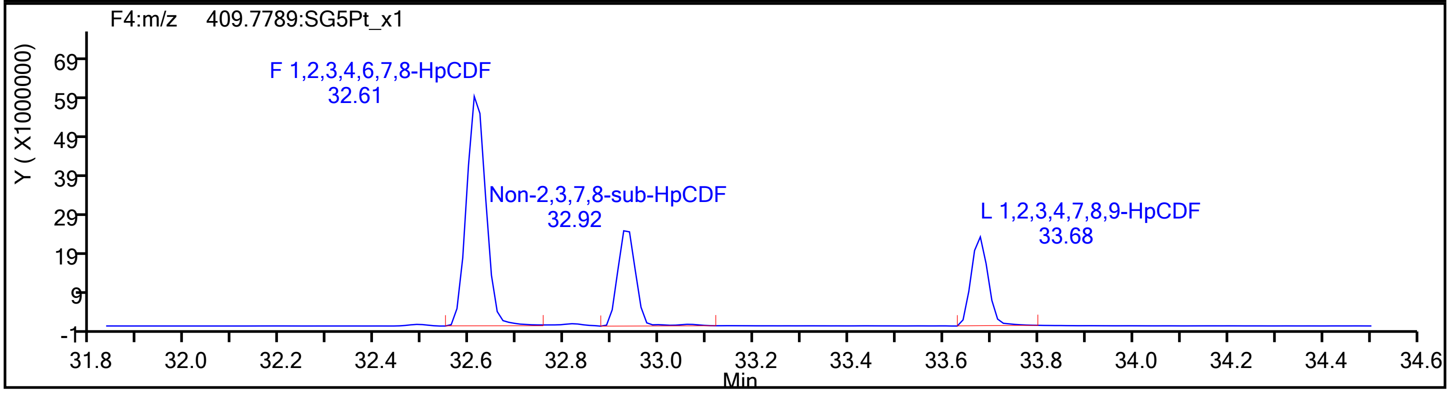

HpCDF Standards

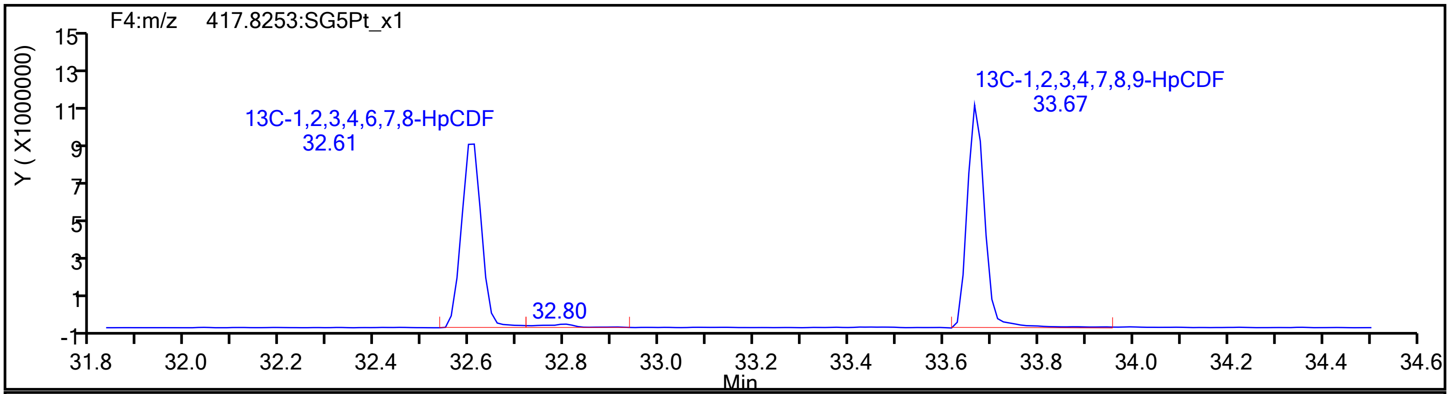

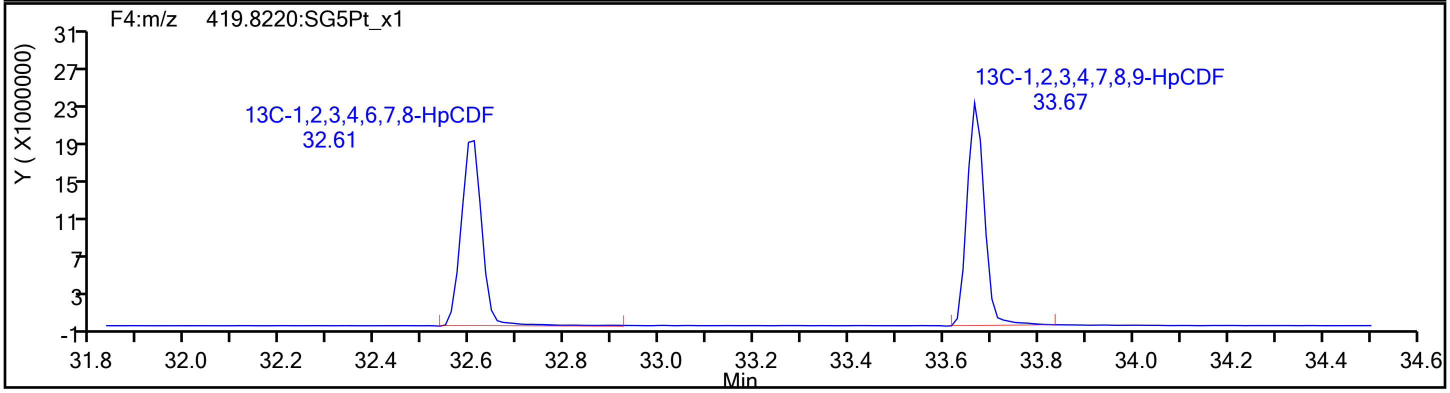

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Injection Date: 09-Oct-2020 17:03:06 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483 Sample Line#: 6
Column Type: Column Dia:

HpCDF

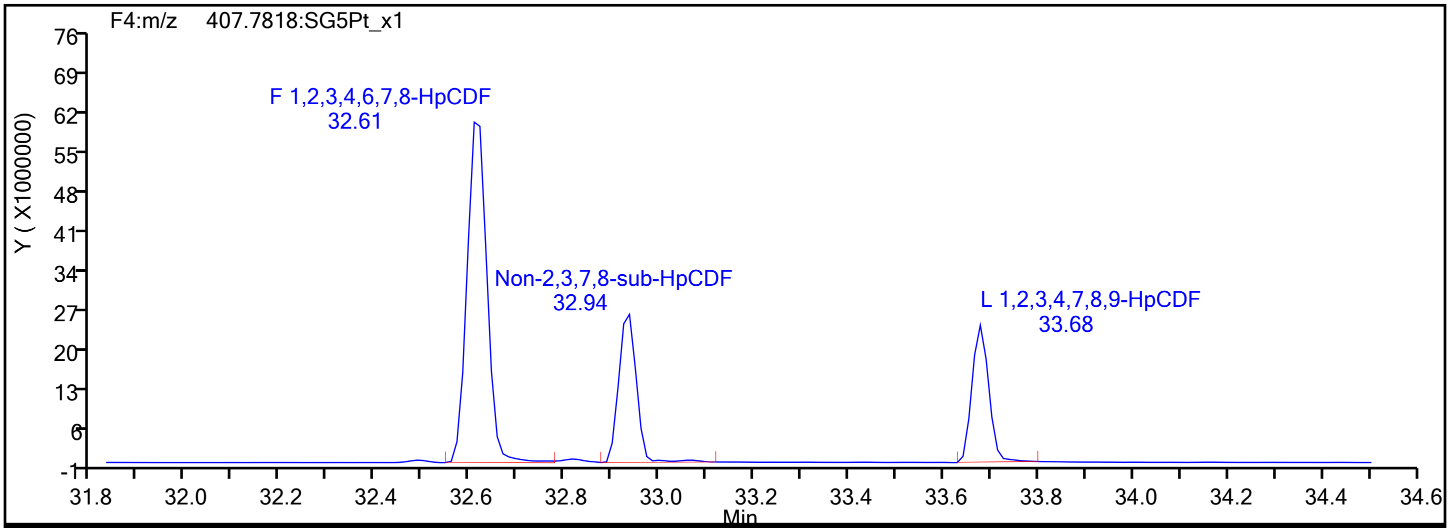

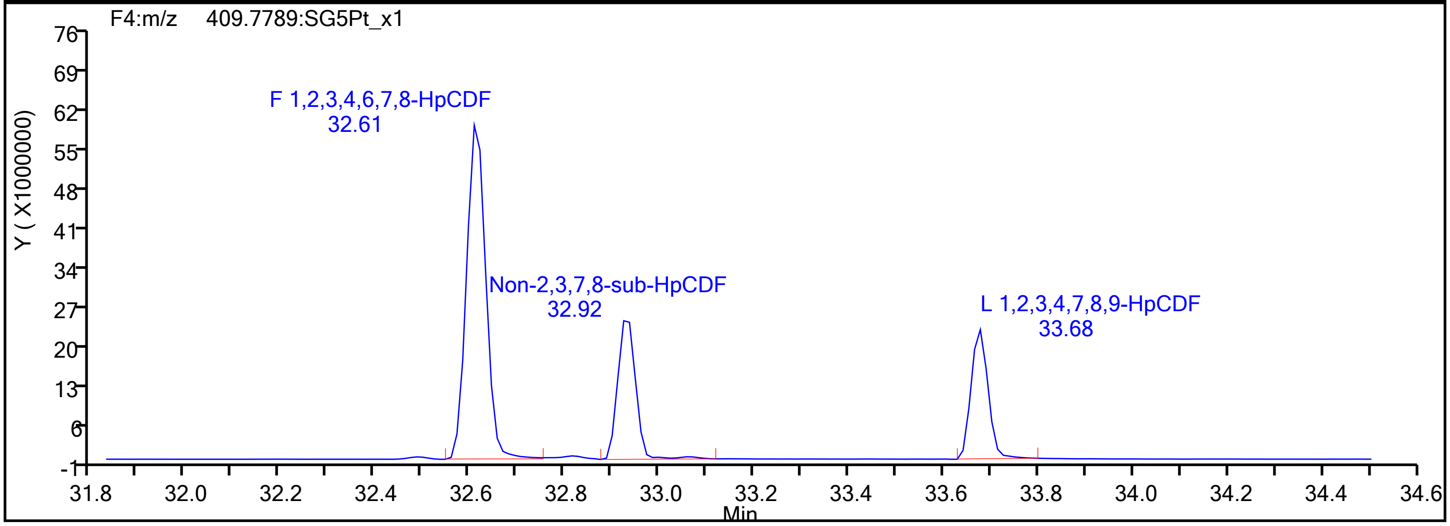

HpCDF Interference Mass

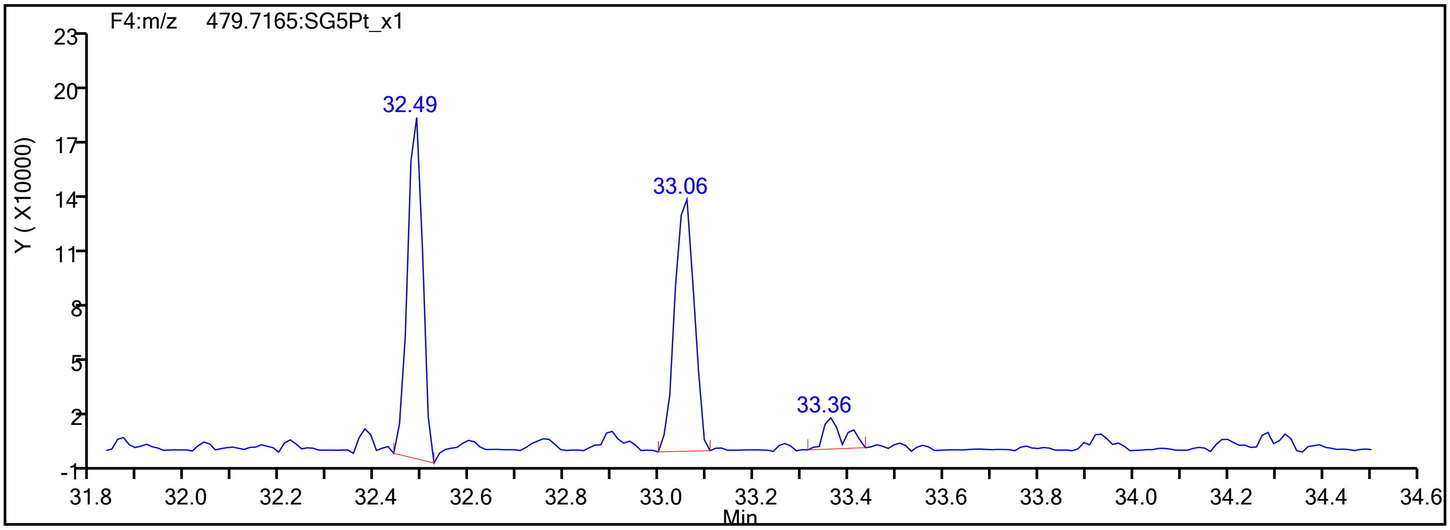

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Injection Date: 09-Oct-2020 17:03:06 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483 Sample Line#: 6
Column Type: Column Dia:

HpCDD

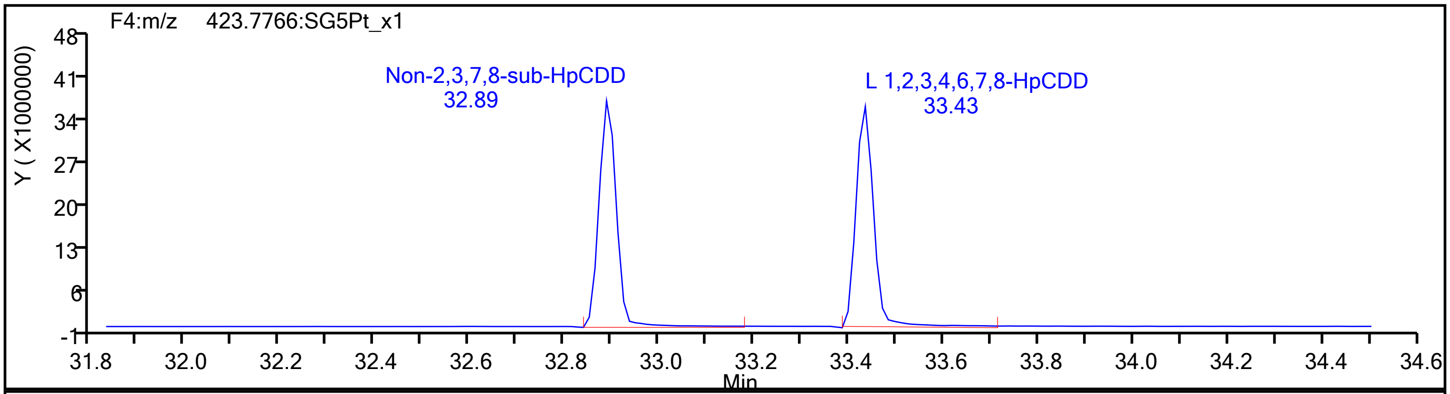

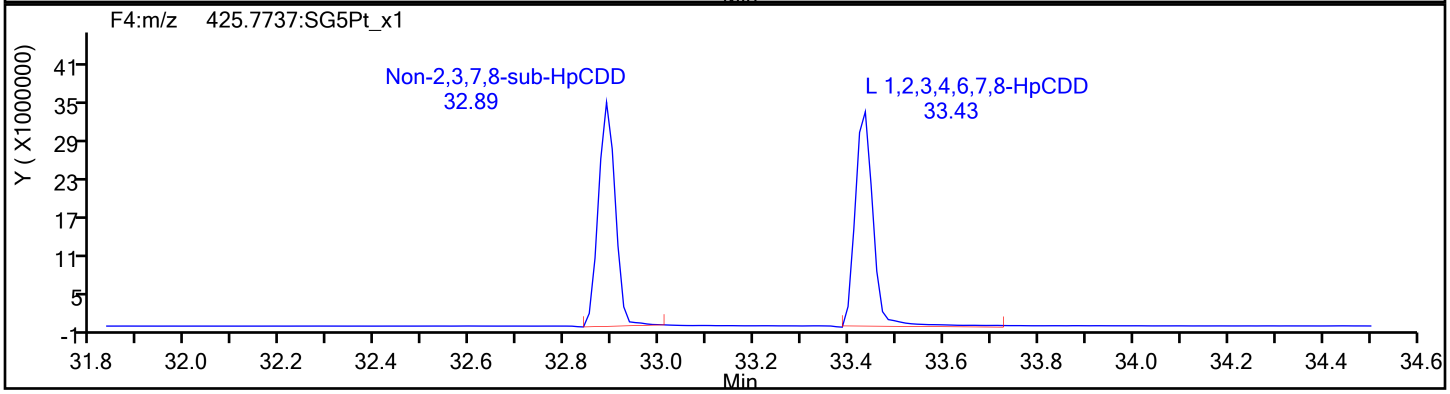

HpCDD Standards

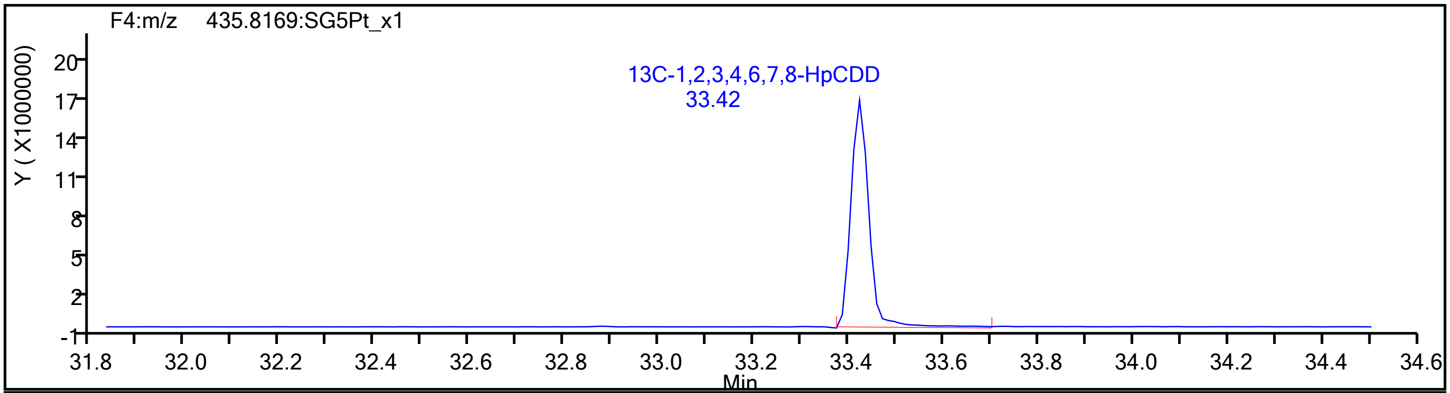

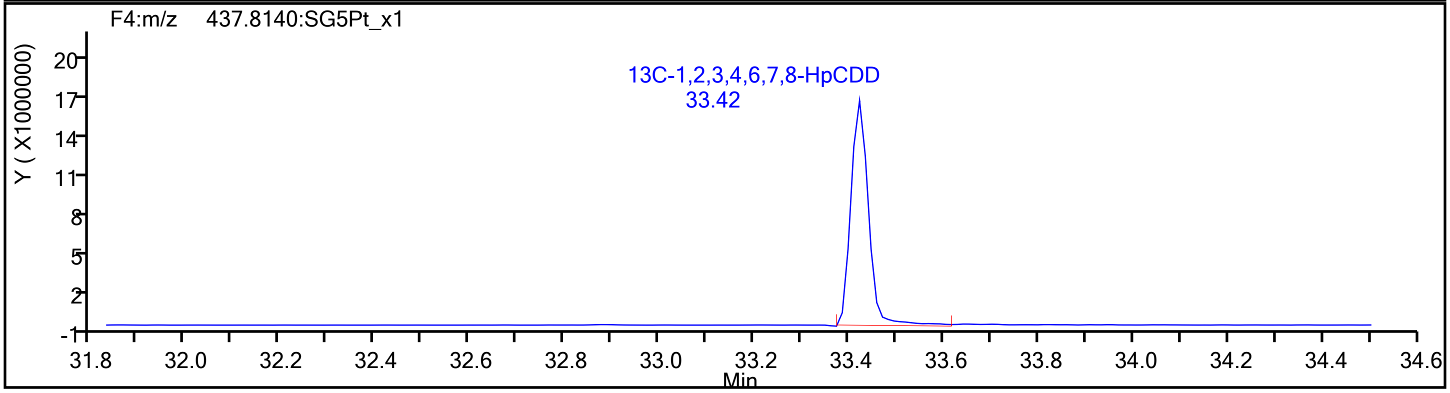

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d		
Injection Date:	09-Oct-2020 17:03:06	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	420483	Sample Line#:	6
Column Type:		Column Dia:	

OCDF

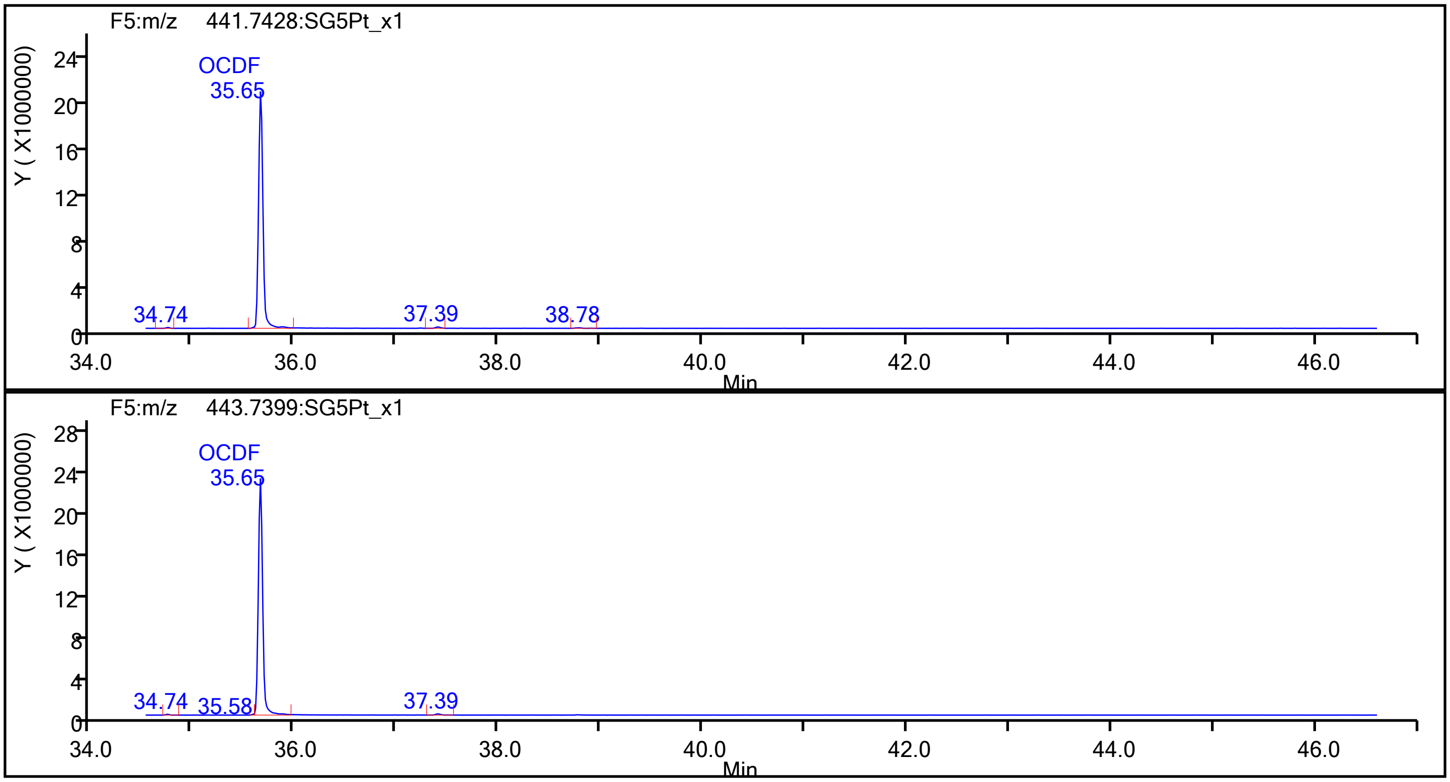

OCDF Standards

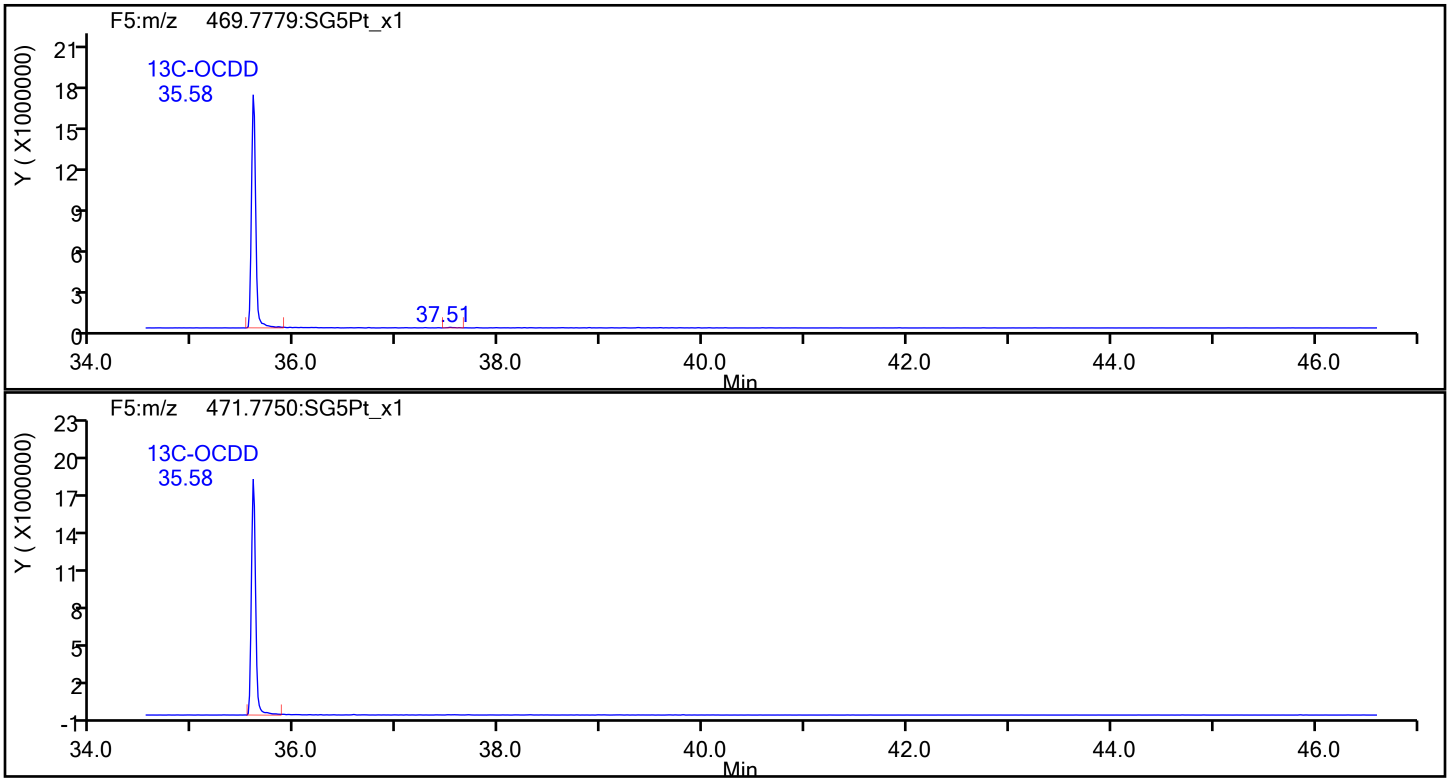

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Injection Date: 09-Oct-2020 17:03:06
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483
Sample Line#: 6
Column Type:
Column Dia:

OCDF

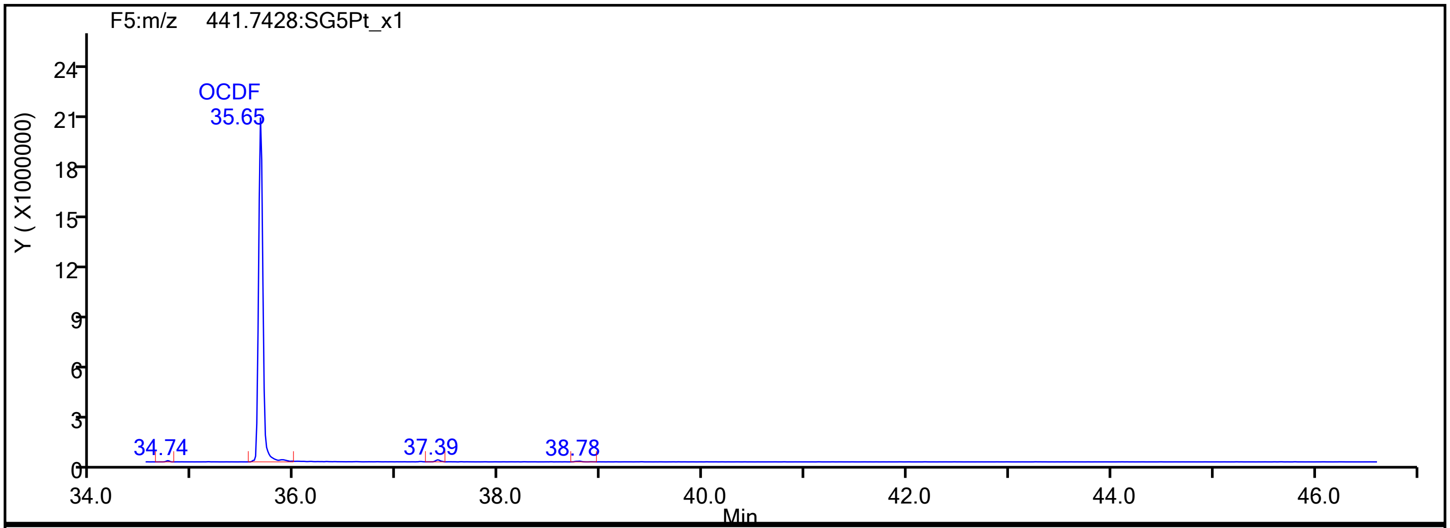

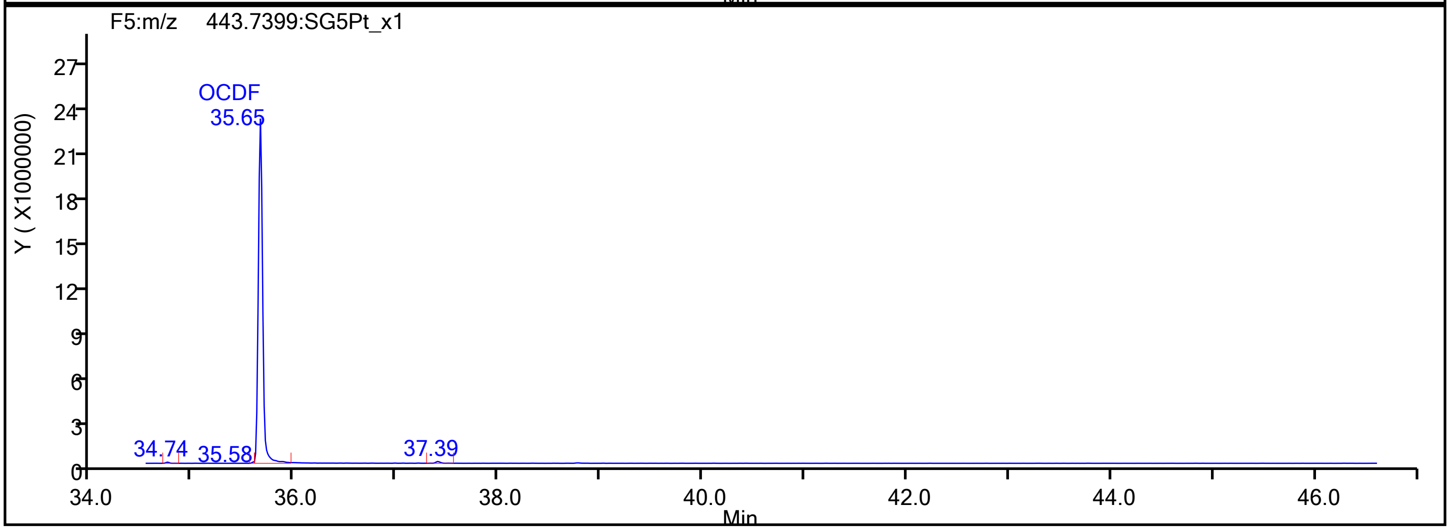

OCDF Interference Mass

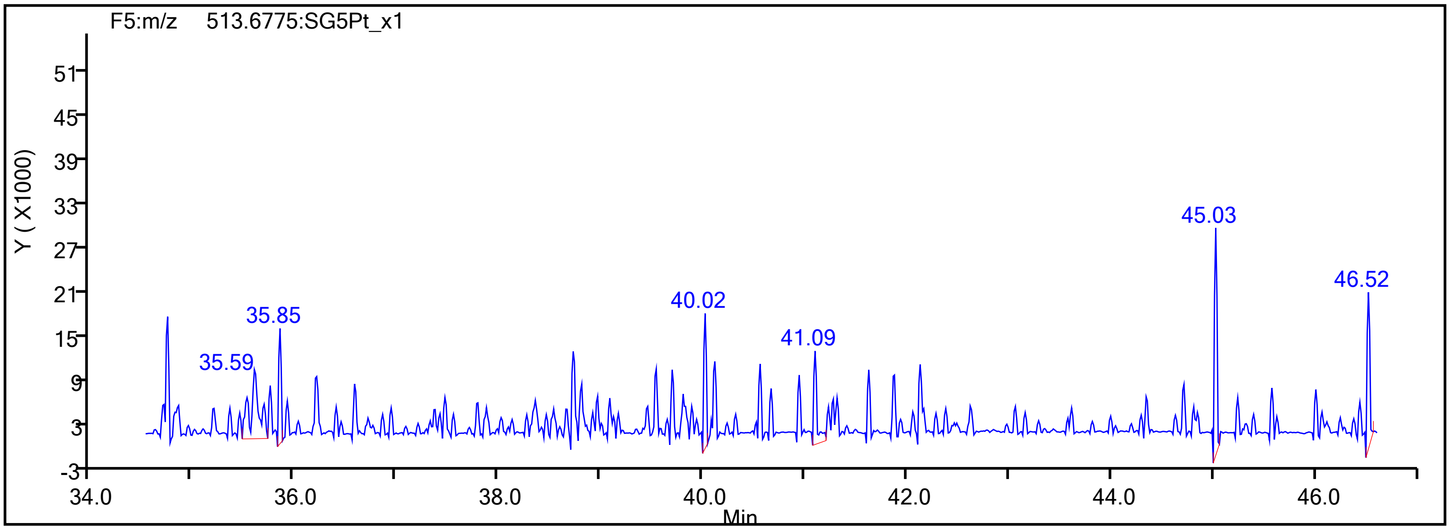

Report Date: 14-Oct-2020 09:01:39 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Injection Date: 09-Oct-2020 17:03:06 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483 Sample Line#: 6
Column Type: Column Dia:

OCDD

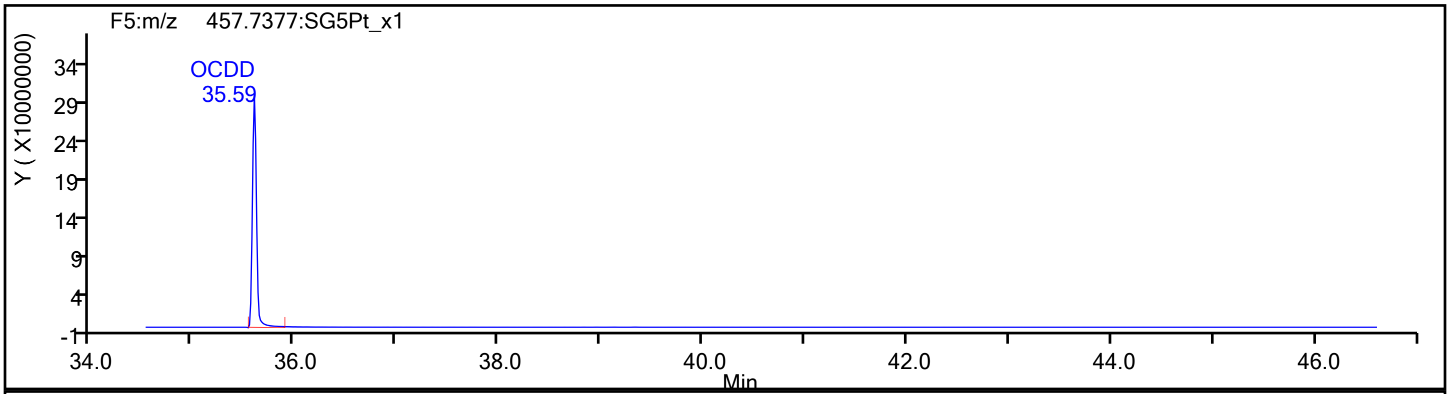

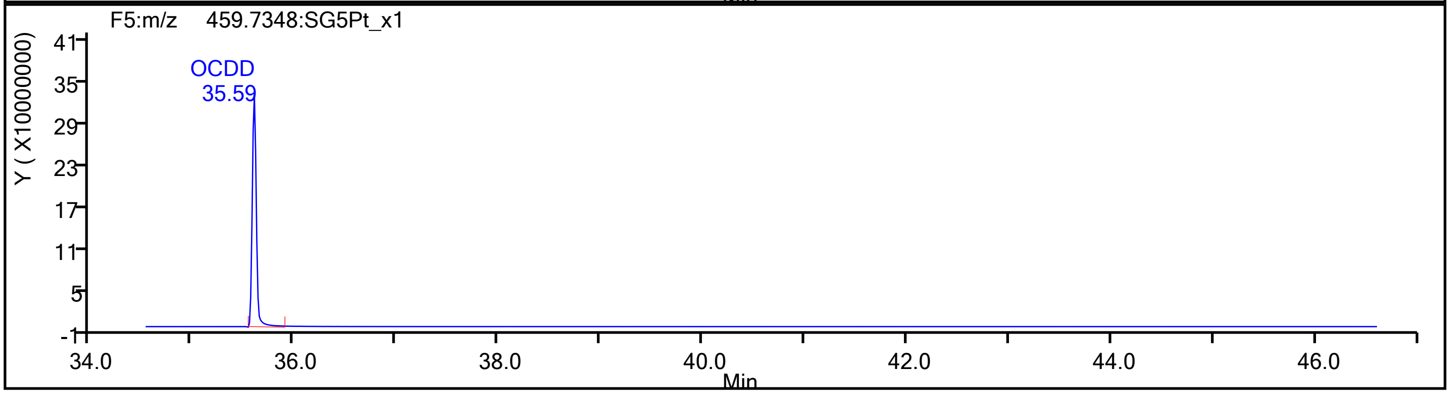

OCDD Standards

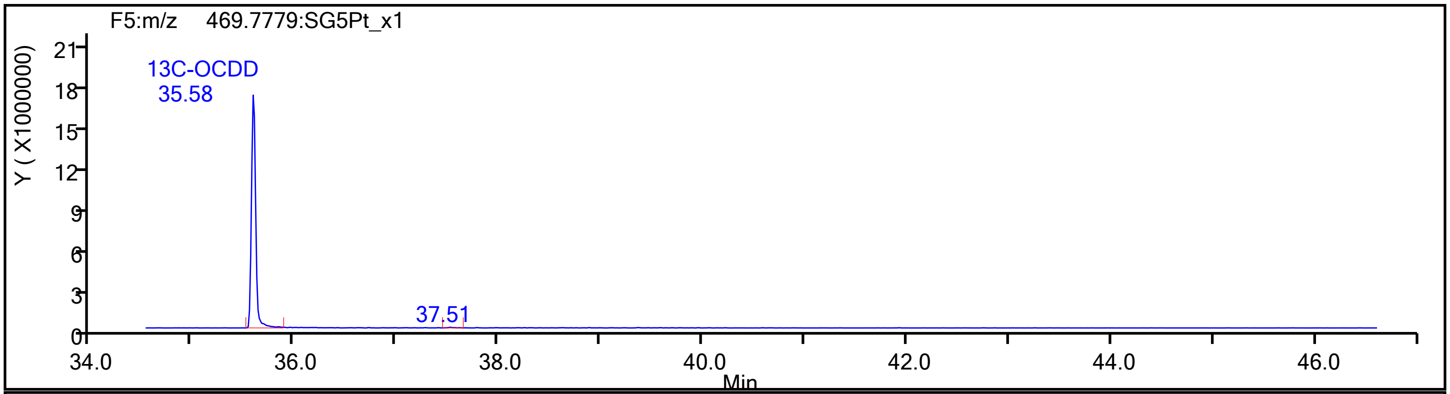

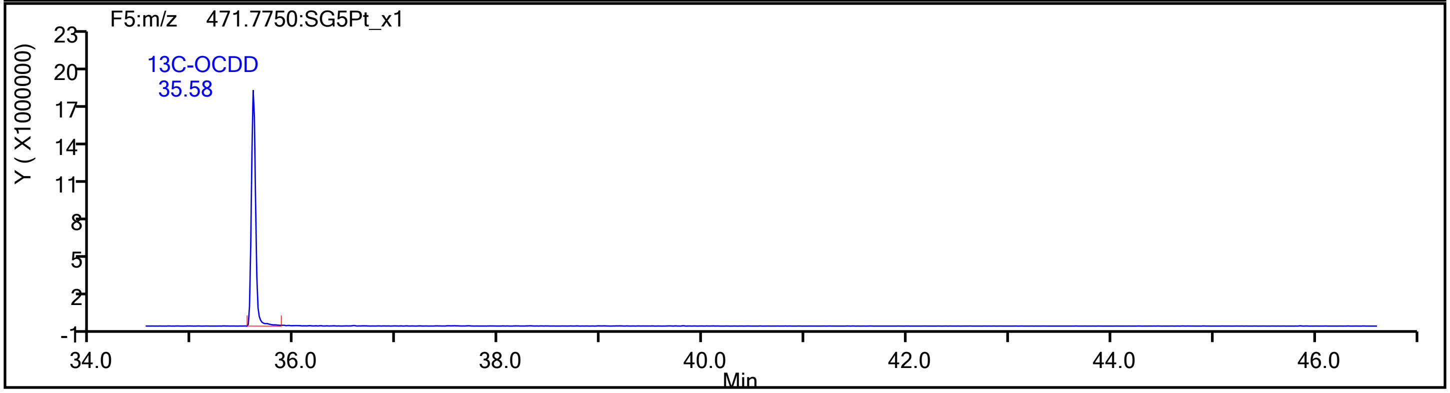

Report Date: 14-Oct-2020 09:01:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 17:03:06
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483
Sample Line#: 6
Column Type:
Column Dia:

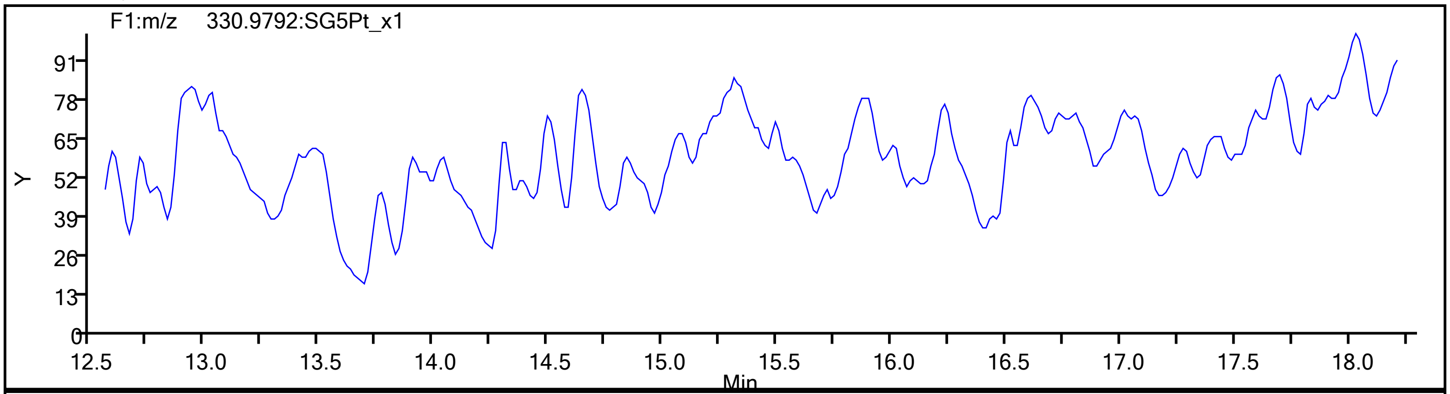
F1:m/z 330.9792:SG5Pt_x1

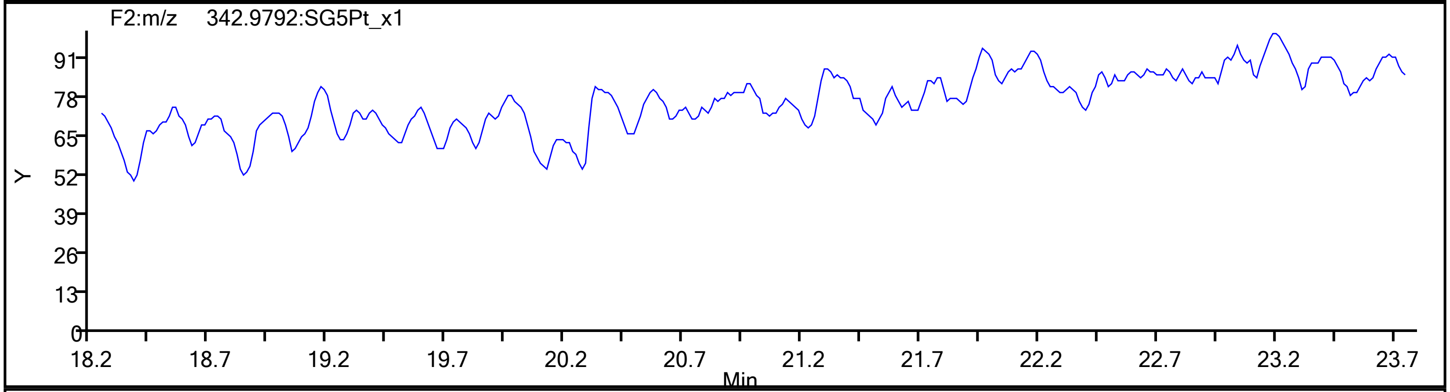
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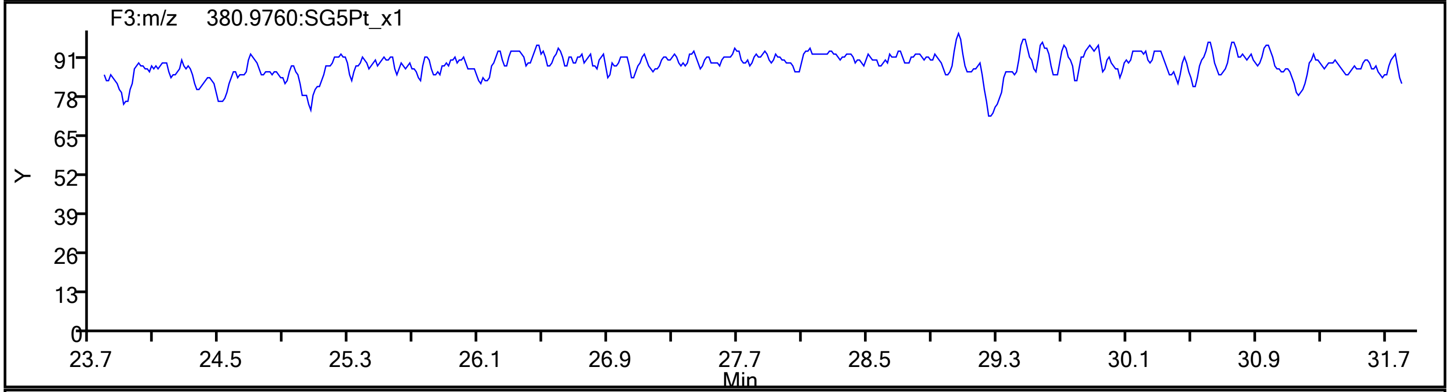
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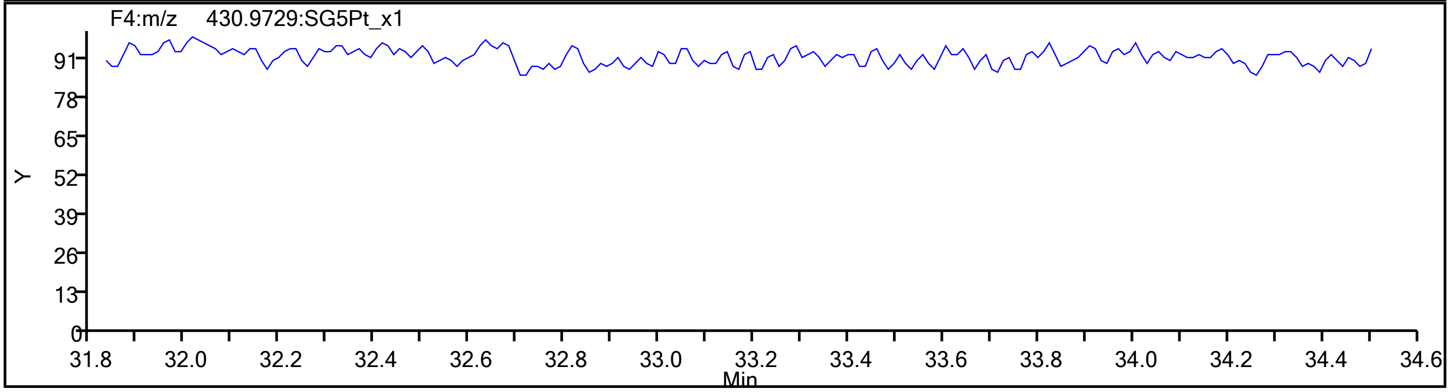
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Report Date: 14-Oct-2020 09:01:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_6.d
Injection Date: 09-Oct-2020 17:03:06
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 420483
Sample Line#: 6
Column Type:
Column Dia:

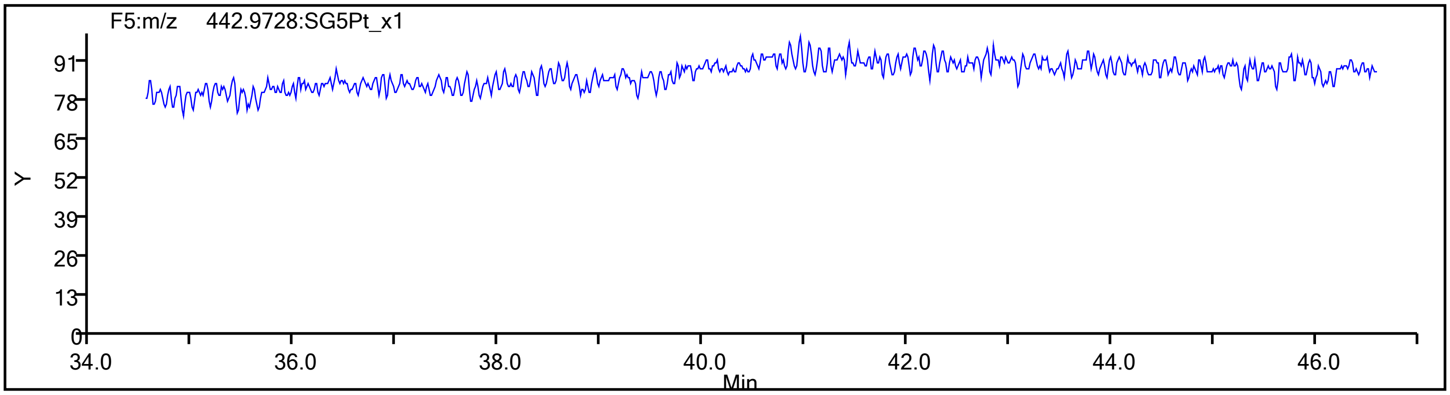

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#1-T=0 DL
Lab Sample ID: 320-65130-13 DL
Matrix: Water
Lab File ID: 16oc20adfs1_13.d
Analysis Method: 1613B
Date Collected: 09/11/2020 11:30
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1040.3(mL)
Date Analyzed: 10/17/2020 02:29
Con. Extract Vol.: 20(uL)
Dilution Factor: 40
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 422778
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	86000		380	370
3268-87-9	OCDD	51000	B	3800	120
41903-57-5	Total TCDD	94000	B	380	370
30402-14-3	Total TCDF	500000	G q B	1100	1100

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		25-164
89059-46-1	13C-2,3,7,8-TCDF	67		24-169
114423-97-1	13C-OCDD	48		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	131		35-197

Report Date: 19-Oct-2020 13:57:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Sample Type: Client
Inject. Date: 17-Oct-2020 02:29:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 40.0000
Sample Info: 320-65130-A-13-A (40x)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2020 13:57:59 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1676

First Level Reviewer: ruangyotsakuld Date: 19-Oct-2020 13:57:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.532	66642	0.77	2.7E+04	2.500	2.500				
D 13C-2,3,7,8-TCDF	18.647	70448	0.88	1.5883	1.664	1.664	0.3452	0.3452	66.55	
2,3,7,8-TCDF	18.655	11972787	0.80	1.0857	391.4	391.4	1.446	1.446		E
A Non-2,3,7,8-sub-TCDF	18.277	7865763	0.77	1.0857	259.6	257.1	1.446	170.5		RQMa
S Total TCDF					651.0	648.5	1.446	1.446		RQ
D 13C-2,3,7,8-TCDD	19.884	52553	0.73	1.1194	1.761	1.761	0.2682	0.2682	70.45	
2,3,7,8-TCDD	19.901	2553309	0.81	1.0810	112.4	112.4	0.4750	0.4750		
$ 37Cl4-2,3,7,8-TCDD	19.910	40168		1.1468	1.314	1.314	0.1231	0.1231	131	
A Non-2,3,7,8-sub-TCDD	19.063	226013	0.79	1.0810	9.946	9.946	0.4750	9.946		
S Total TCDD					122.3	122.3	0.4750	0.4750		
D 13C-1,2,3,7,8-PeCDF	25.771	55102	1.48	1.4782	1.398	1.398	0.0296	0.0296	55.94	
1,2,3,7,8-PeCDF	25.805	340203	1.58	1.0547	14.6	14.6	0.1565	0.1565		
D 13C-2,3,4,7,8-PeCDF	27.194	55135	1.77	1.3912	1.487	1.487	0.0315	0.0315	59.47	M
2,3,4,7,8-PeCDF	27.228	191323	1.57	1.1035	7.861	7.861	0.1666	0.1666		
A F1 PeCDFs	22.977						0.0287	0.1064		RQU
A Non-2,3,7,8-sub-PeCDF	26.427	324776	1.51	1.0791	13.7	13.7	0.1612	5.781		
S Total PeCDF					36.1	36.1	0.1615	0.1615		
D 13C-1,2,3,7,8-PeCDD	27.943	34663	1.77	0.9415	1.381	1.381	0.0757	0.0757	55.25	M
1,2,3,7,8-PeCDD	27.977	17658	1.50	1.0680	1.192	1.192	0.0745	0.0745		
A Non-2,3,7,8-sub-PeCDD	26.858						0.0745	0.0745		
S Total PeCDD					1.192	1.192	0.0745	0.0745		
D 13C-1,2,3,4,7,8-HxCDF	33.724	43829	0.53	1.1378	1.403	1.403	0.0431	0.0431	56.12	
1,2,3,4,7,8-HxCDF	33.733	480300	1.27	1.2643	21.7	21.7	0.0803	0.0803		
D 13C-1,2,3,6,7,8-HxCDF	33.910	49444	0.52	1.3173	1.367	1.367	0.0372	0.0372	54.69	
1,2,3,6,7,8-HxCDF	33.935	130881	1.26	1.2230	5.411	5.411	0.0810	0.0810		
D 13C-2,3,4,6,7,8-HxCDF	34.886	49557	0.49	1.2457	1.449	1.449	0.0393	0.0393	57.96	
2,3,4,6,7,8-HxCDF	34.912	16381	1.43	1.2464	0.6630	0.6630	0.0649	0.0649		
D 13C-1,2,3,7,8,9-HxCDF	35.880	46292	0.50	1.1840	1.424	1.424	0.0414	0.0414	56.96	
1,2,3,7,8,9-HxCDF	35.897	10178	1.28	1.2638	0.4349	0.4349	0.0625	0.0625		
A Non-2,3,7,8-sub-HxCDF	33.742	96047	1.32	1.2494	4.065	4.065	0.0712	1.409		
S Total HxCDF					32.2	32.2	0.0722	0.0722		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.686	68639	1.30	2.9E+04	2.500	2.500				
D 13C-1,2,3,4,7,8-HxCDD	35.139	34918	1.10	0.8477	1.500	1.500	0.0387	0.0387	60.01	
1,2,3,4,7,8-HxCDD	35.164	1429	1.36	1.1561	0.0885	0.0885	0.0333	0.0333		Ma
D 13C-1,2,3,6,7,8-HxCDD	35.265	38683	1.31	0.9979	1.412	1.412	0.0329	0.0329	56.48	
1,2,3,6,7,8-HxCDD	35.291	3793	1.26	1.0284	0.2384	0.2384	0.0324	0.0324		Ma
1,2,3,7,8,9-HxCDD	35.711	2848	1.35	1.1789	0.1641	0.1641	0.0303	0.0303		M
A Non-2,3,7,8-sub-HxCDD	34.272	12948	1.23	1.1211	0.7846	0.7846	0.0319	0.4235		M
S Total HxCDD					1.276	1.276	0.0320	0.0320		
D 13C-1,2,3,4,6,7,8-HpCDF	37.864	33078	0.48	0.9884	1.219	1.219	0.0492	0.0492	48.76	
1,2,3,4,6,7,8-HpCDF	37.873	129136	1.04	1.5064	6.479	6.479	0.0451	0.0451		
D 13C-1,2,3,4,7,8,9-HpCDF	39.187	34180	0.43	0.9203	1.353	1.353	0.0529	0.0529	54.11	
1,2,3,4,7,8,9-HpCDF	39.204	45968	1.03	1.4548	2.311	2.311	0.0476	0.0476		
A Non-2,3,7,8-sub-HpCDF	38.545	51562	1.02	1.4806	2.589	2.589	0.0463	2.589		
S Total HpCDF					11.4	11.4	0.0463	0.0463		
D 13C-1,2,3,4,6,7,8-HpCDD	38.875	33806	1.01	0.9556	1.288	1.288	0.0316	0.0316	51.54	
1,2,3,4,6,7,8-HpCDD	38.884	69500	1.02	1.0640	4.830	4.830	0.0669	0.0669		
A Non-2,3,7,8-sub-HpCDD	38.941	72053	1.05	1.0640	5.008	5.008	0.0669	5.008		
S Total HpCDD					9.838	9.838	0.0669	0.0669		
D 13C-OCDD	41.323	48913	0.79	0.7420	2.401	2.401	0.0396	0.0396	48.02	
OCDF	41.416	54503	0.85	1.4296	3.897	3.897	0.0700	0.0700		
OCDD	41.332	729061	0.90	1.1293	66.0	66.0	0.1515	0.1515		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 19-Oct-2020 13:57:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Sample Type: Client
Inject. Date: 17-Oct-2020 02:29:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 40.0000
Sample Info: 320-65130-A-13-A (40x)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2020 13:57:59 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1676

First Level Reviewer: ruangyotsakuld Date: 19-Oct-2020 13:57:59

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.532	19.548	-1		28935	4589	394	985	12		
333.9338	19.532	19.548	-1		37707	5236	78	195	67	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.647	18.655	0	0.955	32939	5850	569	1422	10		
317.9389	18.630	18.655	-2	0.954	37509	6773	293	732	23	0.88(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.655	18.672	-1	1.000	5320094	816851	1920	4800	425		
305.8987	18.655	18.672	-1	1.000	6652693	1017865	1251	3127	814	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	16.328	18.277	-117	0.876	93618	18986	1920	4800	10		
305.8987	16.328	18.277	-117	0.876	124067	23639	1251	3127	19	0.75(0.65-0.89)	
303.9016	16.775	18.277	-90	0.900	167062	26513	1920	4800	14		
305.8987	16.775	18.277	-90	0.900	231970	35331	1251	3127	28	0.72(0.65-0.89)	
303.9016	17.178	18.277	-66	0.921	168114	24129	1920	4800	13		M
305.8987	17.170	18.277	-66	0.921	213591	29590	1251	3127	24	0.79(0.65-0.89)	
303.9016	17.530	18.277	-45	0.940	240806	38755	1920	4800	20		
305.8987	17.522	18.277	-45	0.940	304541	47730	1251	3127	38	0.79(0.65-0.89)	
303.9016	17.994	18.277	-17	0.965	2316264	389891	1920	4800	203		
305.8987	17.994	18.277	-17	0.965	2898431	483919	1251	3127	387	0.80(0.65-0.89)	
303.9016	18.372	18.277	6	0.985	72758	12880	1920	4800	7		M
305.8987	18.363	18.277	5	0.985	145333	20400	1251	3127	16	0.50(0.65-0.89)	
	Empc Correction				94490	16727	1251	3127	13		
303.9016	19.386	18.277	66	1.040	345089	52105	1920	4800	27		
305.8987	19.386	18.277	66	1.040	450816	67228	1251	3127	54	0.77(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.772	18.277	90	1.060	62708	11042	1920	4800	6		M
305.8987	19.772	18.277	90	1.060	106464	14196	1251	3127	11	0.59(0.65-0.89)	
	Empc Correction				81438	14340	1251	3127	11		
13C-2,3,7,8-TCDD											
331.9368	19.884	19.891	0	1.018	22233	3594	394	985	9		
333.9338	19.884	19.891	0	1.018	30320	3831	78	195	49	0.73(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.901	19.925	-1	1.001	1143572	168000	356	890	472		
321.8936	19.901	19.925	-1	1.001	1409737	212228	254	635	836	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.910	19.925	-1	1.019	40168	6125	222	555	28		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.528	19.063	88	1.032	99833	13828	356	890	39		
321.8936	20.520	19.063	87	1.032	126180	17490	254	635	69	0.79(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.771	25.793	-1	1.319	32862	6217	35	87	178		
353.8970	25.788	25.793	0	1.320	22240	4159	34	85	122	1.48(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.805	25.819	-1	1.001	208178	35828	165	412	217		
341.8567	25.805	25.819	-1	1.001	132025	22706	109	272	208	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											M
351.9000	27.194	27.216	-1	1.392	35265	5990	35	87	171		M
353.8970	27.219	27.216	0	1.394	19870	3325	34	85	98	1.77(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.228	27.250	-1	1.001	116803	20130	165	412	122		
341.8567	27.228	27.250	-1	1.001	74520	12679	109	272	116	1.57(1.32-1.78)	
A F1 PeCDFs											U
339.8597	22.384	22.977	-36	0.869	1411	241	7	17	34		
341.8567	22.375	22.977	-36	0.868	1140	235	42	105	6	1.24(1.32-1.78)	
	Empc Correction				910	155	42	105	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	24.432	26.427	-119	0.948	83941	14867	165	412	90		
341.8567	24.424	26.427	-120	0.948	53603	10003	109	272	92	1.57(1.32-1.78)	
339.8597	25.283	26.427	-69	0.981	5998	1125	165	412	7		
341.8567	25.291	26.427	-68	0.981	3894	706	109	272	6	1.54(1.32-1.78)	
339.8597	25.687	26.427	-44	0.997	12416	3144	165	412	19		
341.8567	25.670	26.427	-45	0.996	7916	2109	109	272	19	1.57(1.32-1.78)	
339.8597	26.352	26.427	-4	1.023	54383	9601	165	412	58		
341.8567	26.352	26.427	-4	1.023	36162	6332	109	272	58	1.50(1.32-1.78)	
339.8597	27.531	26.427	66	1.068	32307	4703	165	412	29		
341.8567	27.539	26.427	67	1.069	23060	3290	109	272	30	1.40(1.32-1.78)	
339.8597	29.114	26.427	161	1.130	6489	1150	165	412	7		
341.8567	29.131	26.427	162	1.130	4607	749	109	272	7	1.41(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											M
367.8949	27.943	27.974	-2	1.431	22157	3745	71	177	53		M
369.8919	27.960	27.974	-1	1.432	12506	2226	41	102	54	1.77(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											
355.8546	27.977	28.008	-2	1.001	10608	1623	56	140	29		
357.8516	27.985	28.008	-1	1.002	7050	1032	20	50	52	1.50(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.858						56	140			
357.8516	26.858						20	50			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.724	33.737	-1	0.945	15182	3067	44	110	70		
385.8610	33.708	33.737	-2	0.945	28647	5055	71	177	71	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.733	33.762	-2	1.000	268481	49606	77	192	644		
375.8178	33.733	33.762	-2	1.000	211819	38874	55	137	707	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.910	33.931	-1	0.950	16922	2948	44	110	67		
385.8610	33.918	33.931	-1	0.950	32522	5384	71	177	76	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.935	33.956	-1	1.001	72892	12834	77	192	167		
375.8178	33.935	33.956	-1	1.001	57989	10104	55	137	184	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.886	34.907	-1	0.978	16245	3365	44	110	76		
385.8610	34.886	34.907	-1	0.978	33312	6827	71	177	96	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.912	34.924	-1	1.001	9647	2023	77	192	26		
375.8178	34.903	34.924	-1	1.000	6734	1447	55	137	26	1.43(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.880	35.901	-1	1.005	15506	3386	44	110	77		
385.8610	35.888	35.901	-1	1.006	30786	7052	71	177	99	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.897	35.918	-1	1.000	5721	1374	77	192	18		
375.8178	35.905	35.918	-1	1.001	4457	1283	55	137	23	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.821	33.742	-115	0.944	18919	2765	77	192	36		
375.8178	31.804	33.742	-116	0.943	14377	1883	55	137	34	1.32(1.05-1.43)	
373.8208	32.958	33.742	-47	0.977	10941	1891	77	192	25		
375.8178	32.950	33.742	-47	0.977	8322	1542	55	137	28	1.31(1.05-1.43)	
373.8208	34.752	33.742	60	1.030	6562	1290	77	192	17		
375.8178	34.752	33.742	60	1.030	4944	1033	55	137	19	1.33(1.05-1.43)	
373.8208	36.015	33.742	136	1.068	18151	4359	77	192	57		
375.8178	36.015	33.742	136	1.068	13831	3523	55	137	64	1.31(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.686	35.690	0		38745	8064	40	100	202		
403.8529	35.678	35.690	-1		29894	6574	37	92	178	1.30(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.139	35.152	-1	0.985	18285	4400	40	100	110		
403.8529	35.139	35.152	-1	0.985	16633	3532	37	92	95	1.10(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDD											Ma
389.8158	35.164	35.168	0	1.001	823	201	13	32	15		M
391.8127	35.181	35.168	1	1.001	606	160	36	90	4	1.36(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.265	35.286	-1	0.988	21943	4892	40	100	122		
403.8529	35.274	35.286	-1	0.988	16740	4255	37	92	115	1.31(1.05-1.43)	
1,2,3,6,7,8-HxCDD											Ma
389.8158	35.291	35.303	-1	1.001	2111	433	13	32	33		M
391.8127	35.291	35.303	-1	1.001	1682	389	36	90	11	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											M
389.8158	35.711	35.707	0	1.016	1634	275	13	32	21		M
391.8127	35.711	35.707	0	1.016	1214	214	36	90	6	1.35(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											M
389.8158	32.857	34.272	-85	0.932	3694	618	13	32	48		
391.8127	32.882	34.272	-83	0.932	3295	547	36	90	15	1.12(1.05-1.43)	
389.8158	34.246	34.272	-2	0.971	3457	609	13	32	47		
391.8127	34.246	34.272	-2	0.971	2502	579	36	90	16	1.38(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.864	37.876	-1	1.061	10701	3698	67	167	55		
419.8220	37.864	37.876	-1	1.061	22377	6500	47	117	138	0.48(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.873	37.892	-1	1.000	65977	19936	61	152	327		
409.7788	37.873	37.892	-1	1.000	63159	19178	50	125	384	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.187	39.206	-1	1.098	10197	3058	67	167	46		
419.8220	39.187	39.206	-1	1.098	23983	6944	47	117	148	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.204	39.215	-1	1.000	23270	7399	61	152	121		
409.7788	39.195	39.215	-1	1.000	22698	6698	50	125	134	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.260	38.545	-17	1.010	26013	8337	61	152	137		
409.7788	38.260	38.545	-17	1.010	25549	7764	50	125	155	1.02(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.875	38.895	-1	1.089	16961	5095	45	112	113		
437.8140	38.875	38.895	-1	1.089	16845	4738	26	65	182	1.01(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.884	38.904	-1	1.000	35140	10819	67	167	161		
425.7737	38.884	38.904	-1	1.000	34360	10975	45	112	244	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.210	38.941	-44	0.983	36880	11368	67	167	170		
425.7737	38.210	38.941	-44	0.983	35173	11192	45	112	249	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.323	41.340	-1	1.158	21624	7074	40	100	177		
471.7750	41.323	41.340	-1	1.158	27289	8767	29	72	302	0.79(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDF											
441.7428	41.416	41.432	-1	1.002	25107	8213	34	85	242		
443.7399	41.407	41.432	-1	1.002	29396	8683	93	232	93	0.85(0.76-1.02)	
OCDD											
457.7377	41.332	41.348	-1	1.000	346210	107365	109	272	985		
459.7348	41.332	41.348	-1	1.000	382851	120922	108	270	1120	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 19-Oct-2020 13:57:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 18.277

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	70448	12623

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		2.500	70448	12623

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.328	93618	18986	124067	23639	7.12	0.75	
16.775	167062	26513	231970	35331	13.0	0.72	
17.178	168114	24129	213591	29590	12.5	0.79	Ma
17.530	240806	38755	304541	47730	17.8	0.79	
17.994	2316264	389891	2898431	483919	170.5	0.80	
18.372	72758	12880	145333	20400	7.13	0.50	RQMa
18.372	72758	12880	94490	16727	5.47		Empc Correction
19.386	345089	52105	450816	67228	26.0	0.77	
19.772	62708	11042	106464	14196	5.53	0.59	RQMa
19.772	62708	11042	81438	14340	4.71		Empc Correction
Signal Totals:							
	3466419	574301	4399344	718504			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7941632	1296334				0.77	RQMa
	7865763	1292805					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 259.592 = (7941632 * 2.500) / (70448 * 1.086)
Empc Amount: 257.112 = (7865763 * 2.500) / (70448 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDD, RT: 19.063

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	52553	7425

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		2.500	52553	7425

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.528	99833	13828	126180	17490	9.95	0.79	
Signal Totals:							
	99833	13828	126180	17490			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	226013	31318				0.79	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 9.946 = (226013 * 2.500) / (52553 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Inject. Date: 17-Oct-2020 02:29:00
Dil. Factor: 40.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422778
Lims Sample ID: 12

F1 PeCDFs, RT: 22.977

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	55102	10376
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	55135	9315

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		2.500	55118	9845

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.384	1411	241	1140	235	0.1064	1.24	RQ
22.384	1411	241	910	155			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDF, RT: 26.427

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	55102	10376
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	55135	9315

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		2.500	55118	9845

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.432	83941	14867	53603	10003	5.78	1.57	
25.283	5998	1125	3894	706	0.4158	1.54	
25.687	12416	3144	7916	2109	0.8546	1.57	
26.352	54383	9601	36162	6332	3.81	1.50	
27.531	32307	4703	23060	3290	2.33	1.40	
29.114	6489	1150	4607	749	0.4664	1.41	
Signal Totals:							
	195534	34590	129242	23189			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	324776	57779				1.51	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 13.651 = (324776 * 2.500) / (55118 * 1.079)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDF, RT: 33.742

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	43829	8122
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	49444	8332
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	49557	10192
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	46292	10438

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		2.500	47280	9271

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.821	18919	2765	14377	1883	1.41	1.32	
32.958	10941	1891	8322	1542	0.8153	1.31	
34.752	6562	1290	4944	1033	0.4870	1.33	
36.015	18151	4359	13831	3523	1.35	1.31	
Signal Totals:							
	54573	10305	41474	7981			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	96047	18286				1.32	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.065 = (96047 * 2.500) / (47280 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 34.272

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	34918	7932
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	38683	9147
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		2.500	36800	8539

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.857	3694	618	3295	547	0.4235	1.12	
34.246	3457	609	2502	579	0.3611	1.38	M
Signal Totals:							
	7151	1227	5797	1126			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12948	2353				1.23	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7846 = (12948 * 2.500) / (36800 * 1.121)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDF, RT: 38.545

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	33078	10198
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	34180	10002

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		2.500	33629	10100

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.260	26013	8337	25549	7764	2.59	1.02	
Signal Totals:							
	26013	8337	25549	7764			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	51562	16101				1.02	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.589 = (51562 * 2.500) / (33629 * 1.481)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Lims ID:	320-65130-A-13-A		
Client ID:	11215702-Tank#1-T=0		
Inject. Date:	17-Oct-2020 02:29:00	Dil. Factor:	40.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	33806	9833

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		2.500	33806	9833

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.210	36880	11368	35173	11192	5.01	1.05	
Signal Totals:							
	36880	11368	35173	11192			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	72053	22560				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 5.008 = (72053 * 2.500) / (33806 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d				
Injection Date:	17-Oct-2020 02:29:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	40.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.74- 21.81)

Signal: 1

Processing Integration Results

Not Detected

RT: 14.74- 21.81

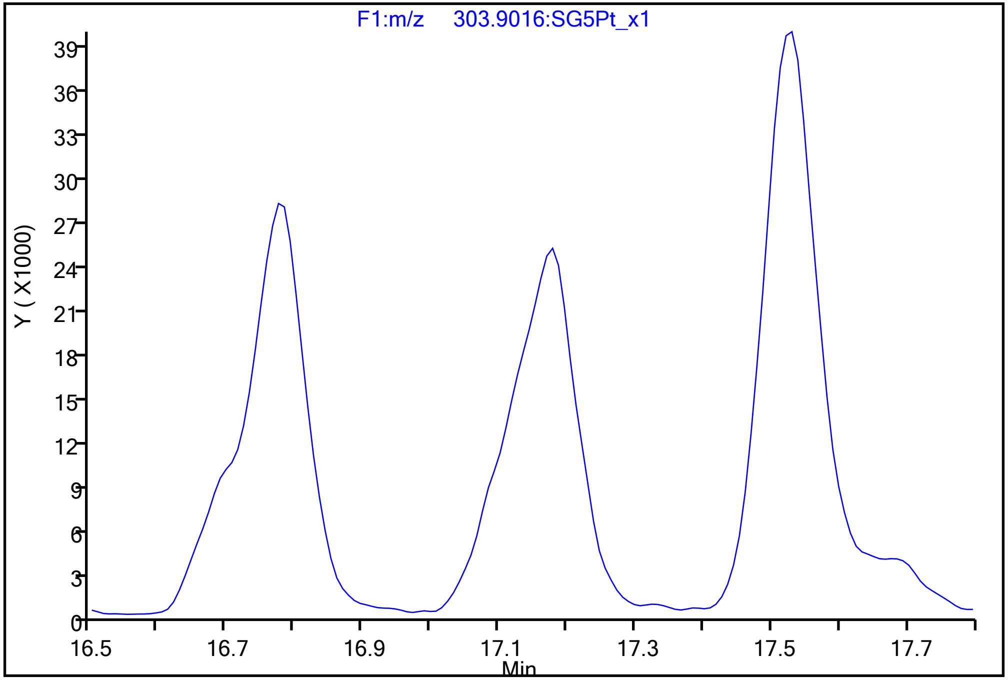

Manual Integration Results

RT = 17.178 Area = 168114 M

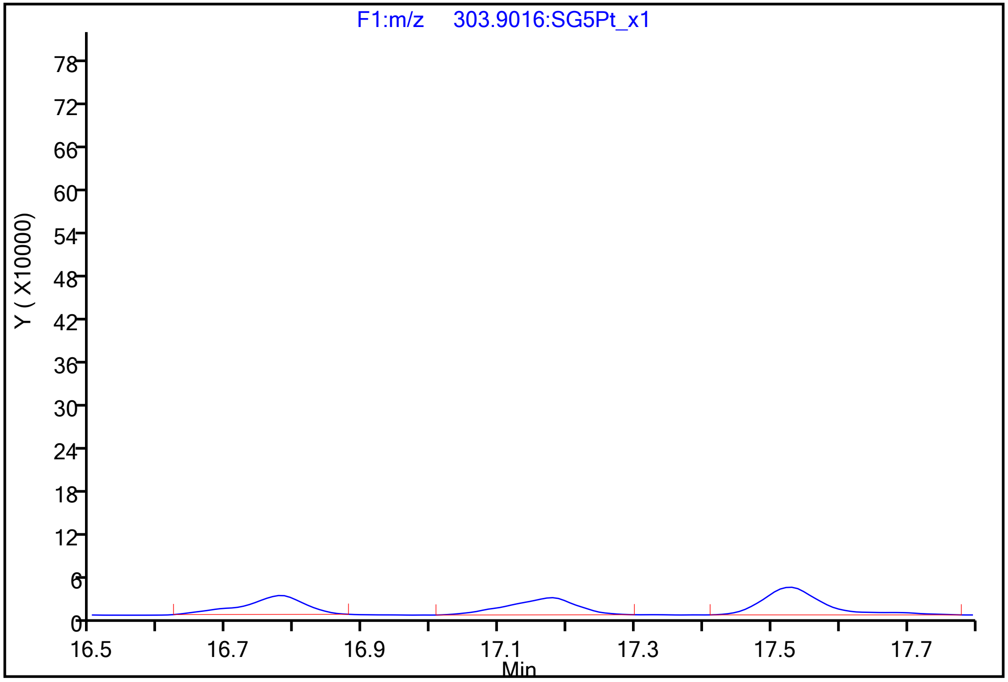

Reviewer: ruangyotsakuld, 19-Oct-2020 13:31:05

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	1.0 ul	Dil. Factor:	40.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.74- 21.81)

Signal: 1

Processing Integration Results

Not Detected

RT: 14.74- 21.81

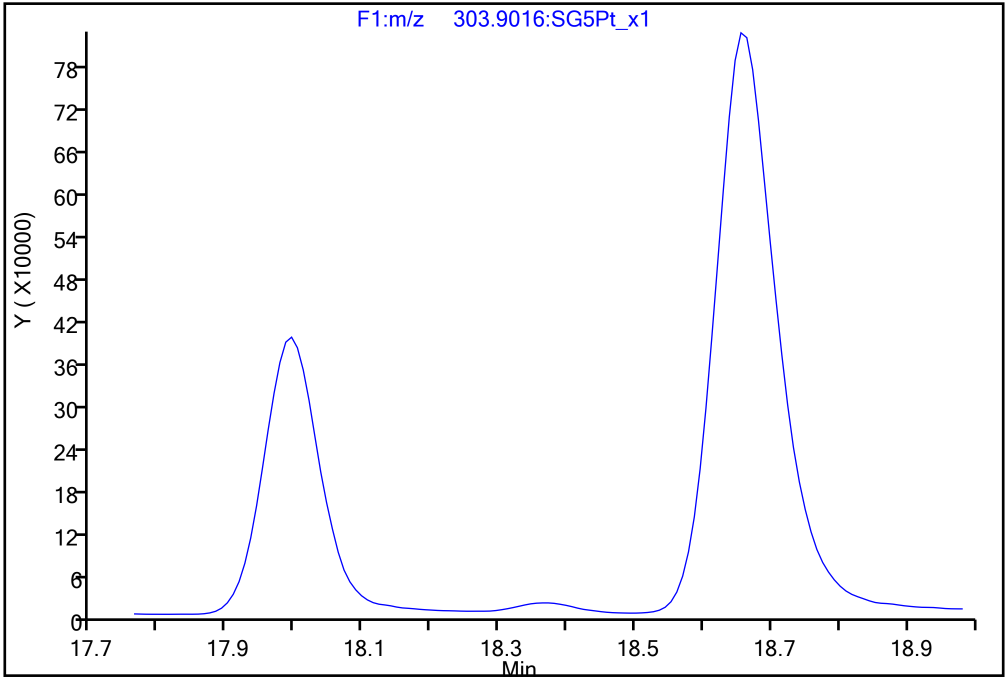

Manual Integration Results

RT = 18.372 Area = 72758 M

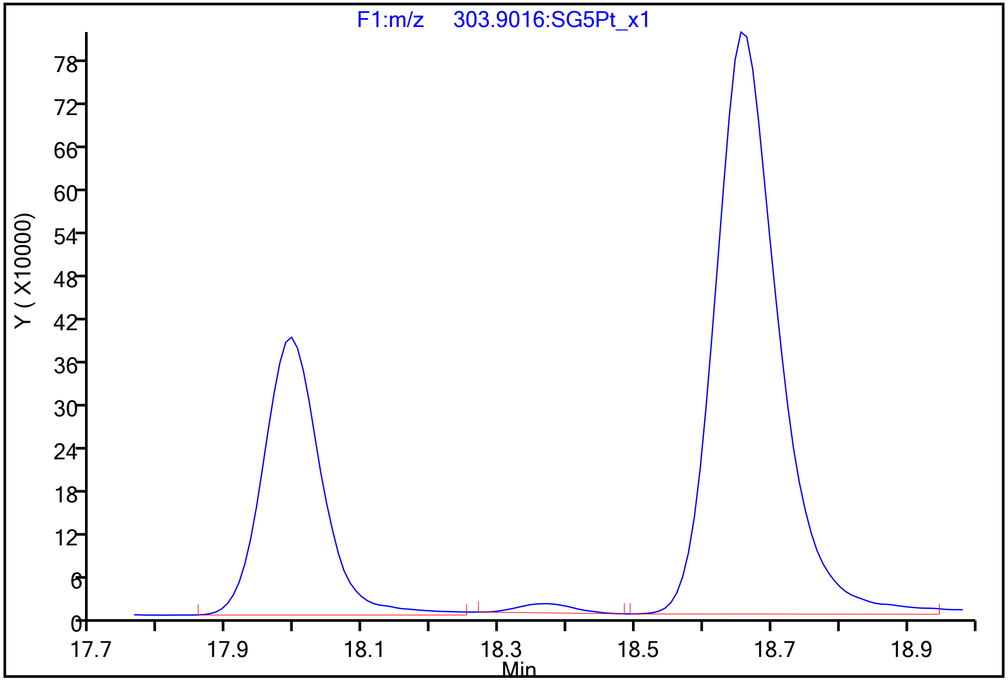

Reviewer: ruangyotsakuld, 19-Oct-2020 13:31:05

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	1.0 ul	Dil. Factor:	40.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.74- 21.81)

Signal: 1

Processing Integration Results

Not Detected
RT: 14.74- 21.81

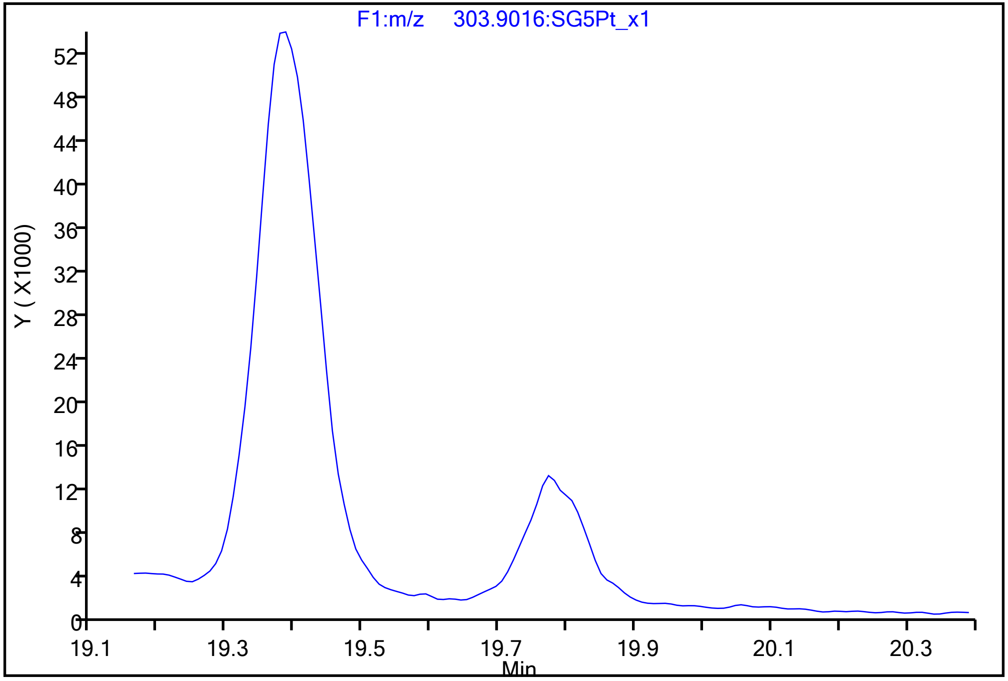

Manual Integration Results

RT = 19.772 Area = 62708 M

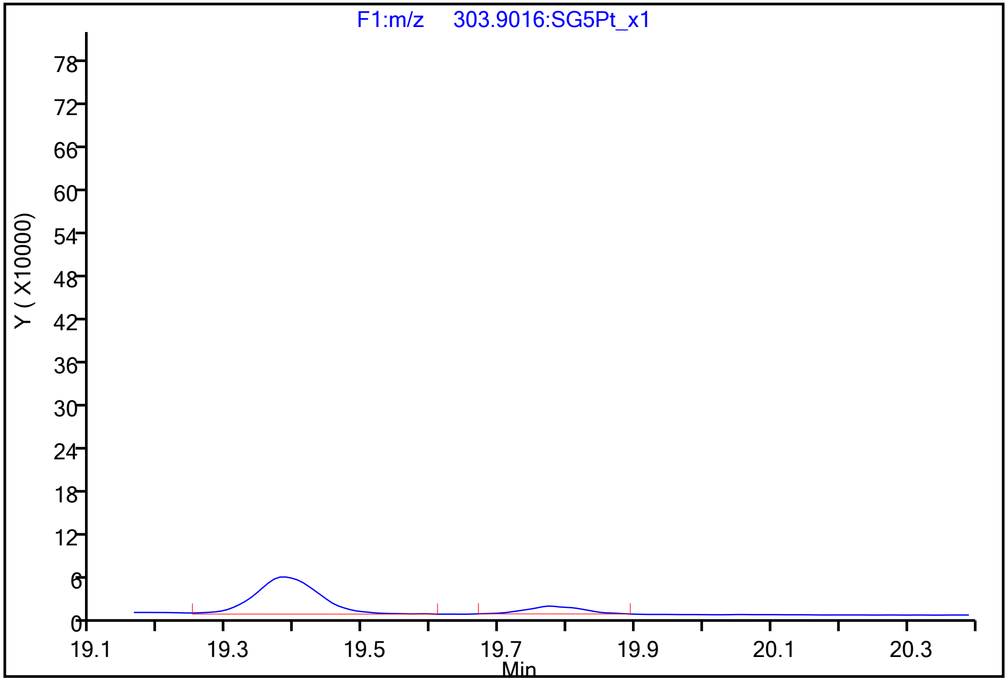

Reviewer: ruangyotsakuld, 19-Oct-2020 13:31:05

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Report Date: 19-Oct-2020 13:58:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	422778	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

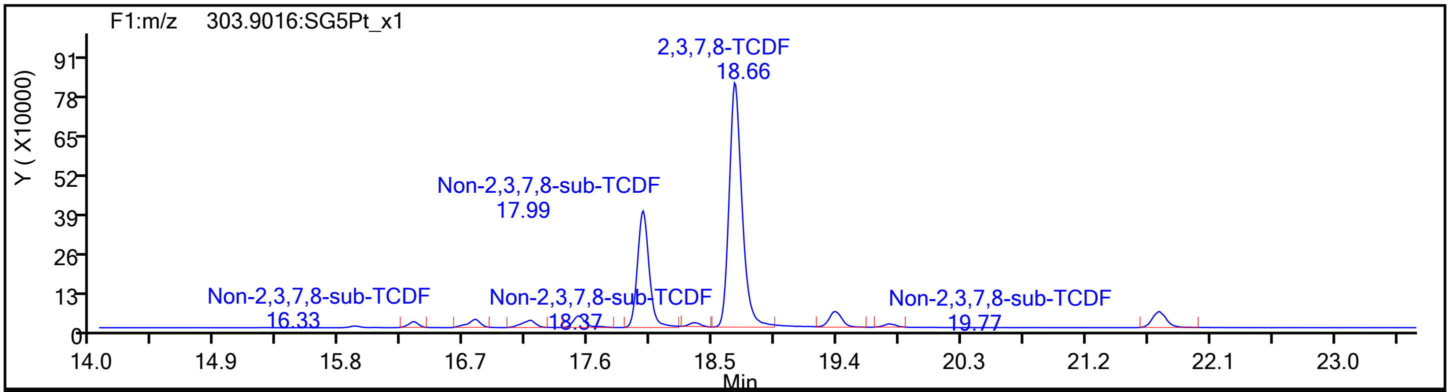

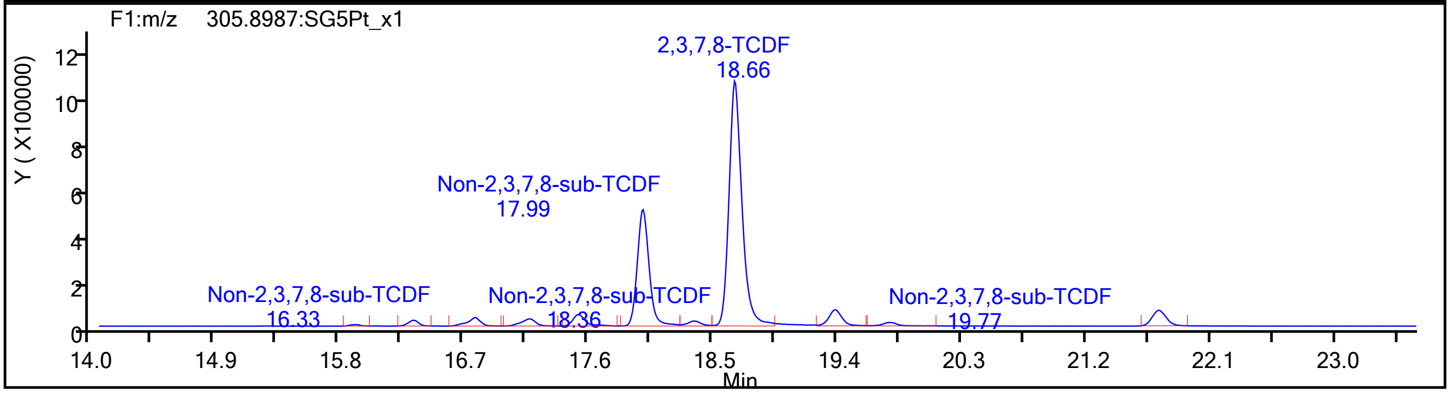

TCDF Standards

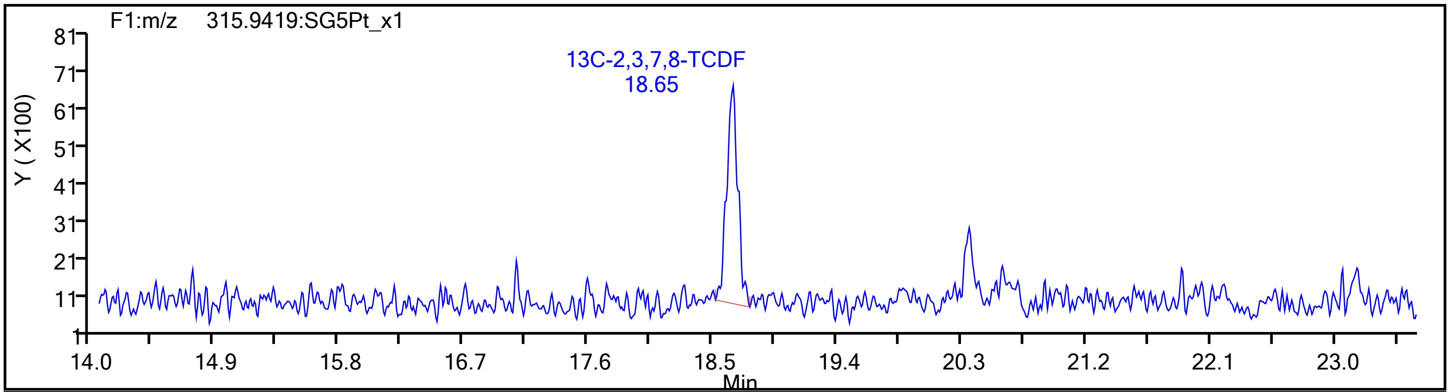

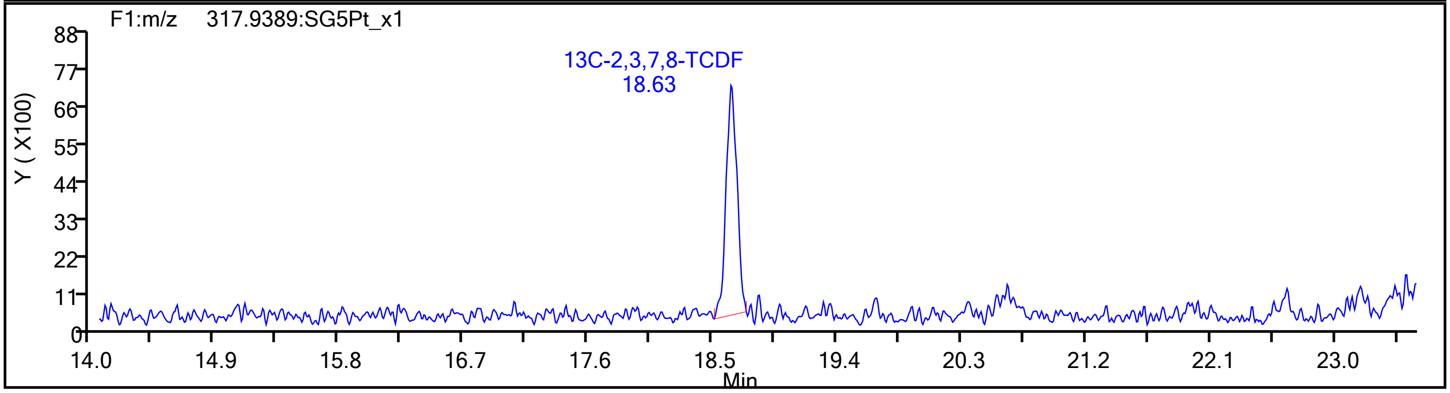

Report Date: 19-Oct-2020 13:58:00　　Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	422778	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

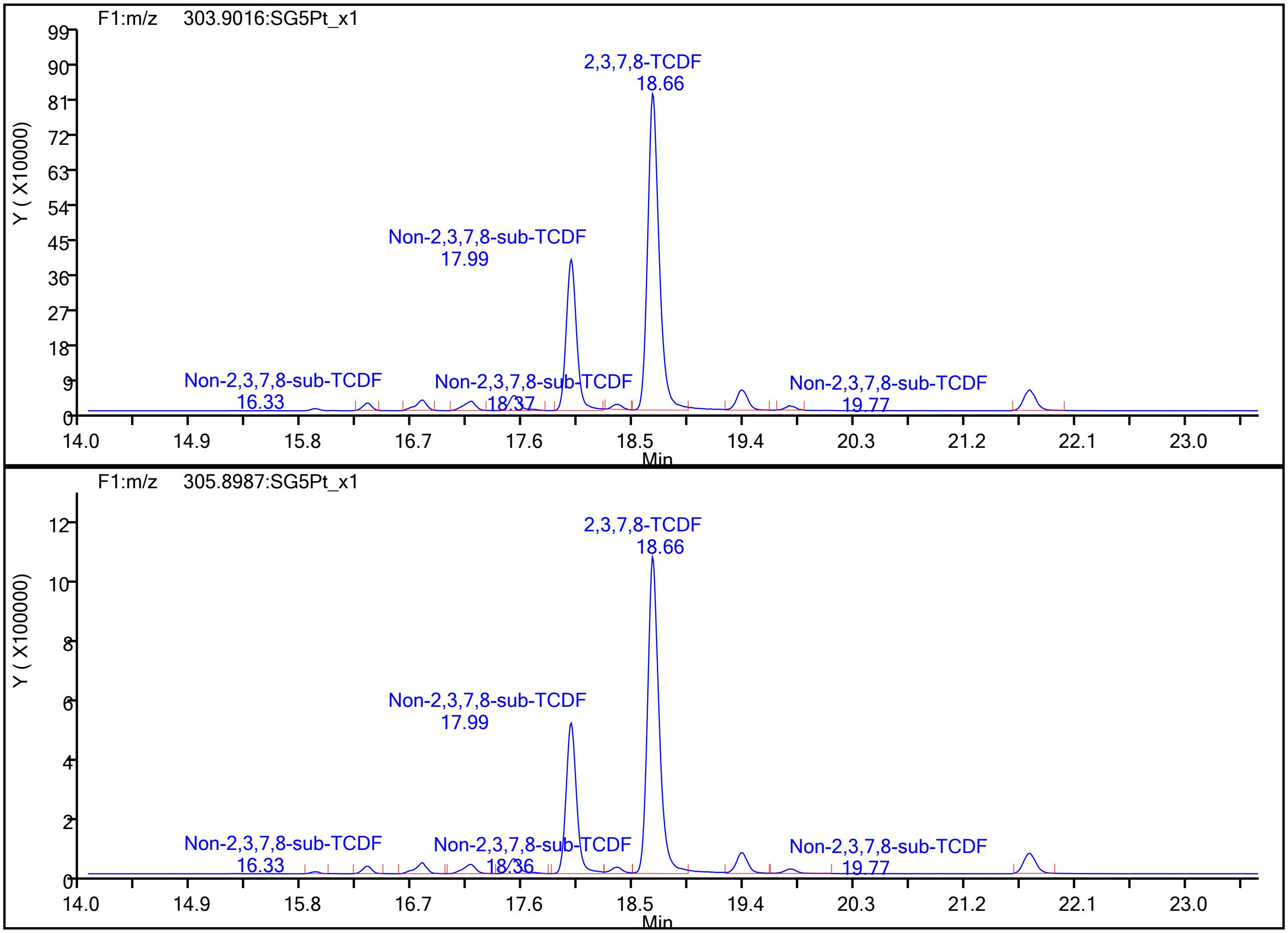

TCDF Interference Mass

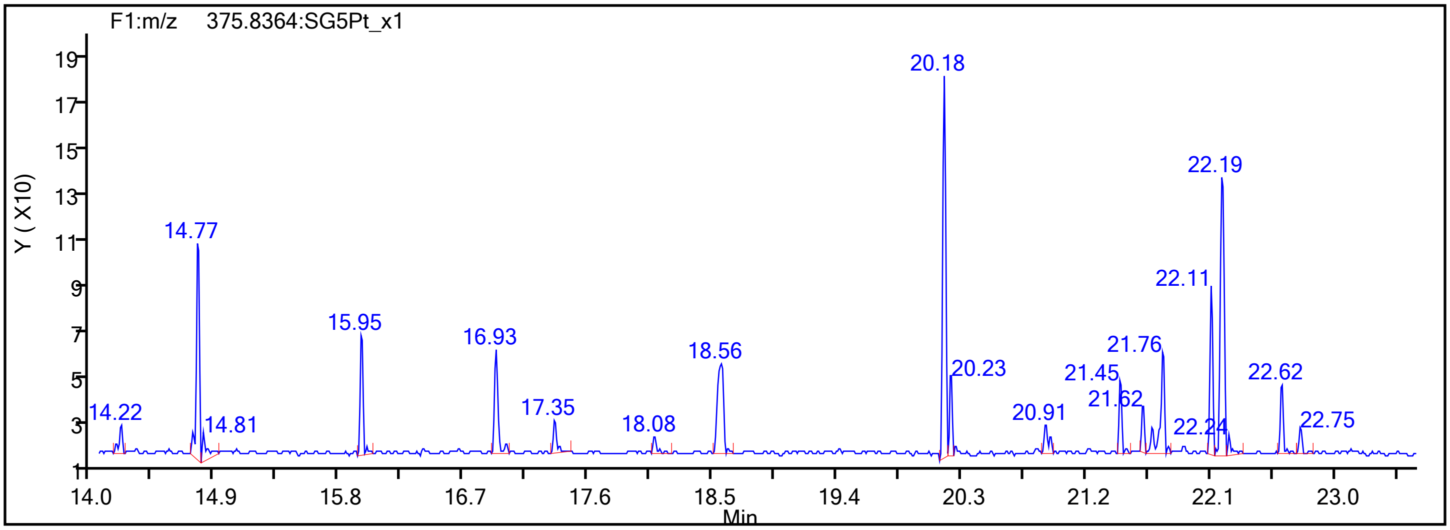

Report Date: 19-Oct-2020 13:58:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d

Injection Date: 17-Oct-2020 02:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-T=0
Worklist#: 422778
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

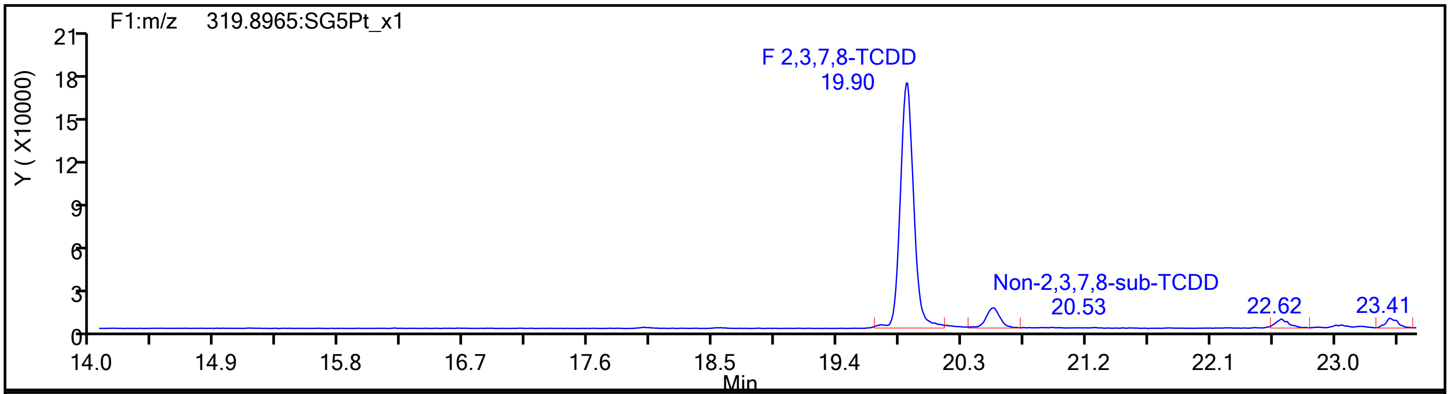

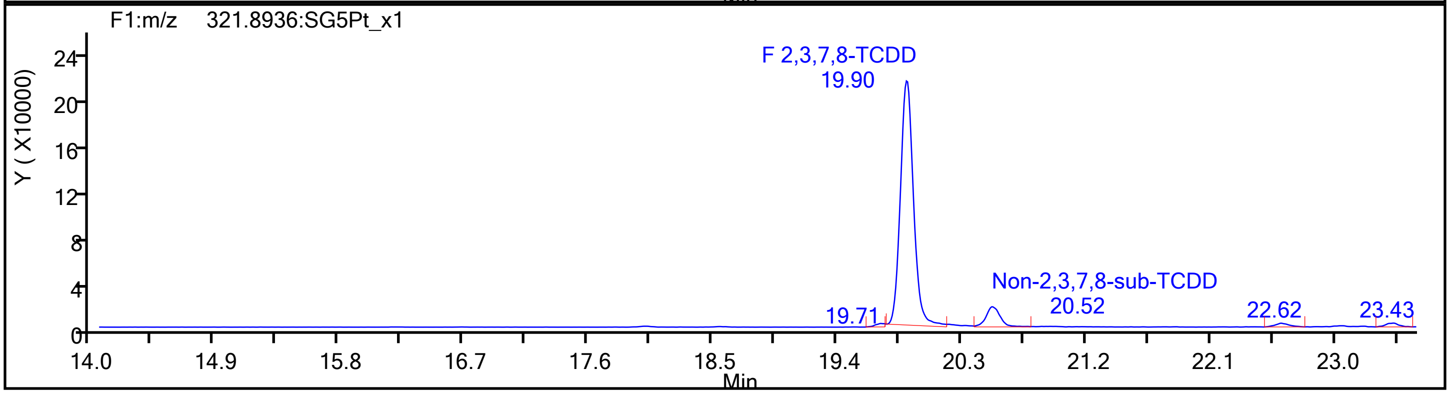

TCDD Standards

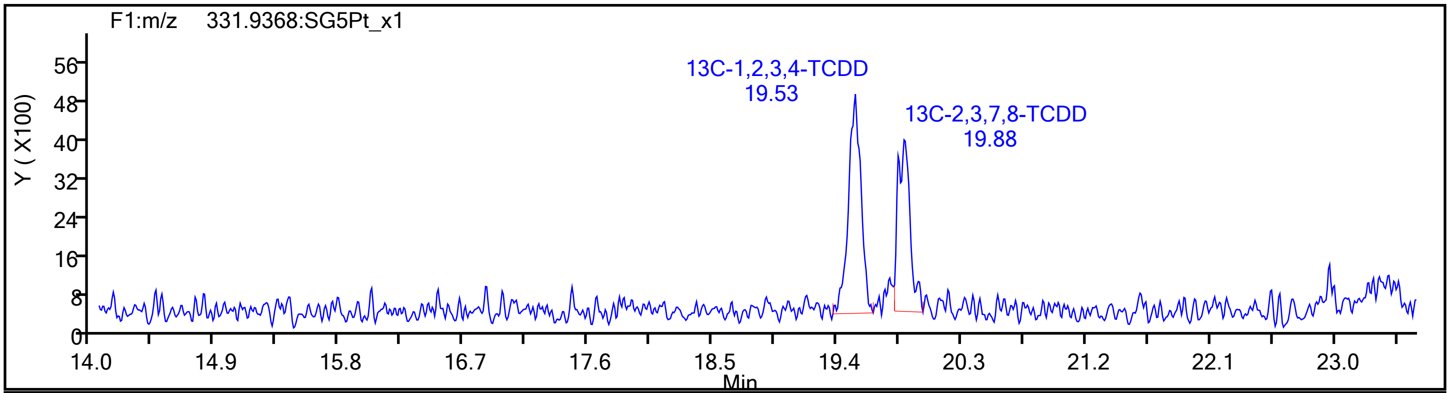

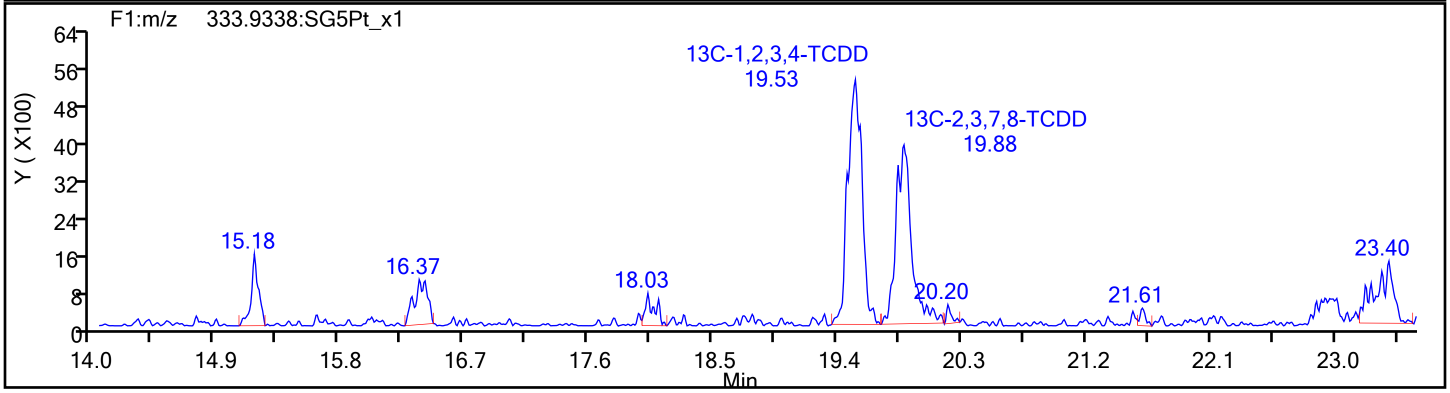

Report Date: 19-Oct-2020 13:58:00		Chrom Revision: 2.3 13-Oct-2020 12:07:44	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	422778	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

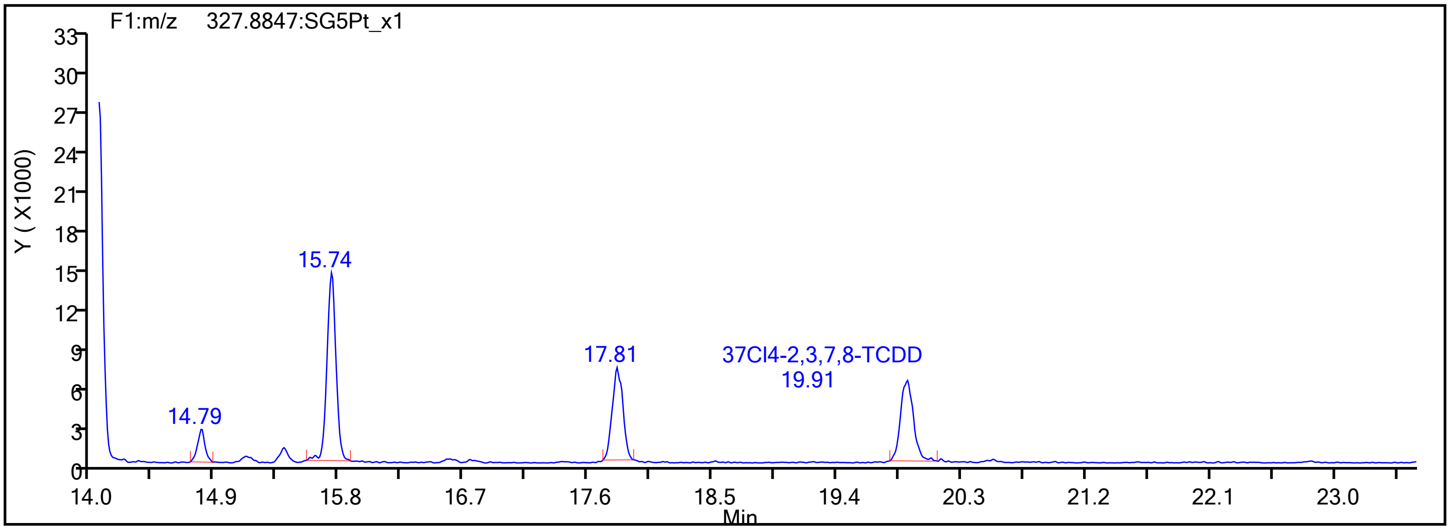

37Cl4-TCDD Standards

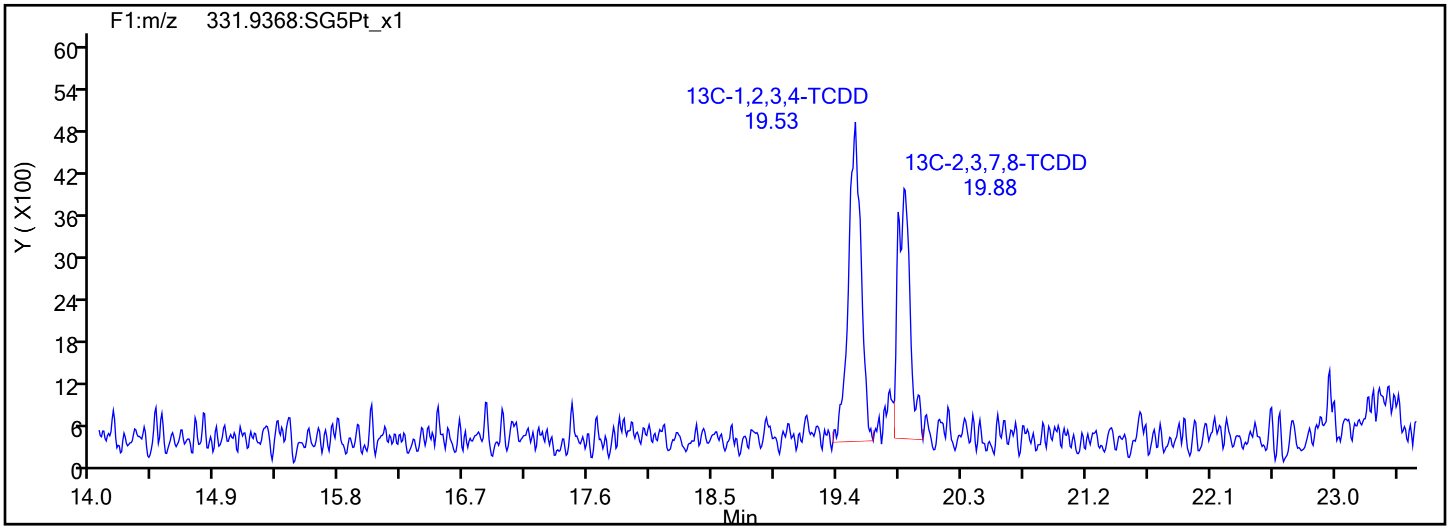

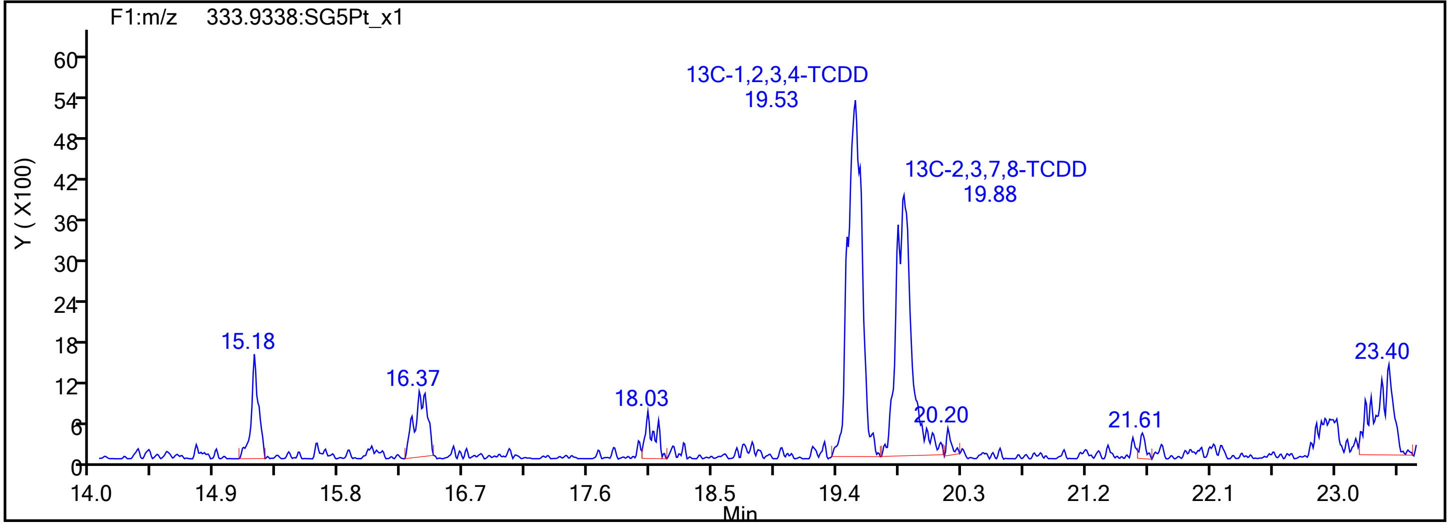

Report Date: 19-Oct-2020 13:58:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	422778	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

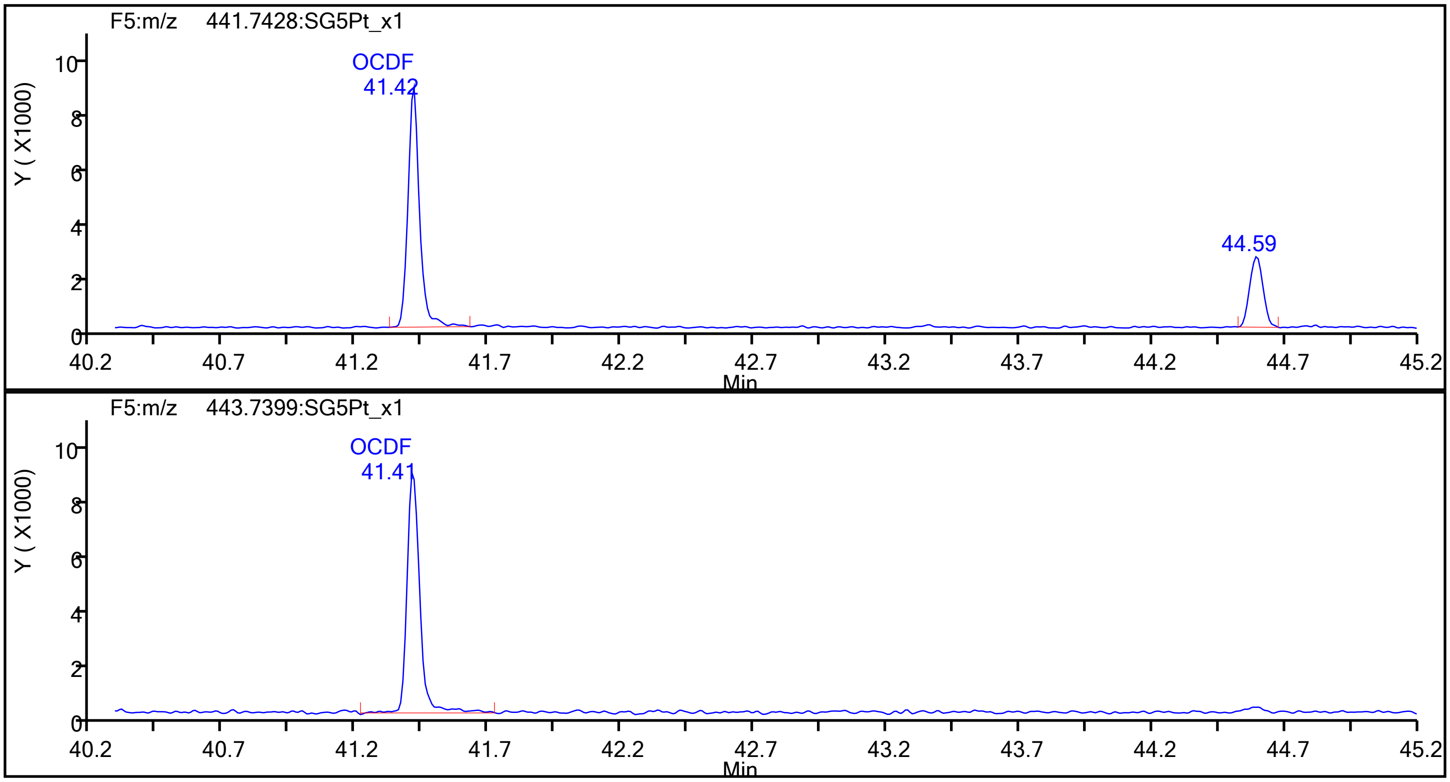

OCDF Standards

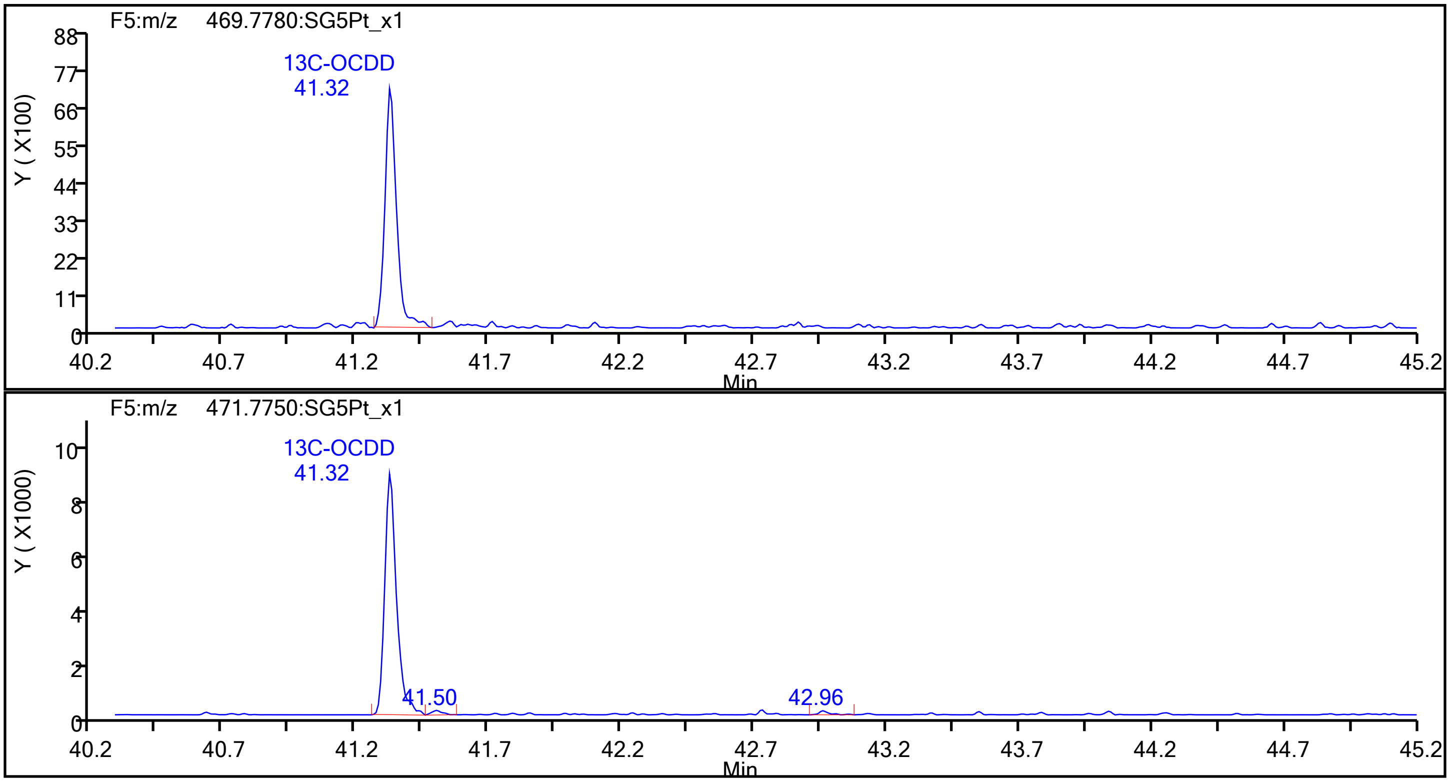

Report Date: 19-Oct-2020 13:58:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d

Injection Date:	17-Oct-2020 02:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	422778	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

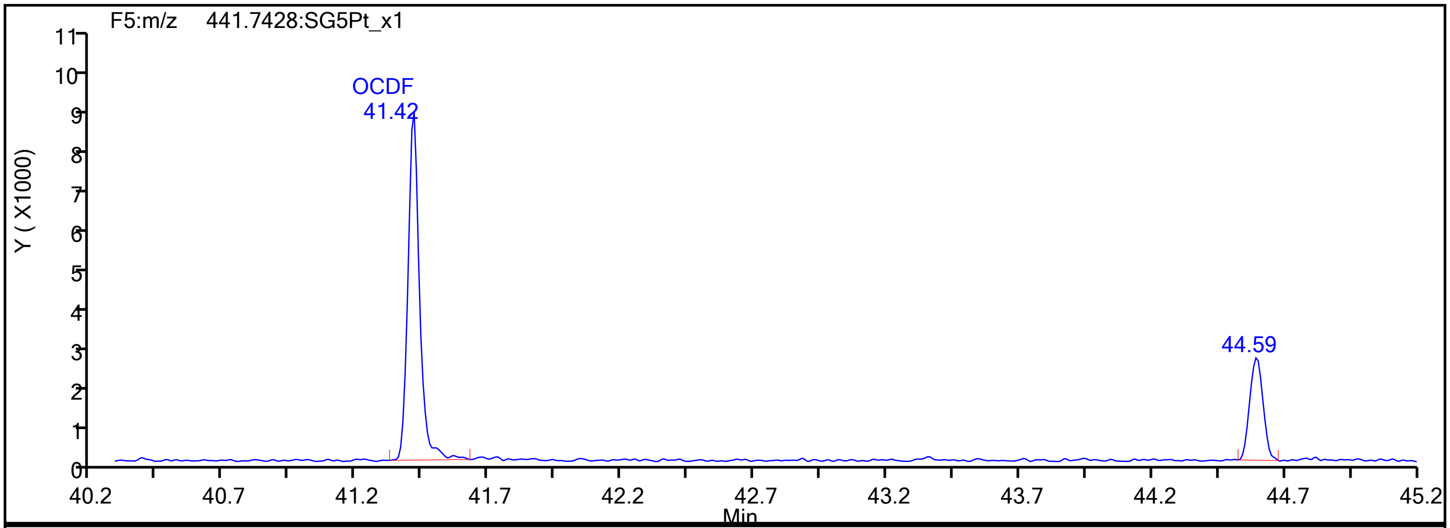

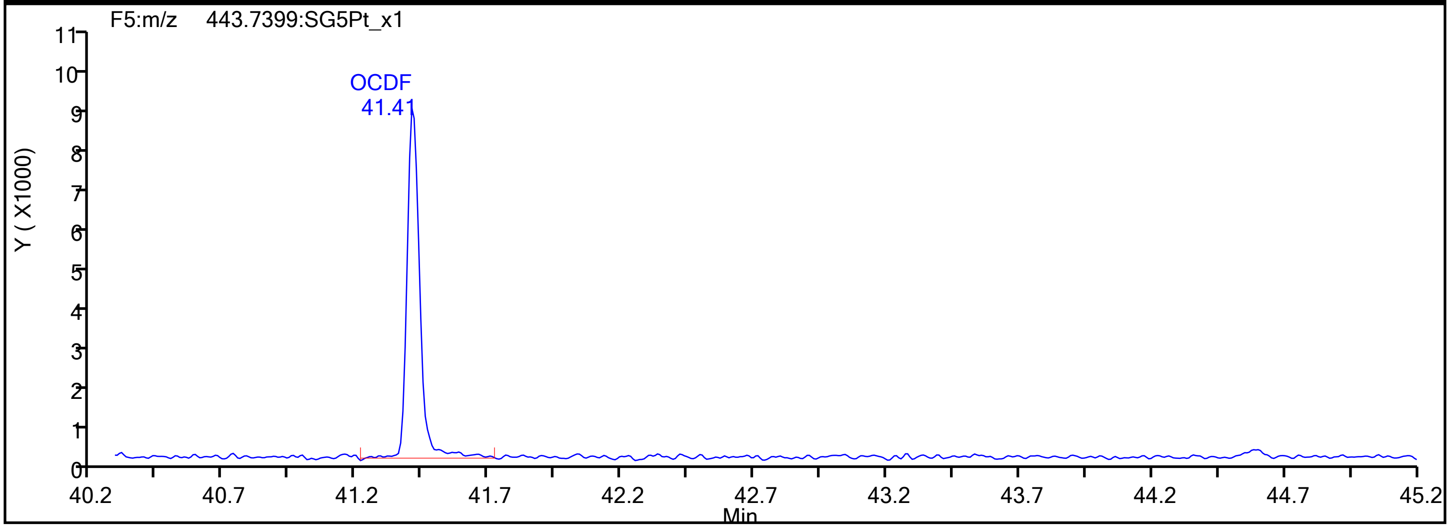

OCDF Interference Mass

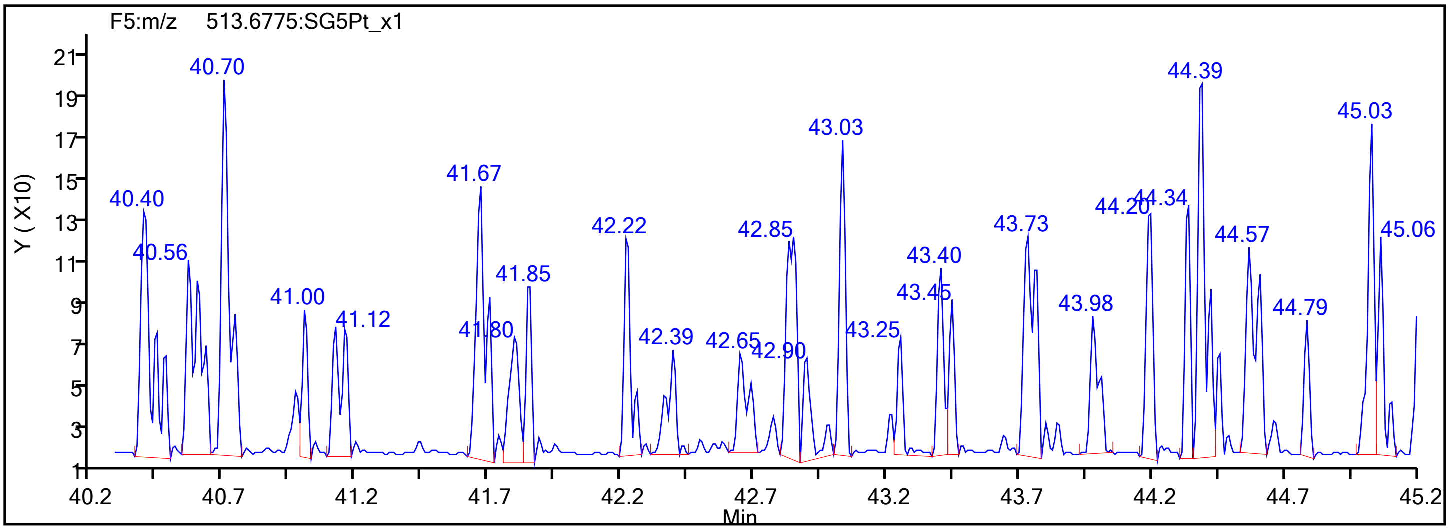

Report Date: 19-Oct-2020 13:58:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d		
Injection Date:	17-Oct-2020 02:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	422778	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

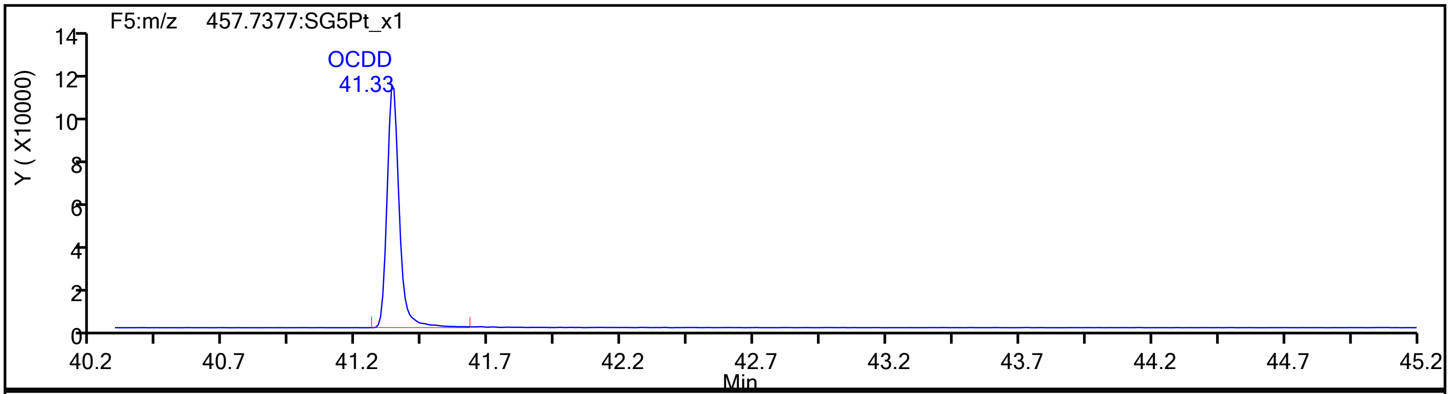

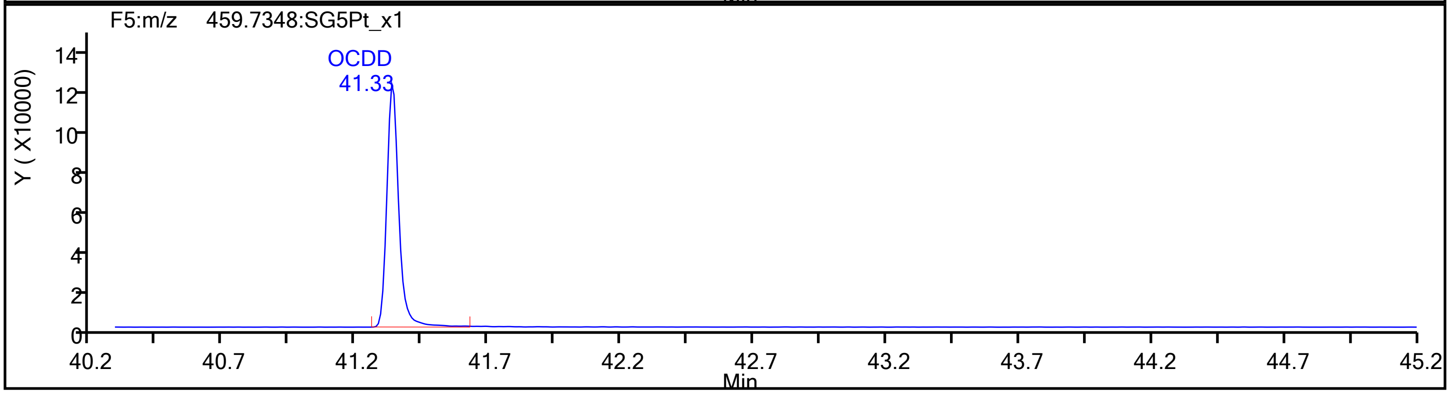

OCDD Standards

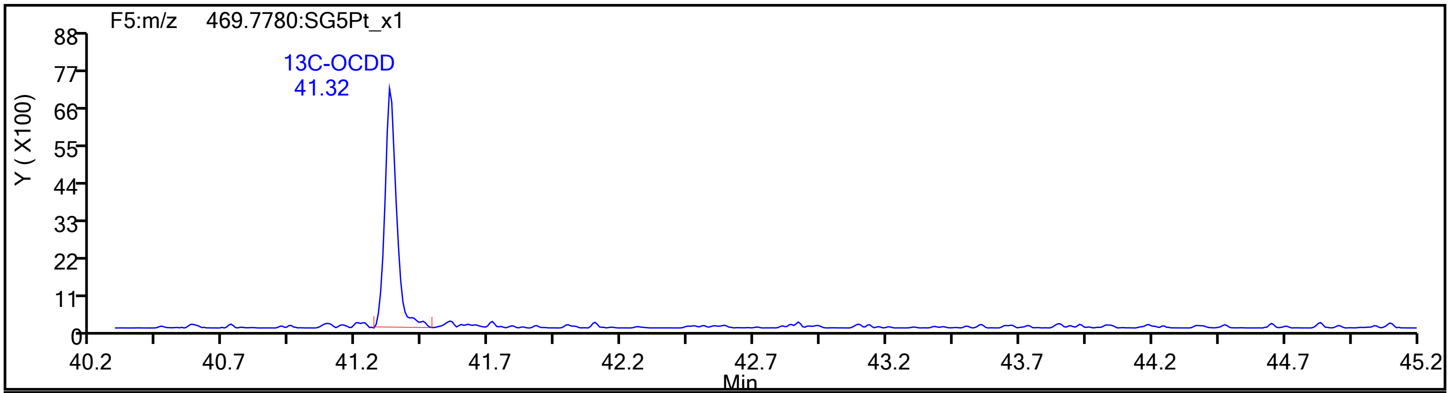

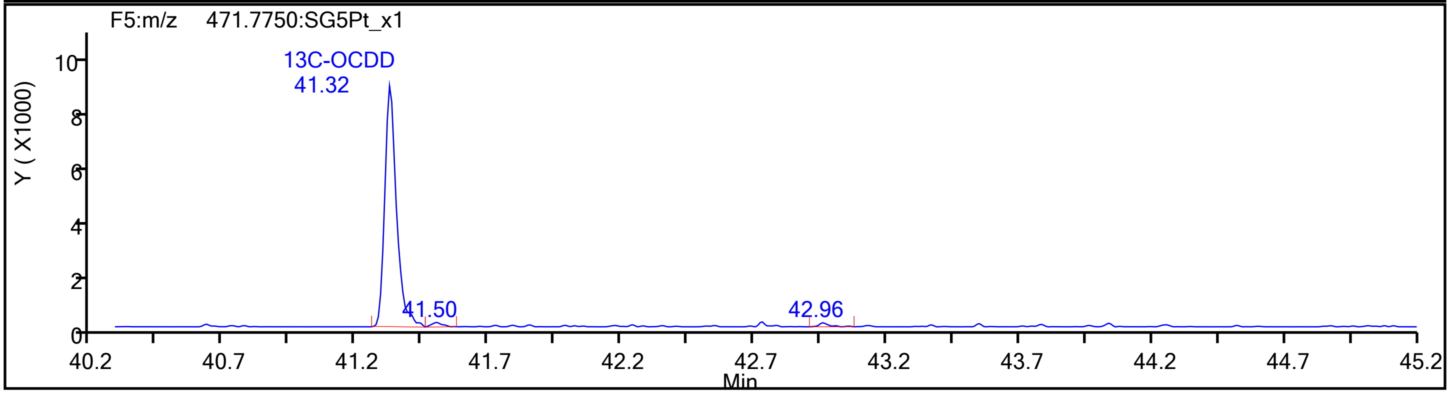

Report Date: 19-Oct-2020 13:58:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d

Injection Date: 17-Oct-2020 02:29:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-T=0

Worklist#: 422778 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

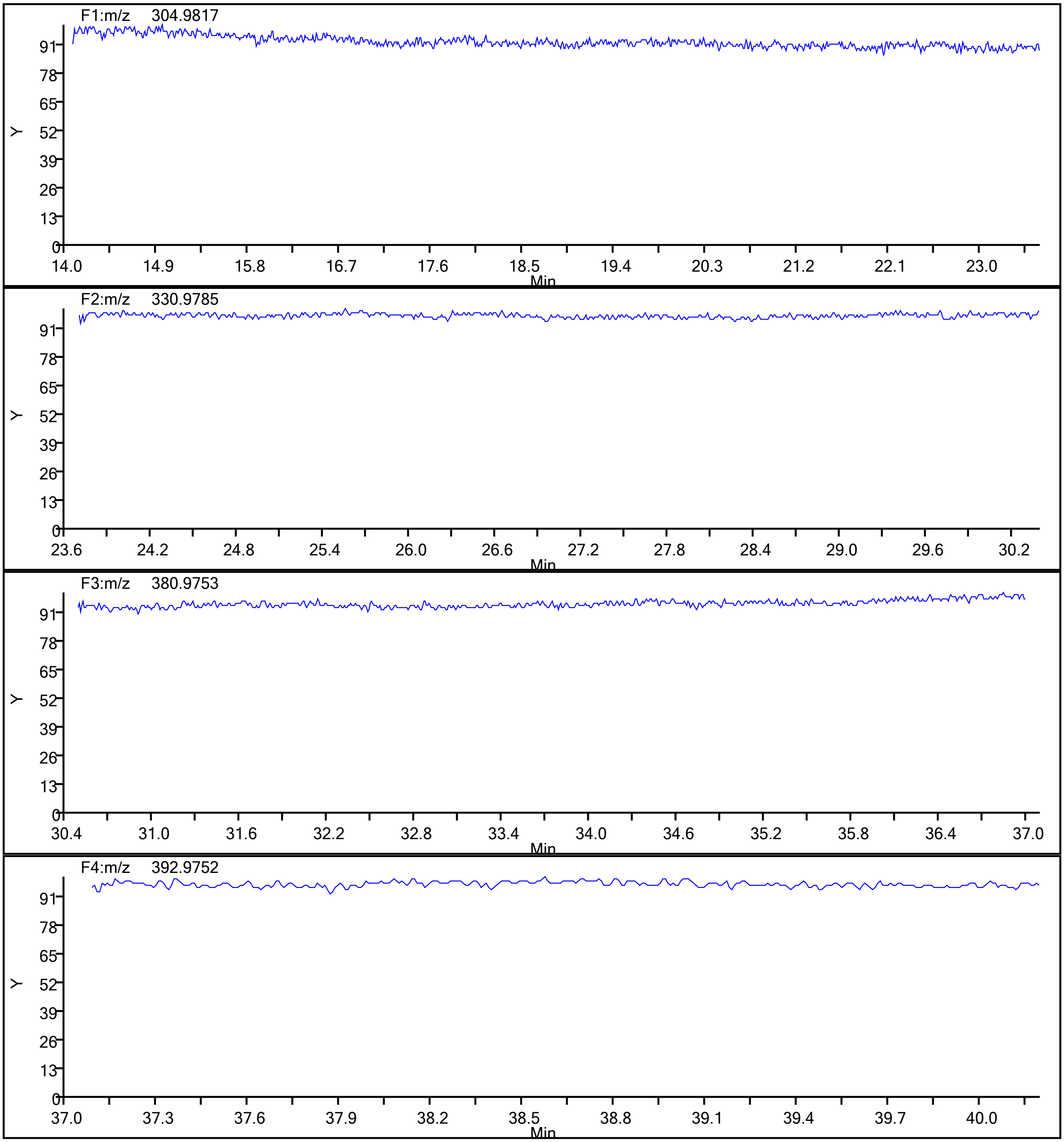

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_13.d

Injection Date: 17-Oct-2020 02:29:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-T=0

Worklist#: 422778

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

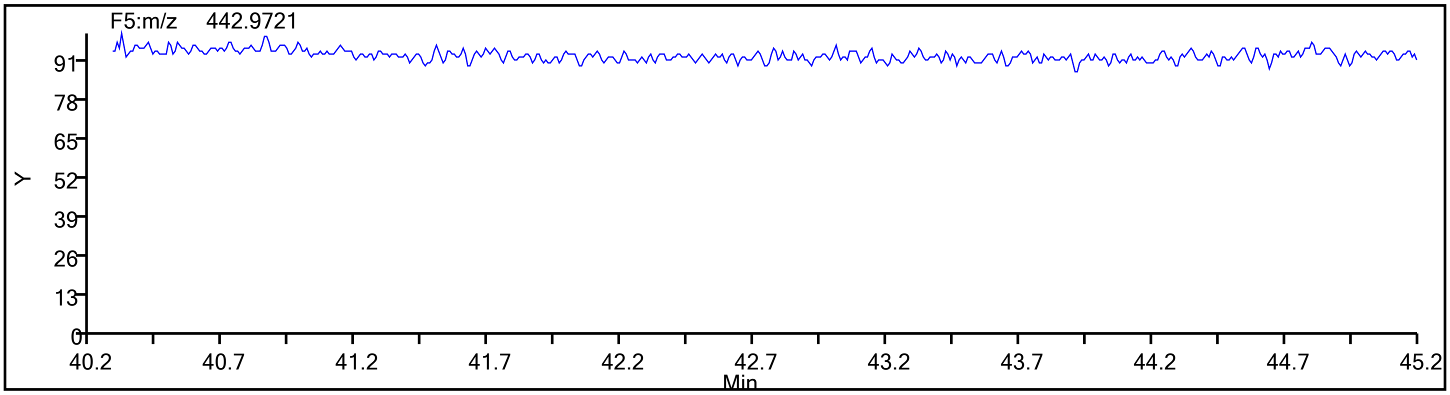

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#1-T=0 RA
Lab Sample ID: 320-65130-13 RA

Matrix: Water
Lab File ID: 13OC20A11D2_015.d

Analysis Method: 1613B
Date Collected: 09/11/2020 11:30

Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42

Sample wt/vol: 1040.3(mL)
Date Analyzed: 10/14/2020 04:38

Con. Extract Vol.: 20(uL)
Dilution Factor: 100

Injection Volume: 2(uL)
Level: (low/med) Low

% Moisture:
GPC Cleanup:(Y/N) N

Analysis Batch No.: 421876
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	150000	B	960	120

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	99		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

Report Date: 14-Oct-2020 17:39:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Sample Type: Client
Inject. Date: 14-Oct-2020 04:38:43 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-65130-A-13-A (100X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:37:34

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.927	3724932	0.85	1.2E+06	1.000	1.000				nMa
D 13C-2,3,7,8-TCDF	16.052	5809706	0.71	1.5708	0.993	0.993	0.1373	0.1373	99.29	a
2,3,7,8-TCDF	16.079	455559628	0.77	0.9943	78.9	78.9	0.0620	0.0620		a
D 13C-2,3,7,8-TCDD	14.666	1538093	0.88	0.9834	0.4199	0.4199	0.7276	0.7276	41.99	nM
2,3,7,8-TCDD	14.694	113814475	0.80	1.2822	57.7	57.7	0.1458	0.1458		a
$ 37Cl4-2,3,7,8-TCDD	14.694	1403384		0.9945	0.3788	0.3788	0.0210	0.0210	94.71	a
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- n - Failed Sig-To-Noise Test

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 14-Oct-2020 17:39:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d
Lims ID: 320-65130-A-13-A
Client ID: 11215702-Tank#1-T=0
Sample Type: Client
Inject. Date: 14-Oct-2020 04:38:43 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-65130-A-13-A (100X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:52 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

First Level Reviewer: stephensk Date: 14-Oct-2020 17:37:34

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											nMa
331.9368	14.927	14.928	0		1716264	400942	160872	402180	2		M
333.9339	14.927	14.928	0		2008668	490325	94213	235532	5	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											a
315.9419	16.052	16.067	-1	1.075	2407509	521350	37381	93452	14		a
317.9389	16.065	16.067	0	1.076	3402197	721580	39533	98832	18	0.71(0.65-0.89)	
2,3,7,8-TCDF											a
303.9016	16.079	16.081	0	1.002	197876428	45485064	13406	33515	3393		a
305.8987	16.065	16.081	-1	1.001	257683200	59462962	17221	43052	3453	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											nM
331.9368	14.666	14.681	-1	0.983	720429	162291	160872	402180	1		M
333.9339	14.680	14.681	0	0.983	817664	217720	94213	235532	2	0.88(0.65-0.89)	M
2,3,7,8-TCDD											a
319.8965	14.694	14.709	-1	1.002	50539651	12708829	15209	38022	836		a
321.8936	14.694	14.709	-1	1.002	63274824	15988812	13209	33022	1210	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											a
327.8840	14.694	14.709	-1	0.984	1403384	354882	7445	18612	48		a

QC Flag Legend

Processing Flags
- n - Failed Sig-To-Noise Test

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 14-Oct-2020 17:39:01
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d		
Injection Date:	14-Oct-2020 04:38:43	Instrument ID:	11D2
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13
Client ID:	11215702-Tank#1-T=0		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 15
Injection Vol:	2.0 ul	Dil. Factor:	100.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 1

RT:	16.74
Area:	509754
Amount:	0.191927
Amount Units:	pg/ul

Processing Integration Results

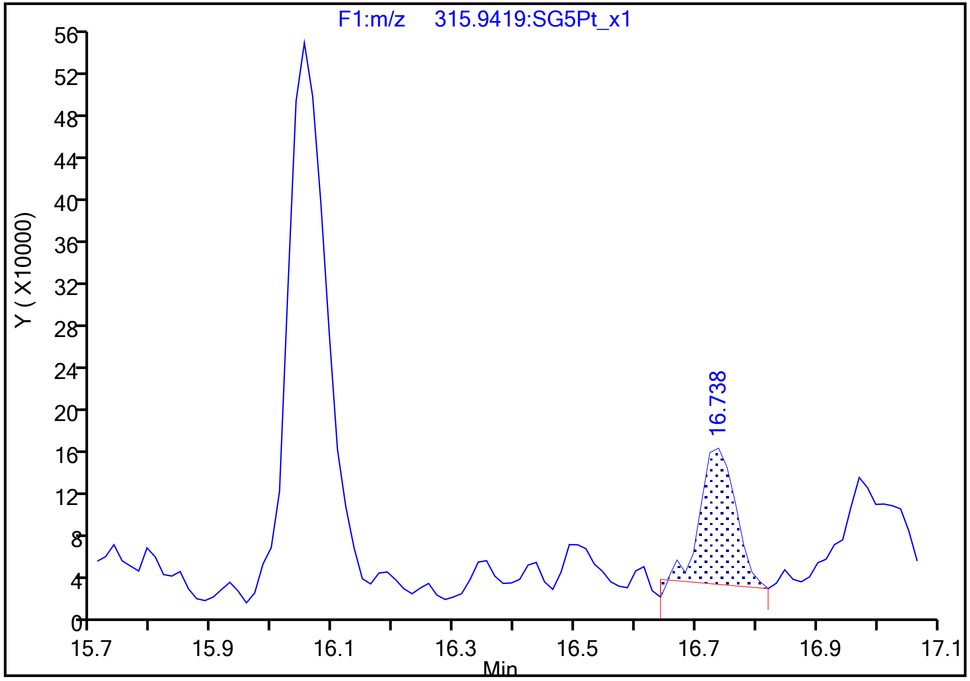

RT:	16.05
Area:	2407509
Amount:	0.992918
Amount Units:	pg/ul

Manual Integration Results

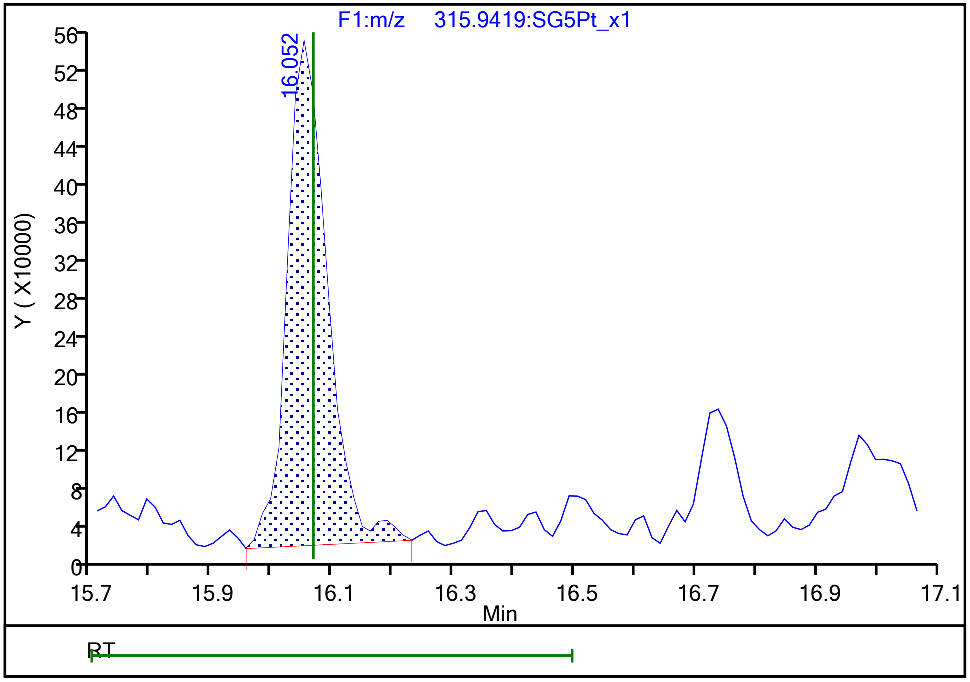

Reviewer: stephensk, 14-Oct-2020 17:37:06
Audit Action: Assigned Compound ID
Audit Reason: Wrong peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d				
Injection Date:	14-Oct-2020 04:38:43	Instrument ID:	11D2		
Lims ID:	320-65130-A-13-A	Lab Sample ID:	320-65130-13		
Client ID:	11215702-Tank#1-T=0				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT: 16.71
Area: 12709752
Amount: 5.101328
Amount Units: pg/ul

Processing Integration Results

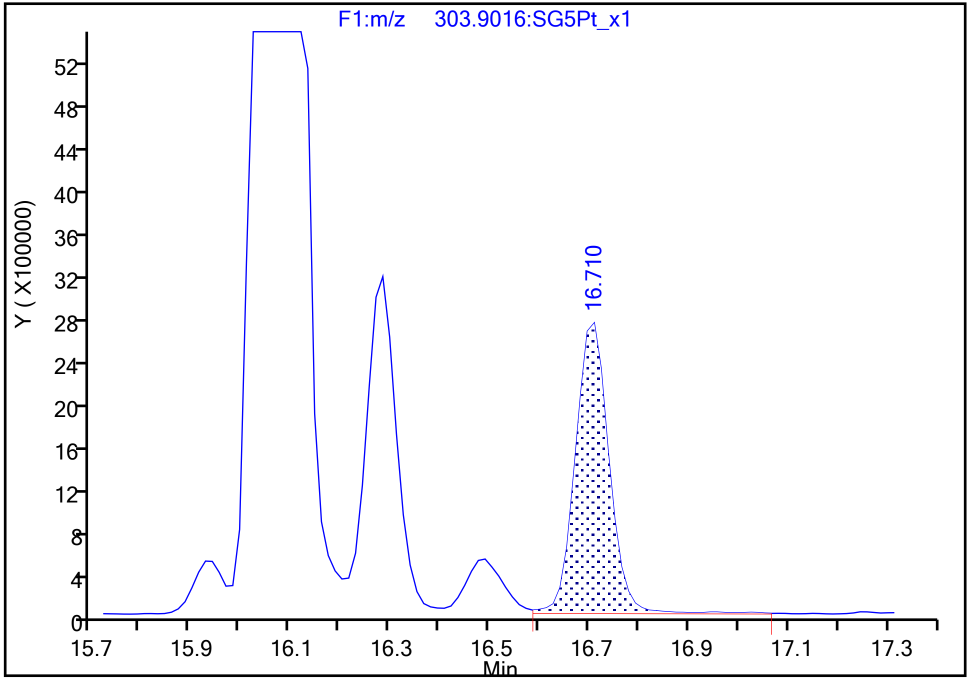

RT: 16.08
Area: 197876428
Amount: 78.865177
Amount Units: pg/ul

Manual Integration Results

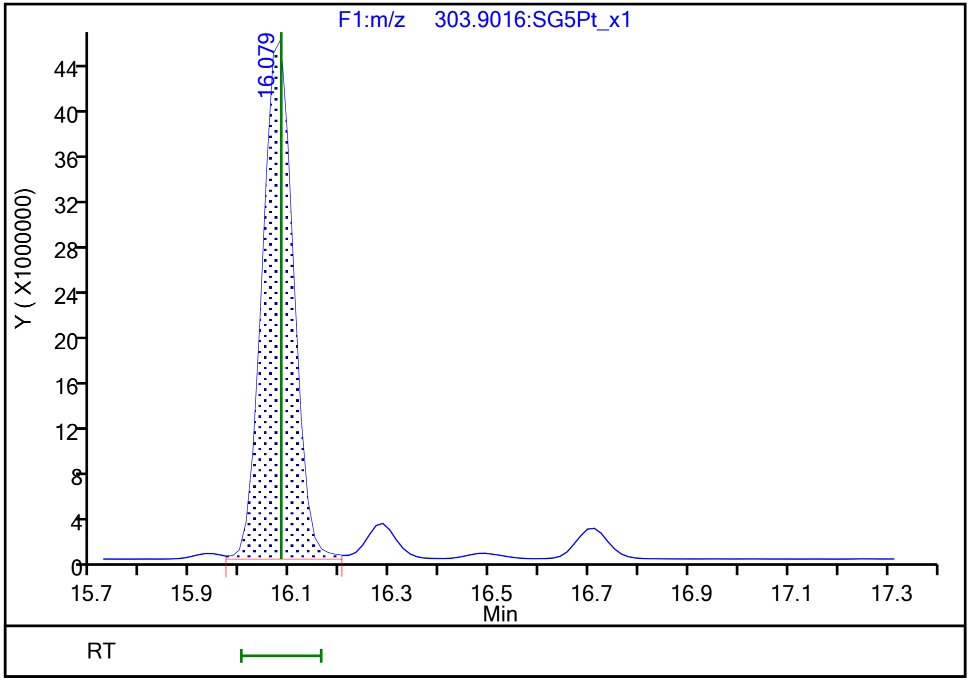

Reviewer: stephensk, 14-Oct-2020 17:37:18

Audit Action: Assigned Compound ID Audit Reason: Wrong peak

Report Date: 14-Oct-2020 17:39:01
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d
Injection Date: 14-Oct-2020 04:38:43
Instrument ID: 11D2
Lims ID: 320-65130-A-13-A
Lab Sample ID: 320-65130-13
Client ID: 11215702-Tank#1-T=0
Operator ID:
ALS Bottle#: 0
Worklist Smp#: 15
Injection Vol: 2.0 ul
Dil. Factor: 100.0000
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Column: DB-225 (0.32 mm)
Detector F1:HRSIR

37Cl4-2,3,7,8-TCDD, CAS: 85508-50-5

Signal: 1

Not Detected
Expected RT: 14.71

Processing Integration Results

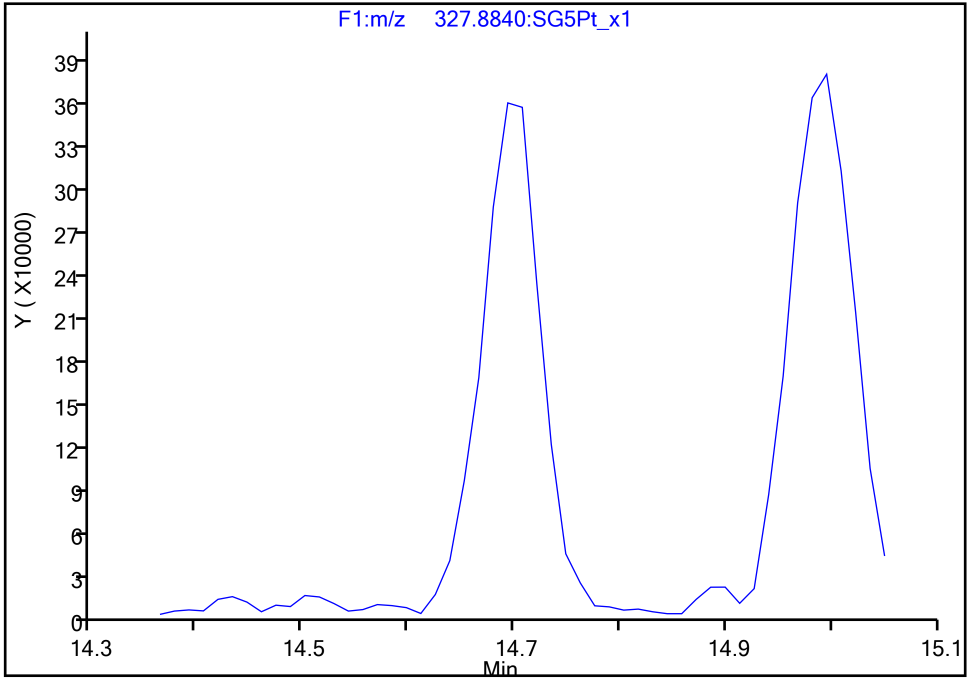

RT: 14.69
Area: 1403384
Amount: 0.378839
Amount Units: pg/ul

Manual Integration Results

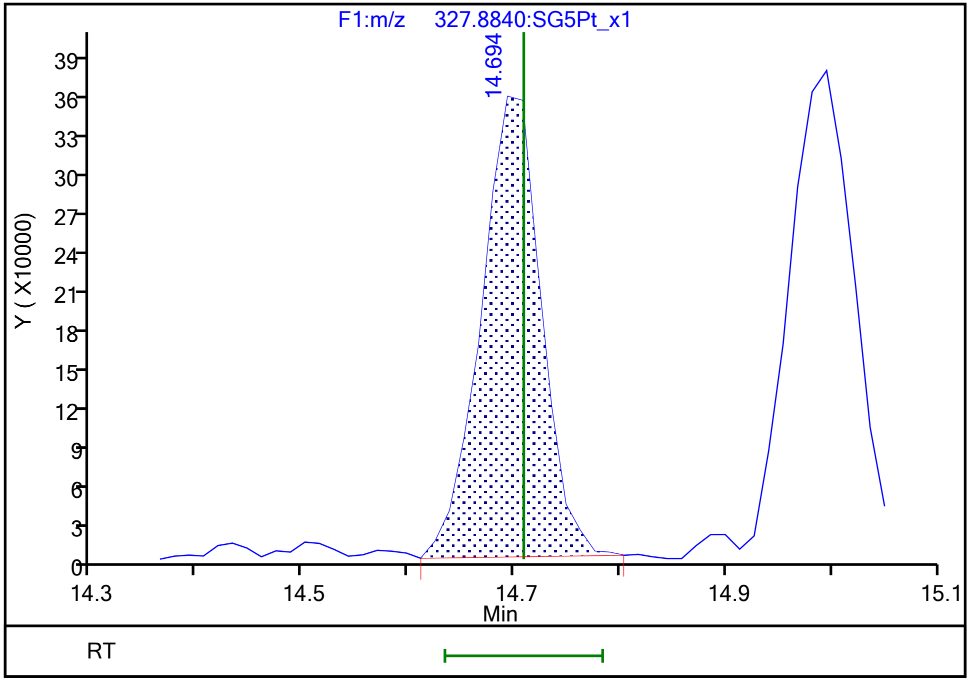

Reviewer: stephensk, 14-Oct-2020 17:38:34
Audit Action: Assigned Compound ID
Audit Reason: Wrong peak

Report Date: 14-Oct-2020 17:39:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d		
Injection Date:	14-Oct-2020 04:38:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	421876	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

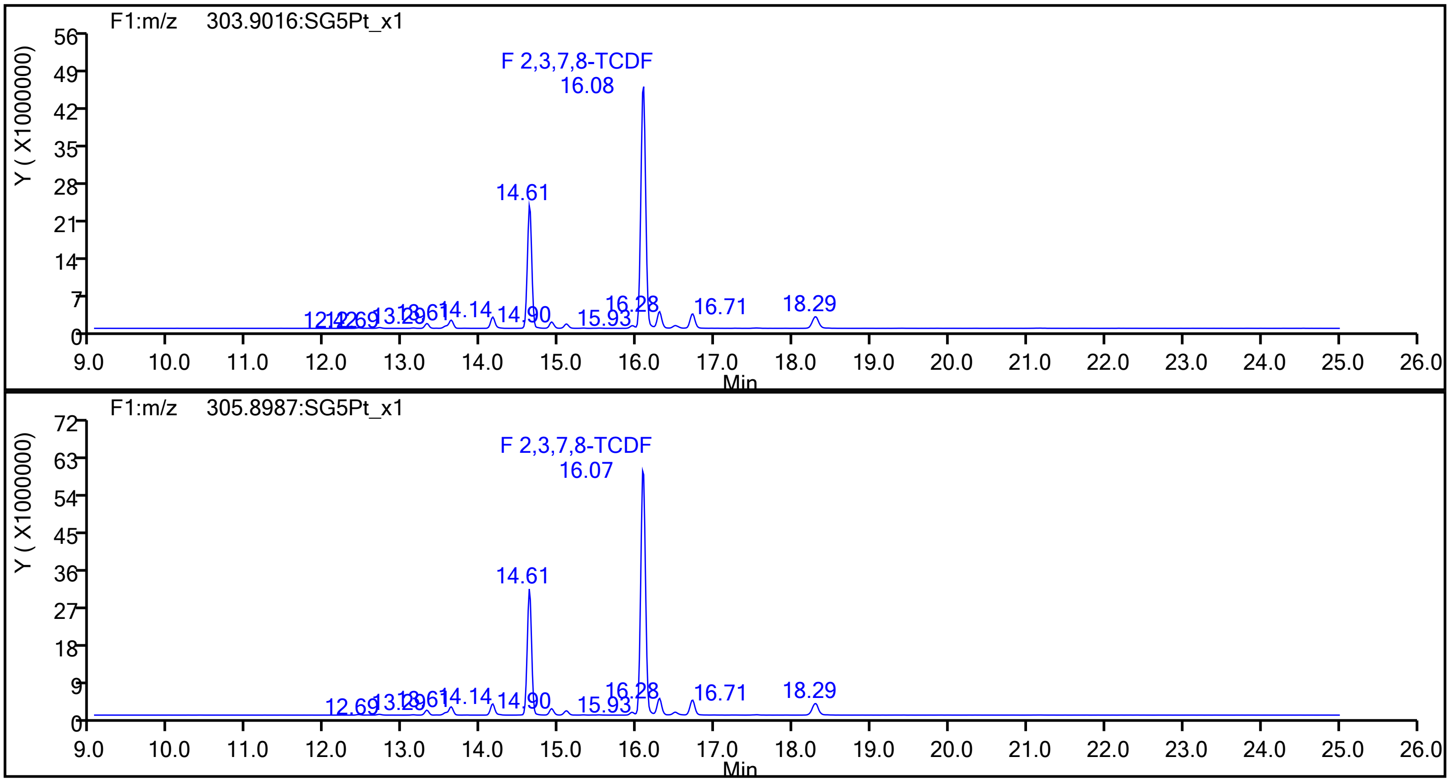

TCDF Standards

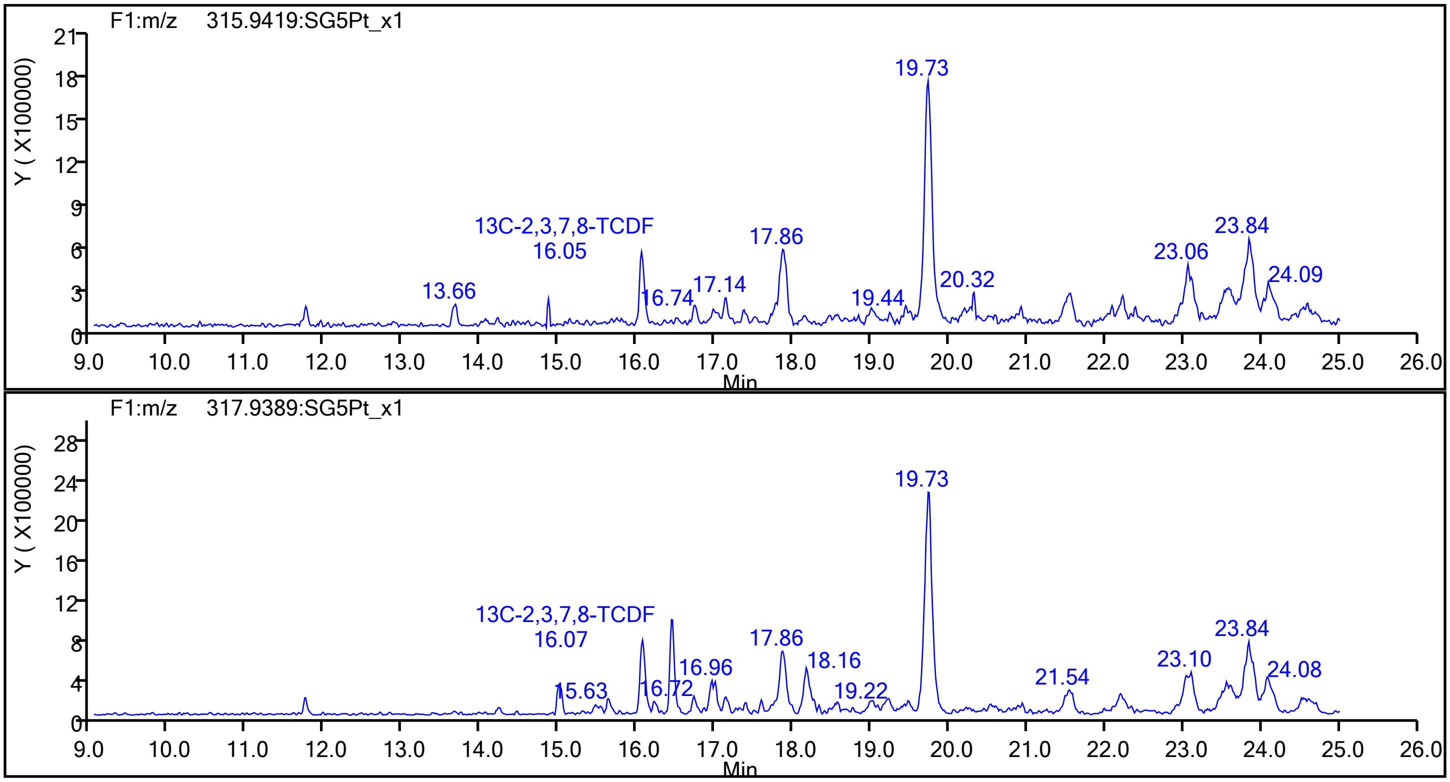

Report Date: 14-Oct-2020 17:39:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d		
Injection Date:	14-Oct-2020 04:38:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	421876	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

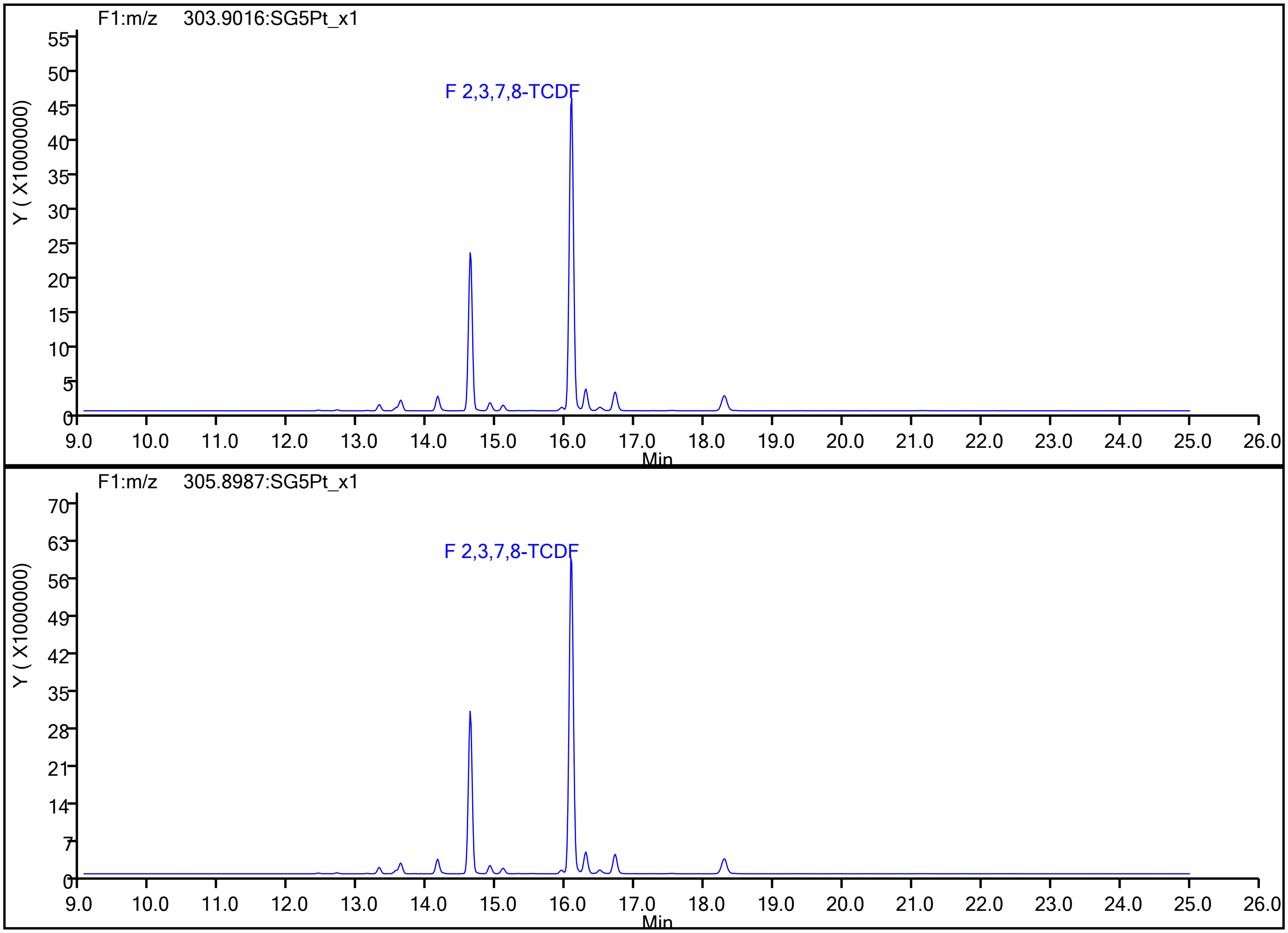

TCDF Interference Mass

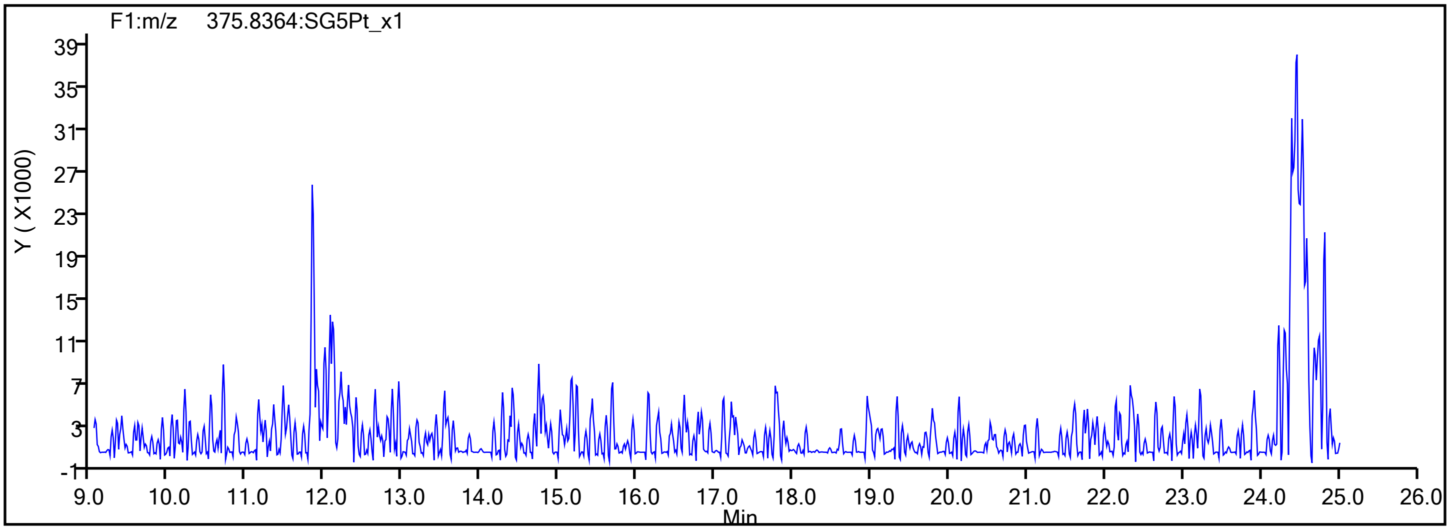

Report Date: 14-Oct-2020 17:39:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d		
Injection Date:	14-Oct-2020 04:38:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	421876	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

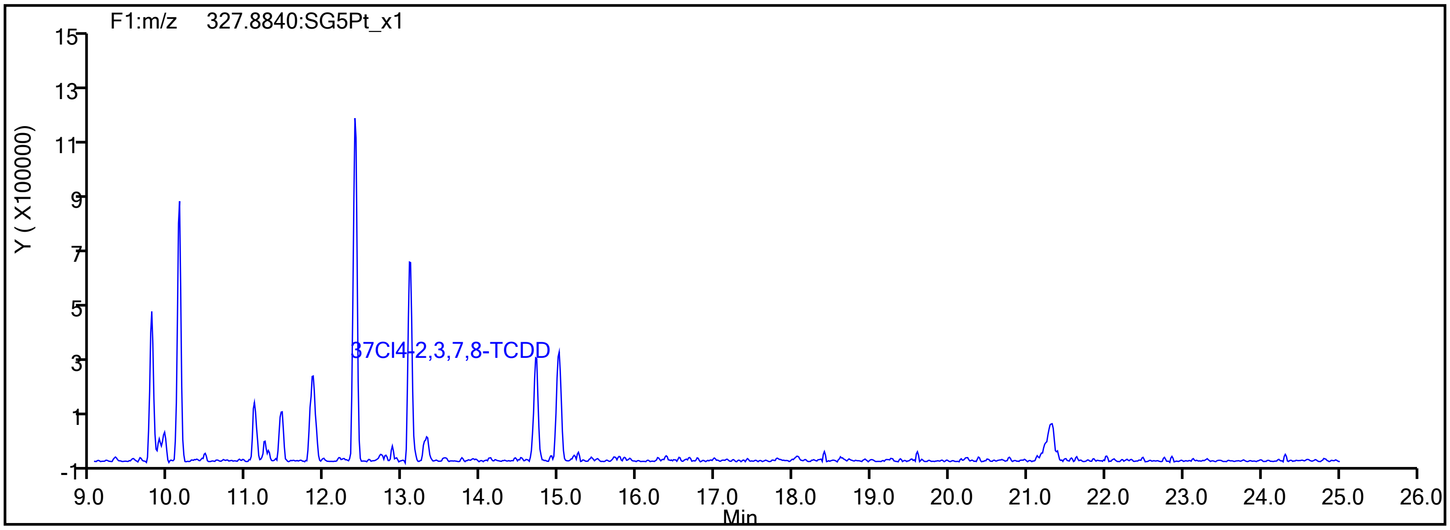

37Cl4-TCDD Standards

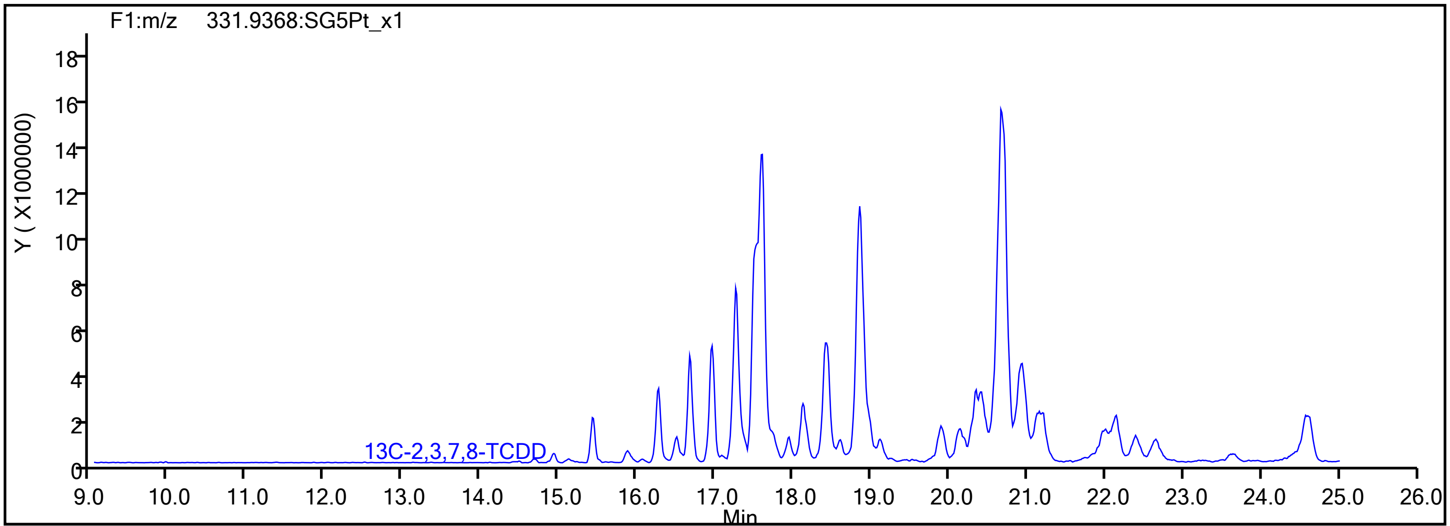

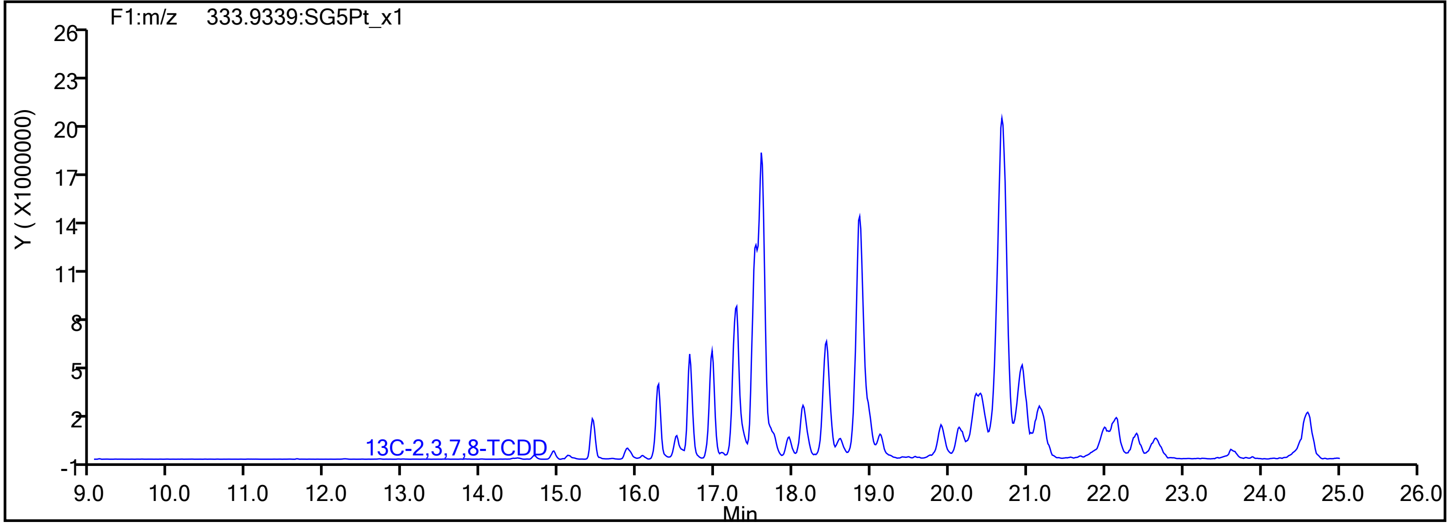

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_015.d		
Injection Date:	14-Oct-2020 04:38:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-T=0		
Worklist#:	421876	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

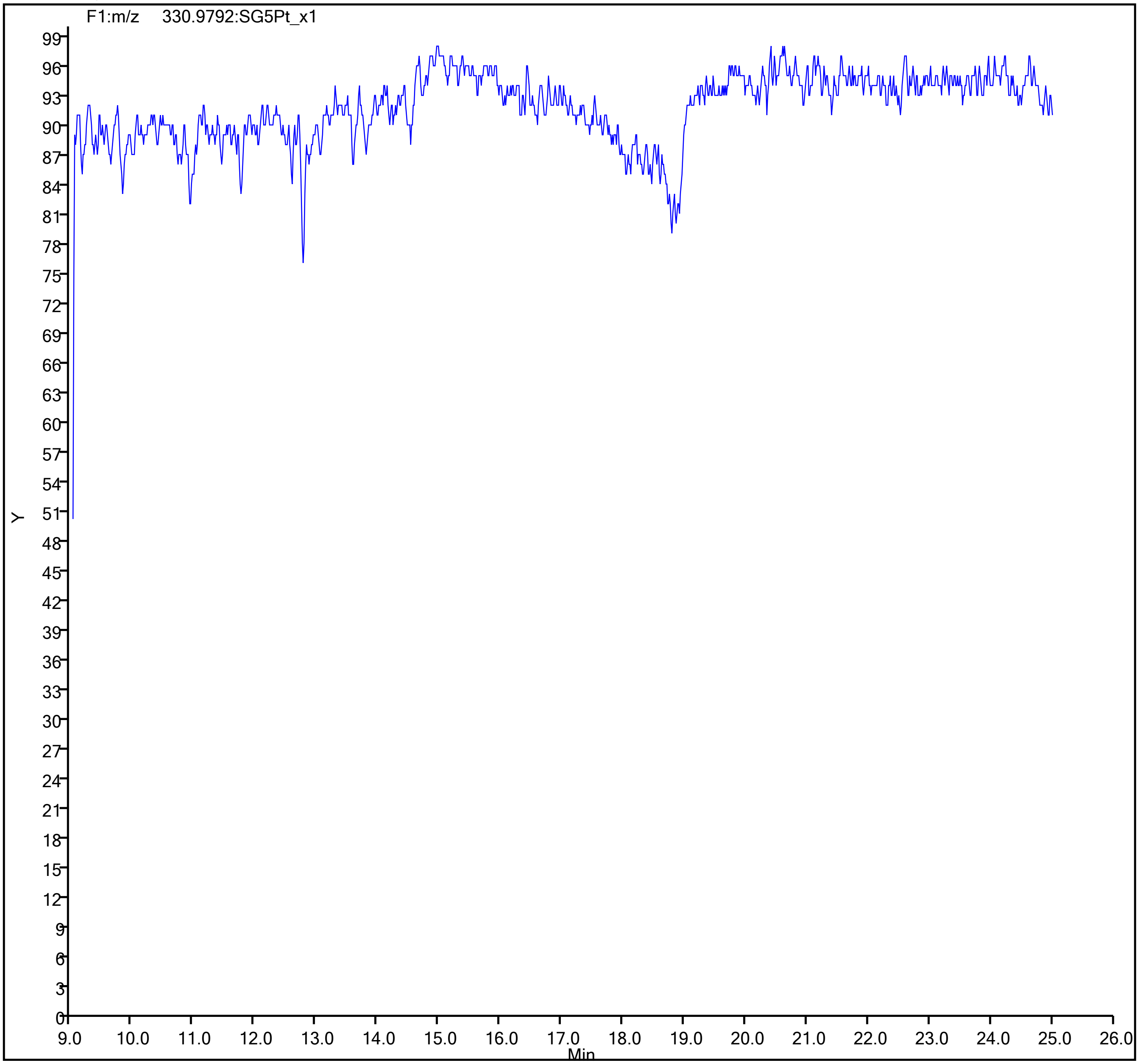

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-T=0 Lab Sample ID: 320-65130-14

Matrix: Water Lab File ID: 12oc20dfs1_7.d

Analysis Method: 1613B Date Collected: 09/09/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1044.6(mL) Date Analyzed: 10/12/2020 17:22

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421107 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	2100		480	67
57117-41-6	1,2,3,7,8-PeCDF	24000		480	180
57117-31-4	2,3,4,7,8-PeCDF	15000		480	160
39227-28-6	1,2,3,4,7,8-HxCDD	38	J B	480	10
57653-85-7	1,2,3,6,7,8-HxCDD	210	J	480	14
19408-74-3	1,2,3,7,8,9-HxCDD	70	J q	480	11
70648-26-9	1,2,3,4,7,8-HxCDF	39000		480	61
57117-44-9	1,2,3,6,7,8-HxCDF	9600		480	53
72918-21-9	1,2,3,7,8,9-HxCDF	650	B	480	47
60851-34-5	2,3,4,6,7,8-HxCDF	1100		480	52
35822-46-9	1,2,3,4,6,7,8-HpCDD	5200		480	30
67562-39-4	1,2,3,4,6,7,8-HpCDF	12000	B	480	66
55673-89-7	1,2,3,4,7,8,9-HpCDF	3900	B	480	63
3268-87-9	OCDD	74000	B	960	76
39001-02-0	OCDF	7200	B	960	22
41903-57-5	Total TCDD	190000	G	260	260
30402-14-3	Total TCDF	1200000	G B	3300	3300
36088-22-9	Total PeCDD	2100		480	67
30402-15-4	Total PeCDF	54000		480	170
34465-46-8	Total HxCDD	1200	q B	480	12
55684-94-1	Total HxCDF	59000	B	480	53
37871-00-4	Total HpCDD	10000		480	30
38998-75-3	Total HpCDF	20000	B	480	65

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-T=0	Lab Sample ID: 320-65130-14
Matrix: Water	Lab File ID: 12oc20dfs1_7.d
Analysis Method: 1613B	Date Collected: 09/09/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1044.6(mL)	Date Analyzed: 10/12/2020 17:22
Con. Extract Vol.: 20(uL)	Dilution Factor: 10
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421107	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	115		25-164
89059-46-1	13C-2,3,7,8-TCDF	106		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	66		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	82		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	82		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	110		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	94		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	99		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	101		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	97		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	83		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	85		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	98		26-138
114423-97-1	13C-OCDD	97		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	218	X	35-197

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Sample Type: Client
Inject. Date: 12-Oct-2020 17:22:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-14-A (10X)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 10:49:23 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1650

First Level Reviewer: shardaa Date: 13-Oct-2020 18:39:45

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.817	439398	0.79	2.7E+04	10.0	10.0				a
D 13C-2,3,7,8-TCDF	18.915	742014	0.80	1.5883	10.6	10.6	1.105	1.105	106	M
2,3,7,8-TCDF	18.924	329576355	0.78	1.0857	4091.2	4091.2	17.2	17.2		Ea
A Non-2,3,7,8-sub-TCDF	18.376	184796683	0.81	1.0857	2294.0	2294.0	17.2	1395.8		
S Total TCDF					6385.2	6385.2	17.2	17.2		
D 13C-2,3,7,8-TCDD	20.178	565564	0.76	1.1194	11.5	11.5	0.8038	0.8038	115	a
$ 37Cl4-2,3,7,8-TCDD	20.212	438854		1.1468	8.709	8.709	2.414	2.414	218	
2,3,7,8-TCDD	20.221	56862937	0.79	1.0810	930.1	930.1	1.353	1.353		Ea
A Non-2,3,7,8-sub-TCDD	19.166	4471751	0.80	1.0810	73.1	73.1	1.353	70.3		
S Total TCDD					1003.3	1003.3	1.353	1.353		
D 13C-1,2,3,7,8-PeCDF	26.019	535212	1.72	1.4782	8.240	8.240	0.1452	0.1452	82.40	
1,2,3,7,8-PeCDF	26.036	7091943	1.57	1.0547	125.6	125.6	0.9547	0.9547		a
D 13C-2,3,4,7,8-PeCDF	27.409	498617	1.65	1.3912	8.157	8.157	0.1542	0.1542	81.57	
2,3,4,7,8-PeCDF	27.434	4172946	1.58	1.1035	75.8	75.8	0.8434	0.8434		
A F1 PeCDFs	23.037	98801	1.57	1.0791	1.771	1.771	0.0374	1.771		
A Non-2,3,7,8-sub-PeCDF	26.479	4517696	1.62	1.0791	81.0	81.0	0.8964	50.9		a
S Total PeCDF					284.2	284.2	0.8990	0.8990		
D 13C-1,2,3,7,8-PeCDD	28.142	274490	1.56	0.9415	6.635	6.635	0.1226	0.1226	66.35	
1,2,3,7,8-PeCDD	28.184	329138	1.60	1.0680	11.2	11.2	0.3524	0.3524		
A Non-2,3,7,8-sub-PeCDD	26.944						0.3524	0.5747		RQU
S Total PeCDD					11.2	11.2	0.3524	0.3524		
D 13C-1,2,3,4,7,8-HxCDF	33.850	351832	0.58	1.1378	9.960	9.960	0.0956	0.0956	99.60	
1,2,3,4,7,8-HxCDF	33.867	9167885	1.28	1.2643	206.1	206.1	0.3203	0.3203		
D 13C-1,2,3,6,7,8-HxCDF	34.044	405556	0.51	1.3173	9.917	9.917	0.0826	0.0826	99.17	
1,2,3,6,7,8-HxCDF	34.052	2480275	1.28	1.2230	50.0	50.0	0.2748	0.2748		
D 13C-2,3,4,6,7,8-HxCDF	34.979	373558	0.55	1.2457	9.659	9.659	0.0874	0.0874	96.59	
2,3,4,6,7,8-HxCDF	34.996	270546	1.27	1.2464	5.810	5.810	0.2697	0.2697		
D 13C-1,2,3,7,8,9-HxCDF	35.957	371662	0.51	1.1840	10.1	10.1	0.0919	0.0919	101	
1,2,3,7,8,9-HxCDF	35.974	159986	1.31	1.2638	3.406	3.406	0.2467	0.2467		
A Non-2,3,7,8-sub-HxCDF	33.821	1899388	1.28	1.2494	40.5	40.5	0.2754	15.2		
S Total HxCDF					305.8	305.8	0.2779	0.2779		

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.755	310454	1.39	2.9E+04	10.0	10.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.224	290795	1.31	0.8477	11.0	11.0	0.0557	0.0557	110	
1,2,3,4,7,8-HxCDD	35.232	6628	1.23	1.1561	0.1972	0.1972	0.0531	0.0531		Ma
D 13C-1,2,3,6,7,8-HxCDD	35.350	292448	1.23	0.9979	9.440	9.440	0.0473	0.0473	94.40	
1,2,3,6,7,8-HxCDD	35.376	32404	1.15	1.0284	1.077	1.077	0.0729	0.0729		M
1,2,3,7,8,9-HxCDD	35.763	12597	1.24	1.1789	0.4036	0.3664	0.0572	0.0572		RQ
A Non-2,3,7,8-sub-HxCDD	34.340	148316	1.22	1.1211	4.536	4.536	0.0602	2.211		
S Total HxCDD					6.215	6.177	0.0611	0.0611		RQ
1,2,3,4,6,7,8-HpCDF	37.925	2430989	1.06	1.5064	62.1	62.1	0.3458	0.3458		
D 13C-1,2,3,4,6,7,8-HpCDF	37.908	260038	0.45	0.9884	8.475	8.475	0.1069	0.1069	84.75	
D 13C-1,2,3,4,7,8,9-HpCDF	39.222	279833	0.48	0.9203	9.794	9.794	0.1148	0.1148	97.94	
1,2,3,4,7,8,9-HpCDF	39.230	823211	1.07	1.4548	20.2	20.2	0.3286	0.3286		
A Non-2,3,7,8-sub-HpCDF	38.571	789642	1.06	1.4806	19.8	19.8	0.3367	19.8		
S Total HpCDF					102.0	102.0	0.3372	0.3372		
1,2,3,4,6,7,8-HpCDD	38.918	716686	1.04	1.0640	27.4	27.4	0.1584	0.1584		
D 13C-1,2,3,4,6,7,8-HpCDD	38.902	246278	1.10	0.9556	8.301	8.301	0.0458	0.0458	83.01	
A Non-2,3,7,8-sub-HpCDD	38.941	720160	1.08	1.0640	27.5	27.5	0.1584	27.5		
S Total HpCDD					54.8	54.8	0.1584	0.1584		
D 13C-OCDD	41.356	447326	0.92	0.7420	19.4	19.4	0.1553	0.1553	97.09	
OCDF	41.440	1210497	0.91	1.4296	37.9	37.9	0.1128	0.1128		
OCDD	41.364	9761336	0.91	1.1293	386.4	386.4	0.3973	0.3973		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Sample Type: Client
Inject. Date: 12-Oct-2020 17:22:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-14-A (10X)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 10:49:23 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1650

First Level Reviewer: shardaa Date: 13-Oct-2020 18:39:45

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.817	19.682	8		193447	30467	1491	3727	20		a
333.9338	19.809	19.682	8		245951	39908	1042	2605	38	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											M
315.9419	18.915	18.788	8	0.954	330129	65736	2456	6140	27		M
317.9389	18.907	18.788	7	0.954	411885	77187	2484	6210	31	0.80(0.65-0.89)	M
2,3,7,8-TCDF											Ea
303.9016	18.924	18.831	6	1.000	144596732	27554536	48219	120547	571		a
305.8987	18.924	18.831	6	1.000	184979623	36112306	58672	146680	615	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.570	18.376	-108	0.876	5252572	971281	48219	120547	20		
305.8987	16.570	18.376	-108	0.876	6380551	1179037	58672	146680	20	0.82(0.65-0.89)	
303.9016	17.042	18.376	-80	0.901	6831991	877872	48219	120547	18		
305.8987	17.042	18.376	-80	0.901	8343876	1071837	58672	146680	18	0.82(0.65-0.89)	
303.9016	17.429	18.376	-57	0.921	4682961	768621	48219	120547	16		
305.8987	17.429	18.376	-57	0.921	5633105	929561	58672	146680	16	0.83(0.65-0.89)	
303.9016	17.781	18.376	-36	0.940	5829800	948526	48219	120547	20		
305.8987	17.781	18.376	-36	0.940	7143354	1169459	58672	146680	20	0.82(0.65-0.89)	
303.9016	18.237	18.376	-8	0.964	50053136	8652639	48219	120547	179		
305.8987	18.237	18.376	-8	0.964	62388224	10900515	58672	146680	186	0.80(0.65-0.89)	
303.9016	18.632	18.376	15	0.985	2660932	410571	48219	120547	9		
305.8987	18.632	18.376	15	0.985	3241711	506410	58672	146680	9	0.82(0.65-0.89)	
303.9016	19.654	18.376	77	1.039	7350258	1304214	48219	120547	27		
305.8987	19.654	18.376	77	1.039	9004212	1591331	58672	146680	27	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											a
331.9368	20.178	20.033	9	1.018	243353	36415	1491	3727	24		a
333.9338	20.170	20.033	8	1.018	322211	46872	1042	2605	45	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.212	20.059	9	1.020	438854	70118	7794	19485	9		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											Ea
319.8965	20.221	20.076	9	1.002	25176455	3613700	2685	6712	1346		a
321.8936	20.221	20.076	9	1.002	31686482	4578174	2187	5467	2093	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	18.254	19.166	-55	0.905	76016	11301	2685	6712	4		
321.8936	18.245	19.166	-55	0.904	100583	15609	2187	5467	7	0.76(0.65-0.89)	
319.8965	20.814	19.166	99	1.032	1906413	269297	2685	6712	100		
321.8936	20.806	19.166	98	1.031	2388739	339556	2187	5467	155	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.019	25.892	8	1.313	338185	52827	366	915	144		
353.8970	26.002	25.892	7	1.312	197027	30870	238	595	130	1.72(1.32-1.78)	
1,2,3,7,8-PeCDF											a
339.8597	26.036	25.918	7	1.001	4327964	671266	2049	5122	328		a
341.8567	26.027	25.918	7	1.000	2763979	430363	1322	3305	326	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.409	27.324	5	1.383	310756	58897	366	915	161		
353.8970	27.400	27.324	5	1.383	187861	31643	238	595	133	1.65(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.434	27.350	5	1.001	2553193	479146	2049	5122	234		
341.8567	27.434	27.350	5	1.001	1619753	302540	1322	3305	229	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.704	23.037	-20	0.873	60418	8350	38	95	220		
341.8567	22.722	23.037	-19	0.873	38383	5871	103	257	57	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											a
339.8597	24.629	26.479	-111	0.947	1752862	337295	2049	5122	165		
341.8567	24.629	26.479	-111	0.947	1084133	211172	1322	3305	160	1.62(1.32-1.78)	
339.8597	25.497	26.479	-59	0.980	158822	25575	2049	5122	12		
341.8567	25.488	26.479	-59	0.980	90689	15623	1322	3305	12	1.75(1.32-1.78)	
339.8597	25.892	26.479	-35	0.995	304607	72927	2049	5122	36		a
341.8567	25.892	26.479	-35	0.995	191267	45177	1322	3305	34	1.59(1.32-1.78)	
339.8597	27.746	26.479	76	1.066	574034	90891	2049	5122	44		
341.8567	27.746	26.479	76	1.066	361282	54544	1322	3305	41	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.142	28.074	4	1.420	167363	26760	257	642	104		
369.8919	28.176	28.074	6	1.422	107127	16411	68	170	241	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.184	28.099	5	1.001	202710	31874	174	435	183		
357.8516	28.184	28.099	5	1.001	126428	21150	476	1190	44	1.60(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	24.873	26.944	-124	0.884	10242	1897	174	435	11		
357.8516	24.924	26.944	-121	0.886	955589	192244	476	1190	404	0.01(1.32-1.78)	
	Empc Correction				6607	1223	476	1190	3		
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.850	33.813	2	0.947	128961	26380	141	352	187		
385.8610	33.858	33.813	3	0.947	222871	43174	177	442	244	0.58(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDF											
373.8208	33.867	33.830	2	1.000	5142828	957630	642	1605	1492		
375.8178	33.867	33.830	2	1.000	4025057	750898	485	1212	1548	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.044	34.007	2	0.952	136896	30023	141	352	213		
385.8610	34.035	34.007	2	0.952	268660	53805	177	442	304	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.052	34.024	2	1.000	1391601	272787	642	1605	425		
375.8178	34.052	34.024	2	1.000	1088674	219891	485	1212	453	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.979	34.960	1	0.978	132785	30410	141	352	216		
385.8610	34.979	34.960	1	0.978	240773	53393	177	442	302	0.55(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.996	34.985	1	1.000	151561	32719	642	1605	51		
375.8178	34.996	34.985	1	1.000	118985	26458	485	1212	55	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.957	35.945	1	1.006	126310	28937	141	352	205		
385.8610	35.965	35.945	1	1.006	245352	61412	177	442	347	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.974	35.962	1	1.000	90761	22937	642	1605	36		
375.8178	35.974	35.962	1	1.000	69225	18621	485	1212	38	1.31(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	32.063	33.821	-105	0.947	397978	71030	642	1605	111		
375.8178	32.063	33.821	-105	0.947	315910	53728	485	1212	111	1.26(1.05-1.43)	
373.8208	33.116	33.821	-42	0.978	185598	34856	642	1605	54		
375.8178	33.116	33.821	-42	0.978	146636	29207	485	1212	60	1.27(1.05-1.43)	
373.8208	34.853	33.821	62	1.030	171922	37515	642	1605	58		
375.8178	34.853	33.821	62	1.030	131214	28269	485	1212	58	1.31(1.05-1.43)	
373.8208	36.084	33.821	135	1.066	311428	78785	642	1605	123		
375.8178	36.084	33.821	135	1.066	238702	62213	485	1212	128	1.30(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.755	35.743	1		180610	40760	99	247	412		a
403.8529	35.755	35.743	1		129844	32294	39	97	828	1.39(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.224	35.204	1	0.985	164954	43320	99	247	438		
403.8529	35.215	35.204	1	0.985	125841	34436	39	97	883	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											Ma
389.8158	35.232	35.221	1	1.000	3651	1065	55	137	19		M
391.8127	35.241	35.221	1	1.000	2977	807	136	340	6	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.350	35.330	1	0.989	161375	34618	99	247	350		
403.8529	35.359	35.330	2	0.989	131073	29016	39	97	744	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.376	35.356	1	1.001	17325	3977	55	137	72		M
391.8127	35.359	35.356	0	1.000	15079	3291	136	340	24	1.15(1.05-1.43)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											RQ
389.8158	35.763	35.751	1	1.015	8253	1636	55	137	30		
	Empc Correction				6973	1330	55	137	24		
391.8127	35.772	35.751	1	1.016	5624	1073	136	340	8	1.47(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	33.049	34.340	-77	0.935	34434	5567	55	137	101		
391.8127	33.066	34.340	-76	0.935	31044	4594	136	340	34	1.11(1.05-1.43)	
389.8158	33.951	34.340	-23	0.960	5710	1207	55	137	22		
391.8127	33.959	34.340	-23	0.961	4827	1079	136	340	8	1.18(1.05-1.43)	
389.8158	34.355	34.340	1	0.972	41312	7703	55	137	140		
391.8127	34.355	34.340	1	0.972	30989	5763	136	340	42	1.33(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.925	37.909	1	1.000	1253480	357030	803	2007	445		
409.7788	37.925	37.909	1	1.000	1177509	332092	720	1800	461	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.908	37.912	0	1.060	80420	22841	183	457	125		
419.8220	37.908	37.912	0	1.060	179618	50251	126	315	399	0.45(0.37-0.51)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.222	39.226	0	1.097	90749	25636	183	457	140		
419.8220	39.213	39.226	-1	1.097	189084	54000	126	315	429	0.48(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.230	39.232	0	1.000	426121	129285	803	2007	161		
409.7788	39.230	39.232	0	1.000	397090	120327	720	1800	167	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.304	38.571	-16	1.010	405694	119604	803	2007	149		
409.7788	38.304	38.571	-16	1.010	383948	111808	720	1800	155	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.918	38.920	0	1.000	366050	106109	256	640	414		
425.7737	38.918	38.920	0	1.000	350636	102770	228	570	451	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.902	38.922	-1	1.088	129172	36525	86	215	425		
437.8140	38.910	38.922	-1	1.088	117106	35286	42	105	840	1.10(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.245	38.941	-42	0.983	373906	106547	256	640	416		
425.7737	38.245	38.941	-42	0.983	346254	98469	228	570	432	1.08(0.88-1.20)	
13C-OCDD											
469.7780	41.356	41.369	-1	1.157	214771	59561	170	425	350		
471.7750	41.356	41.369	-1	1.157	232555	62579	167	417	375	0.92(0.76-1.02)	
OCDF											
441.7428	41.440	41.453	-1	1.002	577615	156904	166	415	945		
443.7399	41.440	41.453	-1	1.002	632882	172415	228	570	756	0.91(0.76-1.02)	
OCDD											
457.7377	41.364	41.377	-1	1.000	4637695	1291576	565	1412	2286		
459.7348	41.364	41.377	-1	1.000	5123641	1429123	531	1327	2691	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 12-Oct-2020 17:22:00
Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 421107
Lims Sample ID: 6

Non-2,3,7,8-sub-TCDF, RT: 18.376

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	742014	142923

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		10.000	742014	142923

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.570	5252572	971281	6380551	1179037	144.4	0.82	
17.042	6831991	877872	8343876	1071837	188.4	0.82	
17.429	4682961	768621	5633105	929561	128.1	0.83	
17.781	5829800	948526	7143354	1169459	161.0	0.82	
18.237	50053136	8652639	62388224	10900515	1395.8	0.80	
18.632	2660932	410571	3241711	506410	73.3	0.82	
19.654	7350258	1304214	9004212	1591331	203.0	0.82	
Signal Totals:							
	82661650	13933724	102135033	17348150			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	184796683	31281874				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2294.0 = (184796683 * 10.000) / (742014 * 1.086)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	12-Oct-2020 17:22:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDD, RT: 19.166

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	565564	83287

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		10.000	565564	83287

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.254	76016	11301	100583	15609	2.89	0.76	
20.814	1906413	269297	2388739	339556	70.3	0.80	
Signal Totals:							
	1982429	280598	2489322	355165			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4471751	635763				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 73.144 = (4471751 * 10.000) / (565564 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 12-Oct-2020 17:22:00 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 421107 Lims Sample ID: 6

F1 PeCDFs, RT: 23.037

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	535212	83697
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	498617	90540

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		10.000	516914	87118

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.704	60418	8350	38383	5871	1.77	1.57	
Signal Totals:							
	60418	8350	38383	5871			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	98801	14221				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.771 = (98801 * 10.000) / (516914 * 1.079)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 12-Oct-2020 17:22:00 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 421107 Lims Sample ID: 6

Non-2,3,7,8-sub-PeCDF, RT: 26.479

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	535212	83697
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	498617	90540

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		10.000	516914	87118

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.629	1752862	337295	1084133	211172	50.9	1.62	
25.497	158822	25575	90689	15623	4.47	1.75	
25.892	304607	72927	191267	45177	8.89	1.59	a
27.746	574034	90891	361282	54544	16.8	1.59	
Signal Totals:							
	2790325	526688	1727371	326516			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4517696	853204				1.62	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 80.991 = (4517696 * 10.000) / (516914 * 1.079)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	12-Oct-2020 17:22:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	6

Non-2,3,7,8-sub-PeCDD, RT: 26.944

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	274490	43171

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		10.000	274490	43171

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
24.873	10242	1897	955589	192244	32.9	0.01	RQ
24.873	10242	1897	6607	1223	0.5747		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	12-Oct-2020 17:22:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	6

Non-2,3,7,8-sub-HxCDF, RT: 33.821

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	351832	69554
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	405556	83828
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	373558	83803
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	371662	90349

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		10.000	375652	81883

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
32.063	397978	71030	315910	53728	15.2	1.26	
33.116	185598	34856	146636	29207	7.08	1.27	
34.853	171922	37515	131214	28269	6.46	1.31	
36.084	311428	78785	238702	62213	11.7	1.30	
Signal Totals:							
	1066926	222186	832462	173417			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1899388	395603				1.28	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 40.470 = (1899388 * 10.000) / (375652 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	12-Oct-2020 17:22:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	6

Non-2,3,7,8-sub-HxCDD, RT: 34.340

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	290795	77756
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	292448	63634
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		10.000	291621	70695

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.049	34434	5567	31044	4594	2.00	1.11	
33.951	5710	1207	4827	1079	0.3223	1.18	
34.355	41312	7703	30989	5763	2.21	1.33	
Signal Totals:							
	81456	14477	66860	11436			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	148316	25913				1.22	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.536 = (148316 * 10.000) / (291621 * 1.121)

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	12-Oct-2020 17:22:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	6

Non-2,3,7,8-sub-HpCDF, RT: 38.571

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	260038	73092
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	279833	79636

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		10.000	269935	76364

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.304	405694	119604	383948	111808	19.8	1.06	
Signal Totals:							
	405694	119604	383948	111808			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	789642	231412				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 19.758 = (789642 * 10.000) / (269935 * 1.481)

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	12-Oct-2020 17:22:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	6

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	246278	71811

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		10.000	246278	71811

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.245	373906	106547	346254	98469	27.5	1.08	
Signal Totals:							
	373906	106547	346254	98469			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	720160	205016				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 27.483 = (720160 * 10.000) / (246278 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d				
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 1

RT:	18.92
Area:	347797
Amount:	11.276283
Amount Units:	pg/ul

Processing Integration Results

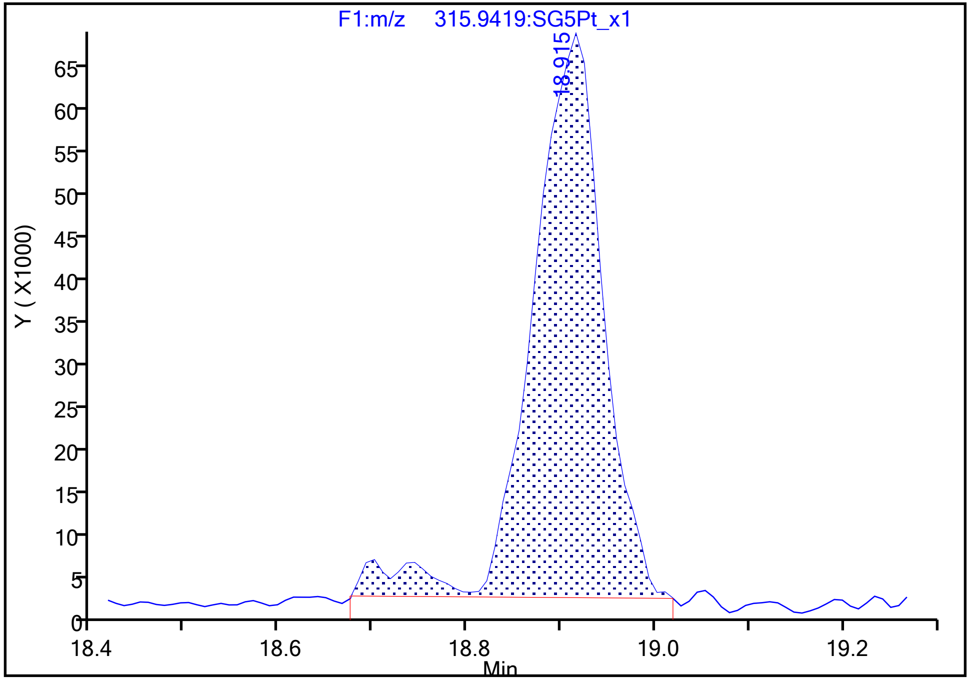

RT:	18.92
Area:	330129
Amount:	10.631931
Amount Units:	pg/ul

Manual Integration Results

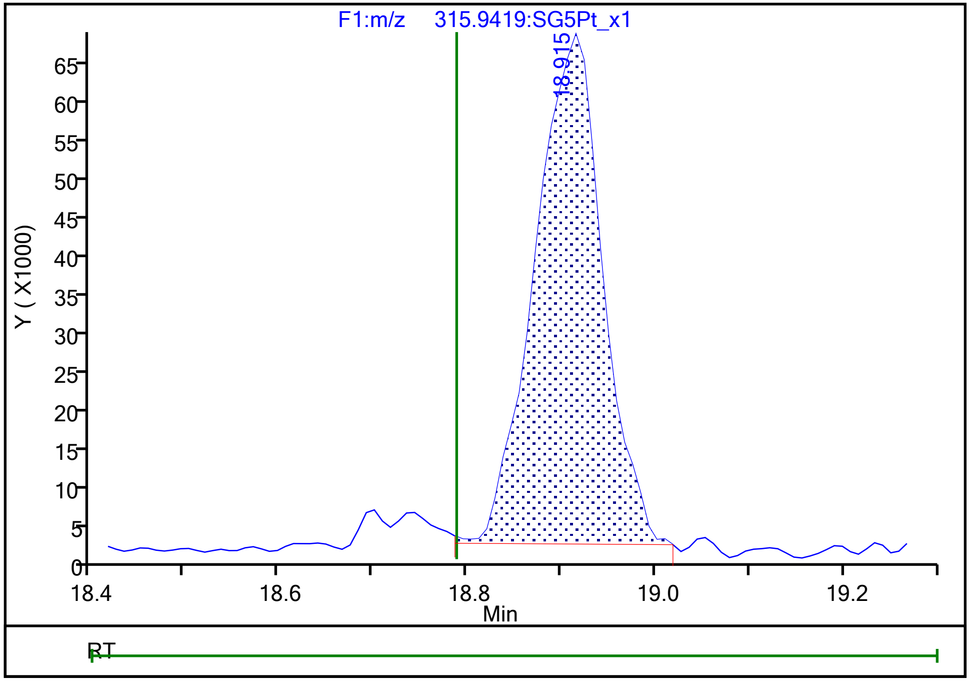

Reviewer: dadunj, 14-Oct-2020 10:48:31

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d				
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 2

Processing Integration Results

RT:	18.91
Area:	439187
Amount:	11.276283
Amount Units:	pg/ul

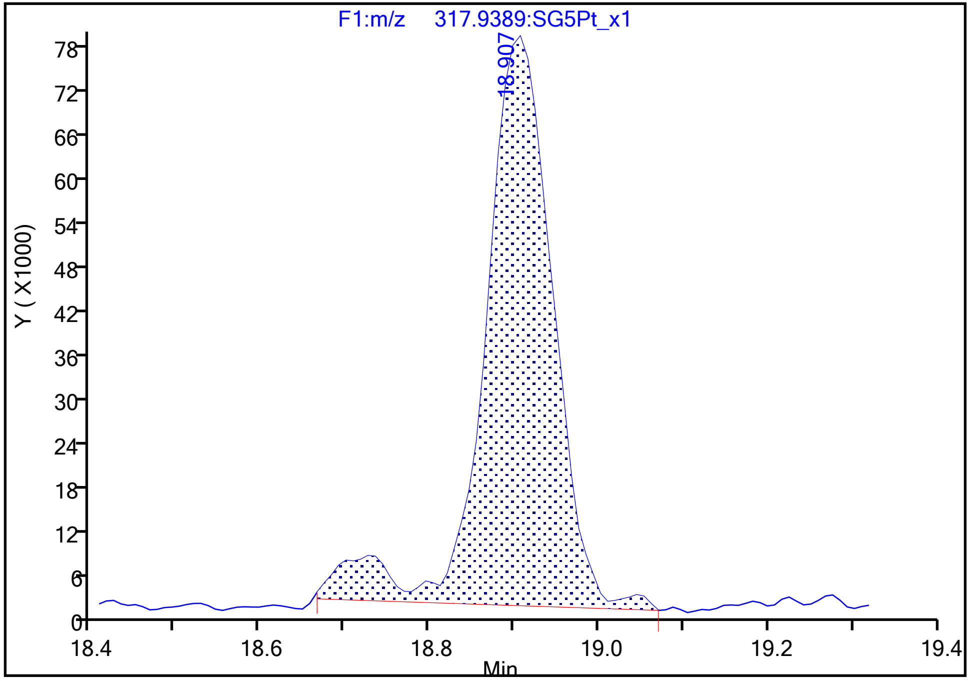

Manual Integration Results

RT:	18.91
Area:	411885
Amount:	10.631931
Amount Units:	pg/ul

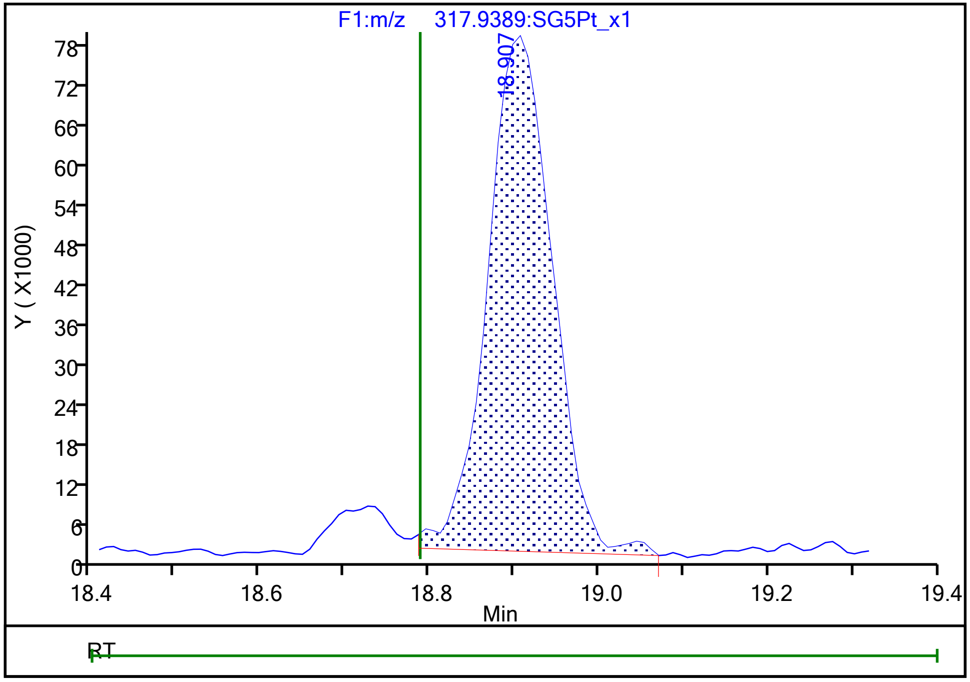

Reviewer: dadunj, 14-Oct-2020 10:48:35

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 10:49:23

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-14-A
Lab Sample ID: 320-65130-14
Client ID: 11215702-Tank#2-T=0
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 1.0 ul
Dil. Factor: 10.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Not Detected
Expected RT: 18.83

Processing Integration Results

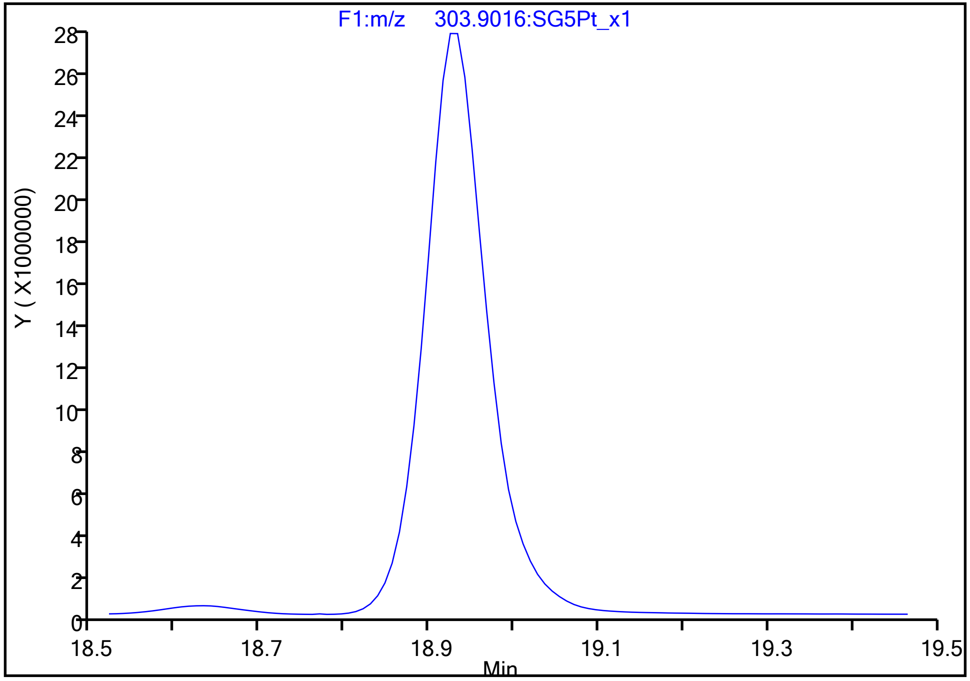

RT: 18.92
Area: 144596732
Amount: 4091.2254
Amount Units: pg/ul

Manual Integration Results

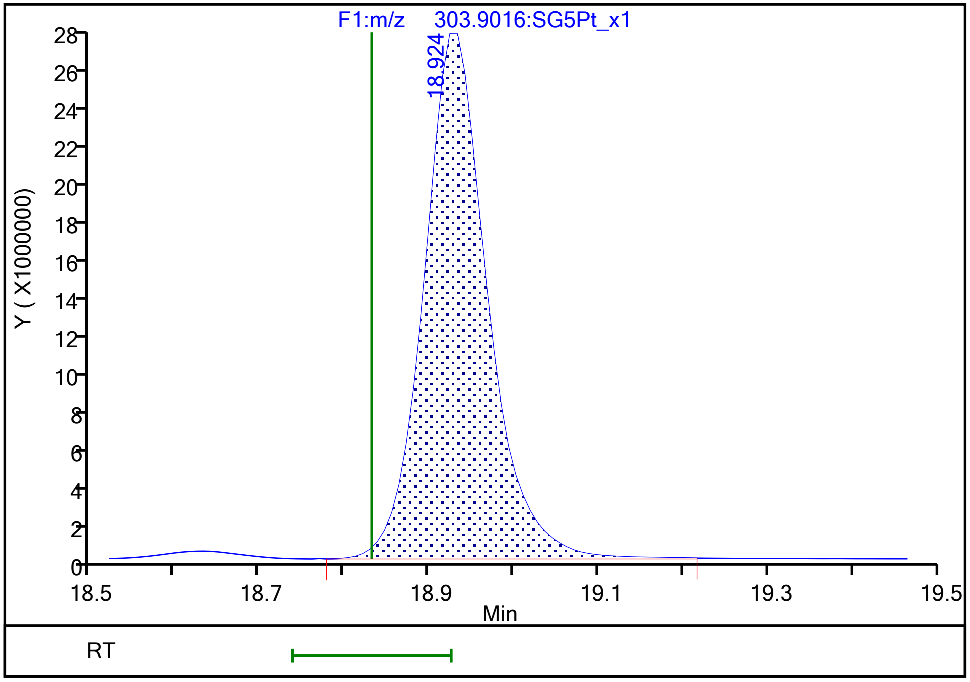

Reviewer: shardaa, 13-Oct-2020 10:38:59

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14
Client ID:	11215702-Tank#2-T=0		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

13C-2,3,7,8-TCDD, CAS: 76523-40-5

Signal: 1

RT:	19.82
Area:	193447
Amount:	8.933154
Amount Units:	pg/ul

Processing Integration Results

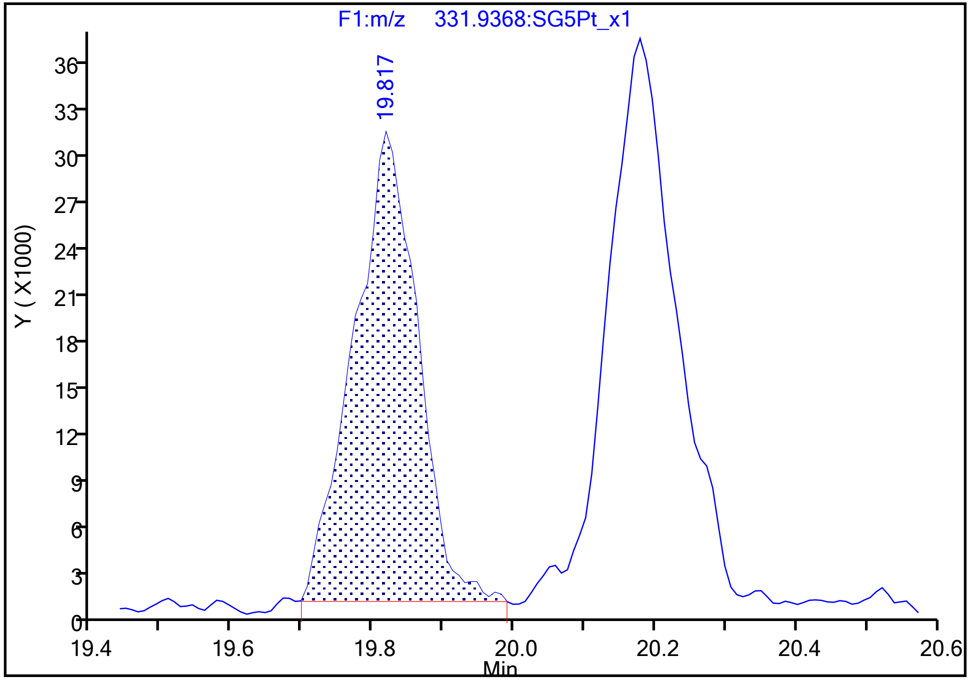

RT:	20.18
Area:	243353
Amount:	11.498164
Amount Units:	pg/ul

Manual Integration Results

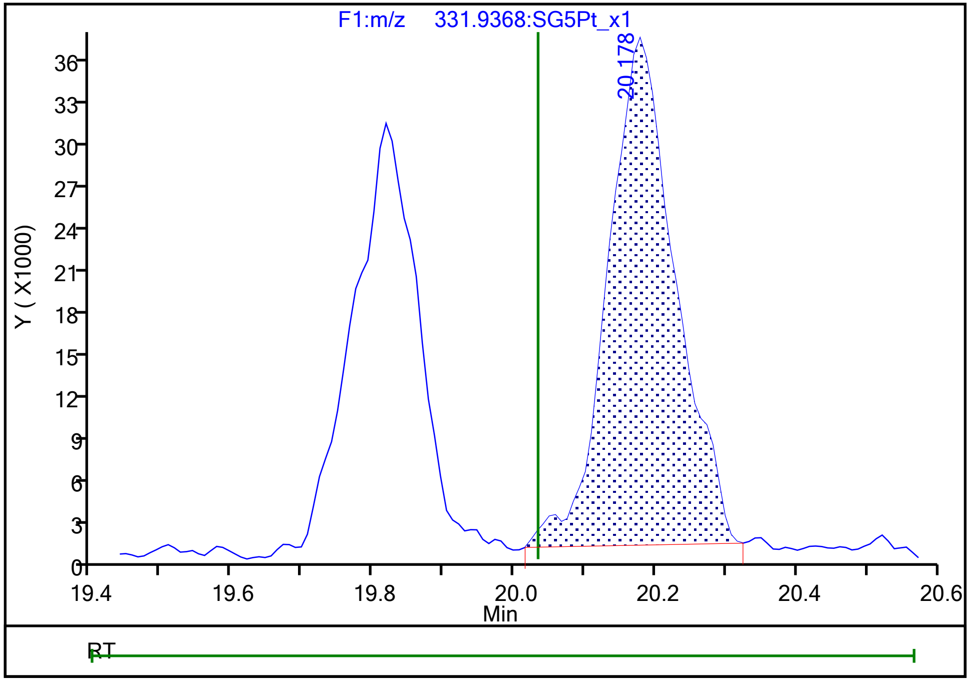

Reviewer: shardaa, 13-Oct-2020 10:39:05

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 14-Oct-2020 10:49:23
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-14-A
Lab Sample ID: 320-65130-14
Client ID: 11215702-Tank#2-T=0
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 1.0 ul
Dil. Factor: 10.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Not Detected
Expected RT: 20.08

Processing Integration Results

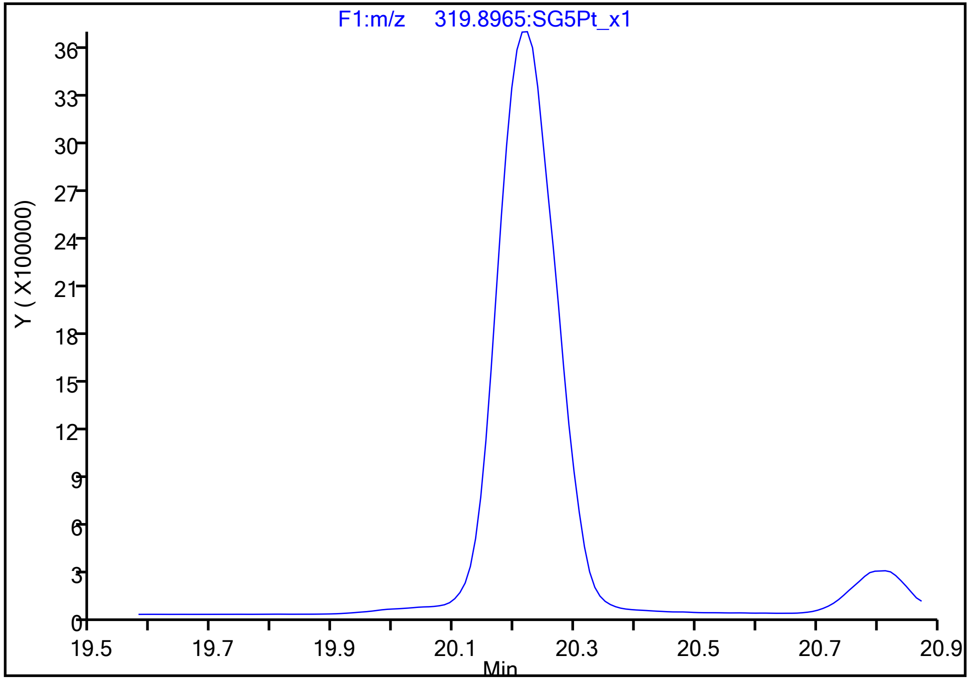

RT: 20.22
Area: 25176455
Amount: 930.1065
Amount Units: pg/ul

Manual Integration Results

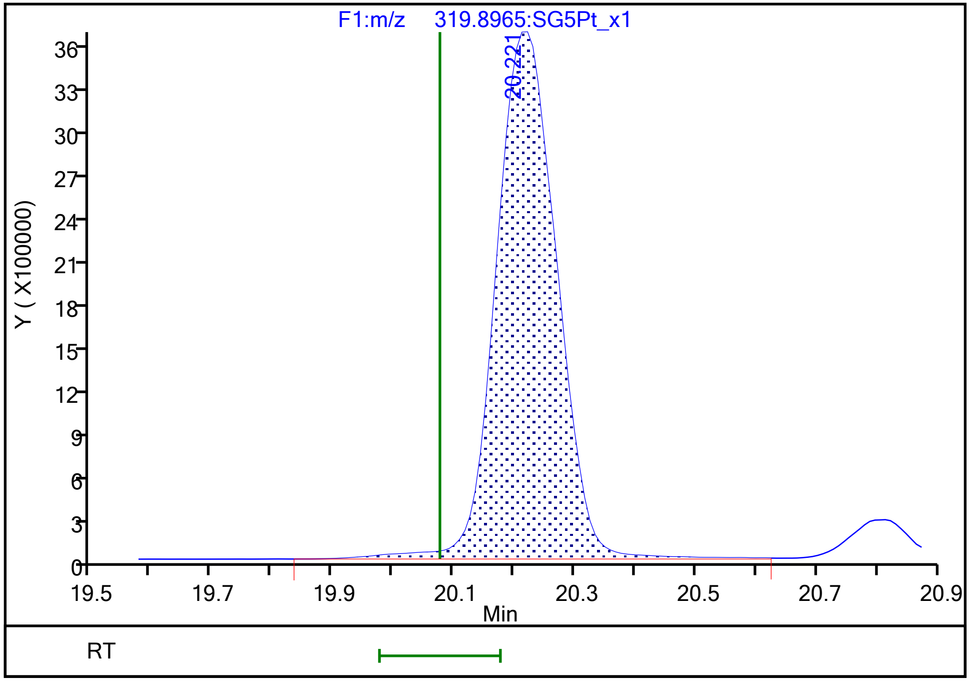

Reviewer: shardaa, 13-Oct-2020 10:39:17
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d				
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.89
Area:	304607
Amount:	8.784904
Amount Units:	pg/ul

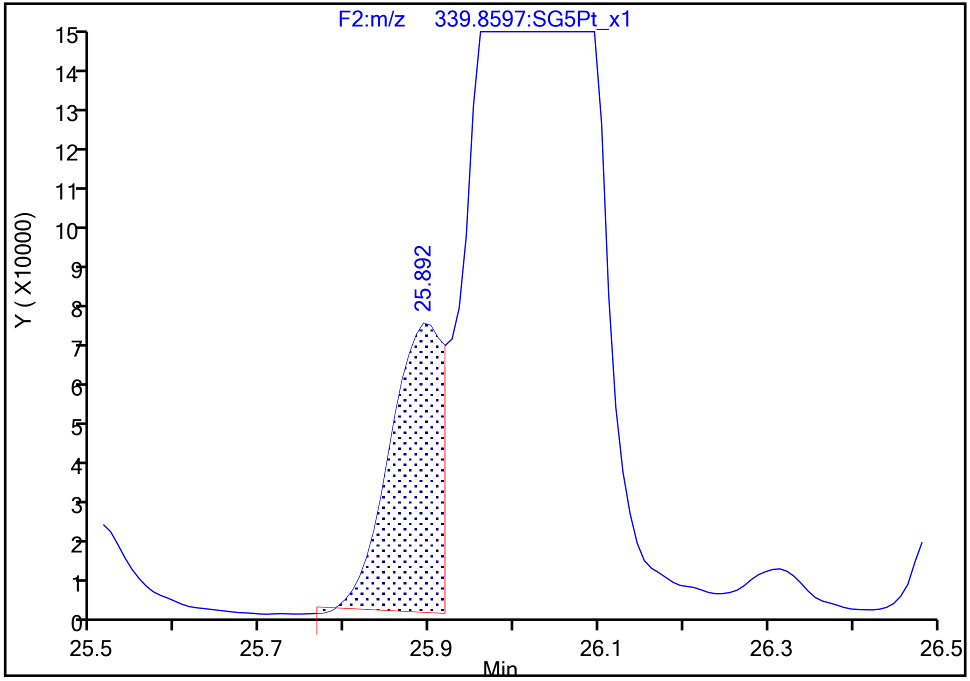

Manual Integration Results

RT:	26.04
Area:	4327964
Amount:	125.6409
Amount Units:	pg/ul

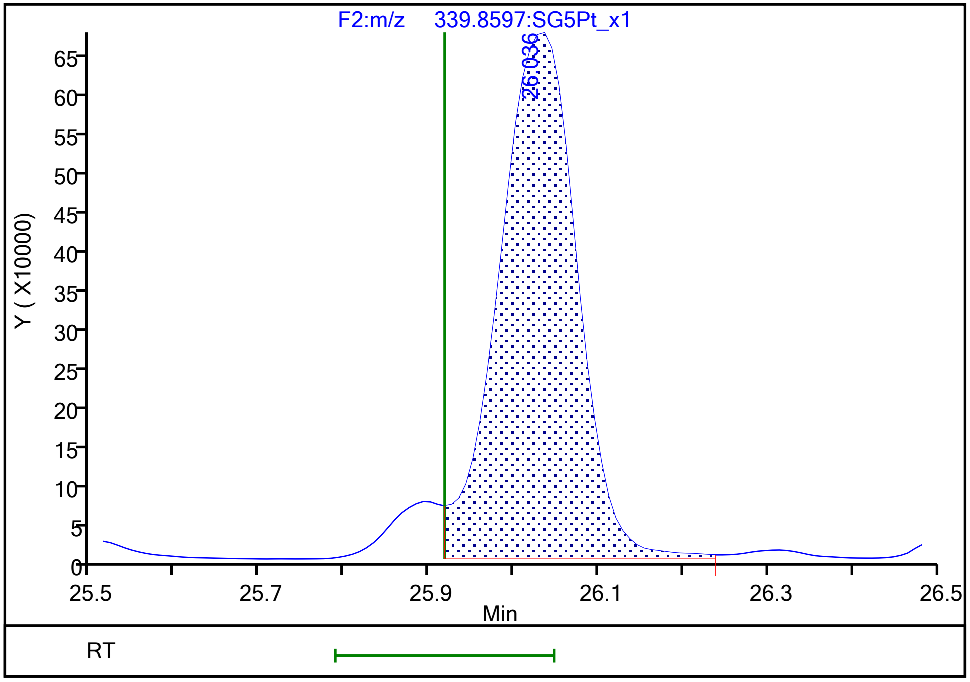

Reviewer: shardaa, 13-Oct-2020 10:39:47

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14
Client ID:	11215702-Tank#2-T=0		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 35.36
Area: 18058
Amount: 1.071086
Amount Units: pg/ul

Processing Integration Results

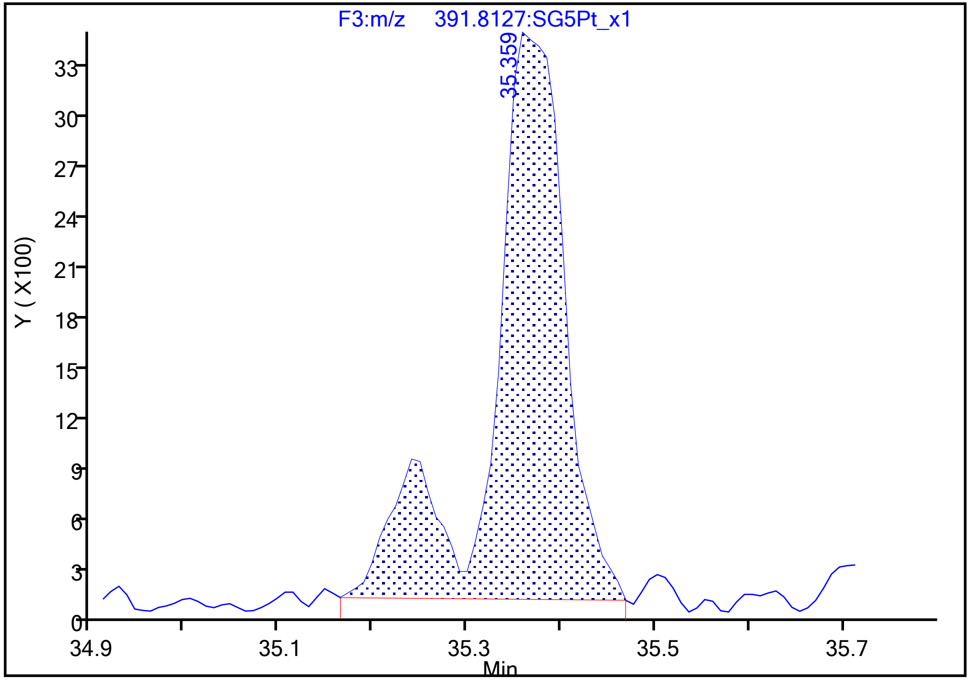

RT: 35.24
Area: 2977
Amount: 0.197155
Amount Units: pg/ul

Manual Integration Results

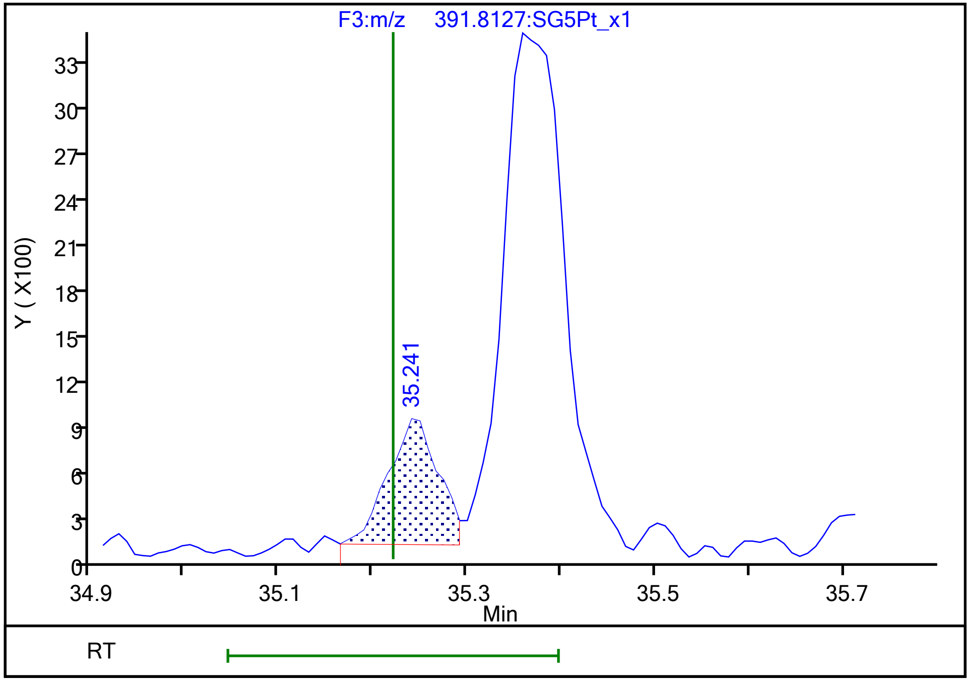

Reviewer: dadunj, 14-Oct-2020 10:47:42
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d				
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 3

Processing Integration Results

RT:	35.38
Area:	36008
Amount:	1.071086
Amount Units:	pg/ul

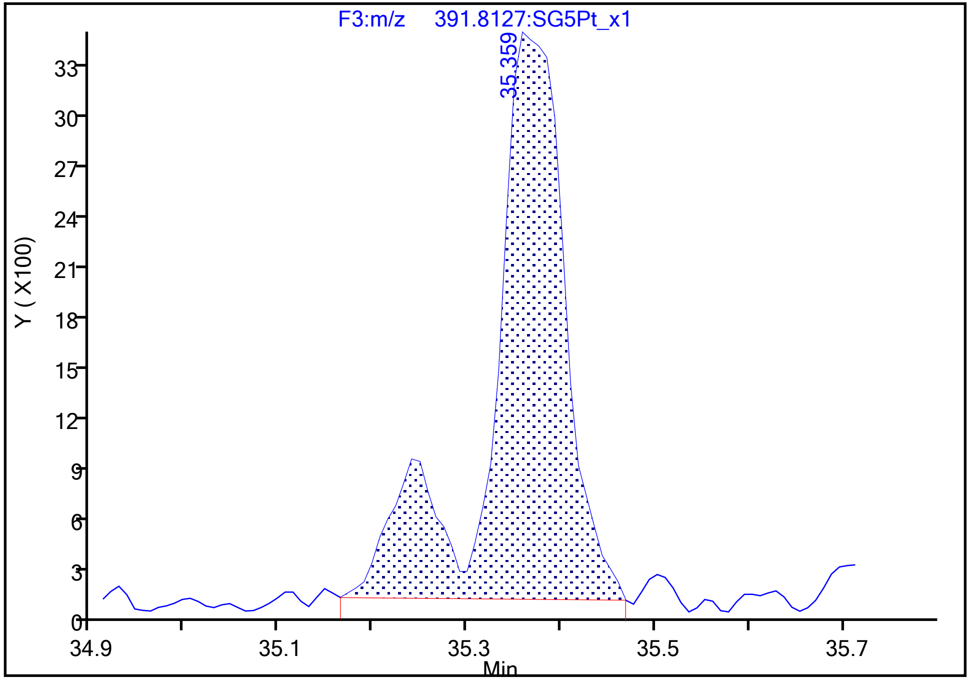

Manual Integration Results

RT:	35.23
Area:	6628
Amount:	0.197155
Amount Units:	pg/ul

Reviewer: dadunj, 14-Oct-2020 10:47:42

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00 Instrument ID: DFS 1
Lims ID: 320-65130-A-14-A Lab Sample ID: 320-65130-14
Client ID: 11215702-Tank#2-T=0
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 10.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT: 35.38
Area: 17950
Amount: 1.071086
Amount Units: pg/ul

Processing Integration Results

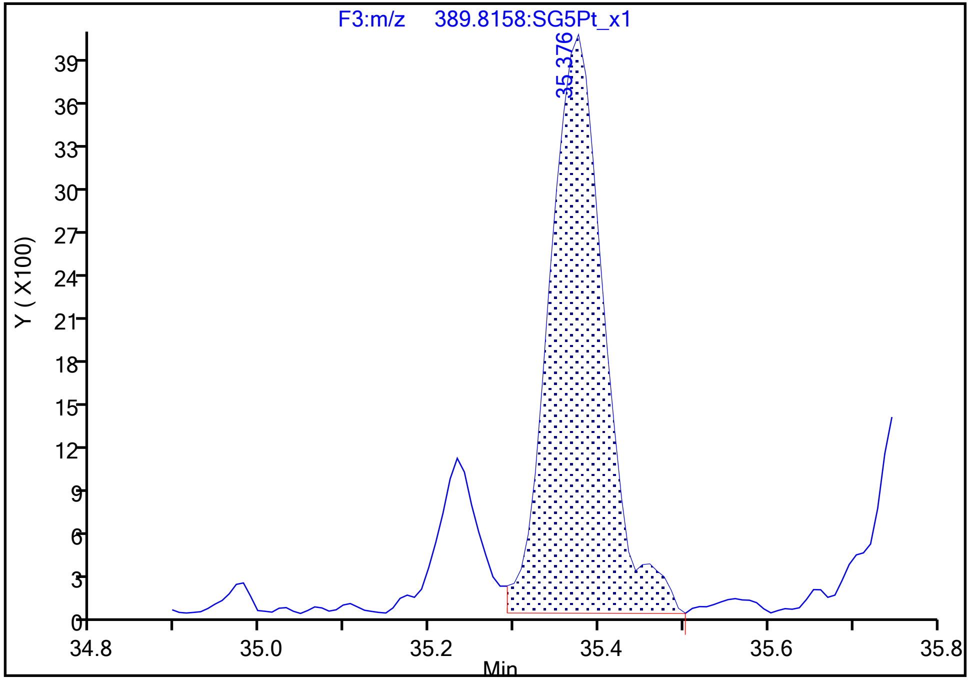

RT: 35.23
Area: 3651
Amount: 0.197155
Amount Units: pg/ul

Manual Integration Results

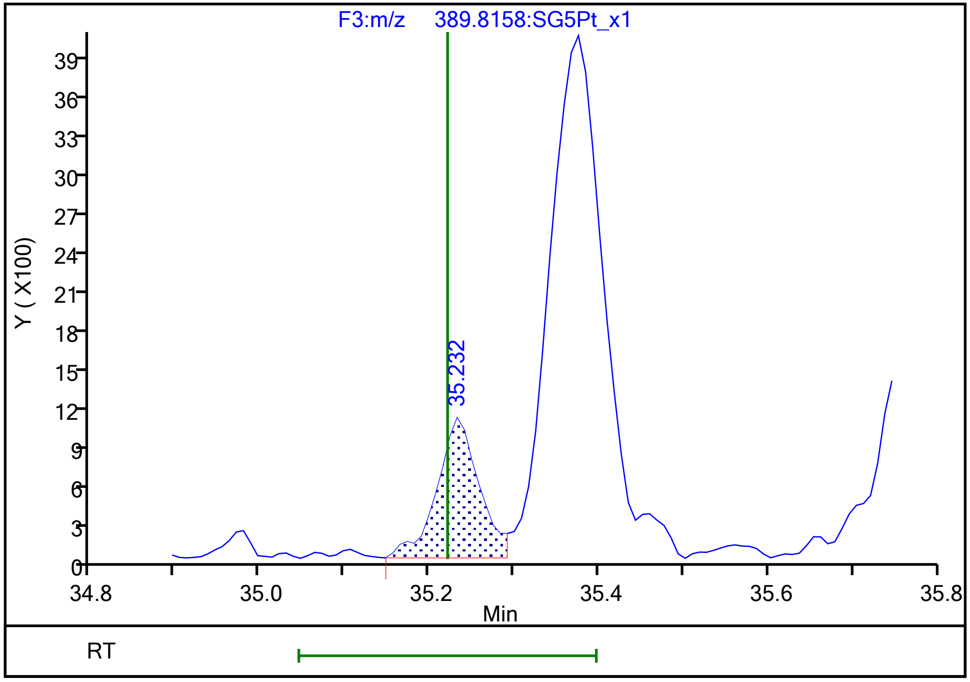

Reviewer: dadunj, 14-Oct-2020 10:47:43

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

RT:	35.36
Area:	18058
Amount:	1.197255
Amount Units:	pg/ul

Processing Integration Results

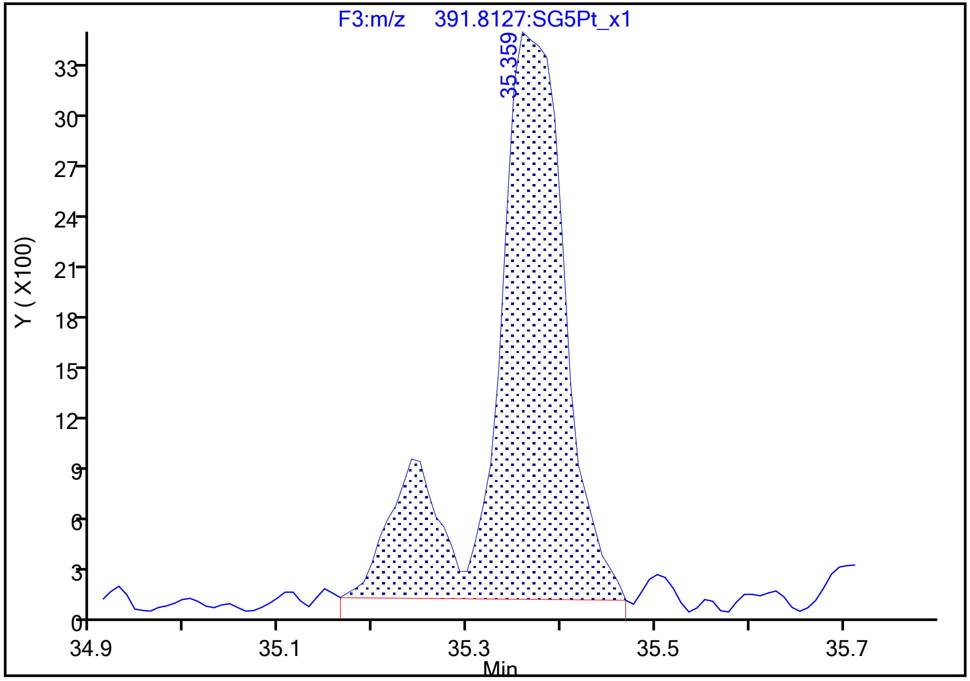

RT:	35.36
Area:	15079
Amount:	1.077423
Amount Units:	pg/ul

Manual Integration Results

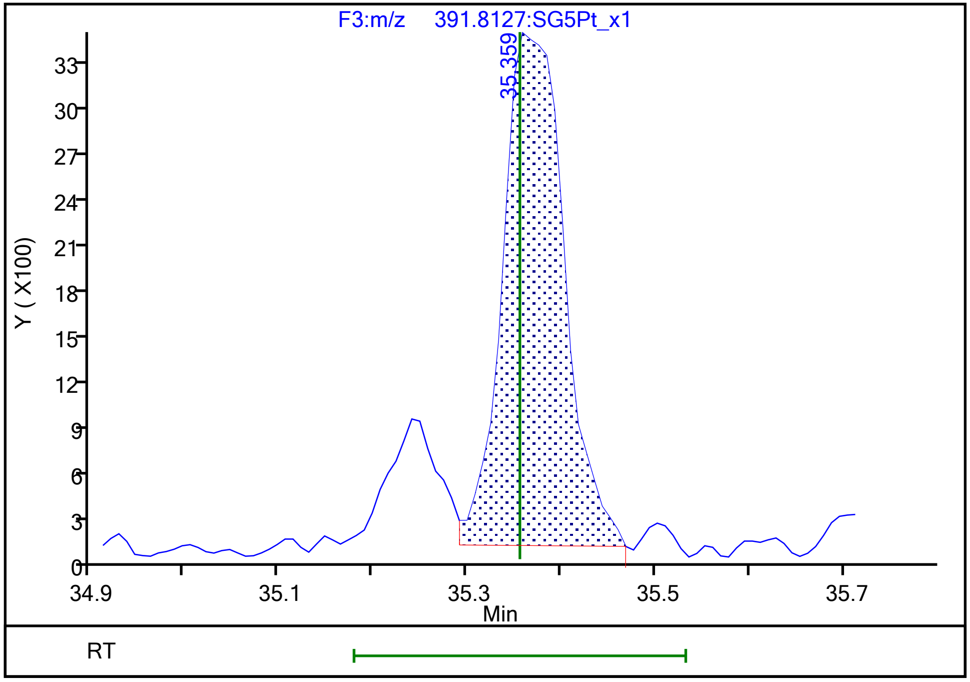

Reviewer: dadunj, 14-Oct-2020 10:47:40

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d				
Injection Date:	12-Oct-2020 17:22:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT:	35.38
Area:	17950
Amount:	1.197255
Amount Units:	pg/ul

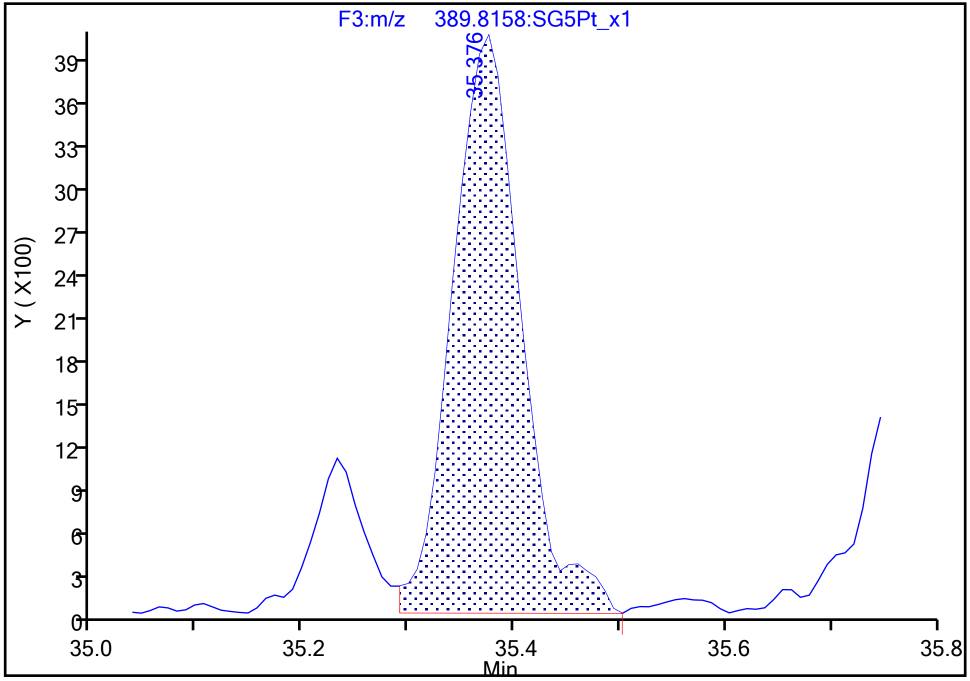

Manual Integration Results

RT:	35.38
Area:	17325
Amount:	1.077423
Amount Units:	pg/ul

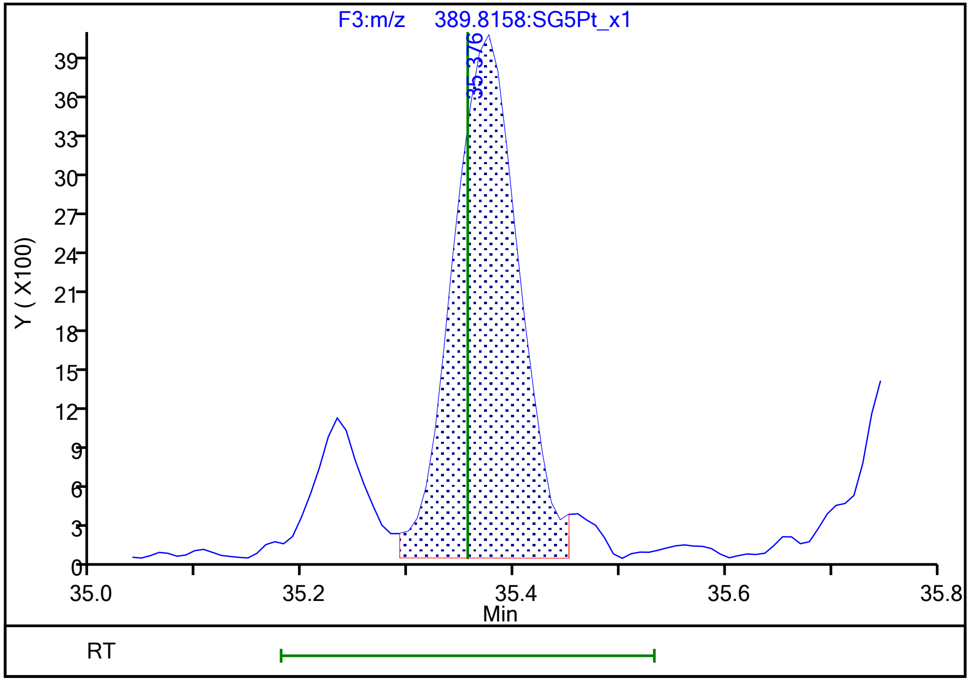

Reviewer: dadunj, 14-Oct-2020 10:47:48

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421107
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

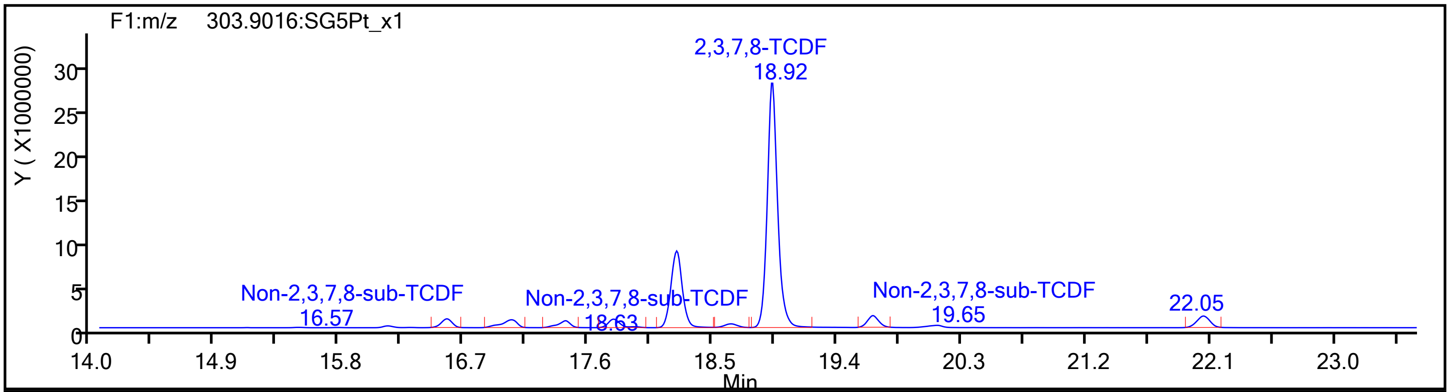

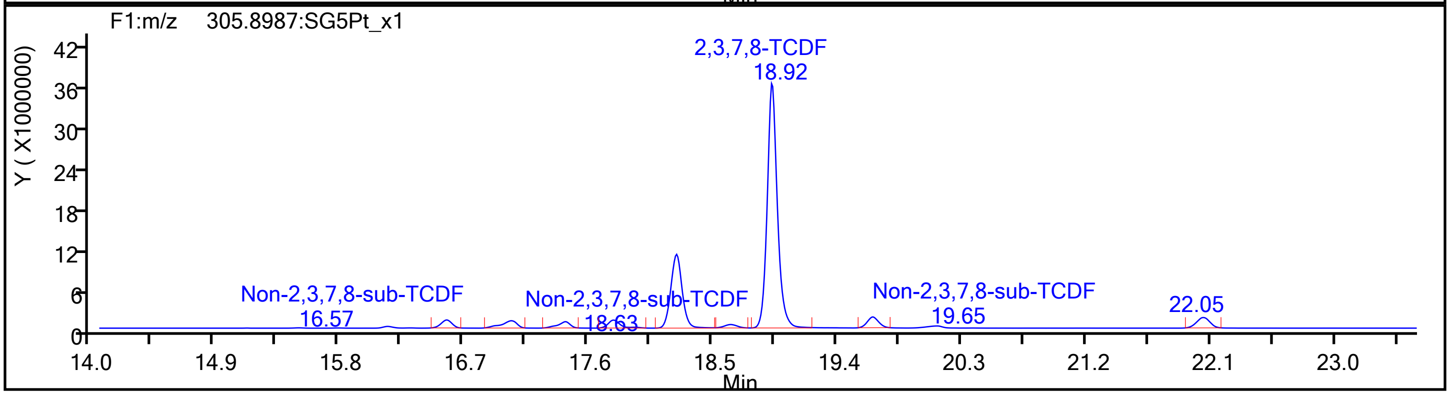

TCDF Standards

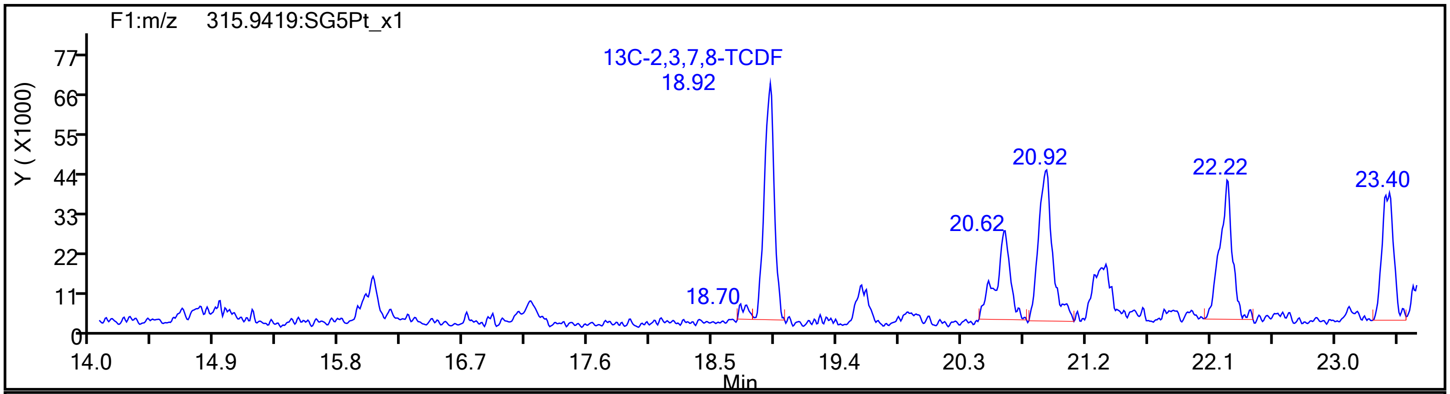

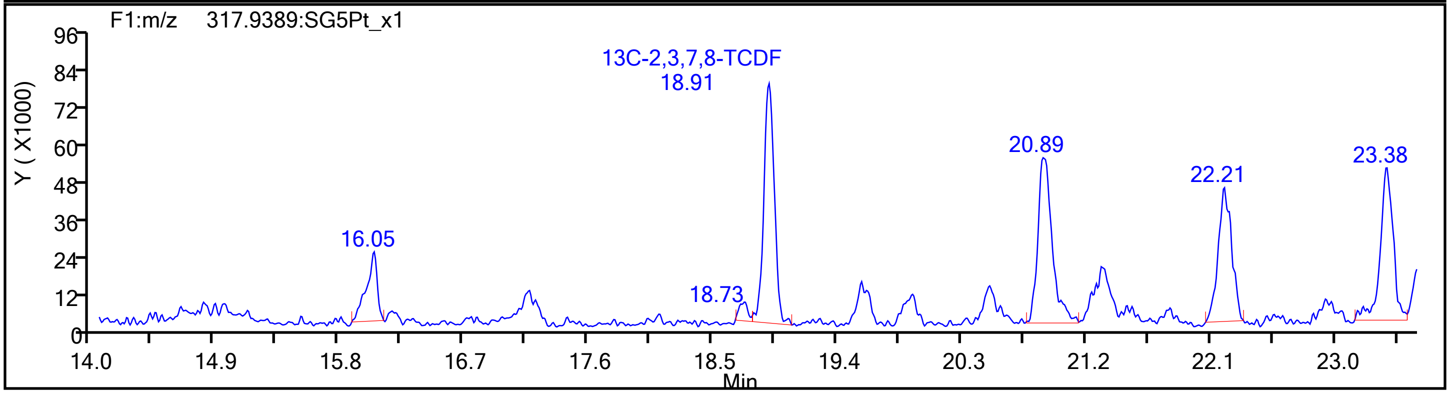

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date:	12-Oct-2020 17:22:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421107	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

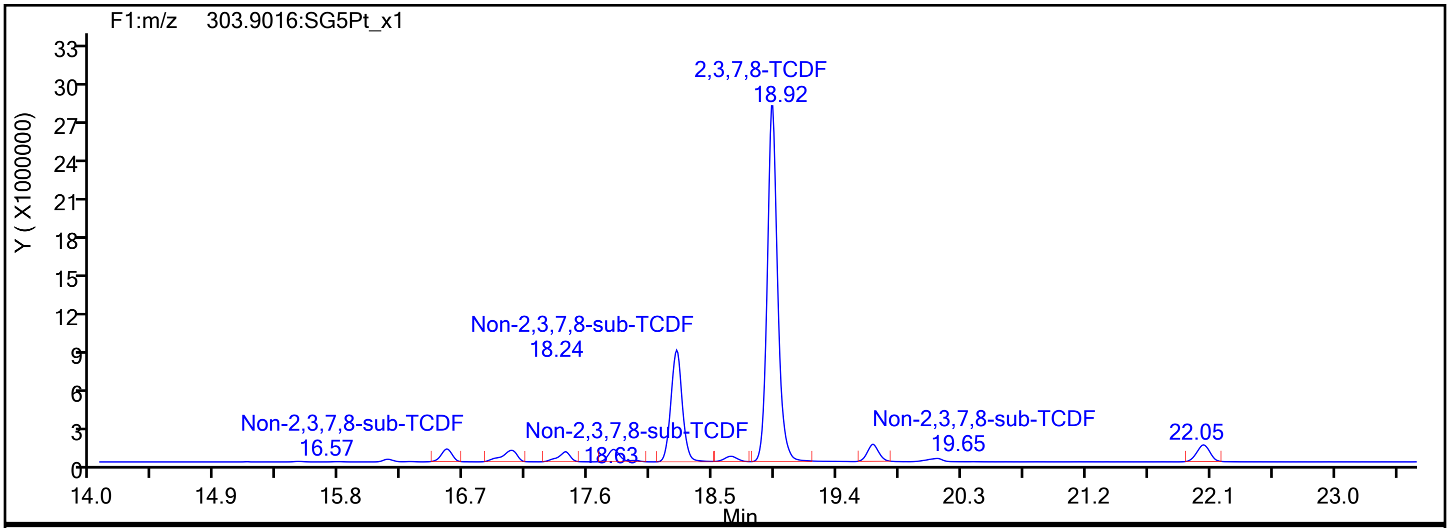

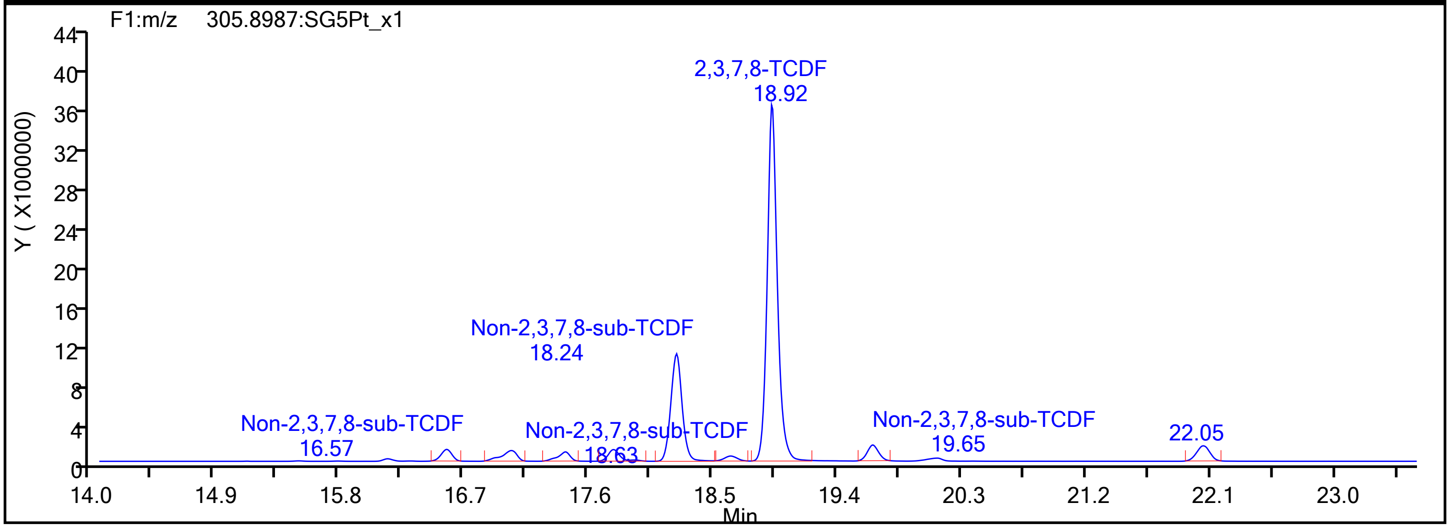

TCDF Interference Mass

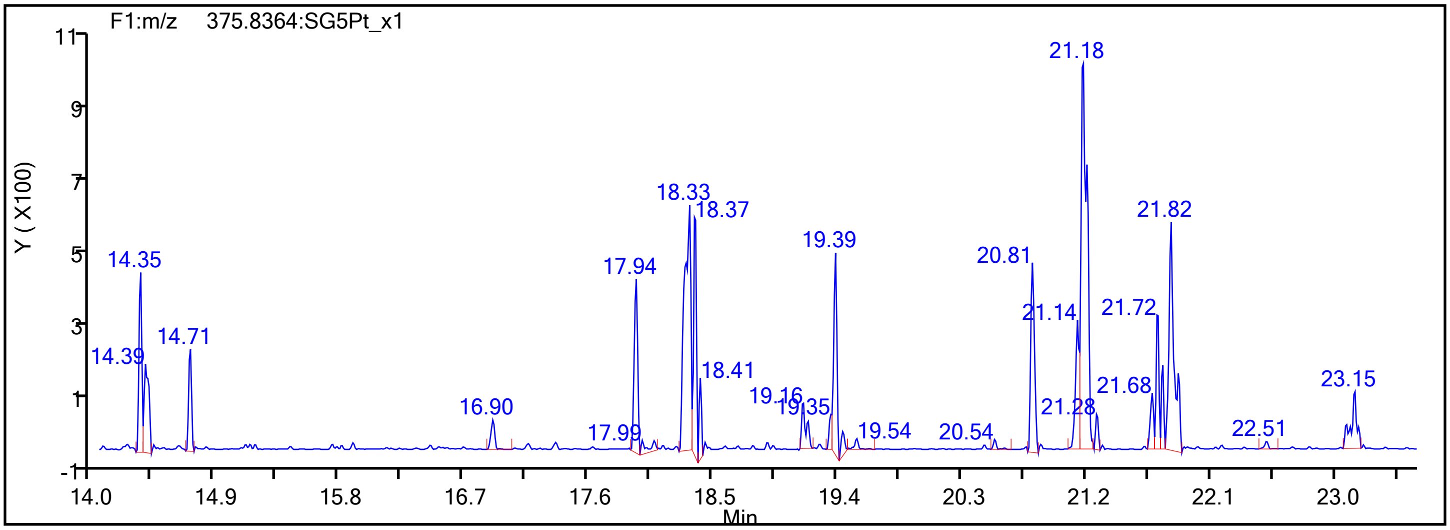

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date: 12-Oct-2020 17:22:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-T=0

Worklist#: 421107 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

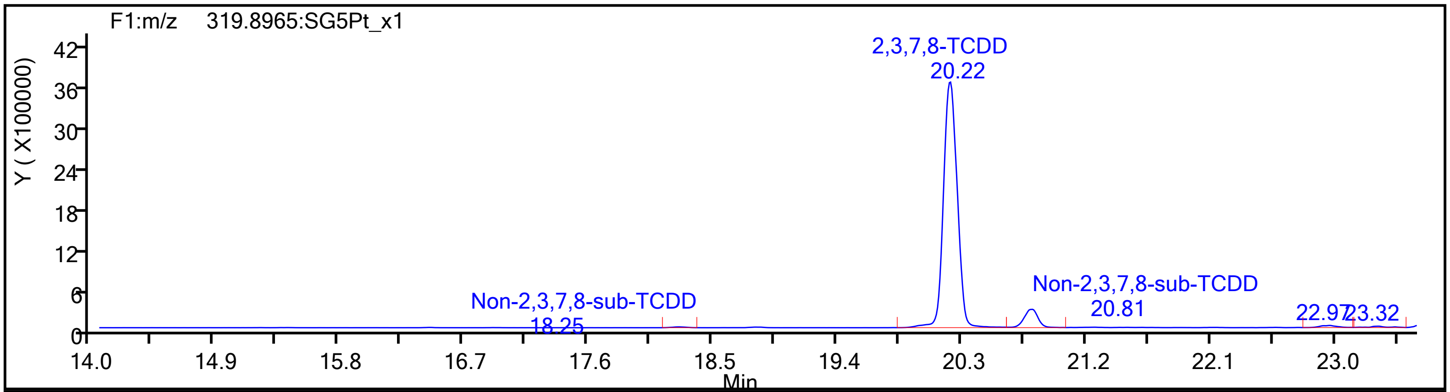

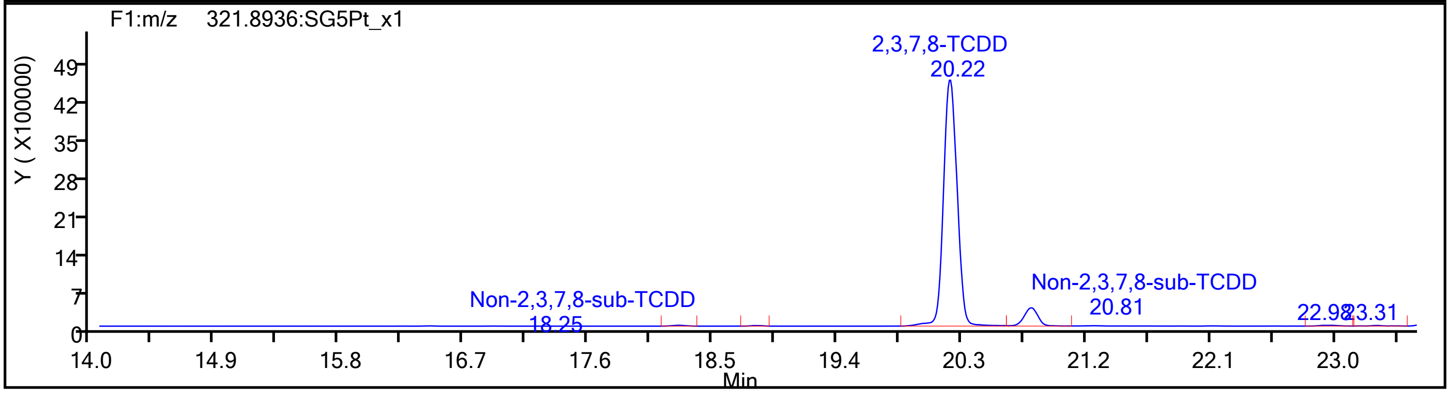

TCDD Standards

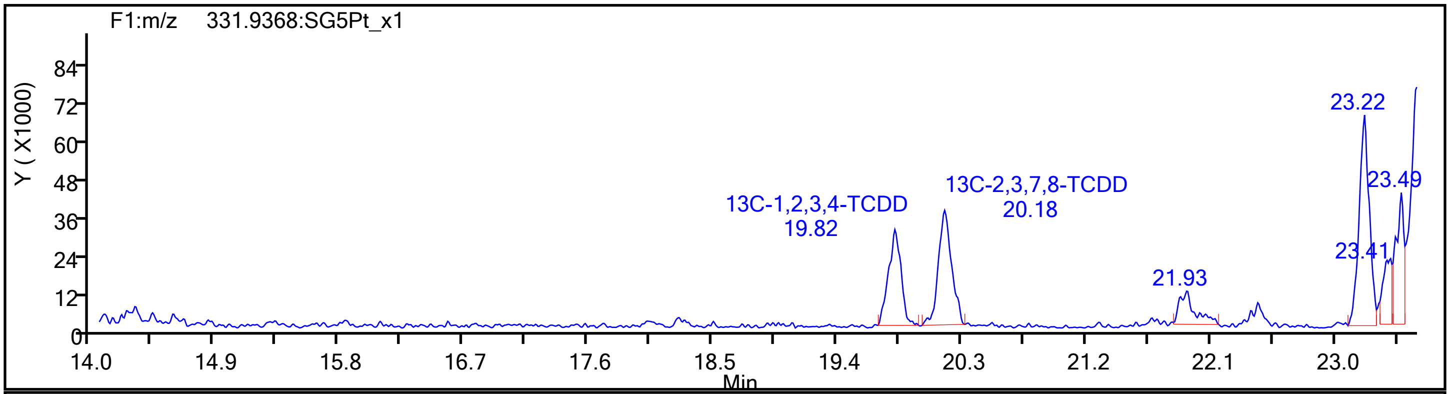

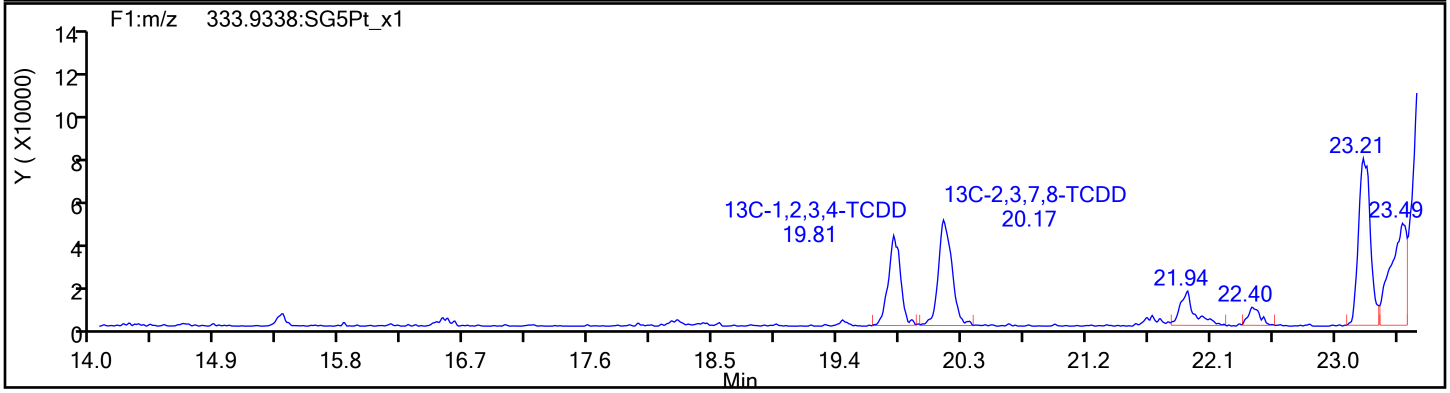

Report Date: 14-Oct-2020 10:49:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	12-Oct-2020 17:22:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421107	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

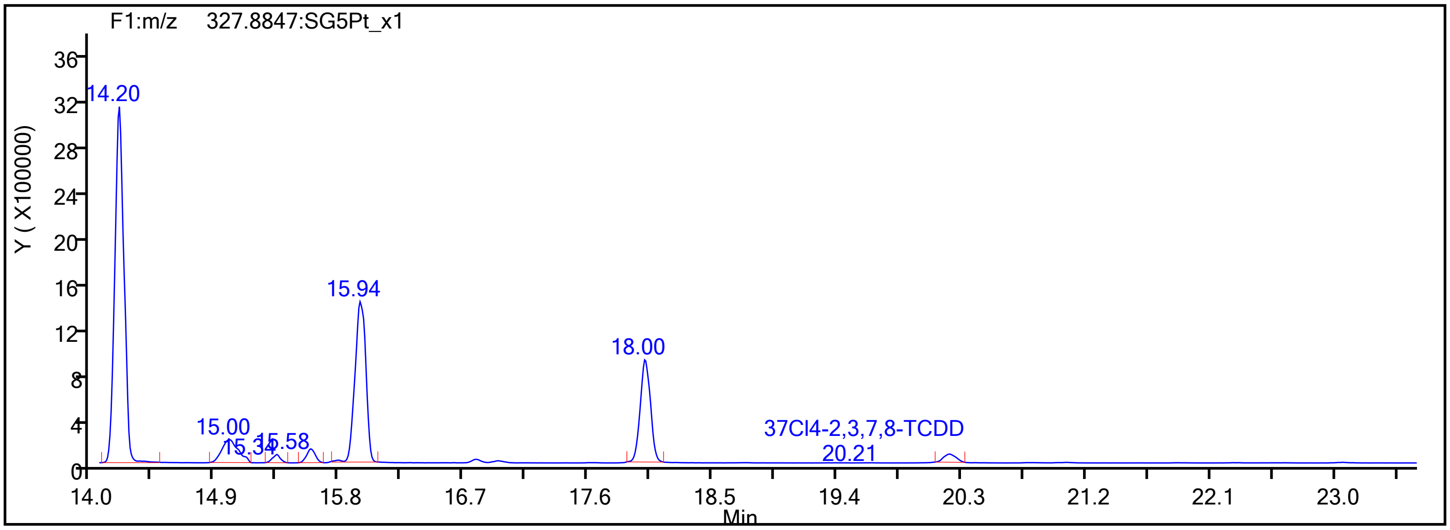

37Cl4-TCDD Standards

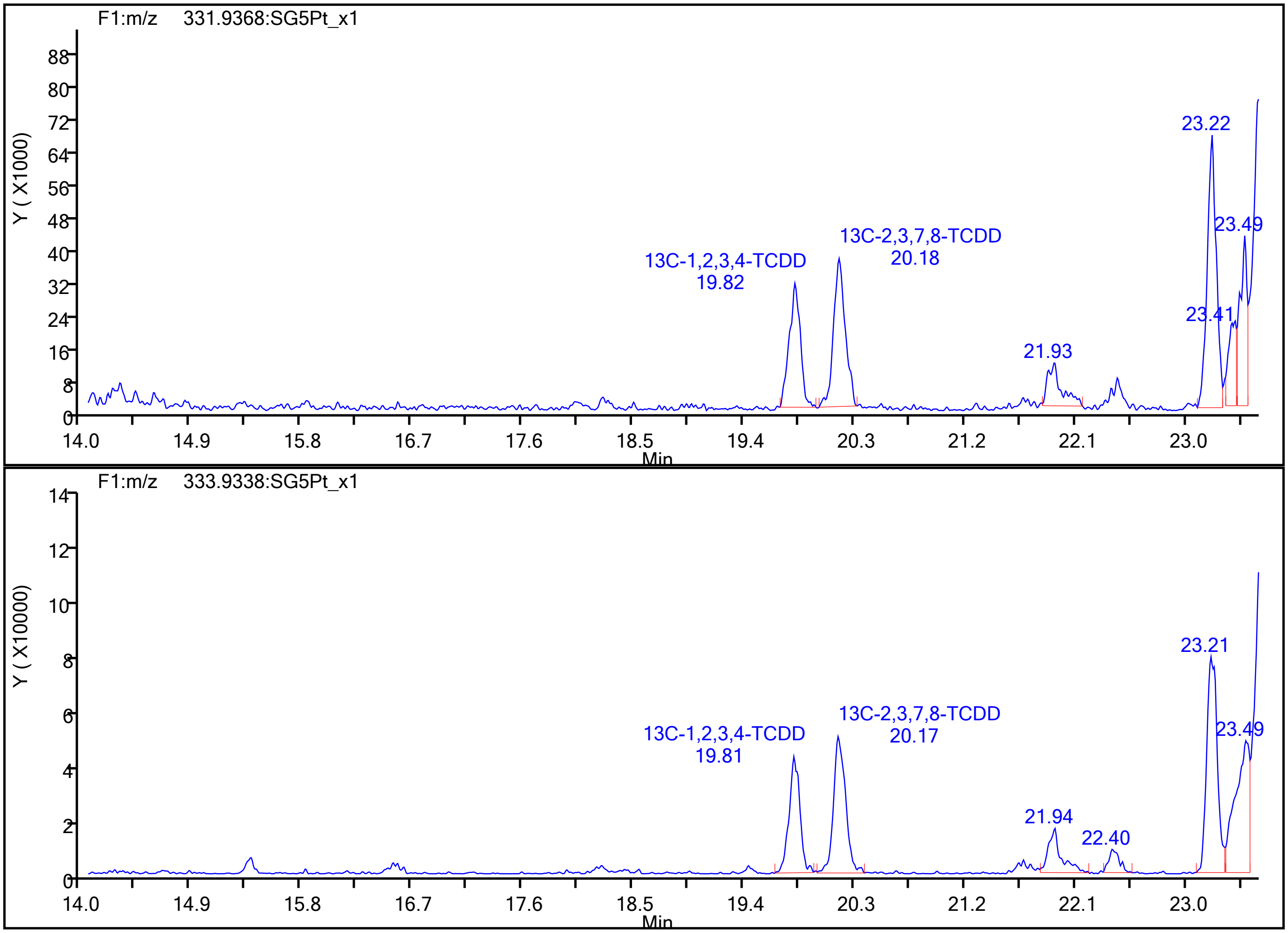

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date:	12-Oct-2020 17:22:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

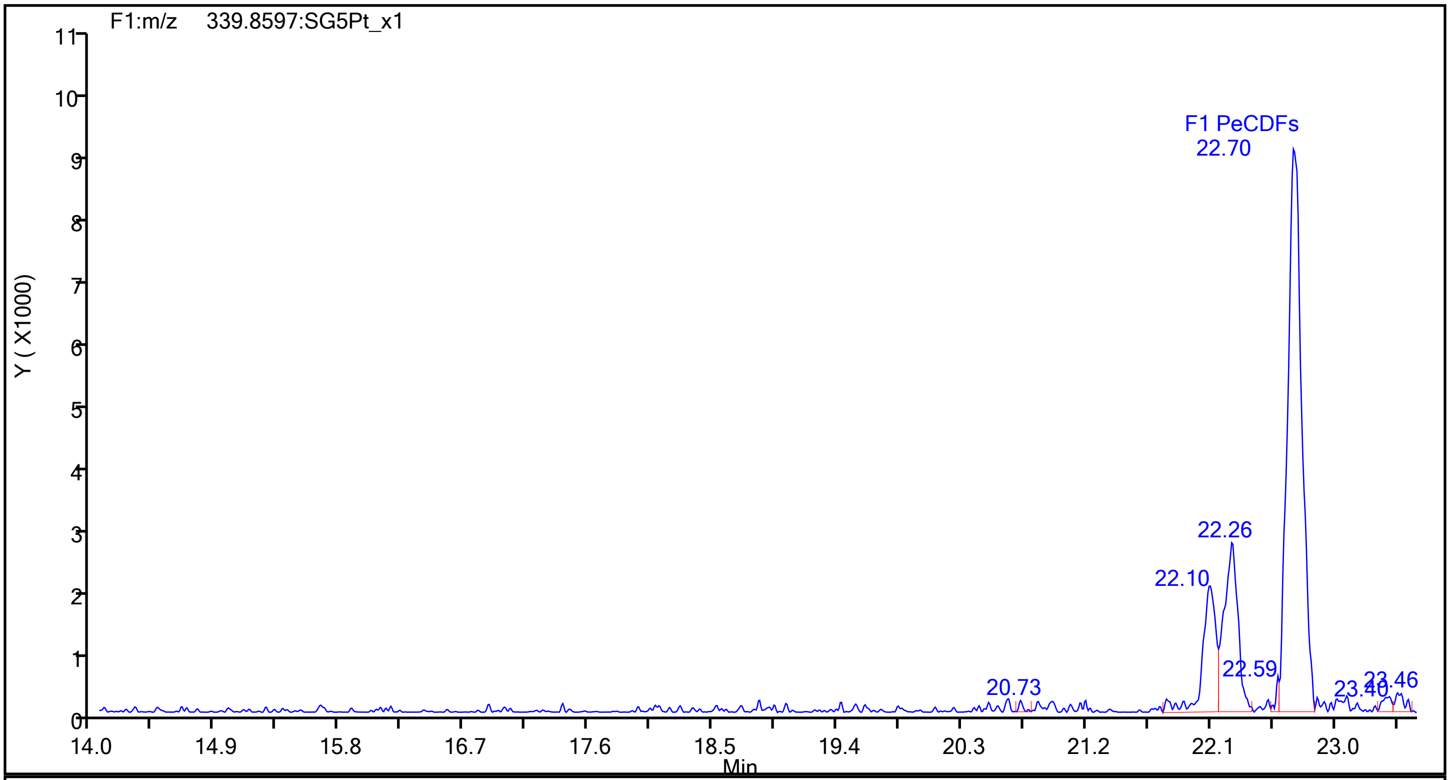

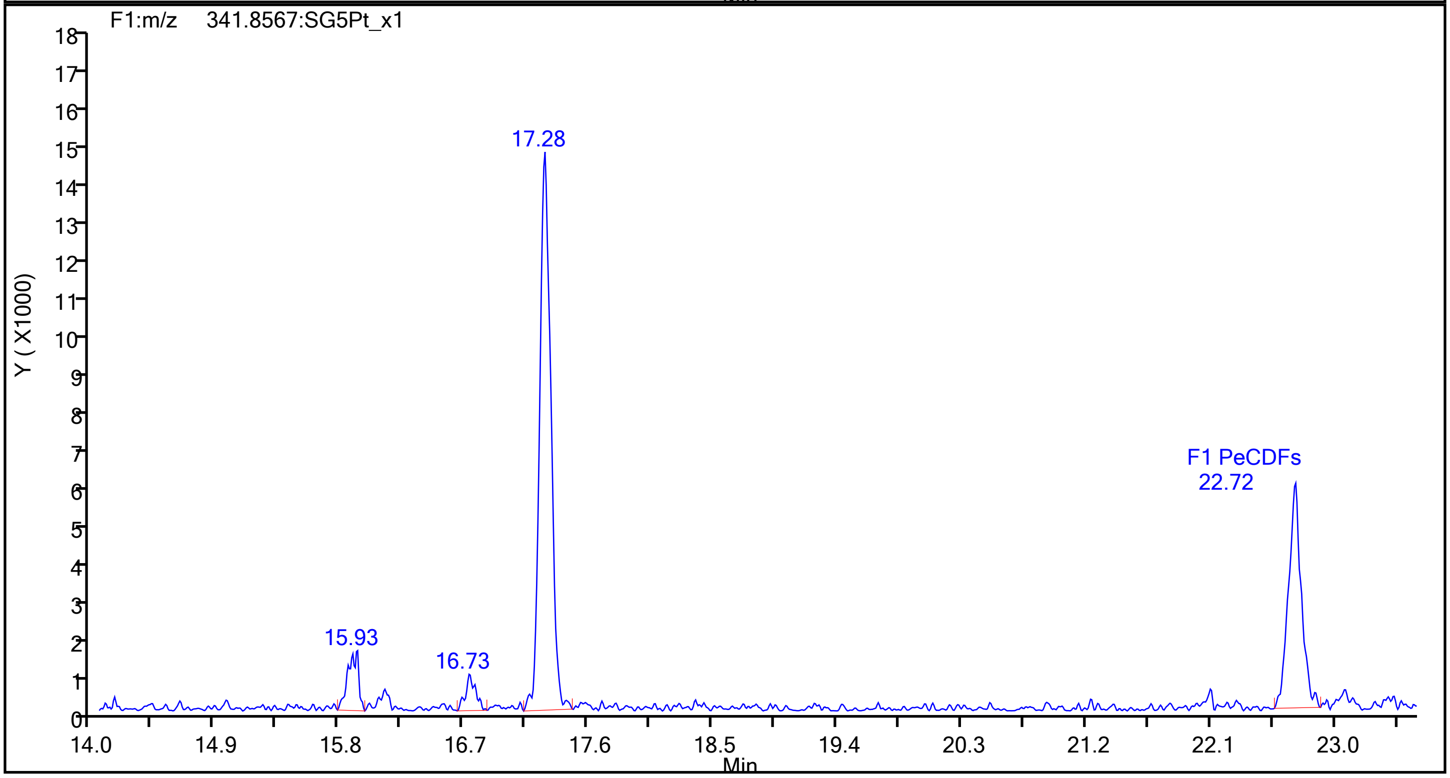

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date: 12-Oct-2020 17:22:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-T=0

Worklist#: 421107

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

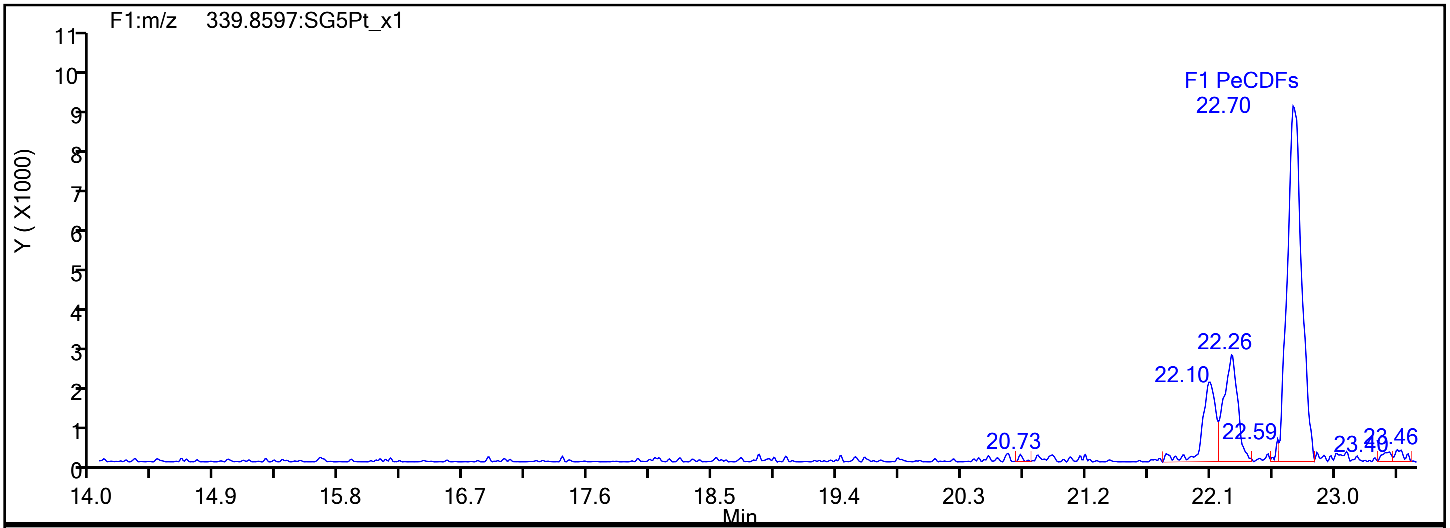

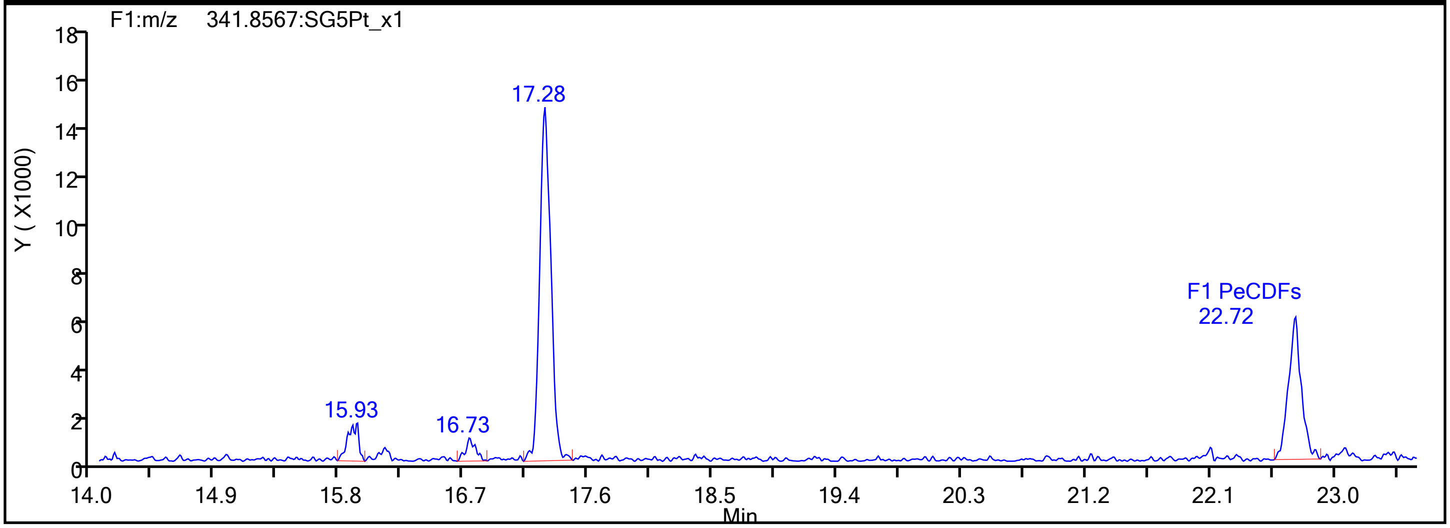

F1 PeCDFs Interference Mass

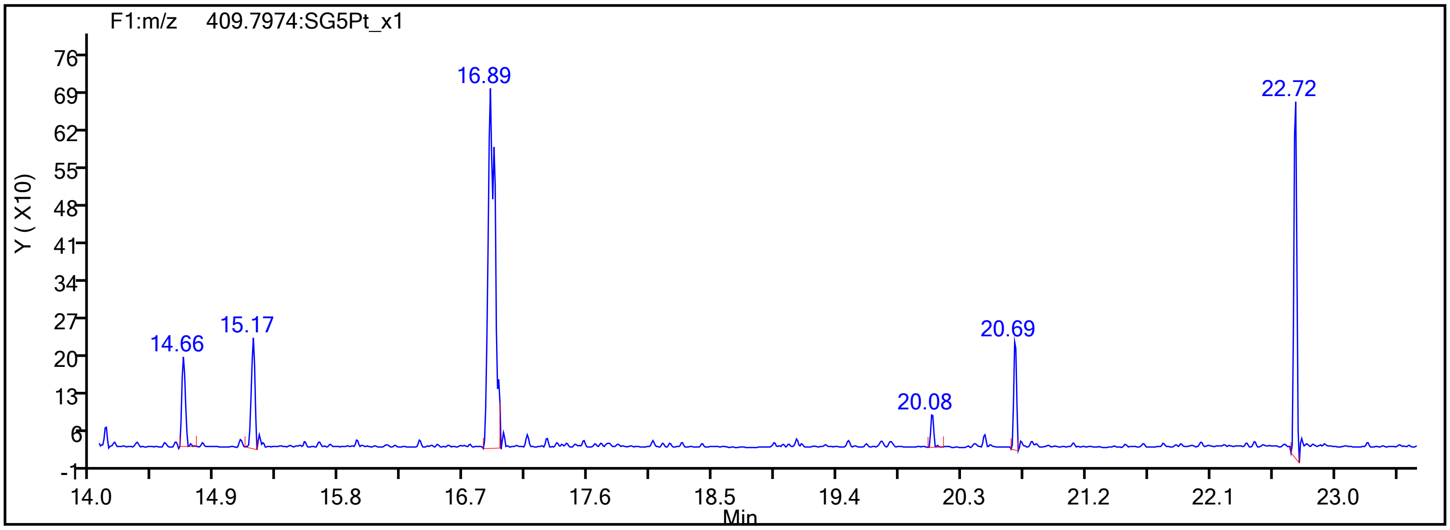

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421107	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

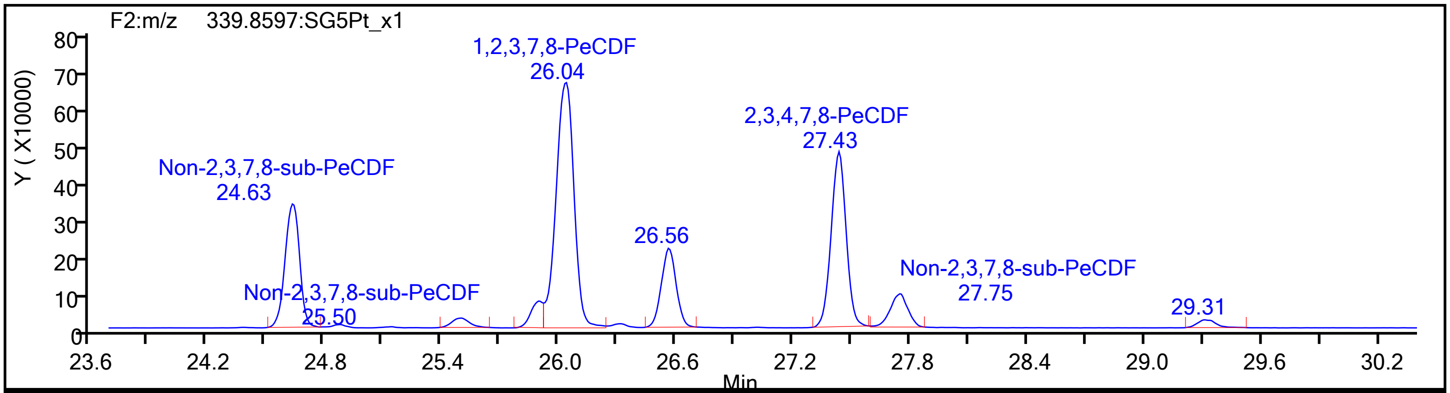

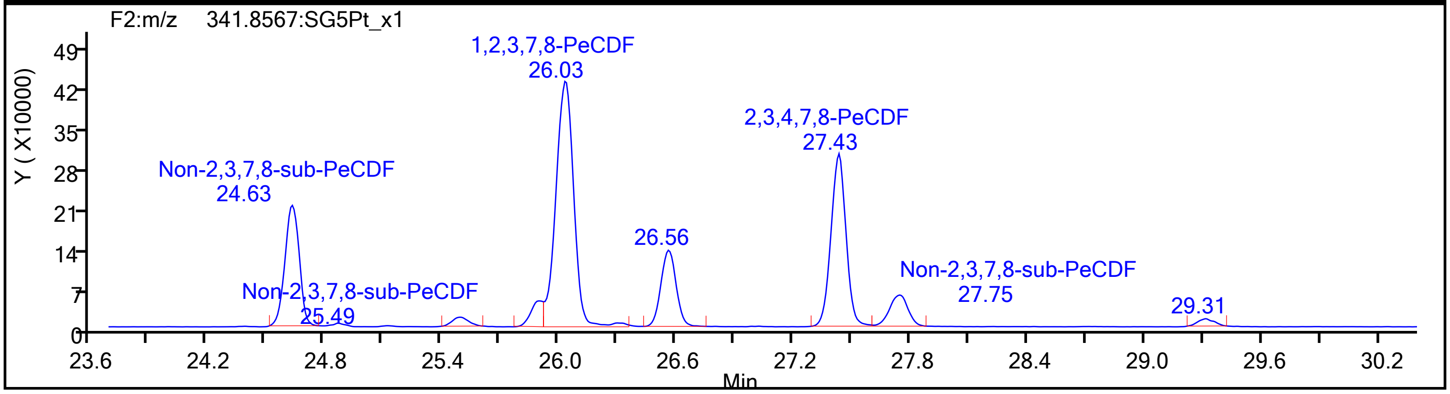

PeCDF Standards

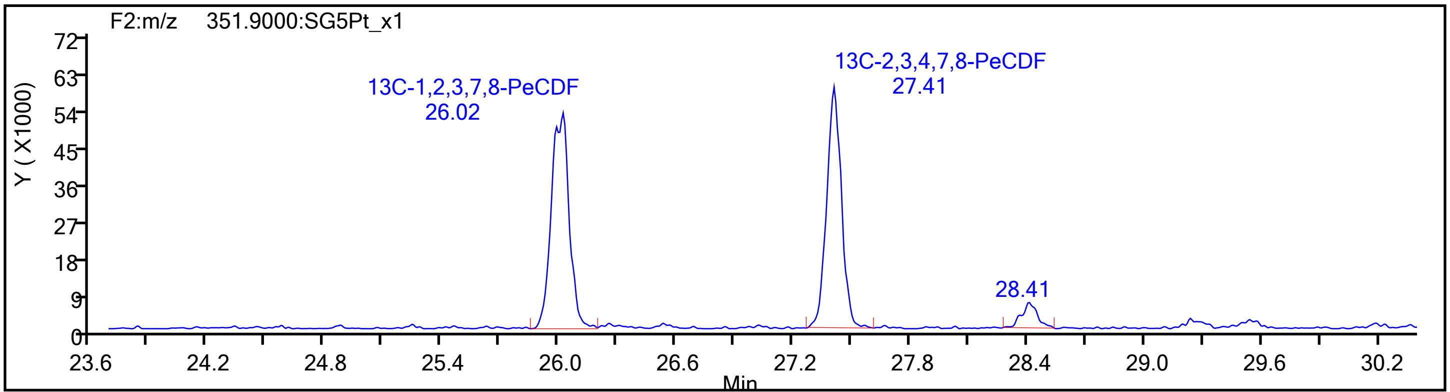

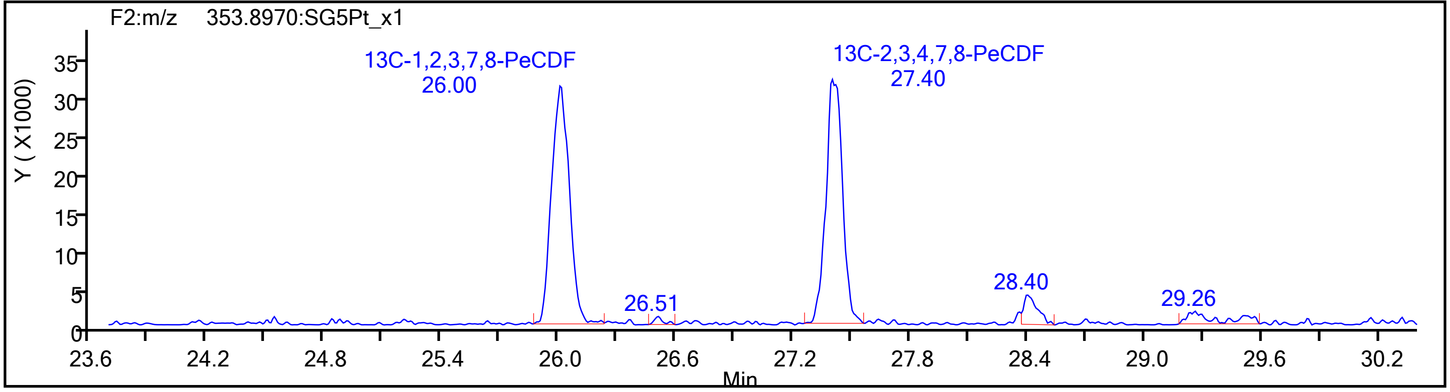

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421107	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

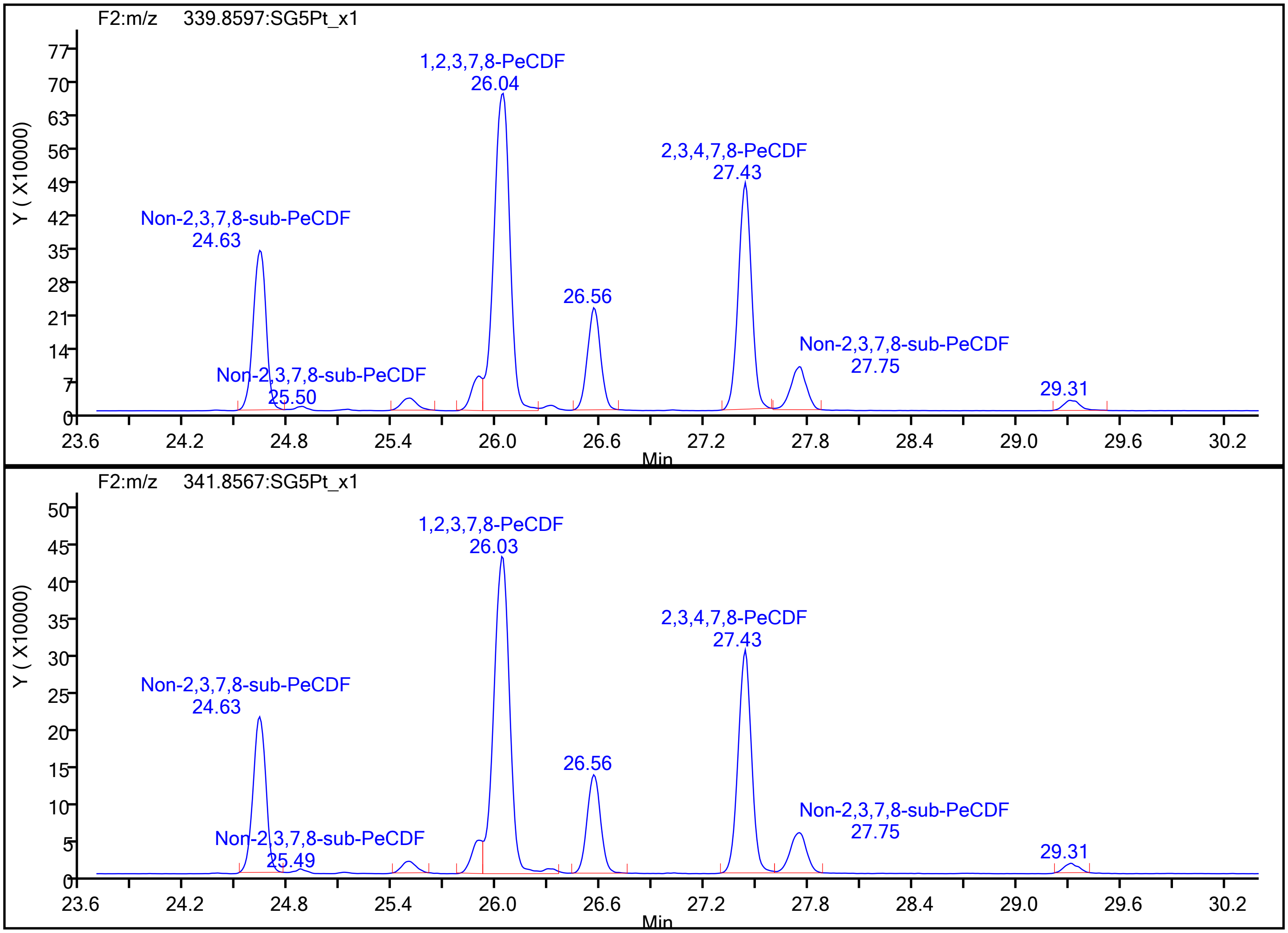

PeCDF Interference Mass

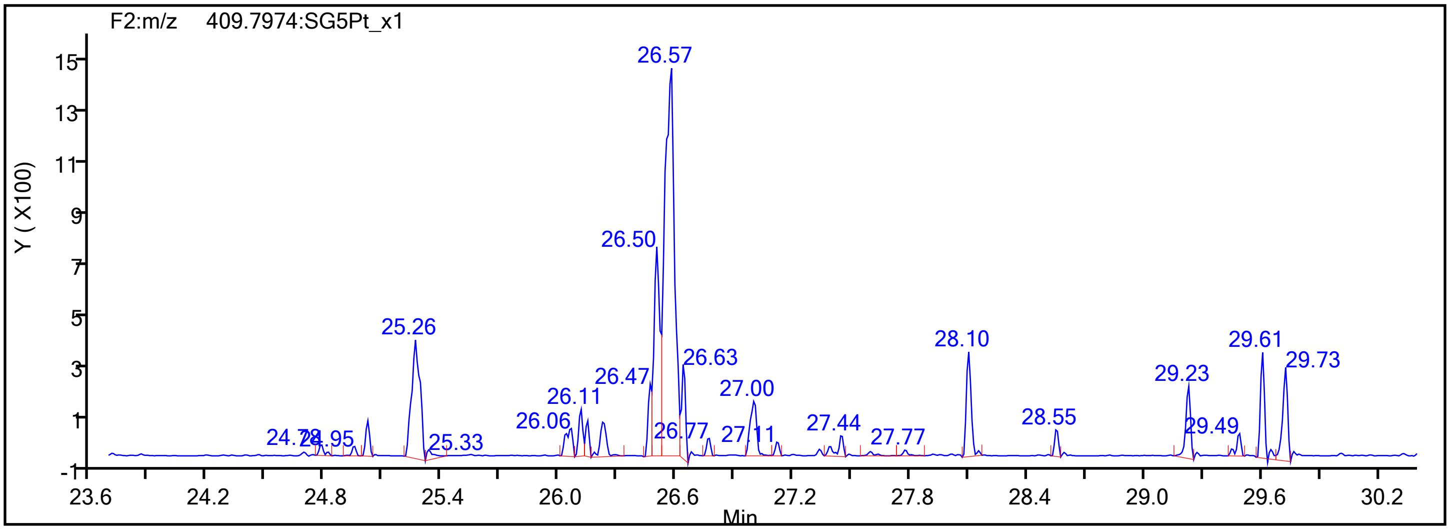

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date: 12-Oct-2020 17:22:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-T=0

Worklist#: 421107 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

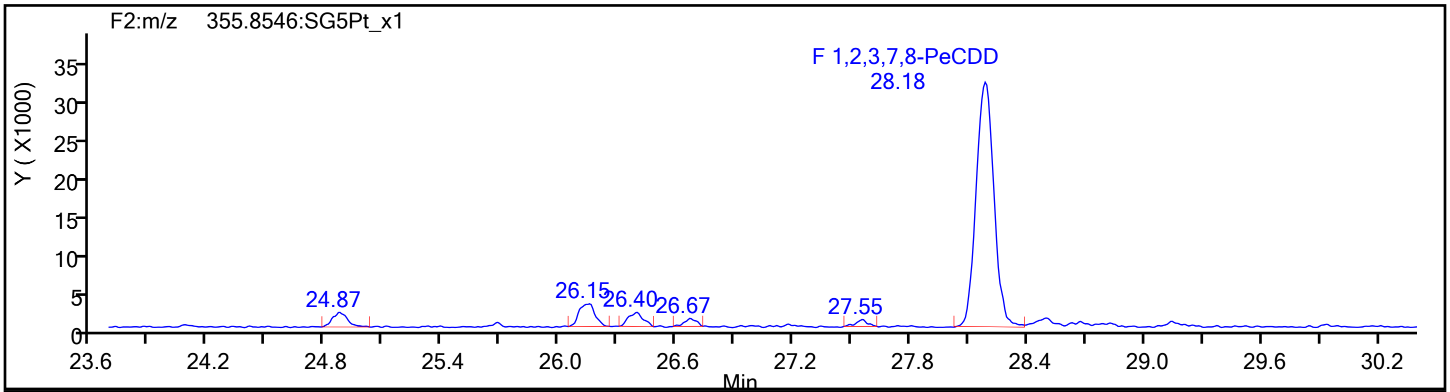

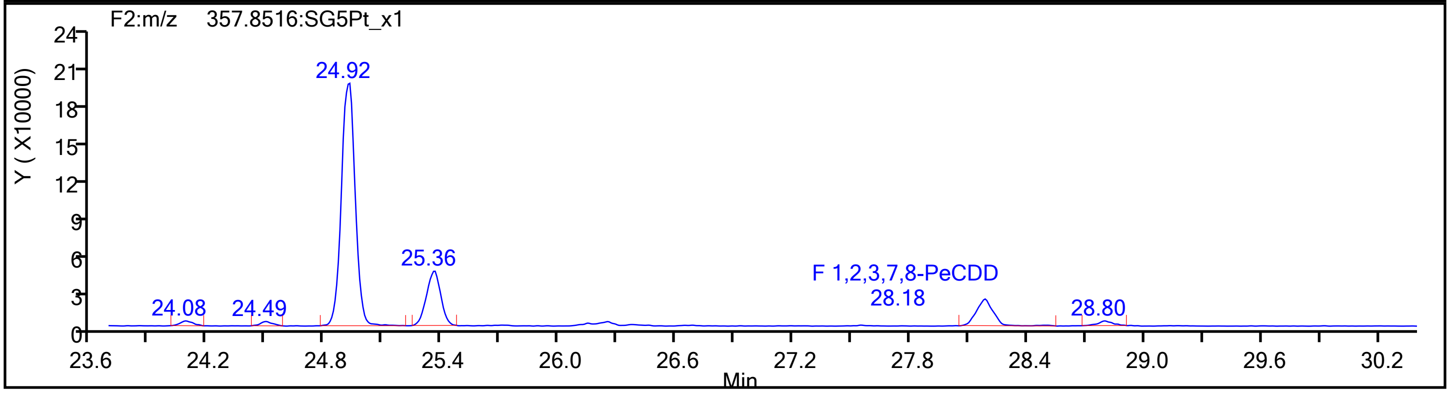

PeCDD Standards

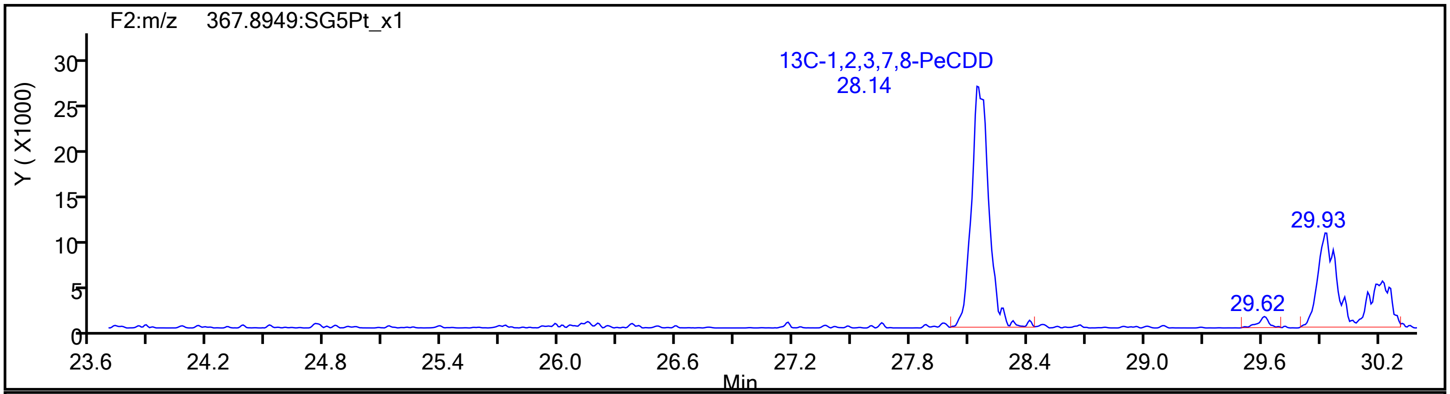

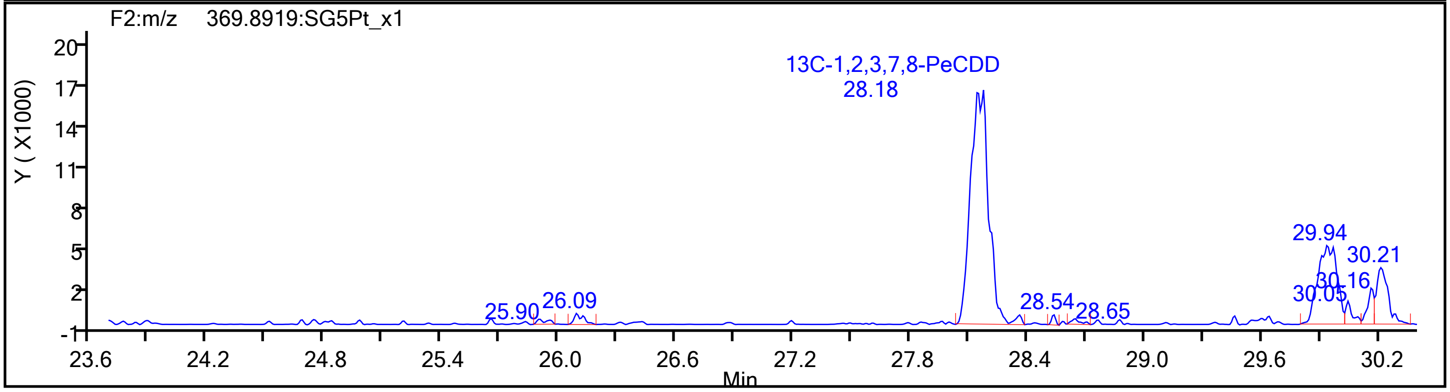

Report Date: 14-Oct-2020 10:49:24
Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421107
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

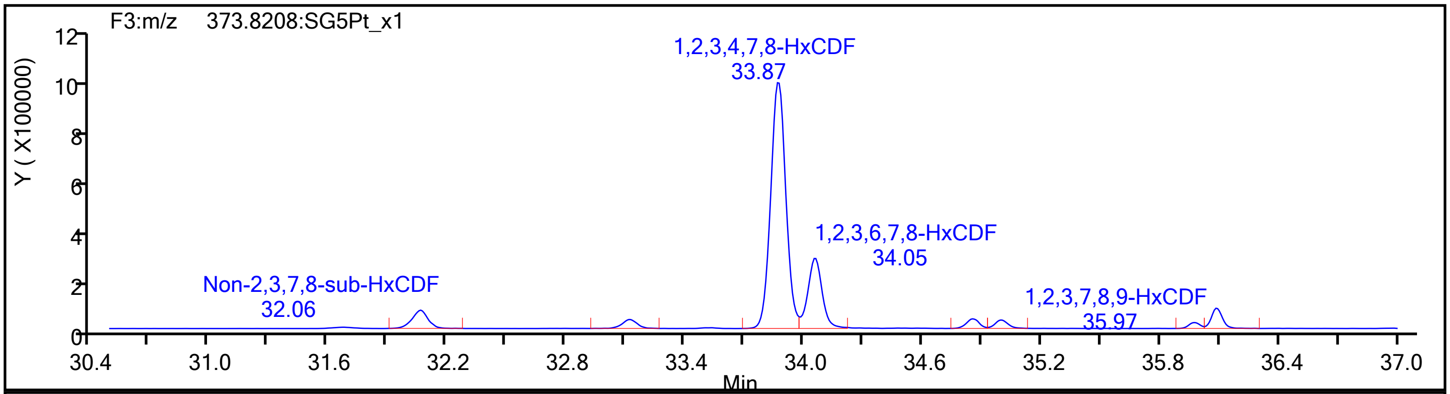

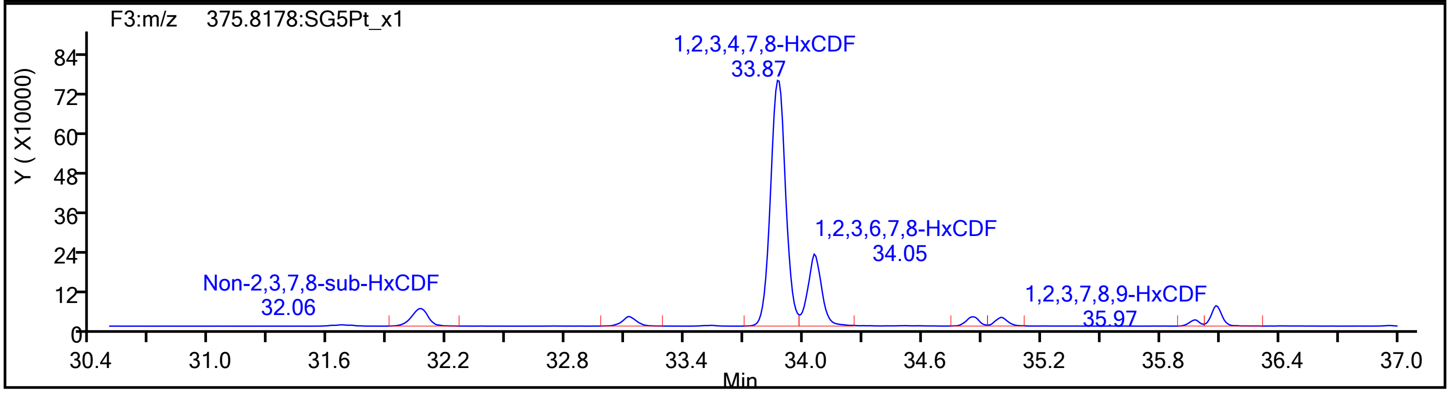

HxCDF Standards

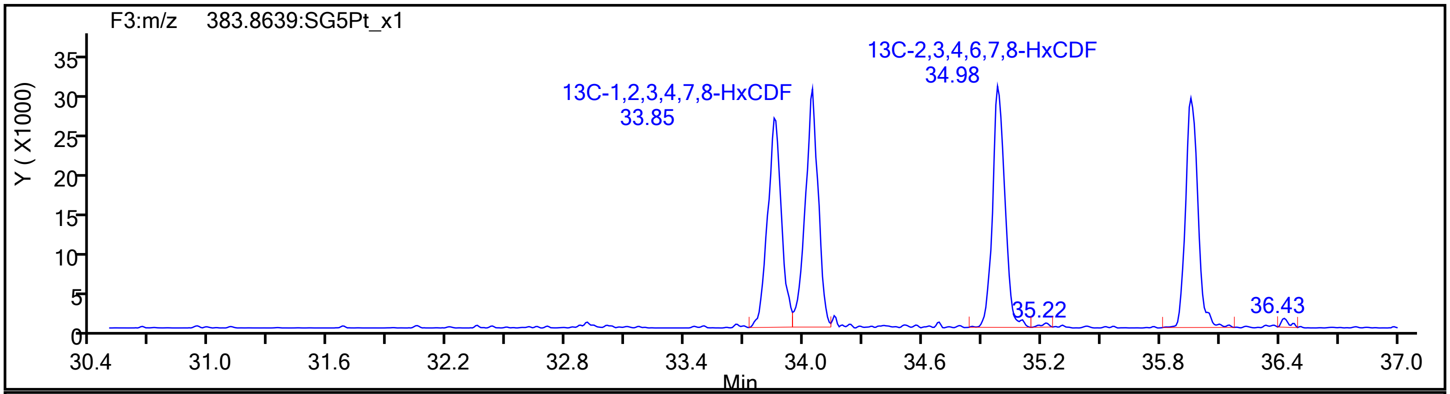

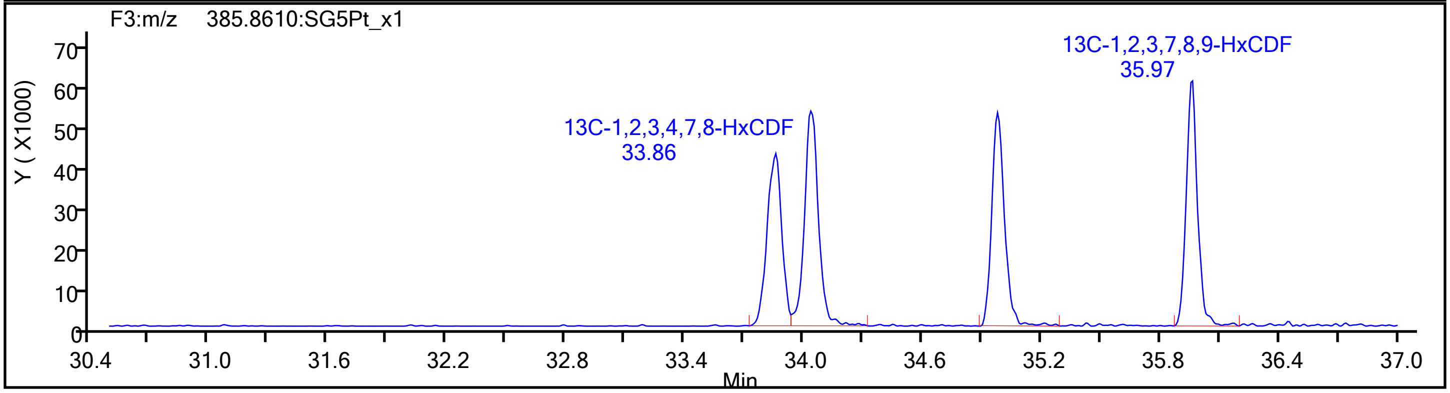

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

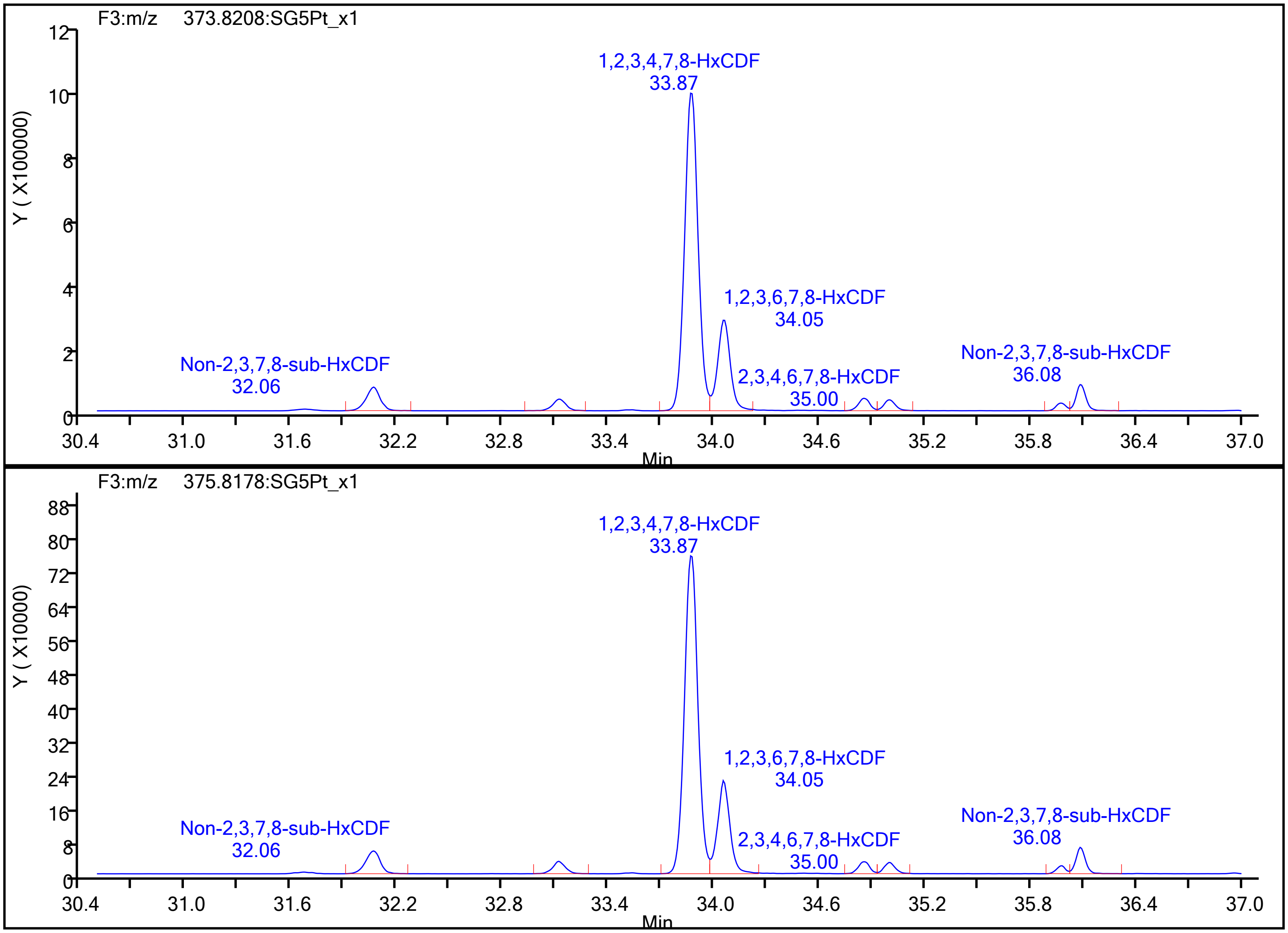

HxCDF Interference Mass

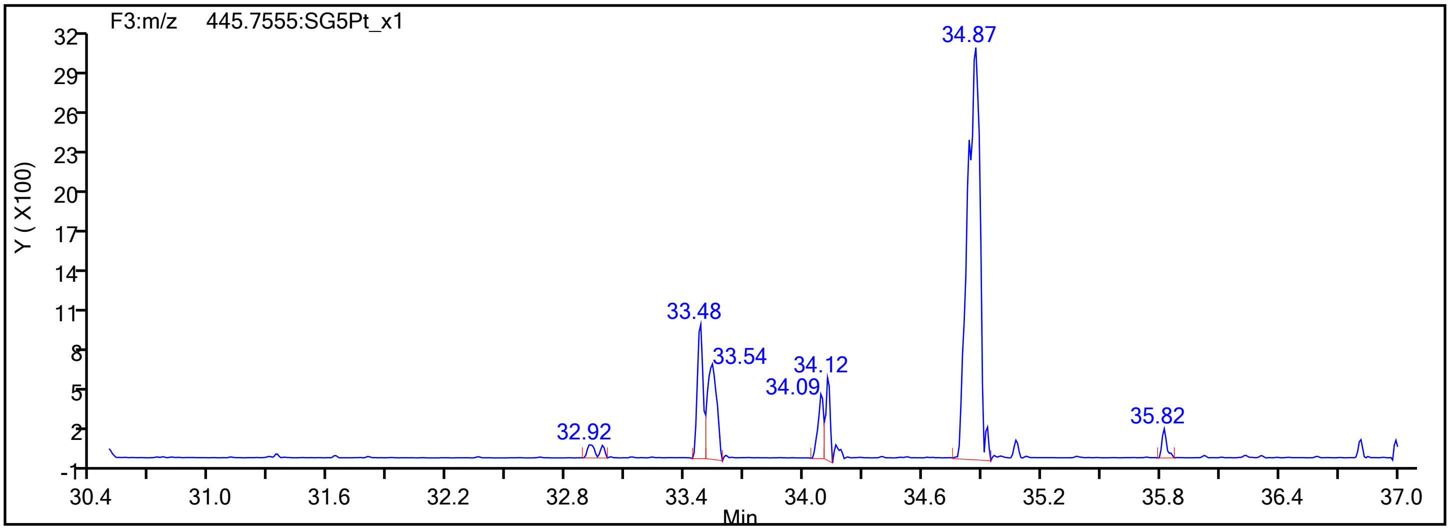

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date: 12-Oct-2020 17:22:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-T=0

Worklist#: 421107 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

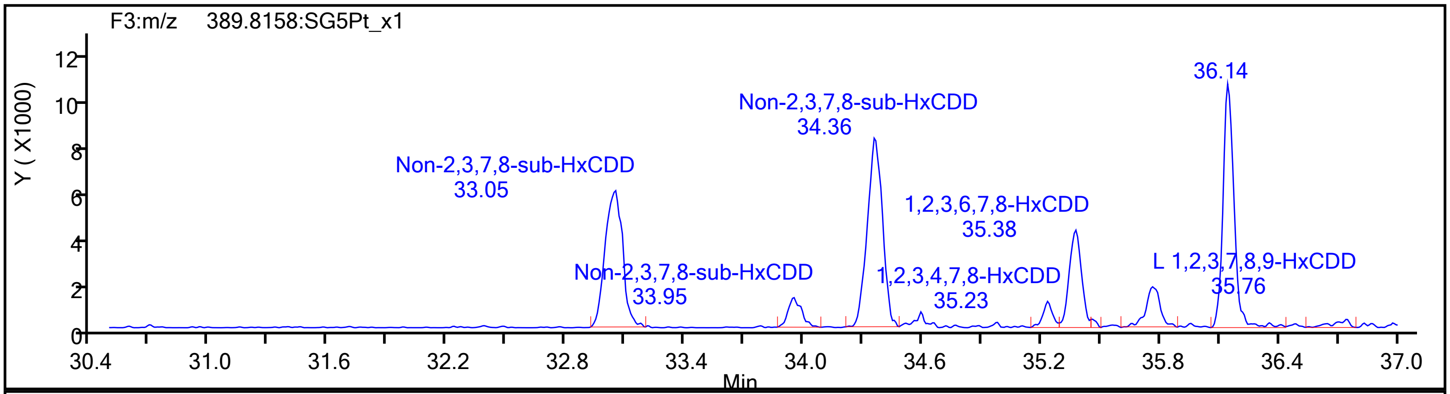

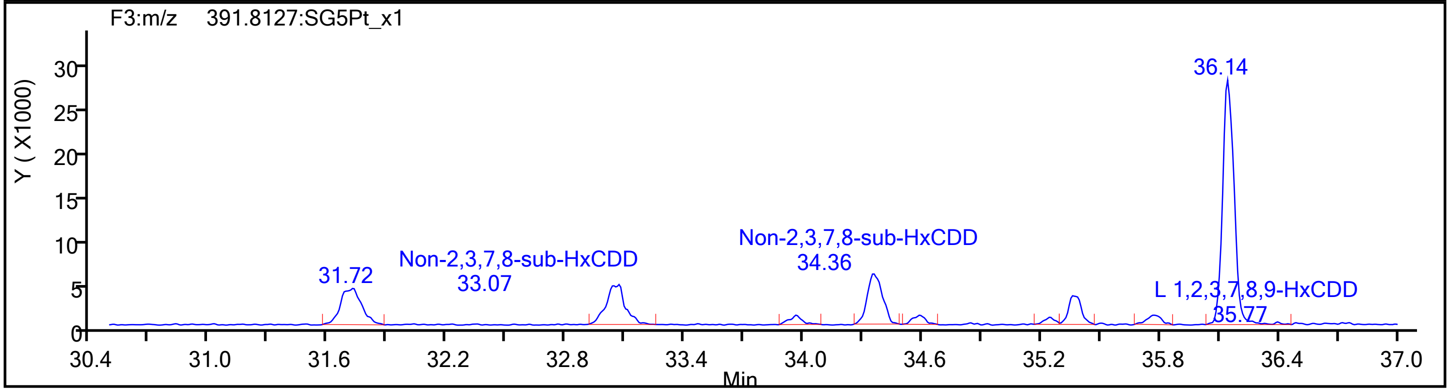

HxCDD Standards

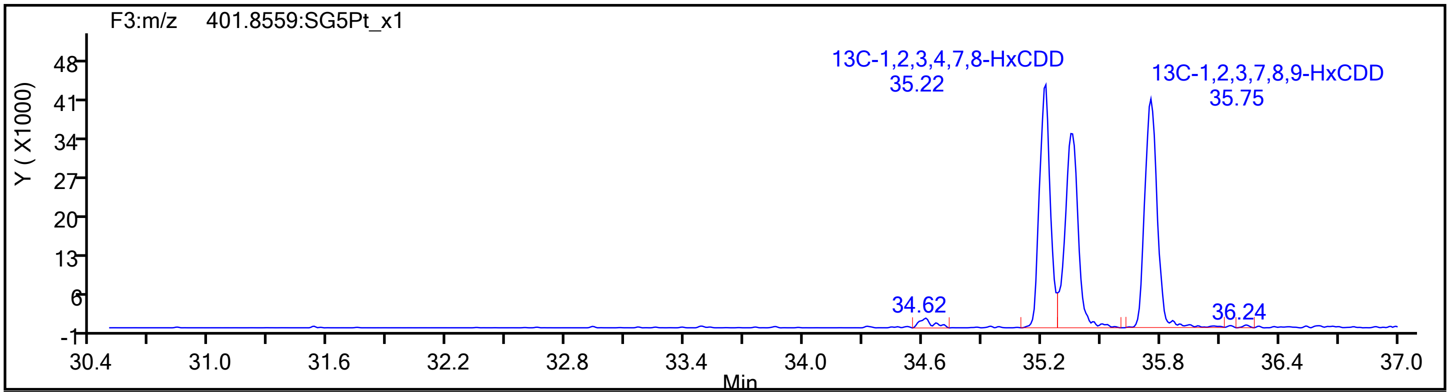

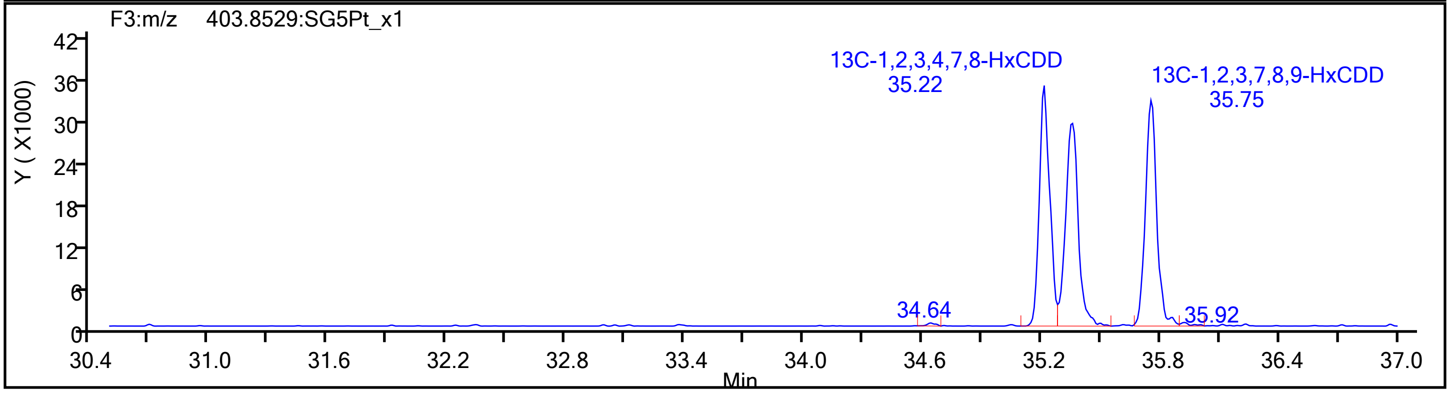

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	12-Oct-2020 17:22:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421107	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

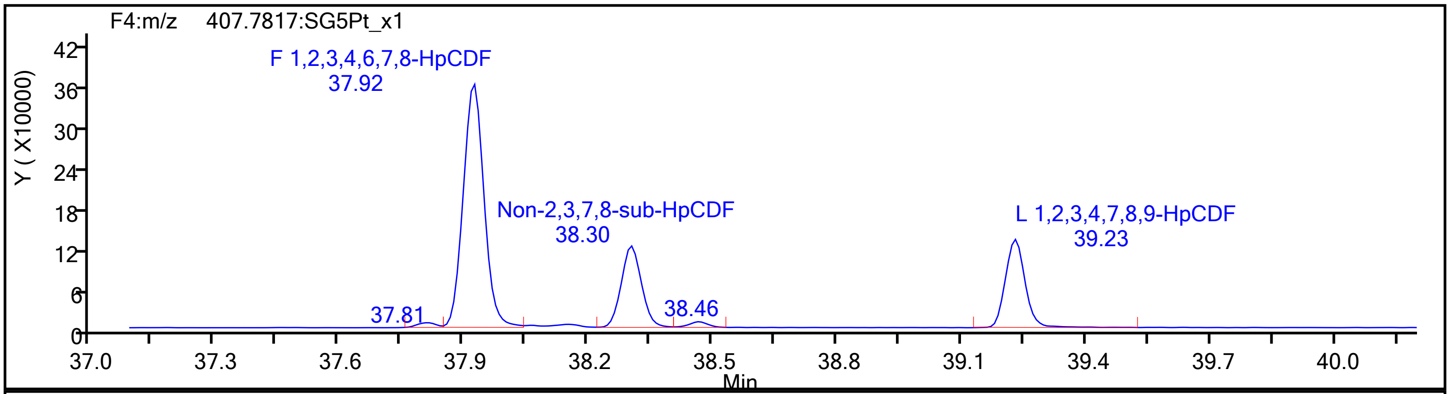

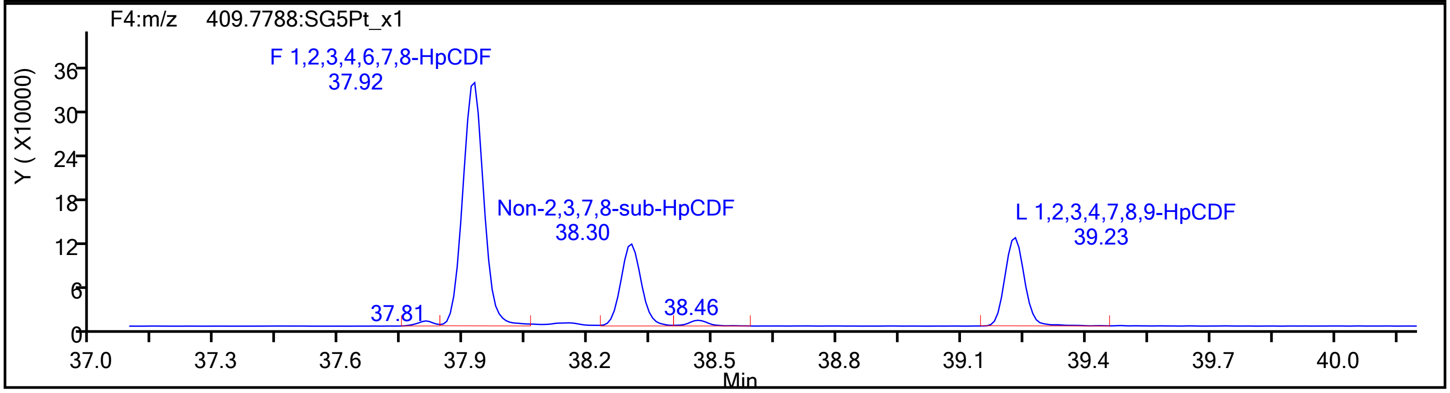

HpCDF Standards

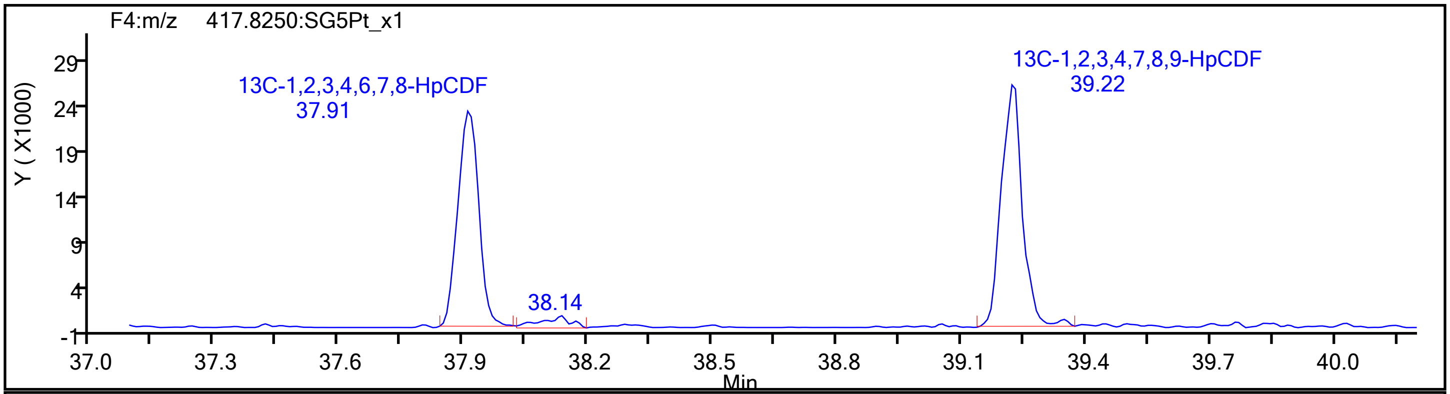

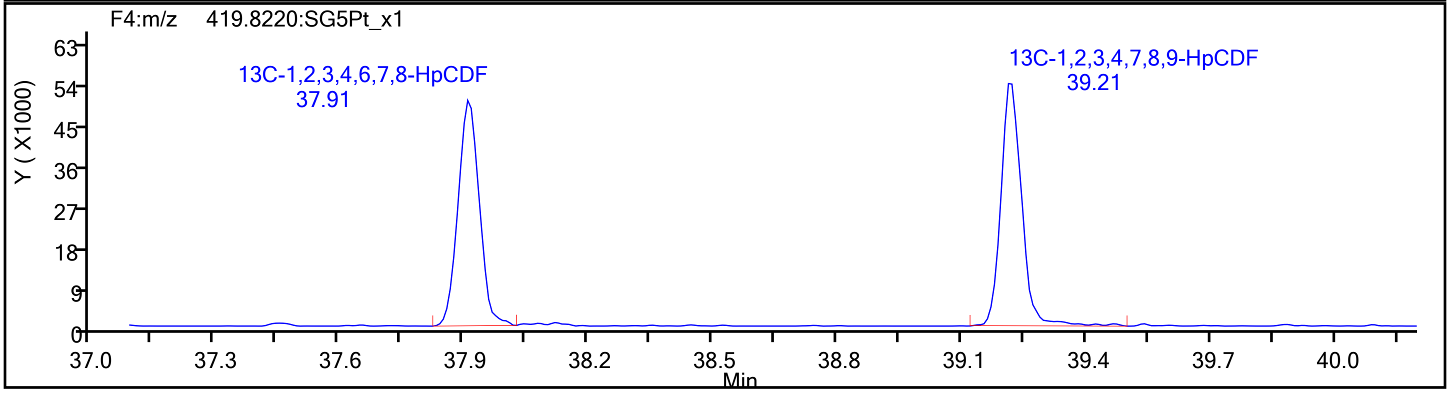

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date: 12-Oct-2020 17:22:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-T=0

Worklist#: 421107

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

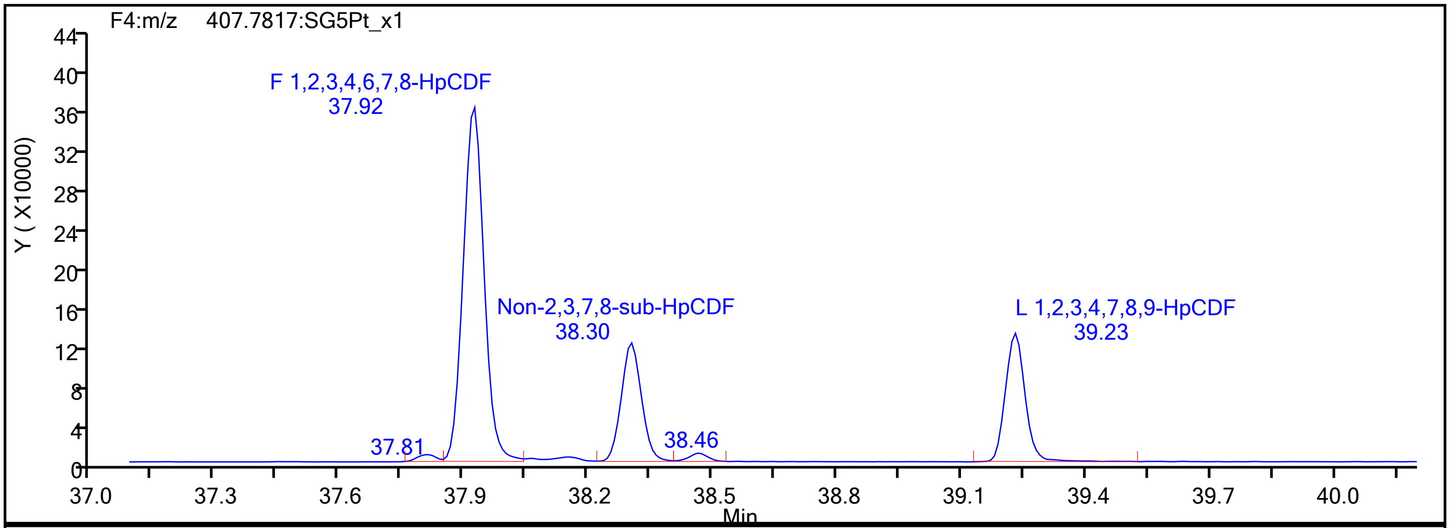

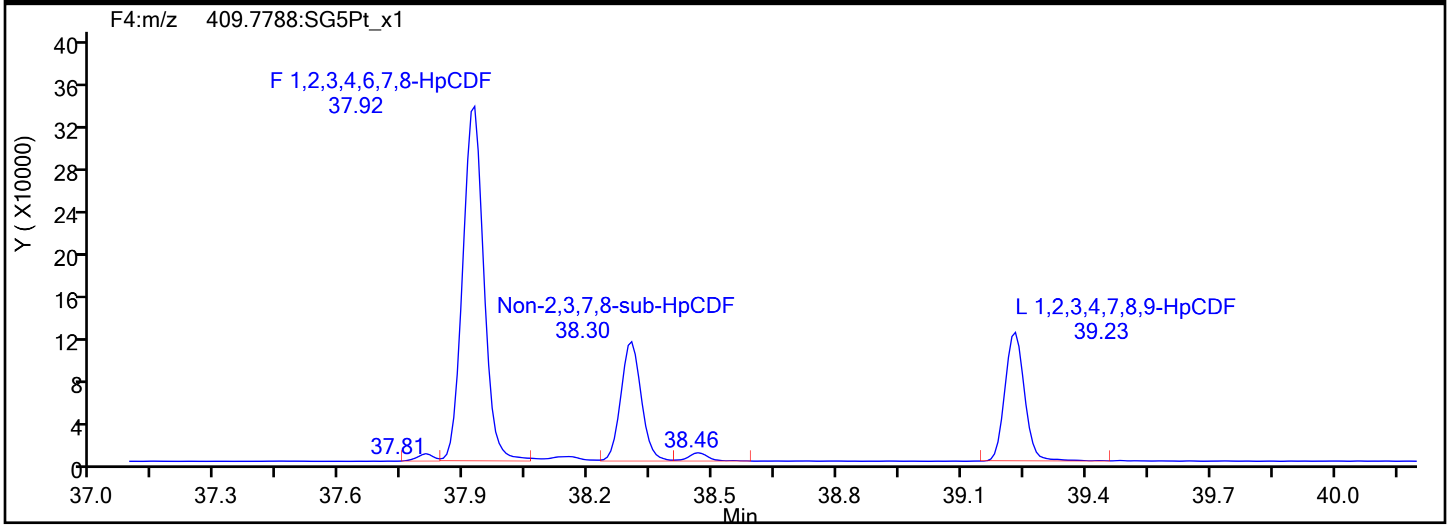

HpCDF Interference Mass

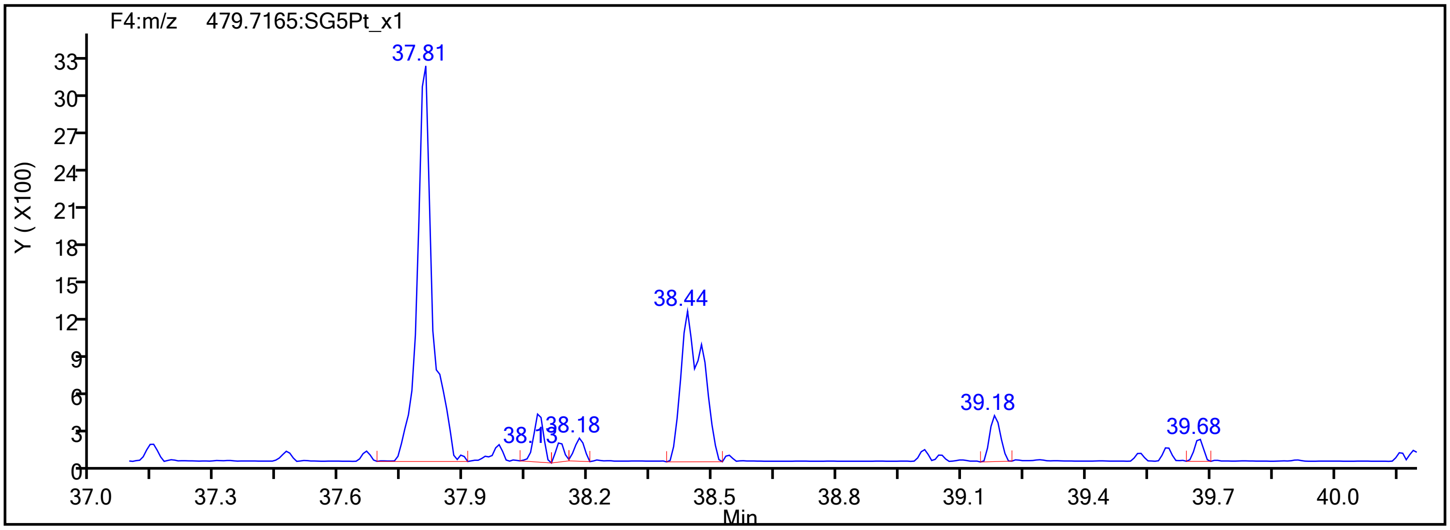

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDD

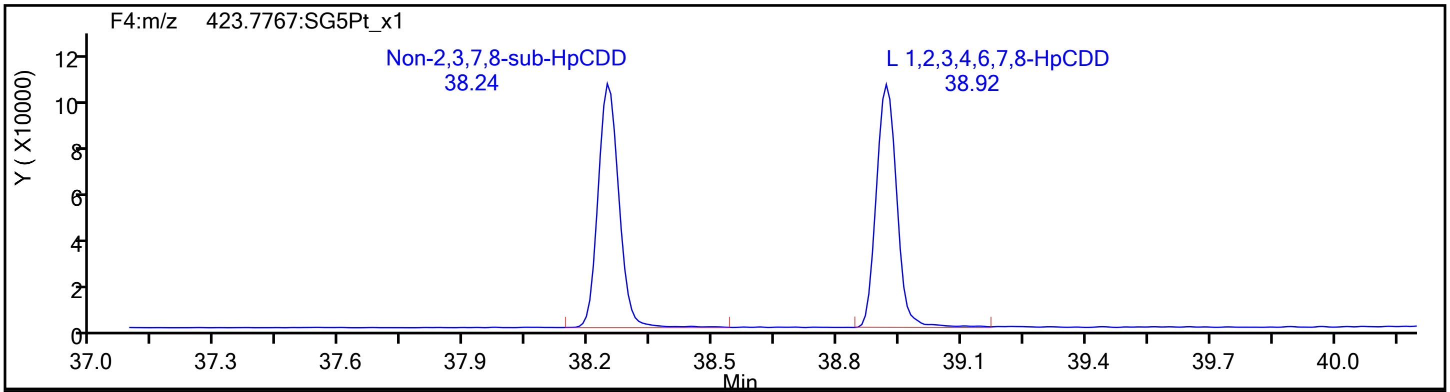

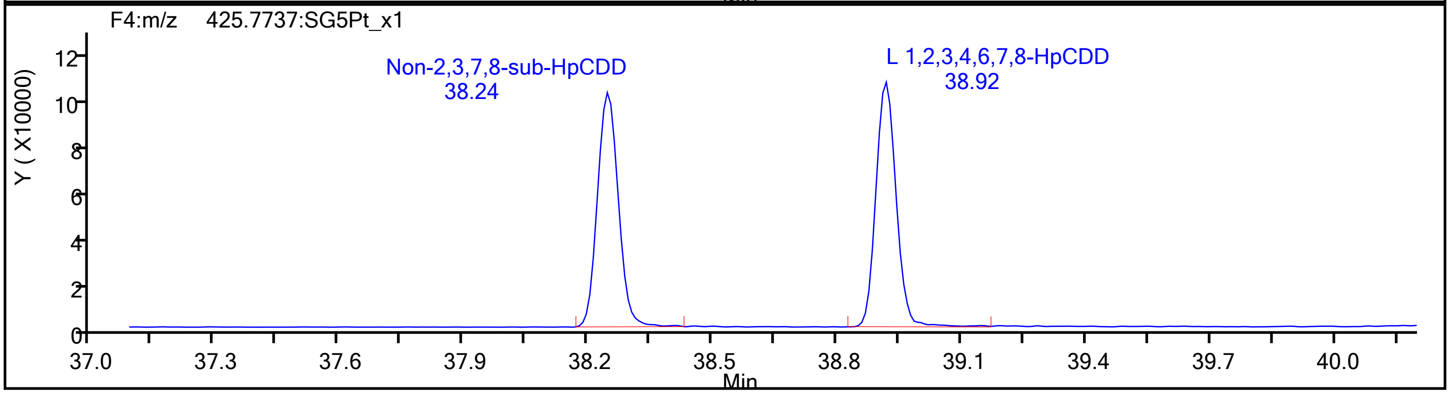

HpCDD Standards

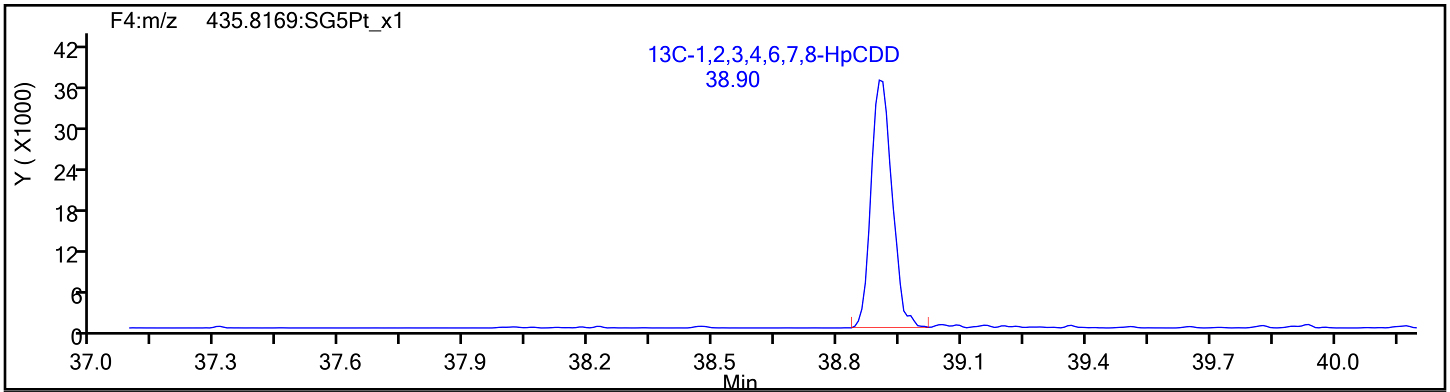

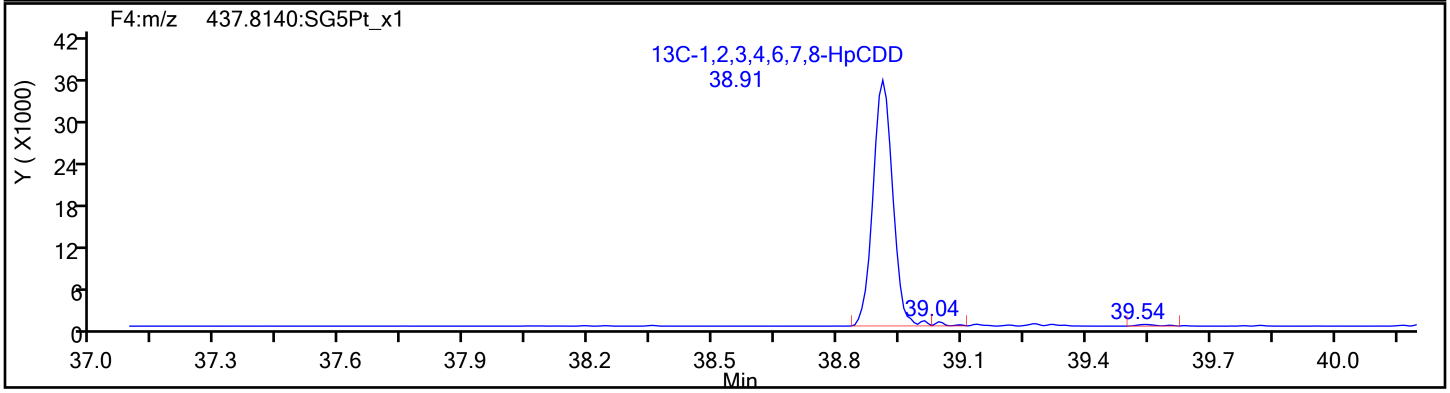

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date: 12-Oct-2020 17:22:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421107
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

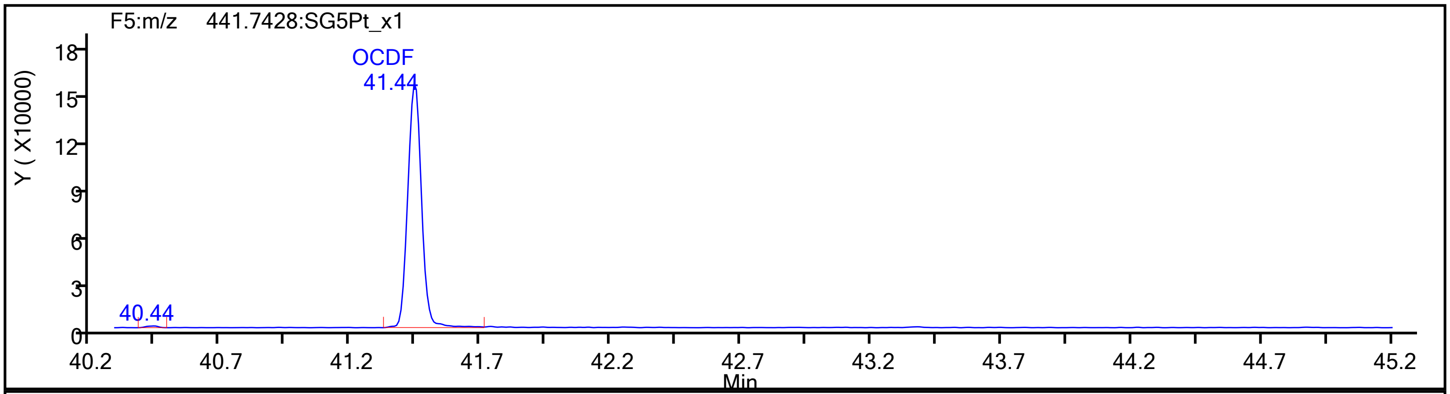

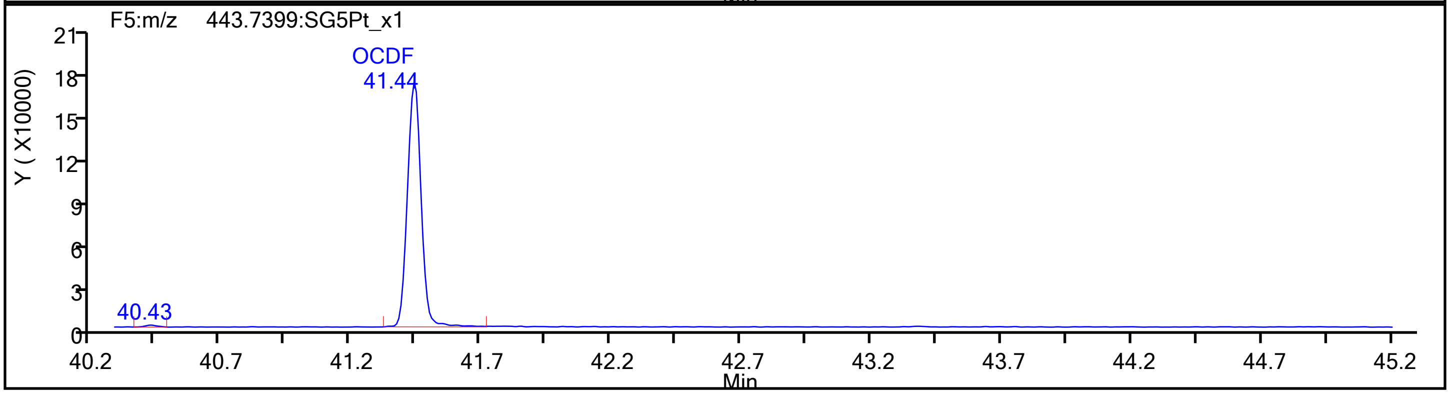

OCDF Standards

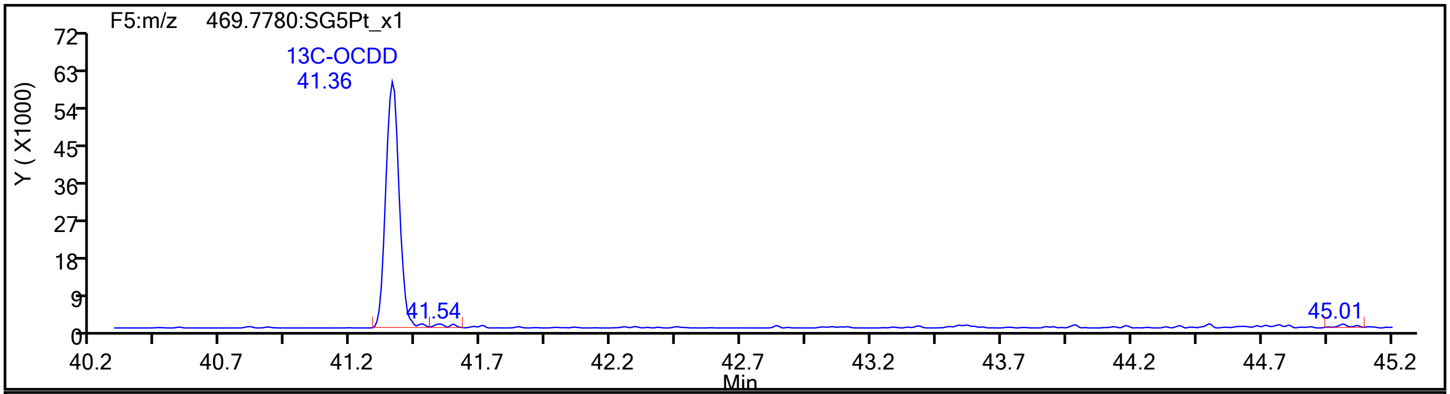

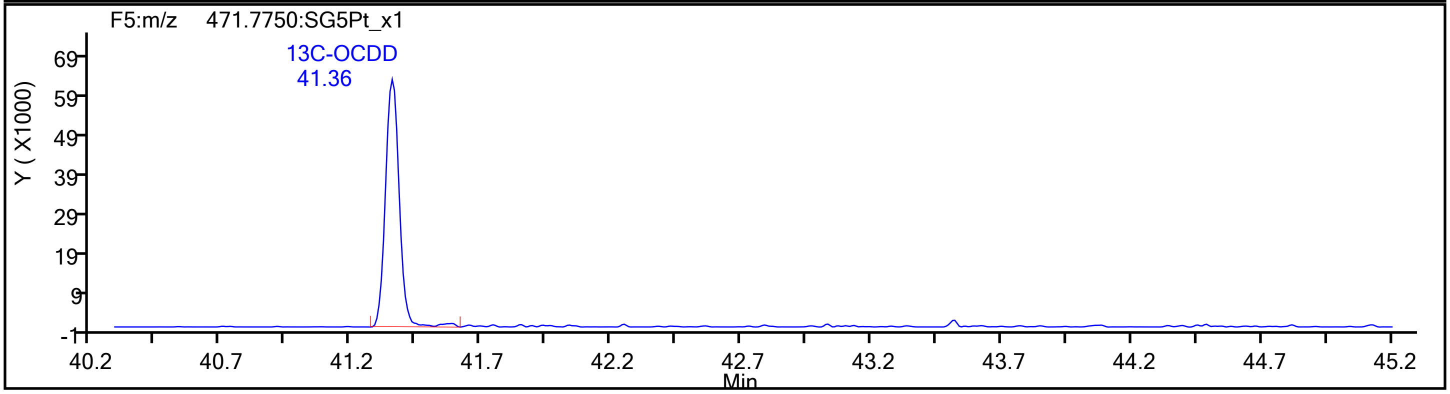

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d		
Injection Date:	12-Oct-2020 17:22:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421107	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

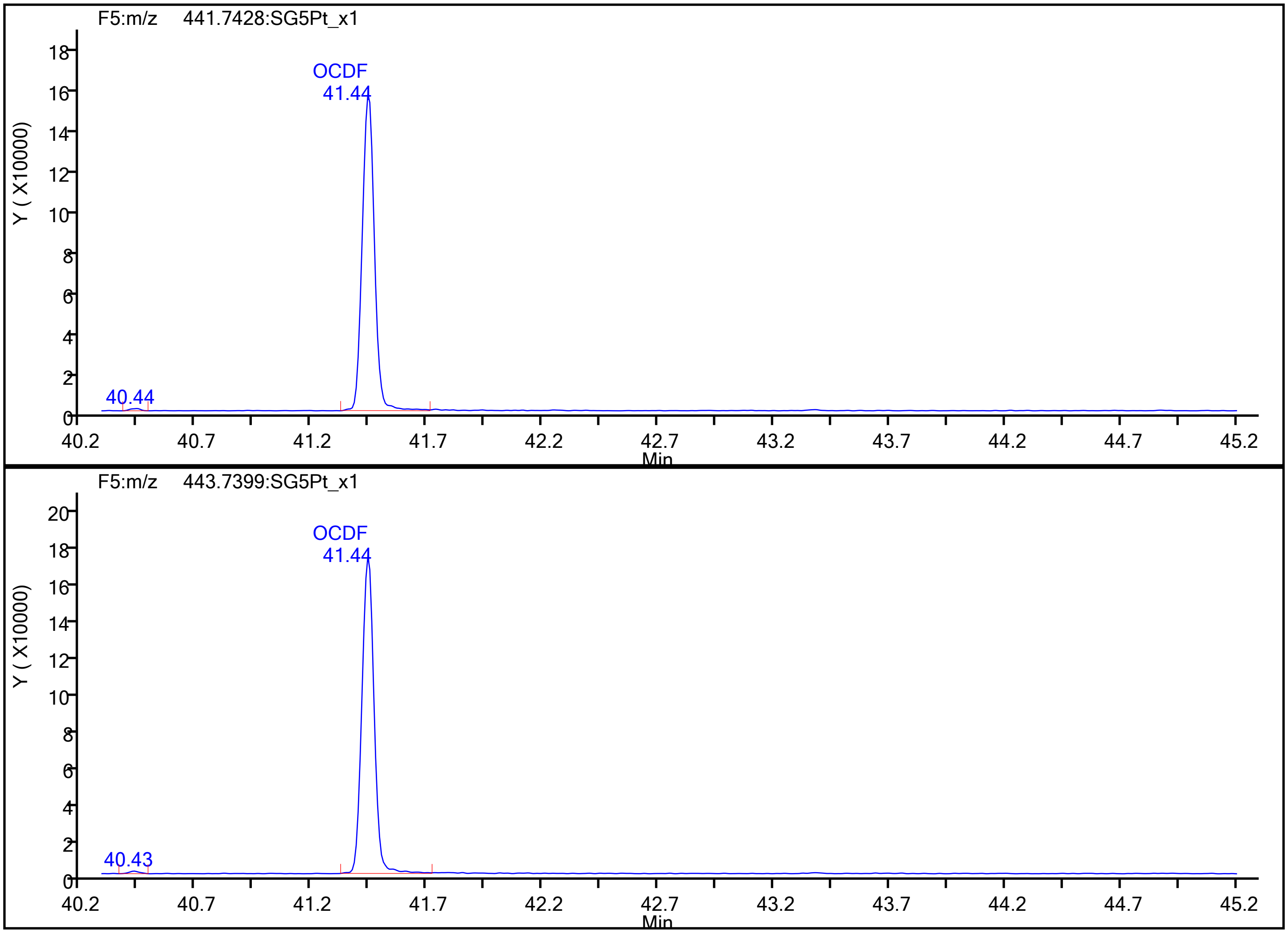

OCDF Interference Mass

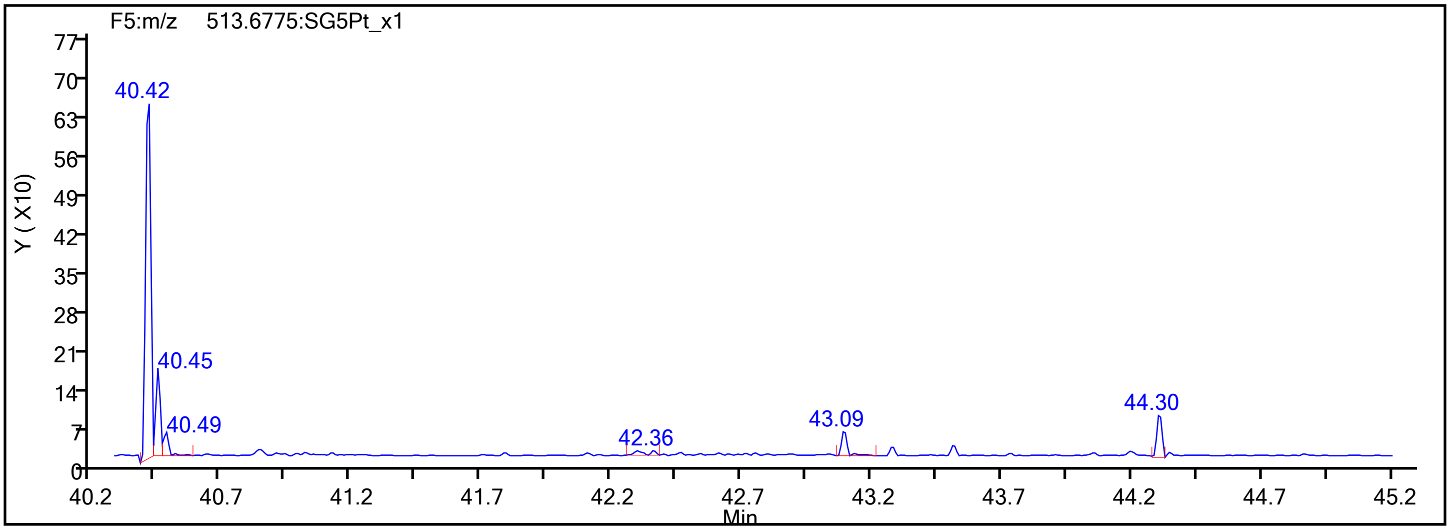

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421107
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

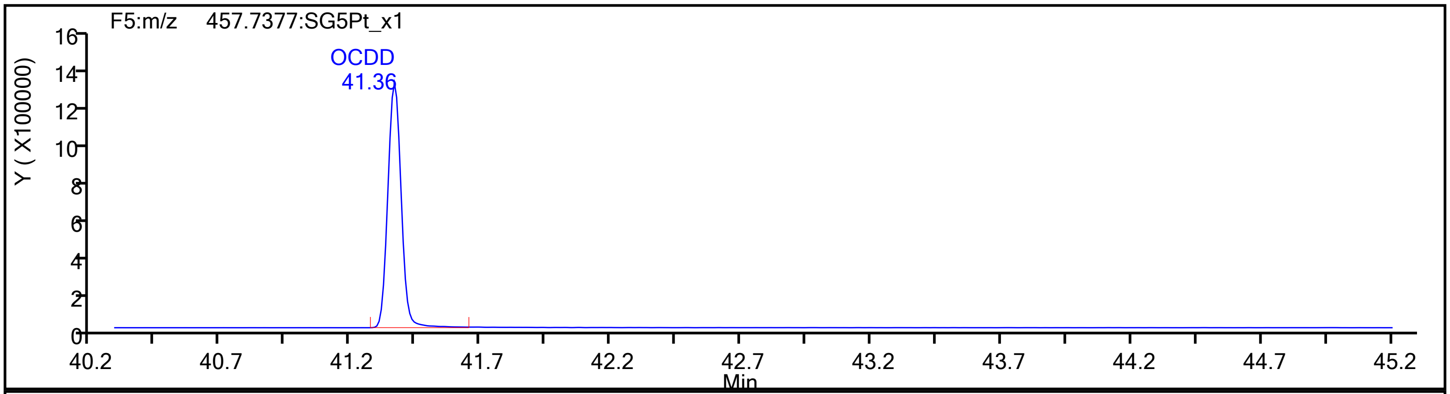

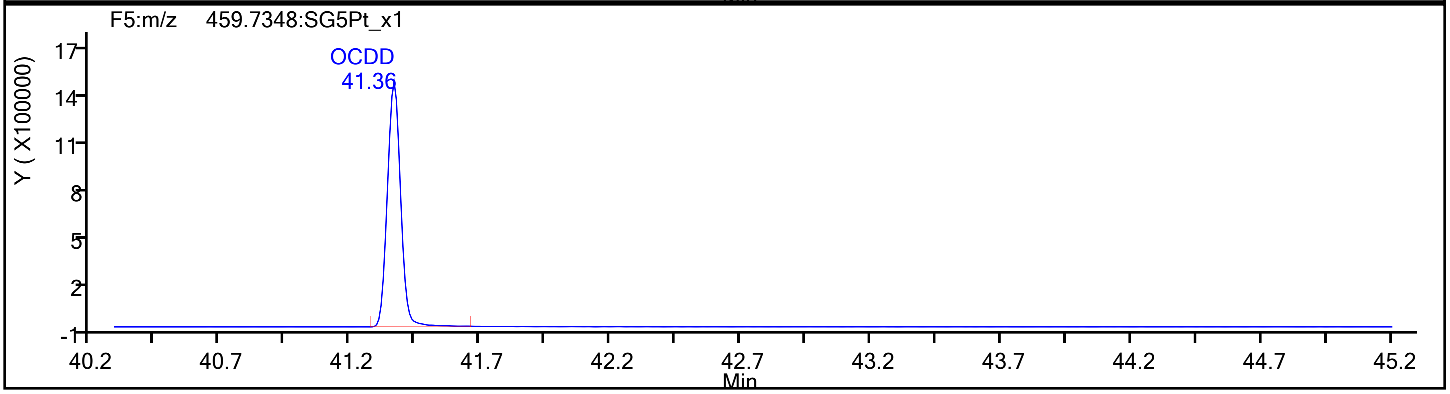

OCDD Standards

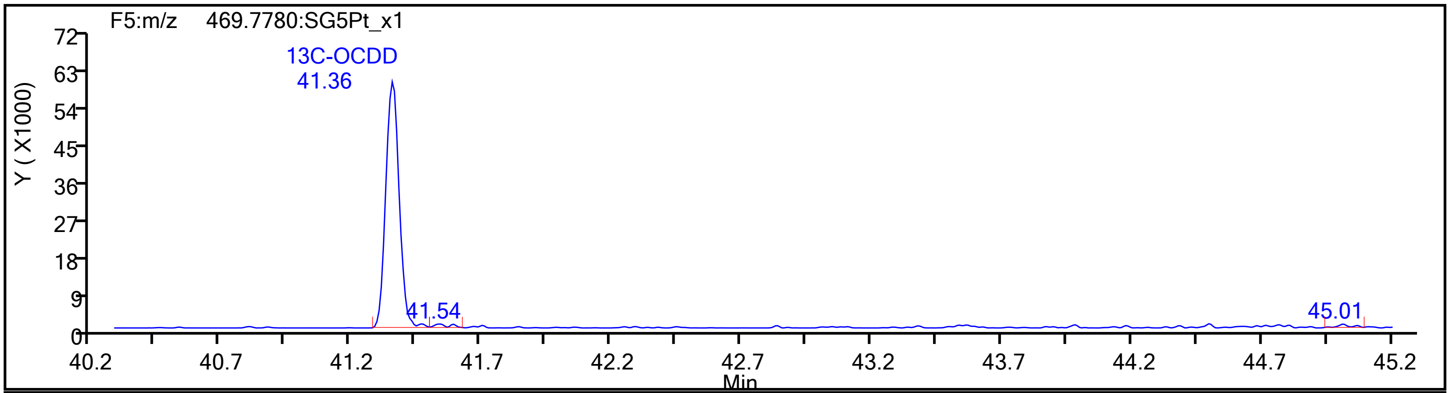

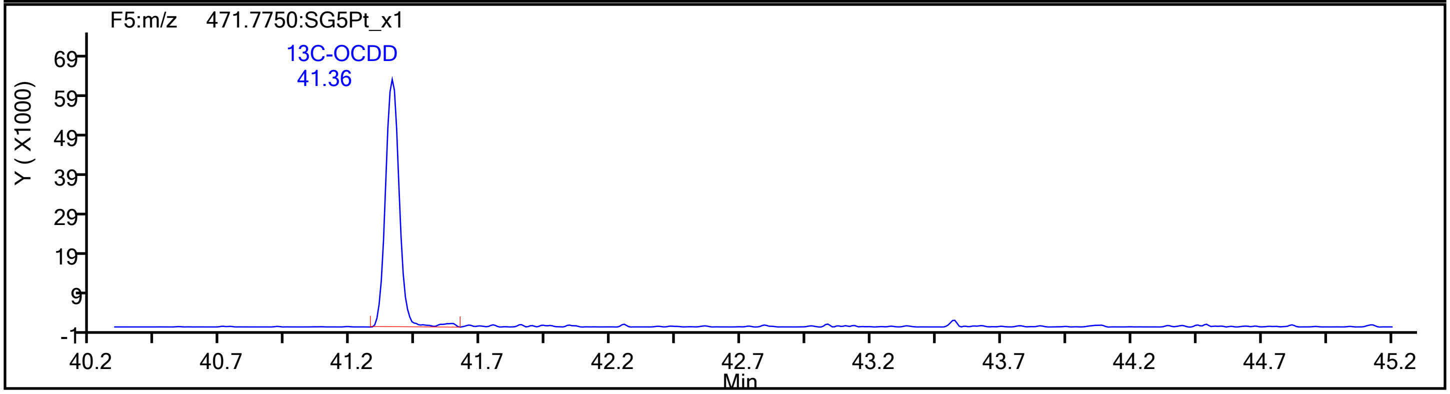

Report Date: 14-Oct-2020 10:49:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d
Injection Date: 12-Oct-2020 17:22:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421107
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

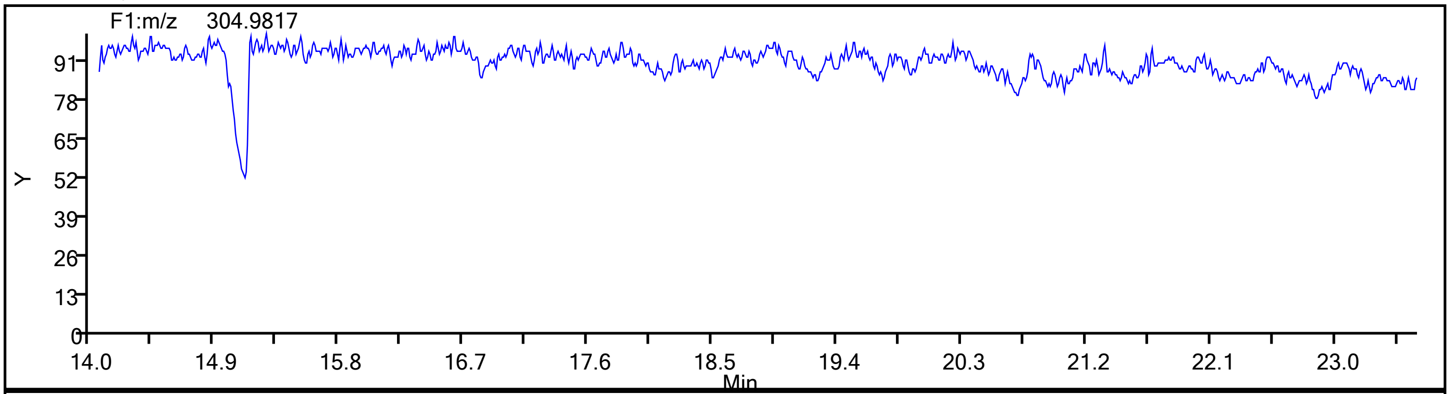

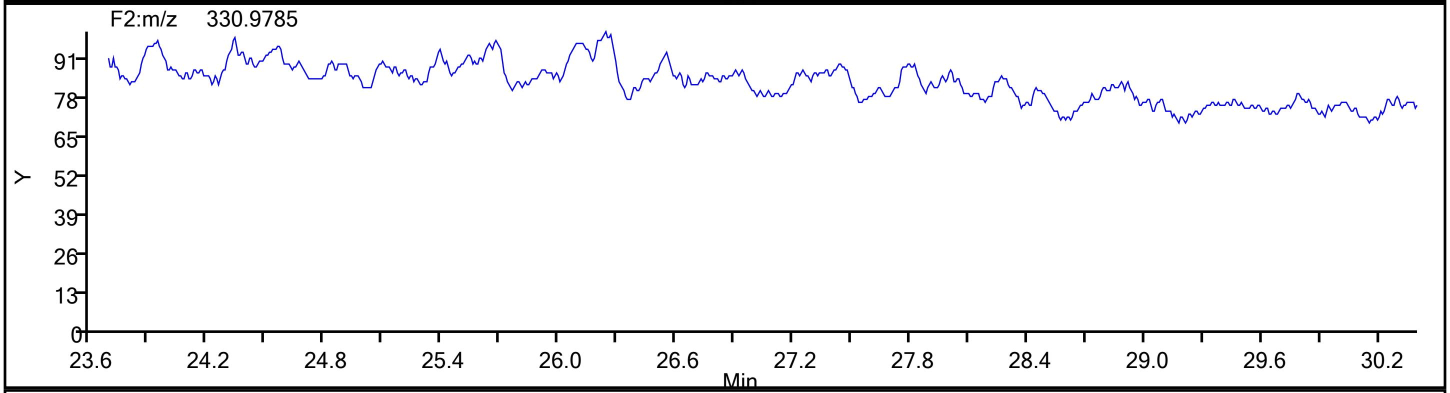

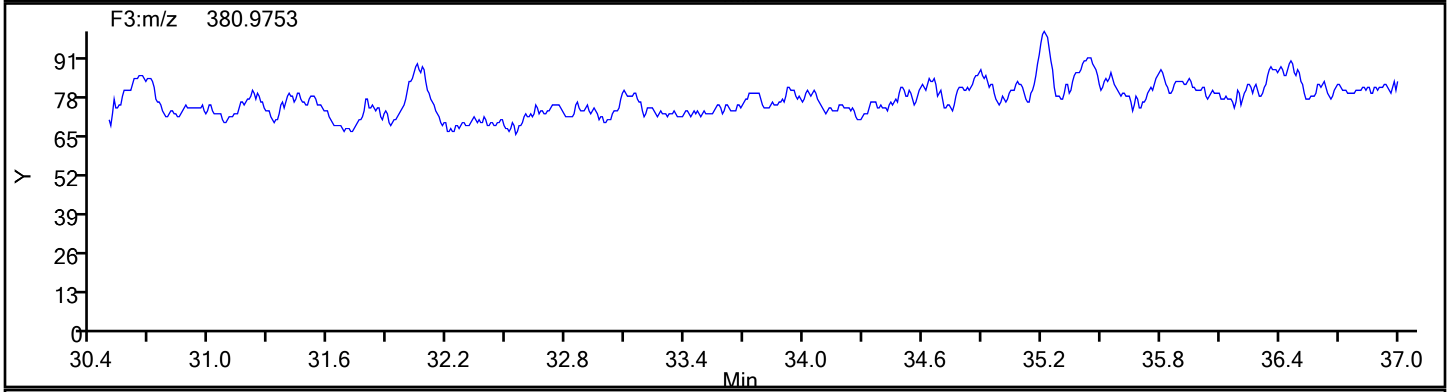

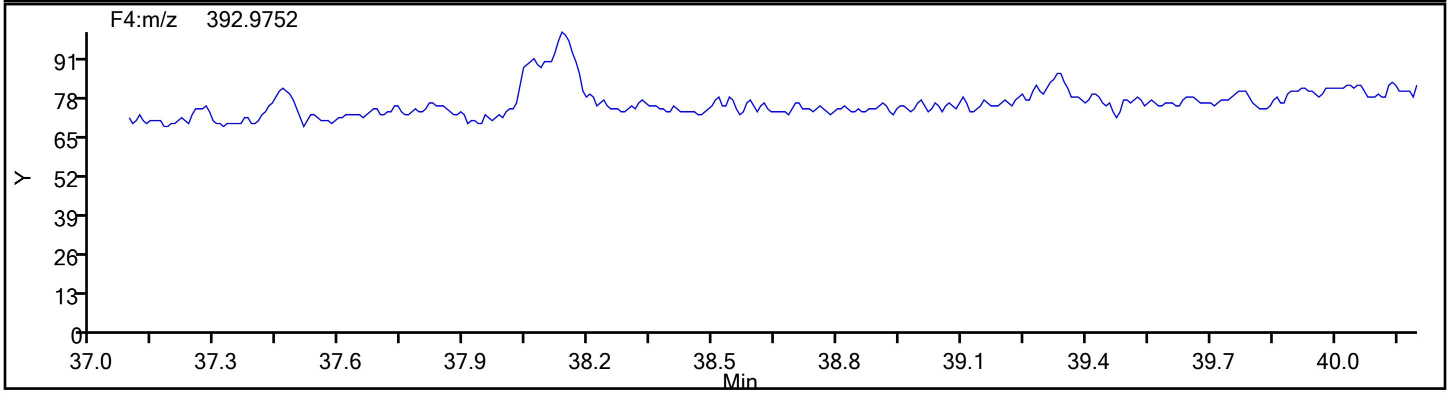

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_7.d

Injection Date: 12-Oct-2020 17:22:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421107
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

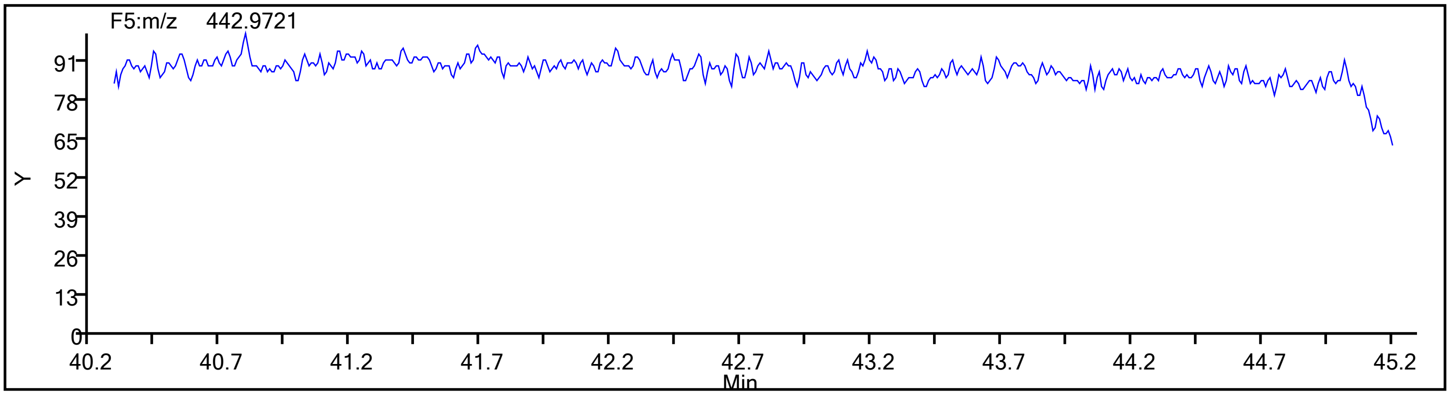

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-T=0 RA Lab Sample ID: 320-65130-14 RA

Matrix: Water Lab File ID: 12OC20A11D2_014.d

Analysis Method: 1613B Date Collected: 09/09/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1044.6(mL) Date Analyzed: 10/12/2020 23:38

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421482 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	6500	B	96	88

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	117	q	24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	37		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Sample Type: Client
Inject. Date: 12-Oct-2020 23:38:45 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-14-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:18:45 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: shardaa Date: 13-Oct-2020 18:33:22

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.105	27321307	0.77	1.2E+06	10.0	10.0				M
D 13C-2,3,7,8-TCDF	16.285	50087461	0.77	1.5708	14.8	11.7	1.349	1.349	148	RQ
2,3,7,8-TCDF	16.285	215144373	0.82	0.9943	34.0	34.0	0.4621	0.4621		M
D 13C-2,3,7,8-TCDD	14.831	5110801	0.77	0.9834	1.902	1.902	7.470	7.470	19.02	nM
2,3,7,8-TCDD	14.844	595981538	0.79	1.2822	909.5	909.5	4.009	4.009		Ea
$ 37Cl4-2,3,7,8-TCDD	14.844	3999515		0.9945	1.472	1.472	0.4632	0.4632	36.80	a
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- n - Failed Sig-To-Noise Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 15-Oct-2020 13:26:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Sample Type: Client
Inject. Date: 12-Oct-2020 23:38:45 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-14-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:18:45 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: shardaa Date: 13-Oct-2020 18:33:22

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											M
331.9368	15.105	14.967	8		11879730	2499114	880165	2200412	3		M
333.9339	15.091	14.967	7		15441577	3311664	827274	2068185	4	0.77(0.65-0.89)	M
13C-2,3,7,8-TCDF											RQ
315.9419	16.285	16.765	12	1.078	21789461	3802378	219735	549337	17		
317.9389	16.298	16.765	13	1.079	41930720	6182758	272635	681587	23	0.52(0.65-0.89)	
	Empc Correction				28298000	4938153	272635	681587	18		
2,3,7,8-TCDF											M
303.9016	16.285	16.285	10	1.000	96829262	75134140	92822	232055	809		M
305.8987	16.285	16.285	10	1.000	118315111	92357068	90668	226670	1019	0.82(0.65-0.89)	M
13C-2,3,7,8-TCDD											nM
331.9368	14.831	14.831	7	0.982	2218855	519982	880165	2200412	1		M
333.9339	14.831	14.831	7	0.982	2891946	758298	827274	2068185	1	0.77(0.65-0.89)	M
2,3,7,8-TCDD											Ea
319.8965	14.844	14.844	7	1.001	262960573	67840960	150118	375295	452		a
321.8936	14.844	14.844	7	1.001	333020965	85631295	112705	281762	760	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											a
327.8840	14.844	14.844	7	0.983	3999515	1013823	107076	267690	9		a

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

a - User Assigned ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d				
Injection Date:	12-Oct-2020 23:38:45	Instrument ID:	11D2		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 16.24
Area: 1260064559
Amount: 350.4093
Amount Units: pg/ul

Processing Integration Results

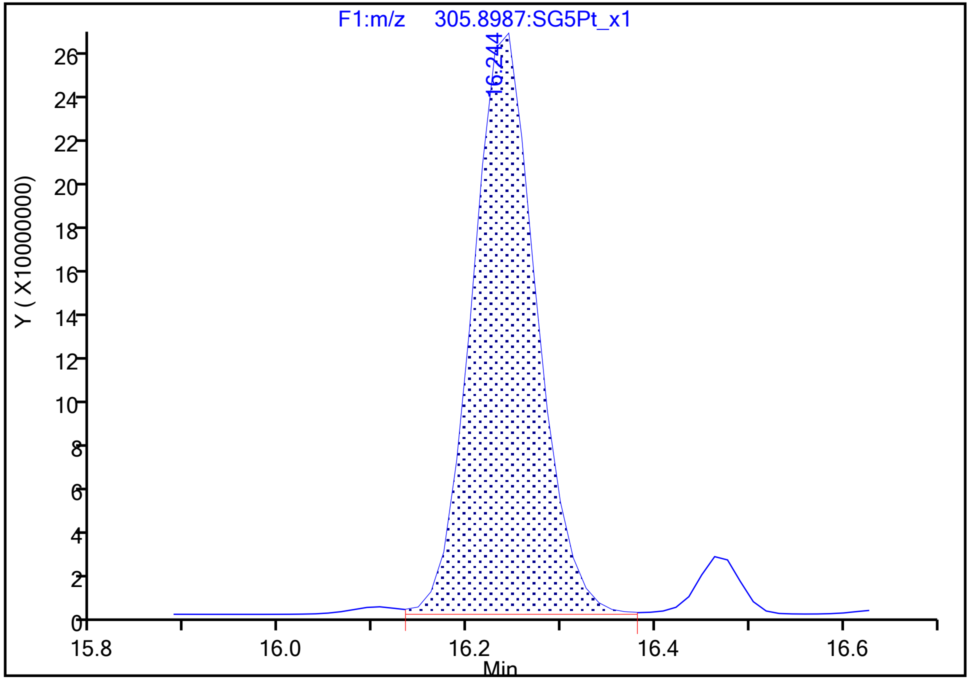

RT: 16.28
Area: 118315111
Amount: 33.958398
Amount Units: pg/ul

Manual Integration Results

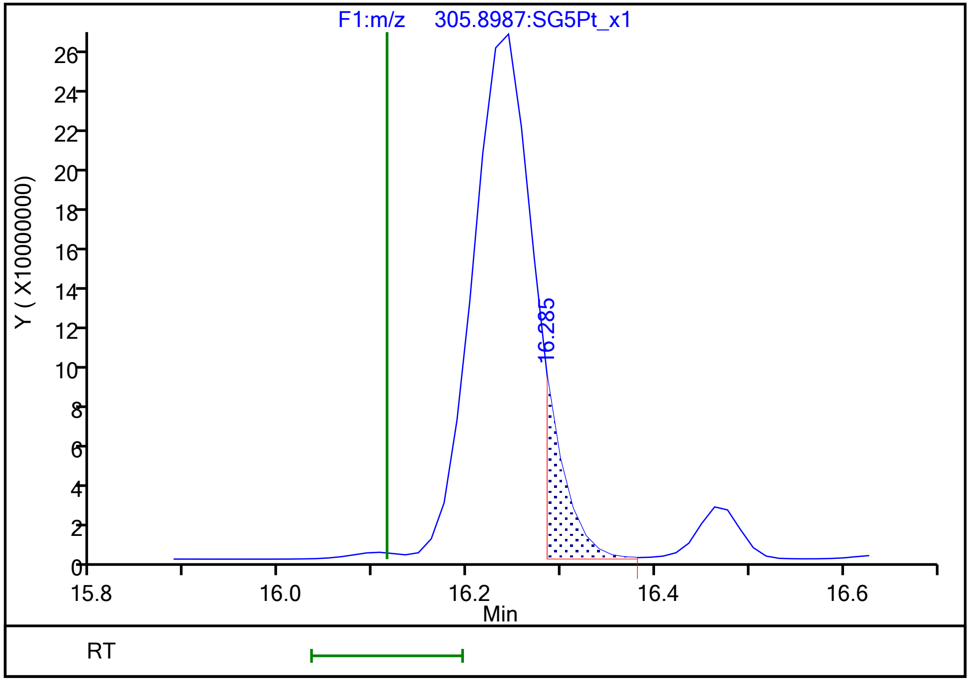

Reviewer: stephensk, 15-Oct-2020 13:17:26

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 15-Oct-2020 13:26:19

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d				
Injection Date:	12-Oct-2020 23:38:45	Instrument ID:	11D2		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	16.24
Area:	959963233
Amount:	350.4093
Amount Units:	pg/ul

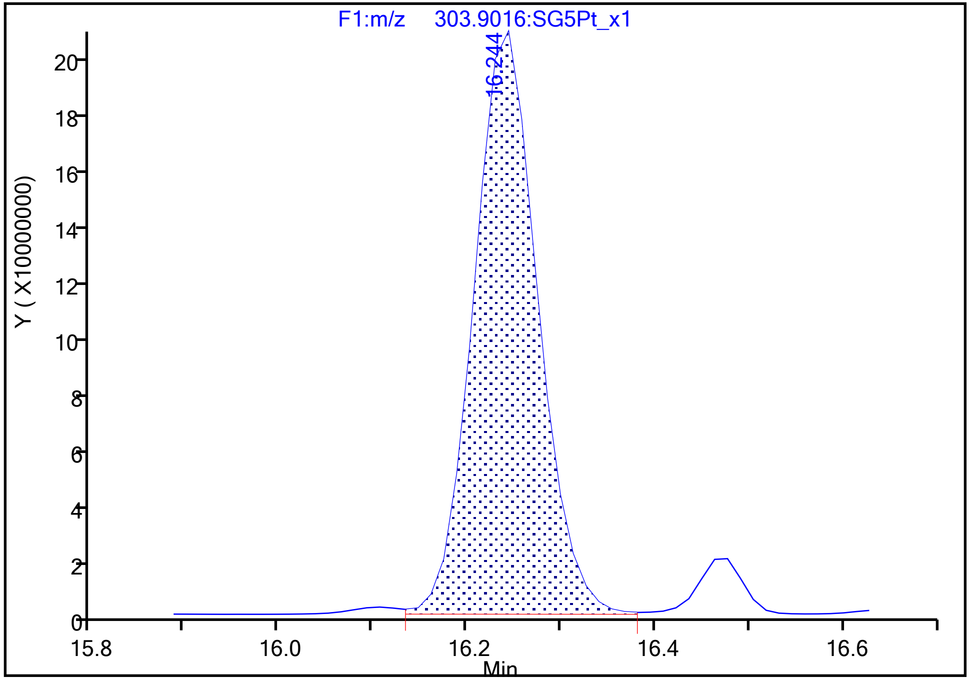

Manual Integration Results

RT:	16.28
Area:	96829262
Amount:	33.958398
Amount Units:	pg/ul

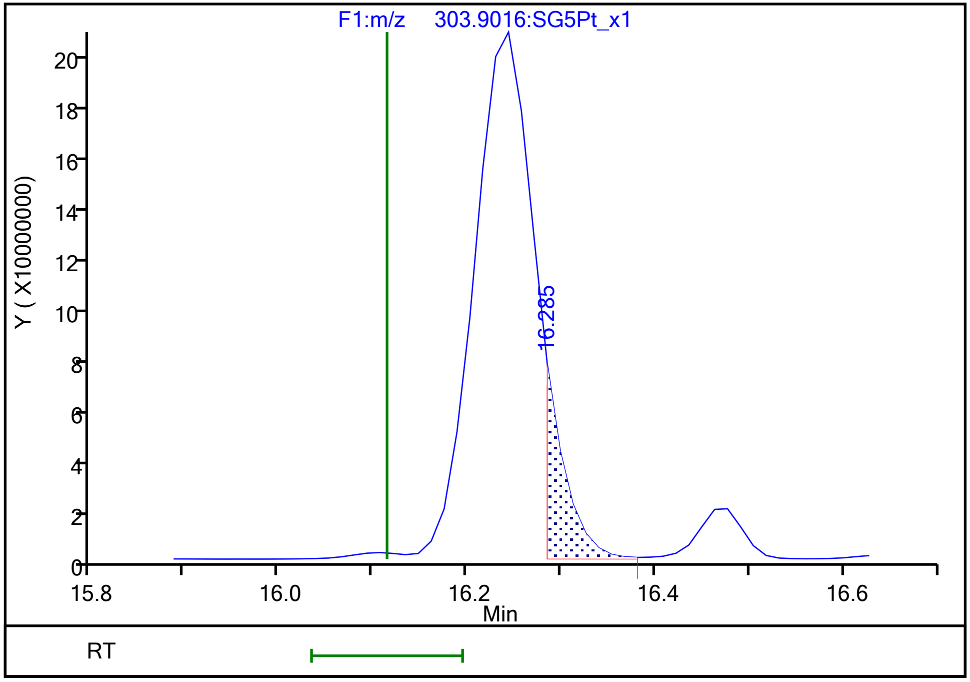

Reviewer: stephensk, 15-Oct-2020 13:17:31

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 15-Oct-2020 13:26:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d				
Injection Date:	12-Oct-2020 23:38:45	Instrument ID:	11D2		
Lims ID:	320-65130-A-14-A	Lab Sample ID:	320-65130-14		
Client ID:	11215702-Tank#2-T=0				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

37Cl4-2,3,7,8-TCDD, CAS: 85508-50-5

Signal: 1

Processing Integration Results

RT:	15.30
Area:	1800745
Amount:	0.662746
Amount Units:	pg/ul

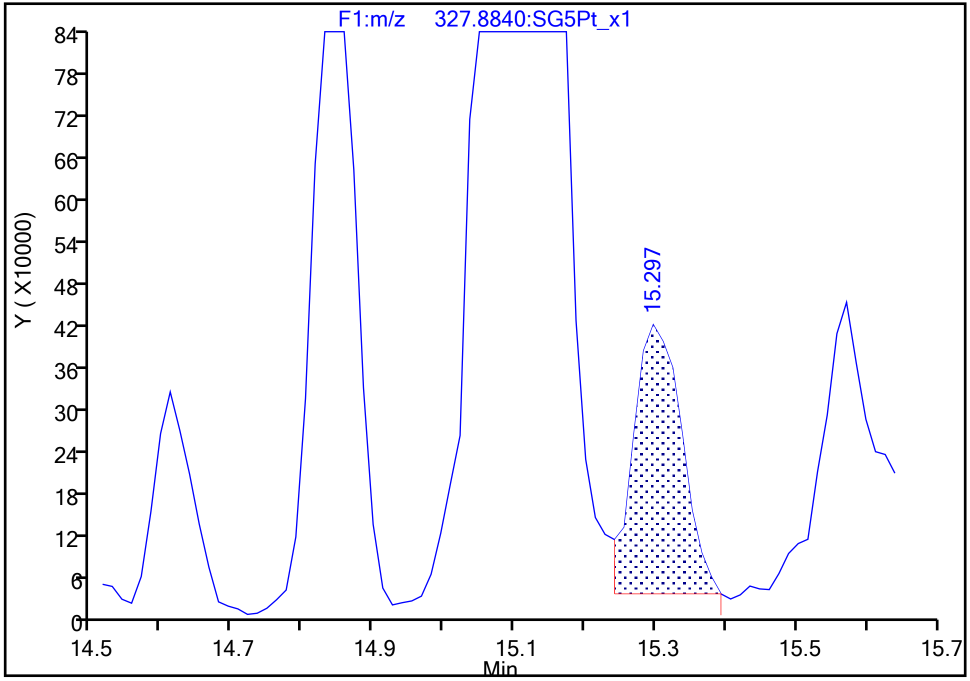

Manual Integration Results

RT:	14.84
Area:	3999515
Amount:	1.471982
Amount Units:	pg/ul

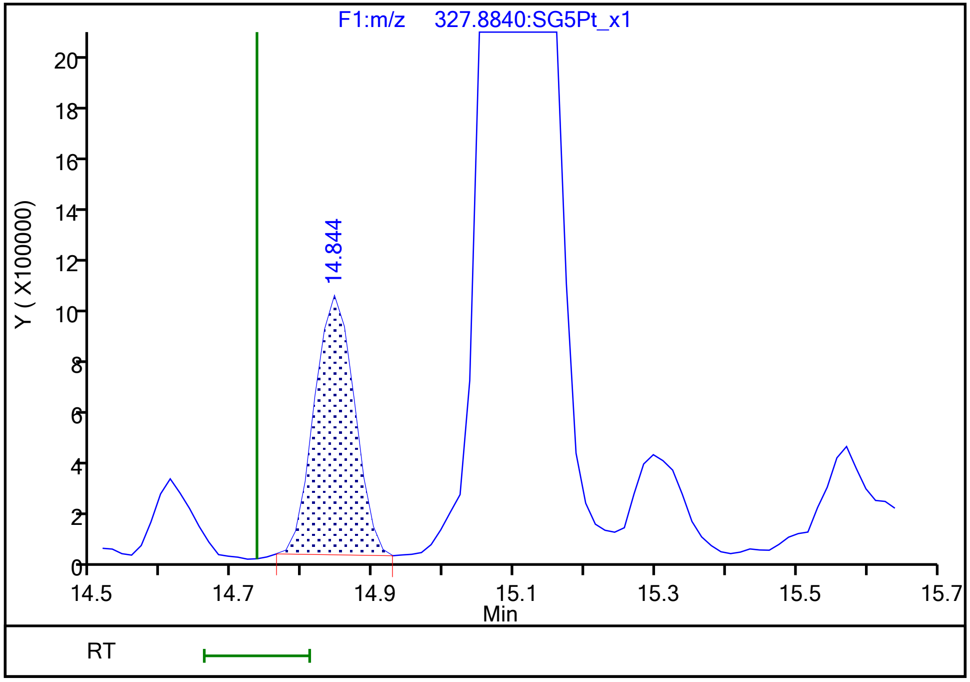

Reviewer: stephensk, 15-Oct-2020 13:18:05

Audit Action: Assigned Compound ID Audit Reason: Retention Time Shift

Report Date: 15-Oct-2020 13:26:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d		
Injection Date:	12-Oct-2020 23:38:45	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421482	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

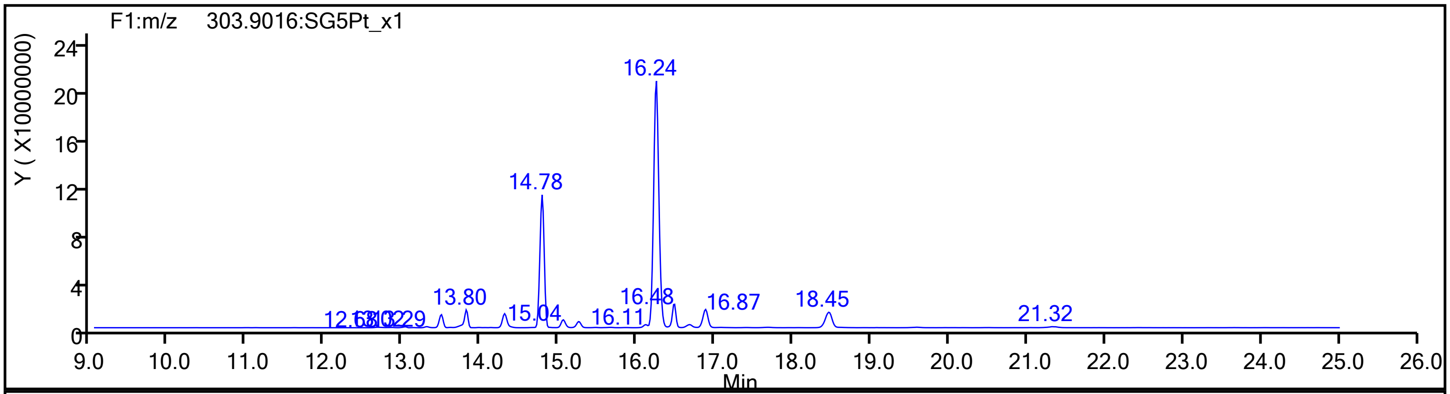

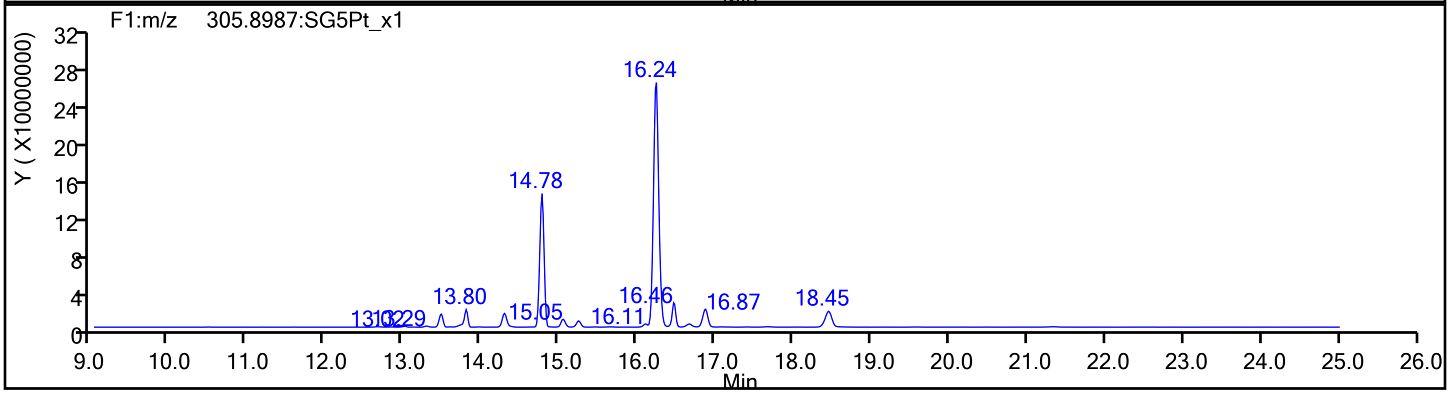

TCDF Standards

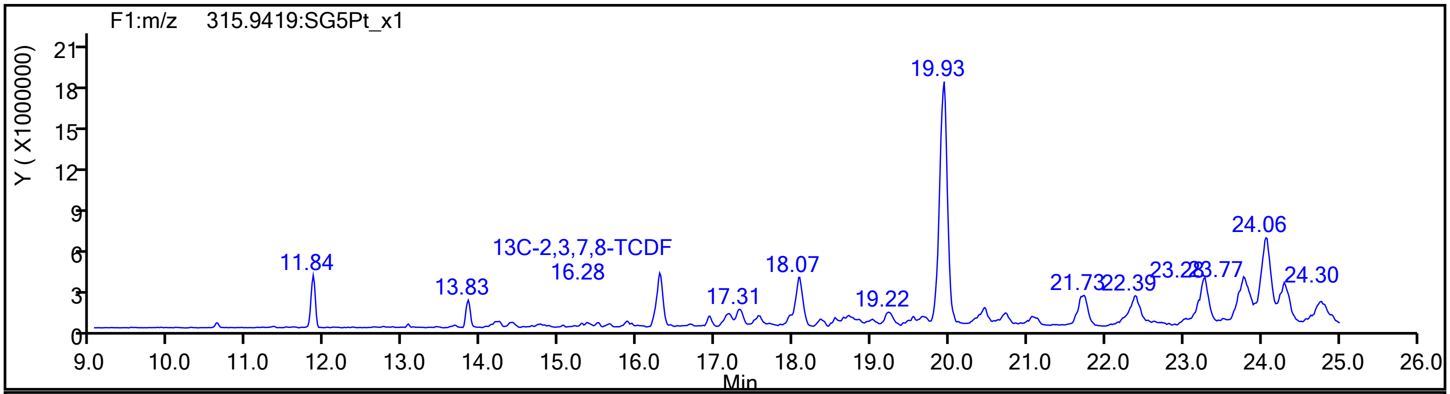

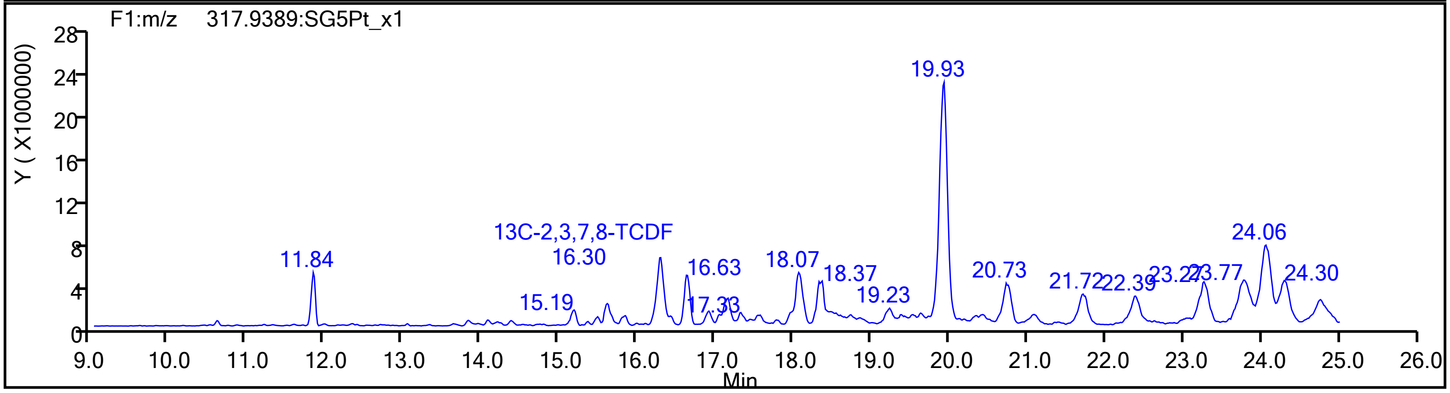

Report Date: 15-Oct-2020 13:26:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d		
Injection Date:	12-Oct-2020 23:38:45	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421482	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

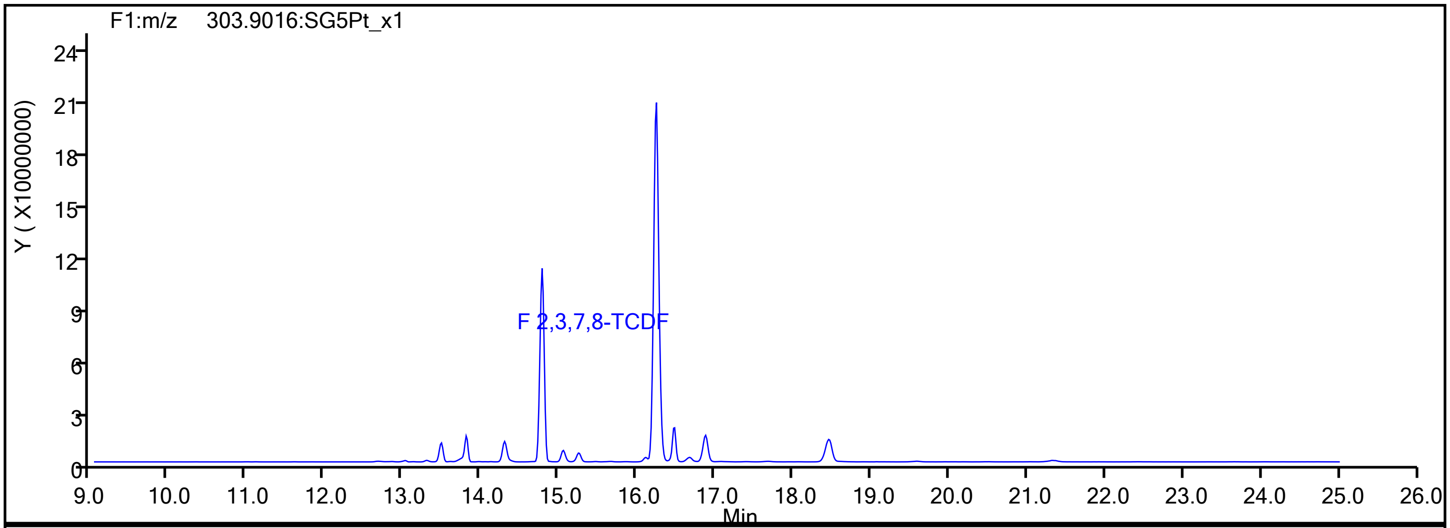

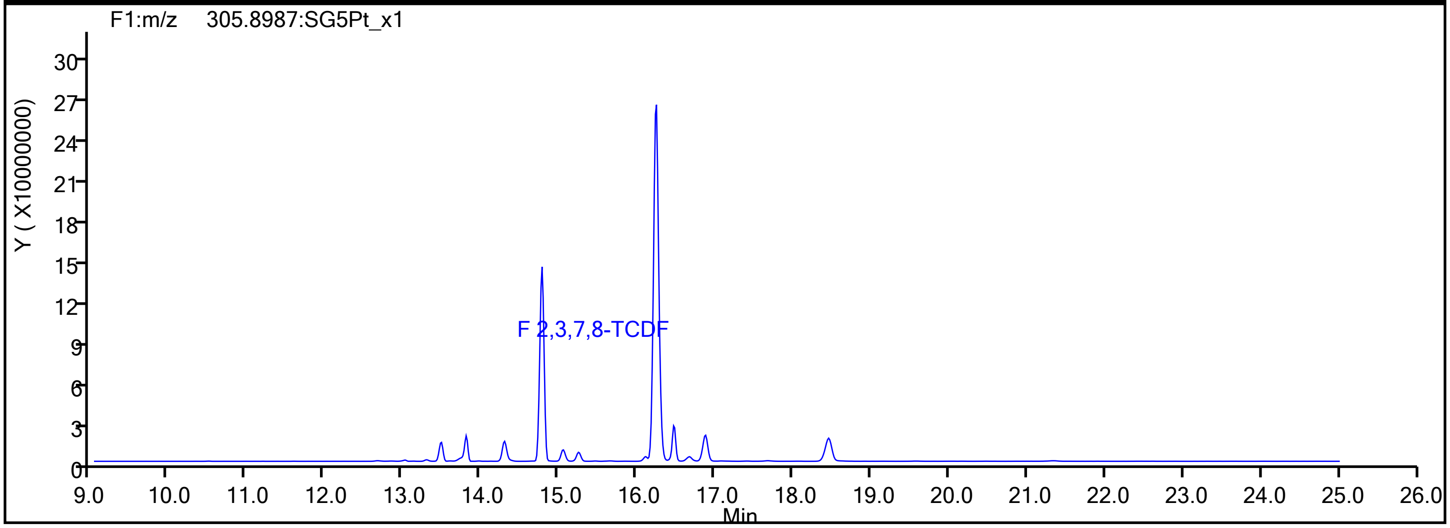

TCDF Interference Mass

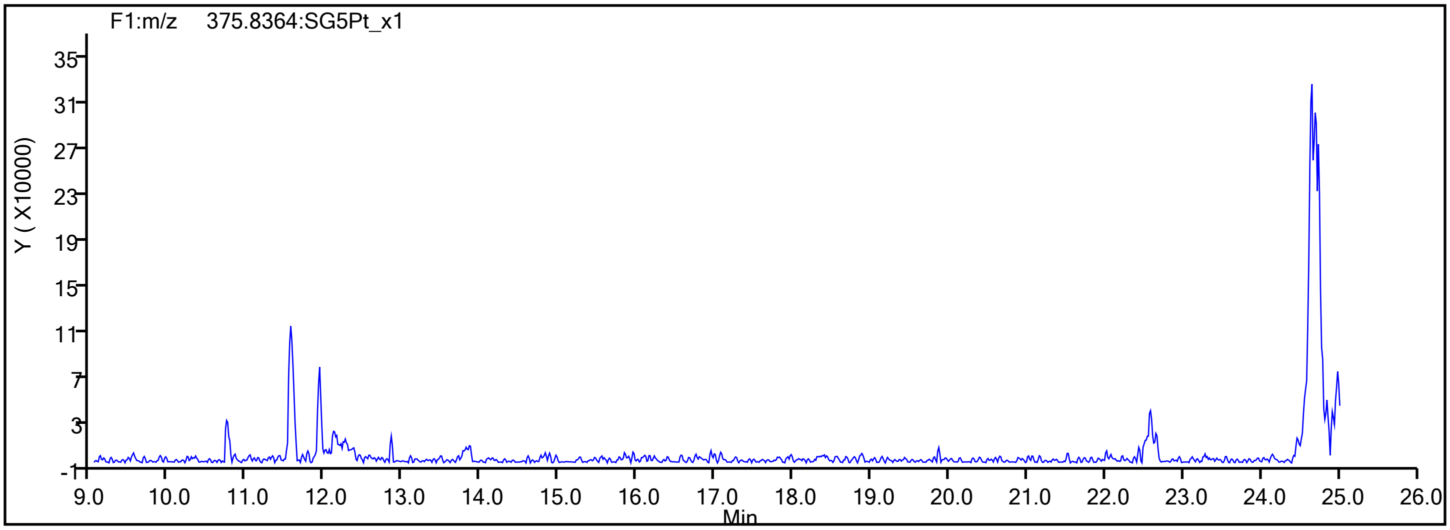

Report Date: 15-Oct-2020 13:26:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d
Injection Date: 12-Oct-2020 23:38:45 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 421482 Sample Line#: 14
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

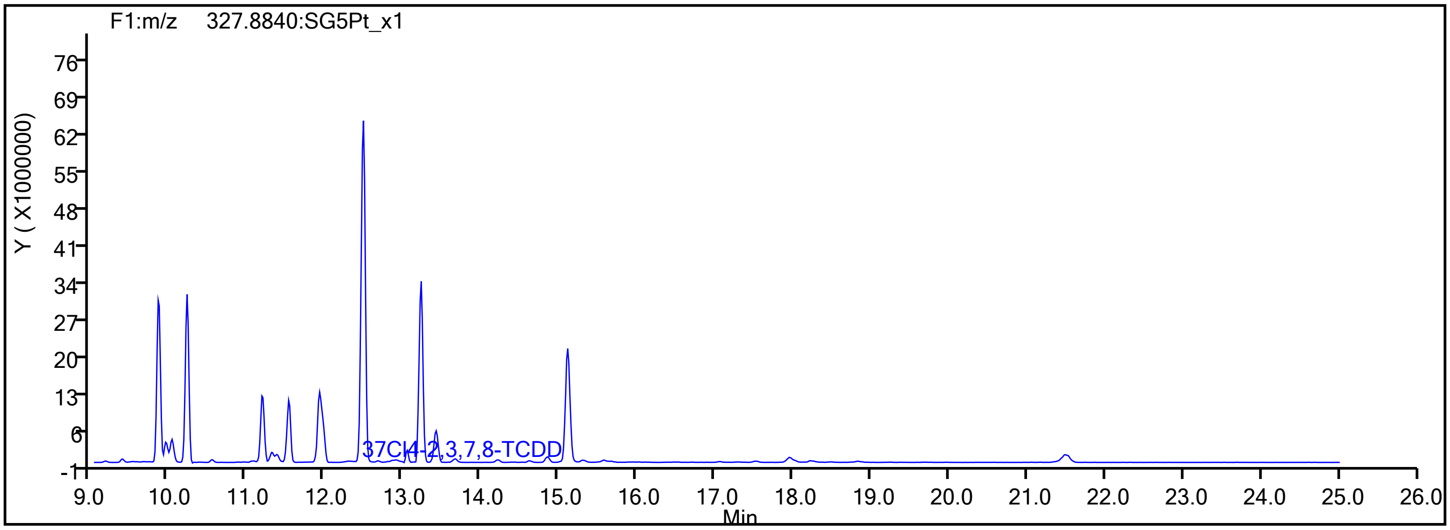

37Cl4-TCDD Standards

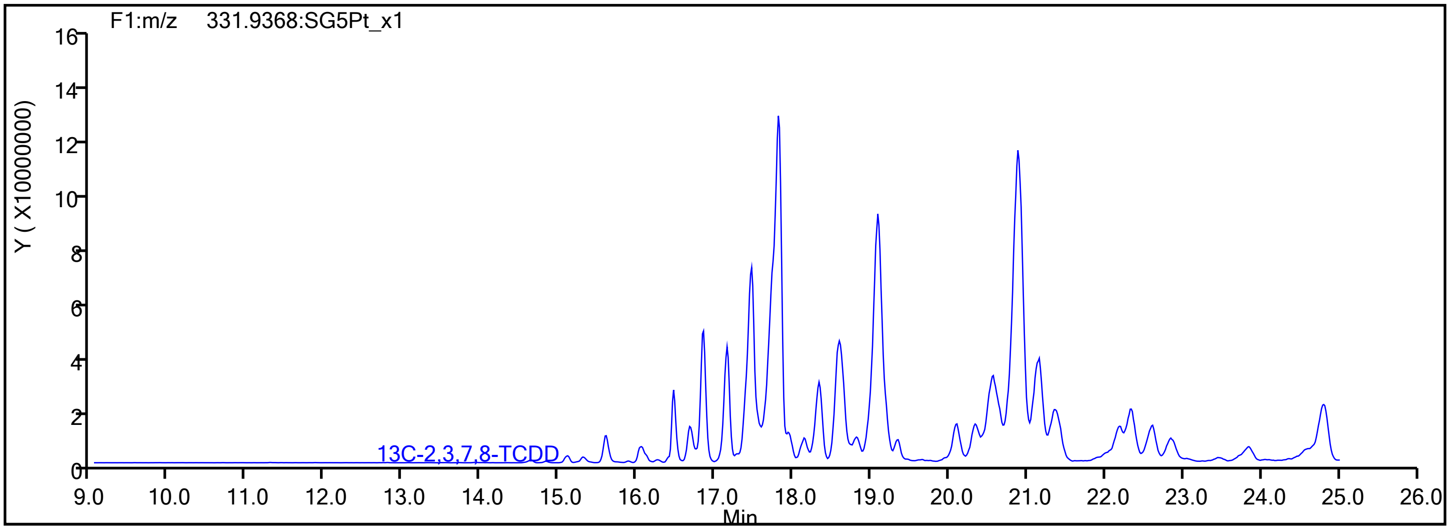

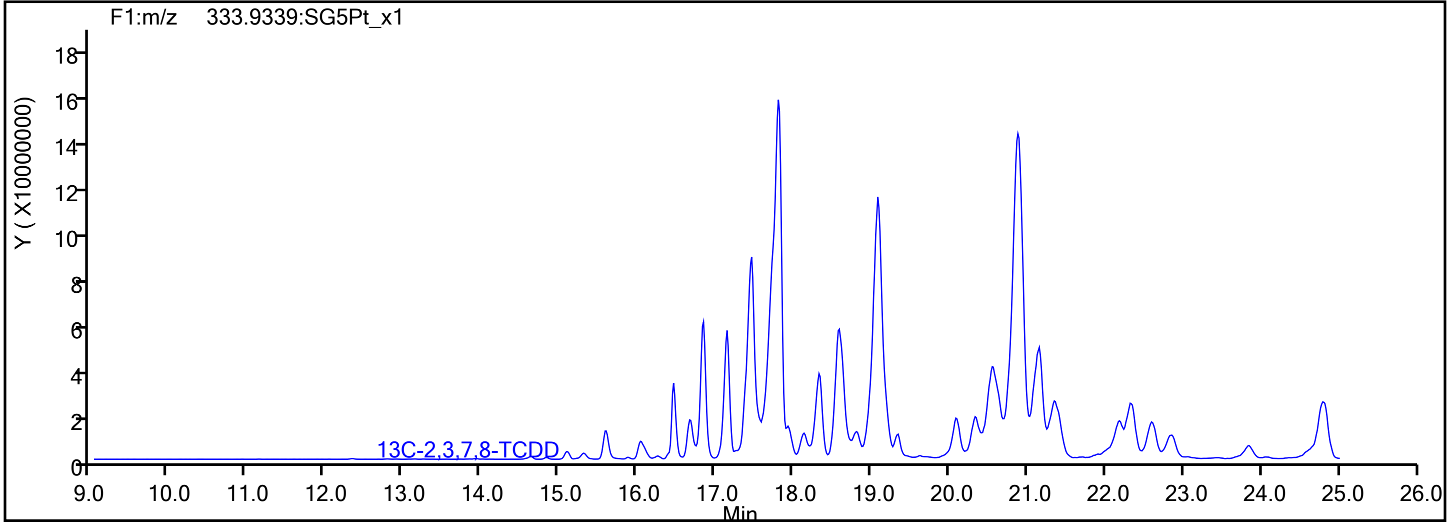

Report Date: 15-Oct-2020 13:26:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_014.d		
Injection Date:	12-Oct-2020 23:38:45	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	421482	Sample Line#:	14
Column Type:	DB-225	Column Dia:	0.32 mm

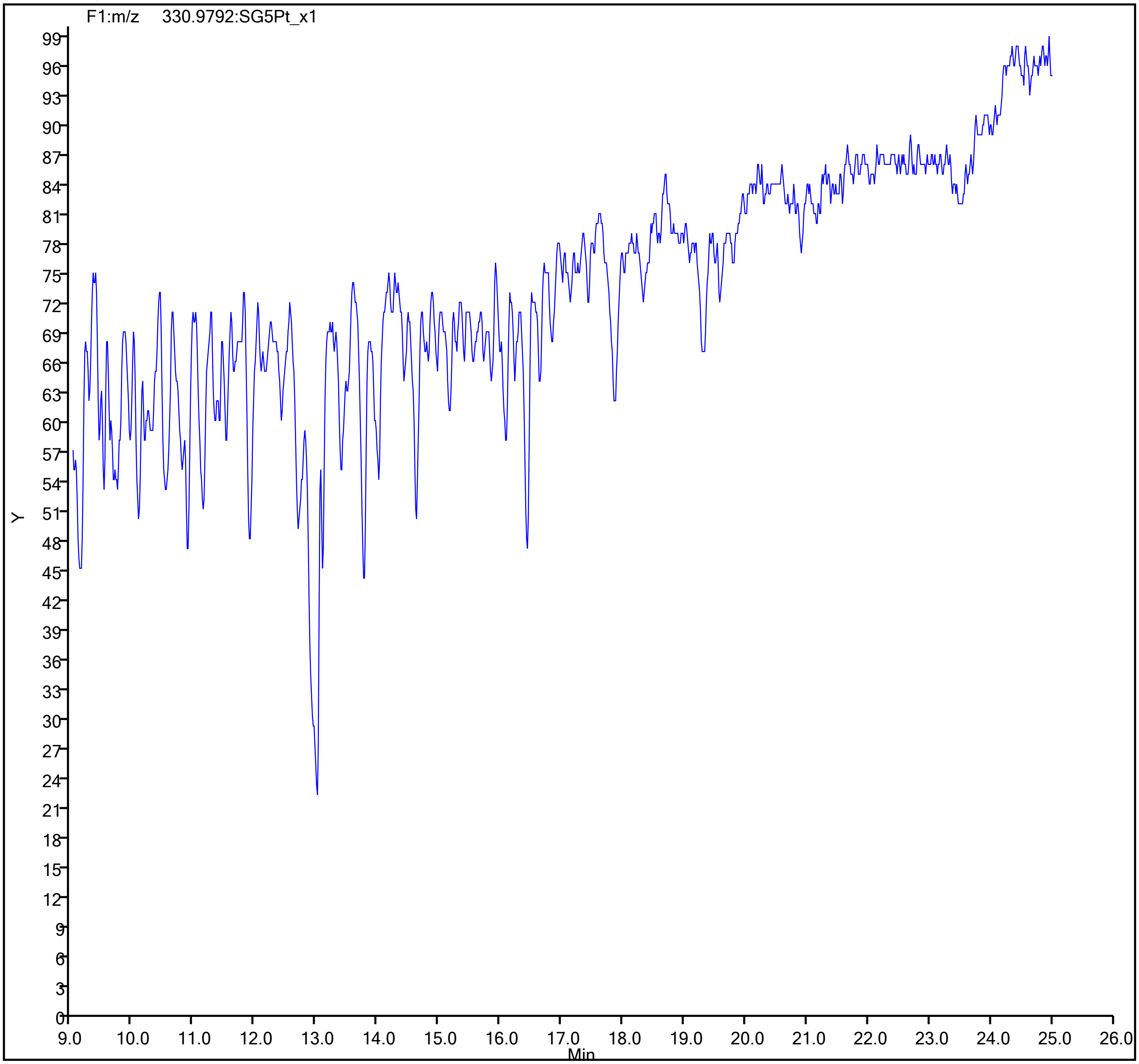

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-T=0 DL

Lab Sample ID: 320-65130-14 DL

Matrix: Water

Lab File ID: 15oc20dfs1_12.d

Analysis Method: 1613B

Date Collected: 09/09/2020 09:30

Extract. Method: 1613B

Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1044.6(mL)

Date Analyzed: 10/15/2020 20:21

Con. Extract Vol.: 20(uL)

Dilution Factor: 70

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 422239

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	180000		670	360

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	111		25-164

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	239	X	35-197

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Sample Type: Client
Inject. Date: 15-Oct-2020 20:21:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 70.0000
Sample Info: 320-65130-A-14-A (70x)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2020 10:55:23 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1676

First Level Reviewer: ruangyotsakuld Date: 19-Oct-2020 10:55:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.638	91741	0.81	2.7E+04	1.429	1.429				a
D 13C-2,3,7,8-TCDF	18.728	151609	0.78	1.5883	1.486	1.486	0.2426	0.2426	104	
2,3,7,8-TCDF	18.745	55418629	0.80	1.0857	481.0	481.0	2.023	2.023		E
A Non-2,3,7,8-sub-TCDF	18.294	18999854	0.80	1.0857	164.9	164.9	2.023	31.6		M
S Total TCDF					645.9	645.9	2.023	2.023		
D 13C-2,3,7,8-TCDD	19.948	113630	0.84	1.1194	1.581	1.581	0.1430	0.1430	111	
$ 37Cl4-2,3,7,8-TCDD	20.008	100603		1.1468	1.366	1.366	0.2609	0.2609	239	
2,3,7,8-TCDD	19.999	11718325	0.81	1.0810	136.3	136.3	0.2697	0.2697		
A Non-2,3,7,8-sub-TCDD	19.080	918375	0.77	1.0810	10.7	10.7	0.2697	10.7		
S Total TCDD					147.0	147.0	0.2697	0.2697		
D 13C-1,2,3,7,8-PeCDF	25.850	111910	1.68	1.4782	1.179	1.179	0.0263	0.0263	82.52	
1,2,3,7,8-PeCDF	25.875	1427335	1.60	1.0547	17.3	17.3	0.1430	0.1430		
D 13C-2,3,4,7,8-PeCDF	27.264	106453	1.57	1.3912	1.192	1.192	0.0279	0.0279	83.41	
2,3,4,7,8-PeCDF	27.289	865175	1.65	1.1035	10.5	10.5	0.1485	0.1485		
A F1 PeCDFs	22.995	23532	1.51	1.0791	0.2853	0.2853	0.0166	0.2853		
A Non-2,3,7,8-sub-PeCDF	26.447	1009708	1.59	1.0791	12.2	12.2	0.1455	7.267		M
S Total PeCDF					40.3	40.3	0.1457	0.1457		
D 13C-1,2,3,7,8-PeCDD	28.030	55624	1.76	0.9415	0.9200	0.9200	0.0232	0.0232	64.40	
1,2,3,7,8-PeCDD	28.047	73659	1.57	1.0680	1.771	1.771	0.0586	0.0586		M
A Non-2,3,7,8-sub-PeCDD	26.883						0.0586	0.0940		RQU
S Total PeCDD					1.771	1.771	0.0586	0.0586		
D 13C-1,2,3,4,7,8-HxCDF	33.757	83121	0.54	1.1378	1.410	1.410	0.0236	0.0236	98.72	
1,2,3,4,7,8-HxCDF	33.782	1960326	1.29	1.2643	26.6	26.6	0.0729	0.0729		
D 13C-1,2,3,6,7,8-HxCDF	33.959	88460	0.55	1.3173	1.296	1.296	0.0204	0.0204	90.74	
1,2,3,6,7,8-HxCDF	33.976	533935	1.30	1.2230	7.050	7.050	0.0699	0.0699		
D 13C-2,3,4,6,7,8-HxCDF	34.918	85637	0.55	1.2457	1.327	1.327	0.0215	0.0215	92.89	
2,3,4,6,7,8-HxCDF	34.935	60626	1.15	1.2464	0.8114	0.8114	0.0584	0.0584		
D 13C-1,2,3,7,8,9-HxCDF	35.912	84014	0.50	1.1840	1.370	1.370	0.0227	0.0227	95.88	
1,2,3,7,8,9-HxCDF	35.921	31532	1.16	1.2638	0.4243	0.4243	0.0560	0.0560		Ma
A Non-2,3,7,8-sub-HxCDF	33.770	324461	1.26	1.2494	4.349	4.349	0.0635	1.925		Ma
S Total HxCDF					39.3	39.3	0.0643	0.0643		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.702	74006	1.18	2.9E+04	1.429	1.429				
D 13C-1,2,3,4,7,8-HxCDD	35.171	63076	1.07	0.8477	1.436	1.436	0.0141	0.0141	101	
1,2,3,4,7,8-HxCDD	35.323						0.0139	0.0139		RQU
D 13C-1,2,3,6,7,8-HxCDD	35.289	66012	1.33	0.9979	1.277	1.277	0.0120	0.0120	89.39	
1,2,3,6,7,8-HxCDD	35.323	5944	1.24	1.0284	0.1478	0.1251	0.0147	0.0147		RQ
1,2,3,7,8,9-HxCDD	35.710	3876	1.29	1.1789	0.0728	0.0728	0.0132	0.0132		
A Non-2,3,7,8-sub-HxCDD	34.296	32931	1.24	1.1211	0.6794	0.6501	0.0139	0.3474		RQ
S Total HxCDD					0.9000	0.8480	0.0139	0.0139		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.884	64804	0.44	0.9884	1.336	1.266	0.0271	0.0271	93.53	RQ
1,2,3,4,6,7,8-HpCDF	37.893	596560	1.03	1.5064	8.270	8.270	0.0444	0.0444		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.207	58163	0.44	0.9203	1.299	1.220	0.0292	0.0292	90.90	RQ
1,2,3,4,7,8,9-HpCDF	39.215	190024	1.07	1.4548	3.014	3.014	0.0456	0.0456		
A Non-2,3,7,8-sub-HpCDF	38.560	187637	1.05	1.4806	2.779	2.779	0.0450	2.779		
S Total HpCDF					14.1	14.1	0.0450	0.0450		
D 13C-1,2,3,4,6,7,8-HpCDD	38.895	63751	0.99	0.9556	1.288	1.288	0.0100	0.0100	90.14	
1,2,3,4,6,7,8-HpCDD	38.904	180696	1.01	1.0640	3.806	3.806	0.0283	0.0283		
A Non-2,3,7,8-sub-HpCDD	38.941	185057	1.05	1.0640	3.897	3.897	0.0283	3.897		
S Total HpCDD					7.703	7.703	0.0283	0.0283		
D 13C-OCDD	41.341	111492	0.87	0.7420	2.900	2.900	0.0365	0.0365	102	
OCDF	41.434	264409	0.94	1.4296	4.740	4.740	0.0224	0.0224		
OCDD	41.349	2371385	0.90	1.1293	53.8	53.8	0.0551	0.0551		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d				
Lims ID:	320-65130-A-14-A				
Client ID:	11215702-Tank#2-T=0				
Sample Type:	Client				
Inject. Date:	15-Oct-2020 20:21:00	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	70.0000		
Sample Info:	320-65130-A-14-A (70x)				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Oct-2020 10:55:23	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1676				

First Level Reviewer: ruangyotsakuld Date: 19-Oct-2020 10:55:23

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.638	19.527	7		40928	7316	532	1330	14		a
333.9338	19.638	19.527	7		50813	8403	173	432	49	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.728	18.642	5	0.954	66418	9832	940	2350	10		
317.9389	18.719	18.642	5	0.953	85191	15233	756	1890	20	0.78(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.745	18.660	5	1.001	24645038	3999257	7737	19342	517		
305.8987	18.737	18.660	5	1.000	30773591	5039993	7677	19192	657	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											M
303.9016	16.400	18.294	-113	0.876	1054145	201338	7737	19342	26		
305.8987	16.400	18.294	-113	0.876	1312195	247579	7677	19192	32	0.80(0.65-0.89)	
303.9016	16.864	18.294	-86	0.900	1325465	183862	7737	19342	24		
305.8987	16.856	18.294	-86	0.900	1620092	228547	7677	19192	30	0.82(0.65-0.89)	
303.9016	17.251	18.294	-62	0.921	856517	138318	7737	19342	18		
305.8987	17.251	18.294	-62	0.921	1103079	178782	7677	19192	23	0.78(0.65-0.89)	
303.9016	17.603	18.294	-41	0.940	1167265	188839	7737	19342	24		
305.8987	17.603	18.294	-41	0.940	1445937	231621	7677	19192	30	0.81(0.65-0.89)	
303.9016	18.444	18.294	9	0.985	520652	86319	7737	19342	11		
305.8987	18.453	18.294	10	0.985	686037	107121	7677	19192	14	0.76(0.65-0.89)	
303.9016	19.467	18.294	70	1.039	1545489	245414	7737	19342	32		
305.8987	19.467	18.294	70	1.039	1965064	309961	7677	19192	40	0.79(0.65-0.89)	
303.9016	19.887	18.294	95	1.062	334111	57806	7737	19342	7		M
305.8987	19.879	18.294	95	1.061	420386	68592	7677	19192	9	0.79(0.65-0.89)	M
303.9016	21.828	18.294	212	1.166	1663794	242319	7737	19342	31		
305.8987	21.828	18.294	212	1.166	1979626	291465	7677	19192	38	0.84(0.65-0.89)	

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	19.948	19.879	4	1.016	51763	8747	532	1330	16		
333.9338	19.973	19.879	6	1.017	61867	7935	173	432	46	0.84(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.008	19.905	6	1.019	100603	16558	1317	3292	13		
2,3,7,8-TCDD											
319.8965	19.999	19.914	5	1.003	5237464	783144	782	1955	1001		
321.8936	19.999	19.914	5	1.003	6480861	968542	580	1450	1670	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.609	19.080	92	1.033	400415	59721	782	1955	76		
321.8936	20.609	19.080	92	1.033	517960	76732	580	1450	132	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.850	25.790	4	1.316	70088	13017	114	285	114		
353.8970	25.841	25.790	3	1.316	41822	7308	57	142	128	1.68(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.875	25.815	4	1.001	878064	146986	498	1245	295		
341.8567	25.875	25.815	4	1.001	549271	90382	360	900	251	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.264	27.213	3	1.388	65072	11099	114	285	97		
353.8970	27.272	27.213	4	1.389	41381	7598	57	142	133	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.289	27.238	3	1.001	538458	95194	498	1245	191		
341.8567	27.289	27.238	3	1.001	326717	58577	360	900	163	1.65(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.515	22.995	-29	0.871	14158	1806	33	82	55		
341.8567	22.472	22.995	-31	0.869	9374	1323	65	162	20	1.51(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											M
339.8597	24.494	26.447	-117	0.948	367463	69711	498	1245	140		M
341.8567	24.494	26.447	-117	0.948	231870	45429	360	900	126	1.58(1.32-1.78)	
339.8597	25.344	26.447	-66	0.980	31603	5995	498	1245	12		
341.8567	25.336	26.447	-67	0.980	21938	3637	360	900	10	1.44(1.32-1.78)	
339.8597	25.749	26.447	-42	0.996	65056	14626	498	1245	29		
341.8567	25.749	26.447	-42	0.996	43673	10082	360	900	28	1.49(1.32-1.78)	
339.8597	27.600	26.447	69	1.068	129962	19542	498	1245	39		
341.8567	27.592	26.447	69	1.067	75551	12062	360	900	34	1.72(1.32-1.78)	
339.8597	29.191	26.447	164	1.129	26107	4355	498	1245	9		
341.8567	29.183	26.447	164	1.129	16485	3358	360	900	9	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.030	27.971	4	1.427	35438	6128	66	165	93		
369.8919	28.013	27.971	3	1.426	20186	4715	30	75	157	1.76(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.047	27.996	3	1.001	45033	7662	81	202	95		M
357.8516	28.038	27.996	3	1.000	28626	4578	109	272	42	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.237	26.883	-39	0.936	2375	481	81	202	6		
357.8516	26.152	26.883	-44	0.933	5393	908	109	272	8	0.44(1.32-1.78)	
	Empc Correction				1532	310	109	272	3		

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.757	33.733	1	0.946	29145	5870	25	62	235		
385.8610	33.757	33.733	1	0.946	53976	11093	110	275	101	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.782	33.750	2	1.001	1103684	207738	304	760	683		
375.8178	33.782	33.750	2	1.001	856642	160290	134	335	1196	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.959	33.927	2	0.951	31433	6873	25	62	275		
385.8610	33.959	33.927	2	0.951	57027	11419	110	275	104	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.976	33.944	2	1.000	301808	59546	304	760	196		
375.8178	33.976	33.944	2	1.000	232127	44033	134	335	329	1.30(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.918	34.895	1	0.978	30265	7532	25	62	301		
385.8610	34.927	34.895	2	0.978	55372	13967	110	275	127	0.55(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.935	34.912	1	1.000	32374	7265	304	760	24		
375.8178	34.935	34.912	1	1.000	28252	6423	134	335	48	1.15(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.912	35.889	1	1.006	27889	7218	25	62	289		
385.8610	35.921	35.889	2	1.006	56125	14887	110	275	135	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	35.921	35.905	1	1.000	16927	4481	304	760	15		M
375.8178	35.929	35.905	1	1.000	14605	3696	134	335	28	1.16(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	31.888	33.770	-113	0.945	80995	12795	304	760	42		
375.8178	31.896	33.770	-112	0.945	62596	9653	134	335	72	1.29(1.05-1.43)	
373.8208	33.016	33.770	-45	0.978	35022	6568	304	760	22		
375.8178	33.024	33.770	-45	0.978	31690	5520	134	335	41	1.11(1.05-1.43)	
373.8208	36.047	33.770	136	1.068	64857	18039	304	760	59		M
375.8178	36.047	33.770	136	1.068	49301	12996	134	335	97	1.32(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.702	35.678	1		40088	9479	32	80	296		
403.8529	35.710	35.678	2		33918	8462	28	70	302	1.18(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.171	35.139	2	0.985	32576	8036	32	80	251		
403.8529	35.171	35.139	2	0.985	30500	7280	28	70	260	1.07(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQU
389.8158	35.156						23	57			
391.8127	35.156						46	115			
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.289	35.266	1	0.988	37644	8624	32	80	270		
403.8529	35.314	35.266	3	0.989	28368	7604	28	70	272	1.33(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQ
389.8158	35.323	35.291	2	1.001	4371	1006	23	57	44		
	Empc Correction				3290	772	23	57	34		
391.8127	35.306	35.291	1	1.000	2654	623	46	115	14	1.65(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											
389.8158	35.710	35.695	1	1.015	2183	390	23	57	17		
391.8127	35.718	35.695	1	1.016	1693	465	46	115	10	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	32.949	34.296	-81	0.934	8488	1413	23	57	61		
391.8127	32.923	34.296	-82	0.933	8328	1279	46	115	28	1.02(1.05-1.43)	
	Empc Correction				6845	1139	46	115	25		
389.8158	34.287	34.296	-1	0.972	9878	1911	23	57	83		
391.8127	34.287	34.296	-1	0.972	7720	1508	46	115	33	1.28(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											RQ
417.8250	37.884	37.863	1	1.061	23407	7485	86	215	87		
	Empc Correction				19801	6118	86	215	71		
419.8220	37.876	37.863	1	1.061	45003	13905	49	122	284	0.52(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	37.893	37.879	1	1.000	302800	94064	205	512	459		M
409.7788	37.893	37.879	1	1.000	293760	94166	196	490	480	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											RQ
417.8250	39.207	39.184	1	1.098	21517	7469	86	215	87		
	Empc Correction				17772	6206	86	215	72		
419.8220	39.207	39.184	1	1.098	40391	14106	49	122	288	0.53(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.215	39.201	1	1.000	98333	33552	205	512	164		
409.7788	39.215	39.201	1	1.000	91691	31308	196	490	160	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.280	38.560	-17	1.010	96207	32420	205	512	158		
409.7788	38.280	38.560	-17	1.010	91430	30409	196	490	155	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.895	38.873	1	1.089	31749	10185	26	65	392		
437.8140	38.895	38.873	1	1.089	32002	11059	22	55	503	0.99(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.904	38.890	1	1.000	90645	31535	99	247	319		
425.7737	38.904	38.890	1	1.000	90051	30366	80	200	380	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.230	38.941	-43	0.983	94954	29947	99	247	302		
425.7737	38.230	38.941	-43	0.983	90103	29705	80	200	371	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.341	41.326	1	1.158	51742	19058	83	207	230		
471.7750	41.341	41.326	1	1.158	59750	21701	53	132	409	0.87(0.76-1.02)	
OCDF											
441.7428	41.434	41.411	1	1.002	128450	41960	69	172	608		
443.7399	41.425	41.411	1	1.002	135959	45224	114	285	397	0.94(0.76-1.02)	
OCDD											
457.7377	41.349	41.335	1	1.000	1126404	385948	170	425	2270		
459.7348	41.349	41.335	1	1.000	1244981	430744	185	462	2328	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	15-Oct-2020 20:21:00	Dil. Factor:	70.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 18.294

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	151609	25065

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		1.429	151609	25065

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.400	1054145	201338	1312195	247579	20.5	0.80	
16.864	1325465	183862	1620092	228547	25.6	0.82	
17.251	856517	138318	1103079	178782	17.0	0.78	
17.603	1167265	188839	1445937	231621	22.7	0.81	
18.444	520652	86319	686037	107121	10.5	0.76	
19.467	1545489	245414	1965064	309961	30.5	0.79	
19.887	334111	57806	420386	68592	6.55	0.79	M
21.828	1663794	242319	1979626	291465	31.6	0.84	
Signal Totals:							
	8467438	1344215	10532416	1663668			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18999854	3007883				0.80	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 164.906 = (18999854 * 1.429) / (151609 * 1.086)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	15-Oct-2020 20:21:00	Dil. Factor:	70.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDD, RT: 19.080

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	113630	16682

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		1.429	113630	16682

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.609	400415	59721	517960	76732	10.7	0.77	
Signal Totals:							
	400415	59721	517960	76732			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	918375	136453				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 10.681 = (918375 * 1.429) / (113630 * 1.081)

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 15-Oct-2020 20:21:00 Dil. Factor: 70.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 422239 Lims Sample ID: 11

F1 PeCDFs, RT: 22.995

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	111910	20325
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	106453	18697

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		1.429	109181	19511

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.515	14158	1806	9374	1323	0.2853	1.51	
Signal Totals:							
	14158	1806	9374	1323			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	23532	3129				1.51	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2853 = (23532 * 1.429) / (109181 * 1.079)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d		
Lims ID:	320-65130-A-14-A		
Client ID:	11215702-Tank#2-T=0		
Inject. Date:	15-Oct-2020 20:21:00	Dil. Factor:	70.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 26.447

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	111910	20325
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	106453	18697

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		1.429	109181	19511

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.494	367463	69711	231870	45429	7.27	1.58	M
25.344	31603	5995	21938	3637	0.6492	1.44	
25.749	65056	14626	43673	10082	1.32	1.49	
27.600	129962	19542	75551	12062	2.49	1.72	
29.191	26107	4355	16485	3358	0.5164	1.58	
Signal Totals:							
	620191	114229	389517	74568			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1009708	188797				1.59	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.243 = (1009708 * 1.429) / (109181 * 1.079)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 15-Oct-2020 20:21:00
Dil. Factor: 70.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 11

Non-2,3,7,8-sub-PeCDD, RT: 26.883

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	55624	10843

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		1.429	55624	10843

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.237	2375	481	5393	908	0.1868	0.44	RQ
26.237	2375	481	1532	310	0.0940		Empc Correction

Compound is Marked ND

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 15-Oct-2020 20:21:00 Dil. Factor: 70.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 422239 Lims Sample ID: 11

Non-2,3,7,8-sub-HxCDF, RT: 33.770

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	83121	16963
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	88460	18292
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	85637	21499
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	84014	22105

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		1.429	85308	19714

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.888	80995	12795	62596	9653	1.92	1.29	
33.016	35022	6568	31690	5520	0.8942	1.11	
36.047	64857	18039	49301	12996	1.53	1.32	Ma
Signal Totals:							
	180874	37402	143587	28169			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	324461	65571				1.26	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.349 = (324461 * 1.429) / (85308 * 1.249)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 15-Oct-2020 20:21:00
Dil. Factor: 70.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 11

Non-2,3,7,8-sub-HxCDD, RT: 34.296

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	63076	15316
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	66012	16228
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		1.429	64544	15772

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.949	8488	1413	8328	1279	0.3320	1.02	RQ
32.949	8488	1413	6845	1139	0.3027		Empc Correction
34.287	9878	1911	7720	1508	0.3474	1.28	
Signal Totals:							
	18366	3324	14565	2647			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	34414	6111				1.14	RQ
	32931	5971					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6794 = (34414 * 1.429) / (64544 * 1.121)
Empc Amount: 0.6501 = (32931 * 1.429) / (64544 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 15-Oct-2020 20:21:00
Dil. Factor: 70.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 11

Non-2,3,7,8-sub-HpCDF, RT: 38.560

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	68410	21390
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	61908	21575

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		1.429	65159	21482

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.280	96207	32420	91430	30409	2.78	1.05	
Signal Totals:							
	96207	32420	91430	30409			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	187637	62829				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.779 = (187637 * 1.429) / (65159 * 1.481)

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Lims ID: 320-65130-A-14-A
Client ID: 11215702-Tank#2-T=0
Inject. Date: 15-Oct-2020 20:21:00 Dil. Factor: 70.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 422239 Lims Sample ID: 11

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	63751	21244

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		1.429	63751	21244

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.230	94954	29947	90103	29705	3.90	1.05	
Signal Totals:							
	94954	29947	90103	29705			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	185057	59652				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.897 = (185057 * 1.429) / (63751 * 1.064)

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d
Injection Date: 15-Oct-2020 20:21:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-T=0
Worklist#: 422239
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

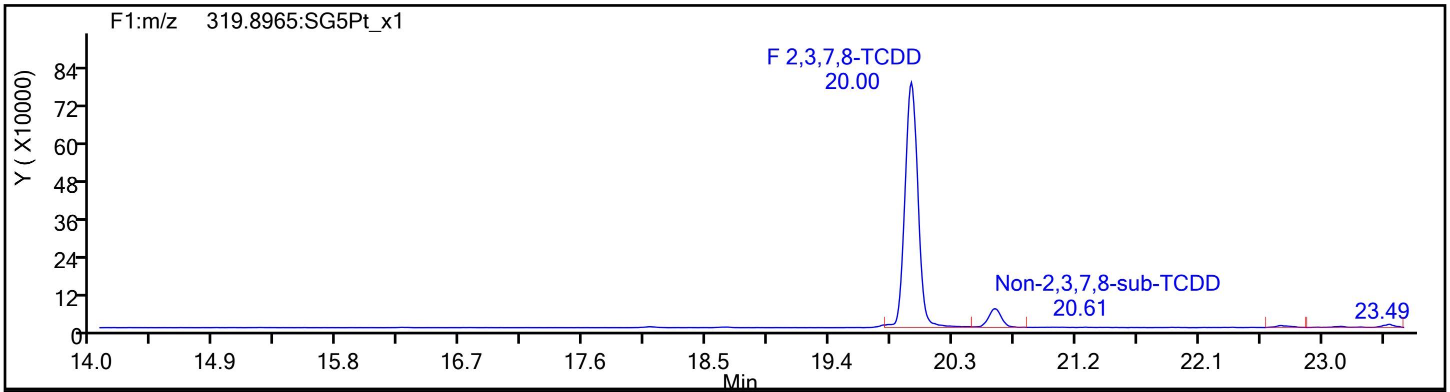

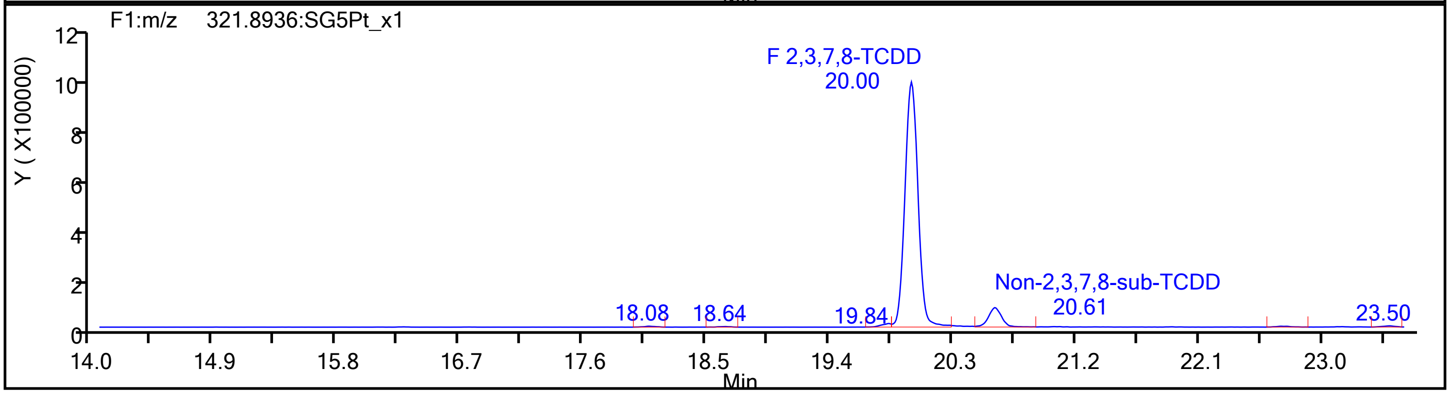

TCDD Standards

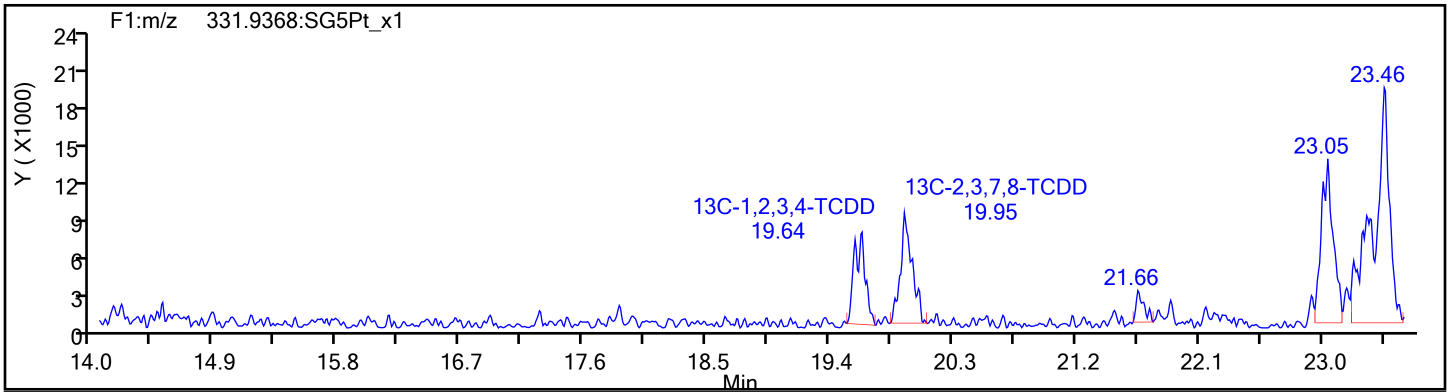

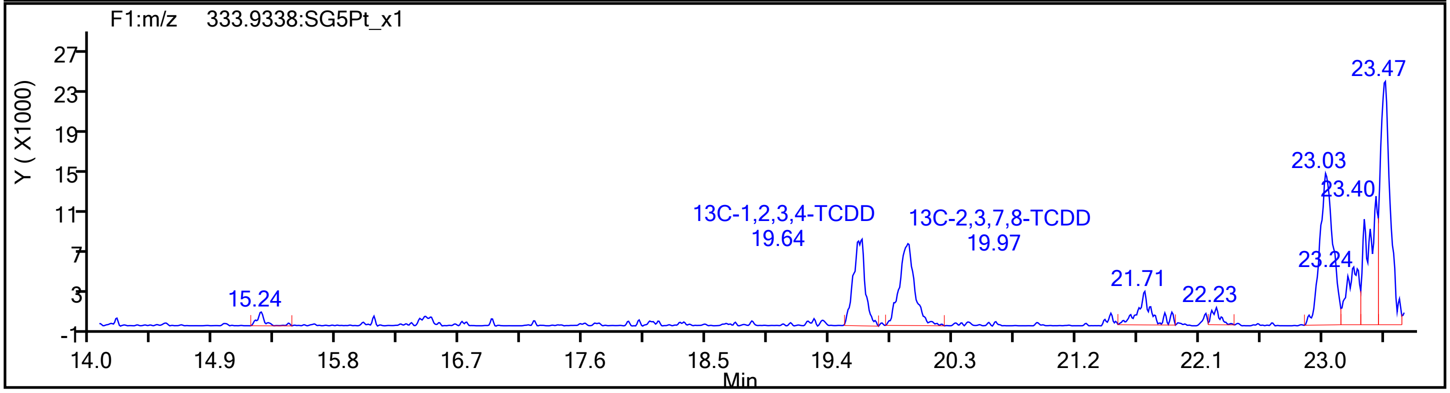

Report Date: 19-Oct-2020 10:55:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d		
Injection Date:	15-Oct-2020 20:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	422239	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

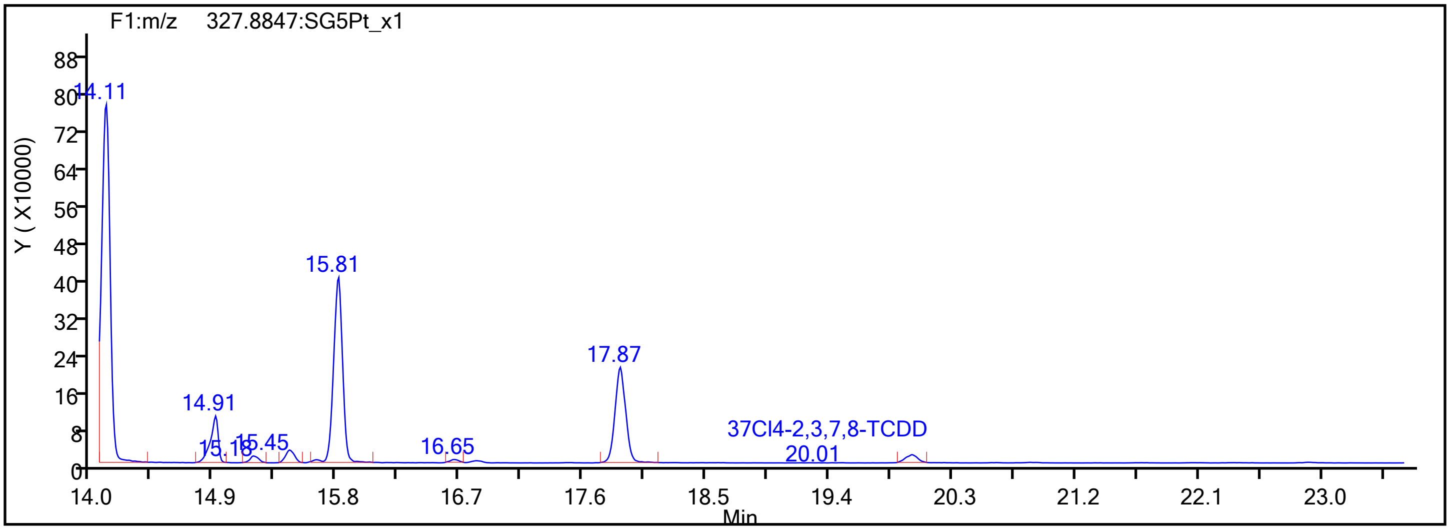

37Cl4-TCDD Standards

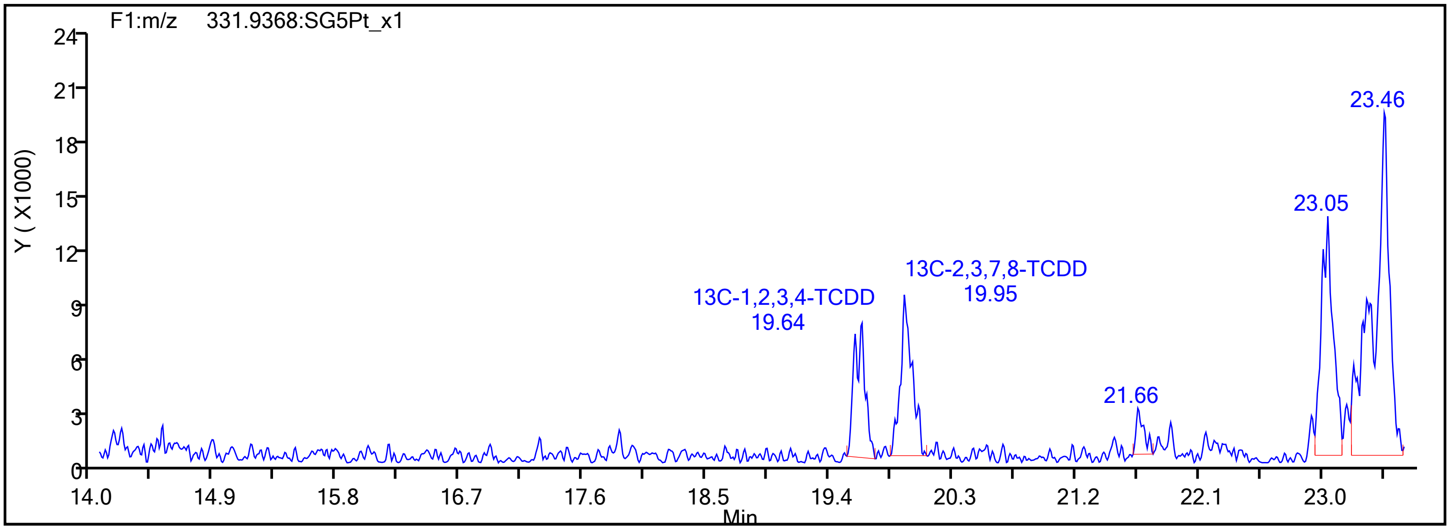

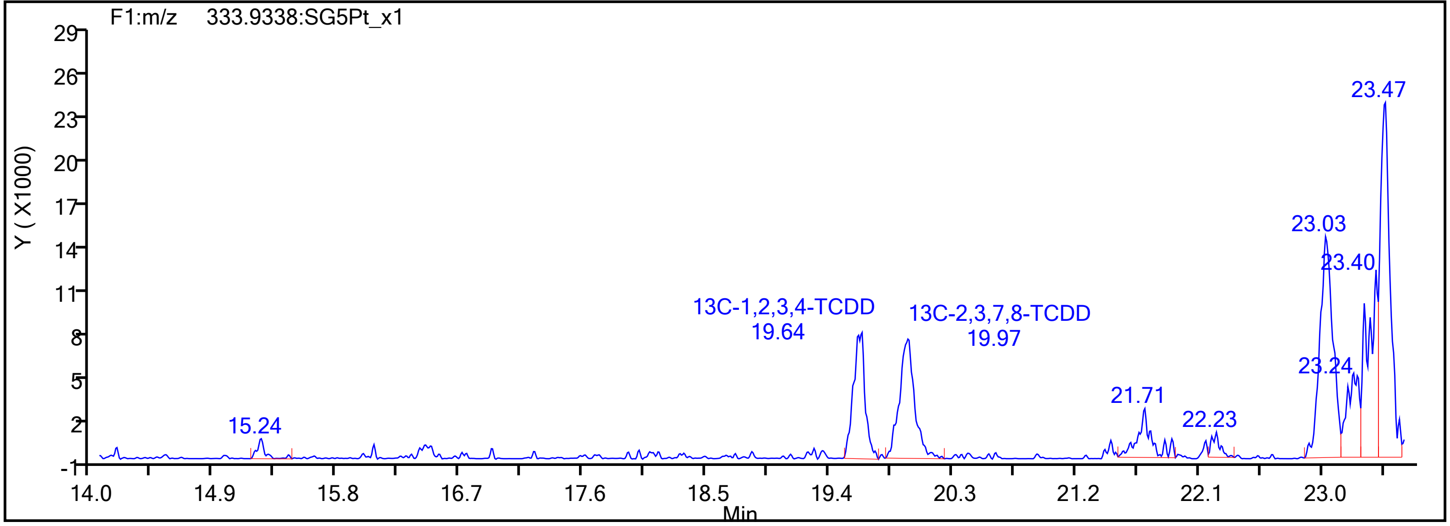

Report Date: 19-Oct-2020 10:55:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d

Injection Date: 15-Oct-2020 20:21:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-T=0

Worklist#: 422239 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

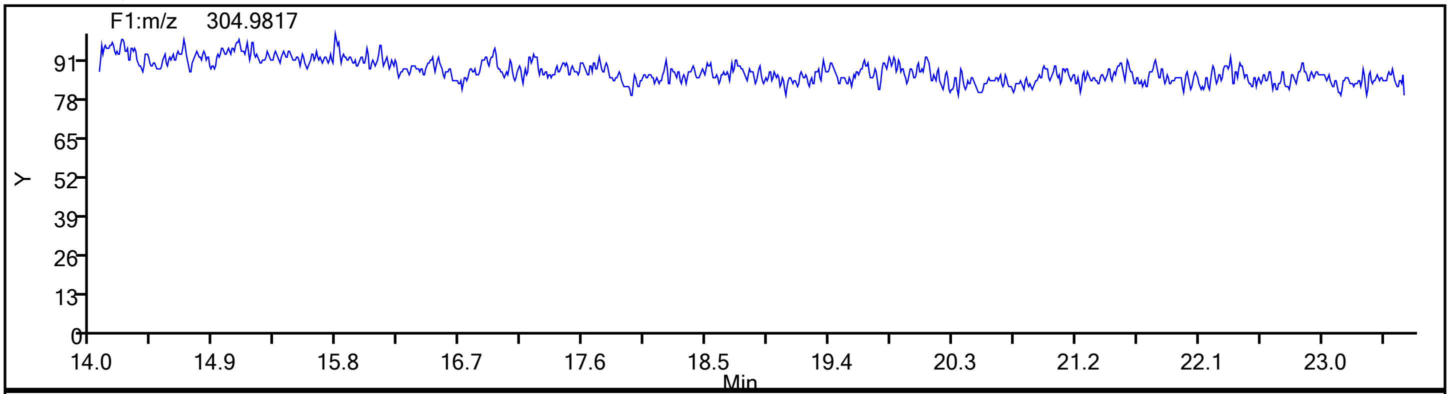

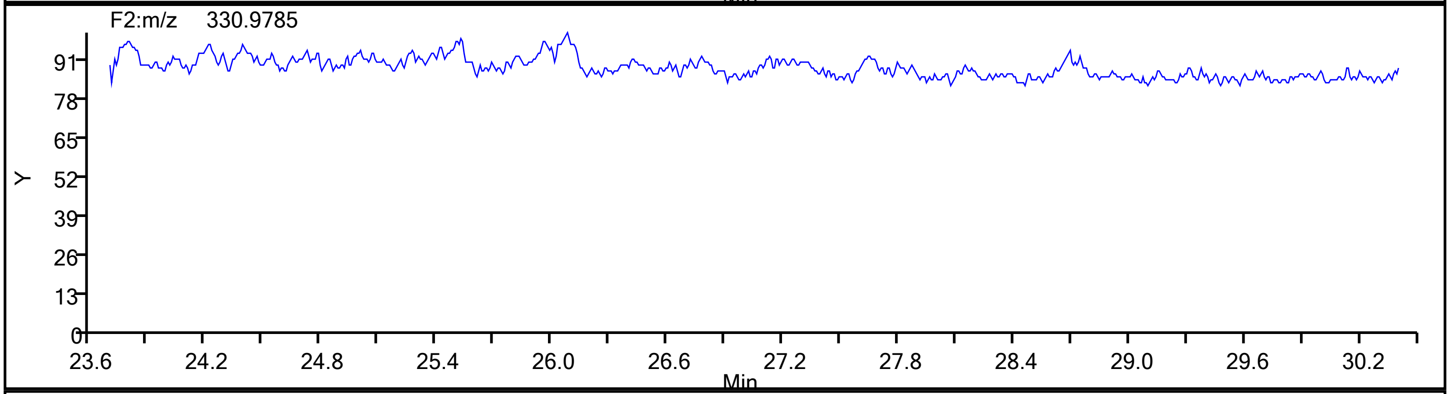

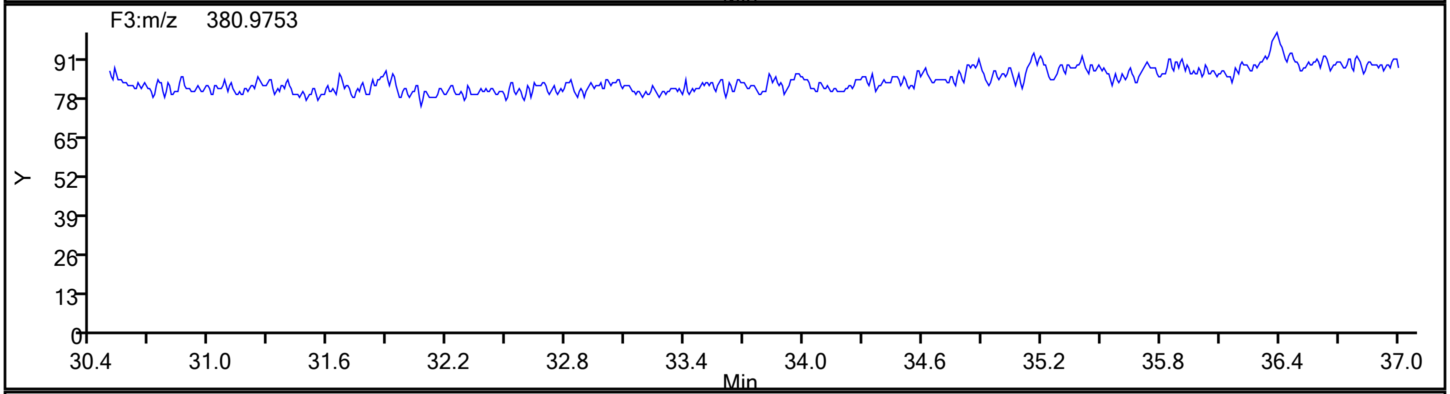

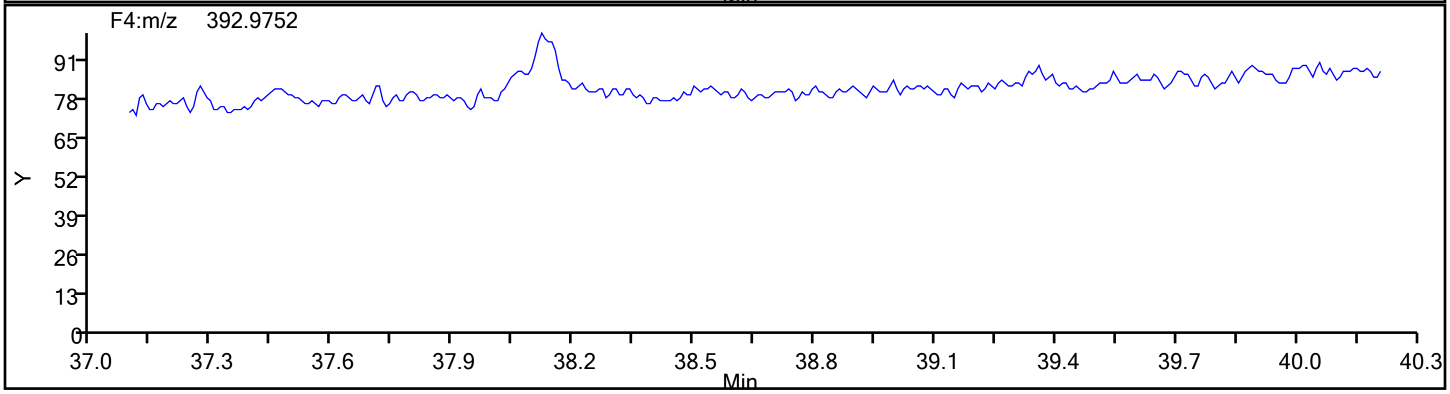

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_12.d		
Injection Date:	15-Oct-2020 20:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-T=0		
Worklist#:	422239	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

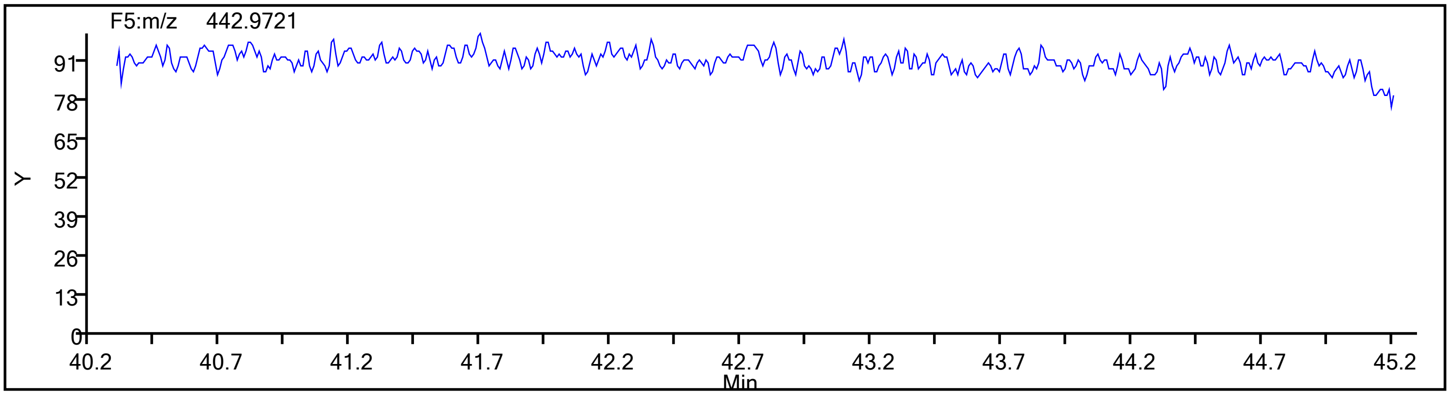

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-2-1 Lab Sample ID: 320-65130-15

Matrix: Water Lab File ID: 12oc20dfs1_6.d

Analysis Method: 1613B Date Collected: 09/10/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1042.5(mL) Date Analyzed: 10/12/2020 16:34

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421107 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1200		9.6	4.7
40321-76-4	1,2,3,7,8-PeCDD	13	J q	48	1.2
57117-41-6	1,2,3,7,8-PeCDF	120		48	1.8
57117-31-4	2,3,4,7,8-PeCDF	87		48	2.0
39227-28-6	1,2,3,4,7,8-HxCDD	1.6	J B	48	0.54
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.81
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.60
70648-26-9	1,2,3,4,7,8-HxCDF	270		48	1.4
57117-44-9	1,2,3,6,7,8-HxCDF	75		48	1.2
72918-21-9	1,2,3,7,8,9-HxCDF	3.9	J q B	48	1.1
60851-34-5	2,3,4,6,7,8-HxCDF	9.0	J	48	1.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	33	J	48	0.73
67562-39-4	1,2,3,4,6,7,8-HpCDF	100	B	48	0.66
55673-89-7	1,2,3,4,7,8,9-HpCDF	37	J B	48	0.64
3268-87-9	OCDD	780	B	96	1.0
39001-02-0	OCDF	83	J B	96	1.0
41903-57-5	Total TCDD	1300		9.6	4.7
30402-14-3	Total TCDF	6600	G q B	17	17
36088-22-9	Total PeCDD	13	J q	48	1.2
30402-15-4	Total PeCDF	330	q	48	1.9
34465-46-8	Total HxCDD	7.0	J q B	48	0.65
55684-94-1	Total HxCDF	400	q B	48	1.2
37871-00-4	Total HpCDD	73		48	0.73
38998-75-3	Total HpCDF	170	B	48	0.65

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-2-1	Lab Sample ID: 320-65130-15
Matrix: Water	Lab File ID: 12oc20dfs1_6.d
Analysis Method: 1613B	Date Collected: 09/10/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1042.5(mL)	Date Analyzed: 10/12/2020 16:34
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421107	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	76		25-164
89059-46-1	13C-2,3,7,8-TCDF	85		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	66		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	75		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	73		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	114		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	93		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	90		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	91		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	94		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	82		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	84		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	89		26-138
114423-97-1	13C-OCDD	97		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	90		35-197

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Sample Type: Client
Inject. Date: 12-Oct-2020 16:34:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-15-A RI
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 10:44:17 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1650

First Level Reviewer: shardaa Date: 13-Oct-2020 17:14:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.631	1999490	0.83	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.746	2688967	0.80	1.5883	84.7	84.7	0.6373	0.6373	84.67	
2,3,7,8-TCDF	18.763	5664375	0.82	1.0857	194.0	194.0	0.8702	0.8702		
A Non-2,3,7,8-sub-TCDF	18.376	4377908	0.77	1.0857	150.9	150.0	0.8702	81.7		RQ
S Total TCDF					344.9	344.0	0.8702	0.8702		RQ
D 13C-2,3,7,8-TCDD	19.984	1710823	0.78	1.1194	76.4	76.4	0.4521	0.4521	76.43	
$ 37Cl4-2,3,7,8-TCDD	20.018	827265		1.1468	36.1	36.1	0.0677	0.0677	90.20	
2,3,7,8-TCDD	20.009	1155952	0.78	1.0810	62.5	62.5	0.2444	0.2444		M
A Non-2,3,7,8-sub-TCDD	19.166	82071	0.74	1.0810	4.438	4.438	0.2444	4.438		
S Total TCDD					66.9	66.9	0.2444	0.2444		
D 13C-1,2,3,7,8-PeCDF	25.863	2207627	1.62	1.4782	74.7	74.7	0.2695	0.2695	74.69	
1,2,3,7,8-PeCDF	25.888	146984	1.55	1.0547	6.313	6.313	0.0959	0.0959		M
D 13C-2,3,4,7,8-PeCDF	27.278	2032767	1.58	1.3912	73.1	73.1	0.2864	0.2864	73.08	
2,3,4,7,8-PeCDF	27.304	101479	1.65	1.1035	4.524	4.524	0.1044	0.1044		
A F1 PeCDFs	23.037						0.0495	0.0632		RQU
A Non-2,3,7,8-sub-PeCDF	26.479	147902	1.55	1.0791	6.655	6.465	0.0998	3.117		RQM
S Total PeCDF					17.5	17.3	0.1001	0.1001		RQ
D 13C-1,2,3,7,8-PeCDD	28.045	1233178	1.55	0.9415	65.5	65.5	0.1724	0.1724	65.51	
1,2,3,7,8-PeCDD	28.095	8711	1.55	1.0680	0.7091	0.6614	0.0620	0.0620		RQM
A Non-2,3,7,8-sub-PeCDD	26.944						0.0620	0.0620		
S Total PeCDD					0.7091	0.6614	0.0620	0.0620		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.786	1603345	0.53	1.1378	92.6	92.6	0.3665	0.3665	92.60	
1,2,3,4,7,8-HxCDF	33.803	280651	1.31	1.2643	13.8	13.8	0.0709	0.0709		
D 13C-1,2,3,6,7,8-HxCDF	33.980	1808433	0.52	1.3173	90.2	90.2	0.3166	0.3166	90.21	
1,2,3,6,7,8-HxCDF	33.989	86698	1.24	1.2230	3.920	3.920	0.0648	0.0648		
D 13C-2,3,4,6,7,8-HxCDF	34.932	1774591	0.55	1.2457	93.6	93.6	0.3347	0.3347	93.61	
2,3,4,6,7,8-HxCDF	34.966	10365	1.26	1.2464	0.4686	0.4686	0.0567	0.0567		
D 13C-1,2,3,7,8,9-HxCDF	35.926	1645119	0.54	1.1840	91.3	91.3	0.3522	0.3522	91.30	
1,2,3,7,8,9-HxCDF	35.943	4260	1.24	1.2638	0.2404	0.2049	0.0555	0.0555		RQ
A Non-2,3,7,8-sub-HxCDF	33.821	53271	1.24	1.2494	2.593	2.497	0.0614	0.9093		RQ
S Total HxCDF					21.1	20.9	0.0620	0.0620		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.716	1521866	1.21	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.185	1473503	1.28	0.8477	114.2	114.2	0.2580	0.2580	114	
1,2,3,4,7,8-HxCDD	35.193	1448	1.16	1.1561	0.0850	0.0850	0.0280	0.0280		
D 13C-1,2,3,6,7,8-HxCDD	35.311	1307465	1.30	0.9979	86.1	86.1	0.2192	0.2192	86.10	
1,2,3,6,7,8-HxCDD	35.193						0.0420	0.0420		U
1,2,3,7,8,9-HxCDD	35.740						0.0314	0.0314		
A Non-2,3,7,8-sub-HxCDD	34.340	4380	1.24	1.1211	0.3270	0.2810	0.0330	0.1425		RQ
S Total HxCDD					0.4120	0.3660	0.0338	0.0338		RQ
1,2,3,4,6,7,8-HpCDF	37.894	103704	1.06	1.5064	5.449	5.449	0.0343	0.0343		
D 13C-1,2,3,4,6,7,8-HpCDF	37.886	1263354	0.45	0.9884	84.0	84.0	0.4403	0.4403	83.99	
D 13C-1,2,3,4,7,8,9-HpCDF	39.209	1249457	0.45	0.9203	89.2	89.2	0.4729	0.4729	89.21	
1,2,3,4,7,8,9-HpCDF	39.218	35392	1.19	1.4548	1.947	1.947	0.0332	0.0332		
A Non-2,3,7,8-sub-HpCDF	38.571	30981	1.04	1.4806	1.665	1.665	0.0337	1.665		
S Total HpCDF					9.062	9.062	0.0338	0.0338		
1,2,3,4,6,7,8-HpCDD	38.906	21845	1.05	1.0640	1.714	1.714	0.0380	0.0380		
D 13C-1,2,3,4,6,7,8-HpCDD	38.889	1198016	1.12	0.9556	82.4	82.4	0.2339	0.2339	82.37	
A Non-2,3,7,8-sub-HpCDD	38.941	26541	0.96	1.0640	2.082	2.082	0.0380	2.082		
S Total HpCDD					3.796	3.796	0.0380	0.0380		
D 13C-OCDD	41.344	2184234	0.87	0.7420	193.4	193.4	0.2702	0.2702	96.71	
OCDF	41.428	67731	0.87	1.4296	4.338	4.338	0.0520	0.0520		
OCDD	41.352	501374	0.89	1.1293	40.7	40.7	0.0546	0.0546		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d				
Lims ID:	320-65130-A-15-A				
Client ID:	11215702-Tank#2-valve-2-1				
Sample Type:	Client				
Inject. Date:	12-Oct-2020 16:34:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-15-A RI				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 10:44:17	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1650				
First Level Reviewer: shardaa		Date:	13-Oct-2020 17:14:19		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.631	19.682	-3		907641	134757	420	1050	321		
333.9338	19.640	19.682	-2		1091849	174455	206	515	847	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.746	18.788	-3	0.955	1191803	201699	881	2202	229		
317.9389	18.738	18.788	-3	0.954	1497164	240204	371	927	647	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.763	18.831	-4	1.001	2555616	374412	649	1622	577		
305.8987	18.763	18.831	-4	1.001	3108759	460104	1021	2552	451	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.426	18.376	-117	0.876	110495	20170	649	1622	31		
305.8987	16.417	18.376	-117	0.876	124943	24474	1021	2552	24	0.88(0.65-0.89)	
303.9016	16.881	18.376	-89	0.901	152665	23207	649	1622	36		
305.8987	16.864	18.376	-91	0.900	179162	26338	1021	2552	26	0.85(0.65-0.89)	
303.9016	17.277	18.376	-66	0.922	112033	18608	649	1622	29		
305.8987	17.268	18.376	-66	0.921	133423	21042	1021	2552	21	0.84(0.65-0.89)	
303.9016	17.629	18.376	-45	0.940	118831	19357	649	1622	30		
305.8987	17.620	18.376	-45	0.940	145156	23461	1021	2552	23	0.82(0.65-0.89)	
303.9016	18.093	18.376	-17	0.965	1071585	181457	649	1622	280		
305.8987	18.093	18.376	-17	0.965	1313325	224680	1021	2552	220	0.82(0.65-0.89)	
303.9016	18.471	18.376	6	0.985	59437	9547	649	1622	15		
305.8987	18.480	18.376	6	0.986	69303	11896	1021	2552	12	0.86(0.65-0.89)	
303.9016	19.494	18.376	67	1.040	179637	30829	649	1622	48		
	Empc Correction				153390	26172	649	1622	40		
305.8987	19.494	18.376	67	1.040	199209	33990	1021	2552	33	0.90(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.889	18.376	91	1.061	45105	6192	649	1622	10		
305.8987	19.889	18.376	91	1.061	51282	8188	1021	2552	8	0.88(0.65-0.89)	
303.9016	21.865	18.376	209	1.166	152333	21252	649	1622	33		
305.8987	21.848	18.376	208	1.165	186231	24212	1021	2552	24	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.984	20.033	-3	1.018	747609	103928	420	1050	247		
333.9338	19.992	20.033	-2	1.018	963214	142868	206	515	694	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.018	20.059	-2	1.020	827265	124468	96	240	1297		
2,3,7,8-TCDD											M
319.8965	20.009	20.076	-4	1.001	504926	73180	179	447	409		M
321.8936	20.009	20.076	-4	1.001	651026	93551	82	205	1141	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.653	19.166	89	1.034	34899	5377	179	447	30		
321.8936	20.653	19.166	89	1.034	47172	6796	82	205	83	0.74(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.863	25.892	-2	1.317	1363814	234574	317	792	740		
353.8970	25.863	25.892	-2	1.317	843813	148048	176	440	841	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.888	25.918	-2	1.001	89455	15531	67	167	232		M
341.8567	25.880	25.918	-2	1.001	57529	10658	88	220	121	1.55(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.278	27.324	-3	1.390	1244312	206013	317	792	650		
353.8970	27.287	27.324	-2	1.390	788455	130038	176	440	739	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.304	27.350	-3	1.001	63186	10085	67	167	151		
341.8567	27.312	27.350	-2	1.001	38293	6309	88	220	72	1.65(1.32-1.78)	
A F1 PeCDFs											U
339.8597	22.553	23.037	-29	0.872	879	149	19	47	8		
341.8567	22.510	23.037	-32	0.870	1428	332	58	145	6	0.62(1.32-1.78)	
	Empc Correction				567	96	58	145	2		
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	24.514	26.479	-118	0.948	44616	8028	67	167	120		M
341.8567	24.498	26.479	-119	0.947	26701	4998	88	220	57	1.67(1.32-1.78)	M
339.8597	25.745	26.479	-44	0.995	8379	1970	67	167	29		
341.8567	25.770	26.479	-42	0.996	5289	1229	88	220	14	1.58(1.32-1.78)	
339.8597	26.436	26.479	-3	1.022	27419	4539	67	167	68		
	Empc Correction				23065	3817	67	167	57		
341.8567	26.419	26.479	-4	1.022	14881	2463	88	220	28	1.84(1.32-1.78)	
339.8597	27.624	26.479	69	1.068	14868	2347	67	167	35		
341.8567	27.615	26.479	68	1.068	10103	1417	88	220	16	1.47(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.045	28.074	-2	1.429	749451	120749	143	357	844		
369.8919	28.045	28.074	-2	1.429	483727	75500	58	145	1302	1.55(1.32-1.78)	

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											RQM
355.8546	28.095	28.099	0	1.002	5295	830	41	102	20		M
357.8516	28.079	28.099	-1	1.001	4044	748	11	27	68	1.31(1.32-1.78)	
	Empc Correction				3416	535	11	27	49		
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.944						41	102			
357.8516	26.944						11	27			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.786	33.813	-2	0.946	552488	102491	167	417	614		
385.8610	33.786	33.813	-2	0.946	1050857	198601	428	1070	464	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.803	33.830	-2	1.000	159096	31365	69	172	455		
375.8178	33.803	33.830	-2	1.000	121555	22838	39	97	586	1.31(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.980	34.007	-2	0.951	614820	114923	167	417	688		
385.8610	33.972	34.007	-2	0.951	1193613	225908	428	1070	528	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.989	34.024	-2	1.000	47943	8817	69	172	128		
375.8178	33.989	34.024	-2	1.000	38755	7780	39	97	199	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.932	34.960	-2	0.978	630751	138064	167	417	827		
385.8610	34.932	34.960	-2	0.978	1143840	244084	428	1070	570	0.55(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.966	34.985	-1	1.001	5780	1206	69	172	17		
375.8178	34.966	34.985	-1	1.001	4585	1213	39	97	31	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.926	35.945	-1	1.006	579267	133748	167	417	801		
385.8610	35.926	35.945	-1	1.006	1065852	251058	428	1070	587	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQ
373.8208	35.943	35.962	-1	1.000	3095	809	69	172	12		
	Empc Correction				2358	700	69	172	10		
375.8178	35.934	35.962	-2	1.000	1902	565	39	97	14	1.63(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	31.924	33.821	-114	0.945	12802	1848	69	172	27		
	Empc Correction				10740	1631	69	172	24		
375.8178	31.924	33.821	-114	0.945	8662	1316	39	97	34	1.48(1.05-1.43)	
373.8208	33.037	33.821	-47	0.978	5750	1056	69	172	15		
375.8178	33.028	33.821	-47	0.978	4135	758	39	97	19	1.39(1.05-1.43)	
373.8208	34.789	33.821	58	1.030	3554	734	69	172	11		
375.8178	34.789	33.821	58	1.030	2621	748	39	97	19	1.36(1.05-1.43)	
373.8208	36.069	33.821	135	1.068	9912	2337	69	172	34		
375.8178	36.061	33.821	134	1.067	7897	1799	39	97	46	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.716	35.743	-2		834371	190465	189	472	1008		
403.8529	35.716	35.743	-2		687495	166144	123	307	1351	1.21(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.185	35.204	-1	0.985	828158	217147	189	472	1149		
403.8529	35.185	35.204	-1	0.985	645345	168833	123	307	1373	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.193	35.221	-2	1.000	779	177	17	42	10		
391.8127	35.202	35.221	-1	1.000	669	298	33	82	9	1.16(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.311	35.330	-1	0.989	739504	163476	189	472	865		
403.8529	35.303	35.330	-2	0.988	567961	125800	123	307	1023	1.30(1.05-1.43)	
1,2,3,6,7,8-HxCDD											U
389.8158	35.356						17	42			
391.8127	35.356						33	82			
1,2,3,7,8,9-HxCDD											
389.8158	35.751						17	42			
391.8127	35.751						33	82			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	32.944	34.340	-84	0.933	1281	284	17	42	17		
391.8127	32.944	34.340	-84	0.933	941	185	33	82	6	1.36(1.05-1.43)	
389.8158	34.326	34.340	-1	0.972	1195	265	17	42	16		
391.8127	34.309	34.340	-2	0.972	1681	292	33	82	9	0.71(1.05-1.43)	
	Empc Correction				963	213	33	82	6		
1,2,3,4,6,7,8-HpCDF											
407.7817	37.894	37.909	-1	1.000	53409	15112	38	95	398		
409.7788	37.894	37.909	-1	1.000	50295	14549	39	97	373	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.886	37.912	-2	1.061	393941	117225	219	547	535		
419.8220	37.886	37.912	-2	1.061	869413	254460	402	1005	633	0.45(0.37-0.51)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.209	39.226	-1	1.098	389842	123787	219	547	565		
419.8220	39.209	39.226	-1	1.098	859615	273257	402	1005	680	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.218	39.232	-1	1.000	19208	6228	38	95	164		
409.7788	39.218	39.232	-1	1.000	16184	5094	39	97	131	1.19(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.282	38.571	-17	1.010	15759	4969	38	95	131		
409.7788	38.282	38.571	-17	1.010	15222	4283	39	97	110	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.906	38.920	-1	1.000	11164	3737	35	87	107		
425.7737	38.906	38.920	-1	1.000	10681	3215	25	62	129	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.889	38.922	-2	1.089	631598	191347	185	462	1034		
437.8140	38.889	38.922	-2	1.089	566418	179910	134	335	1343	1.12(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.223	38.941	-43	0.983	13013	3796	35	87	108		
425.7737	38.223	38.941	-43	0.983	13528	3778	25	62	151	0.96(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-OCDD											
469.7780	41.344	41.369	-1	1.158	1015460	315514	154	385	2049		
471.7750	41.344	41.369	-1	1.158	1168774	349180	132	330	2645	0.87(0.76-1.02)	
OCDF											
441.7428	41.428	41.453	-1	1.002	31461	9181	26	65	353		
443.7399	41.428	41.453	-1	1.002	36270	9538	73	182	131	0.87(0.76-1.02)	
OCDD											
457.7377	41.352	41.377	-1	1.000	236072	71942	34	85	2116		
459.7348	41.352	41.377	-1	1.000	265302	77382	48	120	1612	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Inject. Date: 12-Oct-2020 16:34:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 421107
Lims Sample ID: 5

Non-2,3,7,8-sub-TCDF, RT: 18.376

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2688967	441903

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2688967	441903

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.426	110495	20170	124943	24474	8.06	0.88	
16.881	152665	23207	179162	26338	11.4	0.85	
17.277	112033	18608	133423	21042	8.41	0.84	
17.629	118831	19357	145156	23461	9.04	0.82	
18.093	1071585	181457	1313325	224680	81.7	0.82	
18.471	59437	9547	69303	11896	4.41	0.86	
19.494	179637	30829	199209	33990	13.0	0.90	RQ
19.494	153390	26172	199209	33990	12.1		Empc Correction
19.889	45105	6192	51282	8188	3.30	0.88	
21.865	152333	21252	186231	24212	11.6	0.82	
Signal Totals:							
	1975874	325962	2402034	398281			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4404155	728900				0.83	RQ
	4377908	724243					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 150.864 = (4404155 * 100.000) / (2688967 * 1.086)
Empc Amount: 149.965 = (4377908 * 100.000) / (2688967 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Inject. Date: 12-Oct-2020 16:34:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 421107
Lims Sample ID: 5

Non-2,3,7,8-sub-TCDD, RT: 19.166

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	1710823	246796

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	1710823	246796

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.653	34899	5377	47172	6796	4.44	0.74	
Signal Totals:							
	34899	5377	47172	6796			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	82071	12173				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.438 = (82071 * 100.000) / (1710823 * 1.081)

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Inject. Date: 12-Oct-2020 16:34:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 421107 Lims Sample ID: 5

F1 PeCDFs, RT: 23.037

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2207627	382622
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2032767	336051

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2120197	359336

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.553	879	149	1428	332	0.1008	0.62	RQ
22.553	879	149	567	96	0.0632		Empc Correction

Compound is Marked ND

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Lims ID:	320-65130-A-15-A		
Client ID:	11215702-Tank#2-valve-2-1		
Inject. Date:	12-Oct-2020 16:34:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	5

Non-2,3,7,8-sub-PeCDF, RT: 26.479

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2207627	382622
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2032767	336051

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2120197	359336

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.514	44616	8028	26701	4998	3.12	1.67	M
25.745	8379	1970	5289	1229	0.5974	1.58	
26.436	27419	4539	14881	2463	1.85	1.84	RQ
26.436	23065	3817	14881	2463	1.66		Empc Correction
27.624	14868	2347	10103	1417	1.09	1.47	
Signal Totals:							
	90928	16162	56974	10107			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	152256	26991				1.67	RQM
	147902	26269					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 6.655 = (152256 * 100.000) / (2120197 * 1.079)

Empc Amount: 6.465 = (147902 * 100.000) / (2120197 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Lims ID:	320-65130-A-15-A		
Client ID:	11215702-Tank#2-valve-2-1		
Inject. Date:	12-Oct-2020 16:34:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	5

Non-2,3,7,8-sub-HxCDF, RT: 33.821

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	1603345	301092
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	1808433	340831
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	1774591	382148
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	1645119	384806

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	1707872	352219

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.924	12802	1848	8662	1316	1.01	1.48	RQ
31.924	10740	1631	8662	1316	0.9093		Empc Correction
33.037	5750	1056	4135	758	0.4633	1.39	
34.789	3554	734	2621	748	0.2894	1.36	
36.069	9912	2337	7897	1799	0.8346	1.26	
Signal Totals:							
	29956	5758	23315	4621			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	55333	10596				1.37	RQ
	53271	10379					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.593 = (55333 * 100.000) / (1707872 * 1.249)
Empc Amount: 2.497 = (53271 * 100.000) / (1707872 * 1.249)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Lims ID:	320-65130-A-15-A		
Client ID:	11215702-Tank#2-valve-2-1		
Inject. Date:	12-Oct-2020 16:34:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	5

Non-2,3,7,8-sub-HxCDD, RT: 34.340

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	1473503	385980
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	1307465	289276
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	1390484	337628

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.944	1281	284	941	185	0.1425	1.36	
34.326	1195	265	1681	292	0.1845	0.71	RQ
34.326	1195	265	963	213	0.1384		Empc Correction
Signal Totals:							
	2476	549	1904	398			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5098	1026				0.94	RQ
	4380	947					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3270 = (5098 * 100.000) / (1390484 * 1.121)
Empc Amount: 0.2810 = (4380 * 100.000) / (1390484 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Inject. Date: 12-Oct-2020 16:34:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 421107 Lims Sample ID: 5

Non-2,3,7,8-sub-HpCDF, RT: 38.571

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1263354	371685
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1249457	397044

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	1256405	384364

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.282	15759	4969	15222	4283	1.67	1.04	
Signal Totals:							
	15759	4969	15222	4283			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	30981	9252				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.665 = (30981 * 100.000) / (1256405 * 1.481)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Lims ID:	320-65130-A-15-A		
Client ID:	11215702-Tank#2-valve-2-1		
Inject. Date:	12-Oct-2020 16:34:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	5

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1198016	371257

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	1198016	371257

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.223	13013	3796	13528	3778	2.08	0.96	
Signal Totals:							
	13013	3796	13528	3778			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	26541	7574				0.96	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 2.082 = (26541 * 100.000) / (1198016 * 1.064)

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d

Injection Date:	12-Oct-2020 16:34:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-15-A	Lab Sample ID:	320-65130-15		
Client ID:	11215702-Tank#2-valve-2-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	20.01
Area:	508892
Amount:	62.720188
Amount Units:	pg/ul

Processing Integration Results

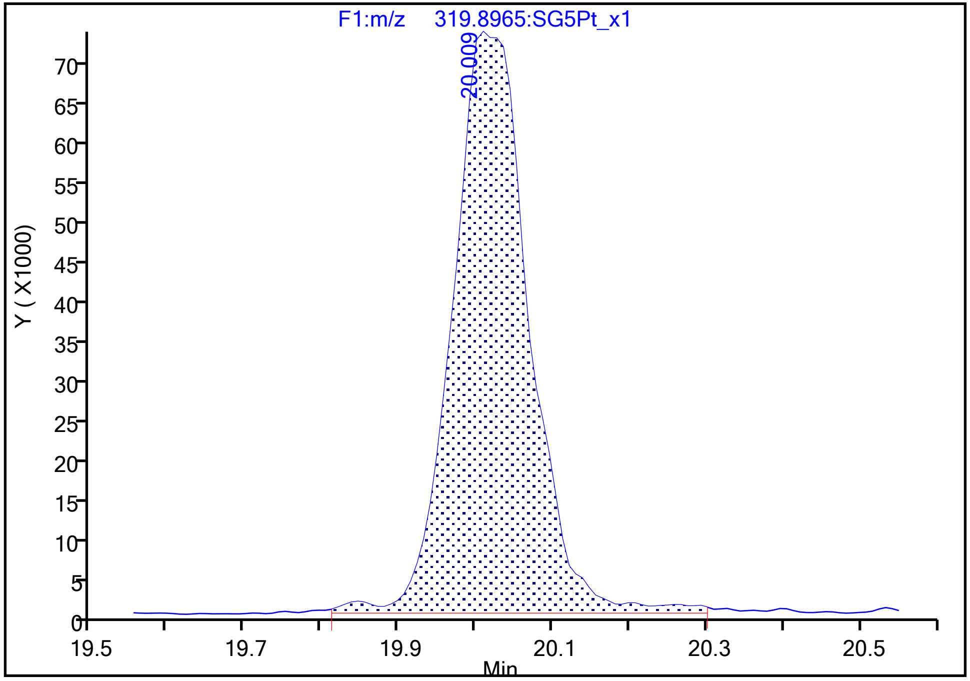

RT:	20.01
Area:	504926
Amount:	62.505735
Amount Units:	pg/ul

Manual Integration Results

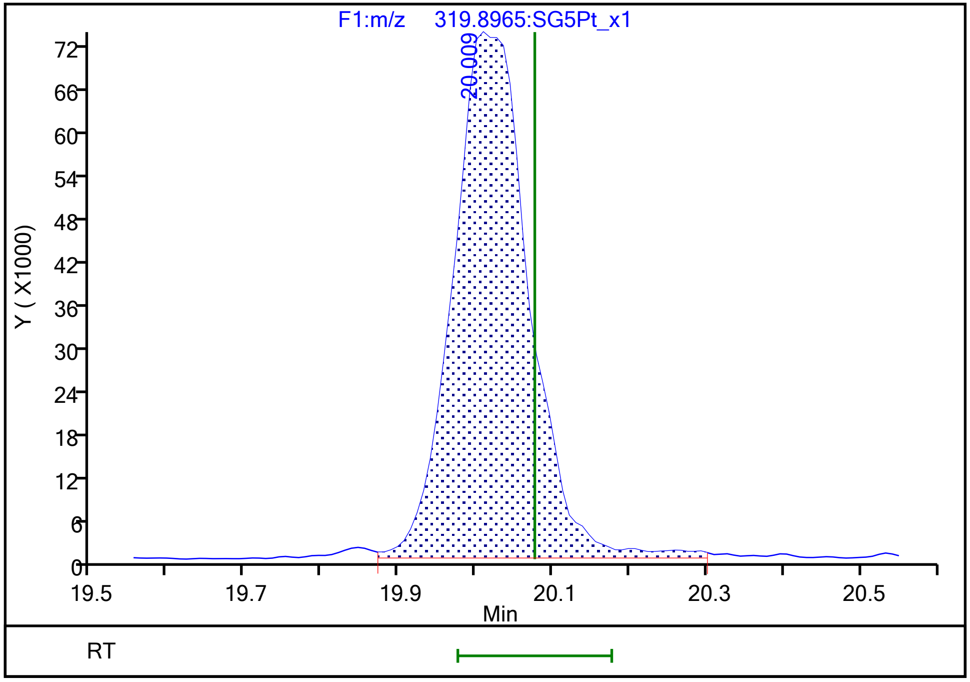

Reviewer: dadunj, 14-Oct-2020 10:41:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d				
Injection Date:	12-Oct-2020 16:34:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-15-A	Lab Sample ID:	320-65130-15		
Client ID:	11215702-Tank#2-valve-2-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT:	25.88
Area:	59651
Amount:	6.560266
Amount Units:	pg/ul

Processing Integration Results

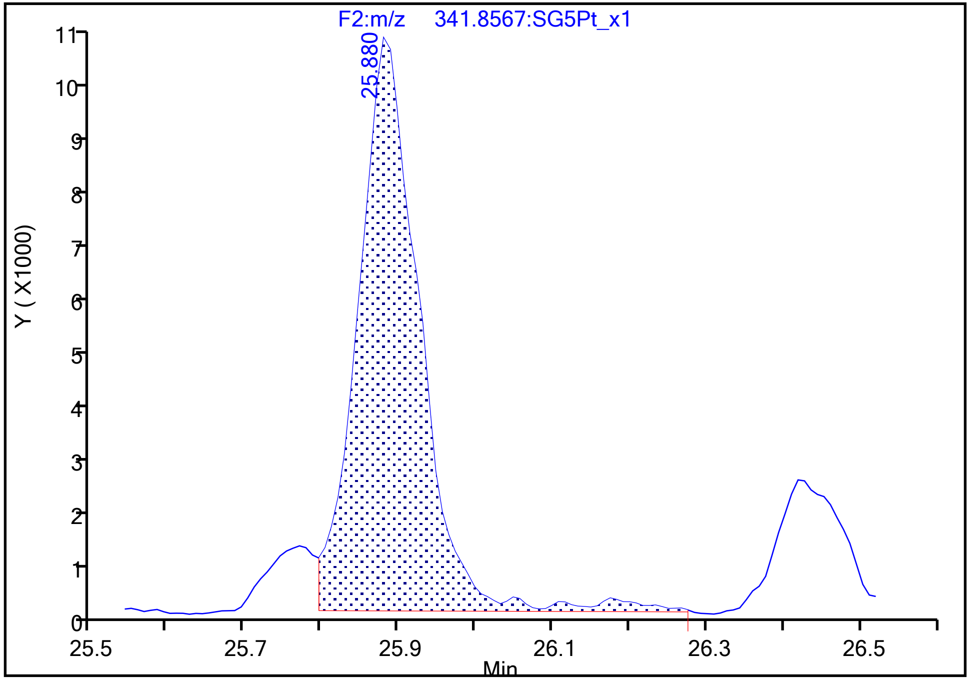

RT:	25.88
Area:	57529
Amount:	6.313002
Amount Units:	pg/ul

Manual Integration Results

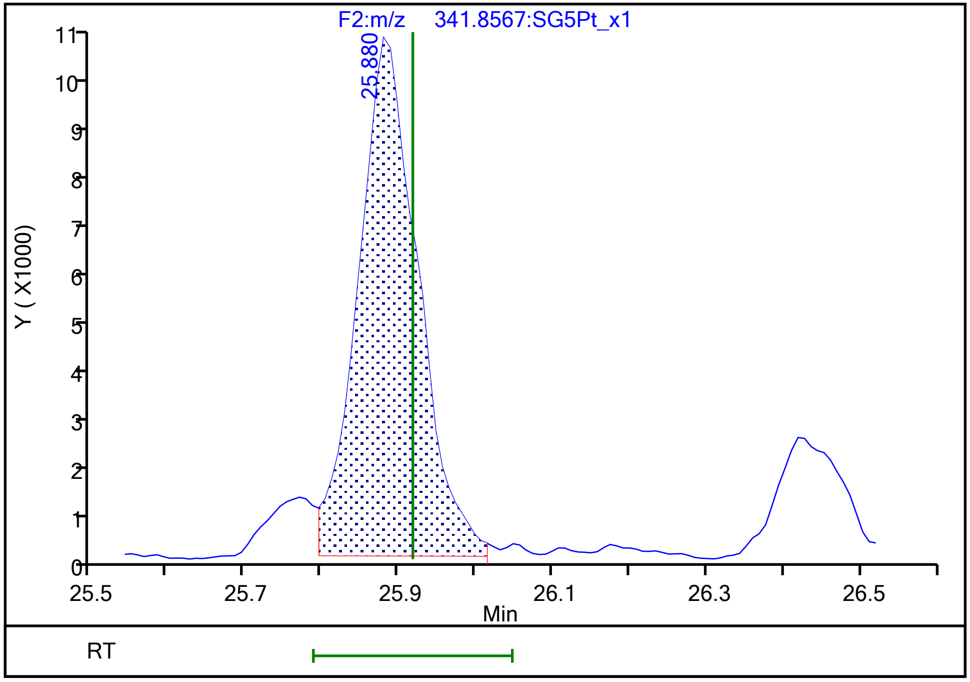

Reviewer: dadunj, 14-Oct-2020 10:41:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d				
Injection Date:	12-Oct-2020 16:34:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-15-A	Lab Sample ID:	320-65130-15		
Client ID:	11215702-Tank#2-valve-2-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.89
Area:	93090
Amount:	6.560266
Amount Units:	pg/ul

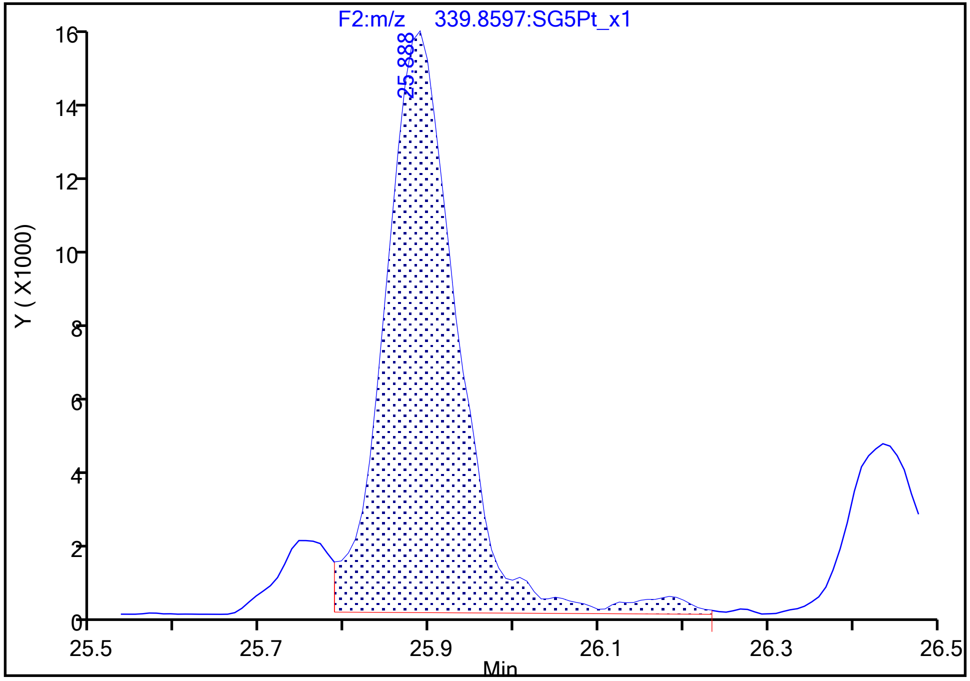

Manual Integration Results

RT:	25.89
Area:	89455
Amount:	6.313002
Amount Units:	pg/ul

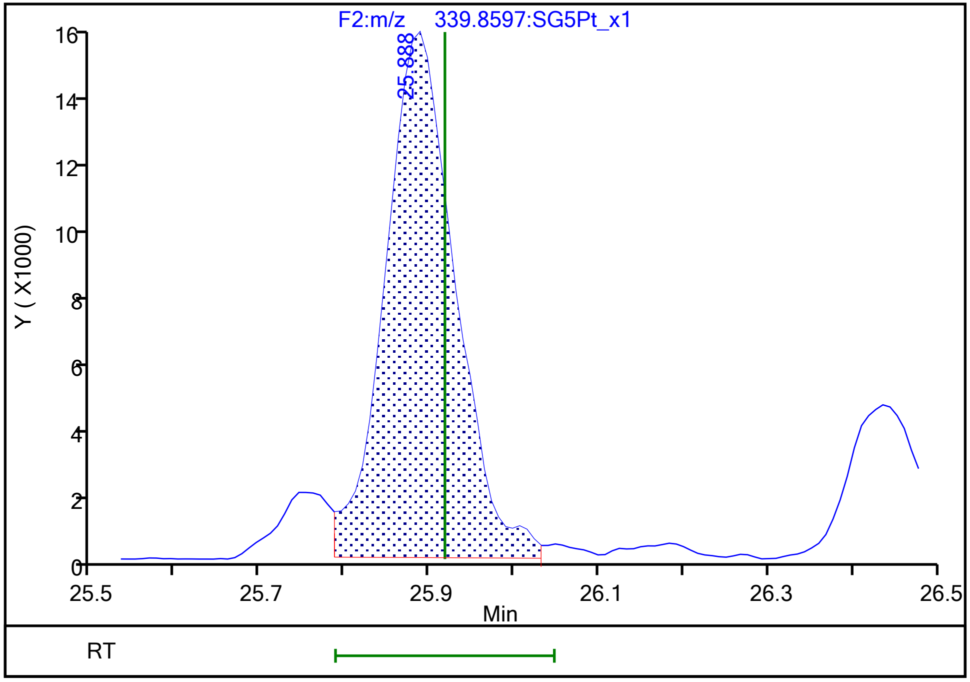

Reviewer: dadunj, 14-Oct-2020 10:41:52

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Injection Date: 12-Oct-2020 16:34:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-15-A
Lab Sample ID: 320-65130-15
Client ID: 11215702-Tank#2-valve-2-1
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 5
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.68- 29.28)

Signal: 1

Processing Integration Results

RT = 24.514 Area = 45383

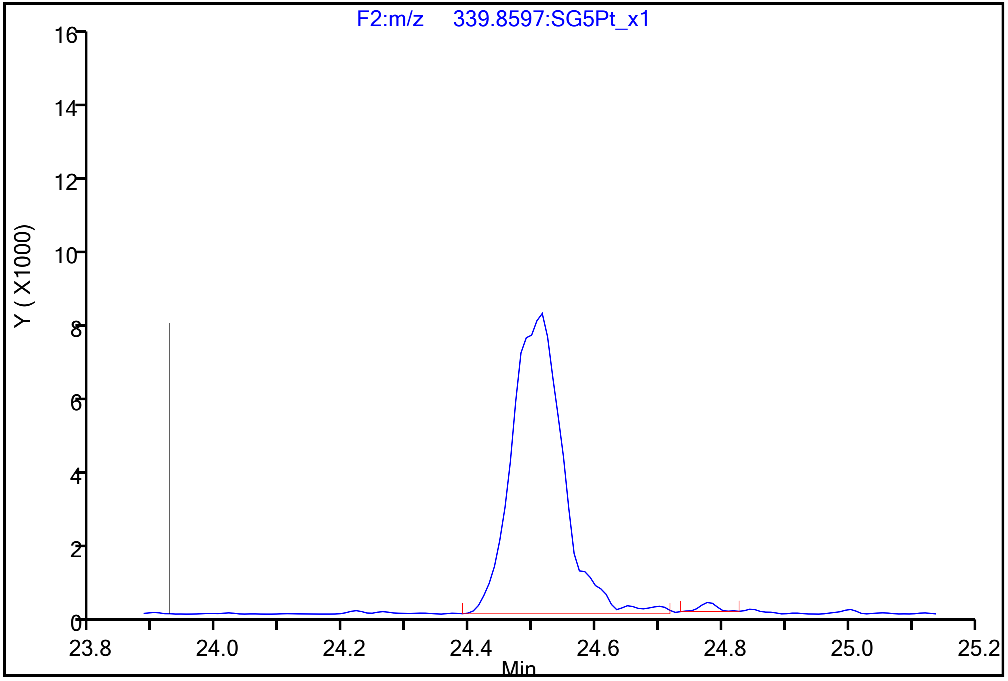

Manual Integration Results

RT = 24.514 Area = 44616 M

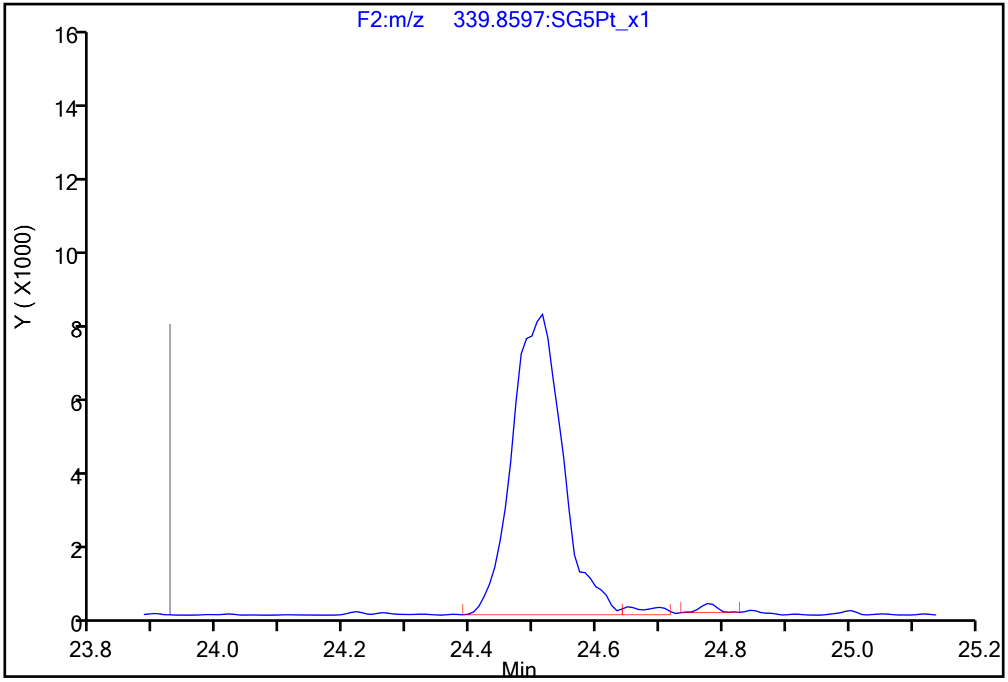

Reviewer: dadunj, 14-Oct-2020 10:42:08

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d

Injection Date: 12-Oct-2020 16:34:00 Instrument ID: DFS 1

Lims ID: 320-65130-A-15-A Lab Sample ID: 320-65130-15

Client ID: 11215702-Tank#2-valve-2-1

Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm) Detector F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.68- 29.28)

Signal: 2

Processing Integration Results

RT = 24.498 Area = 27840

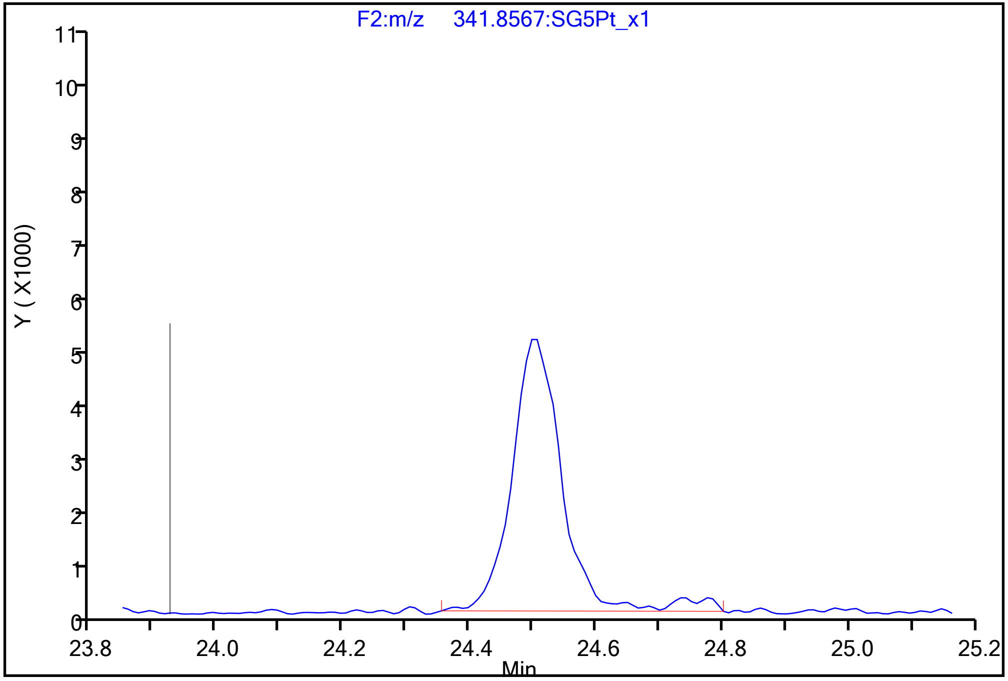

Manual Integration Results

RT = 24.498 Area = 26701 M

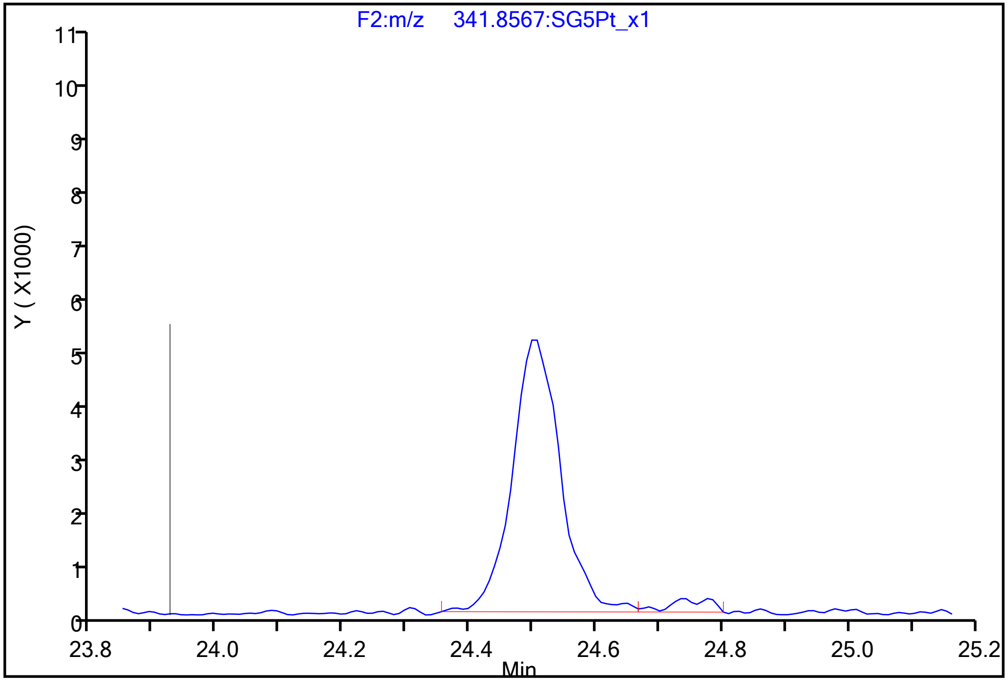

Reviewer: dadunj, 14-Oct-2020 10:42:06

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Injection Date:	12-Oct-2020 16:34:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-15-A	Lab Sample ID:	320-65130-15
Client ID:	11215702-Tank#2-valve-2-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	28.10
Area:	4717
Amount:	0.665204
Amount Units:	pg/ul

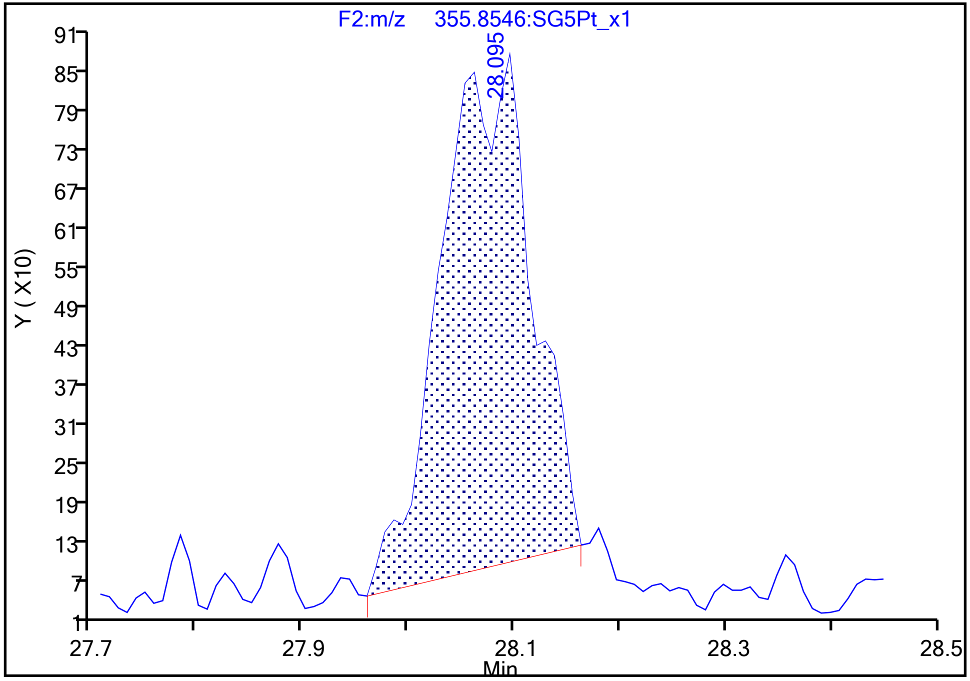

Manual Integration Results

RT:	28.10
Area:	5295
Amount:	0.709090
Amount Units:	pg/ul

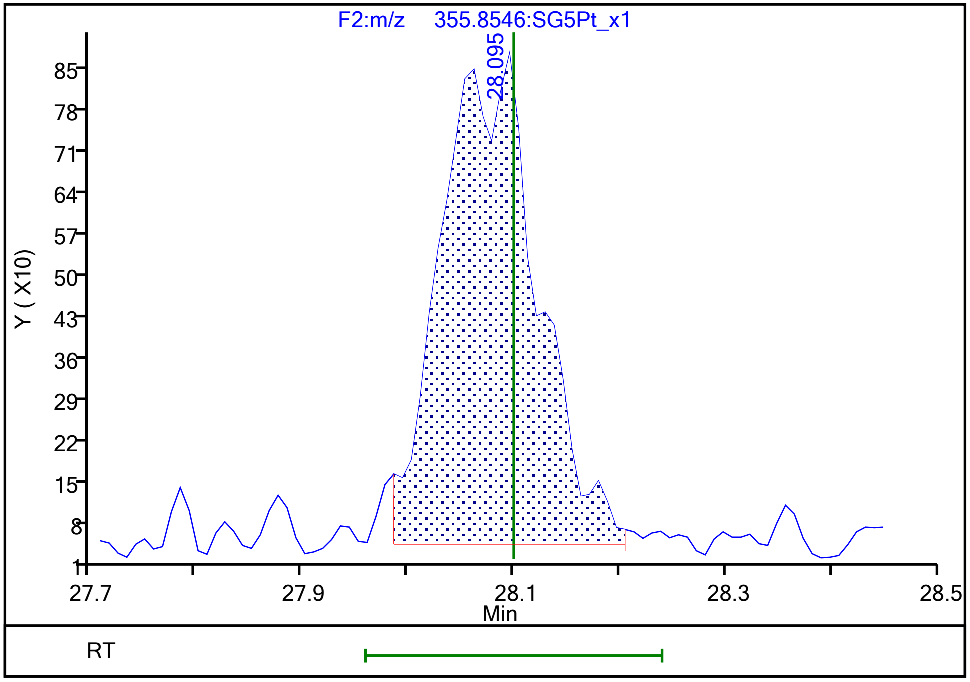

Reviewer: dadunj, 14-Oct-2020 10:42:36

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d

Injection Date: 12-Oct-2020 16:34:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-1

Worklist#: 421107 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

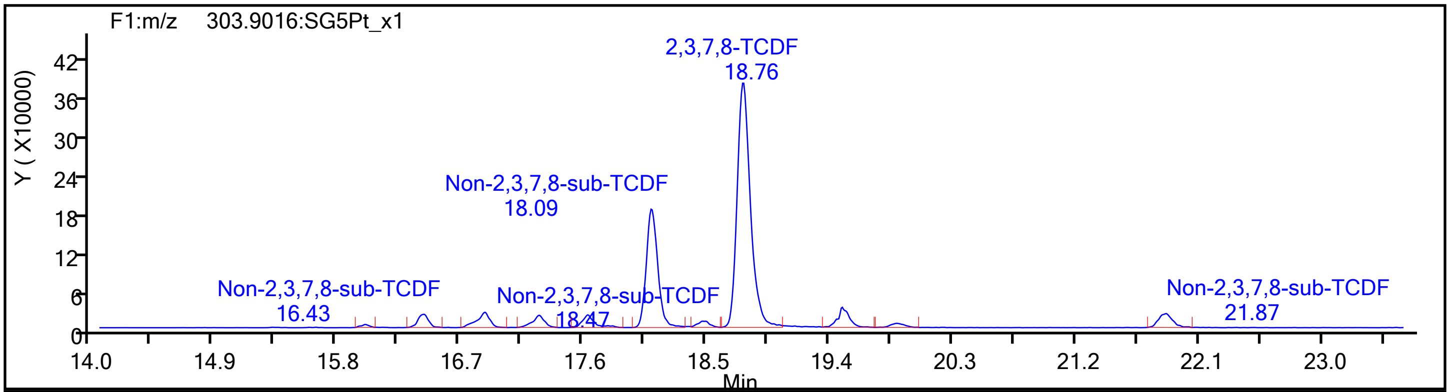

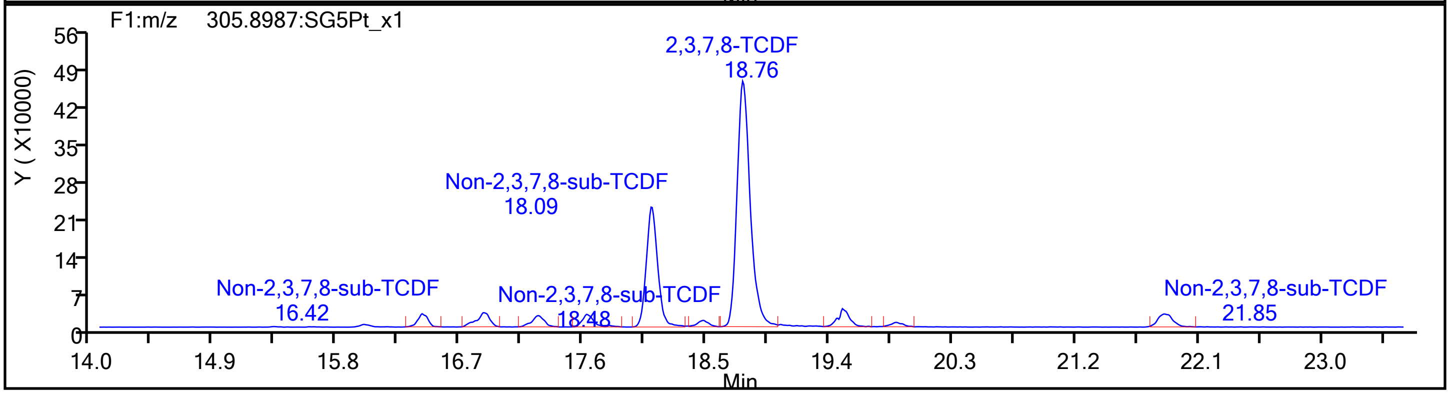

TCDF Standards

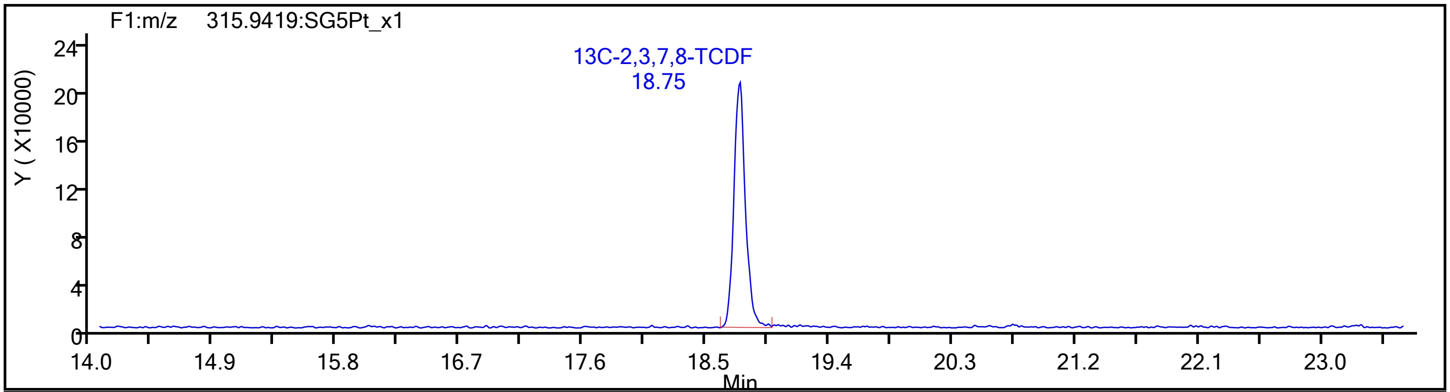

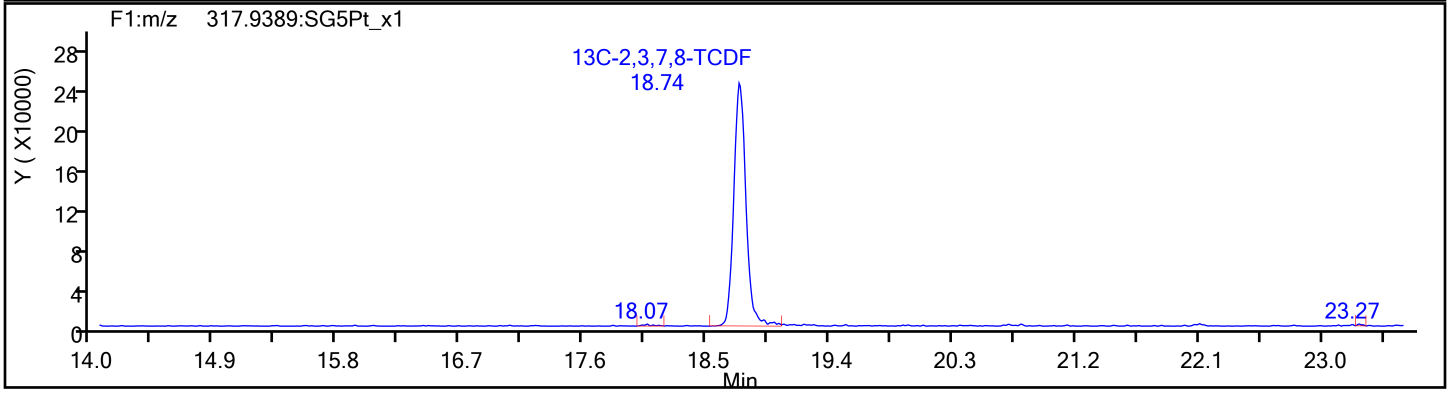

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Injection Date:	12-Oct-2020 16:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
Worklist#:	421107	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

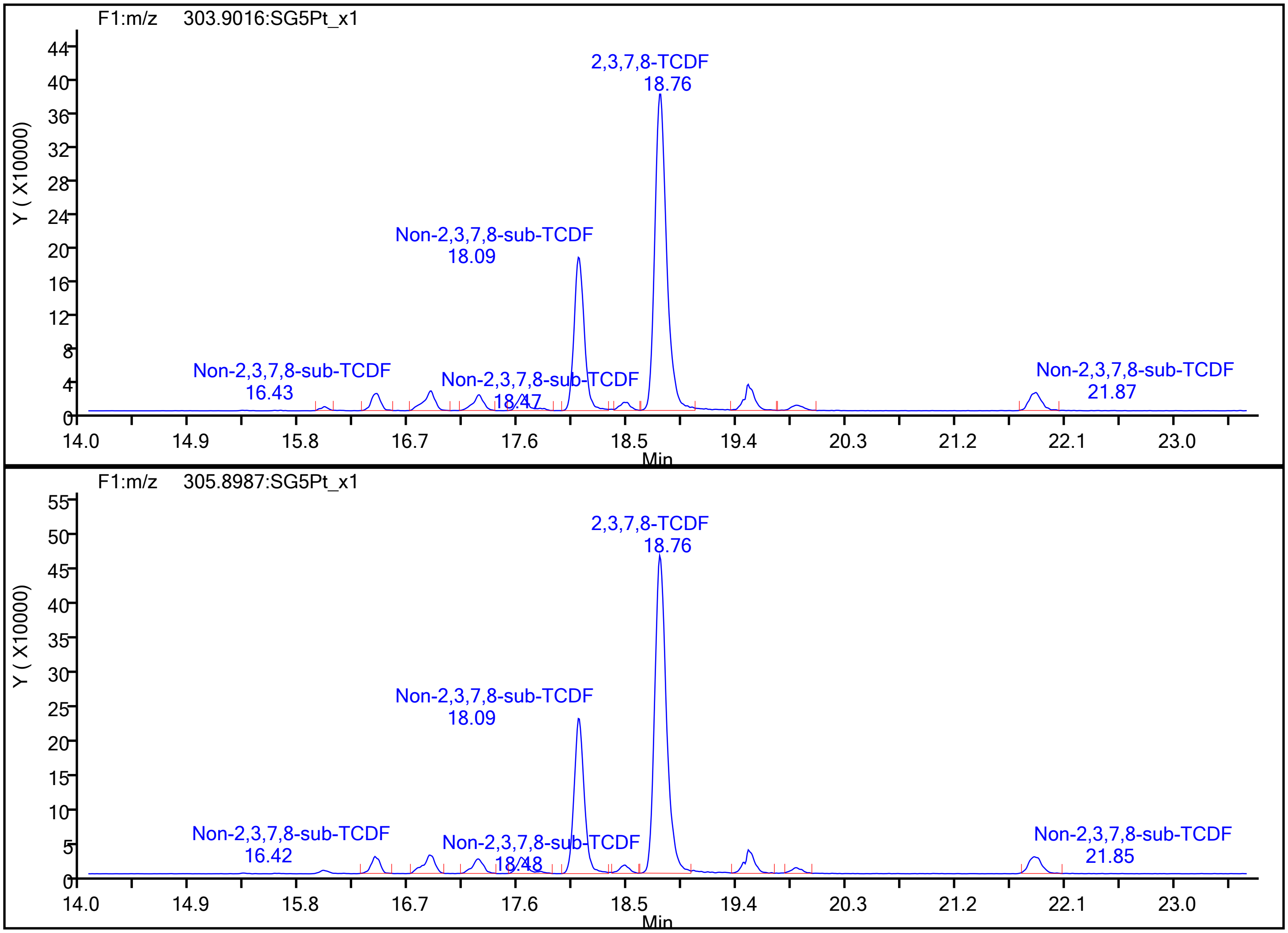

TCDF Interference Mass

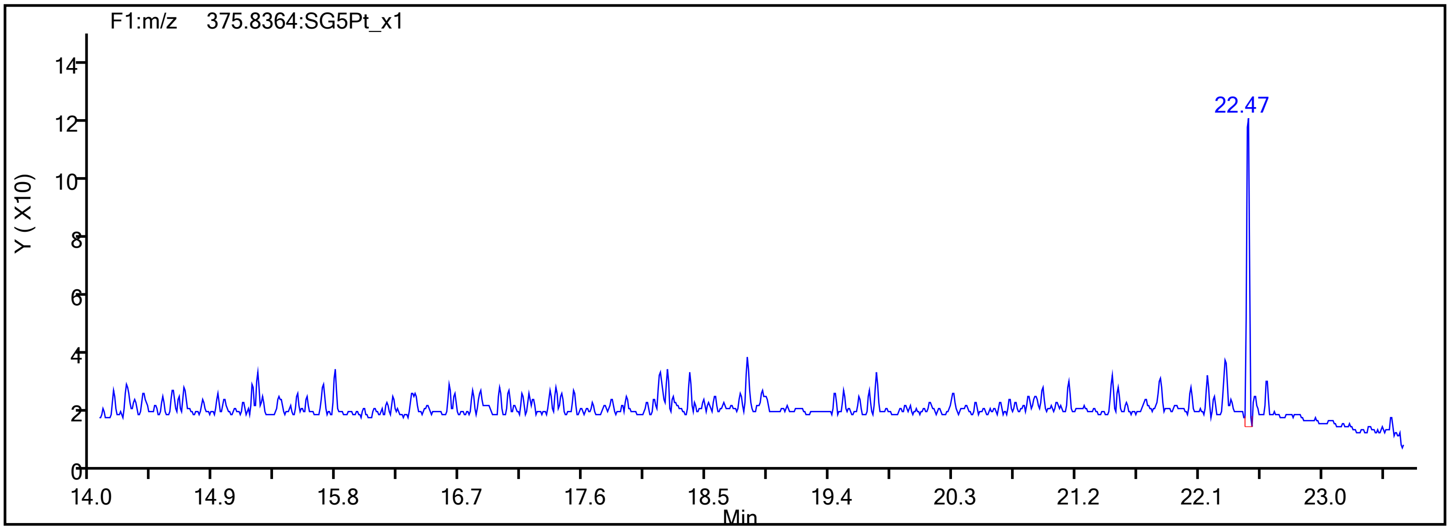

Report Date: 14-Oct-2020 10:44:17
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Injection Date:	12-Oct-2020 16:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
Worklist#:	421107	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

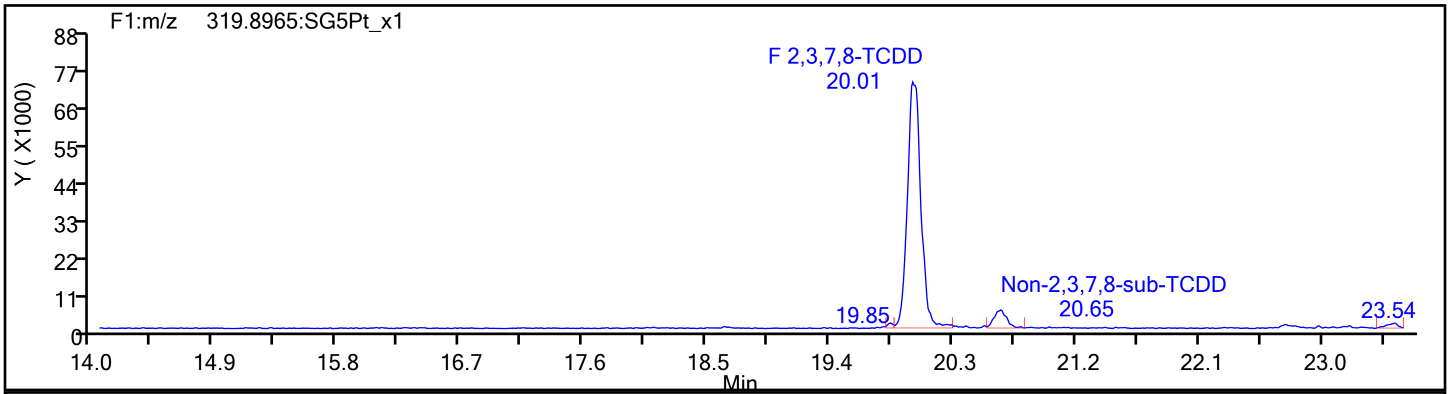

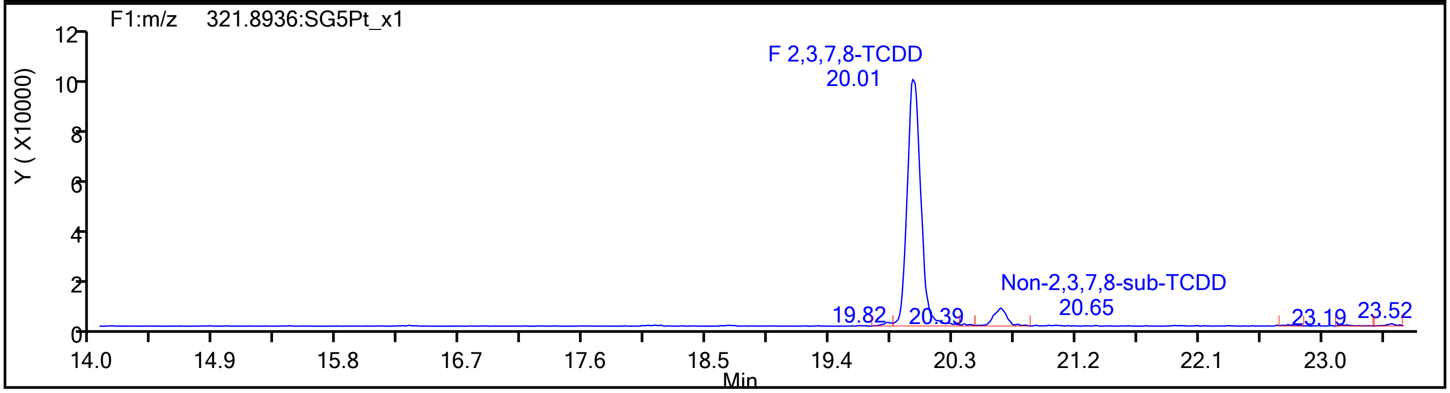

TCDD Standards

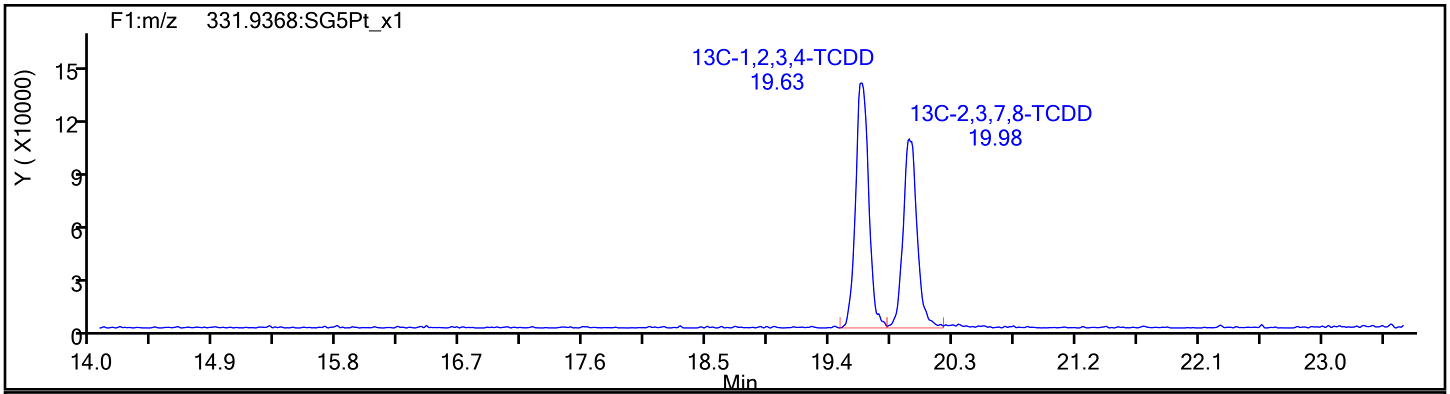

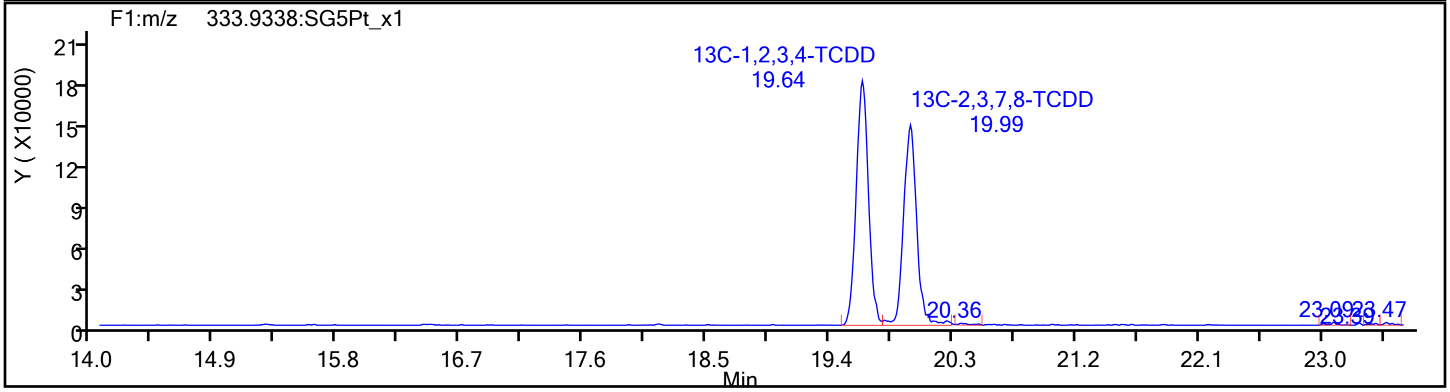

Report Date: 14-Oct-2020 10:44:17 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d
Injection Date: 12-Oct-2020 16:34:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-2-1
Worklist#: 421107
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

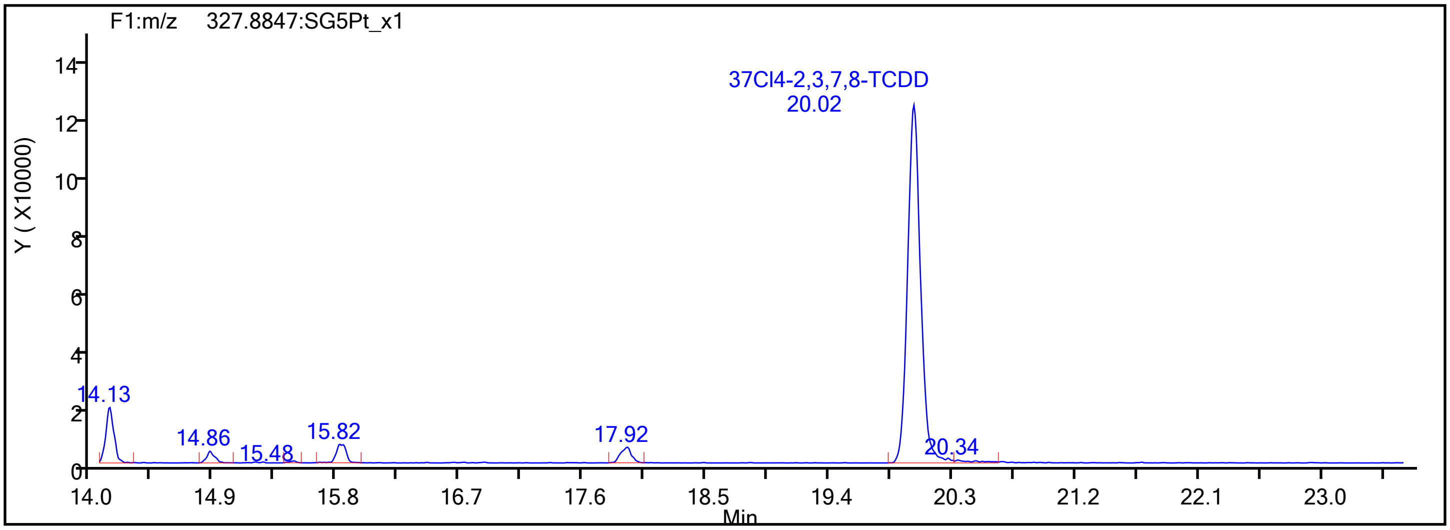

37Cl4-TCDD Standards

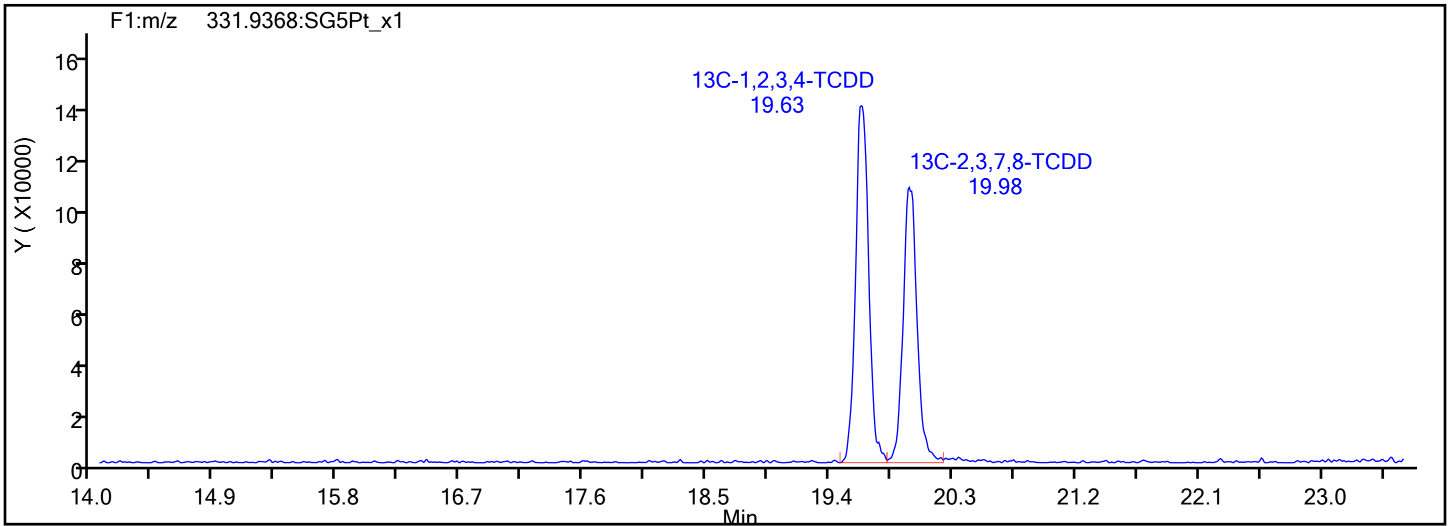

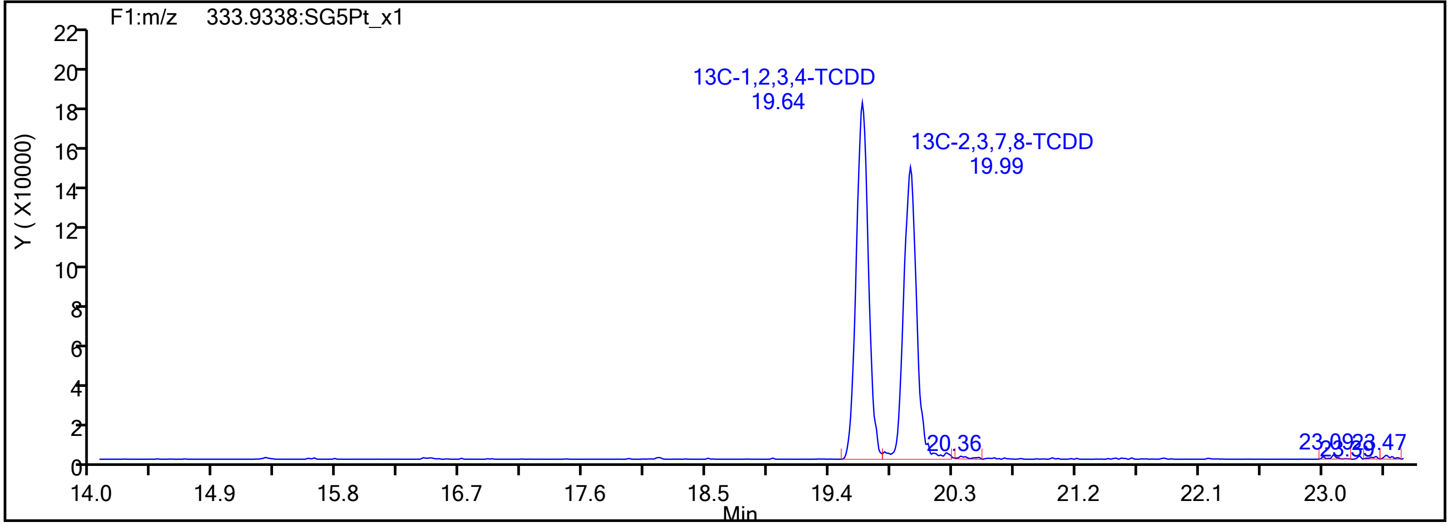

Report Date: 14-Oct-2020 10:44:17	Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

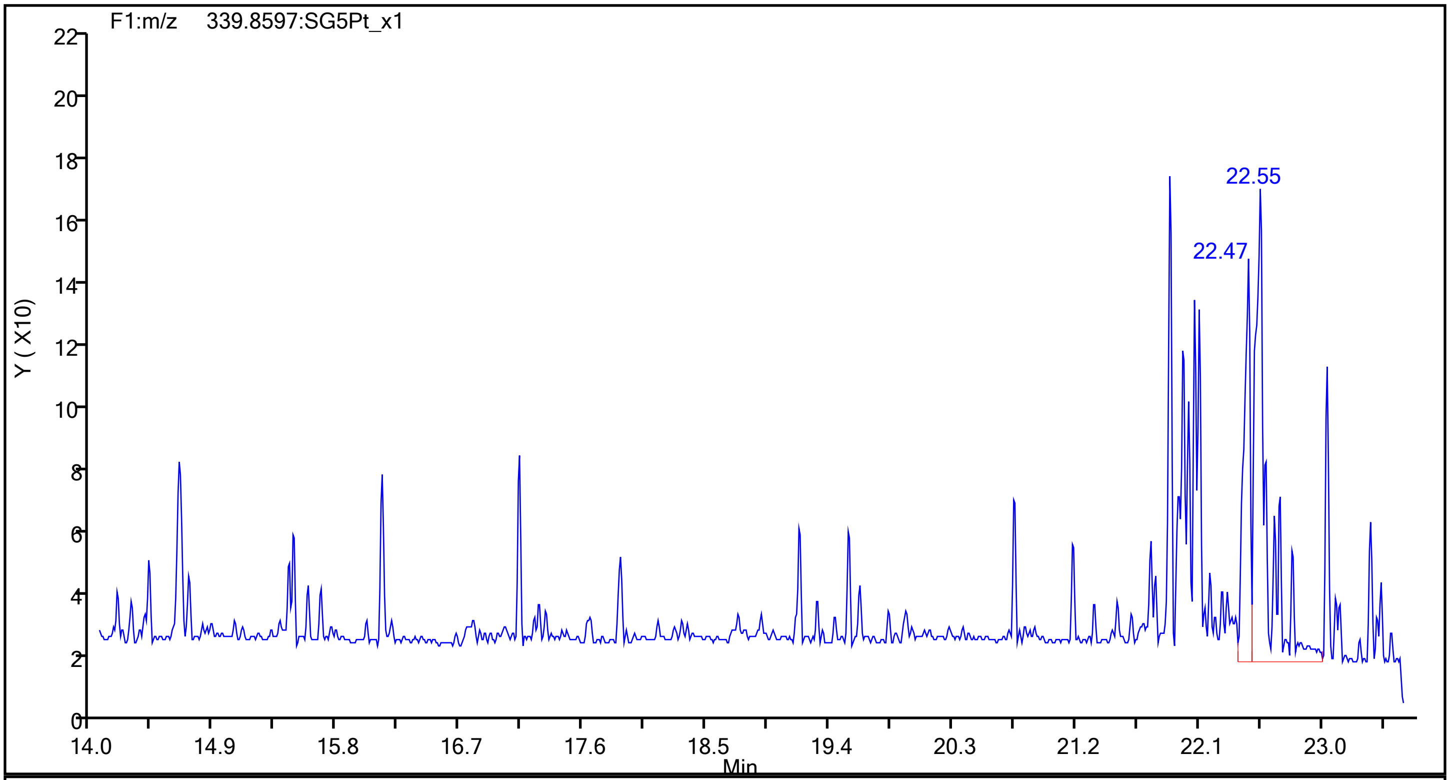

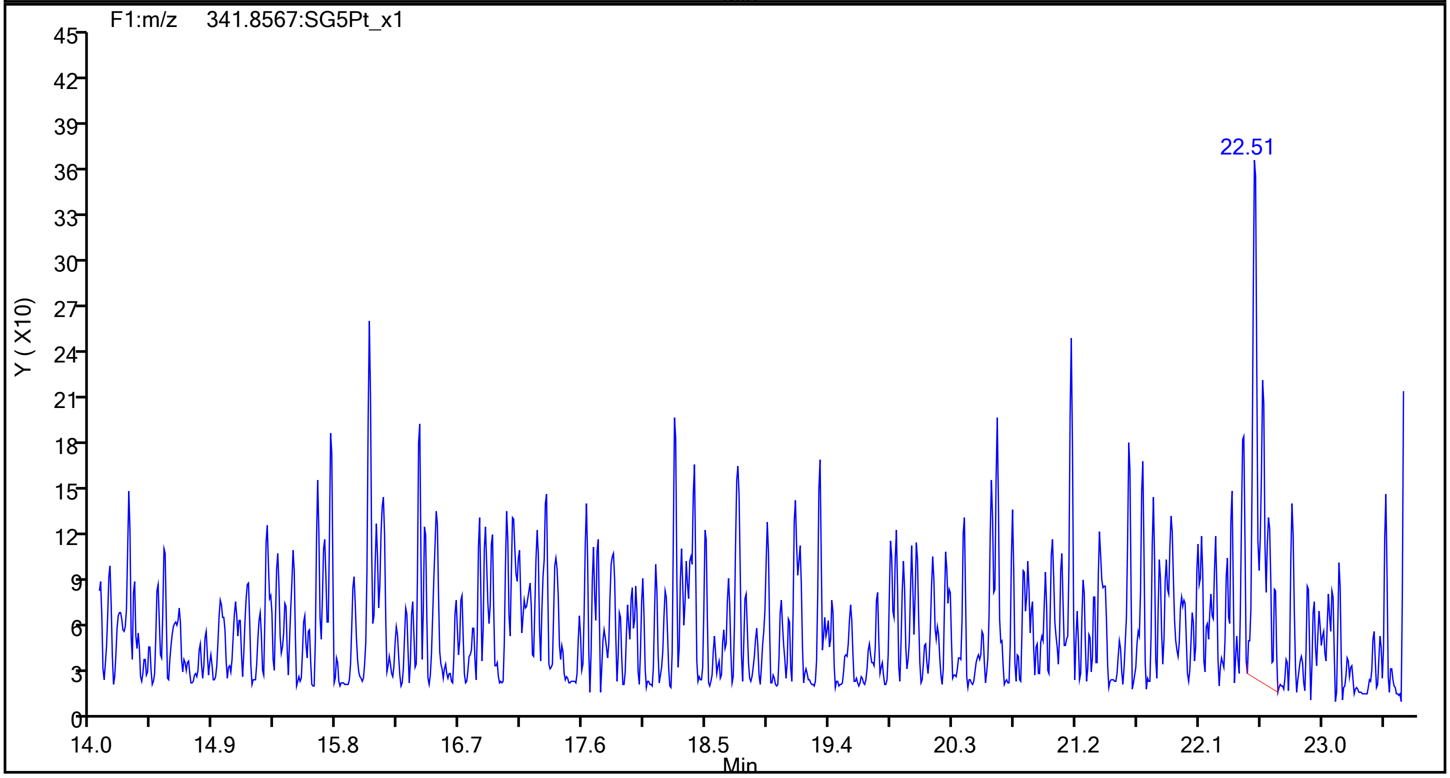

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

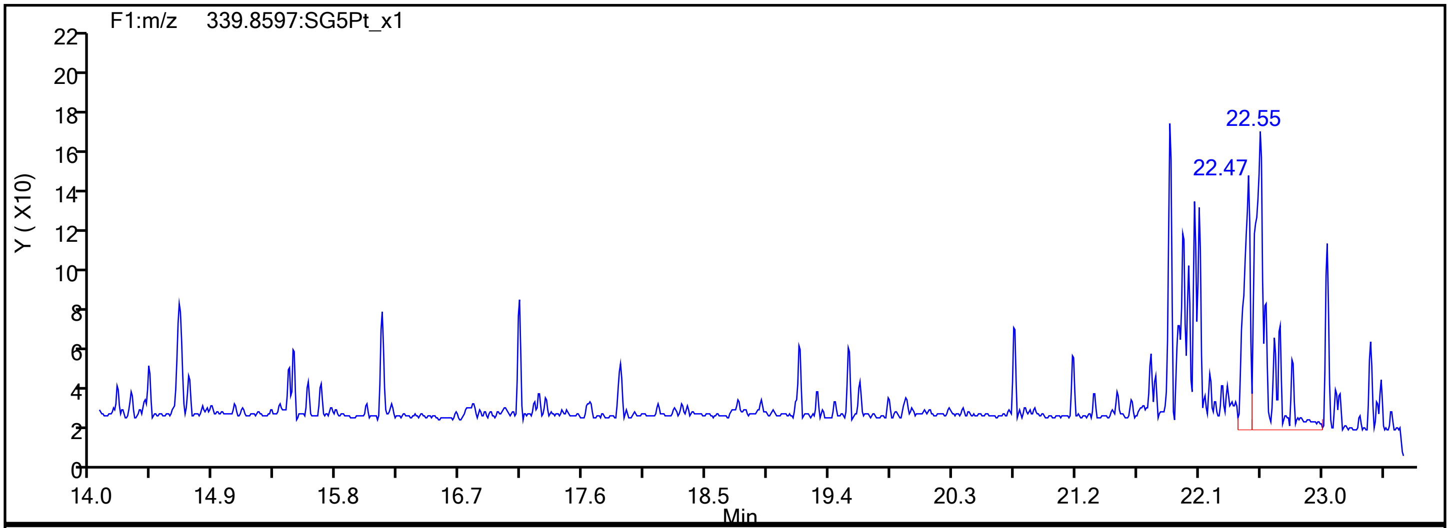

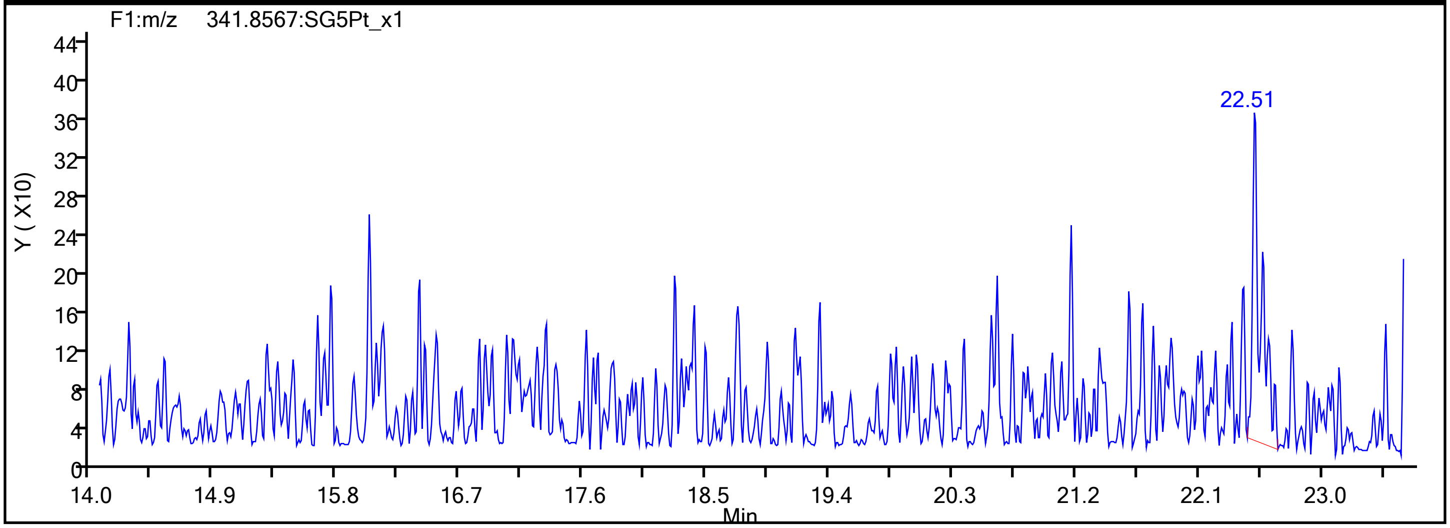

F1 PeCDFs Interference Mass

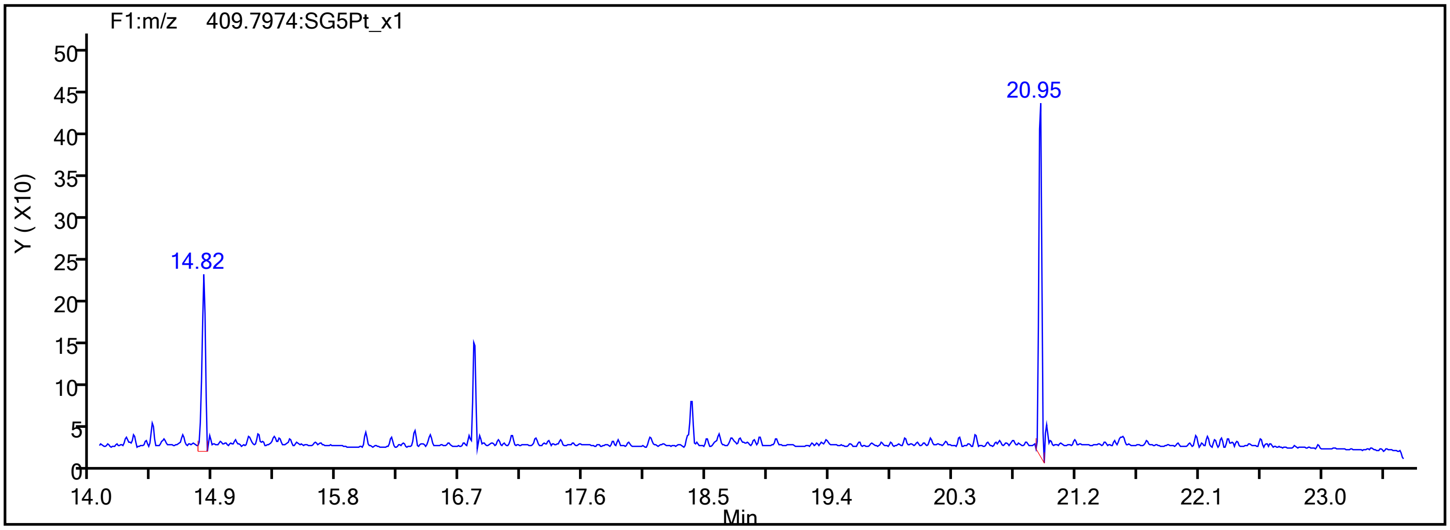

Report Date: 14-Oct-2020 10:44:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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PeCDF

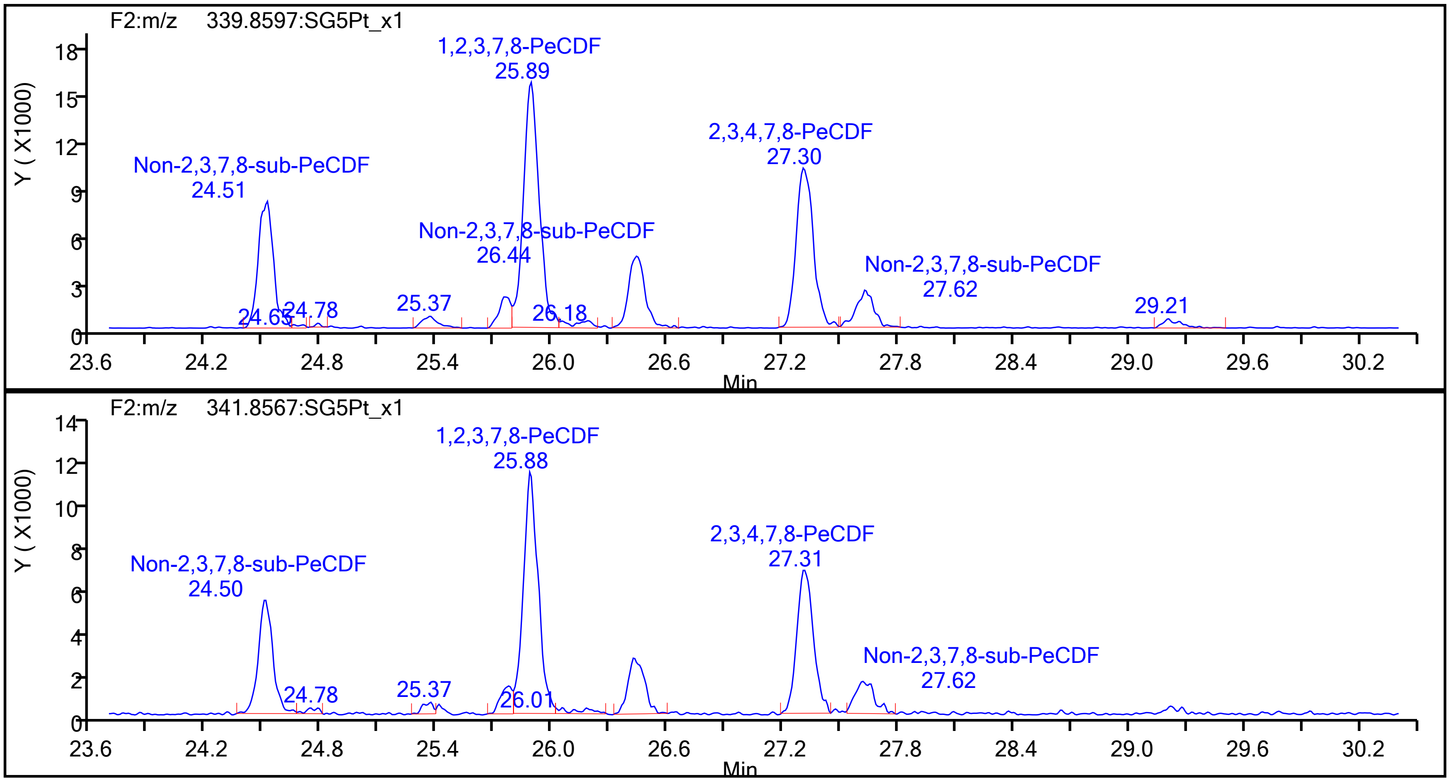

PeCDF Standards

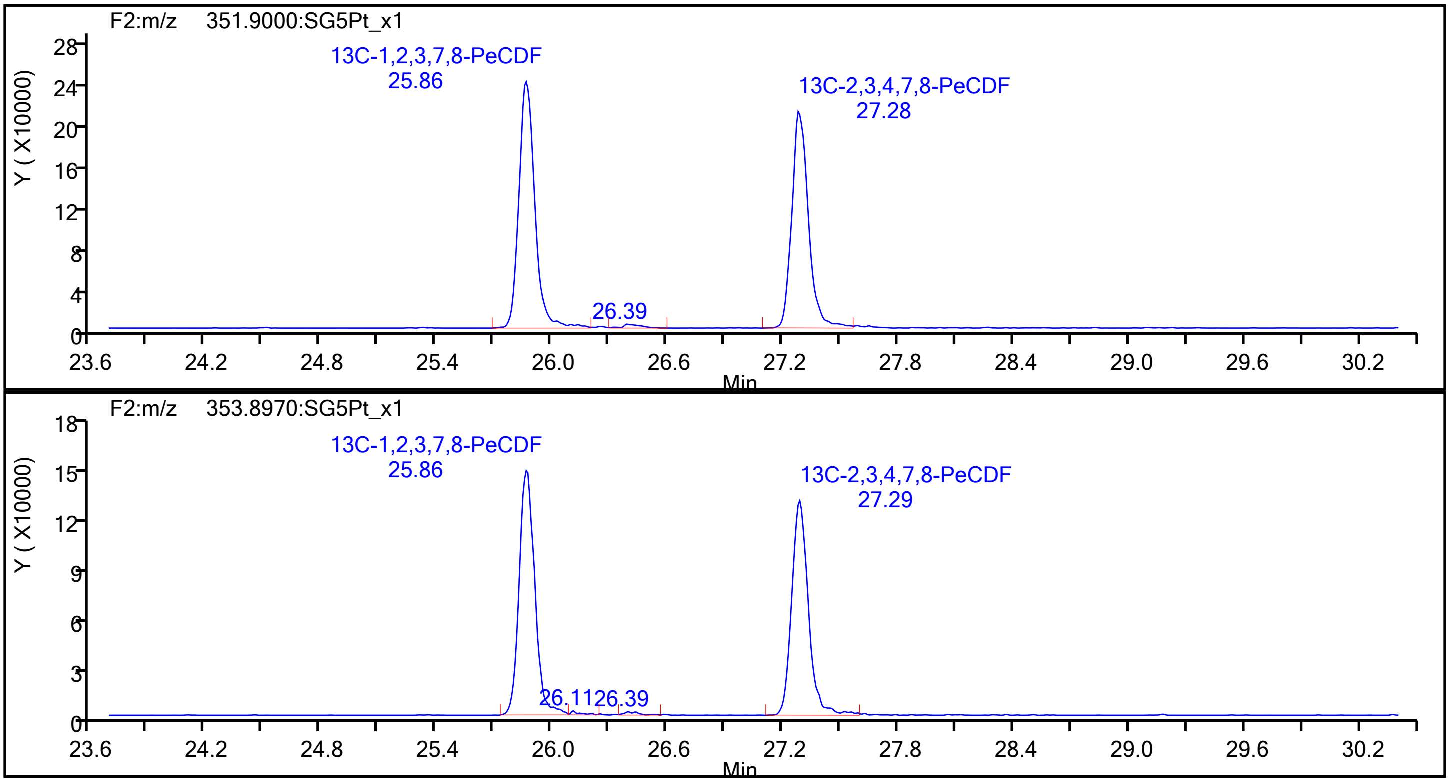

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Eurofins TestAmerica, Sacramento

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PeCDF

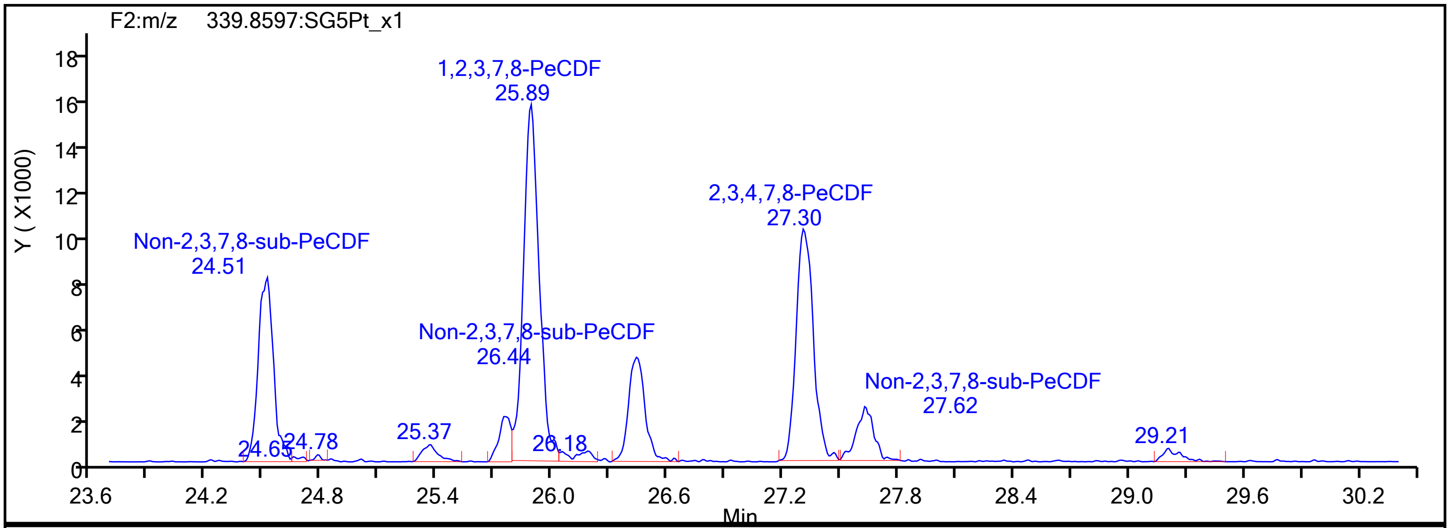

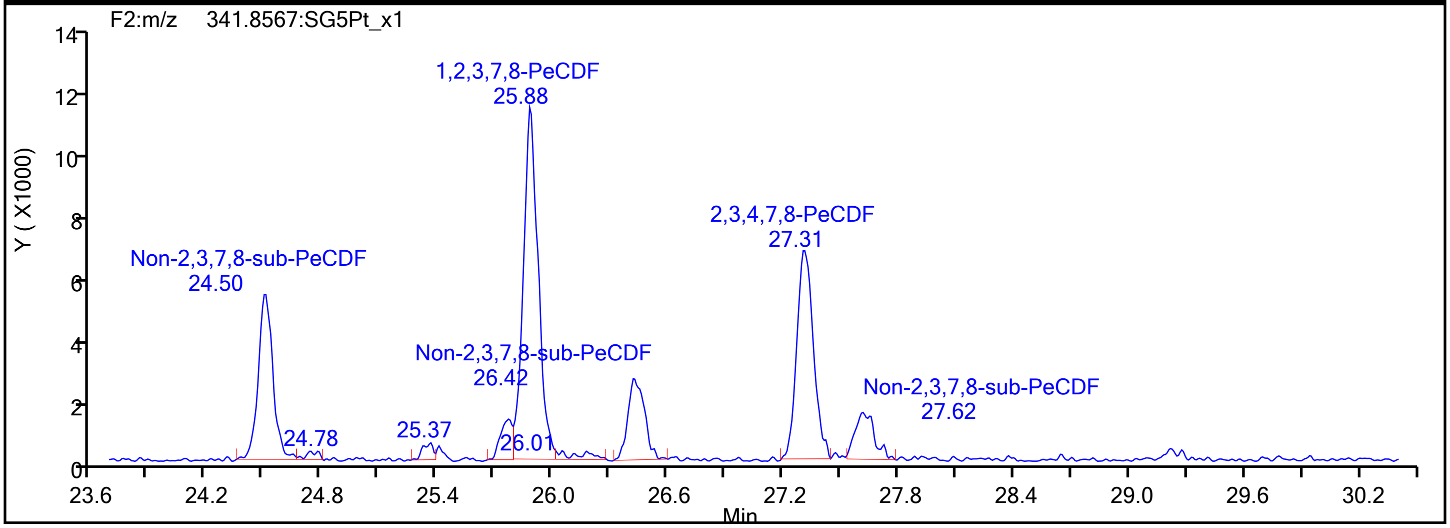

PeCDF Interference Mass

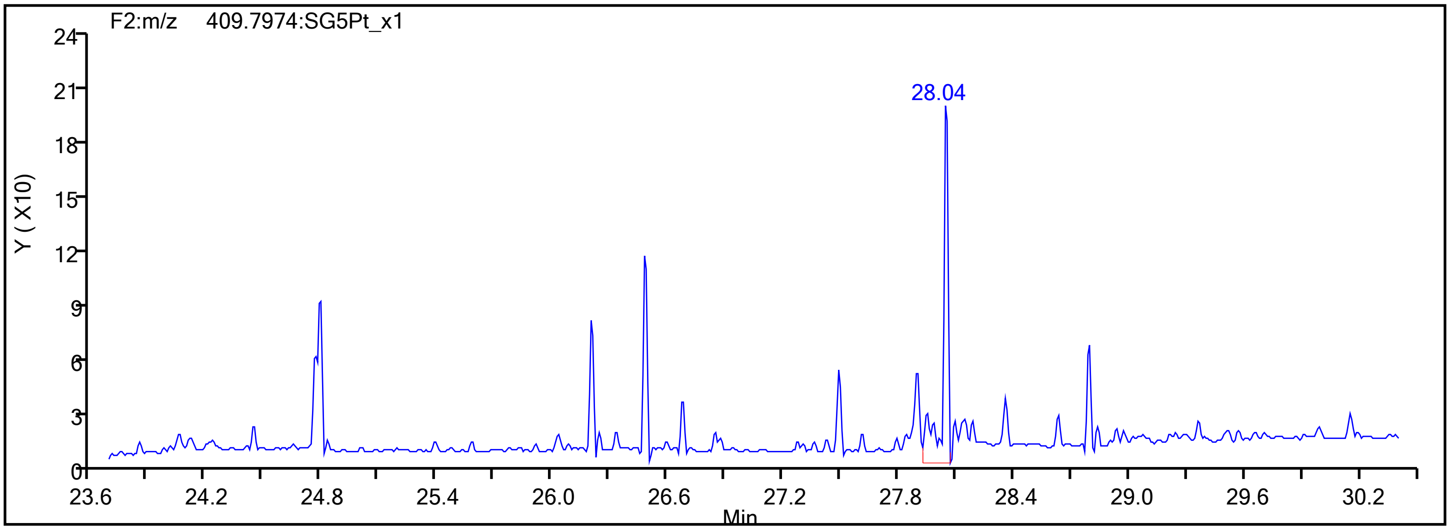

Eurofins TestAmerica, Sacramento

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PeCDD

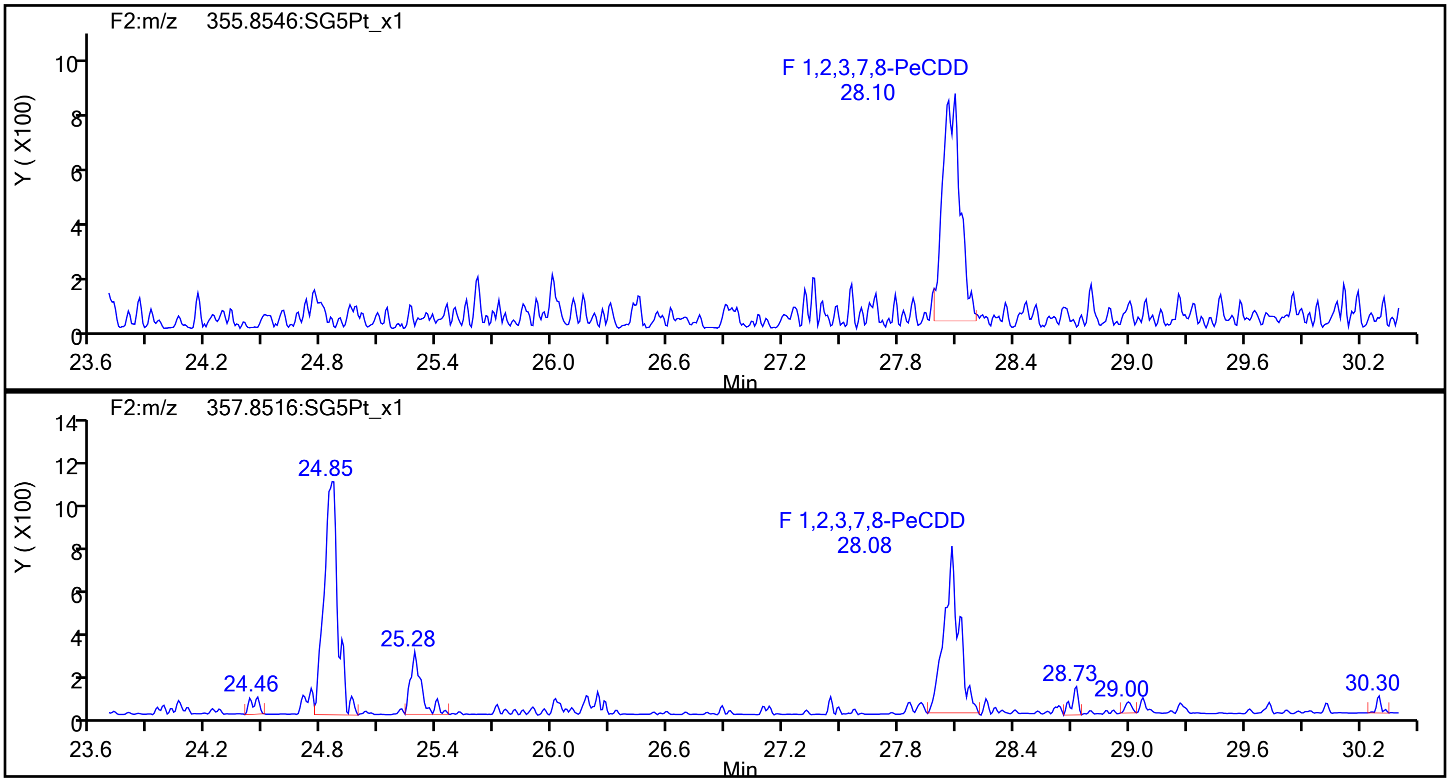

PeCDD Standards

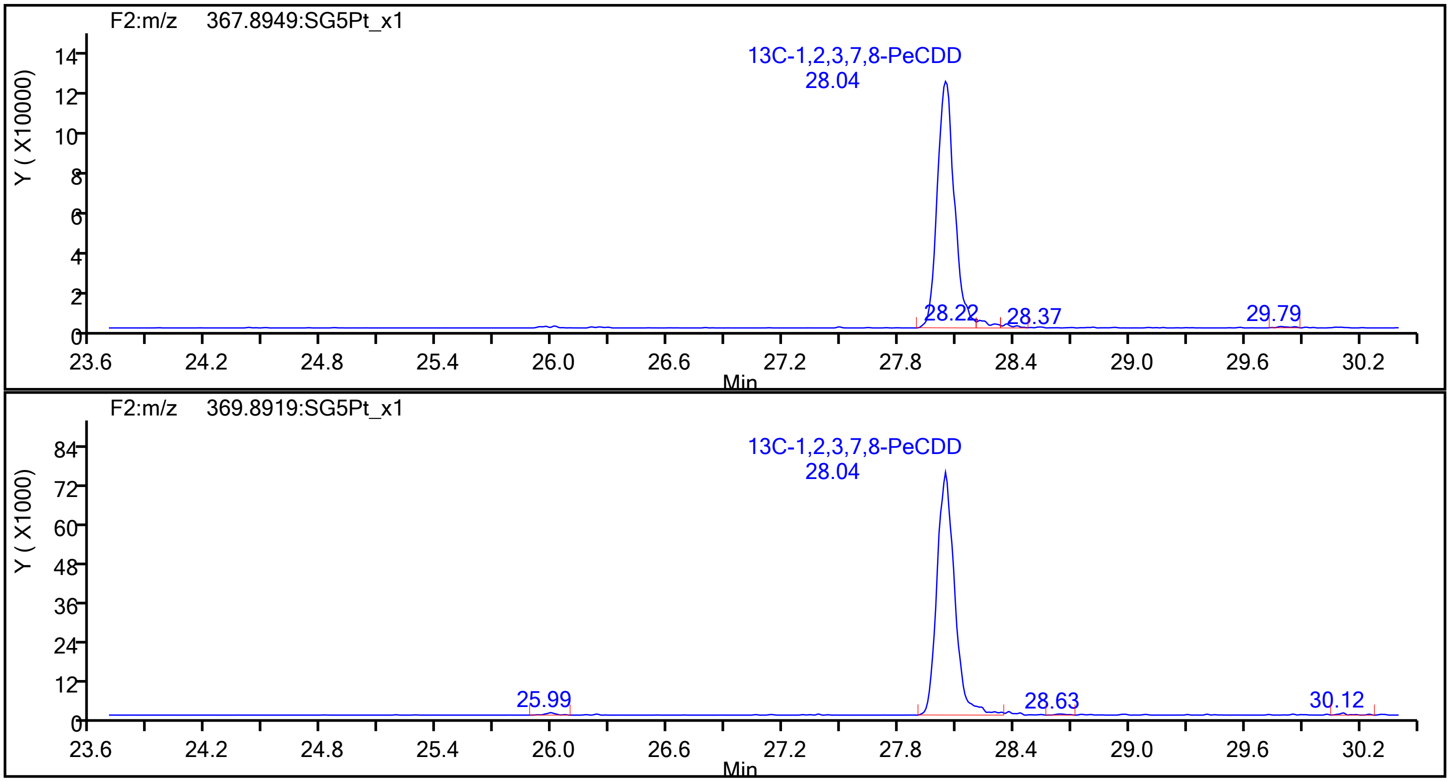

Report Date: 14-Oct-2020 10:44:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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HxCDF

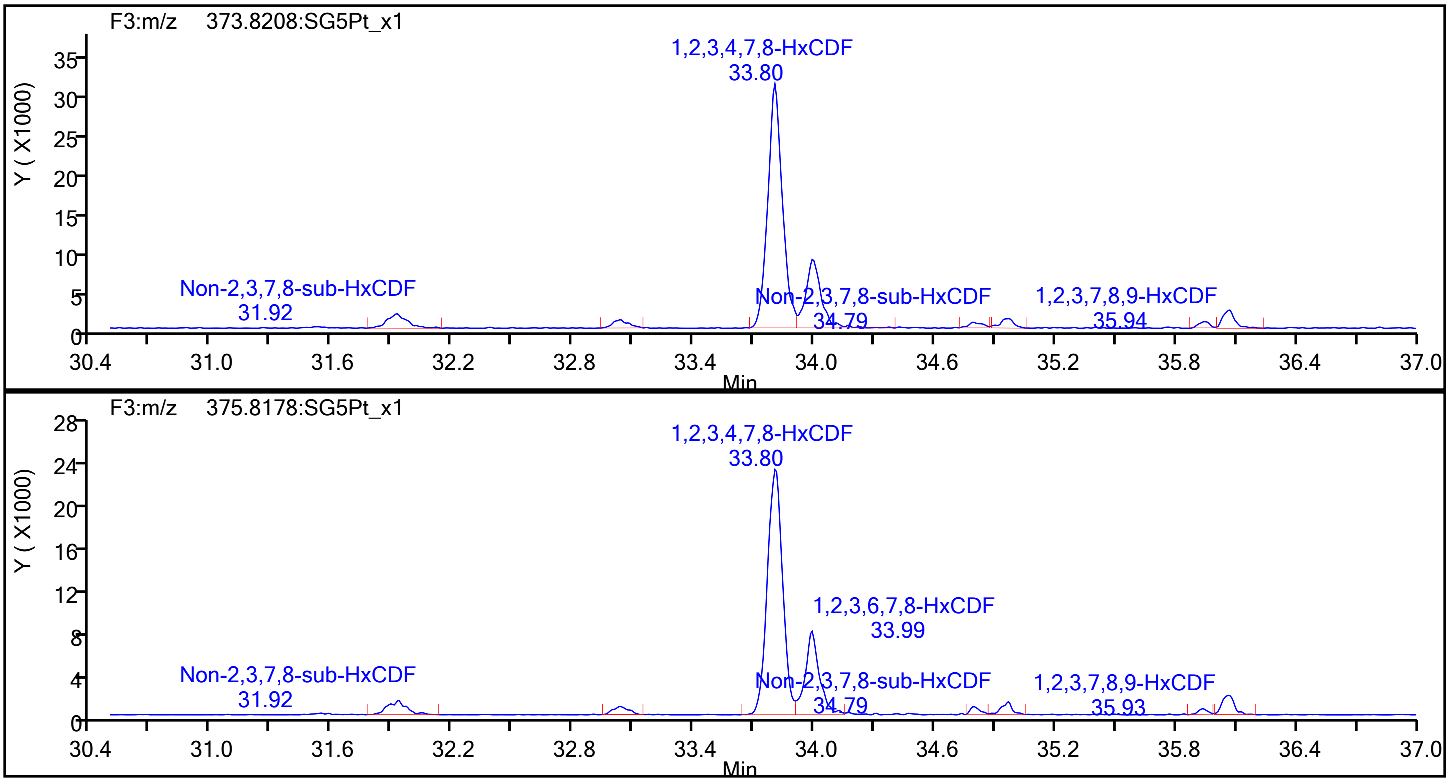

HxCDF Standards

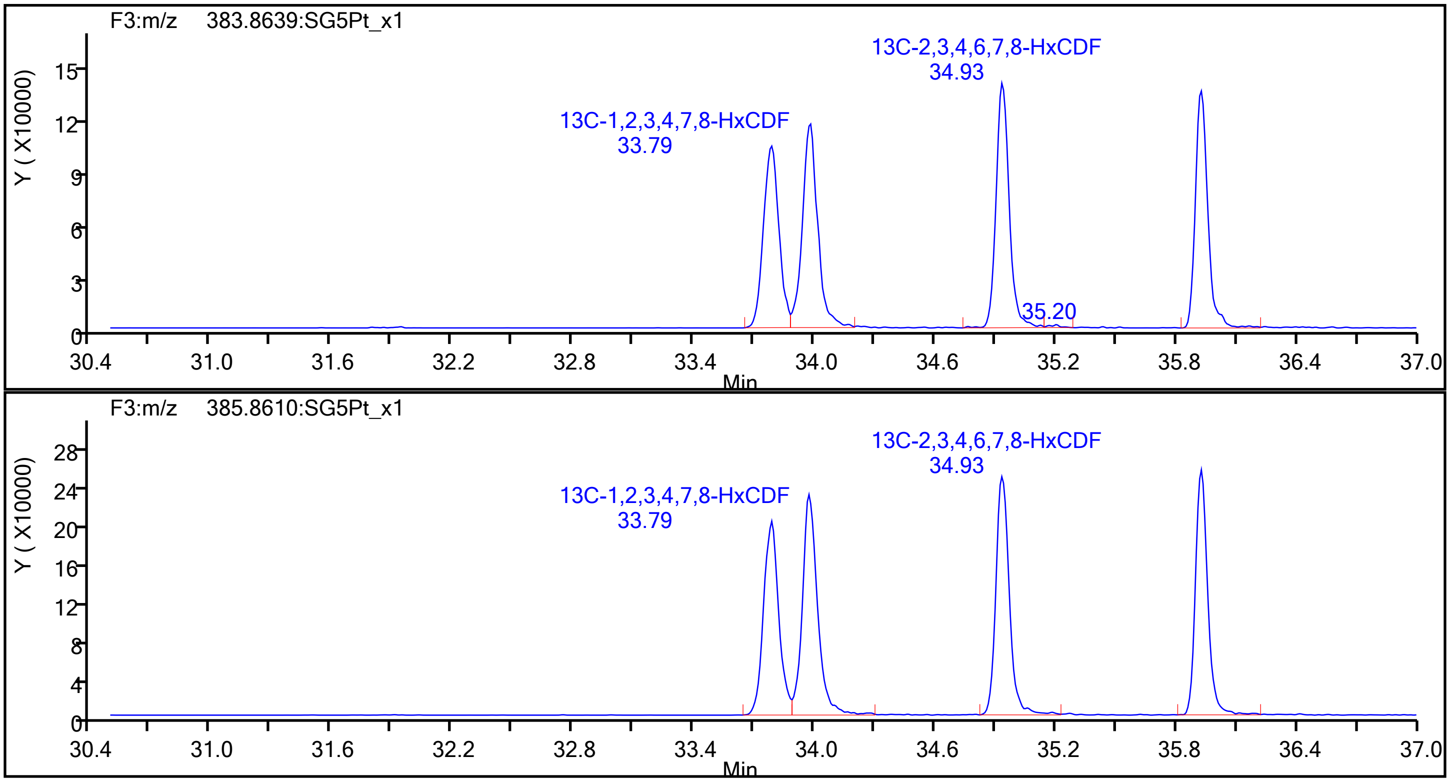

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

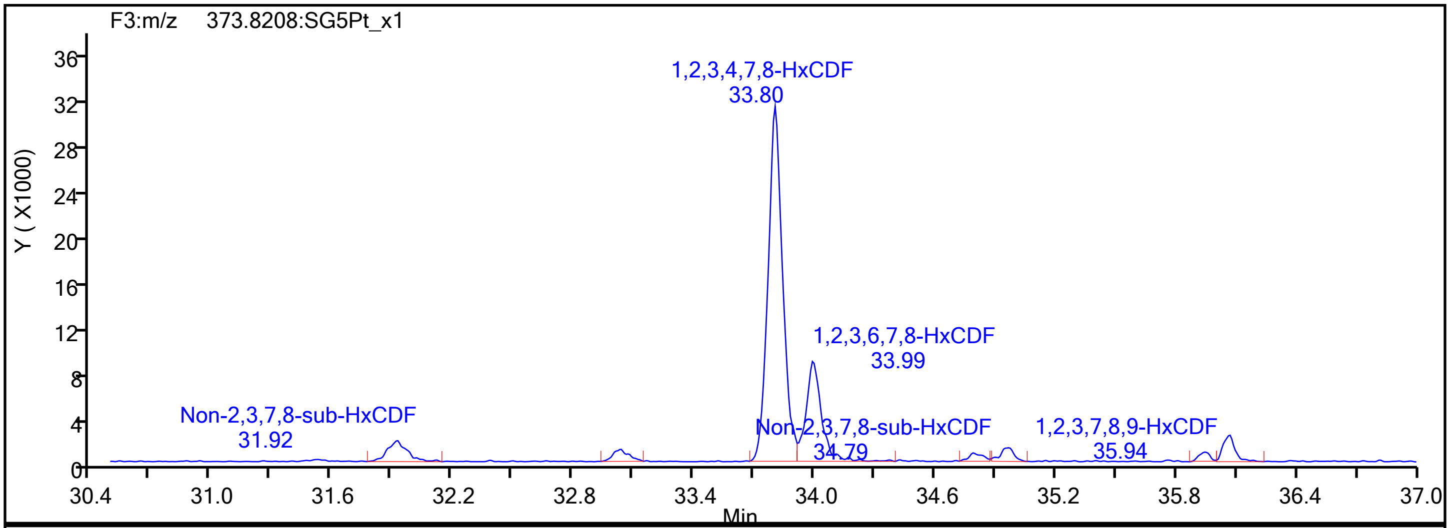

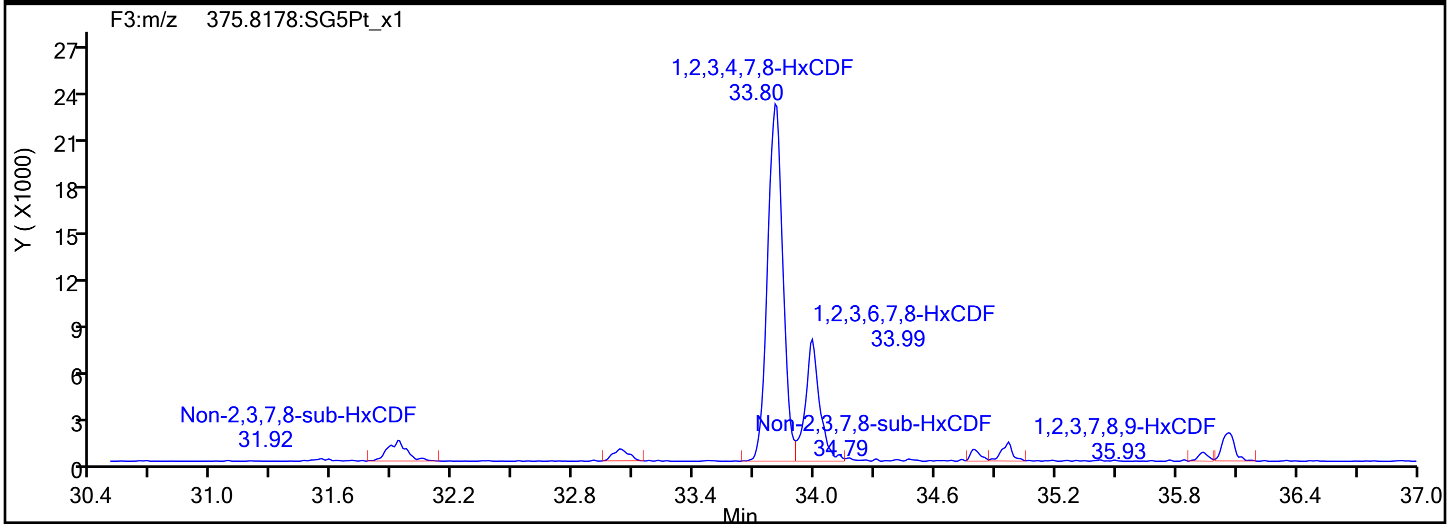

HxCDF Interference Mass

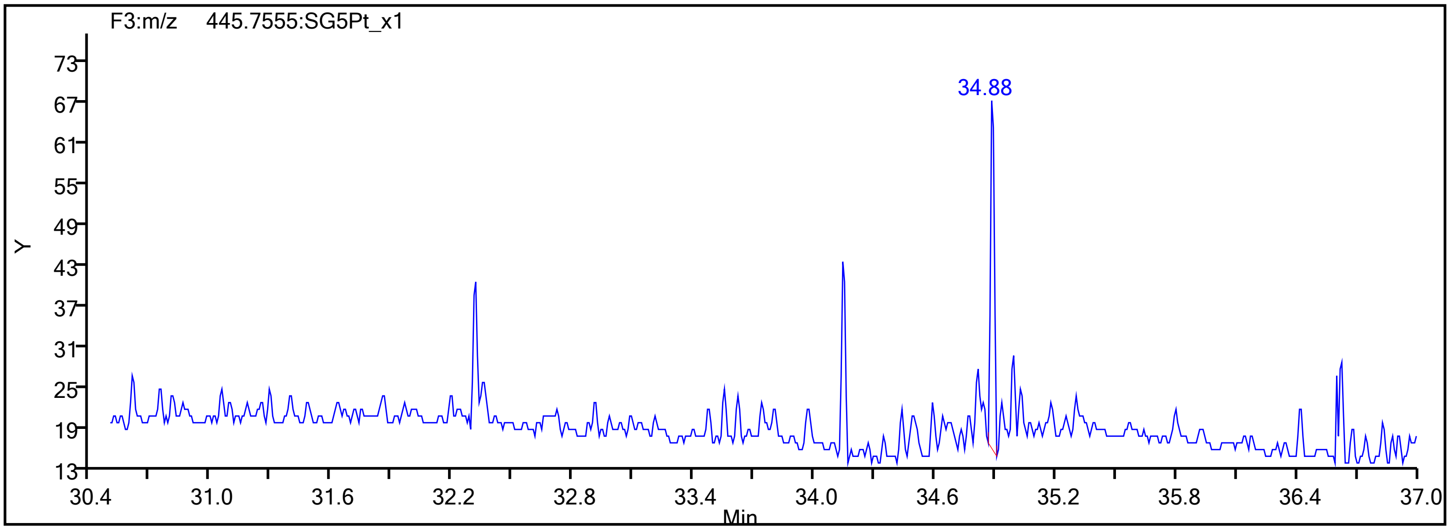

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Eurofins TestAmerica, Sacramento

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Limit Group: HR - 1613B - ICAL
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Sample Line#: 5
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Column Dia: 0.32 mm

HxCDD

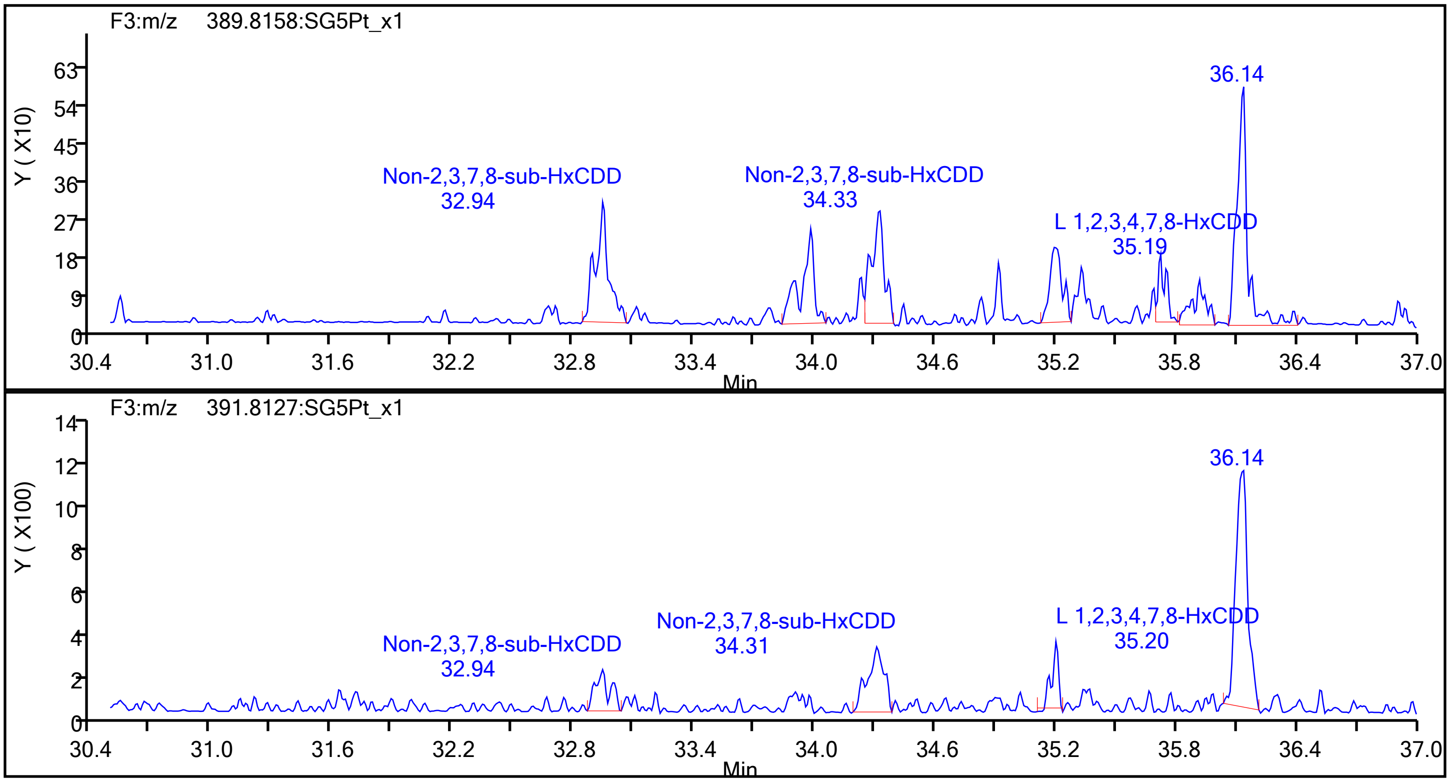

HxCDD Standards

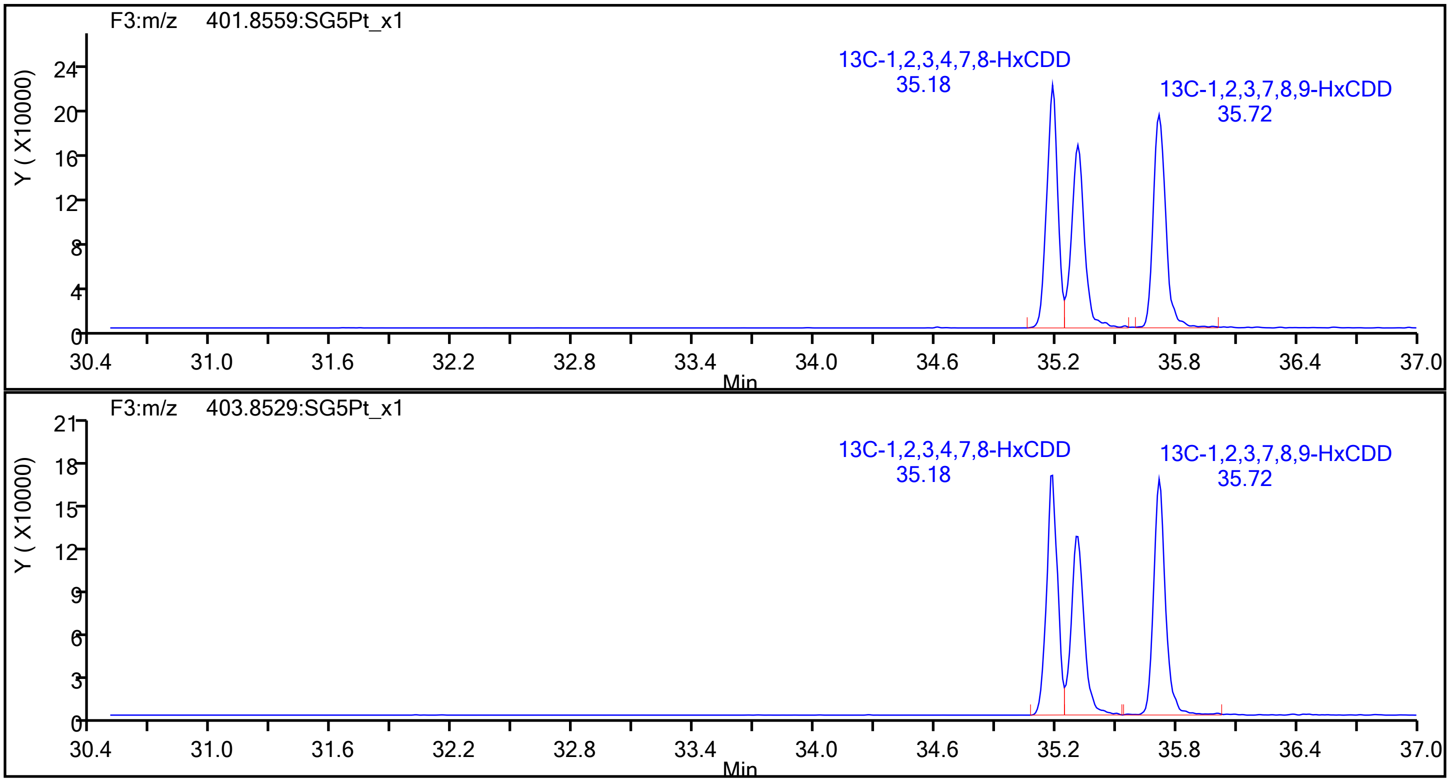

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Eurofins TestAmerica, Sacramento

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HpCDF

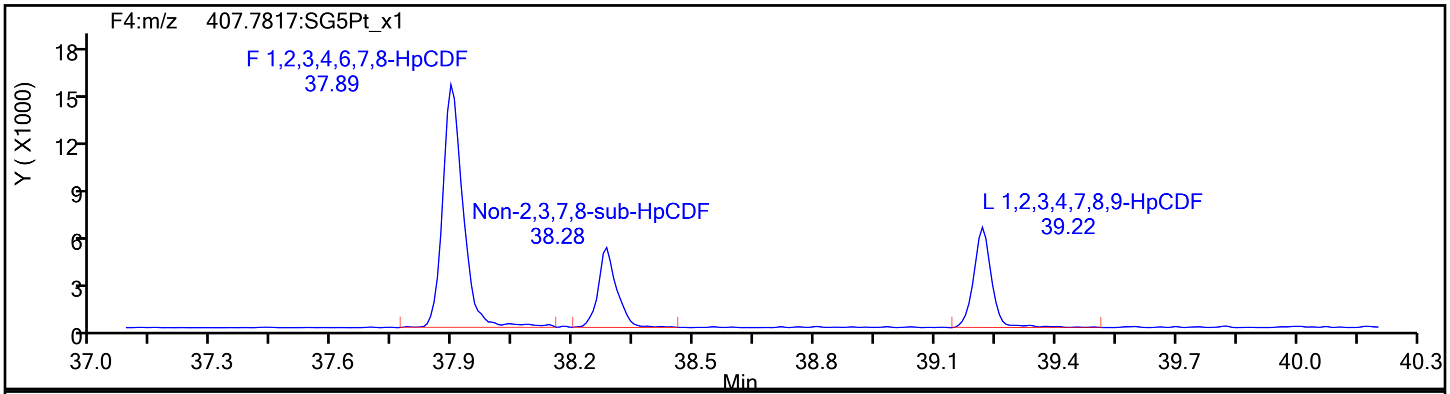

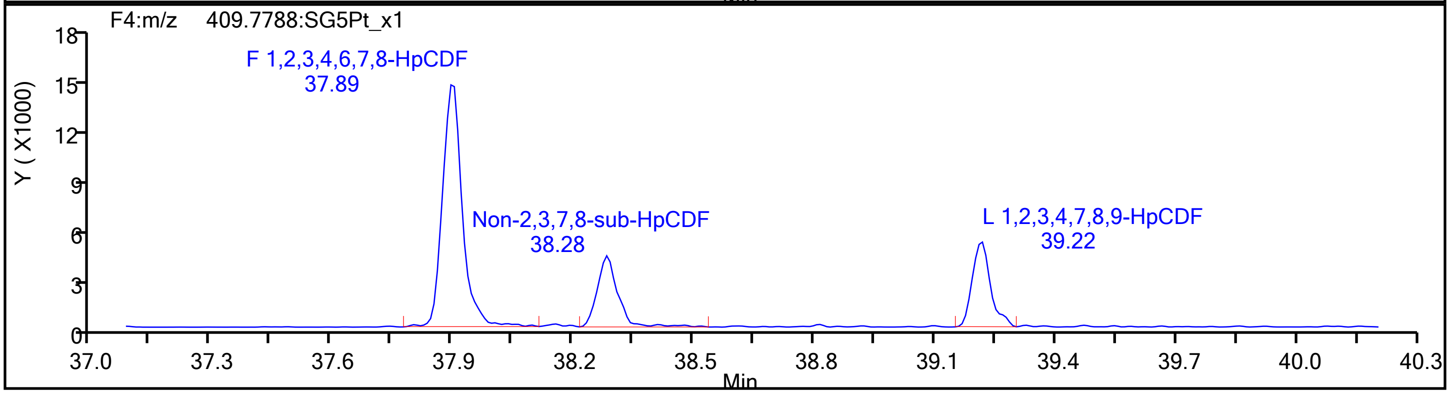

HpCDF Standards

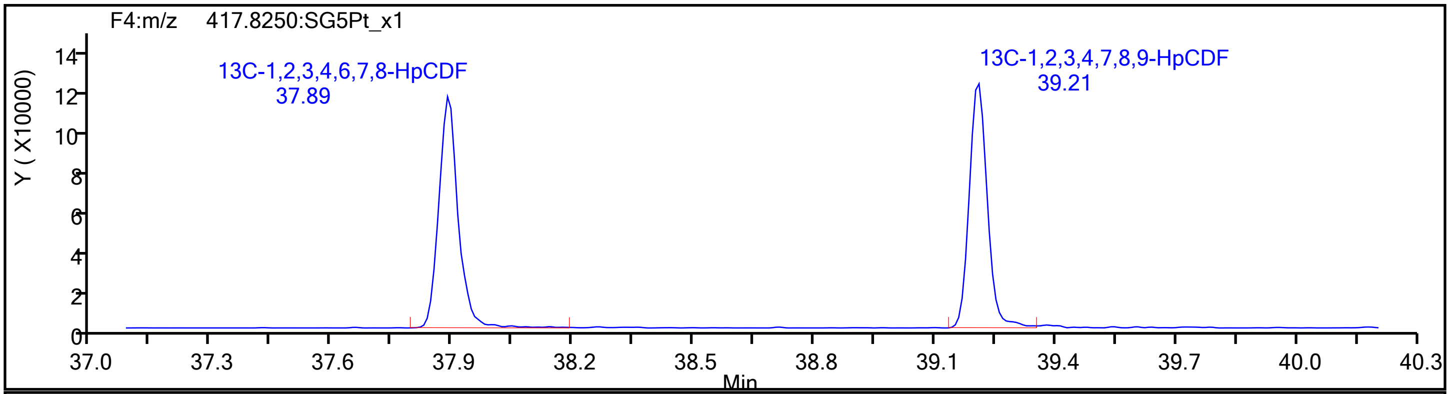

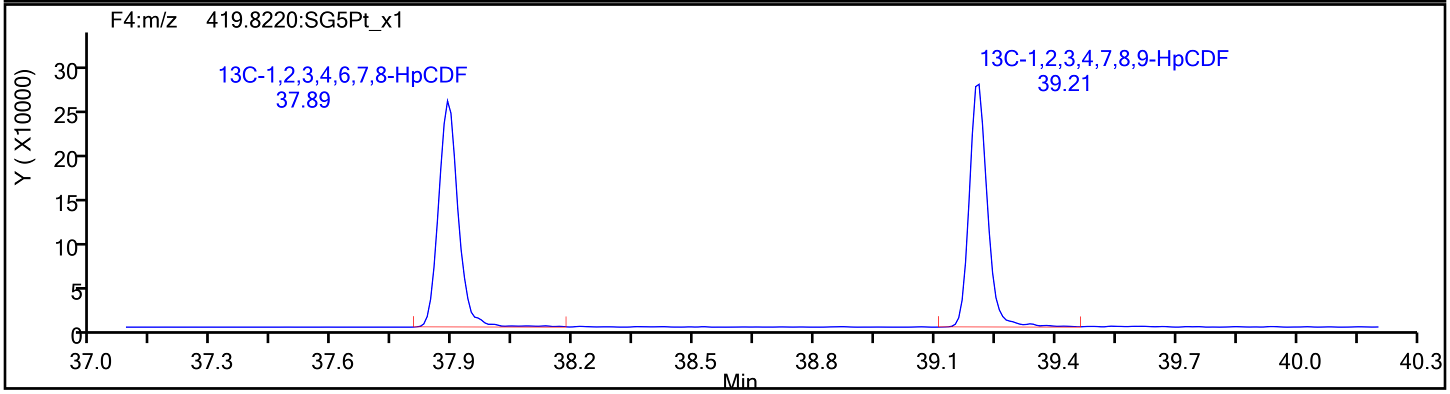

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Eurofins TestAmerica, Sacramento

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HpCDF

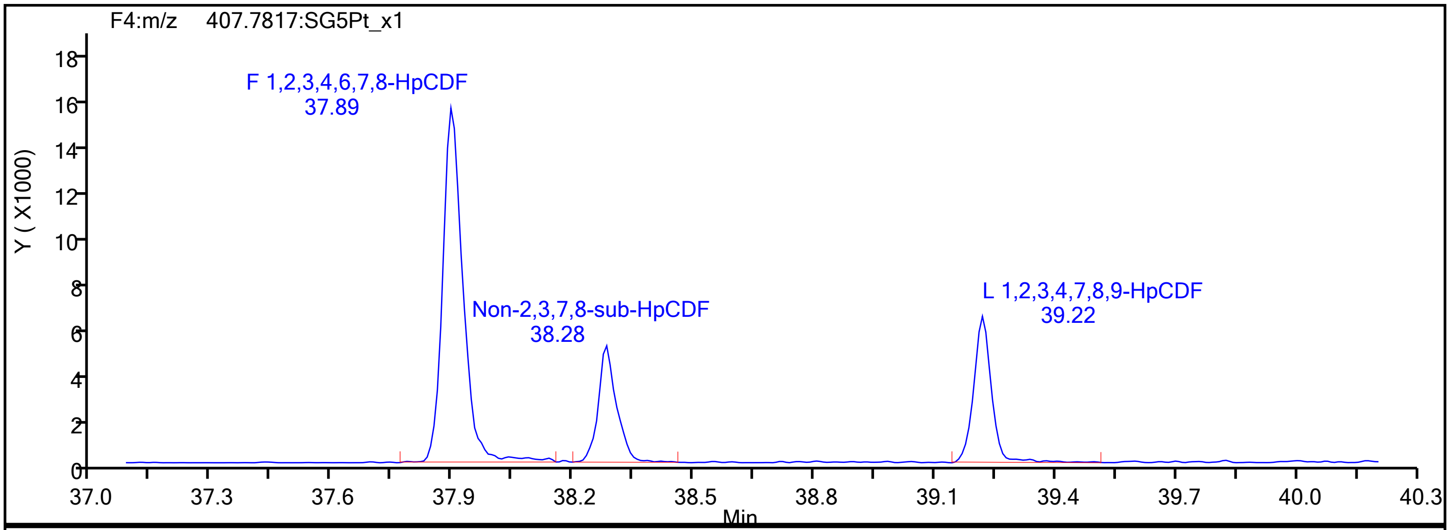

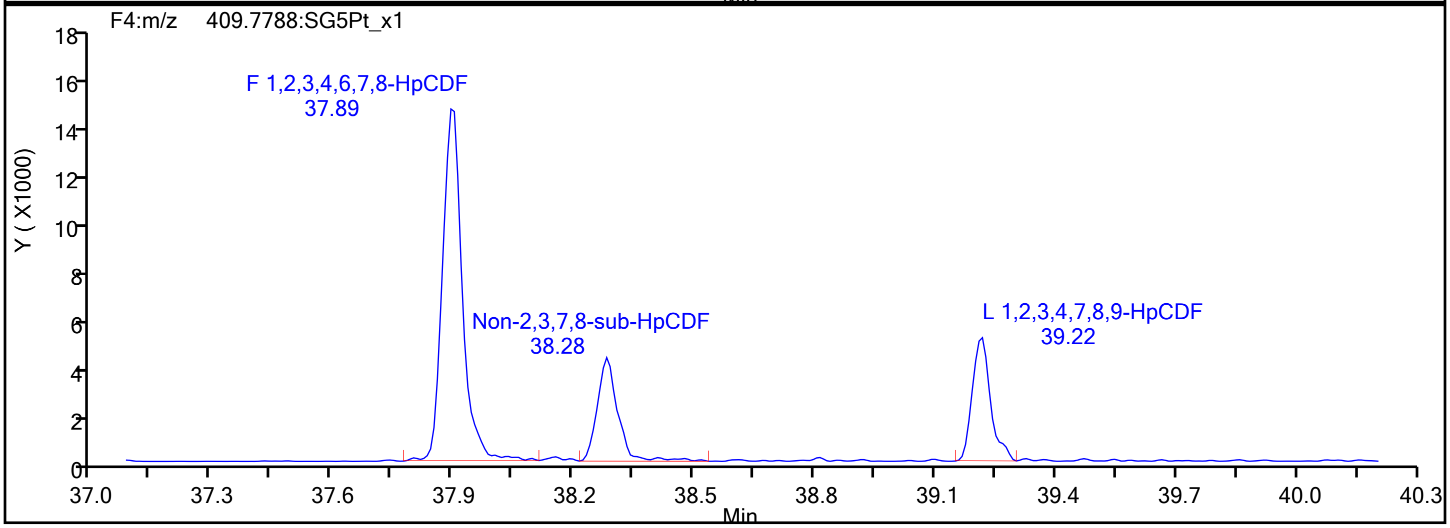

HpCDF Interference Mass

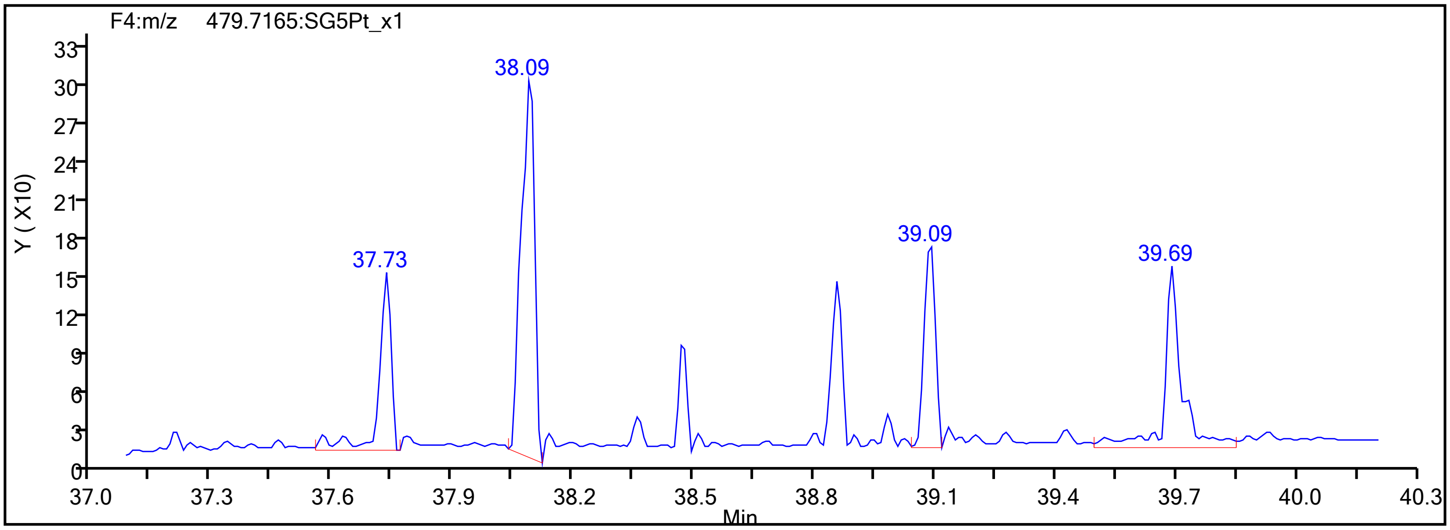

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HpCDD

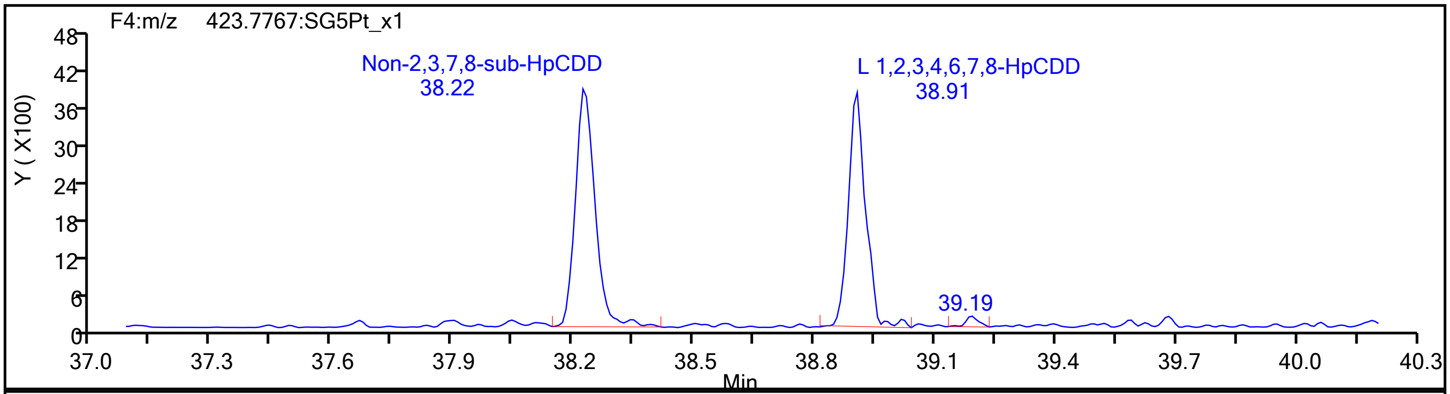

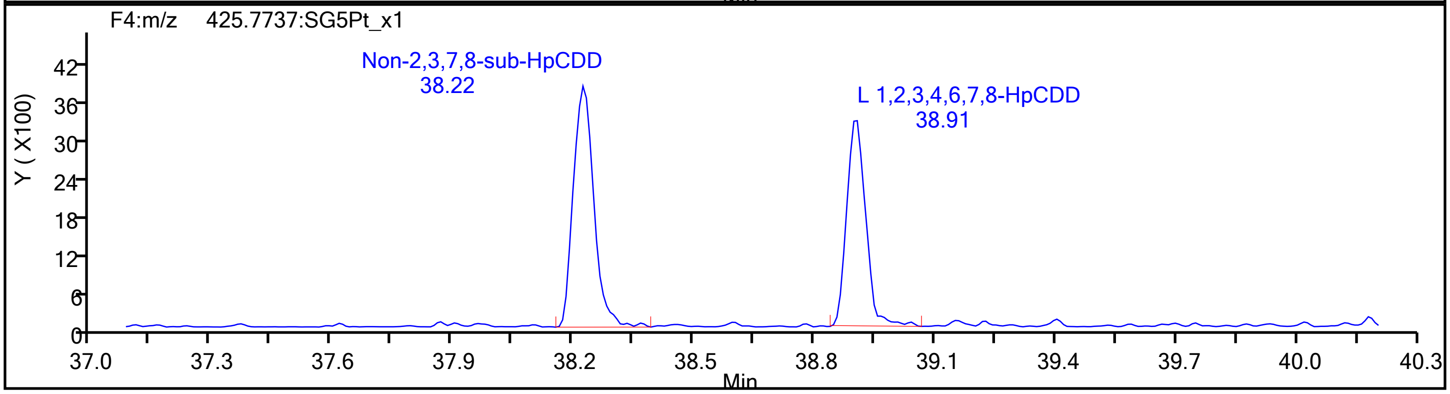

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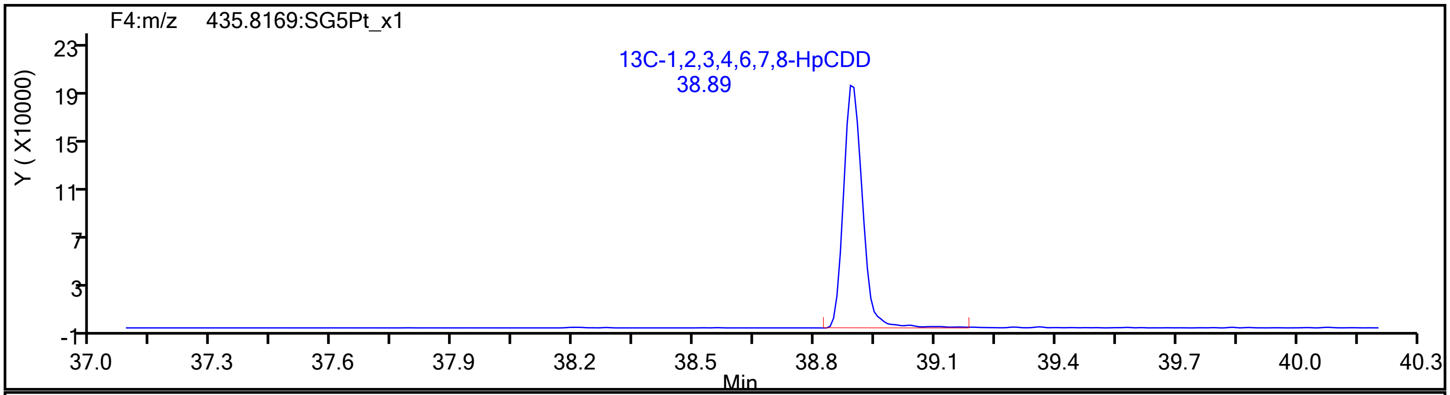

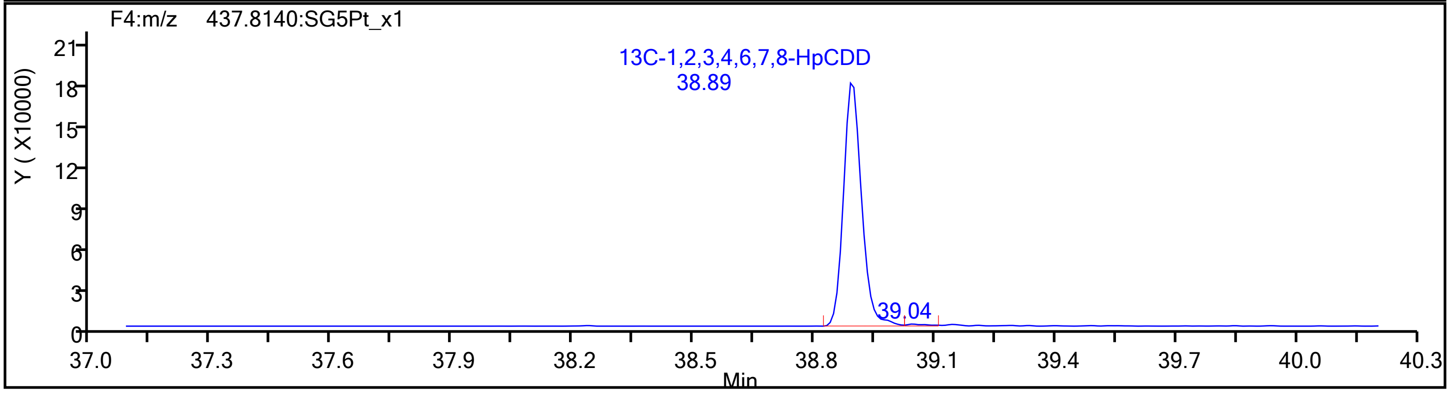

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Eurofins TestAmerica, Sacramento

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OCDF

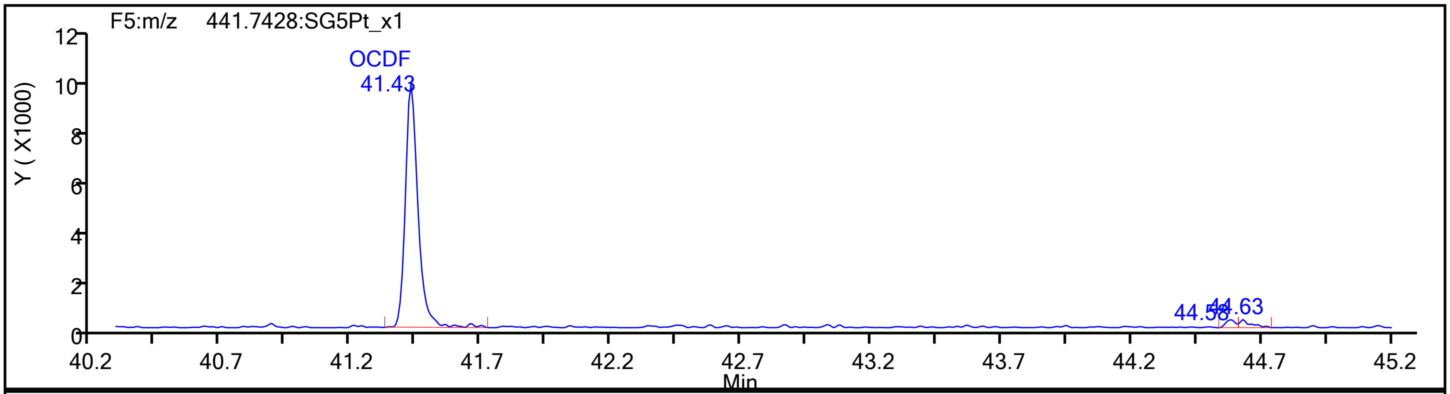

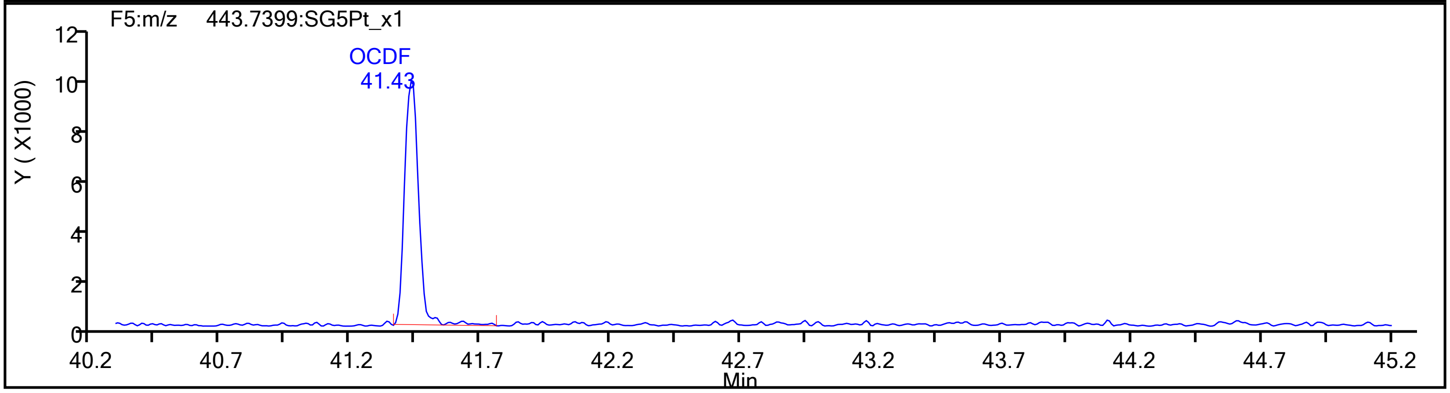

OCDF Standards

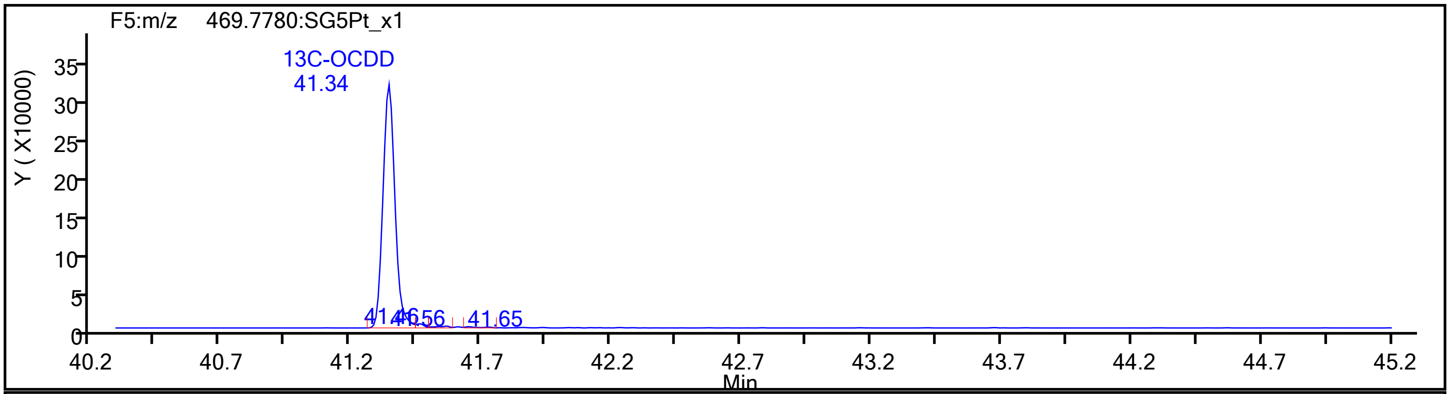

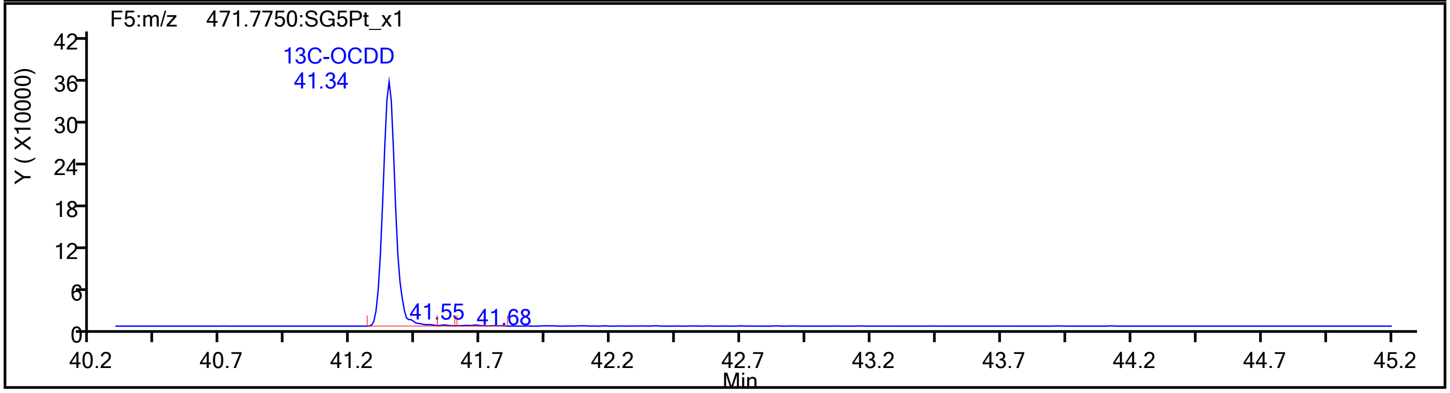

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Eurofins TestAmerica, Sacramento

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OCDF

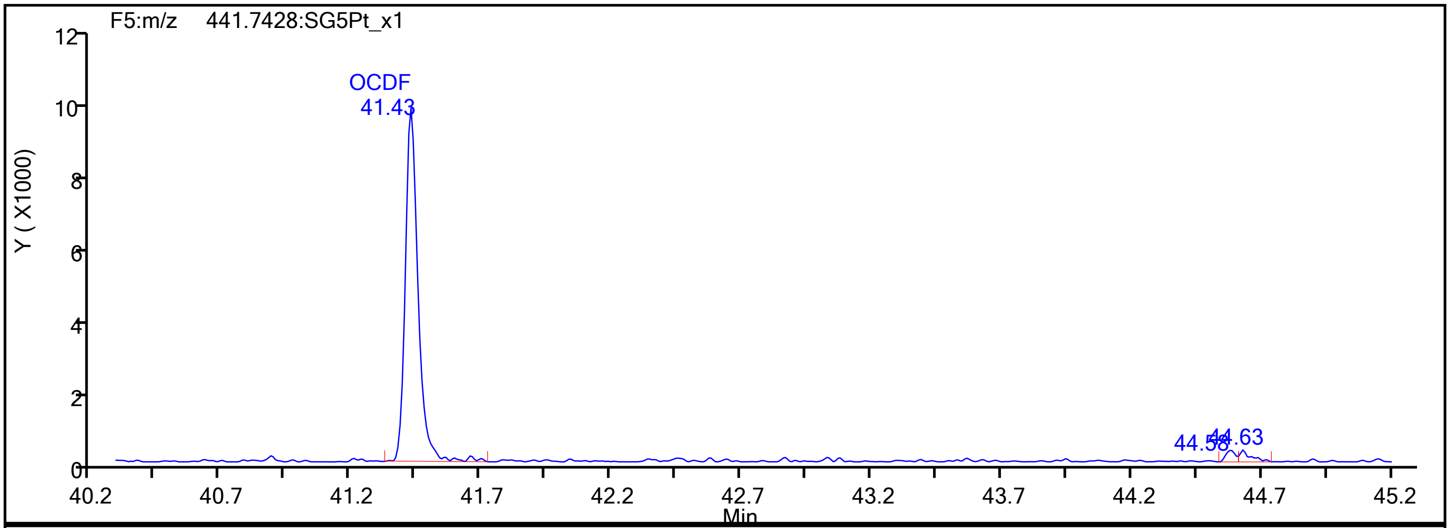

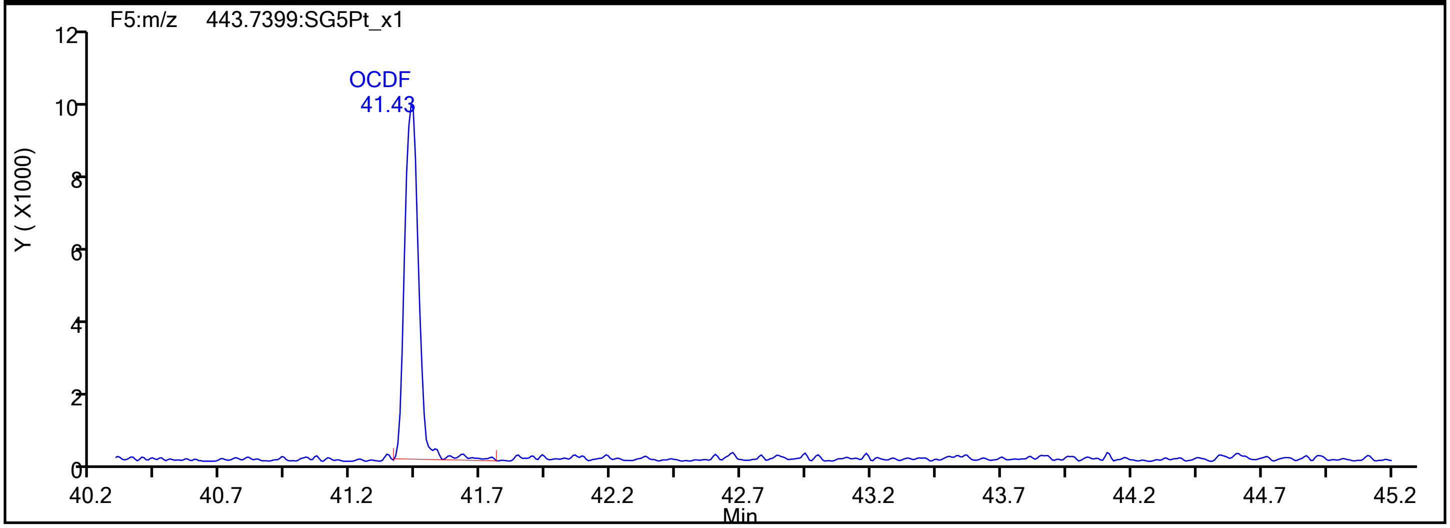

OCDF Interference Mass

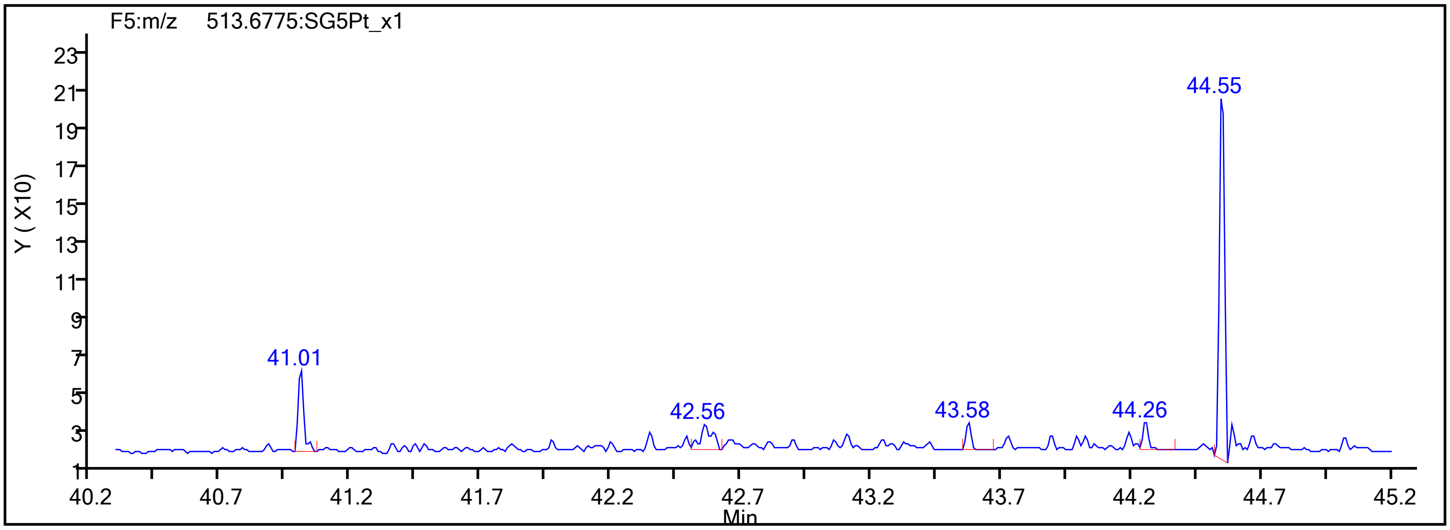

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Eurofins TestAmerica, Sacramento

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OCDD

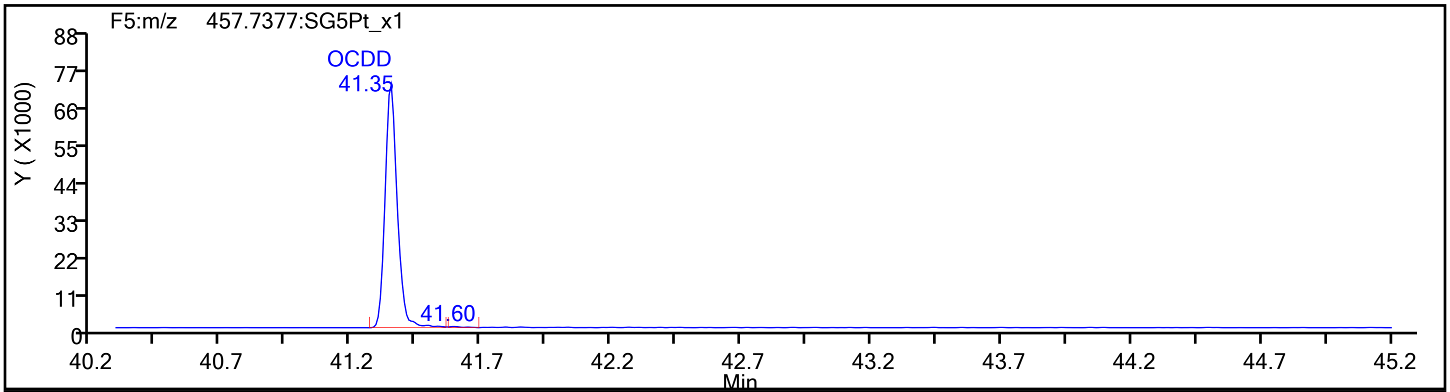

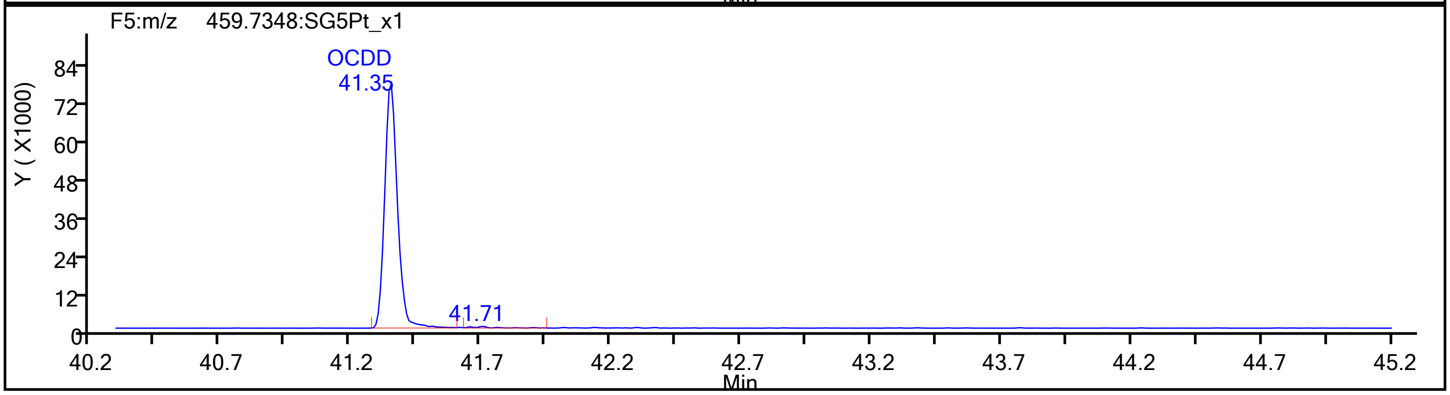

OCDD Standards

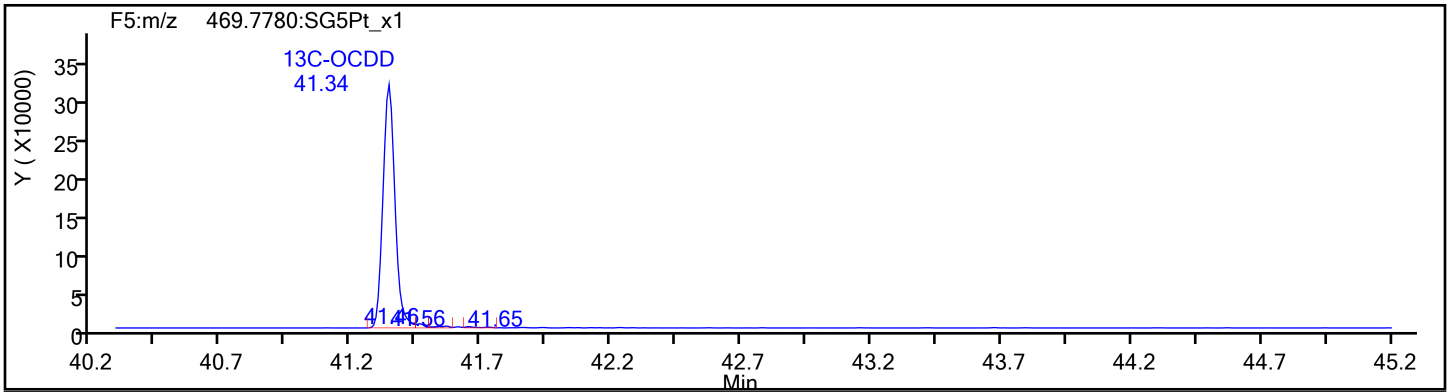

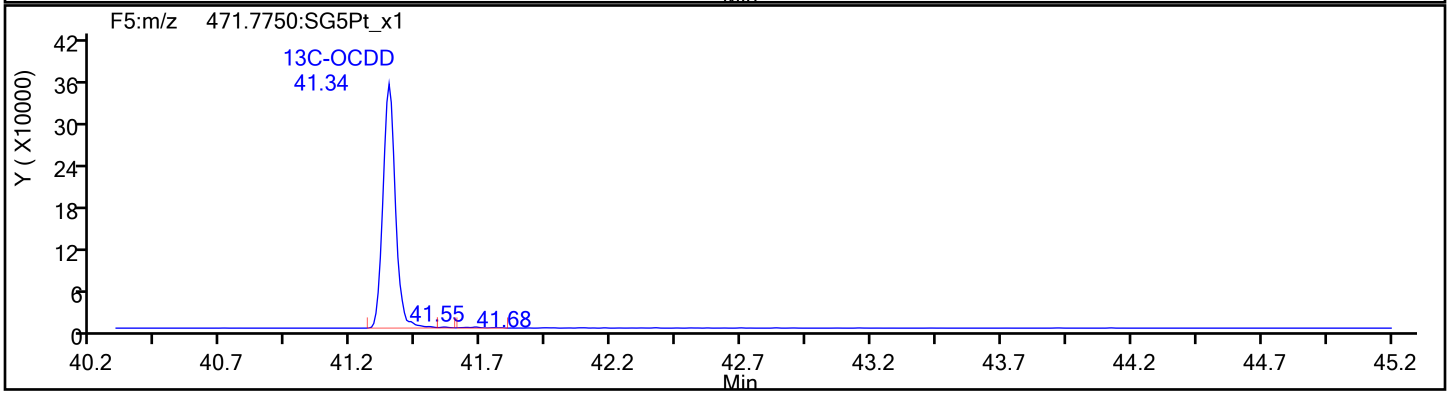

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 421107
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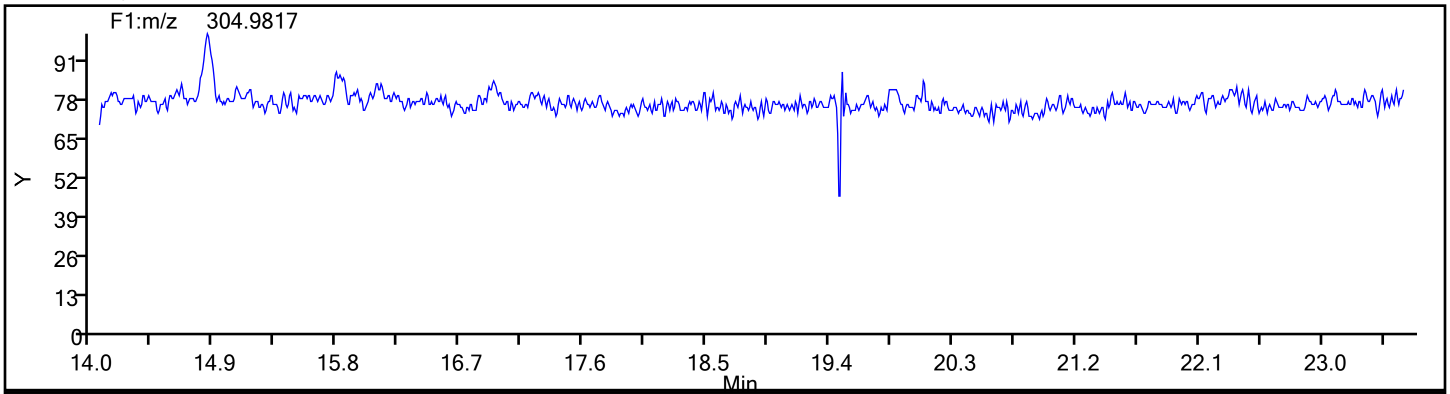

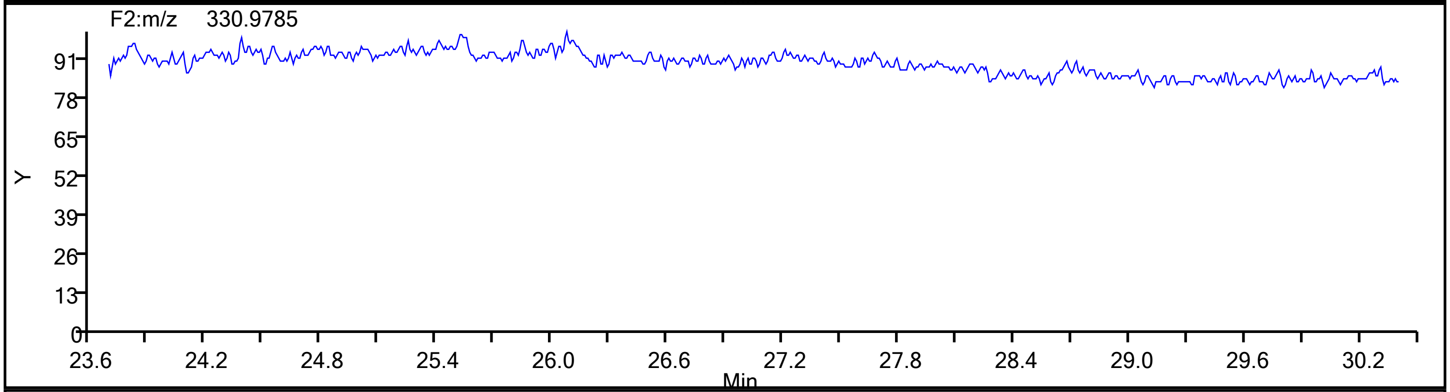

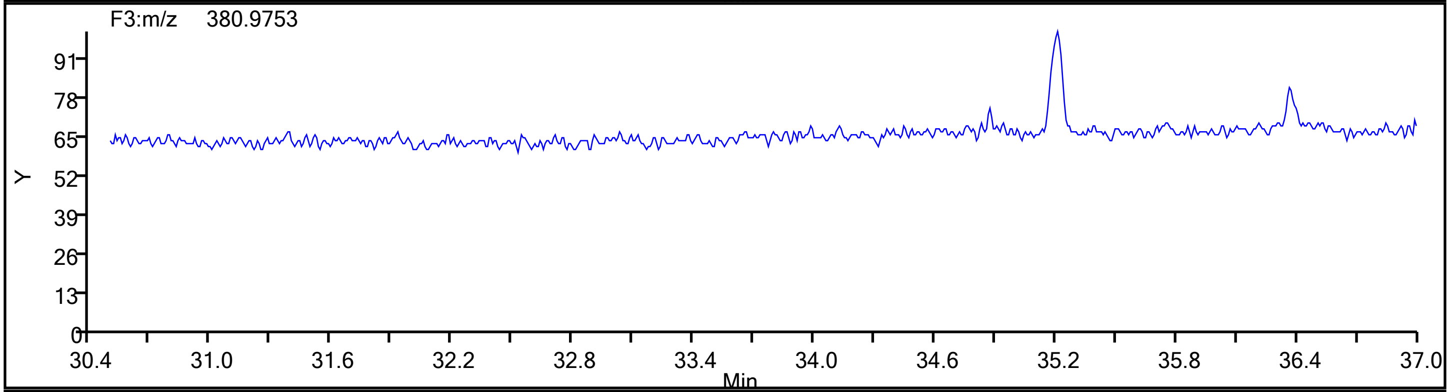

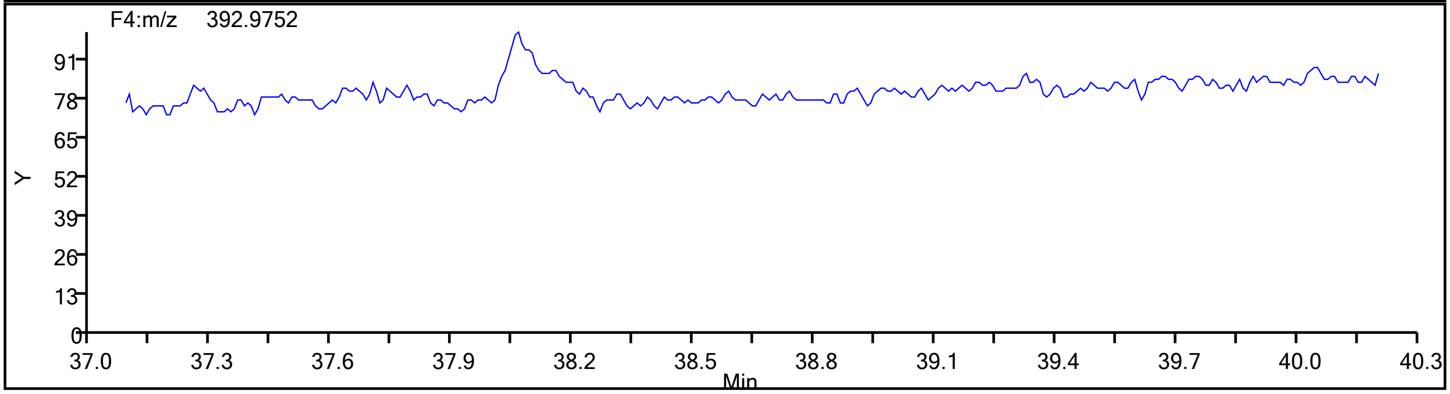

Report Date: 14-Oct-2020 10:44:18 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_6.d		
Injection Date:	12-Oct-2020 16:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
Worklist#:	421107	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

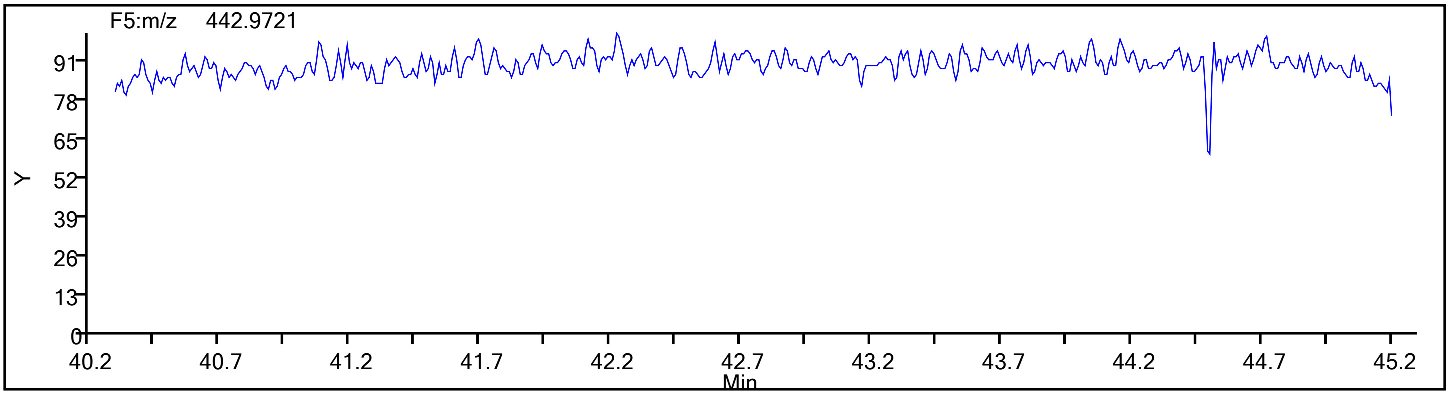

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-2-1 RA	Lab Sample ID: 320-65130-15 RA
Matrix: Water	Lab File ID: 12OC20A11D2_010.d
Analysis Method: 1613B	Date Collected: 09/10/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1042.5(mL)	Date Analyzed: 10/12/2020 21:05
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	3100	B	9.6	4.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	92		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

Report Date: 14-Oct-2020 12:17:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_010.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Sample Type: Client
Inject. Date: 12-Oct-2020 21:05:15 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-15-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.967	56281661	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.106	80983230	0.78	1.5708	91.6	91.6	0.9614	0.9614	91.60	
2,3,7,8-TCDF	16.119	129054663	0.76	0.9943	160.3	160.3	0.2183	0.2183		
D 13C-2,3,7,8-TCDD	14.720	43347935	0.83	0.9834	78.3	78.3	4.011	4.011	78.32	
2,3,7,8-TCDD	14.748	33121150	0.78	1.2822	59.6	59.6	0.4353	0.4353		
$ 37Cl4-2,3,7,8-TCDD	14.748	22869929		0.9945	40.9	40.9	0.1907	0.1907	102	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_010.d
Lims ID: 320-65130-A-15-A
Client ID: 11215702-Tank#2-valve-2-1
Sample Type: Client
Inject. Date: 12-Oct-2020 21:05:15 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-15-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:28

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.967	14.967	0		25781656	6188551	113681	284202	54		
333.9339	14.967	14.967	0		30500005	7384485	100486	251215	73	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.106	16.092	1	1.076	35499076	8113033	43574	108935	186		
317.9389	16.106	16.092	1	1.076	45484154	10182608	38416	96040	265	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.119	16.312	0	1.001	55909275	12730857	6881	17202	1850		
305.8987	16.119	16.312	0	1.001	73145388	16971810	9000	22500	1886	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.720	15.341	0	0.984	19625508	4959016	113681	284202	44		
333.9339	14.720	15.341	0	0.984	23722427	6233940	100486	251215	62	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.748	15.613	1	1.002	14509032	3595531	15307	38267	235		
321.8936	14.748	15.613	1	1.002	18612118	4497712	9682	24205	465	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.748	15.356	1	0.985	22869929	5659791	10299	25747	550		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:24

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_010.d
Injection Date: 12-Oct-2020 21:05:15
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-2-1
Worklist#: 421482
Sample Line#: 10
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

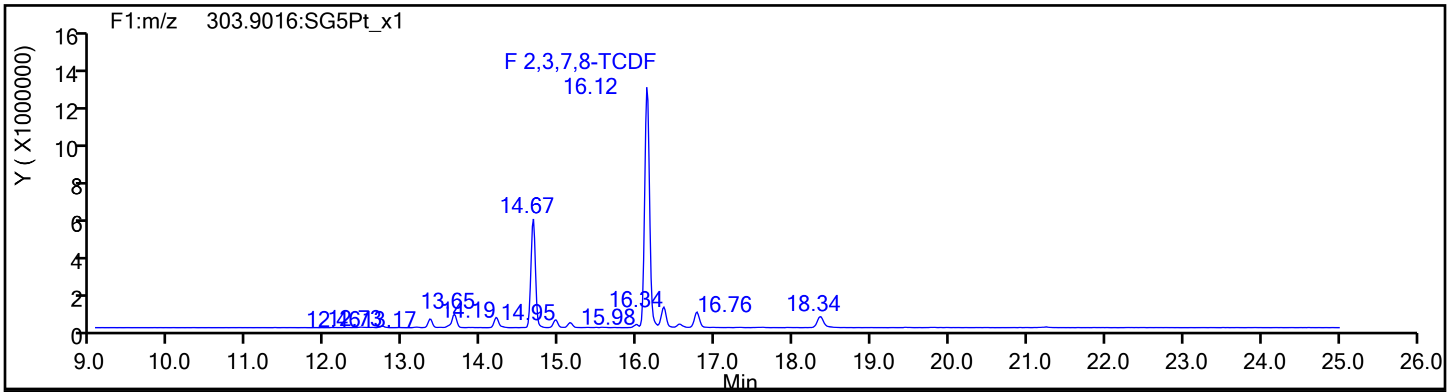

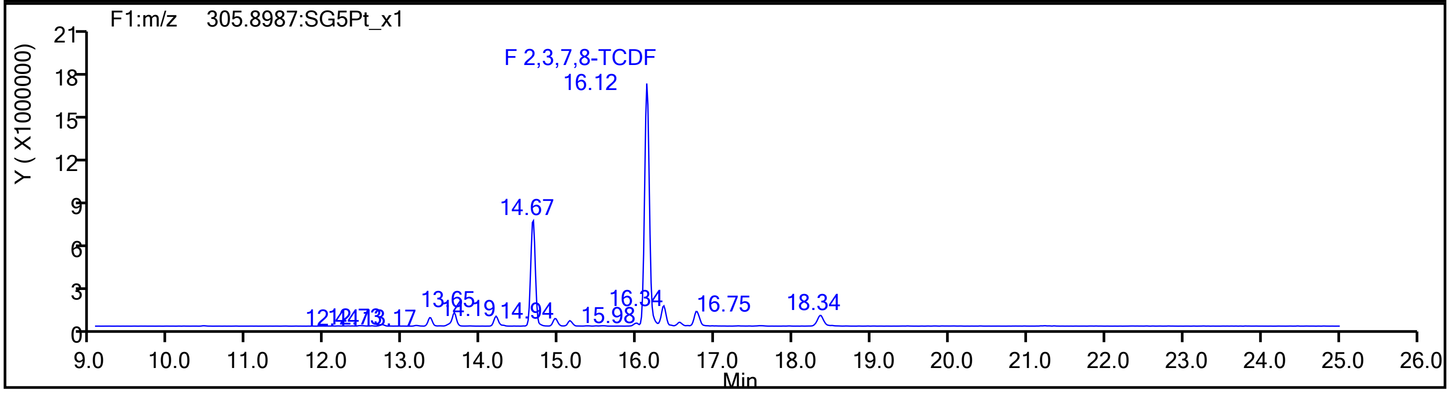

TCDF Standards

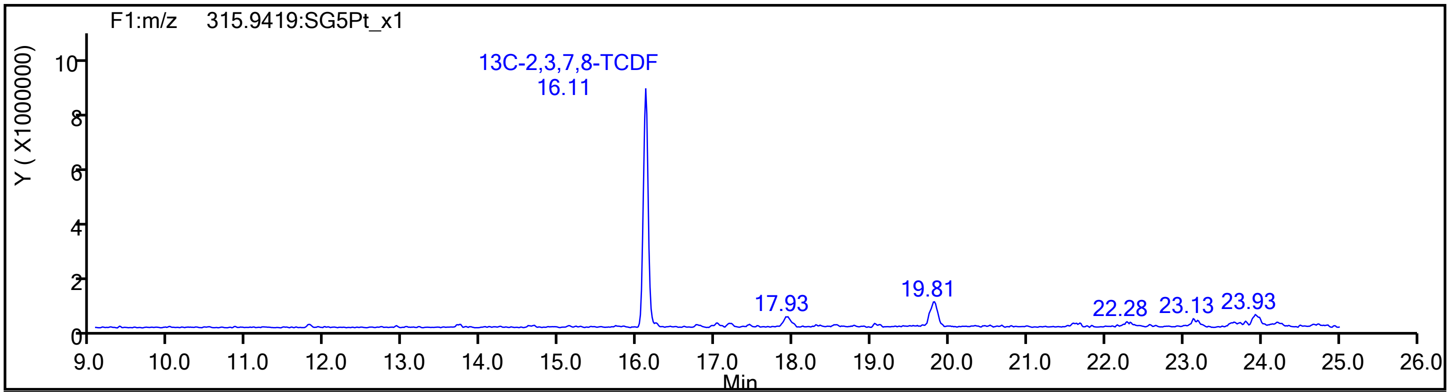

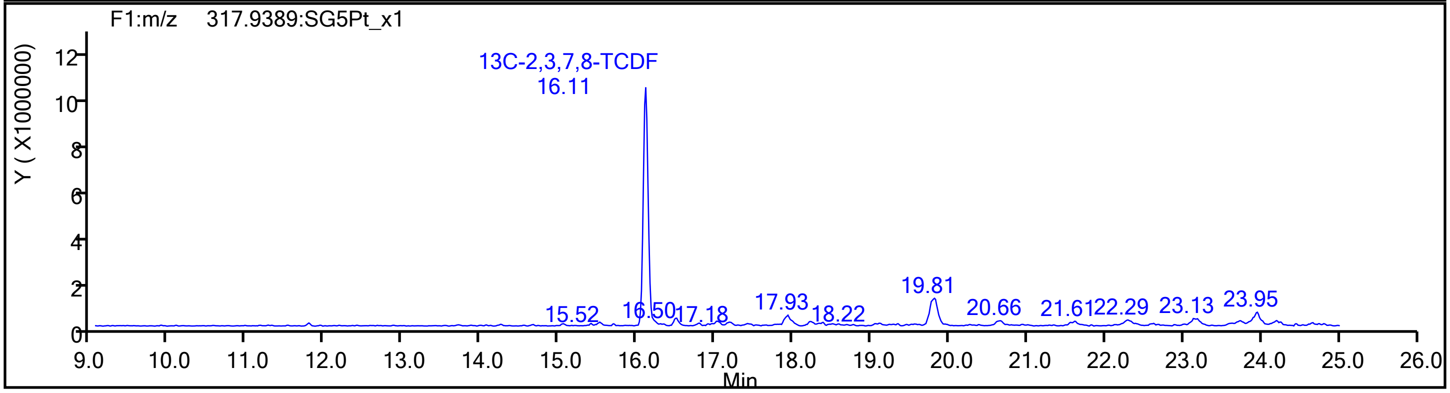

Report Date: 14-Oct-2020 12:17:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_010.d		
Injection Date:	12-Oct-2020 21:05:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
Worklist#:	421482	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

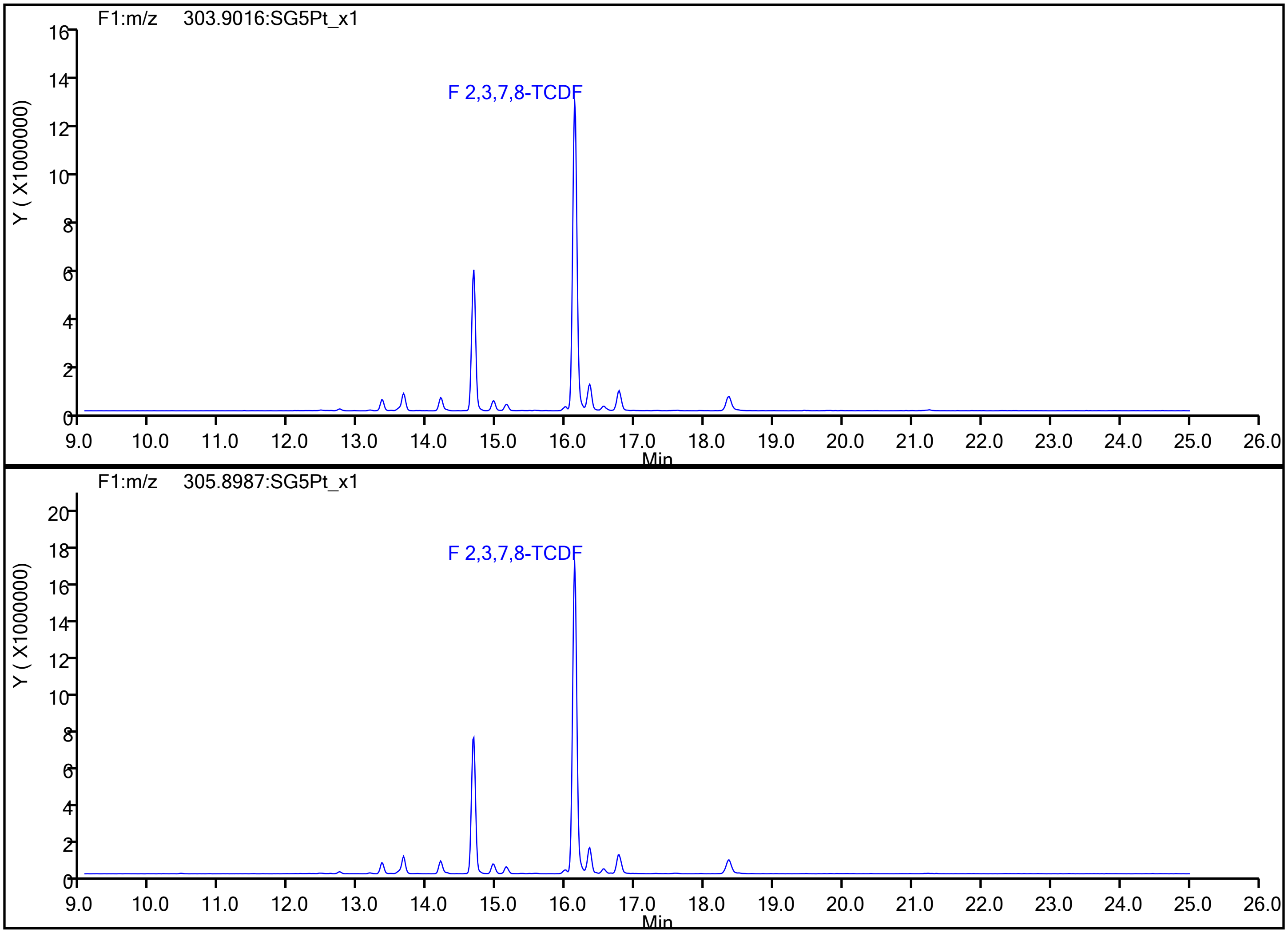

TCDF Interference Mass

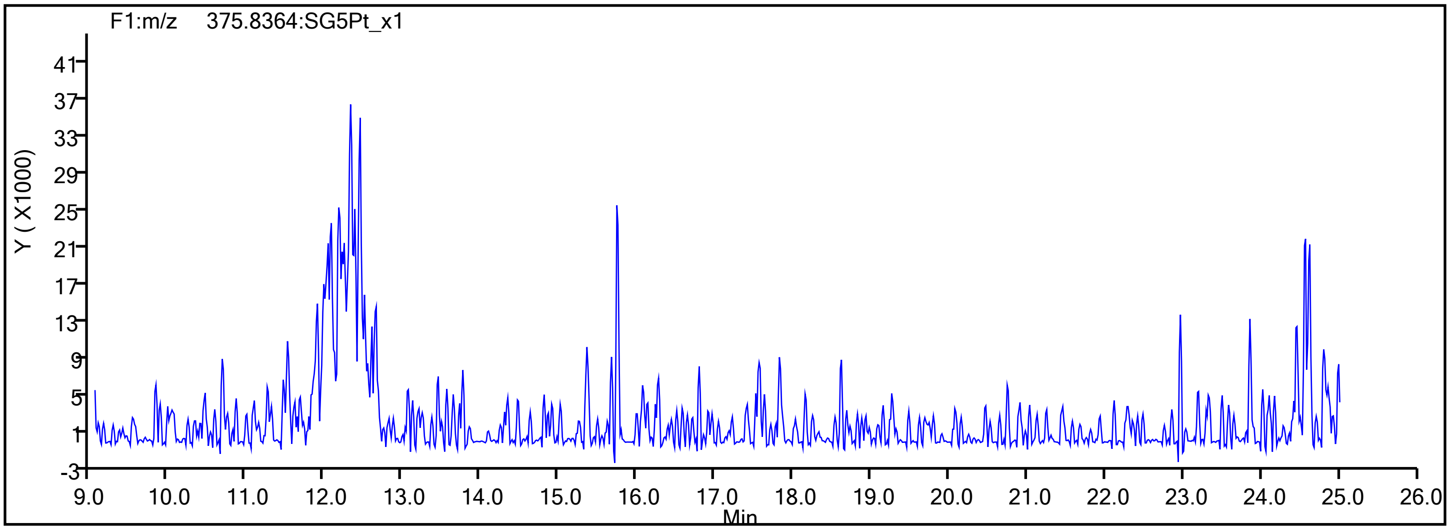

Report Date: 14-Oct-2020 12:17:24 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_010.d		
Injection Date:	12-Oct-2020 21:05:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
Worklist#:	421482	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

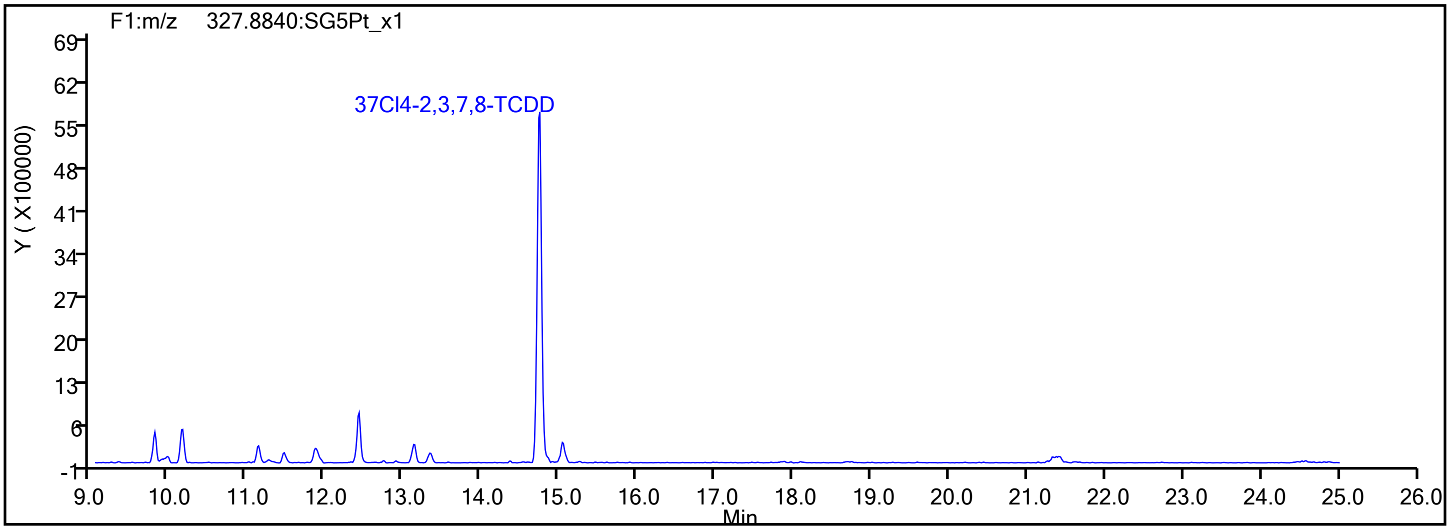

37Cl4-TCDD Standards

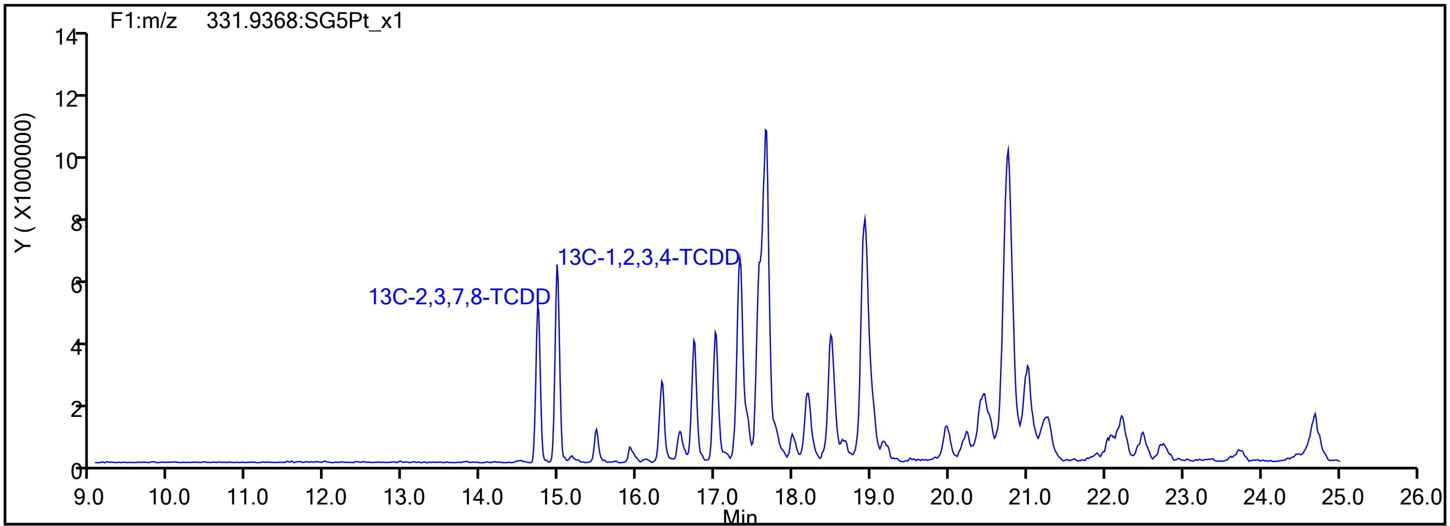

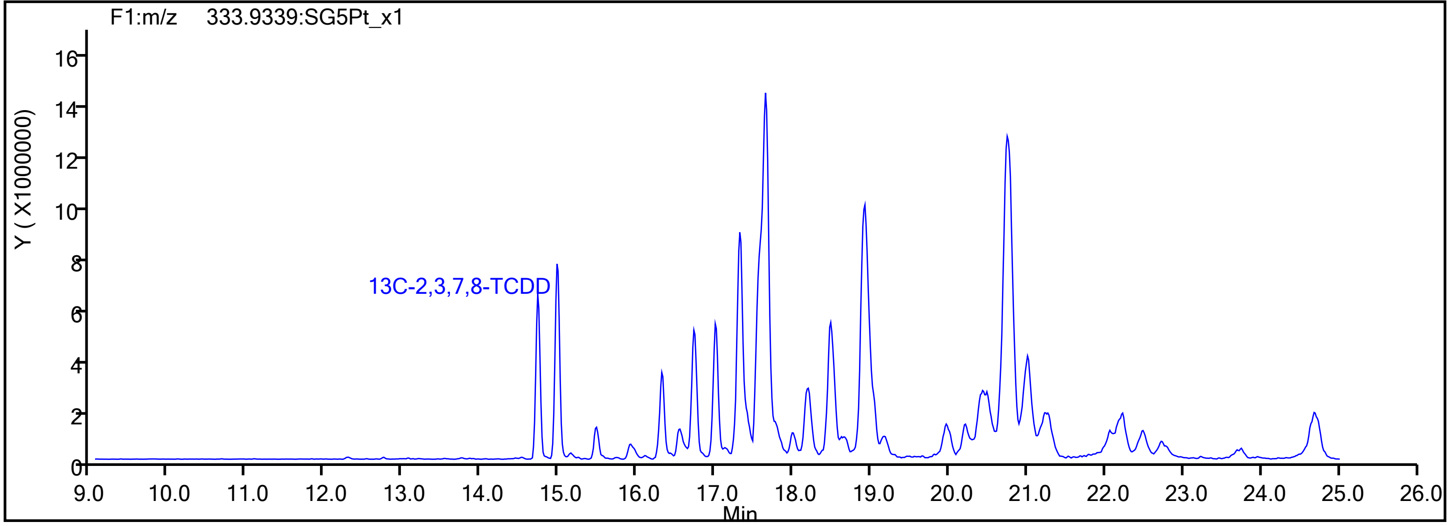

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_010.d		
Injection Date:	12-Oct-2020 21:05:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-1		
Worklist#:	421482	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

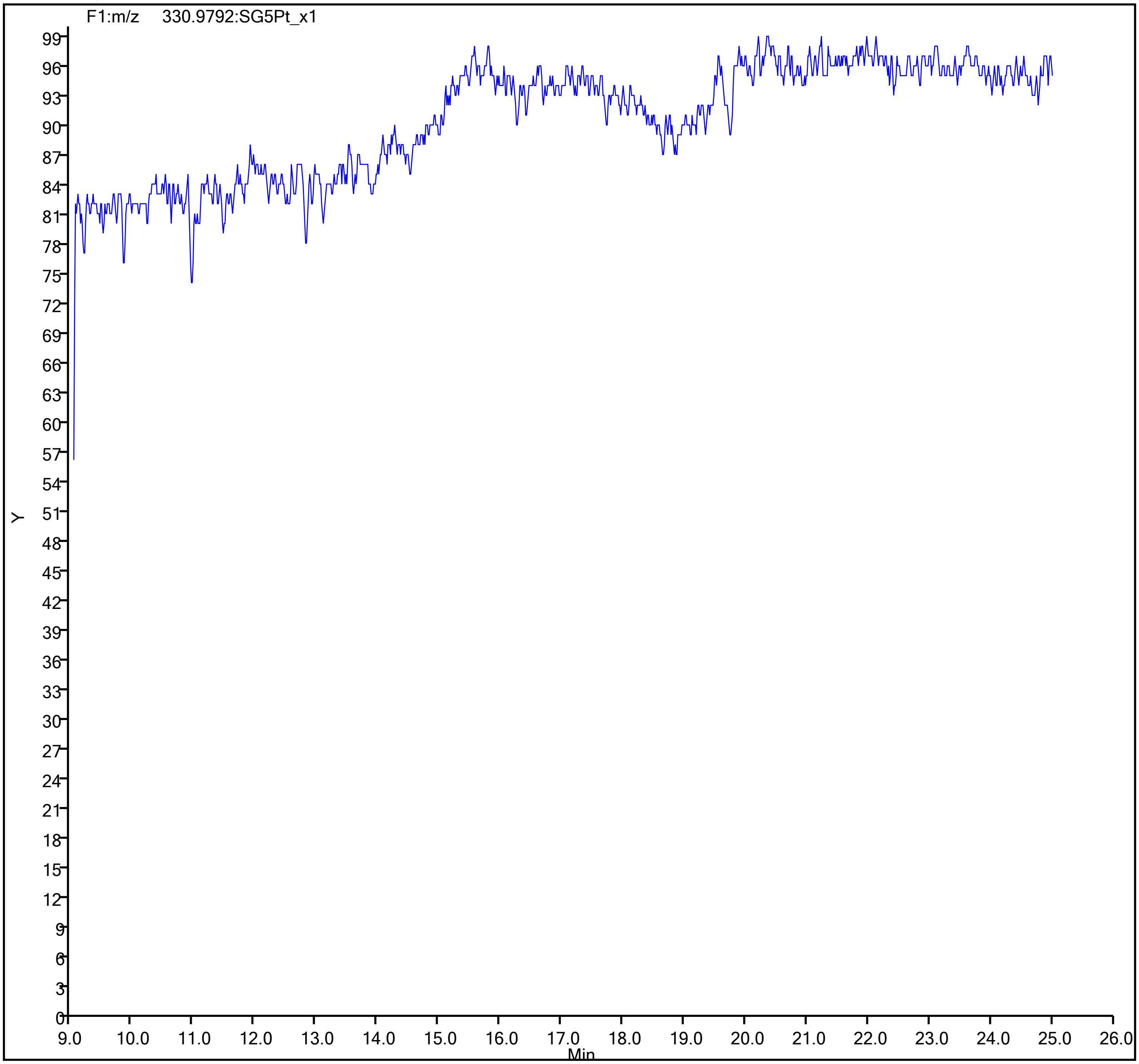

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-3-1	Lab Sample ID: 320-65130-16
Matrix: Water	Lab File ID: 09oc20dfs1_23.d
Analysis Method: 1613B	Date Collected: 09/10/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1042.1(mL)	Date Analyzed: 10/10/2020 10:09
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1200		9.6	3.8
40321-76-4	1,2,3,7,8-PeCDD	16	J	48	1.2
57117-41-6	1,2,3,7,8-PeCDF	120		48	1.3
57117-31-4	2,3,4,7,8-PeCDF	87		48	1.5
39227-28-6	1,2,3,4,7,8-HxCDD	5.1	J B	48	0.41
57653-85-7	1,2,3,6,7,8-HxCDD	3.0	J q	48	0.51
19408-74-3	1,2,3,7,8,9-HxCDD	2.8	J	48	0.42
70648-26-9	1,2,3,4,7,8-HxCDF	270		48	1.1
57117-44-9	1,2,3,6,7,8-HxCDF	71		48	1.0
72918-21-9	1,2,3,7,8,9-HxCDF	7.2	J B	48	0.83
60851-34-5	2,3,4,6,7,8-HxCDF	11	J	48	0.84
35822-46-9	1,2,3,4,6,7,8-HpCDD	40	J	48	0.52
67562-39-4	1,2,3,4,6,7,8-HpCDF	110	B	48	0.52
55673-89-7	1,2,3,4,7,8,9-HpCDF	40	J B	48	0.55
3268-87-9	OCDD	780	B	96	0.87
39001-02-0	OCDF	78	J B	96	0.77
41903-57-5	Total TCDD	1300	q	9.6	3.8
30402-14-3	Total TCDF	6100	B G	16	16
36088-22-9	Total PeCDD	16	J	48	1.2
30402-15-4	Total PeCDF	330	q	48	1.4
34465-46-8	Total HxCDD	15	J B q	48	0.45
55684-94-1	Total HxCDF	390	B	48	0.94
37871-00-4	Total HpCDD	85		48	0.52
38998-75-3	Total HpCDF	180	B	48	0.53

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-3-1 Lab Sample ID: 320-65130-16

Matrix: Water Lab File ID: 09oc20dfs1_23.d

Analysis Method: 1613B Date Collected: 09/10/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1042.1(mL) Date Analyzed: 10/10/2020 10:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	75		25-164
89059-46-1	13C-2,3,7,8-TCDF	70		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	74		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	76		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	75		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	100		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	71		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	72		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	74		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	82		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	82		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		26-138
114423-97-1	13C-OCDD	77		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	90		35-197

Report Date: 12-Oct-2020 09:16:36 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d
Lims ID: 320-65130-A-16-A
Client ID: 11215702-Tank#2-valve-3-1
Sample Type: Client
Inject. Date: 10-Oct-2020 10:09:00 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-16-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:16:36 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:16:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.672	2539563	0.78	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.770	2833195	0.80	1.5883	70.2	70.2	0.4185	0.4185	70.24	
2,3,7,8-TCDF	18.796	5757833	0.80	1.0857	187.2	187.2	0.8348	0.8348		
A Non-2,3,7,8-sub-TCDF	18.413	4035585	0.80	1.0857	131.2	131.2	0.8348	78.4		
S Total TCDF					318.4	318.4	0.8348	0.8348		
D 13C-2,3,7,8-TCDD	20.016	2117941	0.81	1.1194	74.5	74.5	0.2898	0.2898	74.50	
2,3,7,8-TCDD	20.059	1481851	0.79	1.0810	64.7	64.7	0.1999	0.1999		
$ 37Cl4-2,3,7,8-TCDD	20.050	1044831		1.1468	35.9	35.9	0.0725	0.0725	89.69	
A Non-2,3,7,8-sub-TCDD	19.200	118693	0.77	1.0810	5.236	5.184	0.1999	4.637		RQ
S Total TCDD					70.0	69.9	0.1999	0.1999		RQ
D 13C-1,2,3,7,8-PeCDF	25.891	2870024	1.63	1.4782	76.5	76.5	0.1872	0.1872	76.45	
1,2,3,7,8-PeCDF	25.908	192740	1.59	1.0547	6.368	6.368	0.0680	0.0680		M
D 13C-2,3,4,7,8-PeCDF	27.315	2634691	1.59	1.3912	74.6	74.6	0.1989	0.1989	74.57	
2,3,4,7,8-PeCDF	27.341	132495	1.56	1.1035	4.557	4.557	0.0762	0.0762		
A F1 PeCDFs	23.059						0.0165	0.0165		
A Non-2,3,7,8-sub-PeCDF	26.475	188807	1.55	1.0791	6.401	6.357	0.0717	2.854		RQM
S Total PeCDF					17.3	17.3	0.0721	0.0721		RQ
D 13C-1,2,3,7,8-PeCDD	28.074	1771464	1.63	0.9415	74.1	74.1	0.1106	0.1106	74.09	
1,2,3,7,8-PeCDD	28.116	15667	1.62	1.0680	0.8281	0.8281	0.0640	0.0640		M
A Non-2,3,7,8-sub-PeCDD	26.975						0.0640	0.0640		
S Total PeCDD					0.8281	0.8281	0.0640	0.0640		
D 13C-1,2,3,4,7,8-HxCDF	33.812	2156125	0.52	1.1378	71.0	71.0	0.2361	0.2361	70.97	
1,2,3,4,7,8-HxCDF	33.837	382655	1.26	1.2643	14.0	14.0	0.0566	0.0566		
D 13C-1,2,3,6,7,8-HxCDF	34.006	2502175	0.53	1.3173	71.1	71.1	0.2039	0.2039	71.13	
1,2,3,6,7,8-HxCDF	34.022	112841	1.29	1.2230	3.687	3.687	0.0523	0.0523		
D 13C-2,3,4,6,7,8-HxCDF	34.958	2469076	0.53	1.2457	74.2	74.2	0.2156	0.2156	74.23	
2,3,4,6,7,8-HxCDF	34.983	17273	1.19	1.2464	0.5613	0.5613	0.0438	0.0438		
D 13C-1,2,3,7,8,9-HxCDF	35.952	2292078	0.52	1.1840	72.5	72.5	0.2269	0.2269	72.50	
1,2,3,7,8,9-HxCDF	35.969	10903	1.05	1.2638	0.3764	0.3764	0.0435	0.0435		Ma
A Non-2,3,7,8-sub-HxCDF	33.855	41930	1.34	1.2494	1.425	1.425	0.0484	0.9455		
S Total HxCDF					20.1	20.1	0.0491	0.0491		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.742	2670360	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.202	2256452	1.26	0.8477	99.7	99.7	0.1496	0.1496	99.68	
1,2,3,4,7,8-HxCDD	35.219	6891	1.24	1.1561	0.2642	0.2642	0.0213	0.0213		
D 13C-1,2,3,6,7,8-HxCDD	35.329	2297586	1.28	0.9979	86.2	86.2	0.1271	0.1271	86.23	
1,2,3,6,7,8-HxCDD	35.345	3700	1.24	1.0284	0.1926	0.1566	0.0265	0.0265		RQ
1,2,3,7,8,9-HxCDD	35.758	3911	1.43	1.1789	0.1457	0.1457	0.0220	0.0220		M
A Non-2,3,7,8-sub-HxCDD	34.365	6042	1.24	1.1211	0.2522	0.2367	0.0231	0.1342		RQM
S Total HxCDD					0.8546	0.8031	0.0233	0.0233		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.903	2162240	0.46	0.9884	81.9	81.9	0.3119	0.3119	81.92	
1,2,3,4,6,7,8-HpCDF	37.911	180181	1.06	1.5064	5.532	5.532	0.0272	0.0272		
D 13C-1,2,3,4,7,8,9-HpCDF	39.217	1960699	0.45	0.9203	79.8	79.8	0.3350	0.3350	79.78	
1,2,3,4,7,8,9-HpCDF	39.234	58725	1.00	1.4548	2.059	2.059	0.0284	0.0284		
A Non-2,3,7,8-sub-HpCDF	38.593	48674	1.08	1.4806	1.595	1.595	0.0278	1.595		
S Total HpCDF					9.185	9.185	0.0278	0.0278		
D 13C-1,2,3,4,6,7,8-HpCDD	38.906	2085966	1.06	0.9556	81.7	81.7	0.1776	0.1776	81.74	
1,2,3,4,6,7,8-HpCDD	38.922	46512	0.99	1.0640	2.096	2.096	0.0273	0.0273		
A Non-2,3,7,8-sub-HpCDD	38.941	52156	1.06	1.0640	2.350	2.350	0.0273	2.350		
S Total HpCDD					4.446	4.446	0.0273	0.0273		
D 13C-OCDD	41.357	3067917	0.89	0.7420	154.8	154.8	0.1911	0.1911	77.41	
OCDF	41.441	89141	0.93	1.4296	4.065	4.065	0.0400	0.0400		
OCDD	41.365	705775	0.89	1.1293	40.7	40.7	0.0453	0.0453		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Lims ID:	320-65130-A-16-A				
Client ID:	11215702-Tank#2-valve-3-1				
Sample Type:	Client				
Inject. Date:	10-Oct-2020 10:09:00	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-16-A				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Oct-2020 09:16:36	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1605				
First Level Reviewer: dadunj		Date:	12-Oct-2020 09:16:36		

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.672	19.716	-3		1115645	179489	319	797	563		
333.9338	19.672	19.716	-3		1423918	225915	207	517	1091	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.770	18.830	-4	0.954	1255697	201174	658	1645	306		
317.9389	18.778	18.830	-3	0.955	1577498	239322	420	1050	570	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.796	18.865	-4	1.001	2562375	376896	715	1787	527		
305.8987	18.796	18.865	-4	1.001	3195458	473152	882	2205	536	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.458	18.413	-117	0.877	47563	9579	715	1787	13		
305.8987	16.450	18.413	-118	0.876	58030	11404	882	2205	13	0.82(0.65-0.89)	
303.9016	16.897	18.413	-91	0.900	98609	15435	715	1787	22		
305.8987	16.897	18.413	-91	0.900	121873	19065	882	2205	22	0.81(0.65-0.89)	
303.9016	17.301	18.413	-67	0.922	90408	14300	715	1787	20		
305.8987	17.301	18.413	-67	0.922	116671	18422	882	2205	21	0.77(0.65-0.89)	
303.9016	17.653	18.413	-46	0.941	114963	19216	715	1787	27		
305.8987	17.653	18.413	-46	0.941	139723	22275	882	2205	25	0.82(0.65-0.89)	
303.9016	18.126	18.413	-17	0.966	1071928	174567	715	1787	244		
305.8987	18.126	18.413	-17	0.966	1339227	222369	882	2205	252	0.80(0.65-0.89)	
303.9016	19.534	18.413	67	1.041	176471	24472	715	1787	34		
305.8987	19.526	18.413	67	1.040	216680	31791	882	2205	36	0.81(0.65-0.89)	
303.9016	19.938	18.413	91	1.062	39437	6783	715	1787	9		
305.8987	19.930	18.413	91	1.062	50836	7474	882	2205	8	0.78(0.65-0.89)	
303.9016	21.897	18.413	209	1.167	159508	21357	715	1787	30		
305.8987	21.889	18.413	208	1.166	193658	27115	882	2205	31	0.82(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	20.016	20.067	-3	1.017	950862	134123	319	797	420		
333.9338	20.016	20.067	-3	1.017	1167079	169885	207	517	821	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.059	20.101	-3	1.002	655640	93327	182	455	513		
321.8936	20.050	20.101	-3	1.002	826211	116831	81	202	1442	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.050	20.103	-3	1.019	1044831	147998	135	337	1096		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	19.895	19.200	42	0.994	6638	1313	182	455	7		
	Empc Correction				5456	1271	182	455	7		
321.8936	19.861	19.200	40	0.992	7086	1651	81	202	20	0.94(0.65-0.89)	
319.8965	20.686	19.200	89	1.033	45589	6916	182	455	38		
321.8936	20.669	19.200	88	1.033	60562	8551	81	202	106	0.75(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.891	25.934	-3	1.316	1780360	303370	258	645	1176		
353.8970	25.891	25.934	-3	1.316	1089664	194695	191	477	1019	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.908	25.951	-3	1.001	118321	18681	53	132	352		
341.8567	25.917	25.951	-2	1.001	74419	12636	90	225	140	1.59(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.315	27.359	-3	1.389	1616394	259861	258	645	1007		
353.8970	27.324	27.359	-2	1.389	1018297	164625	191	477	862	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.341	27.376	-2	1.001	80808	12387	53	132	234		
341.8567	27.341	27.376	-2	1.001	51687	8331	90	225	93	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.059						1	2			
341.8567	23.059						32	80			
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	24.535	26.475	-116	0.948	51512	9435	53	132	178		M
341.8567	24.535	26.475	-116	0.948	33265	6043	90	225	67	1.55(1.32-1.78)	M
339.8597	25.377	26.475	-66	0.980	5859	849	53	132	16		
	Empc Correction				4555	731	53	132	14		
341.8567	25.394	26.475	-65	0.981	2939	472	90	225	5	1.99(1.32-1.78)	
339.8597	25.799	26.475	-41	0.996	8301	2174	53	132	41		
341.8567	25.790	26.475	-41	0.996	5137	1200	90	225	13	1.62(1.32-1.78)	
339.8597	26.464	26.475	-1	1.022	32704	5759	53	132	109		
341.8567	26.464	26.475	-1	1.022	19972	3284	90	225	36	1.64(1.32-1.78)	
339.8597	27.661	26.475	71	1.068	18522	2767	53	132	52		
341.8567	27.678	26.475	72	1.069	11900	1761	90	225	20	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.074	28.109	-2	1.427	1097581	164739	96	240	1716		
369.8919	28.074	28.109	-2	1.427	673883	101559	73	182	1391	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	28.116	28.134	-1	1.002	9678	1578	57	142	28		M
357.8516	28.091	28.134	-3	1.001	5989	1037	16	40	65	1.62(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						57	142			
357.8516	26.975						16	40			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.812	33.838	-2	0.946	741252	135415	183	457	740		
385.8610	33.812	33.838	-2	0.946	1414873	265315	499	1247	532	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.837	33.855	-1	1.001	213516	38584	76	190	508		
375.8178	33.829	33.855	-2	1.000	169139	29959	39	97	768	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.006	34.024	-1	0.951	869245	152537	183	457	834		
385.8610	33.997	34.024	-2	0.951	1632930	296359	499	1247	594	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.022	34.049	-2	1.000	63571	10994	76	190	145		
375.8178	34.022	34.049	-2	1.000	49270	8878	39	97	228	1.29(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.958	34.976	-1	0.978	852610	184047	183	457	1006		
385.8610	34.958	34.976	-1	0.978	1616466	341268	499	1247	684	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.983	35.001	-1	1.001	9396	2142	76	190	28		
375.8178	34.983	35.001	-1	1.001	7877	1755	39	97	45	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.952	35.962	-1	1.006	786797	184629	183	457	1009		
385.8610	35.952	35.962	-1	1.006	1505281	337389	499	1247	676	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	35.969	35.979	-1	1.000	5579	1561	76	190	21		M
375.8178	35.960	35.979	-1	1.000	5324	1238	39	97	32	1.05(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.966	33.855	-113	0.945	16196	2230	76	190	29		
375.8178	31.966	33.855	-113	0.945	11622	1647	39	97	42	1.39(1.05-1.43)	
373.8208	33.070	33.855	-47	0.978	7788	1356	76	190	18		
375.8178	33.070	33.855	-47	0.978	6324	1040	39	97	27	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.742	35.760	-1		1483720	349250	169	422	2067		
403.8529	35.733	35.760	-2		1186640	285488	153	382	1866	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.202	35.220	-1	0.985	1257161	300836	169	422	1780		
403.8529	35.202	35.220	-1	0.985	999291	246981	153	382	1614	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.219	35.237	-1	1.000	3814	1005	21	52	48		
391.8127	35.219	35.237	-1	1.000	3077	836	33	82	25	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.329	35.355	-2	0.988	1290091	277223	169	422	1640		
403.8529	35.337	35.355	-1	0.989	1007495	217276	153	382	1420	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQ
389.8158	35.345	35.372	-2	1.000	2898	760	21	52	36		
	Empc Correction				2048	538	21	52	26		
391.8127	35.345	35.372	-2	1.000	1652	434	33	82	13	1.75(1.05-1.43)	
1,2,3,7,8,9-HxCDD											M
389.8158	35.758	35.768	-1	1.016	2303	647	21	52	31		M
391.8127	35.750	35.768	-1	1.016	1608	509	33	82	15	1.43(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	33.011	34.365	-81	0.934	1448	312	21	52	15		M
391.8127	32.986	34.365	-83	0.934	1563	336	33	82	10	0.93(1.05-1.43)	
	Empc Correction				1167	251	33	82	8		
389.8158	34.317	34.365	-3	0.971	1836	354	21	52	17		
391.8127	34.368	34.365	0	0.973	1591	322	33	82	10	1.15(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.903	37.927	-1	1.060	678294	204382	276	690	741		
419.8220	37.903	37.927	-1	1.060	1483946	455109	507	1267	898	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.911	37.935	-1	1.000	92671	27979	60	150	466		
409.7788	37.911	37.935	-1	1.000	87510	27287	48	120	568	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.217	39.233	-1	1.097	612967	202906	276	690	735		
419.8220	39.217	39.233	-1	1.097	1347732	449990	507	1267	888	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.234	39.250	-1	1.000	29301	9720	60	150	162		
409.7788	39.226	39.250	-1	1.000	29424	10433	48	120	217	1.00(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.299	38.593	-18	1.010	25260	7460	60	150	124		
409.7788	38.299	38.593	-18	1.010	23414	7580	48	120	158	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.906	38.921	-1	1.089	1071108	356039	233	582	1528		
437.8140	38.906	38.921	-1	1.089	1014858	332009	198	495	1677	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.922	38.938	-1	1.000	23117	7954	50	125	159		
425.7737	38.914	38.938	-1	1.000	23395	7284	30	75	243	0.99(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.248	38.941	-42	0.983	26820	8131	50	125	163		
425.7737	38.248	38.941	-42	0.983	25336	7819	30	75	261	1.06(0.88-1.20)	
13C-OCDD											
469.7780	41.357	41.373	-1	1.157	1443615	497289	173	432	2875		
471.7750	41.357	41.373	-1	1.157	1624302	558859	187	467	2989	0.89(0.76-1.02)	
OCDF											
441.7428	41.441	41.457	-1	1.002	42923	13825	36	90	384		
443.7399	41.441	41.457	-1	1.002	46218	14317	85	212	168	0.93(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	41.365	41.381	-1	1.000	332352	113889	49	122	2324		
459.7348	41.365	41.381	-1	1.000	373423	129038	59	147	2187	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 12-Oct-2020 09:16:36 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Lims ID:	320-65130-A-16-A		
Client ID:	11215702-Tank#2-valve-3-1		
Inject. Date:	10-Oct-2020 10:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	21

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2833195	440496

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2833195	440496

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.458	47563	9579	58030	11404	3.43	0.82	
16.897	98609	15435	121873	19065	7.17	0.81	
17.301	90408	14300	116671	18422	6.73	0.77	
17.653	114963	19216	139723	22275	8.28	0.82	
18.126	1071928	174567	1339227	222369	78.4	0.80	
19.534	176471	24472	216680	31791	12.8	0.81	
19.938	39437	6783	50836	7474	2.93	0.78	
21.897	159508	21357	193658	27115	11.5	0.82	
Signal Totals:							
	1798887	285709	2236698	359915			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4035585	645624				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 131.202 = (4035585 * 100.000) / (2833195 * 1.086)

Report Date: 12-Oct-2020 09:16:36 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d
Lims ID: 320-65130-A-16-A
Client ID: 11215702-Tank#2-valve-3-1
Inject. Date: 10-Oct-2020 10:09:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 21

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	2117941	304008

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	2117941	304008

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.895	6638	1313	7086	1651	0.5994	0.94	RQ
19.895	5456	1271	7086	1651	0.5478		Empc Correction
20.686	45589	6916	60562	8551	4.64	0.75	
Signal Totals:							
	51045	8187	67648	10202			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	119875	18431				0.77	RQ
	118693	18389					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.236 = (119875 * 100.000) / (2117941 * 1.081)
Empc Amount: 5.184 = (118693 * 100.000) / (2117941 * 1.081)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Lims ID:	320-65130-A-16-A		
Client ID:	11215702-Tank#2-valve-3-1		
Inject. Date:	10-Oct-2020 10:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	21

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2870024	498065
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2634691	424486

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2752357	461275

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.535	51512	9435	33265	6043	2.85	1.55	M
25.377	5859	849	2939	472	0.2962	1.99	RQ
25.377	4555	731	2939	472	0.2523		Empc Correction
25.799	8301	2174	5137	1200	0.4524	1.62	
26.464	32704	5759	19972	3284	1.77	1.64	
27.661	18522	2767	11900	1761	1.02	1.56	
Signal Totals:							
	115594	20866	73213	12760			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	190111	33744				1.60	RQM
	188807	33626					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.401 = (190111 * 100.000) / (2752357 * 1.079)
Empc Amount: 6.357 = (188807 * 100.000) / (2752357 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Lims ID:	320-65130-A-16-A		
Client ID:	11215702-Tank#2-valve-3-1		
Inject. Date:	10-Oct-2020 10:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	21

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	2156125	400730
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2502175	448896
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2469076	525315
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	2292078	522018

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2354863	474239

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.966	16196	2230	11622	1647	0.9455	1.39	
33.070	7788	1356	6324	1040	0.4797	1.23	
Signal Totals:							
	23984	3586	17946	2687			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41930	6273				1.34	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.425 = (41930 * 100.000) / (2354863 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d
Lims ID: 320-65130-A-16-A
Client ID: 11215702-Tank#2-valve-3-1
Inject. Date: 10-Oct-2020 10:09:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 21

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	2256452	547817
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2297586	494499
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2277019	521158

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.011	1448	312	1563	336	0.1179	0.93	RQM
33.011	1448	312	1167	251	0.1024		Empc Correction
34.317	1836	354	1591	322	0.1342	1.15	M
Signal Totals:							
	3284	666	2758	573			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6438	1324				1.04	RQM
	6042	1239					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2522 = (6438 * 100.000) / (2277019 * 1.121)
Empc Amount: 0.2367 = (6042 * 100.000) / (2277019 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Lims ID:	320-65130-A-16-A		
Client ID:	11215702-Tank#2-valve-3-1		
Inject. Date:	10-Oct-2020 10:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	21

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2162240	659491
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1960699	652896

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	2061469	656193

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.299	25260	7460	23414	7580	1.59	1.08	
Signal Totals:							
	25260	7460	23414	7580			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	48674	15040				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.595 = (48674 * 100.000) / (2061469 * 1.481)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Lims ID:	320-65130-A-16-A		
Client ID:	11215702-Tank#2-valve-3-1		
Inject. Date:	10-Oct-2020 10:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	21

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2085966	688048

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	2085966	688048

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.248	26820	8131	25336	7819	2.35	1.06	
Signal Totals:							
	26820	8131	25336	7819			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	52156	15950				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 2.350 = (52156 * 100.000) / (2085966 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	25.92
Area:	75565
Amount:	6.405491
Amount Units:	pg/ul

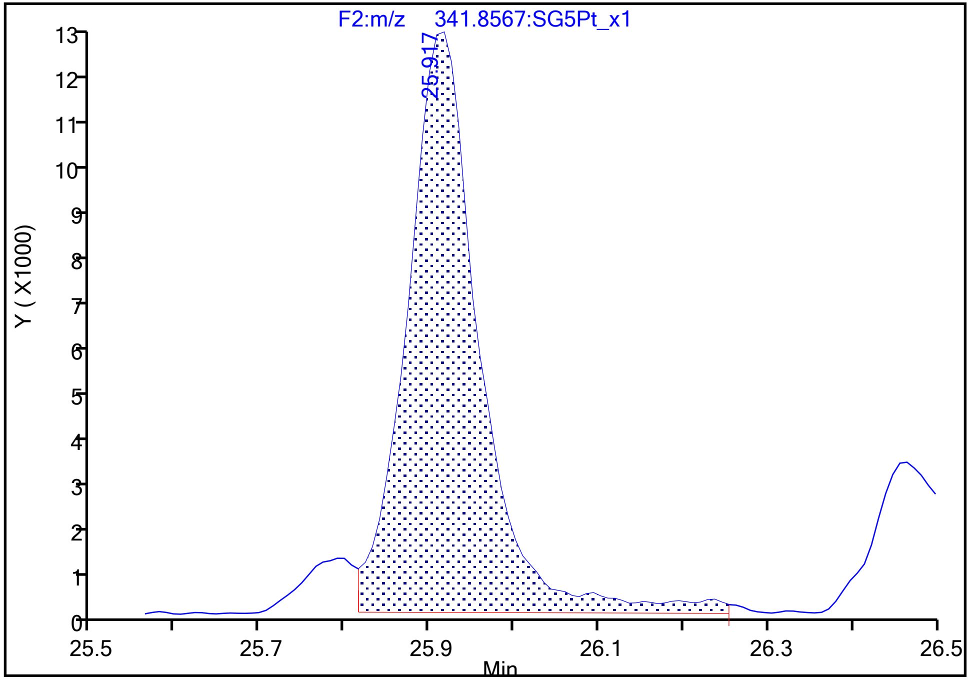

Manual Integration Results

RT:	25.92
Area:	74419
Amount:	6.367631
Amount Units:	pg/ul

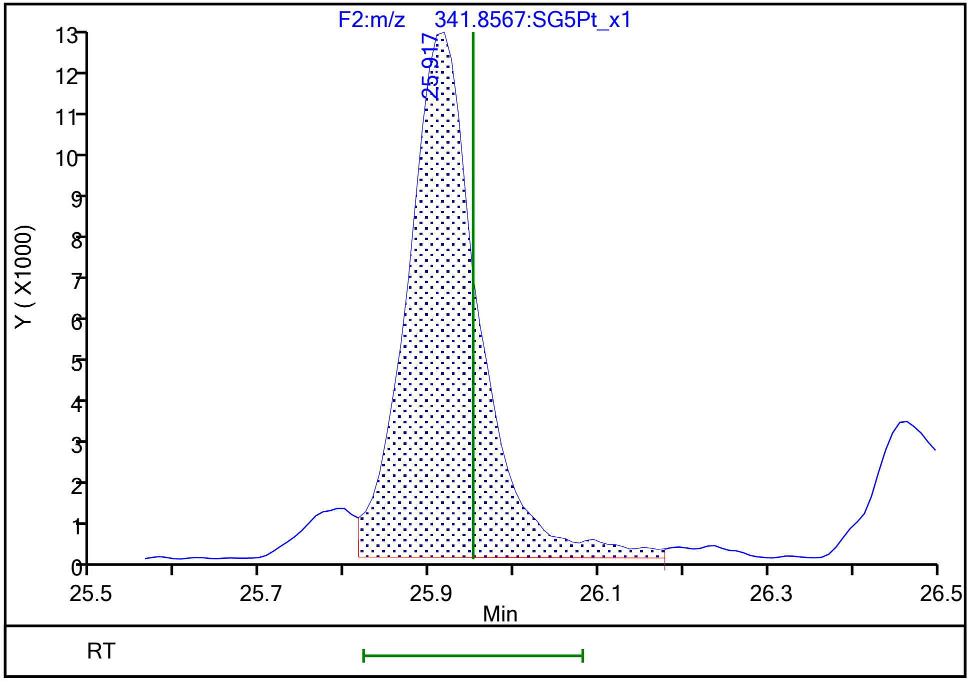

Reviewer: dadunj, 12-Oct-2020 09:14:01

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Processing Integration Results

RT = 24.535 Area = 54156

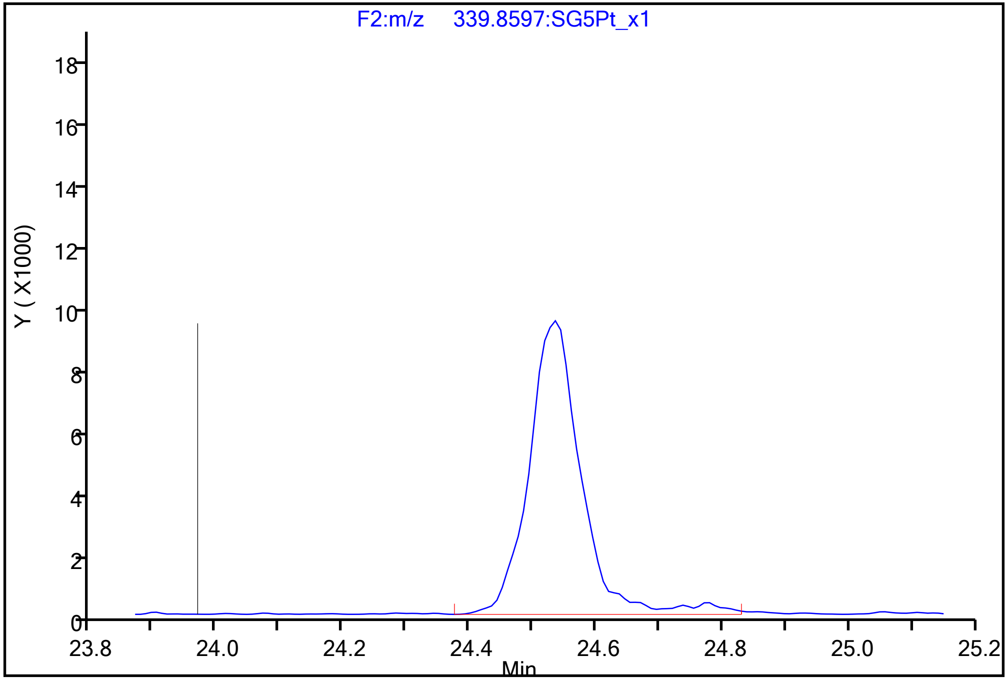

Manual Integration Results

RT = 24.535 Area = 51512 M

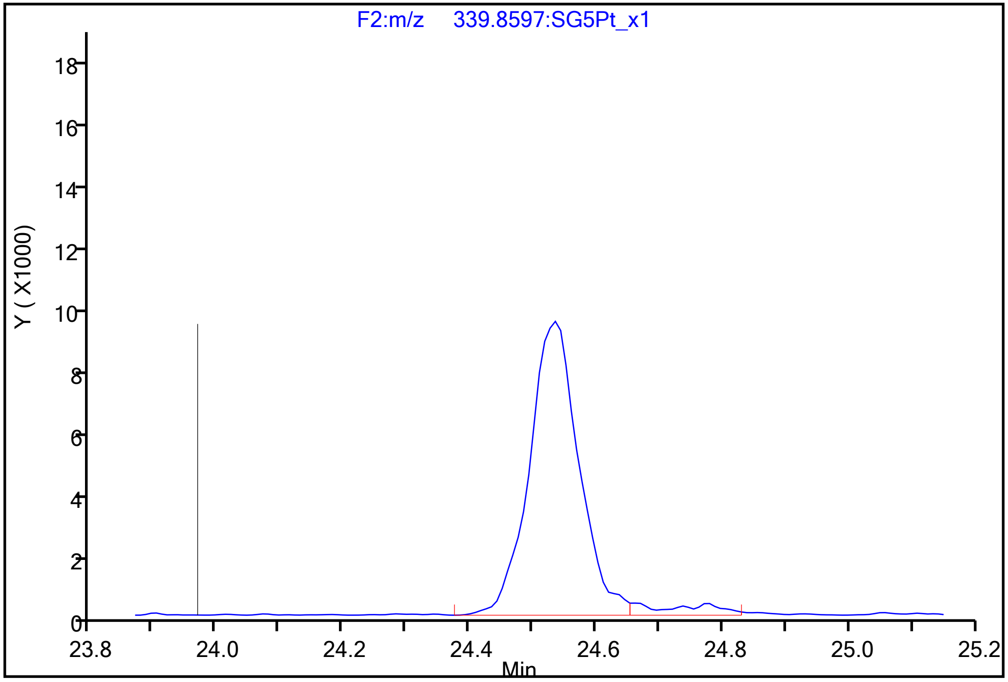

Reviewer: dadunj, 12-Oct-2020 09:14:11

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:16:36

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.63- 29.32)

Signal: 2

RT = 24.535 Area = 34784

Processing Integration Results

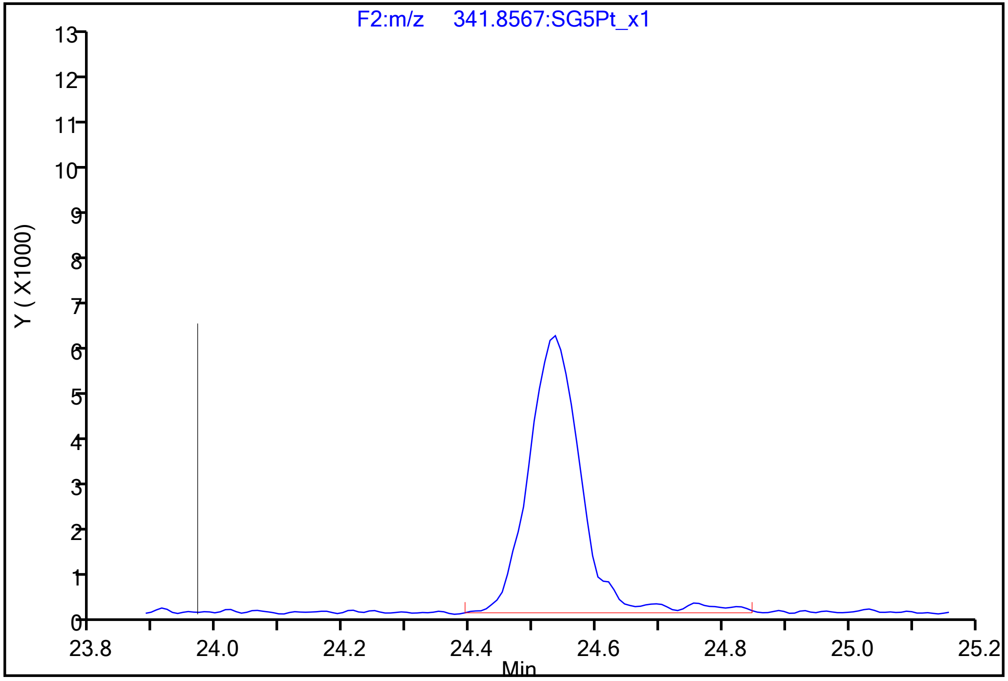

RT = 24.535 Area = 33265 M

Manual Integration Results

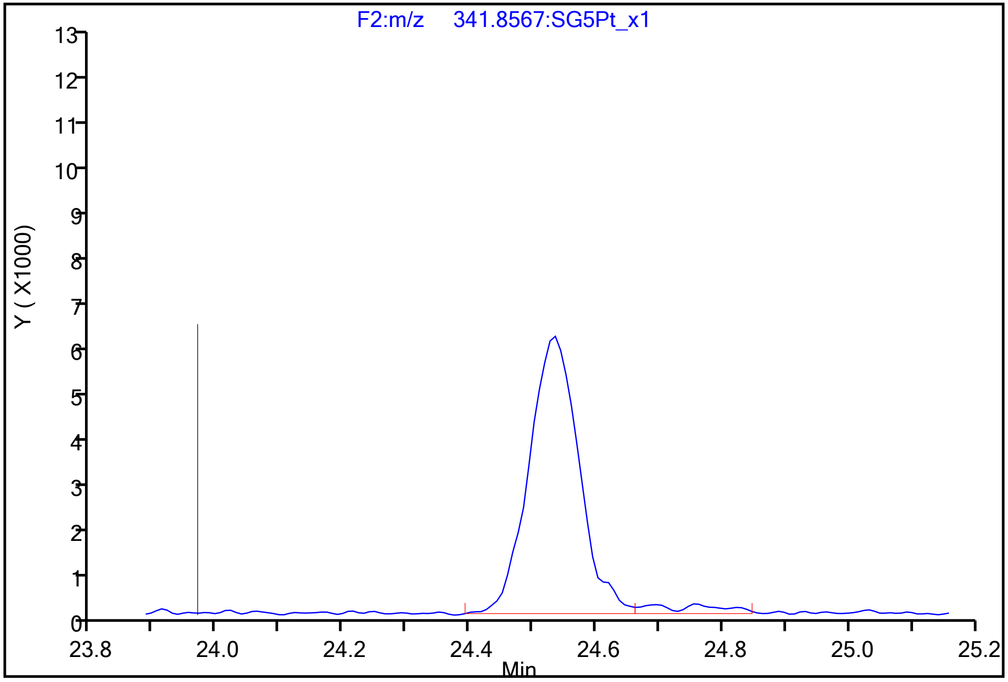

Reviewer: dadunj, 12-Oct-2020 09:14:09

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:16:36

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	28.12
Area:	9250
Amount:	0.815568
Amount Units:	pg/ul

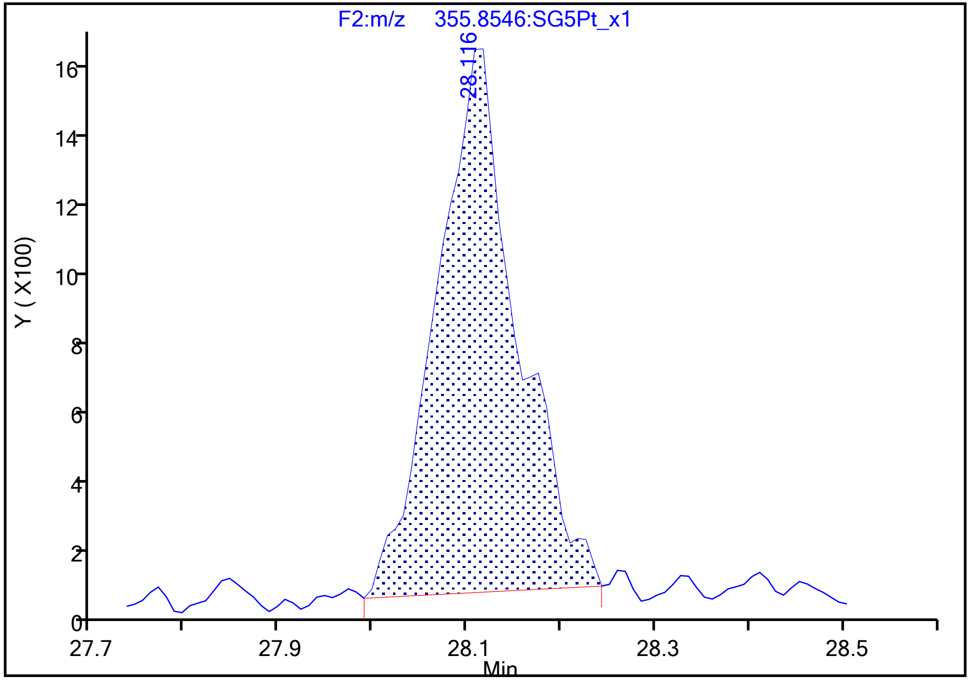

Manual Integration Results

RT:	28.12
Area:	9678
Amount:	0.828095
Amount Units:	pg/ul

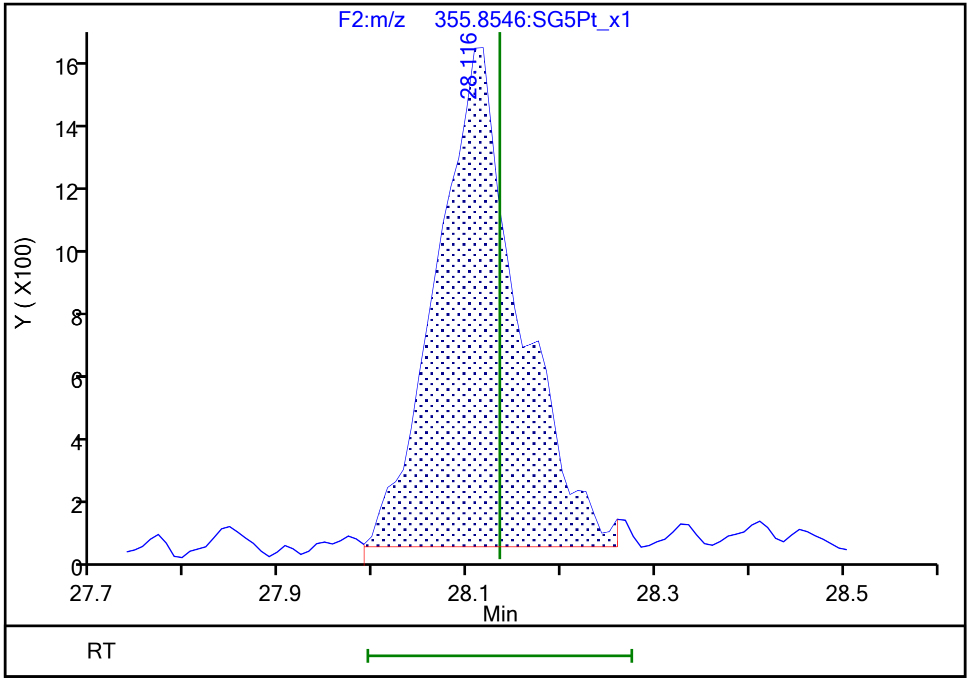

Reviewer: dadunj, 12-Oct-2020 09:14:25

Audit Action: Manually Integrated

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT:	28.09
Area:	6180
Amount:	0.815568
Amount Units:	pg/ul

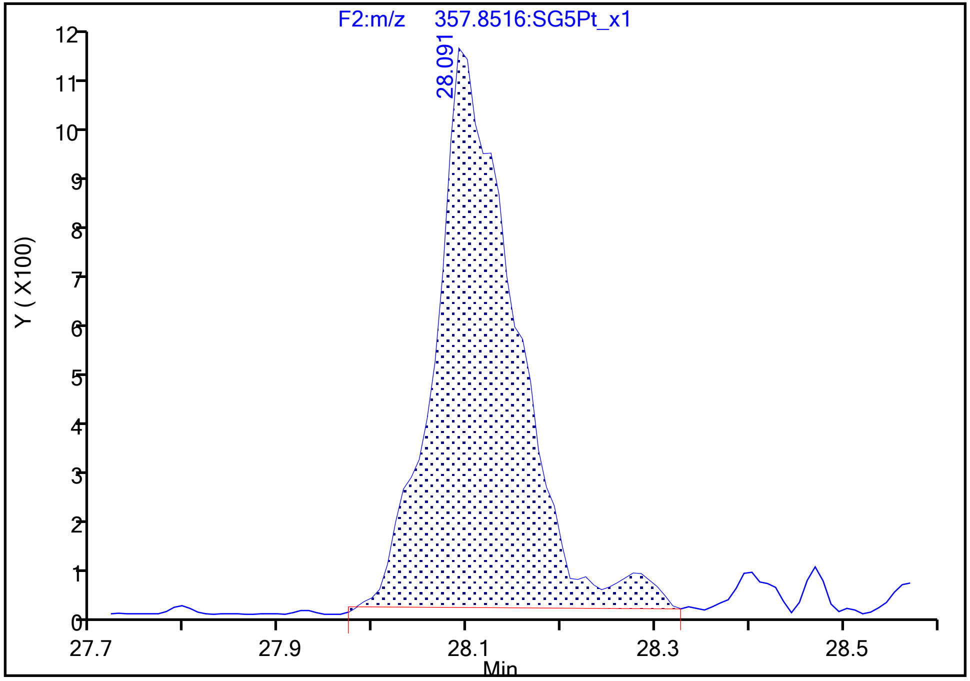

Manual Integration Results

RT:	28.09
Area:	5989
Amount:	0.828095
Amount Units:	pg/ul

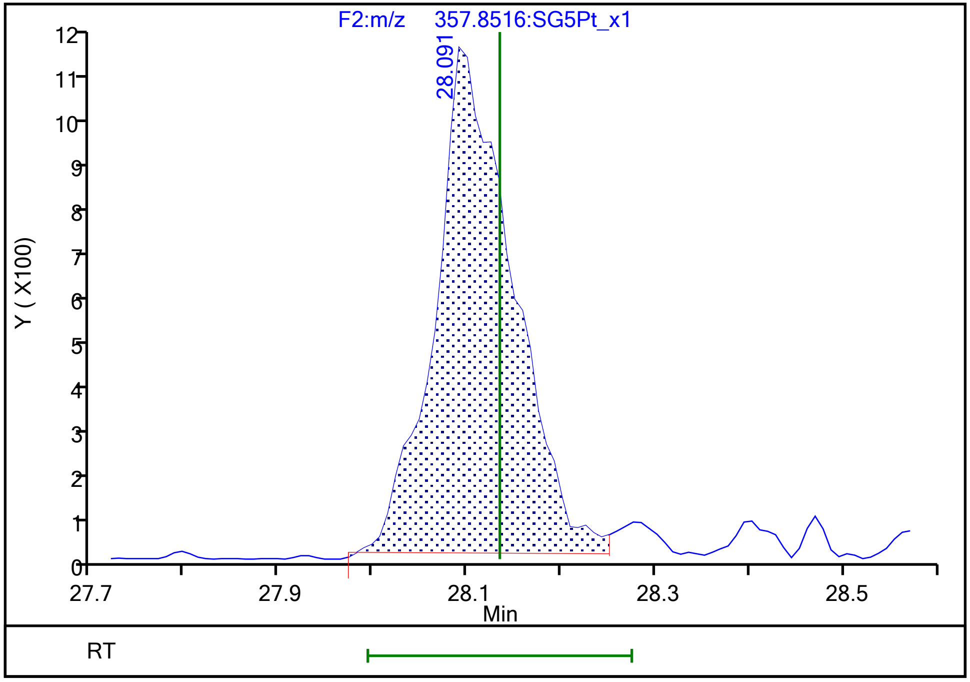

Reviewer: dadunj, 12-Oct-2020 09:14:29

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT: 36.08
Area: 10558
Amount: 1.010141
Amount Units: pg/ul

Processing Integration Results

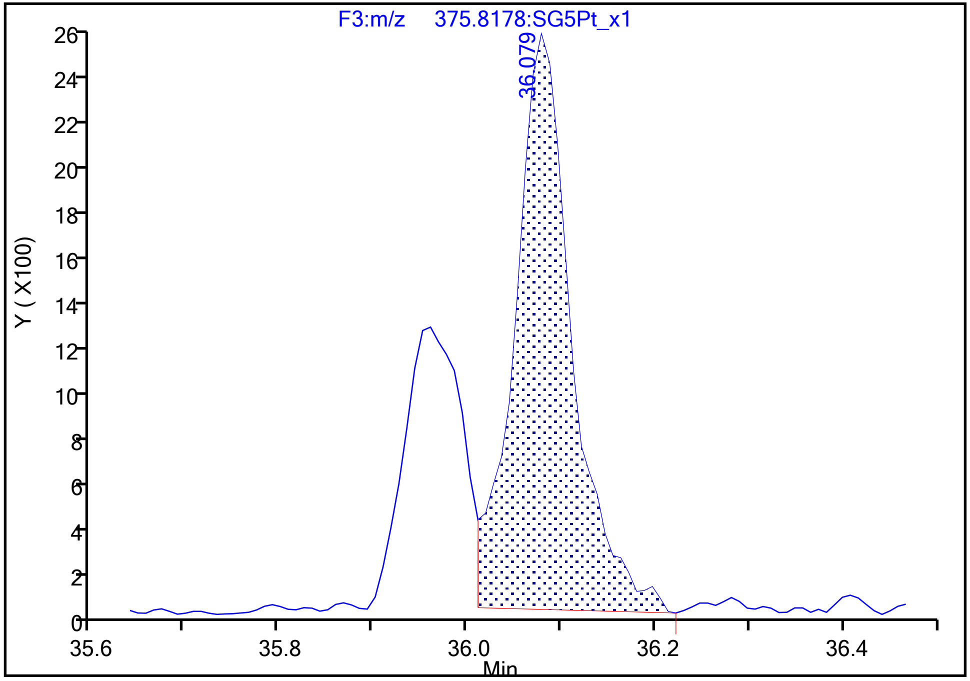

RT: 35.96
Area: 5324
Amount: 0.376404
Amount Units: pg/ul

Manual Integration Results

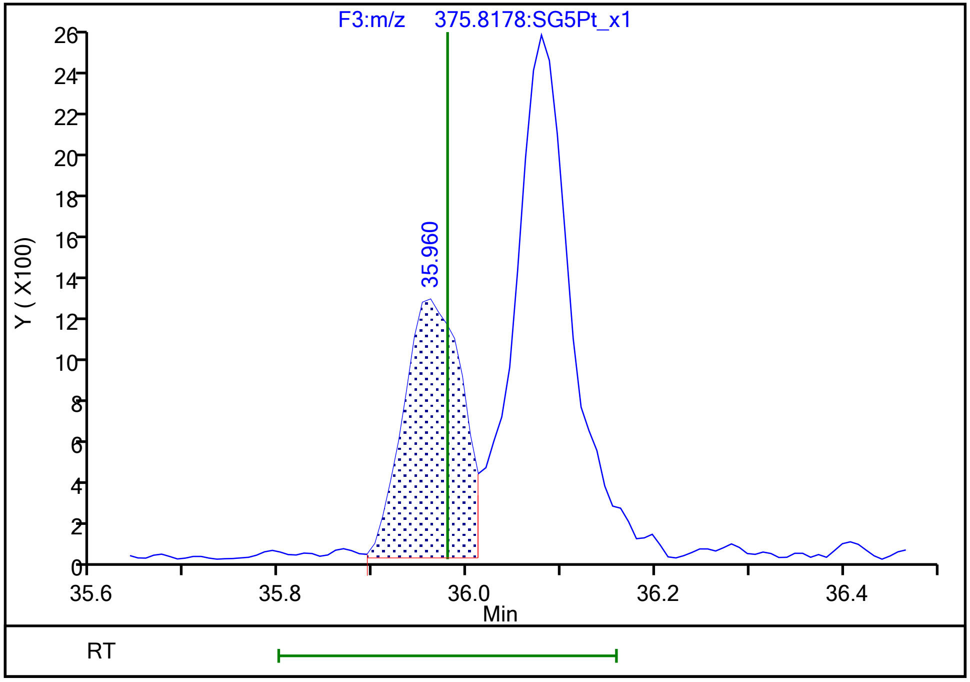

Reviewer: dadunj, 12-Oct-2020 09:14:43

Audit Action: Marked Compound Undetected
Audit Reason: Invalid Compound ID

Report Date: 12-Oct-2020 09:16:36 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 3

Processing Integration Results

RT:	36.08
Area:	29260
Amount:	1.010141
Amount Units:	pg/ul

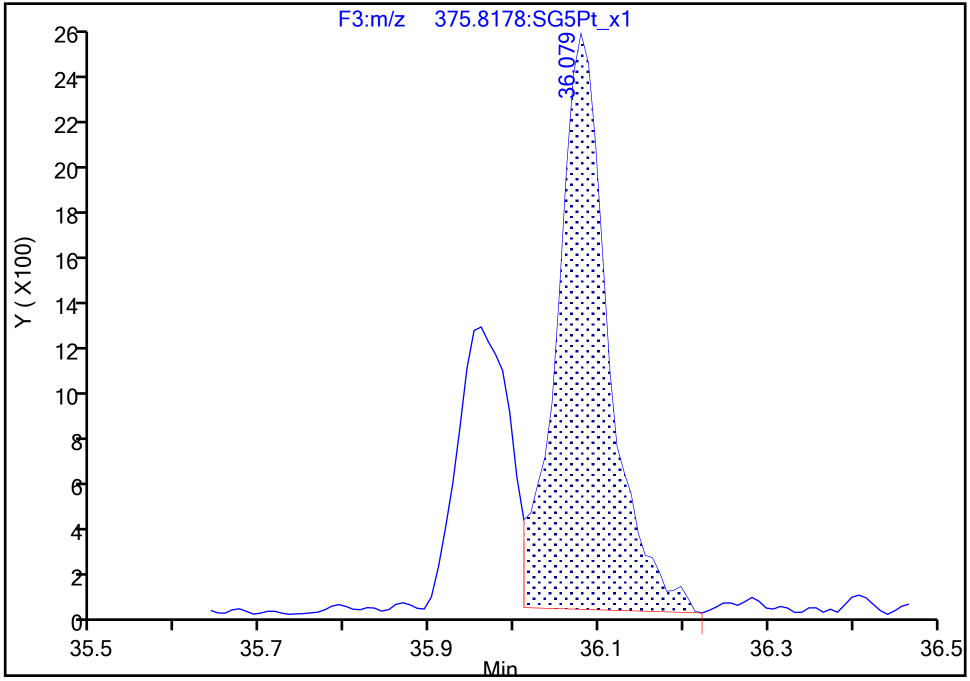

Manual Integration Results

RT:	35.97
Area:	10903
Amount:	0.376404
Amount Units:	pg/ul

Reviewer: dadunj, 12-Oct-2020 09:14:43

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT:	36.08
Area:	18702
Amount:	1.010141
Amount Units:	pg/ul

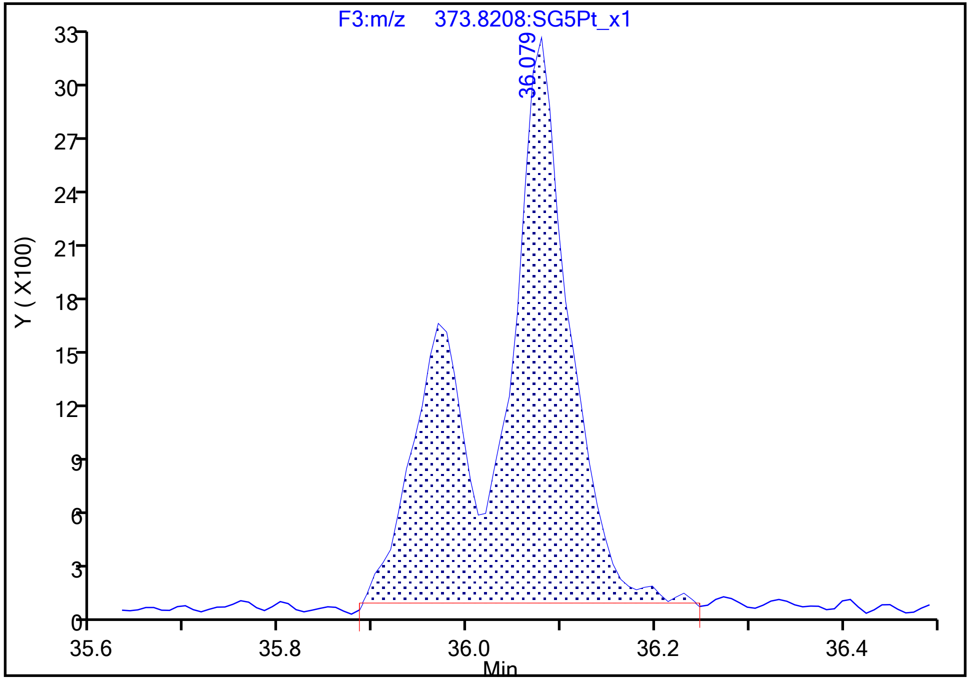

Manual Integration Results

RT:	35.97
Area:	5579
Amount:	0.376404
Amount Units:	pg/ul

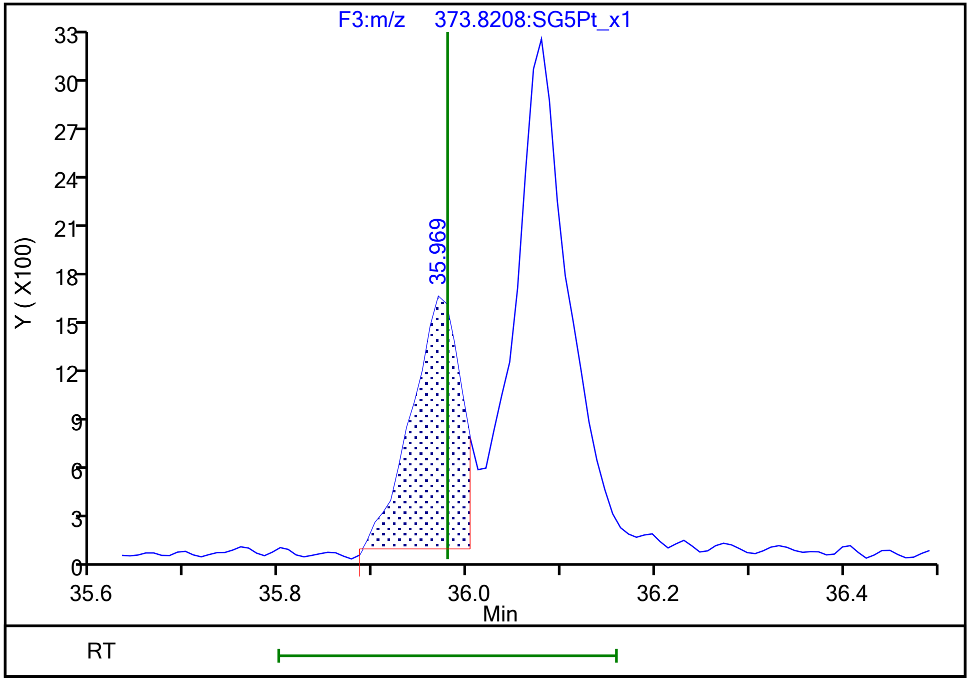

Reviewer: dadunj, 12-Oct-2020 09:14:44

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:16:36

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	35.76
Area:	2395
Amount:	0.164134
Amount Units:	pg/ul

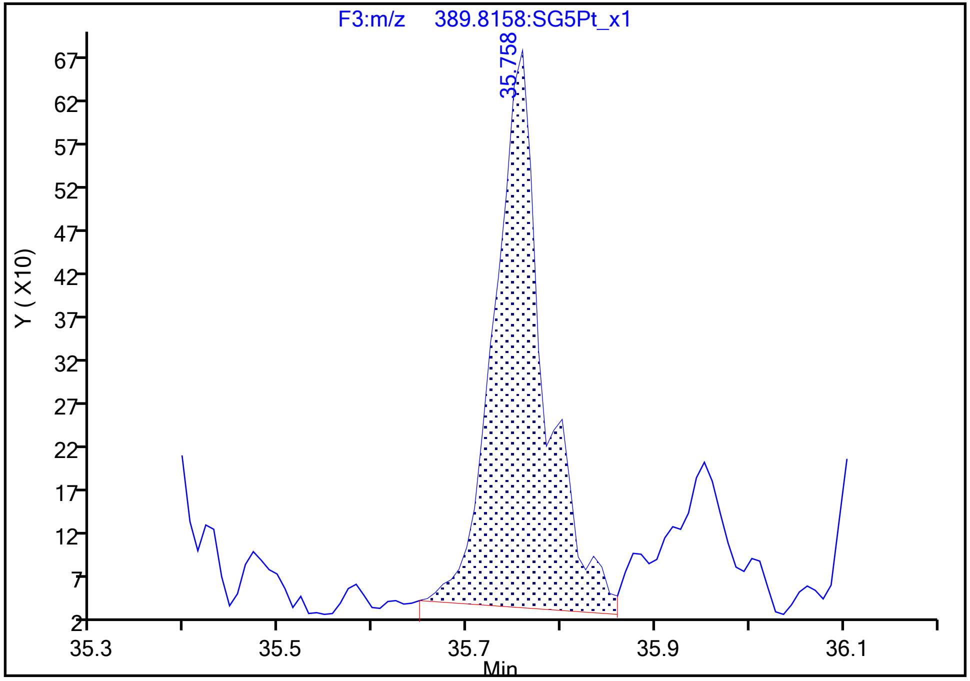

Manual Integration Results

RT:	35.76
Area:	2303
Amount:	0.145694
Amount Units:	pg/ul

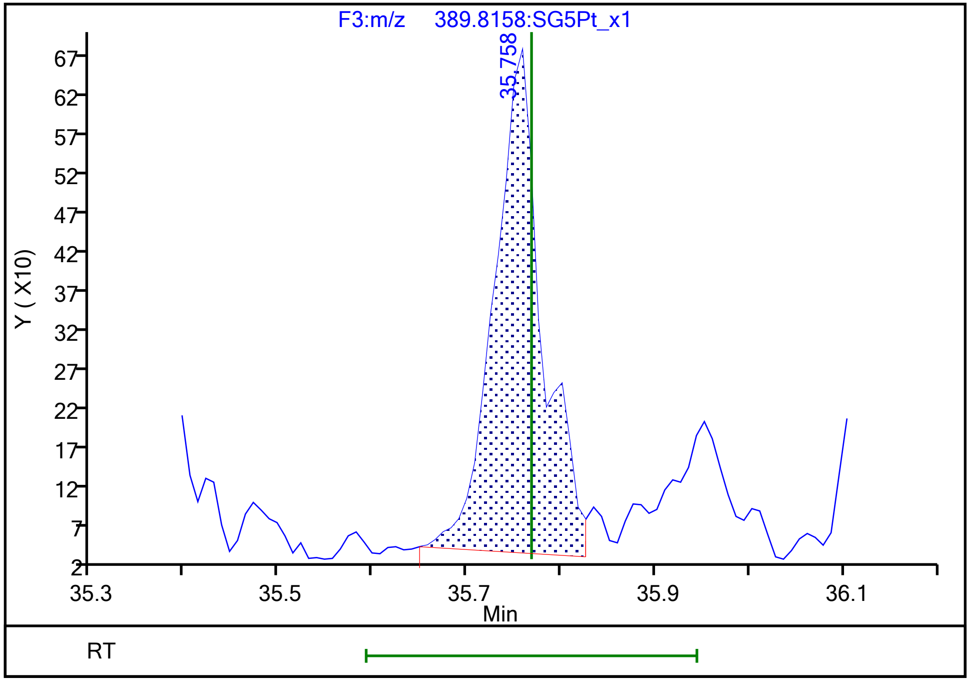

Reviewer: dadunj, 12-Oct-2020 09:15:02

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT: 35.75
Area: 2011
Amount: 0.164134
Amount Units: pg/ul

Processing Integration Results

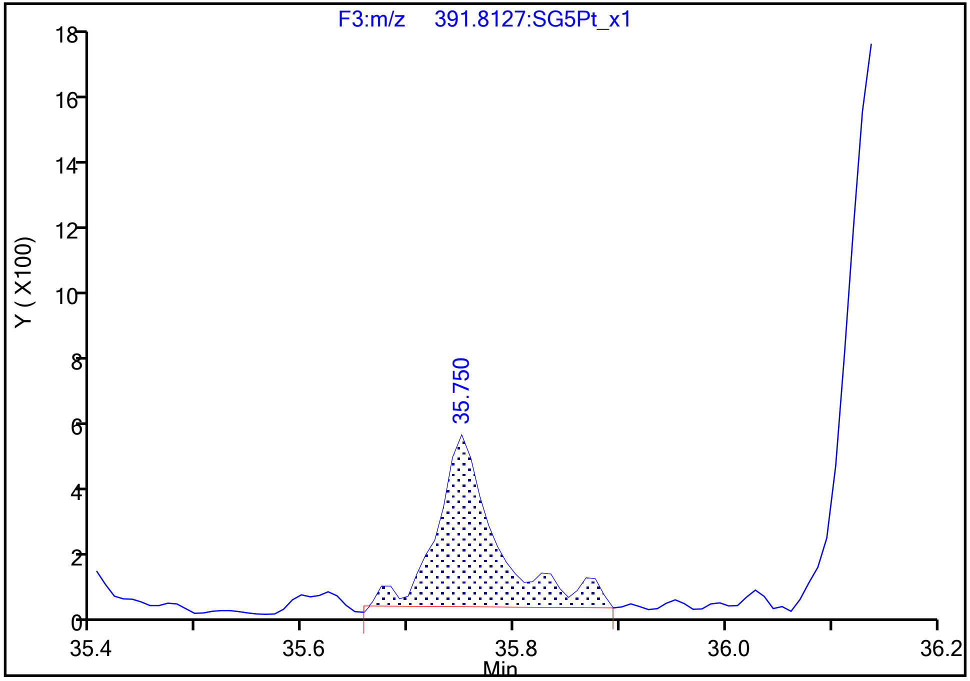

RT: 35.75
Area: 1608
Amount: 0.145694
Amount Units: pg/ul

Manual Integration Results

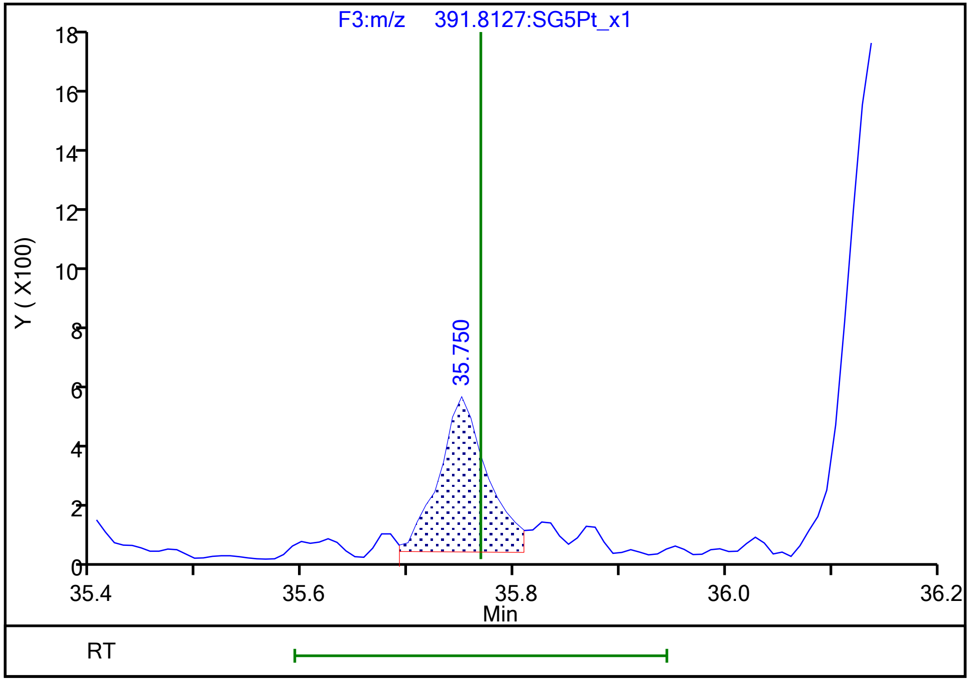

Reviewer: dadunj, 12-Oct-2020 09:15:04
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d				
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16		
Client ID:	11215702-Tank#2-valve-3-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.98- 35.75)

Signal: 1

Processing Integration Results

RT = 33.011 Area = 1597

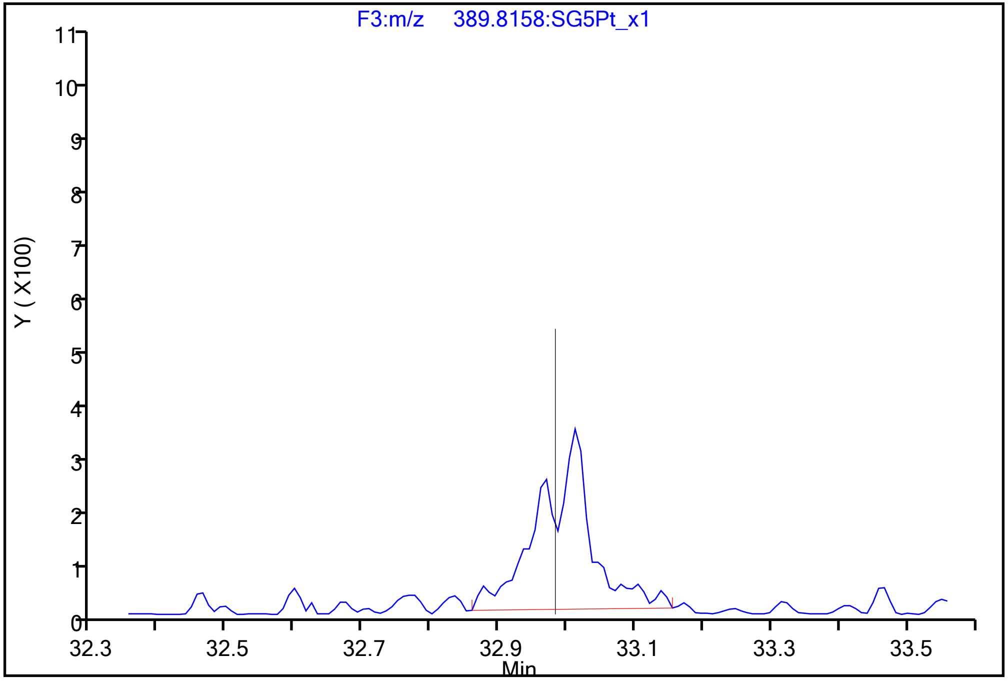

Manual Integration Results

RT = 33.011 Area = 1448 M

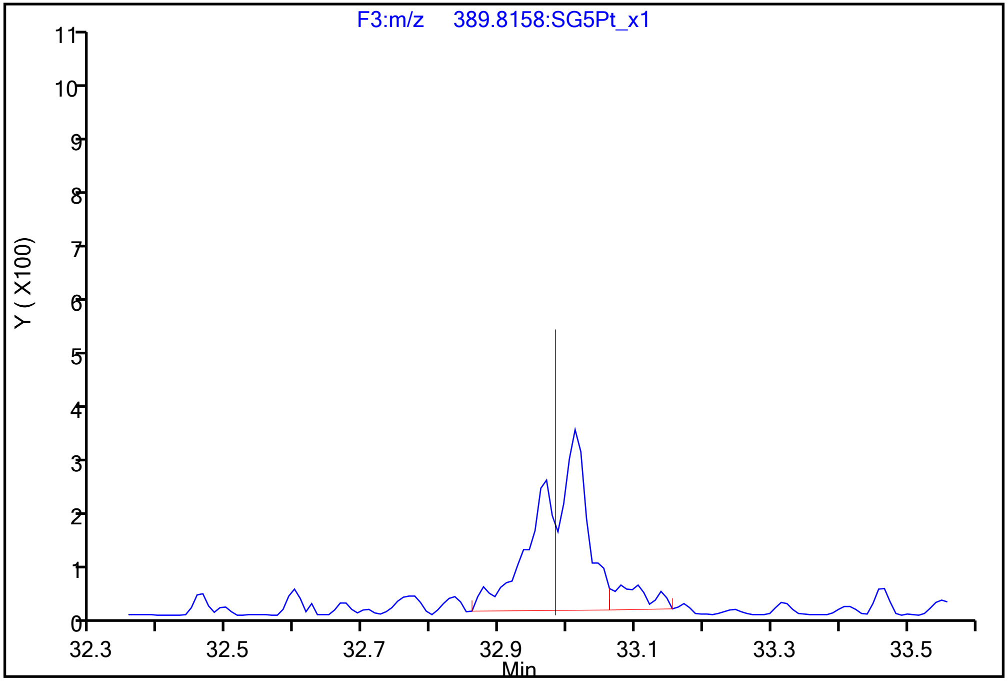

Reviewer: dadunj, 12-Oct-2020 09:15:10

Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-16-A	Lab Sample ID:	320-65130-16
Client ID:	11215702-Tank#2-valve-3-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.98- 35.75)

Signal: 2

Processing Integration Results

RT = 34.368 Area = 2187

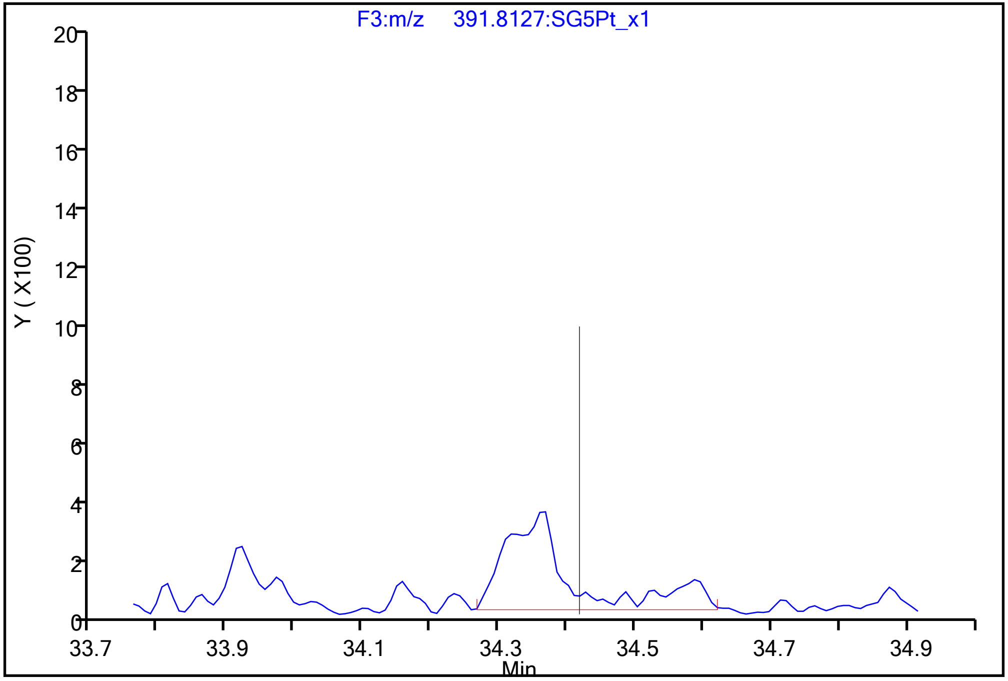

Manual Integration Results

RT = 34.368 Area = 1591 M

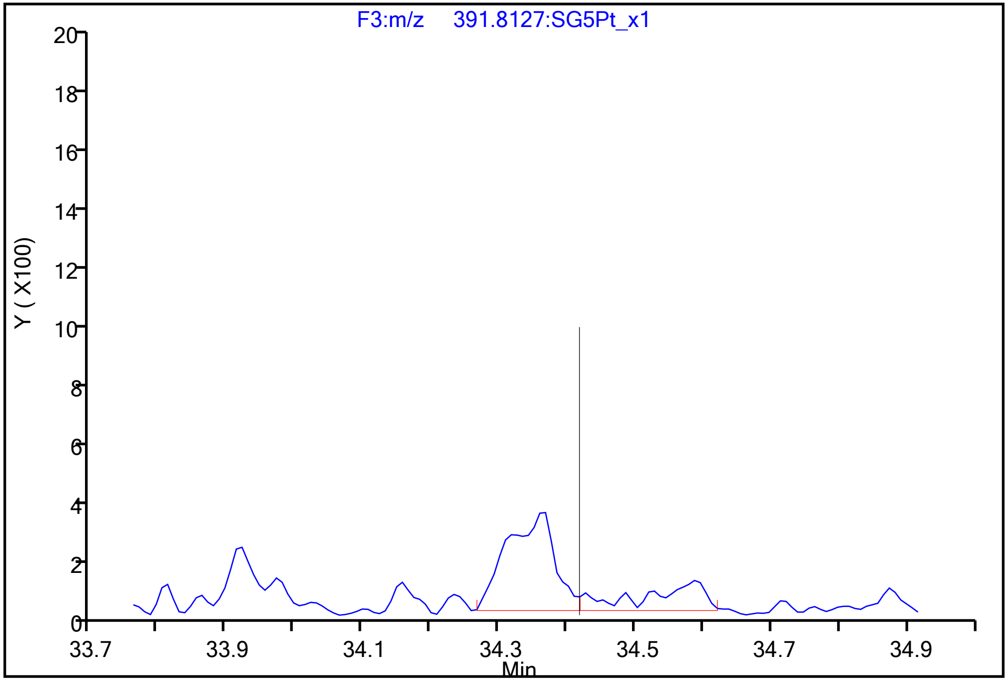

Reviewer: dadunj, 12-Oct-2020 09:15:07

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d

Injection Date: 10-Oct-2020 10:09:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-1

Worklist#: 420640

Sample Line#: 21

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

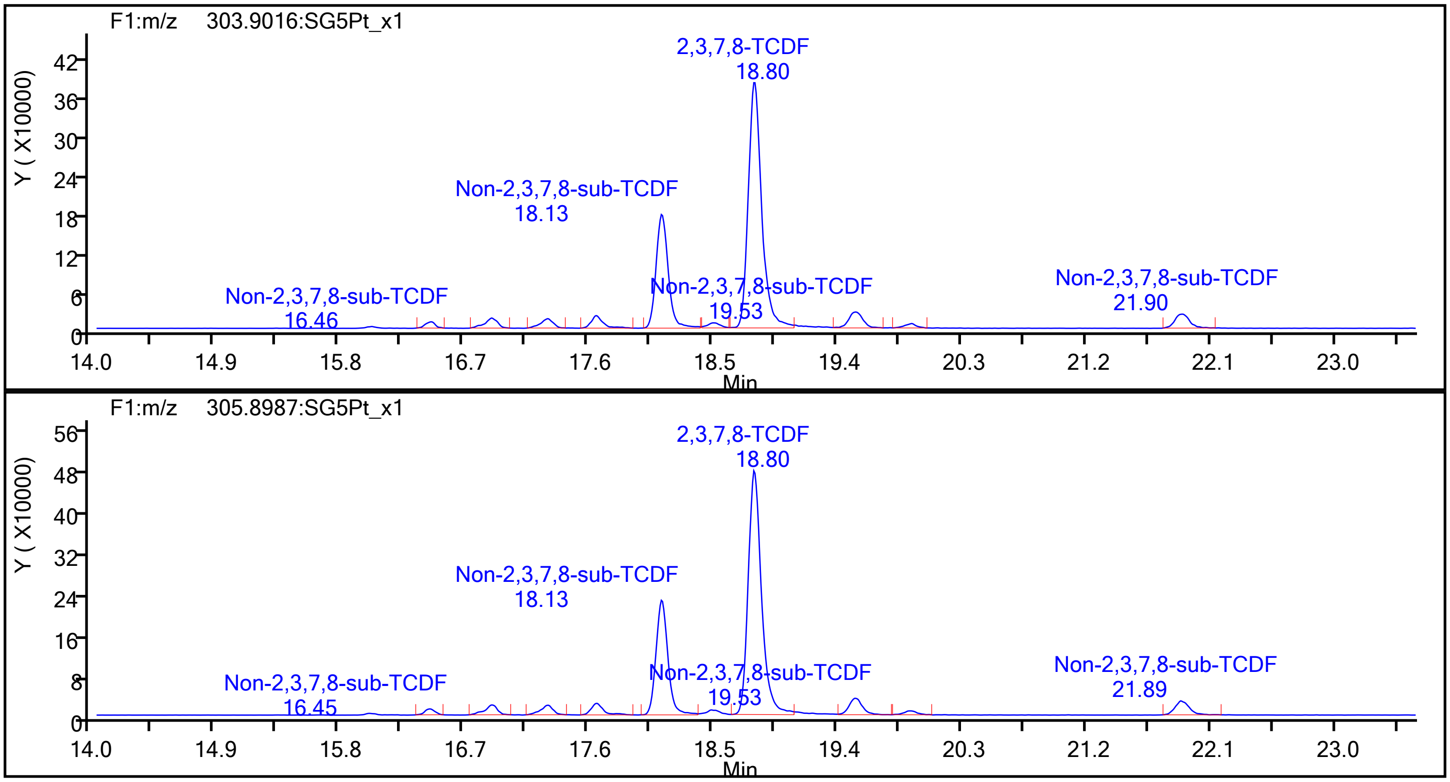

TCDF Standards

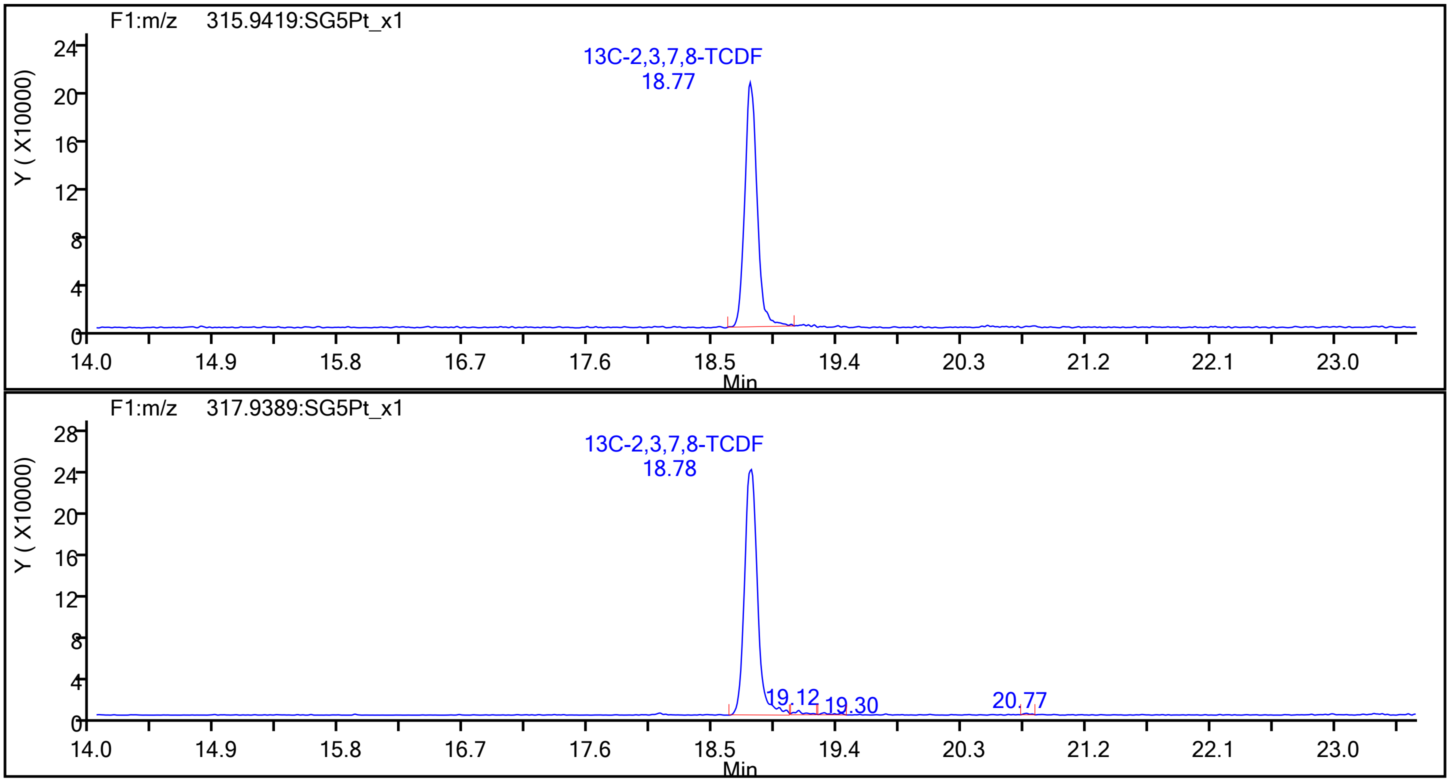

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d
Injection Date: 10-Oct-2020 10:09:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-3-1
Worklist#: 420640
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

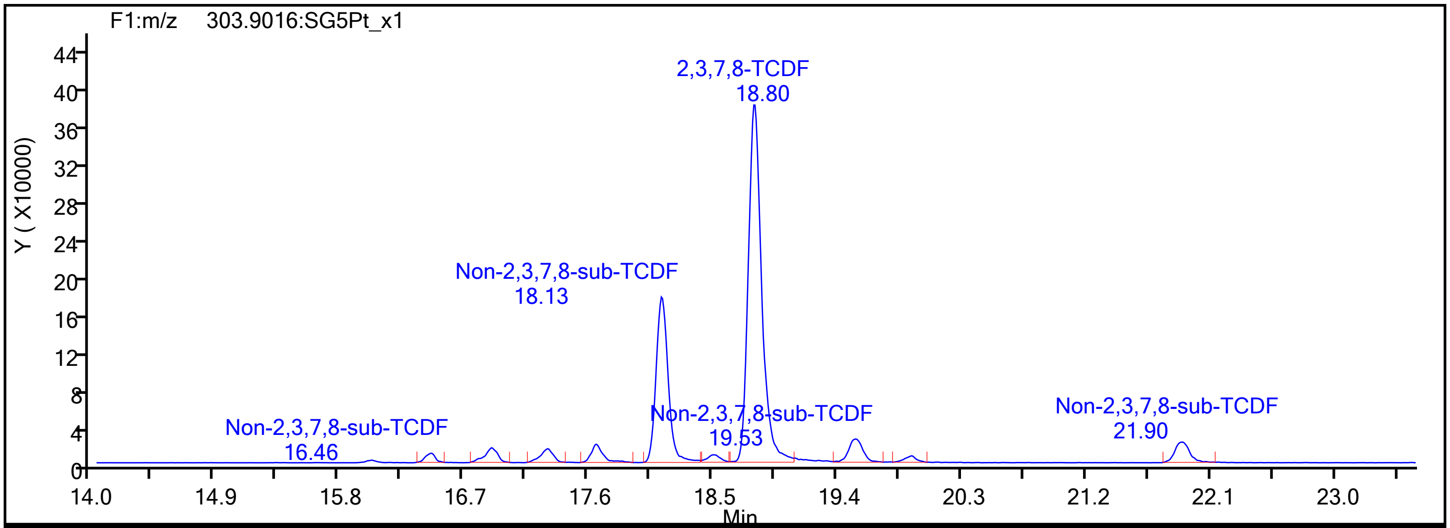

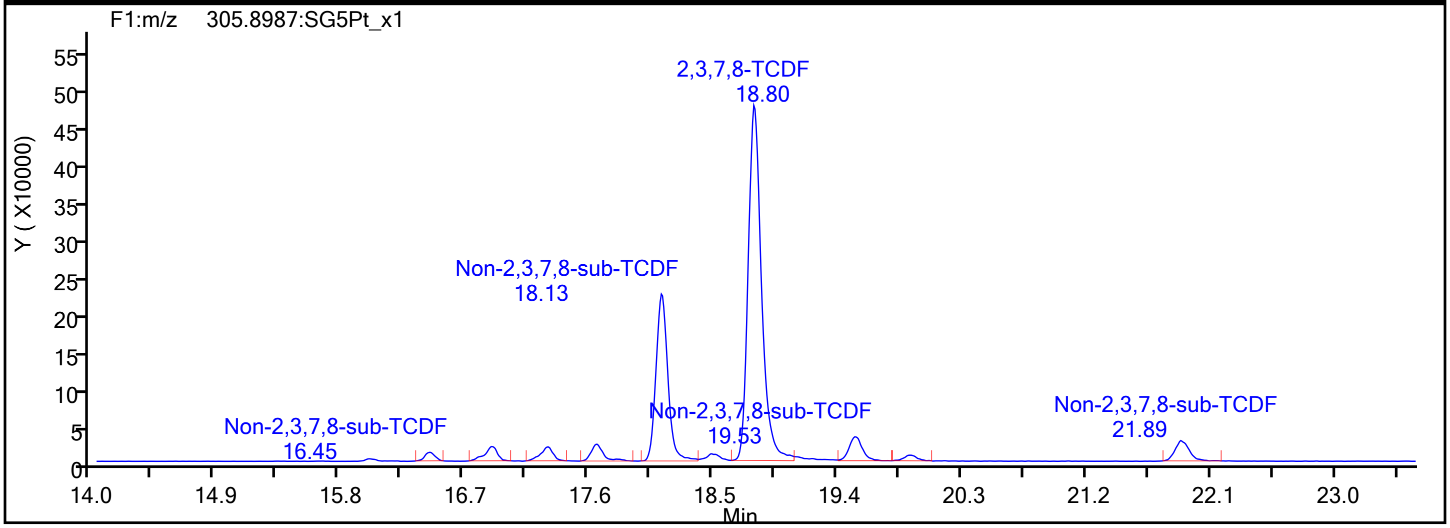

TCDF Interference Mass

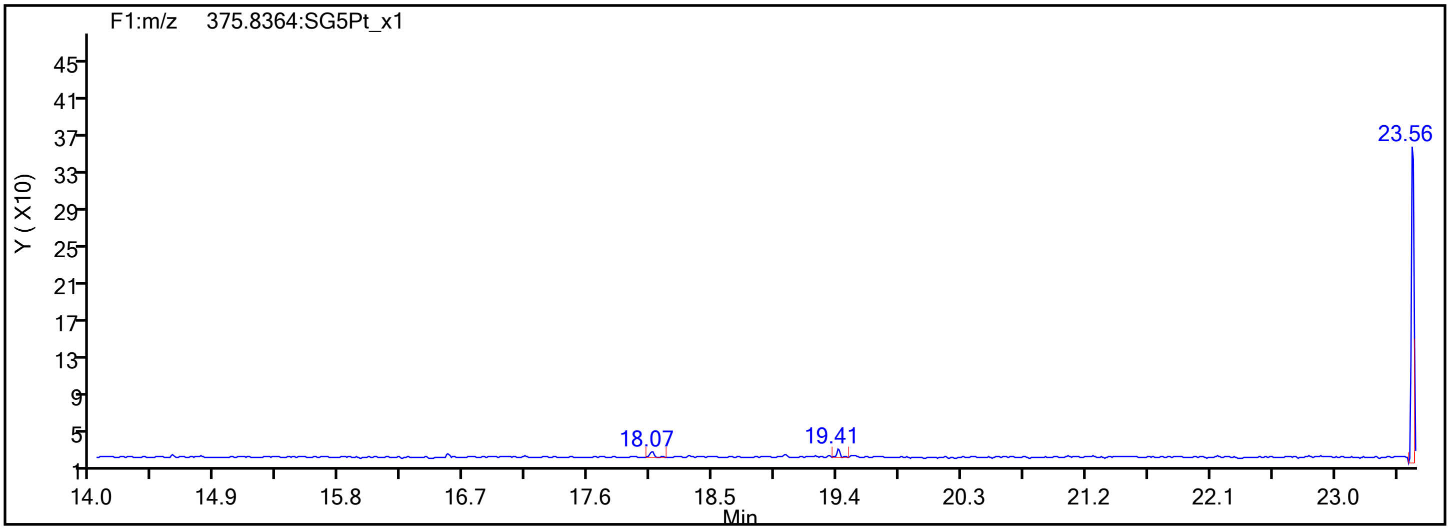

Report Date: 12-Oct-2020 09:16:37
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d
Injection Date: 10-Oct-2020 10:09:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-3-1
Worklist#: 420640
Sample Line#: 21
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

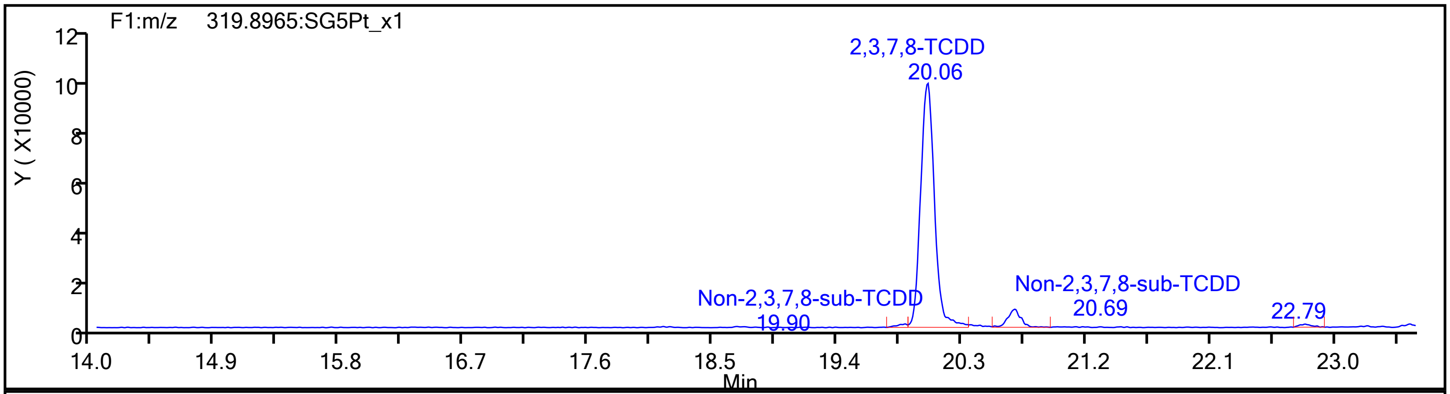

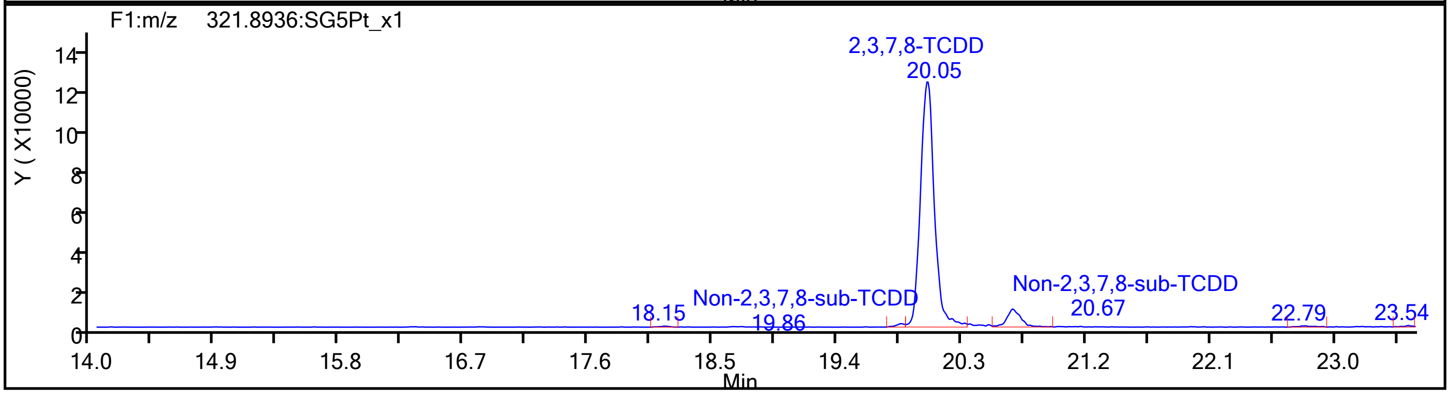

TCDD Standards

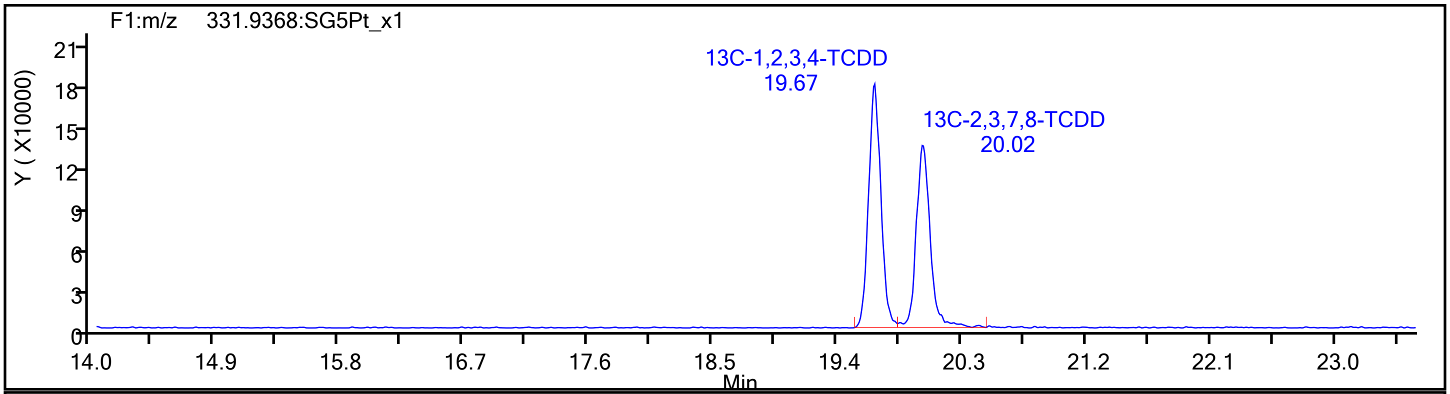

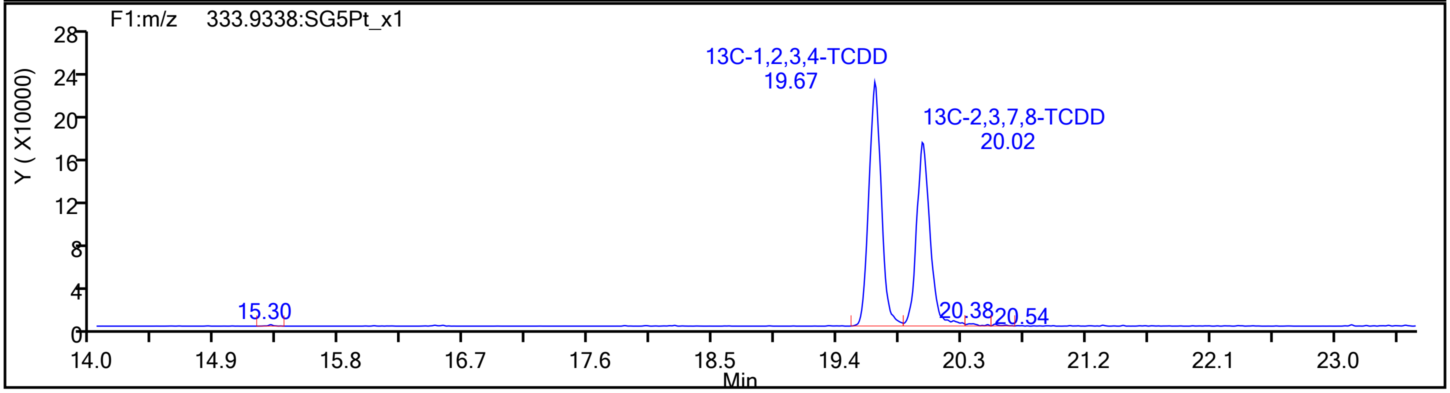

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

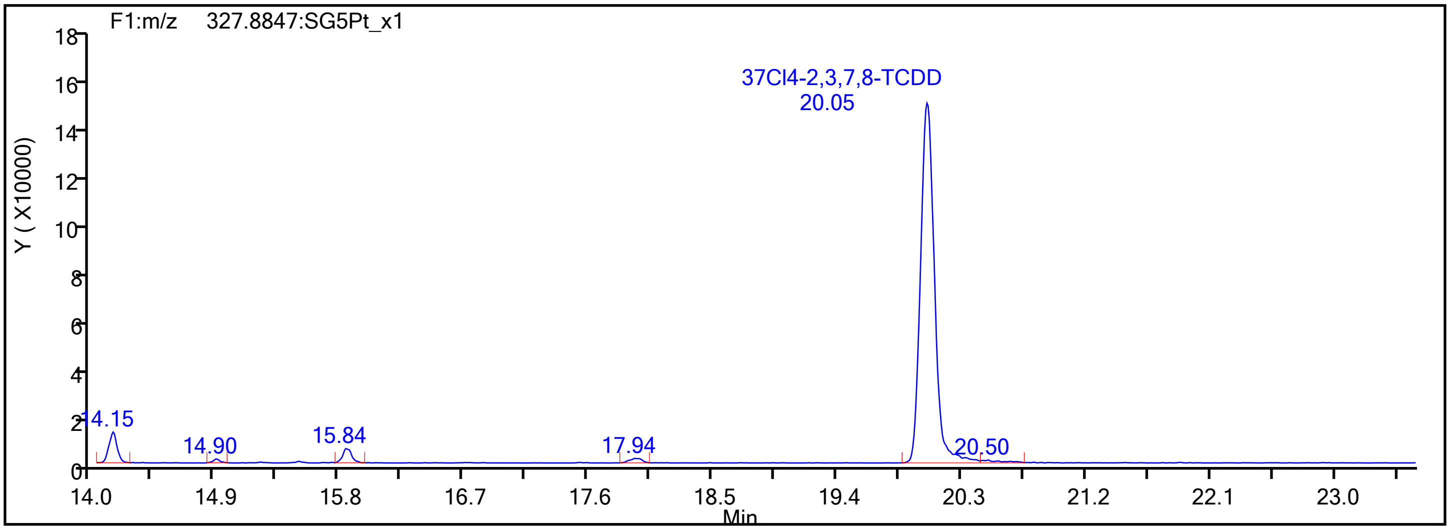

37Cl4-TCDD Standards

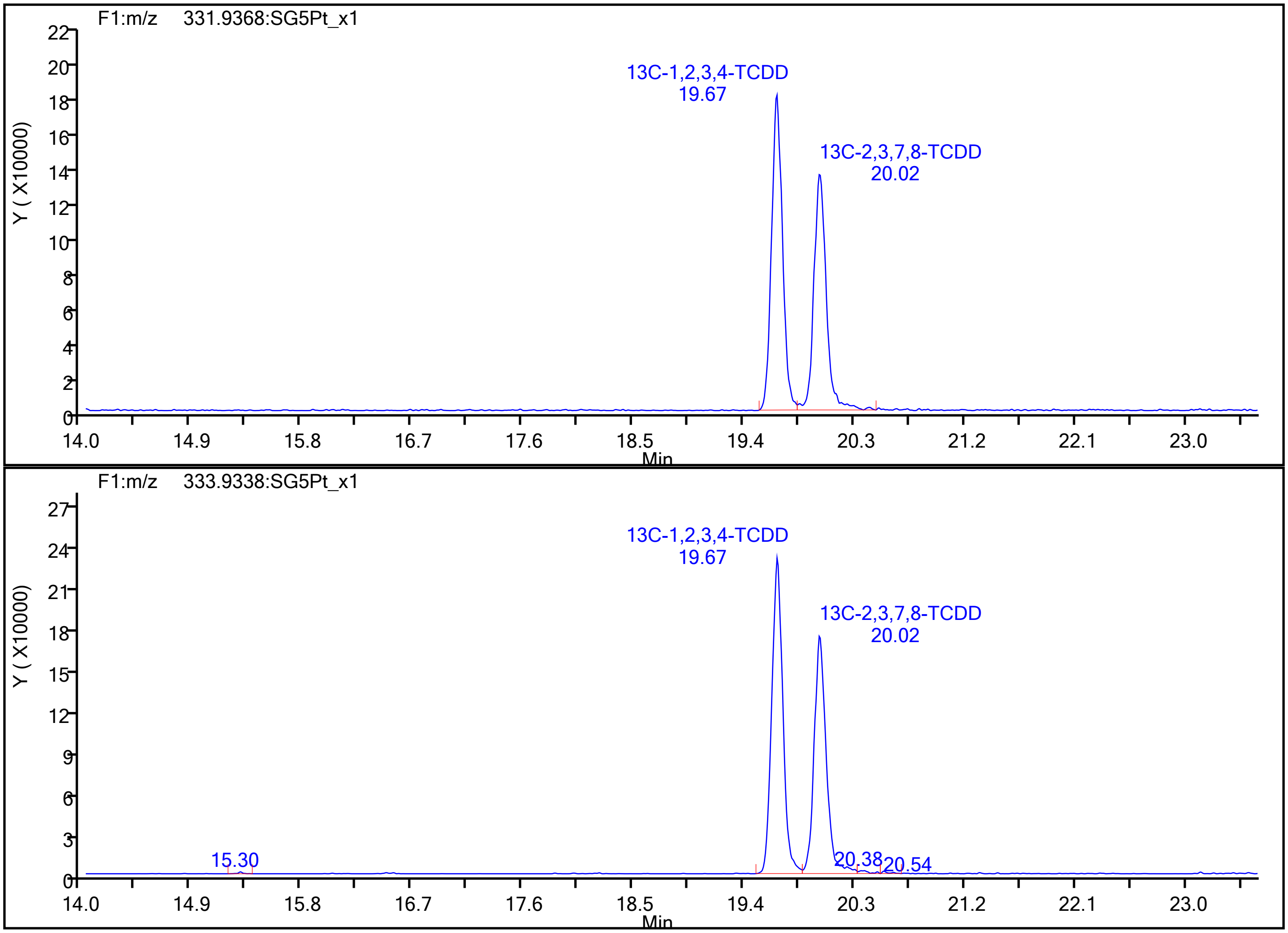

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d

Injection Date: 10-Oct-2020 10:09:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-1

Worklist#: 420640 Sample Line#: 21

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

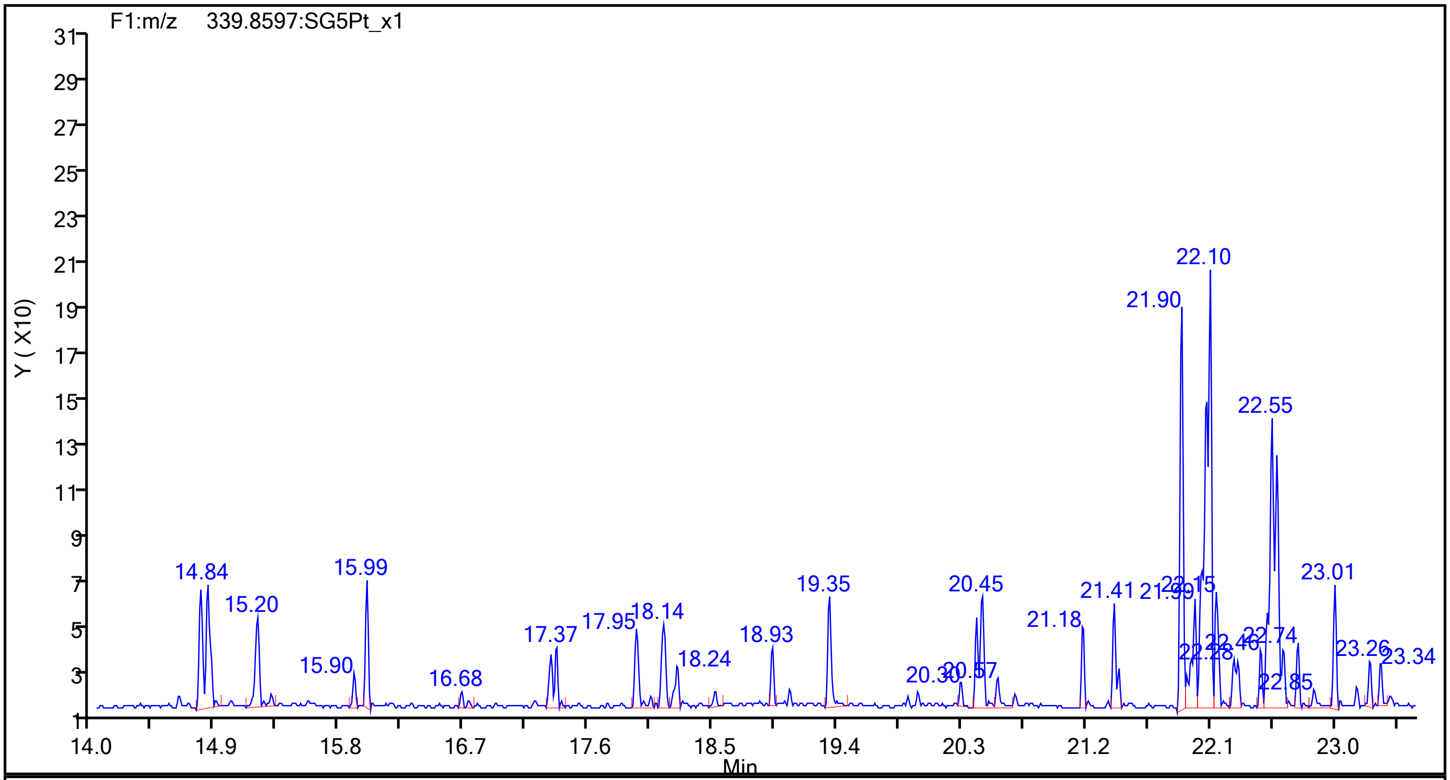

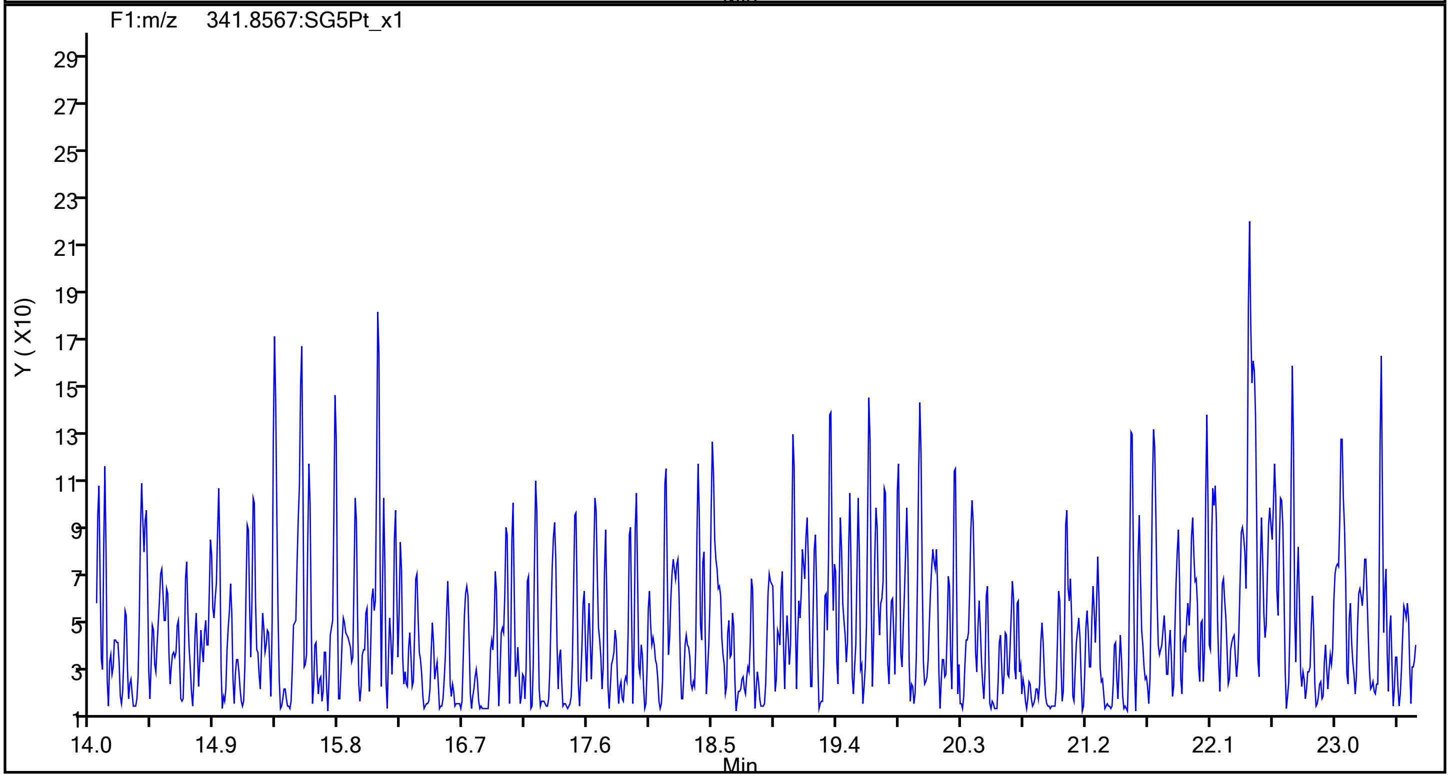

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

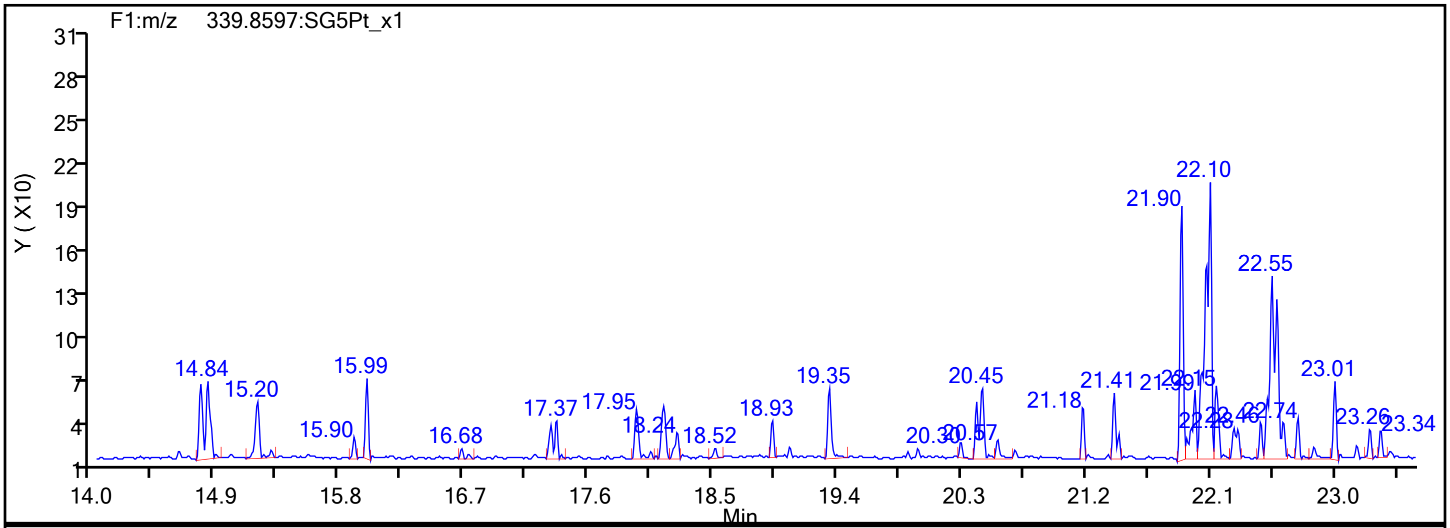

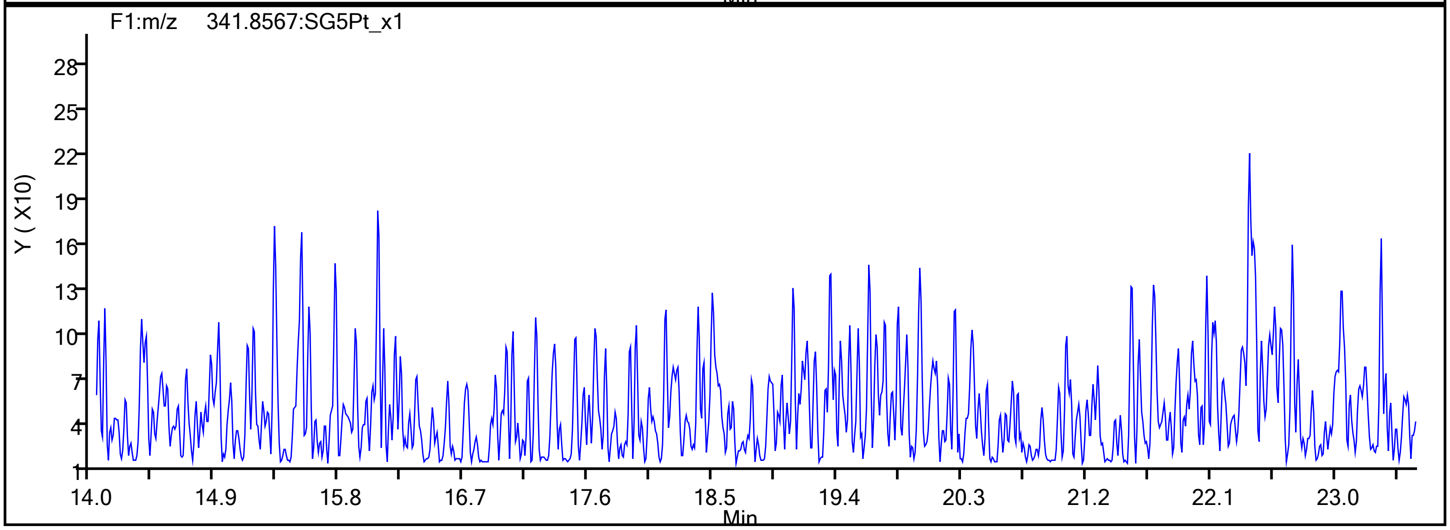

F1 PeCDFs Interference Mass

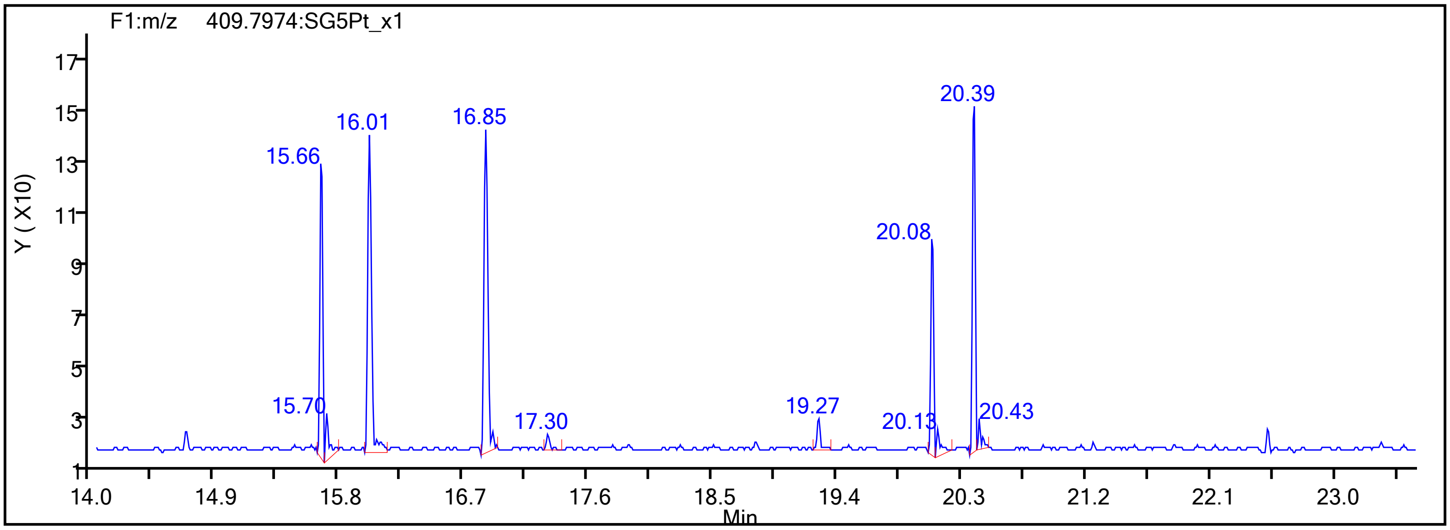

Report Date: 12-Oct-2020 09:16:37   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

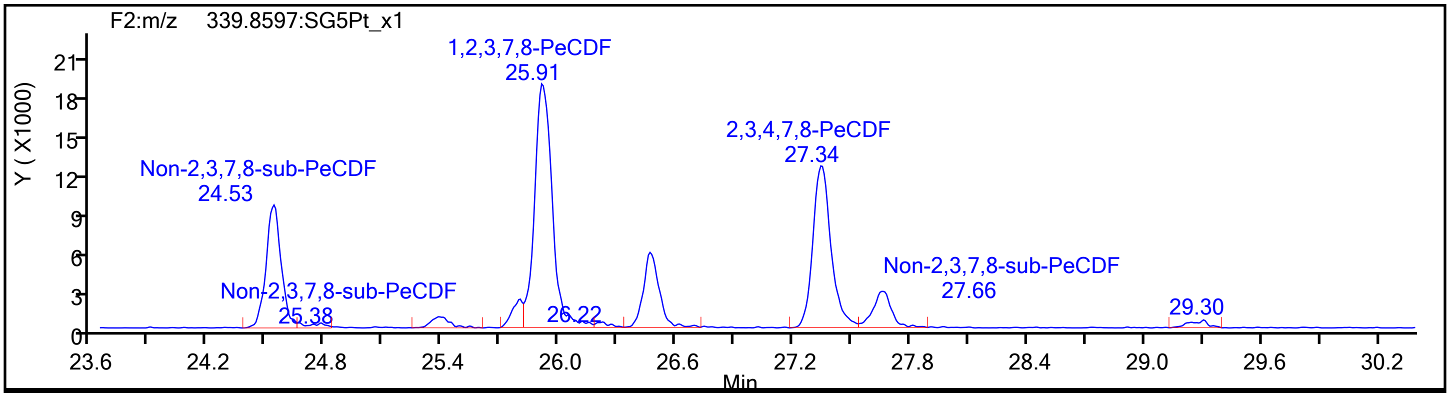

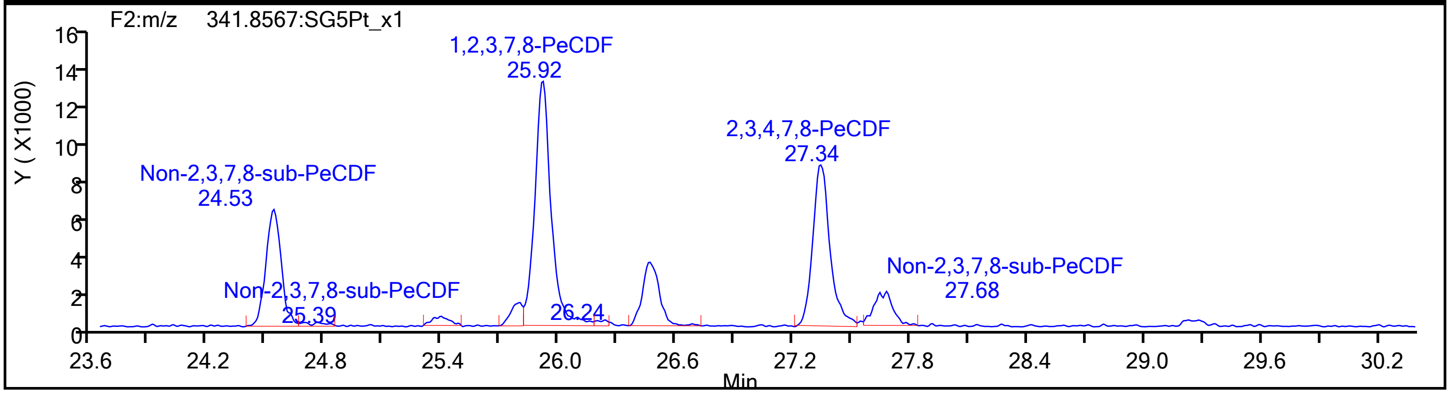

PeCDF Standards

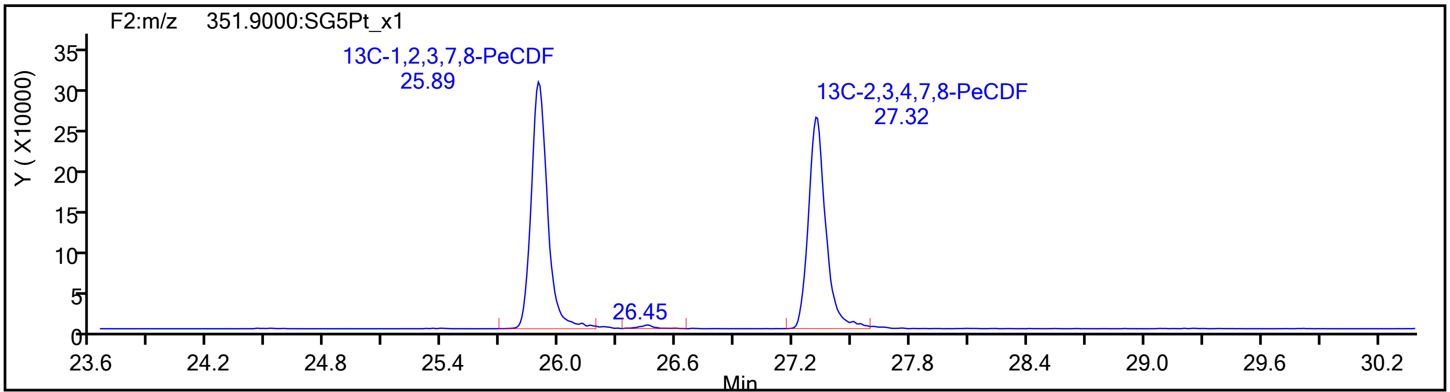

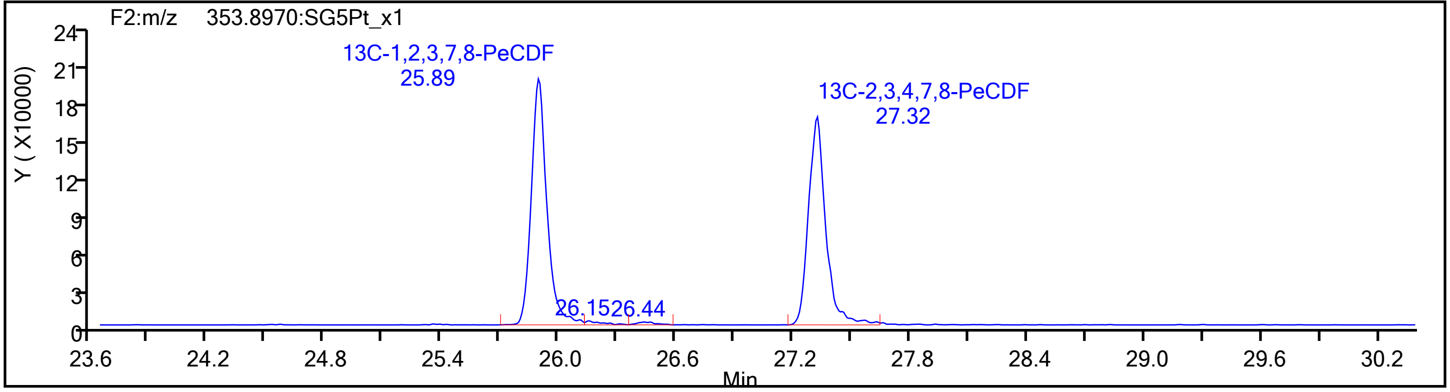

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

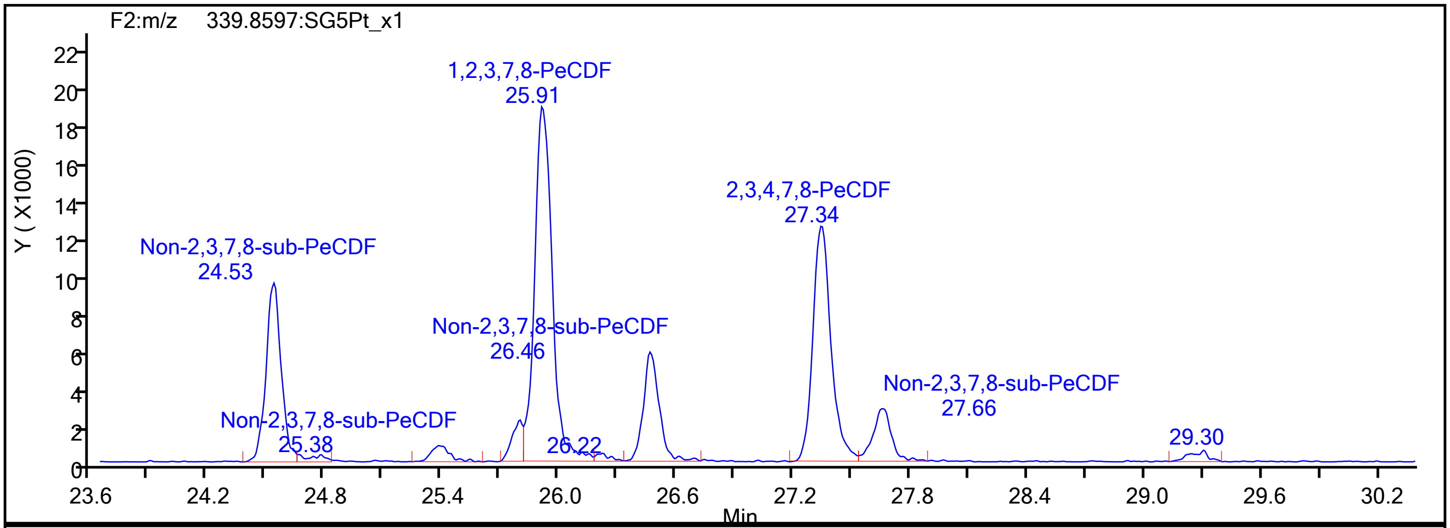

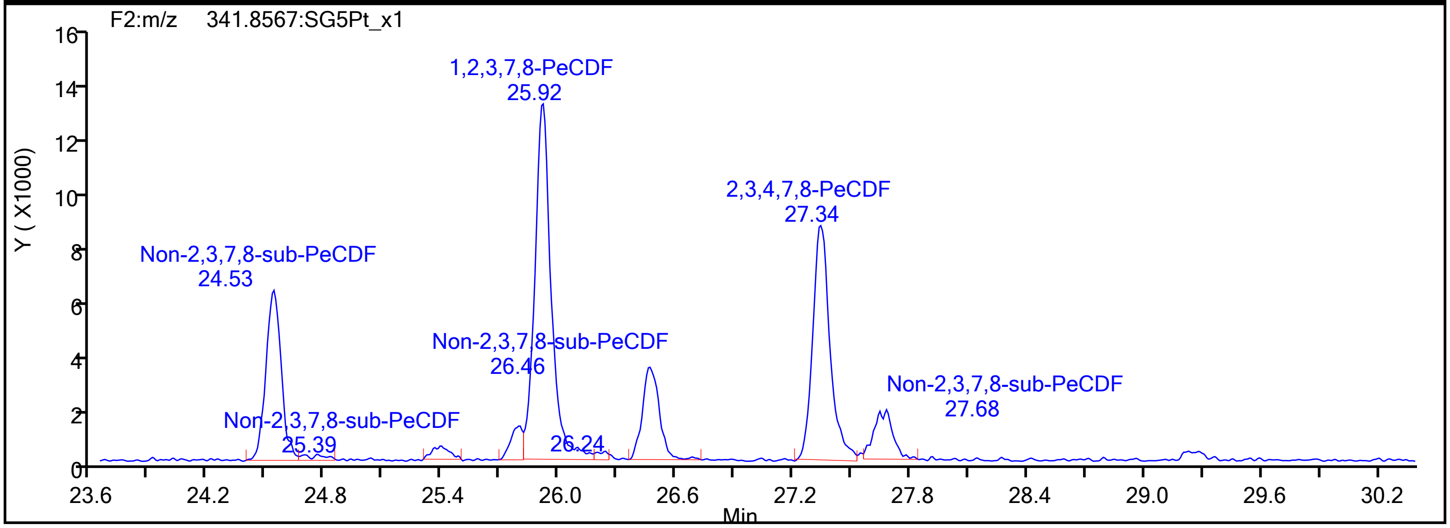

PeCDF Interference Mass

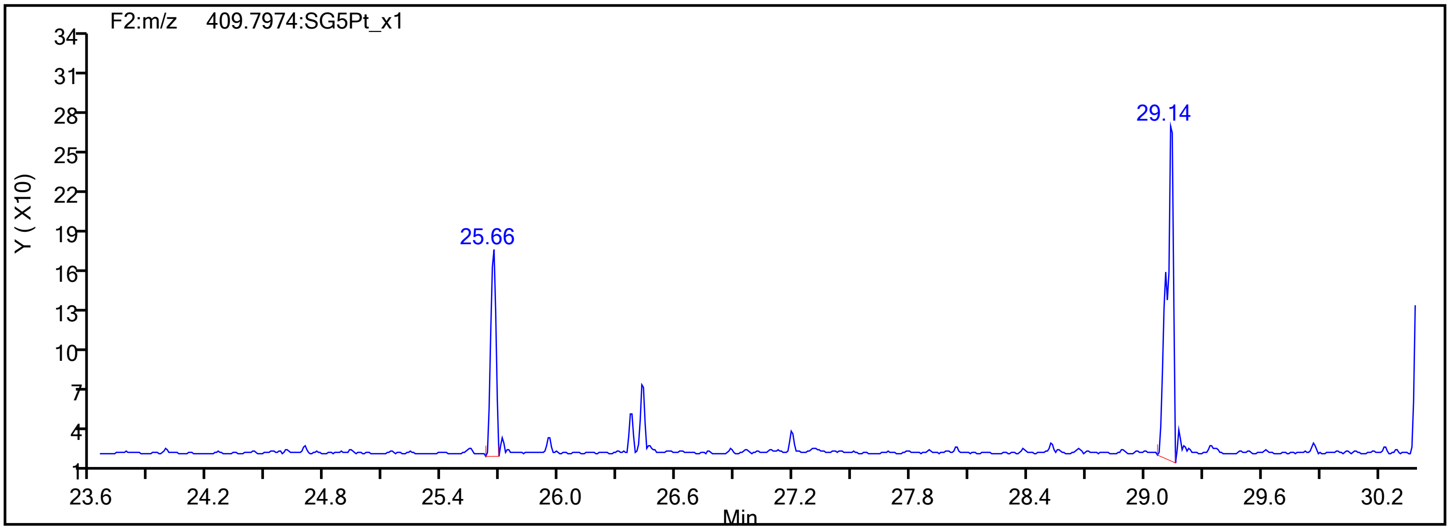

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

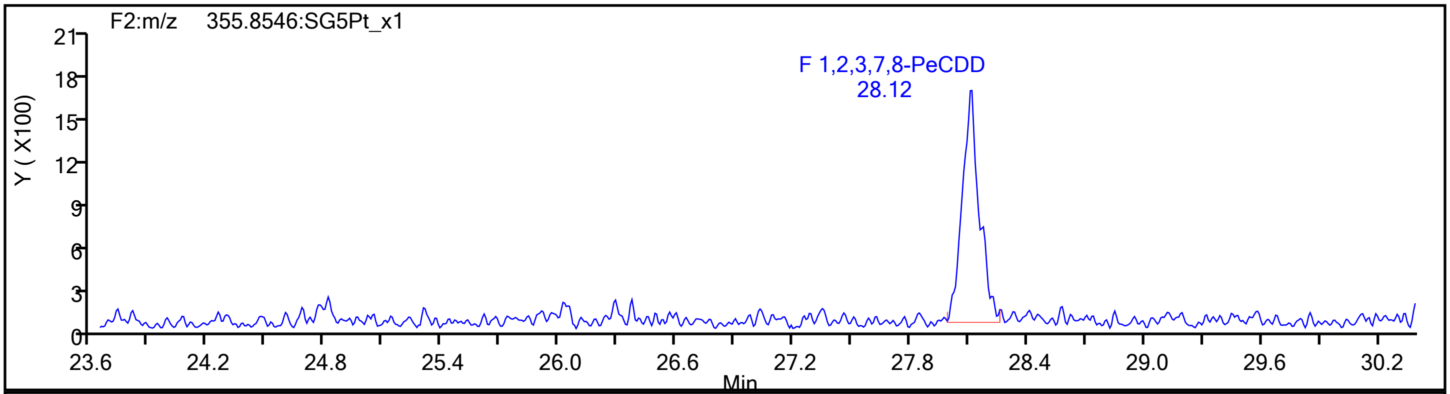

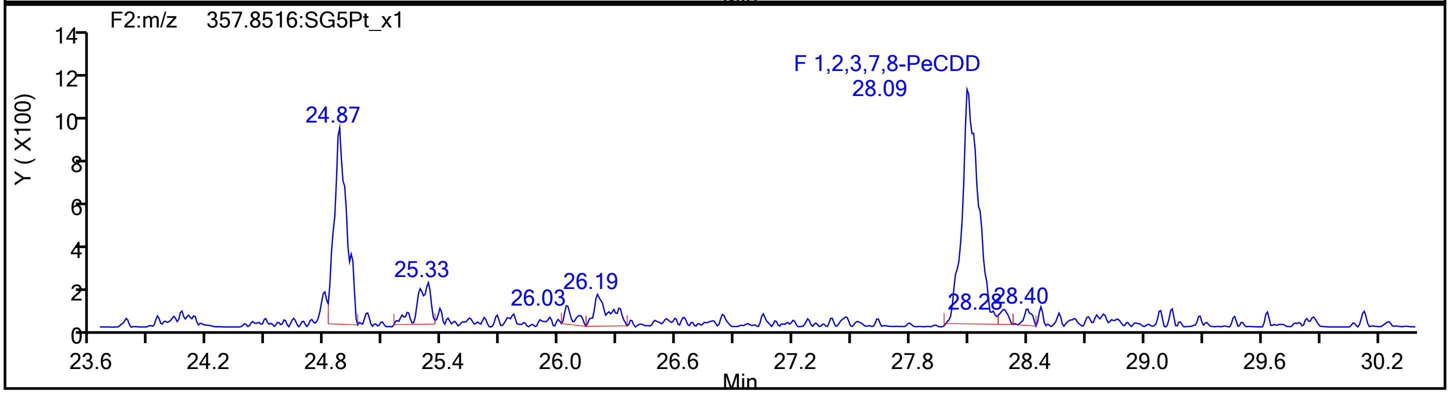

PeCDD Standards

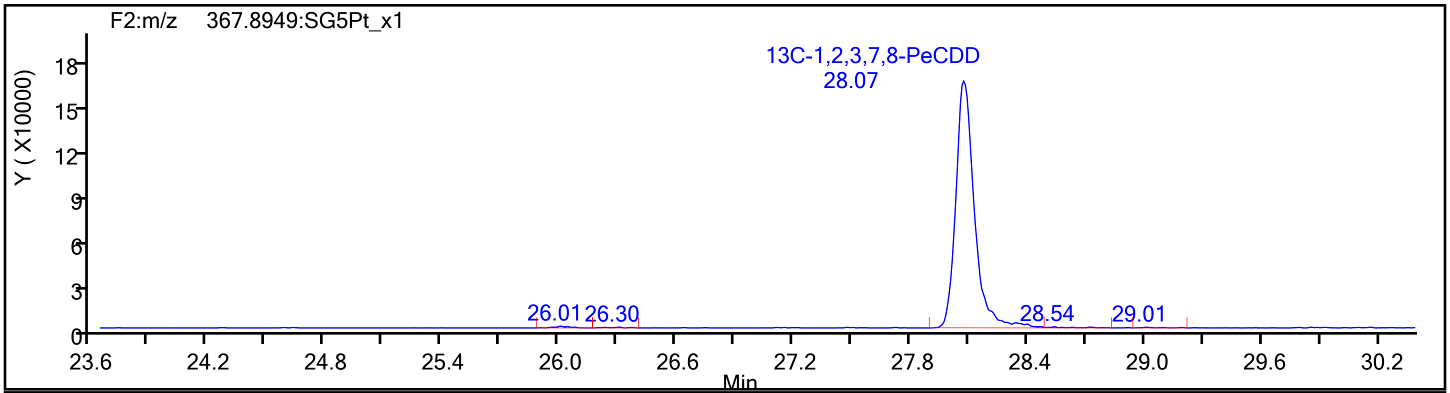

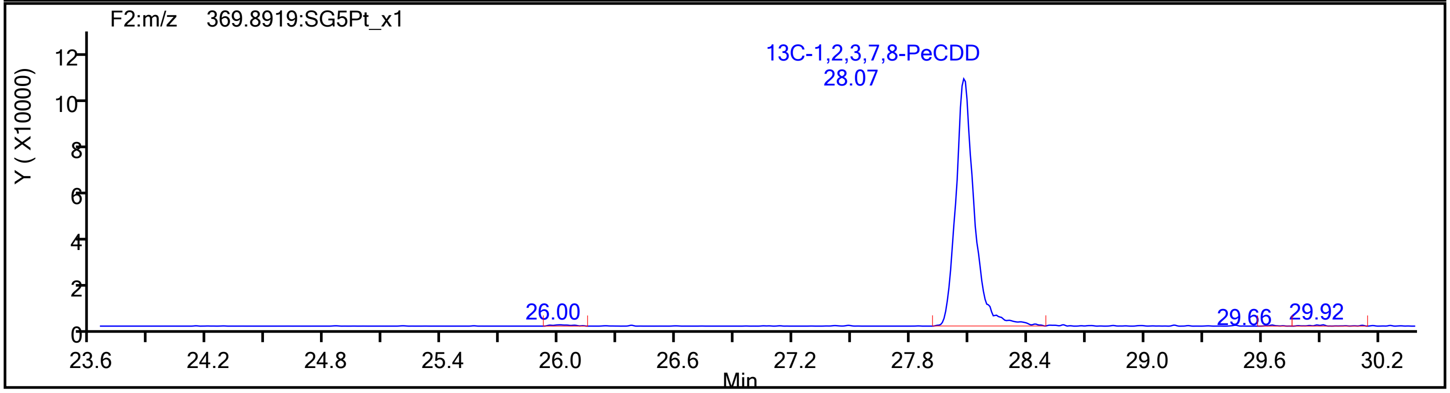

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

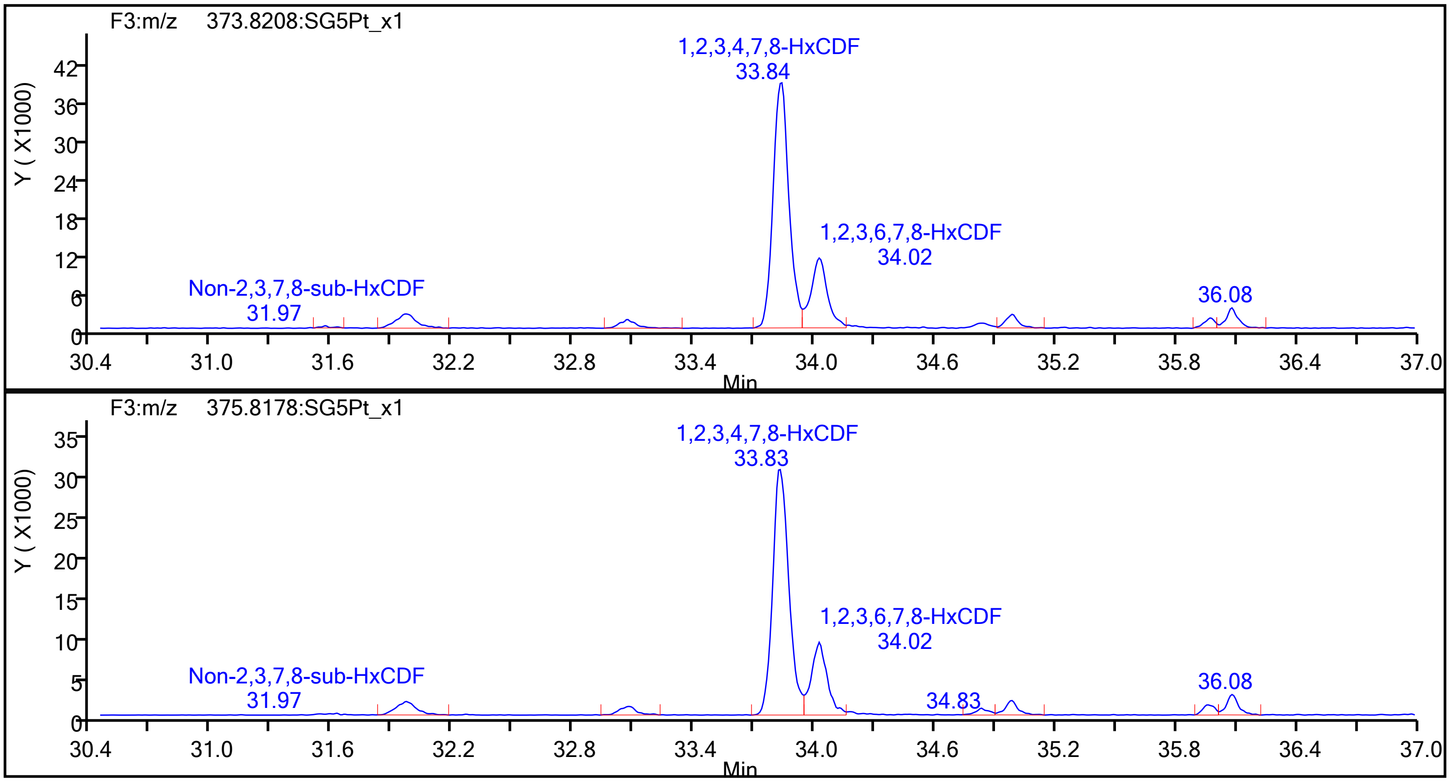

HxCDF Standards

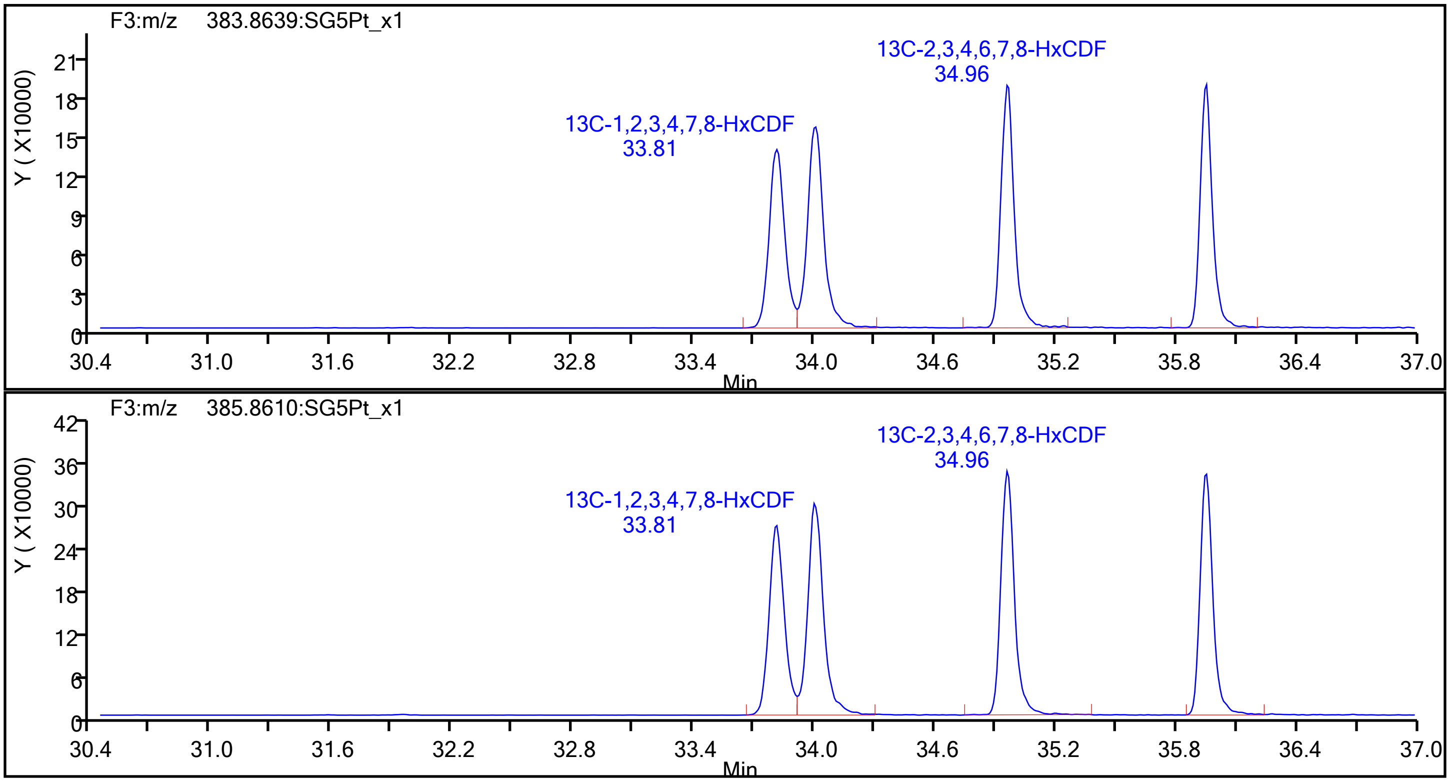

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d

Injection Date: 10-Oct-2020 10:09:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-1

Worklist#: 420640

Sample Line#: 21

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

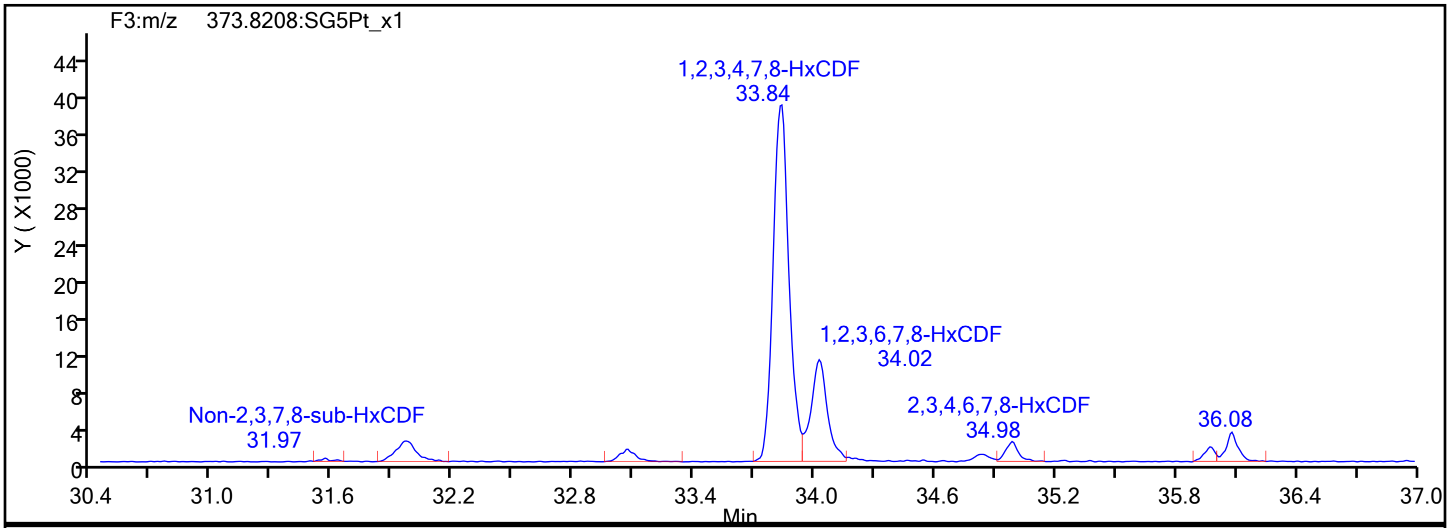

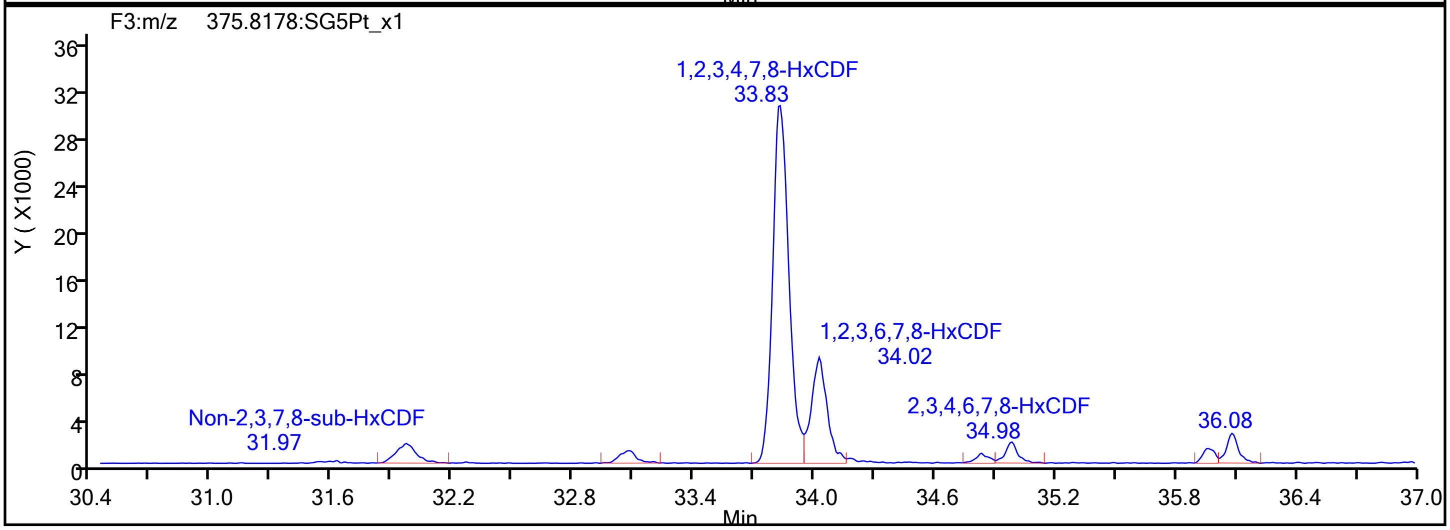

HxCDF Interference Mass

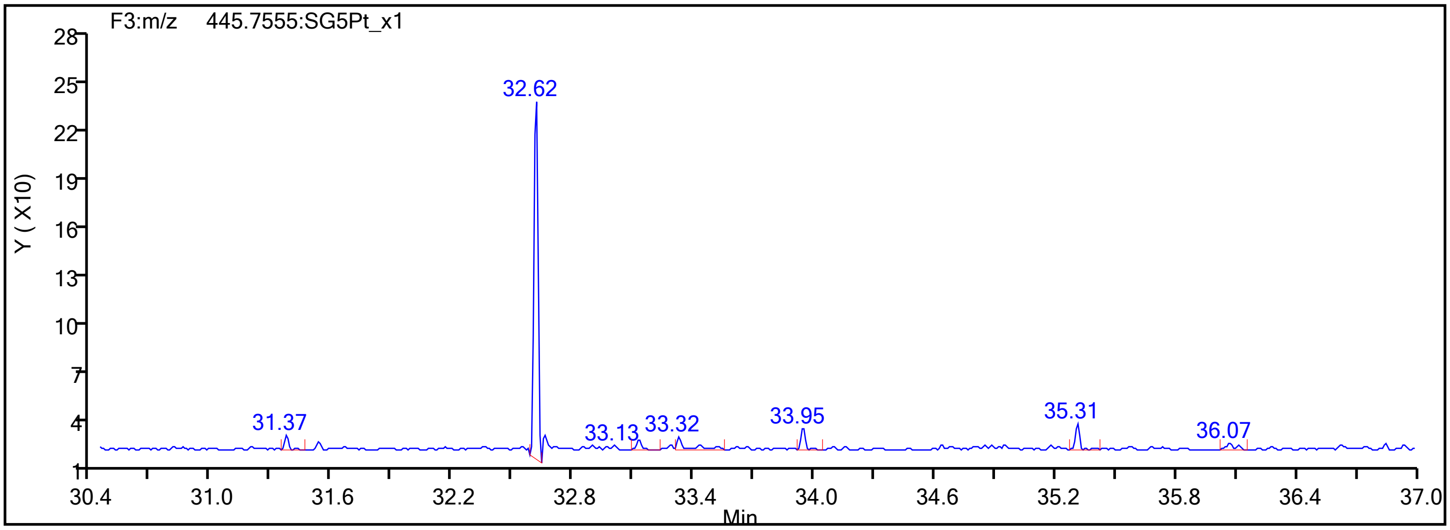

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

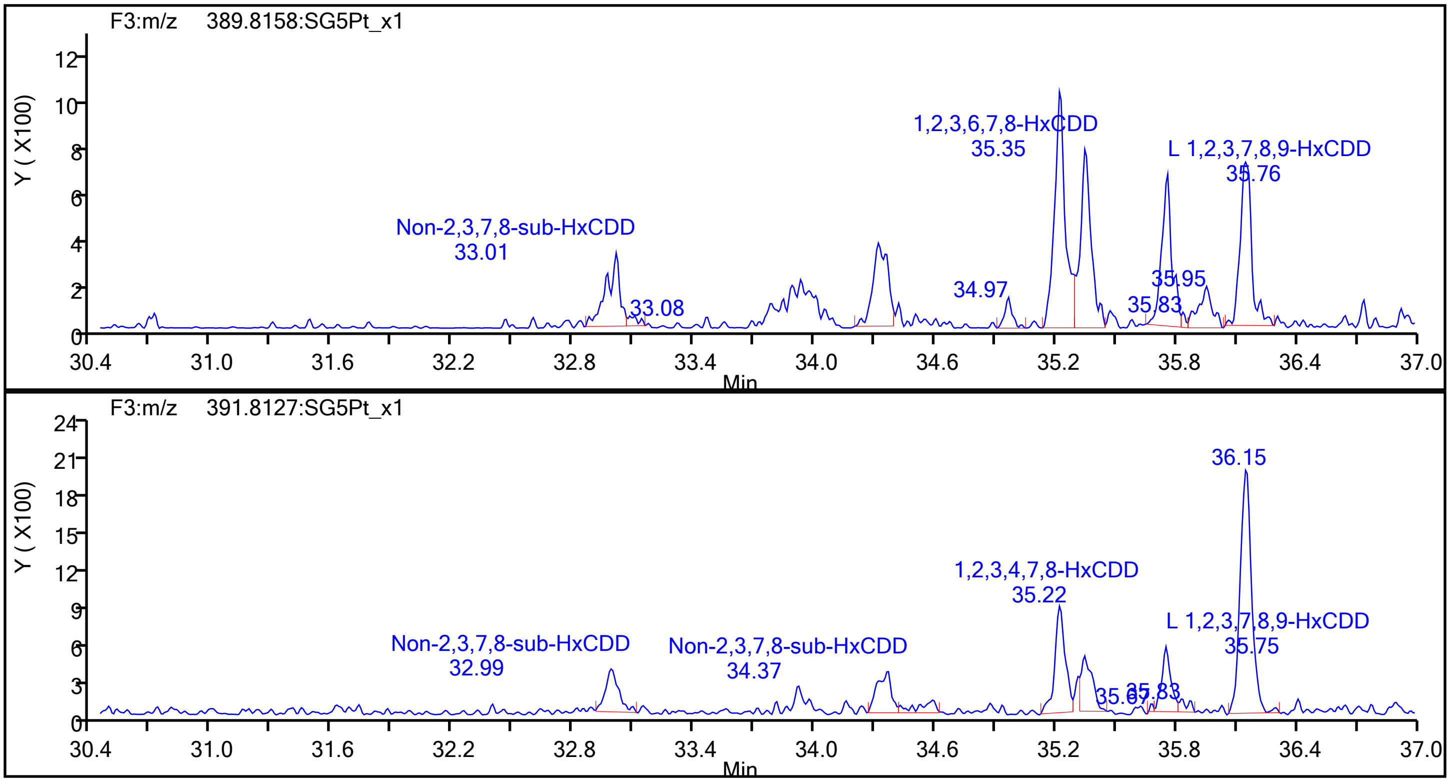

HxCDD Standards

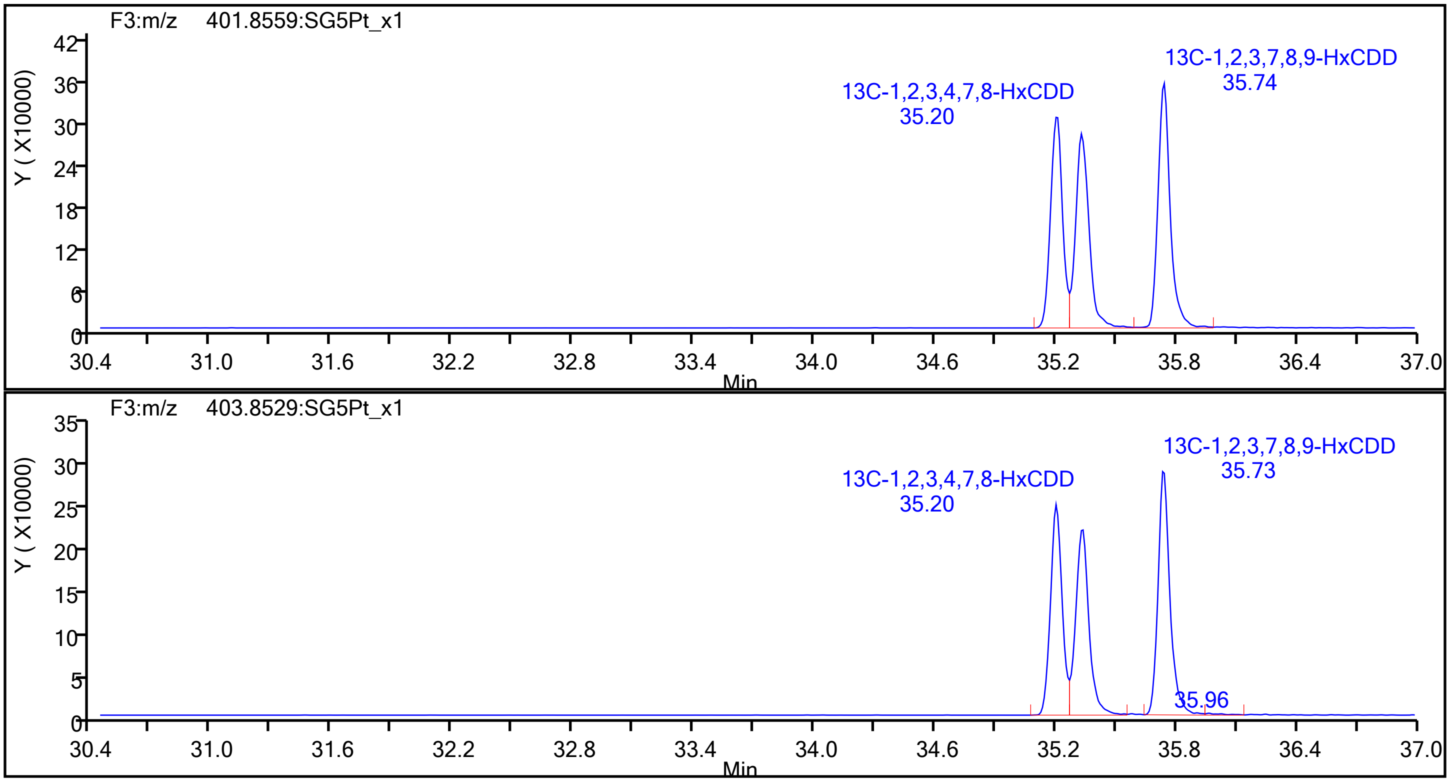

Report Date:	12-Oct-2020 09:16:37	Chrom Revision:	2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

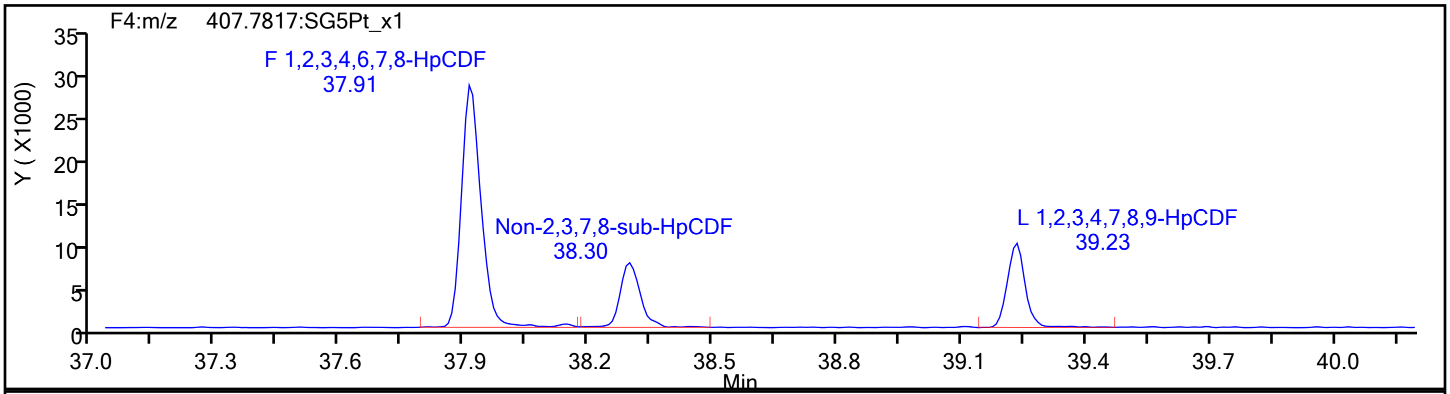

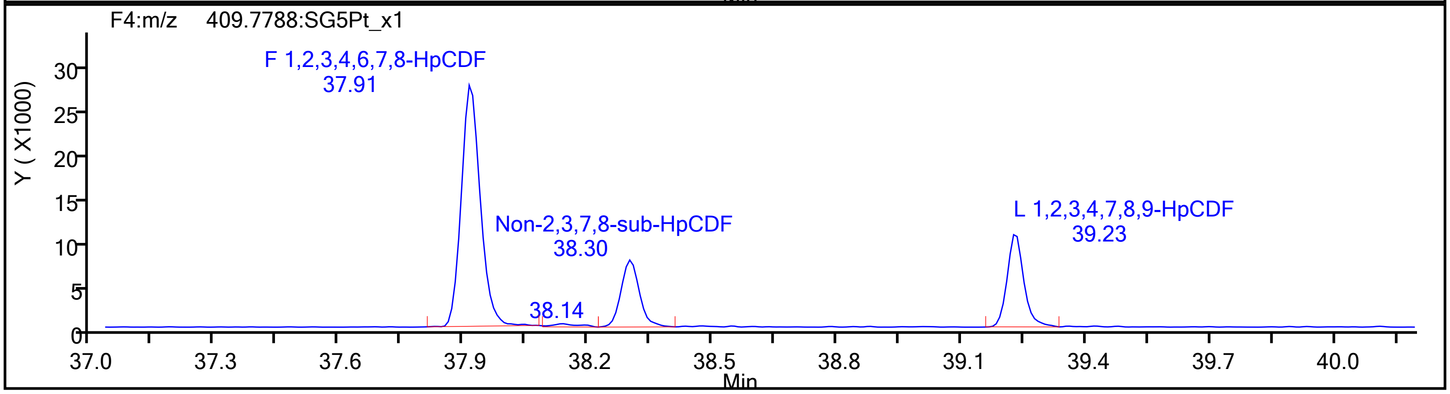

HpCDF Standards

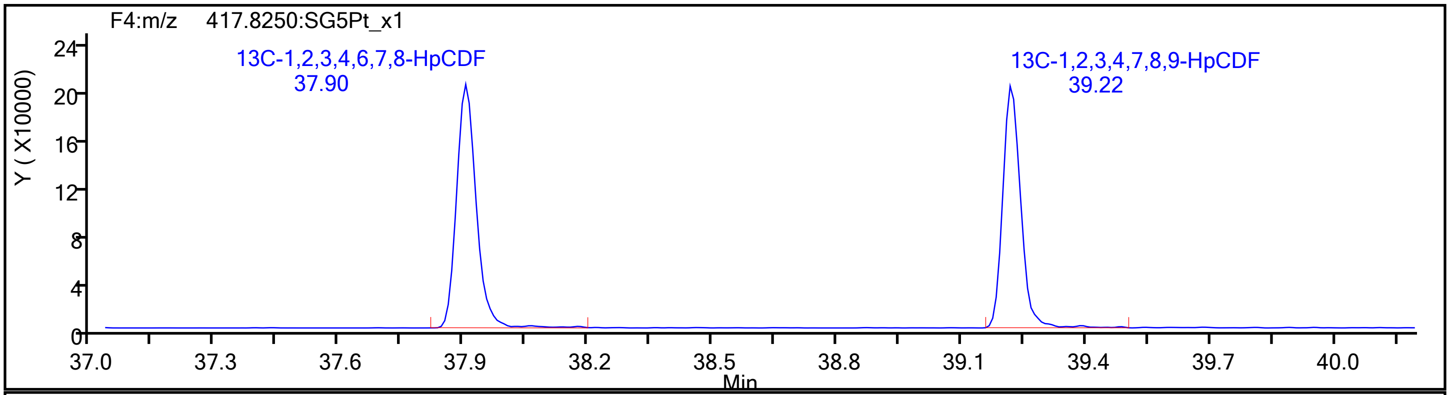

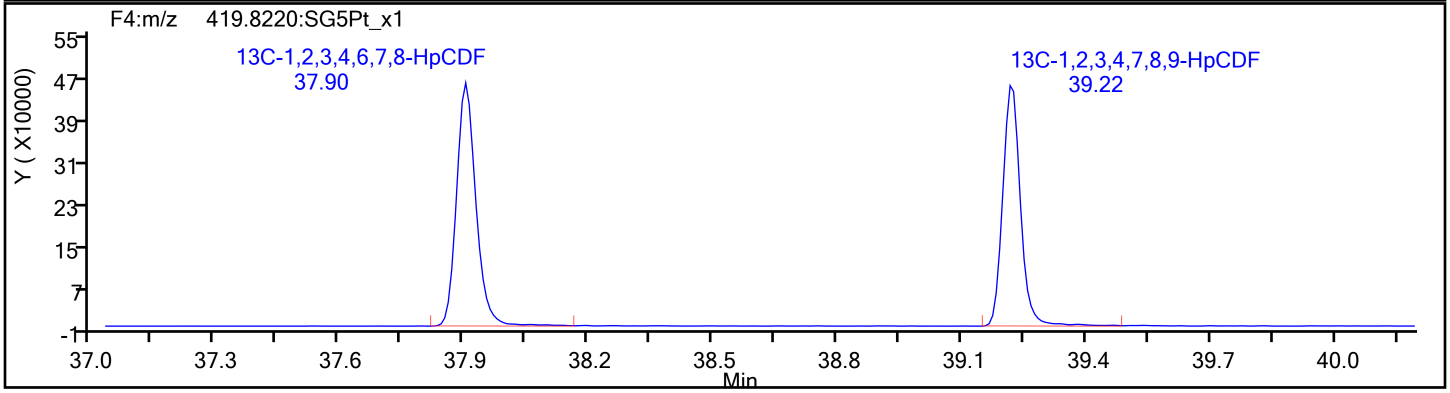

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

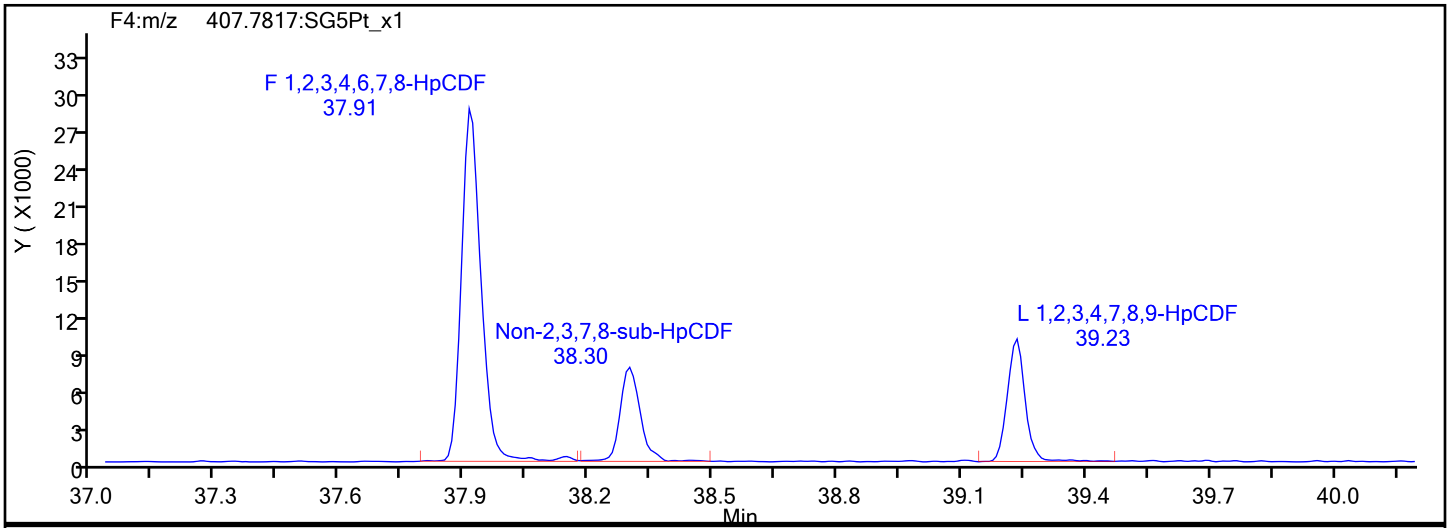

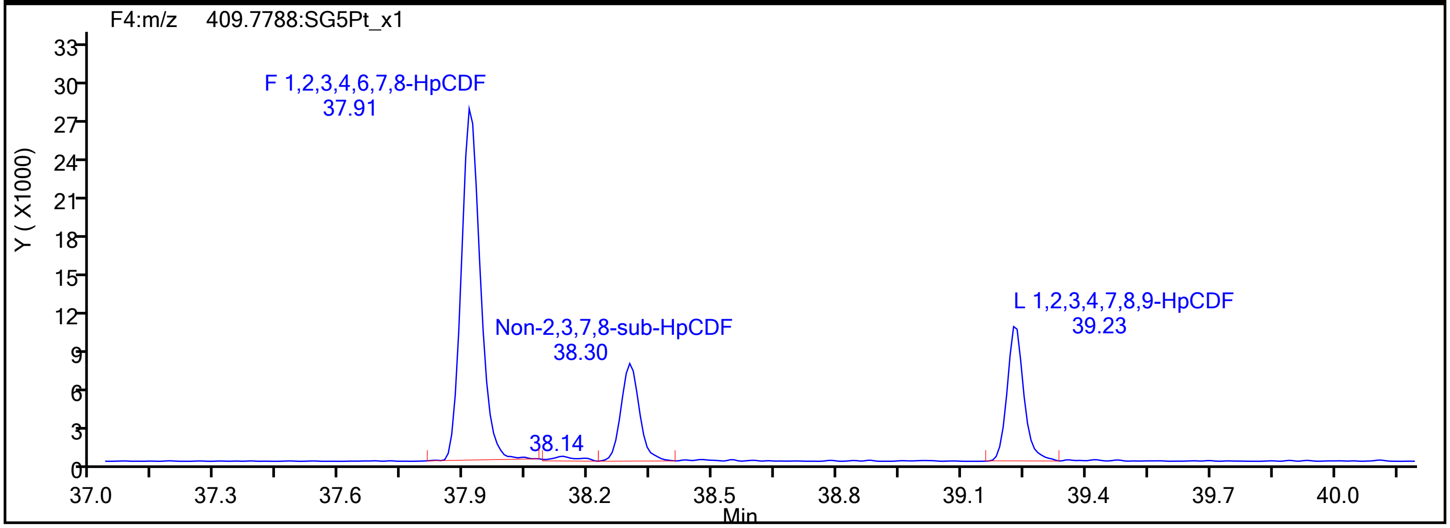

HpCDF Interference Mass

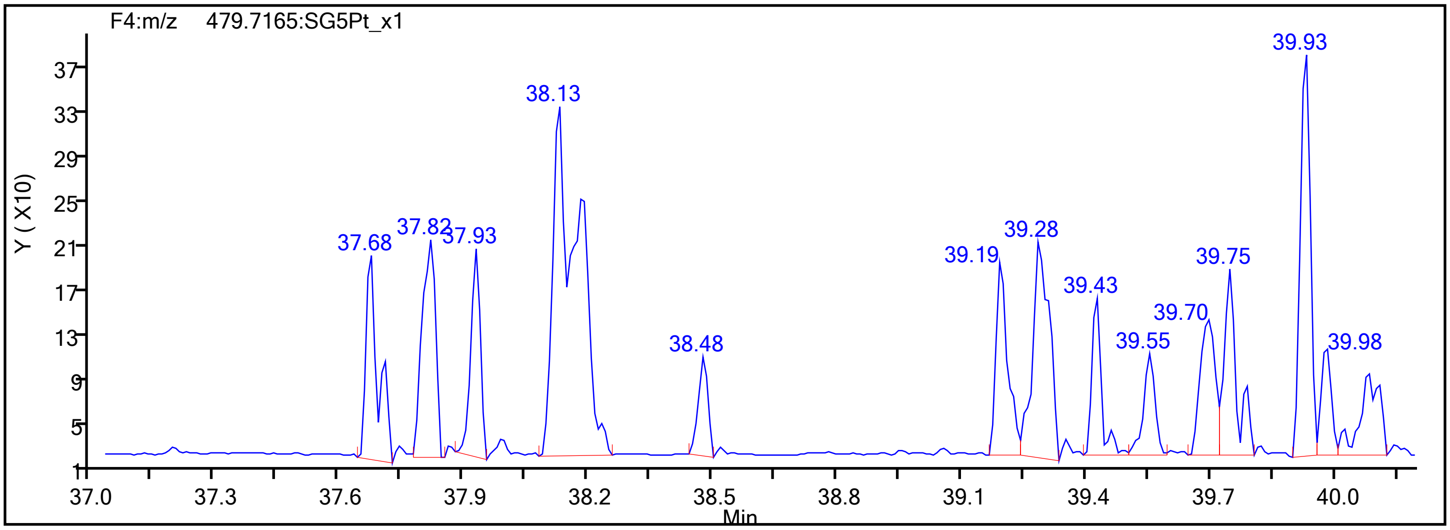

Report Date: 12-Oct-2020 09:16:37 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d

Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

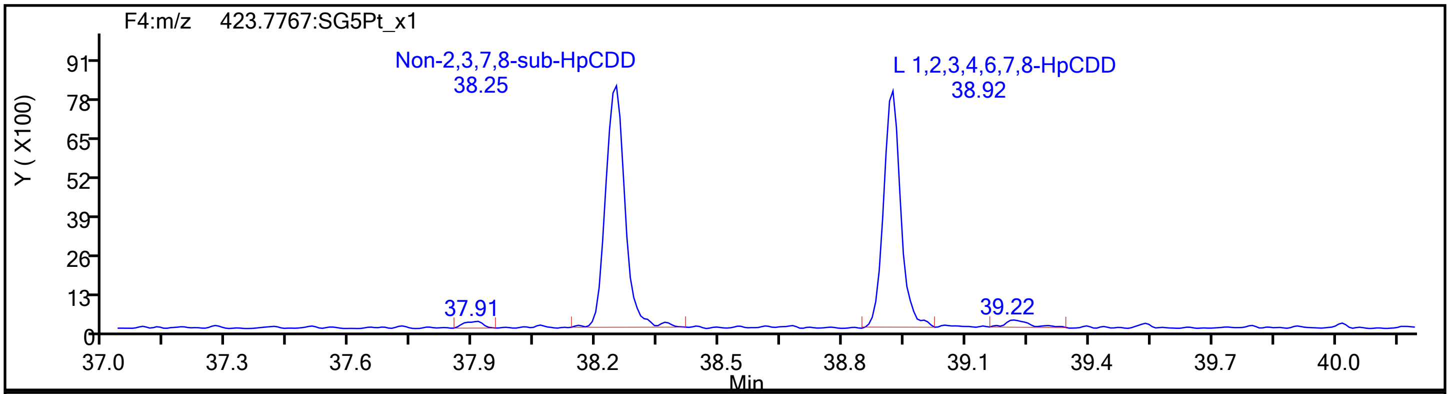

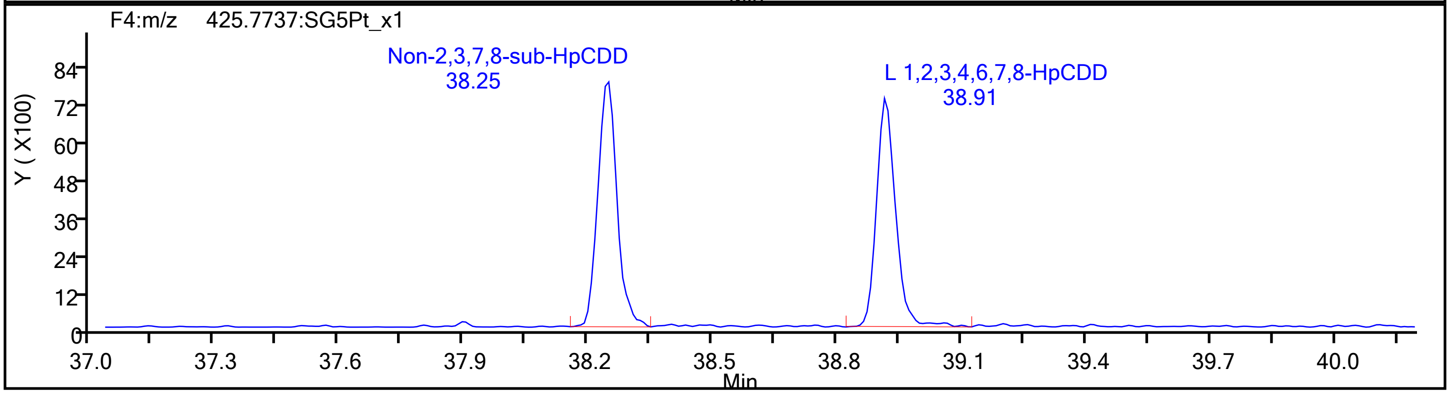

HpCDD Standards

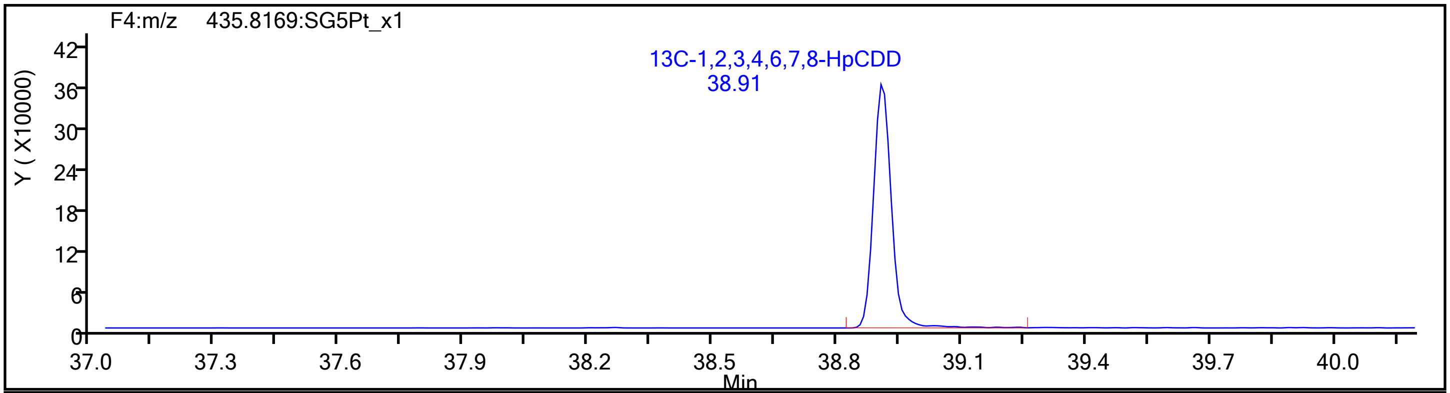

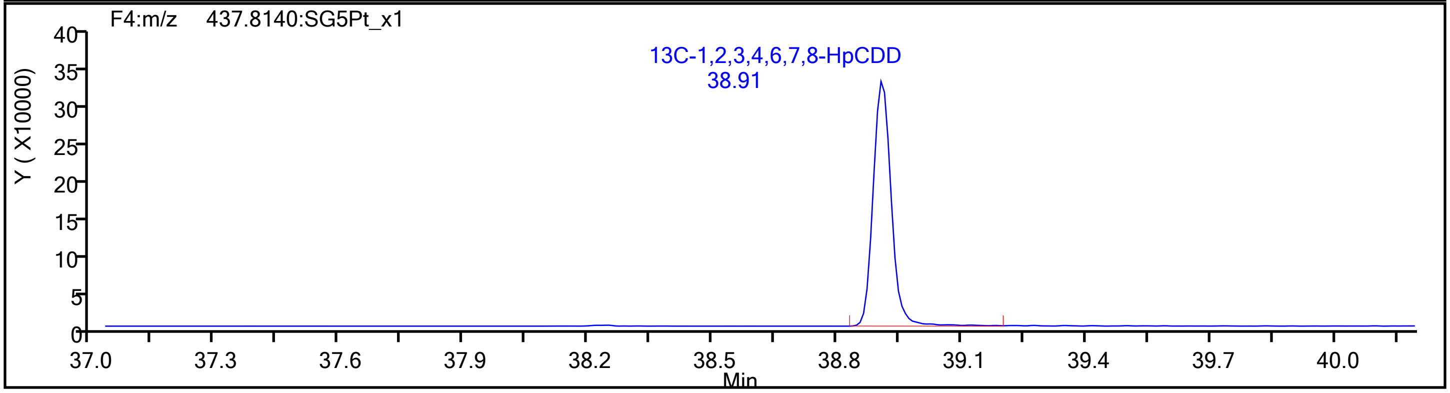

Report Date: 12-Oct-2020 09:16:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d
Injection Date: 10-Oct-2020 10:09:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-3-1
Worklist#: 420640 Sample Line#: 21
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

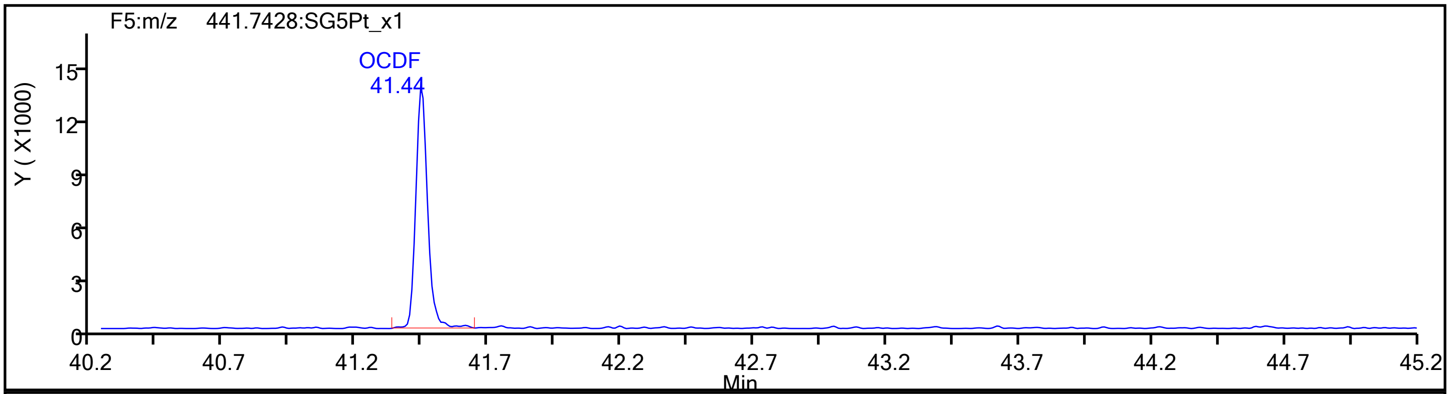

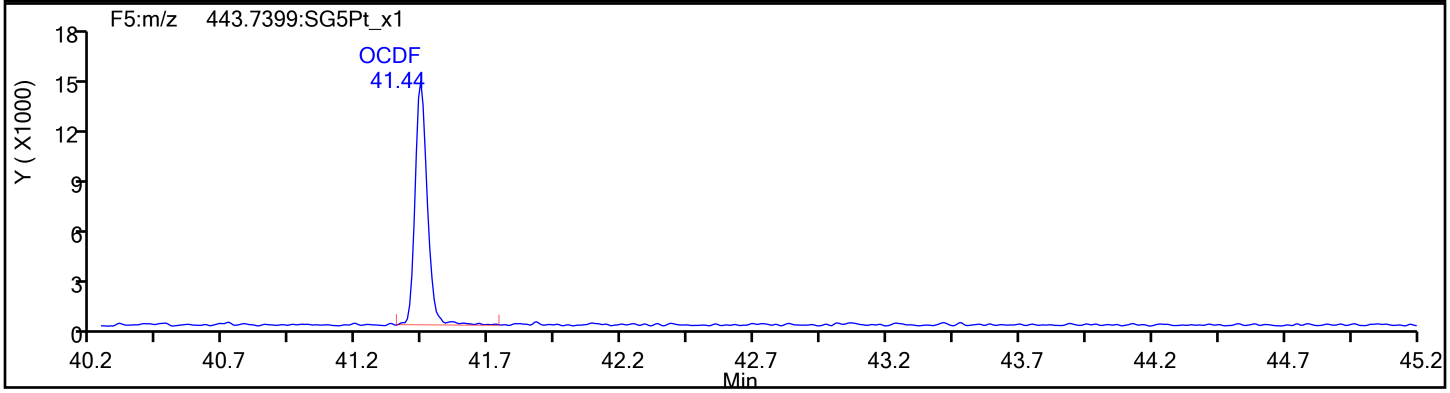

OCDF Standards

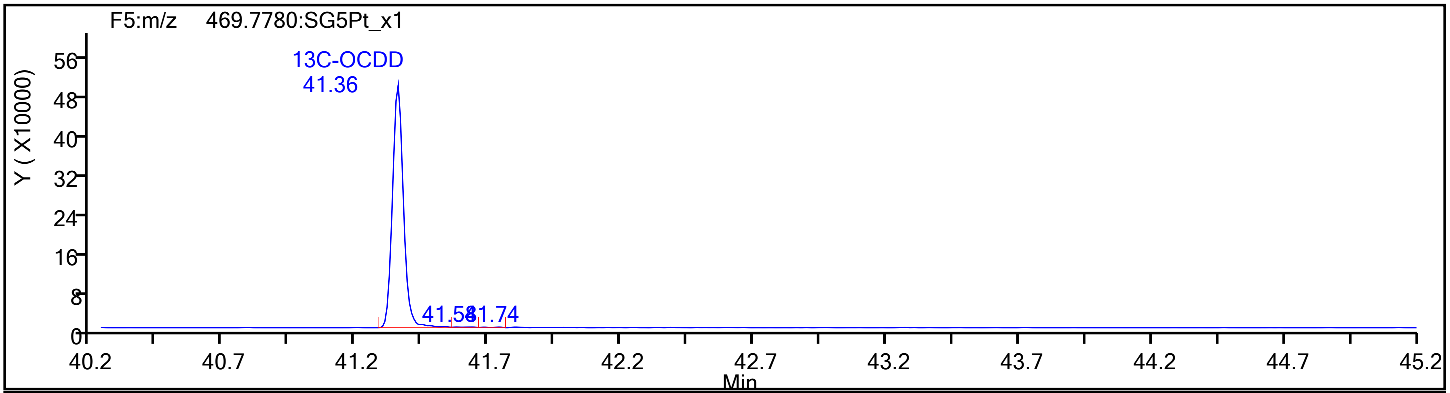

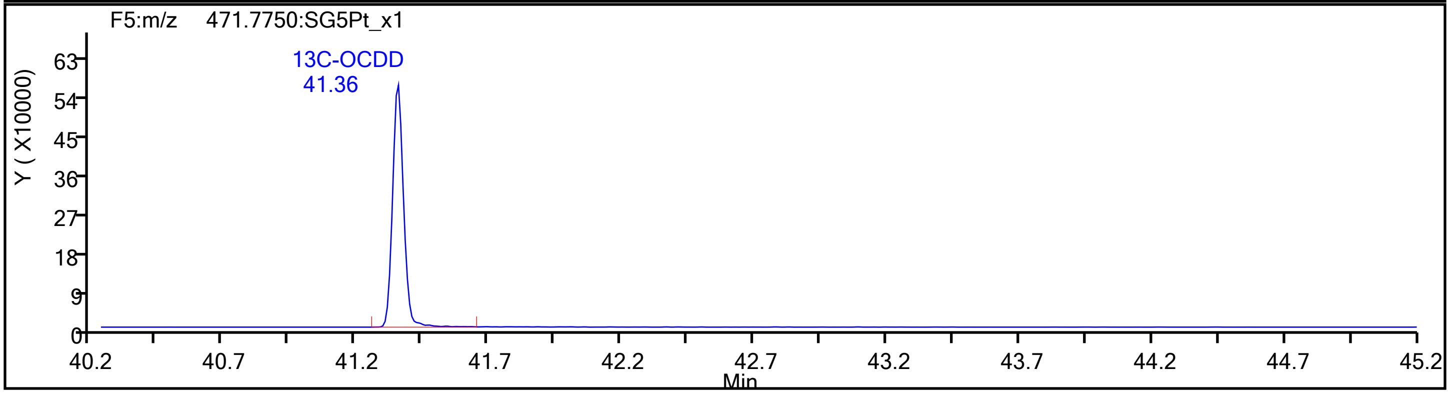

Report Date: 12-Oct-2020 09:16:38 | Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

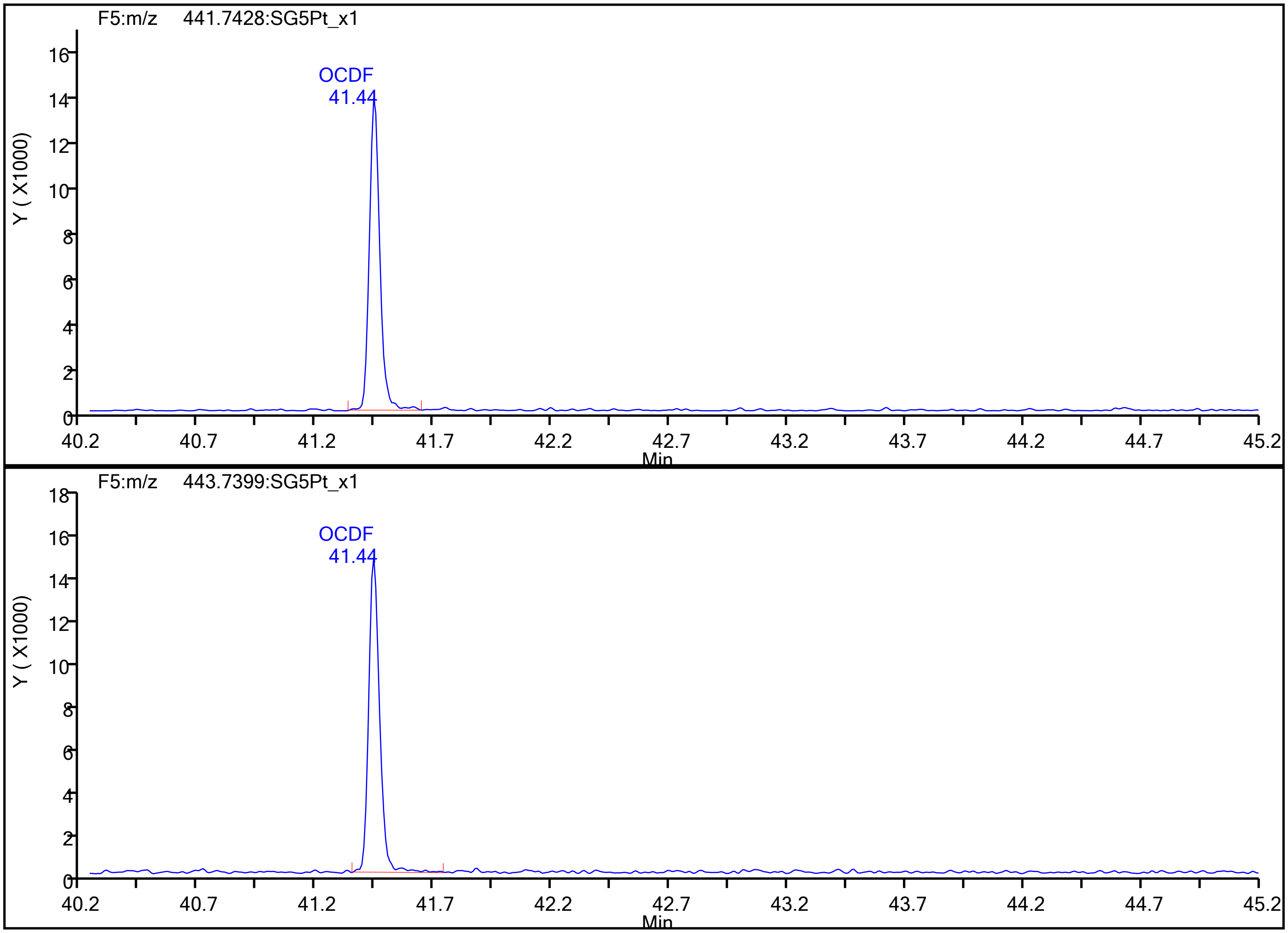

OCDF Interference Mass

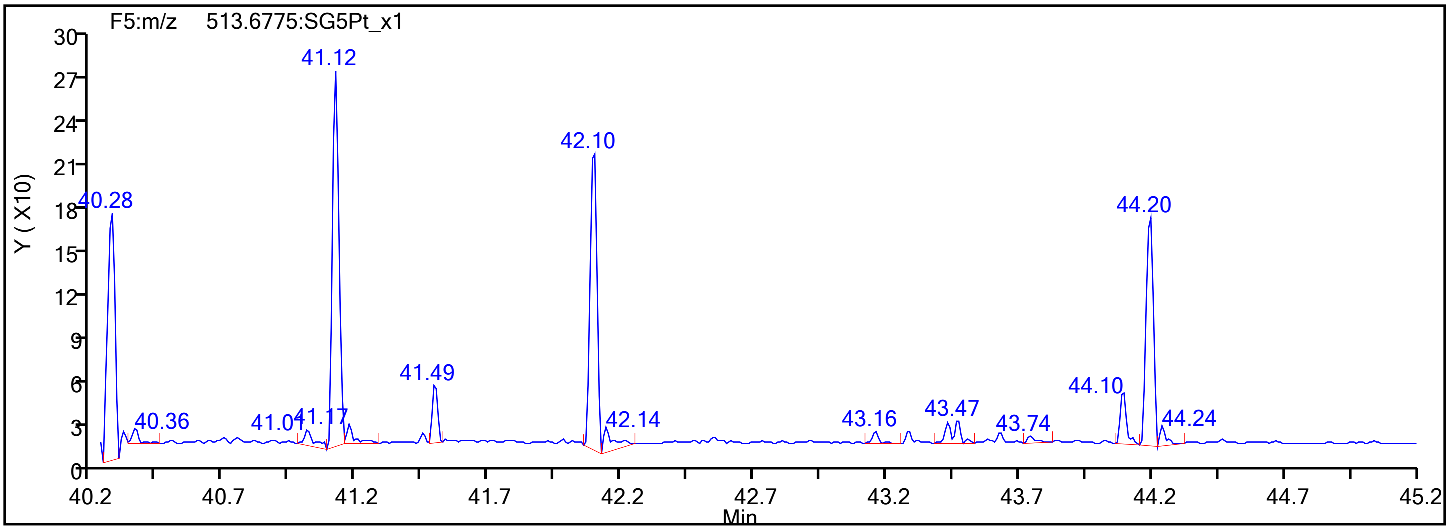

Report Date: 12-Oct-2020 09:16:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d		
Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

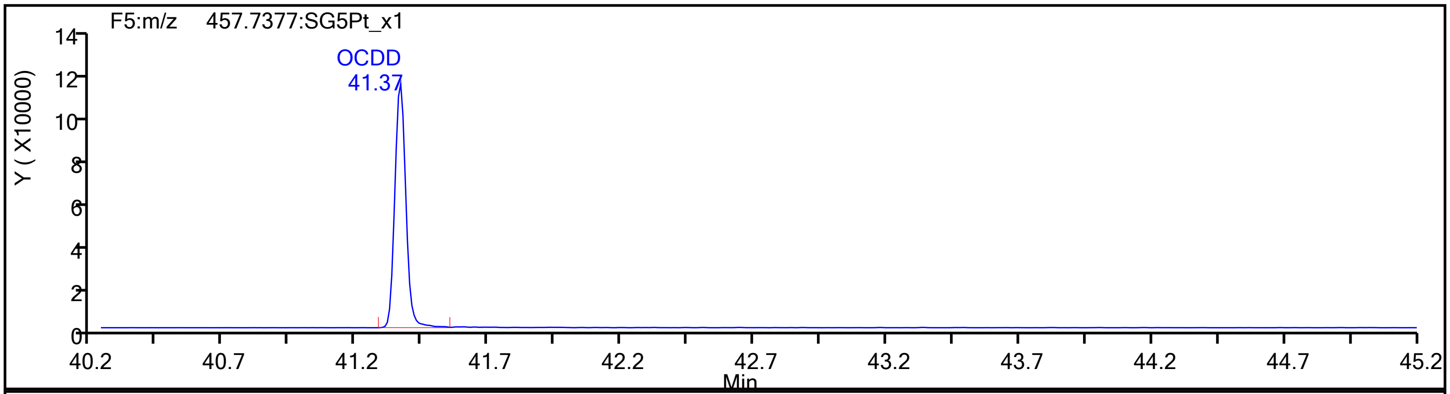

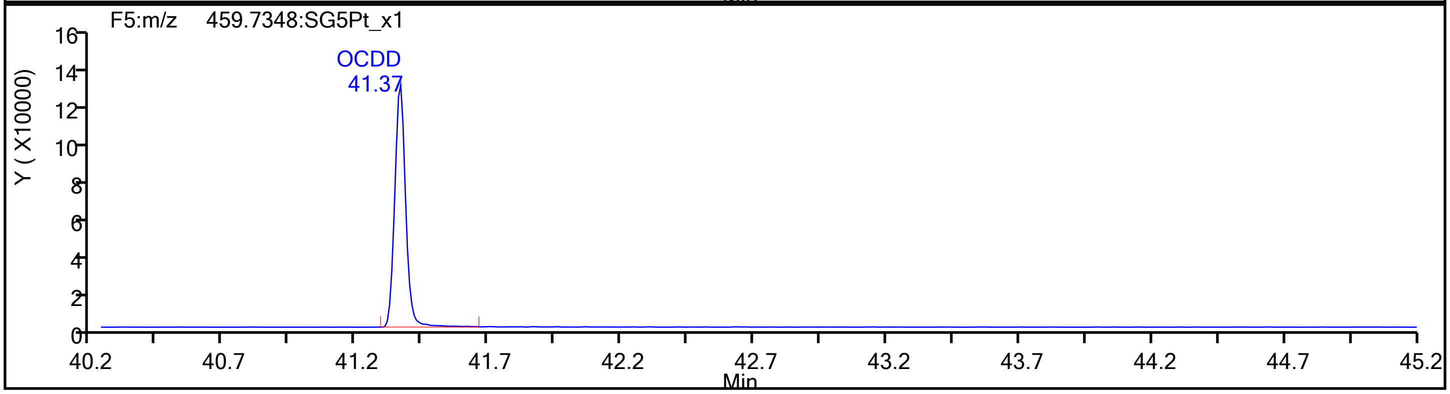

OCDD Standards

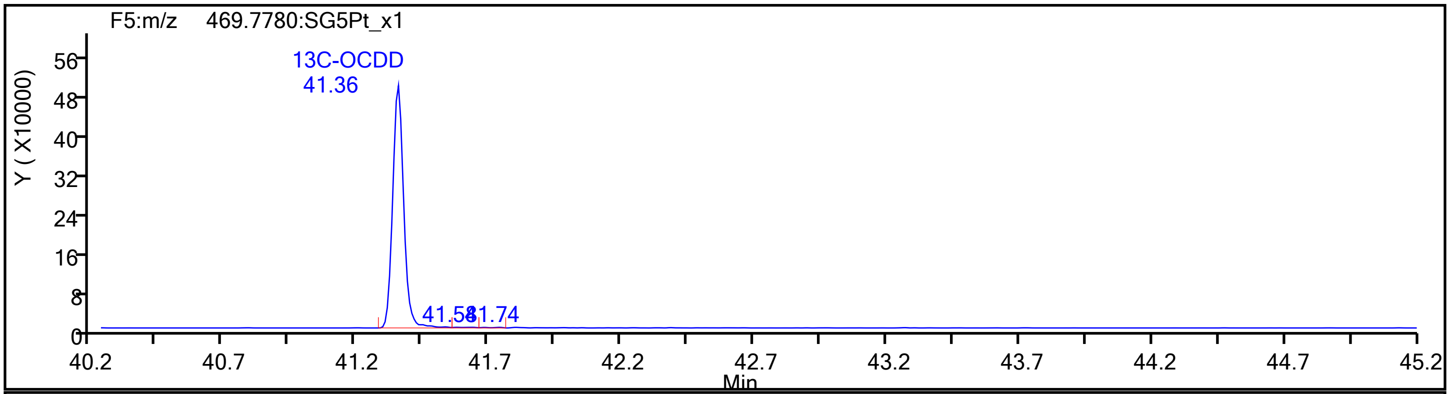

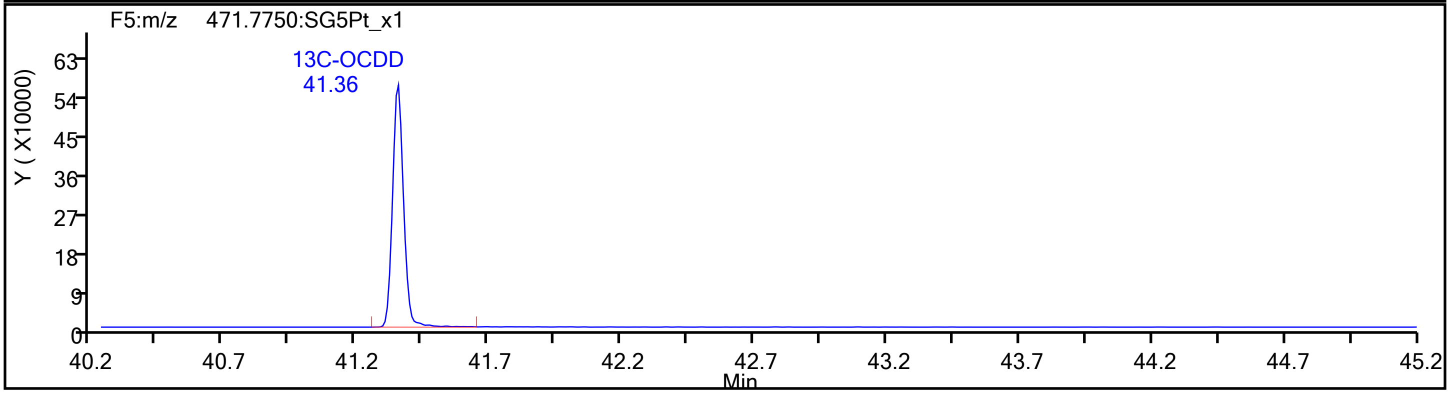

Report Date: 12-Oct-2020 09:16:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d

Injection Date: 10-Oct-2020 10:09:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-1

Worklist#: 420640 Sample Line#: 21

Column Type: DB-5 Column Dia: 0.32 mm

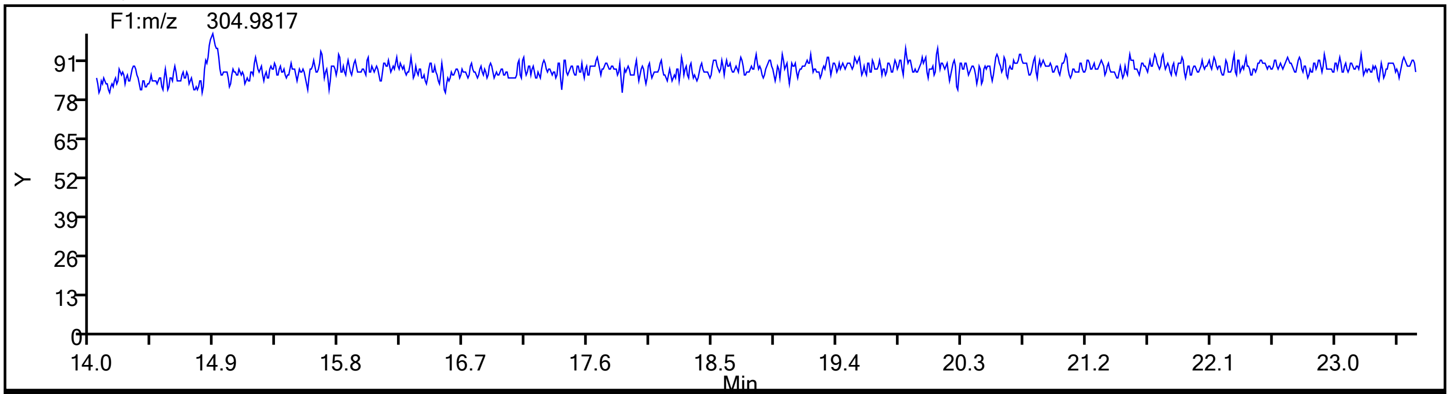

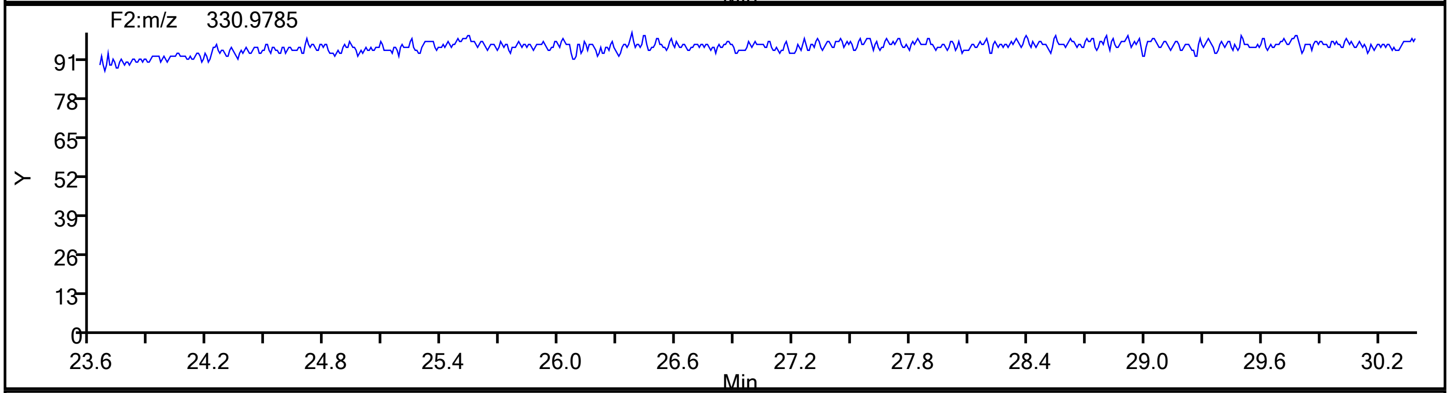

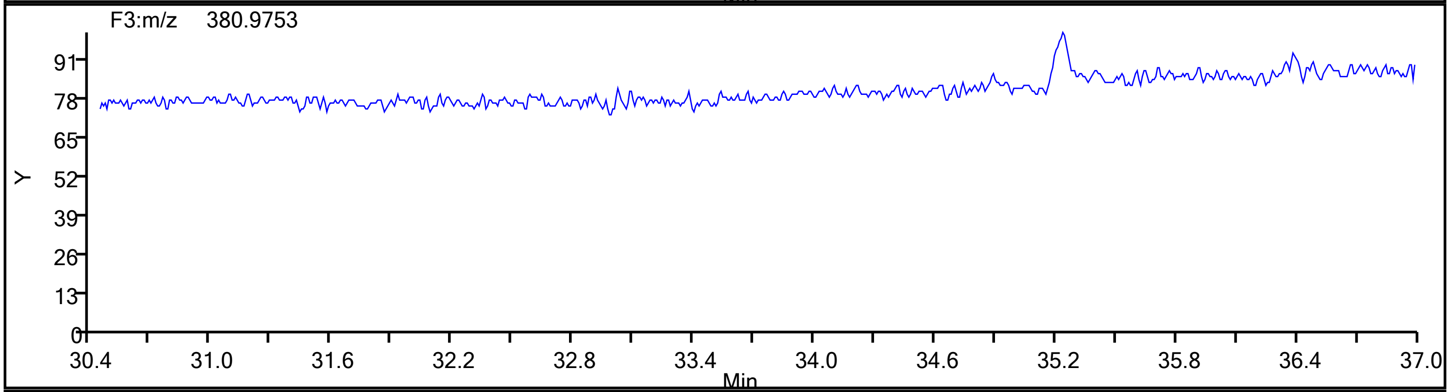

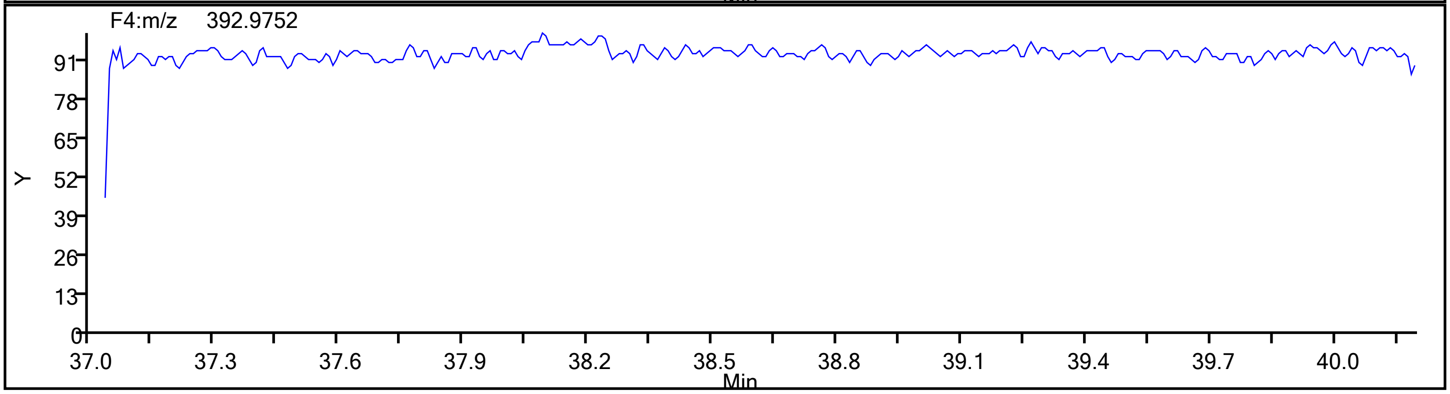

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_23.d

Injection Date:	10-Oct-2020 10:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	420640	Sample Line#:	21
Column Type:	DB-5	Column Dia:	0.32 mm

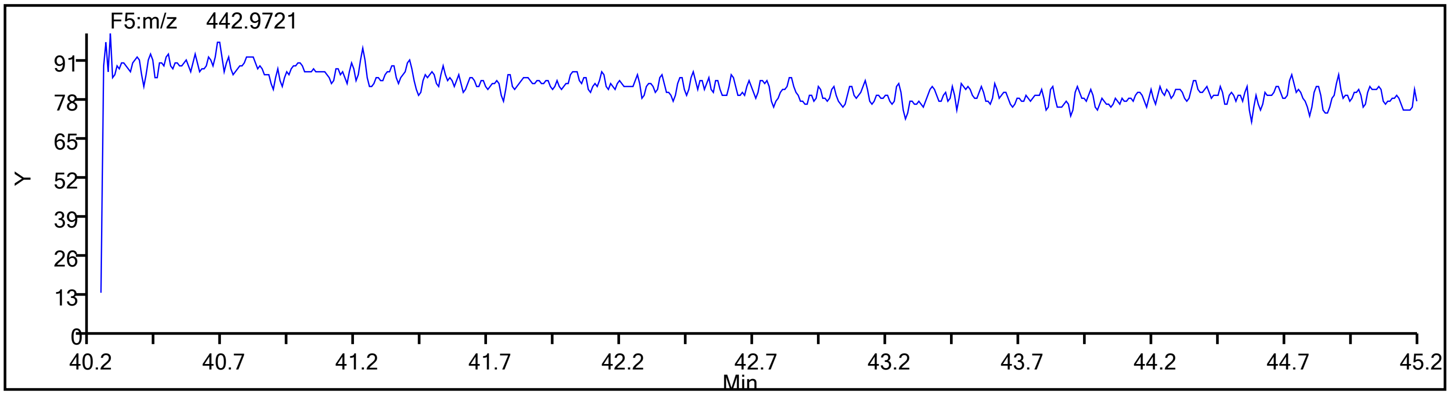

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID: 11215702-Tank#2-valve-3-1 RA
Lab Sample ID: 320-65130-16 RA
Matrix: Water
Lab File ID: 12OC20A11D2_011.d
Analysis Method: 1613B
Date Collected: 09/10/2020 09:30
Extract. Method: 1613B
Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1042.1(mL)
Date Analyzed: 10/12/2020 21:43
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 421482
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	3400	B	9.6	4.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	84		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_011.d
Lims ID: 320-65130-A-16-A
Client ID: 11215702-Tank#2-valve-3-1
Sample Type: Client
Inject. Date: 12-Oct-2020 21:43:38 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-16-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.954	66681865	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.093	87528409	0.79	1.5708	83.6	83.6	0.7546	0.7546	83.56	
2,3,7,8-TCDF	16.107	154222246	0.77	0.9943	177.2	177.2	0.2381	0.2381		
D 13C-2,3,7,8-TCDD	14.707	50692343	0.81	0.9834	77.3	77.3	3.282	3.282	77.31	
2,3,7,8-TCDD	14.735	41838471	0.79	1.2822	64.4	64.4	0.3739	0.3739		
$ 37Cl4-2,3,7,8-TCDD	14.721	27002979		0.9945	40.7	40.7	0.1330	0.1330	102	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 14-Oct-2020 12:17:22 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_011.d				
Lims ID:	320-65130-A-16-A				
Client ID:	11215702-Tank#2-valve-3-1				
Sample Type:	Client				
Inject. Date:	12-Oct-2020 21:43:38	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-16-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	13-Oct-2020 18:46:50	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1633				
First Level Reviewer: shardaa		Date:	13-Oct-2020 18:35:36		

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.954	14.967	-1		29856744	7458554	99572	248930	75		
333.9339	14.954	14.967	-1		36825121	9216722	115725	289312	80	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.093	16.092	0	1.076	38696240	8993455	40792	101980	220		
317.9389	16.093	16.092	0	1.076	48832169	11139145	38274	95685	291	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.107	16.312	-1	1.001	66959689	15811291	8334	20835	1897		
305.8987	16.107	16.312	-1	1.001	87262557	20599749	10727	26817	1920	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.707	15.341	-1	0.983	22705320	6144514	99572	248930	62		
333.9339	14.707	15.341	-1	0.983	27987023	7489505	115725	289312	65	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.735	15.613	0	1.002	18439755	4575158	15420	38550	297		
321.8936	14.721	15.613	-1	1.001	23398716	5995455	10724	26810	559	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.721	15.356	-1	0.984	27002979	6778493	8822	22055	768		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_011.d

Injection Date: 12-Oct-2020 21:43:38 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-1

Worklist#: 421482 Sample Line#: 11

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

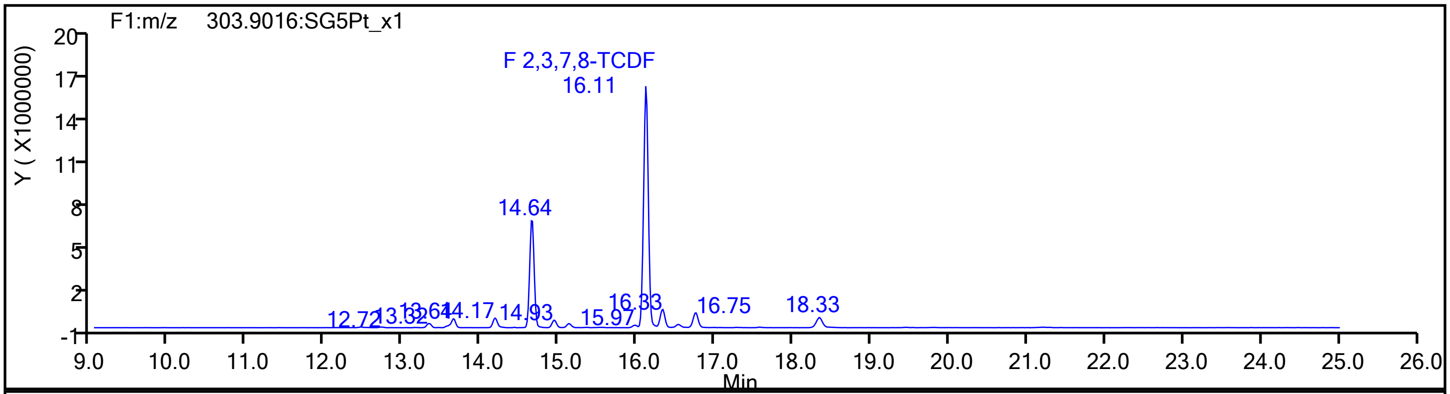

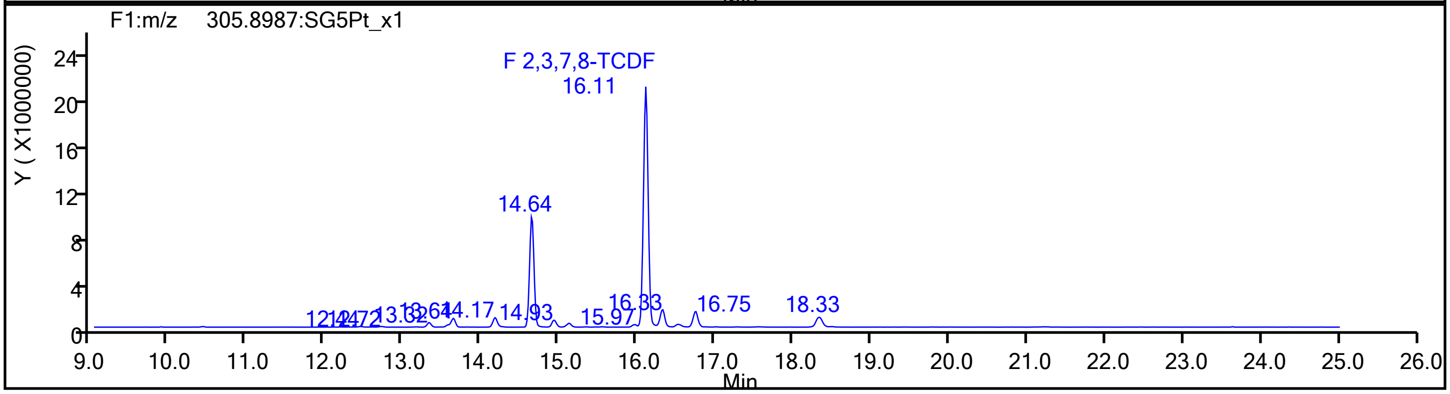

TCDF Standards

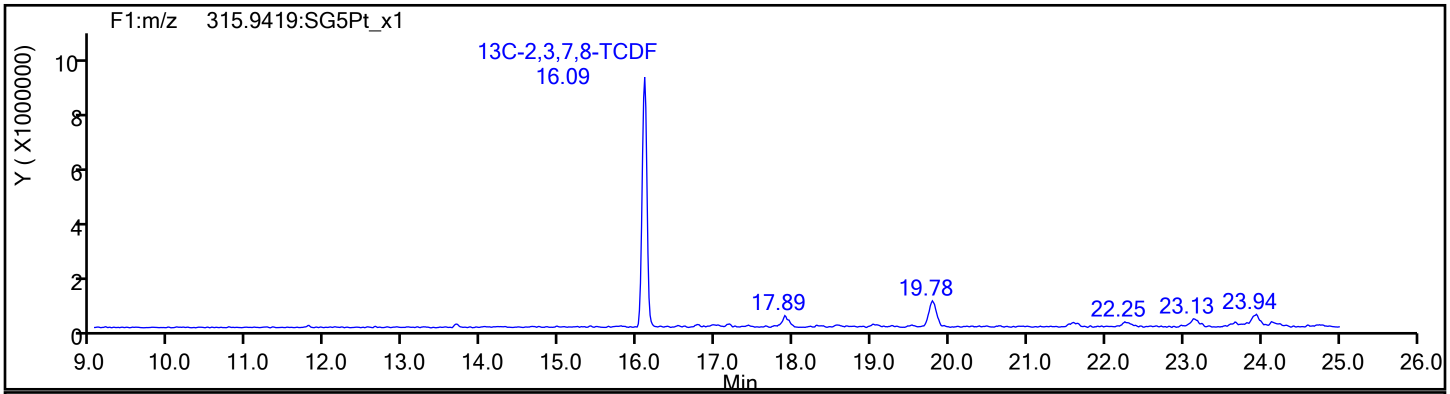

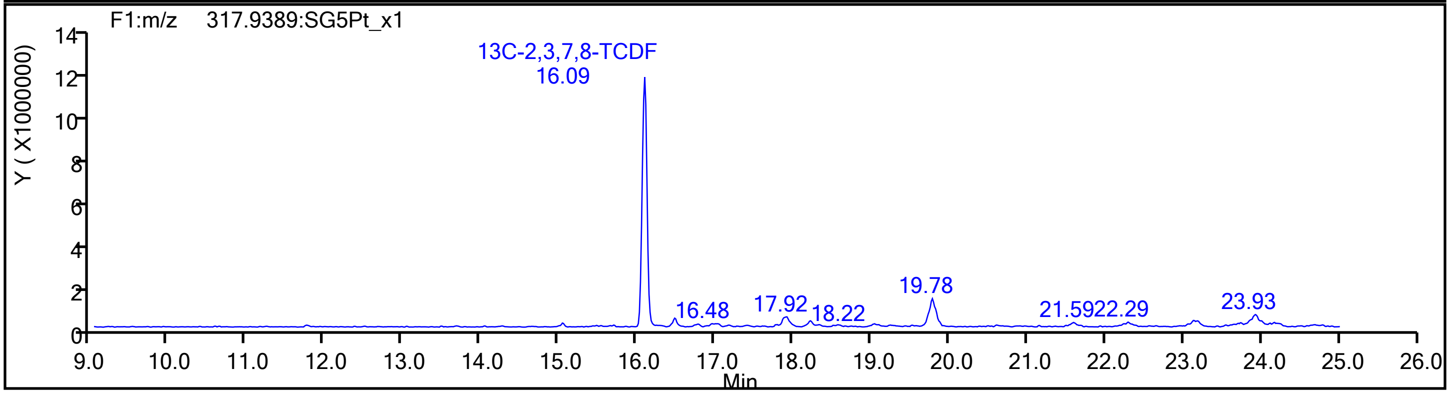

Report Date: 14-Oct-2020 12:17:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_011.d		
Injection Date:	12-Oct-2020 21:43:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	421482	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

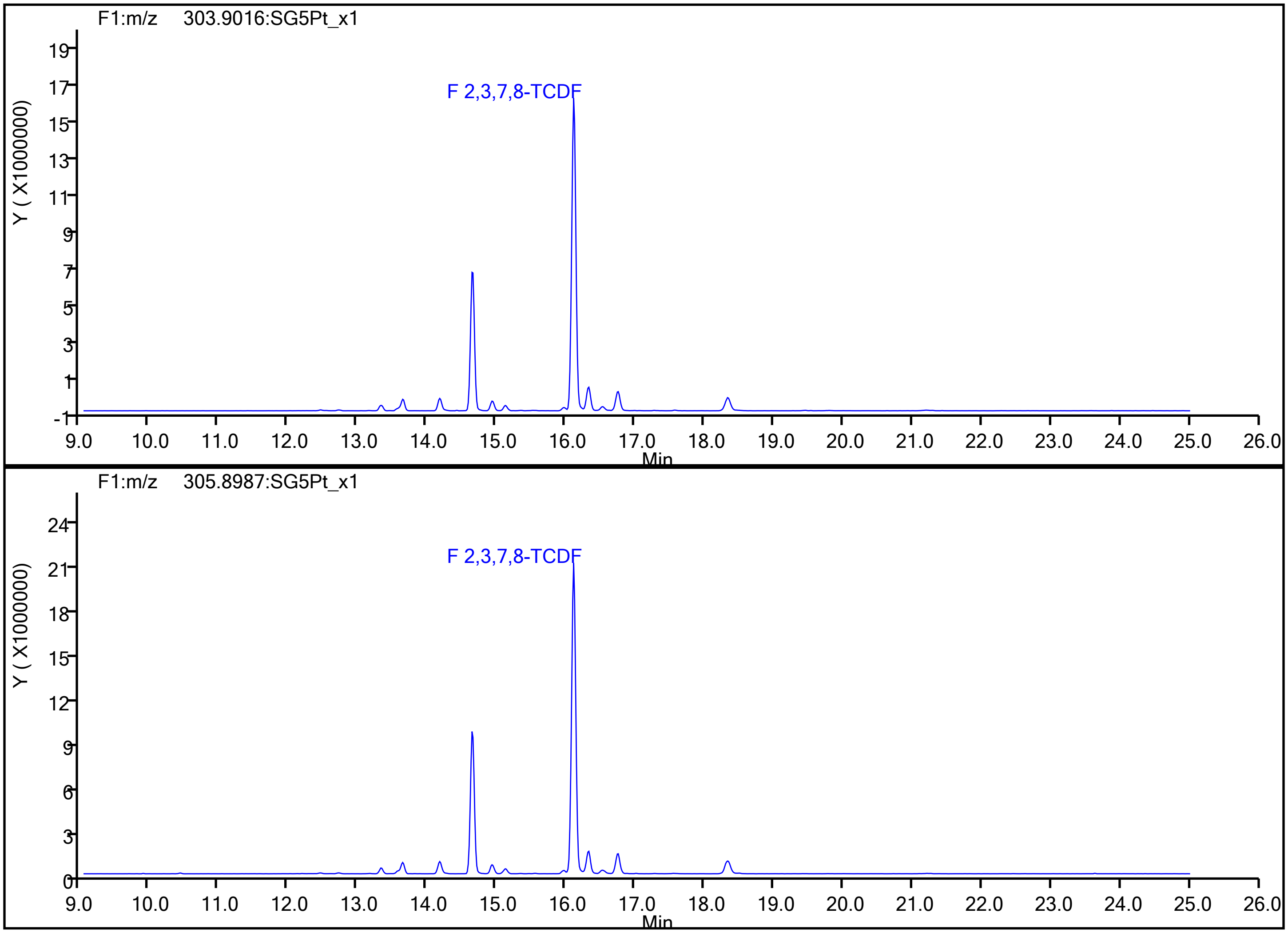

TCDF Interference Mass

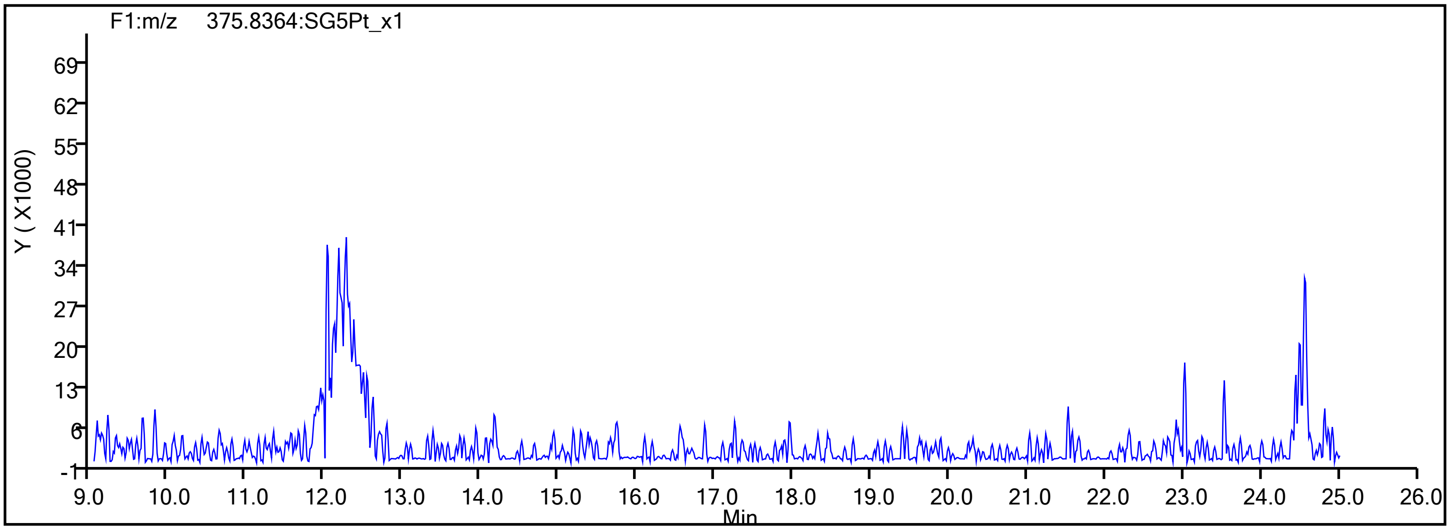

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_011.d		
Injection Date:	12-Oct-2020 21:43:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	421482	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

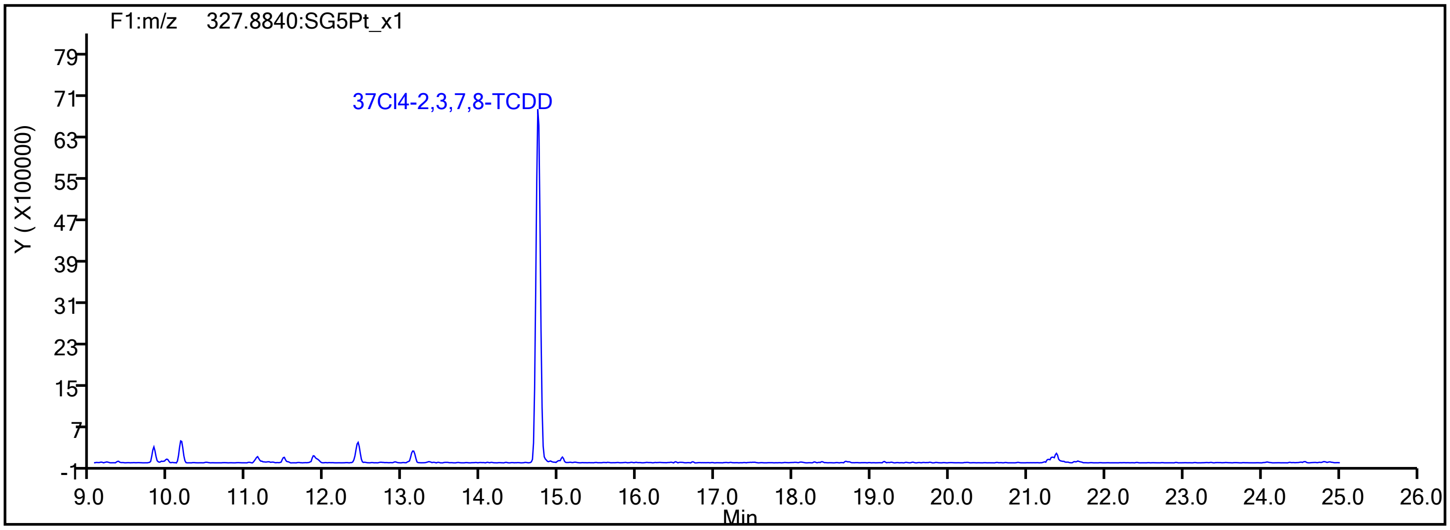

37Cl4-TCDD Standards

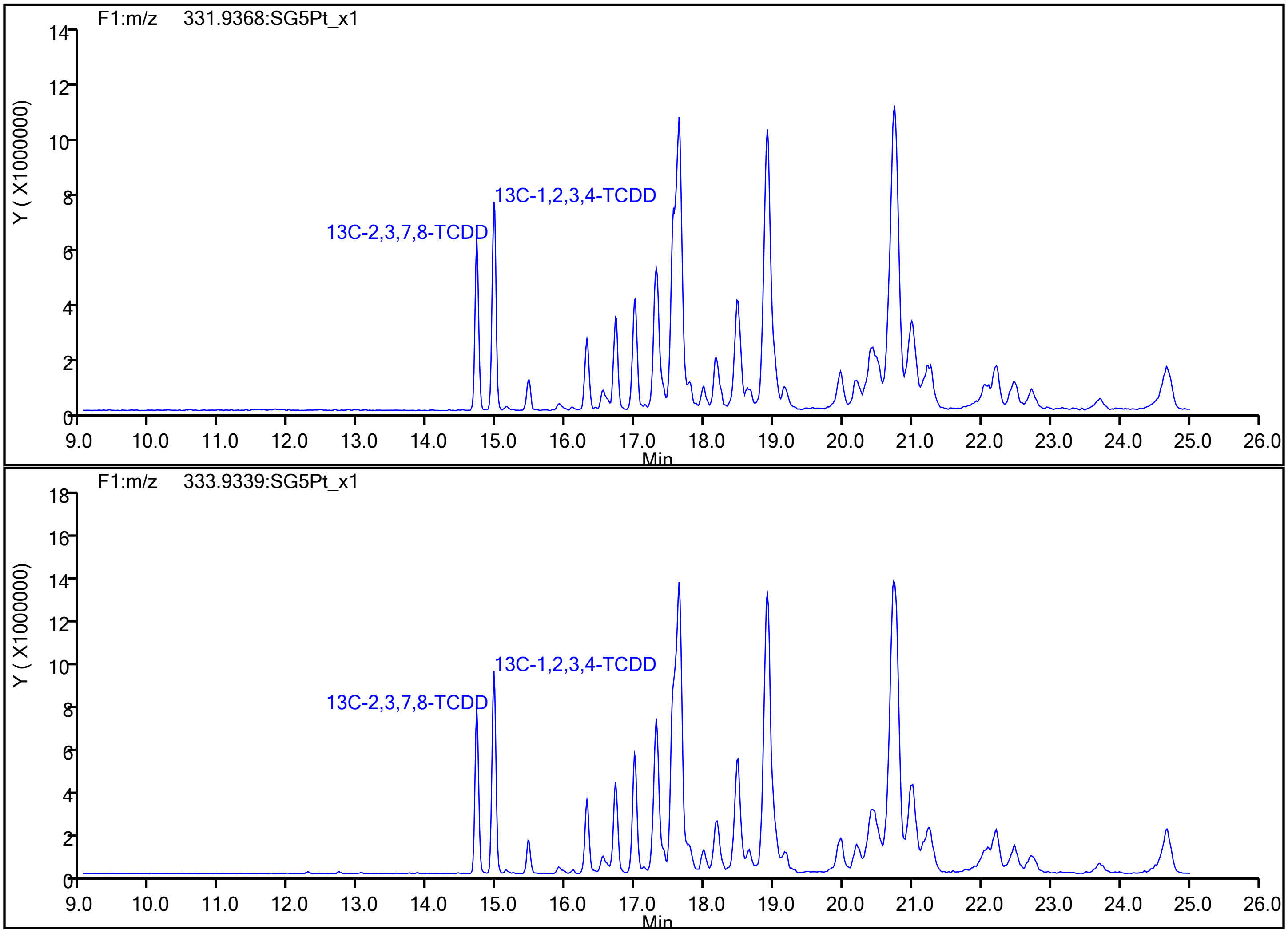

Report Date: 14-Oct-2020 12:17:23 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_011.d		
Injection Date:	12-Oct-2020 21:43:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-1		
Worklist#:	421482	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

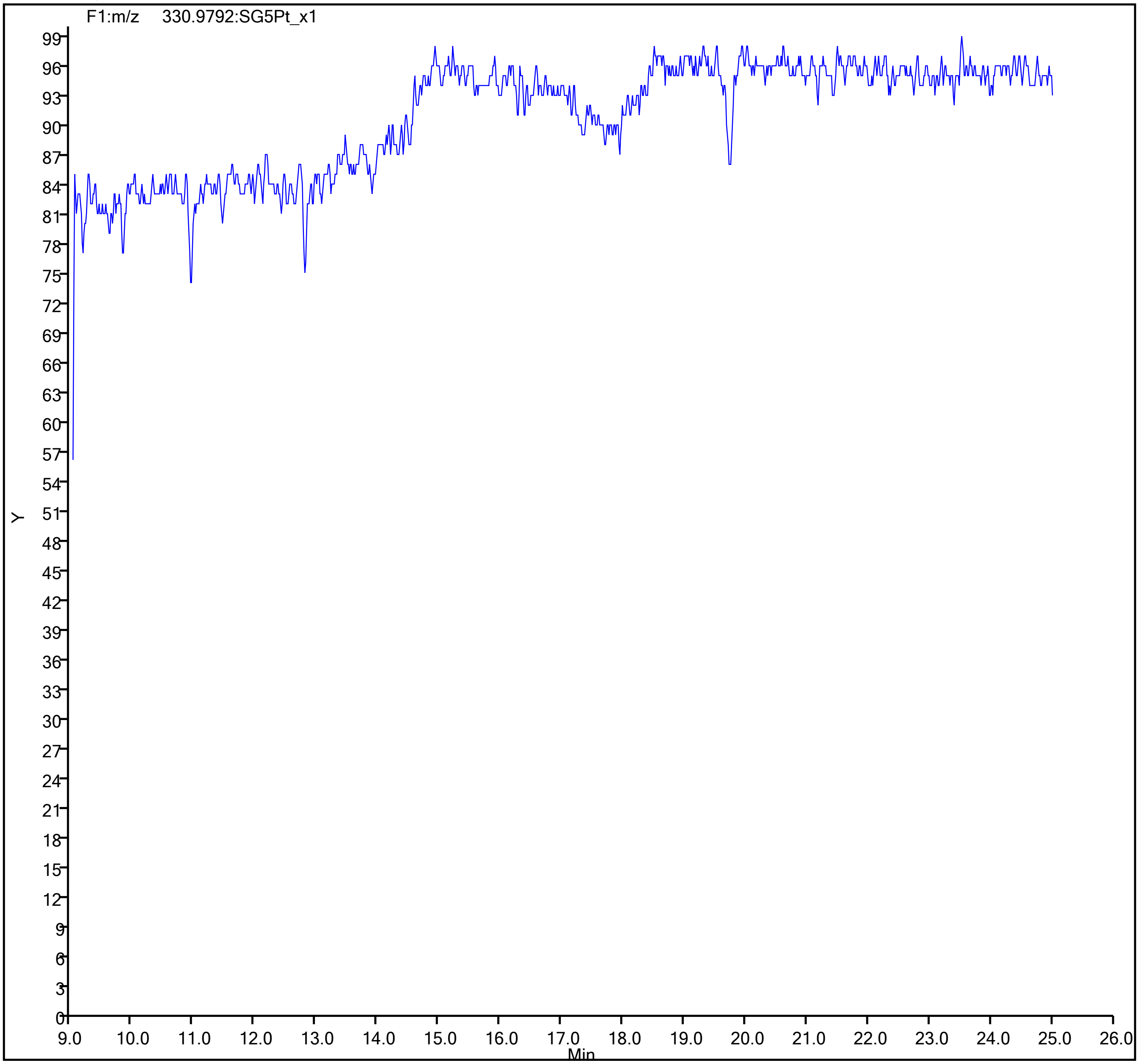

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-4-1 Lab Sample ID: 320-65130-17

Matrix: Water Lab File ID: 09oc20dfs1_24.d

Analysis Method: 1613B Date Collected: 09/10/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1034.1(mL) Date Analyzed: 10/10/2020 10:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1100		9.7	4.1
40321-76-4	1,2,3,7,8-PeCDD	13	J	48	1.1
57117-41-6	1,2,3,7,8-PeCDF	110		48	1.4
57117-31-4	2,3,4,7,8-PeCDF	78		48	1.6
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J q B	48	0.27
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J q	48	0.32
19408-74-3	1,2,3,7,8,9-HxCDD	1.4	J q	48	0.27
70648-26-9	1,2,3,4,7,8-HxCDF	240		48	1.2
57117-44-9	1,2,3,6,7,8-HxCDF	61		48	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	5.4	J B	48	0.93
60851-34-5	2,3,4,6,7,8-HxCDF	8.1	J	48	0.91
35822-46-9	1,2,3,4,6,7,8-HpCDD	33	J	48	0.56
67562-39-4	1,2,3,4,6,7,8-HpCDF	88	B	48	0.48
55673-89-7	1,2,3,4,7,8,9-HpCDF	32	J B	48	0.49
3268-87-9	OCDD	670	B	97	0.89
39001-02-0	OCDF	59	J B	97	0.71
41903-57-5	Total TCDD	1100		9.7	4.1
30402-14-3	Total TCDF	5900	G B	11	11
36088-22-9	Total PeCDD	13	J	48	1.1
30402-15-4	Total PeCDF	290		48	1.5
34465-46-8	Total HxCDD	7.9	J q B	48	0.29
55684-94-1	Total HxCDF	350	B	48	1.0
37871-00-4	Total HpCDD	71		48	0.56
38998-75-3	Total HpCDF	150	B	48	0.49

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-4-1	Lab Sample ID: 320-65130-17
Matrix: Water	Lab File ID: 09oc20dfs1_24.d
Analysis Method: 1613B	Date Collected: 09/10/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1034.1(mL)	Date Analyzed: 10/10/2020 10:57
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	78		25-164
89059-46-1	13C-2,3,7,8-TCDF	71		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	76		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	79		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	76		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	104		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	93		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	74		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	75		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	77		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	83		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	84		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	81		26-138
114423-97-1	13C-OCDD	80		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Sample Type: Client
Inject. Date: 10-Oct-2020 10:57:00 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-17-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: dadunj Date: 12-Oct-2020 09:20:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.671	2380102	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.769	2695021	0.79	1.5883	71.3	71.3	0.4252	0.4252	71.29	
2,3,7,8-TCDF	18.795	5024125	0.80	1.0857	171.7	171.7	0.5787	0.5787		
A Non-2,3,7,8-sub-TCDF	18.413	3832868	0.78	1.0857	131.0	131.0	0.5787	73.3		
S Total TCDF					302.7	302.7	0.5787	0.5787		
D 13C-2,3,7,8-TCDD	20.015	2077701	0.81	1.1194	78.0	78.0	0.3637	0.3637	77.98	
2,3,7,8-TCDD	20.049	1224125	0.76	1.0810	54.5	54.5	0.2131	0.2131		
$ 37Cl4-2,3,7,8-TCDD	20.049	1026616		1.1468	37.6	37.6	0.1001	0.1001	94.03	
A Non-2,3,7,8-sub-TCDD	19.200	102054	0.73	1.0810	4.544	4.544	0.2131	3.971		
S Total TCDD					59.0	59.0	0.2131	0.2131		
D 13C-1,2,3,7,8-PeCDF	25.891	2795695	1.57	1.4782	79.5	79.5	0.2798	0.2798	79.46	
1,2,3,7,8-PeCDF	25.917	162575	1.53	1.0547	5.514	5.514	0.0716	0.0716		
D 13C-2,3,4,7,8-PeCDF	27.316	2522235	1.54	1.3912	76.2	76.2	0.2973	0.2973	76.17	
2,3,4,7,8-PeCDF	27.341	112337	1.58	1.1035	4.036	4.036	0.0828	0.0828		
A F1 PeCDFs	23.059						0.0110	0.0110		
A Non-2,3,7,8-sub-PeCDF	26.475	163347	1.56	1.0791	5.693	5.693	0.0767	2.619		M
S Total PeCDF					15.2	15.2	0.0772	0.0772		
D 13C-1,2,3,7,8-PeCDD	28.074	1702005	1.60	0.9415	76.0	76.0	0.1597	0.1597	75.96	
1,2,3,7,8-PeCDD	28.091	12182	1.67	1.0680	0.6702	0.6702	0.0587	0.0587		M
A Non-2,3,7,8-sub-PeCDD	26.975						0.0587	0.0587		
S Total PeCDD					0.6702	0.6702	0.0587	0.0587		
D 13C-1,2,3,4,7,8-HxCDF	33.808	2120614	0.53	1.1378	73.2	73.2	0.3001	0.3001	73.23	
1,2,3,4,7,8-HxCDF	33.824	328650	1.27	1.2643	12.3	12.3	0.0609	0.0609		
D 13C-1,2,3,6,7,8-HxCDF	33.993	2470008	0.52	1.3173	73.7	73.7	0.2592	0.2592	73.67	
1,2,3,6,7,8-HxCDF	34.027	94756	1.25	1.2230	3.137	3.137	0.0561	0.0561		
D 13C-2,3,4,6,7,8-HxCDF	34.954	2444882	0.52	1.2457	77.1	77.1	0.2741	0.2741	77.11	
2,3,4,6,7,8-HxCDF	34.987	12824	1.15	1.2464	0.4208	0.4208	0.0470	0.0470		
D 13C-1,2,3,7,8,9-HxCDF	35.948	2252677	0.53	1.1840	74.8	74.8	0.2884	0.2884	74.75	
1,2,3,7,8,9-HxCDF	35.965	7929	1.13	1.2638	0.2785	0.2785	0.0479	0.0479		
A Non-2,3,7,8-sub-HxCDF	33.855	59787	1.29	1.2494	2.061	2.061	0.0523	0.7272		
S Total HxCDF					18.2	18.2	0.0530	0.0530		

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.737	2545276	1.23	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.206	2242511	1.30	0.8477	103.9	103.9	0.1520	0.1520	104	
1,2,3,4,7,8-HxCDD	35.232	3482	1.24	1.1561	0.1469	0.1343	0.0138	0.0138		RQ
D 13C-1,2,3,6,7,8-HxCDD	35.333	2349951	1.28	0.9979	92.5	92.5	0.1292	0.1292	92.52	
1,2,3,6,7,8-HxCDD	35.350	1970	1.24	1.0284	0.0990	0.0815	0.0165	0.0165		RQM
1,2,3,7,8,9-HxCDD	35.762	1924	1.24	1.1789	0.0804	0.0711	0.0140	0.0140		RQM
A Non-2,3,7,8-sub-HxCDD	34.365	3133	1.31	1.1211	0.1217	0.1217	0.0147	0.1217		
S Total HxCDD					0.4480	0.4086	0.0148	0.0148		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.904	2117659	0.45	0.9884	84.2	84.2	0.3303	0.3303	84.18	
1,2,3,4,6,7,8-HpCDF	37.912	144596	1.00	1.5064	4.533	4.533	0.0249	0.0249		
D 13C-1,2,3,4,7,8,9-HpCDF	39.218	1908087	0.44	0.9203	81.5	81.5	0.3548	0.3548	81.46	
1,2,3,4,7,8,9-HpCDF	39.235	46186	1.10	1.4548	1.664	1.664	0.0254	0.0254		
A Non-2,3,7,8-sub-HpCDF	38.593	41814	0.93	1.4806	1.403	1.403	0.0251	1.403		M
S Total HpCDF					7.600	7.600	0.0251	0.0251		
D 13C-1,2,3,4,6,7,8-HpCDD	38.906	2014763	1.07	0.9556	82.8	82.8	0.2116	0.2116	82.83	
1,2,3,4,6,7,8-HpCDD	38.915	36229	1.00	1.0640	1.690	1.690	0.0292	0.0292		
A Non-2,3,7,8-sub-HpCDD	38.941	42245	1.09	1.0640	1.971	1.971	0.0292	1.971		a
S Total HpCDD					3.661	3.661	0.0292	0.0292		
D 13C-OCDD	41.358	3014952	0.89	0.7420	159.6	159.6	0.2679	0.2679	79.82	
OCDF	41.442	65751	0.84	1.4296	3.051	3.051	0.0367	0.0367		
OCDD	41.367	585935	0.89	1.1293	34.4	34.4	0.0461	0.0461		

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
a - User Assigned ID

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Sample Type: Client
Inject. Date: 10-Oct-2020 10:57:00 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-17-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: dadunj Date: 12-Oct-2020 09:20:00

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.671	19.716	-3		1053754	162236	400	1000	406		
333.9338	19.662	19.716	-3		1326348	196849	185	462	1064	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.769	18.830	-4	0.954	1189836	202062	678	1695	298		
317.9389	18.778	18.830	-3	0.955	1505185	243913	292	730	835	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.795	18.865	-4	1.001	2229095	328611	727	1817	452		
305.8987	18.795	18.865	-4	1.001	2795030	404124	394	985	1026	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.459	18.413	-117	0.877	51781	9790	727	1817	13		
305.8987	16.450	18.413	-118	0.876	71454	14108	394	985	36	0.72(0.65-0.89)	
303.9016	16.906	18.413	-90	0.901	102055	15793	727	1817	22		
305.8987	16.897	18.413	-91	0.900	135514	19613	394	985	50	0.75(0.65-0.89)	
303.9016	17.309	18.413	-66	0.922	87016	13228	727	1817	18		
305.8987	17.301	18.413	-67	0.922	115296	17110	394	985	43	0.75(0.65-0.89)	
303.9016	17.662	18.413	-45	0.941	102244	15455	727	1817	21		
305.8987	17.653	18.413	-46	0.941	130503	20785	394	985	53	0.78(0.65-0.89)	
303.9016	18.125	18.413	-17	0.966	955559	158174	727	1817	218		
305.8987	18.125	18.413	-17	0.966	1190307	198648	394	985	504	0.80(0.65-0.89)	
303.9016	18.511	18.413	6	0.986	50577	7093	727	1817	10		
305.8987	18.503	18.413	5	0.986	74138	10584	394	985	27	0.68(0.65-0.89)	
303.9016	19.533	18.413	67	1.041	161901	24073	727	1817	33		
305.8987	19.533	18.413	67	1.041	204867	30273	394	985	77	0.79(0.65-0.89)	
303.9016	19.937	18.413	91	1.062	35431	5442	727	1817	7		
305.8987	19.929	18.413	91	1.062	52951	6830	394	985	17	0.67(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	21.888	18.413	208	1.166	132538	17803	727	1817	24		
305.8987	21.897	18.413	209	1.167	178736	24036	394	985	61	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.015	20.067	-3	1.017	927270	132400	400	1000	331		
333.9338	20.023	20.067	-3	1.018	1150431	161525	185	462	873	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.049	20.101	-3	1.002	527206	74532	185	462	403		
321.8936	20.049	20.101	-3	1.002	696919	99807	86	215	1161	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.049	20.103	-3	1.019	1026616	151807	165	412	920		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.860	19.200	40	0.992	5070	1216	185	462	7		
321.8936	19.852	19.200	39	0.992	7806	1571	86	215	18	0.65(0.65-0.89)	
319.8965	20.668	19.200	88	1.033	38026	5797	185	462	31		
321.8936	20.685	19.200	89	1.033	51152	6819	86	215	79	0.74(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.891	25.934	-3	1.316	1709076	290728	369	922	788		
353.8970	25.891	25.934	-3	1.316	1086619	188341	225	562	837	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.917	25.951	-2	1.001	98285	16271	78	195	209		
341.8567	25.908	25.951	-3	1.001	64290	10973	67	167	164	1.53(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.316	27.359	-3	1.389	1529189	238115	369	922	645		
353.8970	27.307	27.359	-3	1.388	993046	158093	225	562	703	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.341	27.376	-2	1.001	68771	11021	78	195	141		
341.8567	27.333	27.376	-3	1.001	43566	7072	67	167	106	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.059						1	2			
341.8567	23.059						20	50			
A Non-2,3,7,8-sub-PeCDF											M
339.8597	24.534	26.475	-116	0.948	46184	8365	78	195	107		M
341.8567	24.534	26.475	-116	0.948	28958	4937	67	167	74	1.59(1.32-1.78)	
339.8597	25.790	26.475	-41	0.996	7019	1730	78	195	22		
341.8567	25.782	26.475	-42	0.996	5256	1549	67	167	23	1.34(1.32-1.78)	
339.8597	26.464	26.475	-1	1.022	28848	4453	78	195	57		
341.8567	26.464	26.475	-1	1.022	18295	2979	67	167	44	1.58(1.32-1.78)	
339.8597	27.653	26.475	71	1.068	17531	2633	78	195	34		
341.8567	27.645	26.475	70	1.068	11256	1716	67	167	26	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.074	28.109	-2	1.427	1047015	154826	141	352	1098		
369.8919	28.066	28.109	-3	1.427	654990	95740	75	187	1277	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.091	28.134	-3	1.001	7612	1338	49	122	27		M
357.8516	28.100	28.134	-2	1.001	4570	841	14	35	60	1.67(1.32-1.78)	M

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						49	122			
357.8516	26.975						14	35			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.808	33.838	-2	0.946	731681	136111	267	667	510		
385.8610	33.799	33.838	-2	0.946	1388933	253517	528	1320	480	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.824	33.855	-2	1.000	184107	32179	70	175	460		
375.8178	33.816	33.855	-2	1.000	144543	26158	50	125	523	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.993	34.024	-2	0.951	840414	149807	267	667	561		
385.8610	34.002	34.024	-1	0.951	1629594	287591	528	1320	545	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.027	34.049	-1	1.001	52634	9091	70	175	130		
375.8178	34.018	34.049	-2	1.001	42122	7156	50	125	143	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.954	34.976	-1	0.978	838038	174912	267	667	655		
385.8610	34.954	34.976	-1	0.978	1606844	337345	528	1320	639	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.987	35.001	-1	1.001	6872	1576	70	175	23		
375.8178	34.979	35.001	-1	1.001	5952	1395	50	125	28	1.15(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.948	35.962	-1	1.006	778187	168477	267	667	631		
385.8610	35.948	35.962	-1	1.006	1474490	327165	528	1320	620	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.965	35.979	-1	1.000	4199	1182	70	175	17		
375.8178	35.965	35.979	-1	1.000	3730	807	50	125	16	1.13(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.954	33.855	-114	0.945	12209	1645	70	175	24		
375.8178	31.945	33.855	-114	0.945	8889	1344	50	125	27	1.37(1.05-1.43)	
373.8208	33.058	33.855	-48	0.978	7120	1159	70	175	17		
375.8178	33.058	33.855	-48	0.978	5341	935	50	125	19	1.33(1.05-1.43)	
373.8208	34.819	33.855	58	1.030	3519	676	70	175	10		
375.8178	34.836	33.855	59	1.030	3202	635	50	125	13	1.10(1.05-1.43)	
373.8208	36.083	33.855	133	1.067	10872	3012	70	175	43		
375.8178	36.074	33.855	133	1.067	8635	2194	50	125	44	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.737	35.760	-1		1406232	320152	148	370	2163		
403.8529	35.737	35.760	-1		1139044	261785	152	380	1722	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.206	35.220	-1	0.985	1267713	310411	148	370	2097		
403.8529	35.206	35.220	-1	0.985	974798	233915	152	380	1539	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8158	35.232	35.237	0	1.001	1928	394	6	15	66		
391.8127	35.232	35.237	0	1.001	1881	435	29	72	15	1.02(1.05-1.43)	
	Empc Correction				1554	317	29	72	11		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.333	35.355	-1	0.989	1318557	286792	148	370	1938		
403.8529	35.333	35.355	-1	0.989	1031394	225112	152	380	1481	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8158	35.350	35.372	-1	1.000	1091	283	6	15	47		
391.8127	35.333	35.372	-2	1.000	1301	289	29	72	10	0.84(1.05-1.43)	M
	Empc Correction				879	228	29	72	8		
1,2,3,7,8,9-HxCDD											RQM
389.8158	35.762	35.768	0	1.016	1318	229	6	15	38		M
	Empc Correction				1065	229	6	15	38		
391.8127	35.729	35.768	-2	1.015	859	185	29	72	6	1.53(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											
389.8158	32.965	34.365	-84	0.933	1774	382	6	15	64		
391.8127	32.973	34.365	-83	0.933	1359	228	29	72	8	1.31(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.904	37.927	-1	1.061	653492	199436	256	640	779		
419.8220	37.904	37.927	-1	1.061	1464167	445560	504	1260	884	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.912	37.935	-1	1.000	72312	22161	59	147	376		
409.7788	37.912	37.935	-1	1.000	72284	21853	38	95	575	1.00(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.218	39.233	-1	1.097	585262	196372	256	640	767		
419.8220	39.218	39.233	-1	1.097	1322825	459220	504	1260	911	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.235	39.250	-1	1.000	24239	7675	59	147	130		
409.7788	39.226	39.250	-1	1.000	21947	7487	38	95	197	1.10(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7817	38.300	38.593	-18	1.010	20183	6293	59	147	107		
409.7788	38.300	38.593	-18	1.010	21631	6494	38	95	171	0.93(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.906	38.921	-1	1.089	1040426	357609	232	580	1541		
437.8140	38.906	38.921	-1	1.089	974337	325102	239	597	1360	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.915	38.938	-1	1.000	18076	6226	61	152	102		
425.7737	38.915	38.938	-1	1.000	18153	5574	24	60	232	1.00(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.241	38.941	-42	0.983	22044	7209	61	152	118		a
425.7737	38.241	38.941	-42	0.983	20201	6464	24	60	269	1.09(0.88-1.20)	
13C-OCDD											
469.7780	41.358	41.373	-1	1.157	1418457	478063	252	630	1897		
471.7750	41.358	41.373	-1	1.157	1596495	540034	211	527	2559	0.89(0.76-1.02)	
OCDF											
441.7428	41.442	41.457	-1	1.002	30017	10247	32	80	320		
443.7399	41.451	41.457	0	1.002	35734	11885	75	187	158	0.84(0.76-1.02)	
OCDD											
457.7377	41.367	41.381	-1	1.000	275134	93043	53	132	1756		
459.7348	41.367	41.381	-1	1.000	310801	102164	53	132	1928	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- a - User Assigned ID

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Inject. Date: 10-Oct-2020 10:57:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 22

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2695021	445975

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2695021	445975

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.459	51781	9790	71454	14108	4.21	0.72	
16.906	102055	15793	135514	19613	8.12	0.75	
17.309	87016	13228	115296	17110	6.91	0.75	
17.662	102244	15455	130503	20785	7.95	0.78	
18.125	955559	158174	1190307	198648	73.3	0.80	
18.511	50577	7093	74138	10584	4.26	0.68	
19.533	161901	24073	204867	30273	12.5	0.79	
19.937	35431	5442	52951	6830	3.02	0.67	
21.888	132538	17803	178736	24036	10.6	0.74	
Signal Totals:							
	1679102	266851	2153766	341987			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3832868	608838				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 131.000 = (3832868 * 100.000) / (2695021 * 1.086)

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Lims ID:	320-65130-A-17-A		
Client ID:	11215702-Tank#2-valve-4-1		
Inject. Date:	10-Oct-2020 10:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	22

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	2077701	293925

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	2077701	293925

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.860	5070	1216	7806	1571	0.5733	0.65	
20.668	38026	5797	51152	6819	3.97	0.74	
Signal Totals:							
	43096	7013	58958	8390			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	102054	15403				0.73	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.544 = (102054 * 100.000) / (2077701 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Inject. Date: 10-Oct-2020 10:57:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 22

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2795695	479069
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2522235	396208

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2658965	437638

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.534	46184	8365	28958	4937	2.62	1.59	M
25.790	7019	1730	5256	1549	0.4278	1.34	
26.464	28848	4453	18295	2979	1.64	1.58	
27.653	17531	2633	11256	1716	1.00	1.56	
Signal Totals:							
	99582	17181	63765	11181			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	163347	28362				1.56	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.693 = (163347 * 100.000) / (2658965 * 1.079)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Lims ID:	320-65130-A-17-A		
Client ID:	11215702-Tank#2-valve-4-1		
Inject. Date:	10-Oct-2020 10:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	22

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	2120614	389628
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2470008	437398
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2444882	512257
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	2252677	495642

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2322045	458731

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.954	12209	1645	8889	1344	0.7272	1.37	
33.058	7120	1159	5341	935	0.4295	1.33	
34.819	3519	676	3202	635	0.2317	1.10	
36.083	10872	3012	8635	2194	0.6724	1.26	
Signal Totals:							
	33720	6492	26067	5108			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59787	11600				1.29	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.061 = (59787 * 100.000) / (2322045 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Lims ID:	320-65130-A-17-A		
Client ID:	11215702-Tank#2-valve-4-1		
Inject. Date:	10-Oct-2020 10:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	22

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	2242511	544326
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2349951	511904
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2296231	528115

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.965	1774	382	1359	228	0.1217	1.31	
Signal Totals:							
	1774	382	1359	228			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3133	610				1.31	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1217 = (3133 * 100.000) / (2296231 * 1.121)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Lims ID:	320-65130-A-17-A		
Client ID:	11215702-Tank#2-valve-4-1		
Inject. Date:	10-Oct-2020 10:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	22

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2117659	644996
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1908087	655592

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	2012873	650294

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.300	20183	6293	21631	6494	1.40	0.93	M
Signal Totals:							
	20183	6293	21631	6494			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41814	12787				0.93	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.403 = (41814 * 100.000) / (2012873 * 1.481)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Inject. Date: 10-Oct-2020 10:57:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 22

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2014763	682711

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	2014763	682711

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.241	22044	7209	20201	6464	1.97	1.09	a
Signal Totals:							
	22044	7209	20201	6464			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	42245	13673				1.09	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.971 = (42245 * 100.000) / (2014763 * 1.064)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d				
Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17		
Client ID:	11215702-Tank#2-valve-4-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Processing Integration Results

RT = 24.534 Area = 48073

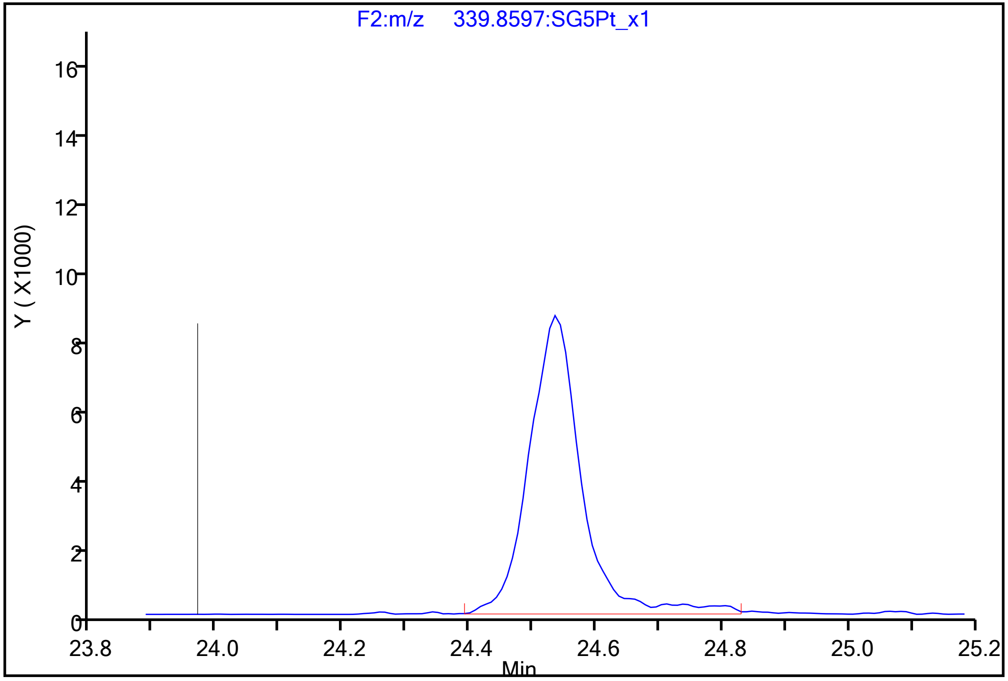

Manual Integration Results

RT = 24.534 Area = 46184 M

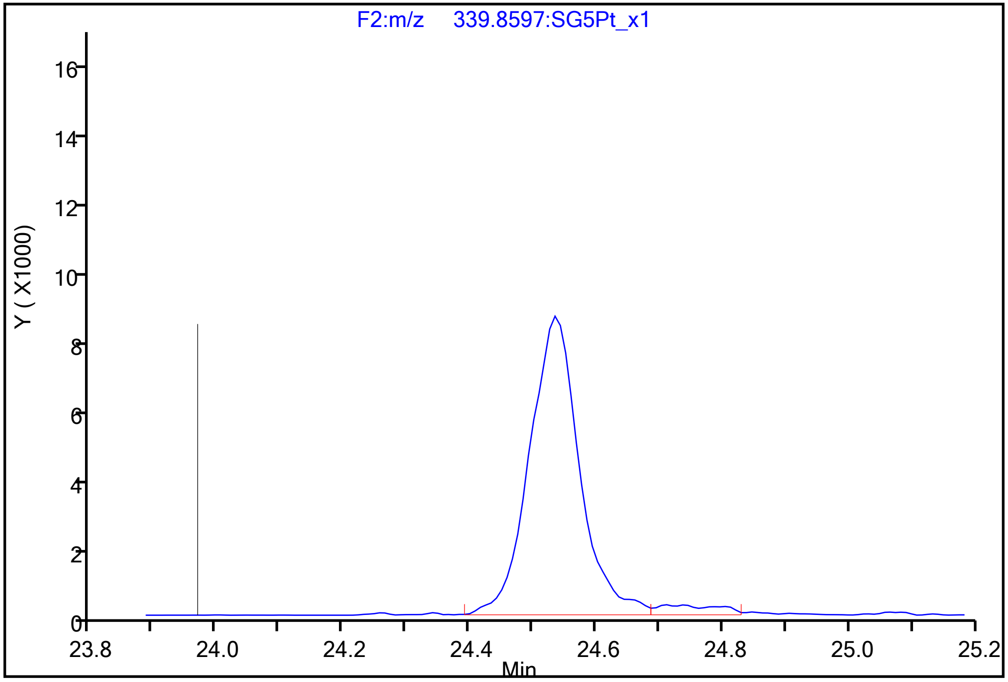

Reviewer: dadunj, 12-Oct-2020 09:17:31

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:31:53

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d				
Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17		
Client ID:	11215702-Tank#2-valve-4-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

RT: 28.10
Area: 4901
Amount: 0.231238
Amount Units: pg/ul

Processing Integration Results

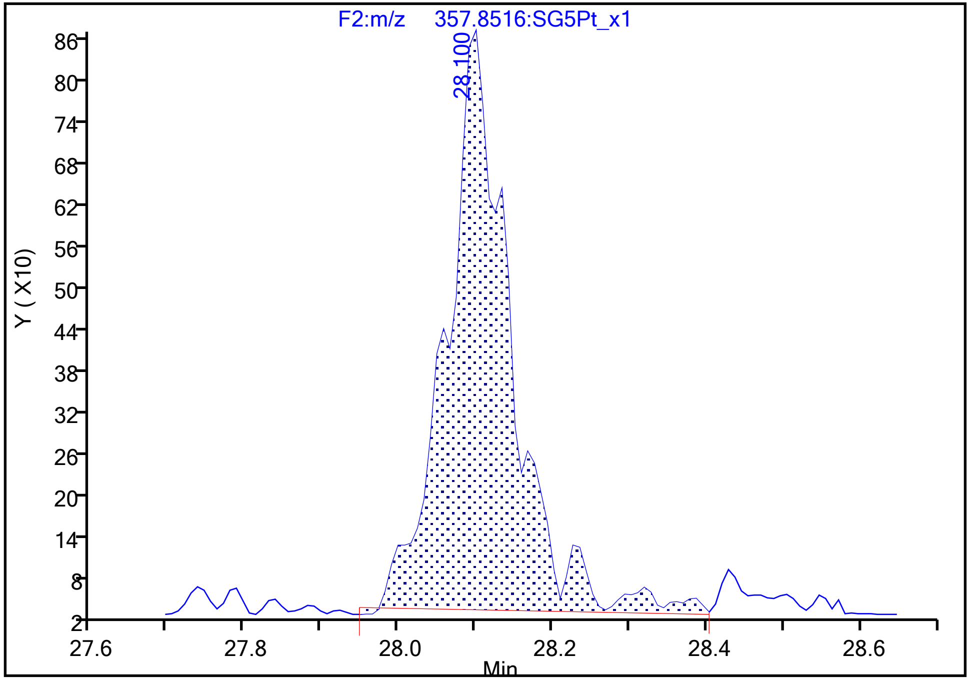

RT: 28.10
Area: 4570
Amount: 0.670169
Amount Units: pg/ul

Manual Integration Results

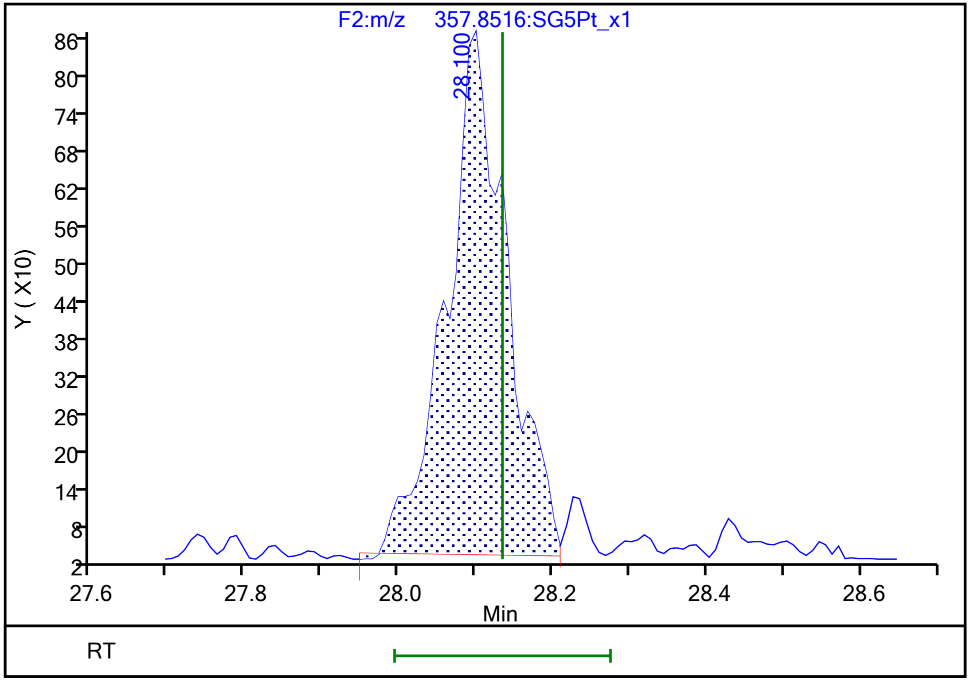

Reviewer: dadunj, 12-Oct-2020 09:18:03

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d

Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17		
Client ID:	11215702-Tank#2-valve-4-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	28.09
Area:	7709
Amount:	0.231238
Amount Units:	pg/ul

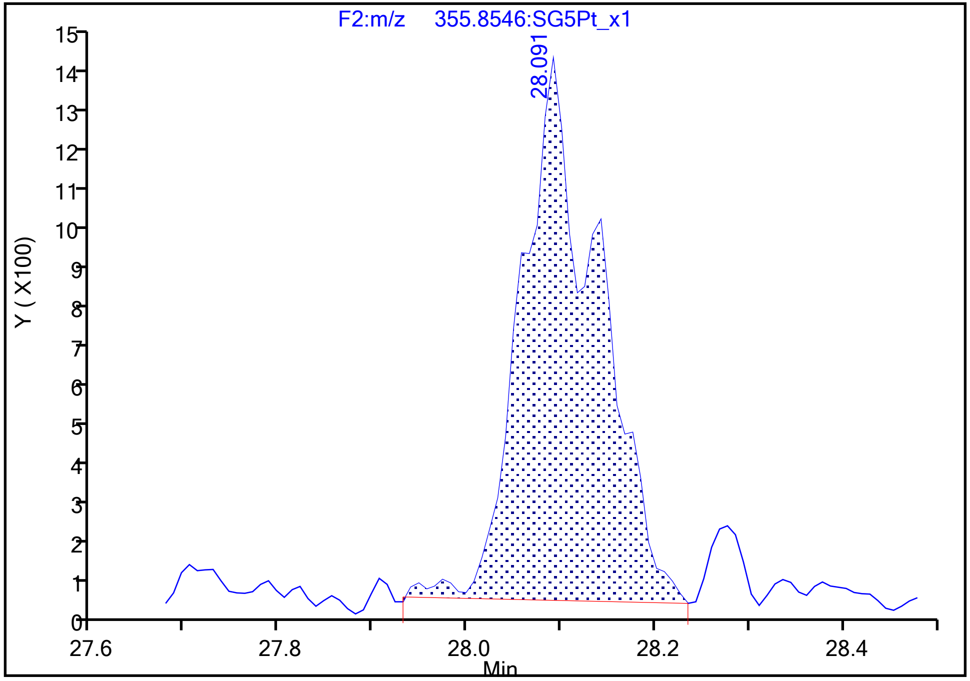

Manual Integration Results

RT:	28.09
Area:	7612
Amount:	0.670169
Amount Units:	pg/ul

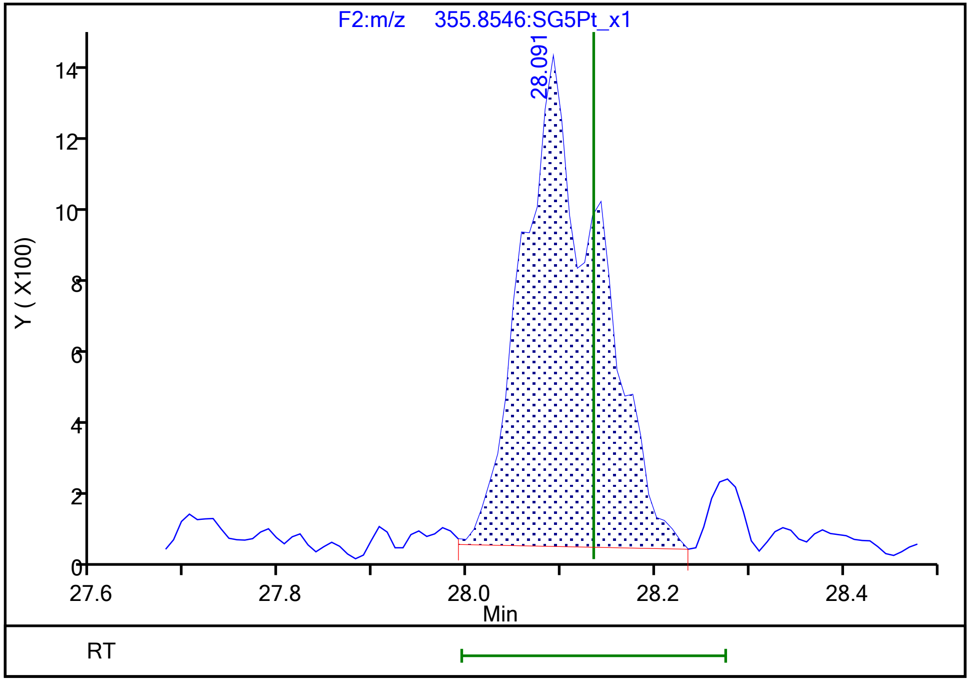

Reviewer: dadunj, 12-Oct-2020 09:18:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d				
Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17		
Client ID:	11215702-Tank#2-valve-4-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

RT:	35.33
Area:	1403
Amount:	0.034400
Amount Units:	pg/ul

Processing Integration Results

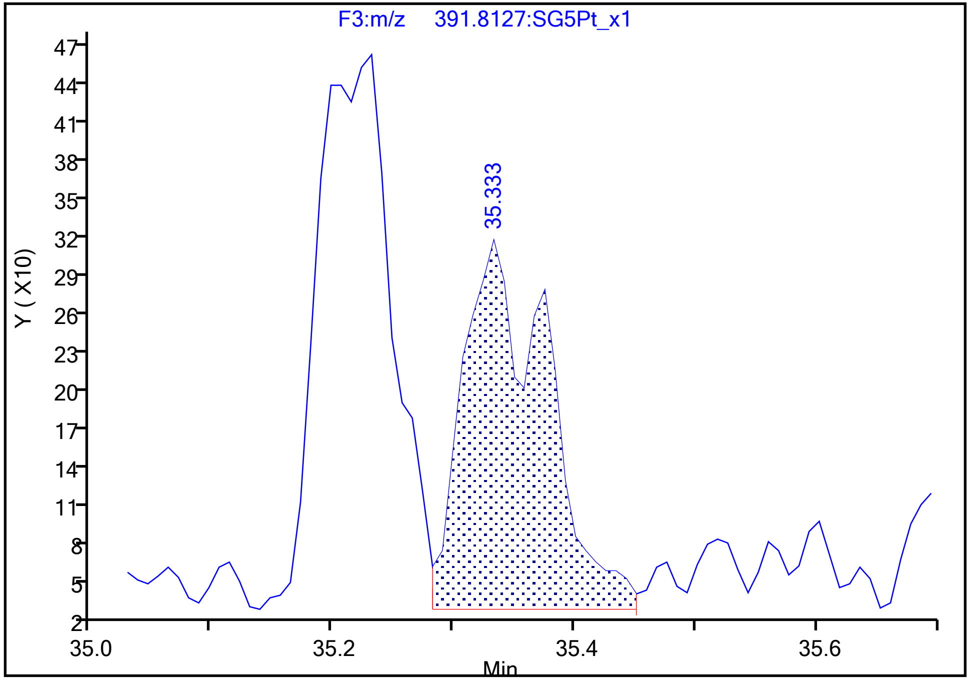

RT:	35.33
Area:	1301
Amount:	0.098978
Amount Units:	pg/ul

Manual Integration Results

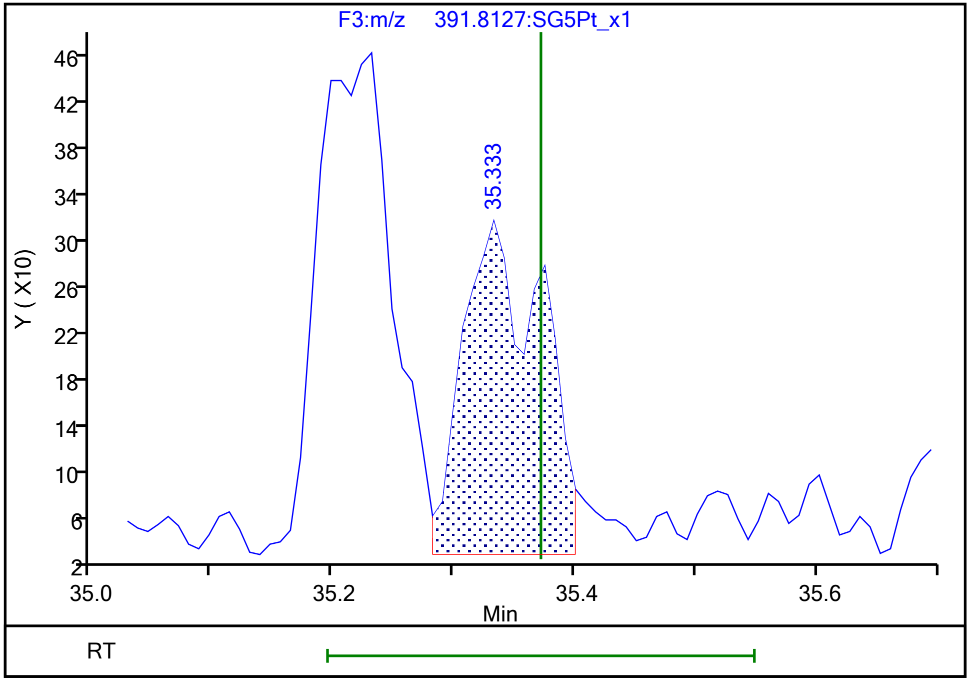

Reviewer: dadunj, 12-Oct-2020 09:18:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d				
Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17		
Client ID:	11215702-Tank#2-valve-4-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

RT:	35.76
Area:	1027
Amount:	0.024627
Amount Units:	pg/ul

Processing Integration Results

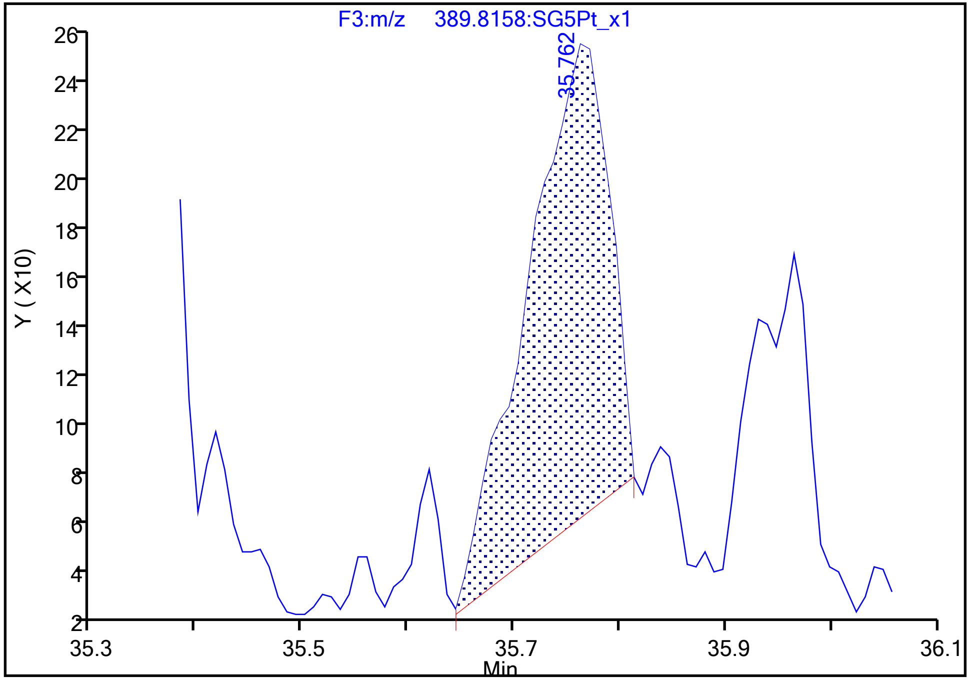

RT:	35.76
Area:	1318
Amount:	0.080420
Amount Units:	pg/ul

Manual Integration Results

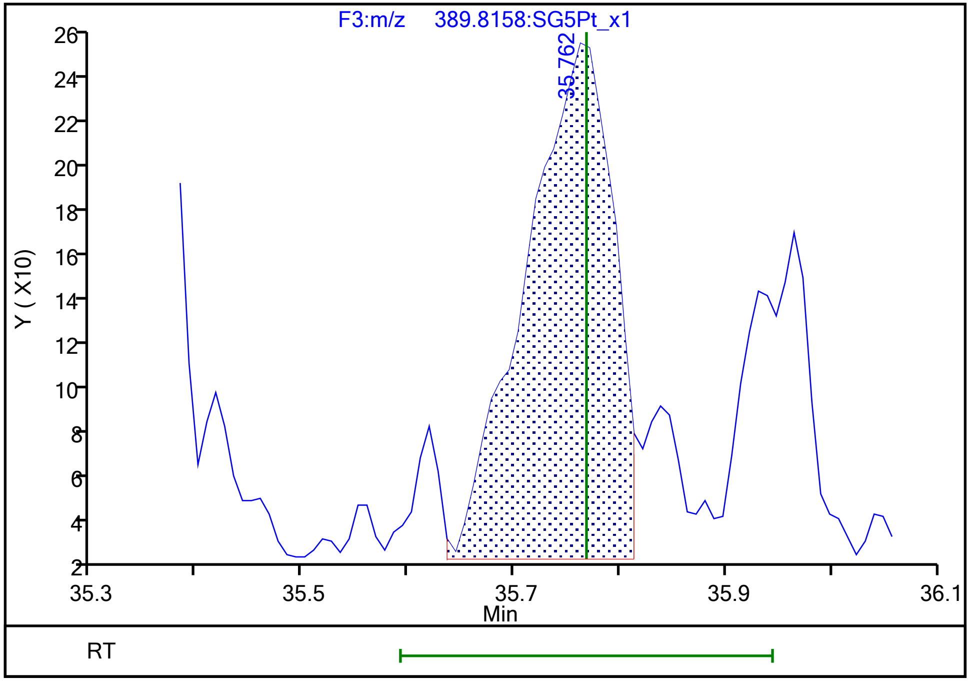

Reviewer: dadunj, 12-Oct-2020 09:18:47

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17
Client ID:	11215702-Tank#2-valve-4-1		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Processing Integration Results

RT:	35.73
Area:	973
Amount:	0.024627
Amount Units:	pg/ul

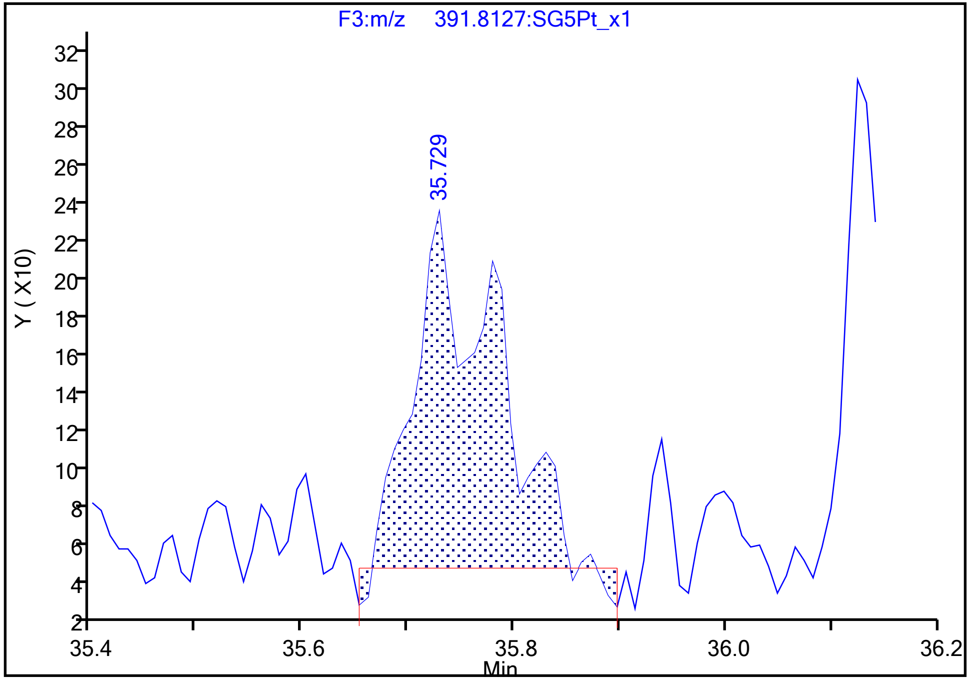

Manual Integration Results

RT:	35.73
Area:	859
Amount:	0.080420
Amount Units:	pg/ul

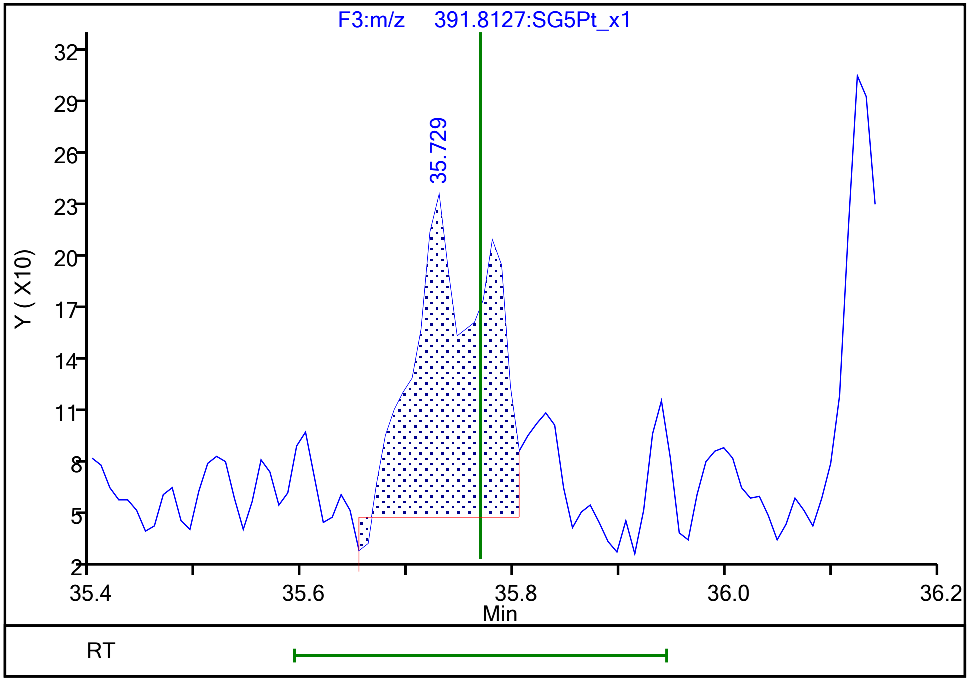

Reviewer: dadunj, 12-Oct-2020 09:18:51

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Oct-2020 11:31:53

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d				
Injection Date:	10-Oct-2020 10:57:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-17-A	Lab Sample ID:	320-65130-17		
Client ID:	11215702-Tank#2-valve-4-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (37.91- 39.28)

Signal: 2

Processing Integration Results

RT = 38.300 Area = 22320

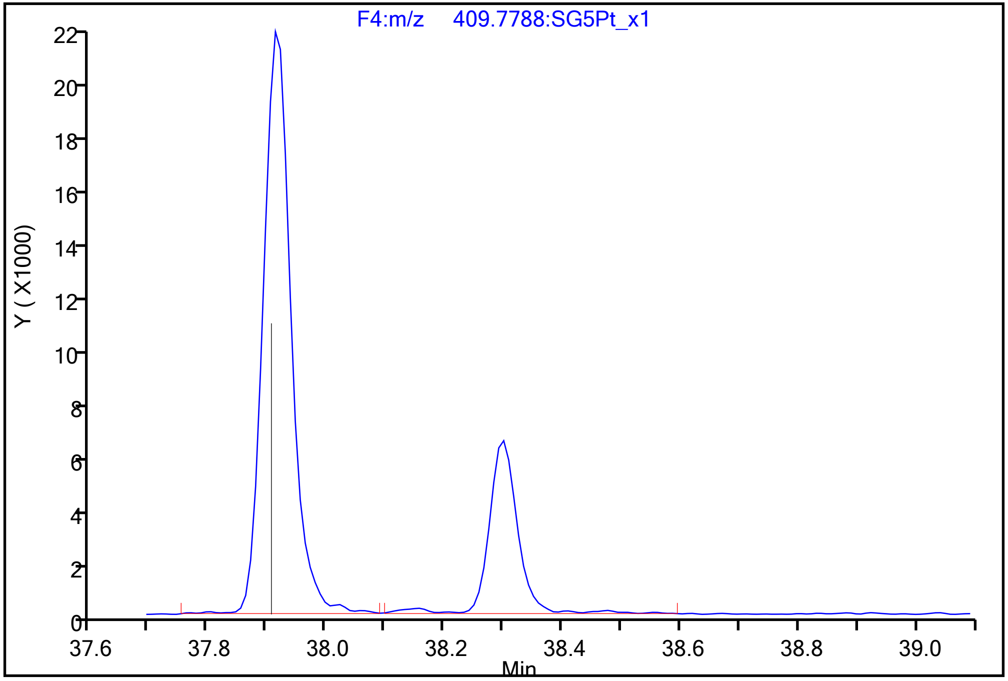

Manual Integration Results

RT = 38.300 Area = 21631 M

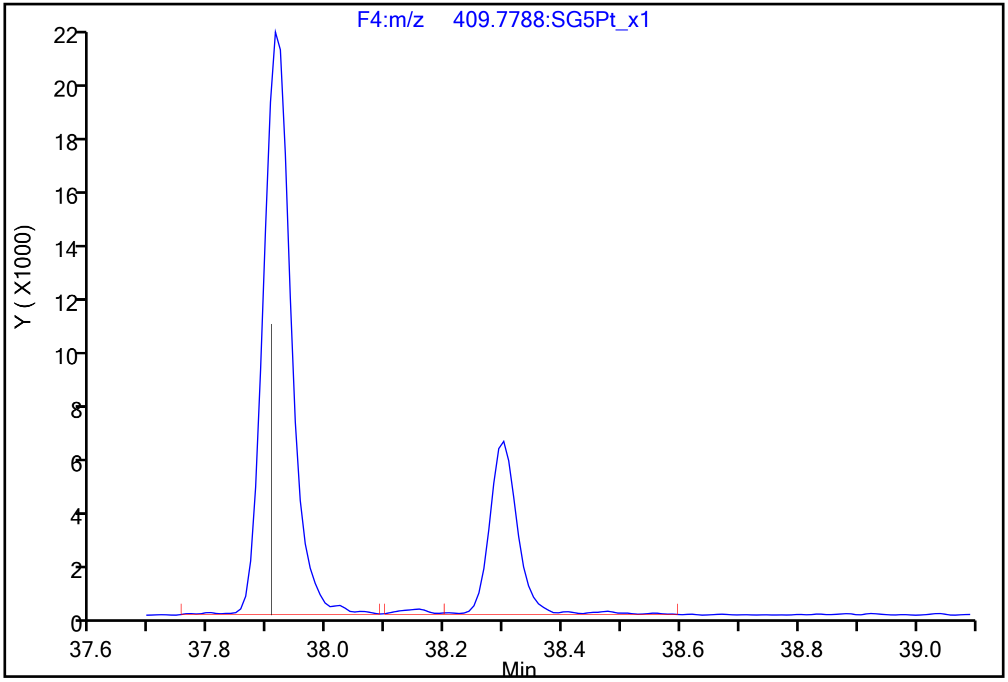

Reviewer: dadunj, 12-Oct-2020 09:19:10

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d

Injection Date: 10-Oct-2020 10:57:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-4-1

Worklist#: 420640 Sample Line#: 22

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

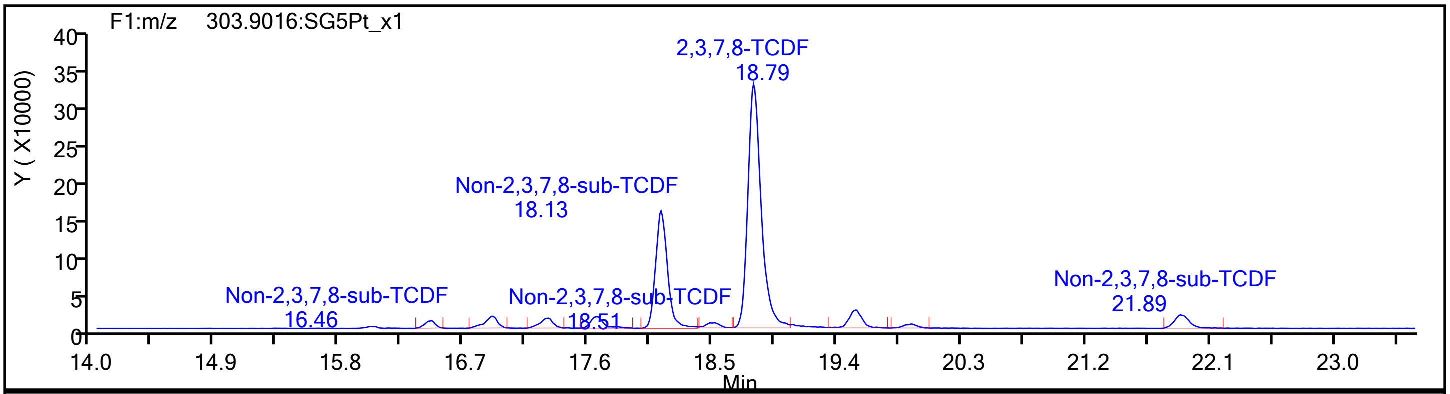

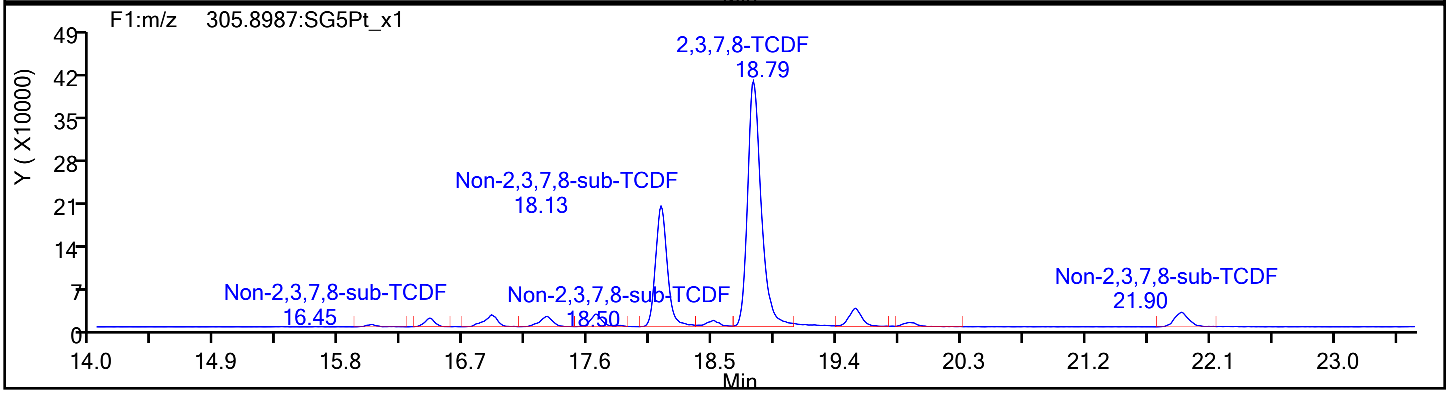

TCDF Standards

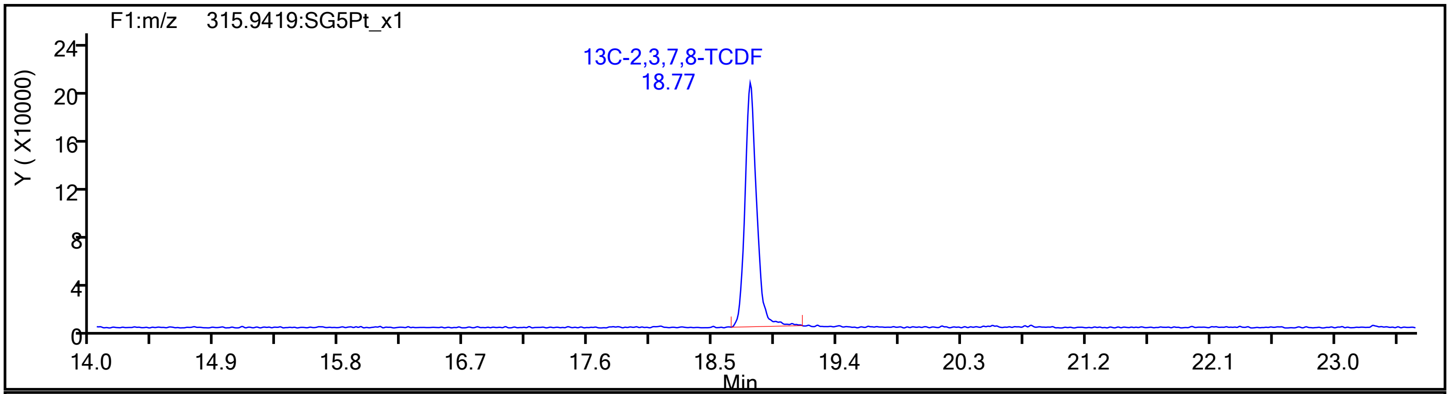

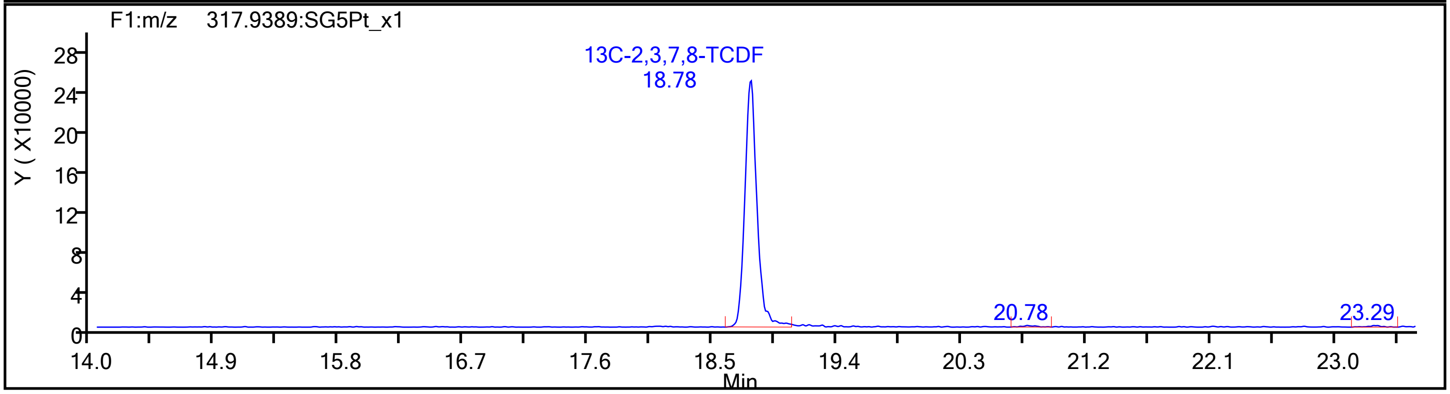

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Injection Date:	10-Oct-2020 10:57:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

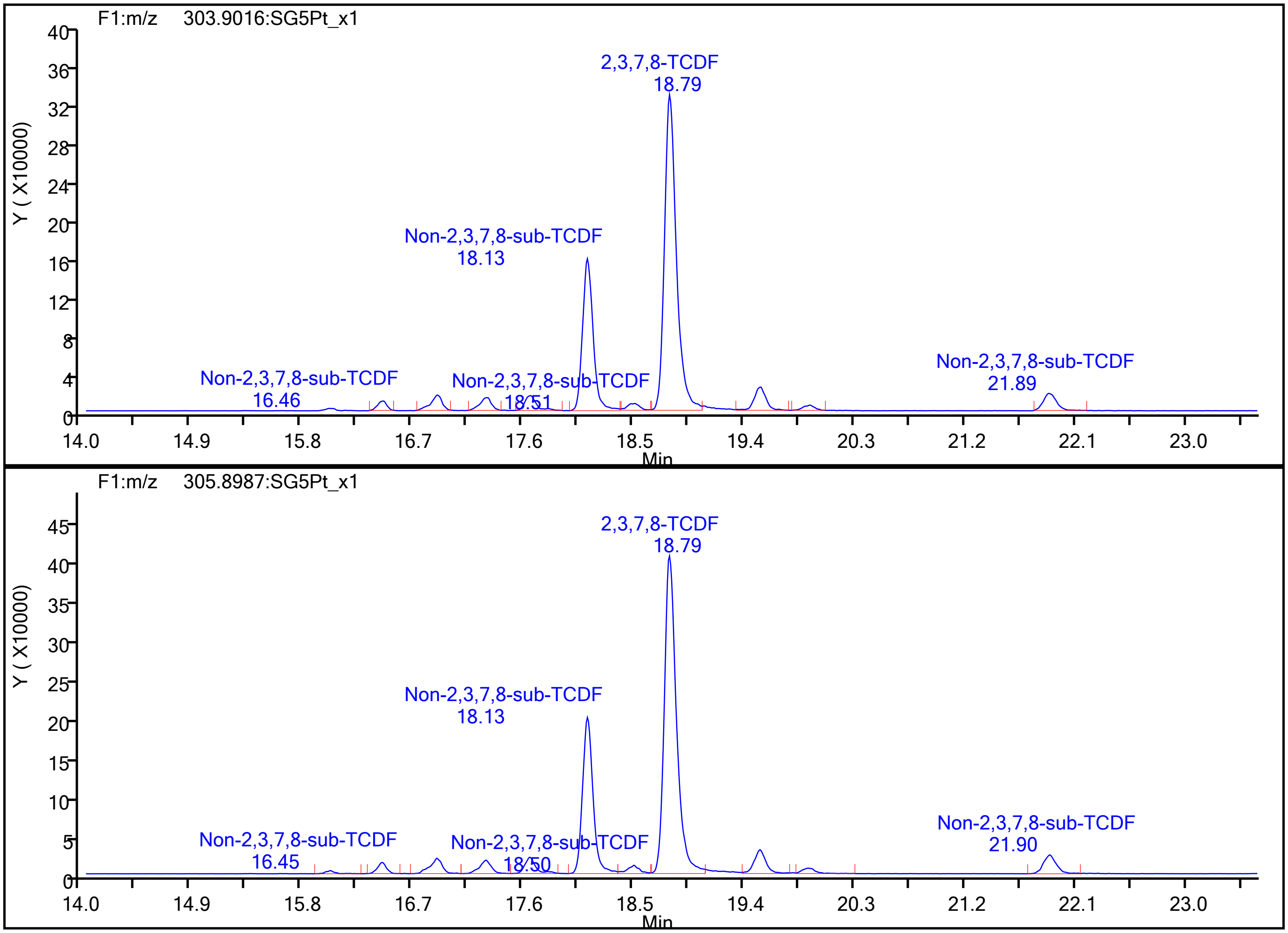

TCDF Interference Mass

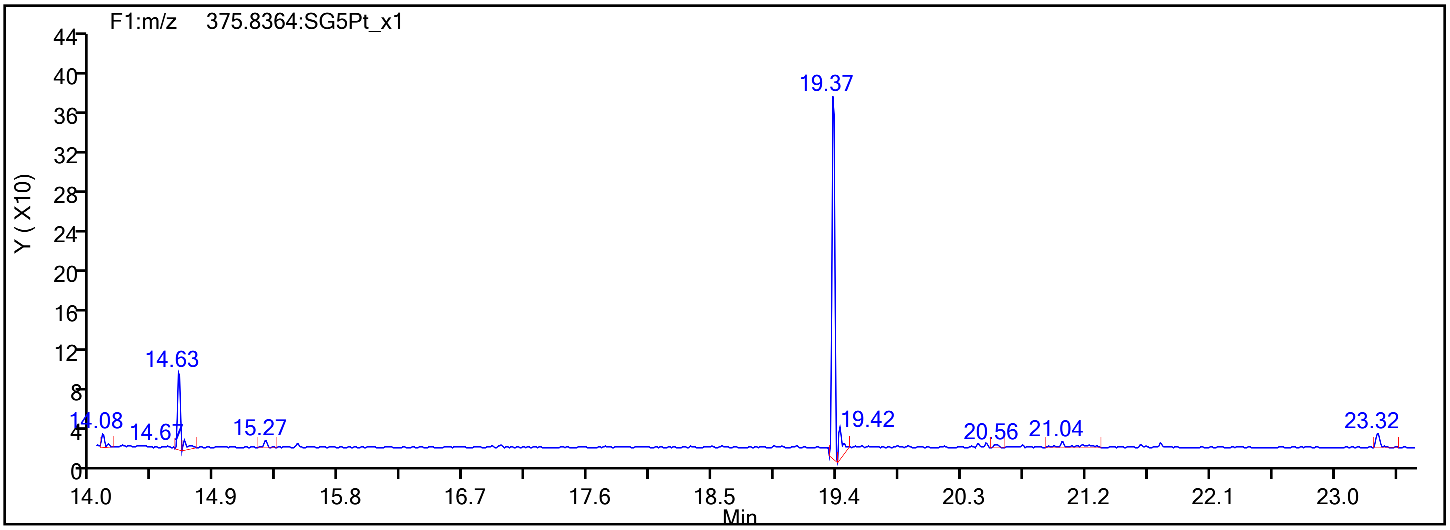

Report Date: 12-Oct-2020 11:31:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Injection Date: 10-Oct-2020 10:57:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-1
Worklist#: 420640
Sample Line#: 22
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

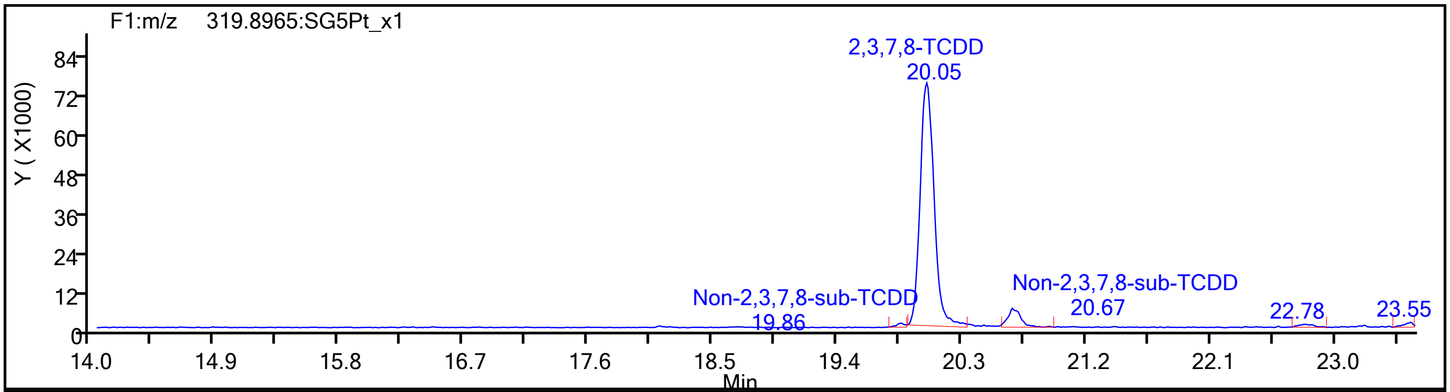

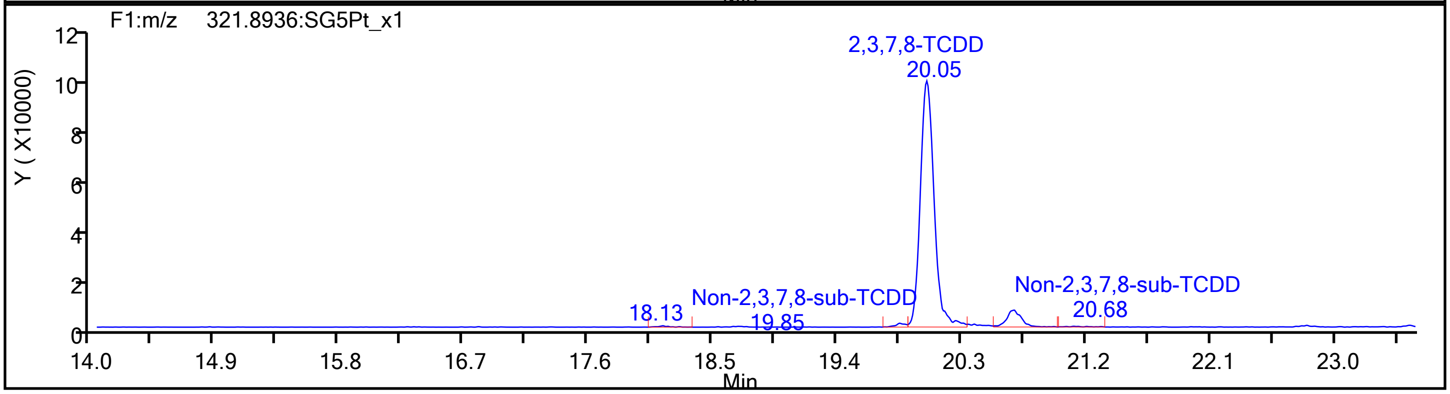

TCDD Standards

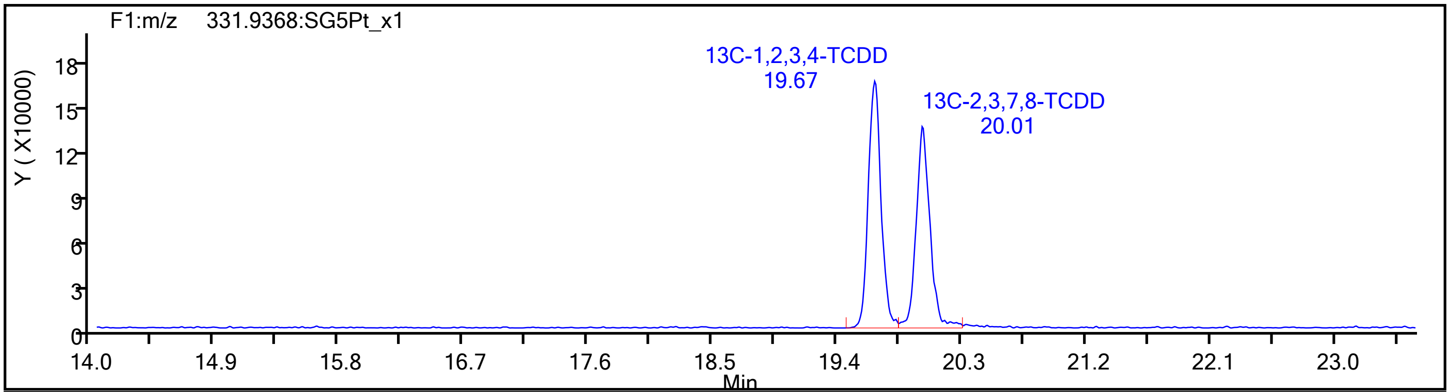

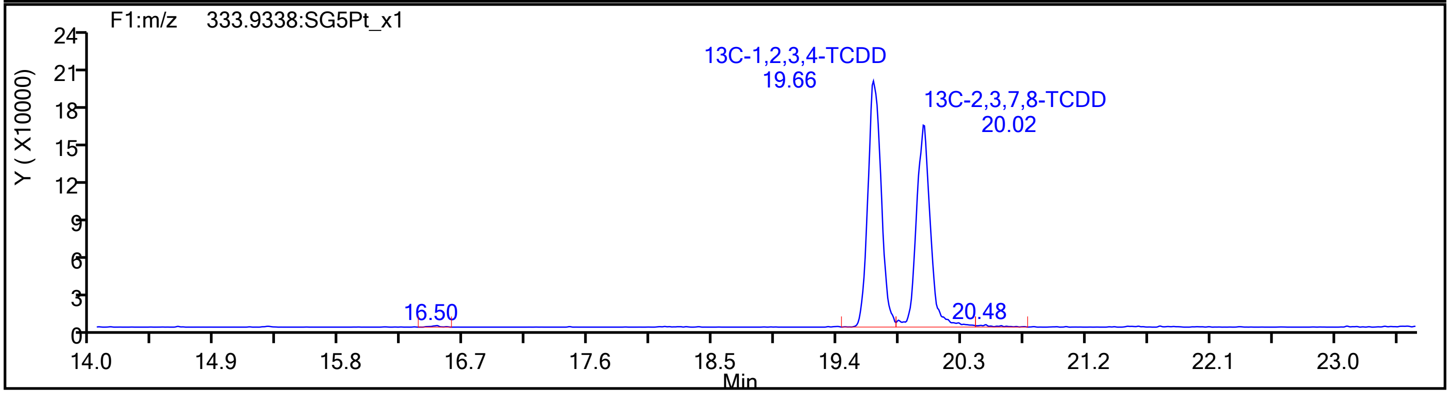

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Injection Date:	10-Oct-2020 10:57:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

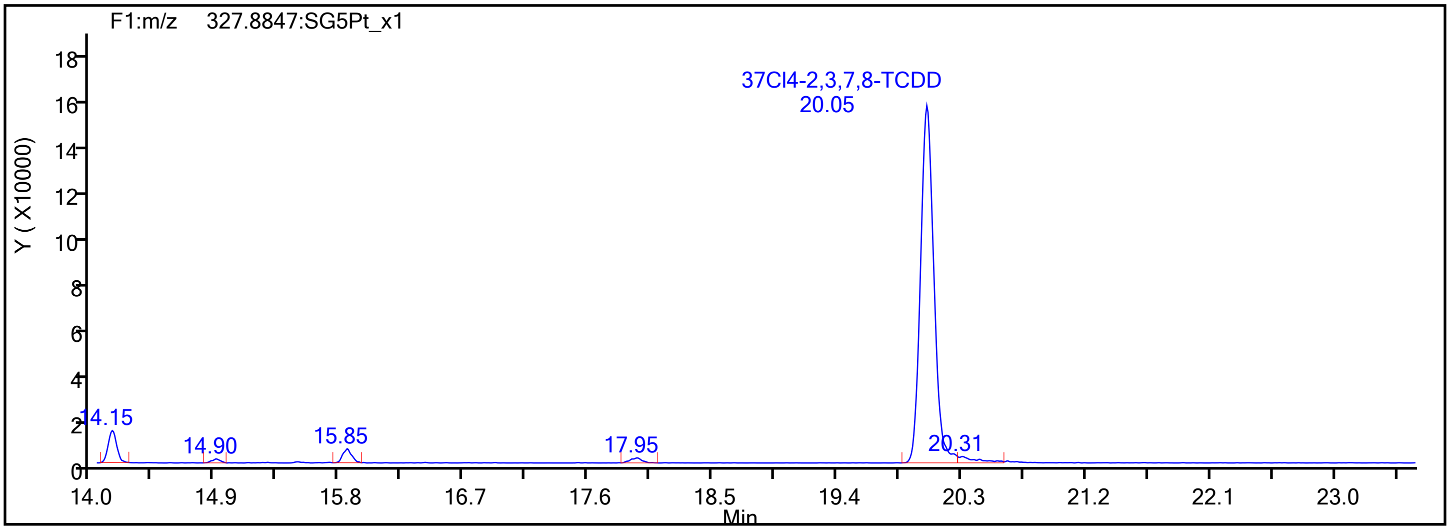

37Cl4-TCDD Standards

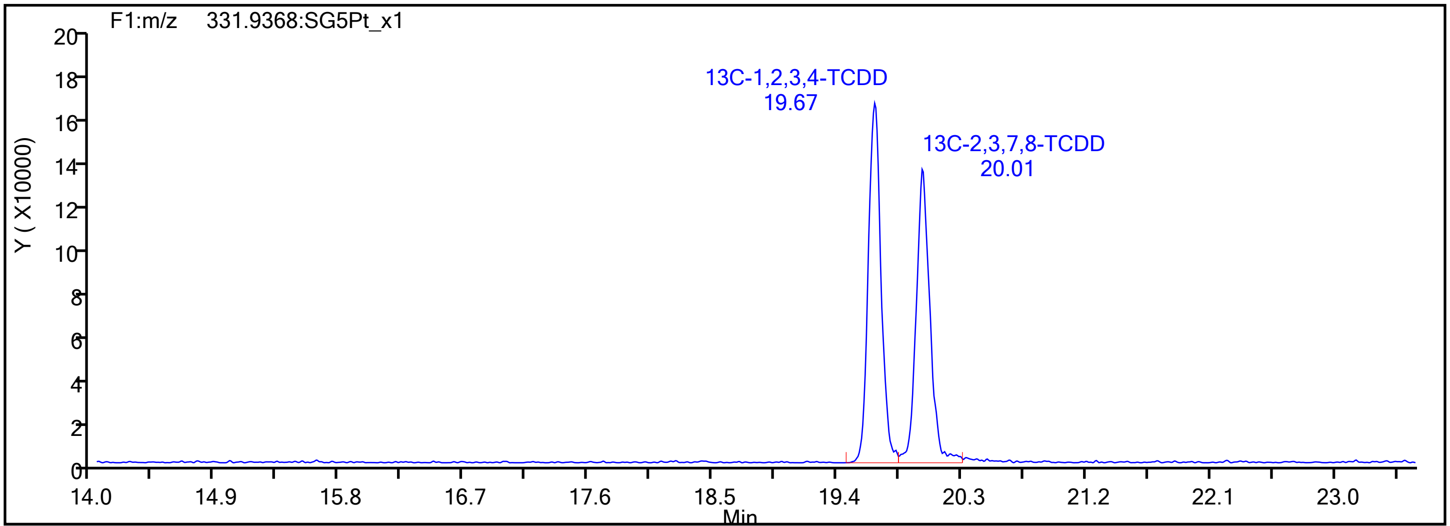

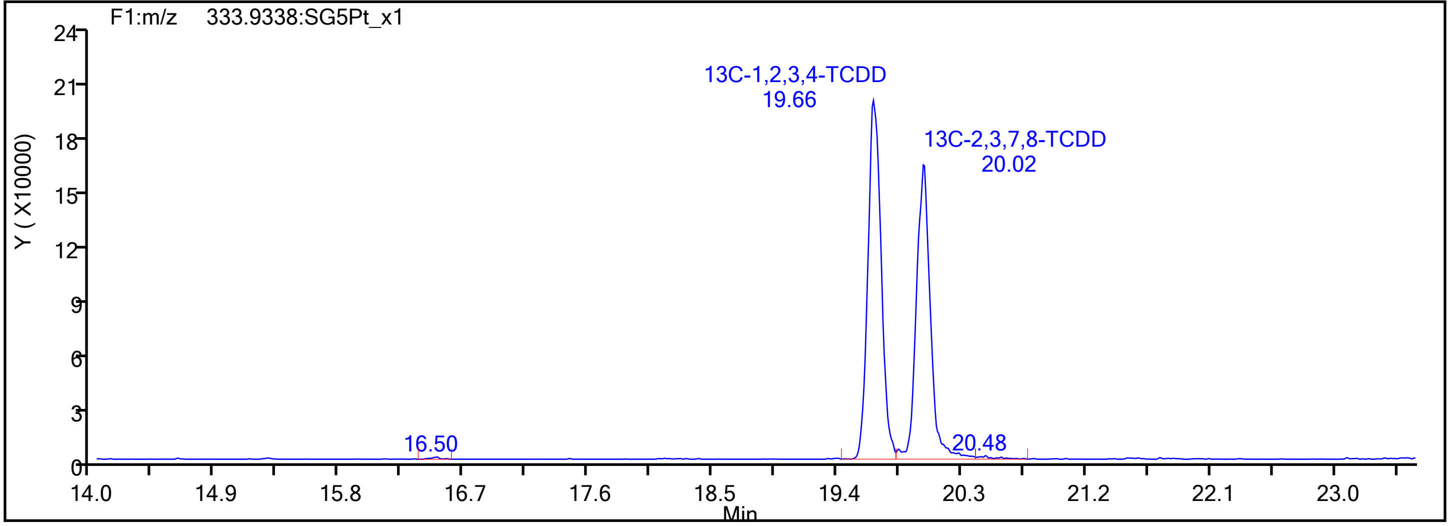

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
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Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-1
Worklist#: 420640 Sample Line#: 22
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F1 PeCDFs

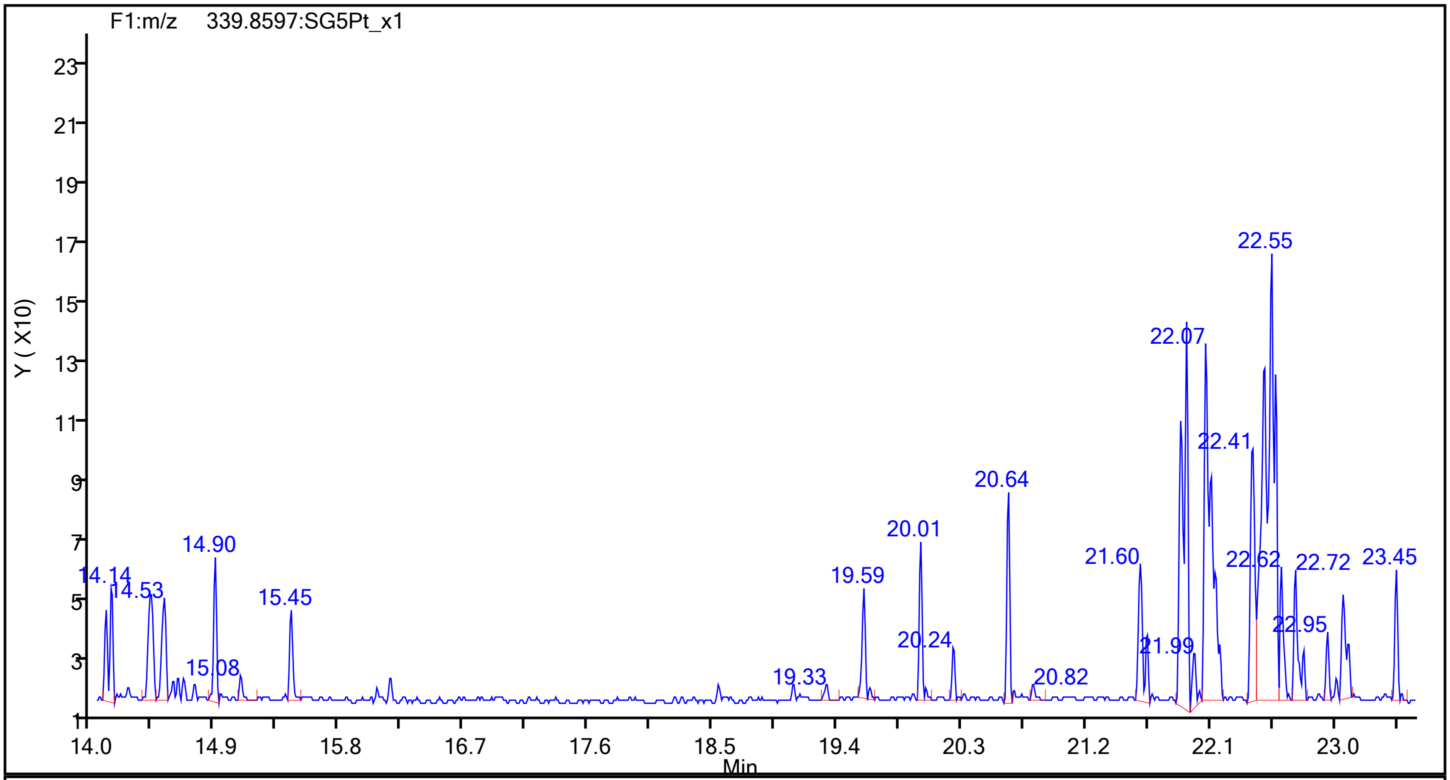

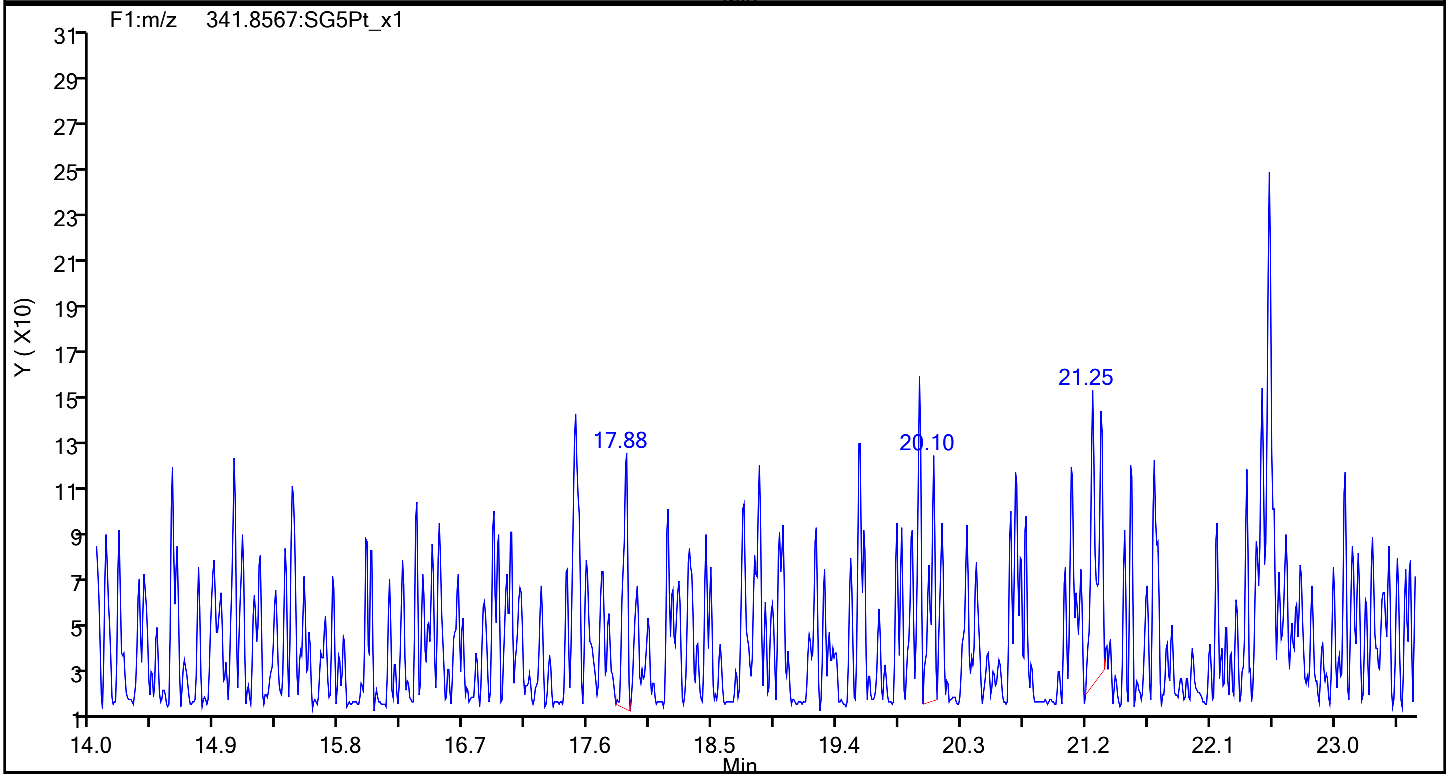

Report Date: 12-Oct-2020 11:31:54
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

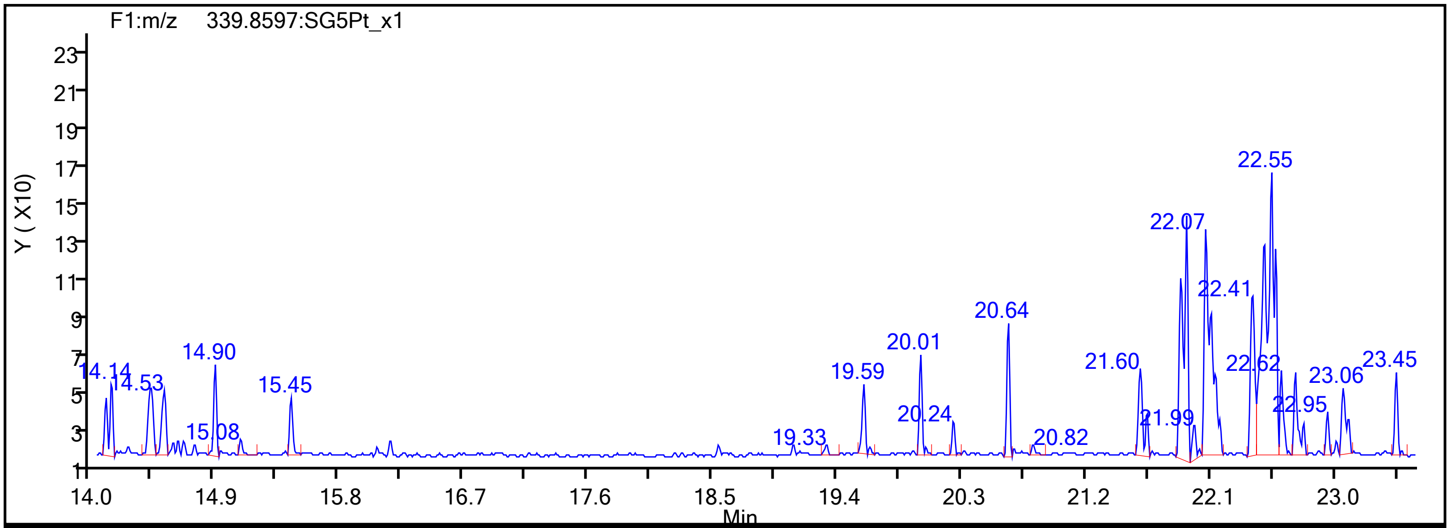

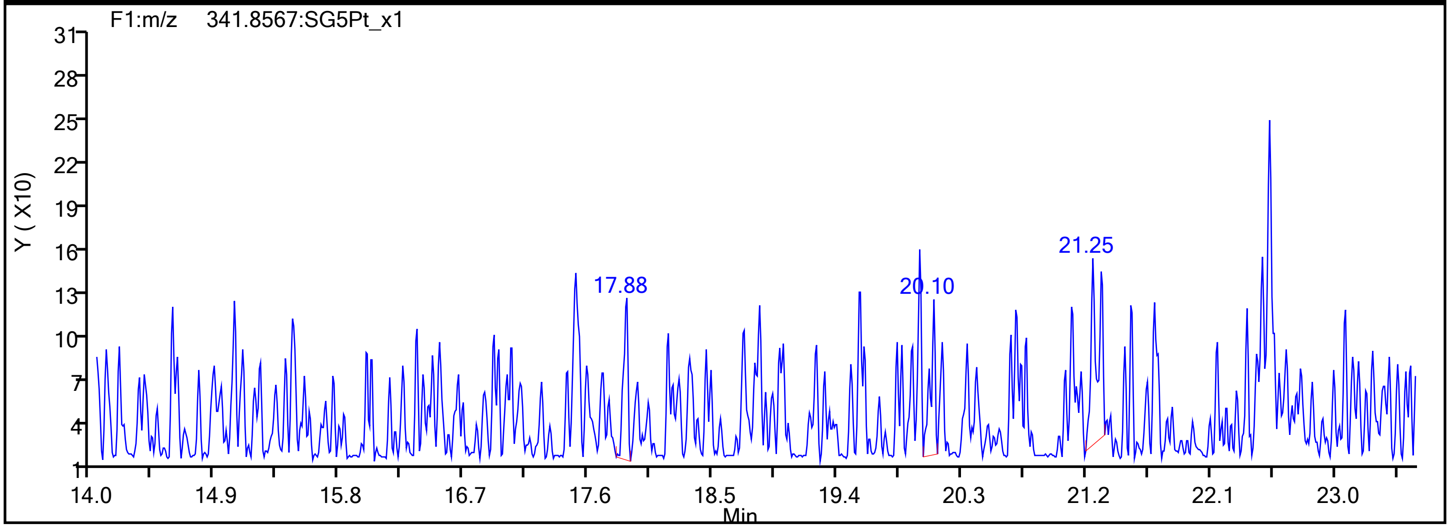

F1 PeCDFs Interference Mass

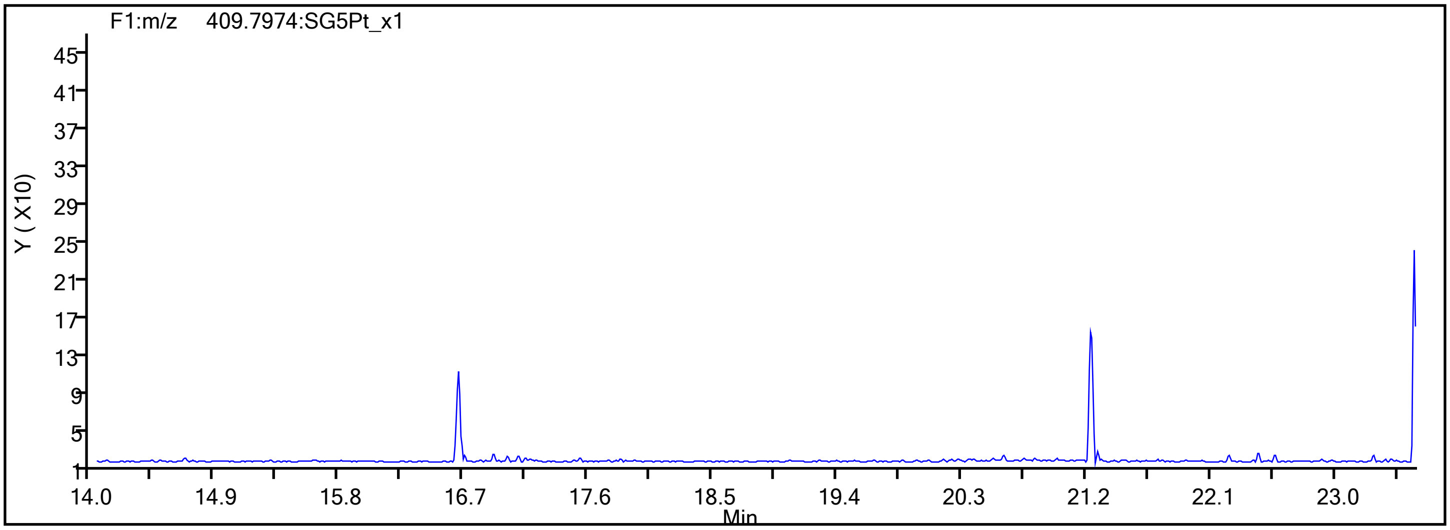

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

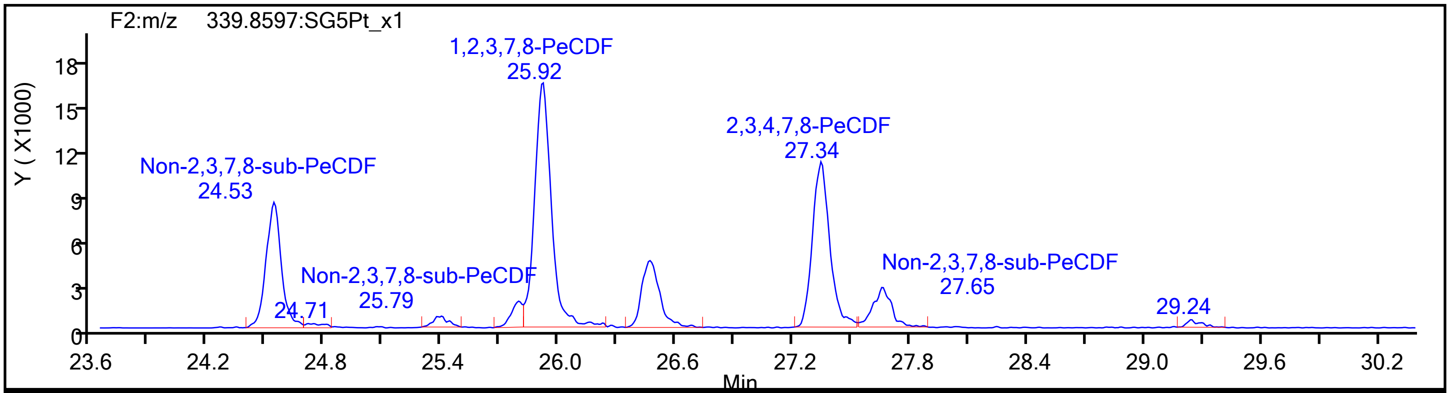

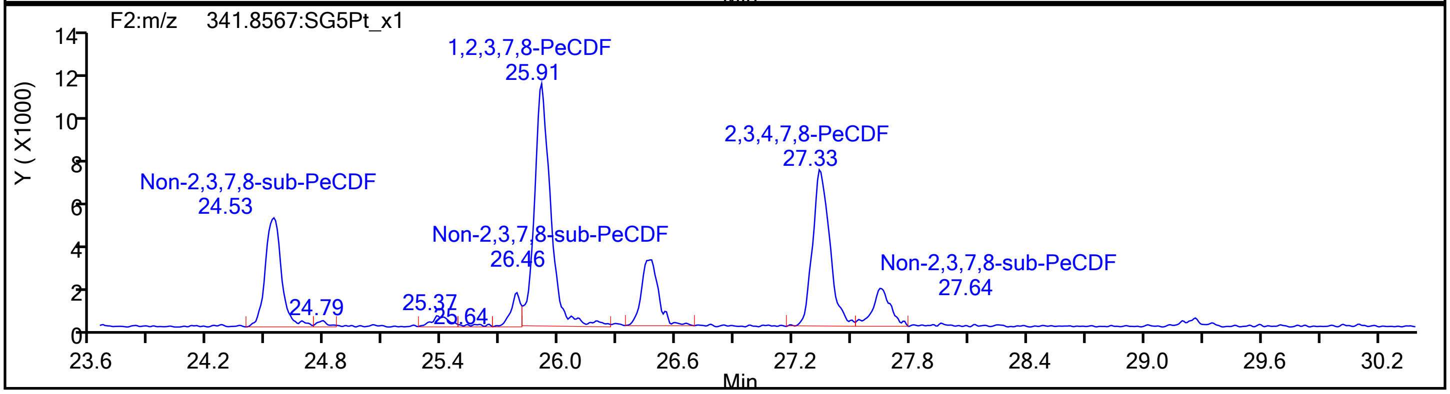

PeCDF Standards

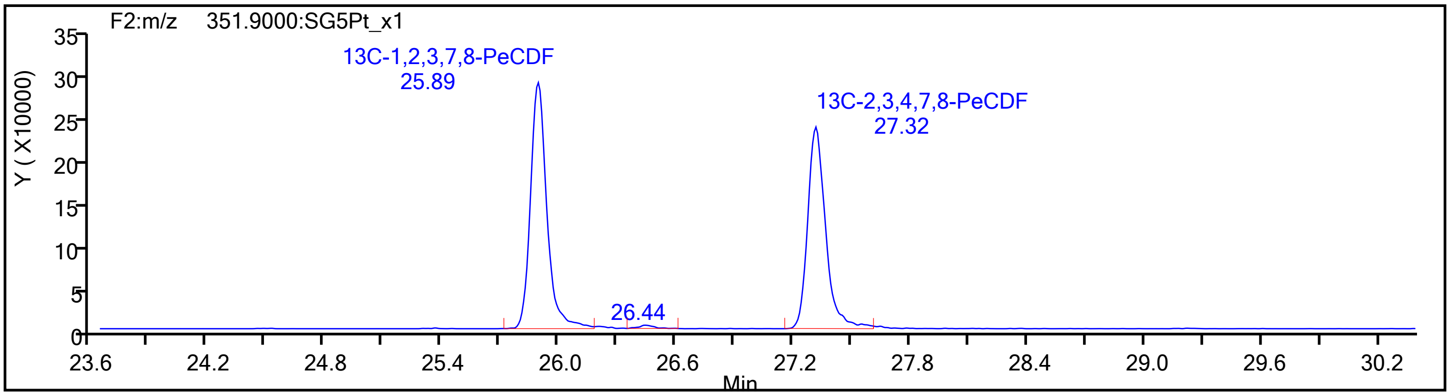

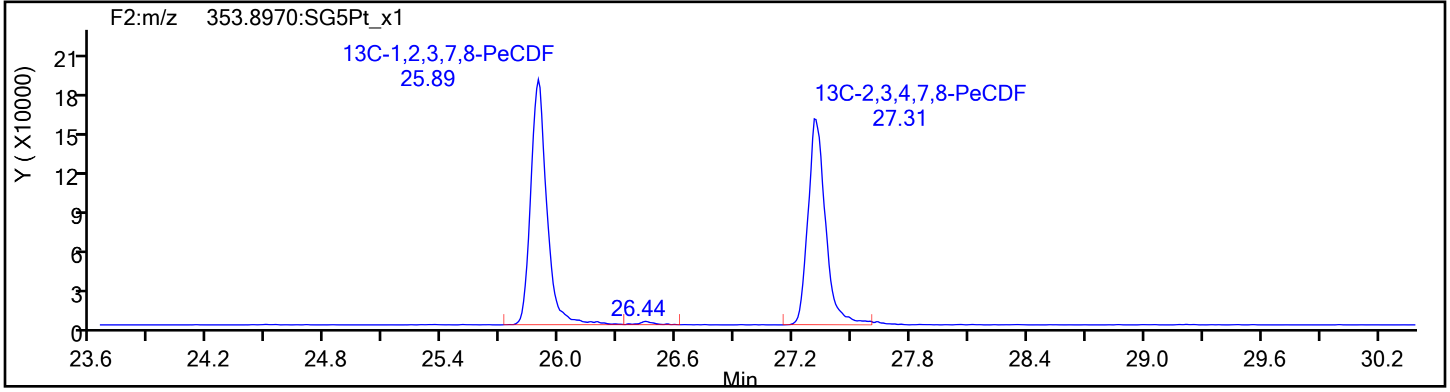

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

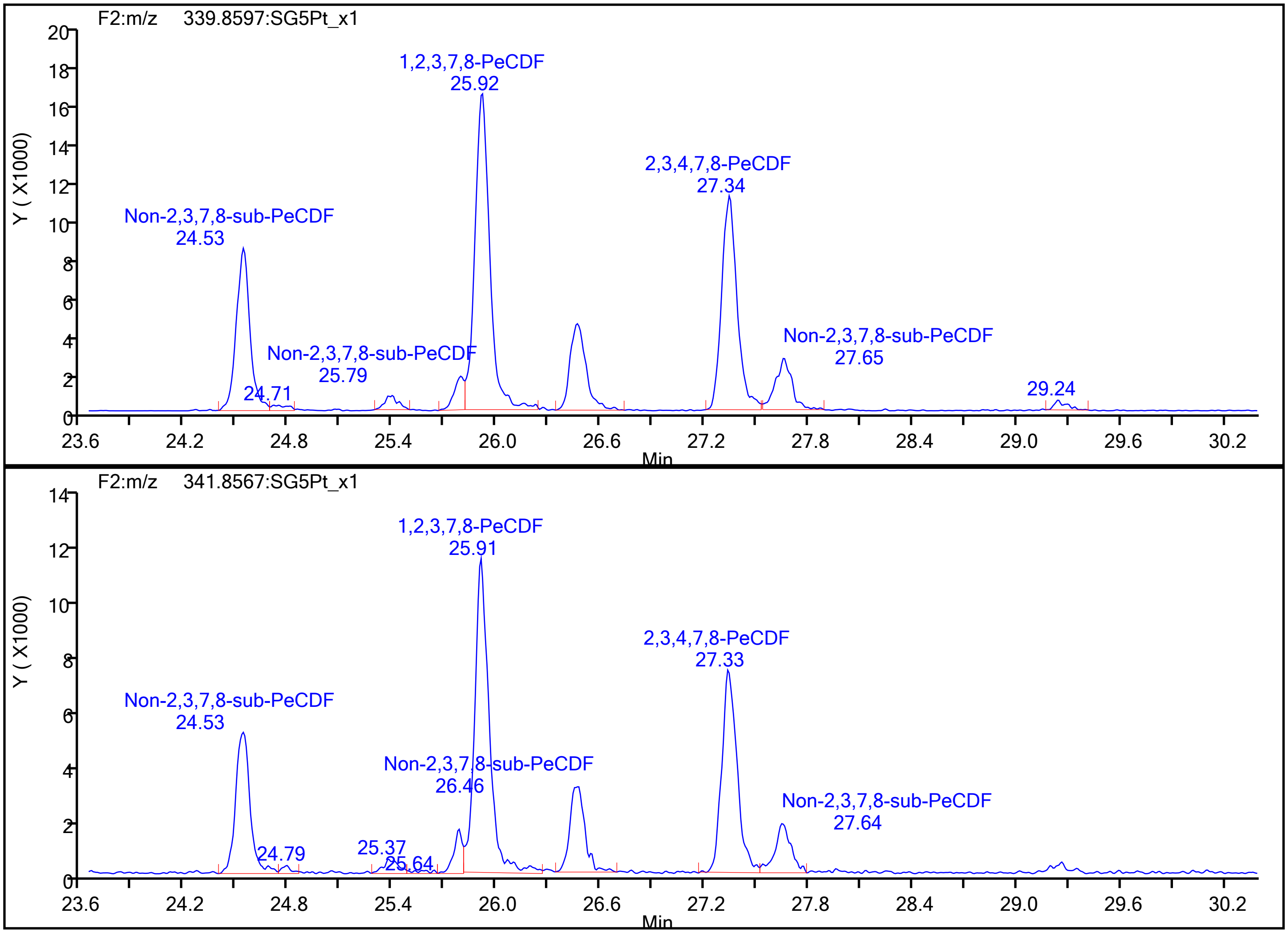

PeCDF Interference Mass

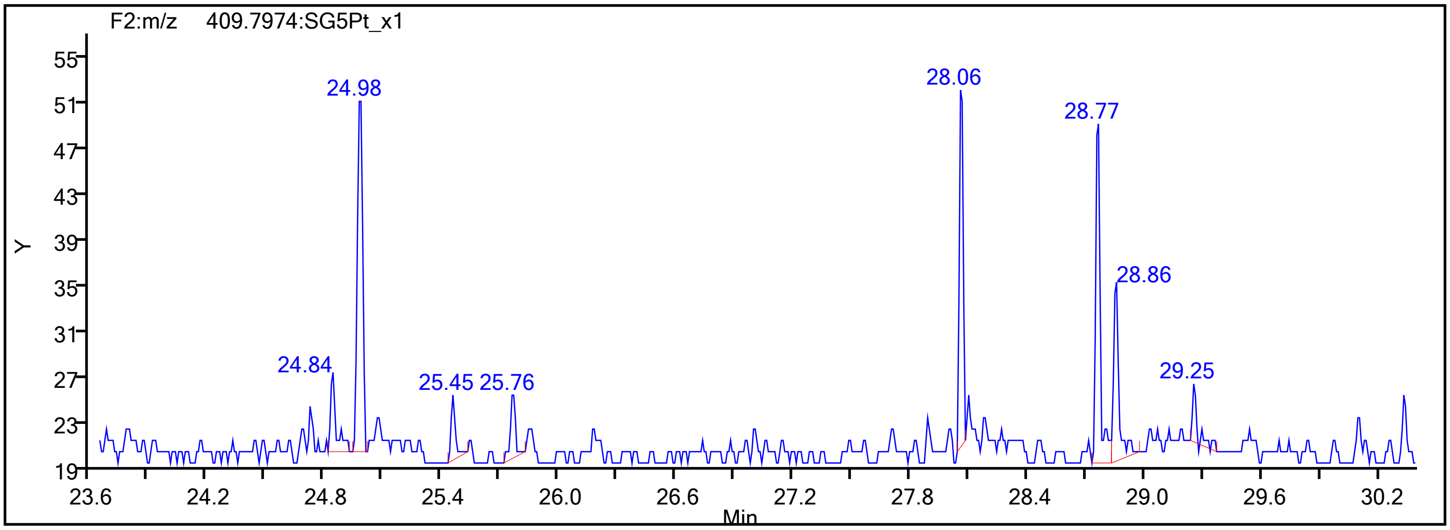

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

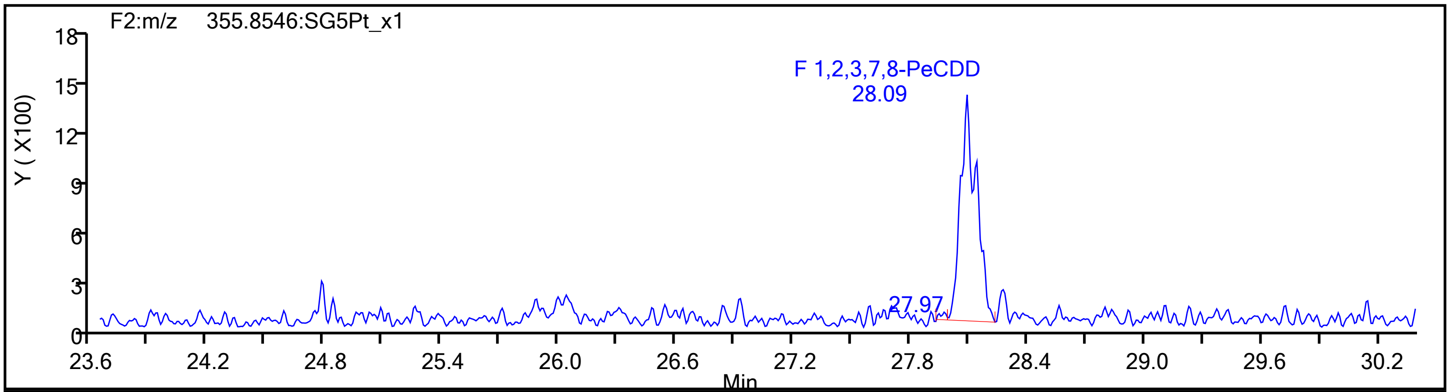

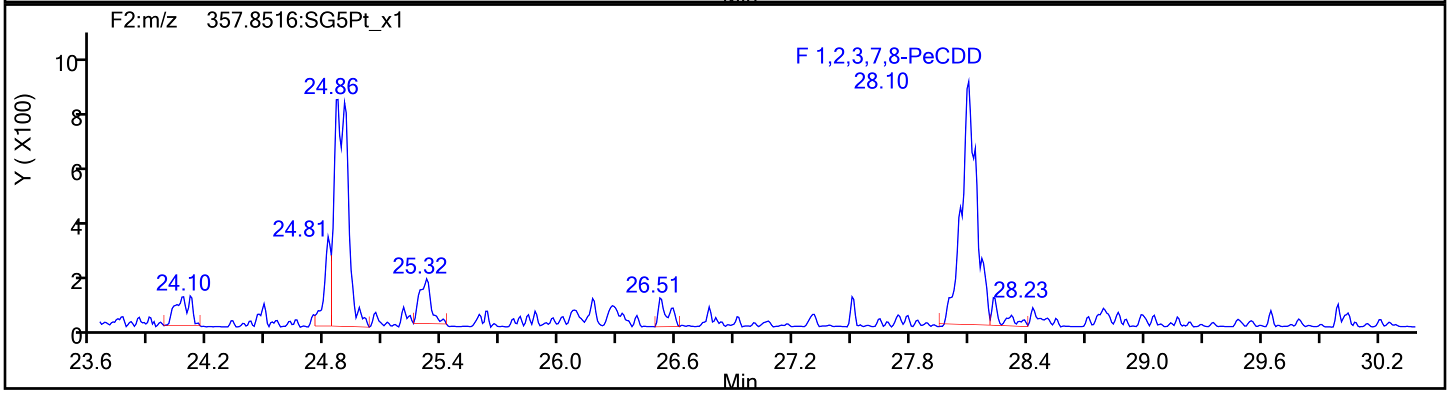

PeCDD Standards

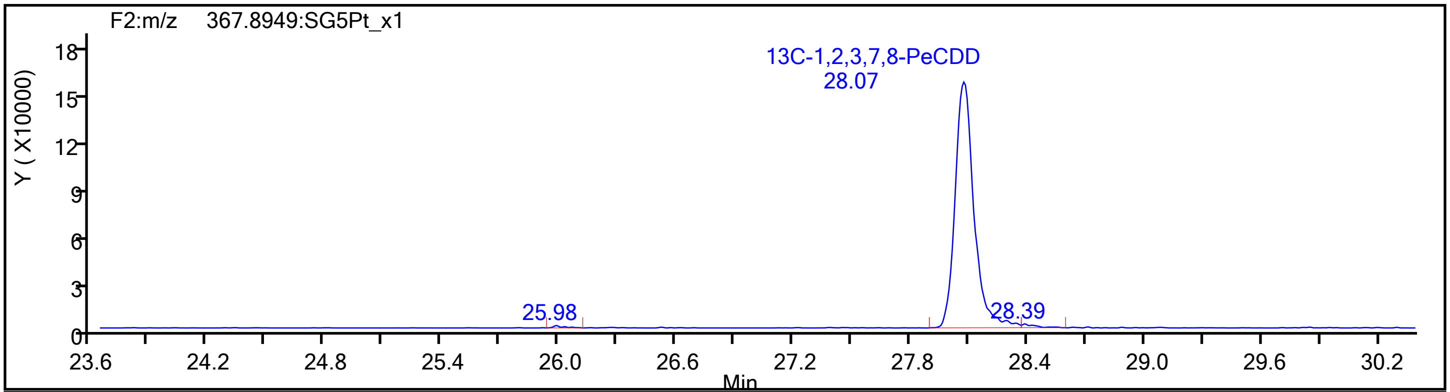

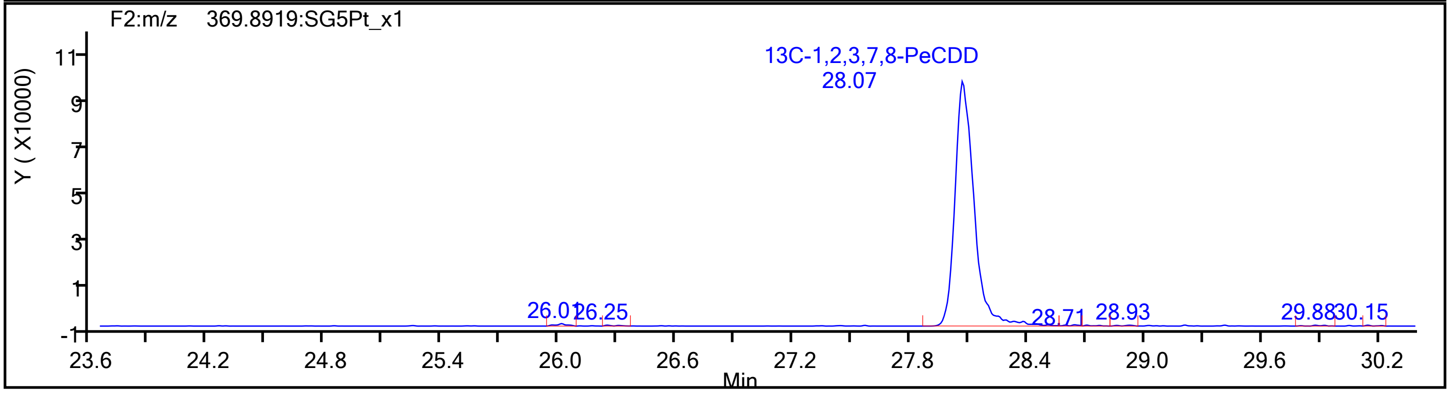

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Injection Date: 10-Oct-2020 10:57:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-1
Worklist#: 420640
Sample Line#: 22
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

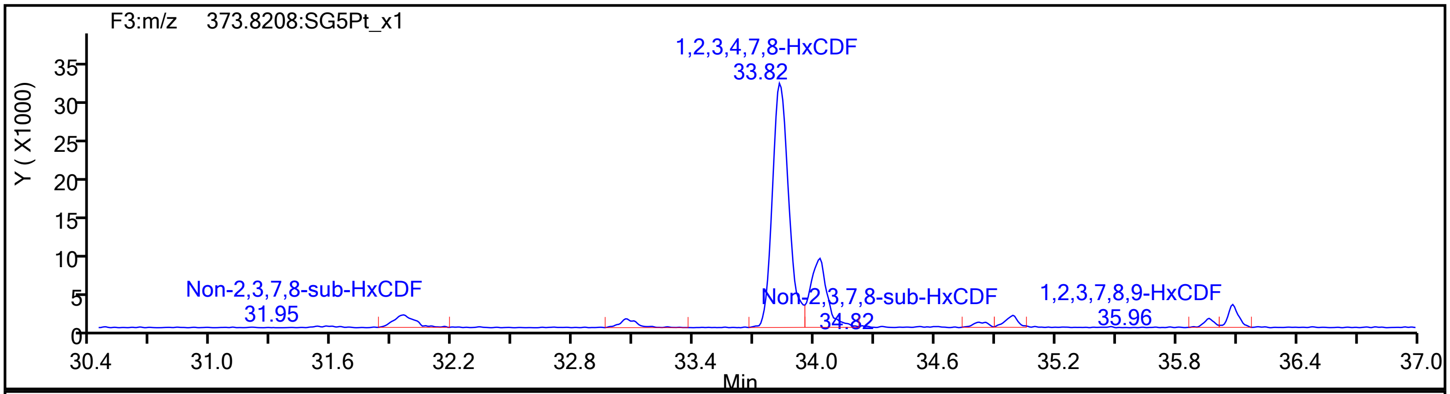

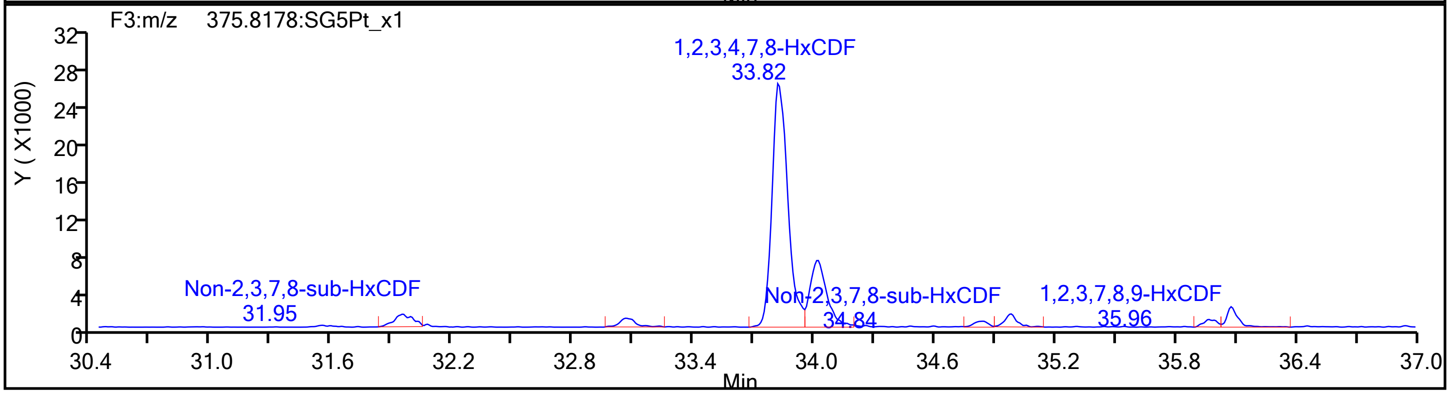

HxCDF Standards

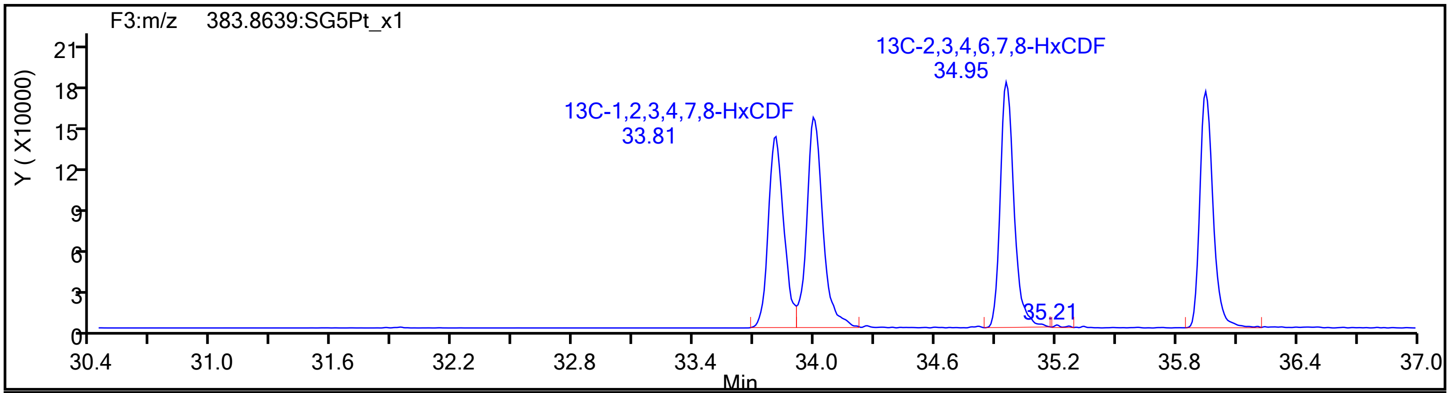

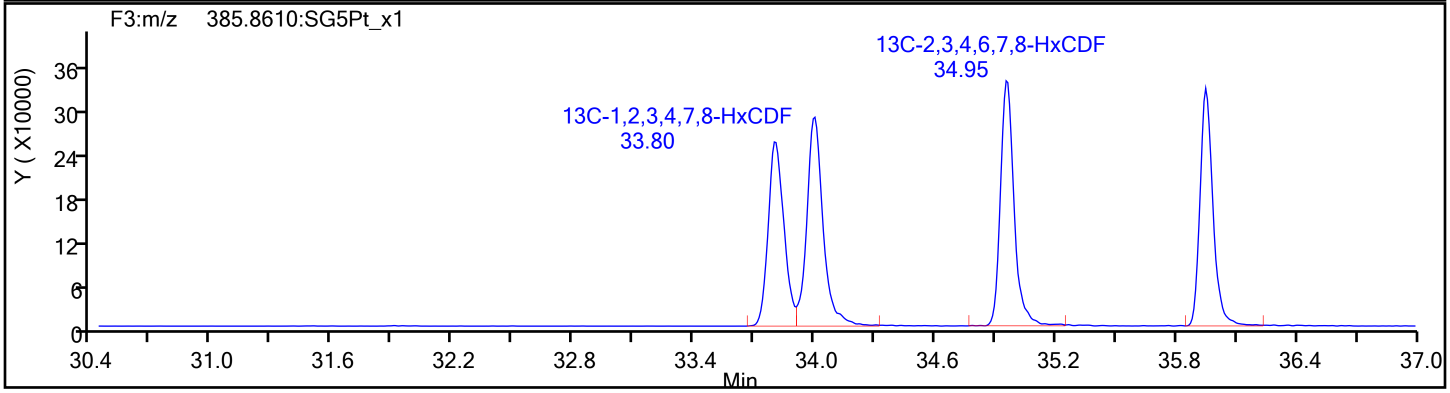

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

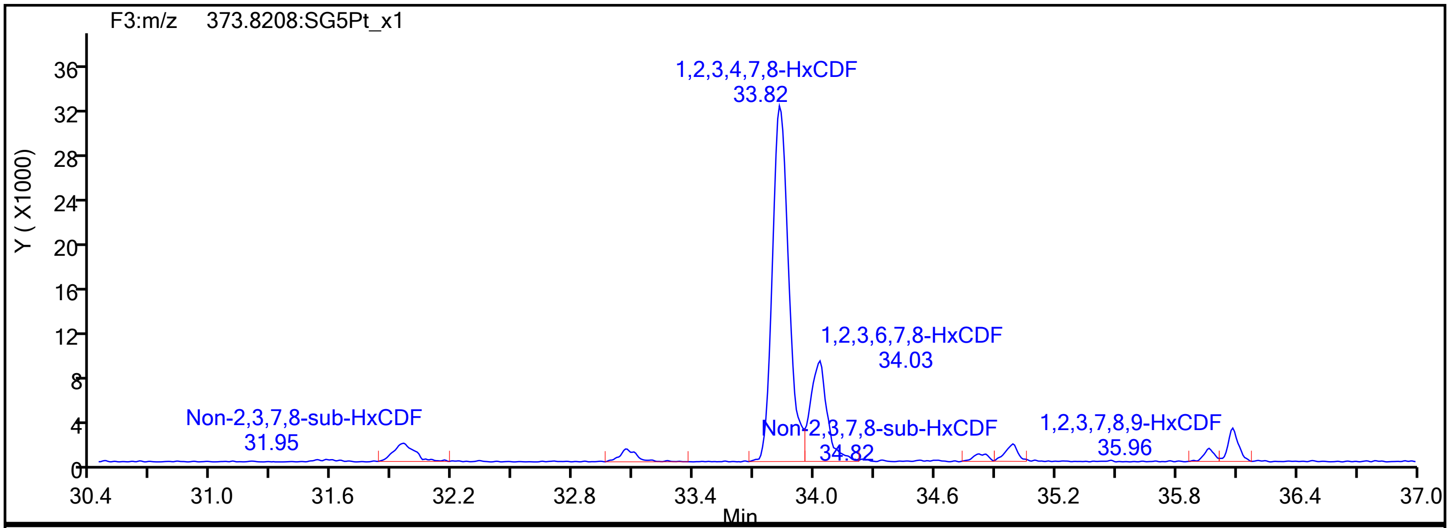

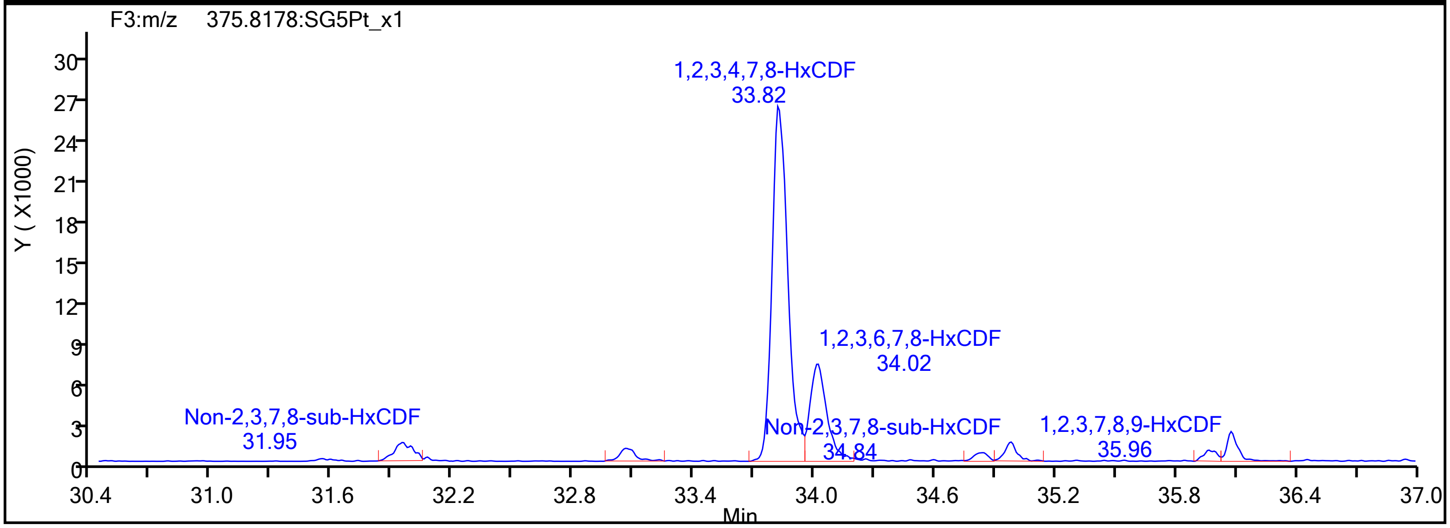

HxCDF Interference Mass

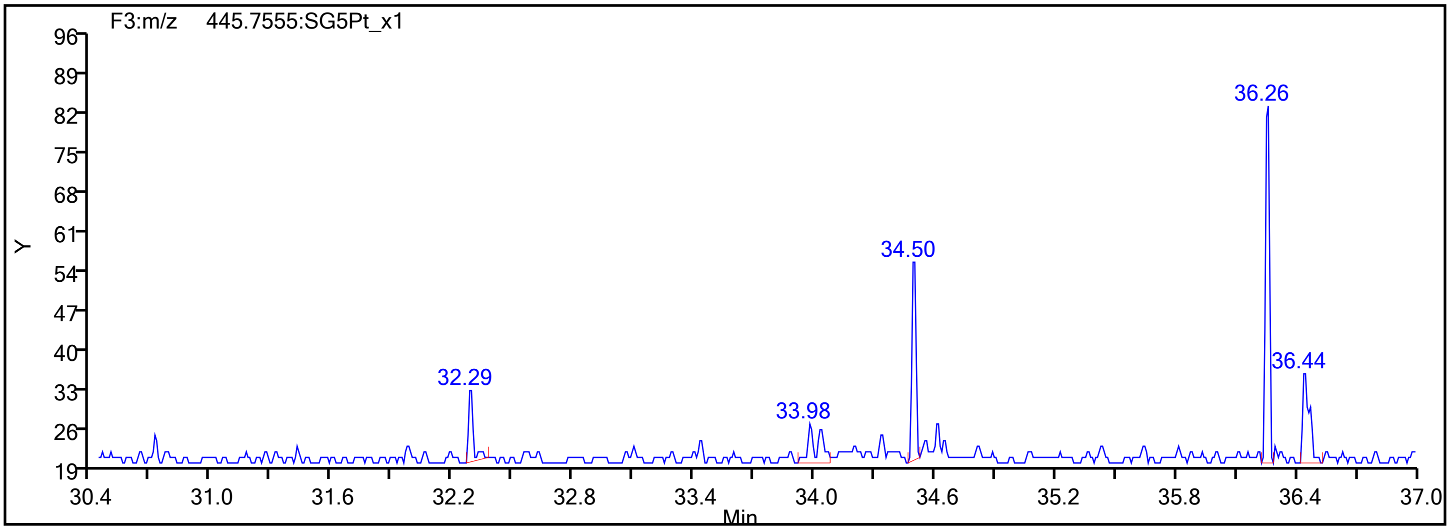

Report Date: 12-Oct-2020 11:31:54 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d

Injection Date: 10-Oct-2020 10:57:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-4-1

Worklist#: 420640

Sample Line#: 22

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

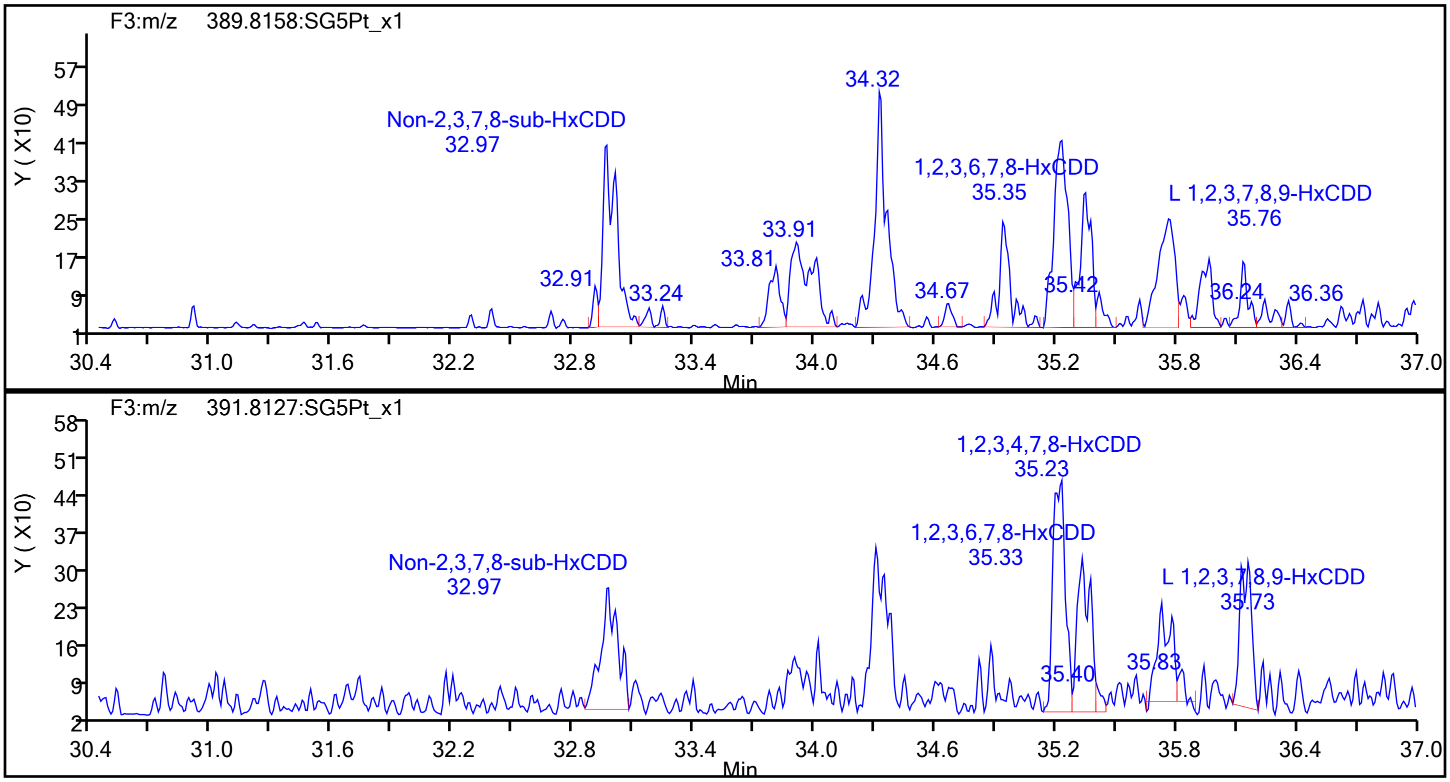

HxCDD Standards

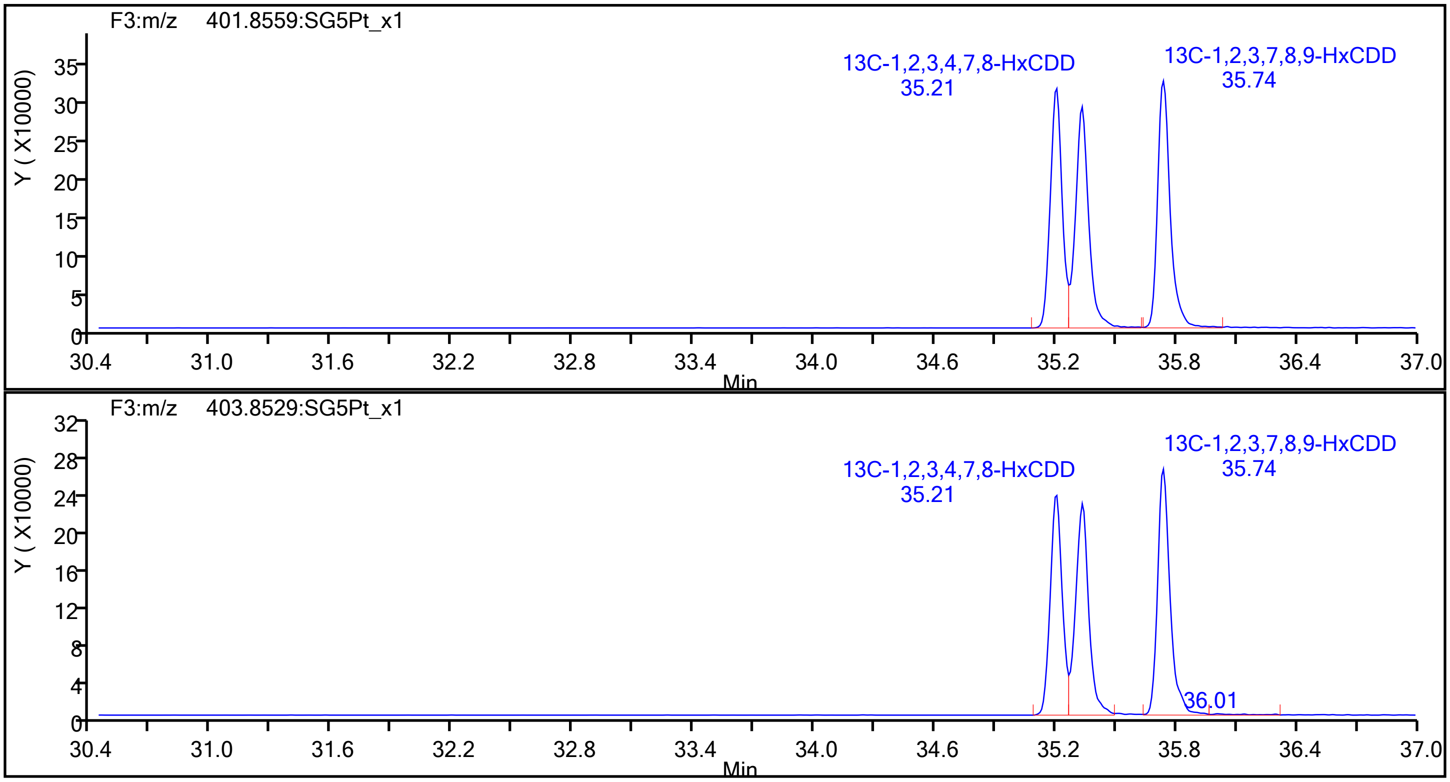

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDF

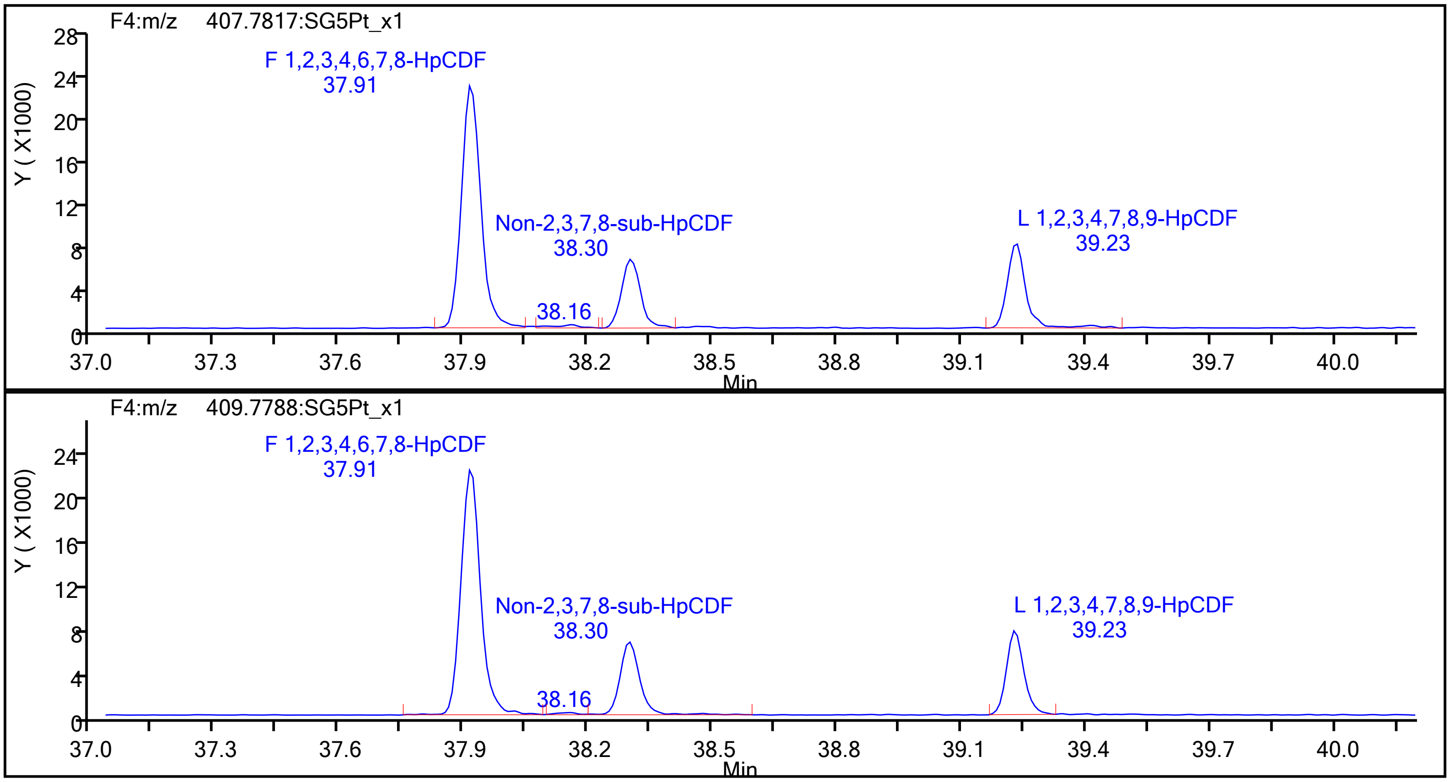

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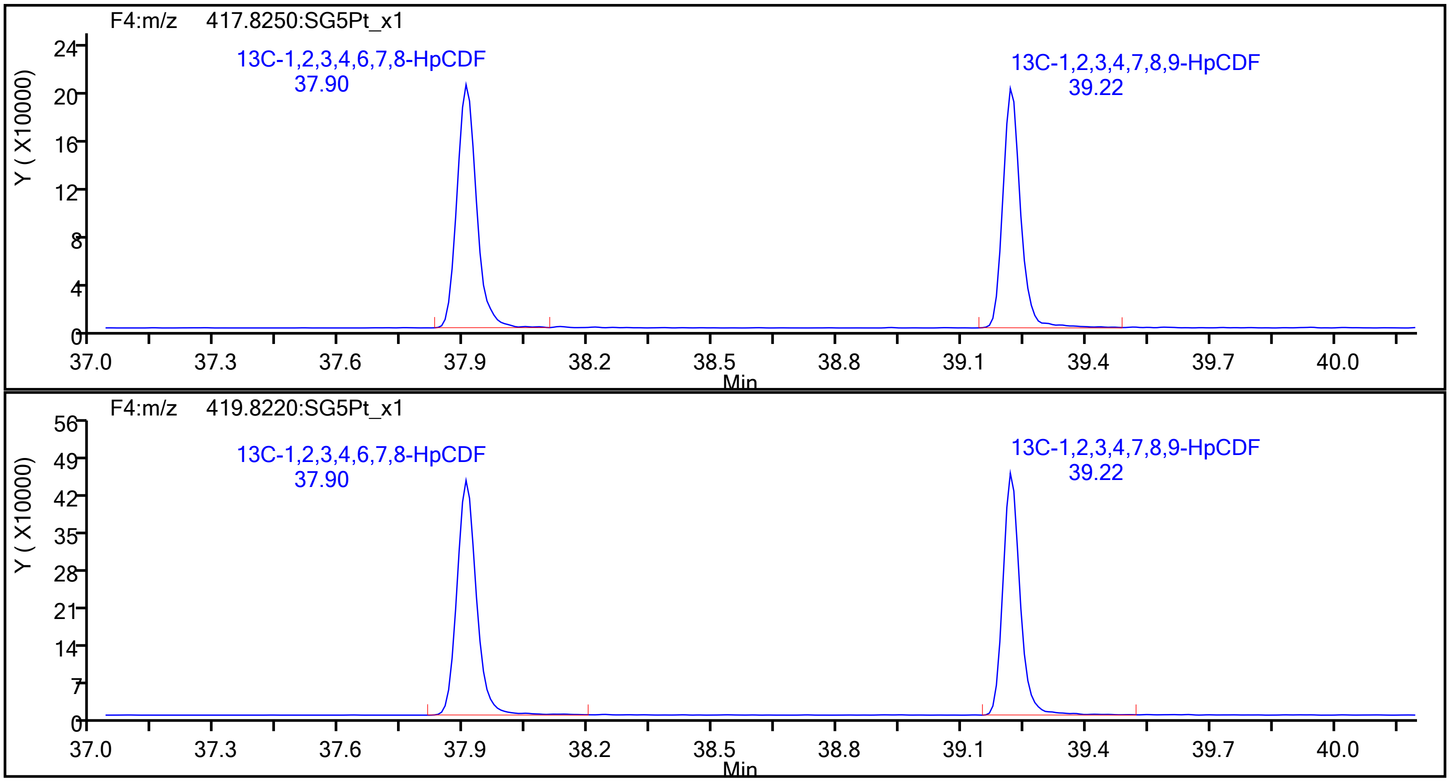

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Eurofins TestAmerica, Sacramento

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HpCDF

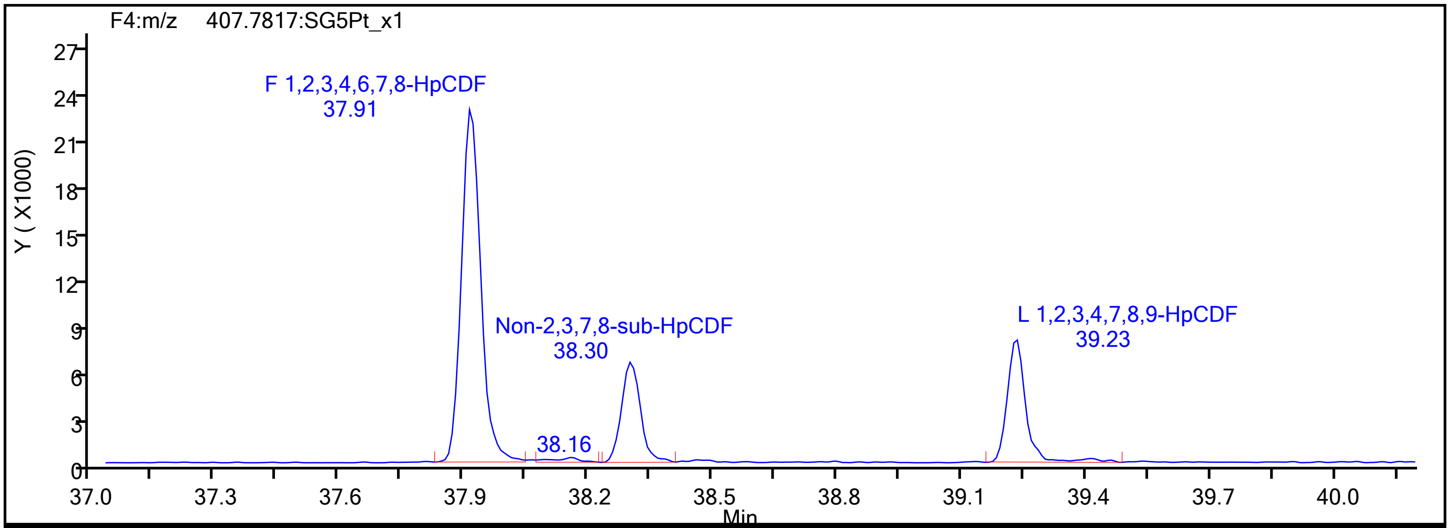

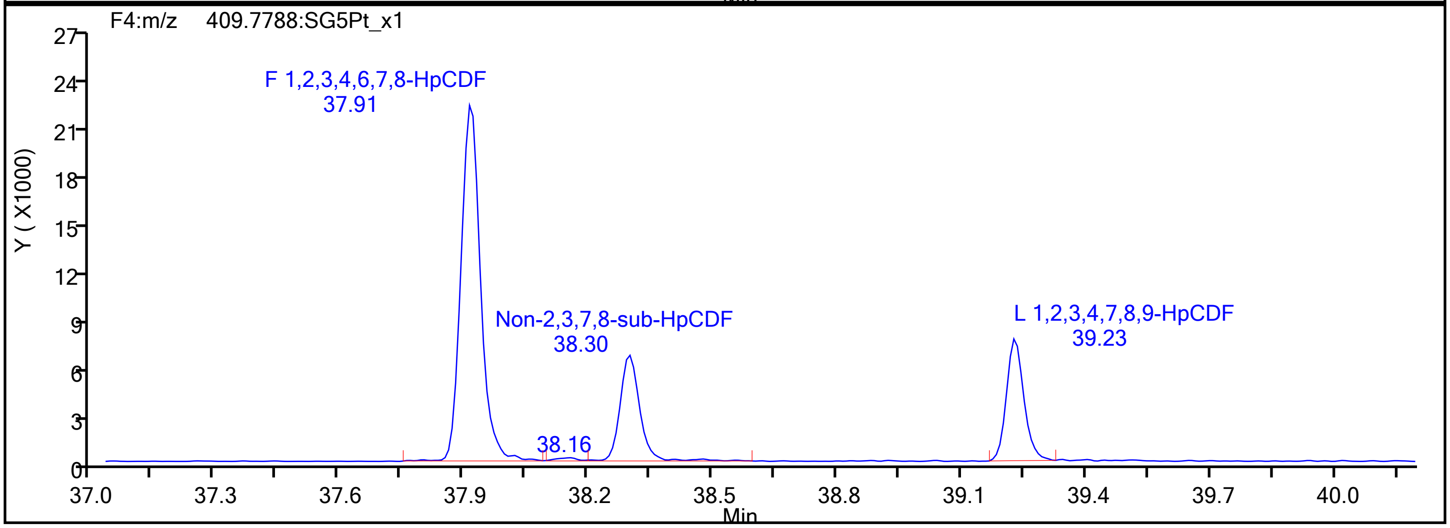

HpCDF Interference Mass

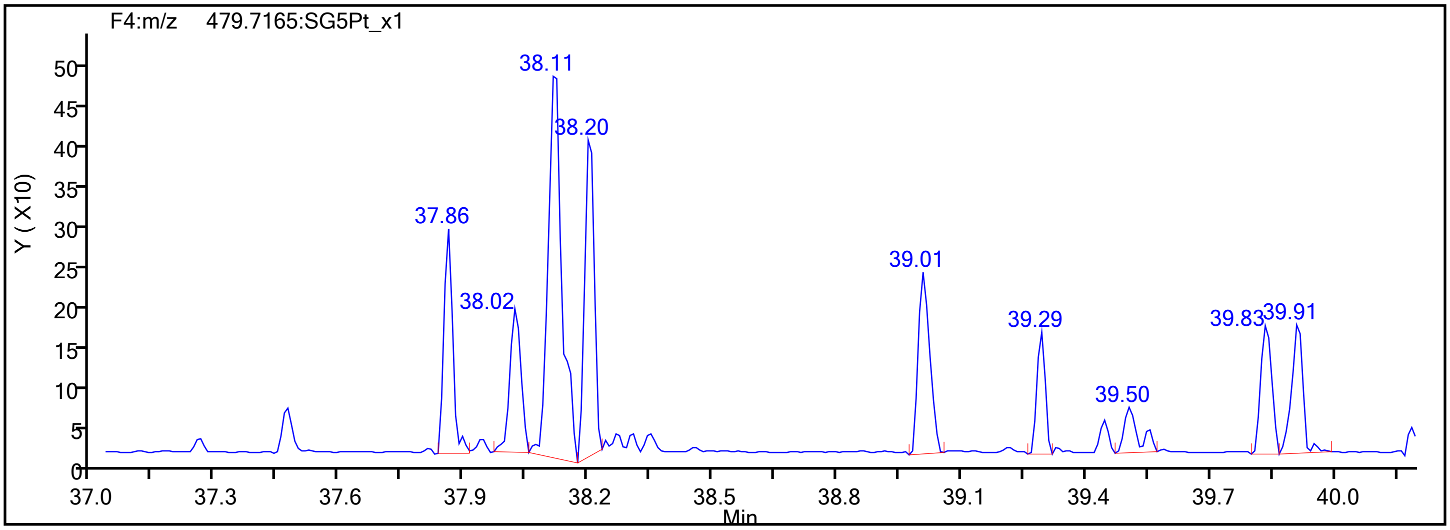

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Eurofins TestAmerica, Sacramento

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Injection Date: 10-Oct-2020 10:57:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-4-1

Worklist#: 420640 Sample Line#: 22

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

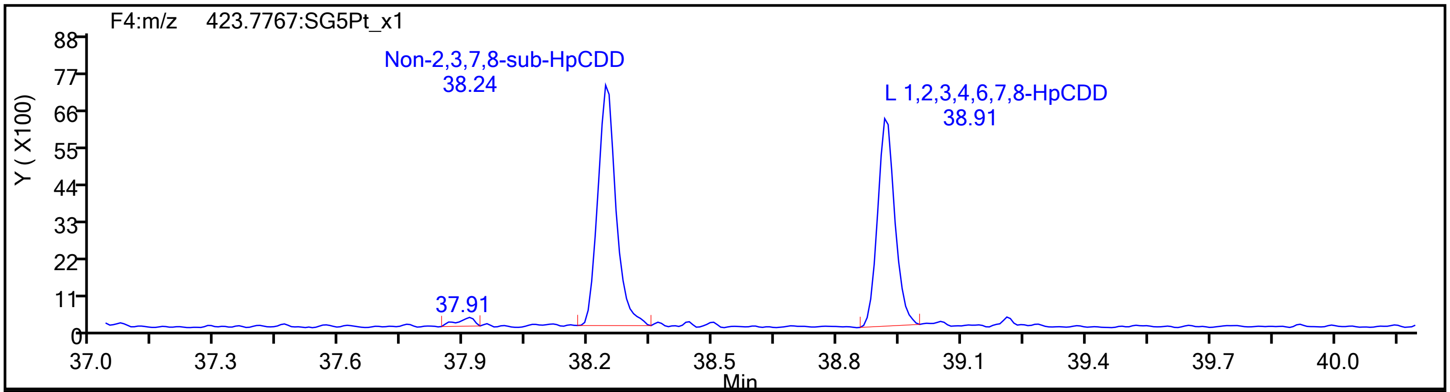

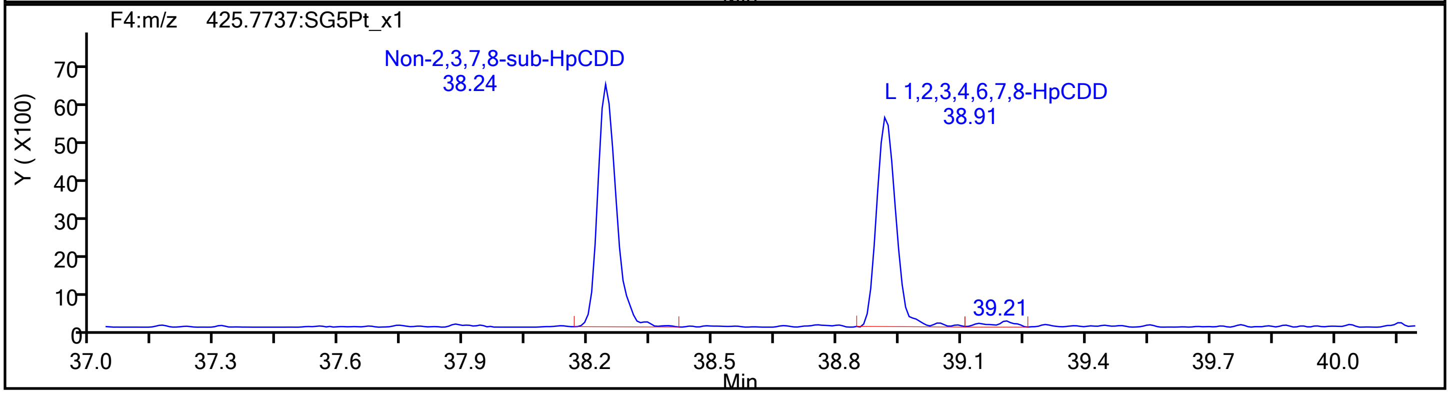

HpCDD Standards

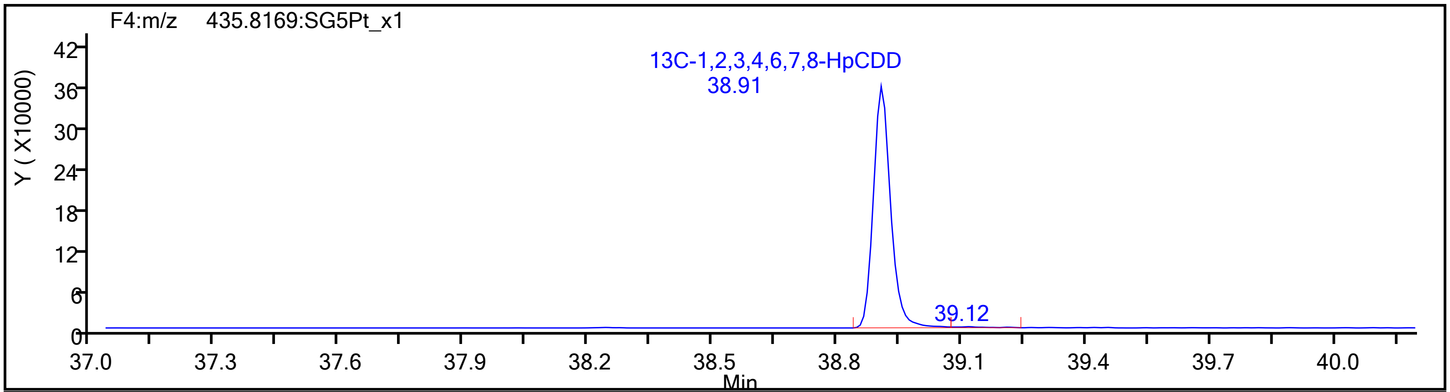

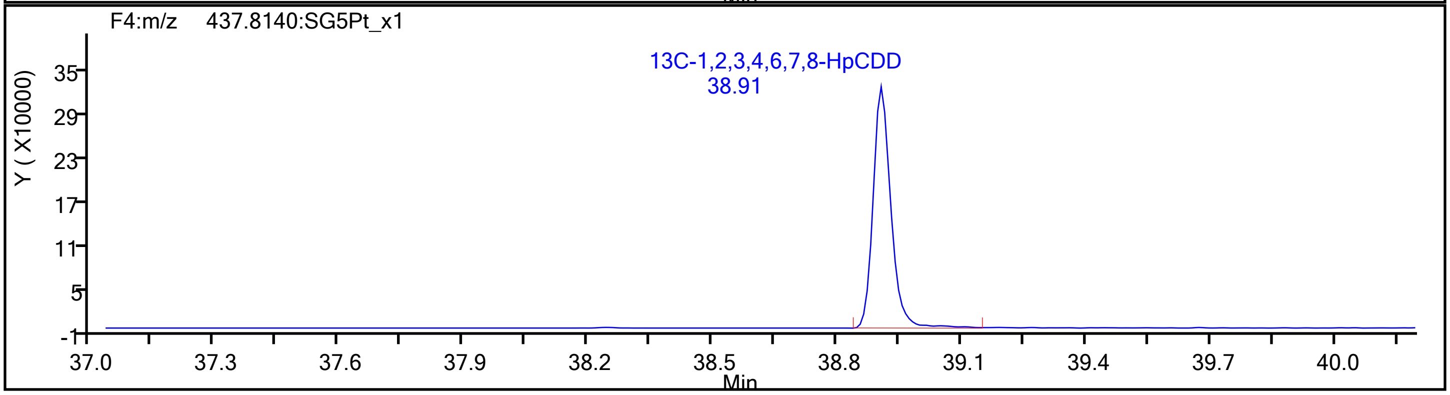

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Eurofins TestAmerica, Sacramento

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Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

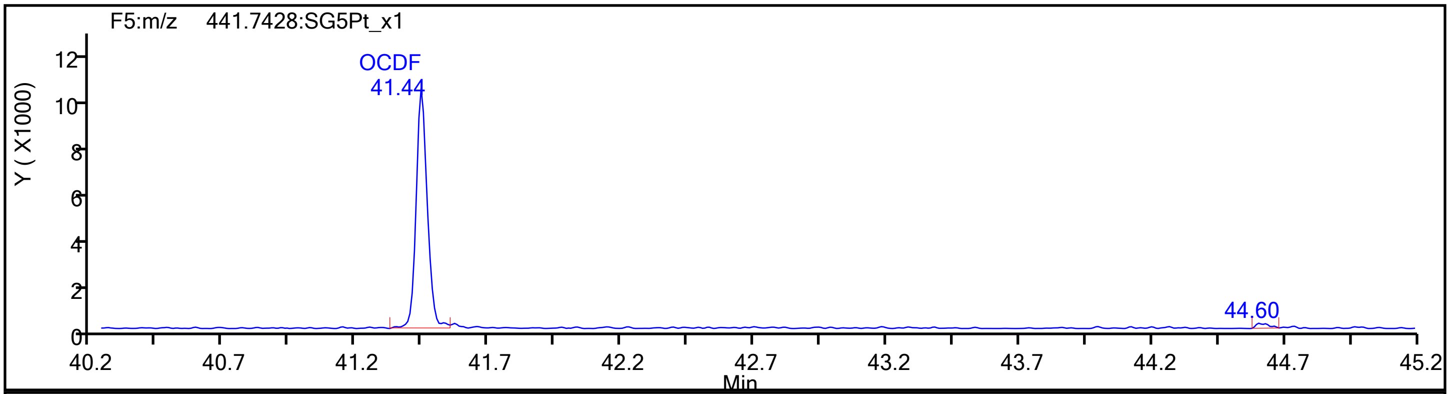

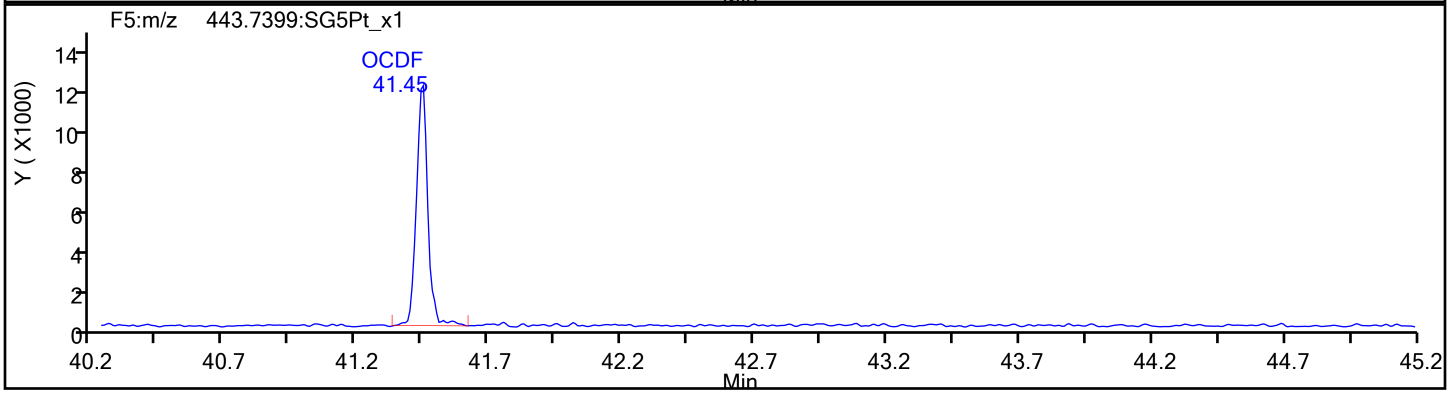

OCDF Standards

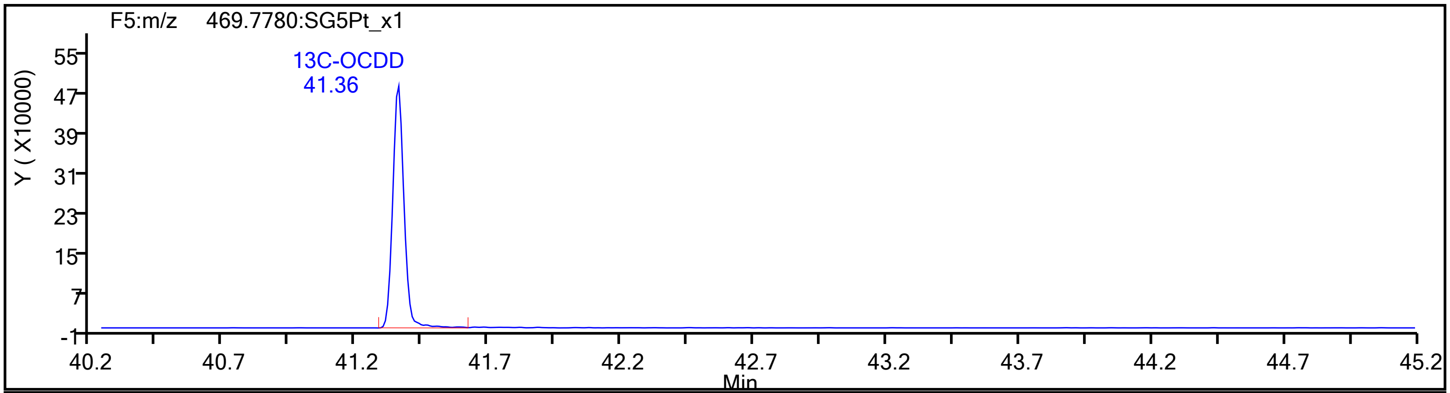

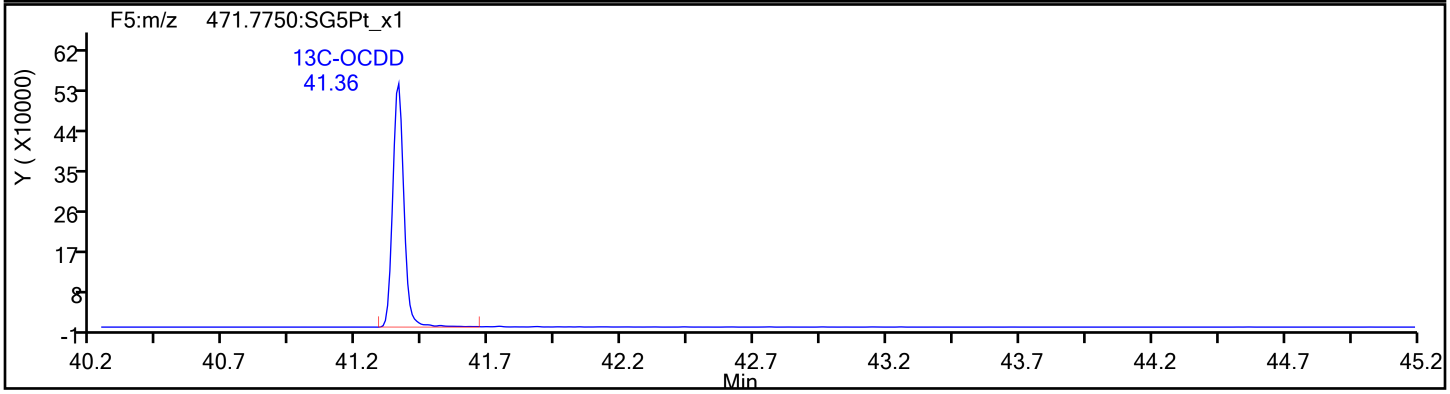

Eurofins TestAmerica, Sacramento

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OCDF

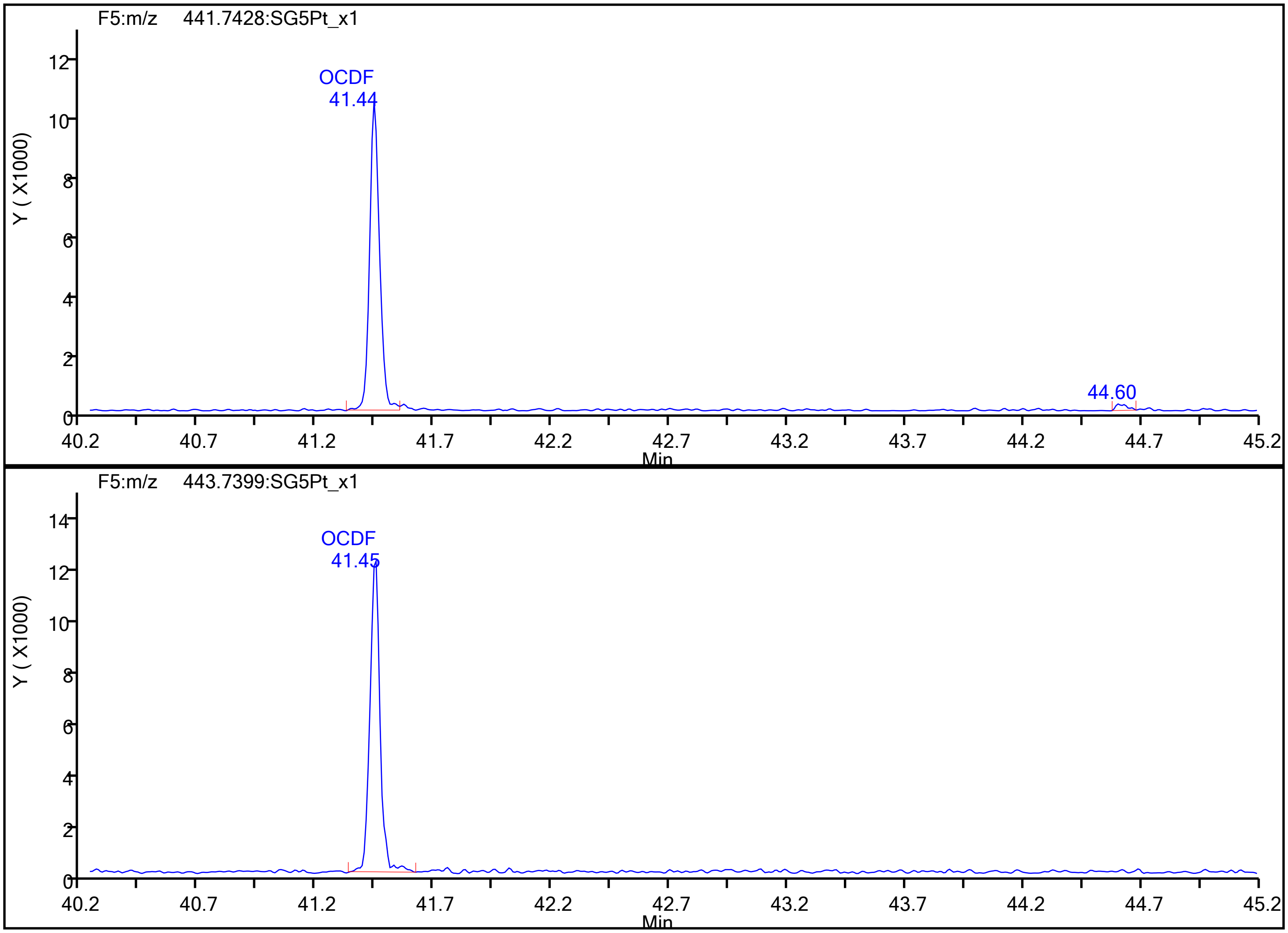

OCDF Interference Mass

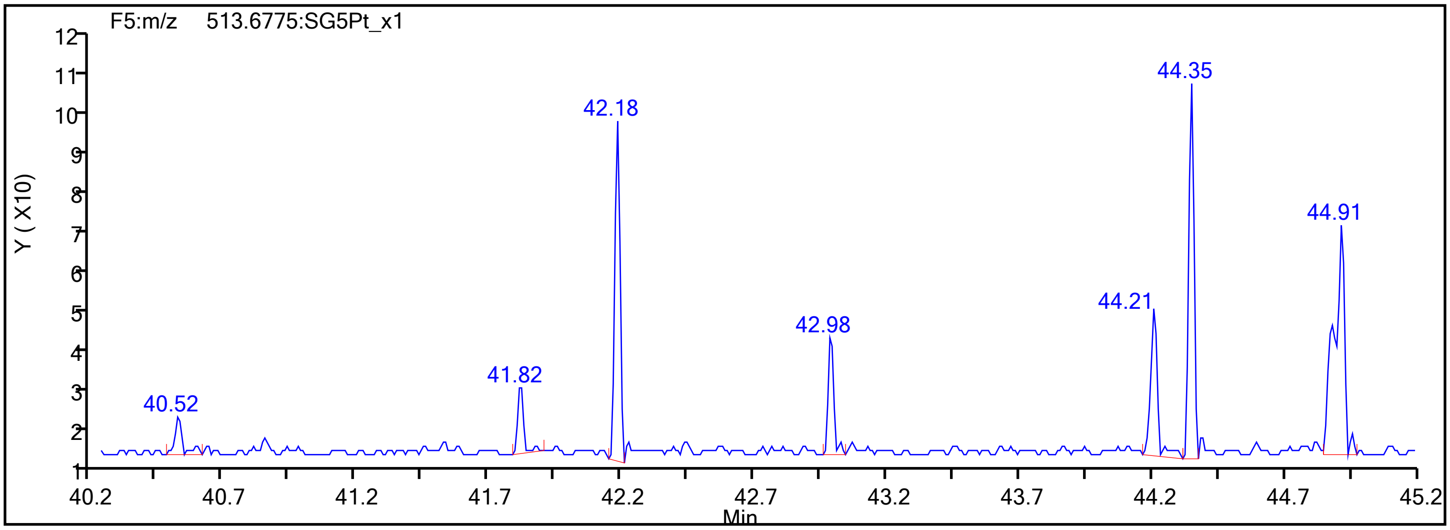

Report Date: 12-Oct-2020 11:31:55 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d
Injection Date: 10-Oct-2020 10:57:00
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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OCDD

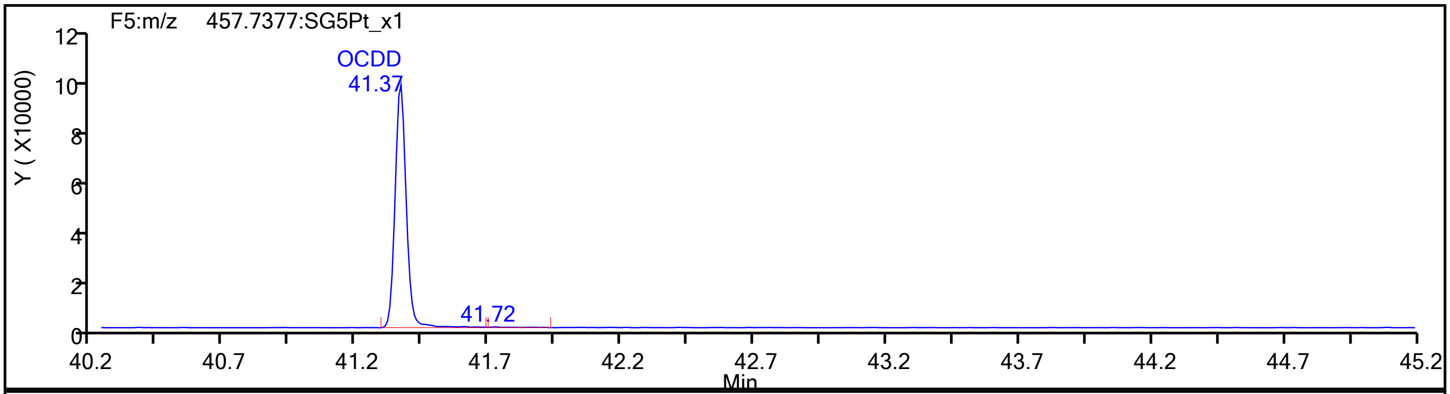

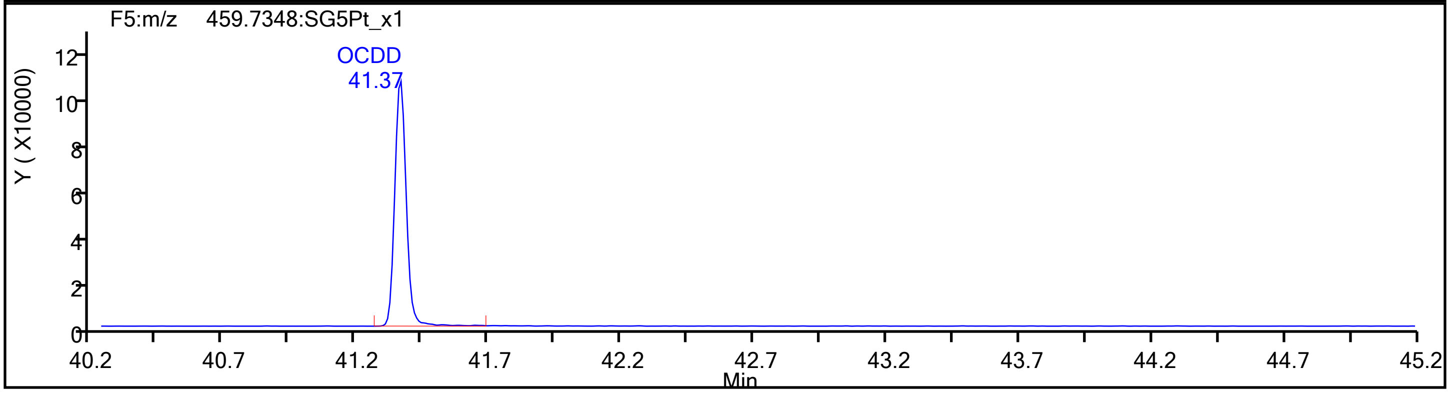

OCDD Standards

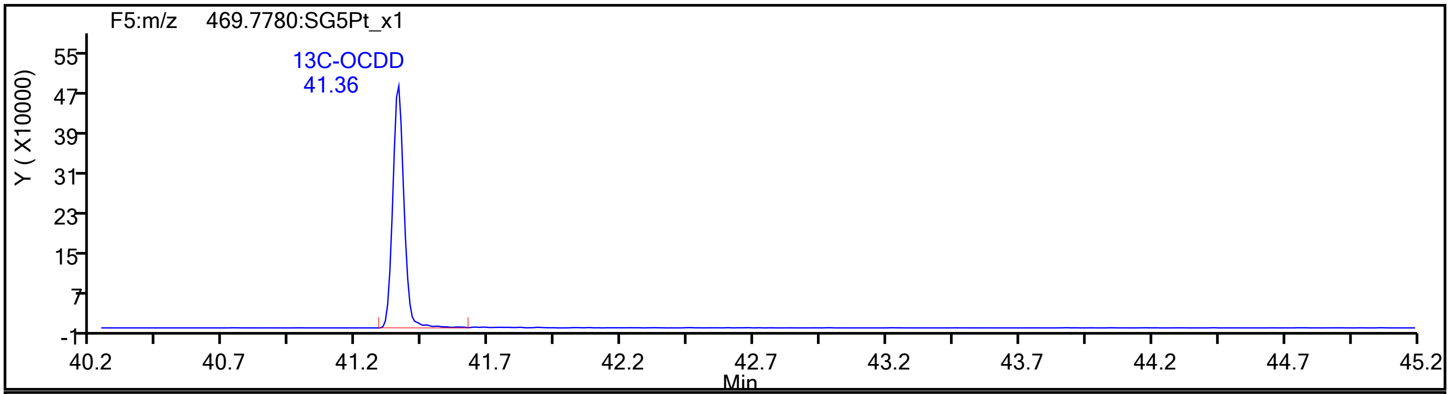

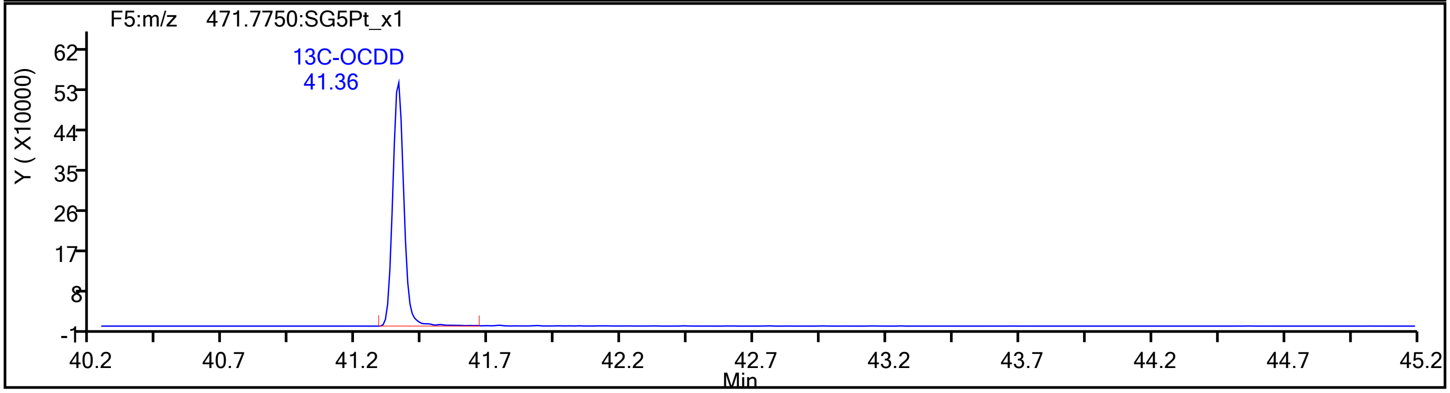

Report Date: 12-Oct-2020 11:31:55 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Injection Date:	10-Oct-2020 10:57:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

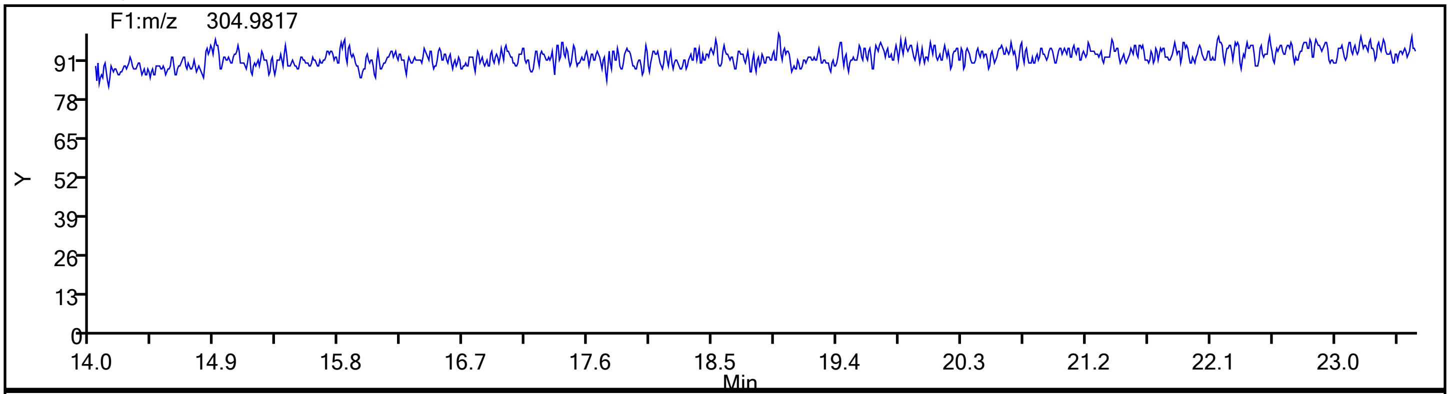

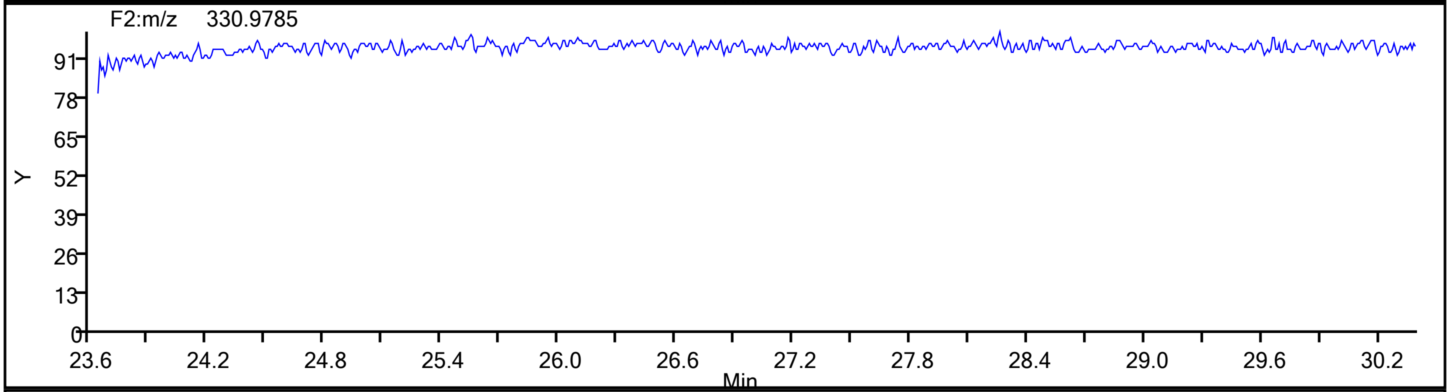

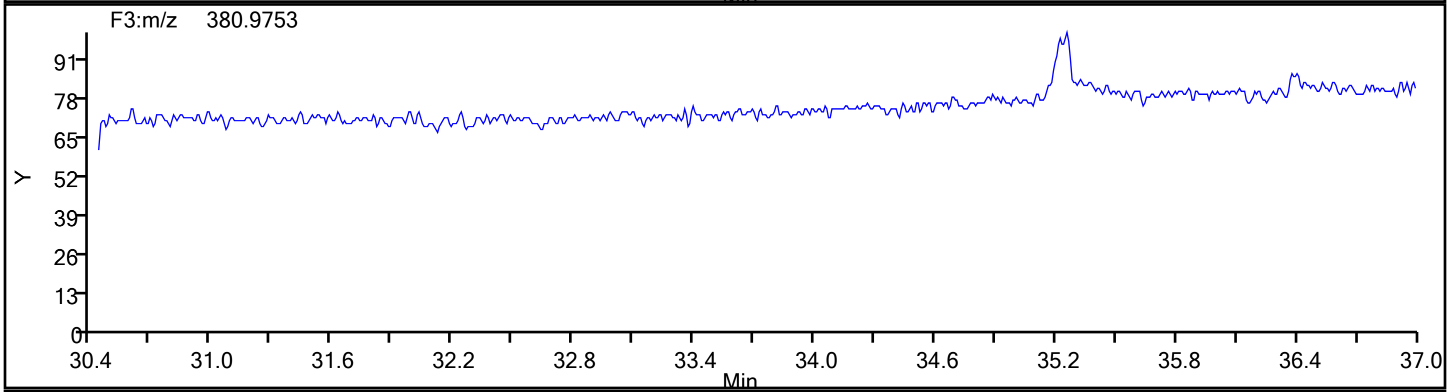

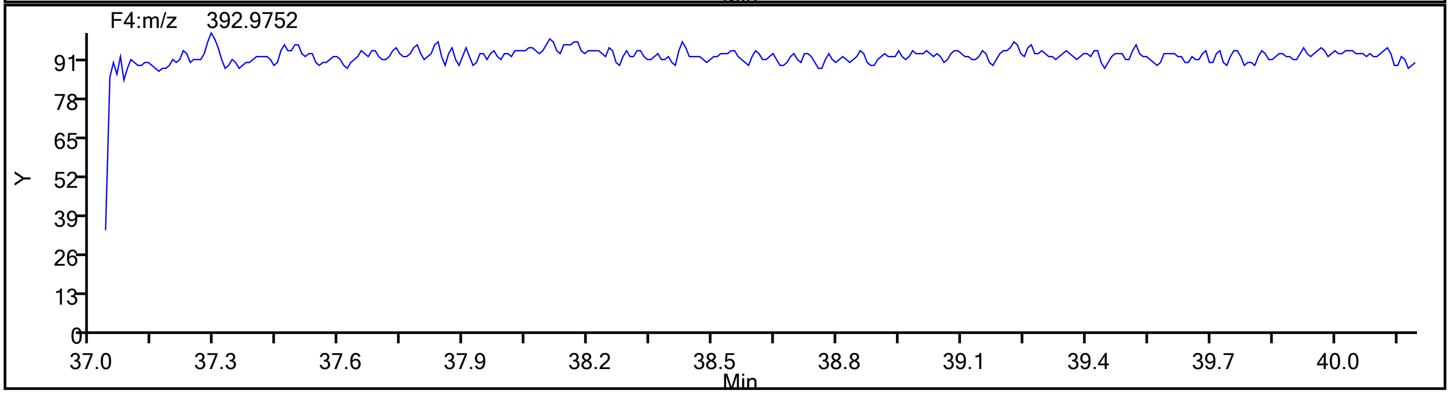

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_24.d		
Injection Date:	10-Oct-2020 10:57:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	420640	Sample Line#:	22
Column Type:	DB-5	Column Dia:	0.32 mm

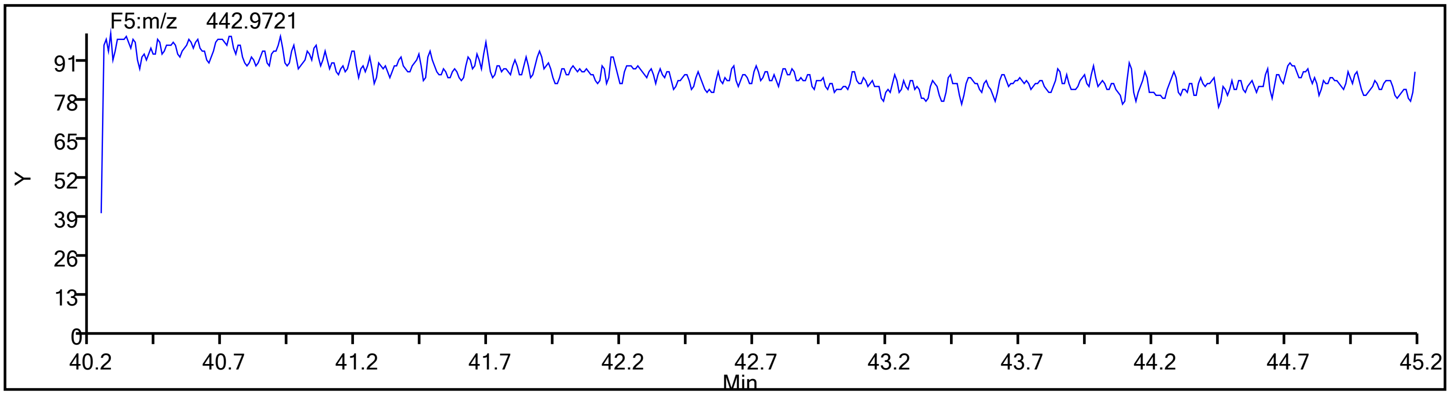

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-4-1 RA	Lab Sample ID: 320-65130-17 RA
Matrix: Water	Lab File ID: 12OC20A11D2_007.d
Analysis Method: 1613B	Date Collected: 09/10/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1034.1(mL)	Date Analyzed: 10/12/2020 19:10
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	3100	B	9.7	3.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	90		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	111		35-197

Report Date: 14-Oct-2020 12:17:26 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_007.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Sample Type: Client
Inject. Date: 12-Oct-2020 19:10:16 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-17-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.968	64802098	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.107	92043375	0.81	1.5708	90.4	90.4	0.8523	0.8523	90.42	
2,3,7,8-TCDF	16.120	146101892	0.76	0.9943	159.6	159.6	0.1862	0.1862		
D 13C-2,3,7,8-TCDD	14.721	51268230	0.82	0.9834	80.5	80.5	3.355	3.355	80.45	
2,3,7,8-TCDD	14.748	36234010	0.79	1.2822	55.1	55.1	0.3431	0.3431		
$ 37Cl4-2,3,7,8-TCDD	14.735	28717286		0.9945	44.6	44.6	0.1073	0.1073	111	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_007.d
Lims ID: 320-65130-A-17-A
Client ID: 11215702-Tank#2-valve-4-1
Sample Type: Client
Inject. Date: 12-Oct-2020 19:10:16 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-17-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:06

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.968	14.967	0		29159745	7093846	88686	221715	80		
333.9339	14.968	14.967	0		35642353	8655579	119128	297820	73	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.107	16.092	1	1.076	41055180	9905133	45594	113985	217		
317.9389	16.107	16.092	1	1.076	50988195	12023577	38750	96875	310	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.120	16.312	0	1.001	63105740	14462948	6019	15047	2403		
305.8987	16.120	16.312	0	1.001	82996152	19376240	10223	25557	1895	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.721	15.341	0	0.984	23048838	5807029	88686	221715	65		
333.9339	14.721	15.341	0	0.984	28219392	7485344	119128	297820	63	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.748	15.613	1	1.002	15980994	3958394	13142	32855	301		
321.8936	14.748	15.613	1	1.002	20253016	5105505	10247	25617	498	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.735	15.356	0	0.984	28717286	7188711	6724	16810	1069		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_007.d
Injection Date: 12-Oct-2020 19:10:16
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-1
Worklist#: 421482
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

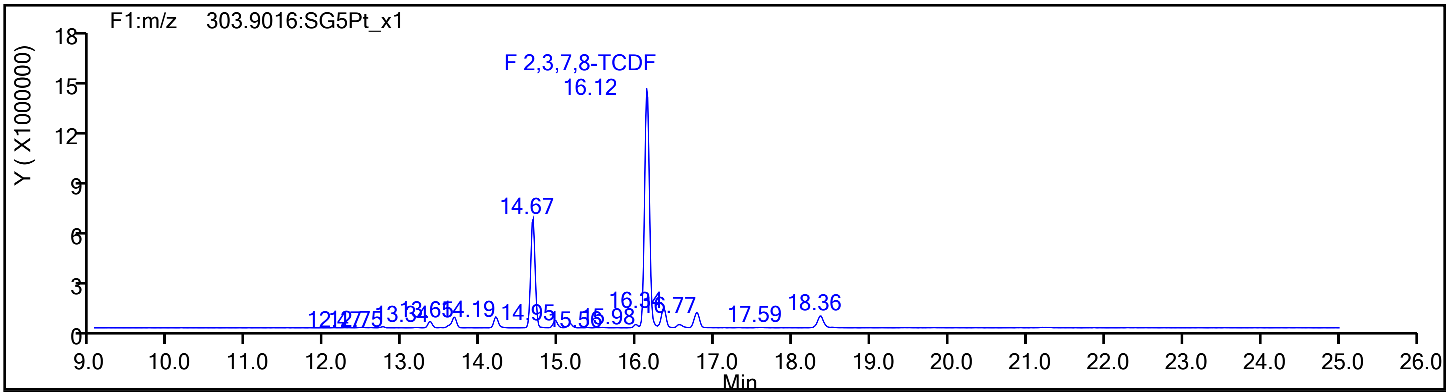

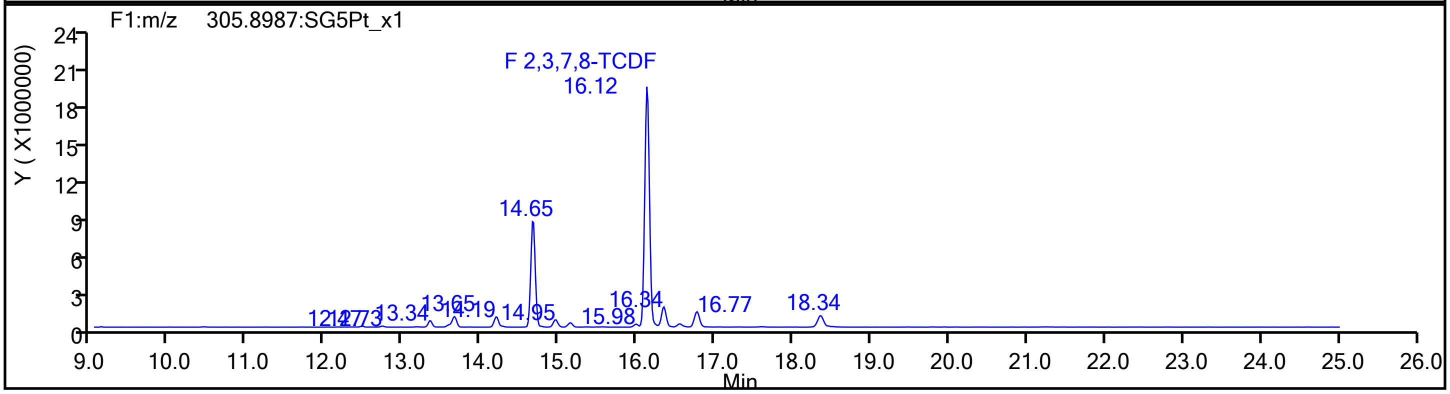

TCDF Standards

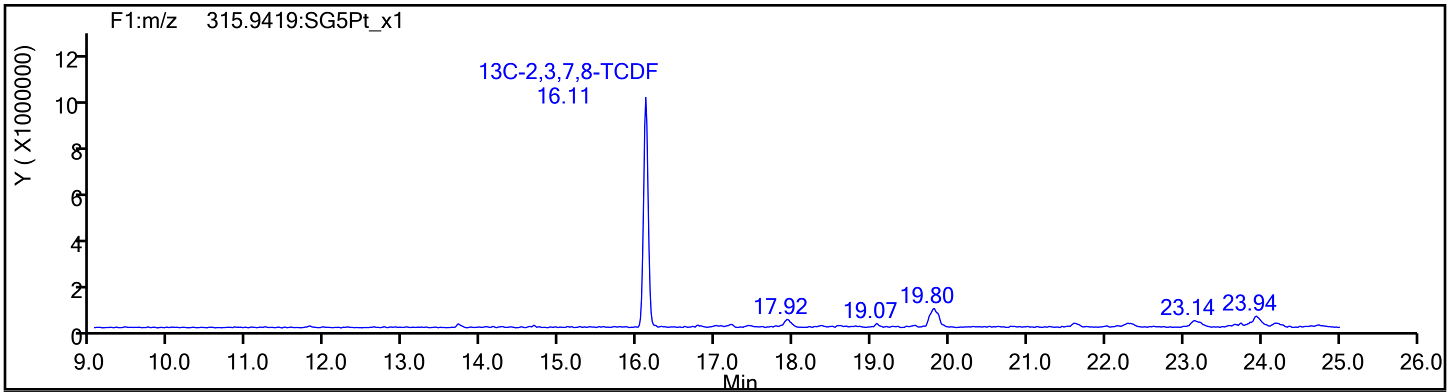

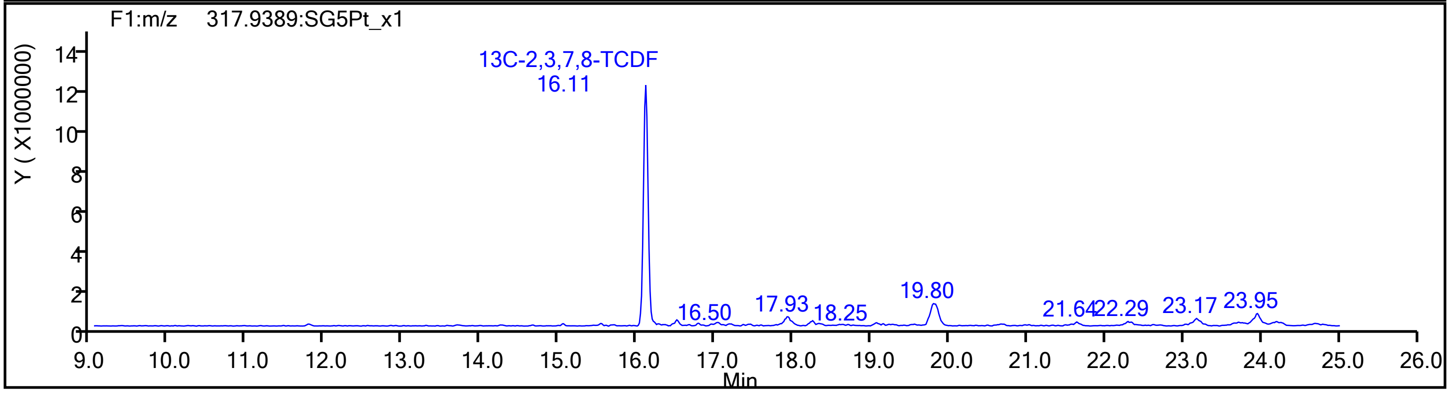

Report Date: 14-Oct-2020 12:17:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_007.d

Injection Date:	12-Oct-2020 19:10:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	421482	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

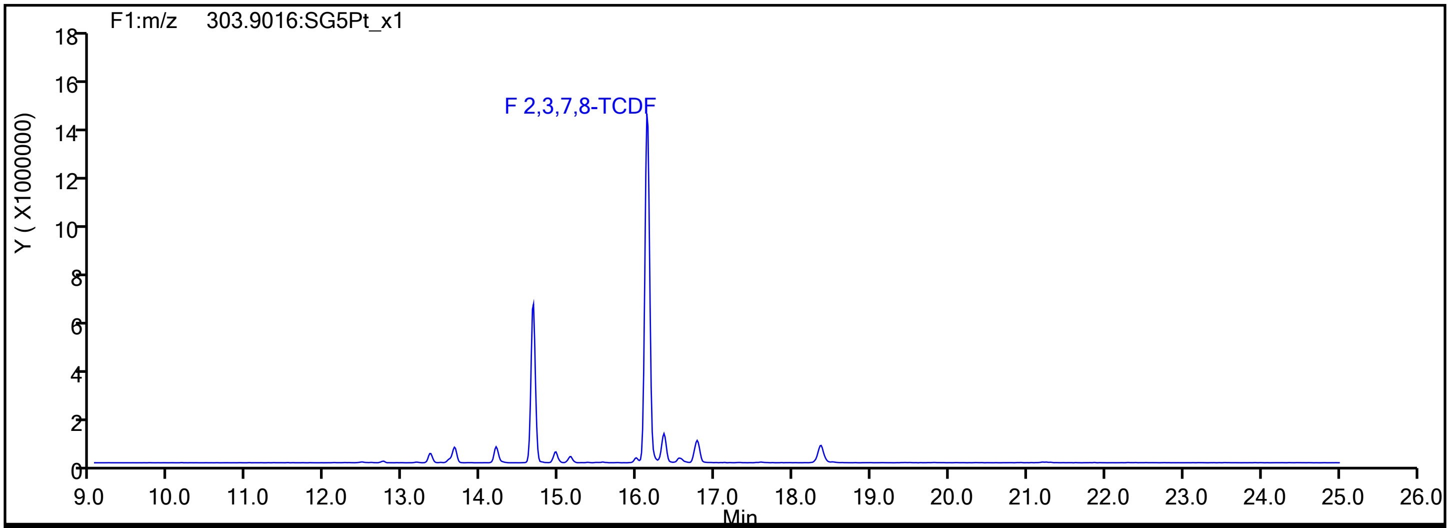

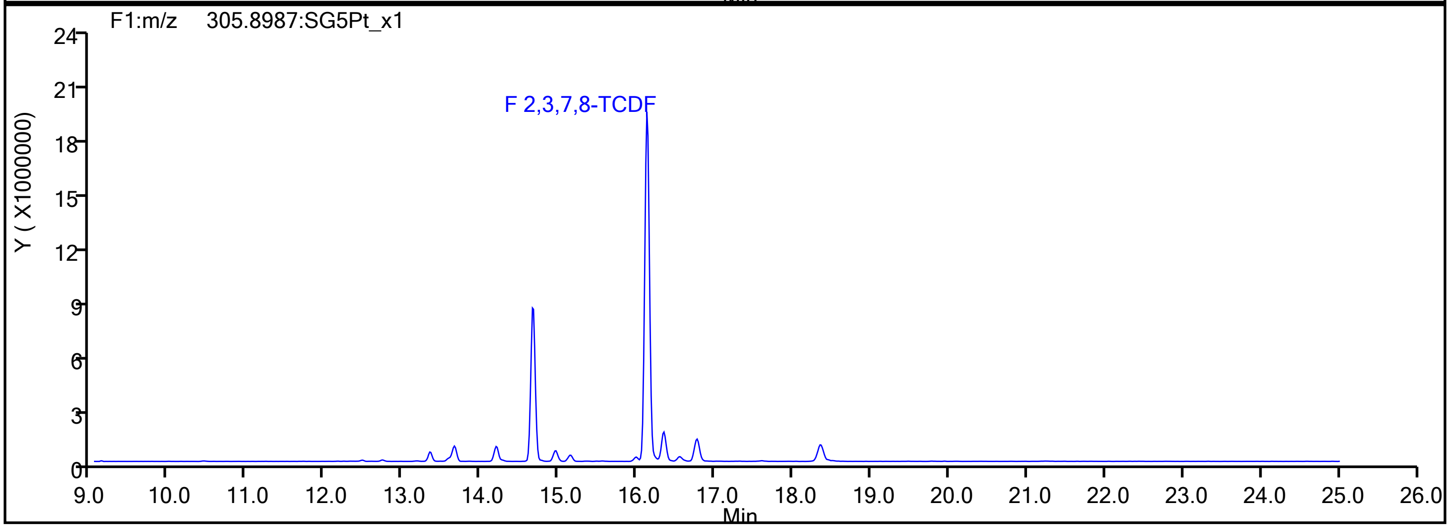

TCDF Interference Mass

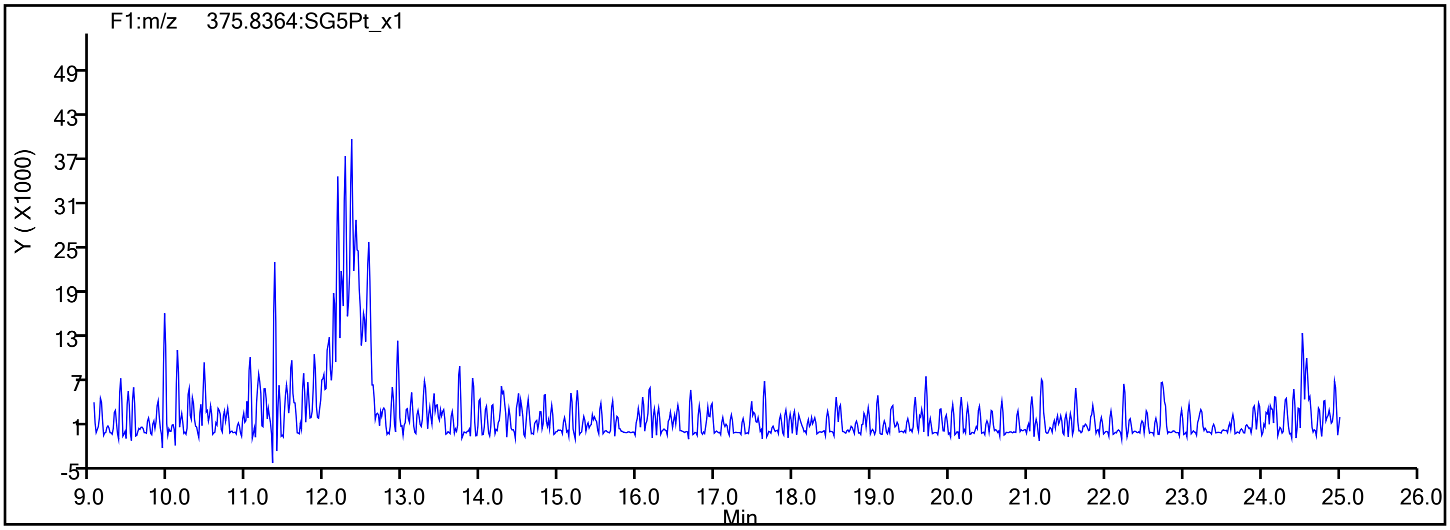

Report Date: 14-Oct-2020 12:17:27
Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_007.d		
Injection Date:	12-Oct-2020 19:10:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	421482	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

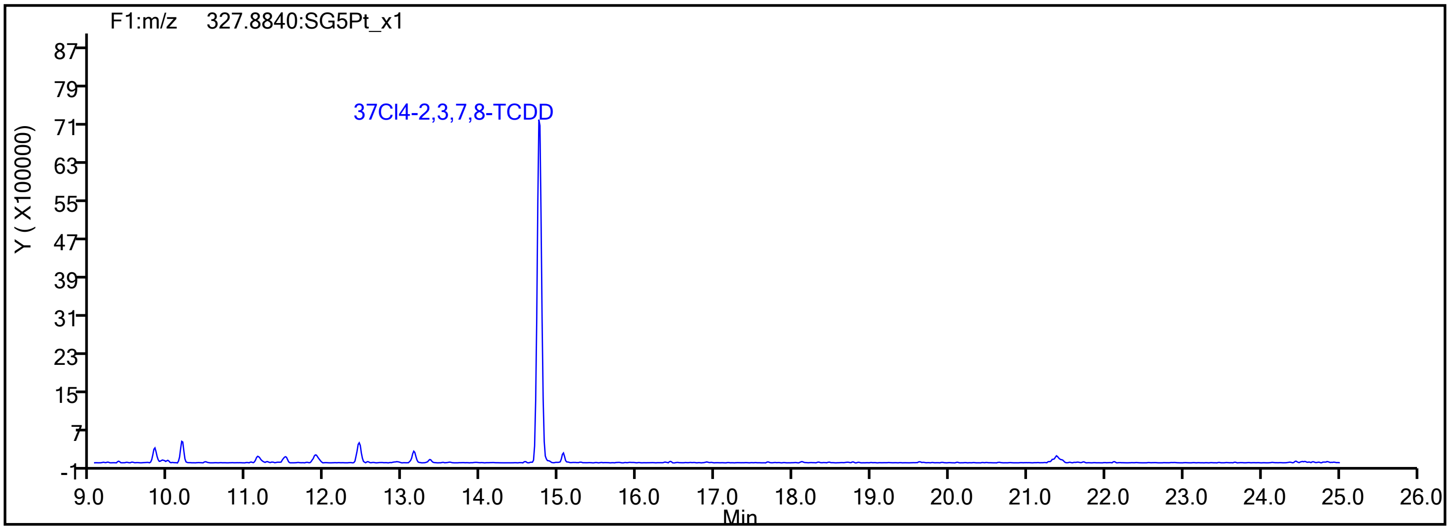

37Cl4-TCDD Standards

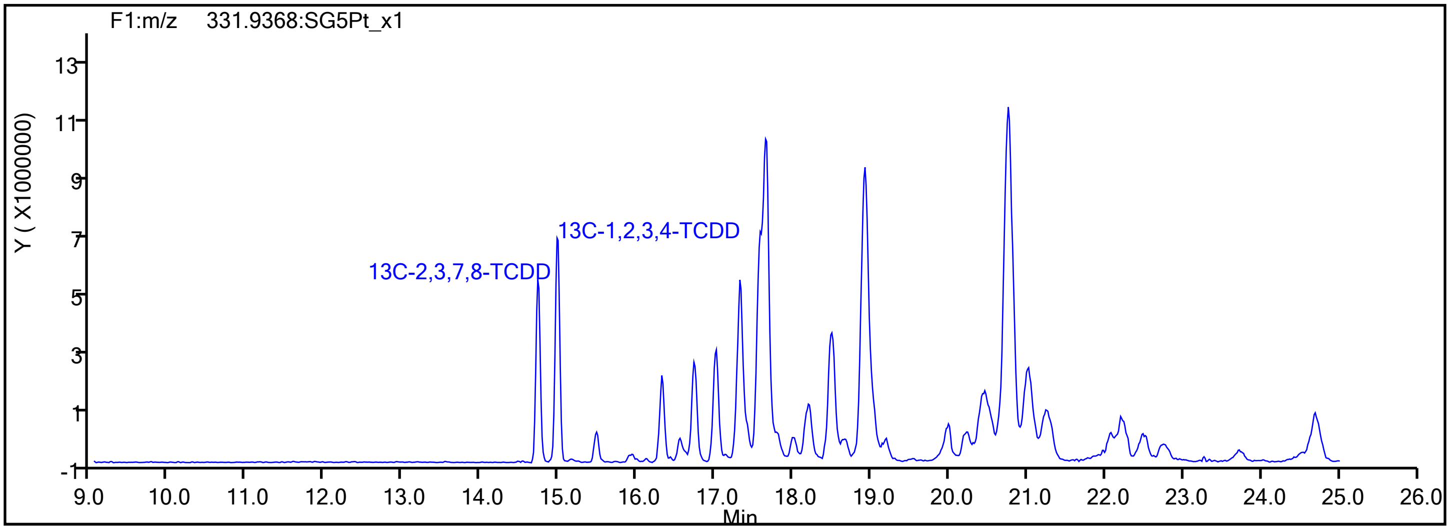

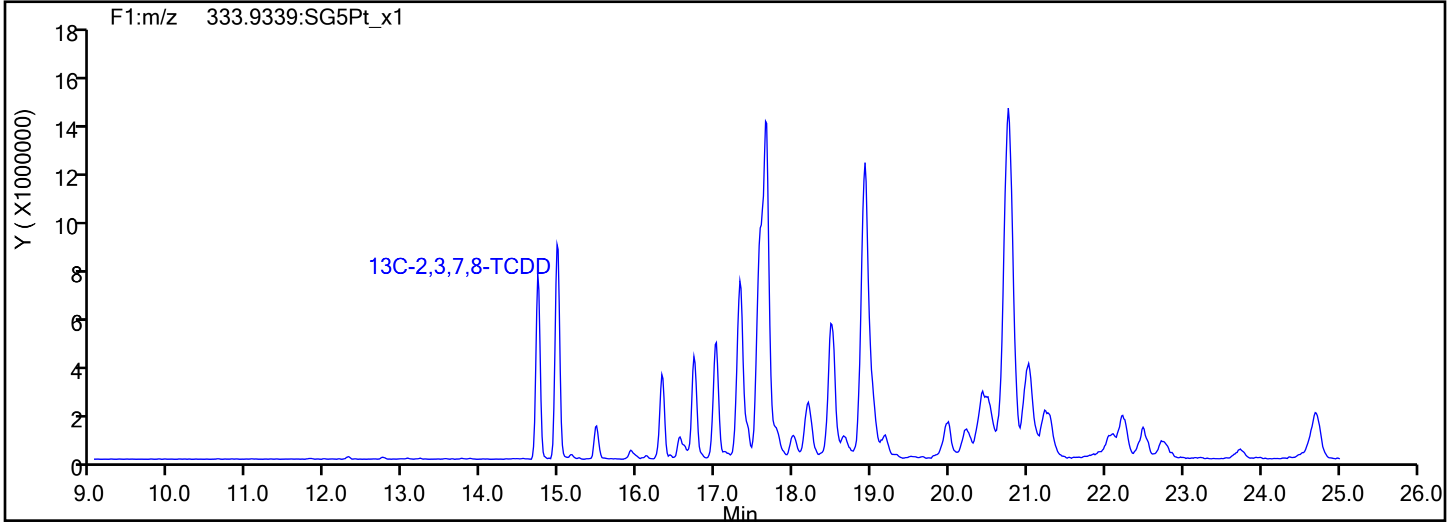

Report Date: 14-Oct-2020 12:17:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_007.d		
Injection Date:	12-Oct-2020 19:10:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-1		
Worklist#:	421482	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

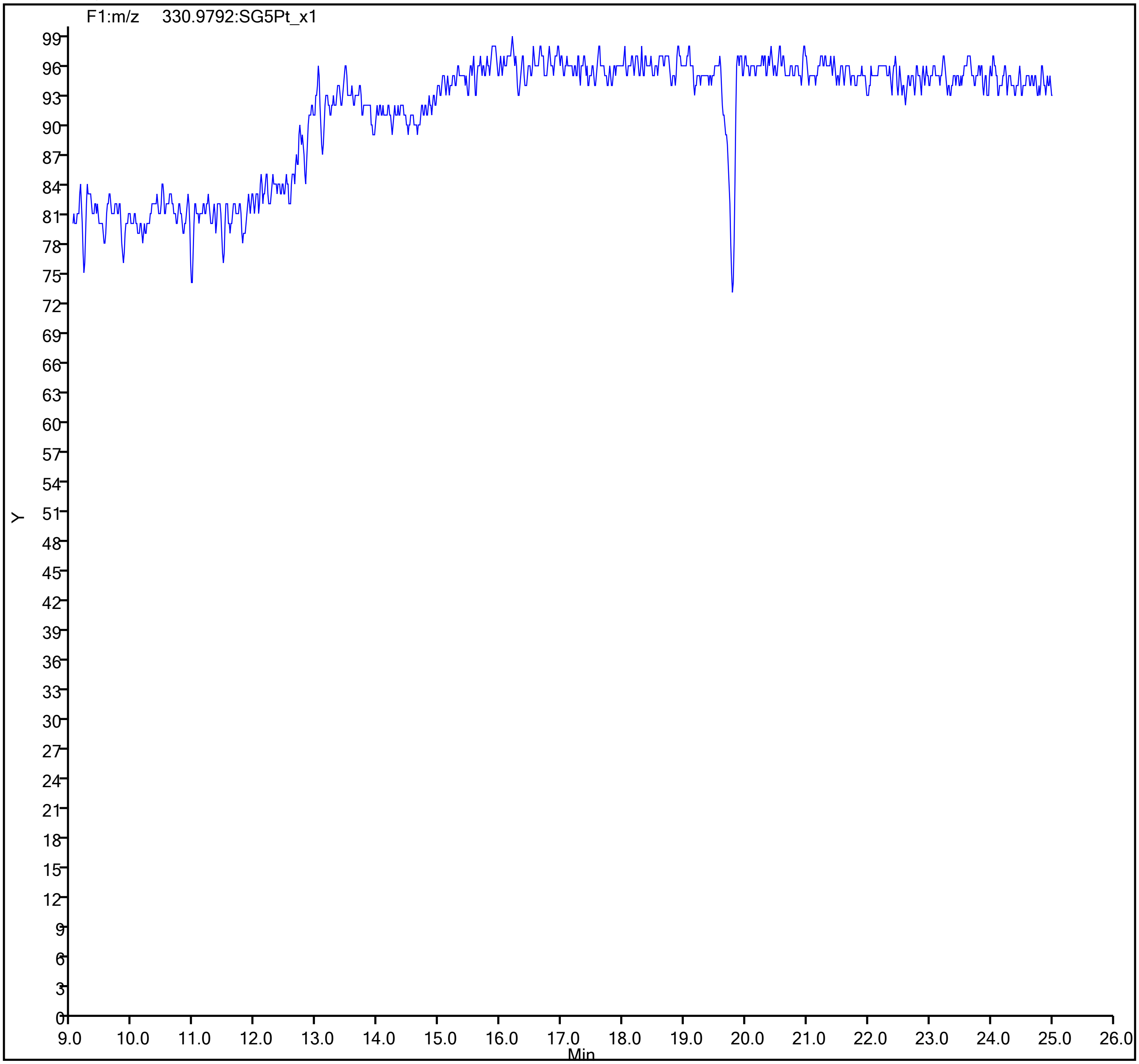

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-5-1   Lab Sample ID: 320-65130-18

Matrix: Water   Lab File ID: 09oc20dfs1_25.d

Analysis Method: 1613B   Date Collected: 09/10/2020 09:30

Extract. Method: 1613B   Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1039.8(mL)   Date Analyzed: 10/10/2020 11:45

Con. Extract Vol.: 20(uL)   Dilution Factor: 1

Injection Volume: 1(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640   Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	52		48	1.7
57117-41-6	1,2,3,7,8-PeCDF	510		48	5.1
57117-31-4	2,3,4,7,8-PeCDF	330		48	5.6
39227-28-6	1,2,3,4,7,8-HxCDD	5.9	J B	48	0.49
57653-85-7	1,2,3,6,7,8-HxCDD	8.2	J q	48	0.62
19408-74-3	1,2,3,7,8,9-HxCDD	5.0	J q	48	0.51
70648-26-9	1,2,3,4,7,8-HxCDF	910		48	3.6
57117-44-9	1,2,3,6,7,8-HxCDF	230		48	3.2
72918-21-9	1,2,3,7,8,9-HxCDF	18	J B	48	2.6
60851-34-5	2,3,4,6,7,8-HxCDF	28	J	48	2.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	130		48	0.91
67562-39-4	1,2,3,4,6,7,8-HpCDF	290	B	48	1.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	100	B	48	1.1
3268-87-9	OCDD	2100	B	96	2.1
39001-02-0	OCDF	170	B	96	0.93
41903-57-5	Total TCDD	5600	G	9.7	9.7
30402-14-3	Total TCDF	28000	G B	62	62
36088-22-9	Total PeCDD	52		48	1.7
30402-15-4	Total PeCDF	1300		48	5.3
34465-46-8	Total HxCDD	30	J q B	48	0.54
55684-94-1	Total HxCDF	1300	B	48	3.1
37871-00-4	Total HpCDD	280		48	0.91
38998-75-3	Total HpCDF	490	B	48	1.1

FORM I 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-5-1   Lab Sample ID: 320-65130-18

Matrix: Water   Lab File ID: 09oc20dfs1_25.d

Analysis Method: 1613B   Date Collected: 09/10/2020 09:30

Extract. Method: 1613B   Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1039.8(mL)   Date Analyzed: 10/10/2020 11:45

Con. Extract Vol.: 20(uL)   Dilution Factor: 1

Injection Volume: 1(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640   Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	73		25-164
89059-46-1	13C-2,3,7,8-TCDF	71		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	70		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	72		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	71		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	91		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	67		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	66		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	69		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	70		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	74		26-138
114423-97-1	13C-OCDD	70		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		35-197

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Sample Type: Client
Inject. Date: 10-Oct-2020 11:45:00 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-18-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: messecara Date: 10-Oct-2020 23:18:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.713	2831088	0.81	2.7E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.803	3182838	0.76	1.5883	70.8	70.8	0.5109	0.5109	70.78	
2,3,7,8-TCDF	18.837	28622421	0.81	1.0857	828.3	828.3	3.219	3.219		E
A Non-2,3,7,8-sub-TCDF	18.413	21175734	0.81	1.0857	612.8	612.8	3.219	351.5		
S Total TCDF					1441.1	1441.1	3.219	3.219		
D 13C-2,3,7,8-TCDD	20.066	2318539	0.79	1.1194	73.2	73.2	0.3839	0.3839	73.16	
2,3,7,8-TCDD	20.100	6645193	0.79	1.0810	265.1	265.1	0.5044	0.5044		E
$ 37Cl4-2,3,7,8-TCDD	20.100	1210511		1.1468	37.3	37.3	0.1026	0.1026	93.21	
A Non-2,3,7,8-sub-TCDD	19.200	614119	0.76	1.0810	24.5	24.5	0.5044	21.0		
S Total TCDD					289.6	289.6	0.5044	0.5044		
D 13C-1,2,3,7,8-PeCDF	25.936	2998010	1.56	1.4782	71.6	71.6	0.1911	0.1911	71.64	
1,2,3,7,8-PeCDF	25.953	834293	1.59	1.0547	26.4	26.4	0.2626	0.2626		
D 13C-2,3,4,7,8-PeCDF	27.352	2801720	1.62	1.3912	71.1	71.1	0.2030	0.2030	71.13	
2,3,4,7,8-PeCDF	27.378	532871	1.60	1.1035	17.2	17.2	0.2912	0.2912		
A F1 PeCDFs	23.059						0.0149	0.0691		RQU
A Non-2,3,7,8-sub-PeCDF	26.475	761450	1.55	1.0791	24.3	24.3	0.2757	11.3		
S Total PeCDF					68.0	68.0	0.2769	0.2769		
D 13C-1,2,3,7,8-PeCDD	28.110	1876739	1.59	0.9415	70.4	70.4	0.1311	0.1311	70.41	
1,2,3,7,8-PeCDD	28.144	54418	1.65	1.0680	2.715	2.715	0.0882	0.0882		
A Non-2,3,7,8-sub-PeCDD	26.975						0.0882	0.0882		
S Total PeCDD					2.715	2.715	0.0882	0.0882		
D 13C-1,2,3,4,7,8-HxCDF	33.833	2210282	0.53	1.1378	67.2	67.2	0.1487	0.1487	67.17	
1,2,3,4,7,8-HxCDF	33.858	1326625	1.24	1.2643	47.5	47.5	0.1862	0.1862		
D 13C-1,2,3,6,7,8-HxCDF	34.026	2533289	0.53	1.3173	66.5	66.5	0.1284	0.1284	66.50	
1,2,3,6,7,8-HxCDF	34.043	373873	1.23	1.2230	12.1	12.1	0.1659	0.1659		
D 13C-2,3,4,6,7,8-HxCDF	34.978	2514780	0.54	1.2457	69.8	69.8	0.1358	0.1358	69.80	
2,3,4,6,7,8-HxCDF	35.003	45909	1.24	1.2464	1.465	1.465	0.1451	0.1451		
D 13C-1,2,3,7,8,9-HxCDF	35.972	2374192	0.53	1.1840	69.3	69.3	0.1429	0.1429	69.34	
1,2,3,7,8,9-HxCDF	35.981	27753	1.22	1.2638	0.9250	0.9250	0.1372	0.1372		
A Non-2,3,7,8-sub-HxCDF	33.855	244932	1.27	1.2494	8.141	8.141	0.1564	2.950		
S Total HxCDF					70.1	70.1	0.1586	0.1586		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.762	2892098	1.22	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.231	2230565	1.25	0.8477	91.0	91.0	0.1502	0.1502	90.98	
1,2,3,4,7,8-HxCDD	35.239	7843	1.27	1.1561	0.3041	0.3041	0.0255	0.0255		
D 13C-1,2,3,6,7,8-HxCDD	35.357	2269613	1.27	0.9979	78.6	78.6	0.1276	0.1276	78.65	
1,2,3,6,7,8-HxCDD	35.382	10004	1.24	1.0284	0.4677	0.4286	0.0324	0.0324		RQ
1,2,3,7,8,9-HxCDD	35.770	6840	1.24	1.1789	0.2864	0.2579	0.0265	0.0265		RQM
A Non-2,3,7,8-sub-HxCDD	34.365	14519	1.26	1.1211	0.5755	0.5755	0.0279	0.5755		
S Total HxCDD					1.634	1.566	0.0282	0.0282		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.927	2133289	0.45	0.9884	74.6	74.6	0.2801	0.2801	74.63	
1,2,3,4,6,7,8-HpCDF	37.936	487514	1.06	1.5064	15.2	15.2	0.0545	0.0545		
D 13C-1,2,3,4,7,8,9-HpCDF	39.242	1957596	0.46	0.9203	73.5	73.5	0.3008	0.3008	73.55	
1,2,3,4,7,8,9-HpCDF	39.250	149491	1.02	1.4548	5.249	5.249	0.0549	0.0549		
A Non-2,3,7,8-sub-HpCDF	38.593	148271	1.03	1.4806	4.896	4.896	0.0547	4.896		
S Total HpCDF					25.3	25.3	0.0547	0.0547		
D 13C-1,2,3,4,6,7,8-HpCDD	38.930	2073379	1.03	0.9556	75.0	75.0	0.1603	0.1603	75.02	
1,2,3,4,6,7,8-HpCDD	38.939	154515	1.06	1.0640	7.004	7.004	0.0475	0.0475		
A Non-2,3,7,8-sub-HpCDD	38.941	163071	1.06	1.0640	7.392	7.392	0.0475	7.392		
S Total HpCDD					14.4	14.4	0.0475	0.0475		
D 13C-OCDD	41.382	3024802	0.88	0.7420	140.9	140.9	0.2256	0.2256	70.47	
OCDF	41.467	193342	0.89	1.4296	8.942	8.942	0.0482	0.0482		
OCDD	41.382	1830792	0.89	1.1293	107.2	107.2	0.1090	0.1090		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Sample Type: Client
Inject. Date: 10-Oct-2020 11:45:00 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-18-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: messecara Date: 10-Oct-2020 23:18:51

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.713	19.716	0		1267076	196926	421	1052	468		a
333.9338	19.713	19.716	0		1564012	233973	320	800	731	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.803	18.830	-2	0.954	1378231	237233	906	2265	262		
317.9389	18.811	18.830	-1	0.954	1804607	293239	493	1232	595	0.76(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.837	18.865	-2	1.002	12832244	1908780	3273	8182	583		
305.8987	18.829	18.865	-2	1.001	15790177	2350168	4143	10357	567	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.483	18.413	-116	0.877	277700	54256	3273	8182	17		
305.8987	16.483	18.413	-116	0.877	341527	65138	4143	10357	16	0.81(0.65-0.89)	
303.9016	16.939	18.413	-88	0.901	519297	78526	3273	8182	24		
305.8987	16.939	18.413	-88	0.901	637707	92062	4143	10357	22	0.81(0.65-0.89)	
303.9016	17.343	18.413	-64	0.922	447731	69543	3273	8182	21		
305.8987	17.334	18.413	-65	0.922	548974	86313	4143	10357	21	0.82(0.65-0.89)	
303.9016	17.686	18.413	-44	0.941	575799	92530	3273	8182	28		
305.8987	17.695	18.413	-43	0.941	705190	111561	4143	10357	27	0.82(0.65-0.89)	
303.9016	18.158	18.413	-15	0.966	5431234	886138	3273	8182	271		
305.8987	18.158	18.413	-15	0.966	6714808	1094933	4143	10357	264	0.81(0.65-0.89)	
303.9016	18.545	18.413	8	0.986	279575	41703	3273	8182	13		
305.8987	18.536	18.413	7	0.986	344699	49768	4143	10357	12	0.81(0.65-0.89)	
303.9016	19.567	18.413	69	1.041	1028230	128017	3273	8182	39		
305.8987	19.567	18.413	69	1.041	1279704	155058	4143	10357	37	0.80(0.65-0.89)	
303.9016	21.939	18.413	211	1.167	920903	123076	3273	8182	38		
305.8987	21.939	18.413	211	1.167	1122656	152344	4143	10357	37	0.82(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	20.066	20.067	0	1.018	1022075	151017	421	1052	359		
333.9338	20.066	20.067	0	1.018	1296464	189168	320	800	591	0.79(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	20.100	20.101	0	1.002	2923374	433071	443	1107	978		
321.8936	20.100	20.101	0	1.002	3721819	550168	299	747	1840	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.100	20.103	0	1.020	1210511	180512	203	507	889		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.175	19.200	-61	0.906	8331	1841	443	1107	4		
321.8936	18.184	19.200	-61	0.906	11629	1840	299	747	6	0.72(0.65-0.89)	
319.8965	19.920	19.200	43	0.993	27430	6118	443	1107	14		
321.8936	19.937	19.200	44	0.994	41656	8220	299	747	27	0.66(0.65-0.89)	
319.8965	20.719	19.200	91	1.033	228857	32811	443	1107	74		
321.8936	20.719	19.200	91	1.033	296216	41744	299	747	140	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.936	25.934	0	1.316	1828433	304998	312	780	978		
353.8970	25.936	25.934	0	1.316	1169577	197709	175	437	1130	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.953	25.951	0	1.001	512419	85008	324	810	262		
341.8567	25.953	25.951	0	1.001	321874	54124	233	582	232	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.352	27.359	0	1.388	1730550	269117	312	780	863		
353.8970	27.352	27.359	0	1.388	1071170	164068	175	437	938	1.62(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.378	27.376	0	1.001	327730	53926	324	810	166		
341.8567	27.378	27.376	0	1.001	205141	32825	233	582	141	1.60(1.32-1.78)	
A F1 PeCDFs											U
339.8597	22.618	23.059	-26	0.872	2829	716	3	7	239		
341.8567	22.618	23.059	-26	0.872	3655	496	27	67	18	0.77(1.32-1.78)	
	Empc Correction				1825	461	27	67	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	24.571	26.475	-114	0.947	215172	39019	324	810	120		
341.8567	24.563	26.475	-115	0.947	137708	25216	233	582	108	1.56(1.32-1.78)	
339.8597	25.827	26.475	-39	0.996	31672	8421	324	810	26		
341.8567	25.827	26.475	-39	0.996	22214	5327	233	582	23	1.43(1.32-1.78)	
339.8597	26.501	26.475	2	1.022	136668	22305	324	810	69		
341.8567	26.501	26.475	2	1.022	88906	14798	233	582	64	1.54(1.32-1.78)	
339.8597	27.689	26.475	73	1.068	79317	12043	324	810	37		
341.8567	27.681	26.475	72	1.067	49793	7421	233	582	32	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.110	28.109	0	1.426	1151900	172654	123	307	1404		
369.8919	28.102	28.109	0	1.426	724839	113947	90	225	1266	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.144	28.134	1	1.001	33896	5025	73	182	69		
357.8516	28.136	28.134	0	1.001	20522	3365	35	87	96	1.65(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						73	182			
357.8516	26.975						35	87			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.833	33.838	0	0.946	761092	144590	164	410	882		
385.8610	33.833	33.838	0	0.946	1449190	257697	289	722	892	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.858	33.855	0	1.001	734730	131009	245	612	535		
375.8178	33.858	33.855	0	1.001	591895	108388	134	335	809	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.026	34.024	0	0.951	882445	159834	164	410	975		
385.8610	34.026	34.024	0	0.951	1650844	306797	289	722	1062	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.043	34.049	0	1.000	206184	36585	245	612	149		
375.8178	34.043	34.049	0	1.000	167689	29360	134	335	219	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.978	34.976	0	0.978	882076	184090	164	410	1123		
385.8610	34.978	34.976	0	0.978	1632704	339652	289	722	1175	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.003	35.001	0	1.001	25402	5579	245	612	23		
375.8178	35.003	35.001	0	1.001	20507	4302	134	335	32	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.972	35.962	1	1.006	820744	188612	164	410	1150		
385.8610	35.972	35.962	1	1.006	1553448	357730	289	722	1238	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.981	35.979	0	1.000	15240	4088	245	612	17		
375.8178	35.981	35.979	0	1.000	12513	3006	134	335	22	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.995	33.855	-111	0.946	49719	7145	245	612	29		
375.8178	32.012	33.855	-110	0.946	39037	5203	134	335	39	1.27(1.05-1.43)	
373.8208	33.108	33.855	-45	0.979	26171	4420	245	612	18		
375.8178	33.099	33.855	-45	0.978	20475	3367	134	335	25	1.28(1.05-1.43)	
373.8208	34.852	33.855	60	1.030	14404	2773	245	612	11		
375.8178	34.860	33.855	60	1.030	11902	2200	134	335	16	1.21(1.05-1.43)	
373.8208	36.099	33.855	134	1.067	46930	12851	245	612	52		
375.8178	36.099	33.855	134	1.067	36294	8807	134	335	66	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.762	35.760	0		1589902	368586	182	455	2025		
403.8529	35.762	35.760	0		1302196	300470	159	397	1890	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.231	35.220	1	0.985	1239309	302669	182	455	1663		
403.8529	35.222	35.220	0	0.985	991256	246382	159	397	1550	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.239	35.237	0	1.000	4391	1359	19	47	72		
391.8127	35.248	35.237	1	1.000	3452	1024	46	115	22	1.27(1.05-1.43)	

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.357	35.355	0	0.989	1271925	271151	182	455	1490		
403.8529	35.349	35.355	0	0.988	997688	215152	159	397	1353	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQ
389.8158	35.382	35.372	1	1.001	5538	1179	19	47	62		
391.8127	35.382	35.372	1	1.001	5378	1187	46	115	26	1.03(1.05-1.43)	
	Empc Correction				4466	950	46	115	21		
1,2,3,7,8,9-HxCDD											RQM
389.8158	35.770	35.768	0	1.015	4543	987	19	47	52		M
	Empc Correction				3786	1135	19	47	60		
391.8127	35.778	35.768	1	1.016	3054	916	46	115	20	1.49(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.363	34.365	0	0.972	8082	1643	19	47	86		
391.8127	34.338	34.365	-2	0.971	6437	1109	46	115	24	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.927	37.927	0	1.061	659943	198421	273	682	727		
419.8220	37.927	37.927	0	1.061	1473346	443589	468	1170	948	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.936	37.935	0	1.000	250461	74618	109	272	685		
409.7788	37.936	37.935	0	1.000	237053	71131	102	255	697	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.242	39.233	1	1.097	618286	205817	273	682	754		
419.8220	39.242	39.233	1	1.097	1339310	453776	468	1170	970	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.250	39.250	0	1.000	75477	24952	109	272	229		
409.7788	39.250	39.250	0	1.000	74014	23816	102	255	233	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.323	38.593	-16	1.010	75257	22620	109	272	208		
409.7788	38.323	38.593	-16	1.010	73014	22095	102	255	217	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.930	38.921	1	1.089	1053366	350967	197	492	1782		
437.8140	38.930	38.921	1	1.089	1020013	342097	213	532	1606	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.939	38.938	0	1.000	79372	26294	83	207	317		
425.7737	38.939	38.938	0	1.000	75143	24873	57	142	436	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.264	38.941	-41	0.983	84054	26639	83	207	321		
425.7737	38.264	38.941	-41	0.983	79017	24329	57	142	427	1.06(0.88-1.20)	
13C-OCDD											
469.7780	41.382	41.373	1	1.157	1416753	468533	216	540	2169		
471.7750	41.382	41.373	1	1.157	1608049	538988	232	580	2323	0.88(0.76-1.02)	
OCDF											
441.7428	41.467	41.457	1	1.002	90987	30803	41	102	751		
443.7399	41.467	41.457	1	1.002	102355	32956	98	245	336	0.89(0.76-1.02)	
OCDD											
457.7377	41.382	41.381	0	1.000	863577	288148	121	302	2381		
459.7348	41.382	41.381	0	1.000	967215	323253	127	317	2545	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Inject. Date: 10-Oct-2020 11:45:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 23

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	3182838	530472

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	3182838	530472

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.483	277700	54256	341527	65138	17.9	0.81	
16.939	519297	78526	637707	92062	33.5	0.81	
17.343	447731	69543	548974	86313	28.8	0.82	
17.686	575799	92530	705190	111561	37.1	0.82	
18.158	5431234	886138	6714808	1094933	351.5	0.81	
18.545	279575	41703	344699	49768	18.1	0.81	
19.567	1028230	128017	1279704	155058	66.8	0.80	
21.939	920903	123076	1122656	152344	59.1	0.82	
Signal Totals:							
	9480469	1473789	11695265	1807177			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	21175734	3280966				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 612.821 = (21175734 * 100.000) / (3182838 * 1.086)

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	10-Oct-2020 11:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	23

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	2318539	340185

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	2318539	340185

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.175	8331	1841	11629	1840	0.7964	0.72	
19.920	27430	6118	41656	8220	2.76	0.66	
20.719	228857	32811	296216	41744	21.0	0.77	
Signal Totals:							
	264618	40770	349501	51804			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	614119	92574				0.76	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 24.503 = (614119 * 100.000) / (2318539 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	10-Oct-2020 11:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	23

F1 PeCDFs, RT: 23.059

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2998010	502707
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2801720	433185

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2899865	467946

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.618	2829	716	3655	496	0.0691	0.77	RQ
22.618	2829	716	1825	461			Empc Correction
23.374	109	46	265	130	0.003984	0.41	RQ
23.374	109	46	70	29			Empc Correction

Compound is Marked ND

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d

Lims ID: 320-65130-A-18-A

Client ID: 11215702-Tank#2-valve-5-1

Inject. Date: 10-Oct-2020 11:45:00 Dil. Factor: 1.0000

Sample Type: Client Sample

Instrument ID: DFS 1 Operator: Xcalibur_System

Lims Batch ID: 420640 Lims Sample ID: 23

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2998010	502707
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2801720	433185

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2899865	467946

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.571	215172	39019	137708	25216	11.3	1.56	
25.827	31672	8421	22214	5327	1.72	1.43	
26.501	136668	22305	88906	14798	7.21	1.54	
27.689	79317	12043	49793	7421	4.13	1.59	
Signal Totals:							
	462829	81788	298621	52762			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	761450	134550				1.55	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 24.333 = (761450 * 100.000) / (2899865 * 1.079)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	10-Oct-2020 11:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	23

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	2210282	402287
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2533289	466631
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2514780	523742
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	2374192	546342

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2408135	484750

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.995	49719	7145	39037	5203	2.95	1.27	
33.108	26171	4420	20475	3367	1.55	1.28	
34.852	14404	2773	11902	2200	0.8743	1.21	
36.099	46930	12851	36294	8807	2.77	1.29	
Signal Totals:							
	137224	27189	107708	19577			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	244932	46766				1.27	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.141 = (244932 * 100.000) / (2408135 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	10-Oct-2020 11:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	23

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	2230565	549051
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2269613	486303
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2250089	517677

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.363	8082	1643	6437	1109	0.5755	1.26	
Signal Totals:							
	8082	1643	6437	1109			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14519	2752				1.26	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5755 = (14519 * 100.000) / (2250089 * 1.121)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	10-Oct-2020 11:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	23

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2133289	642010
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1957596	659593

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	2045442	650801

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.323	75257	22620	73014	22095	4.90	1.03	
Signal Totals:							
	75257	22620	73014	22095			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	148271	44715				1.03	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.896 = (148271 * 100.000) / (2045442 * 1.481)

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	10-Oct-2020 11:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	23

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2073379	693064

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	2073379	693064

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.264	84054	26639	79017	24329	7.39	1.06	
Signal Totals:							
	84054	26639	79017	24329			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	163071	50968				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 7.392 = (163071 * 100.000) / (2073379 * 1.064)

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Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d				
Injection Date:	10-Oct-2020 11:45:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-18-A	Lab Sample ID:	320-65130-18		
Client ID:	11215702-Tank#2-valve-5-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	23
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	35.77
Area:	4807
Amount:	0.101622
Amount Units:	pg/ul

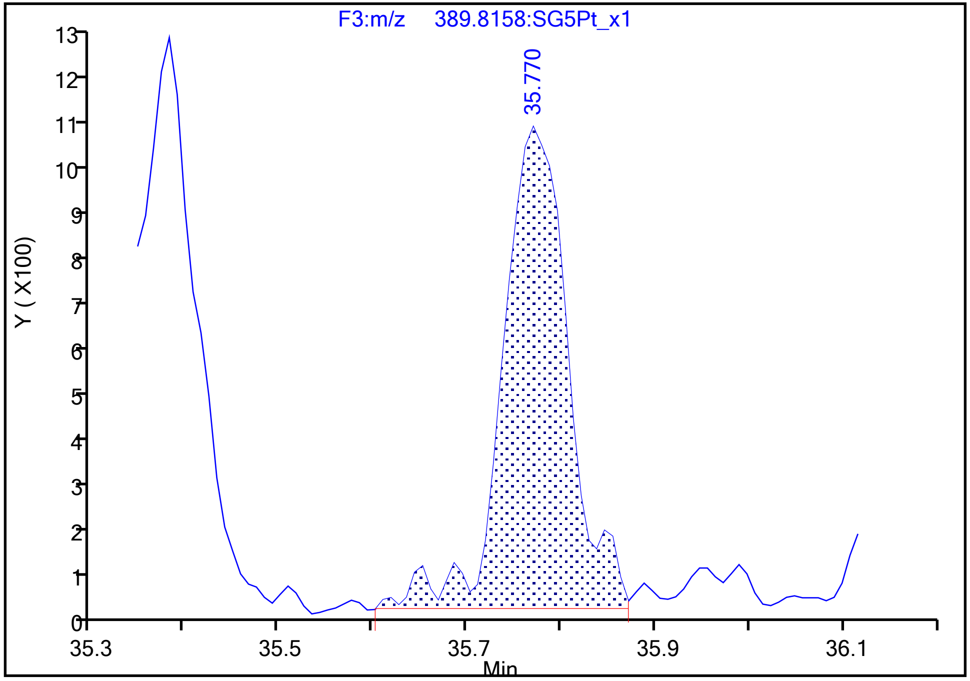

Manual Integration Results

RT:	35.77
Area:	4543
Amount:	0.286393
Amount Units:	pg/ul

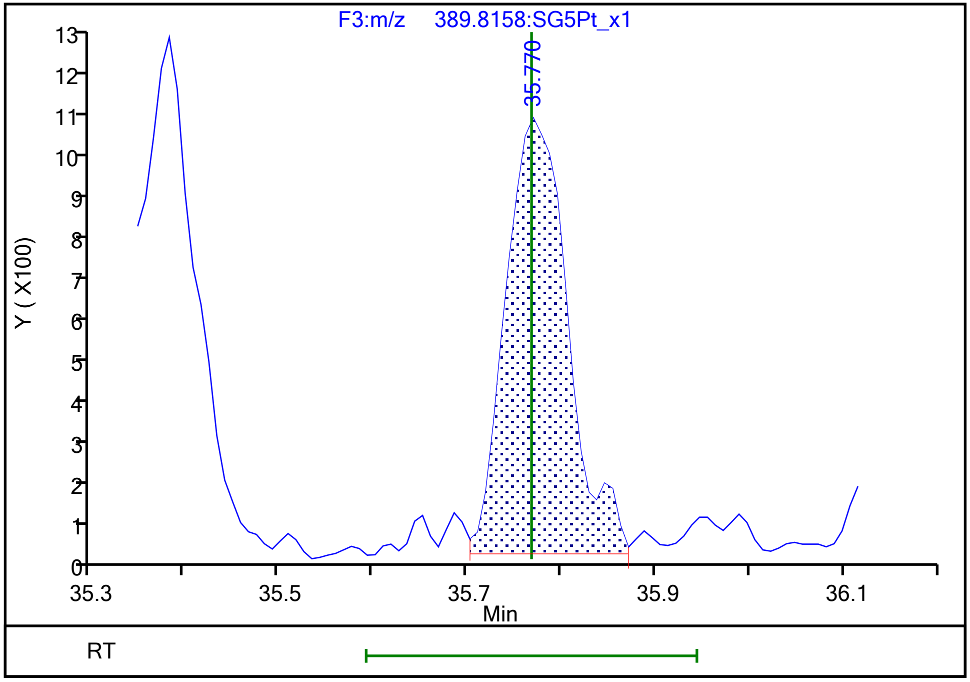

Reviewer: dadunj, 12-Oct-2020 09:21:39

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d				
Injection Date:	10-Oct-2020 11:45:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-18-A	Lab Sample ID:	320-65130-18		
Client ID:	11215702-Tank#2-valve-5-1				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	23
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT:	35.78
Area:	3280
Amount:	0.101622
Amount Units:	pg/ul

Processing Integration Results

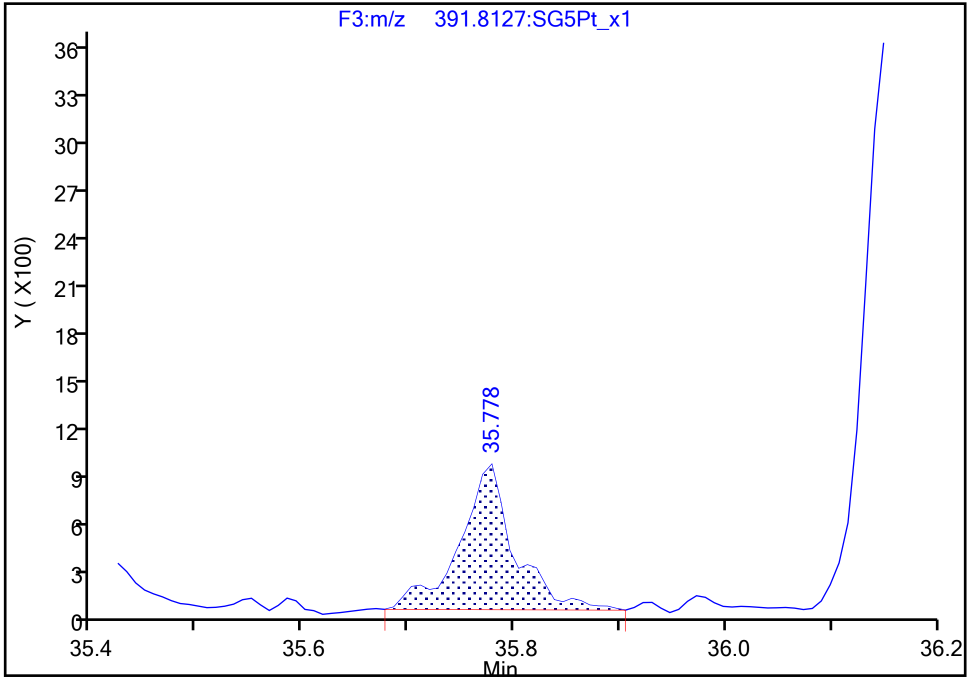

RT:	35.78
Area:	3054
Amount:	0.286393
Amount Units:	pg/ul

Manual Integration Results

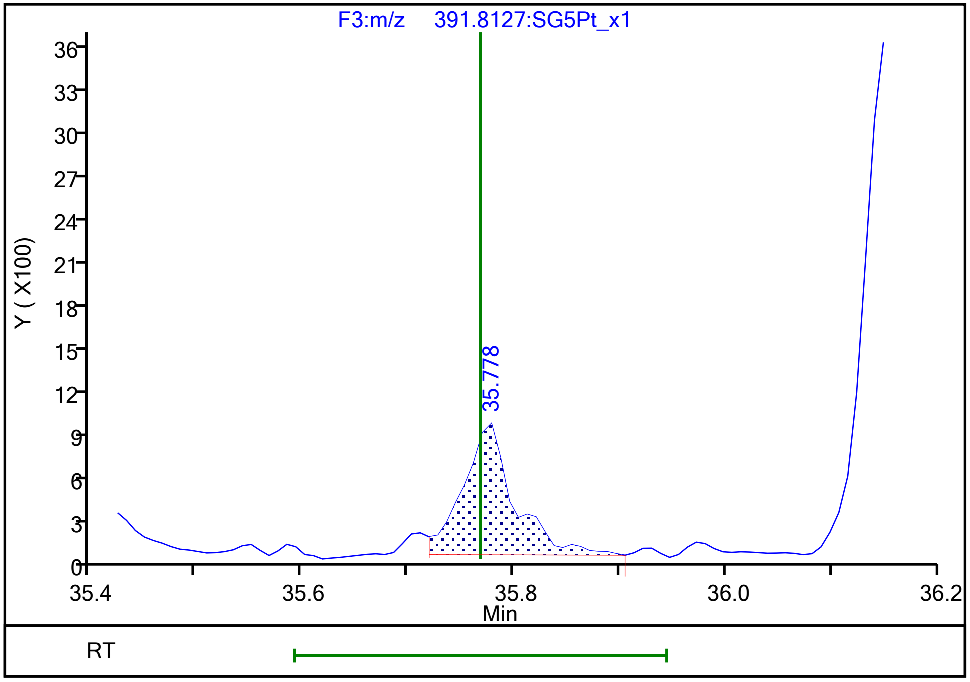

Reviewer: dadunj, 12-Oct-2020 09:21:42

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d

Injection Date: 10-Oct-2020 11:45:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 420640

Sample Line#: 23

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

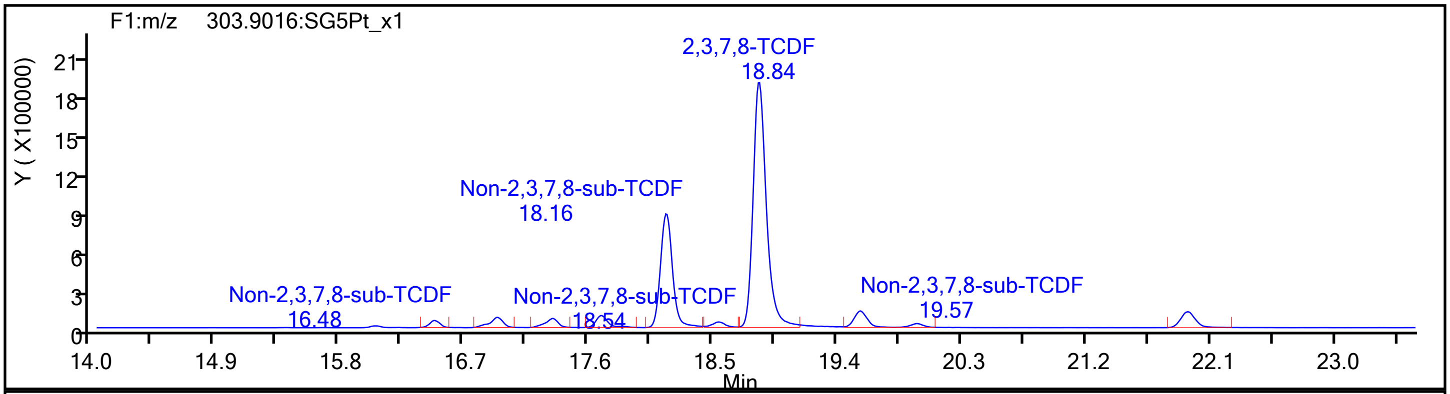

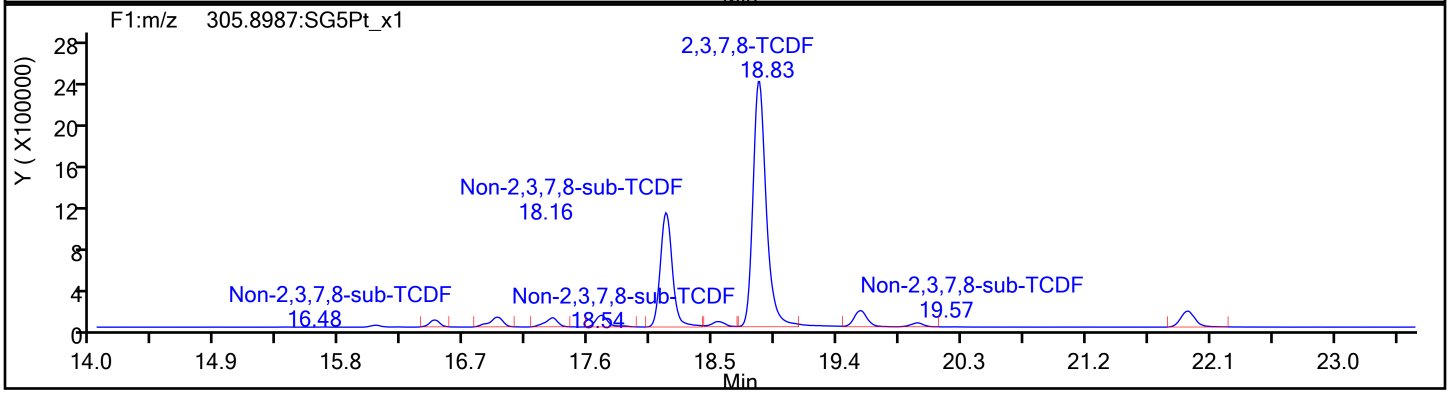

TCDF Standards

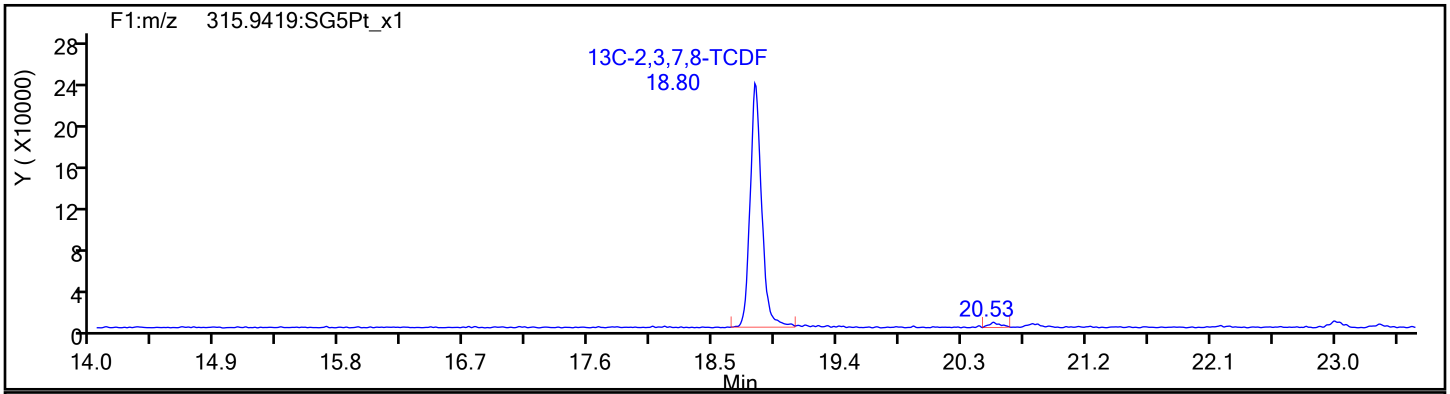

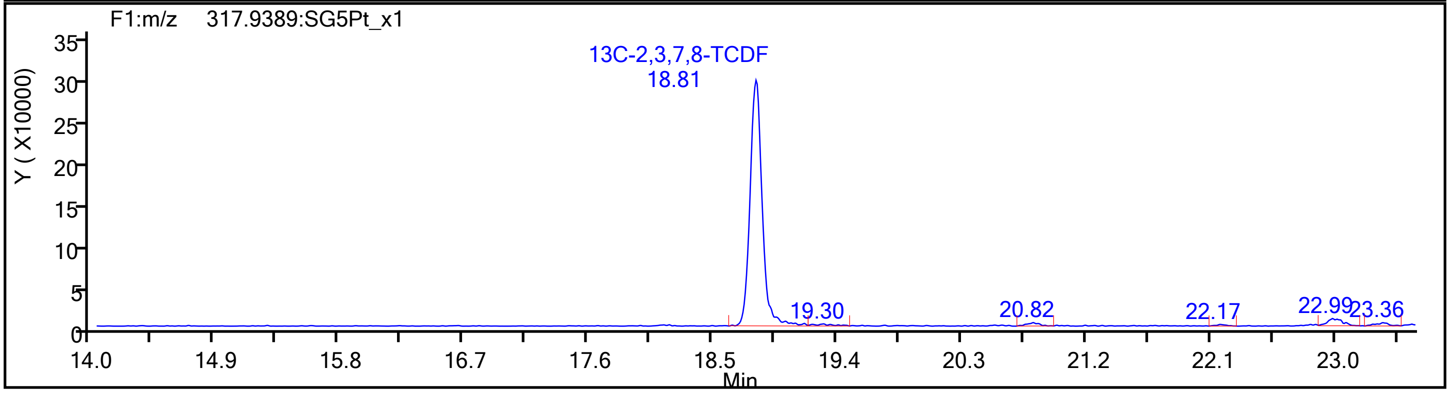

Report Date: 12-Oct-2020 11:31:56 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Injection Date:	10-Oct-2020 11:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	420640	Sample Line#:	23
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

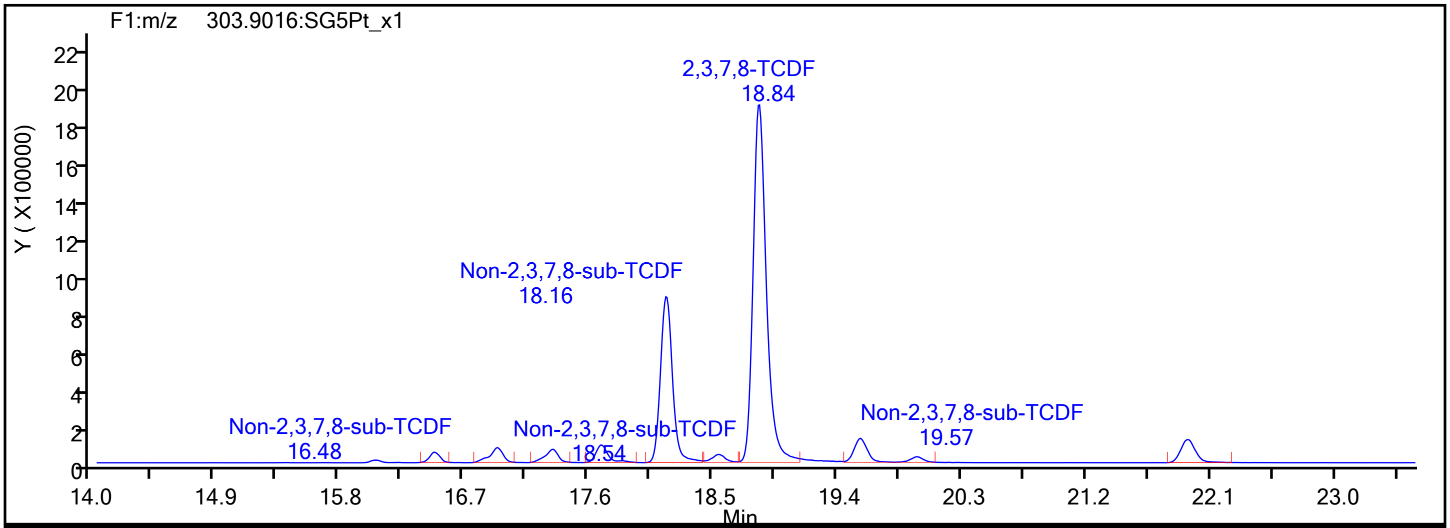

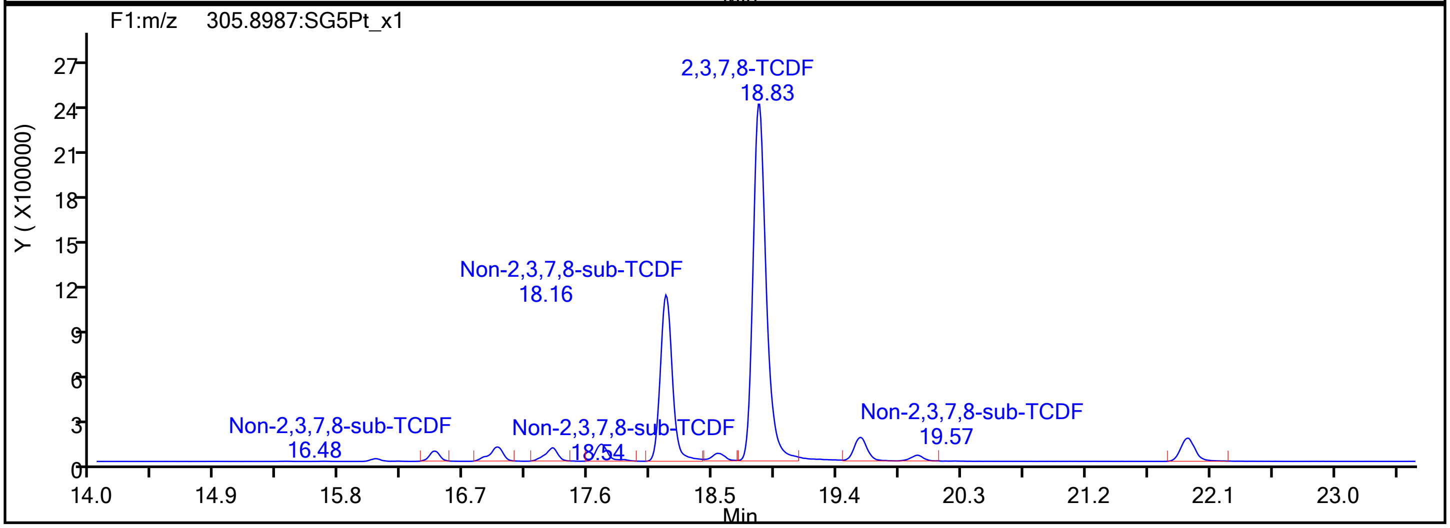

TCDF Interference Mass

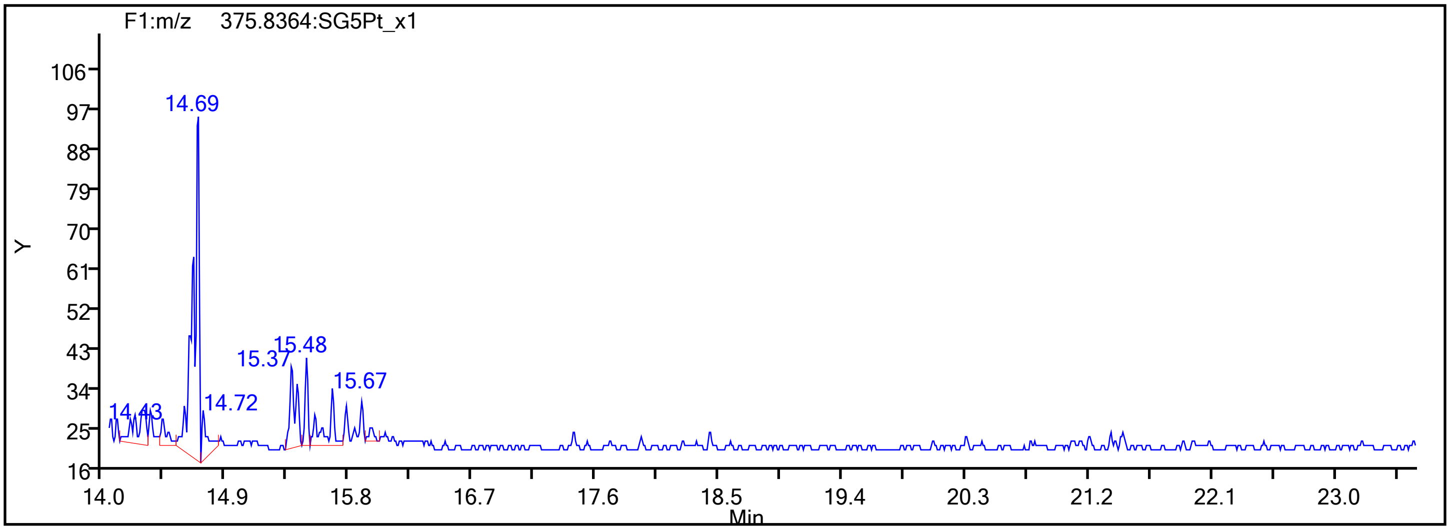

Report Date: 12-Oct-2020 11:31:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Injection Date:	10-Oct-2020 11:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	420640	Sample Line#:	23
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

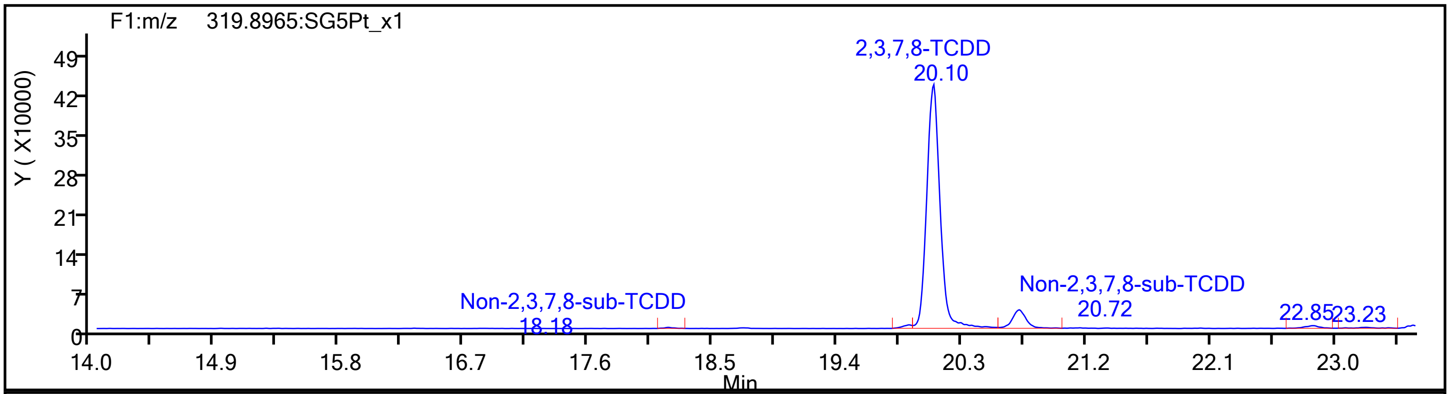

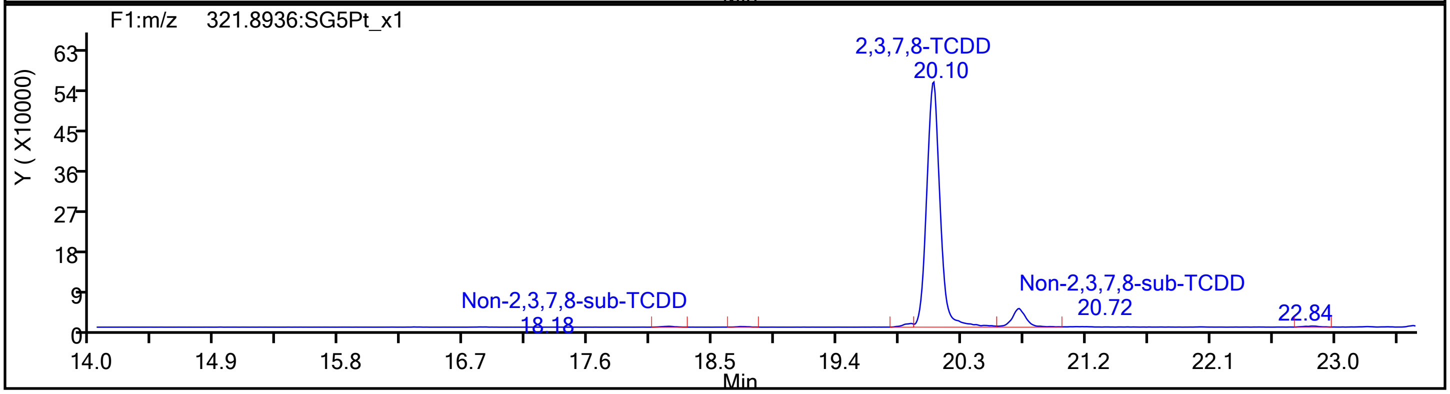

TCDD Standards

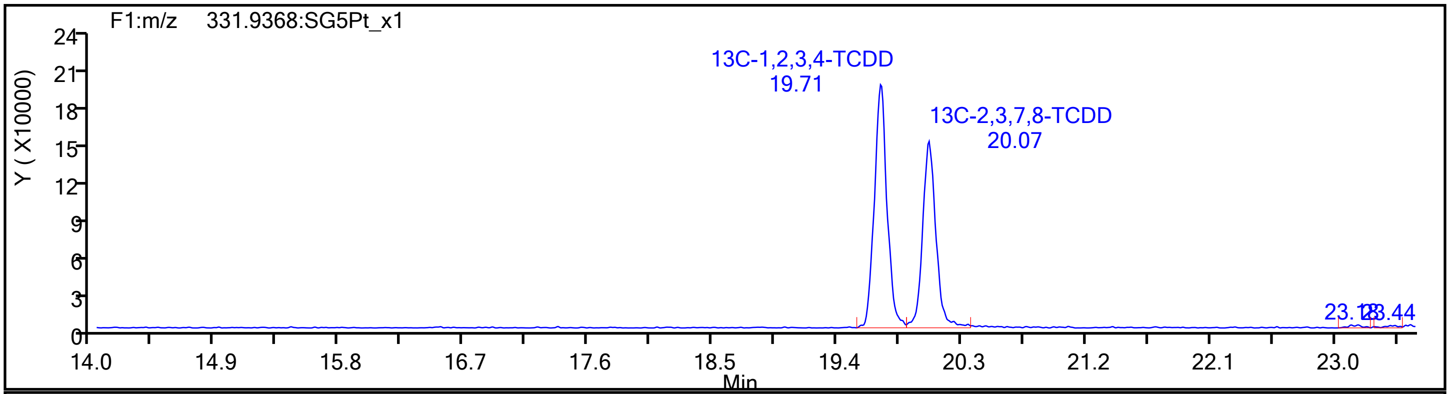

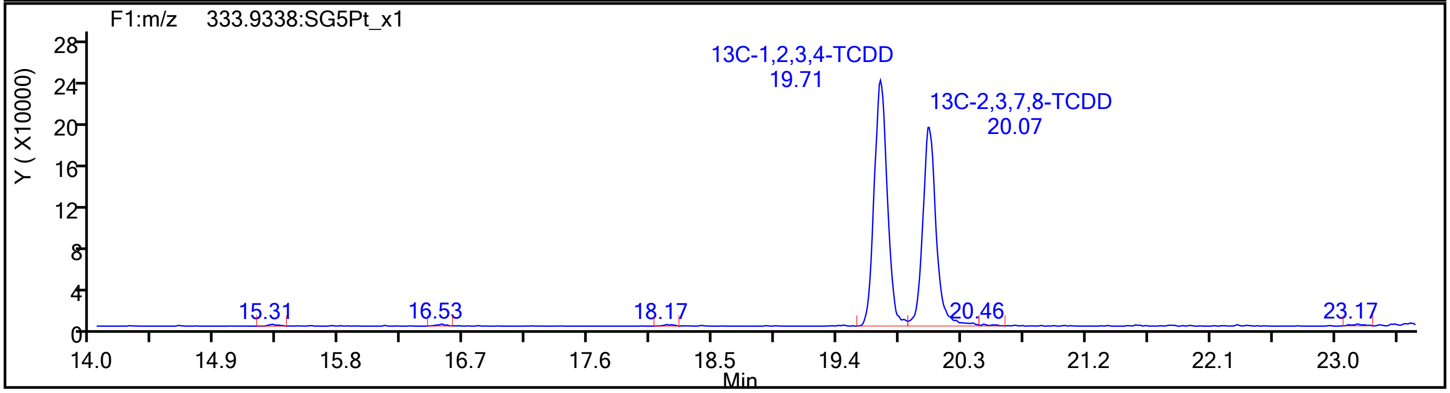

Report Date: 12-Oct-2020 11:31:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	420640	Sample Line#:	23
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

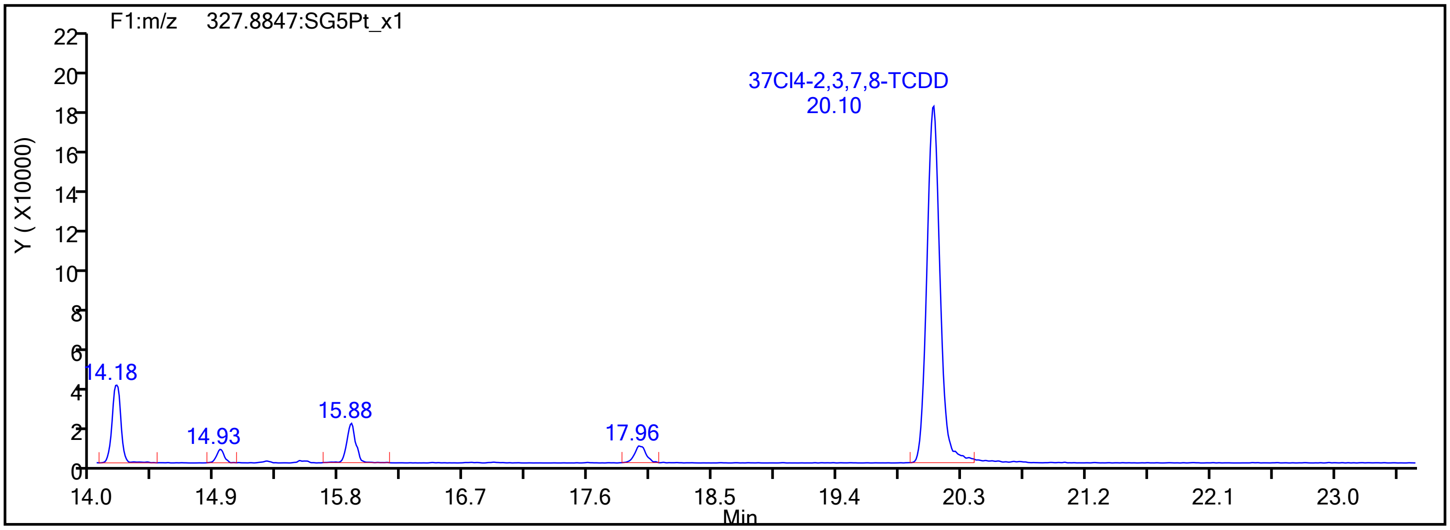

37Cl4-TCDD Standards

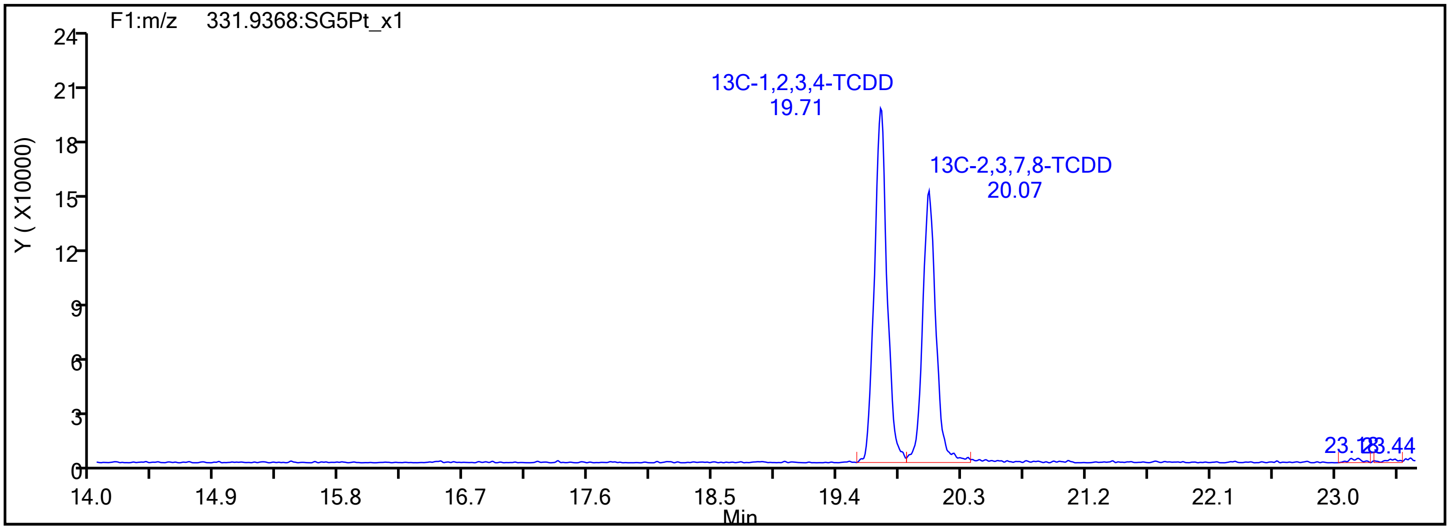

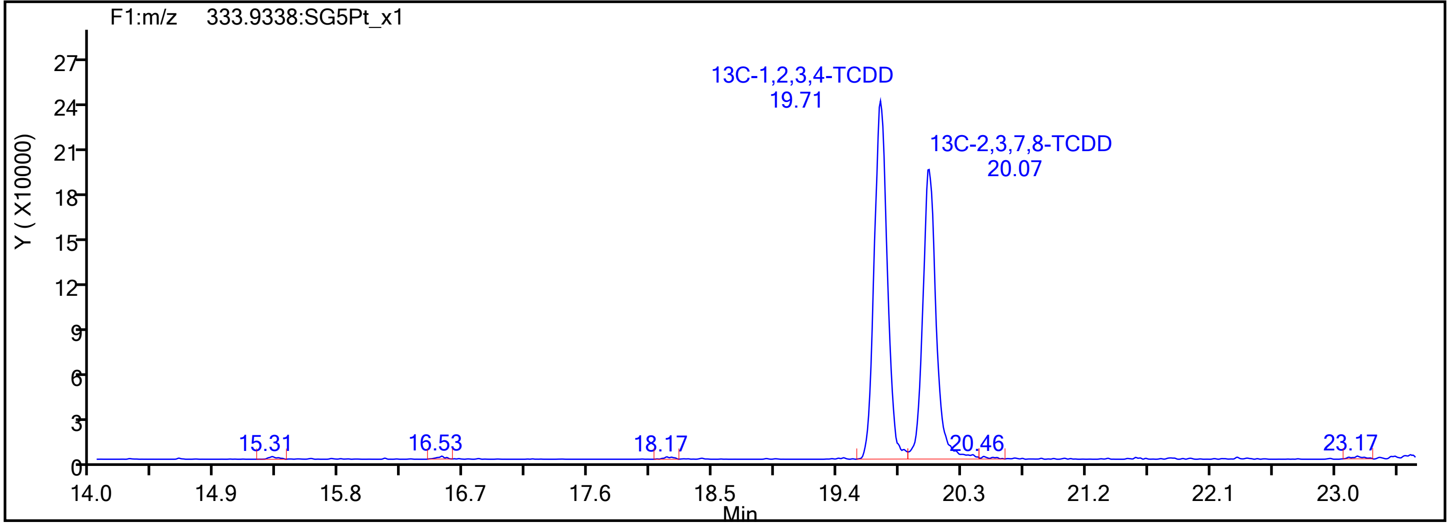

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

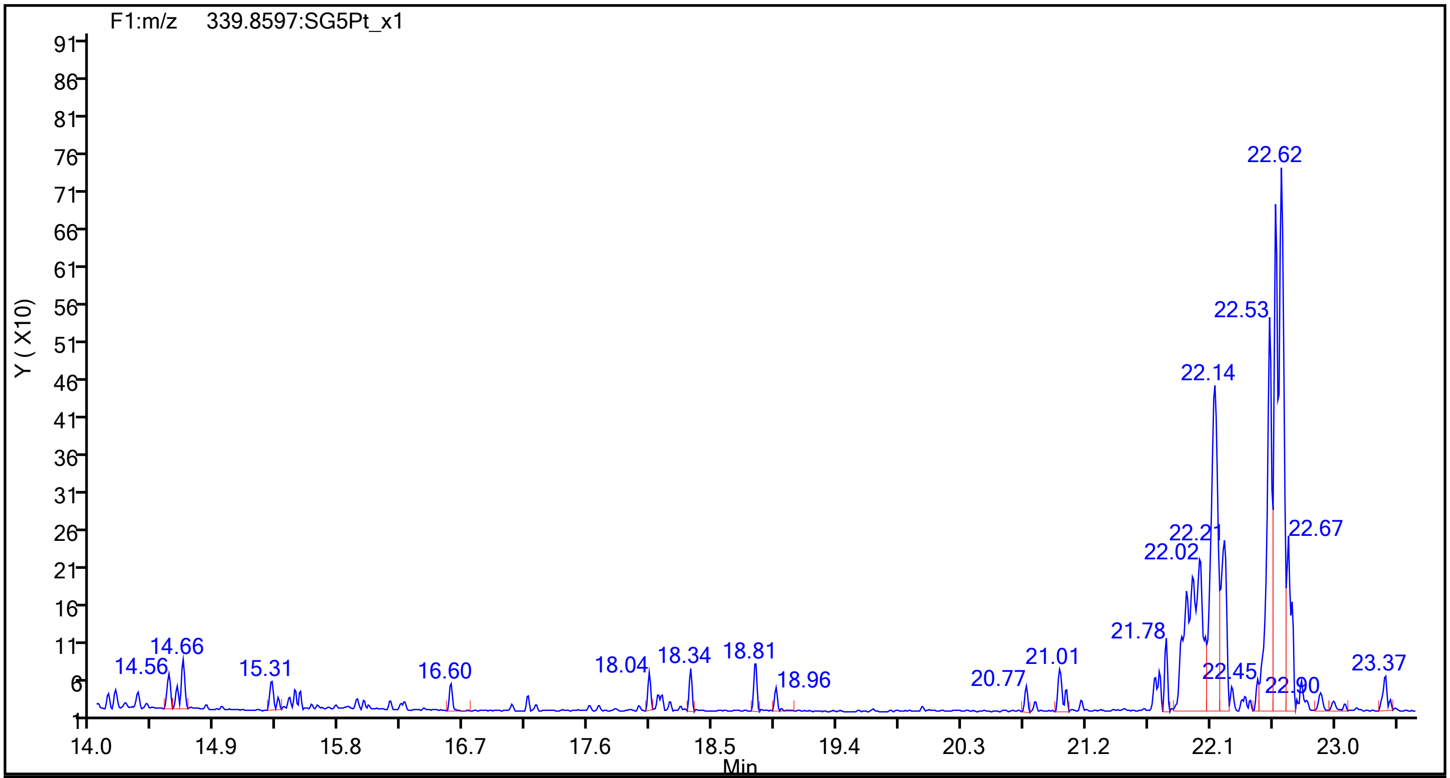

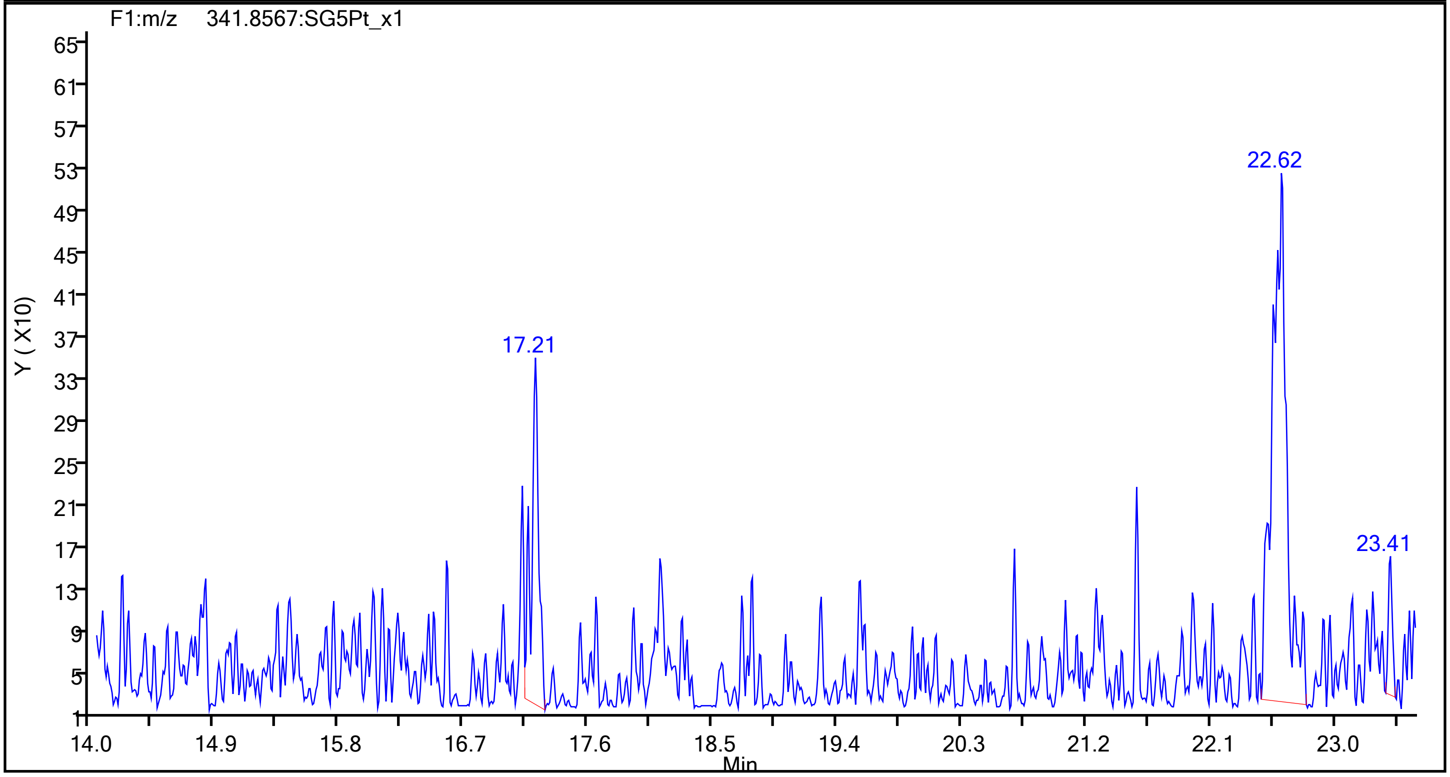

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 420640
Sample Line#: 23

Column Type: DB-5
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F1 PeCDFs

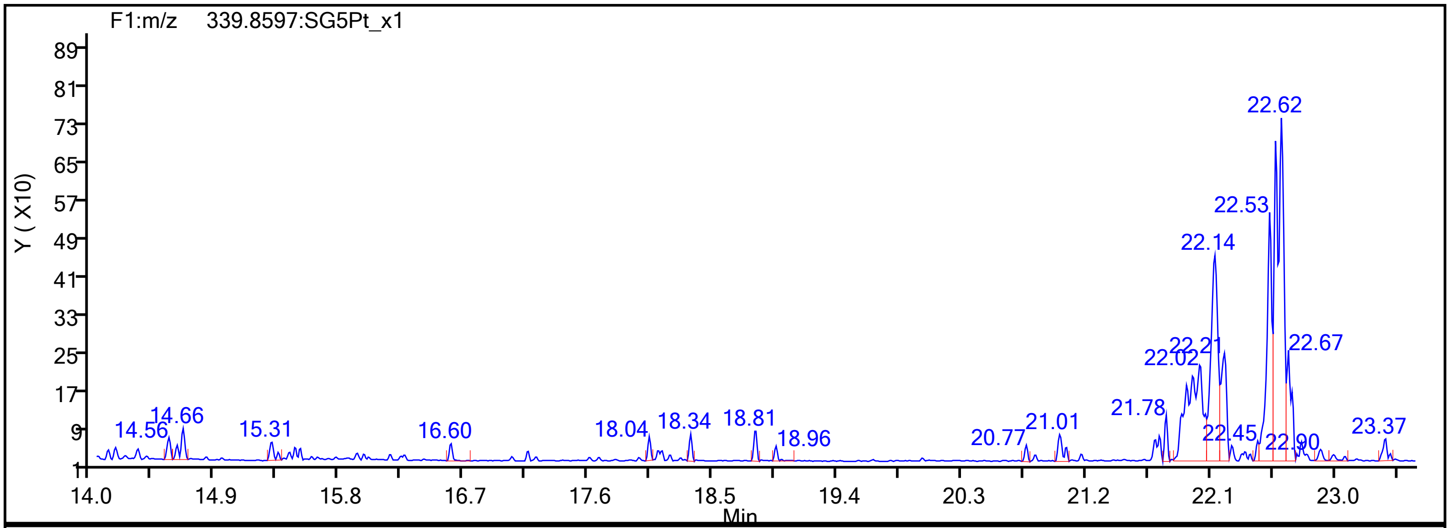

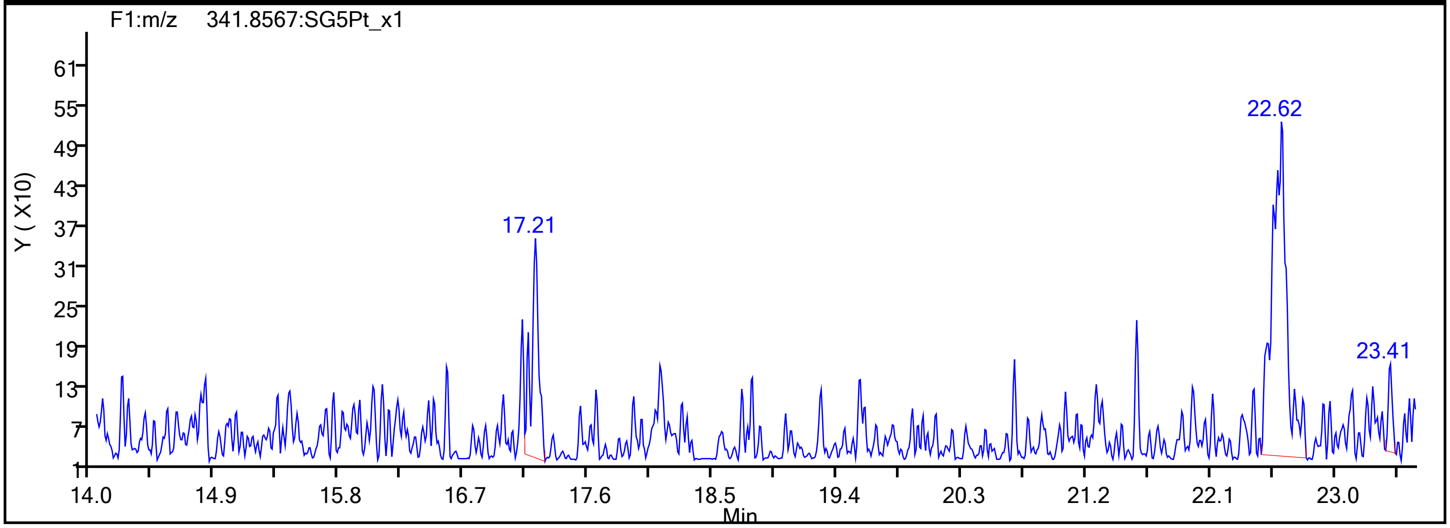

F1 PeCDFs Interference Mass

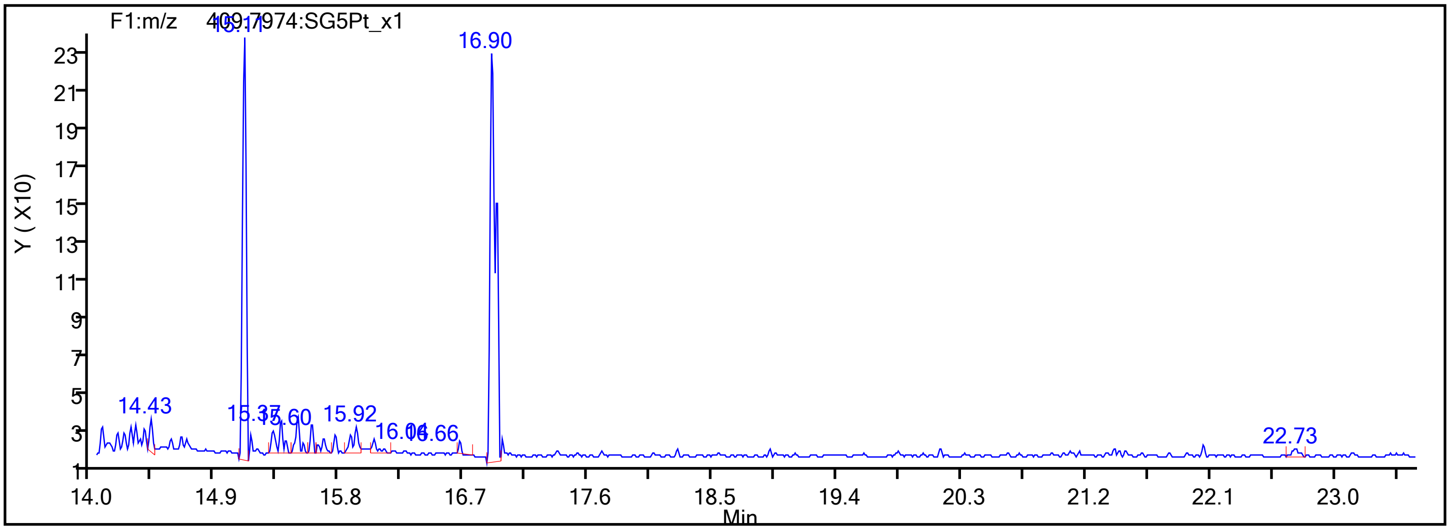

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Eurofins TestAmerica, Sacramento

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Worklist#: 420640
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PeCDF

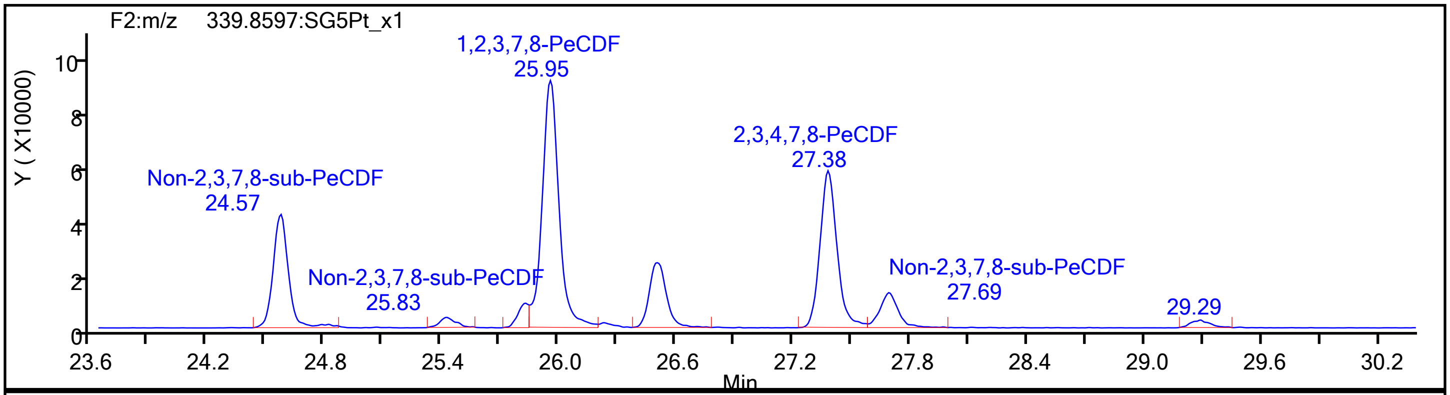

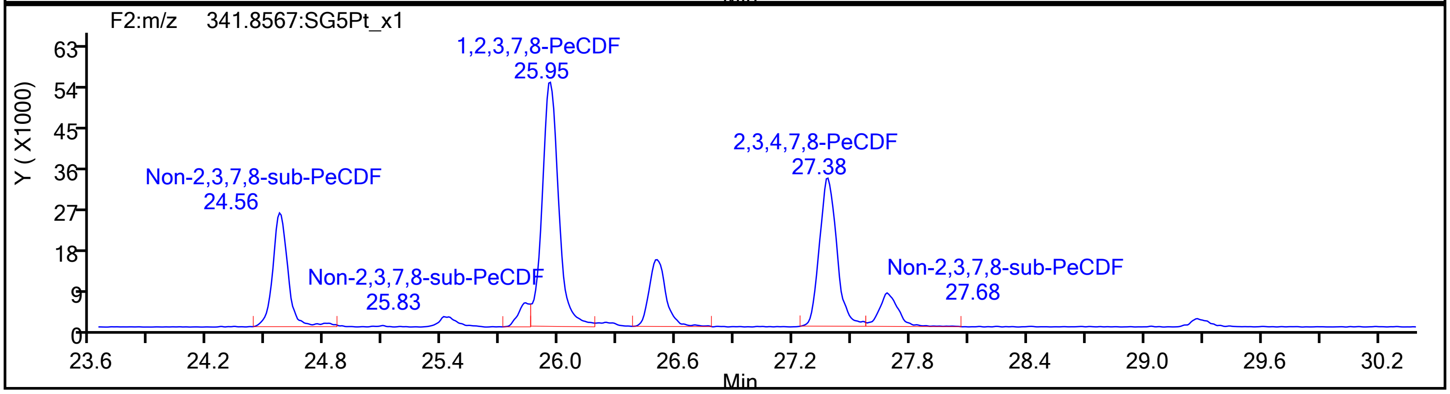

PeCDF Standards

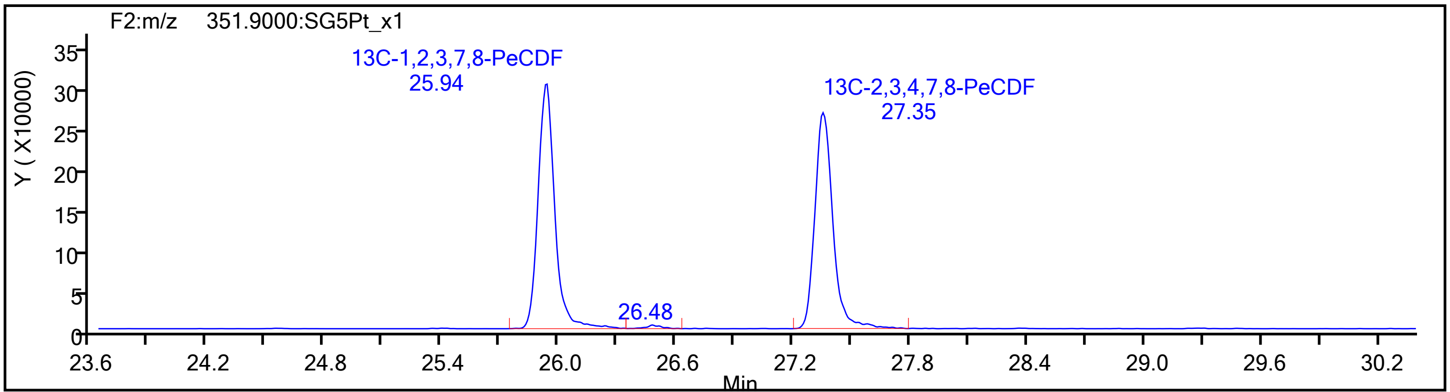

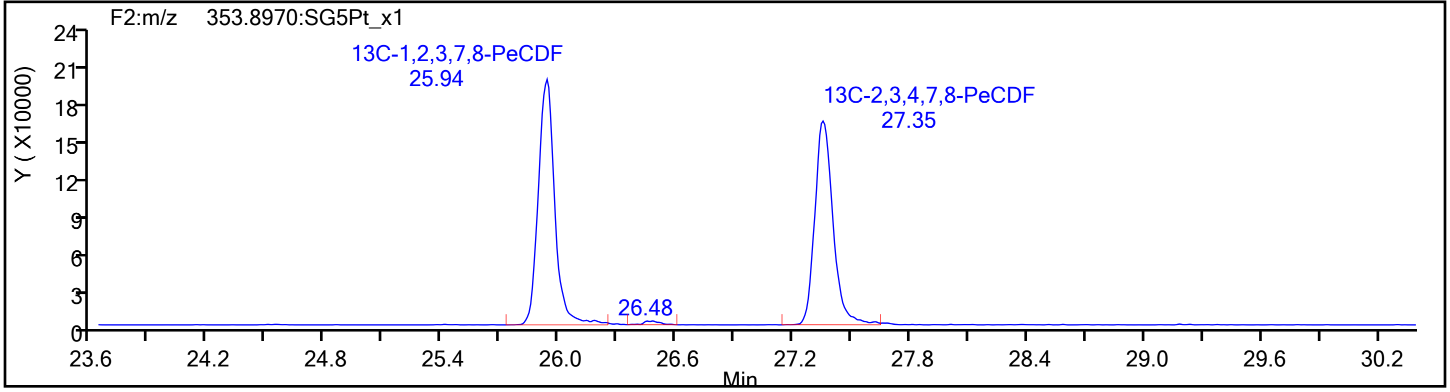

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Eurofins TestAmerica, Sacramento

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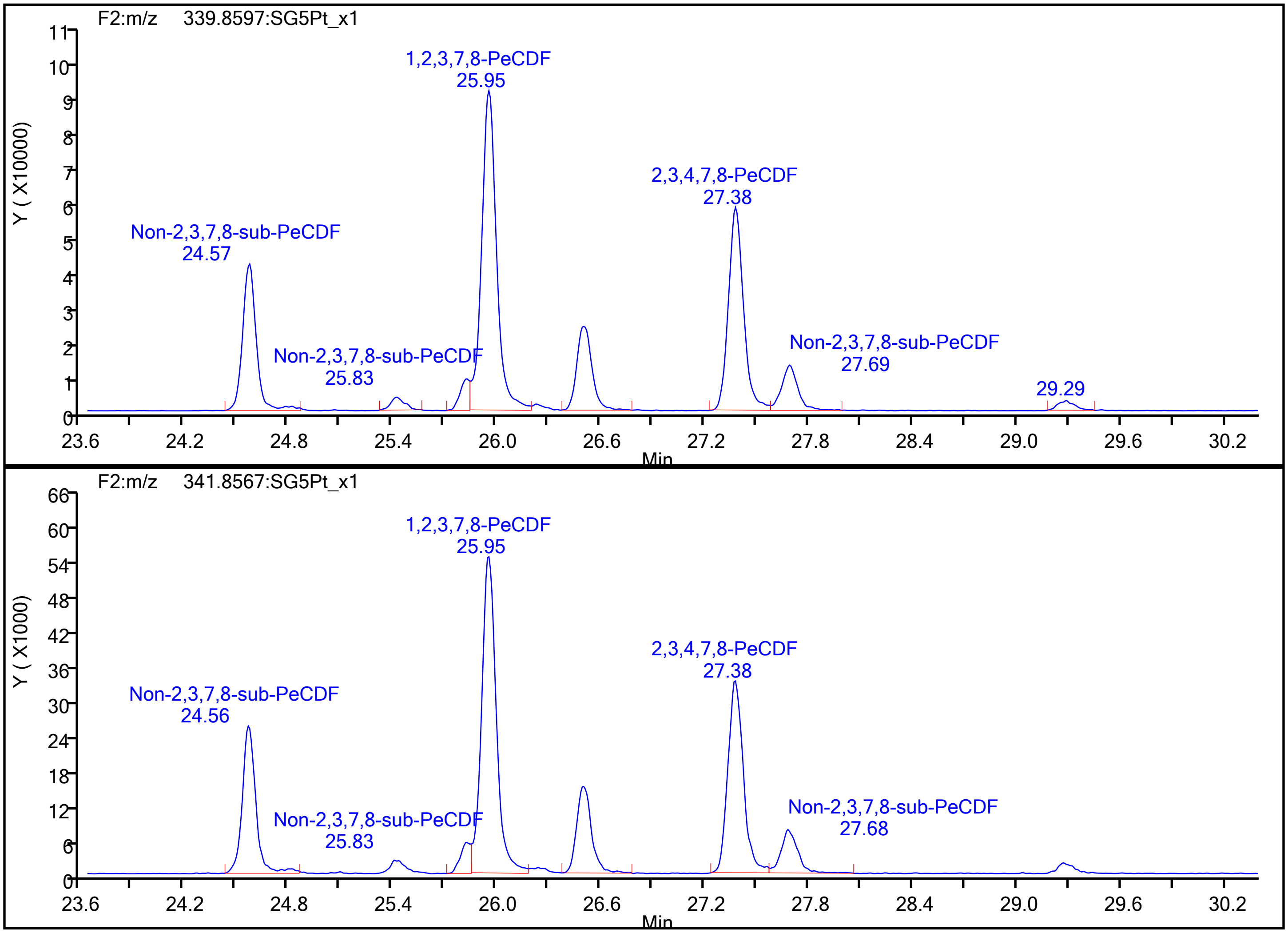

PeCDF Interference Mass

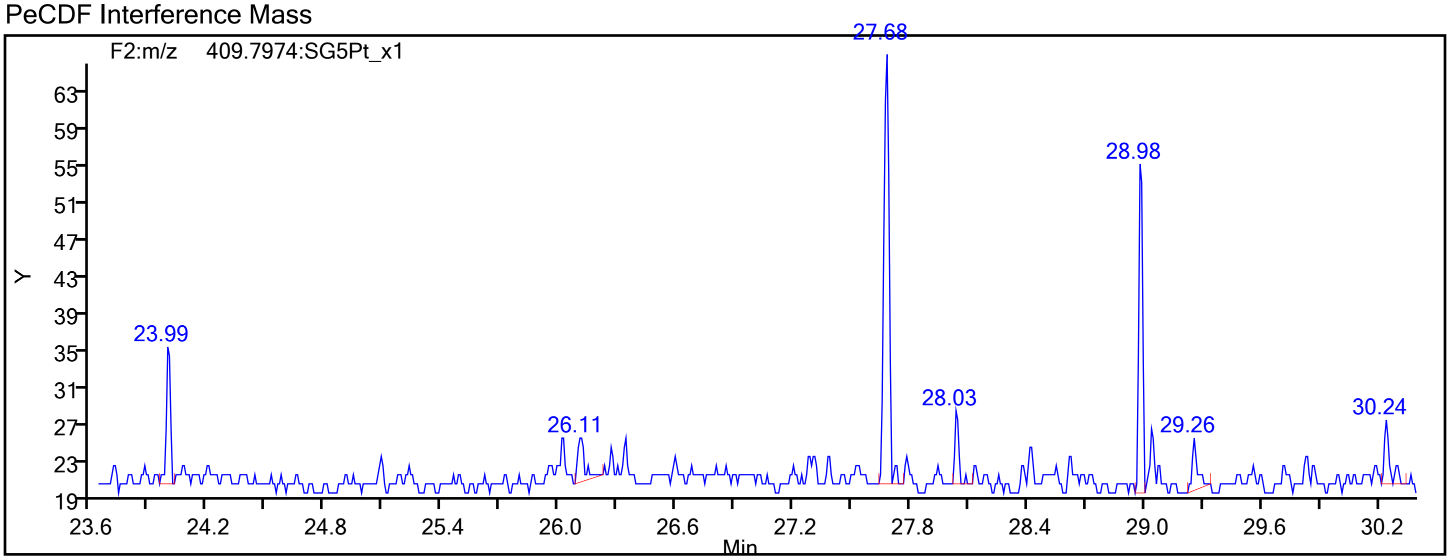

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 420640

Sample Line#: 23

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

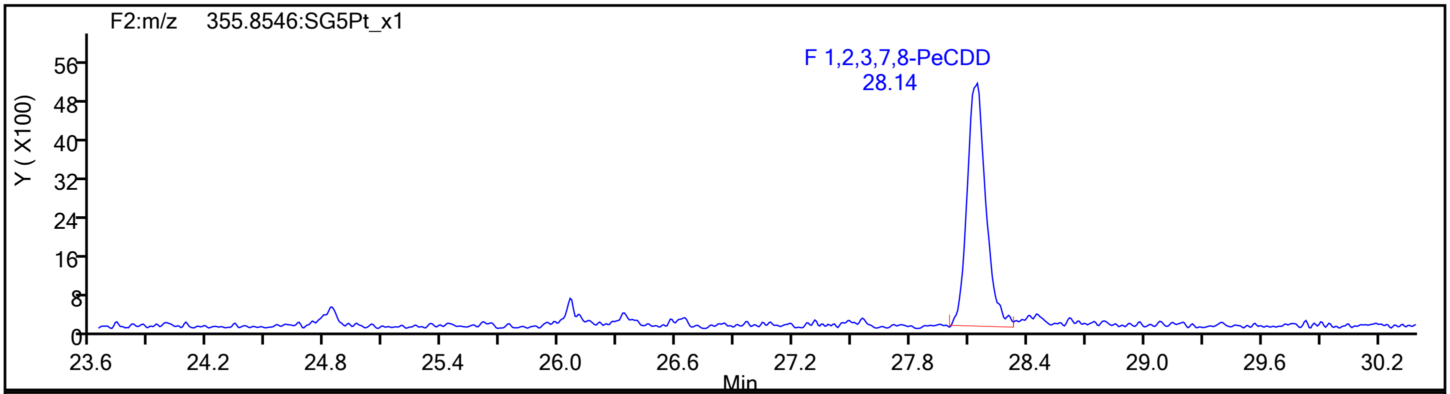

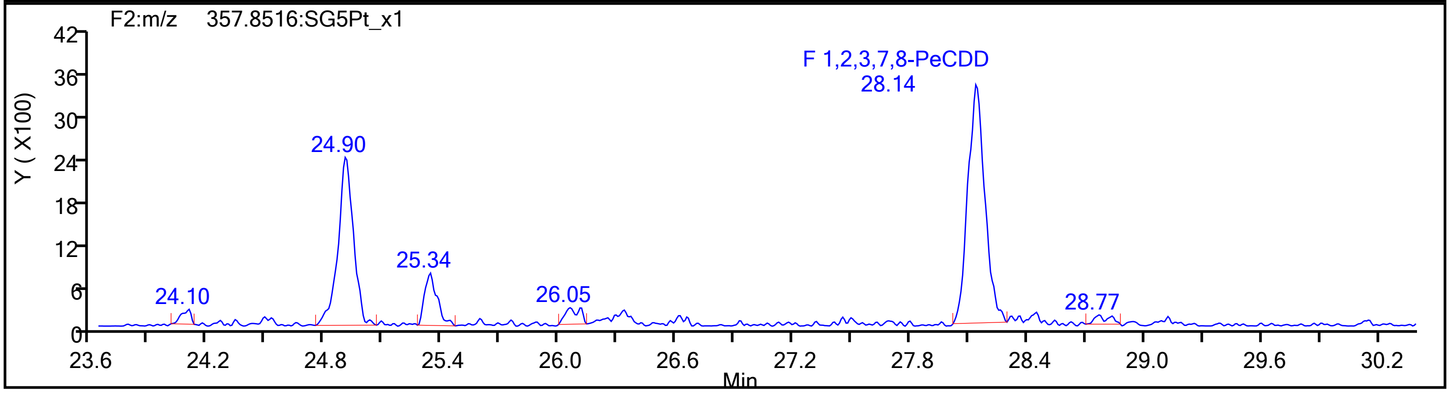

PeCDD Standards

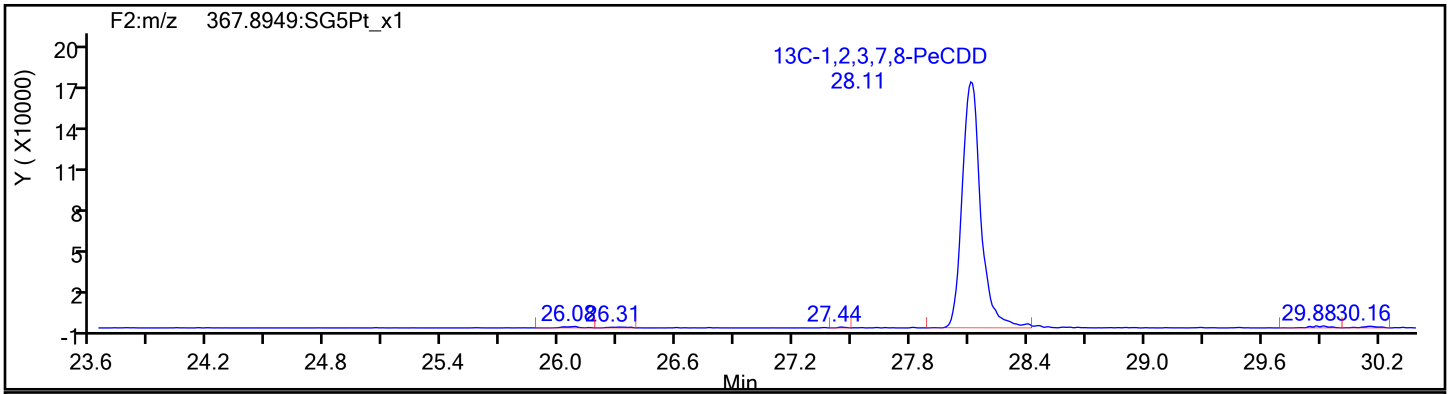

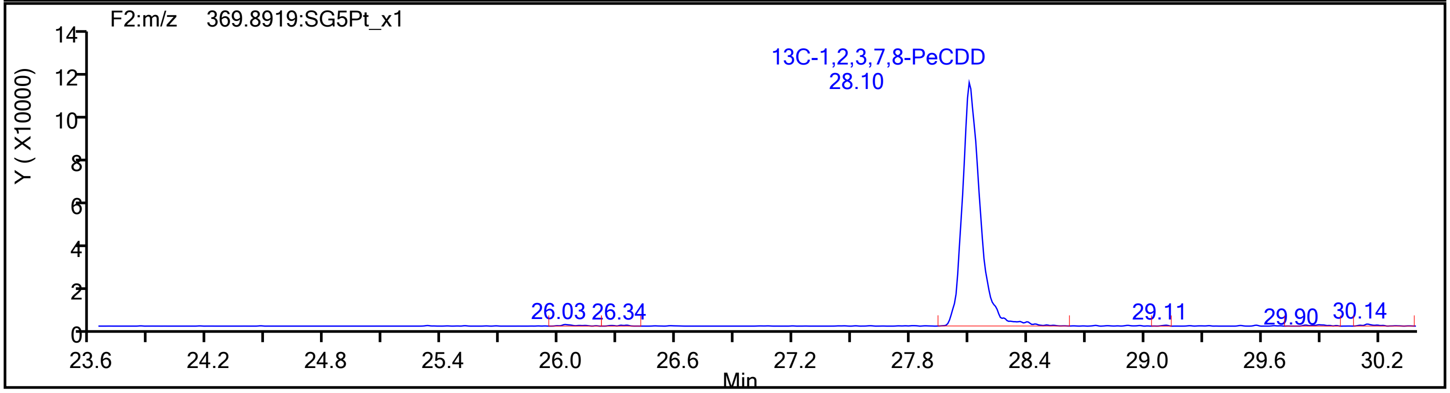

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Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
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Injection Date: 10-Oct-2020 11:45:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 420640
Sample Line#: 23
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Column Dia: 0.32 mm

HxCDF

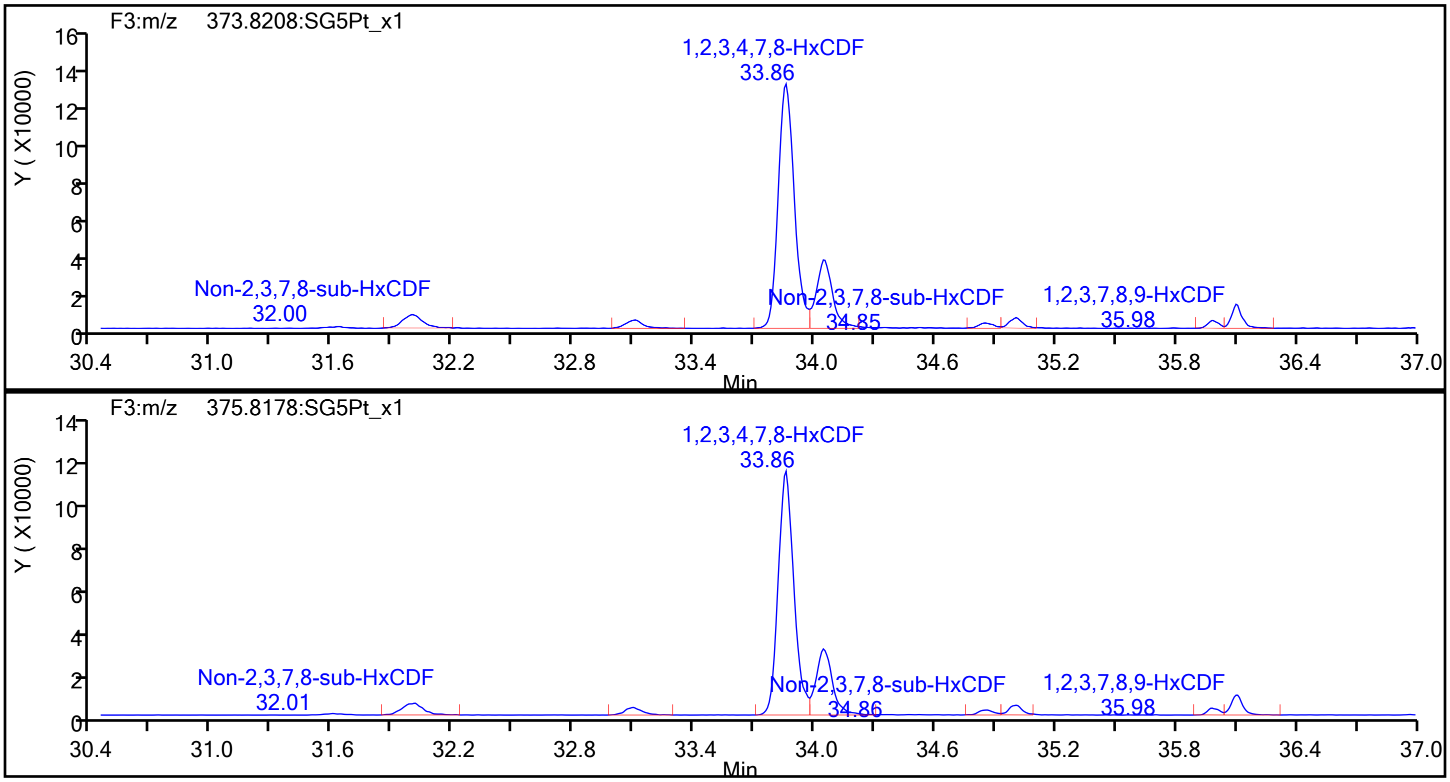

HxCDF Standards

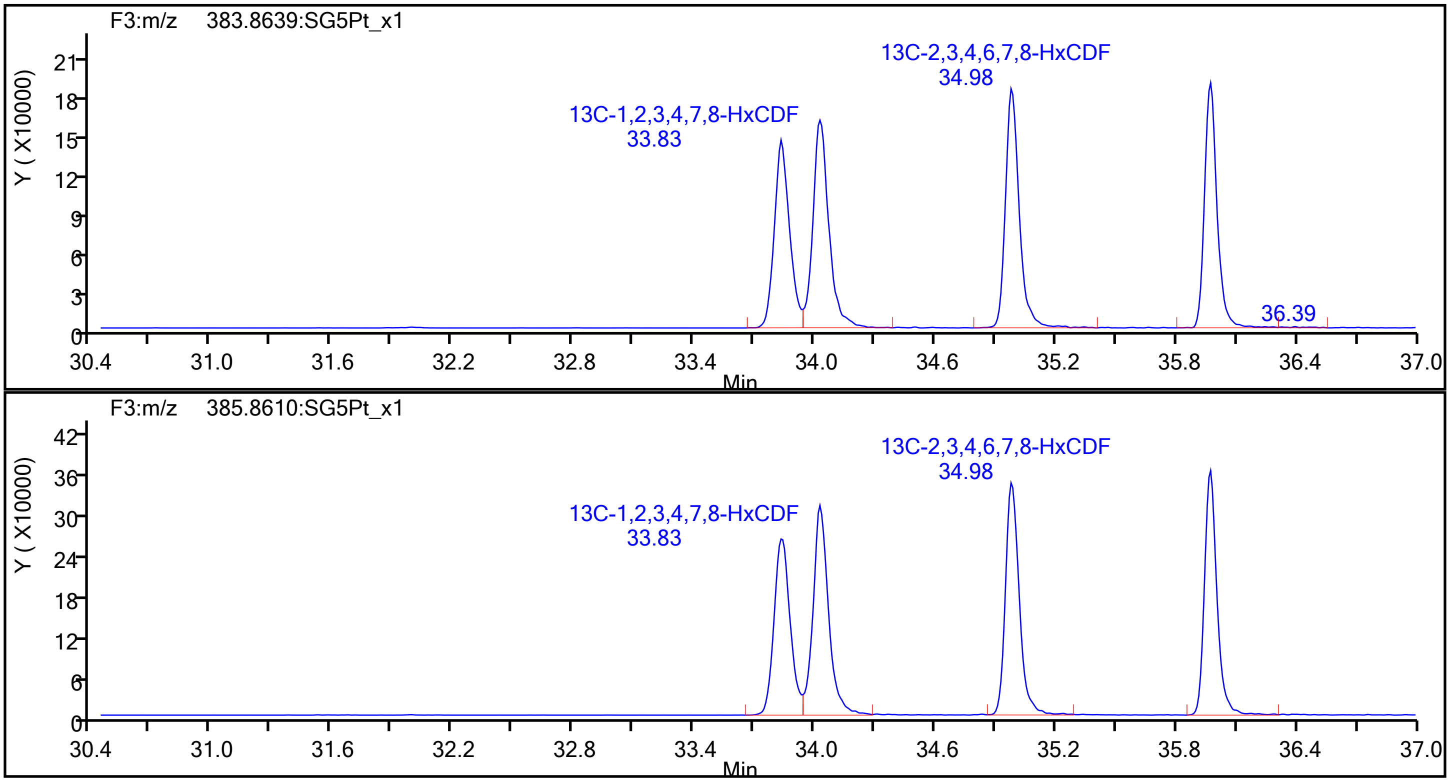

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Eurofins TestAmerica, Sacramento

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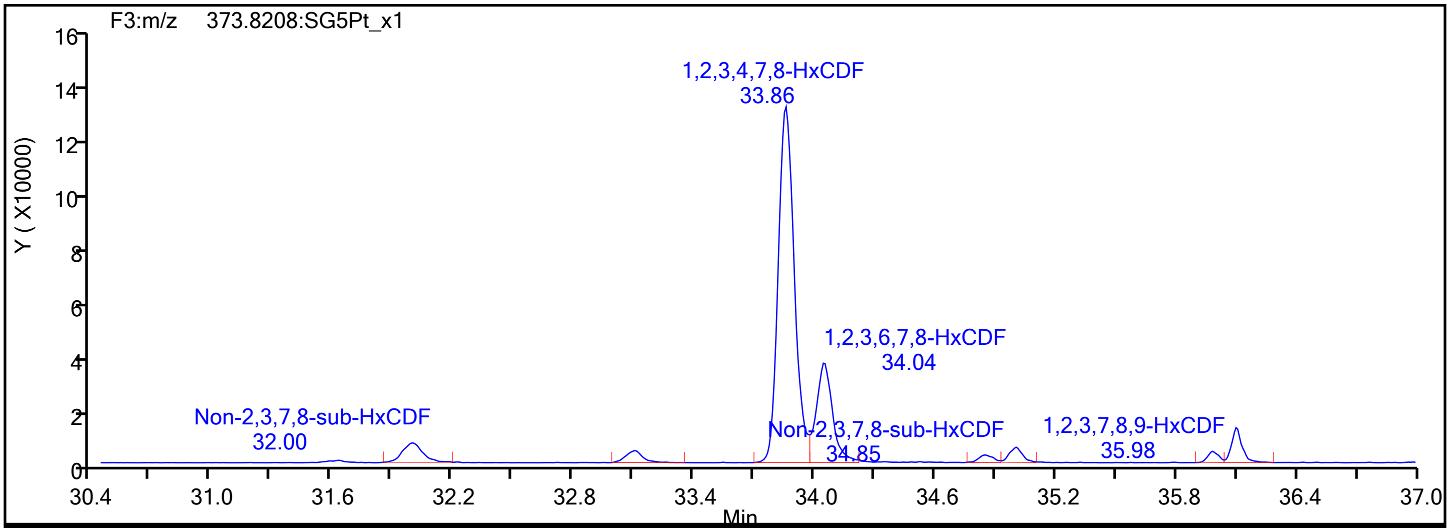

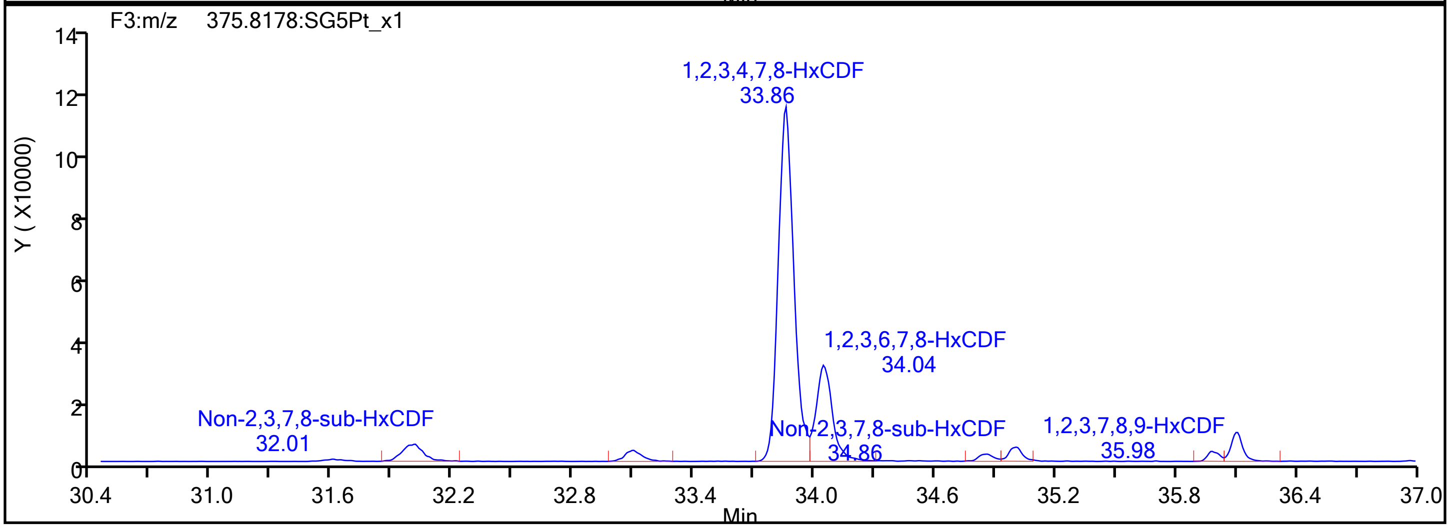

HxCDF Interference Mass

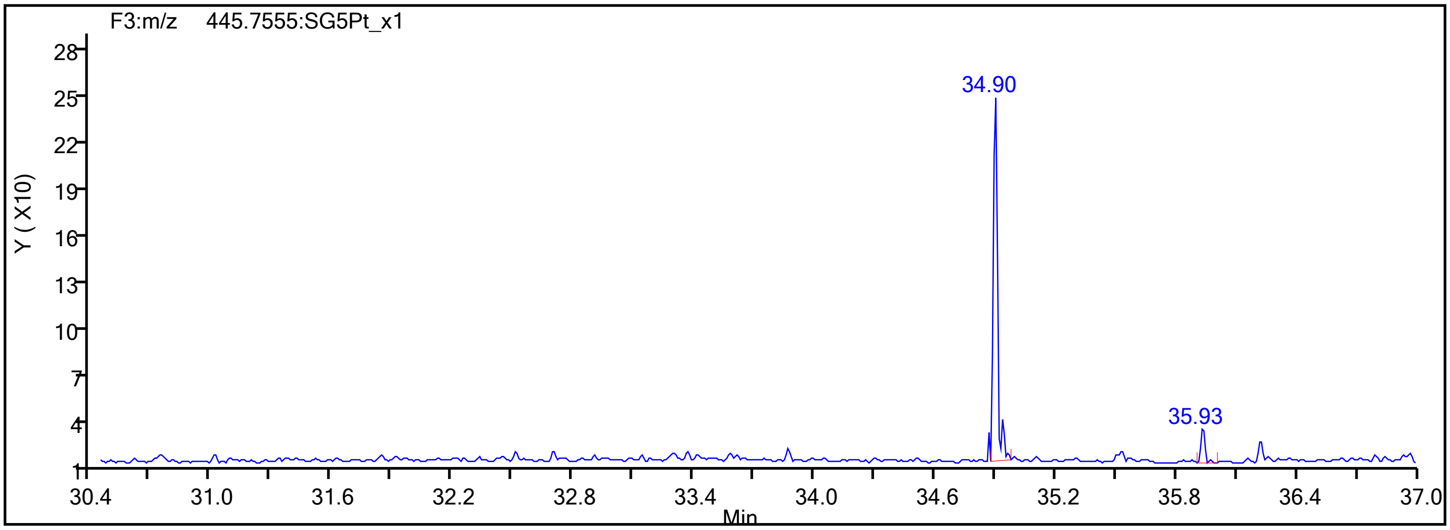

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Eurofins TestAmerica, Sacramento

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Injection Date: 10-Oct-2020 11:45:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 420640 Sample Line#: 23

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

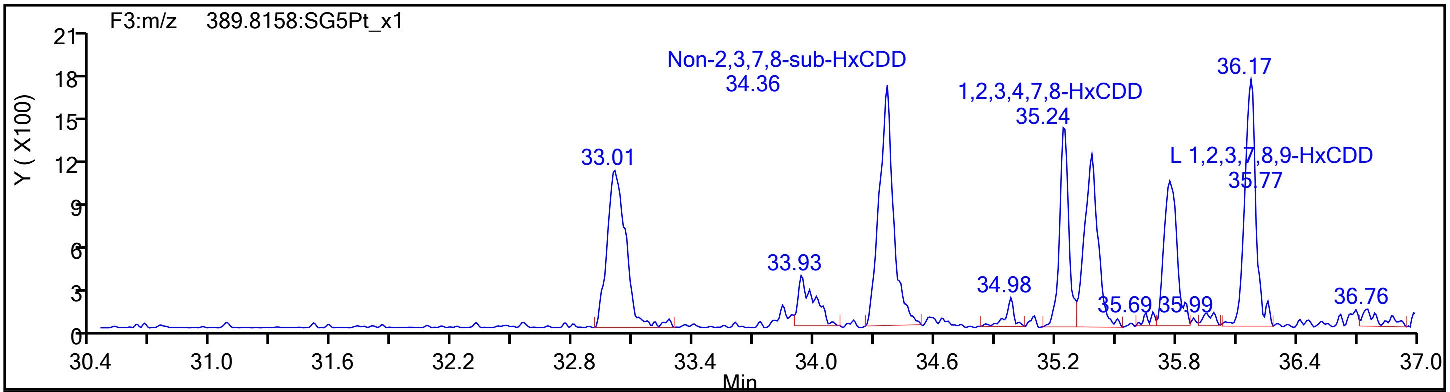

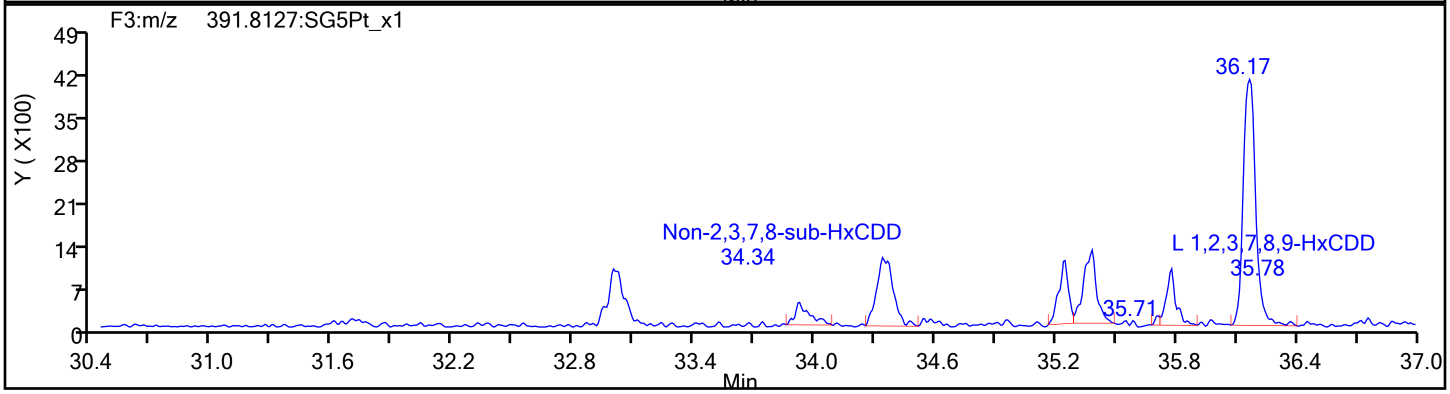

HxCDD Standards

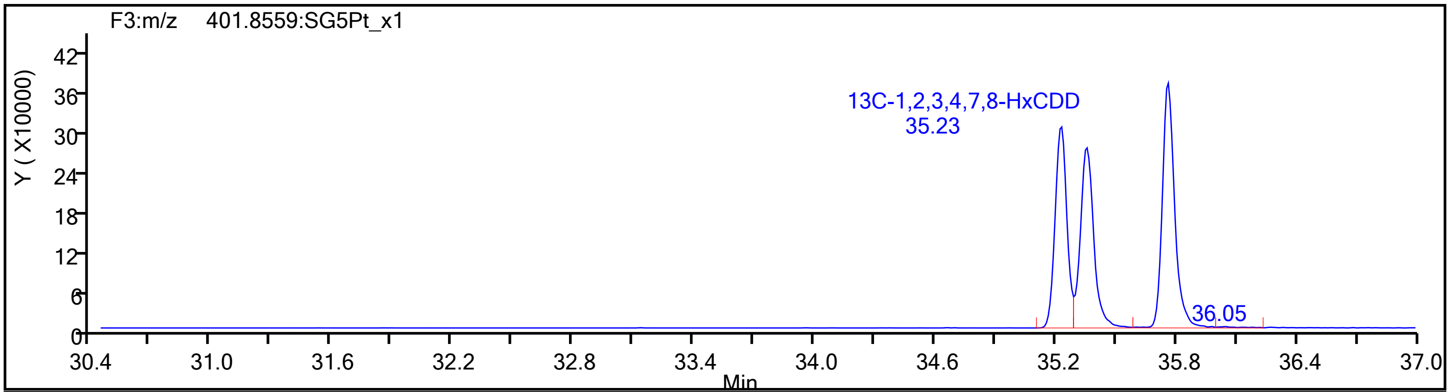

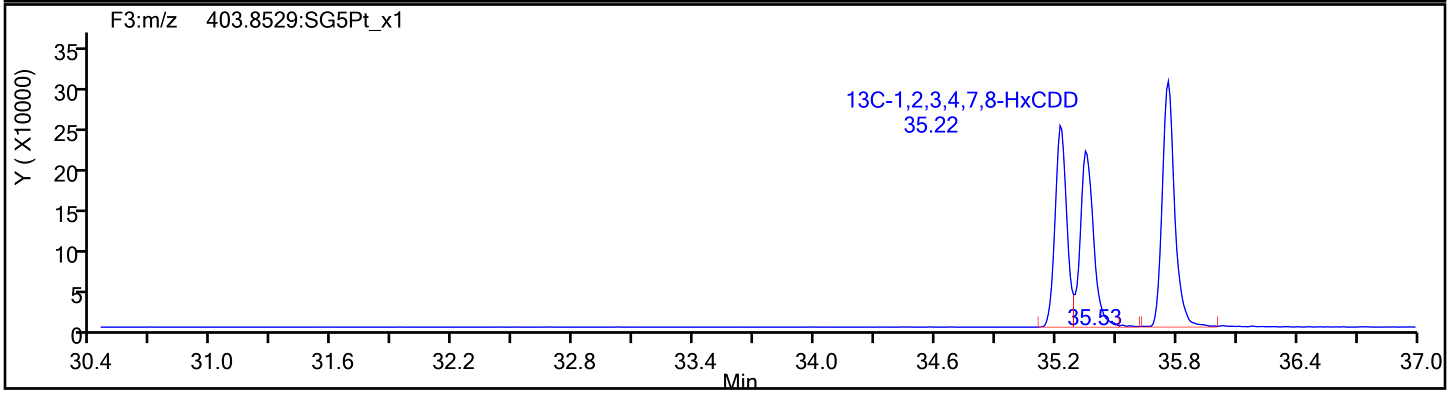

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Eurofins TestAmerica, Sacramento

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HpCDF

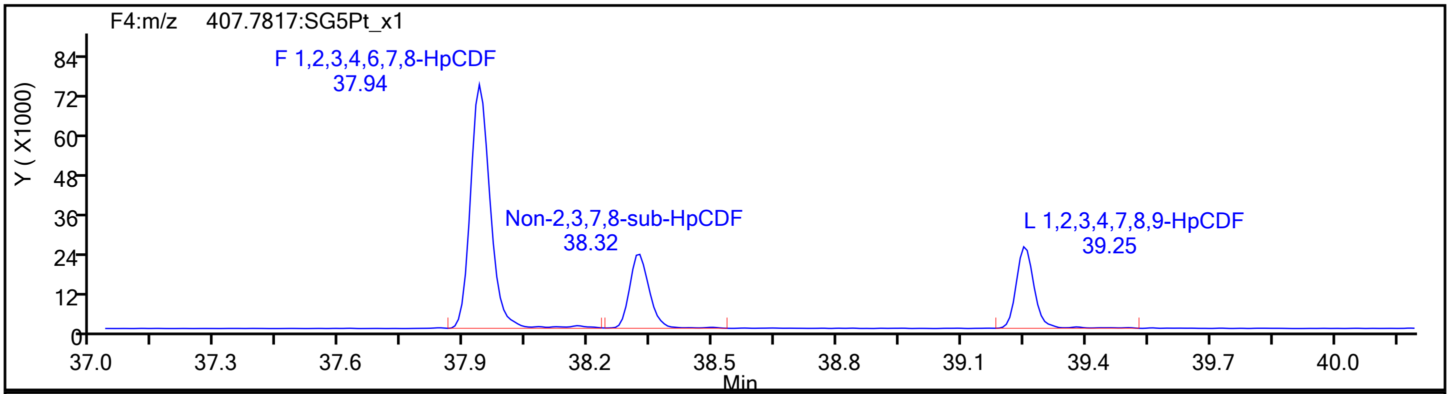

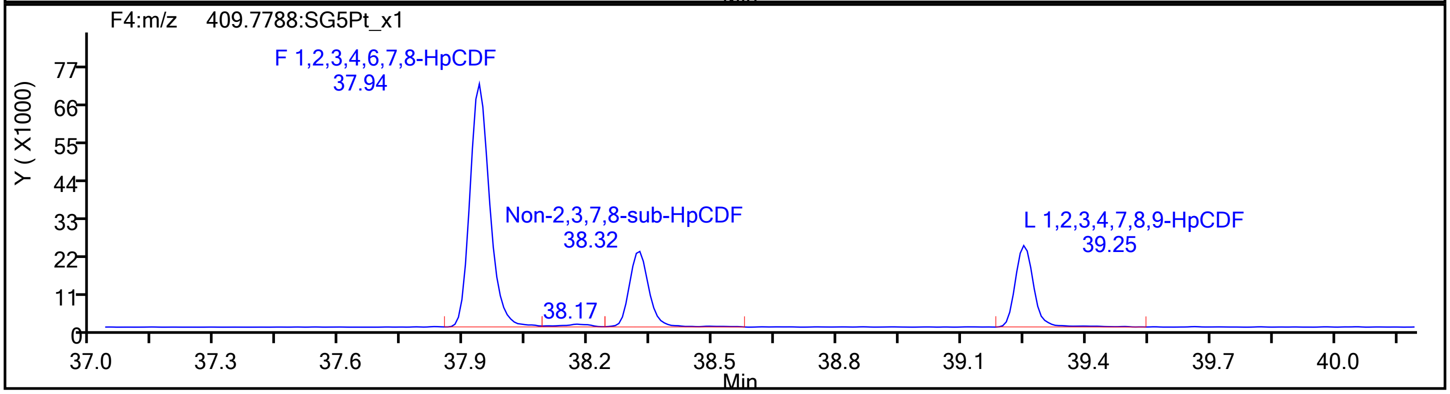

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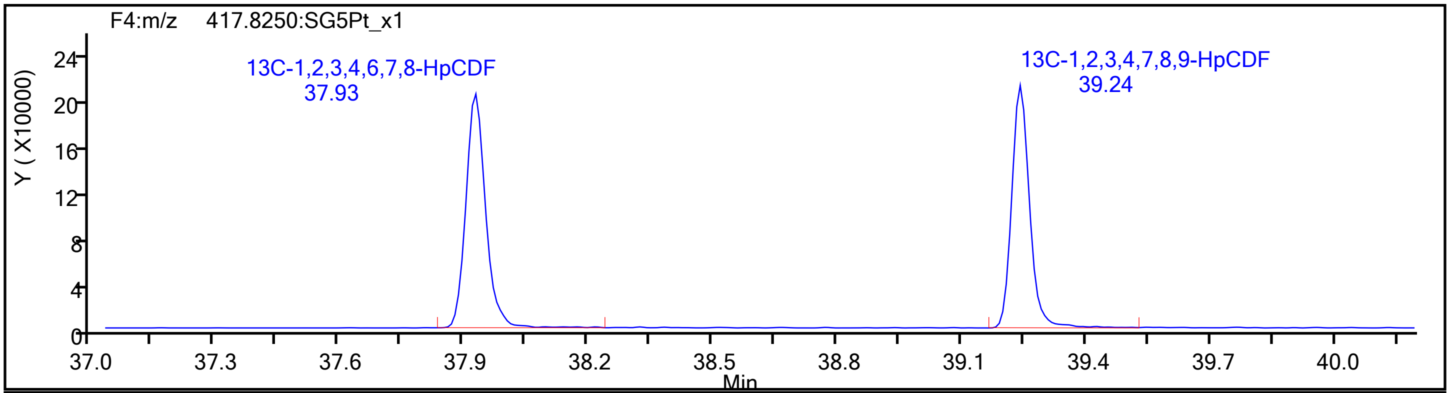

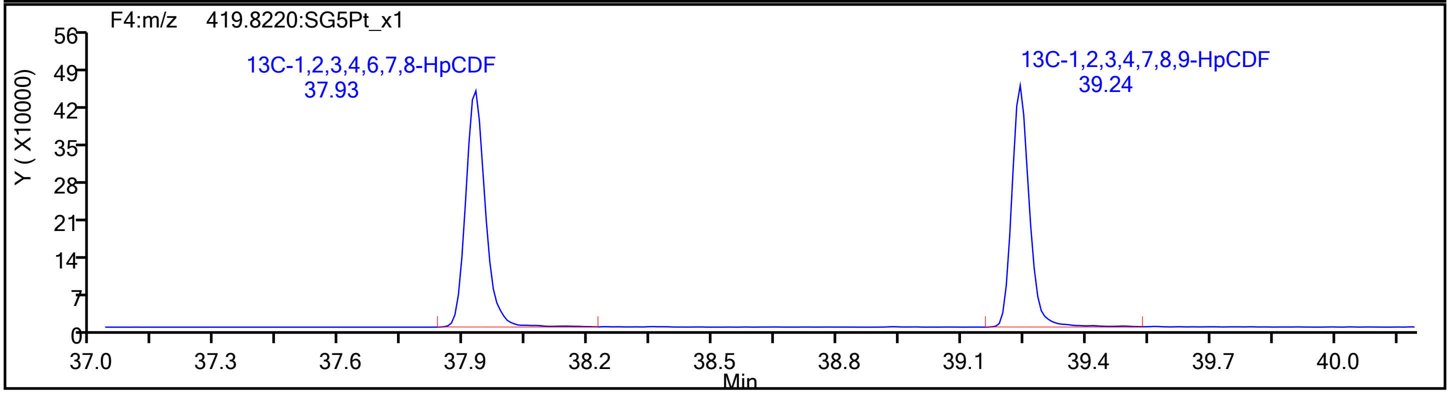

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

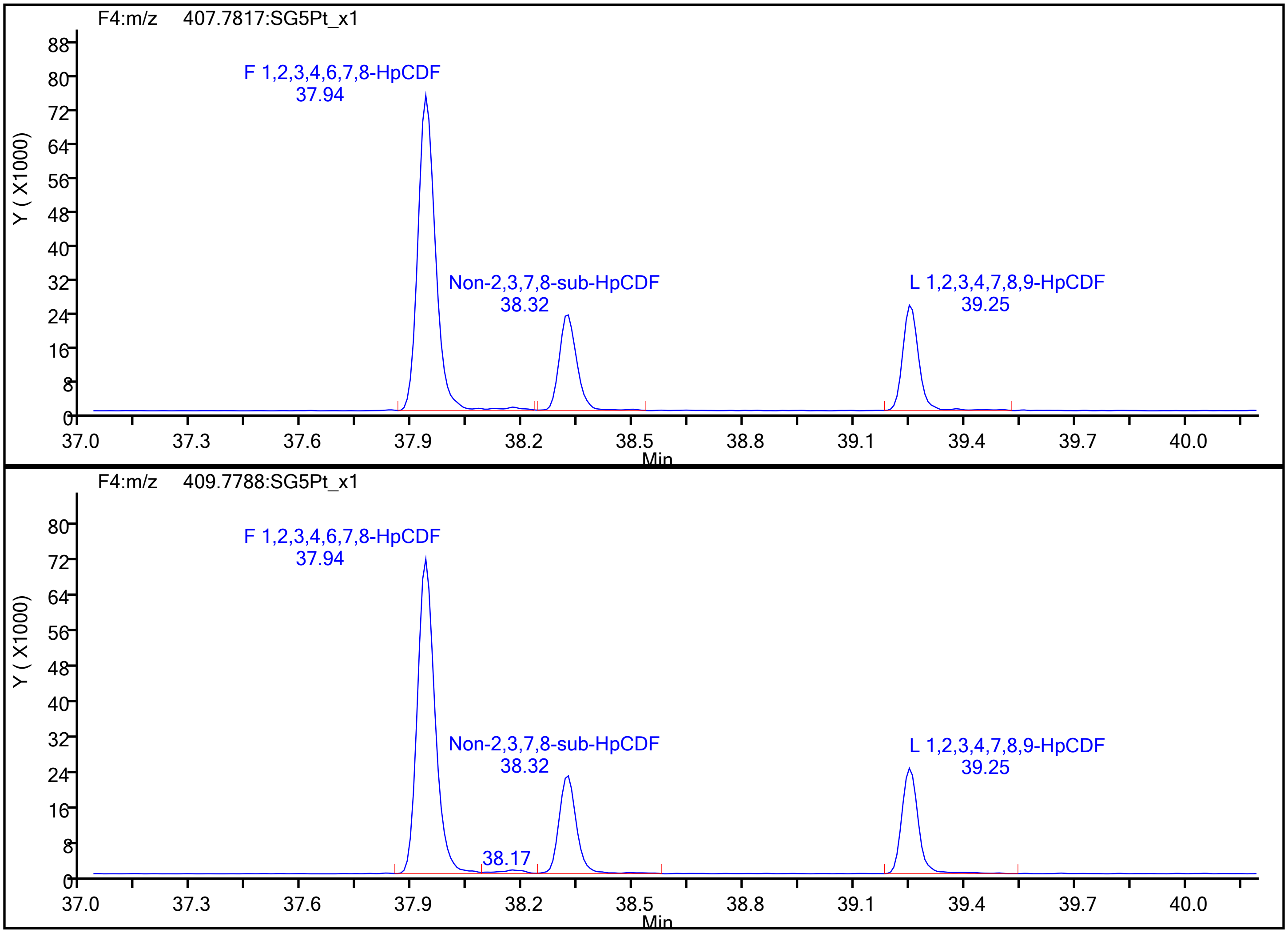

HpCDF Interference Mass

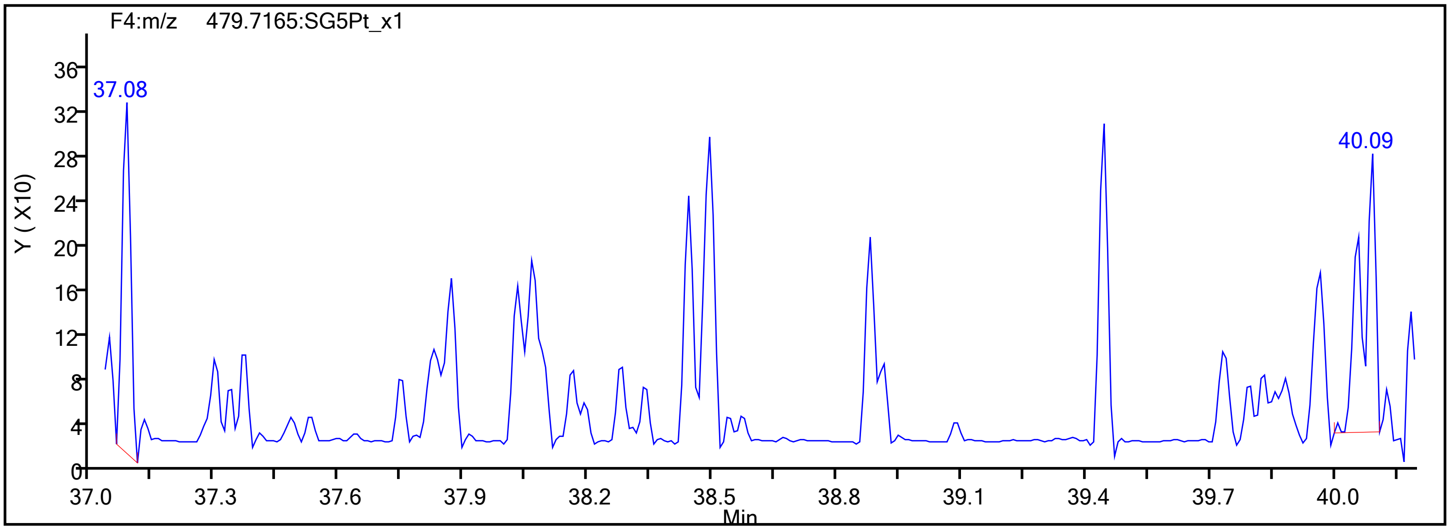

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Eurofins TestAmerica, Sacramento

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HpCDD

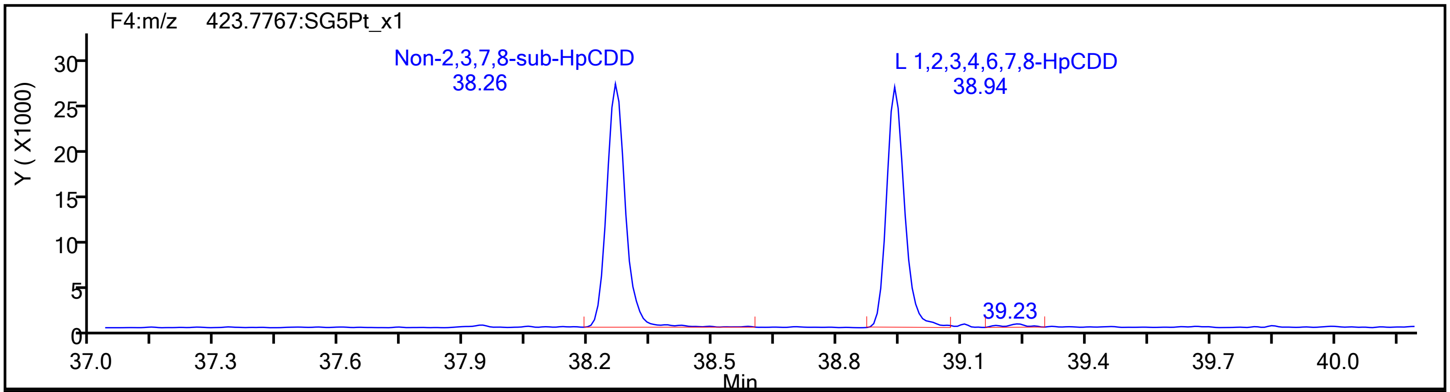

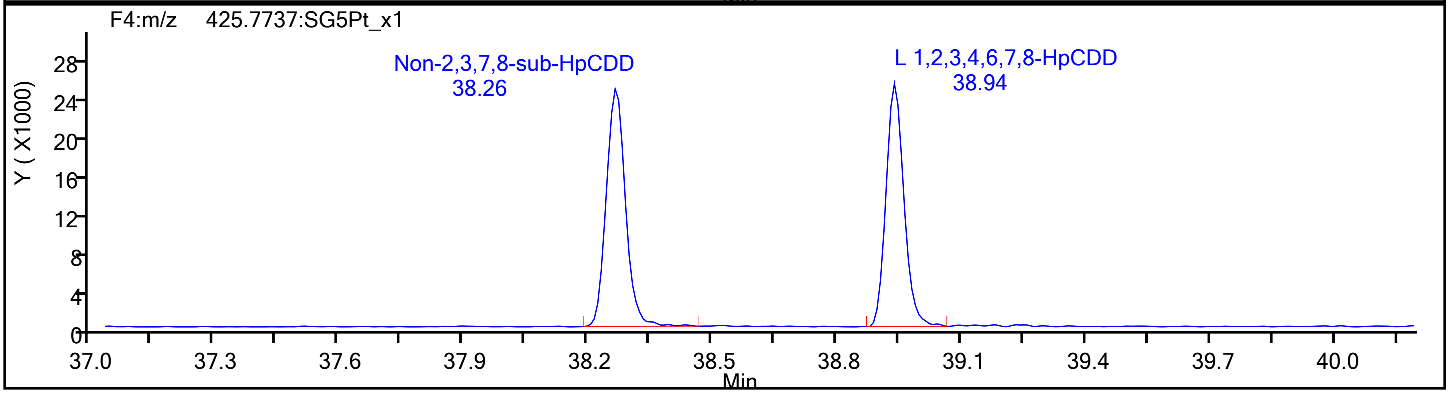

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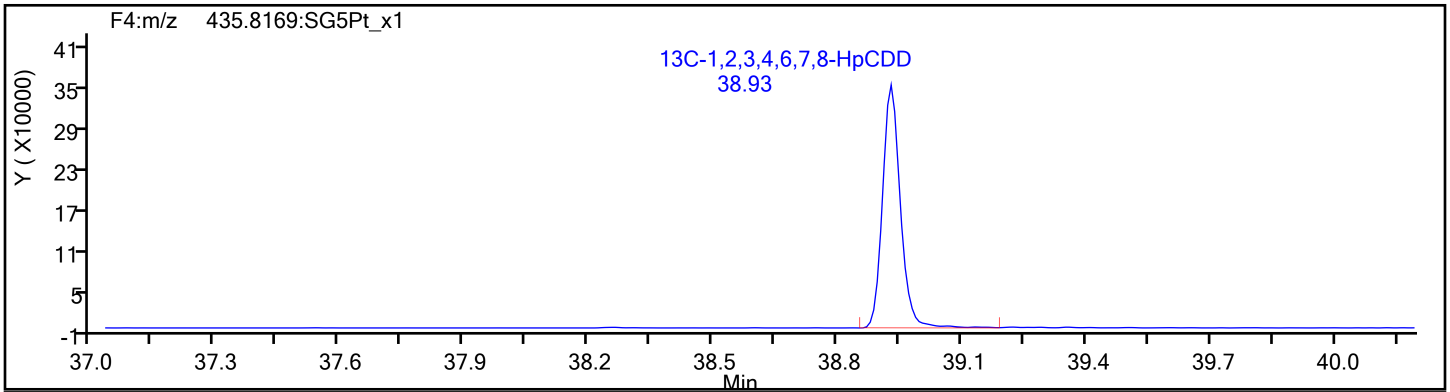

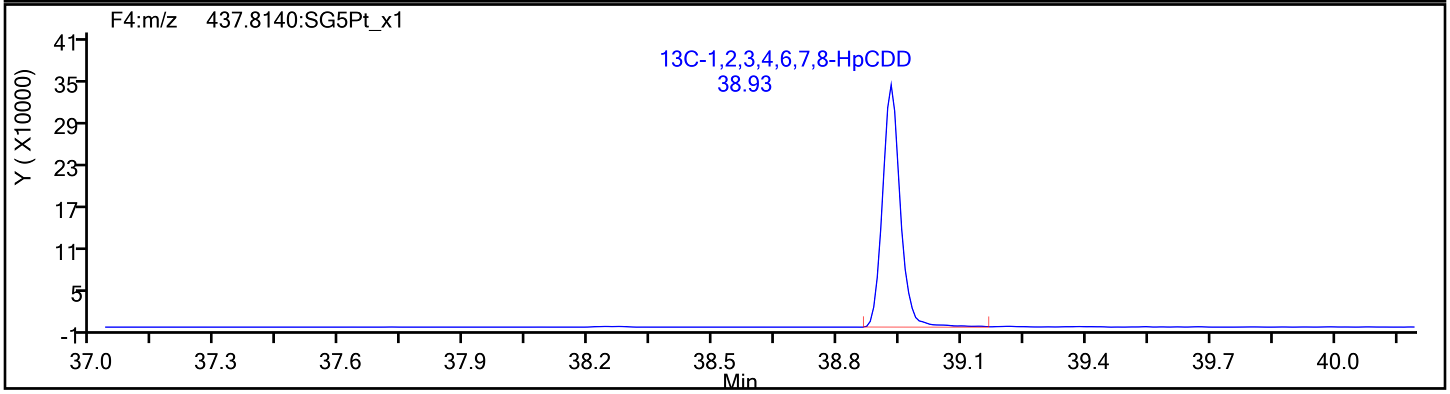

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 420640
Sample Line#: 23
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Column Dia: 0.32 mm

OCDF

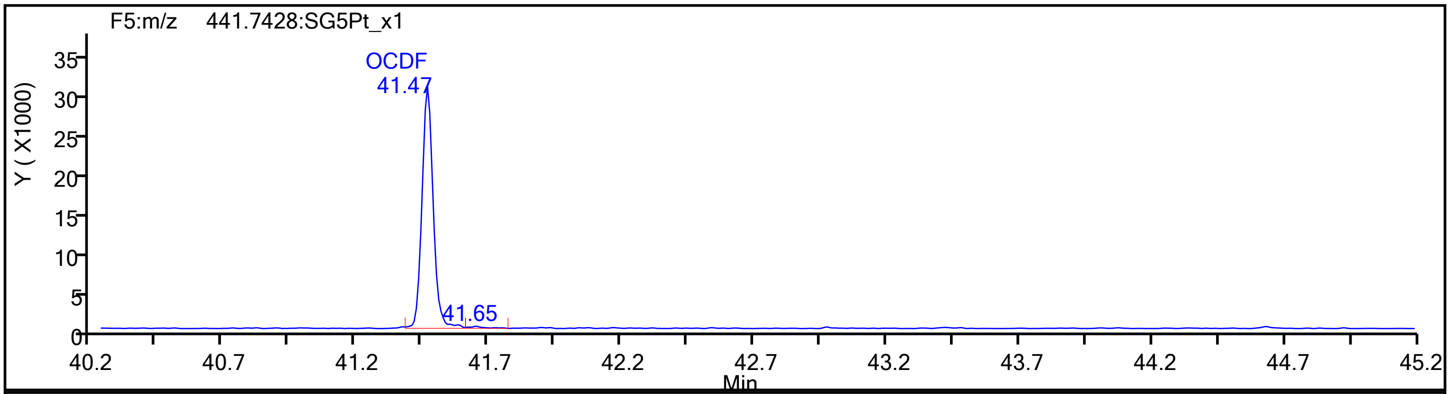

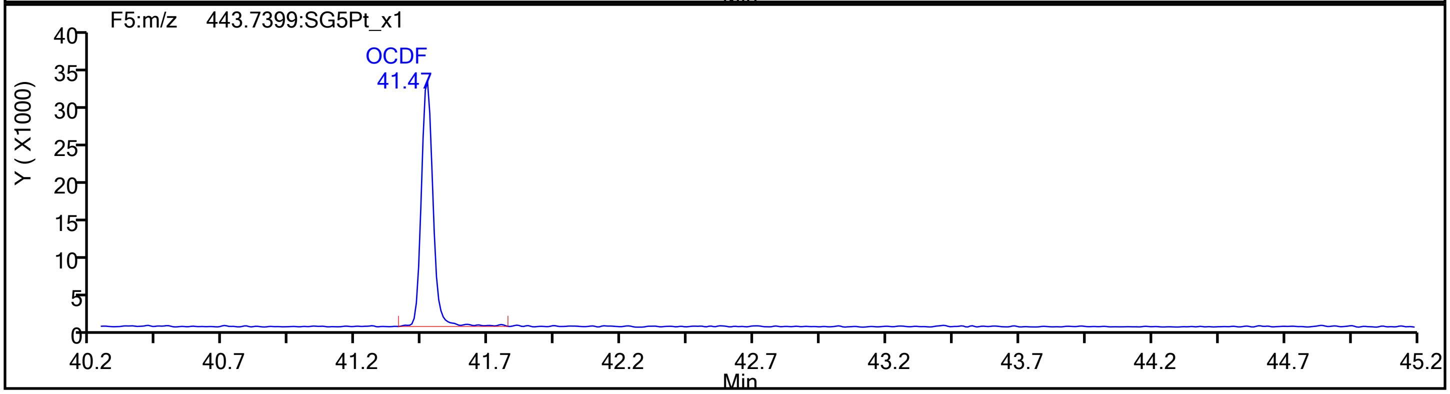

OCDF Standards

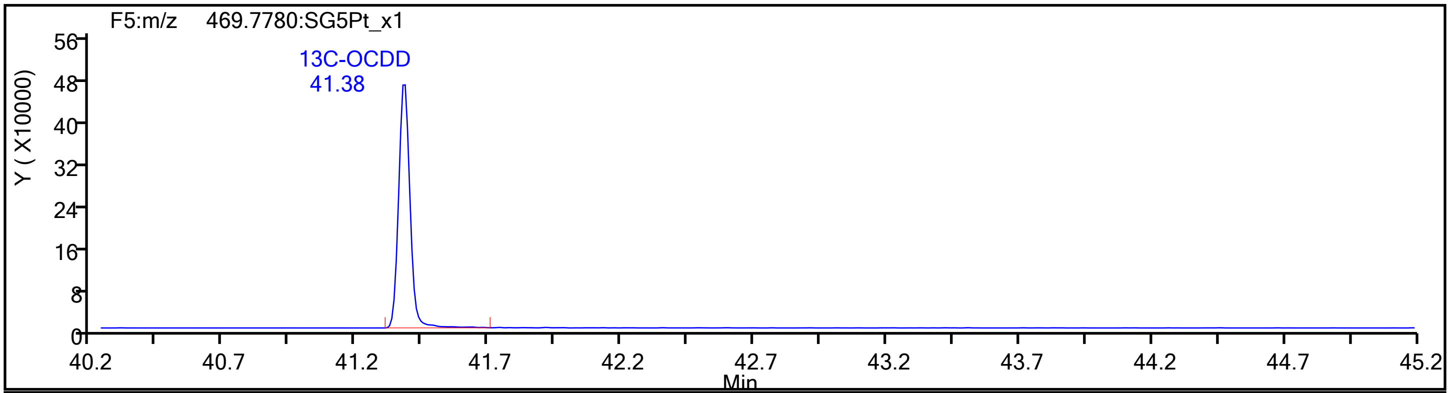

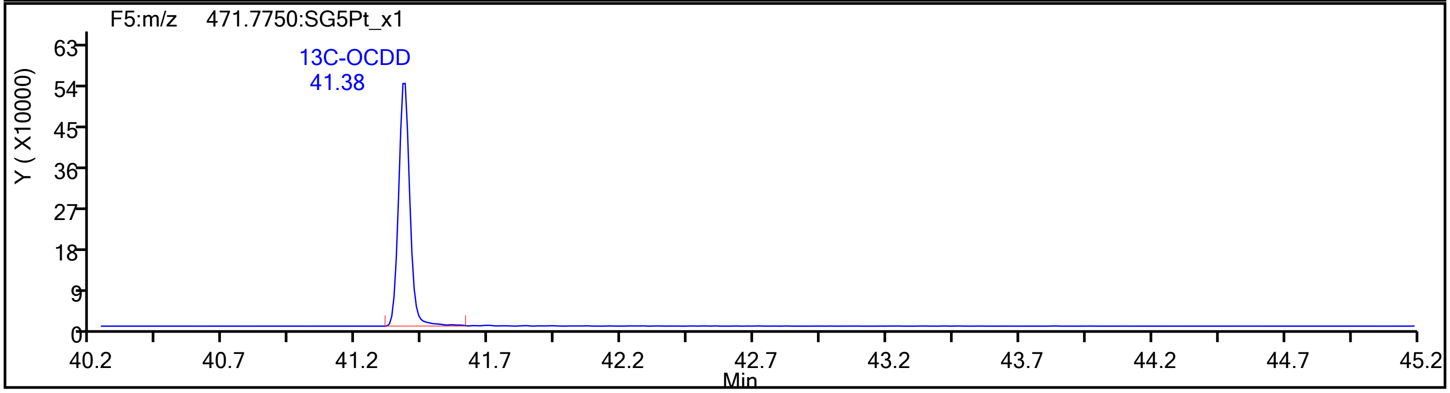

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 420640
Sample Line#: 23
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Column Dia: 0.32 mm

OCDF

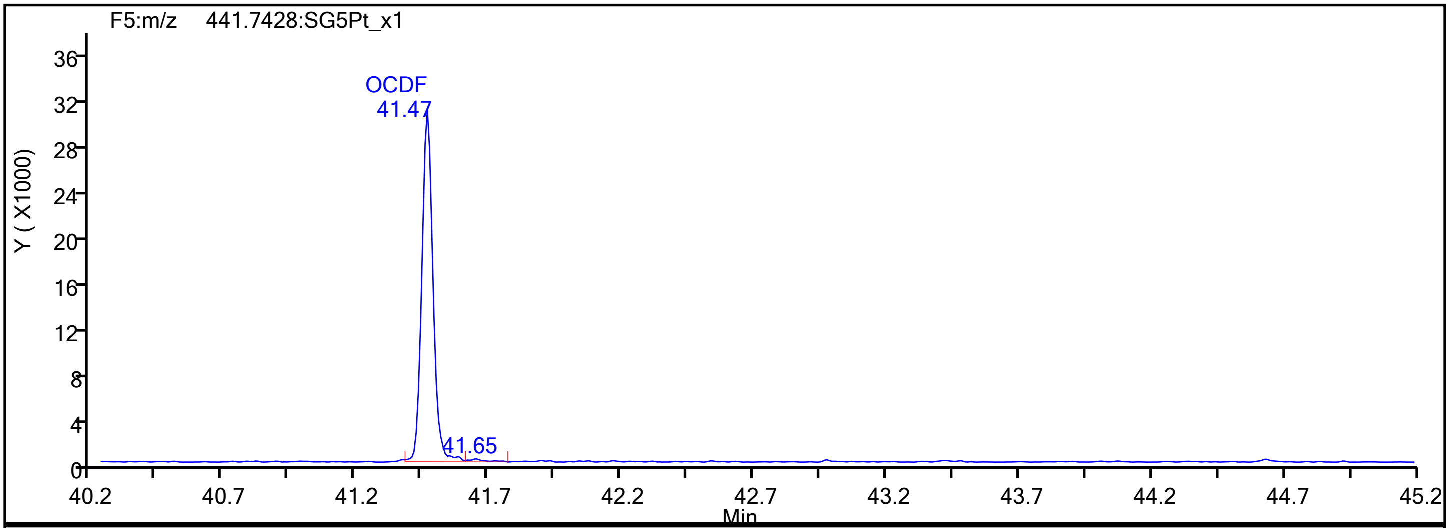

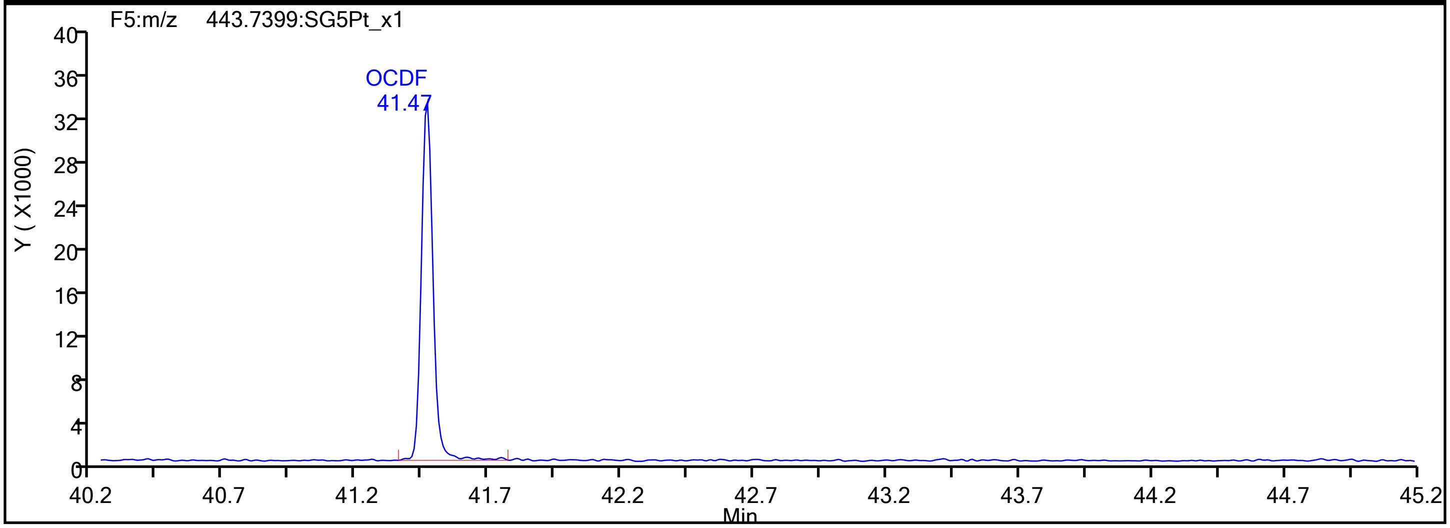

OCDF Interference Mass

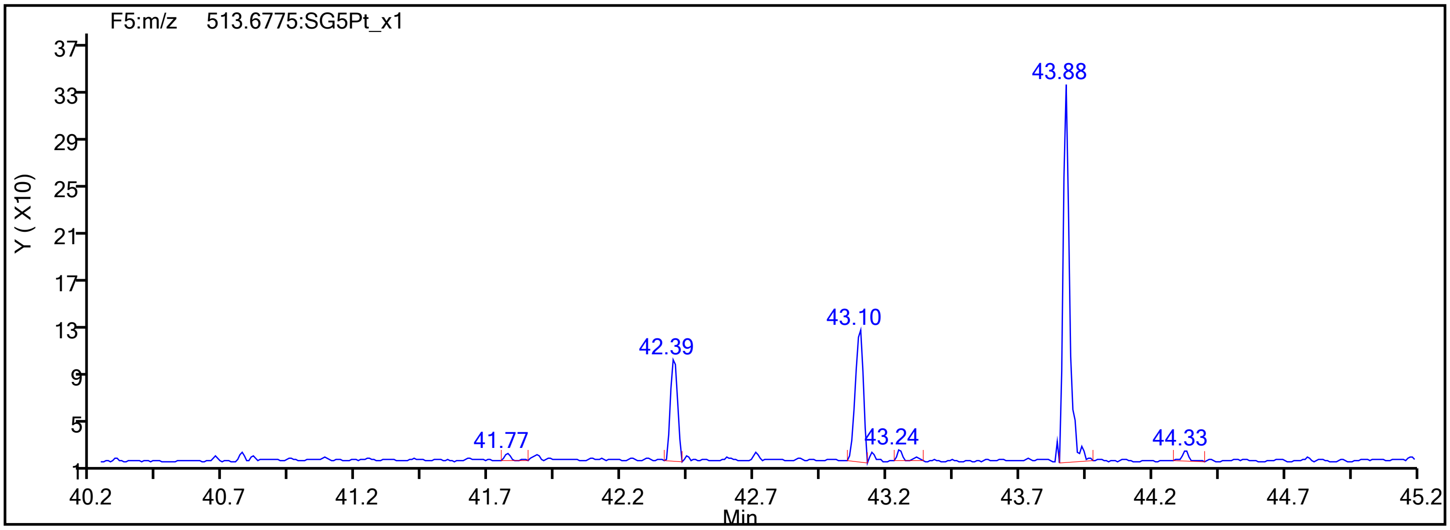

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-5-1
Worklist#: 420640
Sample Line#: 23
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

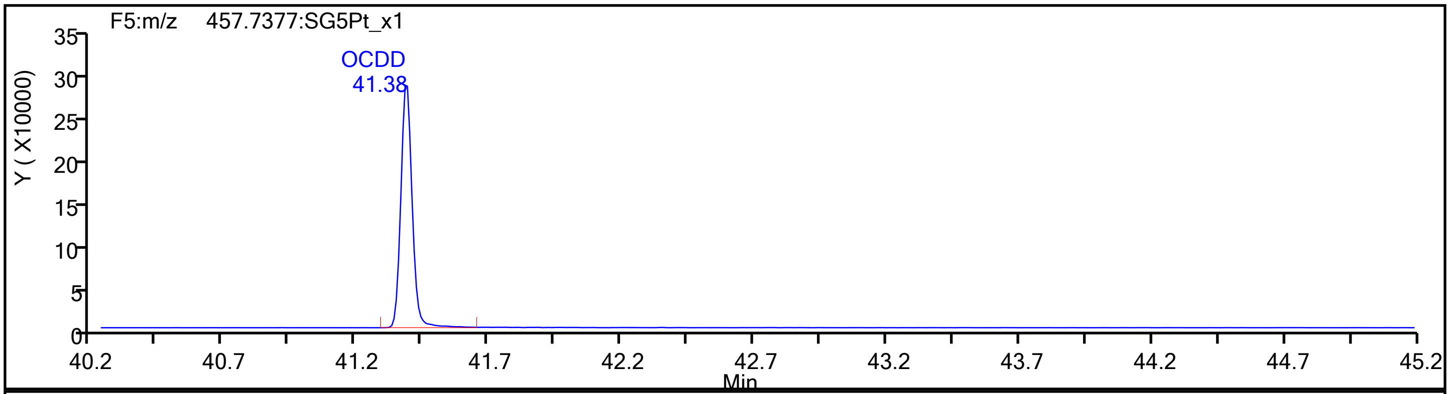

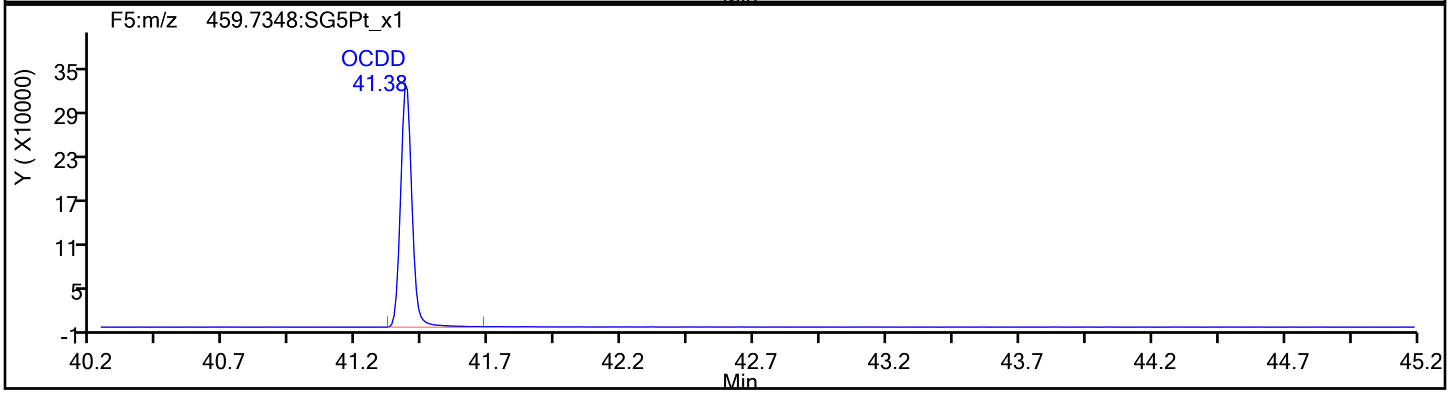

OCDD Standards

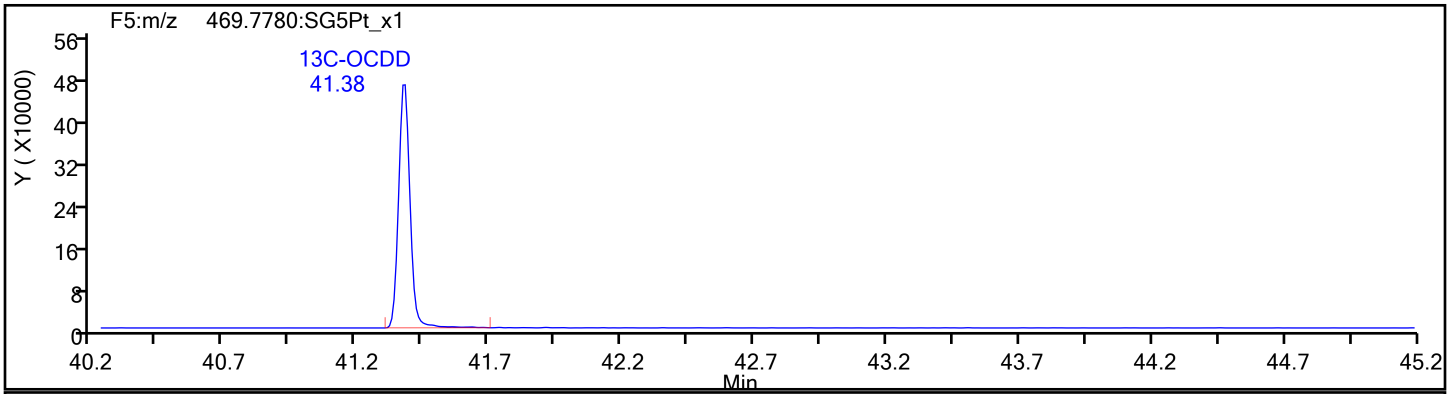

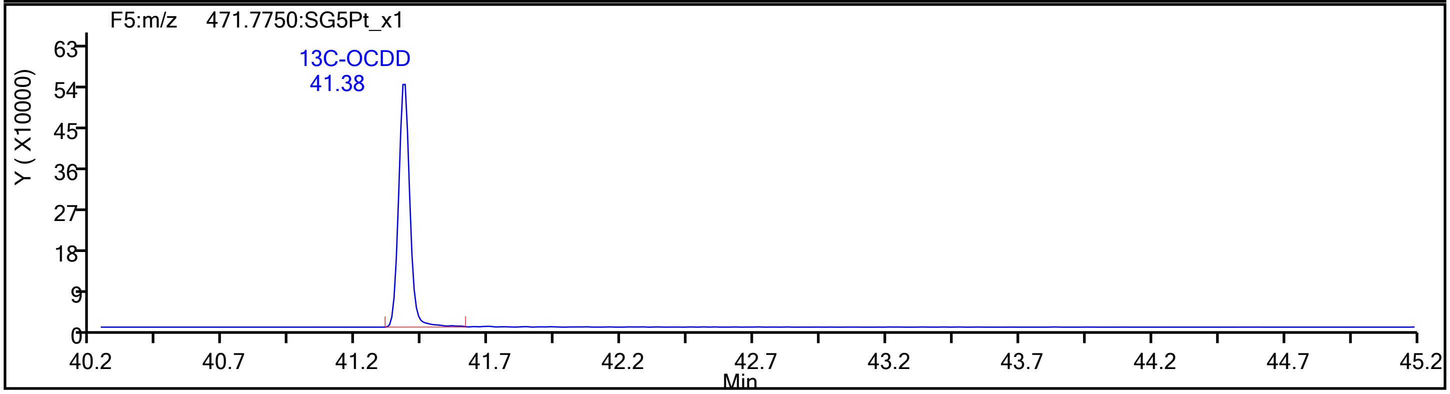

Report Date: 12-Oct-2020 11:31:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d
Injection Date: 10-Oct-2020 11:45:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-5-1
Worklist#: 420640
Sample Line#: 23
Column Type: DB-5
Column Dia: 0.32 mm

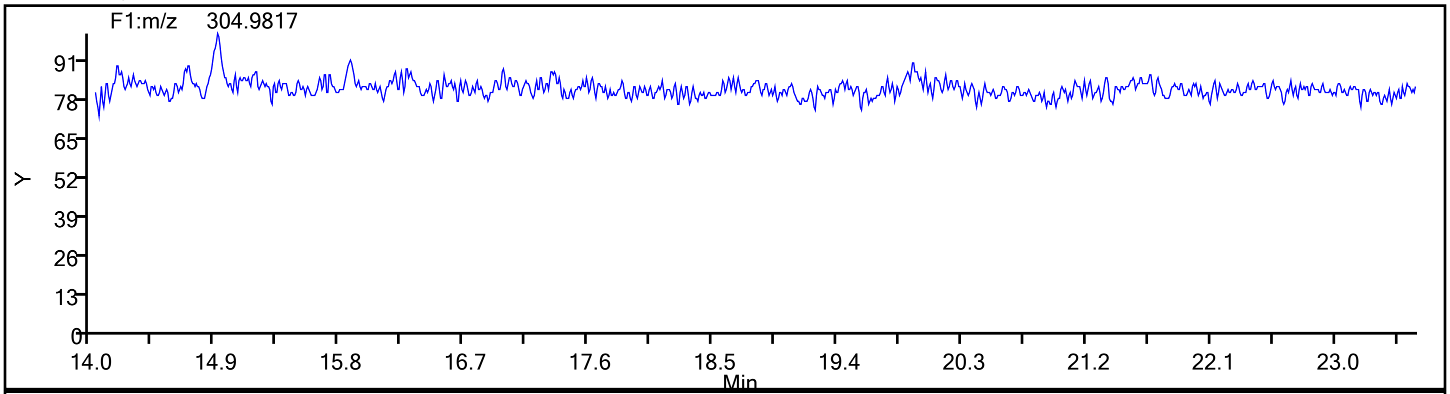

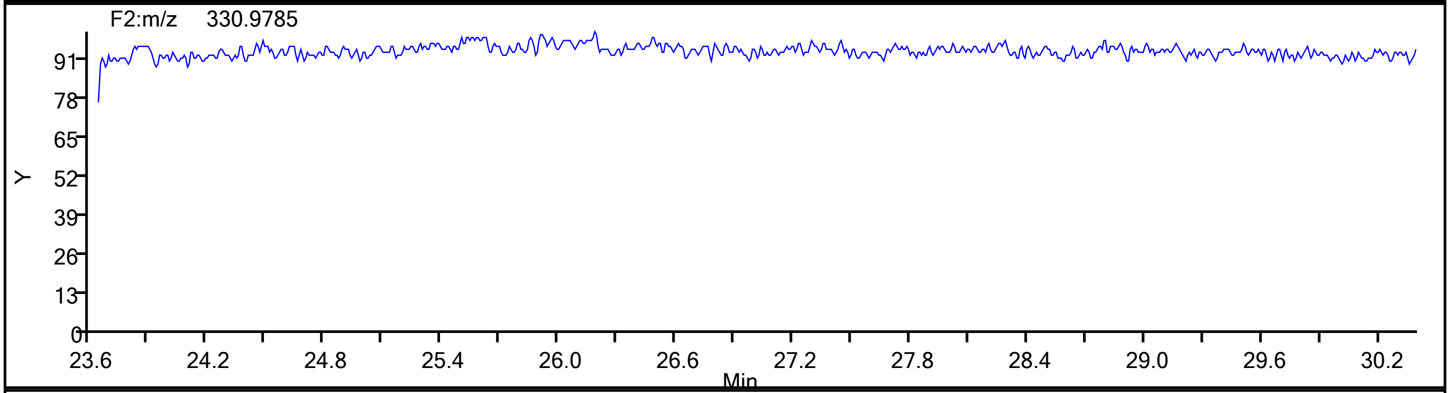

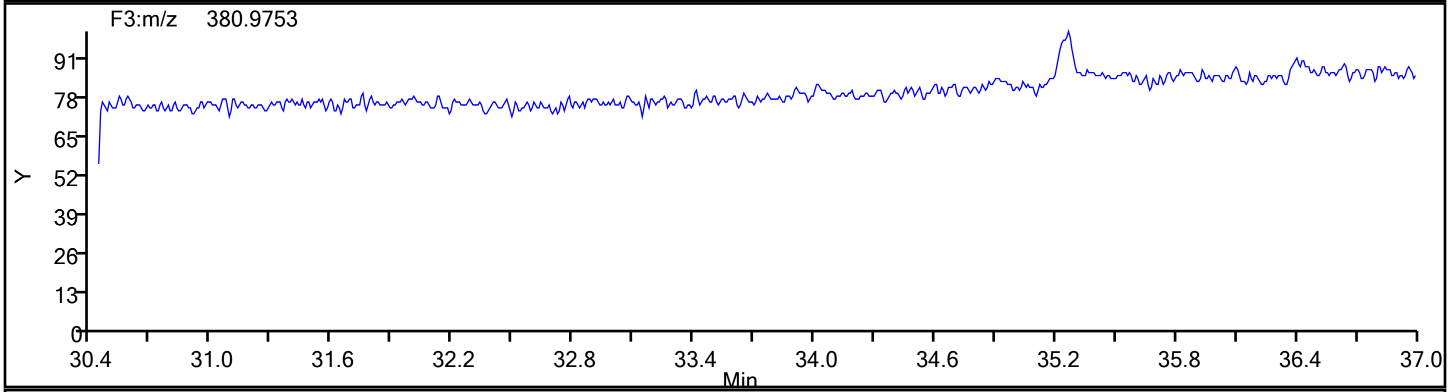

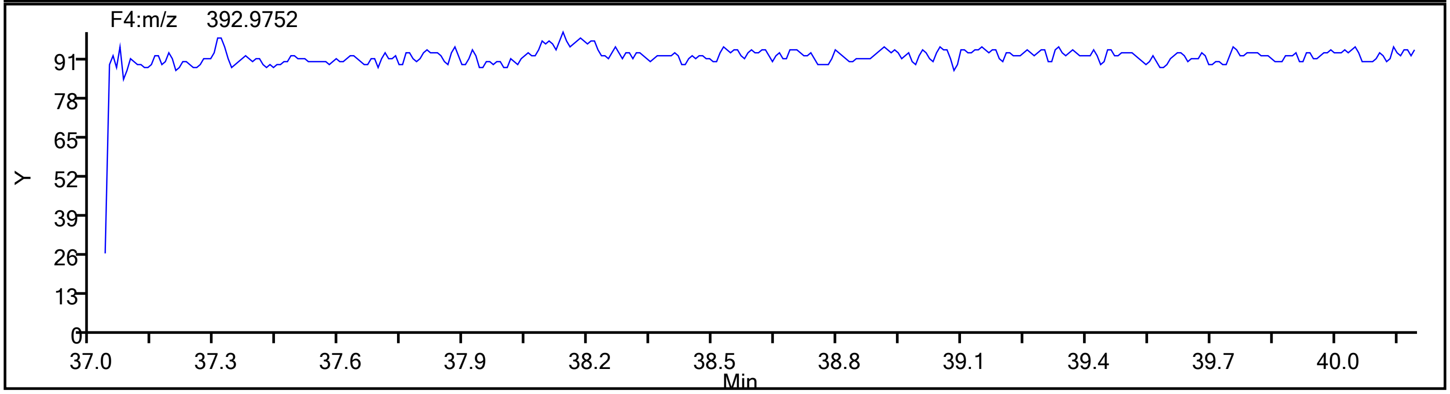

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_25.d		
Injection Date:	10-Oct-2020 11:45:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	420640	Sample Line#:	23
Column Type:	DB-5	Column Dia:	0.32 mm

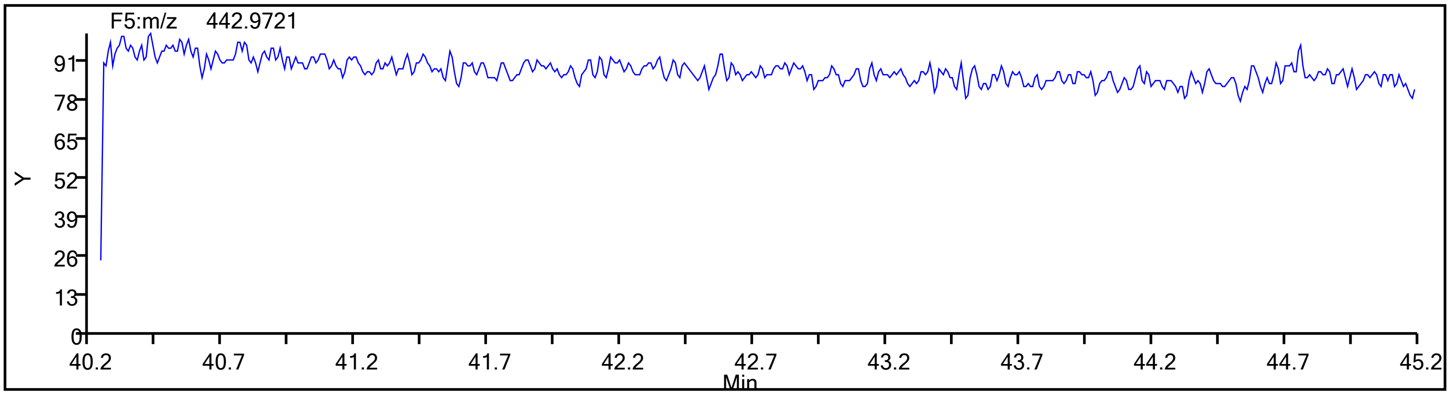

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-5-1 RA	Lab Sample ID: 320-65130-18 RA
Matrix: Water	Lab File ID: 14OC2011D2_010.d
Analysis Method: 1613B	Date Collected: 09/10/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1039.8(mL)	Date Analyzed: 10/14/2020 17:07
Con. Extract Vol.: 20(uL)	Dilution Factor: 10
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 422080	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	15000	B	96	23

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	82		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	109		35-197

Report Date: 15-Oct-2020 13:36:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_010.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Sample Type: Client
Inject. Date: 14-Oct-2020 17:07:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-18-A 10X
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:36:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: stephensk Date: 15-Oct-2020 12:08:01

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.901	9354636	0.79	1.2E+06	10.0	10.0				
D 13C-2,3,7,8-TCDF	16.026	12087534	0.66	1.5708	8.226	8.226	0.4677	0.4677	82.26	
2,3,7,8-TCDF	16.039	93047083	0.77	0.9943	77.4	77.4	0.1172	0.1172		
D 13C-2,3,7,8-TCDD	14.654	6627722	0.84	0.9834	7.205	7.205	1.131	1.131	72.05	
2,3,7,8-TCDD	14.667	24071969	0.78	1.2822	28.3	28.3	0.2239	0.2239		
$ 37Cl4-2,3,7,8-TCDD	14.667	4041585		0.9945	4.344	4.344	0.0781	0.0781	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 15-Oct-2020 13:36:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_010.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Sample Type: Client
Inject. Date: 14-Oct-2020 17:07:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-18-A 10X
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:36:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: stephensk Date: 15-Oct-2020 12:08:01

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.901	14.925	-1		4139054	972471	42367	105917	23		
333.9339	14.887	14.925	-2		5215582	1249647	56499	141247	22	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.026	16.050	-1	1.076	4797642	1178750	40406	101015	29		
317.9389	16.026	16.050	-1	1.076	7289892	1611846	24893	62232	65	0.66(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.039	16.064	-1	1.001	40603090	9480356	7407	18517	1280		
305.8987	16.039	16.064	-1	1.001	52443993	12147976	5597	13992	2170	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.654	14.678	-1	0.983	3031531	858570	42367	105917	20		
333.9339	14.654	14.678	-1	0.983	3596191	982708	56499	141247	17	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.667	14.692	-1	1.001	10579848	2697888	12239	30597	220		
321.8936	14.667	14.692	-1	1.001	13492121	3366760	8910	22275	378	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.667	14.692	-1	0.984	4041585	978285	6905	17262	142		

QC Flag Legend

Processing Flags

Report Date: 15-Oct-2020 13:36:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_010.d

Injection Date: 14-Oct-2020 17:07:00 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 422080 Sample Line#: 10

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

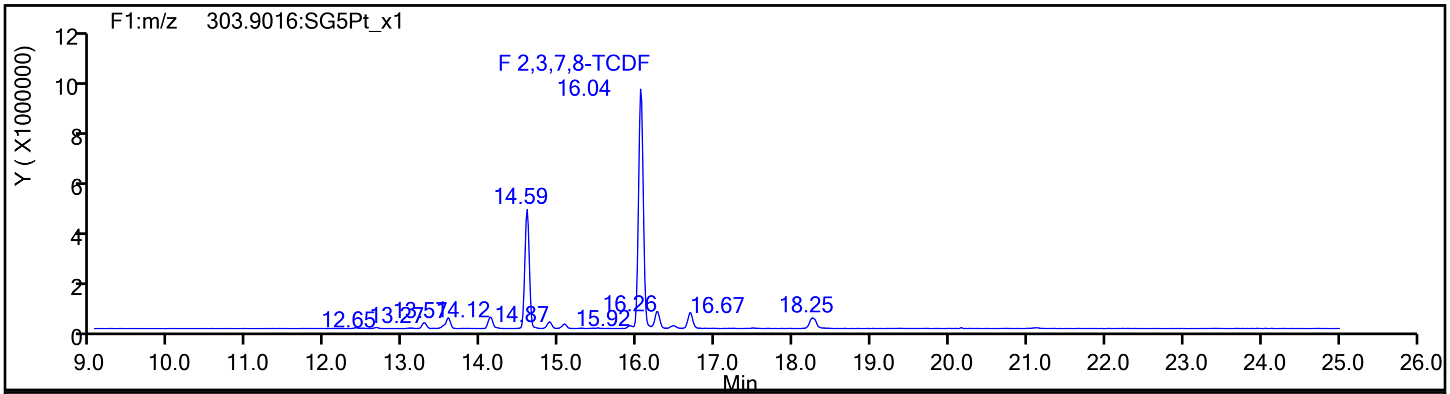

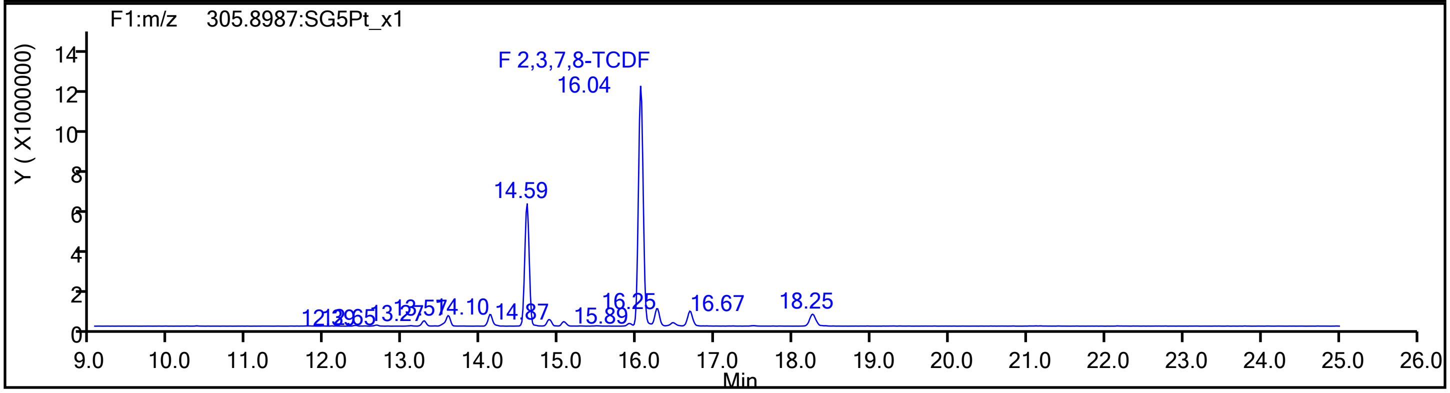

TCDF Standards

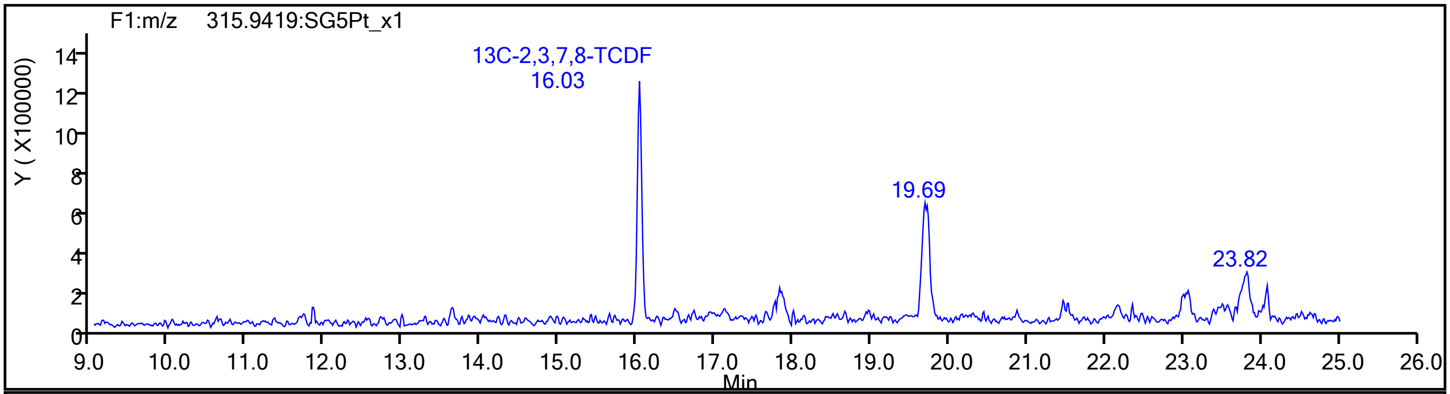

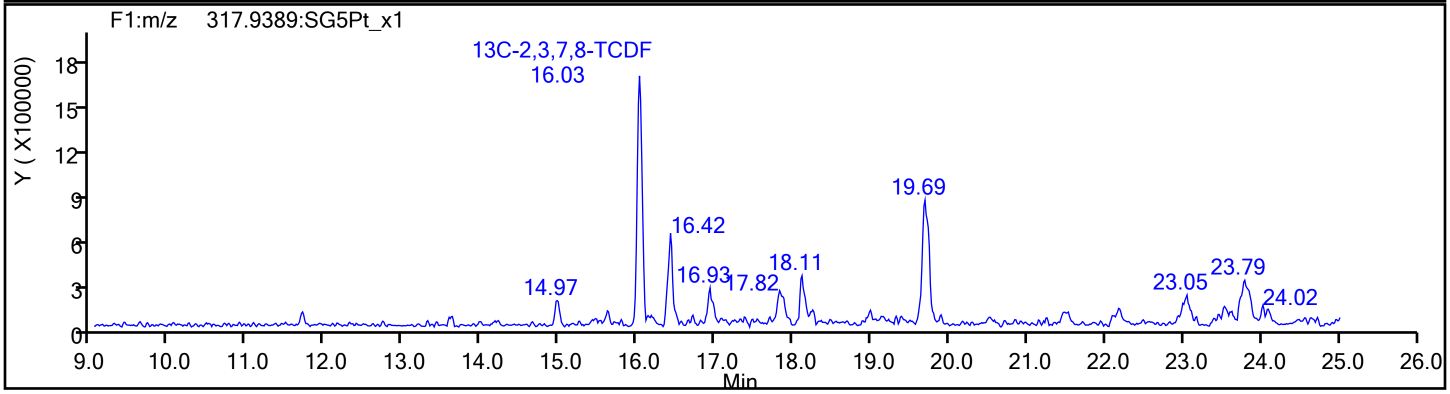

Report Date: 15-Oct-2020 13:36:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_010.d		
Injection Date:	14-Oct-2020 17:07:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	422080	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

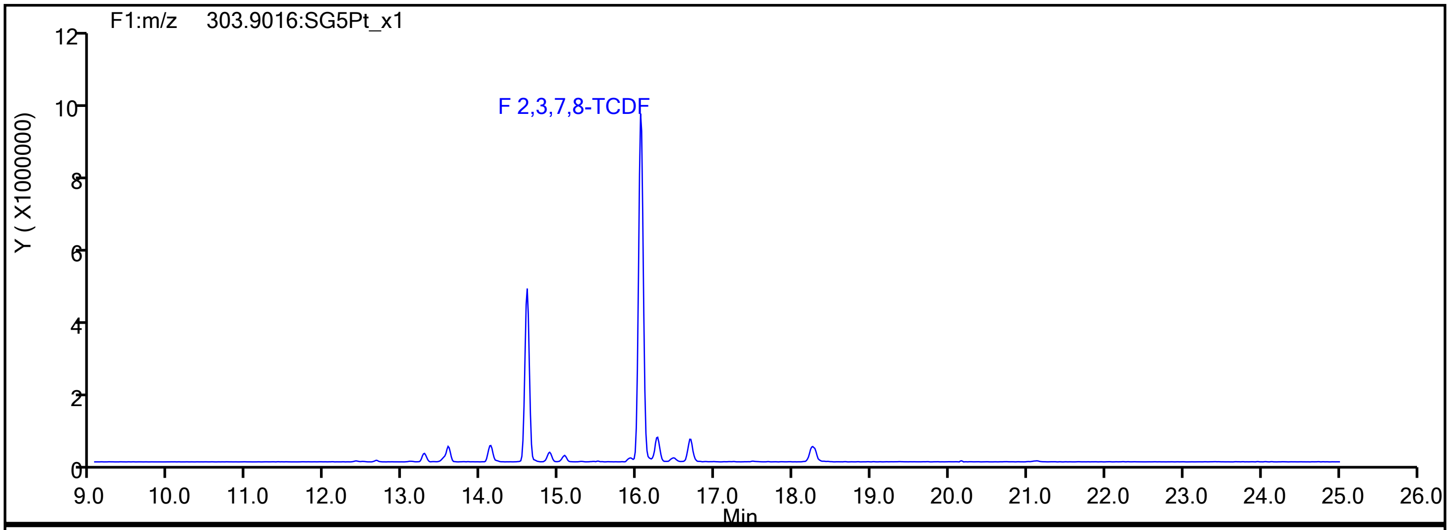

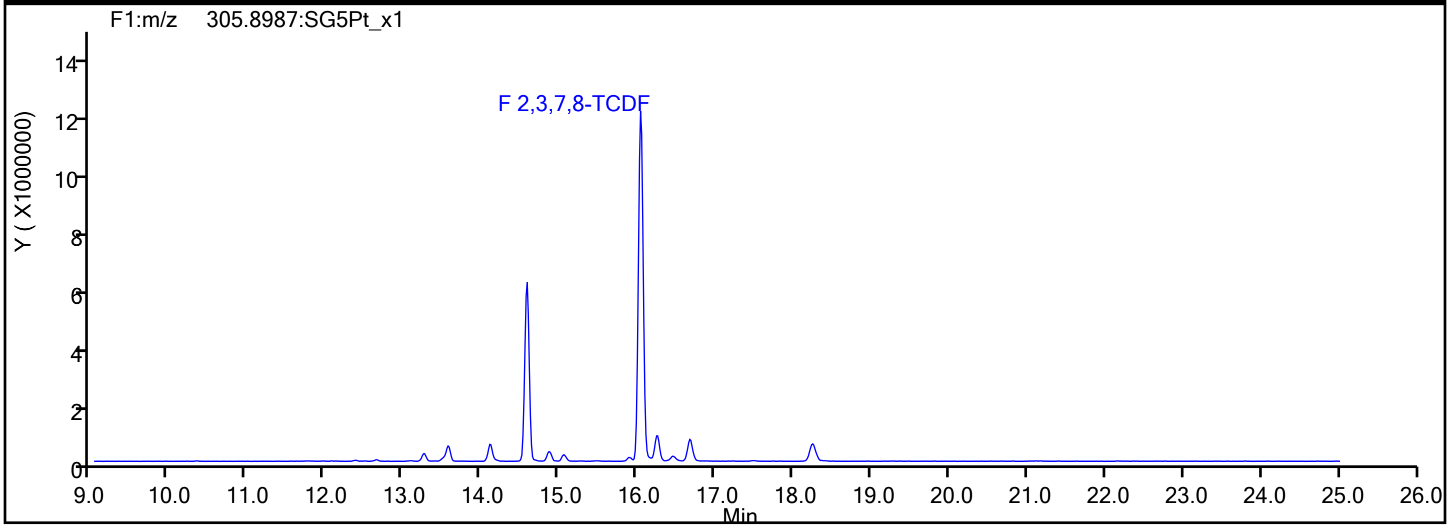

TCDF Interference Mass

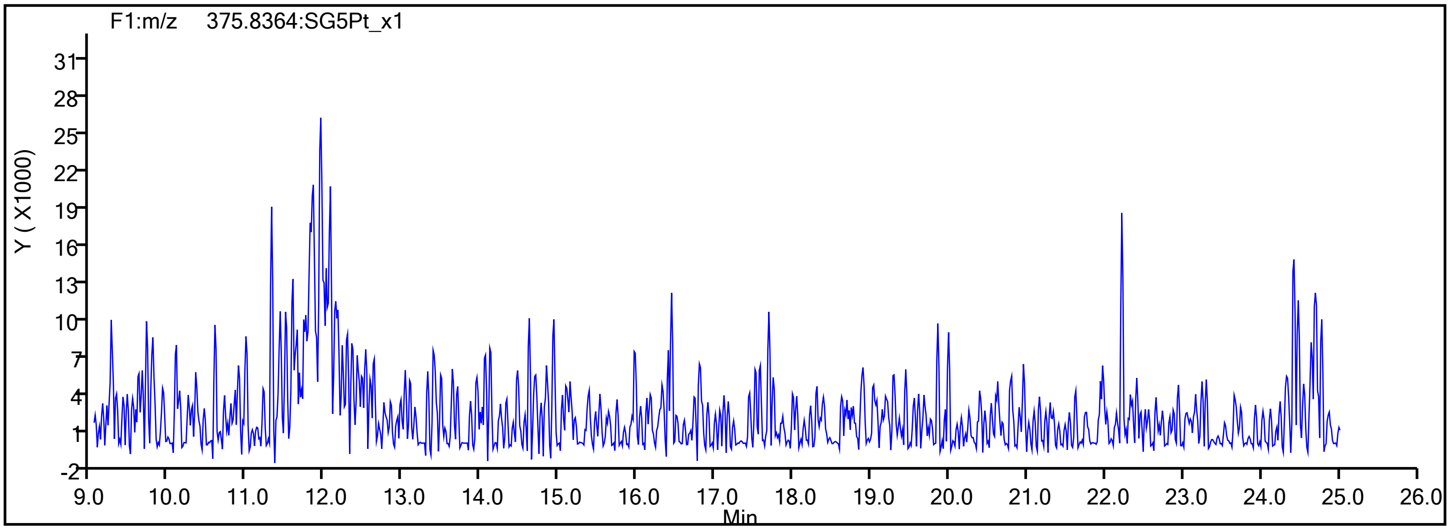

Report Date: 15-Oct-2020 13:36:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_010.d		
Injection Date:	14-Oct-2020 17:07:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	422080	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

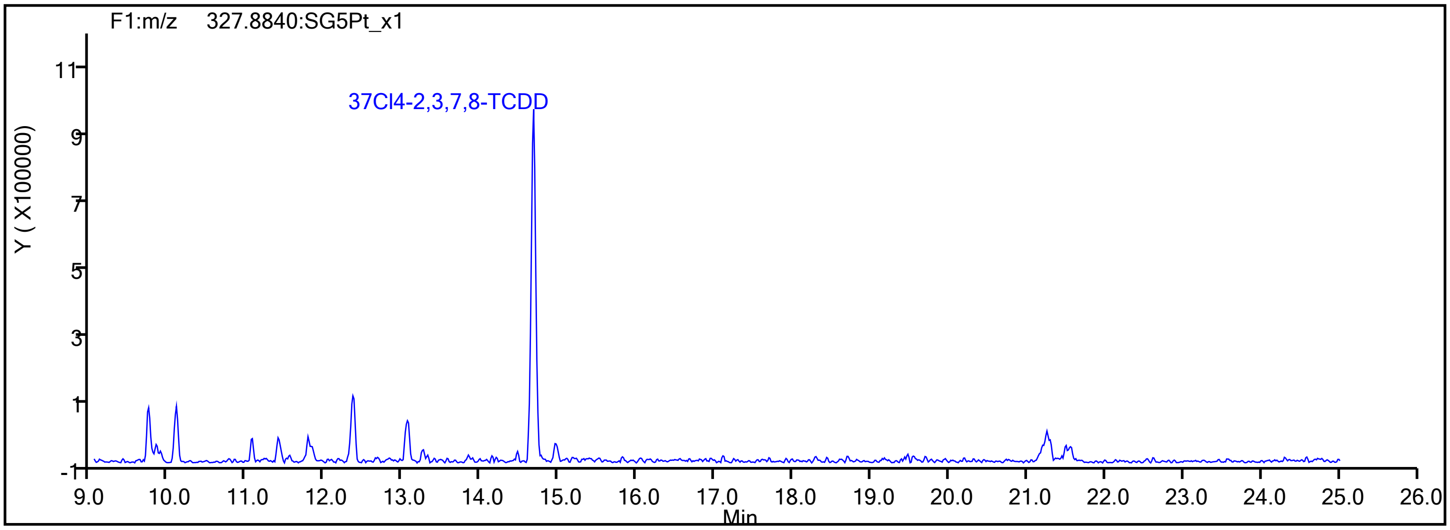

37Cl4-TCDD Standards

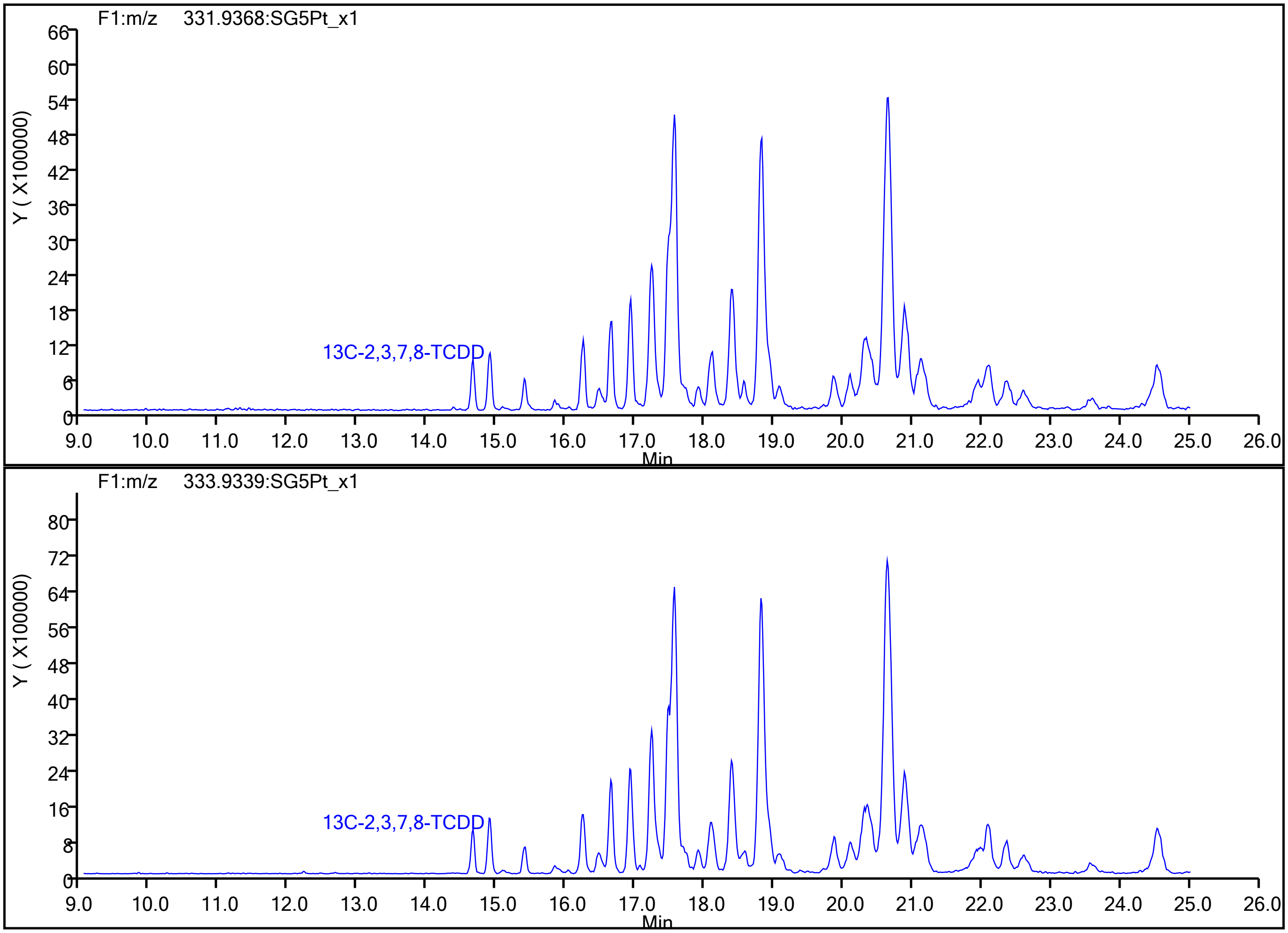

Report Date: 15-Oct-2020 13:36:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_010.d		
Injection Date:	14-Oct-2020 17:07:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	422080	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

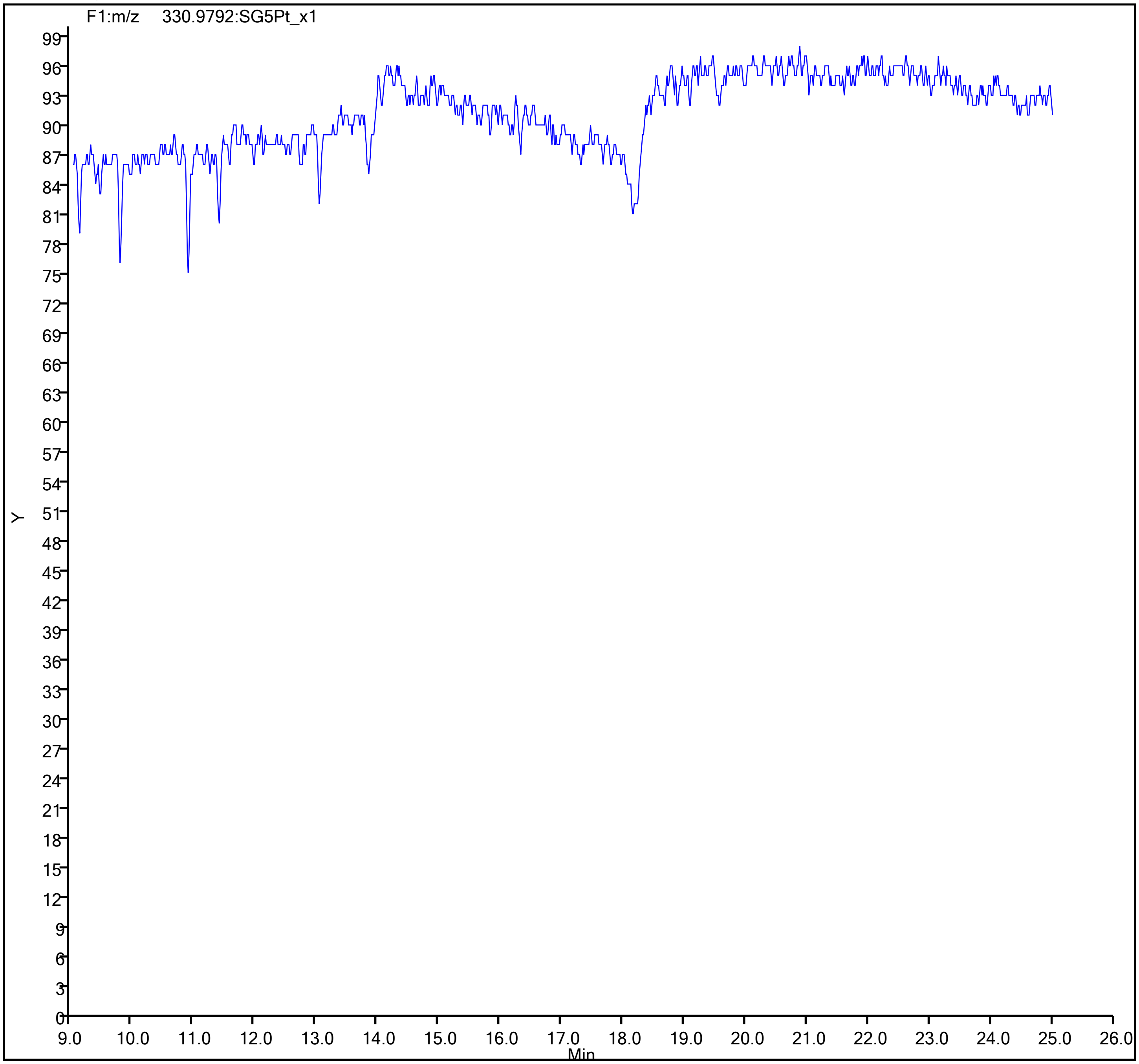

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-5-1 DL Lab Sample ID: 320-65130-18 DL

Matrix: Water Lab File ID: 15oc20dfs1_13.d

Analysis Method: 1613B Date Collected: 09/10/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1039.8(mL) Date Analyzed: 10/15/2020 21:09

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 422239 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	5400		96	30

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		25-164

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Sample Type: Client
Inject. Date: 15-Oct-2020 21:09:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 10.0000
Sample Info: 320-65130-A-18-A (10x)
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2020 11:00:04 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1676

First Level Reviewer: shardaa Date: 16-Oct-2020 10:00:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.552	253392	0.79	2.7E+04	10.0	10.0				
D 13C-2,3,7,8-TCDF	18.650	295924	0.83	1.5883	7.353	7.353	0.3116	0.3116	73.53	
2,3,7,8-TCDF	18.684	2989130	0.82	1.0857	93.0	93.0	0.4288	0.4288		
A Non-2,3,7,8-sub-TCDF	18.294	2226652	0.77	1.0857	69.6	69.3	0.4288	40.3		RQ
S Total TCDF					162.7	162.3	0.4288	0.4288		RQ
D 13C-2,3,7,8-TCDD	19.878	200964	0.85	1.1194	7.085	7.085	0.2392	0.2392	70.85	
$ 37Cl4-2,3,7,8-TCDD	19.930	109213		1.1468	3.758	3.758	0.0333	0.0333	93.96	
2,3,7,8-TCDD	19.913	604699	0.77	1.0810	27.8	27.8	0.1564	0.1564		
A Non-2,3,7,8-sub-TCDD	19.080	49448	0.76	1.0810	2.276	2.276	0.1564	2.276		
S Total TCDD					30.1	30.1	0.1564	0.1564		
D 13C-1,2,3,7,8-PeCDF	25.793	226221	1.49	1.4782	6.040	6.040	0.0390	0.0390	60.40	
1,2,3,7,8-PeCDF	25.818	68515	1.50	1.0547	2.872	2.872	0.0680	0.0680		
D 13C-2,3,4,7,8-PeCDF	27.216	213000	1.56	1.3912	6.042	6.042	0.0414	0.0414	60.42	
2,3,4,7,8-PeCDF	27.241	43963	1.68	1.1035	1.870	1.870	0.0745	0.0745		M
A F1 PeCDFs	22.995						0.0225	0.0225		RQU
A Non-2,3,7,8-sub-PeCDF	26.447	63137	1.55	1.0791	2.697	2.664	0.0710	1.207		RQMa
S Total PeCDF					7.439	7.406	0.0712	0.0712		RQ
D 13C-1,2,3,7,8-PeCDD	27.974	130813	1.48	0.9415	5.484	5.484	0.0846	0.0846	54.84	
1,2,3,7,8-PeCDD	28.024	3629	1.55	1.0680	0.2969	0.2598	0.0546	0.0546		RQM
A Non-2,3,7,8-sub-PeCDD	26.883						0.0546	0.0546		U
S Total PeCDD					0.2969	0.2598	0.0546	0.0546		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.726	171380	0.50	1.1378	7.336	7.336	0.0571	0.0571	73.36	
1,2,3,4,7,8-HxCDF	33.760	106323	1.28	1.2643	4.907	4.907	0.0570	0.0570		
D 13C-1,2,3,6,7,8-HxCDF	33.928	188287	0.55	1.3173	6.961	6.961	0.0493	0.0493	69.61	
1,2,3,6,7,8-HxCDF	33.945	30089	1.19	1.2230	1.307	1.307	0.0519	0.0519		
D 13C-2,3,4,6,7,8-HxCDF	34.888	203992	0.55	1.2457	7.975	7.975	0.0522	0.0522	79.75	
2,3,4,6,7,8-HxCDF	34.888	3948	1.12	1.2464	0.1553	0.1553	0.0392	0.0392		
D 13C-1,2,3,7,8,9-HxCDF	35.899	186110	0.47	1.1840	7.655	7.655	0.0549	0.0549	76.55	
1,2,3,7,8,9-HxCDF	35.899	2102	1.23	1.2638	0.0894	0.0894	0.0395	0.0395		Ma
A Non-2,3,7,8-sub-HxCDF	33.770	10801	1.26	1.2494	0.4612	0.4612	0.0457	0.2941		Ma
S Total HxCDF					6.920	6.920	0.0469	0.0469		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.680	205334	1.28	2.9E+04	10.0	10.0				
D 13C-1,2,3,4,7,8-HxCDD	35.141	140222	1.24	0.8477	8.056	8.056	0.0509	0.0509	80.56	
1,2,3,4,7,8-HxCDD	35.155						0.0171	0.0171		
D 13C-1,2,3,6,7,8-HxCDD	35.276	160023	1.32	0.9979	7.810	7.810	0.0432	0.0432	78.10	
1,2,3,6,7,8-HxCDD	35.290						0.0182	0.0182		
1,2,3,7,8,9-HxCDD	35.694						0.0163	0.0163		
A Non-2,3,7,8-sub-HxCDD	34.296	1025	1.24	1.1211	0.0674	0.0609	0.0172	0.0609		RQ
S Total HxCDD					0.0674	0.0609	0.0172	0.0172		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.863	173156	0.49	0.9884	8.532	8.532	0.0824	0.0824	85.32	
1,2,3,4,6,7,8-HpCDF	37.879	39515	1.05	1.5064	1.515	1.515	0.0268	0.0268		
D 13C-1,2,3,4,7,8,9-HpCDF	39.193	158357	0.49	0.9203	8.380	8.380	0.0885	0.0885	83.80	
1,2,3,4,7,8,9-HpCDF	39.193	12428	0.94	1.4548	0.5395	0.5395	0.0276	0.0276		
A Non-2,3,7,8-sub-HpCDF	38.560	12571	0.93	1.4806	0.5122	0.5122	0.0272	0.5122		M
S Total HpCDF					2.567	2.567	0.0272	0.0272		
D 13C-1,2,3,4,6,7,8-HpCDD	38.873	152909	1.09	0.9556	7.793	7.793	0.0909	0.0909	77.93	
1,2,3,4,6,7,8-HpCDD	38.890	12182	0.96	1.0640	0.7488	0.7488	0.0338	0.0338		
A Non-2,3,7,8-sub-HpCDD	38.941	12616	1.11	1.0640	0.7754	0.7754	0.0338	0.7754		a
S Total HpCDD					1.524	1.524	0.0338	0.0338		
D 13C-OCDD	41.329	259065	0.89	0.7420	17.0	17.0	0.1224	0.1224	85.01	
OCDF	41.413	23593	0.78	1.4296	1.274	1.274	0.0531	0.0531		
OCDD	41.329	169601	0.91	1.1293	11.6	11.6	0.0465	0.0465		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d				
Lims ID:	320-65130-A-18-A				
Client ID:	11215702-Tank#2-valve-5-1				
Sample Type:	Client				
Inject. Date:	15-Oct-2020 21:09:00	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	10.0000		
Sample Info:	320-65130-A-18-A (10x)				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Oct-2020 11:00:04	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1676				

First Level Reviewer: shardaa Date: 16-Oct-2020 10:00:59

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.552	19.527	1		112145	16087	333	832	48		
333.9338	19.535	19.527	0		141247	22448	80	200	281	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.650	18.642	0	0.954	134066	21089	572	1430	37		
317.9389	18.658	18.642	1	0.954	161858	26537	191	477	139	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.684	18.660	1	1.002	1347065	196144	372	930	527		
305.8987	18.675	18.660	1	1.001	1642065	240394	515	1287	467	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.348	18.294	-117	0.877	30187	5293	372	930	14		
305.8987	16.348	18.294	-117	0.877	35192	6918	515	1287	13	0.86(0.65-0.89)	
303.9016	16.786	18.294	-90	0.900	56147	8807	372	930	24		
305.8987	16.786	18.294	-90	0.900	69471	10997	515	1287	21	0.81(0.65-0.89)	
303.9016	17.172	18.294	-67	0.921	39290	6421	372	930	17		
305.8987	17.190	18.294	-66	0.922	62004	9114	515	1287	18	0.63(0.65-0.89)	
	Empc Correction				51025	8338	515	1287	16		
303.9016	17.542	18.294	-45	0.941	61118	9352	372	930	25		
305.8987	17.542	18.294	-45	0.941	76494	11889	515	1287	23	0.80(0.65-0.89)	
303.9016	18.014	18.294	-17	0.966	583573	97066	372	930	261		
305.8987	18.014	18.294	-17	0.966	712001	119083	515	1287	231	0.82(0.65-0.89)	
303.9016	18.383	18.294	5	0.986	28532	4954	372	930	13		
305.8987	18.383	18.294	5	0.986	38106	5674	515	1287	11	0.75(0.65-0.89)	
303.9016	19.414	18.294	67	1.041	93948	13169	372	930	35		
305.8987	19.414	18.294	67	1.041	111422	16225	515	1287	32	0.84(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.784	18.294	89	1.061	20129	3105	372	930	8		
305.8987	19.801	18.294	90	1.062	25273	3589	515	1287	7	0.80(0.65-0.89)	
303.9016	21.760	18.294	207	1.167	84980	12018	372	930	32		
305.8987	21.760	18.294	207	1.167	109764	14990	515	1287	29	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.878	19.879	0	1.017	92279	13997	333	832	42		
333.9338	19.895	19.879	1	1.018	108685	15097	80	200	189	0.85(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.930	19.905	1	1.019	109213	14917	59	147	253		
2,3,7,8-TCDD											
319.8965	19.913	19.914	0	1.002	263131	38310	123	307	311		
321.8936	19.921	19.914	0	1.002	341568	50153	74	185	678	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.540	19.080	87	1.033	21320	3055	123	307	25		
321.8936	20.557	19.080	88	1.034	28128	3973	74	185	54	0.76(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.793	25.790	0	1.319	135223	23960	45	112	532		
353.8970	25.801	25.790	1	1.320	90998	16469	44	110	374	1.49(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.818	25.815	0	1.001	41154	6939	42	105	165		
341.8567	25.818	25.815	0	1.001	27361	5067	74	185	68	1.50(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.216	27.213	0	1.392	129790	21796	45	112	484		
353.8970	27.233	27.213	1	1.393	83210	13495	44	110	307	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	27.241	27.238	0	1.001	27530	4746	42	105	113		
341.8567	27.258	27.238	1	1.002	16433	2735	74	185	37	1.68(1.32-1.78)	M
A F1 PeCDFs											U
339.8597	22.995	22.995	0	0.892	77	36	2	5			
341.8567	22.995	22.995	0	0.892	575	145	35	87		0.13(1.32-1.78)	
	Empc Correction				49	23	35	87	0		
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	24.437	26.447	-120	0.947	16952	3360	42	105	80		
341.8567	24.437	26.447	-120	0.947	11652	2151	74	185	29	1.45(1.32-1.78)	
339.8597	25.692	26.447	-45	0.996	2123	659	42	105	16		
341.8567	25.683	26.447	-46	0.996	2138	618	74	185	8	0.99(1.32-1.78)	
	Empc Correction				1369	425	74	185	6		
339.8597	26.374	26.447	-4	1.023	12160	1940	42	105	46		
341.8567	26.374	26.447	-4	1.023	7398	1341	74	185	18	1.64(1.32-1.78)	
339.8597	27.553	26.447	66	1.068	7276	974	42	105	23		M
341.8567	27.544	26.447	66	1.068	4207	674	74	185	9	1.73(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.974	27.971	0	1.431	78084	11276	43	107	262		
369.8919	27.991	27.971	1	1.432	52729	7948	80	200	99	1.48(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											RQM
355.8546	28.024	27.996	2	1.002	2206	498	41	102	12		M
357.8516	28.007	27.996	1	1.001	1942	348	4	10	87	1.14(1.32-1.78)	M
	Empc Correction				1423	321	4	10	80		
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.883						41	102			
357.8516	26.883						4	10			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.726	33.733	0	0.945	57469	10771	46	115	234		
385.8610	33.718	33.733	-1	0.945	113911	20031	85	212	236	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.760	33.750	1	1.001	59601	11829	55	137	215		
375.8178	33.743	33.750	0	1.001	46722	8808	34	85	259	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.928	33.927	0	0.951	66431	12333	46	115	268		
385.8610	33.928	33.927	0	0.951	121856	22618	85	212	266	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.945	33.944	0	1.000	16338	2798	55	137	51		
375.8178	33.945	33.944	0	1.000	13751	2344	34	85	69	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.888	34.895	0	0.978	72651	17365	46	115	378		
385.8610	34.896	34.895	0	0.978	131341	28026	85	212	330	0.55(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.888	34.912	-1	1.000	2090	380	55	137	7		
375.8178	34.913	34.912	0	1.001	1858	474	34	85	14	1.12(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.899	35.889	1	1.006	59459	13858	46	115	301		
385.8610	35.890	35.889	0	1.006	126651	30560	85	212	360	0.47(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	35.899	35.905	0	1.000	1159	294	55	137	5		M
375.8178	35.907	35.905	0	1.000	943	301	34	85	9	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	32.985	33.770	-47	0.978	2217	396	55	137	7		
375.8178	32.977	33.770	-47	0.978	1696	310	34	85	9	1.31(1.05-1.43)	
373.8208	36.017	33.770	135	1.068	3800	1081	55	137	20		M
375.8178	36.017	33.770	135	1.068	3088	743	34	85	22	1.23(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.680	35.678	0		115374	26879	49	122	549		
403.8529	35.680	35.678	0		89960	23439	38	95	617	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.141	35.139	0	0.985	77498	17790	49	122	363		
403.8529	35.141	35.139	0	0.985	62724	16131	38	95	425	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.156						6	15			
391.8127	35.156						21	52			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.276	35.266	1	0.989	90926	20834	49	122	425		
403.8529	35.276	35.266	1	0.989	69097	14886	38	95	392	1.32(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.291						6	15			
391.8127	35.291						21	52			
1,2,3,7,8,9-HxCDD											
389.8158	35.695						6	15			
391.8127	35.695						21	52			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	34.273	34.296	-1	0.972	677	139	6	15	23		
	Empc Correction				567	172	6	15	29		
391.8127	34.240	34.296	-3	0.971	458	139	21	52	7	1.48(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.863	37.863	0	1.061	56886	18065	77	192	235		
419.8220	37.863	37.863	0	1.061	116270	35249	87	217	405	0.49(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.879	37.879	0	1.000	20210	6765	51	127	133		
409.7788	37.879	37.879	0	1.000	19305	5763	35	87	165	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.193	39.184	1	1.098	51743	17279	77	192	224		
419.8220	39.184	39.184	0	1.098	106614	36235	87	217	416	0.49(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.193	39.201	-1	1.000	6012	1947	51	127	38		
409.7788	39.201	39.201	0	1.000	6416	2304	35	87	66	0.94(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7817	38.267	38.560	-18	1.011	6060	1902	51	127	37		M
409.7788	38.267	38.560	-18	1.011	6511	2297	35	87	66	0.93(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.873	38.873	0	1.090	79824	25851	113	282	229		
437.8140	38.873	38.873	0	1.090	73085	24764	62	155	399	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.890	38.890	0	1.000	5975	1808	43	107	42		
425.7737	38.890	38.890	0	1.000	6207	2059	30	75	69	0.96(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.216	38.941	-43	0.983	6624	2006	43	107	47		a
425.7737	38.208	38.941	-44	0.983	5992	1910	30	75	64	1.11(0.88-1.20)	
13C-OCDD											
469.7780	41.329	41.326	0	1.158	121774	40043	128	320	313		
471.7750	41.329	41.326	0	1.158	137291	45617	55	137	829	0.89(0.76-1.02)	
OCDF											
441.7428	41.413	41.411	0	1.002	10302	3278	43	107	76		
443.7399	41.405	41.411	0	1.002	13291	3485	87	217	40	0.78(0.76-1.02)	
OCDD											
457.7377	41.329	41.335	0	1.000	81018	25744	44	110	585		
459.7348	41.337	41.335	0	1.000	88583	28736	46	115	625	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Inject. Date: 15-Oct-2020 21:09:00
Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 12

Non-2,3,7,8-sub-TCDF, RT: 18.294

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	295924	47626

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		10.000	295924	47626

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.348	30187	5293	35192	6918	2.04	0.86	
16.786	56147	8807	69471	10997	3.91	0.81	
17.172	39290	6421	62004	9114	3.15	0.63	RQ
17.172	39290	6421	51025	8338	2.81		Empc Correction
17.542	61118	9352	76494	11889	4.28	0.80	
18.014	583573	97066	712001	119083	40.3	0.82	
18.383	28532	4954	38106	5674	2.07	0.75	
19.414	93948	13169	111422	16225	6.39	0.84	
19.784	20129	3105	25273	3589	1.41	0.80	
21.760	84980	12018	109764	14990	6.06	0.77	
Signal Totals:							
	997904	160185	1228748	197703			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2237631	358664				0.80	RQ
	2226652	357888					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 69.649 = (2237631 * 10.000) / (295924 * 1.086)
Empc Amount: 69.308 = (2226652 * 10.000) / (295924 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Inject. Date: 15-Oct-2020 21:09:00
Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 12

Non-2,3,7,8-sub-TCDD, RT: 19.080

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	200964	29094

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		10.000	200964	29094

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.540	21320	3055	28128	3973	2.28	0.76	
Signal Totals:							
	21320	3055	28128	3973			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	49448	7028				0.76	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.276 = (49448 * 10.000) / (200964 * 1.081)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	15-Oct-2020 21:09:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	12

F1 PeCDFs, RT: 22.995

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	226221	40429
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	213000	35291

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		10.000	219610	37860

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.572	77	36	575	145	0.0275	0.13	RQ
23.572	77	36	49	23	0.005317		Empc Correction

Compound is Marked ND

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d
Lims ID: 320-65130-A-18-A
Client ID: 11215702-Tank#2-valve-5-1
Inject. Date: 15-Oct-2020 21:09:00
Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 12

Non-2,3,7,8-sub-PeCDF, RT: 26.447

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	226221	40429
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	213000	35291

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		10.000	219610	37860

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.437	16952	3360	11652	2151	1.21	1.45	
25.692	2123	659	2138	618	0.1798	0.99	RQ
25.692	2123	659	1369	425	0.1474		Empc Correction
26.374	12160	1940	7398	1341	0.8253	1.64	
27.553	7276	974	4207	674	0.4846	1.73	Ma
Signal Totals:							
	38511	6933	24626	4591			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	63906	11717				1.52	RQMa
	63137	11524					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.697 = (63906 * 10.000) / (219610 * 1.079)
Empc Amount: 2.664 = (63137 * 10.000) / (219610 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	15-Oct-2020 21:09:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDD, RT: 26.883

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	130813	19224

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		10.000	130813	19224

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	15-Oct-2020 21:09:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDF, RT: 33.770

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	171380	30802
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	188287	34951
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	203992	45391
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	186110	44418

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		10.000	187442	38890

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
32.985	2217	396	1696	310	0.1671	1.31	
36.017	3800	1081	3088	743	0.2941	1.23	M
Signal Totals:							
	6017	1477	4784	1053			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10801	2530				1.26	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4612 = (10801 * 10.000) / (187442 * 1.249)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	15-Oct-2020 21:09:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 34.296

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	140222	33921
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	160023	35720
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		10.000	150122	34820

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.273	677	139	458	139	0.0674	1.48	RQ
34.273	567	172	458	139	0.0609		Empc Correction
Signal Totals:							
	567	172	458	139			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1135	278				1.48	RQ
	1025	311					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0674 = (1135 * 10.000) / (150122 * 1.121)
Empc Amount: 0.0609 = (1025 * 10.000) / (150122 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	15-Oct-2020 21:09:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDF, RT: 38.560

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	173156	53314
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	158357	53514

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		10.000	165756	53414

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.267	6060	1902	6511	2297	0.5122	0.93	M
Signal Totals:							
	6060	1902	6511	2297			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12571	4199				0.93	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5122 = (12571 * 10.000) / (165756 * 1.481)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Lims ID:	320-65130-A-18-A		
Client ID:	11215702-Tank#2-valve-5-1		
Inject. Date:	15-Oct-2020 21:09:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	152909	50615

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		10.000	152909	50615

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.216	6624	2006	5992	1910	0.7754	1.11	a
Signal Totals:							
	6624	2006	5992	1910			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12616	3916				1.11	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7754 = (12616 * 10.000) / (152909 * 1.064)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Injection Date:	15-Oct-2020 21:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	422239	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

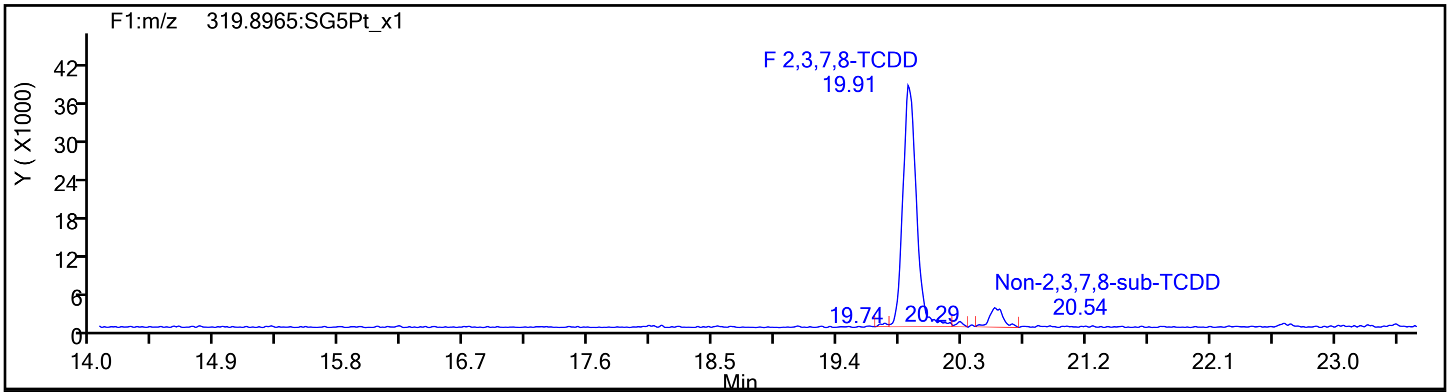

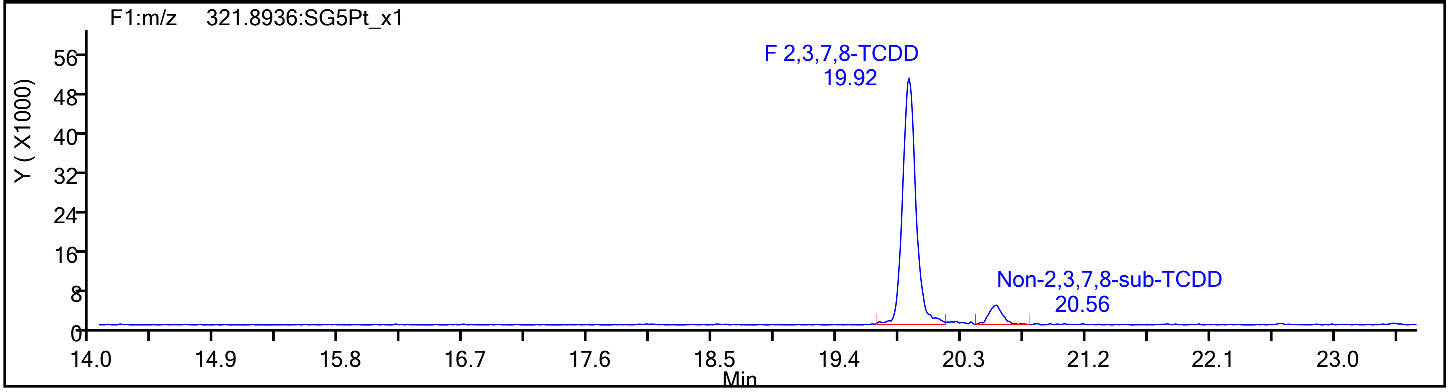

TCDD Standards

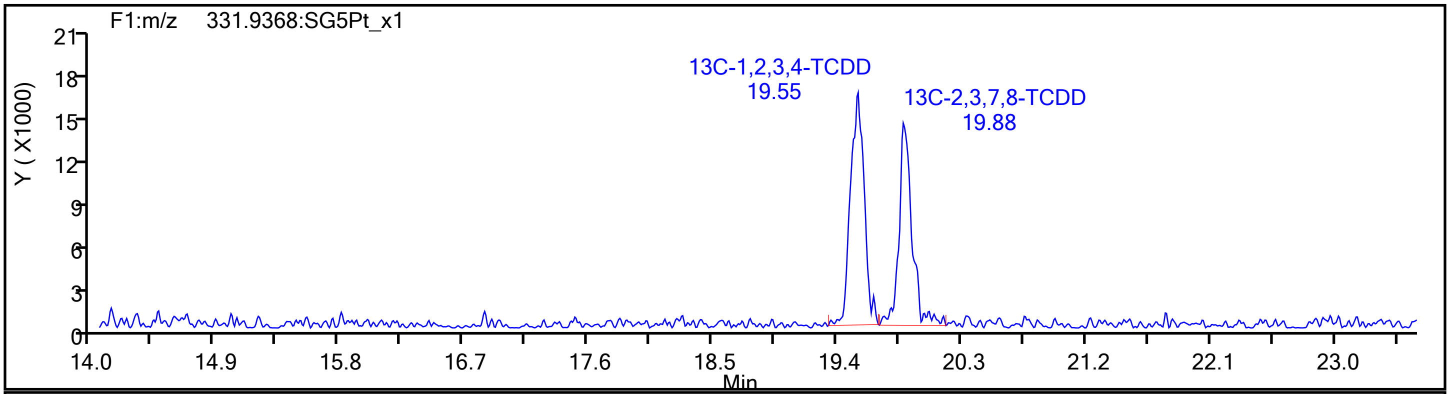

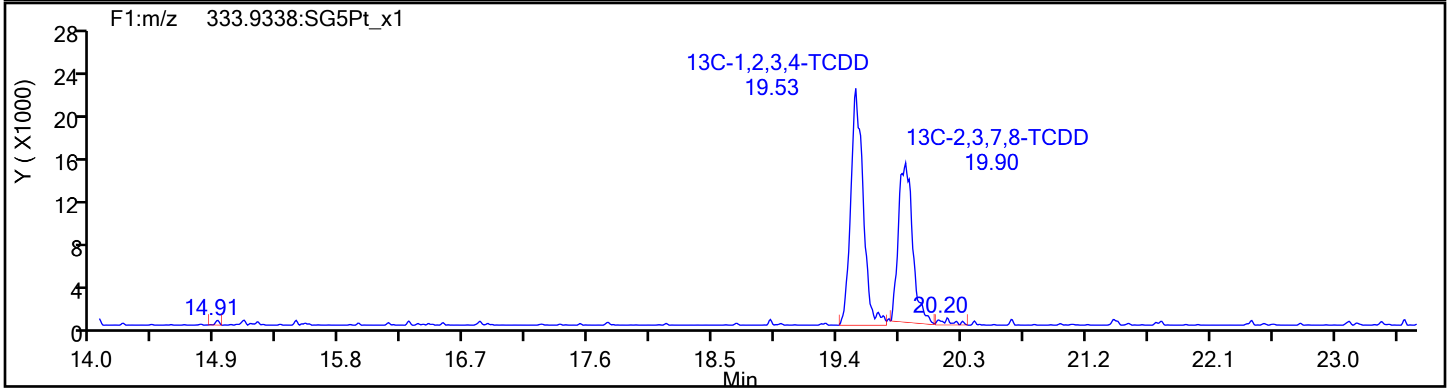

Report Date: 19-Oct-2020 11:00:05 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d

Injection Date: 15-Oct-2020 21:09:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 422239

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

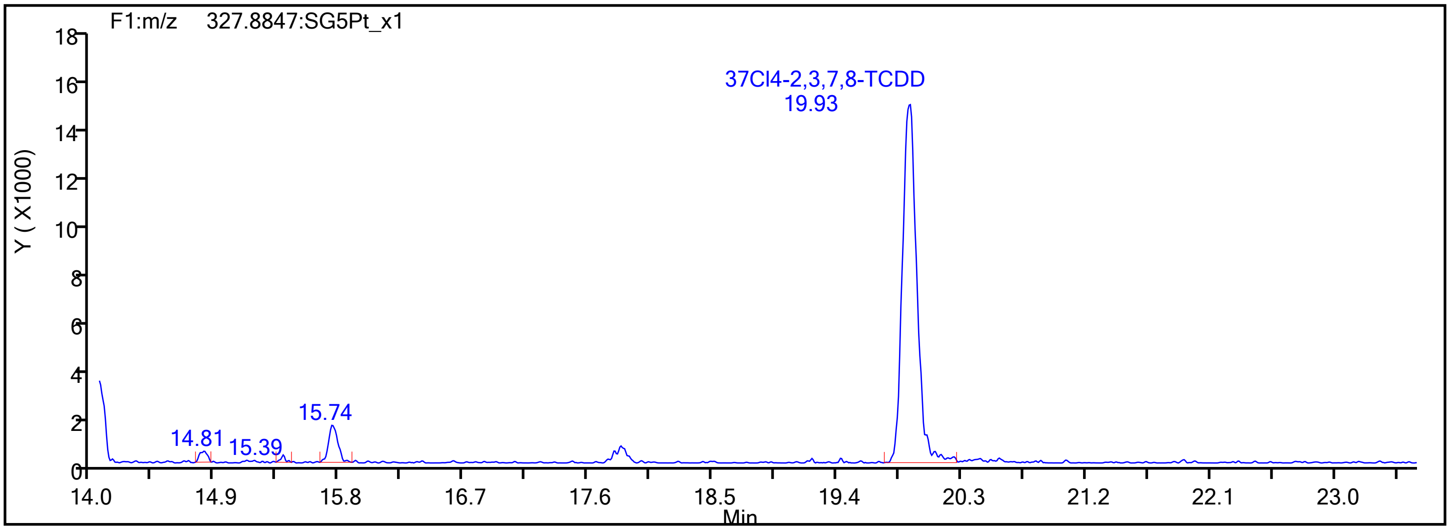

37Cl4-TCDD Standards

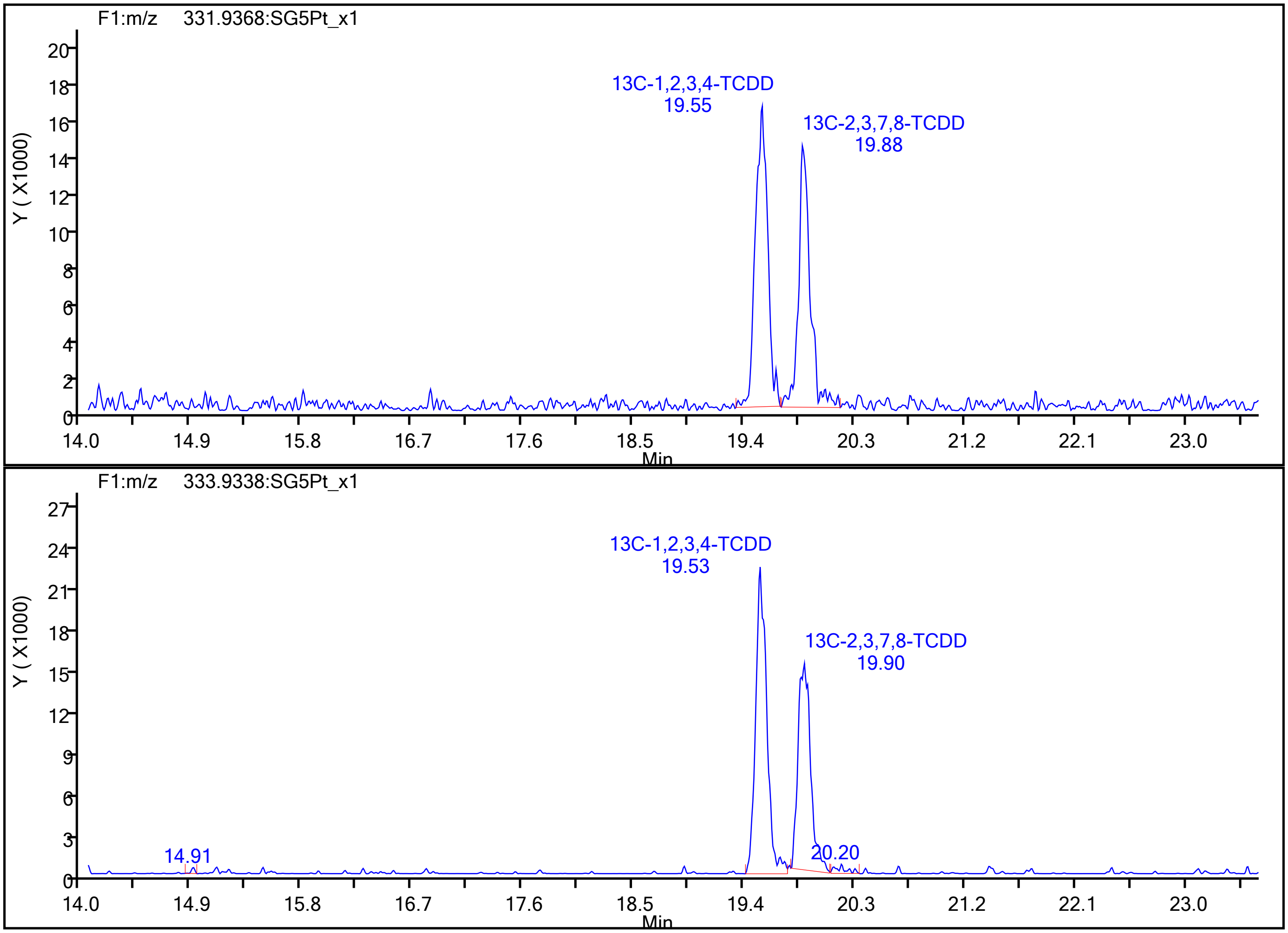

Report Date: 19-Oct-2020 11:00:06 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d

Injection Date: 15-Oct-2020 21:09:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-1

Worklist#: 422239

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

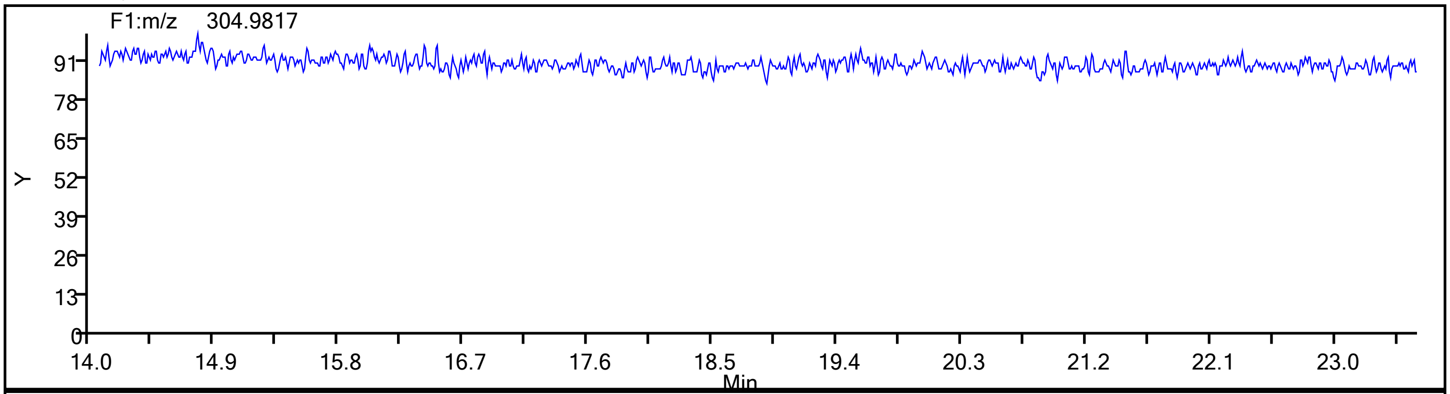

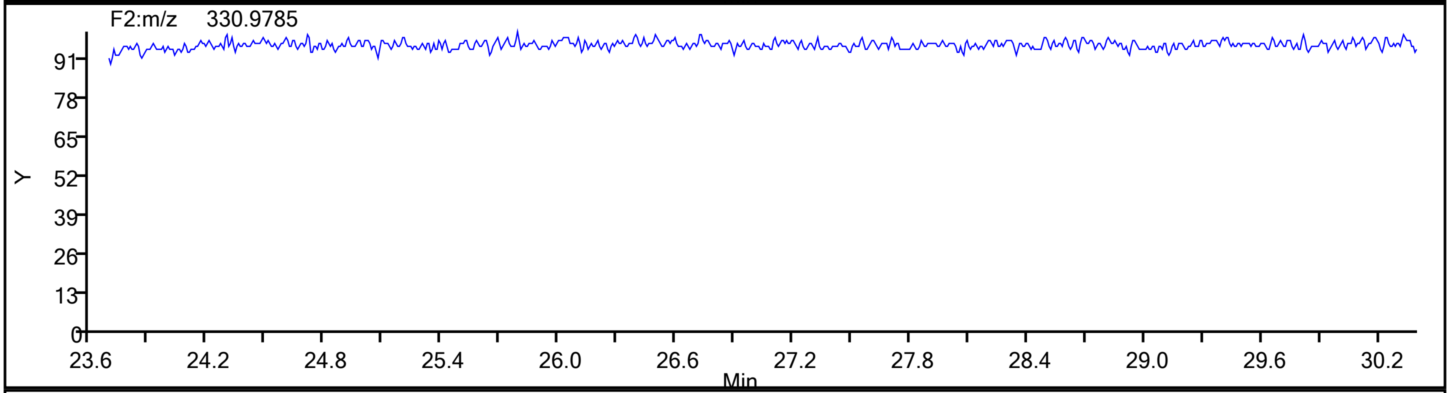

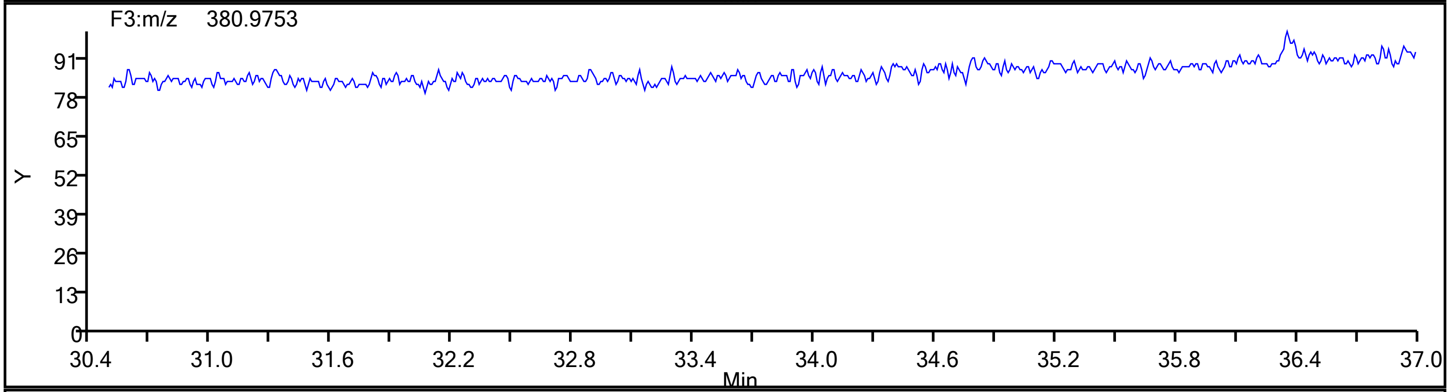

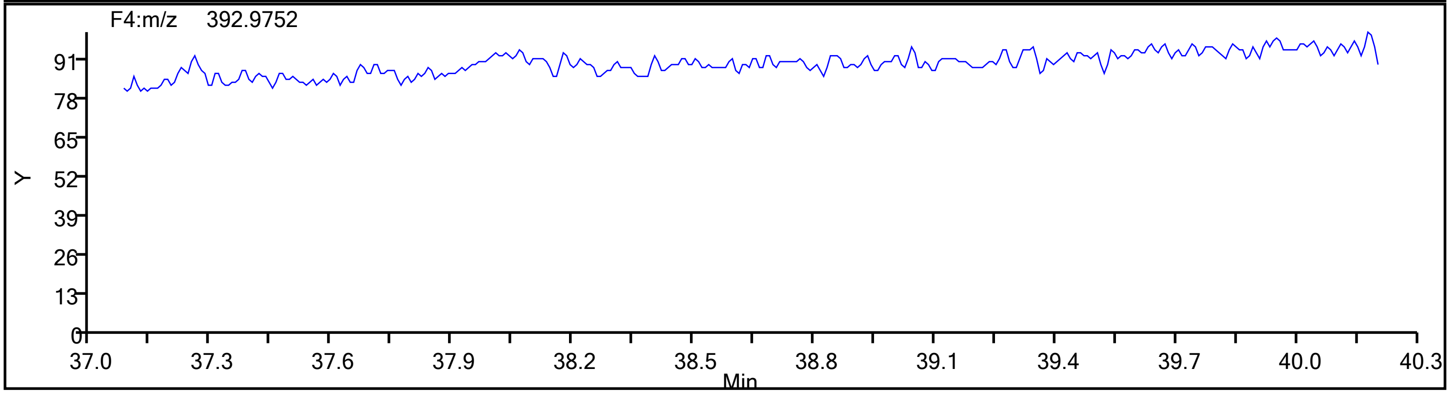

Report Date: 19-Oct-2020 11:00:06 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_13.d		
Injection Date:	15-Oct-2020 21:09:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-1		
Worklist#:	422239	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

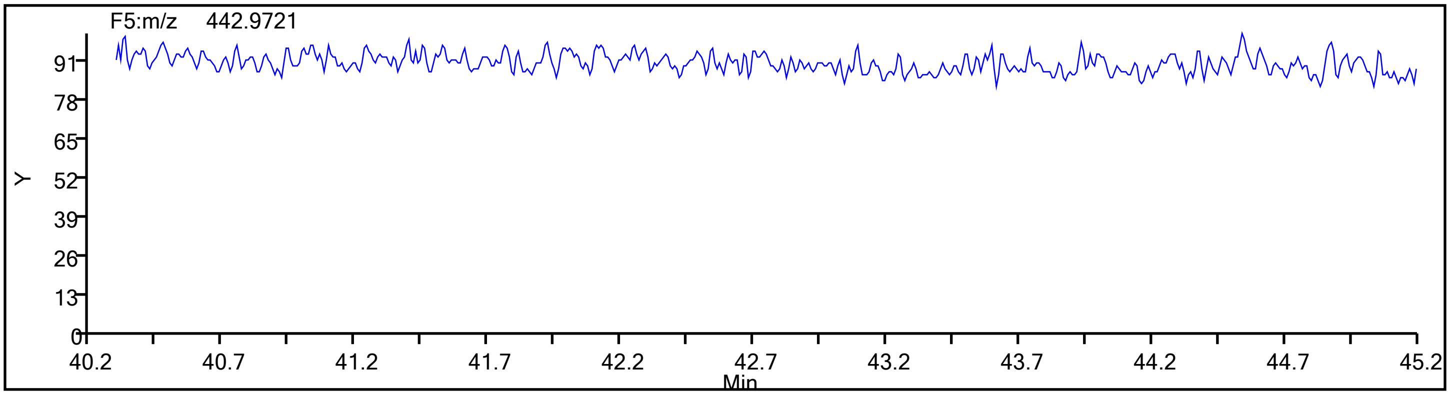

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-2-2

Lab Sample ID: 320-65130-19

Matrix: Water

Lab File ID: 09oc20dfs1_26.d

Analysis Method: 1613B

Date Collected: 09/11/2020 09:30

Extract. Method: 1613B

Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1045.9(mL)

Date Analyzed: 10/10/2020 12:33

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	850		9.6	3.7
40321-76-4	1,2,3,7,8-PeCDD	9.5	J	48	1.4
57117-41-6	1,2,3,7,8-PeCDF	83		48	1.7
57117-31-4	2,3,4,7,8-PeCDF	64		48	1.9
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J B	48	0.36
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.44
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.36
70648-26-9	1,2,3,4,7,8-HxCDF	190		48	1.5
57117-44-9	1,2,3,6,7,8-HxCDF	48		48	1.4
72918-21-9	1,2,3,7,8,9-HxCDF	3.8	J B	48	1.1
60851-34-5	2,3,4,6,7,8-HxCDF	5.5	J	48	1.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	27	J	48	0.56
67562-39-4	1,2,3,4,6,7,8-HpCDF	73	B	48	0.49
55673-89-7	1,2,3,4,7,8,9-HpCDF	25	J B	48	0.50
3268-87-9	OCDD	560	B	96	0.76
39001-02-0	OCDF	51	J B	96	0.79
41903-57-5	Total TCDD	910		9.6	3.7
30402-14-3	Total TCDF	4400	q B	9.6	8.3
36088-22-9	Total PeCDD	9.5	J	48	1.4
30402-15-4	Total PeCDF	230	q	48	1.8
34465-46-8	Total HxCDD	1.9	J B	48	0.39
55684-94-1	Total HxCDF	260	B	48	1.3
37871-00-4	Total HpCDD	59		48	0.56
38998-75-3	Total HpCDF	120	B	48	0.50

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-2-2	Lab Sample ID: 320-65130-19
Matrix: Water	Lab File ID: 09oc20dfs1_26.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1045.9(mL)	Date Analyzed: 10/10/2020 12:33
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		25-164
89059-46-1	13C-2,3,7,8-TCDF	62		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	66		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	67		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	66		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	86		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	62		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	65		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	64		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	66		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	71		26-138
114423-97-1	13C-OCDD	70		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	92		35-197

Report Date: 12-Oct-2020 11:31:59 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d				
Lims ID:	320-65130-A-19-A				
Client ID:	11215702-Tank#2-valve-2-2				
Sample Type:	Client				
Inject. Date:	10-Oct-2020 12:33:00	ALS Bottle#:	0	Worklist Smp#:	24
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-19-A				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Oct-2020 11:30:25	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1627				

First Level Reviewer: messecara Date: 10-Oct-2020 23:20:05

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.663	2384412	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.761	2347367	0.80	1.5883	62.0	62.0	0.4152	0.4152	61.98	
2,3,7,8-TCDF	18.786	3422367	0.78	1.0857	134.3	134.3	0.4332	0.4332		
A Non-2,3,7,8-sub-TCDF	18.413	2496784	0.77	1.0857	98.6	98.0	0.4332	54.9		RQM
S Total TCDF					232.9	232.3	0.4332	0.4332		RQ
D 13C-2,3,7,8-TCDD	20.015	1793217	0.79	1.1194	67.2	67.2	0.3401	0.3401	67.18	
2,3,7,8-TCDD	20.032	858603	0.77	1.0810	44.3	44.3	0.1956	0.1956		M
$ 37Cl4-2,3,7,8-TCDD	20.041	1006777		1.1468	36.8	36.8	0.0790	0.0790	92.05	
A Non-2,3,7,8-sub-TCDD	19.200	65458	0.83	1.0810	3.377	3.377	0.1956	3.377		
S Total TCDD					47.7	47.7	0.1956	0.1956		
D 13C-1,2,3,7,8-PeCDF	25.885	2363298	1.58	1.4782	67.1	67.1	0.2362	0.2362	67.05	
1,2,3,7,8-PeCDF	25.902	108446	1.59	1.0547	4.351	4.351	0.0896	0.0896		M
D 13C-2,3,4,7,8-PeCDF	27.300	2173243	1.61	1.3912	65.5	65.5	0.2510	0.2510	65.51	
2,3,4,7,8-PeCDF	27.334	80337	1.61	1.1035	3.350	3.350	0.1012	0.1012		
A F1 PeCDFs	23.059						0.0177	0.0177		
A Non-2,3,7,8-sub-PeCDF	26.475	111650	1.55	1.0791	4.625	4.561	0.0949	2.178		RQM
S Total PeCDF					12.3	12.3	0.0954	0.0954		RQ
D 13C-1,2,3,7,8-PeCDD	28.059	1474203	1.58	0.9415	65.7	65.7	0.1274	0.1274	65.67	
1,2,3,7,8-PeCDD	28.092	7842	1.45	1.0680	0.4981	0.4981	0.0727	0.0727		M
A Non-2,3,7,8-sub-PeCDD	26.975						0.0727	0.0727		
S Total PeCDD					0.4981	0.4981	0.0727	0.0727		
D 13C-1,2,3,4,7,8-HxCDF	33.799	1826353	0.53	1.1378	62.3	62.3	0.1698	0.1698	62.29	
1,2,3,4,7,8-HxCDF	33.824	228293	1.23	1.2643	9.887	9.887	0.0769	0.0769		
D 13C-1,2,3,6,7,8-HxCDF	33.993	2209830	0.53	1.3173	65.1	65.1	0.1466	0.1466	65.10	
1,2,3,6,7,8-HxCDF	34.010	67720	1.33	1.2230	2.506	2.506	0.0716	0.0716		
D 13C-2,3,4,6,7,8-HxCDF	34.945	2121571	0.52	1.2457	66.1	66.1	0.1551	0.1551	66.09	
2,3,4,6,7,8-HxCDF	34.970	7602	1.13	1.2464	0.2875	0.2875	0.0599	0.0599		M
D 13C-1,2,3,7,8,9-HxCDF	35.939	1943724	0.50	1.1840	63.7	63.7	0.1632	0.1632	63.70	
1,2,3,7,8,9-HxCDF	35.948	4934	1.35	1.2638	0.2009	0.2009	0.0593	0.0593		
A Non-2,3,7,8-sub-HxCDF	33.855	13858	1.35	1.2494	0.5476	0.5476	0.0661	0.5476		
S Total HxCDF					13.4	13.4	0.0669	0.0669		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.729	2577089	1.29	2.9E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.198	1884327	1.30	0.8477	86.3	86.3	0.1683	0.1683	86.25	
1,2,3,4,7,8-HxCDD	35.223	2156	1.18	1.1561	0.0990	0.0990	0.0186	0.0186		M
D 13C-1,2,3,6,7,8-HxCDD	35.324	1989959	1.26	0.9979	77.4	77.4	0.1430	0.1430	77.38	
1,2,3,6,7,8-HxCDD	35.223						0.0229	0.0229		QMU
1,2,3,7,8,9-HxCDD	35.746						0.0191	0.0191		RQU
A Non-2,3,7,8-sub-HxCDD	34.365						0.0201	0.0503		RQU
S Total HxCDD					0.0990	0.0990	0.0202	0.0202		
D 13C-1,2,3,4,6,7,8-HpCDF	37.895	1870697	0.46	0.9884	73.4	73.4	0.3252	0.3252	73.44	
1,2,3,4,6,7,8-HpCDF	37.911	108092	1.08	1.5064	3.836	3.836	0.0257	0.0257		
D 13C-1,2,3,4,7,8,9-HpCDF	39.210	1685679	0.45	0.9203	71.1	71.1	0.3493	0.3493	71.07	
1,2,3,4,7,8,9-HpCDF	39.218	32408	0.89	1.4548	1.322	1.322	0.0263	0.0263		
A Non-2,3,7,8-sub-HpCDF	38.593	31005	1.01	1.4806	1.178	1.178	0.0260	1.178		
S Total HpCDF					6.335	6.335	0.0260	0.0260		
D 13C-1,2,3,4,6,7,8-HpCDD	38.898	1800127	1.08	0.9556	73.1	73.1	0.1658	0.1658	73.09	
1,2,3,4,6,7,8-HpCDD	38.915	26575	0.98	1.0640	1.387	1.387	0.0291	0.0291		
A Non-2,3,7,8-sub-HpCDD	38.941	32727	0.97	1.0640	1.709	1.709	0.0291	1.709		M
S Total HpCDD					3.096	3.096	0.0291	0.0291		
D 13C-OCDD	41.348	2692222	0.89	0.7420	140.8	140.8	0.1991	0.1991	70.39	
OCDF	41.441	51173	0.90	1.4296	2.659	2.659	0.0412	0.0412		
OCDD	41.357	447393	0.86	1.1293	29.4	29.4	0.0400	0.0400		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Lims ID: 320-65130-A-19-A
Client ID: 11215702-Tank#2-valve-2-2
Sample Type: Client
Inject. Date: 10-Oct-2020 12:33:00 ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-19-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: messecara Date: 10-Oct-2020 23:20:05

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.663	19.716	-3		1049148	158154	355	887	446		
333.9338	19.663	19.716	-3		1335264	200427	191	477	1049	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.761	18.830	-4	0.954	1042163	161893	652	1630	248		
317.9389	18.761	18.830	-4	0.954	1305204	201707	294	735	686	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.786	18.865	-5	1.001	1504791	216572	376	940	576		
305.8987	18.786	18.865	-5	1.001	1917576	272380	308	770	884	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQM
303.9016	16.441	18.413	-118	0.876	46256	8102	376	940	22		
305.8987	16.433	18.413	-119	0.876	60483	10157	308	770	33	0.76(0.65-0.89)	
303.9016	16.896	18.413	-91	0.901	78701	11397	376	940	30		
	Empc Correction				63489	11040	376	940	29		
305.8987	16.888	18.413	-91	0.900	82454	14338	308	770	47	0.95(0.65-0.89)	
303.9016	17.292	18.413	-67	0.922	58865	9124	376	940	24		
305.8987	17.300	18.413	-67	0.922	80714	11929	308	770	39	0.73(0.65-0.89)	
303.9016	17.635	18.413	-47	0.940	68734	10455	376	940	28		
305.8987	17.635	18.413	-47	0.940	87859	12816	308	770	42	0.78(0.65-0.89)	
303.9016	18.116	18.413	-18	0.966	620541	99544	376	940	265		
305.8987	18.116	18.413	-18	0.966	777341	122477	308	770	398	0.80(0.65-0.89)	
303.9016	18.512	18.413	6	0.987	36140	5691	376	940	15		
305.8987	18.486	18.413	4	0.985	51010	6758	308	770	22	0.71(0.65-0.89)	
303.9016	19.517	18.413	66	1.040	108076	14876	376	940	40		M
305.8987	19.517	18.413	66	1.040	144311	19416	308	770	63	0.75(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	21.896	18.413	209	1.167	91282	12807	376	940	34		
305.8987	21.896	18.413	209	1.167	119229	14427	308	770	47	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.015	20.067	-3	1.018	792371	109601	355	887	309		
333.9338	20.015	20.067	-3	1.018	1000846	138639	191	477	726	0.79(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	20.032	20.101	-4	1.001	372490	51660	156	390	331		M
321.8936	20.041	20.101	-4	1.001	486113	68929	54	135	1276	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.041	20.103	-4	1.019	1006777	143504	130	325	1104		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.676	19.200	88	1.033	29734	3575	156	390	23		
321.8936	20.650	19.200	87	1.032	35724	4484	54	135	83	0.83(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.885	25.934	-3	1.316	1446276	241562	304	760	795		
353.8970	25.885	25.934	-3	1.316	917022	155426	197	492	789	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.902	25.951	-3	1.001	66604	11143	54	135	206		
341.8567	25.902	25.951	-3	1.001	41842	7279	96	240	76	1.59(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.300	27.359	-3	1.388	1340841	204989	304	760	674		
353.8970	27.309	27.359	-3	1.389	832402	130662	197	492	663	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.334	27.376	-2	1.001	49509	8239	54	135	153		
341.8567	27.343	27.376	-2	1.002	30828	4837	96	240	50	1.61(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.059						1	2			
341.8567	23.059						27	67			
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	24.528	26.475	-117	0.948	33398	5986	54	135	111		M
341.8567	24.536	26.475	-116	0.948	19909	3725	96	240	39	1.68(1.32-1.78)	
339.8597	25.775	26.475	-42	0.996	5402	1292	54	135	24		
341.8567	25.775	26.475	-42	0.996	3438	934	96	240	10	1.57(1.32-1.78)	
339.8597	26.458	26.475	-1	1.022	19734	3292	54	135	61		
341.8567	26.432	26.475	-3	1.021	13212	2192	96	240	23	1.49(1.32-1.78)	
339.8597	27.646	26.475	70	1.068	11614	1681	54	135	31		
	Empc Correction				10064	1757	54	135	33		
341.8567	27.638	26.475	70	1.068	6493	1134	96	240	12	1.79(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.059	28.109	-3	1.427	901802	127714	110	275	1161		
369.8919	28.067	28.109	-3	1.427	572401	84669	62	155	1366	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.092	28.134	-3	1.001	4643	788	50	125	16		M
357.8516	28.118	28.134	-1	1.002	3199	497	16	40	31	1.45(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						50	125			
357.8516	26.975						16	40			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.799	33.838	-2	0.946	629266	122309	151	377	810		
385.8610	33.799	33.838	-2	0.946	1197087	224445	305	762	736	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.824	33.855	-2	1.001	125900	22822	88	220	259		
375.8178	33.816	33.855	-2	1.000	102393	18494	47	117	393	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.993	34.024	-2	0.951	764882	132058	151	377	875		
385.8610	33.993	34.024	-2	0.951	1444948	252636	305	762	828	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.010	34.049	-2	1.000	38644	6512	88	220	74		
375.8178	34.018	34.049	-2	1.001	29076	4792	47	117	102	1.33(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.945	34.976	-2	0.978	724906	153349	151	377	1016		
385.8610	34.945	34.976	-2	0.978	1396665	297829	305	762	976	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	34.970	35.001	-2	1.001	4034	917	88	220	10		M
375.8178	34.979	35.001	-1	1.001	3568	886	47	117	19	1.13(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.939	35.962	-1	1.006	651403	149170	151	377	988		
385.8610	35.939	35.962	-1	1.006	1292321	300724	305	762	986	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.948	35.979	-2	1.000	2833	839	88	220	10		
375.8178	35.956	35.979	-1	1.000	2101	555	47	117	12	1.35(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	36.074	33.855	133	1.067	7965	1982	88	220	23		
375.8178	36.066	33.855	132	1.067	5893	1394	47	117	30	1.35(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.729	35.760	-2		1450883	334762	193	482	1735		a
403.8529	35.729	35.760	-2		1126206	255378	144	360	1773	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.198	35.220	-1	0.985	1066039	267508	193	482	1386		
403.8529	35.198	35.220	-1	0.985	818288	196481	144	360	1364	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.223	35.237	-1	1.001	1168	326	11	27	30		
391.8127	35.181	35.237	-3	1.000	988	231	29	72	8	1.18(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.324	35.355	-2	0.989	1107815	235420	193	482	1220		
403.8529	35.324	35.355	-2	0.989	882144	189756	144	360	1318	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											QMU
389.8158	35.372						11	27			
391.8127	35.372						29	72			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDD											RQU
389.8158	35.768						11	27			
391.8127	35.768						29	72			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	32.973	34.365	-83	0.933	1350	332	11	27	30		
	Empc Correction				1111	198	11	27	0		
391.8127	32.973	34.365	-83	0.933	896	160	29	72	6	1.51(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.895	37.927	-2	1.061	592288	179027	270	675	663		
419.8220	37.895	37.927	-2	1.061	1278409	382518	489	1222	782	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.911	37.935	-1	1.000	56080	16438	50	125	329		
409.7788	37.903	37.935	-2	1.000	52012	15781	37	92	427	1.08(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.210	39.233	-1	1.097	522135	179141	270	675	663		
419.8220	39.210	39.233	-1	1.097	1163544	388019	489	1222	793	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.218	39.250	-2	1.000	15222	5006	50	125	100		
409.7788	39.218	39.250	-2	1.000	17186	5900	37	92	159	0.89(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.299	38.593	-18	1.011	15591	4318	50	125	86		
409.7788	38.291	38.593	-18	1.010	15414	4526	37	92	122	1.01(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.898	38.921	-1	1.089	934043	304080	208	520	1462		
437.8140	38.898	38.921	-1	1.089	866084	283960	166	415	1711	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.915	38.938	-1	1.000	13180	4262	50	125	85		
425.7737	38.915	38.938	-1	1.000	13395	4391	23	57	191	0.98(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											M
423.7767	38.232	38.941	-42	0.983	16147	5218	50	125	104		M
425.7737	38.240	38.941	-42	0.983	16580	5551	23	57	241	0.97(0.88-1.20)	
13C-OCDD											
469.7780	41.348	41.373	-1	1.157	1268587	424942	190	475	2237		
471.7750	41.348	41.373	-1	1.157	1423635	491734	159	397	3093	0.89(0.76-1.02)	
OCDF											
441.7428	41.441	41.457	-1	1.002	24304	7924	30	75	264		
443.7399	41.441	41.457	-1	1.002	26869	8350	78	195	107	0.90(0.76-1.02)	
OCDD											
457.7377	41.357	41.381	-1	1.000	206364	69924	35	87	1998		
459.7348	41.357	41.381	-1	1.000	241029	82465	48	120	1718	0.86(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Lims ID:	320-65130-A-19-A		
Client ID:	11215702-Tank#2-valve-2-2		
Inject. Date:	10-Oct-2020 12:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	24

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2347367	363600

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2347367	363600

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.441	46256	8102	60483	10157	4.19	0.76	
16.896	78701	11397	82454	14338	6.32	0.95	RQ
16.896	63489	11040	82454	14338	5.73		Empc Correction
17.292	58865	9124	80714	11929	5.48	0.73	
17.635	68734	10455	87859	12816	6.14	0.78	
18.116	620541	99544	777341	122477	54.9	0.80	
18.512	36140	5691	51010	6758	3.42	0.71	
19.517	108076	14876	144311	19416	9.90	0.75	M
21.896	91282	12807	119229	14427	8.26	0.77	
Signal Totals:							
	1093383	171639	1403401	212318			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2511996	384314				0.79	RQM
	2496784	383957					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 98.571 = (2511996 * 100.000) / (2347367 * 1.086)
Empc Amount: 97.974 = (2496784 * 100.000) / (2347367 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 12-Oct-2020 11:31:59 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Lims ID: 320-65130-A-19-A
Client ID: 11215702-Tank#2-valve-2-2
Inject. Date: 10-Oct-2020 12:33:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 24

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	1793217	248240

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	1793217	248240

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.676	29734	3575	35724	4484	3.38	0.83	
Signal Totals:							
	29734	3575	35724	4484			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	65458	8059				0.83	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.377 = (65458 * 100.000) / (1793217 * 1.081)

Report Date: 12-Oct-2020 11:31:59 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Lims ID:	320-65130-A-19-A		
Client ID:	11215702-Tank#2-valve-2-2		
Inject. Date:	10-Oct-2020 12:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	24

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2363298	396988
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2173243	335651

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2268270	366319

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.528	33398	5986	19909	3725	2.18	1.68	M
25.775	5402	1292	3438	934	0.3612	1.57	
26.458	19734	3292	13212	2192	1.35	1.49	
27.646	11614	1681	6493	1134	0.7398	1.79	RQ
27.646	10064	1757	6493	1134	0.6764		Empc Correction
Signal Totals:							
	68598	12327	43052	7985			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	113200	20236				1.63	RQM
	111650	20312					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.625 = (113200 * 100.000) / (2268270 * 1.079)
Empc Amount: 4.561 = (111650 * 100.000) / (2268270 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Lims ID:	320-65130-A-19-A		
Client ID:	11215702-Tank#2-valve-2-2		
Inject. Date:	10-Oct-2020 12:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	24

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	1826353	346754
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2209830	384694
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2121571	451178
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	1943724	449894

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2025369	408130

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
36.074	7965	1982	5893	1394	0.5476	1.35	
Signal Totals:							
	7965	1982	5893	1394			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13858	3376				1.35	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5476 = (13858 * 100.000) / (2025369 * 1.249)

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Lims ID:	320-65130-A-19-A		
Client ID:	11215702-Tank#2-valve-2-2		
Inject. Date:	10-Oct-2020 12:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	24

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	1884327	463989
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	1989959	425176
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	1937143	444582

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.973	1350	332	896	160	0.0345	1.51	RQ
32.973	1111	198	896	160			Empc Correction
33.909	2101	199	1178	245	0.0503	1.78	RQ
33.909	1460	303	1178	245			Empc Correction

Compound is Marked ND

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Lims ID:	320-65130-A-19-A		
Client ID:	11215702-Tank#2-valve-2-2		
Inject. Date:	10-Oct-2020 12:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	24

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1870697	561545
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1685679	567160

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	1778188	564352

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.299	15591	4318	15414	4526	1.18	1.01	
Signal Totals:							
	15591	4318	15414	4526			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	31005	8844				1.01	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.178 = (31005 * 100.000) / (1778188 * 1.481)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Lims ID:	320-65130-A-19-A		
Client ID:	11215702-Tank#2-valve-2-2		
Inject. Date:	10-Oct-2020 12:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	24

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1800127	588040

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	1800127	588040

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.232	16147	5218	16580	5551	1.71	0.97	M
Signal Totals:							
	16147	5218	16580	5551			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	32727	10769				0.97	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.709 = (32727 * 100.000) / (1800127 * 1.064)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d				
Injection Date:	10-Oct-2020 12:33:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-19-A	Lab Sample ID:	320-65130-19		
Client ID:	11215702-Tank#2-valve-2-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	24
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.85- 21.98)

Signal: 1

Processing Integration Results

RT = 19.517 Area = 133661

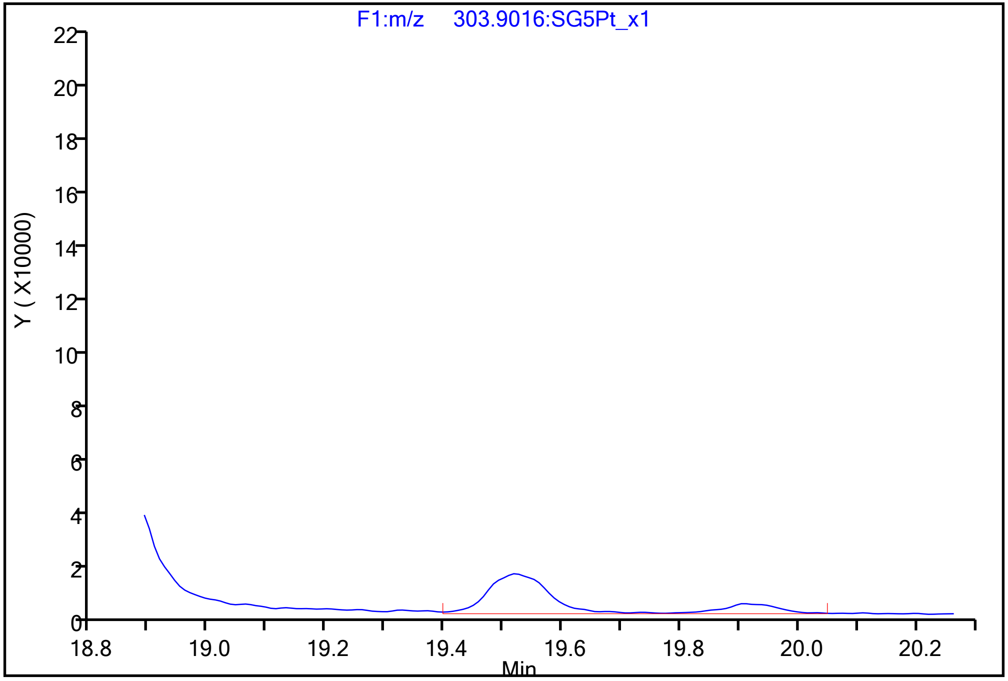

Manual Integration Results

RT = 19.517 Area = 108076 M

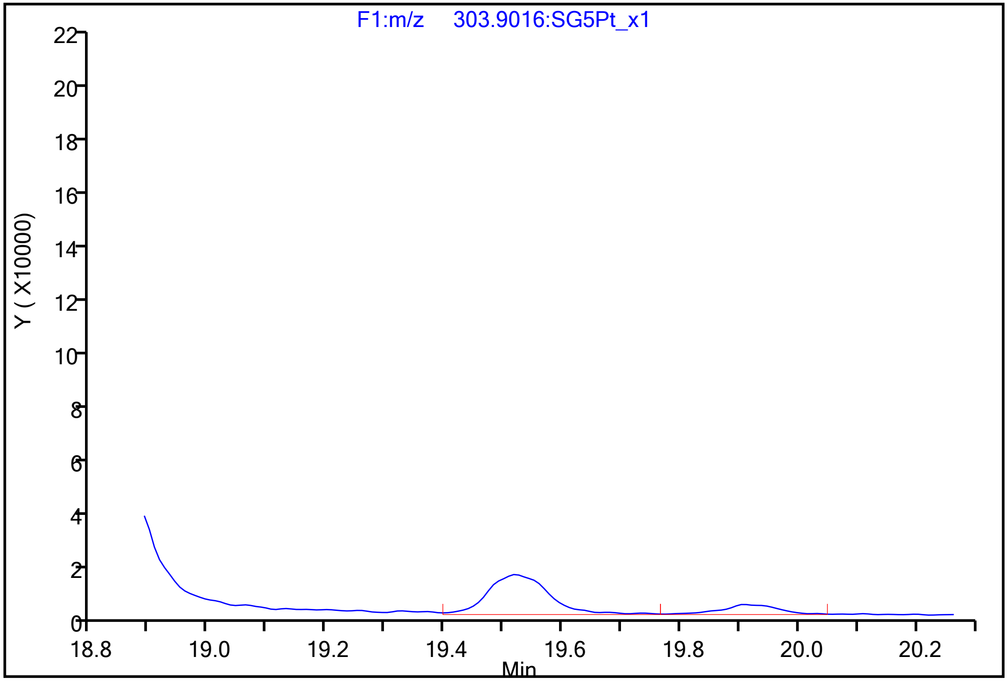

Reviewer: dadunj, 12-Oct-2020 09:28:00

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:00

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00

Instrument ID: DFS 1

Lims ID: 320-65130-A-19-A

Lab Sample ID: 320-65130-19

Client ID: 11215702-Tank#2-valve-2-2

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 24

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 20.03

Area: 375451

Amount: 14.815578

Amount Units: pg/ul

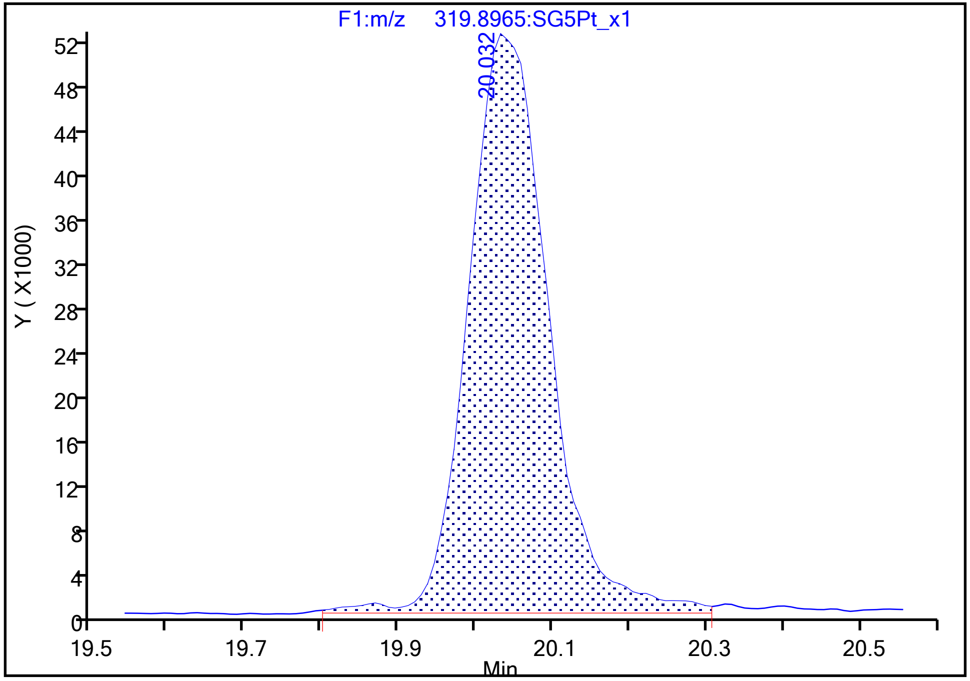

Manual Integration Results

RT: 20.03

Area: 372490

Amount: 44.293980

Amount Units: pg/ul

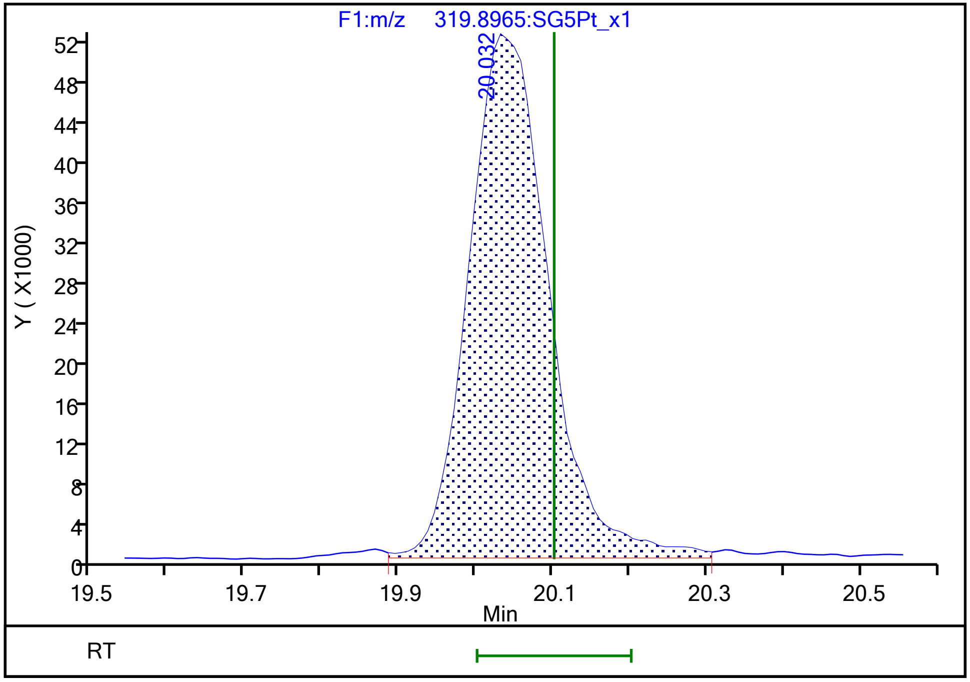

Reviewer: dadunj, 12-Oct-2020 09:23:23

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-19-A	Lab Sample ID:	320-65130-19
Client ID:	11215702-Tank#2-valve-2-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 24
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	25.90
Area:	42663
Amount:	1.461305
Amount Units:	pg/ul

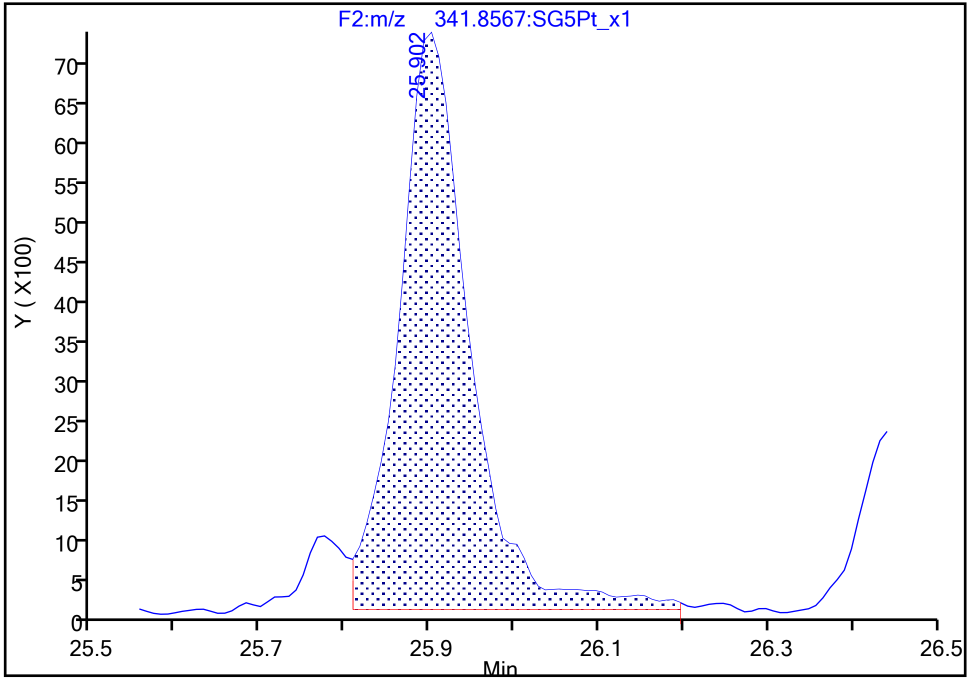

Manual Integration Results

RT:	25.90
Area:	41842
Amount:	4.350975
Amount Units:	pg/ul

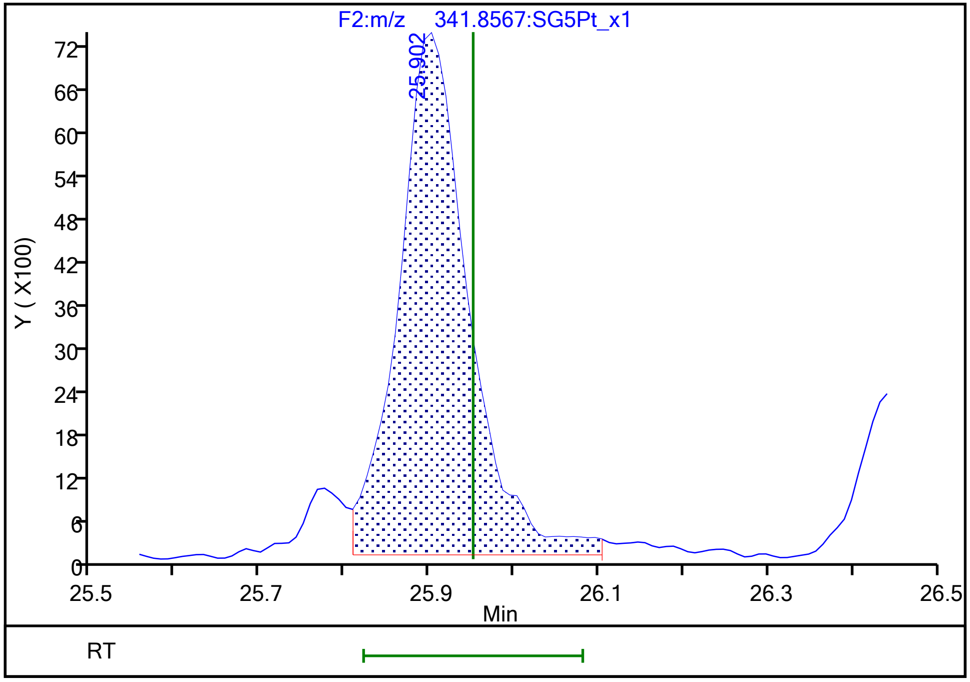

Reviewer: dadunj, 12-Oct-2020 09:23:33

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d				
Injection Date:	10-Oct-2020 12:33:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-19-A	Lab Sample ID:	320-65130-19		
Client ID:	11215702-Tank#2-valve-2-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	24
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Processing Integration Results

RT = 24.528 Area = 34302

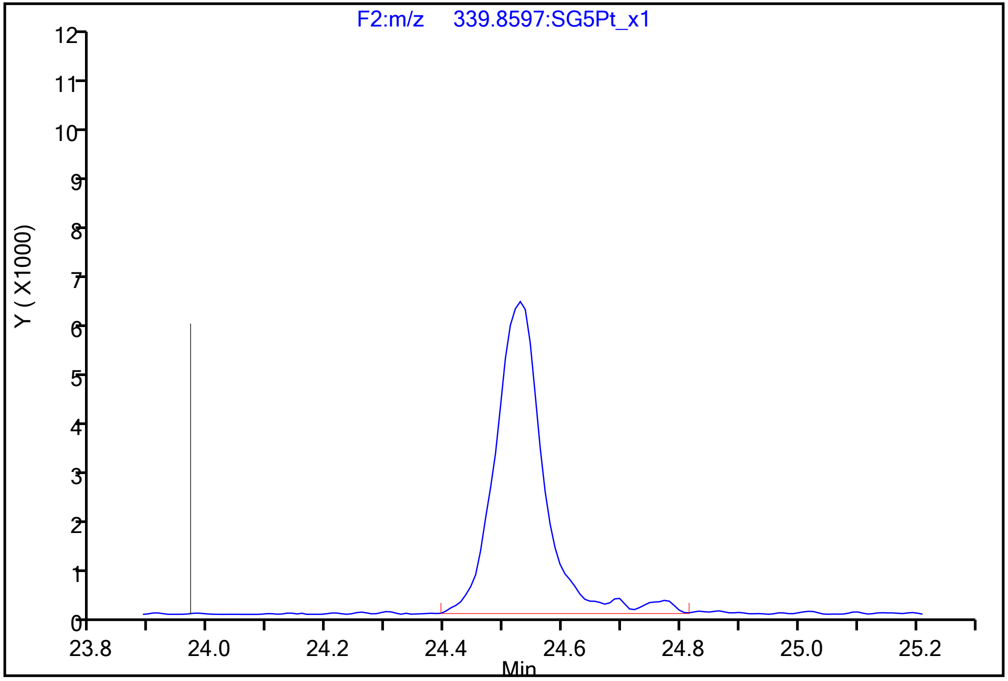

Manual Integration Results

RT = 24.528 Area = 33398 M

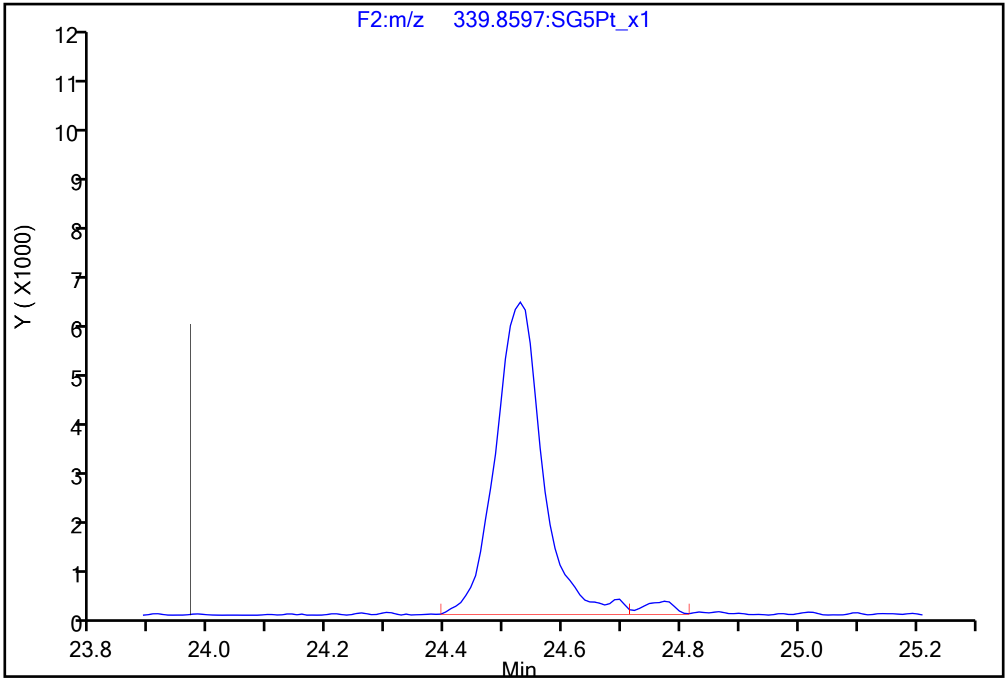

Reviewer: dadunj, 12-Oct-2020 09:23:41

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Injection Date: 10-Oct-2020 12:33:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-19-A
Lab Sample ID: 320-65130-19
Client ID: 11215702-Tank#2-valve-2-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 24
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

RT: 28.12
Area: 2930
Amount: 0.163676
Amount Units: pg/ul

Processing Integration Results

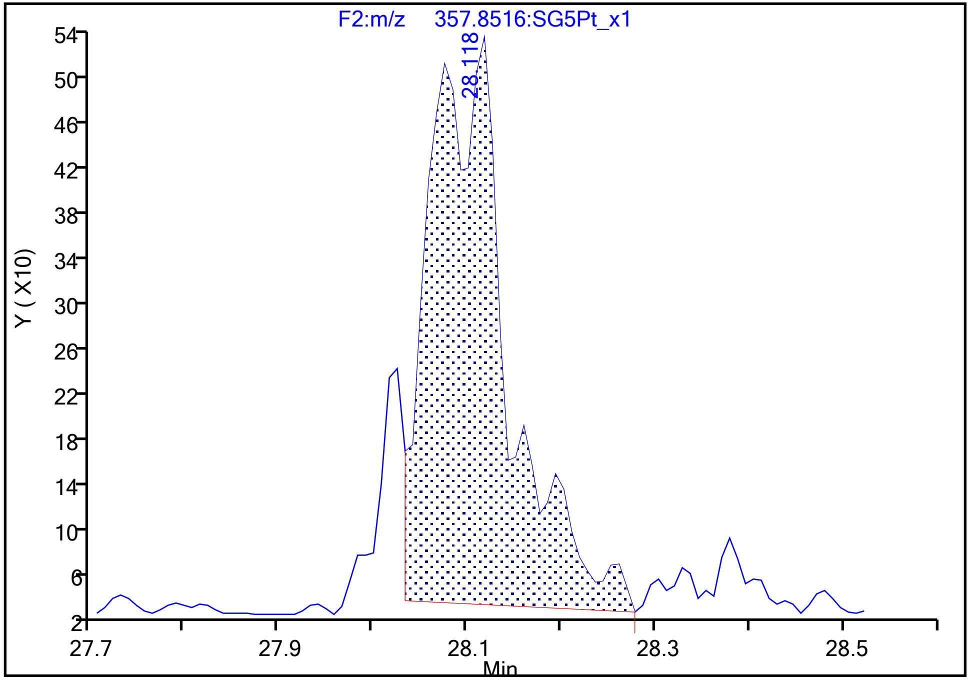

RT: 28.12
Area: 3199
Amount: 0.498077
Amount Units: pg/ul

Manual Integration Results

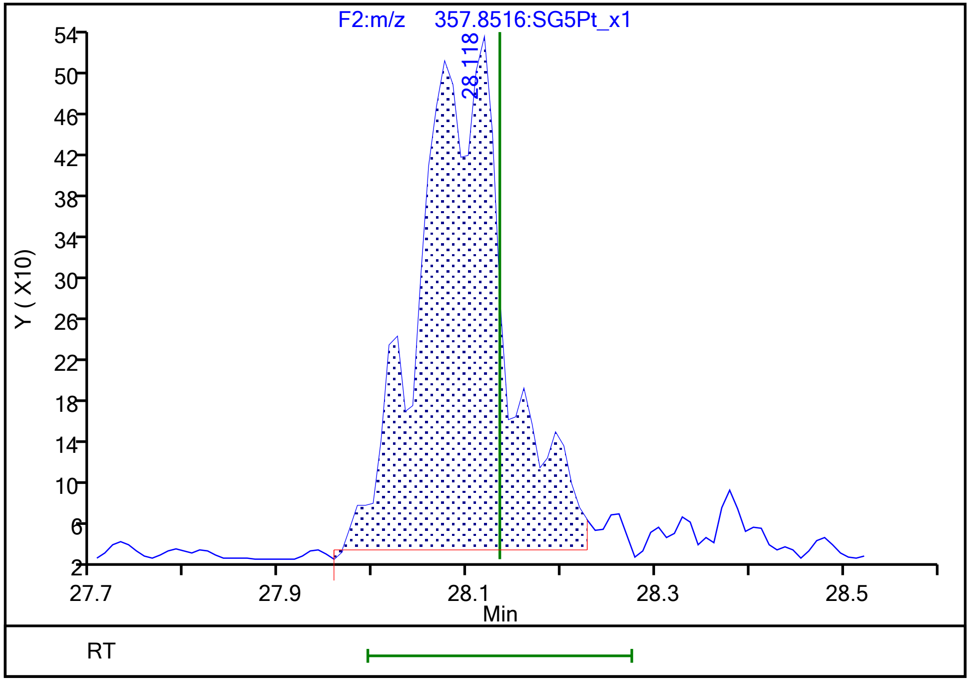

Reviewer: dadunj, 12-Oct-2020 09:26:37
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Injection Date: 10-Oct-2020 12:33:00 Instrument ID: DFS 1
Lims ID: 320-65130-A-19-A Lab Sample ID: 320-65130-19
Client ID: 11215702-Tank#2-valve-2-2
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT: 28.09
Area: 4801
Amount: 0.163676
Amount Units: pg/ul

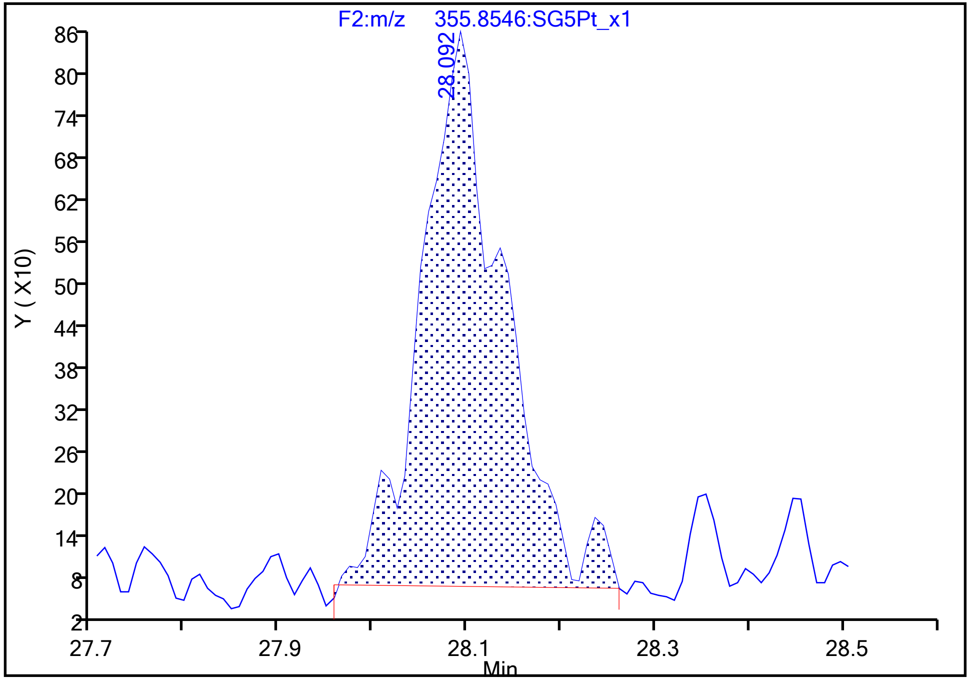

Manual Integration Results

RT: 28.09
Area: 4643
Amount: 0.498077
Amount Units: pg/ul

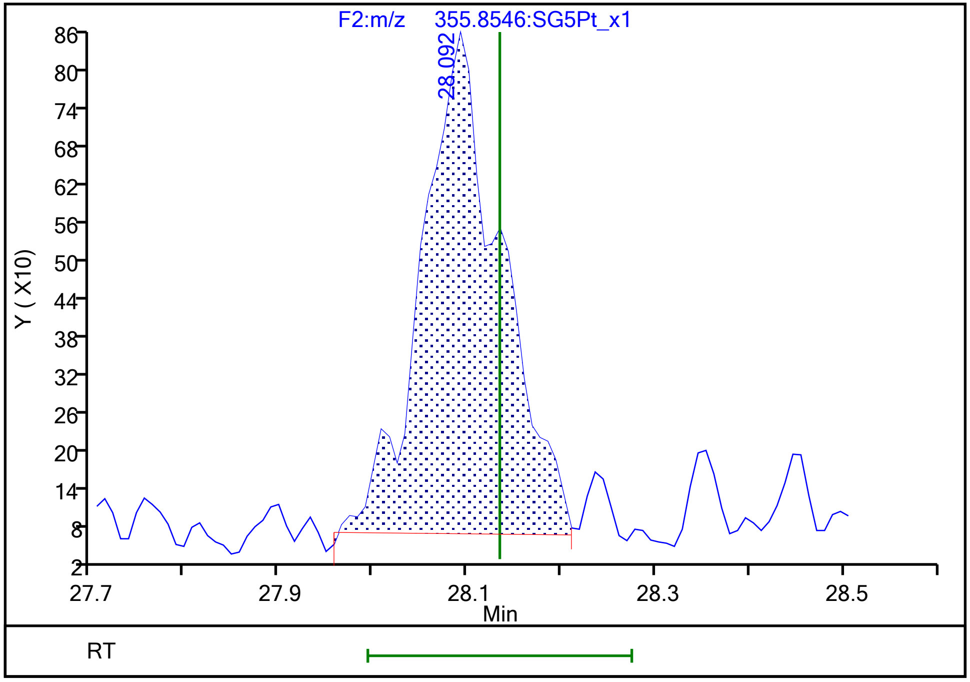

Reviewer: dadunj, 12-Oct-2020 09:26:43
Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Injection Date: 10-Oct-2020 12:33:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-19-A
Lab Sample ID: 320-65130-19
Client ID: 11215702-Tank#2-valve-2-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 24
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT: 34.97
Area: 6180
Amount: 0.122875
Amount Units: pg/ul

Processing Integration Results

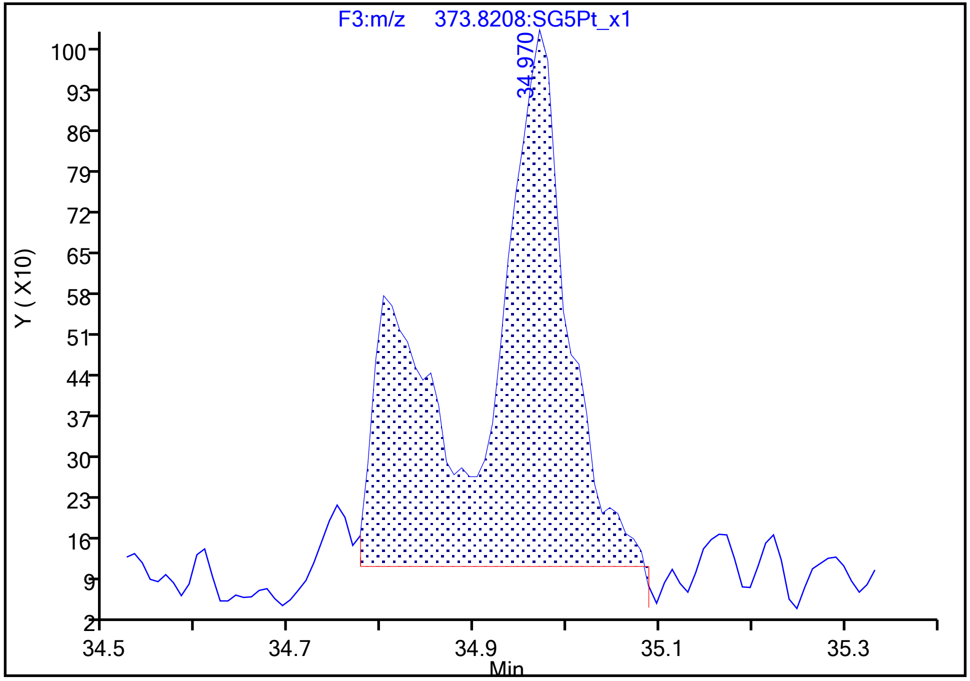

RT: 34.97
Area: 4034
Amount: 0.287473
Amount Units: pg/ul

Manual Integration Results

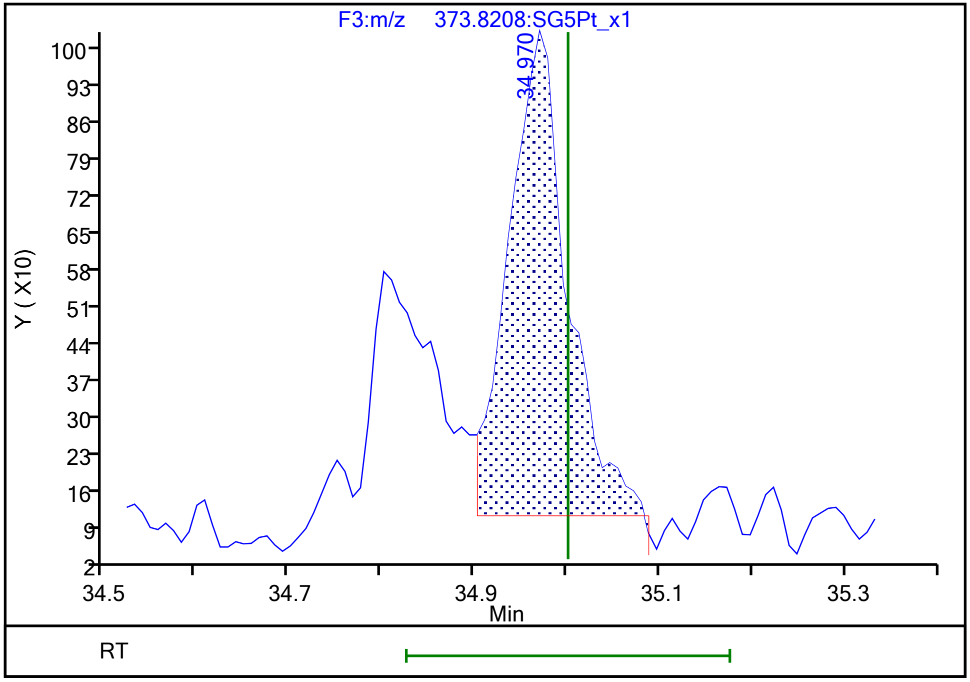

Reviewer: dadunj, 12-Oct-2020 09:26:59
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date:	10-Oct-2020 12:33:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-19-A	Lab Sample ID:	320-65130-19		
Client ID:	11215702-Tank#2-valve-2-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	24
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	35.18
Area:	1521
Amount:	0.041146
Amount Units:	pg/ul

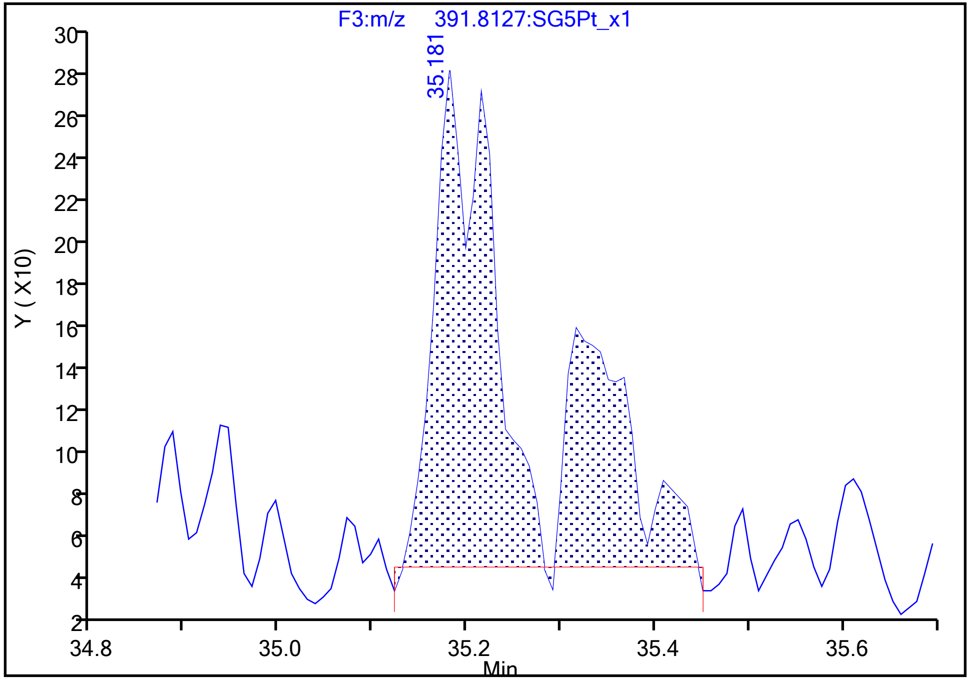

Manual Integration Results

RT:	35.18
Area:	988
Amount:	0.098970
Amount Units:	pg/ul

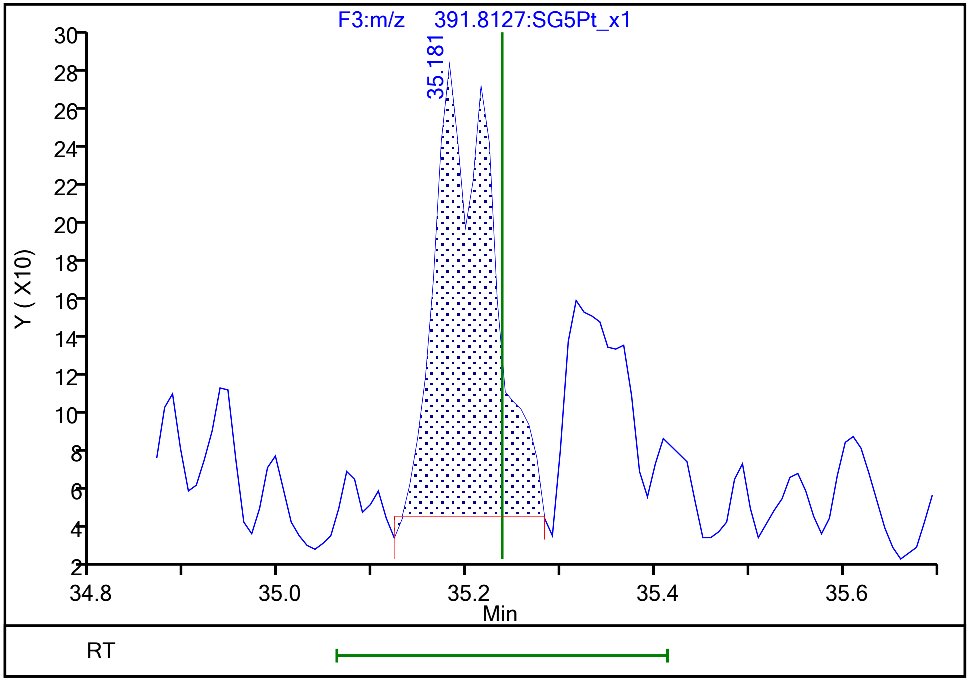

Reviewer: dadunj, 12-Oct-2020 09:27:15

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:00

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d				
Injection Date:	10-Oct-2020 12:33:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-19-A	Lab Sample ID:	320-65130-19		
Client ID:	11215702-Tank#2-valve-2-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	24
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.42- 39.47)

Signal: 1

Processing Integration Results

RT = 38.232 Area = 16551

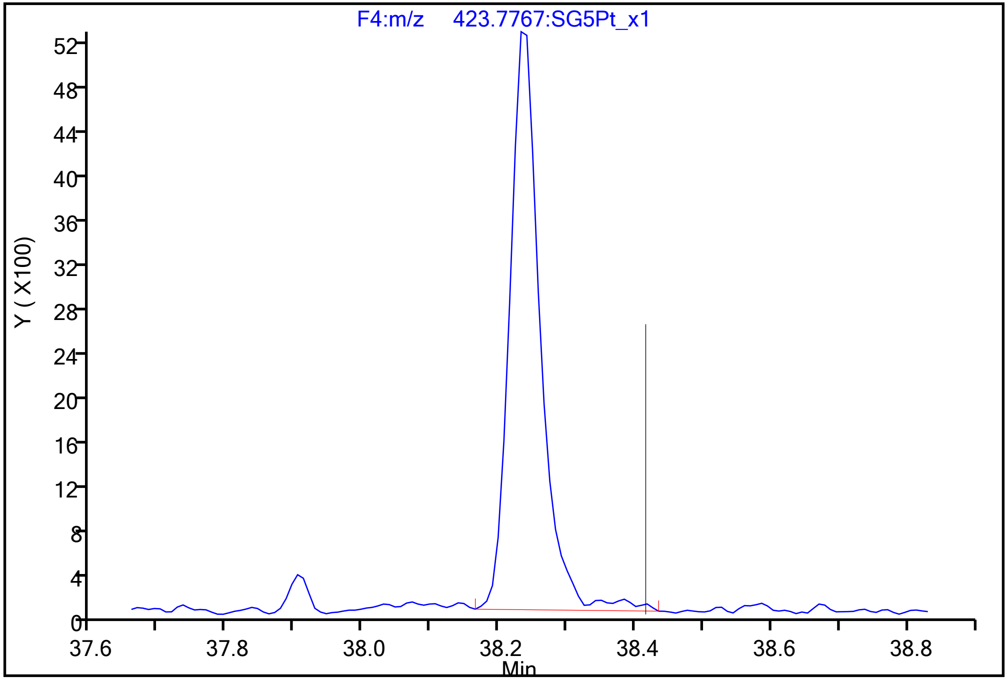

Manual Integration Results

RT = 38.232 Area = 16147 M

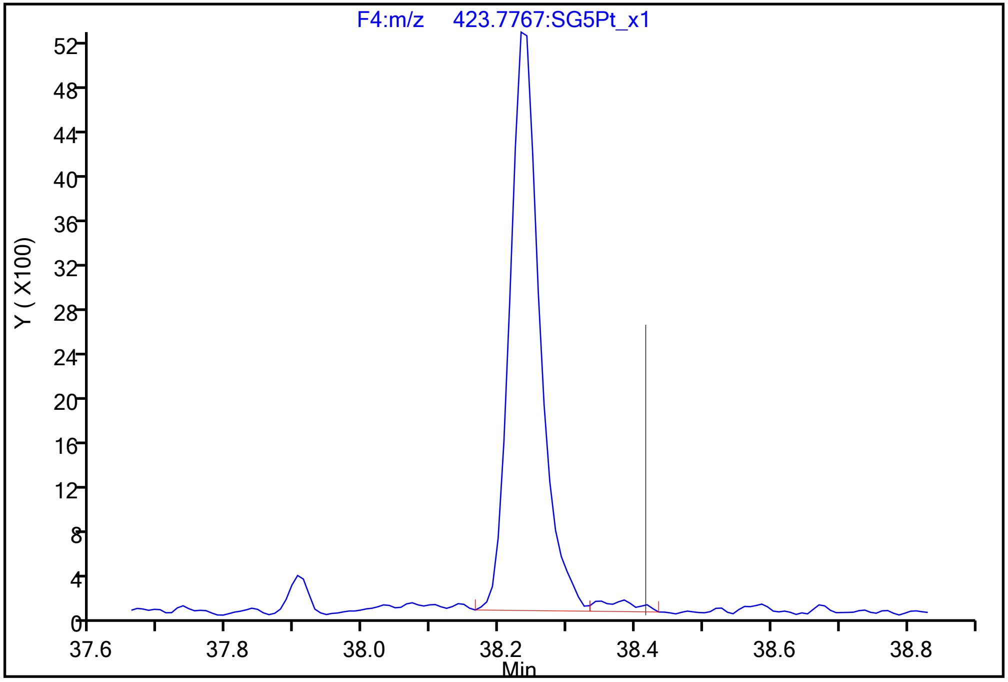

Reviewer: dadunj, 12-Oct-2020 09:27:45

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:00
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

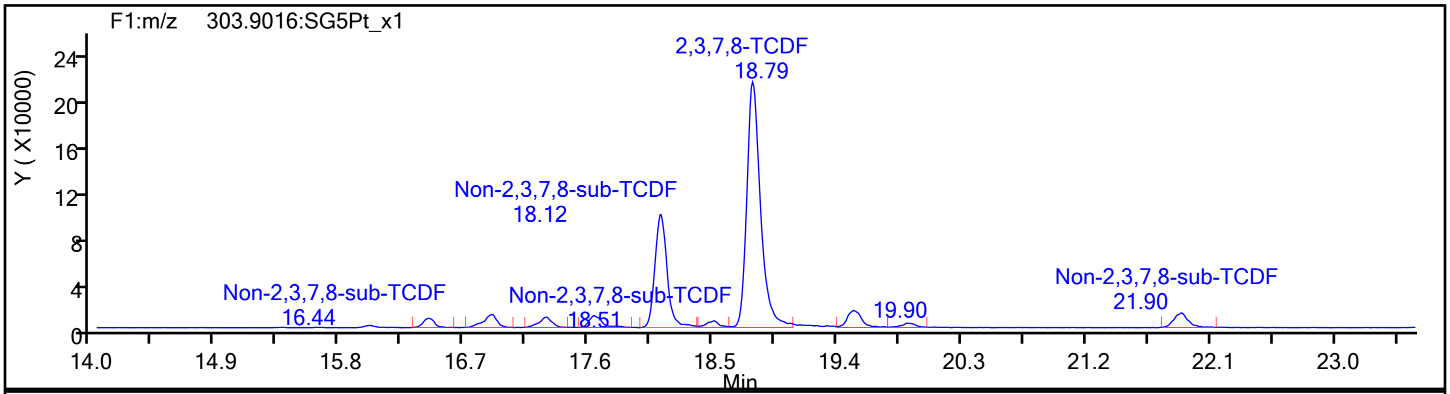

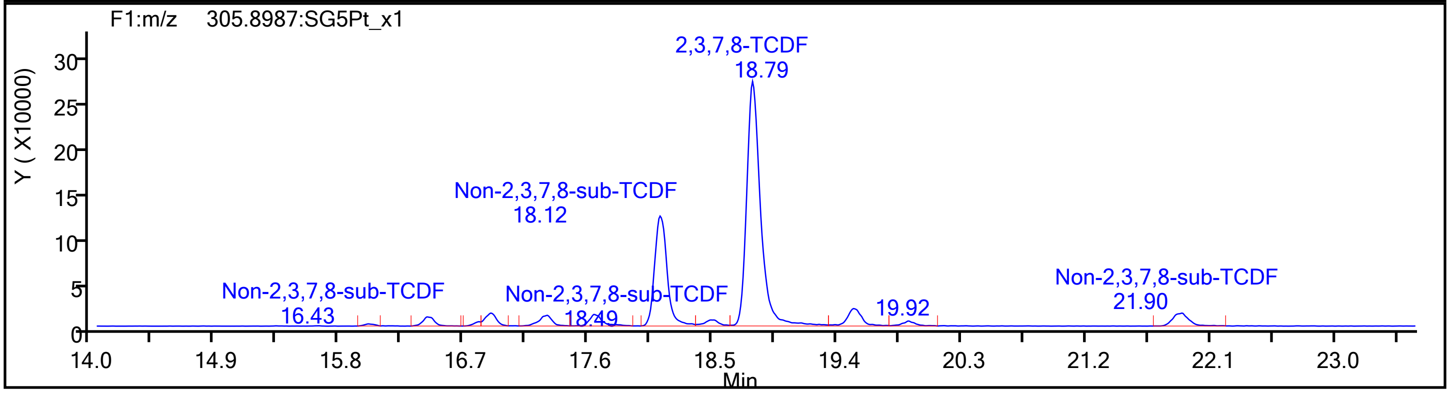

TCDF Standards

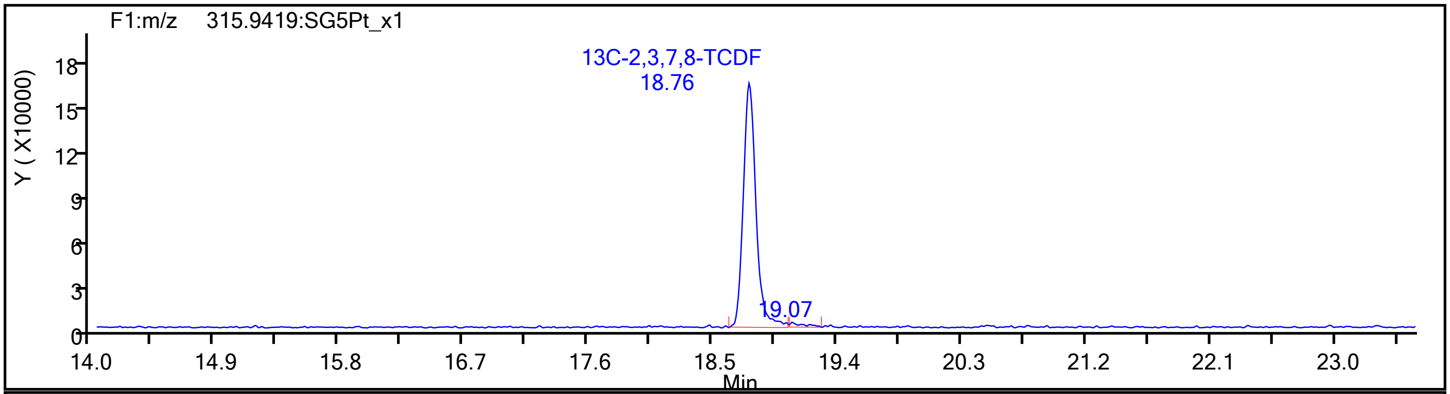

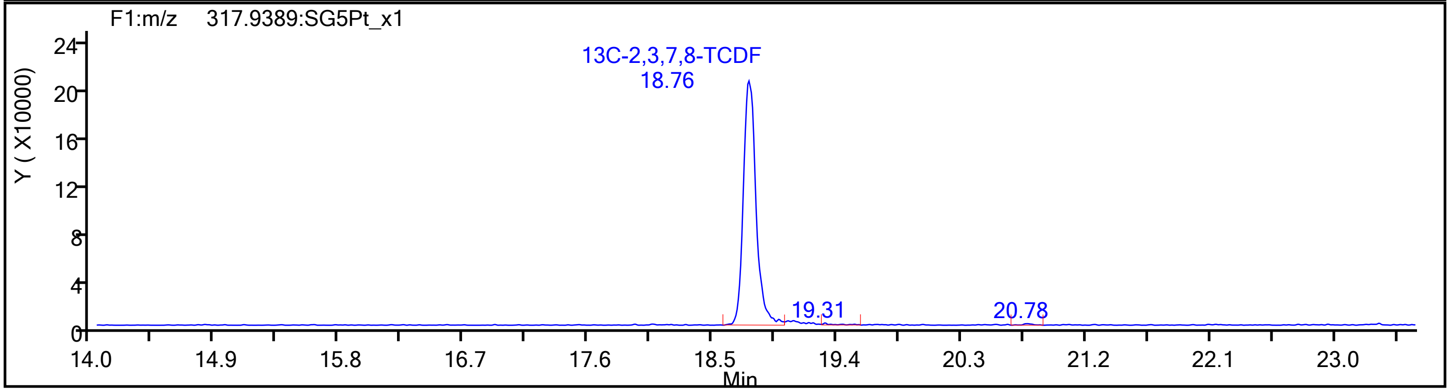

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

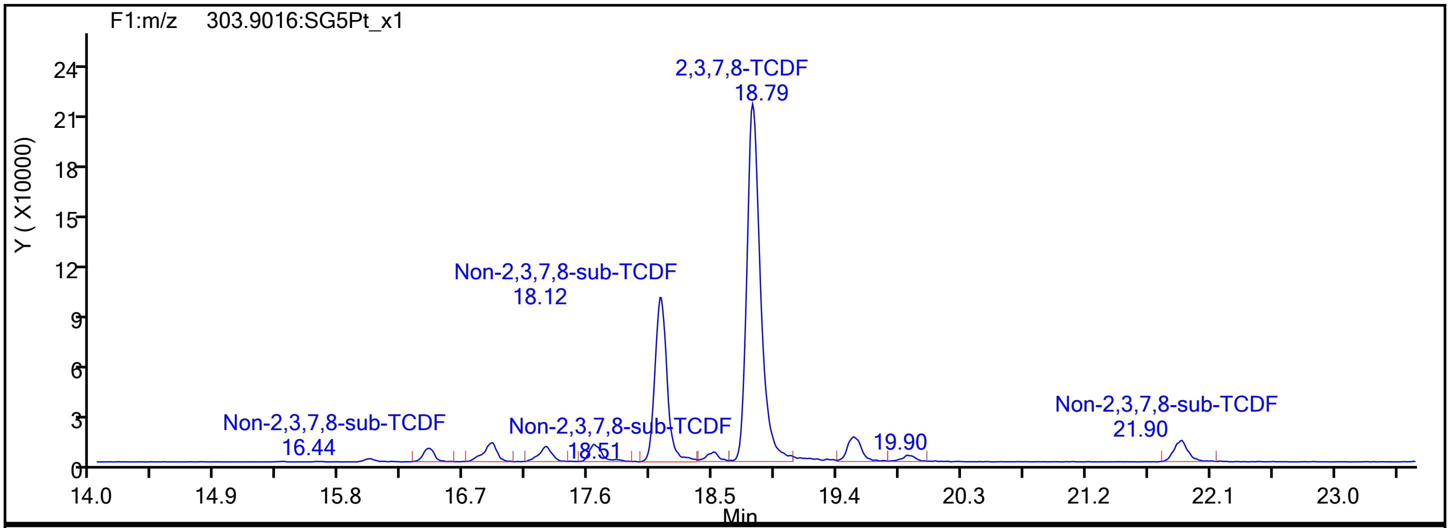

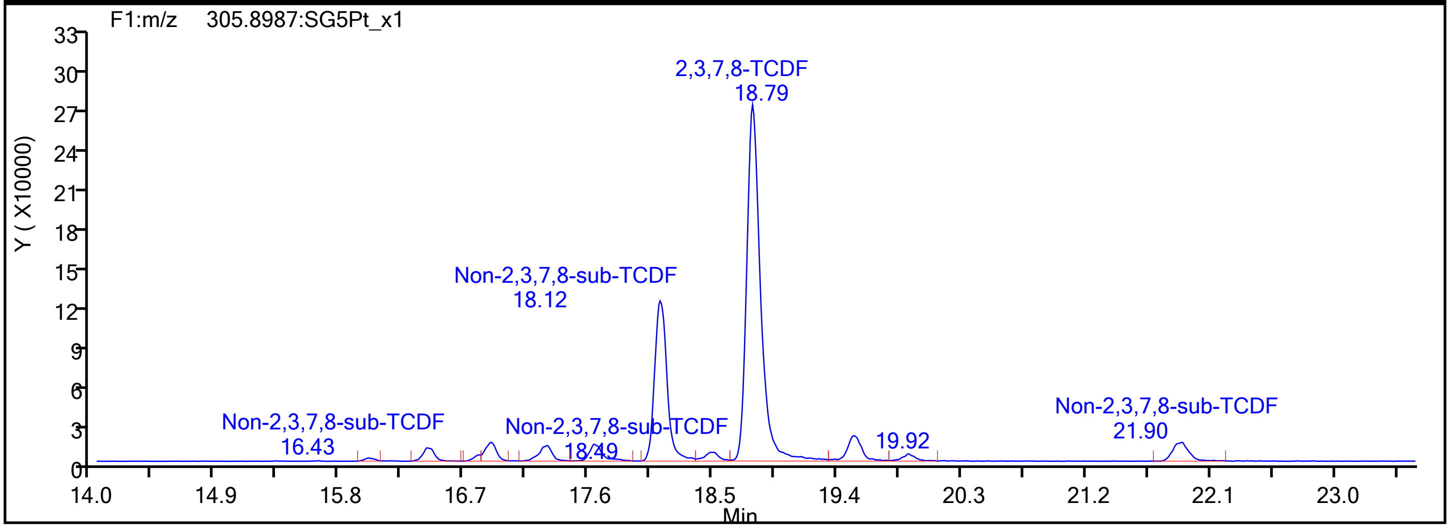

TCDF Interference Mass

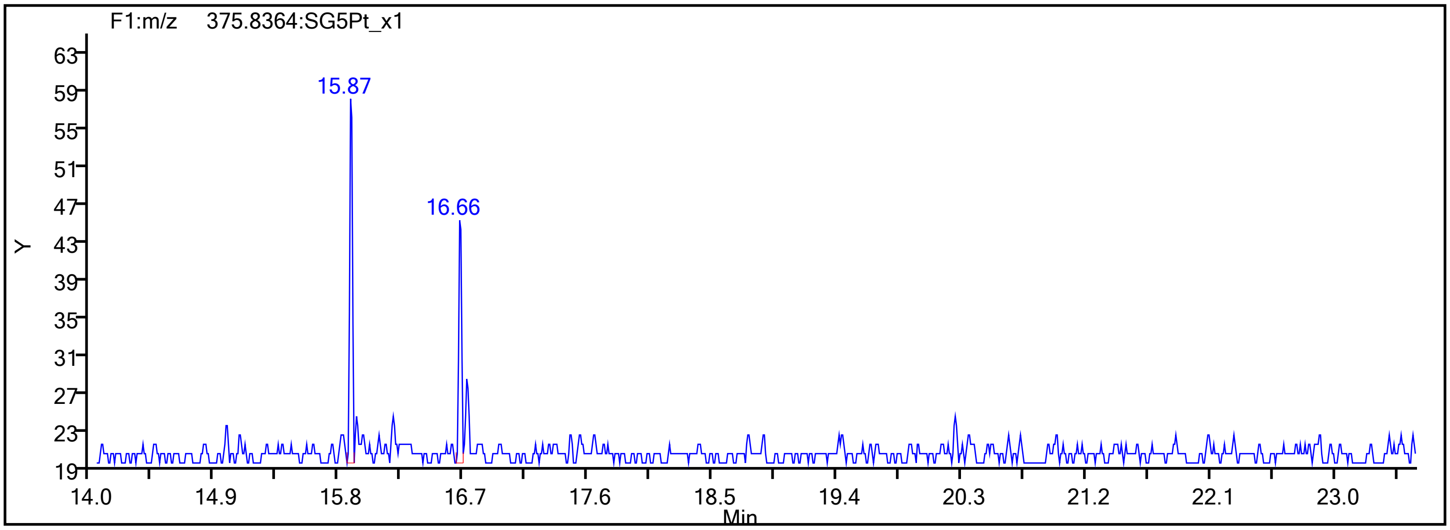

Report Date: 12-Oct-2020 11:32:00　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Injection Date: 10-Oct-2020 12:33:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-2-2
Worklist#: 420640
Sample Line#: 24
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

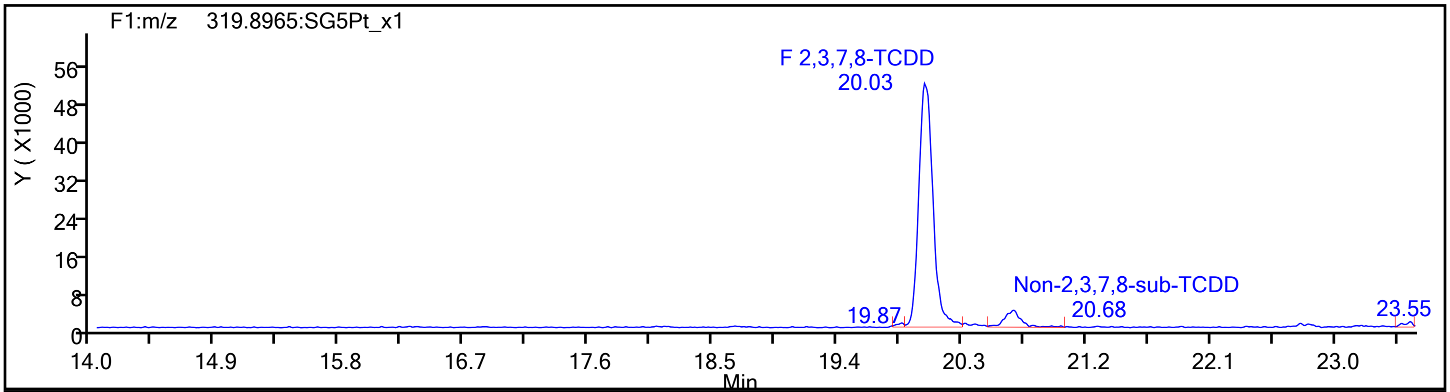

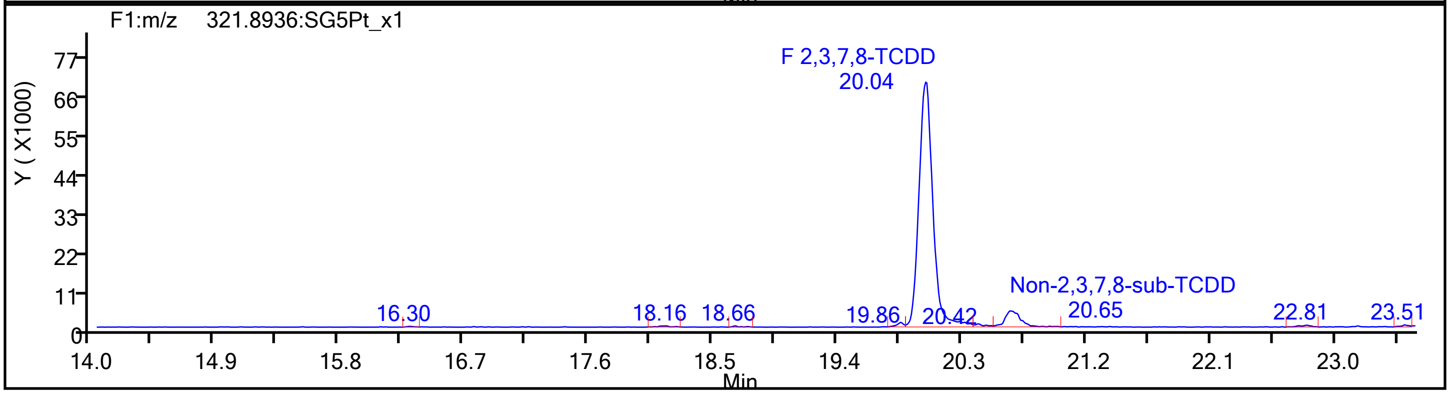

TCDD Standards

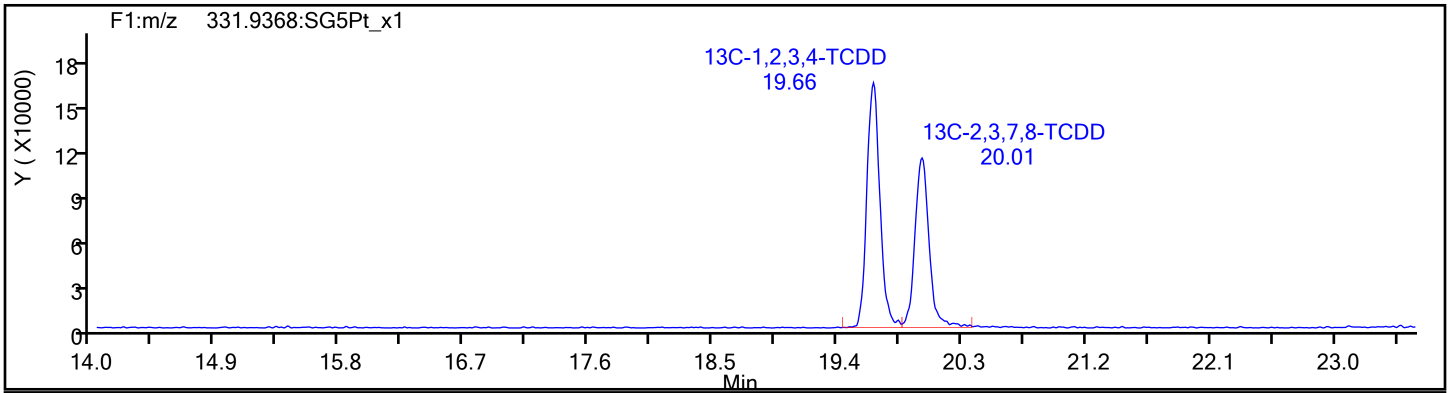

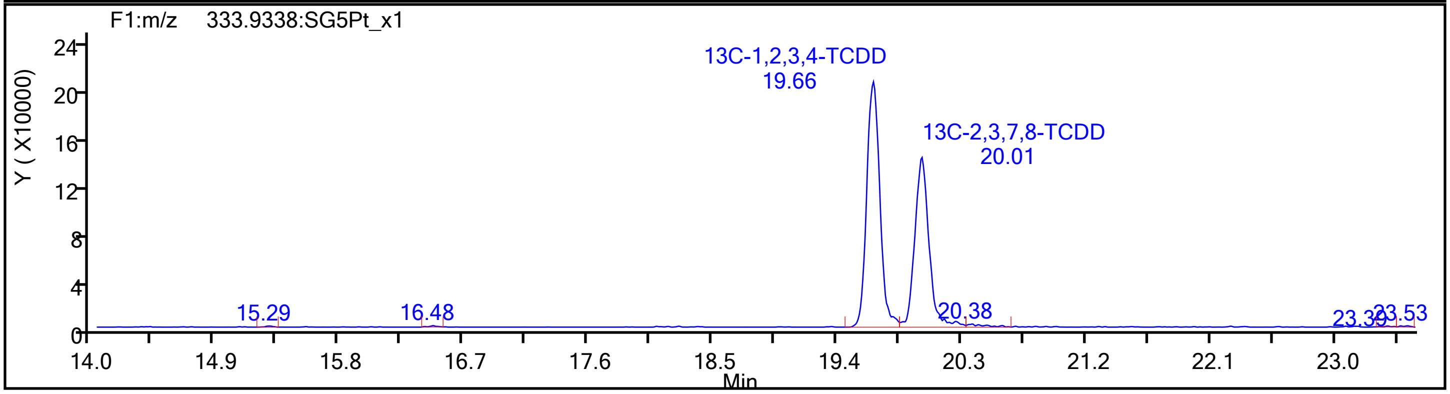

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

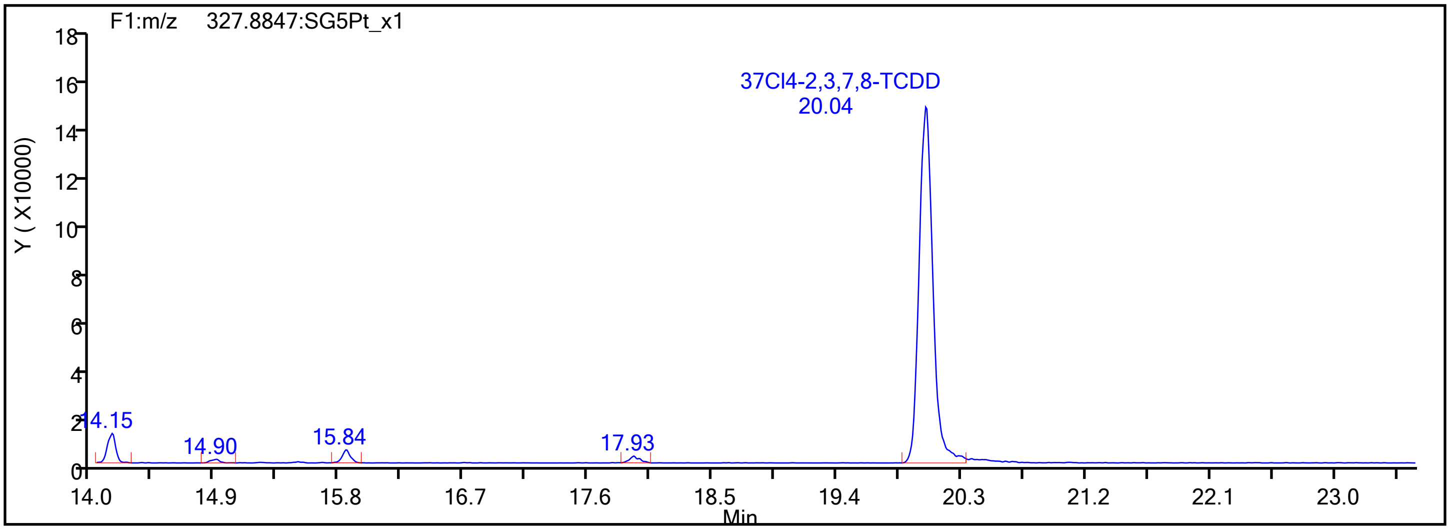

37Cl4-TCDD Standards

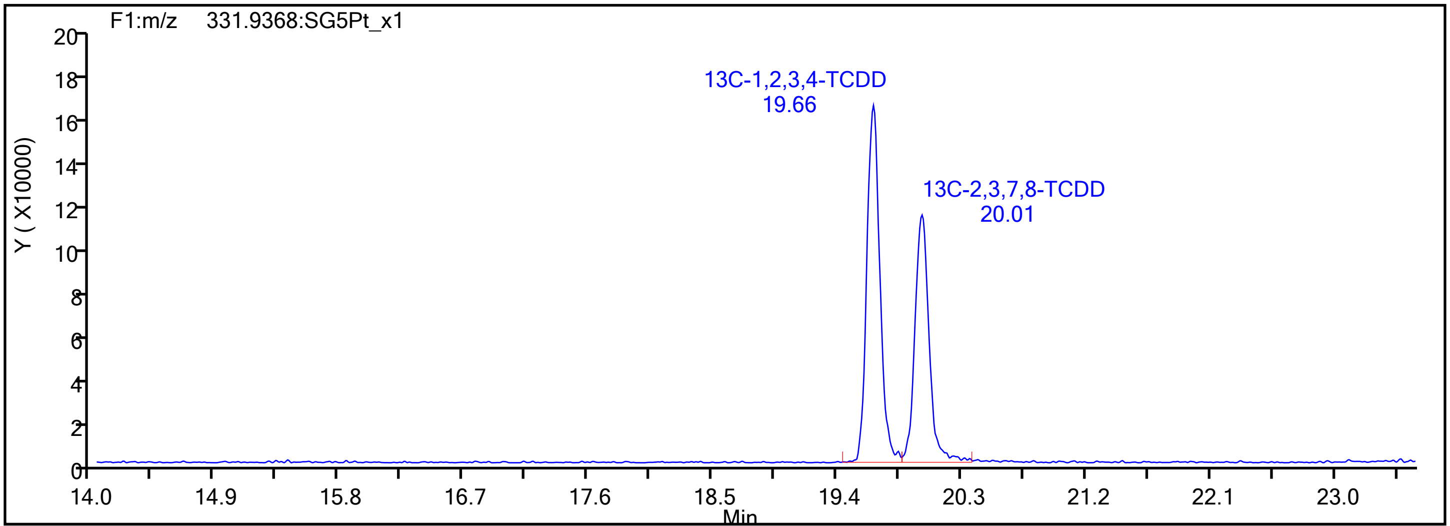

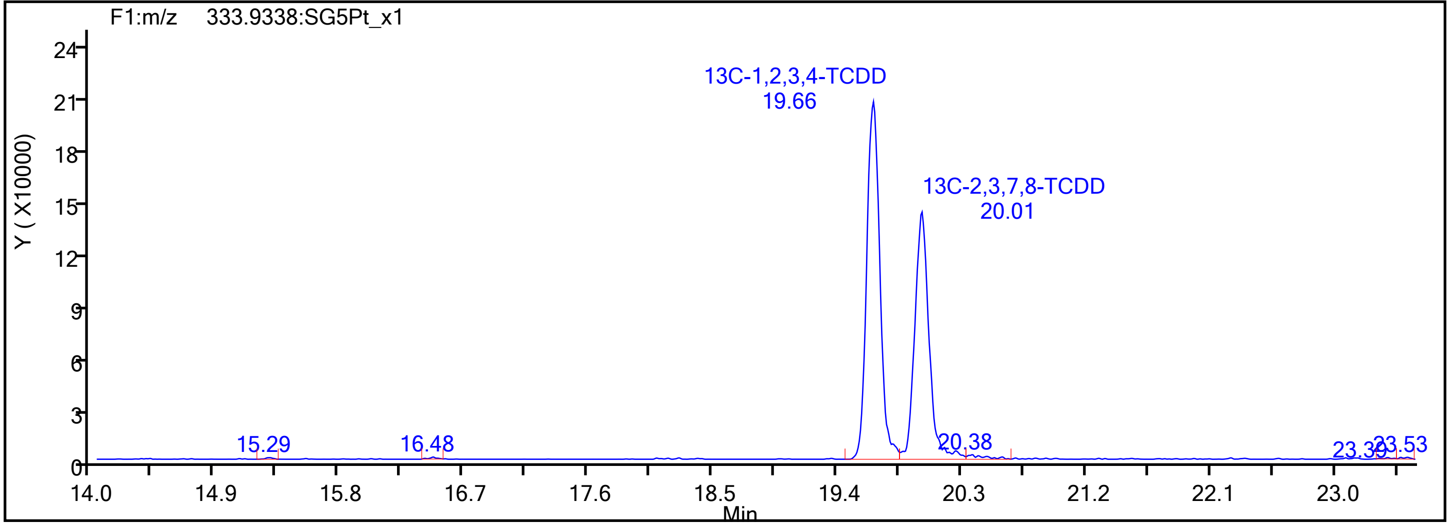

Report Date: 12-Oct-2020 11:32:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

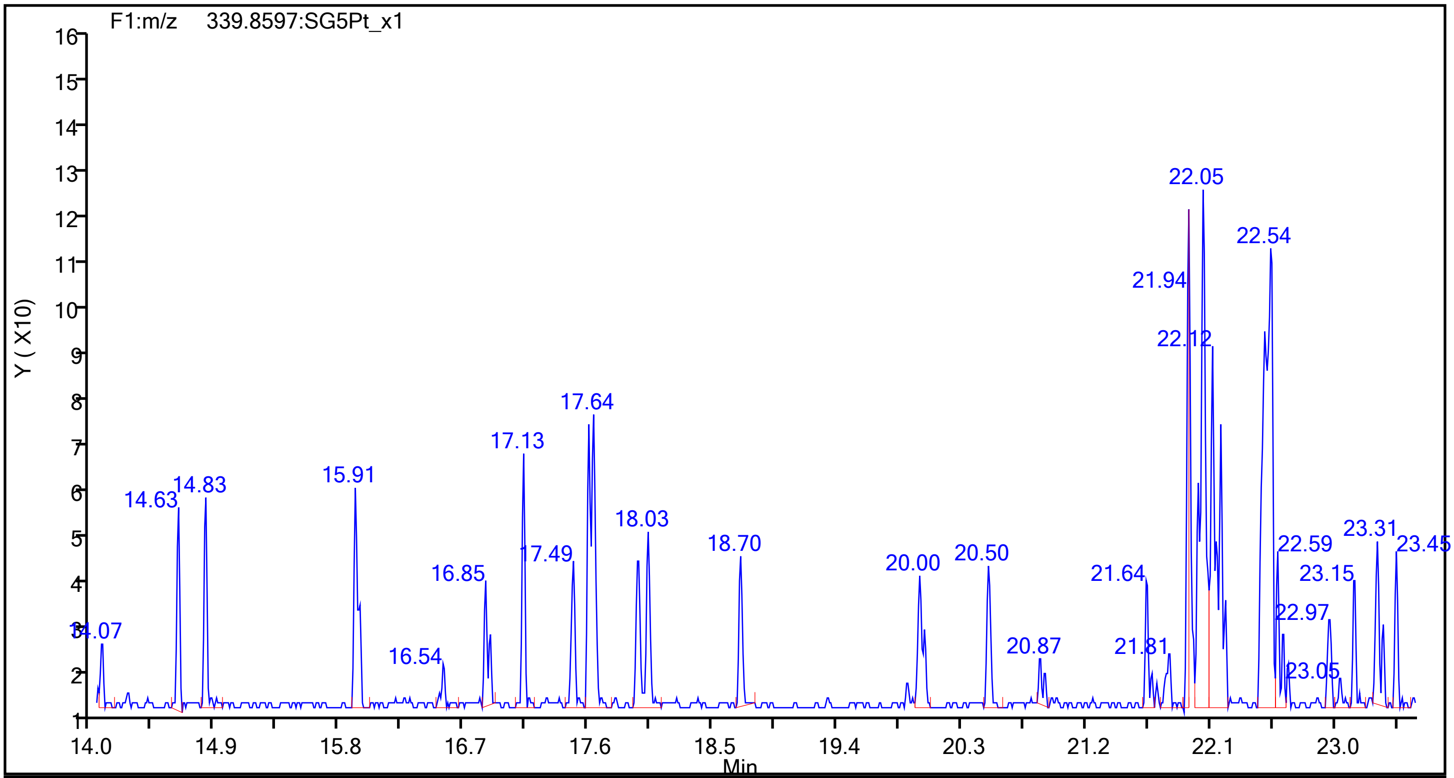

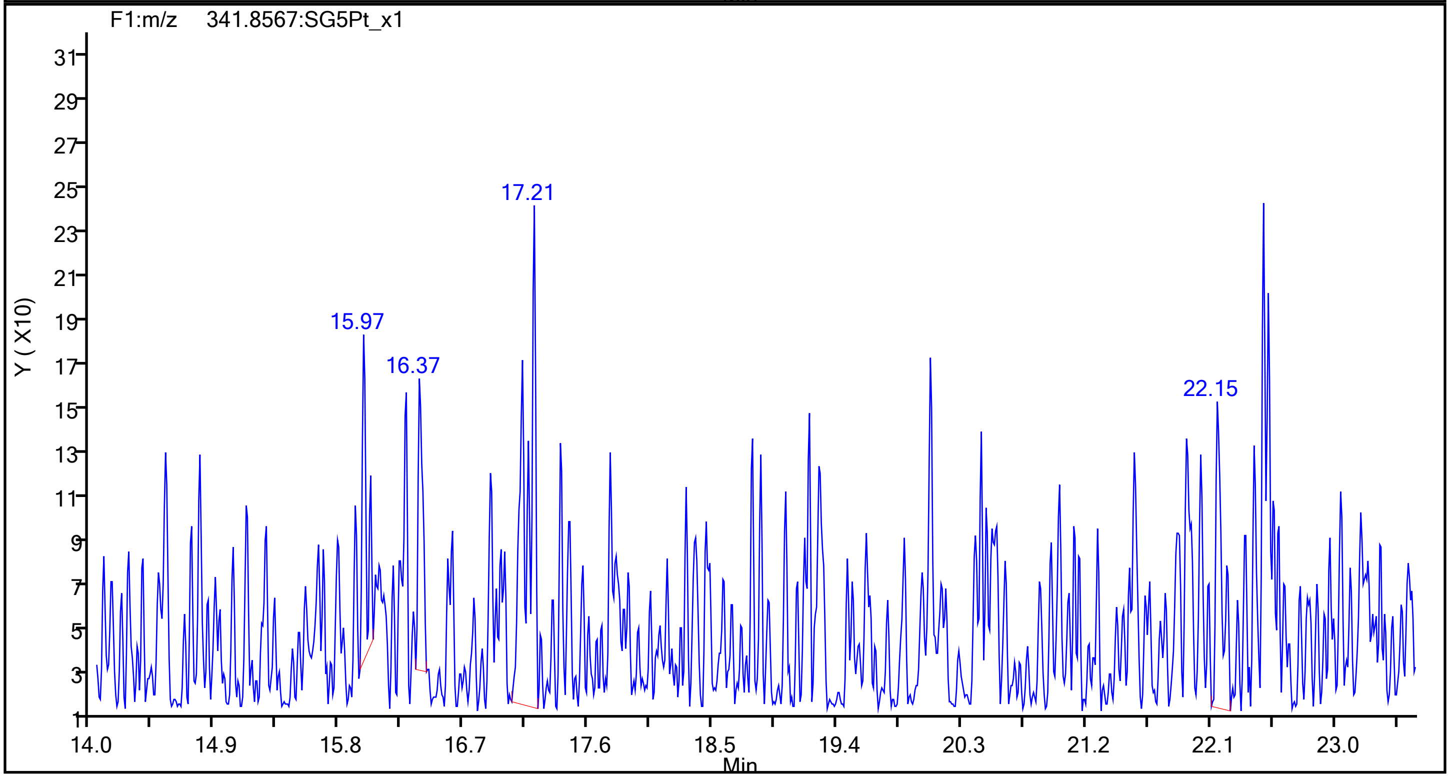

Report Date: 12-Oct-2020 11:32:00		Chrom Revision: 2.3 08-Oct-2020 16:36:14	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

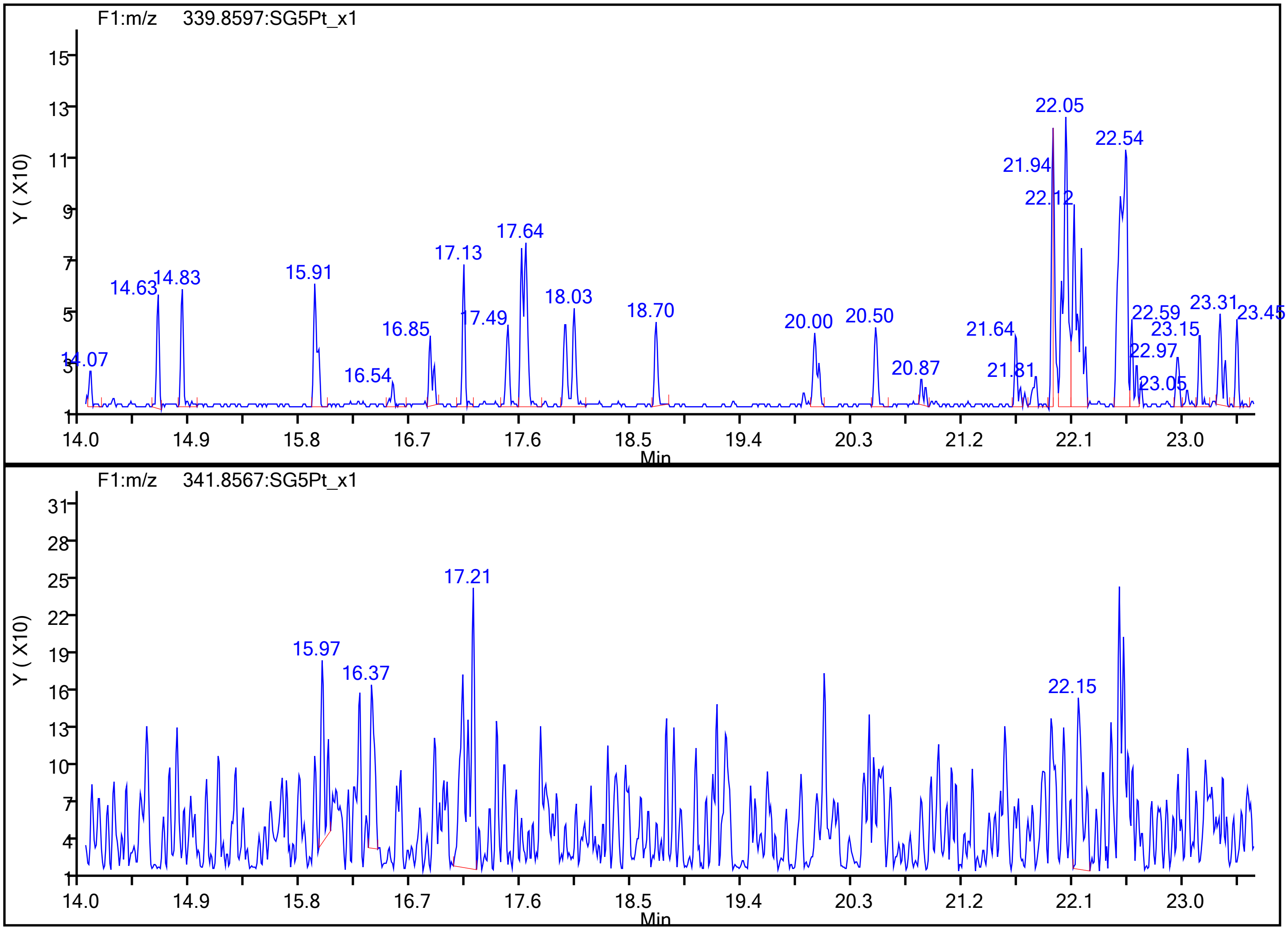

F1 PeCDFs Interference Mass

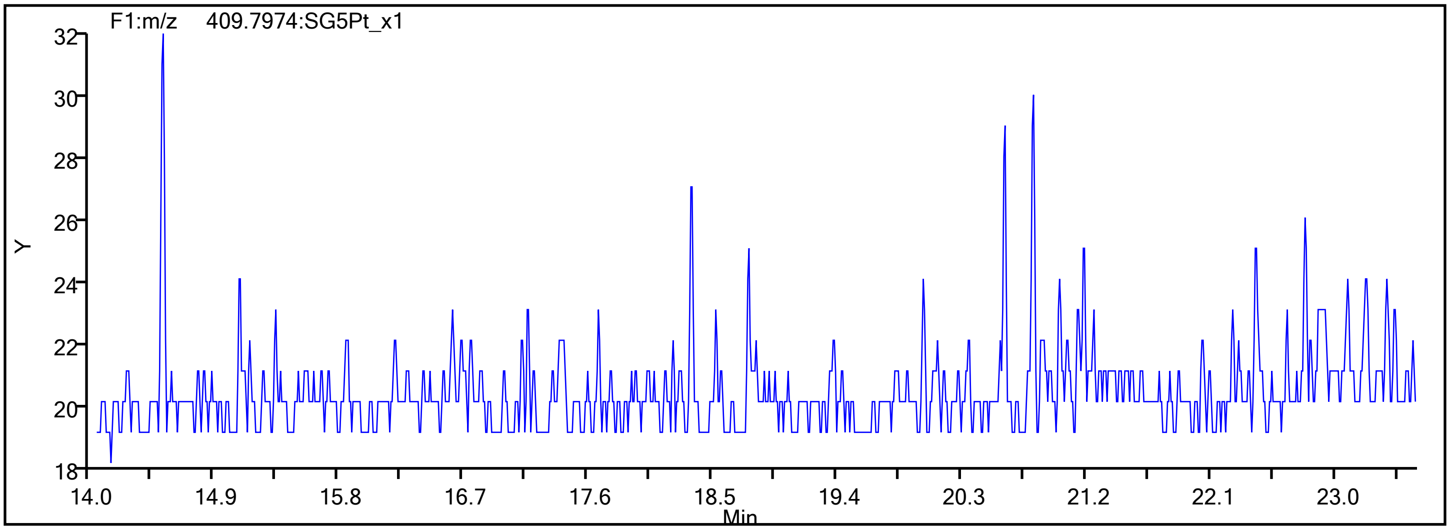

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

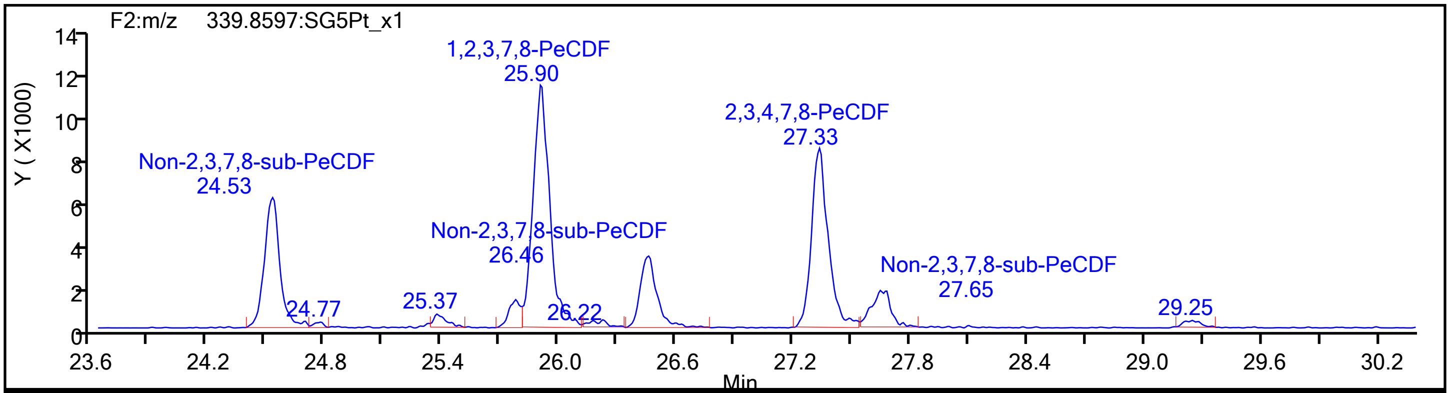

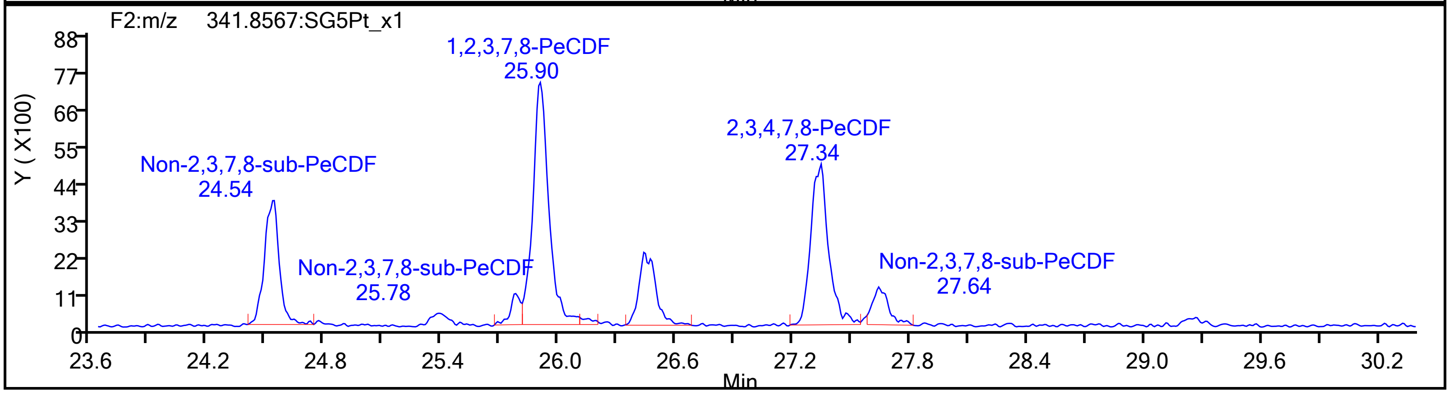

PeCDF Standards

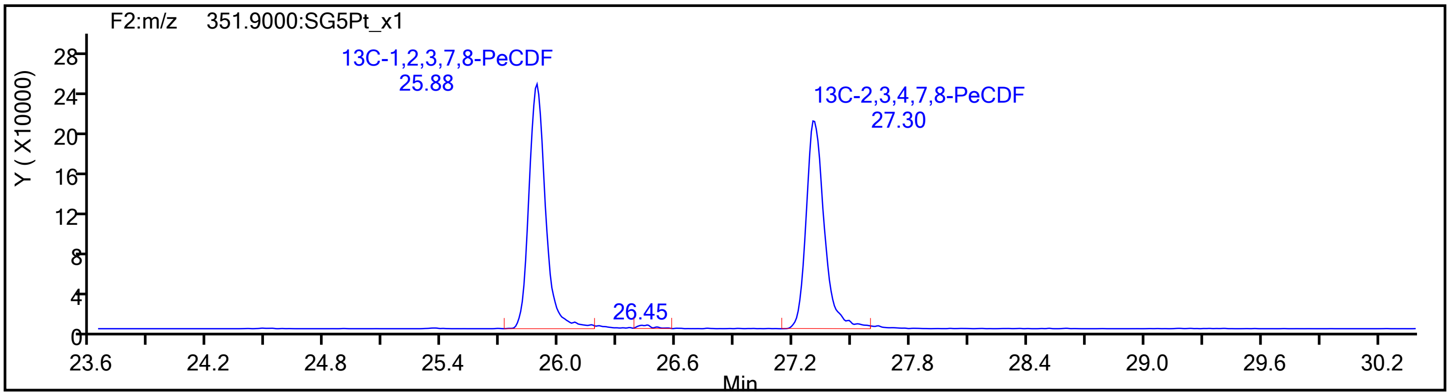

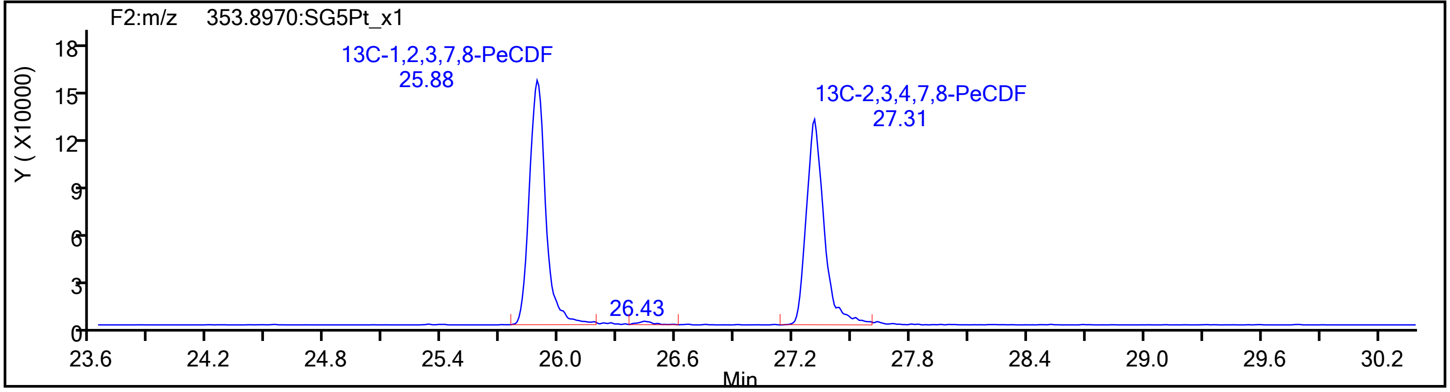

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d
Injection Date: 10-Oct-2020 12:33:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-2-2
Worklist#: 420640
Sample Line#: 24
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

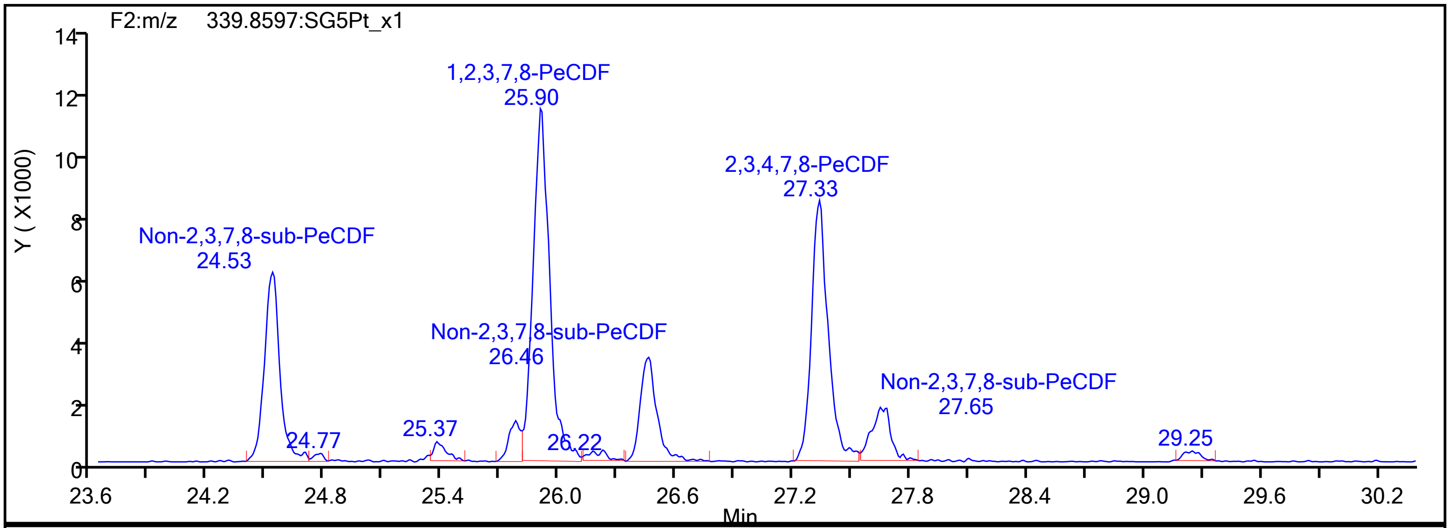

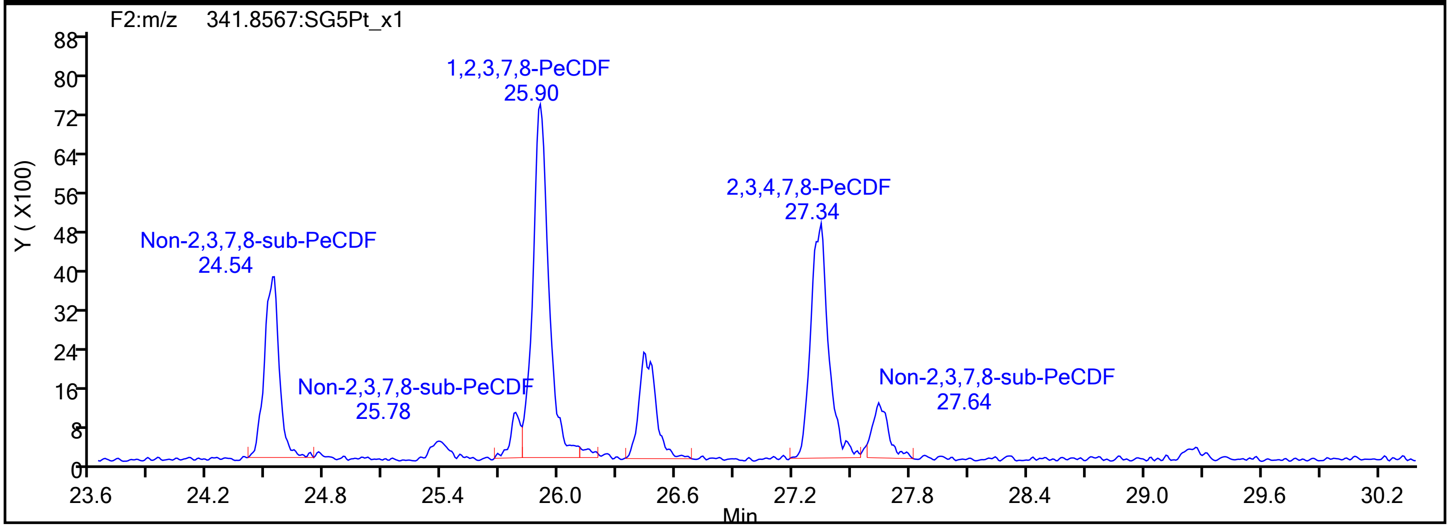

PeCDF Interference Mass

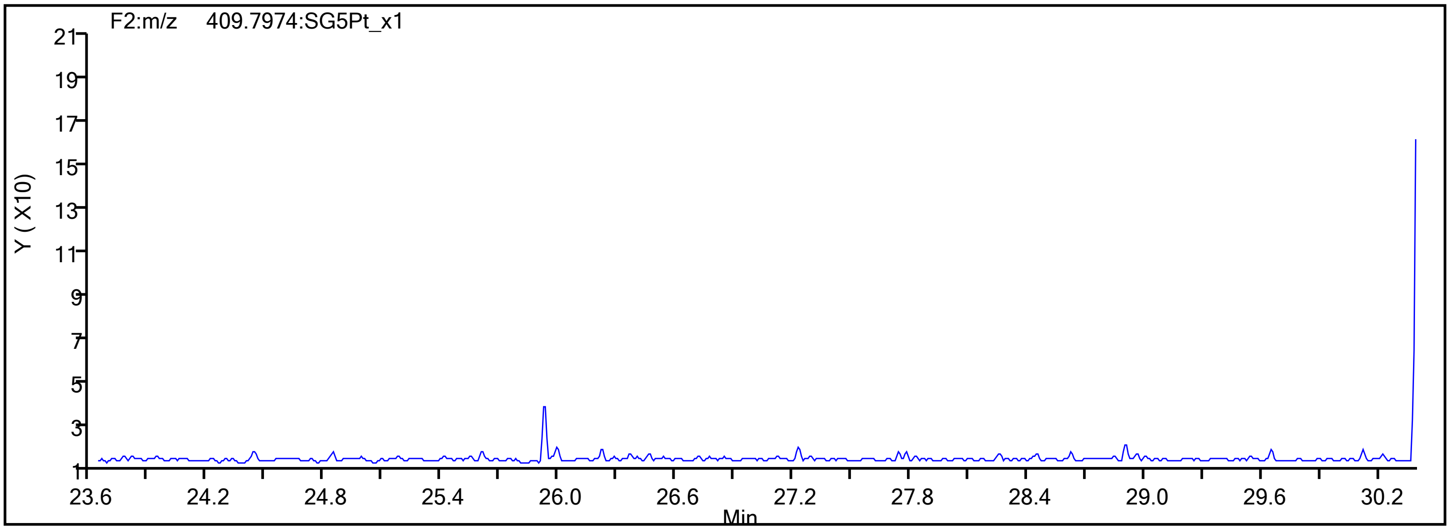

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-2-2
Worklist#: 420640
Sample Line#: 24
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

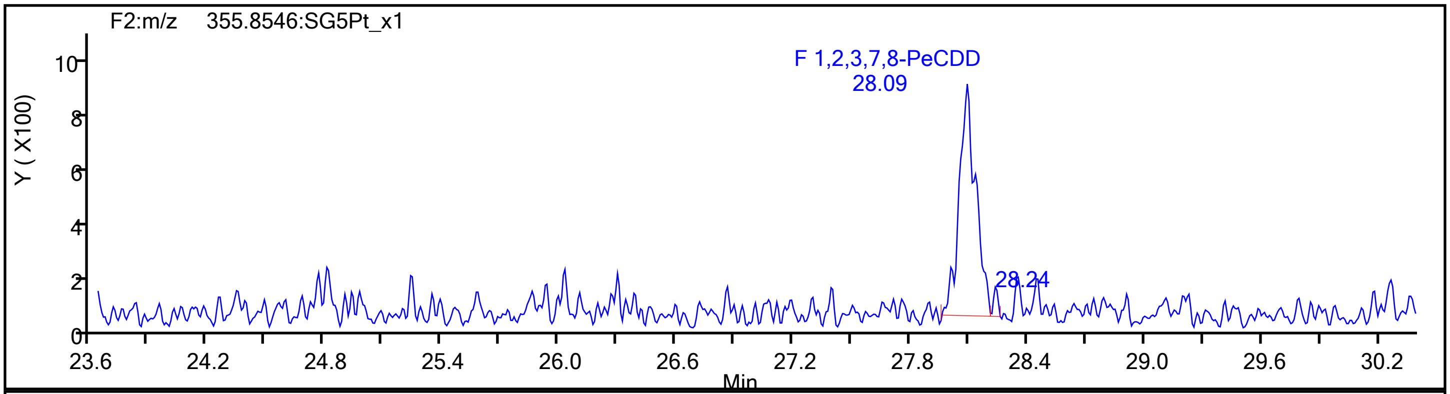

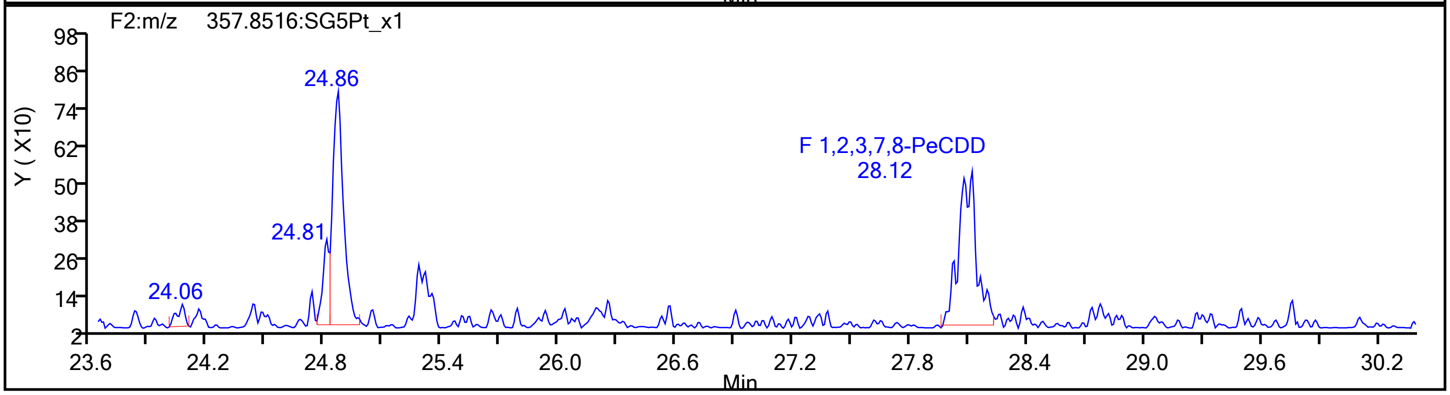

PeCDD Standards

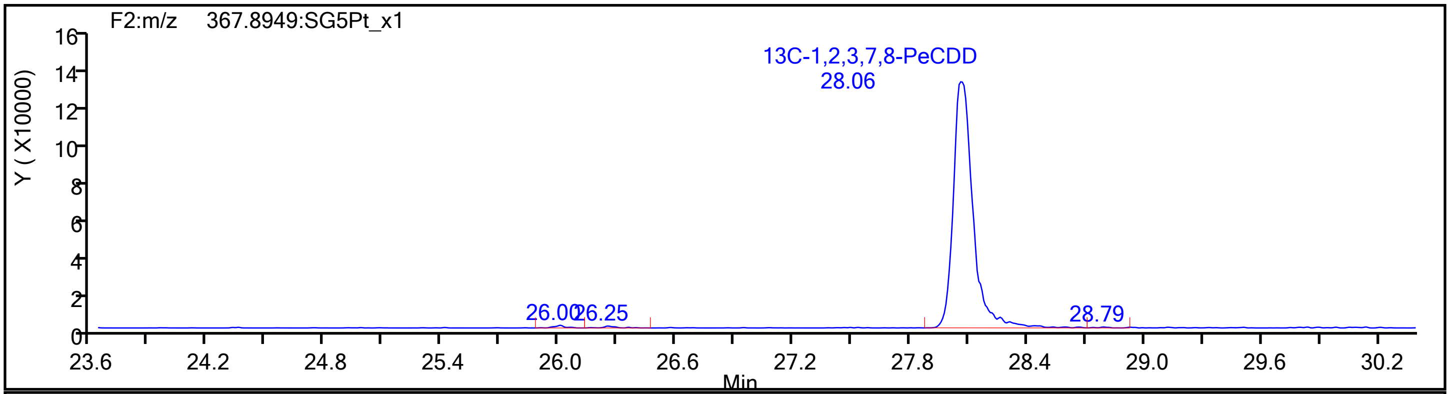

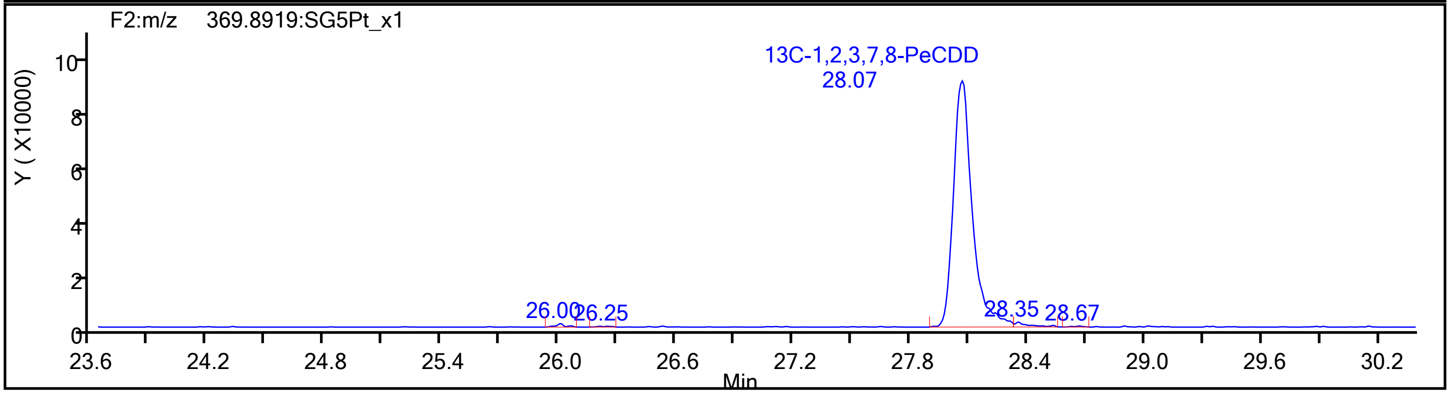

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

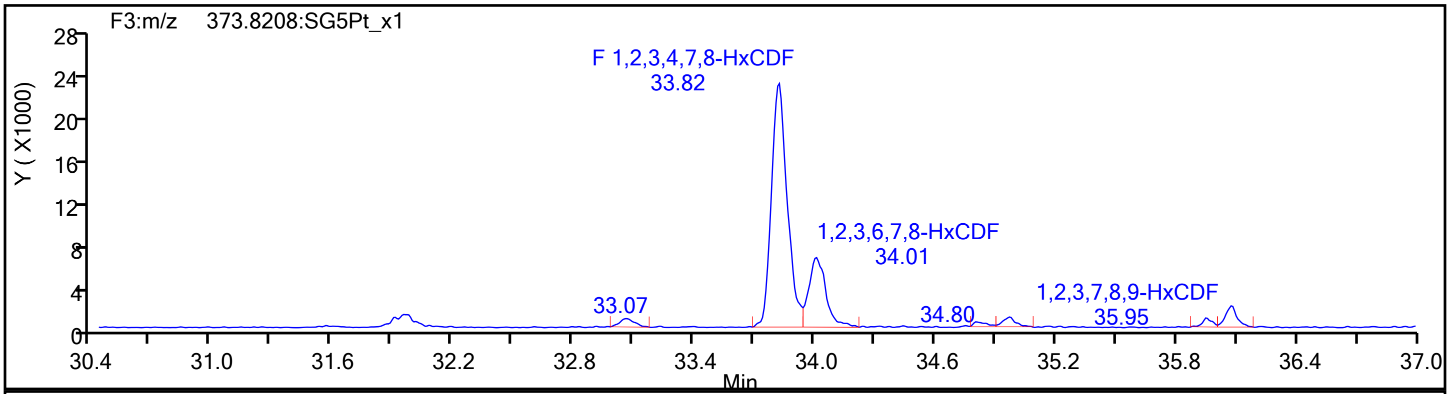

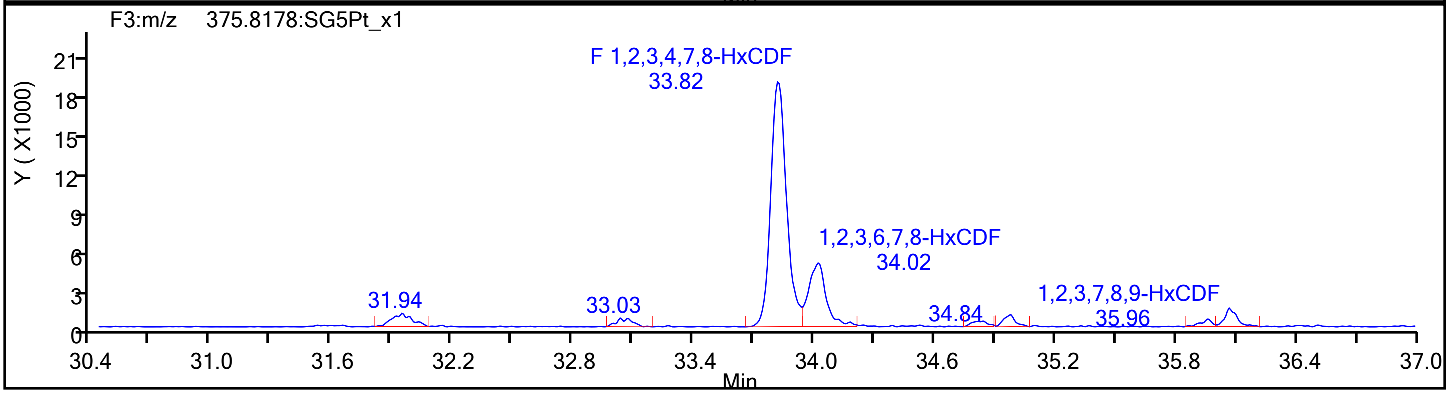

HxCDF Standards

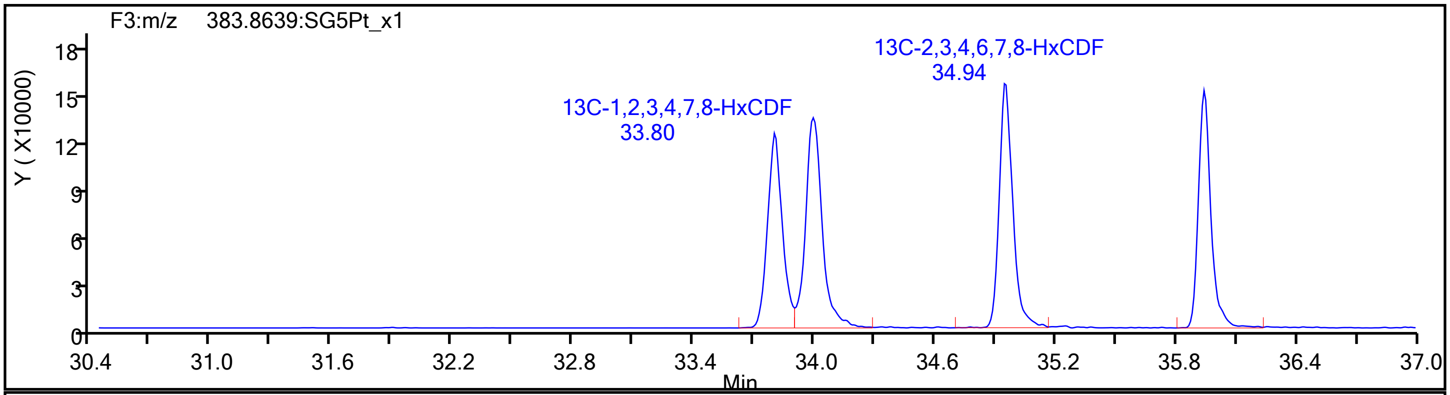

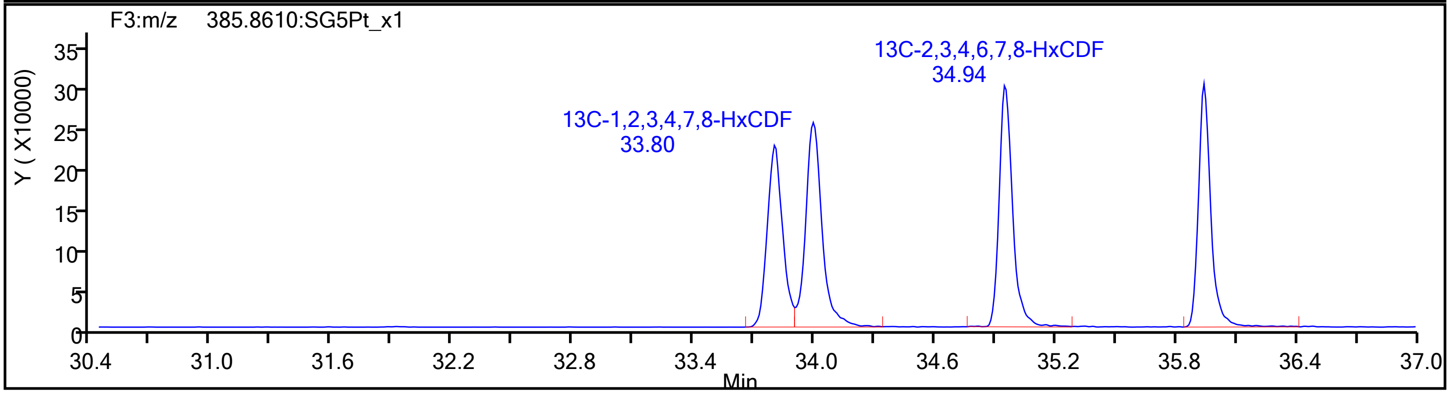

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

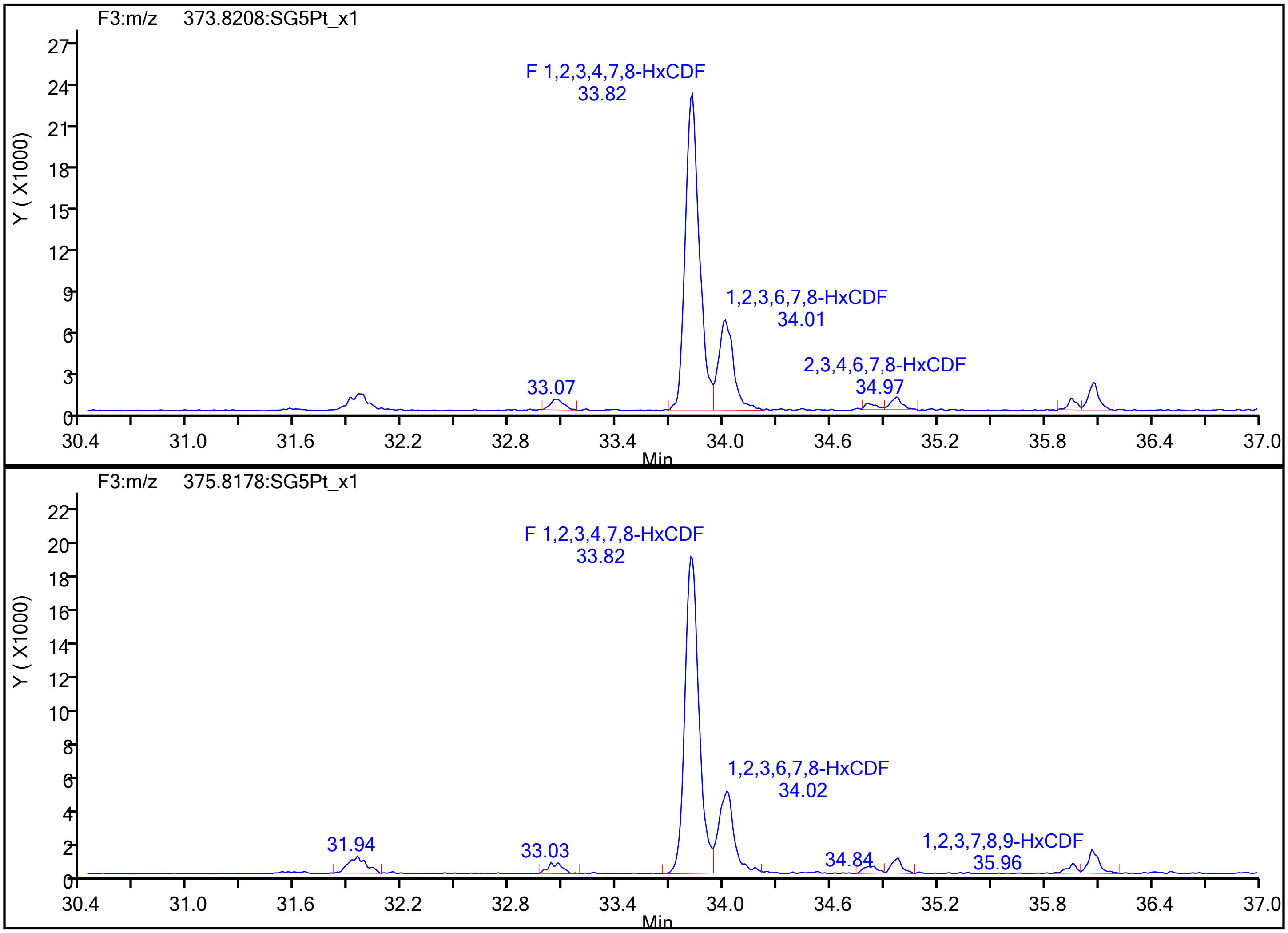

HxCDF Interference Mass

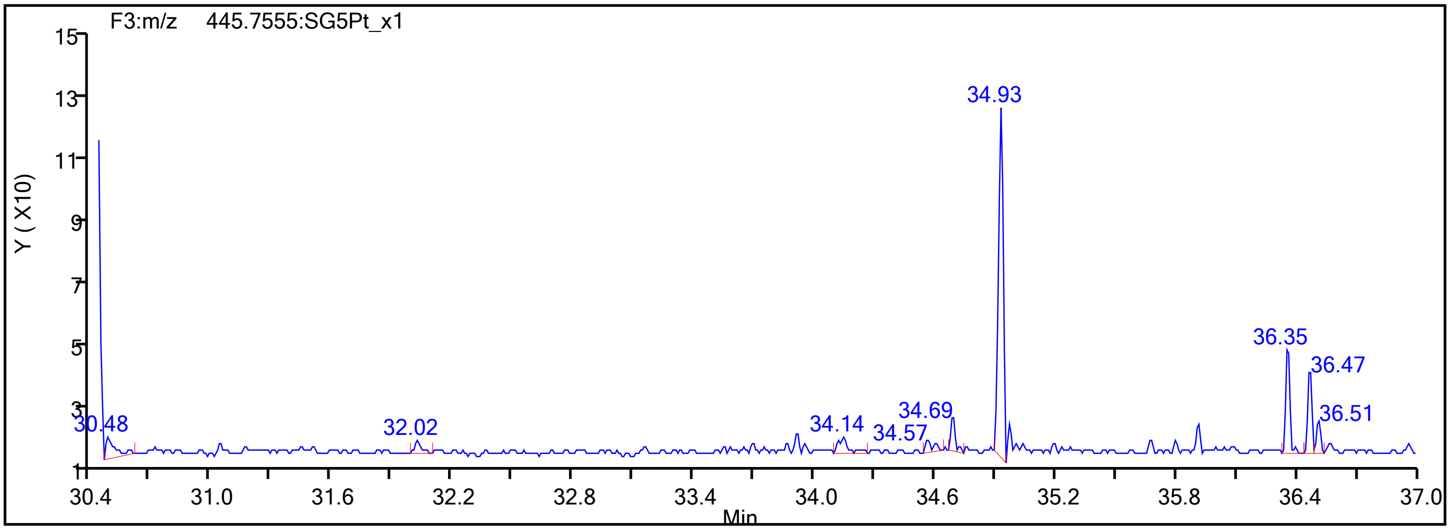

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 420640

Sample Line#: 24

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

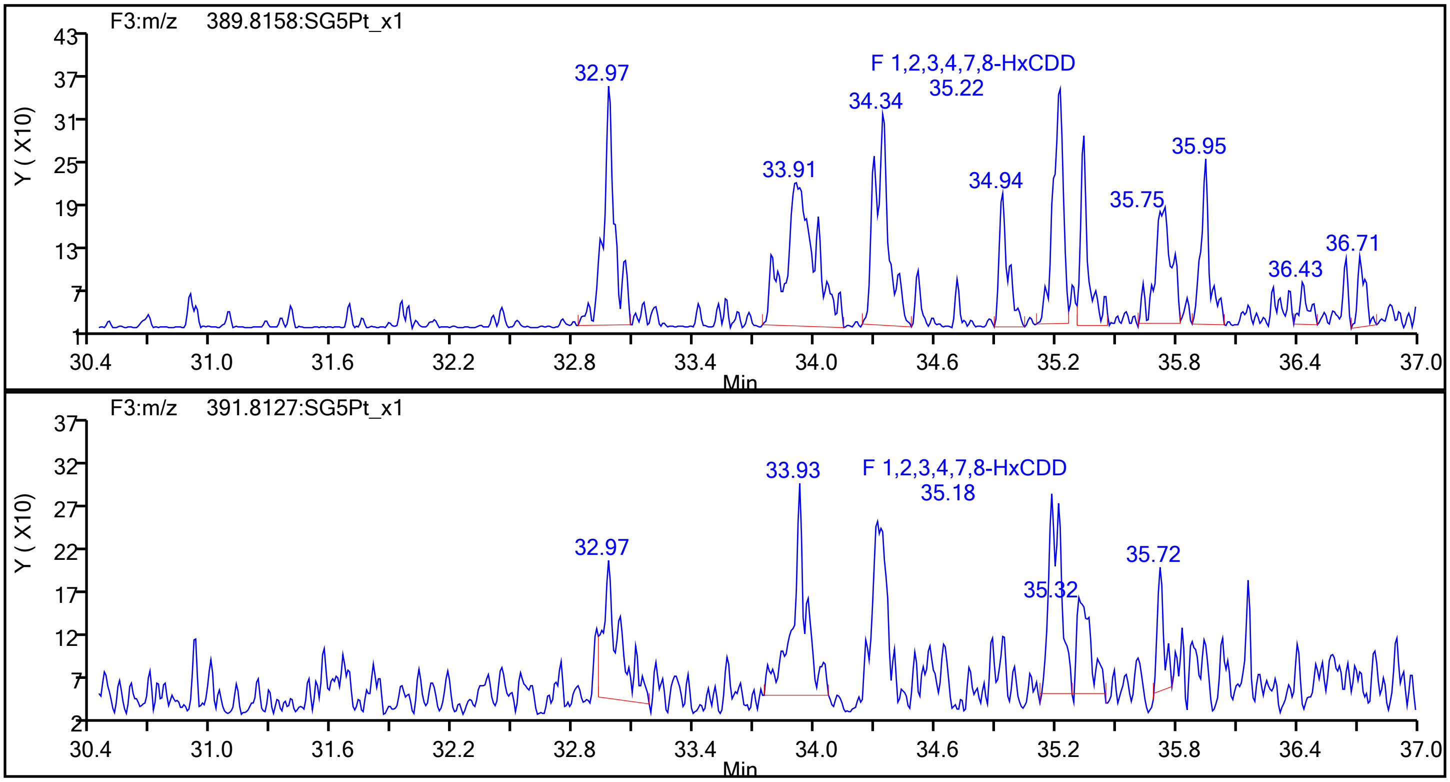

HxCDD Standards

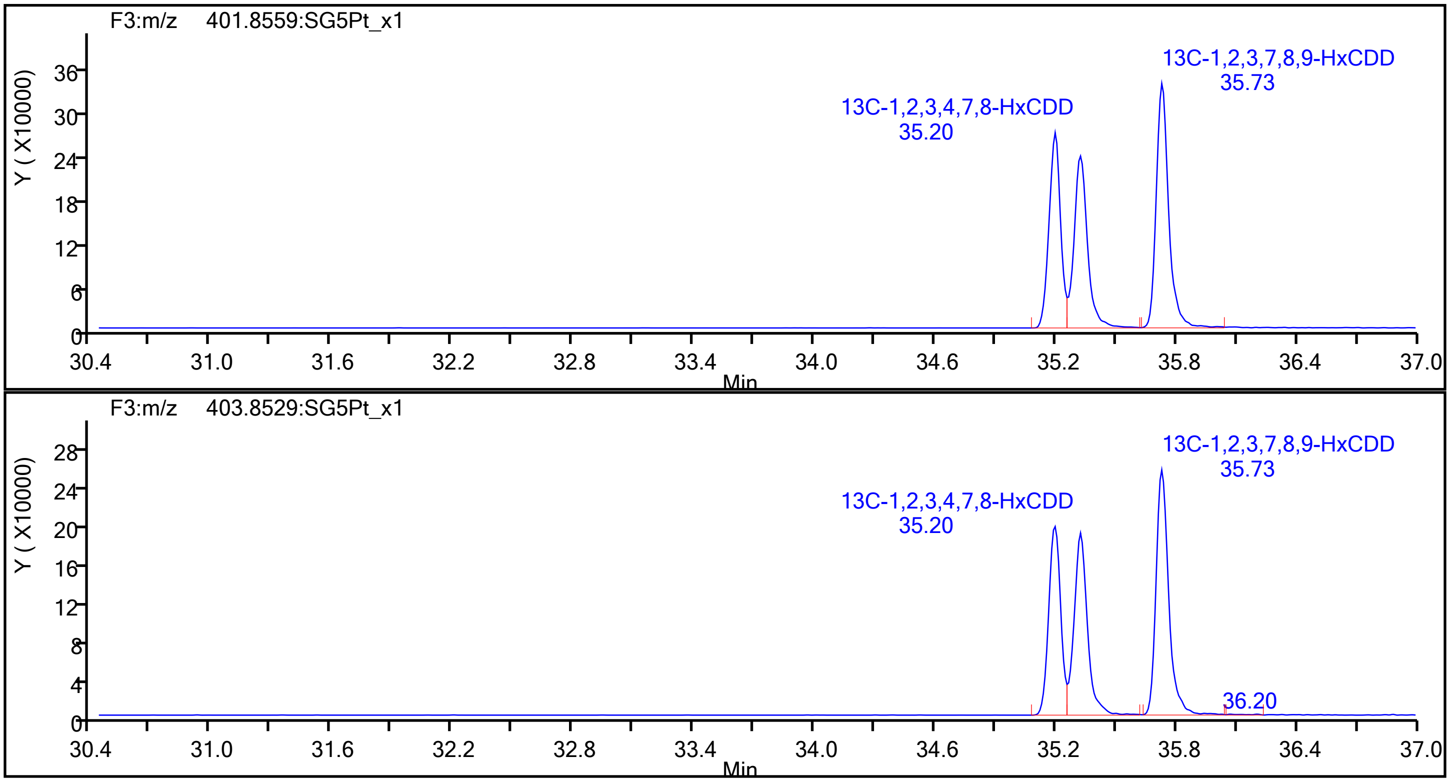

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 420640 Sample Line#: 24

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

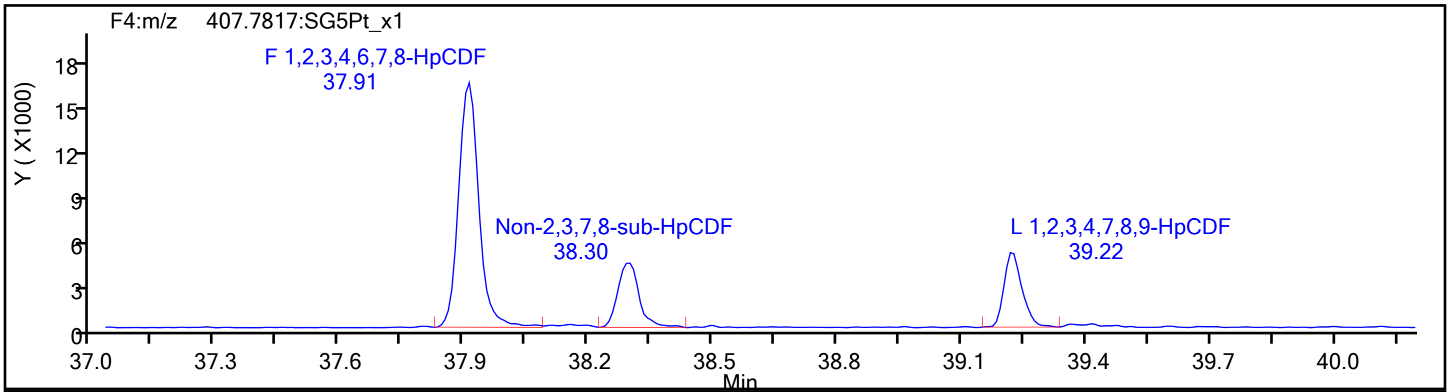

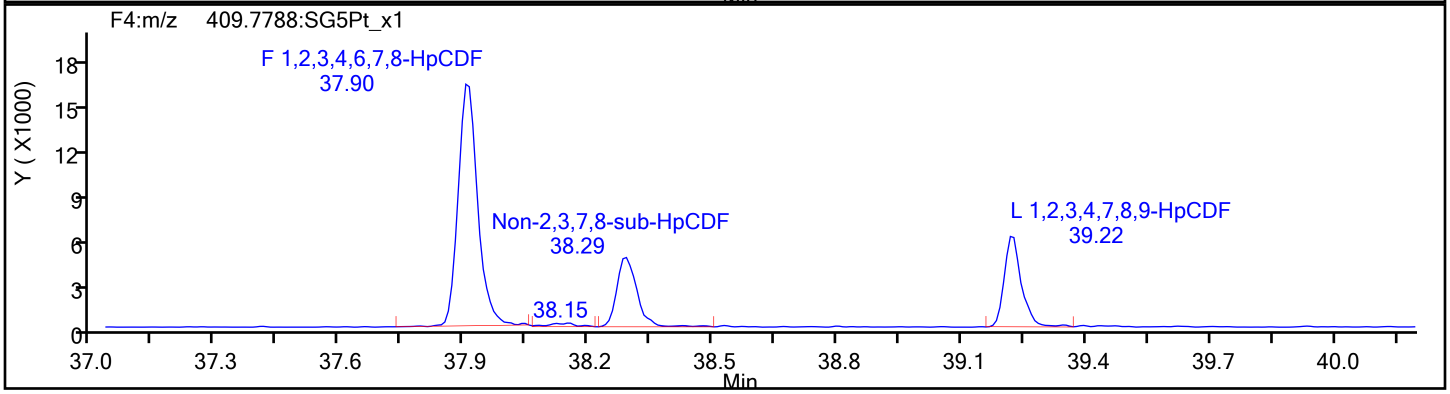

HpCDF Standards

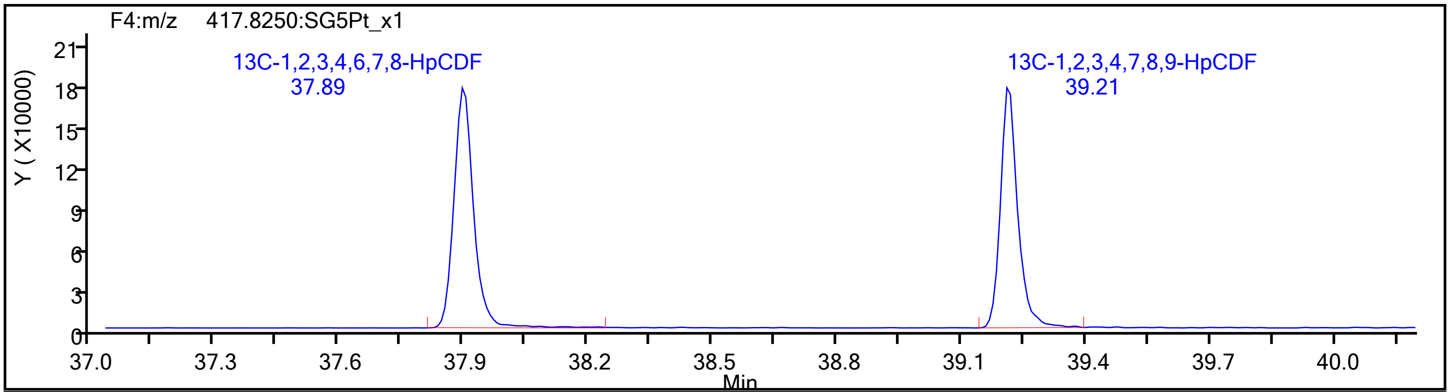

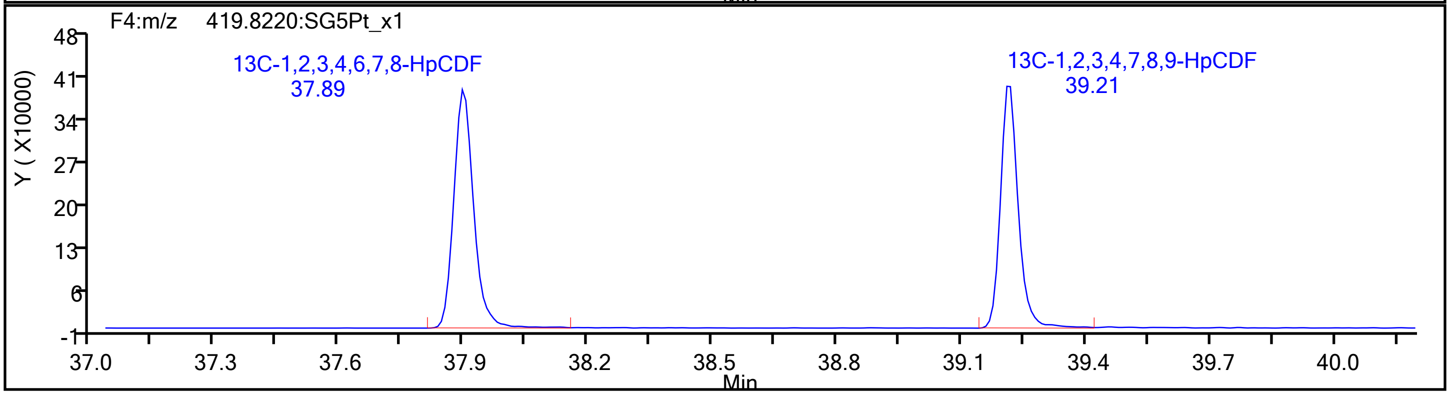

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 420640

Sample Line#: 24

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

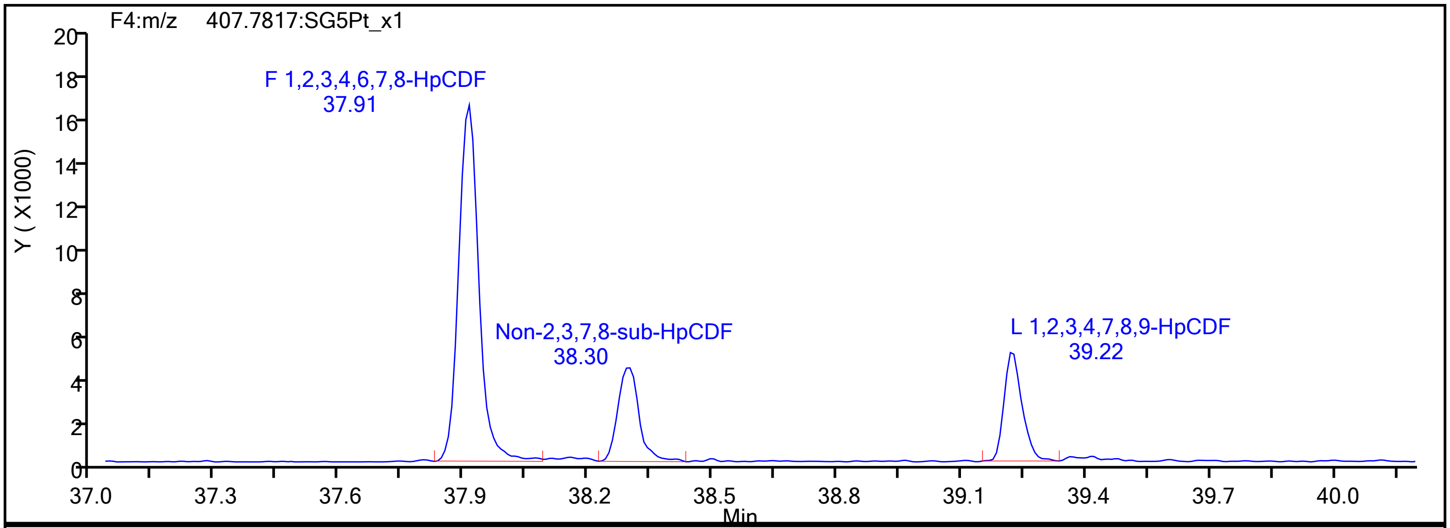

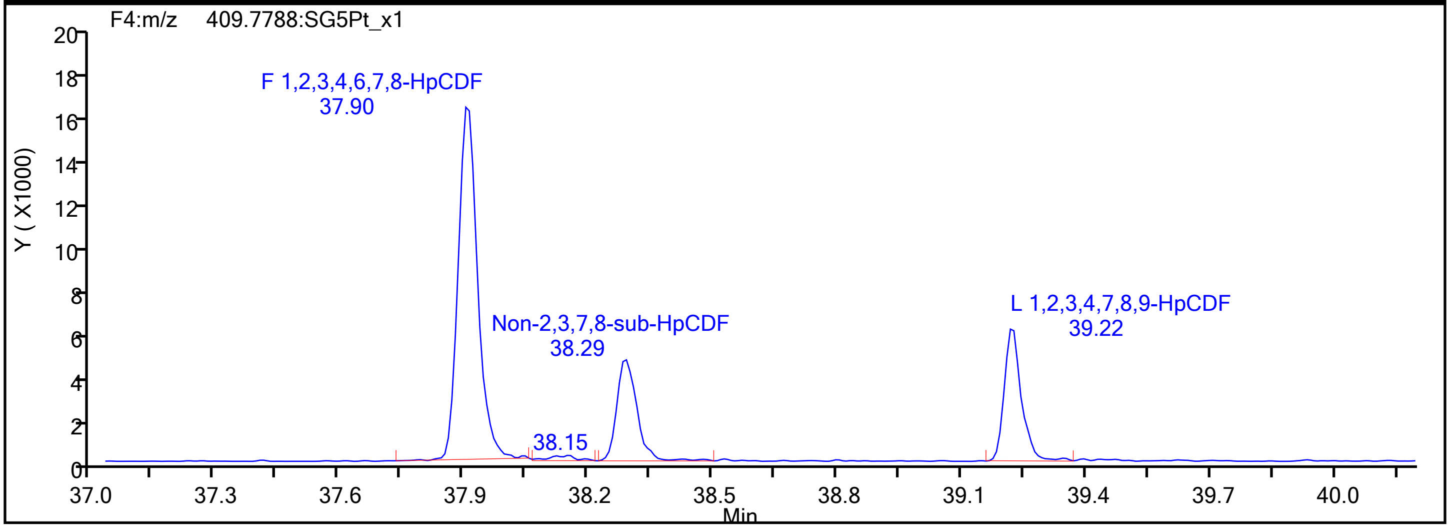

HpCDF Interference Mass

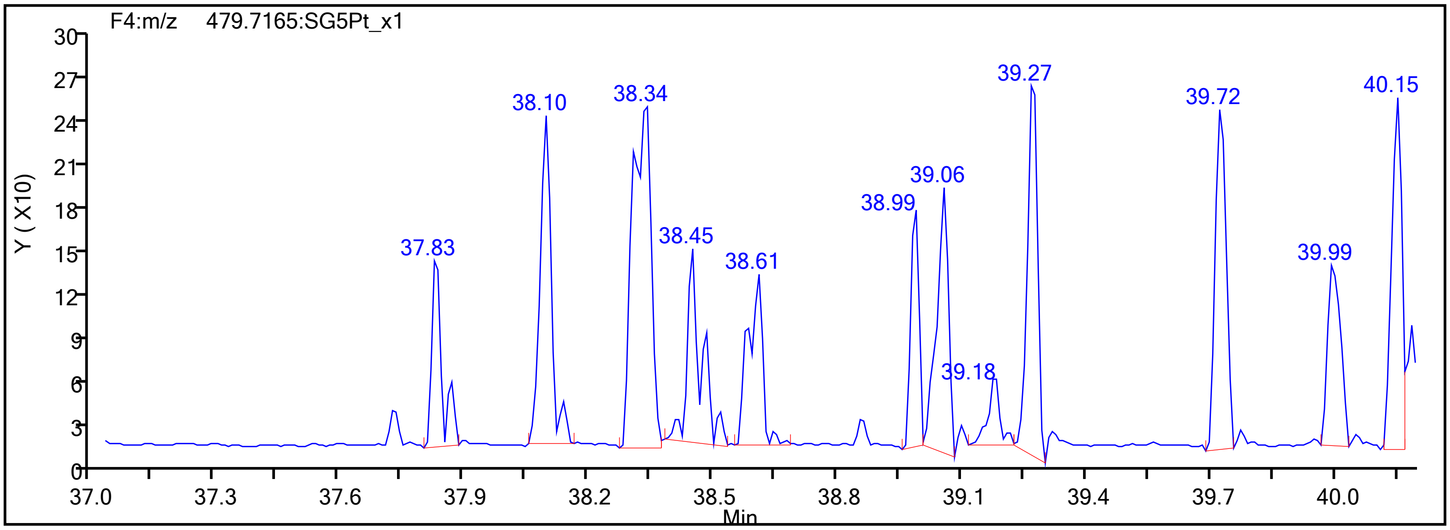

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 420640

Sample Line#: 24

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

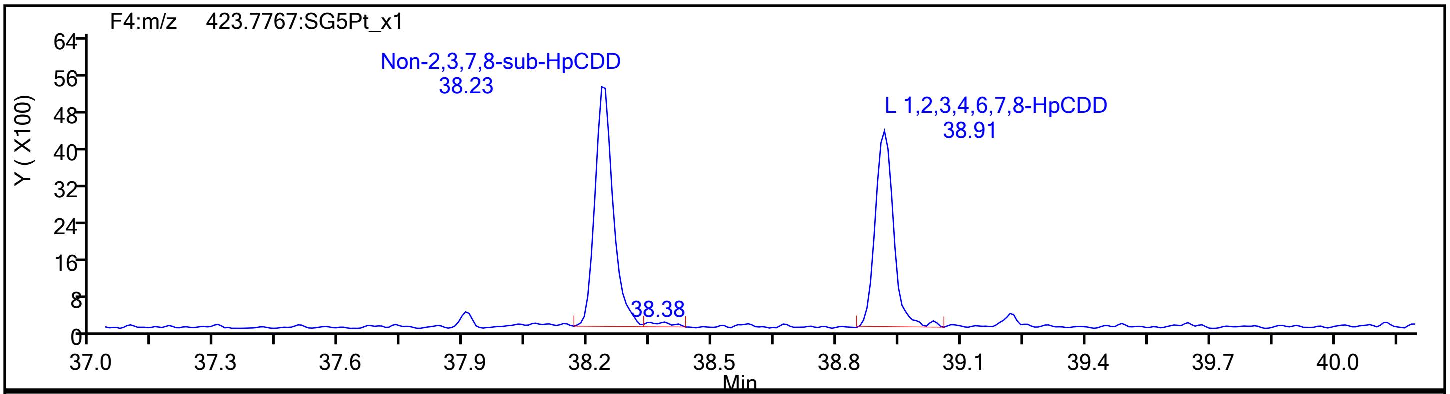

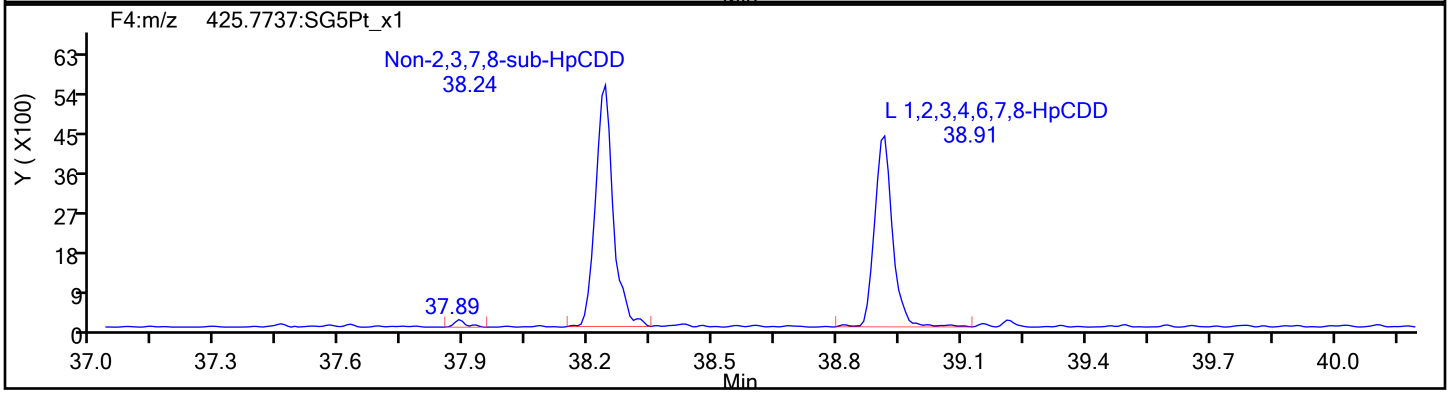

HpCDD Standards

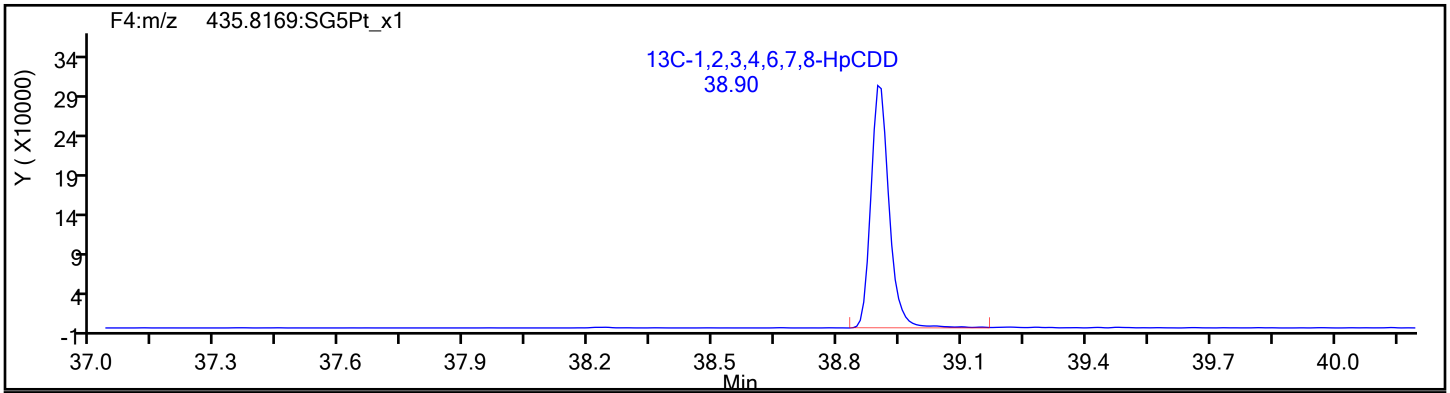

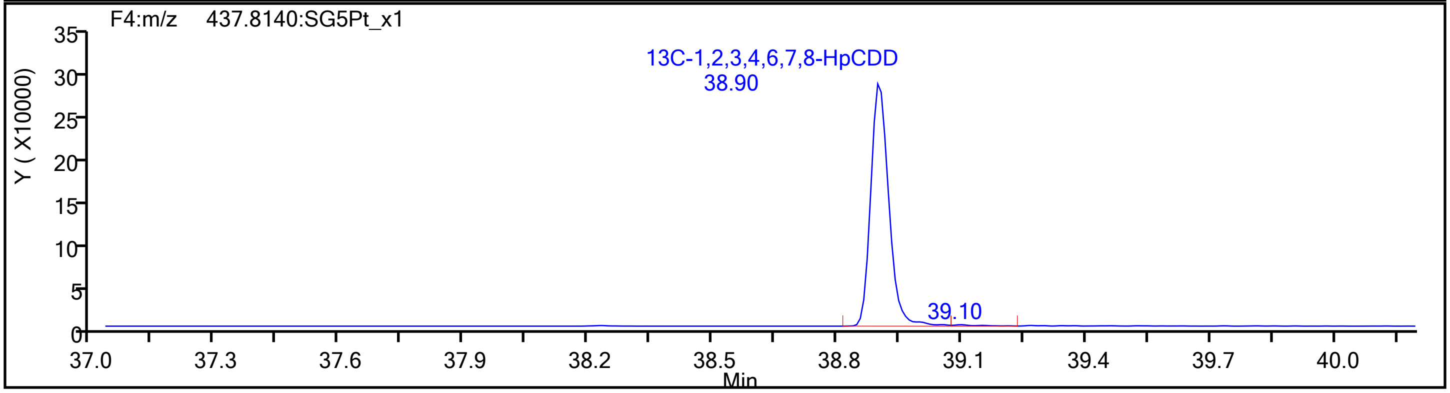

Report Date: 12-Oct-2020 11:32:01　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

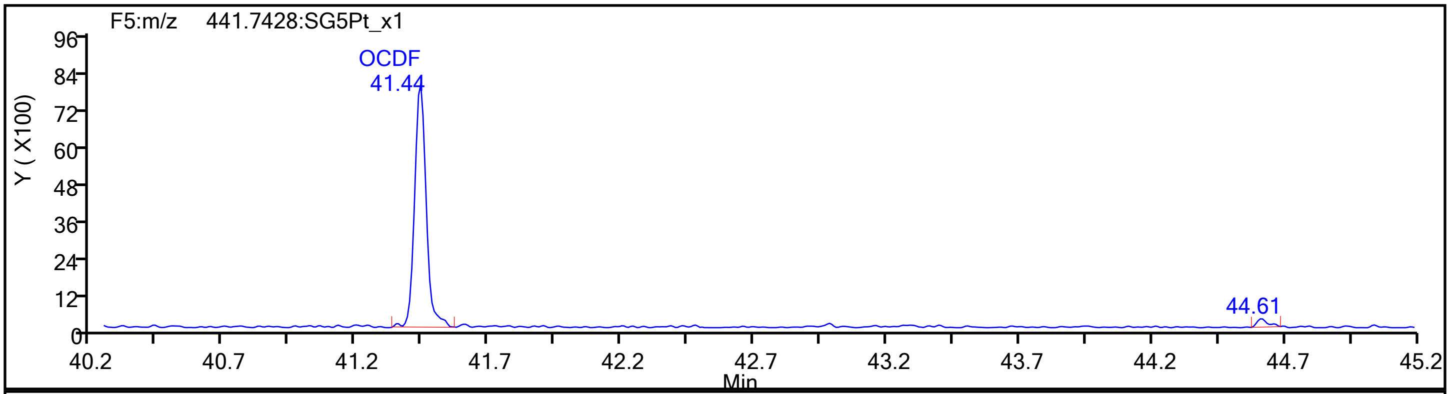

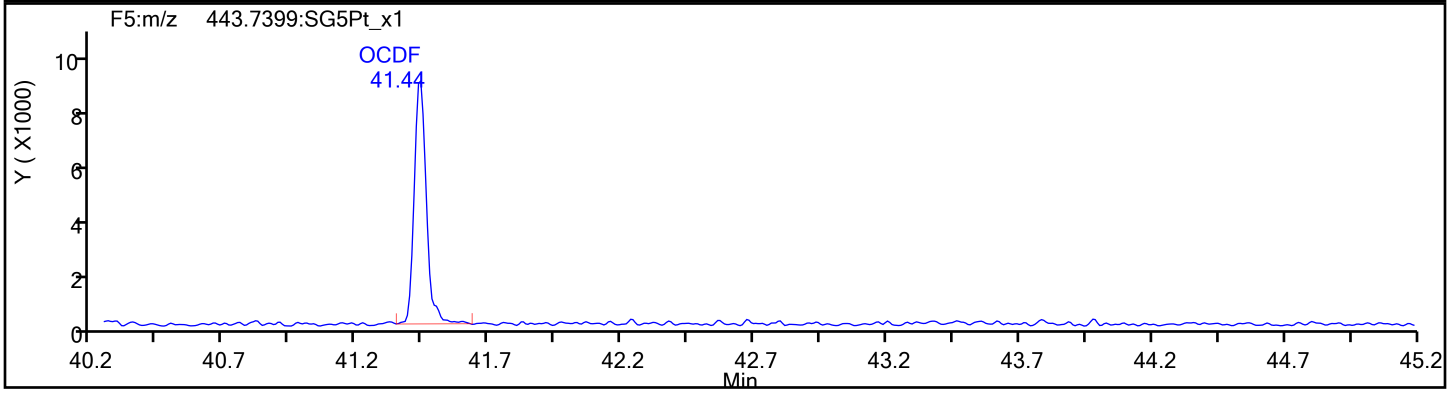

OCDF Standards

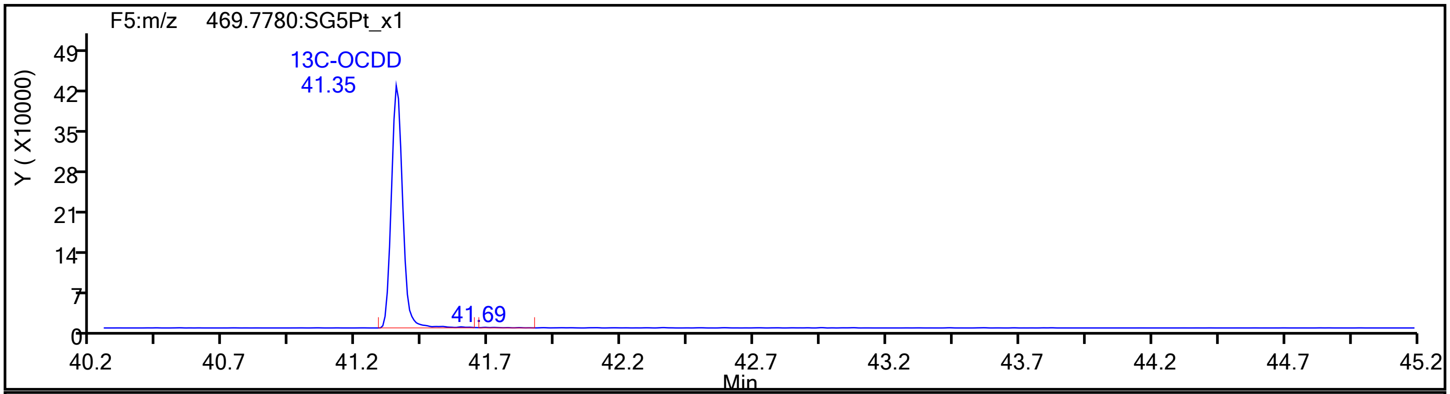

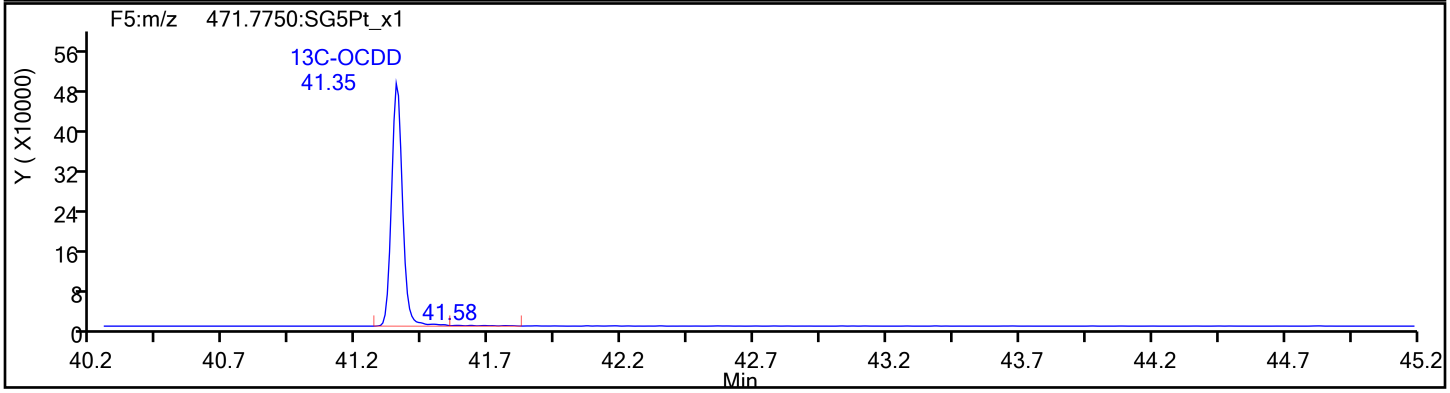

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

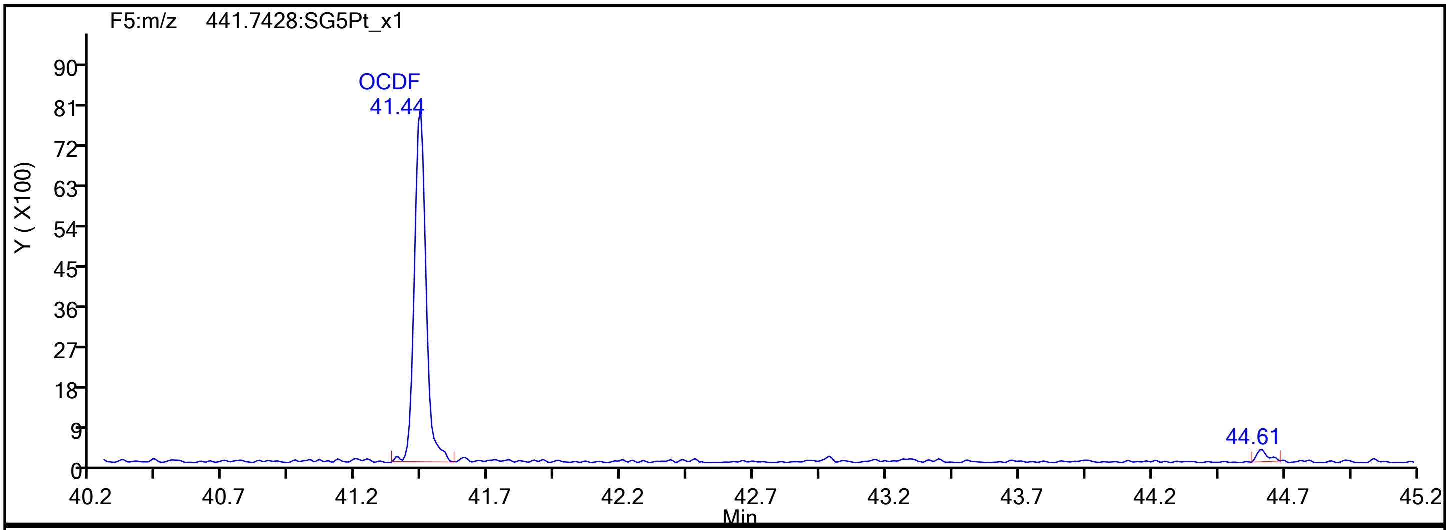

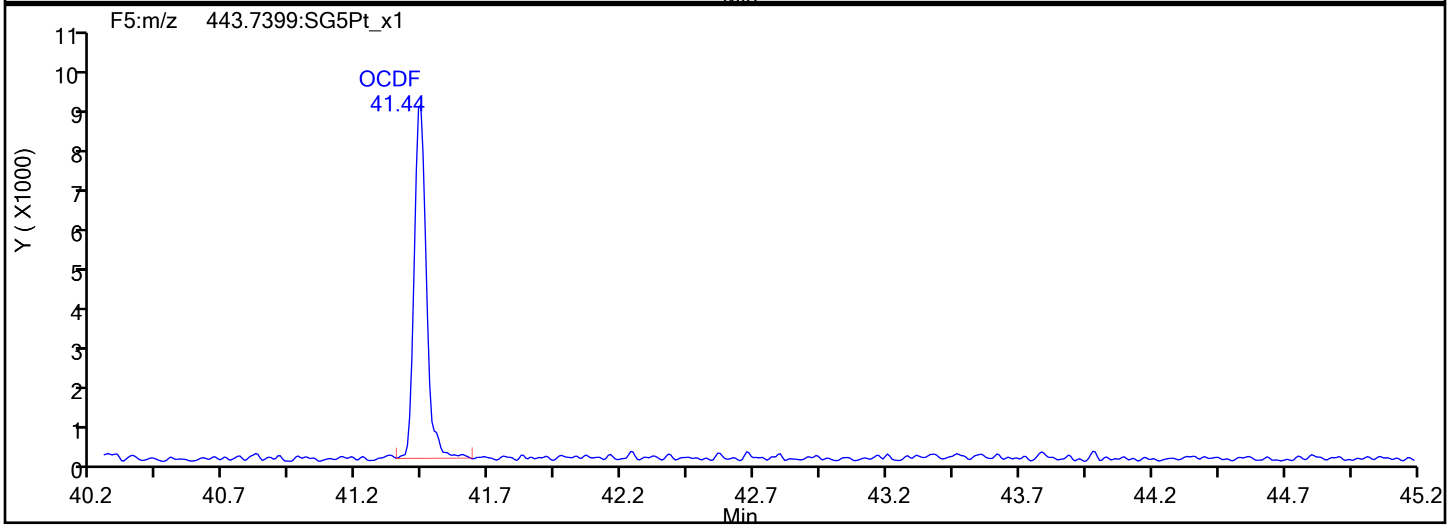

OCDF Interference Mass

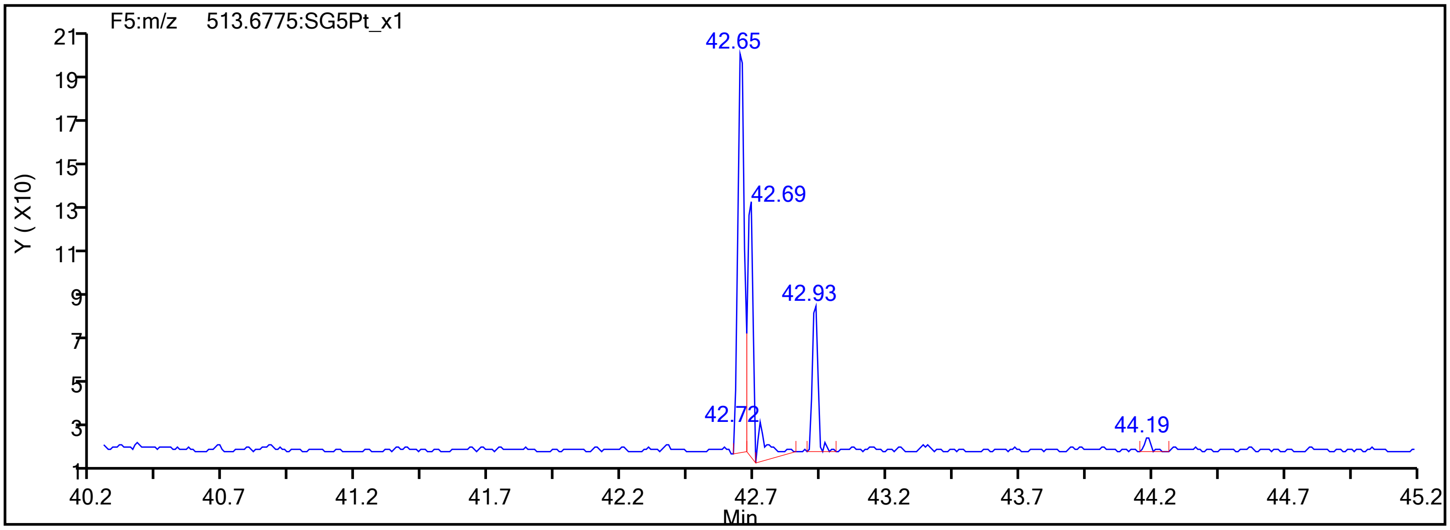

Report Date: 12-Oct-2020 11:32:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 420640 Sample Line#: 24

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

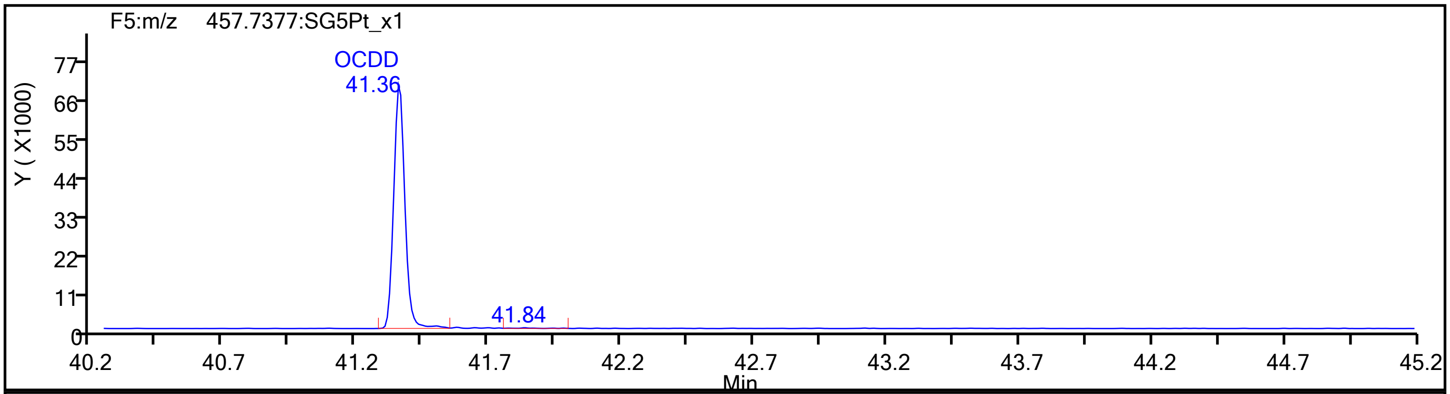

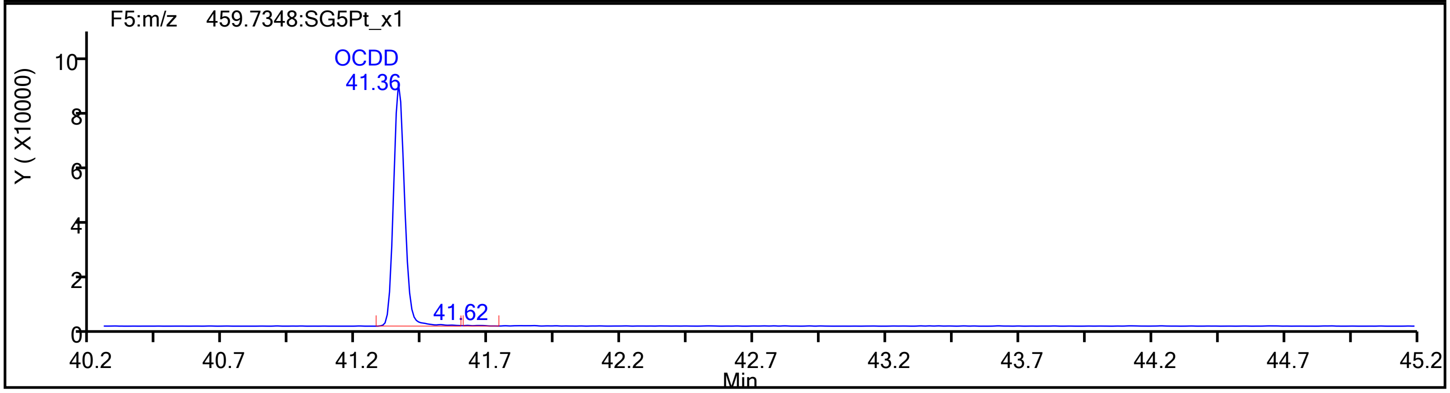

OCDD Standards

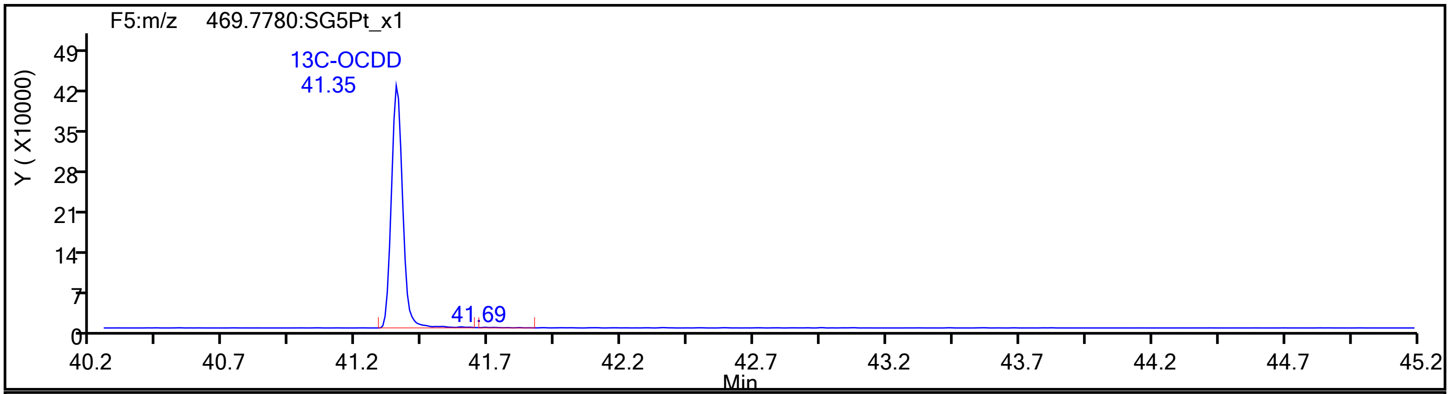

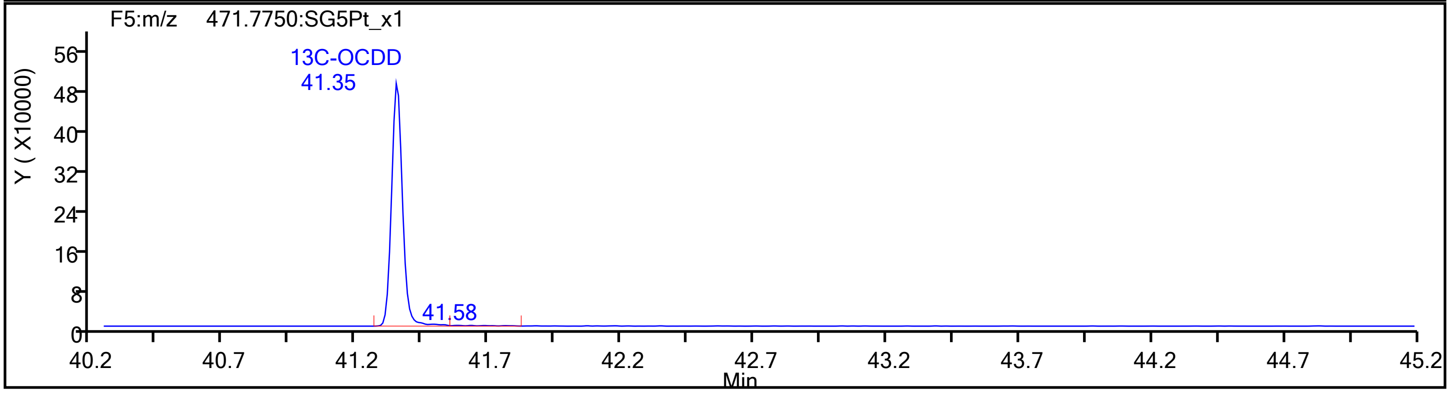

Report Date: 12-Oct-2020 11:32:02 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d

Injection Date: 10-Oct-2020 12:33:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 420640 Sample Line#: 24

Column Type: DB-5 Column Dia: 0.32 mm

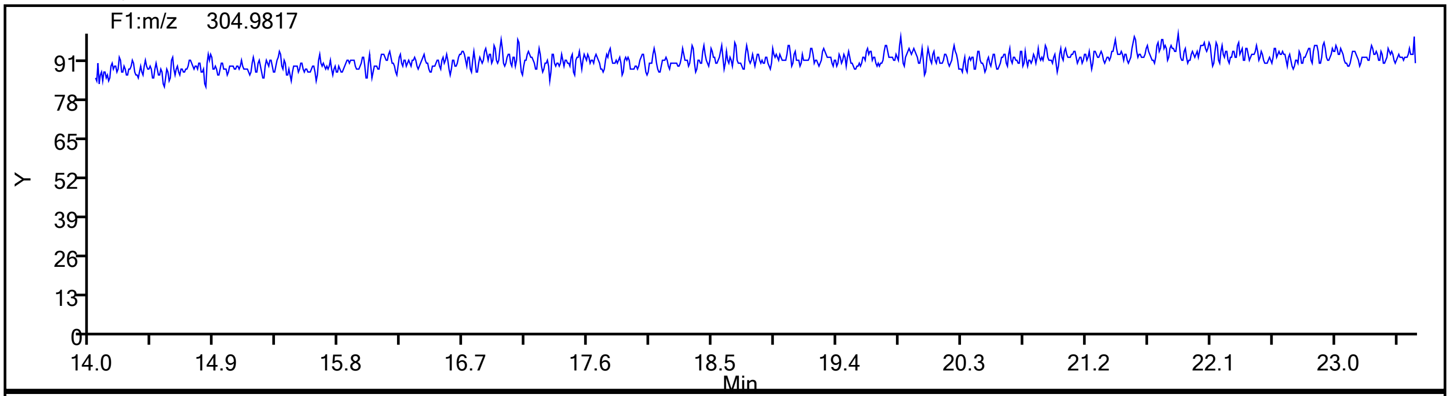

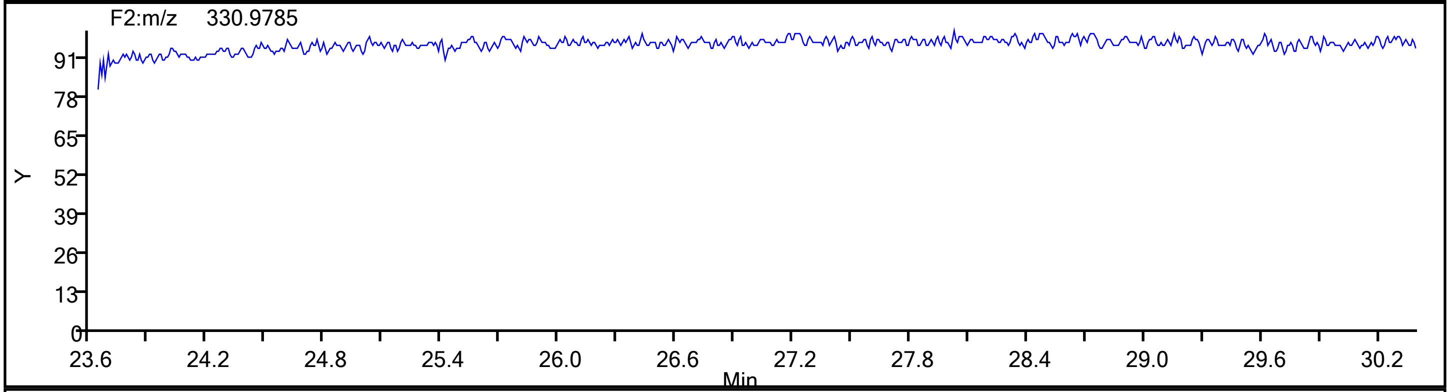

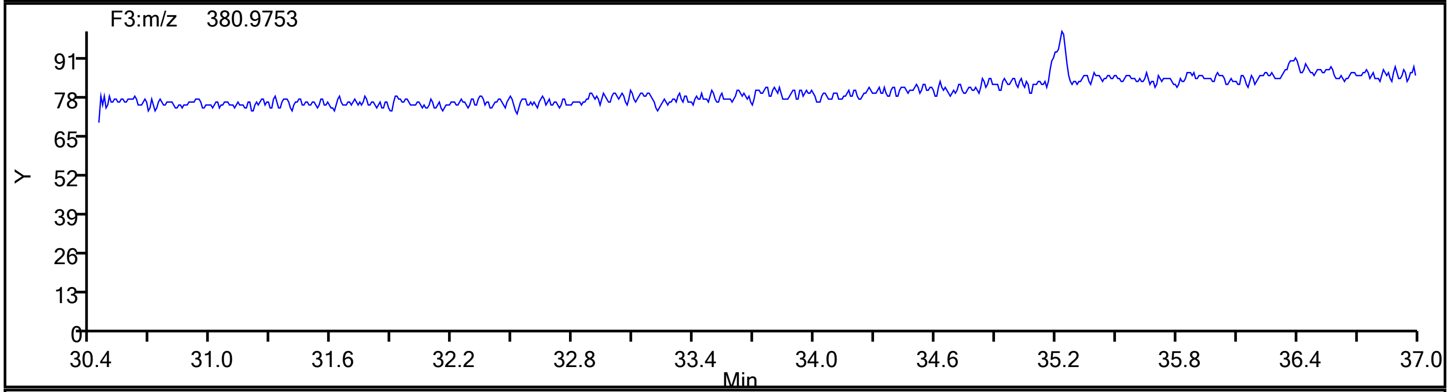

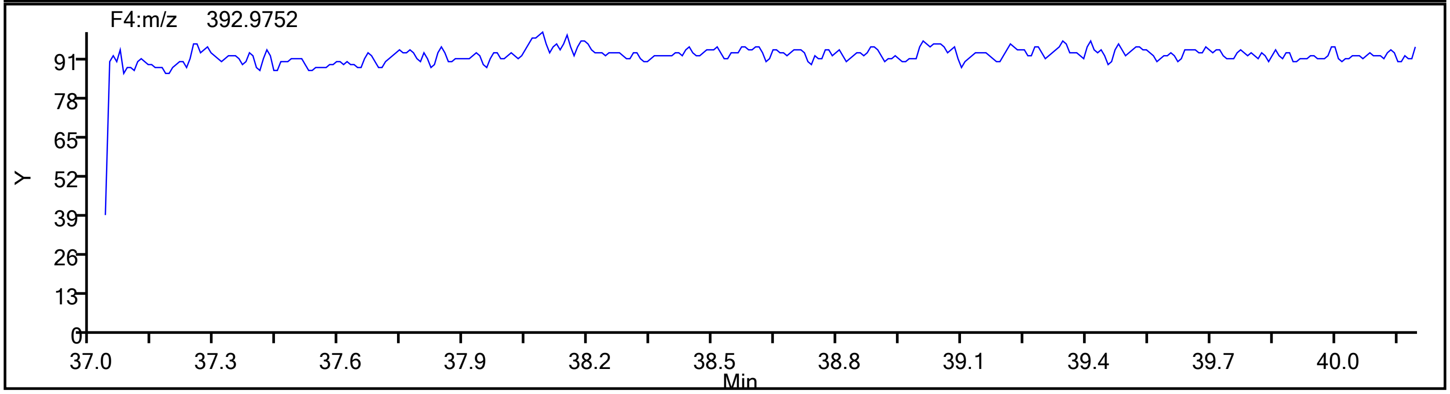

Report Date: 12-Oct-2020 11:32:02 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_26.d		
Injection Date:	10-Oct-2020 12:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	420640	Sample Line#:	24
Column Type:	DB-5	Column Dia:	0.32 mm

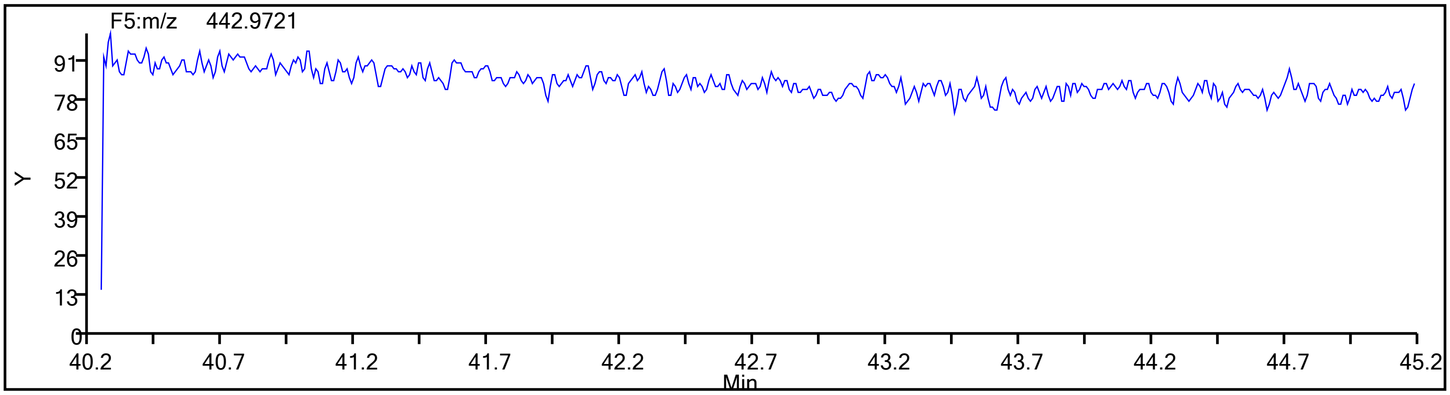

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-2-2 RA

Lab Sample ID: 320-65130-19 RA

Matrix: Water

Lab File ID: 12OC20A11D2_006.d

Analysis Method: 1613B

Date Collected: 09/11/2020 09:30

Extract. Method: 1613B

Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1045.9(mL)

Date Analyzed: 10/12/2020 18:31

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 421482

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2400	B	9.6	3.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	111		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_006.d
Lims ID: 320-65130-A-19-A
Client ID: 11215702-Tank#2-valve-2-2
Sample Type: Client
Inject. Date: 12-Oct-2020 18:31:58 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-19-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:34:58

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.971	67431972	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.096	77350509	0.77	1.5708	73.0	73.0	0.7354	0.7354	73.03	
2,3,7,8-TCDF	16.123	95832456	0.77	0.9943	124.6	124.6	0.2054	0.2054		
D 13C-2,3,7,8-TCDD	14.710	46501218	0.82	0.9834	70.1	70.1	3.181	3.181	70.13	
2,3,7,8-TCDD	14.738	26964273	0.81	1.2822	45.2	45.2	0.3106	0.3106		
$ 37Cl4-2,3,7,8-TCDD	14.738	29828857		0.9945	44.5	44.5	0.1146	0.1146	111	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_006.d
Lims ID: 320-65130-A-19-A
Client ID: 11215702-Tank#2-valve-2-2
Sample Type: Client
Inject. Date: 12-Oct-2020 18:31:58 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-19-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:34:58

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.971	14.967	0		30427529	7436112	92260	230650	81		
333.9339	14.957	14.967	-1		37004443	9144264	115228	288070	79	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.096	16.092	0	1.075	33569279	7407016	41872	104680	177		
317.9389	16.096	16.092	0	1.075	43781230	9965539	34742	86855	287	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.123	16.312	0	1.002	41663401	9545735	6012	15030	1588		
305.8987	16.109	16.312	-1	1.001	54169055	12466679	8178	20445	1524	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.710	15.341	-1	0.983	20946894	5348069	92260	230650	58		
333.9339	14.710	15.341	-1	0.983	25554324	6684130	115228	288070	58	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.738	15.613	0	1.002	12028668	3039317	10210	25525	298		
321.8936	14.738	15.613	0	1.002	14935605	3698664	8956	22390	413	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.738	15.356	0	0.984	29828857	7394473	7559	18897	978		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_006.d		
Injection Date:	12-Oct-2020 18:31:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	421482	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

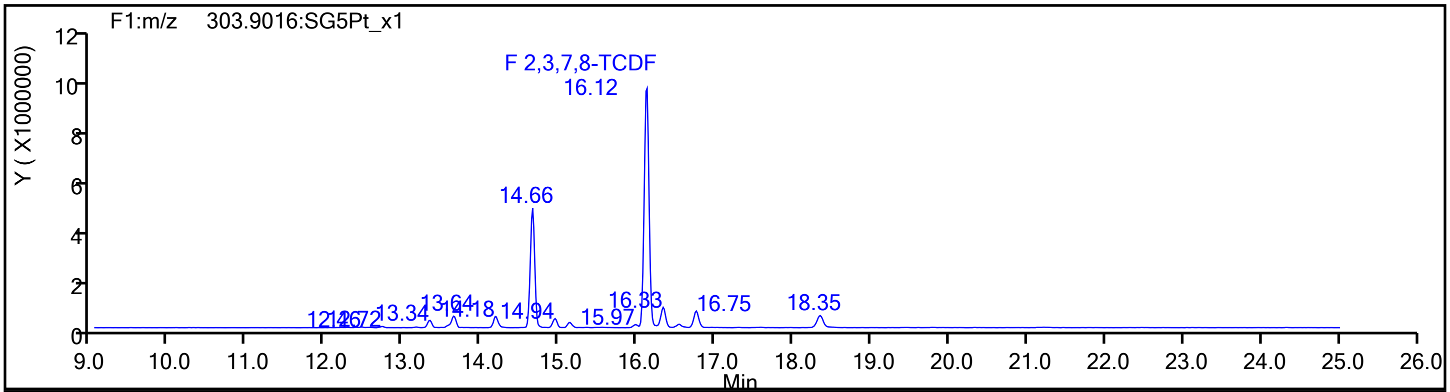

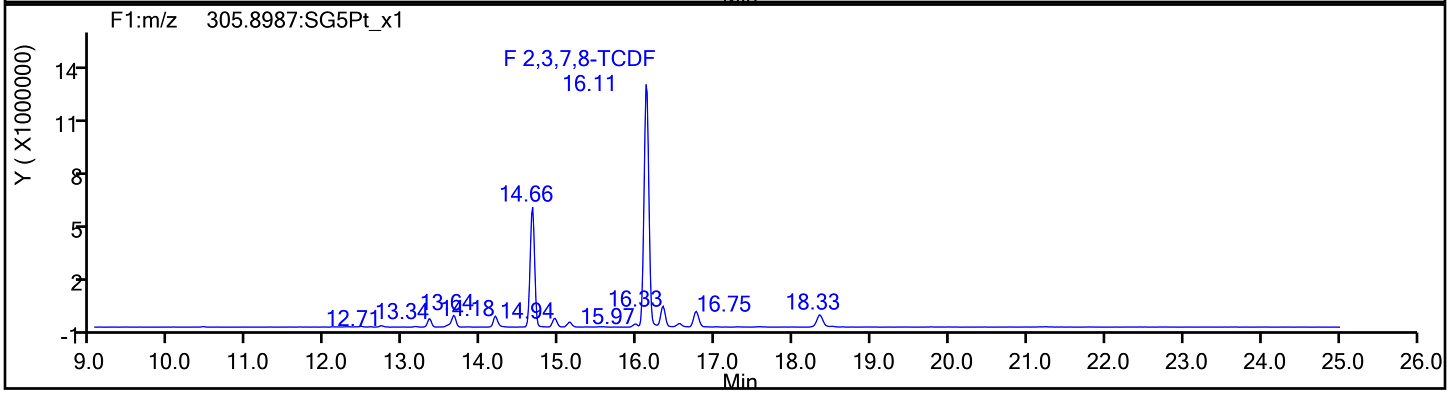

TCDF Standards

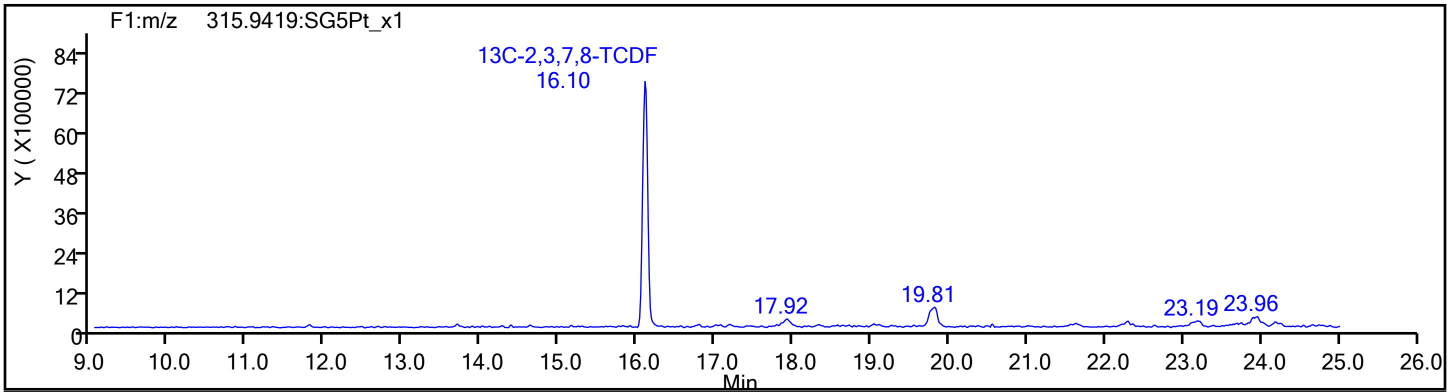

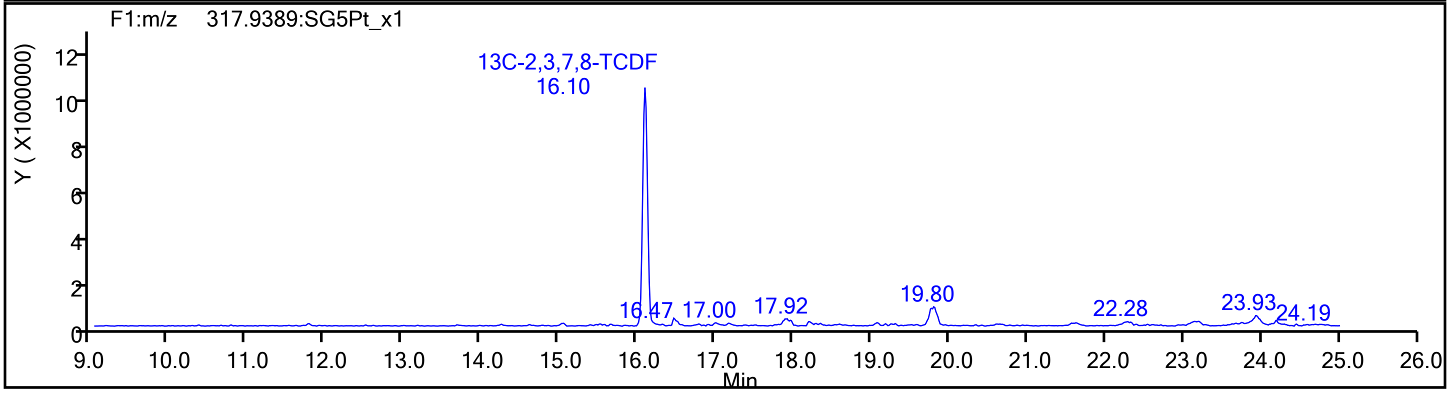

Report Date: 14-Oct-2020 12:17:28 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_006.d		
Injection Date:	12-Oct-2020 18:31:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	421482	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

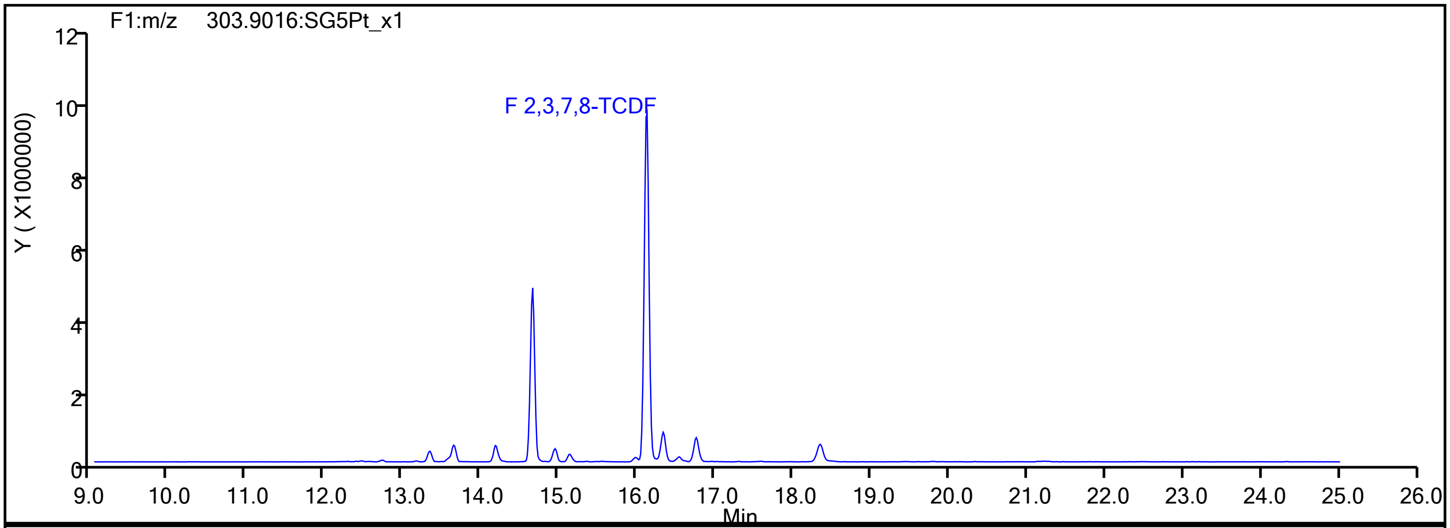

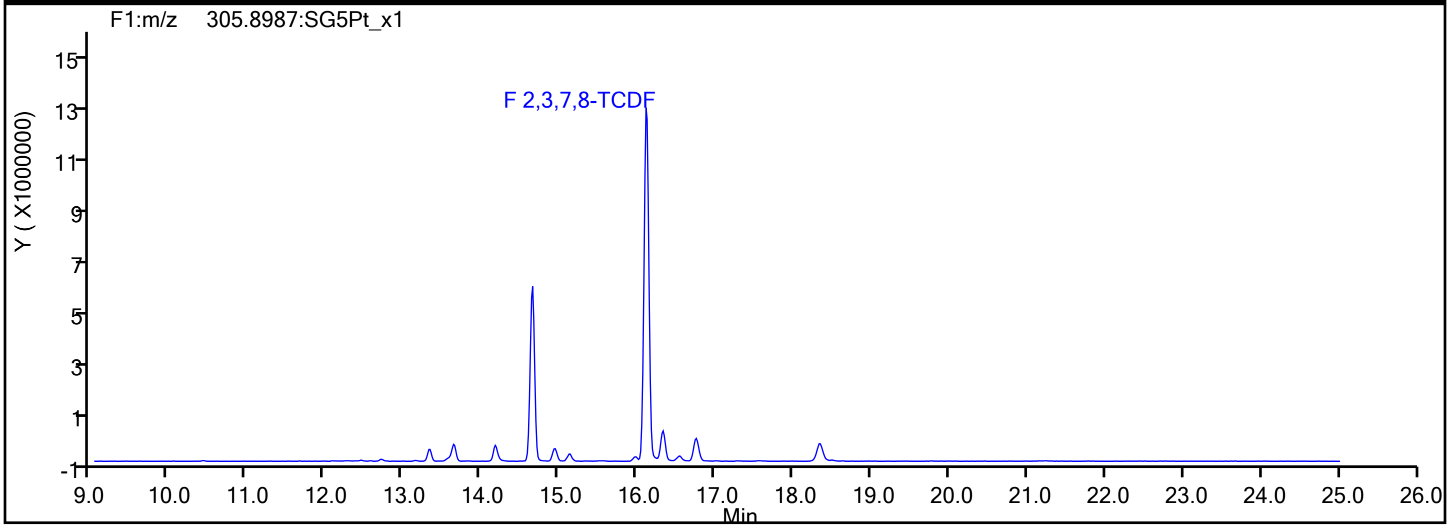

TCDF Interference Mass

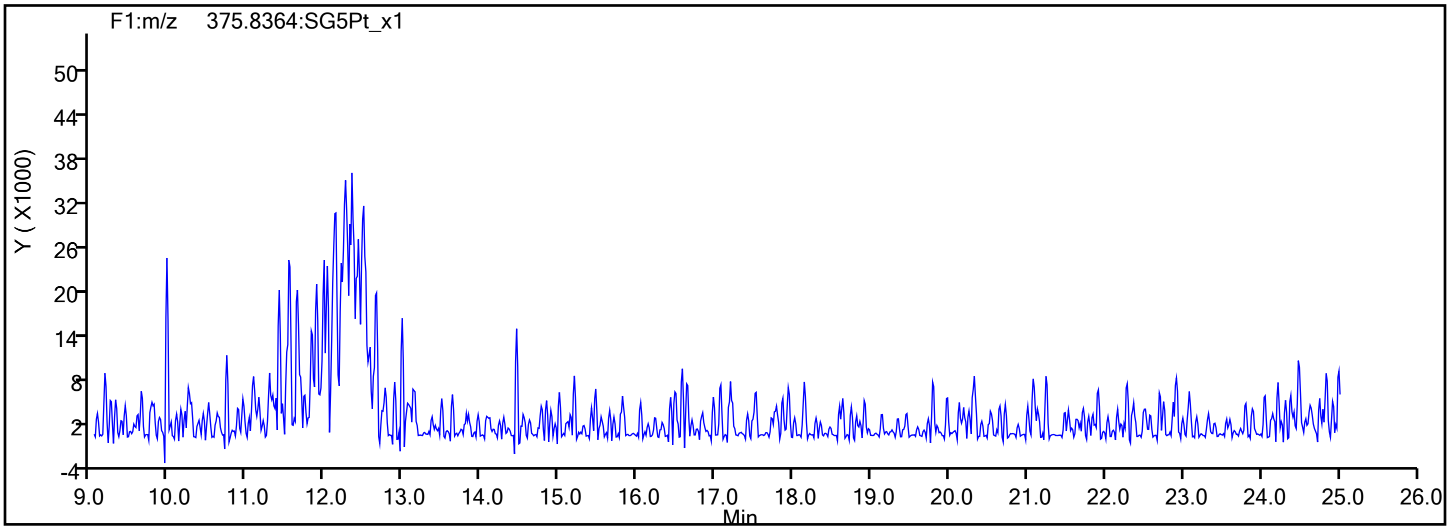

Report Date: 14-Oct-2020 12:17:28

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_006.d

Injection Date: 12-Oct-2020 18:31:58

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-2-2

Worklist#: 421482

Sample Line#: 6

Column Type: DB-225

Column Dia: 0.32 mm

37Cl4-TCDD

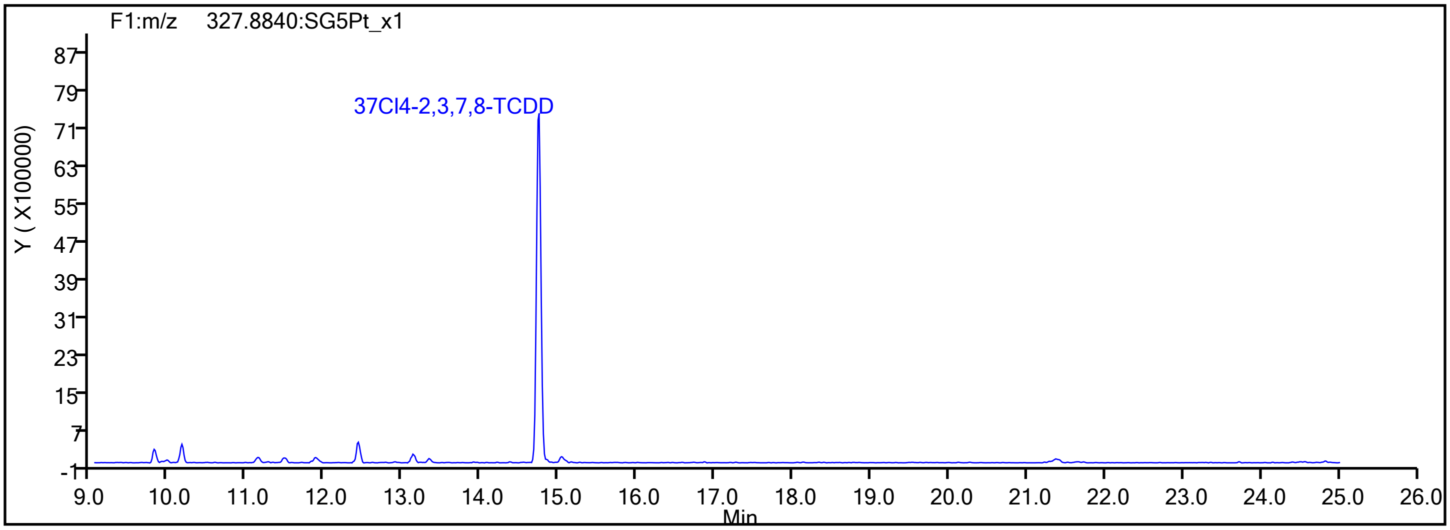

37Cl4-TCDD Standards

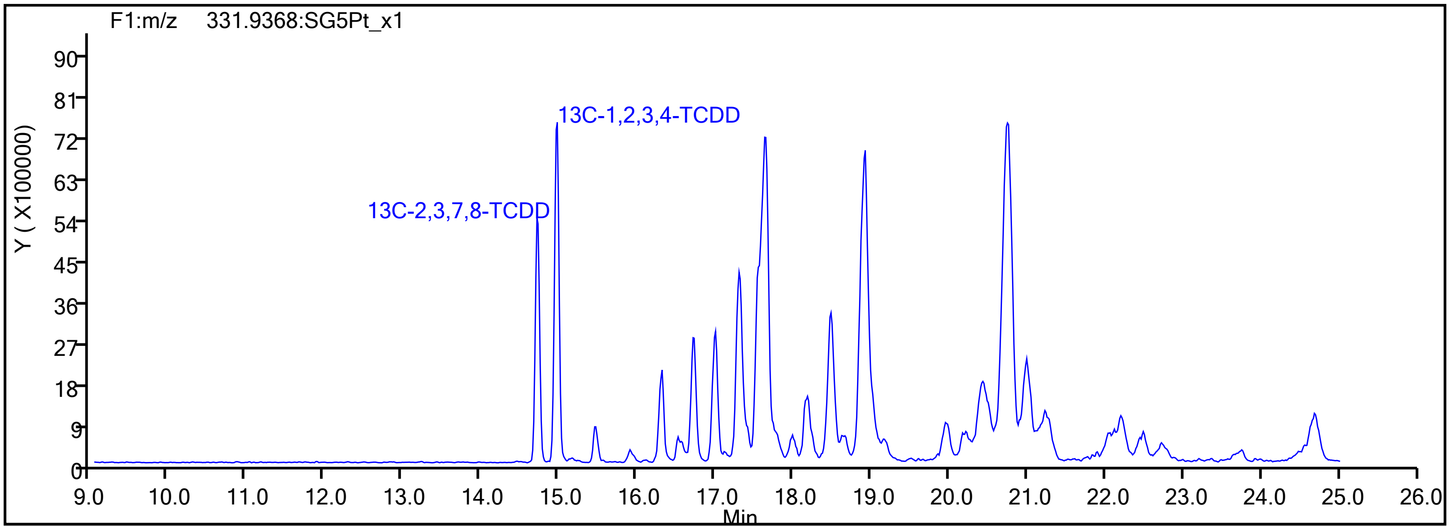

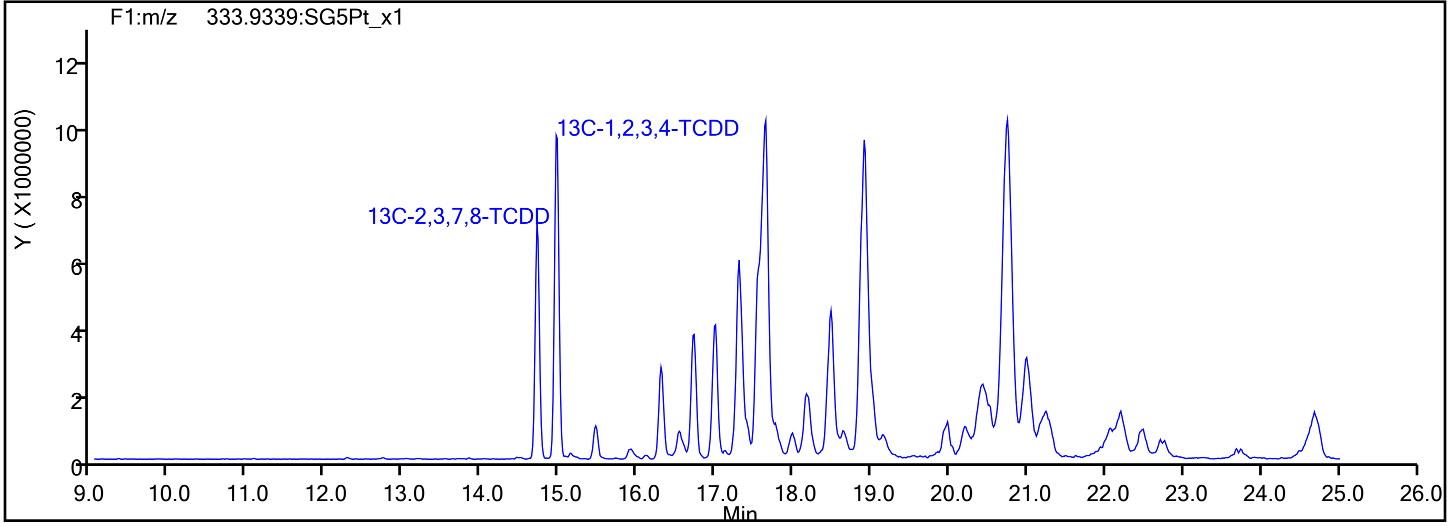

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_006.d

Injection Date:	12-Oct-2020 18:31:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-2-2		
Worklist#:	421482	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

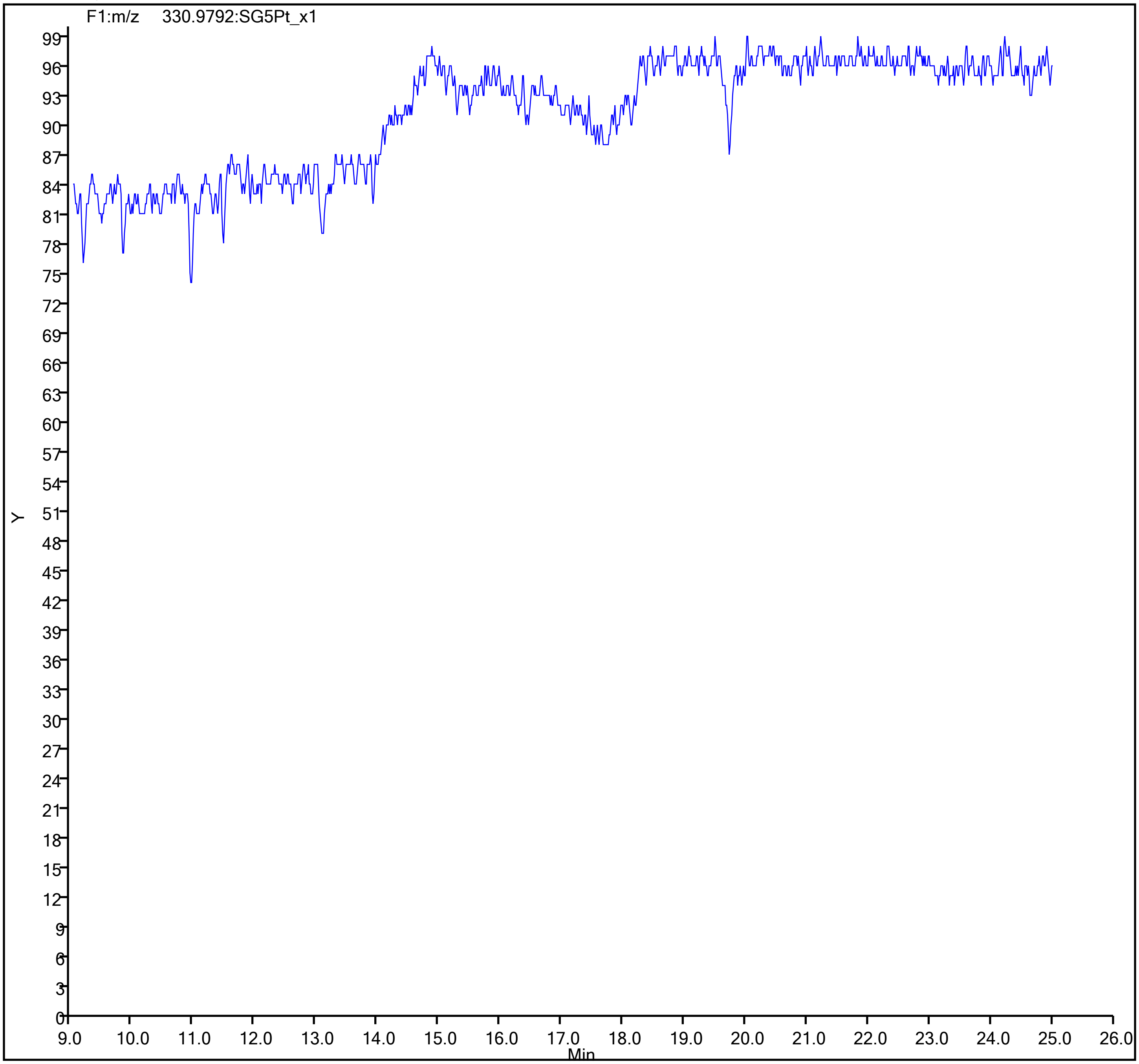

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-3-2	Lab Sample ID: 320-65130-20
Matrix: Water	Lab File ID: 09oc20dfs1_27.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1045.3(mL)	Date Analyzed: 10/10/2020 13:20
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1400		9.6	5.3
40321-76-4	1,2,3,7,8-PeCDD	14	J	48	1.3
57117-41-6	1,2,3,7,8-PeCDF	140		48	1.6
57117-31-4	2,3,4,7,8-PeCDF	100		48	1.8
39227-28-6	1,2,3,4,7,8-HxCDD	2.1	J q B	48	0.32
57653-85-7	1,2,3,6,7,8-HxCDD	2.0	J	48	0.40
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.33
70648-26-9	1,2,3,4,7,8-HxCDF	300		48	1.6
57117-44-9	1,2,3,6,7,8-HxCDF	77		48	1.4
72918-21-9	1,2,3,7,8,9-HxCDF	5.1	J B	48	1.2
60851-34-5	2,3,4,6,7,8-HxCDF	9.0	J	48	1.2
35822-46-9	1,2,3,4,6,7,8-HpCDD	42	J	48	0.64
67562-39-4	1,2,3,4,6,7,8-HpCDF	110	B	48	0.63
55673-89-7	1,2,3,4,7,8,9-HpCDF	38	J B	48	0.67
3268-87-9	OCDD	810	B	96	1.0
39001-02-0	OCDF	79	J B	96	0.82
41903-57-5	Total TCDD	1500	q	9.6	5.3
30402-14-3	Total TCDF	7200	G B	19	19
36088-22-9	Total PeCDD	14	J	48	1.3
30402-15-4	Total PeCDF	380	q	48	1.7
34465-46-8	Total HxCDD	6.9	J q B	48	0.35
55684-94-1	Total HxCDF	440	B	48	1.3
37871-00-4	Total HpCDD	92		48	0.64
38998-75-3	Total HpCDF	180	B	48	0.65

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-3-2	Lab Sample ID: 320-65130-20
Matrix: Water	Lab File ID: 09oc20dfs1_27.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1045.3(mL)	Date Analyzed: 10/10/2020 13:20
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		25-164
89059-46-1	13C-2,3,7,8-TCDF	68		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	71		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	72		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	91		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	64		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	67		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	68		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	69		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	73		26-138
114423-97-1	13C-OCDD	76		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Lims ID: 320-65130-A-20-A
Client ID: 11215702-Tank#2-valve-3-2
Sample Type: Client
Inject. Date: 10-Oct-2020 13:20:00 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-20-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: dadunj Date: 12-Oct-2020 09:31:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.680	2481681	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.779	2698606	0.80	1.5883	68.5	68.5	0.4262	0.4262	68.46	
2,3,7,8-TCDF	18.804	6369335	0.81	1.0857	217.4	217.4	0.9696	0.9696		E
A Non-2,3,7,8-sub-TCDF	18.413	4654548	0.80	1.0857	158.9	158.9	0.9696	89.8		
S Total TCDF					376.3	376.3	0.9696	0.9696		
D 13C-2,3,7,8-TCDD	20.015	1961808	0.75	1.1194	70.6	70.6	0.6323	0.6323	70.62	
2,3,7,8-TCDD	20.058	1570295	0.78	1.0810	74.0	74.0	0.2774	0.2774		
$ 37Cl4-2,3,7,8-TCDD	20.058	1078247		1.1468	37.9	37.9	0.0748	0.0748	94.72	
A Non-2,3,7,8-sub-TCDD	19.200	128442	0.77	1.0810	6.134	6.057	0.2774	5.482		RQ
S Total TCDD					80.2	80.1	0.2774	0.2774		RQ
D 13C-1,2,3,7,8-PeCDF	25.895	2635053	1.54	1.4782	71.8	71.8	0.2337	0.2337	71.83	
1,2,3,7,8-PeCDF	25.920	203512	1.59	1.0547	7.323	7.323	0.0840	0.0840		M
D 13C-2,3,4,7,8-PeCDF	27.319	2419584	1.53	1.3912	70.1	70.1	0.2483	0.2483	70.08	
2,3,4,7,8-PeCDF	27.336	139891	1.57	1.1035	5.239	5.239	0.0954	0.0954		
A F1 PeCDFs	23.059	2145	1.55	1.0791	0.0869	0.0787	0.0136	0.0787		RQM
A Non-2,3,7,8-sub-PeCDF	26.475	194717	1.55	1.0791	7.201	7.140	0.0891	3.399		RQMa
S Total PeCDF					19.9	19.8	0.0897	0.0897		RQ
D 13C-1,2,3,7,8-PeCDD	28.086	1655109	1.60	0.9415	70.8	70.8	0.1446	0.1446	70.84	
1,2,3,7,8-PeCDD	28.094	13316	1.70	1.0680	0.7533	0.7533	0.0693	0.0693		M
A Non-2,3,7,8-sub-PeCDD	26.975						0.0693	0.0693		RQU
S Total PeCDD					0.7533	0.7533	0.0693	0.0693		
D 13C-1,2,3,4,7,8-HxCDF	33.809	1981239	0.53	1.1378	64.4	64.4	0.2618	0.2618	64.42	
1,2,3,4,7,8-HxCDF	33.834	393796	1.27	1.2643	15.7	15.7	0.0840	0.0840		
D 13C-1,2,3,6,7,8-HxCDF	34.011	2372036	0.53	1.3173	66.6	66.6	0.2261	0.2261	66.62	
1,2,3,6,7,8-HxCDF	34.028	116586	1.23	1.2230	4.019	4.019	0.0749	0.0749		
D 13C-2,3,4,6,7,8-HxCDF	34.963	2338357	0.53	1.2457	69.4	69.4	0.2391	0.2391	69.45	
2,3,4,6,7,8-HxCDF	34.972	13750	1.37	1.2464	0.4718	0.4718	0.0602	0.0602		
D 13C-1,2,3,7,8,9-HxCDF	35.950	2183343	0.53	1.1840	68.2	68.2	0.2515	0.2515	68.22	
1,2,3,7,8,9-HxCDF	35.975	7422	1.10	1.2638	0.2690	0.2690	0.0608	0.0608		
A Non-2,3,7,8-sub-HxCDF	33.855	69108	1.11	1.2494	2.493	2.493	0.0686	0.9638		
S Total HxCDF					23.0	23.0	0.0700	0.0700		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.739	2702930	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.207	2088003	1.29	0.8477	91.1	91.1	0.1564	0.1564	91.13	
1,2,3,4,7,8-HxCDD	35.224	2632	1.24	1.1561	0.1187	0.1090	0.0169	0.0169		RQ
D 13C-1,2,3,6,7,8-HxCDD	35.334	2123427	1.24	0.9979	78.7	78.7	0.1328	0.1328	78.73	
1,2,3,6,7,8-HxCDD	35.385	2300	1.09	1.0284	0.1053	0.1053	0.0211	0.0211		M
1,2,3,7,8,9-HxCDD	35.764						0.0174	0.0174		U
A Non-2,3,7,8-sub-HxCDD	34.365	3450	1.24	1.1211	0.1658	0.1461	0.0183	0.1461		RQ
S Total HxCDD					0.3898	0.3605	0.0185	0.0185		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.905	2058106	0.45	0.9884	77.0	77.0	0.3264	0.3264	77.04	
1,2,3,4,6,7,8-HpCDF	37.922	180977	1.04	1.5064	5.837	5.837	0.0328	0.0328		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.228	1819082	0.47	0.9203	73.1	73.1	0.3505	0.3505	73.13	
1,2,3,4,7,8,9-HpCDF	39.237	52391	1.01	1.4548	1.980	1.980	0.0350	0.0350		
A Non-2,3,7,8-sub-HpCDF	38.593	52060	0.99	1.4806	1.814	1.814	0.0339	1.814		
S Total HpCDF					9.631	9.631	0.0339	0.0339		
D 13C-1,2,3,4,6,7,8-HpCDD	38.908	1945501	1.07	0.9556	75.3	75.3	0.1975	0.1975	75.32	
1,2,3,4,6,7,8-HpCDD	38.925	45053	1.01	1.0640	2.176	2.176	0.0333	0.0333		
A Non-2,3,7,8-sub-HpCDD	38.941	54705	1.03	1.0640	2.643	2.643	0.0333	2.643		a
S Total HpCDD					4.819	4.819	0.0333	0.0333		
D 13C-OCDD	41.362	3064040	0.88	0.7420	152.8	152.8	0.2453	0.2453	76.38	
OCDF	41.455	90215	0.93	1.4296	4.119	4.119	0.0426	0.0426		
OCDD	41.371	729343	0.88	1.1293	42.2	42.2	0.0522	0.0522		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Lims ID: 320-65130-A-20-A
Client ID: 11215702-Tank#2-valve-3-2
Sample Type: Client
Inject. Date: 10-Oct-2020 13:20:00 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-20-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: dadunj Date: 12-Oct-2020 09:31:57

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.680	19.716	-2		1097107	180871	913	2282	198		
333.9338	19.680	19.716	-2		1384574	215727	210	525	1027	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.779	18.830	-3	0.954	1202360	187952	673	1682	279		
317.9389	18.779	18.830	-3	0.954	1496246	243546	401	1002	607	0.80(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.804	18.865	-4	1.001	2844467	418614	834	2085	502		
305.8987	18.796	18.865	-4	1.001	3524868	515027	983	2457	524	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.460	18.413	-117	0.877	83524	16979	834	2085	20		
305.8987	16.451	18.413	-117	0.876	113676	21828	983	2457	22	0.73(0.65-0.89)	
303.9016	16.898	18.413	-91	0.900	140405	20773	834	2085	25		
305.8987	16.898	18.413	-91	0.900	180862	27246	983	2457	28	0.78(0.65-0.89)	
303.9016	17.301	18.413	-67	0.921	106274	16460	834	2085	20		
305.8987	17.293	18.413	-67	0.921	136225	20160	983	2457	21	0.78(0.65-0.89)	
303.9016	17.662	18.413	-45	0.941	126533	18508	834	2085	22		
305.8987	17.662	18.413	-45	0.941	154102	22672	983	2457	23	0.82(0.65-0.89)	
303.9016	18.134	18.413	-17	0.966	1180016	193926	834	2085	233		
305.8987	18.134	18.413	-17	0.966	1451103	240401	983	2457	245	0.81(0.65-0.89)	
303.9016	18.495	18.413	5	0.985	65846	9822	834	2085	12		
305.8987	18.512	18.413	6	0.986	80540	13950	983	2457	14	0.82(0.65-0.89)	
303.9016	19.543	18.413	68	1.041	191099	28992	834	2085	35		
305.8987	19.534	18.413	67	1.040	246031	34316	983	2457	35	0.78(0.65-0.89)	
303.9016	21.897	18.413	209	1.166	179740	24895	834	2085	30		
305.8987	21.897	18.413	209	1.166	218572	29432	983	2457	30	0.82(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	20.015	20.067	-3	1.017	843174	125892	913	2282	138		
333.9338	20.024	20.067	-3	1.017	1118634	152553	210	525	726	0.75(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.058	20.101	-3	1.002	688650	101463	199	497	510		
321.8936	20.058	20.101	-3	1.002	881645	129716	135	337	961	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.058	20.103	-3	1.019	1078247	155917	136	340	1146		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	19.886	19.200	41	0.994	6938	1485	199	497	7		
	Empc Correction				5303	1545	199	497	8		
321.8936	19.861	19.200	40	0.992	6888	2007	135	337	15	1.01(0.65-0.89)	
319.8965	20.677	19.200	88	1.033	53491	7295	199	497	37		
321.8936	20.677	19.200	88	1.033	62760	8884	135	337	66	0.85(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.895	25.934	-2	1.316	1598869	278443	320	800	870		
353.8970	25.895	25.934	-2	1.316	1036184	178959	228	570	785	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.920	25.951	-2	1.001	125029	21676	64	160	339		M
341.8567	25.920	25.951	-2	1.001	78483	13549	98	245	138	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.319	27.359	-2	1.388	1462168	233663	320	800	730		
353.8970	27.319	27.359	-2	1.388	957416	151136	228	570	663	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.336	27.376	-2	1.001	85537	13146	64	160	205		
341.8567	27.344	27.376	-2	1.001	54354	8471	98	245	86	1.57(1.32-1.78)	
A F1 PeCDFs											RQM
339.8597	22.533	23.059	-31	0.870	1304	237	2	5	119		M
341.8567	22.567	23.059	-29	0.872	1066	238	23	57	10	1.22(1.32-1.78)	M
	Empc Correction				841	152	23	57	7		
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	24.546	26.475	-116	0.948	57084	10757	64	160	168		M
341.8567	24.538	26.475	-116	0.948	35625	7126	98	245	73	1.60(1.32-1.78)	
339.8597	25.810	26.475	-40	0.997	7842	2102	64	160	33		M
341.8567	25.777	26.475	-42	0.995	6729	1635	98	245	17	1.17(1.32-1.78)	
	Empc Correction				5059	1356	98	245	14		
339.8597	26.467	26.475	0	1.022	34088	5732	64	160	90		
341.8567	26.467	26.475	0	1.022	22102	3661	98	245	37	1.54(1.32-1.78)	
339.8597	27.656	26.475	71	1.068	20922	3203	64	160	50		
341.8567	27.648	26.475	70	1.068	11995	2126	98	245	22	1.74(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.086	28.109	-1	1.427	1018801	152504	128	320	1191		
369.8919	28.077	28.109	-2	1.427	636308	93314	88	220	1060	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.094	28.134	-2	1.000	8379	1383	55	137	25		M
357.8516	28.111	28.134	-1	1.001	4937	926	18	45	51	1.70(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											U
355.8546	25.996	26.975	-59	0.926	943	216	55	137	4		
	Empc Correction				593	150	55	137	0		
357.8516	26.021	26.975	-57	0.926	383	97	18	45	5	2.46(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.809	33.838	-2	0.946	690352	128484	289	722	445		
385.8610	33.809	33.838	-2	0.946	1290887	238735	457	1142	522	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.834	33.855	-1	1.001	220586	40734	93	232	438		
375.8178	33.834	33.855	-1	1.001	173210	31815	63	157	505	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.011	34.024	-1	0.952	825262	145035	289	722	502		
385.8610	34.011	34.024	-1	0.952	1546774	280439	457	1142	614	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.028	34.049	-1	1.000	64373	10846	93	232	117		
375.8178	34.028	34.049	-1	1.000	52213	9181	63	157	146	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.963	34.976	-1	0.978	811854	175464	289	722	607		
385.8610	34.963	34.976	-1	0.978	1526503	344427	457	1142	754	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.972	35.001	-2	1.000	7960	1672	93	232	18		
375.8178	34.972	35.001	-2	1.000	5790	1198	63	157	19	1.37(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.950	35.962	-1	1.006	751858	174723	289	722	605		
385.8610	35.950	35.962	-1	1.006	1431485	332674	457	1142	728	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.975	35.979	0	1.001	3880	1019	93	232	11		
375.8178	35.966	35.979	-1	1.000	3542	941	63	157	15	1.10(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.972	33.855	-113	0.946	14151	2014	93	232	22		
375.8178	31.981	33.855	-112	0.946	12567	1678	63	157	27	1.13(1.05-1.43)	
373.8208	33.076	33.855	-47	0.978	6137	1082	93	232	12		
375.8178	33.068	33.855	-47	0.978	5615	1011	63	157	16	1.09(1.05-1.43)	
373.8208	34.828	33.855	58	1.030	4376	955	93	232	10		
375.8178	34.837	33.855	59	1.030	3714	767	63	157	12	1.18(1.05-1.43)	
373.8208	36.093	33.855	134	1.068	11758	3035	93	232	33		
375.8178	36.093	33.855	134	1.068	10790	2404	63	157	38	1.09(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.739	35.760	-1		1502888	352377	191	477	1845		
403.8529	35.739	35.760	-1		1200042	273822	141	352	1942	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.207	35.220	-1	0.985	1175517	287665	191	477	1506		
403.8529	35.207	35.220	-1	0.985	912486	225094	141	352	1596	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8158	35.224	35.237	-1	1.000	1690	442	9	22	49		
	Empc Correction				1457	324	9	22	36		
391.8127	35.241	35.237	0	1.001	1175	262	31	77	8	1.44(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.334	35.355	-1	0.989	1176018	252772	191	477	1323		
403.8529	35.334	35.355	-1	0.989	947409	207590	141	352	1472	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.385	35.372	1	1.001	1201	236	9	22	26		
391.8127	35.359	35.372	-1	1.001	1099	225	31	77	7	1.09(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											U
389.8158	35.768						9	22			
391.8127	35.768						31	77			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	33.000	34.365	-82	0.934	1910	363	9	22	40		
391.8127	32.983	34.365	-83	0.933	2003	361	31	77	12	0.95(1.05-1.43)	
	Empc Correction				1540	292	31	77	9		
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.905	37.927	-1	1.061	634541	192865	312	780	618		
419.8220	37.905	37.927	-1	1.061	1423565	438159	496	1240	883	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	37.922	37.935	-1	1.000	92416	28687	70	175	410		
409.7788	37.922	37.935	-1	1.000	88561	26215	55	137	477	1.04(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.228	39.233	0	1.098	580818	195799	312	780	628		
419.8220	39.228	39.233	0	1.098	1238264	417813	496	1240	842	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.237	39.250	-1	1.000	26263	9061	70	175	129		
409.7788	39.237	39.250	-1	1.000	26128	8562	55	137	156	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.310	38.593	-17	1.011	25964	7726	70	175	110		
409.7788	38.301	38.593	-17	1.010	26096	7845	55	137	143	0.99(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.908	38.921	-1	1.089	1007213	325969	276	690	1181		
437.8140	38.908	38.921	-1	1.089	938288	308552	197	492	1566	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.925	38.938	-1	1.000	22617	8142	59	147	138		
425.7737	38.925	38.938	-1	1.000	22436	7355	31	77	237	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.242	38.941	-42	0.983	27716	8626	59	147	146		a
425.7737	38.251	38.941	-41	0.983	26989	8266	31	77	267	1.03(0.88-1.20)	
13C-OCDD											
469.7780	41.362	41.373	-1	1.157	1432479	478960	225	562	2129		
471.7750	41.362	41.373	-1	1.157	1631561	545071	231	577	2360	0.88(0.76-1.02)	
OCDF											
441.7428	41.455	41.457	0	1.002	43421	13627	36	90	379		
443.7399	41.447	41.457	-1	1.002	46794	14823	89	222	167	0.93(0.76-1.02)	
OCDD											
457.7377	41.371	41.381	-1	1.000	340542	114793	61	152	1882		
459.7348	41.371	41.381	-1	1.000	388801	129342	60	150	2156	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags
  R - Failed Signal Ratio Test
  E - Exceeded Maximum Amount
  Q - EMPC-Estimated Max. Possible Conc.
Review Flags
  M - Manually Integrated
  U - Marked Undetected
  a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Lims ID:	320-65130-A-20-A		
Client ID:	11215702-Tank#2-valve-3-2		
Inject. Date:	10-Oct-2020 13:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	25

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2698606	431498

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2698606	431498

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.460	83524	16979	113676	21828	6.73	0.73	
16.898	140405	20773	180862	27246	11.0	0.78	
17.301	106274	16460	136225	20160	8.28	0.78	
17.662	126533	18508	154102	22672	9.58	0.82	
18.134	1180016	193926	1451103	240401	89.8	0.81	
18.495	65846	9822	80540	13950	5.00	0.82	
19.543	191099	28992	246031	34316	14.9	0.78	
21.897	179740	24895	218572	29432	13.6	0.82	
Signal Totals:							
	2073437	330355	2581111	410005			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4654548	740360				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 158.872 = (4654548 * 100.000) / (2698606 * 1.086)

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Lims ID:	320-65130-A-20-A		
Client ID:	11215702-Tank#2-valve-3-2		
Inject. Date:	10-Oct-2020 13:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	25

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	1961808	278445

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	1961808	278445

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.886	6938	1485	6888	2007	0.6520	1.01	RQ
19.886	5303	1545	6888	2007	0.5749		Empc Correction
20.677	53491	7295	62760	8884	5.48	0.85	
Signal Totals:							
	58794	8840	69648	10891			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	130077	19671				0.87	RQ
	128442	19731					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.134 = (130077 * 100.000) / (1961808 * 1.081)
Empc Amount: 6.057 = (128442 * 100.000) / (1961808 * 1.081)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Lims ID: 320-65130-A-20-A
Client ID: 11215702-Tank#2-valve-3-2
Inject. Date: 10-Oct-2020 13:20:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 25

F1 PeCDFs, RT: 23.059

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2635053	457402
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2419584	384799

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2527318	421100

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.533	1304	237	1066	238	0.0869	1.22	RQM
22.533	1304	237	841	152	0.0787		Empc Correction
Signal Totals:							
	1304	237	841	152			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2370	475				1.22	RQM
	2145	389					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0869 = (2370 * 100.000) / (2527318 * 1.079)
Empc Amount: 0.0787 = (2145 * 100.000) / (2527318 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Lims ID:	320-65130-A-20-A		
Client ID:	11215702-Tank#2-valve-3-2		
Inject. Date:	10-Oct-2020 13:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	25

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2635053	457402
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2419584	384799

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2527318	421100

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.546	57084	10757	35625	7126	3.40	1.60	M
25.810	7842	2102	6729	1635	0.5343	1.17	RQMa
25.810	7842	2102	5059	1356	0.4730		Empc Correction
26.467	34088	5732	22102	3661	2.06	1.54	
27.656	20922	3203	11995	2126	1.21	1.74	
Signal Totals:							
	119936	21794	74781	14269			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	196387	36342				1.57	RQMa
	194717	36063					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 7.201 = (196387 * 100.000) / (2527318 * 1.079)

Empc Amount: 7.140 = (194717 * 100.000) / (2527318 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Lims ID: 320-65130-A-20-A
Client ID: 11215702-Tank#2-valve-3-2
Inject. Date: 10-Oct-2020 13:20:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 25

Non-2,3,7,8-sub-PeCDD, RT: 26.975

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	1655109	245818

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		100.000	1655109	245818

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
25.996	943	216	383	97	0.0250	2.46	RQ
25.996	593	150	383	97			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Lims ID:	320-65130-A-20-A		
Client ID:	11215702-Tank#2-valve-3-2		
Inject. Date:	10-Oct-2020 13:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	25

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	1981239	367219
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2372036	425474
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2338357	519891
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	2183343	507397

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2218743	454995

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.972	14151	2014	12567	1678	0.9638	1.13	
33.076	6137	1082	5615	1011	0.4239	1.09	
34.828	4376	955	3714	767	0.2918	1.18	
36.093	11758	3035	10790	2404	0.8134	1.09	
Signal Totals:							
	36422	7086	32686	5860			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	69108	12946				1.11	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.493 = (69108 * 100.000) / (2218743 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Lims ID:	320-65130-A-20-A		
Client ID:	11215702-Tank#2-valve-3-2		
Inject. Date:	10-Oct-2020 13:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	25

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	2088003	512759
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2123427	460362
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2105715	486560

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.000	1910	363	2003	361	0.1658	0.95	RQ
33.000	1910	363	1540	292	0.1461		Empc Correction
Signal Totals:							
	1910	363	1540	292			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3913	724				0.95	RQ
	3450	655					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1658 = (3913 * 100.000) / (2105715 * 1.121)
Empc Amount: 0.1461 = (3450 * 100.000) / (2105715 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Lims ID: 320-65130-A-20-A
Client ID: 11215702-Tank#2-valve-3-2
Inject. Date: 10-Oct-2020 13:20:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 25

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2058106	631024
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1819082	613612

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	1938594	622318

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.310	25964	7726	26096	7845	1.81	0.99	
Signal Totals:							
	25964	7726	26096	7845			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	52060	15571				0.99	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.814 = (52060 * 100.000) / (1938594 * 1.481)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Lims ID:	320-65130-A-20-A		
Client ID:	11215702-Tank#2-valve-3-2		
Inject. Date:	10-Oct-2020 13:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	25

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1945501	634521

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	1945501	634521

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.242	27716	8626	26989	8266	2.64	1.03	a
Signal Totals:							
	27716	8626	26989	8266			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	54705	16892				1.03	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.643 = (54705 * 100.000) / (1945501 * 1.064)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d				
Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.92
Area:	132866
Amount:	2.535018
Amount Units:	pg/ul

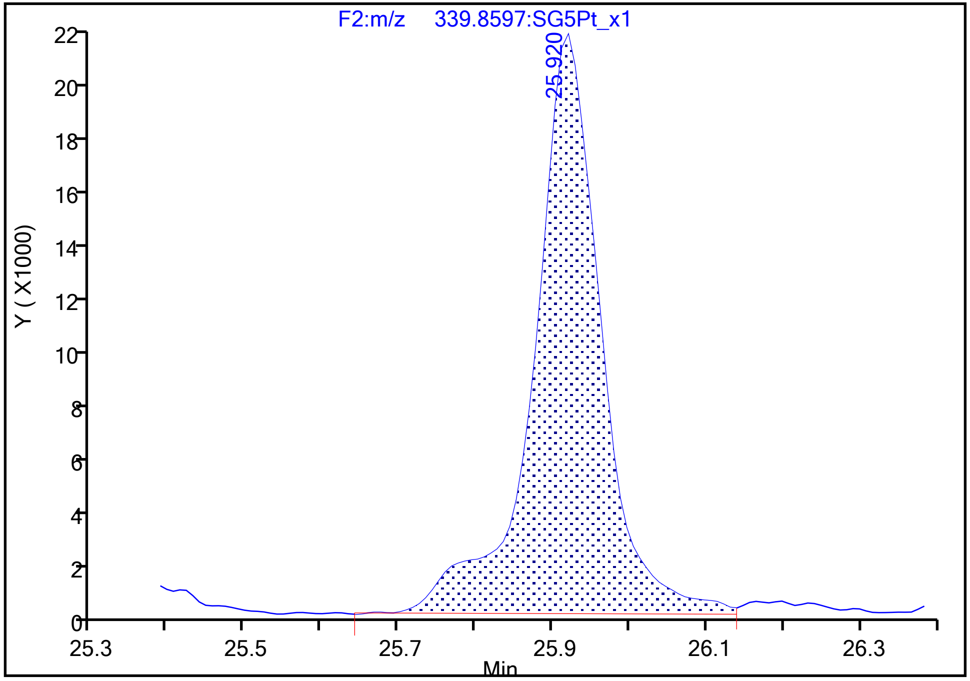

Manual Integration Results

RT:	25.92
Area:	125029
Amount:	7.323053
Amount Units:	pg/ul

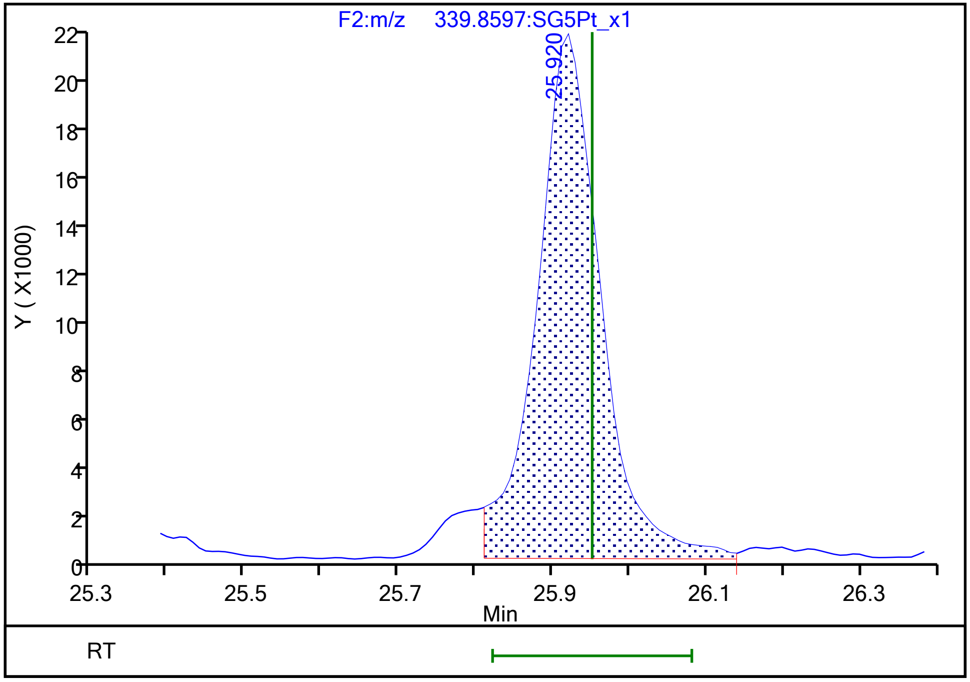

Reviewer: dadunj, 12-Oct-2020 09:29:48

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:03

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d				
Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (22.53- 23.59)

Signal: 1

Processing Integration Results

RT = 22.533 Area = 1585

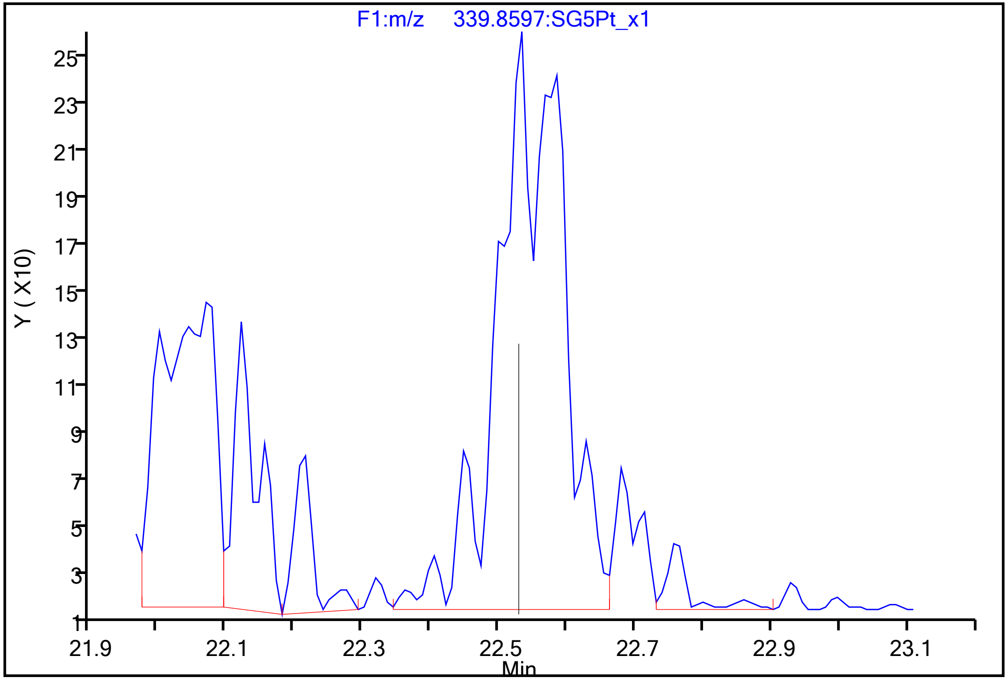

Manual Integration Results

RT = 22.533 Area = 1304 M

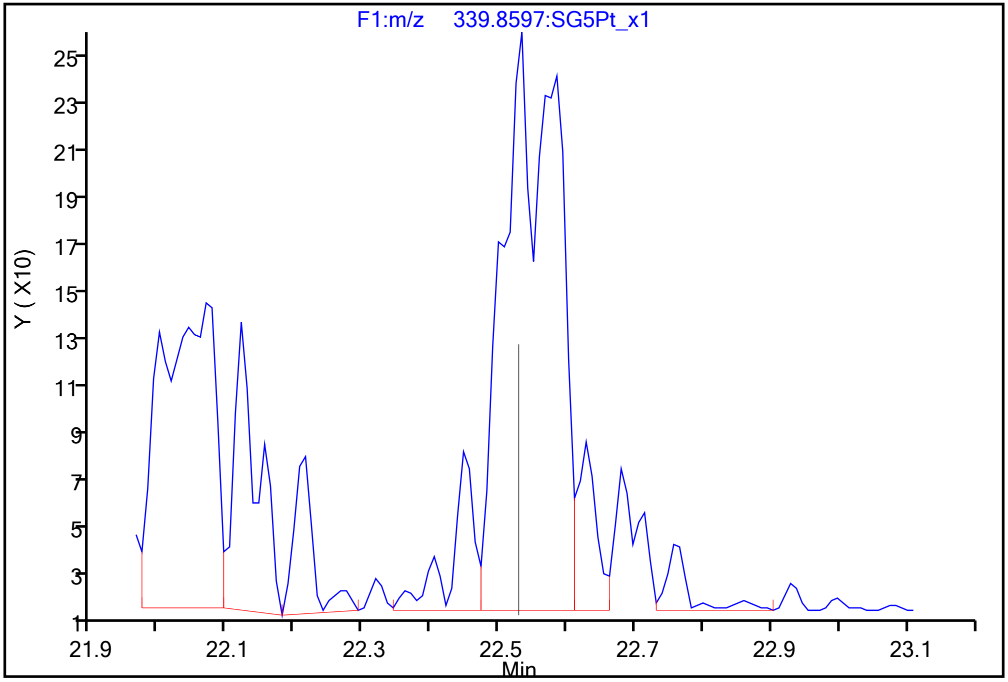

Reviewer: dadunj, 12-Oct-2020 09:29:58

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d

Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 2, m/z: 341.8567, RT: (22.53- 23.59)

Signal: 2

Processing Integration Results

RT = 22.567 Area = 1158

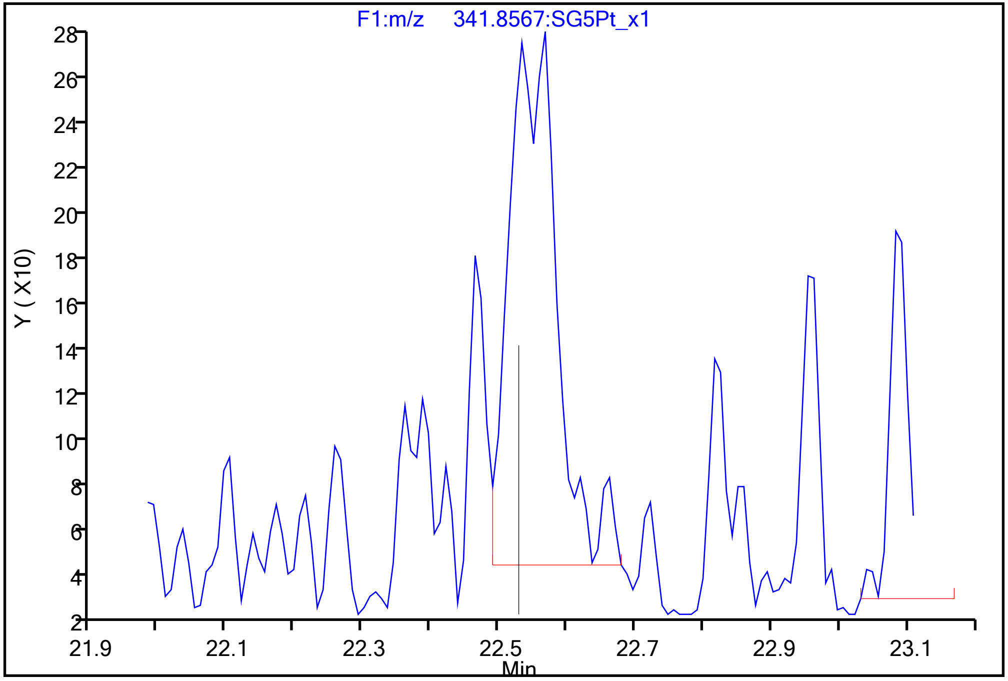

Manual Integration Results

RT = 22.567 Area = 1066 M

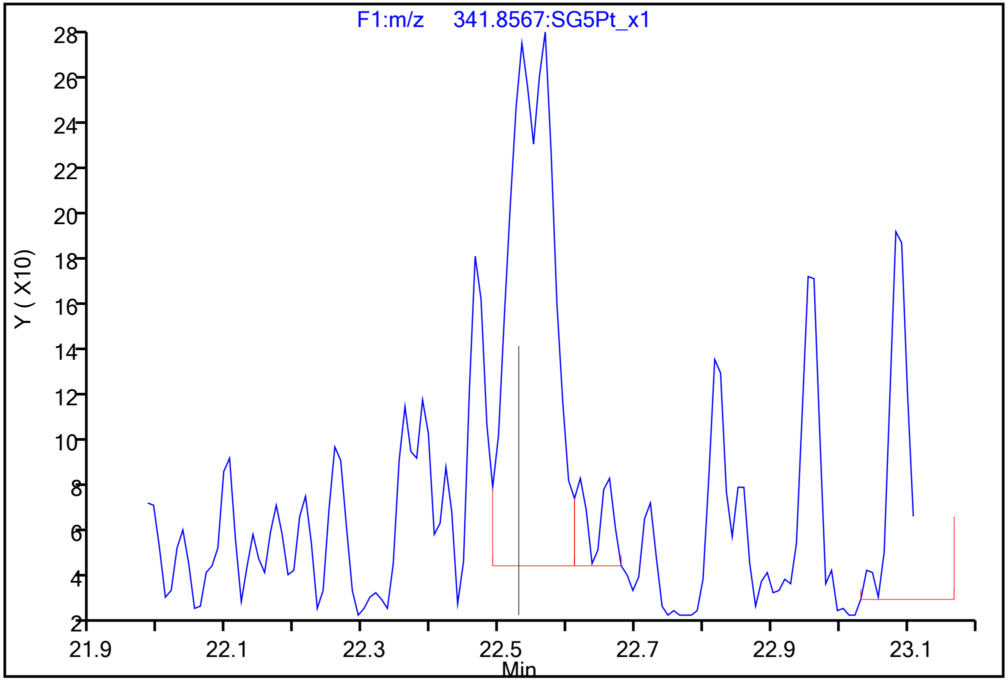

Reviewer: dadunj, 12-Oct-2020 09:29:57

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d				
Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Processing Integration Results

RT = 24.546 Area = 59992

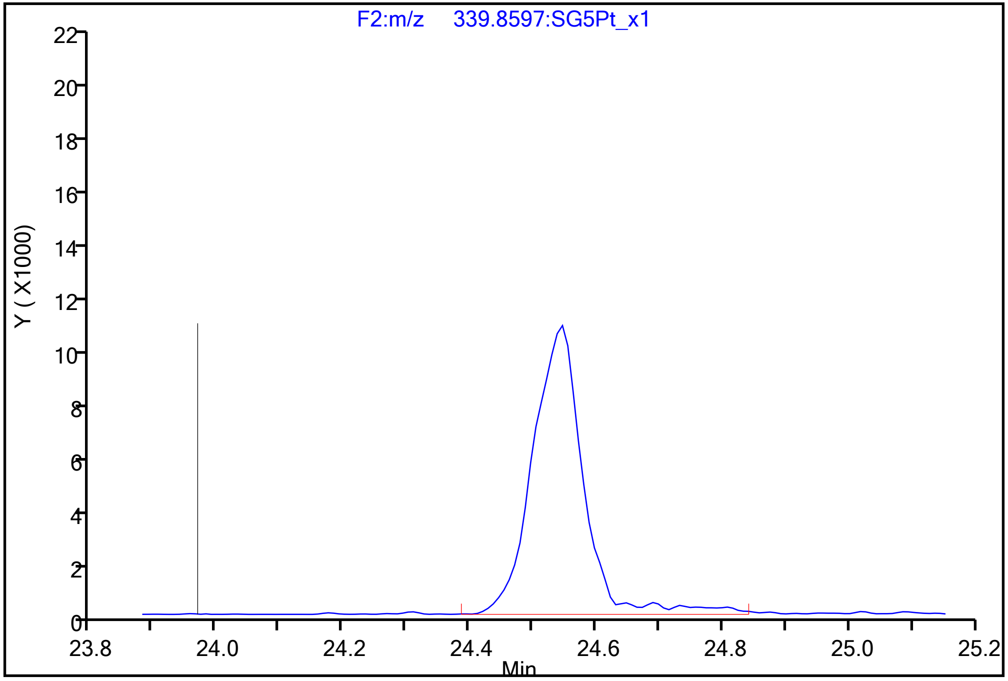

Manual Integration Results

RT = 24.546 Area = 57084 M

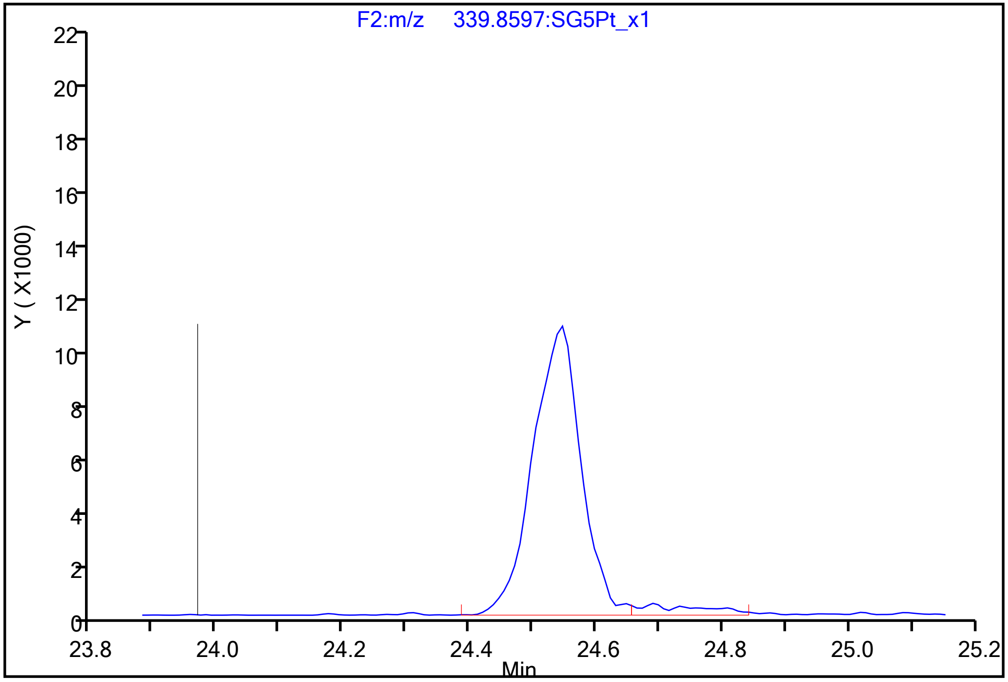

Reviewer: dadunj, 12-Oct-2020 09:30:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20
Client ID:	11215702-Tank#2-valve-3-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Not Detected

RT: 23.63- 29.32

Processing Integration Results

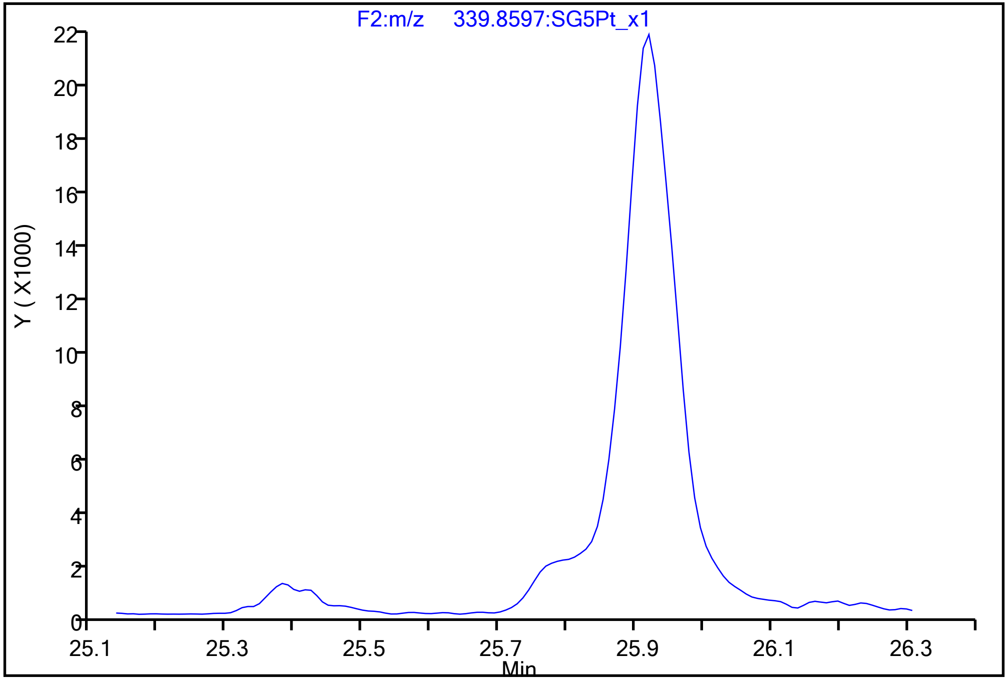

RT = 25.810 Area = 7842 M

Manual Integration Results

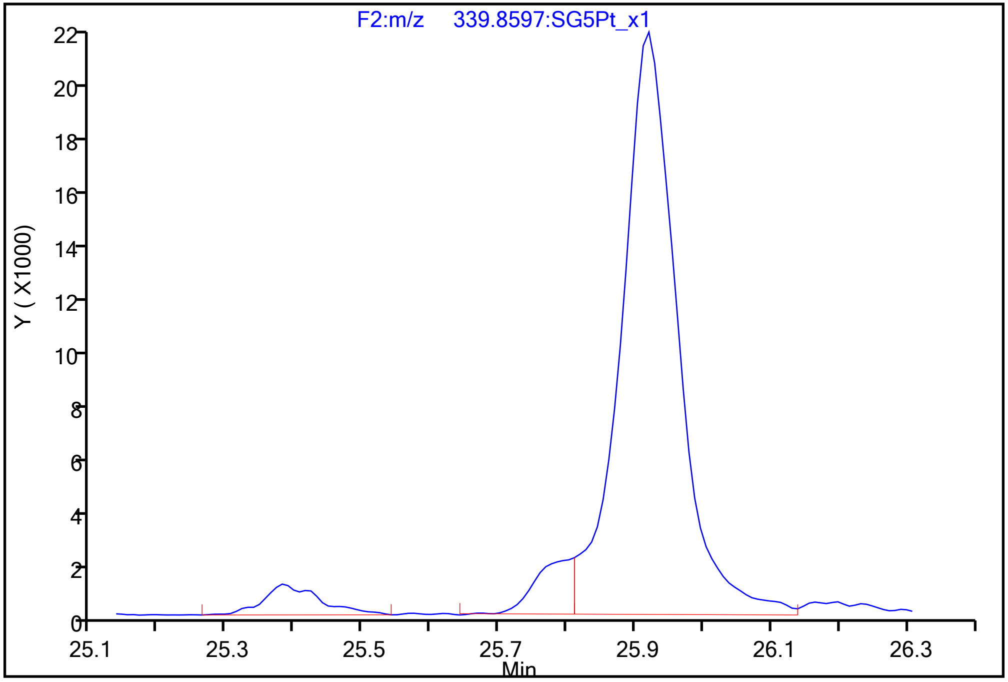

Reviewer: dadunj, 12-Oct-2020 09:30:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:03

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d				
Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT:	28.11
Area:	5158
Amount:	0.268037
Amount Units:	pg/ul

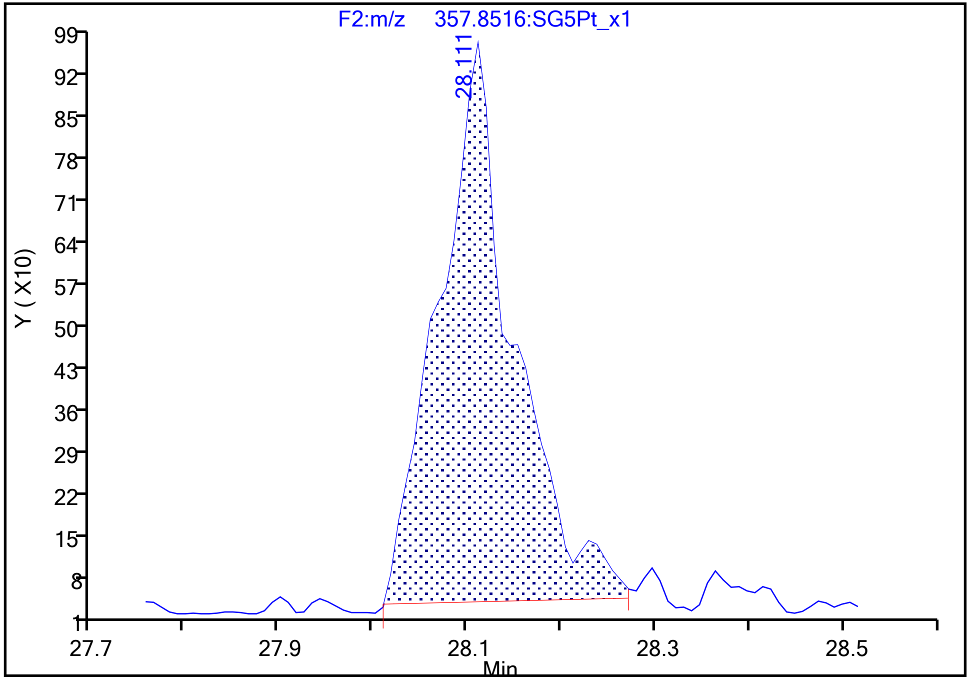

Manual Integration Results

RT:	28.11
Area:	4937
Amount:	0.753310
Amount Units:	pg/ul

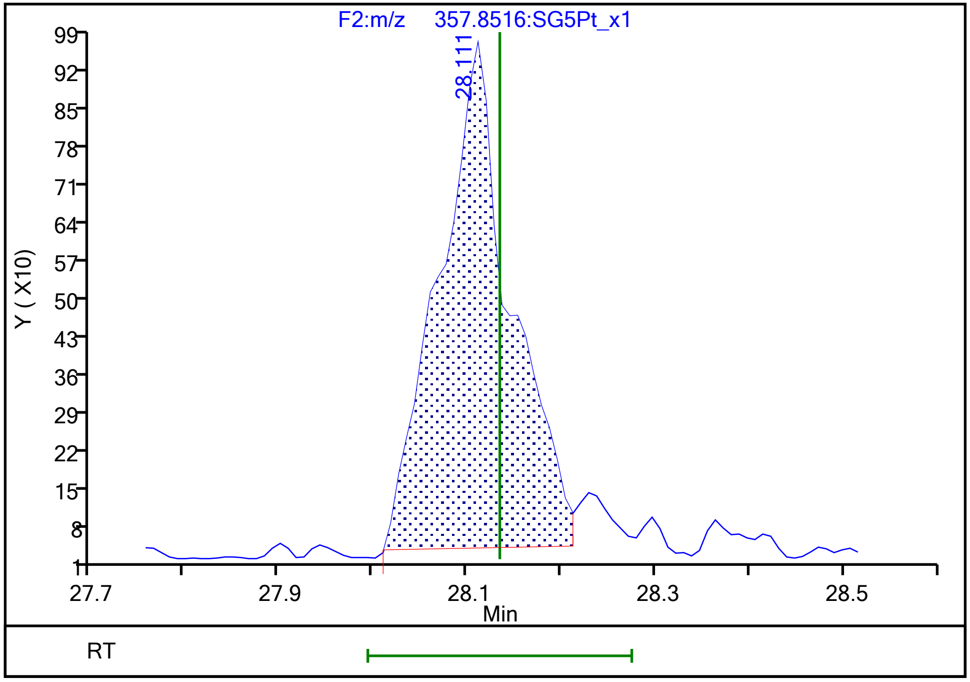

Reviewer: dadunj, 12-Oct-2020 09:30:18

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d				
Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	28.09
Area:	9056
Amount:	0.268037
Amount Units:	pg/ul

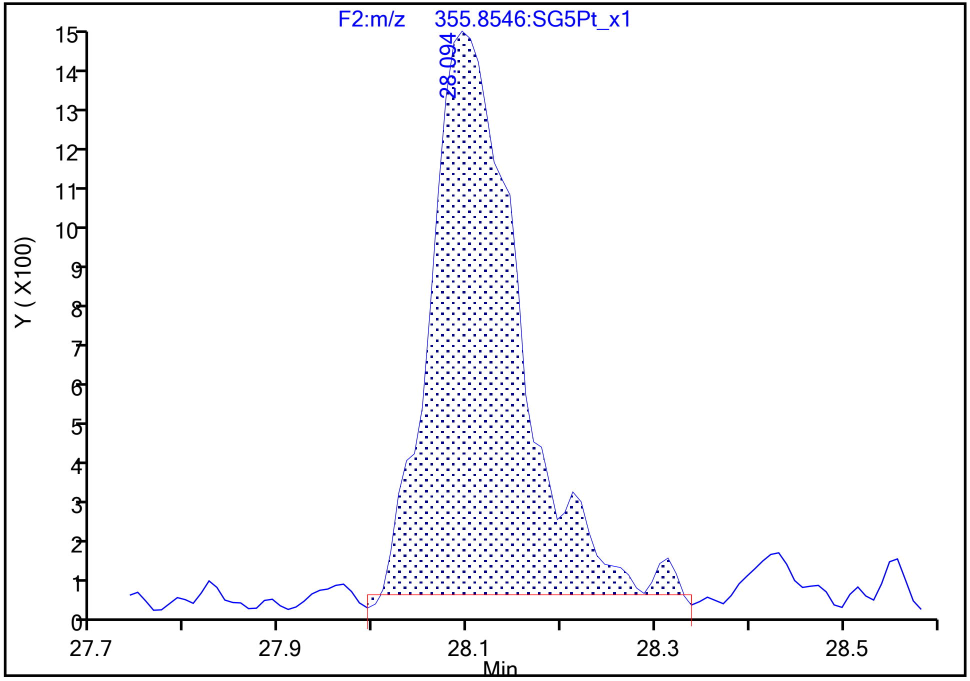

Manual Integration Results

RT:	28.09
Area:	8379
Amount:	0.753310
Amount Units:	pg/ul

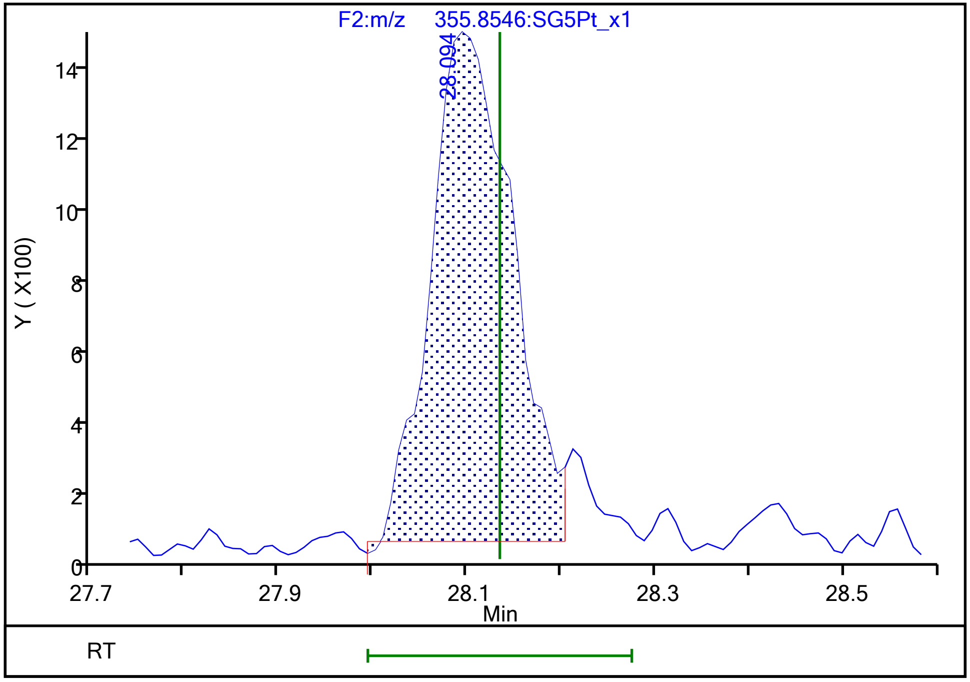

Reviewer: dadunj, 12-Oct-2020 09:30:19

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:03 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d

Injection Date:	10-Oct-2020 13:20:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-20-A	Lab Sample ID:	320-65130-20		
Client ID:	11215702-Tank#2-valve-3-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	25
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	35.36
Area:	1248
Amount:	0.037382
Amount Units:	pg/ul

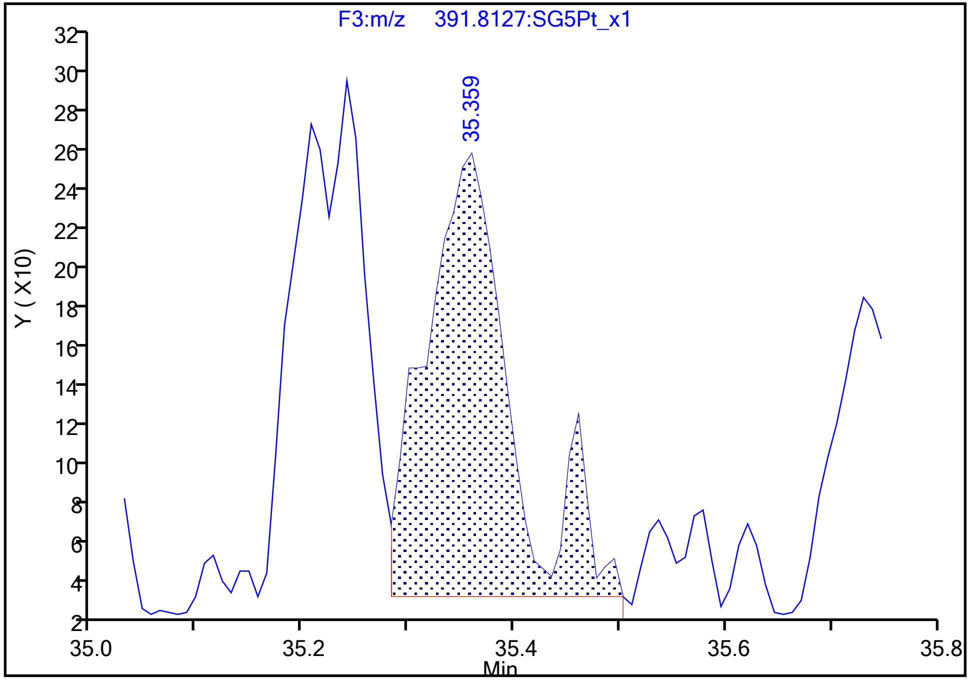

Manual Integration Results

RT:	35.36
Area:	1099
Amount:	0.105324
Amount Units:	pg/ul

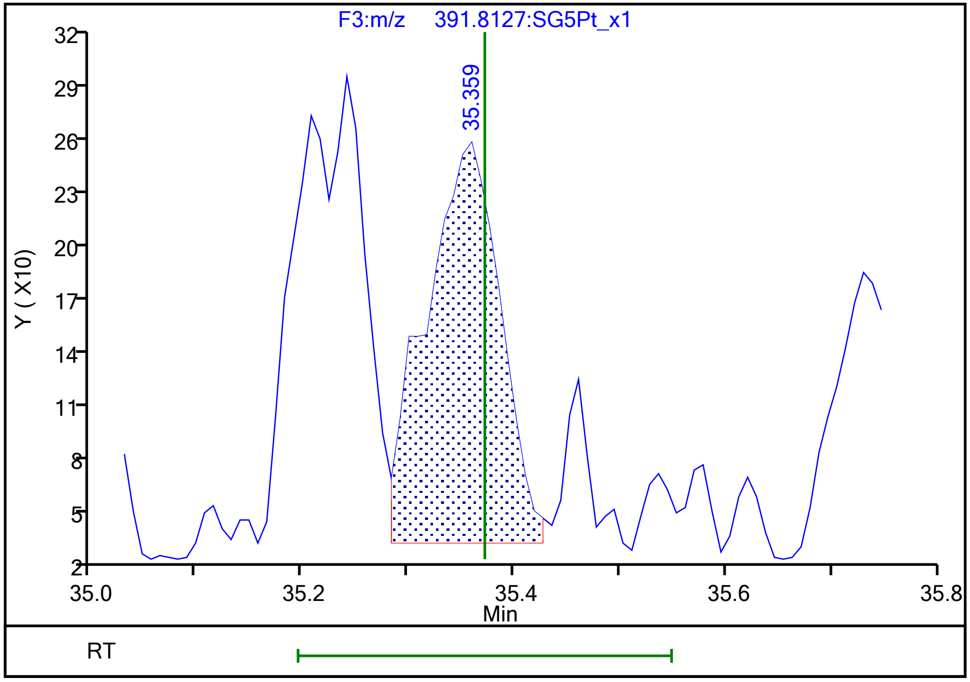

Reviewer: dadunj, 12-Oct-2020 09:30:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Injection Date: 10-Oct-2020 13:20:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-20-A
Lab Sample ID: 320-65130-20
Client ID: 11215702-Tank#2-valve-3-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 25
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 37.92
Area: 90823
Amount: 1.970113
Amount Units: pg/ul

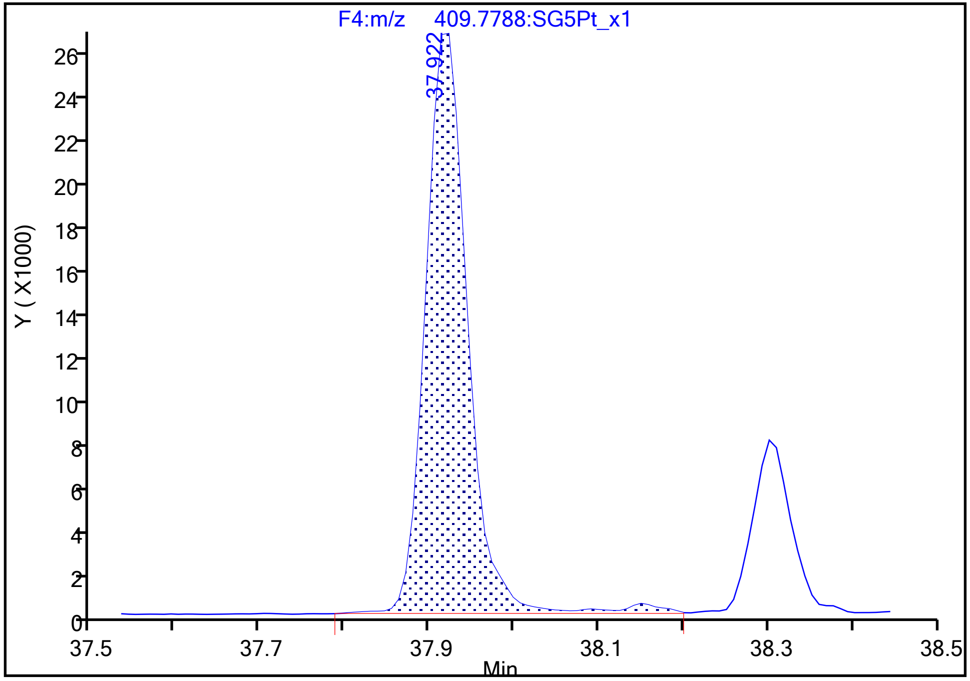

Manual Integration Results

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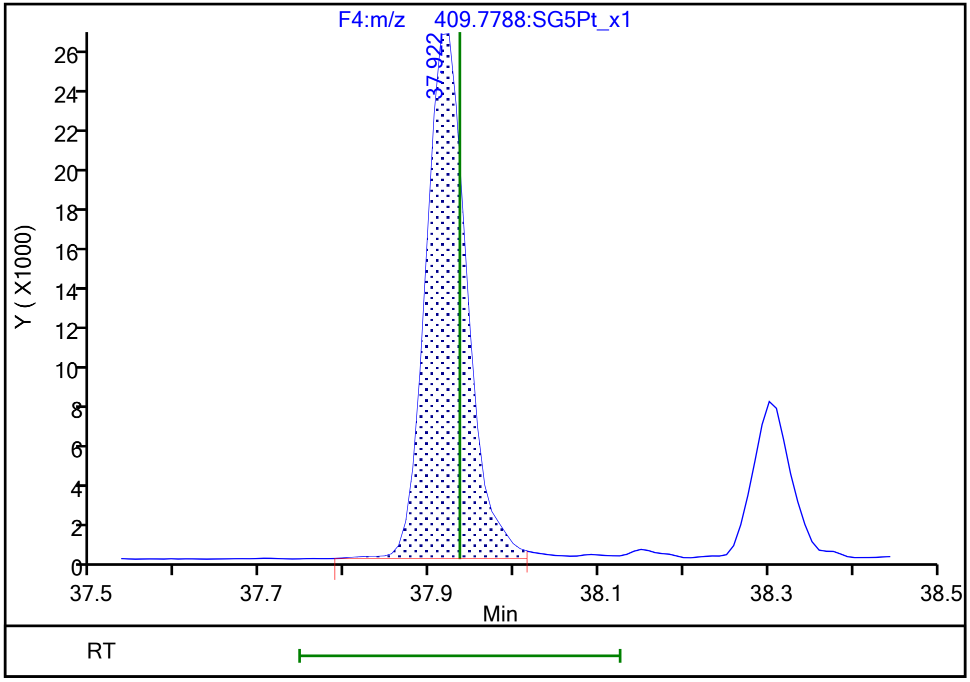

Reviewer: dadunj, 12-Oct-2020 09:31:06

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:04		Chrom Revision: 2.3 08-Oct-2020 16:36:14	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Injection Date:	10-Oct-2020 13:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

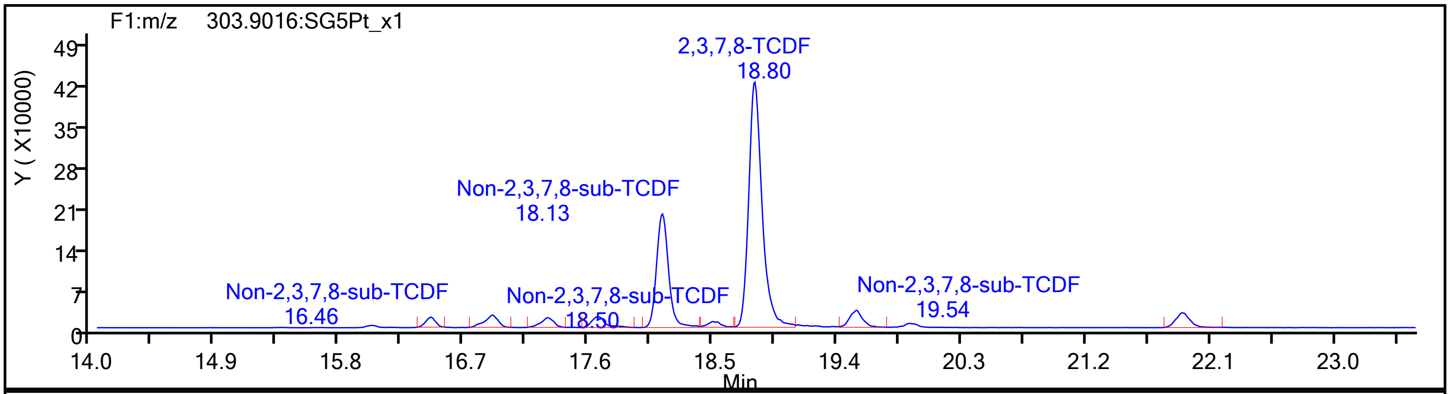

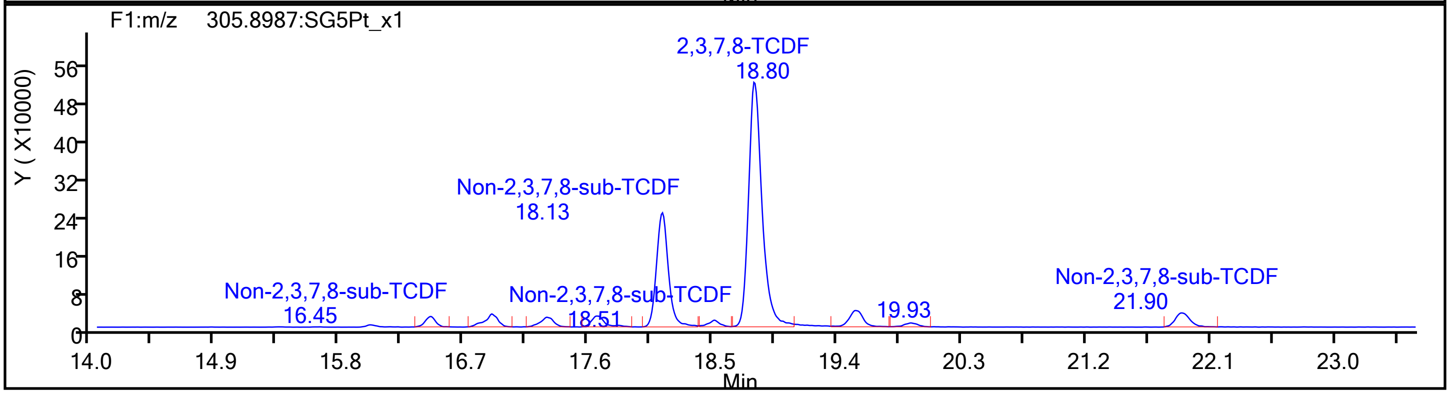

TCDF Standards

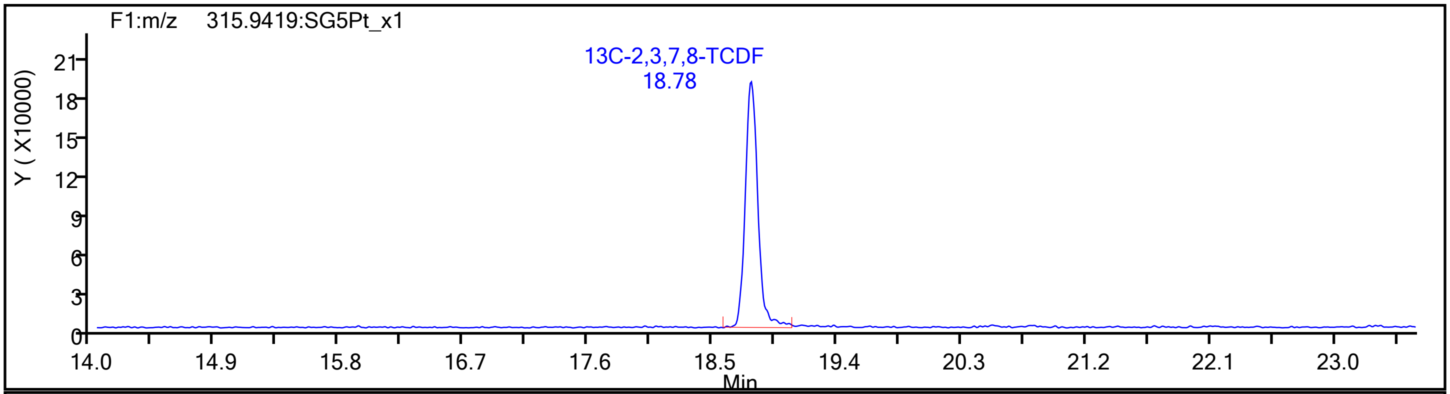

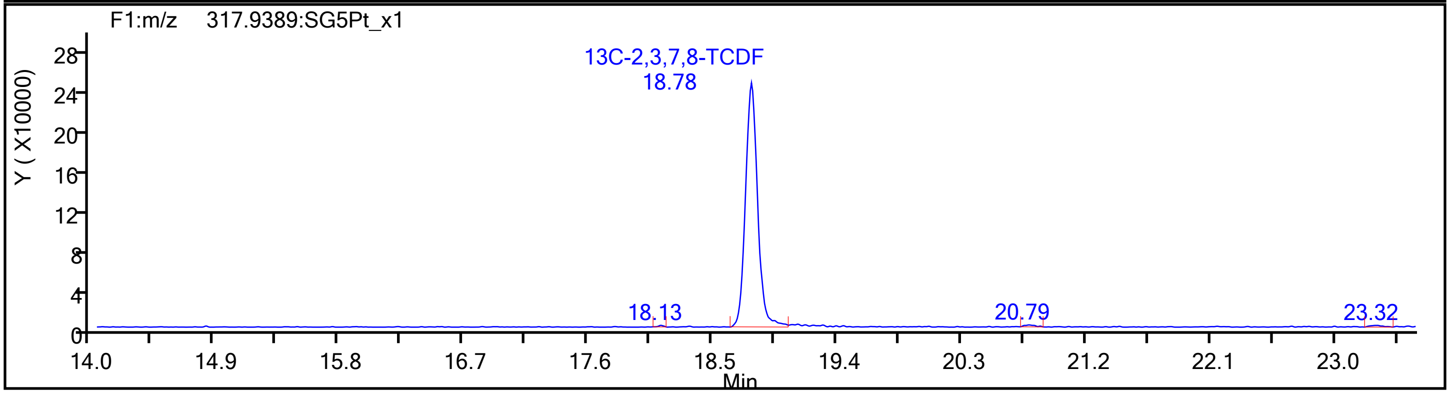

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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TCDF

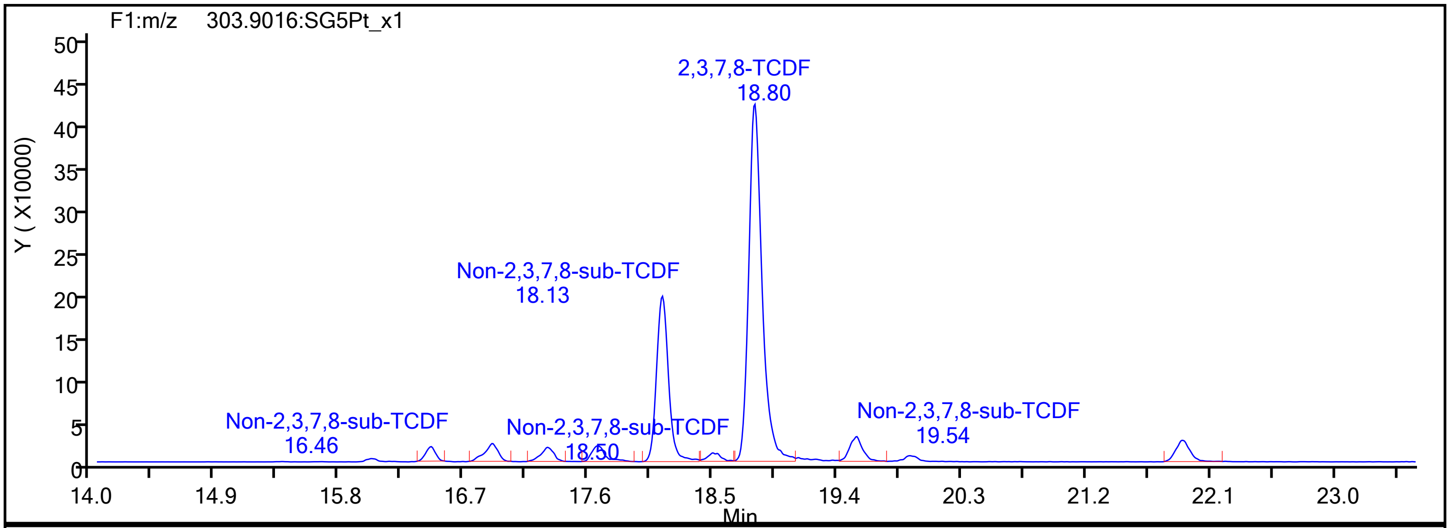

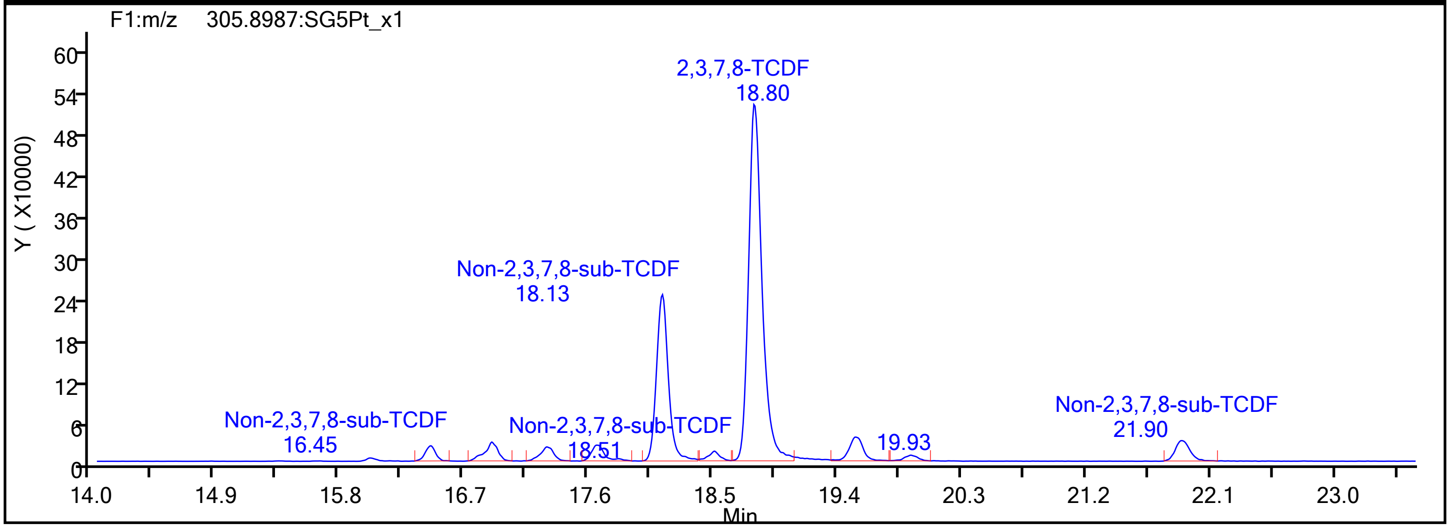

TCDF Interference Mass

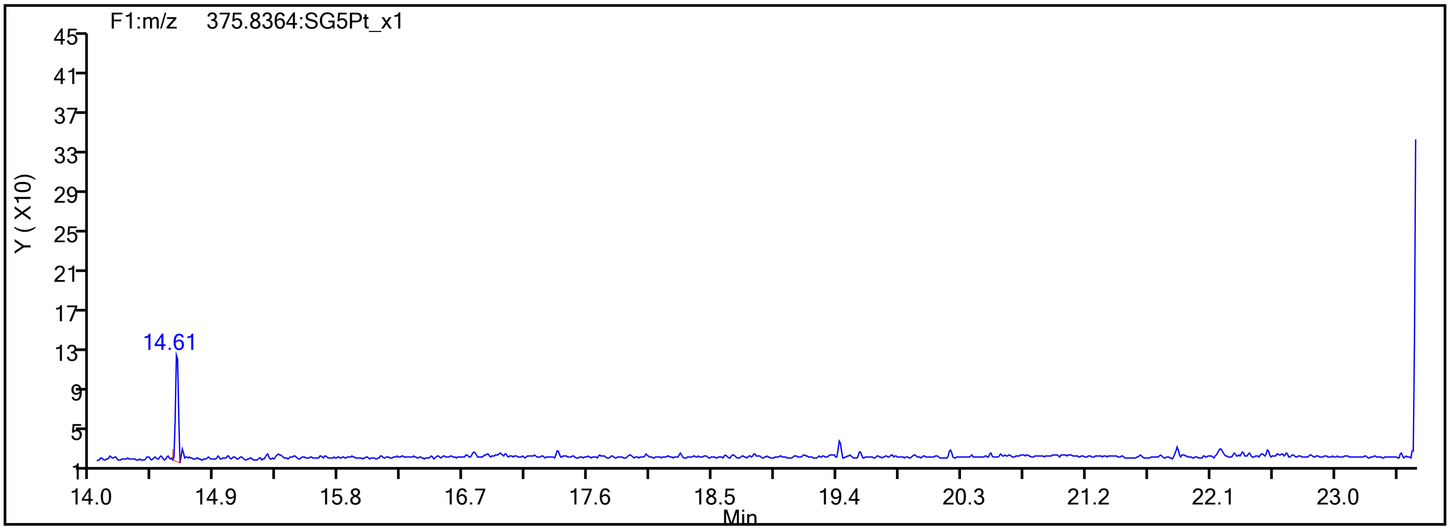

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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TCDD

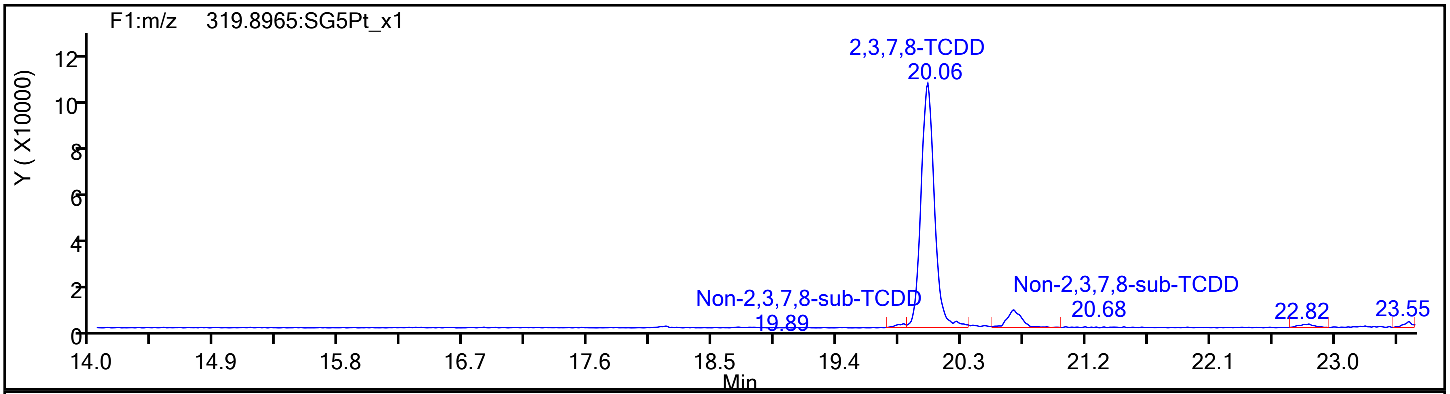

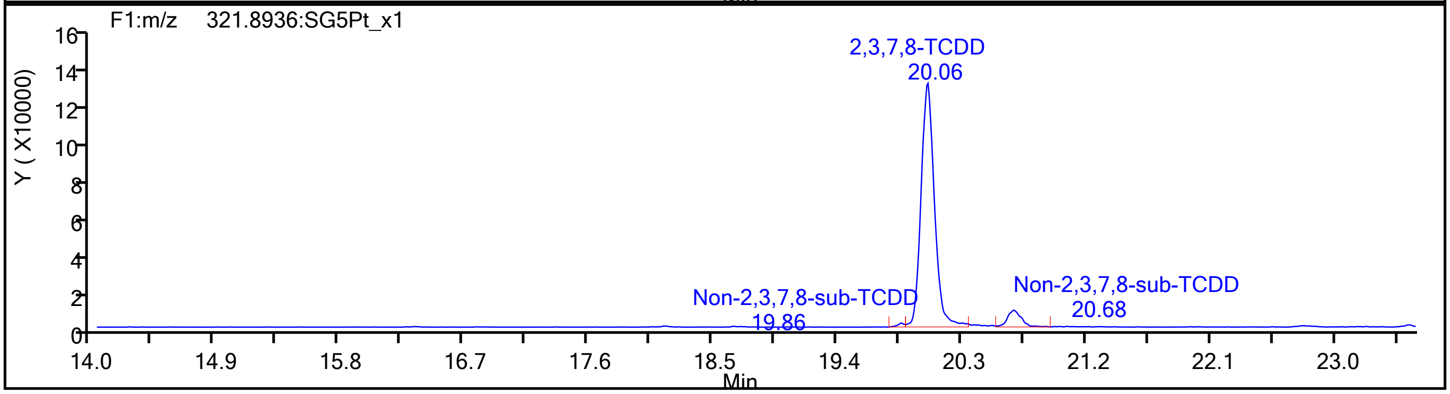

TCDD Standards

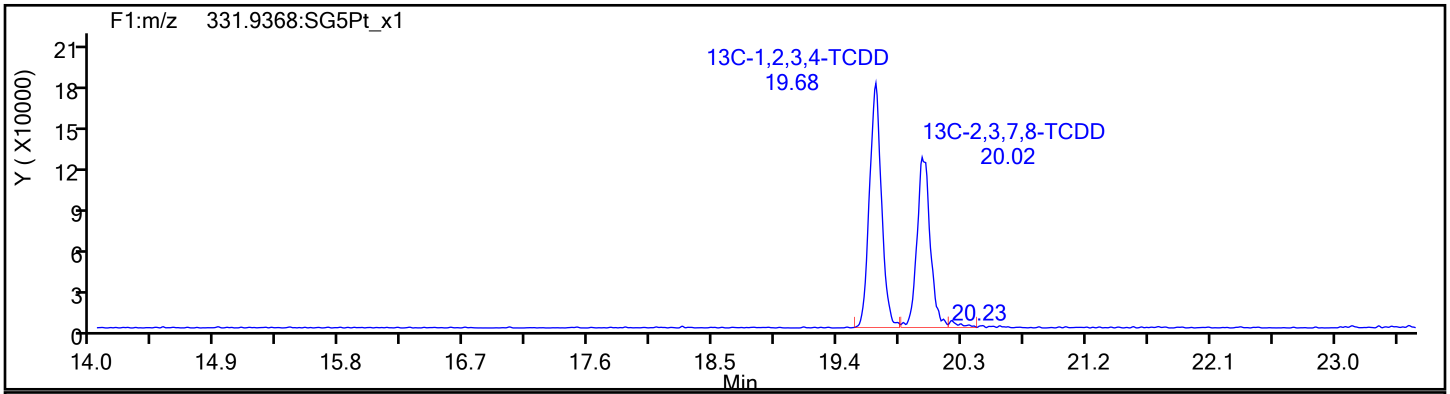

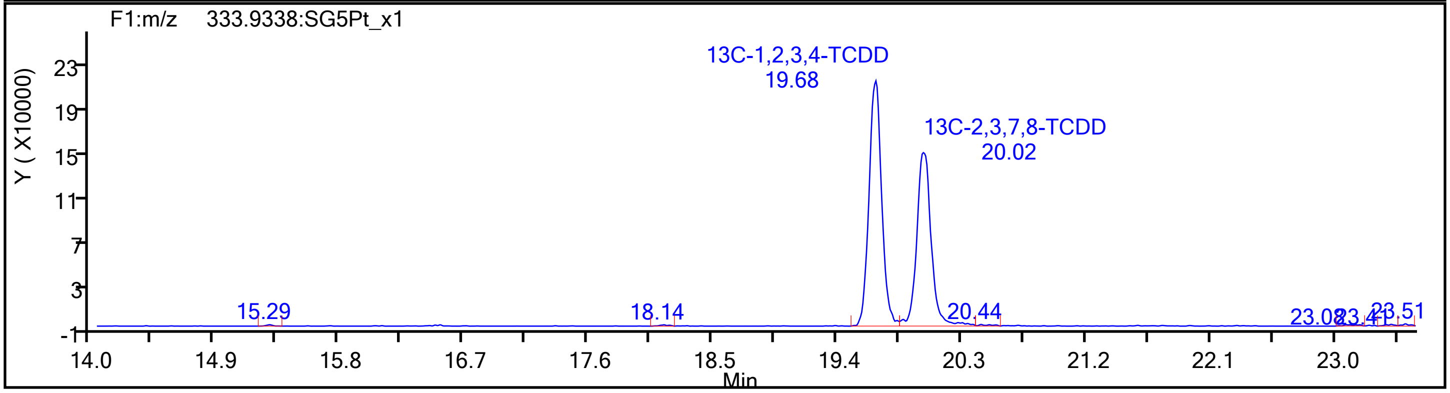

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Client ID:	11215702-Tank#2-valve-3-2		
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37Cl4-TCDD

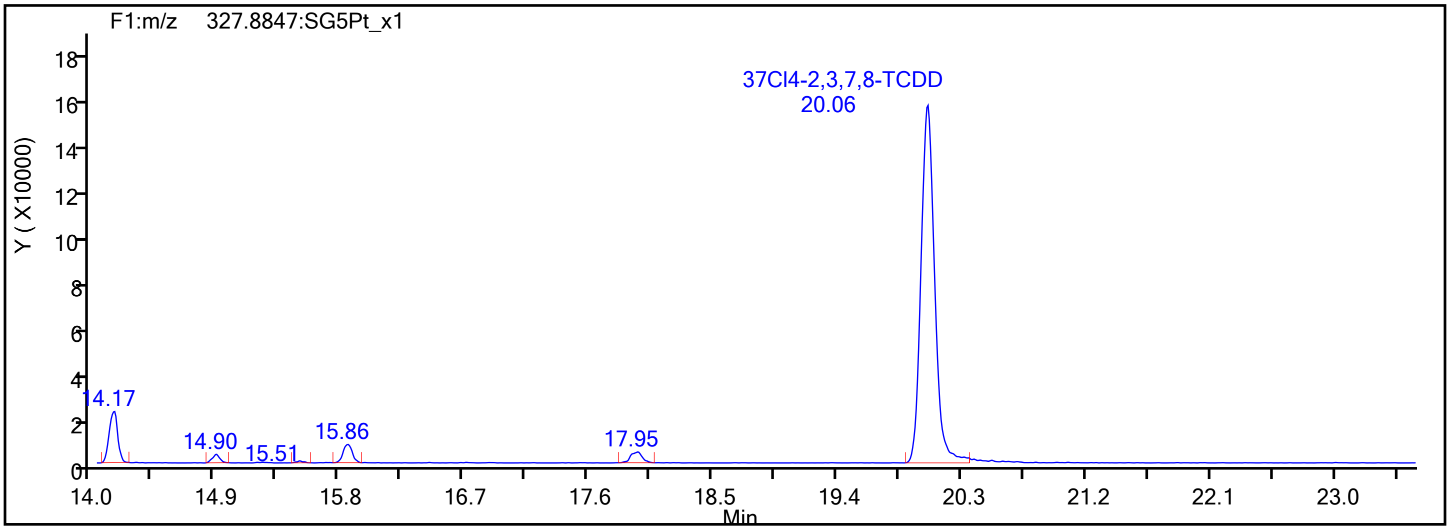

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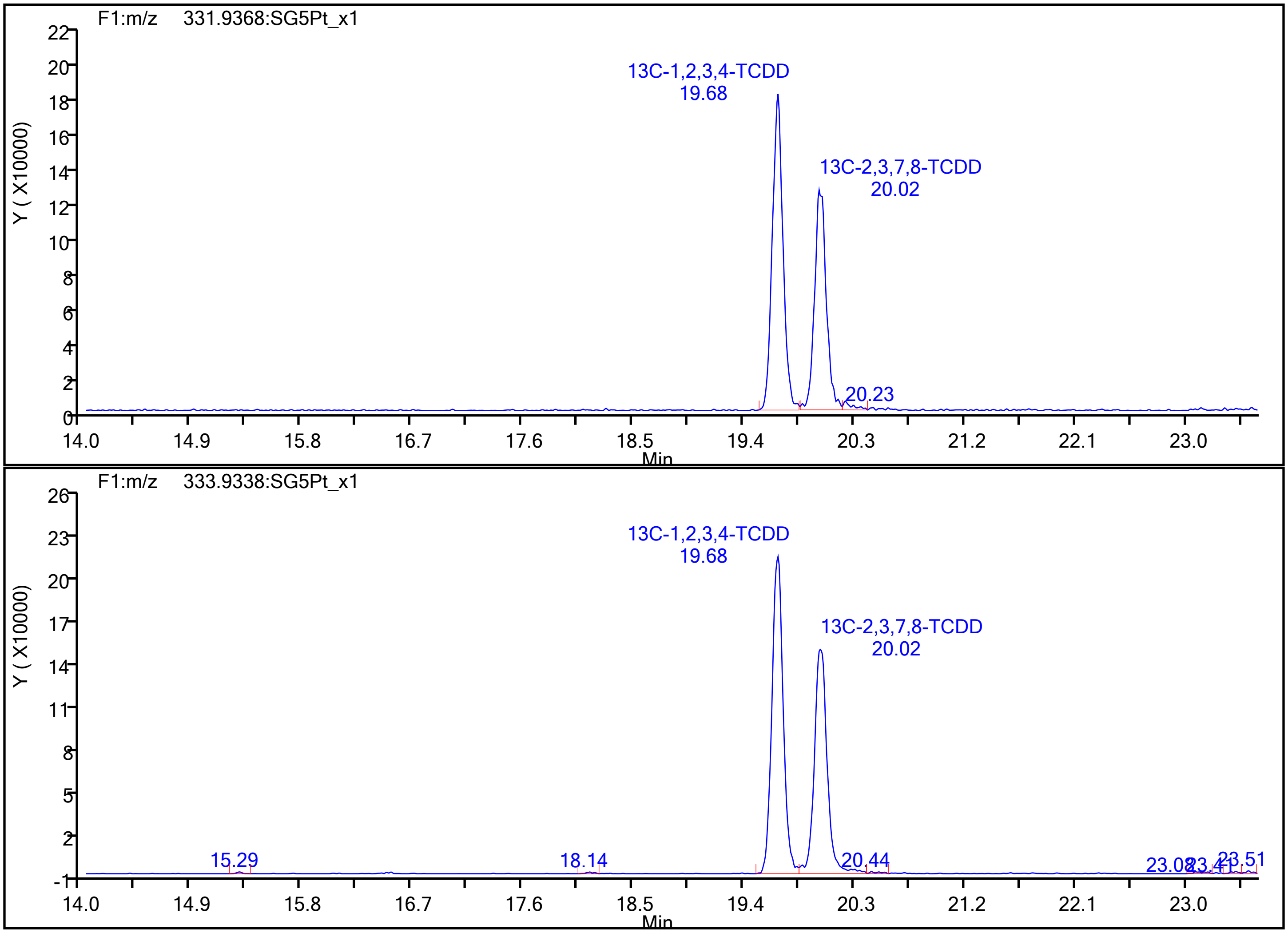

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Oct-2020 13:20:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-2

Worklist#: 420640 Sample Line#: 25

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

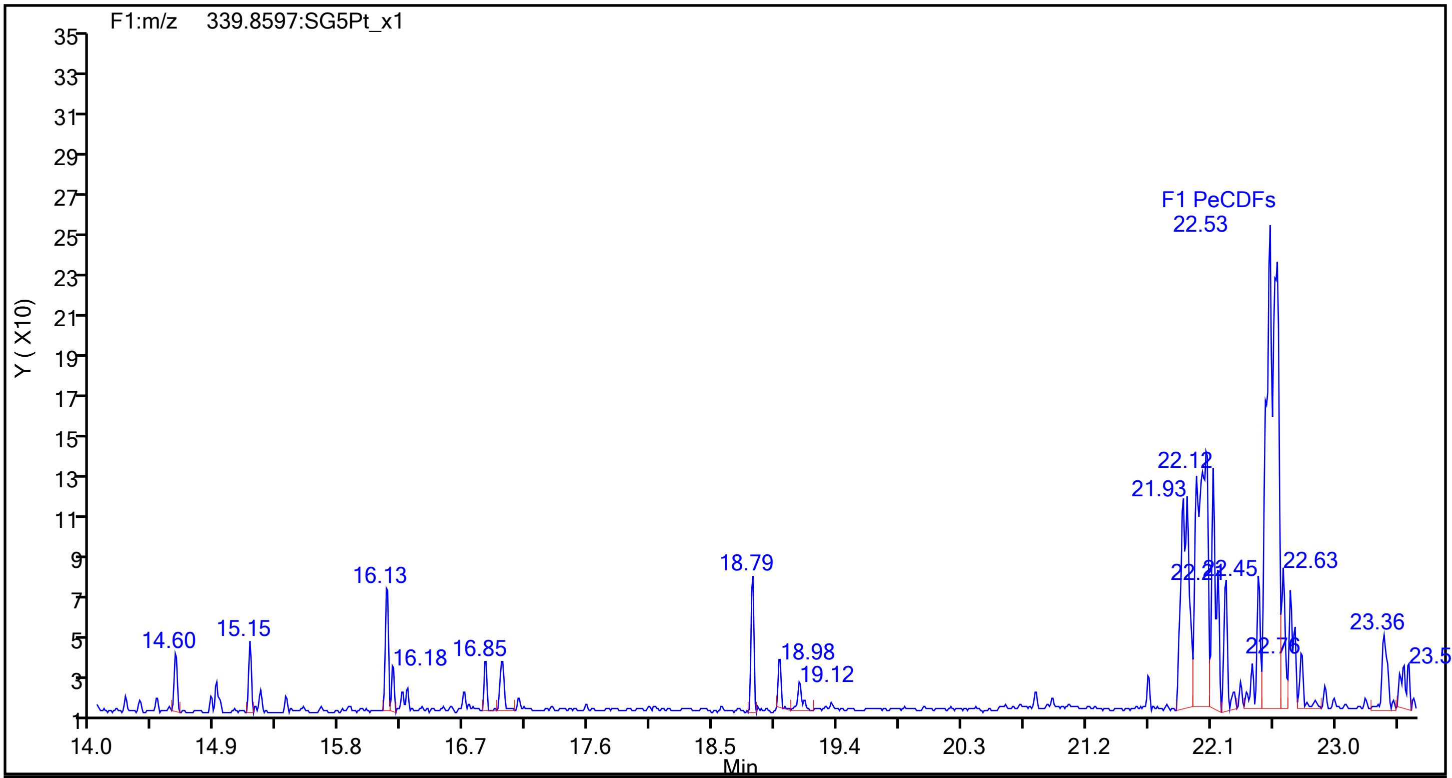

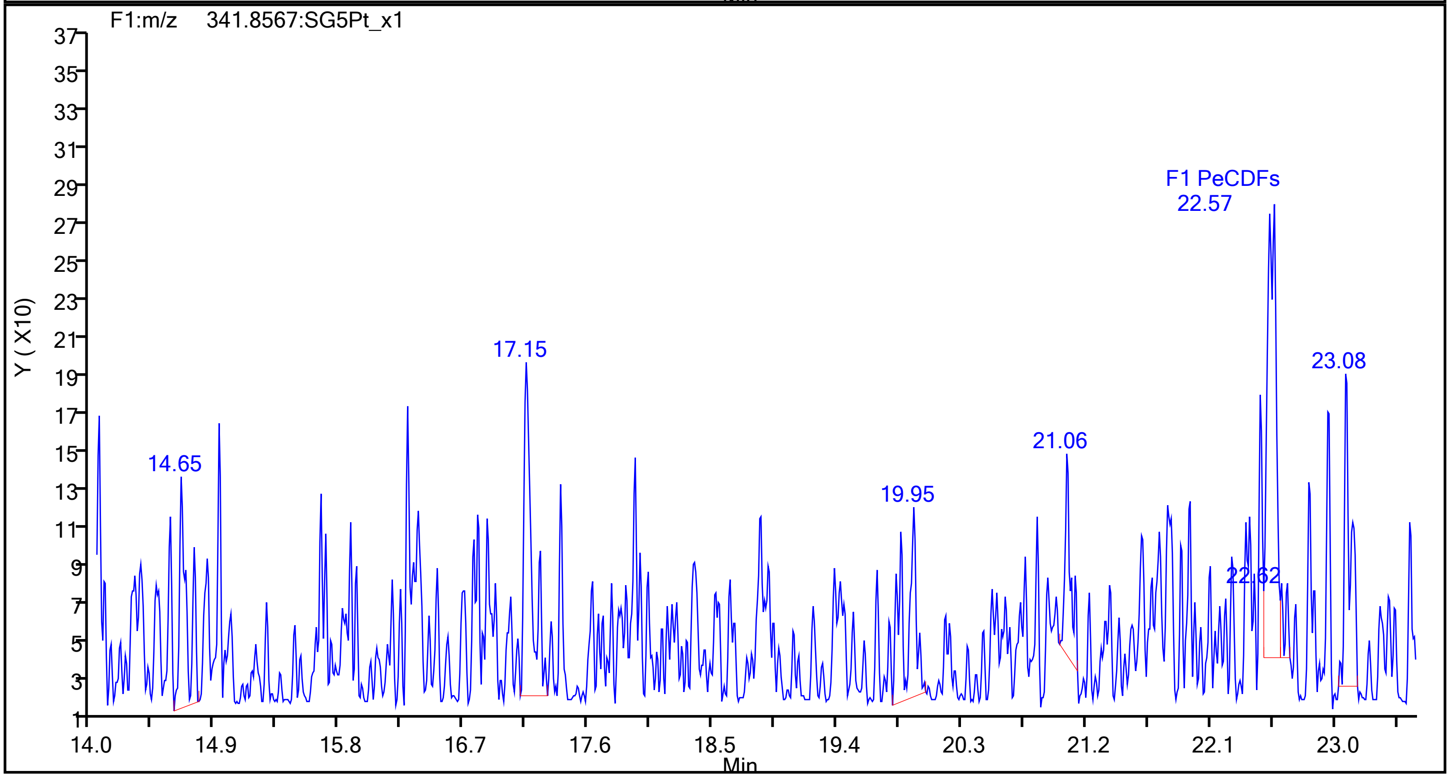

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Eurofins TestAmerica, Sacramento

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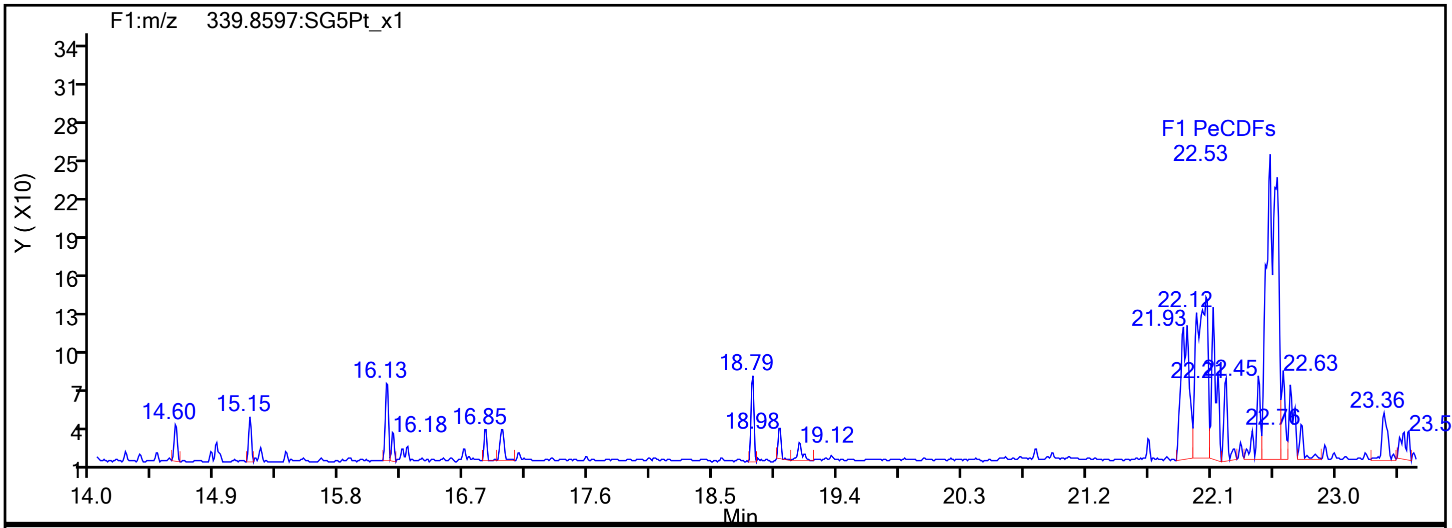

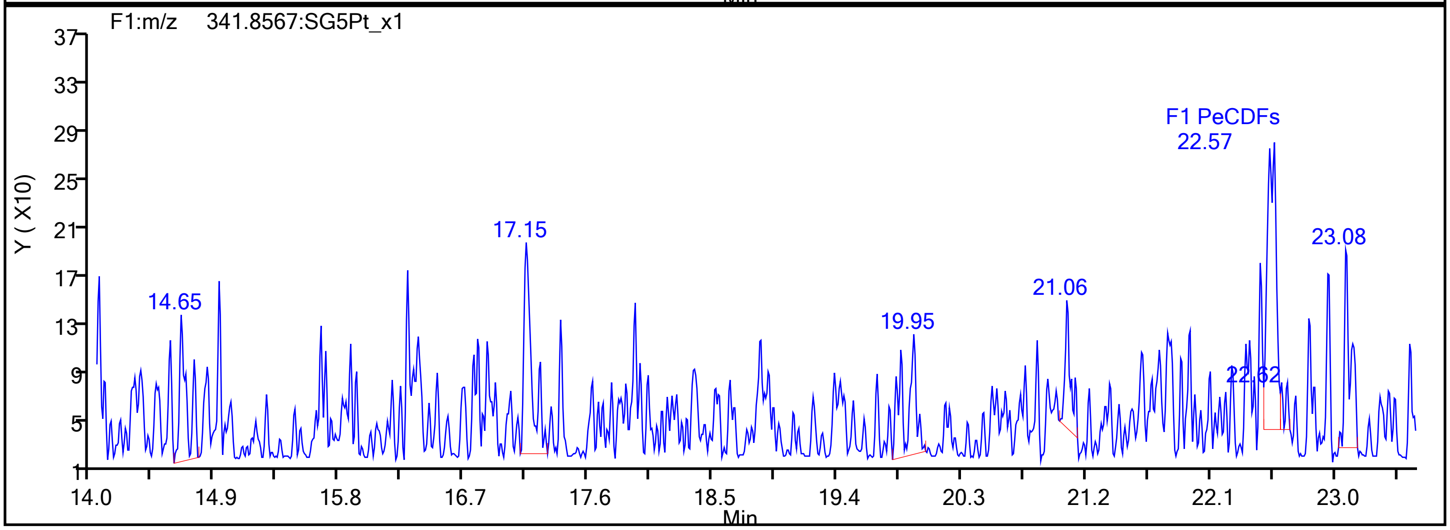

F1 PeCDFs Interference Mass

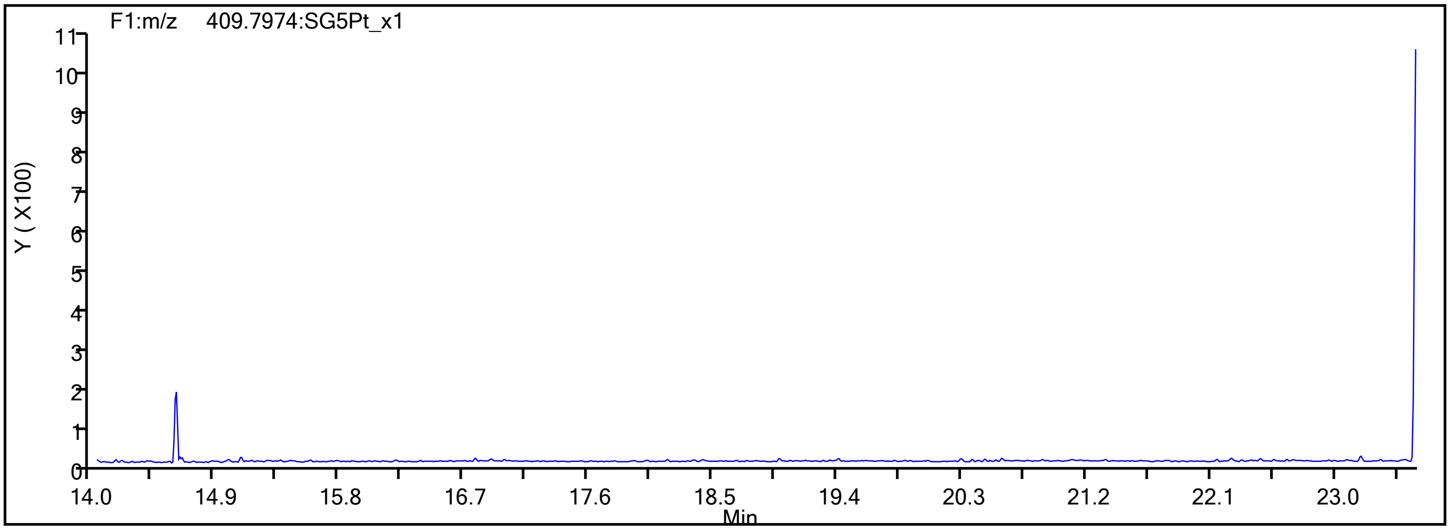

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

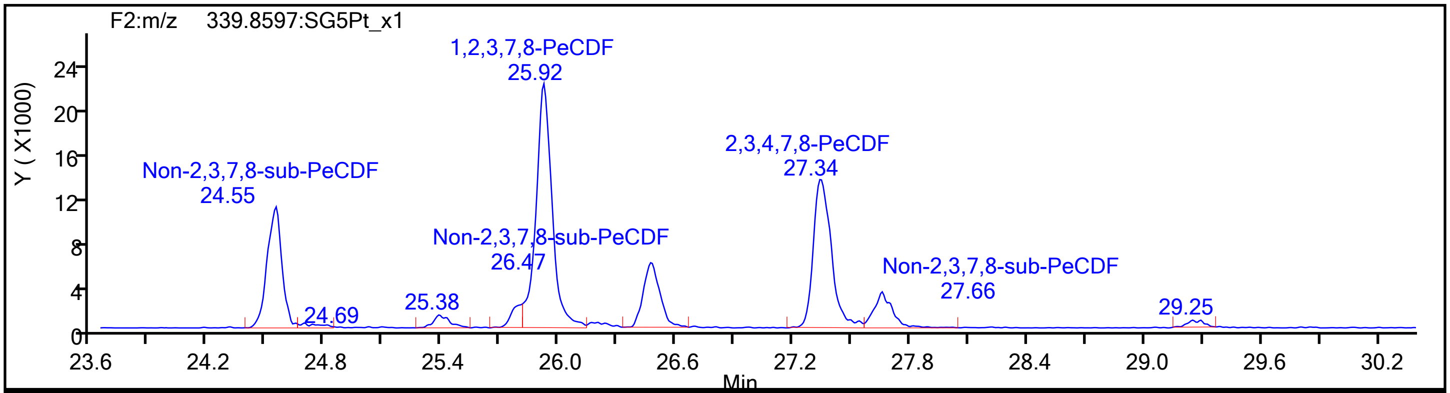

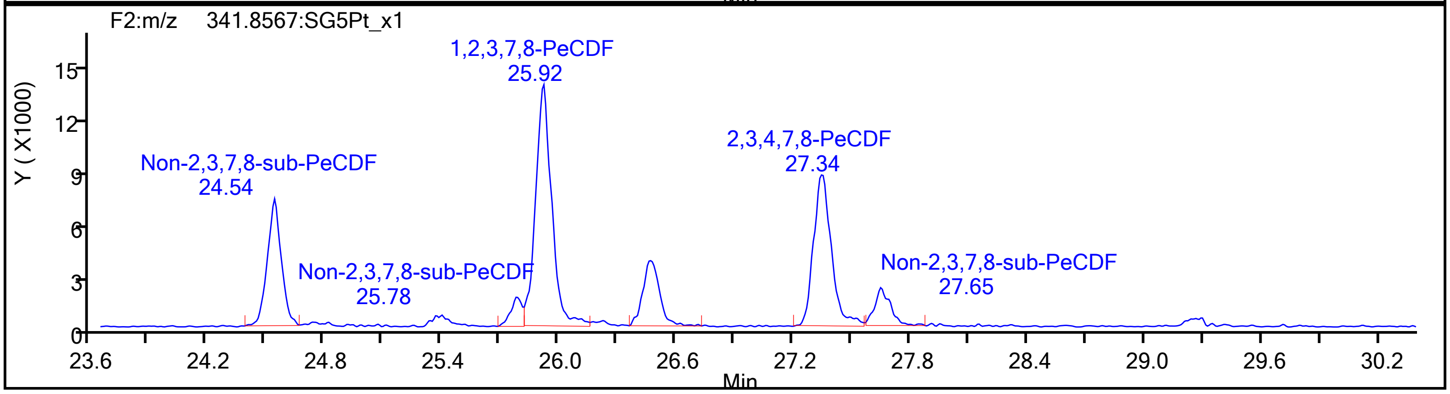

PeCDF Standards

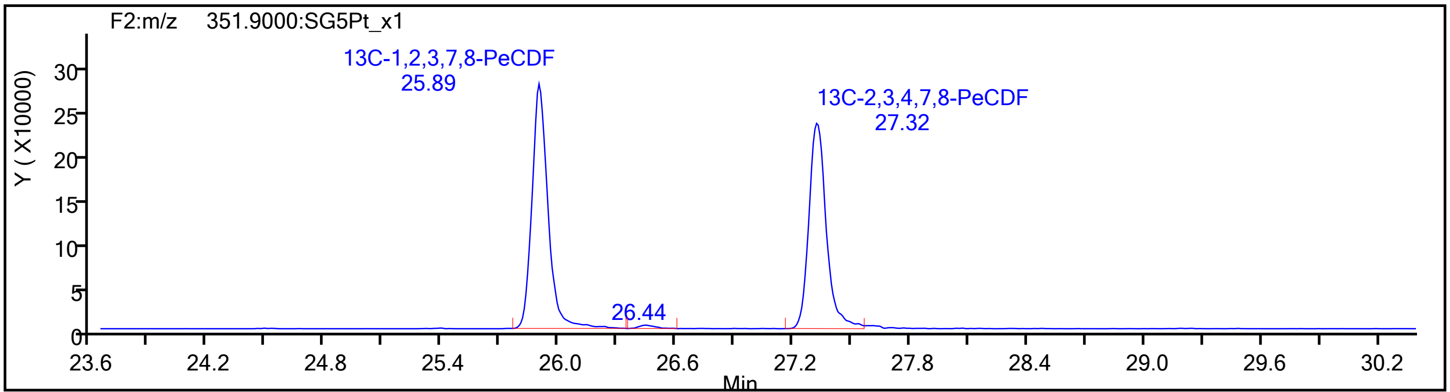

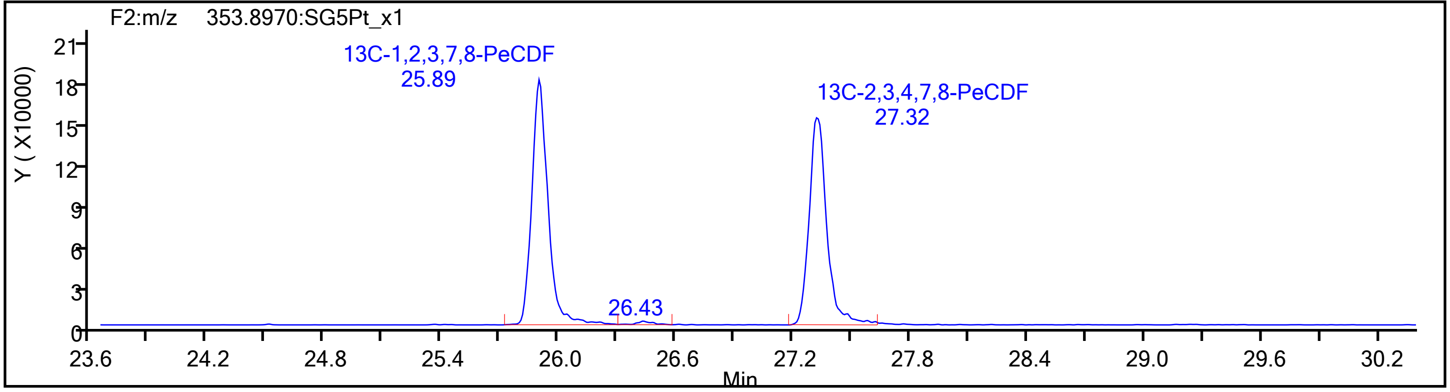

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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PeCDF

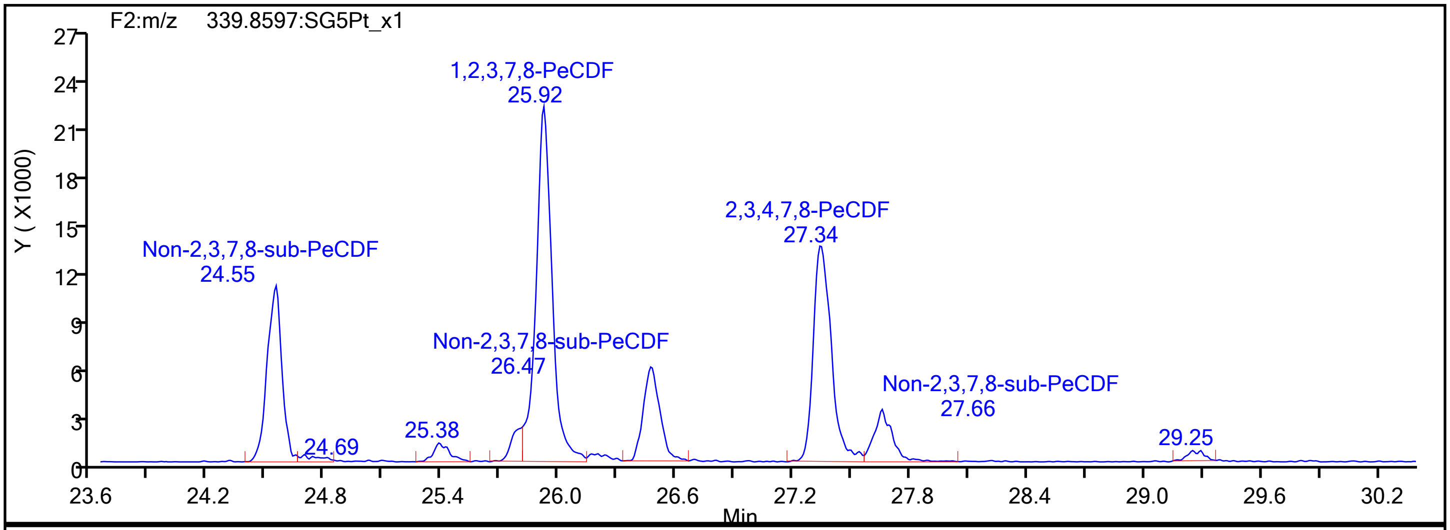

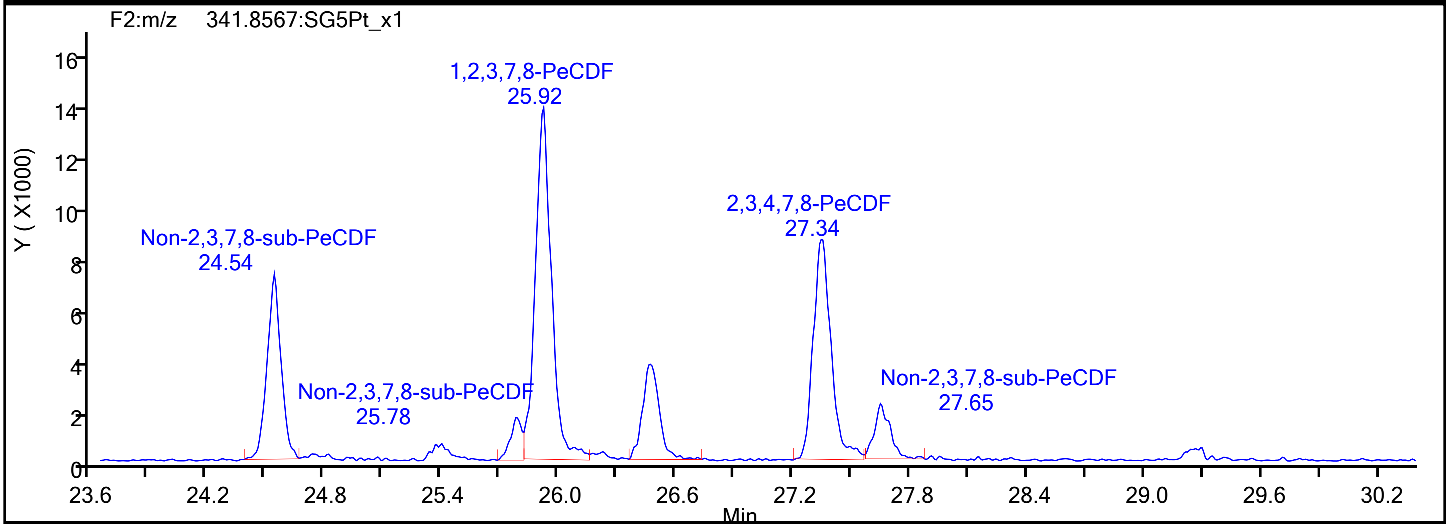

PeCDF Interference Mass

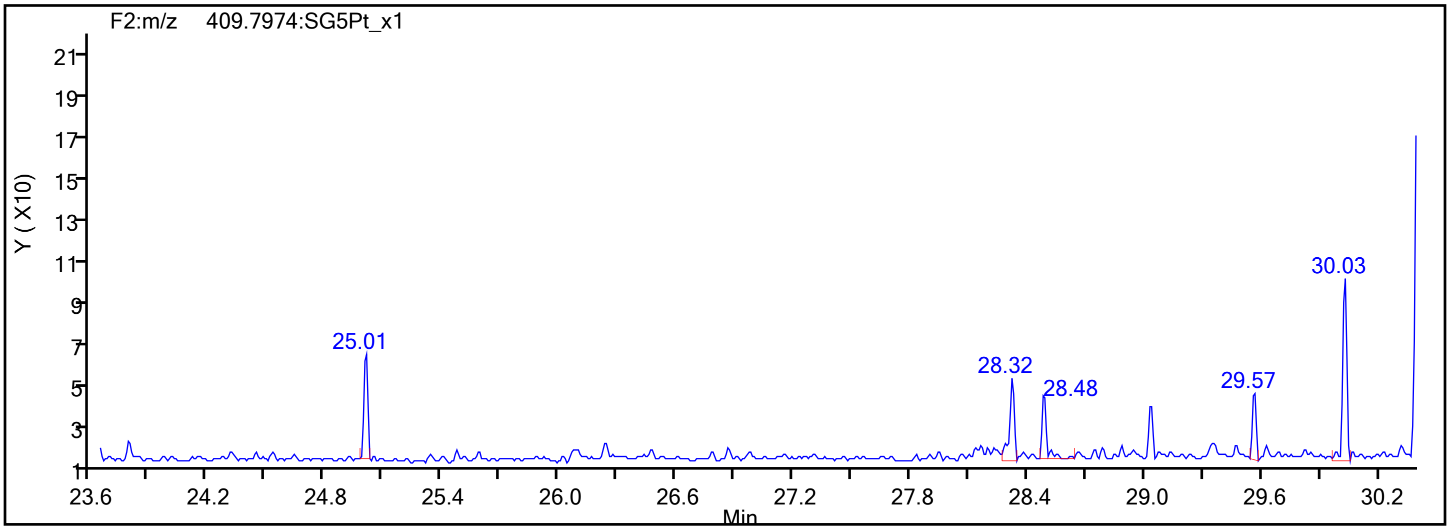

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Eurofins TestAmerica, Sacramento

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PeCDD

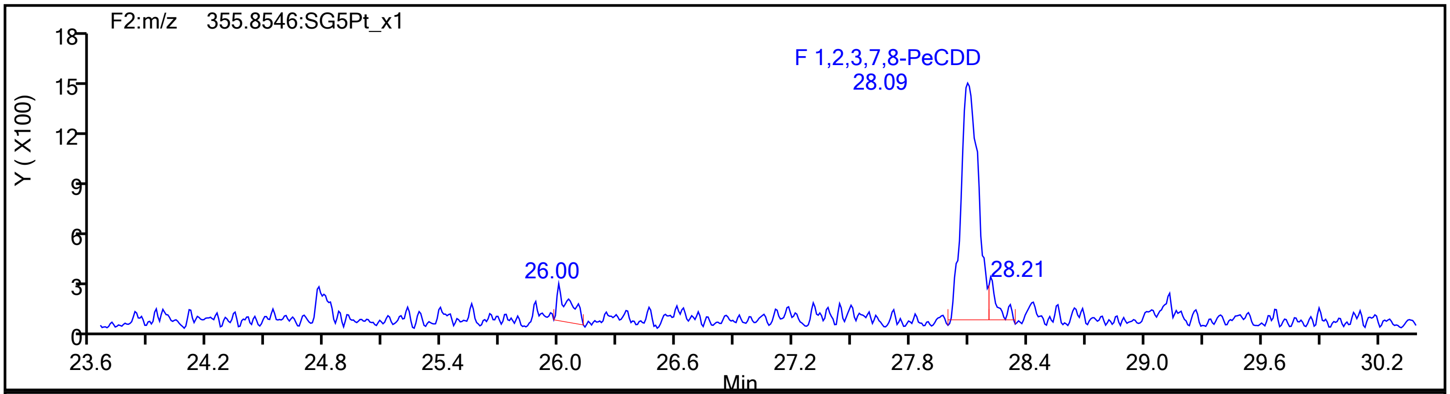

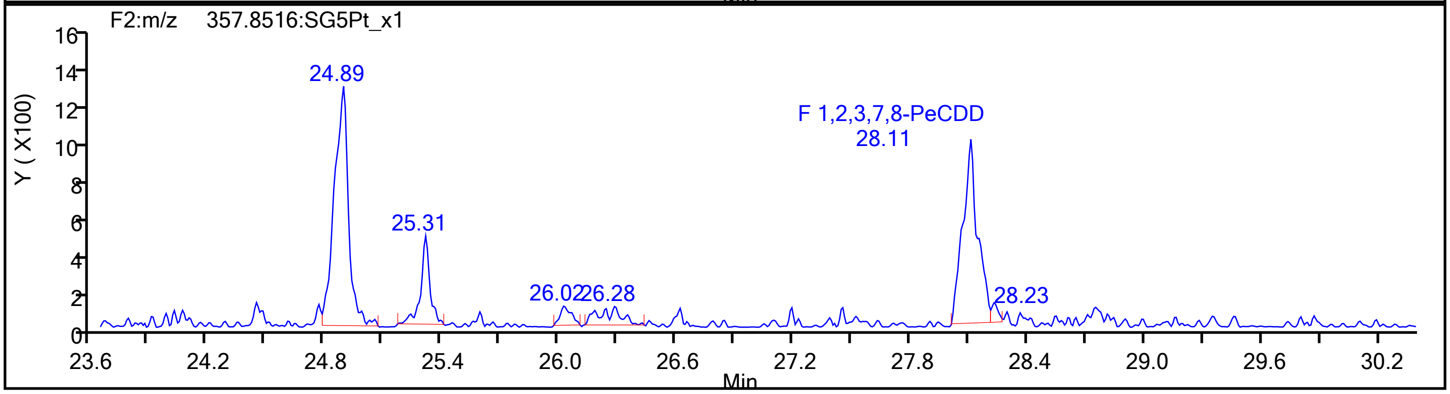

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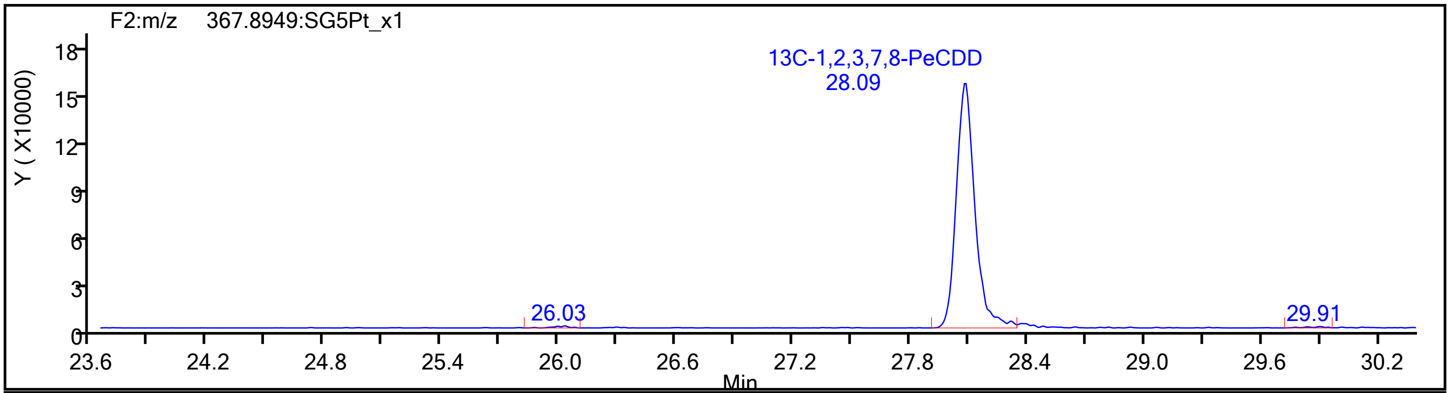

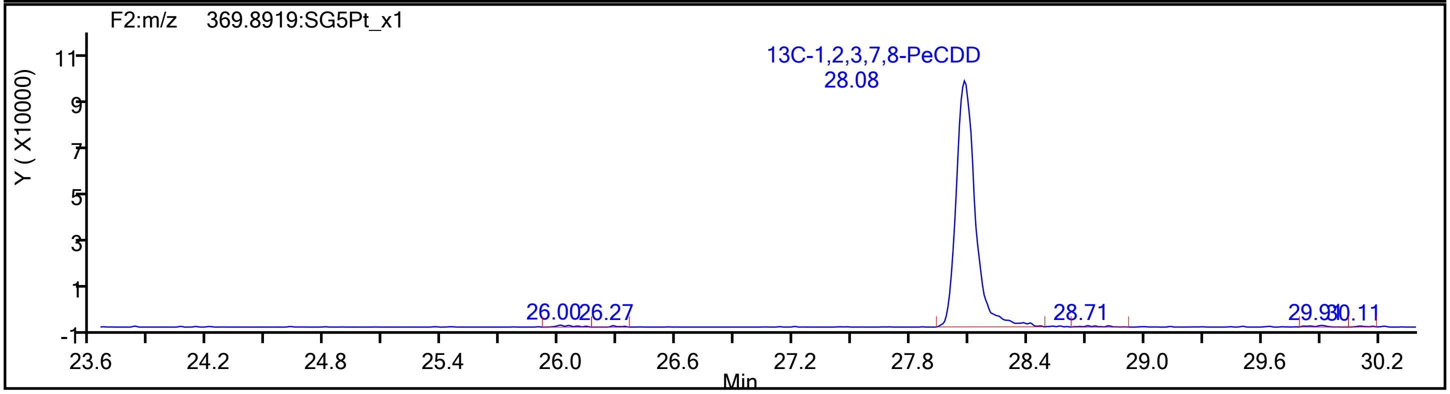

Report Date: 12-Oct-2020 11:32:04 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

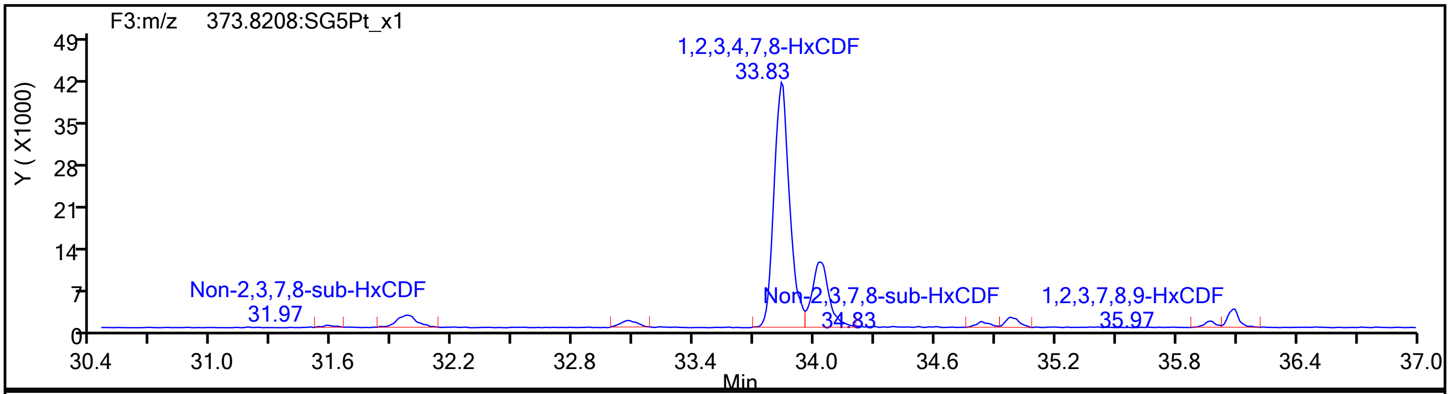

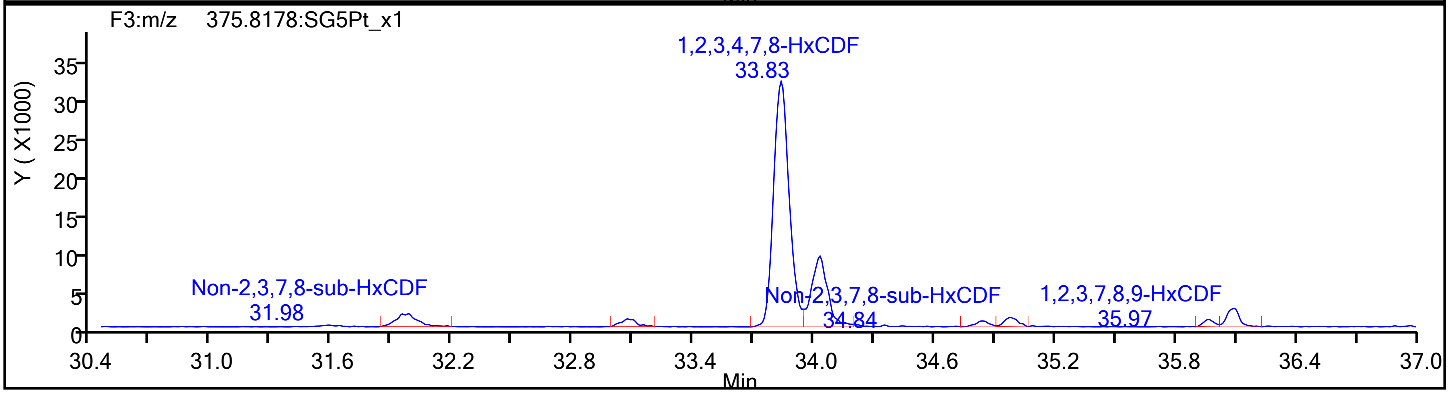

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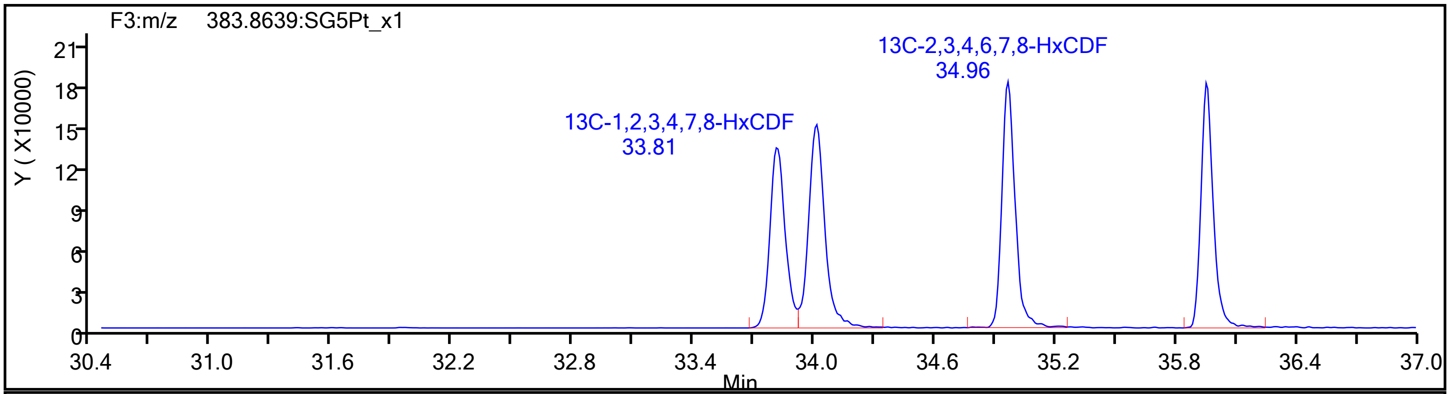

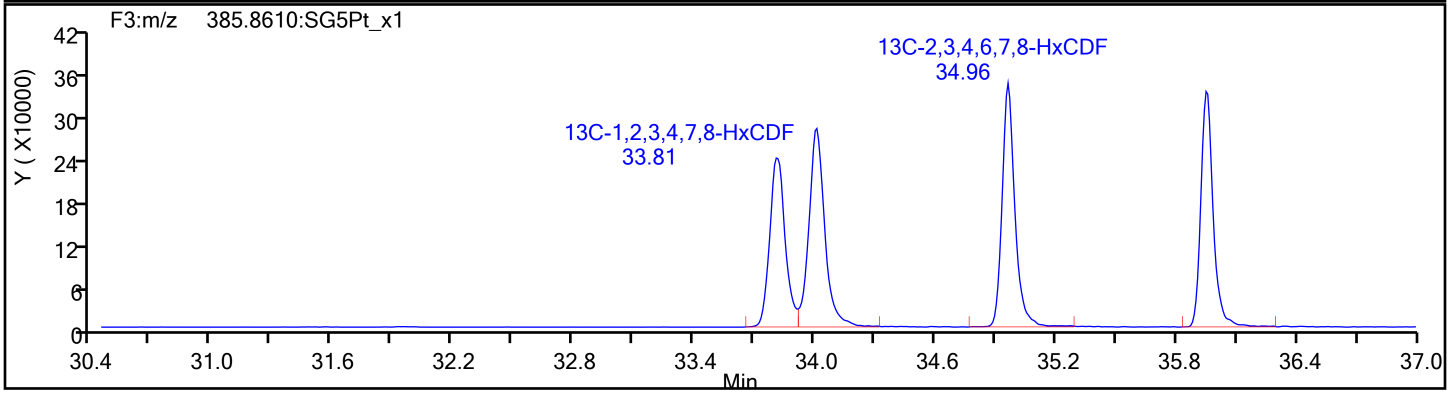

Report Date: 12-Oct-2020 11:32:05　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Oct-2020 13:20:00　Injection Vol: 1.0 ul
Instrument ID: DFS 1　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL
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HxCDF

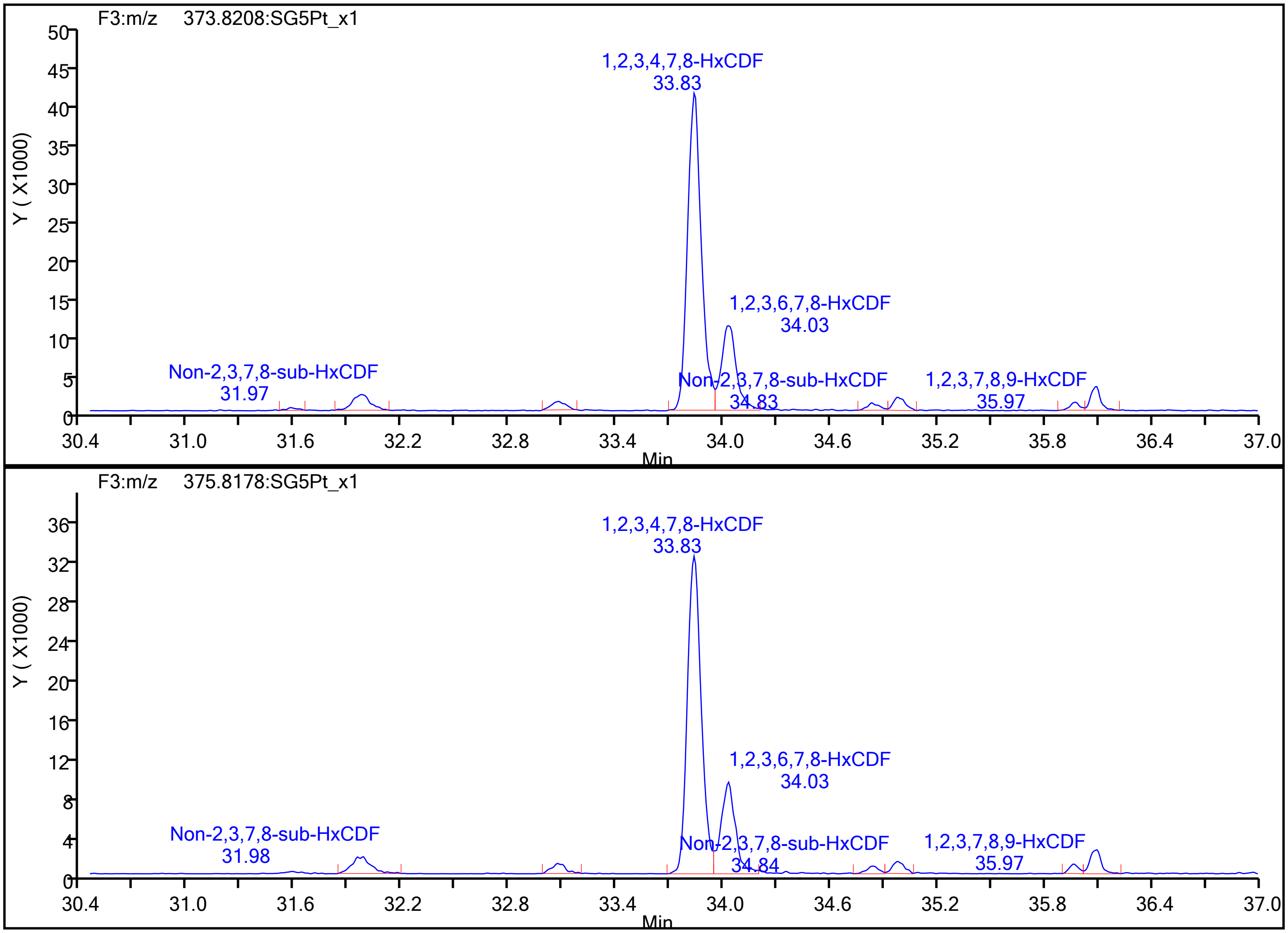

HxCDF Interference Mass

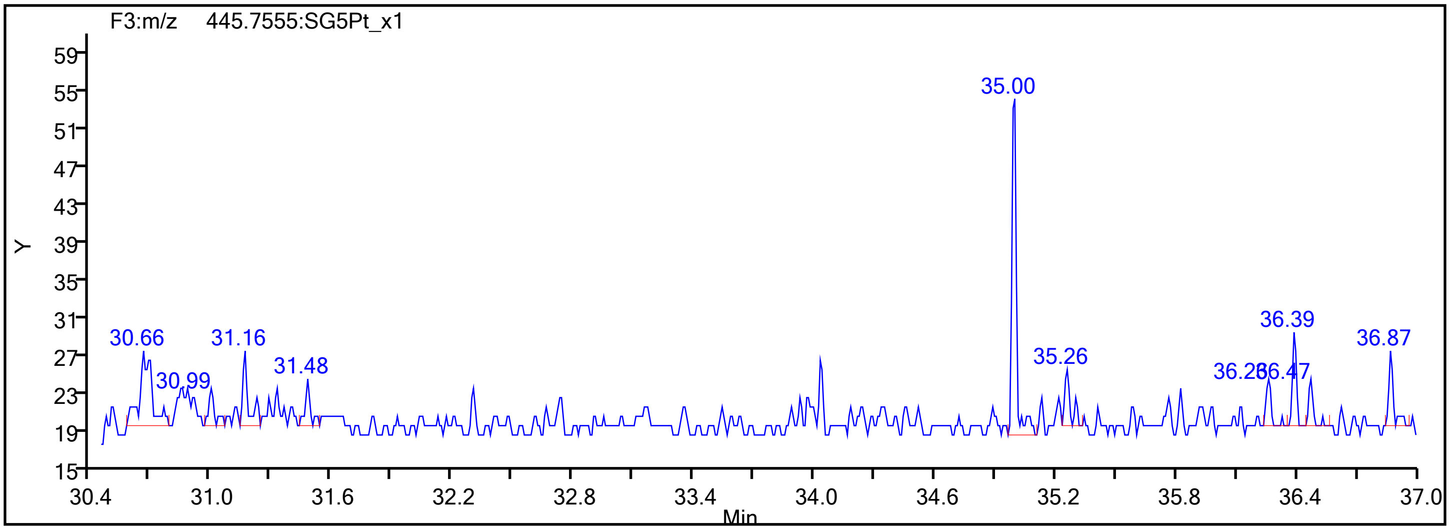

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Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
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HxCDD

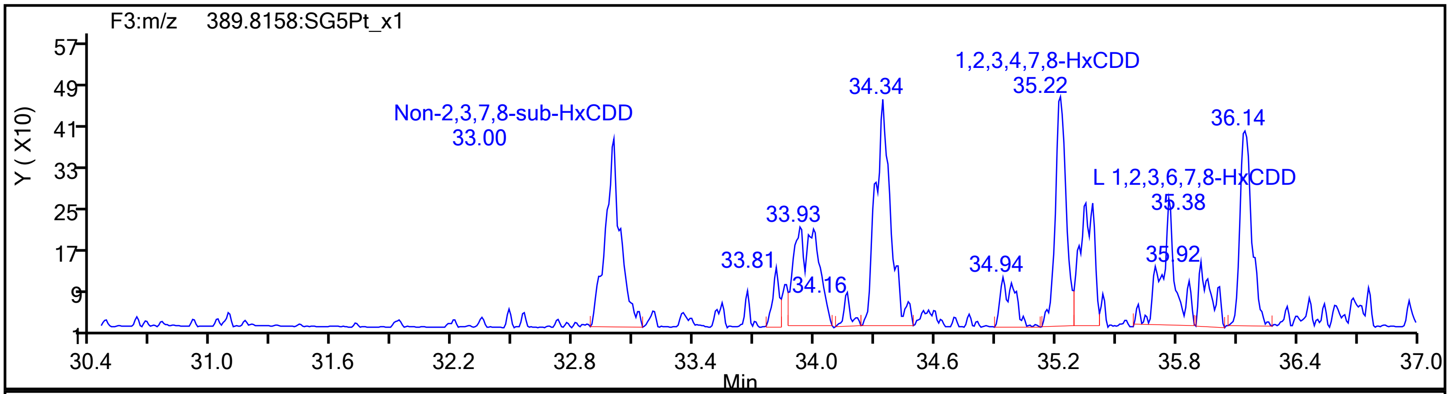

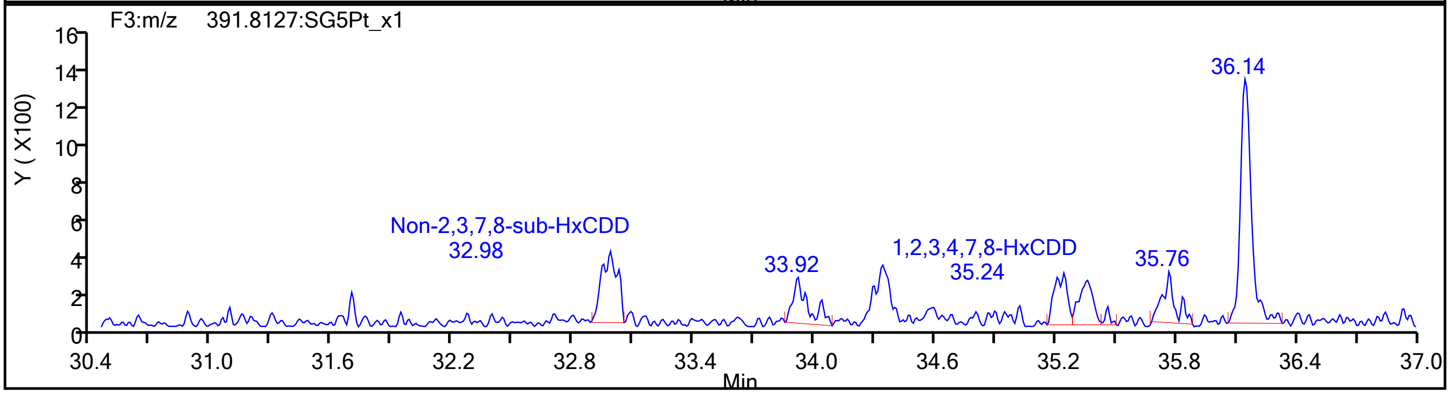

HxCDD Standards

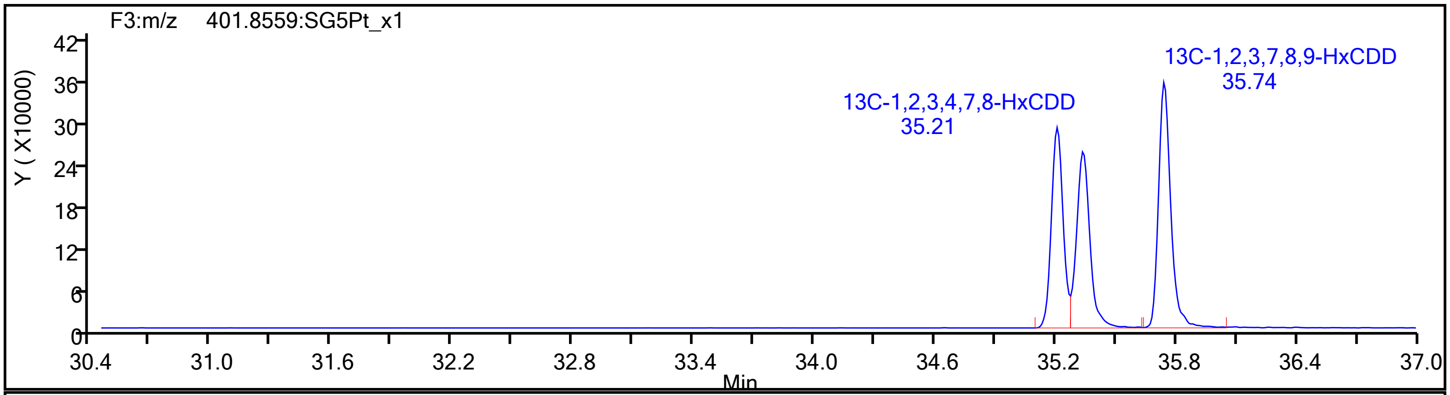

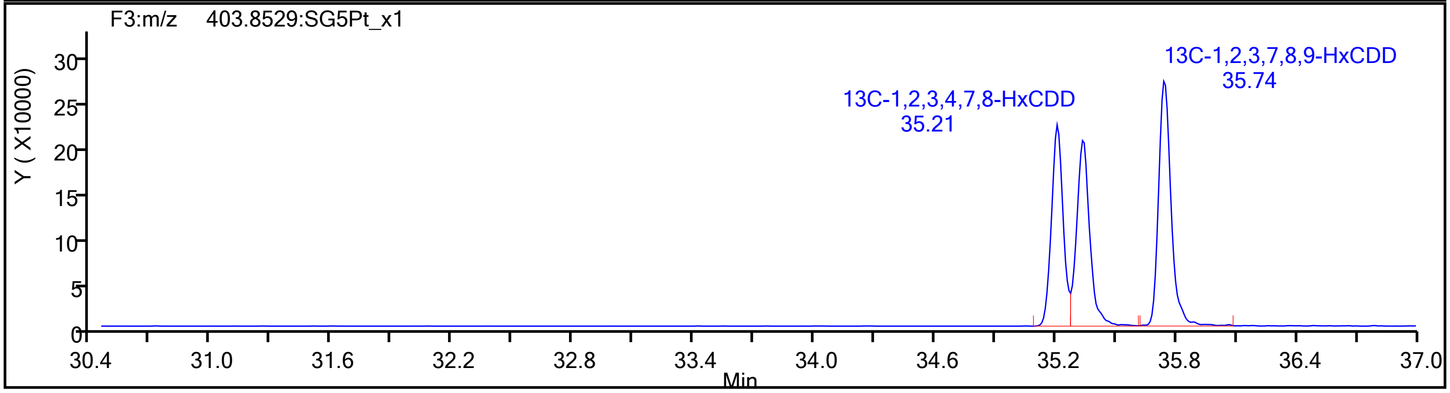

Report Date: 12-Oct-2020 11:32:05　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Injection Date: 10-Oct-2020 13:20:00　Injection Vol: 1.0 ul
Instrument ID: DFS 1　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL
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HpCDF

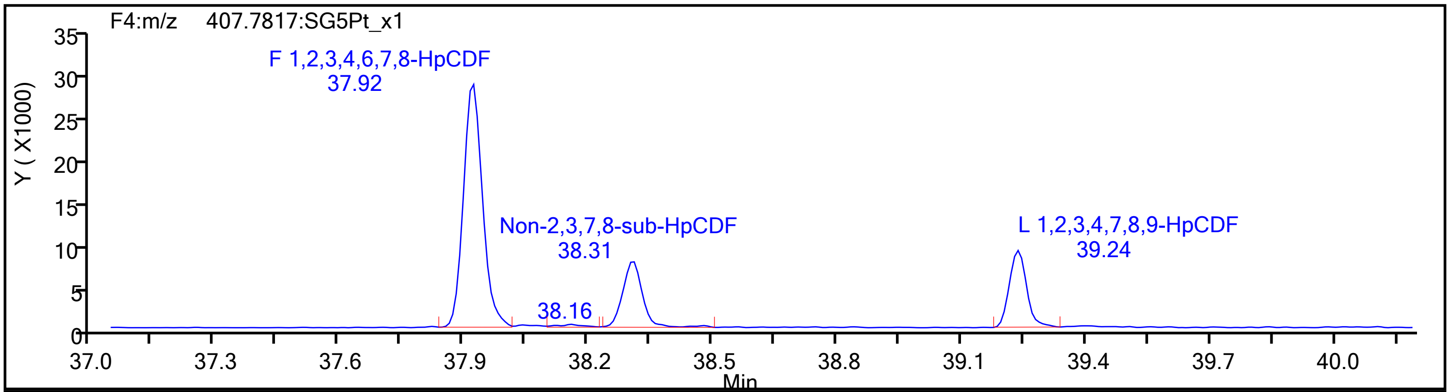

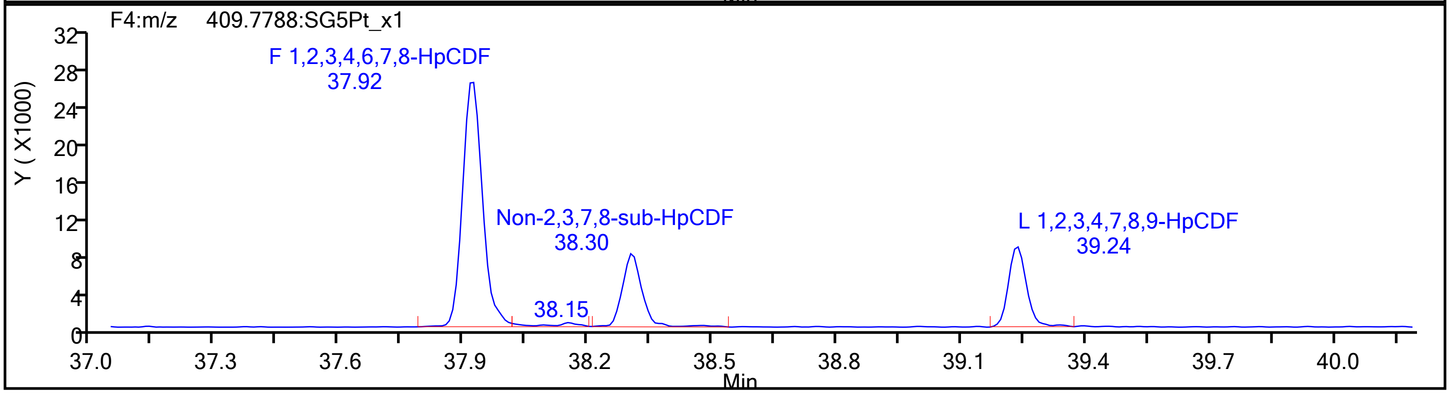

HpCDF Standards

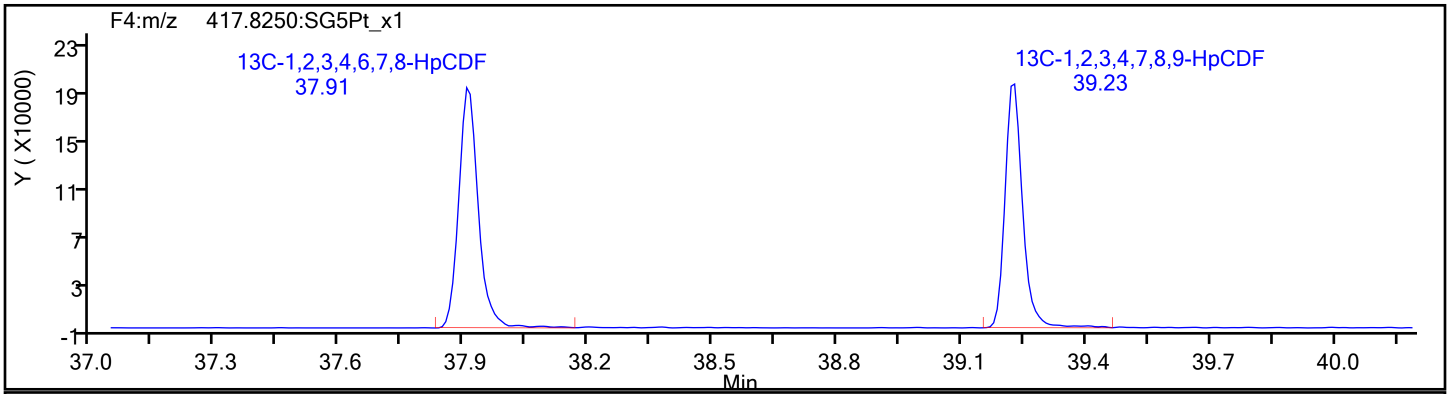

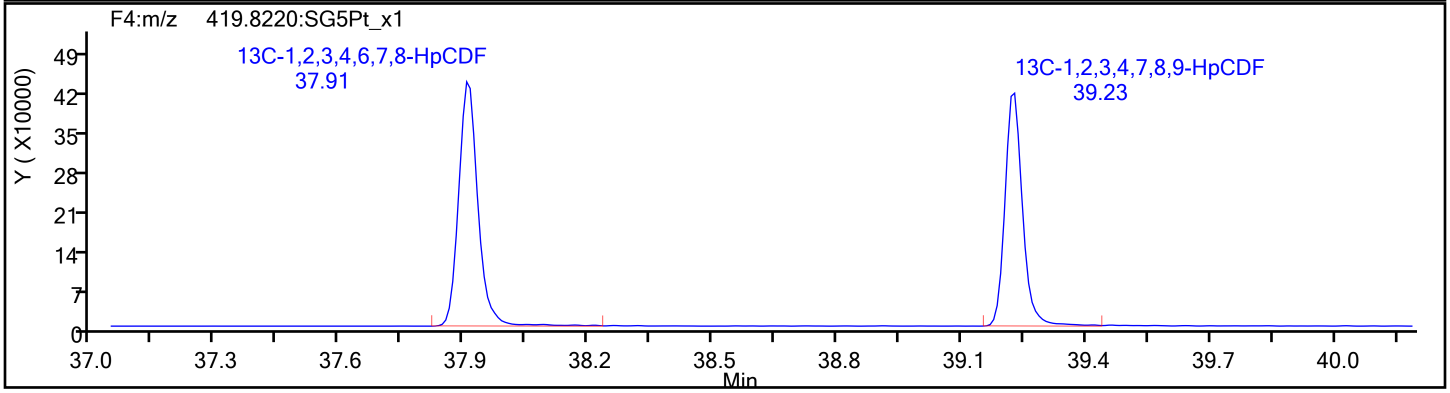

Report Date: 12-Oct-2020 11:32:05 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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HpCDF

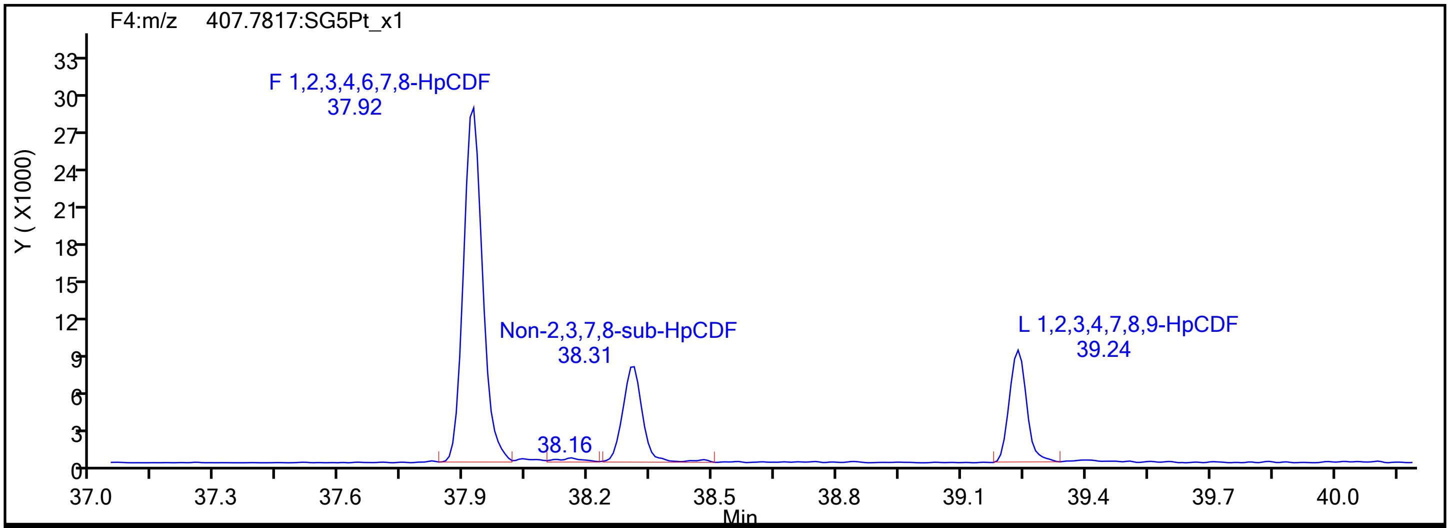

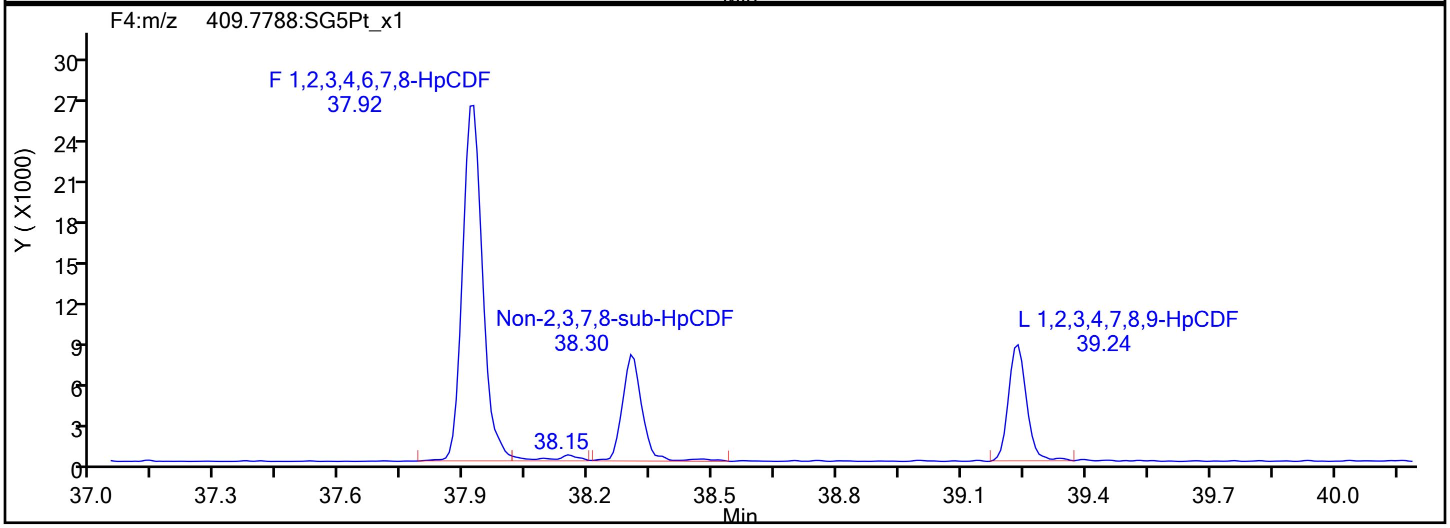

HpCDF Interference Mass

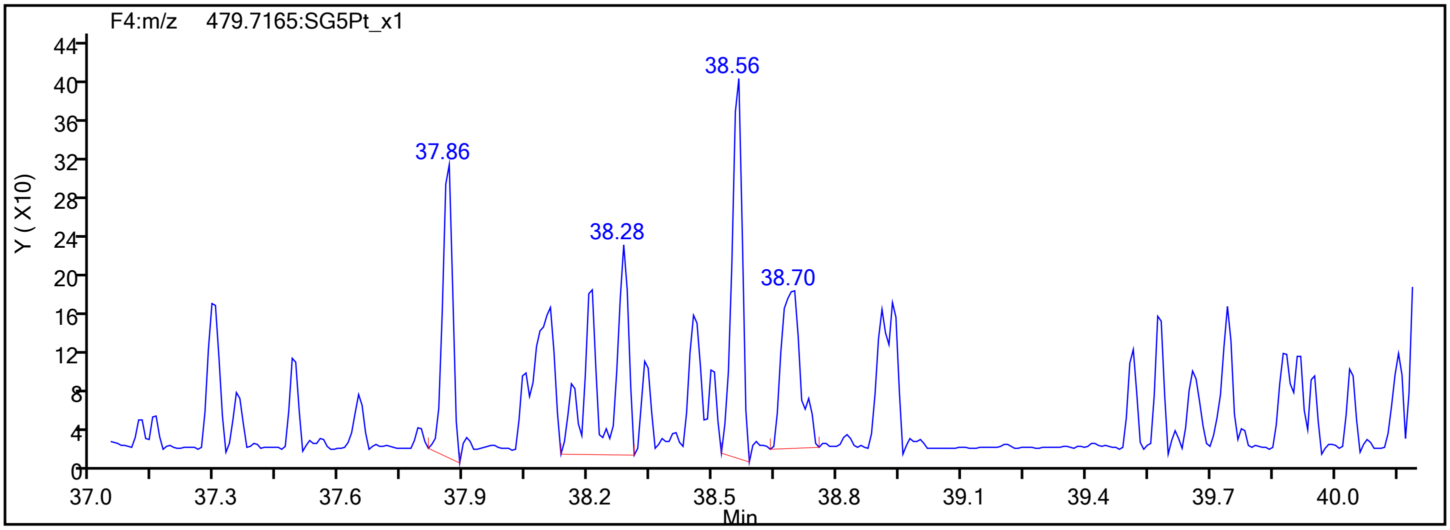

Report Date: 12-Oct-2020 11:32:05 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Injection Date:	10-Oct-2020 13:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
Worklist#:	420640	Sample Line#:	25
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

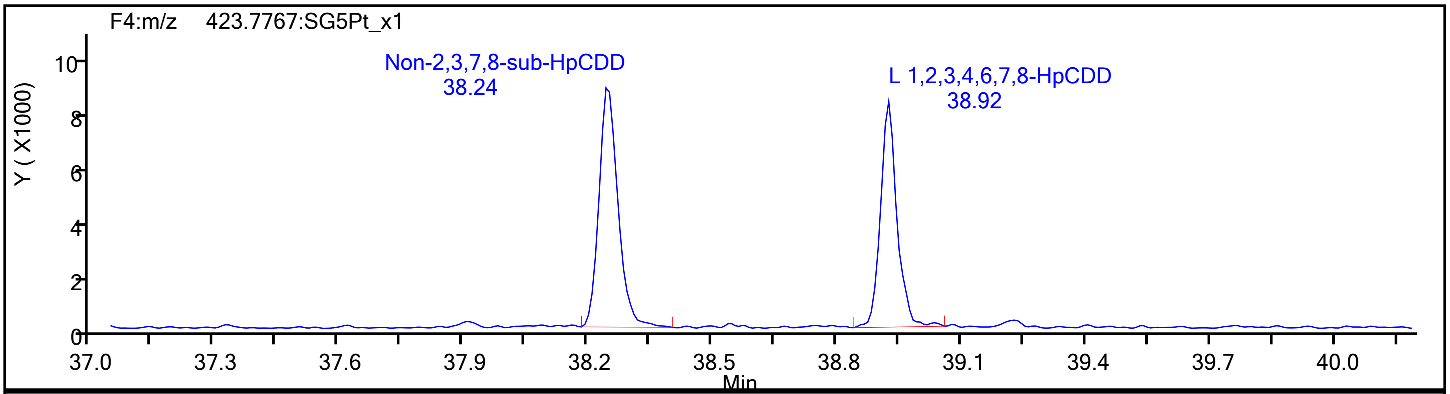

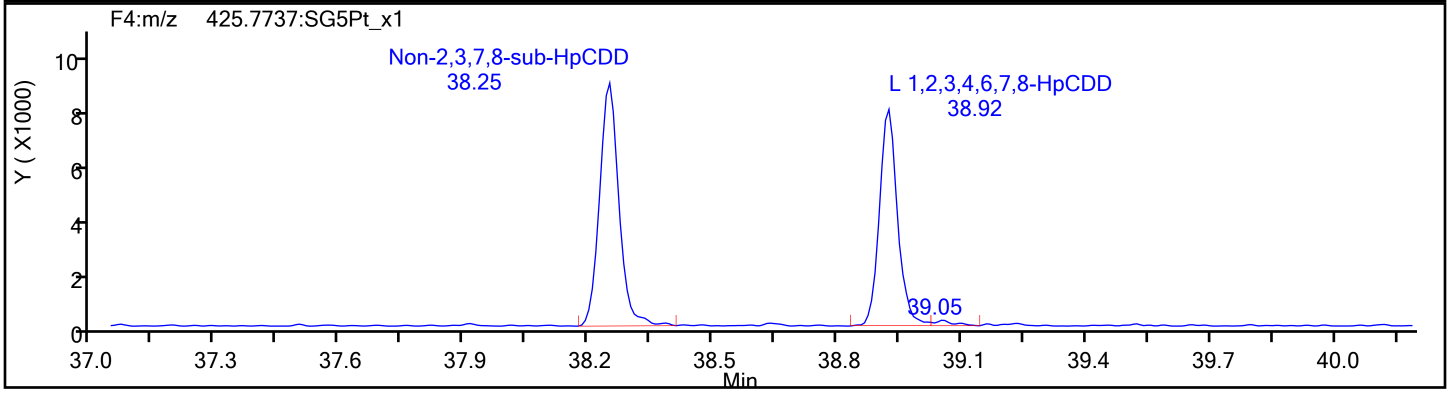

HpCDD Standards

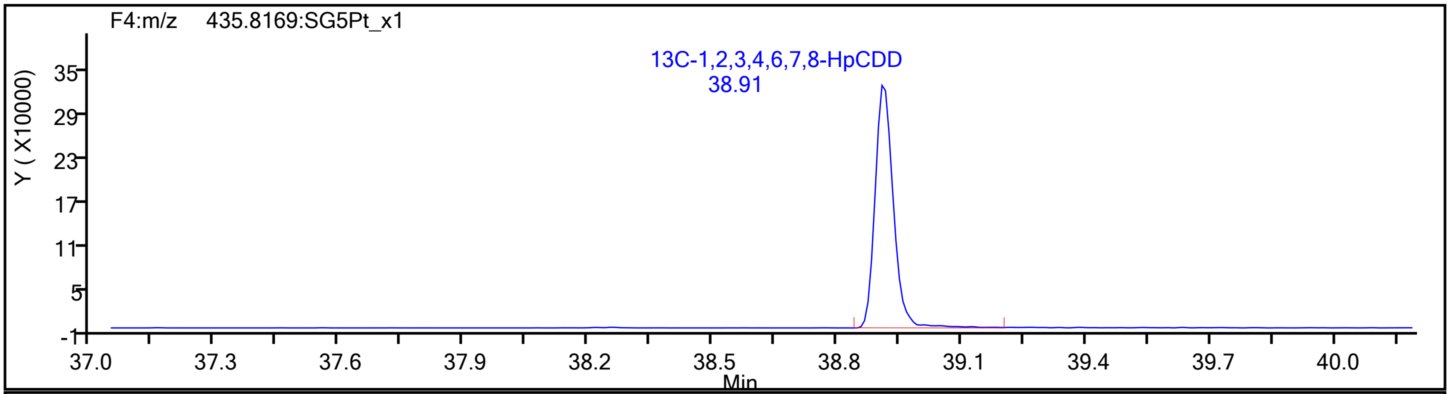

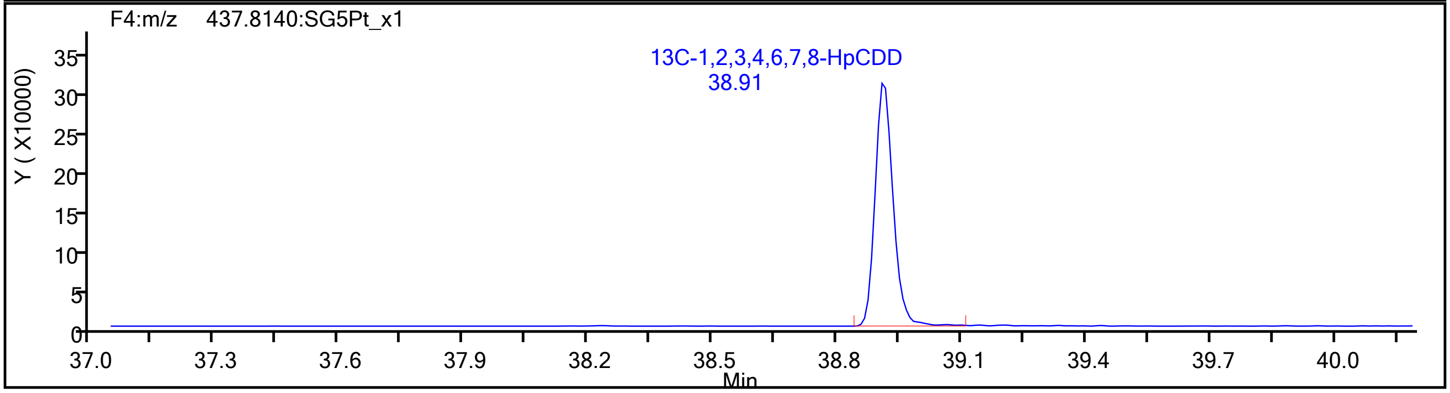

Report Date: 12-Oct-2020 11:32:05 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Injection Date:	10-Oct-2020 13:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
Worklist#:	420640	Sample Line#:	25
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

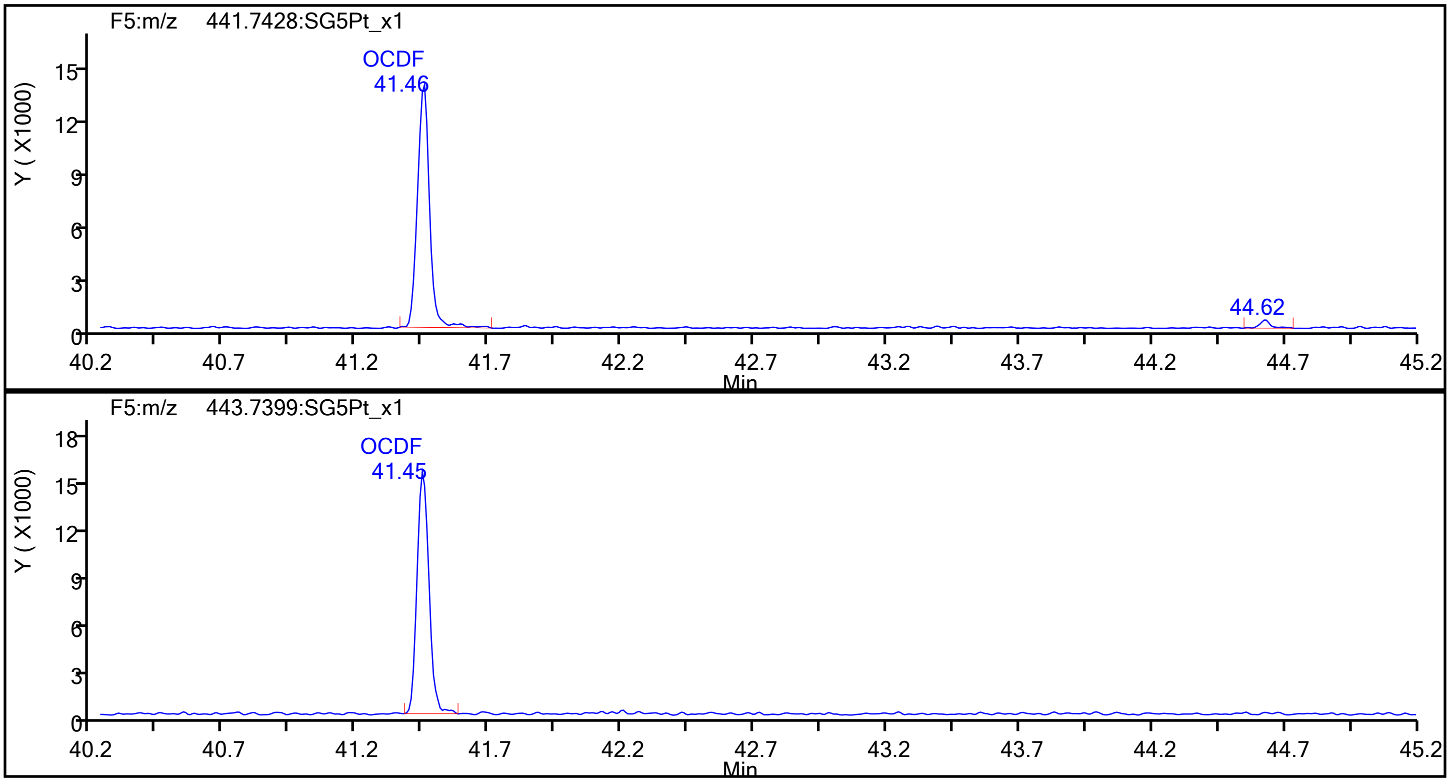

OCDF Standards

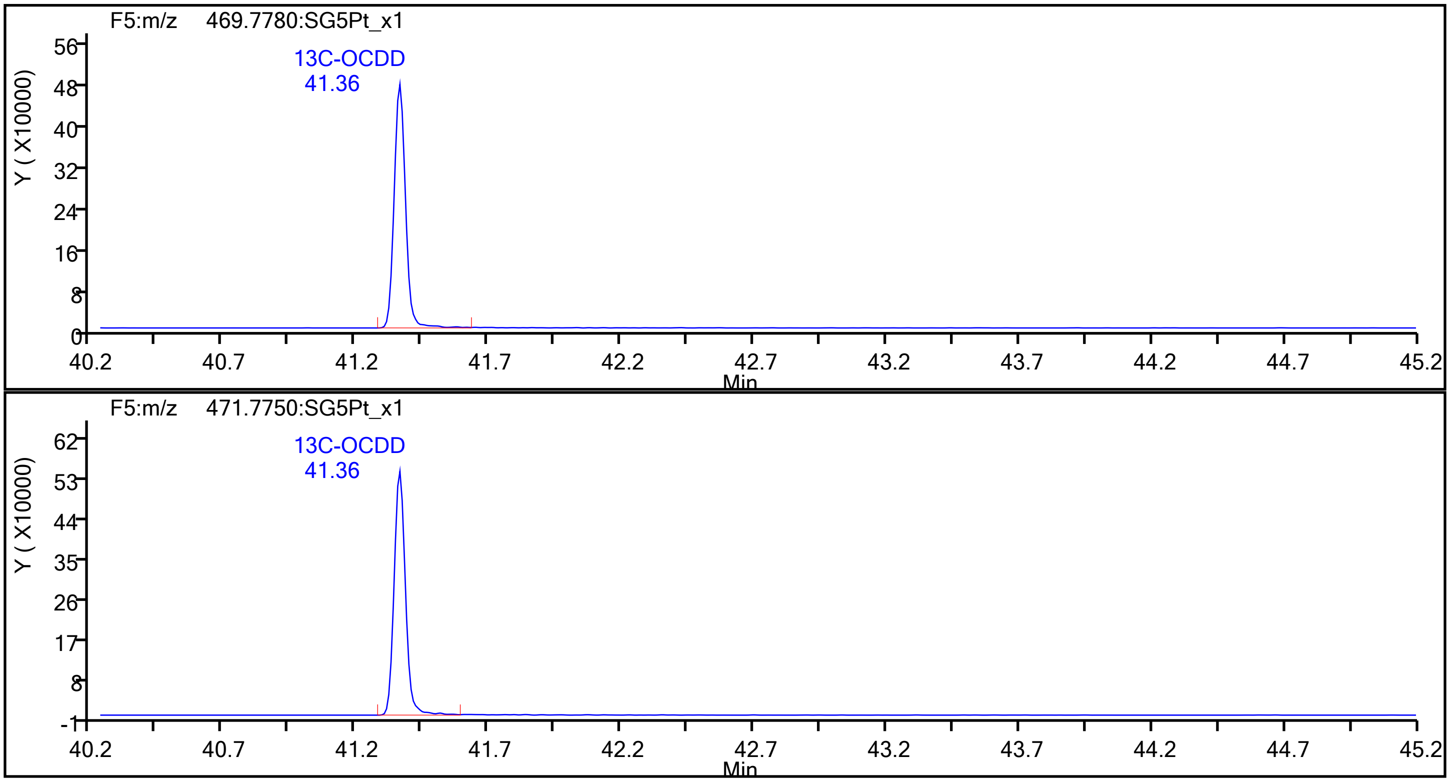

Report Date: 12-Oct-2020 11:32:05 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Injection Date:	10-Oct-2020 13:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
Worklist#:	420640	Sample Line#:	25
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

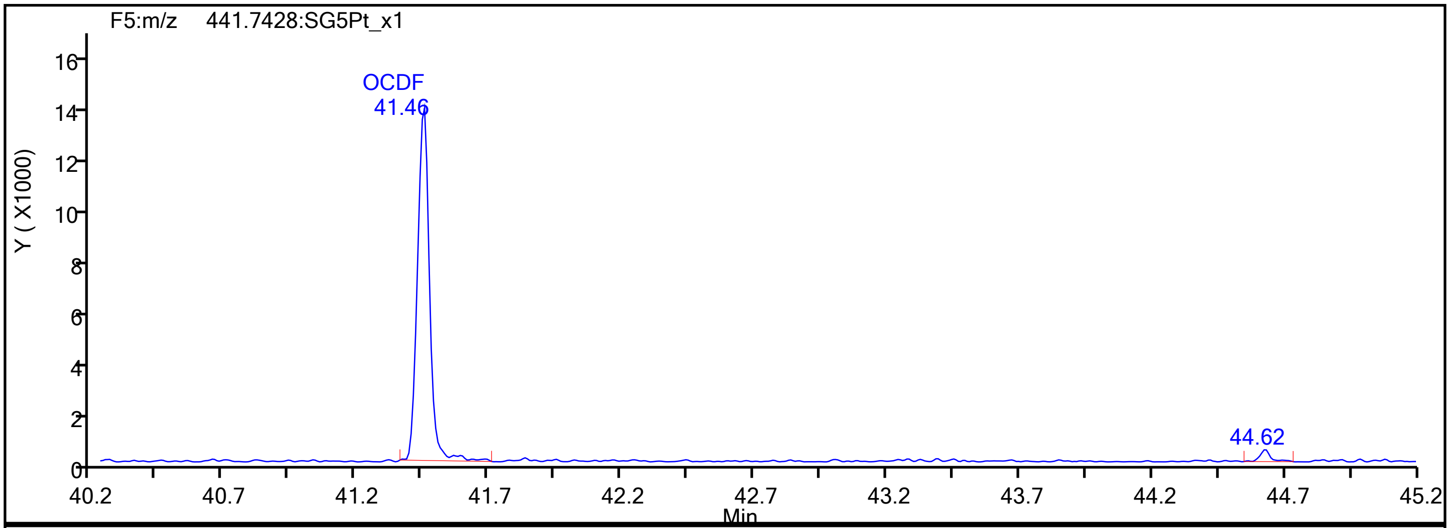

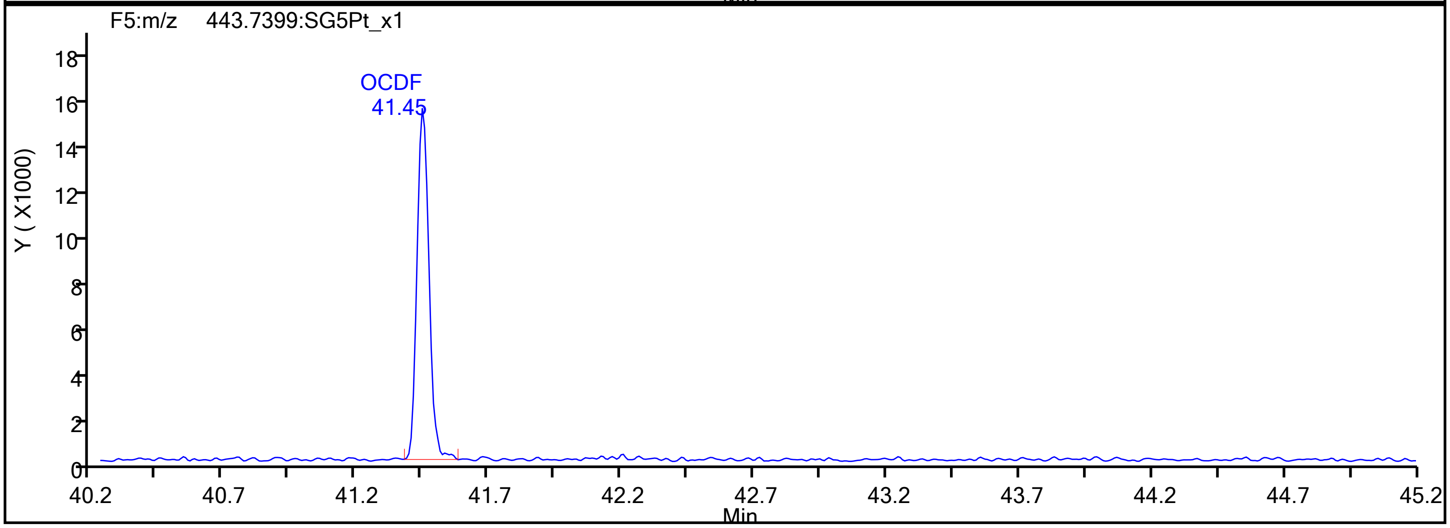

OCDF Interference Mass

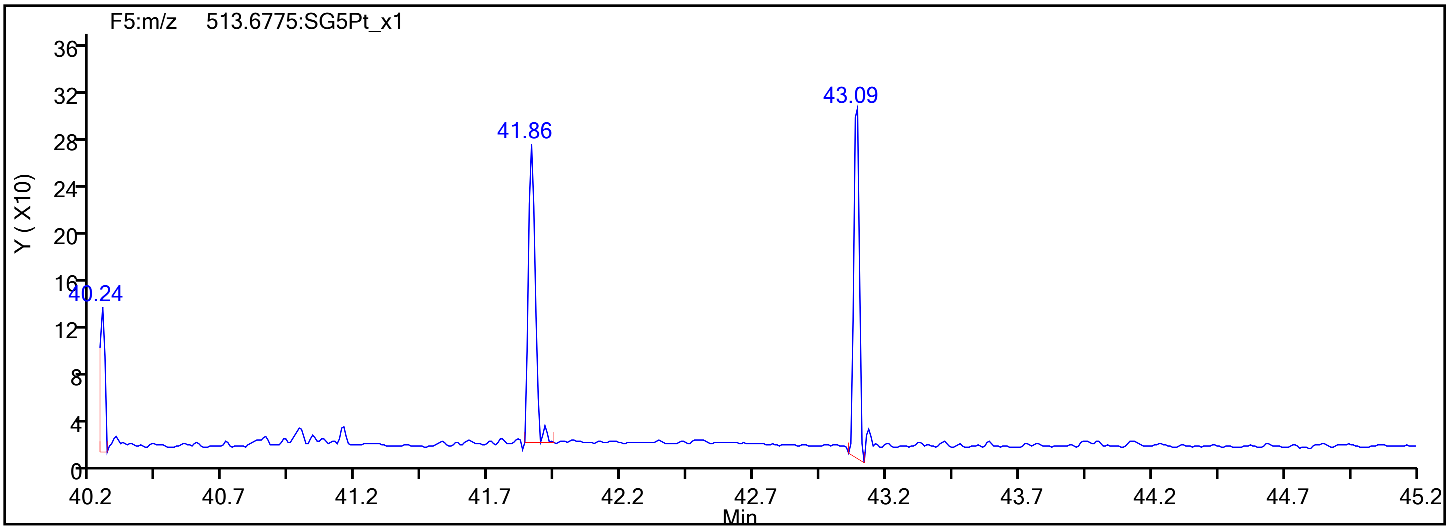

Report Date: 12-Oct-2020 11:32:05
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d
Injection Date: 10-Oct-2020 13:20:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-3-2
Worklist#: 420640
Sample Line#: 25
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

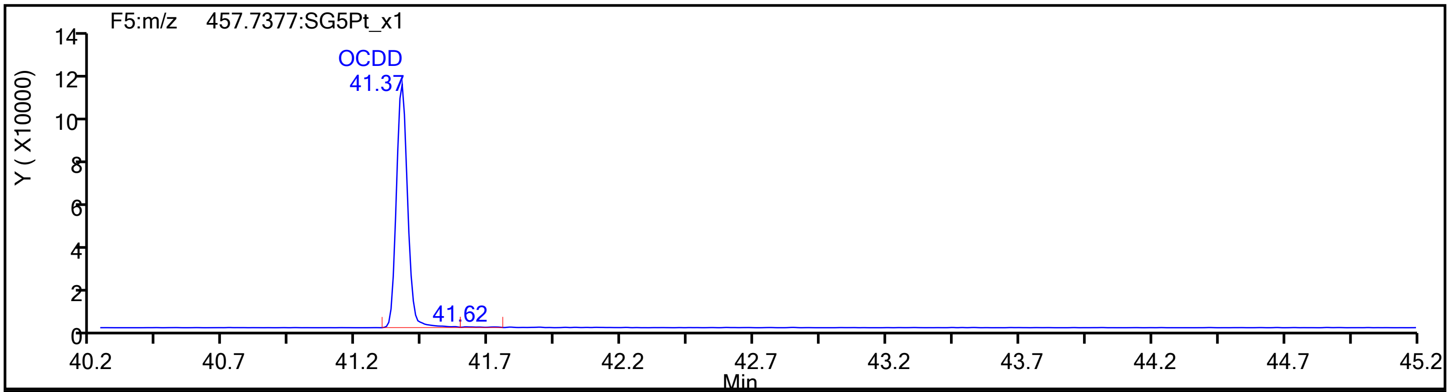

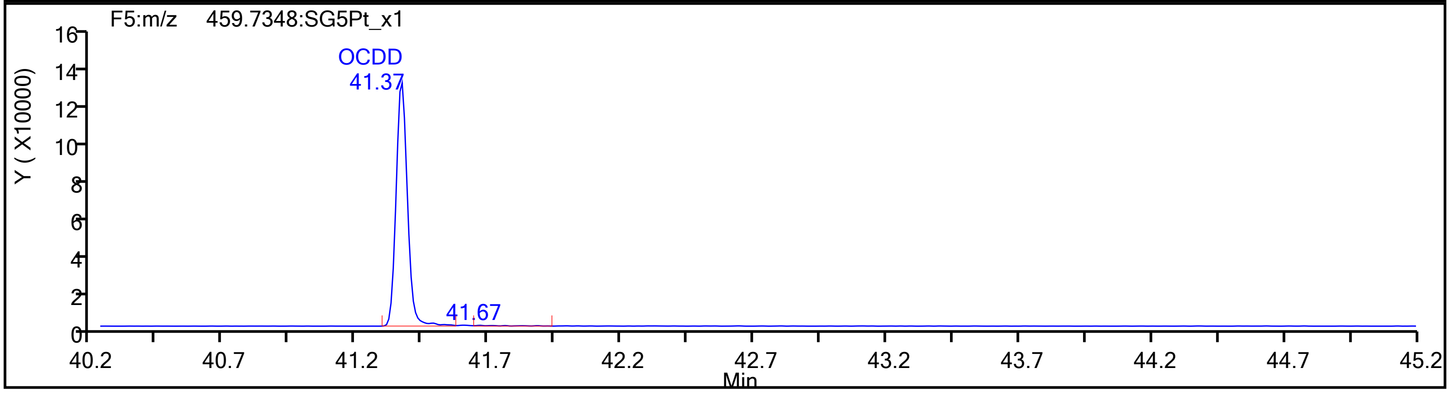

OCDD Standards

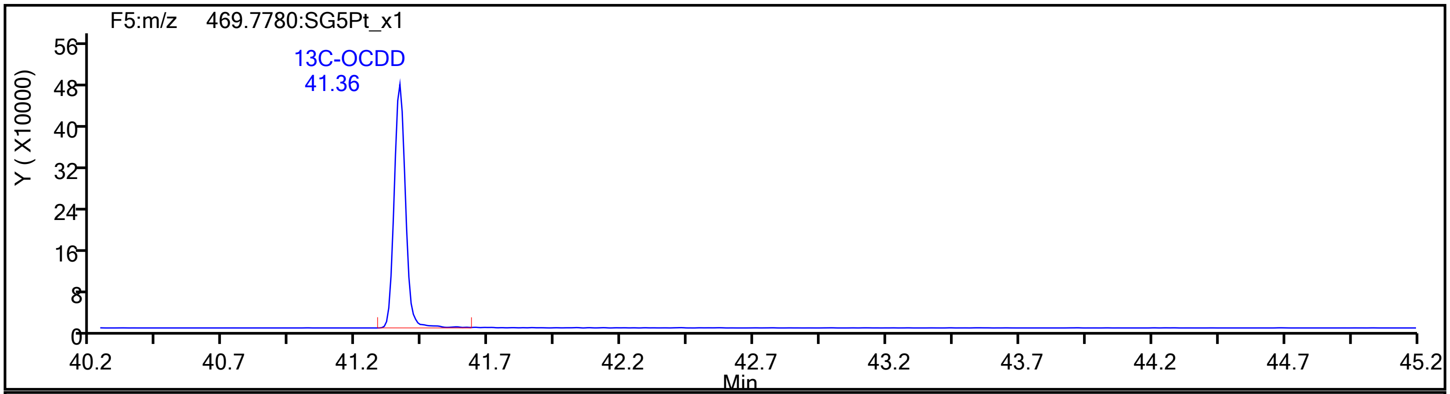

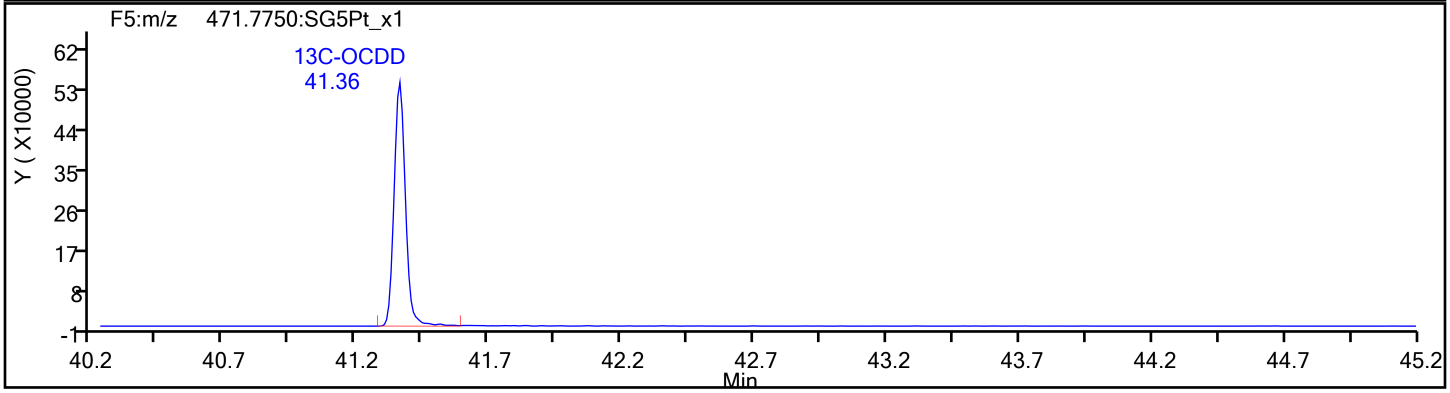

Report Date: 12-Oct-2020 11:32:05 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d		
Injection Date:	10-Oct-2020 13:20:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
Worklist#:	420640	Sample Line#:	25
Column Type:	DB-5	Column Dia:	0.32 mm

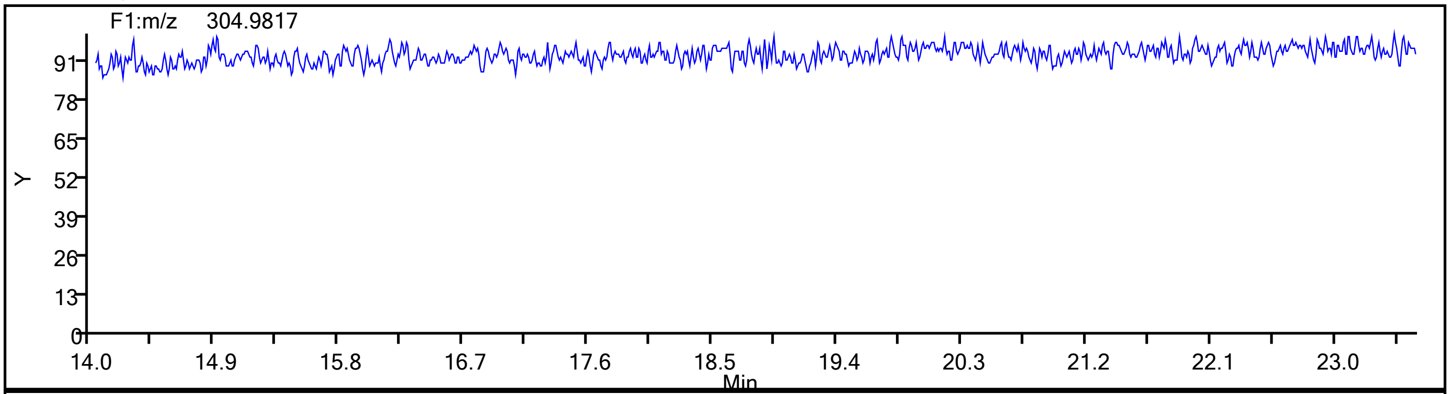

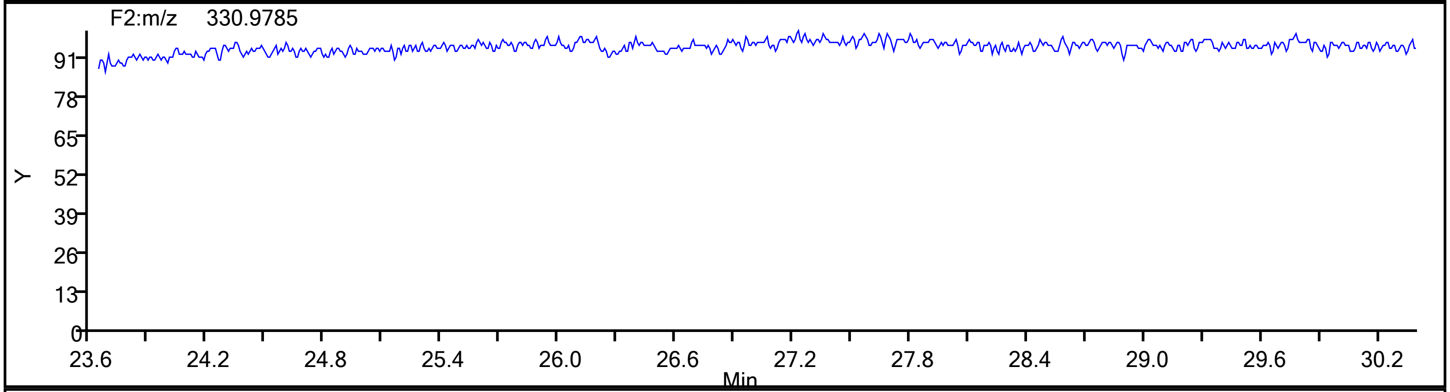

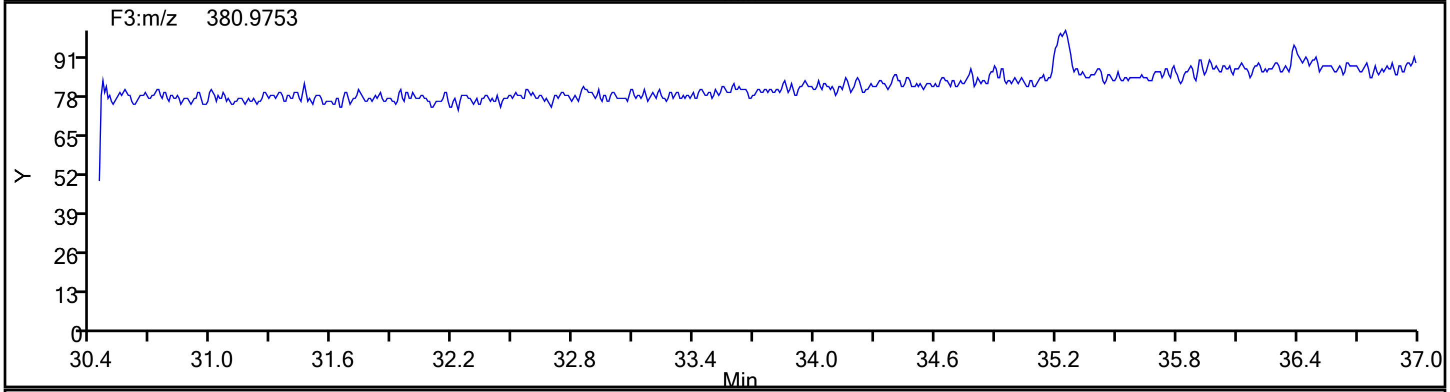

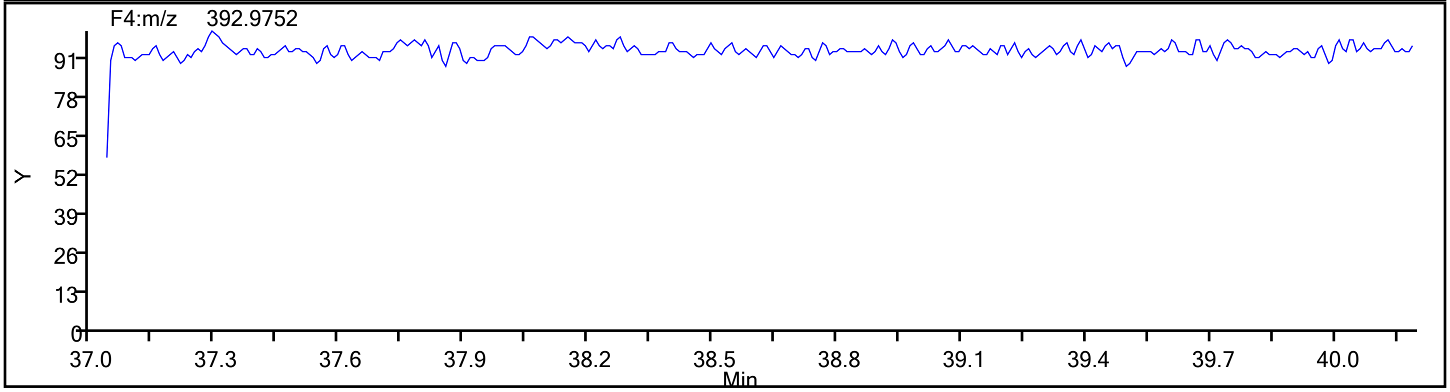

Report Date: 12-Oct-2020 11:32:05 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_27.d

Injection Date: 10-Oct-2020 13:20:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-2

Worklist#: 420640 Sample Line#: 25

Column Type: DB-5 Column Dia: 0.32 mm

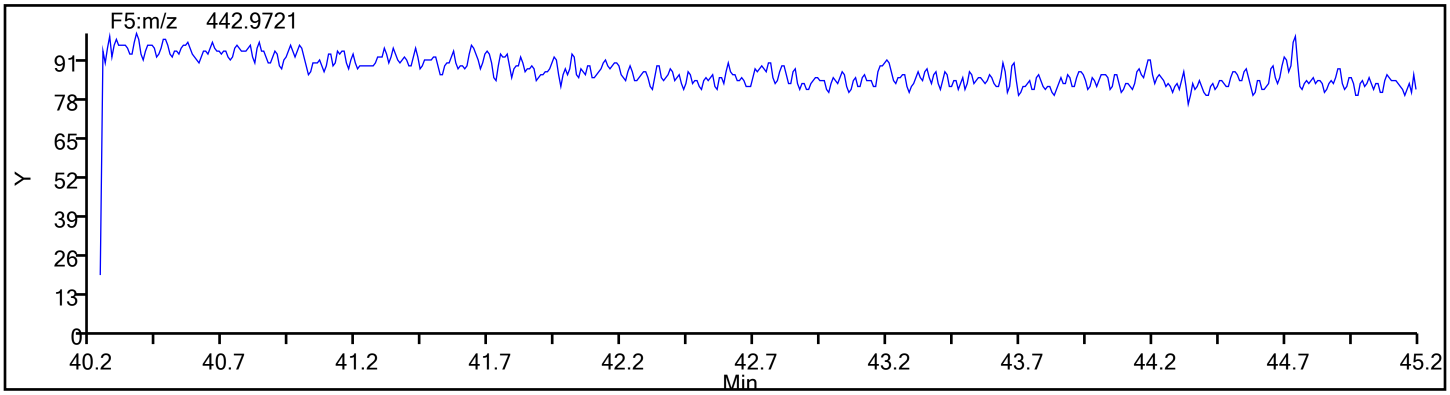

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-3-2 RA

Lab Sample ID: 320-65130-20 RA

Matrix: Water

Lab File ID: 14OC2011D2_009.d

Analysis Method: 1613B

Date Collected: 09/11/2020 09:30

Extract. Method: 1613B

Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1045.3(mL)

Date Analyzed: 10/14/2020 16:28

Con. Extract Vol.: 20(uL)

Dilution Factor: 5

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 422080

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	3800	B	48	15

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	110		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_009.d				
Lims ID:	320-65130-A-20-A				
Client ID:	11215702-Tank#2-valve-3-2				
Sample Type:	Client				
Inject. Date:	14-Oct-2020 16:28:38	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	5.0000		
Sample Info:	320-65130-A-20-A 5X				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	15-Oct-2020 13:36:51	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1615				

First Level Reviewer: stephensk Date: 15-Oct-2020 12:07:44

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.902	15911487	0.83	1.2E+06	20.0	20.0				
D 13C-2,3,7,8-TCDF	16.027	19193421	0.78	1.5708	15.4	15.4	0.4051	0.4051	76.79	
2,3,7,8-TCDF	16.041	38133755	0.78	0.9943	40.0	40.0	0.1591	0.1591		
D 13C-2,3,7,8-TCDD	14.655	12204752	0.84	0.9834	15.6	15.6	1.067	1.067	78.00	
2,3,7,8-TCDD	14.669	11047541	0.78	1.2822	14.1	14.1	0.1817	0.1817		
$ 37Cl4-2,3,7,8-TCDD	14.669	6935074		0.9945	8.765	8.765	0.0804	0.0804	110	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_009.d
Lims ID: 320-65130-A-20-A
Client ID: 11215702-Tank#2-valve-3-2
Sample Type: Client
Inject. Date: 14-Oct-2020 16:28:38 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-65130-A-20-A 5X
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:36:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: stephensk Date: 15-Oct-2020 12:07:44

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.902	14.925	-1		7236710	1813166	46057	115142	39		
333.9339	14.902	14.925	-1		8674777	2162066	37370	93425	58	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.027	16.050	-1	1.075	8420375	1875552	29977	74942	63		
317.9389	16.027	16.050	-1	1.075	10773046	2474512	20619	51547	120	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.041	16.064	-1	1.001	16763109	3907512	8092	20230	483		
305.8987	16.041	16.064	-1	1.001	21370646	5127211	5671	14177	904	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.655	14.678	-1	0.983	5571291	1355300	46057	115142	29		
333.9339	14.655	14.678	-1	0.983	6633461	1674873	37370	93425	45	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.669	14.692	-1	1.001	4826730	1176178	7557	18892	156		
321.8936	14.669	14.692	-1	1.001	6220811	1550377	6559	16397	236	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.669	14.692	-1	0.984	6935074	1892452	6360	15900	298		

QC Flag Legend

Processing Flags

Report Date: 15-Oct-2020 13:36:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_009.d

Injection Date: 14-Oct-2020 16:28:38 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-2

Worklist#: 422080 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

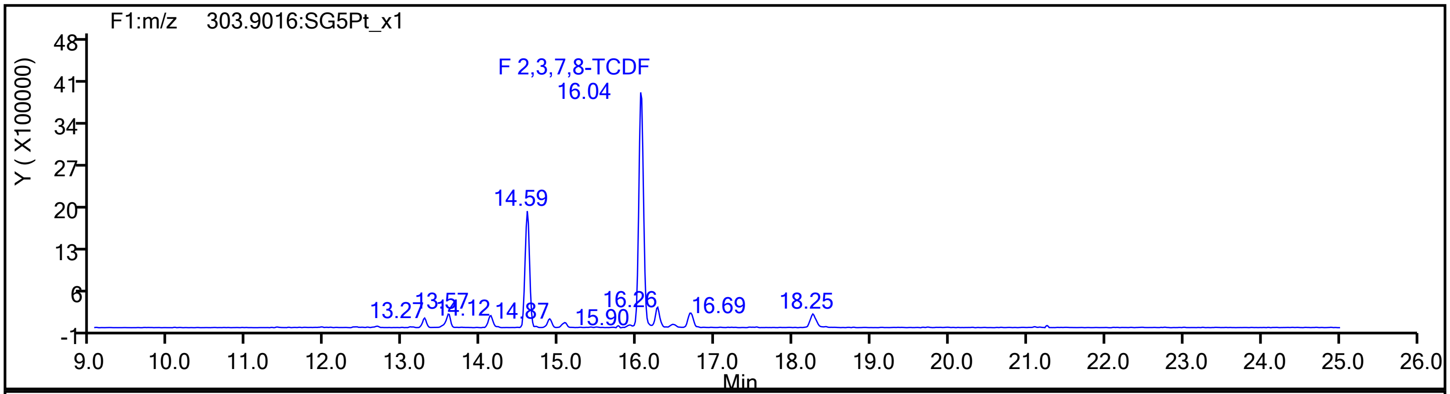

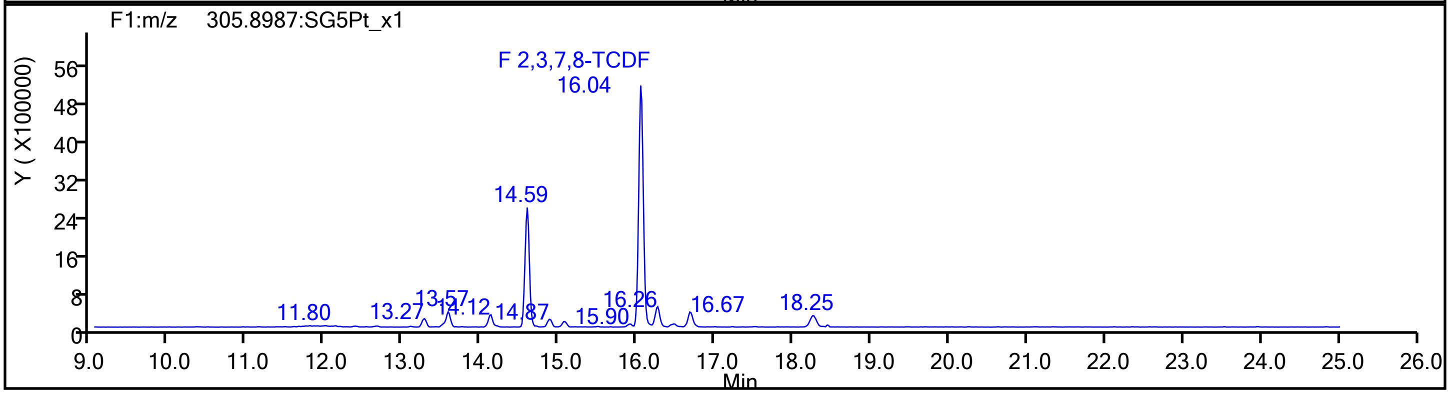

TCDF Standards

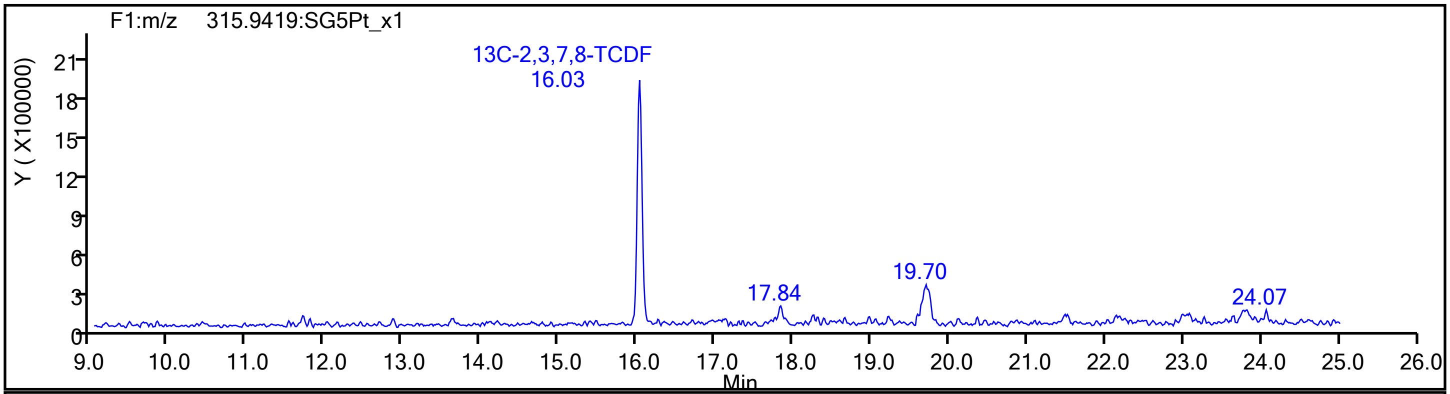

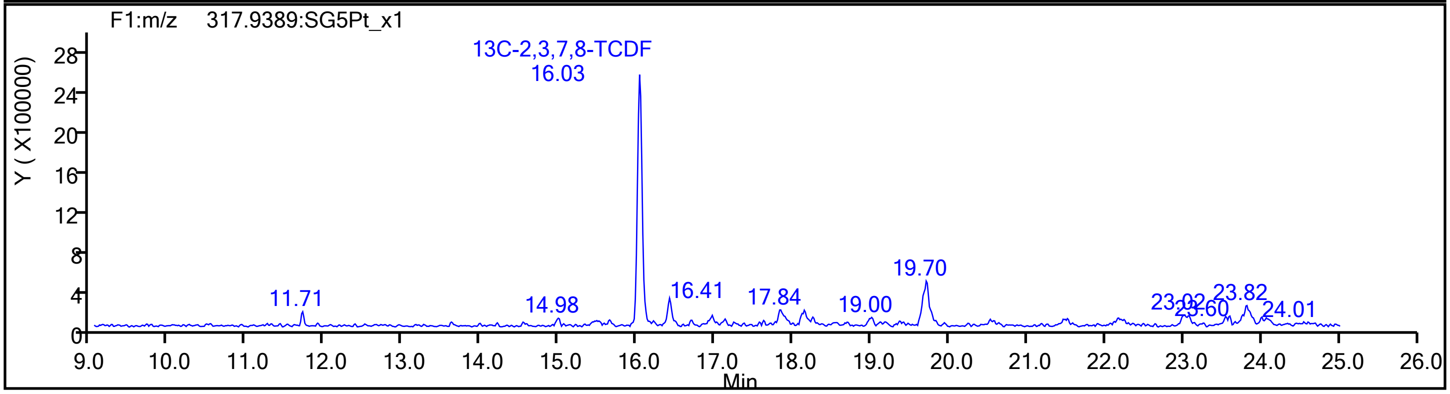

Report Date: 15-Oct-2020 13:36:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_009.d

Injection Date: 14-Oct-2020 16:28:38

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-3-2

Worklist#: 422080

Sample Line#: 9

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

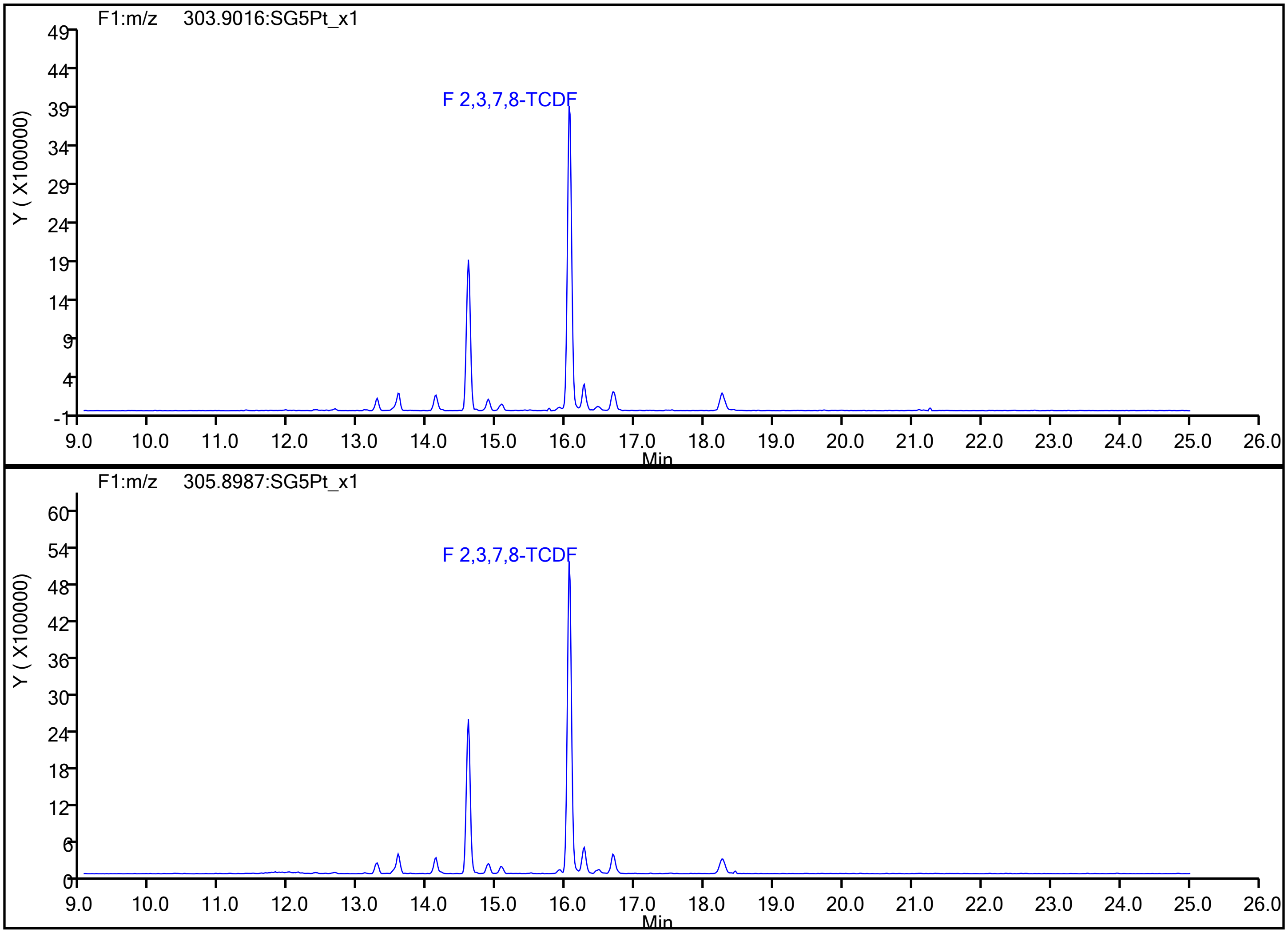

TCDF Interference Mass

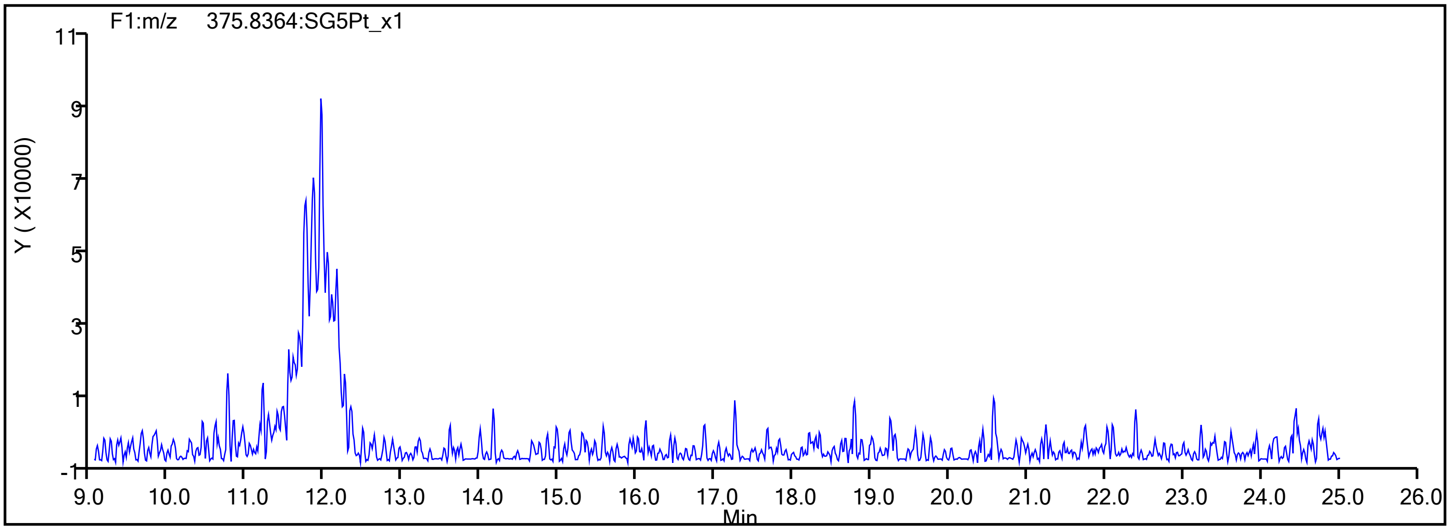

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_009.d		
Injection Date:	14-Oct-2020 16:28:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
Worklist#:	422080	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

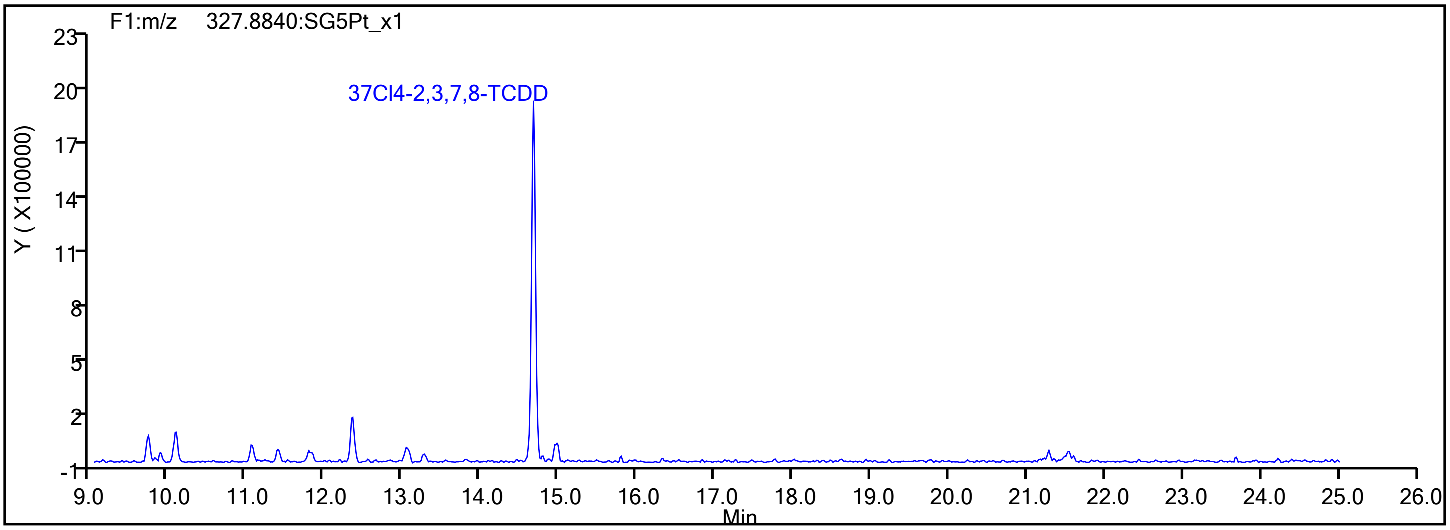

37Cl4-TCDD Standards

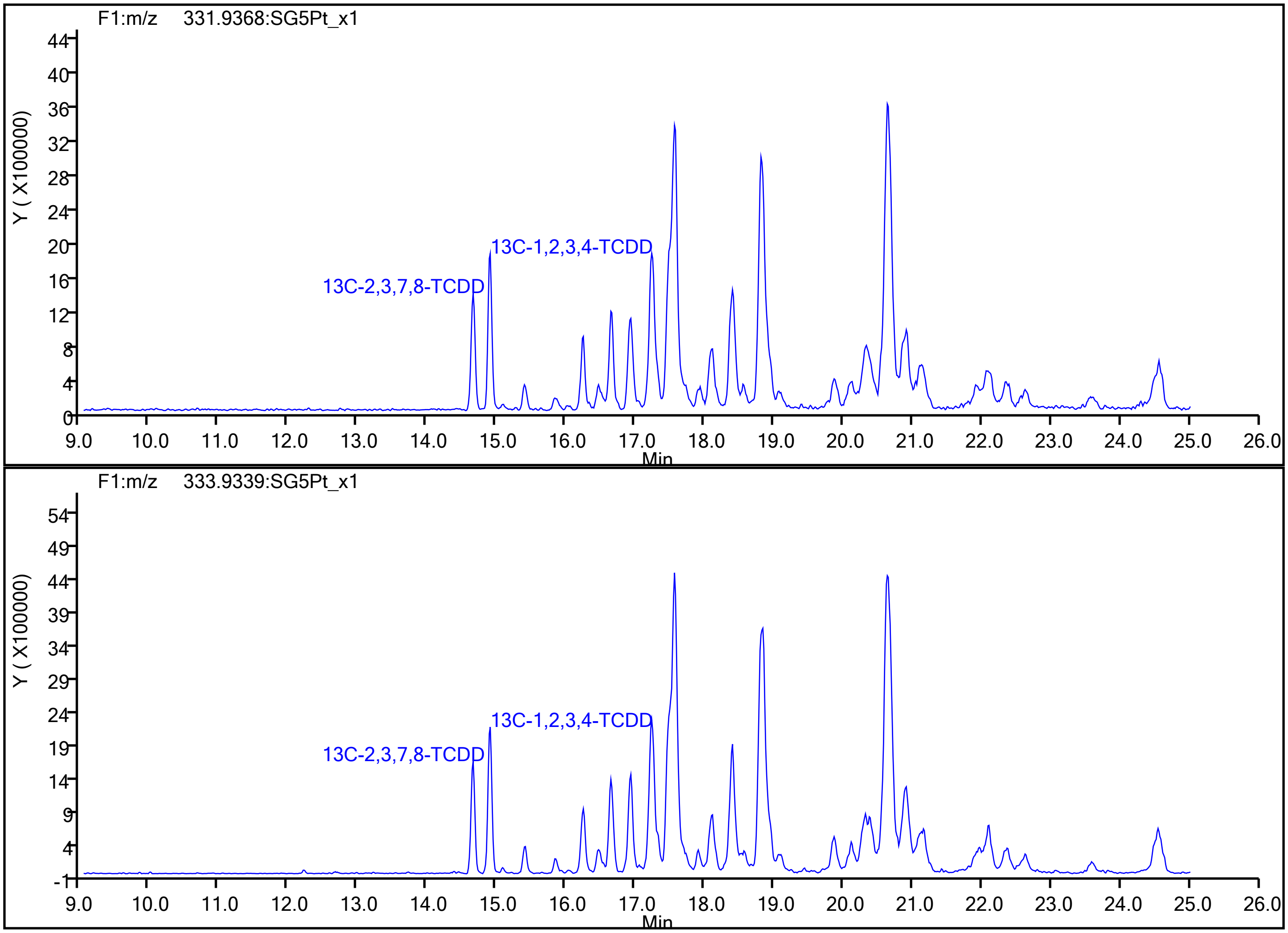

Report Date: 15-Oct-2020 13:36:58 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_009.d		
Injection Date:	14-Oct-2020 16:28:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-3-2		
Worklist#:	422080	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

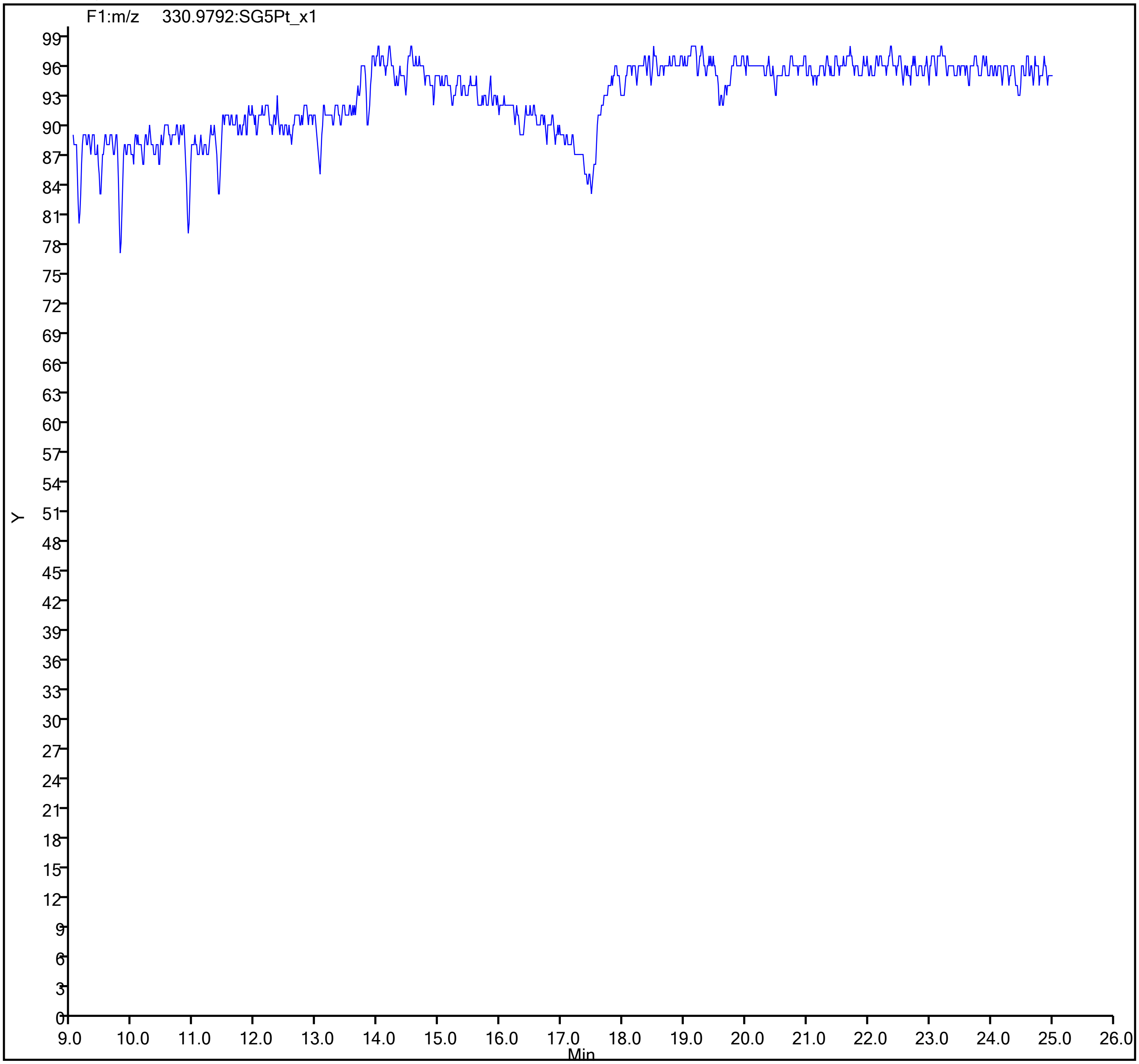

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-4-2	Lab Sample ID: 320-65130-21
Matrix: Water	Lab File ID: 09oc20dfs1_28.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1047.6(mL)	Date Analyzed: 10/10/2020 14:08
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	940		9.5	4.5
40321-76-4	1,2,3,7,8-PeCDD	11	J	48	1.3
57117-41-6	1,2,3,7,8-PeCDF	92		48	1.3
57117-31-4	2,3,4,7,8-PeCDF	66		48	1.4
39227-28-6	1,2,3,4,7,8-HxCDD	3.0	J B	48	0.38
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.43
19408-74-3	1,2,3,7,8,9-HxCDD	1.9	J	48	0.37
70648-26-9	1,2,3,4,7,8-HxCDF	210		48	1.1
57117-44-9	1,2,3,6,7,8-HxCDF	55		48	1.0
72918-21-9	1,2,3,7,8,9-HxCDF	4.2	J q B	48	0.85
60851-34-5	2,3,4,6,7,8-HxCDF	8.0	J	48	0.90
35822-46-9	1,2,3,4,6,7,8-HpCDD	30	J	48	0.58
67562-39-4	1,2,3,4,6,7,8-HpCDF	84	B	48	0.55
55673-89-7	1,2,3,4,7,8,9-HpCDF	30	J B	48	0.56
3268-87-9	OCDD	600	B	95	0.85
39001-02-0	OCDF	54	J B	95	0.84
41903-57-5	Total TCDD	1000		9.5	4.5
30402-14-3	Total TCDF	5000	G B	14	14
36088-22-9	Total PeCDD	11	J	48	1.3
30402-15-4	Total PeCDF	250	q	48	1.4
34465-46-8	Total HxCDD	8.6	J q B	48	0.39
55684-94-1	Total HxCDF	310	q B	48	0.98
37871-00-4	Total HpCDD	65		48	0.58
38998-75-3	Total HpCDF	140	B	48	0.55

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-4-2	Lab Sample ID: 320-65130-21
Matrix: Water	Lab File ID: 09oc20dfs1_28.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1047.6(mL)	Date Analyzed: 10/10/2020 14:08
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		25-164
89059-46-1	13C-2,3,7,8-TCDF	59		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	61		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	64		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	62		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	76		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	61		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	62		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	62		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	64		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	71		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	70		26-138
114423-97-1	13C-OCDD	70		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	85		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Lims ID: 320-65130-A-21-A
Client ID: 11215702-Tank#2-valve-4-2
Sample Type: Client
Inject. Date: 10-Oct-2020 14:08:00 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-21-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: messecara Date: 10-Oct-2020 23:24:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.655	2597711	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.762	2435048	0.80	1.5883	59.0	59.0	0.3901	0.3901	59.02	
2,3,7,8-TCDF	18.779	3901401	0.80	1.0857	147.6	147.6	0.7301	0.7301		
A Non-2,3,7,8-sub-TCDF	18.413	2969148	0.79	1.0857	112.3	112.3	0.7301	61.7		
S Total TCDF					259.9	259.9	0.7301	0.7301		
D 13C-2,3,7,8-TCDD	19.999	1845734	0.79	1.1194	63.5	63.5	0.3027	0.3027	63.47	
2,3,7,8-TCDD	20.033	980738	0.78	1.0810	49.2	49.2	0.2351	0.2351		
$ 37Cl4-2,3,7,8-TCDD	20.033	1010515		1.1468	33.9	33.9	0.1150	0.1150	84.80	
A Non-2,3,7,8-sub-TCDD	19.200	70991	0.84	1.0810	3.558	3.558	0.2351	3.558		
S Total TCDD					52.7	52.7	0.2351	0.2351		
D 13C-1,2,3,7,8-PeCDF	25.884	2467126	1.57	1.4782	64.2	64.2	0.2242	0.2242	64.25	
1,2,3,7,8-PeCDF	25.900	126068	1.63	1.0547	4.845	4.845	0.0703	0.0703		M
D 13C-2,3,4,7,8-PeCDF	27.299	2240529	1.56	1.3912	62.0	62.0	0.2382	0.2382	62.00	
2,3,4,7,8-PeCDF	27.316	85617	1.60	1.1035	3.463	3.463	0.0743	0.0743		M
A F1 PeCDFs	23.059						0.0183	0.0183		
A Non-2,3,7,8-sub-PeCDF	26.475	124093	1.55	1.0791	4.929	4.886	0.0722	2.363		RQMa
S Total PeCDF					13.2	13.2	0.0723	0.0723		RQ
D 13C-1,2,3,7,8-PeCDD	28.058	1497505	1.62	0.9415	61.2	61.2	0.1282	0.1282	61.23	
1,2,3,7,8-PeCDD	28.100	8924	1.76	1.0680	0.5580	0.5580	0.0696	0.0696		M
A Non-2,3,7,8-sub-PeCDD	26.975						0.0696	0.0696		
S Total PeCDD					0.5580	0.5580	0.0696	0.0696		
D 13C-1,2,3,4,7,8-HxCDF	33.797	1852821	0.54	1.1378	61.0	61.0	0.1504	0.1504	60.98	
1,2,3,4,7,8-HxCDF	33.814	255046	1.25	1.2643	10.9	10.9	0.0589	0.0589		
D 13C-1,2,3,6,7,8-HxCDF	33.991	2187498	0.53	1.3173	62.2	62.2	0.1299	0.1299	62.19	
1,2,3,6,7,8-HxCDF	34.008	76654	1.18	1.2230	2.865	2.865	0.0540	0.0540		
D 13C-2,3,4,6,7,8-HxCDF	34.943	2117338	0.53	1.2457	63.7	63.7	0.1374	0.1374	63.65	
2,3,4,6,7,8-HxCDF	34.969	11065	1.11	1.2464	0.4193	0.4193	0.0471	0.0471		
D 13C-1,2,3,7,8,9-HxCDF	35.929	1972259	0.54	1.1840	62.4	62.4	0.1446	0.1446	62.38	
1,2,3,7,8,9-HxCDF	35.955	5541	1.24	1.2638	0.2563	0.2223	0.0443	0.0443		RQ
A Non-2,3,7,8-sub-HxCDF	33.855	41977	1.30	1.2494	1.653	1.653	0.0505	0.7407		
S Total HxCDF					16.1	16.0	0.0511	0.0511		RQ

Report Date: 12-Oct-2020 11:32:06 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.727	2670421	1.28	2.9E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.196	1713965	1.27	0.8477	75.7	75.7	0.1689	0.1689	75.71	
1,2,3,4,7,8-HxCDD	35.196	3107	1.25	1.1561	0.1568	0.1568	0.0200	0.0200		M
D 13C-1,2,3,6,7,8-HxCDD	35.323	1893020	1.26	0.9979	71.0	71.0	0.1435	0.1435	71.04	
1,2,3,6,7,8-HxCDD	35.196						0.0224	0.0224		QMU
1,2,3,7,8,9-HxCDD	35.736	2146	1.06	1.1789	0.1009	0.1009	0.0196	0.0196		M
A Non-2,3,7,8-sub-HxCDD	34.365	3856	1.24	1.1211	0.2056	0.1907	0.0206	0.1055		RQM
S Total HxCDD					0.4634	0.4484	0.0207	0.0207		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.888	1866121	0.45	0.9884	70.7	70.7	0.3282	0.3282	70.70	
1,2,3,4,6,7,8-HpCDF	37.896	123445	1.03	1.5064	4.391	4.391	0.0287	0.0287		
D 13C-1,2,3,4,7,8,9-HpCDF	39.211	1731517	0.46	0.9203	70.5	70.5	0.3525	0.3525	70.46	
1,2,3,4,7,8,9-HpCDF	39.219	39332	1.00	1.4548	1.561	1.561	0.0294	0.0294		
A Non-2,3,7,8-sub-HpCDF	38.593	34818	1.01	1.4806	1.307	1.307	0.0290	1.307		
S Total HpCDF					7.260	7.260	0.0291	0.0291		
D 13C-1,2,3,4,6,7,8-HpCDD	38.891	1788142	1.06	0.9556	70.1	70.1	0.1607	0.1607	70.07	
1,2,3,4,6,7,8-HpCDD	38.899	29863	0.98	1.0640	1.570	1.570	0.0306	0.0306		
A Non-2,3,7,8-sub-HpCDD	38.941	35332	0.92	1.0640	1.857	1.857	0.0306	1.857		M
S Total HpCDD					3.427	3.427	0.0306	0.0306		
D 13C-OCDD	41.347	2785364	0.89	0.7420	140.6	140.6	0.1902	0.1902	70.28	
OCDF	41.431	56663	0.90	1.4296	2.846	2.846	0.0441	0.0441		M
OCDD	41.355	494486	0.91	1.1293	31.4	31.4	0.0444	0.0444		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Lims ID: 320-65130-A-21-A
Client ID: 11215702-Tank#2-valve-4-2
Sample Type: Client
Inject. Date: 10-Oct-2020 14:08:00 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-21-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 11:30:25 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1627

First Level Reviewer: messecara Date: 10-Oct-2020 23:24:42

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.655	19.716	-4		1147152	180313	328	820	550		
333.9338	19.655	19.716	-4		1450559	223160	219	547	1019	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.762	18.830	-4	0.955	1084467	164708	681	1702	242		
317.9389	18.762	18.830	-4	0.955	1350581	211257	319	797	662	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.779	18.865	-5	1.001	1737100	247873	600	1500	413		
305.8987	18.779	18.865	-5	1.001	2164301	309935	592	1480	524	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.434	18.413	-119	0.876	59802	11980	600	1500	20		
305.8987	16.434	18.413	-119	0.876	76727	14245	592	1480	24	0.78(0.65-0.89)	
303.9016	16.898	18.413	-91	0.901	91835	12231	600	1500	20		
305.8987	16.889	18.413	-91	0.900	120591	17053	592	1480	29	0.76(0.65-0.89)	
303.9016	17.276	18.413	-68	0.921	58282	10357	600	1500	17		
305.8987	17.284	18.413	-68	0.921	87762	13229	592	1480	22	0.66(0.65-0.89)	
303.9016	17.637	18.413	-47	0.940	78383	11978	600	1500	20		
305.8987	17.637	18.413	-47	0.940	94645	14715	592	1480	25	0.83(0.65-0.89)	
303.9016	18.117	18.413	-18	0.966	725174	117958	600	1500	197		
305.8987	18.117	18.413	-18	0.966	905094	149952	592	1480	253	0.80(0.65-0.89)	
303.9016	18.487	18.413	4	0.985	40458	6333	600	1500	11		
305.8987	18.487	18.413	4	0.985	55350	8326	592	1480	14	0.73(0.65-0.89)	
303.9016	19.518	18.413	66	1.040	122857	16783	600	1500	28		
305.8987	19.518	18.413	66	1.040	153262	21619	592	1480	37	0.80(0.65-0.89)	
303.9016	19.913	18.413	90	1.061	26635	4222	600	1500	7		
305.8987	19.913	18.413	90	1.061	35297	5626	592	1480	10	0.75(0.65-0.89)	

Report Date: 12-Oct-2020 11:32:06 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	21.881	18.413	208	1.166	102401	13780	600	1500	23		
305.8987	21.881	18.413	208	1.166	134593	17536	592	1480	30	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.999	20.067	-4	1.017	814385	114617	328	820	349		
333.9338	20.016	20.067	-3	1.018	1031349	147095	219	547	672	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.033	20.101	-4	1.002	429293	61754	165	412	374		
321.8936	20.025	20.101	-5	1.001	551445	80089	101	252	793	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.033	20.103	-4	1.019	1010515	143728	213	532	675		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.678	19.200	89	1.034	32347	4801	165	412	29		
321.8936	20.678	19.200	89	1.034	38644	5231	101	252	52	0.84(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.884	25.934	-3	1.317	1505716	240837	352	880	684		
353.8970	25.875	25.934	-4	1.316	961410	157086	183	457	858	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.900	25.951	-3	1.001	78222	13185	45	112	293		M
341.8567	25.909	25.951	-3	1.001	47846	8399	73	182	115	1.63(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.299	27.359	-4	1.389	1363857	212563	352	880	604		
353.8970	27.299	27.359	-4	1.389	876672	147149	183	457	804	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	27.316	27.376	-4	1.001	52667	8413	45	112	187		M
341.8567	27.325	27.376	-3	1.001	32950	5471	73	182	75	1.60(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.059						2	5			
341.8567	23.059						28	70			
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	24.519	26.475	-117	0.947	36275	6678	45	112	148		M
341.8567	24.519	26.475	-117	0.947	23756	4069	73	182	56	1.53(1.32-1.78)	
339.8597	25.782	26.475	-41	0.996	5778	1585	45	112	35		M
	Empc Correction				4663	1055	45	112	23		
341.8567	25.757	26.475	-43	0.995	3009	681	73	182	9	1.92(1.32-1.78)	
339.8597	26.457	26.475	-1	1.022	21483	3923	45	112	87		M
341.8567	26.457	26.475	-1	1.022	14302	2494	73	182	34	1.50(1.32-1.78)	M
339.8597	27.636	26.475	70	1.068	12762	1904	45	112	42		
341.8567	27.662	26.475	71	1.069	7843	1186	73	182	16	1.63(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.058	28.109	-3	1.428	926976	138720	116	290	1196		
369.8919	28.058	28.109	-3	1.428	570529	86068	79	197	1089	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	28.100	28.134	-2	1.002	5689	1028	51	127	20		M
357.8516	28.083	28.134	-3	1.001	3235	632	16	40	40	1.76(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						51	127			
357.8516	26.975						16	40			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.797	33.838	-2	0.946	653255	117586	147	367	800		
385.8610	33.797	33.838	-2	0.946	1199566	227487	293	732	776	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.814	33.855	-2	1.001	141783	26265	61	152	431		
375.8178	33.814	33.855	-2	1.001	113263	20393	42	105	486	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.991	34.024	-2	0.951	754547	135713	147	367	923		
385.8610	33.991	34.024	-2	0.951	1432951	253088	293	732	864	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.008	34.049	-2	1.000	41568	7157	61	152	117		
375.8178	34.016	34.049	-2	1.001	35086	6027	42	105	144	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.943	34.976	-2	0.978	733122	151053	147	367	1028		
385.8610	34.943	34.976	-2	0.978	1384216	286878	293	732	979	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.969	35.001	-2	1.001	5812	1559	61	152	26		
375.8178	34.969	35.001	-2	1.001	5253	1153	42	105	27	1.11(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.929	35.962	-2	1.006	687633	161255	147	367	1097		
385.8610	35.929	35.962	-2	1.006	1284626	297685	293	732	1016	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQ
373.8208	35.955	35.979	-1	1.001	3914	1030	61	152	17		
	Empc Correction				3067	810	61	152	13		
375.8178	35.938	35.979	-2	1.000	2474	654	42	105	16	1.58(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.952	33.855	-114	0.945	10596	1596	61	152	26		
375.8178	31.969	33.855	-113	0.946	8214	1043	42	105	25	1.29(1.05-1.43)	
373.8208	33.056	33.855	-48	0.978	4915	1051	61	152	17		
375.8178	33.064	33.855	-47	0.978	4059	587	42	105	14	1.21(1.05-1.43)	
373.8208	36.064	33.855	132	1.067	8240	1932	61	152	32		
375.8178	36.072	33.855	133	1.067	5953	1549	42	105	37	1.38(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.727	35.760	-2		1497479	358250	205	512	1748		a
403.8529	35.727	35.760	-2		1172942	284421	163	407	1745	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.196	35.220	-1	0.985	960459	228874	205	512	1116		
403.8529	35.188	35.220	-2	0.985	753506	182143	163	407	1117	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.196	35.237	-2	1.000	1728	513	9	22	57		
391.8127	35.205	35.237	-2	1.000	1379	449	29	72	15	1.25(1.05-1.43)	M

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.323	35.355	-2	0.989	1056466	229330	205	512	1119		
403.8529	35.314	35.355	-2	0.988	836554	182656	163	407	1121	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											QMU
389.8158	35.372						9	22			
391.8127	35.372						29	72			
1,2,3,7,8,9-HxCDD											M
389.8158	35.736	35.768	-2	1.015	1105	364	9	22	40		M
391.8127	35.744	35.768	-1	1.016	1041	242	29	72	8	1.06(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	32.997	34.365	-82	0.934	954	241	9	22	27		M
391.8127	32.988	34.365	-82	0.934	1071	221	29	72	8	0.89(1.05-1.43)	
	Empc Correction				769	194	29	72	7		
389.8158	34.303	34.365	-4	0.971	1161	304	9	22	34		M
391.8127	34.311	34.365	-3	0.971	972	316	29	72	11	1.19(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.888	37.927	-2	1.060	577847	180096	252	630	715		
419.8220	37.888	37.927	-2	1.060	1288274	390645	582	1455	671	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.896	37.935	-2	1.000	62514	19587	59	147	332		
409.7788	37.896	37.935	-2	1.000	60931	18462	40	100	462	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.211	39.233	-1	1.098	543383	180600	252	630	717		
419.8220	39.211	39.233	-1	1.098	1188134	397333	582	1455	683	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.219	39.250	-2	1.000	19710	6408	59	147	109		
409.7788	39.219	39.250	-2	1.000	19622	6572	40	100	164	1.00(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.284	38.593	-18	1.010	17484	5024	59	147	85		
409.7788	38.284	38.593	-18	1.010	17334	5409	40	100	135	1.01(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.891	38.921	-2	1.089	921080	306369	211	527	1452		
437.8140	38.891	38.921	-2	1.089	867062	293099	184	460	1593	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.899	38.938	-2	1.000	14768	4534	55	137	82		
425.7737	38.907	38.938	-2	1.000	15095	4772	23	57	207	0.98(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											M
423.7767	38.233	38.941	-42	0.983	16945	5508	55	137	100		M
425.7737	38.233	38.941	-42	0.983	18387	5710	23	57	248	0.92(0.88-1.20)	M
13C-OCDD											
469.7780	41.347	41.373	-2	1.157	1310328	434415	176	440	2468		
471.7750	41.347	41.373	-2	1.157	1475036	491814	187	467	2630	0.89(0.76-1.02)	
OCDF											M
441.7428	41.431	41.457	-2	1.002	26797	8772	37	92	237		
443.7399	41.431	41.457	-2	1.002	29866	10002	80	200	125	0.90(0.76-1.02)	M

Report Date: 12-Oct-2020 11:32:06 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	41.355	41.381	-2	1.000	235313	77631	48	120	1617		
459.7348	41.355	41.381	-2	1.000	259173	84889	45	112	1886	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Lims ID:	320-65130-A-21-A		
Client ID:	11215702-Tank#2-valve-4-2		
Inject. Date:	10-Oct-2020 14:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	26

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2435048	375965

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2435048	375965

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.434	59802	11980	76727	14245	5.16	0.78	
16.898	91835	12231	120591	17053	8.04	0.76	
17.276	58282	10357	87762	13229	5.52	0.66	
17.637	78383	11978	94645	14715	6.55	0.83	
18.117	725174	117958	905094	149952	61.7	0.80	
18.487	40458	6333	55350	8326	3.62	0.73	
19.518	122857	16783	153262	21619	10.4	0.80	
19.913	26635	4222	35297	5626	2.34	0.75	
21.881	102401	13780	134593	17536	8.96	0.76	
Signal Totals:							
	1305827	205622	1663321	262301			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2969148	467923				0.79	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 112.314 = (2969148 * 100.000) / (2435048 * 1.086)

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Lims ID:	320-65130-A-21-A		
Client ID:	11215702-Tank#2-valve-4-2		
Inject. Date:	10-Oct-2020 14:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	26

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	1845734	261712

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	1845734	261712

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.678	32347	4801	38644	5231	3.56	0.84	
Signal Totals:							
	32347	4801	38644	5231			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	70991	10032				0.84	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 3.558 = (70991 * 100.000) / (1845734 * 1.081)

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Lims ID:	320-65130-A-21-A		
Client ID:	11215702-Tank#2-valve-4-2		
Inject. Date:	10-Oct-2020 14:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	26

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2467126	397923
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2240529	359712

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2353827	378817

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.519	36275	6678	23756	4069	2.36	1.53	M
25.782	5778	1585	3009	681	0.3459	1.92	RQMa
25.782	4663	1055	3009	681	0.3020		Empc Correction
26.457	21483	3923	14302	2494	1.41	1.50	M
27.636	12762	1904	7843	1186	0.8112	1.63	
Signal Totals:							
	75183	13560	48910	8430			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	125208	22520				1.56	RQMa
	124093	21990					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 4.929 = (125208 * 100.000) / (2353827 * 1.079)

Empc Amount: 4.886 = (124093 * 100.000) / (2353827 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 12-Oct-2020 11:32:07   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Lims ID:	320-65130-A-21-A		
Client ID:	11215702-Tank#2-valve-4-2		
Inject. Date:	10-Oct-2020 14:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	26

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF   IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	1852821	345073
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2187498	388801
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2117338	437931
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	1972259	458940

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2032479	407686

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.952	10596	1596	8214	1043	0.7407	1.29	
33.056	4915	1051	4059	587	0.3534	1.21	
36.064	8240	1932	5953	1549	0.5589	1.38	
Signal Totals:							
	23751	4579	18226	3179			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41977	7758				1.30	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1.653 = (41977 * 100.000) / (2032479 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Lims ID:	320-65130-A-21-A		
Client ID:	11215702-Tank#2-valve-4-2		
Inject. Date:	10-Oct-2020 14:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	26

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	1713965	411017
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	1893020	411986
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	1803492	411501

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.997	954	241	1071	221	0.1002	0.89	RQM
32.997	954	241	769	194	0.0852		Empc Correction
34.303	1161	304	972	316	0.1055	1.19	M
Signal Totals:							
	2115	545	1741	510			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4158	1082				1.04	RQM
	3856	1055					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2056 = (4158 * 100.000) / (1803492 * 1.121)
Empc Amount: 0.1907 = (3856 * 100.000) / (1803492 * 1.121)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Lims ID: 320-65130-A-21-A
Client ID: 11215702-Tank#2-valve-4-2
Inject. Date: 10-Oct-2020 14:08:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 26

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1866121	570741
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1731517	577933

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	1798819	574337

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.284	17484	5024	17334	5409	1.31	1.01	
Signal Totals:							
	17484	5024	17334	5409			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	34818	10433				1.01	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.307 = (34818 * 100.000) / (1798819 * 1.481)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Lims ID:	320-65130-A-21-A		
Client ID:	11215702-Tank#2-valve-4-2		
Inject. Date:	10-Oct-2020 14:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	26

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1788142	599468

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	1788142	599468

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.233	16945	5508	18387	5710	1.86	0.92	M
Signal Totals:							
	16945	5508	18387	5710			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	35332	11218				0.92	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.857 = (35332 * 100.000) / (1788142 * 1.064)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21
Client ID:	11215702-Tank#2-valve-4-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT:	25.91
Area:	40749
Amount:	2.329152
Amount Units:	pg/ul

Processing Integration Results

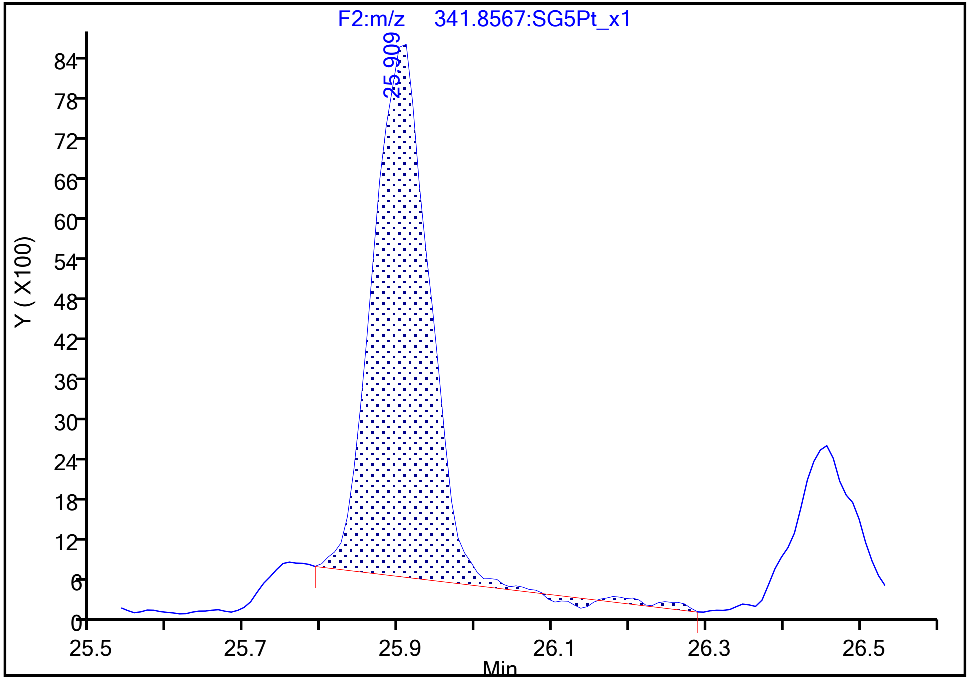

RT:	25.91
Area:	47846
Amount:	4.845126
Amount Units:	pg/ul

Manual Integration Results

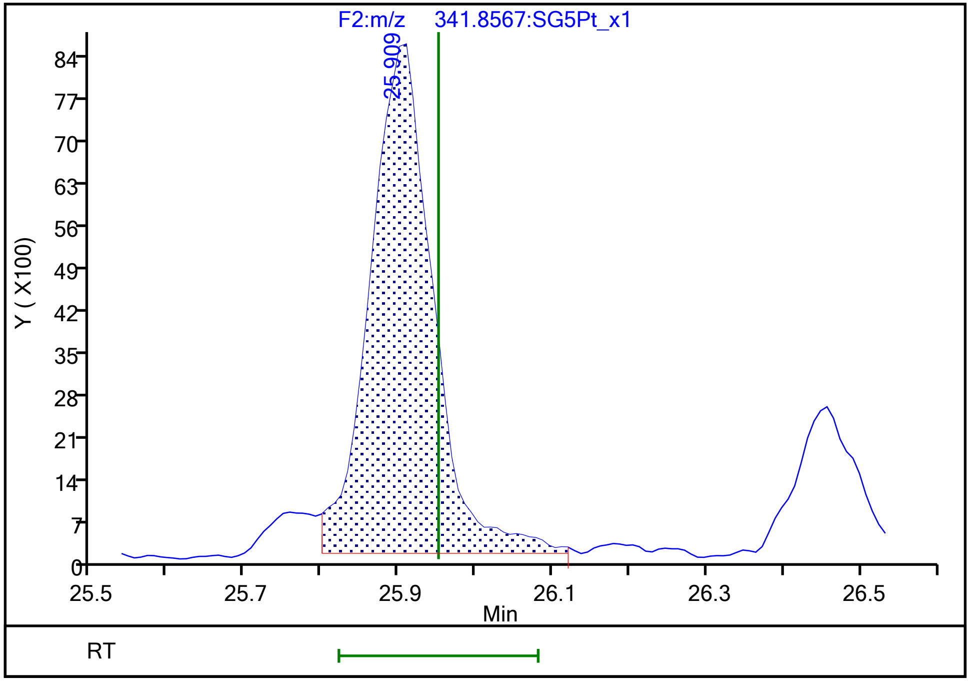

Reviewer: dadunj, 12-Oct-2020 09:32:42

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT:	25.90
Area:	80458
Amount:	2.329152
Amount Units:	pg/ul

Processing Integration Results

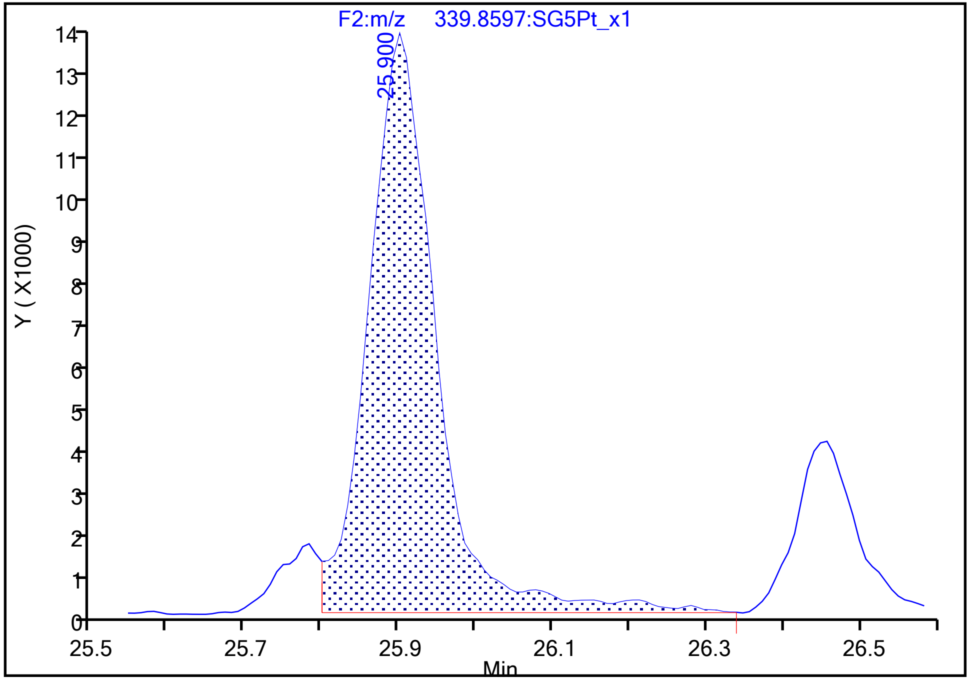

RT:	25.90
Area:	78222
Amount:	4.845126
Amount Units:	pg/ul

Manual Integration Results

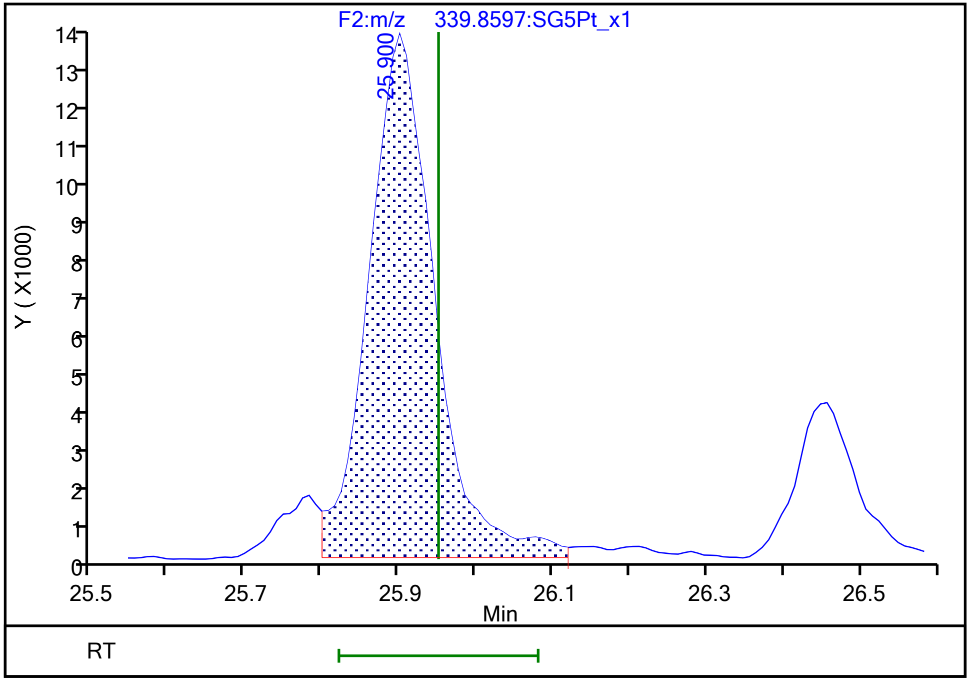

Reviewer: dadunj, 12-Oct-2020 09:32:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

RT: 27.32
Area: 53686
Amount: 1.751974
Amount Units: pg/ul

Processing Integration Results

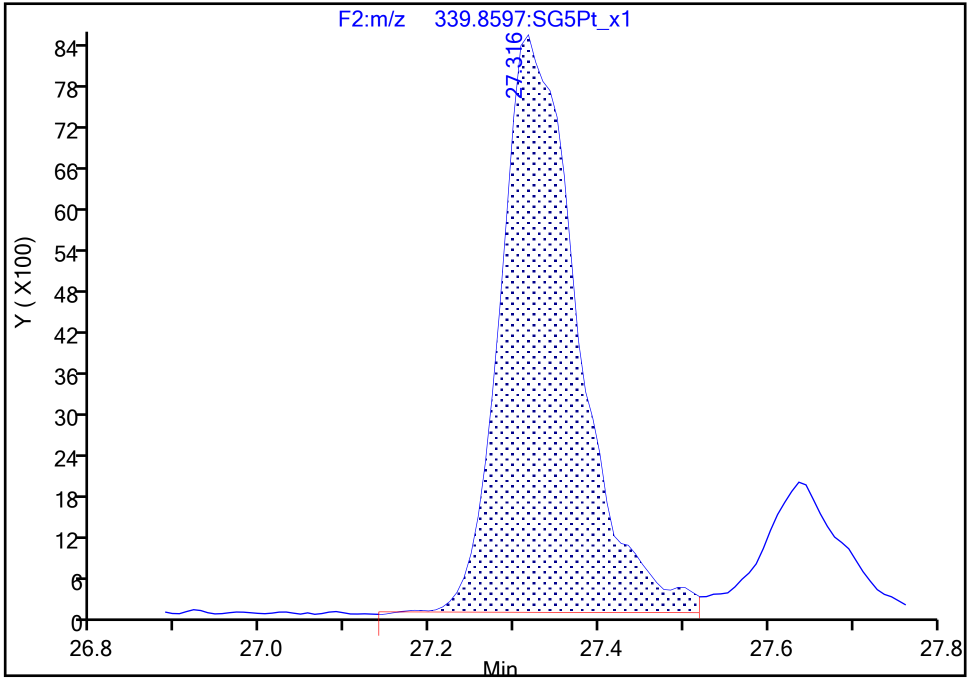

RT: 27.32
Area: 52667
Amount: 3.462736
Amount Units: pg/ul

Manual Integration Results

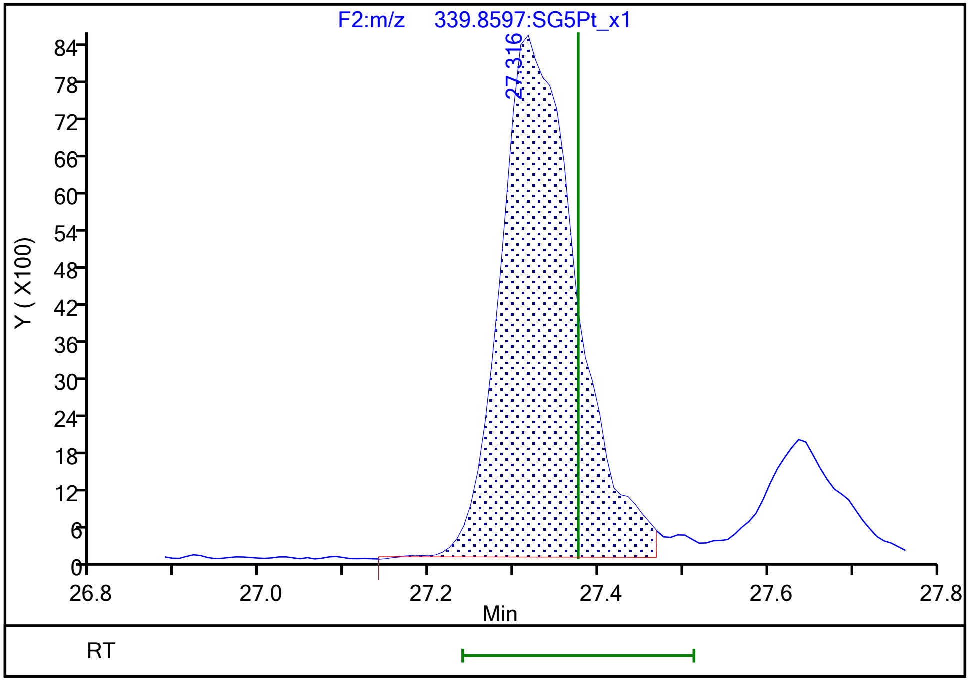

Reviewer: dadunj, 12-Oct-2020 09:32:50

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Processing Integration Results

RT = 24.519 Area = 37366

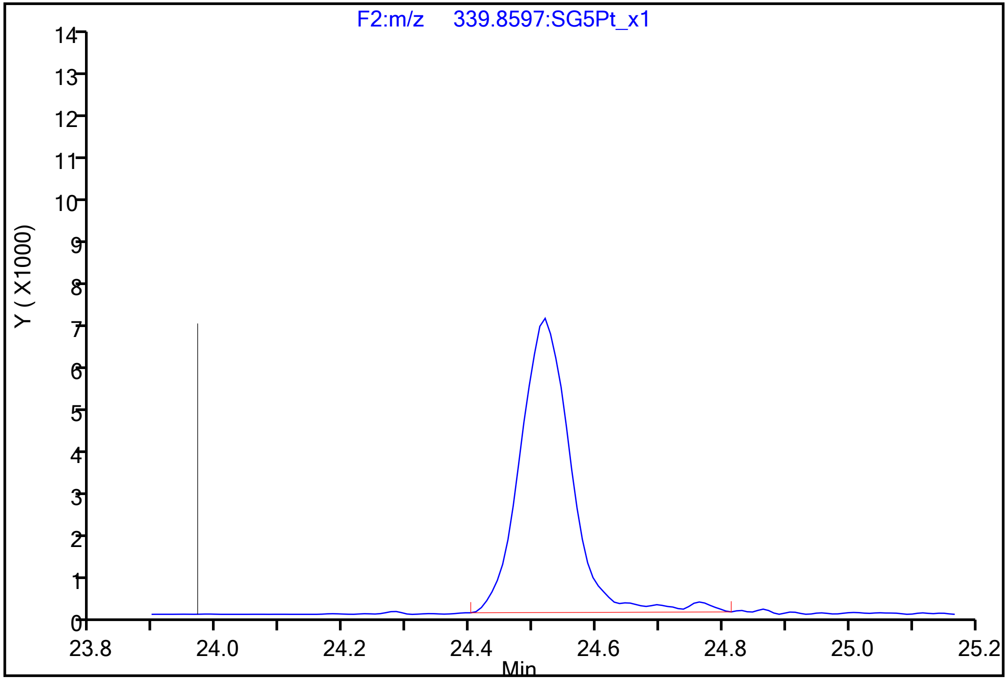

Manual Integration Results

RT = 24.519 Area = 36275 M

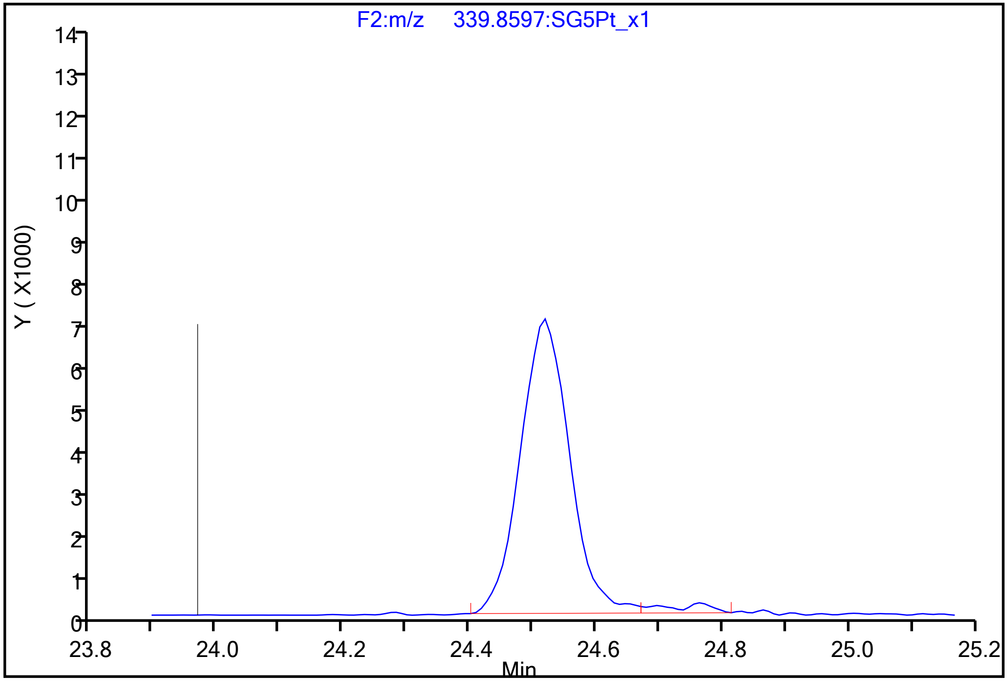

Reviewer: dadunj, 12-Oct-2020 09:33:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

Processing Integration Results

RT = 25.782 Area = 5778

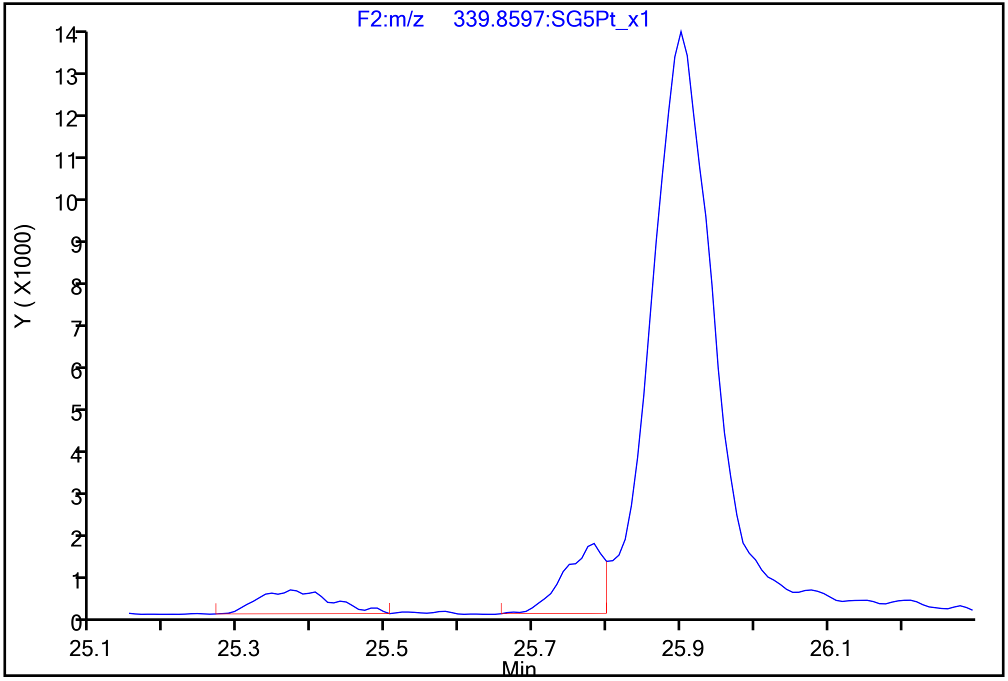

Manual Integration Results

RT = 25.782 Area = 5778

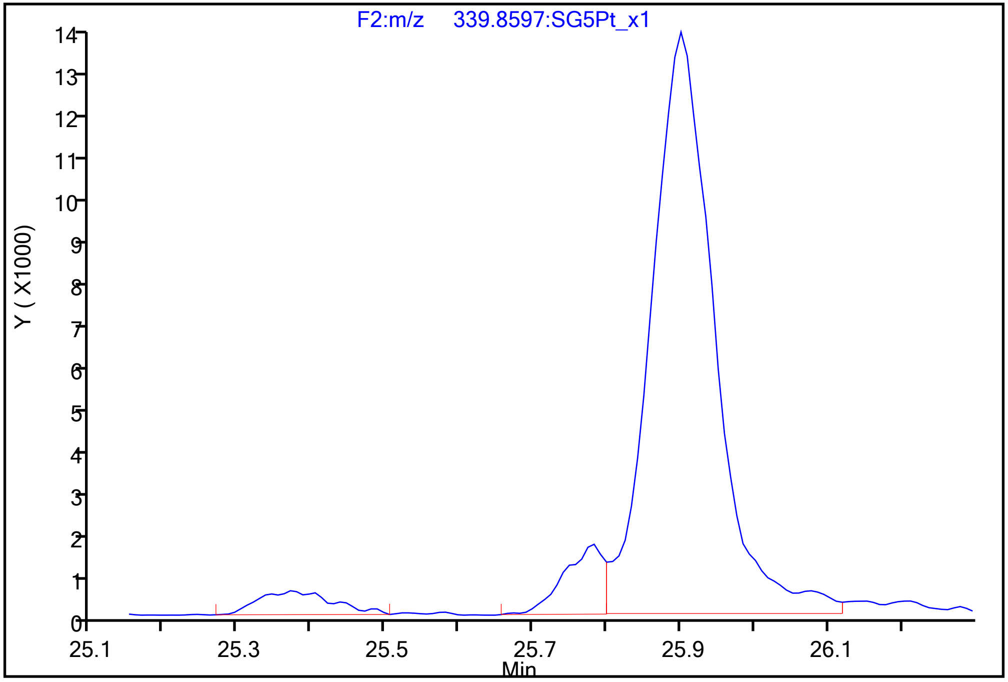

Reviewer: dadunj, 12-Oct-2020 09:33:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.63- 29.32)

Signal: 1

RT = 26.457 Area = 22575

Processing Integration Results

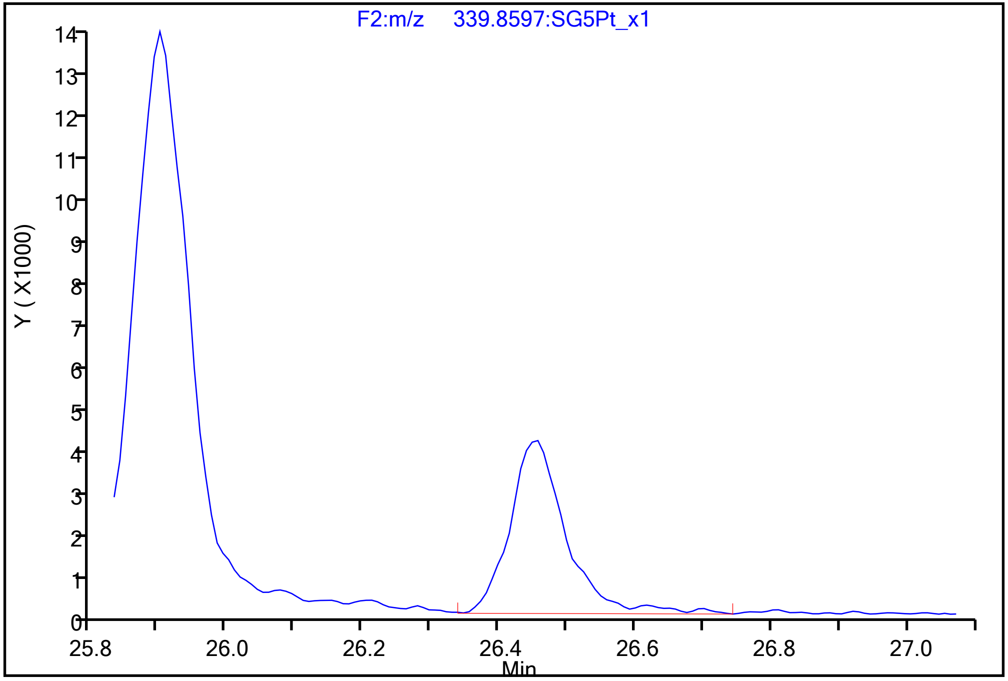

RT = 26.457 Area = 21483 M

Manual Integration Results

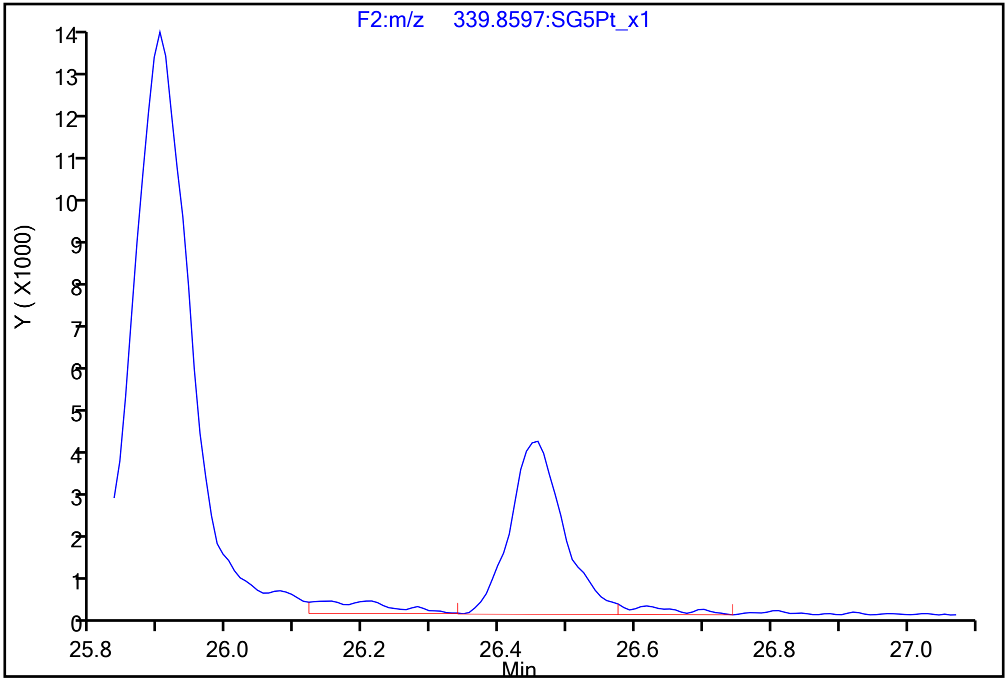

Reviewer: dadunj, 12-Oct-2020 09:33:33

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.63- 29.32)

Signal: 2

Processing Integration Results

RT = 26.457 Area = 15229

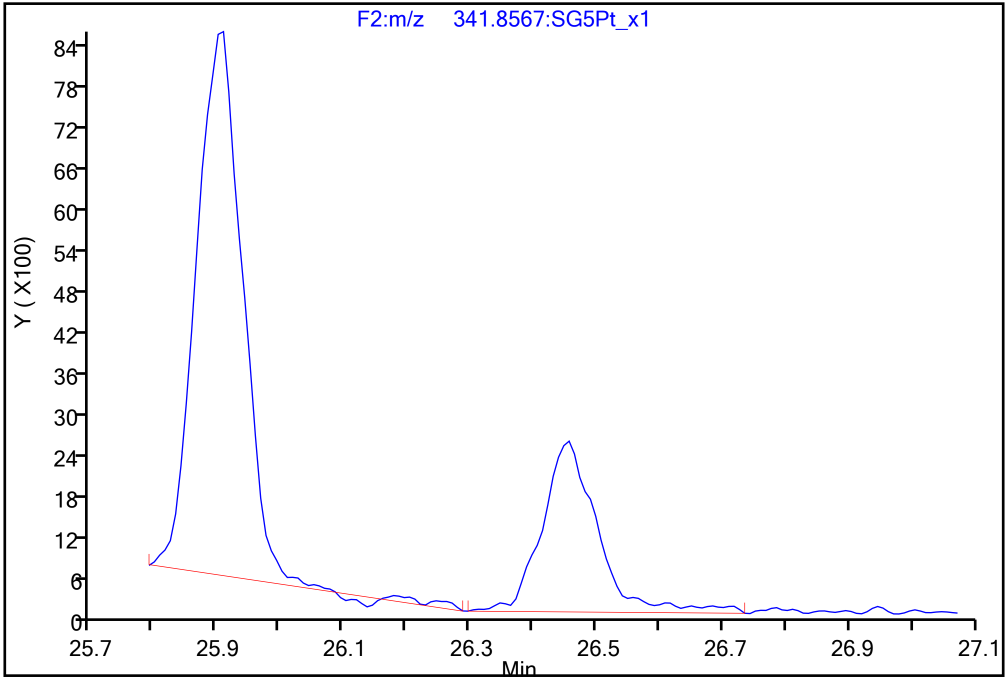

Manual Integration Results

RT = 26.457 Area = 14302 M

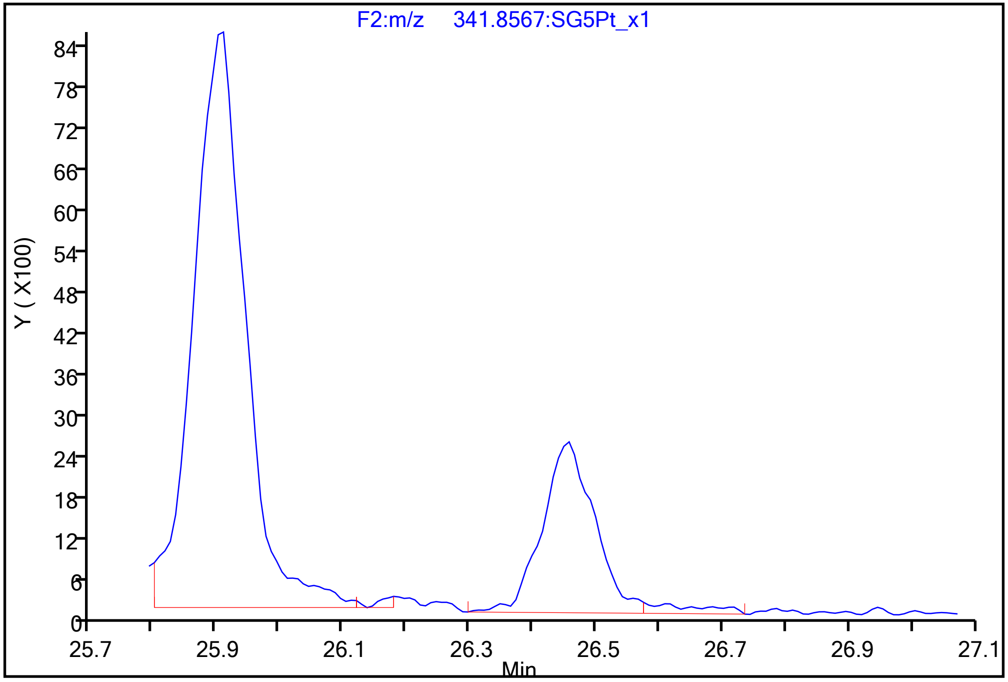

Reviewer: dadunj, 12-Oct-2020 09:33:14

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:07

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT:	28.08
Area:	4192
Amount:	0.352145
Amount Units:	pg/ul

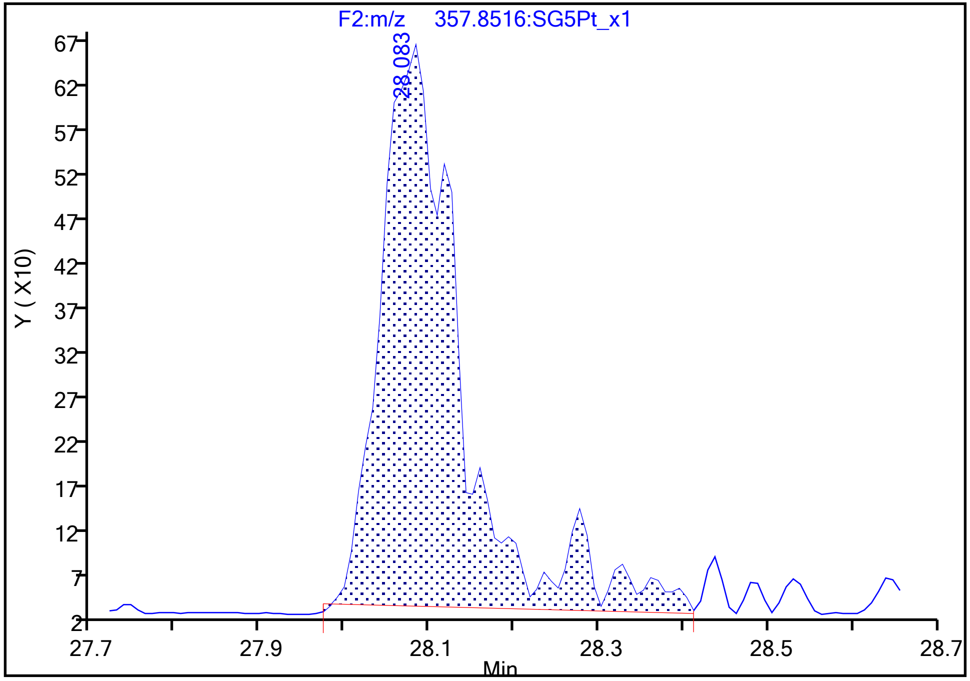

Manual Integration Results

RT:	28.08
Area:	3235
Amount:	0.557979
Amount Units:	pg/ul

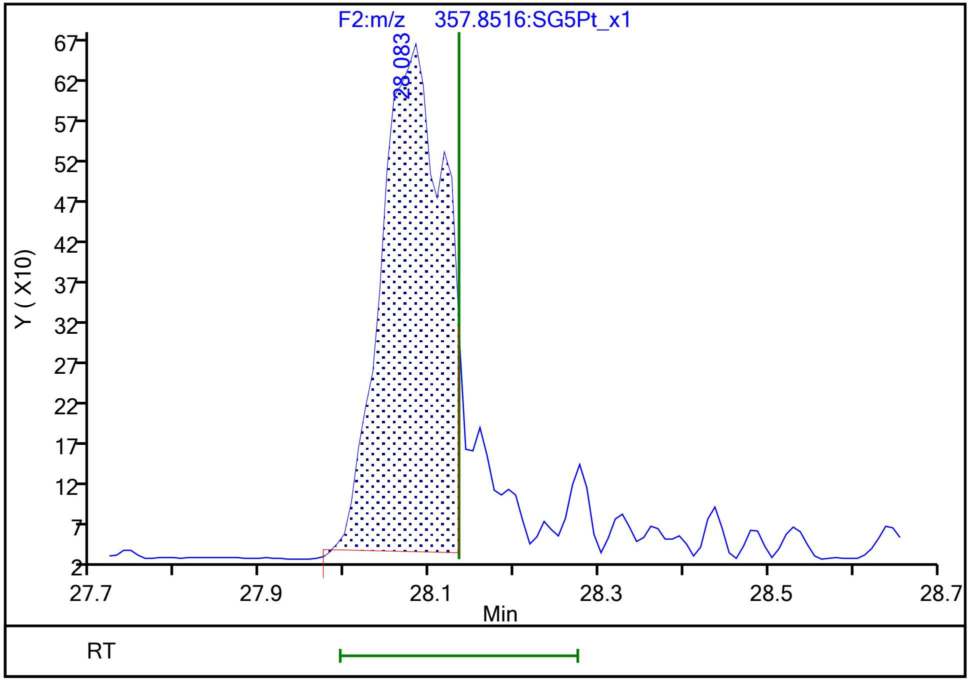

Reviewer: dadunj, 12-Oct-2020 09:33:48

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21
Client ID:	11215702-Tank#2-valve-4-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	28.10
Area:	7072
Amount:	0.352145
Amount Units:	pg/ul

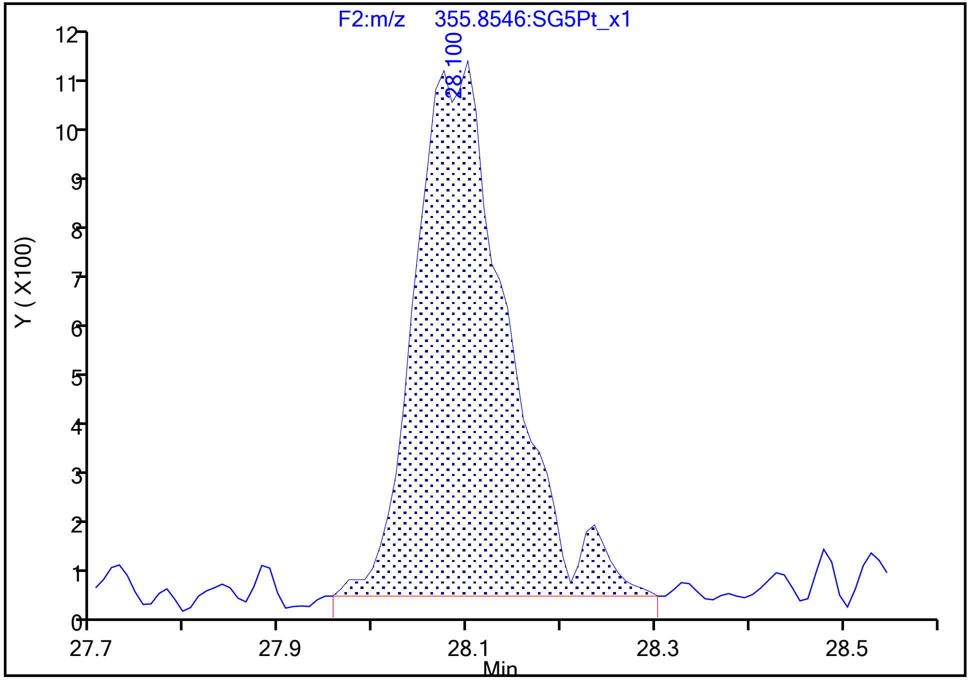

Manual Integration Results

RT:	28.10
Area:	5689
Amount:	0.557979
Amount Units:	pg/ul

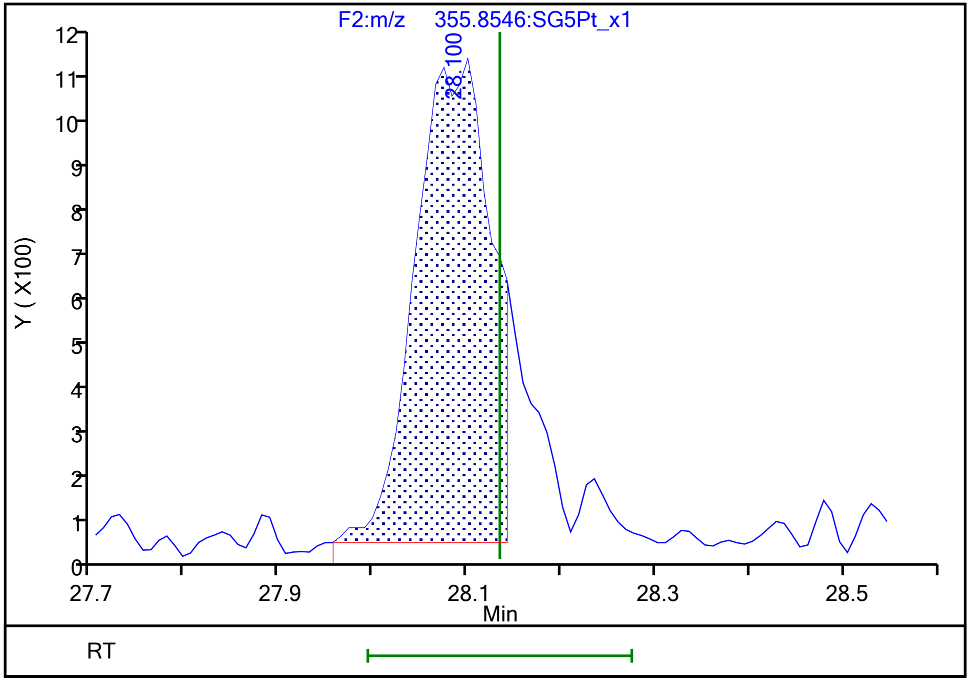

Reviewer: dadunj, 12-Oct-2020 09:33:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 11:32:07

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	35.20
Area:	3232
Amount:	0.125159
Amount Units:	pg/ul

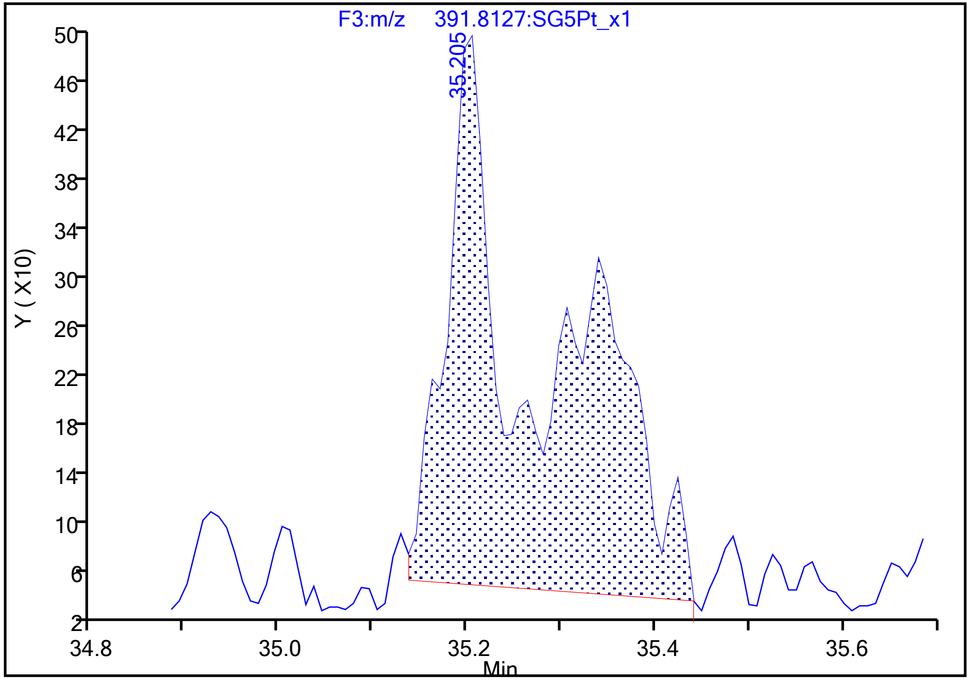

Manual Integration Results

RT:	35.20
Area:	1379
Amount:	0.156802
Amount Units:	pg/ul

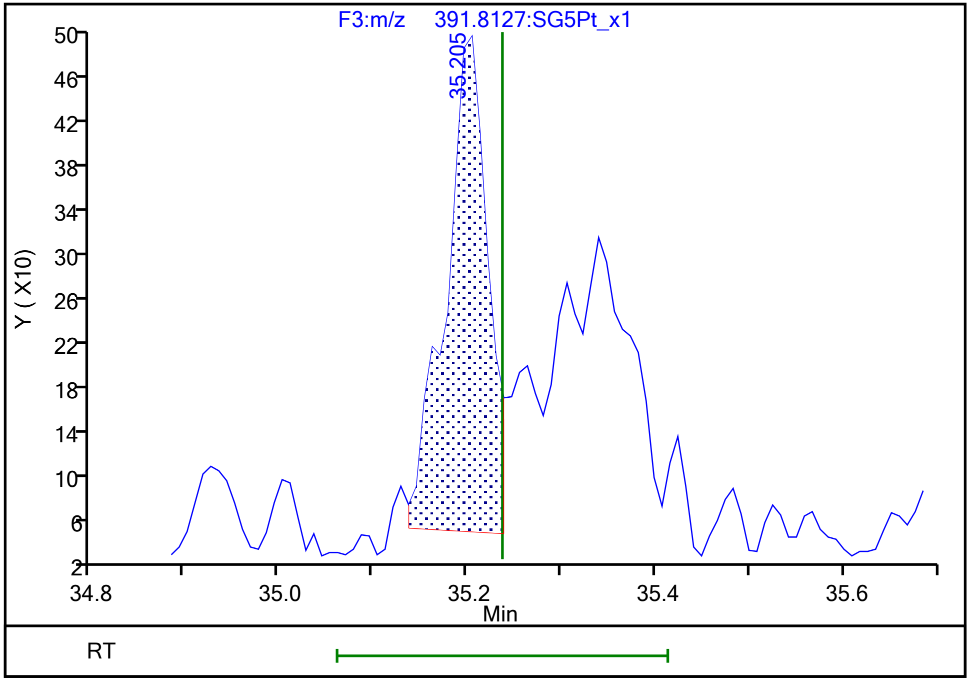

Reviewer: dadunj, 12-Oct-2020 09:34:11

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	35.74
Area:	776
Amount:	0.045881
Amount Units:	pg/ul

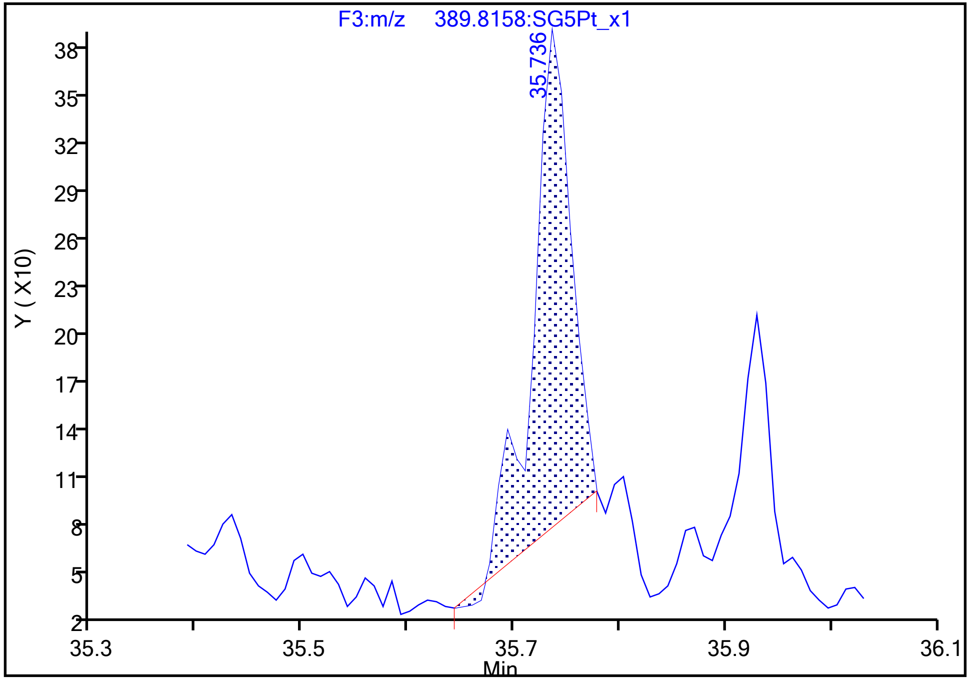

Manual Integration Results

RT:	35.74
Area:	1105
Amount:	0.100934
Amount Units:	pg/ul

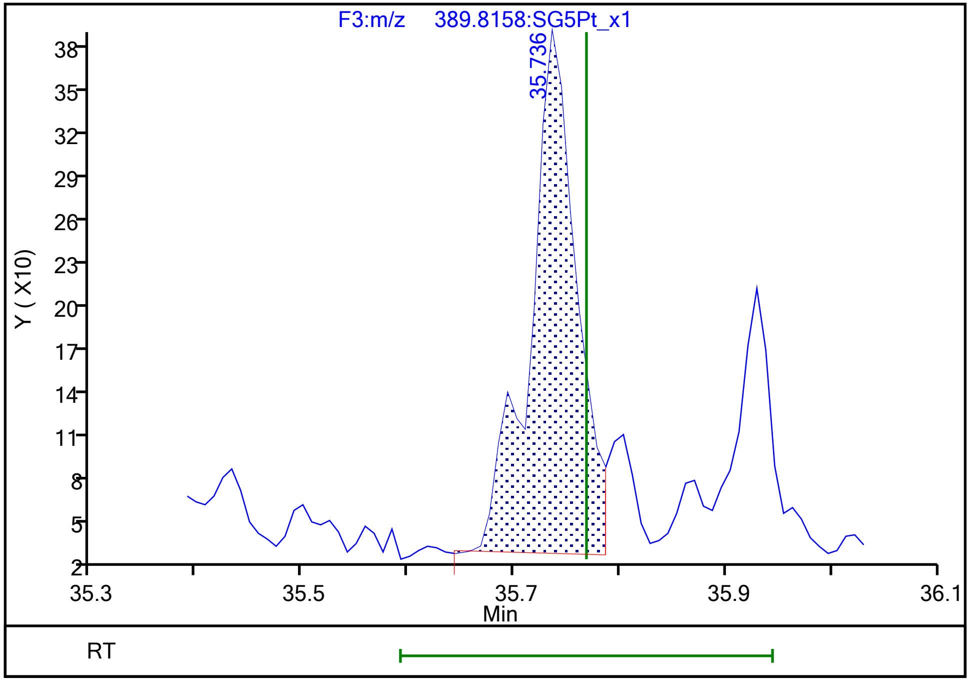

Reviewer: dadunj, 12-Oct-2020 09:34:25

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21
Client ID:	11215702-Tank#2-valve-4-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT:	35.74
Area:	1175
Amount:	0.045881
Amount Units:	pg/ul

Processing Integration Results

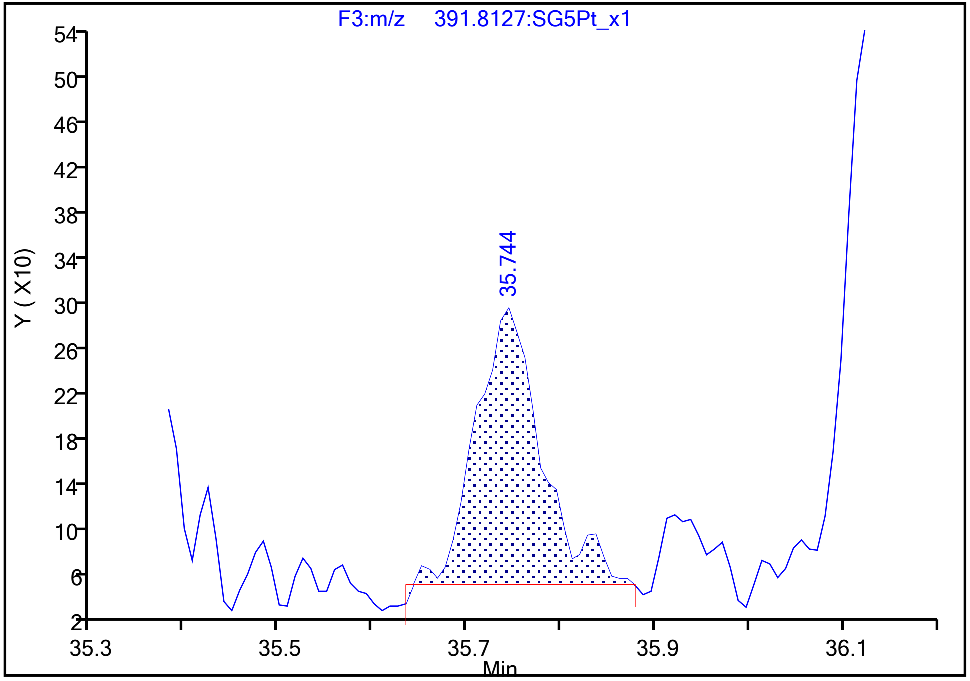

RT:	35.74
Area:	1041
Amount:	0.100934
Amount Units:	pg/ul

Manual Integration Results

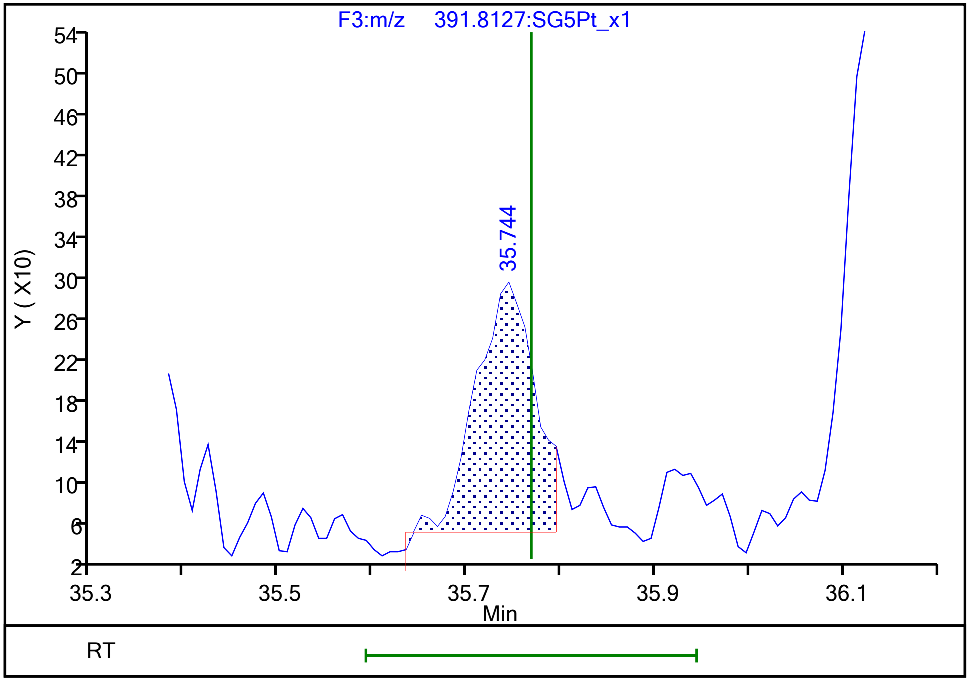

Reviewer: dadunj, 12-Oct-2020 09:34:30

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.98- 35.75)

Signal: 1

Processing Integration Results

RT = 32.997 Area = 1114

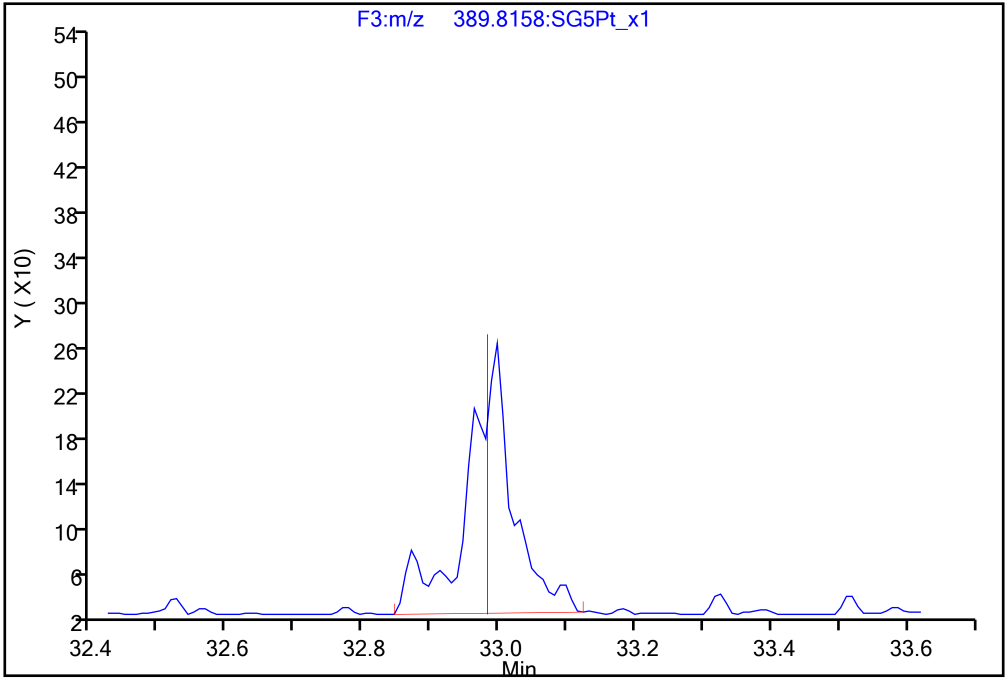

Manual Integration Results

RT = 32.997 Area = 954 M

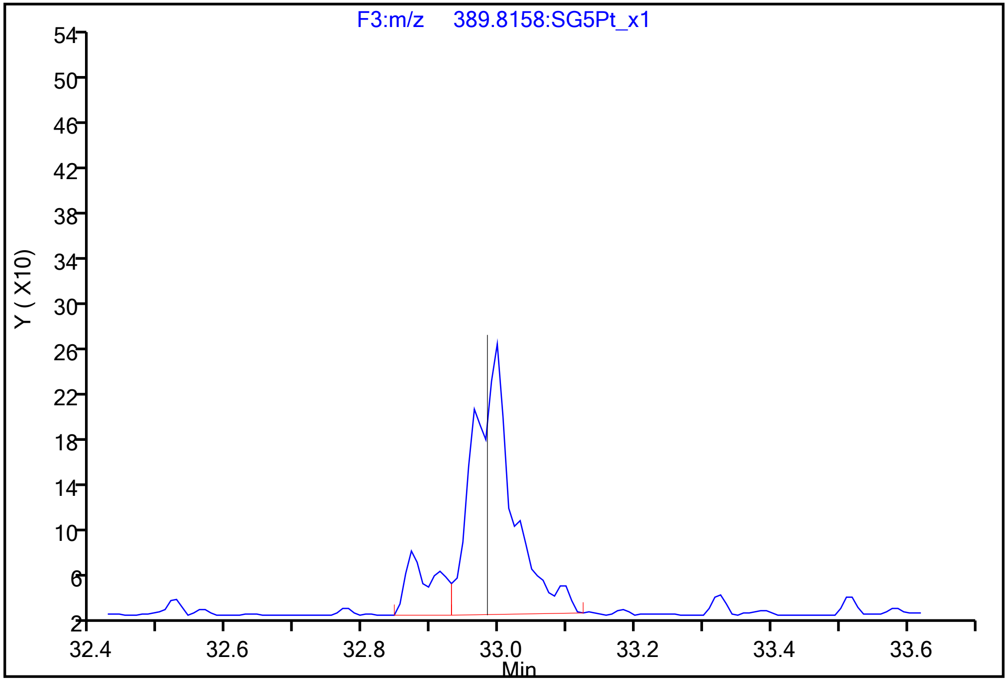

Reviewer: dadunj, 12-Oct-2020 09:34:40

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Oct-2020 11:32:07

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21
Client ID:	11215702-Tank#2-valve-4-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.98- 35.75)

Signal: 1

Processing Integration Results

RT = 34.303 Area = 1646

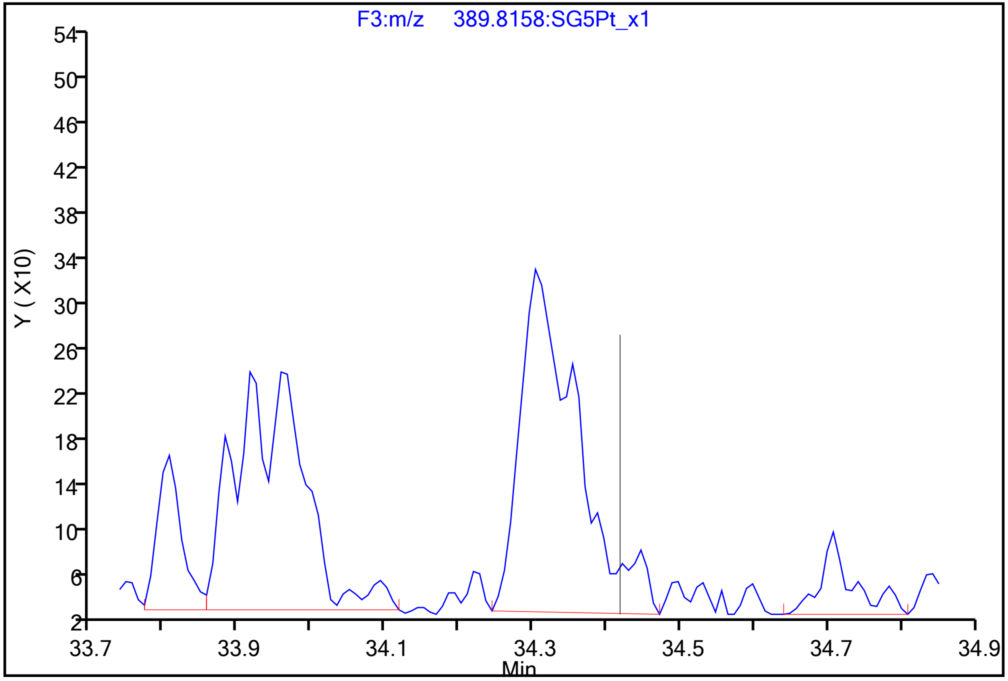

Manual Integration Results

RT = 34.303 Area = 1161 M

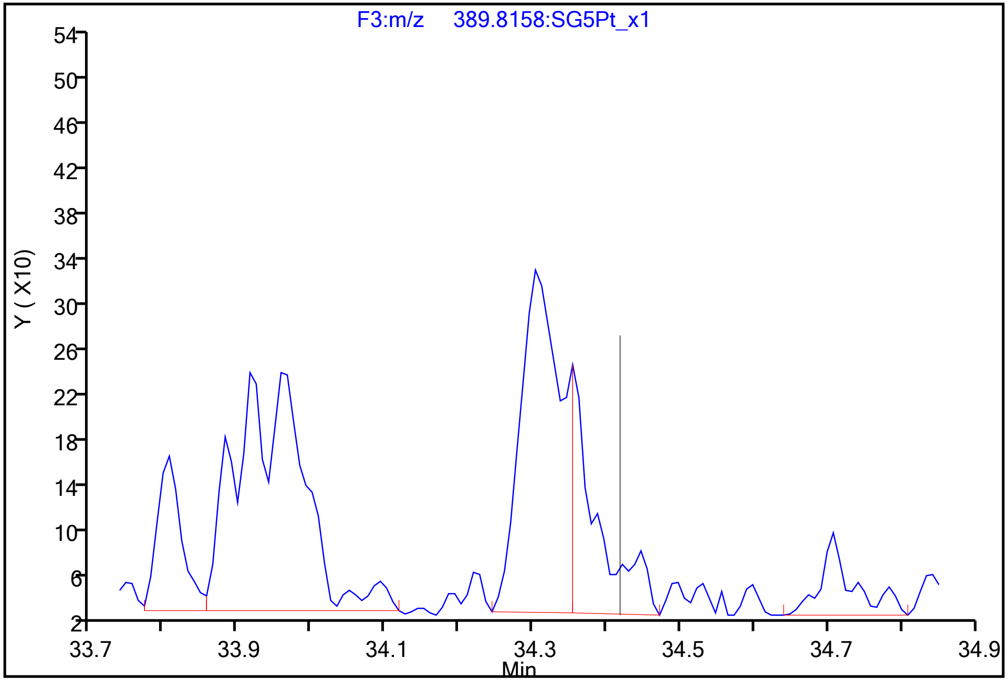

Reviewer: dadunj, 12-Oct-2020 09:34:40

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21
Client ID:	11215702-Tank#2-valve-4-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.98- 35.75)

Signal: 2

Processing Integration Results

RT = 34.311 Area = 1509

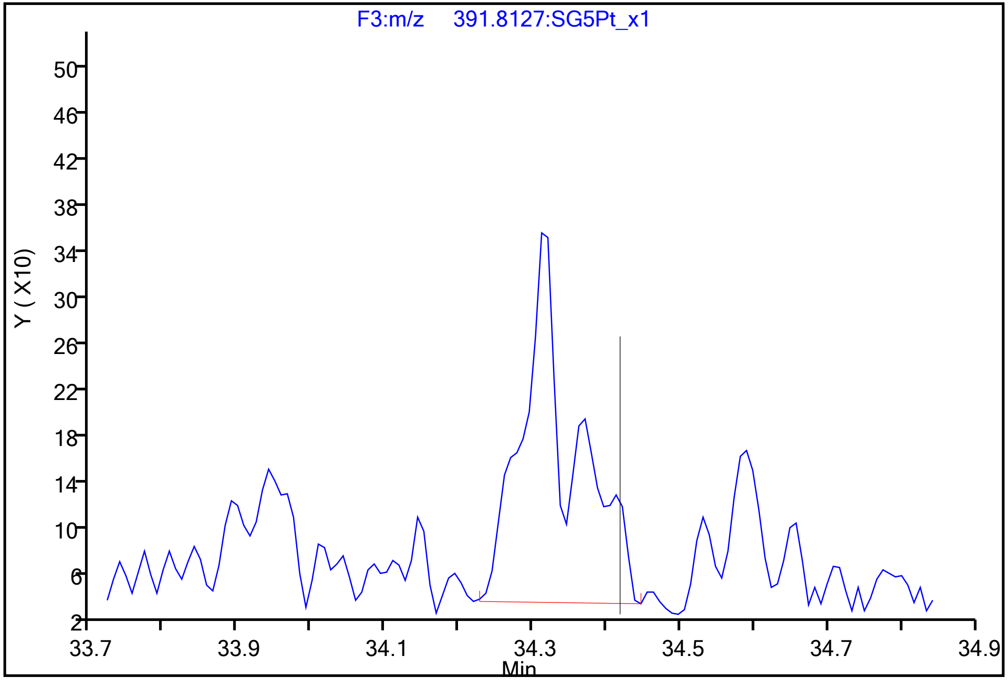

Manual Integration Results

RT = 34.311 Area = 972 M

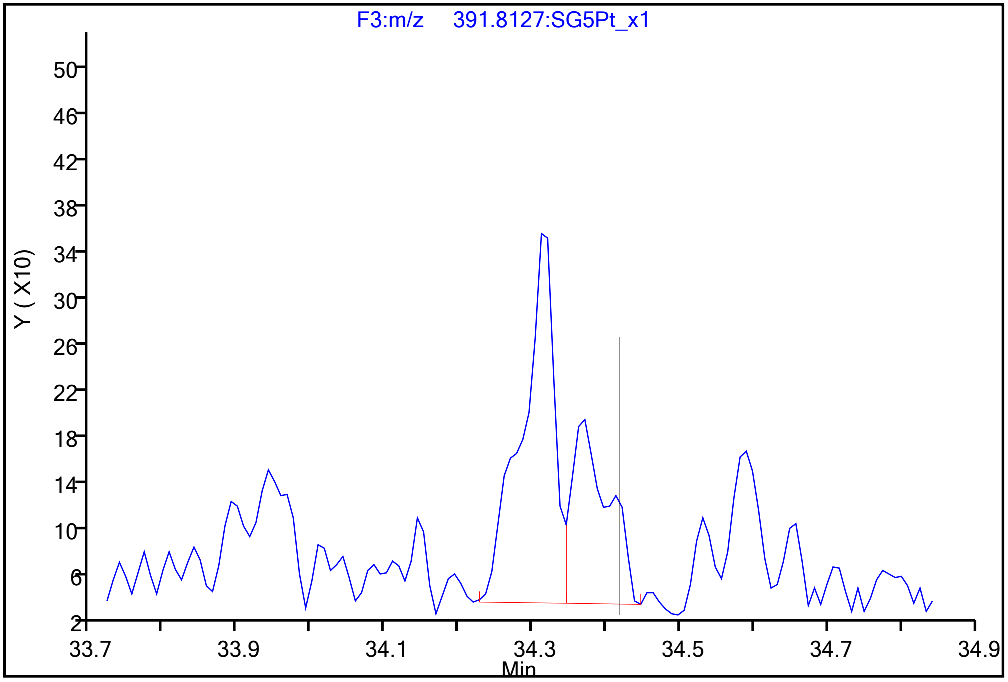

Reviewer: dadunj, 12-Oct-2020 09:34:37

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d				
Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.42- 39.47)

Signal: 1

Processing Integration Results

RT = 38.233 Area = 17439

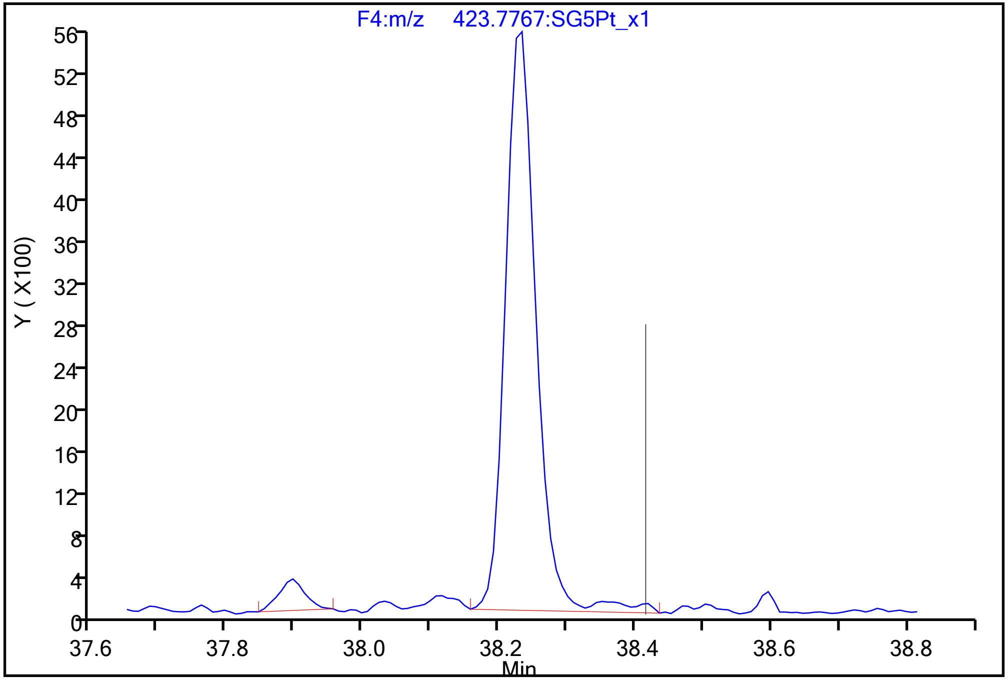

Manual Integration Results

RT = 38.233 Area = 16945 M

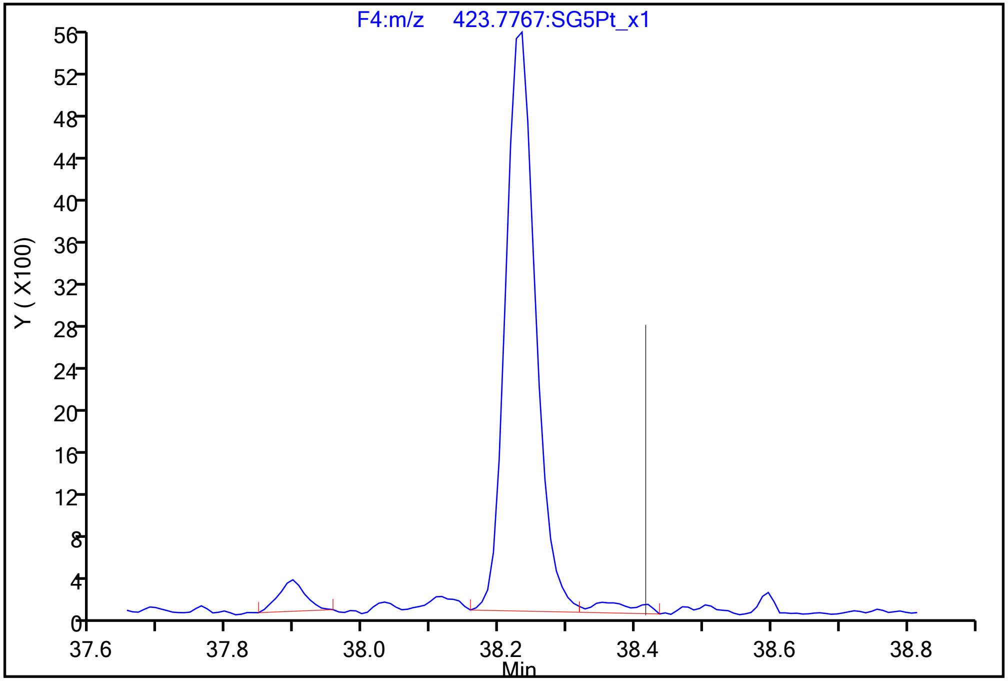

Reviewer: dadunj, 12-Oct-2020 09:34:52

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-21-A	Lab Sample ID:	320-65130-21		
Client ID:	11215702-Tank#2-valve-4-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	26
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (38.42- 39.47)

Signal: 2

Processing Integration Results

RT = 38.233 Area = 18814

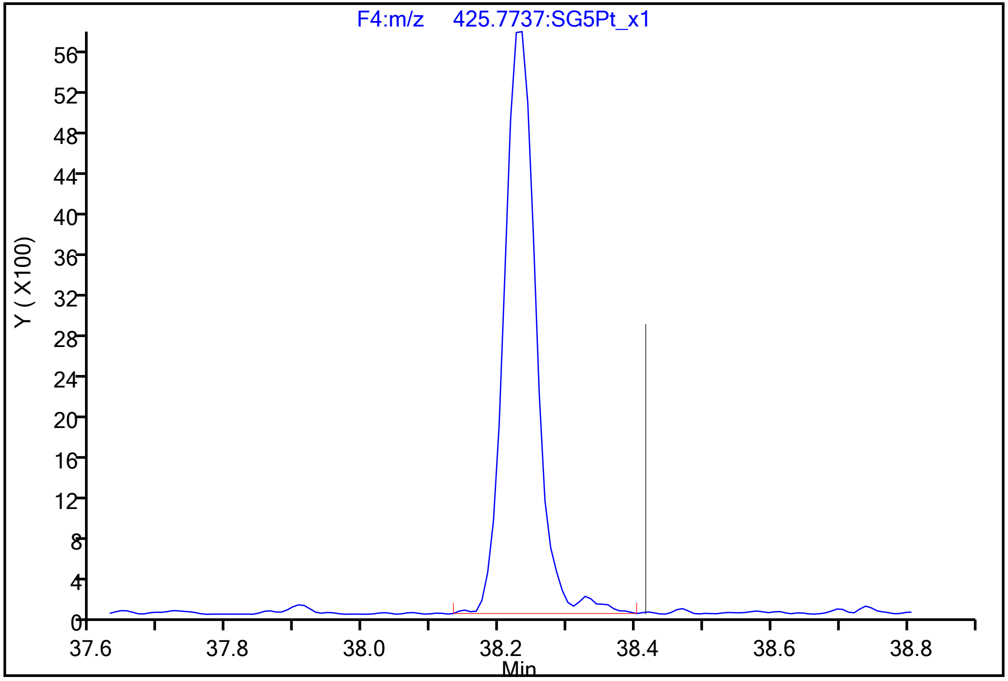

Manual Integration Results

RT = 38.233 Area = 18387 M

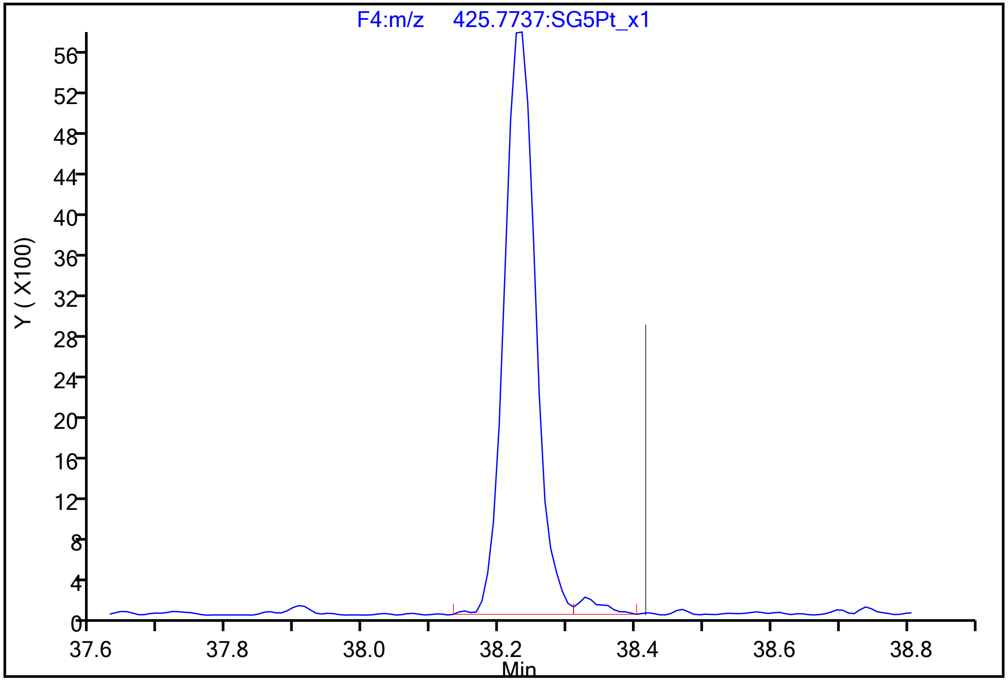

Reviewer: dadunj, 12-Oct-2020 09:34:51

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Oct-2020 14:08:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-21-A
Lab Sample ID: 320-65130-21
Client ID: 11215702-Tank#2-valve-4-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 26
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 2

RT: 41.43
Area: 30557
Amount: 1.440326
Amount Units: pg/ul

Processing Integration Results

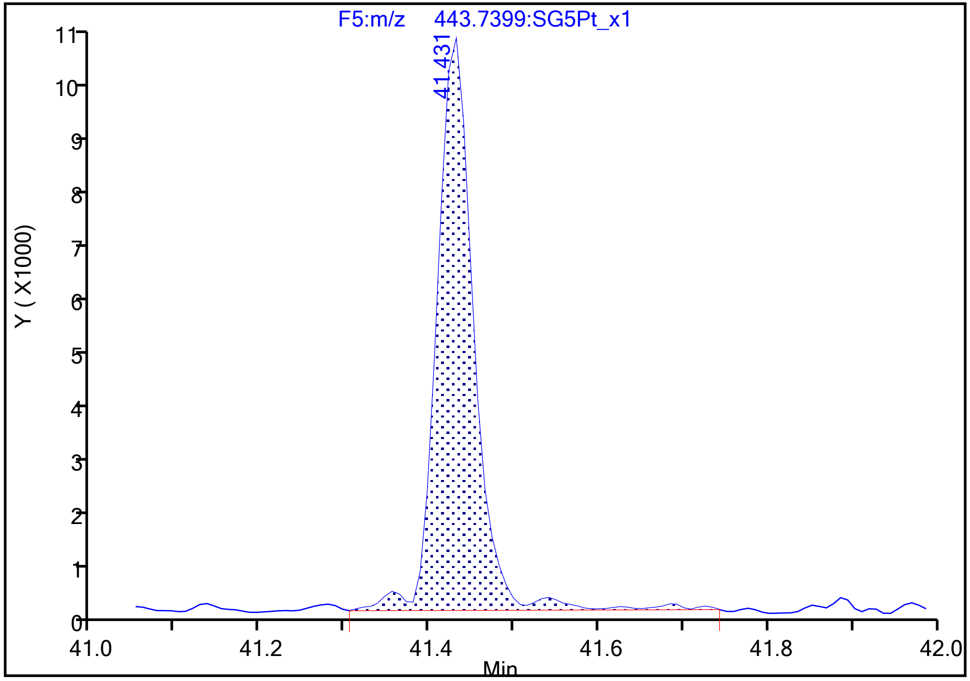

RT: 41.43
Area: 29866
Amount: 2.845946
Amount Units: pg/ul

Manual Integration Results

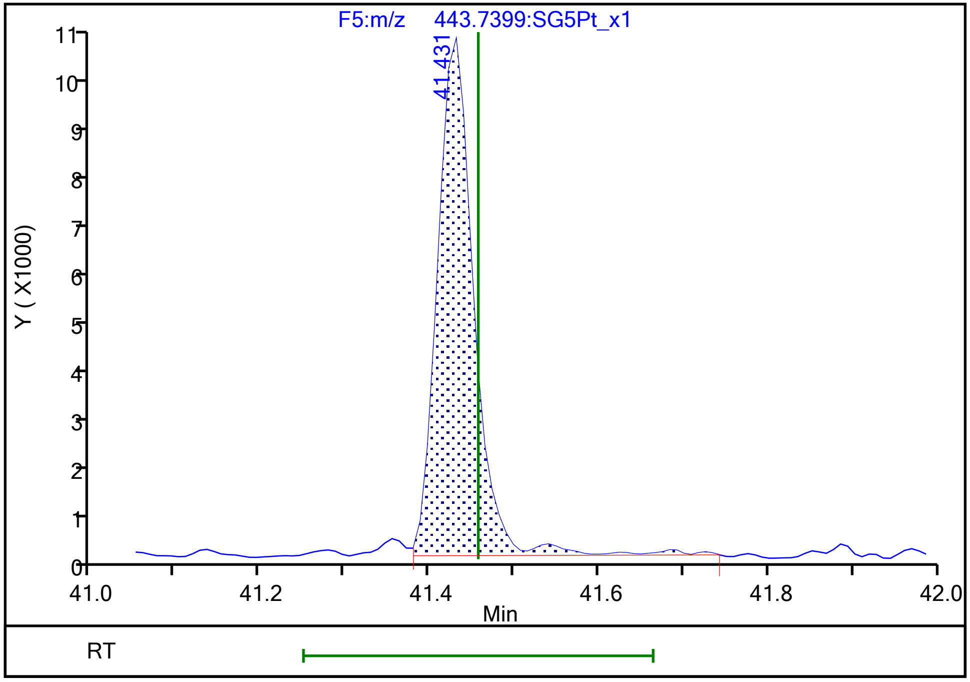

Reviewer: dadunj, 12-Oct-2020 09:35:32
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640 Sample Line#: 26
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

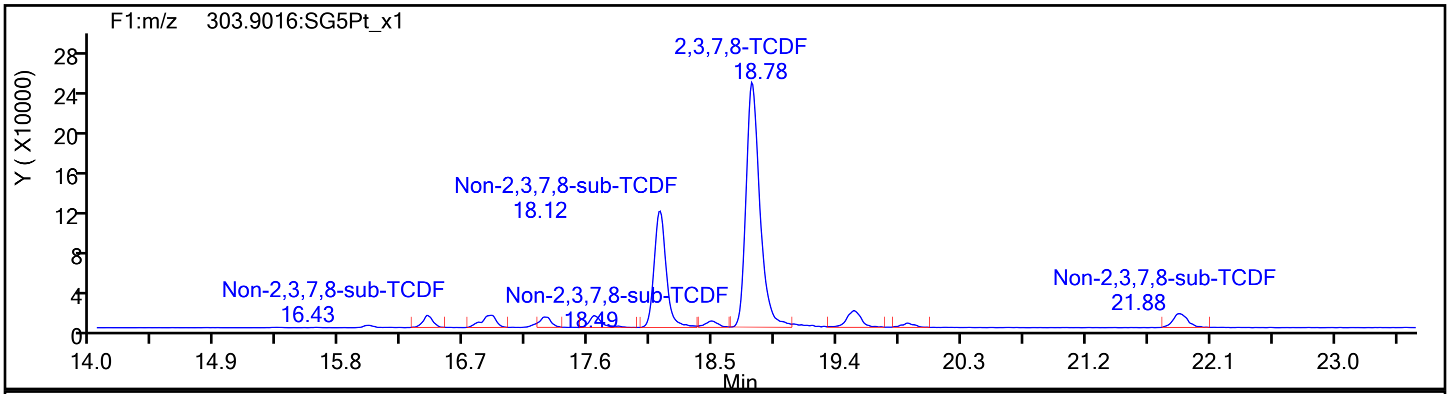

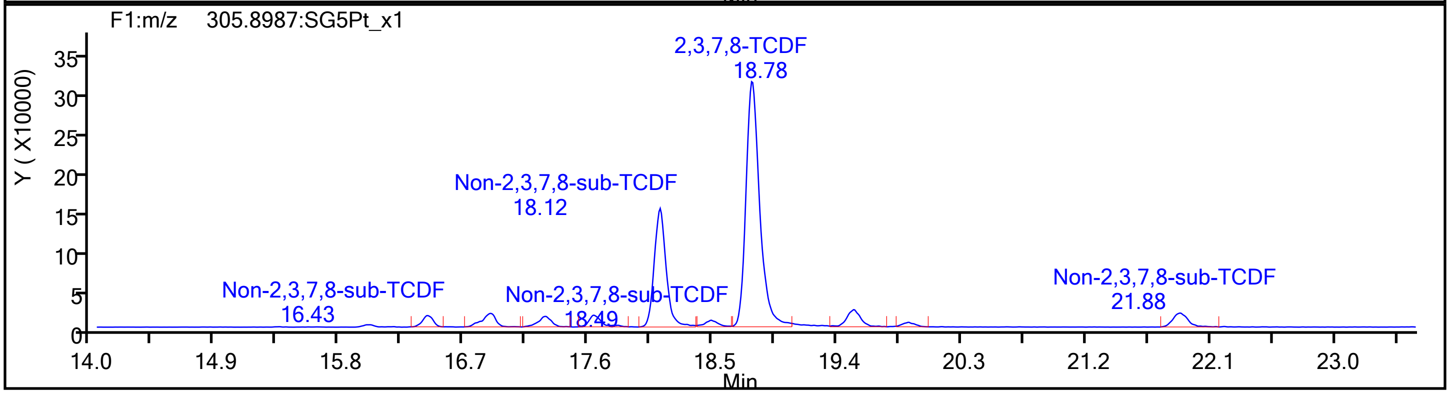

TCDF Standards

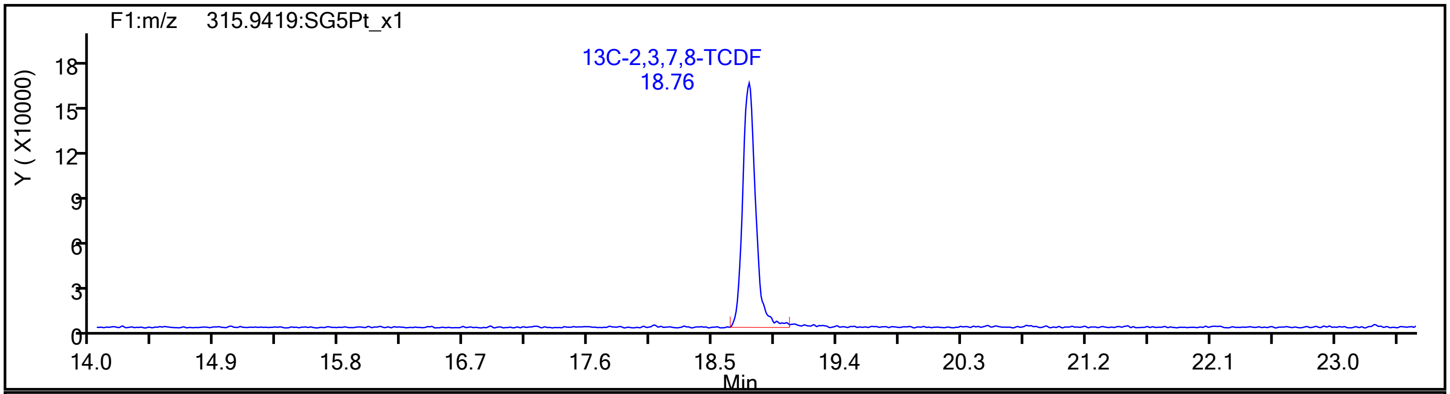

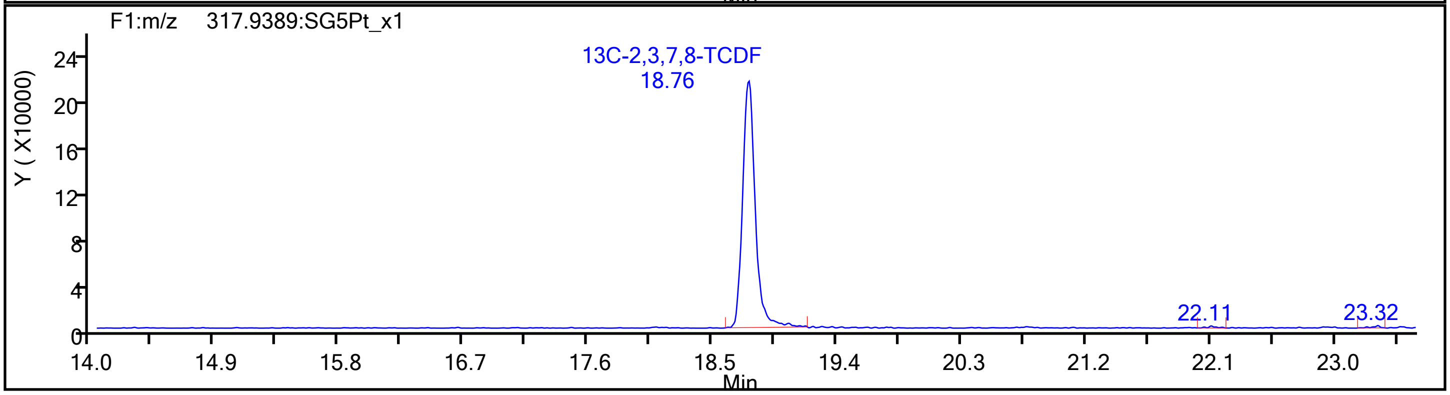

Report Date: 12-Oct-2020 11:32:07 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640
Sample Line#: 26
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

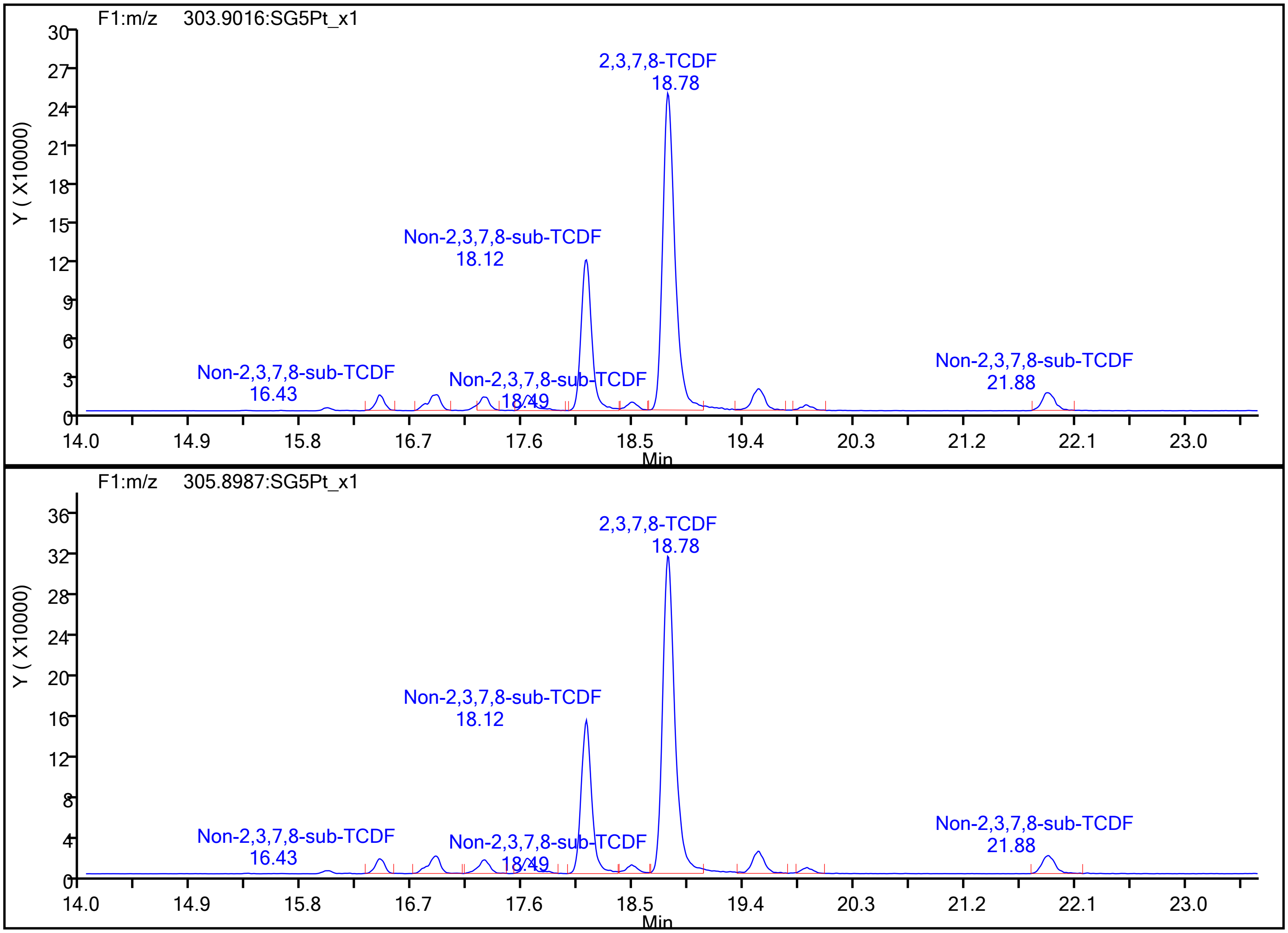

TCDF Interference Mass

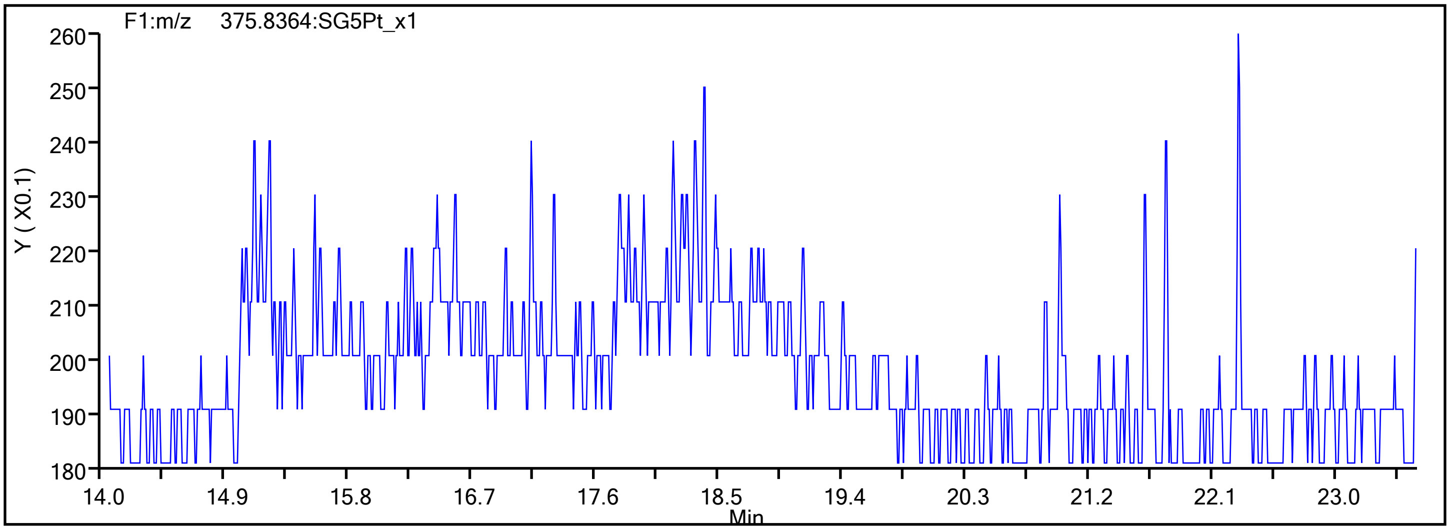

Report Date: 12-Oct-2020 11:32:08
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640
Sample Line#: 26
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

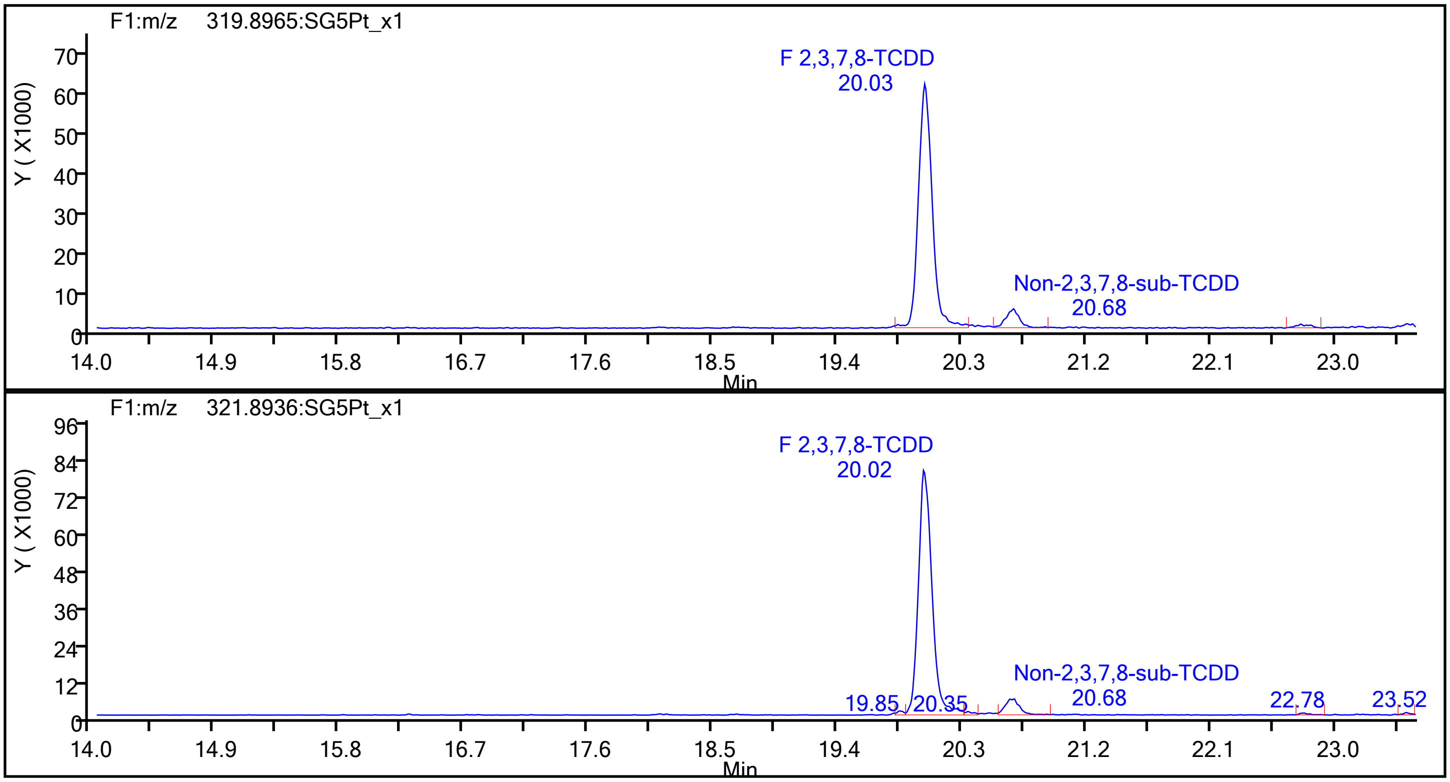

TCDD Standards

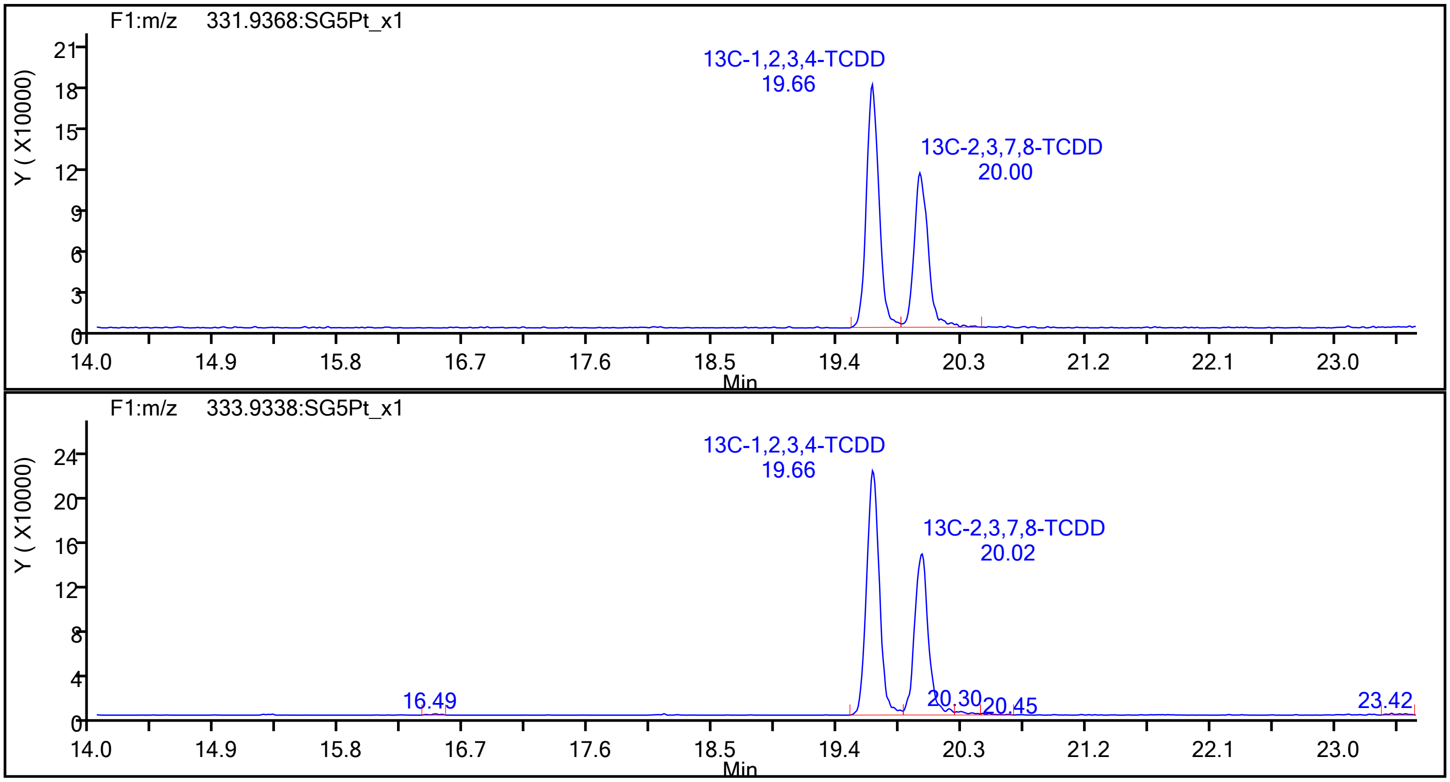

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

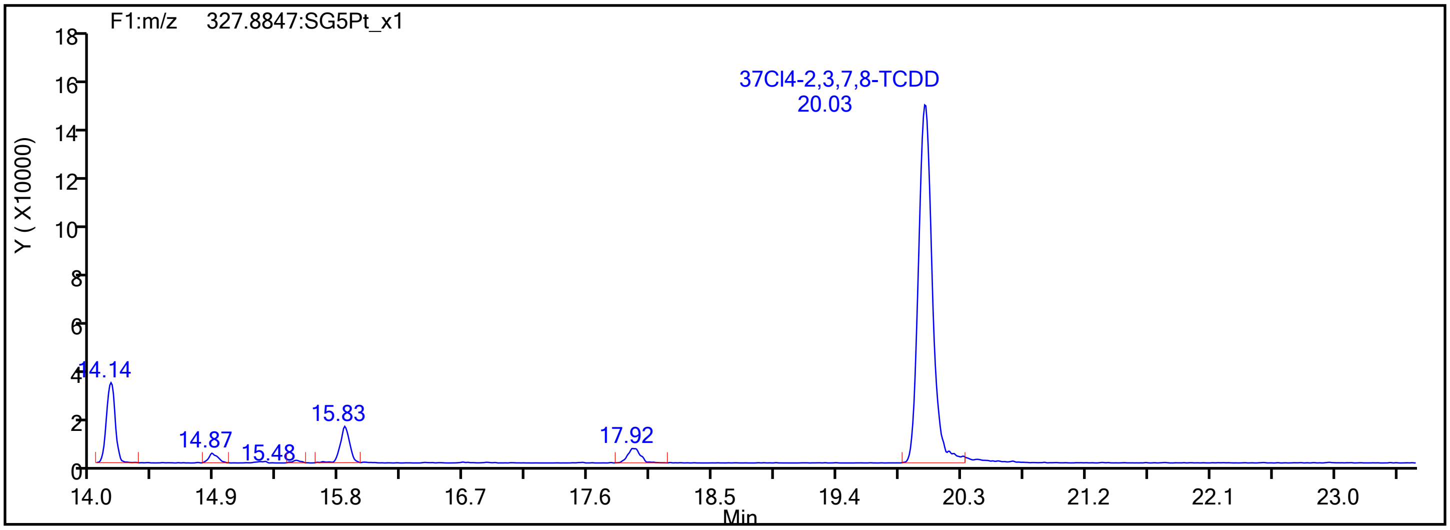

37Cl4-TCDD Standards

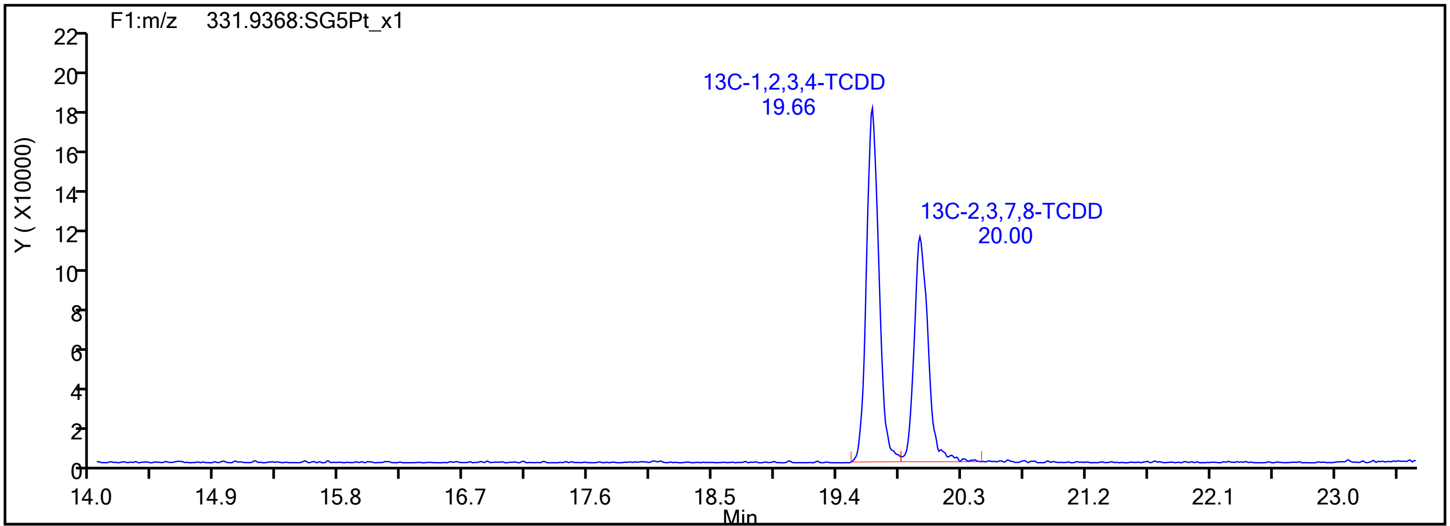

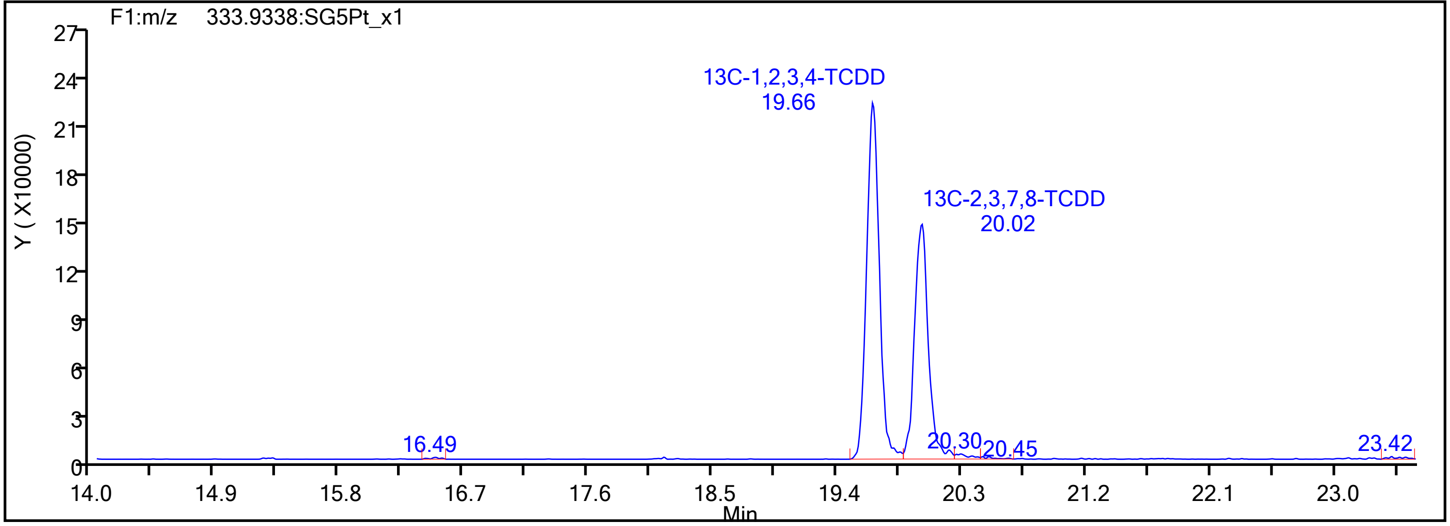

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
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Client ID:	11215702-Tank#2-valve-4-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

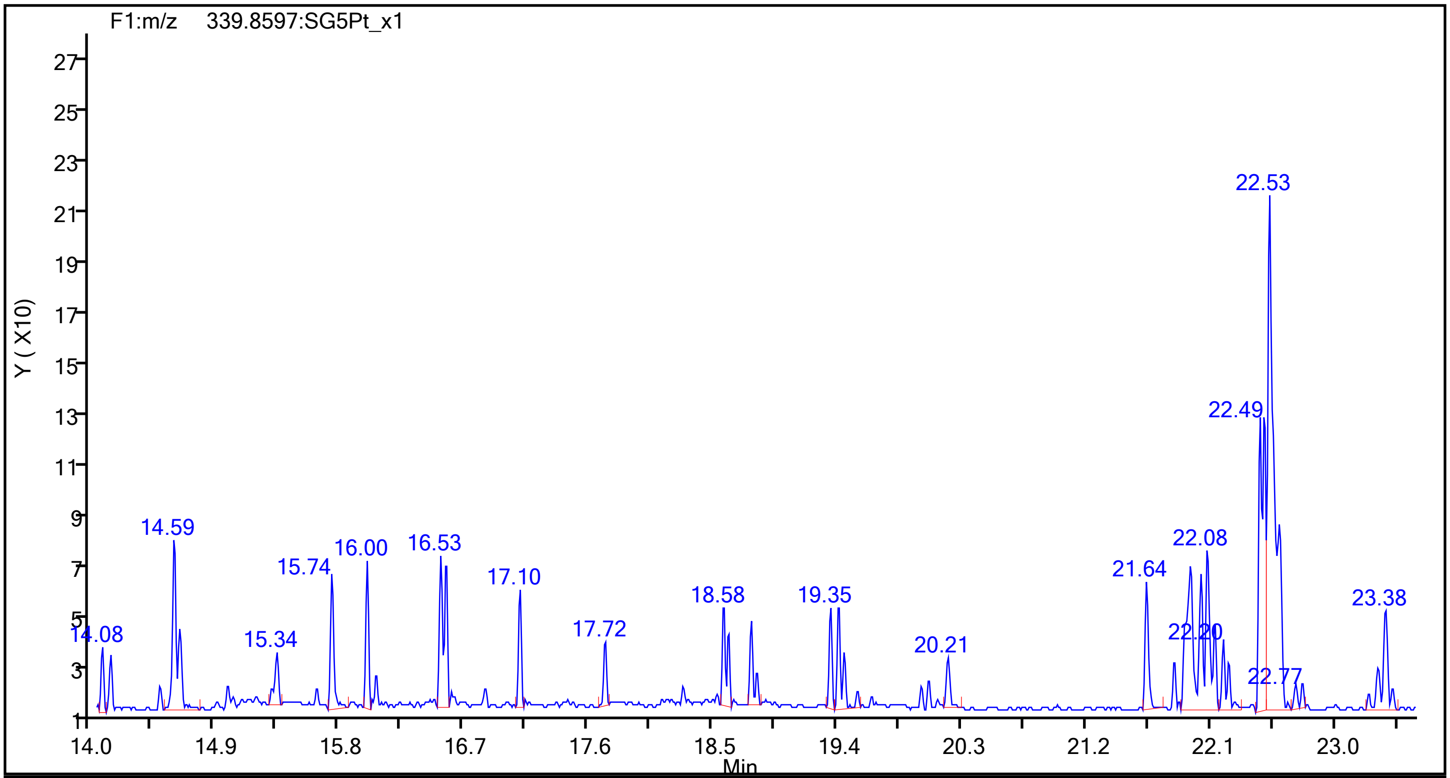

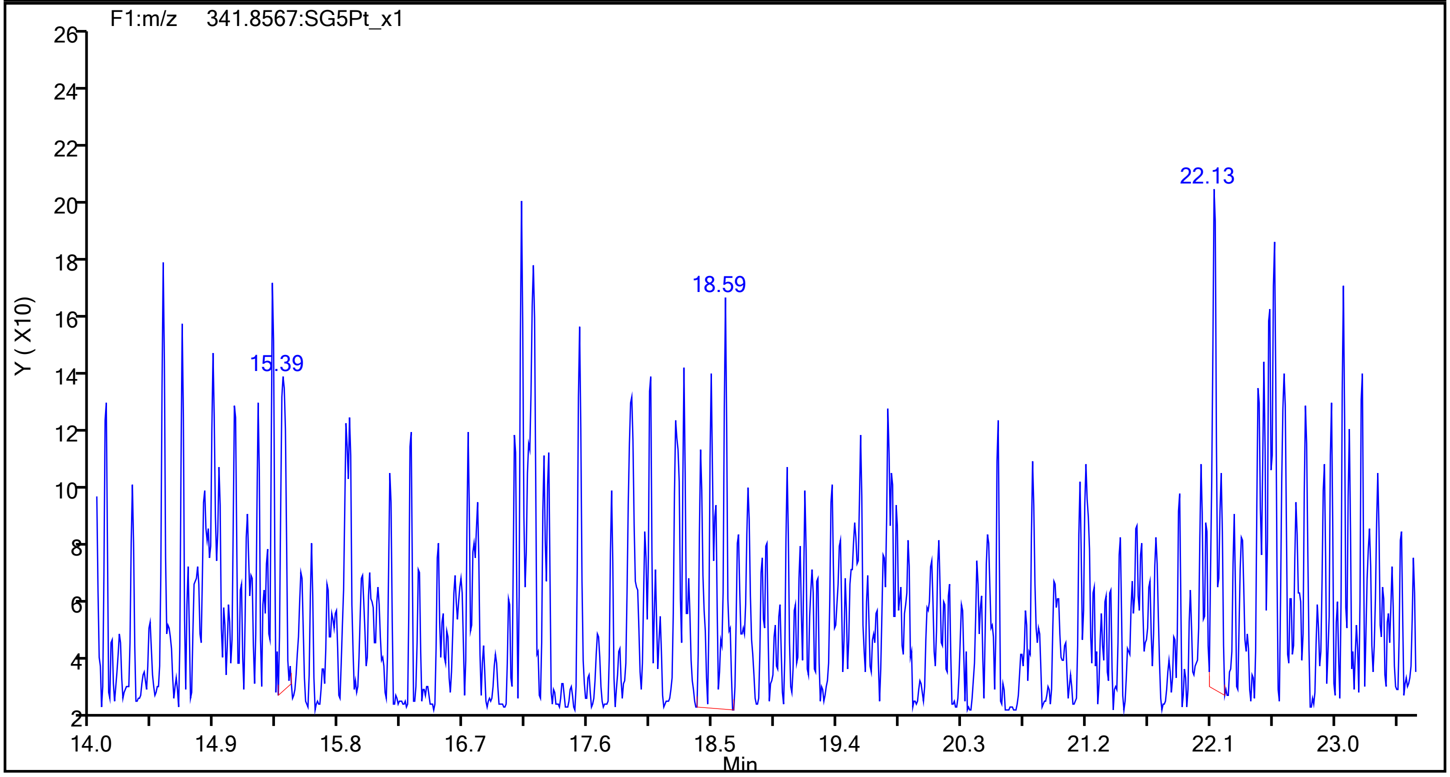

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

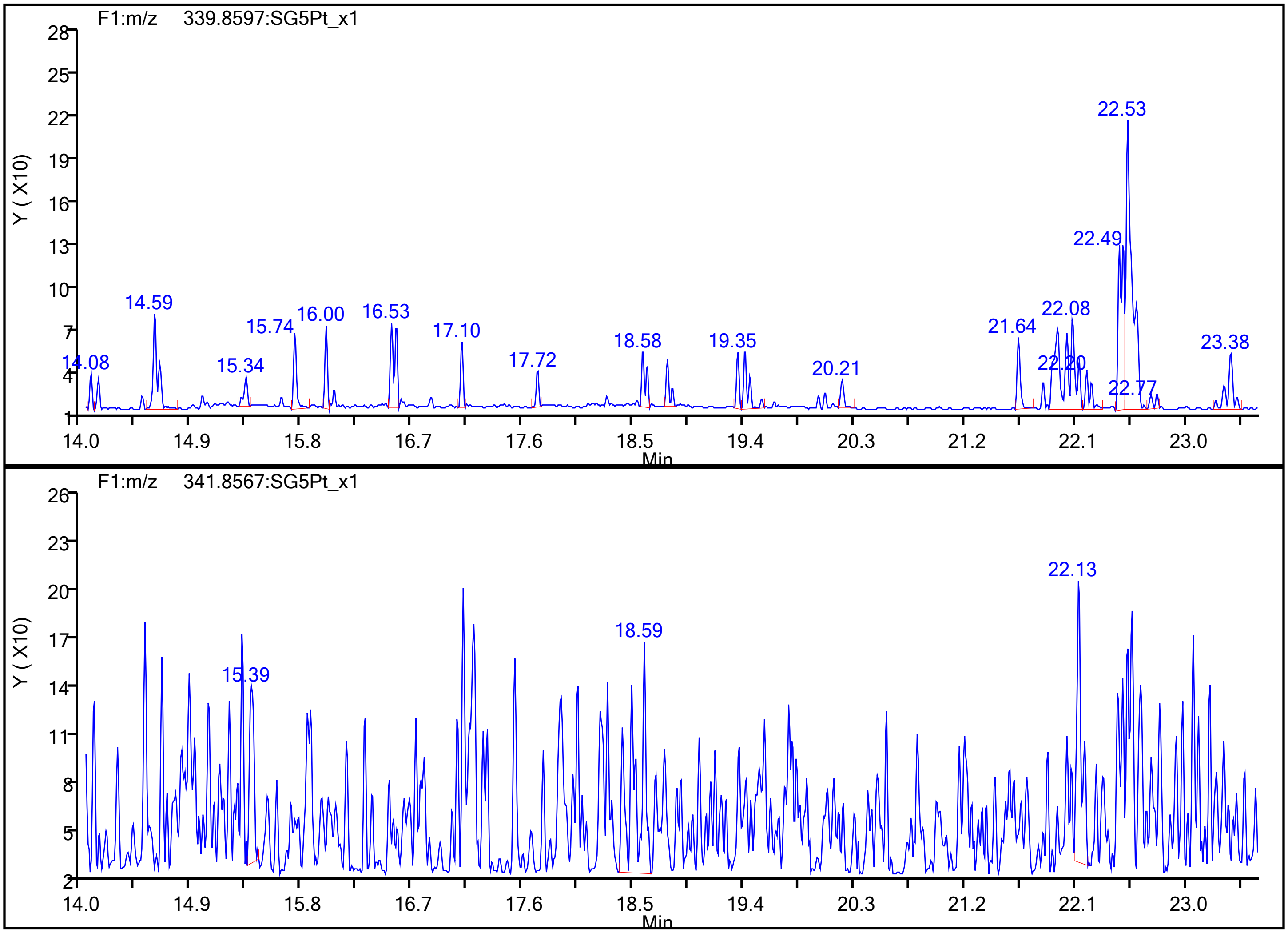

F1 PeCDFs Interference Mass

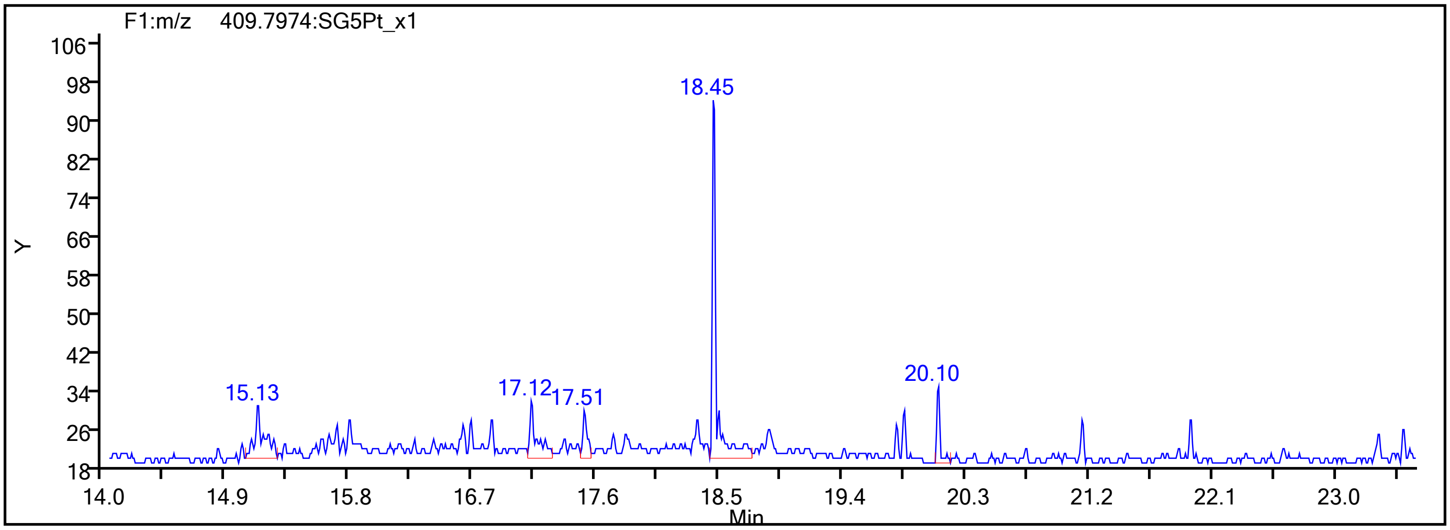

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

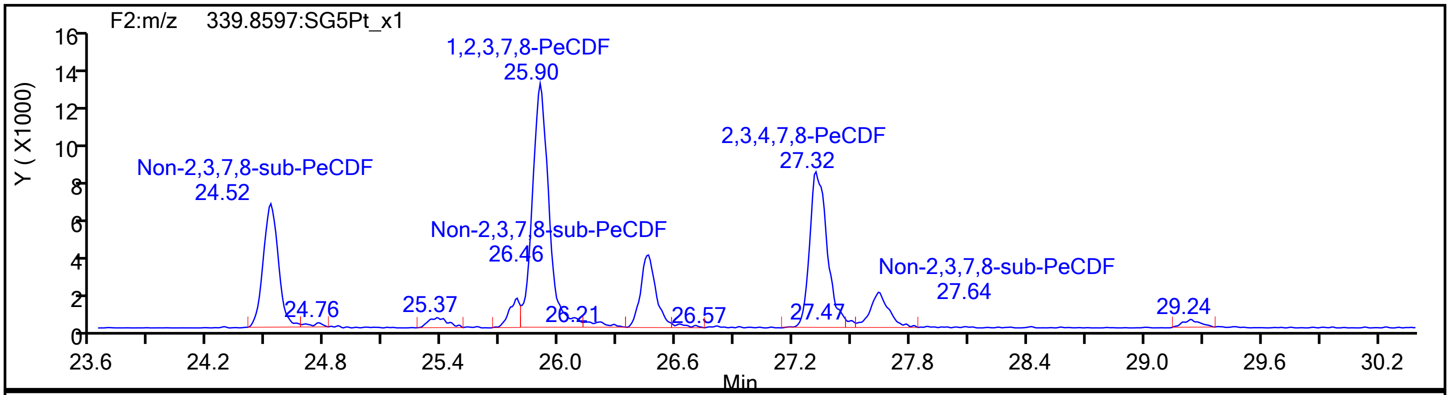

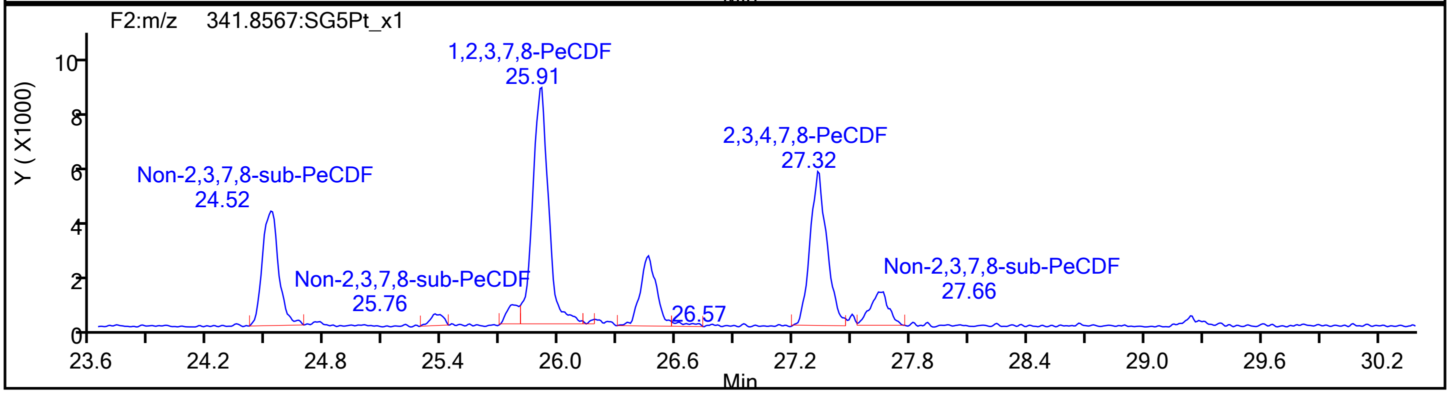

PeCDF Standards

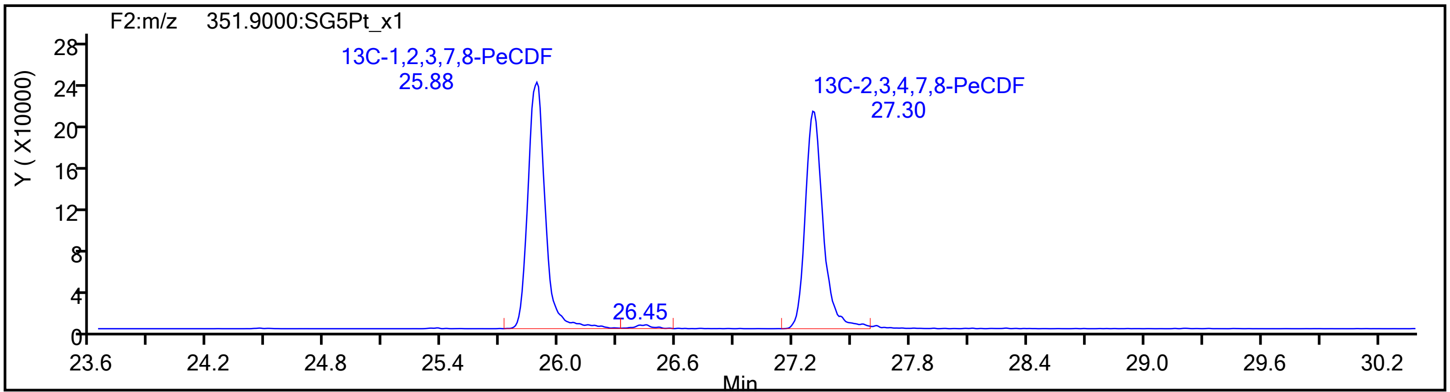

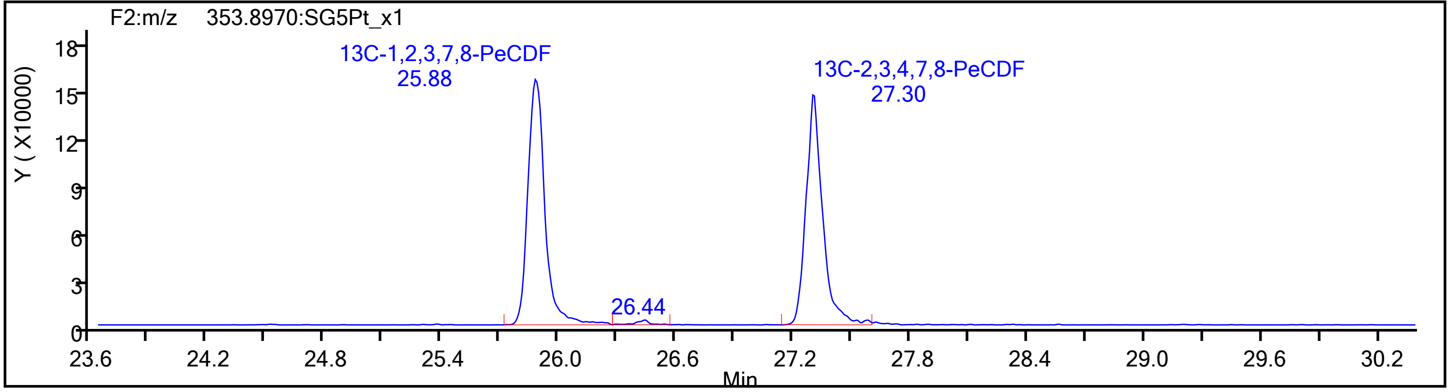

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

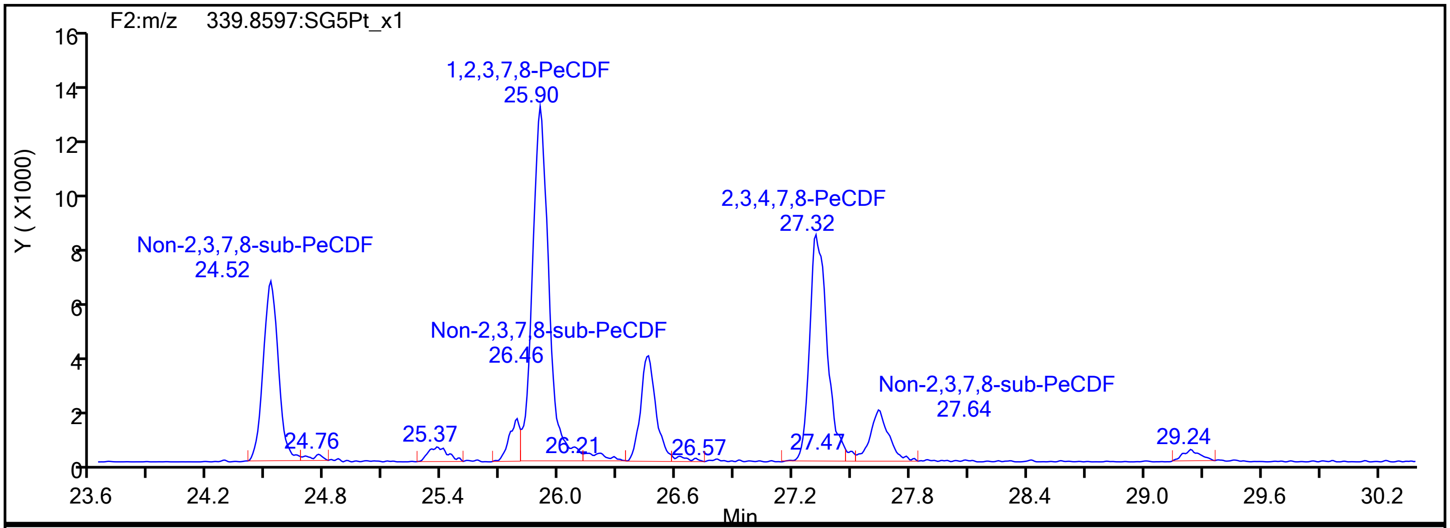

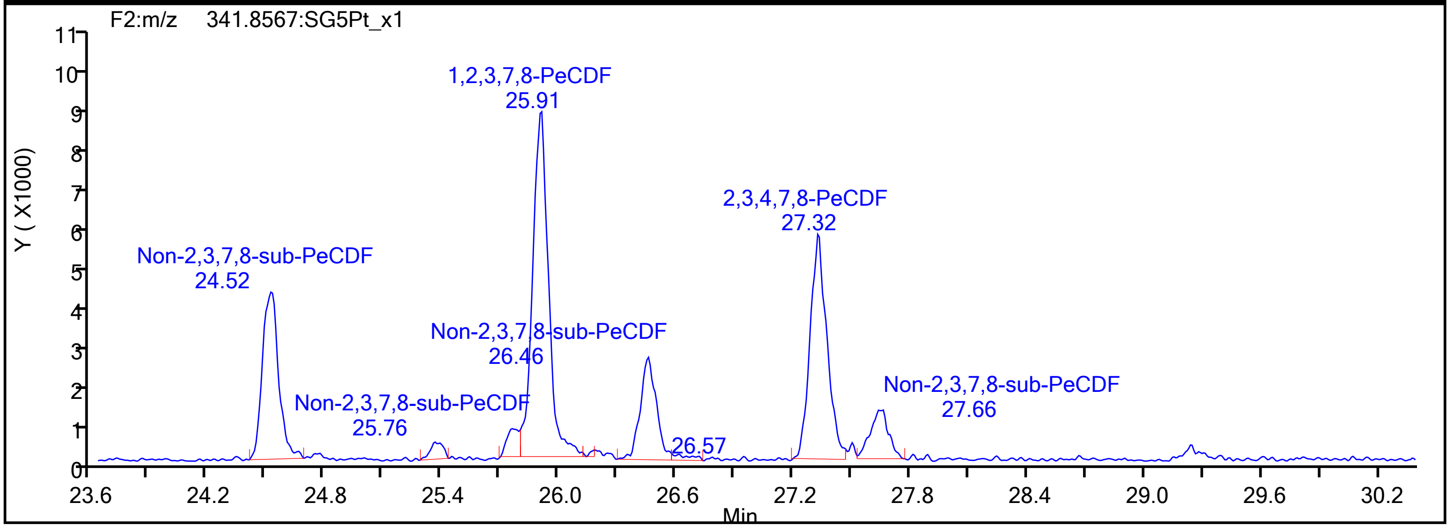

PeCDF Interference Mass

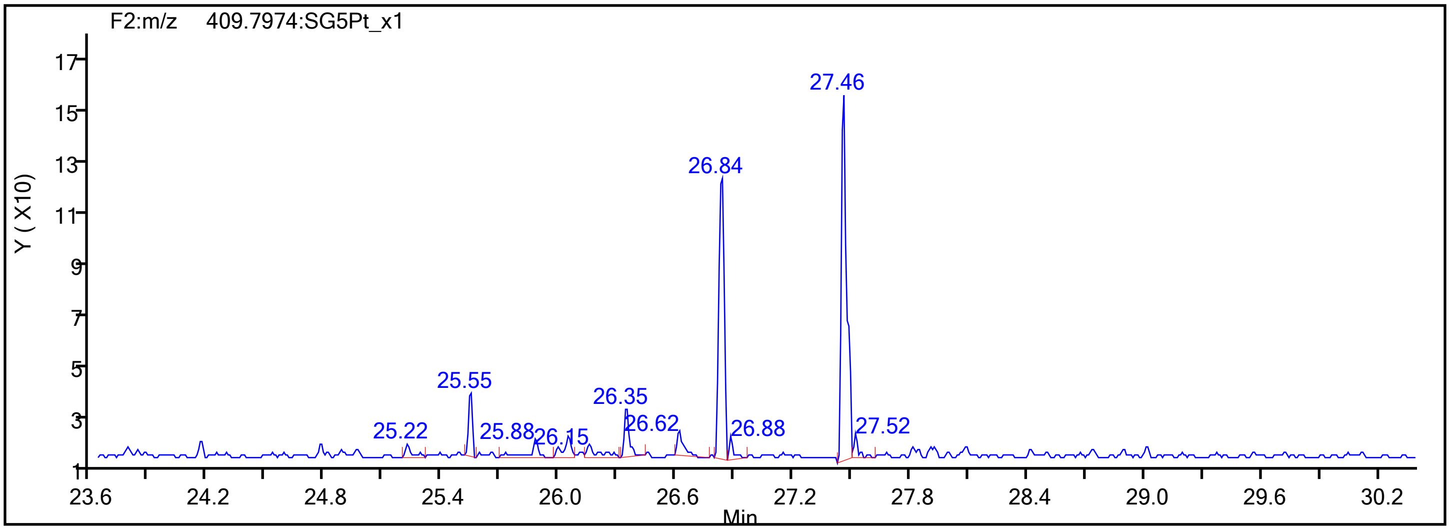

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

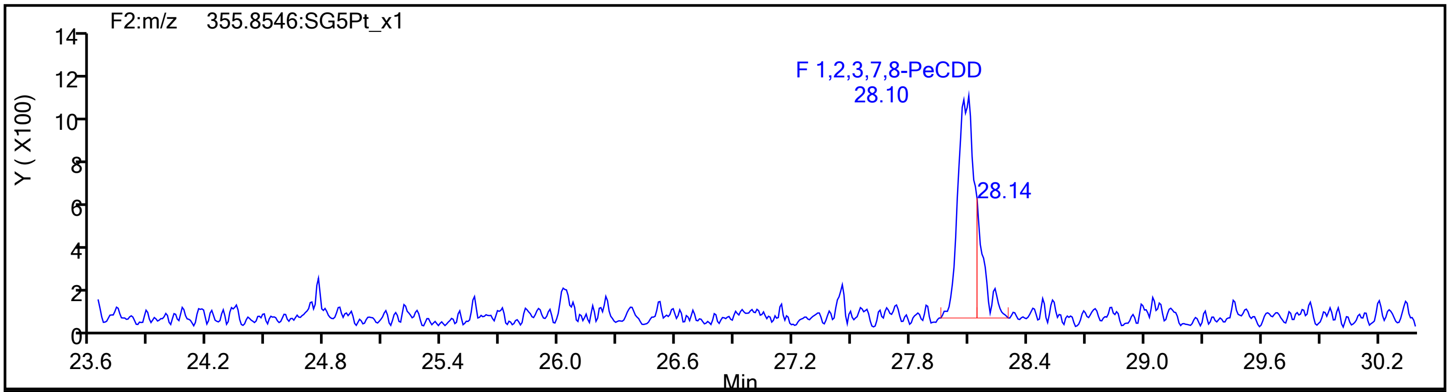

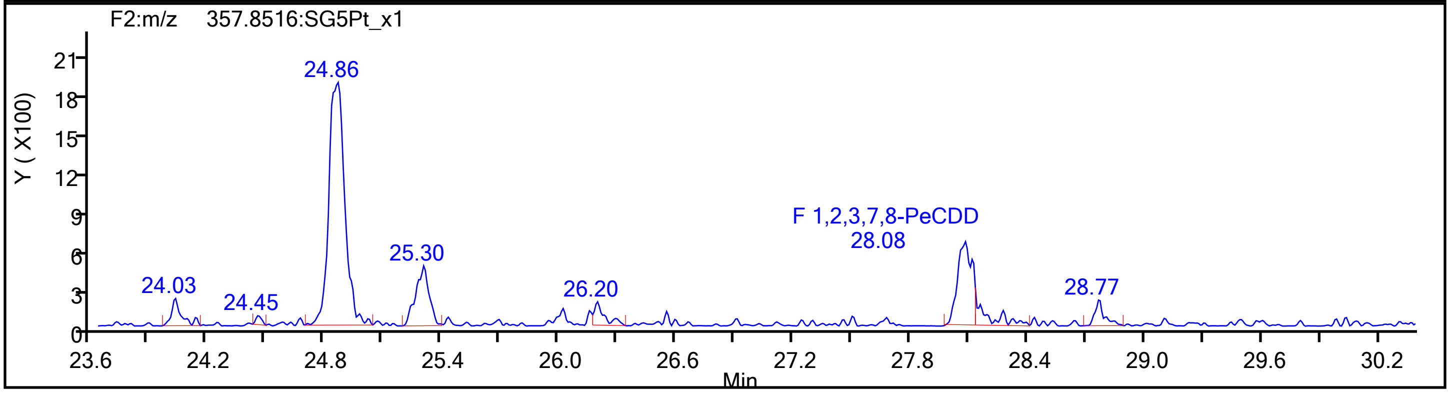

PeCDD Standards

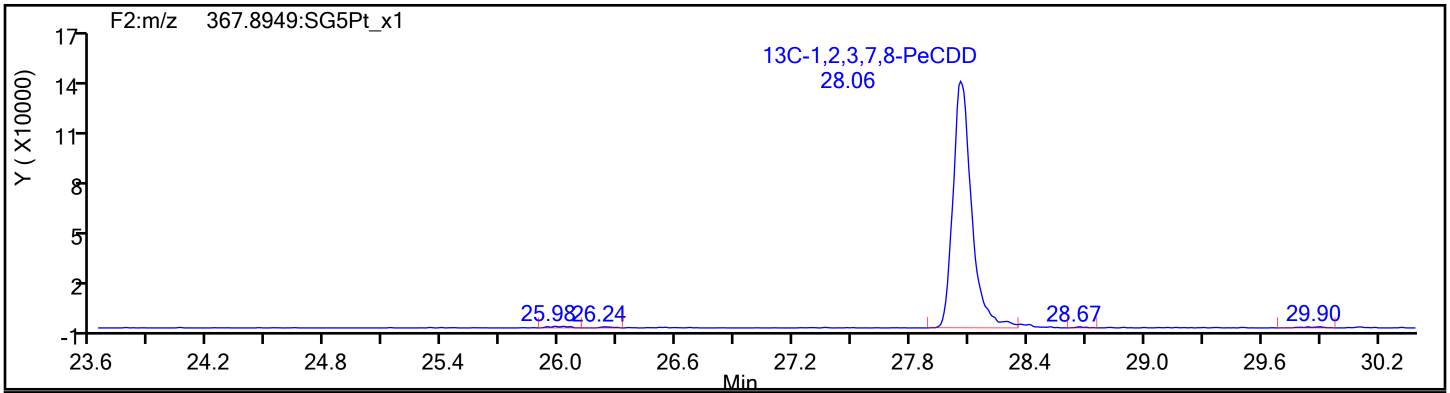

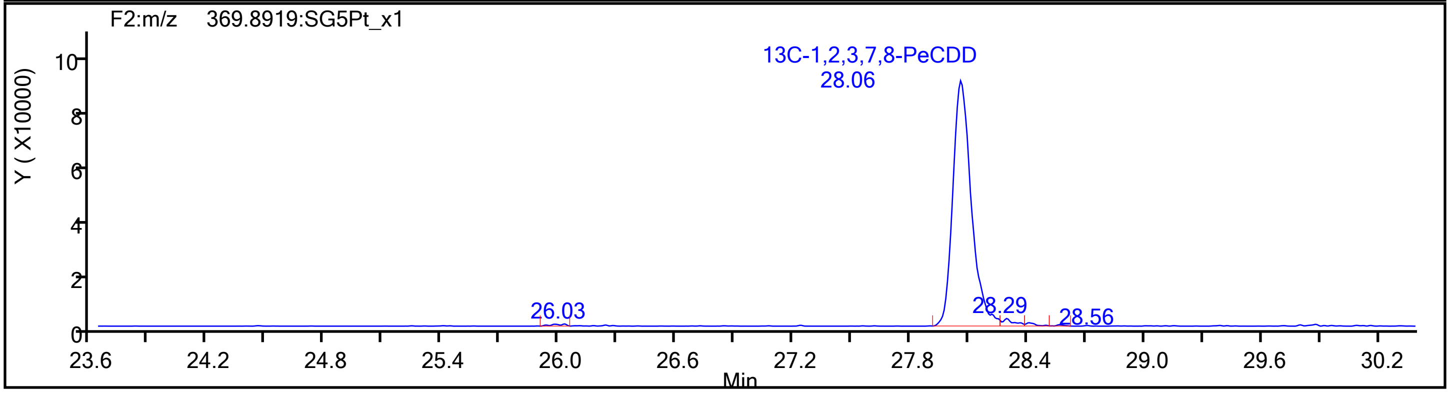

Report Date: 12-Oct-2020 11:32:08
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640
Sample Line#: 26
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

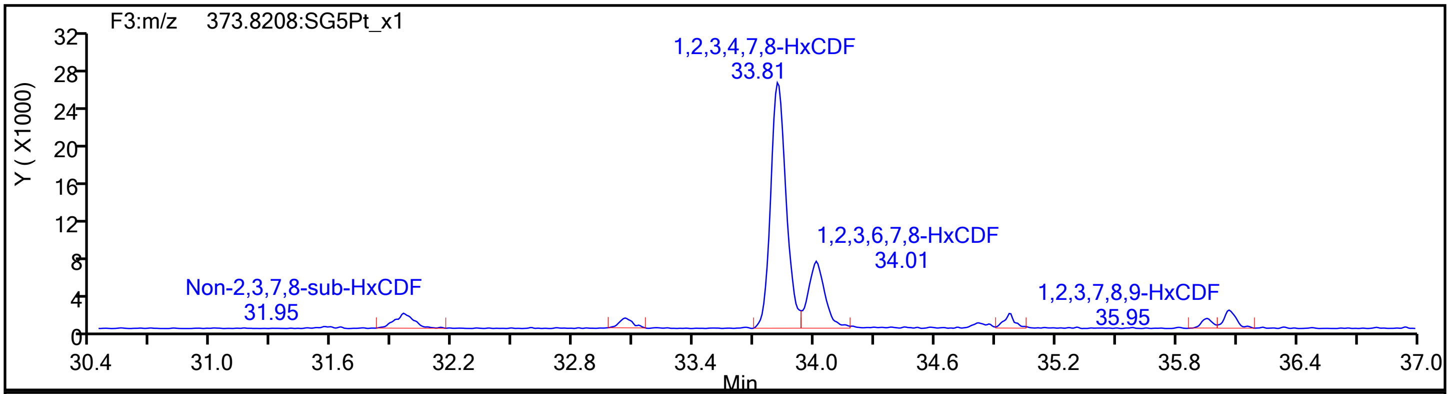

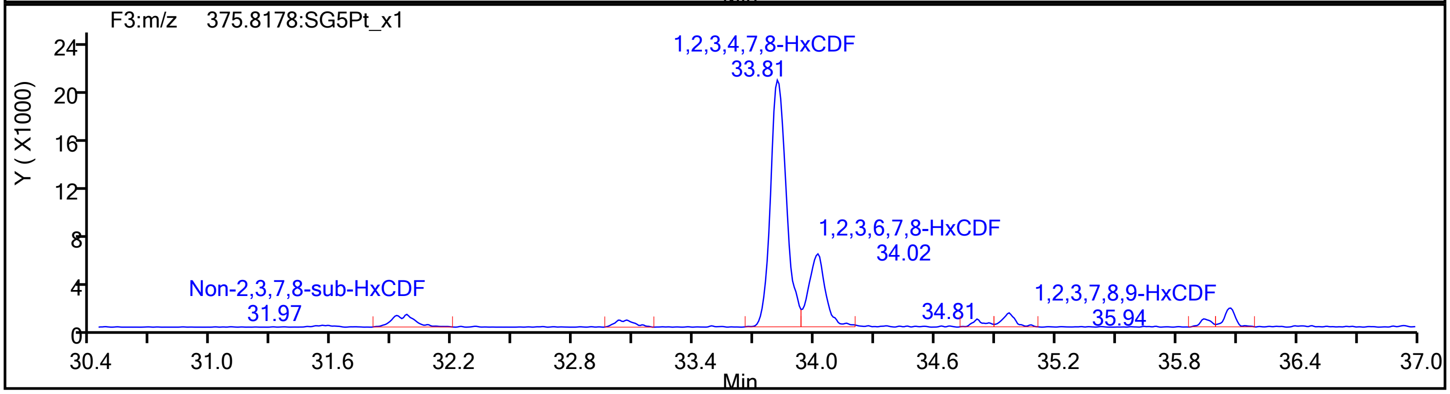

HxCDF Standards

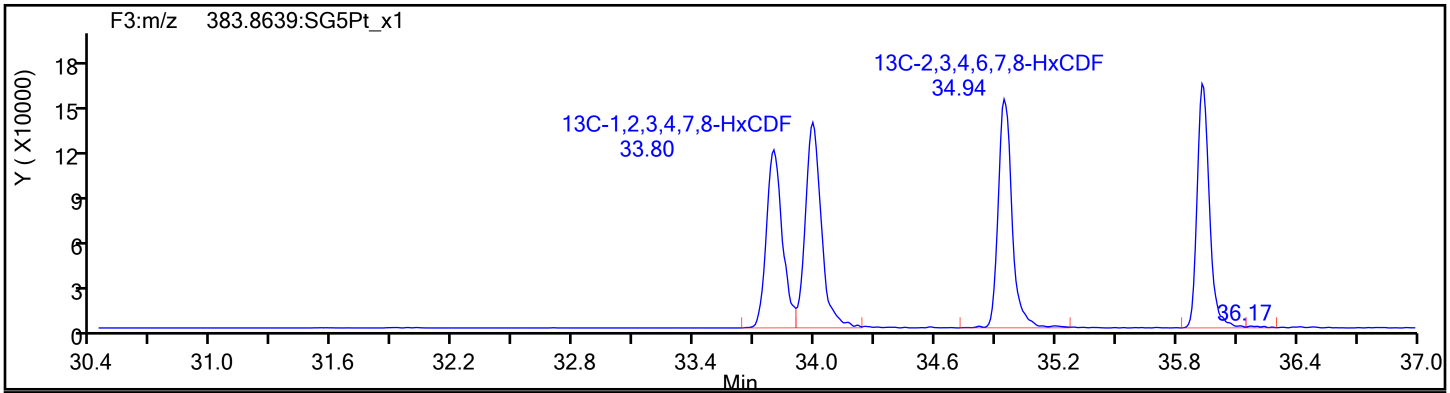

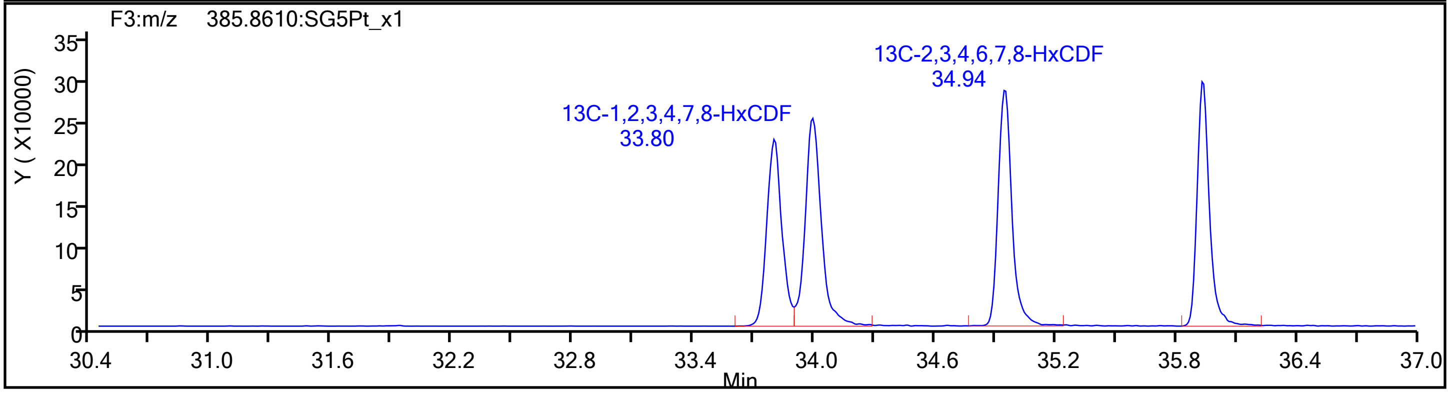

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640
Sample Line#: 26
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

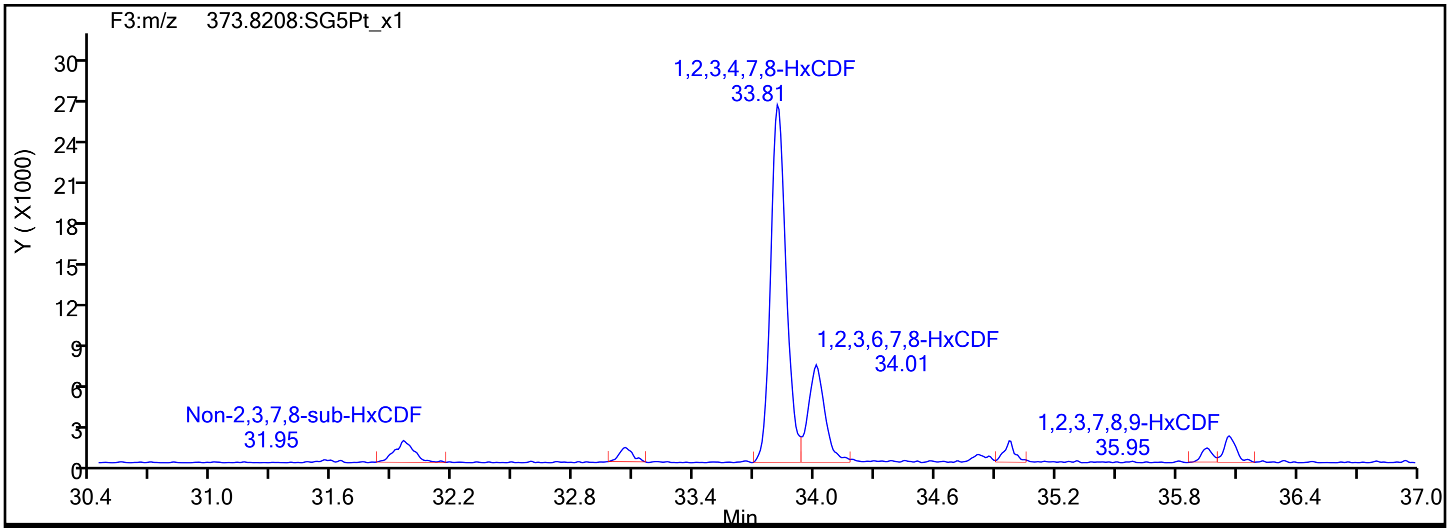

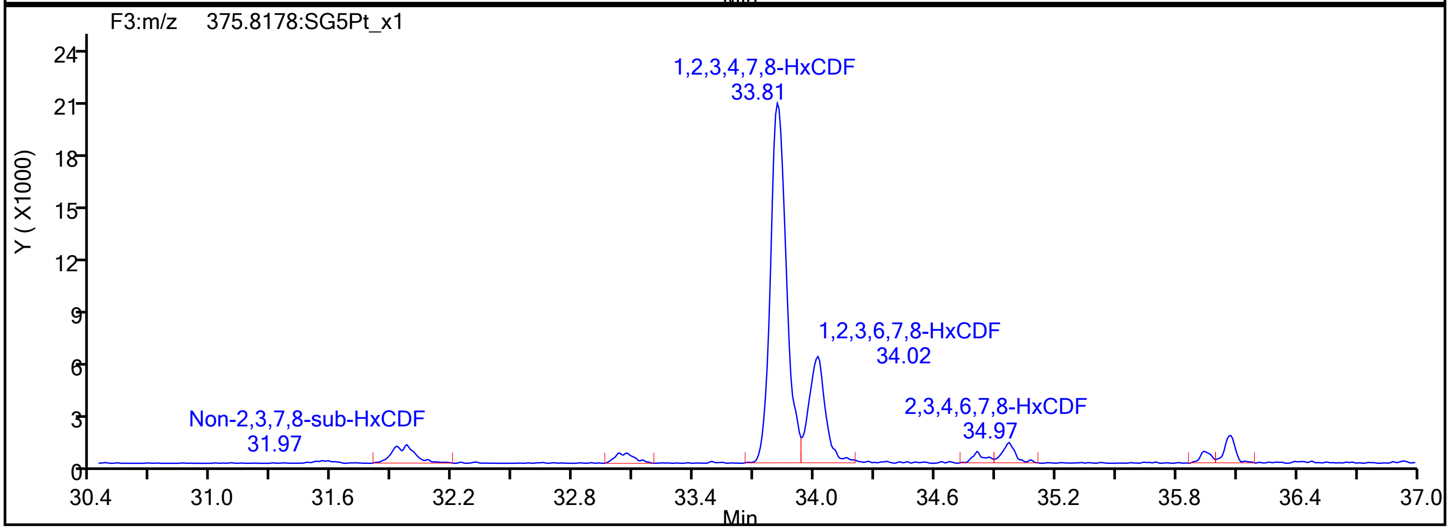

HxCDF Interference Mass

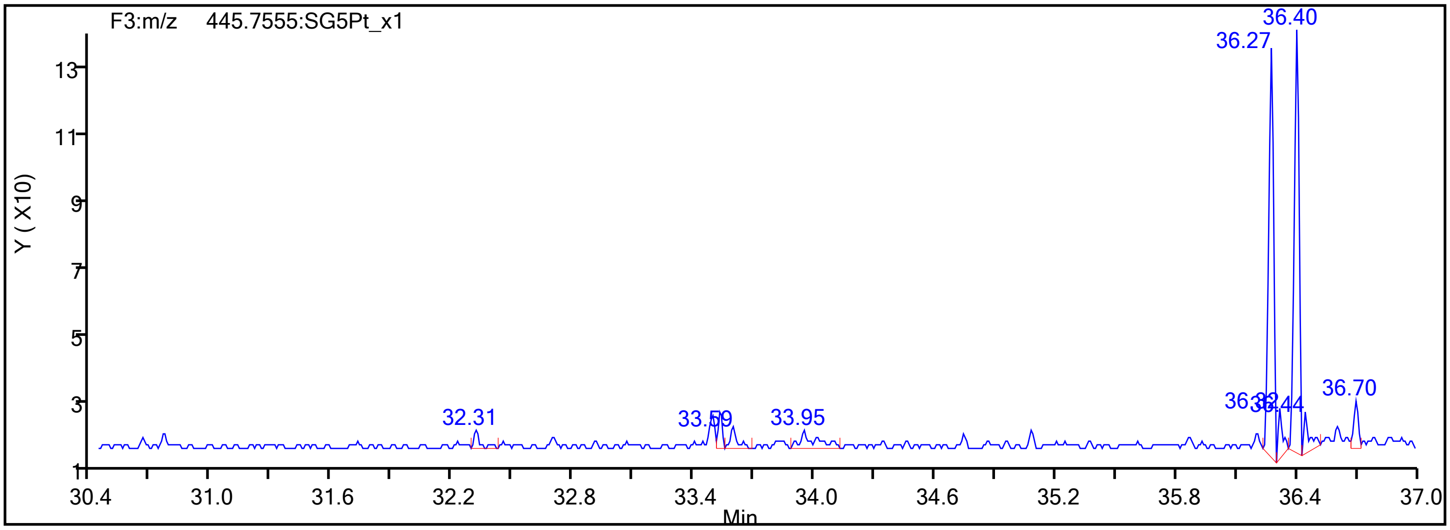

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date: 10-Oct-2020 14:08:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-4-2

Worklist#: 420640 Sample Line#: 26

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

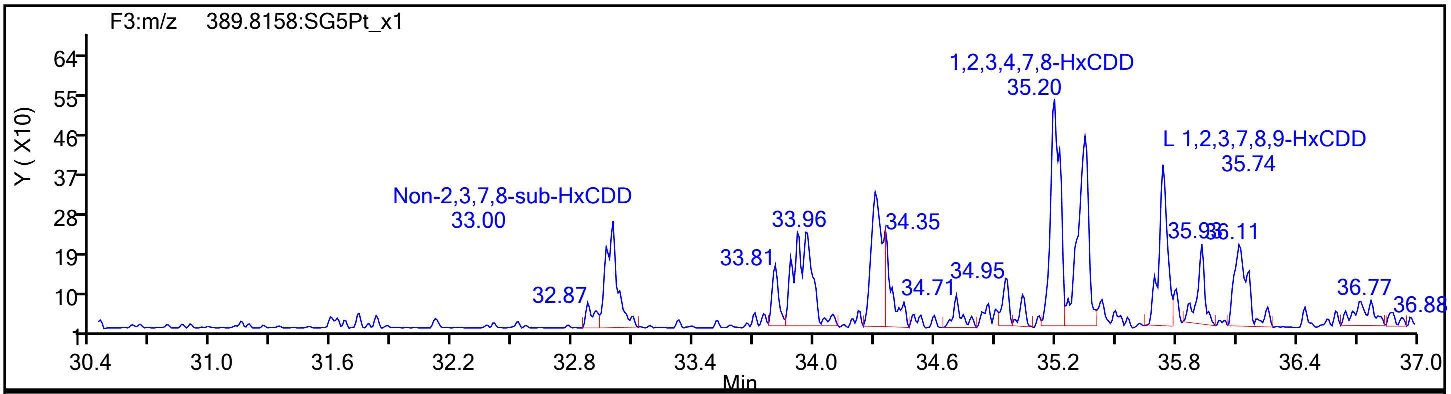

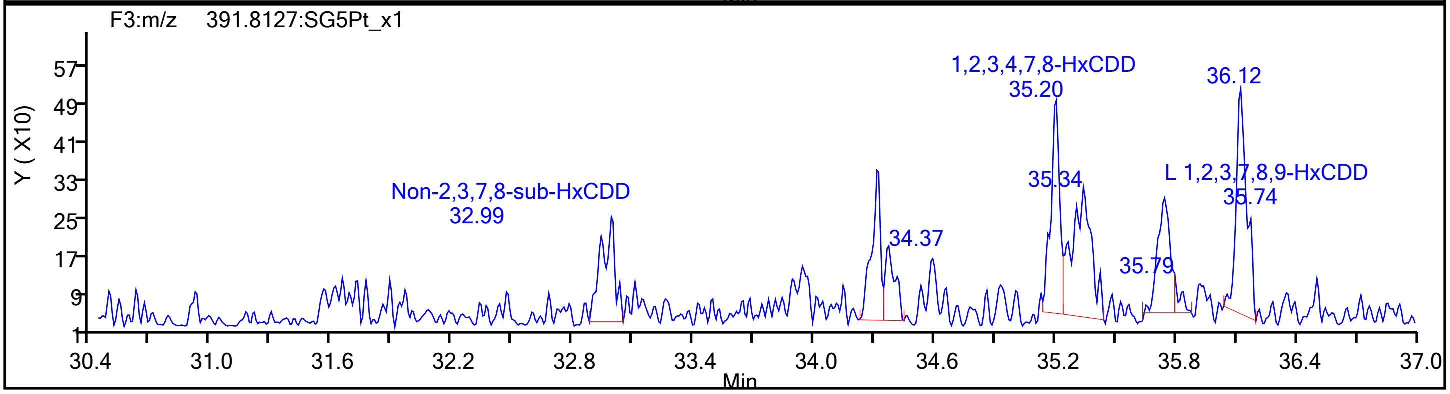

HxCDD Standards

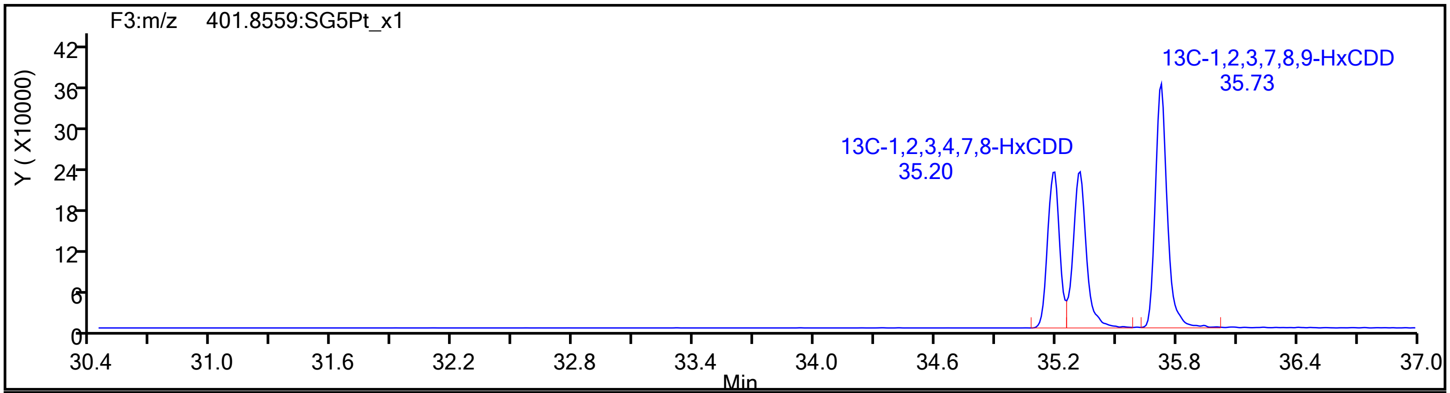

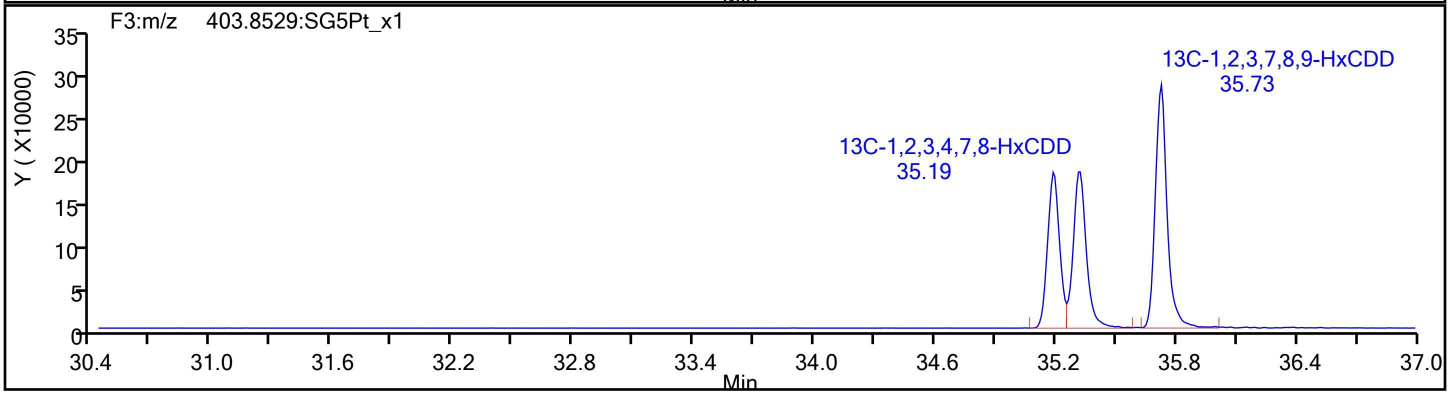

Report Date: 12-Oct-2020 11:32:08 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

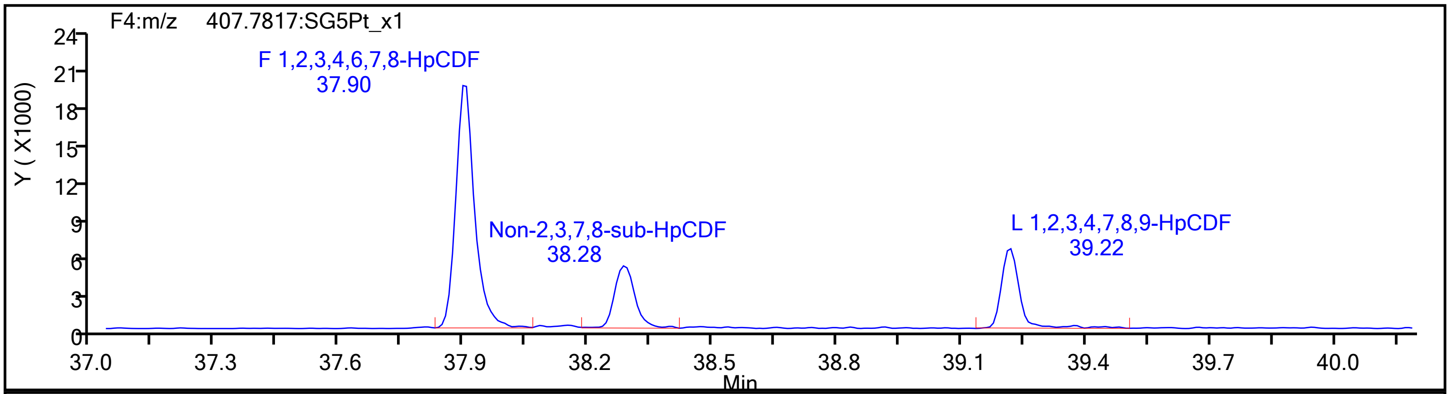

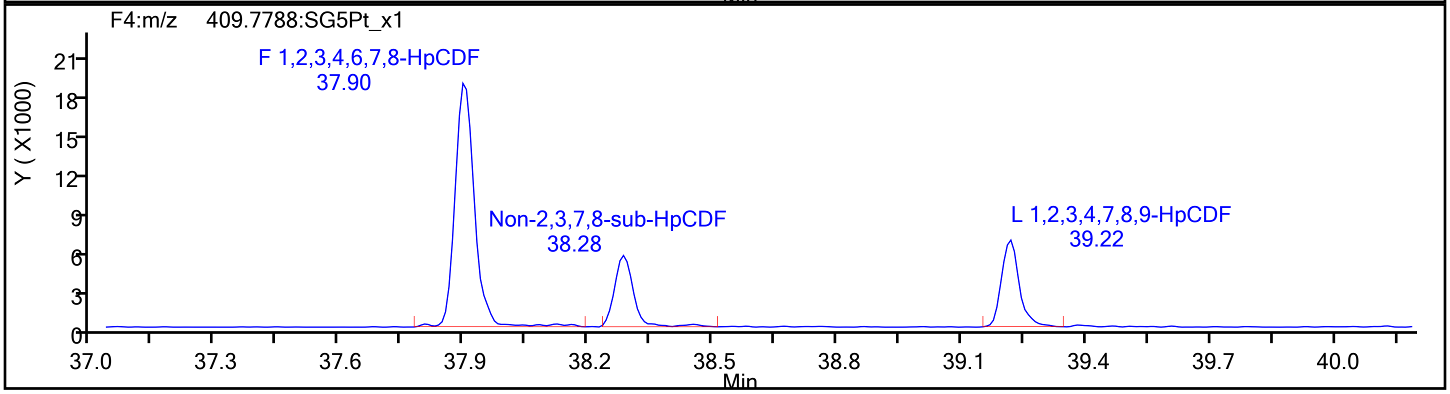

HpCDF Standards

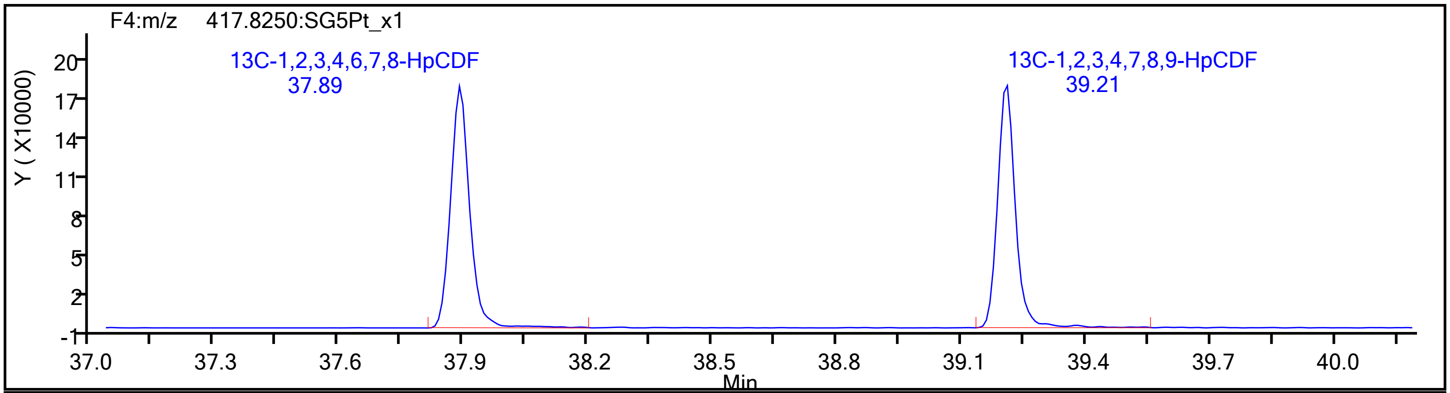

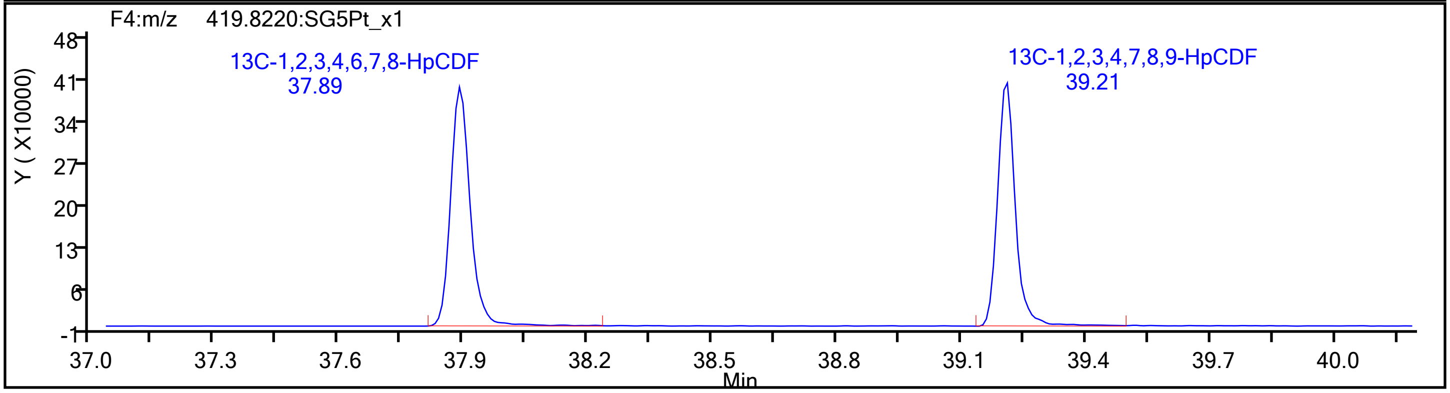

Report Date: 12-Oct-2020 11:32:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

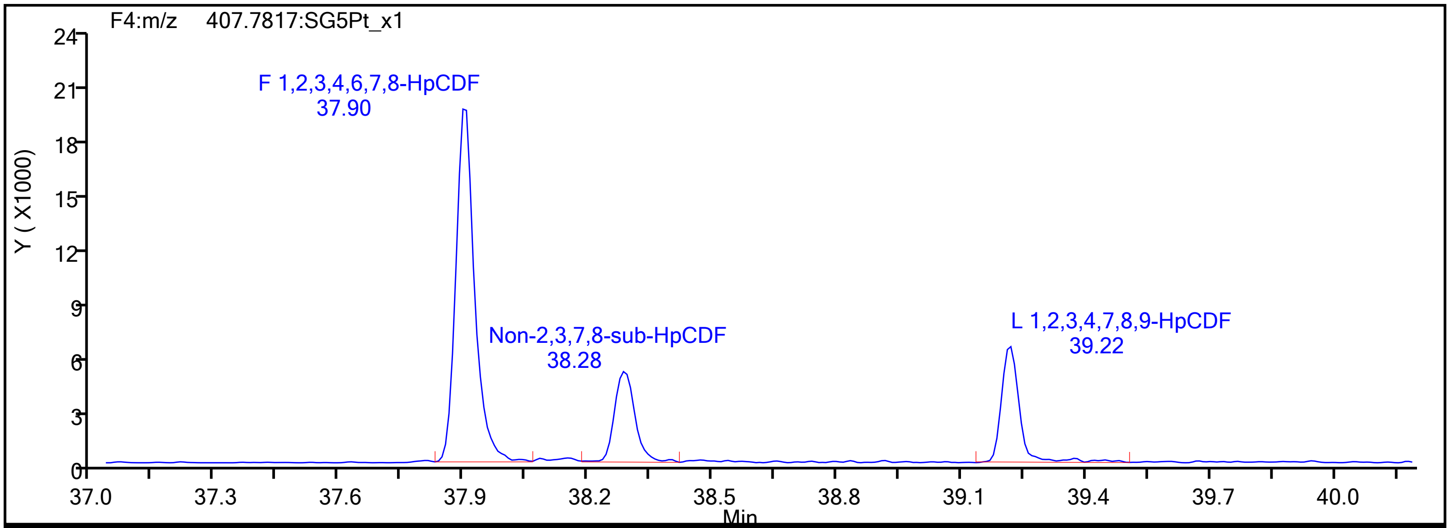

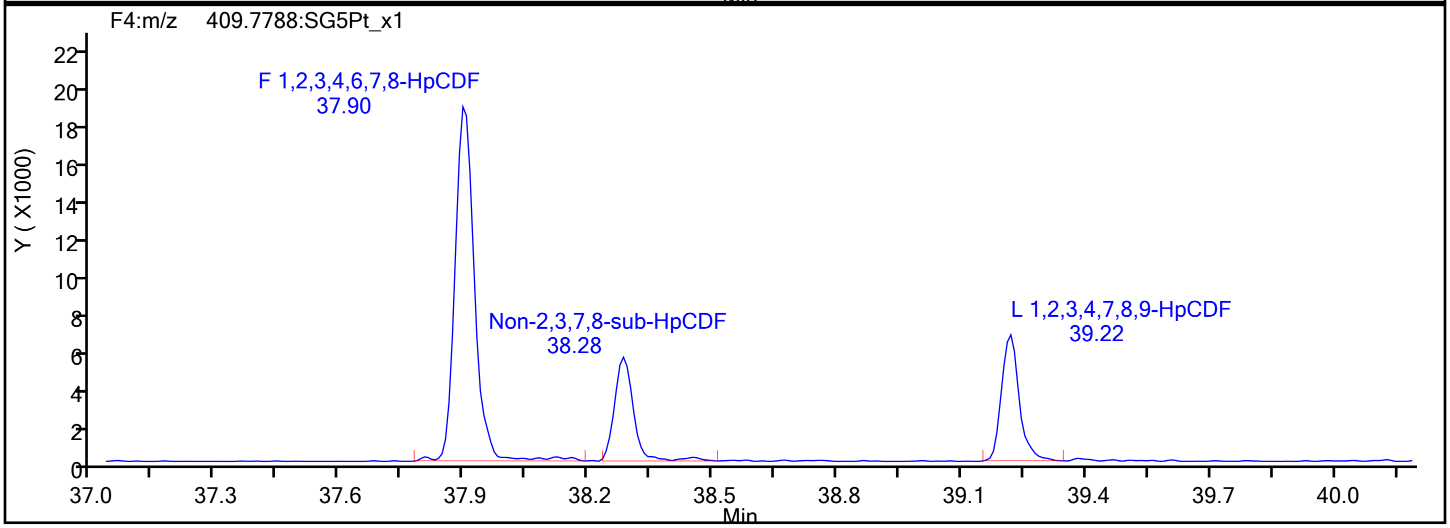

HpCDF Interference Mass

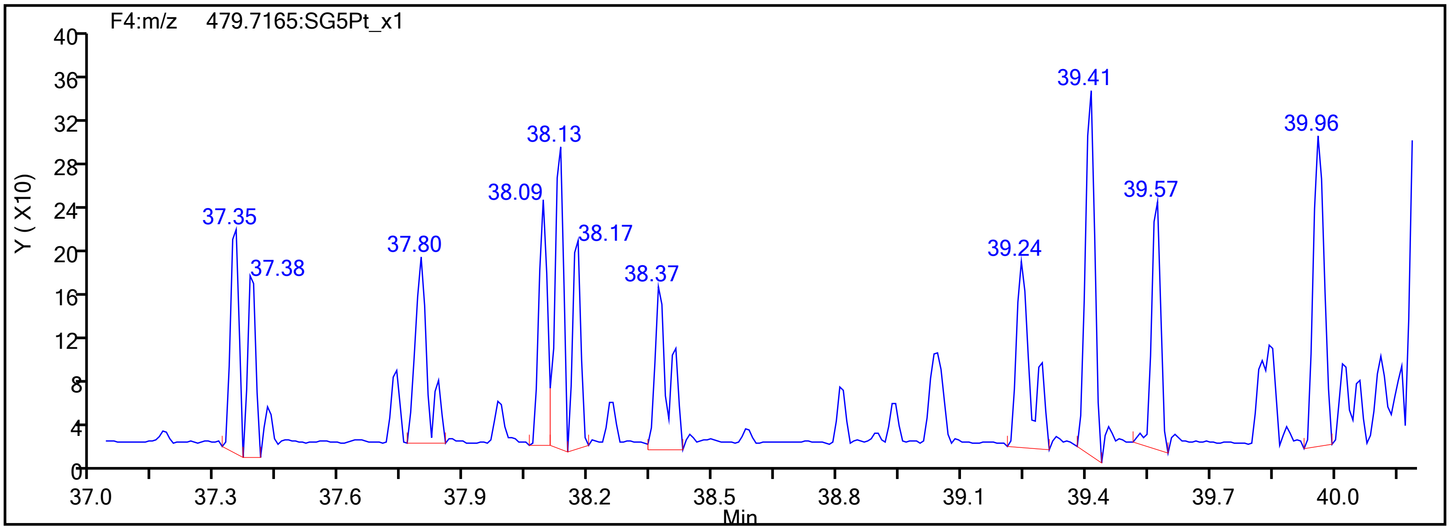

Report Date: 12-Oct-2020 11:32:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

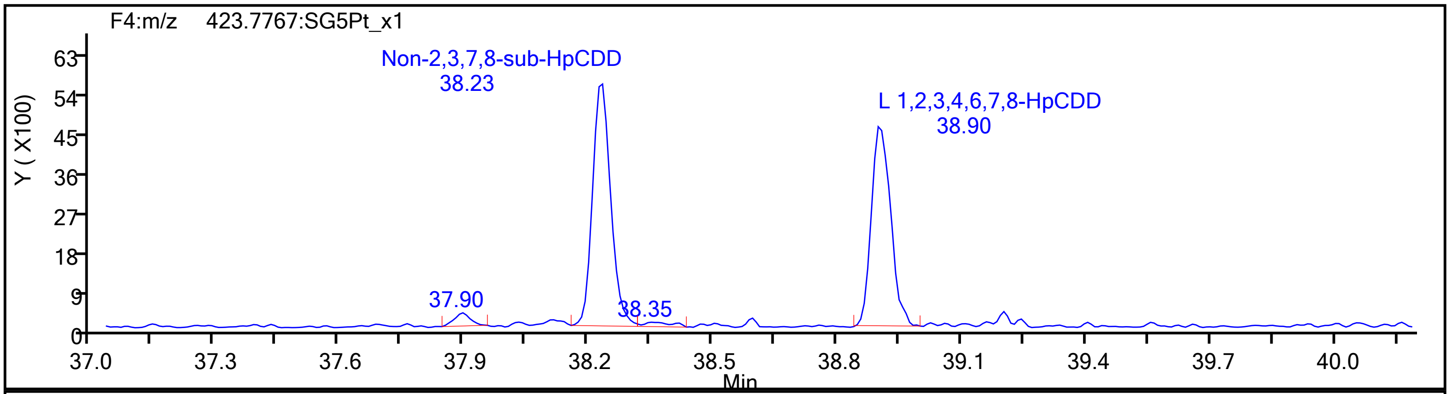

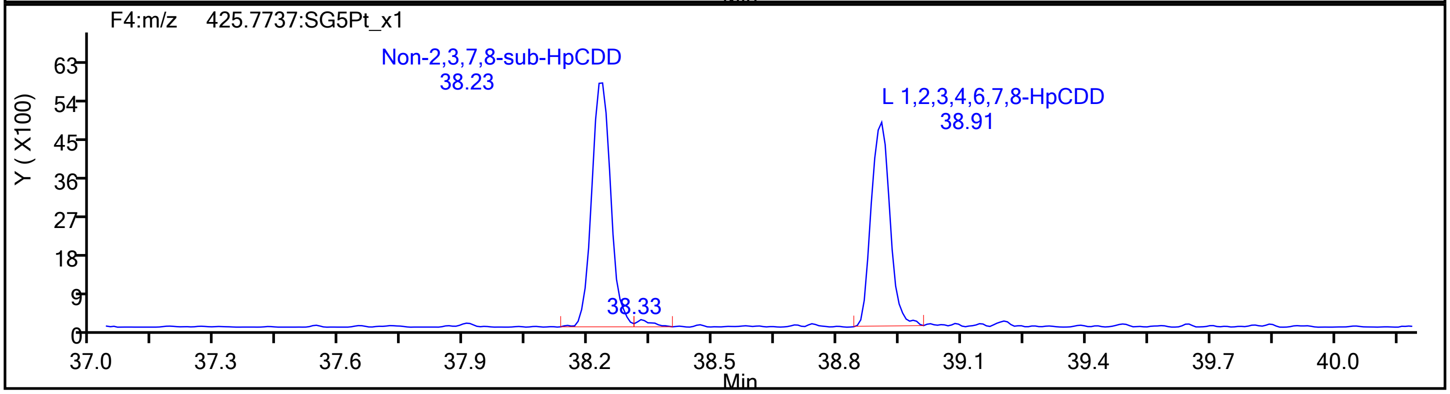

HpCDD Standards

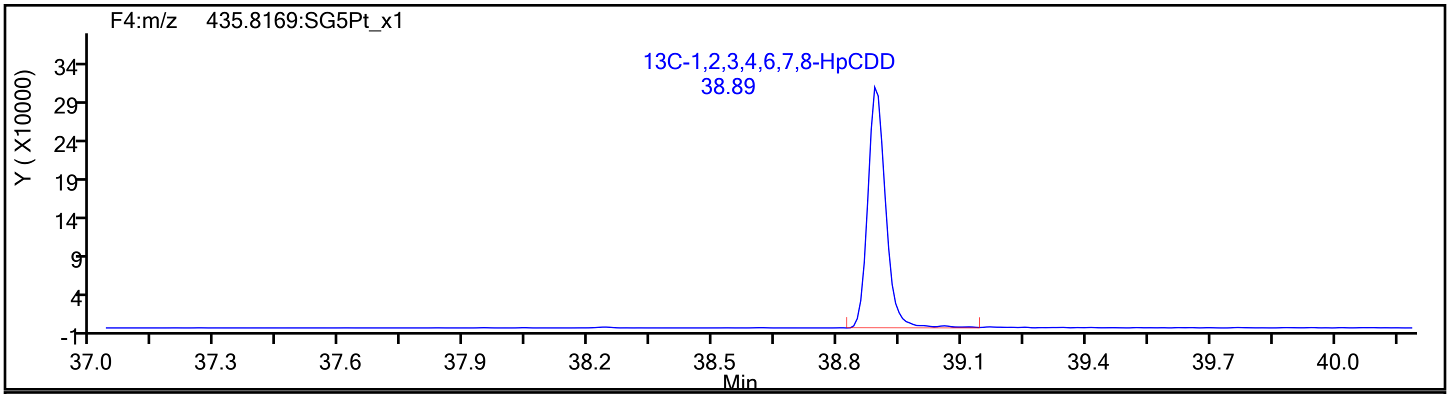

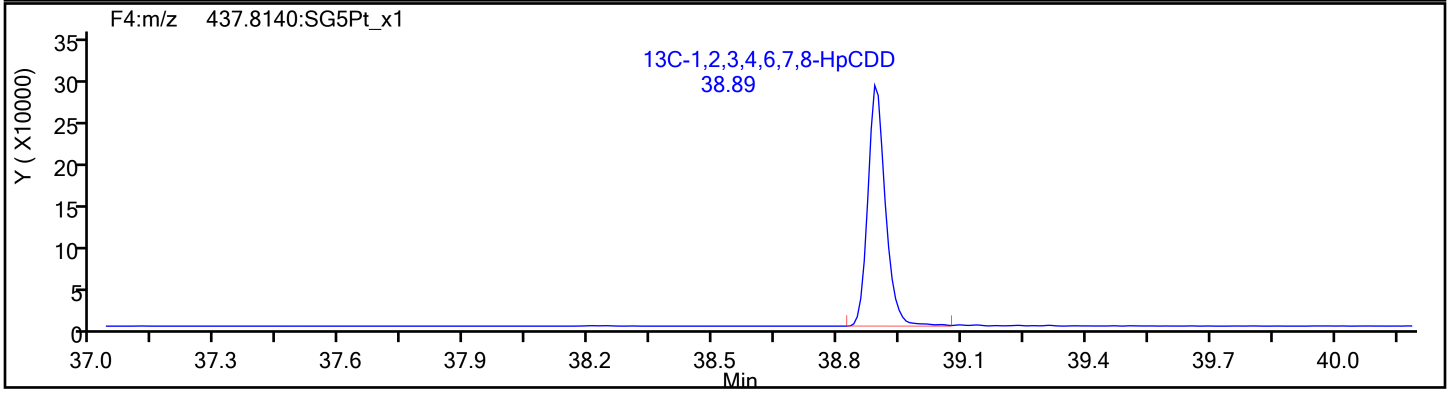

Report Date: 12-Oct-2020 11:32:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date: 10-Oct-2020 14:08:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-4-2

Worklist#: 420640

Sample Line#: 26

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

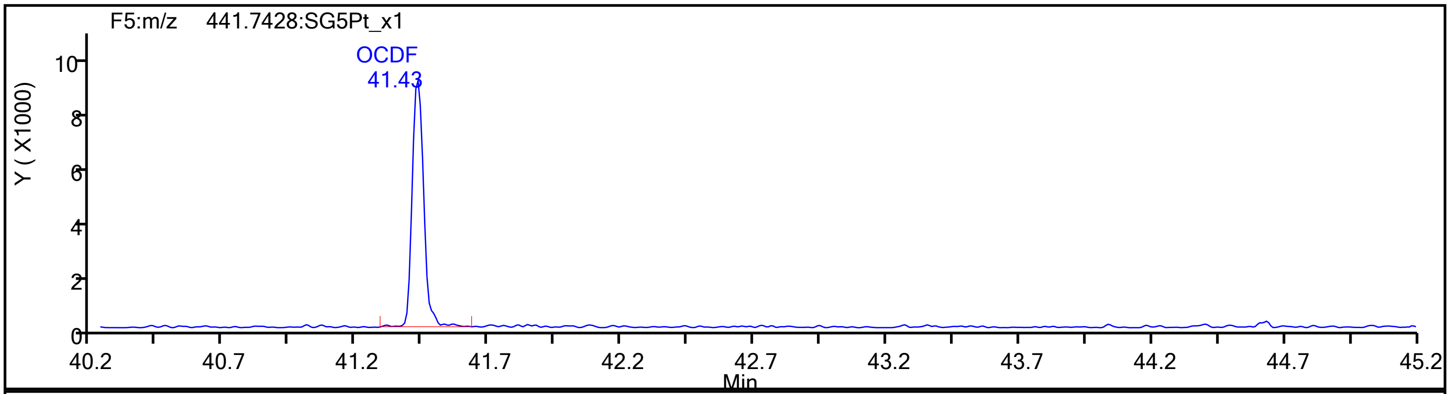

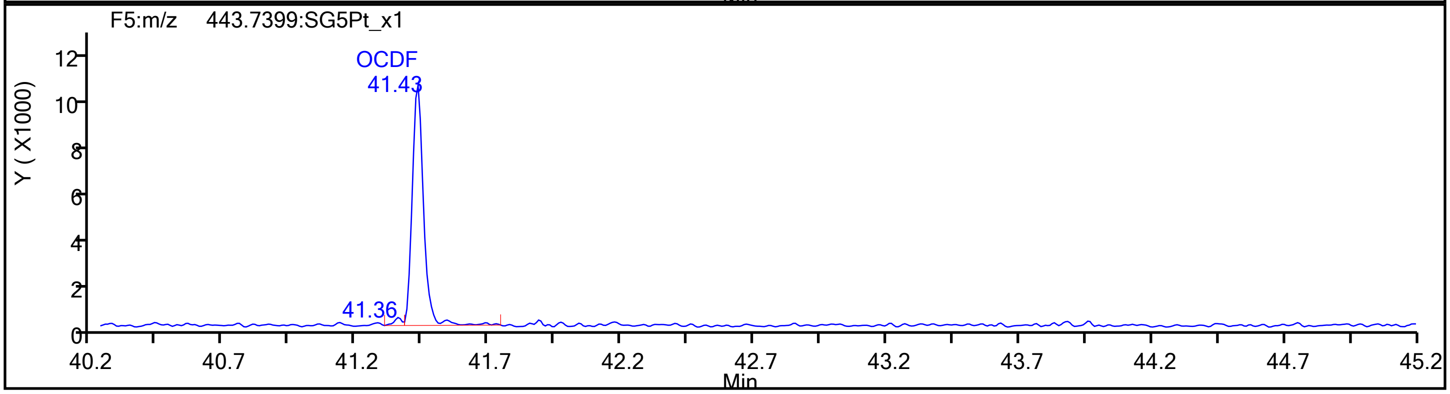

OCDF Standards

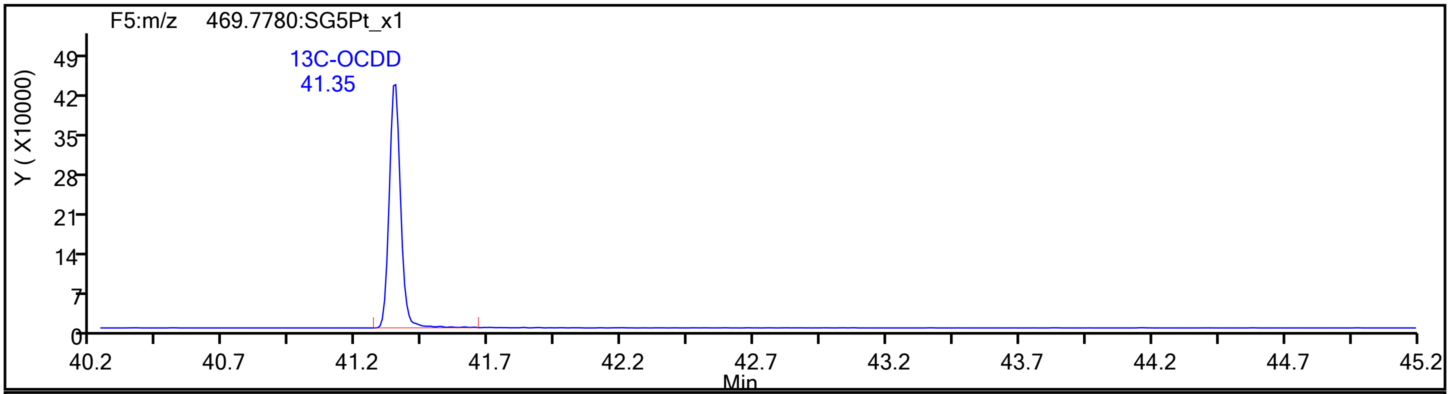

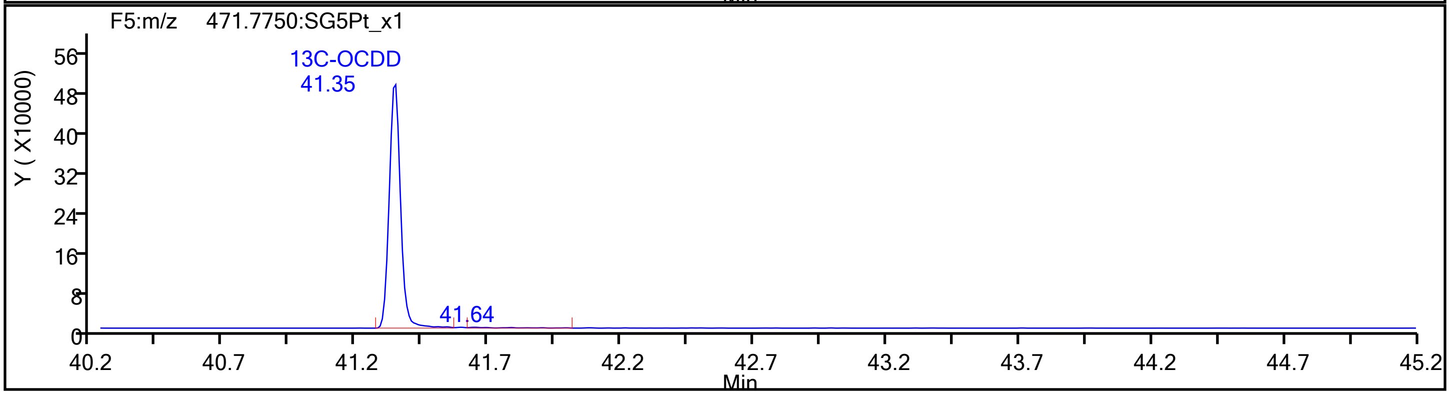

Report Date: 12-Oct-2020 11:32:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640
Sample Line#: 26
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

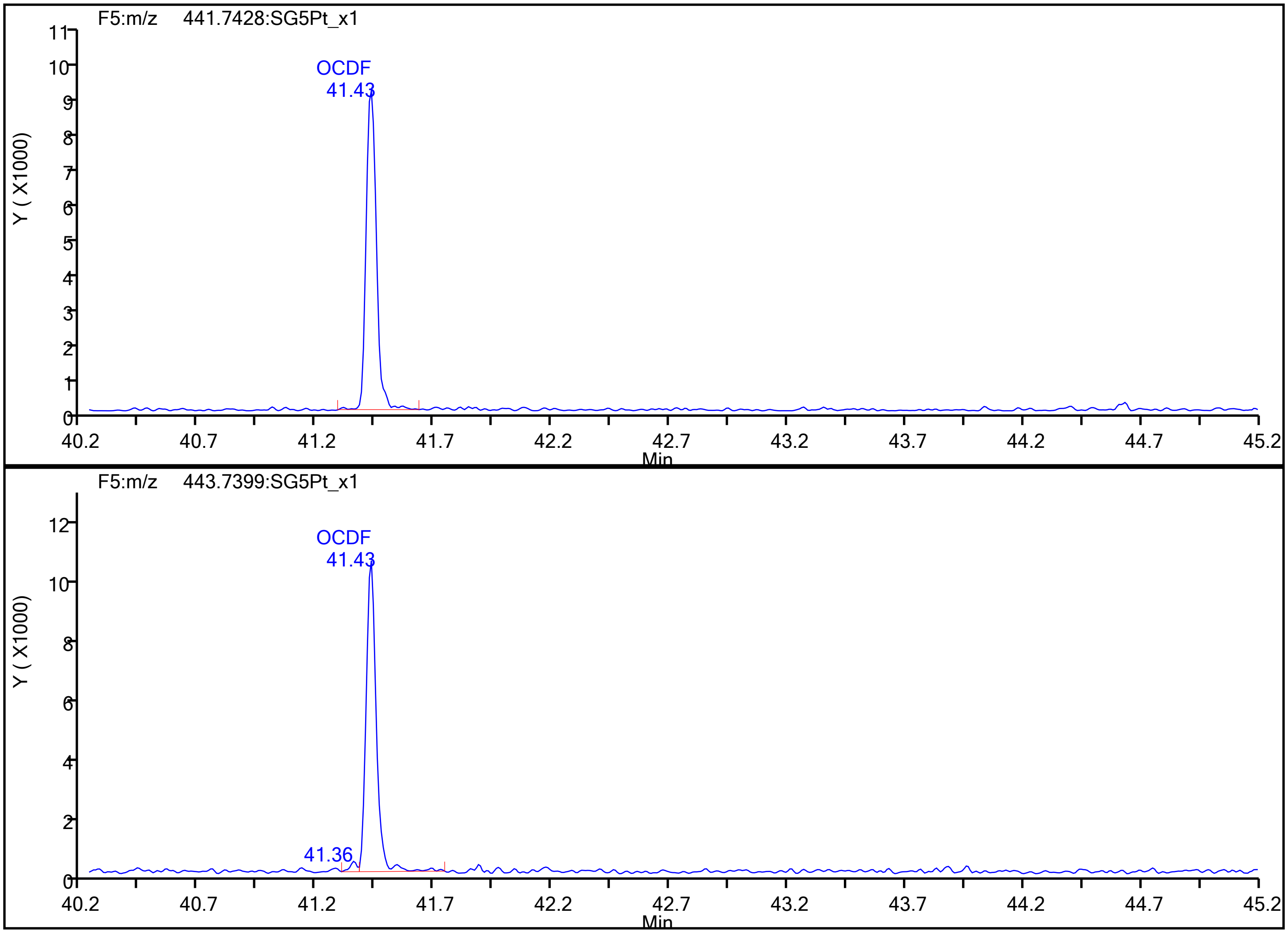

OCDF Interference Mass

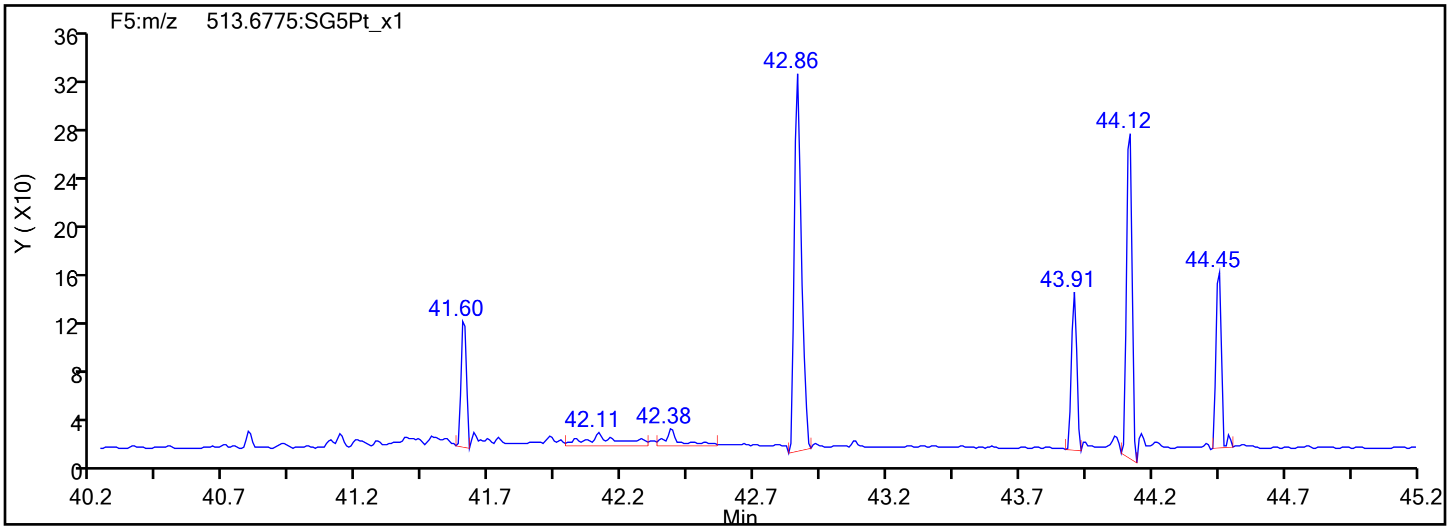

Report Date: 12-Oct-2020 11:32:09
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d
Injection Date: 10-Oct-2020 14:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 420640
Sample Line#: 26
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

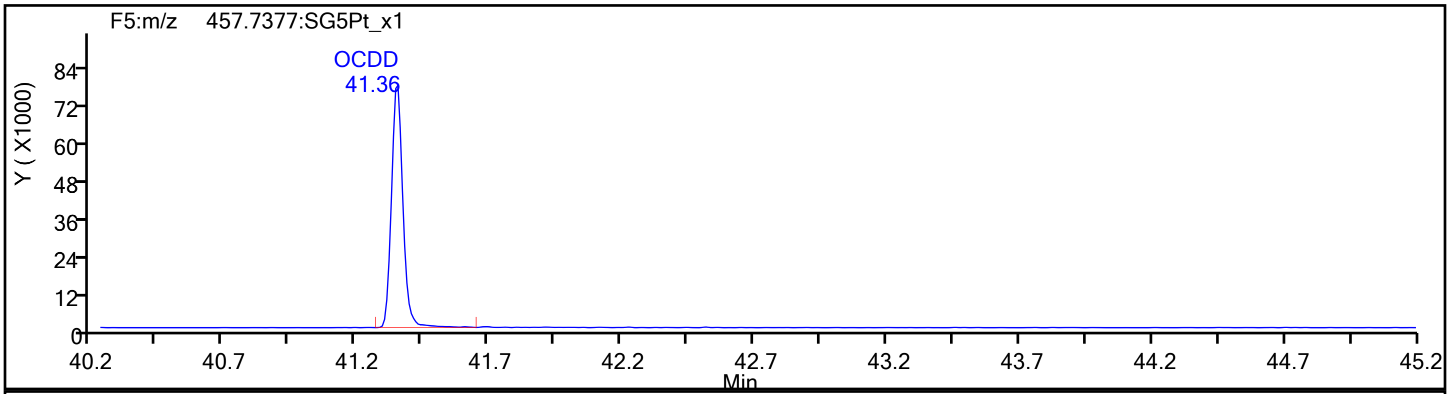

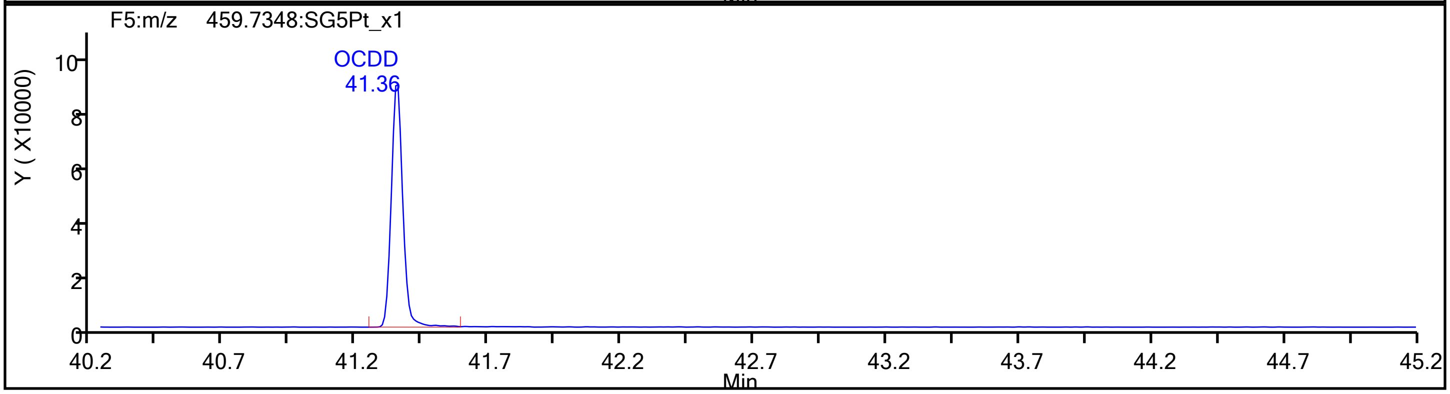

OCDD Standards

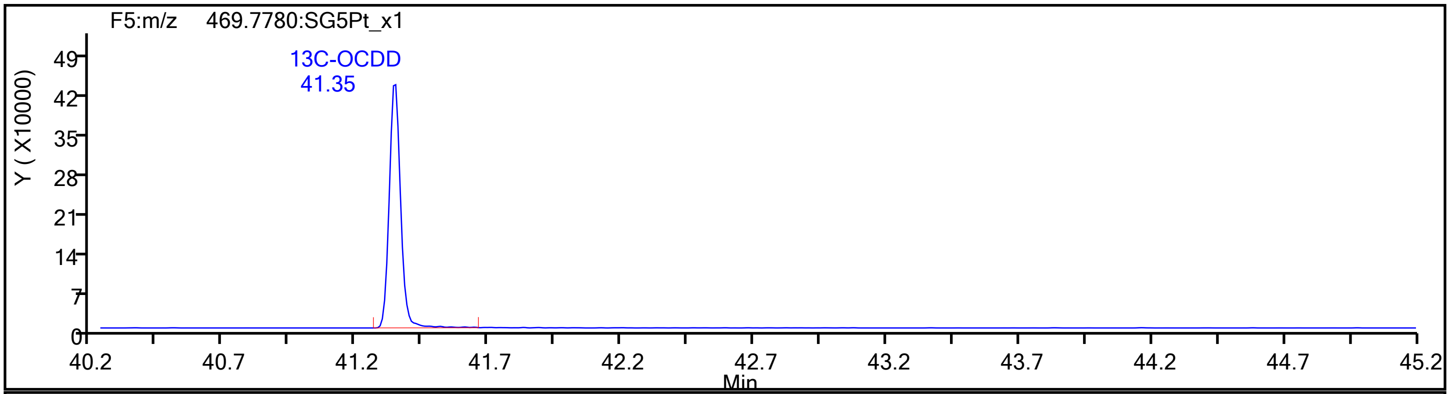

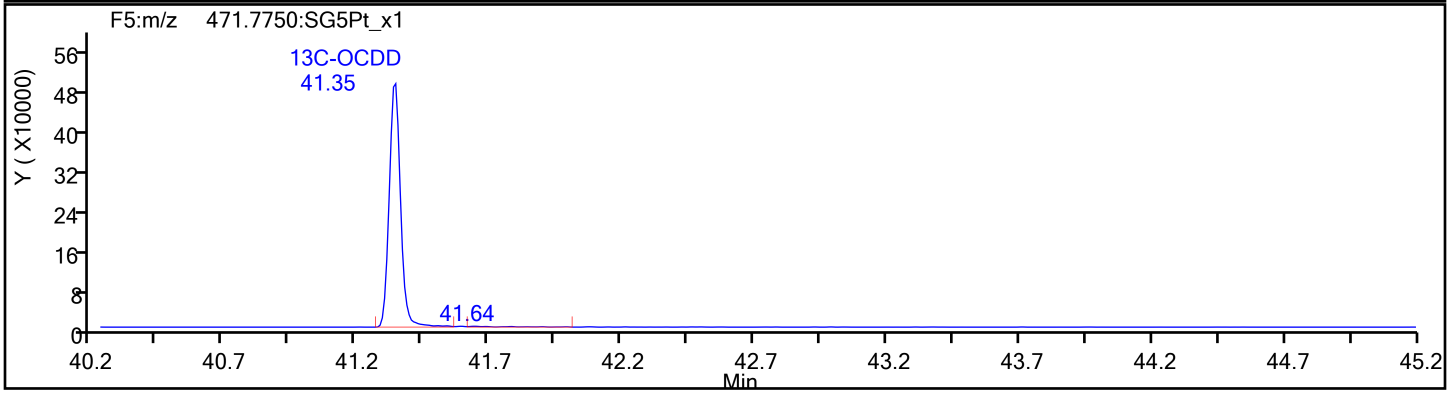

Report Date: 12-Oct-2020 11:32:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d		
Injection Date:	10-Oct-2020 14:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

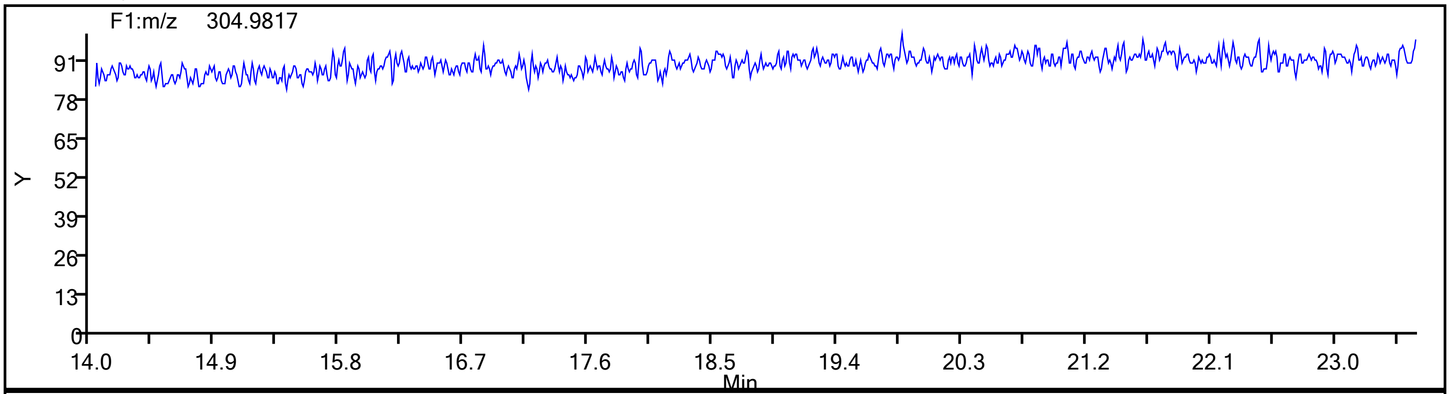

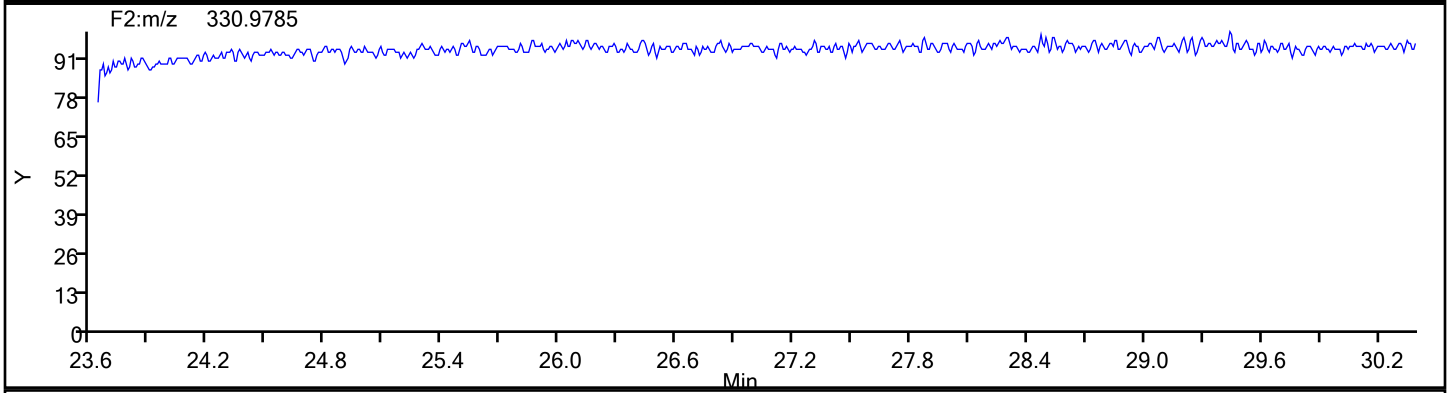

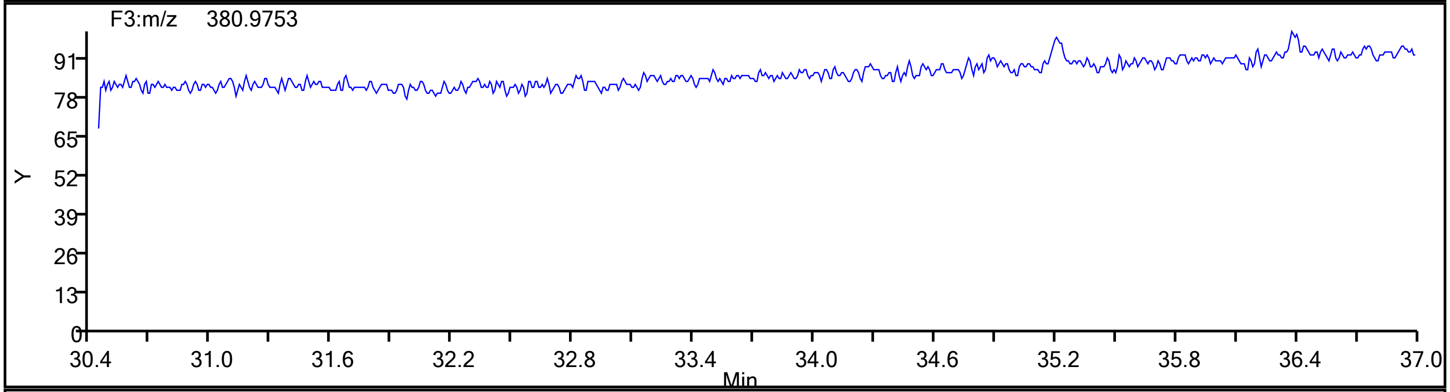

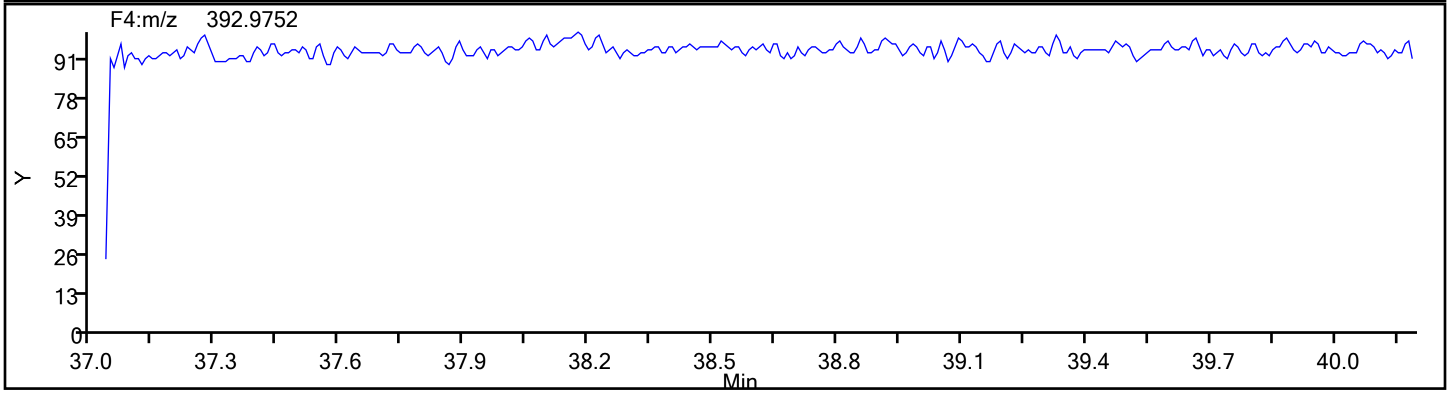

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_28.d

Injection Date:	10-Oct-2020 14:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	420640	Sample Line#:	26
Column Type:	DB-5	Column Dia:	0.32 mm

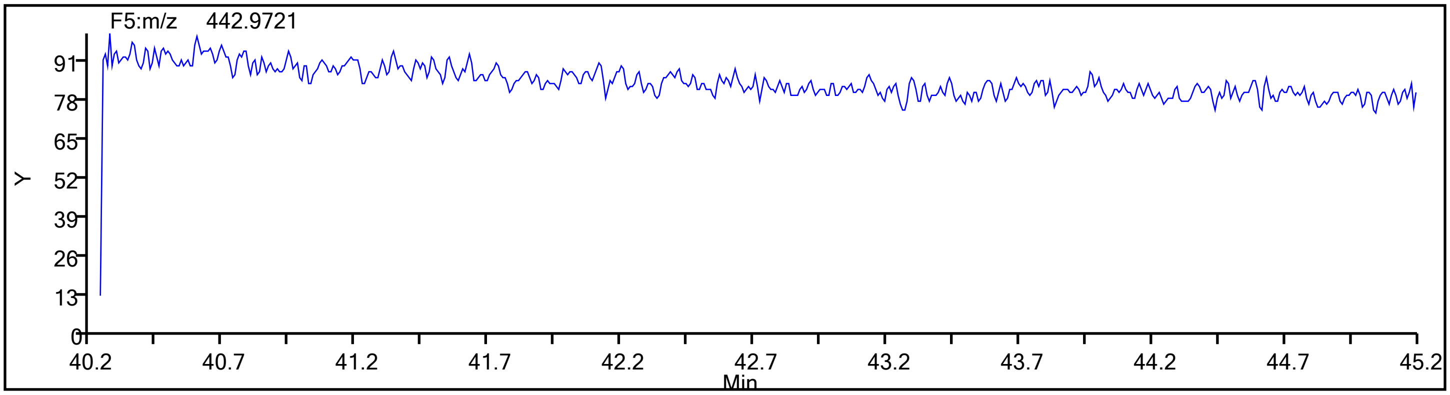

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-4-2 RA	Lab Sample ID: 320-65130-21 RA
Matrix: Water	Lab File ID: 12OC20A11D2_009.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1047.6(mL)	Date Analyzed: 10/12/2020 20:26
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2500	B	9.5	3.7

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_009.d				
Lims ID:	320-65130-A-21-A				
Client ID:	11215702-Tank#2-valve-4-2				
Sample Type:	Client				
Inject. Date:	12-Oct-2020 20:26:53	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65130-A-21-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	13-Oct-2020 18:46:50	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1633				
First Level Reviewer: shardaa		Date:	13-Oct-2020 18:35:21		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.977	71629365	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.115	78747431	0.80	1.5708	70.0	70.0	0.7239	0.7239	69.99	
2,3,7,8-TCDF	16.129	104457557	0.76	0.9943	133.4	133.4	0.1957	0.1957		
D 13C-2,3,7,8-TCDD	14.730	46964087	0.81	0.9834	66.7	66.7	2.722	2.722	66.68	
2,3,7,8-TCDD	14.743	29394994	0.79	1.2822	48.8	48.8	0.2929	0.2929		
$ 37Cl4-2,3,7,8-TCDD	14.743	28743241		0.9945	40.3	40.3	0.1597	0.1597	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_009.d
Lims ID: 320-65130-A-21-A
Client ID: 11215702-Tank#2-valve-4-2
Sample Type: Client
Inject. Date: 12-Oct-2020 20:26:53 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-21-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:21

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.977	14.967	1		31712164	8027099	79704	199260	101		
333.9339	14.977	14.967	1		39917201	10113652	114528	286320	88	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.115	16.092	1	1.076	34918480	7793486	43815	109537	178		
317.9389	16.115	16.092	1	1.076	43828951	9859036	38693	96732	255	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.129	16.312	1	1.001	45262342	10472215	6164	15410	1699		
305.8987	16.129	16.312	1	1.001	59195215	13619434	7572	18930	1799	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.730	15.341	1	0.984	21012372	5501777	79704	199260	69		
333.9339	14.730	15.341	1	0.984	25951715	6687273	114528	286320	58	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.743	15.613	1	1.001	12993440	3254627	8924	22310	365		
321.8936	14.743	15.613	1	1.001	16401554	4127348	9389	23472	440	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.743	15.356	1	0.984	28743241	7357261	11523	28807	638		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:25 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_009.d

Injection Date: 12-Oct-2020 20:26:53 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-4-2

Worklist#: 421482 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

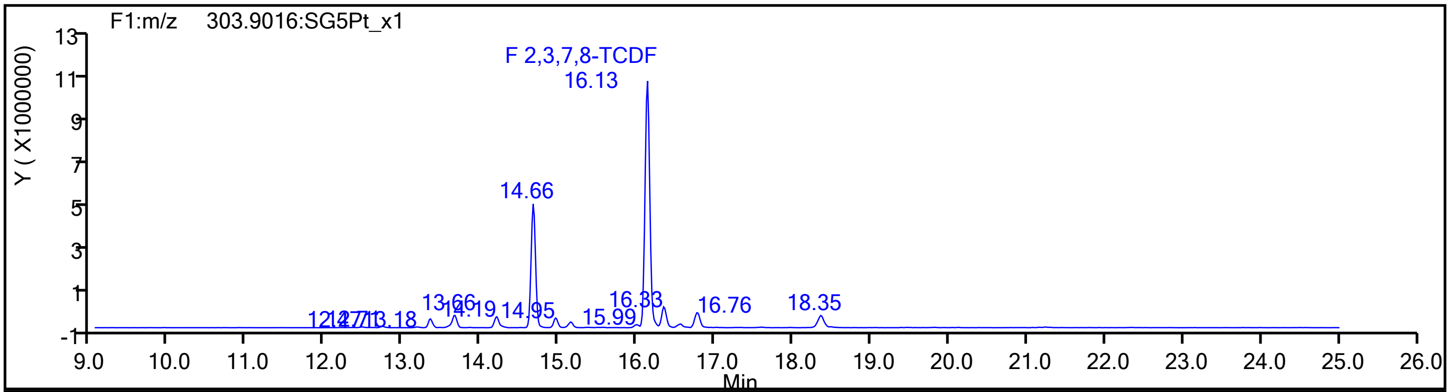

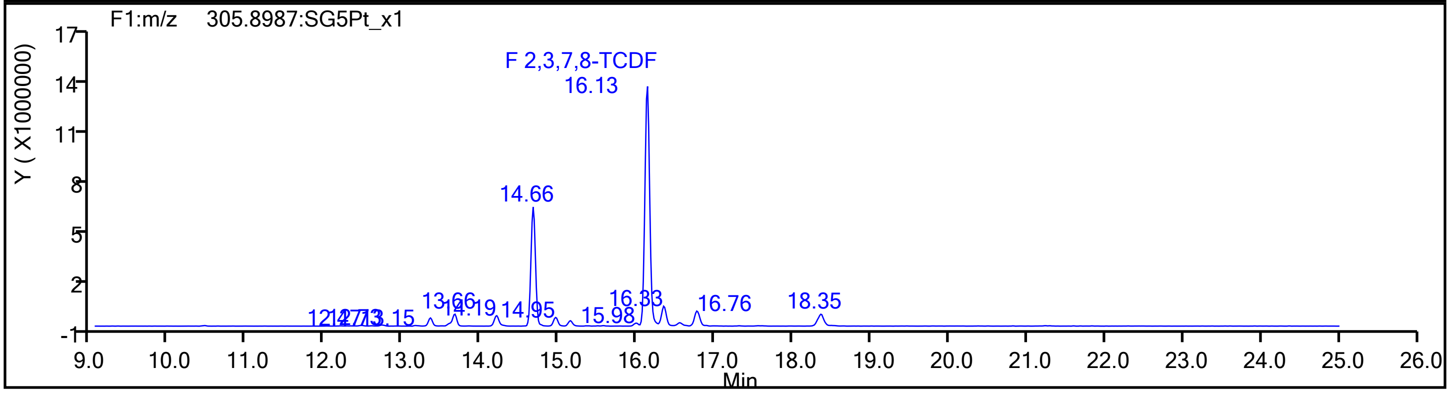

TCDF Standards

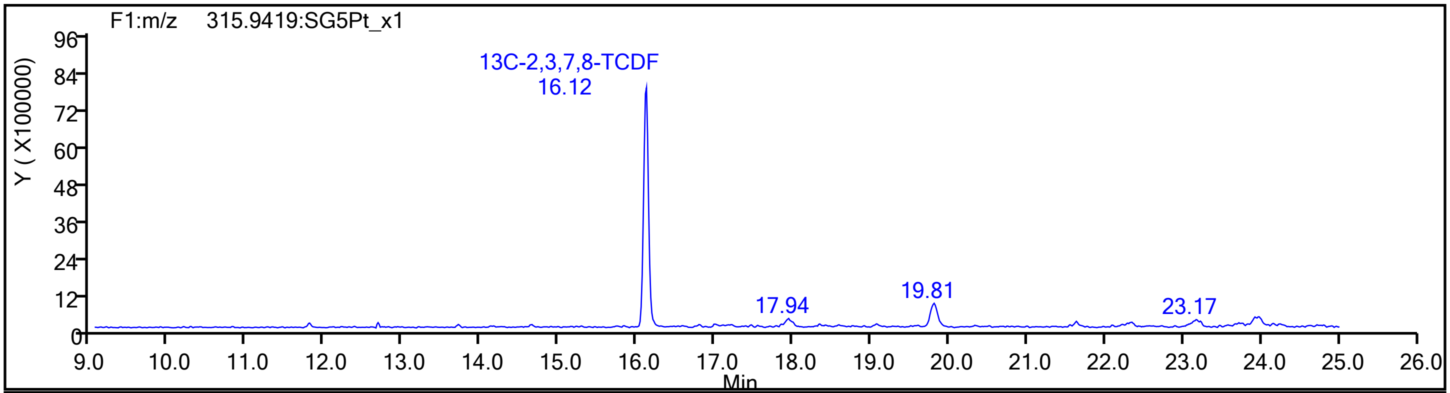

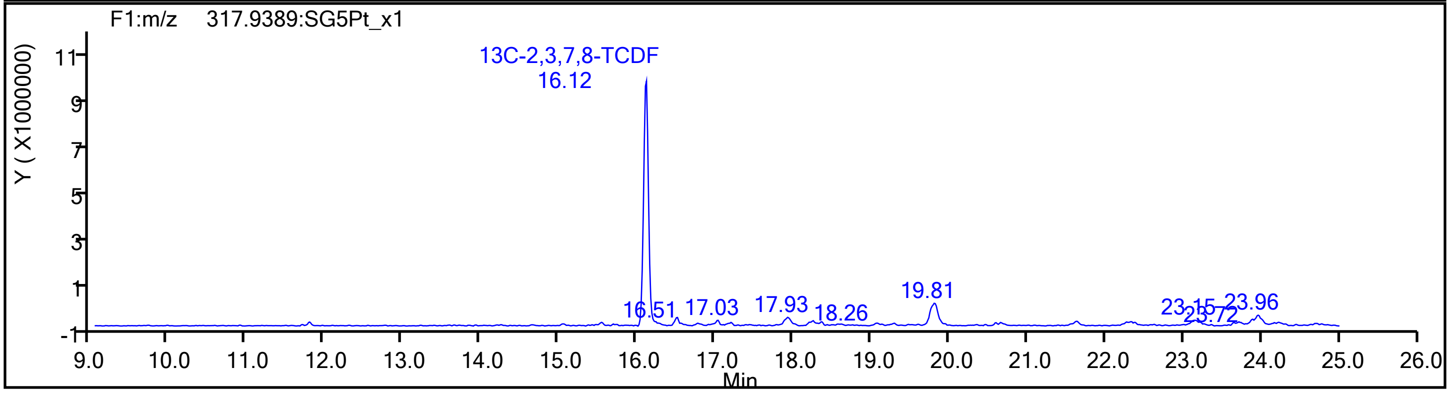

Report Date: 14-Oct-2020 12:17:25 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_009.d

Injection Date:	12-Oct-2020 20:26:53	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	421482	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

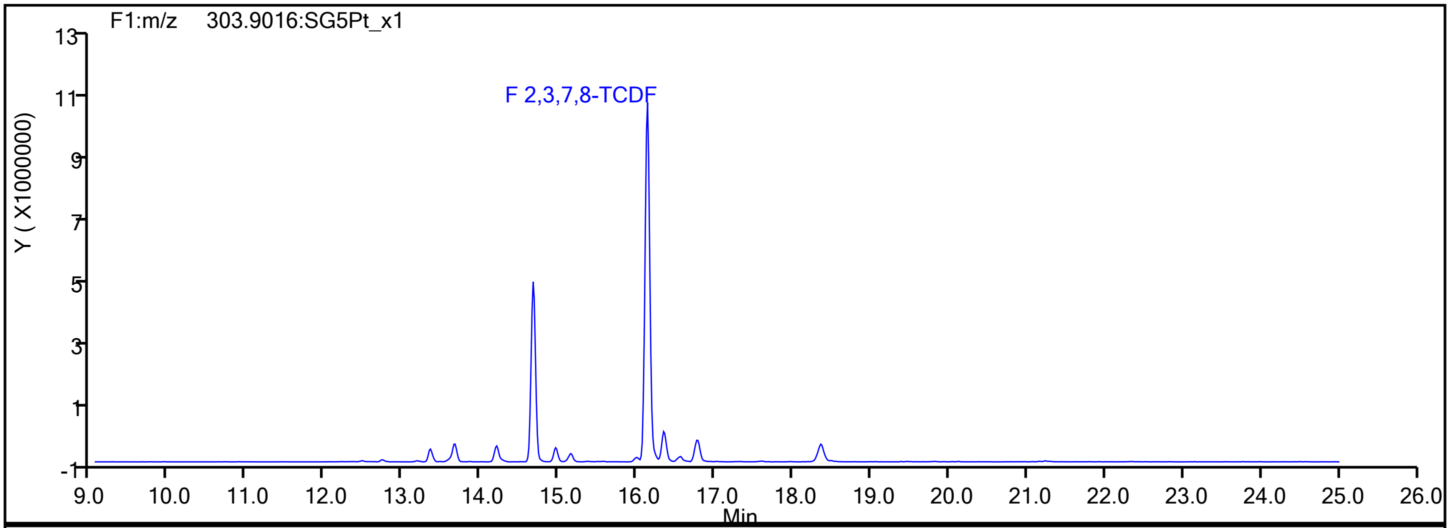

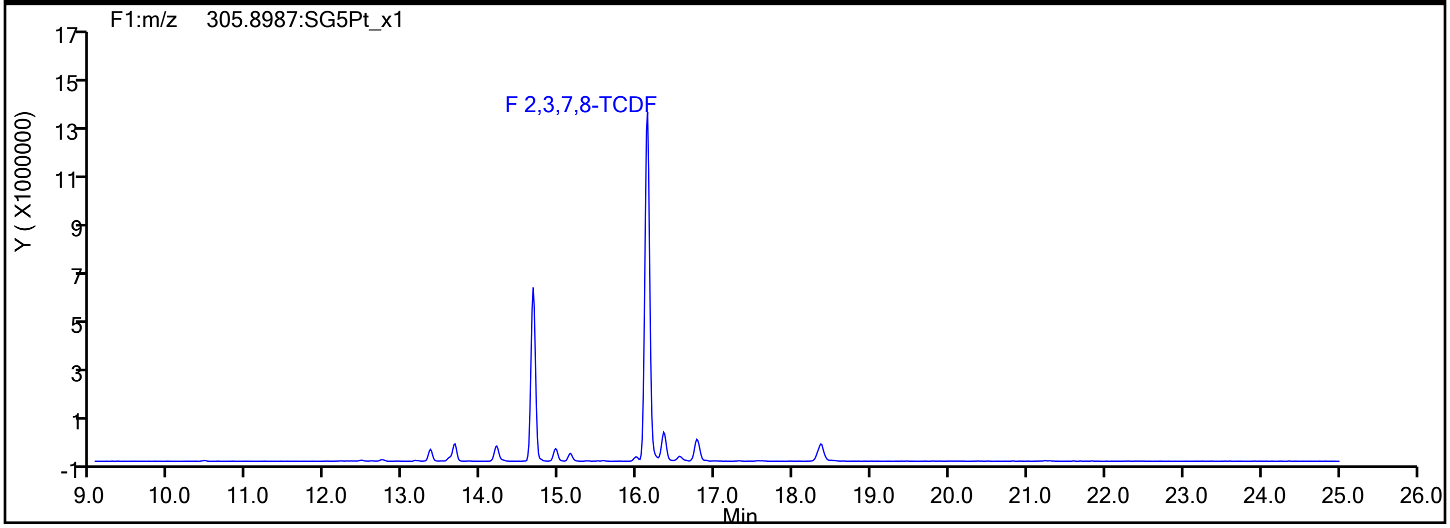

TCDF Interference Mass

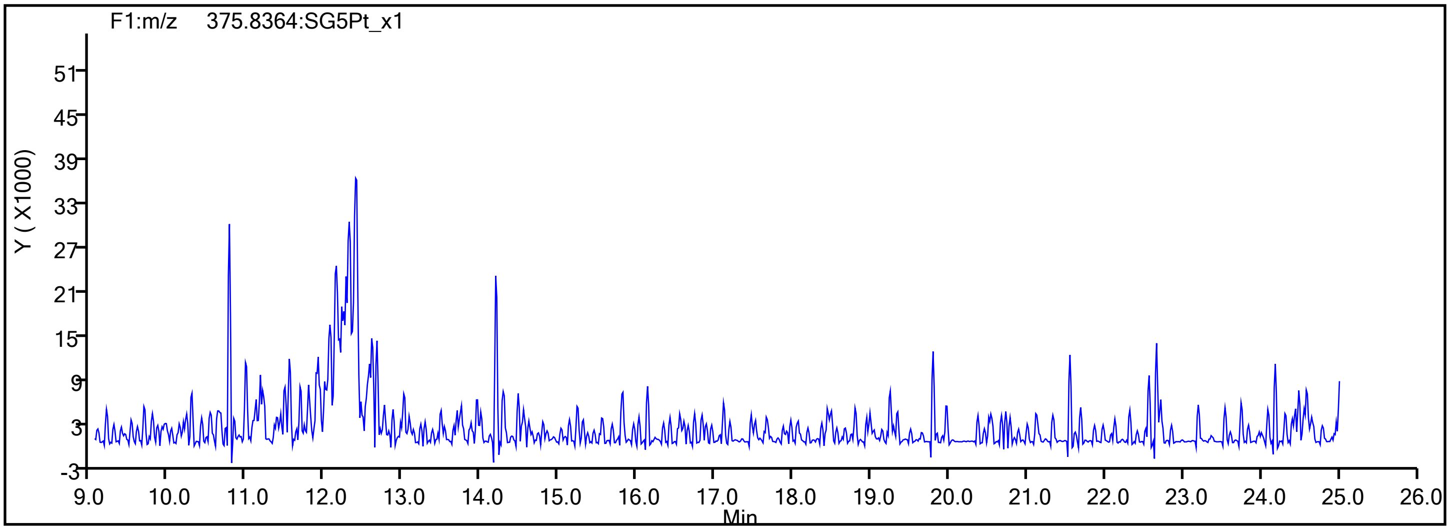

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_009.d
Injection Date: 12-Oct-2020 20:26:53
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-4-2
Worklist#: 421482
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

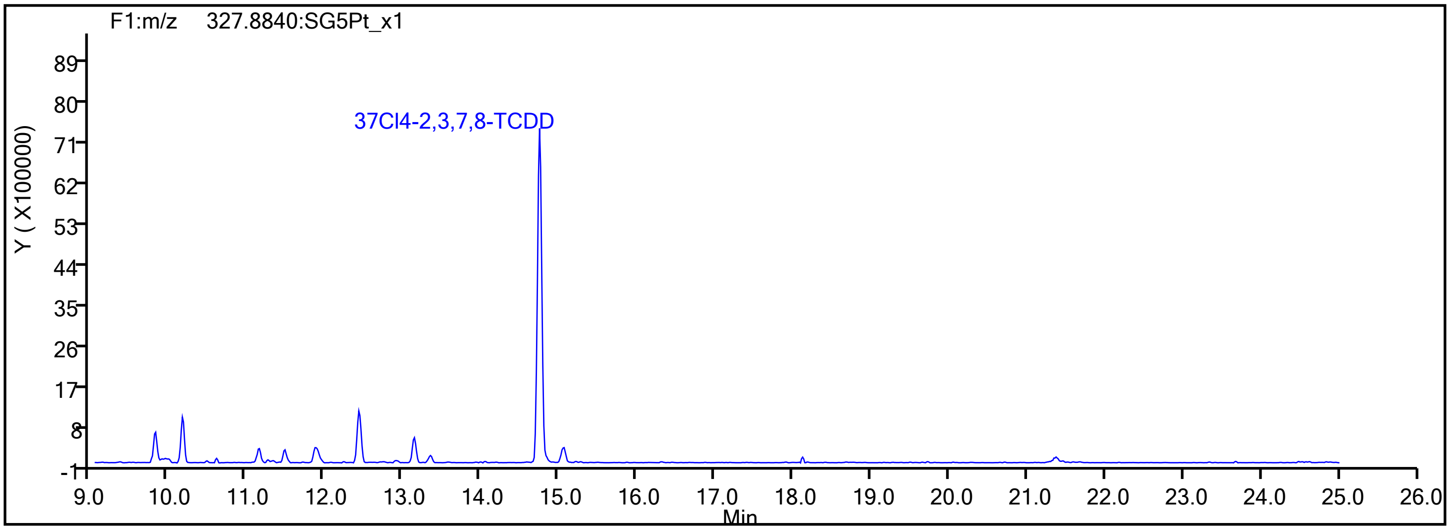

37Cl4-TCDD Standards

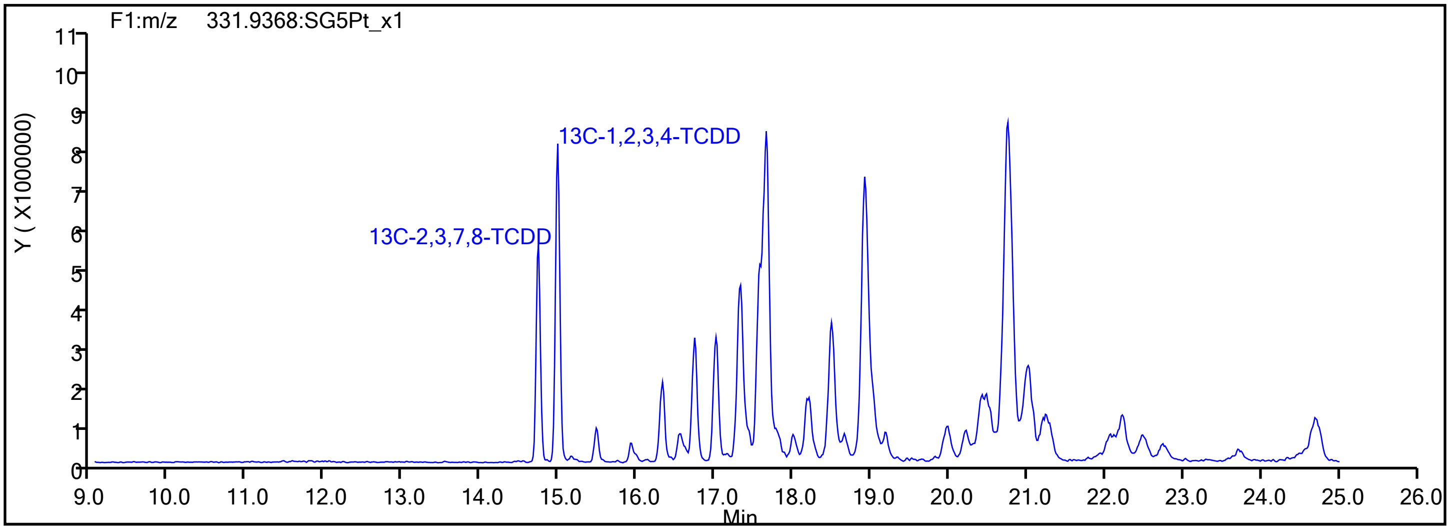

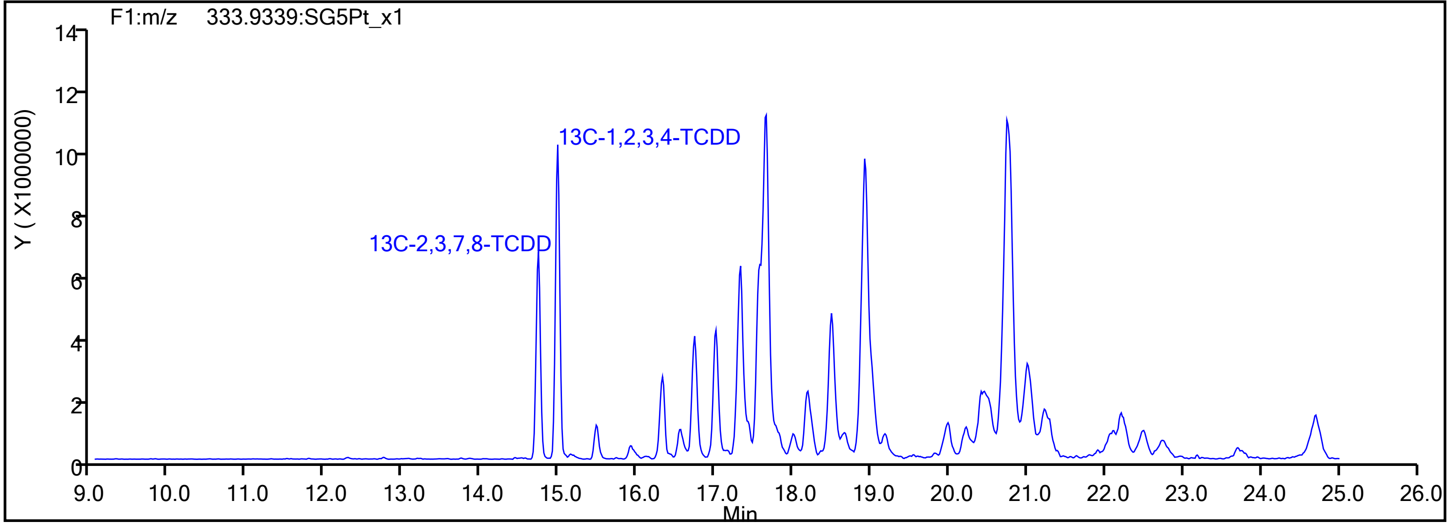

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_009.d		
Injection Date:	12-Oct-2020 20:26:53	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-4-2		
Worklist#:	421482	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

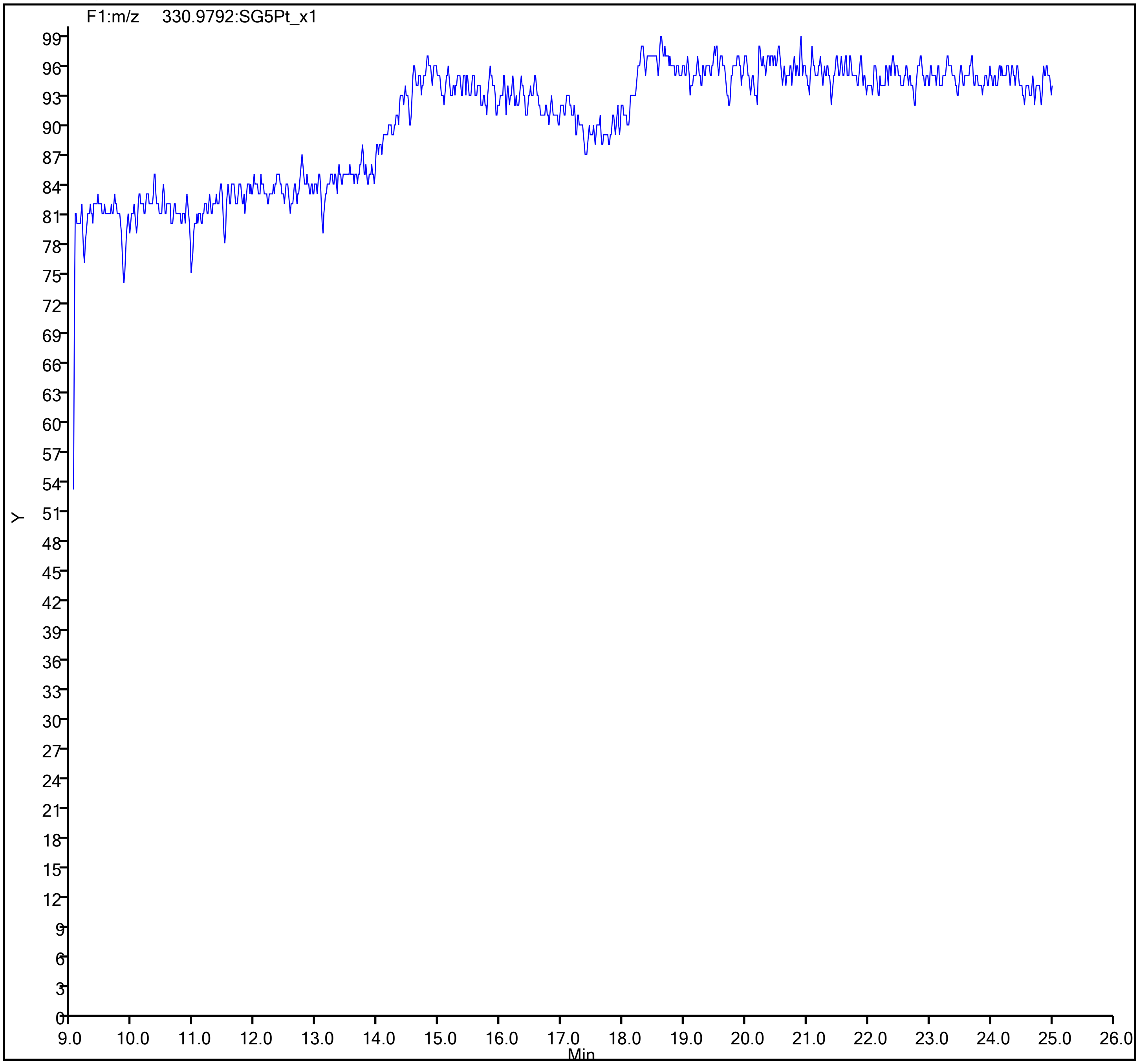

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: 11215702-Tank#2-valve-5-2 Lab Sample ID: 320-65130-22

Matrix: Water Lab File ID: 09oc20dfs1_29.d

Analysis Method: 1613B Date Collected: 09/11/2020 09:30

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1047.2(mL) Date Analyzed: 10/10/2020 14:56

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1300		9.5	4.1
40321-76-4	1,2,3,7,8-PeCDD	13	J	48	1.3
57117-41-6	1,2,3,7,8-PeCDF	120		48	1.6
57117-31-4	2,3,4,7,8-PeCDF	88		48	1.9
39227-28-6	1,2,3,4,7,8-HxCDD	2.4	J B	48	0.33
57653-85-7	1,2,3,6,7,8-HxCDD	1.5	J	48	0.41
19408-74-3	1,2,3,7,8,9-HxCDD	0.84	J q	48	0.34
70648-26-9	1,2,3,4,7,8-HxCDF	260		48	1.3
57117-44-9	1,2,3,6,7,8-HxCDF	67		48	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	4.8	J B	48	0.98
60851-34-5	2,3,4,6,7,8-HxCDF	7.6	J	48	0.96
35822-46-9	1,2,3,4,6,7,8-HpCDD	35	J	48	0.65
67562-39-4	1,2,3,4,6,7,8-HpCDF	97	B	48	0.51
55673-89-7	1,2,3,4,7,8,9-HpCDF	34	J B	48	0.54
3268-87-9	OCDD	690	B	95	0.81
39001-02-0	OCDF	64	J B	95	0.78
41903-57-5	Total TCDD	1400		9.5	4.1
30402-14-3	Total TCDF	6500	B q G	17	17
36088-22-9	Total PeCDD	13	J	48	1.3
30402-15-4	Total PeCDF	340	q	48	1.7
34465-46-8	Total HxCDD	7.5	J B q	48	0.36
55684-94-1	Total HxCDF	370	B	48	1.1
37871-00-4	Total HpCDD	79		48	0.65
38998-75-3	Total HpCDF	160	B	48	0.52

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-5-2	Lab Sample ID: 320-65130-22
Matrix: Water	Lab File ID: 09oc20dfs1_29.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1047.2(mL)	Date Analyzed: 10/10/2020 14:56
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	69		25-164
89059-46-1	13C-2,3,7,8-TCDF	66		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	69		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	71		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	69		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	91		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	64		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	65		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	66		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	69		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	74		26-138
114423-97-1	13C-OCDD	77		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Lims ID: 320-65130-A-22-A
Client ID: 11215702-Tank#2-valve-5-2
Sample Type: Client
Inject. Date: 10-Oct-2020 14:56:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-22-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:39:57 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: messecara Date: 10-Oct-2020 23:25:45

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.671	2470404	0.83	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.769	2589210	0.78	1.5883	66.0	66.0	0.3909	0.3909	65.99	
2,3,7,8-TCDF	18.795	5645517	0.80	1.0857	200.8	200.8	0.8808	0.8808		E
A Non-2,3,7,8-sub-TCDF	18.413	3926663	0.77	1.0857	141.4	139.7	0.8808	83.9		RQ
S Total TCDF					342.3	340.5	0.8808	0.8808		RQ
D 13C-2,3,7,8-TCDD	20.031	1895759	0.83	1.1194	68.6	68.6	0.3204	0.3204	68.55	
2,3,7,8-TCDD	20.049	1366962	0.76	1.0810	66.7	66.7	0.2155	0.2155		
$ 37Cl4-2,3,7,8-TCDD	20.049	1075976		1.1468	38.0	38.0	0.0529	0.0529	94.95	
A Non-2,3,7,8-sub-TCDD	19.200	115290	0.75	1.0810	5.626	5.626	0.2155	5.002		
S Total TCDD					72.3	72.3	0.2155	0.2155		
D 13C-1,2,3,7,8-PeCDF	25.890	2603943	1.59	1.4782	71.3	71.3	0.2104	0.2104	71.31	
1,2,3,7,8-PeCDF	25.915	177498	1.56	1.0547	6.463	6.463	0.0830	0.0830		
D 13C-2,3,4,7,8-PeCDF	27.314	2371194	1.56	1.3912	69.0	69.0	0.2236	0.2236	68.99	
2,3,4,7,8-PeCDF	27.339	120249	1.64	1.1035	4.595	4.595	0.0970	0.0970		M
A F1 PeCDFs	23.059						0.0162	0.0162		
A Non-2,3,7,8-sub-PeCDF	26.475	179974	1.55	1.0791	6.794	6.705	0.0892	2.984		RQM
S Total PeCDF					17.9	17.8	0.0900	0.0900		RQ
D 13C-1,2,3,7,8-PeCDD	28.072	1613923	1.64	0.9415	69.4	69.4	0.1638	0.1638	69.39	
1,2,3,7,8-PeCDD	28.098	11915	1.55	1.0680	0.6913	0.6913	0.0705	0.0705		M
A Non-2,3,7,8-sub-PeCDD	26.975						0.0705	0.0705		U
S Total PeCDD					0.6913	0.6913	0.0705	0.0705		
D 13C-1,2,3,4,7,8-HxCDF	33.799	1955890	0.53	1.1378	64.5	64.5	0.1932	0.1932	64.47	
1,2,3,4,7,8-HxCDF	33.824	339127	1.27	1.2643	13.7	13.7	0.0683	0.0683		
D 13C-1,2,3,6,7,8-HxCDF	33.993	2274133	0.53	1.3173	64.7	64.7	0.1669	0.1669	64.74	
1,2,3,6,7,8-HxCDF	34.009	98089	1.23	1.2230	3.527	3.527	0.0597	0.0597		
D 13C-2,3,4,6,7,8-HxCDF	34.954	2289618	0.53	1.2457	68.9	68.9	0.1765	0.1765	68.93	
2,3,4,6,7,8-HxCDF	34.962	11338	1.21	1.2464	0.3973	0.3973	0.0501	0.0501		
D 13C-1,2,3,7,8,9-HxCDF	35.940	2085688	0.53	1.1840	66.1	66.1	0.1857	0.1857	66.06	
1,2,3,7,8,9-HxCDF	35.957	6692	1.15	1.2638	0.2539	0.2539	0.0511	0.0511		
A Non-2,3,7,8-sub-HxCDF	33.855	39829	1.26	1.2494	1.482	1.482	0.0564	0.7670		
S Total HxCDF					19.4	19.4	0.0573	0.0573		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.729	2666589	1.25	2.9E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.198	2052345	1.27	0.8477	90.8	90.8	0.1671	0.1671	90.79	
1,2,3,4,7,8-HxCDD	35.198	2955	1.07	1.1561	0.1245	0.1245	0.0171	0.0171		M
D 13C-1,2,3,6,7,8-HxCDD	35.325	2078229	1.26	0.9979	78.1	78.1	0.1419	0.1419	78.10	
1,2,3,6,7,8-HxCDD	35.325	1700	1.12	1.0284	0.0795	0.0795	0.0216	0.0216		M
1,2,3,7,8,9-HxCDD	35.738	1071	1.24	1.1789	0.0508	0.0440	0.0177	0.0177		RQM
A Non-2,3,7,8-sub-HxCDD	34.365	3291	1.29	1.1211	0.1421	0.1421	0.0187	0.1421		
S Total HxCDD					0.3971	0.3902	0.0188	0.0188		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.897	2037503	0.44	0.9884	77.3	77.3	0.3225	0.3225	77.31	
1,2,3,4,6,7,8-HpCDF	37.906	155105	1.03	1.5064	5.053	5.053	0.0266	0.0266		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.212	1823516	0.46	0.9203	74.3	74.3	0.3464	0.3464	74.31	
1,2,3,4,7,8,9-HpCDF	39.229	47237	0.96	1.4548	1.781	1.781	0.0281	0.0281		
A Non-2,3,7,8-sub-HpCDF	38.593	44495	1.03	1.4806	1.557	1.557	0.0273	1.557		
S Total HpCDF					8.391	8.391	0.0274	0.0274		
D 13C-1,2,3,4,6,7,8-HpCDD	38.908	1914213	1.04	0.9556	75.1	75.1	0.1886	0.1886	75.12	
1,2,3,4,6,7,8-HpCDD	38.917	37531	1.05	1.0640	1.843	1.843	0.0343	0.0343		
A Non-2,3,7,8-sub-HpCDD	38.941	46239	1.08	1.0640	2.270	2.270	0.0343	2.270		
S Total HpCDD					4.113	4.113	0.0343	0.0343		
D 13C-OCDD	41.354	3036112	0.91	0.7420	153.4	153.4	0.2151	0.2151	76.72	
OCDF	41.438	72894	0.93	1.4296	3.359	3.359	0.0406	0.0406		M
OCDD	41.362	619958	0.89	1.1293	36.2	36.2	0.0426	0.0426		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Lims ID: 320-65130-A-22-A
Client ID: 11215702-Tank#2-valve-5-2
Sample Type: Client
Inject. Date: 10-Oct-2020 14:56:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-22-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:39:57 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: messecara Date: 10-Oct-2020 23:25:45

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.671	19.716	-3		1123226	173828	334	835	520		
333.9338	19.671	19.716	-3		1347178	208729	215	537	971	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.769	18.830	-4	0.954	1134362	179422	640	1600	280		
317.9389	18.769	18.830	-4	0.954	1454848	230005	310	775	742	0.78(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.795	18.865	-4	1.001	2517697	378203	663	1657	570		
305.8987	18.795	18.865	-4	1.001	3127820	476400	903	2257	528	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.449	18.413	-118	0.876	61512	11994	663	1657	18		
305.8987	16.440	18.413	-118	0.876	77101	15069	903	2257	17	0.80(0.65-0.89)	
303.9016	16.904	18.413	-90	0.901	114600	17779	663	1657	27		
305.8987	16.887	18.413	-91	0.900	143405	20640	903	2257	23	0.80(0.65-0.89)	
303.9016	17.300	18.413	-67	0.922	95003	14700	663	1657	22		
305.8987	17.291	18.413	-67	0.921	106180	16164	903	2257	18	0.89(0.65-0.89)	
303.9016	17.652	18.413	-46	0.940	107911	17308	663	1657	26		
305.8987	17.652	18.413	-46	0.940	133866	21709	903	2257	24	0.81(0.65-0.89)	
303.9016	18.124	18.413	-17	0.966	1049569	174739	663	1657	264		
305.8987	18.124	18.413	-17	0.966	1307609	213774	903	2257	237	0.80(0.65-0.89)	
303.9016	19.533	18.413	67	1.041	167132	26152	663	1657	39		
305.8987	19.525	18.413	67	1.040	266042	30881	903	2257	34	0.63(0.65-0.89)	
	Empc Correction				217054	33963	903	2257	38		
303.9016	21.887	18.413	208	1.166	151347	21411	663	1657	32		
305.8987	21.896	18.413	209	1.167	194374	25125	903	2257	28	0.78(0.65-0.89)	

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	20.031	20.067	-2	1.018	859309	123145	334	835	369		
333.9338	20.023	20.067	-3	1.018	1036450	156707	215	537	729	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.049	20.101	-3	1.001	589753	88478	166	415	533		
321.8936	20.049	20.101	-3	1.001	777209	112568	95	237	1185	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.049	20.103	-3	1.019	1075976	161574	93	232	1737		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.877	19.200	41	0.992	5014	1217	166	415	7		
321.8936	19.877	19.200	41	0.992	7768	1752	95	237	18	0.65(0.65-0.89)	
319.8965	20.676	19.200	88	1.032	44243	6837	166	415	41		
321.8936	20.684	19.200	89	1.033	58265	7755	95	237	82	0.76(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.890	25.934	-3	1.316	1597488	276874	289	722	958		
353.8970	25.890	25.934	-3	1.316	1006455	176566	187	467	944	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.915	25.951	-2	1.001	108053	17579	67	167	262		
341.8567	25.907	25.951	-3	1.001	69445	11976	92	230	130	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.314	27.359	-3	1.389	1443502	225512	289	722	780		
353.8970	27.314	27.359	-3	1.389	927692	145543	187	467	778	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	27.339	27.376	-2	1.001	74762	12321	67	167	184		M
341.8567	27.339	27.376	-2	1.001	45487	7331	92	230	80	1.64(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.059						2	5			
341.8567	23.059						27	67			
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	24.525	26.475	-117	0.947	49493	9036	67	167	135		
341.8567	24.533	26.475	-116	0.948	30615	5196	92	230	56	1.62(1.32-1.78)	M
339.8597	25.367	26.475	-66	0.980	6055	1026	67	167	15		
	Empc Correction				4583	965	67	167	14		
341.8567	25.384	26.475	-65	0.980	2957	623	92	230	7	2.05(1.32-1.78)	
339.8597	25.789	26.475	-41	0.996	7786	2300	67	167	34		
341.8567	25.789	26.475	-41	0.996	5947	1415	92	230	15	1.31(1.32-1.78)	
	Empc Correction				5023	1483	92	230	16		
339.8597	26.455	26.475	-1	1.022	30538	5129	67	167	77		
341.8567	26.463	26.475	-1	1.022	19331	3394	92	230	37	1.58(1.32-1.78)	
339.8597	27.643	26.475	70	1.068	18717	2692	67	167	40		
341.8567	27.634	26.475	69	1.067	10931	1760	92	230	19	1.71(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.072	28.109	-2	1.427	1002414	147810	157	392	941		
369.8919	28.064	28.109	-3	1.427	611509	93957	79	197	1189	1.64(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	28.098	28.134	-2	1.001	7234	1368	58	145	24		M
357.8516	28.098	28.134	-2	1.001	4681	792	15	37	53	1.55(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.975						58	145			
357.8516	26.975						15	37			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.799	33.838	-2	0.946	679168	129089	231	577	559		
385.8610	33.799	33.838	-2	0.946	1276722	232424	331	827	702	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.824	33.855	-2	1.001	189843	34713	69	172	503		
375.8178	33.824	33.855	-2	1.001	149284	27841	56	140	497	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.993	34.024	-2	0.951	784475	147114	231	577	637		
385.8610	34.001	34.024	-1	0.952	1489658	280409	331	827	847	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.009	34.049	-2	1.000	54155	10066	69	172	146		
375.8178	34.018	34.049	-2	1.001	43934	7985	56	140	143	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.954	34.976	-1	0.978	791412	172213	231	577	746		
385.8610	34.954	34.976	-1	0.978	1498206	327210	331	827	989	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.962	35.001	-2	1.000	6200	1422	69	172	21		
375.8178	34.971	35.001	-2	1.000	5138	1227	56	140	22	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.940	35.962	-1	1.006	725611	167167	231	577	724		
385.8610	35.940	35.962	-1	1.006	1360077	315644	331	827	954	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.957	35.979	-1	1.000	3575	883	69	172	13		
375.8178	35.974	35.979	0	1.001	3117	761	56	140	14	1.15(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.066	33.855	-47	0.978	6646	1111	69	172	16		
375.8178	33.057	33.855	-48	0.978	5337	918	56	140	16	1.25(1.05-1.43)	
373.8208	34.836	33.855	59	1.031	3875	928	69	172	13		
375.8178	34.819	33.855	58	1.030	3355	675	56	140	12	1.15(1.05-1.43)	
373.8208	36.075	33.855	133	1.067	11672	2989	69	172	43		
375.8178	36.075	33.855	133	1.067	8944	2367	56	140	42	1.31(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.729	35.760	-2		1480395	348034	193	482	1803		a
403.8529	35.729	35.760	-2		1186194	290971	169	422	1722	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.198	35.220	-1	0.985	1148192	286190	193	482	1483		
403.8529	35.198	35.220	-1	0.985	904153	219147	169	422	1297	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.198	35.237	-2	1.000	1525	408	8	20	51		M
391.8127	35.207	35.237	-2	1.000	1430	506	32	80	16	1.07(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.325	35.355	-2	0.989	1159252	251967	193	482	1306		
403.8529	35.325	35.355	-2	0.989	918977	199122	169	422	1178	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.325	35.372	-3	1.000	898	240	8	20	30		M
391.8127	35.350	35.372	-1	1.001	802	260	32	80	8	1.12(1.05-1.43)	
1,2,3,7,8,9-HxCDD											RQM
389.8158	35.738	35.768	-2	1.015	593	195	8	20	24		M
391.8127	35.746	35.768	-1	1.016	645	260	32	80	8	0.92(1.05-1.43)	
	Empc Correction				478	157	32	80	5		
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.322	34.365	-3	0.972	1855	416	8	20	52		
391.8127	34.330	34.365	-2	0.972	1436	316	32	80	10	1.29(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.897	37.927	-2	1.061	622887	194073	281	702	691		
419.8220	37.897	37.927	-2	1.061	1414616	433857	534	1335	812	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	37.906	37.935	-2	1.000	78662	23815	57	142	418		M
409.7788	37.906	37.935	-2	1.000	76443	23119	44	110	525	1.03(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.212	39.233	-1	1.097	572535	192218	281	702	684		
419.8220	39.212	39.233	-1	1.097	1250981	425045	534	1335	796	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.229	39.250	-1	1.000	23086	7634	57	142	134		
409.7788	39.220	39.250	-2	1.000	24151	7696	44	110	175	0.96(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.293	38.593	-18	1.010	22532	6511	57	142	114		
409.7788	38.293	38.593	-18	1.010	21963	6973	44	110	158	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.908	38.921	-1	1.089	977026	325376	220	550	1479		
437.8140	38.900	38.921	-1	1.089	937187	310401	241	602	1288	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.917	38.938	-1	1.000	19234	6612	60	150	110		
425.7737	38.917	38.938	-1	1.000	18297	6269	33	82	190	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.234	38.941	-42	0.983	24038	7537	60	150	126		
425.7737	38.234	38.941	-42	0.983	22201	6988	33	82	212	1.08(0.88-1.20)	
13C-OCDD											
469.7780	41.354	41.373	-1	1.157	1445024	477653	211	527	2264		
471.7750	41.354	41.373	-1	1.157	1591088	528149	197	492	2681	0.91(0.76-1.02)	
OCDF											M
441.7428	41.438	41.457	-1	1.002	35144	11572	35	87	331		M
443.7399	41.438	41.457	-1	1.002	37750	12249	82	205	149	0.93(0.76-1.02)	M
OCDD											
457.7377	41.362	41.381	-1	1.000	291819	98074	45	112	2179		
459.7348	41.362	41.381	-1	1.000	328139	108252	52	130	2082	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2589210	409427

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2589210	409427

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.449	61512	11994	77101	15069	4.93	0.80	
16.904	114600	17779	143405	20640	9.18	0.80	
17.300	95003	14700	106180	16164	7.16	0.89	
17.652	107911	17308	133866	21709	8.60	0.81	
18.124	1049569	174739	1307609	213774	83.9	0.80	
19.533	167132	26152	266042	30881	15.4	0.63	RQ
19.533	167132	26152	217054	33963	13.7		Empc Correction
21.887	151347	21411	194374	25125	12.3	0.78	
Signal Totals:							
	1747074	284083	2179589	346444			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3975651	627445				0.78	RQ
	3926663	630527					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 141.433 = (3975651 * 100.000) / (2589210 * 1.086)
Empc Amount: 139.690 = (3926663 * 100.000) / (2589210 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	1895759	279852

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	1895759	279852

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.877	5014	1217	7768	1752	0.6237	0.65	
20.676	44243	6837	58265	7755	5.00	0.76	
Signal Totals:							
	49257	8054	66033	9507			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	115290	17561				0.75	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.626 = (115290 * 100.000) / (1895759 * 1.081)

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2603943	453440
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2371194	371055

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2487568	412247

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.525	49493	9036	30615	5196	2.98	1.62	M
25.367	6055	1026	2957	623	0.3357	2.05	RQ
25.367	4583	965	2957	623	0.2809		Empc Correction
25.789	7786	2300	5947	1415	0.5116	1.31	RQ
25.789	7786	2300	5023	1483	0.4772		Empc Correction
26.455	30538	5129	19331	3394	1.86	1.58	
27.643	18717	2692	10931	1760	1.10	1.71	
Signal Totals:							
	111117	20122	68857	12456			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	182370	32571				1.61	RQM
	179974	32578					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.794 = (182370 * 100.000) / (2487568 * 1.079)
Empc Amount: 6.705 = (179974 * 100.000) / (2487568 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-PeCDD, RT: 26.975

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068	D 13C-1,2,3,7,8-PeCDD	100.000	1613923	241767

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.068		100.000	1613923	241767

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	1955890	361513
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2274133	427523
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2289618	499423
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	2085688	482811

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2151332	442817

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.066	6646	1111	5337	918	0.4458	1.25	
34.836	3875	928	3355	675	0.2690	1.15	
36.075	11672	2989	8944	2367	0.7670	1.31	
Signal Totals:							
	22193	5028	17636	3960			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	39829	8988				1.26	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.482 = (39829 * 100.000) / (2151332 * 1.249)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	2052345	505337
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2078229	451089
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	2065287	478213

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.322	1855	416	1436	316	0.1421	1.29	
Signal Totals:							
	1855	416	1436	316			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3291	732				1.29	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1421 = (3291 * 100.000) / (2065287 * 1.121)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Lims ID:	320-65130-A-22-A		
Client ID:	11215702-Tank#2-valve-5-2		
Inject. Date:	10-Oct-2020 14:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	29

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2037503	627930
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1823516	617263

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	1930509	622596

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.293	22532	6511	21963	6973	1.56	1.03	
Signal Totals:							
	22532	6511	21963	6973			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	44495	13484				1.03	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.557 = (44495 * 100.000) / (1930509 * 1.481)

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Lims ID: 320-65130-A-22-A
Client ID: 11215702-Tank#2-valve-5-2
Inject. Date: 10-Oct-2020 14:56:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 29

Non-2,3,7,8-sub-HpCDD, RT: 38.941

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.064	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1914213	635777
Averages:					
	RRFn		Qis	Ris Area	Ris Height
	1.064		100.000	1914213	635777

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.234	24038	7537	22201	6988	2.27	1.08	
Signal Totals:							
	24038	7537	22201	6988			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	46239	14525				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.270 = (46239 * 100.000) / (1914213 * 1.064)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22
Client ID:	11215702-Tank#2-valve-5-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

RT:	27.34
Area:	70919
Amount:	4.448547
Amount Units:	pg/ul

Processing Integration Results

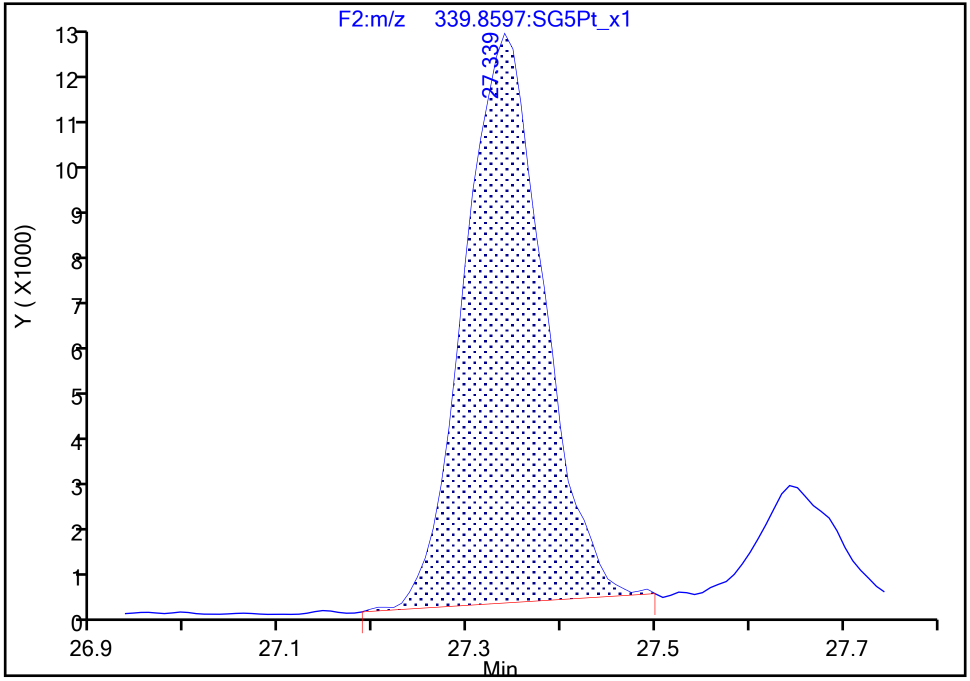

RT:	27.34
Area:	74762
Amount:	4.595410
Amount Units:	pg/ul

Manual Integration Results

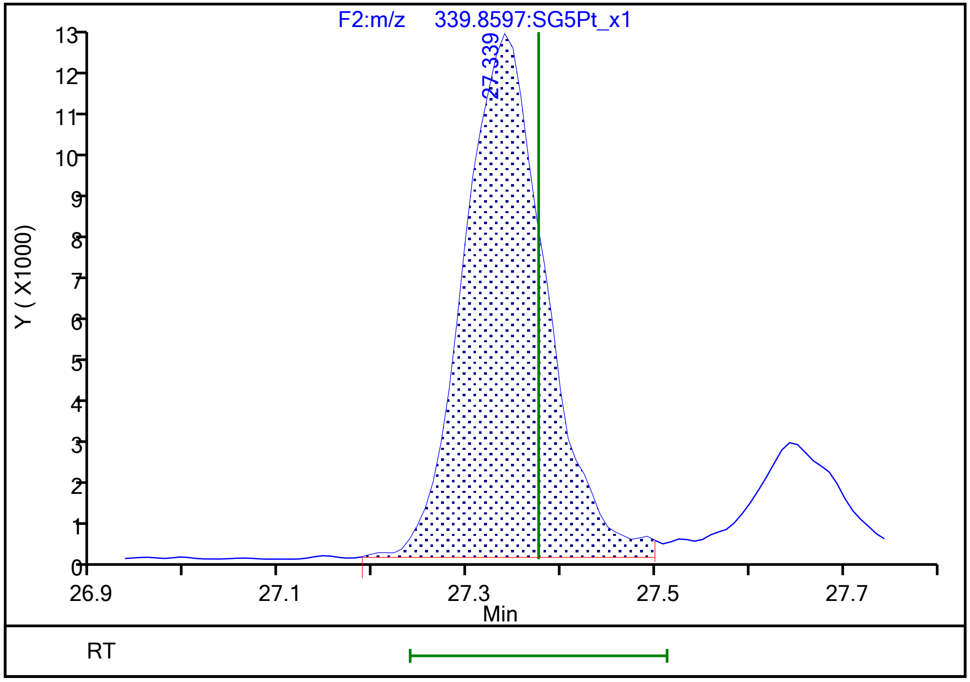

Reviewer: dadunj, 12-Oct-2020 09:37:10

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 12-Oct-2020 09:39:57
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d				
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22		
Client ID:	11215702-Tank#2-valve-5-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.63- 29.32)

Signal: 2

Processing Integration Results

RT = 24.533 Area = 32044

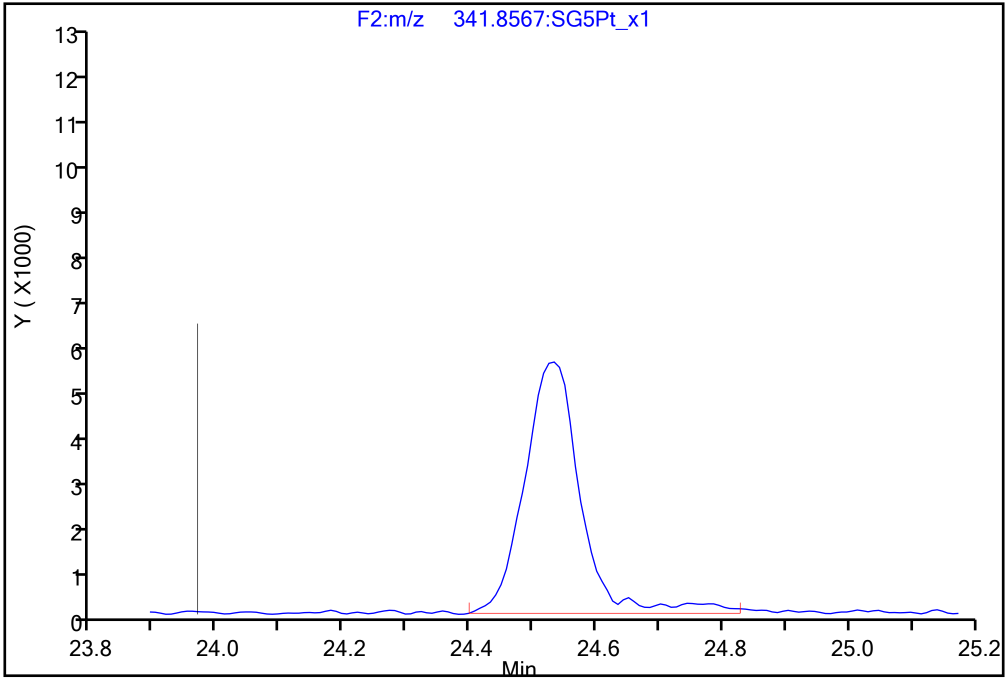

Manual Integration Results

RT = 24.533 Area = 30615 M

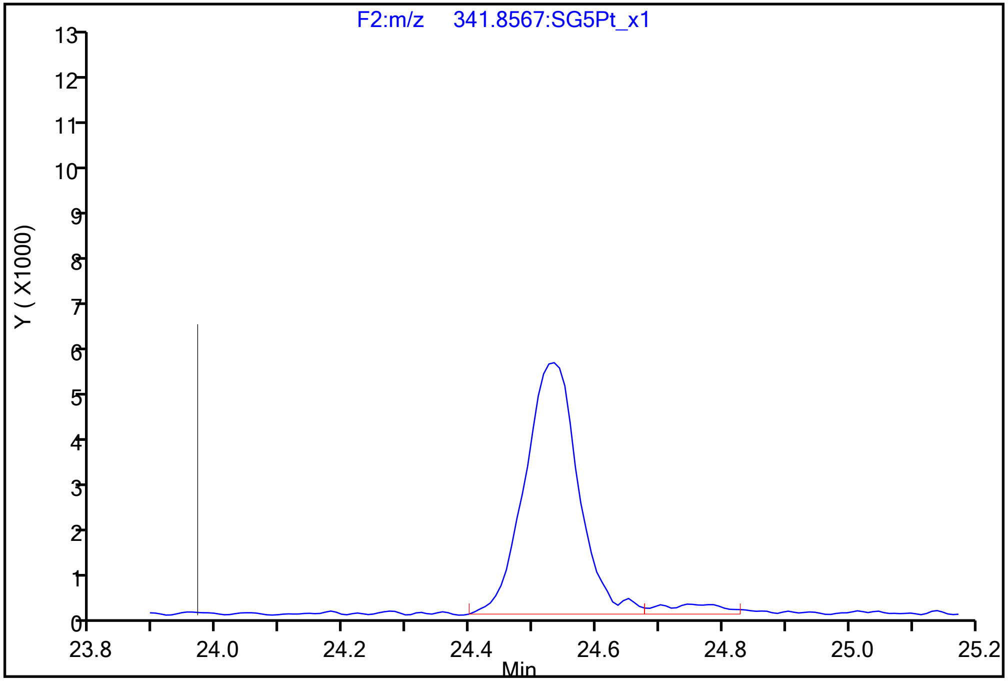

Reviewer: dadunj, 12-Oct-2020 09:37:39

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22
Client ID:	11215702-Tank#2-valve-5-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT: 28.10
Area: 5029
Amount: 0.749212
Amount Units: pg/ul

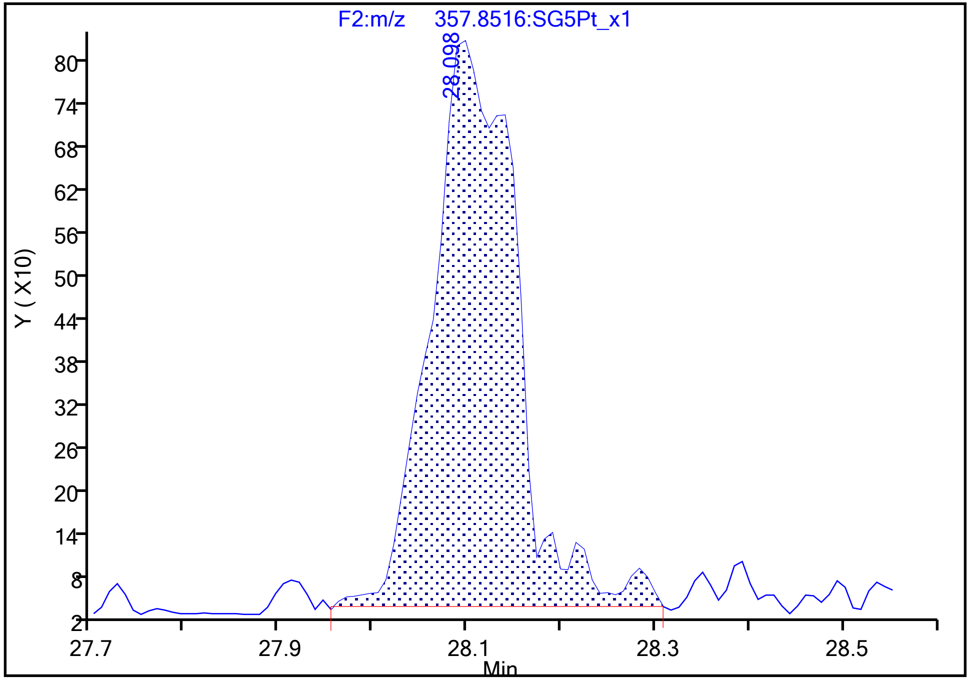

Manual Integration Results

RT: 28.10
Area: 4681
Amount: 0.691254
Amount Units: pg/ul

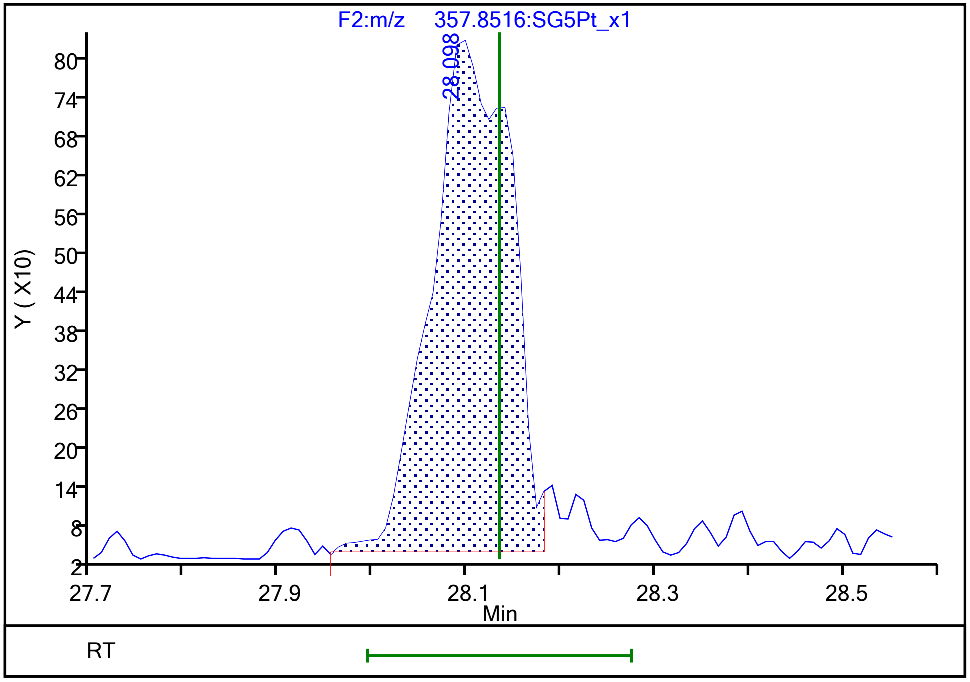

Reviewer: dadunj, 12-Oct-2020 09:37:48

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Injection Date: 10-Oct-2020 14:56:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-22-A
Lab Sample ID: 320-65130-22
Client ID: 11215702-Tank#2-valve-5-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 29
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT: 28.10
Area: 7885
Amount: 0.749212
Amount Units: pg/ul

Processing Integration Results

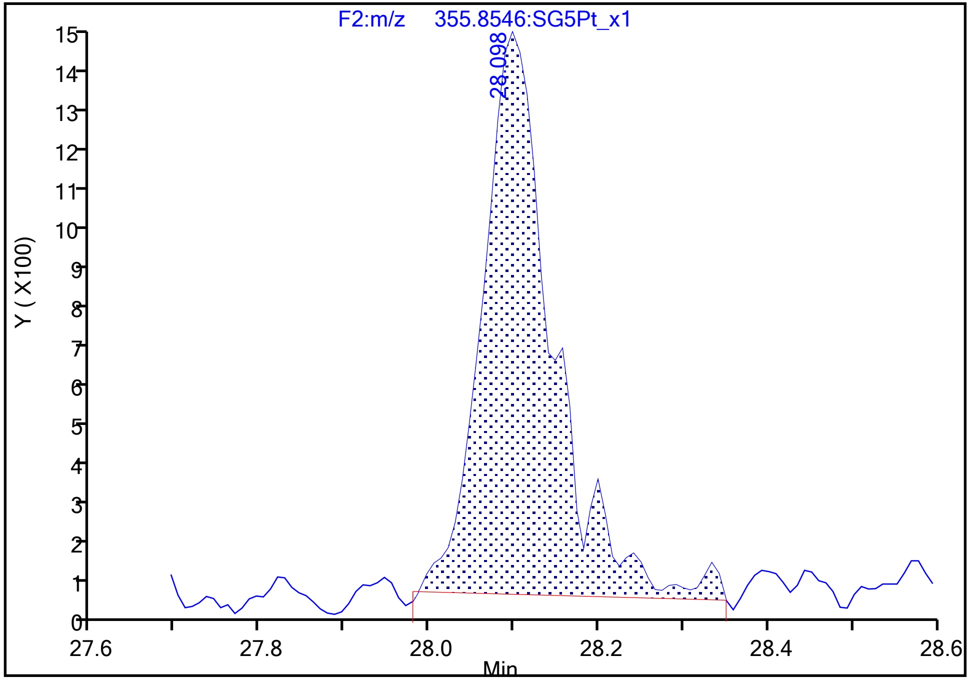

RT: 28.10
Area: 7234
Amount: 0.691254
Amount Units: pg/ul

Manual Integration Results

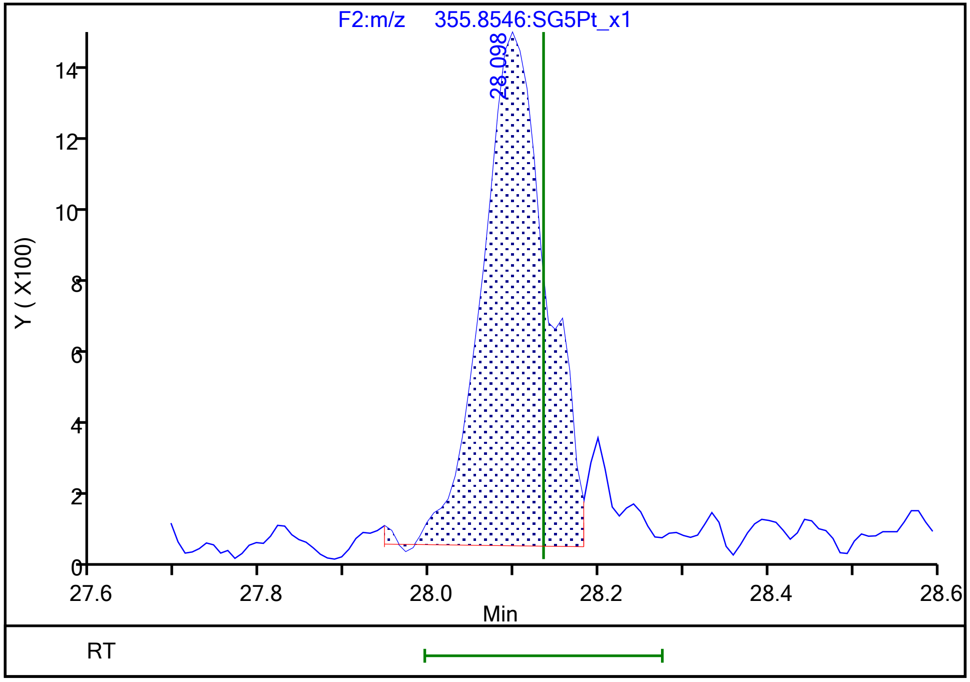

Reviewer: dadunj, 12-Oct-2020 09:37:58

Audit Action: Manually Integrated Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22		
Client ID:	11215702-Tank#2-valve-5-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT: 35.20
Area: 1561
Amount: 0.126060
Amount Units: pg/ul

Processing Integration Results

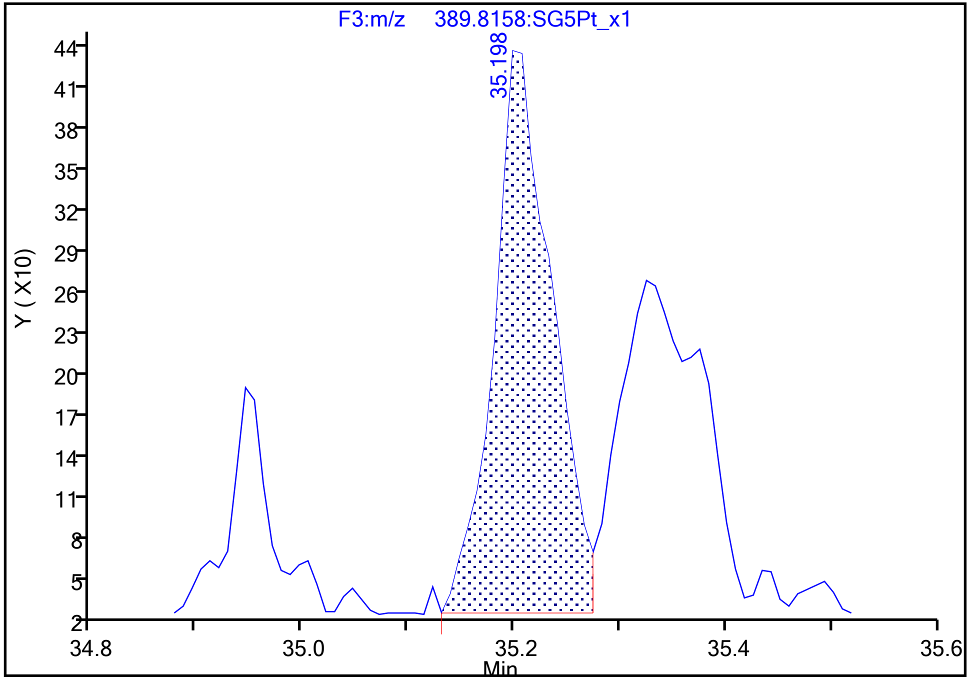

RT: 35.20
Area: 1525
Amount: 0.124543
Amount Units: pg/ul

Manual Integration Results

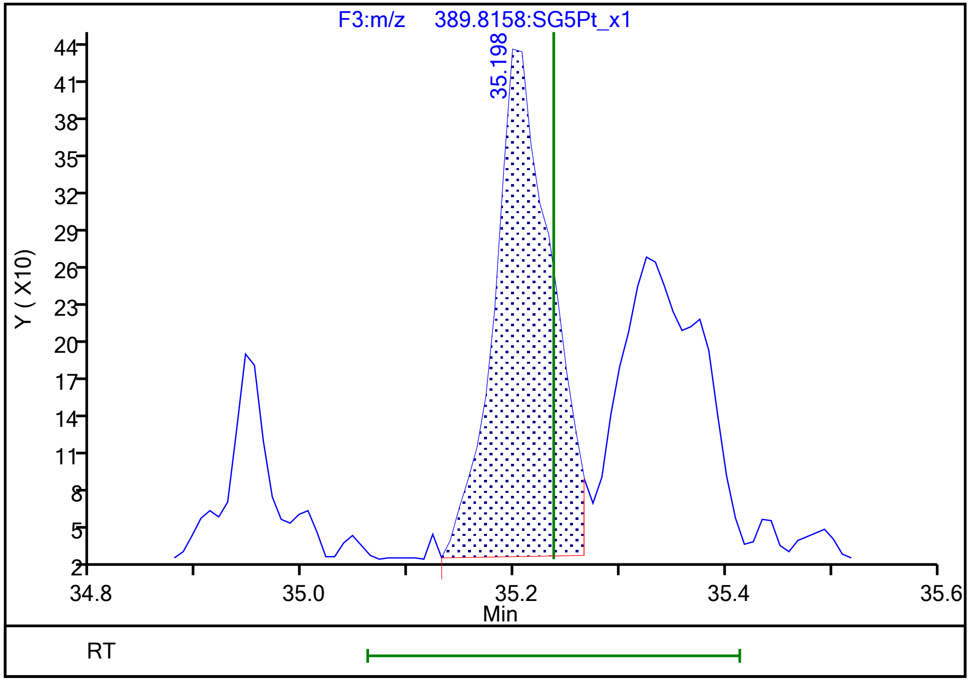

Reviewer: dadunj, 12-Oct-2020 09:38:32

Audit Action: Manually Integrated

Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22
Client ID:	11215702-Tank#2-valve-5-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT:	35.32
Area:	1355
Amount:	0.100924
Amount Units:	pg/ul

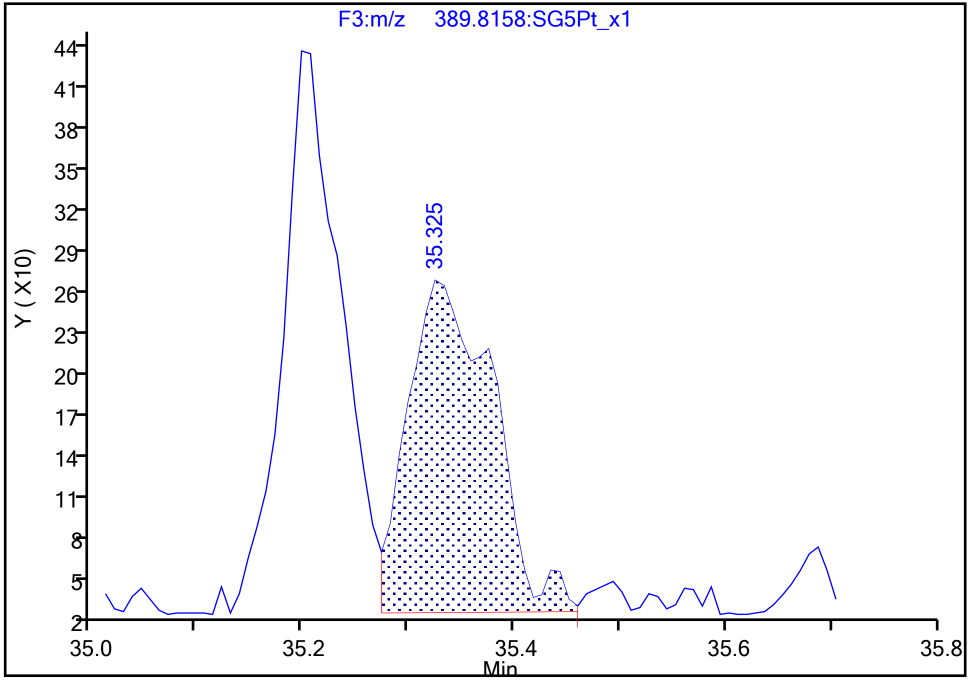

Manual Integration Results

RT:	35.32
Area:	898
Amount:	0.079541
Amount Units:	pg/ul

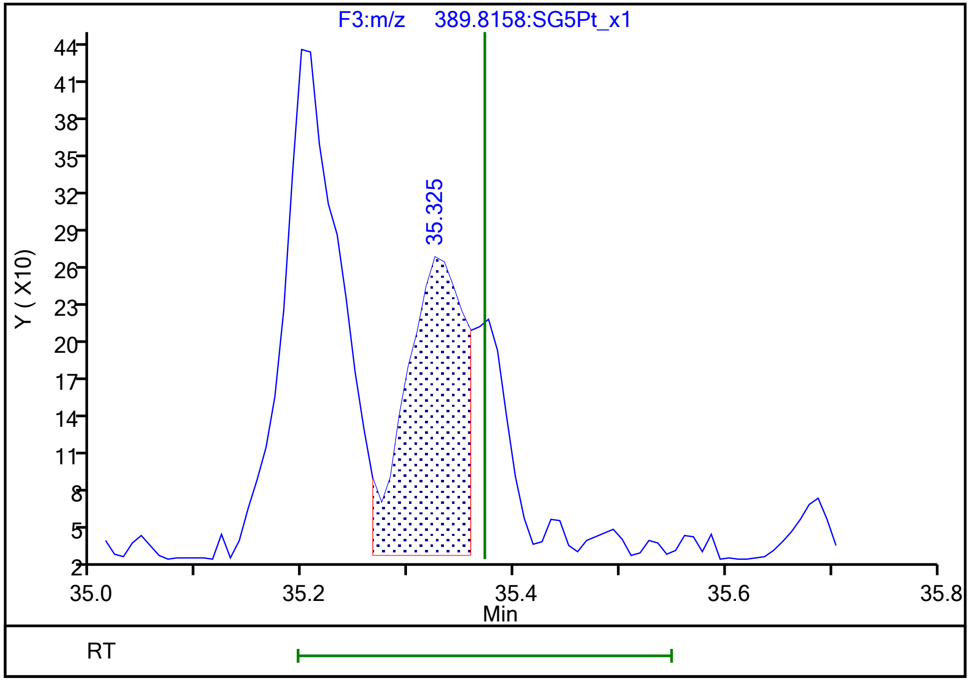

Reviewer: dadunj, 12-Oct-2020 09:38:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22
Client ID:	11215702-Tank#2-valve-5-2		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT: 35.74
Area: 743
Amount: 0.057007
Amount Units: pg/ul

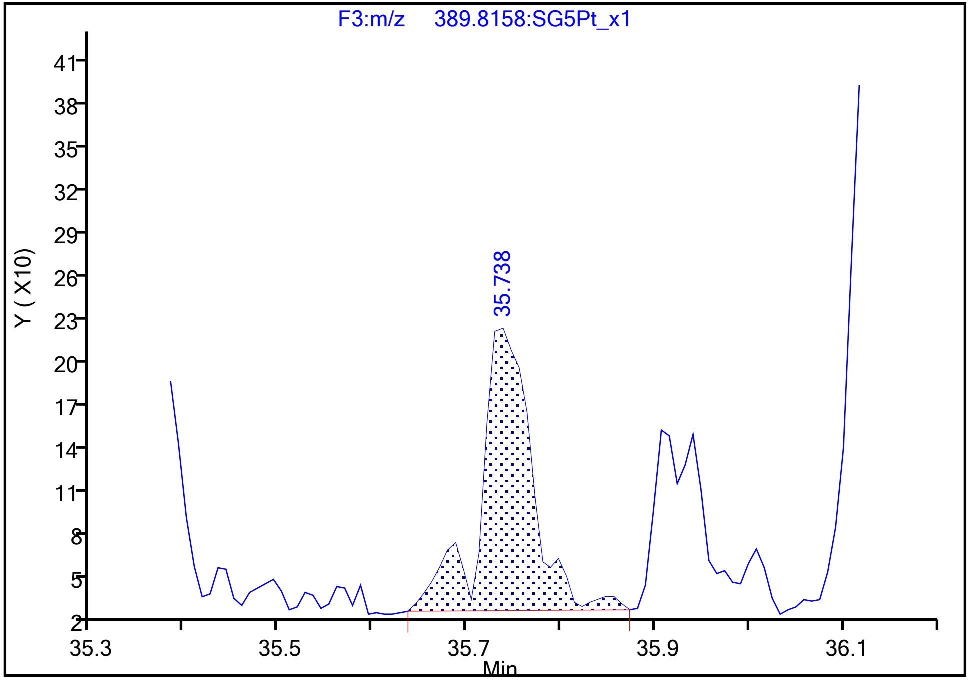

Manual Integration Results

RT: 35.74
Area: 593
Amount: 0.050846
Amount Units: pg/ul

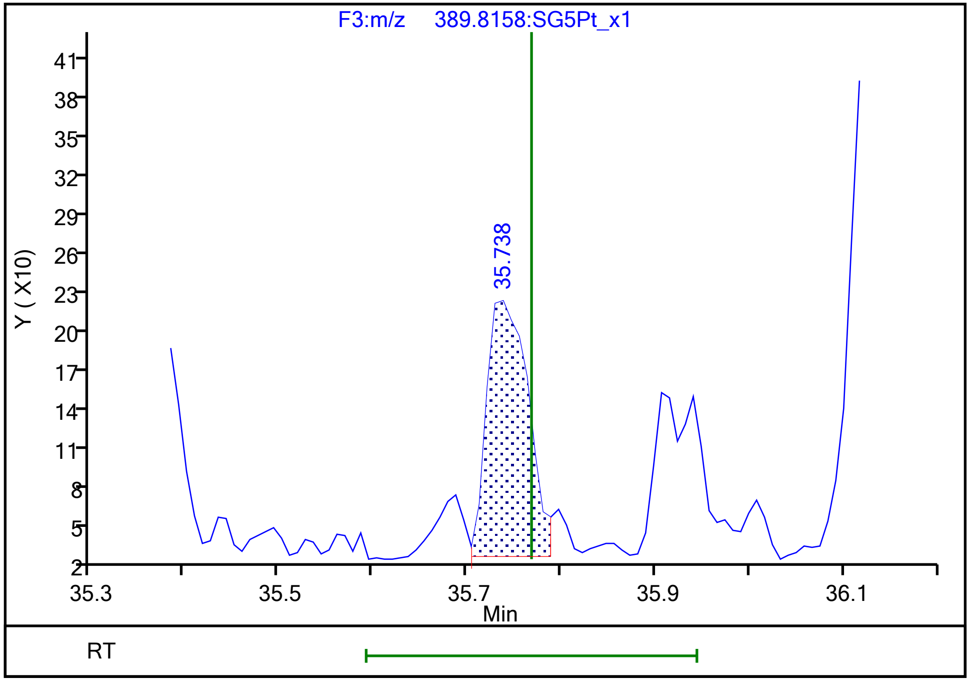

Reviewer: dadunj, 12-Oct-2020 09:38:46

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d				
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22		
Client ID:	11215702-Tank#2-valve-5-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT:	37.91
Area:	80450
Amount:	5.146685
Amount Units:	pg/ul

Processing Integration Results

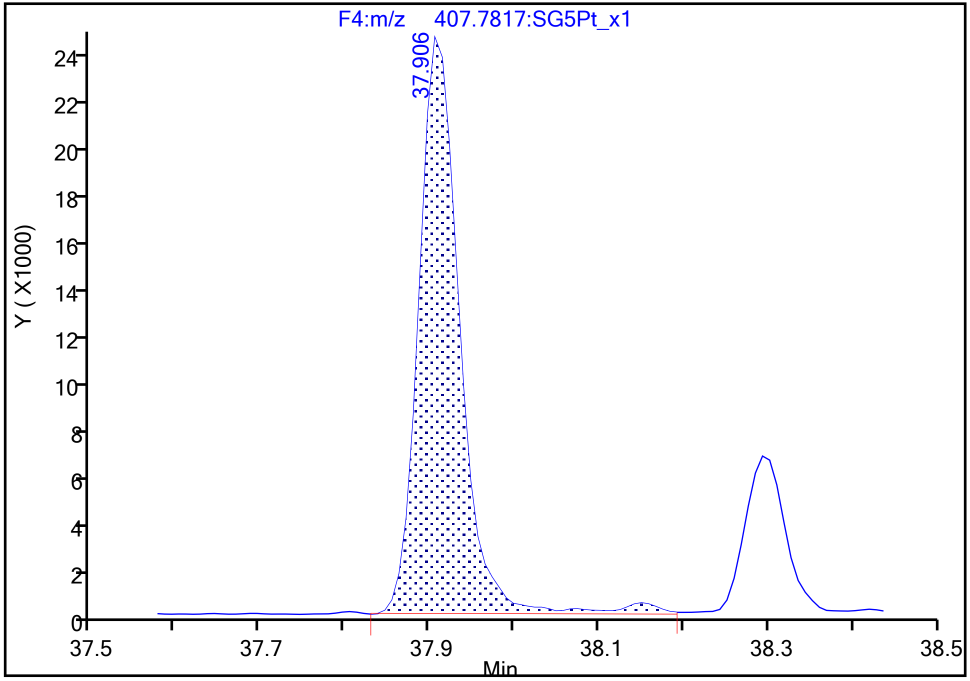

RT:	37.91
Area:	78662
Amount:	5.053471
Amount Units:	pg/ul

Manual Integration Results

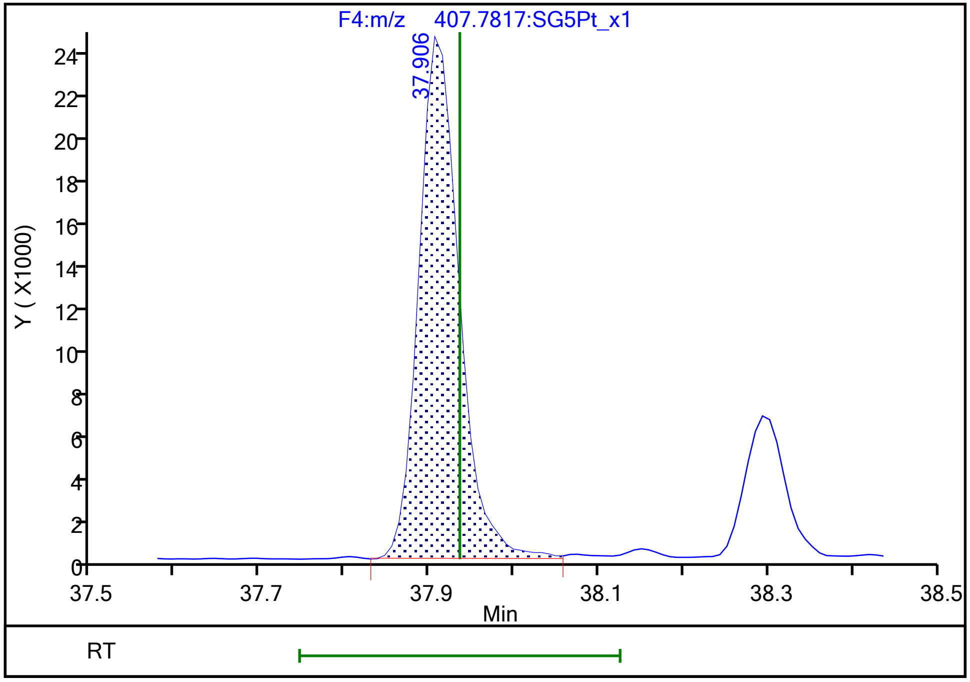

Reviewer: dadunj, 12-Oct-2020 09:39:09

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d				
Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22		
Client ID:	11215702-Tank#2-valve-5-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT:	37.91
Area:	77516
Amount:	5.146685
Amount Units:	pg/ul

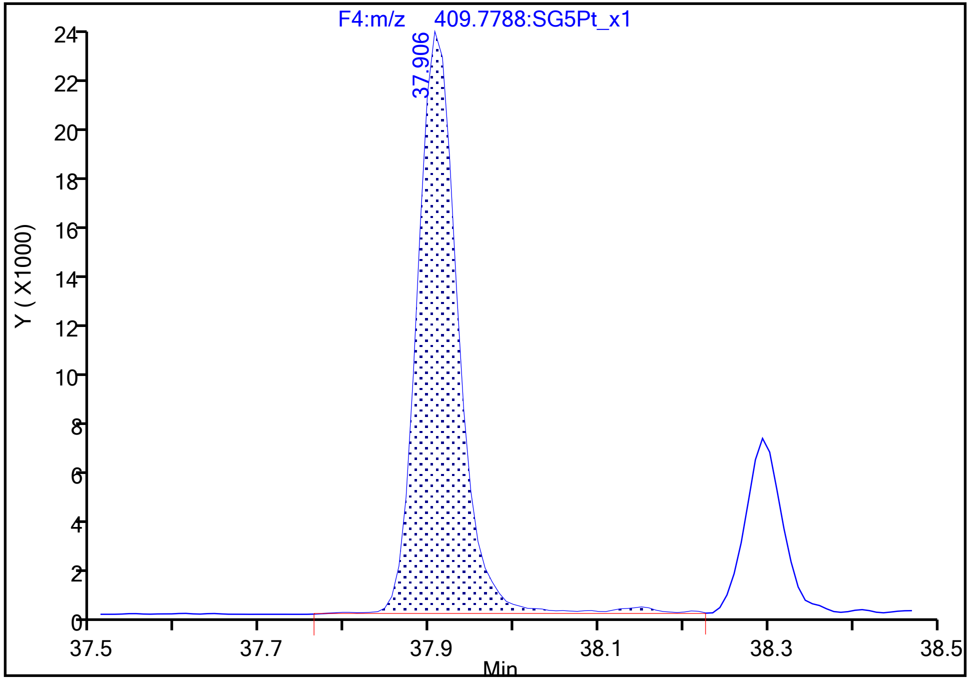

Manual Integration Results

RT:	37.91
Area:	76443
Amount:	5.053471
Amount Units:	pg/ul

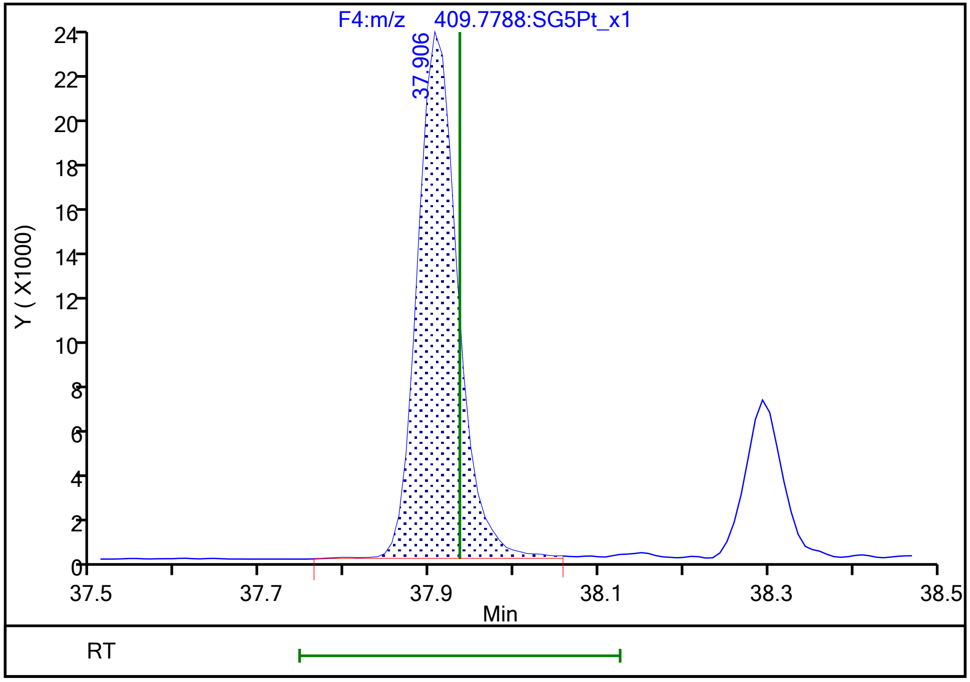

Reviewer: dadunj, 12-Oct-2020 09:39:11

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date:	10-Oct-2020 14:56:00	Instrument ID:	DFS 1		
Lims ID:	320-65130-A-22-A	Lab Sample ID:	320-65130-22		
Client ID:	11215702-Tank#2-valve-5-2				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT:	41.44
Area:	38619
Amount:	3.448321
Amount Units:	pg/ul

Processing Integration Results

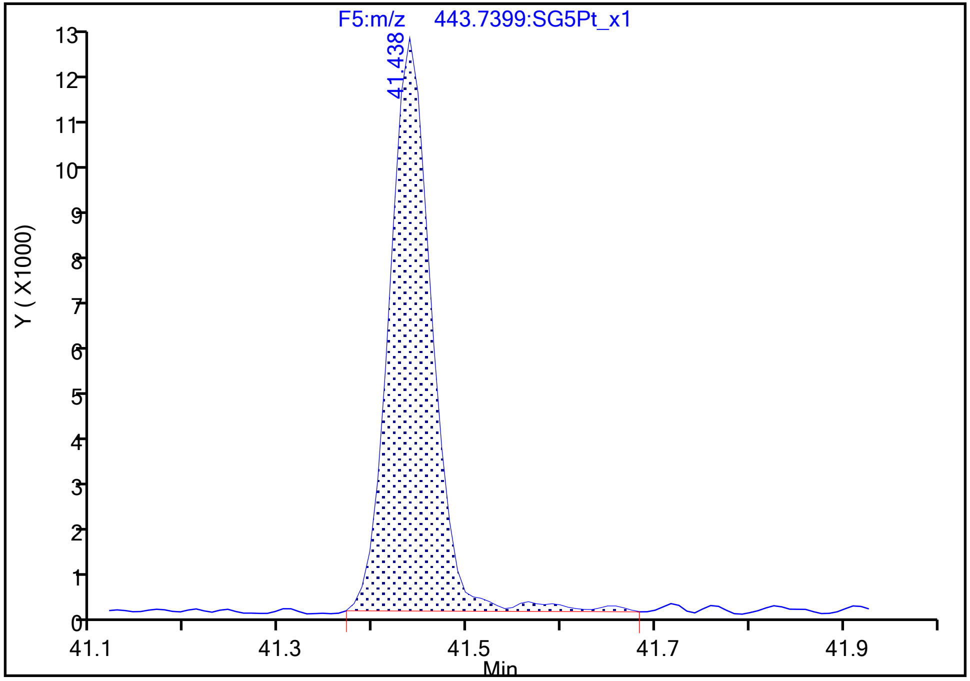

RT:	41.44
Area:	37750
Amount:	3.358792
Amount Units:	pg/ul

Manual Integration Results

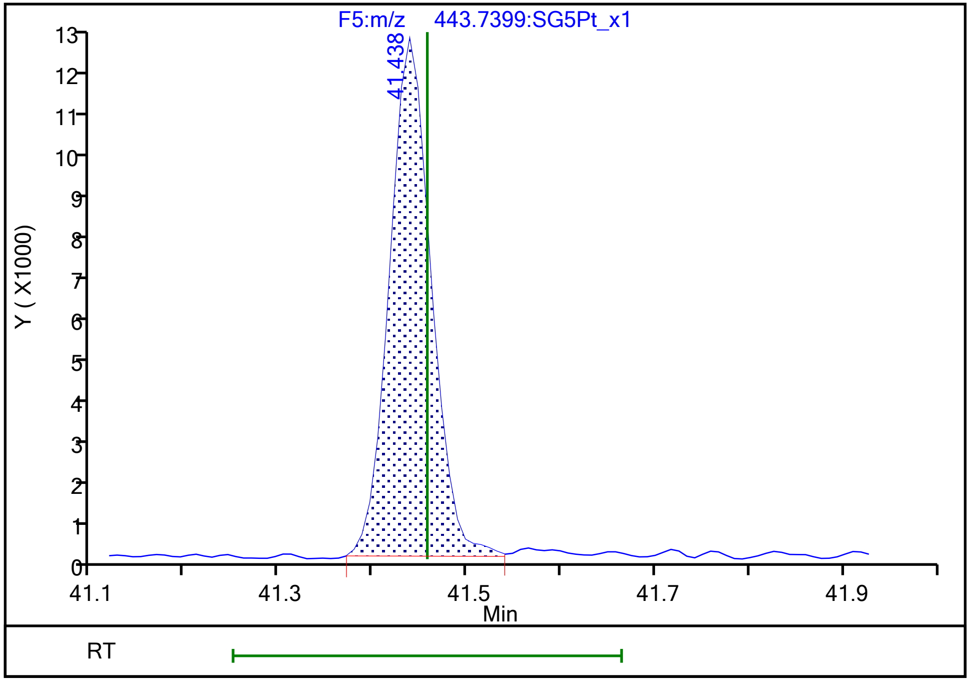

Reviewer: dadunj, 12-Oct-2020 09:39:23

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Injection Date: 10-Oct-2020 14:56:00
Instrument ID: DFS 1
Lims ID: 320-65130-A-22-A
Lab Sample ID: 320-65130-22
Client ID: 11215702-Tank#2-valve-5-2
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 29
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 1

RT: 41.44
Area: 36218
Amount: 3.448321
Amount Units: pg/ul

Processing Integration Results

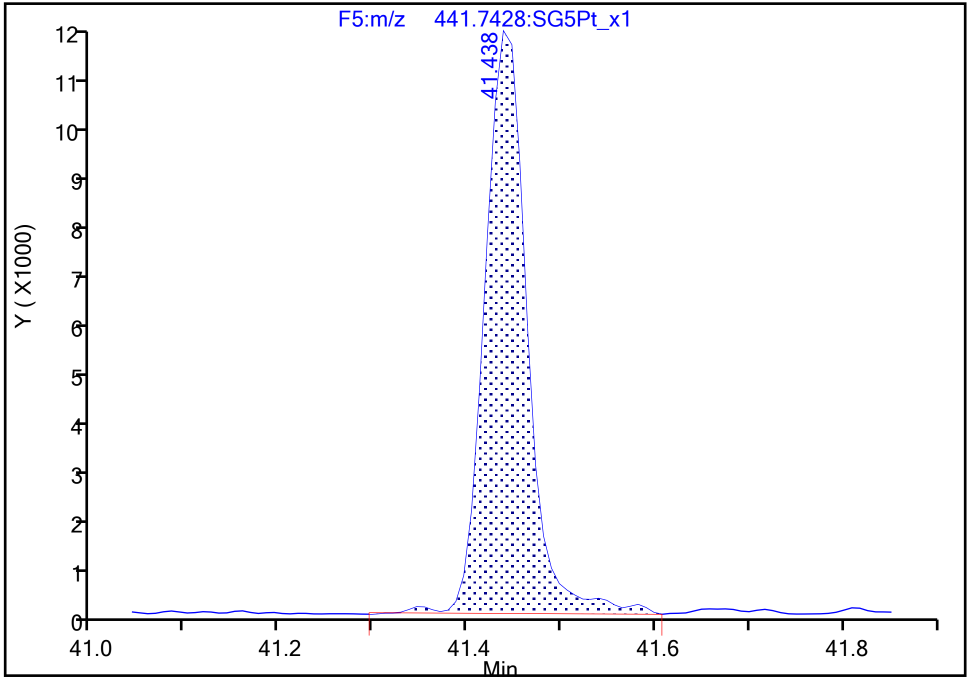

RT: 41.44
Area: 35144
Amount: 3.358792
Amount Units: pg/ul

Manual Integration Results

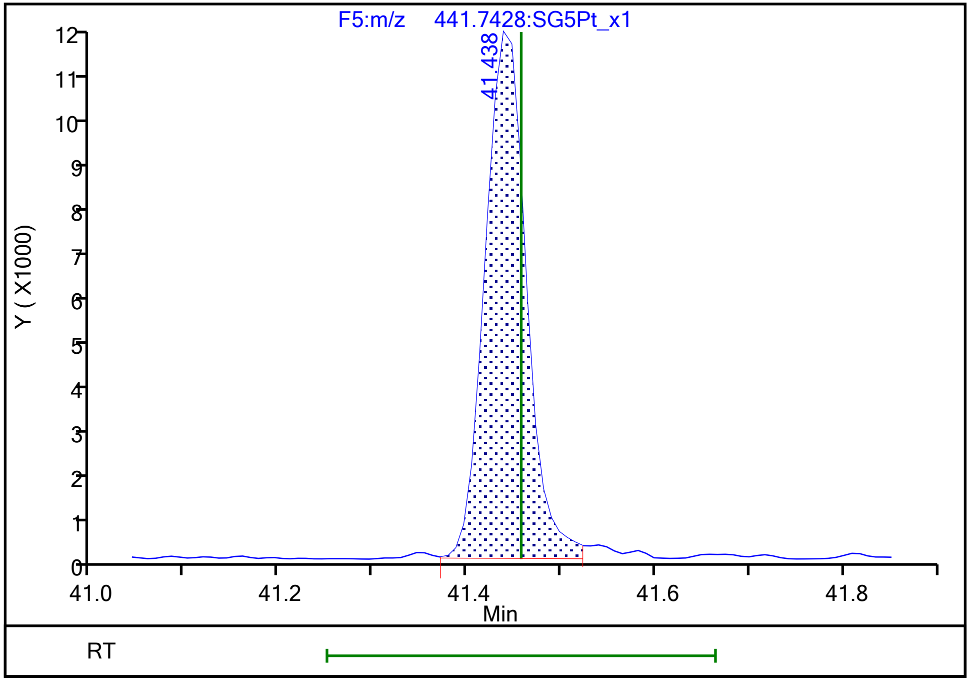

Reviewer: dadunj, 12-Oct-2020 09:39:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

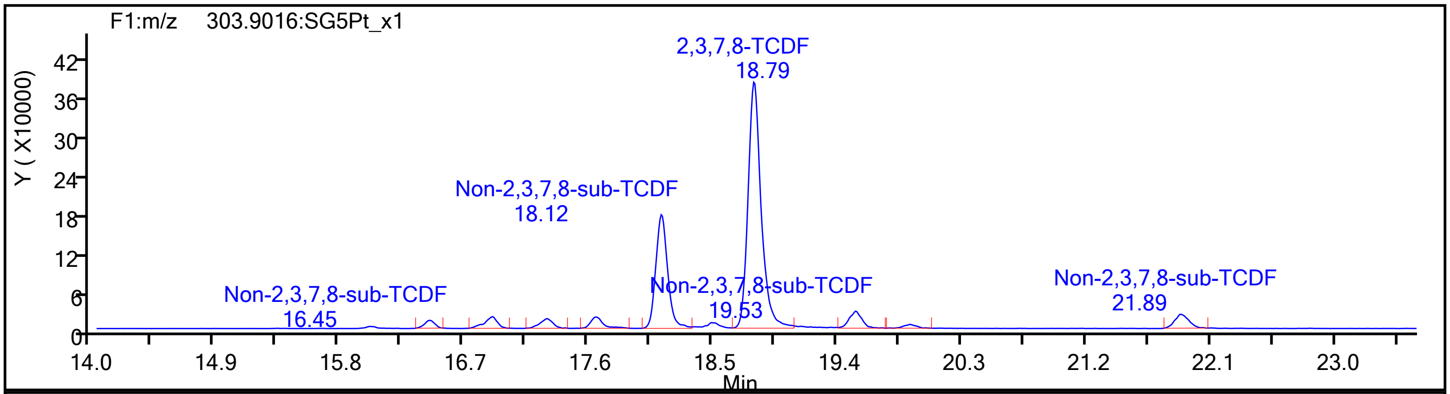

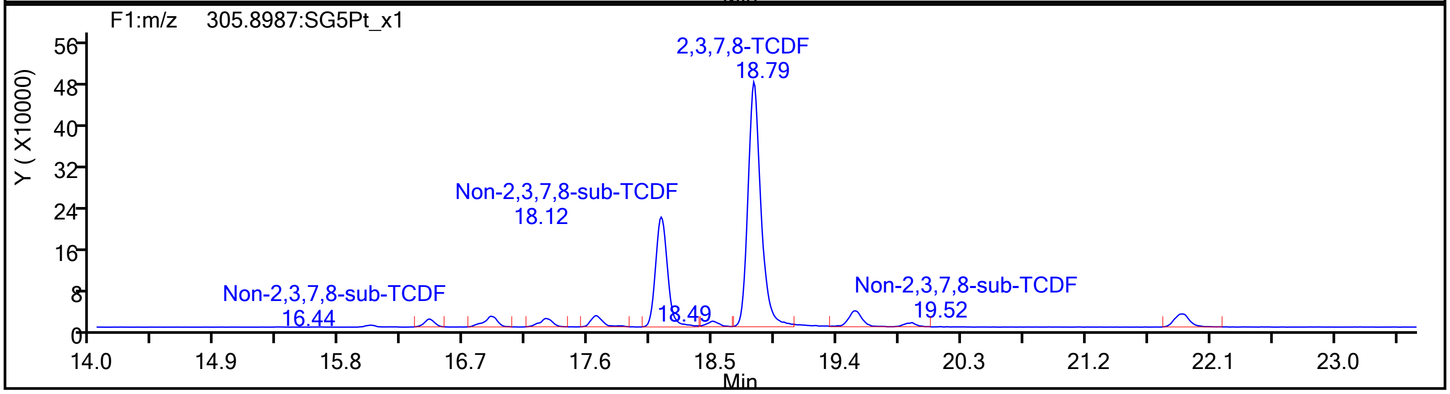

TCDF Standards

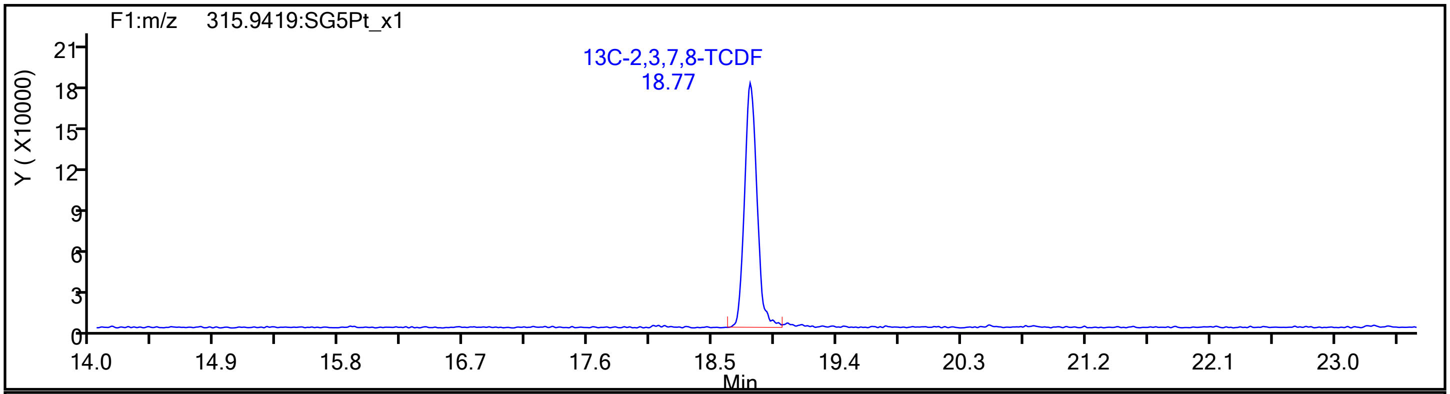

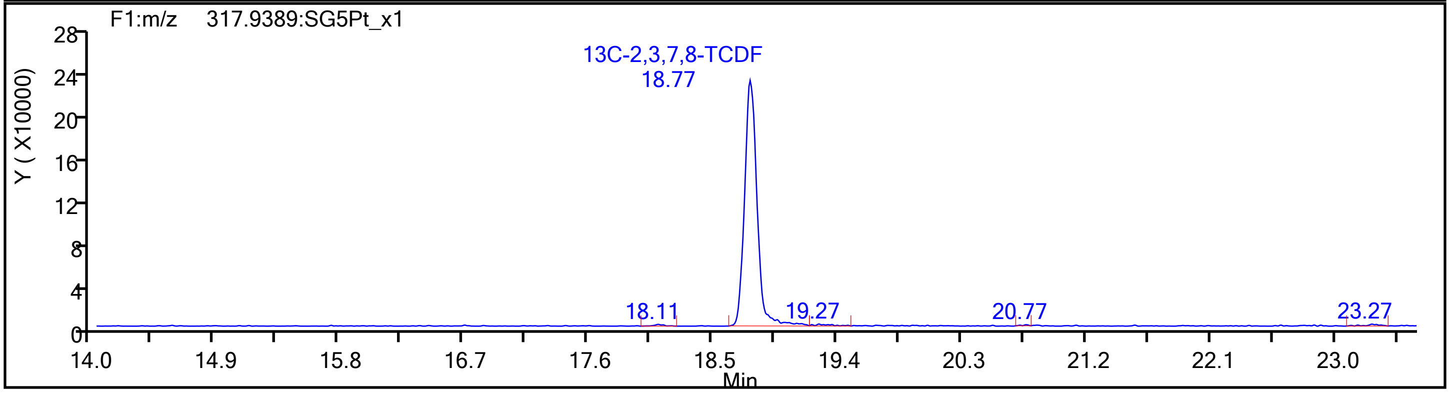

Report Date: 12-Oct-2020 09:39:57 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

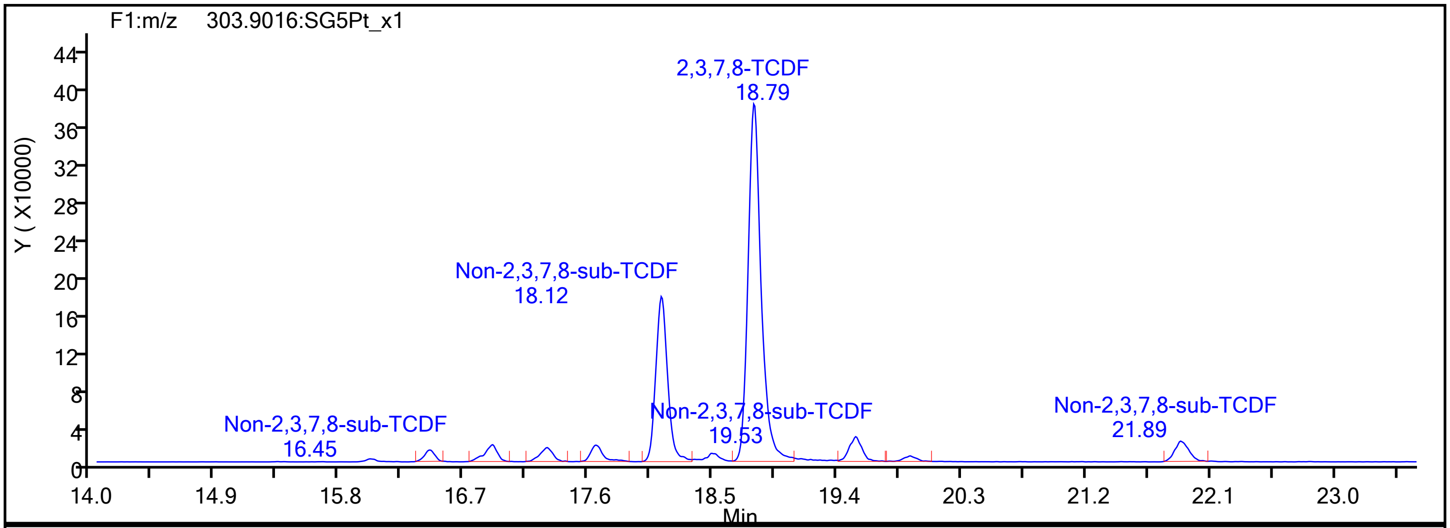

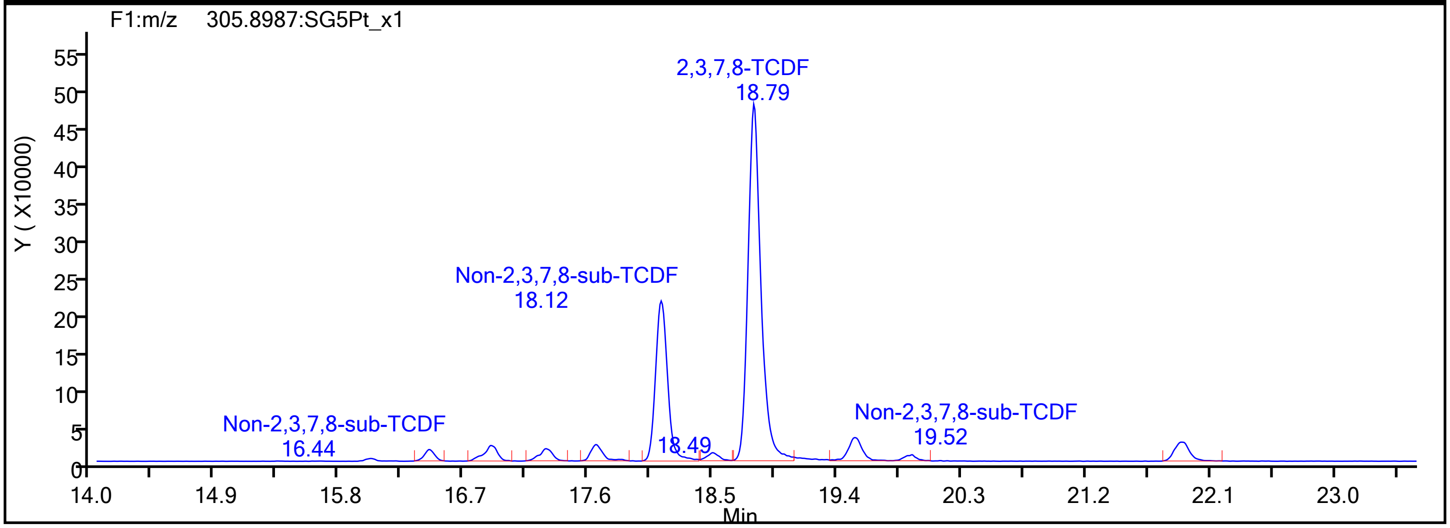

TCDF Interference Mass

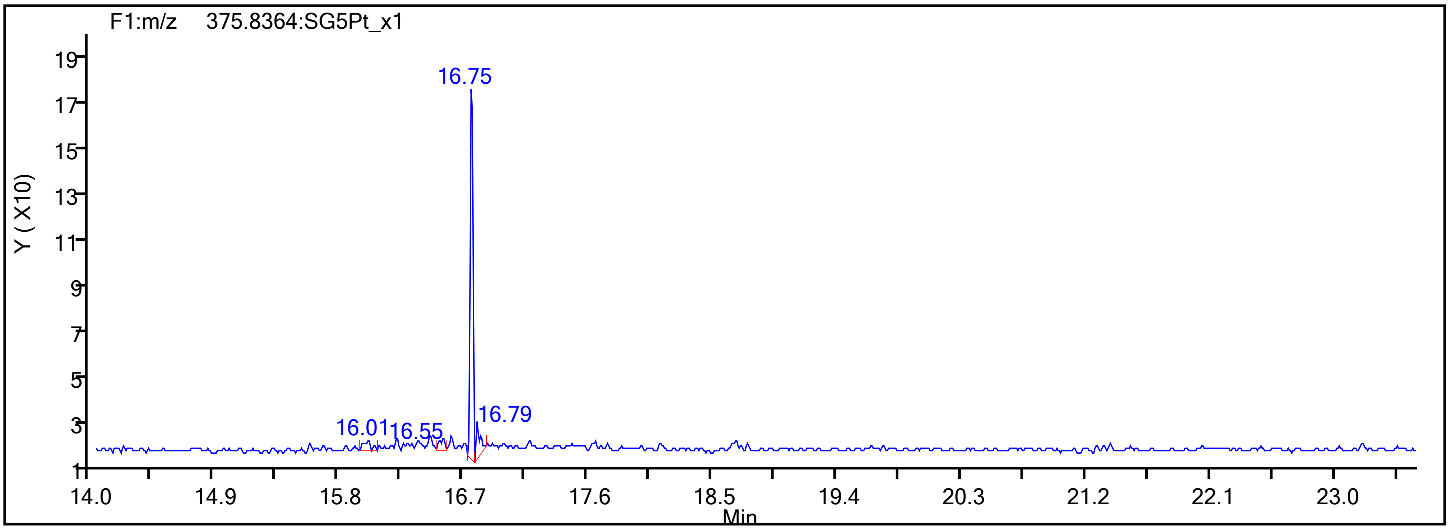

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Injection Date: 10-Oct-2020 14:56:00
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-valve-5-2
Worklist#: 420640
Sample Line#: 29
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

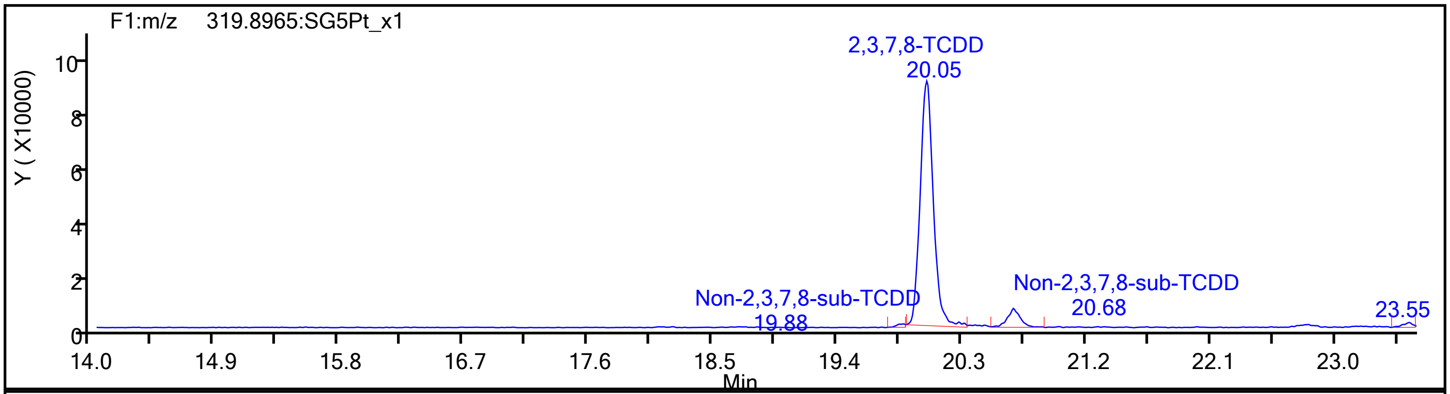

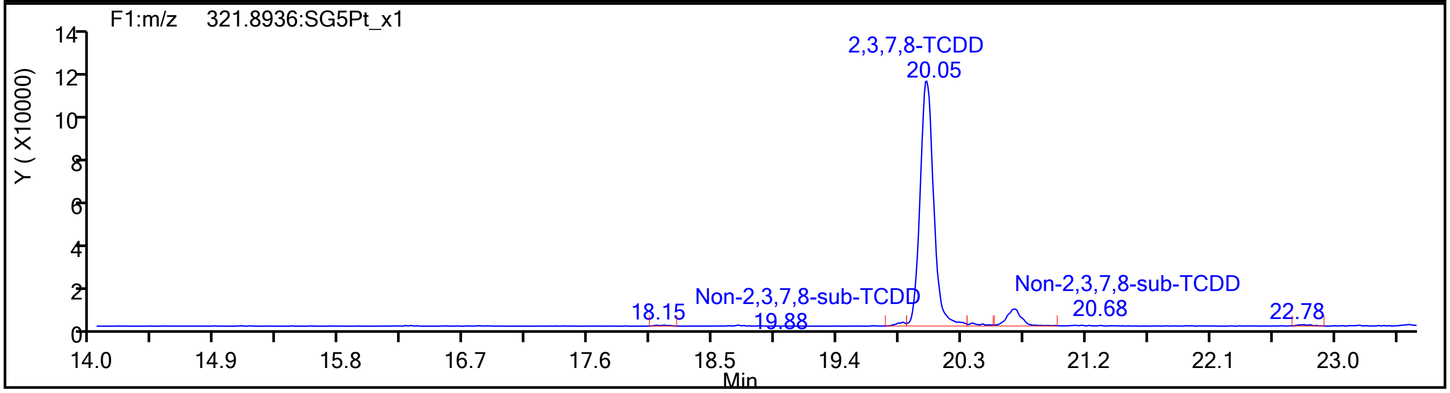

TCDD Standards

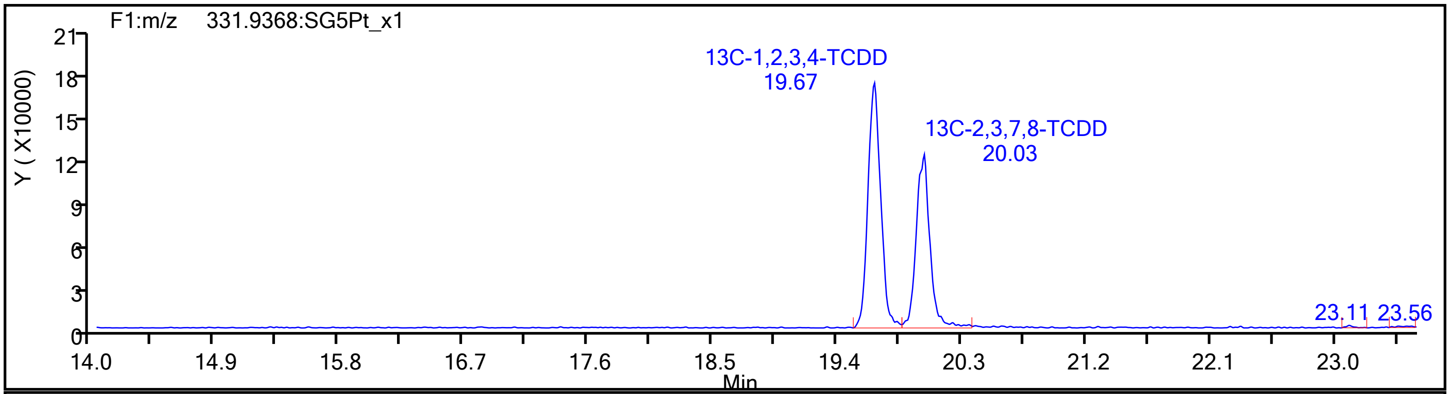

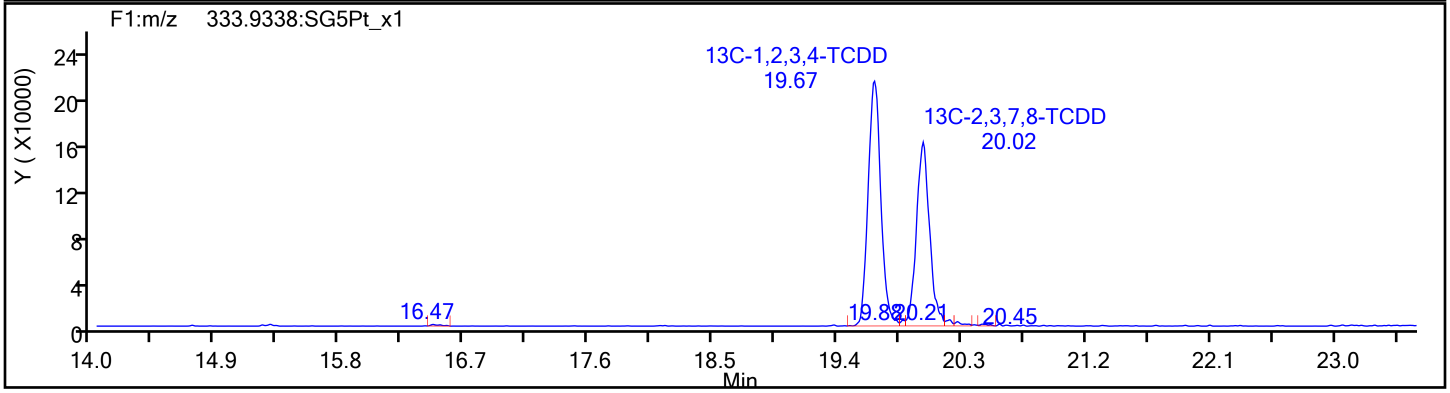

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

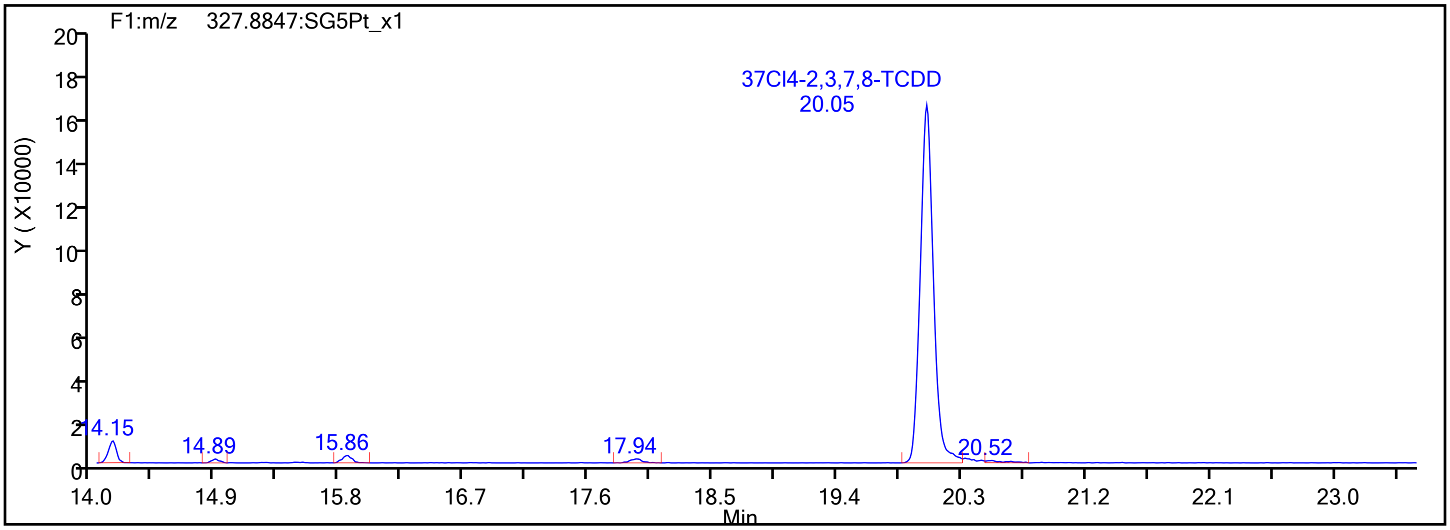

37Cl4-TCDD Standards

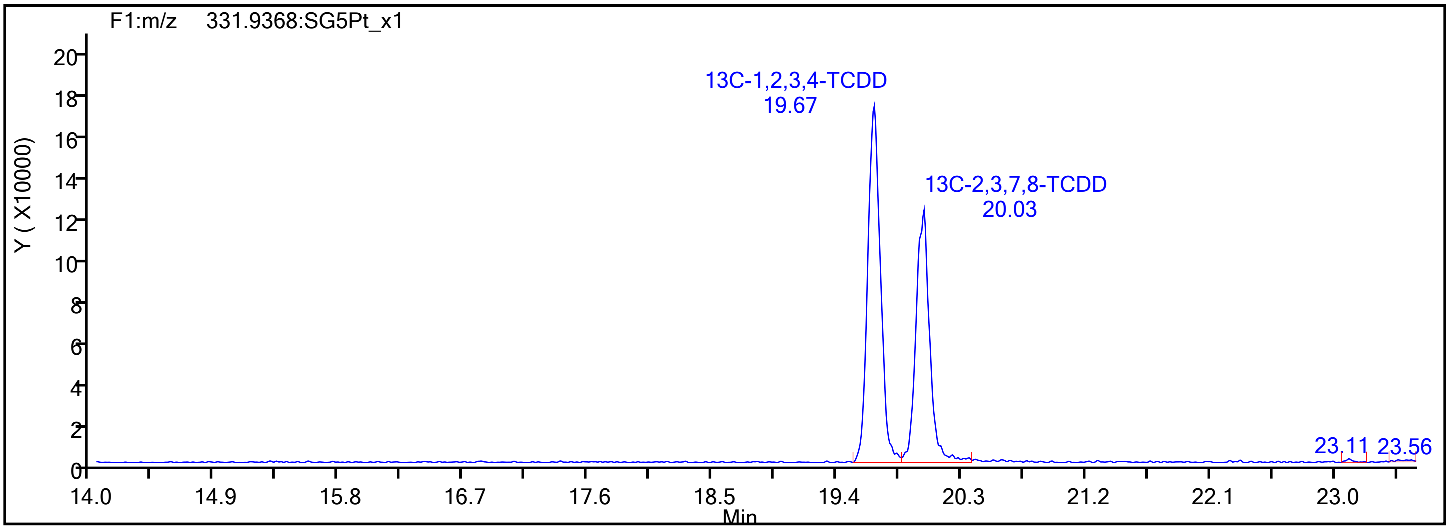

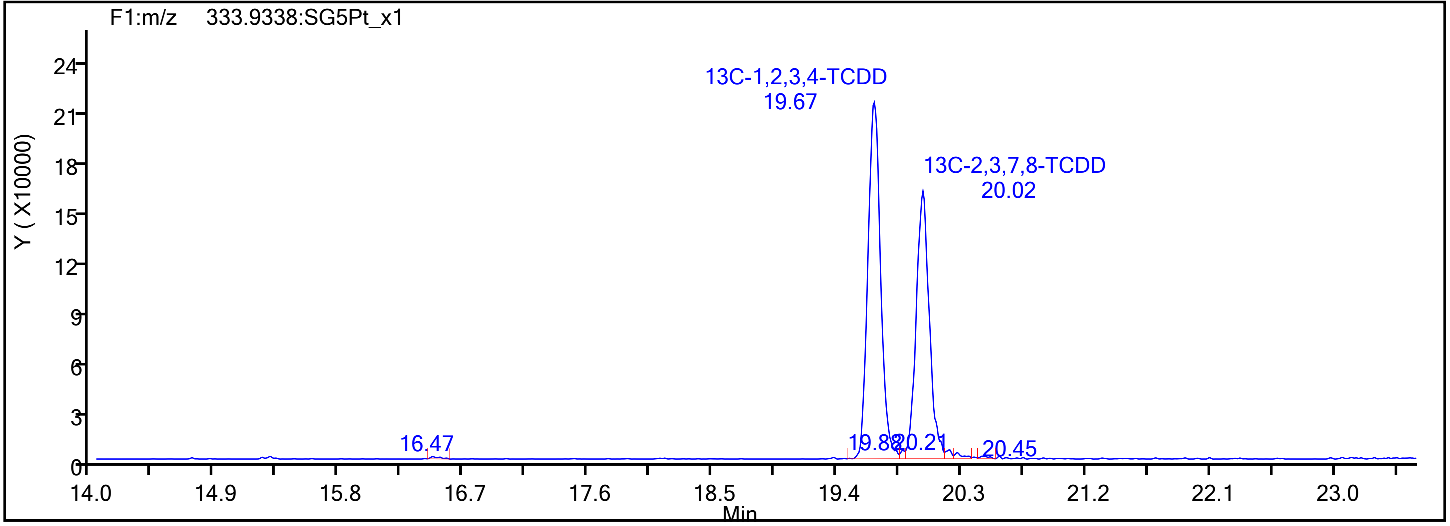

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

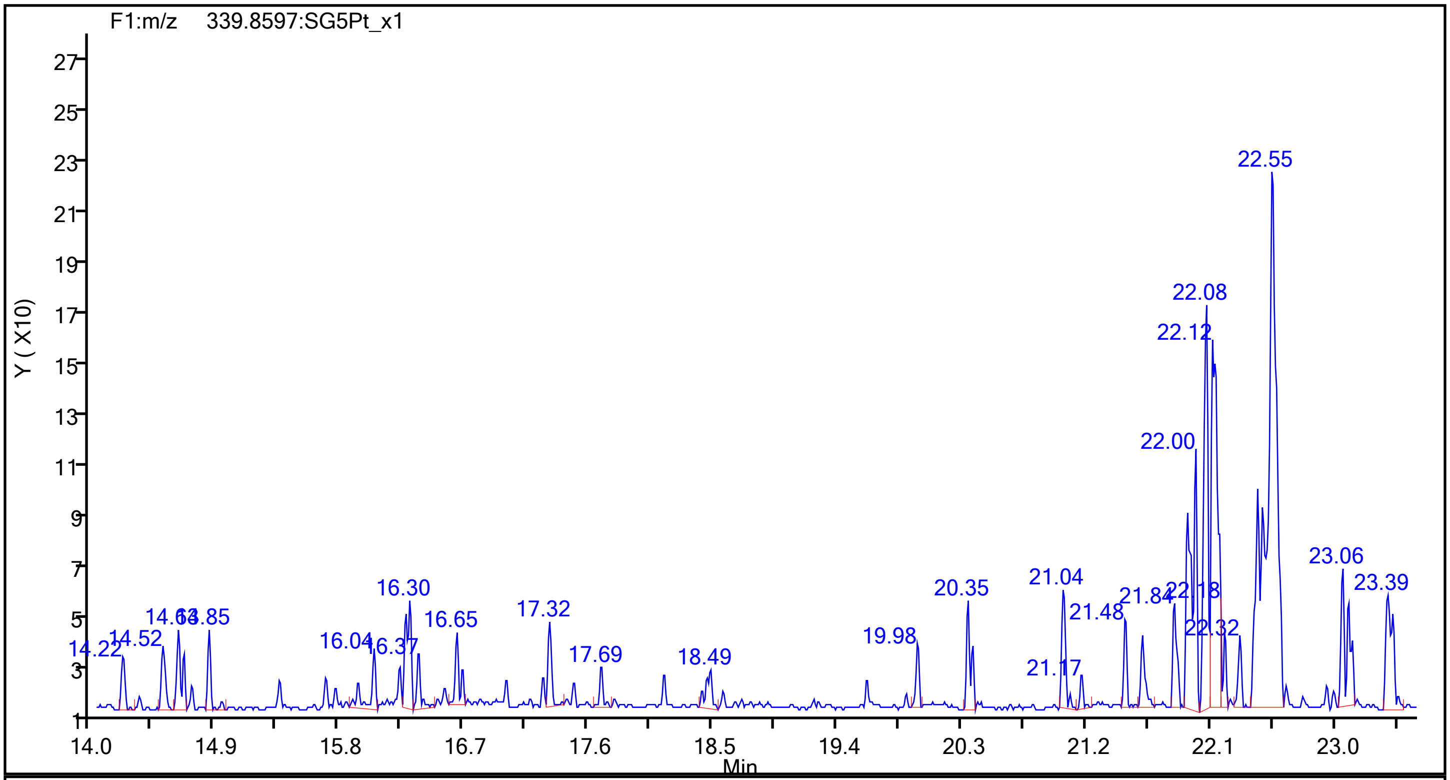

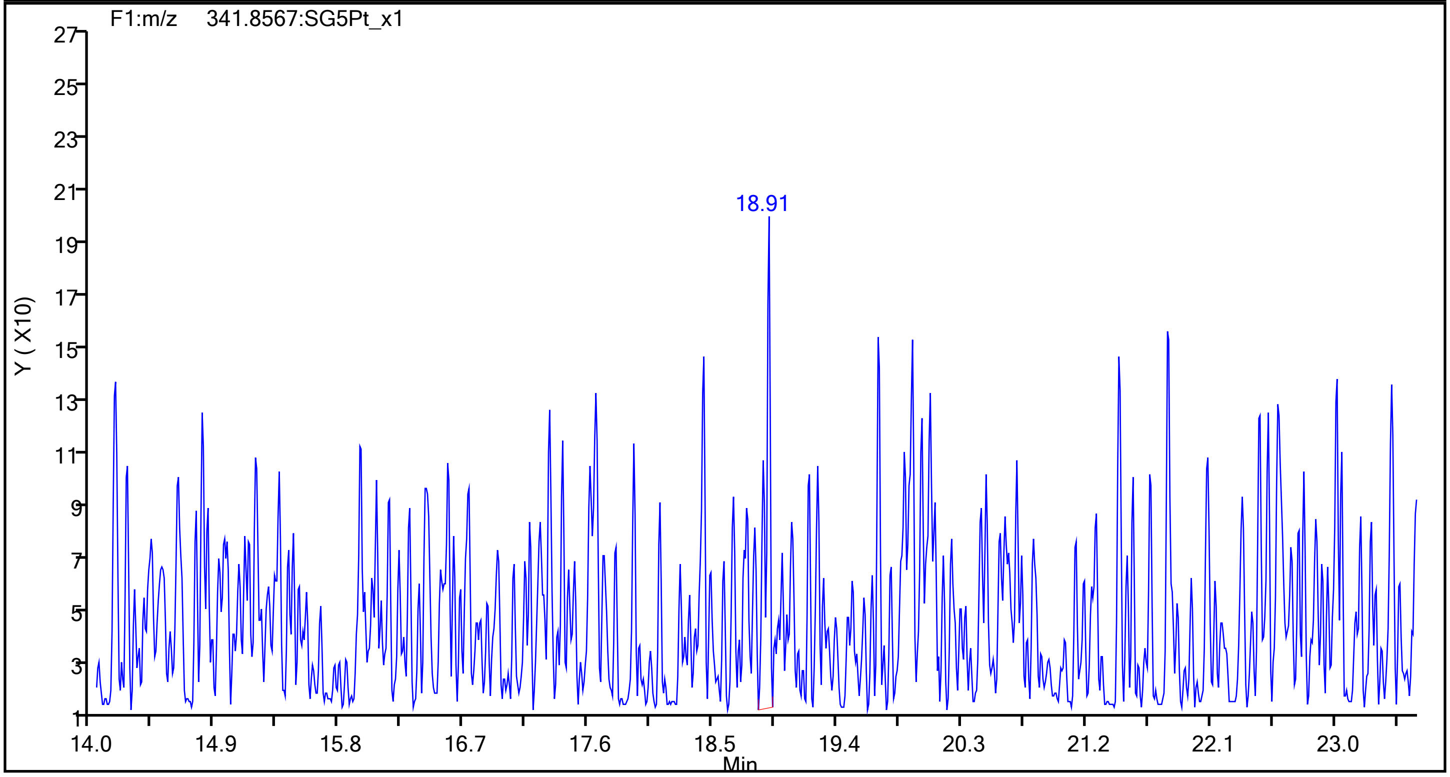

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

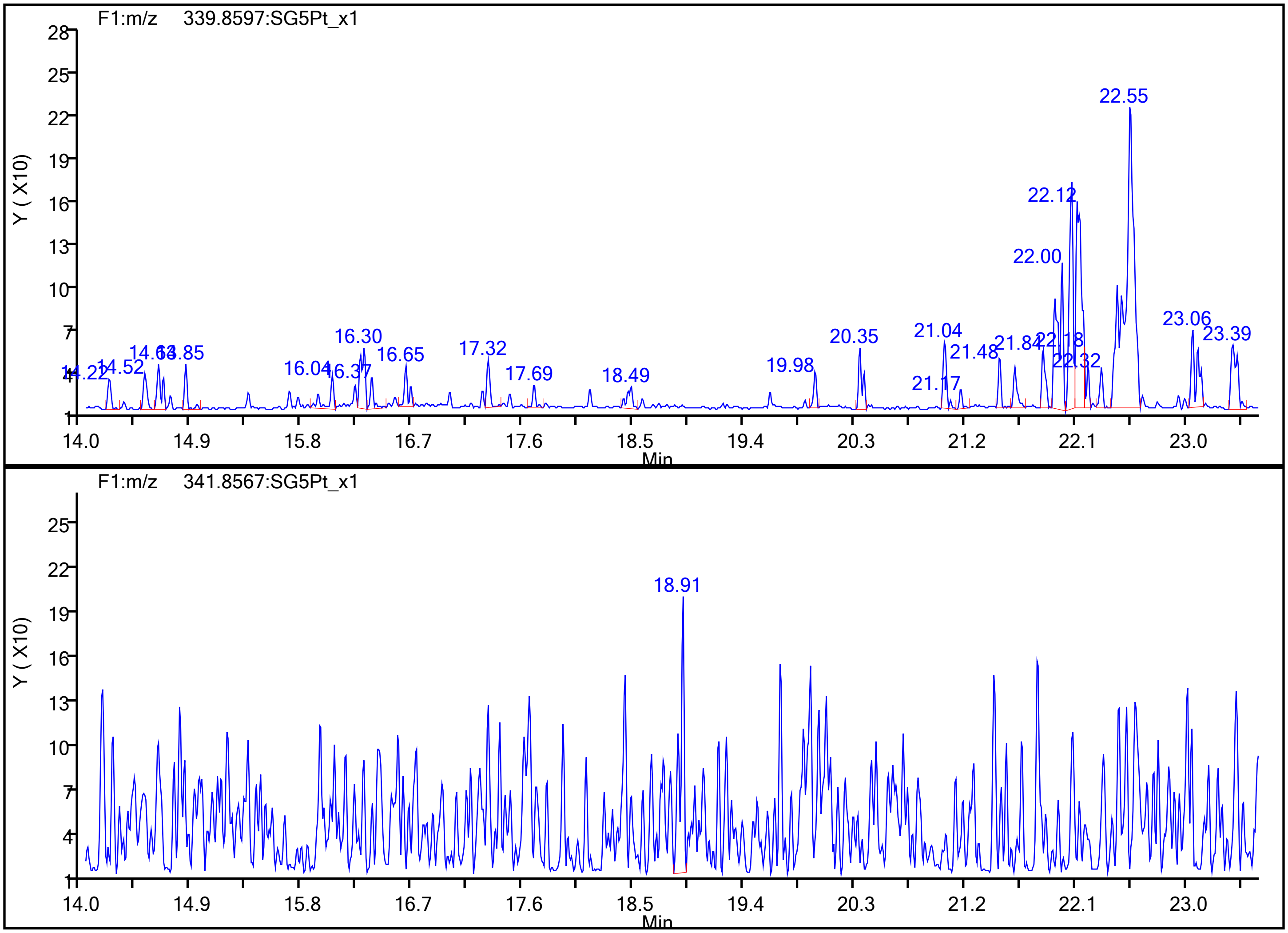

F1 PeCDFs Interference Mass

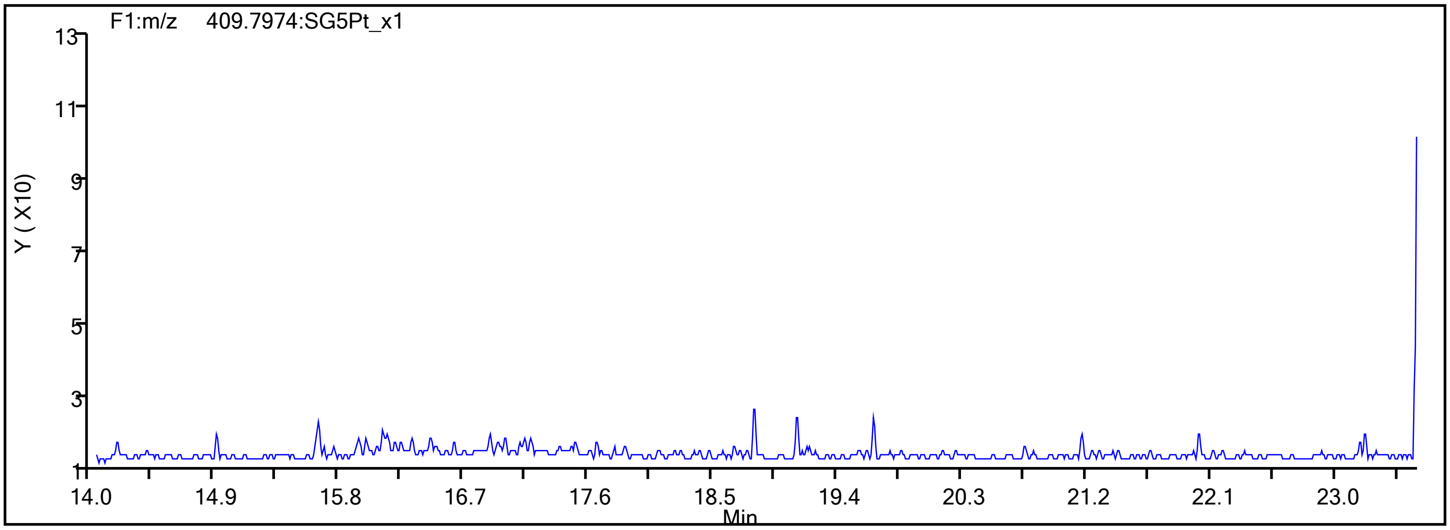

Report Date: 12-Oct-2020 09:39:58　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

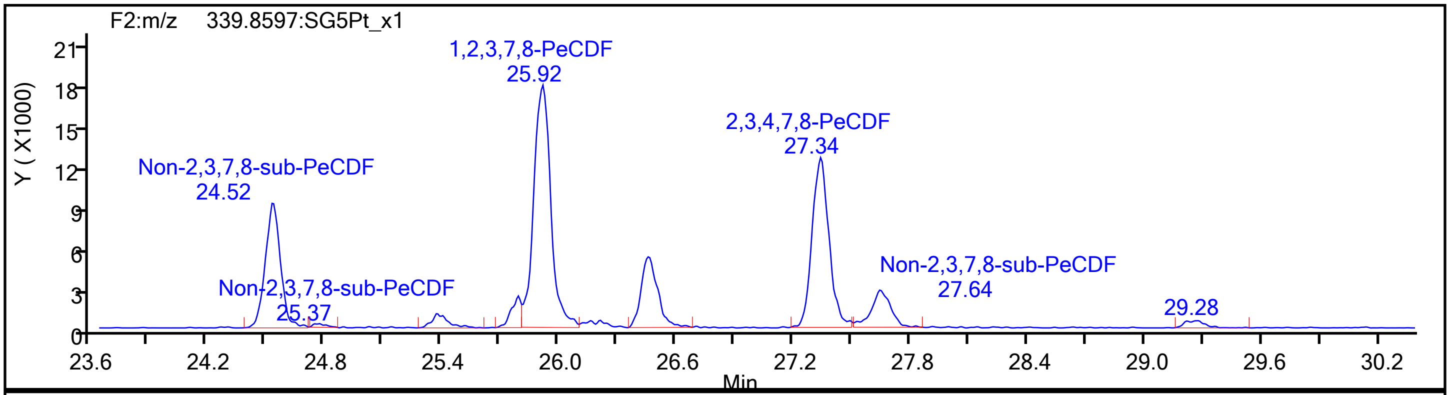

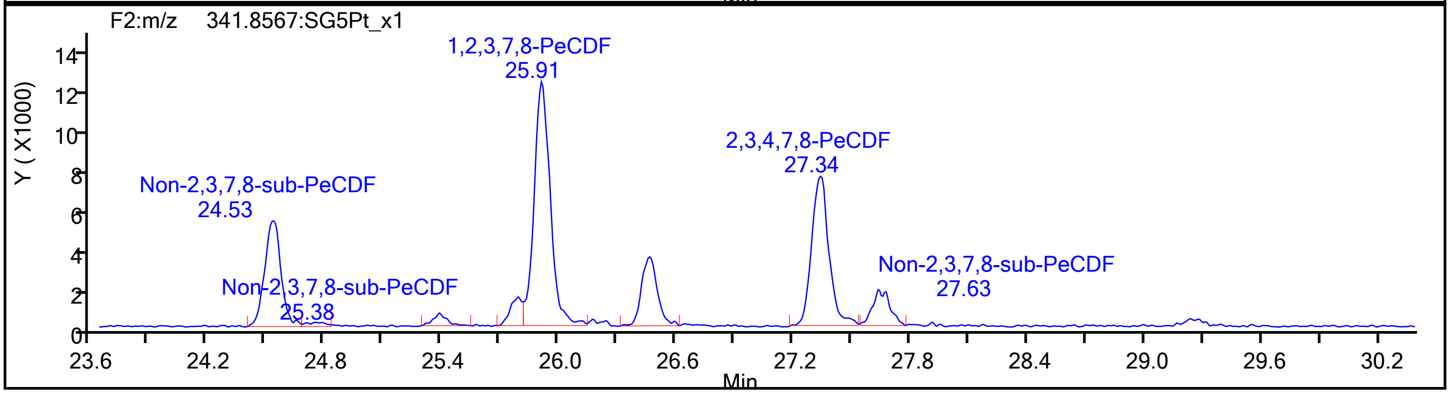

PeCDF Standards

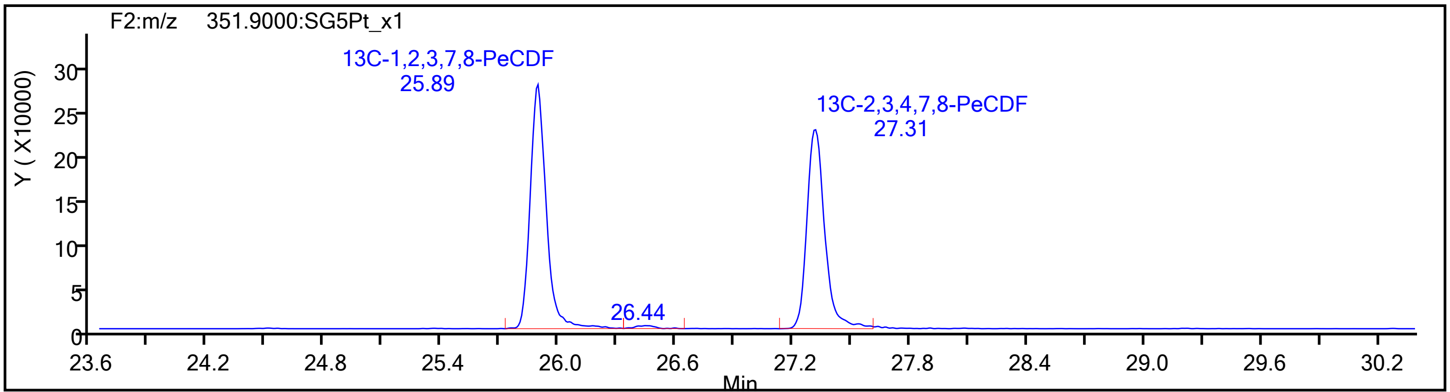

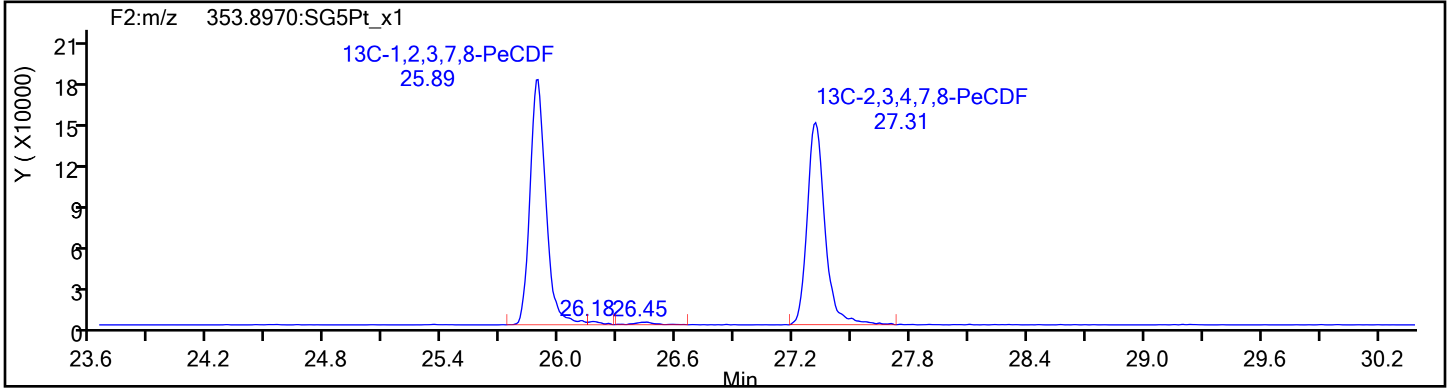

Report Date: 12-Oct-2020 09:39:58
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

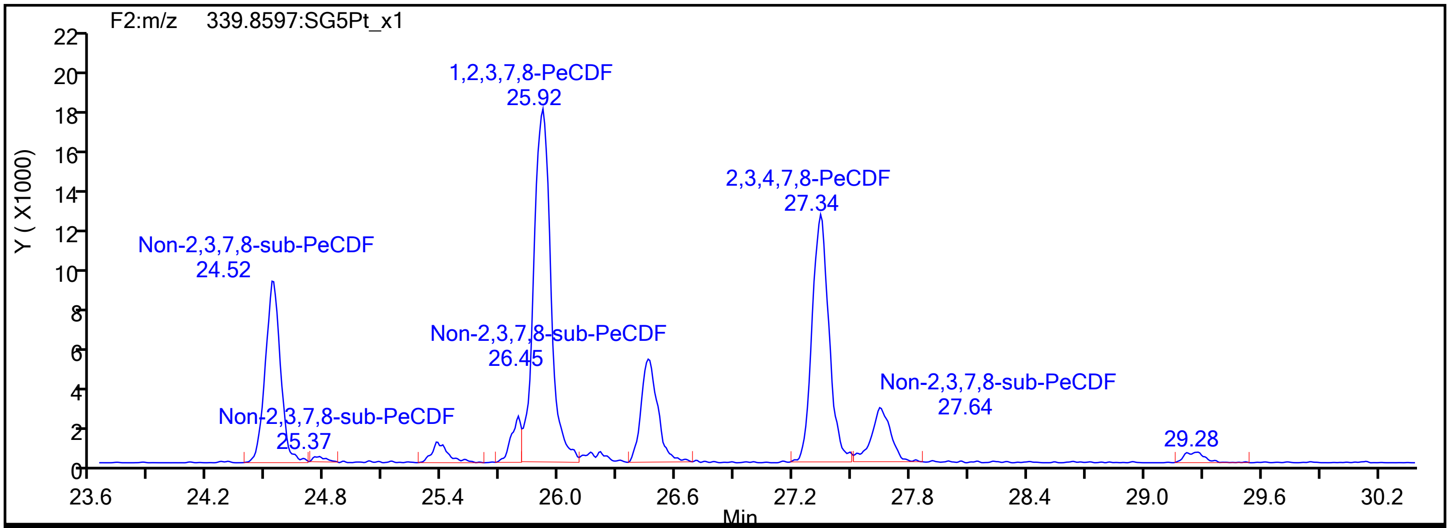

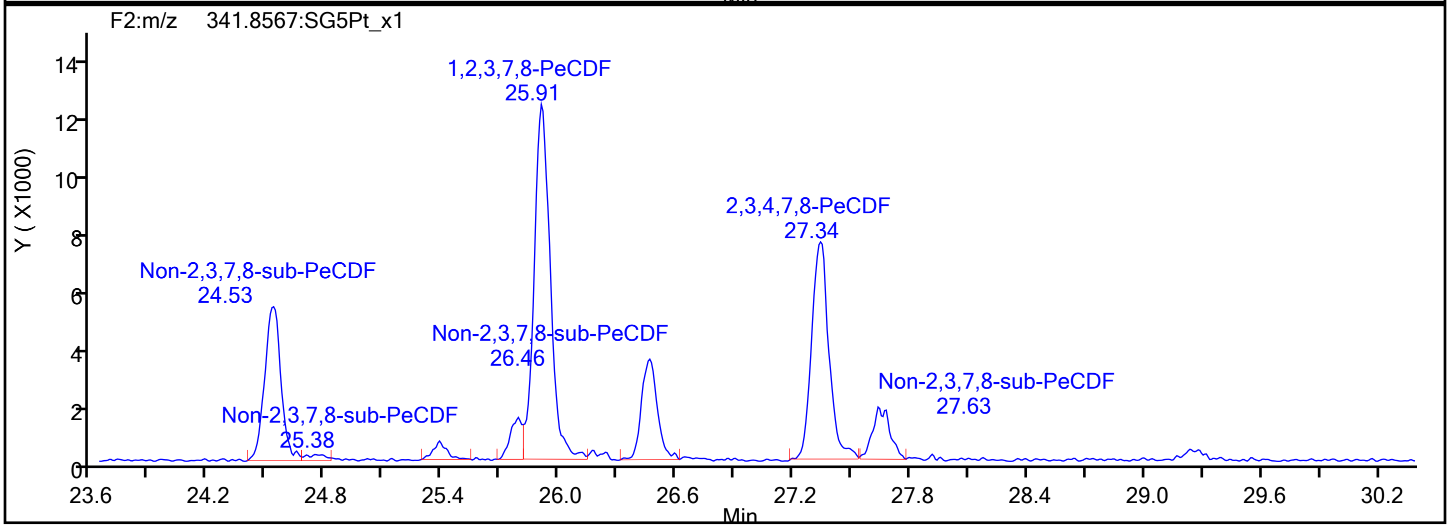

PeCDF Interference Mass

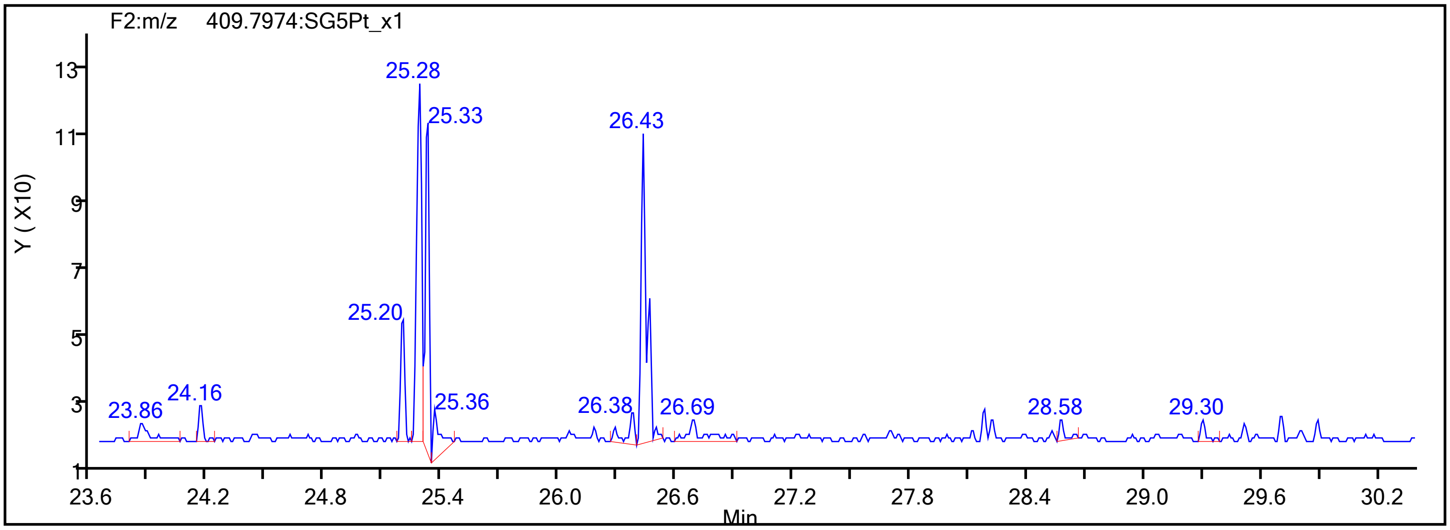

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

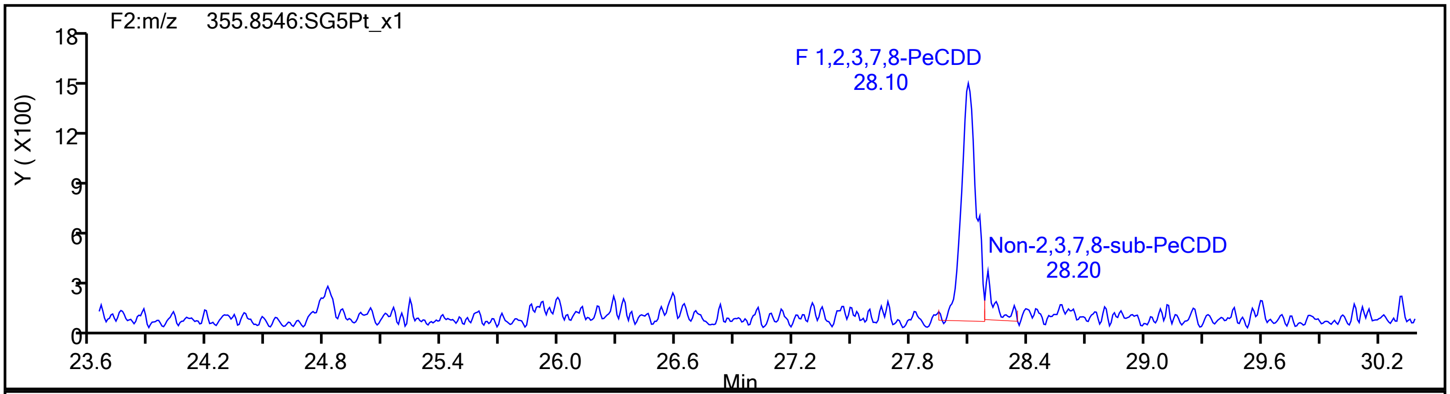

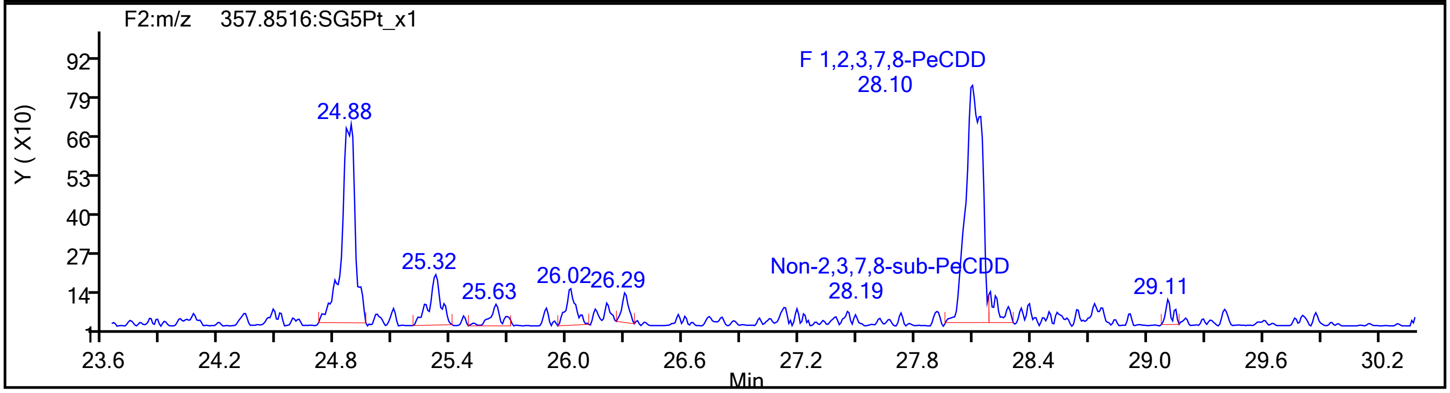

PeCDD Standards

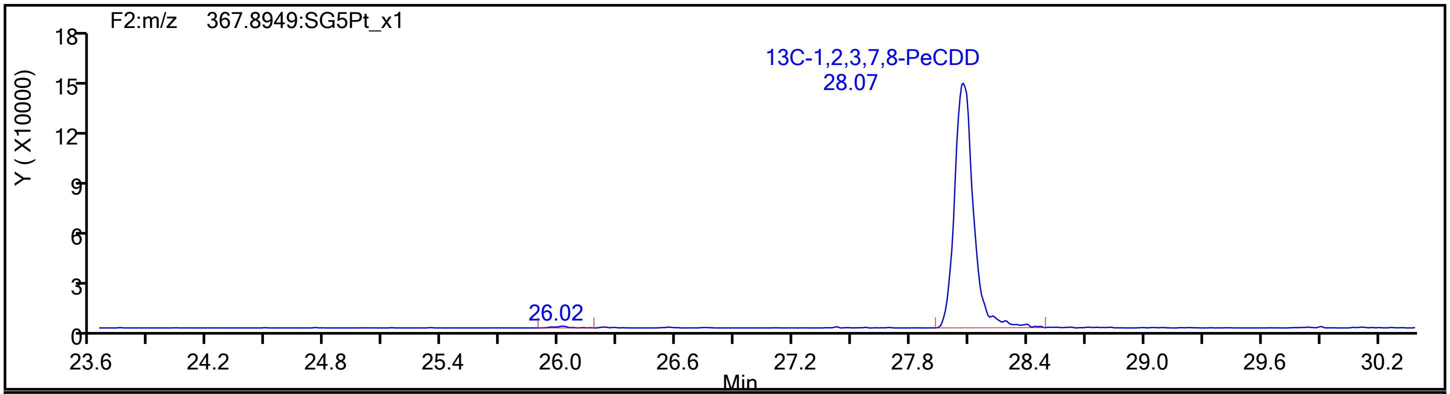

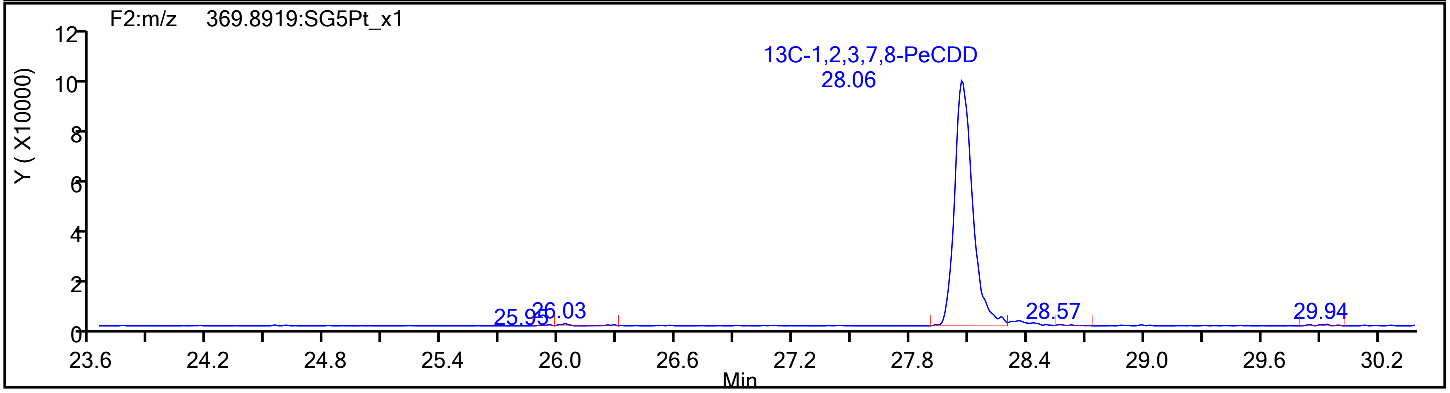

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Client ID:	11215702-Tank#2-valve-5-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

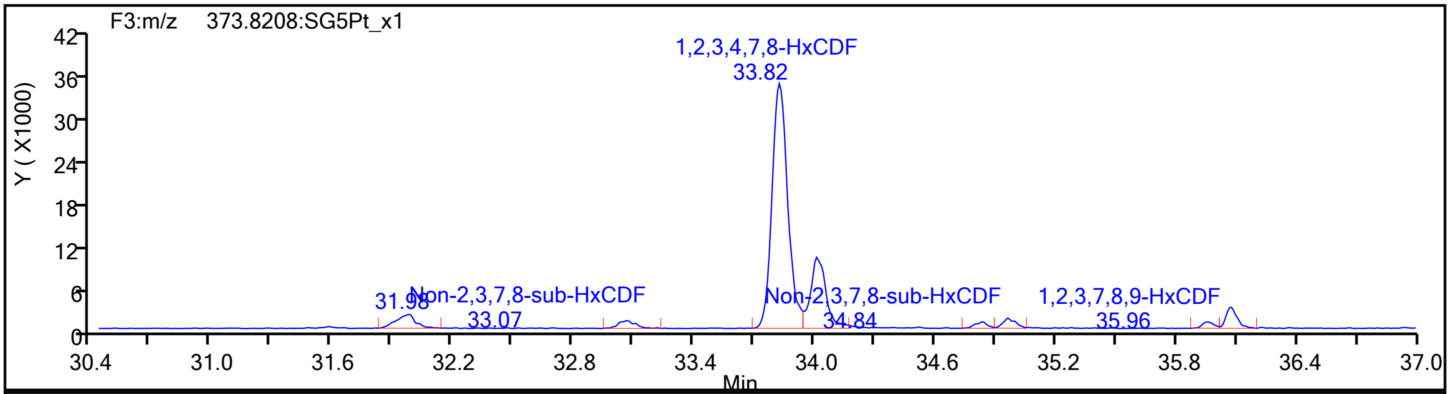

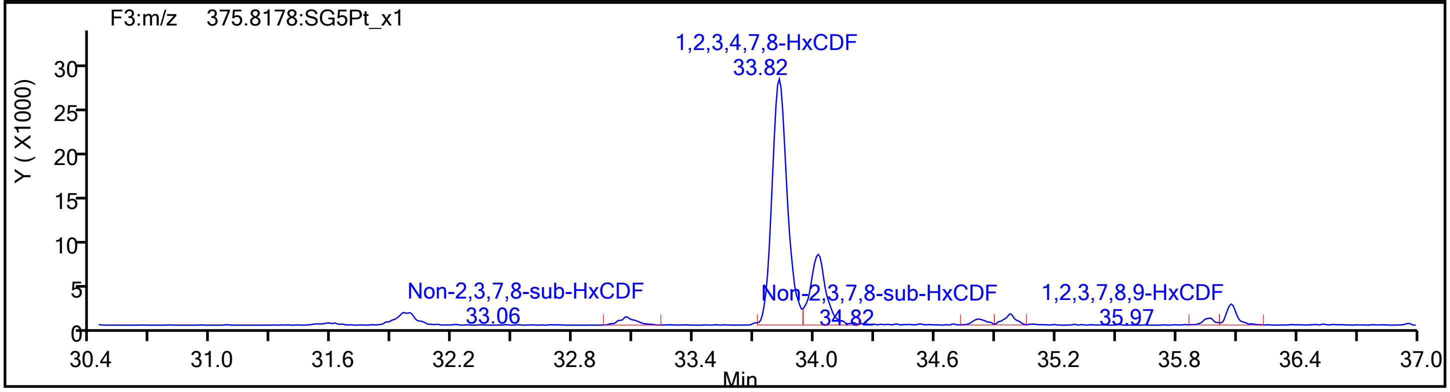

HxCDF Standards

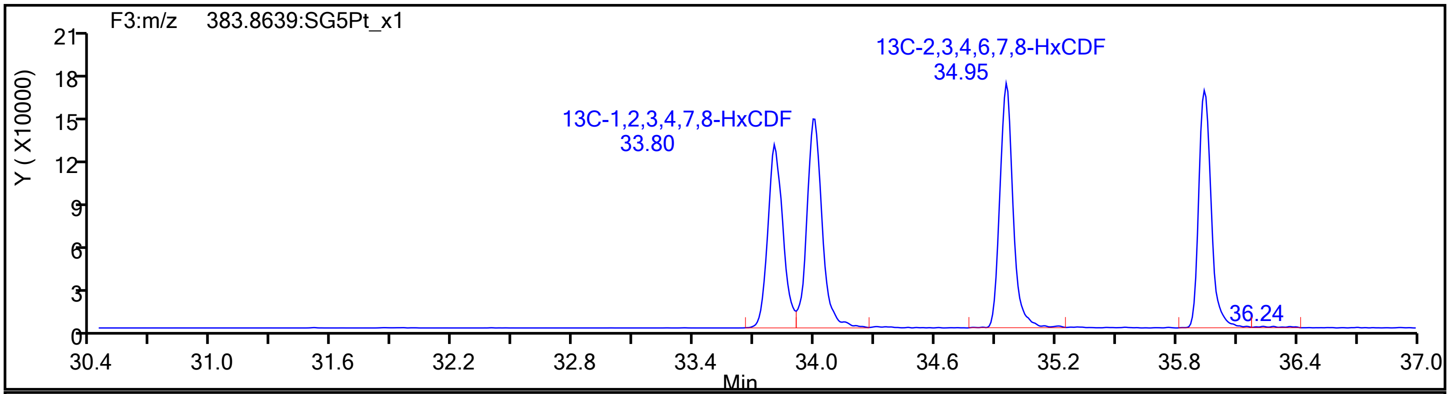

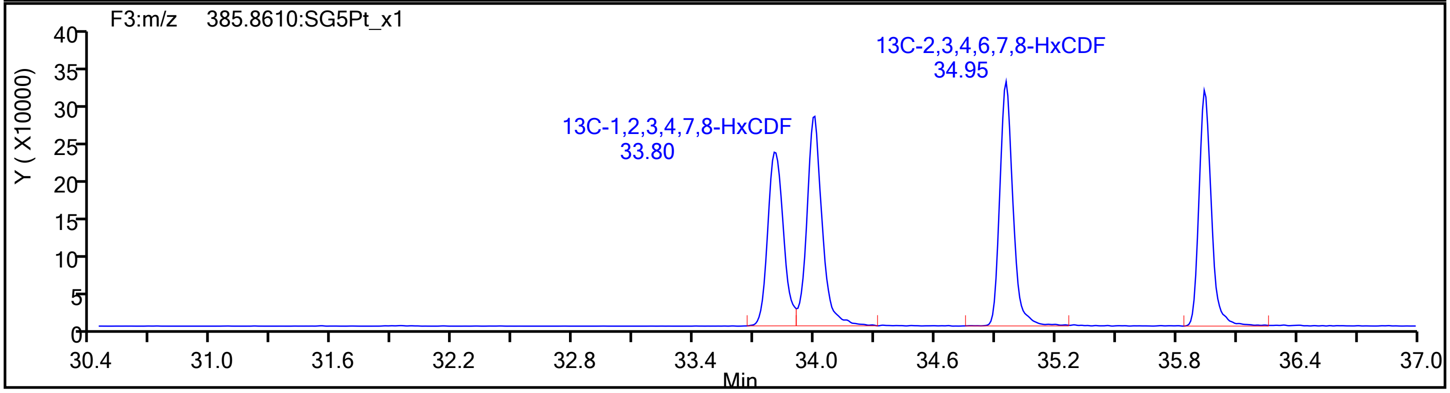

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

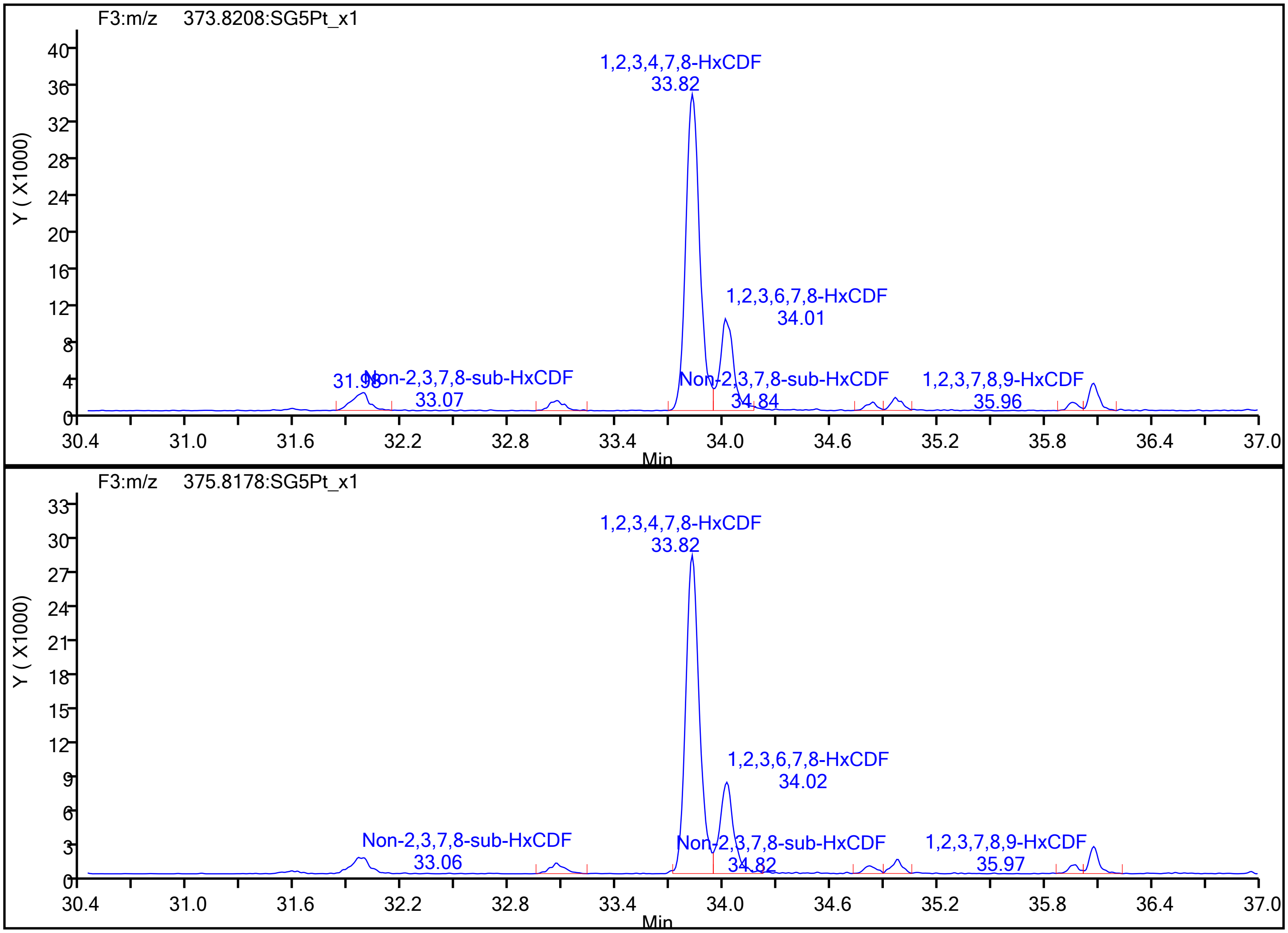

HxCDF Interference Mass

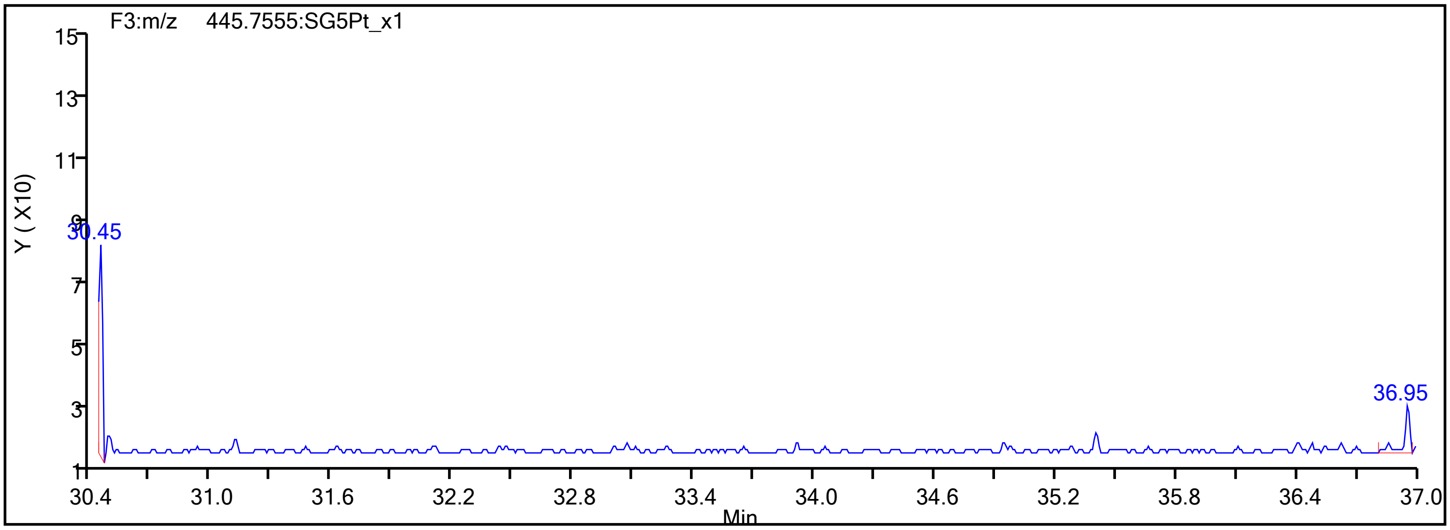

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date:	10-Oct-2020 14:56:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

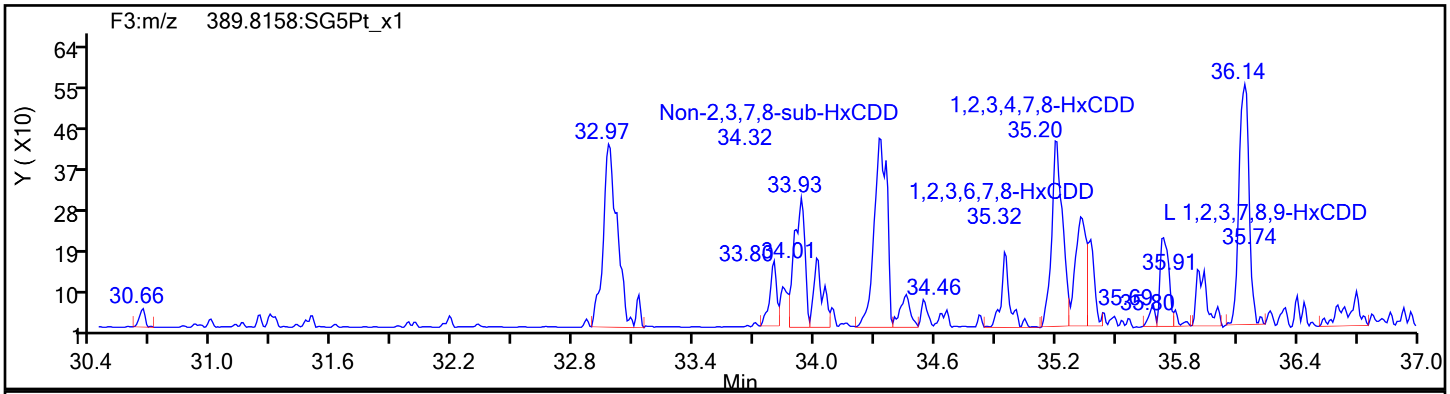

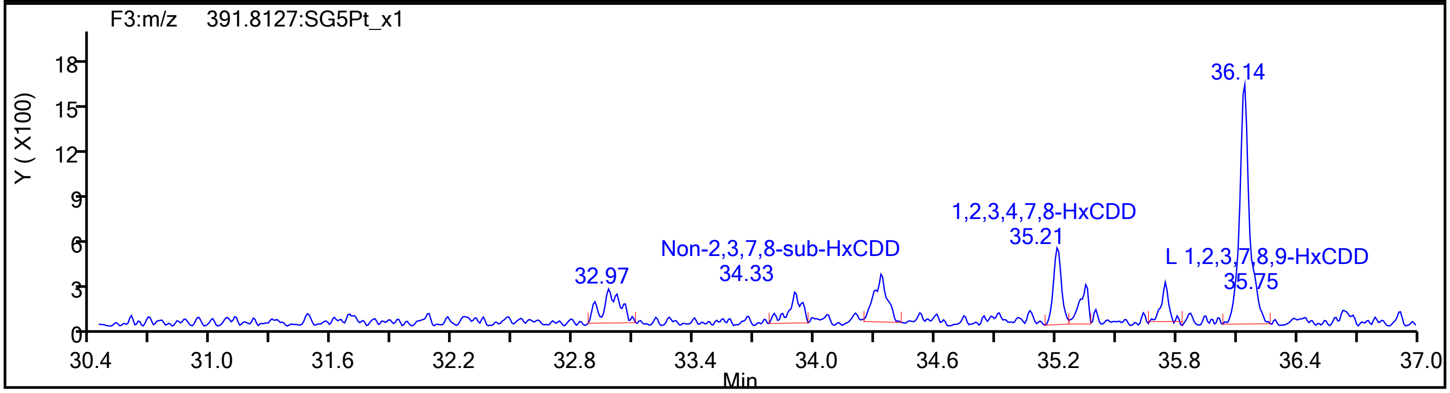

HxCDD Standards

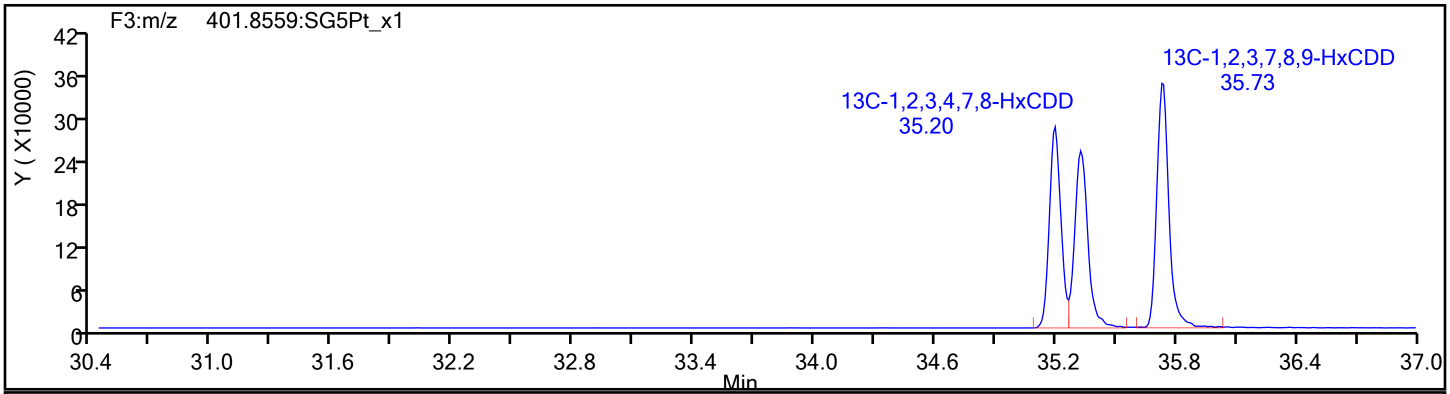

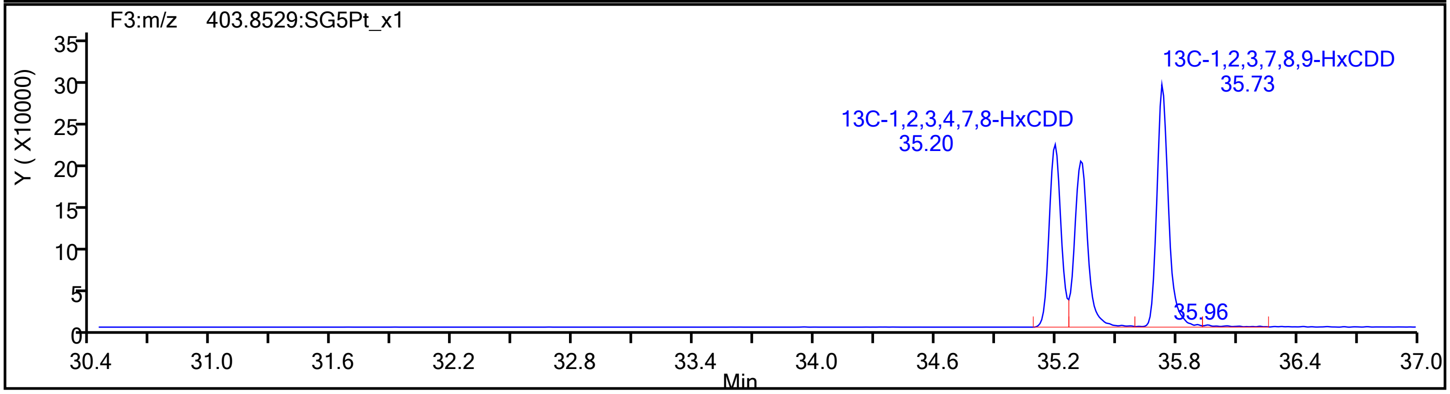

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d
Injection Date: 10-Oct-2020 14:56:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 420640
Sample Line#: 29
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Column Dia: 0.32 mm

HpCDF

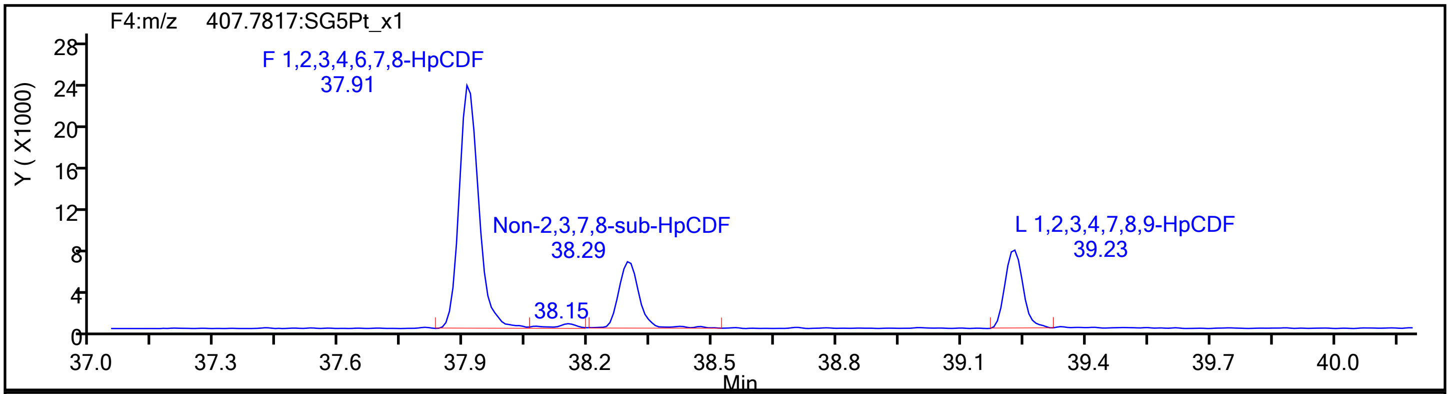

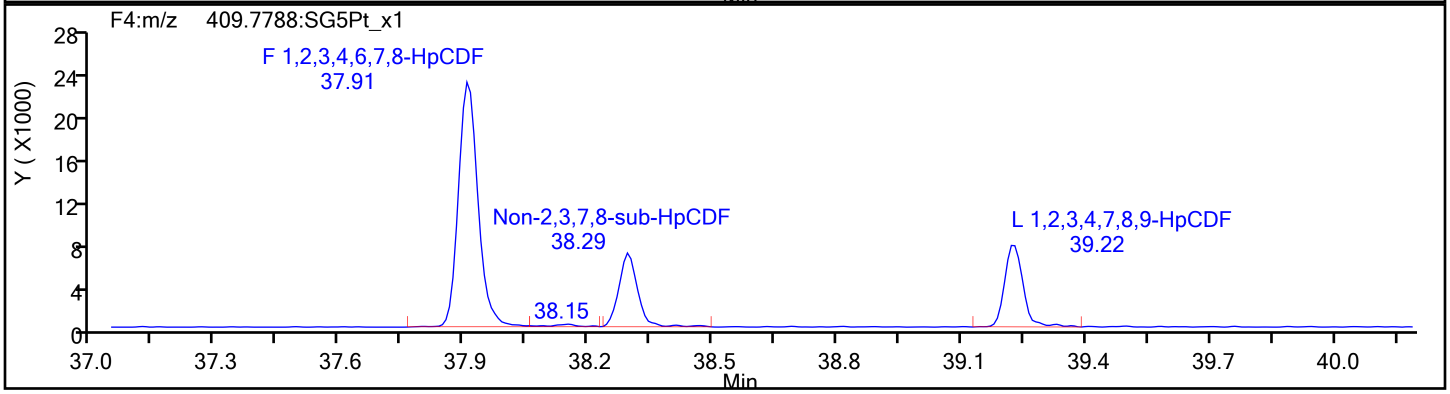

HpCDF Standards

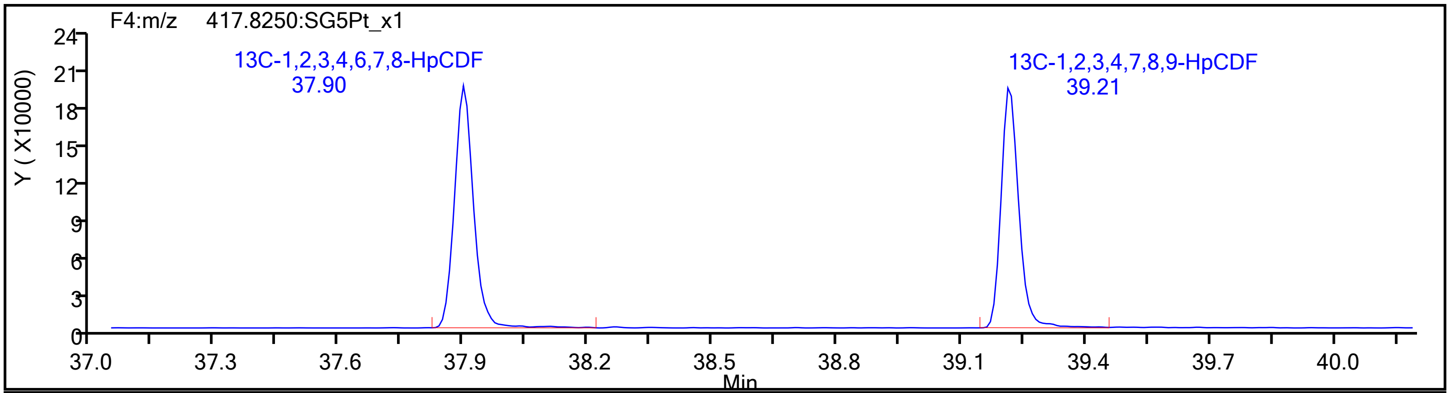

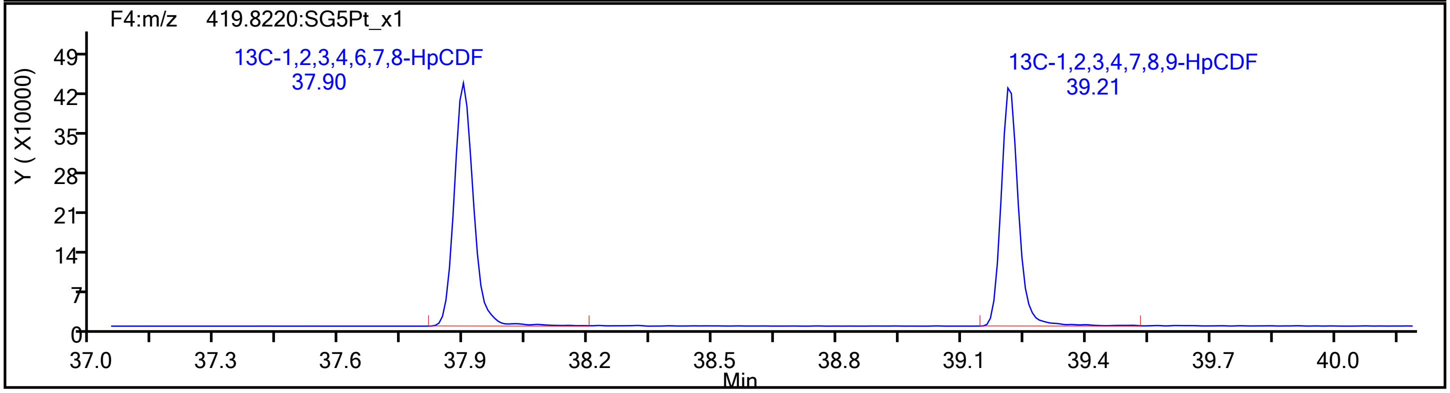

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
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HpCDF

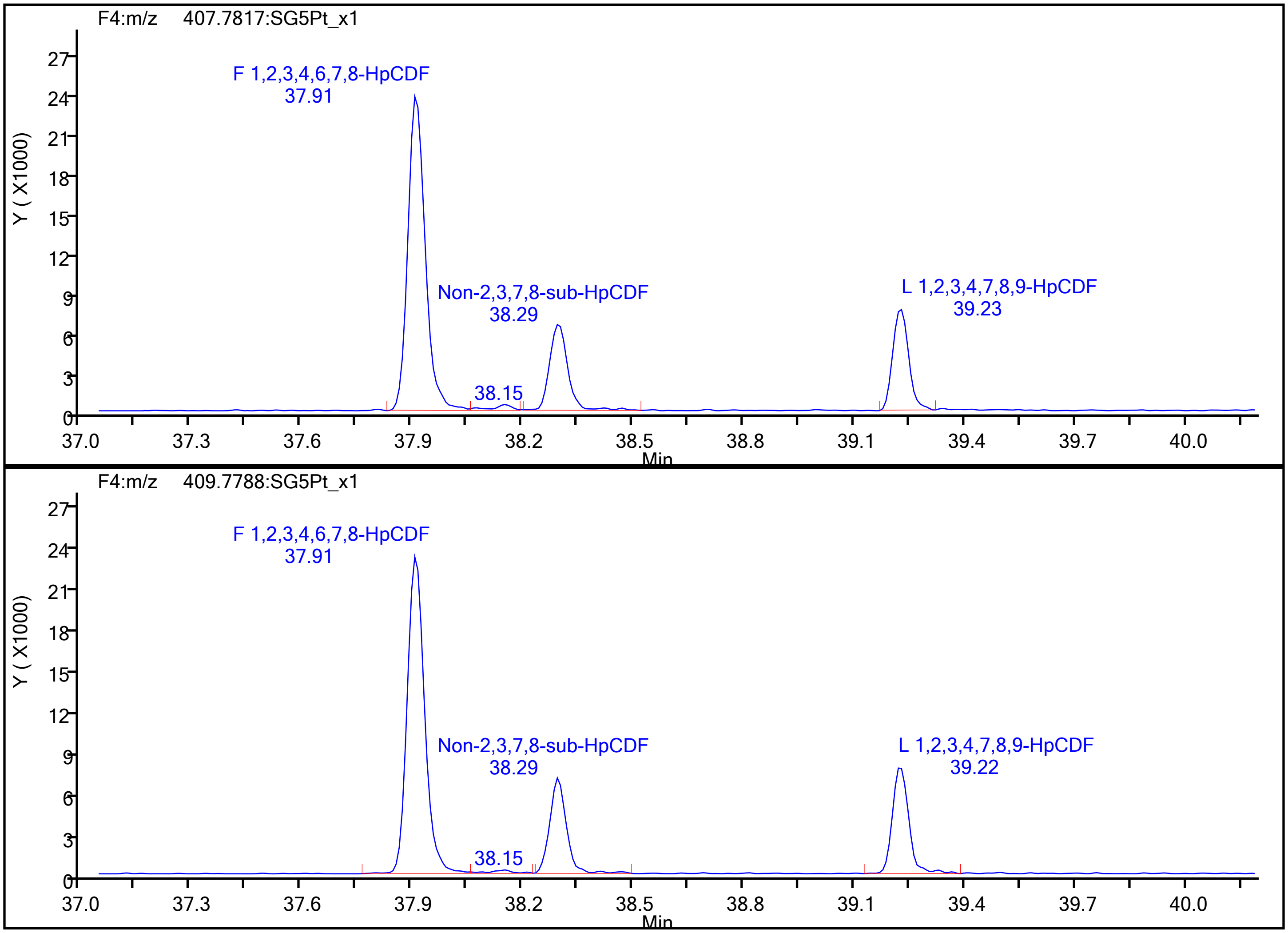

HpCDF Interference Mass

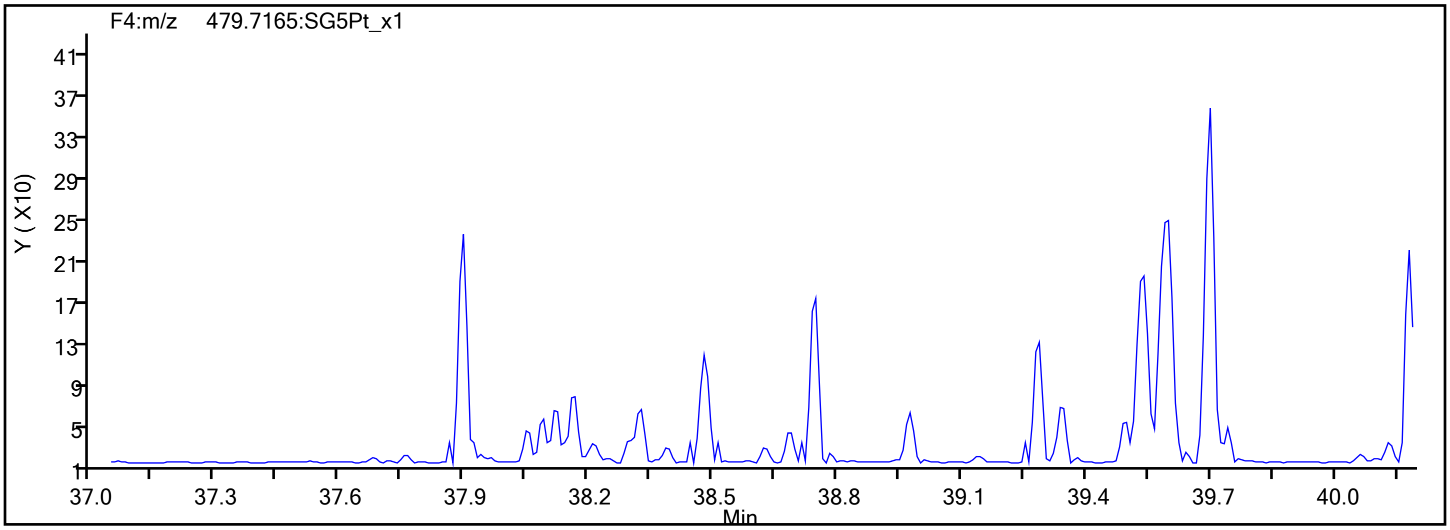

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date: 10-Oct-2020 14:56:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-2

Worklist#: 420640 Sample Line#: 29

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

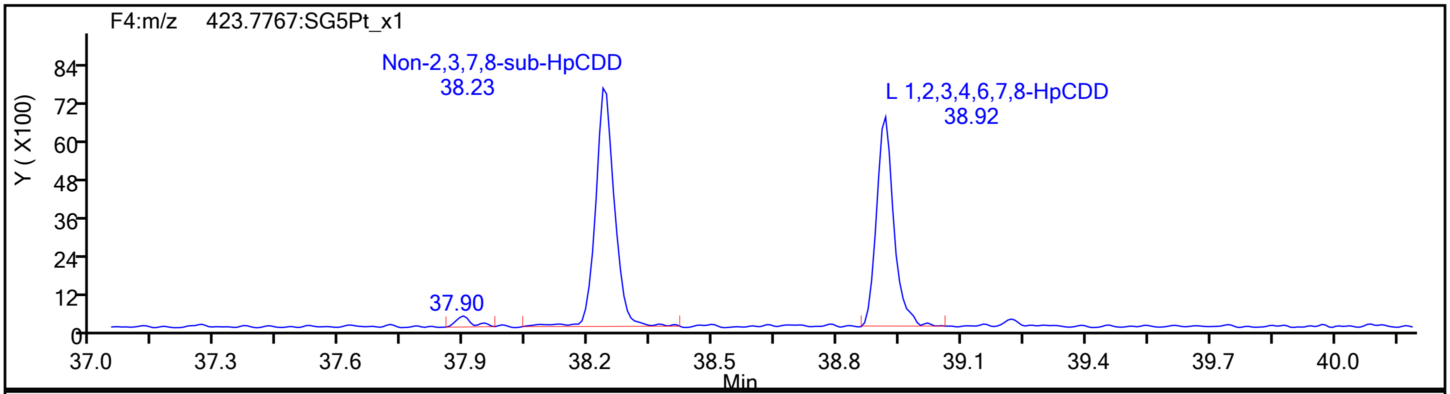

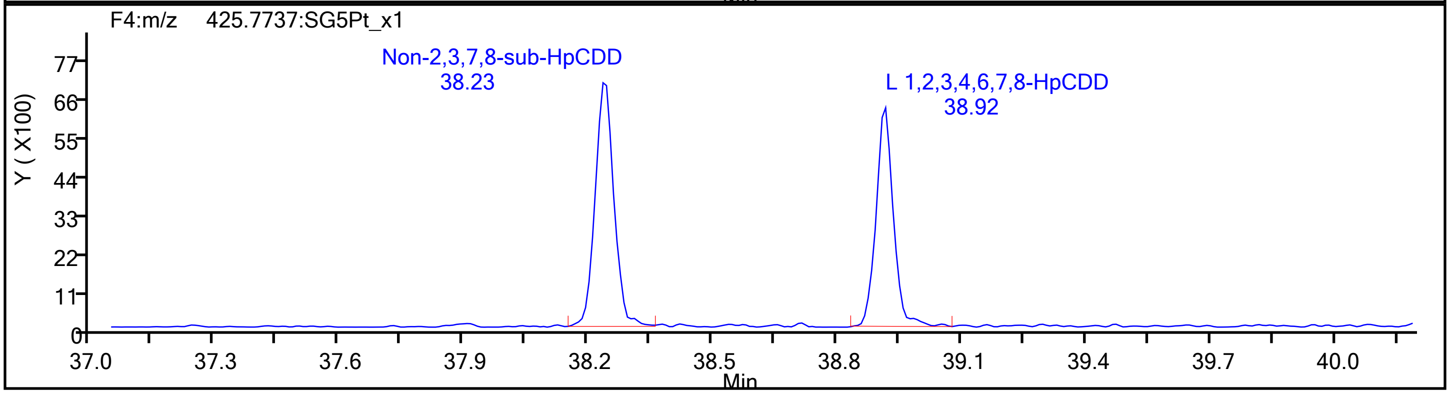

HpCDD Standards

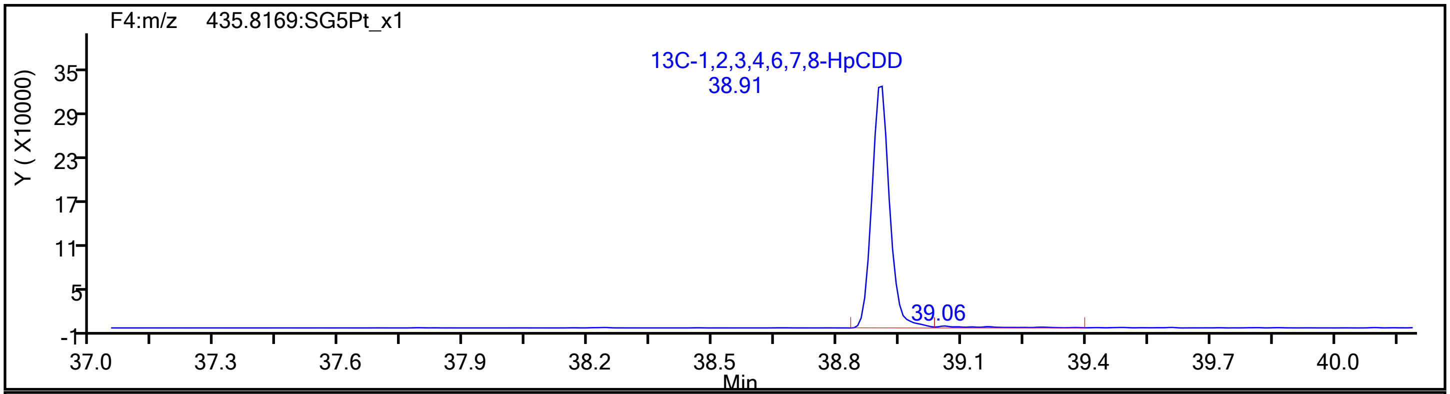

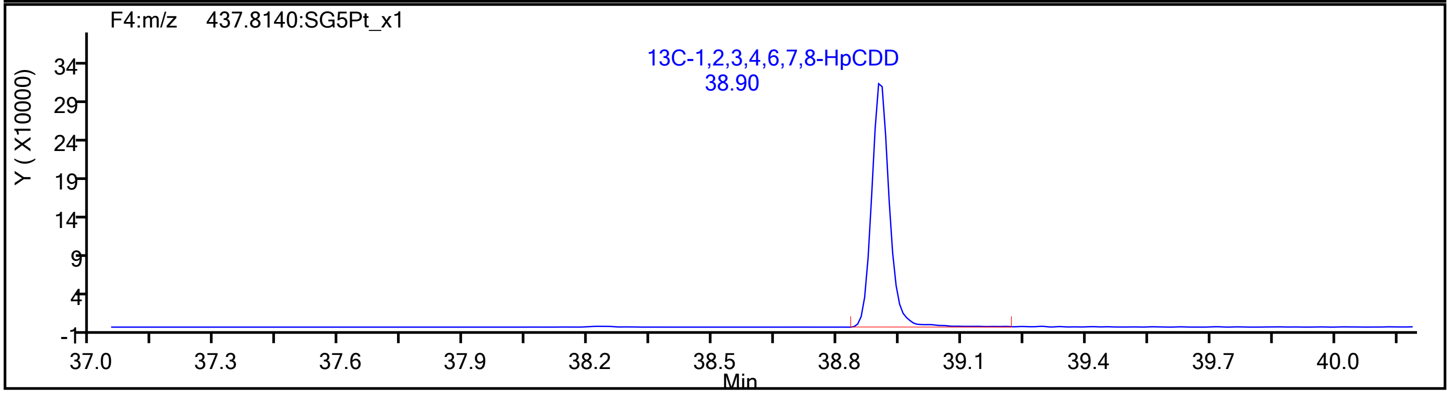

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date: 10-Oct-2020 14:56:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-2

Worklist#: 420640

Sample Line#: 29

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

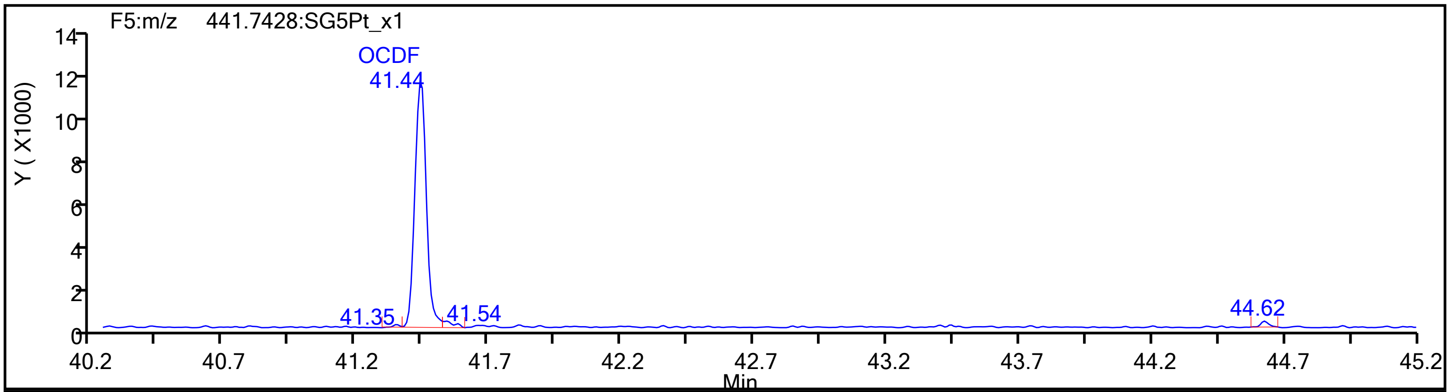

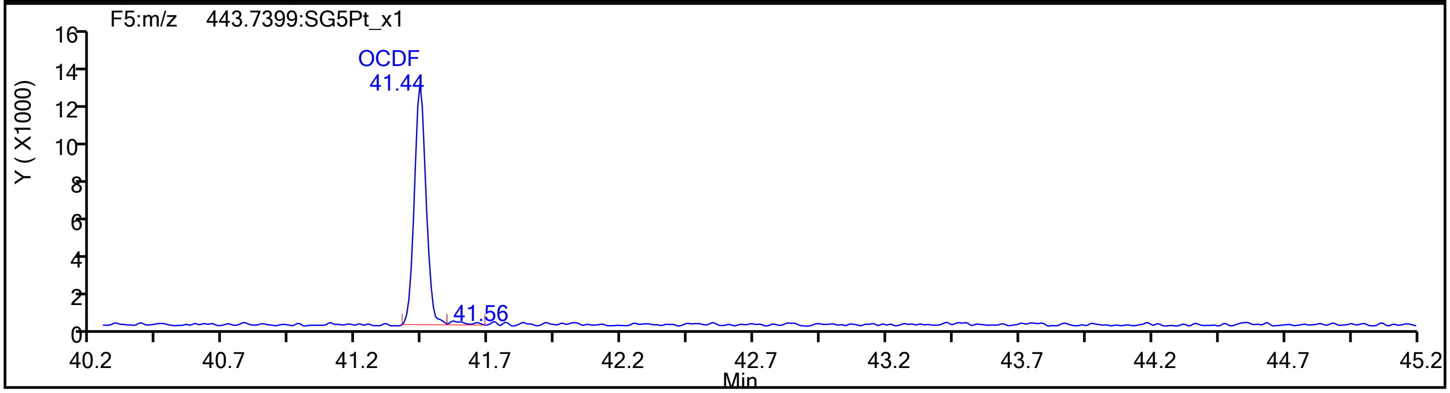

OCDF Standards

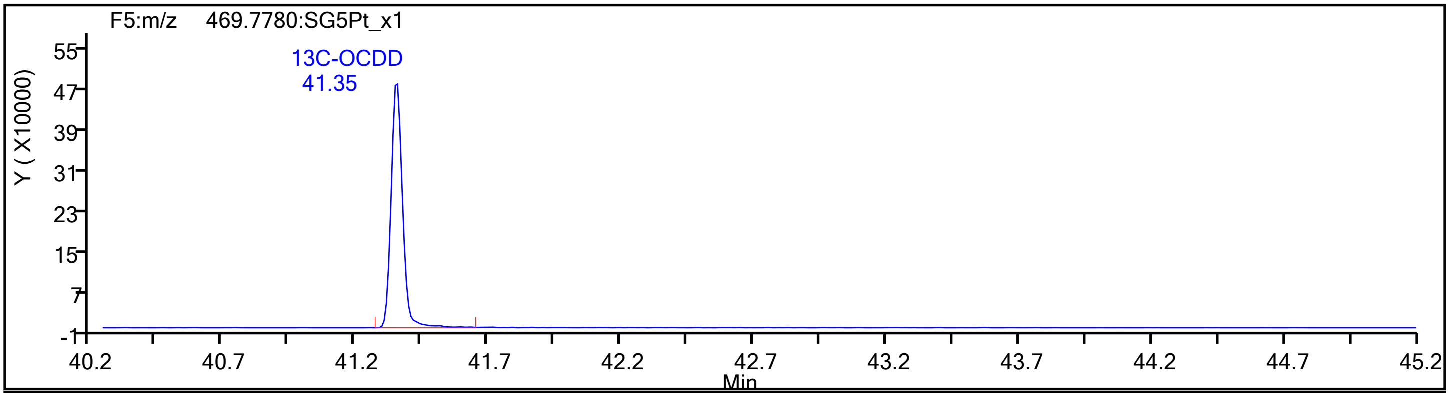

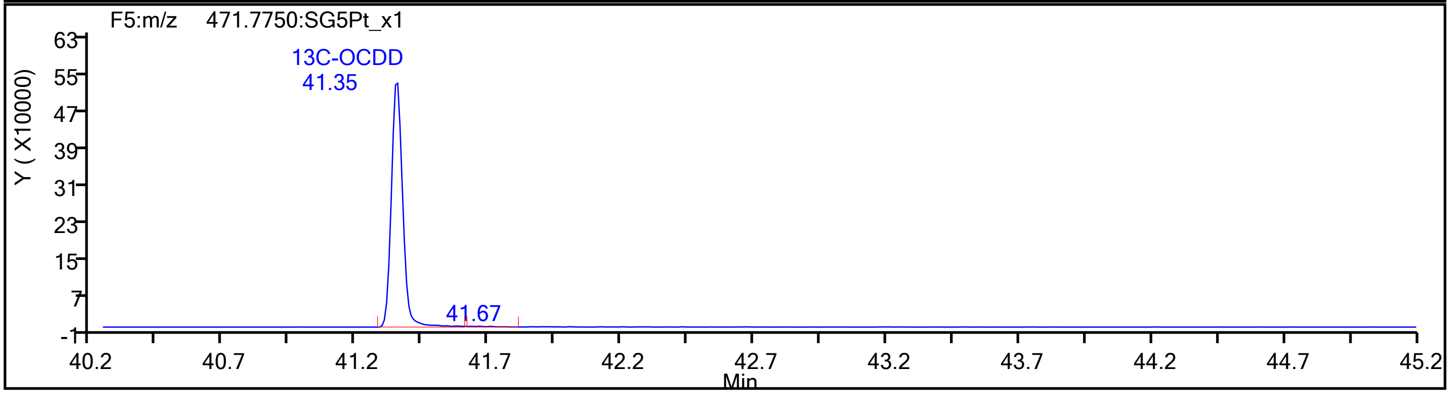

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date:	10-Oct-2020 14:56:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

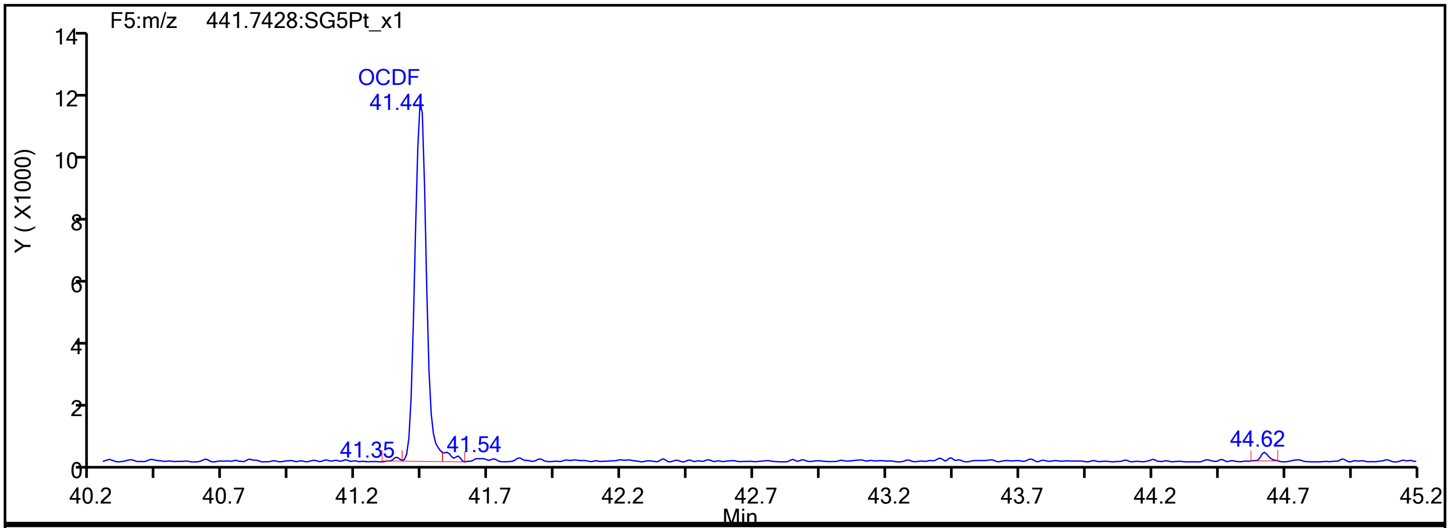

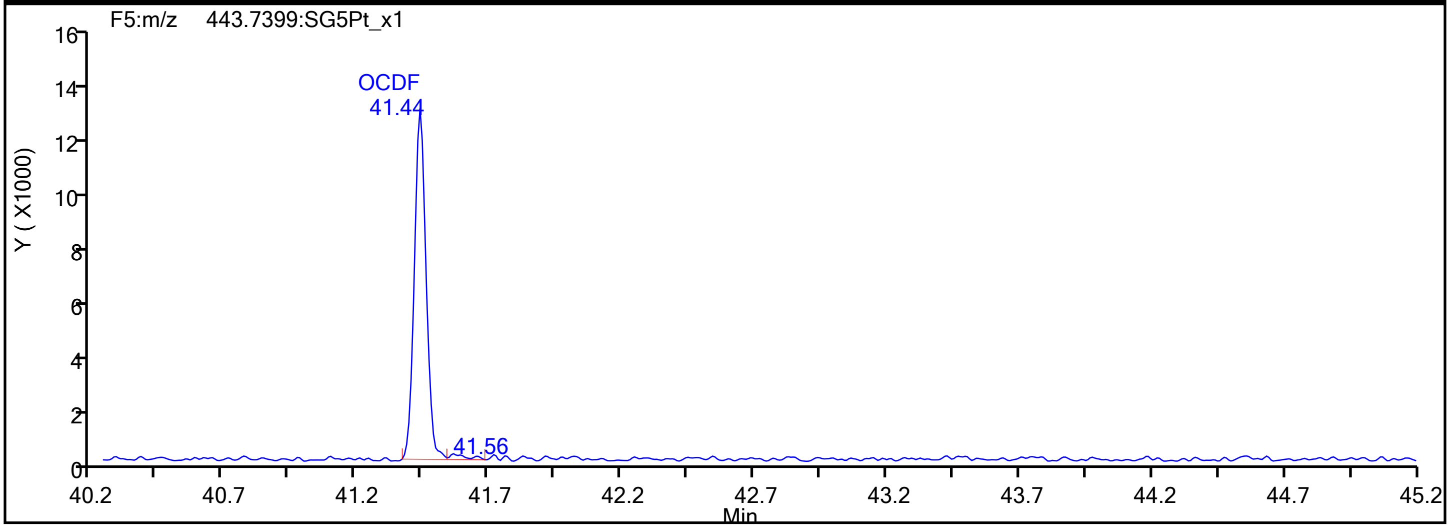

OCDF Interference Mass

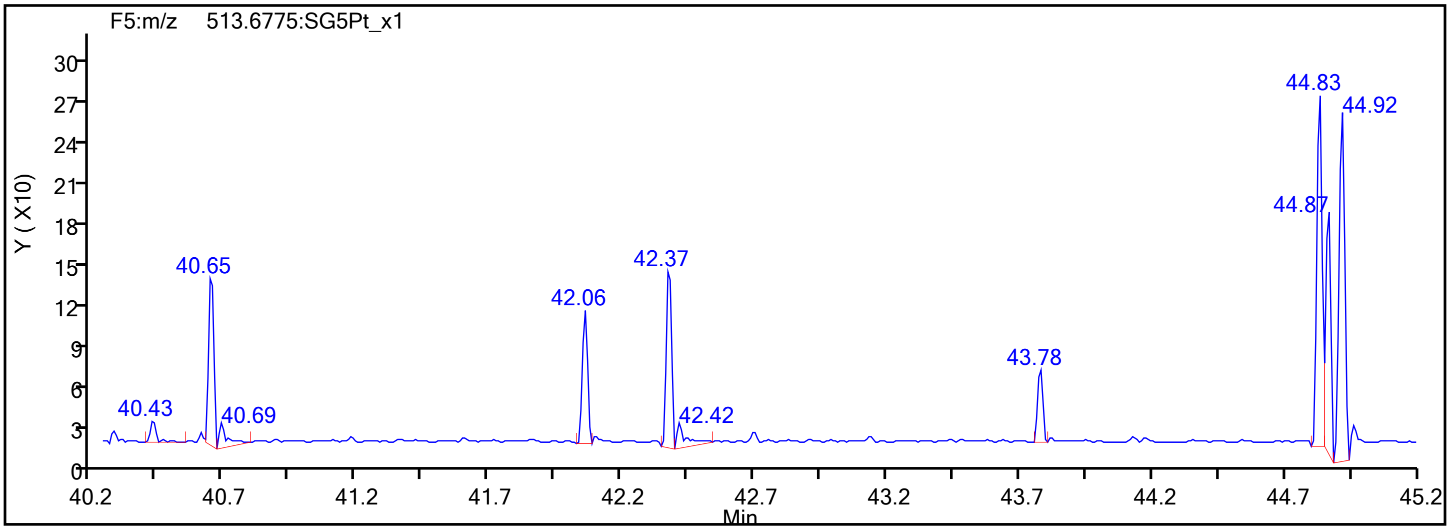

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

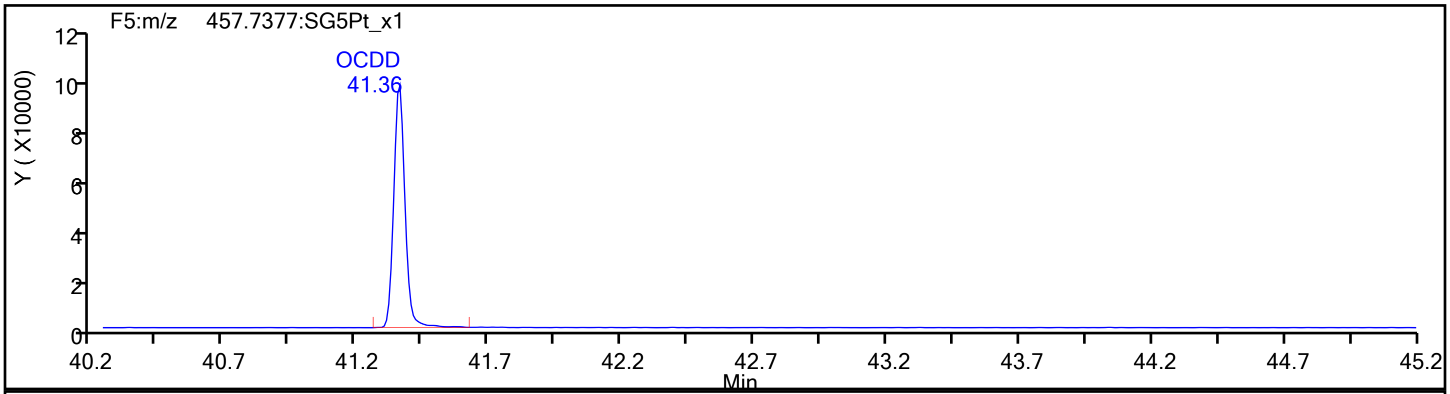

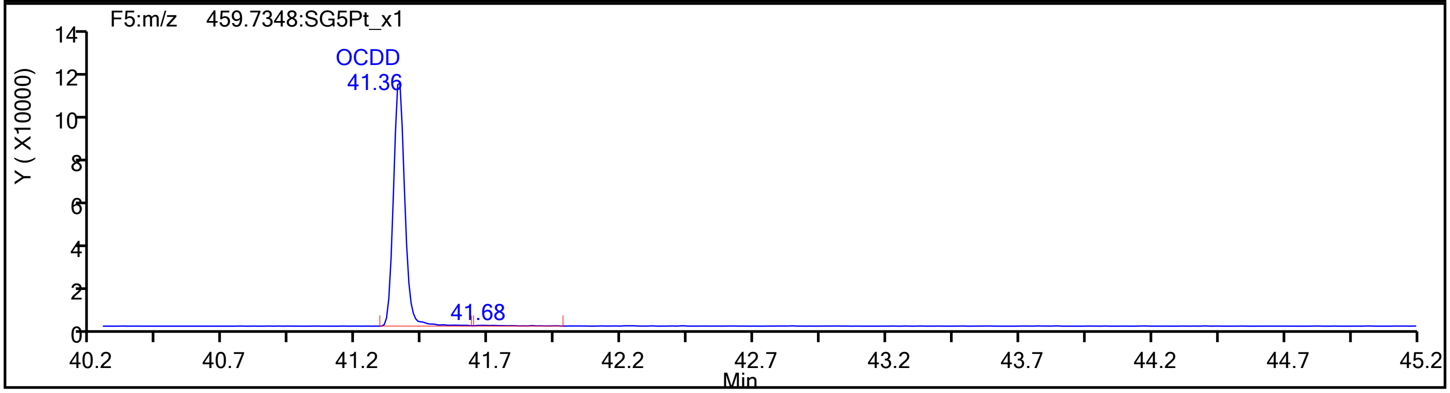

OCDD Standards

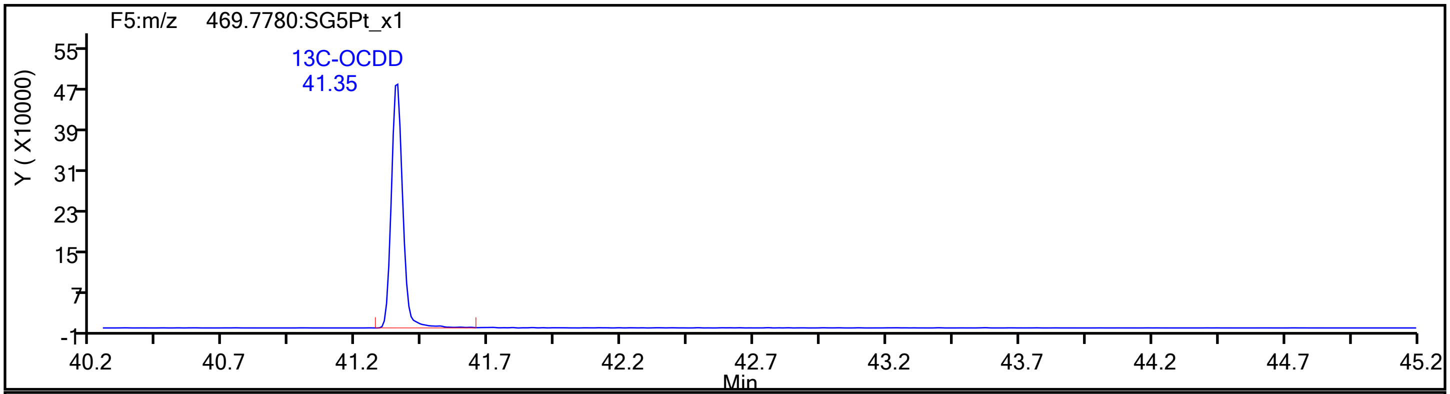

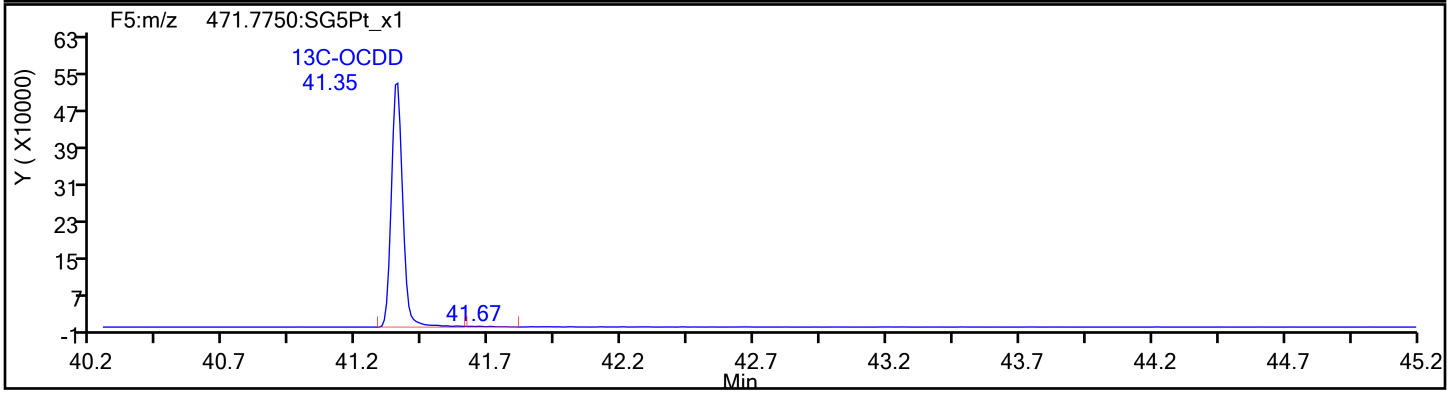

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d		
Injection Date:	10-Oct-2020 14:56:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	420640	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

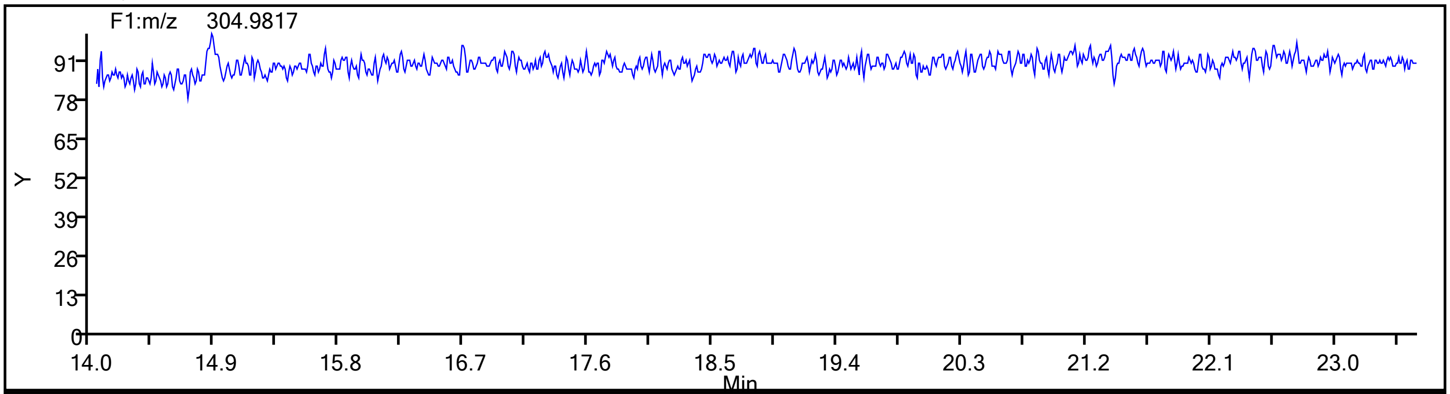

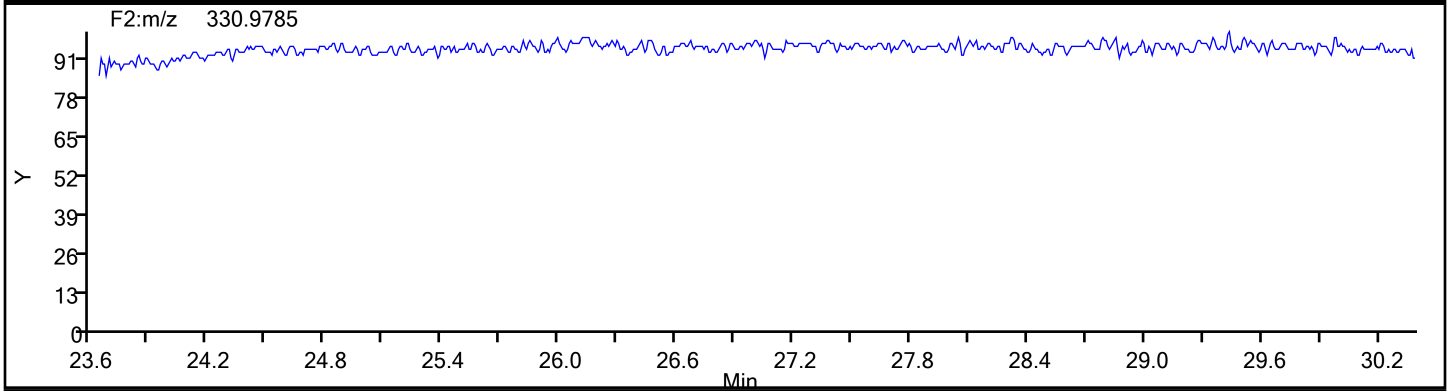

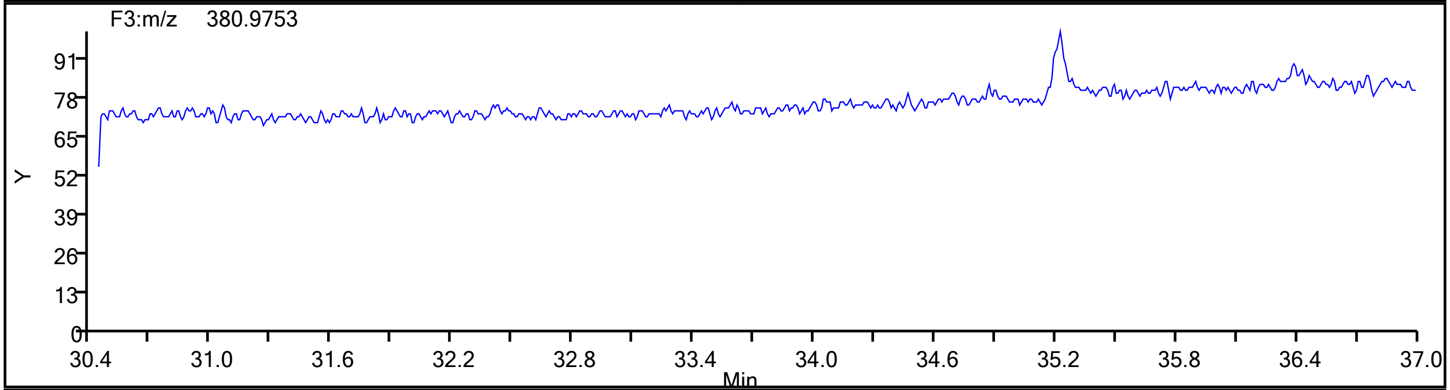

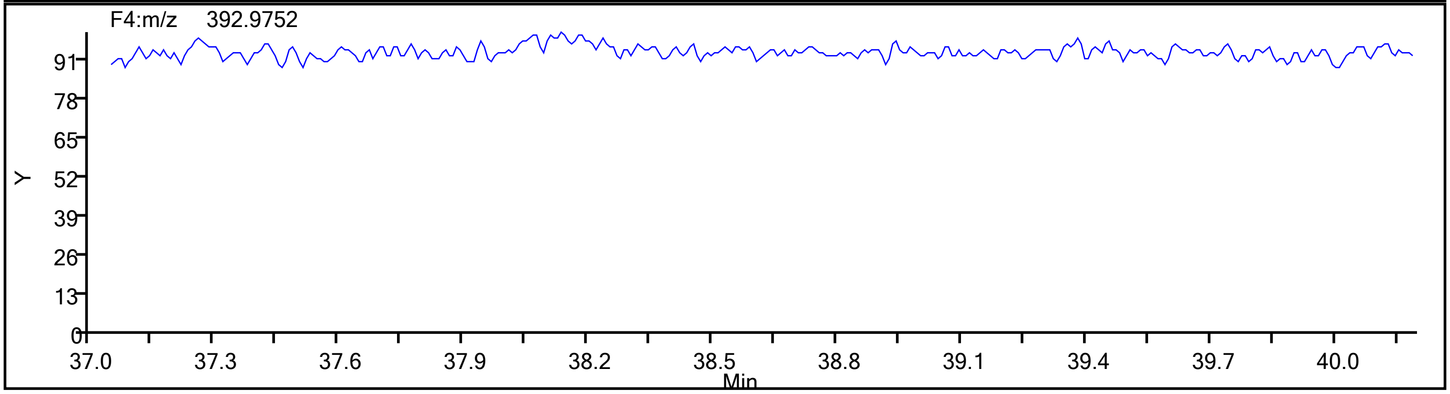

Report Date: 12-Oct-2020 09:39:58 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_29.d

Injection Date: 10-Oct-2020 14:56:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-2

Worklist#: 420640 Sample Line#: 29

Column Type: DB-5 Column Dia: 0.32 mm

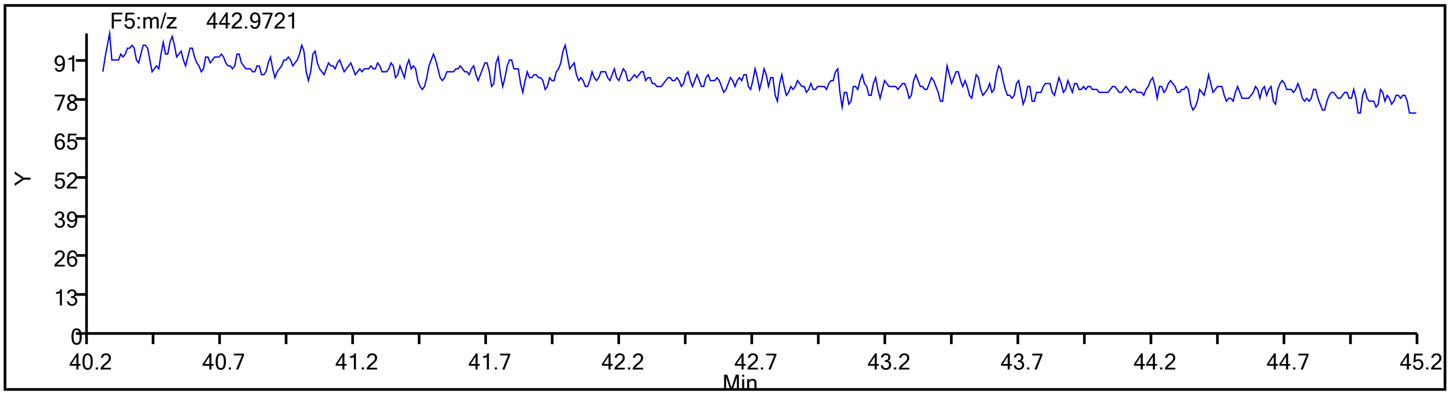

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-valve-5-2 RA	Lab Sample ID: 320-65130-22 RA
Matrix: Water	Lab File ID: 12OC20A11D2_013.d
Analysis Method: 1613B	Date Collected: 09/11/2020 09:30
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1047.2(mL)	Date Analyzed: 10/12/2020 23:00
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421482	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	3500	B	9.5	4.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	111		35-197

Report Date: 14-Oct-2020 12:17:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_013.d
Lims ID: 320-65130-A-22-A
Client ID: 11215702-Tank#2-valve-5-2
Sample Type: Client
Inject. Date: 12-Oct-2020 23:00:23 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-22-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.955	62792738	0.84	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.094	73189501	0.78	1.5708	74.2	74.2	0.7752	0.7752	74.20	
2,3,7,8-TCDF	16.107	134302457	0.75	0.9943	184.6	184.6	0.2560	0.2560		
D 13C-2,3,7,8-TCDD	14.708	44699724	0.82	0.9834	72.4	72.4	3.768	3.768	72.39	
2,3,7,8-TCDD	14.736	38423425	0.78	1.2822	67.0	67.0	0.4166	0.4166		
$ 37Cl4-2,3,7,8-TCDD	14.722	27742685		0.9945	44.4	44.4	0.1573	0.1573	111	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:19 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_013.d
Lims ID: 320-65130-A-22-A
Client ID: 11215702-Tank#2-valve-5-2
Sample Type: Client
Inject. Date: 12-Oct-2020 23:00:23 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65130-A-22-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 18:46:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:35:52

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.955	14.967	-1		28612016	7434014	123978	309945	60		
333.9339	14.955	14.967	-1		34180722	8886116	117908	294770	75	0.84(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.094	16.092	0	1.076	32029724	7456398	38553	96382	193		
317.9389	16.094	16.092	0	1.076	41159777	9400899	40941	102352	230	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.107	16.312	-1	1.001	57773209	13557352	8097	20242	1674		
305.8987	16.107	16.312	-1	1.001	76529248	17993685	9064	22660	1985	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.708	15.341	-1	0.983	20201686	5273475	123978	309945	43		
333.9339	14.708	15.341	-1	0.983	24498038	6393190	117908	294770	54	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.736	15.613	0	1.002	16802723	4162214	13623	34057	306		
321.8936	14.736	15.613	0	1.002	21620702	5370281	11306	28265	475	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.722	15.356	-1	0.984	27742685	6977534	10215	25537	683		

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 12:17:20 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_013.d		
Injection Date:	12-Oct-2020 23:00:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	421482	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

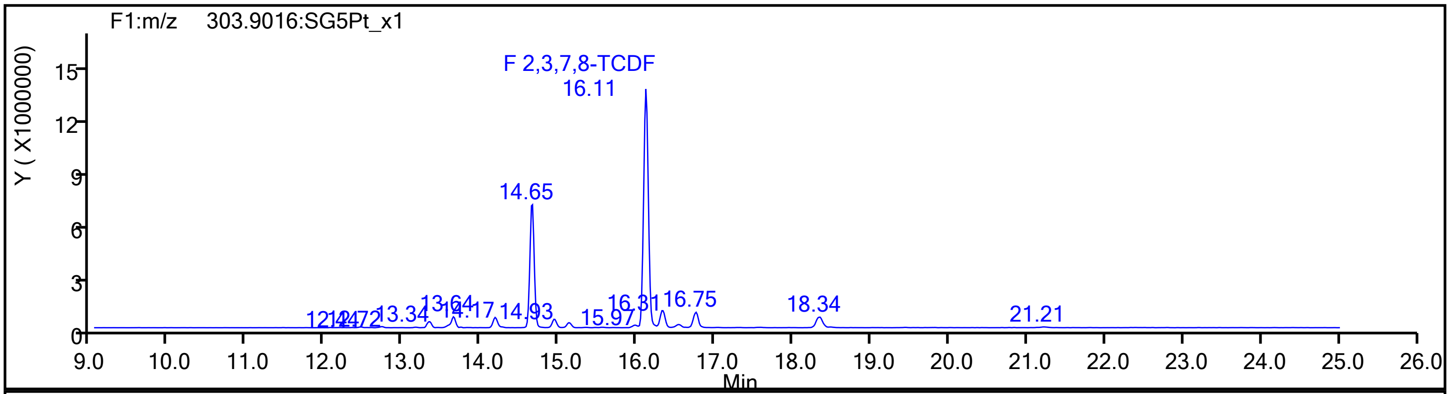

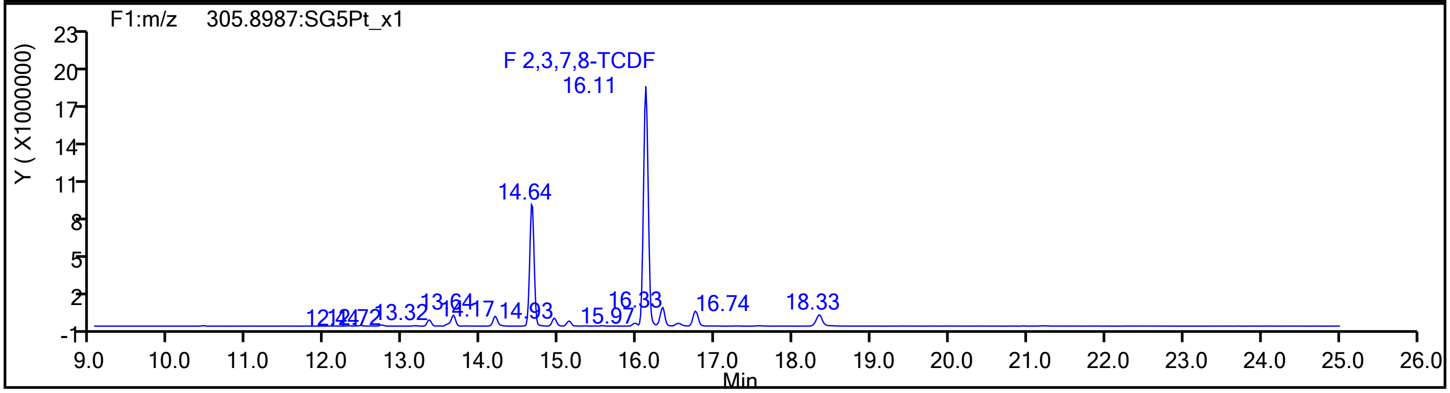

TCDF Standards

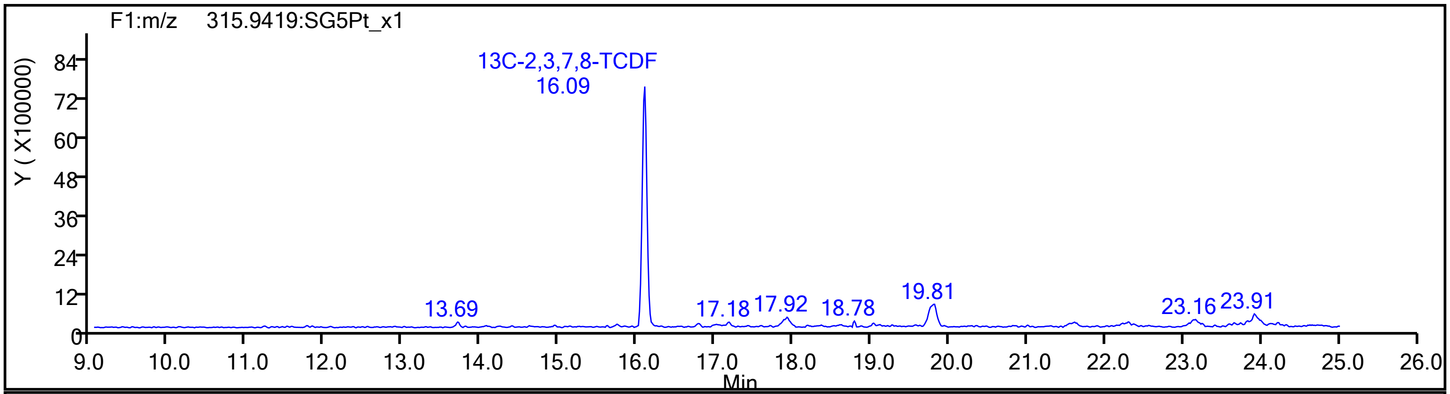

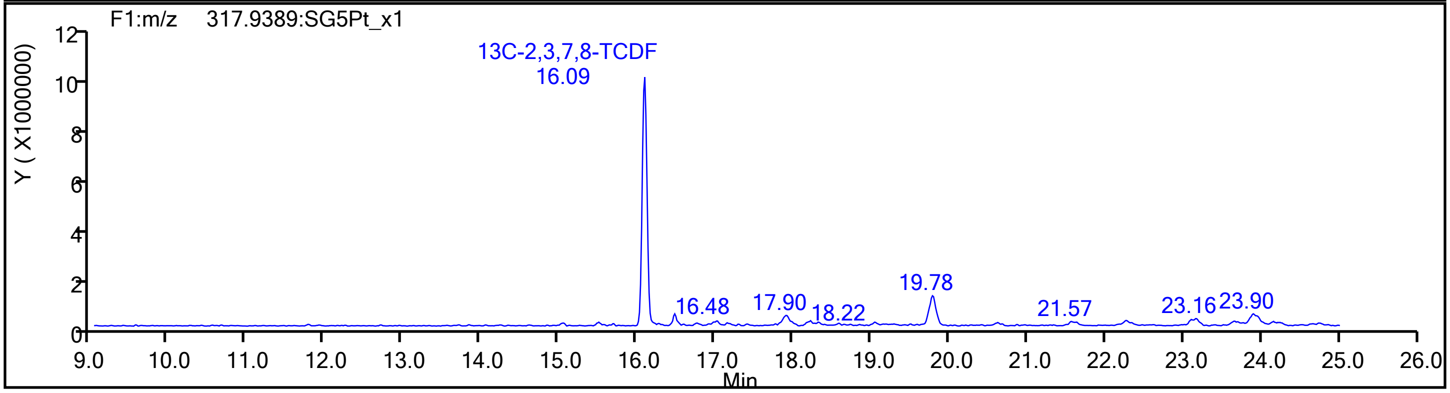

Report Date: 14-Oct-2020 12:17:20 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_013.d		
Injection Date:	12-Oct-2020 23:00:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	421482	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

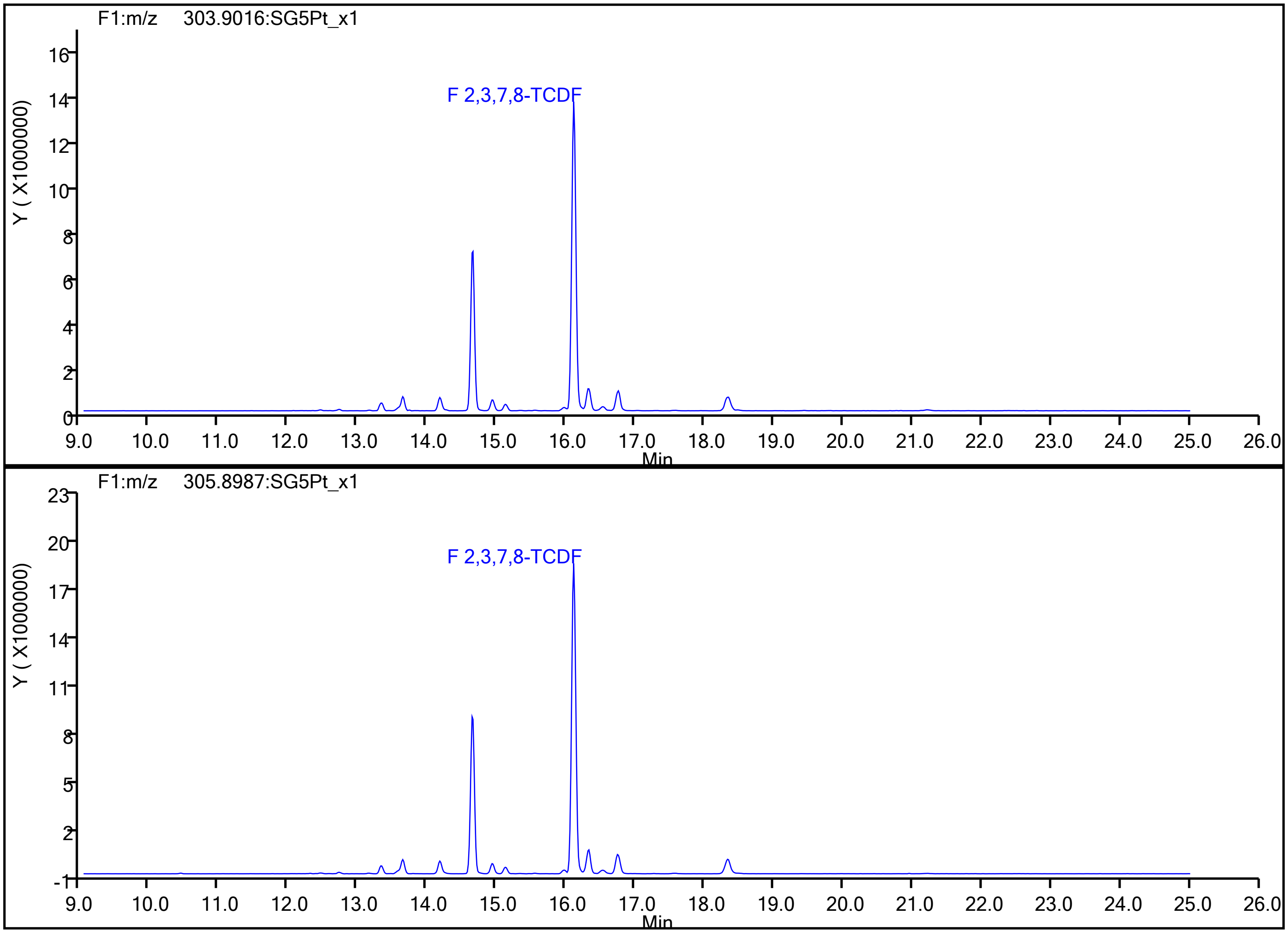

TCDF Interference Mass

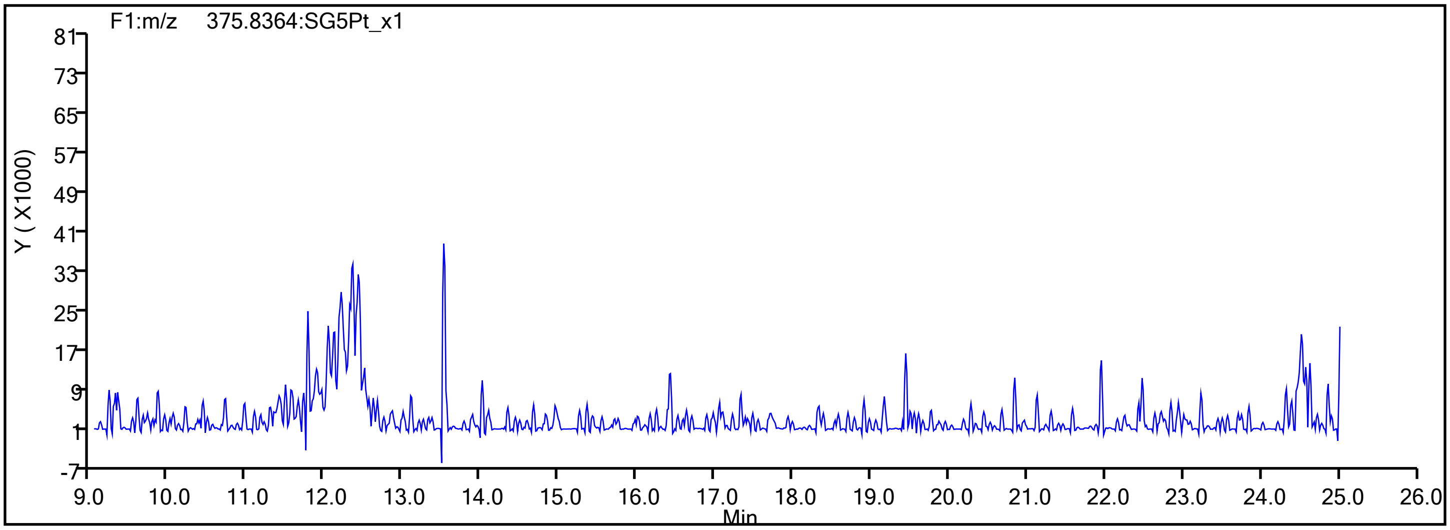

Report Date: 14-Oct-2020 12:17:20 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_013.d

Injection Date: 12-Oct-2020 23:00:23 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-valve-5-2

Worklist#: 421482 Sample Line#: 13

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

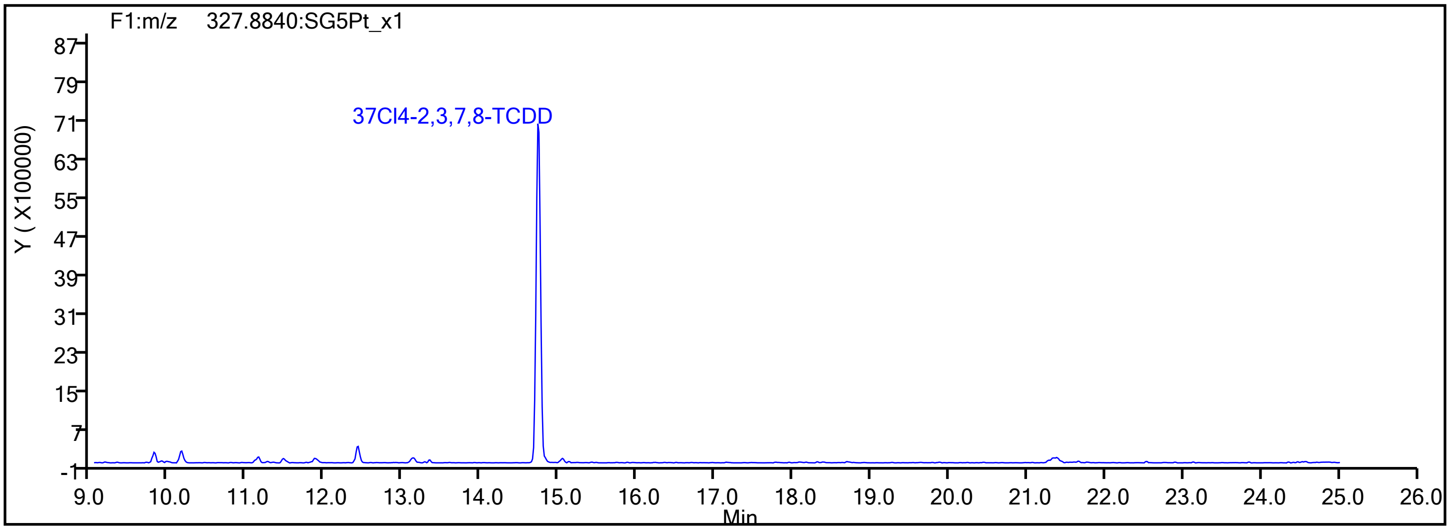

37Cl4-TCDD Standards

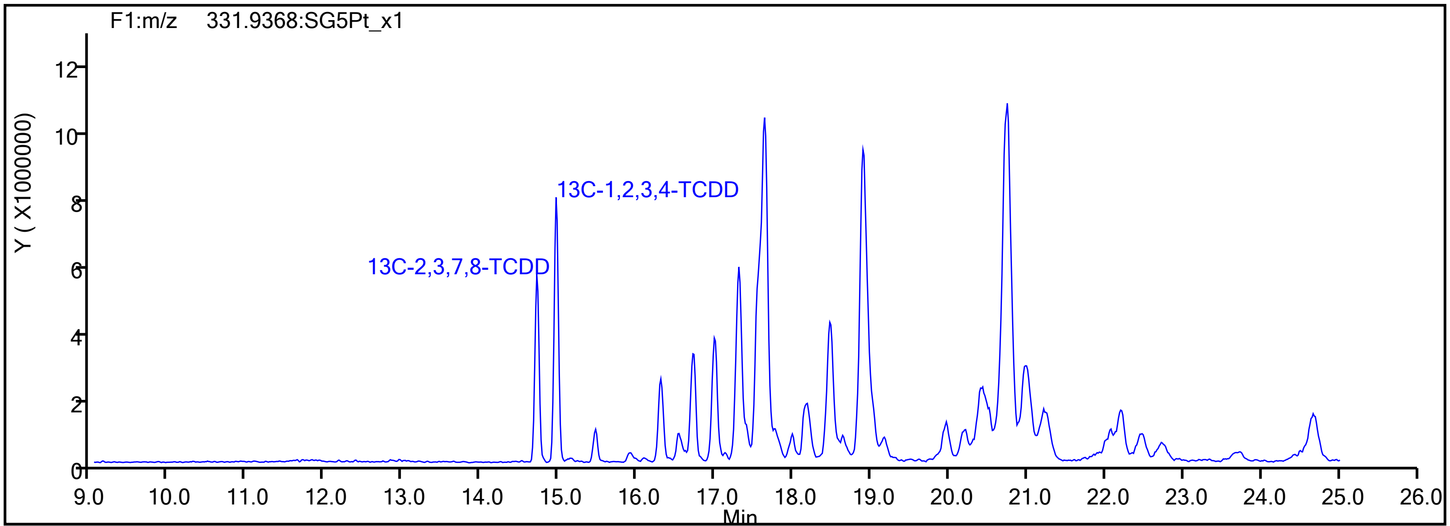

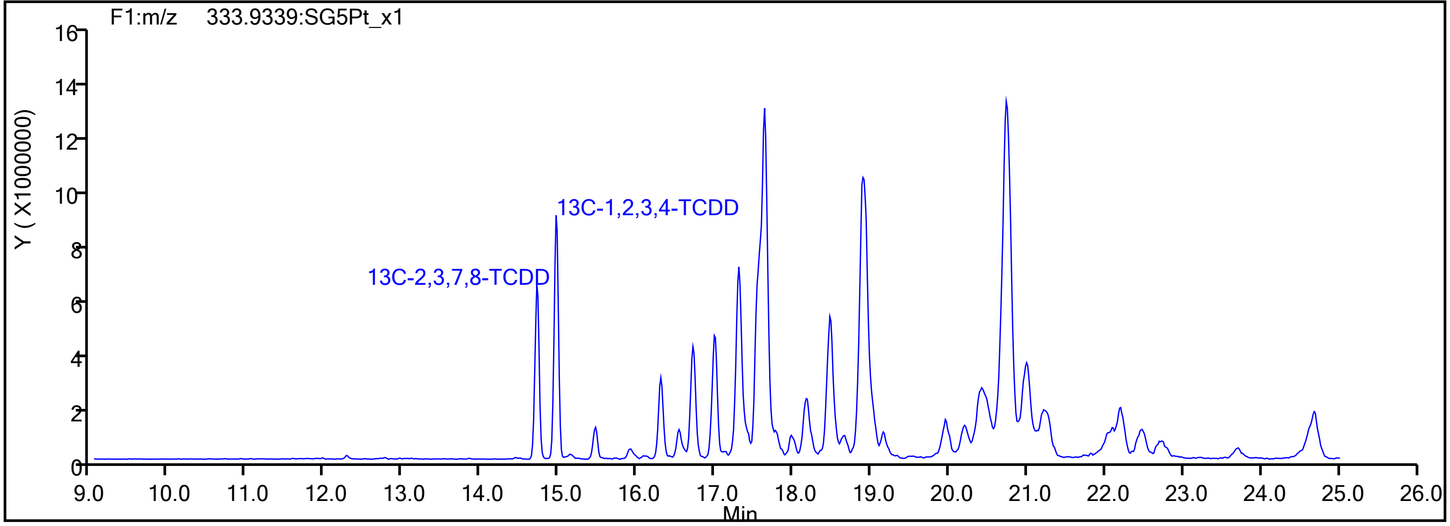

Report Date: 14-Oct-2020 12:17:20 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_013.d		
Injection Date:	12-Oct-2020 23:00:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-valve-5-2		
Worklist#:	421482	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

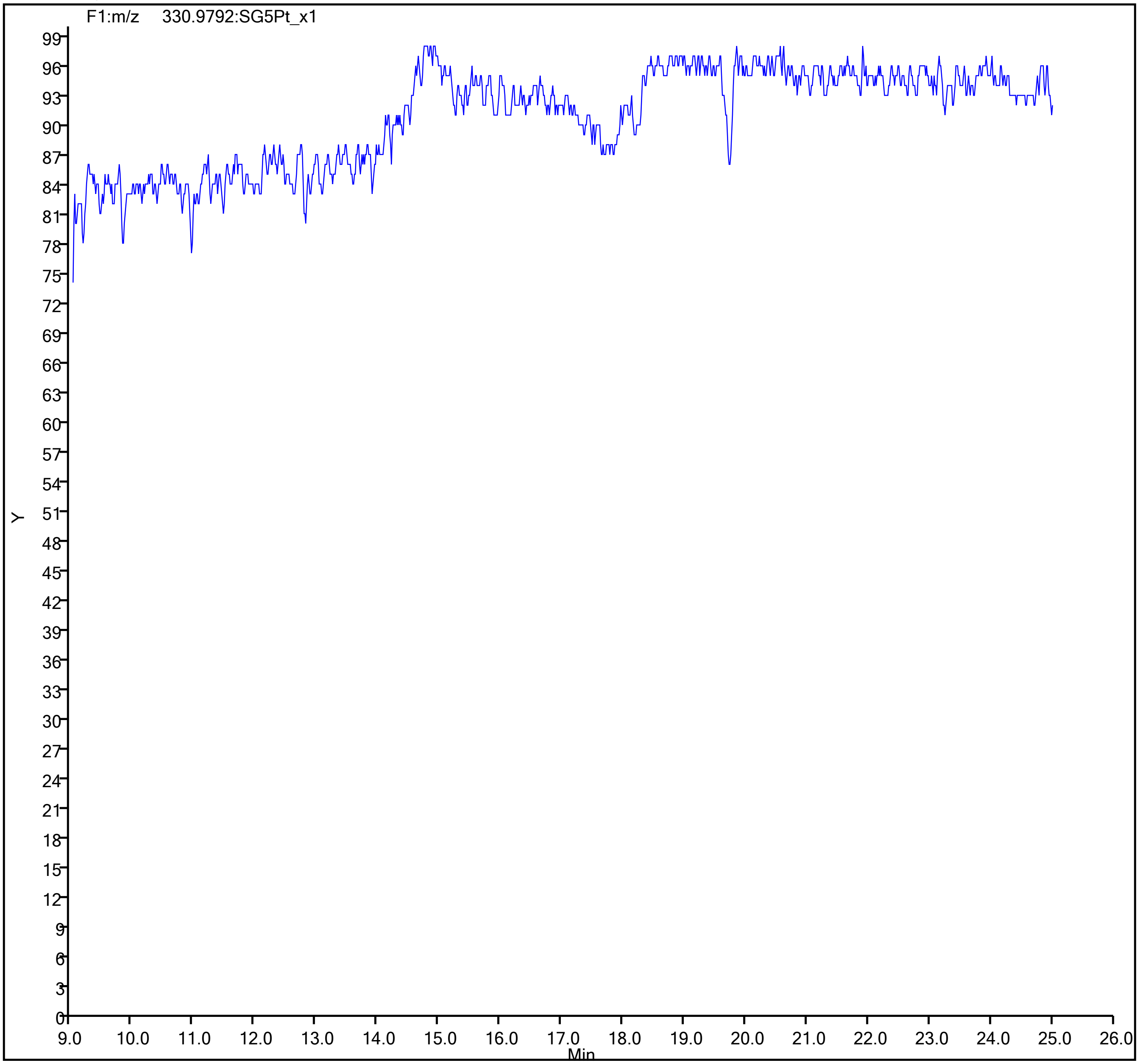

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTC	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTC	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTC	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

```
Data file    Smp Work Order     Sample ID                  FV-uL Method/Matrix Box  Size       U

24JL2011D2   1   CPS 072420     CPS HRDXNCP_00040                Dioxin             1.00000
24JL2011D2   2   SB 072420      SB Solvent Blank C-14                               1.00000
24JL2011D2   3   IC 072420      CS-2 HRDXNL2_00029               Dioxin        ICAL 1.00000
24JL2011D2   4   IC 072420A     CS-3 HRDXNL3_00027               Dioxin             1.00000
24JL2011D2   5   IC 072420B     CS-4 HRDXNL4_00094               Dioxin             1.00000
24JL2011D2   6   IC 072420C     CS-5 HRDXNL5_00030               Dioxin             1.00000
24JL2011D2   7   IC 072420D     CS-6 HRDXNL6_00026               Dioxin             1.00000
24JL2011D2   8   SB 072420C     SB Solvent Blank C-14                               1.00000
24JL2011D2   9   ICV 072420     ICV HRDXNIC_00045                Dioxin             1.00000
24JL2011D2   10                                                                     1.00000
24JL2011D2   11                                                                     1.00000
24JL2011D2   12                                                                     1.00000
24JL2011D2   13                                                                     1.00000
24JL2011D2   14                                                                     1.00000
24JL2011D2   15                                                                     1.00000
24JL2011D2   16                                                                     1.00000
24JL2011D2   17                                                                     1.00000
24JL2011D2   18                 ALM 07-24-20                                        1.00000
24JL2011D2   19                                                                     1.00000
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Logfile ✓ id
7/27/20
KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

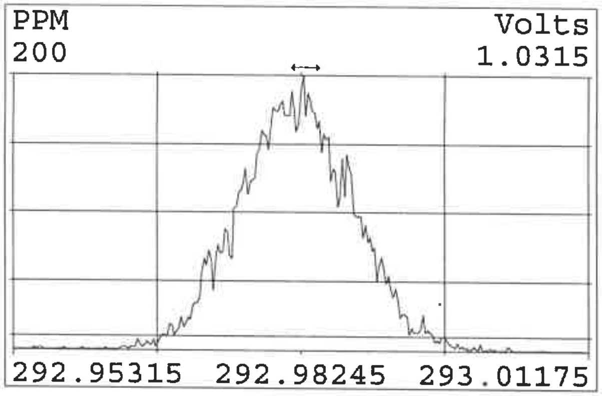

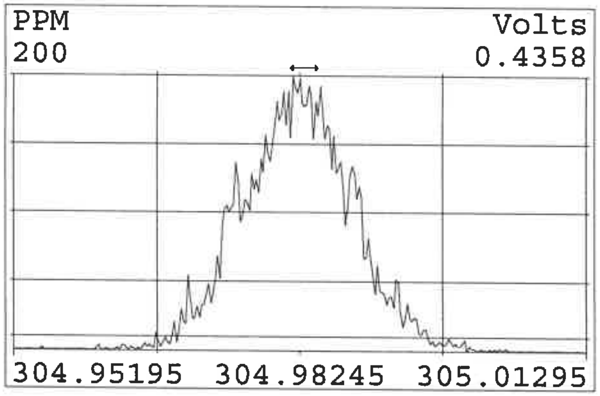

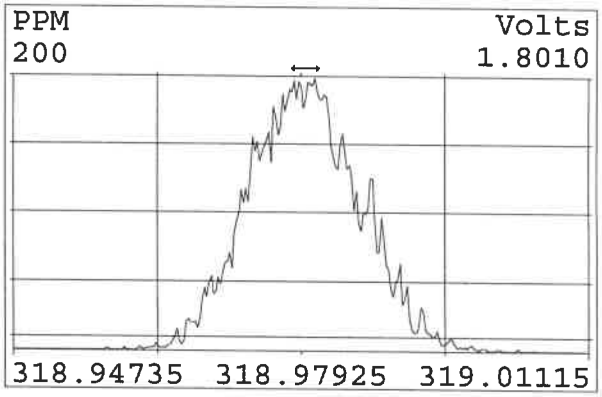

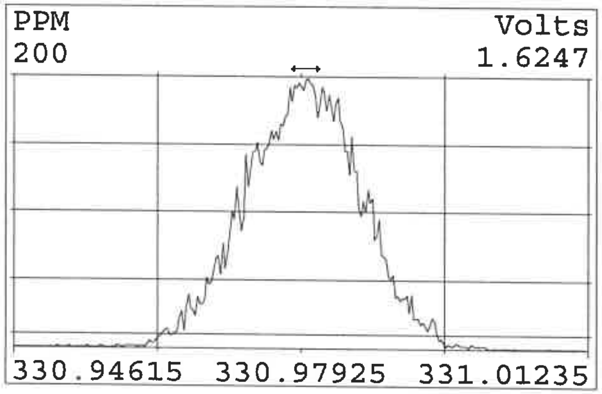

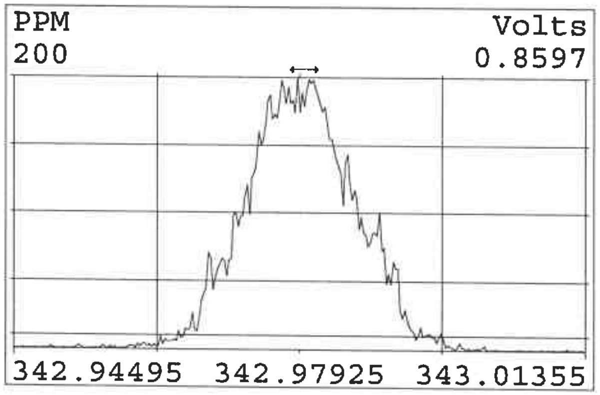

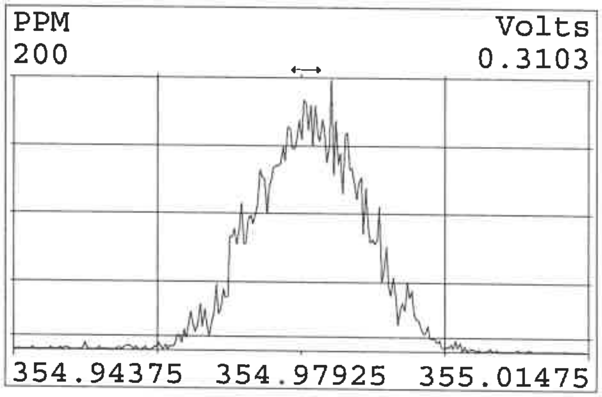

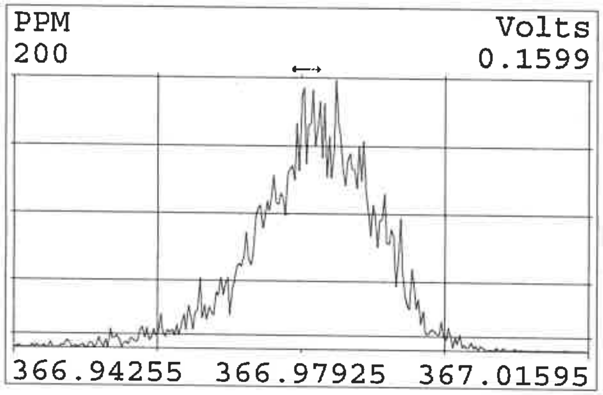

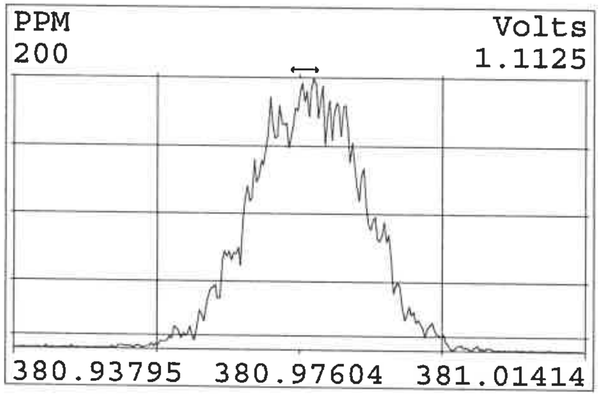

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

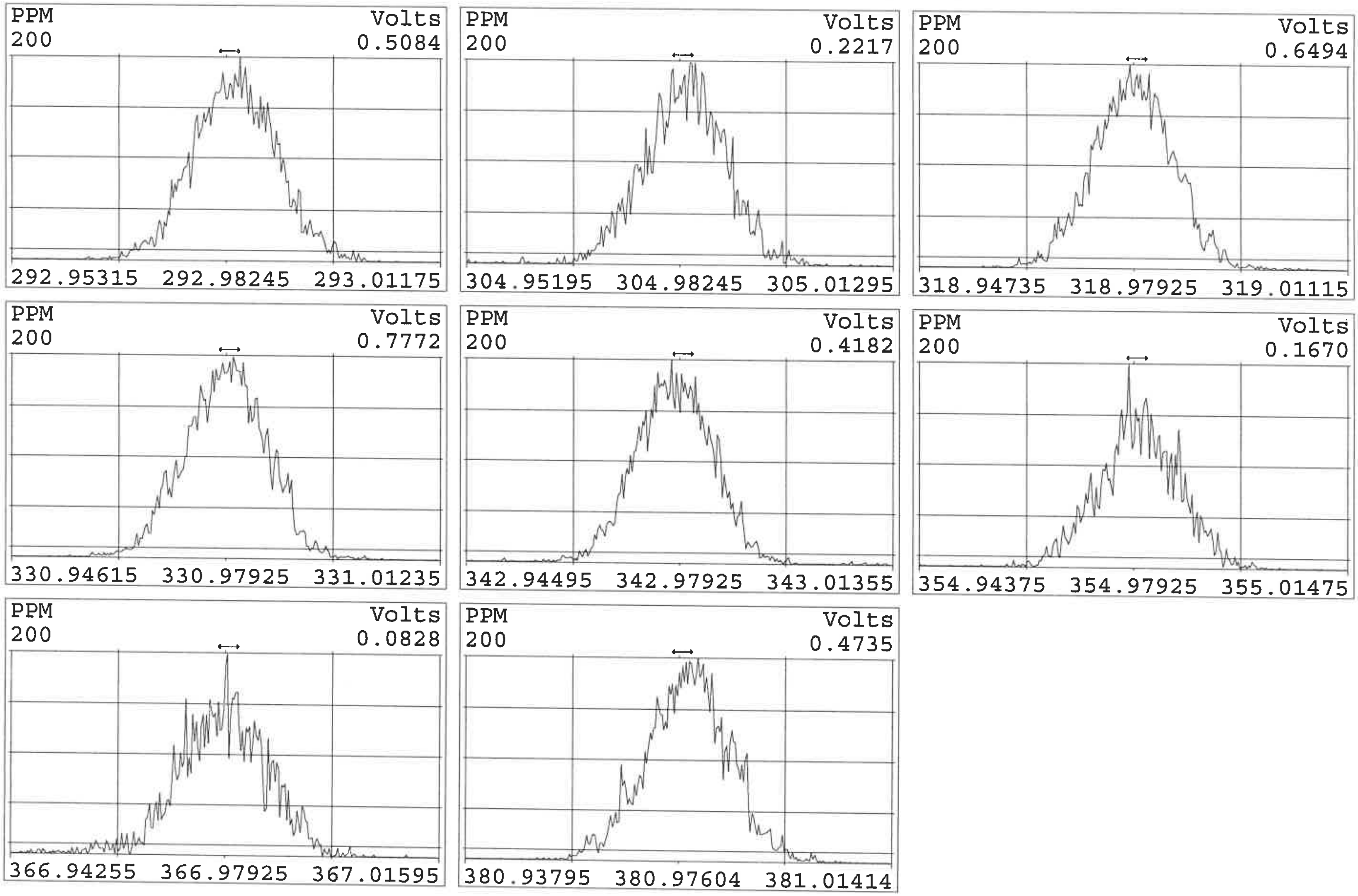

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d				
Lims ID:	IC 2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	24-Jul-2020 23:50:17	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:49	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:37		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC
Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17
ALS Bottle#: 0
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID:
Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49
Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)
Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa
Date: 27-Jul-2020 12:33:37

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d

Injection Date: 24-Jul-2020 23:50:17

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641

Sample Line#: 3

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

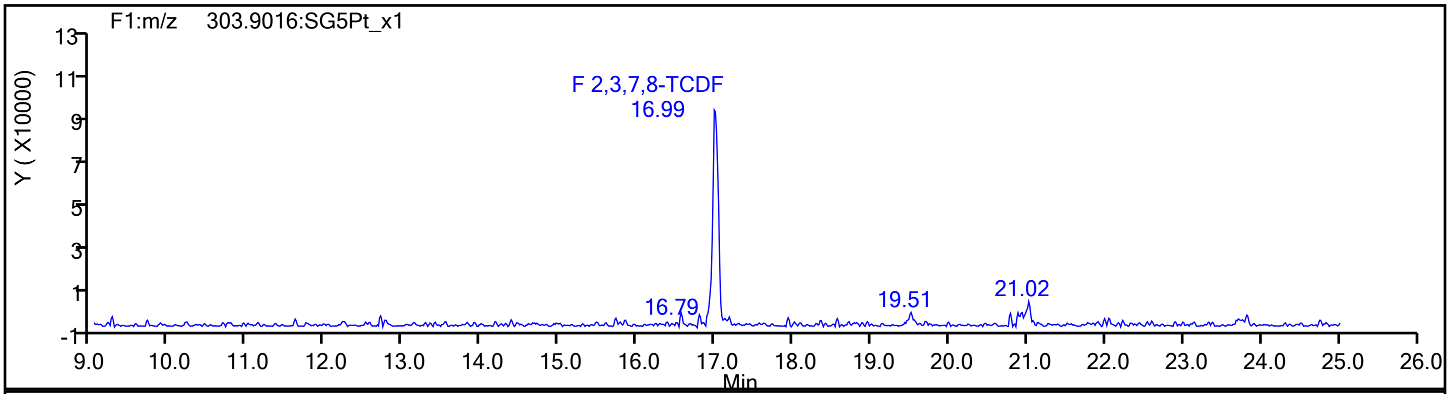

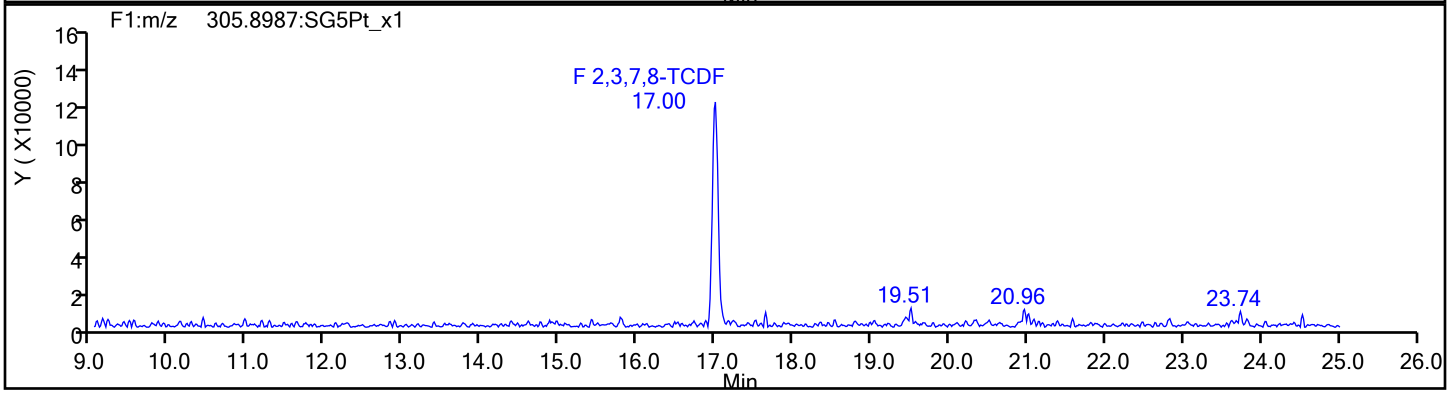

TCDF Standards

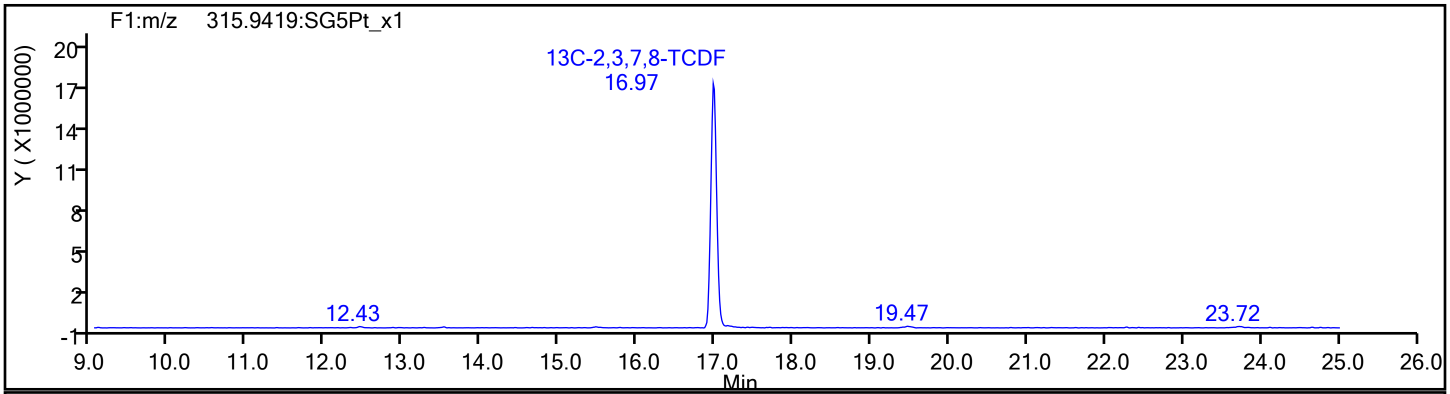

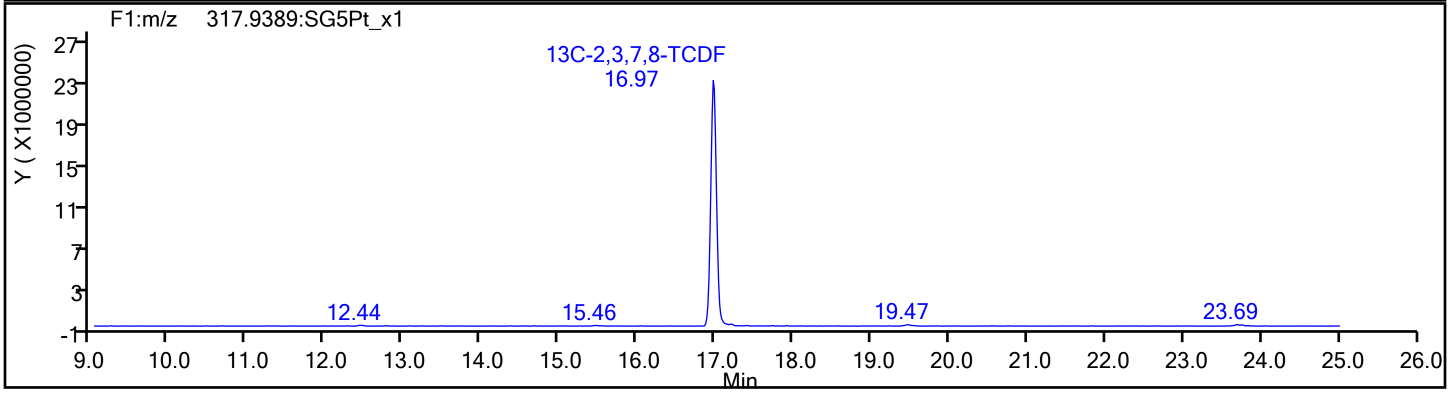

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d

Injection Date: 24-Jul-2020 23:50:17 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 3

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

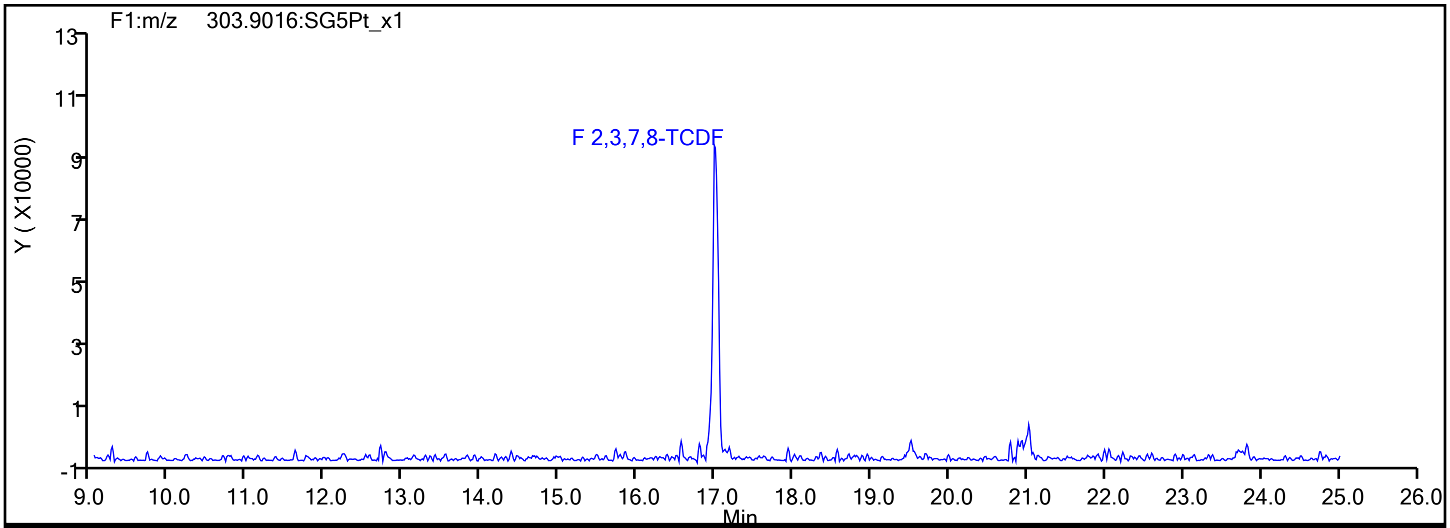

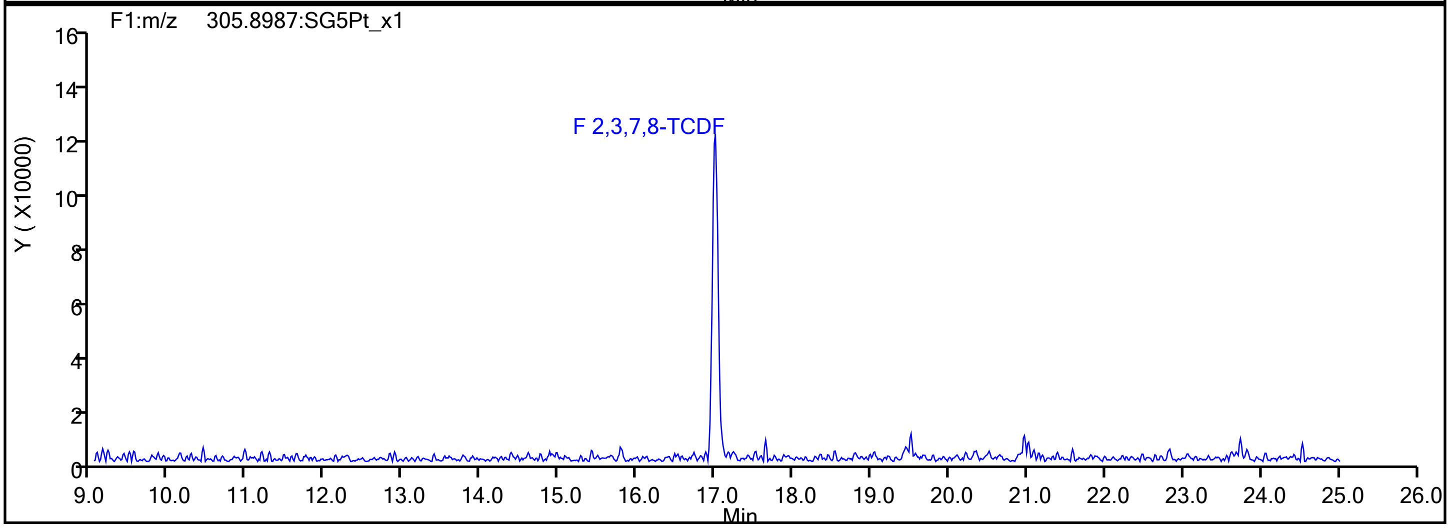

TCDF Interference Mass

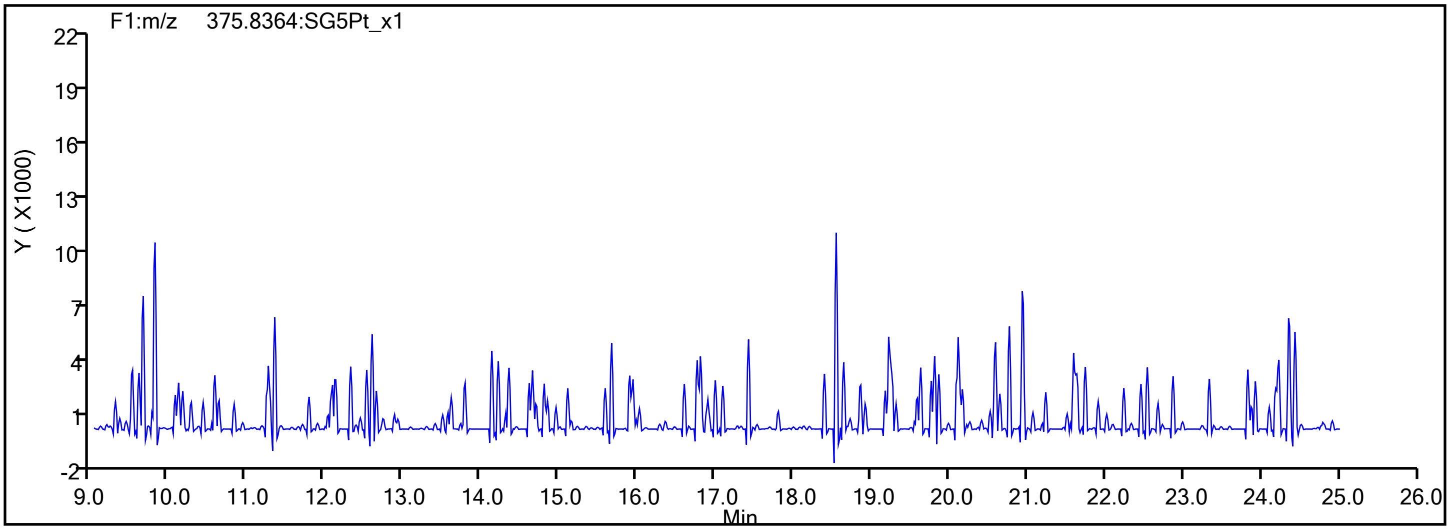

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

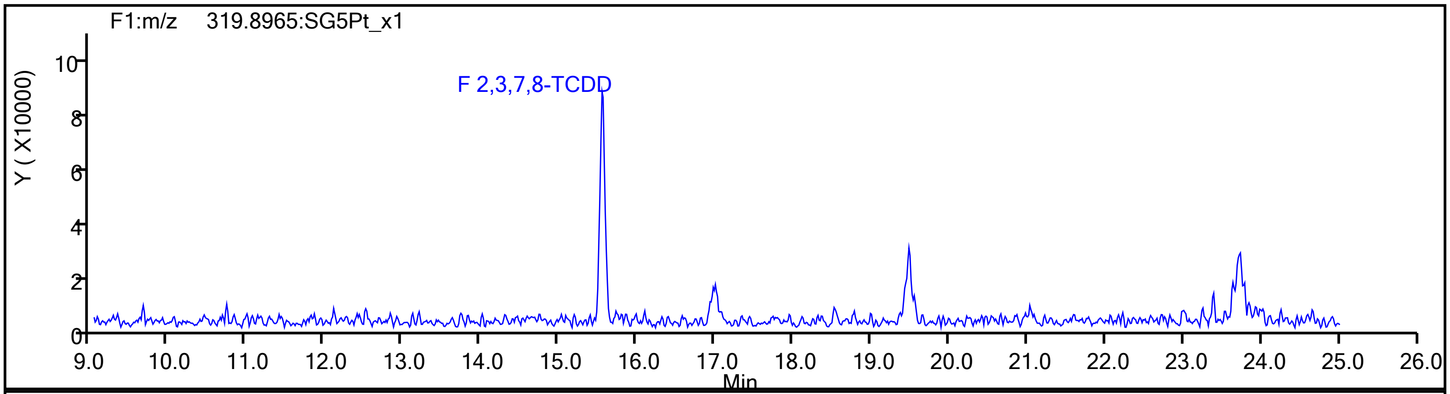

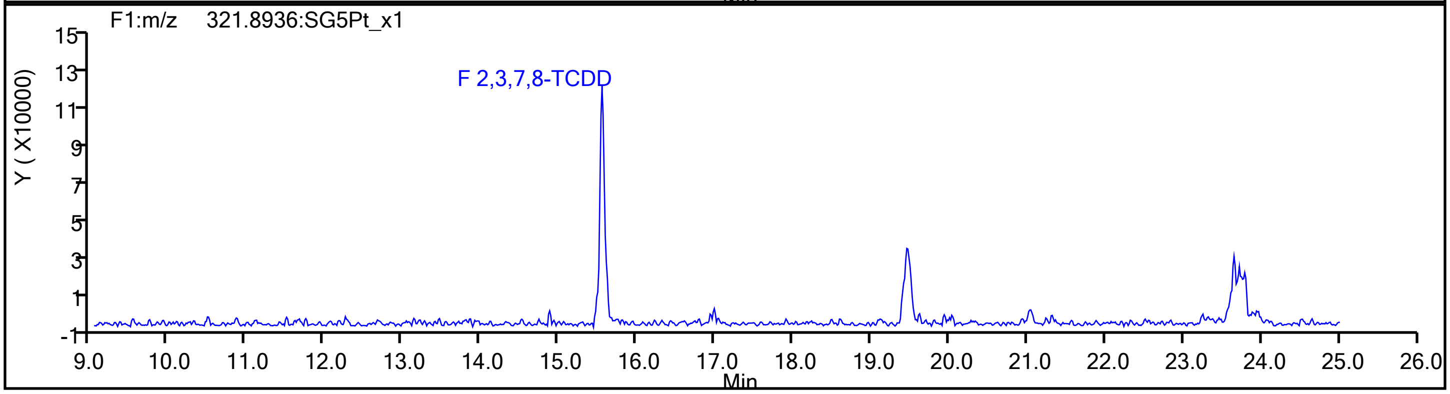

TCDD Standards

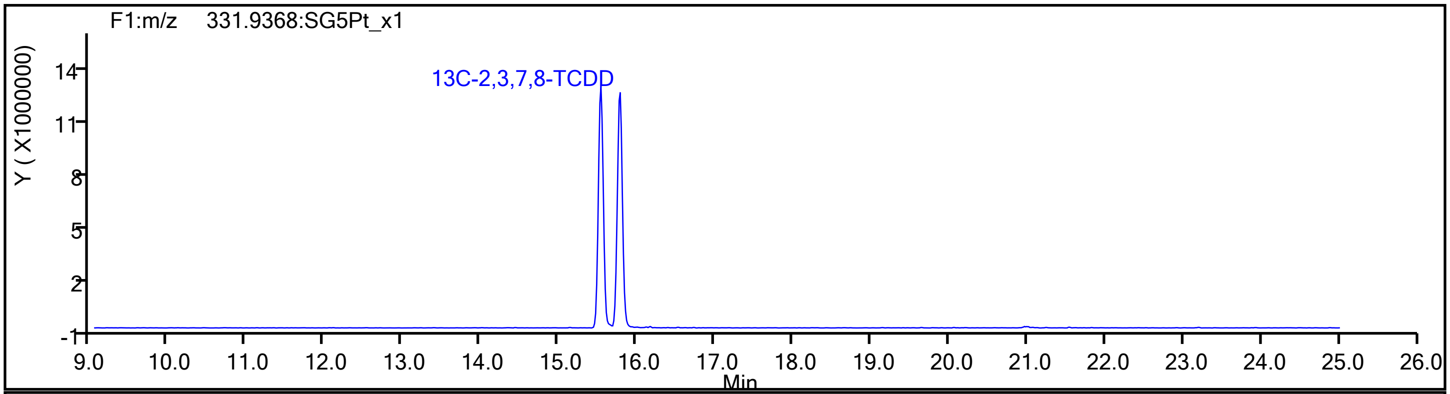

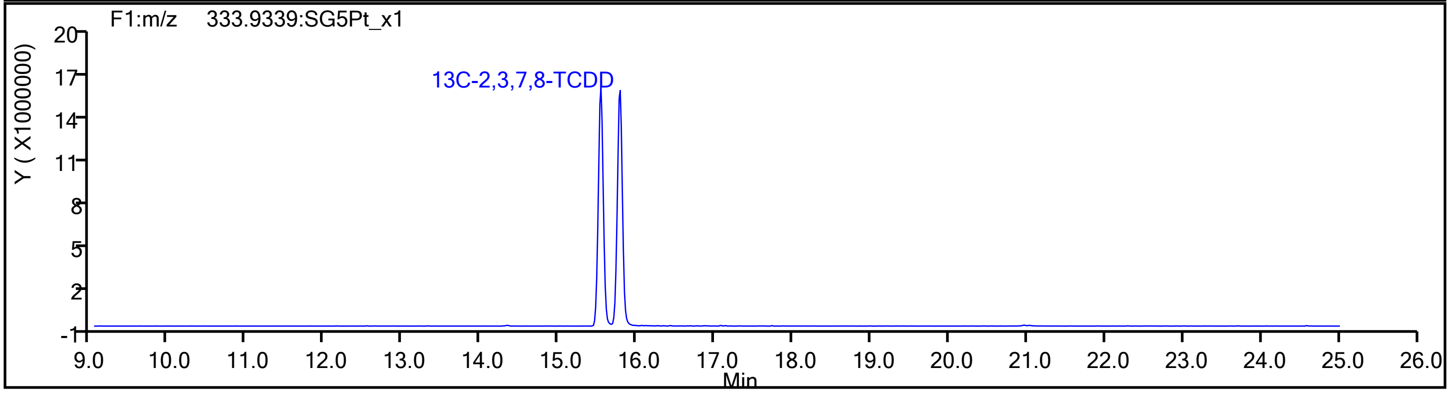

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

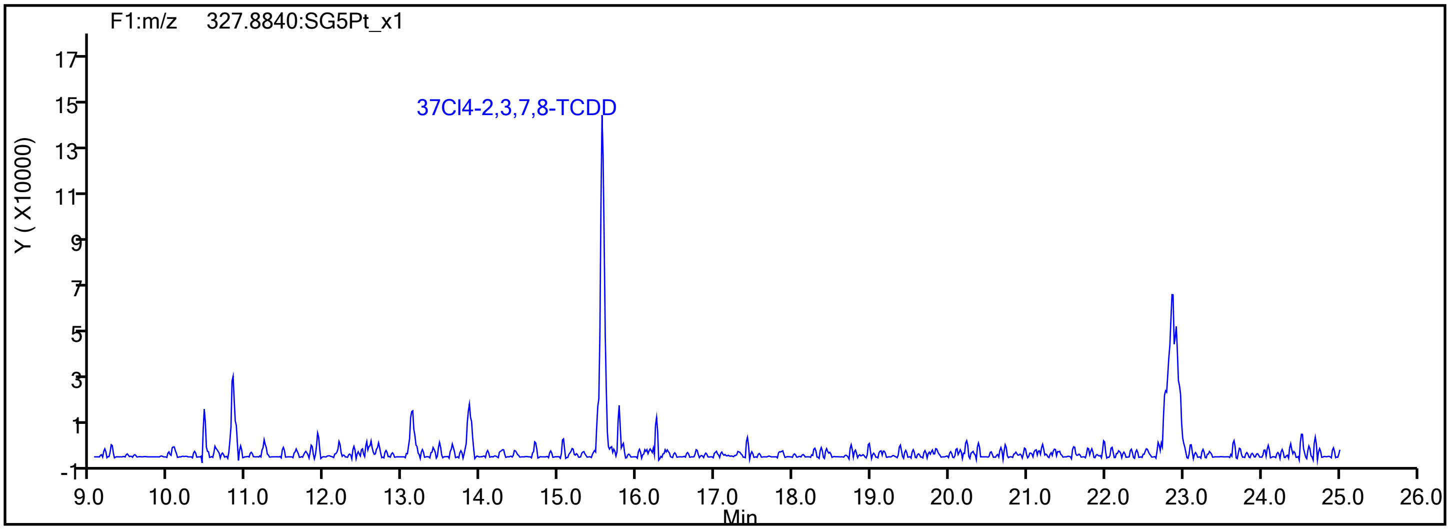

37Cl4-TCDD Standards

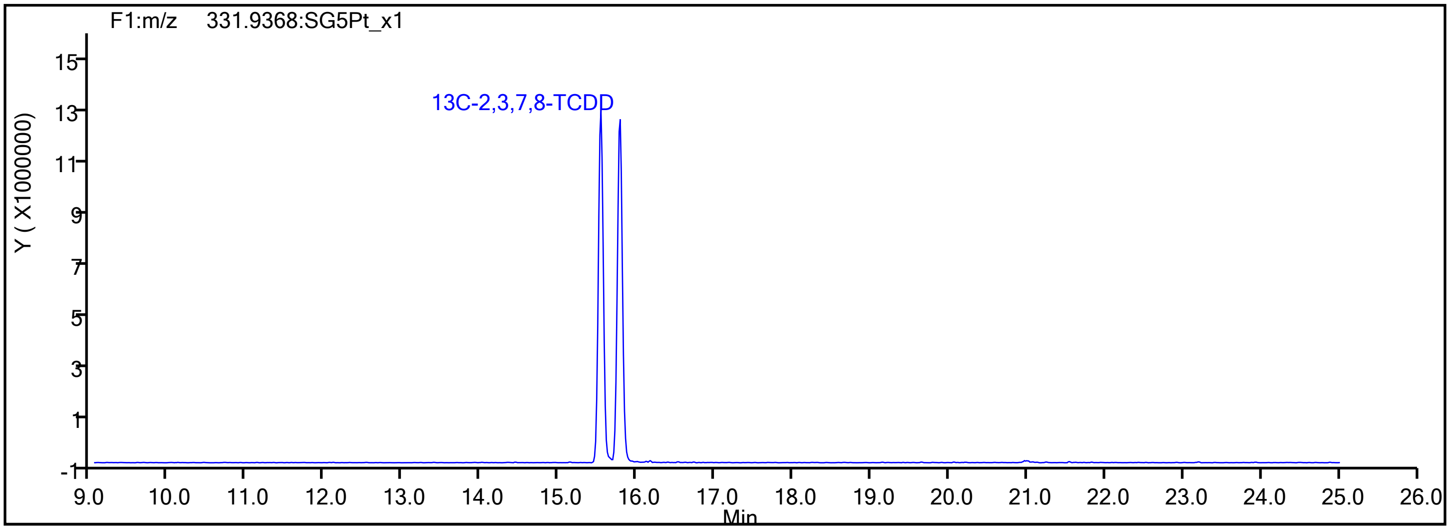

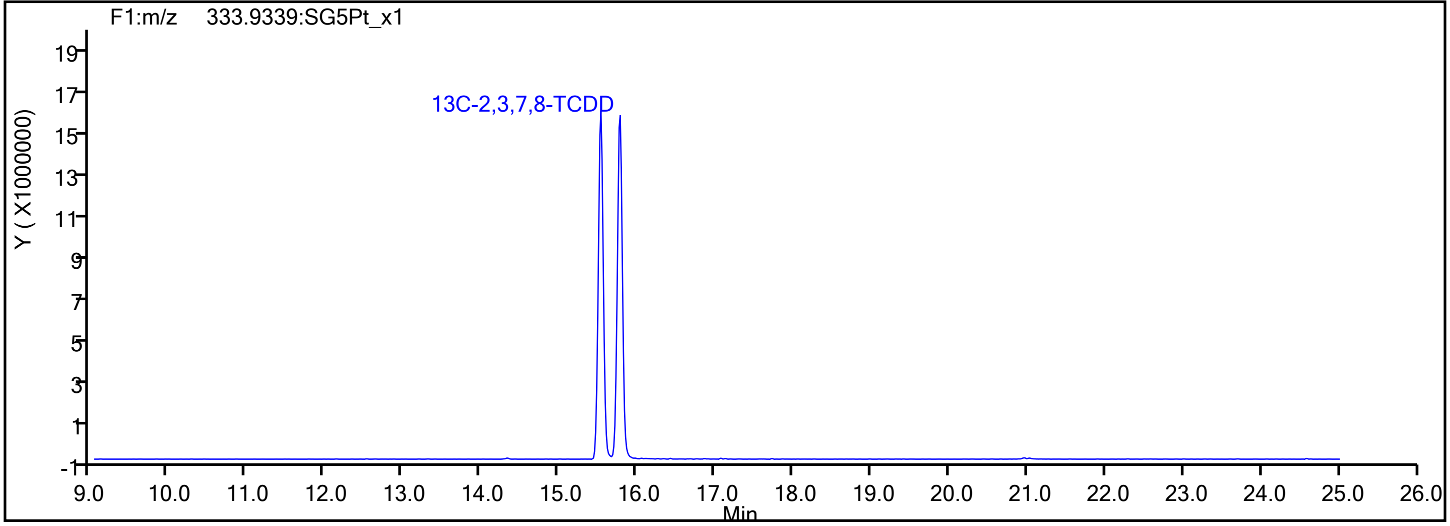

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

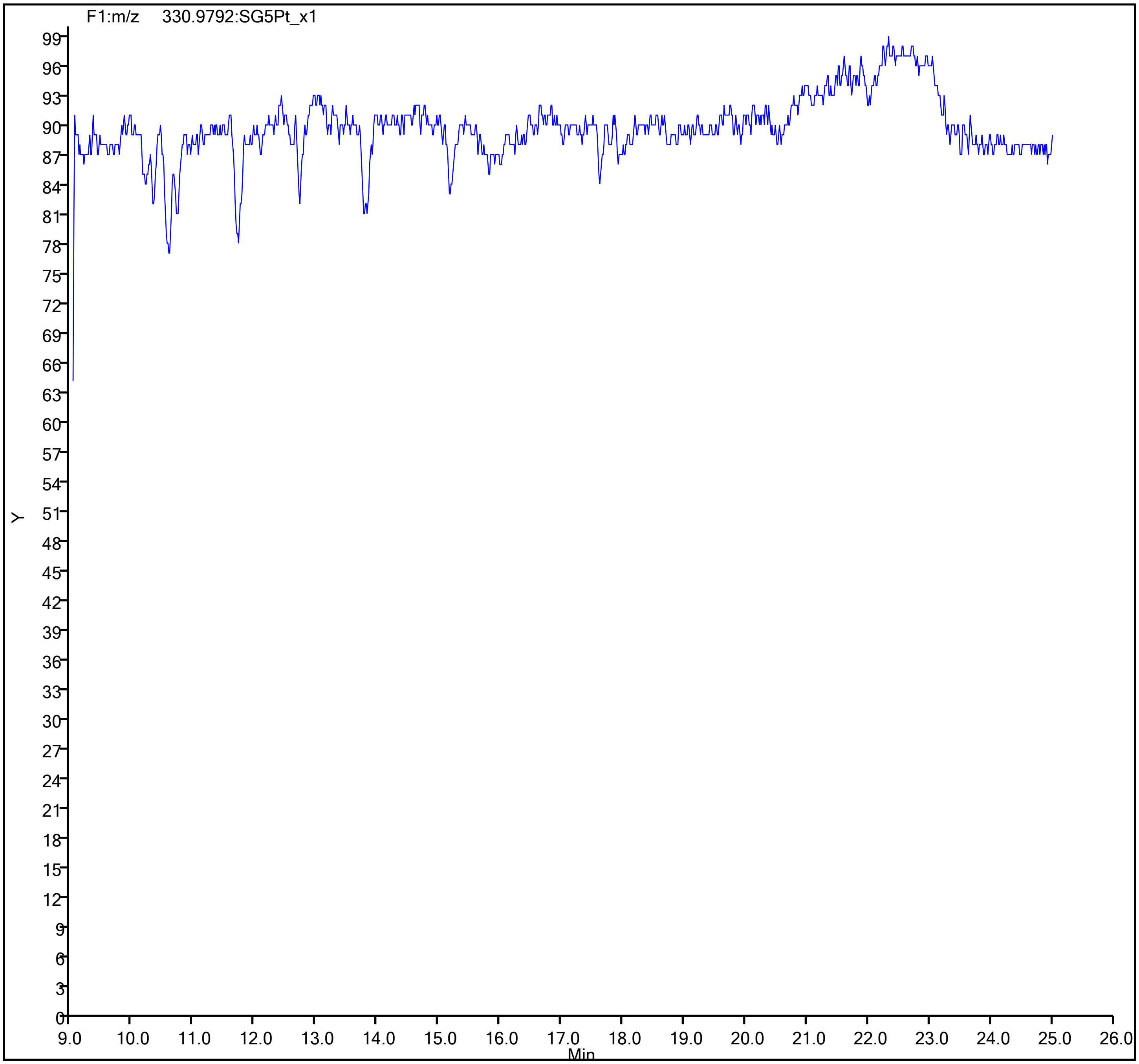

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:47		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Lims ID: IC 3
Client ID:
Sample Type: IC
Calib Level: 3
Inject. Date: 25-Jul-2020 00:28:40
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID:
Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:53
Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)
Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa
Date: 27-Jul-2020 12:33:47

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

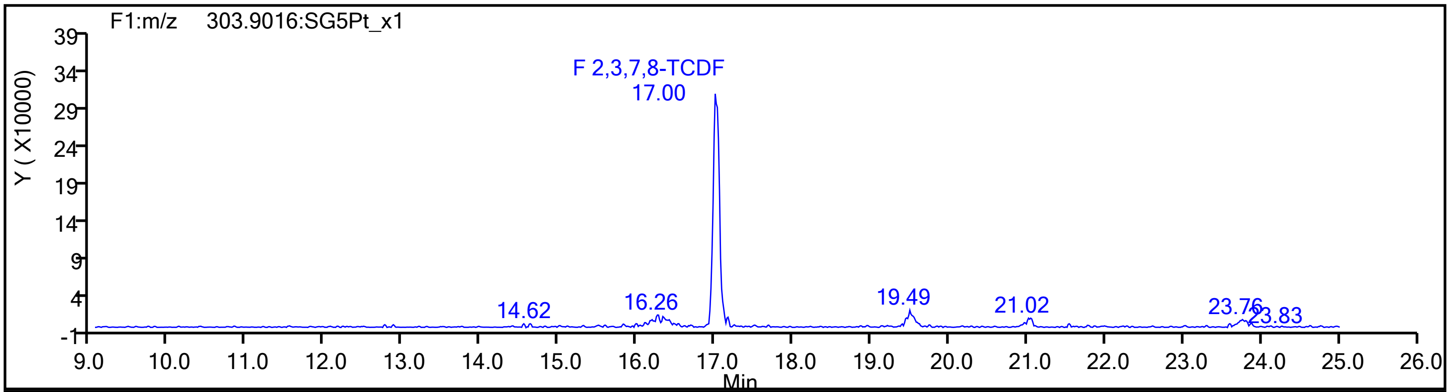

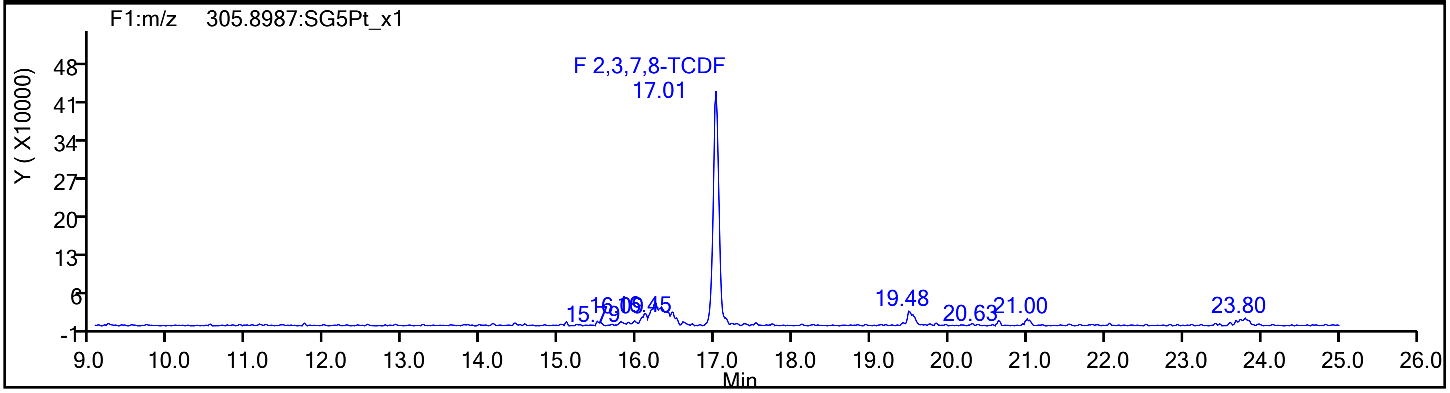

TCDF Standards

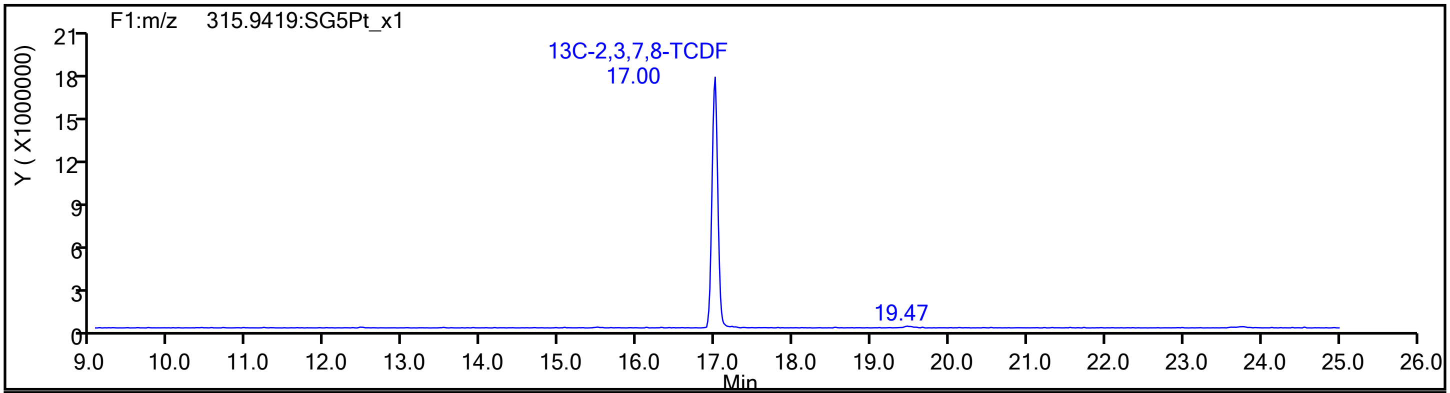

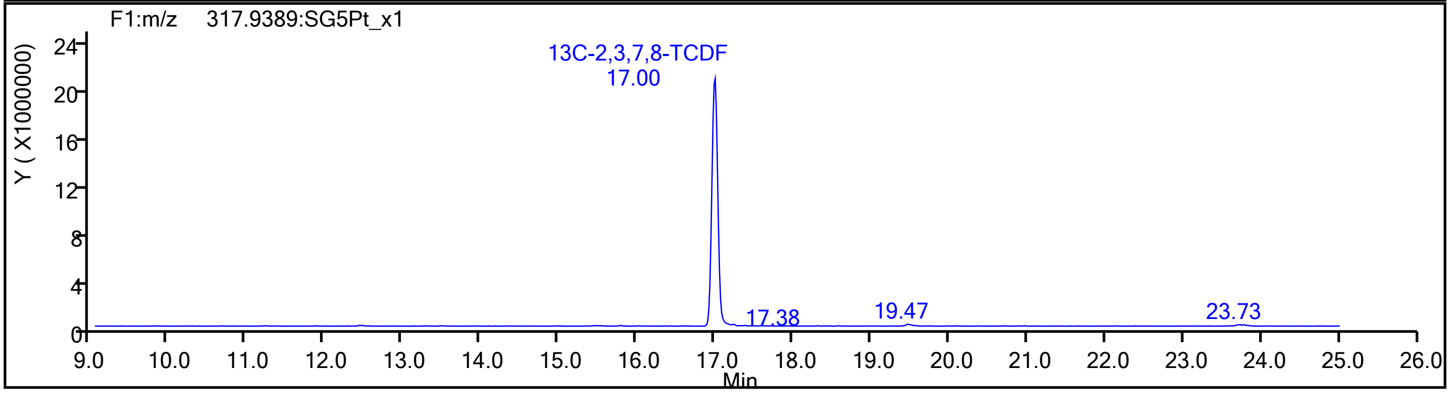

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

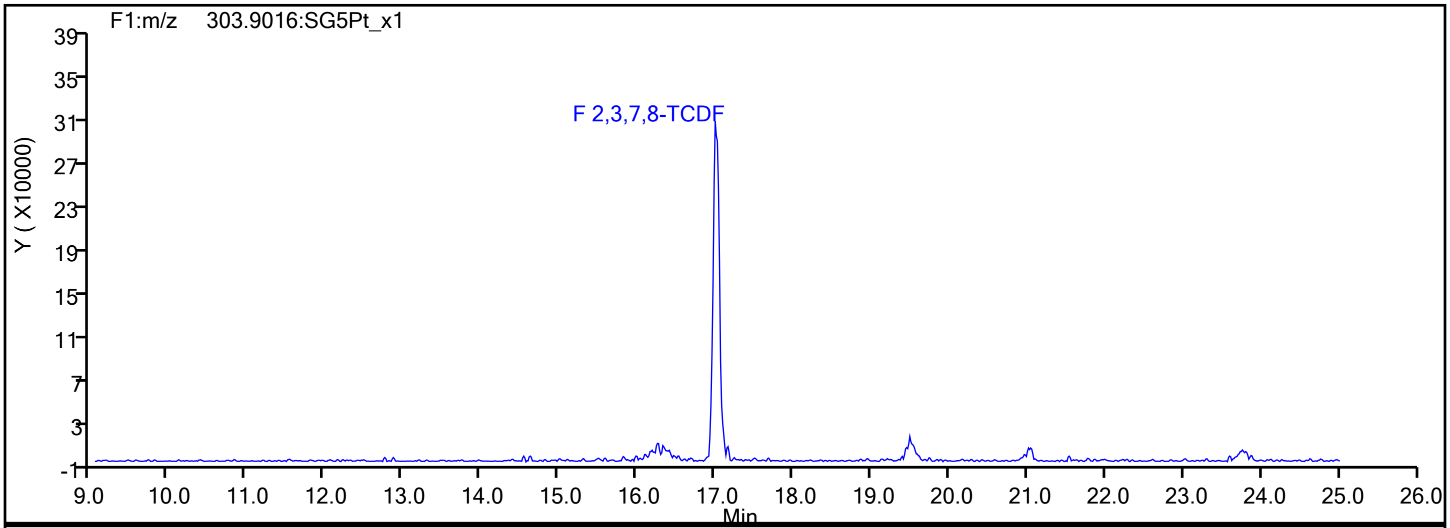

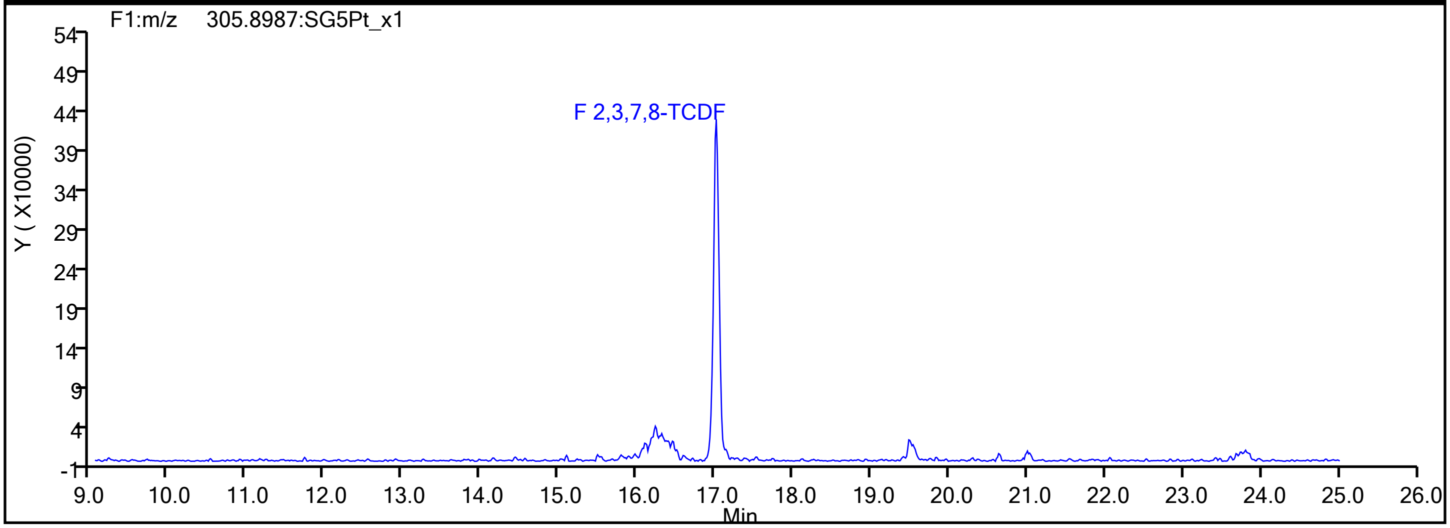

TCDF Interference Mass

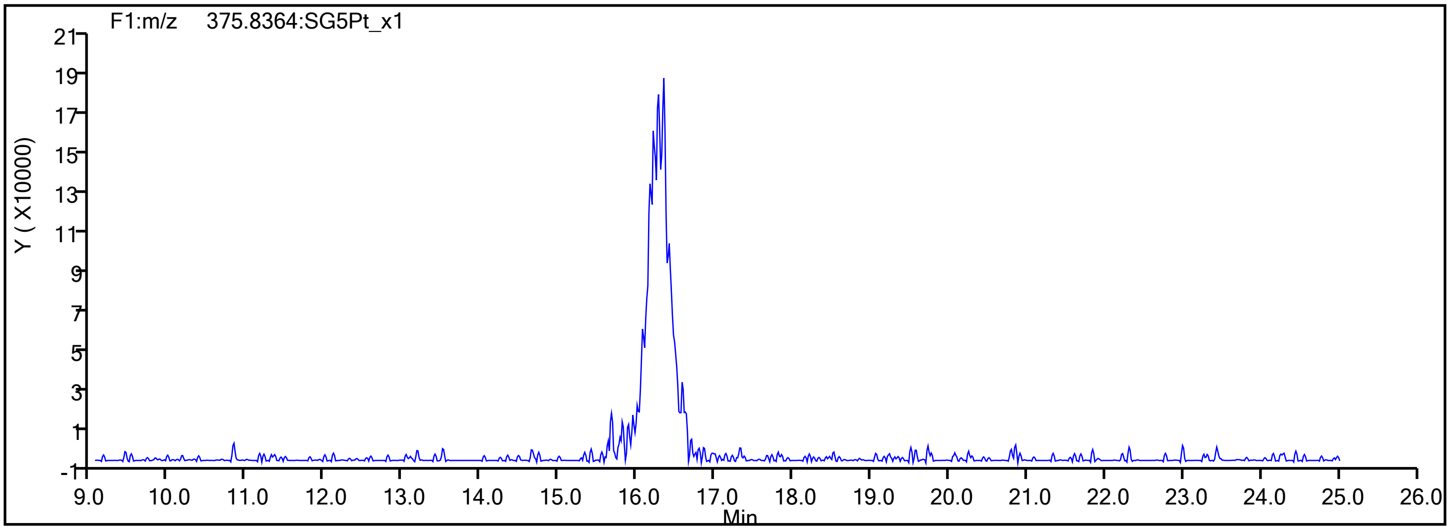

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

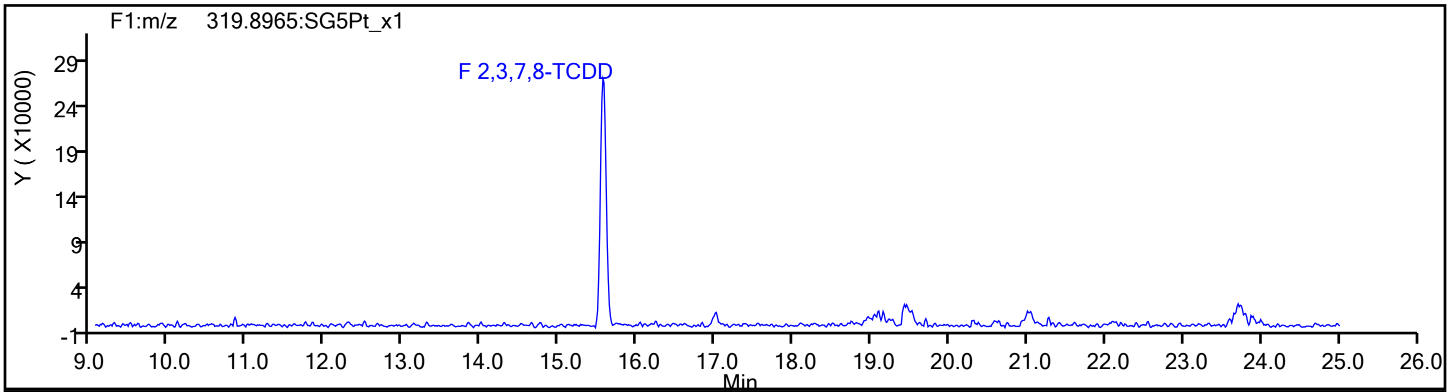

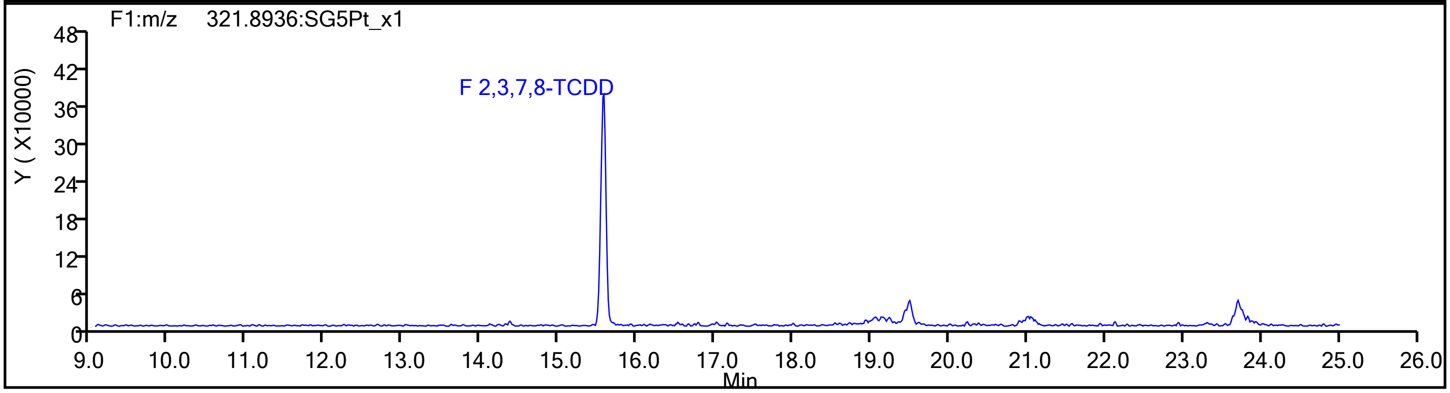

TCDD Standards

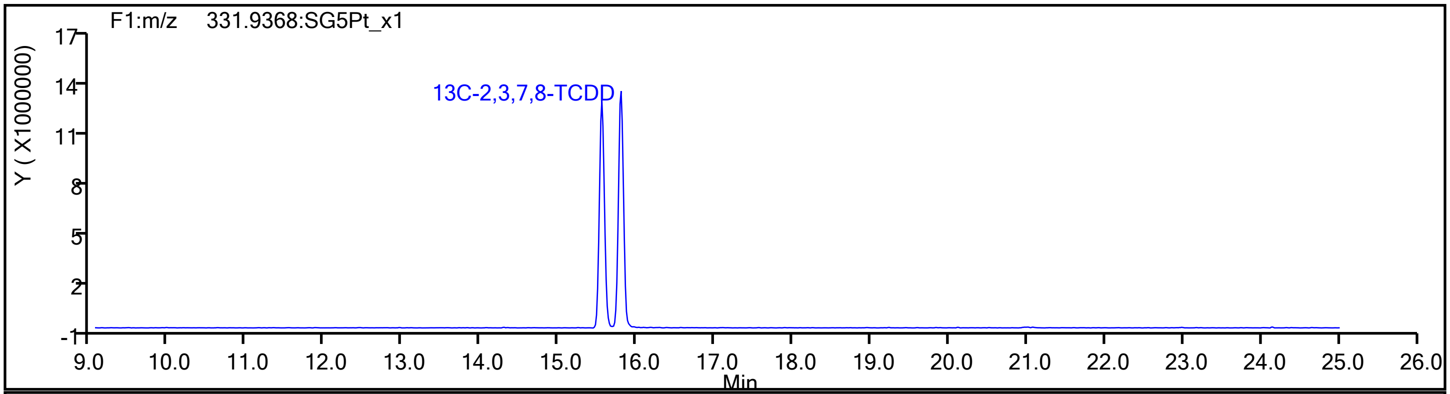

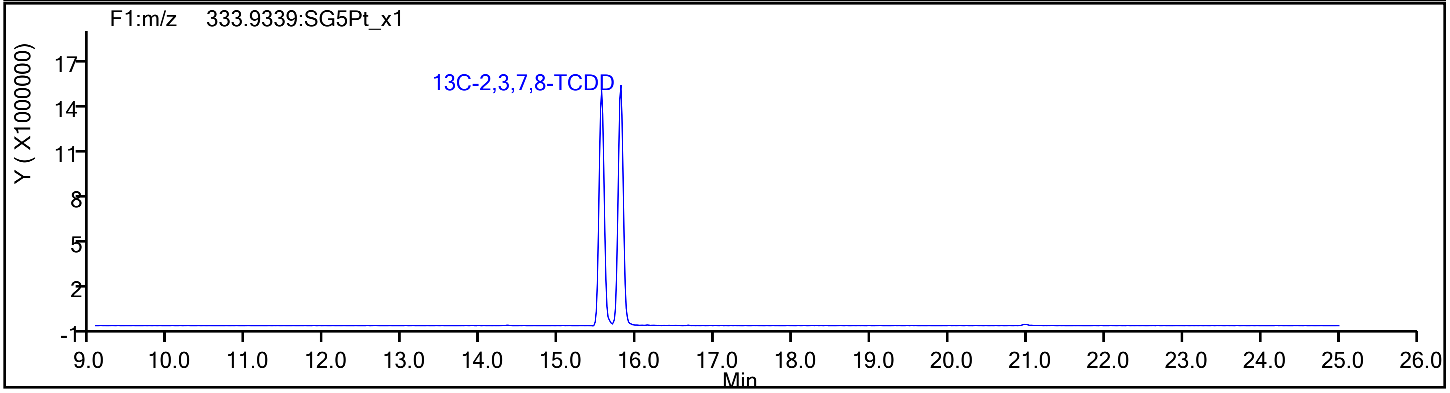

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

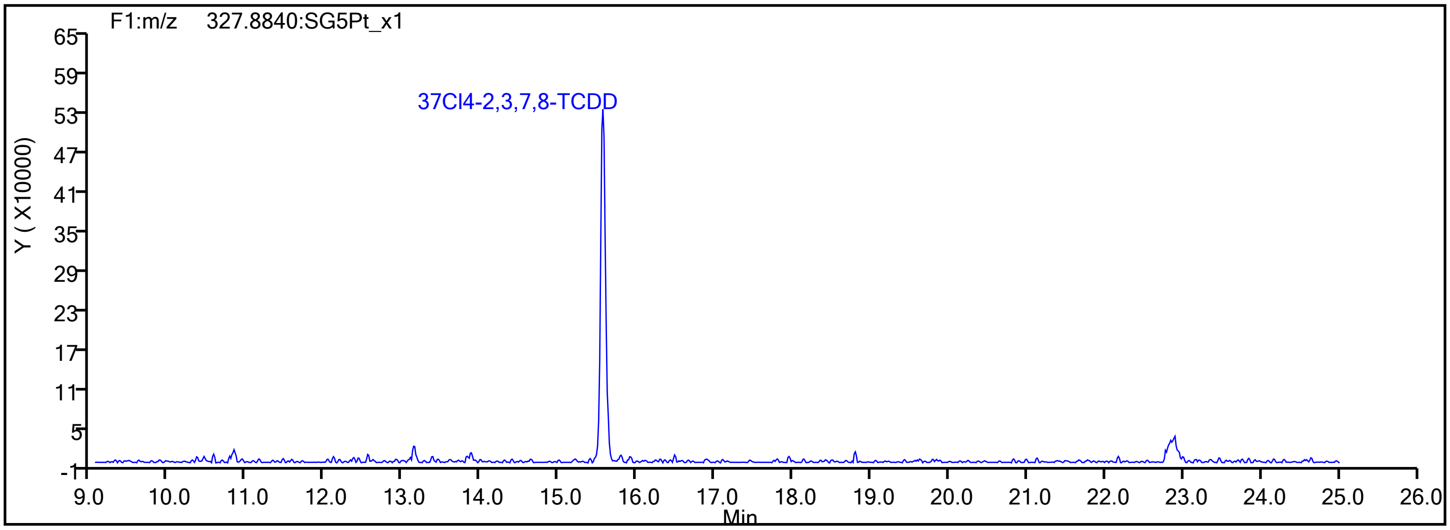

37Cl4-TCDD Standards

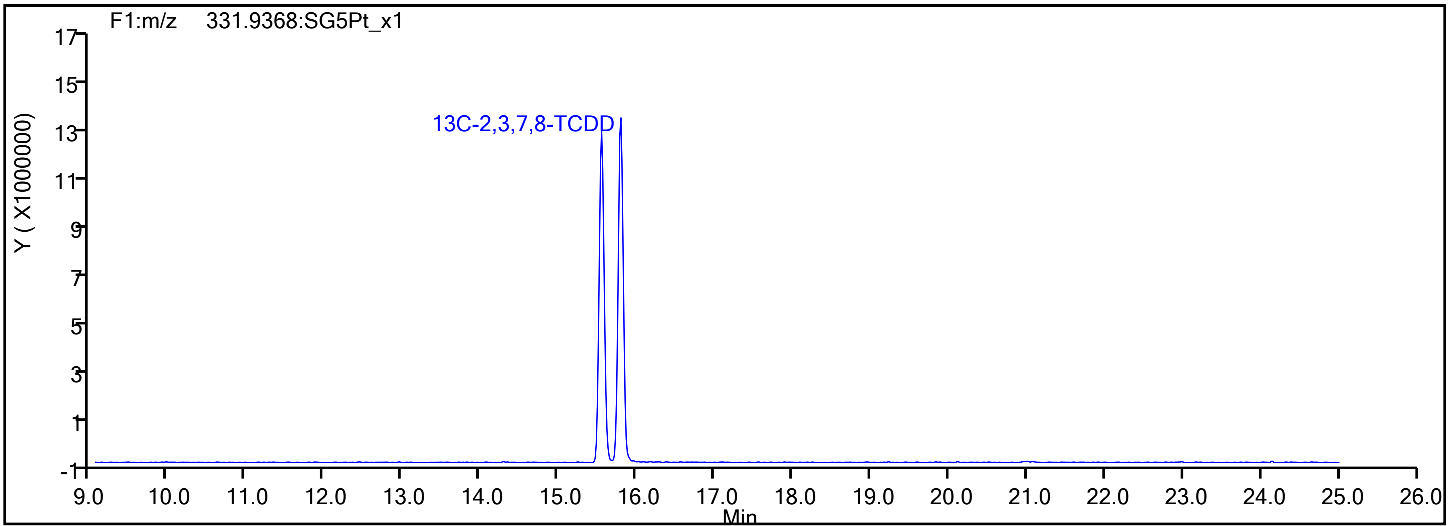

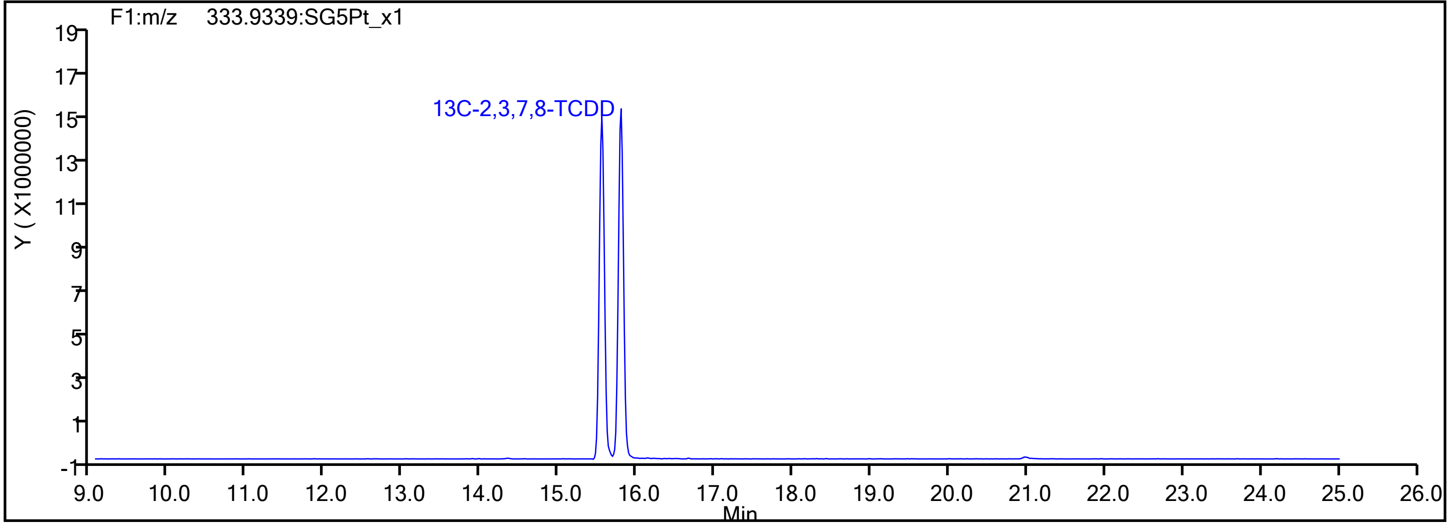

Report Date: 27-Jul-2020 12:42:56 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

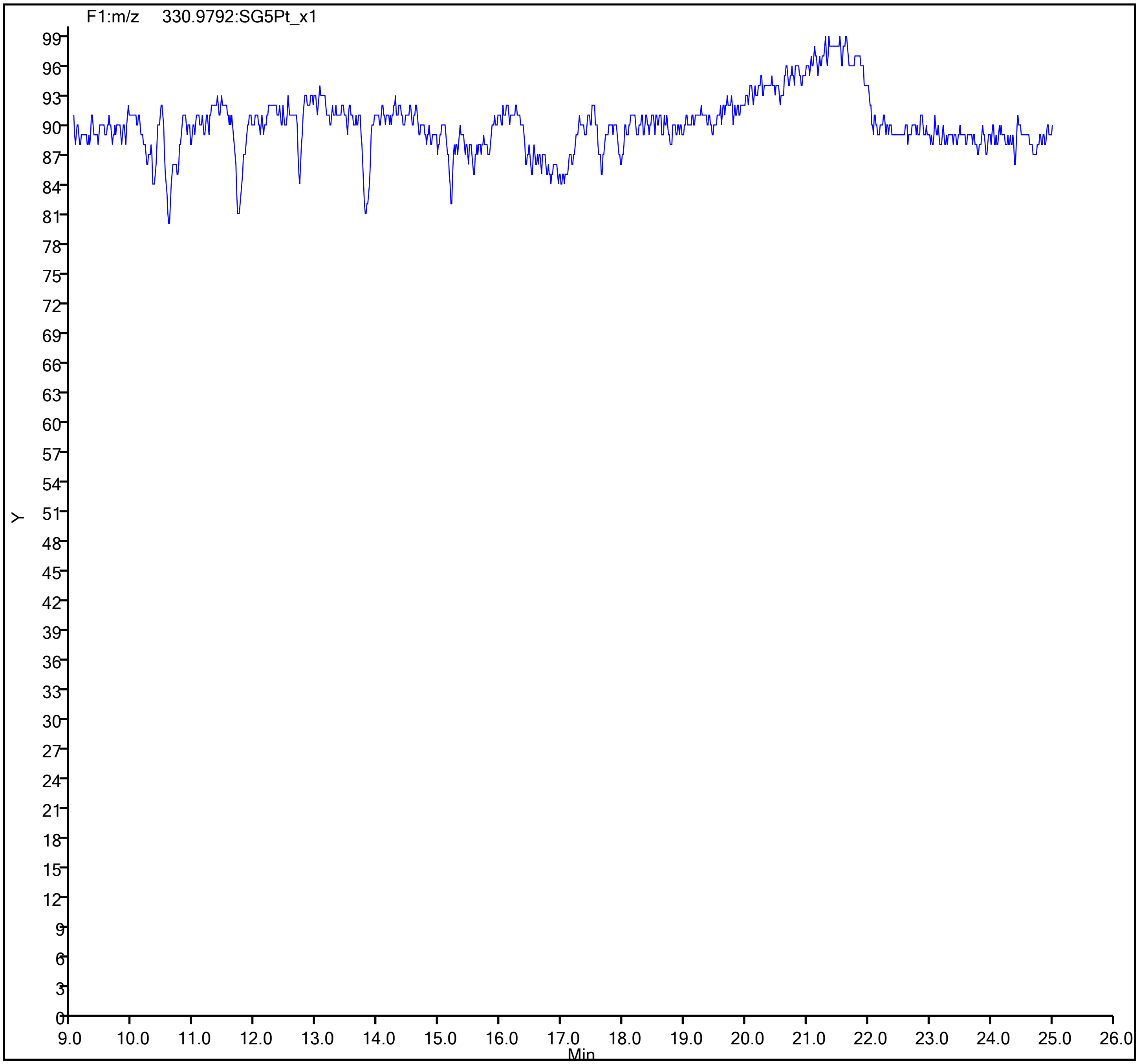

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC   Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02   ALS Bottle#: 0   Worklist Smp#: 5
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57   Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa   Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

HRDXNL4_00094   Amount Added: 2.00   Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

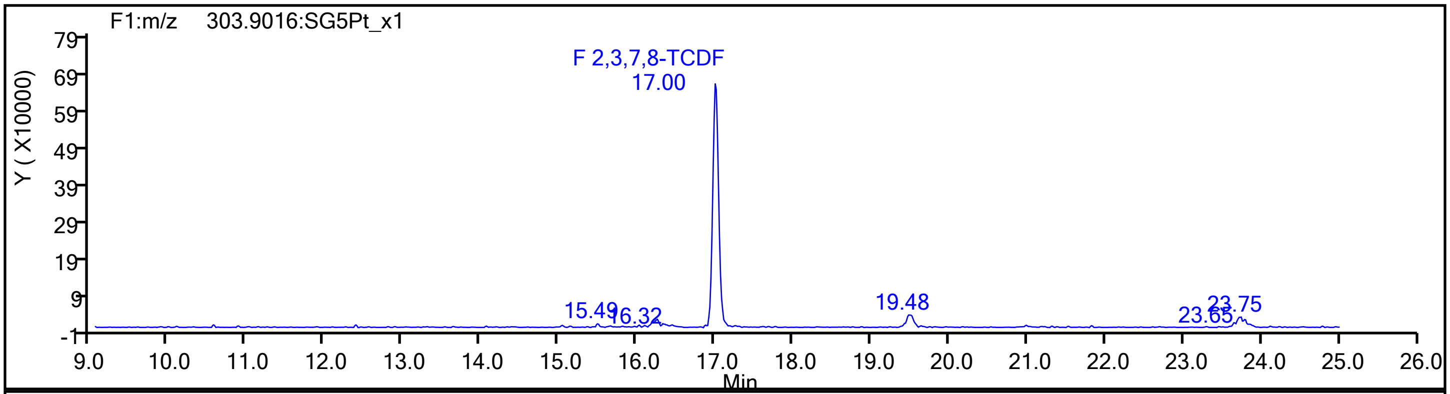

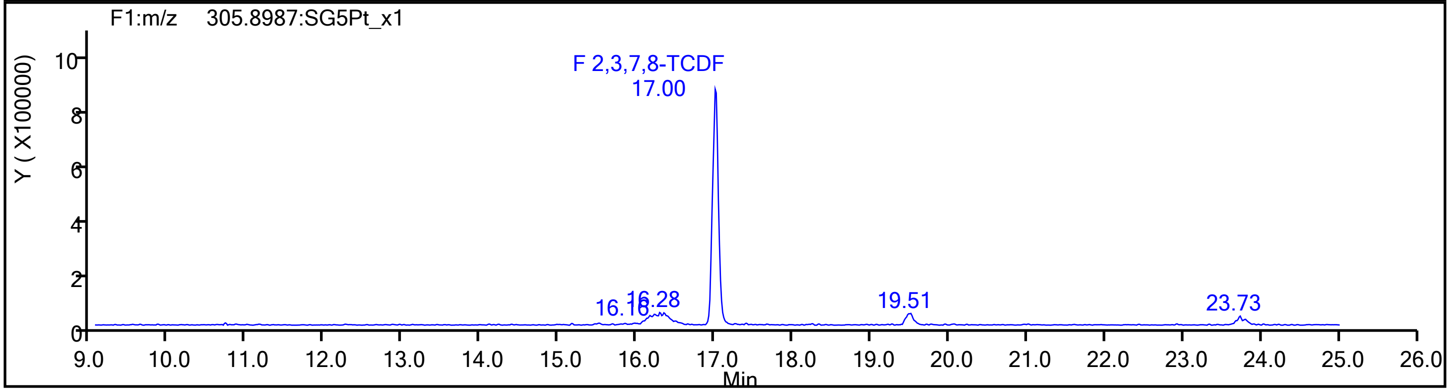

TCDF Standards

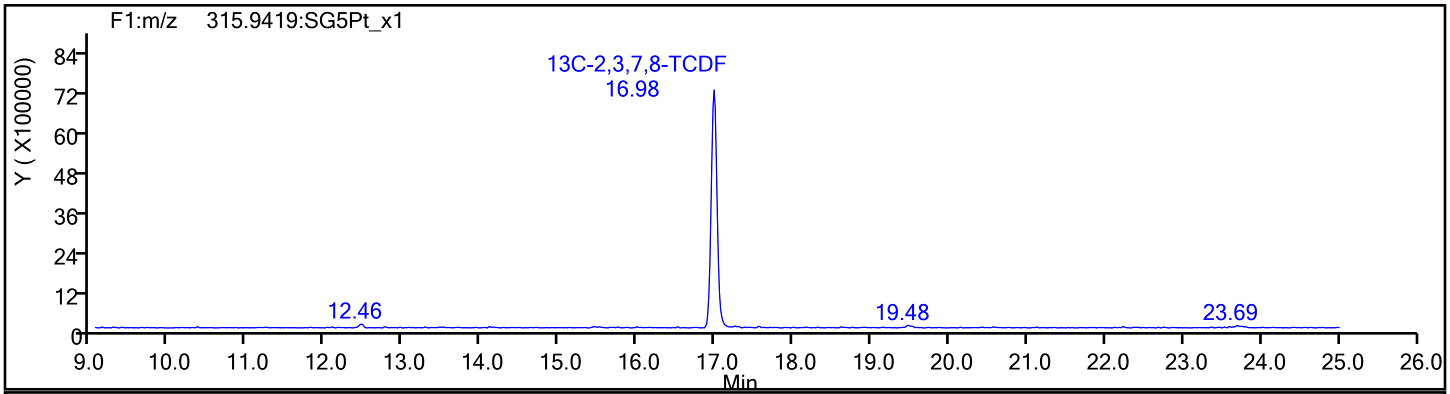

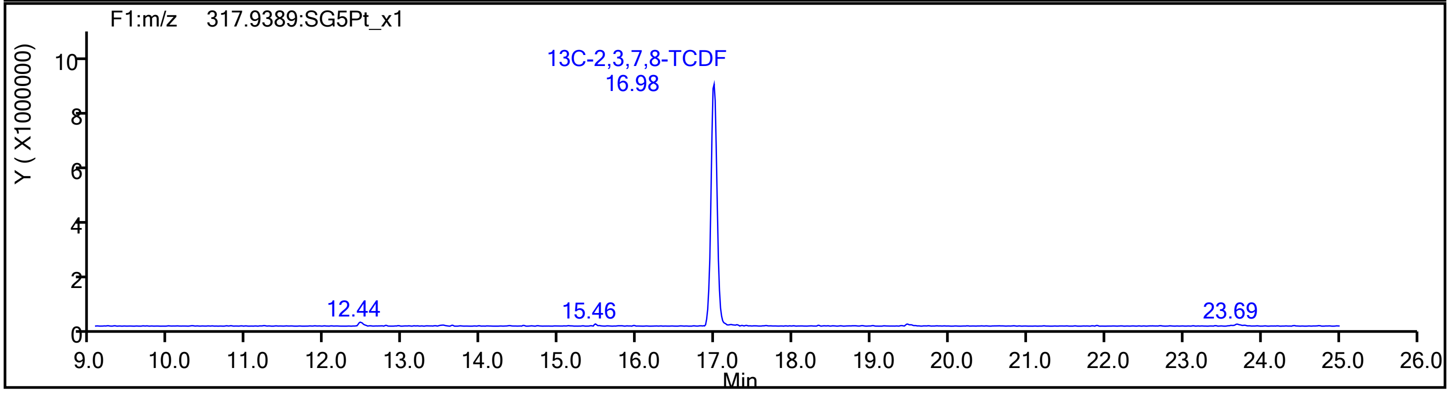

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

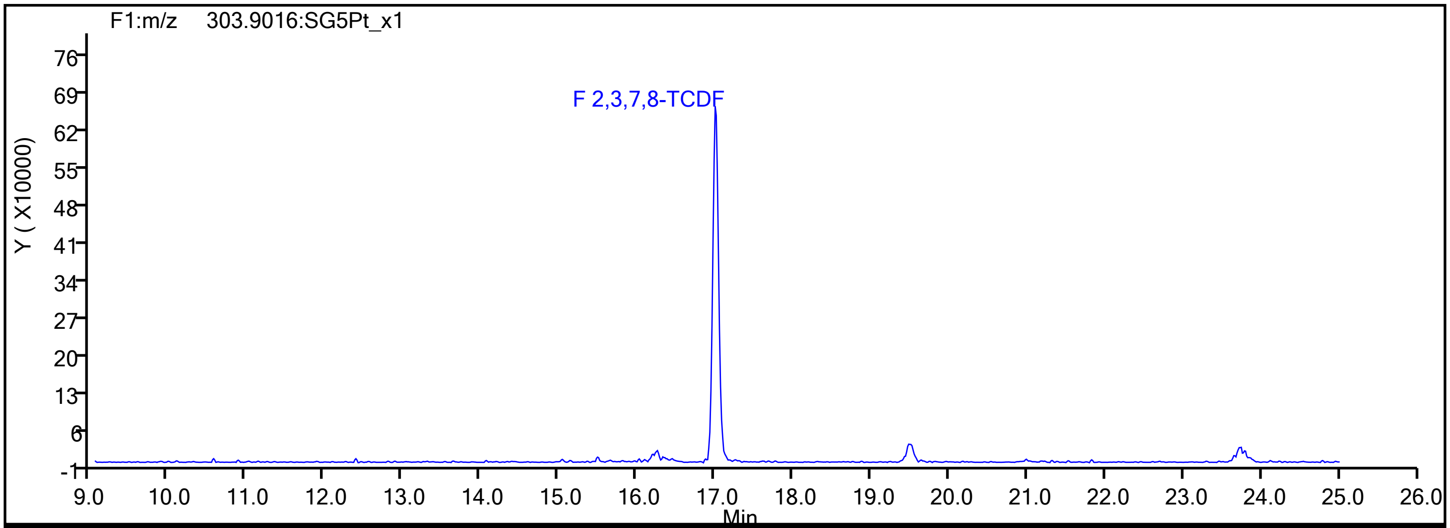

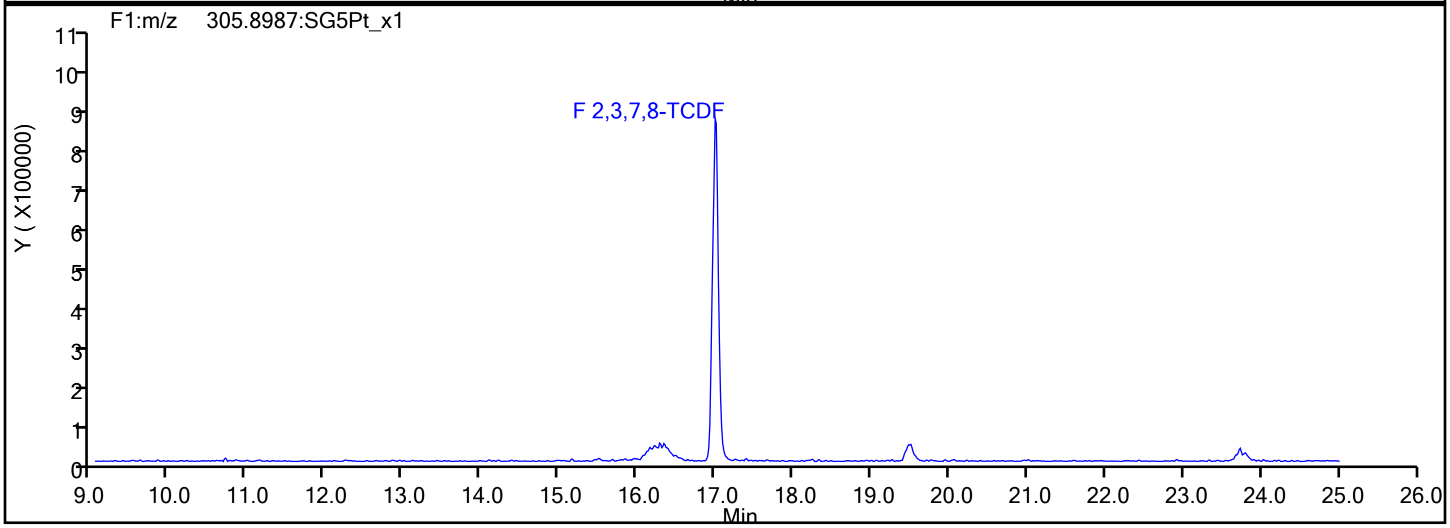

TCDF Interference Mass

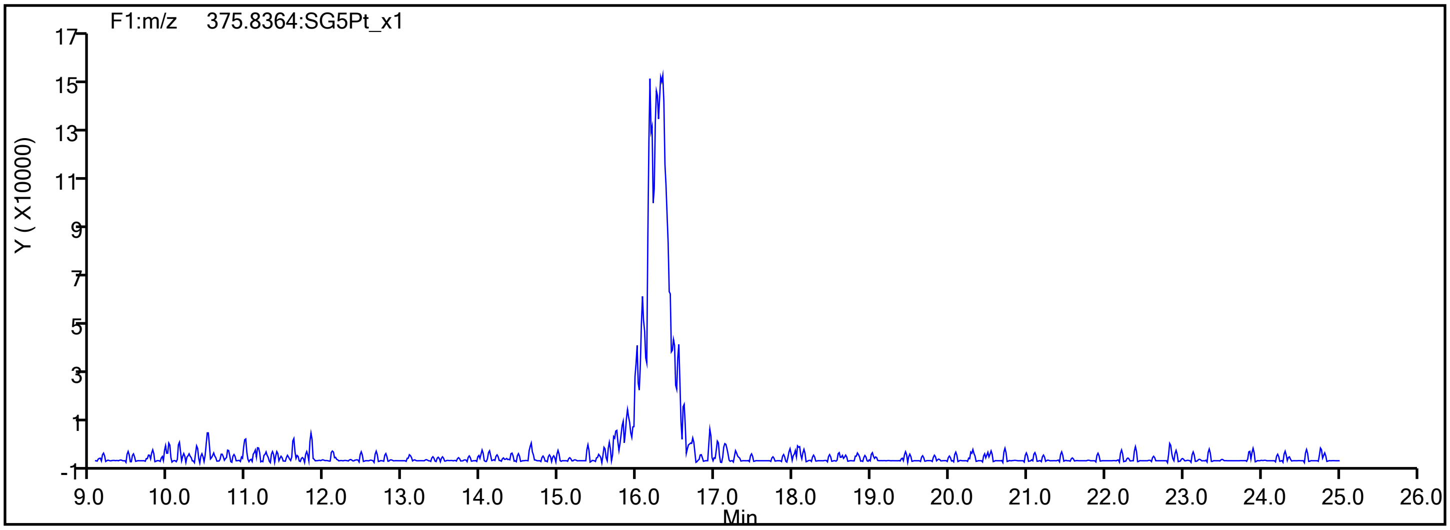

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

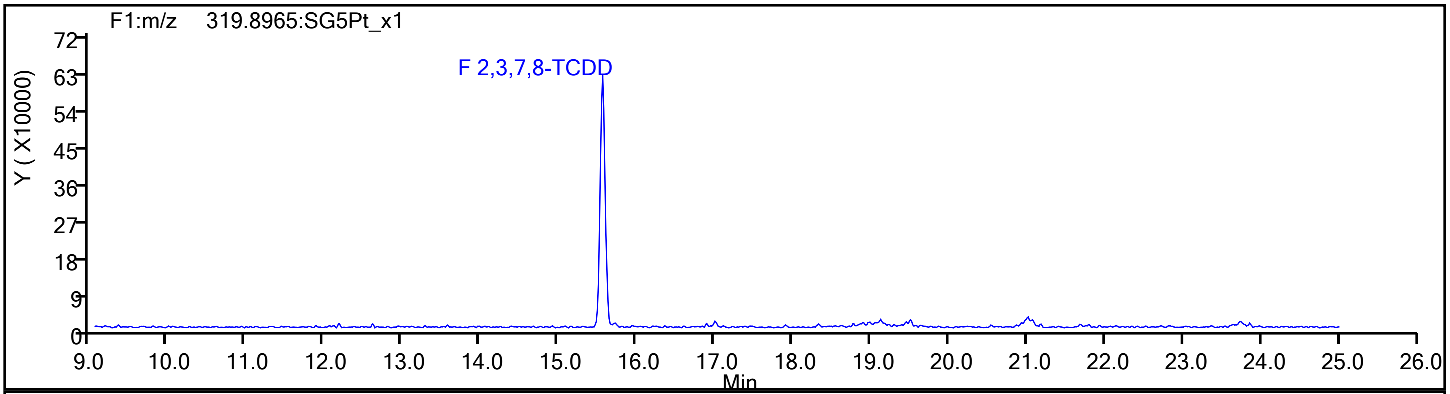

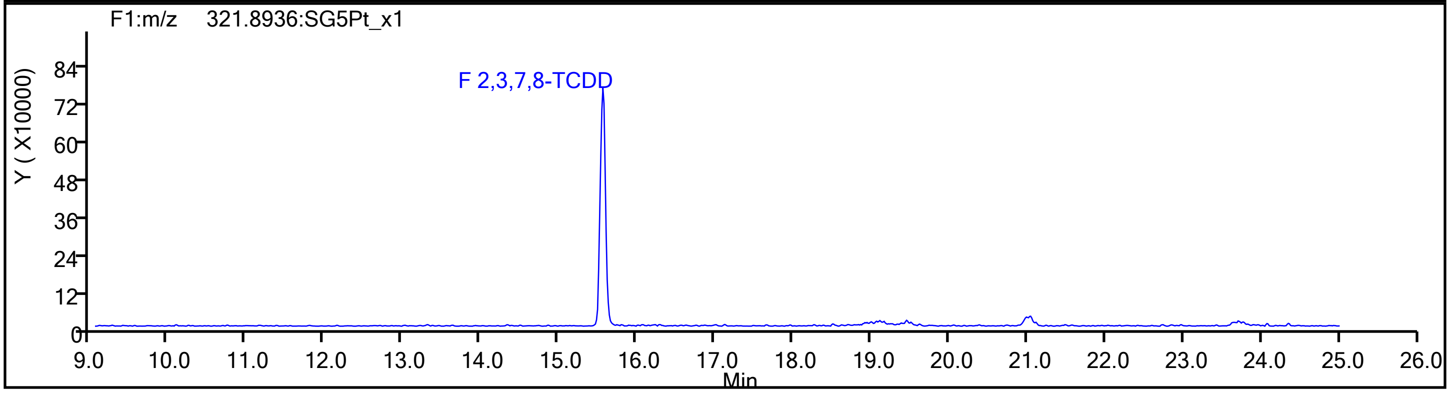

TCDD Standards

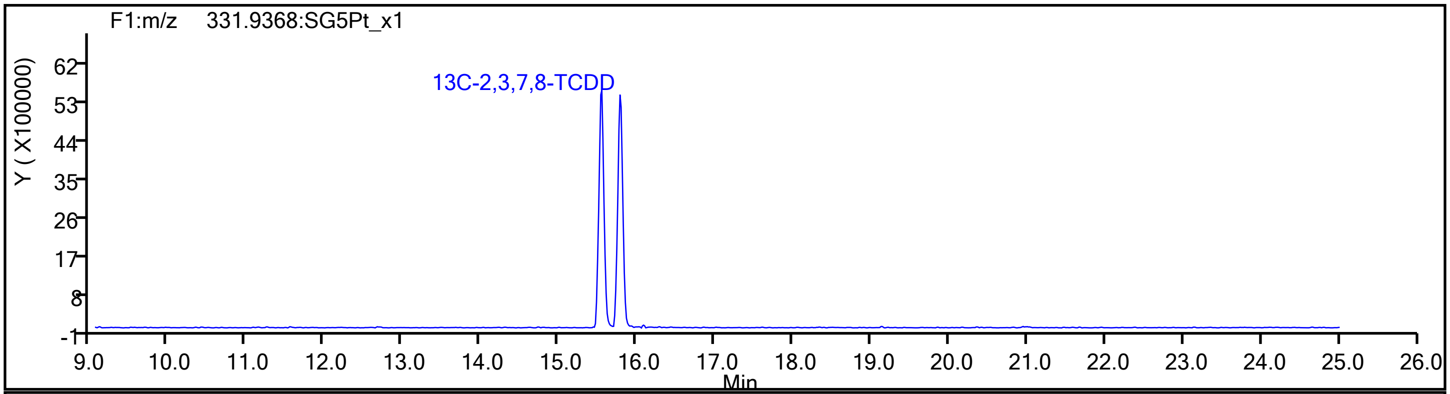

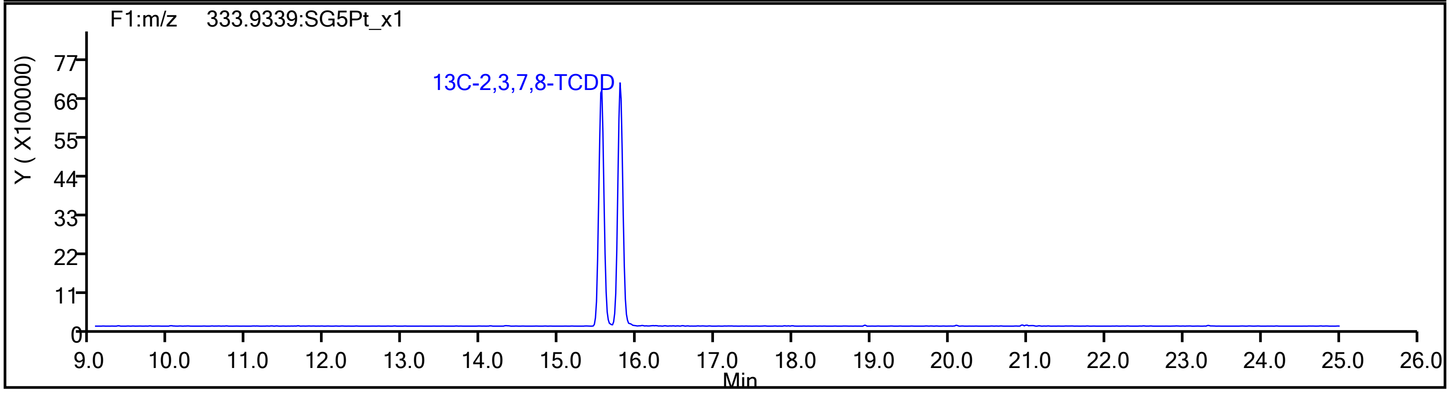

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

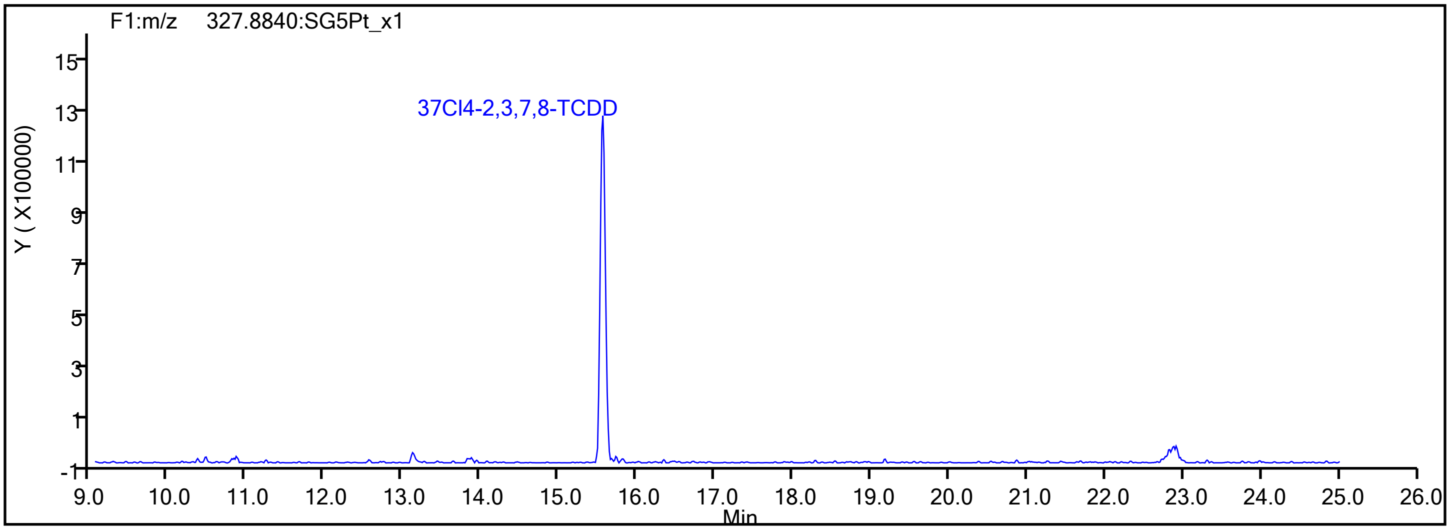

37Cl4-TCDD Standards

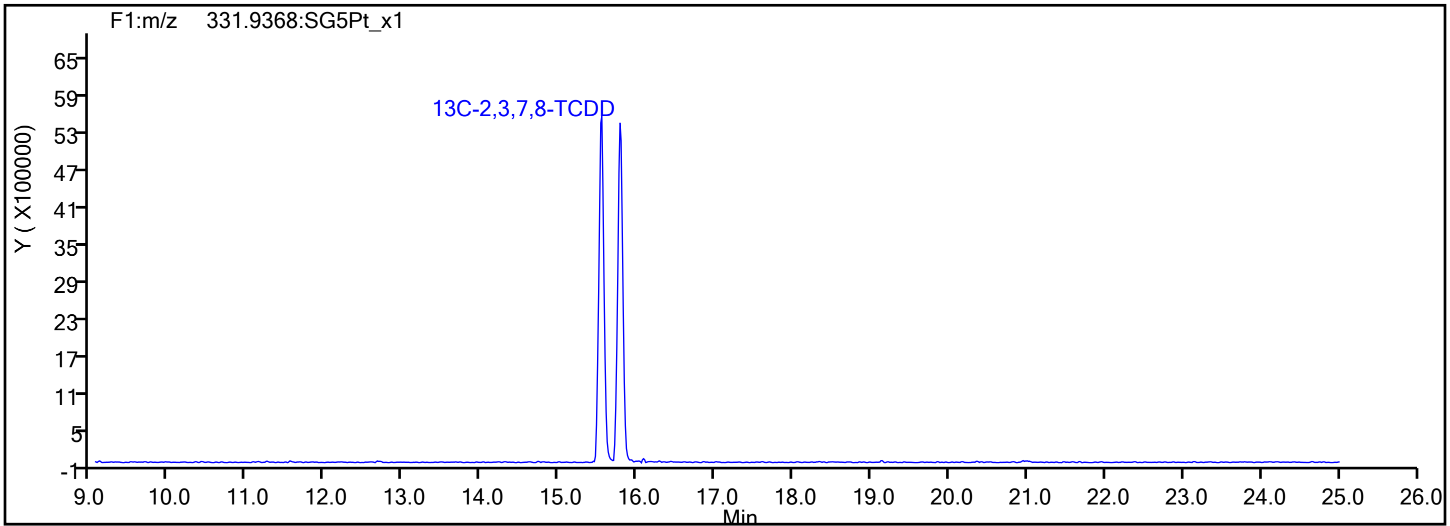

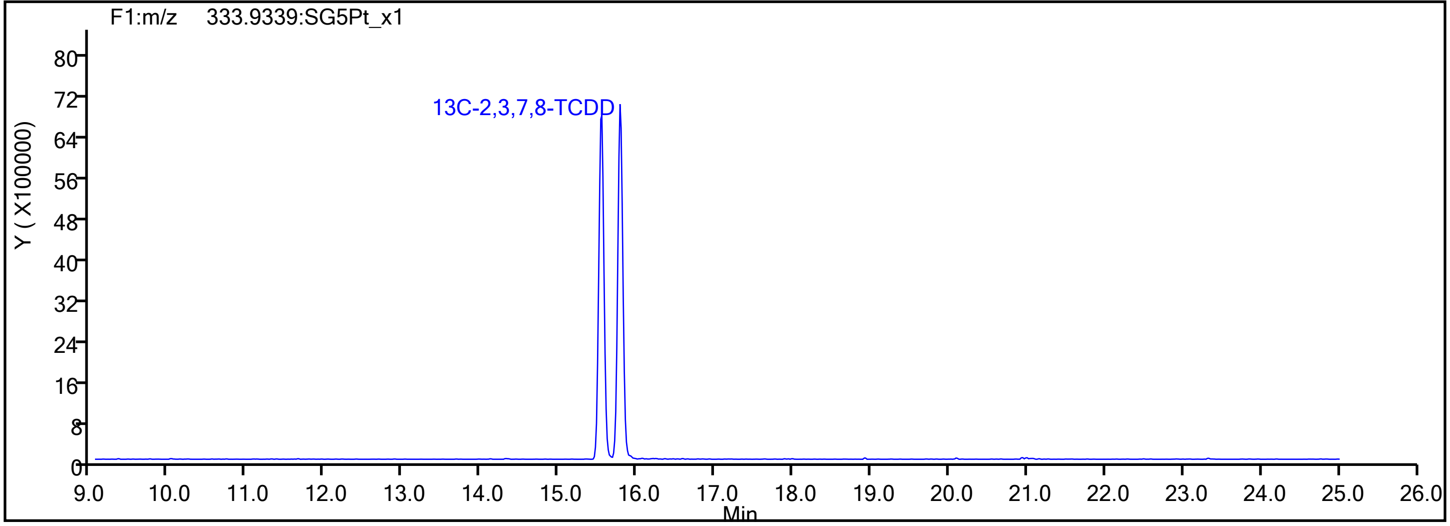

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d

Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

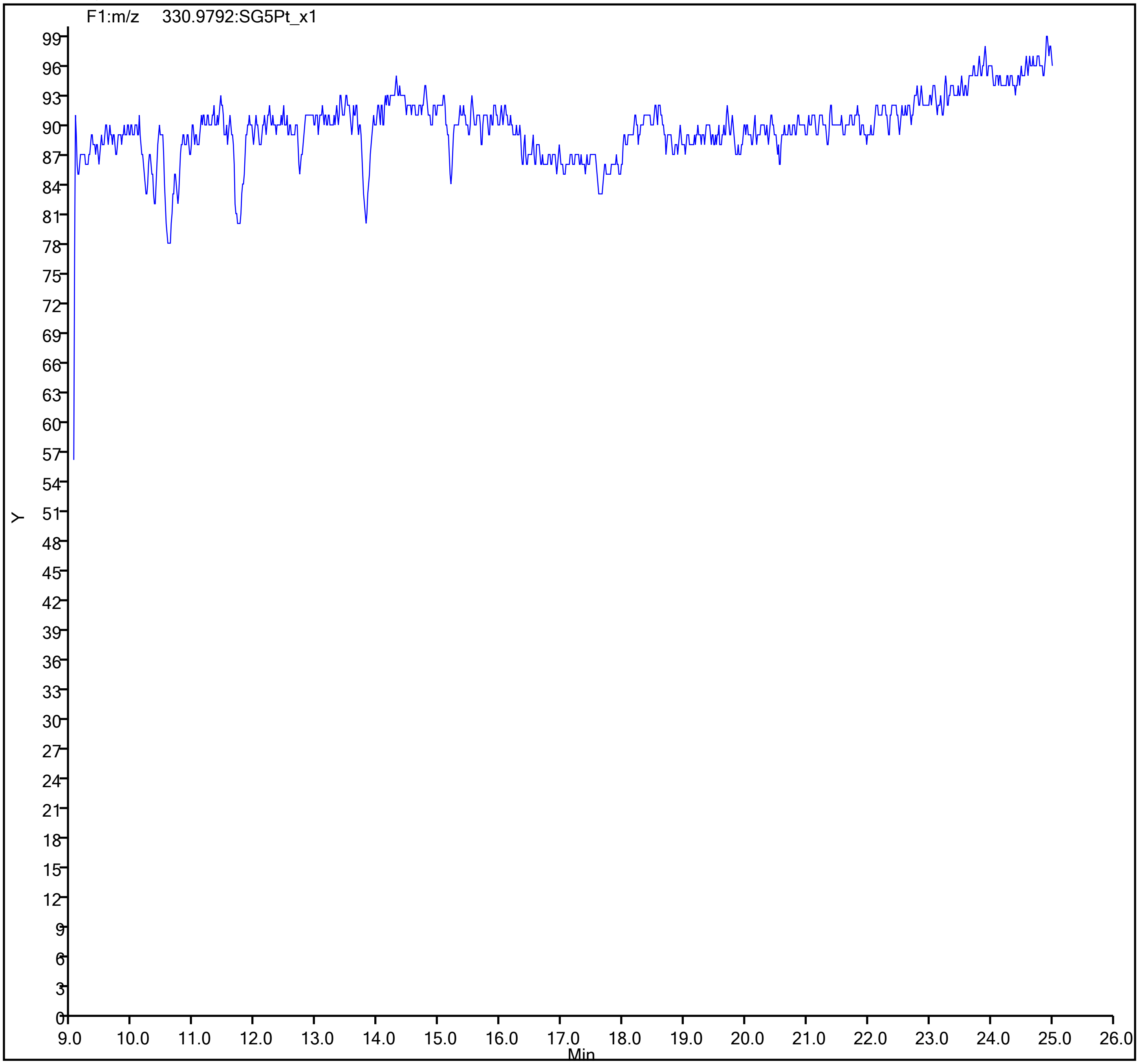

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Lims ID: IC 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 25-Jul-2020 01:45:24 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:03 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

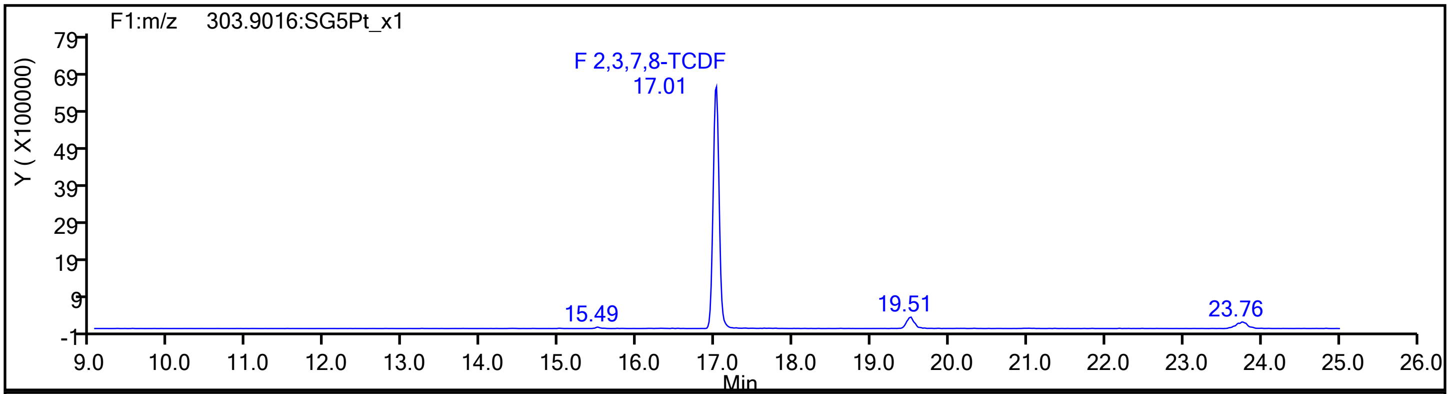

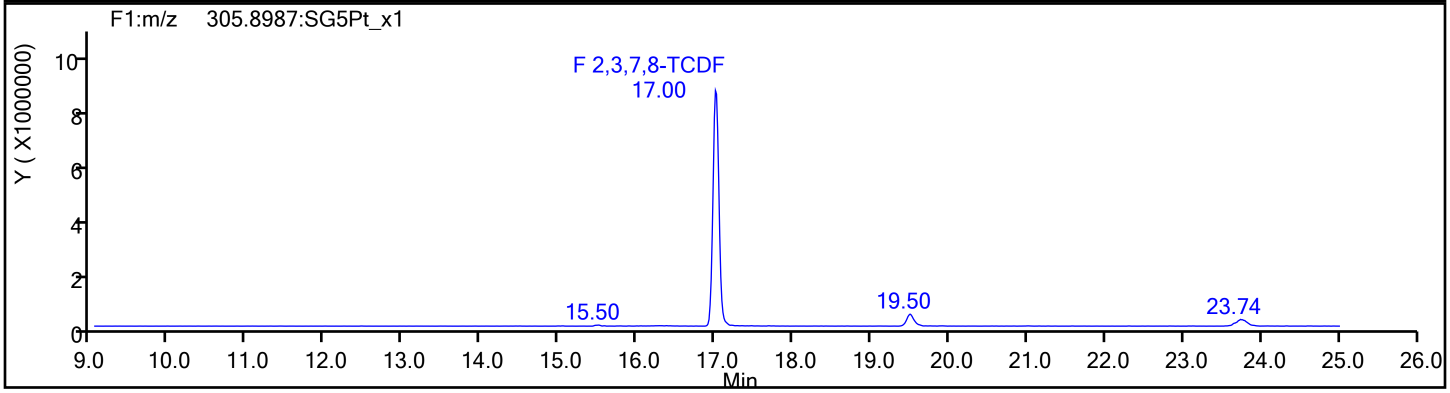

TCDF Standards

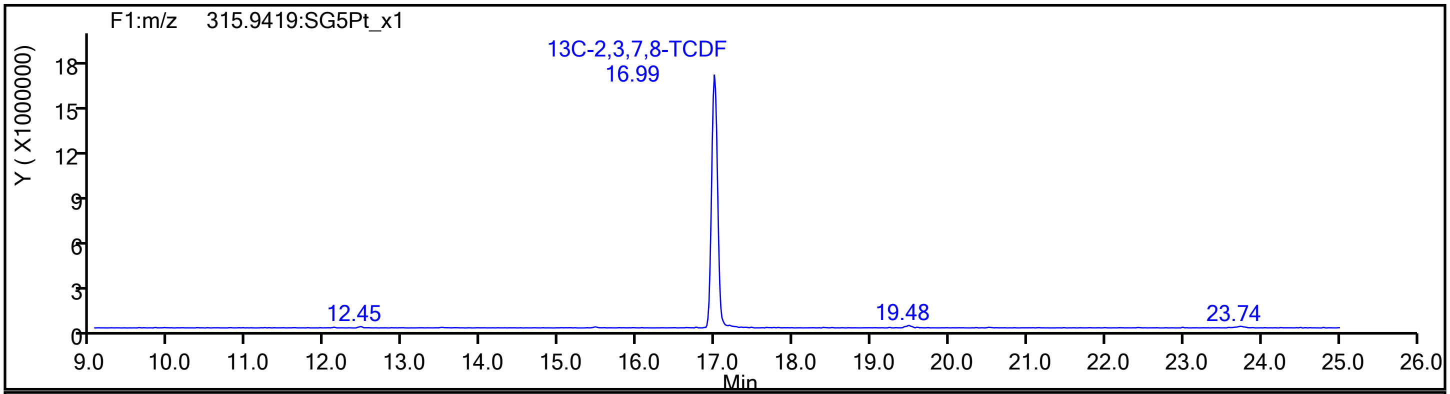

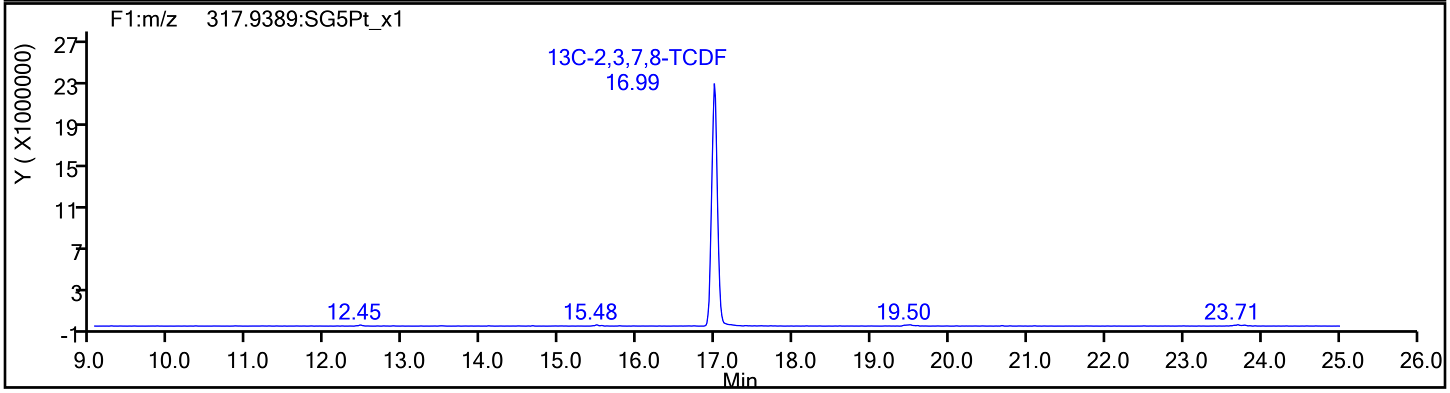

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

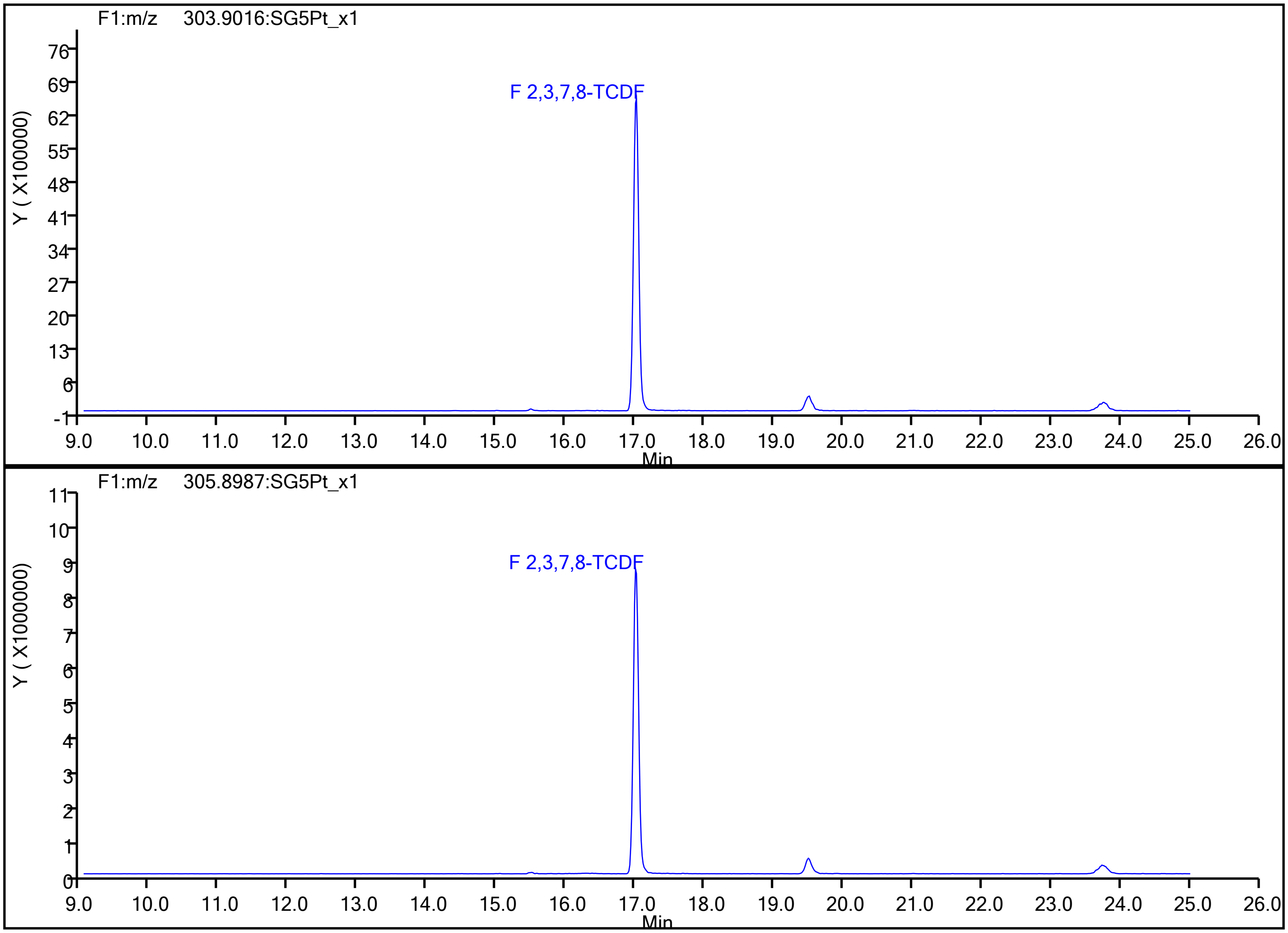

TCDF Interference Mass

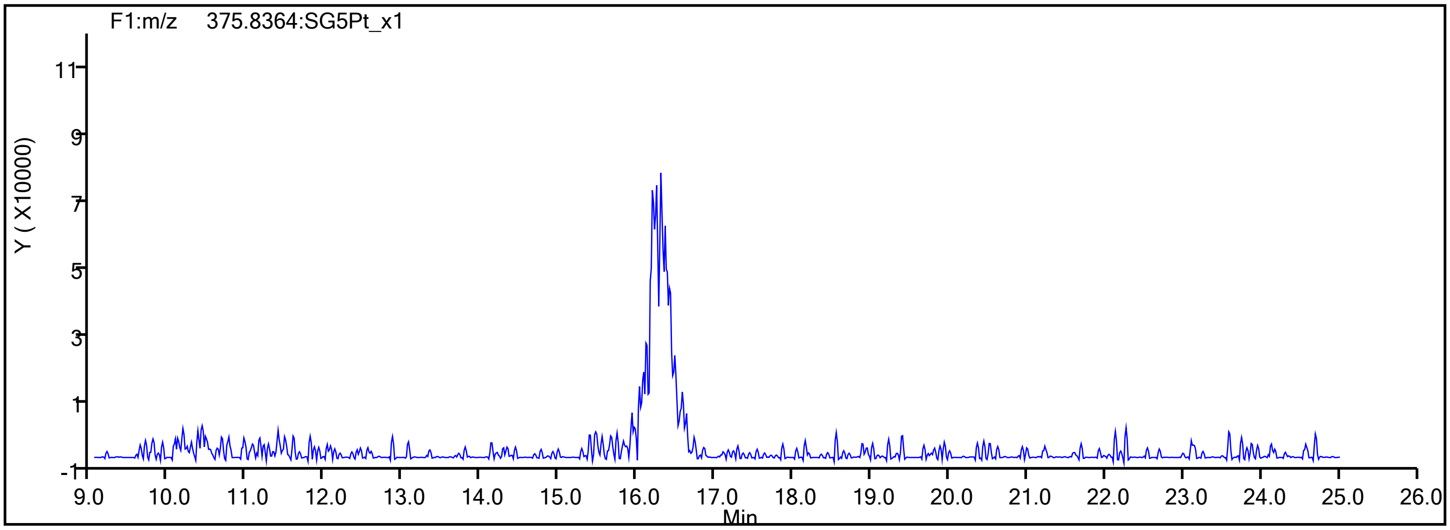

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

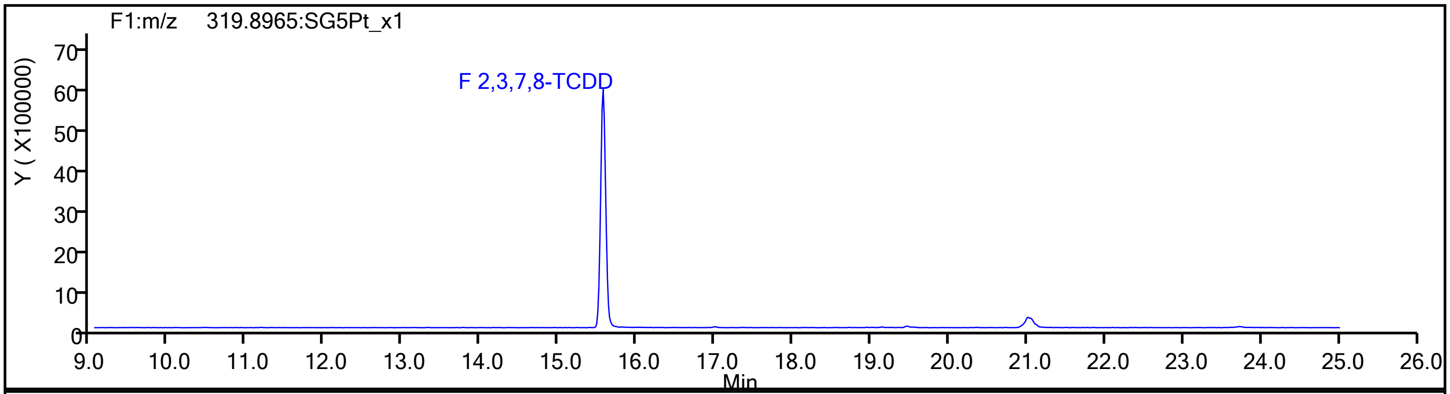

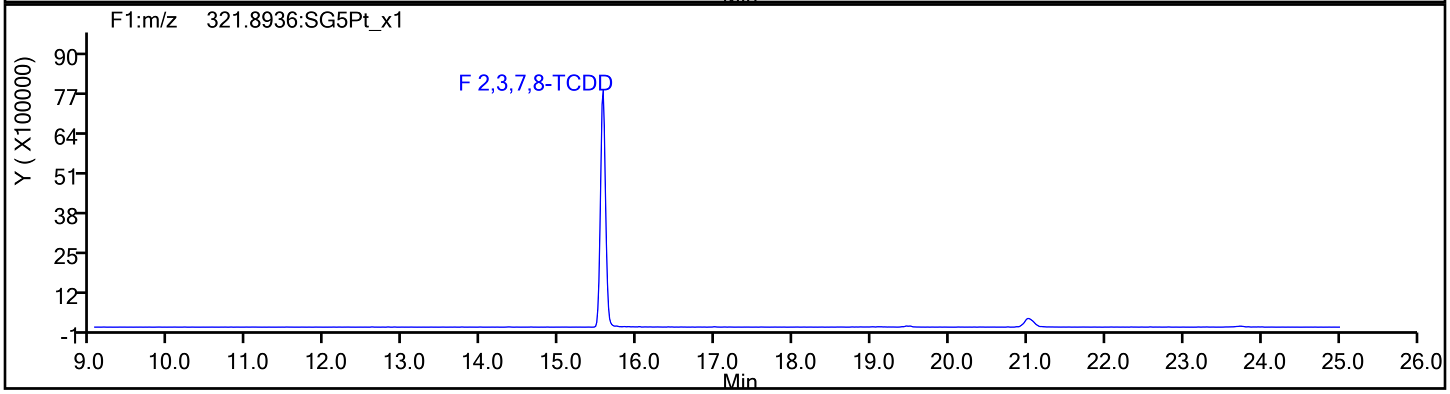

TCDD Standards

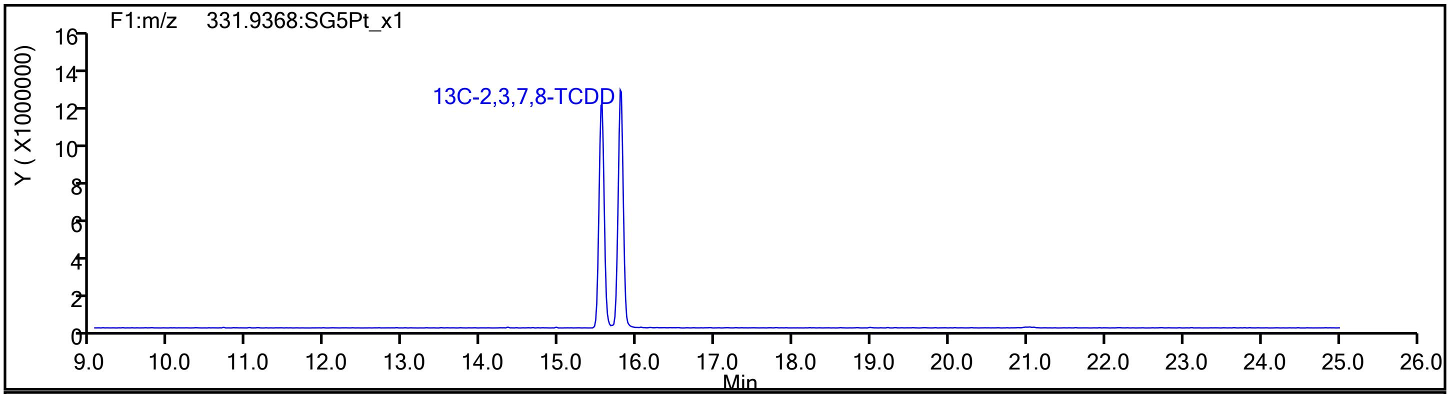

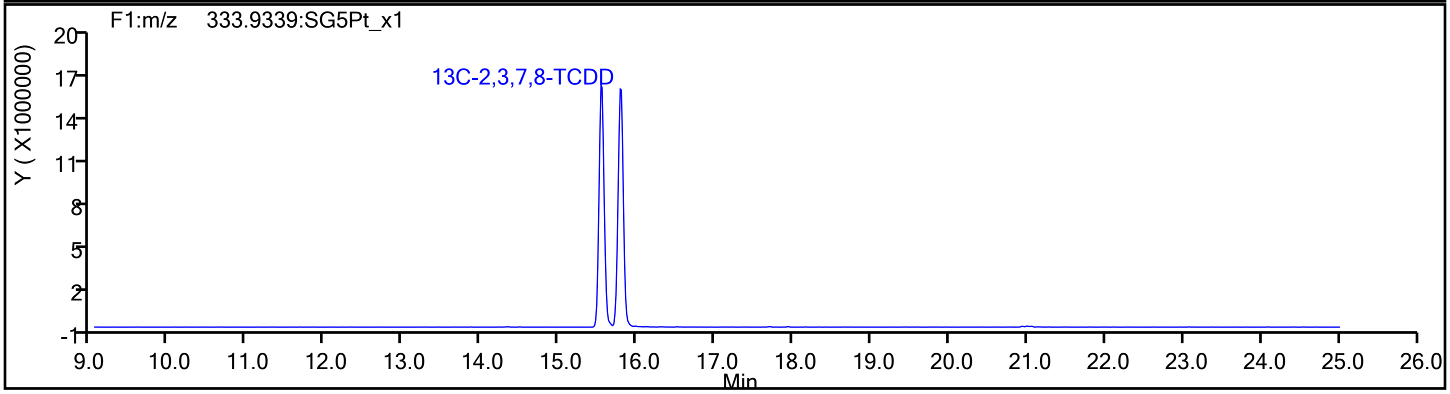

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

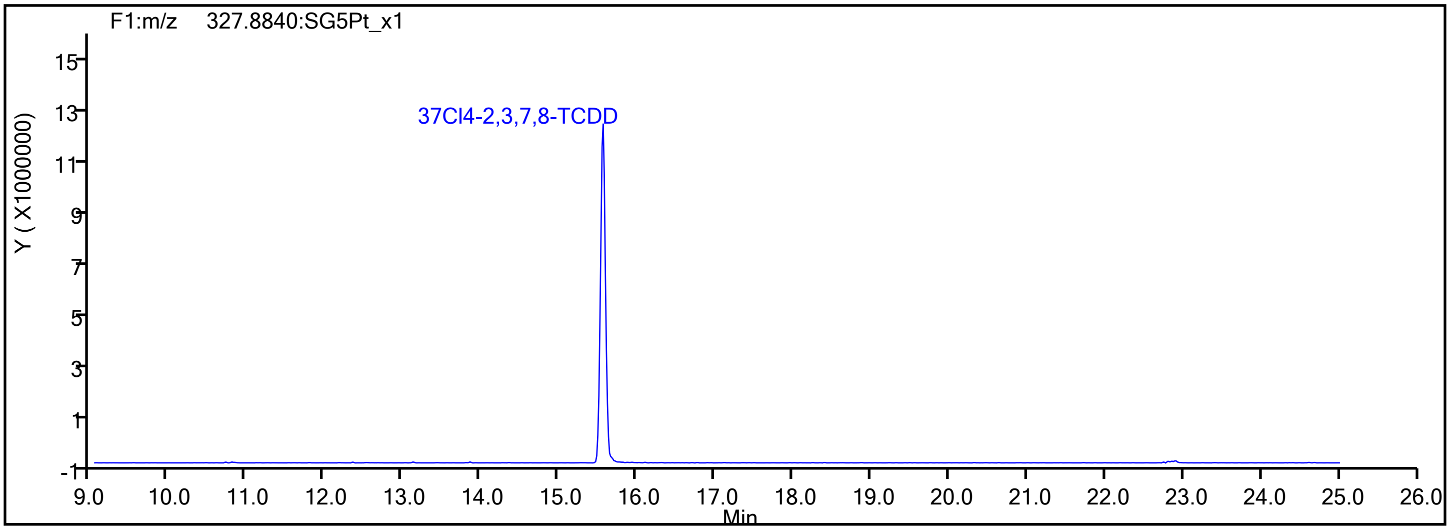

37Cl4-TCDD Standards

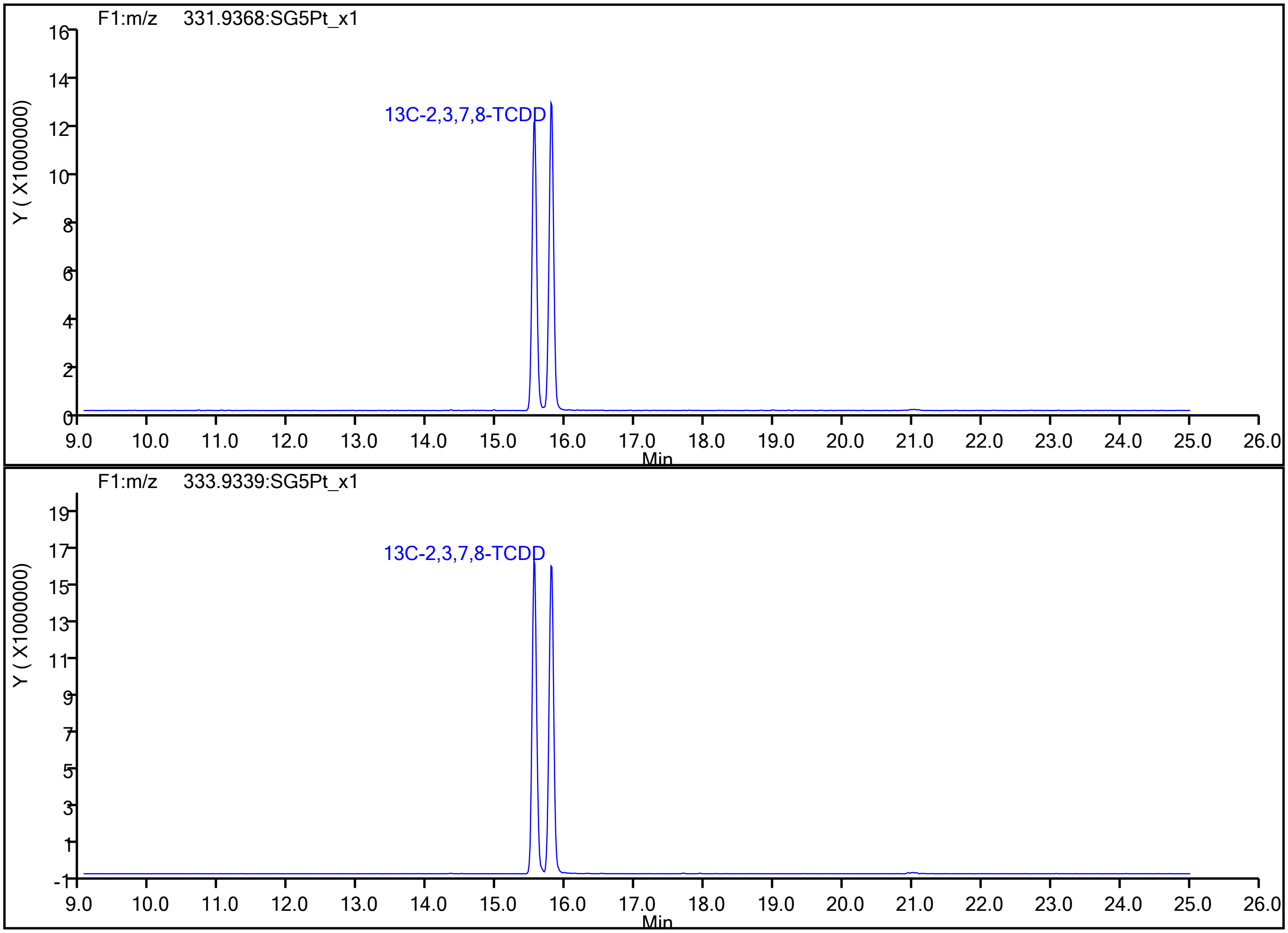

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

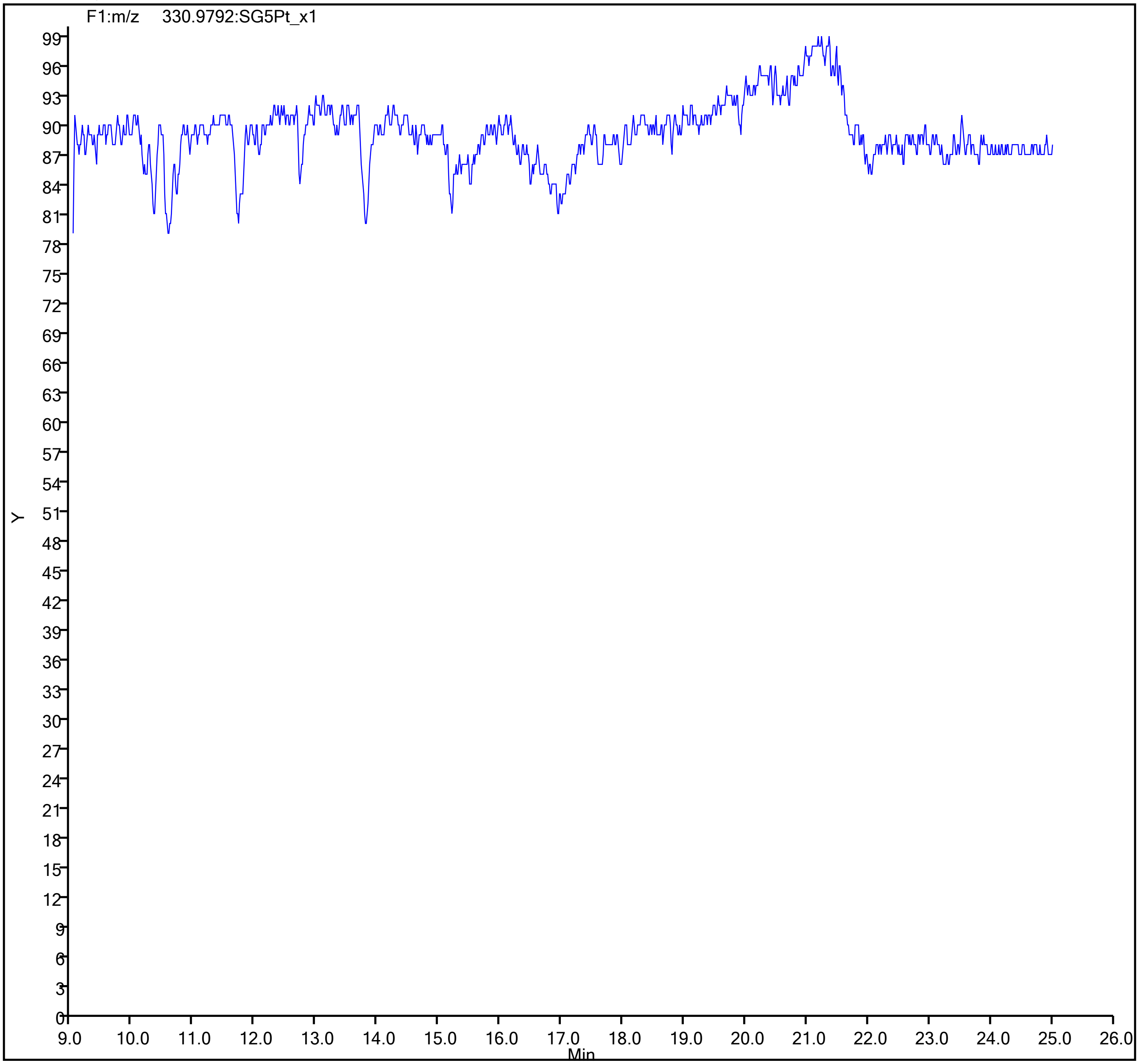

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:39:57		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Jul-2020 02:23:46 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:08 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

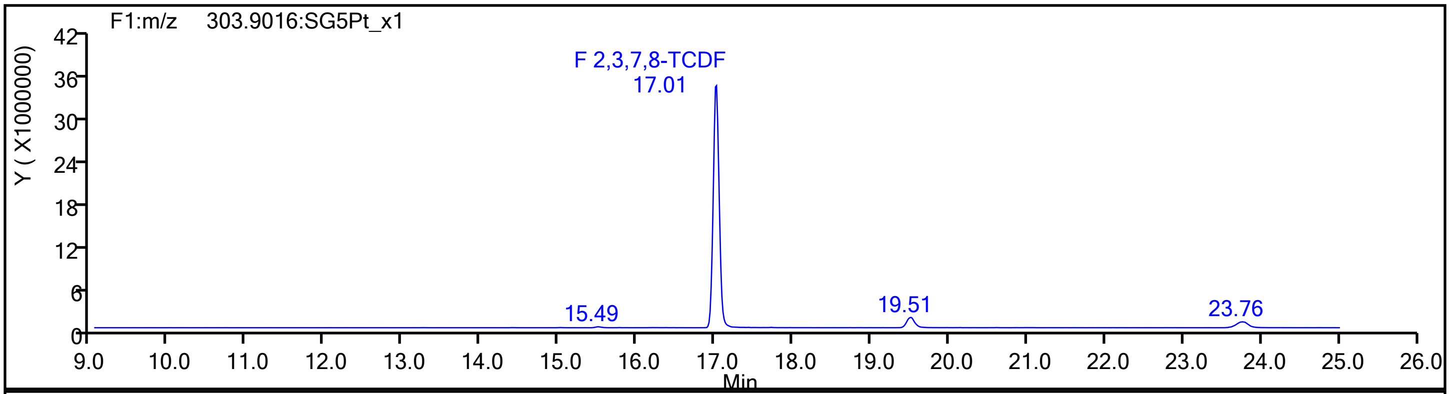

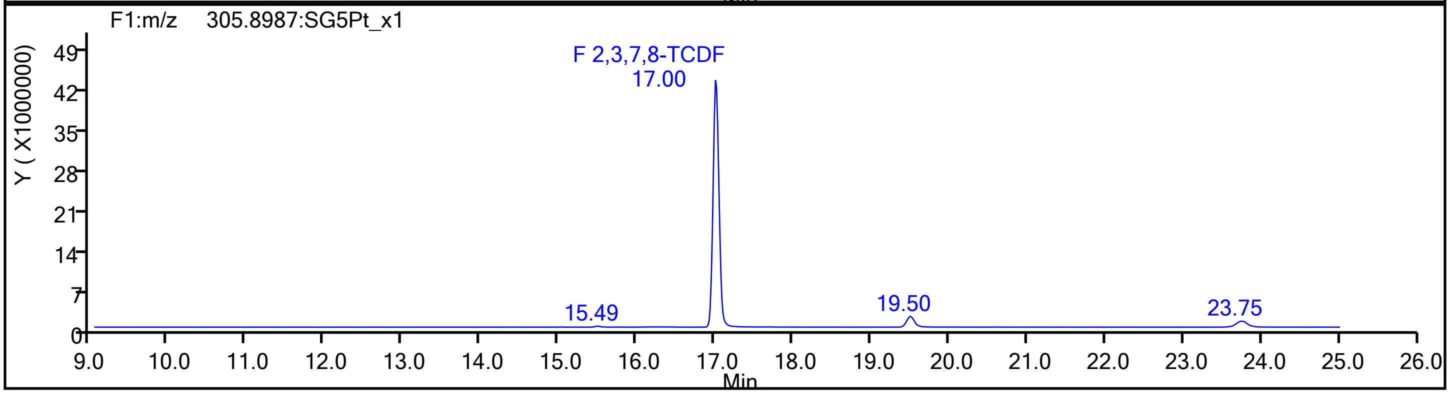

TCDF Standards

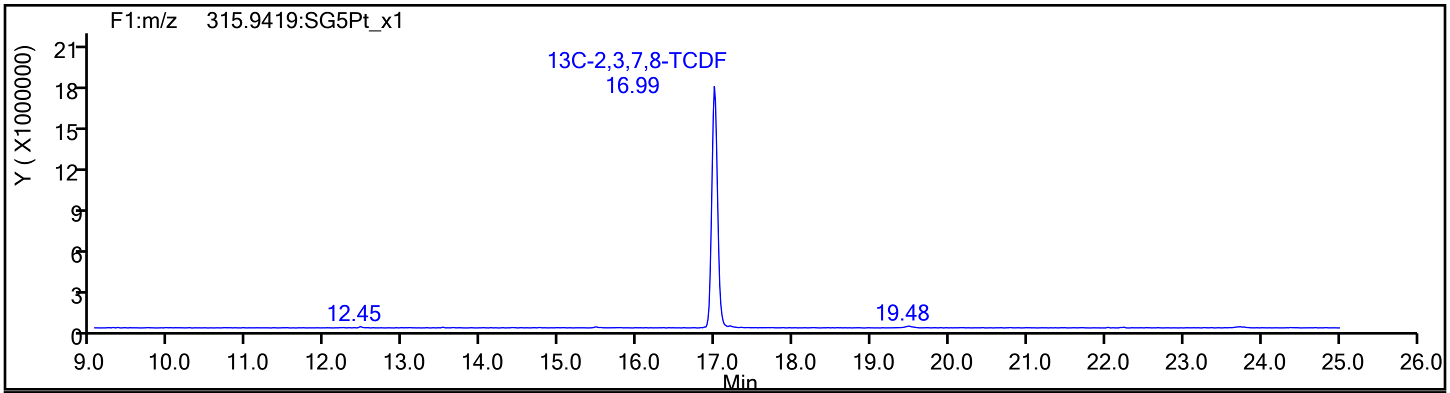

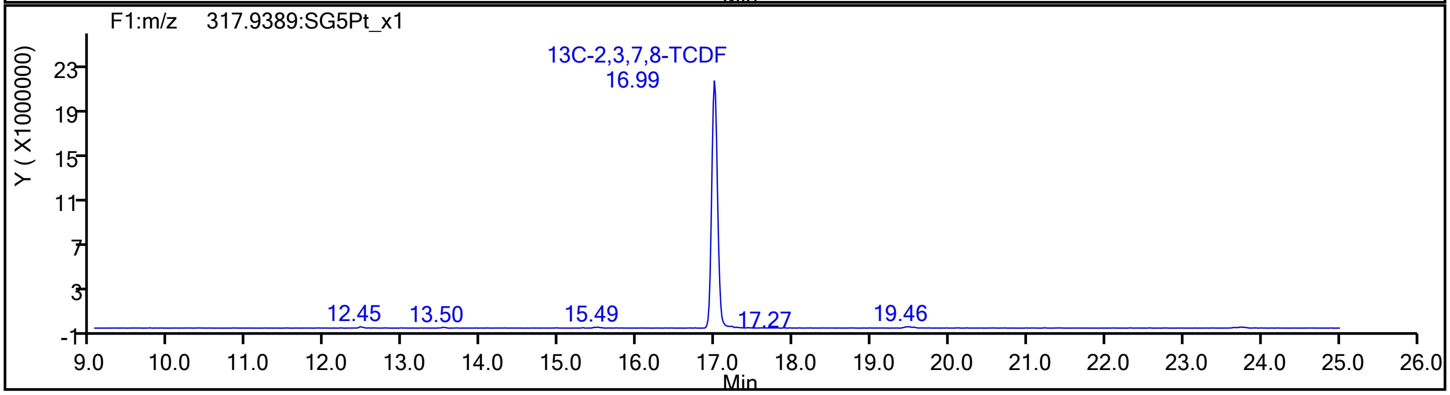

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

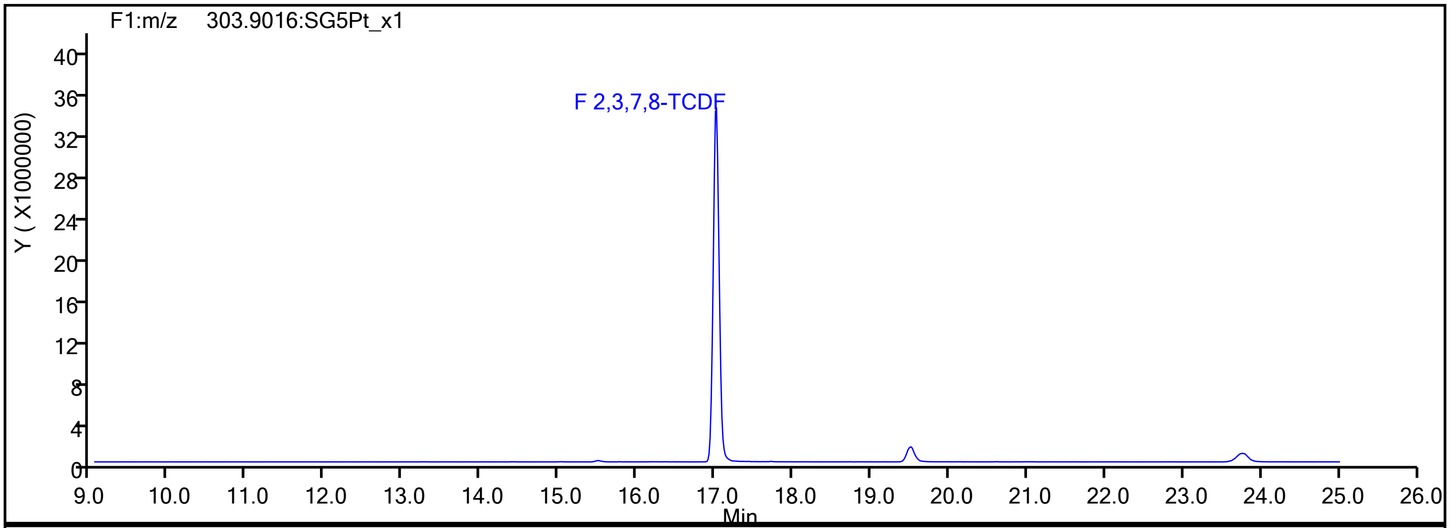

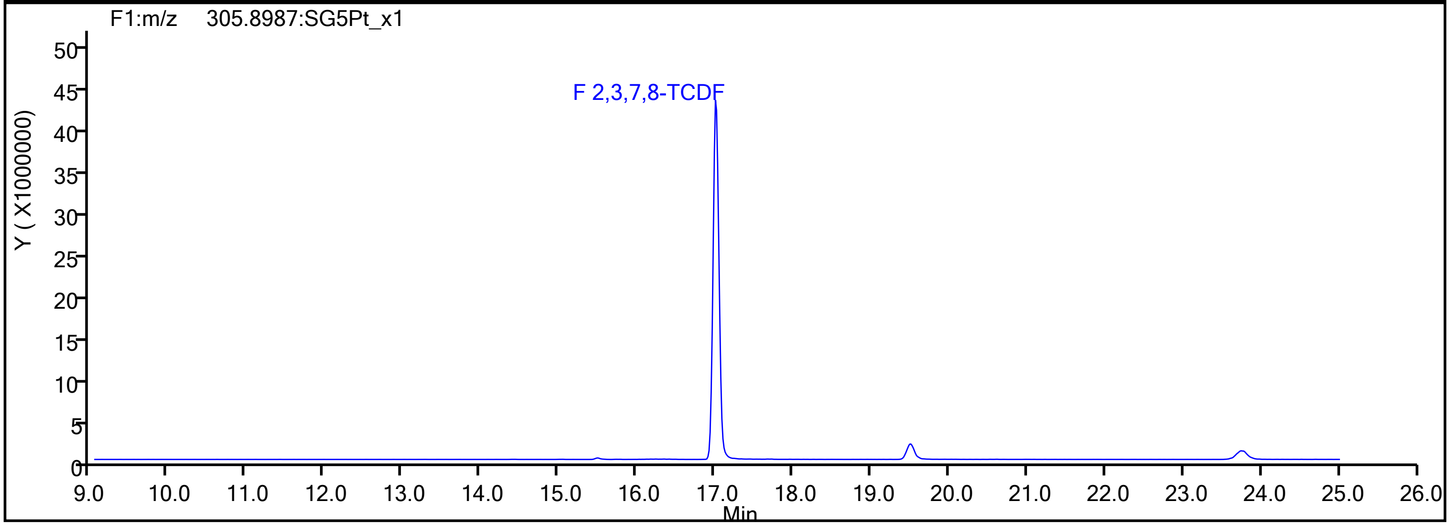

TCDF Interference Mass

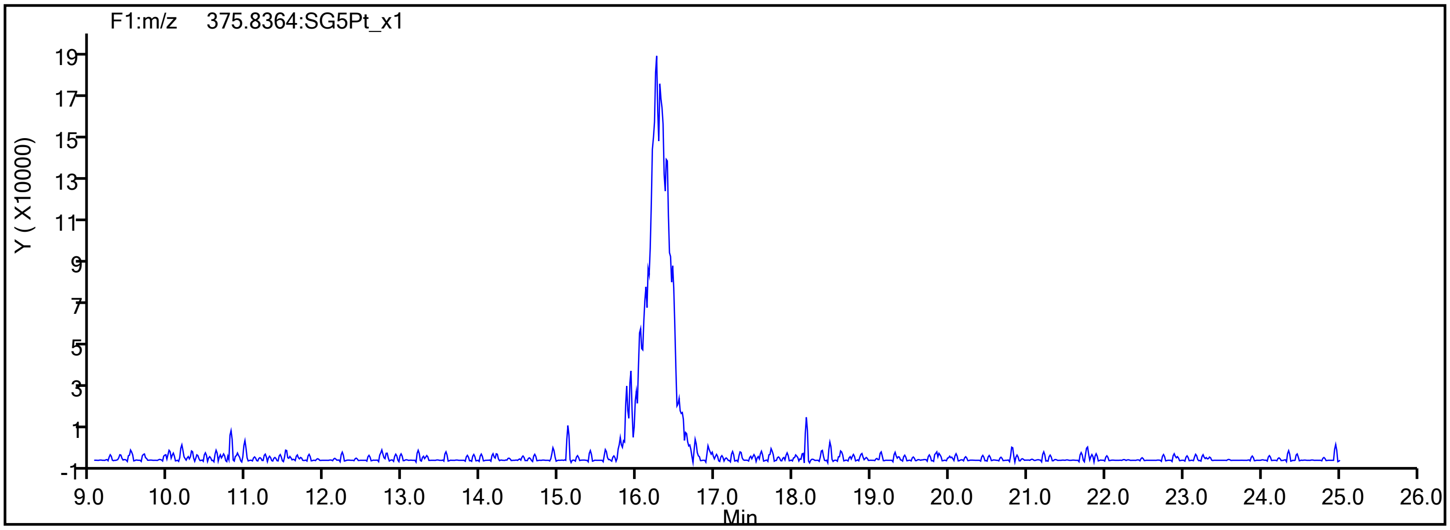

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

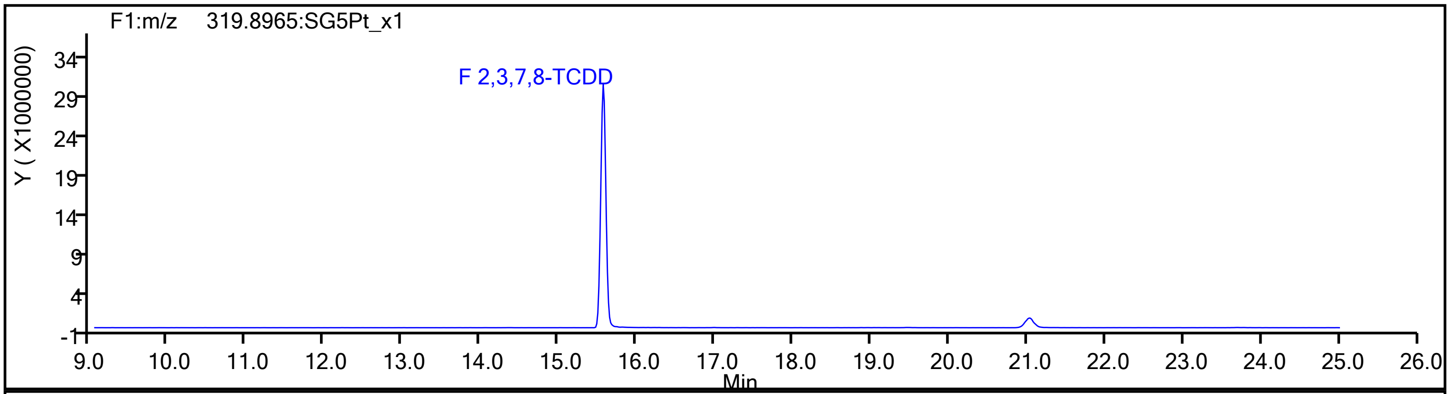

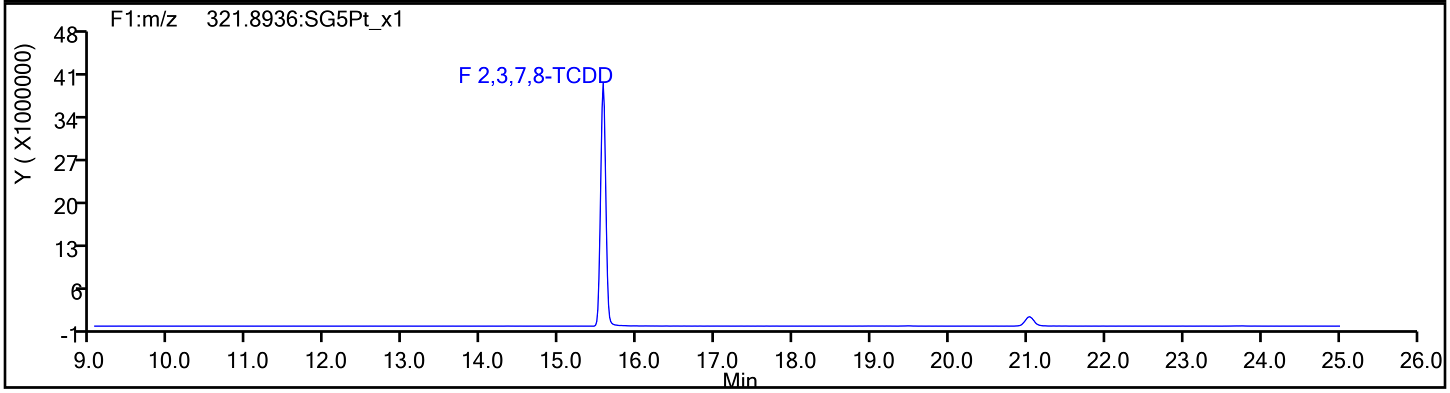

TCDD Standards

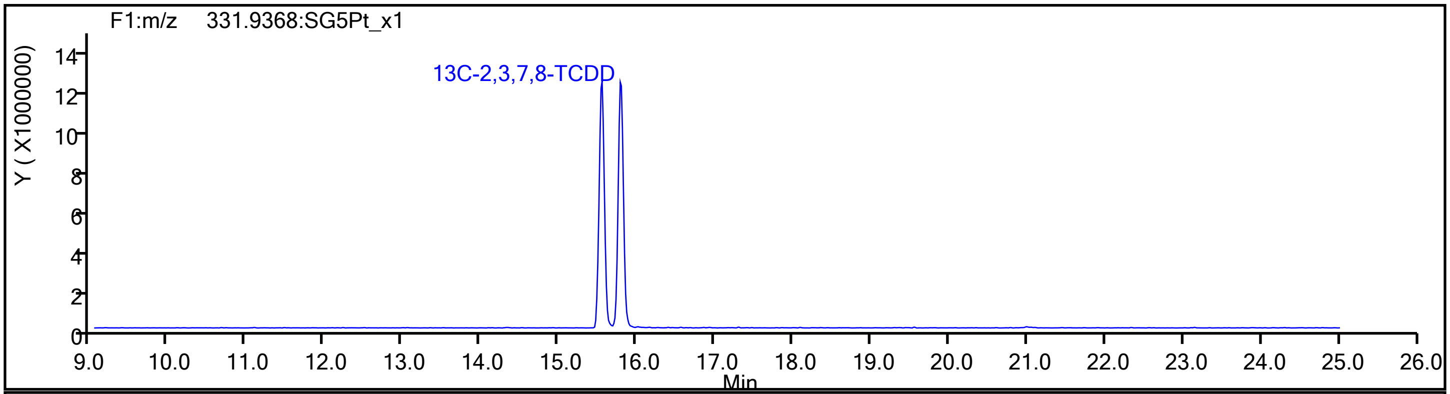

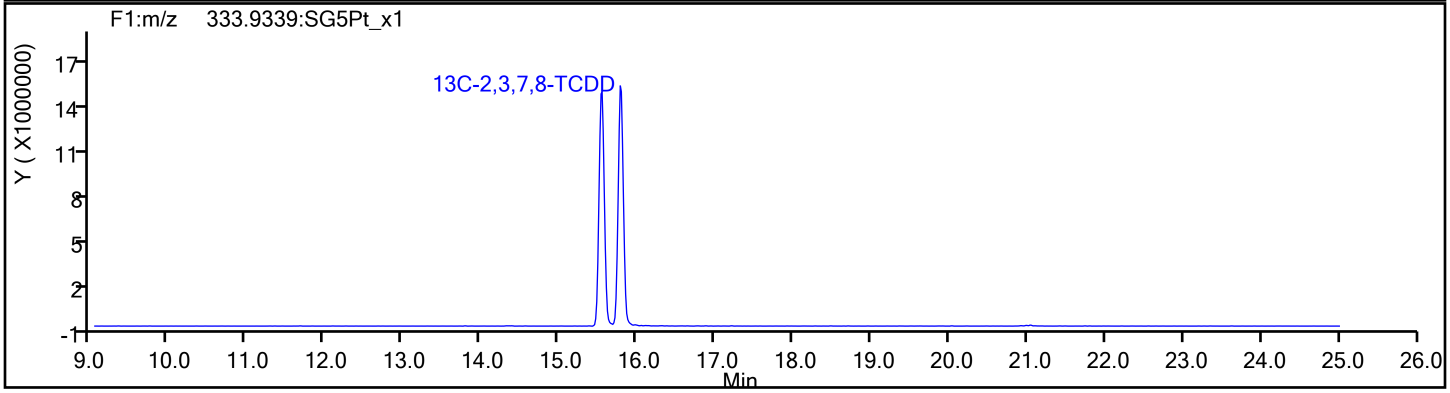

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

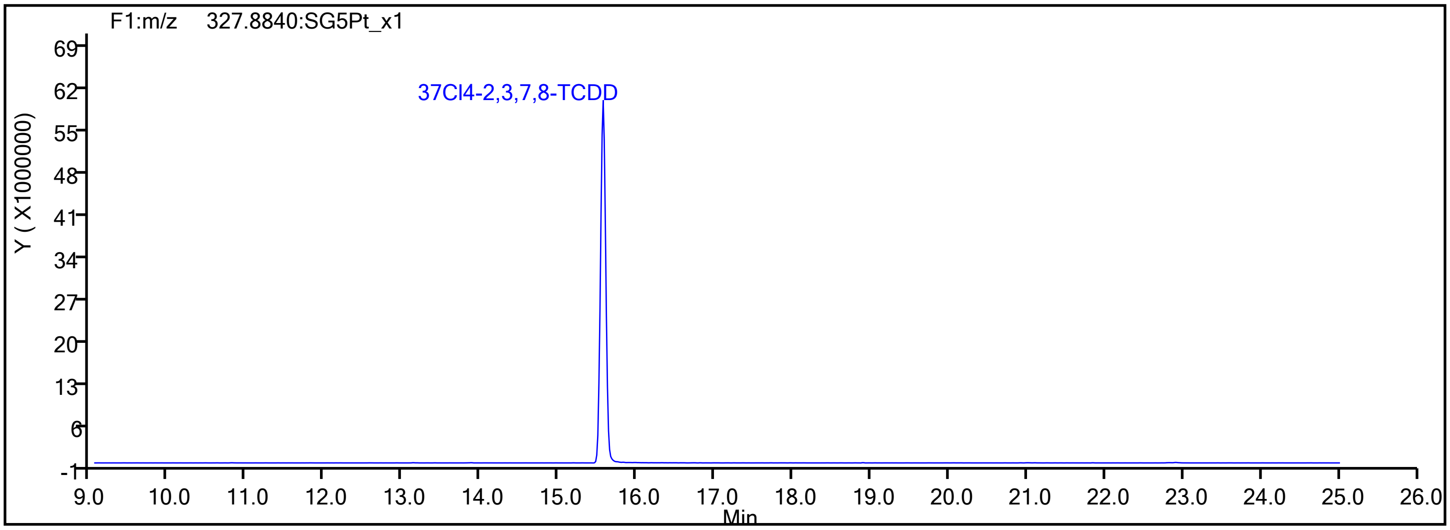

37Cl4-TCDD Standards

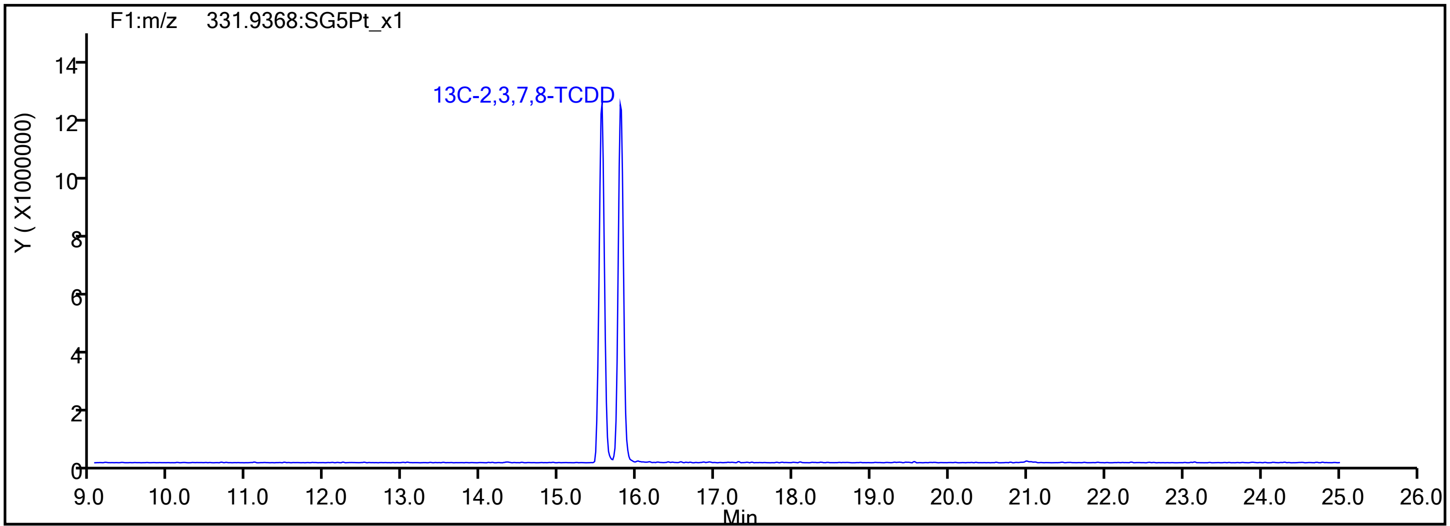

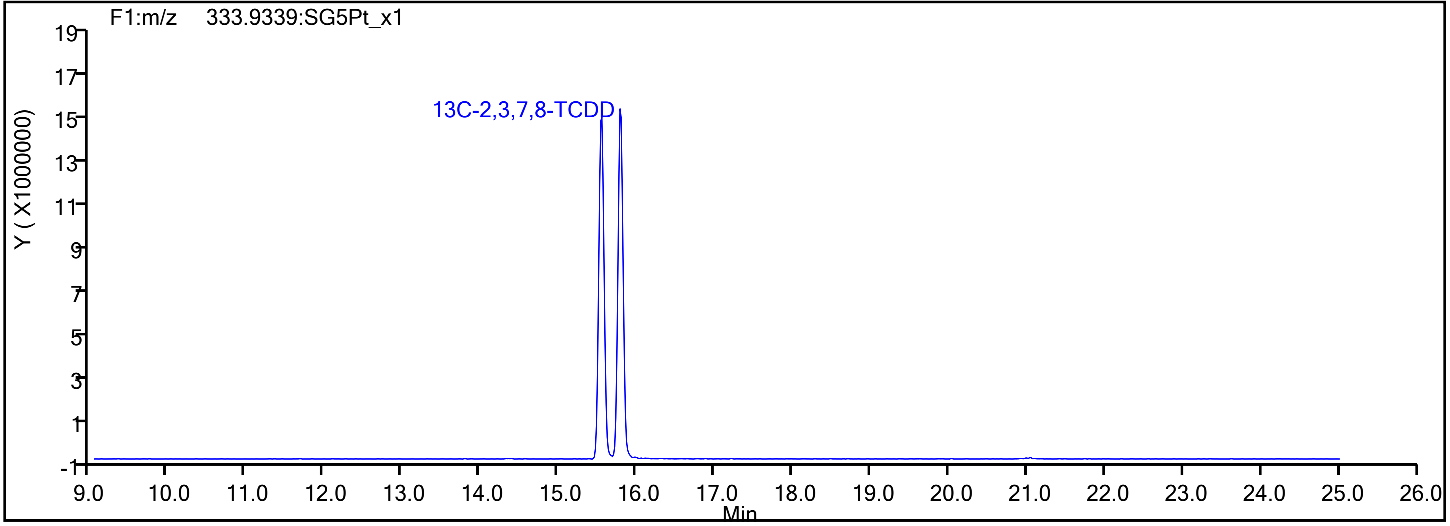

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

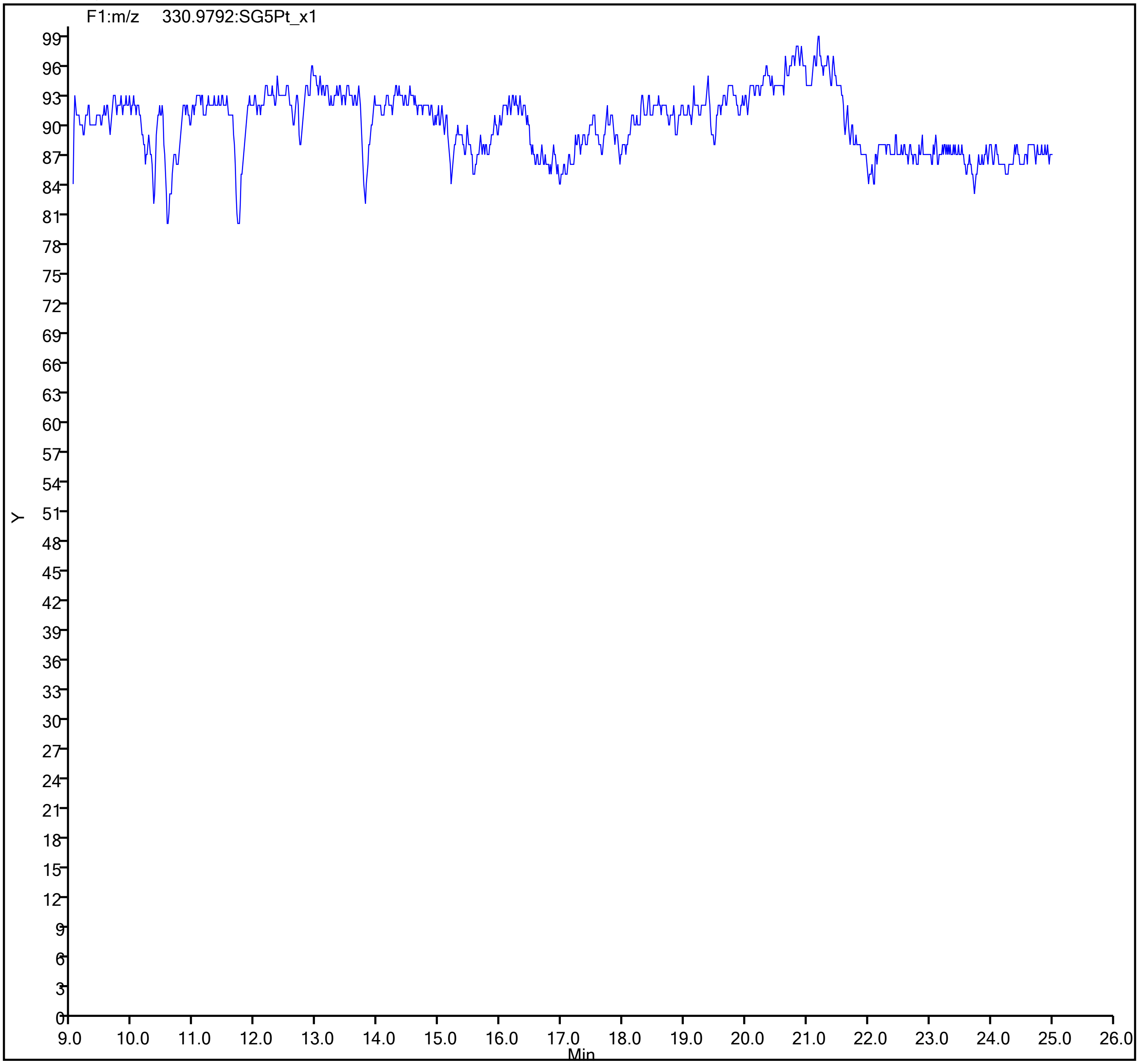

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 419031

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2020 17:35 Calibration End Date: 10/05/2020 20:45 Calibration ID: 52342

Calibration Files:

LEVEL:	LAB SAMPLE ID:	EPA SAMPLE NO:	LAB FILE ID:
Level 1	IC 320-419031/3	L2	05OC203D5_4.d
Level 2	IC 320-419031/4	L3	05OC203D5_5.d
Level 3	IC 320-419031/5	L4	05OC203D5_6.d
Level 4	IC 320-419031/6	L5	05OC203D5_7.d
Level 5	IC 320-419031/7	L6	05OC203D5_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.0620	0.9808	0.8816	0.8832	0.9594	AveID		0.9534				7.9		20.0			
2,3,7,8-TCDD	1.1066	1.1167	0.9305	0.9620	0.9865	AveID		1.0205				8.4		20.0			
1,2,3,7,8-PeCDF	1.1937	1.1244	1.0290	1.0264	1.0232	AveID		1.0794				7.1		20.0			
2,3,4,7,8-PeCDF	1.1907	1.0858	1.0823	1.0673	1.0570	AveID		1.0966				4.9		20.0			
1,2,3,7,8-PeCDD	1.2736	1.2162	1.0717	1.0857	1.0510	AveID		1.1397				8.7		20.0			
1,2,3,4,7,8-HxCDF	1.4516	1.2520	1.1922	1.1871	1.1933	AveID		1.2552				9.0		20.0			
1,2,3,6,7,8-HxCDF	1.3925	1.2028	1.1554	1.1596	1.1406	AveID		1.2102				8.6		20.0			
2,3,4,6,7,8-HxCDF	1.3216	1.2520	1.2021	1.1482	1.1672	AveID		1.2182				5.7		20.0			
1,2,3,4,7,8-HxCDD	1.5071	1.2857	1.2086	1.1605	1.1057	AveID		1.2535				12.5		20.0			
1,2,3,6,7,8-HxCDD	1.2963	1.1850	1.0623	1.0137	1.0013	AveID		1.1117				11.3		20.0			
1,2,3,7,8,9-HxCDD	1.4665	1.3322	1.2765	1.1961	1.1548	AveID		1.2852				9.5		20.0			
1,2,3,7,8,9-HxCDF	1.3628	1.2613	1.1502	1.2018	1.1834	AveID		1.2319				6.8		20.0			
1,2,3,4,6,7,8-HpCDF	1.6355	1.4483	1.4444	1.4241	1.4395	AveID		1.4783				6.0		20.0			
1,2,3,4,6,7,8-HpCDD	1.2730	1.1224	1.0501	0.9893	0.9963	AveID		1.0862				10.8		20.0			
1,2,3,4,7,8,9-HpCDF	1.5402	1.3132	1.3058	1.3765	1.3564	AveID		1.3784				6.9		20.0			
OCDD	1.4429	1.3218	1.1762	1.1908	1.1562	AveID		1.2576				9.7		20.0			
OCDF	1.9393	1.6586	1.6756	1.6818	1.6687	AveID		1.7248				7.0		20.0			
13C-2,3,7,8-TCDF	1.4237	1.5322	1.4559	1.5242	1.4858	Ave		1.4844				3.1		35.0			
13C-2,3,7,8-TCDD	1.0804	1.0444	1.0898	1.1017	1.1209	Ave		1.0875				2.6		35.0			
13C-1,2,3,7,8-PeCDF	1.3179	1.5257	1.3405	1.3682	1.4193	Ave		1.3943				5.9		35.0			
13C-2,3,4,7,8-PeCDF	1.2757	1.5647	1.1326	1.3219	1.3899	Ave		1.3370				11.9		35.0			
13C-1,2,3,7,8-PeCDD	0.7780	0.9786	0.7819	0.8315	0.8677	Ave		0.8475				9.7		35.0			
13C-1,2,3,4,7,8-HxCDF	1.2089	1.3694	1.2268	1.3607	1.3666	Ave		1.3065				6.2		35.0			
13C-1,2,3,6,7,8-HxCDF	1.3639	1.4475	1.3777	1.4694	1.4477	Ave		1.4213				3.3		35.0			
13C-2,3,4,6,7,8-HxCDF	1.3628	1.2805	1.2083	1.3649	1.3546	Ave		1.3142				5.2		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8896	0.8648	0.8138	0.8668	0.8951	Ave		0.8660				3.7		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9952	0.9876	0.9366	1.0043	0.9897	Ave		0.9827				2.7		35.0			
13C-1,2,3,7,8,9-HxCDF	1.3644	1.2926	1.2658	1.3582	1.3212	Ave		1.3204				3.2		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9880	0.9356	0.9099	0.9480	0.9238	Ave		0.9410				3.2		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.9321	0.8850	0.8582	0.9659	0.8832	Ave		0.9049				4.8		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.8879	0.9033	0.8386	0.8848	0.8609	Ave		0.8751				2.9		35.0			
13C-OCDD	0.6121	0.5592	0.5767	0.5997	0.5438	Ave		0.5783				4.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1   Analy Batch No.: 419031

SDG No.:

Instrument ID: 3D5   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2020 17:35   Calibration End Date: 10/05/2020 20:45   Calibration ID: 52342

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.1743	1.0636	1.0797	1.1178	1.1728	Ave		1.1216				4.6					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1   Analy Batch No.: 419031

SDG No.:

Instrument ID: 3D5   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2020 17:35   Calibration End Date: 10/05/2020 20:45   Calibration ID: 52342

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-419031/3	05OC203D5_4.d
Level 2	IC 320-419031/4	05OC203D5_5.d
Level 3	IC 320-419031/5	05OC203D5_6.d
Level 4	IC 320-419031/6	05OC203D5_7.d
Level 5	IC 320-419031/7	05OC203D5_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	2498585	9292400	22883694	209927269	971346079	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	1975718	7211859	18078510	165290208	753535988	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	12998716	53040887	122961113	1095066318	4947974033	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	12549711	52526938	109276357	1100136364	5005702595	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	8186440	36797749	74700044	703934838	3107231597	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	11814148	53315823	112784338	1072201977	5360382544	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	12786900	54145612	122749686	1130996813	5427888743	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	12125605	49858111	112010119	1040197011	5196996618	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	9025689	34579446	75842567	667700957	3253249323	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	8685482	36392677	76726616	675790557	3257293201	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	9304429	38371352	86148227	742798772	3577305445	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	12517837	50702079	112273420	1083434305	5139532813	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	10878430	42136391	101345783	896098269	4371164576	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	7988833	30891331	69492442	634301328	2892407260	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	9206493	36886443	84442665	808401655	3838434709	2.50	10.0	50.0	200	1000
OCDD		AveID	11891958	45972410	104603965	947975714	4133195923	5.00	20.0	100	400	2000
OCDF		AveID	15983063	57688411	149015907	1338861012	5965126561	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	470540819	473709511	259567987	594233438	506243118	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	357070059	322907789	194294526	429526256	381920719	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	435566652	471706314	239001909	533428169	483559045	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	421600416	483769777	201929838	515365819	473557446	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	257109569	302558598	139406633	324170430	295637007	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	325548260	425854337	189204634	451595301	449223128	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	367295819	450154636	212479465	487656939	475877091	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	366988076	398218568	186349778	452978201	445271015	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	239555990	268944480	125505747	287684208	294228859	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	268010578	307122774	144452206	333320962	325315824	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	367428287	401971596	195222946	450751254	434302561	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	266065307	290941521	140327471	314629194	303648587	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	251016211	275221324	132356754	320575932	290324978	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	239104671	280894999	129335281	293649009	282985749	100	100	100	100	100
13C-OCDD	13CHx	Ave	329659244	347805209	177866153	398049912	357480780	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	1940444	6576840	19249268	174316633	799190369	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 419031

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2020 17:35 Calibration End Date: 10/05/2020 20:45 Calibration ID: 52342

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\05OC203D5.SPL
Last Modified: Monday, October 05, 2020 16:37:50 Pacific Daylight Time
Printed: Monday, October 05, 2020 16:43:43 Pacific Daylight Time

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User	Sample Size
1	05OC203D5_1	WDM HRDXNCP_00040	WDM 100520	Tray1:1	DXN		SMA	1.000000
2	05OC203D5_2	WDM HRDXNCP_00040	WDM 100520A	Tray1:1	DXN		SMA	1.000000
3	05OC203D5_3	SB Solvent Blank C-14	SB 100520	Tray1:2			SMA	1.000000
4	05OC203D5_4	CS-2 HRDXNL2_00030	IC 100520	Tray1:3	8290/1613B		SMA	1.000000
5	05OC203D5_5	CS-3 HRDXNL3_00028	IC 100520A	Tray1:4	8290/1613B		SMA	1.000000
6	05OC203D5_6	CS-4 HRDXNL4_00095	IC 100520B	Tray1:5	8290/1613B		SMA	1.000000
7	05OC203D5_7	CS-5 HRDXNL5_00031	IC 100520C	Tray1:6	8290/1613B		SMA	1.000000
8	05OC203D5_8	CS-6 HRDXNL6_00027	IC 100520D	Tray1:7	8290/1613B		SMA	1.000000
9	05OC203D5_9	SB Solvent Blank C-14	SB 100520A	Tray1:2			SMA	1.000000
10	05OC203D5_10	ICV HRDXNIC_00046	ICV 100520	Tray1:8	DXN		SMA	1.000000

Logfile checked
10/06/20 SMA

Units	MS File	Inlet File	Inject Volume	Sample Type	Conc A	Conc B	Conc C	Conc D	Conc E	Conc F
---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---	---	---
	Dioxin3D5	dioxinnogc	2.000000	Analyte	10	50	100	100	200	5

Conc G	Process	Process Options	Action On Error	s5
---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error	---
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	FBAT_ML_FileMover	---	---	C:\CHROM
---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error	---
100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error	---

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, October 05, 2020 14:47:20 Pacific Daylight Time

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M 292.9824 R 14043

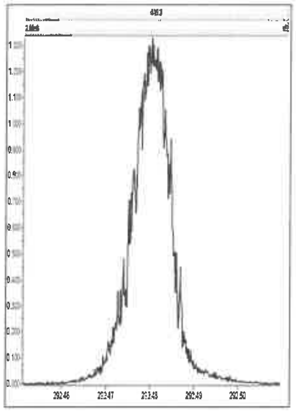

M 304.9824 R 14445

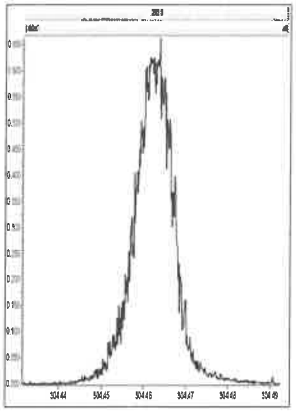

M 318.9792 R 16446

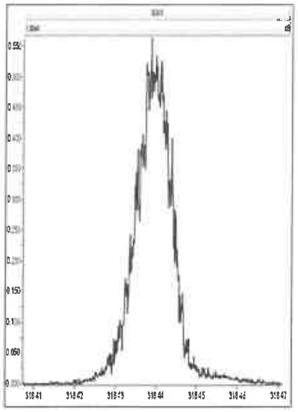

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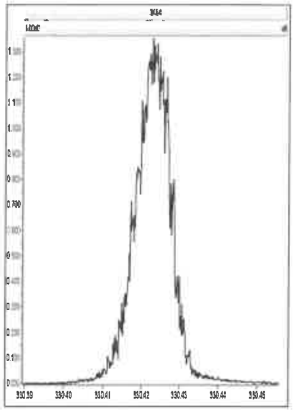

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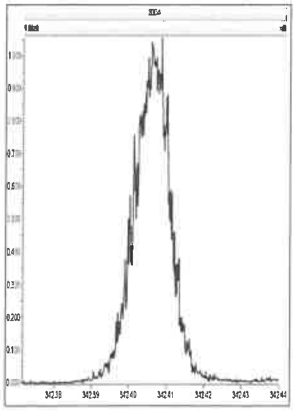

M 354.9792 R 14967

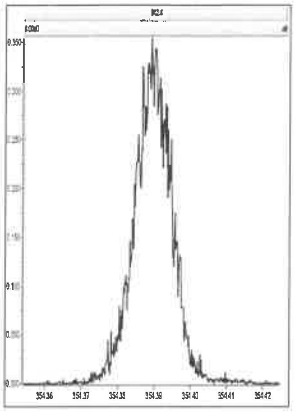

M 366.9792 R 15625

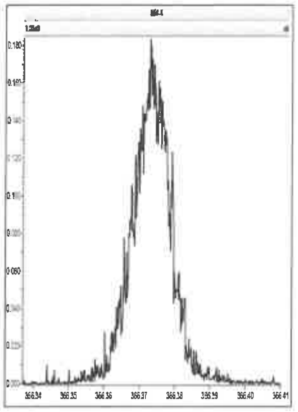

M 380.9760 R 15721

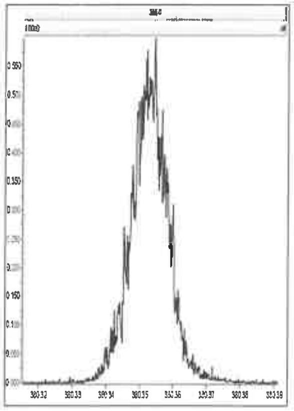

M 392.9760 R 15061

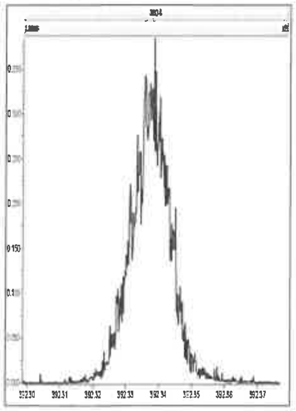

M 404.9760 R 14624

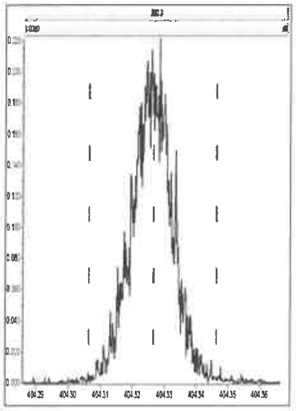

M 416.9760 R 16662

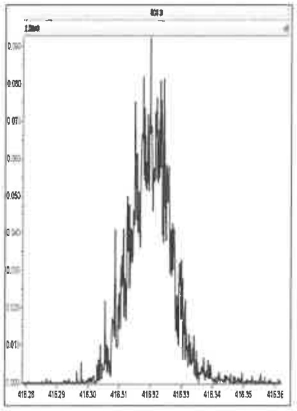

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Monday, October 05, 2020 14:48:09 Pacific Daylight Time

M 318.9792 R 13965

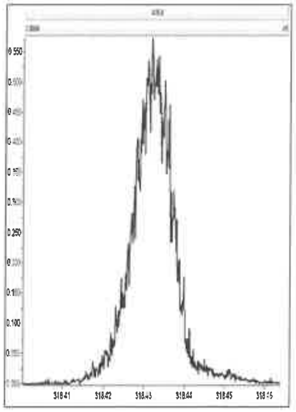

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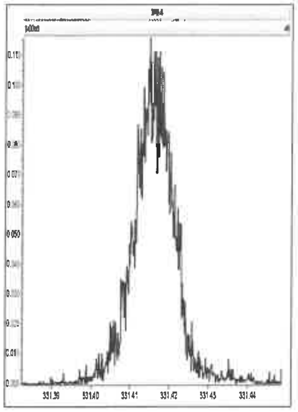

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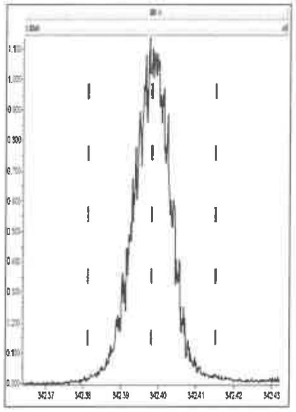

M 354.9792 R 14364

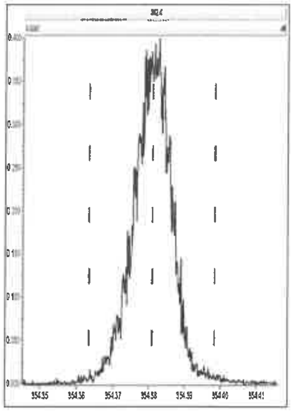

M 366.9792 R 14880

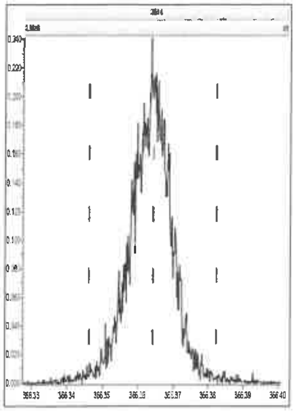

M 380.9760 R 14283

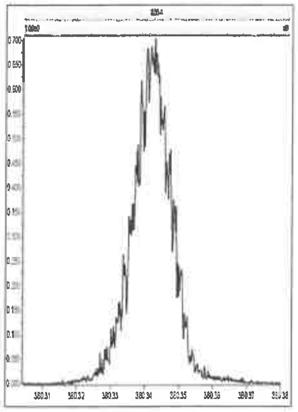

M 392.9760 R 15152

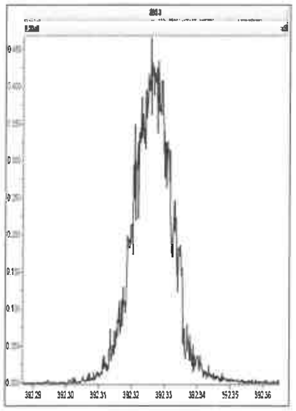

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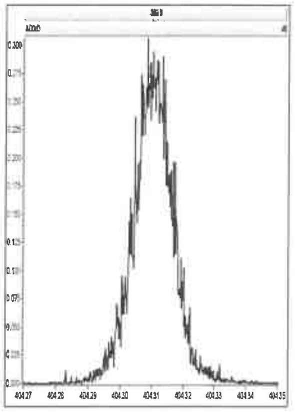

M 416.9760 R 14707

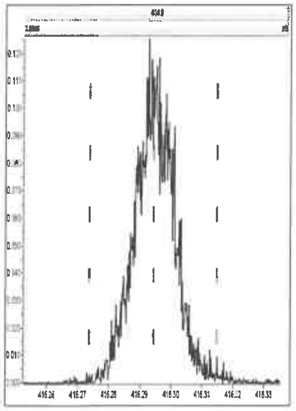

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

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M 366.9792 R 12887

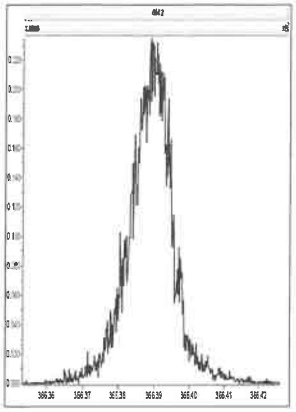

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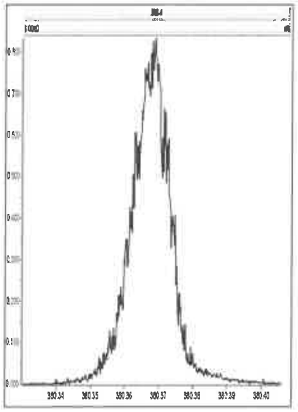

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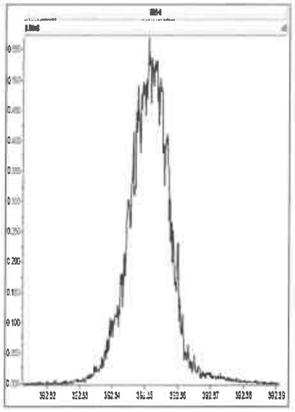

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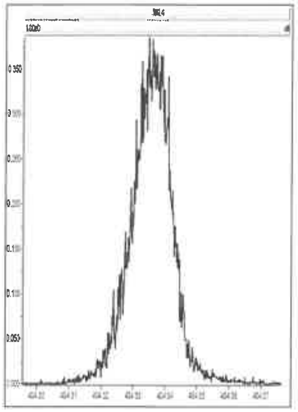

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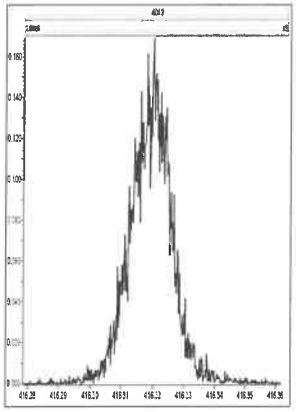

M 430.9728 R 14367

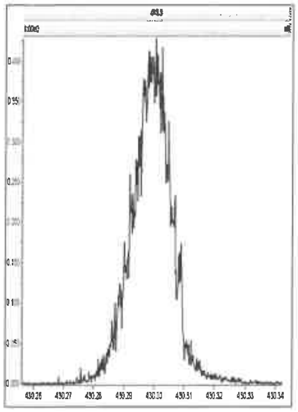

M 442.9728 R 14790

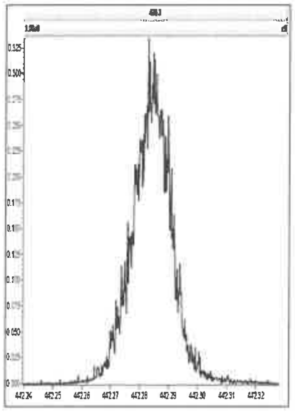

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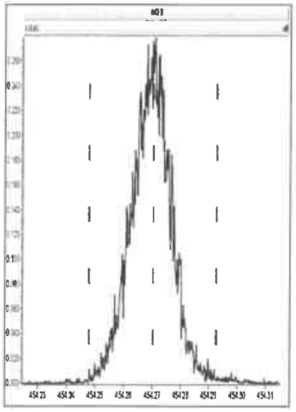

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

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M 380.9760 R 14125

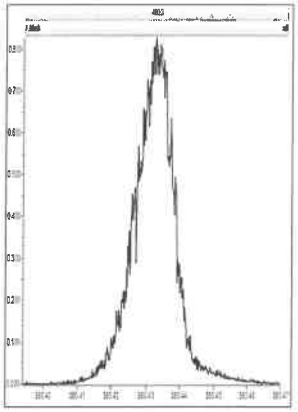

M 392.9760 R 13965

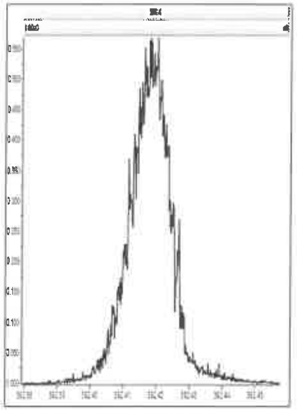

M 404.9760 R 13159

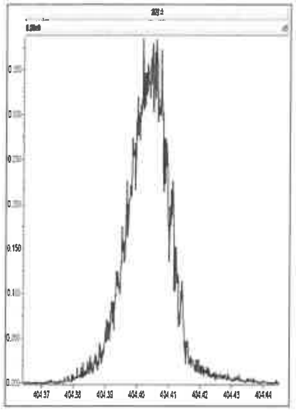

M 416.9760 R 13660

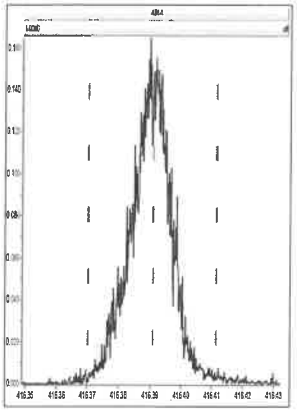

M 430.9728 R 13733

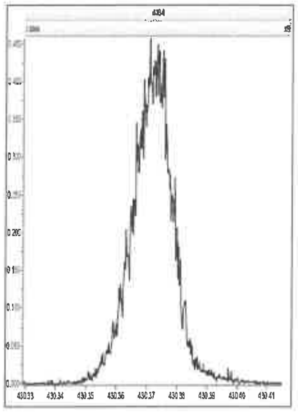

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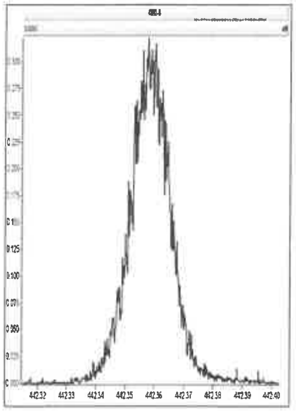

M 454.9728 R 13810

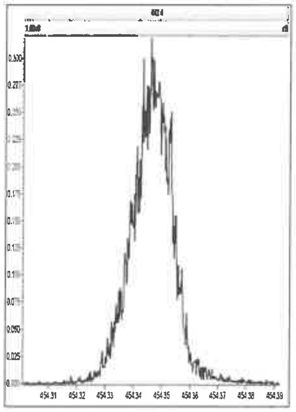

M 466.9728 R 13298

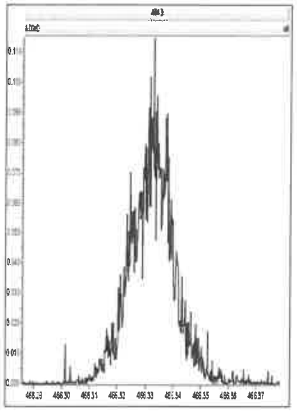

M 480.9696 R 13157

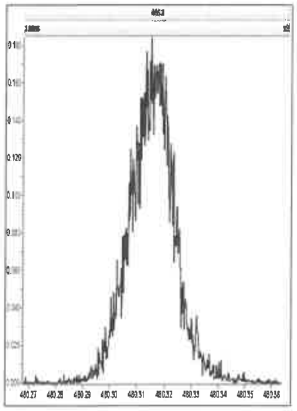

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

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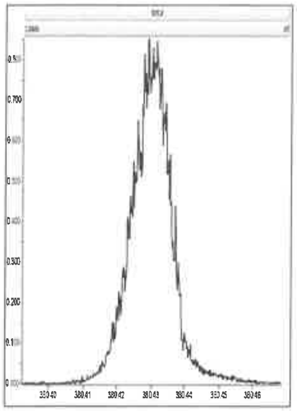

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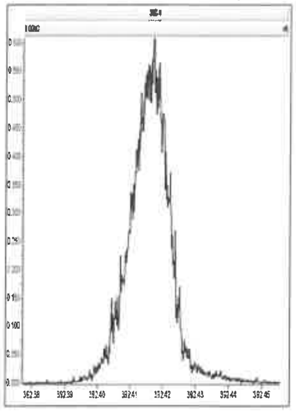

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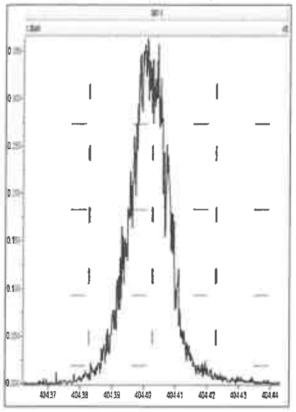

M 416.9760 R 14618

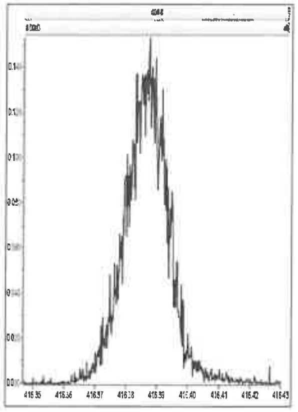

M 430.9728 R 13443

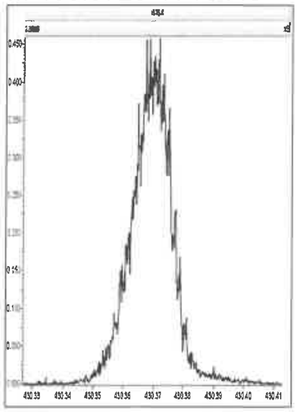

M 442.9728 R 14535

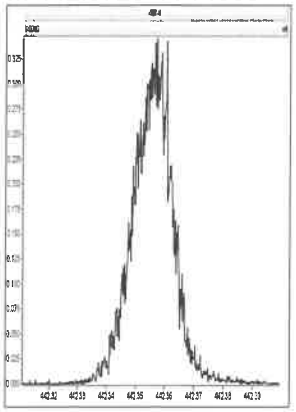

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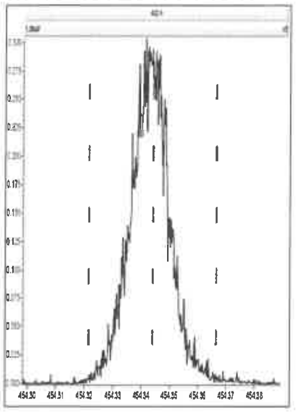

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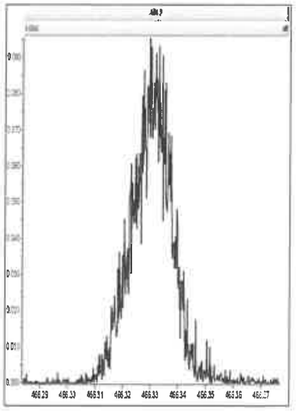

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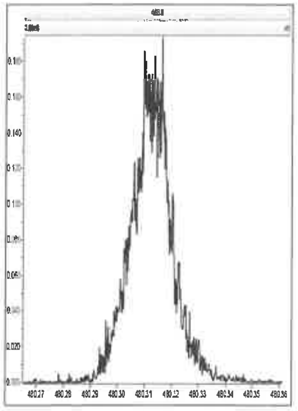

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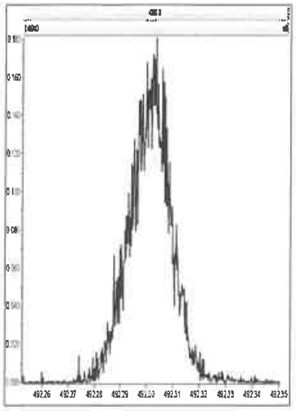

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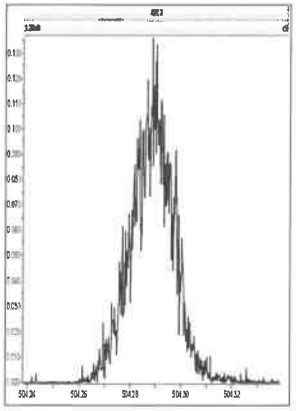

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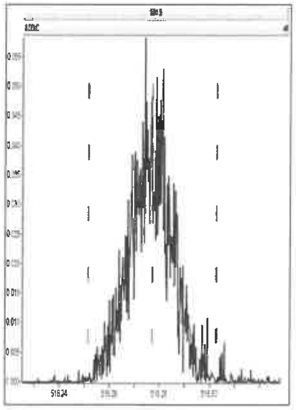

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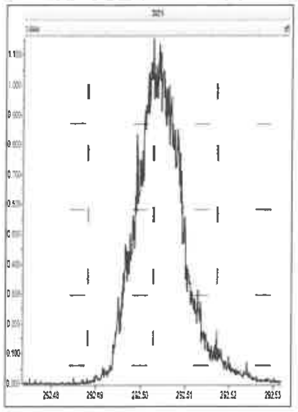

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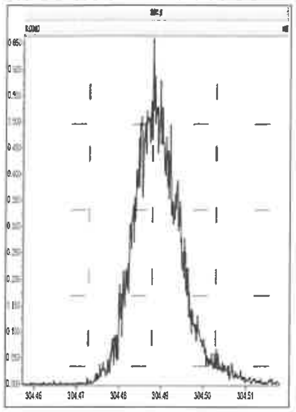

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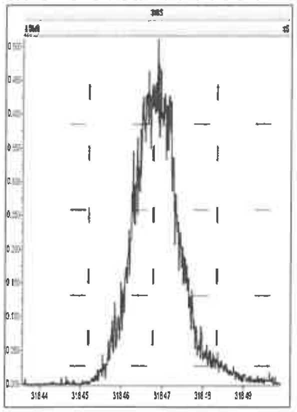

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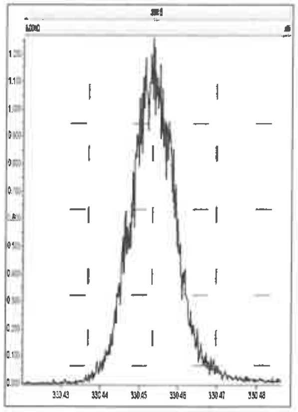

M 342.9792 R 12051

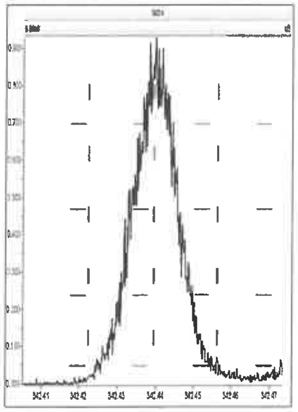

M 354.9792 R 12410

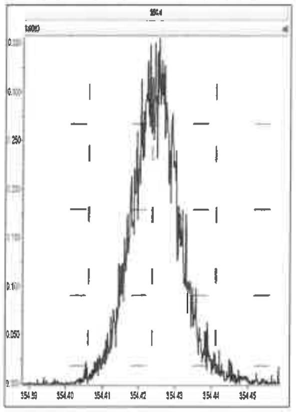

M 366.9792 R 11492

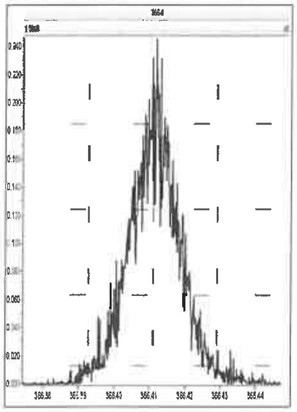

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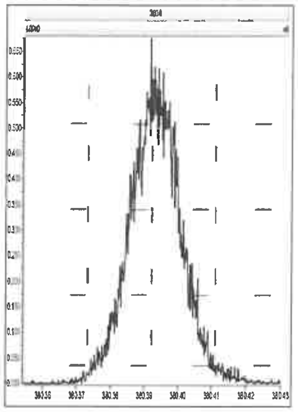

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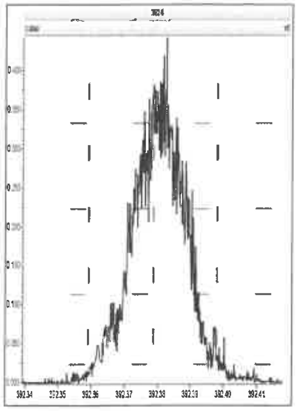

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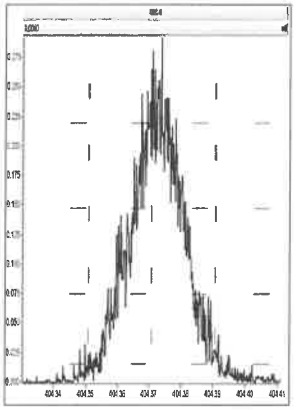

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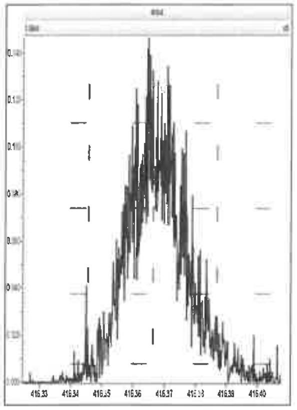

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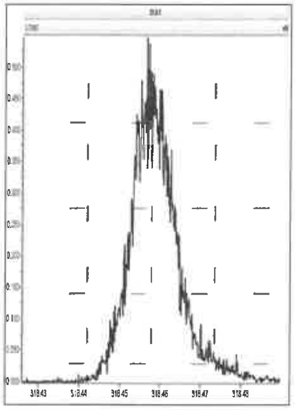

M 330.9792 R 12202

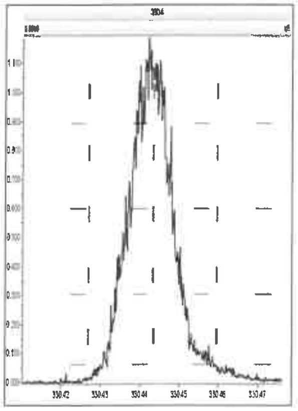

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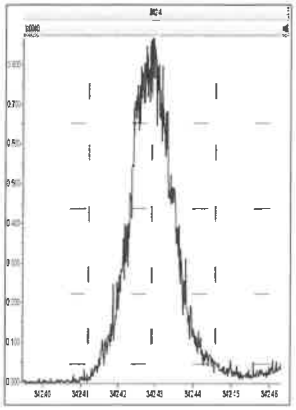

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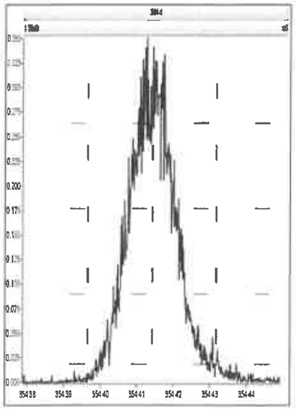

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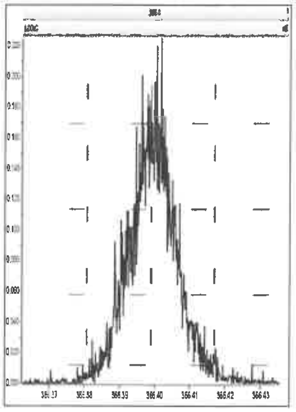

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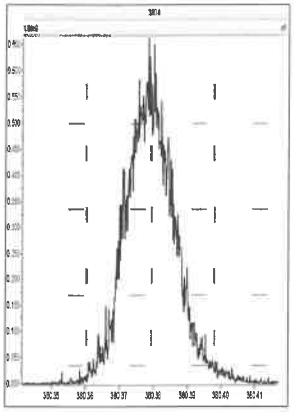

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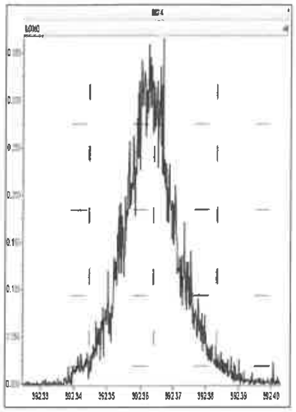

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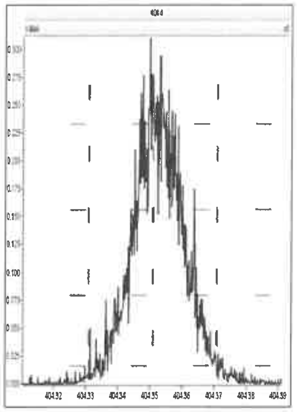

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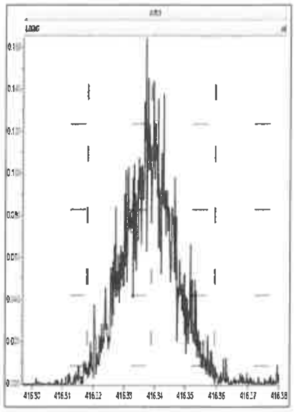

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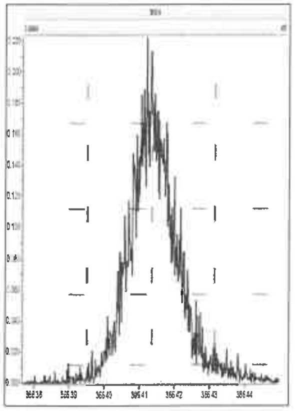

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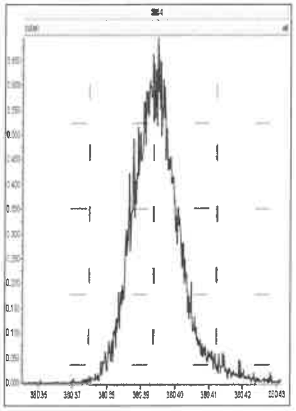

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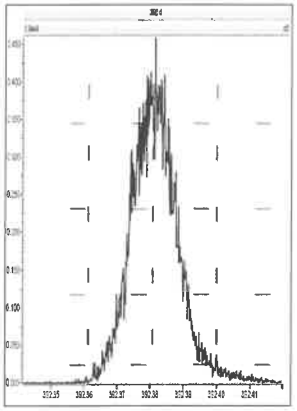

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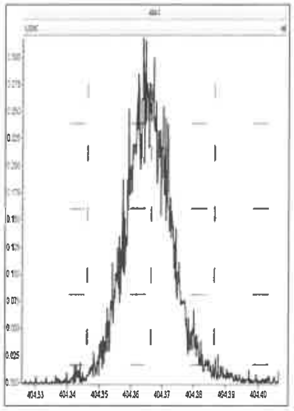

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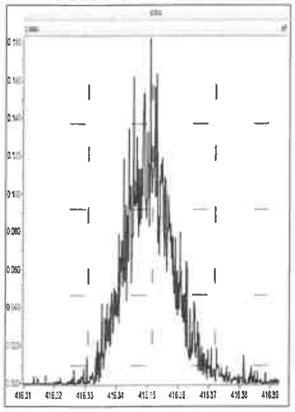

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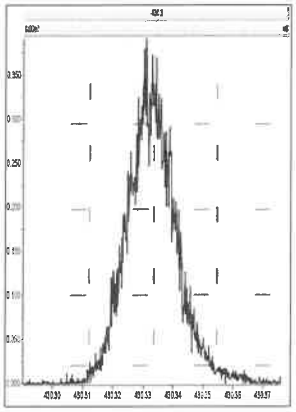

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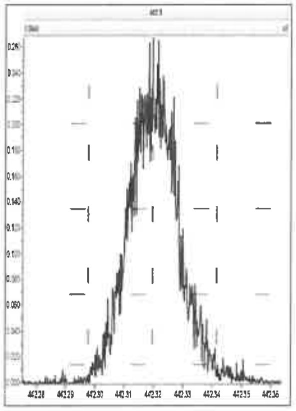

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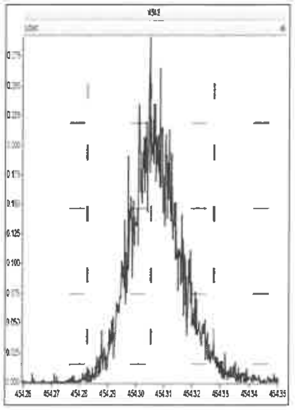

M 380.9760 R 11307

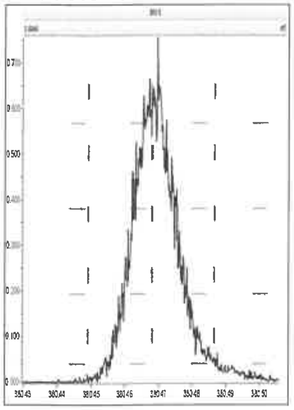

M 392.9760 R 12626

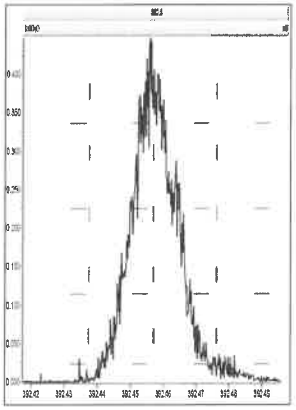

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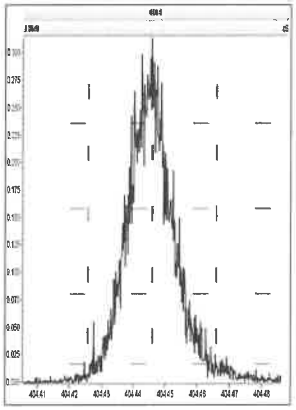

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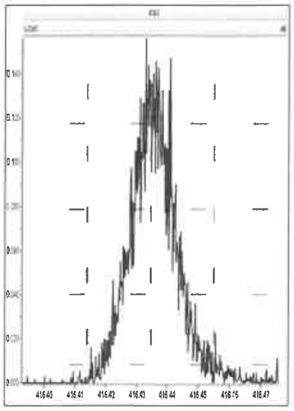

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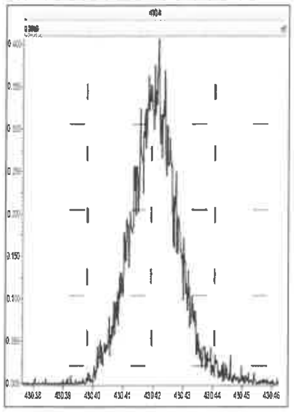

M 442.9728 R 12135

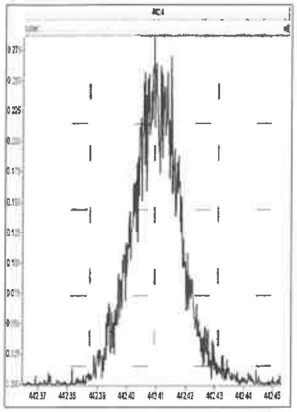

M 454.9728 R 12126

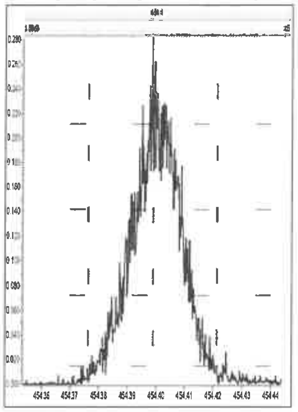

M 466.9728 R 12218

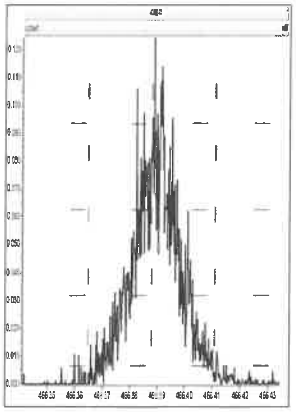

M 480.9696 R 11420

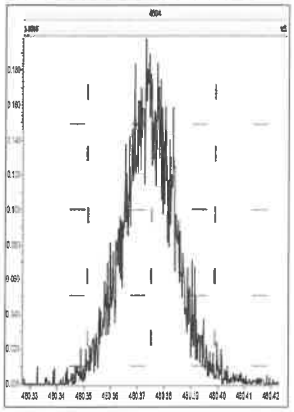

M 380.9760 R 11682

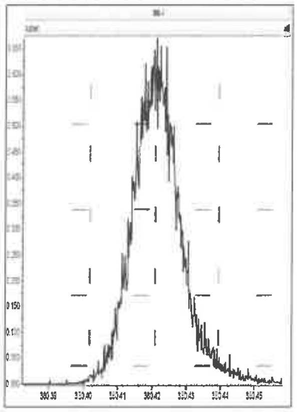

M 392.9760 R 11683

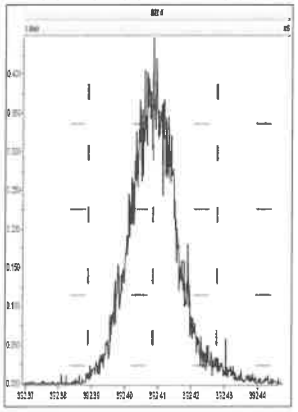

M 404.9760 R 12048

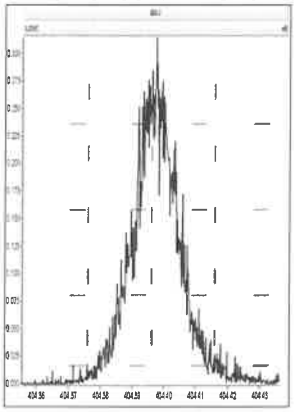

M 416.9760 R 13086

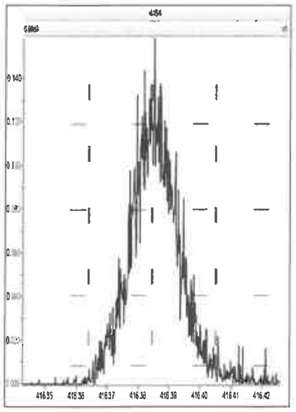

M 430.9728 R 12376

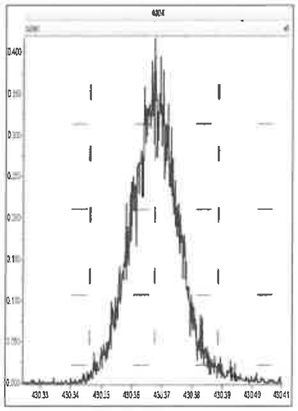

M 442.9728 R 12177

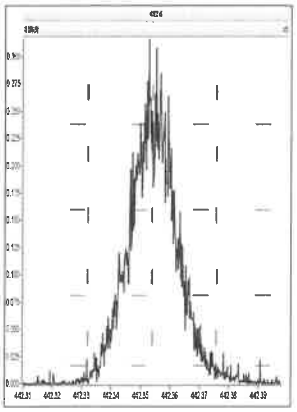

M 454.9728 R 12197

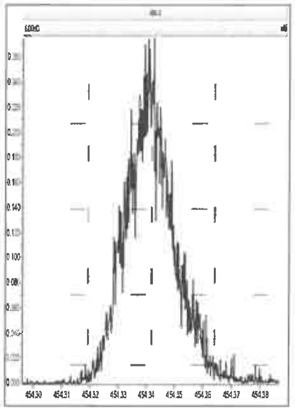

M 466.9728 R 14947

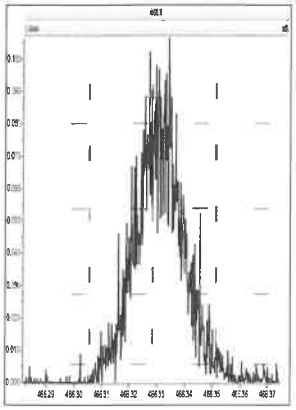

M 480.9696 R 11820

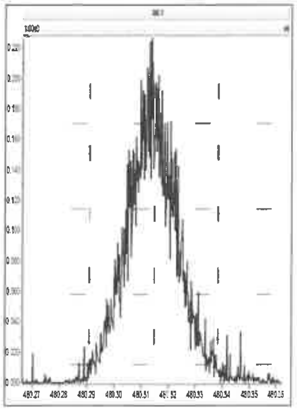

M 492.9696 R 11037

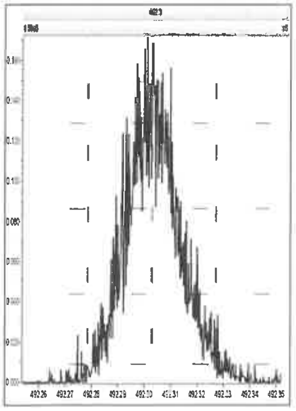

M 504.9696 R 11653

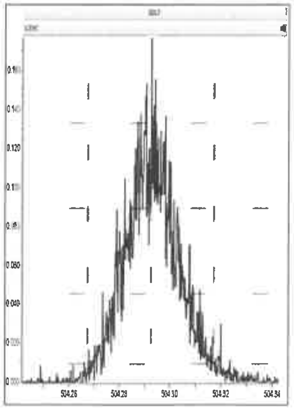

M 516.9697 R 14046

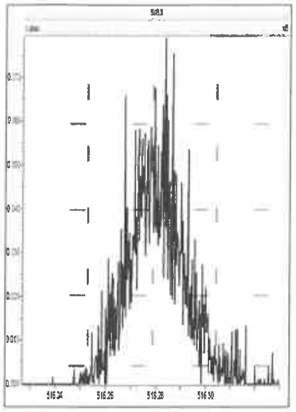

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Lims ID: IC 2
Client ID: L2
Sample Type: IC Calib Level: 2
Inject. Date: 05-Oct-2020 17:35:00 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520 CS-2 HRDXNL2_00030
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:16 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:49:43

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.946	330495941	0.81	3.1E+06	100.0	100.0				a
D 13C-2,3,7,8-TCDF	15.507	470540819	0.78	1.4844	95.9	95.9	0.3017	0.3017	95.92	
2,3,7,8-TCDF	15.522	2498585	0.80	0.9534	0.5570	0.5570	0.0189	0.0189	111	
S Total TCDF					0.5570	0.5570	0.0189	0.0189		
D 13C-2,3,7,8-TCDD	16.112	357070059	0.85	1.0875	99.4	99.4	0.3180	0.3180	99.35	
2,3,7,8-TCDD	16.127	1975718	0.67	1.0205	0.5422	0.5422	0.0197	0.0197	108	
$ 37Cl4-2,3,7,8-TCDD	16.127	1940444		1.1216	0.5235	0.5235	0.009023	0.009023	105	
S Total TCDD					0.5422	0.5422	0.0197	0.0197		
D 13C-1,2,3,7,8-PeCDF	19.727	435566652	1.58	1.3943	94.5	94.5	0.2930	0.2930	94.52	
1,2,3,7,8-PeCDF	19.754	12998716	1.54	1.0794	2.765	2.765	0.0257	0.0257	111	
D 13C-2,3,4,7,8-PeCDF	20.859	421600416	1.54	1.3370	95.4	95.4	0.3056	0.3056	95.41	
2,3,4,7,8-PeCDF	20.873	12549711	1.57	1.0966	2.714	2.714	0.0279	0.0279	109	
S Total PeCDF					5.479	5.479	0.0268	0.0268		
D 13C-1,2,3,7,8-PeCDD	21.459	257109569	1.60	0.8475	91.8	91.8	0.1670	0.1670	91.79	
1,2,3,7,8-PeCDD	21.486	8186440	1.55	1.1397	2.794	2.794	0.0353	0.0353	112	
S Total PeCDD					2.794	2.794	0.0353	0.0353		
D 13C-1,2,3,4,7,8-HxCDF	26.786	325548260	0.54	1.3065	92.5	92.5	0.5482	0.5482	92.53	
1,2,3,4,7,8-HxCDF	26.813	11814148	1.20	1.2552	2.891	2.891	0.0381	0.0381	116	
D 13C-1,2,3,6,7,8-HxCDF	27.052	367295819	0.54	1.4213	96.0	96.0	0.5039	0.5039	95.97	
1,2,3,6,7,8-HxCDF	27.079	12786900	1.21	1.2102	2.877	2.877	0.0371	0.0371	115	
D 13C-2,3,4,6,7,8-HxCDF	28.610	366988076	0.52	1.3142	103.7	103.7	0.5450	0.5450	104	
2,3,4,6,7,8-HxCDF	28.650	12125605	1.19	1.2182	2.712	2.712	0.0383	0.0383	108	
D 13C-1,2,3,7,8,9-HxCDF	30.421	367428287	0.53	1.3204	103.3	103.3	0.5424	0.5424	103	
1,2,3,7,8,9-HxCDF	30.434	12517837	1.22	1.2319	2.766	2.766	0.0264	0.0264	111	
S Total HxCDF					11.2	11.2	0.0350	0.0350		
* 13C-1,2,3,7,8,9-HxCDD	30.115	269296108	1.25	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.090	239555990	1.25	0.8660	102.7	102.7	0.6416	0.6416	103	a
1,2,3,4,7,8-HxCDD	29.143	9025689	1.26	1.2535	3.006	3.006	0.0532	0.0532	120	
D 13C-1,2,3,6,7,8-HxCDD	29.382	268010578	1.25	0.9827	101.3	101.3	0.5654	0.5654	101	a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	29.396	8685482	1.32	1.1117	2.915	2.915	0.0573	0.0573	117	
1,2,3,7,8,9-HxCDD	30.155	9304429	1.18	1.2852	2.853	2.853	0.0507	0.0507	114	
S Total HxCDD					8.773	8.773	0.0537	0.0537		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	266065307	0.45	0.9410	105.0	105.0	1.805	1.805	105	
1,2,3,4,6,7,8-HpCDF	32.559	10878430	1.12	1.4783	2.766	2.766	0.0234	0.0234	111	
D 13C-1,2,3,4,7,8,9-HpCDF	33.653	239104671	0.48	0.8751	101.5	101.5	1.941	1.941	101	
1,2,3,4,7,8,9-HpCDF	33.653	9206493	1.02	1.3784	2.793	2.793	0.0267	0.0267	112	
S Total HpCDF					5.559	5.559	0.0250	0.0250		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	251016211	1.09	0.9049	103.0	103.0	1.225	1.225	103	
1,2,3,4,6,7,8-HpCDD	33.410	7988833	0.97	1.0862	2.930	2.930	0.0234	0.0234	117	
S Total HpCDD					2.930	2.930	0.0234	0.0234		
D 13C-OCDD	35.570	329659244	0.92	0.5783	211.7	211.7	0.5071	0.5071	106	
OCDF	35.642	15983063	0.93	1.7248	5.622	5.622	0.0186	0.0186	112	
OCDD	35.570	11891958	0.92	1.2576	5.737	5.737	0.0213	0.0213	115	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:16:16 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Lims ID: IC 2
Client ID: L2
Sample Type: IC Calib Level: 2
Inject. Date: 05-Oct-2020 17:35:00 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520 CS-2 HRDXNL2_00030
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:16 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:49:43

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	15.946	15.942	0		147715878	41713066	63859	159647	653		a
333.9339	15.946	15.942	0		182780063	52152260	65969	164922	791	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.507	15.501	0	0.973	205456854	58486990	96018	240045	609		
317.9389	15.507	15.501	0	0.973	265083965	74287602	72114	180285	1030	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.522	15.516	0	1.001	1112692	300588	3697	9242	81		
305.8987	15.522	15.516	0	1.001	1385893	374613	5884	14710	64	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.112	16.106	0	1.010	163615567	42411413	63859	159647	664		
333.9339	16.112	16.106	0	1.010	193454492	51792974	65969	164922	785	0.85(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.127	16.121	0	1.001	790869	206209	3786	9465	54		
321.8936	16.127	16.121	0	1.001	1184849	311423	3792	9480	82	0.67(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.127	16.121	0	1.011	1940444	527539	3800	9500	139		
13C-1,2,3,7,8-PeCDF											
351.9000	19.727	19.725	0	1.237	266416504	53807579	92382	230955	582		
353.8970	19.727	19.725	0	1.237	169150148	34647803	61023	152557	568	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.754	19.746	0	1.001	7875759	1438159	5070	12675	284		
341.8567	19.754	19.746	0	1.001	5122957	1043743	4738	11845	220	1.54(1.32-1.78)	

Report Date: 08-Oct-2020 15:16:16 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	20.859	20.848	1	1.308	255813047	48726151	92382	230955	527		
353.8970	20.846	20.848	0	1.307	165787369	31555004	61023	152557	517	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.873	20.865	0	1.001	7658666	1450597	5070	12675	286		
341.8567	20.873	20.865	0	1.001	4891045	919258	4738	11845	194	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.459	21.454	0	1.346	158141027	28488691	32396	80990	879		
369.8919	21.459	21.454	0	1.346	98968542	17646840	20737	51842	851	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.486	21.481	0	1.001	4981520	893768	4490	11225	199		
357.8516	21.486	21.481	0	1.001	3204920	606956	2938	7345	207	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.786	26.775	1	0.889	113985595	15872099	45727	114317	347		
385.8610	26.786	26.775	1	0.889	211562665	29294207	75926	189815	386	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.813	26.805	0	1.001	6455149	894639	4529	11322	198		
375.8178	26.826	26.805	1	1.001	5358999	713510	4106	10265	174	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.052	27.044	0	0.898	128489907	16837465	45727	114317	368		
385.8610	27.052	27.044	0	0.898	238805912	31196257	75926	189815	411	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.079	27.079	0	1.001	7006921	978122	4529	11322	216		
375.8178	27.079	27.079	0	1.001	5779979	819342	4106	10265	200	1.21(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.610	28.600	1	0.950	125709760	15754306	45727	114317	345		
385.8610	28.610	28.600	1	0.950	241278316	30494844	75926	189815	402	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.650	28.639	1	1.001	6596976	817226	4529	11322	180		
375.8178	28.663	28.639	1	1.002	5528629	673433	4106	10265	164	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.421	30.413	0	1.010	127572535	23364456	45727	114317	511		
385.8610	30.421	30.413	0	1.010	239855752	43014093	75926	189815	567	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.434	30.437	0	1.000	6882929	1170940	4529	11322	259		
375.8178	30.448	30.437	1	1.001	5634908	991736	4106	10265	242	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.115	30.109	0		149517885	23564334	67750	169375	348		
403.8529	30.115	30.109	0		119778223	18899079	26624	66560	710	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.090	29.092	0	0.966	133254853	15956317	67750	169375	236		a
403.8529	29.090	29.092	0	0.966	106301137	12646151	26624	66560	475	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.143	29.124	1	1.002	5023174	647407	4217	10542	154		
391.8127	29.129	29.124	0	1.001	4002515	497367	3416	8540	146	1.26(1.05-1.43)	

Report Date: 08-Oct-2020 15:16:16 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.382	29.361	1	0.976	148907325	16639827	67750	169375	246		a
403.8529	29.369	29.361	0	0.975	119103253	13334031	26624	66560	501	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.396	29.390	0	1.000	4935947	576347	4217	10542	137		
391.8127	29.396	29.390	0	1.000	3749535	439699	3416	8540	129	1.32(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.155	30.136	1	1.037	5029638	799829	4217	10542	190		
391.8127	30.141	30.136	0	1.036	4274791	678205	3416	8540	199	1.18(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.081	82244571	27626081	162728	406820	170		
419.8220	32.547	32.547	0	1.081	183820736	62850851	125756	314390	500	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	5749310	1985977	7456	18640	266		
409.7789	32.559	32.559	0	1.000	5129120	1827394	5049	12622	362	1.12(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.653	33.646	0	1.117	77780216	26934523	162728	406820	166		
419.8220	33.653	33.646	0	1.117	161324455	57925785	125756	314390	461	0.48(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	4640261	1682234	7456	18640	226		
409.7789	33.653	33.653	0	1.000	4566232	1665010	5049	12622	330	1.02(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.109	130885052	50354624	76690	191725	657		
437.8140	33.398	33.398	0	1.109	120131159	46825319	111590	278975	420	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	3927431	1576192	5301	13252	297		
425.7737	33.410	33.410	0	1.000	4061402	1582033	4584	11460	345	0.97(0.88-1.20)	
13C-OCDD											
469.7779	35.570	35.565	0	1.181	157568123	48837573	18867	47167	2589		
471.7750	35.570	35.565	0	1.181	172091121	54136962	30940	77350	1750	0.92(0.76-1.02)	
OCDF											
441.7428	35.642	35.640	0	1.002	7682102	2594194	3106	7765	835		
443.7399	35.642	35.640	0	1.002	8300961	2637591	3504	8760	753	0.93(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	5692943	1852290	2698	6745	687		
459.7348	35.570	35.570	0	1.000	6199015	2004120	2807	7017	714	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d				
Injection Date:	05-Oct-2020 17:35:00	Instrument ID:	3D5		
Lims ID:	IC 2				
Client ID:	L2				
Operator ID:	SMA	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 15.94

Processing Integration Results

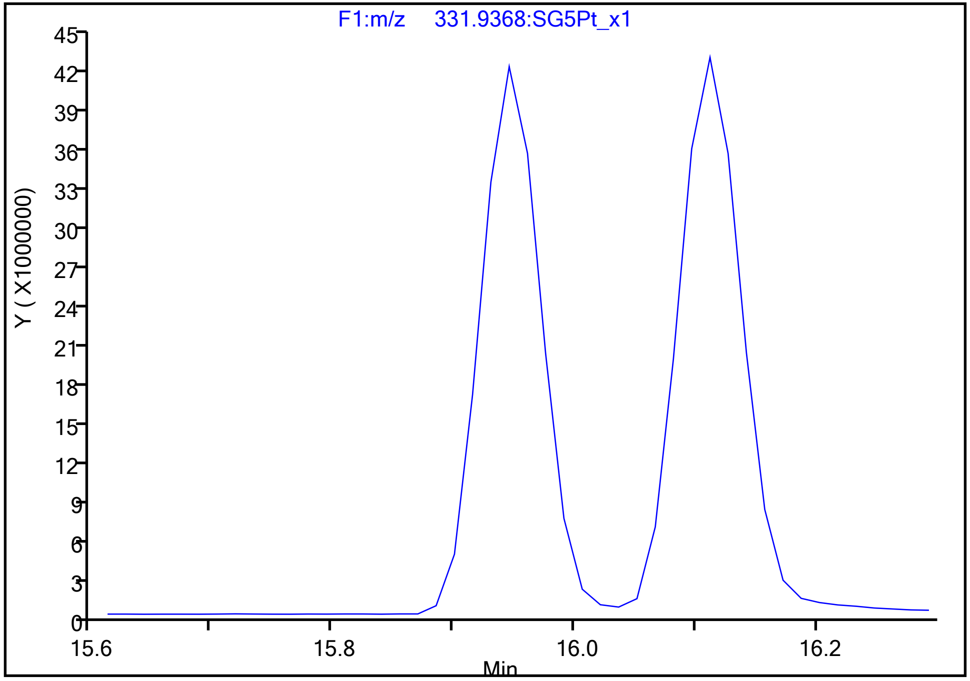

RT:	15.95
Area:	147715878
Amount:	100.0000
Amount Units:	pg/ul

Manual Integration Results

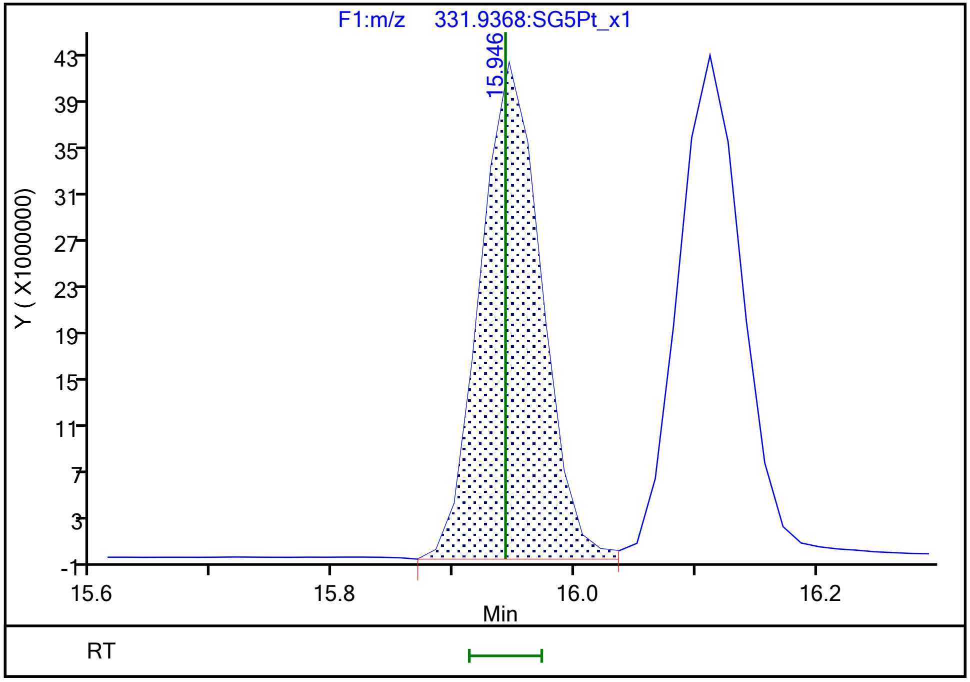

Reviewer: arghestanis, 08-Oct-2020 14:27:38

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d				
Injection Date:	05-Oct-2020 17:35:00	Instrument ID:	3D5		
Lims ID:	IC 2				
Client ID:	L2				
Operator ID:	SMA	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Processing Integration Results

RT:	29.38
Area:	148907325
Amount:	112.1817
Amount Units:	pg/ul

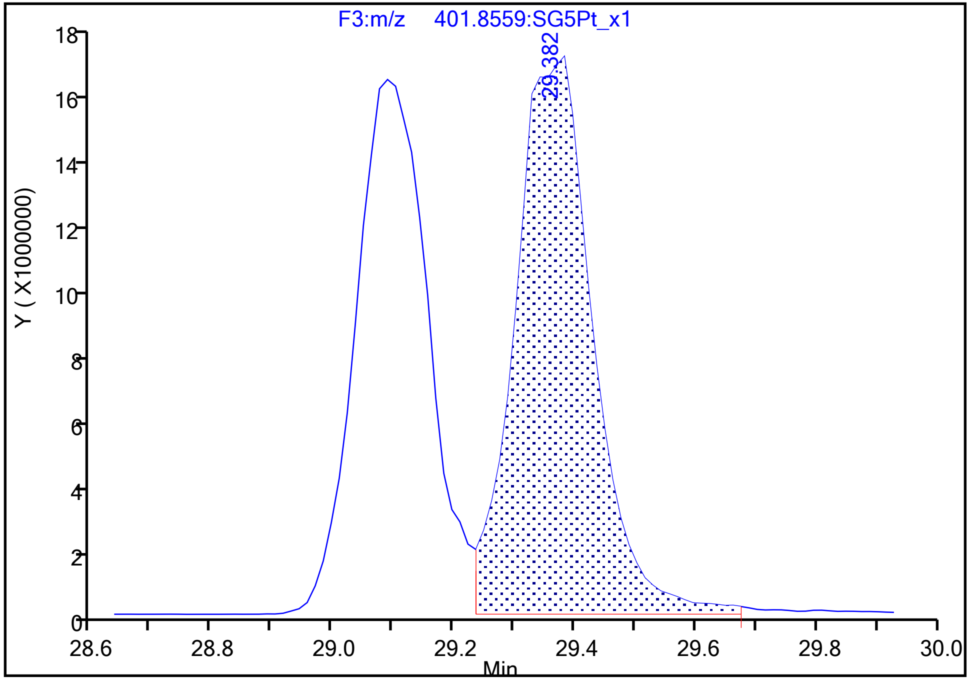

Manual Integration Results

RT:	29.09
Area:	133254853
Amount:	102.7182
Amount Units:	pg/ul

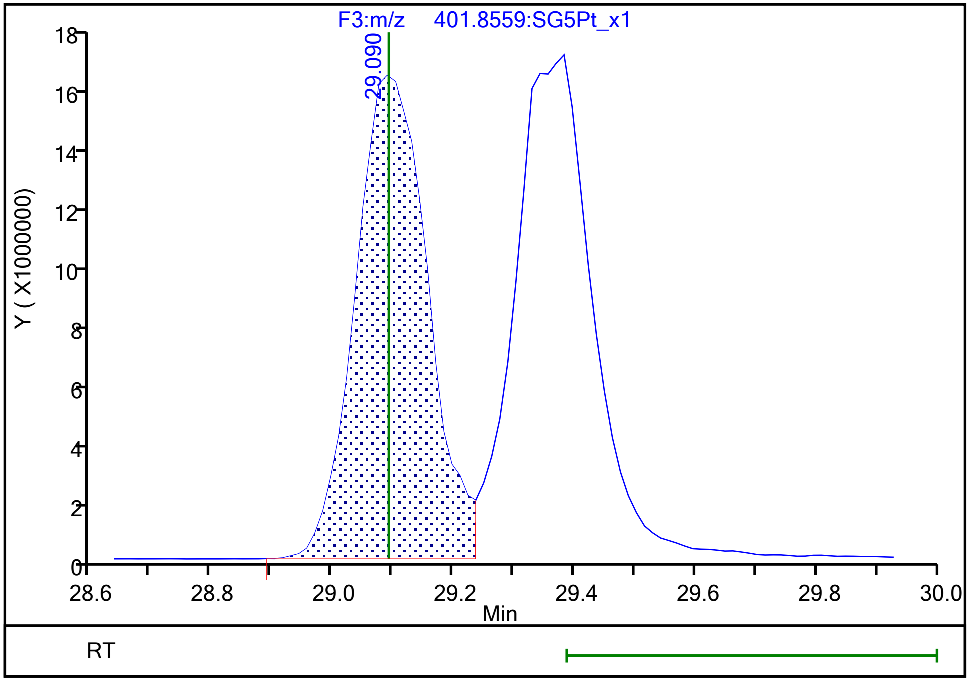

Reviewer: arghestanis, 08-Oct-2020 14:37:32

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00 Instrument ID: 3D5
Lims ID: IC 2
Client ID: L2
Operator ID: SMA ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT: 30.11
Area: 149517885
Amount: 101.7246
Amount Units: pg/ul

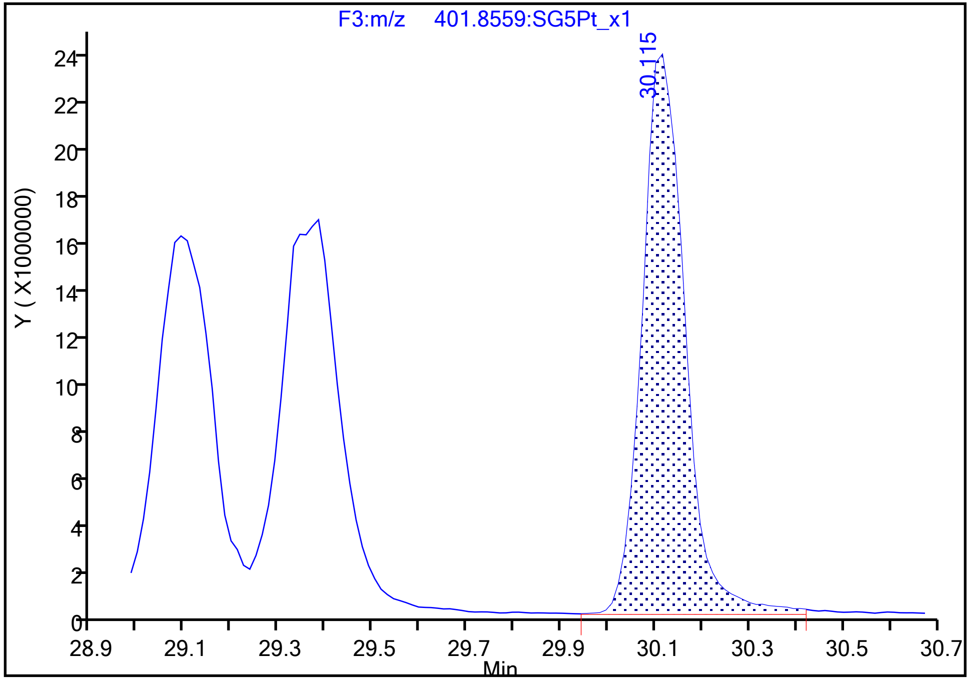

Manual Integration Results

RT: 29.38
Area: 148907325
Amount: 101.2751
Amount Units: pg/ul

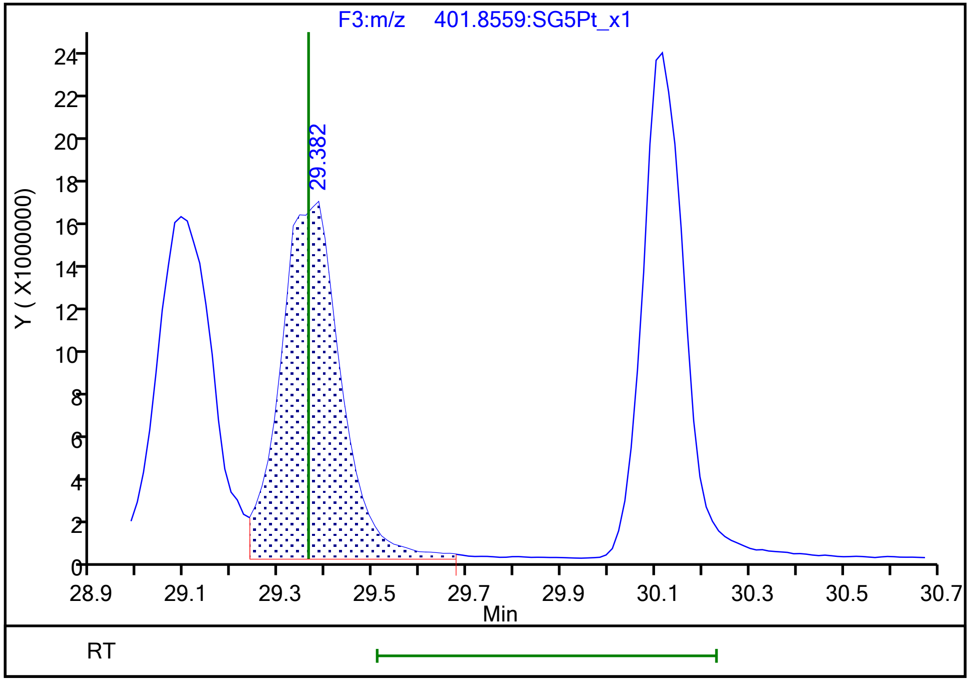

Reviewer: arghestanis, 08-Oct-2020 14:37:24

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Injection Date: 05-Oct-2020 17:35:00 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L2

Worklist#: 419031 Sample Line#: 3

Column Type: Column Dia:

TCDF

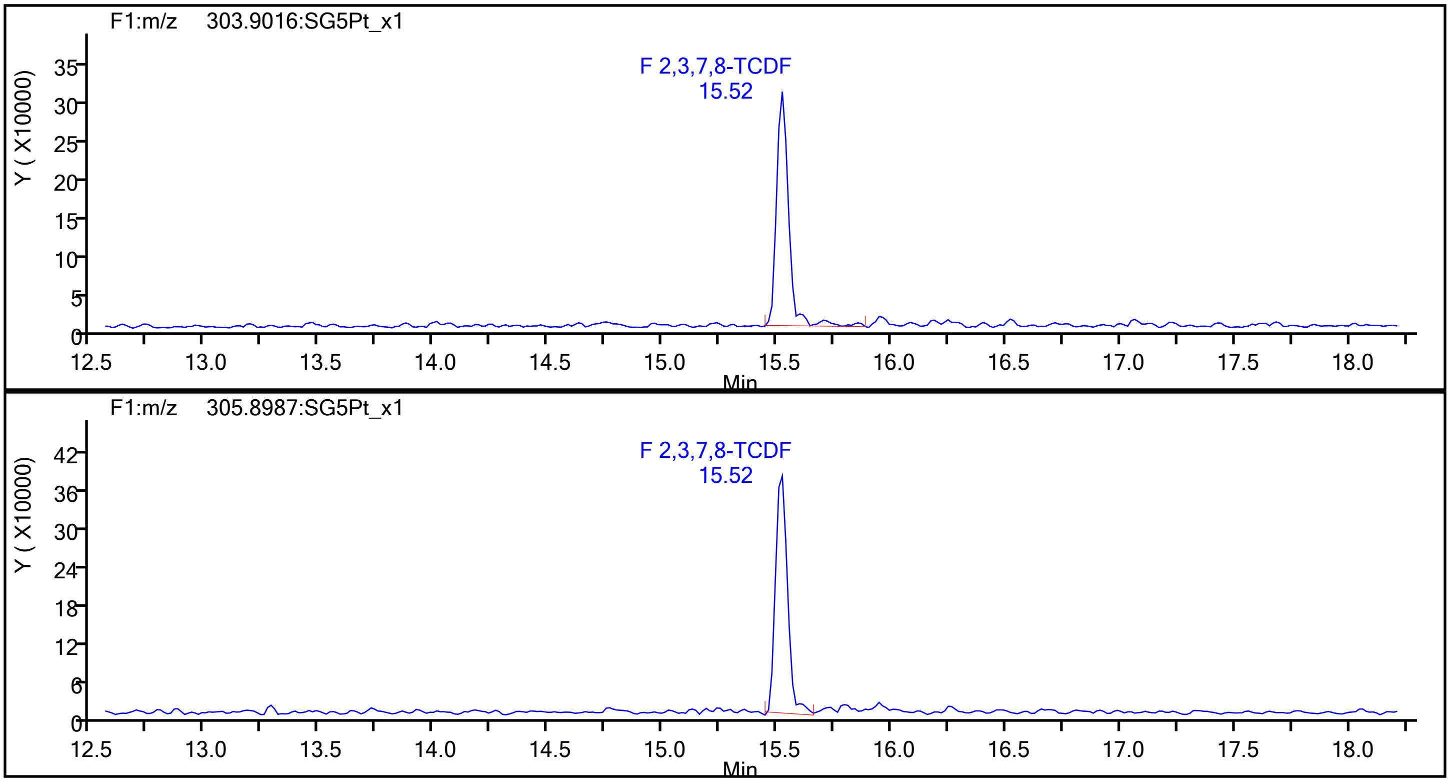

TCDF Standards

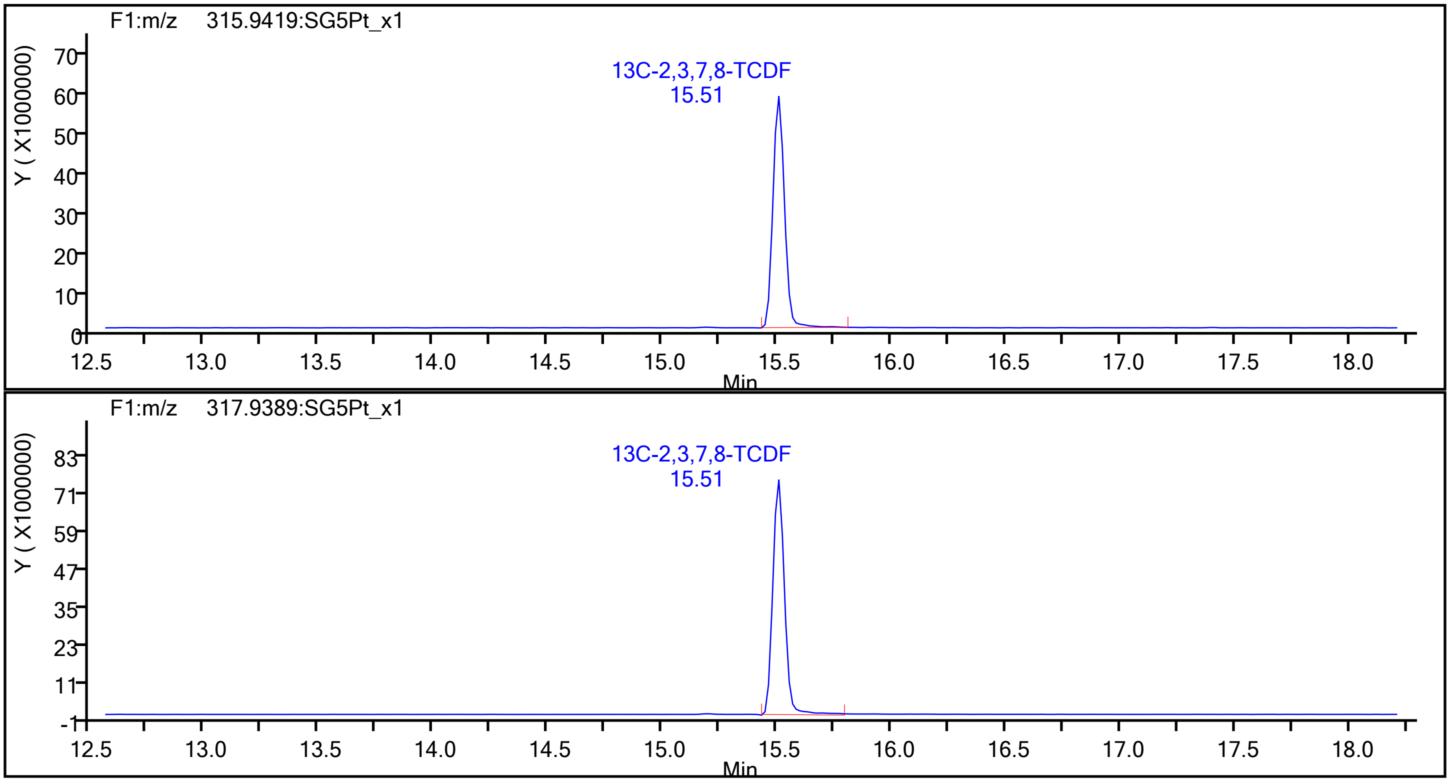

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031
Sample Line#: 3
Column Type:
Column Dia:

TCDF

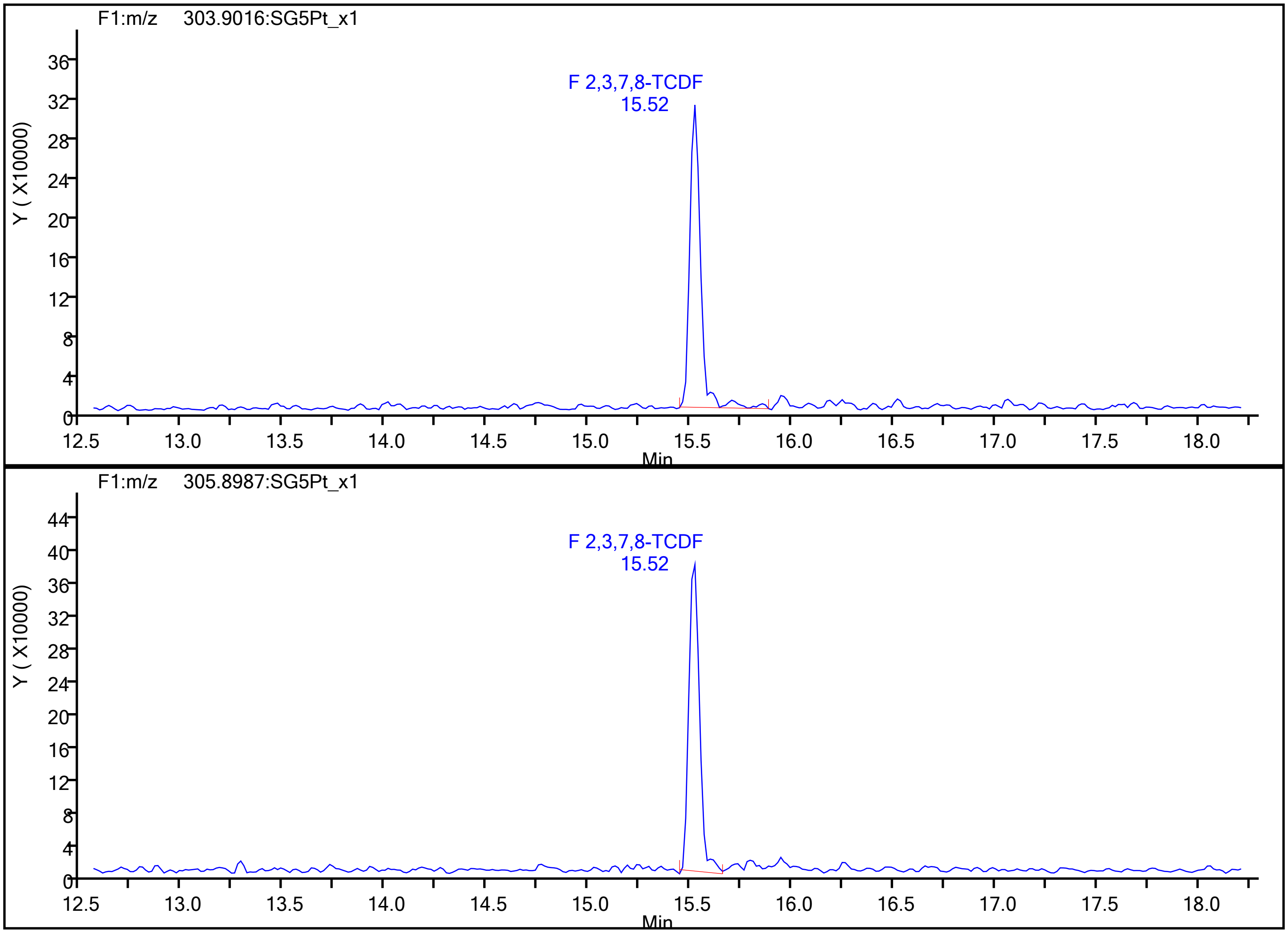

TCDF Interference Mass

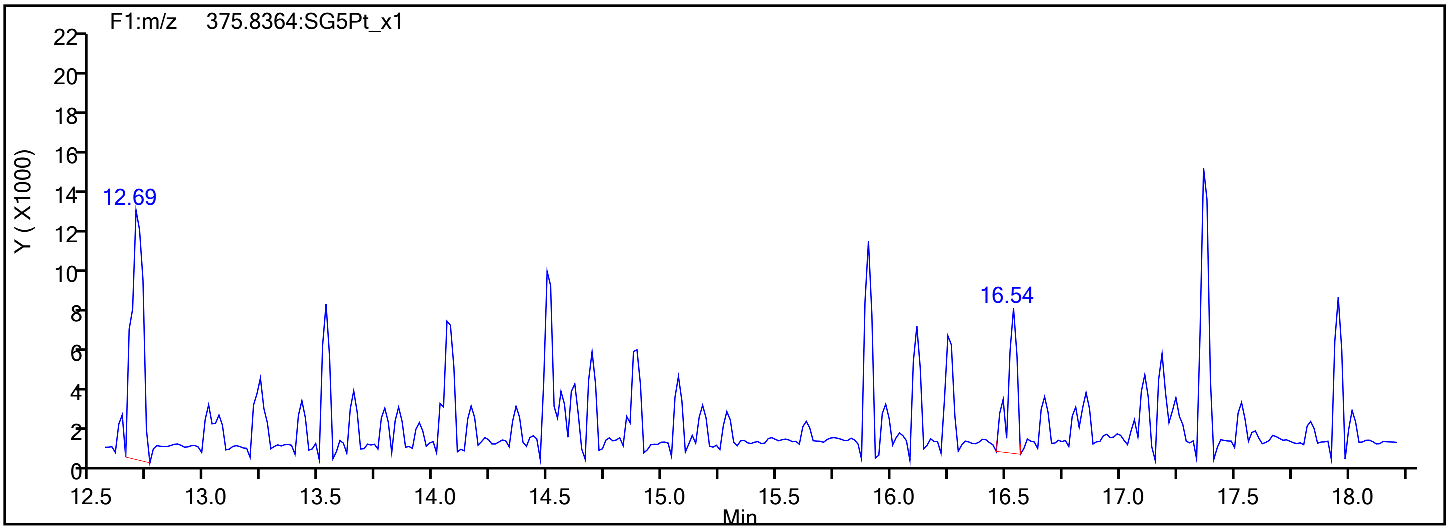

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d		
Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

TCDD

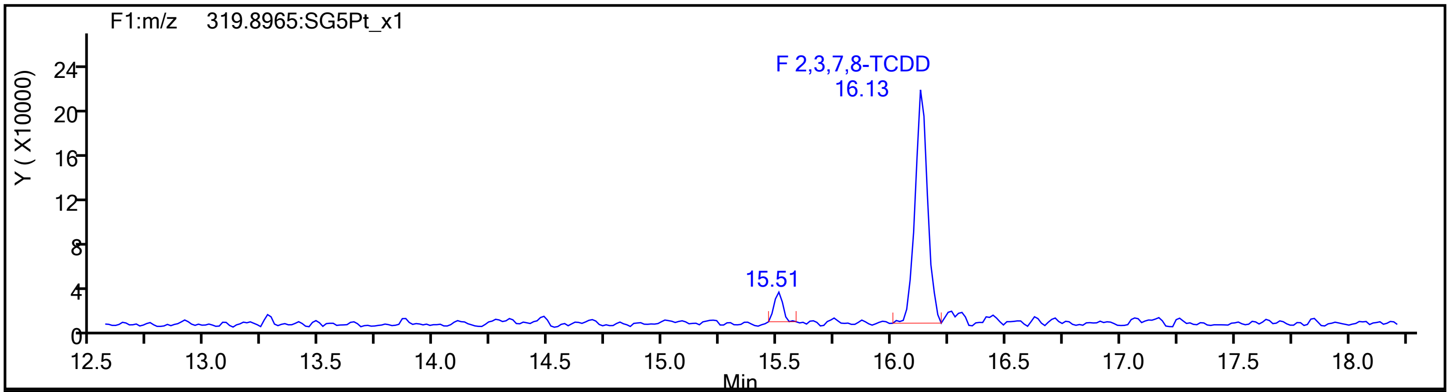

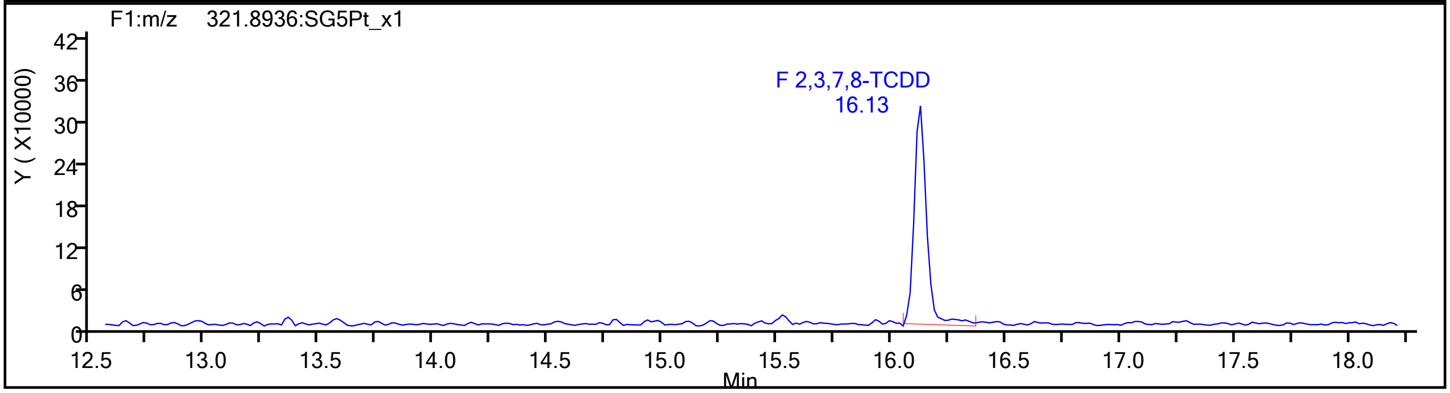

TCDD Standards

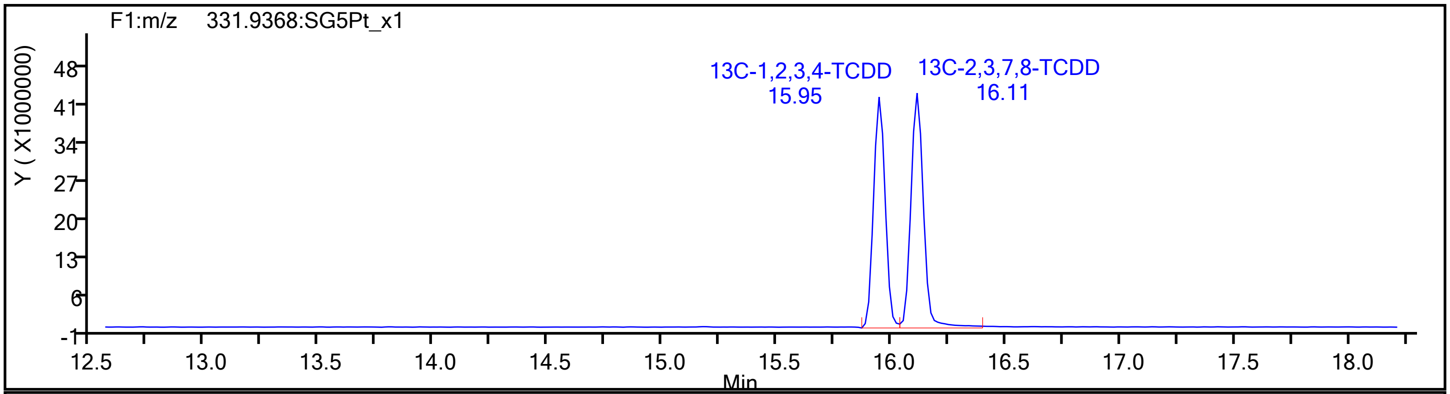

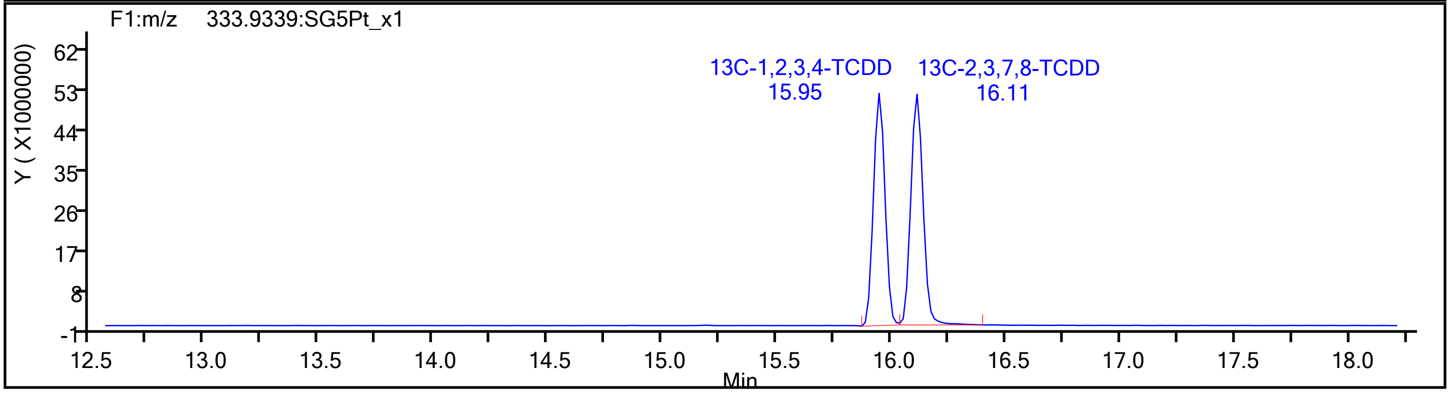

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031
Sample Line#: 3
Column Type:
Column Dia:

37Cl4-TCDD

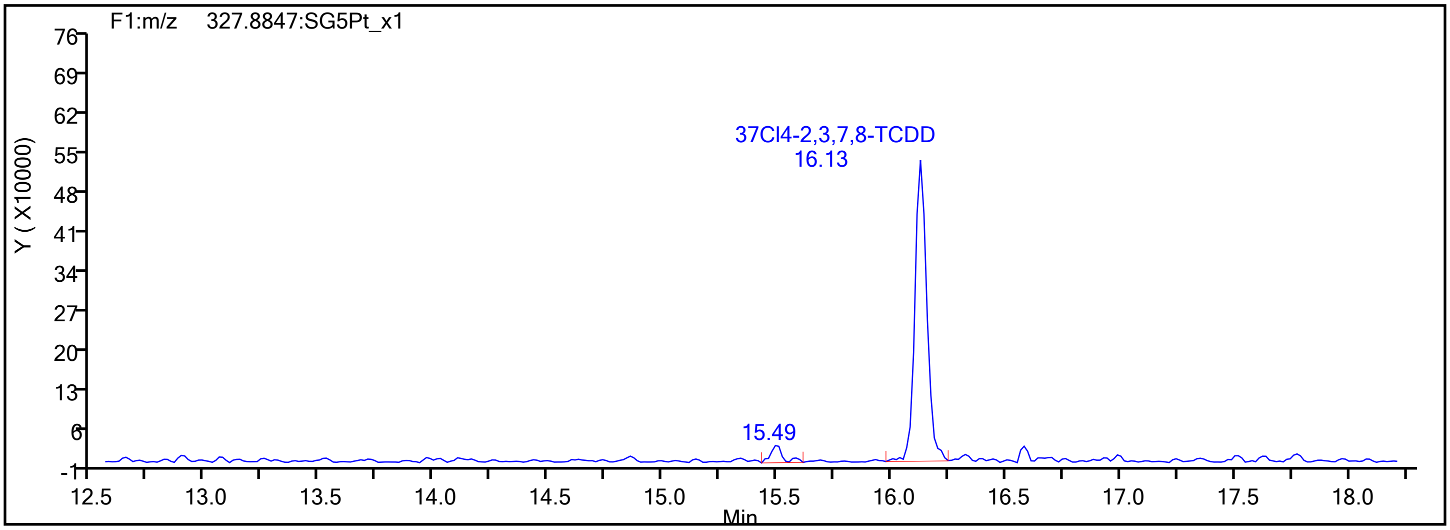

37Cl4-TCDD Standards

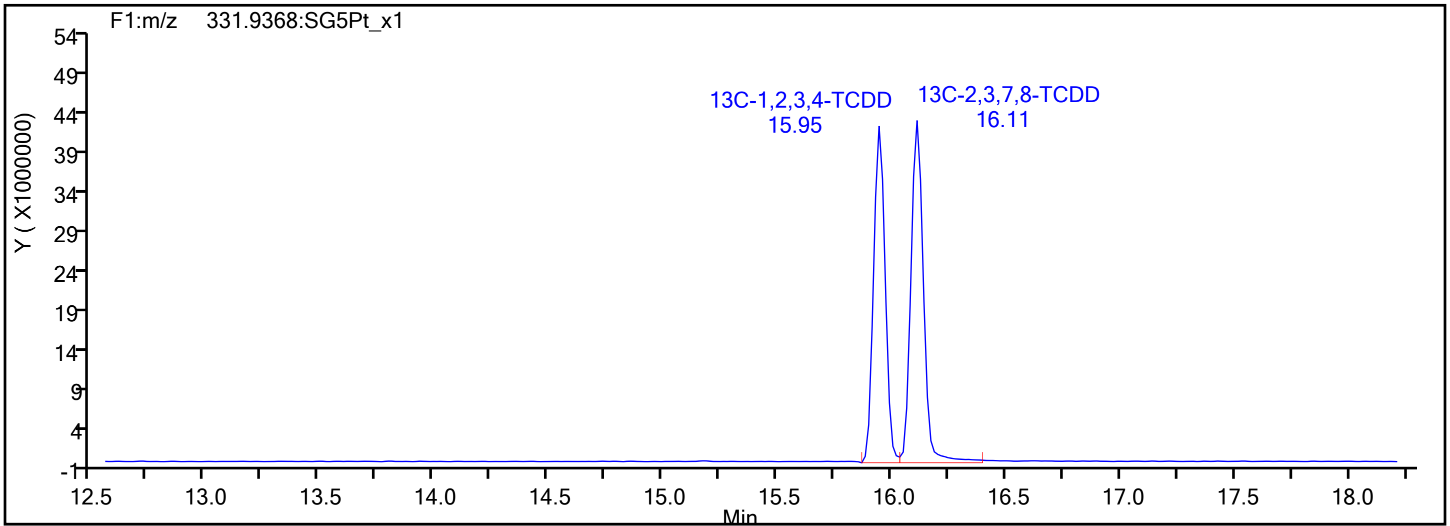

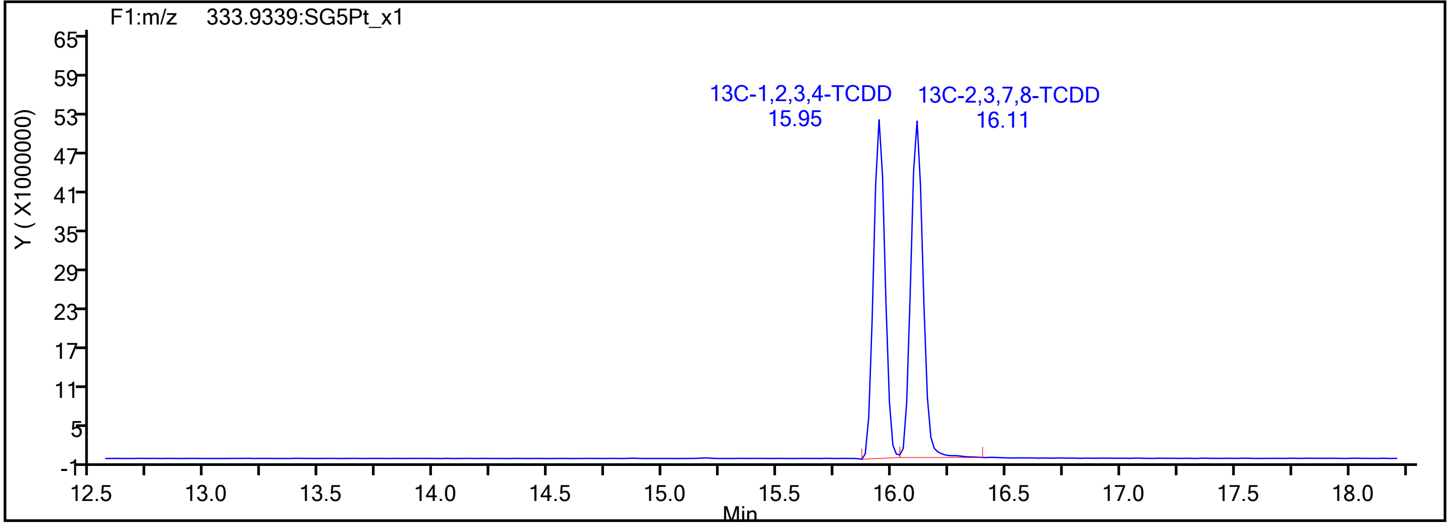

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Injection Date: 05-Oct-2020 17:35:00

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: L2

Worklist#: 419031

Sample Line#: 3

Column Type:

Column Dia:

PeCDF

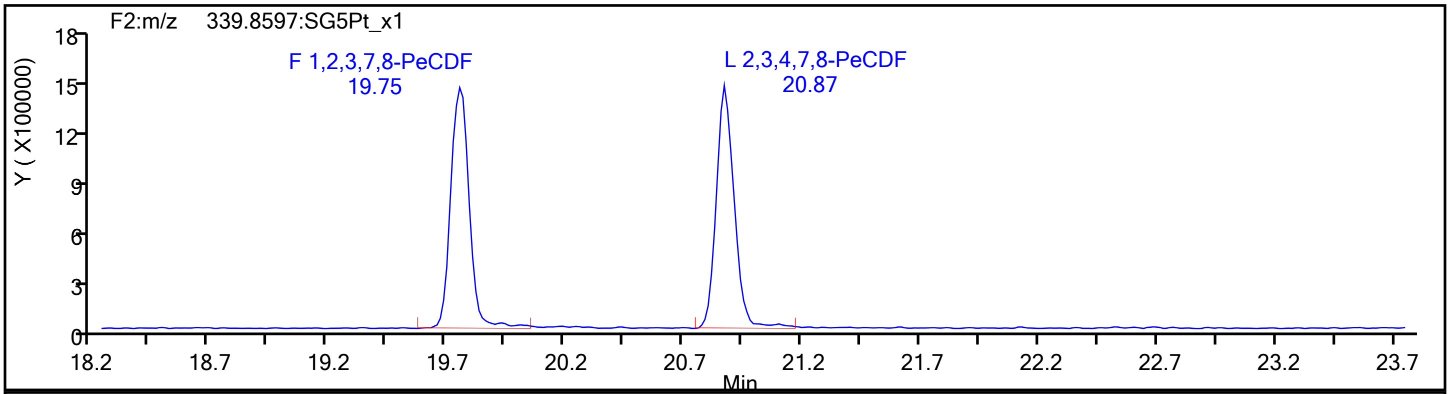

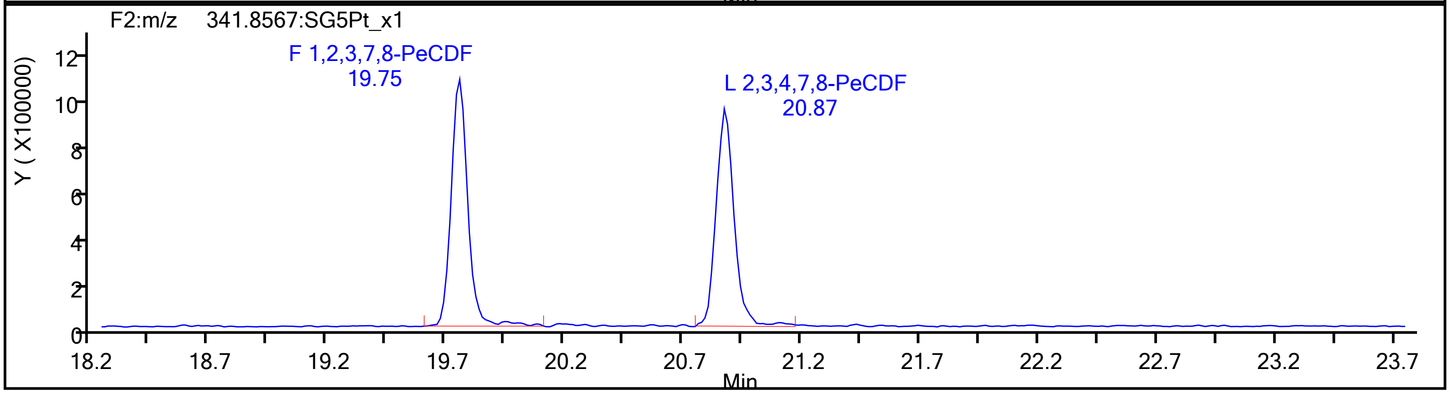

PeCDF Standards

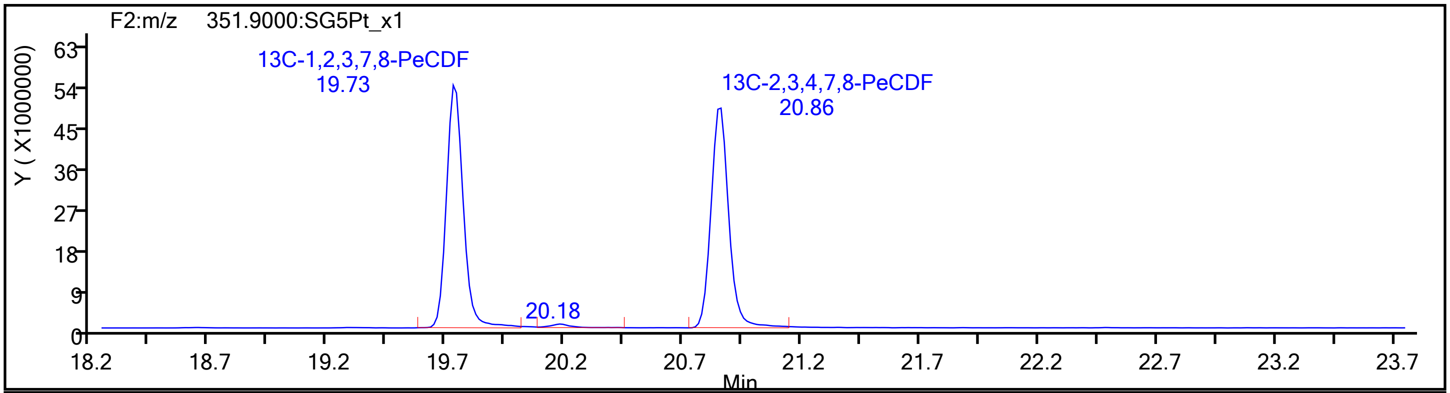

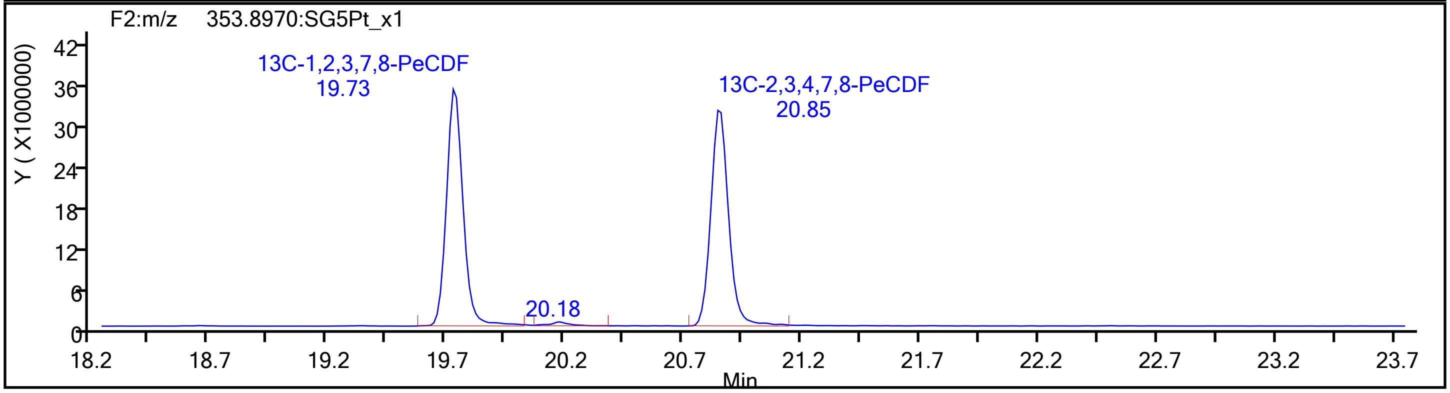

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031
Sample Line#: 3
Column Type:
Column Dia:

PeCDF

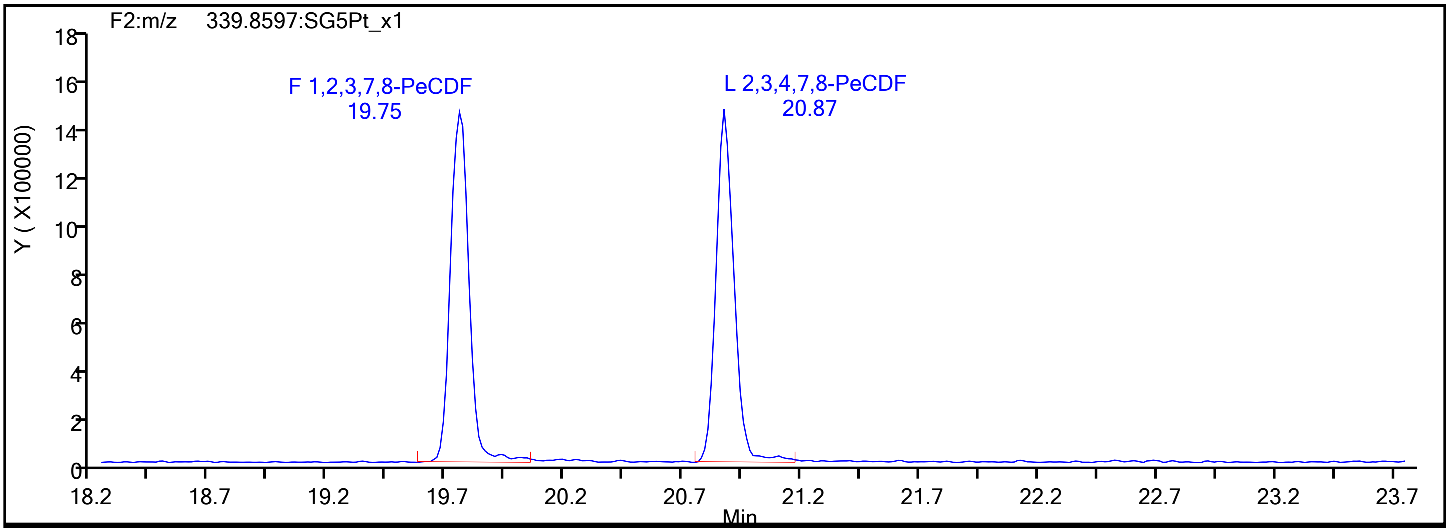

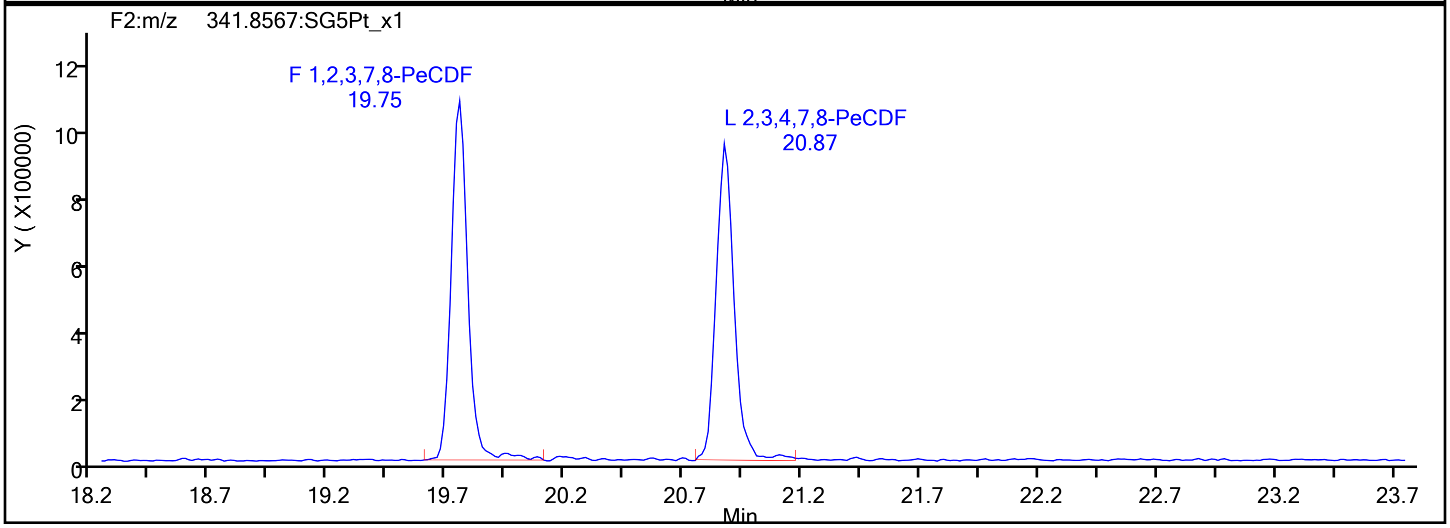

PeCDF Interference Mass

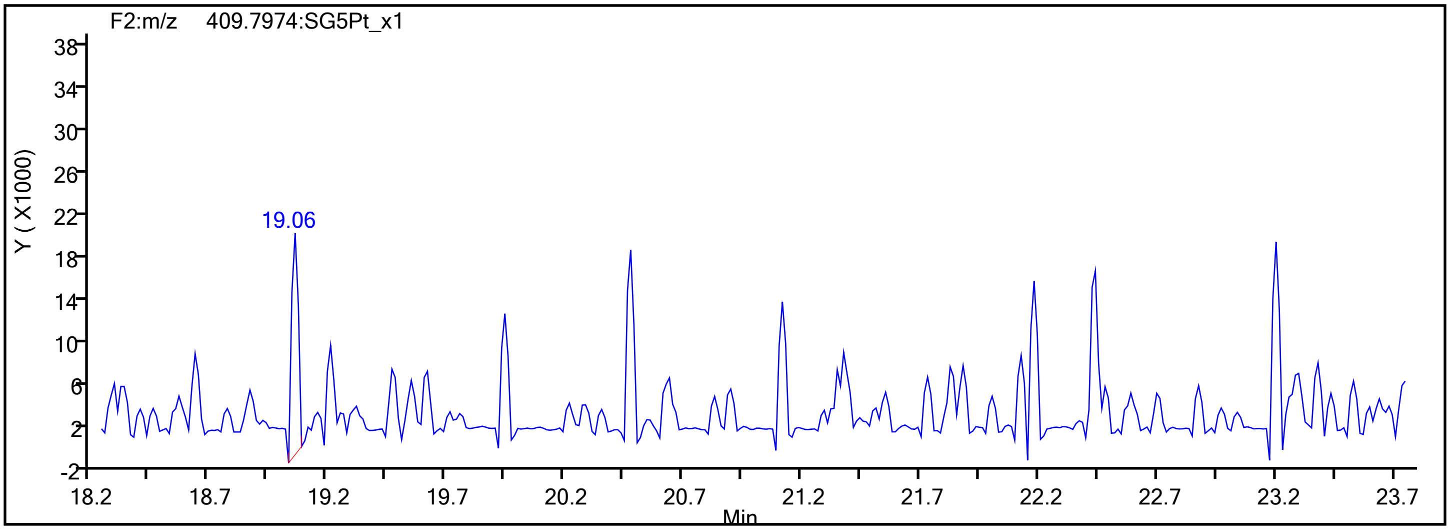

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d		
Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

PeCDD

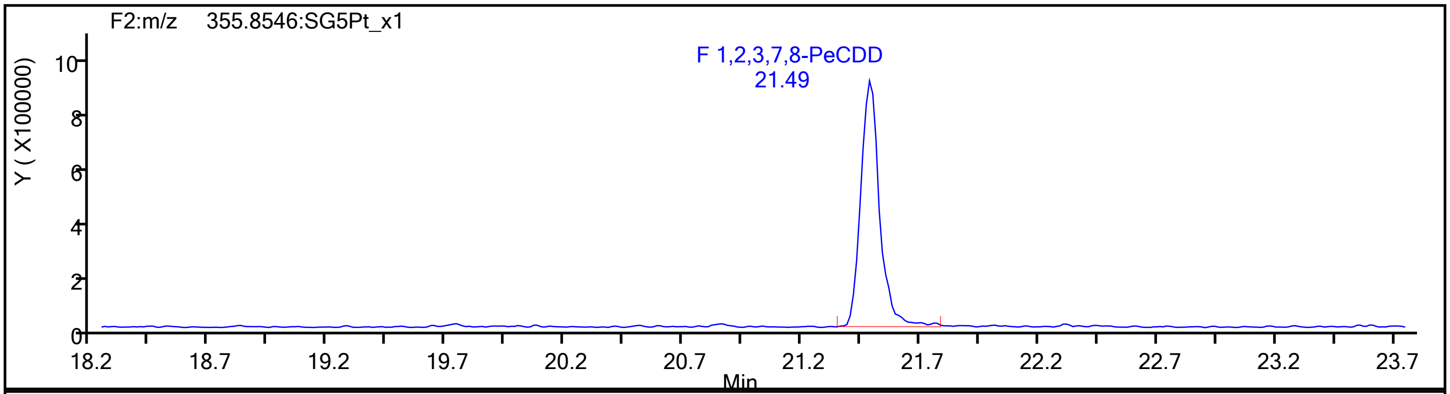

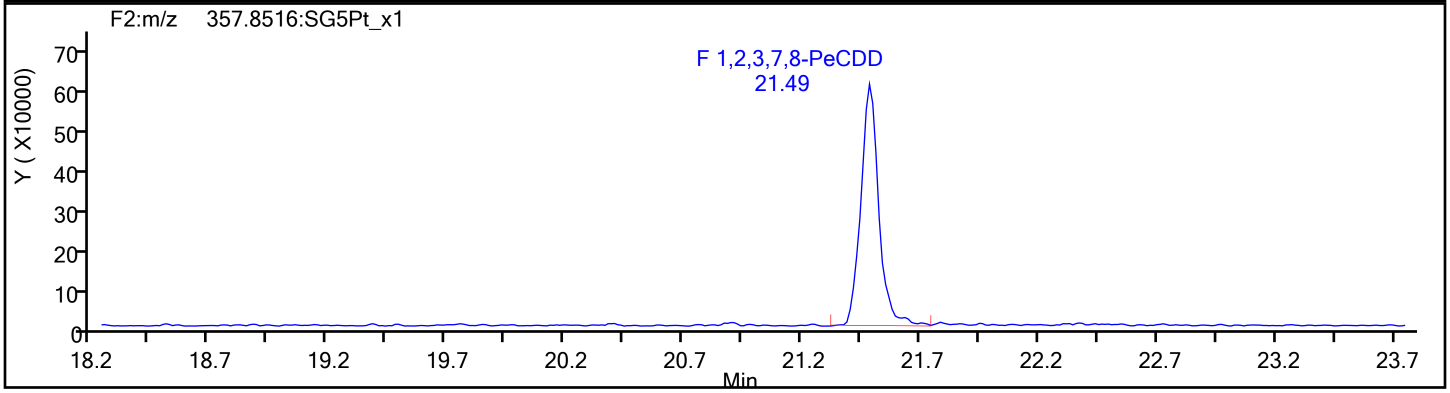

PeCDD Standards

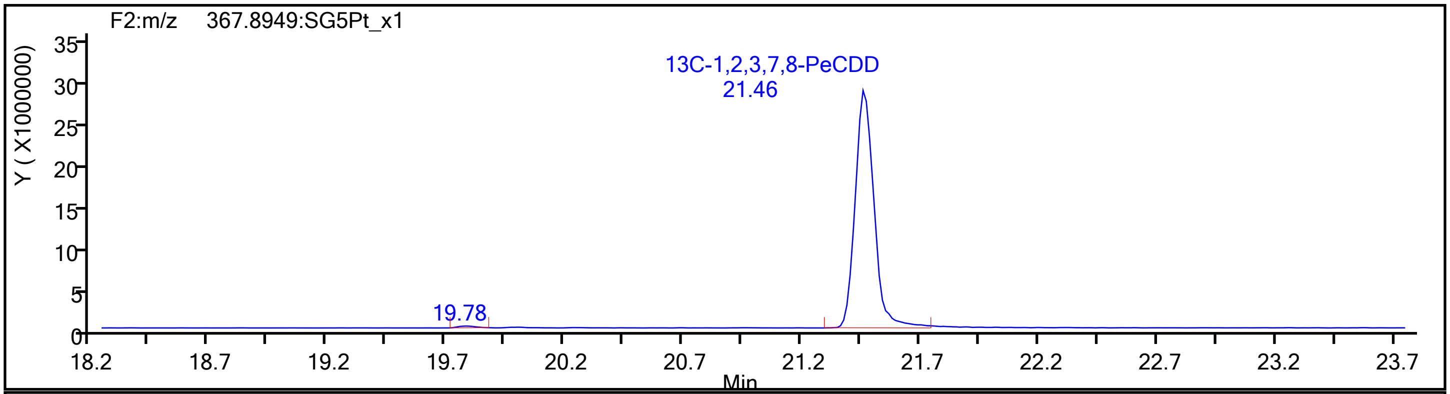

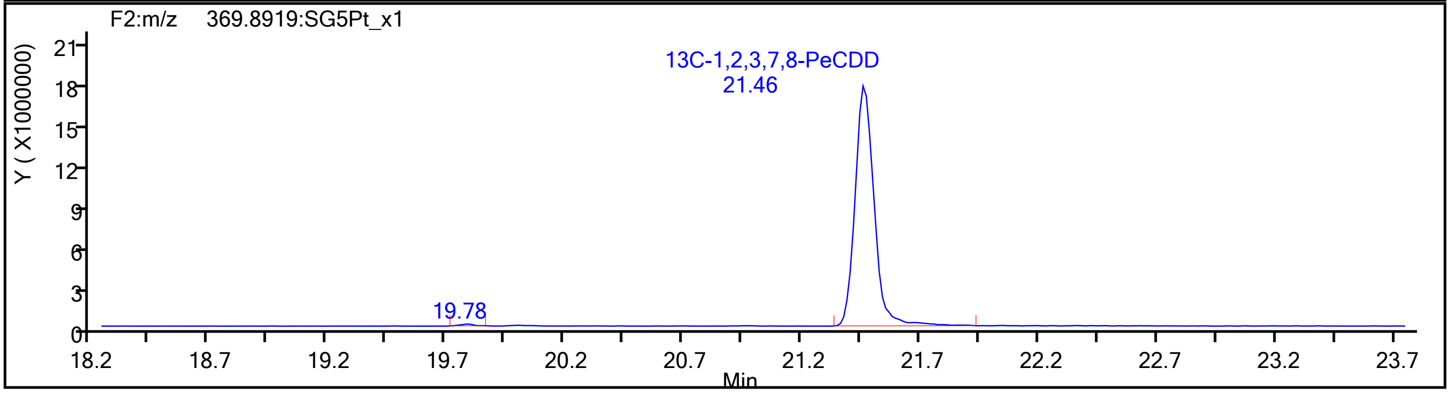

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031 Sample Line#: 3
Column Type: Column Dia:

HxCDF

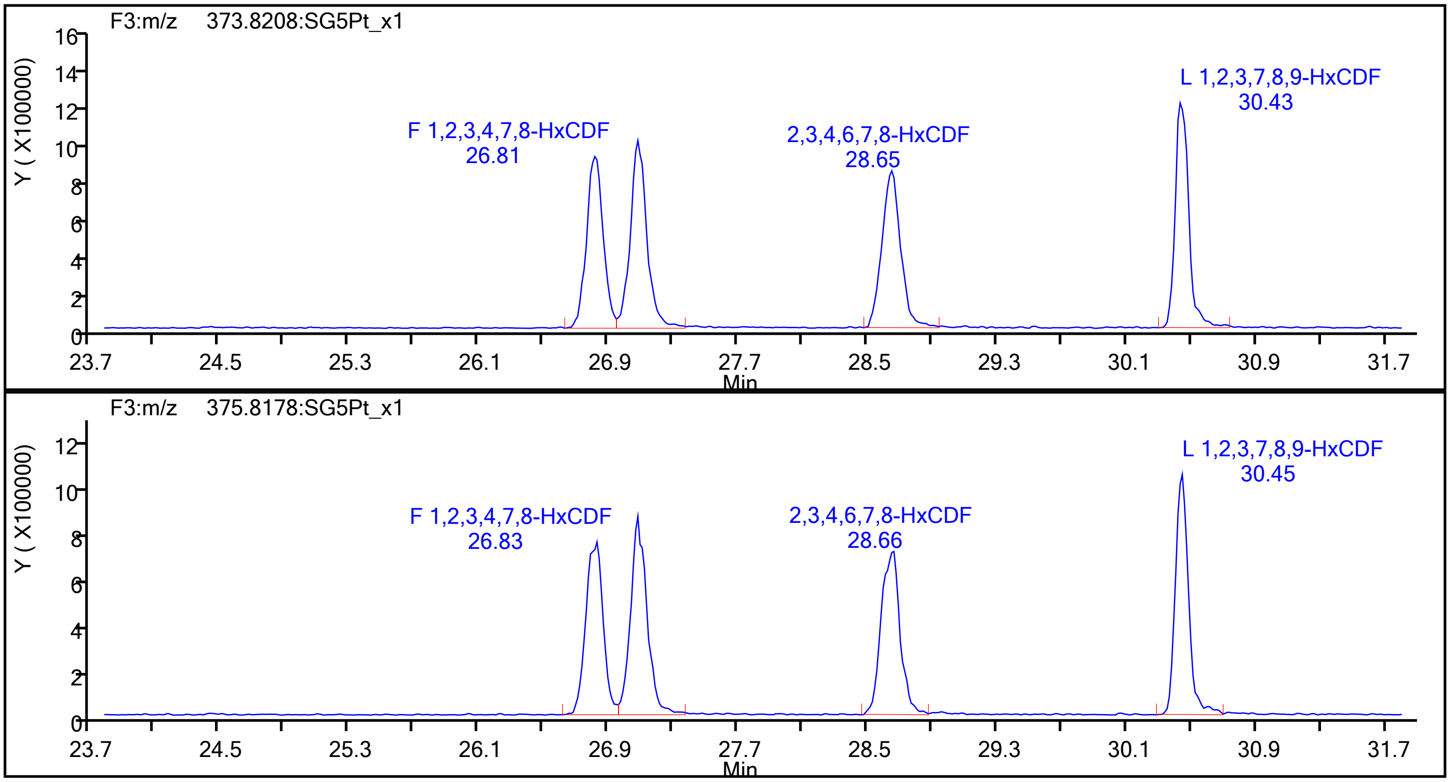

HxCDF Standards

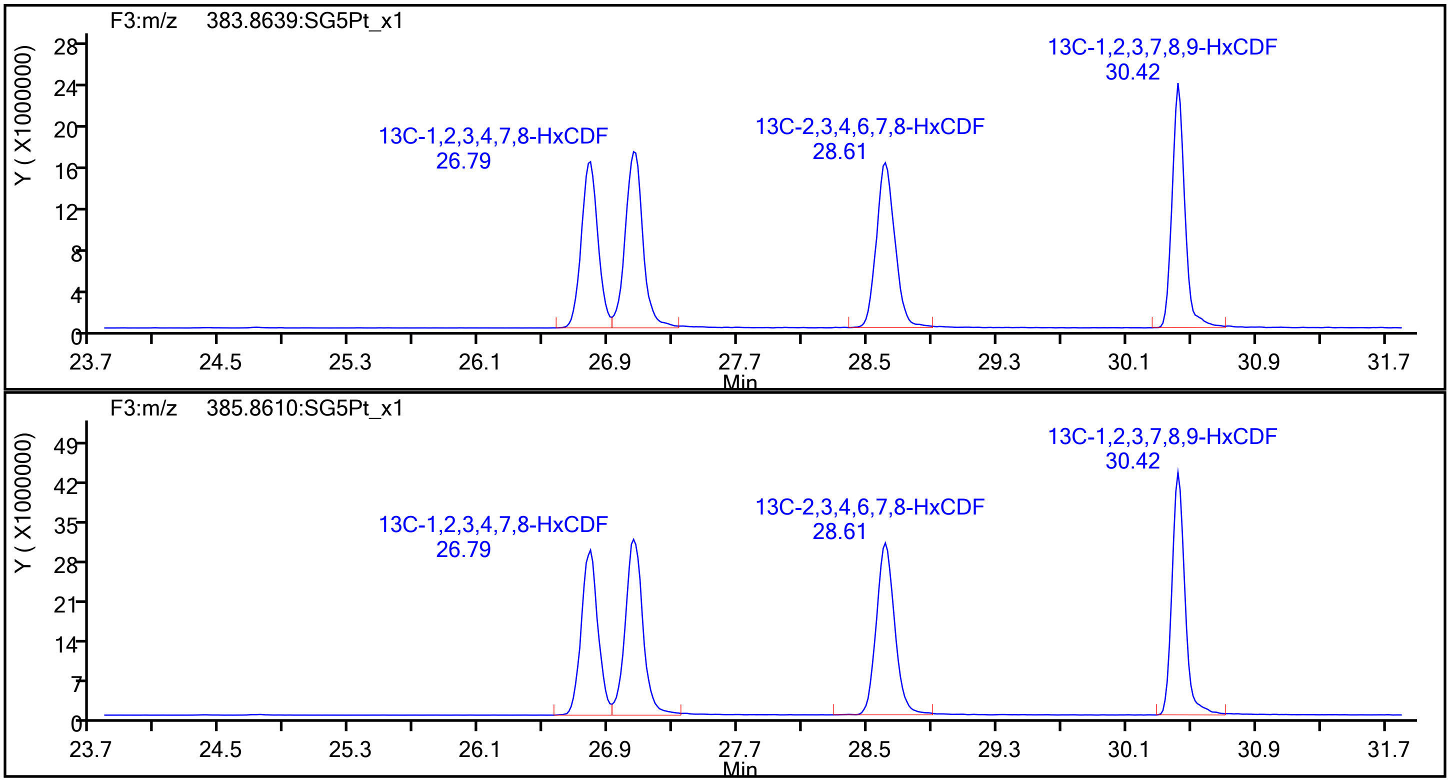

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031
Sample Line#: 3
Column Type:
Column Dia:

HxCDF

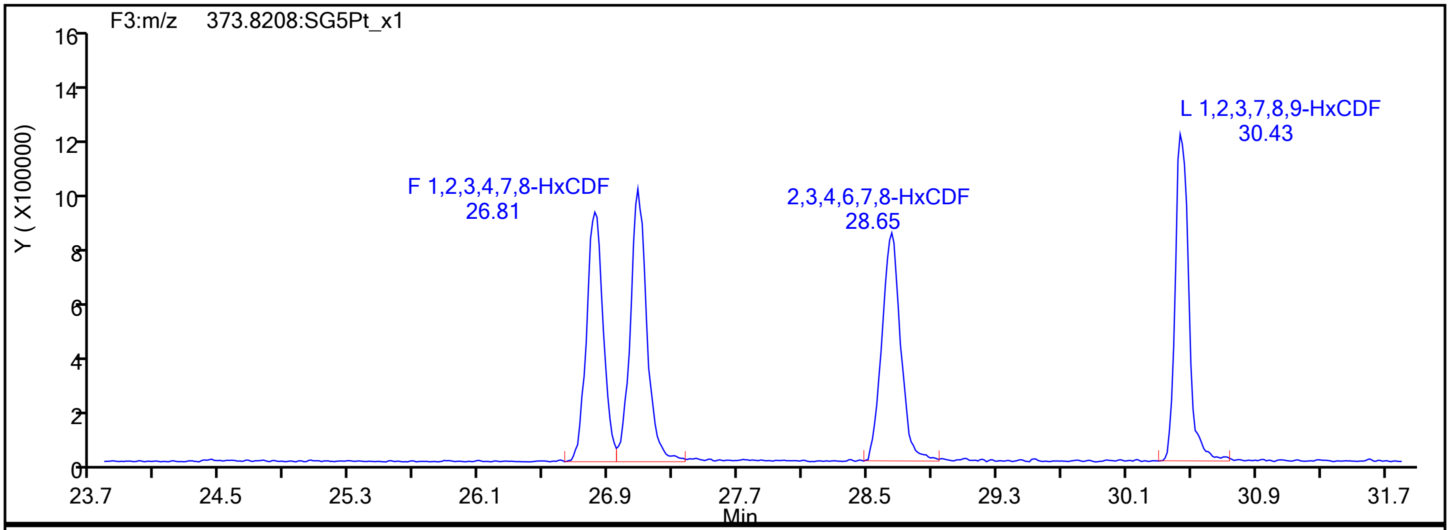

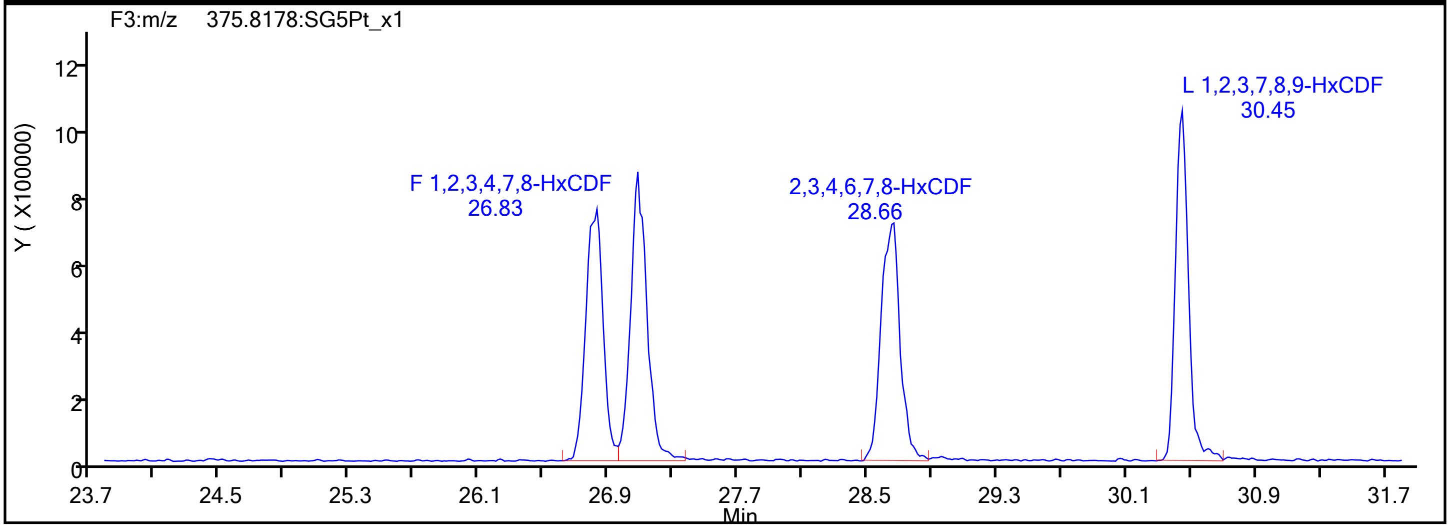

HxCDF Interference Mass

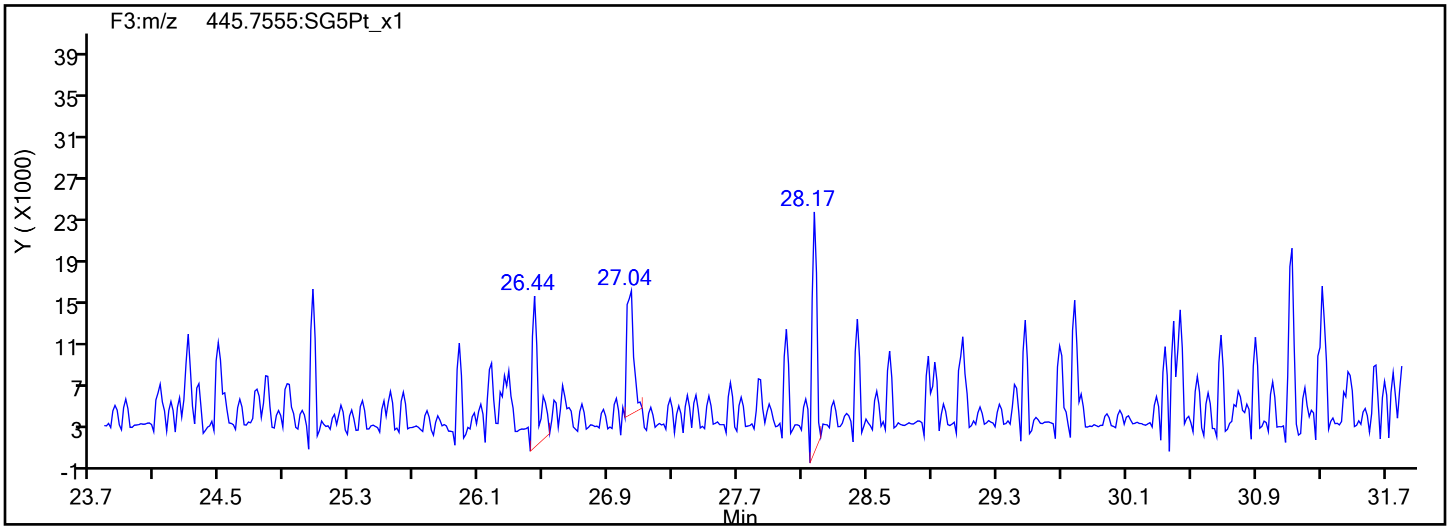

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d		
Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

HxCDD

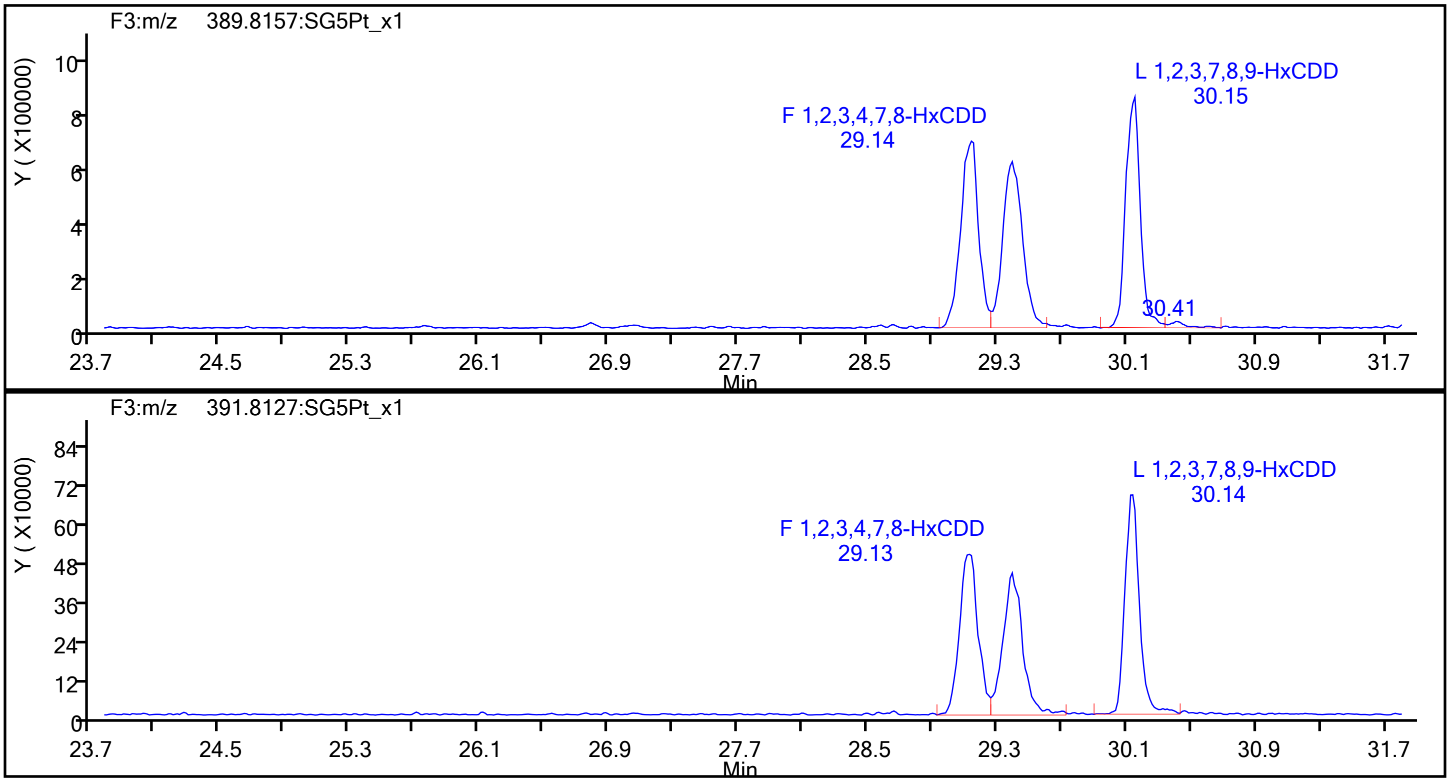

HxCDD Standards

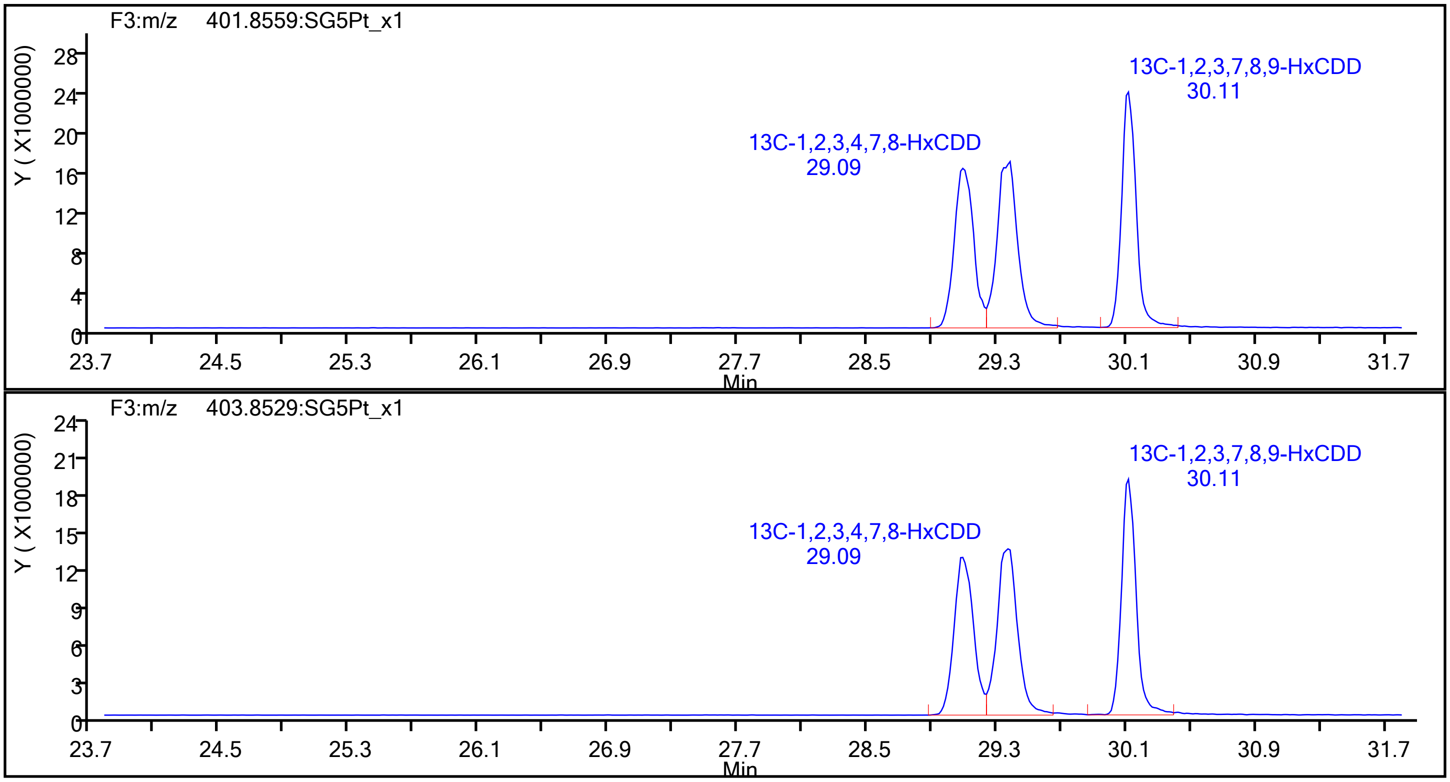

Report Date: 08-Oct-2020 15:16:17
Chrom Revision: 2.3 06-Oct-2020 14:45:12
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031
Sample Line#: 3
Column Type:
Column Dia:

HpCDF

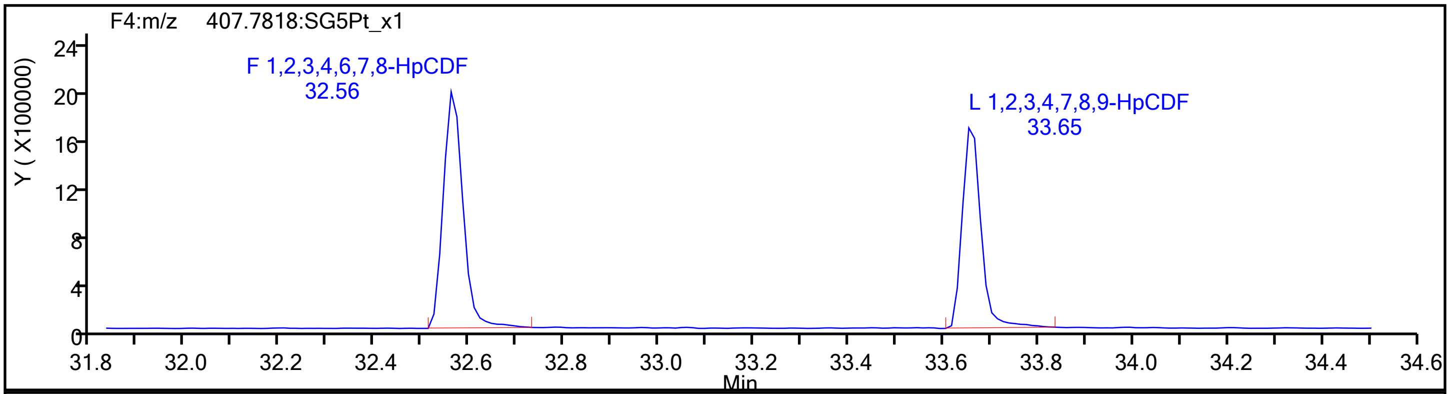

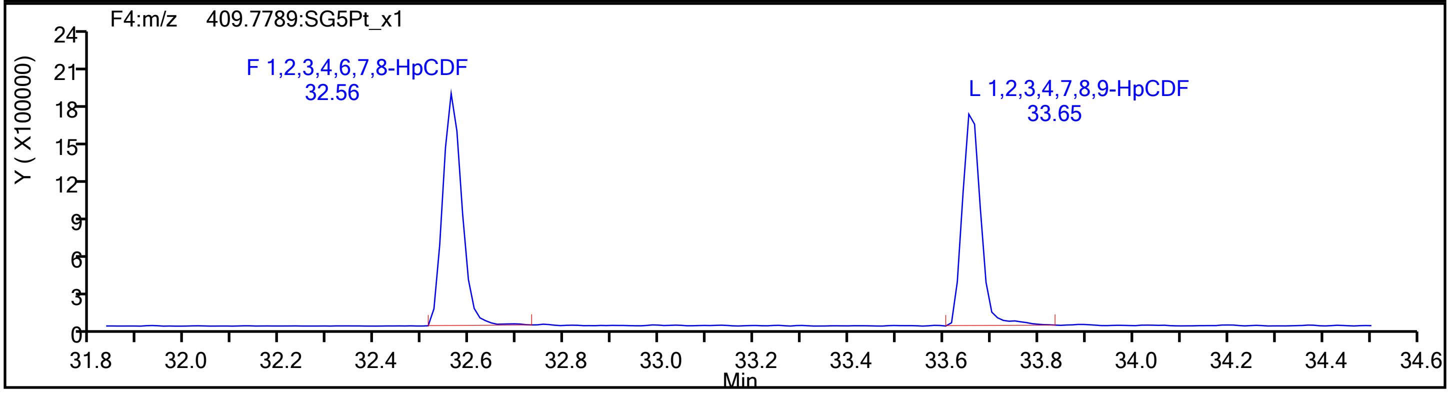

HpCDF Standards

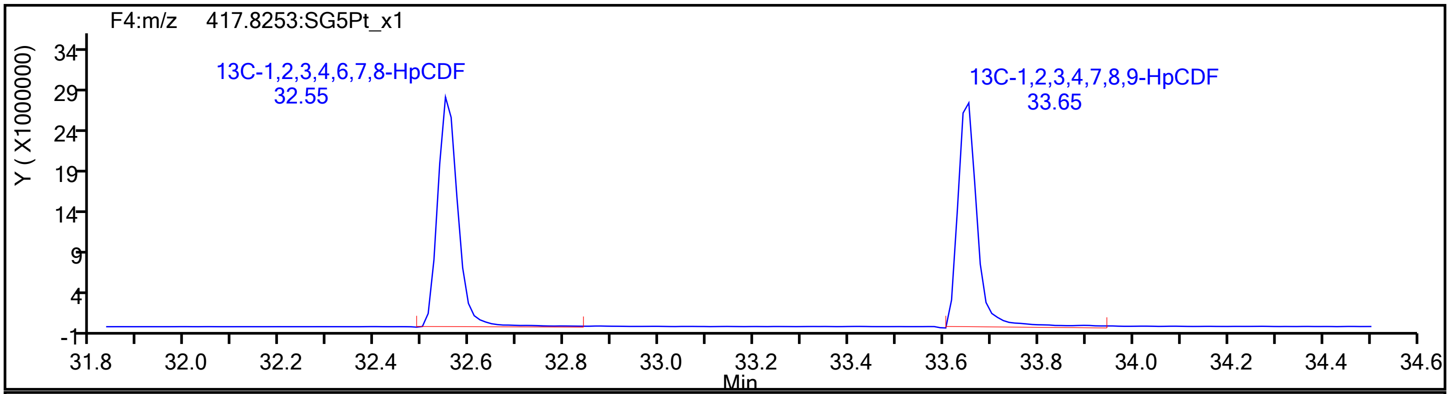

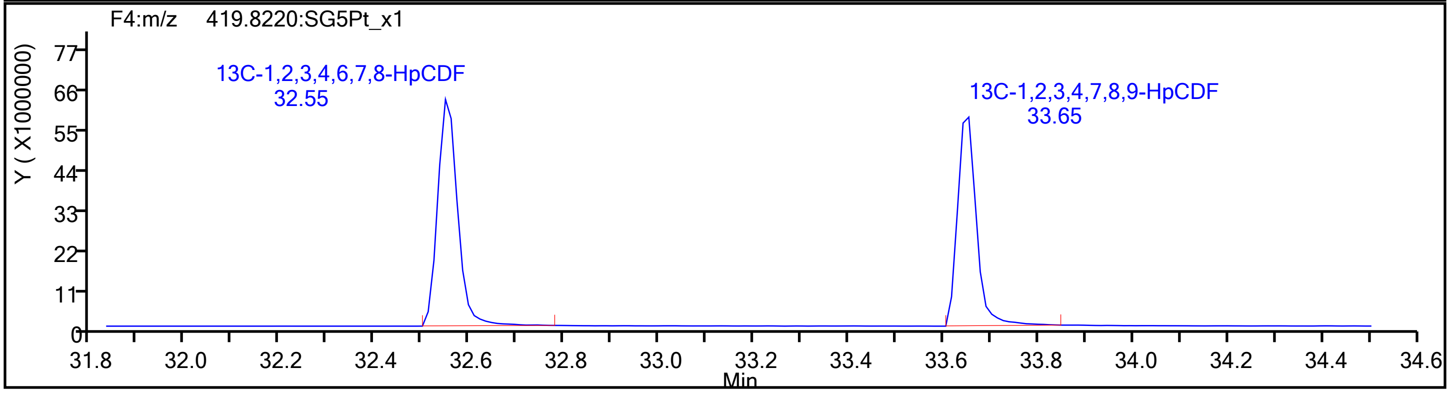

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d		
Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

HpCDF

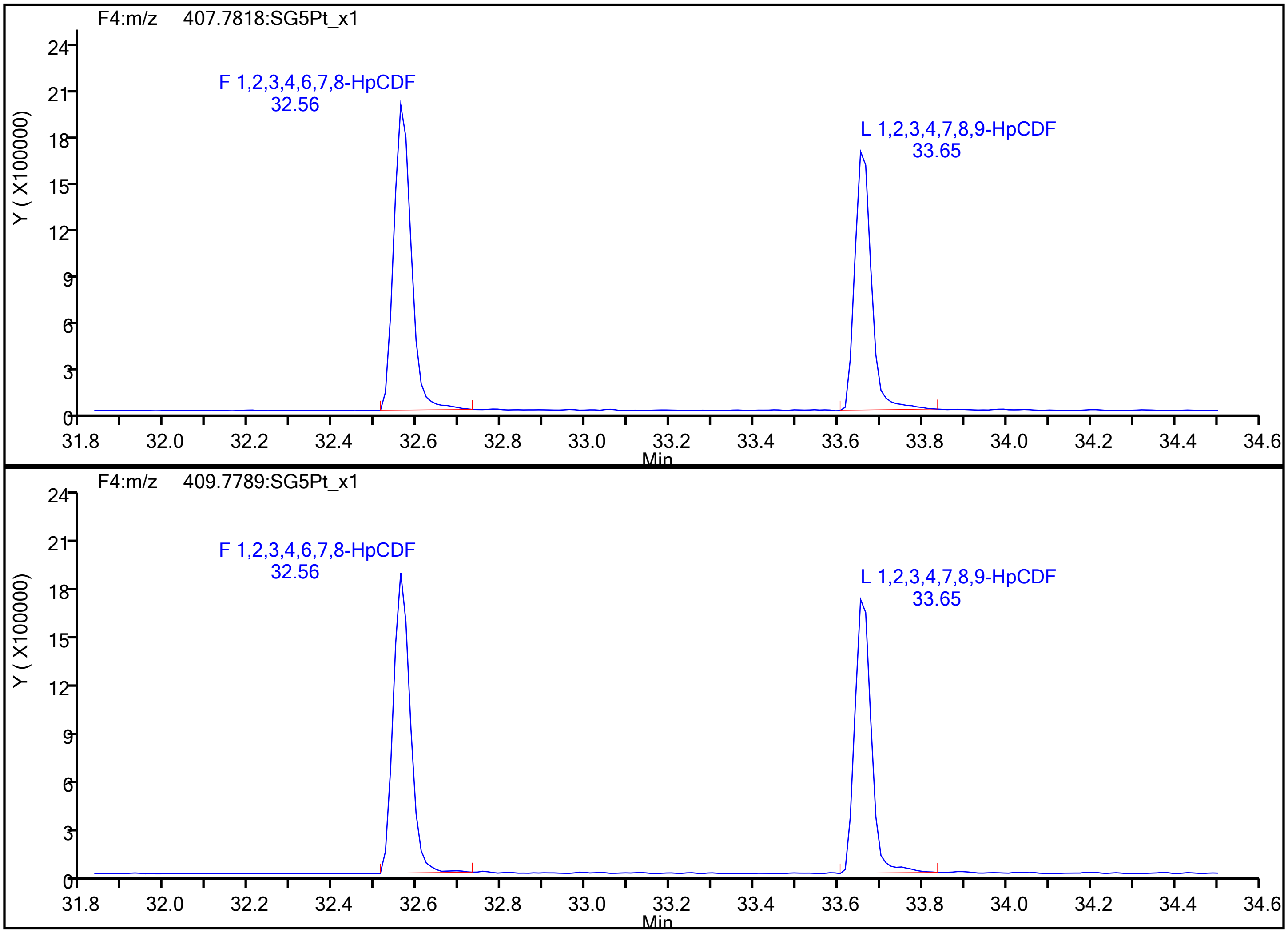

HpCDF Interference Mass

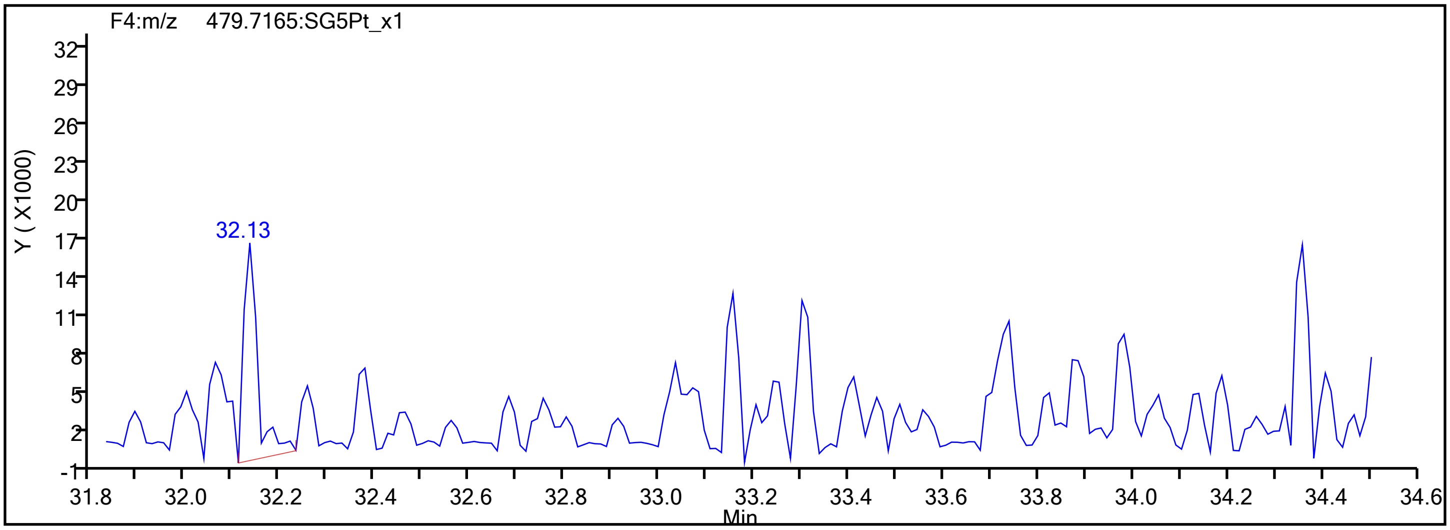

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d
Injection Date: 05-Oct-2020 17:35:00
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L2
Worklist#: 419031
Sample Line#: 3
Column Type:
Column Dia:

HpCDD

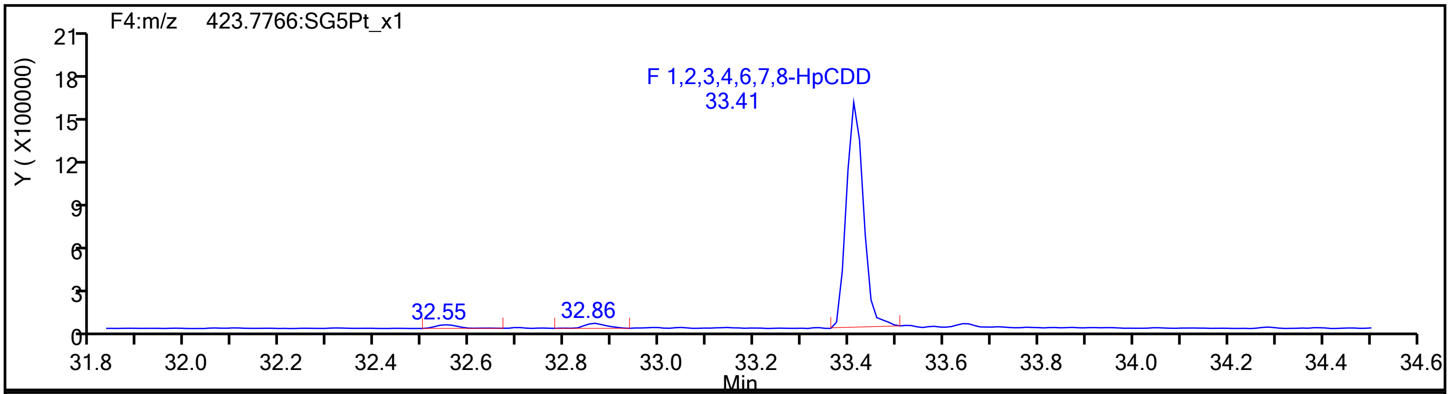

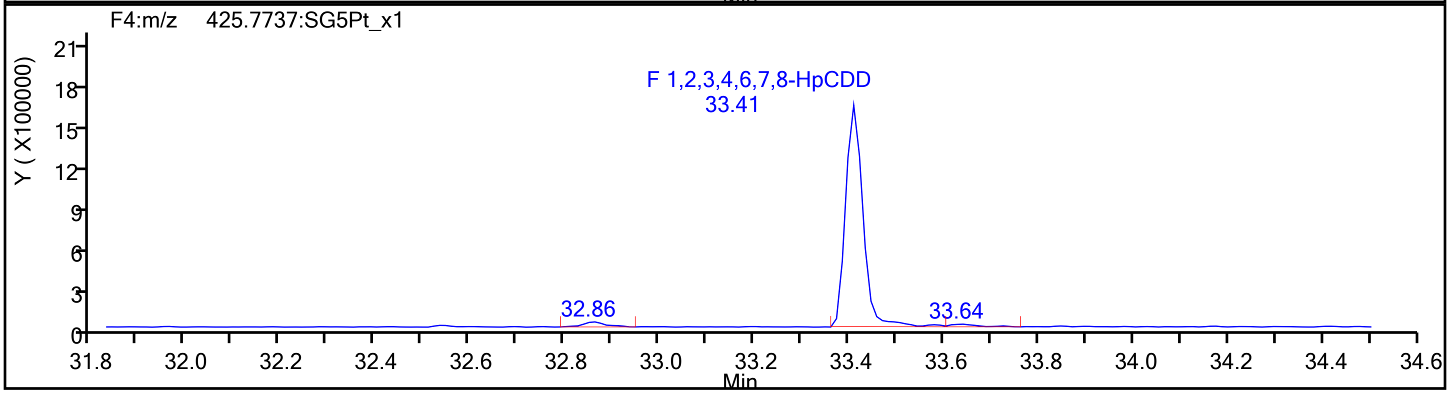

HpCDD Standards

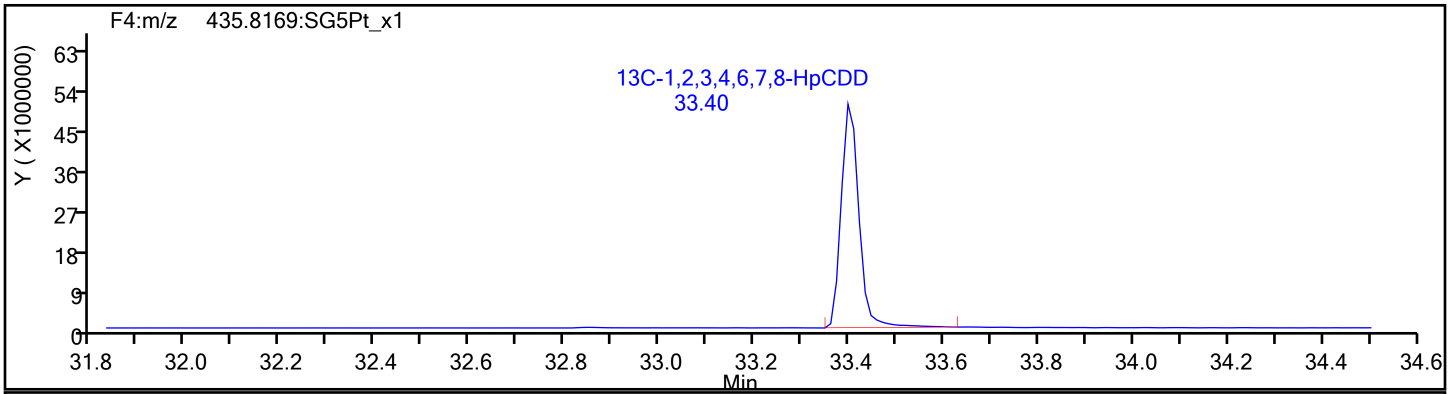

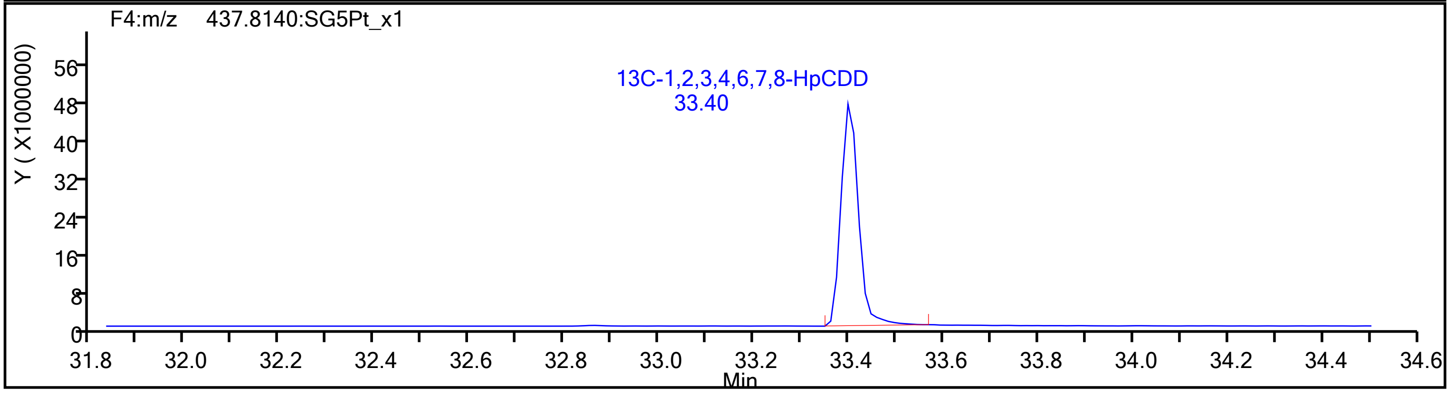

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Injection Date: 05-Oct-2020 17:35:00 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L2

Worklist#: 419031 Sample Line#: 3

Column Type: Column Dia:

OCDF

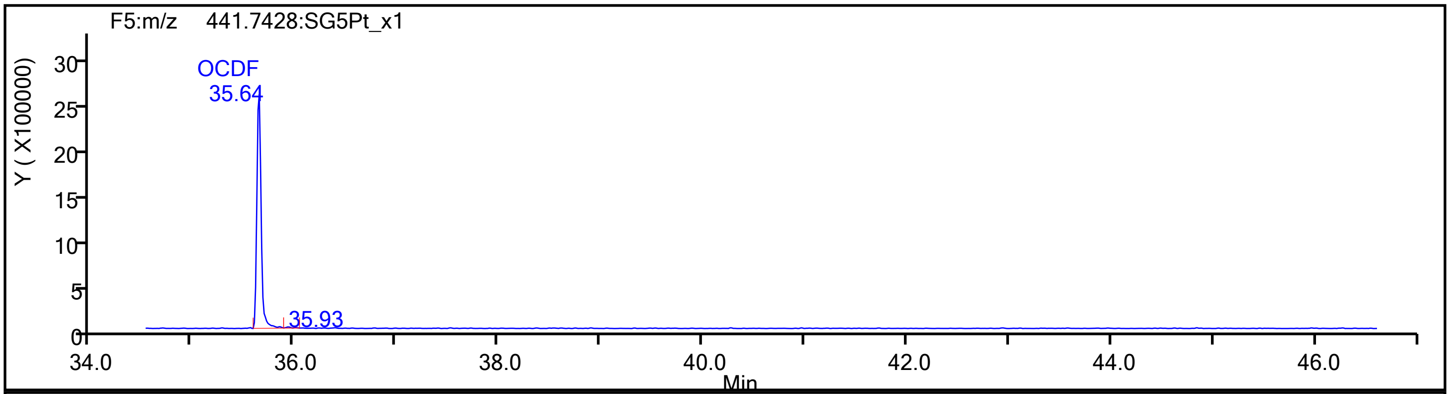

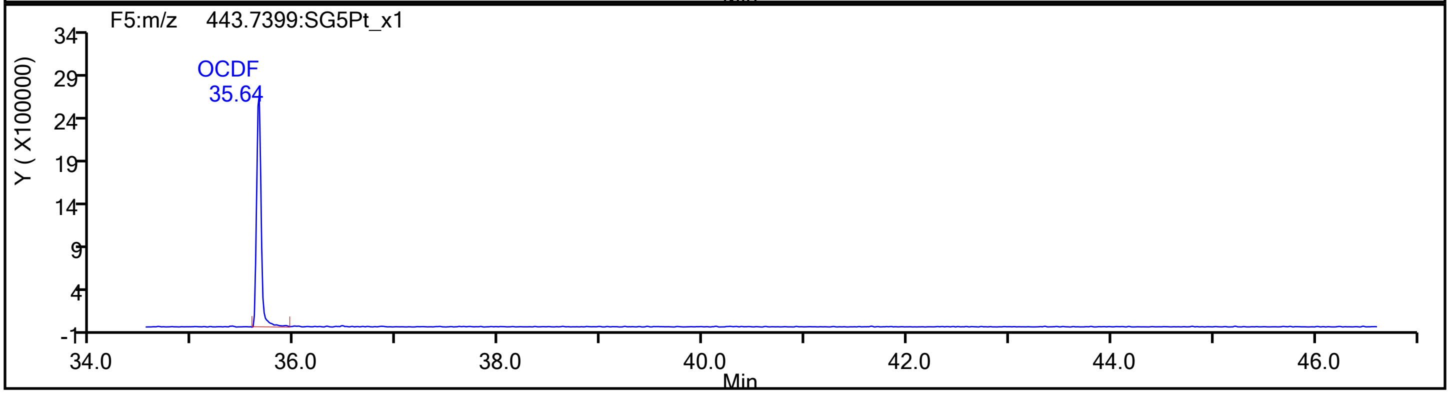

OCDF Standards

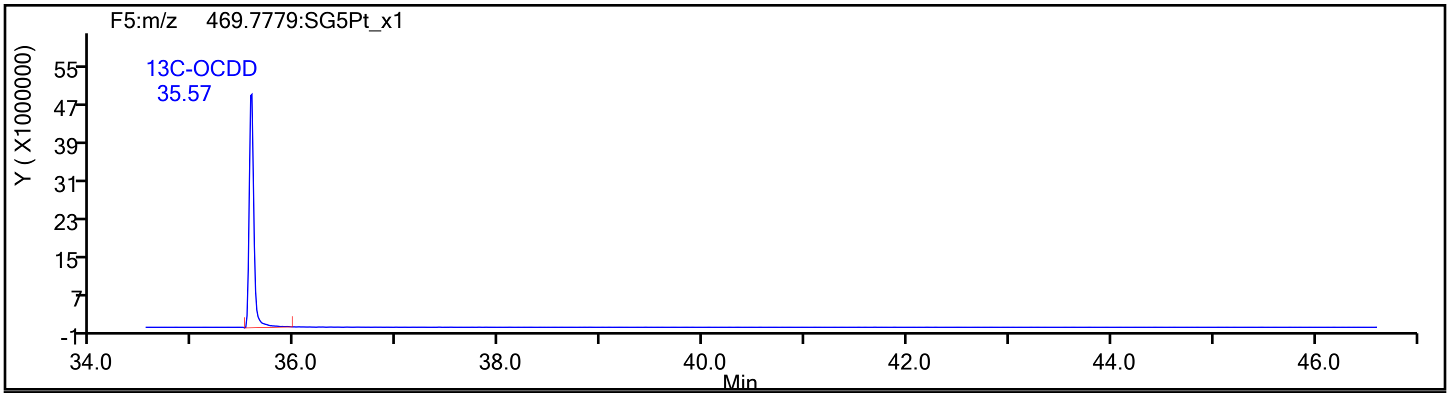

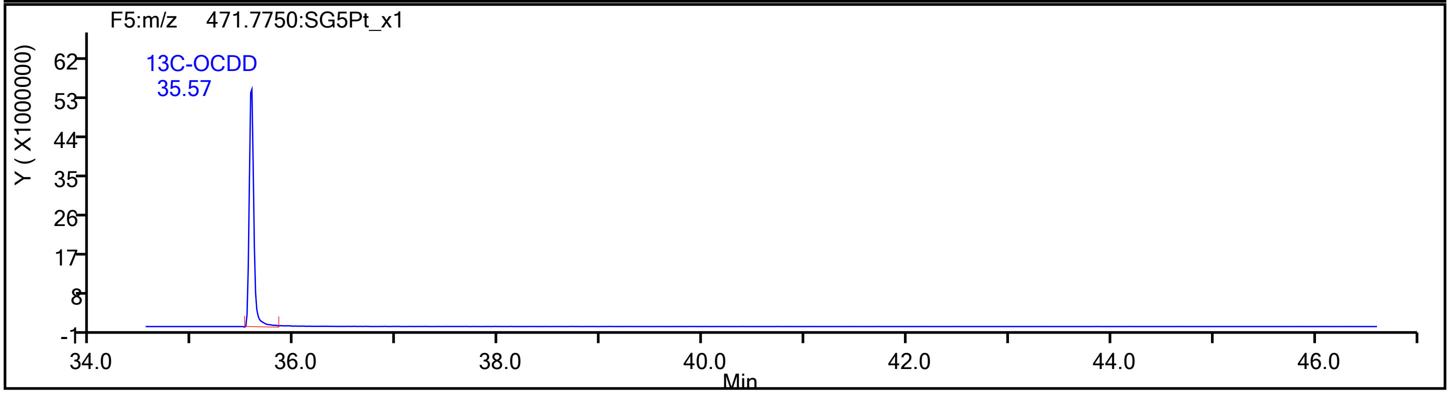

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

OCDF

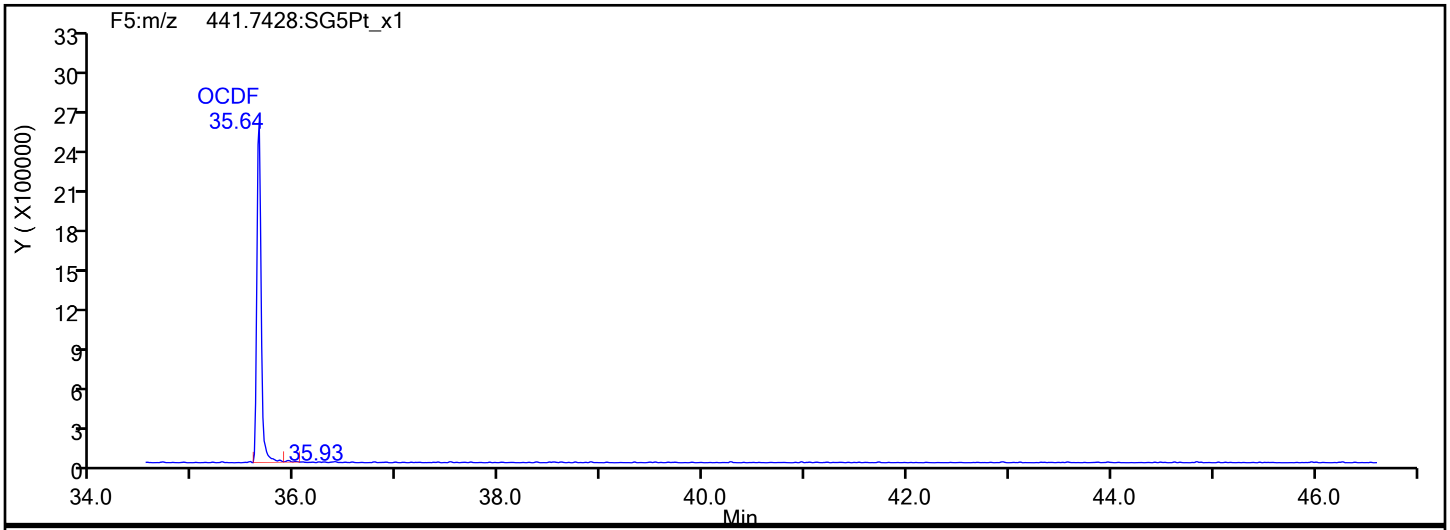

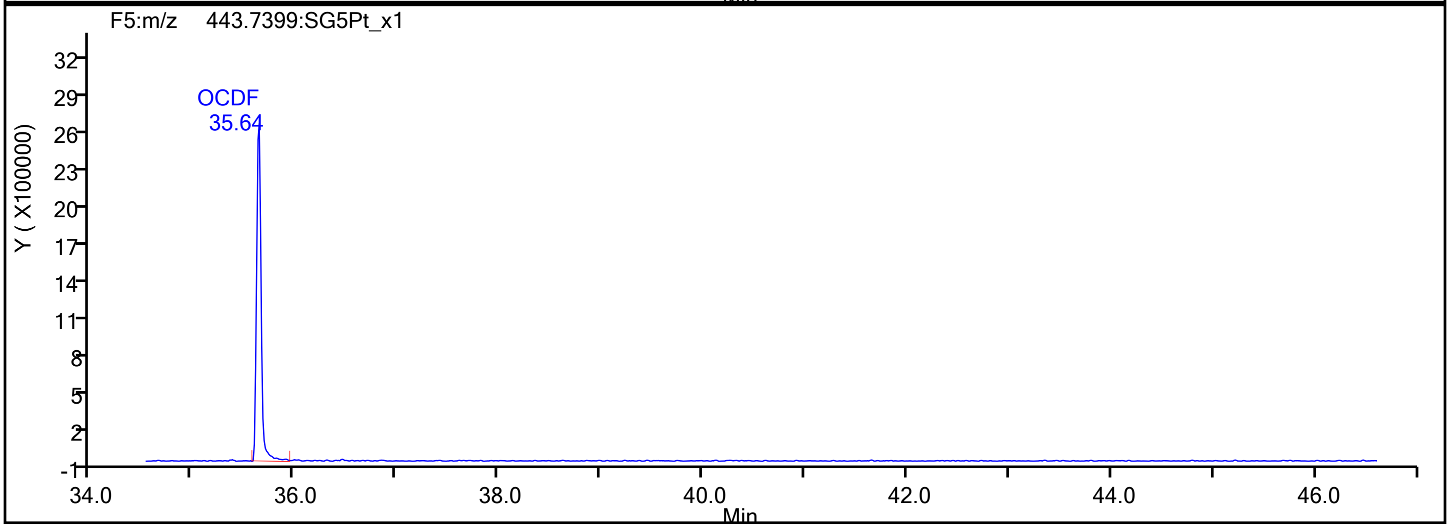

OCDF Interference Mass

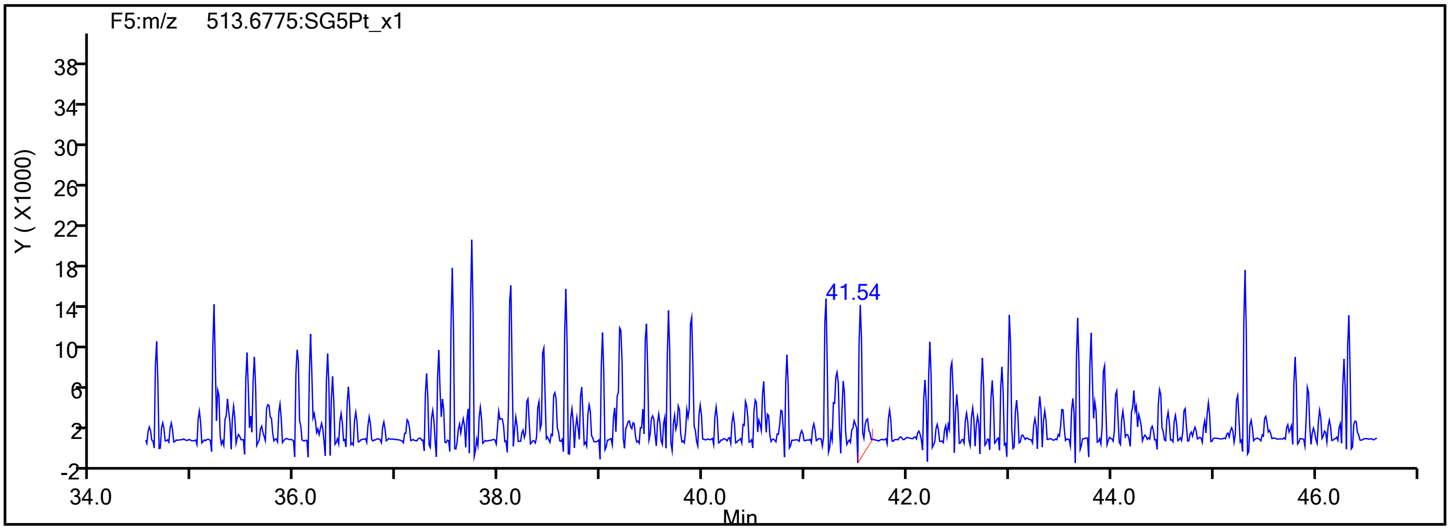

Report Date: 08-Oct-2020 15:16:17 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d		
Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

OCDD

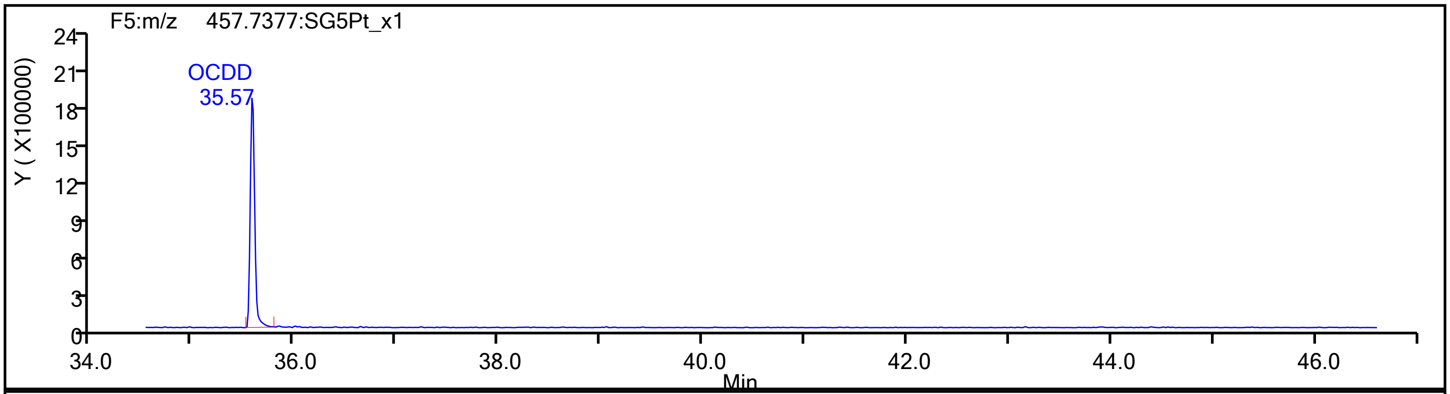

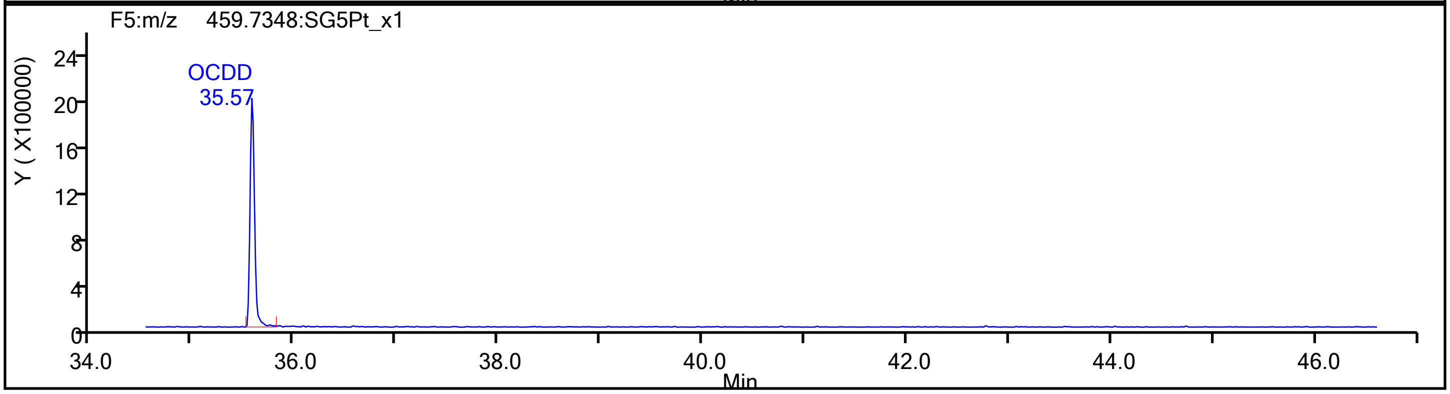

OCDD Standards

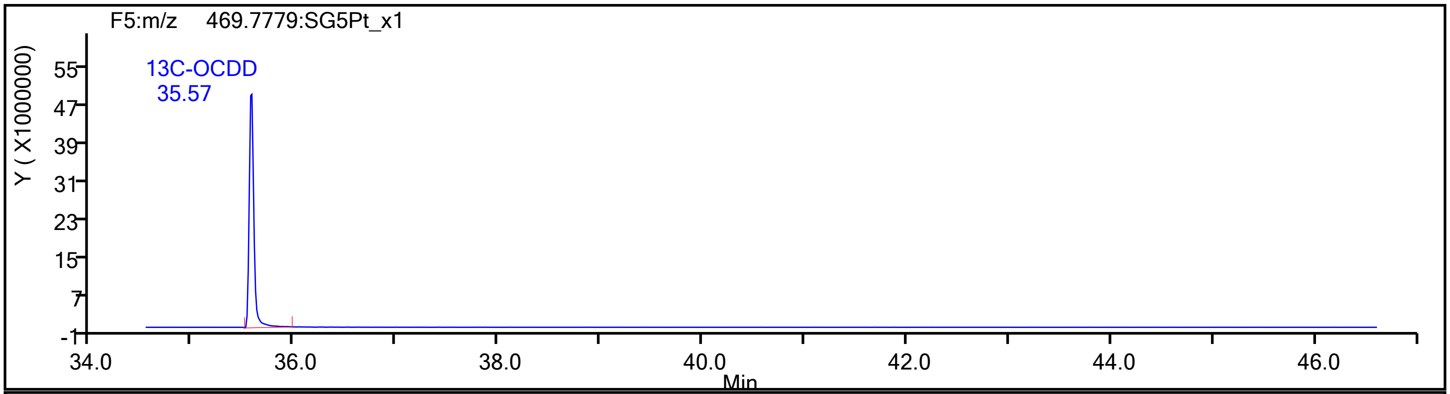

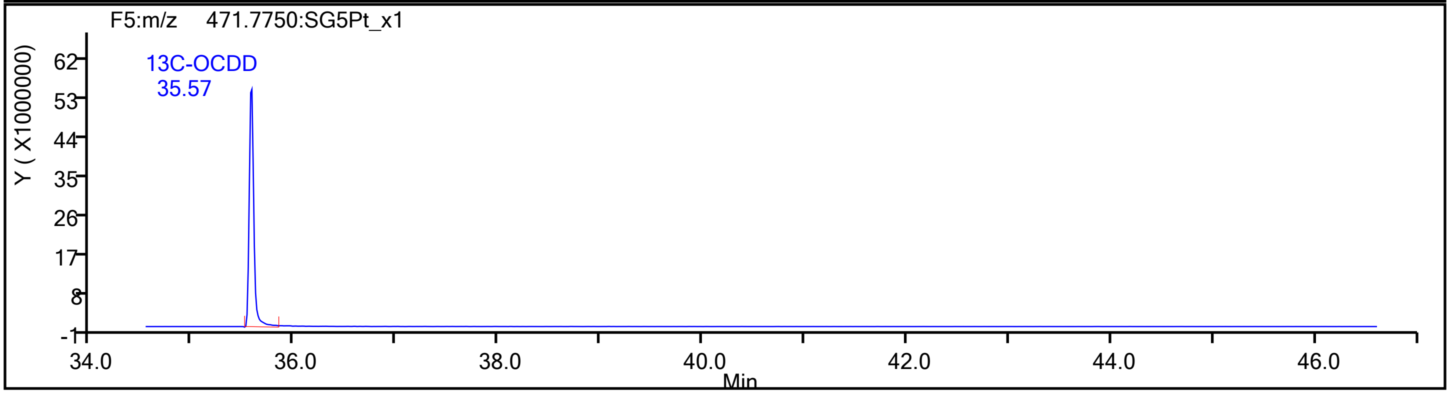

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d

Injection Date: 05-Oct-2020 17:35:00

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: L2

Worklist#: 419031

Sample Line#: 3

Column Type:

Column Dia:

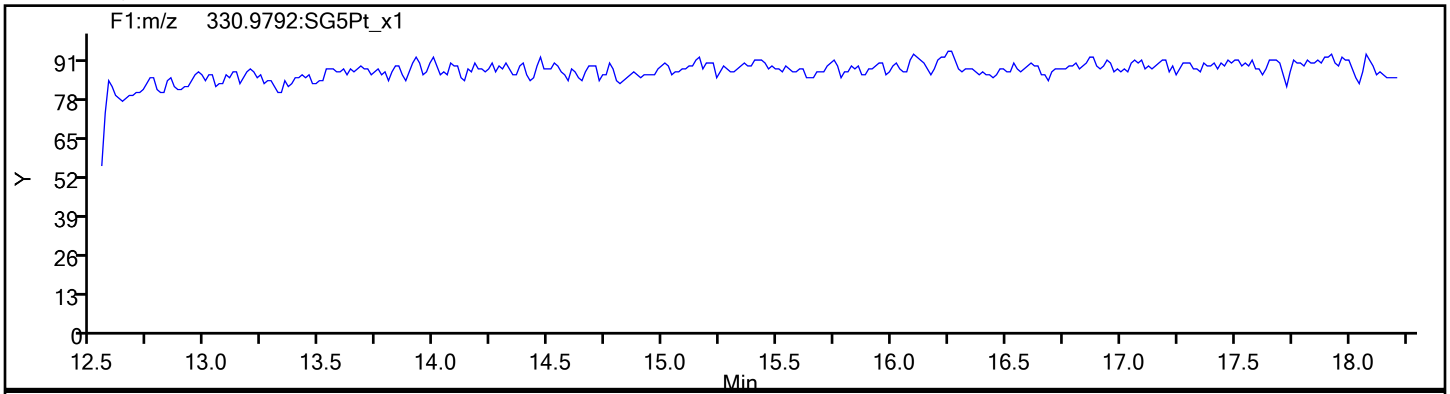

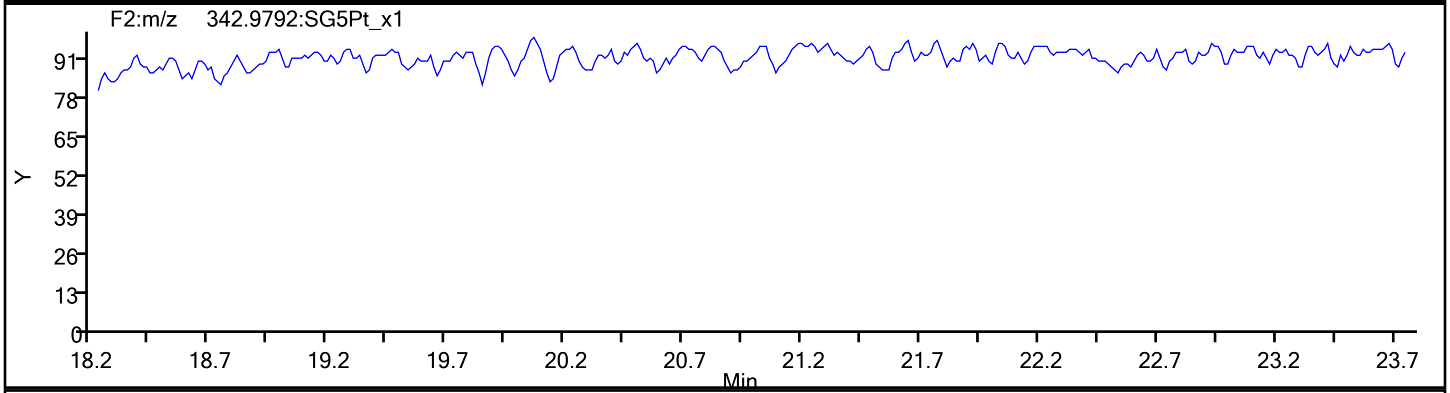

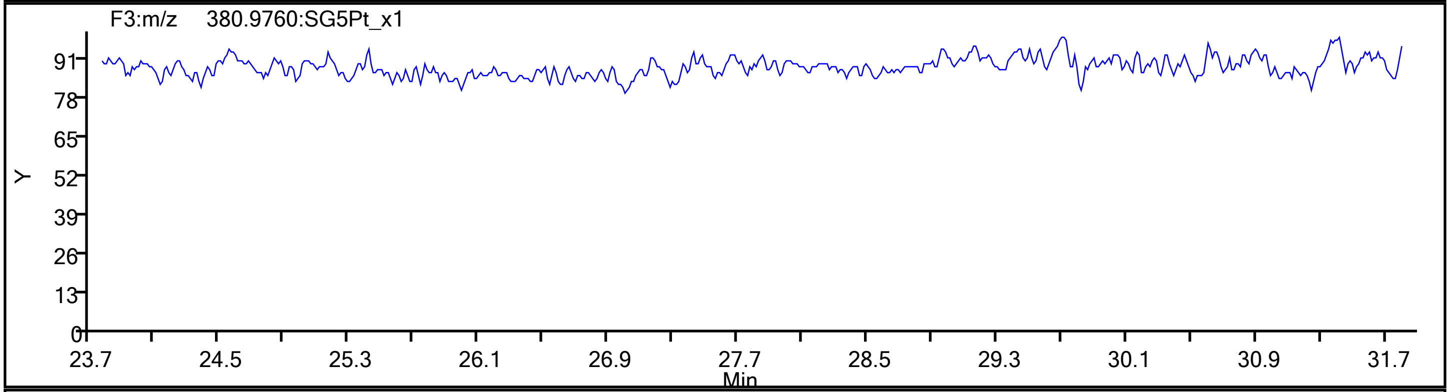

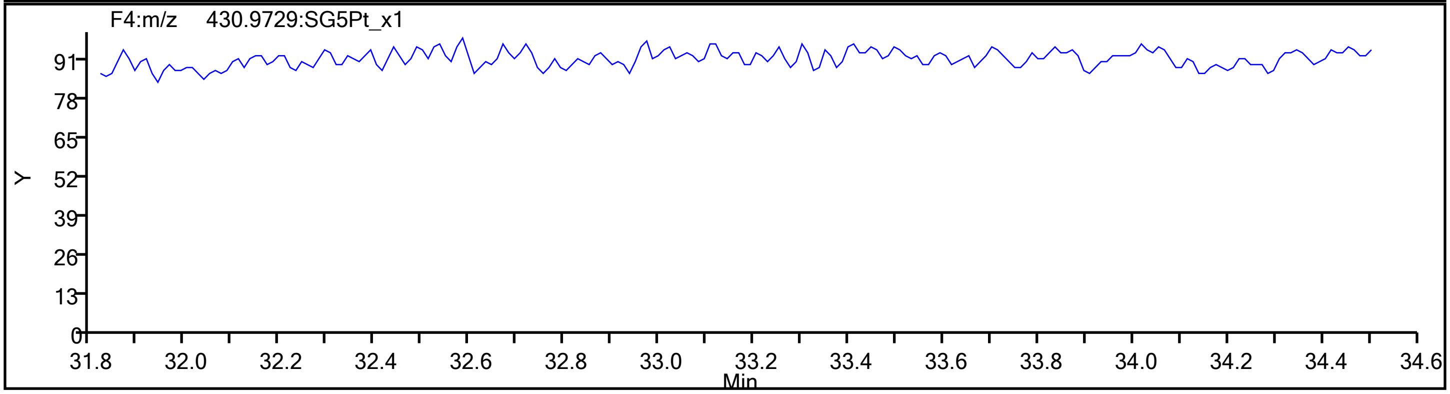

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_4.d		
Injection Date:	05-Oct-2020 17:35:00	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L2		
Worklist#:	419031	Sample Line#:	3
Column Type:		Column Dia:	

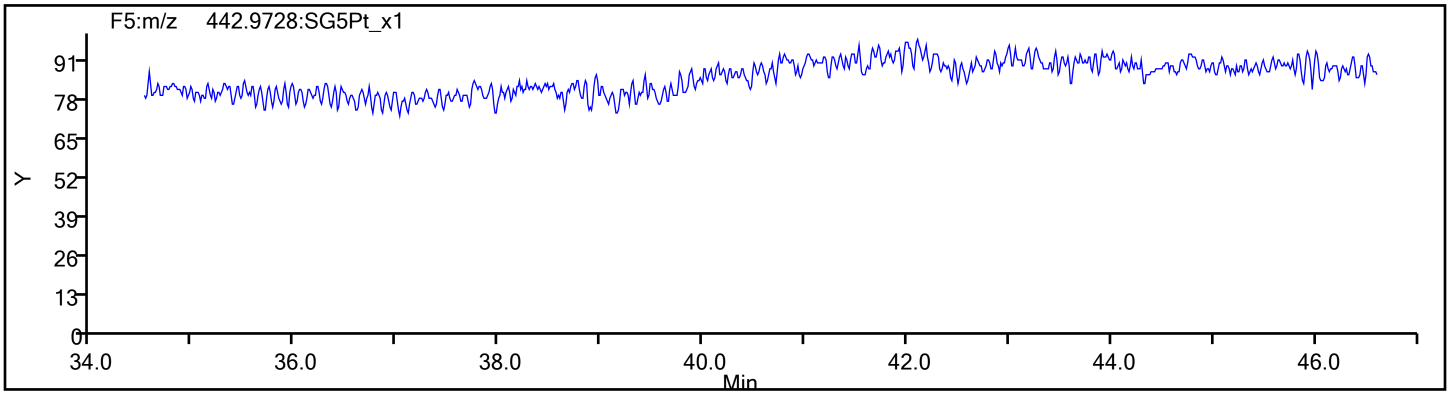

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d		
Lims ID:	IC 3		
Client ID:	L3		
Sample Type:	IC	Calib Level:	3
Inject. Date:	05-Oct-2020 18:22:41	ALS Bottle#:	4 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Sample Info:	IC 100520A CS-3 HRDXNL3_00028		
Misc. Info.:	05OC203D5		
Operator ID:	SMA	Instrument ID:	3D5
Sublist:	chrom-Dioxin_3D5*sub1		
Method:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	08-Oct-2020 15:16:23	Calib Date:	05-Oct-2020 20:45:32
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Column 1 :		Det: F1:HRSIR	
Process Host:	CTX1622		
First Level Reviewer: arghestanis		Date:	06-Oct-2020 11:50:03

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.946	309170536	0.81	3.1E+06	100.0	100.0				a
D 13C-2,3,7,8-TCDF	15.507	473709511	0.77	1.4844	103.2	103.2	0.3686	0.3686	103	
2,3,7,8-TCDF	15.522	9292400	0.67	0.9534	2.058	2.058	0.0191	0.0191	103	
S Total TCDF					2.058	2.058	0.0191	0.0191		
D 13C-2,3,7,8-TCDD	16.112	322907789	0.81	1.0875	96.0	96.0	0.2747	0.2747	96.04	
2,3,7,8-TCDD	16.127	7211859	0.74	1.0205	2.189	2.189	0.0227	0.0227	109	
$ 37Cl4-2,3,7,8-TCDD	16.127	6576840		1.1216	1.897	1.897	0.0148	0.0148	94.83	
S Total TCDD					2.189	2.189	0.0227	0.0227		
D 13C-1,2,3,7,8-PeCDF	19.727	471706314	1.59	1.3943	109.4	109.4	0.3363	0.3363	109	
1,2,3,7,8-PeCDF	19.754	53040887	1.57	1.0794	10.4	10.4	0.0490	0.0490	104	
D 13C-2,3,4,7,8-PeCDF	20.846	483769777	1.56	1.3370	117.0	117.0	0.3507	0.3507	117	
2,3,4,7,8-PeCDF	20.873	52526938	1.46	1.0966	9.901	9.901	0.0512	0.0512	99.01	
S Total PeCDF					20.3	20.3	0.0501	0.0501		
D 13C-1,2,3,7,8-PeCDD	21.459	302558598	1.58	0.8475	115.5	115.5	0.1898	0.1898	115	
1,2,3,7,8-PeCDD	21.486	36797749	1.56	1.1397	10.7	10.7	0.0384	0.0384	107	
S Total PeCDD					10.7	10.7	0.0384	0.0384		
D 13C-1,2,3,4,7,8-HxCDF	26.773	425854337	0.54	1.3065	104.8	104.8	0.5139	0.5139	105	
1,2,3,4,7,8-HxCDF	26.813	53315823	1.25	1.2552	9.974	9.974	0.0683	0.0683	99.74	
D 13C-1,2,3,6,7,8-HxCDF	27.052	450154636	0.53	1.4213	101.8	101.8	0.4724	0.4724	102	
1,2,3,6,7,8-HxCDF	27.079	54145612	1.12	1.2102	9.939	9.939	0.0740	0.0740	99.39	
D 13C-2,3,4,6,7,8-HxCDF	28.610	398218568	0.53	1.3142	97.4	97.4	0.5109	0.5109	97.44	
2,3,4,6,7,8-HxCDF	28.650	49858111	1.20	1.2182	10.3	10.3	0.0862	0.0862	103	
D 13C-1,2,3,7,8,9-HxCDF	30.421	401971596	0.52	1.3204	97.9	97.9	0.5085	0.5085	97.89	
1,2,3,7,8,9-HxCDF	30.448	50702079	1.21	1.2319	10.2	10.2	0.0594	0.0594	102	
S Total HxCDF					40.4	40.4	0.0720	0.0720		
* 13C-1,2,3,7,8,9-HxCDD	30.115	310981153	1.28	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.103	268944480	1.29	0.8660	99.9	99.9	0.3495	0.3495	99.86	a
1,2,3,4,7,8-HxCDD	29.129	34579446	1.24	1.2535	10.3	10.3	0.0710	0.0710	103	
D 13C-1,2,3,6,7,8-HxCDD	29.356	307122774	1.24	0.9827	100.5	100.5	0.3080	0.3080	100	a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	29.396	36392677	1.28	1.1117	10.7	10.7	0.0744	0.0744	107	
1,2,3,7,8,9-HxCDD	30.141	38371352	1.27	1.2852	10.4	10.4	0.0667	0.0667	104	
S Total HxCDD					31.3	31.3	0.0707	0.0707		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	290941521	0.46	0.9410	99.4	99.4	1.646	1.646	99.42	
1,2,3,4,6,7,8-HpCDF	32.559	42136391	1.16	1.4783	9.797	9.797	0.0573	0.0573	97.97	
D 13C-1,2,3,4,7,8,9-HpCDF	33.653	280894999	0.44	0.8751	103.2	103.2	1.770	1.770	103	
1,2,3,4,7,8,9-HpCDF	33.653	36886443	1.10	1.3784	9.527	9.527	0.0608	0.0608	95.27	
S Total HpCDF					19.3	19.3	0.0591	0.0591		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	275221324	1.07	0.9049	97.8	97.8	1.146	1.146	97.80	
1,2,3,4,6,7,8-HpCDD	33.410	30891331	1.00	1.0862	10.3	10.3	0.0958	0.0958	103	
S Total HpCDD					10.3	10.3	0.0958	0.0958		
D 13C-OCDD	35.570	347805209	0.92	0.5783	193.4	193.4	0.4706	0.4706	96.70	
OCDF	35.642	57688411	0.90	1.7248	19.2	19.2	0.0388	0.0388	96.16	
OCDD	35.570	45972410	0.92	1.2576	21.0	21.0	0.0431	0.0431	105	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags
Review Flags
a - User Assigned ID

Reagents:
HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:16:24 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d				
Lims ID:	IC 3				
Client ID:	L3				
Sample Type:	IC	Calib Level:	3		
Inject. Date:	05-Oct-2020 18:22:41	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 100520A CS-3 HRDXNL3_00028				
Misc. Info.:	05OC203D5				
Operator ID:	SMA	Instrument ID:	3D5		
Sublist:	chrom-Dioxin_3D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	08-Oct-2020 15:16:23	Calib Date:	05-Oct-2020 20:45:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Column 1 :			Det: F1:HRSIR		
Process Host:	CTX1622				
First Level Reviewer: arghestanis		Date:	06-Oct-2020 11:50:03		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	15.946	15.942	0		138080958	39936386	55569	138922	719		a
333.9339	15.946	15.942	0		171089578	50190743	52106	130265	963	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.507	15.501	0	0.973	205932893	59022999	102737	256842	575		
317.9389	15.507	15.501	0	0.973	267776618	76808150	94512	236280	813	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.522	15.516	0	1.001	3712026	1078110	4637	11592	233		
305.8987	15.522	15.516	0	1.001	5580374	1567958	5234	13085	300	0.67(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.112	16.106	0	1.010	144234379	38663003	55569	138922	696		
333.9339	16.112	16.106	0	1.010	178673410	47680385	52106	130265	915	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.127	16.121	0	1.001	3066029	875273	4575	11437	191		
321.8936	16.127	16.121	0	1.001	4145830	1127945	3438	8595	328	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.127	16.121	0	1.011	6576840	1792794	5966	14915	301		
13C-1,2,3,7,8-PeCDF											
351.9000	19.727	19.725	0	1.237	289271187	59306961	104154	260385	569		
353.8970	19.727	19.725	0	1.237	182435127	36616329	64870	162175	564	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.754	19.746	0	1.001	32417385	6524548	11098	27745	588		
341.8567	19.754	19.746	0	1.001	20623502	4219310	9201	23002	459	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	20.846	20.848	0	1.307	294723300	55102038	104154	260385	529		
353.8970	20.846	20.848	0	1.307	189046477	35324080	64870	162175	545	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.873	20.865	0	1.001	31203583	5883975	11098	27745	530		
341.8567	20.873	20.865	0	1.001	21323355	4104227	9201	23002	446	1.46(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.459	21.454	0	1.346	185256288	33633020	36635	91587	918		
369.8919	21.459	21.454	0	1.346	117302310	20568844	21358	53395	963	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.486	21.481	0	1.001	22409024	3945641	5877	14692	671		
357.8516	21.486	21.481	0	1.001	14388725	2466864	3605	9012	684	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.773	26.775	0	0.889	148851291	21207789	46029	115072	461		
385.8610	26.773	26.775	0	0.889	277003046	38737969	86862	217155	446	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.813	26.805	0	1.001	29618556	4053719	11103	27757	365		
375.8178	26.813	26.805	0	1.001	23697267	3260138	9465	23662	344	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.052	27.044	0	0.898	155614313	19499211	46029	115072	424		
385.8610	27.052	27.044	0	0.898	294540323	37954055	86862	217155	437	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.079	27.079	0	1.001	28579289	3714387	11103	27757	335		
375.8178	27.079	27.079	0	1.001	25566323	3401309	9465	23662	359	1.12(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.610	28.600	1	0.950	138148806	17081952	46029	115072	371		
385.8610	28.610	28.600	1	0.950	260069762	31898513	86862	217155	367	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.650	28.639	1	1.001	27230624	3411511	11103	27757	307		
375.8178	28.637	28.639	0	1.001	22627487	2934945	9465	23662	310	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.421	30.413	0	1.010	137913247	23998498	46029	115072	521		
385.8610	30.421	30.413	0	1.010	264058349	46267436	86862	217155	533	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.448	30.437	1	1.001	27774092	4879289	11103	27757	439		
375.8178	30.434	30.437	0	1.000	22927987	3847362	9465	23662	406	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.115	30.109	0		174732087	27936813	33179	82947	842		
403.8529	30.115	30.109	0		136249066	21543897	26734	66835	806	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.103	29.092	1	0.966	151416013	18273411	33179	82947	551		a
403.8529	29.103	29.092	1	0.966	117528467	14556656	26734	66835	544	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.129	29.124	0	1.001	19125599	2299507	6066	15165	379		
391.8127	29.129	29.124	0	1.001	15453847	2037555	5615	14037	363	1.24(1.05-1.43)	

Report Date: 08-Oct-2020 15:16:24 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.356	29.361	0	0.975	170208915	19964536	33179	82947	602		a
403.8529	29.356	29.361	0	0.975	136913859	15343143	26734	66835	574	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.396	29.390	0	1.001	20407650	2374279	6066	15165	391		
391.8127	29.396	29.390	0	1.001	15985027	1866795	5615	14037	332	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.141	30.136	0	1.036	21471567	3472321	6066	15165	572		
391.8127	30.141	30.136	0	1.036	16899785	2709902	5615	14037	483	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.081	91488976	30514695	56885	142212	536		
419.8220	32.547	32.547	0	1.081	199452545	66318699	249618	624045	266	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	22606879	7571377	17749	44372	427		
409.7789	32.559	32.559	0	1.000	19529512	6784443	15067	37667	450	1.16(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.653	33.646	0	1.117	86165473	31164856	56885	142212	548		
419.8220	33.653	33.646	0	1.117	194729526	66739487	249618	624045	267	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	19352753	7035219	17749	44372	396		
409.7789	33.653	33.653	0	1.000	17533690	6607058	15067	37667	439	1.10(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.109	142458182	54575140	95258	238145	573		
437.8140	33.398	33.398	0	1.109	132763142	52251936	109919	274797	475	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	15460528	6199666	20265	50662	306		
425.7737	33.410	33.410	0	1.000	15430803	5925017	24186	60465	245	1.00(0.88-1.20)	
13C-OCDD											
469.7779	35.570	35.565	0	1.181	166507477	53252226	21534	53835	2473		
471.7750	35.558	35.565	0	1.181	181297732	58554538	32328	80820	1811	0.92(0.76-1.02)	
OCDF											
441.7428	35.642	35.640	0	1.002	27294262	8563122	4597	11492	1863		
443.7399	35.630	35.640	-1	1.002	30394149	10143561	10349	25872	980	0.90(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	21984863	7251358	5531	13827	1311		
459.7348	35.570	35.570	0	1.000	23987547	8038099	6603	16507	1217	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Chrom Revision: 2.3 06-Oct-2020 14:45:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d				
Injection Date:	05-Oct-2020 18:22:41	Instrument ID:	3D5		
Lims ID:	IC 3				
Client ID:	L3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 15.94

Processing Integration Results

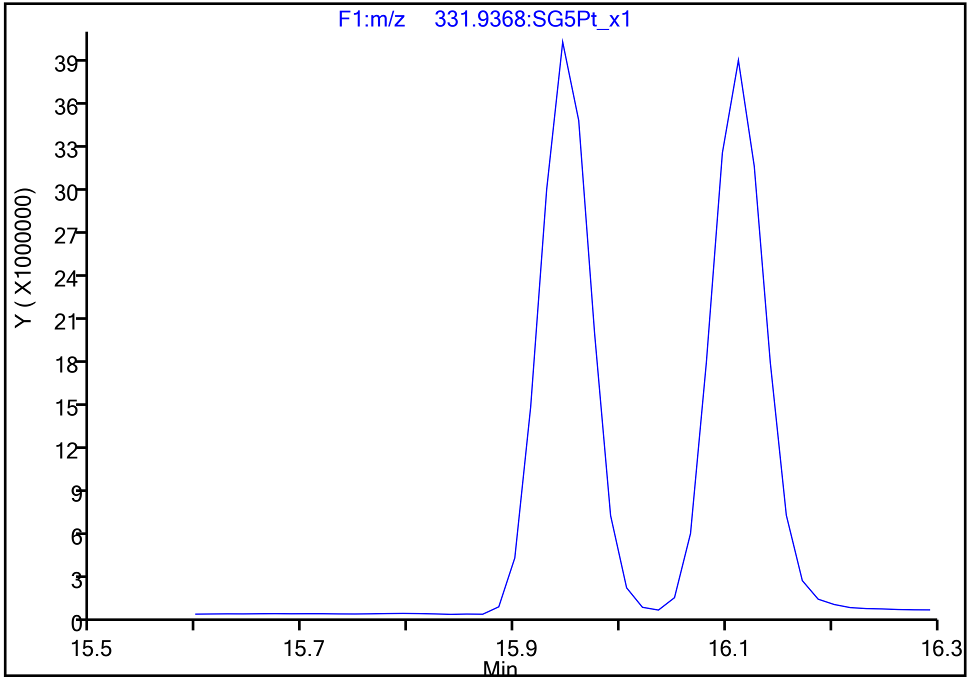

RT: 15.95
Area: 138080958
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

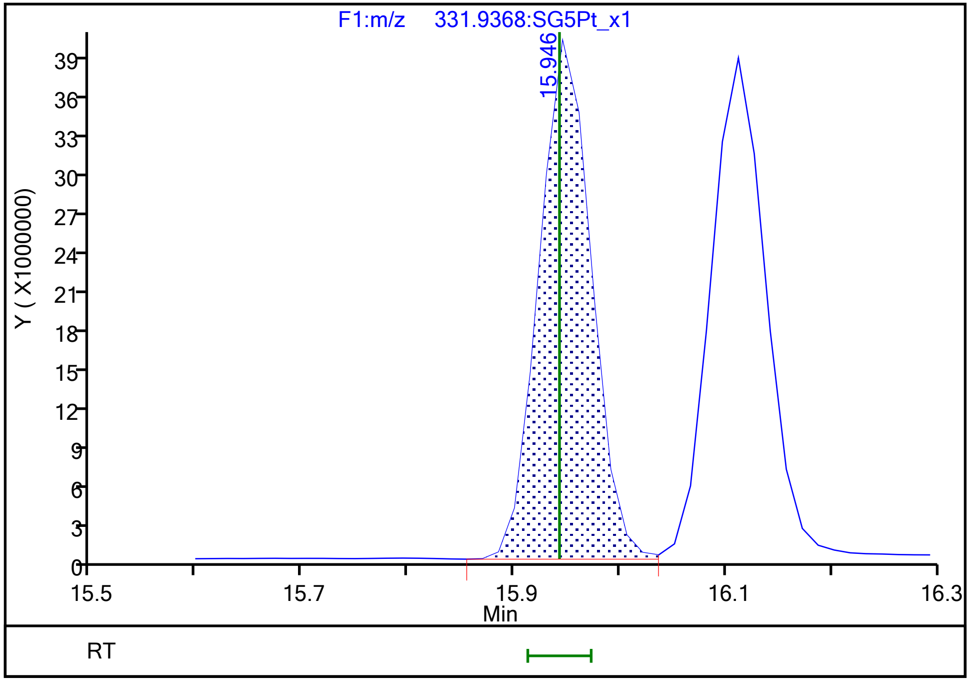

Reviewer: arghestanis, 08-Oct-2020 14:27:58
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:24 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d
Injection Date: 05-Oct-2020 18:22:41 Instrument ID: 3D5
Lims ID: IC 3
Client ID: L3
Operator ID: SMA ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F3:HRSIR

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.09

Processing Integration Results

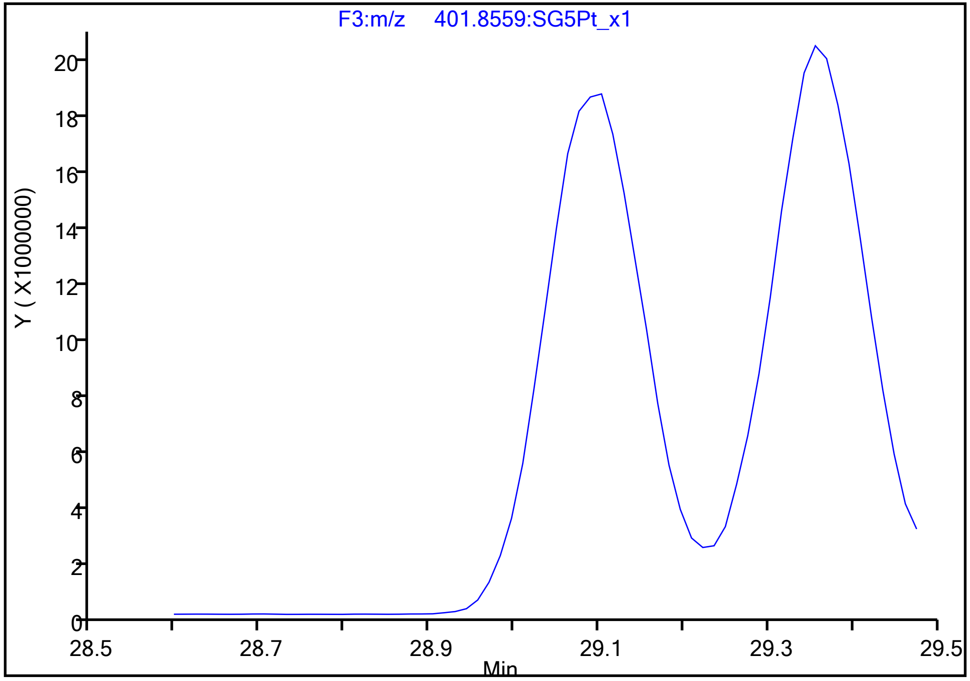

RT: 29.10
Area: 151416013
Amount: 99.861736
Amount Units: pg/ul

Manual Integration Results

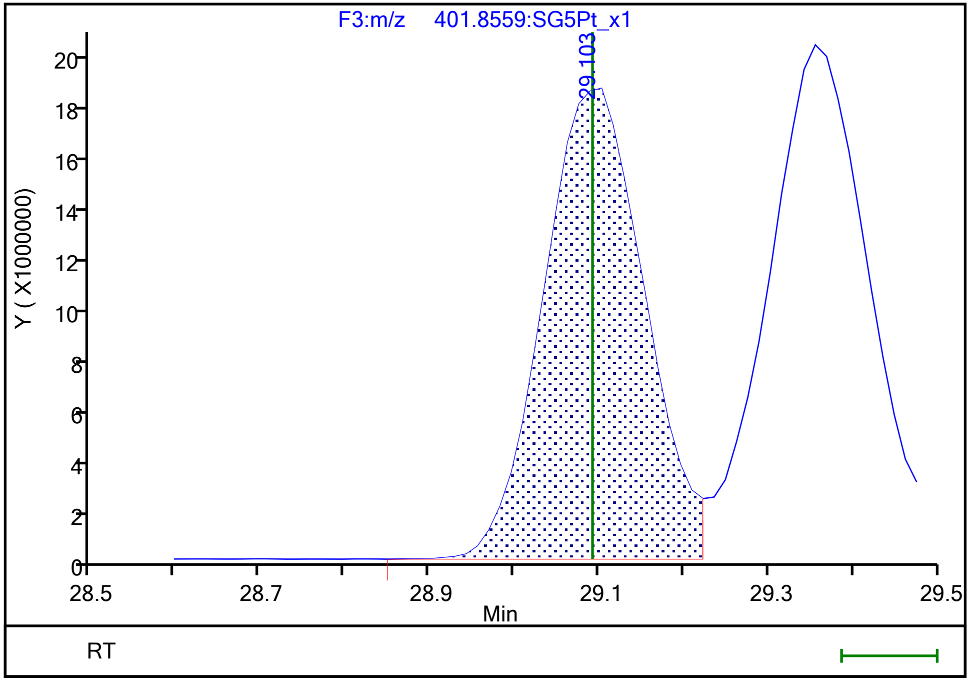

Reviewer: arghestanis, 08-Oct-2020 14:28:10

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Chrom Revision: 2.3 06-Oct-2020 14:45:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d				
Injection Date:	05-Oct-2020 18:22:41	Instrument ID:	3D5		
Lims ID:	IC 3				
Client ID:	L3				
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.11
Area:	175192013
Amount:	100.0147
Amount Units:	pg/ul

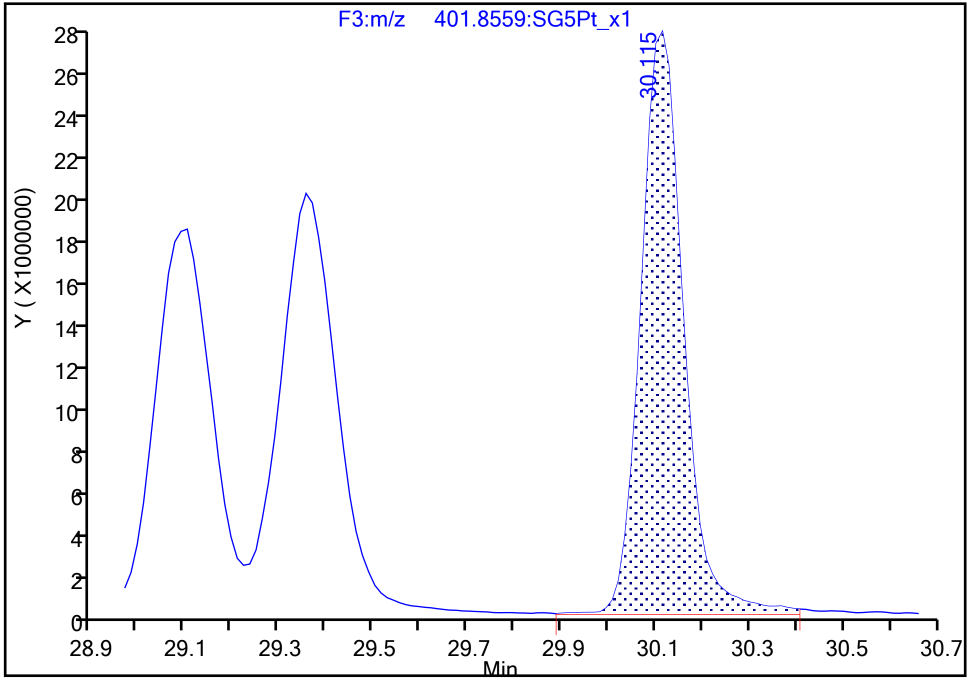

Manual Integration Results

RT:	29.36
Area:	170208915
Amount:	100.4983
Amount Units:	pg/ul

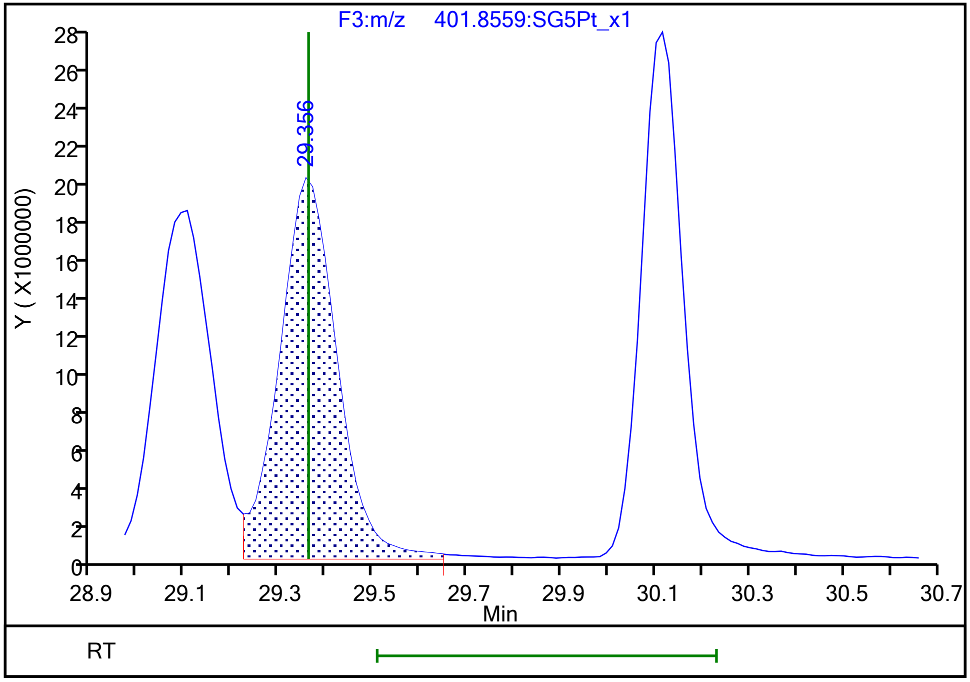

Reviewer: arghestanis, 08-Oct-2020 14:32:23

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:24 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d		
Injection Date:	05-Oct-2020 18:22:41	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
Worklist#:	419031	Sample Line#:	4
Column Type:		Column Dia:	

TCDF

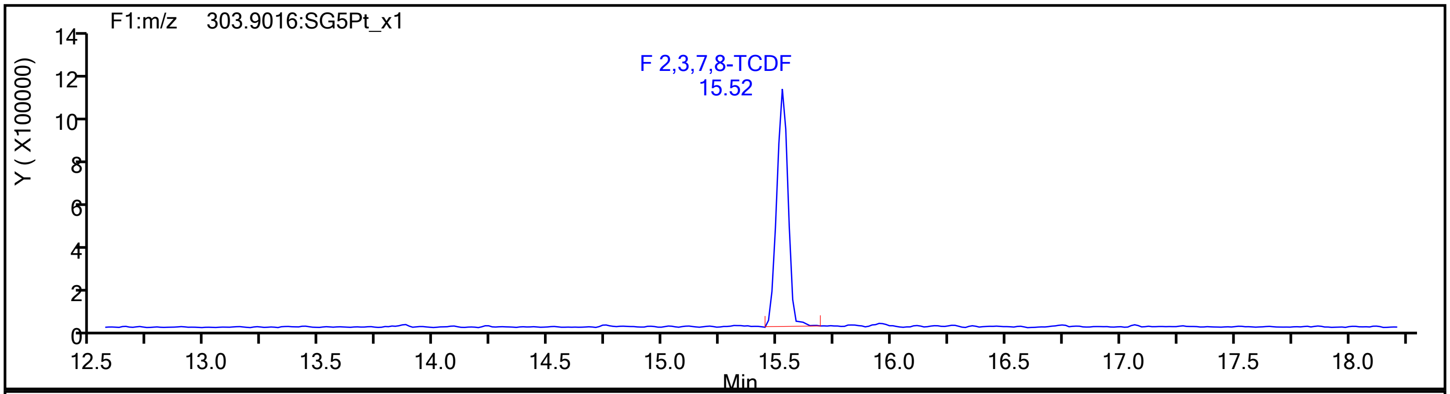

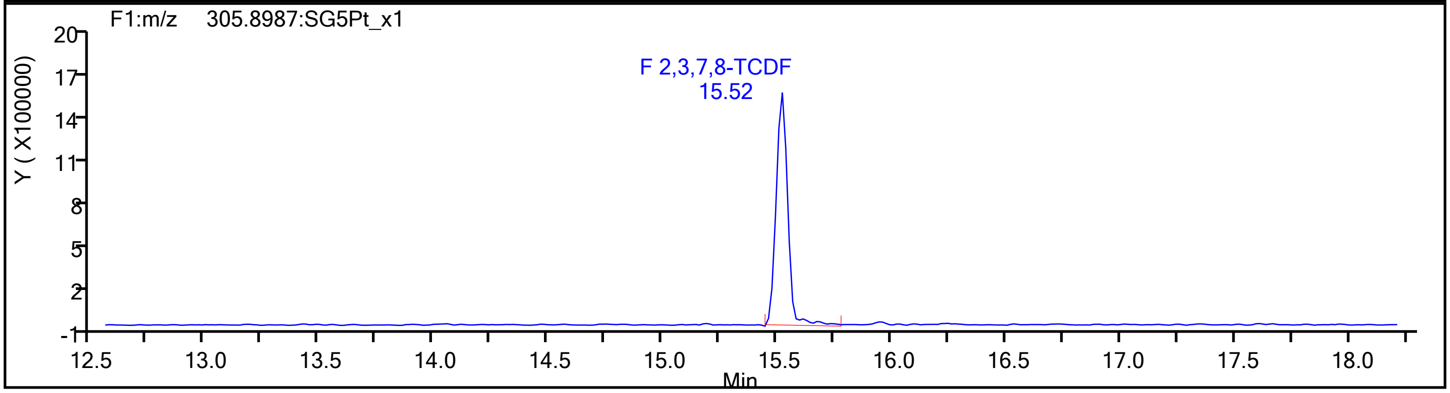

TCDF Standards

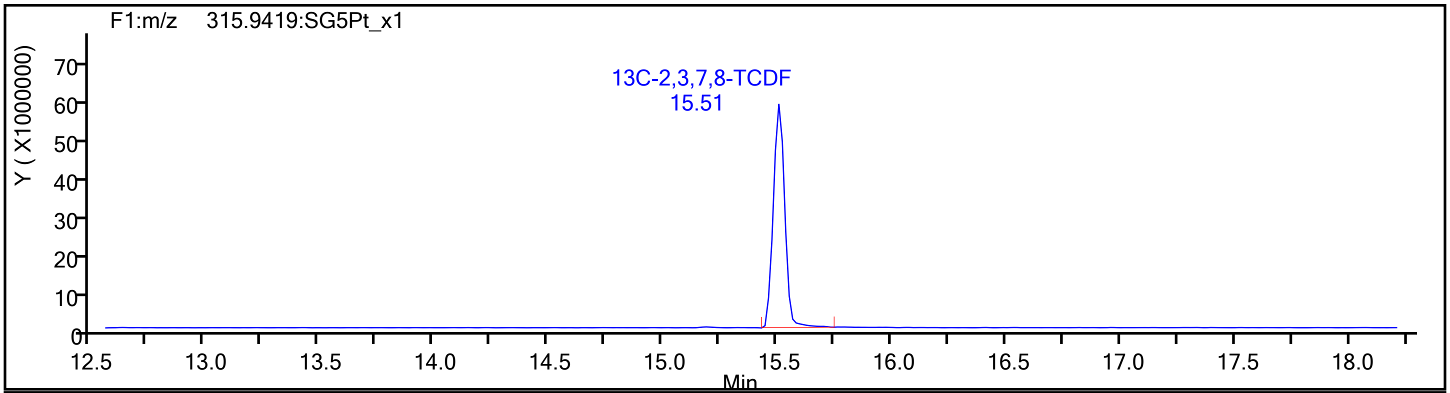

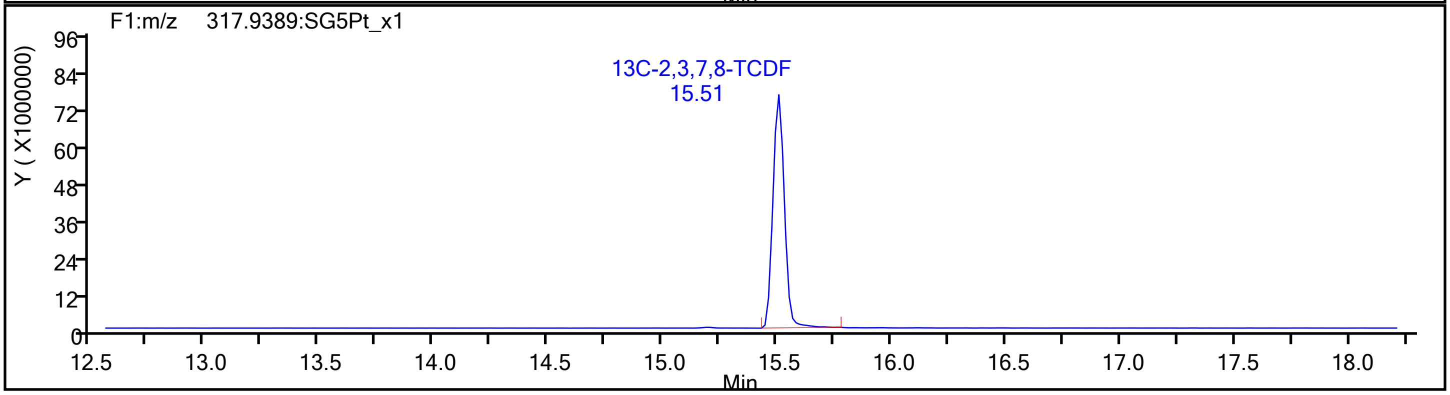

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d		
Injection Date:	05-Oct-2020 18:22:41	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
Worklist#:	419031	Sample Line#:	4
Column Type:		Column Dia:	

TCDF

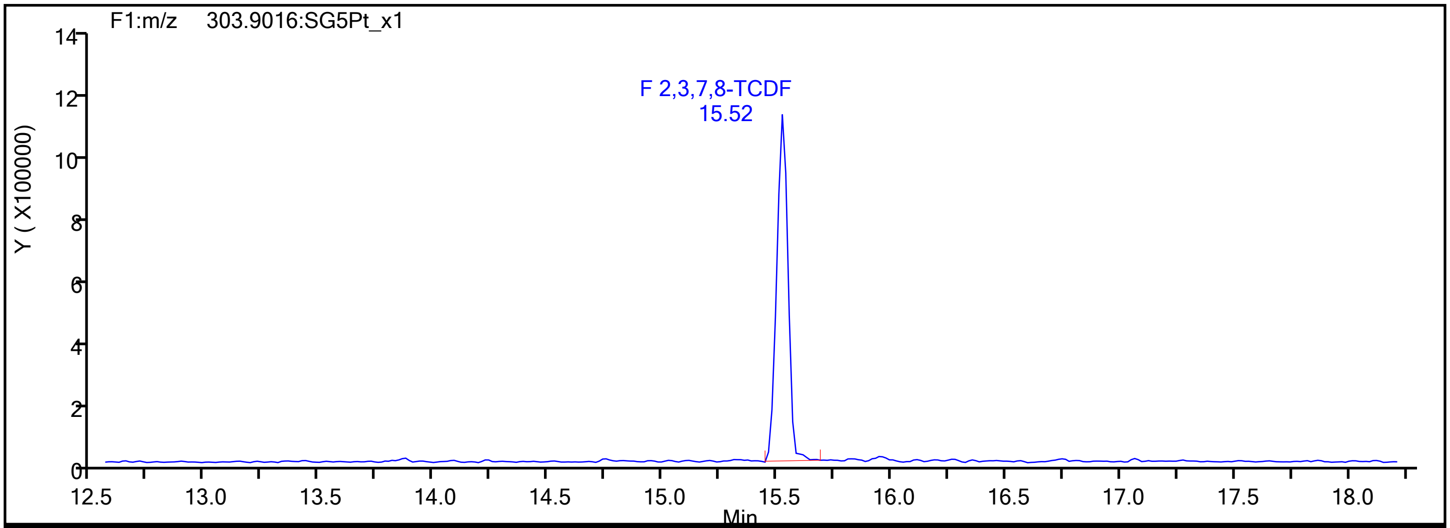

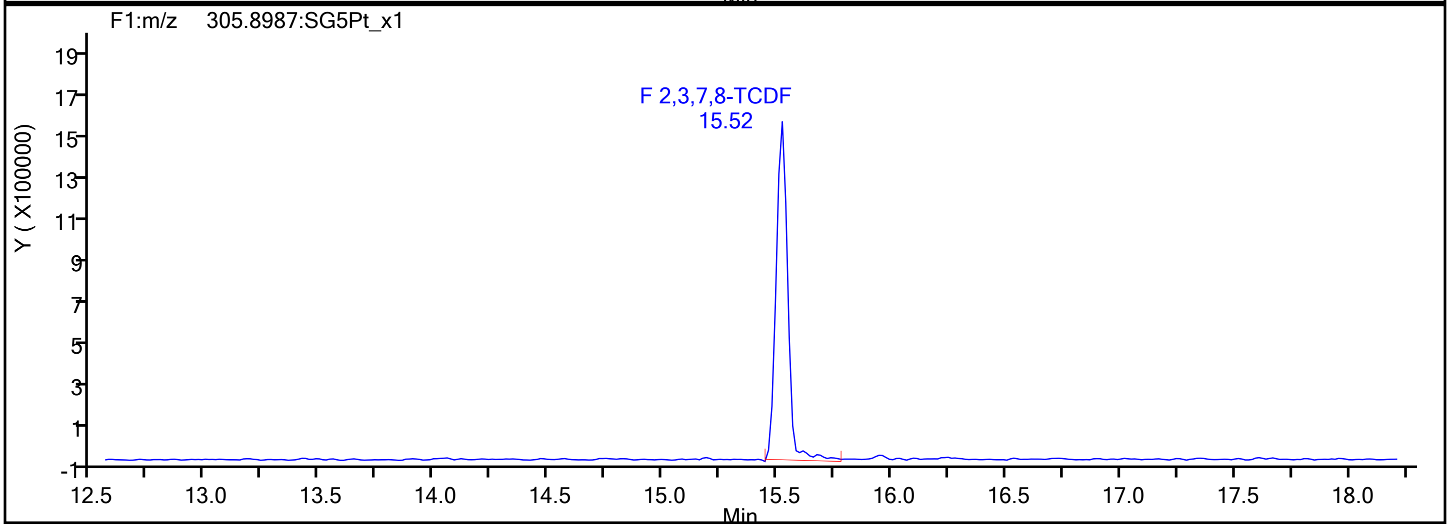

TCDF Interference Mass

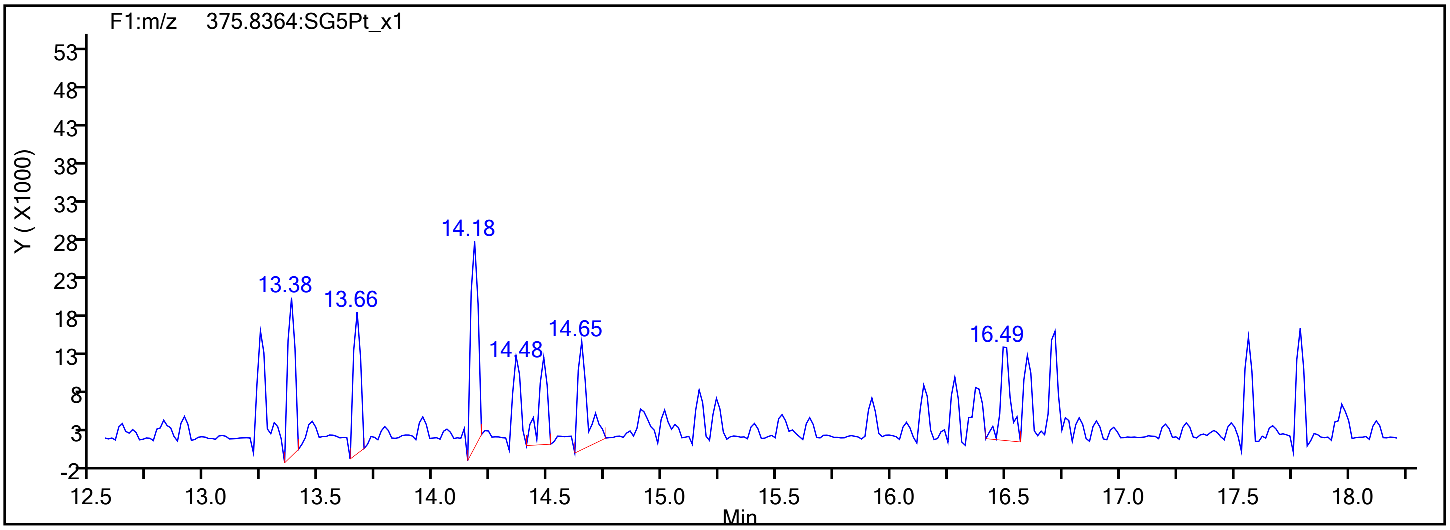

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d

Injection Date: 05-Oct-2020 18:22:41 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L3

Worklist#: 419031 Sample Line#: 4

Column Type: Column Dia:

TCDD

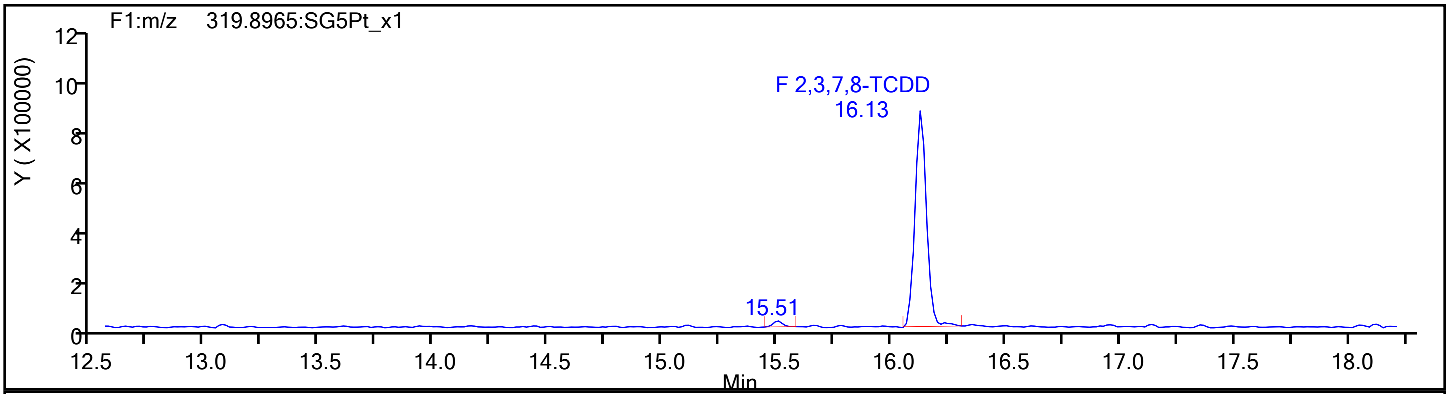

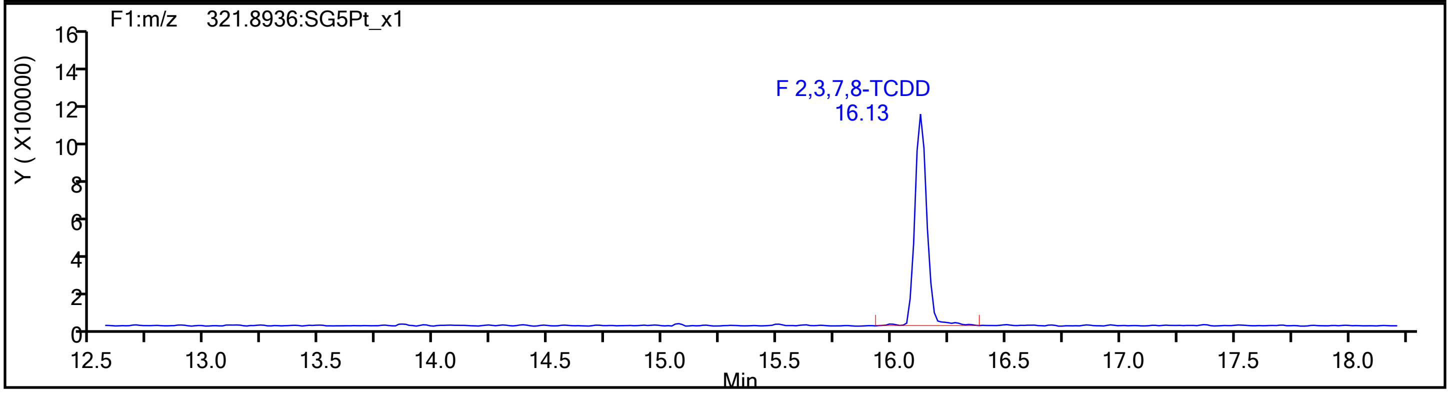

TCDD Standards

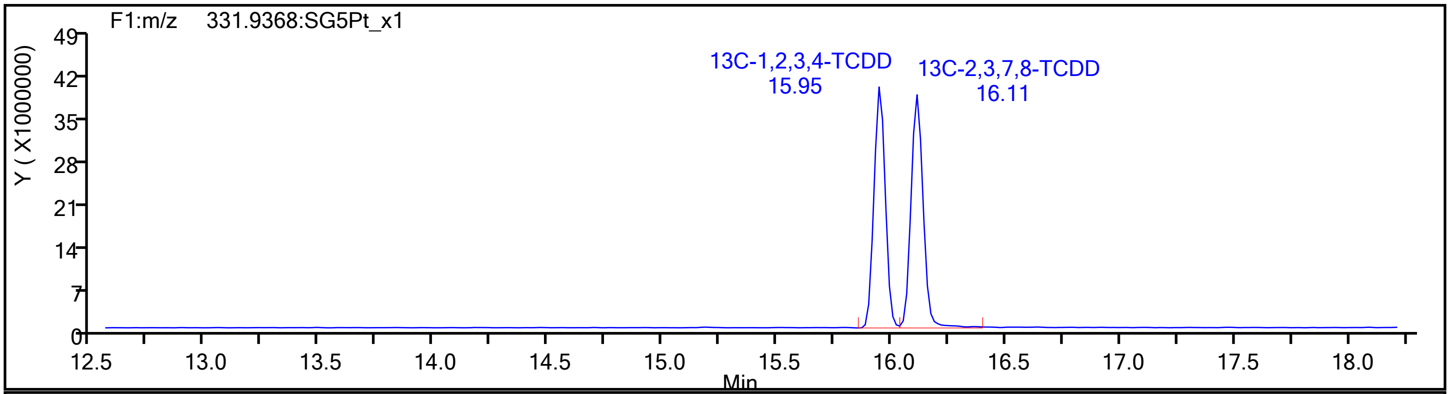

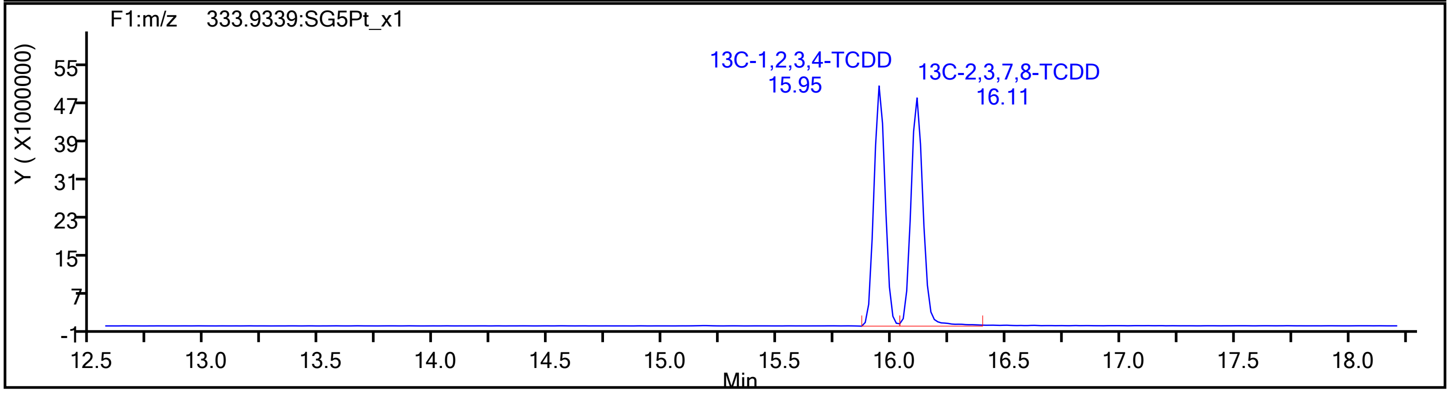

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d
Injection Date: 05-Oct-2020 18:22:41
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L3
Worklist#: 419031
Sample Line#: 4
Column Type:
Column Dia:

37Cl4-TCDD

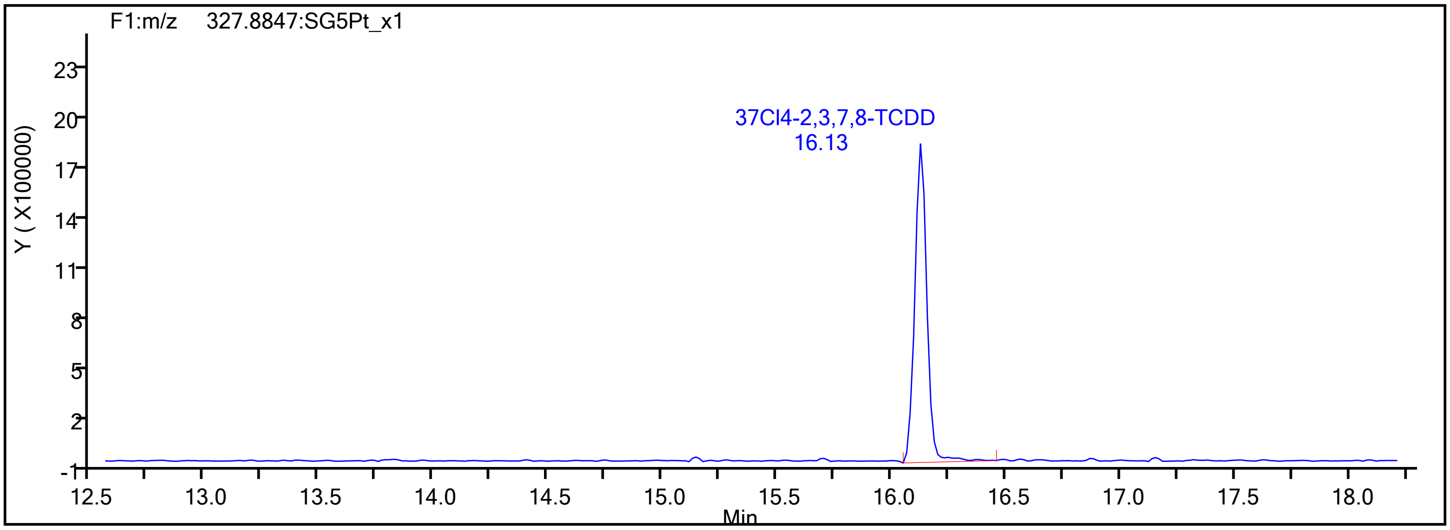

37Cl4-TCDD Standards

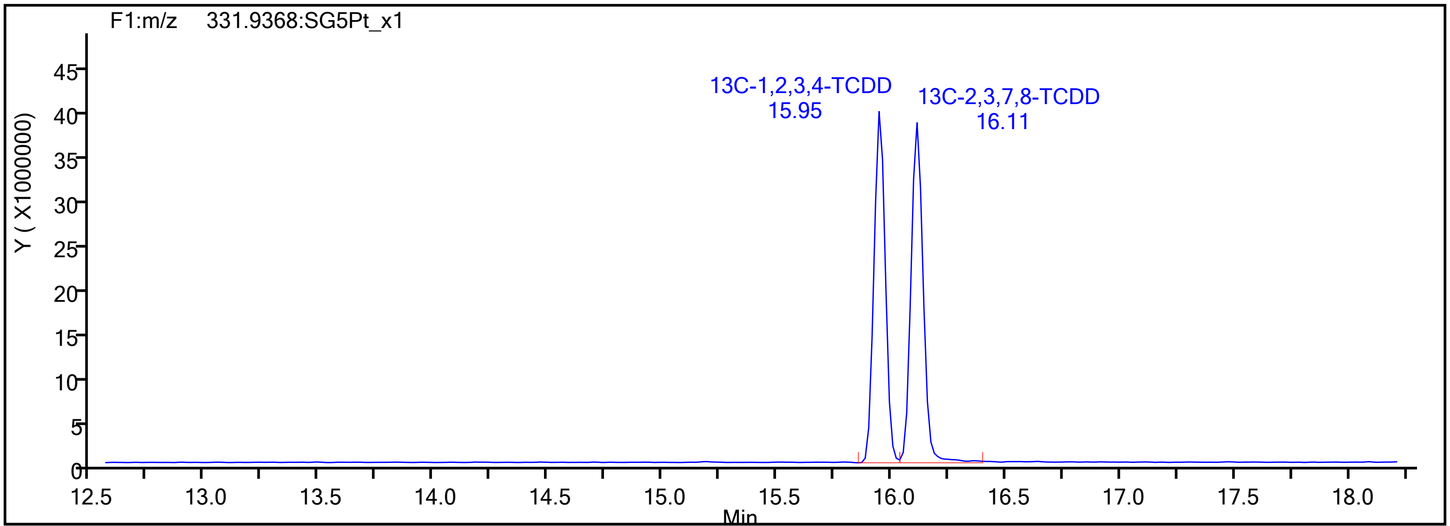

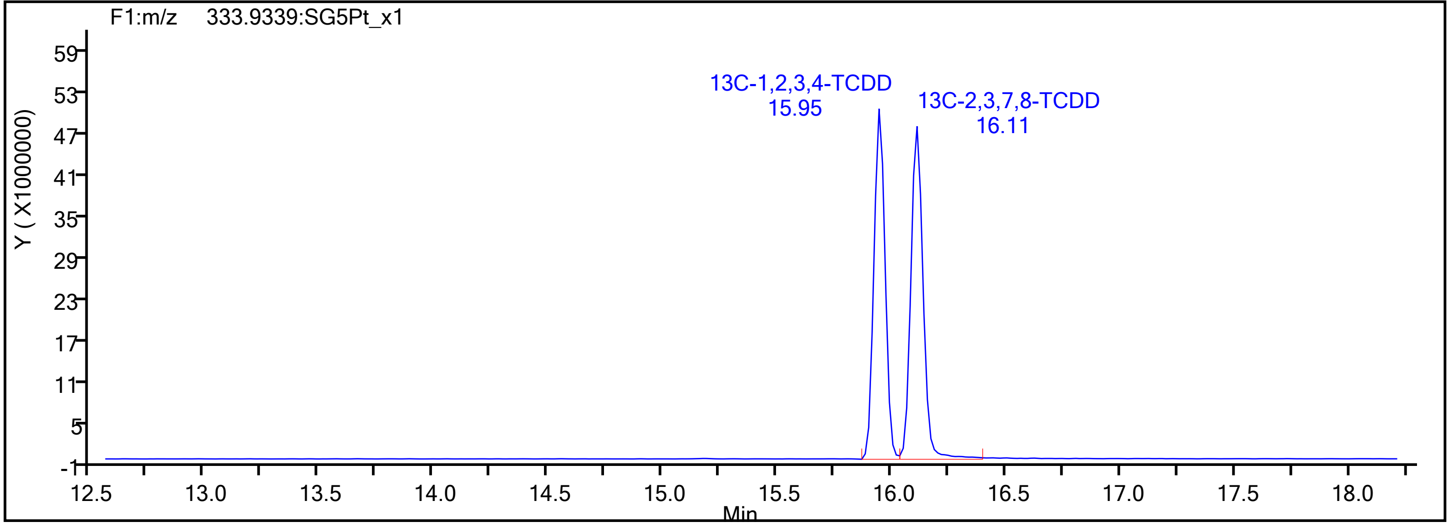

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d
Injection Date: 05-Oct-2020 18:22:41
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L3
Worklist#: 419031
Sample Line#: 4
Column Type:
Column Dia:

PeCDF

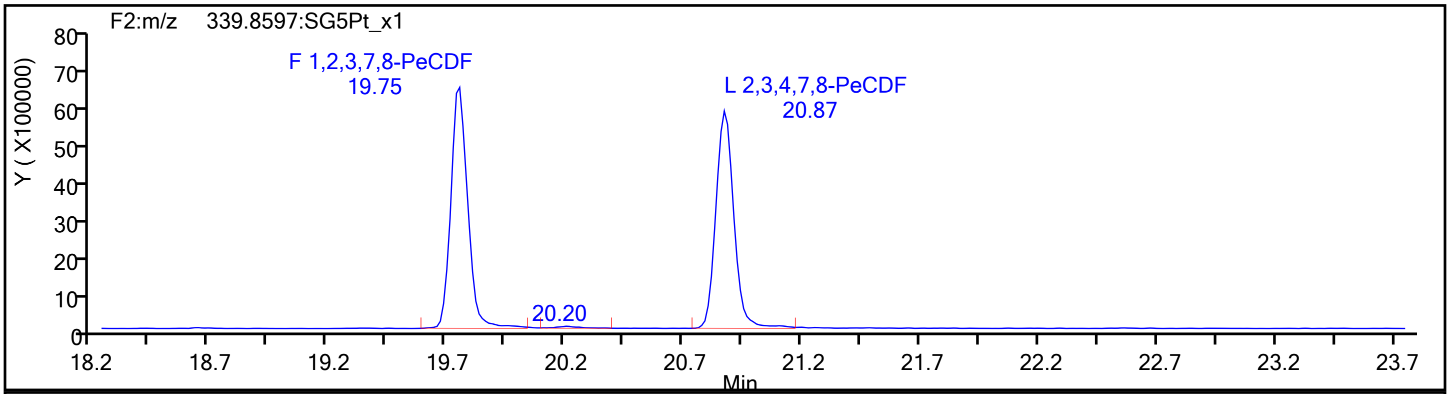

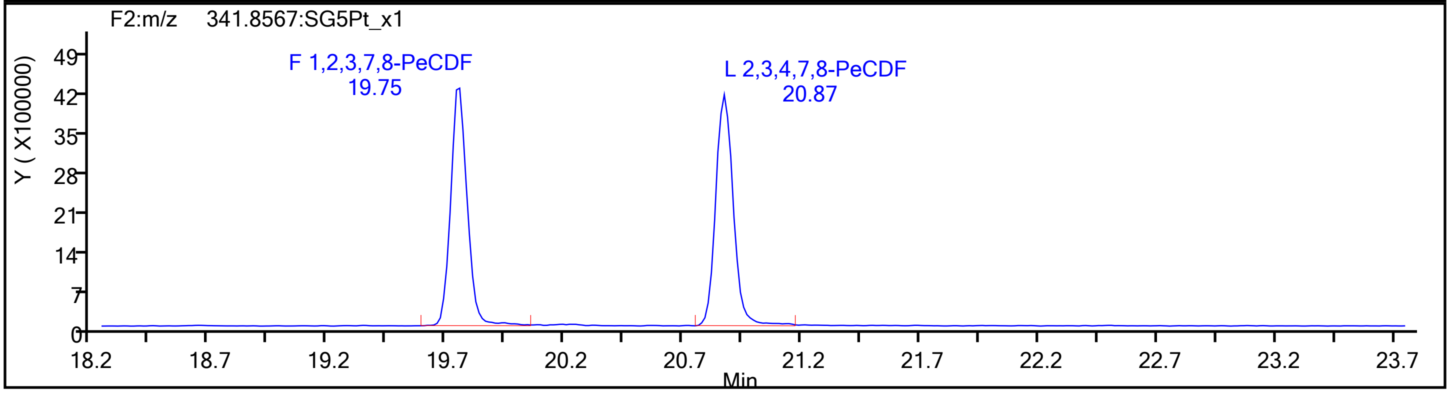

PeCDF Standards

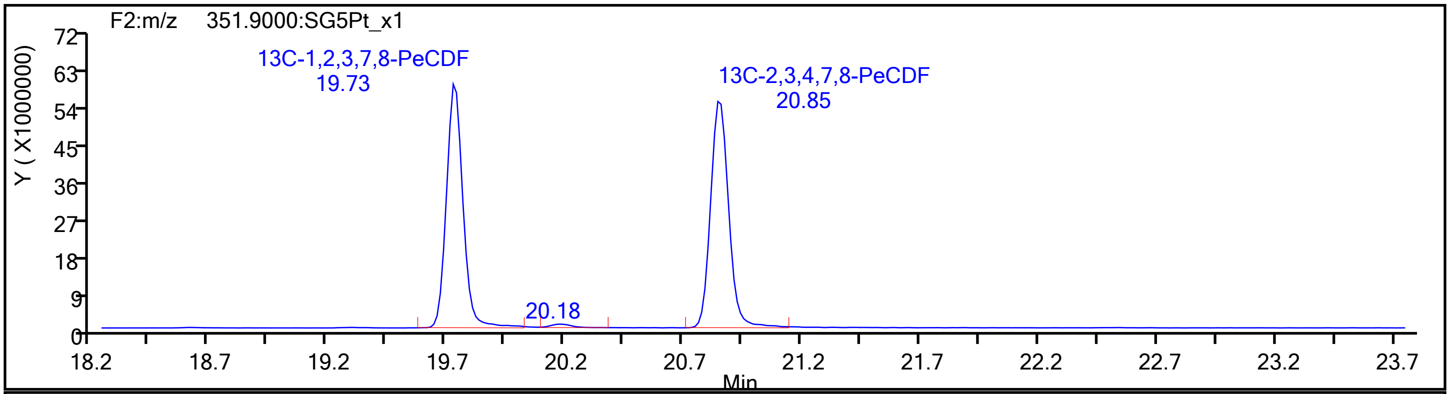

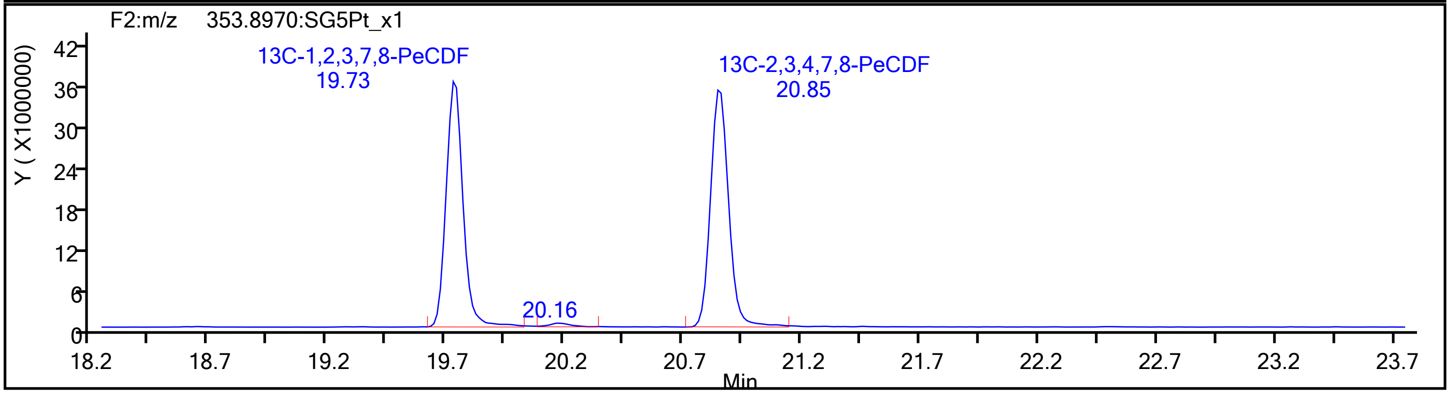

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d		
Injection Date:	05-Oct-2020 18:22:41	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
Worklist#:	419031	Sample Line#:	4
Column Type:		Column Dia:	

PeCDF

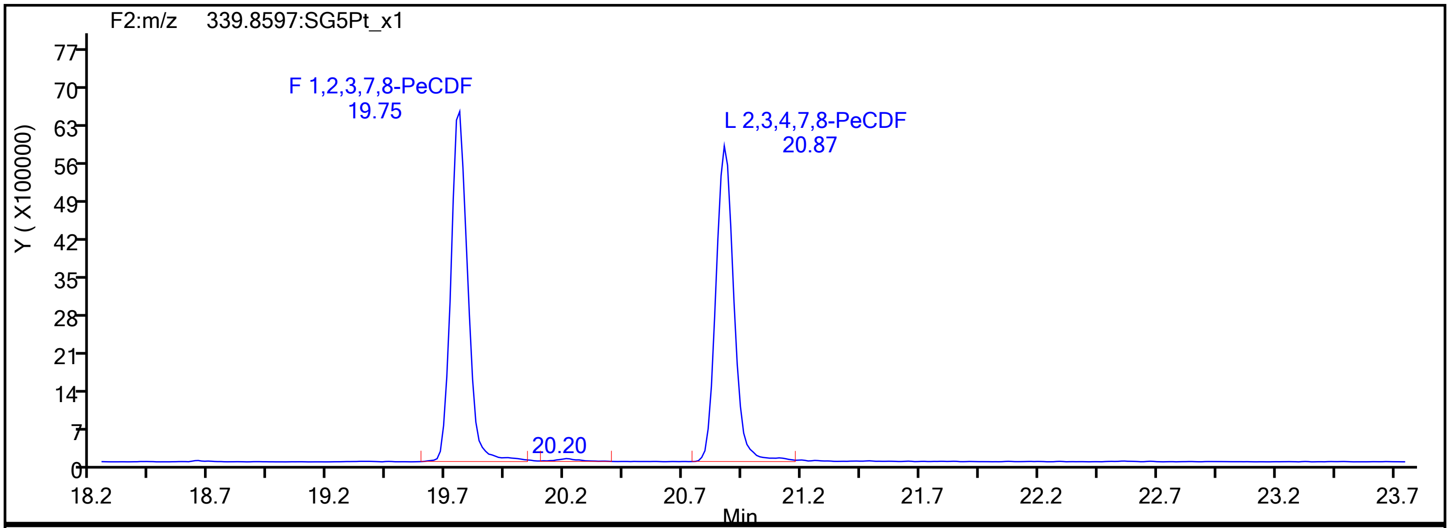

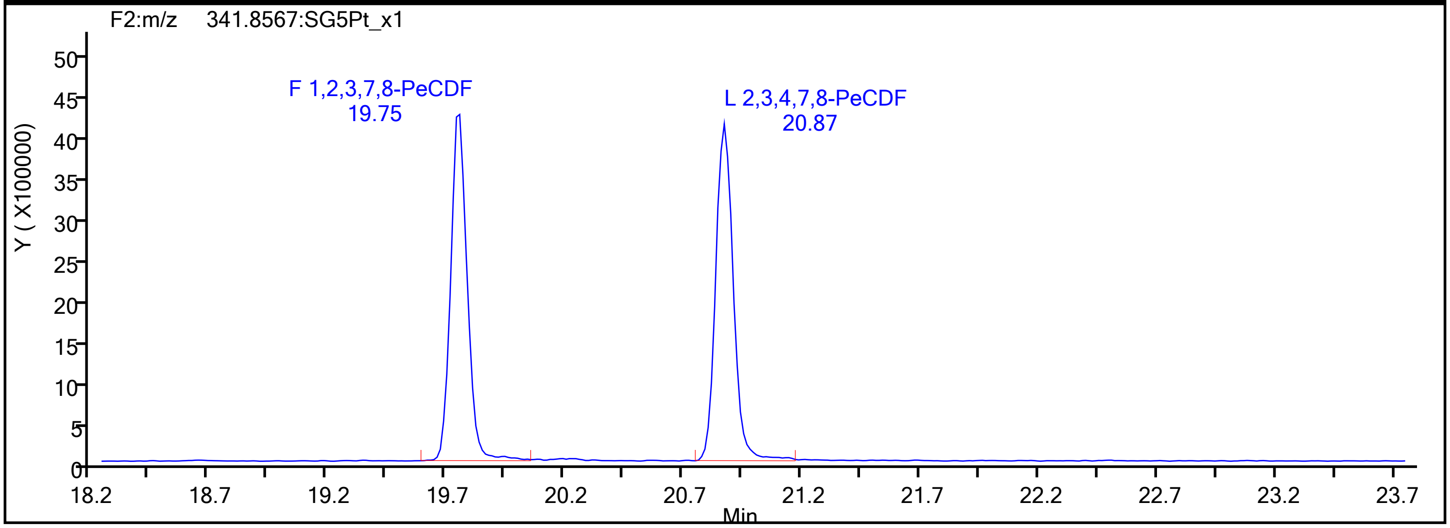

PeCDF Interference Mass

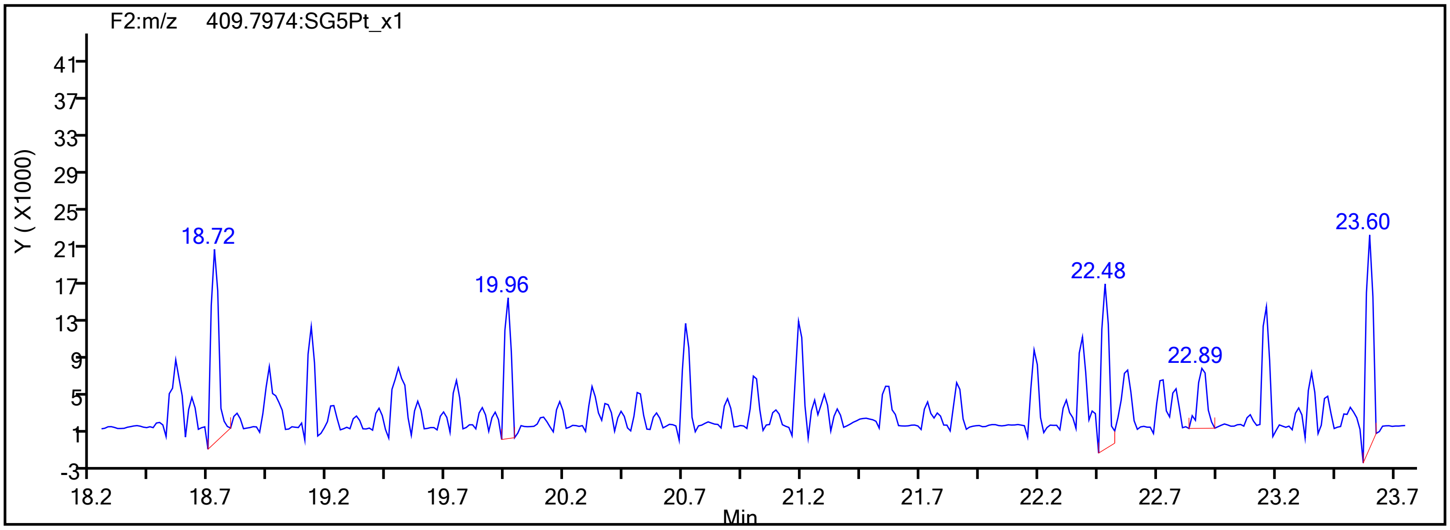

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d
Injection Date: 05-Oct-2020 18:22:41
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L3
Worklist#: 419031
Sample Line#: 4
Column Type:
Column Dia:

PeCDD

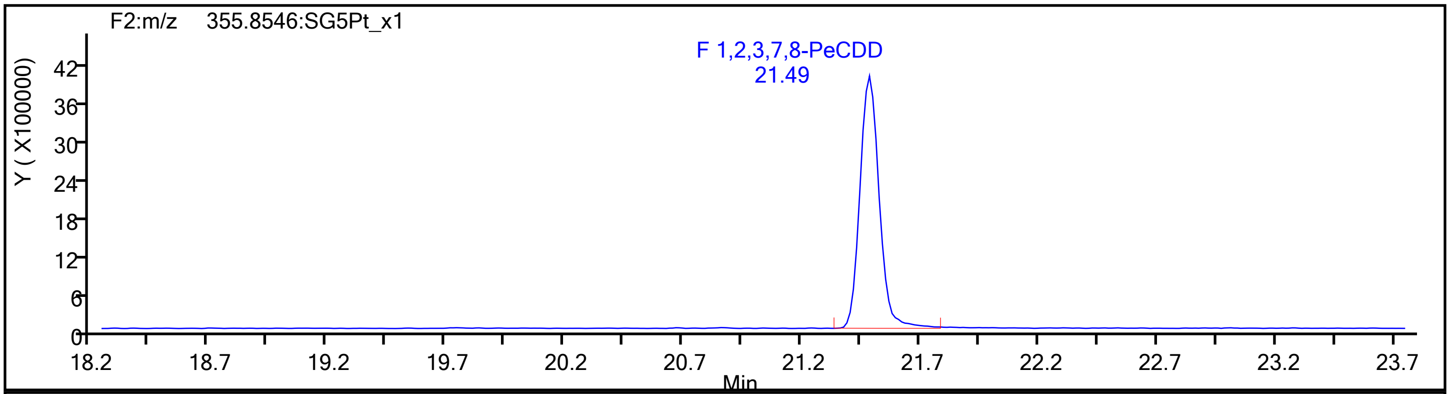

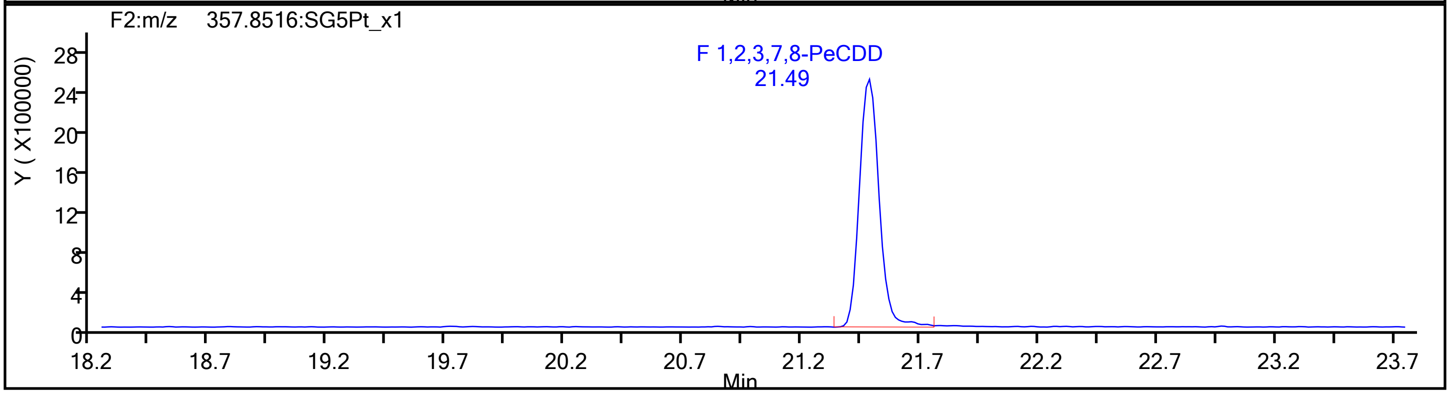

PeCDD Standards

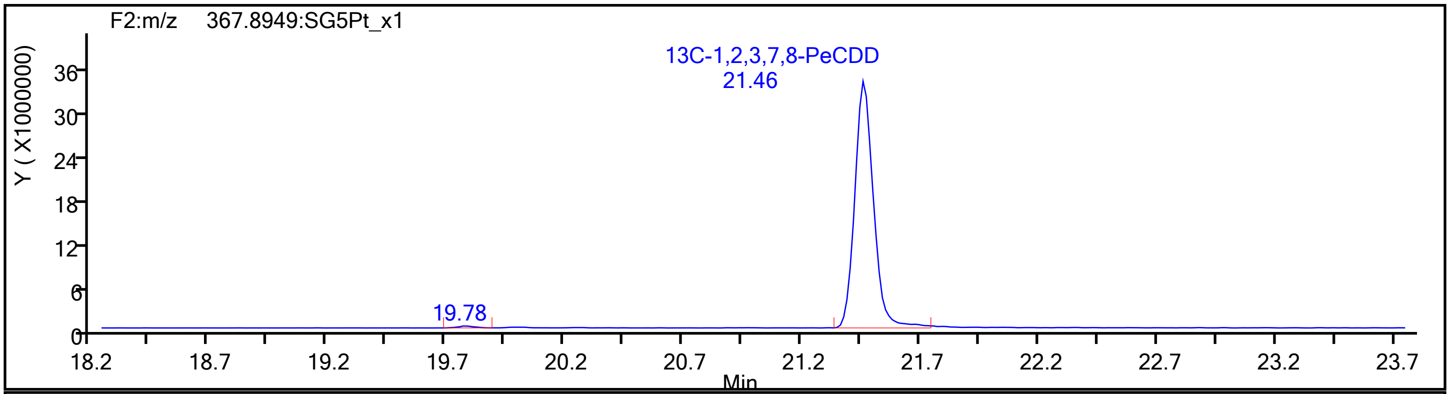

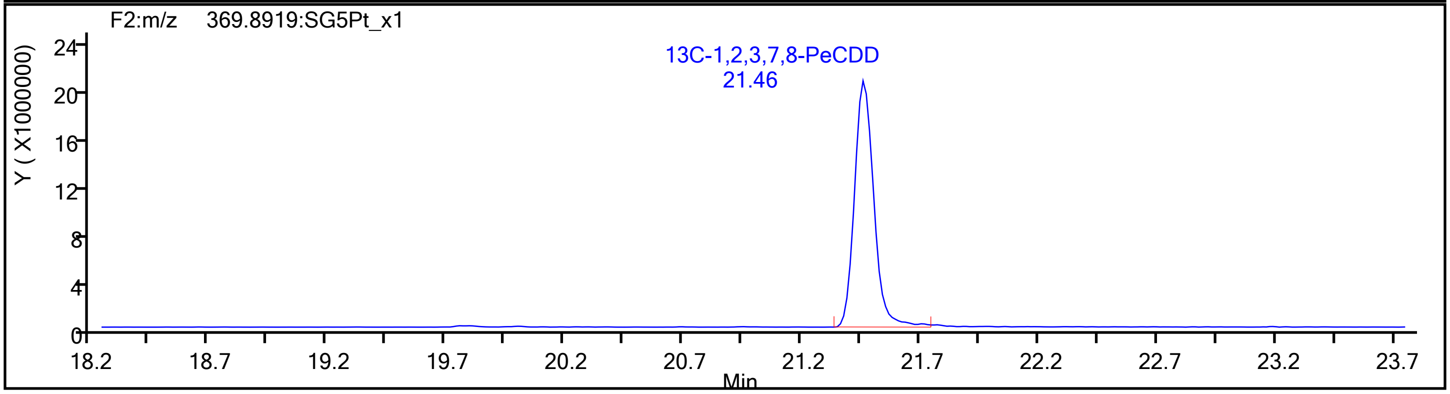

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d

Injection Date: 05-Oct-2020 18:22:41 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L3

Worklist#: 419031 Sample Line#: 4

Column Type: Column Dia:

HxCDF

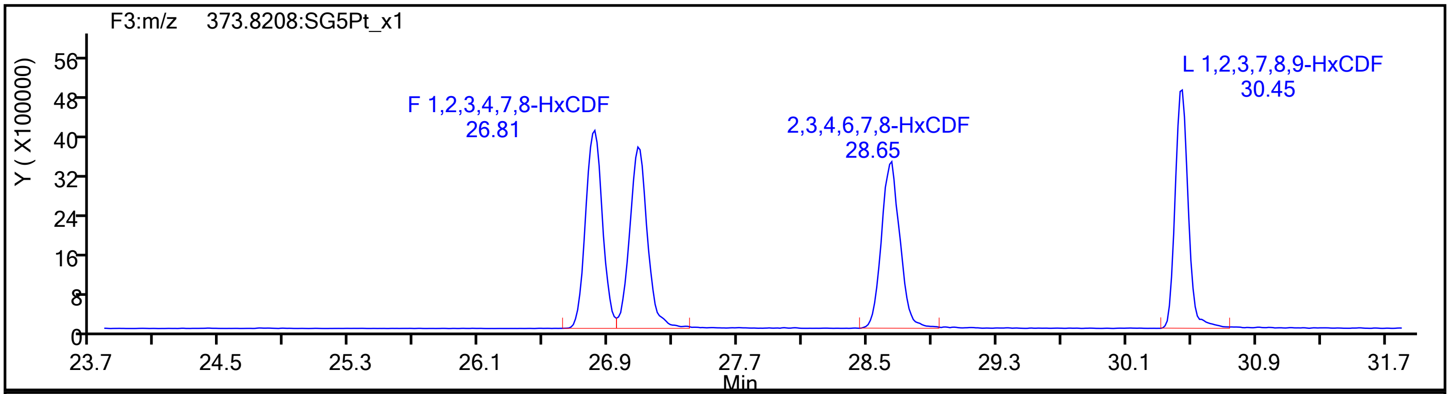

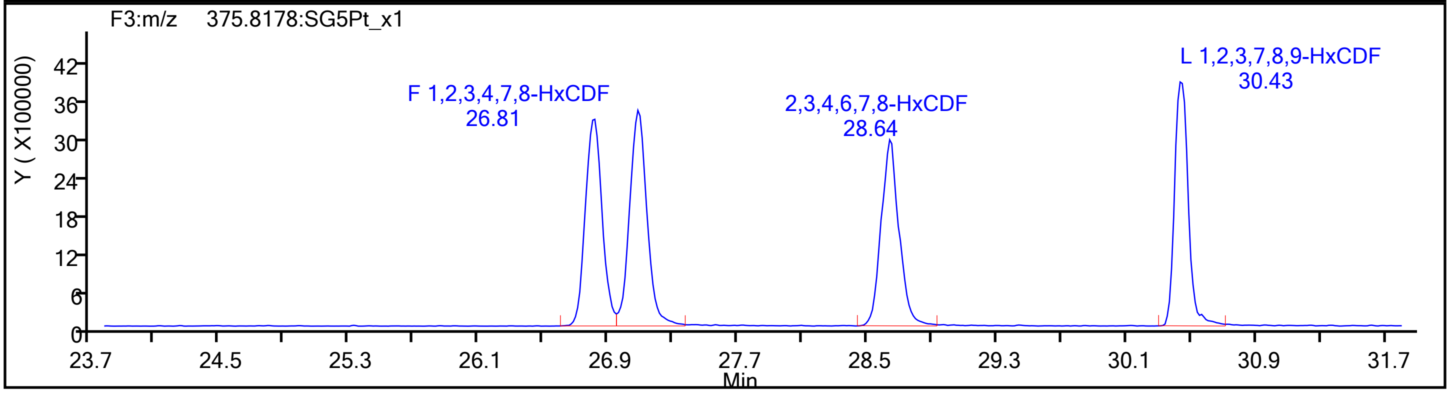

HxCDF Standards

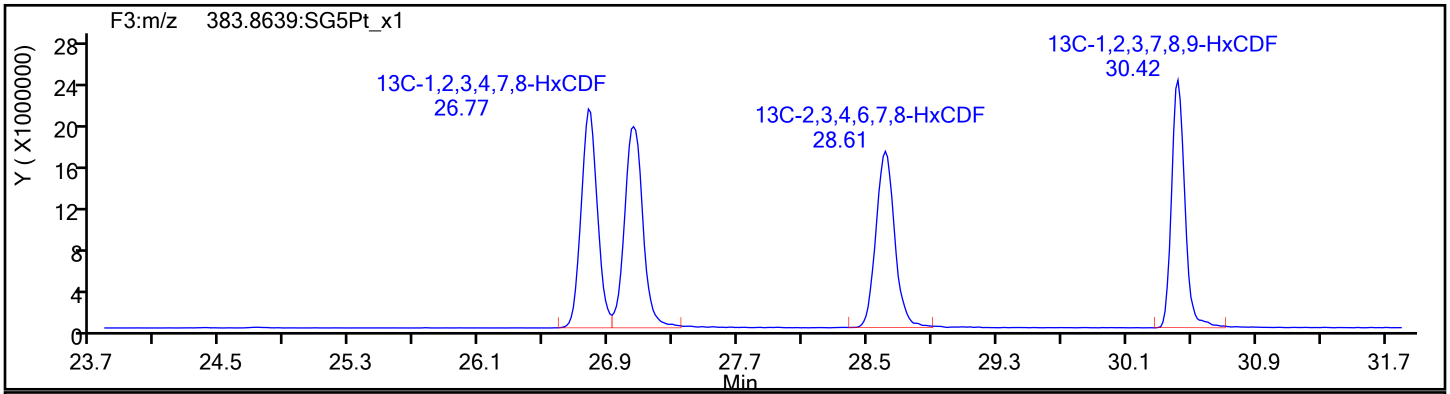

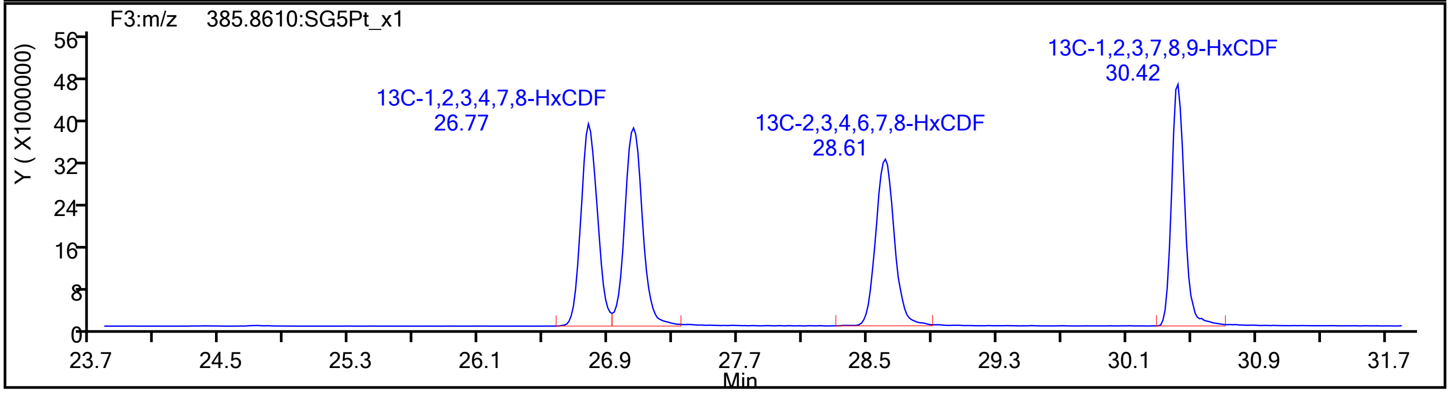

Report Date: 08-Oct-2020 15:16:25
Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 18:22:41
Injection Vol: 2.0 ul
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Method: Dioxin_3D5
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Client ID: L3
Worklist#: 419031
Sample Line#: 4
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Column Dia:

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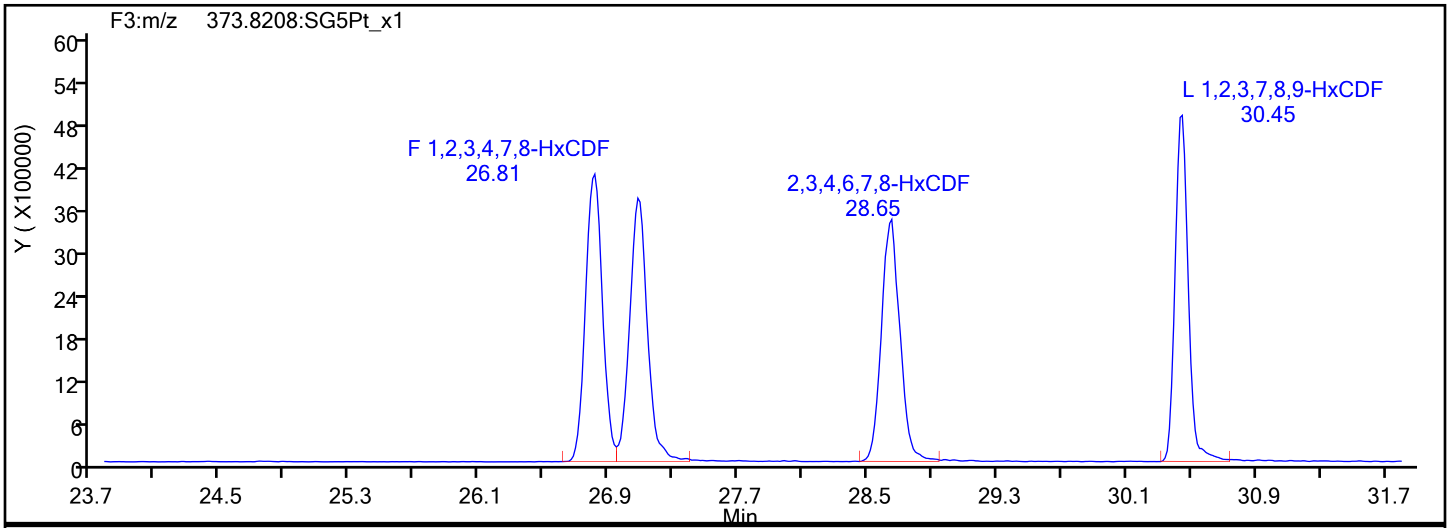

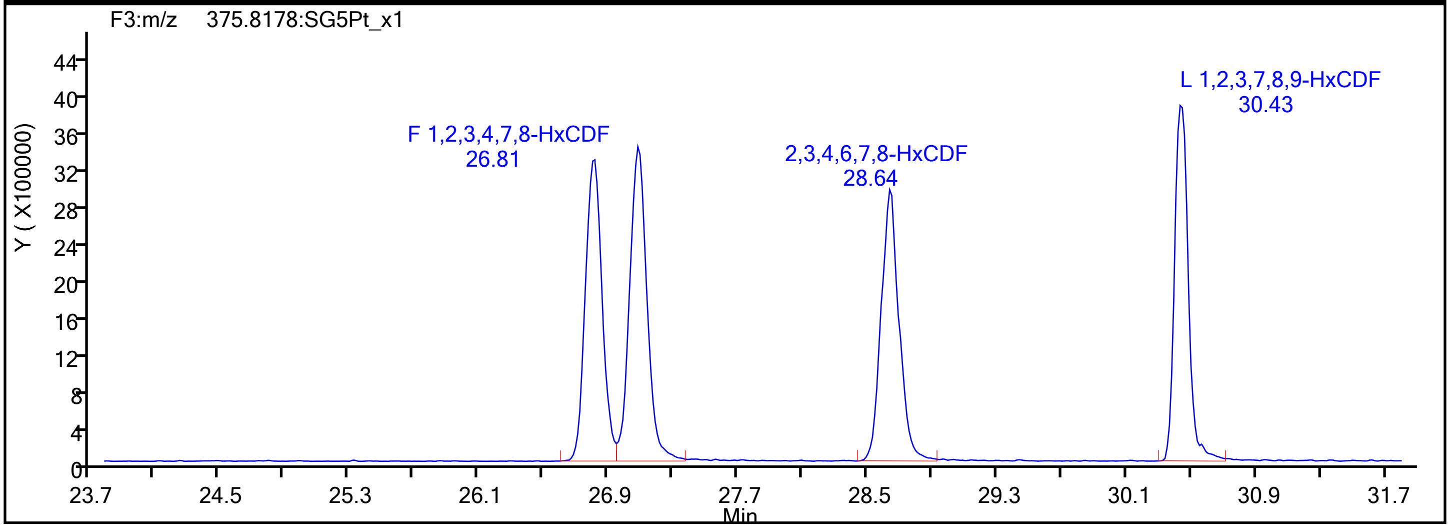

HxCDF Interference Mass

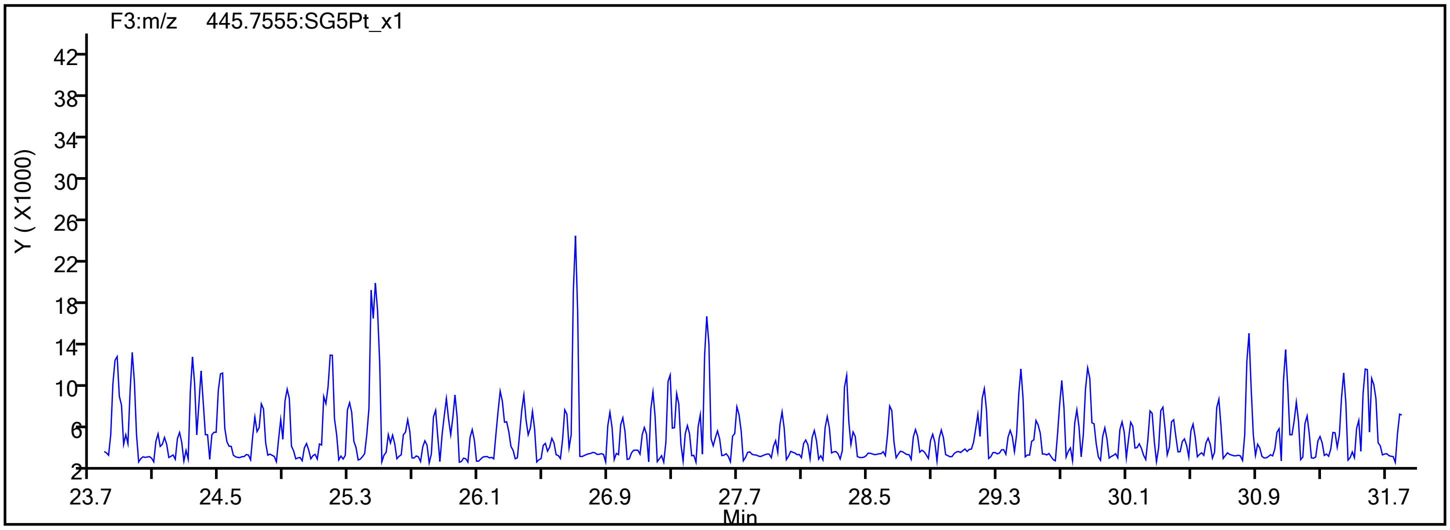

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d		
Injection Date:	05-Oct-2020 18:22:41	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
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Column Type:		Column Dia:	

HxCDD

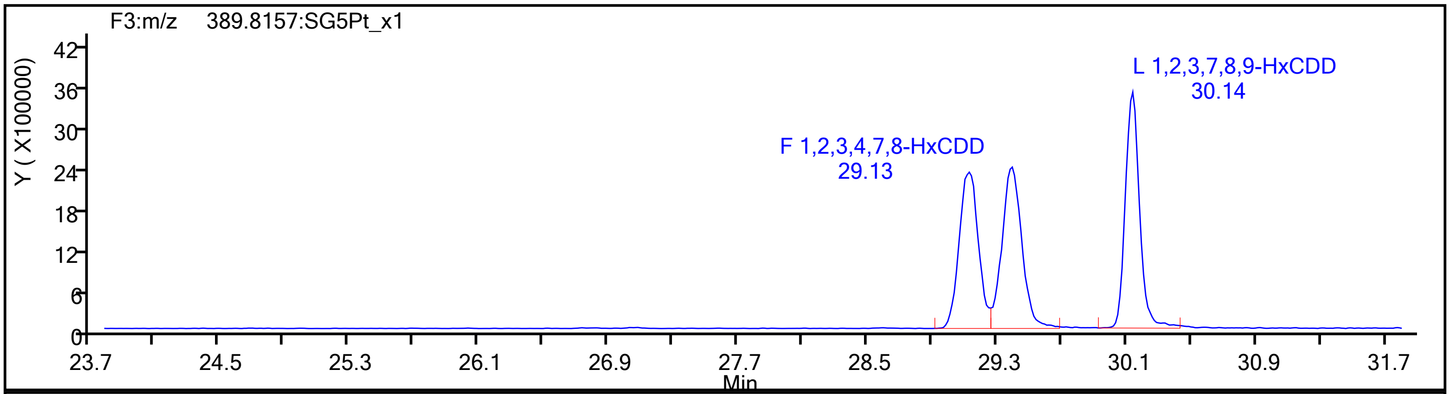

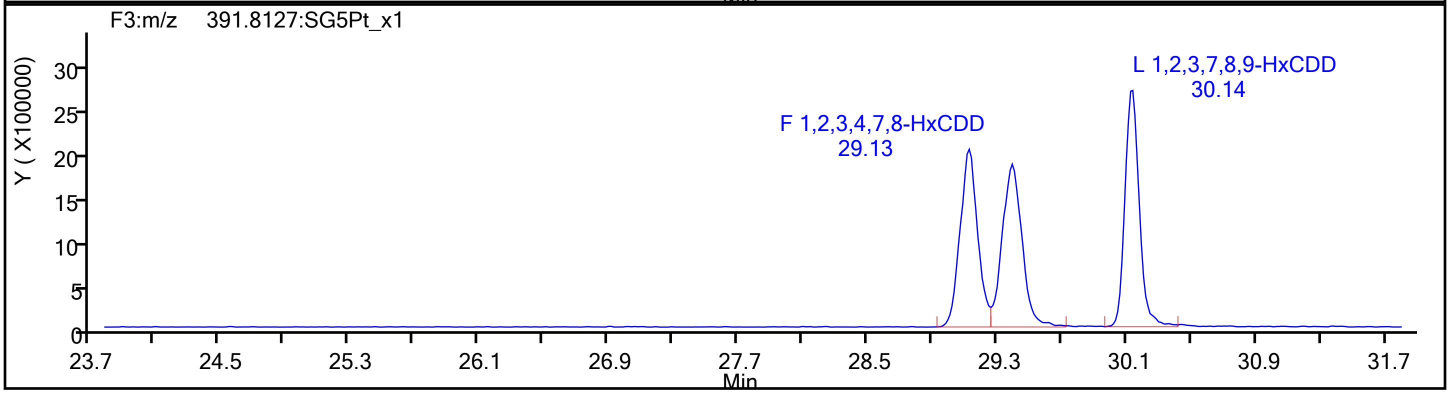

HxCDD Standards

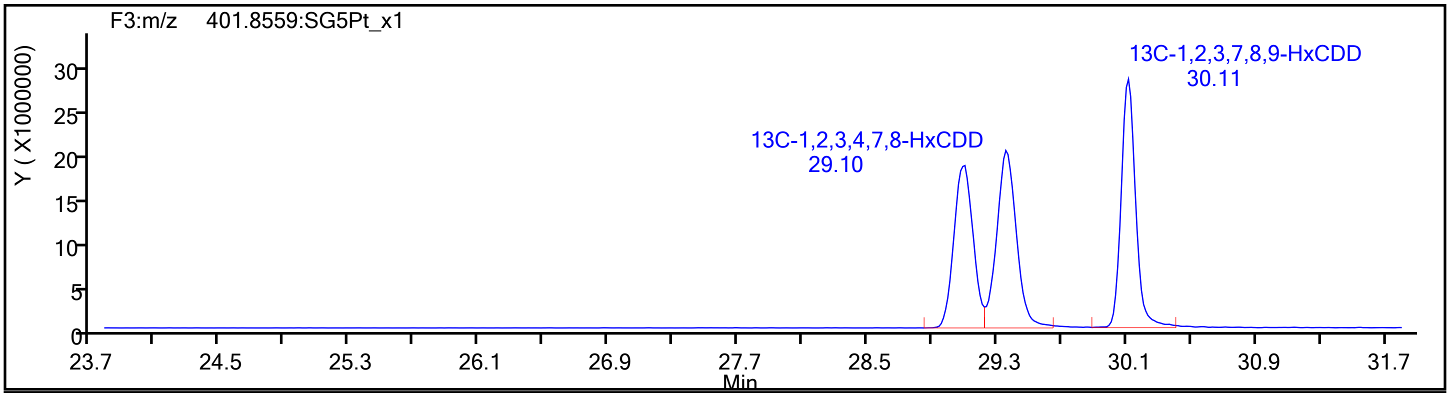

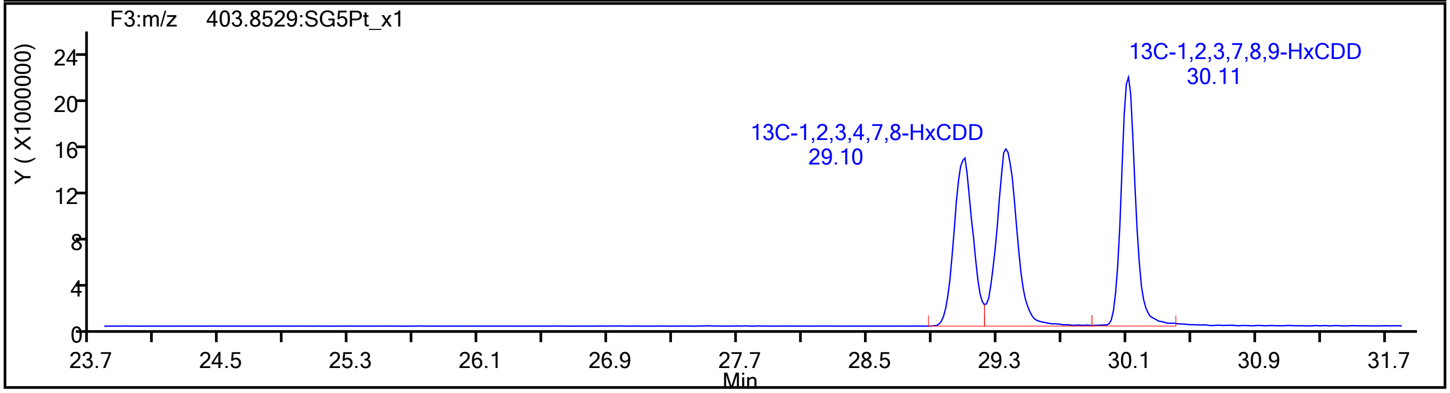

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d
Injection Date: 05-Oct-2020 18:22:41
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
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Client ID: L3
Worklist#: 419031
Sample Line#: 4
Column Type:
Column Dia:

HpCDF

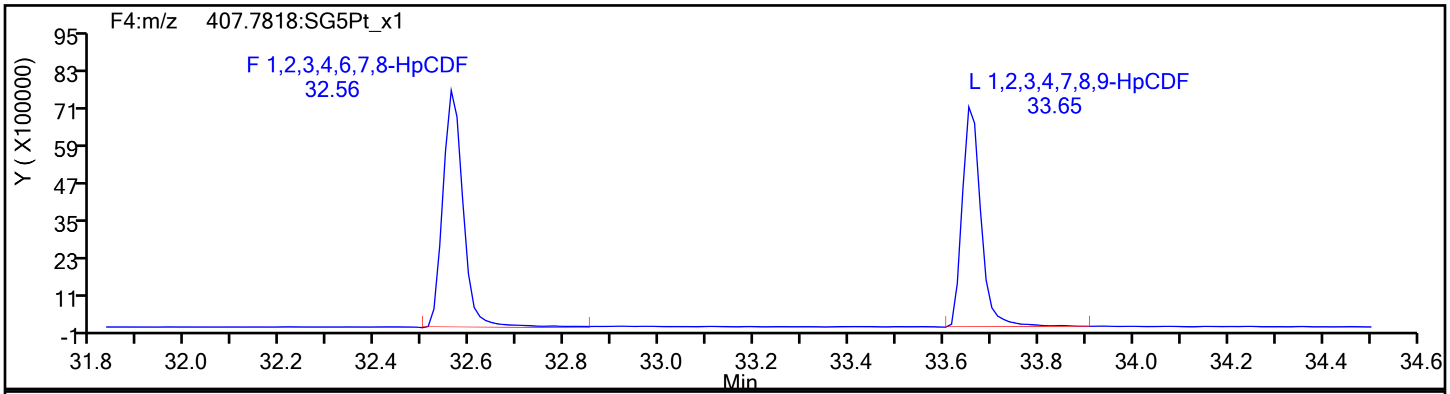

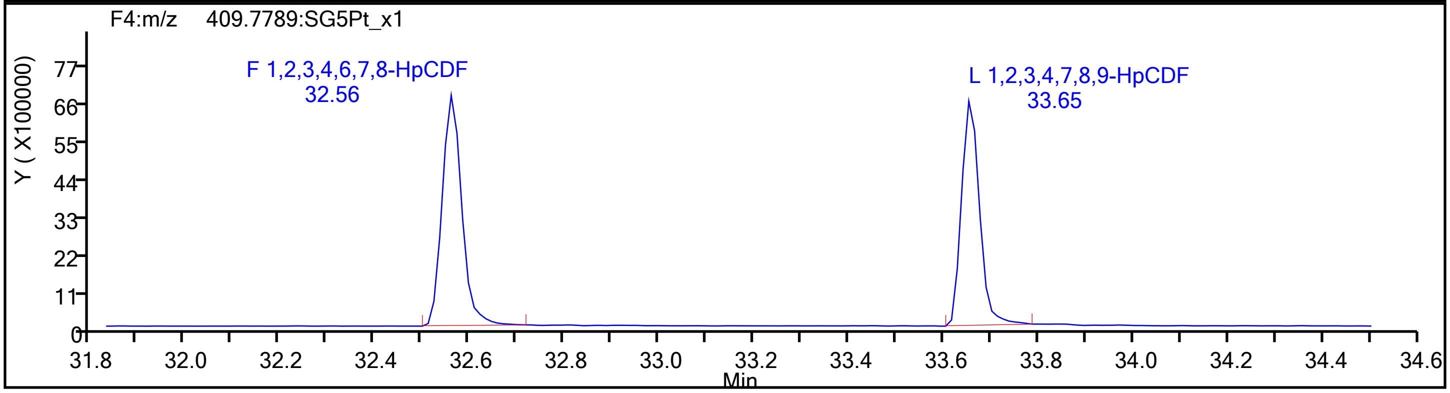

HpCDF Standards

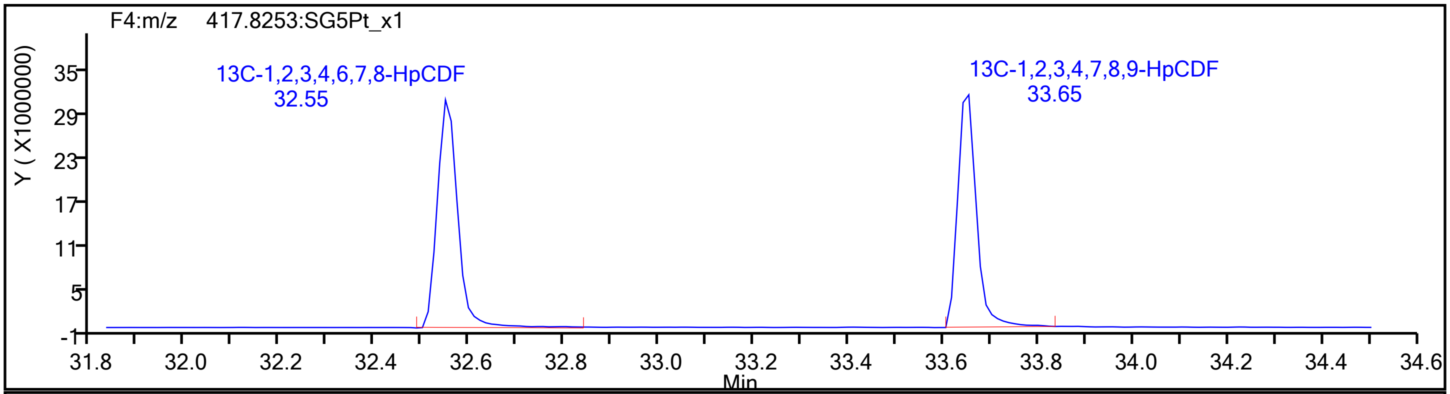

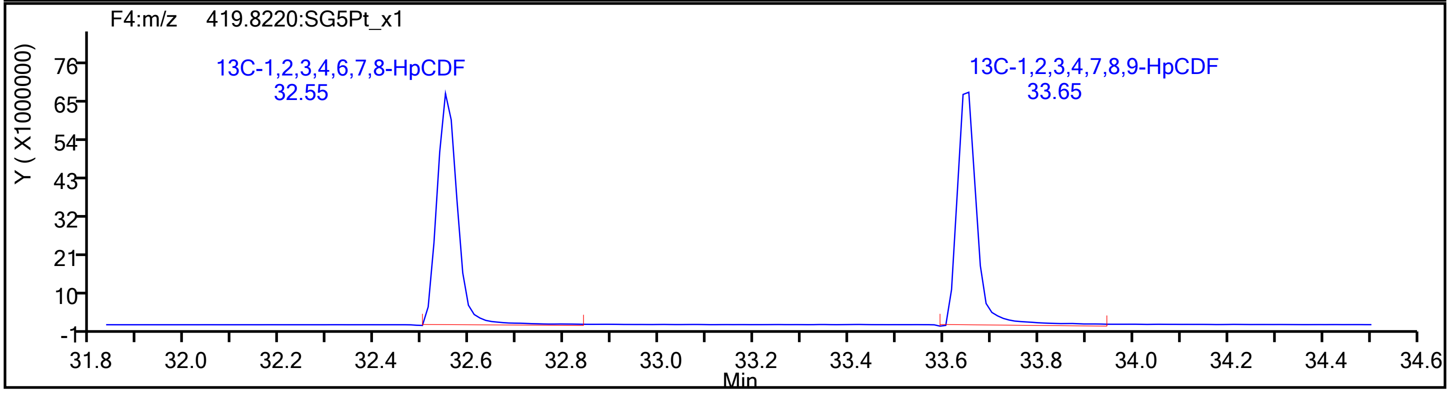

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_5.d
Injection Date: 05-Oct-2020 18:22:41 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: L3
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Column Type: Column Dia:

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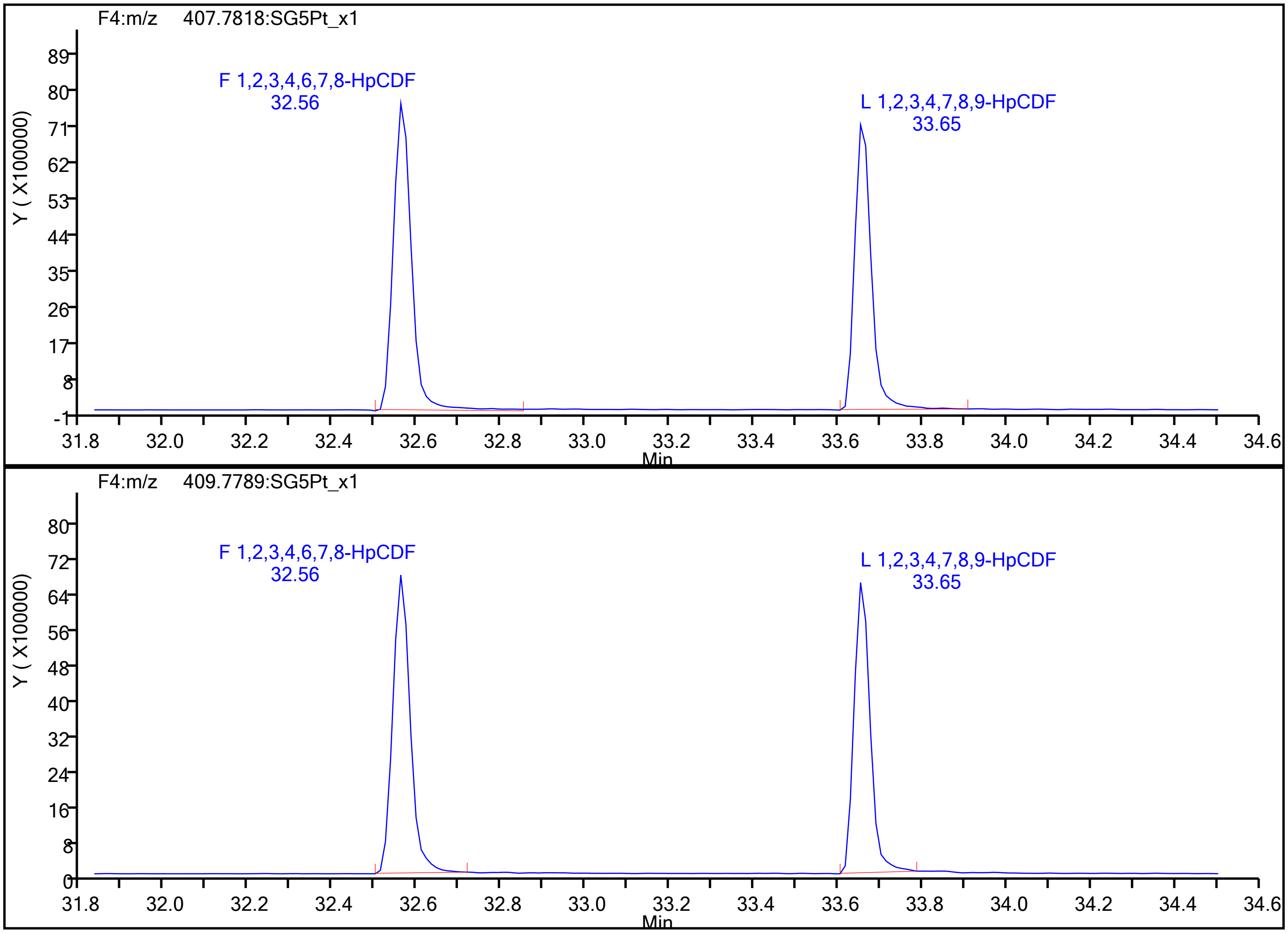

HpCDF Interference Mass

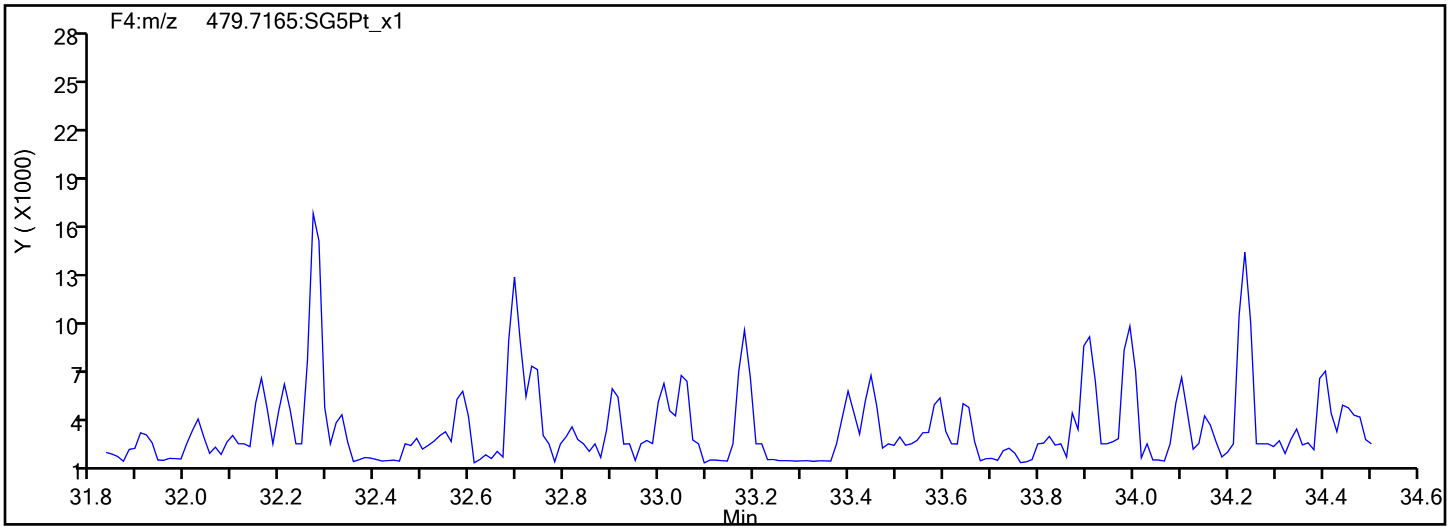

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 18:22:41

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: L3

Worklist#: 419031

Sample Line#: 4

Column Type:

Column Dia:

HpCDD

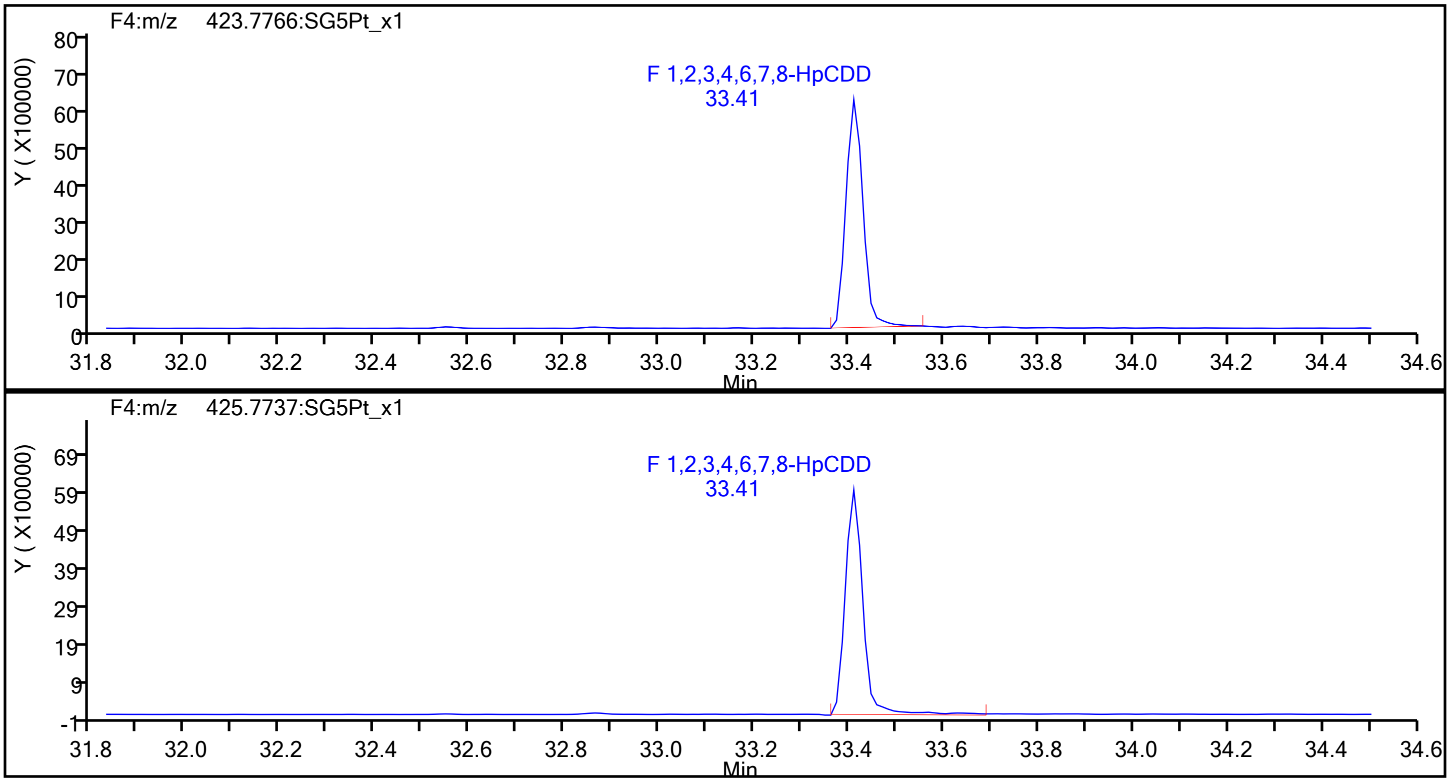

HpCDD Standards

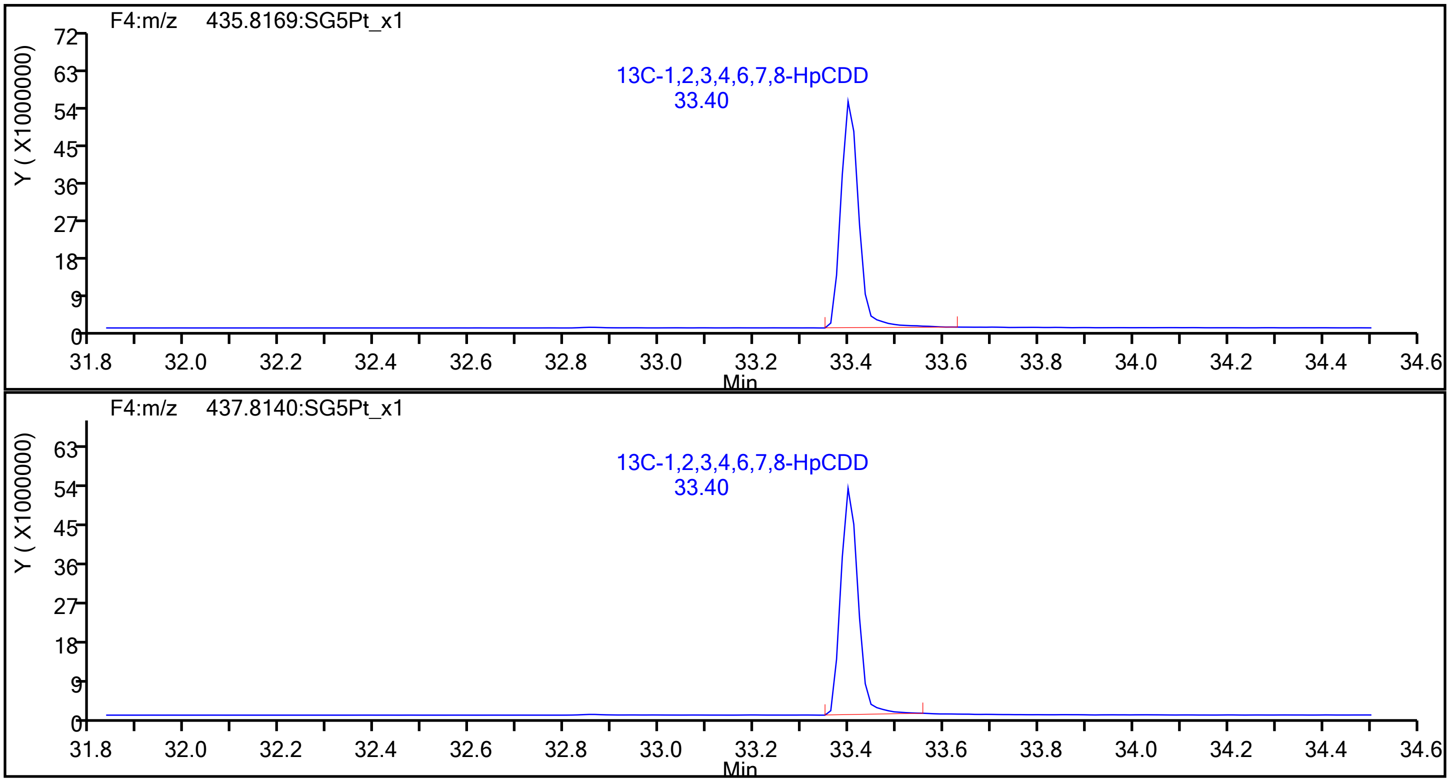

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
Worklist#:	419031	Sample Line#:	4
Column Type:		Column Dia:	

OCDF

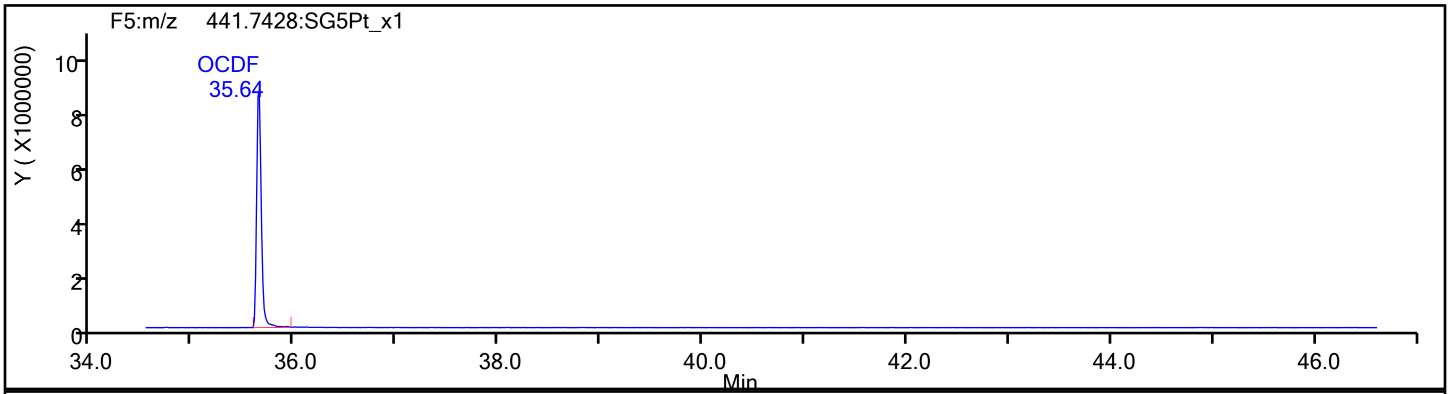

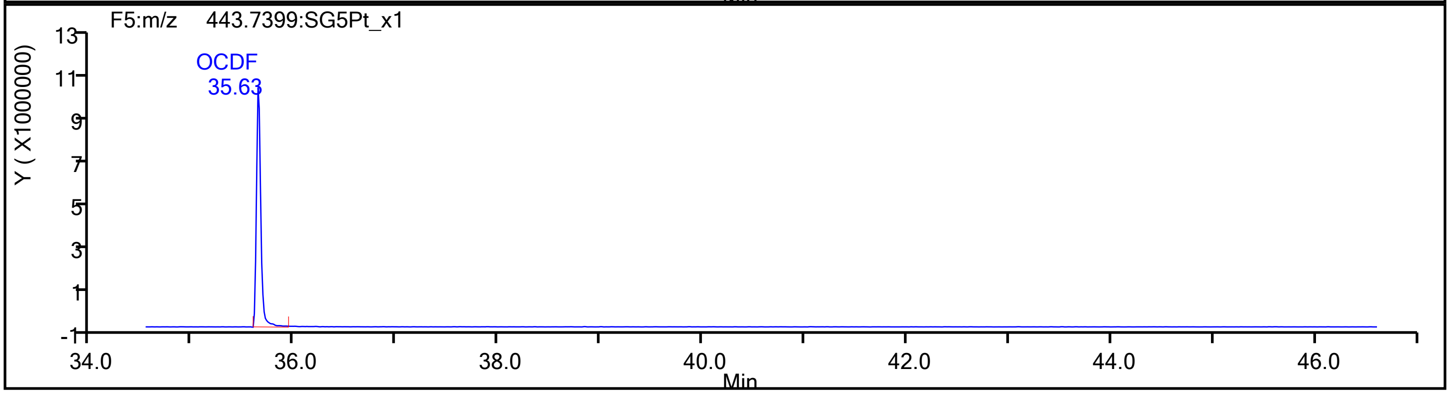

OCDF Standards

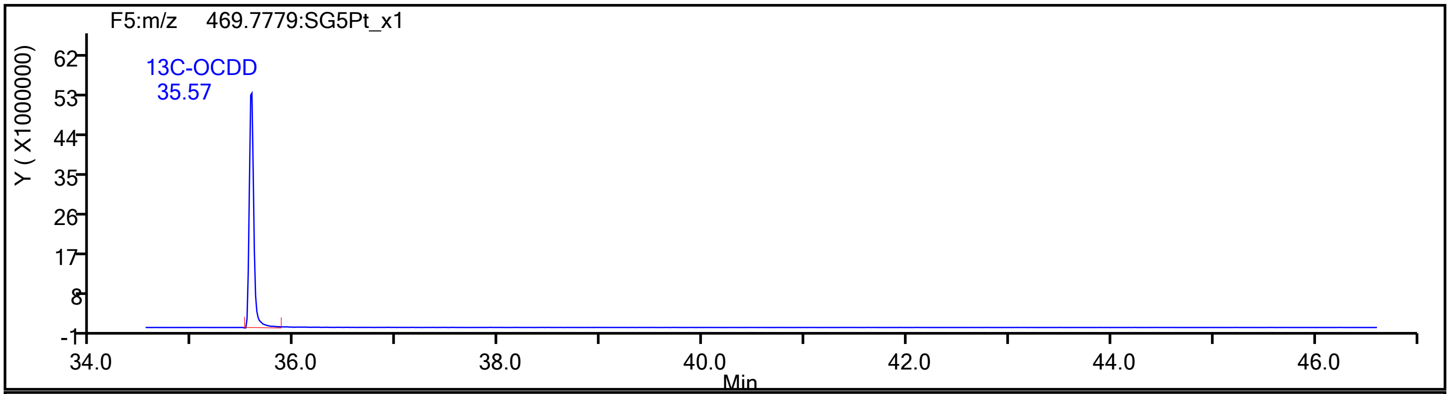

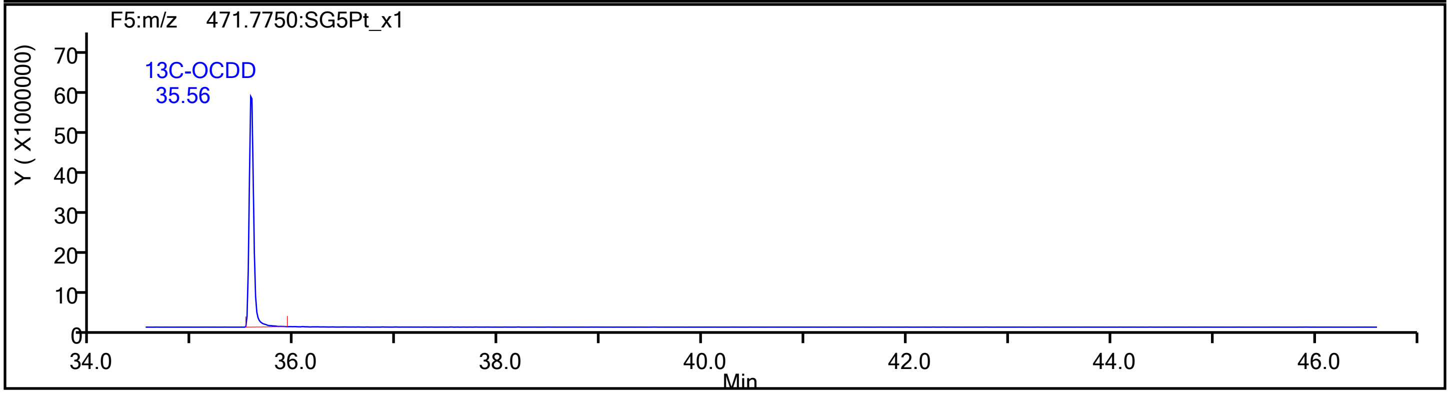

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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Injection Date:	05-Oct-2020 18:22:41	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
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Column Type:		Column Dia:	

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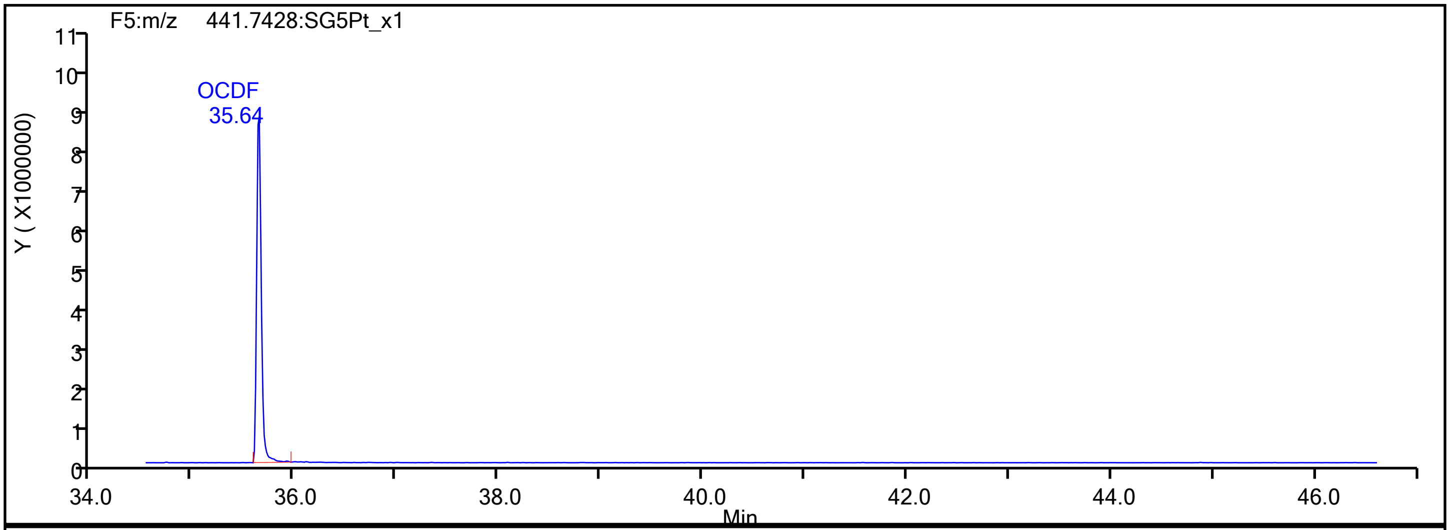

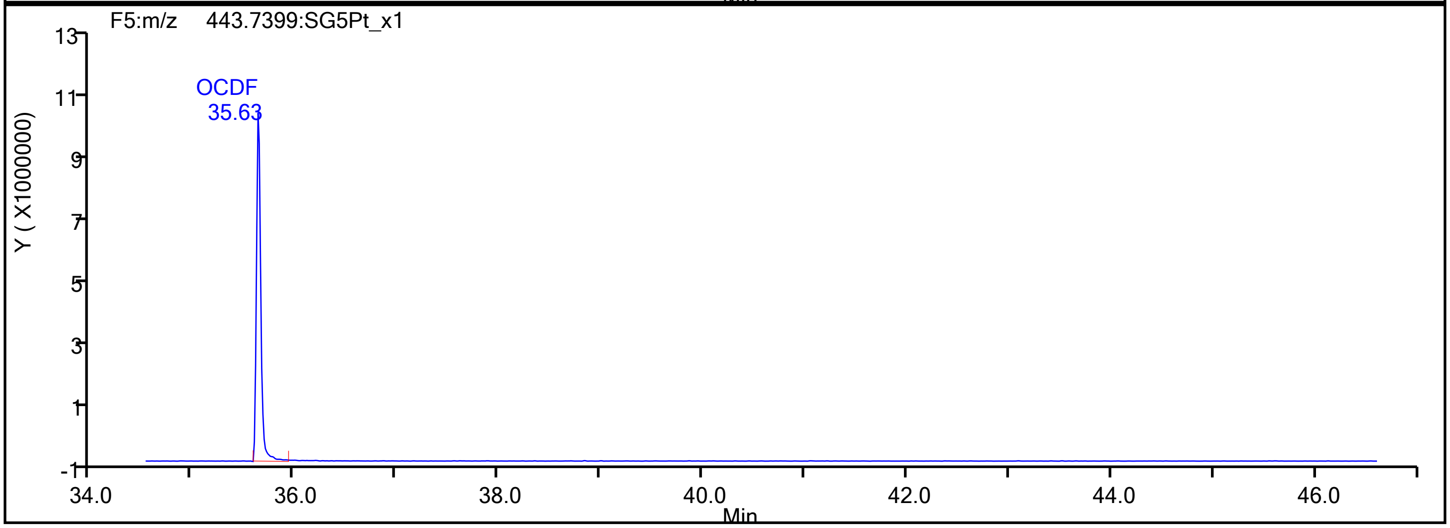

OCDF Interference Mass

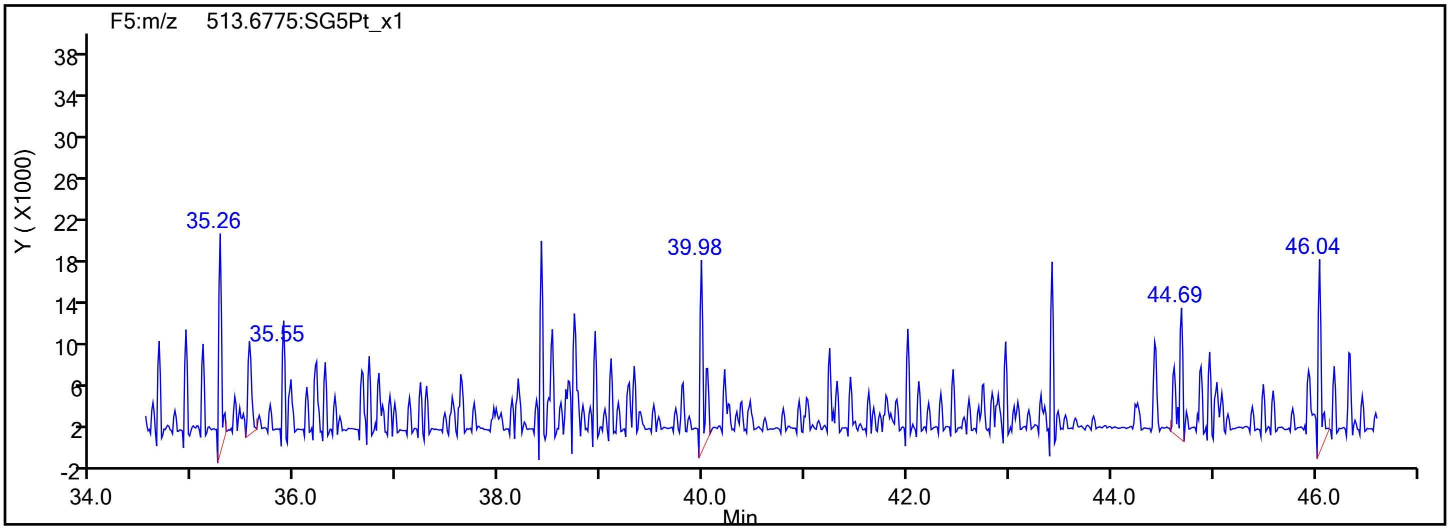

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L3		
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Column Type:		Column Dia:	

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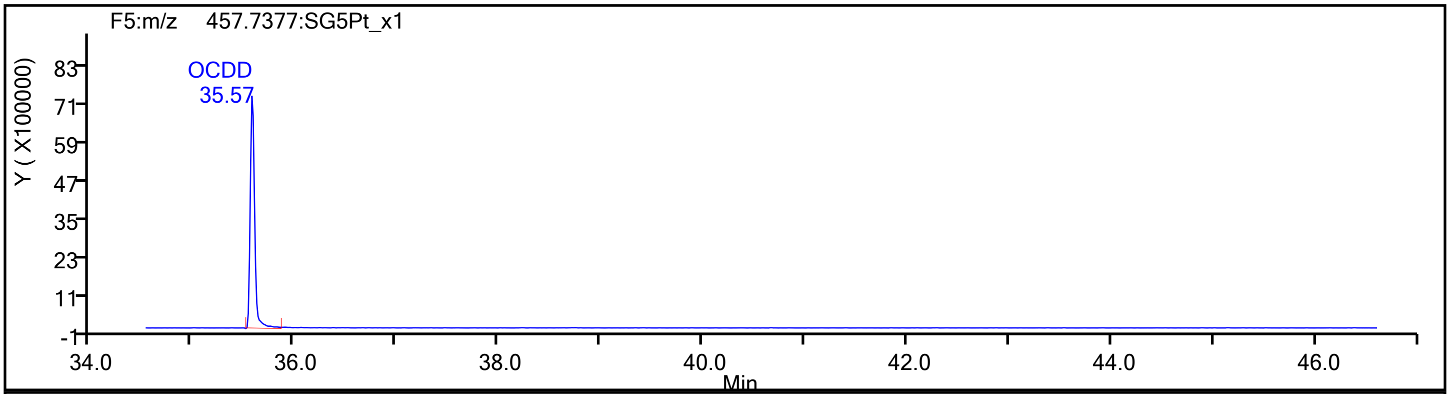

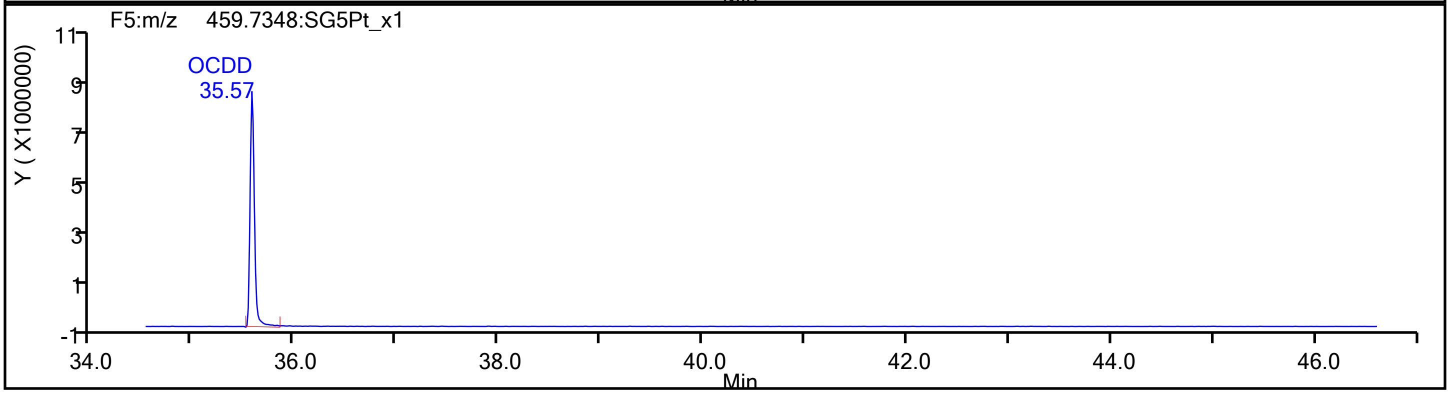

OCDD Standards

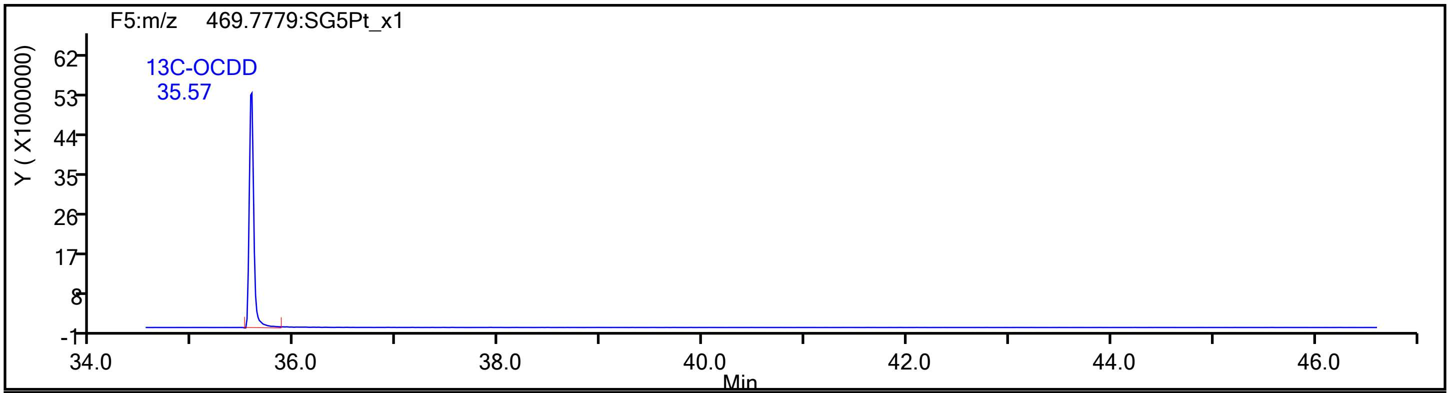

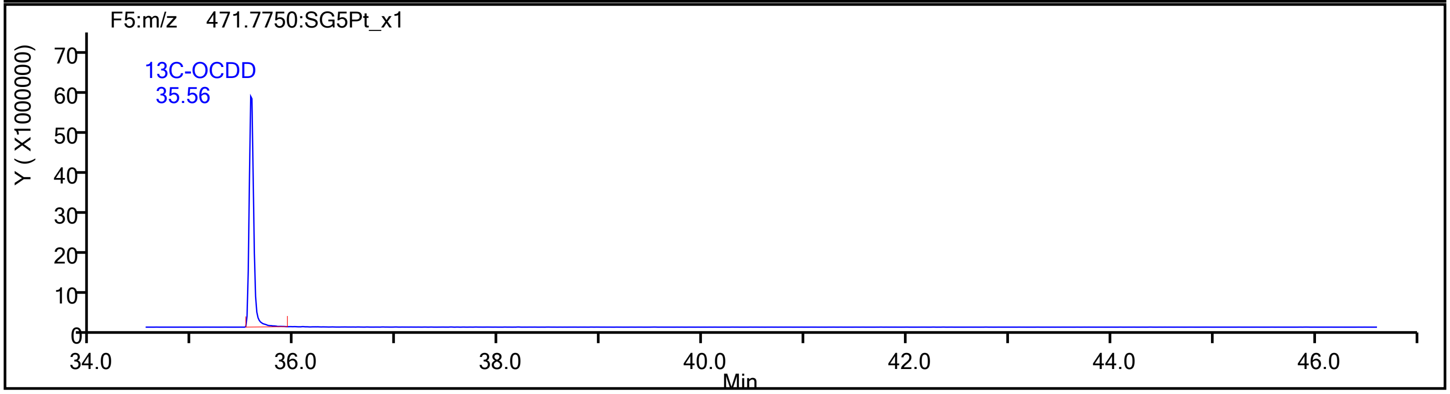

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Instrument ID:	3D5	Operator ID:	SMA
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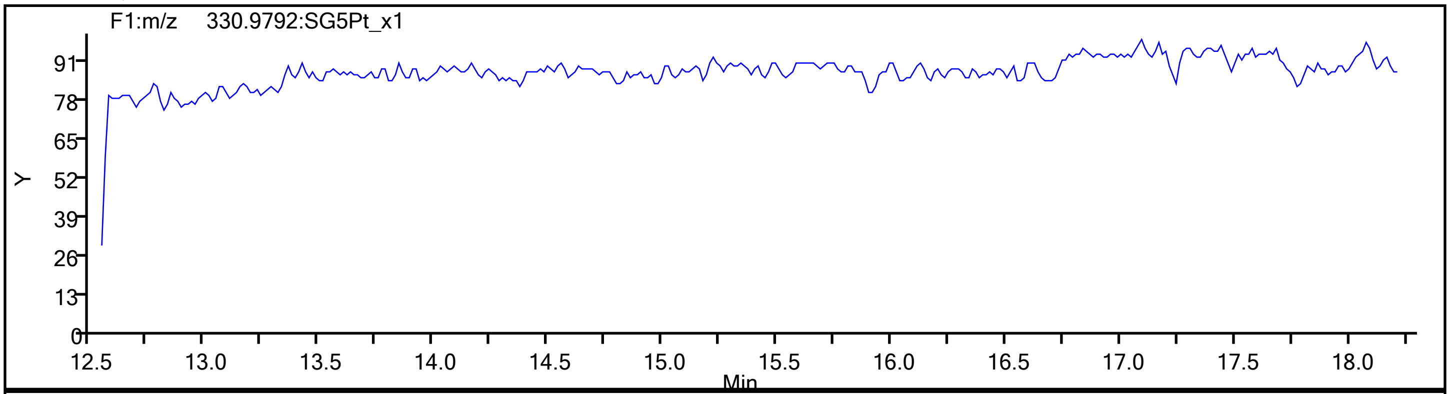

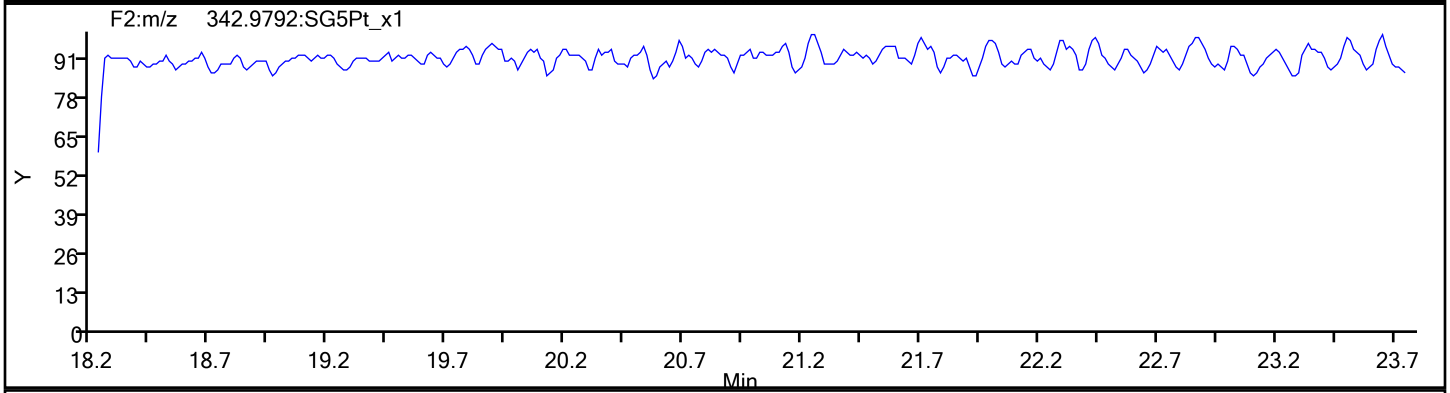

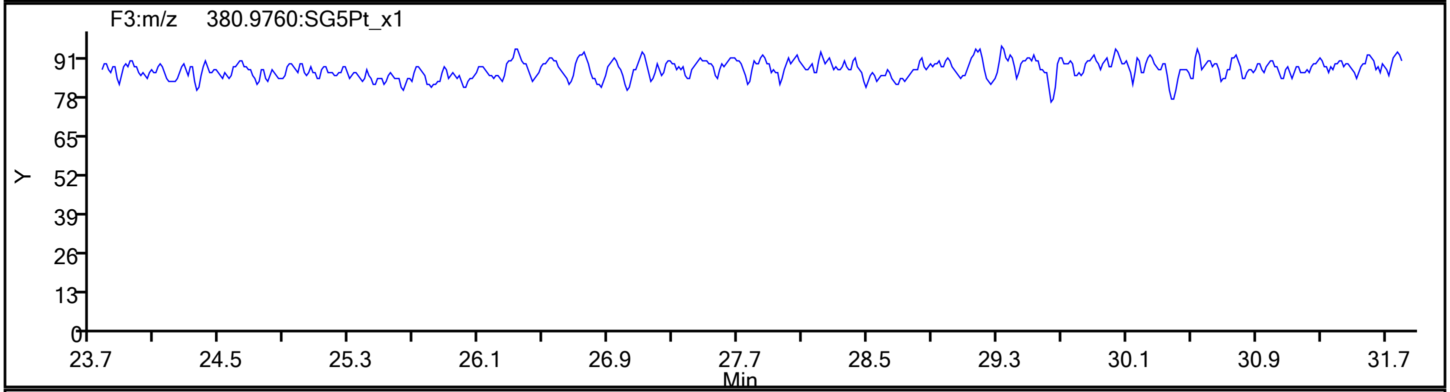

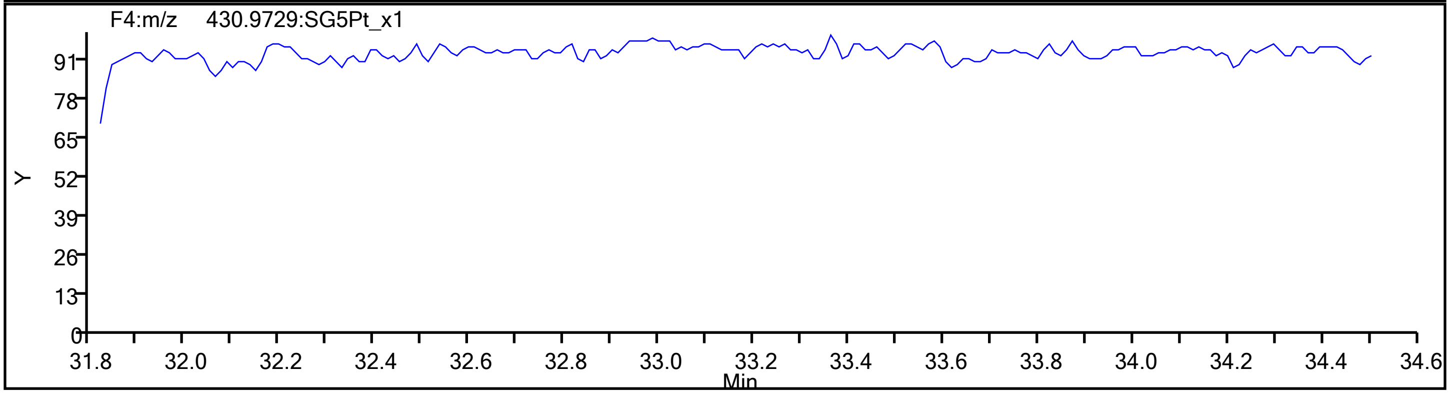

Report Date: 08-Oct-2020 15:16:25 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 18:22:41
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L3
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Sample Line#: 4
Column Type:
Column Dia:

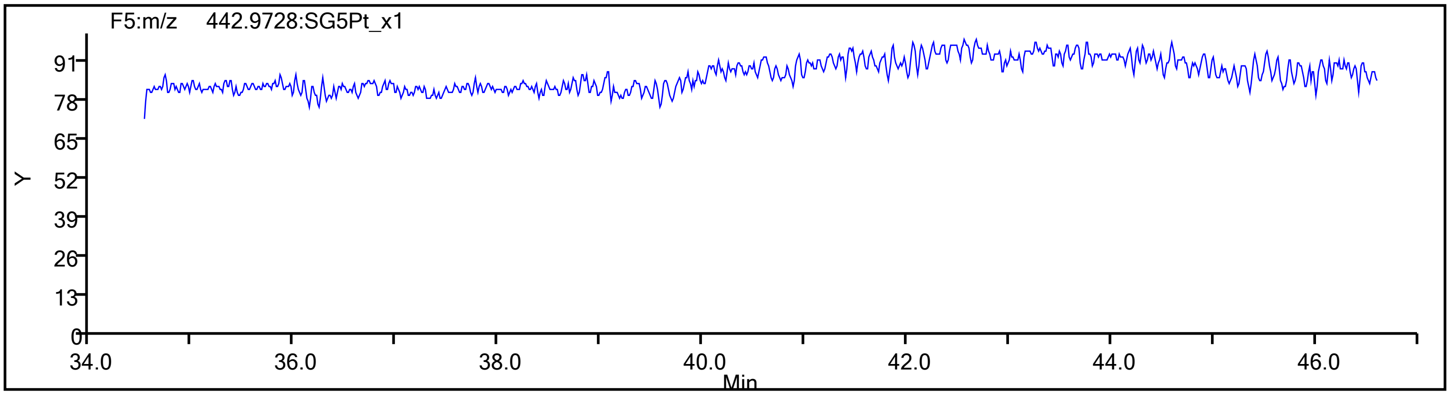

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d
Lims ID: IC 4
Client ID: L4
Sample Type: IC Calib Level: 4
Inject. Date: 05-Oct-2020 19:10:18 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520B CS-4 HRDXNL4_00095
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:31 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:15:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.946	178288818	0.82	3.1E+06	100.0	100.0				a
D 13C-2,3,7,8-TCDF	15.507	259567987	0.68	1.4844	98.1	98.1	0.5657	0.5657	98.08	
2,3,7,8-TCDF	15.522	22883694	0.83	0.9534	9.247	9.247	0.0511	0.0511	92.47	
S Total TCDF					9.247	9.247	0.0511	0.0511		
D 13C-2,3,7,8-TCDD	16.112	194294526	0.80	1.0875	100.2	100.2	0.3861	0.3861	100	
2,3,7,8-TCDD	16.127	18078510	0.77	1.0205	9.118	9.118	0.0469	0.0469	91.18	
$ 37Cl4-2,3,7,8-TCDD	16.127	19249268		1.1216	9.626	9.626	0.0291	0.0291	96.26	
S Total TCDD					9.118	9.118	0.0469	0.0469		
D 13C-1,2,3,7,8-PeCDF	19.727	239001909	1.57	1.3943	96.1	96.1	0.3191	0.3191	96.14	
1,2,3,7,8-PeCDF	19.754	122961113	1.57	1.0794	47.7	47.7	0.2163	0.2163	95.33	
D 13C-2,3,4,7,8-PeCDF	20.859	201929838	1.53	1.3370	84.7	84.7	0.3328	0.3328	84.71	
2,3,4,7,8-PeCDF	20.873	109276357	1.59	1.0966	49.3	49.3	0.2983	0.2983	98.70	
S Total PeCDF					97.0	97.0	0.2573	0.2573		
D 13C-1,2,3,7,8-PeCDD	21.459	139406633	1.58	0.8475	92.3	92.3	0.1883	0.1883	92.26	
1,2,3,7,8-PeCDD	21.486	74700044	1.58	1.1397	47.0	47.0	0.1237	0.1237	94.04	
S Total PeCDD					47.0	47.0	0.1237	0.1237		
D 13C-1,2,3,4,7,8-HxCDF	26.773	189204634	0.53	1.3065	93.9	93.9	0.5652	0.5652	93.90	
1,2,3,4,7,8-HxCDF	26.799	112784338	1.17	1.2552	47.5	47.5	0.3008	0.3008	94.98	
D 13C-1,2,3,6,7,8-HxCDF	27.039	212479465	0.53	1.4213	96.9	96.9	0.5196	0.5196	96.94	
1,2,3,6,7,8-HxCDF	27.079	122749686	1.27	1.2102	47.7	47.7	0.2880	0.2880	95.47	
D 13C-2,3,4,6,7,8-HxCDF	28.597	186349778	0.53	1.3142	91.9	91.9	0.5619	0.5619	91.94	
2,3,4,6,7,8-HxCDF	28.637	112010119	1.20	1.2182	49.3	49.3	0.3422	0.3422	98.68	
D 13C-1,2,3,7,8,9-HxCDF	30.408	195222946	0.53	1.3204	95.9	95.9	0.5593	0.5593	95.87	
1,2,3,7,8,9-HxCDF	30.434	112273420	1.17	1.2319	46.7	46.7	0.2302	0.2302	93.37	
S Total HxCDF					191.2	191.2	0.2903	0.2903		
* 13C-1,2,3,7,8,9-HxCDD	30.115	154222867	1.27	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.090	125505747	1.25	0.8660	94.0	94.0	0.3948	0.3948	93.97	a
1,2,3,4,7,8-HxCDD	29.116	75842567	1.26	1.2535	48.2	48.2	0.2464	0.2464	96.42	
D 13C-1,2,3,6,7,8-HxCDD	29.356	144452206	1.23	0.9827	95.3	95.3	0.3479	0.3479	95.31	a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	29.396	76726616	1.24	1.1117	47.8	47.8	0.2593	0.2593	95.56	
1,2,3,7,8,9-HxCDD	30.128	86148227	1.25	1.2852	49.7	49.7	0.2320	0.2320	99.32	
S Total HxCDD					145.6	145.6	0.2459	0.2459		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	140327471	0.44	0.9410	96.7	96.7	1.119	1.119	96.69	
1,2,3,4,6,7,8-HpCDF	32.559	101345783	1.05	1.4783	48.9	48.9	0.3381	0.3381	97.70	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	129335281	0.47	0.8751	95.8	95.8	1.204	1.204	95.83	
1,2,3,4,7,8,9-HpCDF	33.653	84442665	1.08	1.3784	47.4	47.4	0.3862	0.3862	94.73	
S Total HpCDF					96.2	96.2	0.3621	0.3621		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	132356754	1.06	0.9049	94.8	94.8	1.269	1.269	94.84	
1,2,3,4,6,7,8-HpCDD	33.410	69492442	0.96	1.0862	48.3	48.3	0.4180	0.4180	96.67	
S Total HpCDD					48.3	48.3	0.4180	0.4180		
D 13C-OCDD	35.558	177866153	0.90	0.5783	199.4	199.4	0.6182	0.6182	99.72	
OCDF	35.642	149015907	0.92	1.7248	97.1	97.1	0.0769	0.0769	97.15	
OCDD	35.570	104603965	0.90	1.2576	93.5	93.5	0.1849	0.1849	93.53	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:16:31 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d
Lims ID: IC 4
Client ID: L4
Sample Type: IC
Calib Level: 4
Inject. Date: 05-Oct-2020 19:10:18
ALS Bottle#: 5
Worklist Smp#: 5
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: IC 100520B CS-4 HRDXNL4_00095
Misc. Info.: 05OC203D5
Operator ID: SMA
Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:31
Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 :
Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis
Date: 06-Oct-2020 11:15:42

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	15.946	15.942	0		80181776	22435703	53140	132850	422		a
333.9339	15.946	15.942	0		98107042	27738468	31122	77805	891	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.507	15.501	0	0.973	105497240	28420125	111344	278360	255		
317.9389	15.507	15.501	0	0.973	154070747	41912866	57169	142922	733	0.68(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.522	15.516	0	1.001	10378476	2821243	5747	14367	491		
305.8987	15.522	15.516	0	1.001	12505218	3441622	7964	19910	432	0.83(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.112	16.106	0	1.010	86338496	21990021	53140	132850	414		
333.9339	16.112	16.106	0	1.010	107956030	27867485	31122	77805	895	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.127	16.121	0	1.001	7875580	2059263	5268	13170	391		
321.8936	16.127	16.121	0	1.001	10202930	2557576	4275	10687	598	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.127	16.121	0	1.011	19249268	4822621	6544	16360	737		
13C-1,2,3,7,8-PeCDF											
351.9000	19.727	19.725	0	1.237	145878765	29599260	53509	133772	553		
353.8970	19.727	19.725	0	1.237	93123144	18957985	35793	89482	530	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.754	19.746	0	1.001	75189503	14956709	26454	66135	565		
341.8567	19.741	19.746	0	1.001	47771610	9580626	18896	47240	507	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	20.859	20.848	1	1.308	122235402	21060954	53509	133772	394		
353.8970	20.846	20.848	0	1.307	79694436	13596691	35793	89482	380	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.873	20.865	0	1.001	67155270	12511526	26454	66135	473		
341.8567	20.873	20.865	0	1.001	42121087	7612430	18896	47240	403	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.459	21.454	0	1.346	85438172	15521401	19379	48447	801		
369.8919	21.459	21.454	0	1.346	53968461	9599603	12652	31630	759	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.486	21.481	0	1.001	45695793	7891858	8058	20145	979		
357.8516	21.486	21.481	0	1.001	29004251	5028084	6103	15257	824	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.773	26.775	0	0.889	65580229	8512862	25588	63970	333		
385.8610	26.773	26.775	0	0.889	123624405	17167039	47866	119665	359	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.799	26.805	0	1.001	60912335	8633955	21297	53242	405		
375.8178	26.799	26.805	0	1.001	51872003	7429573	17492	43730	425	1.17(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.039	27.044	0	0.898	73820406	9615485	25588	63970	376		
385.8610	27.052	27.044	0	0.898	138659059	18210662	47866	119665	380	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.079	27.079	0	1.001	68581097	9002216	21297	53242	423		
375.8178	27.079	27.079	0	1.001	54168589	6964824	17492	43730	398	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.597	28.600	0	0.950	64901045	8126020	25588	63970	318		
385.8610	28.597	28.600	0	0.950	121448733	15134416	47866	119665	316	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.637	28.639	0	1.001	61009083	7227496	21297	53242	339		
375.8178	28.624	28.639	-1	1.001	51001036	6230538	17492	43730	356	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.413	0	1.010	67409275	12073507	25588	63970	472		
385.8610	30.408	30.413	0	1.010	127813671	22126864	47866	119665	462	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.434	30.437	0	1.001	60540278	10422553	21297	53242	489		
375.8178	30.434	30.437	0	1.001	51733142	9176697	17492	43730	525	1.17(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.115	30.109	0		86248158	14133804	21360	53400	662		
403.8529	30.115	30.109	0		67974709	10733375	12650	31625	848	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.090	29.092	0	0.966	69777398	8725948	21360	53400	409		a
403.8529	29.090	29.092	0	0.966	55728349	6916221	12650	31625	547	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.116	29.124	0	1.001	42341067	5163580	10720	26800	482		
391.8127	29.116	29.124	0	1.001	33501500	4101235	8602	21505	477	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.356	29.361	0	0.975	79629965	9350856	21360	53400	438		a
403.8529	29.356	29.361	0	0.975	64822241	7409428	12650	31625	586	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.396	29.390	0	1.001	42460552	5085663	10720	26800	474		
391.8127	29.382	29.390	0	1.001	34266064	3936806	8602	21505	458	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.128	30.136	0	1.036	47897175	7756710	10720	26800	724		
391.8127	30.128	30.136	0	1.036	38251052	6364928	8602	21505	740	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.081	43188176	14698670	29568	73920	497		
419.8220	32.547	32.547	0	1.081	97139295	33514796	75194	187985	446	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	51789292	17046396	48851	122127	349		
409.7789	32.559	32.559	0	1.000	49556491	16546136	47548	118870	348	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.646	0	1.117	41298557	14333830	29568	73920	485		
419.8220	33.641	33.646	0	1.117	88036724	30941565	75194	187985	411	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	43804936	16416421	48851	122127	336		
409.7789	33.653	33.653	0	1.000	40637729	15624664	47548	118870	329	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.109	68076790	26763058	57672	144180	464		
437.8140	33.398	33.398	0	1.109	64279964	24832279	56527	141317	439	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	34121425	13395985	38443	96107	348		
425.7737	33.410	33.410	0	1.000	35371017	13016088	55265	138162	236	0.96(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.565	0	1.181	84214587	26219374	10595	26487	2475		
471.7750	35.558	35.565	0	1.181	93651566	29197781	24963	62407	1170	0.90(0.76-1.02)	
OCDF											
441.7428	35.642	35.640	0	1.002	71530223	22979380	5979	14947	3843		
443.7399	35.630	35.640	-1	1.002	77485684	25090585	8728	21820	2875	0.92(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	49561240	16164973	9411	23527	1718		
459.7348	35.570	35.570	0	1.000	55042725	17939741	16358	40895	1097	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d
Injection Date: 05-Oct-2020 19:10:18 Instrument ID: 3D5
Lims ID: IC 4
Client ID: L4
Operator ID: SMA ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F1:HRSIR

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 15.94

Processing Integration Results

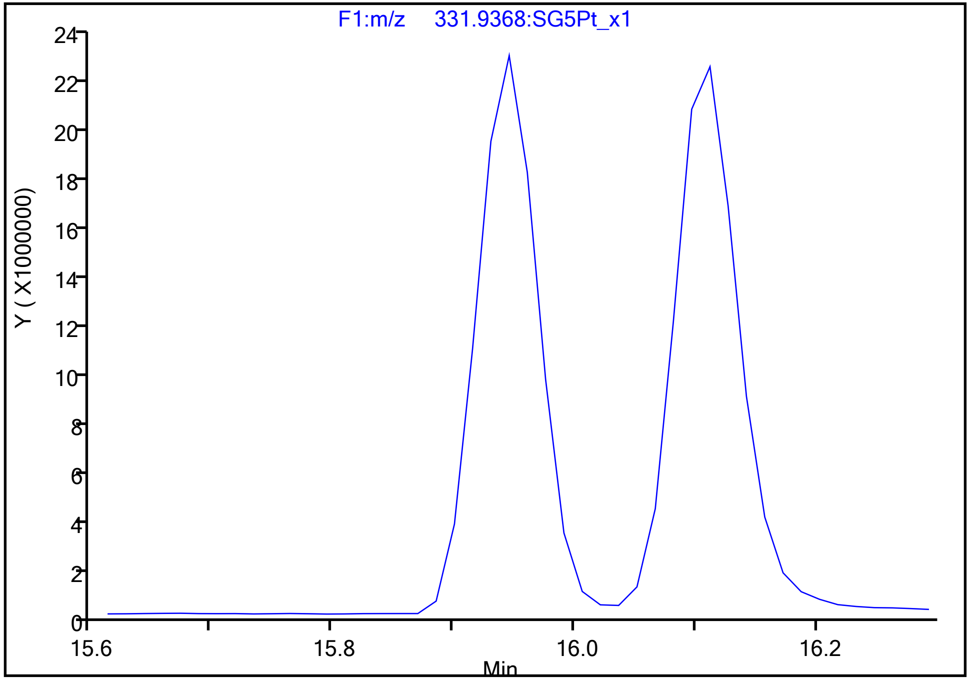

RT: 15.95
Area: 80181776
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

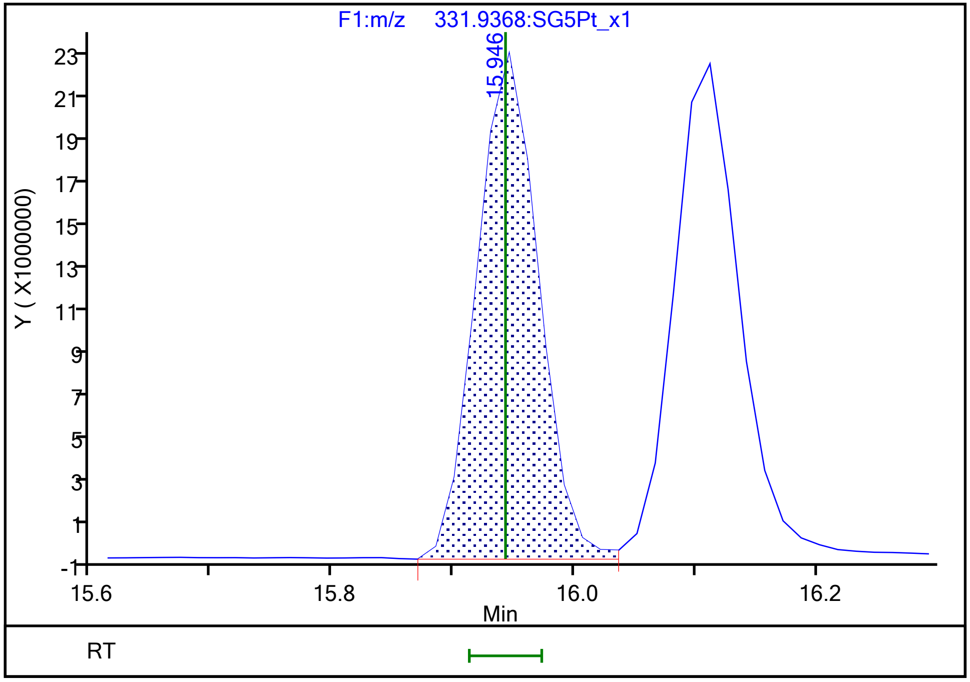

Reviewer: arghestanis, 08-Oct-2020 14:26:06
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:32

Chrom Revision: 2.3 06-Oct-2020 14:45:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d

Injection Date: 05-Oct-2020 19:10:18

Instrument ID: 3D5

Lims ID: IC 4

Client ID: L4

Operator ID: SMA

ALS Bottle#: 5

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Column:

Detector F3:HRSIR

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.09

Processing Integration Results

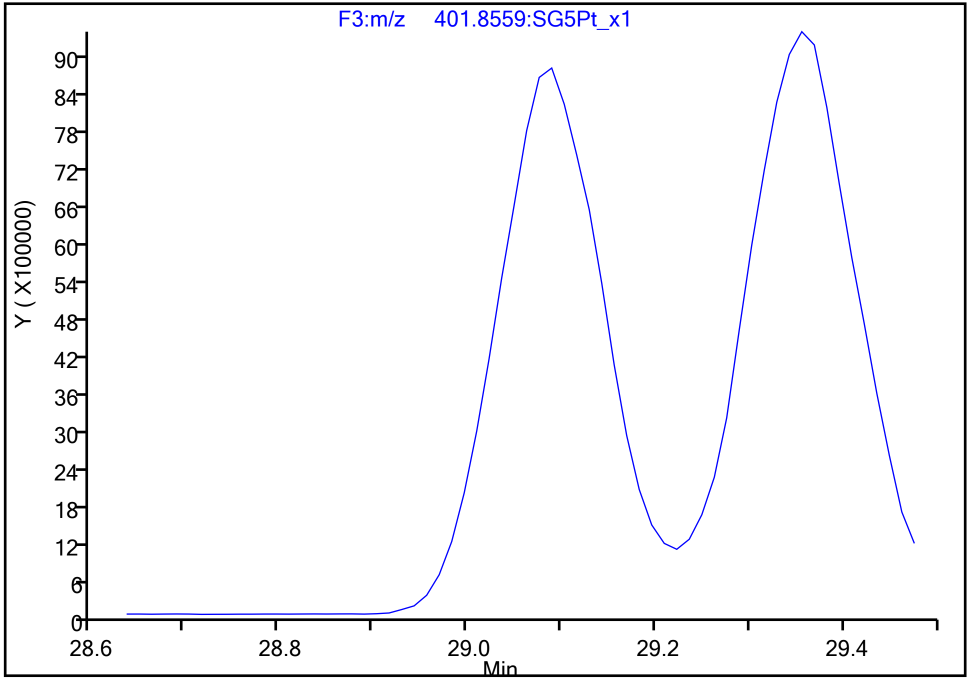

RT: 29.09

Area: 69777398

Amount: 93.969169

Amount Units: pg/ul

Manual Integration Results

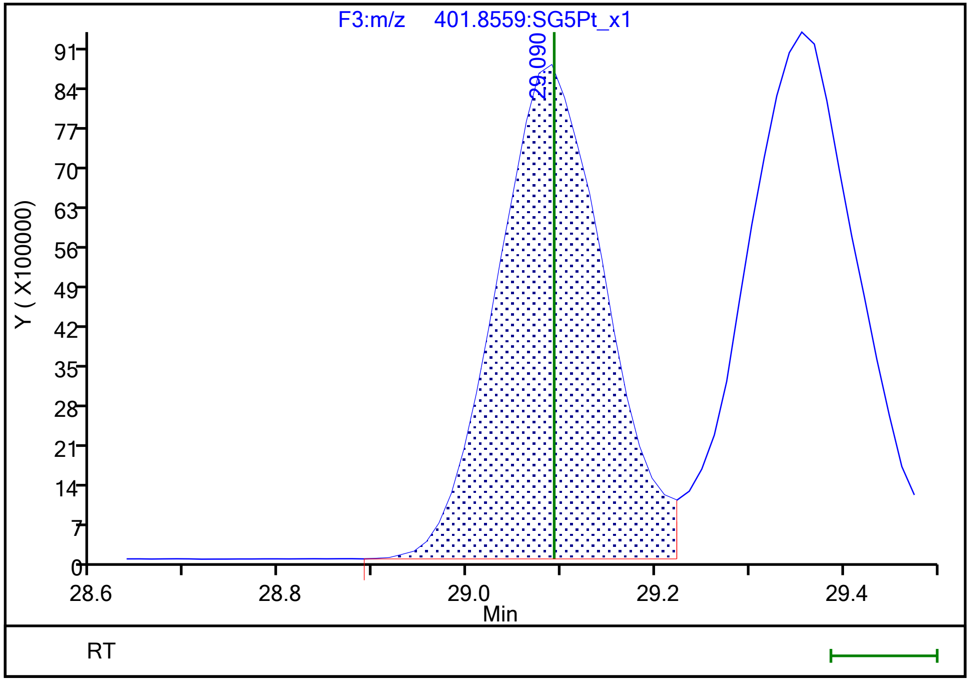

Reviewer: arghestanis, 08-Oct-2020 14:26:18

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d				
Injection Date:	05-Oct-2020 19:10:18	Instrument ID:	3D5		
Lims ID:	IC 4				
Client ID:	L4				
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.11
Area:	86567265
Amount:	100.3519
Amount Units:	pg/ul

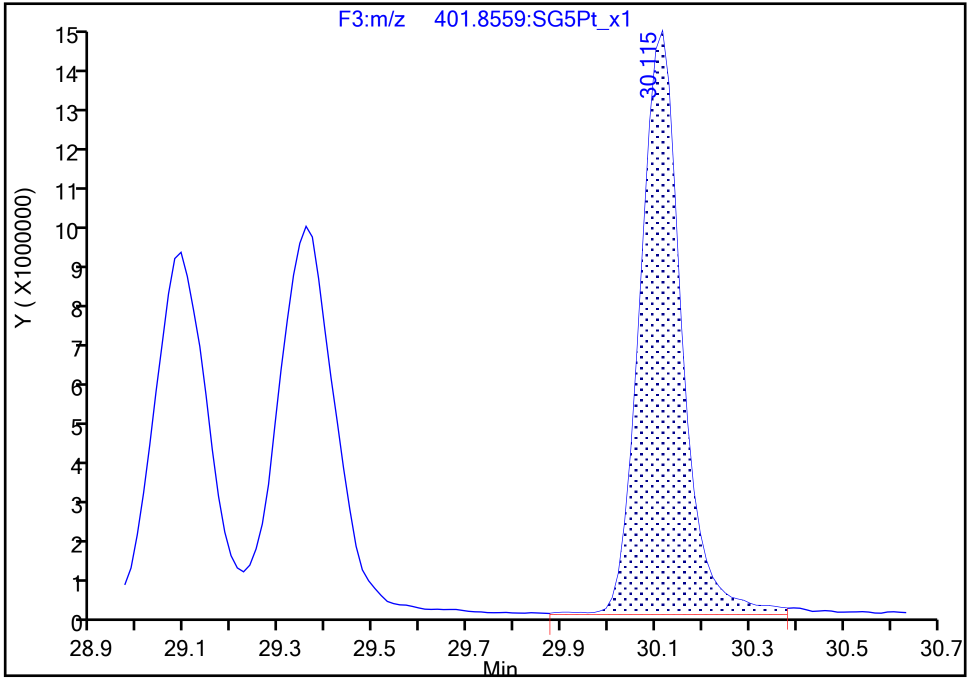

Manual Integration Results

RT:	29.36
Area:	79629965
Amount:	95.313918
Amount Units:	pg/ul

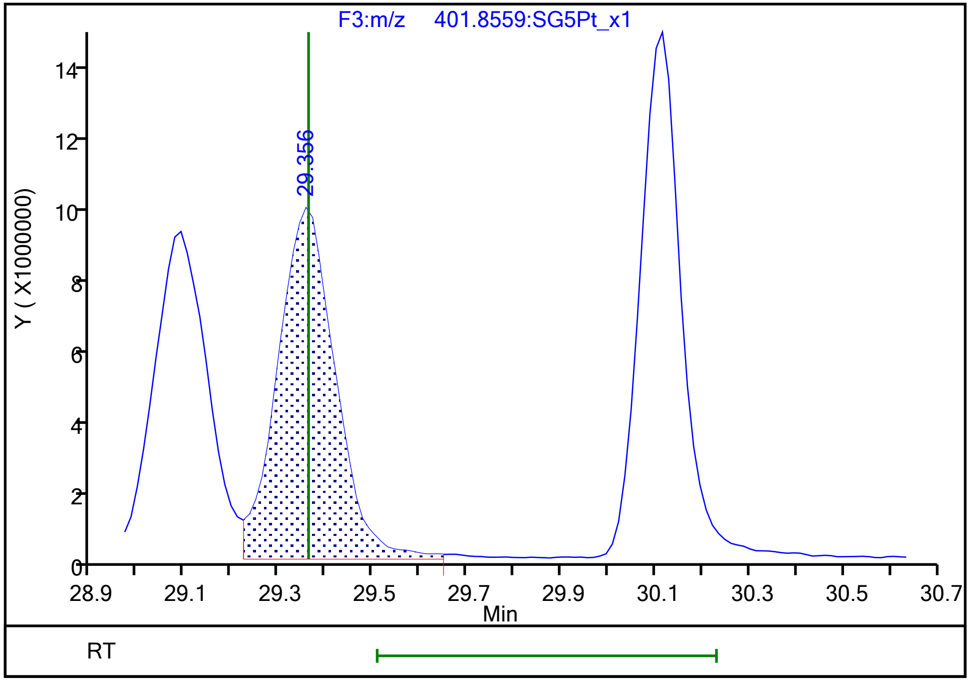

Reviewer: arghestanis, 08-Oct-2020 14:33:03

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:32 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d		
Injection Date:	05-Oct-2020 19:10:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L4		
Worklist#:	419031	Sample Line#:	5
Column Type:		Column Dia:	

TCDF

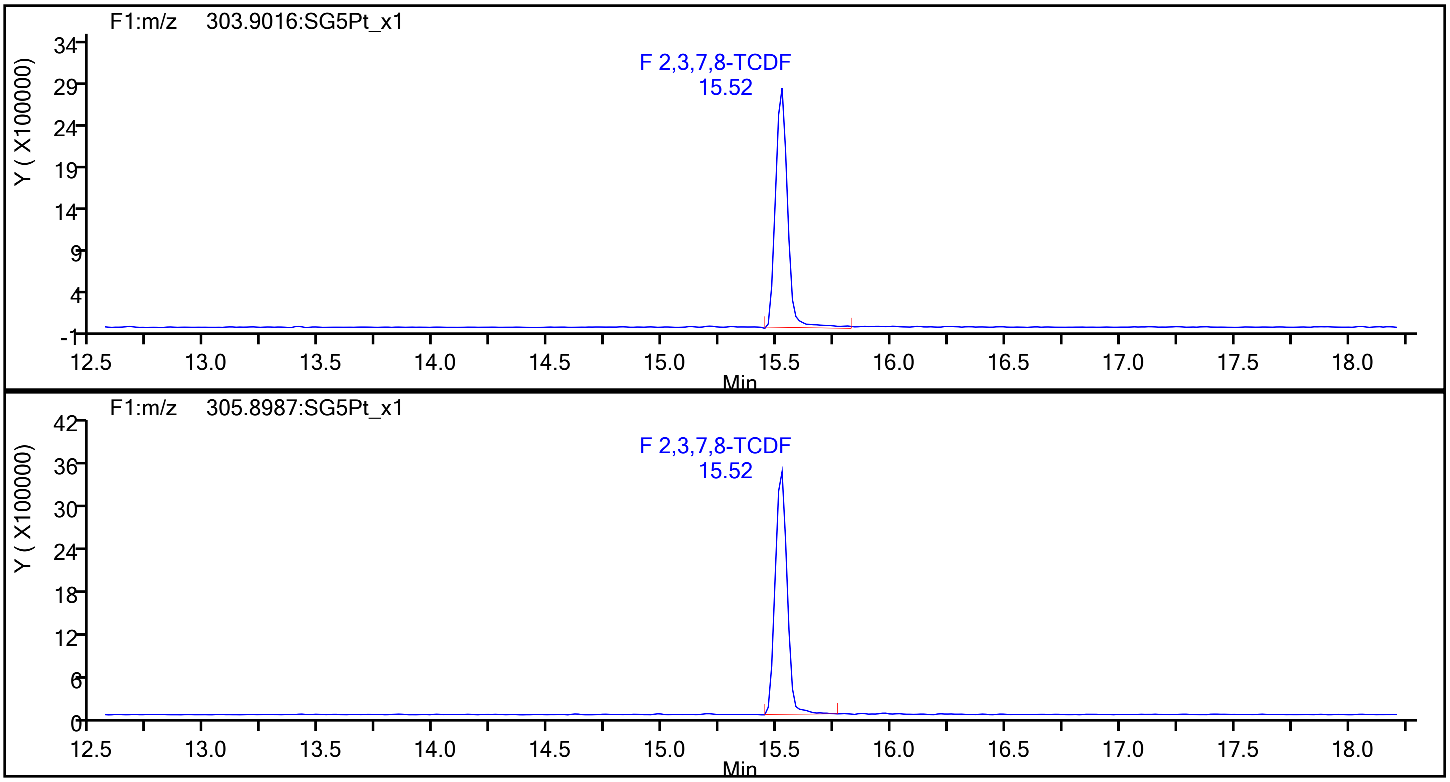

TCDF Standards

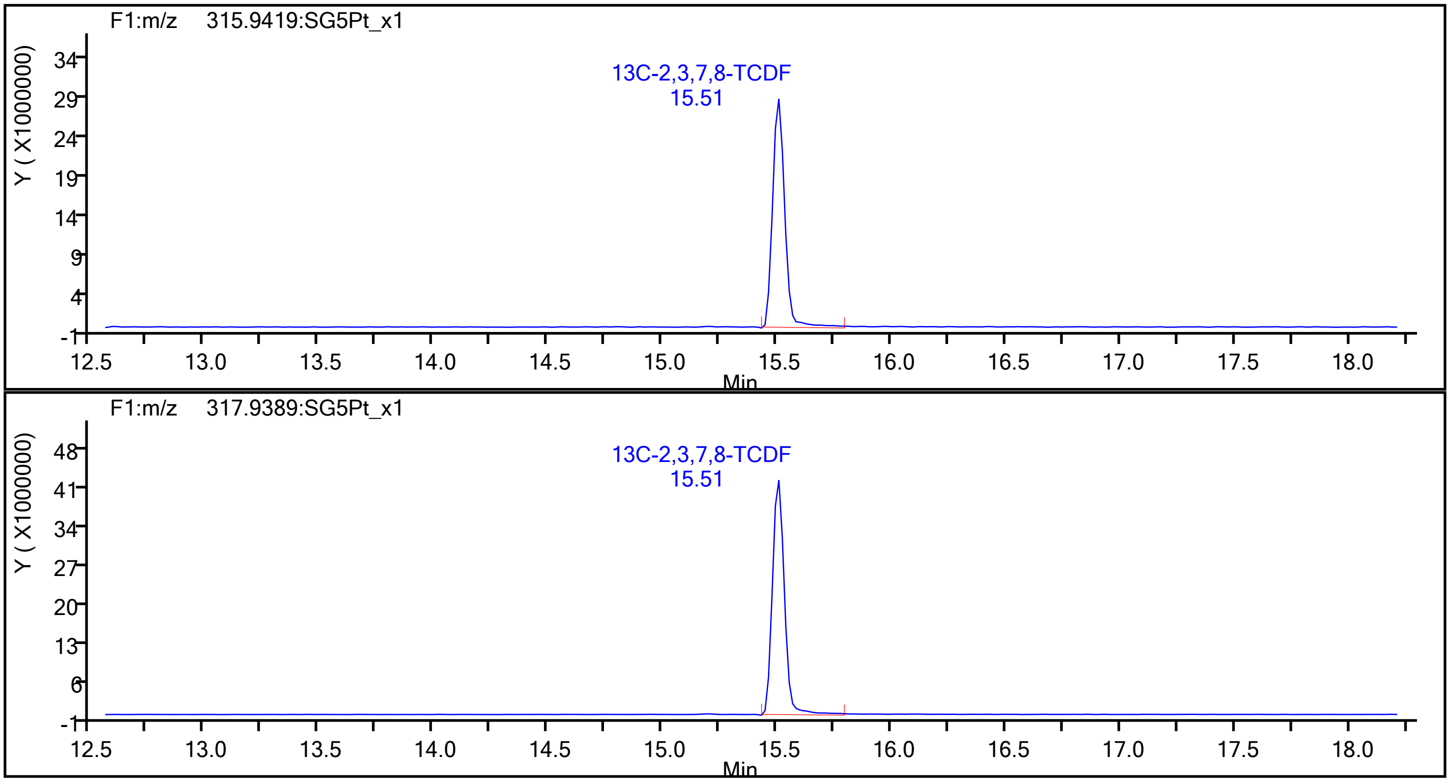

Report Date: 08-Oct-2020 15:16:32 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d
Injection Date: 05-Oct-2020 19:10:18
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L4
Worklist#: 419031
Sample Line#: 5
Column Type:
Column Dia:

TCDF

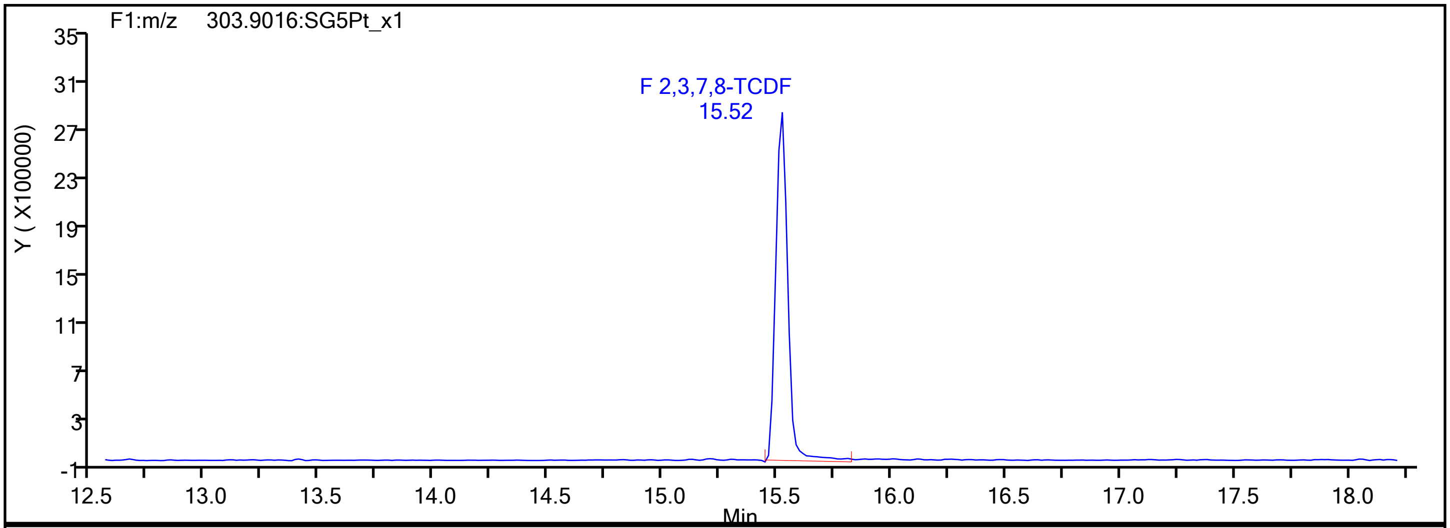

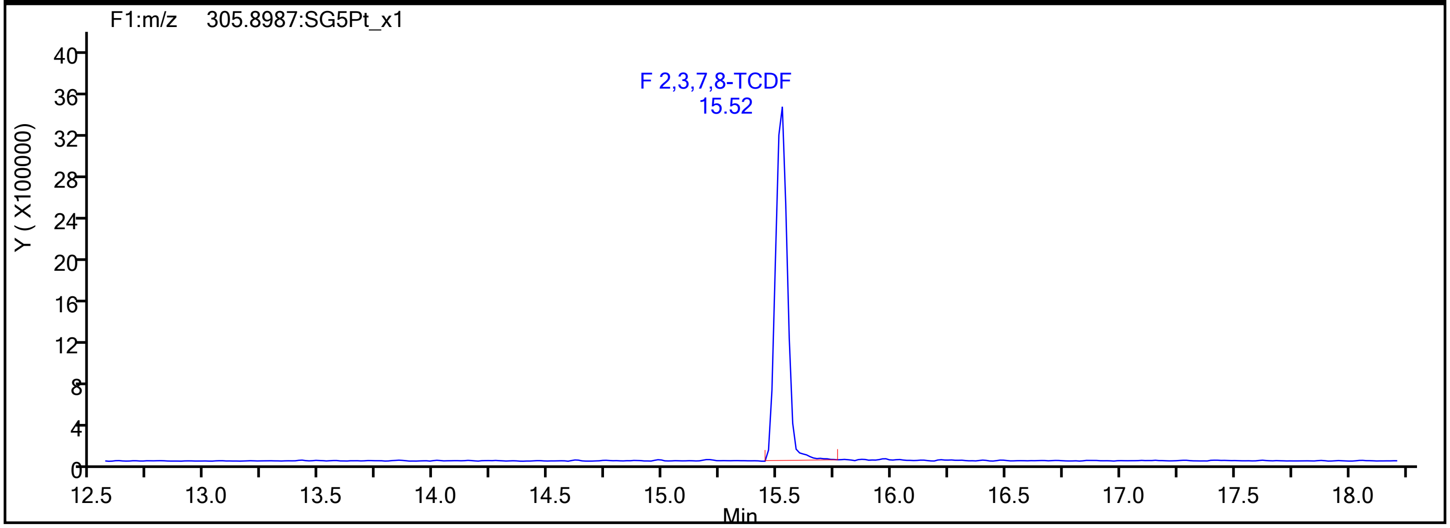

TCDF Interference Mass

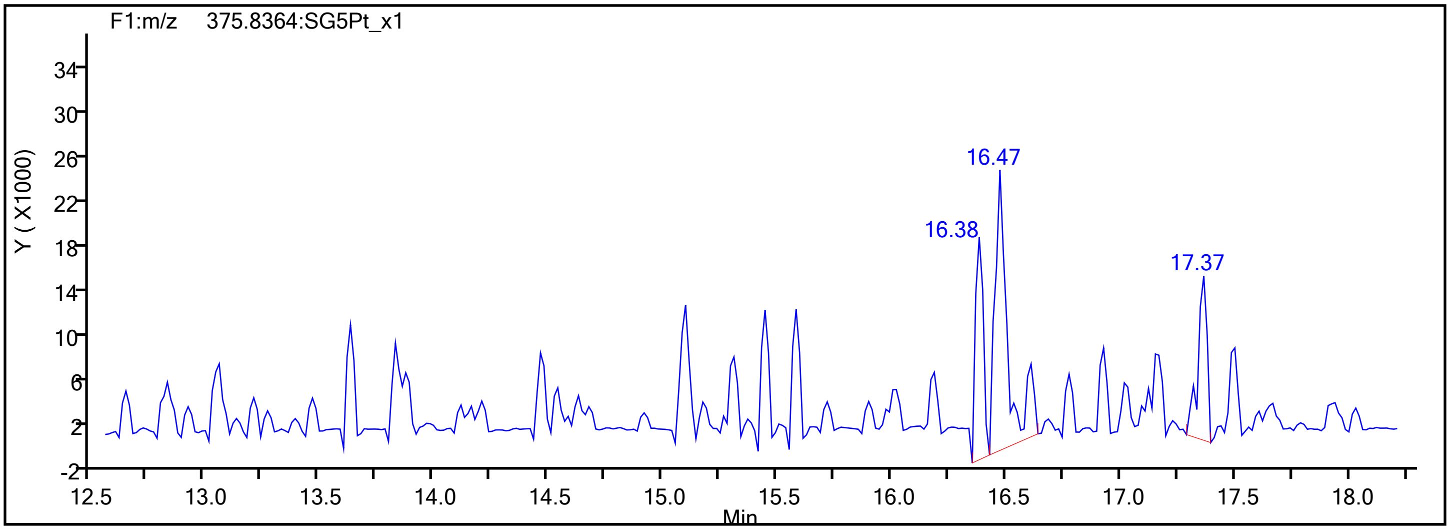

Report Date: 08-Oct-2020 15:16:32 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d

Injection Date: 05-Oct-2020 19:10:18
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L4
Worklist#: 419031
Sample Line#: 5
Column Type:
Column Dia:

TCDD

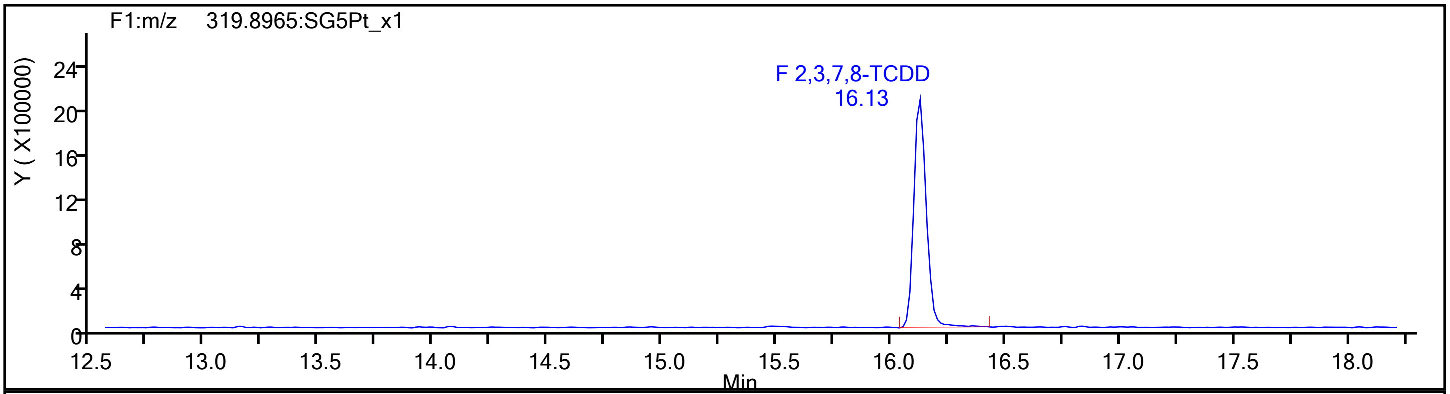

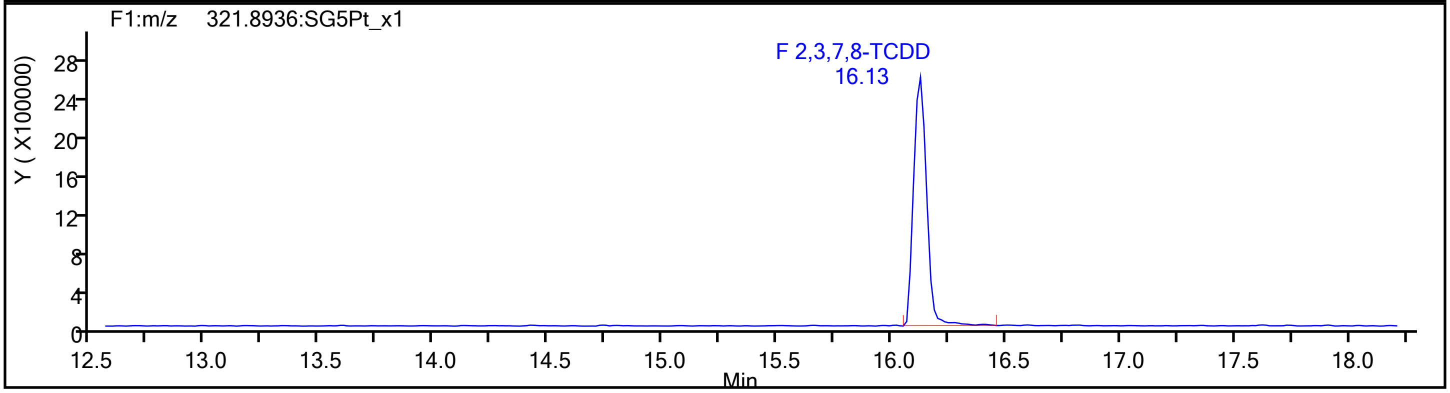

TCDD Standards

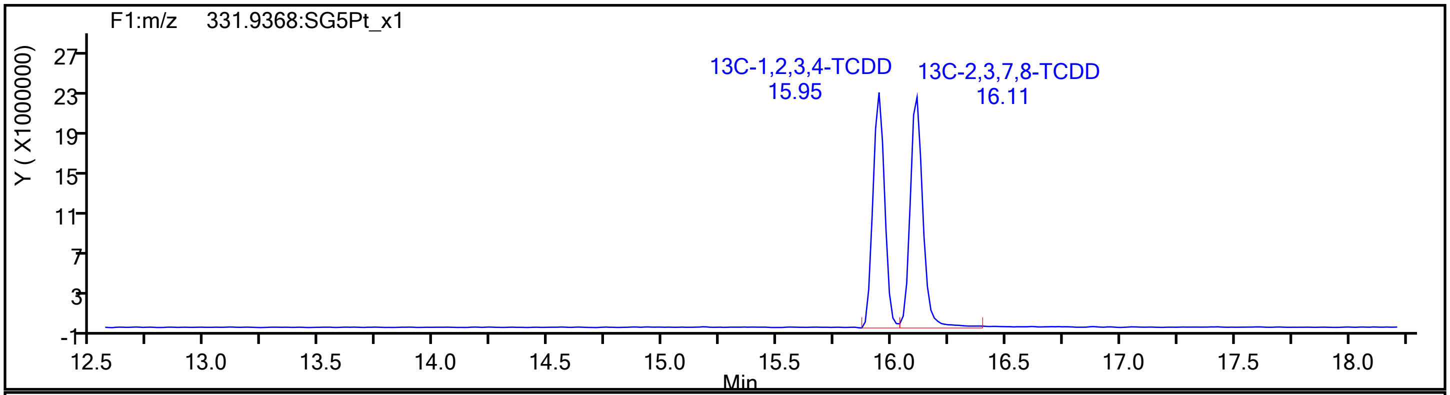

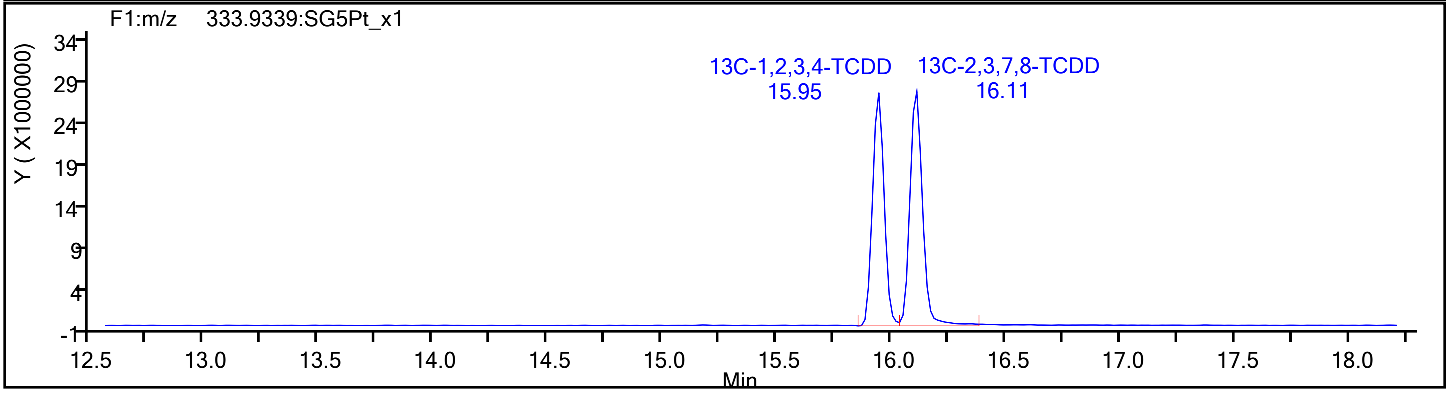

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 19:10:18

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

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Sample Line#: 5

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Column Dia:

37Cl4-TCDD

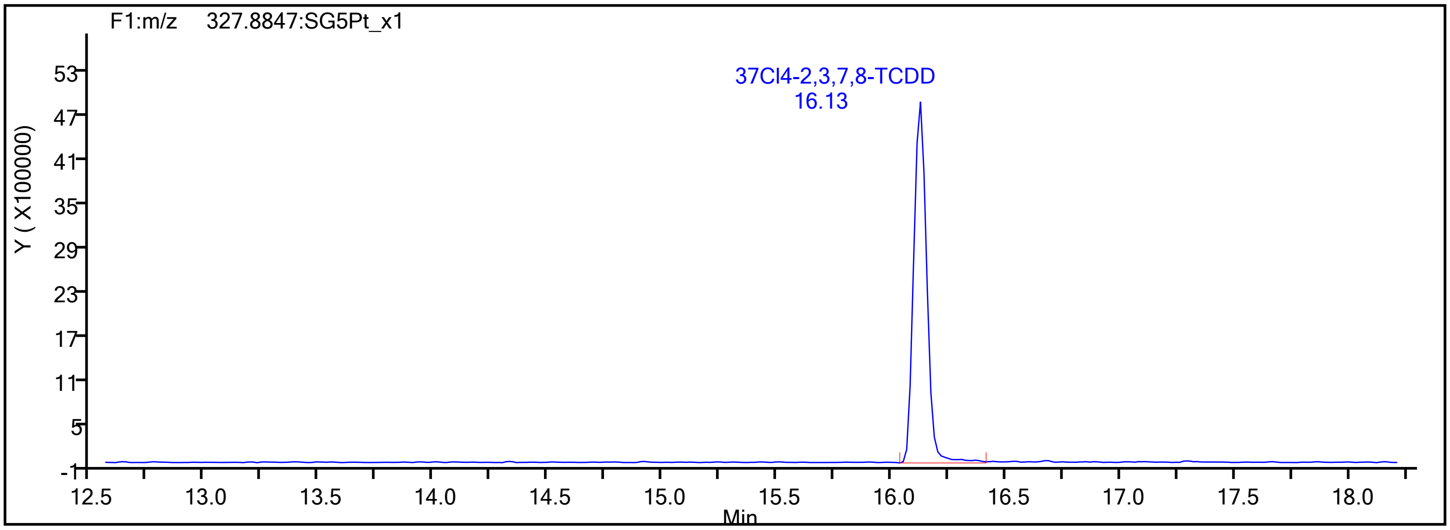

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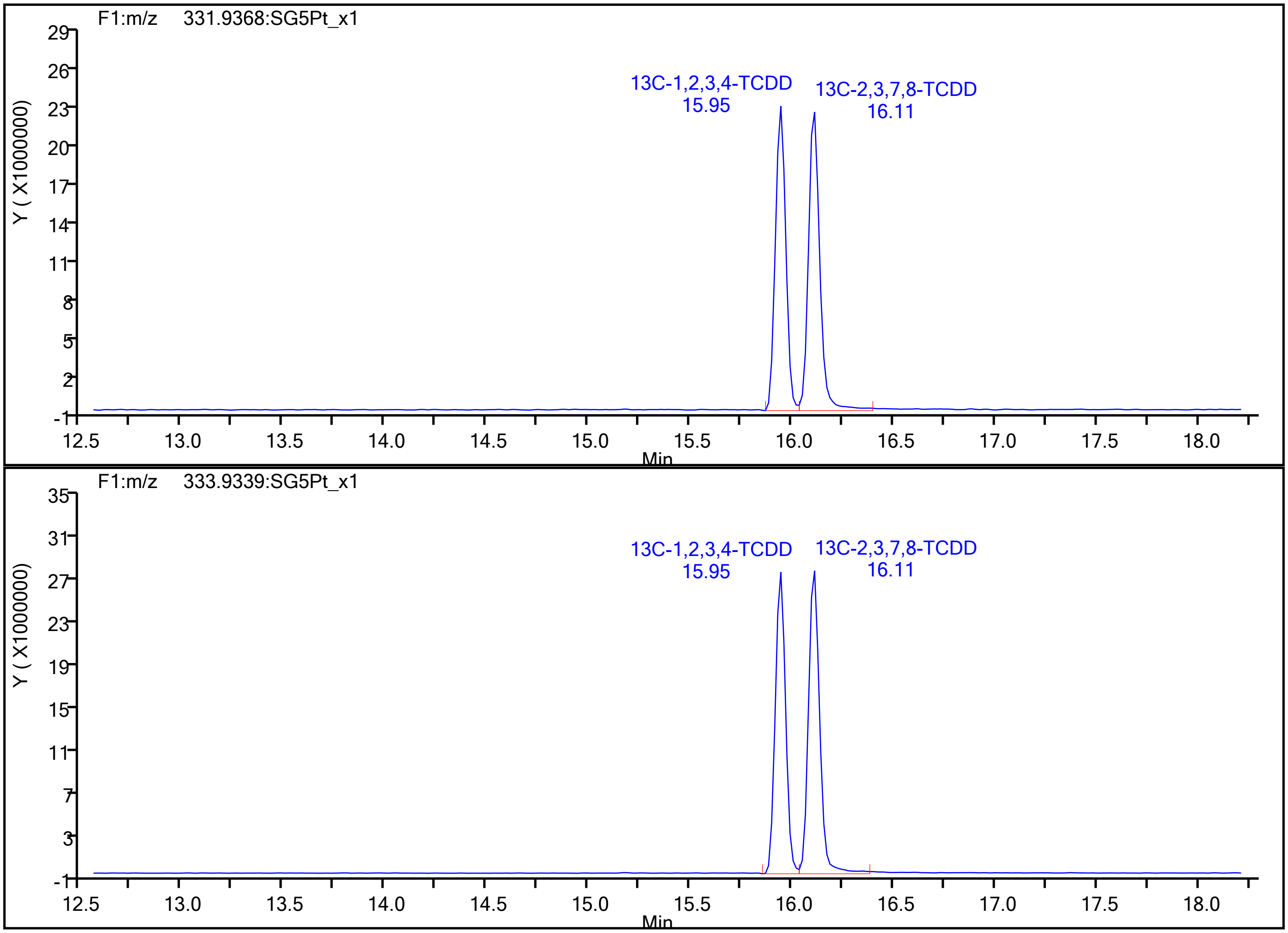

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PeCDF

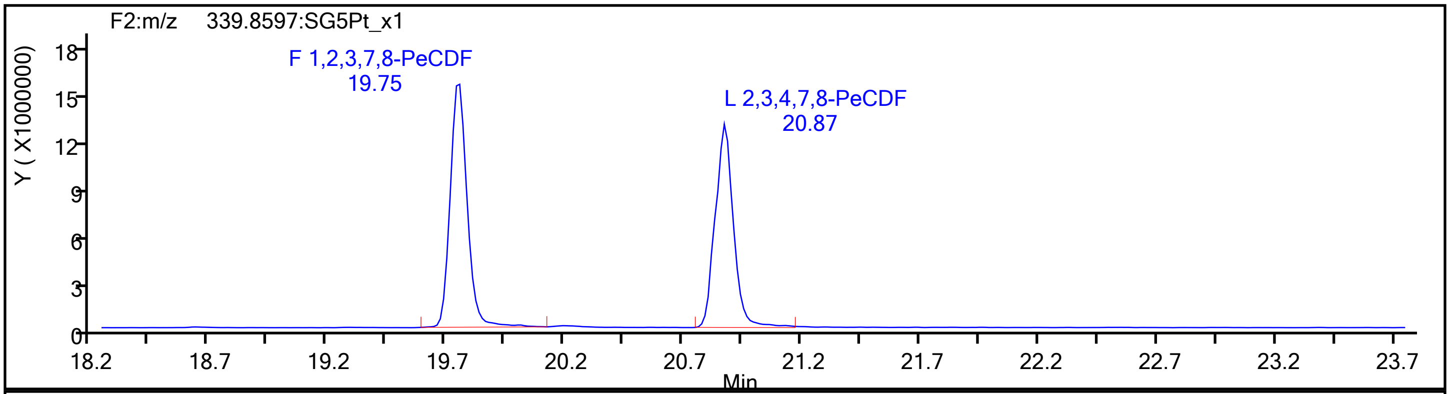

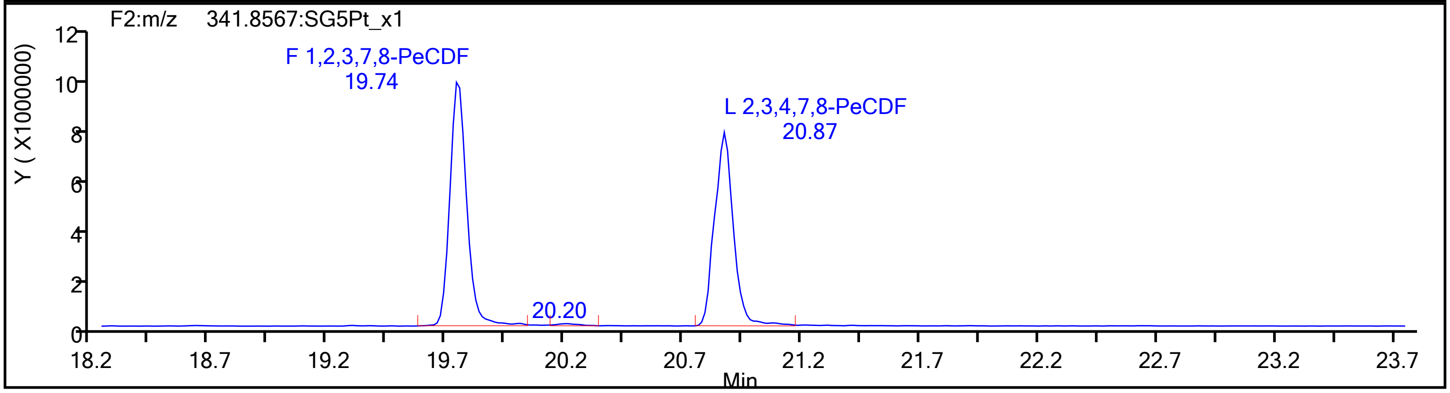

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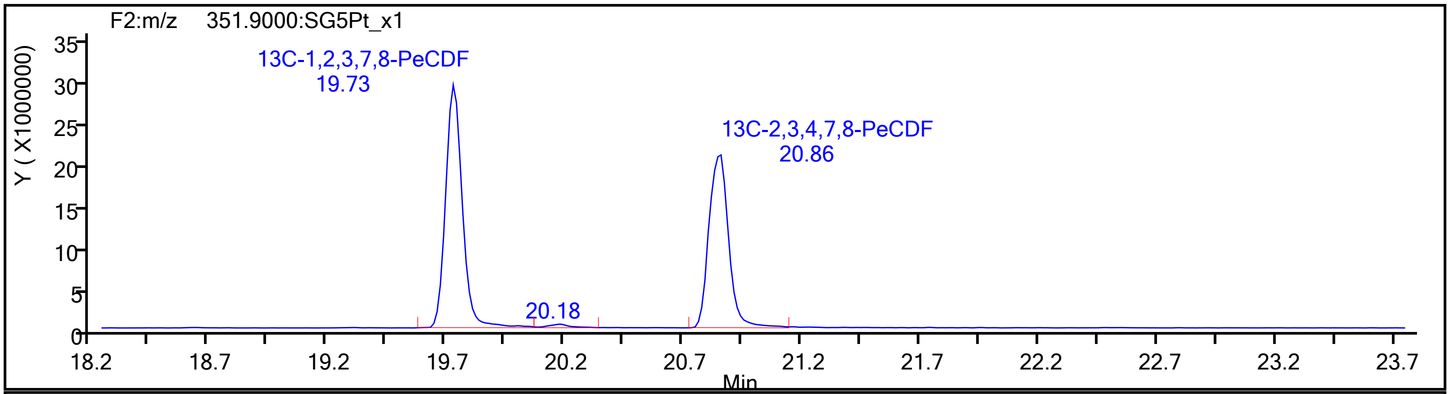

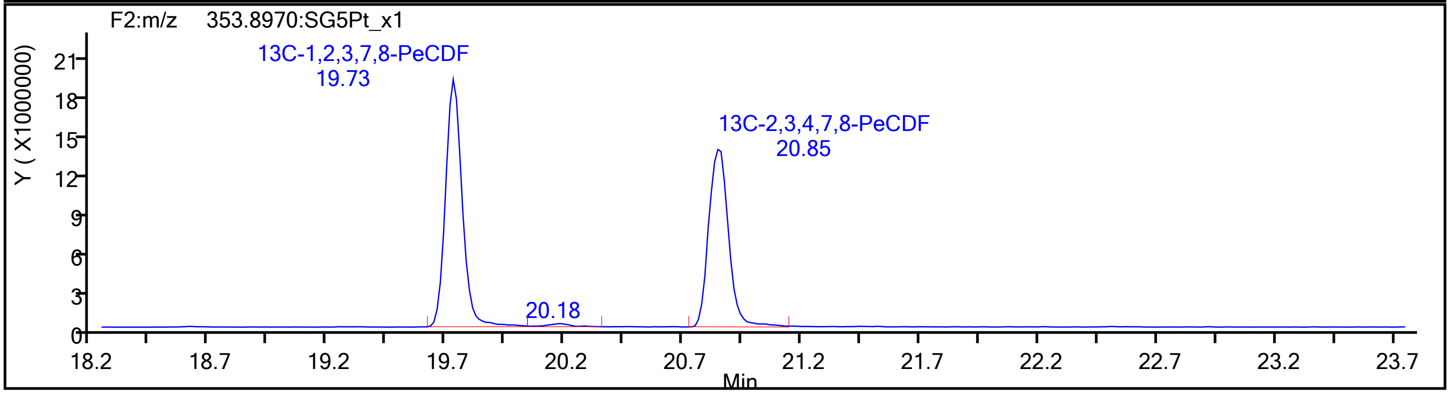

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Eurofins TestAmerica, Sacramento

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Column Dia:

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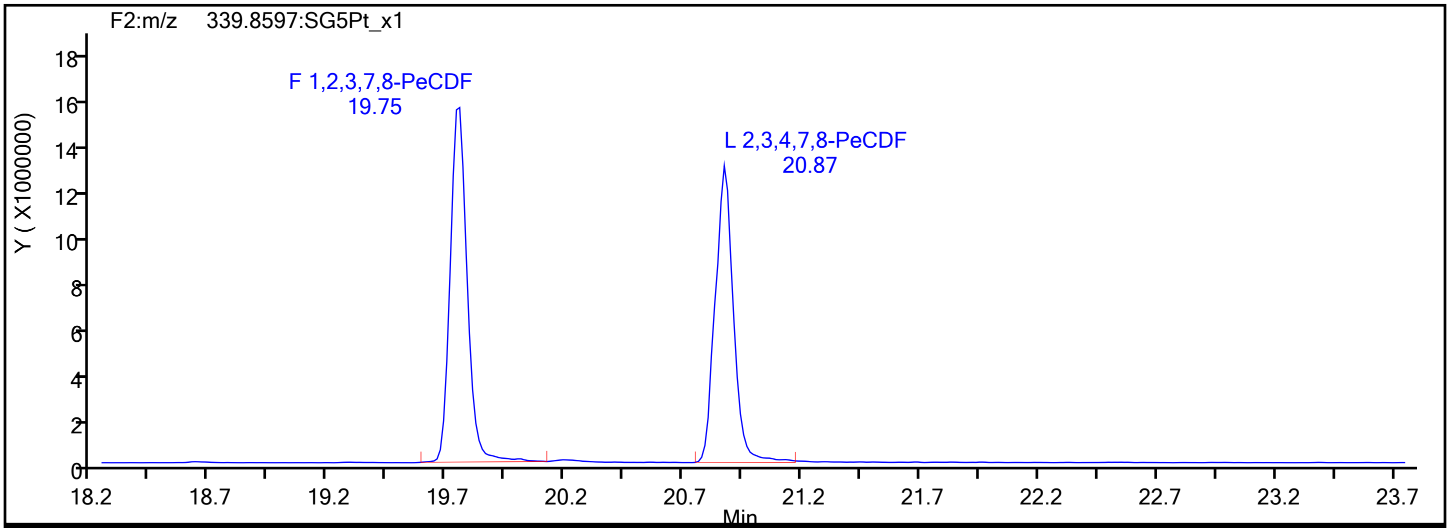

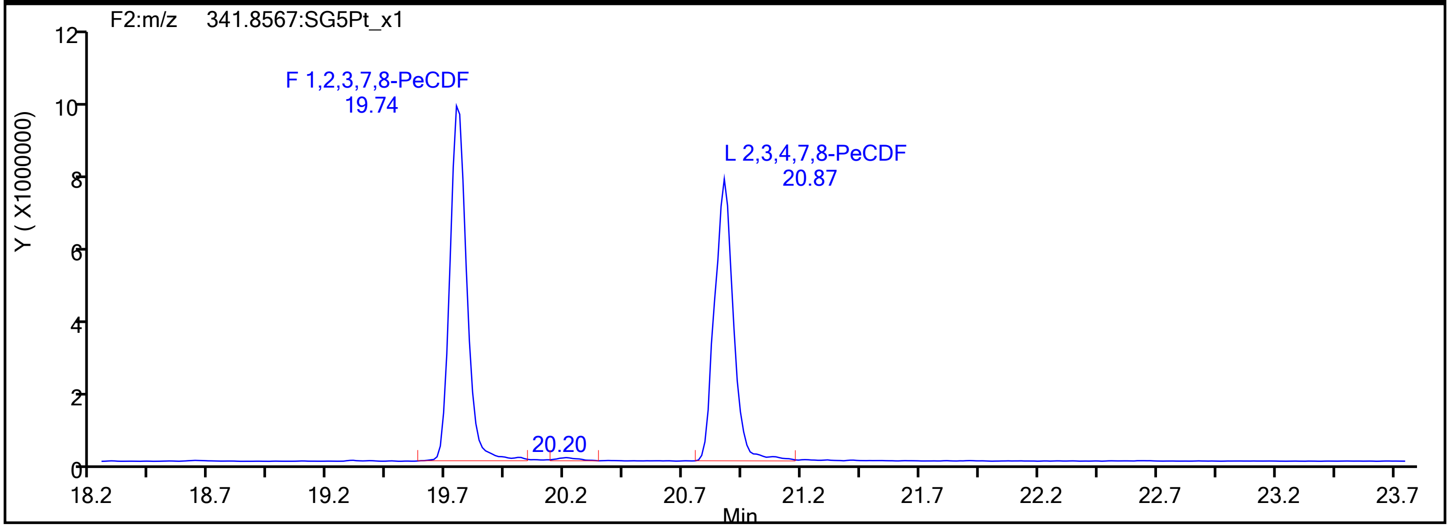

PeCDF Interference Mass

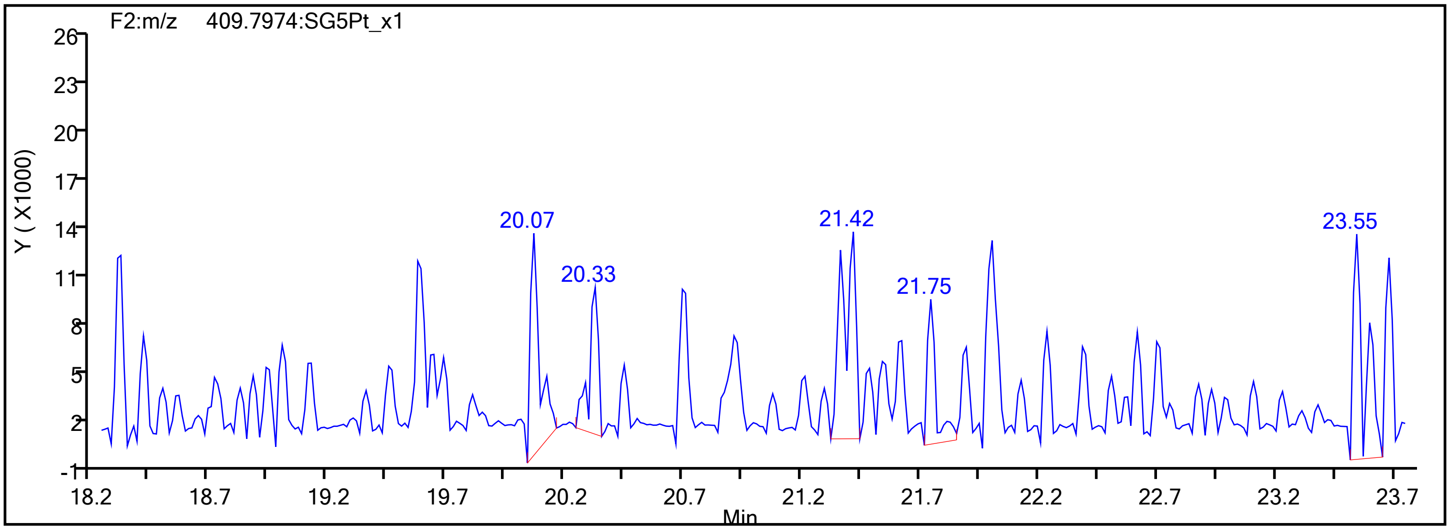

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 19:10:18 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

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Client ID: L4

Worklist#: 419031 Sample Line#: 5

Column Type: Column Dia:

PeCDD

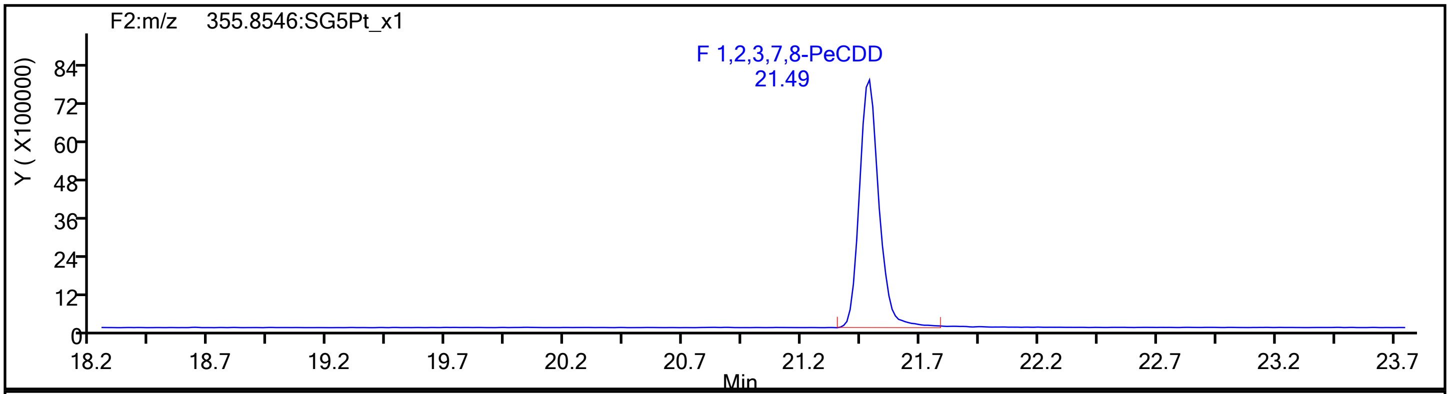

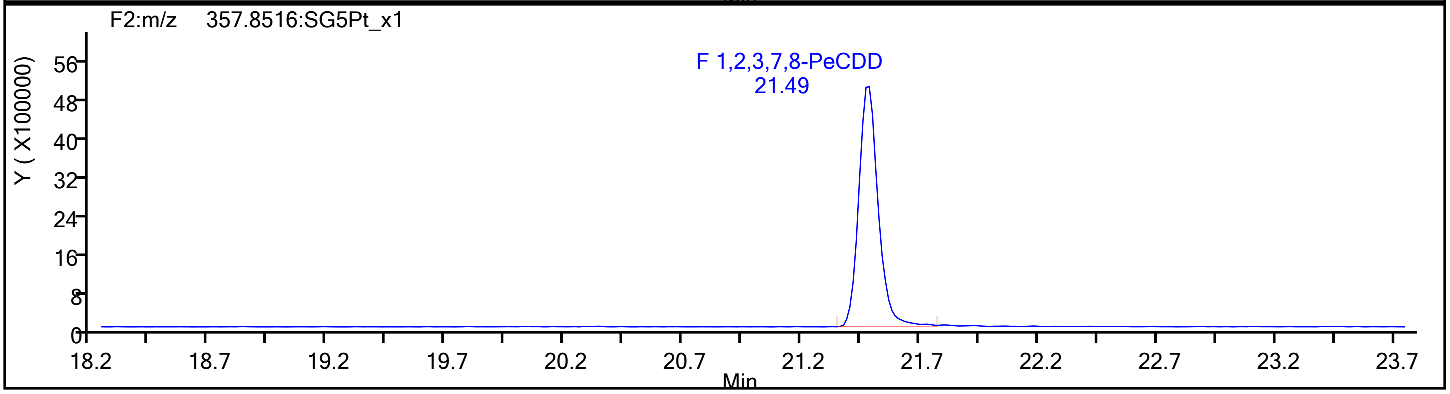

PeCDD Standards

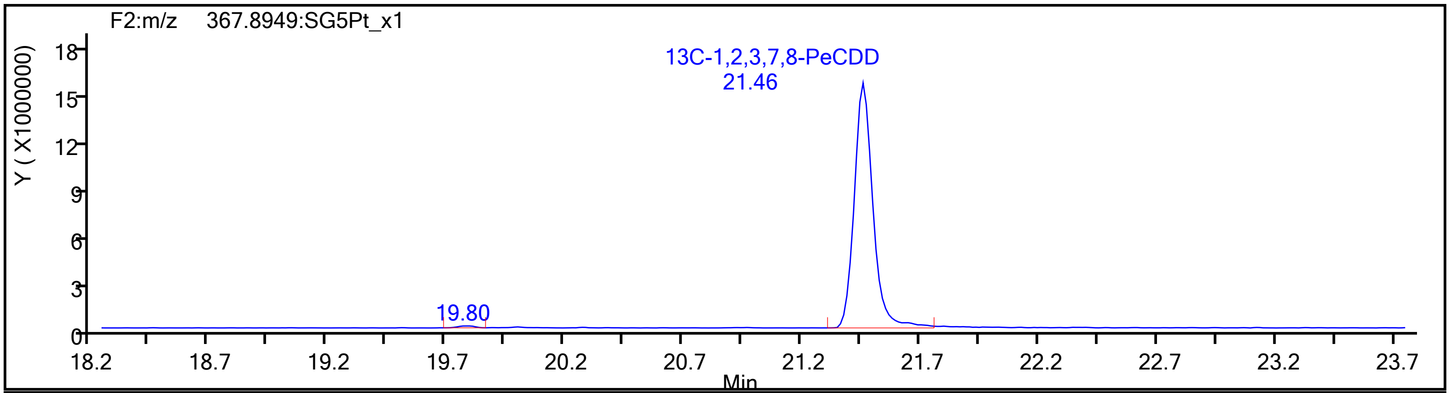

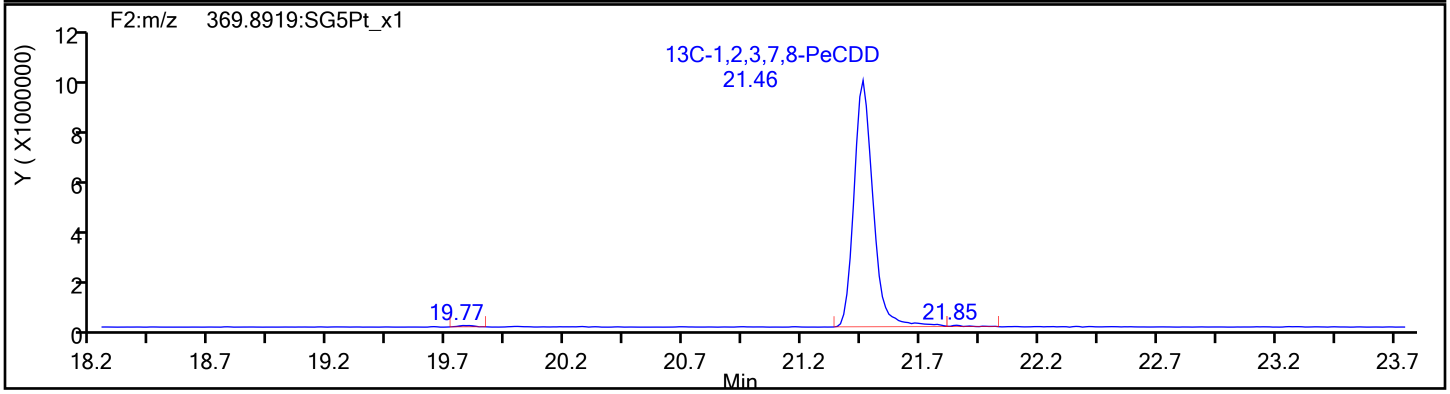

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Eurofins TestAmerica, Sacramento

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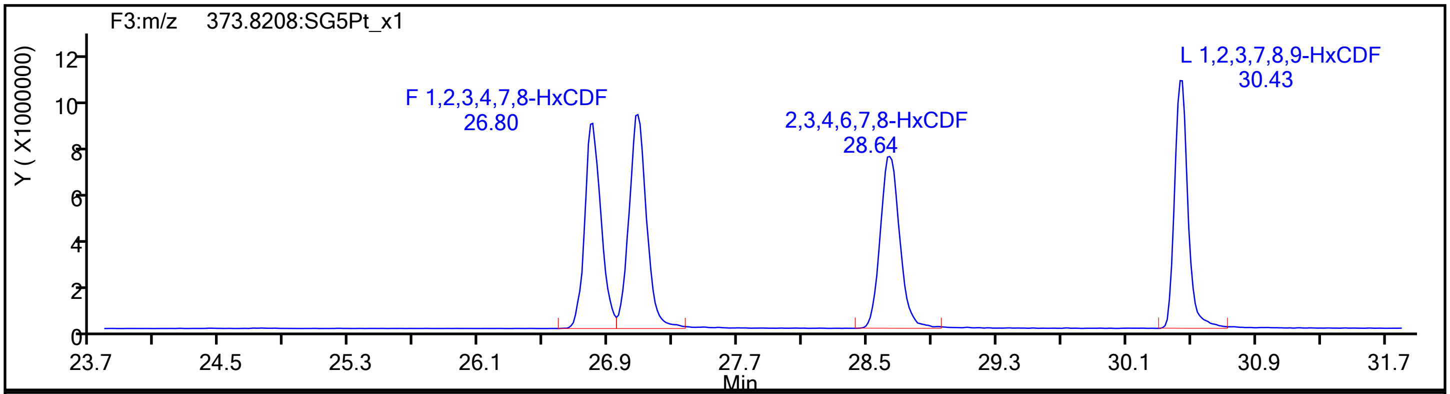

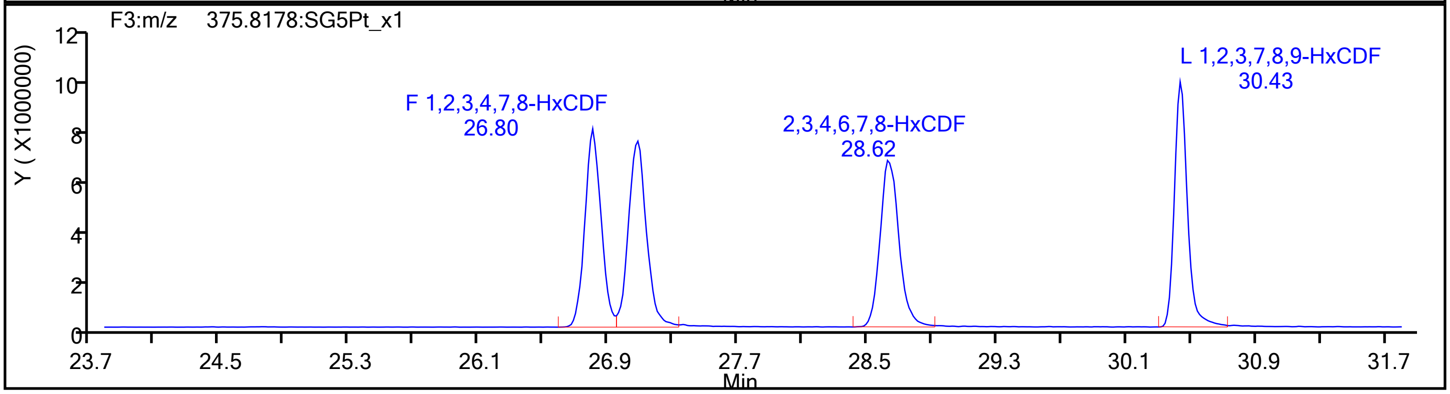

HxCDF Standards

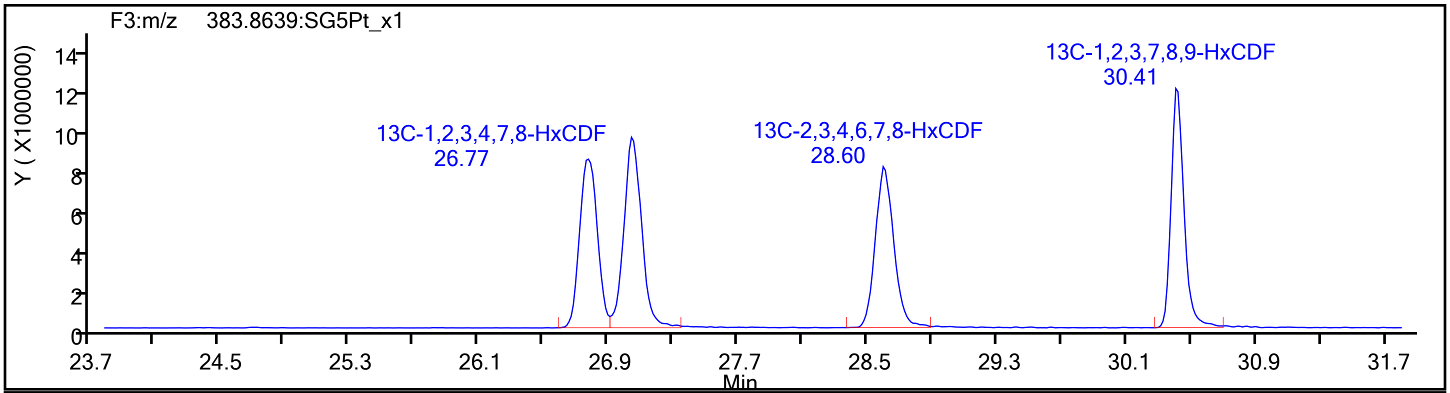

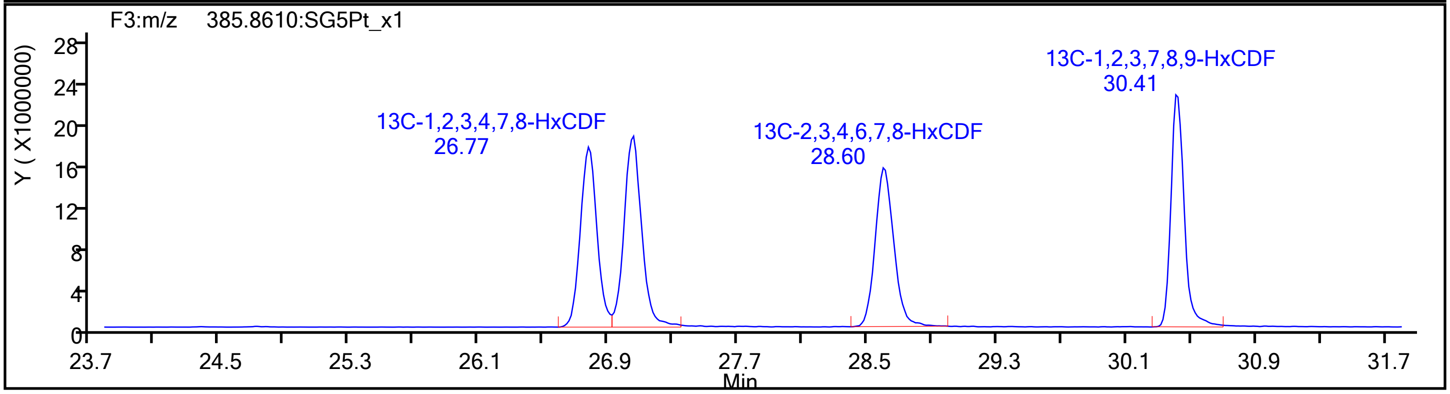

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Eurofins TestAmerica, Sacramento

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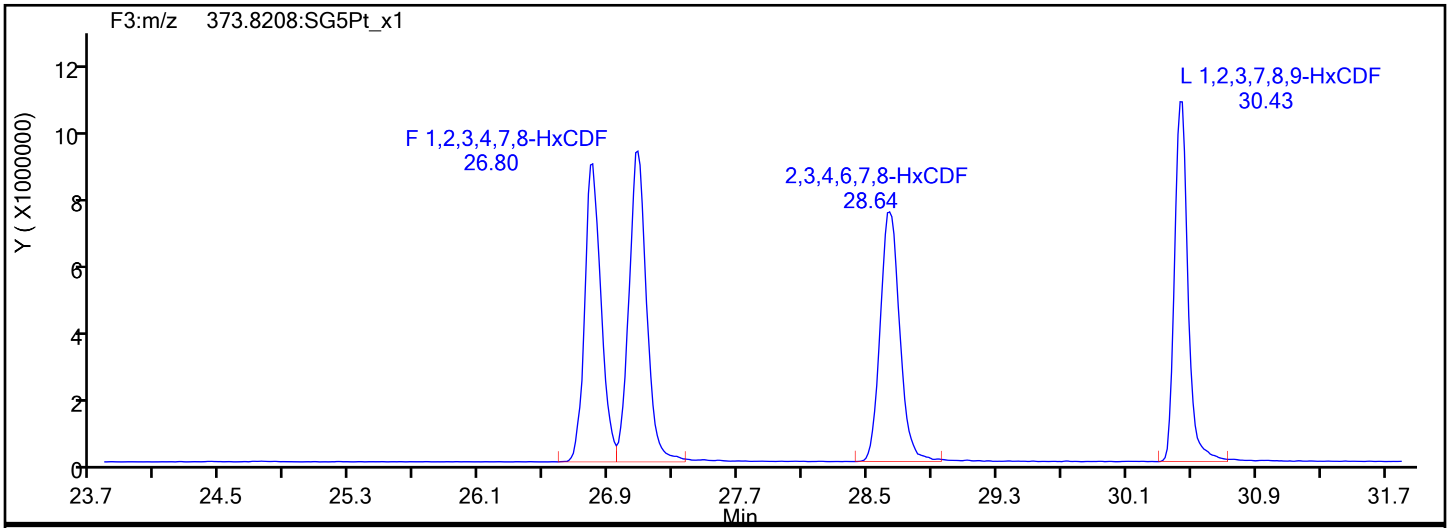

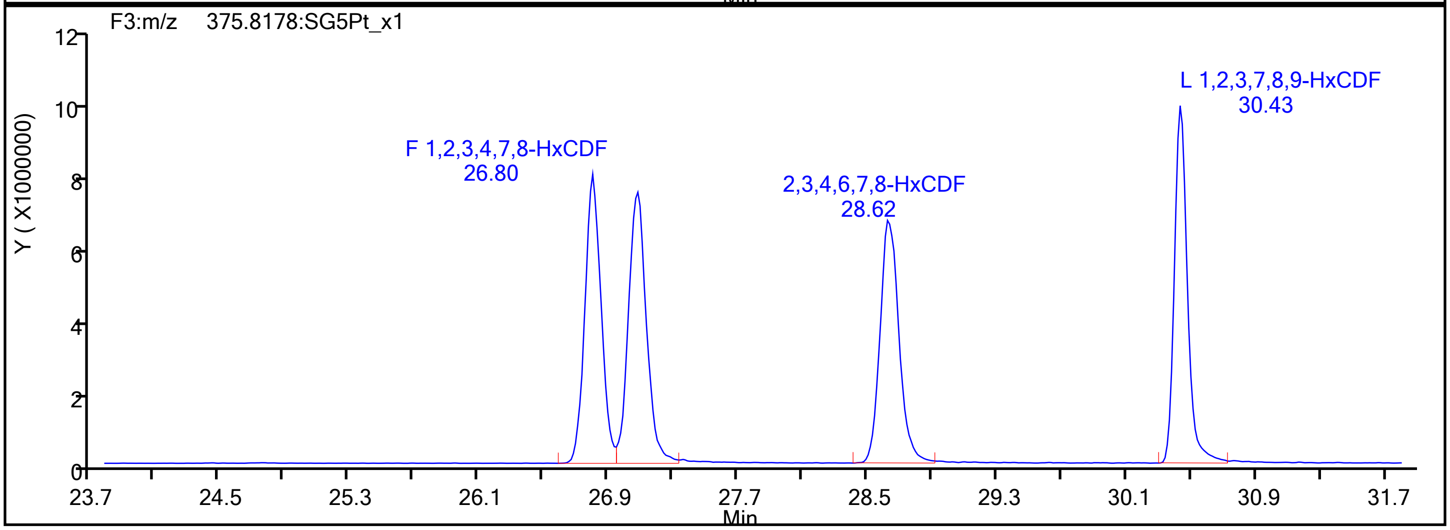

HxCDF Interference Mass

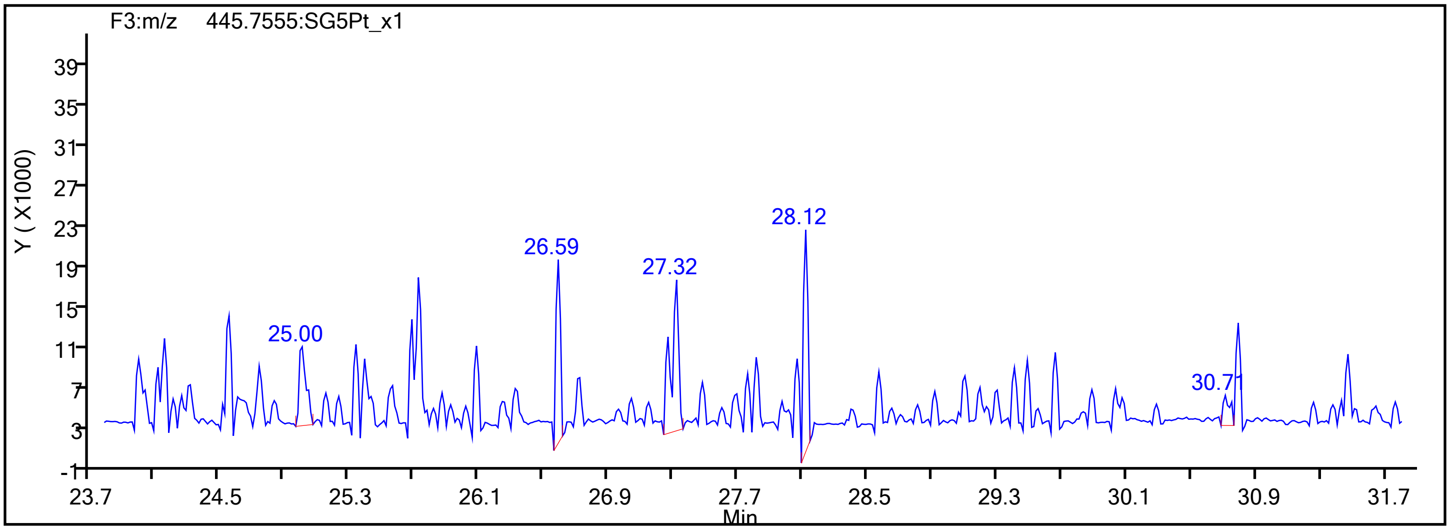

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 19:10:18 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L4

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Column Type: Column Dia:

HxCDD

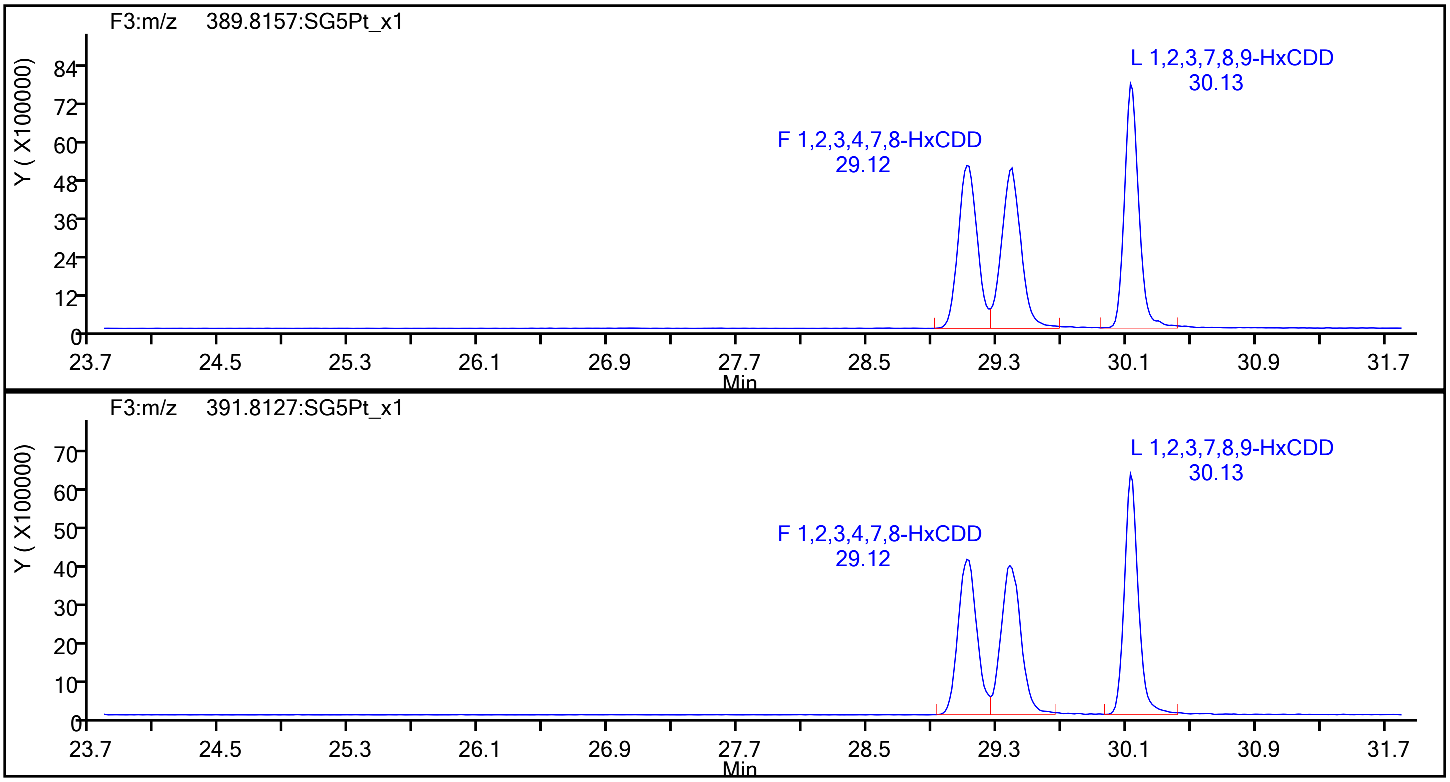

HxCDD Standards

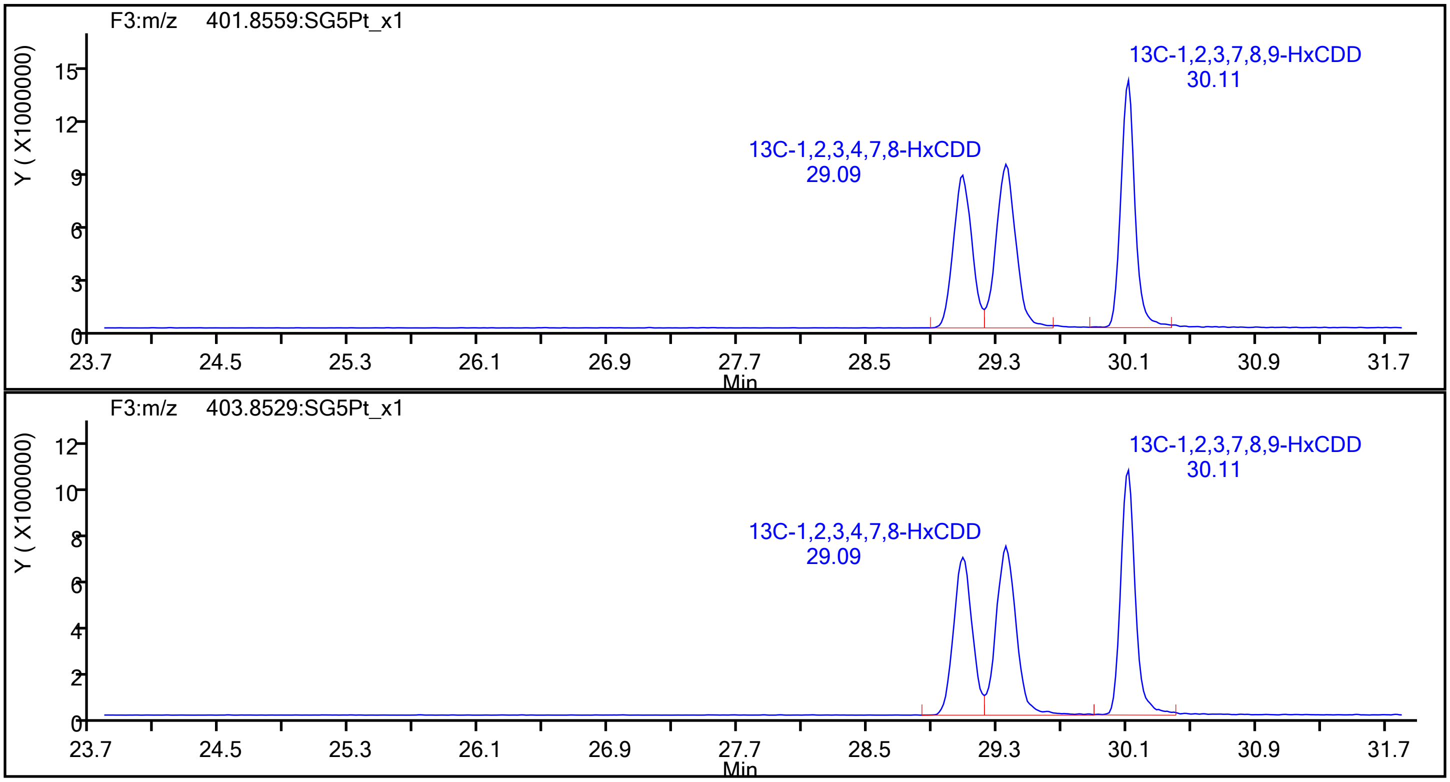

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HpCDF

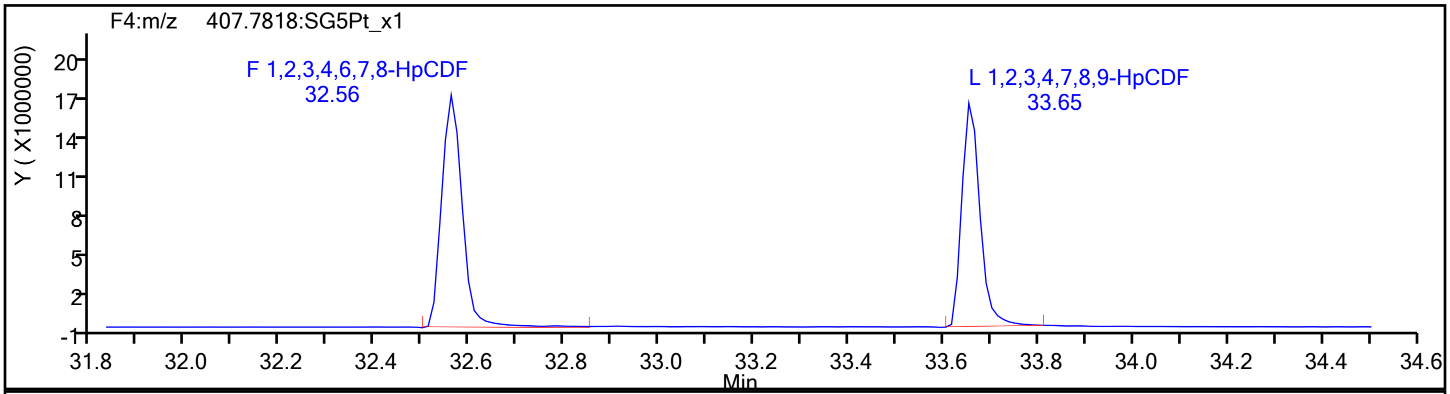

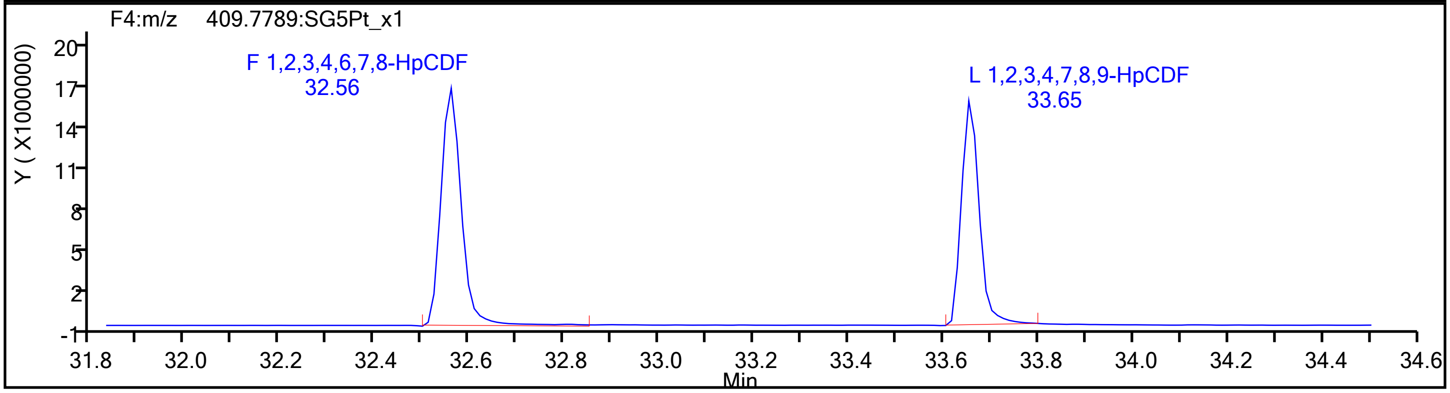

HpCDF Standards

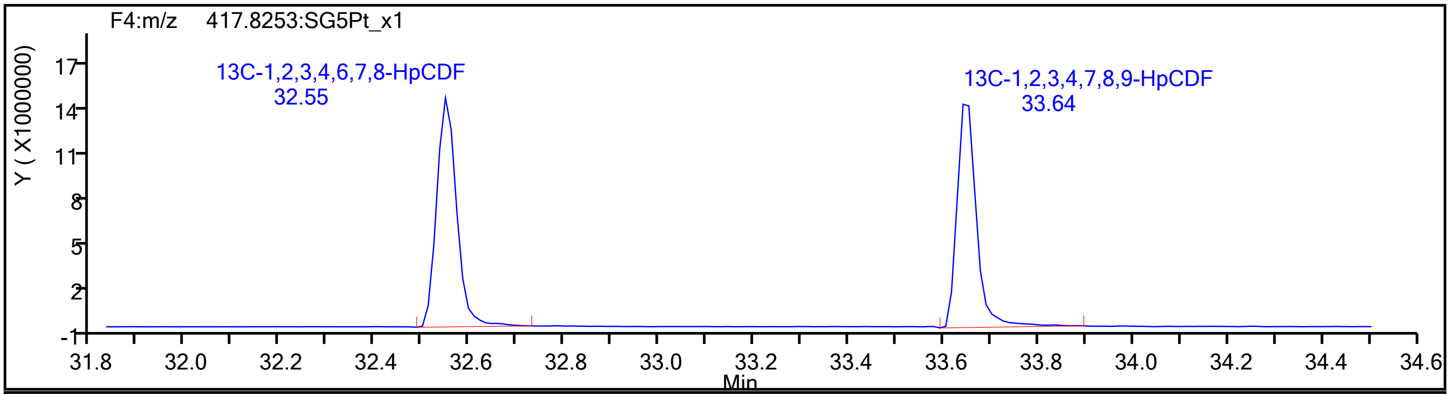

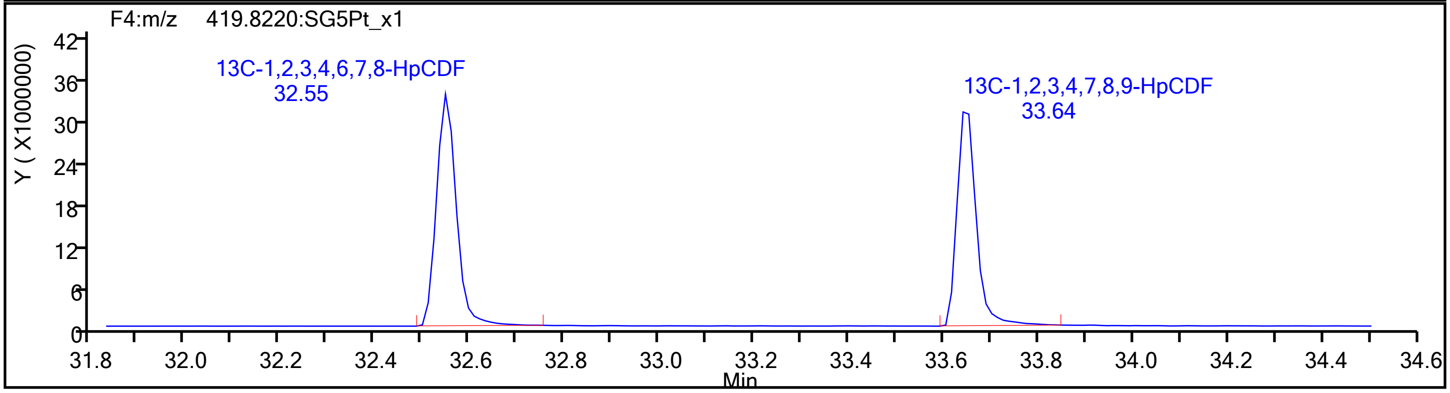

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Eurofins TestAmerica, Sacramento

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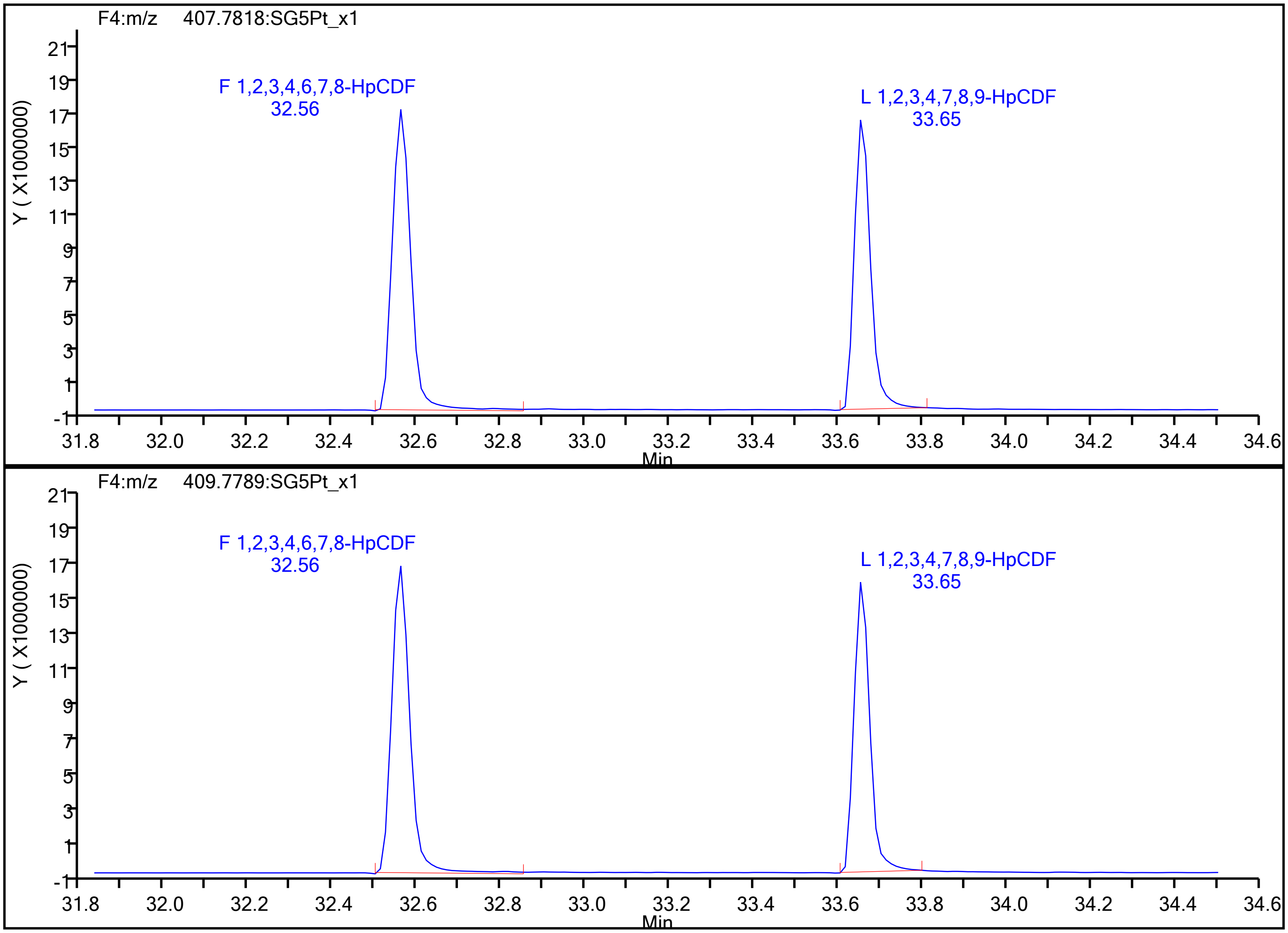

HpCDF Interference Mass

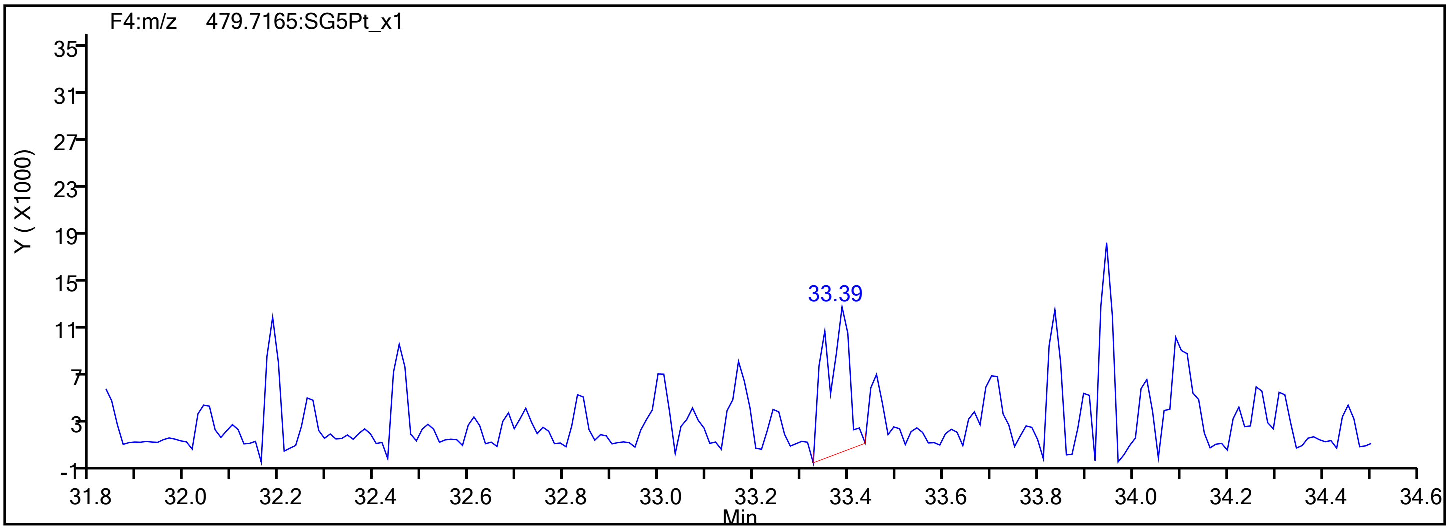

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5 Operator ID: SMA

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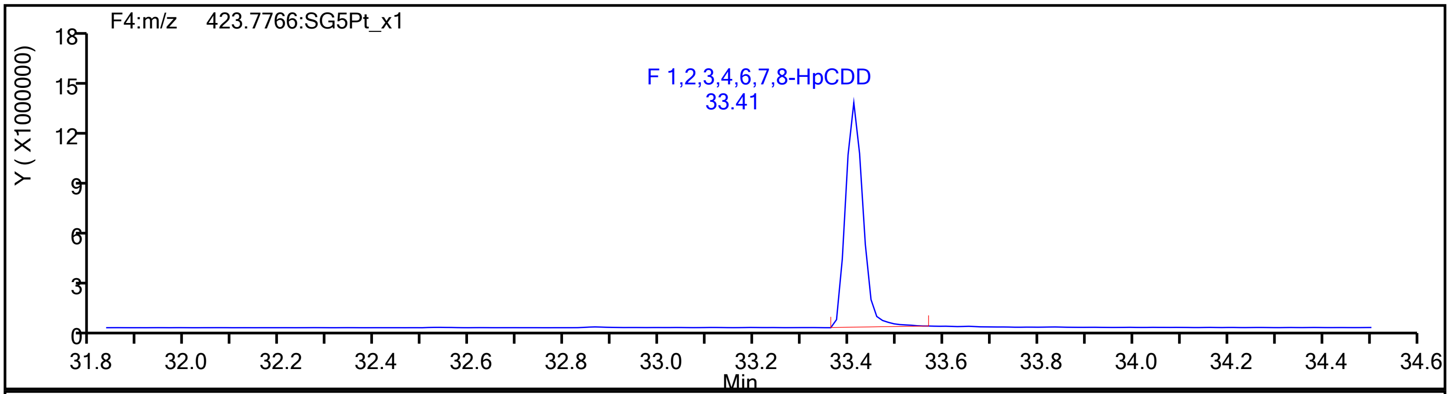

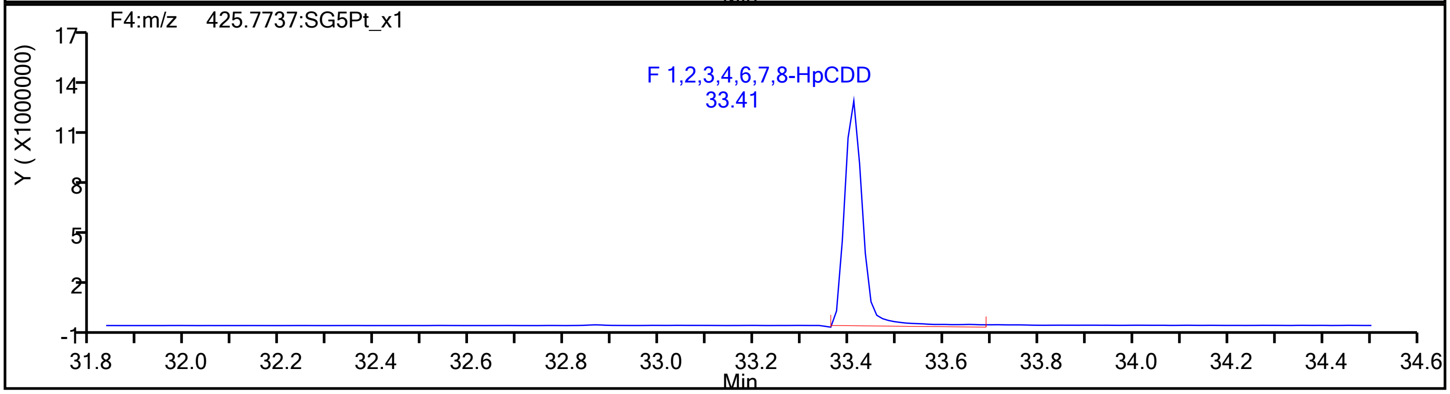

HpCDD Standards

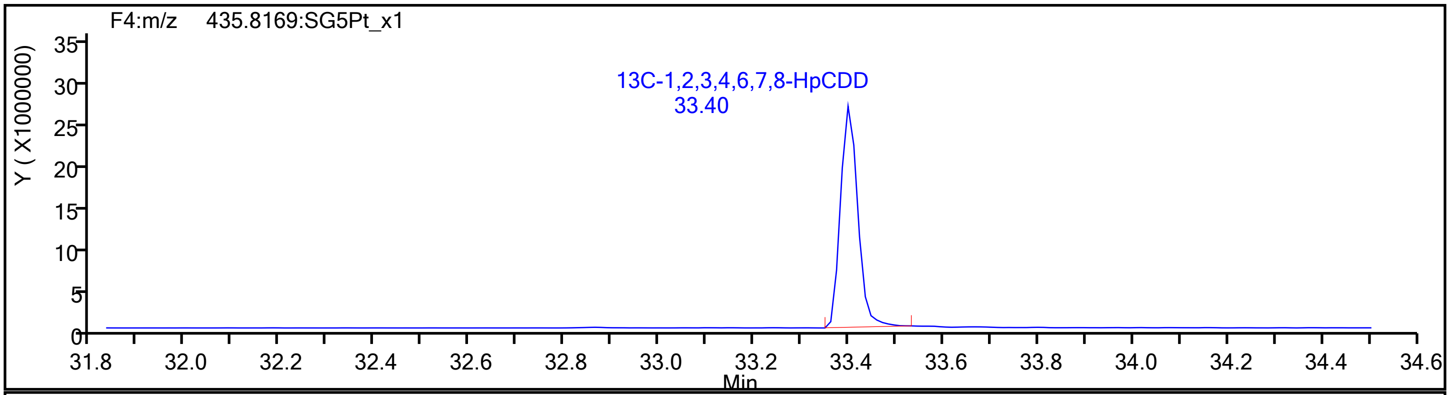

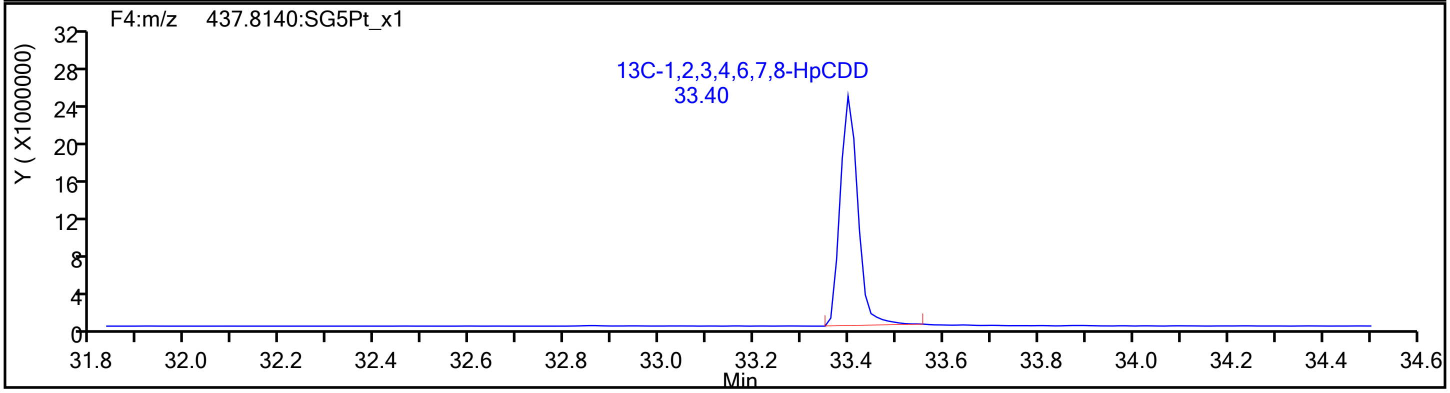

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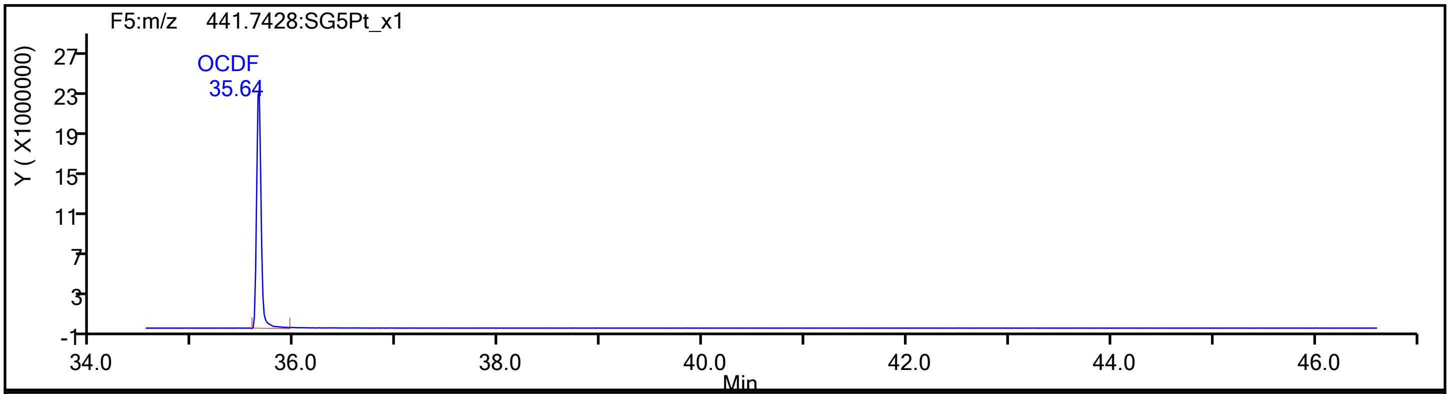

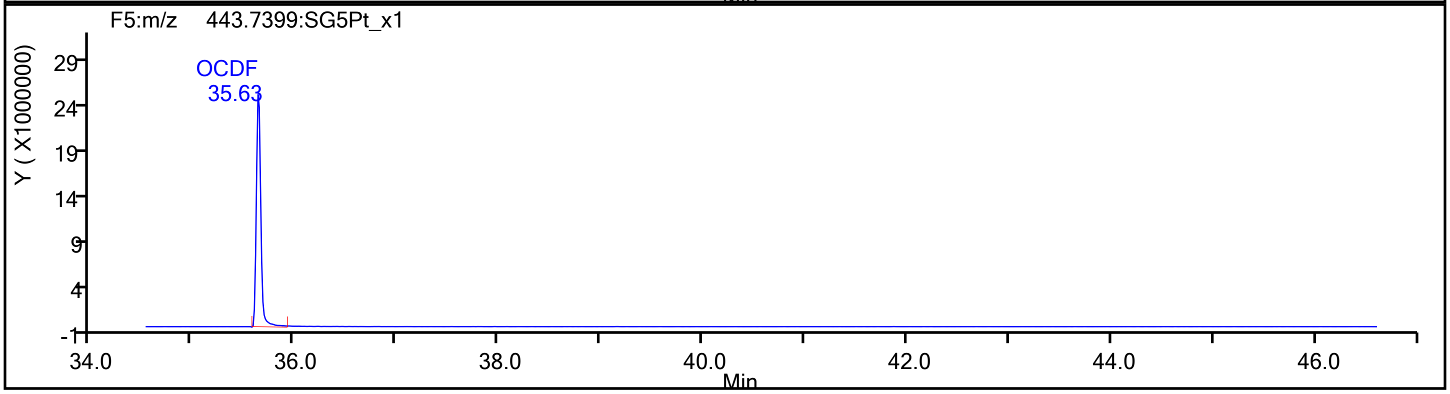

OCDF Standards

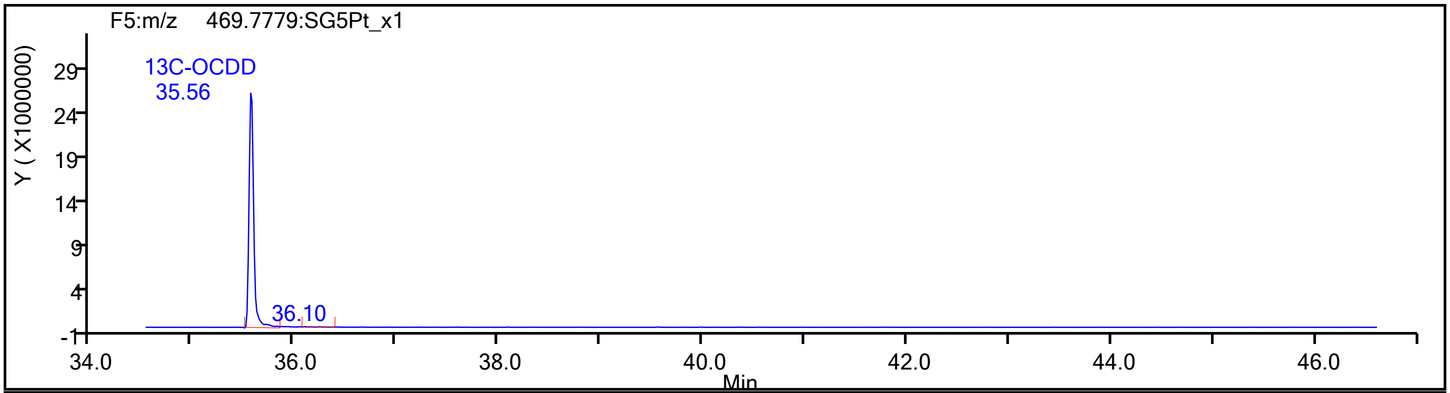

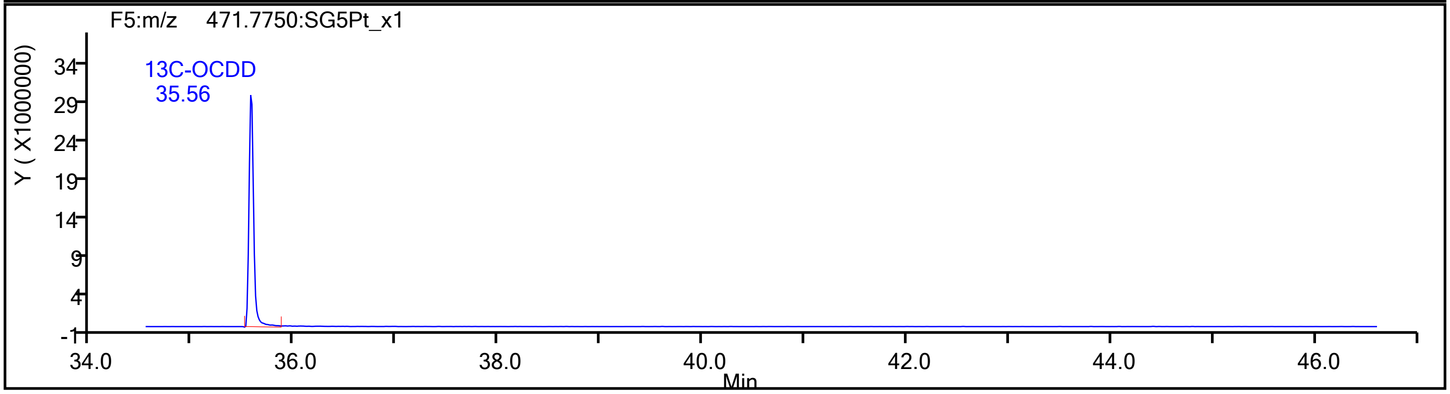

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Eurofins TestAmerica, Sacramento

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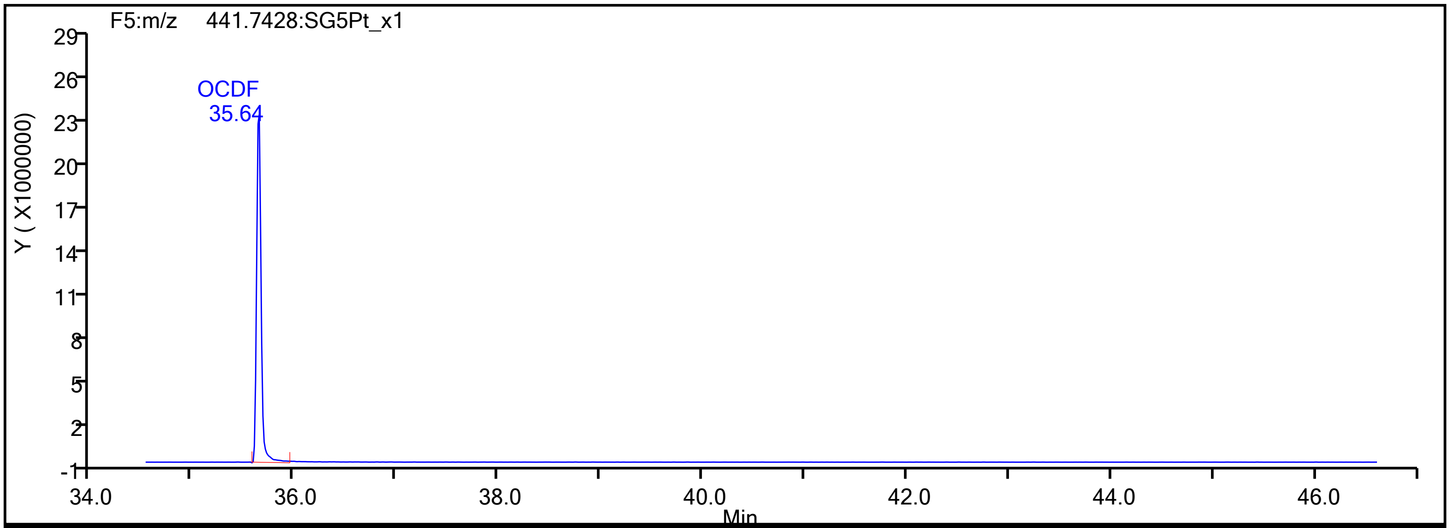

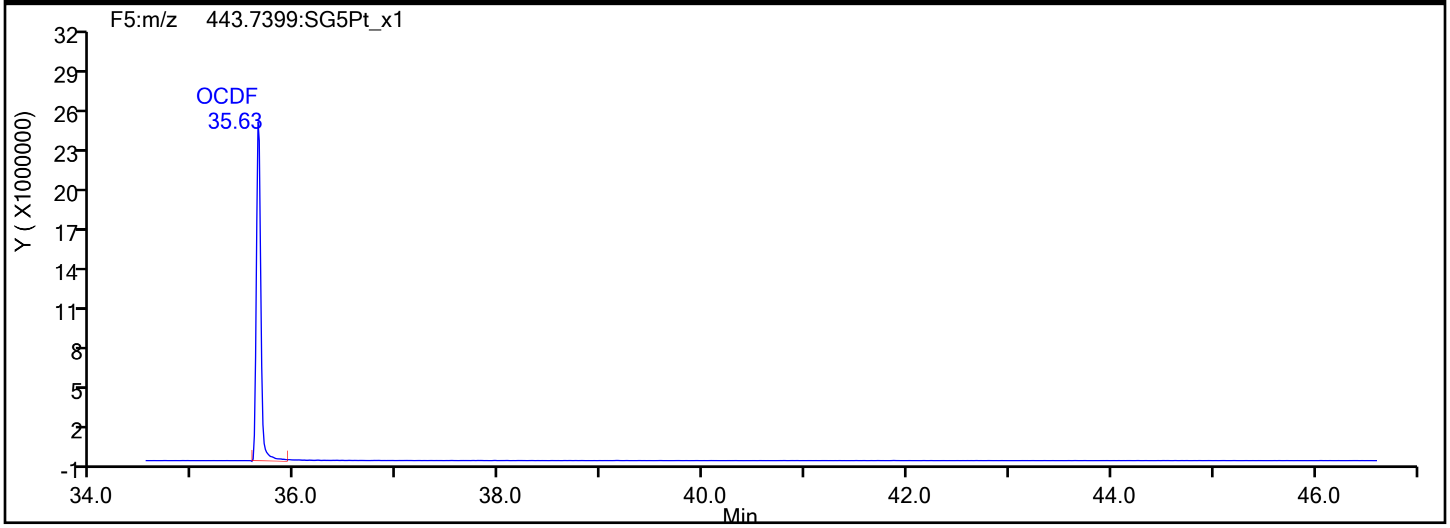

OCDF Interference Mass

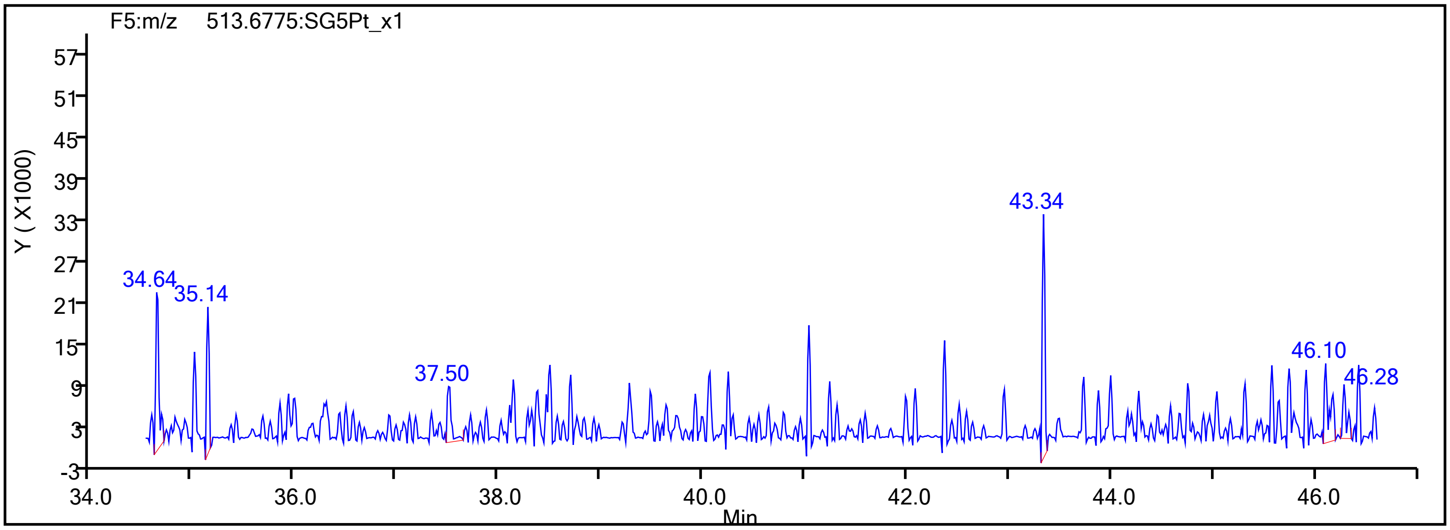

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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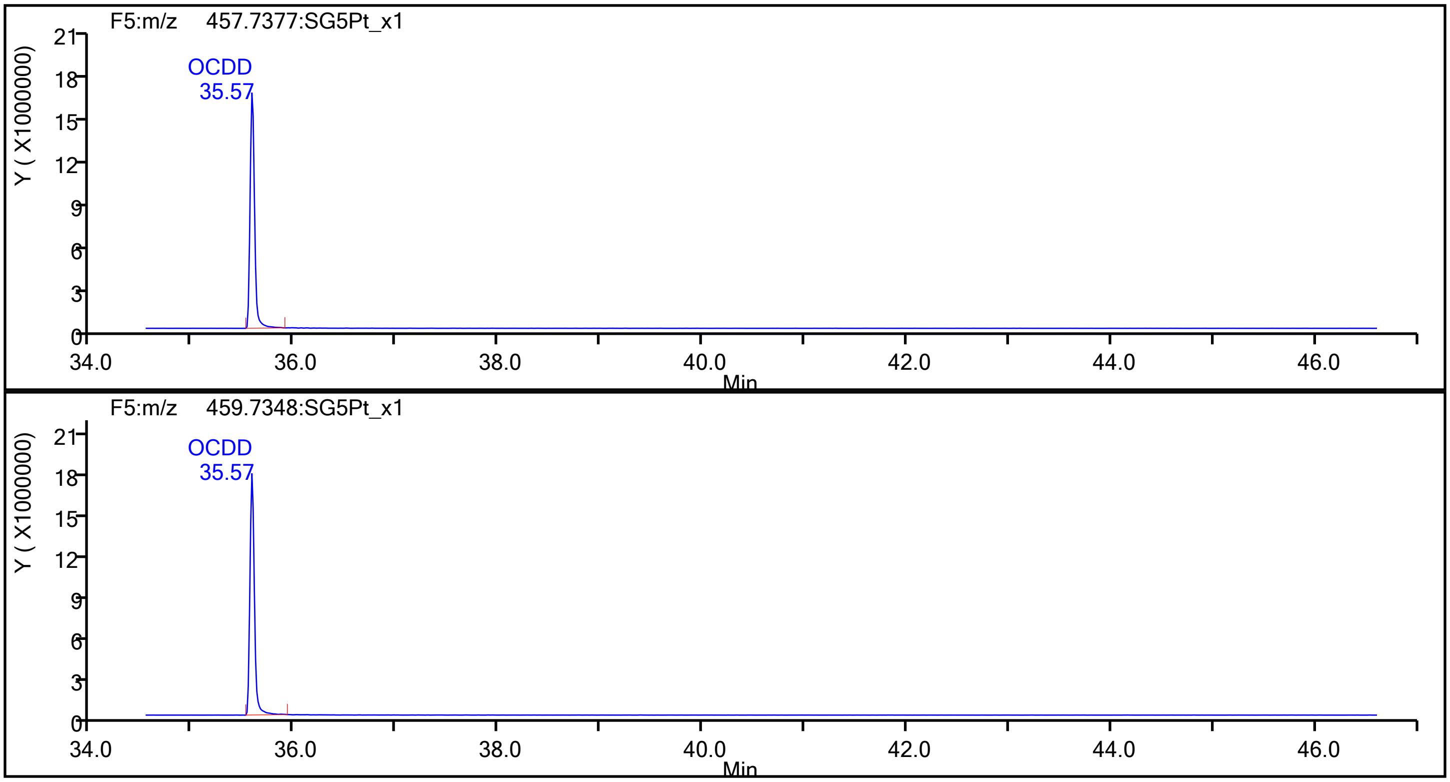

OCDD Standards

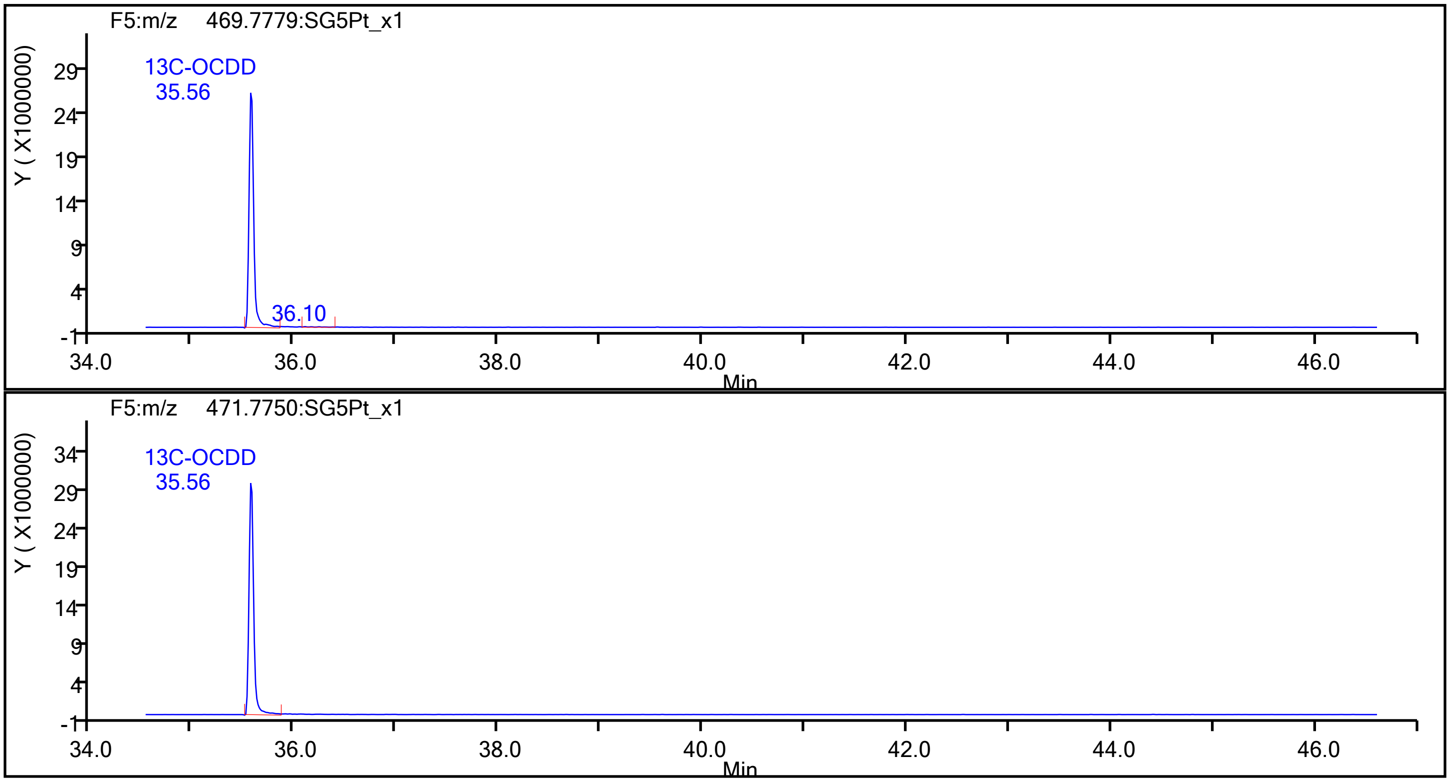

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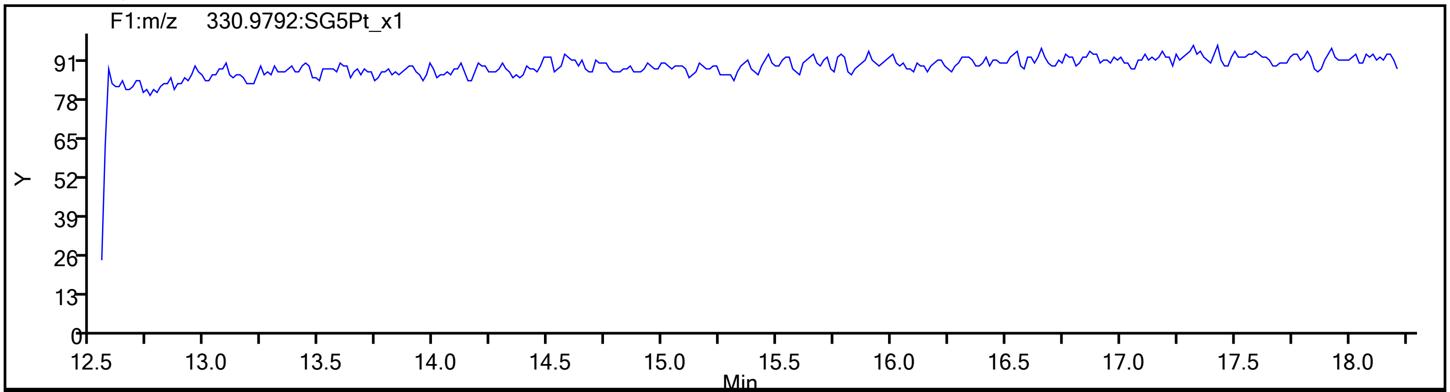

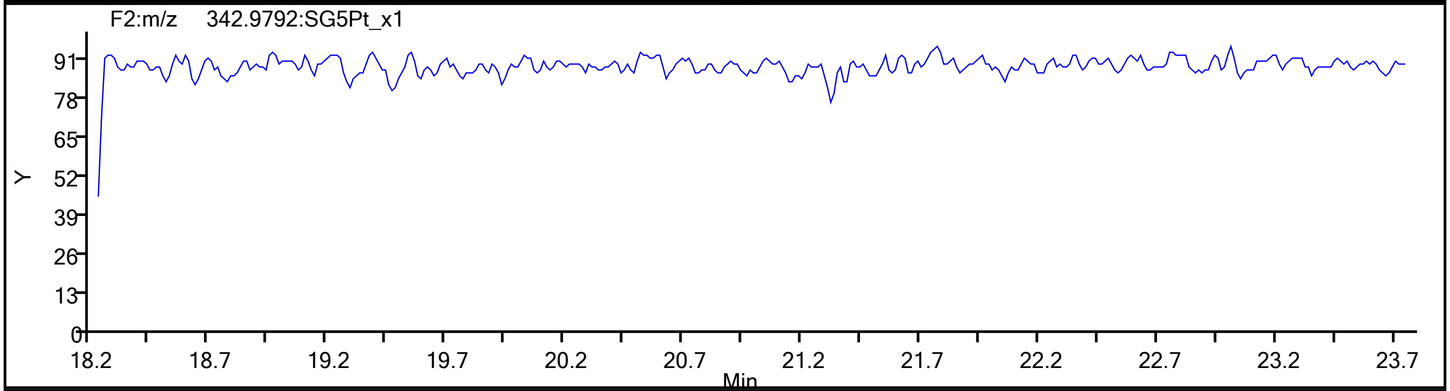

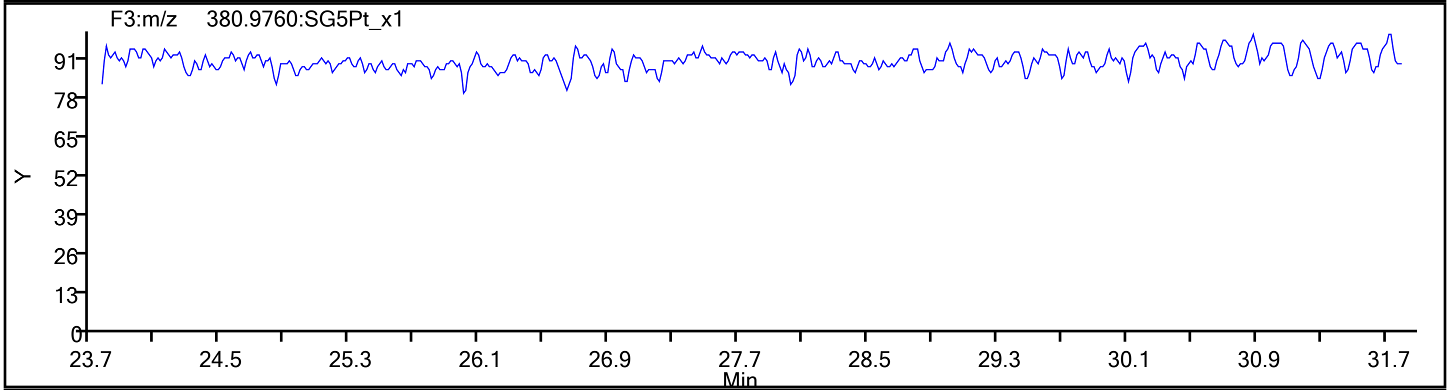

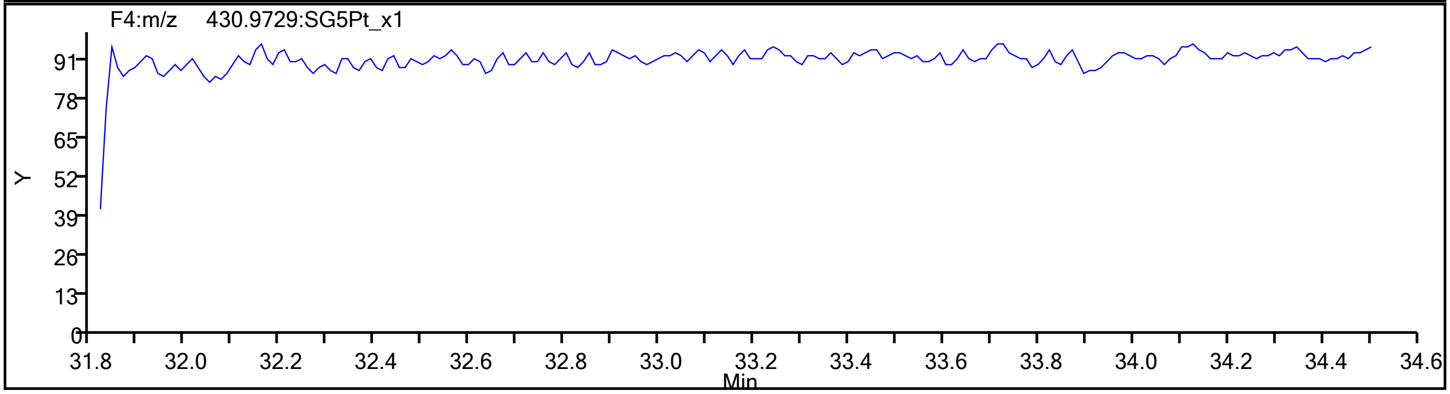

Report Date: 08-Oct-2020 15:16:32 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_6.d

Injection Date: 05-Oct-2020 19:10:18 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L4

Worklist#: 419031 Sample Line#: 5

Column Type: Column Dia:

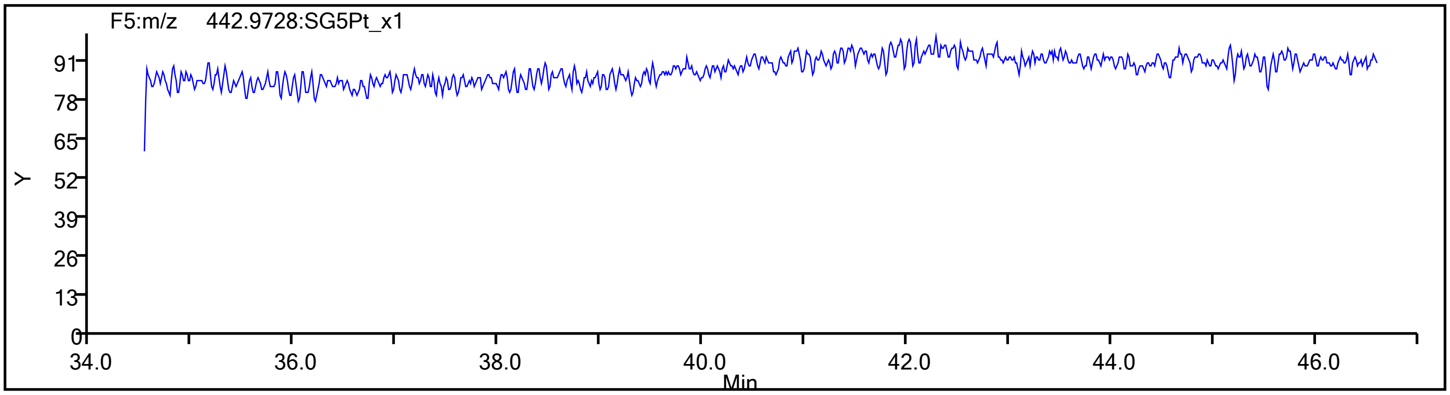

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Lims ID: IC 5
Client ID: L5
Sample Type: IC Calib Level: 5
Inject. Date: 05-Oct-2020 19:57:54 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520C CS-5 HRDXNL5_00031
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:38 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:51:21

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.946	389862328	0.78	3.1E+06	100.0	100.0				a
D 13C-2,3,7,8-TCDF	15.507	594233438	0.80	1.4844	102.7	102.7	0.4848	0.4848	103	
2,3,7,8-TCDF	15.522	209927269	0.79	0.9534	37.1	37.1	0.2204	0.2204	92.64	
S Total TCDF					37.1	37.1	0.2204	0.2204		
D 13C-2,3,7,8-TCDD	16.112	429526256	0.79	1.0875	101.3	101.3	0.4078	0.4078	101	
2,3,7,8-TCDD	16.127	165290208	0.69	1.0205	37.7	37.7	0.0473	0.0473	94.27	
$ 37Cl4-2,3,7,8-TCDD	16.127	174316633		1.1216	39.9	39.9	0.0602	0.0602	99.66	
S Total TCDD					37.7	37.7	0.0473	0.0473		
D 13C-1,2,3,7,8-PeCDF	19.727	533428169	1.58	1.3943	98.1	98.1	0.2595	0.2595	98.13	
1,2,3,7,8-PeCDF	19.741	1095066318	1.56	1.0794	190.2	190.2	0.6045	0.6045	95.10	
D 13C-2,3,4,7,8-PeCDF	20.846	515365819	1.57	1.3370	98.9	98.9	0.2706	0.2706	98.87	
2,3,4,7,8-PeCDF	20.859	1100136364	1.56	1.0966	194.7	194.7	0.6378	0.6378	97.33	
S Total PeCDF					384.9	384.9	0.6212	0.6212		
D 13C-1,2,3,7,8-PeCDD	21.445	324170430	1.51	0.8475	98.1	98.1	0.1560	0.1560	98.11	
1,2,3,7,8-PeCDD	21.473	703934838	1.59	1.1397	190.5	190.5	0.2659	0.2659	95.27	
S Total PeCDD					190.5	190.5	0.2659	0.2659		
D 13C-1,2,3,4,7,8-HxCDF	26.773	451595301	0.53	1.3065	104.2	104.2	0.4418	0.4418	104	
1,2,3,4,7,8-HxCDF	26.799	1072201977	1.22	1.2552	189.1	189.1	0.7953	0.7953	94.57	
D 13C-1,2,3,6,7,8-HxCDF	27.039	487656939	0.54	1.4213	103.4	103.4	0.4061	0.4061	103	
1,2,3,6,7,8-HxCDF	27.079	1130996813	1.25	1.2102	191.6	191.6	0.8256	0.8256	95.82	
D 13C-2,3,4,6,7,8-HxCDF	28.597	452978201	0.54	1.3142	103.9	103.9	0.4392	0.4392	104	
2,3,4,6,7,8-HxCDF	28.624	1040197011	1.19	1.2182	188.5	188.5	0.8761	0.8761	94.25	
D 13C-1,2,3,7,8,9-HxCDF	30.408	450751254	0.53	1.3204	102.9	102.9	0.4371	0.4371	103	
1,2,3,7,8,9-HxCDF	30.434	1083434305	1.24	1.2319	195.1	195.1	0.5935	0.5935	97.56	
S Total HxCDF					764.4	764.4	0.7726	0.7726		
* 13C-1,2,3,7,8,9-HxCDD	30.101	331878907	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.090	287684208	1.28	0.8660	100.1	100.1	0.3027	0.3027	100	a
1,2,3,4,7,8-HxCDD	29.116	667700957	1.26	1.2535	185.2	185.2	0.5553	0.5553	92.58	
D 13C-1,2,3,6,7,8-HxCDD	29.356	333320962	1.26	0.9827	102.2	102.2	0.2667	0.2667	102	a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	29.382	675790557	1.27	1.1117	182.4	182.4	0.5909	0.5909	91.19	
1,2,3,7,8,9-HxCDD	30.128	742798772	1.25	1.2852	186.1	186.1	0.5259	0.5259	93.07	
S Total HxCDD					553.7	553.7	0.5574	0.5574		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	314629194	0.45	0.9410	100.7	100.7	1.807	1.807	101	
1,2,3,4,6,7,8-HpCDF	32.559	896098269	1.07	1.4783	192.7	192.7	2.202	2.202	96.33	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	293649009	0.44	0.8751	101.1	101.1	1.943	1.943	101	
1,2,3,4,7,8,9-HpCDF	33.653	808401655	1.03	1.3784	199.7	199.7	2.189	2.189	99.86	
S Total HpCDF					392.4	392.4	2.196	2.196		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	320575932	1.07	0.9049	106.7	106.7	2.901	2.901	107	
1,2,3,4,6,7,8-HpCDD	33.410	634301328	1.03	1.0862	182.2	182.2	0.5856	0.5856	91.08	
S Total HpCDD					182.2	182.2	0.5856	0.5856		
D 13C-OCDD	35.558	398049912	0.91	0.5783	207.4	207.4	1.057	1.057	104	
OCDF	35.630	1338861012	0.92	1.7248	390.0	390.0	0.6190	0.6190	97.51	
OCDD	35.570	947975714	0.91	1.2576	378.8	378.8	0.8700	0.8700	94.69	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Lims ID: IC 5
Client ID: L5
Sample Type: IC Calib Level: 5
Inject. Date: 05-Oct-2020 19:57:54 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520C CS-5 HRDXNL5_00031
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:38 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:51:21

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	15.946	15.942	0		170796490	48242039	94066	235165	513		a
333.9339	15.946	15.942	0		219065838	61992751	101471	253677	611	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.507	15.501	0	0.973	263574183	72613646	124941	312352	581		
317.9389	15.507	15.501	0	0.973	330659255	90973911	192344	480860	473	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.522	15.516	0	1.001	92340972	24960346	56166	140415	444		
305.8987	15.507	15.516	-1	1.000	117586297	32062362	81313	203282	394	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.112	16.106	0	1.010	190171243	48696320	94066	235165	518		
333.9339	16.112	16.106	0	1.010	239355013	61330158	101471	253677	604	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.127	16.121	0	1.001	67746790	17847814	10332	25830	1727		
321.8936	16.127	16.121	0	1.001	97543418	25882337	10896	27240	2375	0.69(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.127	16.121	0	1.011	174316633	45836226	29789	74472	1539		
13C-1,2,3,7,8-PeCDF											
351.9000	19.727	19.725	0	1.237	326475285	67286923	94237	235592	714		
353.8970	19.727	19.725	0	1.237	206952884	42654841	65300	163250	653	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.741	19.746	0	1.001	667520932	138723754	175032	437580	793		
341.8567	19.741	19.746	0	1.001	427545386	87806634	111910	279775	785	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	20.846	20.848	0	1.307	314995759	62853247	94237	235592	667		
353.8970	20.846	20.848	0	1.307	200370060	39705144	65300	163250	608	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.859	20.865	0	1.001	670674732	132465138	175032	437580	757		
341.8567	20.859	20.865	0	1.001	429461632	83154000	111910	279775	743	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.445	21.454	0	1.345	194839698	34969892	36620	91550	955		
369.8919	21.459	21.454	0	1.346	129330732	23564263	21668	54170	1088	1.51(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.473	21.481	0	1.001	431815765	79881729	42842	107105	1865		
357.8516	21.473	21.481	0	1.001	272119073	50260829	28101	70252	1789	1.59(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.773	26.775	0	0.889	156627172	22191192	44133	110332	503		
385.8610	26.773	26.775	0	0.889	294968129	40716726	83518	208795	488	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.799	26.805	0	1.001	589733491	85404895	136270	340675	627		
375.8178	26.799	26.805	0	1.001	482468486	70927348	114918	287295	617	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.039	27.044	0	0.898	170305718	22102428	44133	110332	501		
385.8610	27.052	27.044	0	0.899	317351221	40752220	83518	208795	488	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.079	27.079	0	1.001	627511216	85669328	136270	340675	629		
375.8178	27.079	27.079	0	1.001	503485597	69579188	114918	287295	605	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.597	28.600	0	0.950	158076721	20907702	44133	110332	474		
385.8610	28.597	28.600	0	0.950	294901480	37931836	83518	208795	454	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.624	28.639	-1	1.001	564486488	71042522	136270	340675	521		
375.8178	28.624	28.639	-1	1.001	475710523	60387341	114918	287295	525	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.413	0	1.010	156840997	29942326	44133	110332	678		
385.8610	30.408	30.413	0	1.010	293910257	55944712	83518	208795	670	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.434	30.437	0	1.001	599498422	114886999	136270	340675	843		
375.8178	30.434	30.437	0	1.001	483935883	91935729	114918	287295	800	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.101	30.109	0		185178736	30690179	32289	80722	950		
403.8529	30.101	30.109	0		146700171	24602298	25681	64202	958	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.090	29.092	0	0.966	161380125	21128590	32289	80722	654		a
403.8529	29.090	29.092	0	0.966	126304083	16308148	25681	64202	635	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.116	29.124	0	1.001	372848907	48264227	57800	144500	835		
391.8127	29.116	29.124	0	1.001	294852050	38550588	46428	116070	830	1.26(1.05-1.43)	

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.356	29.361	0	0.975	186019162	22321126	32289	80722	691		a
403.8529	29.356	29.361	0	0.975	147301800	17343619	25681	64202	675	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.382	29.390	0	1.001	377876298	46385374	57800	144500	803		
391.8127	29.382	29.390	0	1.001	297914259	36770412	46428	116070	792	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.128	30.136	0	1.036	412482321	70639440	57800	144500	1222		
391.8127	30.128	30.136	0	1.036	330316451	56323224	46428	116070	1213	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.081	97779740	33947601	111819	279547	304		
419.8220	32.547	32.547	0	1.081	216849454	73811254	264232	660580	279	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	463593215	156196225	684489	1711222	228		
409.7789	32.559	32.559	0	1.000	432505054	145851605	718739	1796847	203	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.646	0	1.118	89641193	35542852	111819	279547	318		
419.8220	33.641	33.646	0	1.118	204007816	80702991	264232	660580	305	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	410313482	160189167	684489	1711222	234		
409.7789	33.653	33.653	0	1.000	398088173	144693990	718739	1796847	201	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	165746978	61510308	300213	750532	205		
437.8140	33.398	33.398	0	1.110	154828954	56772391	280459	701147	202	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	321485587	122250125	140940	352350	867		
425.7737	33.398	33.410	-1	1.000	312815741	117400795	160019	400047	734	1.03(0.88-1.20)	
13C-OCDD											
469.7779	35.558	35.565	0	1.181	189836312	61496678	69128	172820	890		
471.7750	35.558	35.565	0	1.181	208213600	69025077	66065	165162	1045	0.91(0.76-1.02)	
OCDF											
441.7428	35.630	35.640	-1	1.002	641620149	221408214	98523	246307	2247		
443.7399	35.630	35.640	-1	1.002	697240863	240248274	180194	450485	1333	0.92(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	451463833	152952701	219024	547560	698		
459.7348	35.570	35.570	0	1.000	496511881	166031221	66568	166420	2494	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d				
Injection Date:	05-Oct-2020 19:57:54	Instrument ID:	3D5		
Lims ID:	IC 5				
Client ID:	L5				
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 15.94

Processing Integration Results

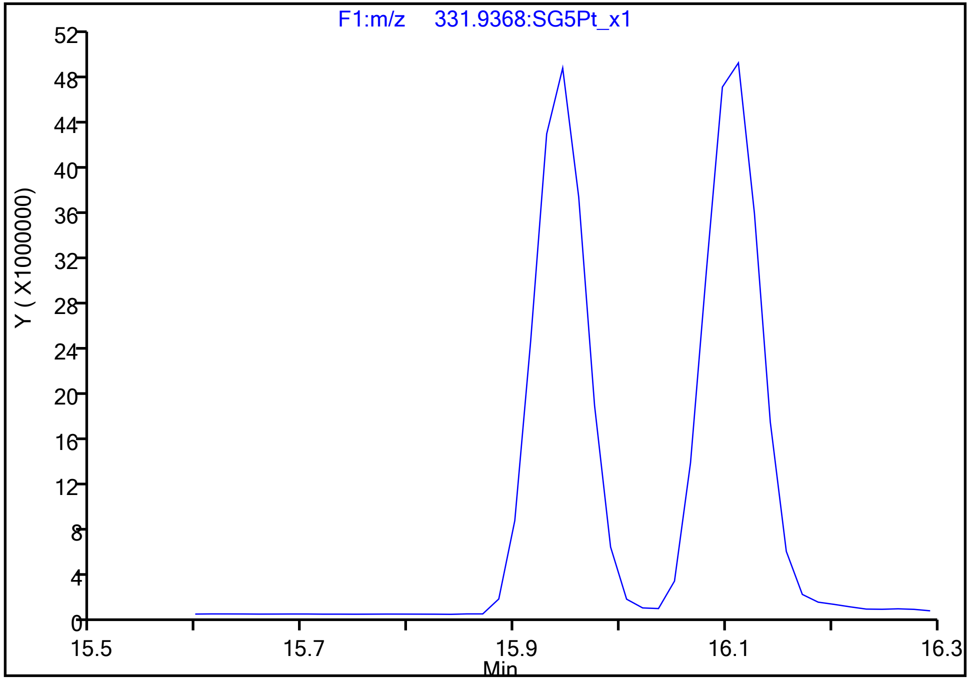

RT: 15.95

Area: 170796490

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

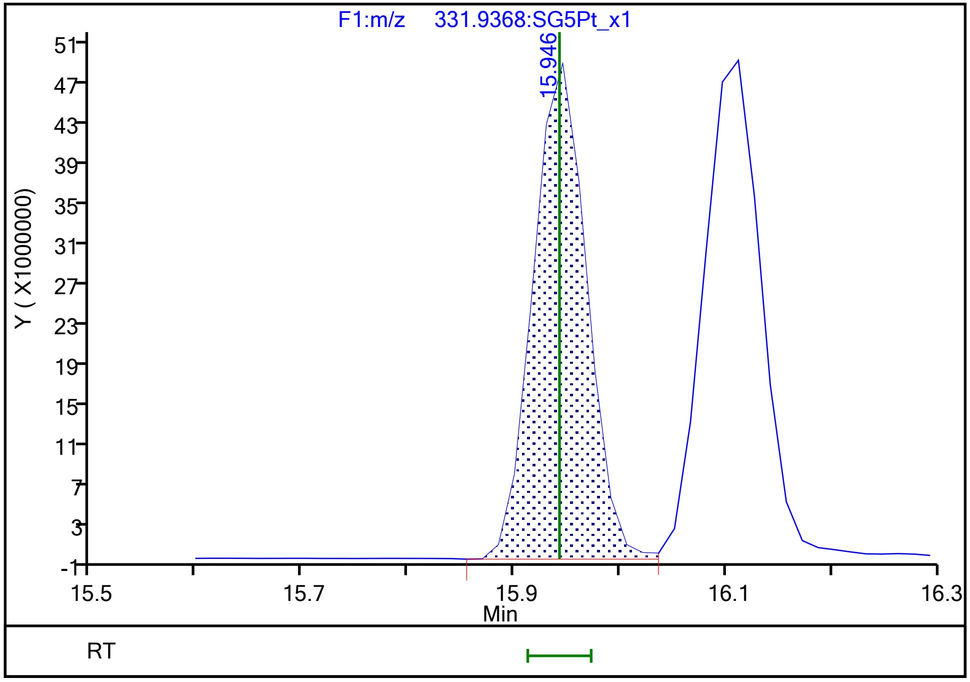

Reviewer: arghestanis, 08-Oct-2020 14:30:22

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Instrument ID: 3D5
Lims ID: IC 5
Client ID: L5
Operator ID: SMA
ALS Bottle#: 6
Worklist Smp#: 6
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.09

Processing Integration Results

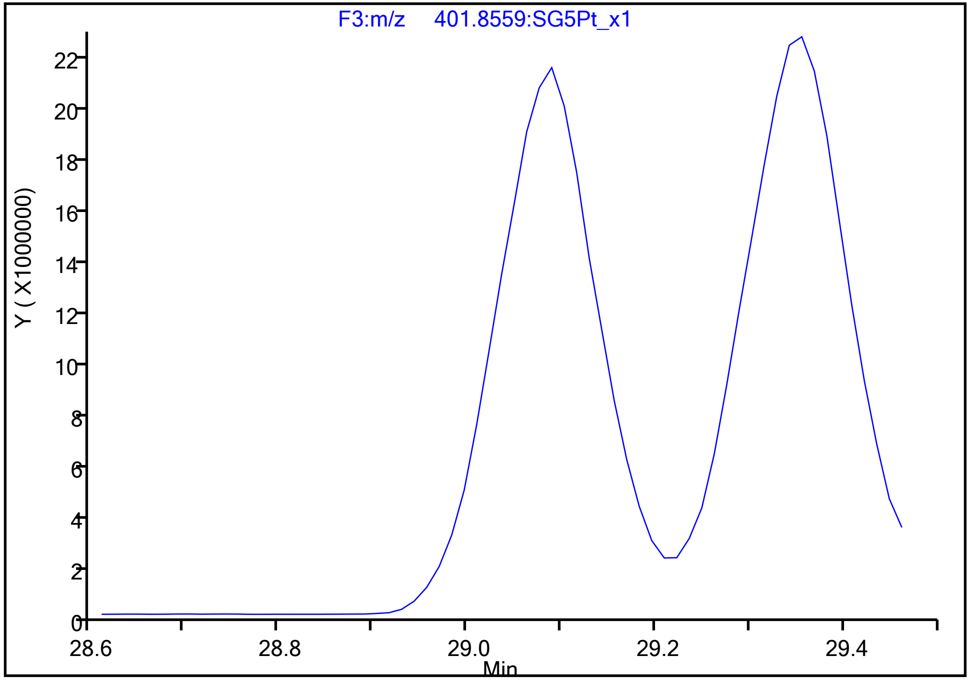

RT: 29.09
Area: 161380125
Amount: 100.0937
Amount Units: pg/ul

Manual Integration Results

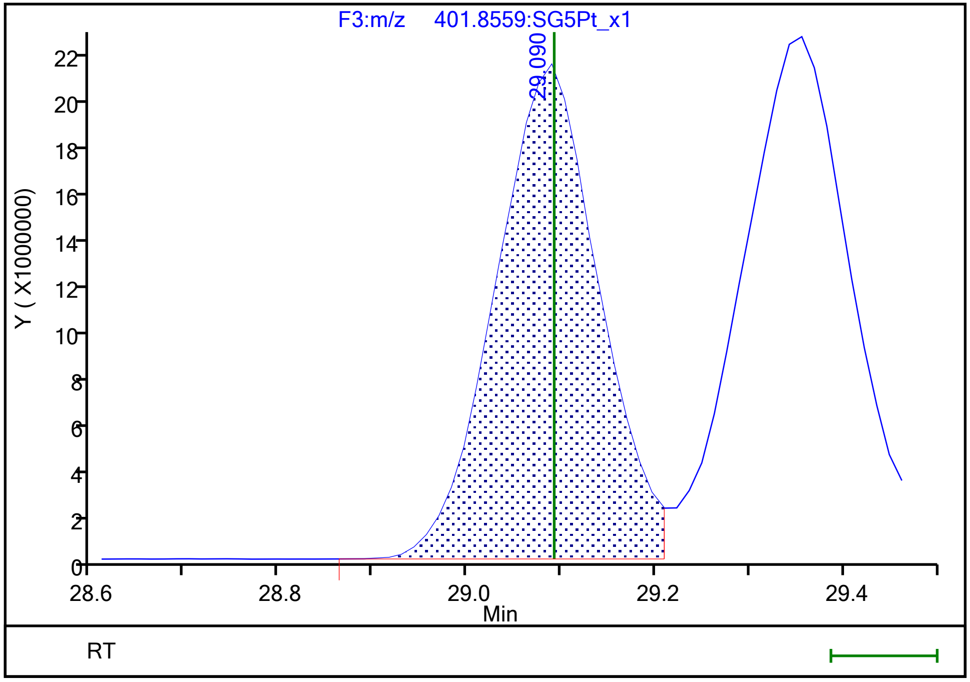

Reviewer: arghestanis, 08-Oct-2020 14:30:30
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Instrument ID: 3D5
Lims ID: IC 5
Client ID: L5
Operator ID: SMA
ALS Bottle#: 6
Worklist Smp#: 6
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT:	30.10
Area:	185178736
Amount:	101.5867
Amount Units:	pg/ul

Processing Integration Results

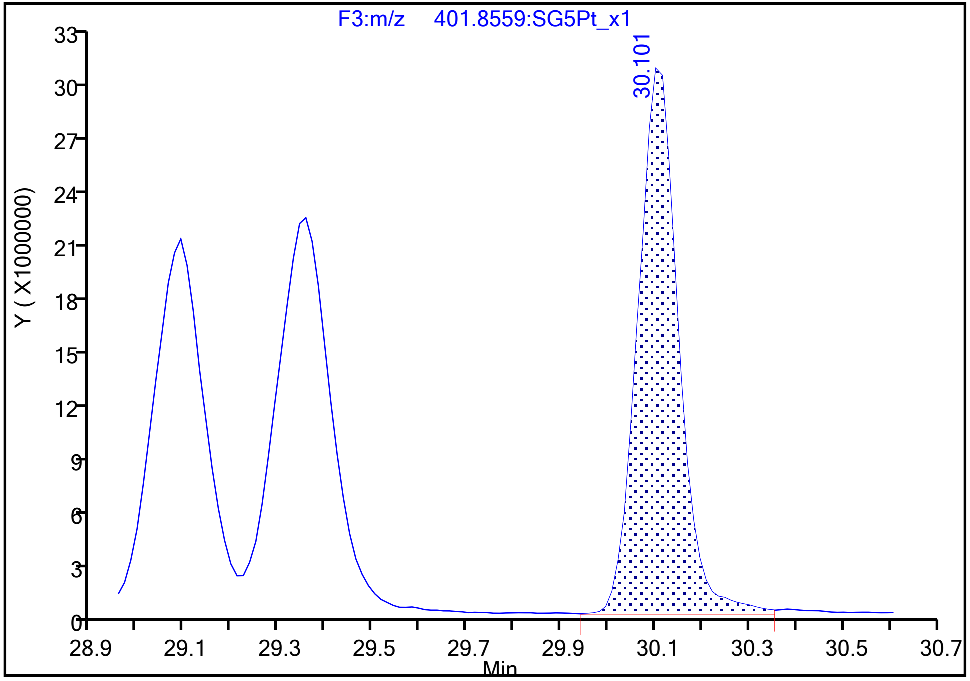

RT:	29.36
Area:	186019162
Amount:	102.2031
Amount Units:	pg/ul

Manual Integration Results

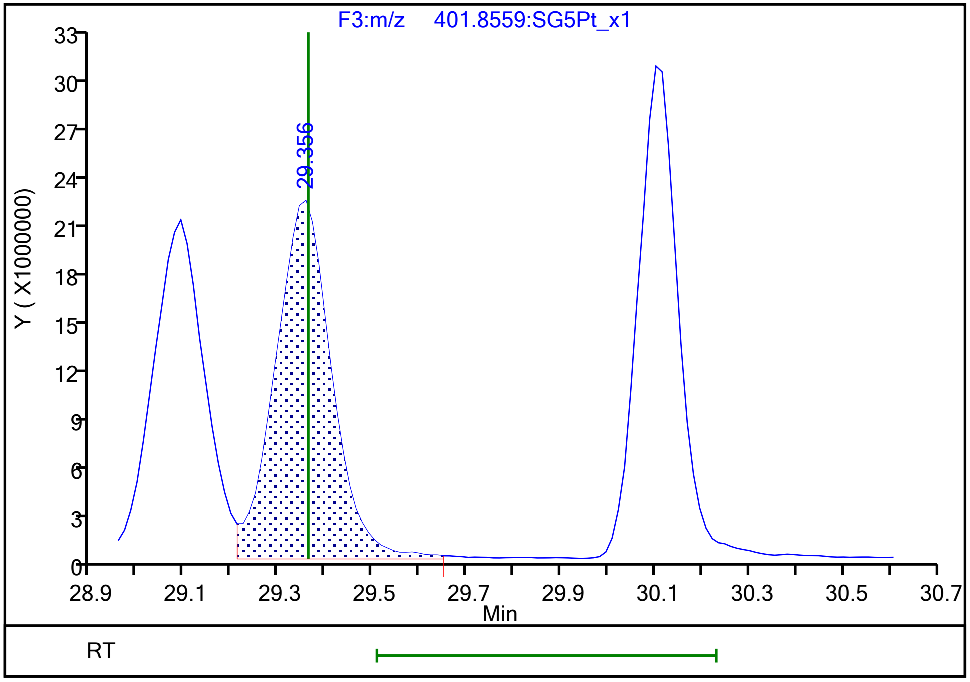

Reviewer: arghestanis, 08-Oct-2020 14:33:42
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

TCDF

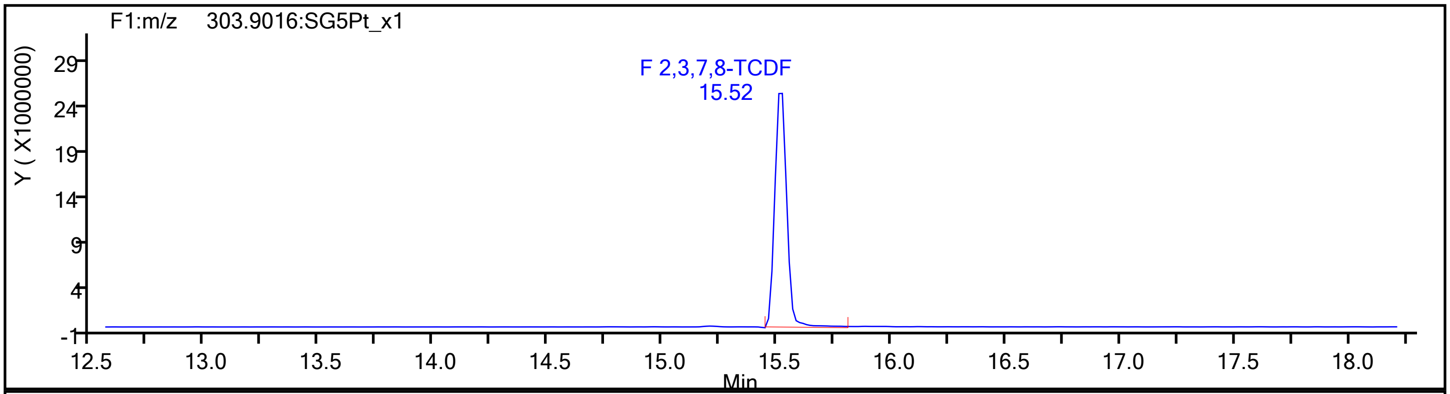

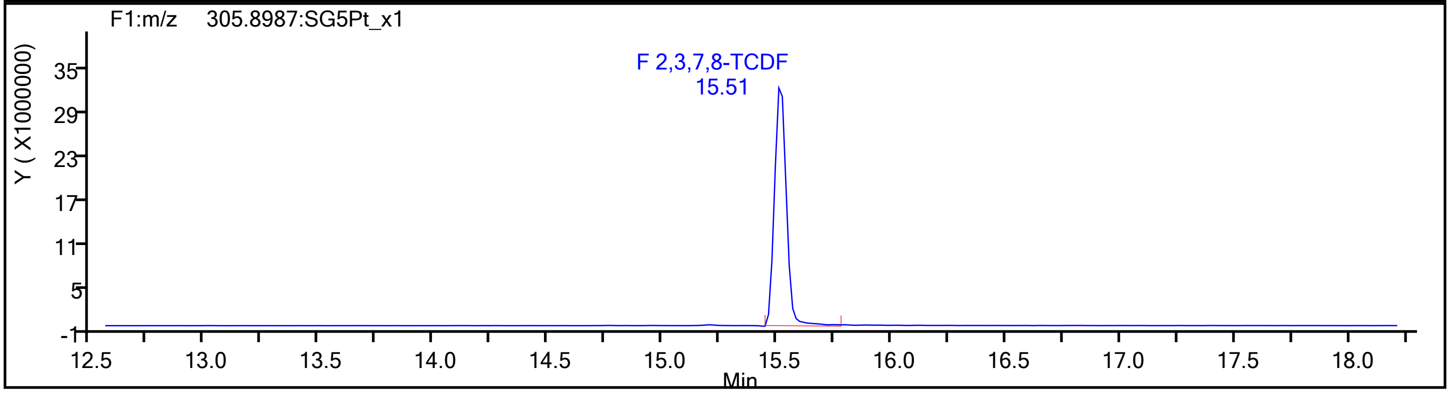

TCDF Standards

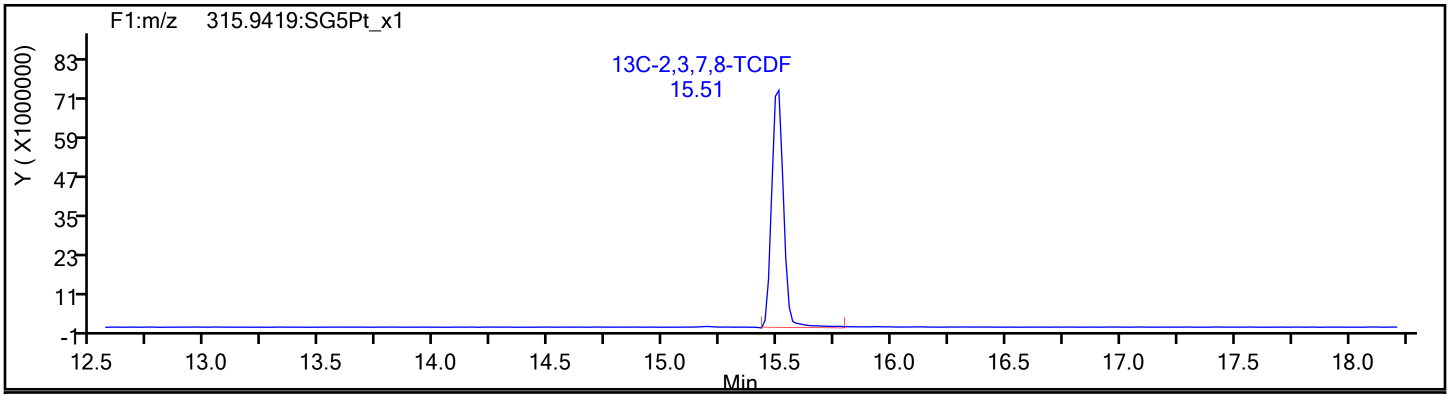

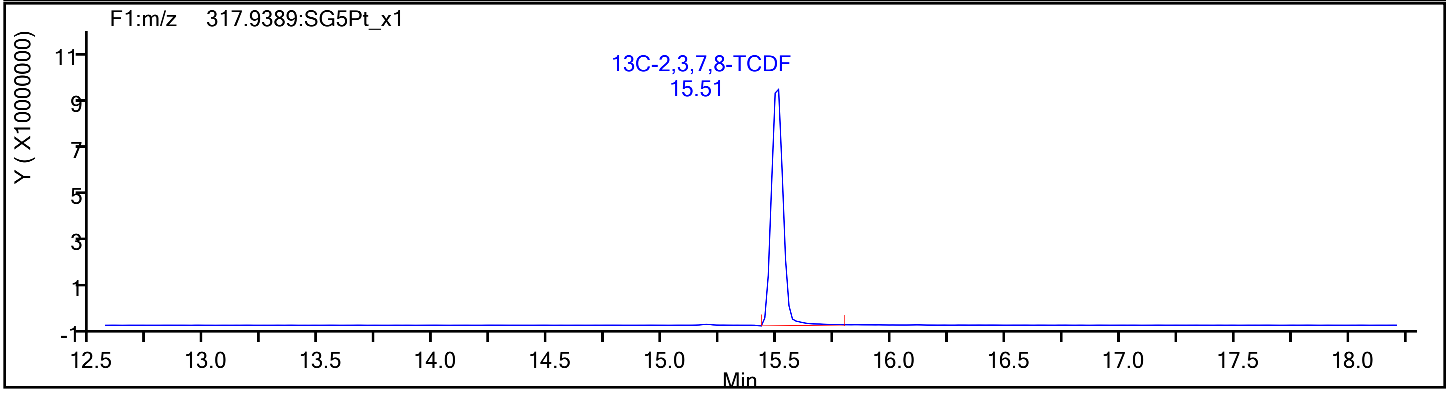

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031
Sample Line#: 6
Column Type:
Column Dia:

TCDF

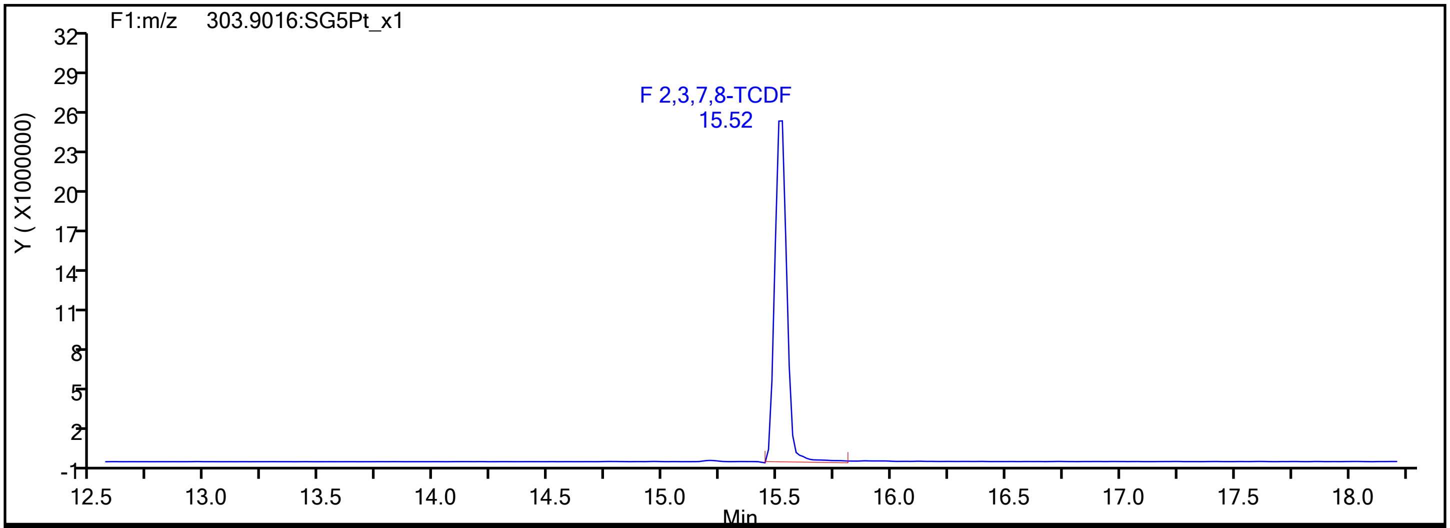

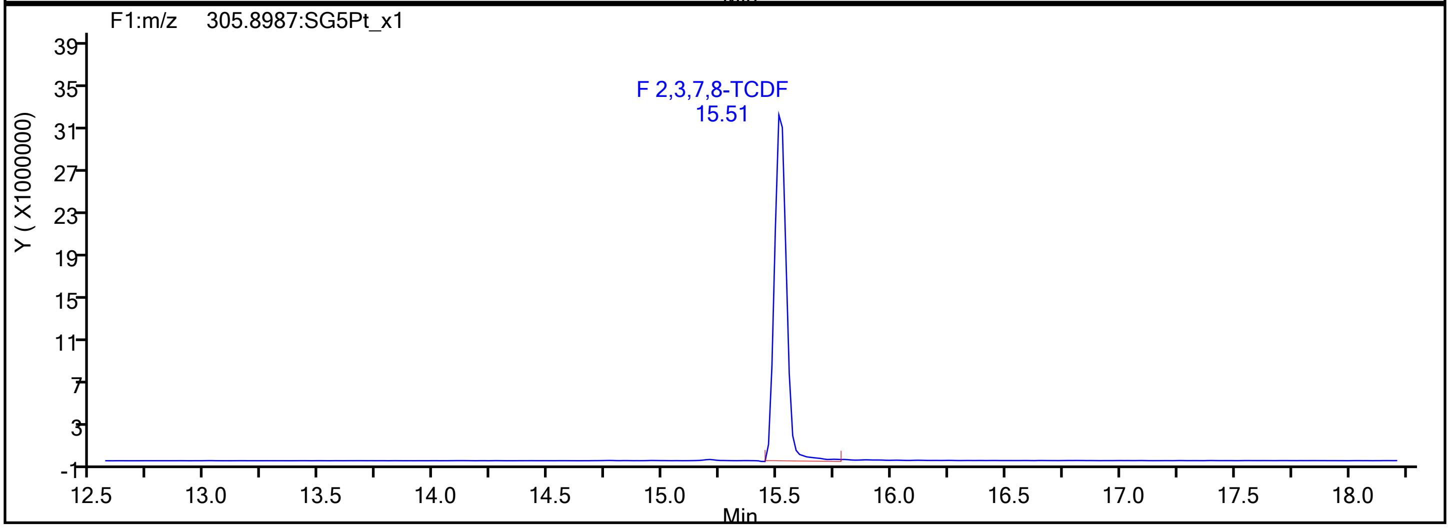

TCDF Interference Mass

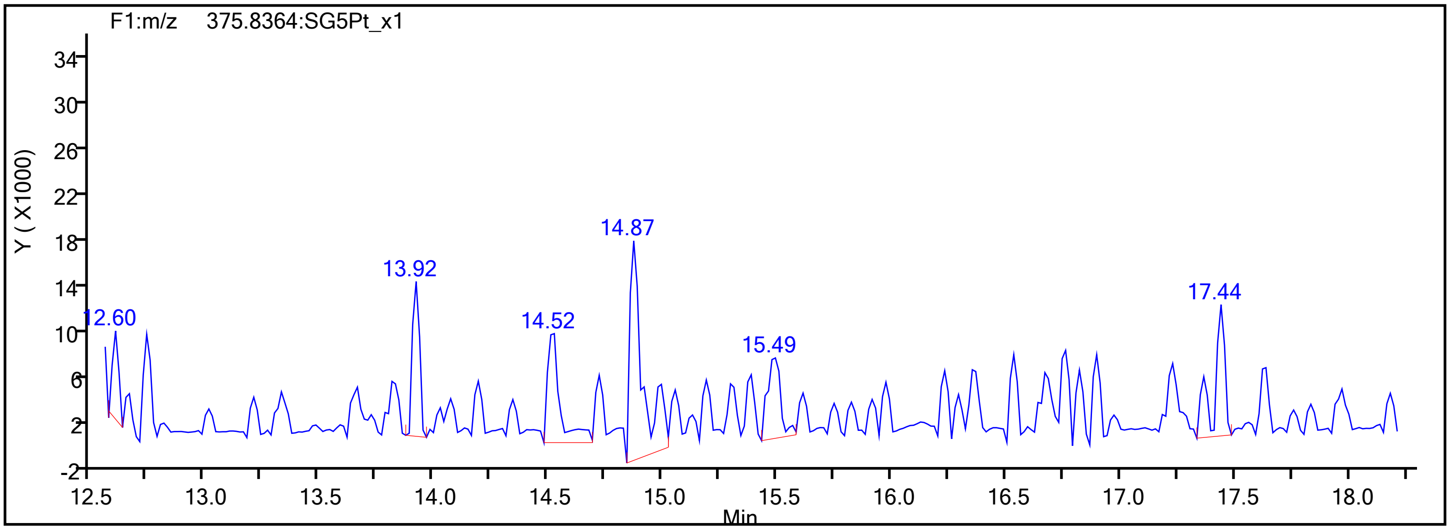

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

TCDD

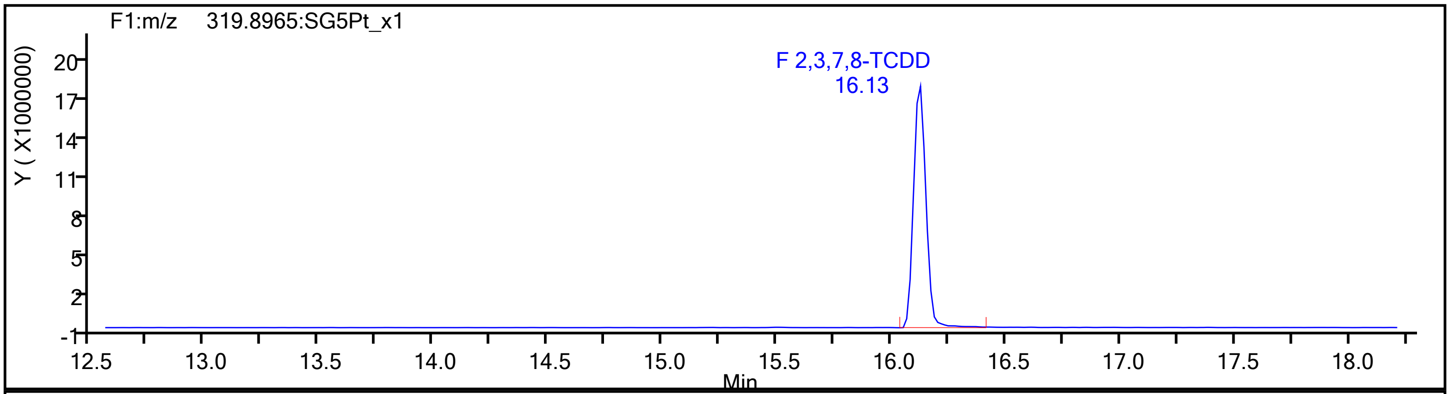

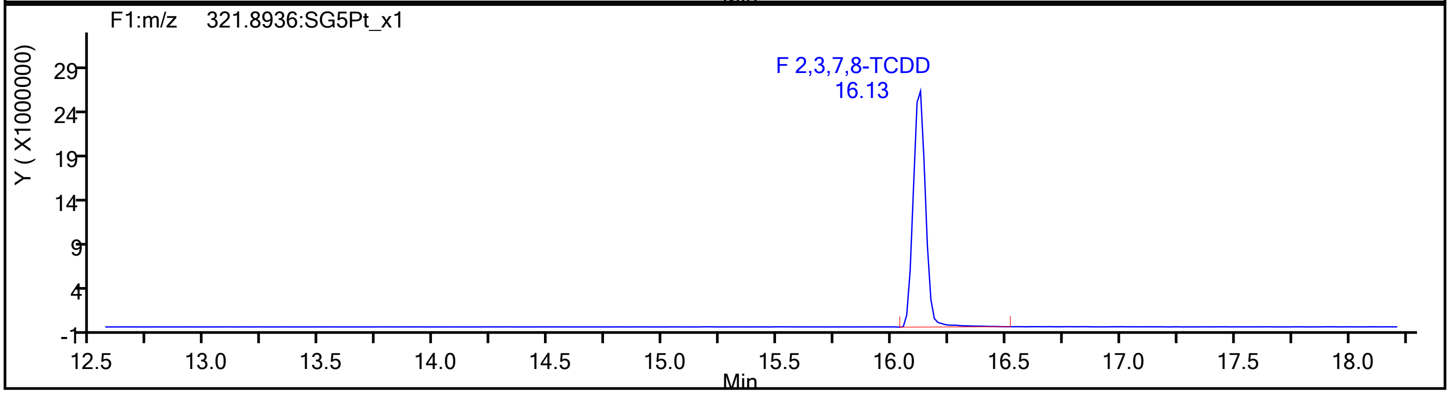

TCDD Standards

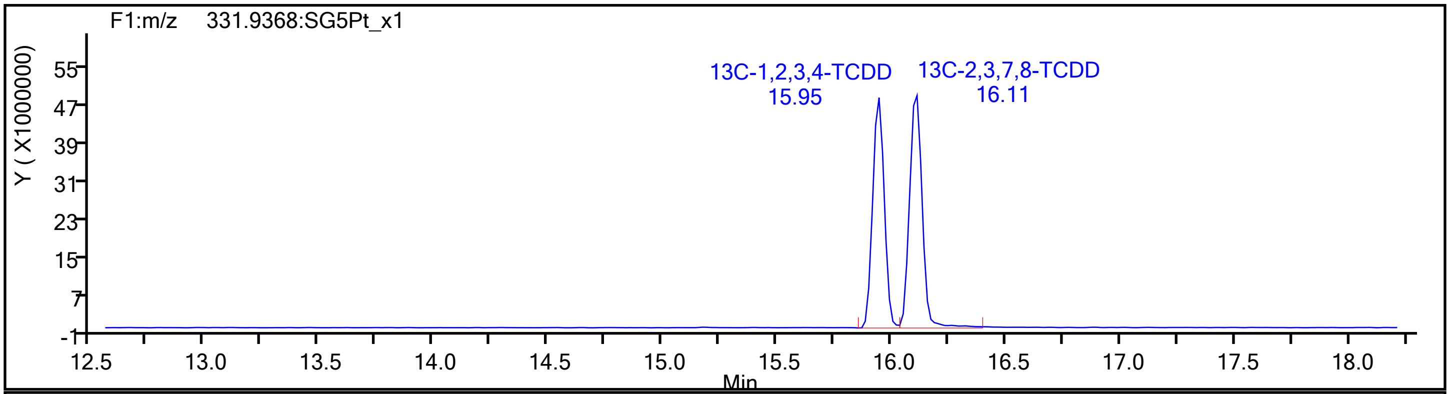

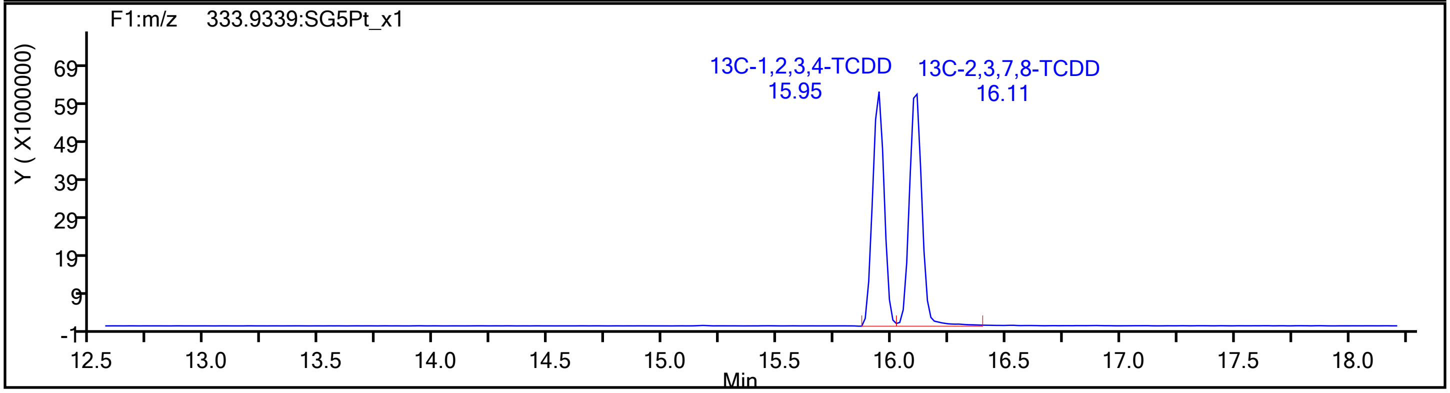

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

37Cl4-TCDD

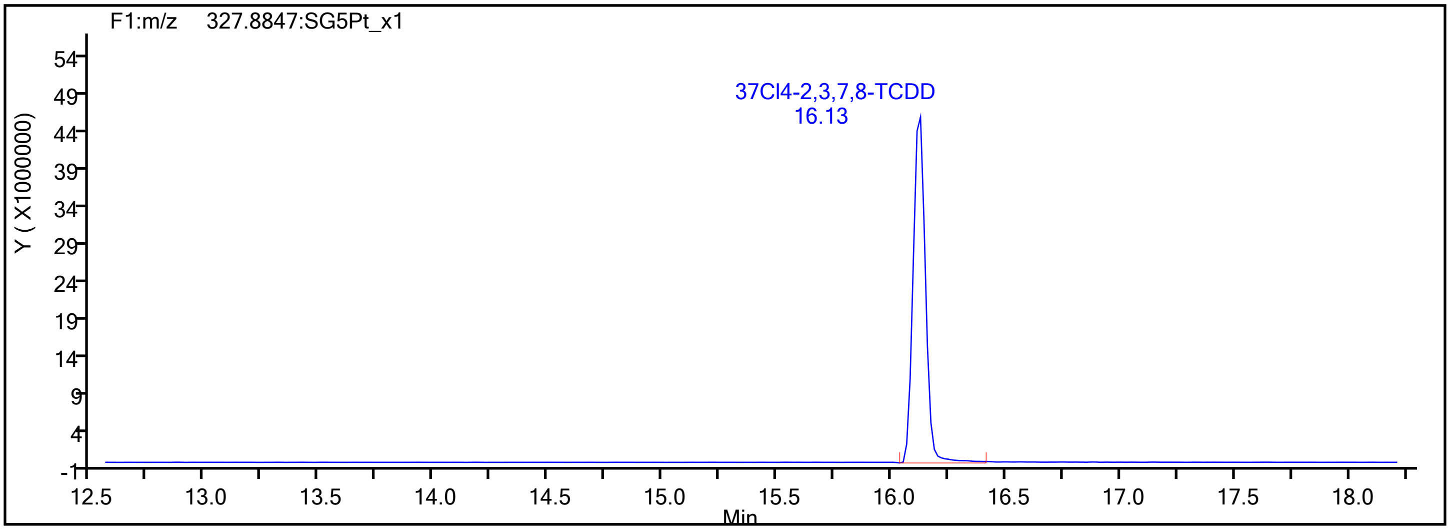

37Cl4-TCDD Standards

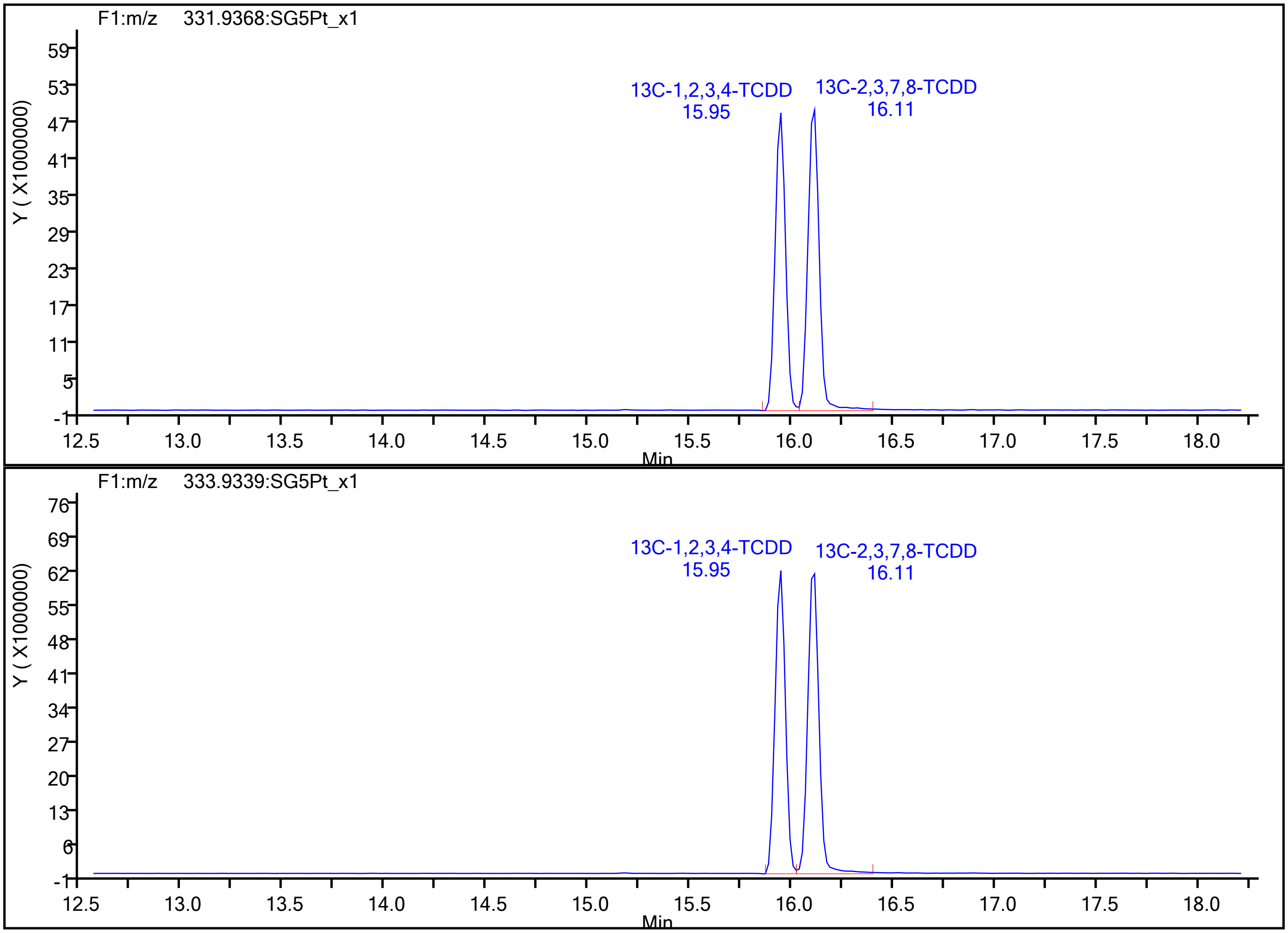

Report Date: 08-Oct-2020 15:16:39
Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031
Sample Line#: 6
Column Type:
Column Dia:

PeCDF

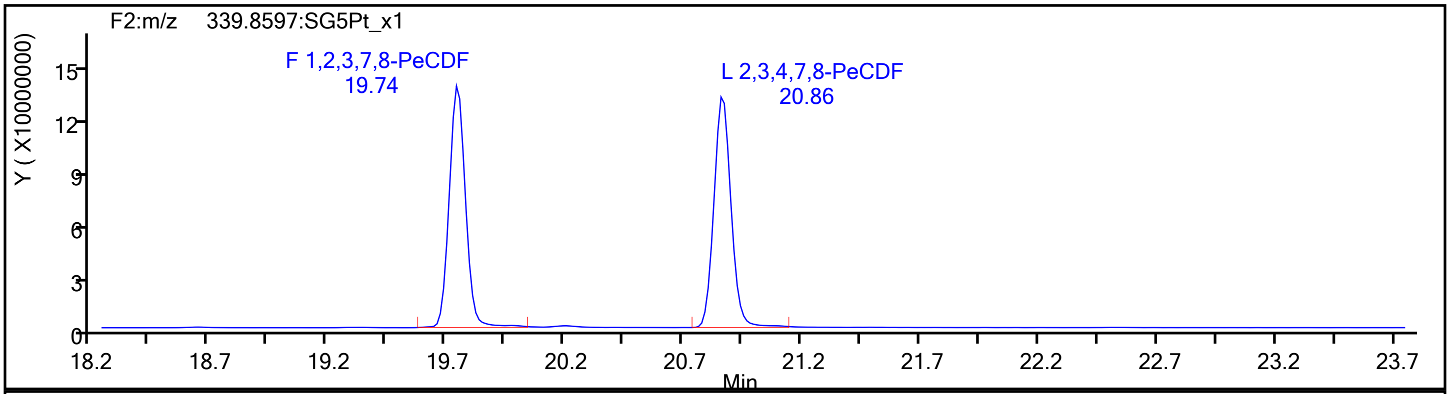

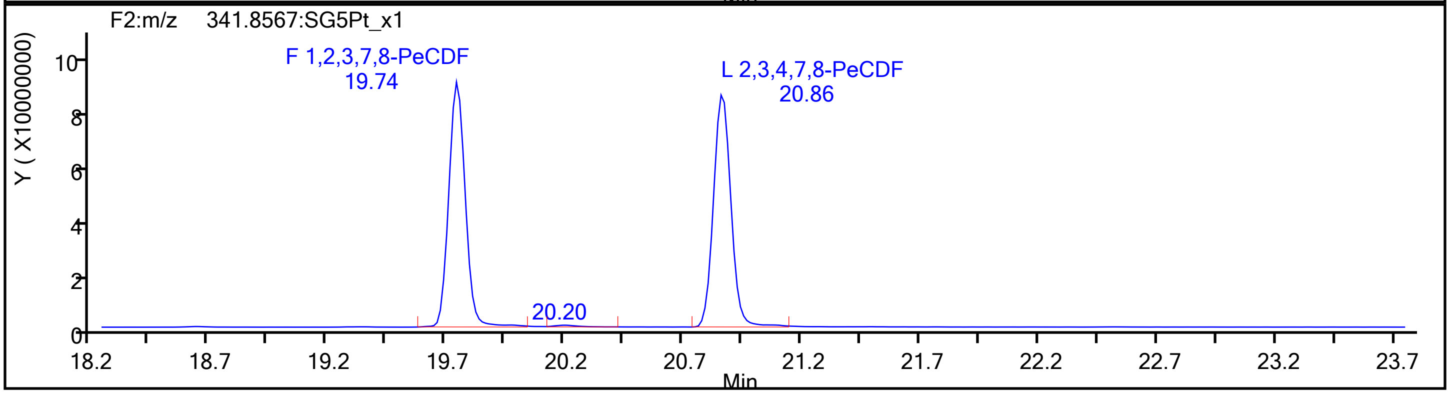

PeCDF Standards

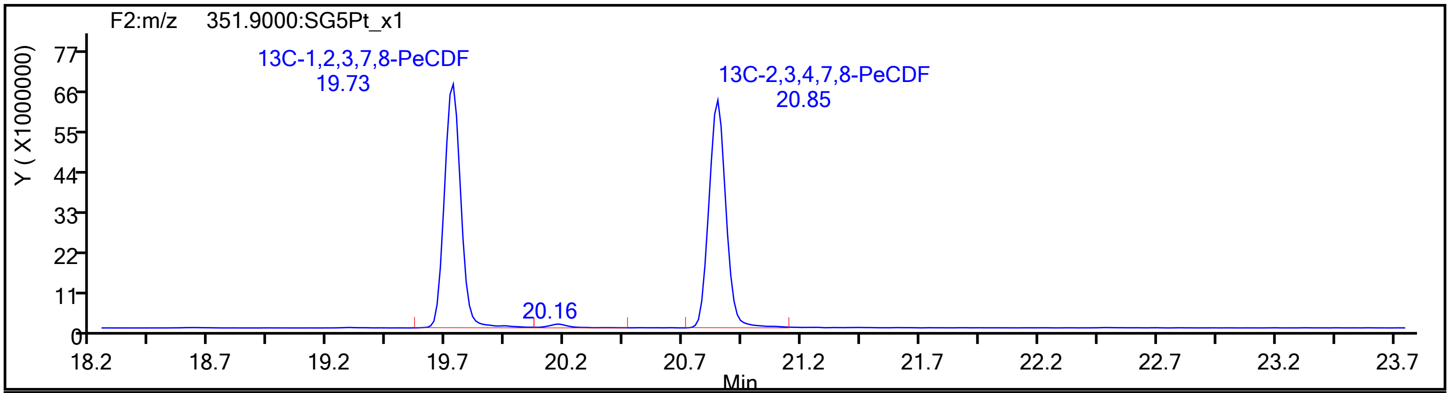

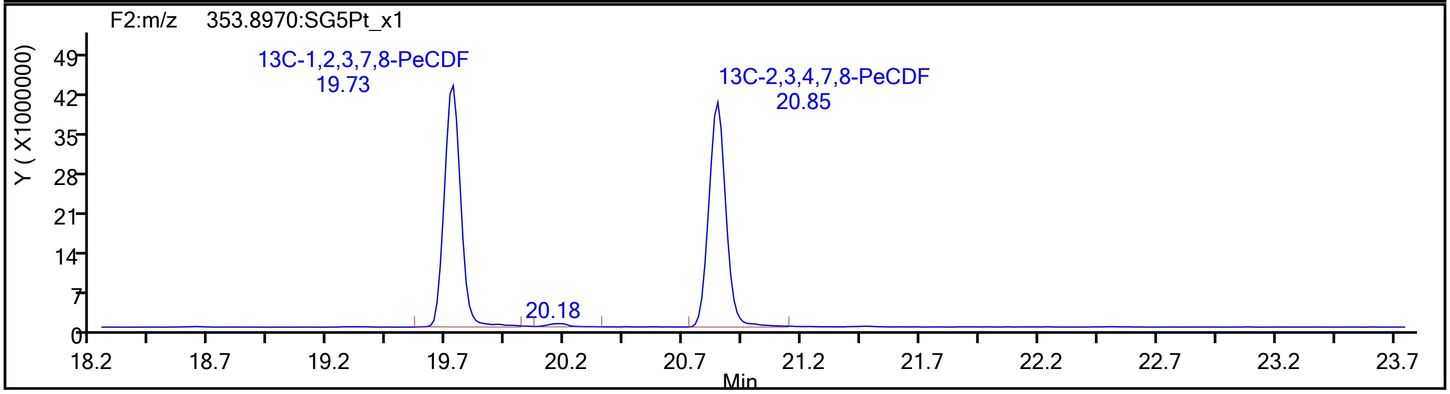

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

PeCDF

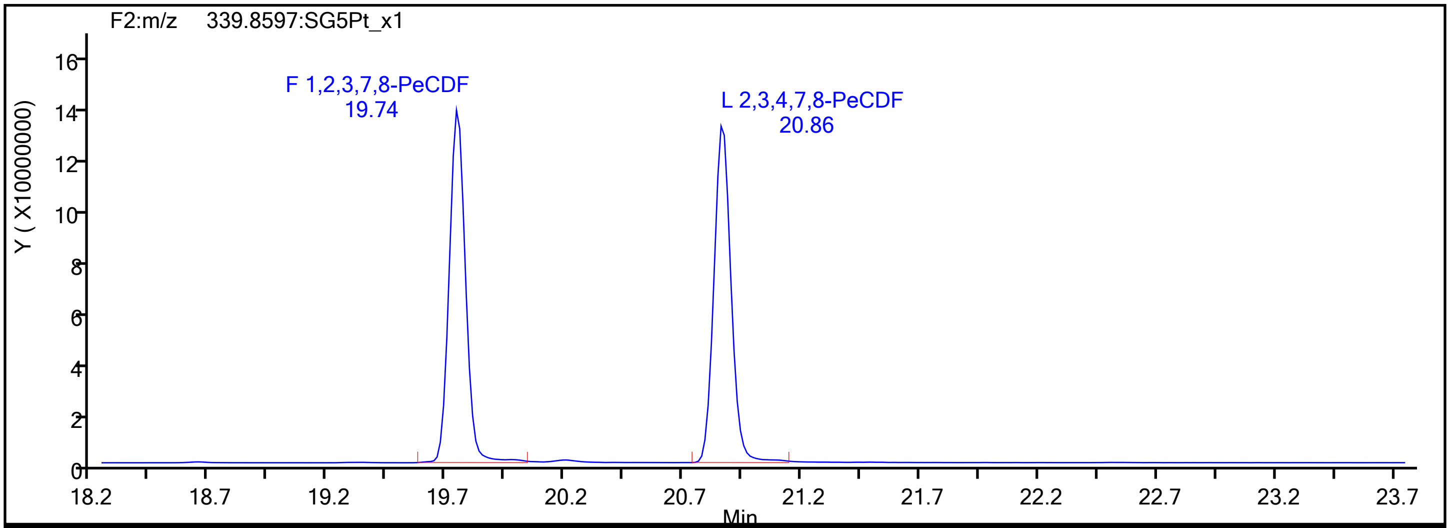

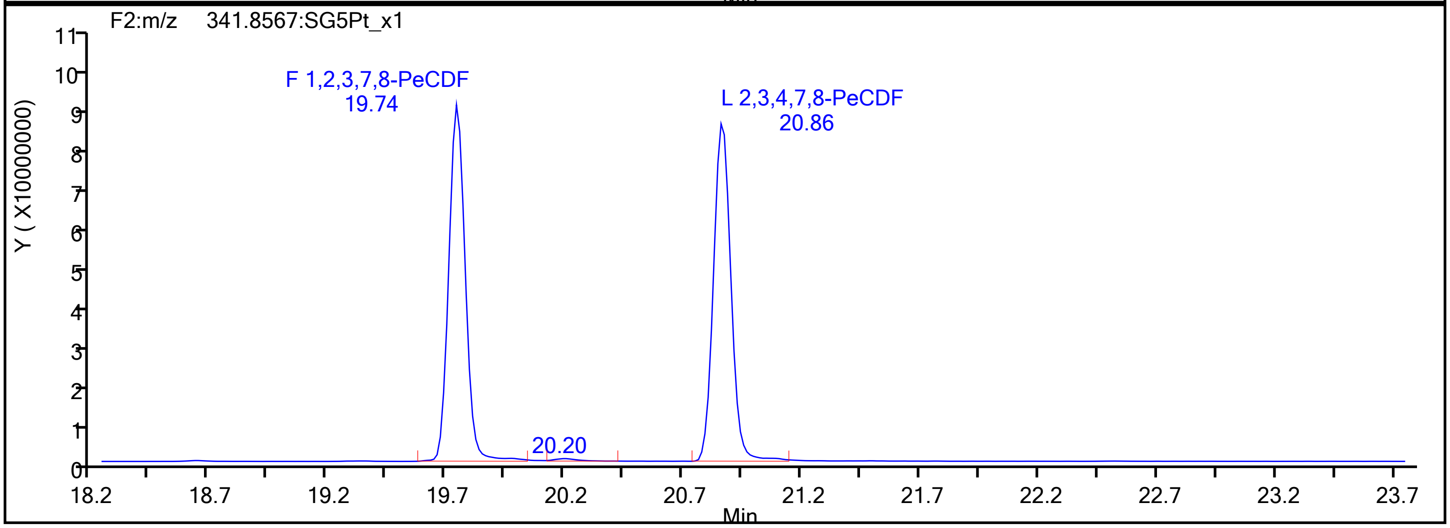

PeCDF Interference Mass

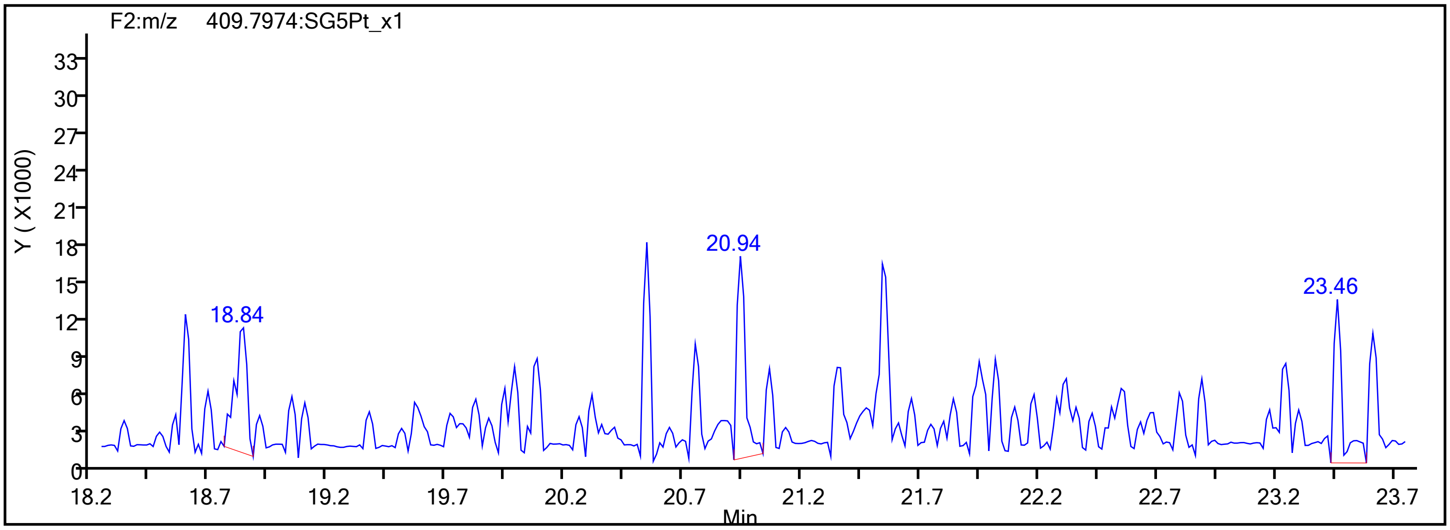

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d

Injection Date: 05-Oct-2020 19:57:54 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L5

Worklist#: 419031 Sample Line#: 6

Column Type: Column Dia:

PeCDD

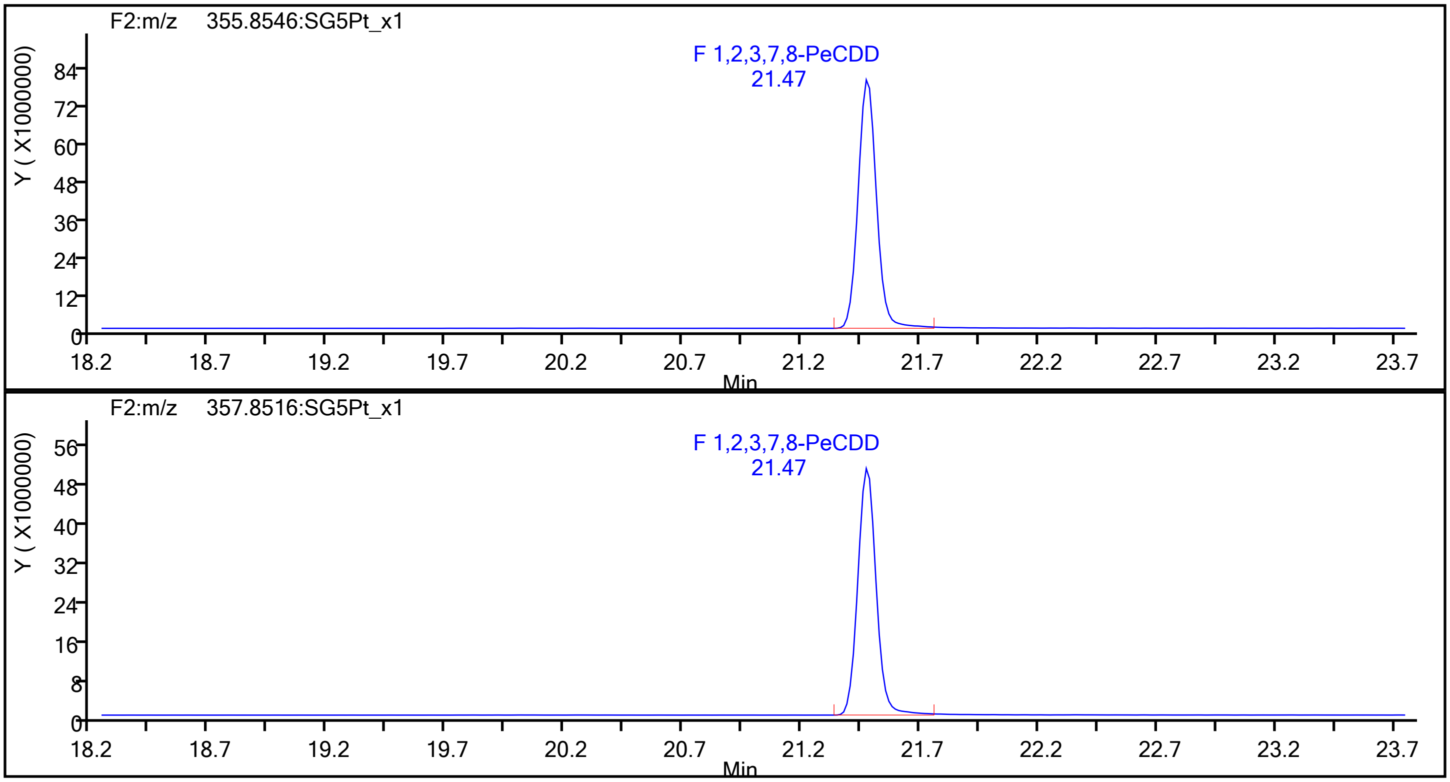

PeCDD Standards

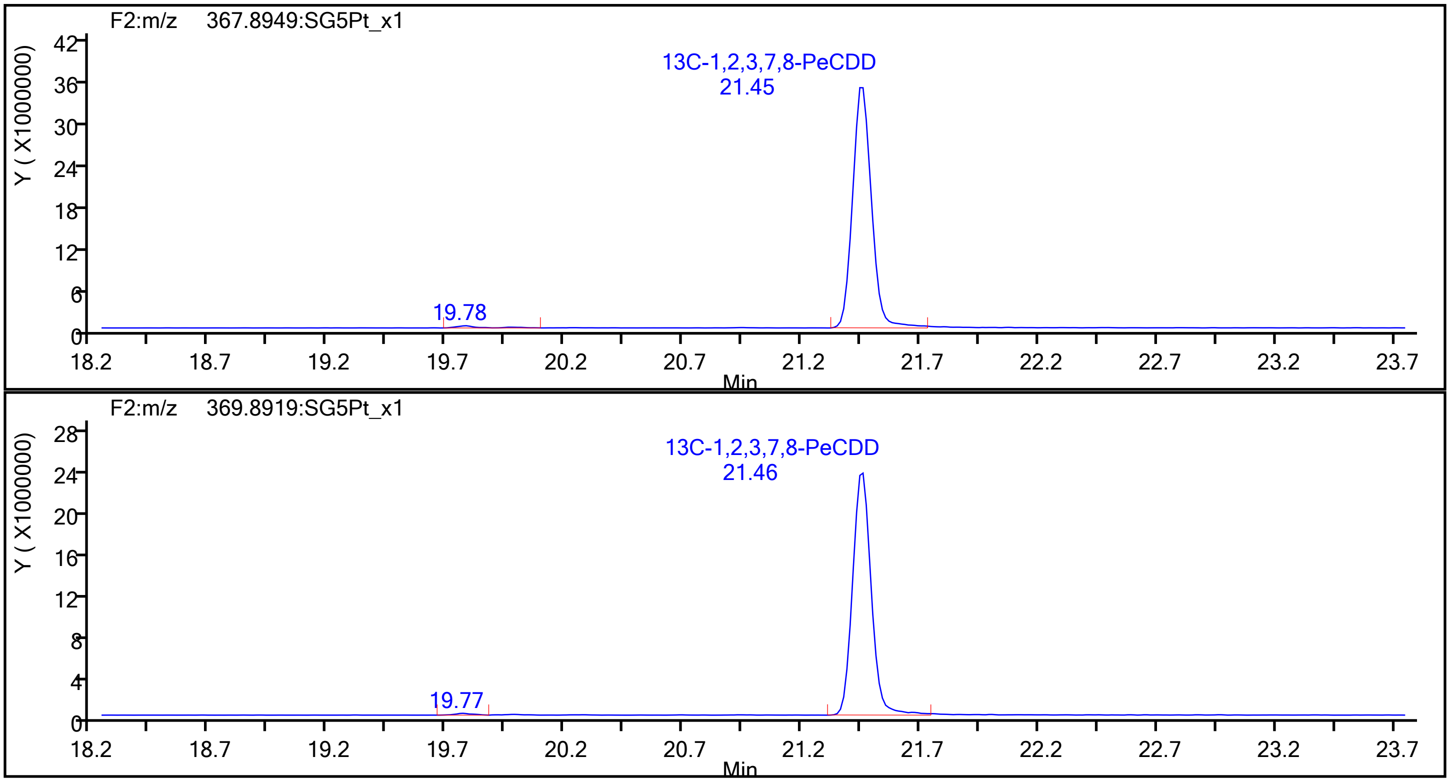

Report Date: 08-Oct-2020 15:16:39
Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031
Sample Line#: 6
Column Type:
Column Dia:

HxCDF

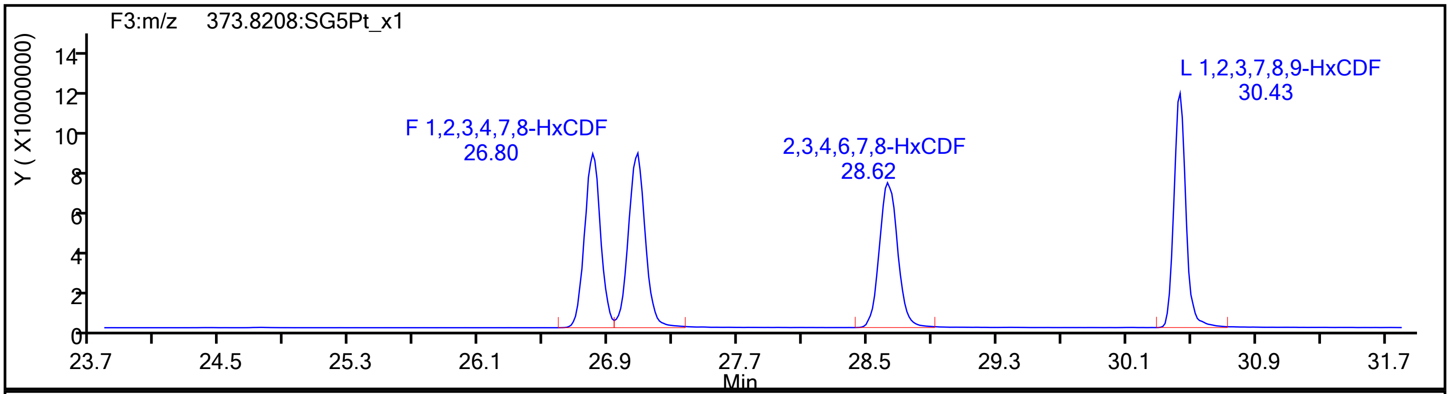

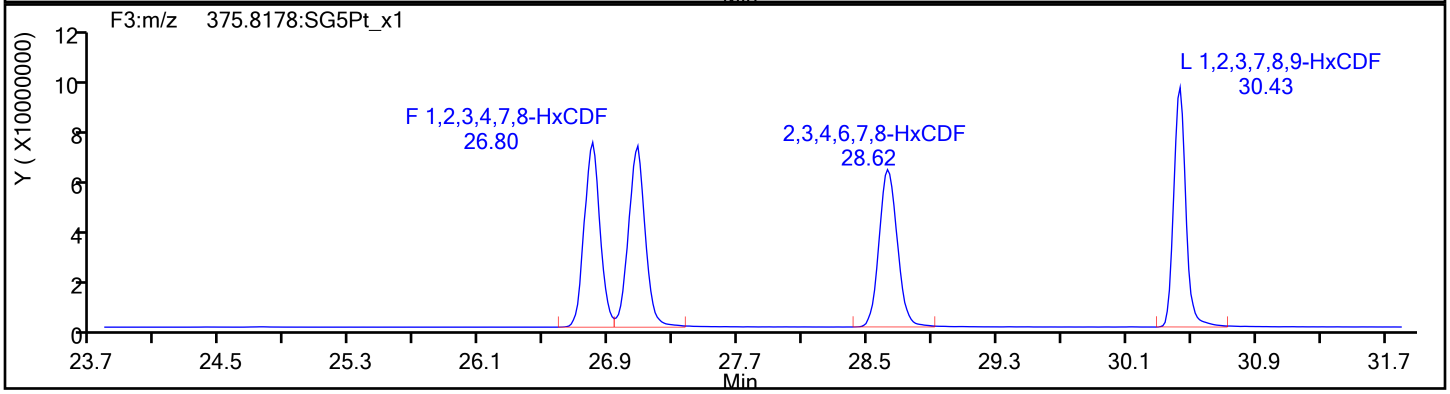

HxCDF Standards

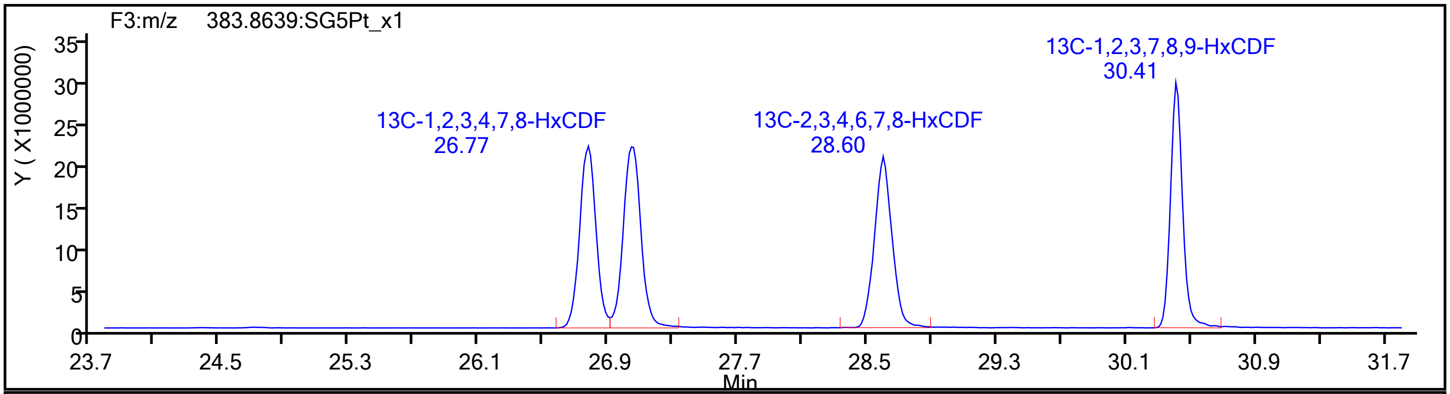

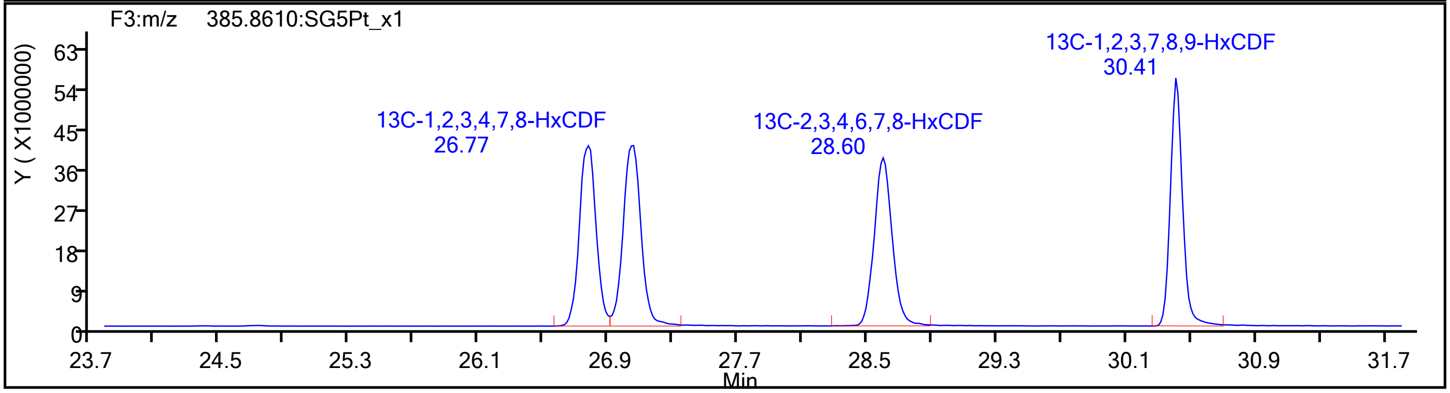

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031
Sample Line#: 6
Column Type:
Column Dia:

HxCDF

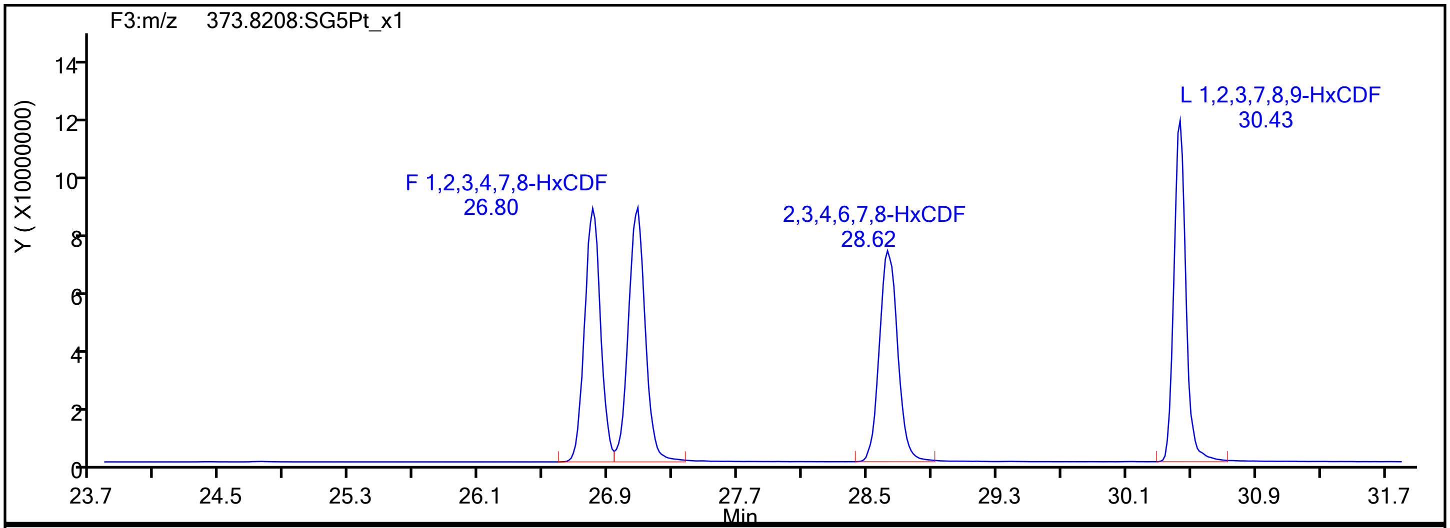

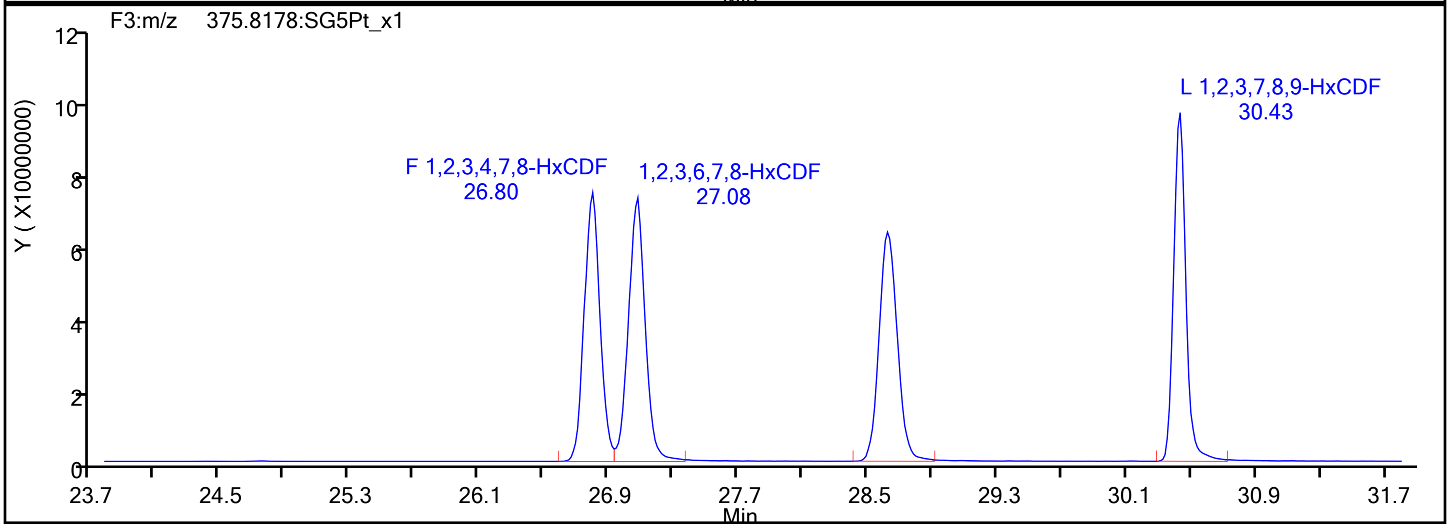

HxCDF Interference Mass

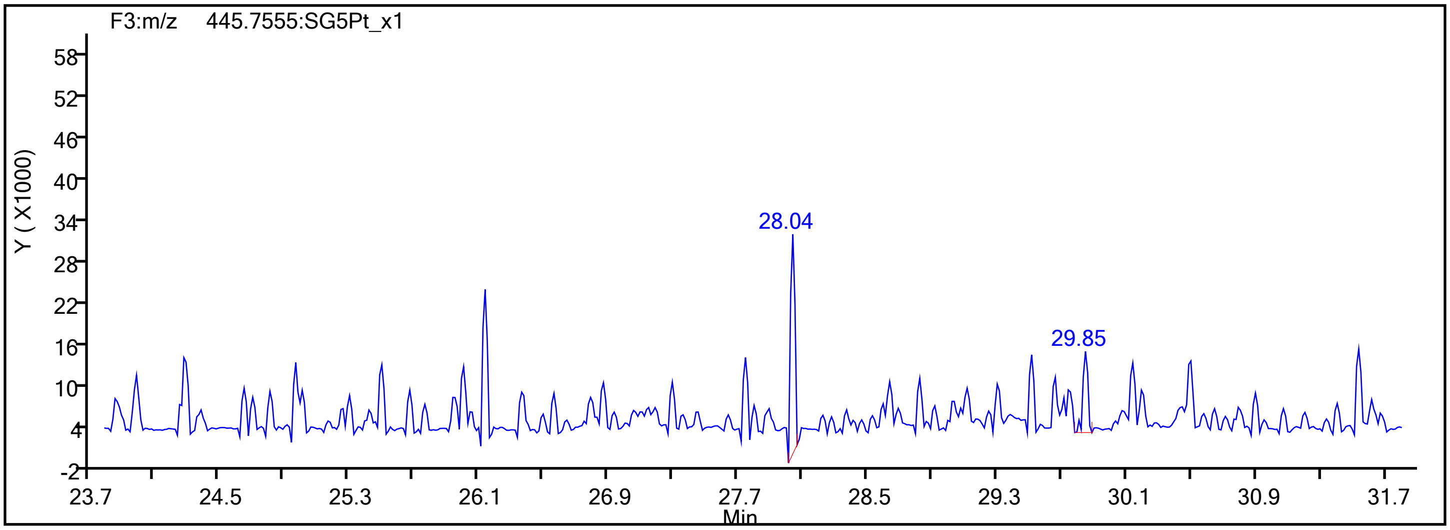

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

HxCDD

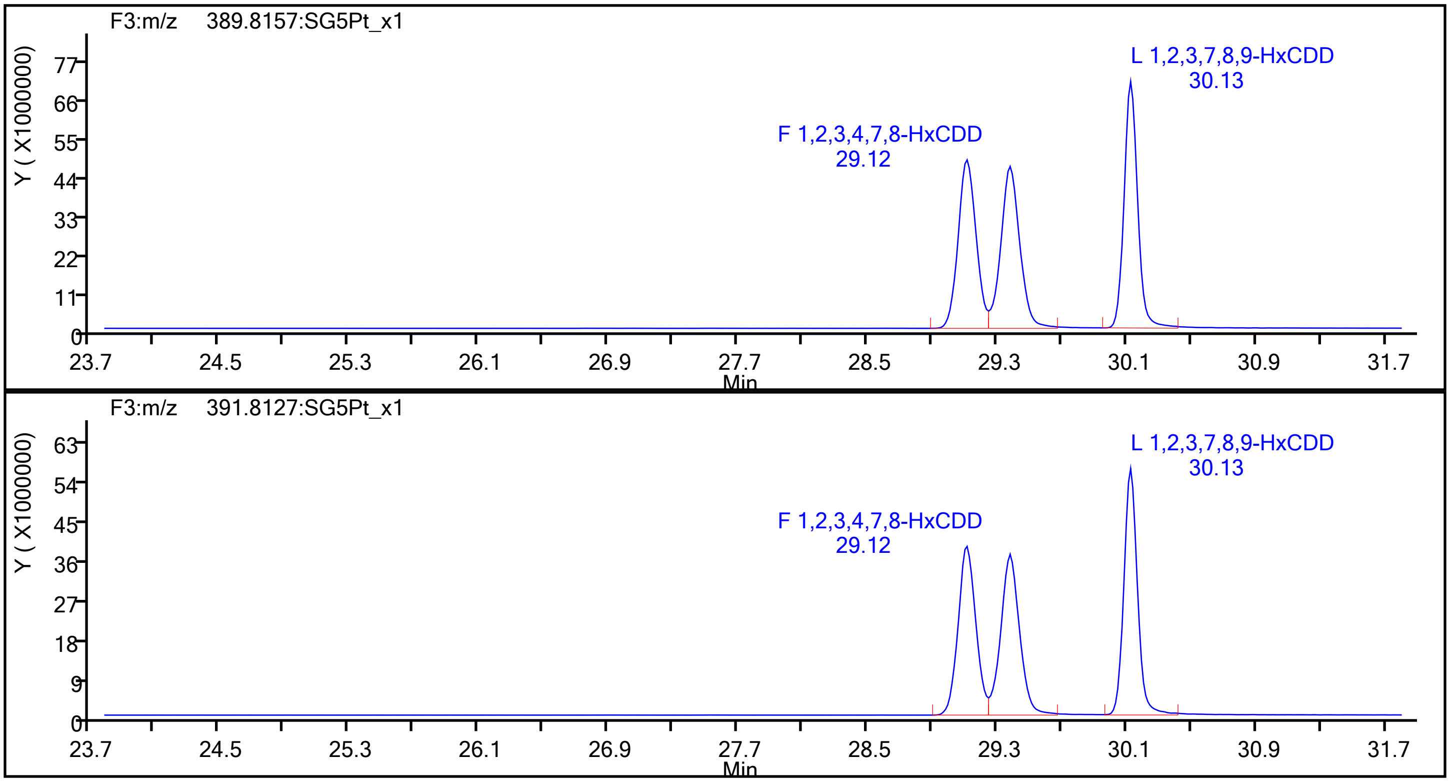

HxCDD Standards

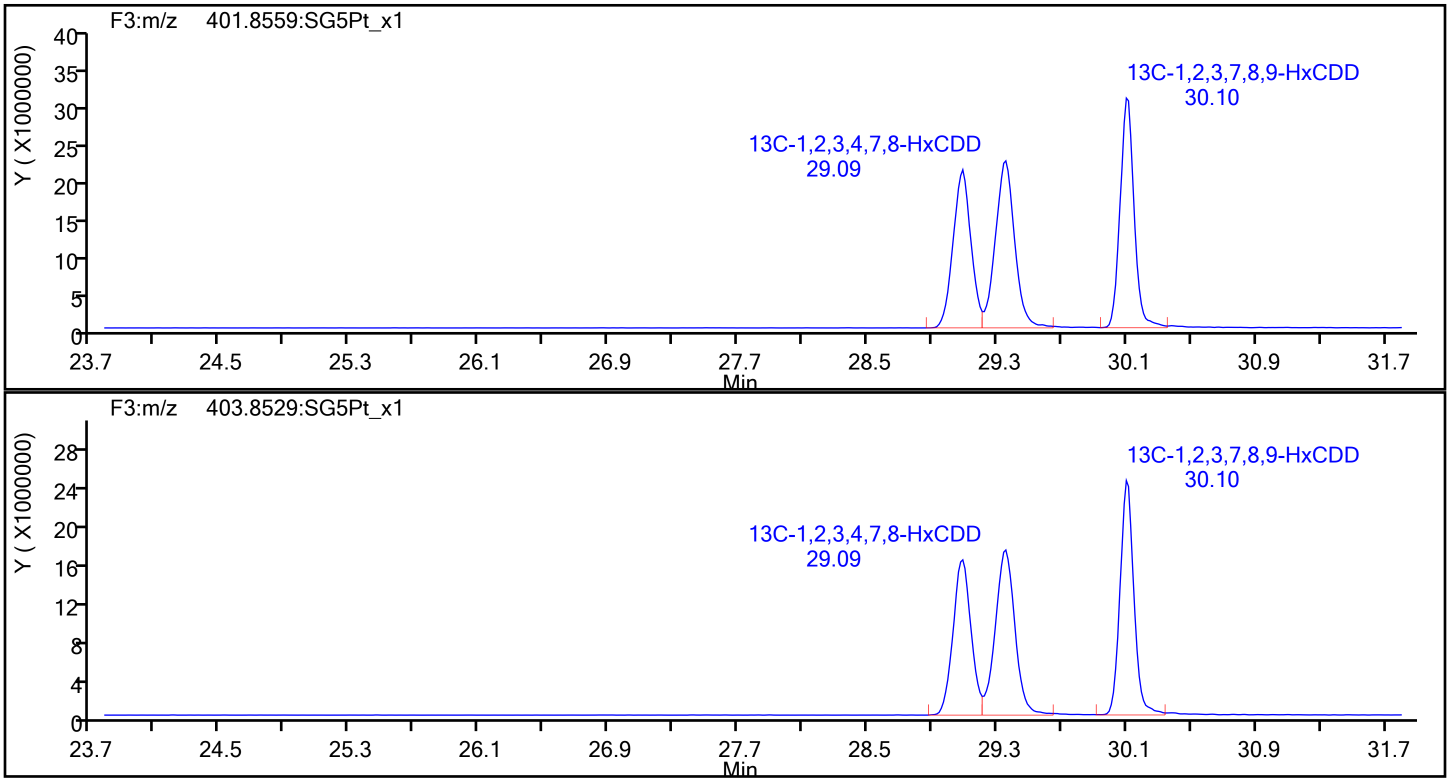

Report Date: 08-Oct-2020 15:16:39
Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031
Sample Line#: 6
Column Type:
Column Dia:

HpCDF

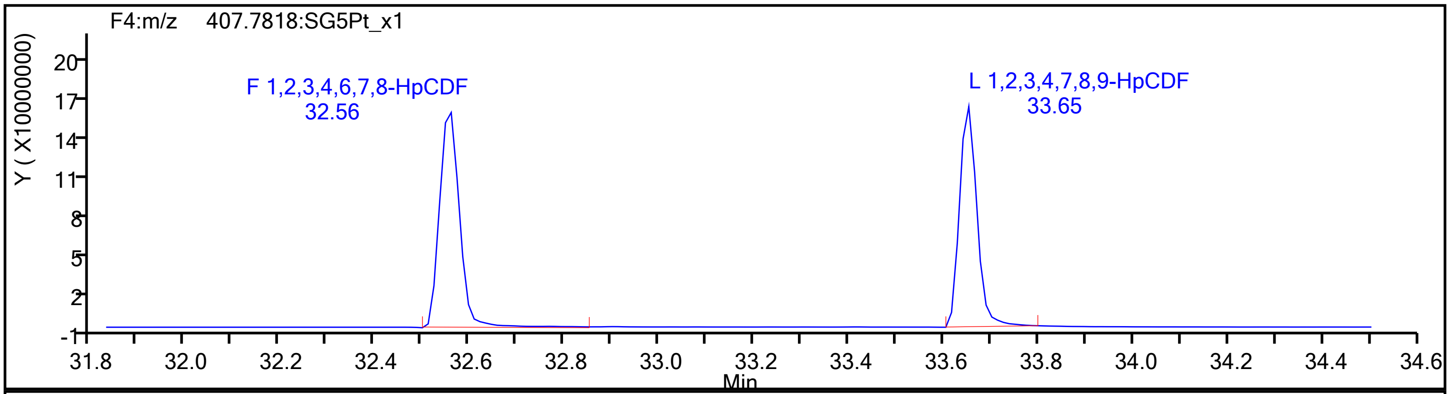

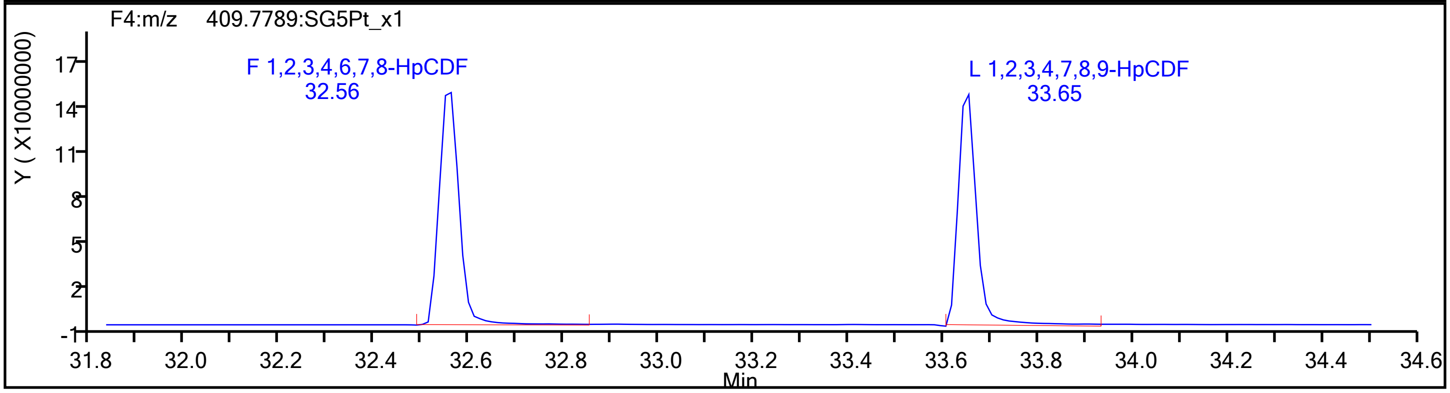

HpCDF Standards

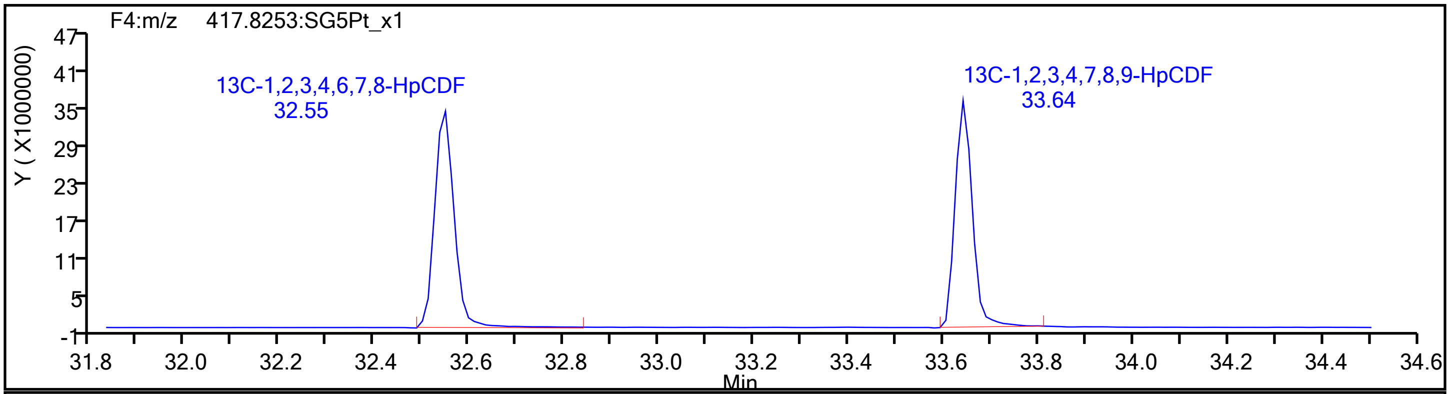

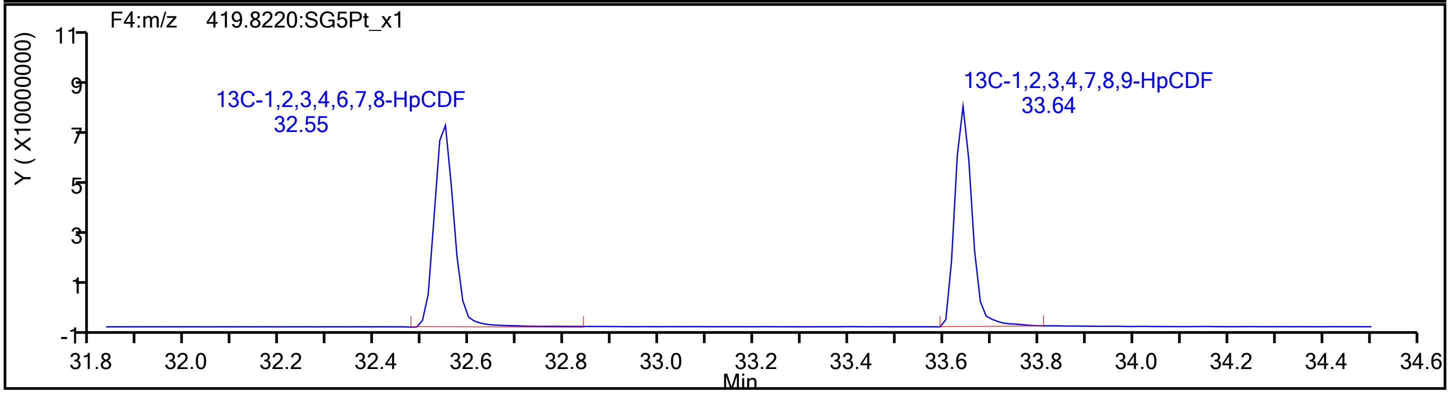

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d

Injection Date: 05-Oct-2020 19:57:54

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: L5

Worklist#: 419031

Sample Line#: 6

Column Type:

Column Dia:

HpCDF

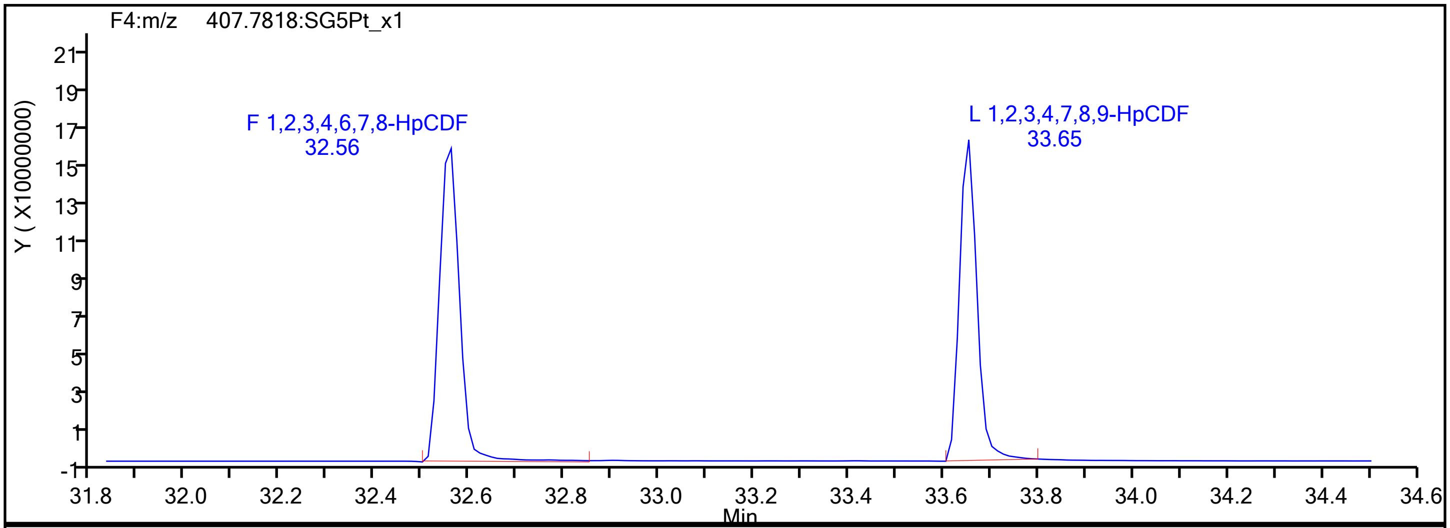

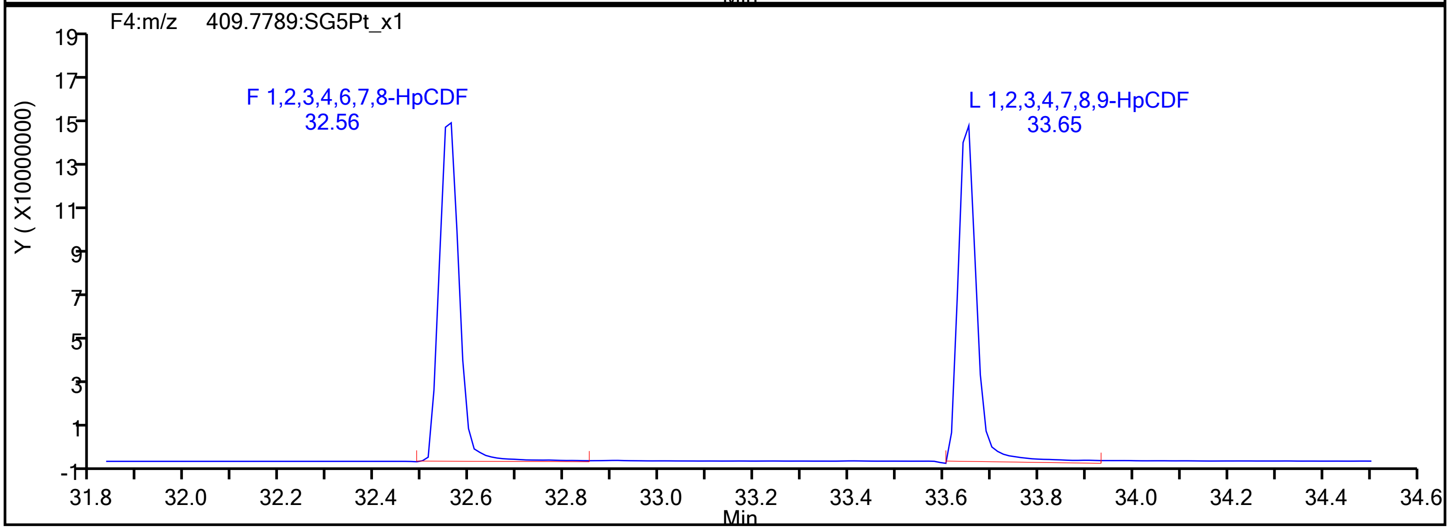

HpCDF Interference Mass

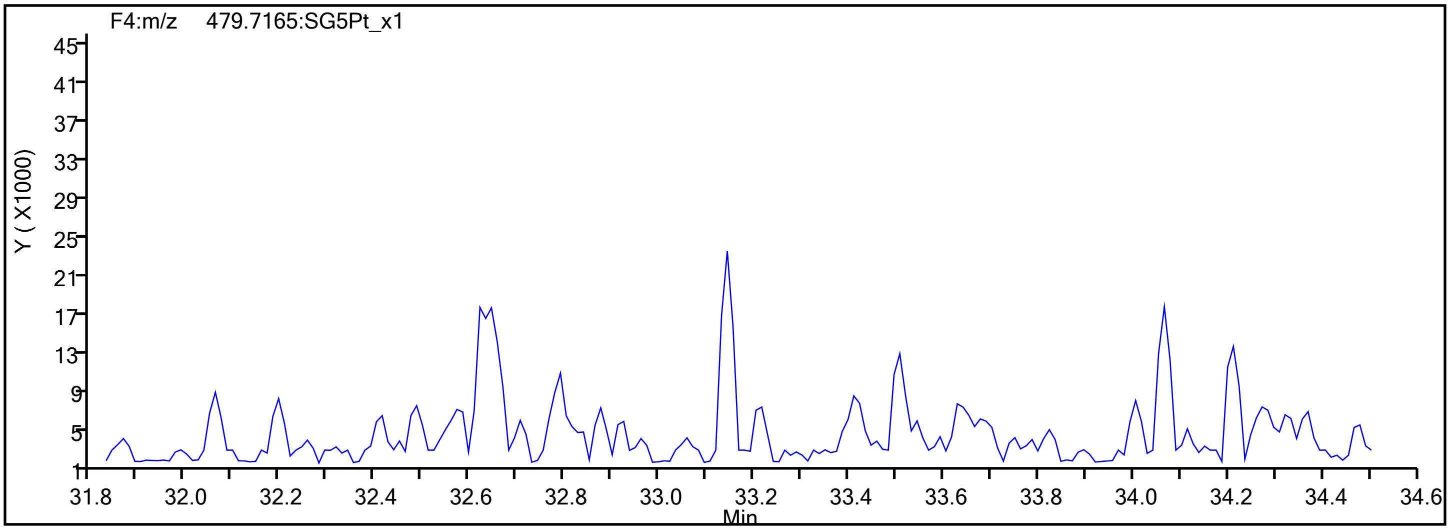

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031 Sample Line#: 6
Column Type: Column Dia:

HpCDD

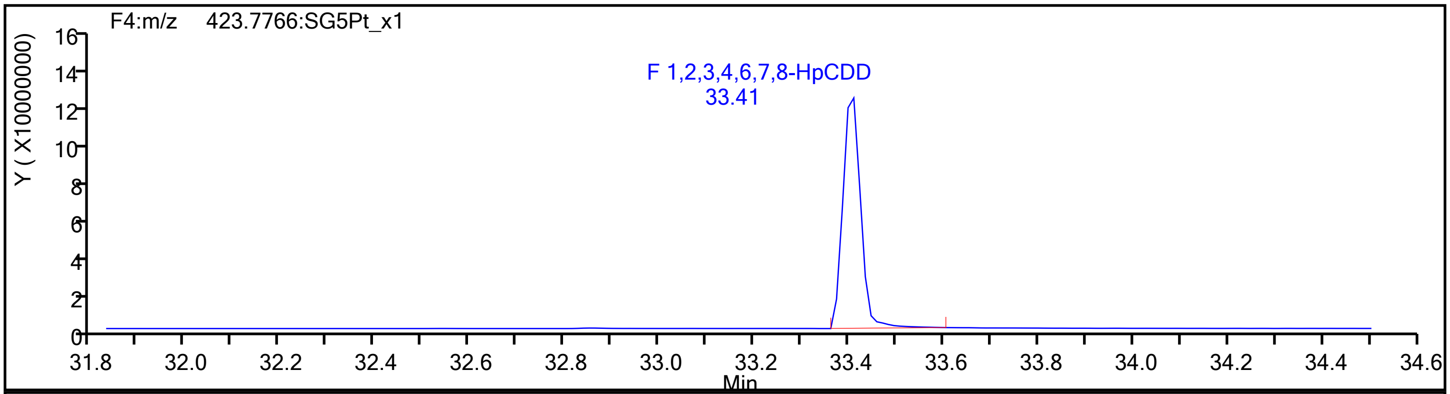

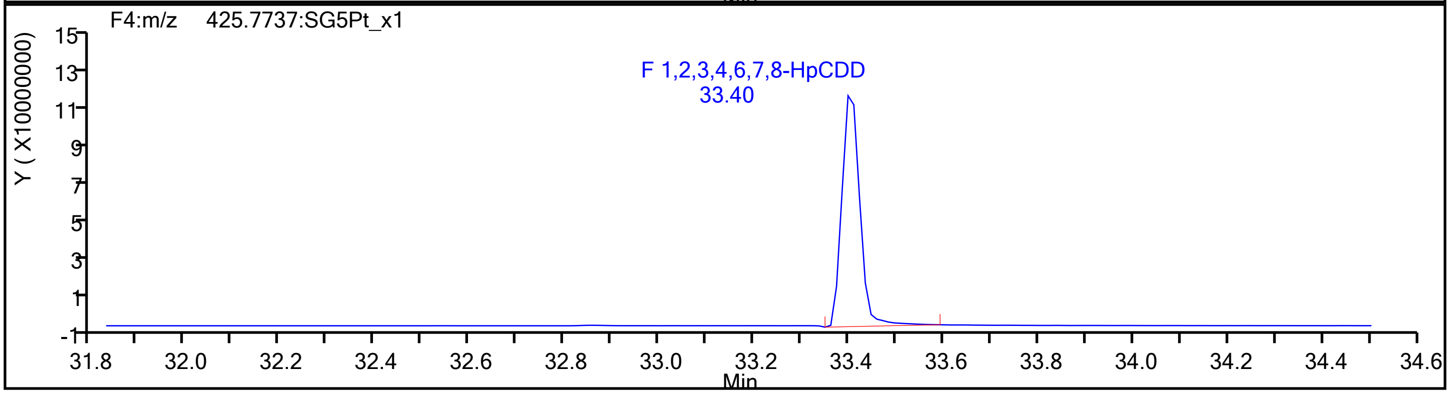

HpCDD Standards

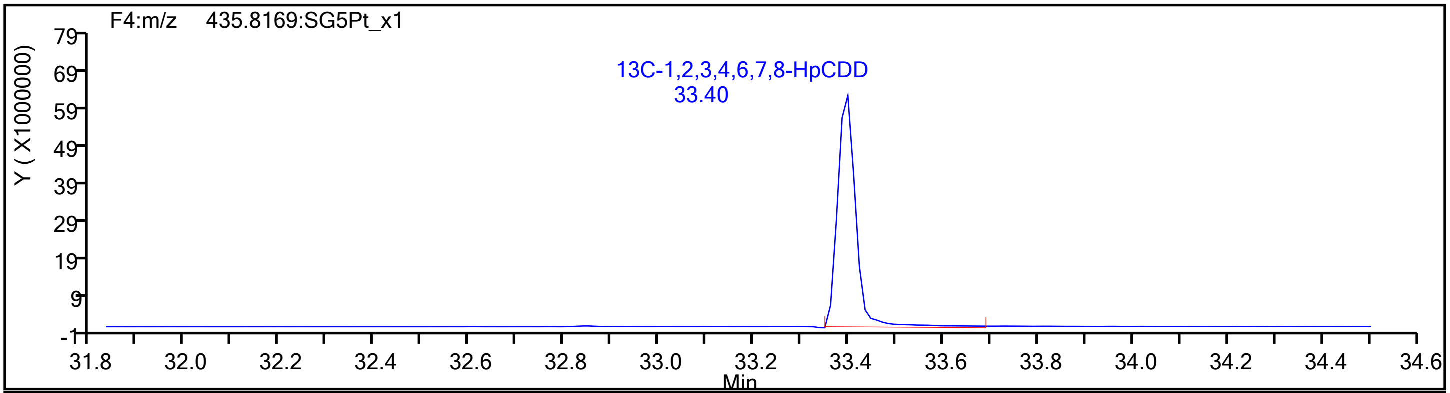

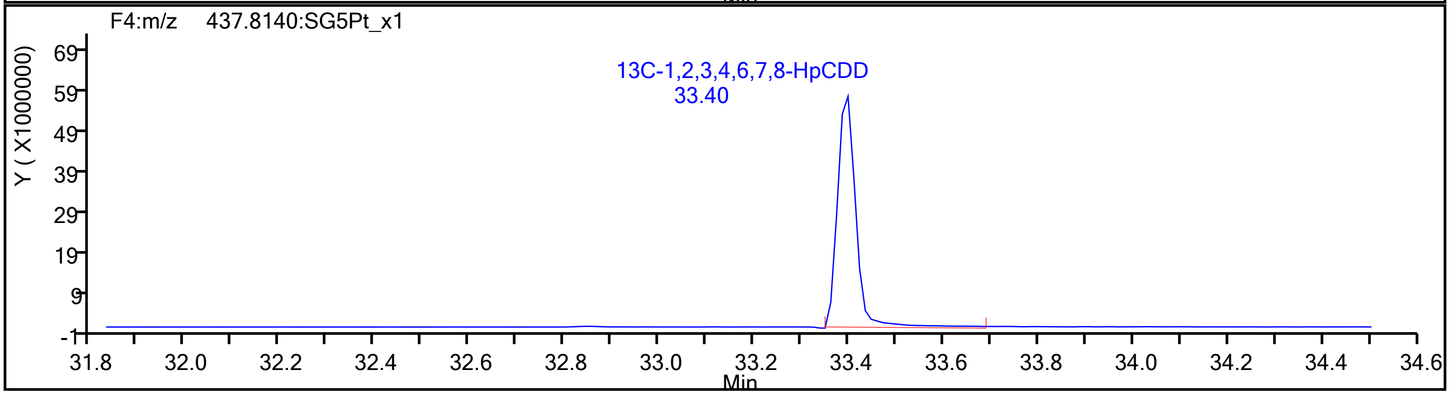

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

OCDF

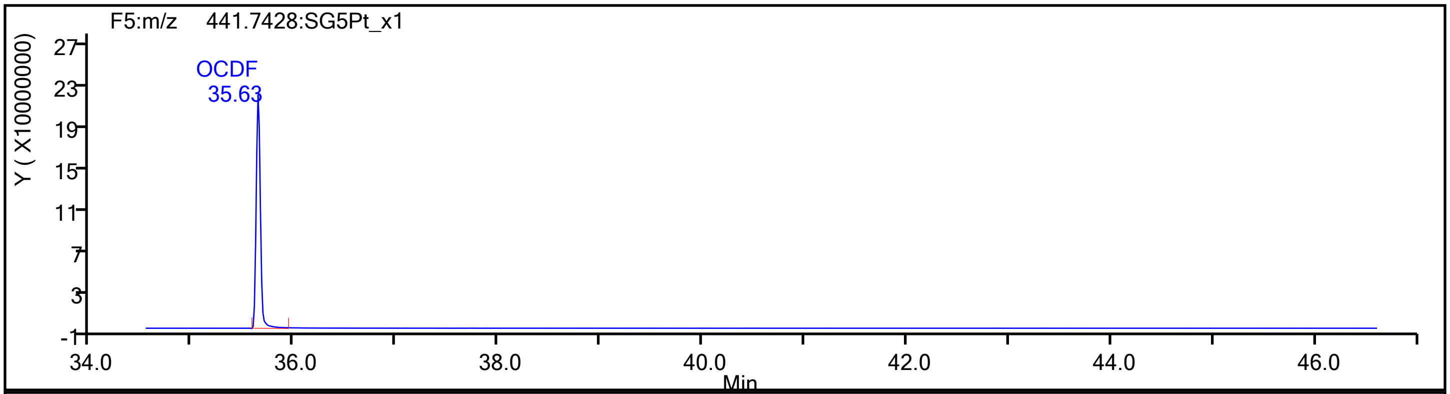

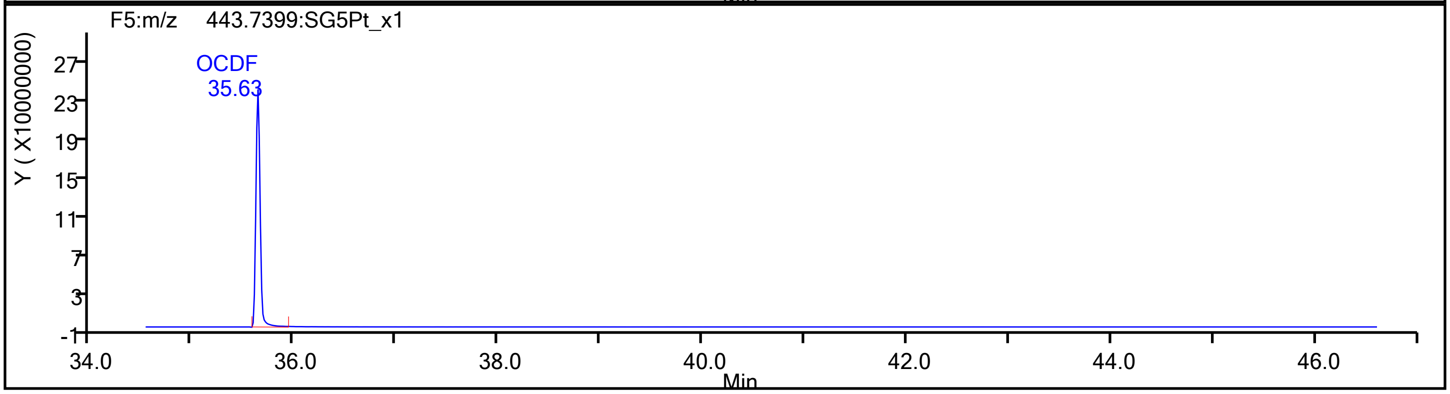

OCDF Standards

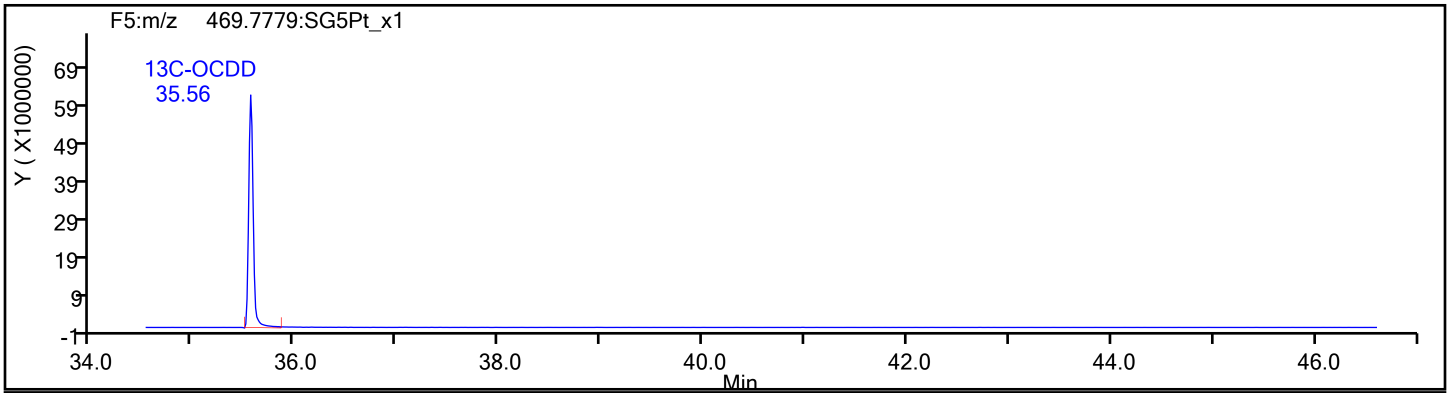

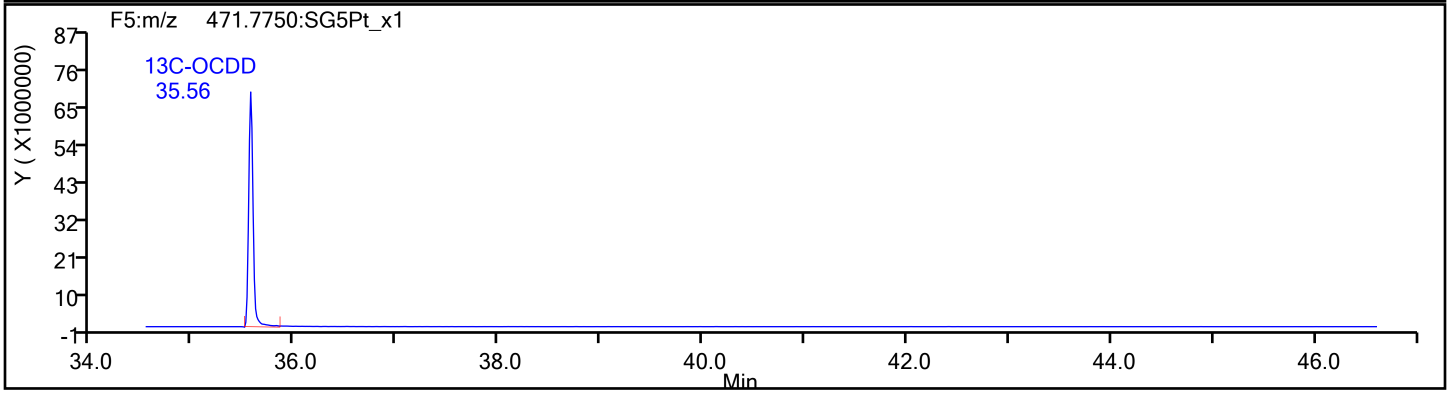

Report Date: 08-Oct-2020 15:16:39		Chrom Revision: 2.3 06-Oct-2020 14:45:12	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

OCDF

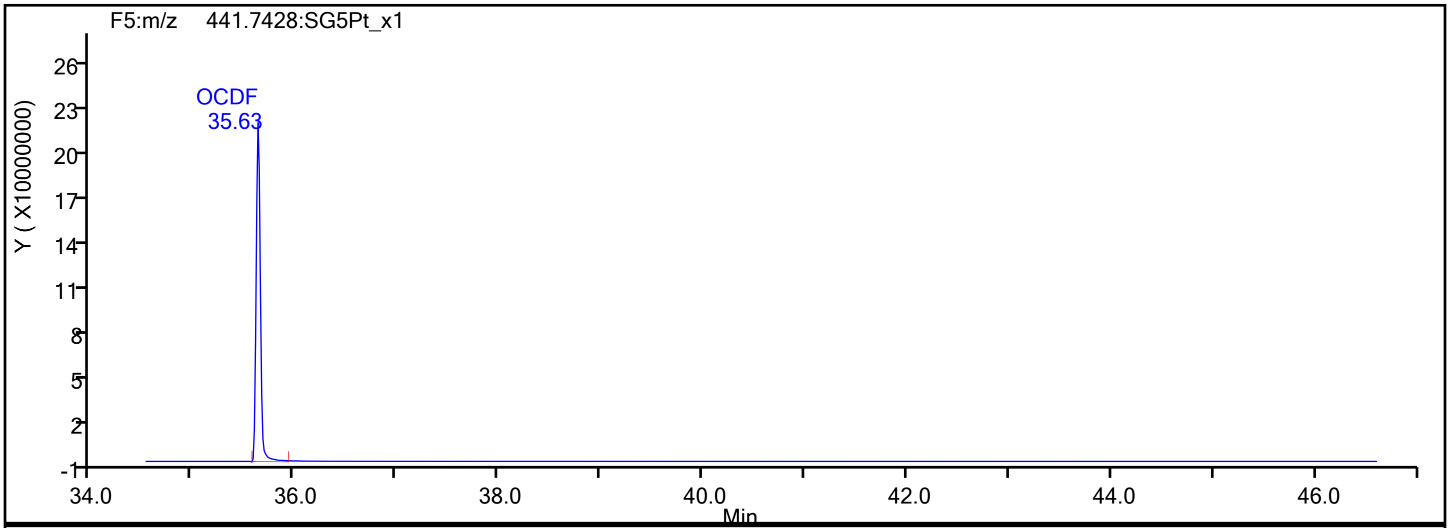

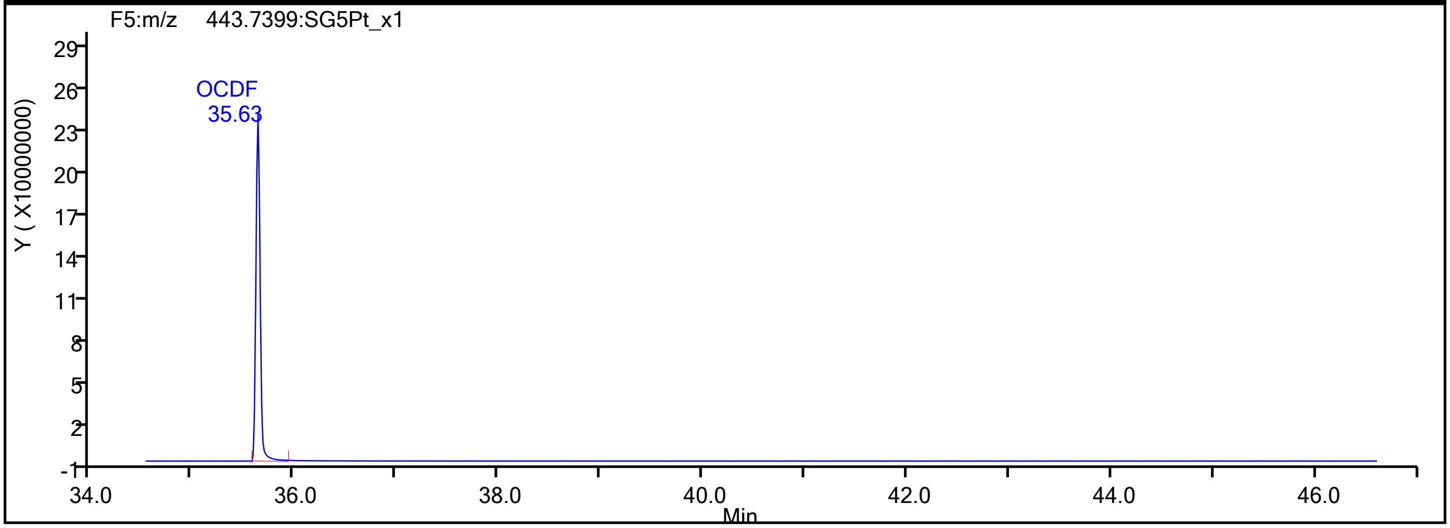

OCDF Interference Mass

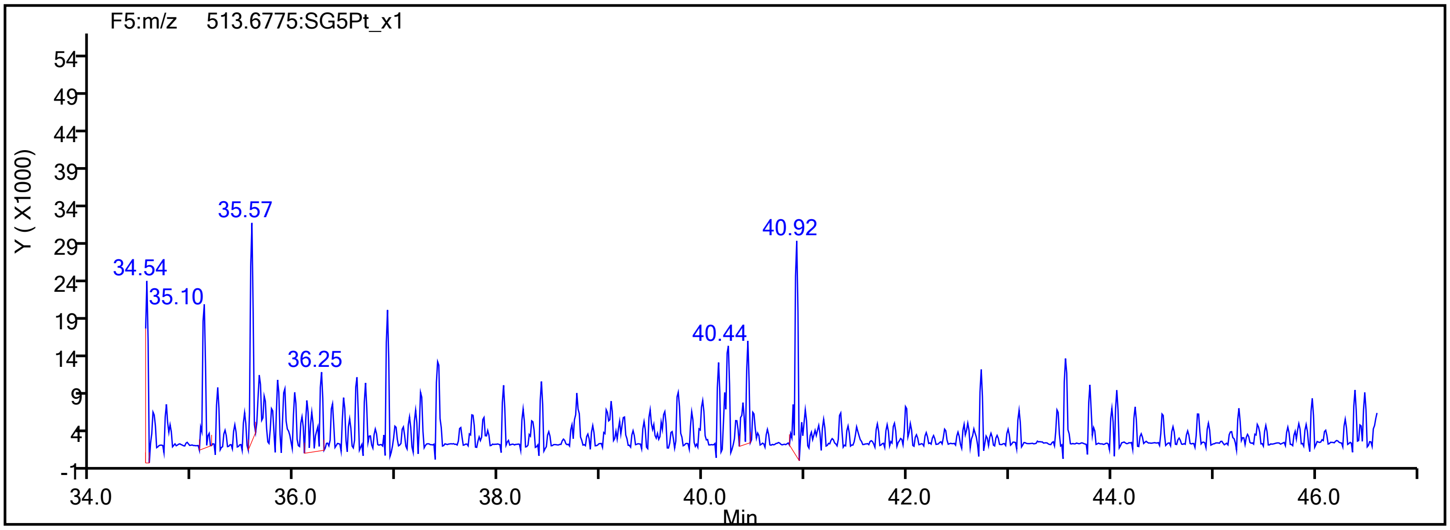

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d
Injection Date: 05-Oct-2020 19:57:54 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: L5
Worklist#: 419031 Sample Line#: 6
Column Type: Column Dia:

OCDD

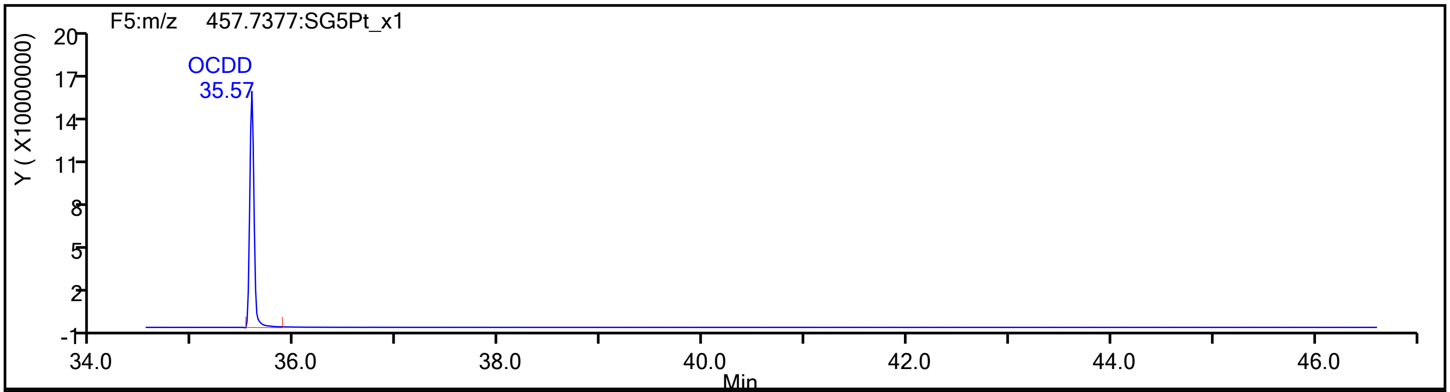

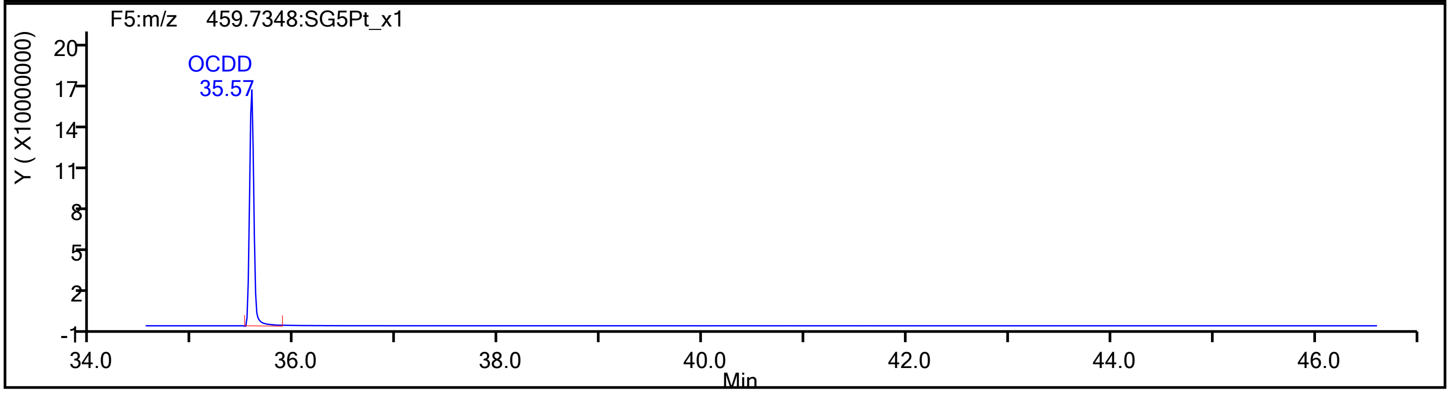

OCDD Standards

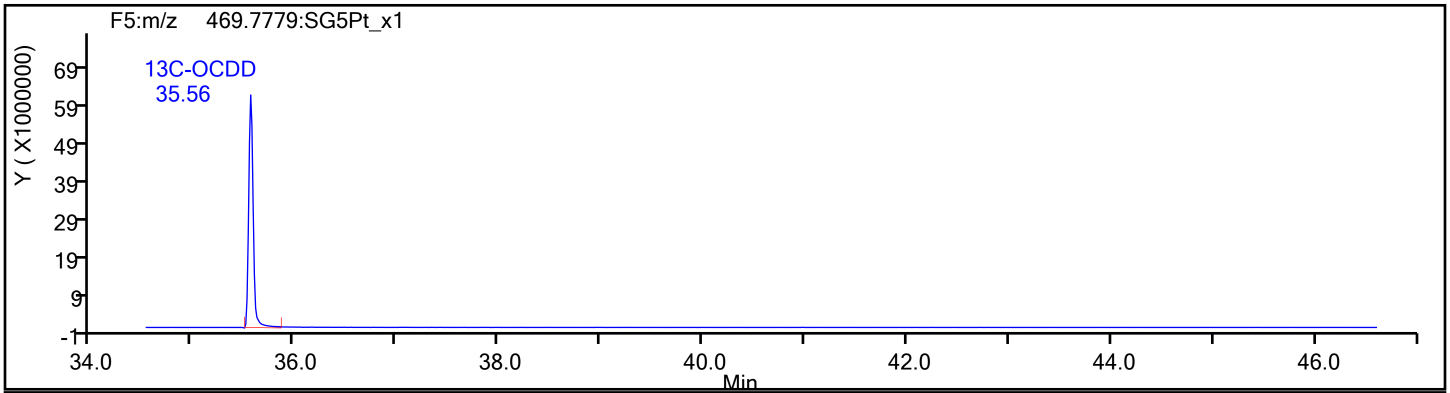

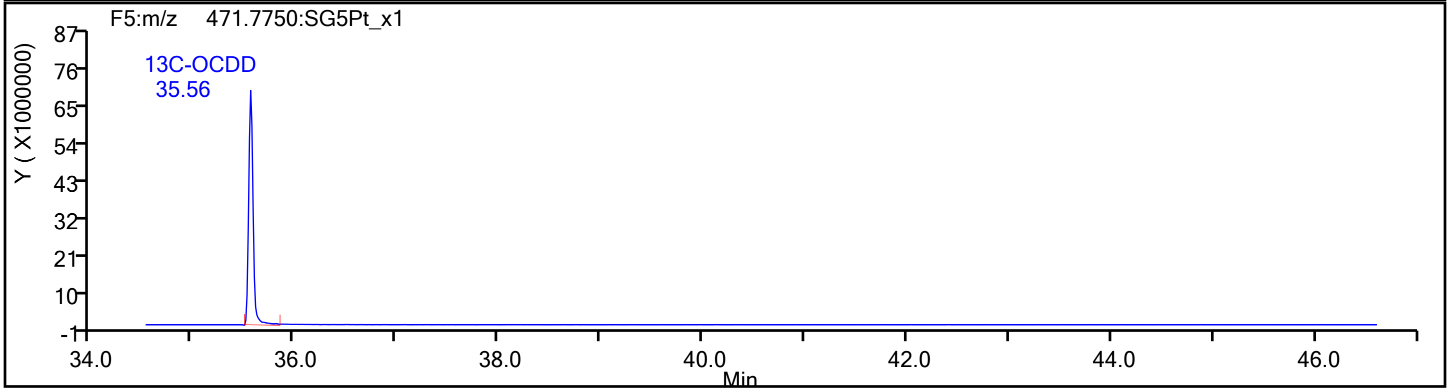

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d

Injection Date: 05-Oct-2020 19:57:54

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: L5

Worklist#: 419031

Sample Line#: 6

Column Type:

Column Dia:

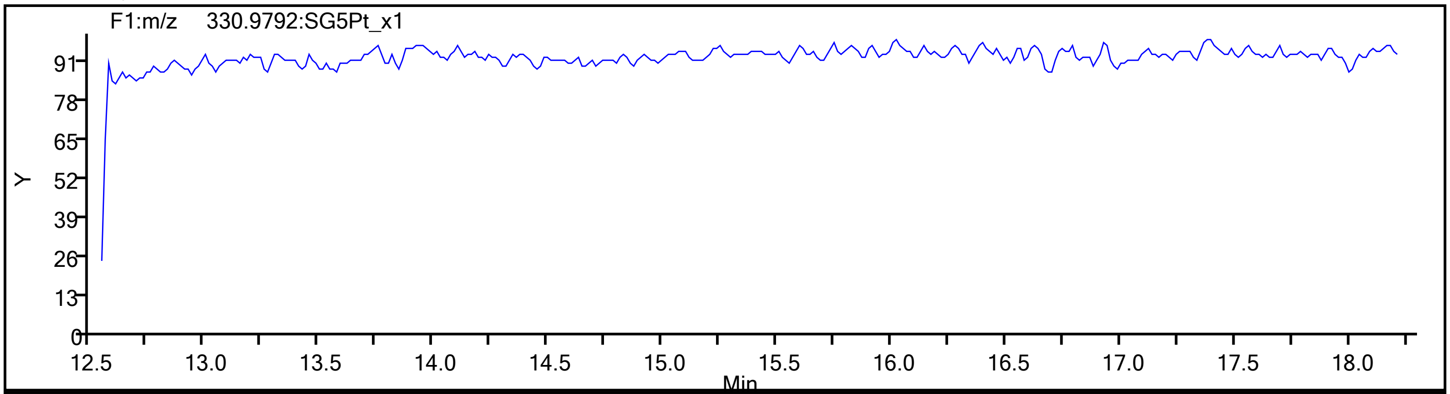

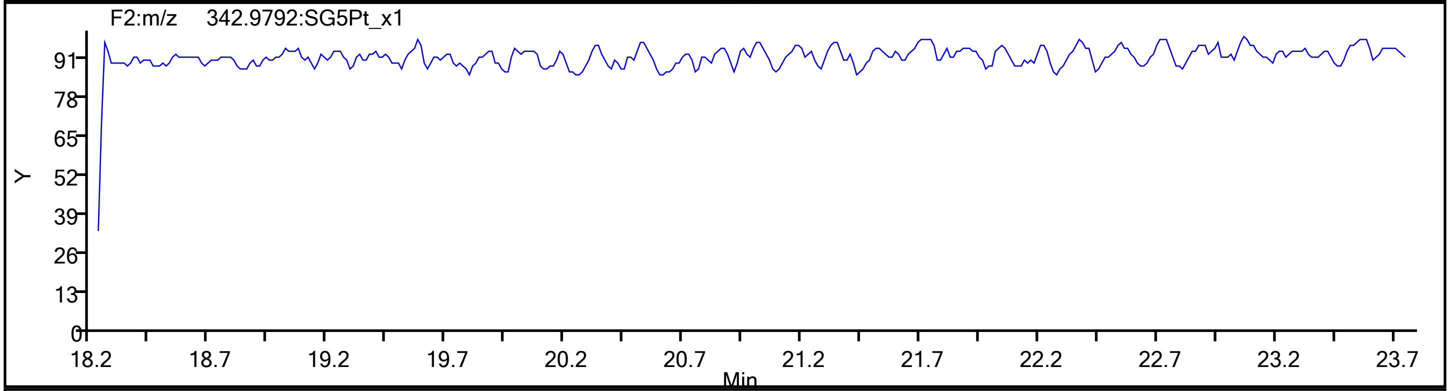

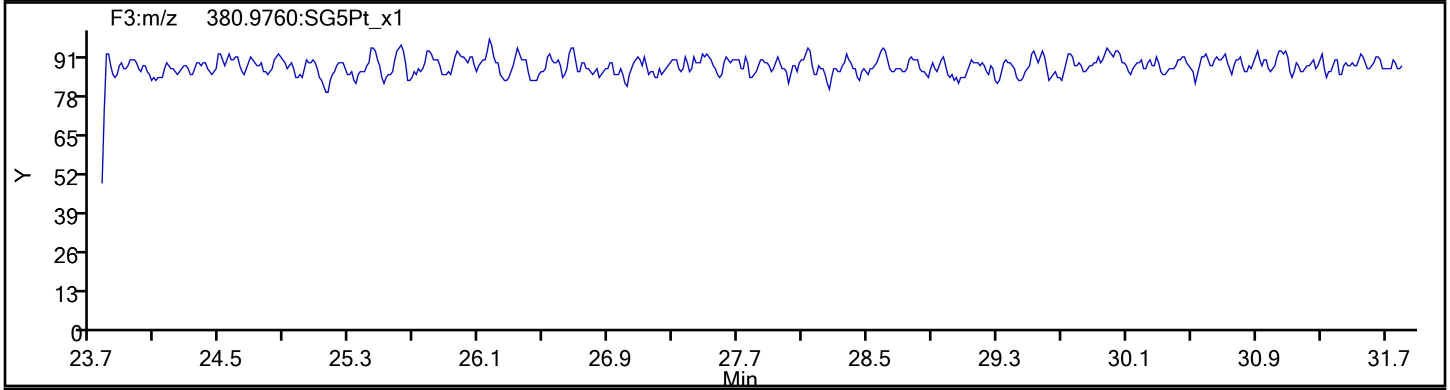

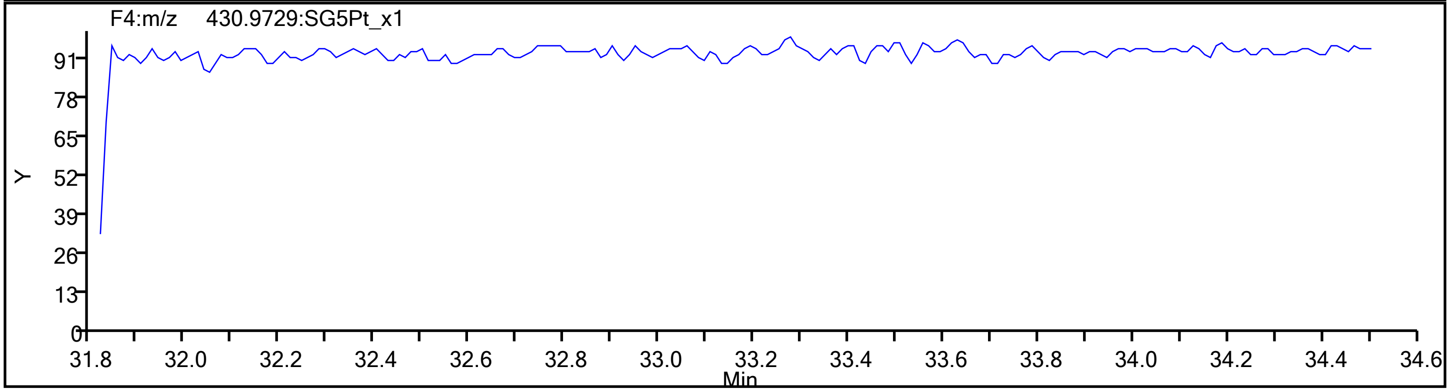

Report Date: 08-Oct-2020 15:16:39 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_7.d		
Injection Date:	05-Oct-2020 19:57:54	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L5		
Worklist#:	419031	Sample Line#:	6
Column Type:		Column Dia:	

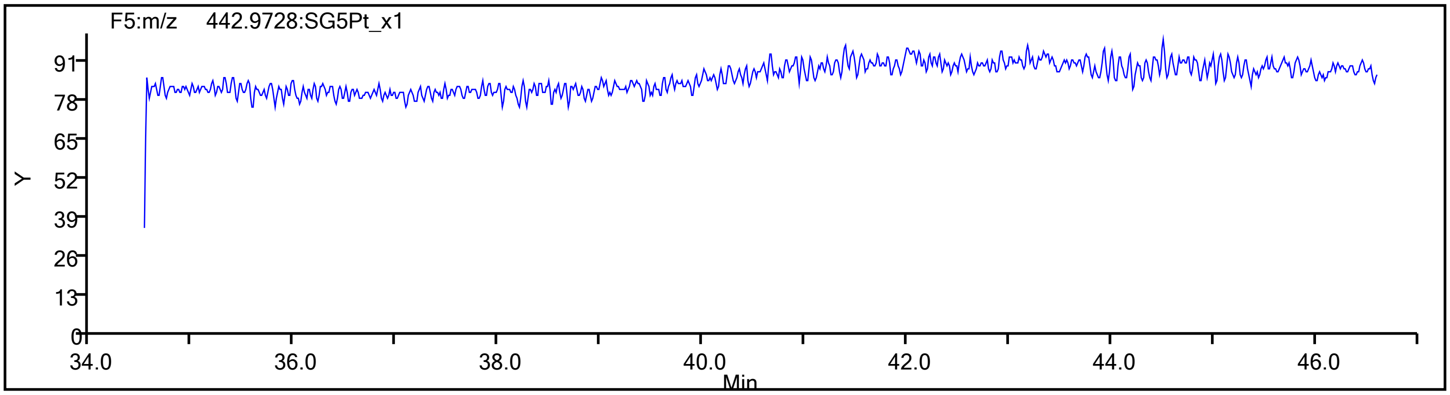

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d
Lims ID: IC 6
Client ID: L6
Sample Type: IC Calib Level: 6
Inject. Date: 05-Oct-2020 20:45:32 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520D CS-6 HRDXNL6_00027
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:46 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:51:53

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.930	340714033	0.80	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	506243118	0.75	1.4844	100.1	100.1	0.2926	0.2926	100	
2,3,7,8-TCDF	15.492	971346079	0.79	0.9534	201.3	201.3	0.4257	0.4257	101	
S Total TCDF					201.3	201.3	0.4257	0.4257		
D 13C-2,3,7,8-TCDD	16.081	381920719	0.78	1.0875	103.1	103.1	0.3173	0.3173	103	
2,3,7,8-TCDD	16.097	753535988	0.75	1.0205	193.3	193.3	0.3655	0.3655	96.67	
$ 37Cl4-2,3,7,8-TCDD	16.097	799190369		1.1216	209.1	209.1	0.4510	0.4510	105	
S Total TCDD					193.3	193.3	0.3655	0.3655		
D 13C-1,2,3,7,8-PeCDF	19.714	483559045	1.58	1.3943	101.8	101.8	0.2537	0.2537	102	
1,2,3,7,8-PeCDF	19.727	4947974033	1.58	1.0794	948.0	948.0	2.456	2.456	94.80	
D 13C-2,3,4,7,8-PeCDF	20.832	473557446	1.59	1.3370	104.0	104.0	0.2646	0.2646	104	
2,3,4,7,8-PeCDF	20.846	5005702595	1.58	1.0966	963.9	963.9	2.607	2.607	96.39	
S Total PeCDF					1911.9	1911.9	2.531	2.531		
D 13C-1,2,3,7,8-PeCDD	21.445	295637007	1.55	0.8475	102.4	102.4	0.1454	0.1454	102	
1,2,3,7,8-PeCDD	21.473	3107231597	1.59	1.1397	922.2	922.2	0.9822	0.9822	92.22	
S Total PeCDD					922.2	922.2	0.9822	0.9822		
D 13C-1,2,3,4,7,8-HxCDF	26.773	449223128	0.53	1.3065	104.6	104.6	0.3598	0.3598	105	
1,2,3,4,7,8-HxCDF	26.799	5360382544	1.27	1.2552	950.6	950.6	3.046	3.046	95.06	
D 13C-1,2,3,6,7,8-HxCDF	27.039	475877091	0.54	1.4213	101.9	101.9	0.3308	0.3308	102	
1,2,3,6,7,8-HxCDF	27.079	5427888743	1.21	1.2102	942.5	942.5	3.019	3.019	94.25	
D 13C-2,3,4,6,7,8-HxCDF	28.583	445271015	0.52	1.3142	103.1	103.1	0.3577	0.3577	103	
2,3,4,6,7,8-HxCDF	28.637	5196996618	1.22	1.2182	958.1	958.1	3.489	3.489	95.81	
D 13C-1,2,3,7,8,9-HxCDF	30.408	434302561	0.53	1.3204	100.1	100.1	0.3560	0.3560	100	
1,2,3,7,8,9-HxCDF	30.434	5139532813	1.27	1.2319	960.6	960.6	2.355	2.355	96.06	
S Total HxCDF					3811.8	3811.8	2.977	2.977		
* 13C-1,2,3,7,8,9-HxCDD	30.101	328711864	1.25	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.090	294228859	1.30	0.8660	103.4	103.4	0.2792	0.2792	103	a
1,2,3,4,7,8-HxCDD	29.116	3253249323	1.26	1.2535	882.1	882.1	2.085	2.085	88.21	
D 13C-1,2,3,6,7,8-HxCDD	29.356	325315824	1.29	0.9827	100.7	100.7	0.2461	0.2461	101	a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	29.382	3257293201	1.26	1.1117	900.7	900.7	2.169	2.169	90.07	
1,2,3,7,8,9-HxCDD	30.128	3577305445	1.27	1.2852	898.5	898.5	1.952	1.952	89.85	
S Total HxCDD					2681.3	2681.3	2.069	2.069		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	303648587	0.44	0.9410	98.2	98.2	1.883	1.883	98.16	
1,2,3,4,6,7,8-HpCDF	32.559	4371164576	1.05	1.4783	973.8	973.8	8.126	8.126	97.38	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	282985749	0.45	0.8751	98.4	98.4	2.025	2.025	98.38	
1,2,3,4,7,8,9-HpCDF	33.653	3838434709	1.02	1.3784	984.0	984.0	8.240	8.240	98.40	
S Total HpCDF					1957.8	1957.8	8.183	8.183		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	290324978	1.02	0.9049	97.6	97.6	0.6323	0.6323	97.60	
1,2,3,4,6,7,8-HpCDD	33.410	2892407260	1.06	1.0862	917.2	917.2	3.111	3.111	91.72	
S Total HpCDD					917.2	917.2	3.111	3.111		
D 13C-OCDD	35.570	357480780	0.98	0.5783	188.1	188.1	0.7359	0.7359	94.03	
OCDF	35.642	5965126561	0.94	1.7248	1934.9	1934.9	2.724	2.724	96.74	
OCDD	35.570	4133195923	0.90	1.2576	1838.8	1838.8	4.213	4.213	91.94	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d
Lims ID: IC 6
Client ID: L6
Sample Type: IC Calib Level: 6
Inject. Date: 05-Oct-2020 20:45:32 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 100520D CS-6 HRDXNL6_00027
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:16:46 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:51:53

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.930	15.942	-1		151108390	42321058	88382	220955	479		
333.9339	15.930	15.942	-1		189605643	52792329	42902	107255	1231	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.501	-1	0.972	217716387	63922524	103977	259942	615		
317.9389	15.477	15.501	-1	0.972	288526731	83445507	61284	153210	1362	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.516	-1	1.001	429117320	123817586	91240	228100	1357		
305.8987	15.492	15.516	-1	1.001	542228759	160260529	148011	370027	1083	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.081	16.106	-1	1.009	167903098	45797332	88382	220955	518		
333.9339	16.081	16.106	-1	1.009	214017621	58416146	42902	107255	1362	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.121	-1	1.001	324081706	87829708	62331	155827	1409		
321.8936	16.097	16.121	-1	1.001	429454282	117939531	93158	232895	1266	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.121	-1	1.010	799190369	217245437	192465	481162	1129		
13C-1,2,3,7,8-PeCDF											
351.9000	19.714	19.725	-1	1.237	296168824	63170814	76267	190667	828		
353.8970	19.714	19.725	-1	1.237	187390221	39715596	58334	145835	681	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.727	19.746	-1	1.001	3027780648	646564473	654985	1637462	987		
341.8567	19.727	19.746	-1	1.001	1920193385	416313269	435916	1089790	955	1.58(1.32-1.78)	

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	20.832	20.848	-1	1.308	290366068	58500537	76267	190667	767		
353.8970	20.832	20.848	-1	1.308	183191378	36893413	58334	145835	632	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.846	20.865	-1	1.001	3065599069	608087156	654985	1637462	928		
341.8567	20.846	20.865	-1	1.001	1940103526	385867342	435916	1089790	885	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.445	21.454	0	1.346	179899625	32783029	28372	70930	1155		
369.8919	21.445	21.454	0	1.346	115737382	21211161	18523	46307	1145	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.473	21.481	0	1.001	1908012464	353795417	150737	376842	2347		
357.8516	21.473	21.481	0	1.001	1199219133	220402762	91029	227572	2421	1.59(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.773	26.775	0	0.889	156052742	21631761	37559	93897	576		
385.8610	26.759	26.775	-1	0.889	293170386	39827320	65616	164040	607	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.799	26.805	0	1.001	2995126501	428848175	516202	1290505	831		
375.8178	26.799	26.805	0	1.001	2365256043	334457919	423731	1059327	789	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.039	27.044	0	0.898	167478677	22526905	37559	93897	600		
385.8610	27.039	27.044	0	0.898	308398414	41798022	65616	164040	637	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.079	27.079	0	1.001	2975785926	413498949	516202	1290505	801		
375.8178	27.079	27.079	0	1.001	2452102817	332906520	423731	1059327	786	1.21(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.583	28.600	-1	0.950	152484490	19004818	37559	93897	506		
385.8610	28.597	28.600	0	0.950	292786525	36286015	65616	164040	553	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.637	28.639	0	1.002	2853002649	365268614	516202	1290505	708		
375.8178	28.624	28.639	-1	1.001	2343993969	300585803	423731	1059327	709	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.413	0	1.010	150444095	28066048	37559	93897	747		
385.8610	30.408	30.413	0	1.010	283858466	52917516	65616	164040	806	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.434	30.437	0	1.001	2875186348	555114305	516202	1290505	1075		
375.8178	30.434	30.437	0	1.001	2264346465	440492767	423731	1059327	1040	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.101	30.109	0		182706598	30466772	29949	74872	1017		
403.8529	30.101	30.109	0		146005266	24397185	23122	57805	1055	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.090	29.092	0	0.966	166123596	20498305	29949	74872	684		a
403.8529	29.090	29.092	0	0.966	128105263	15696823	23122	57805	679	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.116	29.124	0	1.001	1815154329	233869472	206068	515170	1135		
391.8127	29.116	29.124	0	1.001	1438094994	184713798	172339	430847	1072	1.26(1.05-1.43)	

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.356	29.361	0	0.975	183426271	22148590	29949	74872	740		a
403.8529	29.356	29.361	0	0.975	141889553	17075798	23122	57805	739	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.382	29.390	0	1.001	1815231287	227358770	206068	515170	1103		
391.8127	29.382	29.390	0	1.001	1442061914	181975175	172339	430847	1056	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.128	30.136	0	1.036	1998324052	337409594	206068	515170	1637		
391.8127	30.128	30.136	0	1.036	1578981393	269857827	172339	430847	1566	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.081	93490992	32686130	102296	255740	320		
419.8220	32.547	32.547	0	1.081	210157595	74541932	286540	716350	260	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	2235763049	794120900	3348402	8371005	237		
409.7789	32.559	32.559	0	1.000	2135401527	761818340	1804268	4510670	422	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.646	0	1.118	87739096	35127409	102296	255740	343		
419.8220	33.641	33.646	0	1.118	195246653	78293096	286540	716350	273	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	1935079754	776190023	3348402	8371005	232		
409.7789	33.653	33.653	0	1.000	1903354955	755122455	1804268	4510670	419	1.02(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	146491857	57446256	52439	131097	1095		
437.8140	33.398	33.398	0	1.110	143833121	54119018	73126	182815	740	1.02(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	1490584704	581077389	680512	1701280	854		
425.7737	33.398	33.410	-1	1.000	1401822556	551577219	827272	2068180	667	1.06(0.88-1.20)	
13C-OCDD											
469.7779	35.570	35.565	0	1.182	176555040	56635853	39952	99880	1418		
471.7750	35.570	35.565	0	1.182	180925740	57417218	53440	133600	1074	0.98(0.76-1.02)	
OCDF											
441.7428	35.642	35.640	0	1.002	2893669012	940643924	392939	982347	2394		
443.7399	35.630	35.640	-1	1.002	3071457549	988451182	678645	1696612	1457	0.94(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	1963152787	647559293	512325	1280812	1264		
459.7348	35.570	35.570	0	1.000	2170043136	730157089	696368	1740920	1049	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Injection Date:	05-Oct-2020 20:45:32	Instrument ID:	3D5		
Lims ID:	IC 6				
Client ID:	L6				
Operator ID:	SMA	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.09

Processing Integration Results

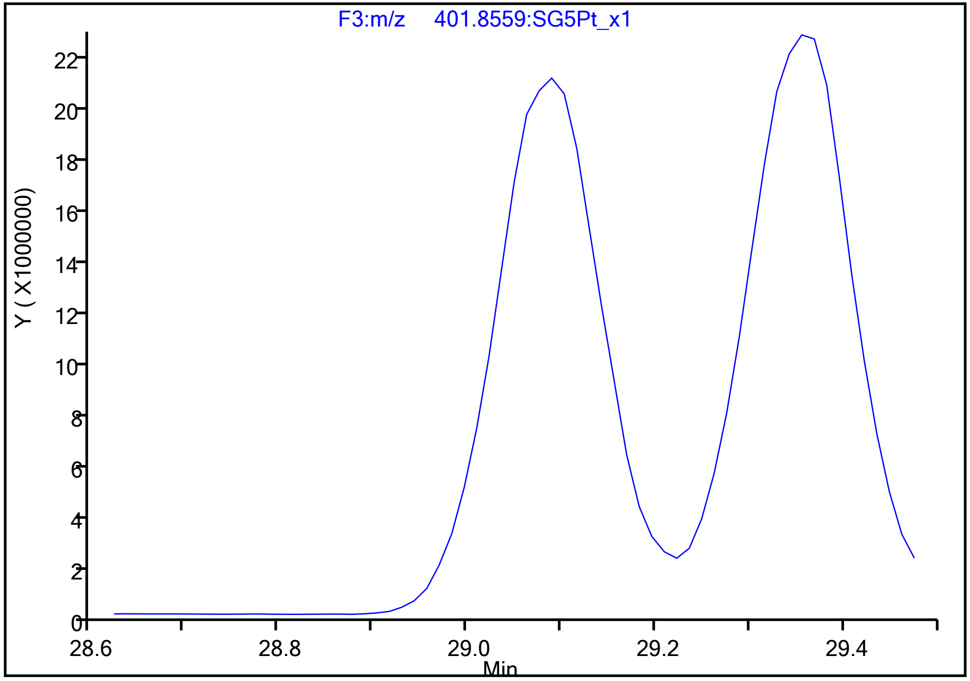

RT:	29.09
Area:	166123596
Amount:	103.3571
Amount Units:	pg/ul

Manual Integration Results

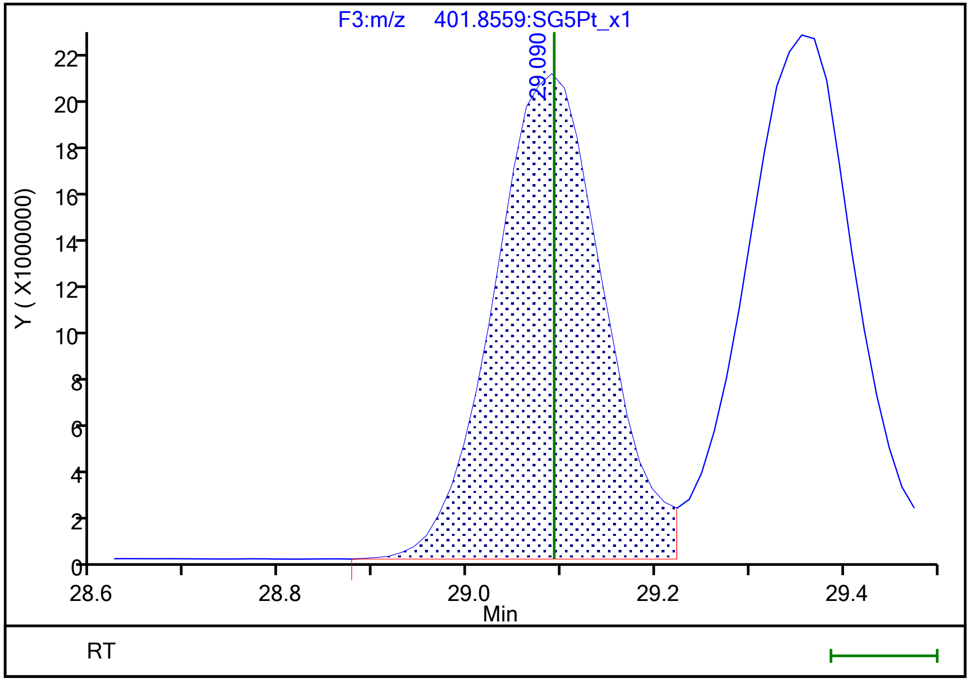

Reviewer: arghestanis, 08-Oct-2020 14:30:55

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Injection Date:	05-Oct-2020 20:45:32	Instrument ID:	3D5		
Lims ID:	IC 6				
Client ID:	L6				
Operator ID:	SMA	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT: 30.10
Area: 183112302
Amount: 101.5329
Amount Units: pg/ul

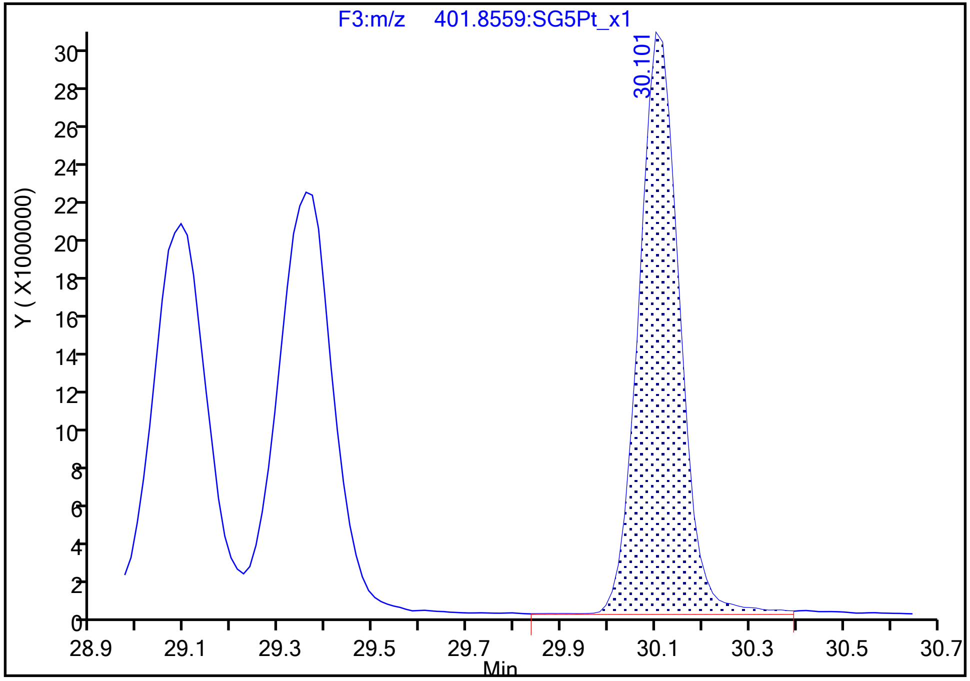

Manual Integration Results

RT: 29.36
Area: 183426271
Amount: 100.7096
Amount Units: pg/ul

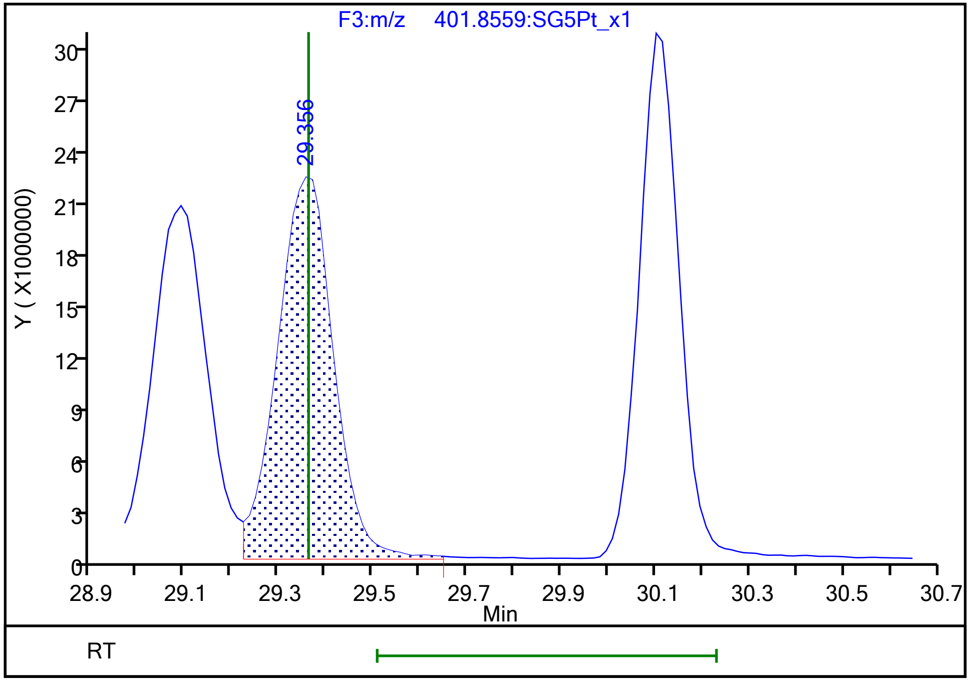

Reviewer: arghestanis, 08-Oct-2020 14:34:17

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:16:47
Chrom Revision: 2.3 06-Oct-2020 14:45:12
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Injection Date:	05-Oct-2020 20:45:32	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

TCDF

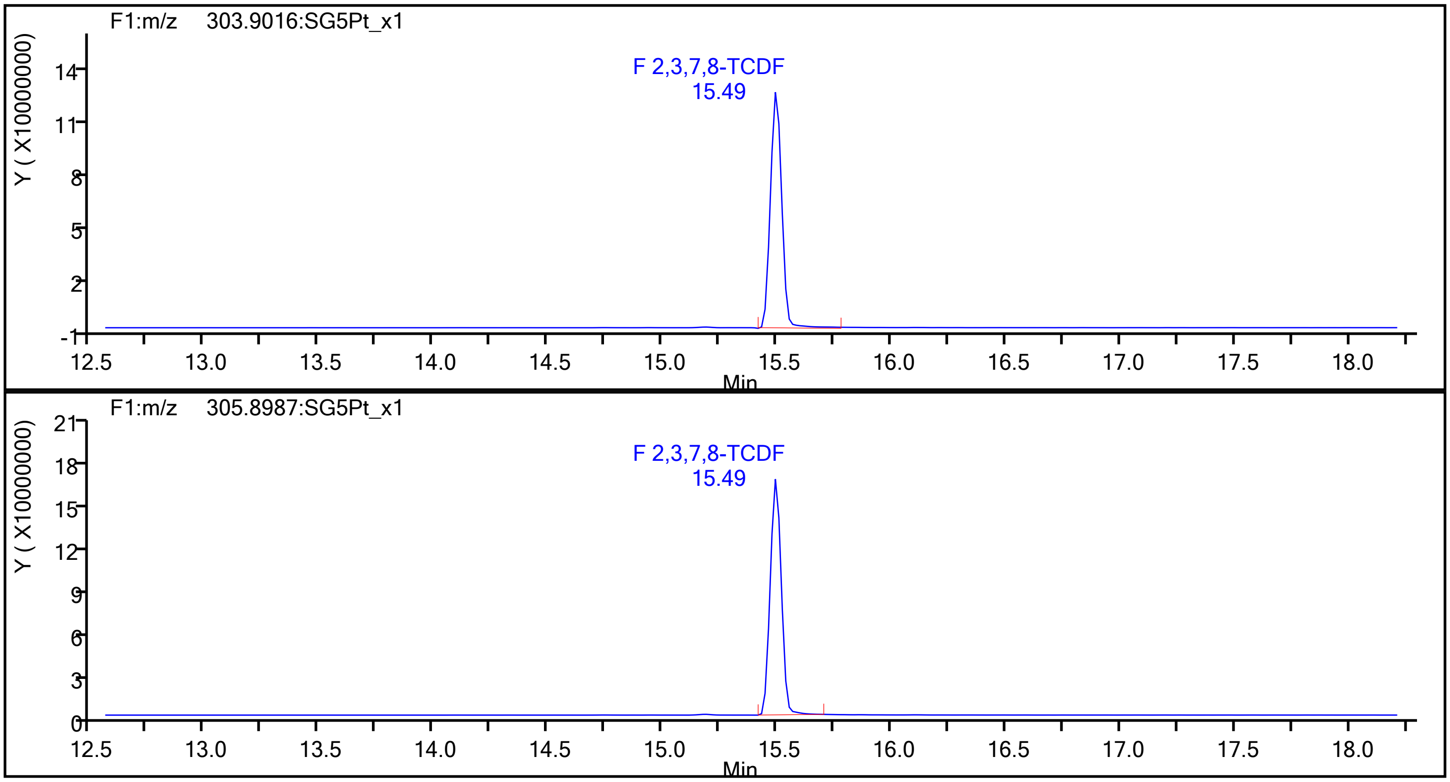

TCDF Standards

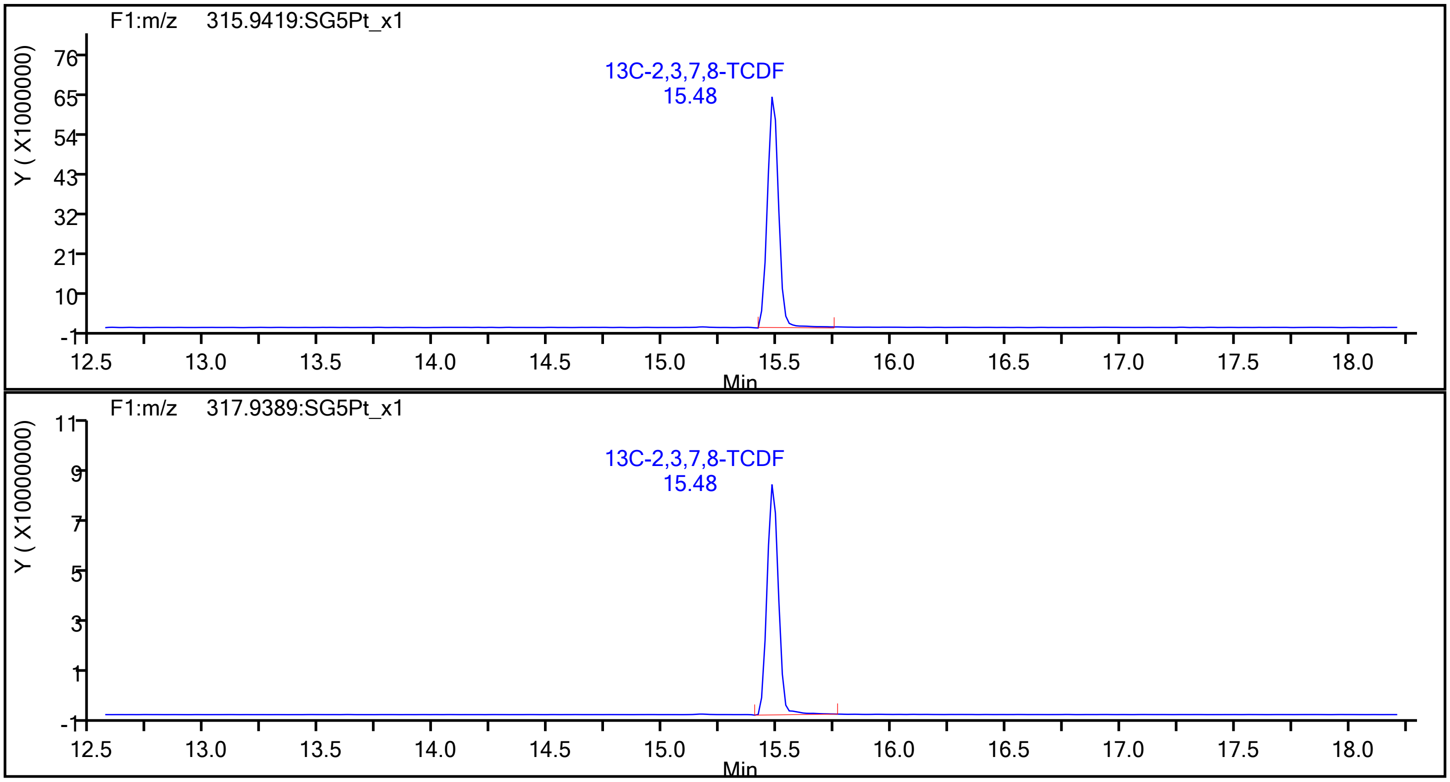

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d
Injection Date: 05-Oct-2020 20:45:32
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L6
Worklist#: 419031
Sample Line#: 7
Column Type:
Column Dia:

TCDF

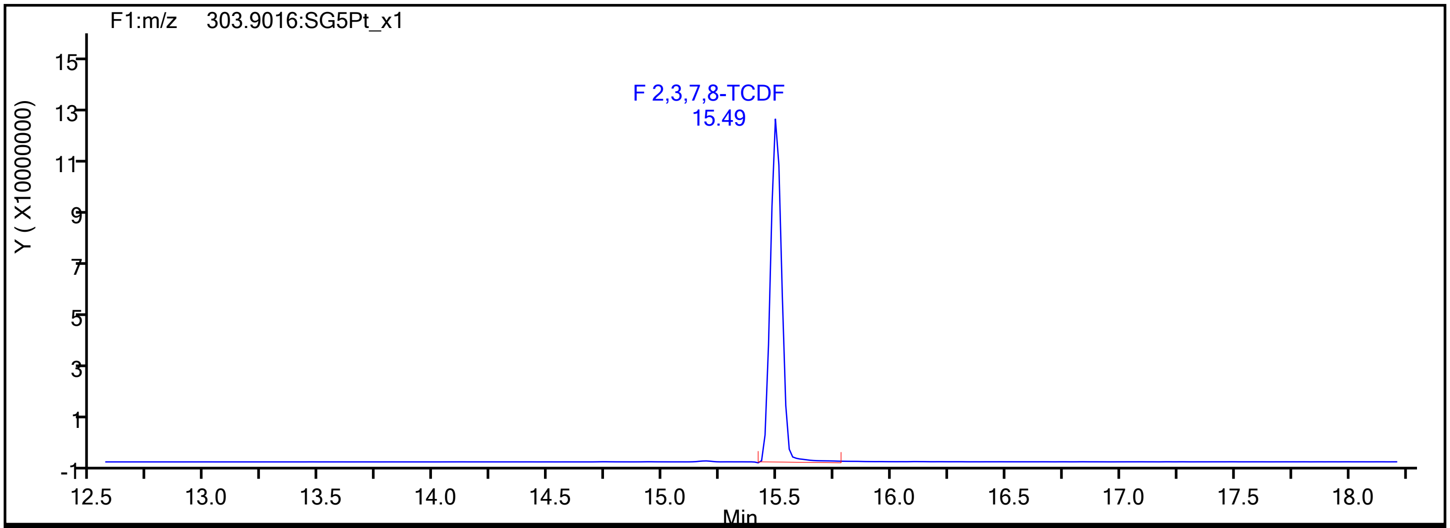

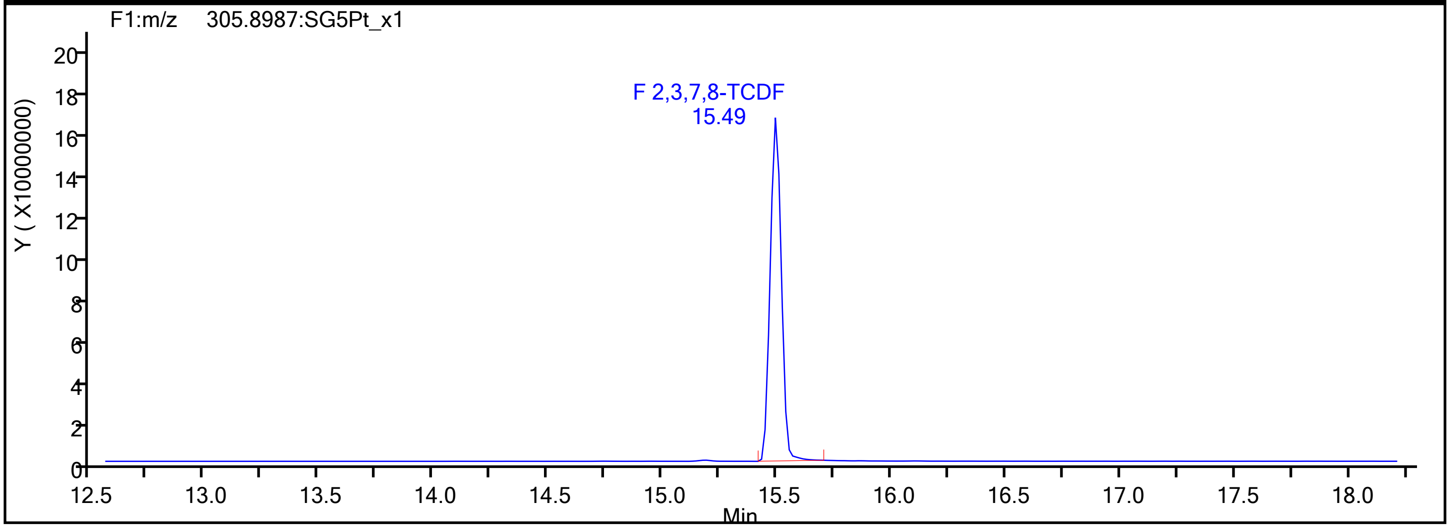

TCDF Interference Mass

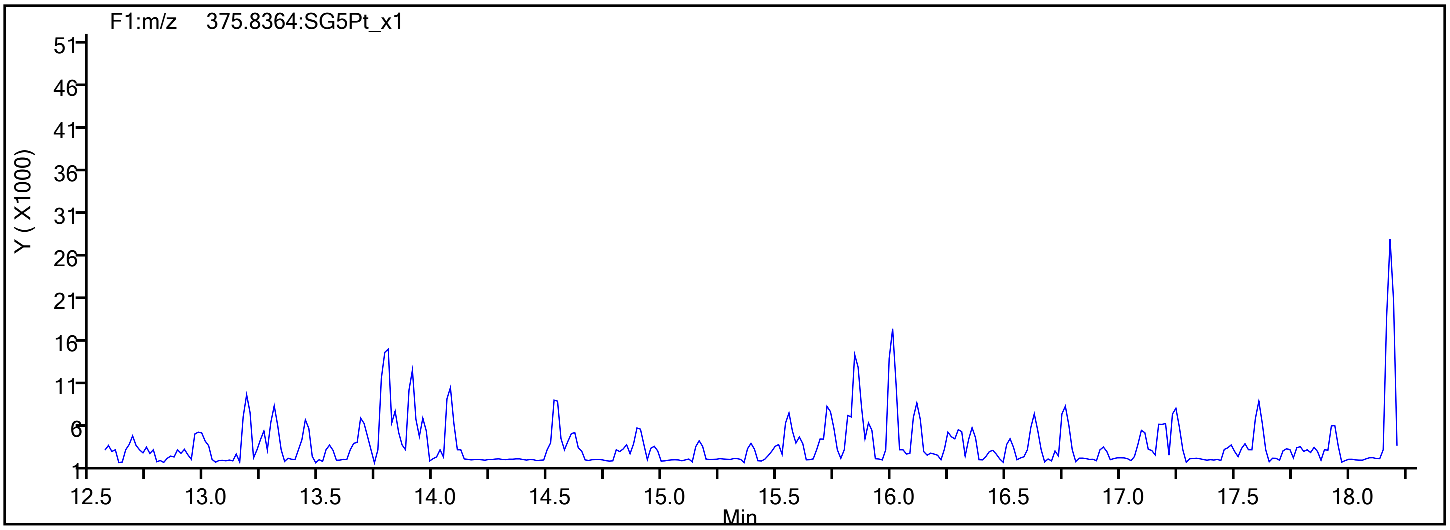

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Injection Date:	05-Oct-2020 20:45:32	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
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Column Type:		Column Dia:	

TCDD

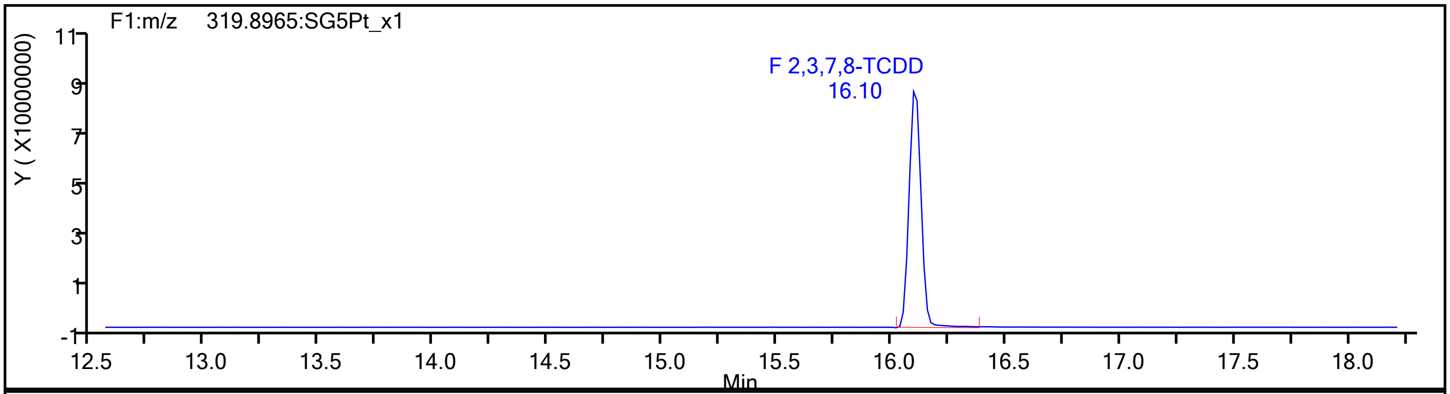

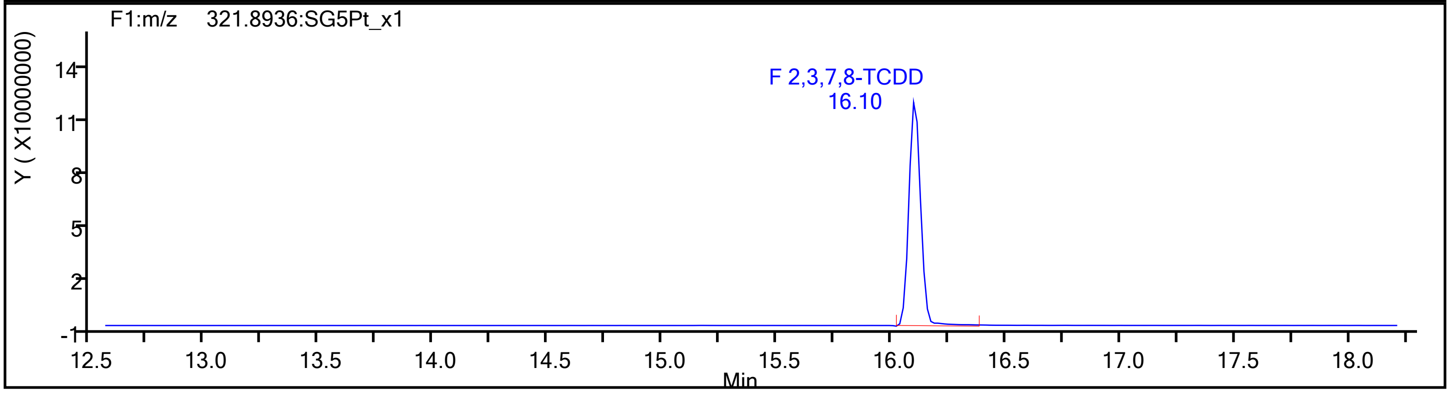

TCDD Standards

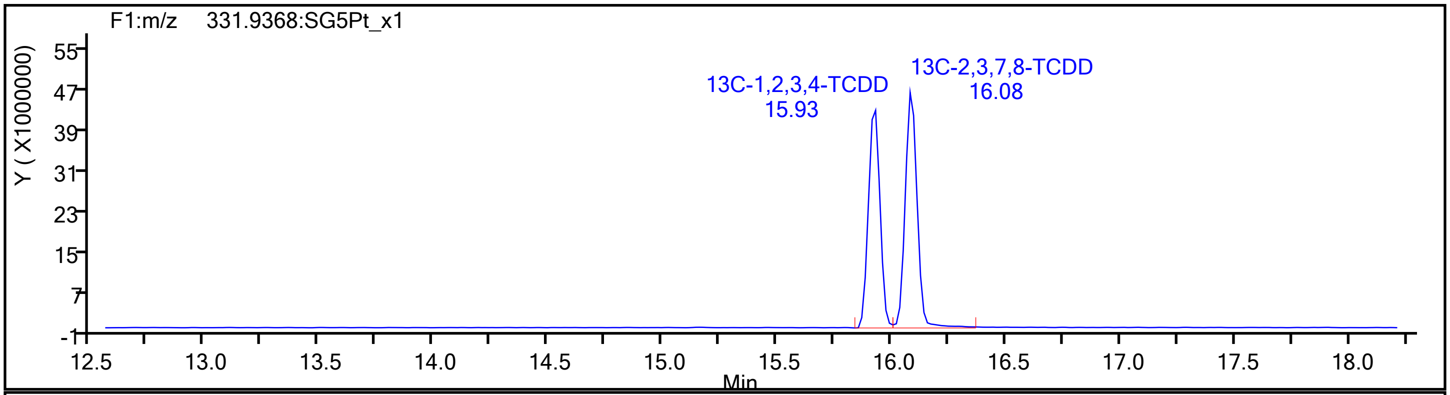

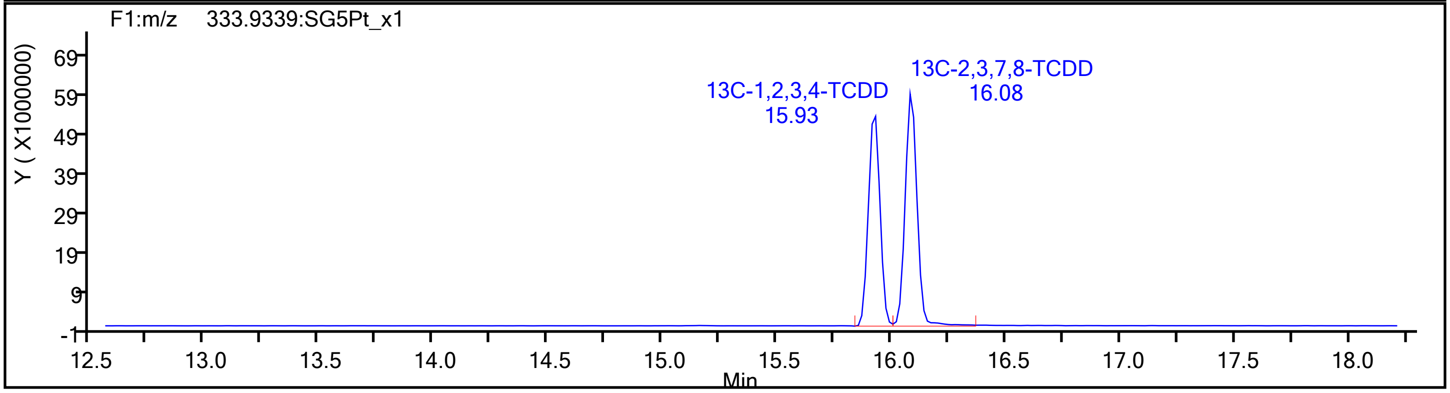

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d
Injection Date: 05-Oct-2020 20:45:32
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L6
Worklist#: 419031
Sample Line#: 7
Column Type:
Column Dia:

37Cl4-TCDD

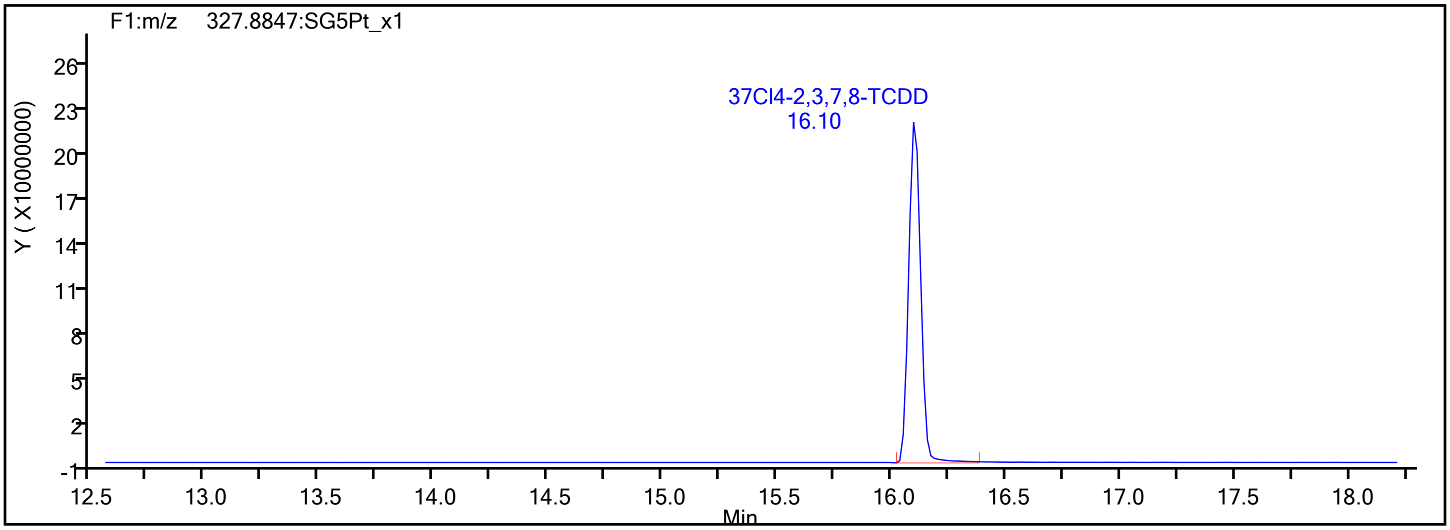

37Cl4-TCDD Standards

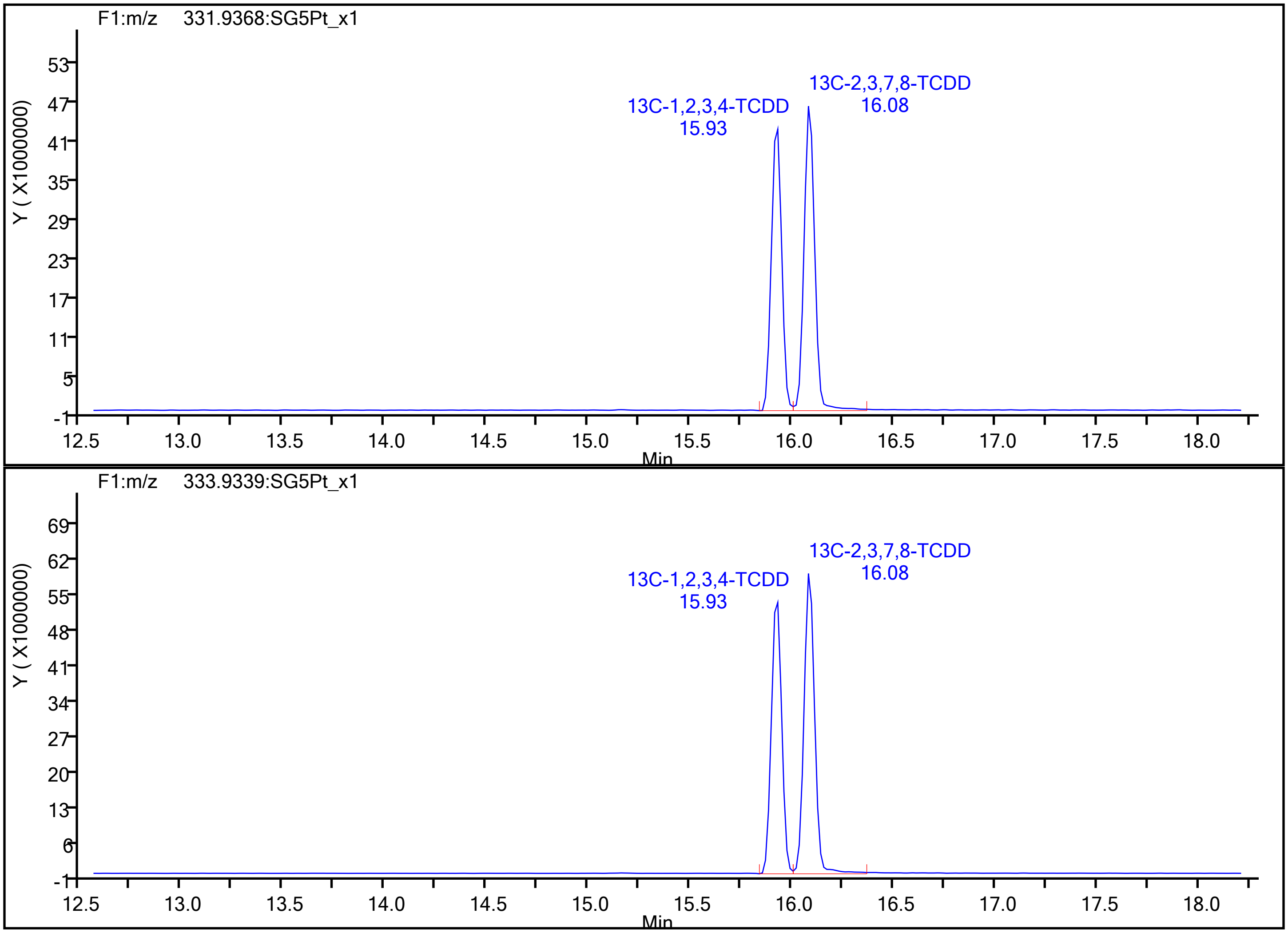

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
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Column Type:		Column Dia:	

PeCDF

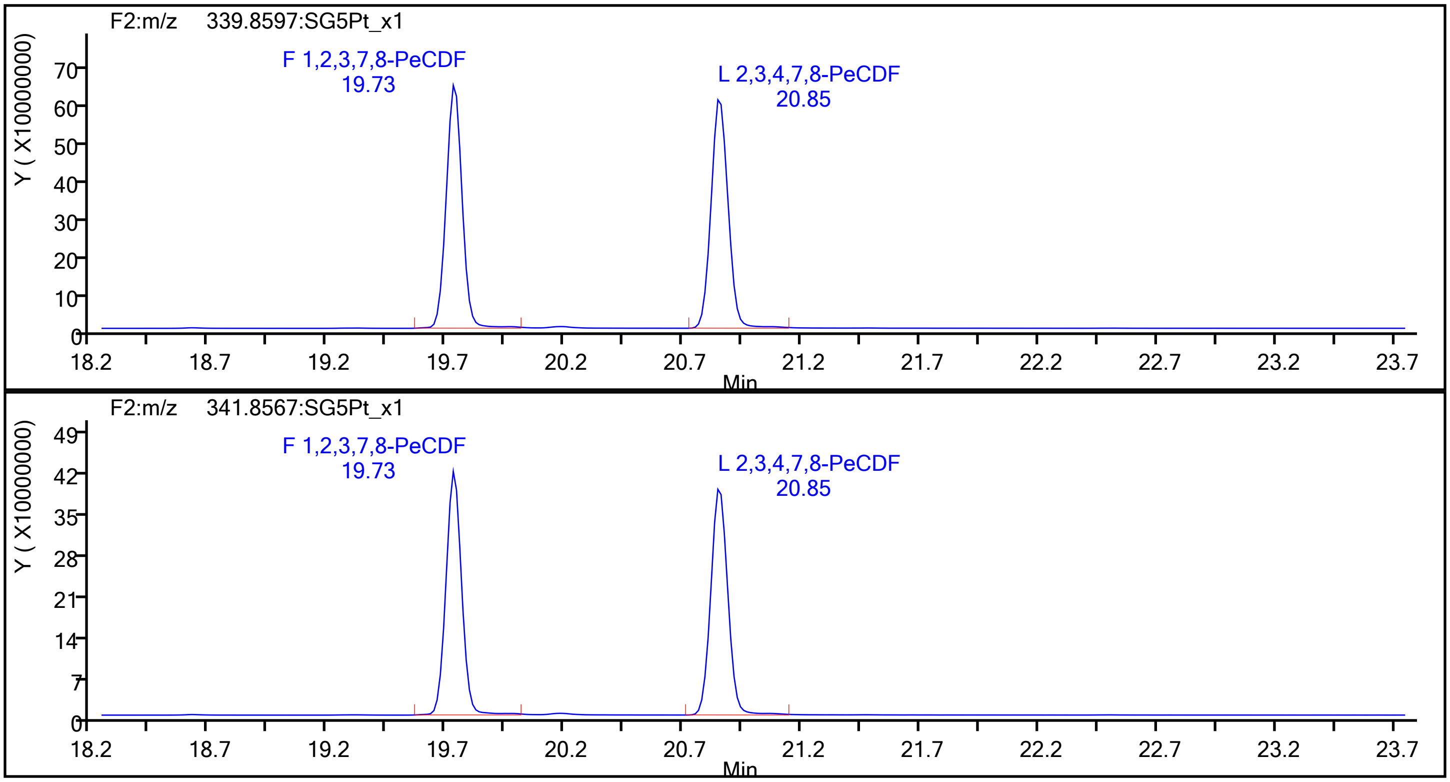

PeCDF Standards

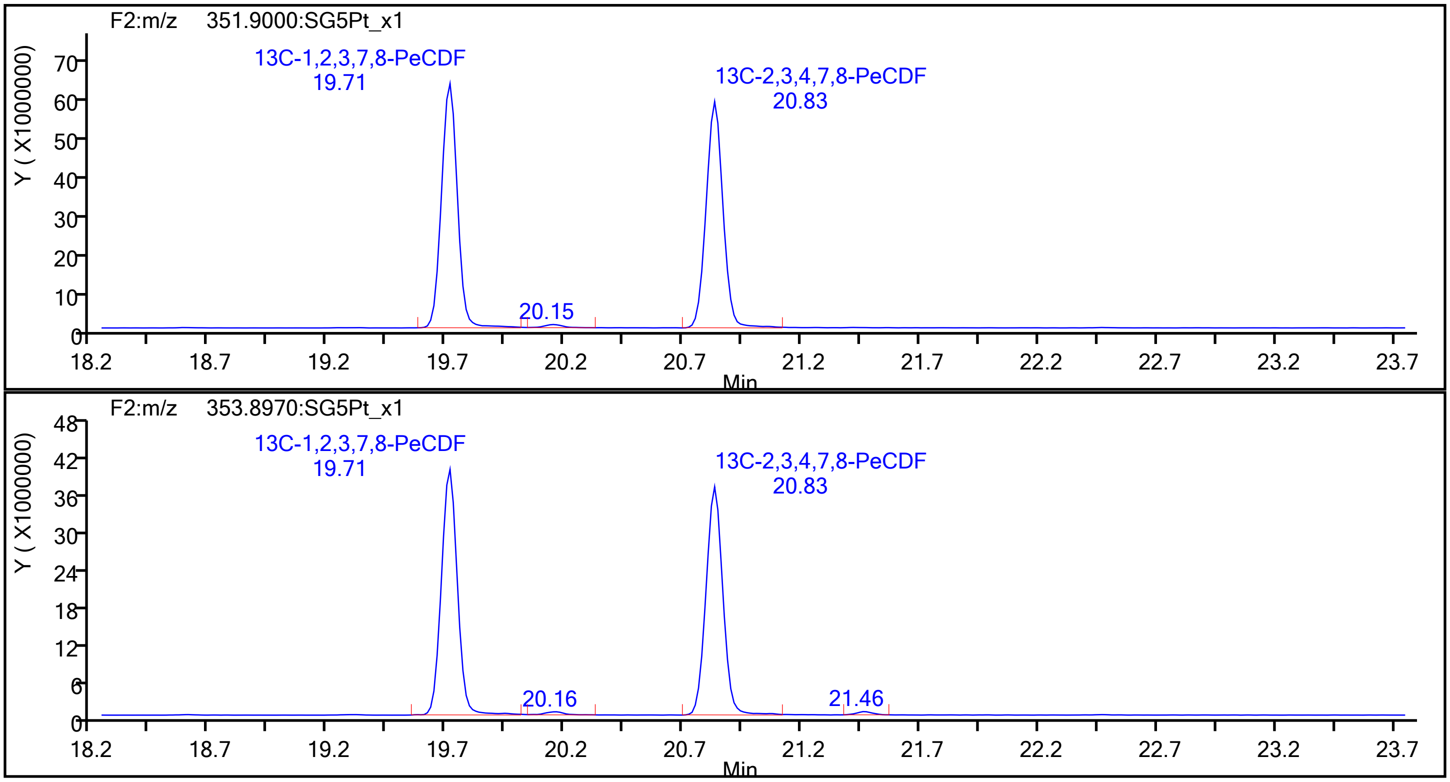

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 20:45:32
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L6
Worklist#: 419031
Sample Line#: 7
Column Type:
Column Dia:

PeCDF

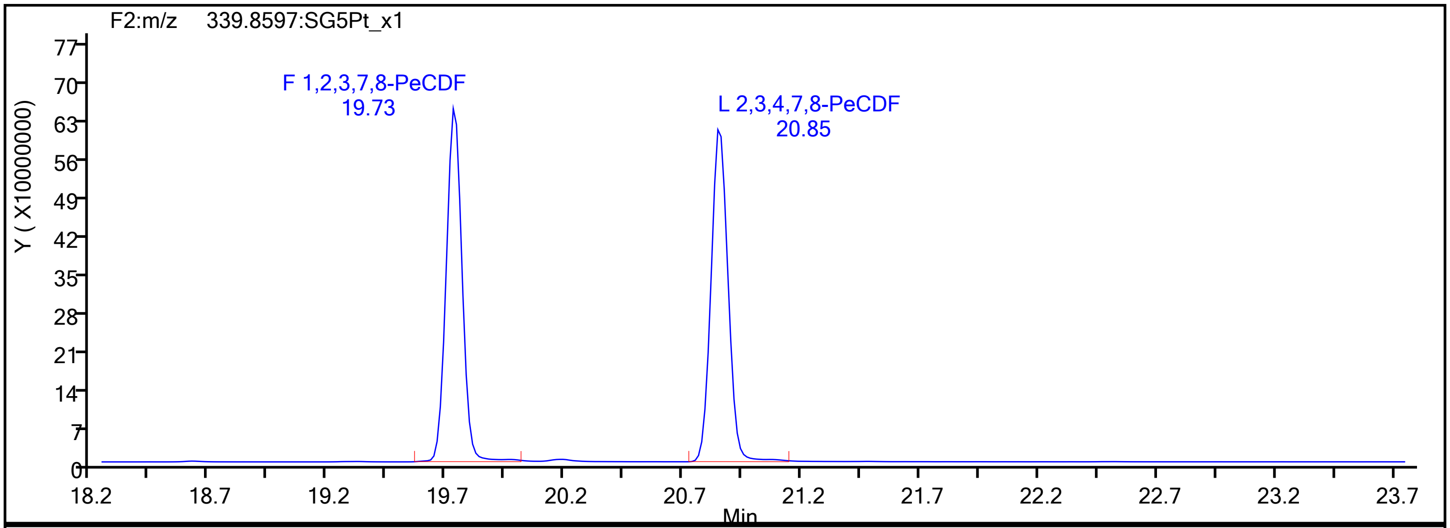

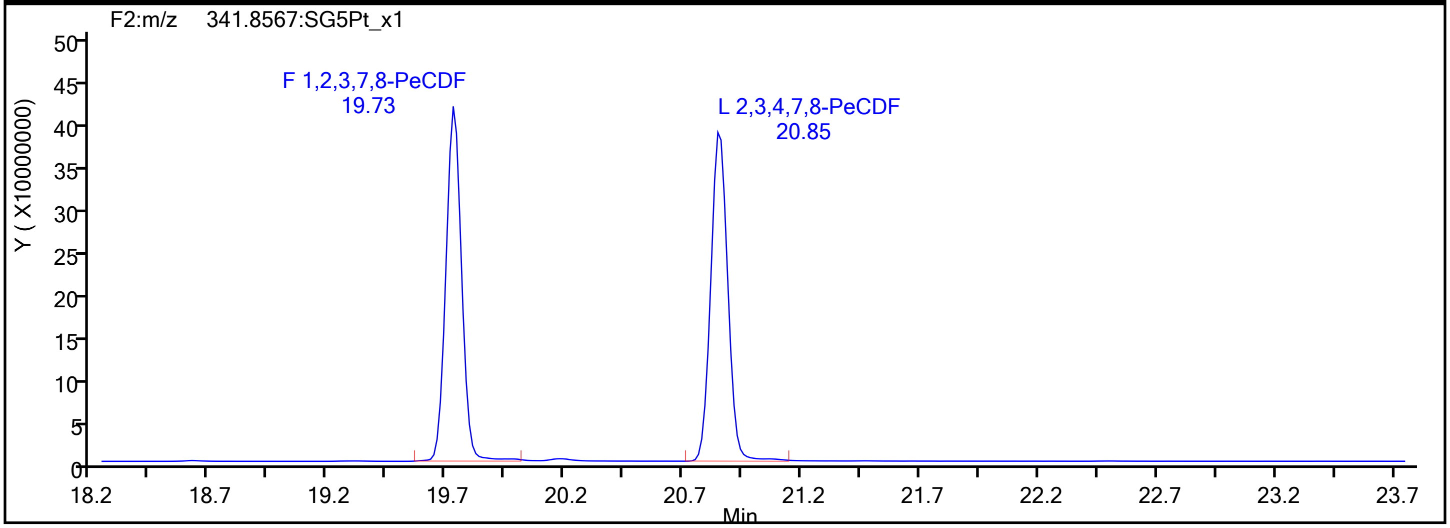

PeCDF Interference Mass

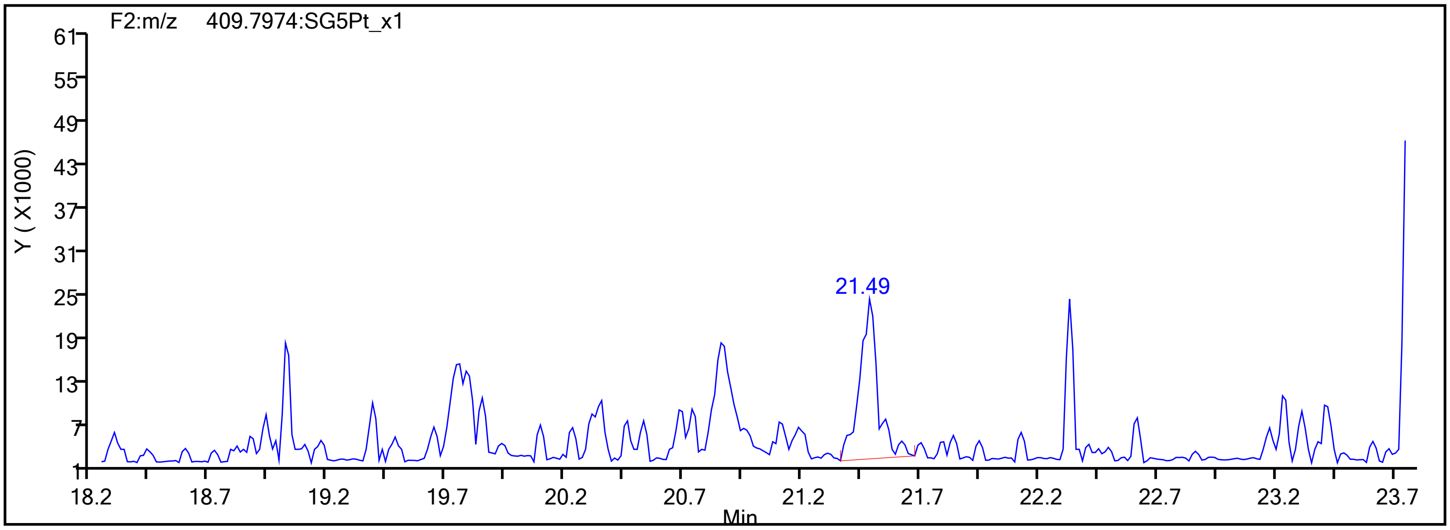

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Injection Date:	05-Oct-2020 20:45:32	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

PeCDD

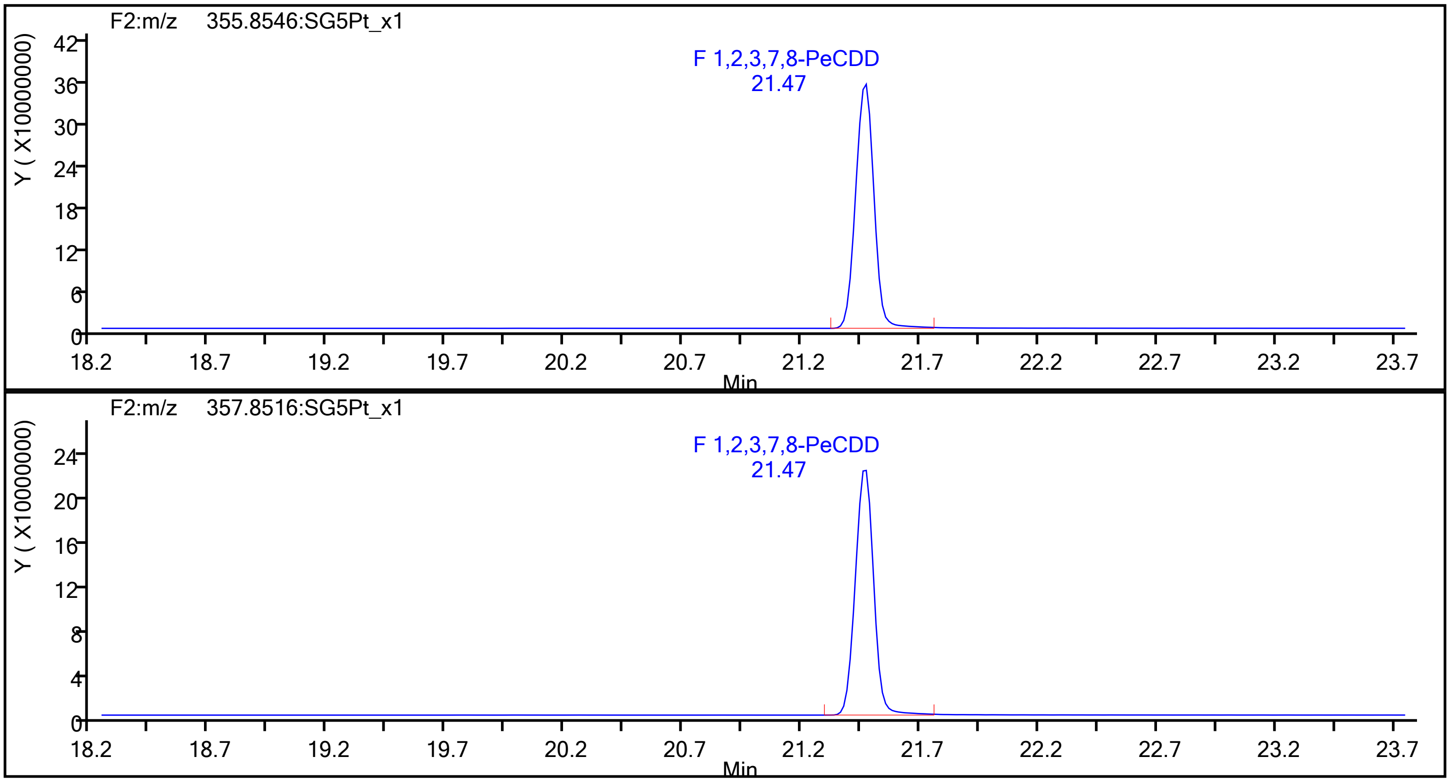

PeCDD Standards

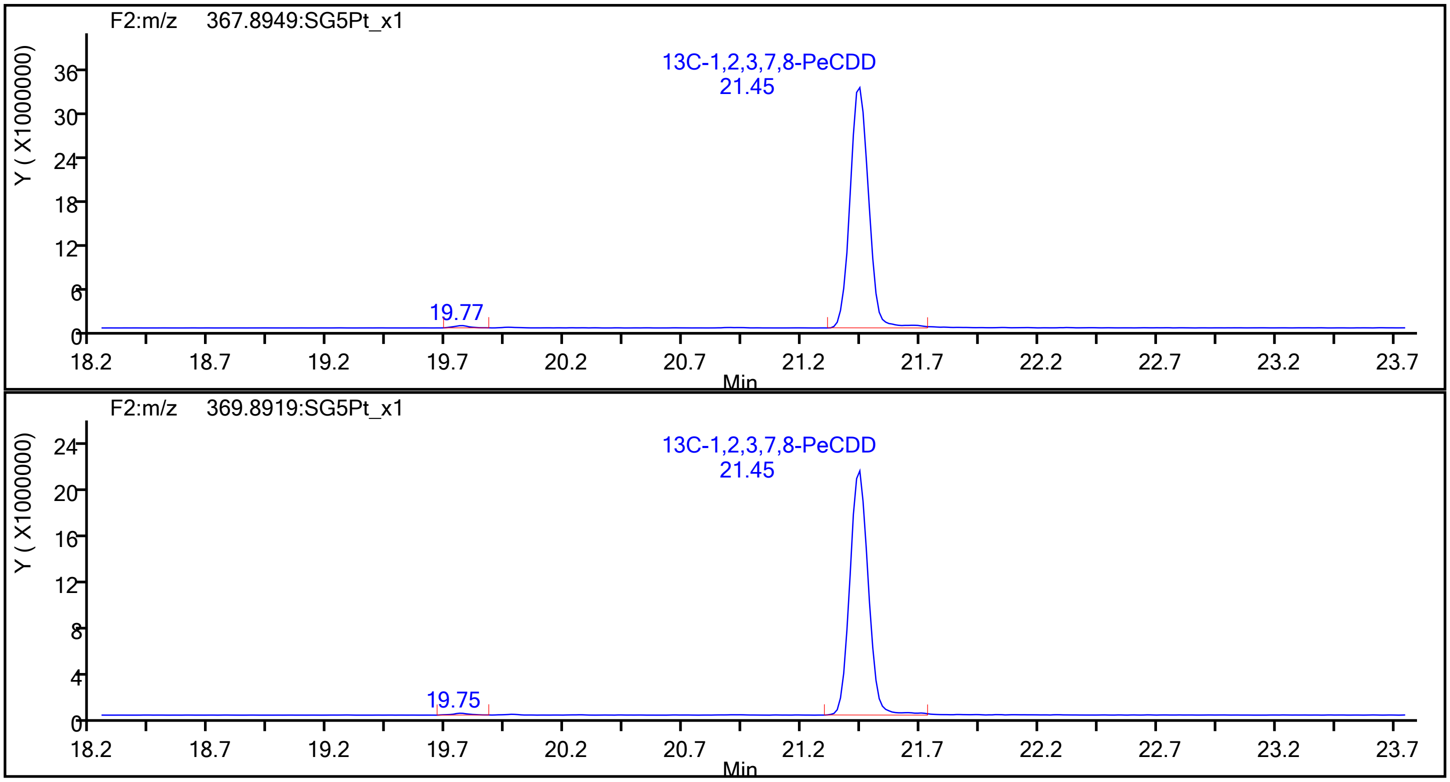

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d
Injection Date: 05-Oct-2020 20:45:32 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID: L6
Worklist#: 419031 Sample Line#: 7
Column Type: Column Dia:

HxCDF

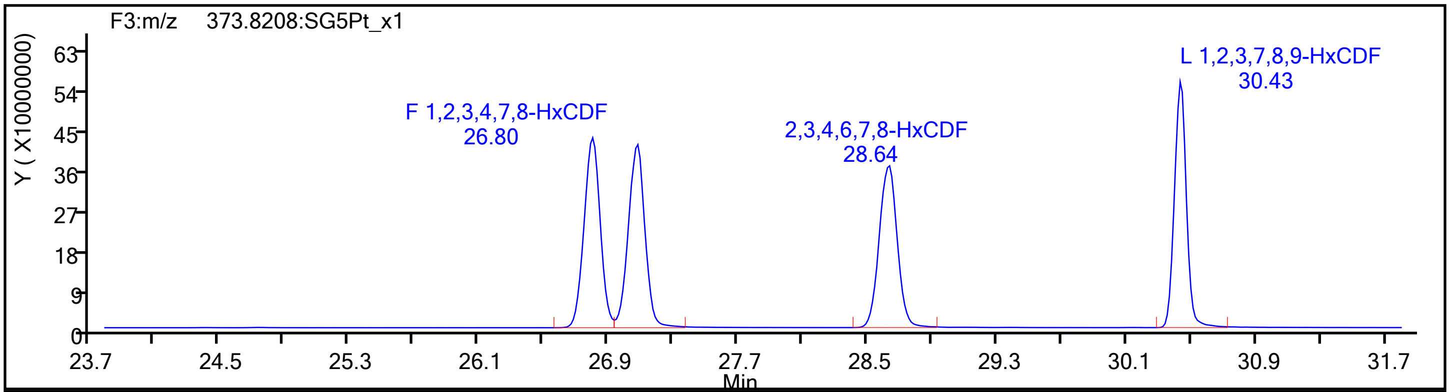

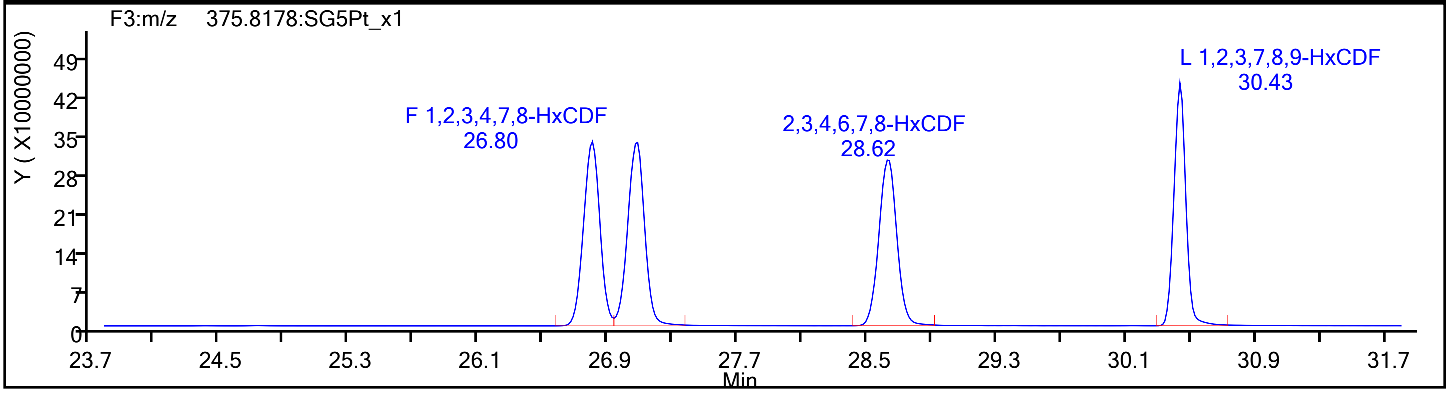

HxCDF Standards

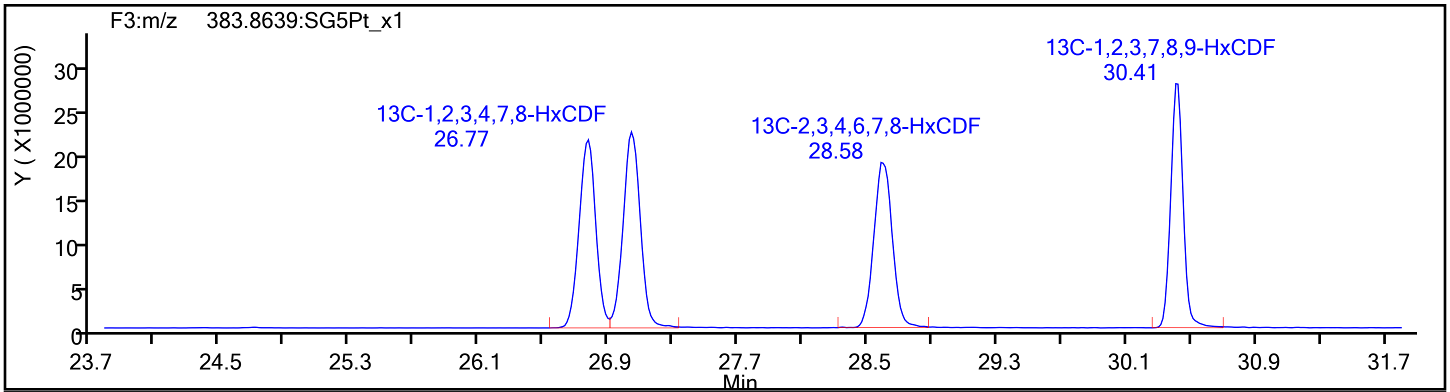

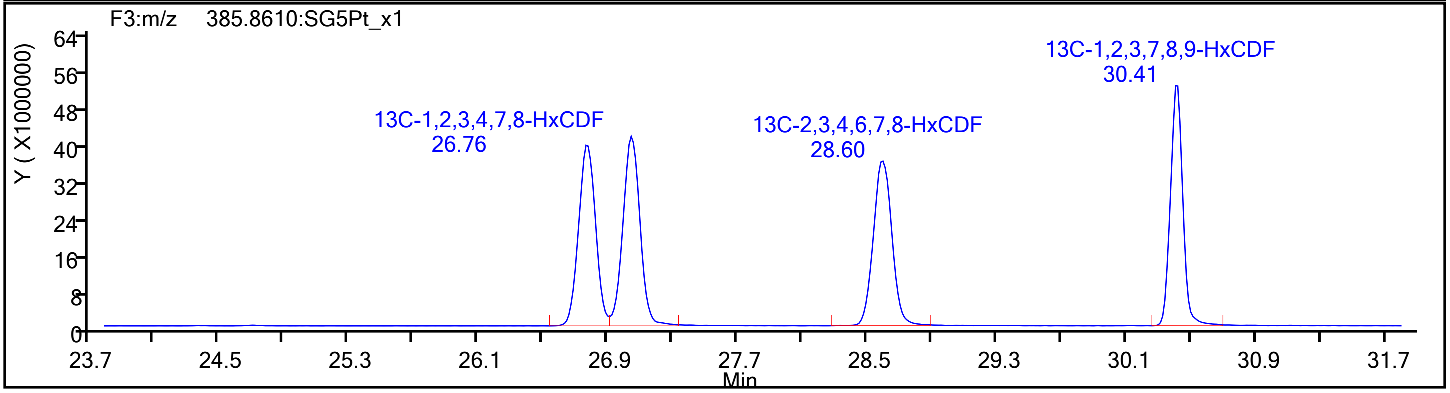

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

HxCDF

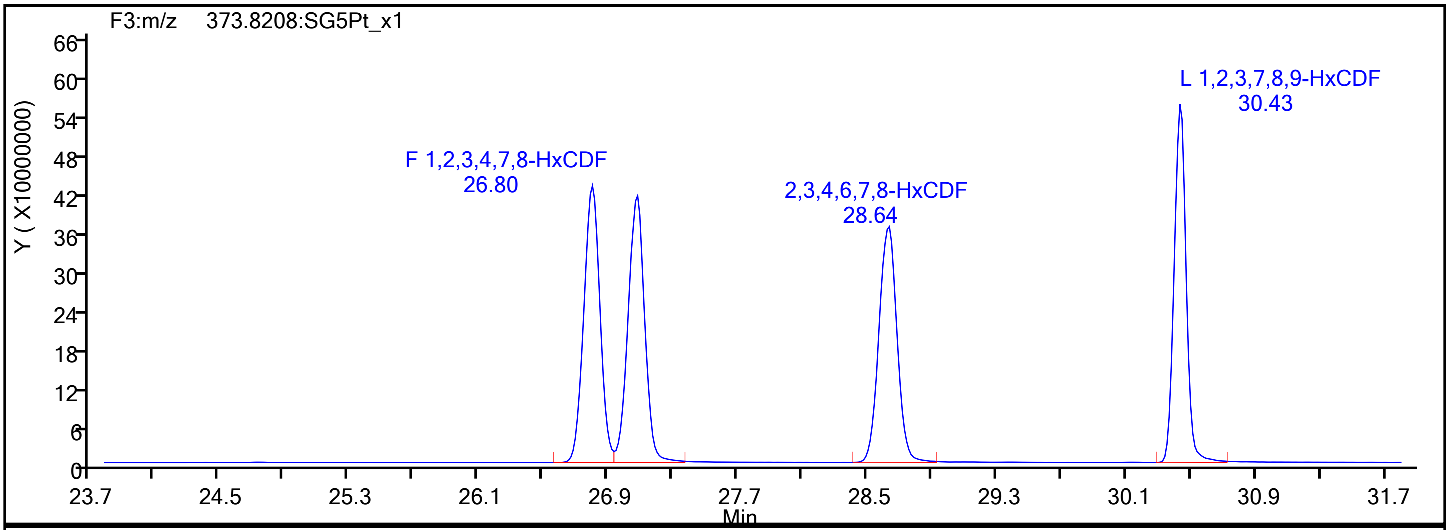

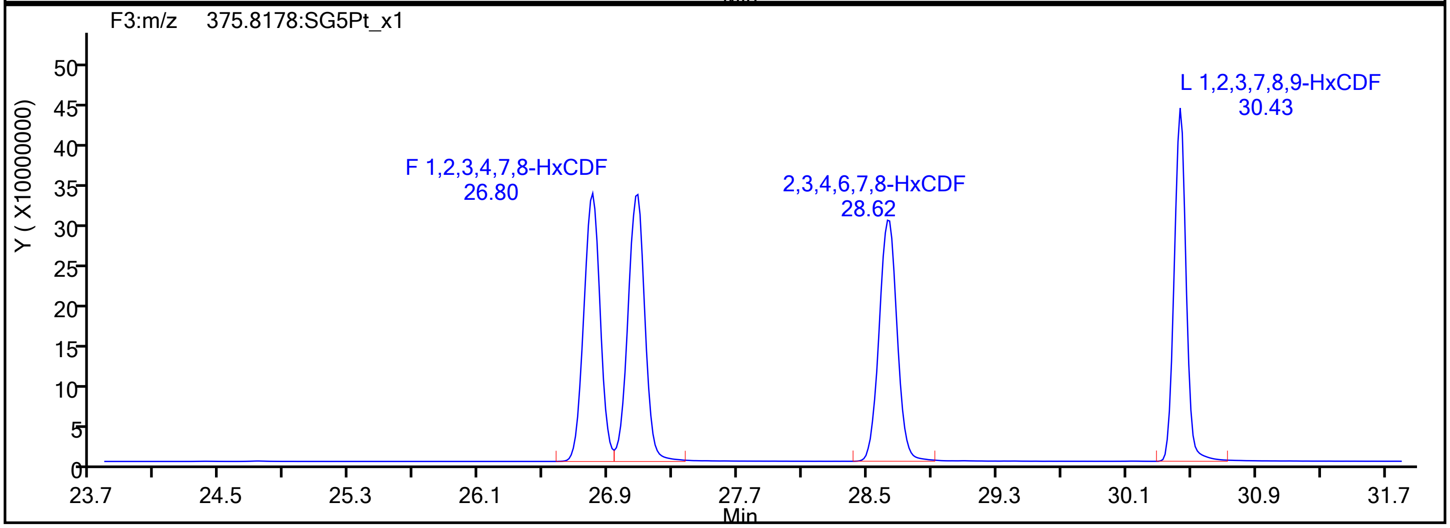

HxCDF Interference Mass

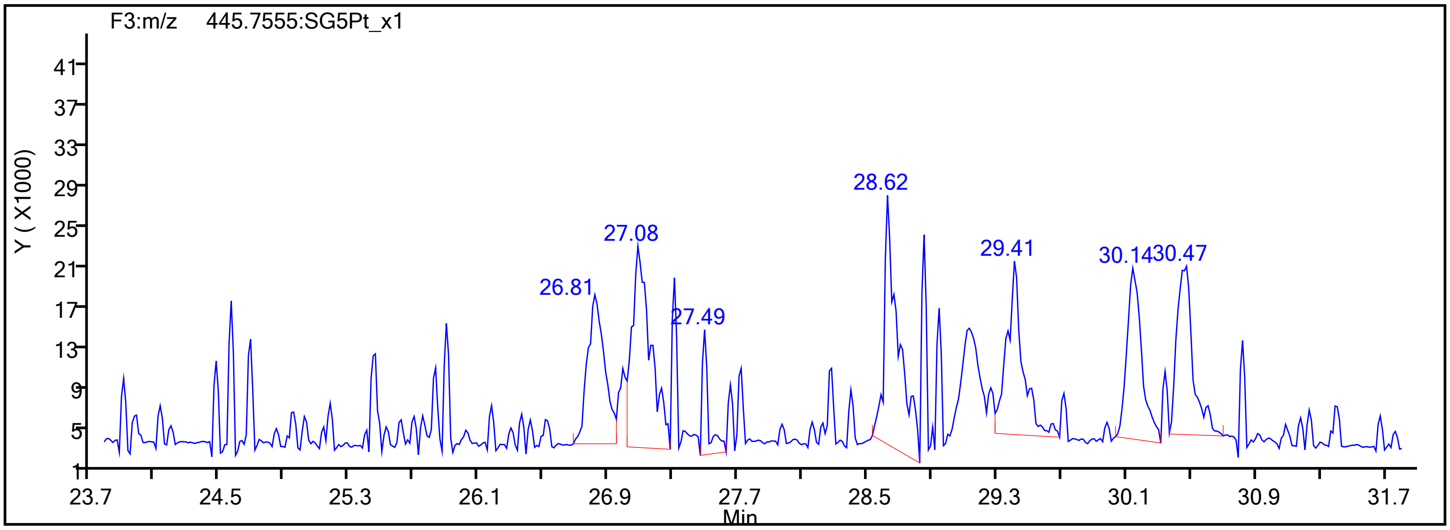

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Injection Date:	05-Oct-2020 20:45:32	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

HxCDD

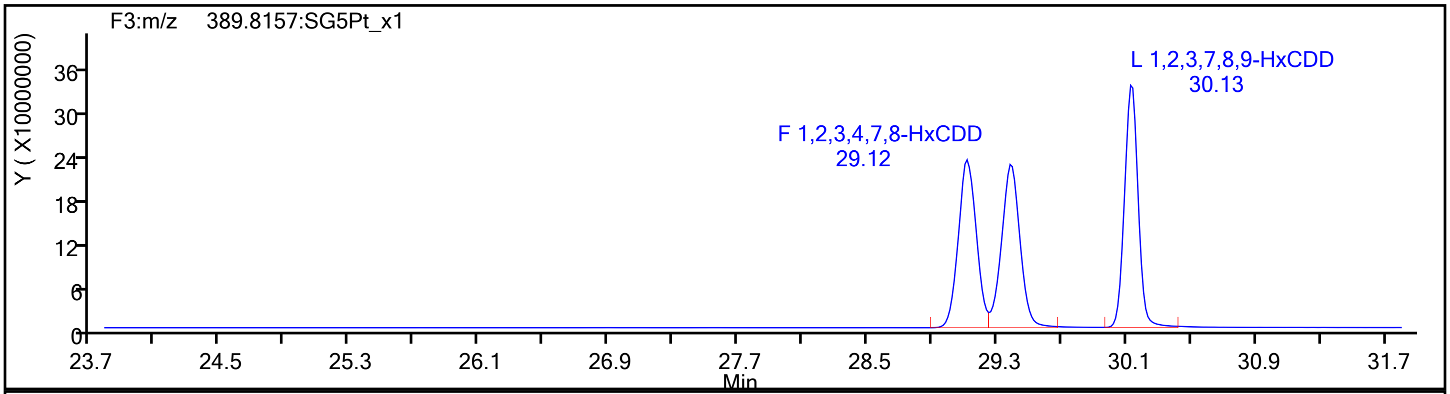

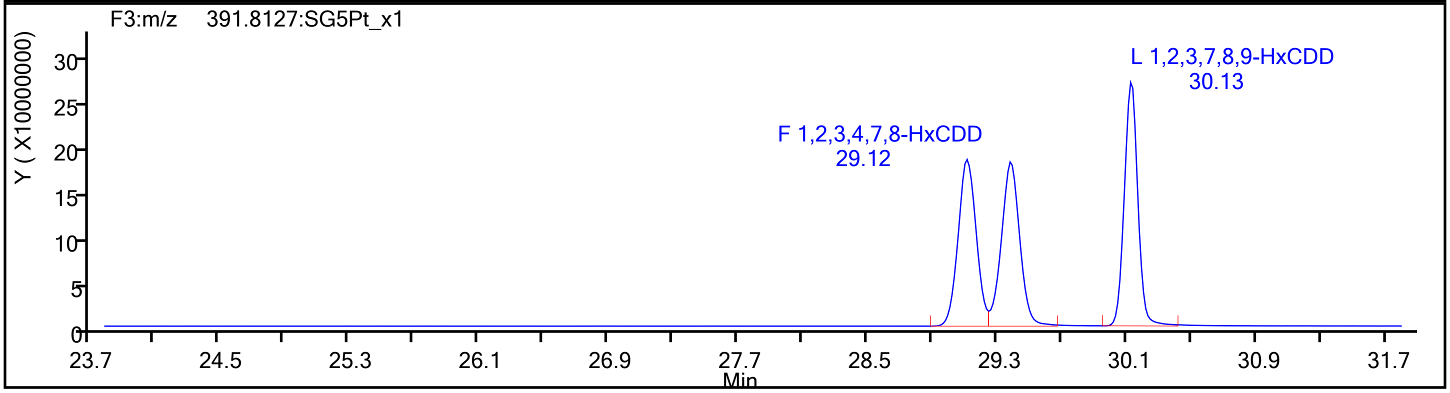

HxCDD Standards

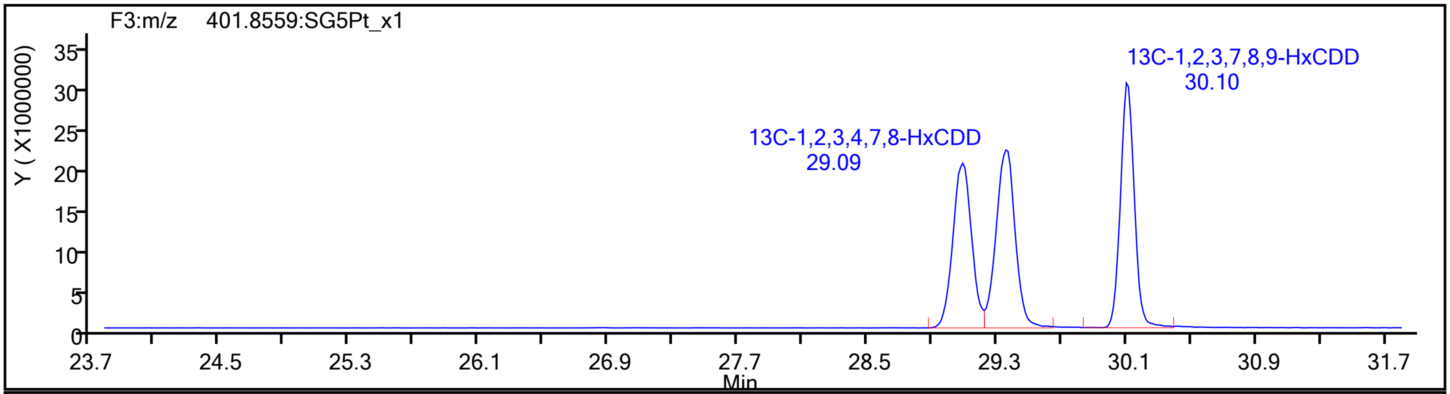

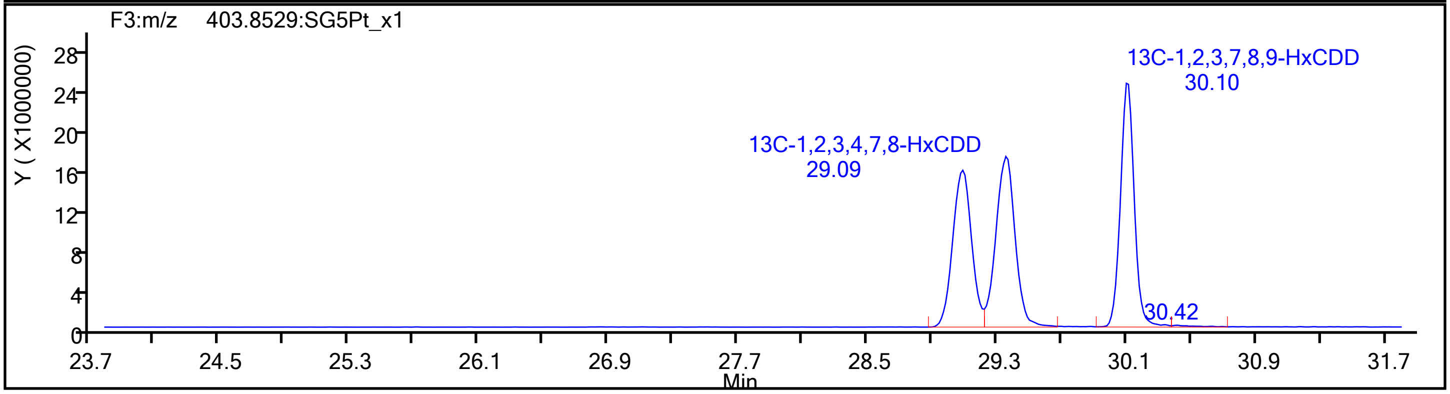

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

HpCDF

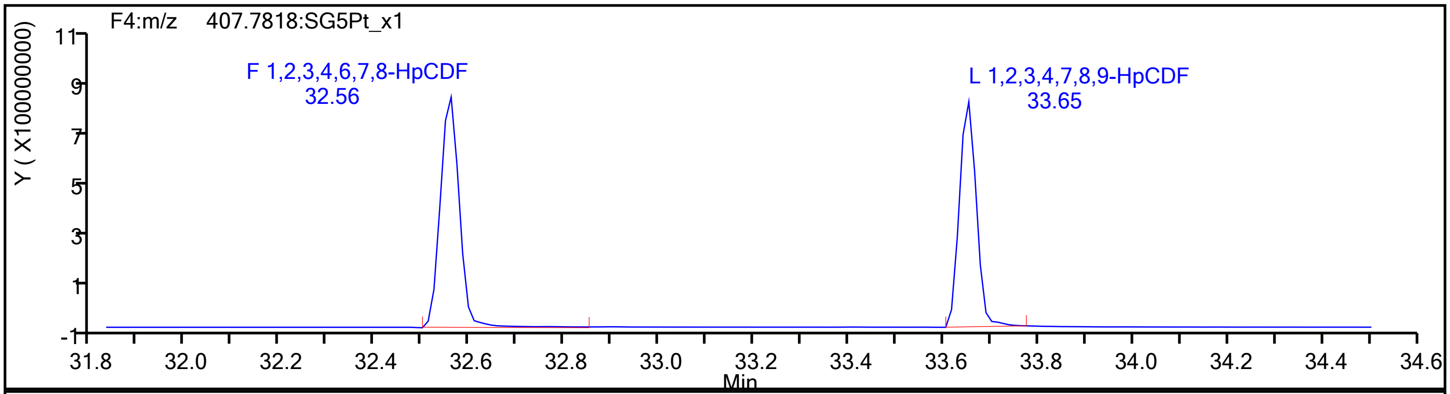

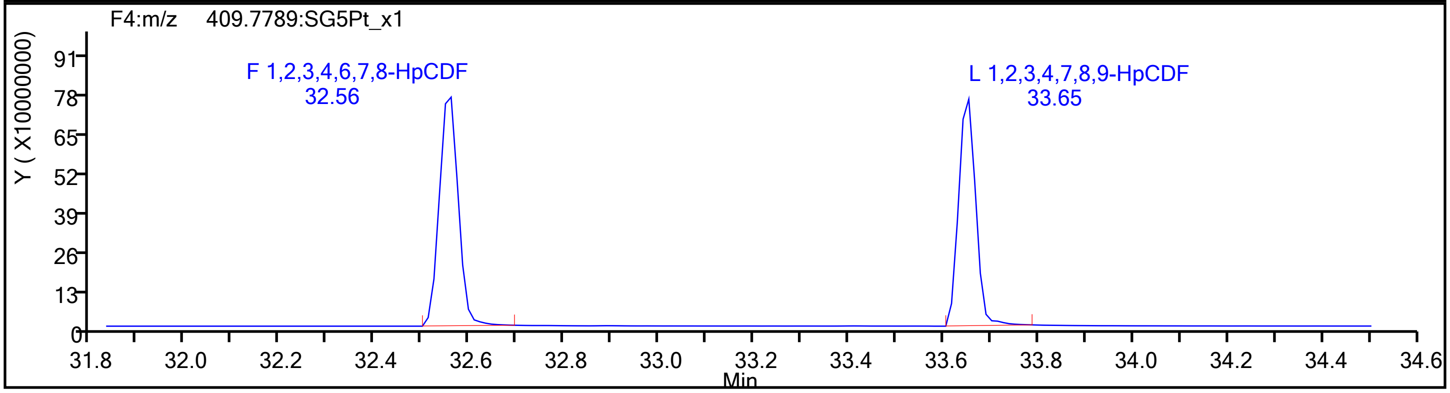

HpCDF Standards

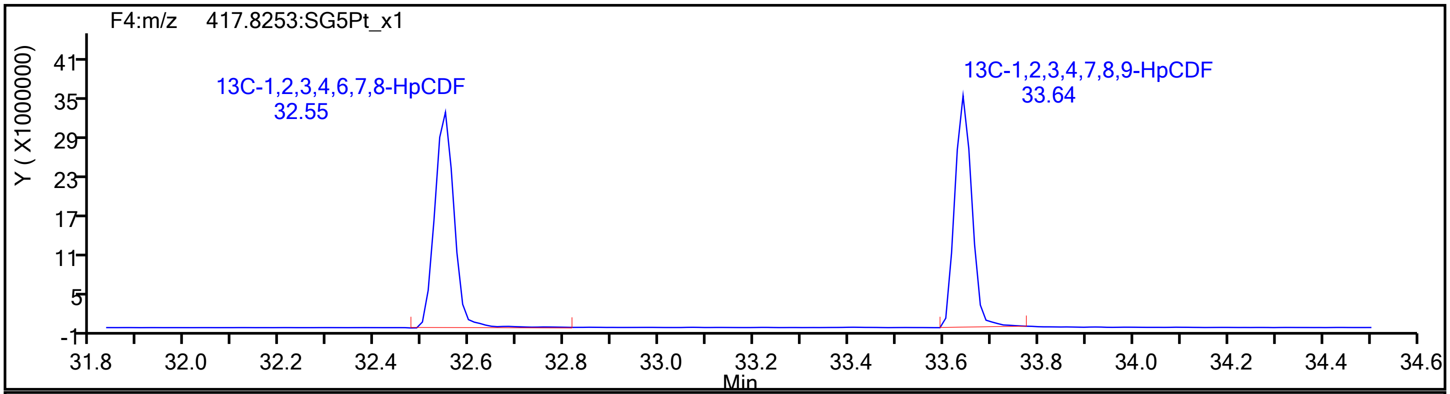

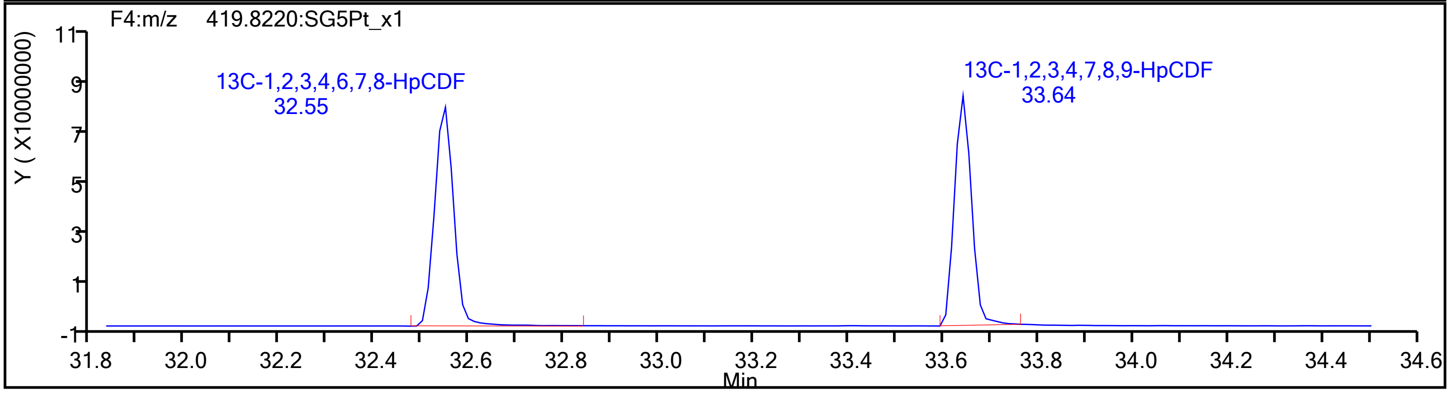

Report Date: 08-Oct-2020 15:16:47		Chrom Revision: 2.3 06-Oct-2020 14:45:12	

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

HpCDF

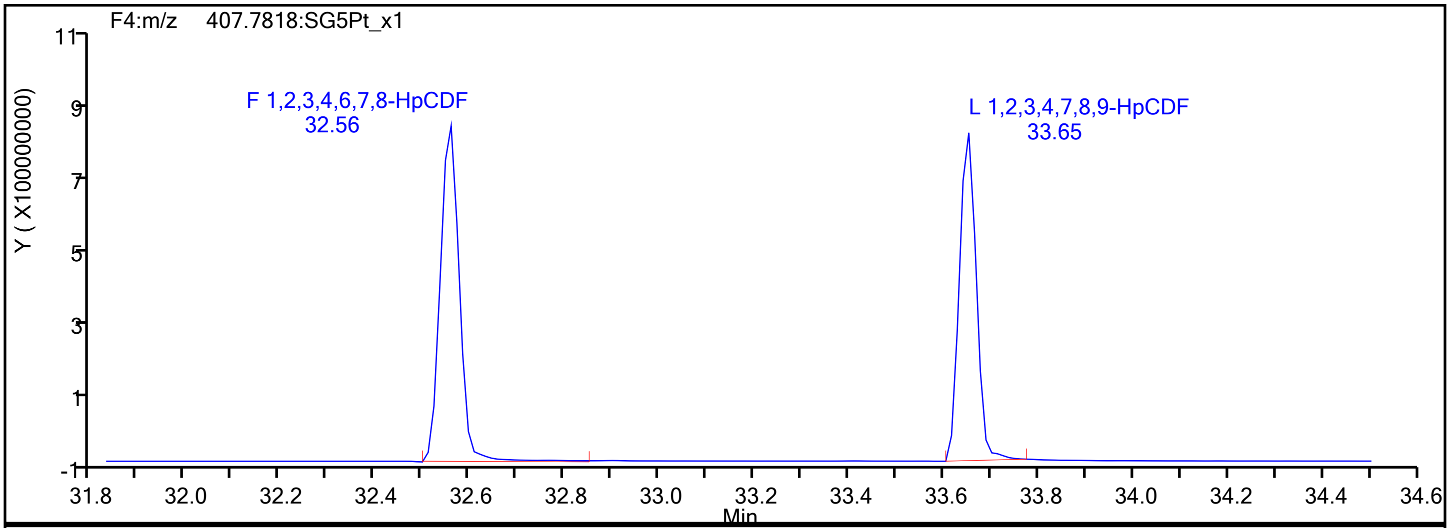

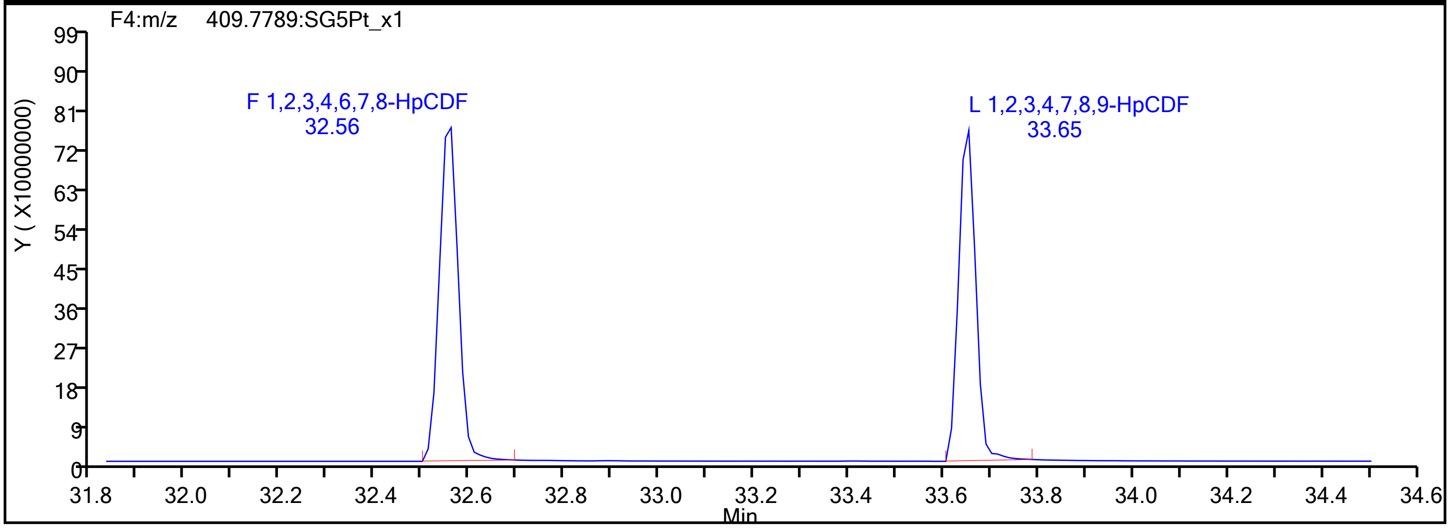

HpCDF Interference Mass

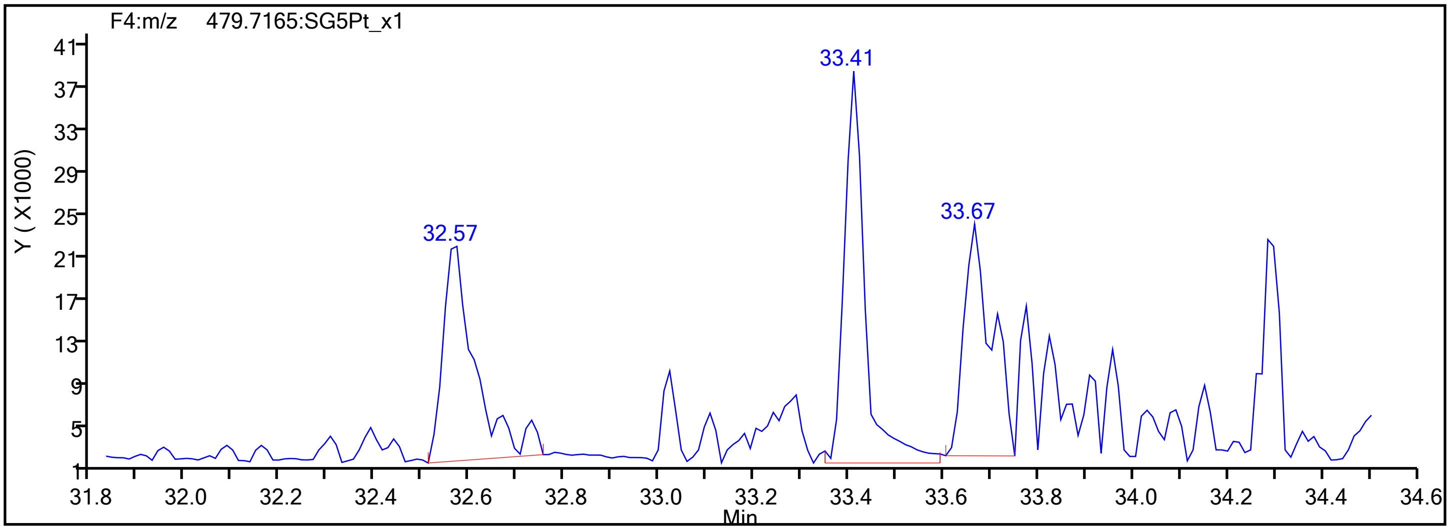

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d
Injection Date: 05-Oct-2020 20:45:32
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L6
Worklist#: 419031
Sample Line#: 7
Column Type:
Column Dia:

HpCDD

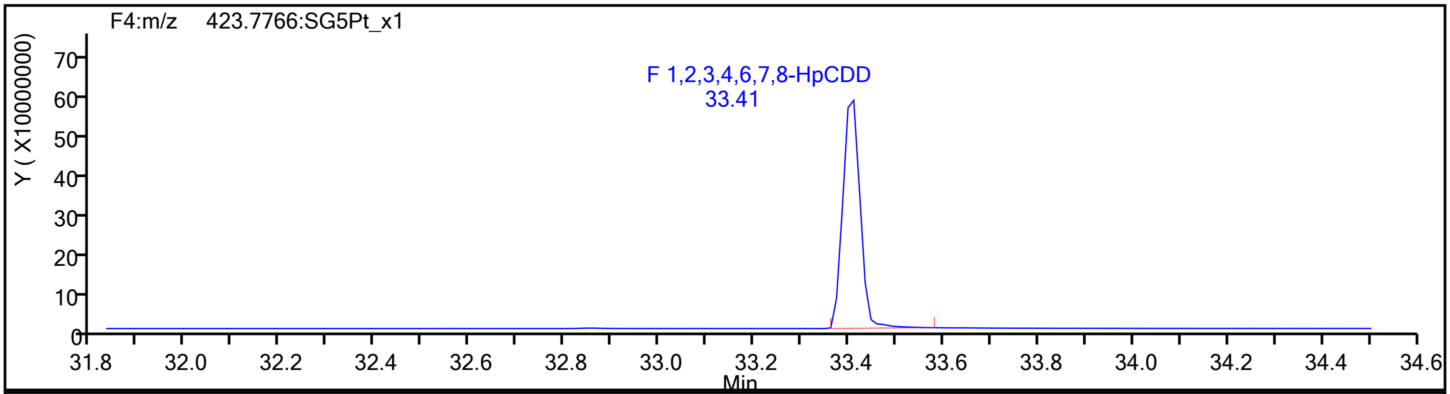

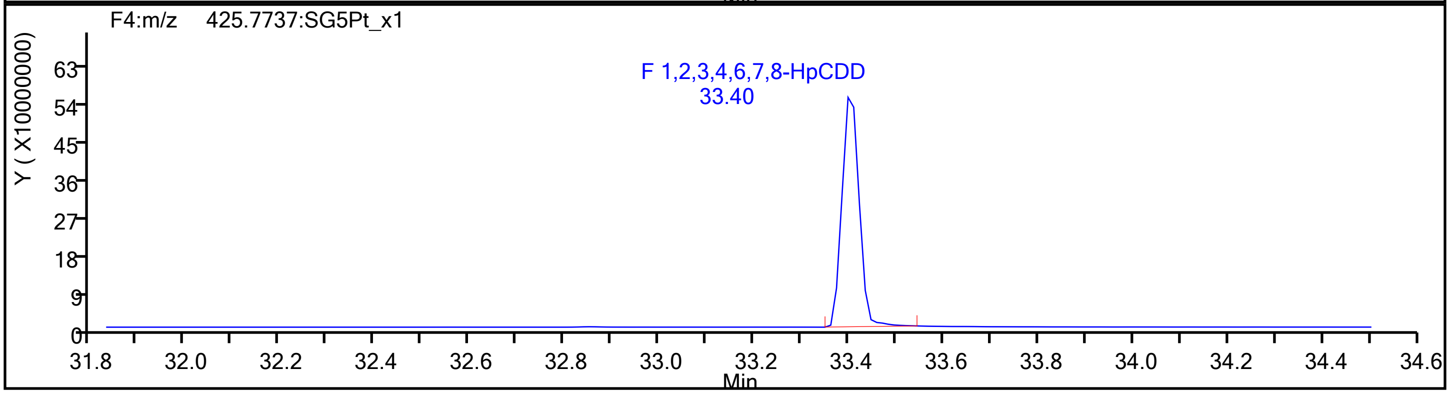

HpCDD Standards

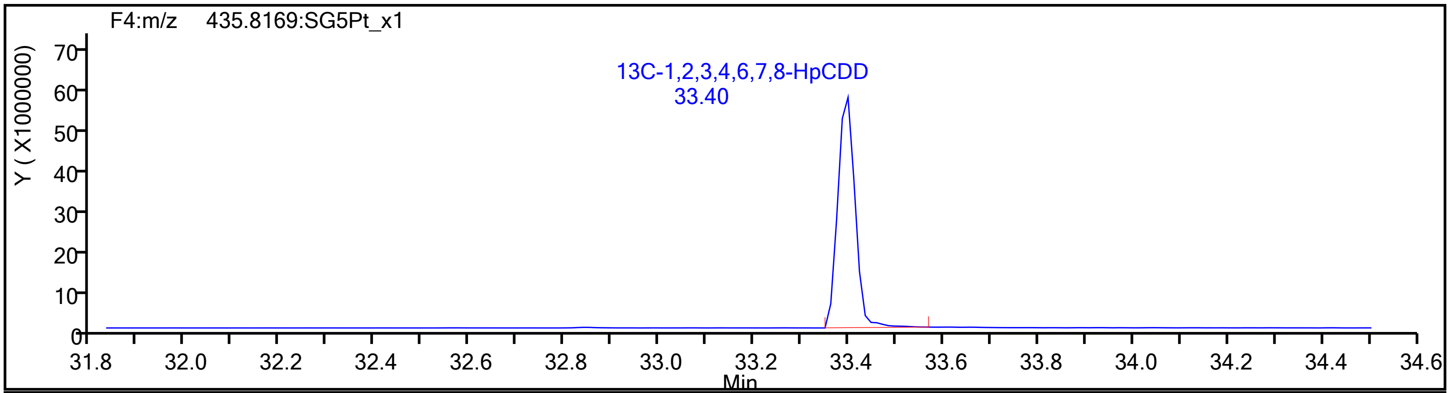

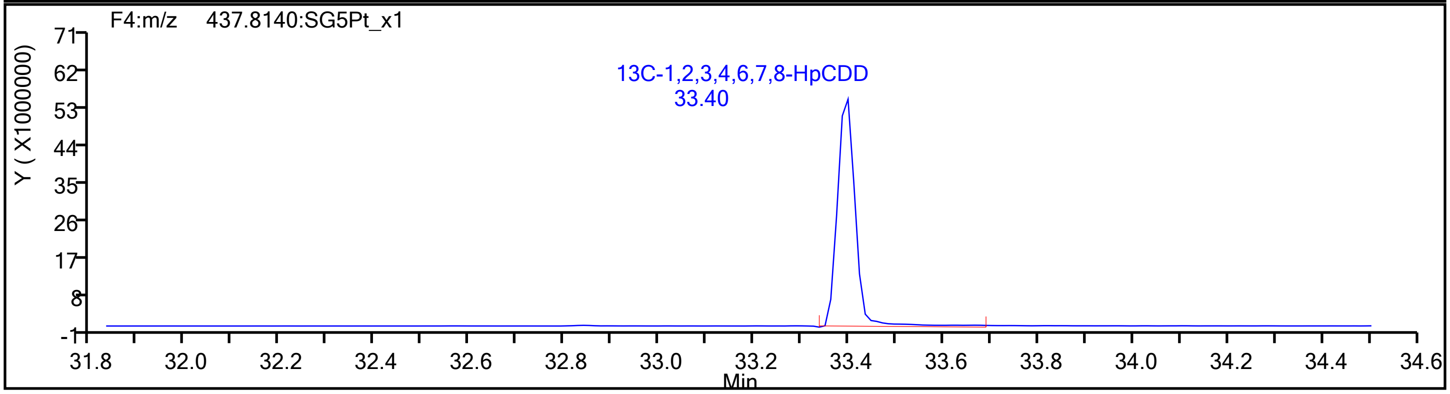

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Injection Date: 05-Oct-2020 20:45:32
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID: L6
Worklist#: 419031
Sample Line#: 7
Column Type:
Column Dia:

OCDF

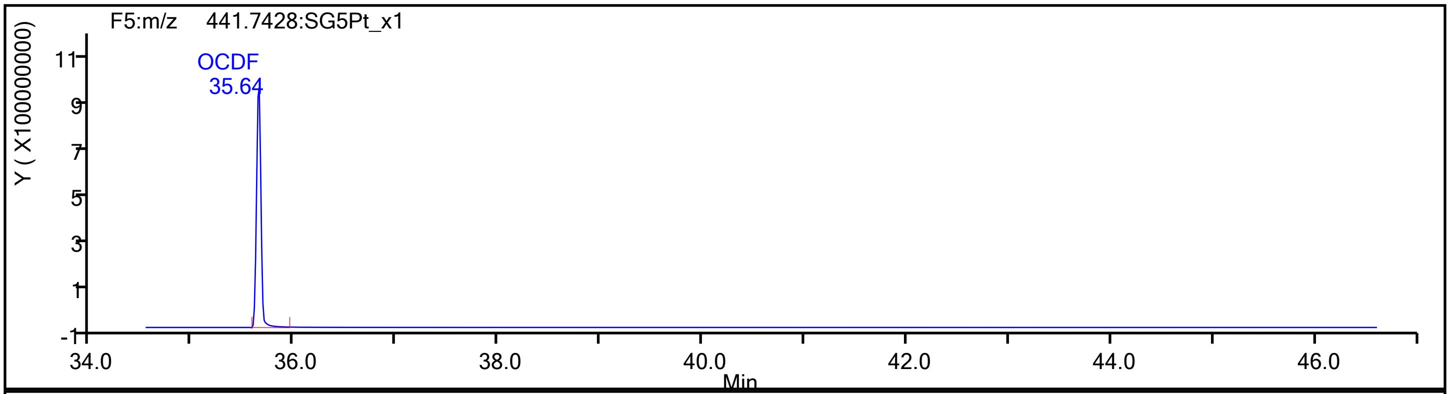

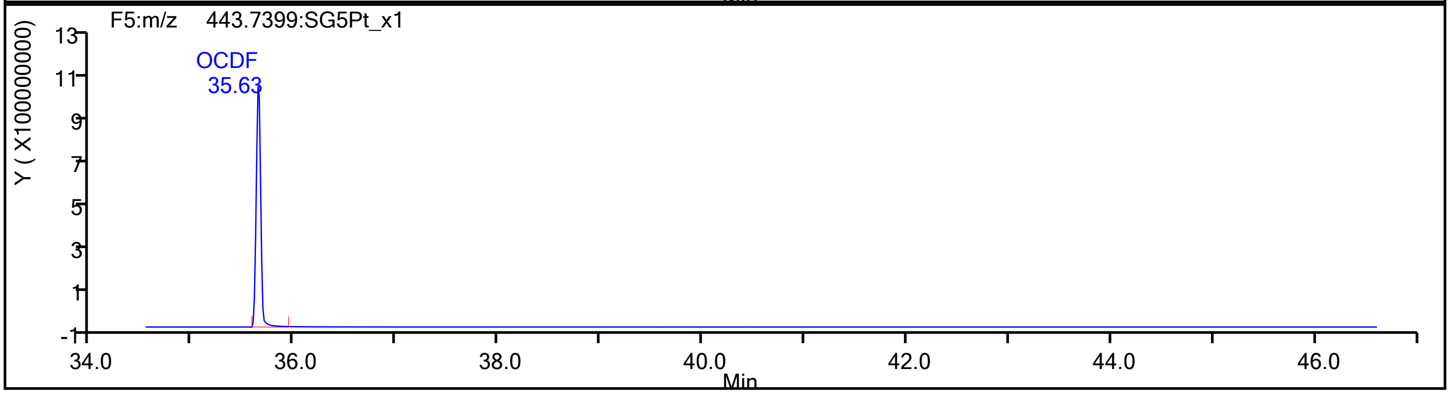

OCDF Standards

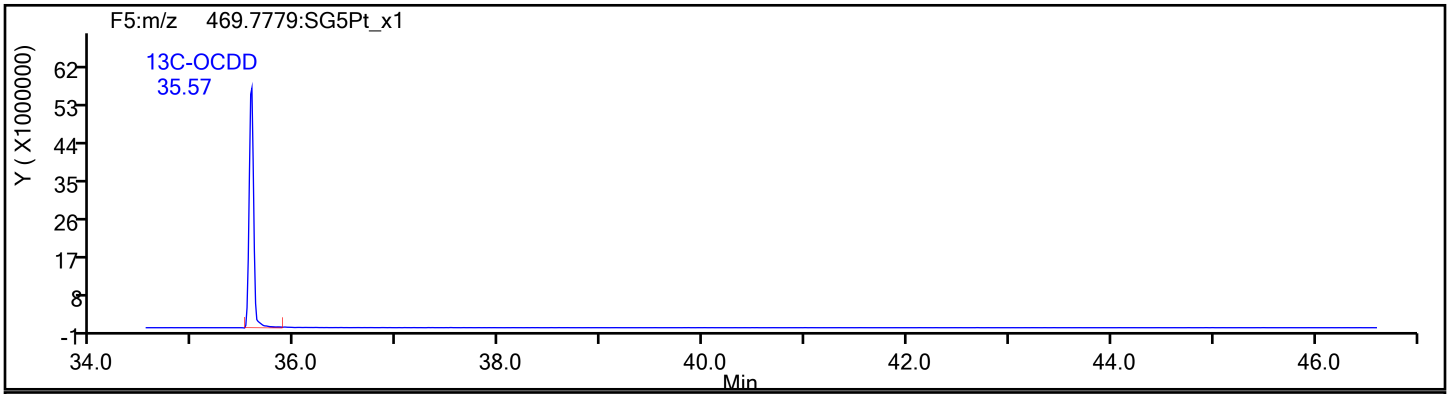

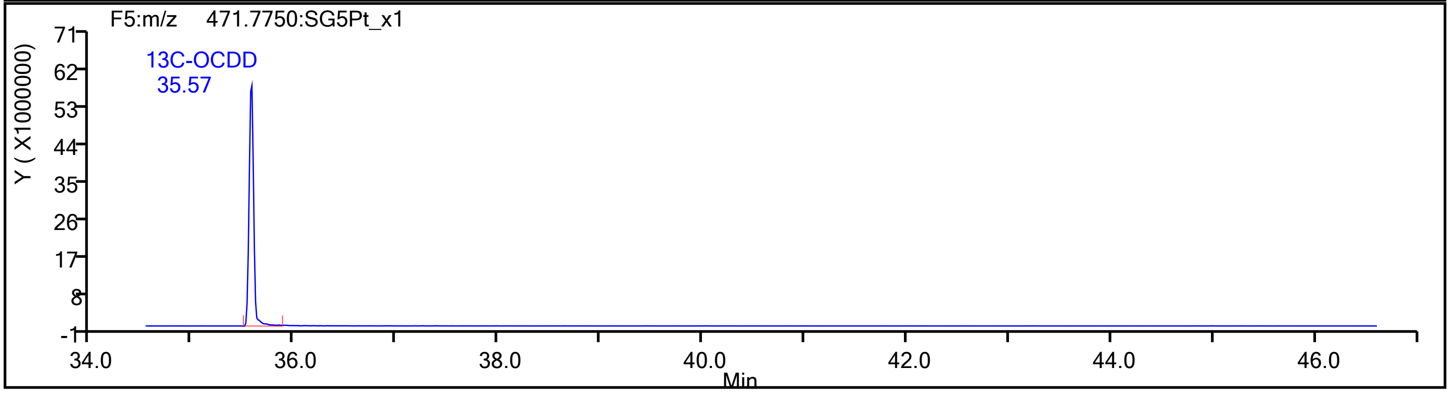

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Injection Date:	05-Oct-2020 20:45:32	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

OCDF

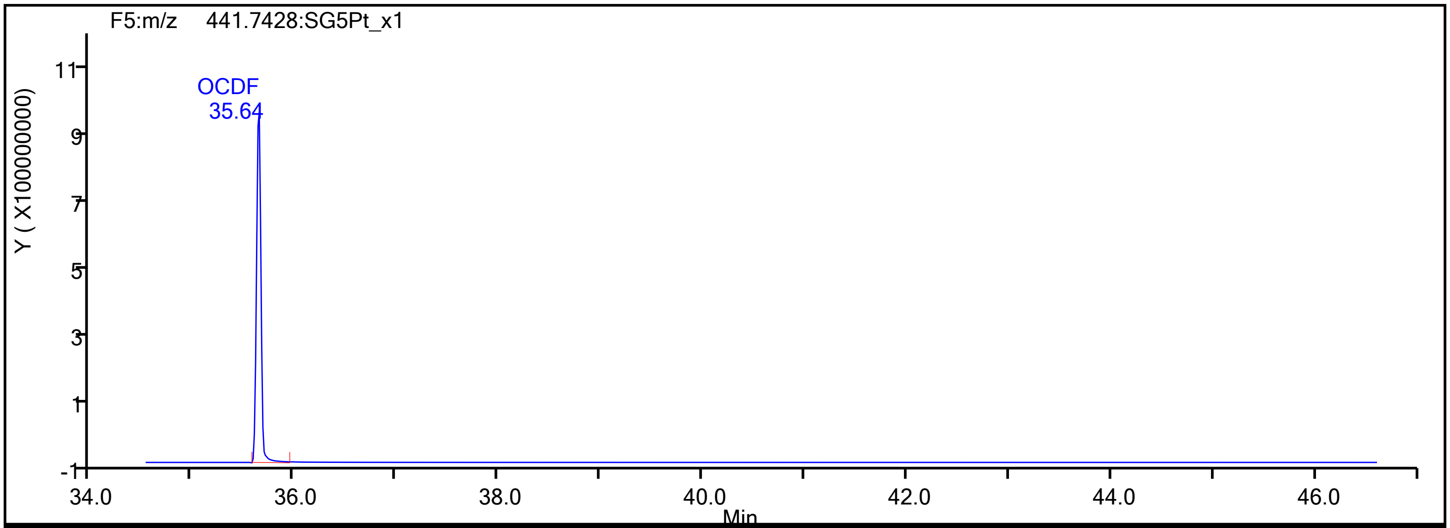

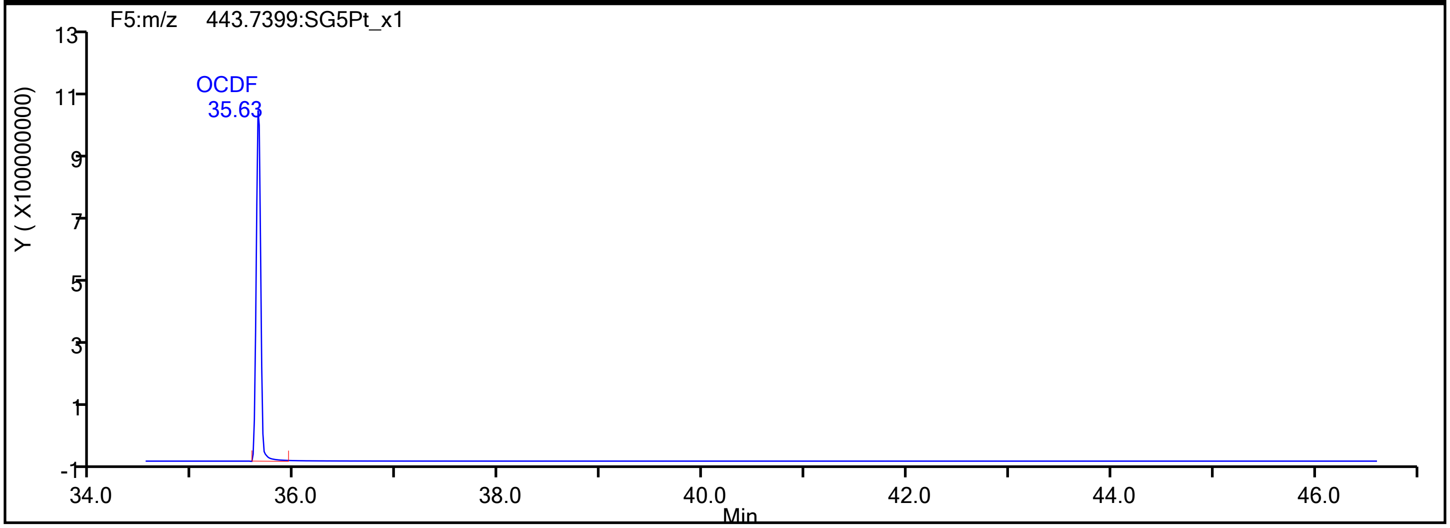

OCDF Interference Mass

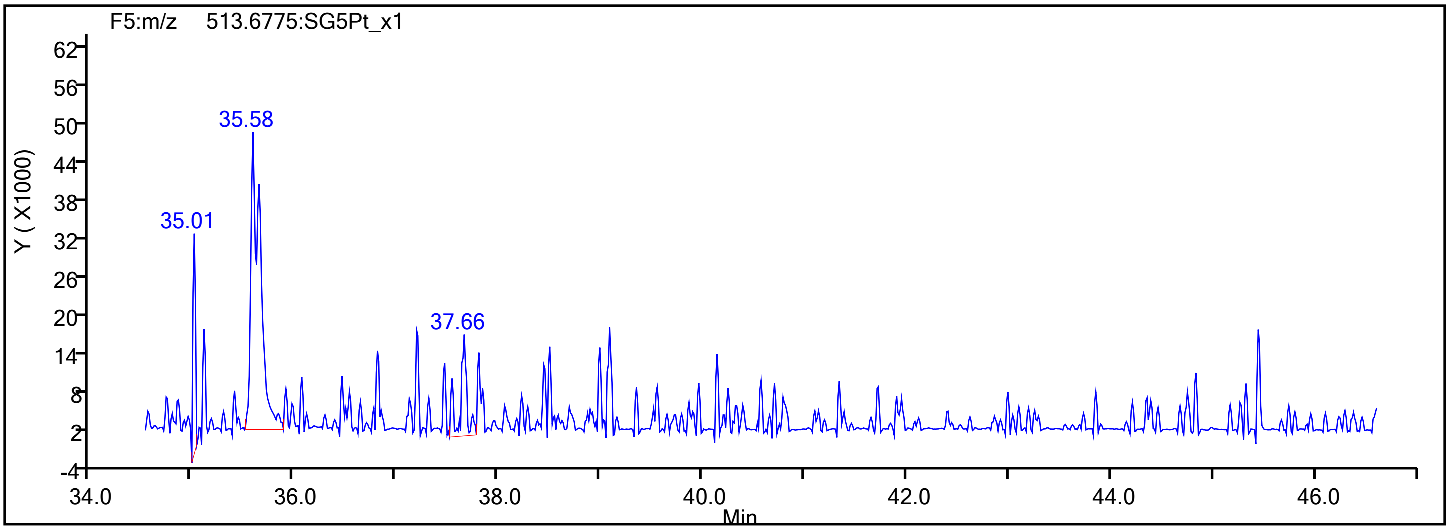

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d		
Injection Date:	05-Oct-2020 20:45:32	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	L6		
Worklist#:	419031	Sample Line#:	7
Column Type:		Column Dia:	

OCDD

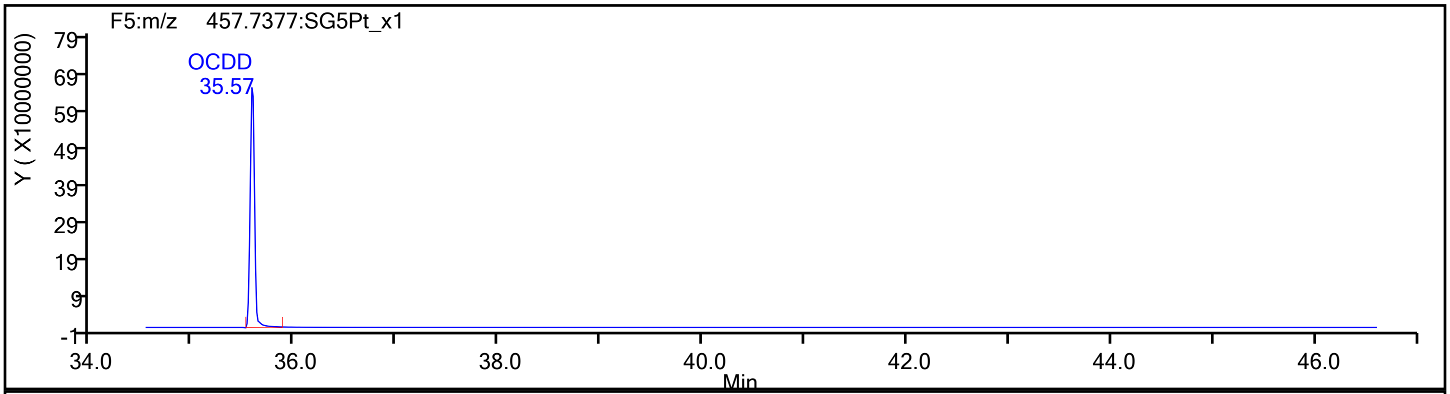

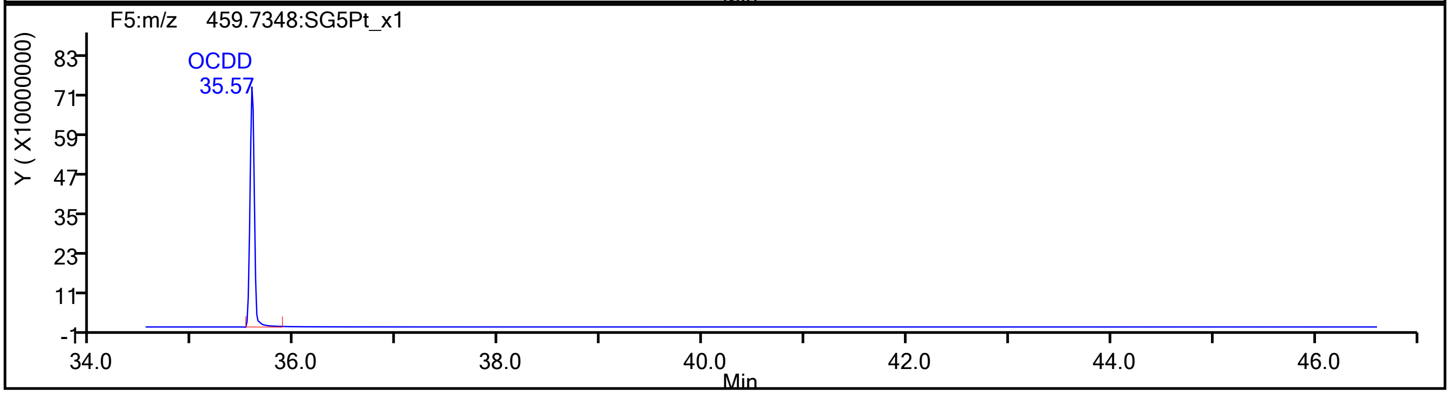

OCDD Standards

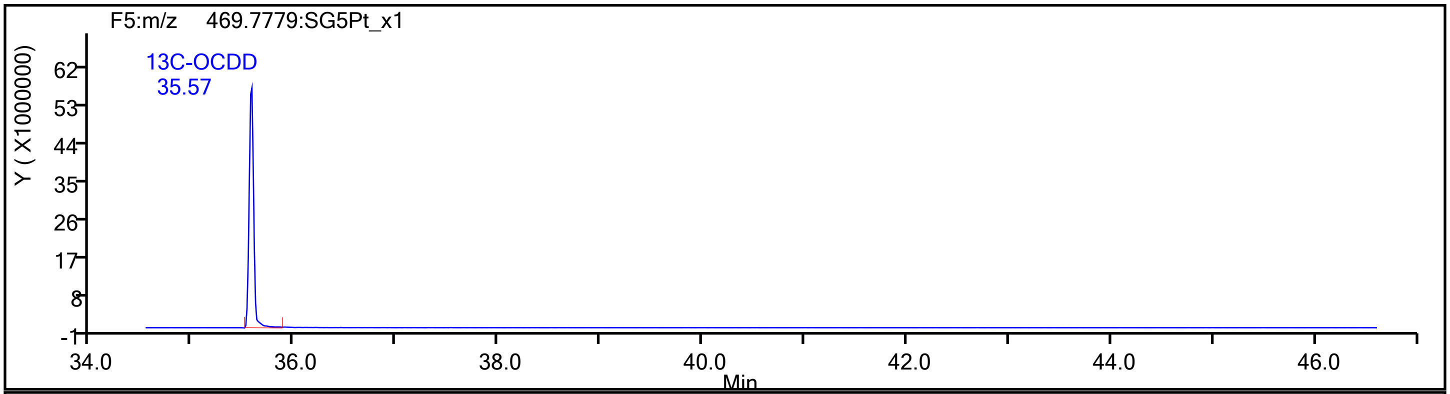

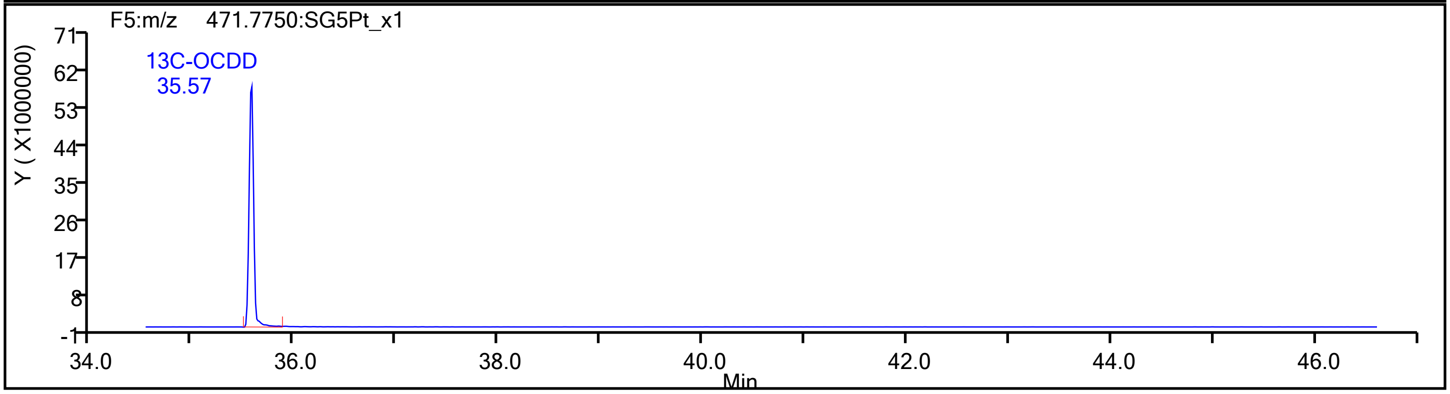

Report Date: 08-Oct-2020 15:16:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Injection Date: 05-Oct-2020 20:45:32 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: L6

Worklist#: 419031 Sample Line#: 7

Column Type: Column Dia:

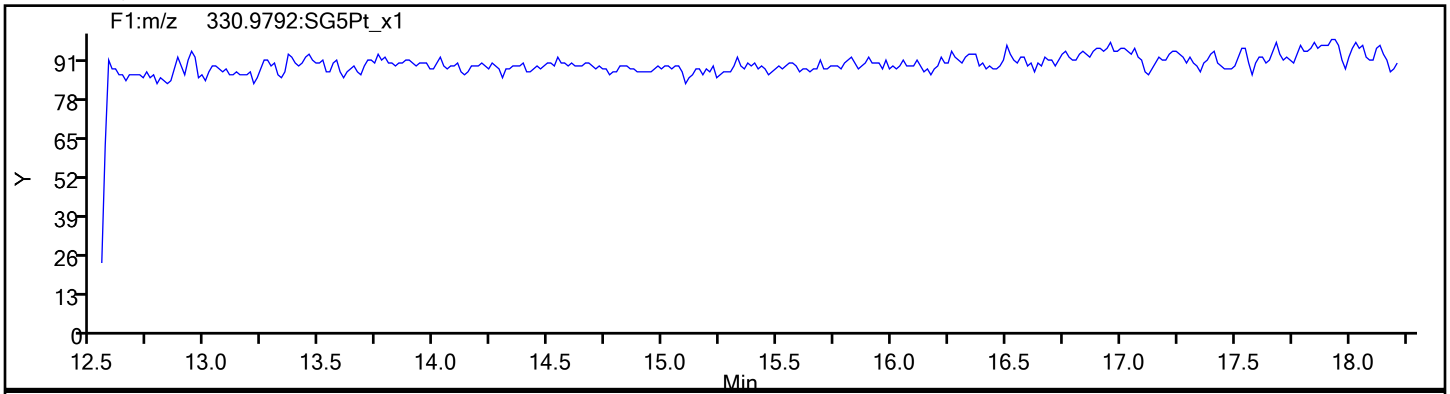

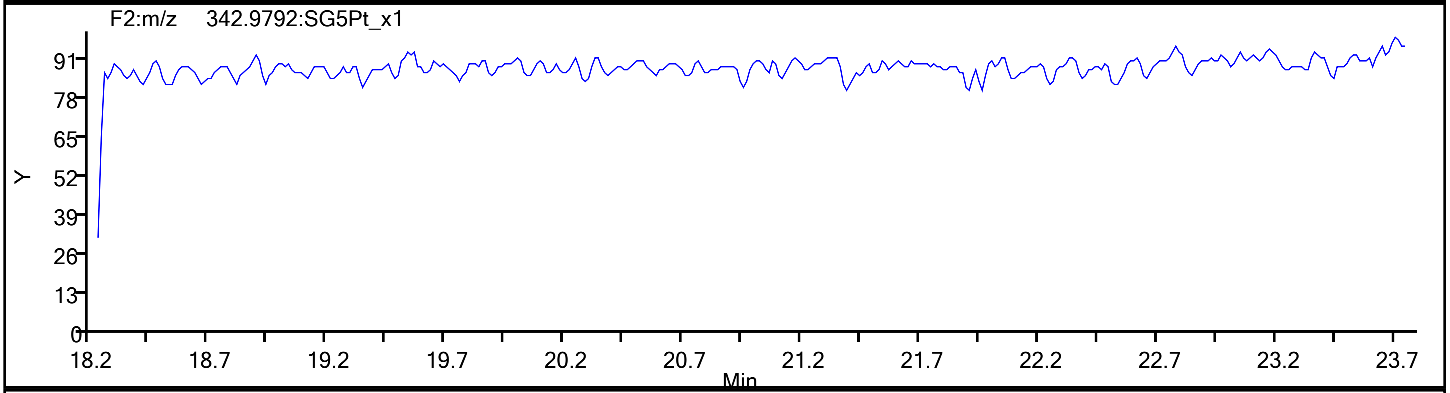

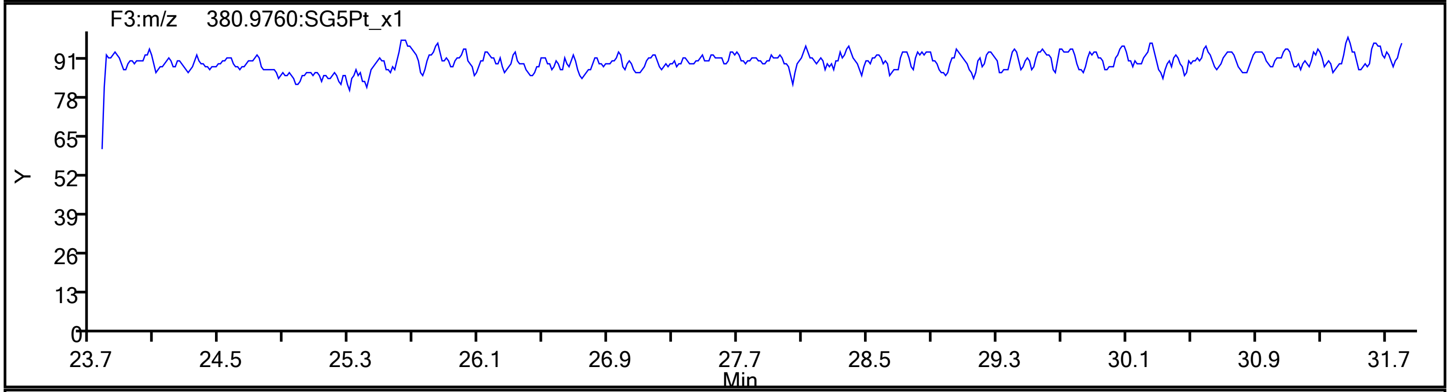

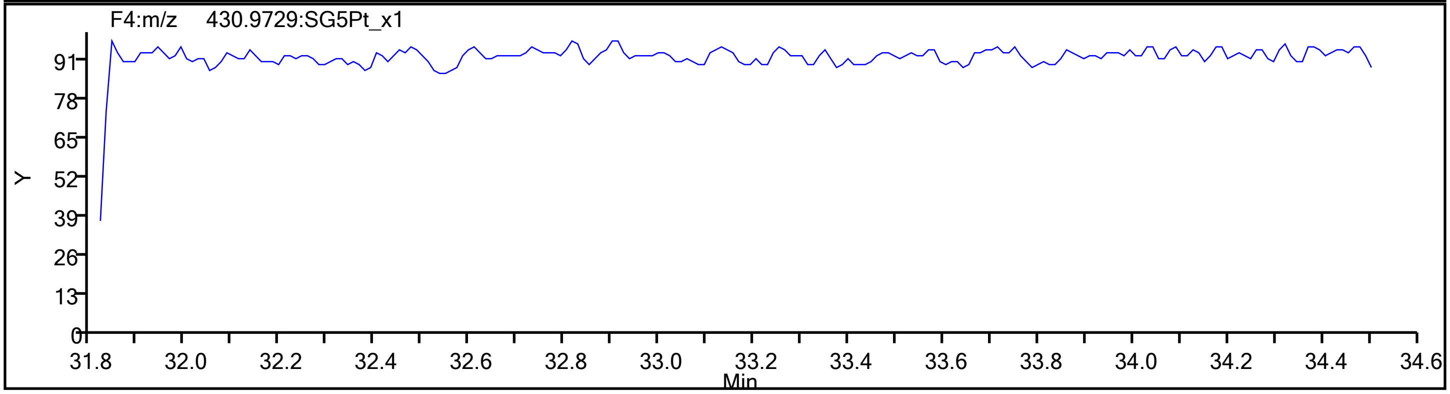

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Injection Date: 05-Oct-2020 20:45:32

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: L6

Worklist#: 419031

Sample Line#: 7

Column Type:

Column Dia:

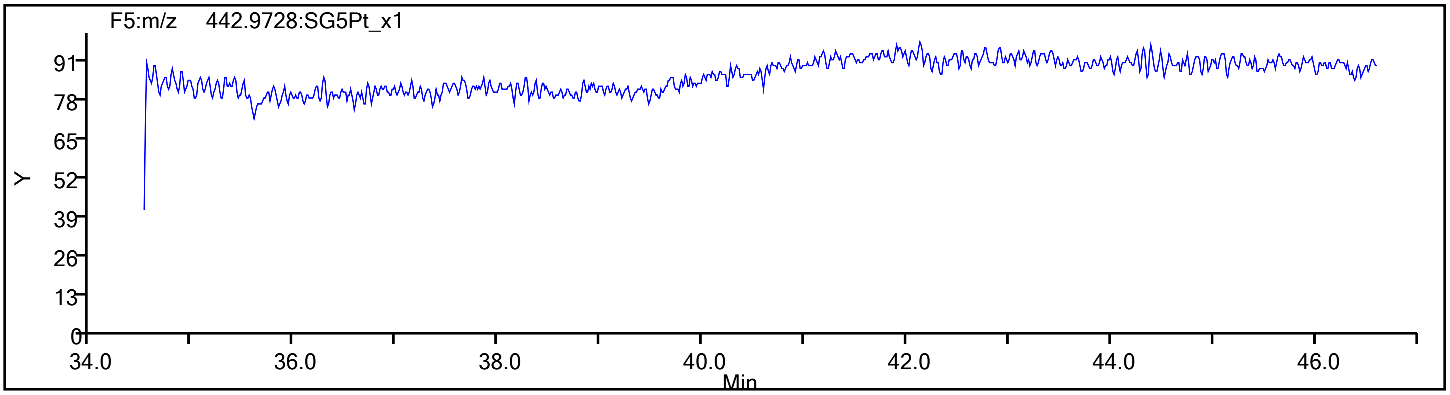

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16 Calibration End Date: 09/17/2020 16:30 Calibration ID: 51923

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413255/3	17se20dfs1_4.d
Level 2	IC 320-413255/4	17se20dfs1_5.d
Level 3	IC 320-413255/5	17se20dfs1_6.d
Level 4	IC 320-413255/6	17se20dfs1_7.d
Level 5	IC 320-413255/7	17se20dfs1_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.1858	1.1360	1.0443	1.0418	1.0204	AveID		1.0857				6.6		20.0			
2,3,7,8-TCDD	1.1871	1.1048	1.0496	1.0306	1.0328	AveID		1.0810				6.2		20.0			
1,2,3,7,8-PeCDF	1.1909	1.0791	1.0295	1.0032	0.9705	AveID		1.0547				8.1		20.0			
2,3,4,7,8-PeCDF	1.2775	1.0981	1.0850	1.0536	1.0036	AveID		1.1035				9.4		20.0			
1,2,3,7,8-PeCDD	1.2031	1.1146	1.0486	1.0121	0.9617	AveID		1.0680				8.8		20.0			
1,2,3,4,7,8-HxCDF	1.4358	1.2703	1.2293	1.2269	1.1592	AveID		1.2643				8.2		20.0			
1,2,3,6,7,8-HxCDF	1.3701	1.2626	1.1868	1.1711	1.1244	AveID		1.2230				7.9		20.0			
2,3,4,6,7,8-HxCDF	1.3957	1.2826	1.2042	1.1879	1.1618	AveID		1.2464				7.6		20.0			
1,2,3,4,7,8-HxCDD	1.3337	1.1740	1.1295	1.1096	1.0336	AveID		1.1561				9.6		20.0			
1,2,3,6,7,8-HxCDD	1.1641	1.0436	1.0095	0.9800	0.9449	AveID		1.0284				8.2		20.0			
1,2,3,7,8,9-HxCDD	1.3458	1.1740	1.1537	1.1375	1.0836	AveID		1.1789				8.4		20.0			
1,2,3,7,8,9-HxCDF	1.4374	1.3105	1.2253	1.1869	1.1586	AveID		1.2638				8.9		20.0			
1,2,3,4,6,7,8-HpCDF	1.7102	1.5209	1.4812	1.4184	1.4013	AveID		1.5064				8.2		20.0			
1,2,3,4,6,7,8-HpCDD	1.2191	1.0870	1.0491	0.9954	0.9694	AveID		1.0640				9.2		20.0			
1,2,3,4,7,8,9-HpCDF	1.6952	1.4441	1.4154	1.3832	1.3362	AveID		1.4548				9.6		20.0			
OCDD	1.2923	1.1759	1.0825	1.0506	1.0452	AveID		1.1293				9.3		20.0			
OCDF	1.5570	1.4324	1.3917	1.3560	1.4110	AveID		1.4296				5.4		20.0			
13C-2,3,7,8-TCDF	1.5688	1.5355	1.6148	1.6392	1.5834	Ave		1.5883				2.5		35.0			
13C-2,3,7,8-TCDD	1.1018	1.0837	1.1094	1.1551	1.1470	Ave		1.1194				2.7		35.0			
13C-1,2,3,7,8-PeCDF	1.3966	1.4019	1.5199	1.5258	1.5468	Ave		1.4782				4.9		35.0			
13C-2,3,4,7,8-PeCDF	1.3040	1.3701	1.4126	1.4058	1.4634	Ave		1.3912				4.2		35.0			
13C-1,2,3,7,8-PeCDD	0.8828	0.9039	0.9533	0.9699	0.9974	Ave		0.9415				5.0		35.0			
13C-1,2,3,4,7,8-HxCDF	1.1131	1.1743	1.1364	1.1154	1.1497	Ave		1.1378				2.2		35.0			
13C-1,2,3,6,7,8-HxCDF	1.3054	1.3359	1.3172	1.3159	1.3119	Ave		1.3173				0.9		35.0			
13C-2,3,4,6,7,8-HxCDF	1.2378	1.2573	1.2465	1.2460	1.2409	Ave		1.2457				0.6		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8355	0.8663	0.8330	0.8453	0.8586	Ave		0.8477				1.7		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9778	1.0192	0.9843	1.0087	0.9992	Ave		0.9979				1.7		35.0			
13C-1,2,3,7,8,9-HxCDF	1.1892	1.1804	1.1596	1.1929	1.1978	Ave		1.1840				1.3		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9928	0.9762	0.9647	0.9956	1.0124	Ave		0.9884				1.9		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.9663	0.9472	0.9319	0.9759	0.9569	Ave		0.9556				1.8		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.9307	0.9201	0.9035	0.9148	0.9325	Ave		0.9203				1.3		35.0			
13C-OCDD	0.7421	0.7174	0.7293	0.7472	0.7742	Ave		0.7420				2.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16 Calibration End Date: 09/17/2020 16:30 Calibration ID: 51923

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.1752	1.1011	1.1353	1.1649	1.1573	Ave		1.1468				2.6					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1   Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16   Calibration End Date: 09/17/2020 16:30   Calibration ID: 51923

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413255/3	17se20dfs1_4.d
Level 2	IC 320-413255/4	17se20dfs1_5.d
Level 3	IC 320-413255/5	17se20dfs1_6.d
Level 4	IC 320-413255/6	17se20dfs1_7.d
Level 5	IC 320-413255/7	17se20dfs1_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	26671	80239	474391	1665214	10338981	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	18752	55075	327581	1160856	7580962	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	119224	347966	2200993	7463293	48029276	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	119412	346052	2155859	7221609	46990984	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	76134	231718	1406053	4786052	30689802	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	114675	348028	2124449	7193761	48519418	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	128332	393550	2377194	8101410	53706793	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	123959	376227	2282654	7780338	52489543	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	79949	237281	1430853	4930619	32309502	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	81674	248155	1511008	5196501	34375082	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	87547	258219	1594191	5542974	36648130	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	122654	360924	2160700	7442846	50528283	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	121827	346408	2172971	7423570	51654249	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	84526	240224	1486612	5106412	33775862	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	113201	309989	1944648	6651383	45362969	2.50	10.0	50.0	200	1000
OCDD		AveID	137632	393634	2401141	8253790	58924724	5.00	20.0	100	400	2000
OCDF		AveID	165819	479466	3086889	10652820	79546388	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	4498215	3531795	4542653	3996116	5066219	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	3159205	2492630	3120967	2816107	3670066	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	4004528	3224518	4275697	3719700	4948994	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	3738896	3151439	3973993	3427156	4682390	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	2531354	2078935	2681743	2364404	3191360	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	3194678	2739797	3456400	2931726	4185677	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	3746543	3116925	4006041	3458749	4776398	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	3552526	2933370	3791155	3274841	4517864	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	2397843	2021094	2533537	2221816	3126000	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	2806463	2377971	2993576	2651289	3638034	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	3413194	2754056	3526809	3135400	4360996	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	2849439	2277691	2934128	2616915	3686056	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	2773416	2209893	2834170	2565014	3484029	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	2671106	2146658	2747864	2404416	3395006	100	100	100	100	100
13C-OCDD	13CHx	Ave	4259906	3347397	4436272	3927948	5637421	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	16848	50653	319378	1135994	7405818	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1 Analy Batch No.: 413255

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 13:16 Calibration End Date: 09/17/2020 16:30 Calibration ID: 51923

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

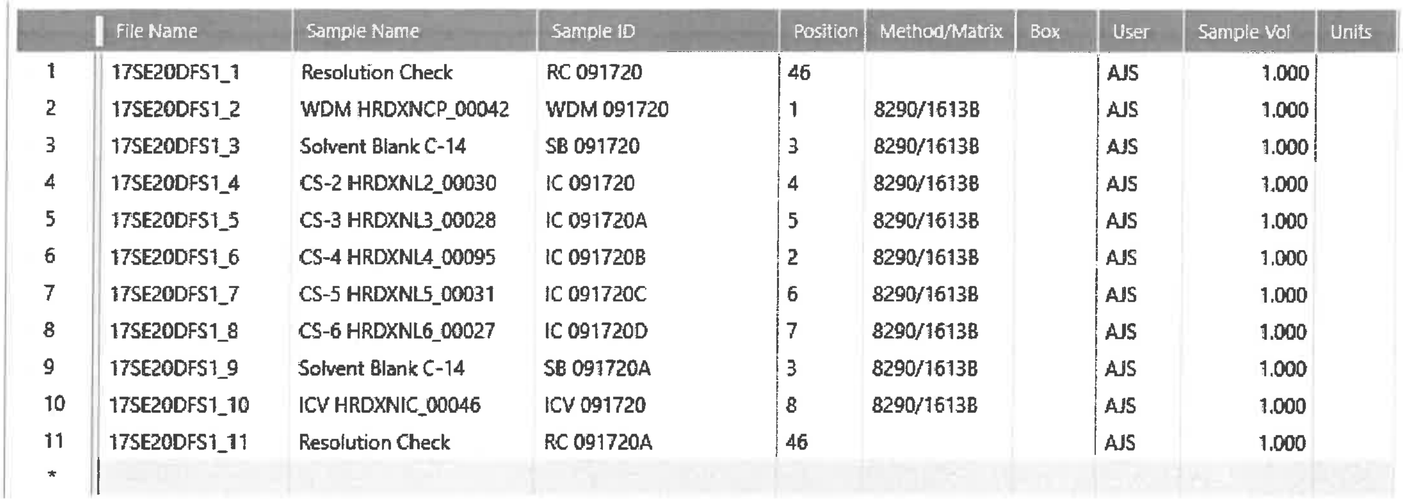

	File Name	Sample Name	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	17SE20DFS1_1	Resolution Check	RC 091720	46			AJS	1.000	
2	17SE20DFS1_2	WDM HRDXNCP_00042	WDM 091720	1	8290/1613B		AJS	1.000	
3	17SE20DFS1_3	Solvent Blank C-14	SB 091720	3	8290/1613B		AJS	1.000	
4	17SE20DFS1_4	CS-2 HRDXNL2_00030	IC 091720	4	8290/1613B		AJS	1.000	
5	17SE20DFS1_5	CS-3 HRDXNL3_00028	IC 091720A	5	8290/1613B		AJS	1.000	
6	17SE20DFS1_6	CS-4 HRDXNL4_00095	IC 091720B	2	8290/1613B		AJS	1.000	
7	17SE20DFS1_7	CS-5 HRDXNL5_00031	IC 091720C	6	8290/1613B		AJS	1.000	
8	17SE20DFS1_8	CS-6 HRDXNL6_00027	IC 091720D	7	8290/1613B		AJS	1.000	
9	17SE20DFS1_9	Solvent Blank C-14	SB 091720A	3	8290/1613B		AJS	1.000	
10	17SE20DFS1_10	ICV HRDXNIC_00046	ICV 091720	8	8290/1613B		AJS	1.000	
11	17SE20DFS1_11	Resolution Check	RC 091720A	46			AJS	1.000	
*									

logfile checked
9-17-20 ALM

Resolution Check Report (DFS SN: 3487)

Date:	17 Sep 2020 10:38
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12132 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11917 [5%height]

Ref. mass 318.9851 [m/z] Resolution: 11943 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11897 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11920 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12004 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11617 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11886 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11858 [5%height]

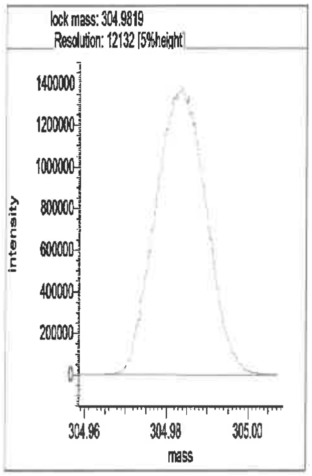

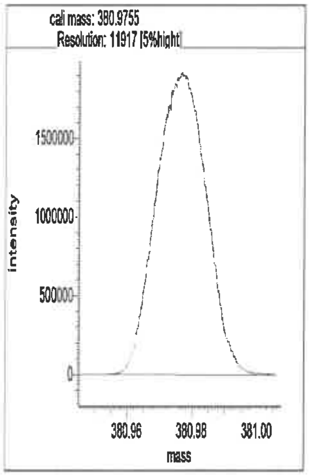

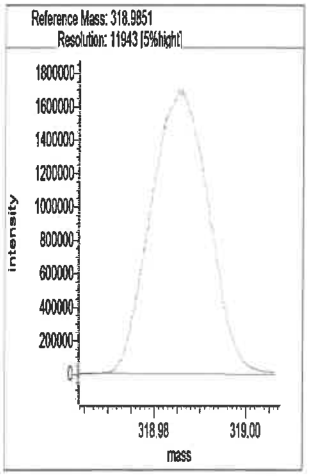

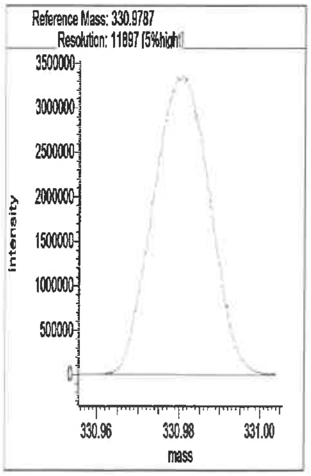

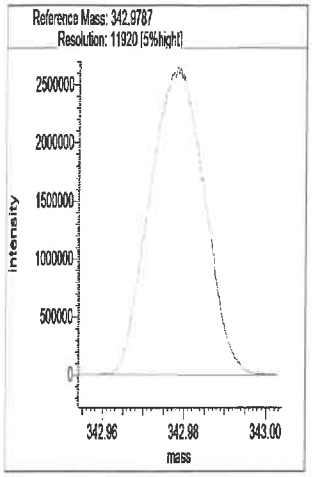

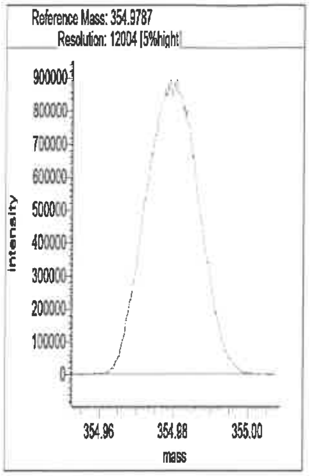

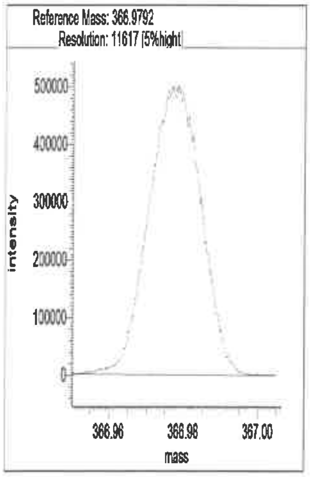

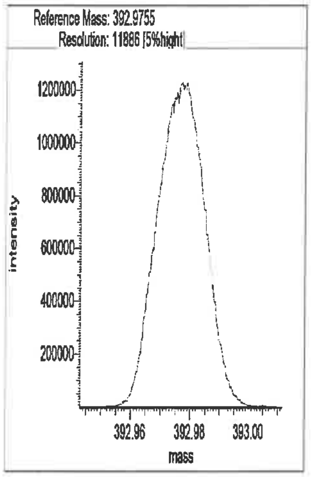

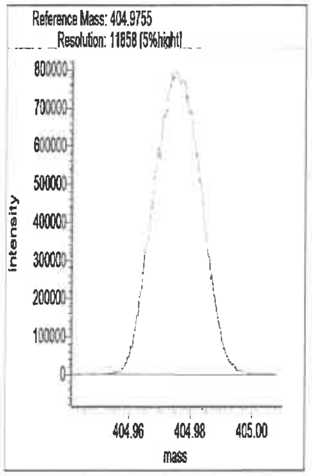

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12310 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12140 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11999 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11991 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11530 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11892 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11886 [5%height]

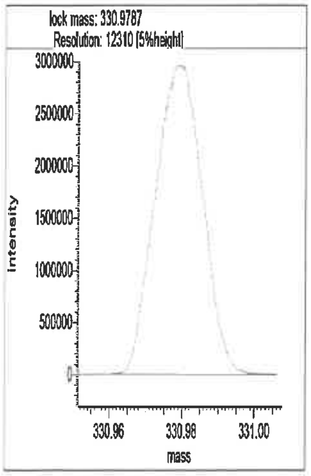

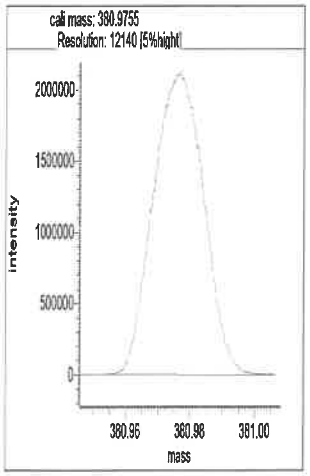

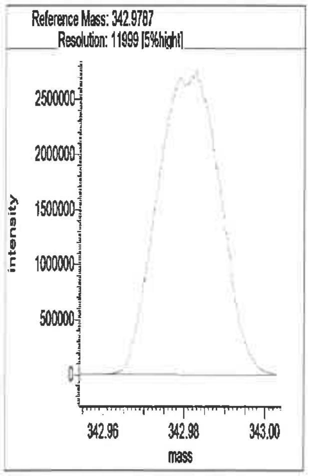

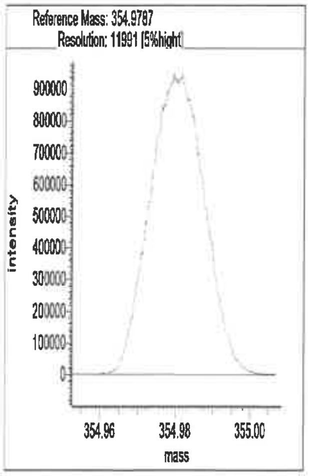

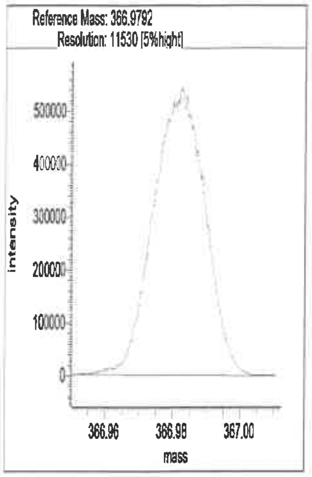

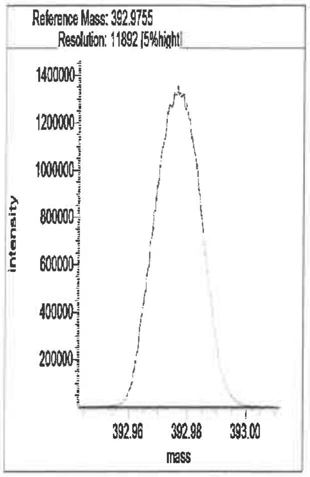

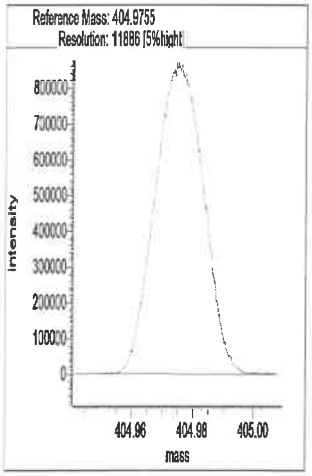

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11934 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11948 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12137 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11923 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12007 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11760 [5%height]

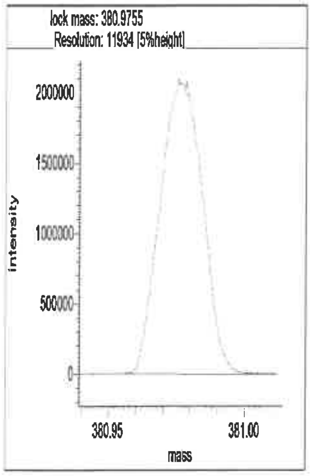

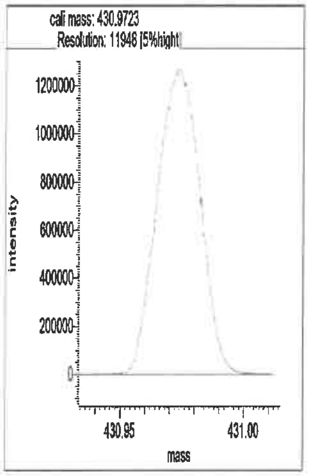

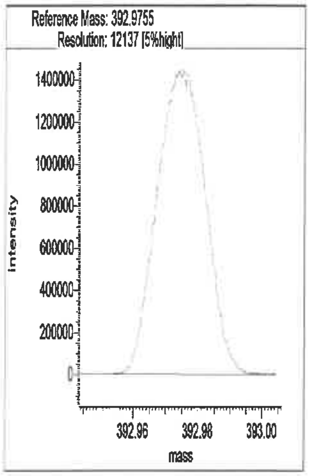

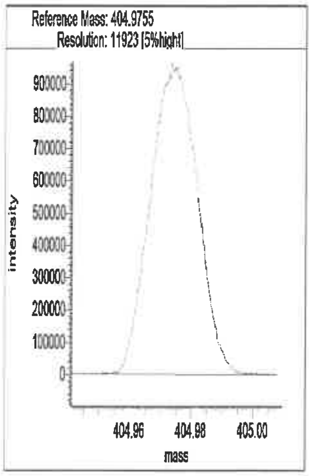

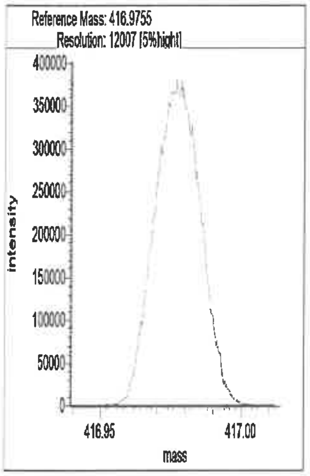

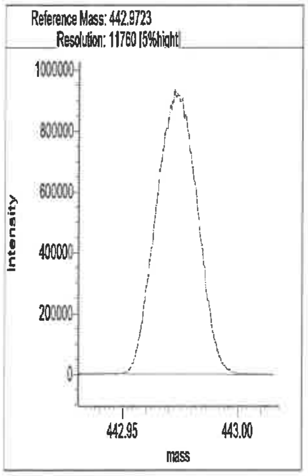

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11988 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11682 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11882 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12046 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11804 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12111 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12009 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 11816 [5%height]

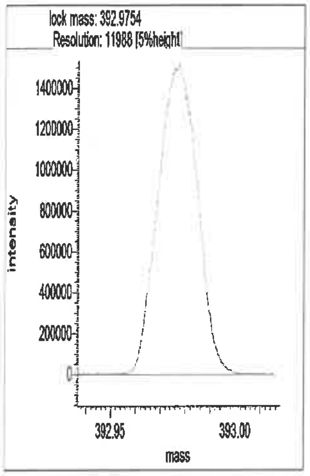

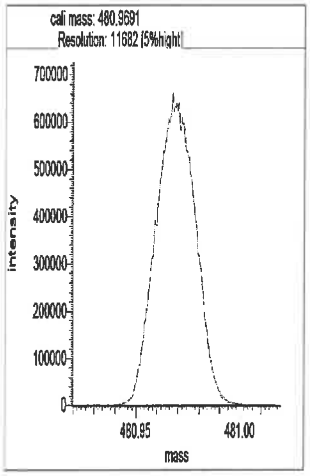

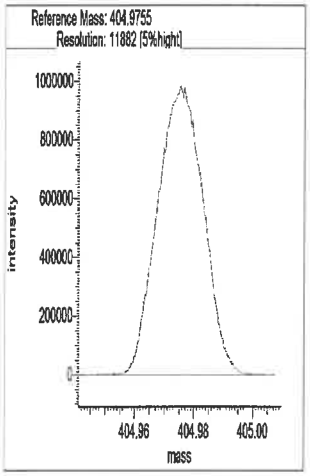

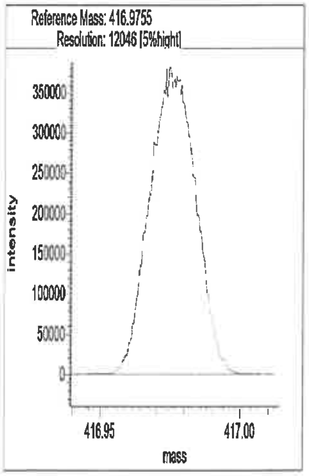

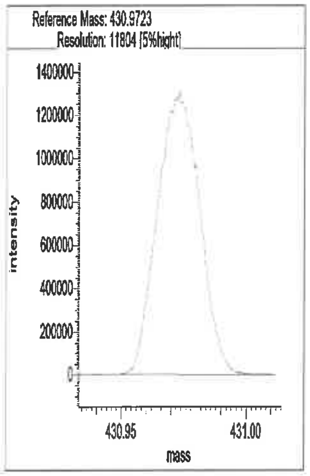

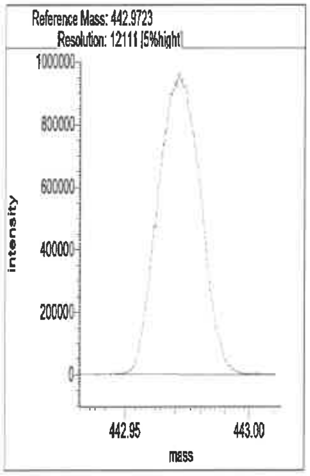

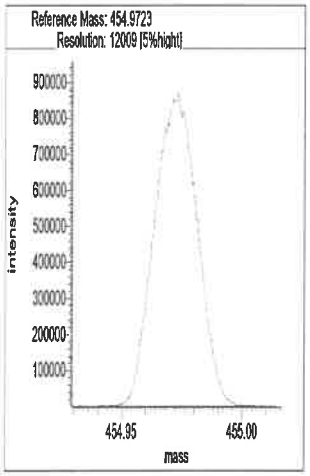

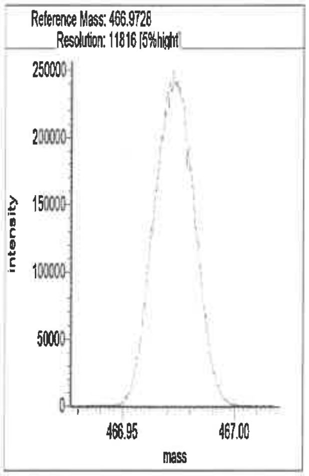

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12191 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11916 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12124 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 11903 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11957 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12164 [5%height]

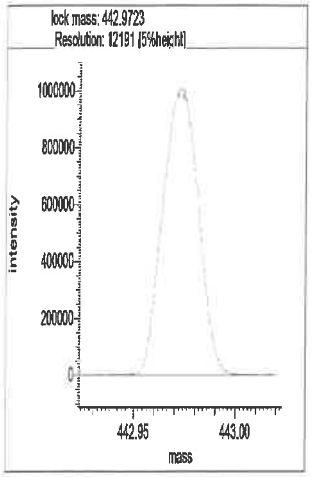
lock mass: 442.9723
Resolution: 12191 [5%height]
intensity
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

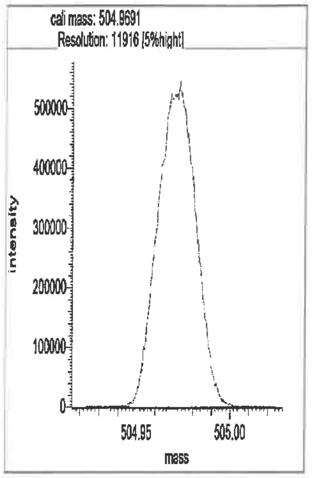
cali mass: 504.9691
Resolution: 11916 [5%hight]
intensity
500000
400000
300000
200000
100000
0
504.95
505.00
mass

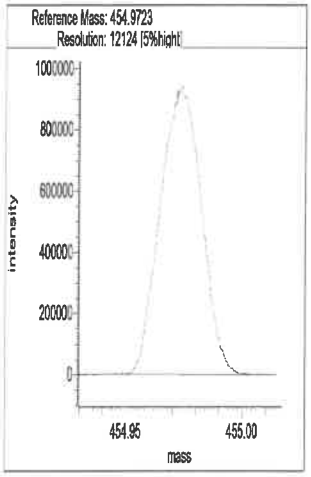
Reference Mass: 454.9723
Resolution: 12124 [5%hight]
intensity
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

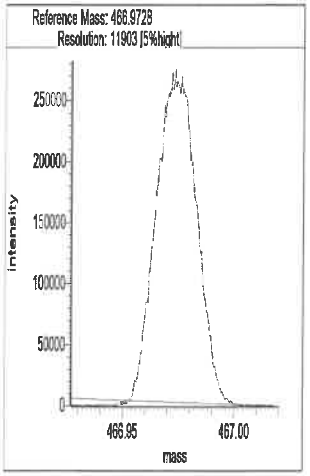
Reference Mass: 466.9728
Resolution: 11903 [5%hight]
intensity
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200000
150000
100000
50000
0
466.95
467.00
mass

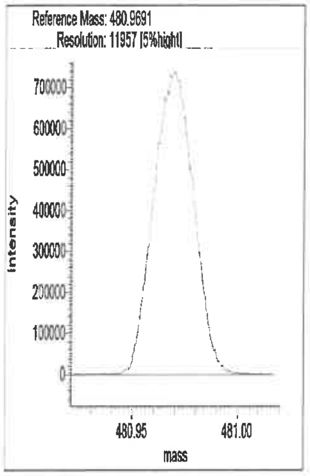
Reference Mass: 480.9691
Resolution: 11957 [5%hight]
intensity
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600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

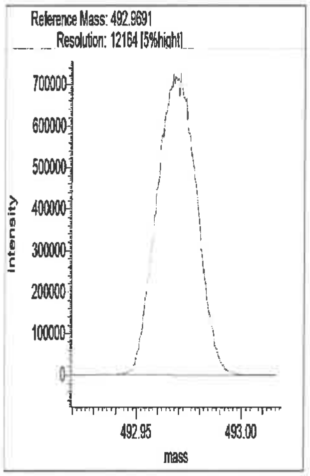
Reference Mass: 492.9691
Resolution: 12164 [5%hight]
intensity
700000
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date: 17 Sep 2020 18:53
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12067 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11764 [5%height]
Ref. mass 318.9851 [m/z] Resolution: 11865 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11971 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11991 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11991 [5%height]
Ref. mass 366.9792 [m/z] Resolution: 11559 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11798 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11984 [5%height]

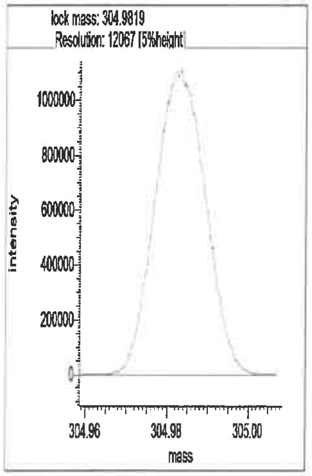

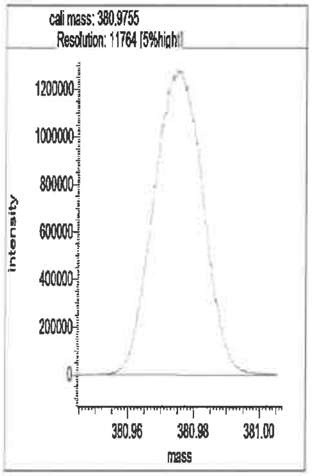

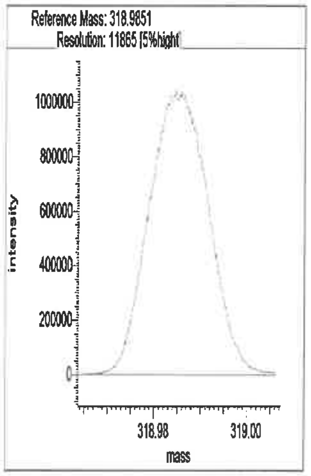

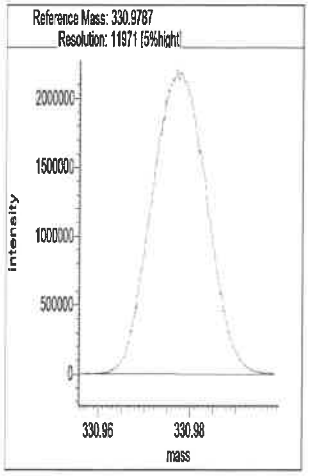

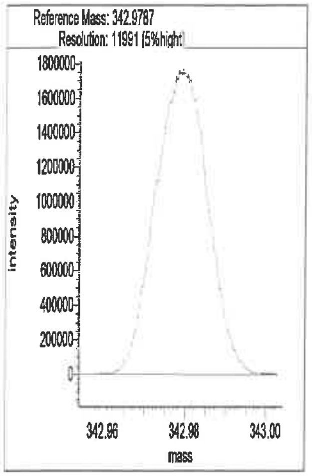

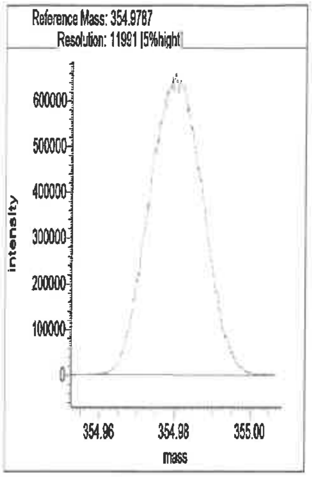

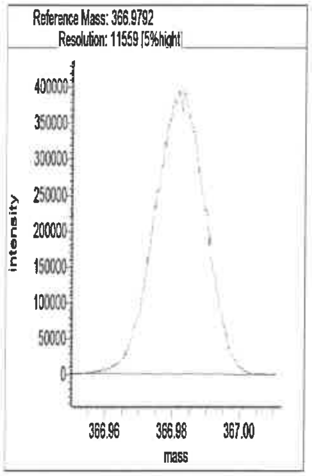

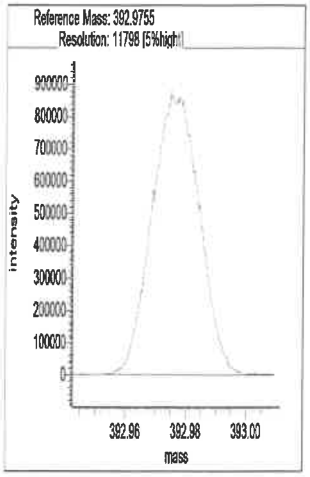

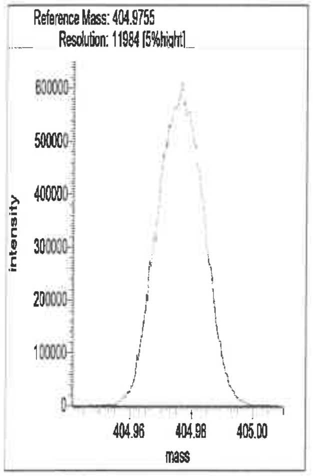

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12019 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12048 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12017 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12028 [5%height]

Ref. mass 366.9792 [m/z] Resolution: 11614 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12067 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11912 [5%height]

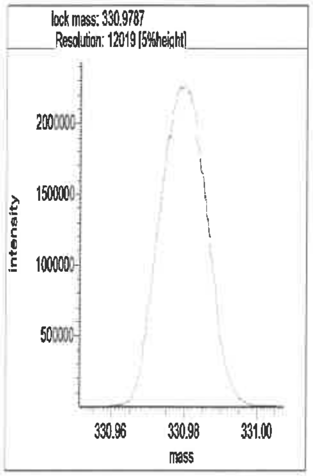

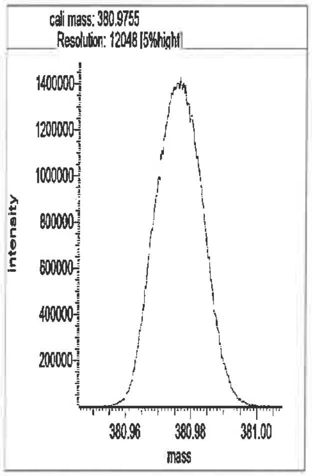

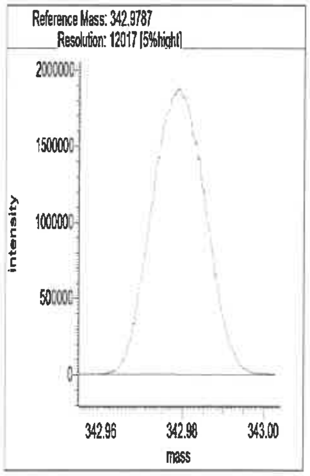

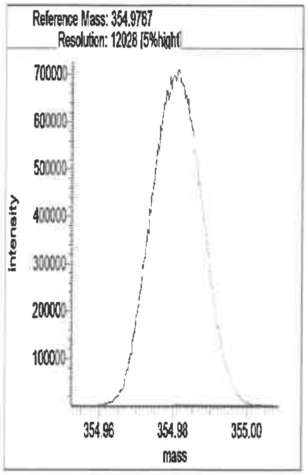

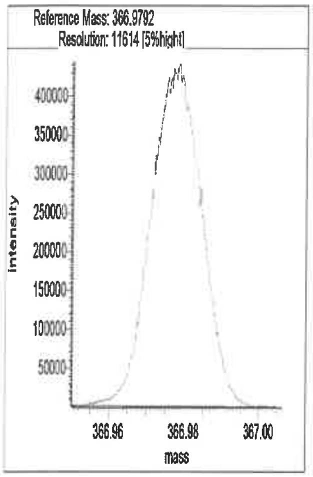

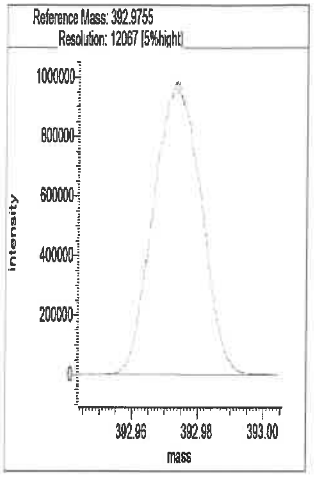

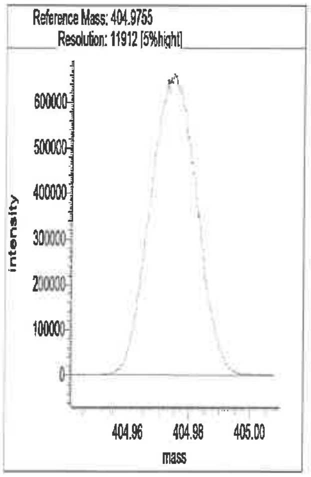

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12306 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12537 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12237 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12336 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12418 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12368 [5%height]

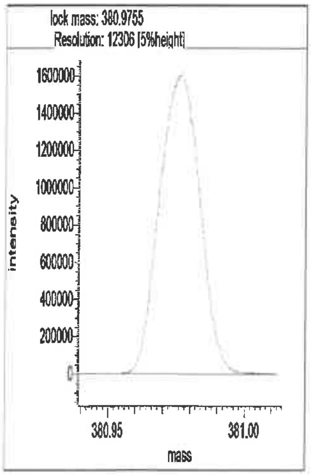

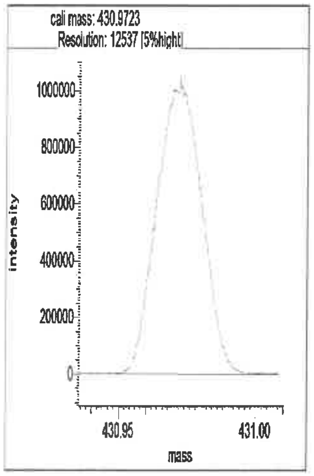

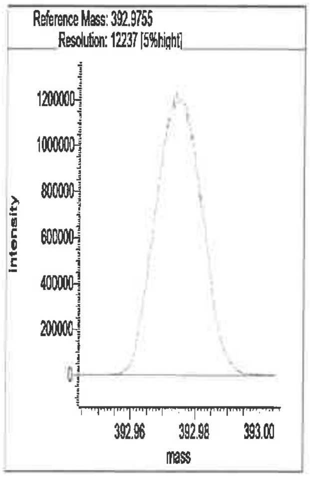

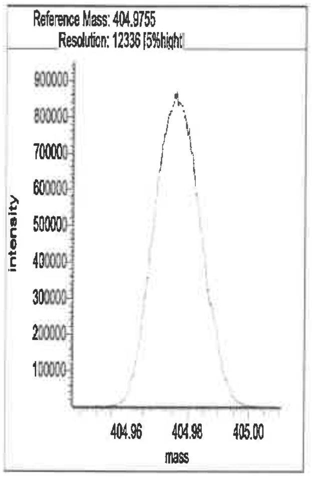

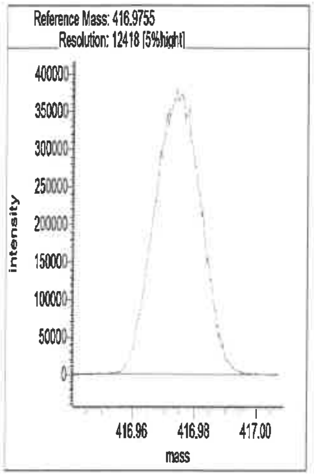

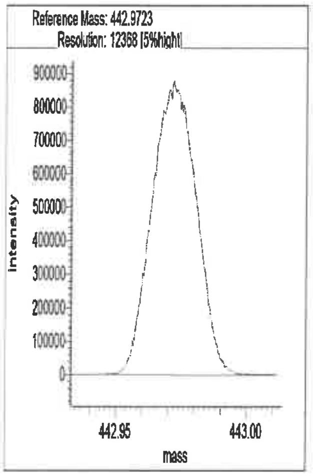

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12474 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12282 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12457 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12365 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12445 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12502 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12392 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12167 [5%height]

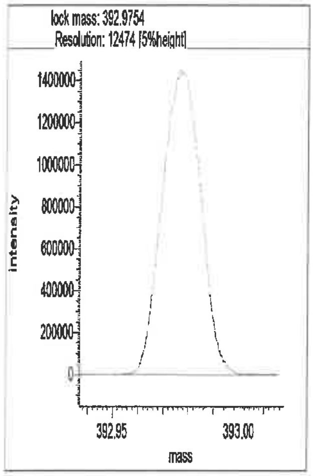

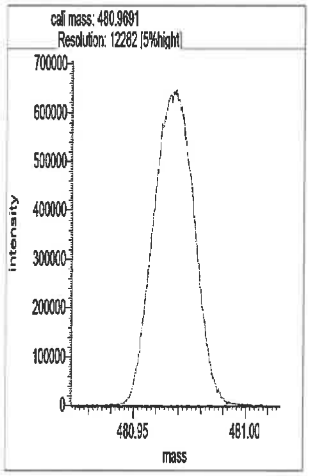

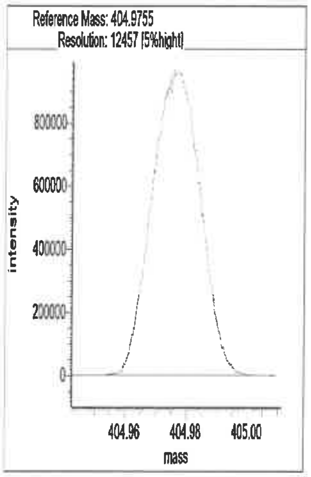

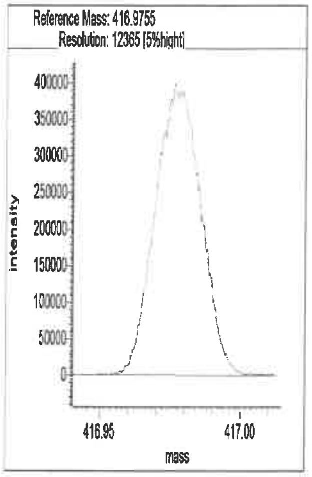

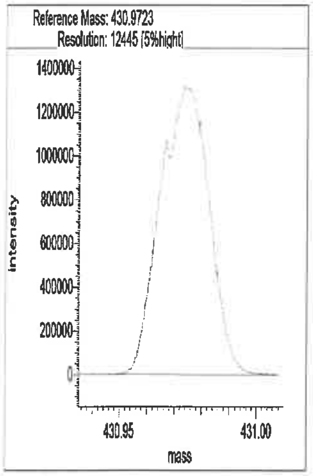

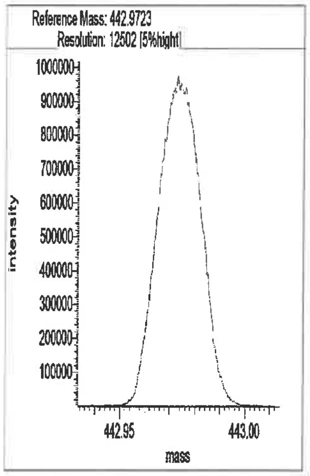

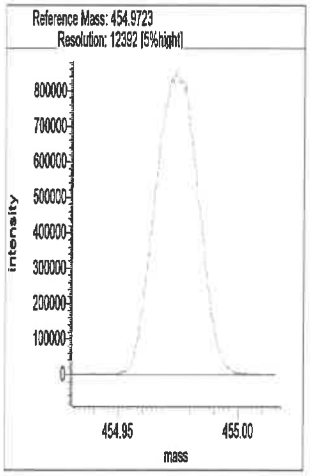

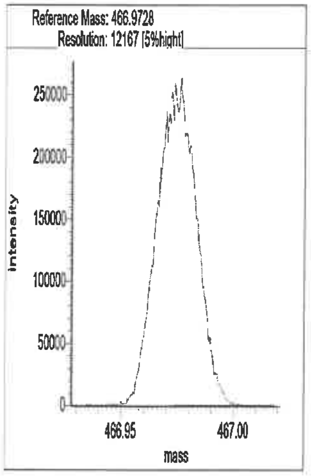

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12570 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12555 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12346 [5%height]
Ref. mass 466.9728 [m/z] Resolution: 12232 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12396 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12138 [5%height]

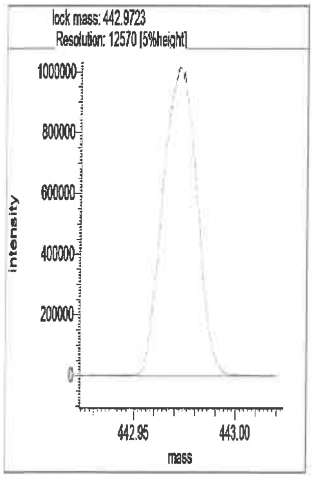
lock mass: 442.9723
Resolution: 12570 [5%height]
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

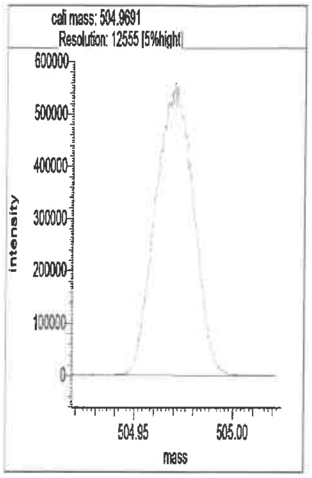
cali mass: 504.9691
Resolution: 12555 [5%hight]
600000
500000
400000
300000
200000
100000
0
intensity
504.95
505.00
mass

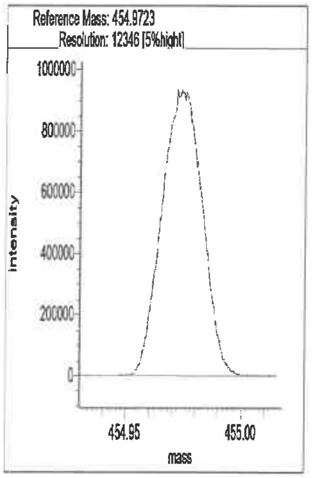
Reference Mass: 454.9723
Resolution: 12346 [5%hight]
1000000
800000
600000
400000
200000
0
intensity
454.95
455.00
mass

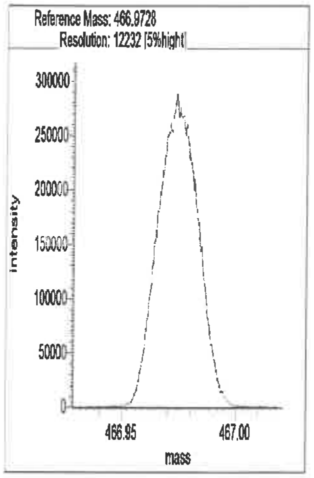
Reference Mass: 466.9728
Resolution: 12232 [5%hight]
300000
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

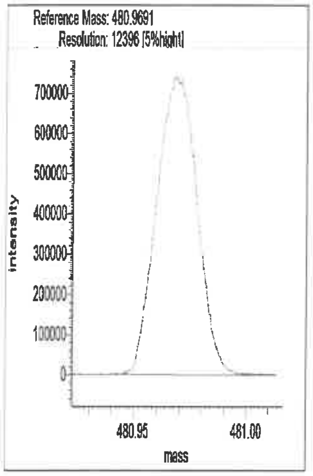
Reference Mass: 480.9691
Resolution: 12396 [5%hight]
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

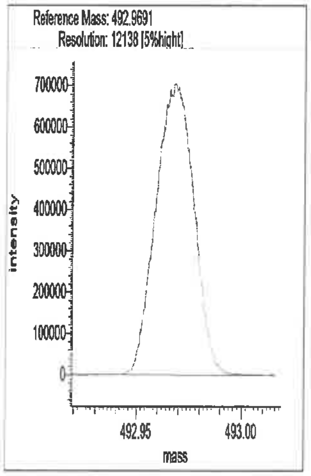
Reference Mass: 492.9691
Resolution: 12138 [5%hight]
700000
600000
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 13:16:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:59:44 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 15:01:18

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.126	2867279	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.206	4498215	0.78	1.5883	98.8	98.8	0.3878	0.3878	98.77	
2,3,7,8-TCDF	19.232	26671	0.78	1.0857	0.5461	0.5461	0.0337	0.0337	109	M
S Total TCDF					0.5461	0.5461	0.0337	0.0337		
D 13C-2,3,7,8-TCDD	20.487	3159205	0.78	1.1194	98.4	98.4	0.3374	0.3374	98.43	
$ 37Cl4-2,3,7,8-TCDD	20.505	16848		1.1468	0.5124	0.5124	0.0136	0.0136	102	
2,3,7,8-TCDD	20.513	18752	0.75	1.0810	0.5491	0.5491	0.0679	0.0679	110	M
S Total TCDD					0.5491	0.5491	0.0679	0.0679		
D 13C-1,2,3,7,8-PeCDF	26.281	4004528	1.57	1.4782	94.5	94.5	0.4694	0.4694	94.48	
1,2,3,7,8-PeCDF	26.298	119224	1.57	1.0547	2.823	2.823	0.0379	0.0379	113	
D 13C-2,3,4,7,8-PeCDF	27.746	3738896	1.59	1.3912	93.7	93.7	0.4988	0.4988	93.73	
2,3,4,7,8-PeCDF	27.771	119412	1.55	1.1035	2.894	2.894	0.0421	0.0421	116	
S Total PeCDF					5.717	5.717	0.0400	0.0400		
D 13C-1,2,3,7,8-PeCDD	28.513	2531354	1.57	0.9415	93.8	93.8	0.2412	0.2412	93.77	
1,2,3,7,8-PeCDD	28.538	76134	1.58	1.0680	2.816	2.816	0.0648	0.0648	113	
S Total PeCDD					2.816	2.816	0.0648	0.0648		
D 13C-1,2,3,4,7,8-HxCDF	34.160	3194678	0.53	1.1378	97.8	97.8	0.4787	0.4787	97.83	
1,2,3,4,7,8-HxCDF	34.177	114675	1.25	1.2643	2.839	2.839	0.0333	0.0333	114	
D 13C-1,2,3,6,7,8-HxCDF	34.345	3746543	0.53	1.3173	99.1	99.1	0.4135	0.4135	99.10	
1,2,3,6,7,8-HxCDF	34.362	128332	1.24	1.2230	2.801	2.801	0.0318	0.0318	112	
D 13C-2,3,4,6,7,8-HxCDF	35.255	3552526	0.53	1.2457	99.4	99.4	0.4372	0.4372	99.37	
2,3,4,6,7,8-HxCDF	35.272	123959	1.26	1.2464	2.799	2.799	0.0275	0.0275	112	
D 13C-1,2,3,7,8,9-HxCDF	36.207	3413194	0.52	1.1840	100.4	100.4	0.4600	0.4600	100	
1,2,3,7,8,9-HxCDF	36.224	122654	1.27	1.2638	2.844	2.844	0.0261	0.0261	114	
S Total HxCDF					11.3	11.3	0.0297	0.0297		
* 13C-1,2,3,7,8,9-HxCDD	36.005	2870058	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.482	2397843	1.27	0.8477	98.6	98.6	0.3192	0.3192	98.55	
1,2,3,4,7,8-HxCDD	35.499	79949	1.22	1.1561	2.884	2.884	0.0287	0.0287	115	
D 13C-1,2,3,6,7,8-HxCDD	35.609	2806463	1.26	0.9979	98.0	98.0	0.2711	0.2711	97.99	
1,2,3,6,7,8-HxCDD	35.626	81674	1.26	1.0284	2.830	2.830	0.0288	0.0288	113	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.013	87547	1.25	1.1789	2.854	2.854	0.0265	0.0265	114	
S Total HxCDD					8.568	8.568	0.0280	0.0280		
D 13C-1,2,3,4,6,7,8-HpCDF	38.111	2849439	0.45	0.9884	100.5	100.5	0.5325	0.5325	100	
1,2,3,4,6,7,8-HpCDF	38.119	121827	1.06	1.5064	2.838	2.838	0.0226	0.0226	114	
D 13C-1,2,3,4,7,8,9-HpCDF	39.408	2671106	0.46	0.9203	101.1	101.1	0.5719	0.5719	101	
1,2,3,4,7,8,9-HpCDF	39.416	113201	1.03	1.4548	2.913	2.913	0.0235	0.0235	117	
S Total HpCDF					5.751	5.751	0.0230	0.0230		
D 13C-1,2,3,4,6,7,8-HpCDD	39.096	2773416	1.06	0.9556	101.1	101.1	0.2945	0.2945	101	
1,2,3,4,6,7,8-HpCDD	39.105	84526	1.06	1.0640	2.864	2.864	0.0232	0.0232	115	
S Total HpCDD					2.864	2.864	0.0232	0.0232		
D 13C-OCDD	41.549	4259906	0.91	0.7420	200.0	200.0	0.2839	0.2839	100	
OCDF	41.642	165819	0.94	1.4296	5.446	5.446	0.0367	0.0367	109	
OCDD	41.558	137632	0.84	1.1293	5.722	5.722	0.0214	0.0214	114	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 13:16:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:59:44 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 15:01:18

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.126	20.145	-1		1283753	191236	461	1152	415		
333.9338	20.126	20.145	-1		1583526	238951	189	472	1264	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.206	19.222	-1	0.954	1970405	288920	722	1805	400		
317.9389	19.206	19.222	-1	0.954	2527810	367161	338	845	1086	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	19.232	19.246	-1	1.001	11715	1954	21	52	93		M
305.8987	19.232	19.246	-1	1.001	14956	2249	75	187	30	0.78(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	20.487	20.507	-1	1.018	1385384	196545	461	1152	426		
333.9338	20.479	20.507	-2	1.018	1773821	246098	189	472	1302	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.505	20.531	-2	1.019	16848	2385	27	67	88		
2,3,7,8-TCDD											M
319.8965	20.513	20.532	-1	1.001	8063	1362	105	262	13		M
321.8936	20.496	20.532	-2	1.000	10689	1465	25	62	59	0.75(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.281	26.301	-1	1.306	2446693	400677	740	1850	541		
353.8970	26.281	26.301	-1	1.306	1557835	263136	454	1135	580	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.298	26.321	-1	1.001	72858	11805	28	70	422		
341.8567	26.306	26.321	-1	1.001	46366	7710	78	195	99	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.746	27.762	-1	1.379	2297047	354078	740	1850	478		
353.8970	27.738	27.762	-1	1.378	1441849	216332	454	1135	477	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.771	27.787	-1	1.001	72650	11536	28	70	412		
341.8567	27.771	27.787	-1	1.001	46762	7260	78	195	93	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.513	28.537	-1	1.417	1545088	229761	258	645	891		
369.8919	28.521	28.537	-1	1.417	986266	145920	133	332	1097	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.538	28.562	-1	1.001	46621	7003	85	212	82		
357.8516	28.547	28.562	-1	1.001	29513	4393	19	47	231	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.160	34.181	-1	0.949	1107600	232468	492	1230	472		
385.8610	34.160	34.181	-1	0.949	2087078	432901	1054	2635	411	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.177	34.200	-1	1.000	63746	13025	68	170	192		
375.8178	34.177	34.200	-1	1.000	50929	10983	44	110	250	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.345	34.365	-1	0.954	1299916	252040	492	1230	512		
385.8610	34.345	34.365	-1	0.954	2446627	467172	1054	2635	443	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.362	34.384	-1	1.000	71098	13884	68	170	204		
375.8178	34.362	34.384	-1	1.000	57234	11346	44	110	258	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.255	35.272	-1	0.979	1232175	280852	492	1230	571		
385.8610	35.246	35.272	-2	0.979	2320351	537346	1054	2635	510	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.272	35.288	-1	1.000	69196	15962	68	170	235		
375.8178	35.272	35.288	-1	1.000	54763	12390	44	110	282	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.207	36.225	-1	1.006	1163249	287326	492	1230	584		
385.8610	36.207	36.225	-1	1.006	2249945	560830	1054	2635	532	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.224	36.240	-1	1.000	68721	16467	68	170	242		
375.8178	36.215	36.240	-1	1.000	53933	12682	44	110	288	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.005	36.021	-1		1610704	398886	452	1130	882		
403.8529	36.005	36.021	-1		1259354	310767	316	790	983	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.482	35.502	-1	0.985	1339435	341191	452	1130	755		
403.8529	35.482	35.502	-1	0.985	1058408	268257	316	790	849	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.499	35.519	-1	1.000	43922	10710	39	97	275		
391.8127	35.491	35.519	-2	1.000	36027	9106	42	105	217	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.609	35.630	-1	0.989	1561924	380416	452	1130	842		
403.8529	35.609	35.630	-1	0.989	1244539	302063	316	790	956	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.626	35.646	-1	1.000	45493	10981	39	97	282		
391.8127	35.626	35.646	-1	1.000	36181	8678	42	105	207	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.013	36.033	-1	1.015	48576	12704	39	97	326		
391.8127	36.013	36.033	-1	1.015	38971	9649	42	105	230	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.111	38.132	-1	1.059	890663	282719	496	1240	570		
419.8220	38.111	38.132	-1	1.059	1958776	621025	998	2495	622	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.119	38.141	-1	1.000	62628	19743	73	182	270		
409.7788	38.119	38.141	-1	1.000	59199	17675	50	125	354	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.408	39.428	-1	1.095	835396	277121	496	1240	559		
419.8220	39.408	39.428	-1	1.095	1835710	621401	998	2495	623	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.416	39.438	-1	1.000	57334	18363	73	182	252		
409.7788	39.416	39.438	-1	1.000	55867	17932	50	125	359	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.096	39.118	-1	1.086	1429108	497590	417	1042	1193		
437.8140	39.096	39.118	-1	1.086	1344308	462627	382	955	1211	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.105	39.126	-1	1.000	43457	14088	59	147	239		
425.7737	39.105	39.126	-1	1.000	41069	14247	36	90	396	1.06(0.88-1.20)	
13C-OCDD											
469.7780	41.549	41.572	-1	1.154	2027273	640660	323	807	1983		
471.7750	41.549	41.572	-1	1.154	2232633	702876	275	687	2556	0.91(0.76-1.02)	
OCDF											
441.7428	41.642	41.663	-1	1.002	80266	24941	40	100	624		
443.7399	41.642	41.663	-1	1.002	85553	27321	101	252	271	0.94(0.76-1.02)	
OCDD											
457.7377	41.558	41.580	-1	1.000	62632	20054	28	70	716		
459.7348	41.558	41.580	-1	1.000	75000	23129	37	92	625	0.84(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d				
Injection Date:	17-Sep-2020 13:16:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	19.23
Area:	15605
Amount:	0.563268
Amount Units:	pg/ul

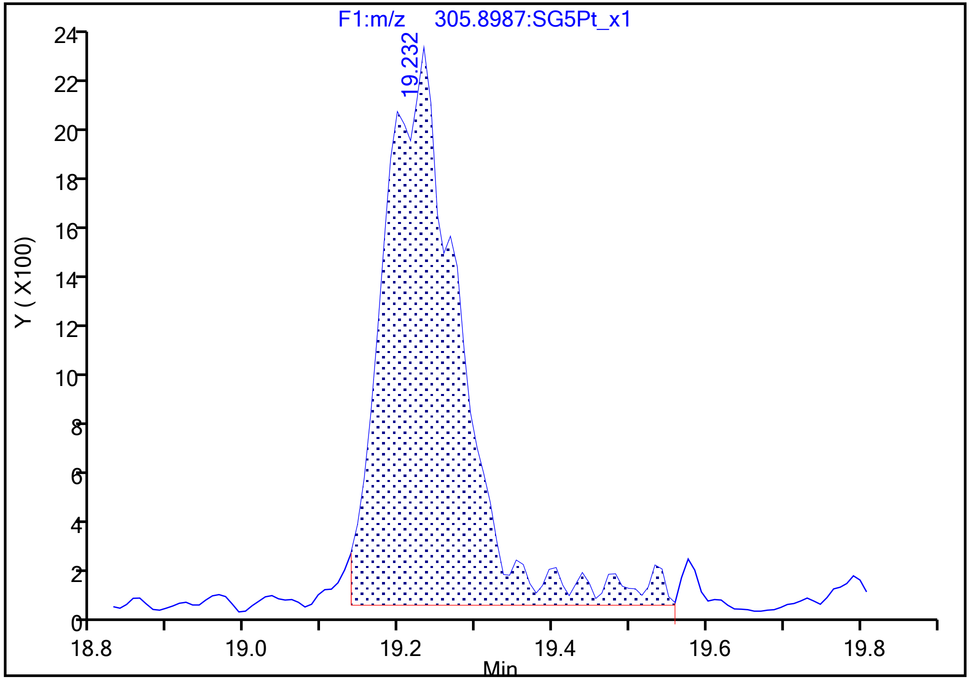

Manual Integration Results

RT:	19.23
Area:	14956
Amount:	0.546146
Amount Units:	pg/ul

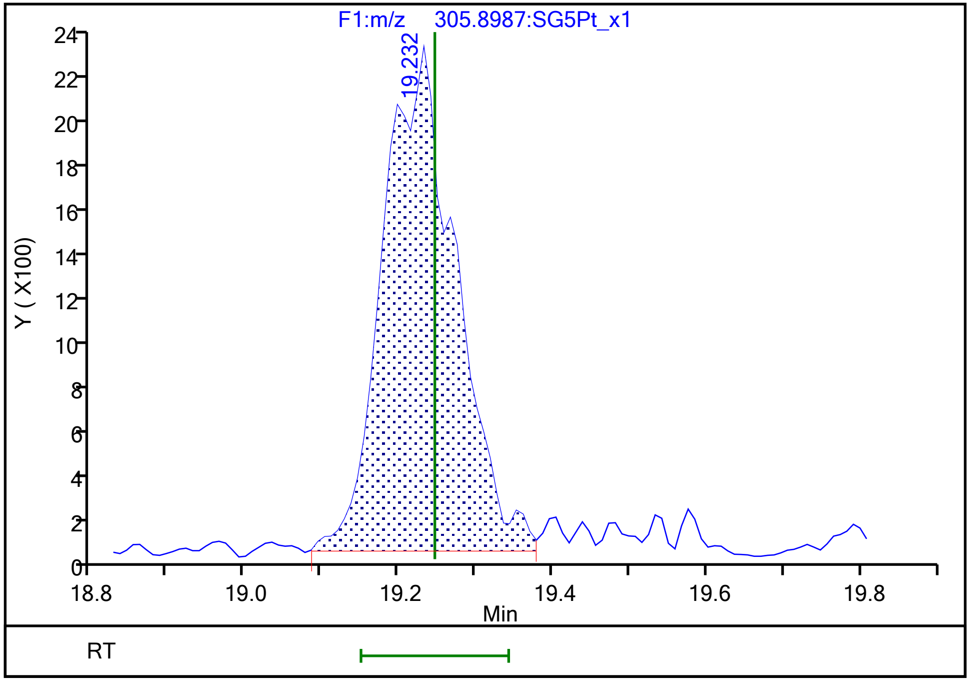

Reviewer: shardaa, 17-Sep-2020 18:30:26

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d				
Injection Date:	17-Sep-2020 13:16:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT: 19.23
Area: 12196
Amount: 0.563268
Amount Units: pg/ul

Processing Integration Results

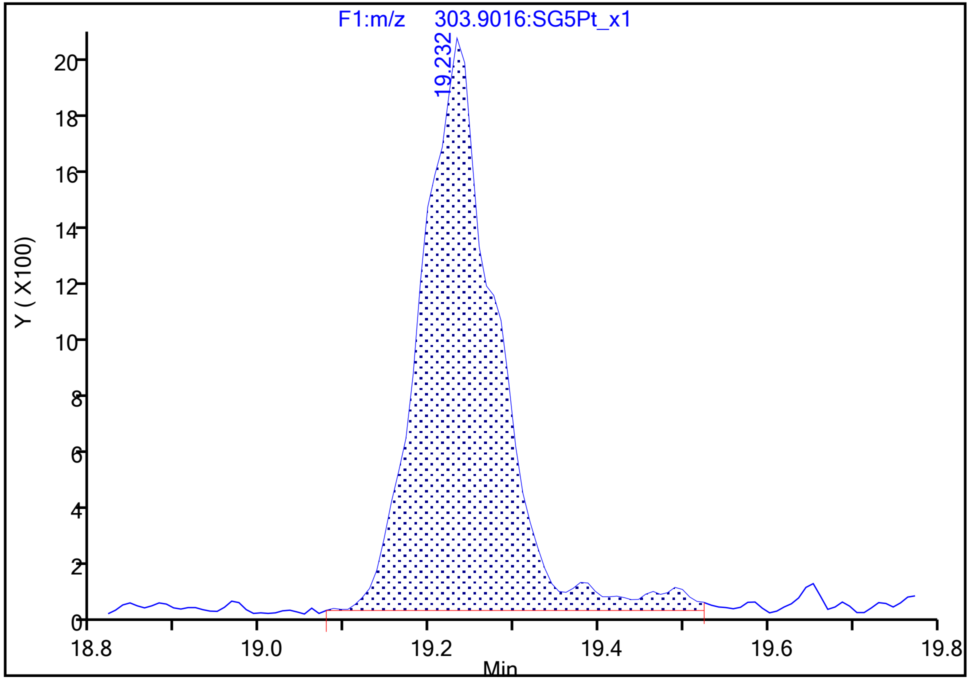

RT: 19.23
Area: 11715
Amount: 0.546146
Amount Units: pg/ul

Manual Integration Results

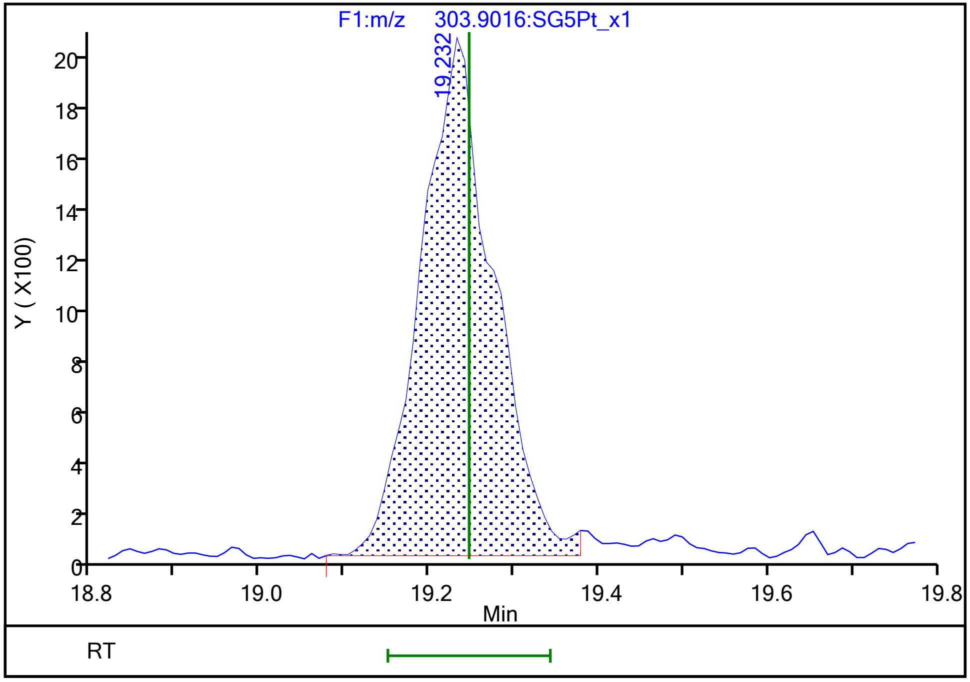

Reviewer: shardaa, 17-Sep-2020 18:30:33

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d				
Injection Date:	17-Sep-2020 13:16:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	20.51
Area:	9265
Amount:	0.574409
Amount Units:	pg/ul

Processing Integration Results

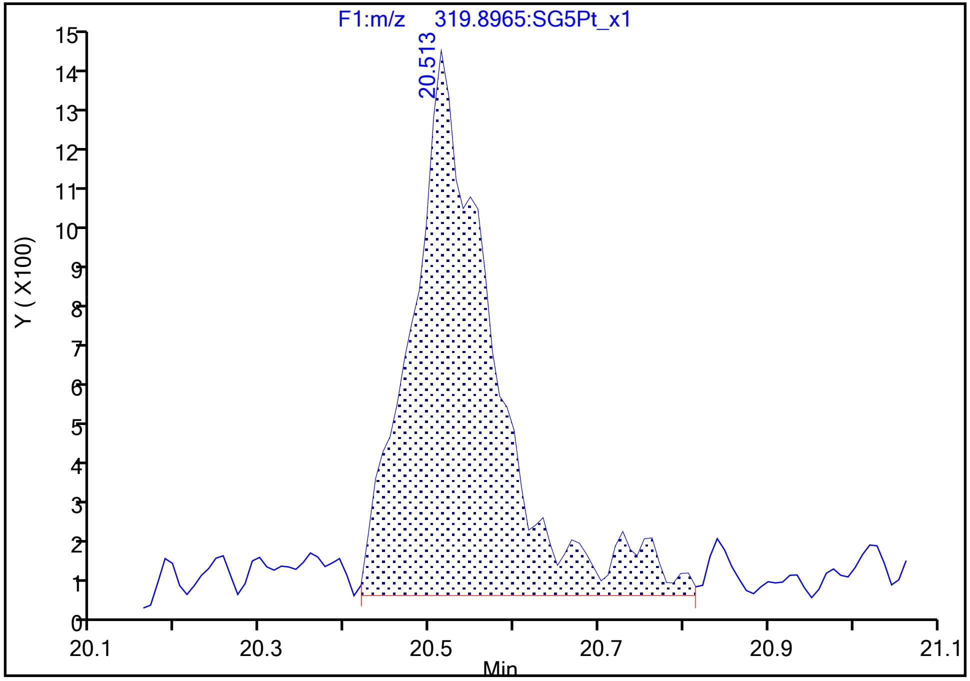

RT:	20.51
Area:	8063
Amount:	0.549104
Amount Units:	pg/ul

Manual Integration Results

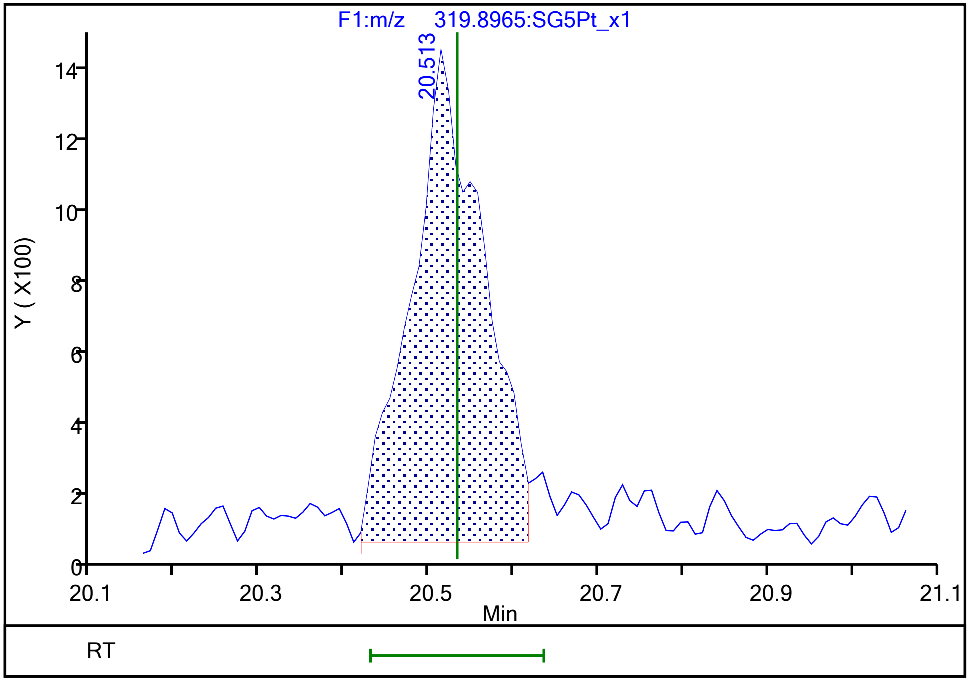

Reviewer: shardaa, 17-Sep-2020 18:29:31

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 18-Sep-2020 10:59:56　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

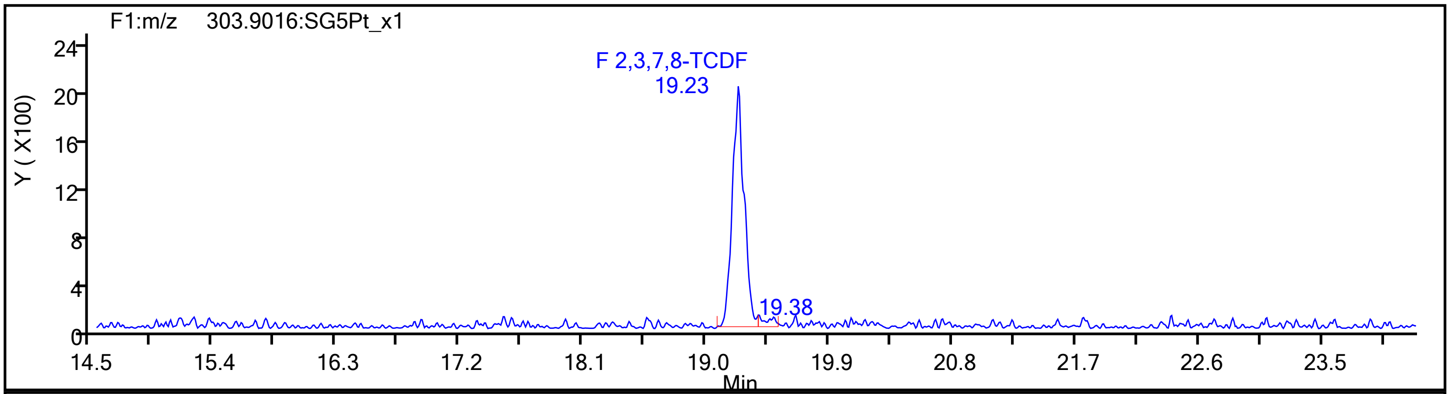

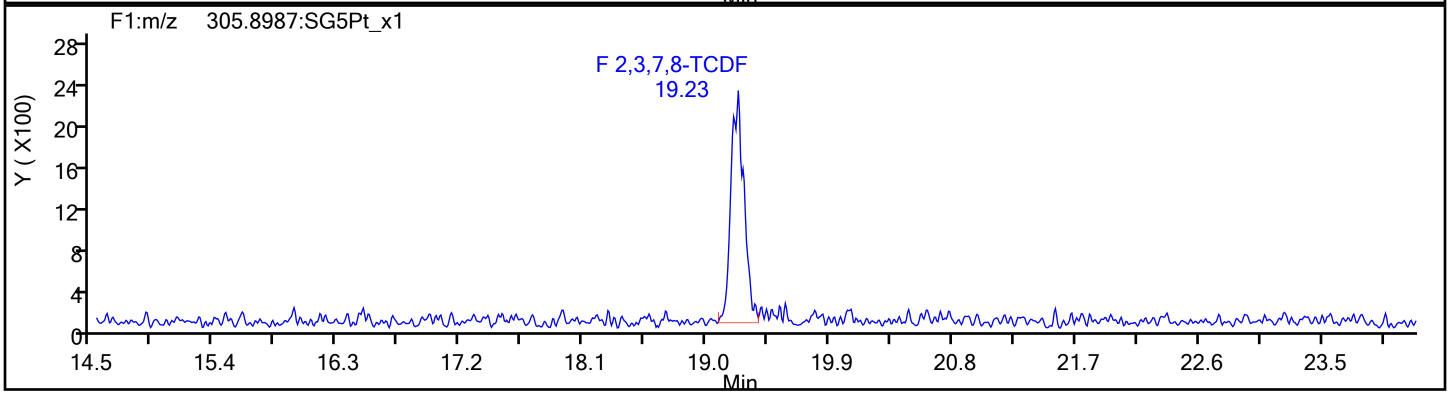

TCDF Standards

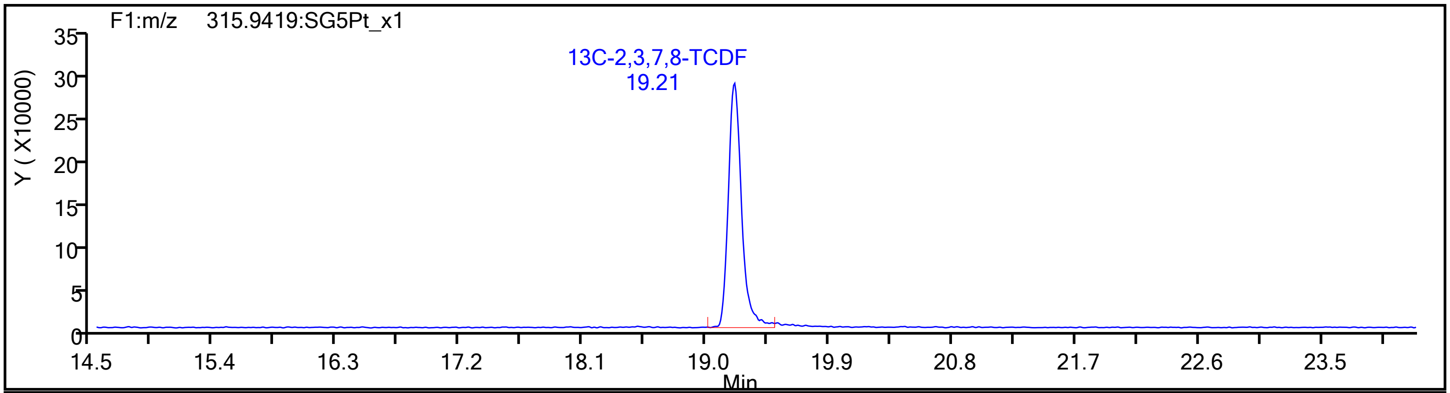

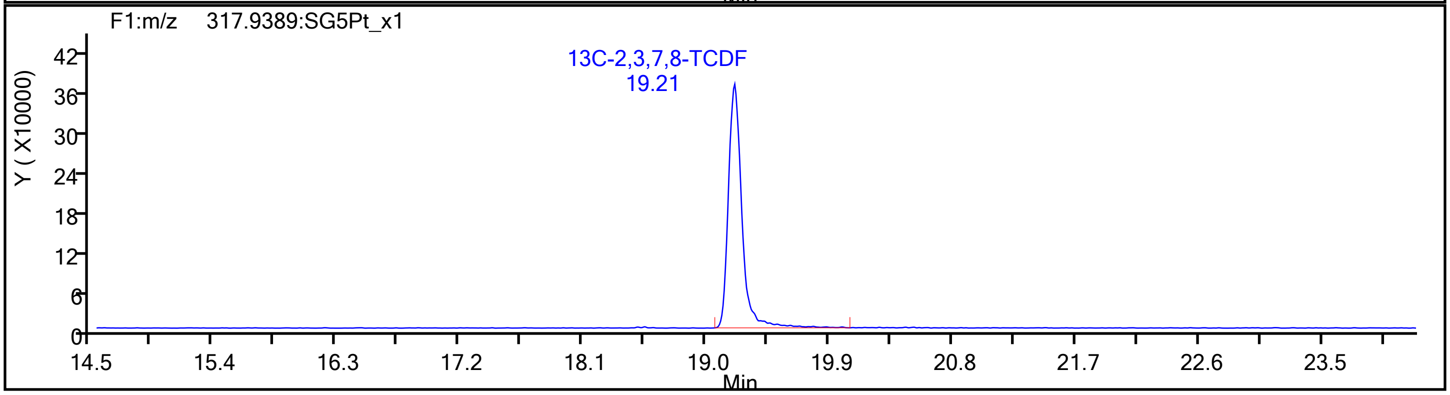

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

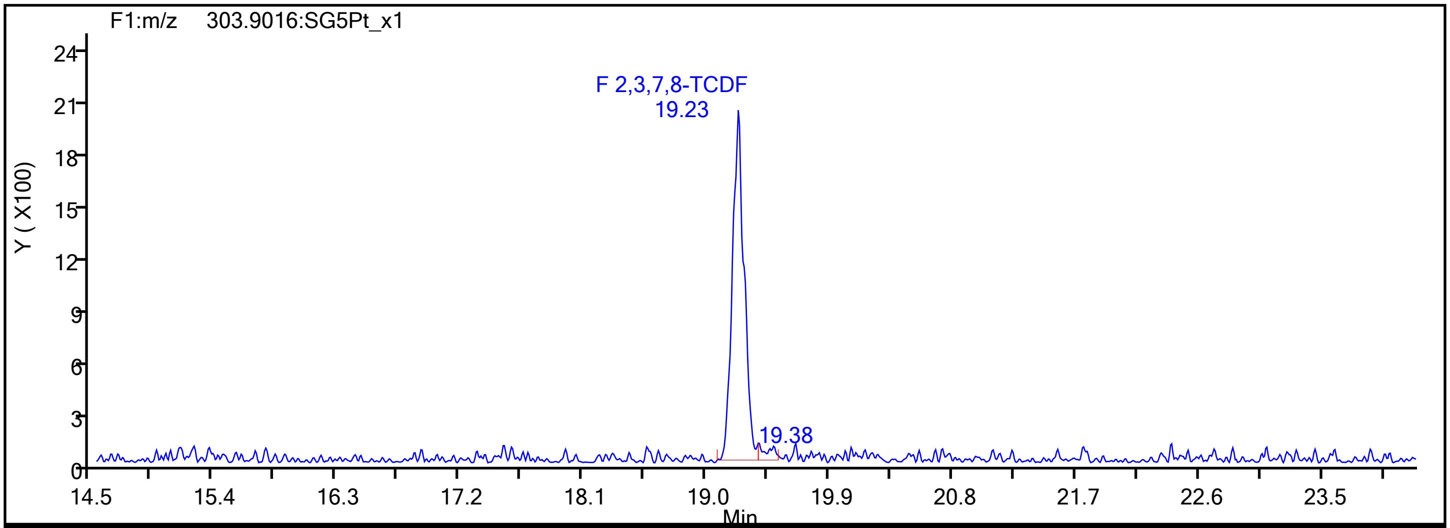

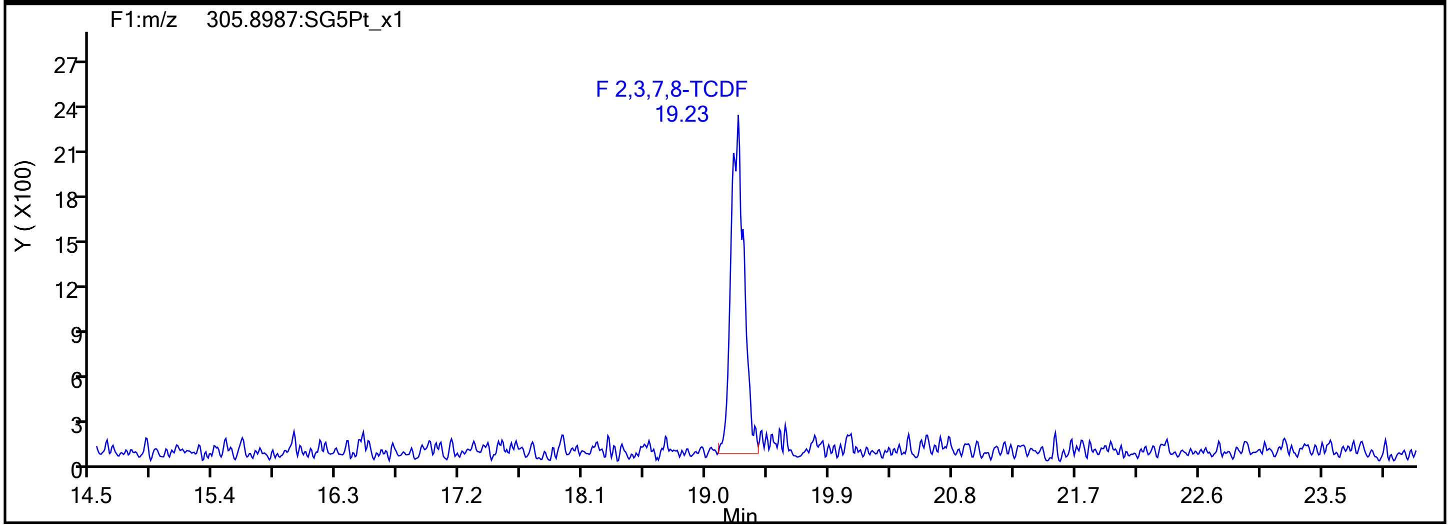

TCDF Interference Mass

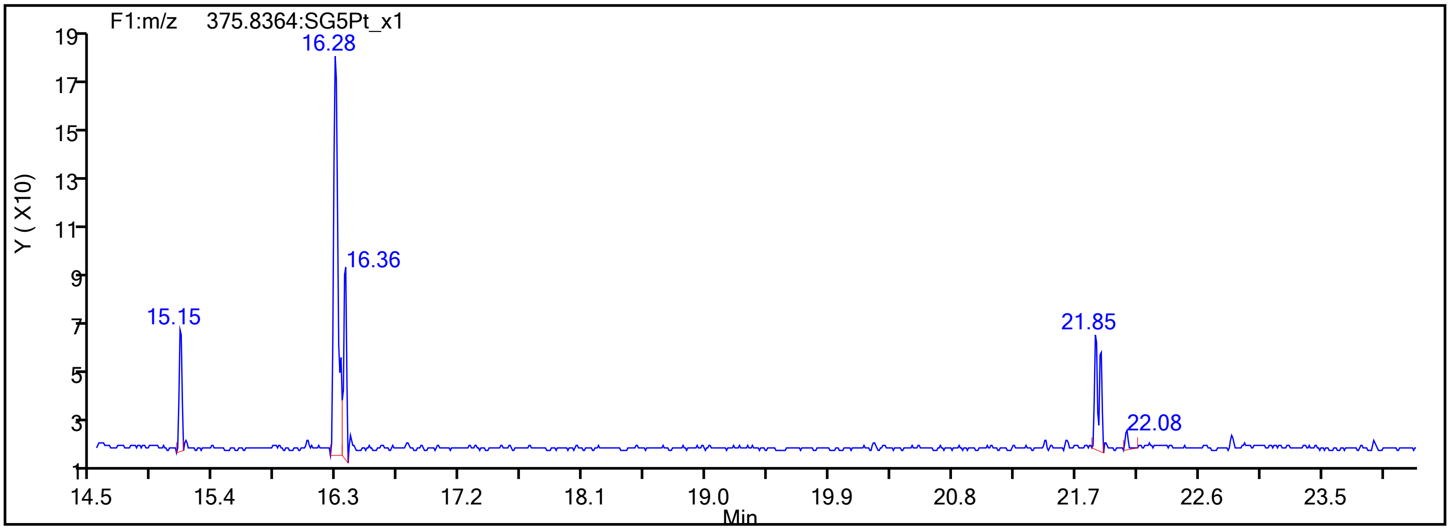

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d
Injection Date: 17-Sep-2020 13:16:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

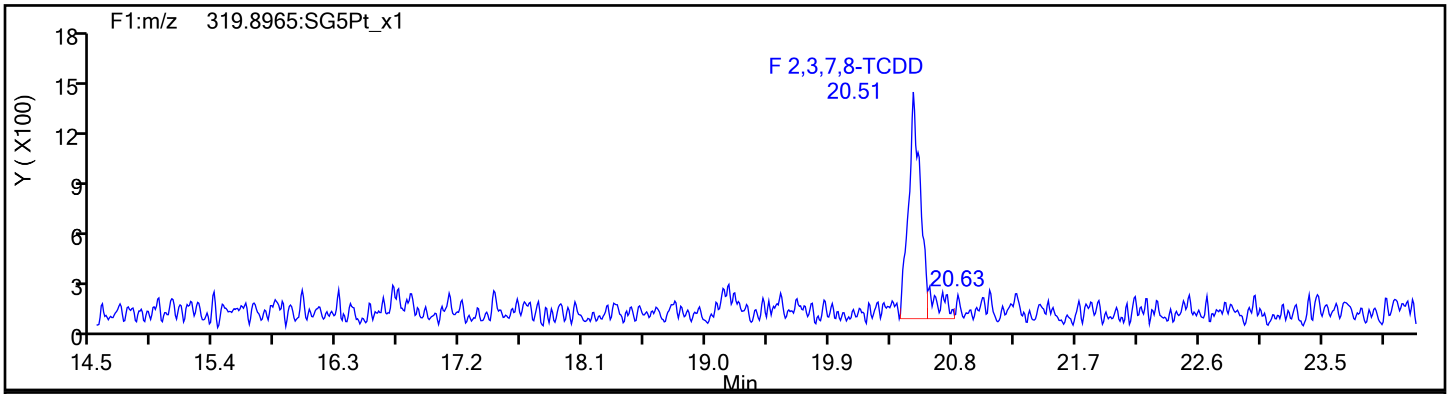

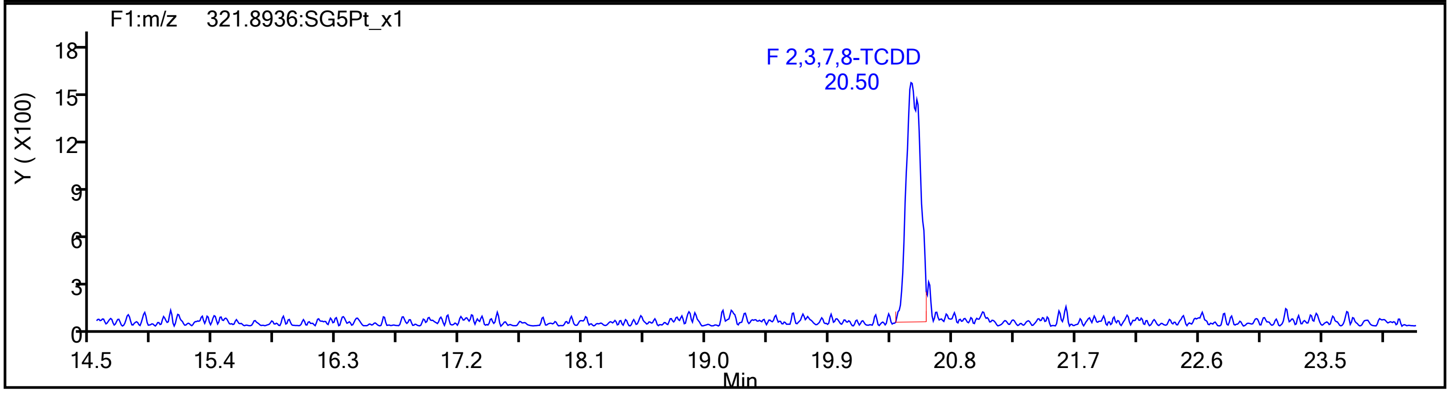

TCDD Standards

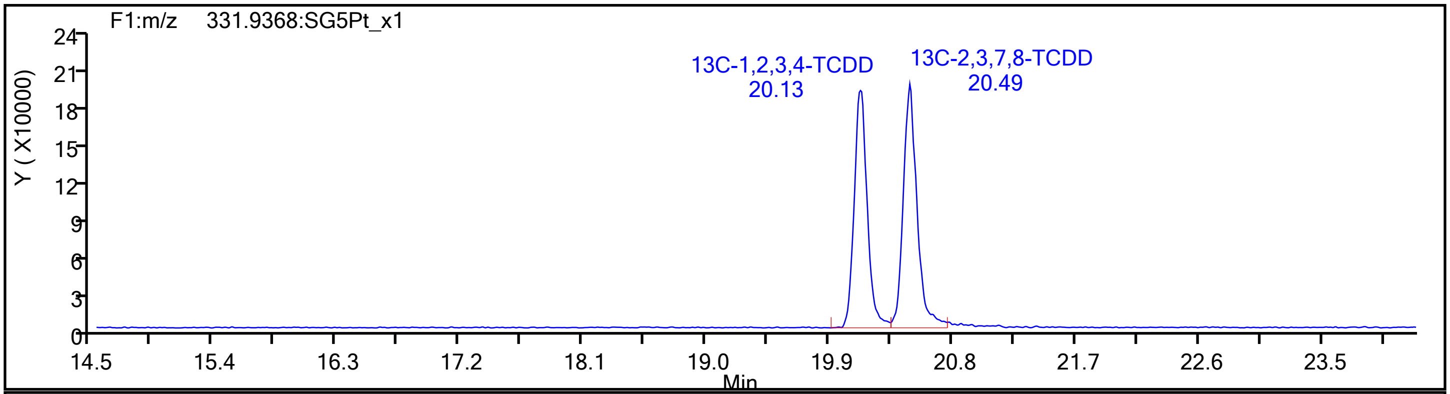

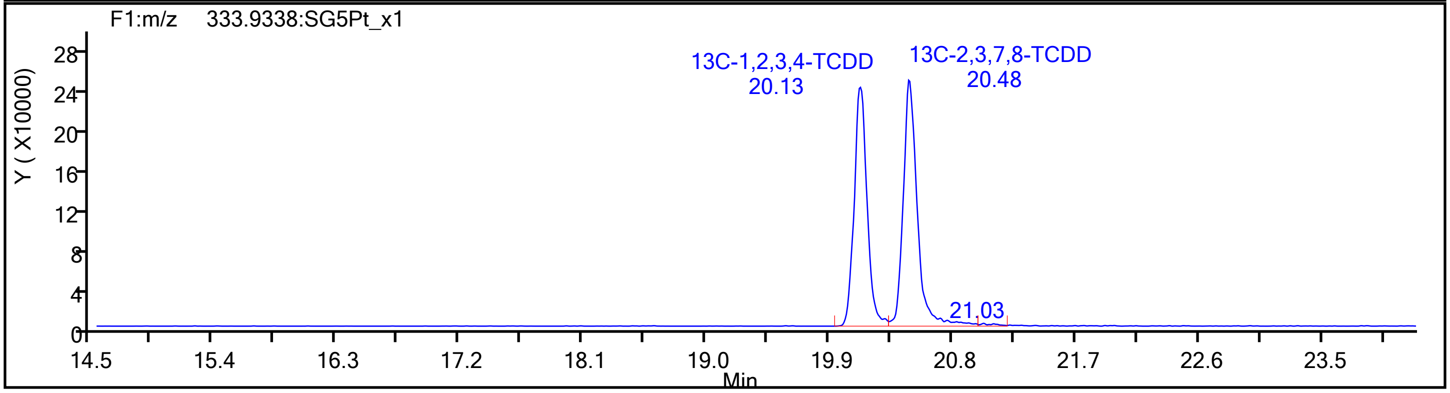

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

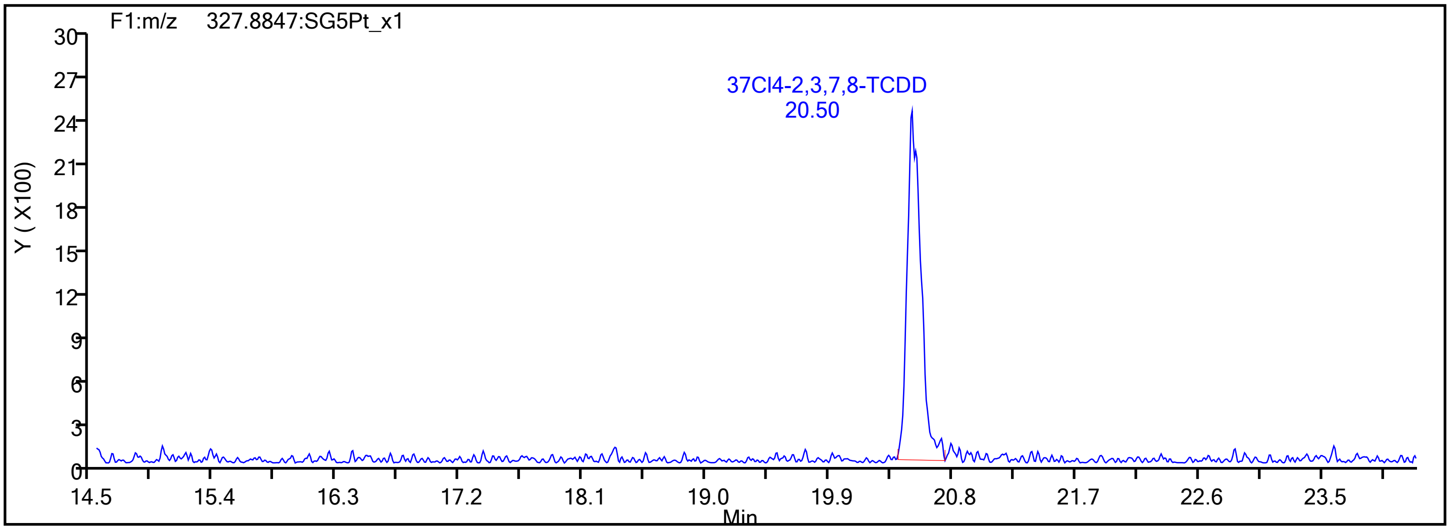

37Cl4-TCDD Standards

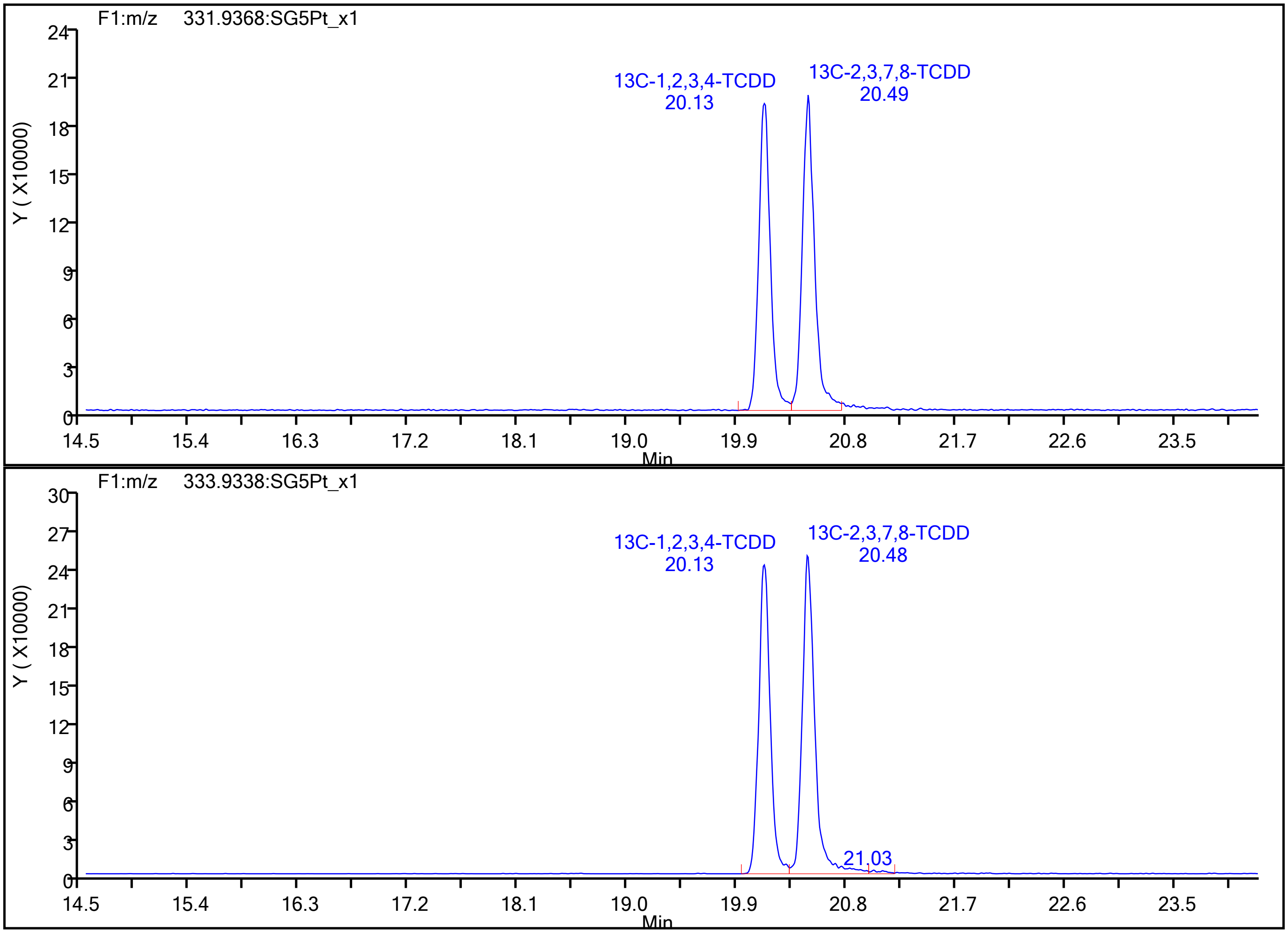

Report Date: 18-Sep-2020 10:59:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d

Injection Date: 17-Sep-2020 13:16:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255
Sample Line#: 3

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

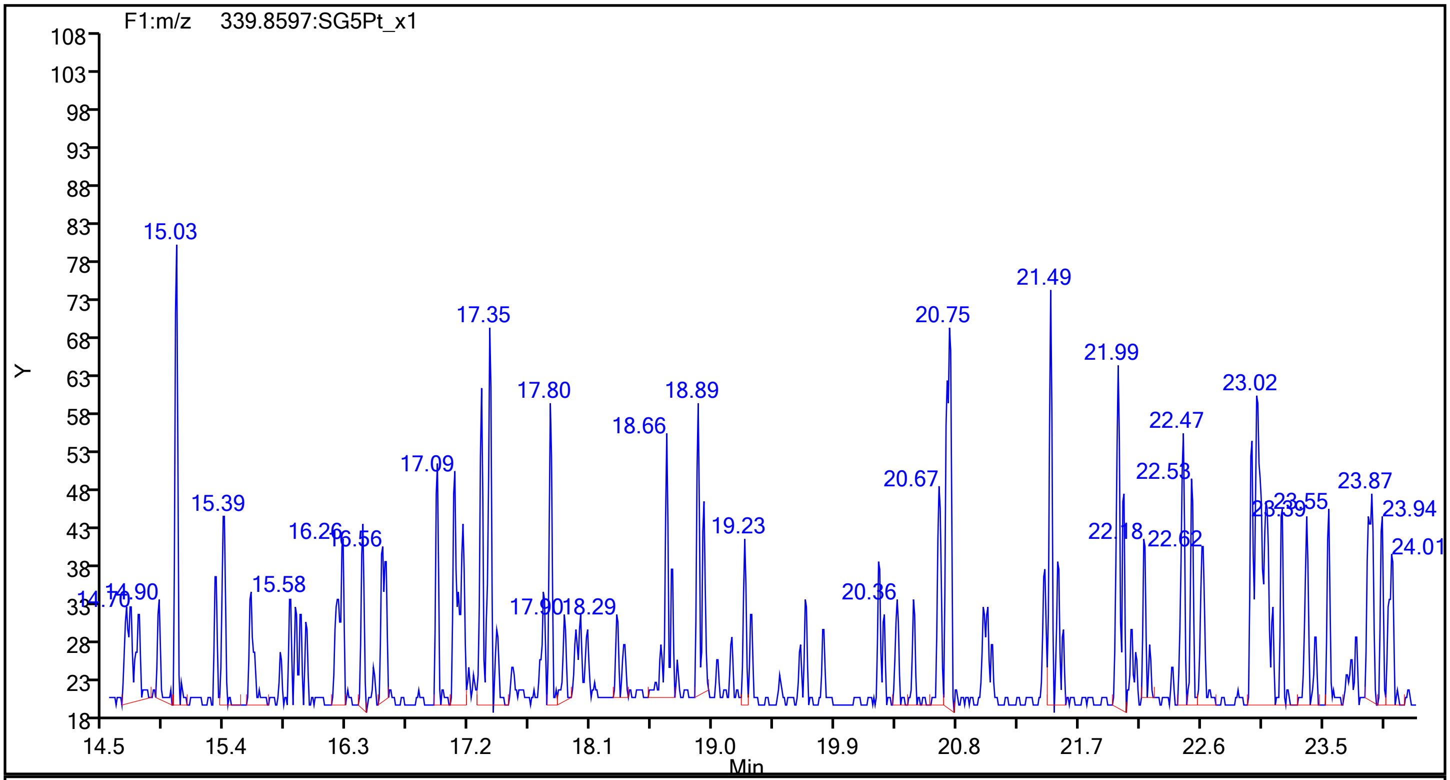

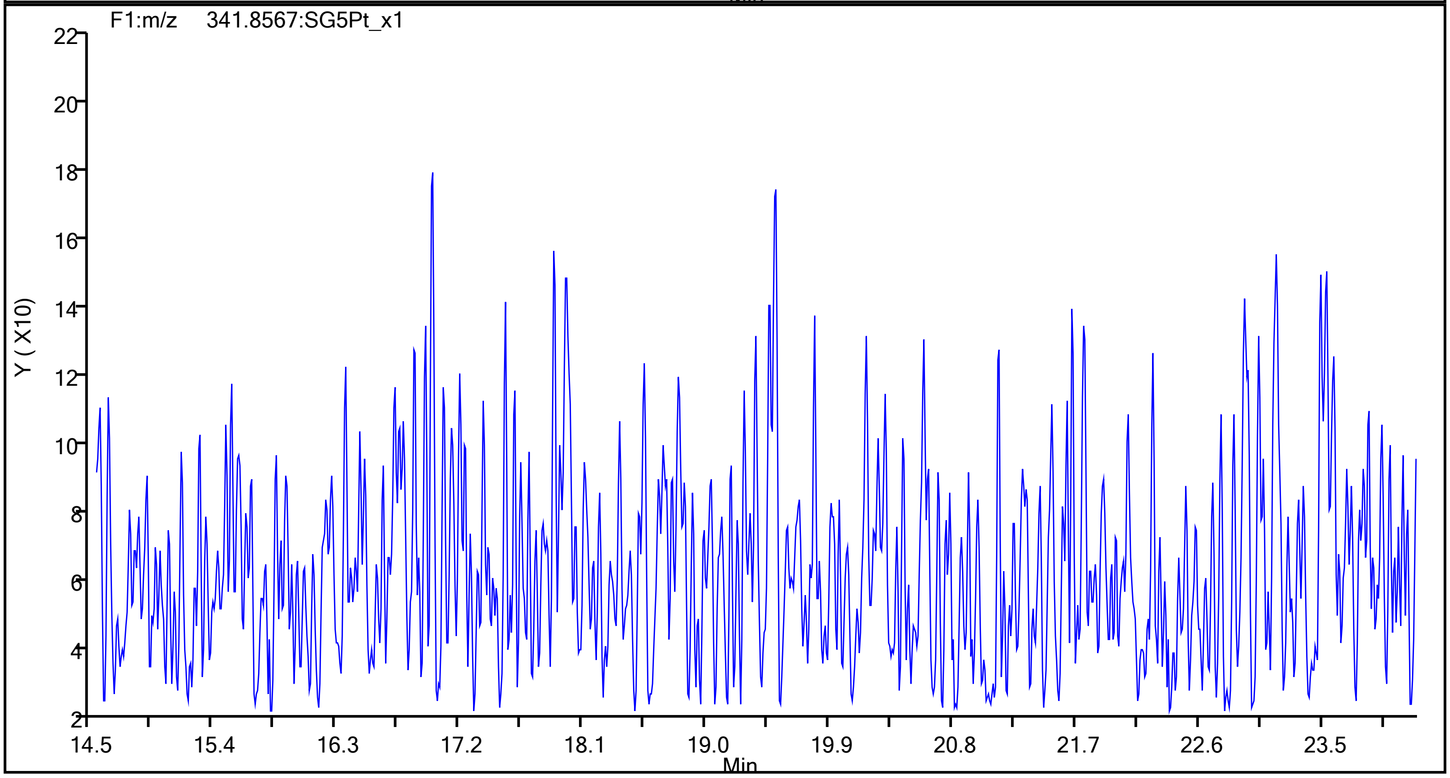

Report Date: 18-Sep-2020 10:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
Injection Date:	17-Sep-2020 13:16:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

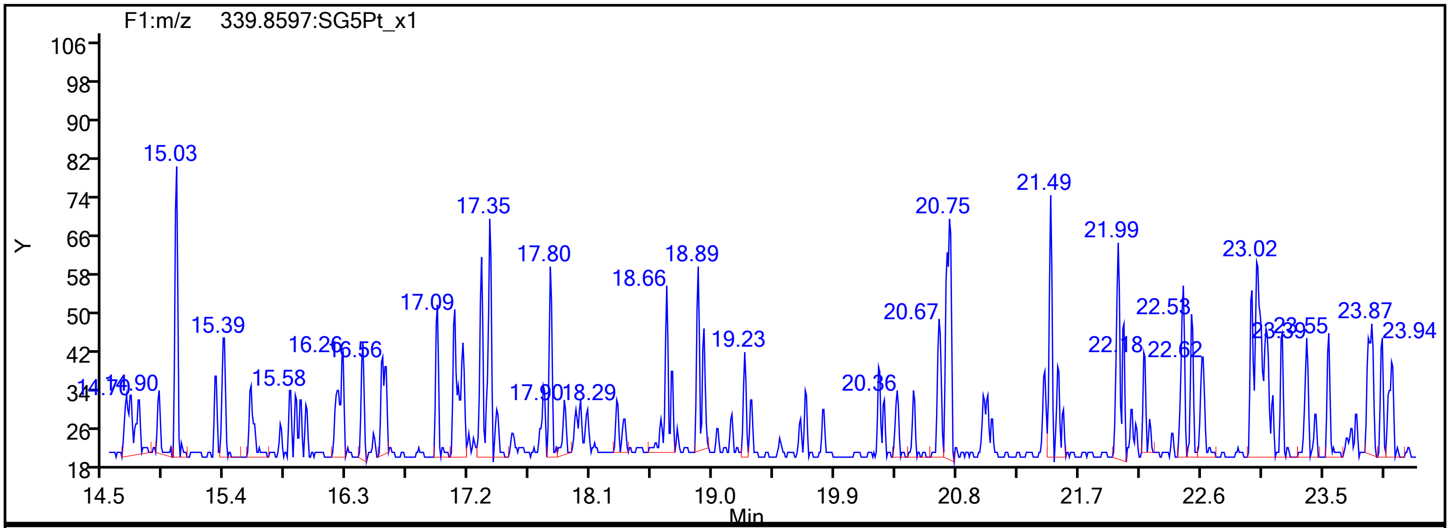

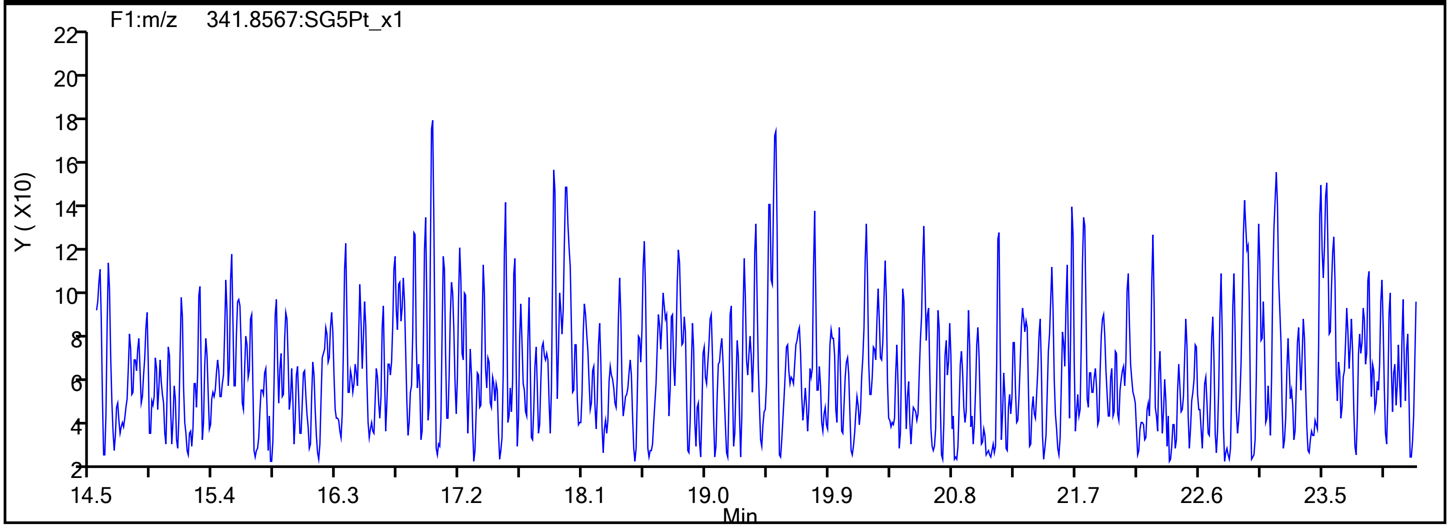

F1 PeCDFs Interference Mass

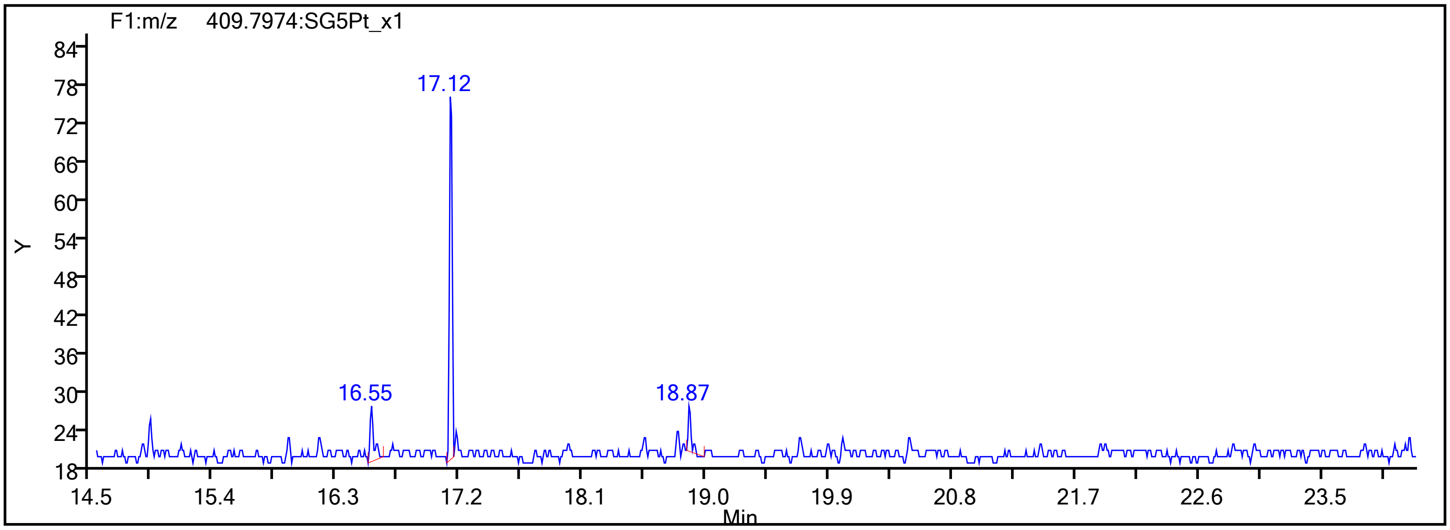

Report Date: 18-Sep-2020 10:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d
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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

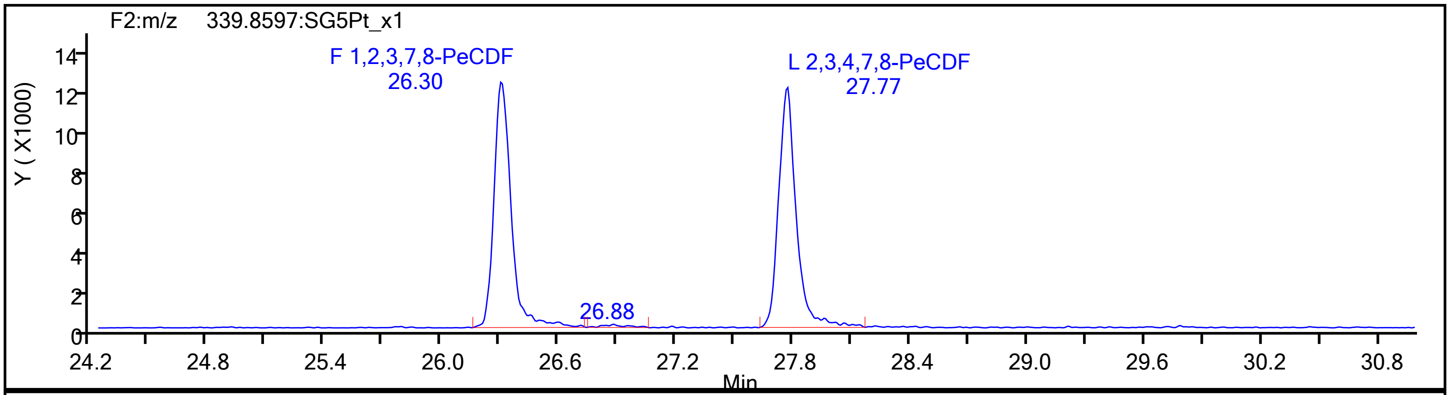

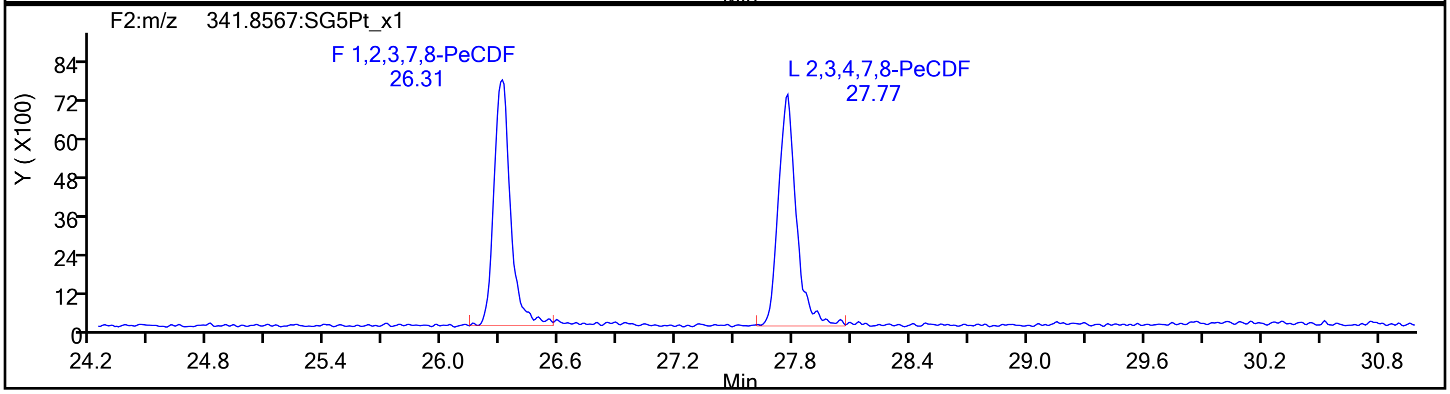

PeCDF Standards

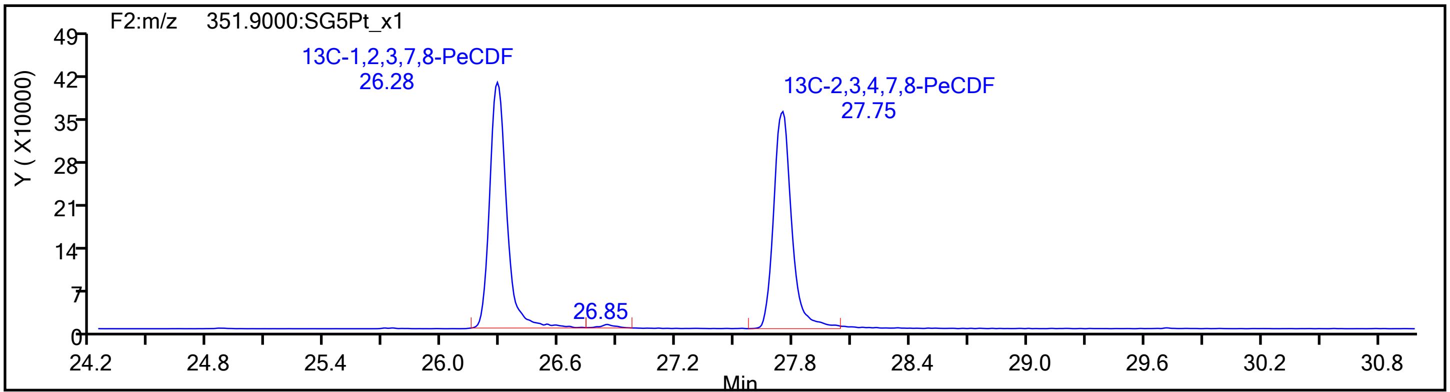

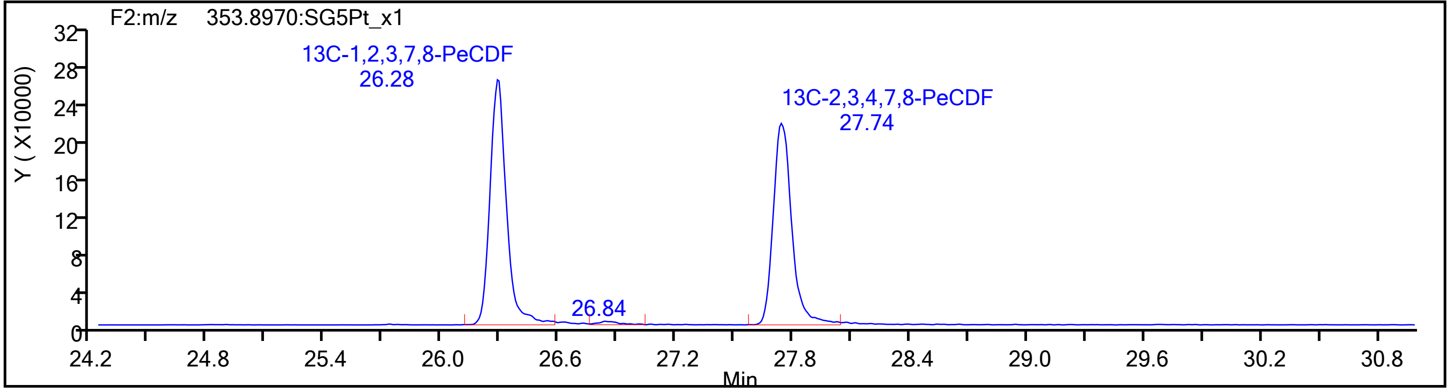

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Eurofins TestAmerica, Sacramento

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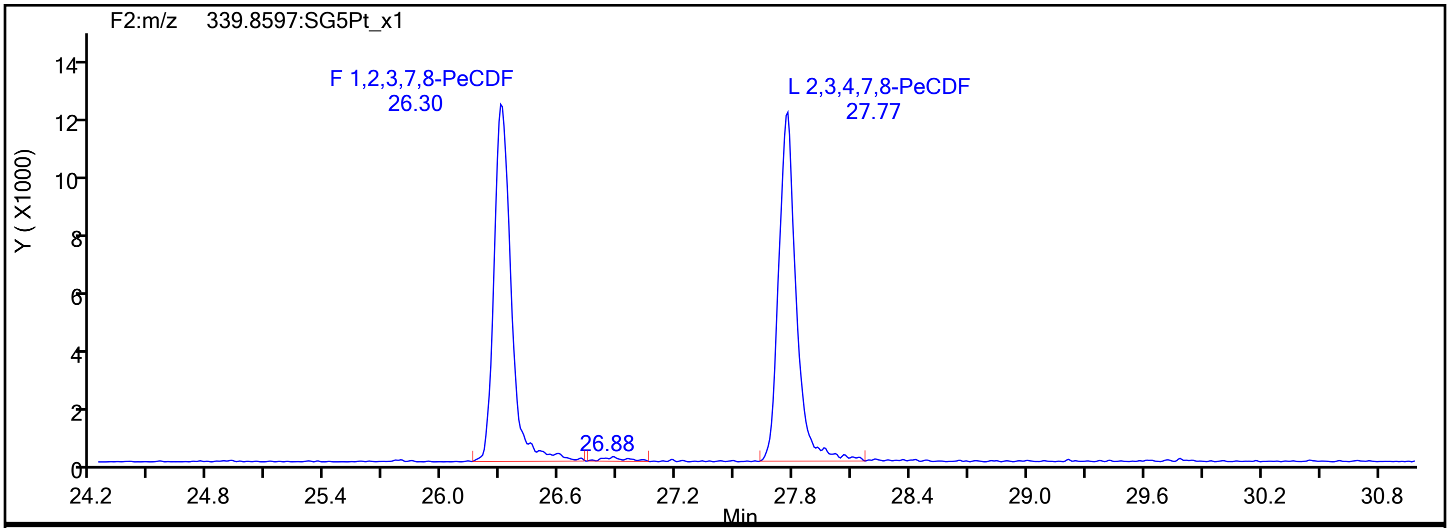

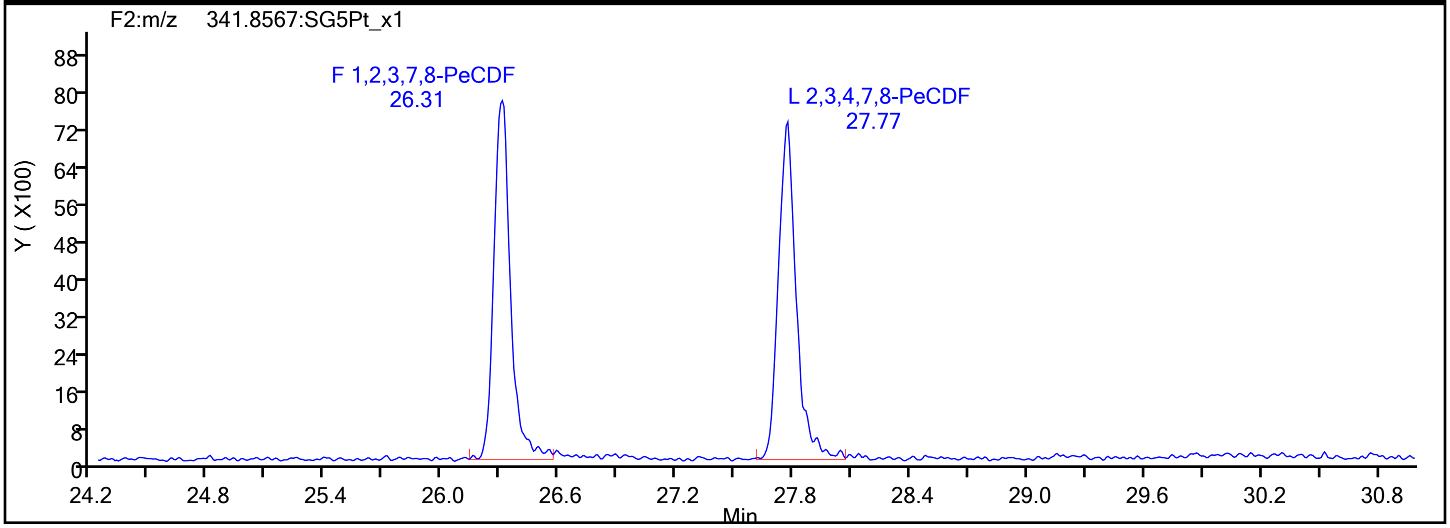

PeCDF Interference Mass

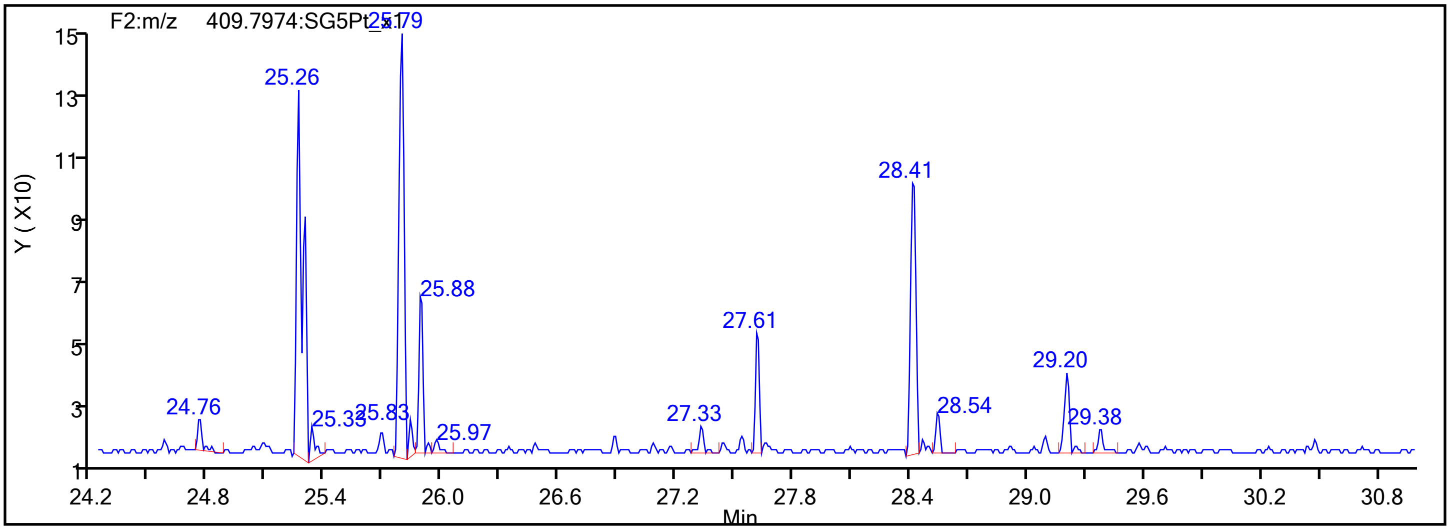

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Eurofins TestAmerica, Sacramento

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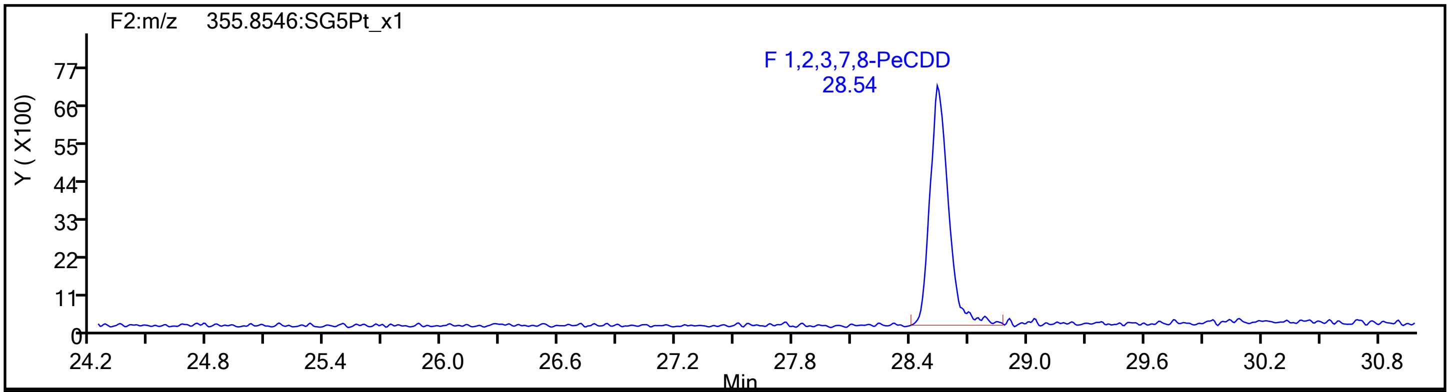

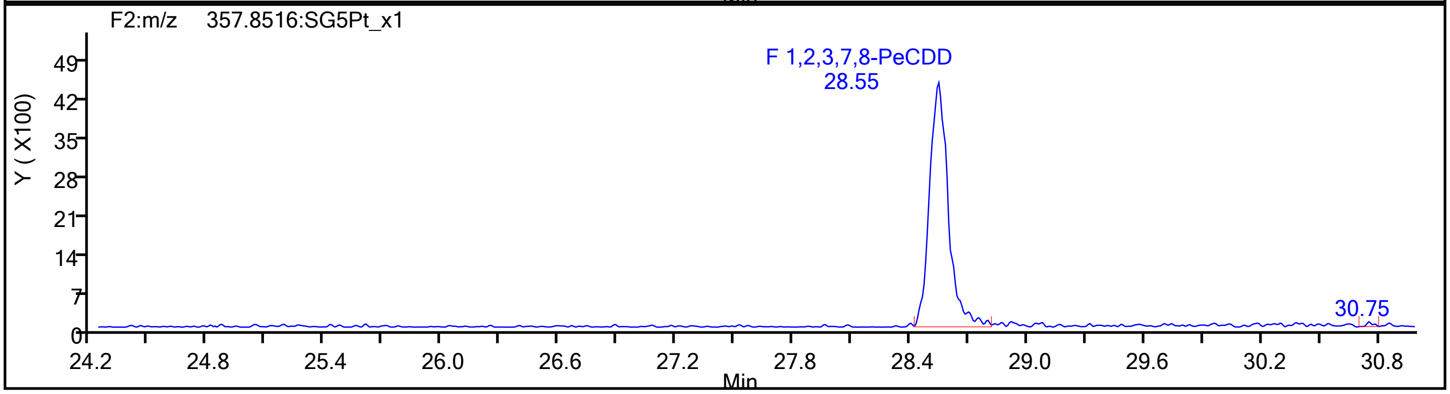

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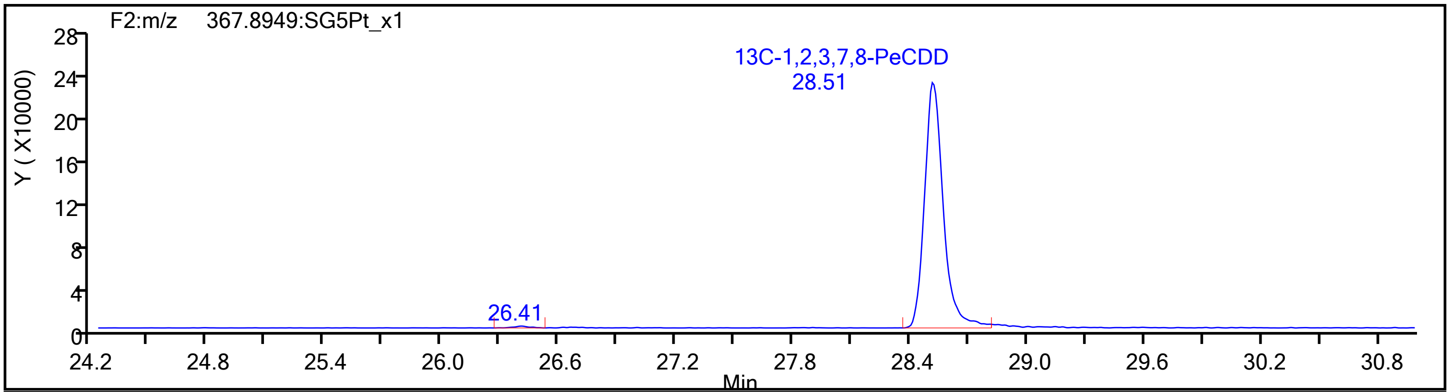

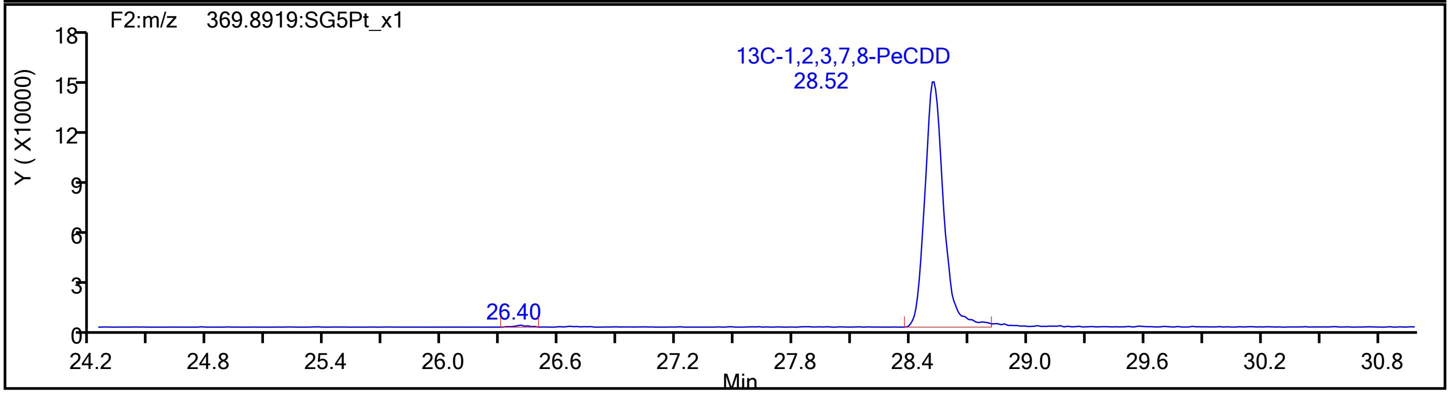

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HxCDF

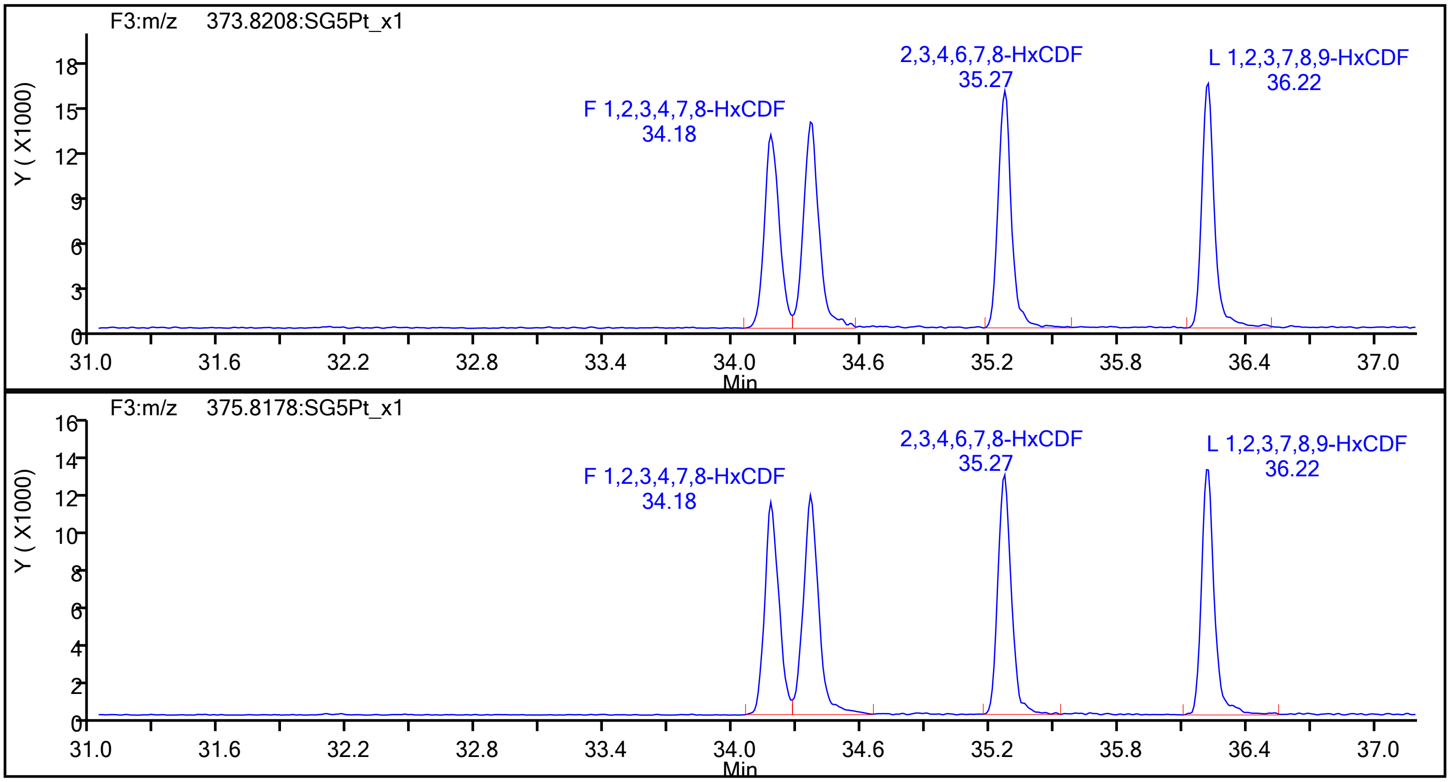

HxCDF Standards

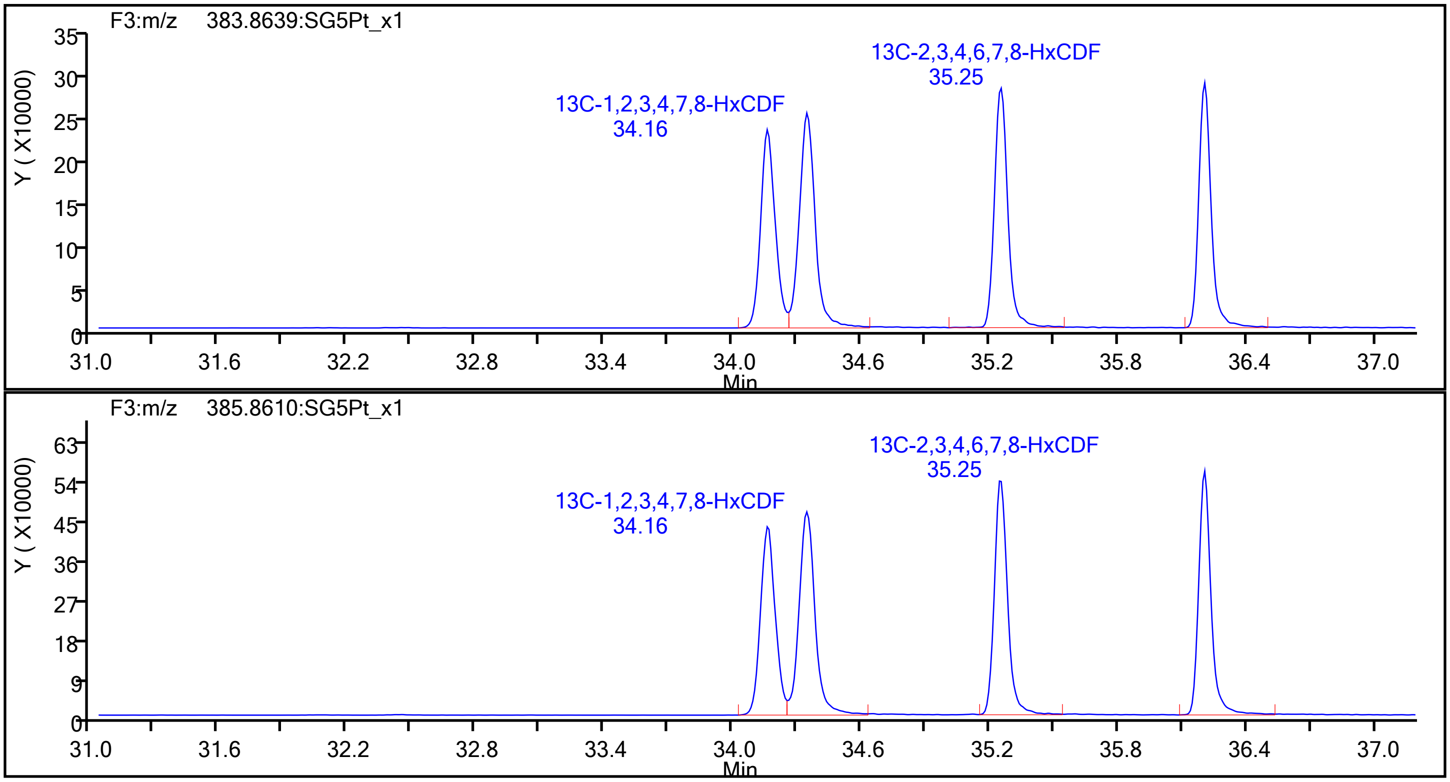

Eurofins TestAmerica, Sacramento

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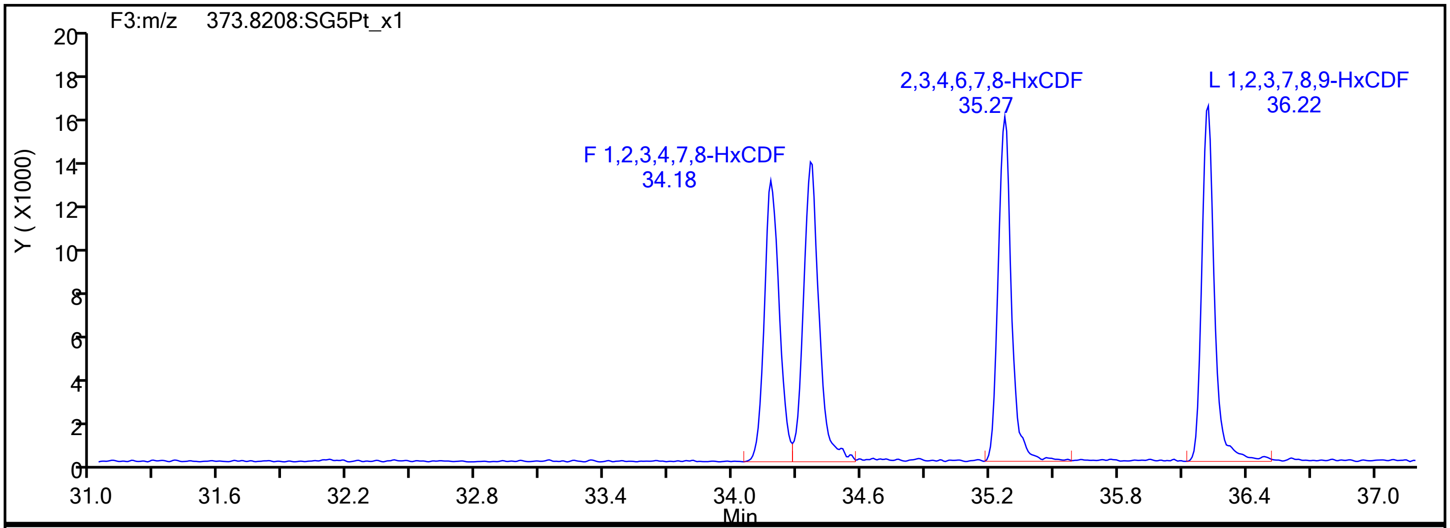

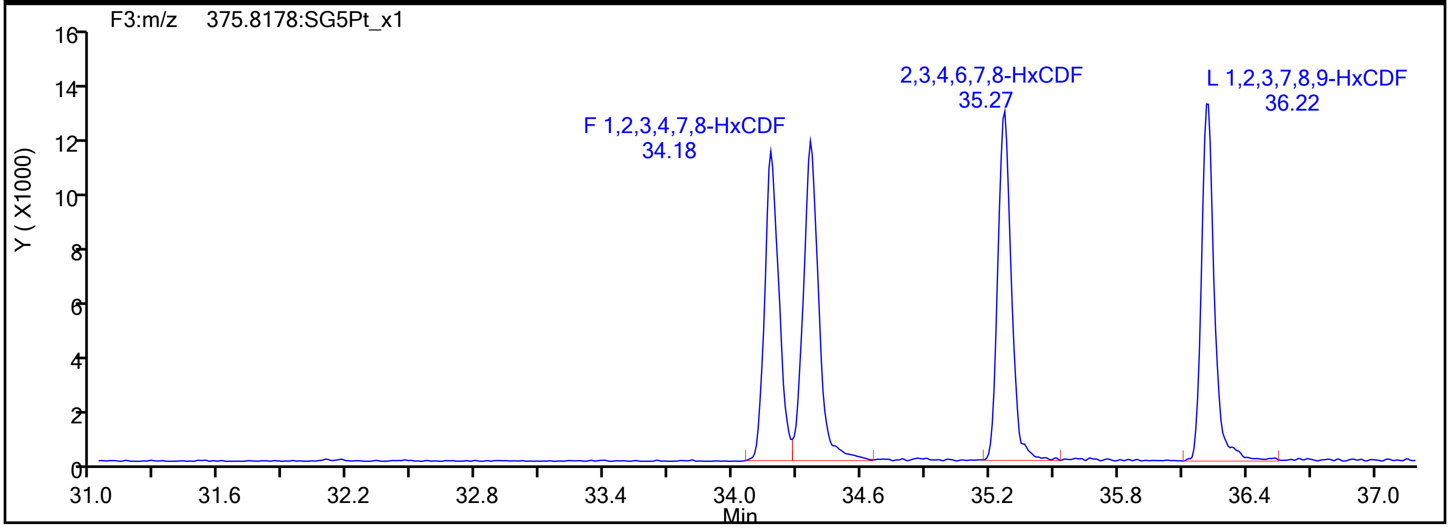

HxCDF Interference Mass

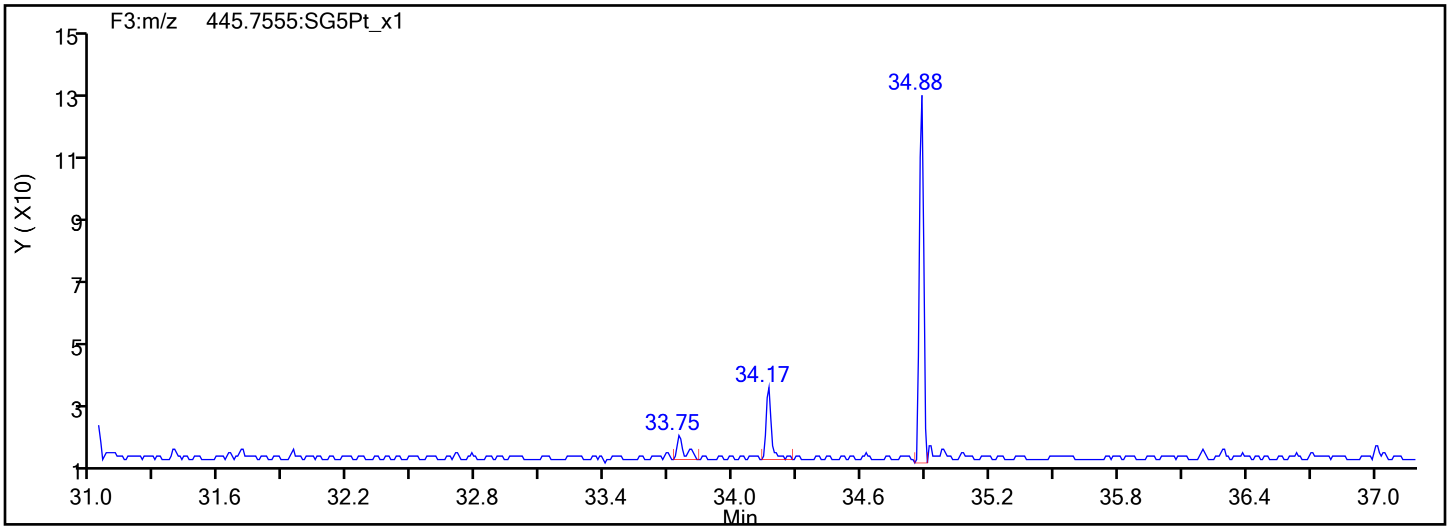

Report Date: 18-Sep-2020 10:59:57　　　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDD

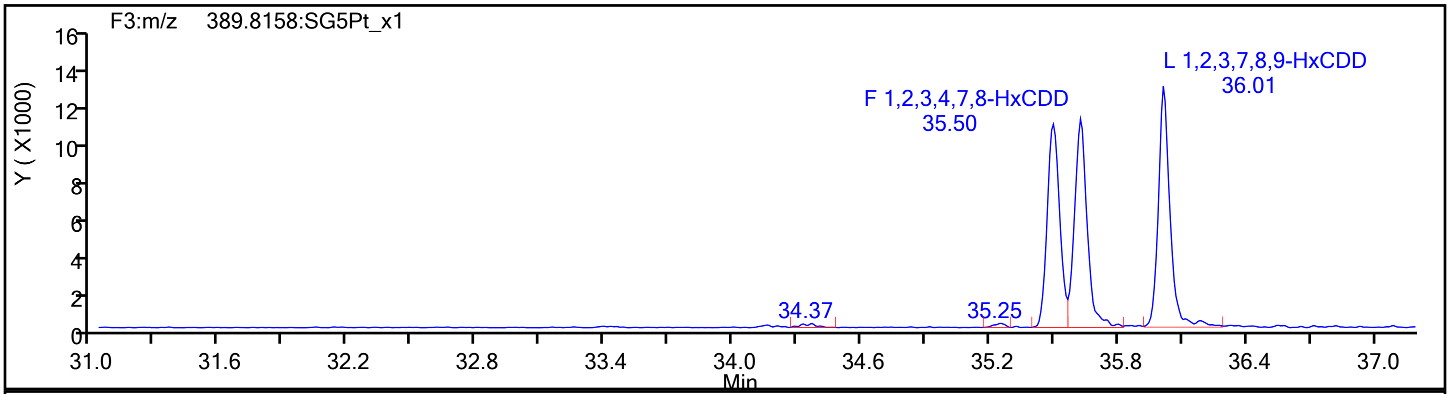

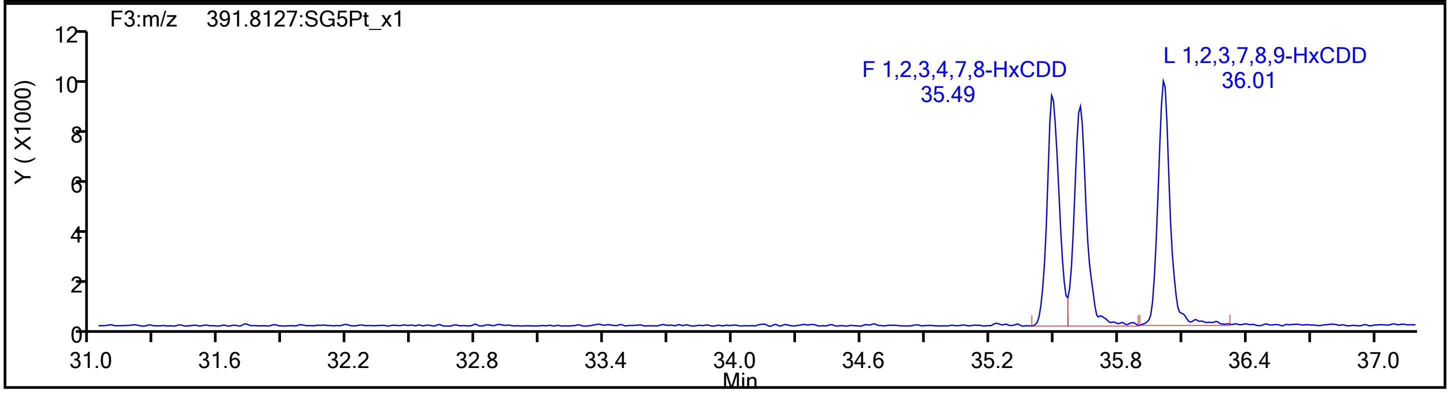

HxCDD Standards

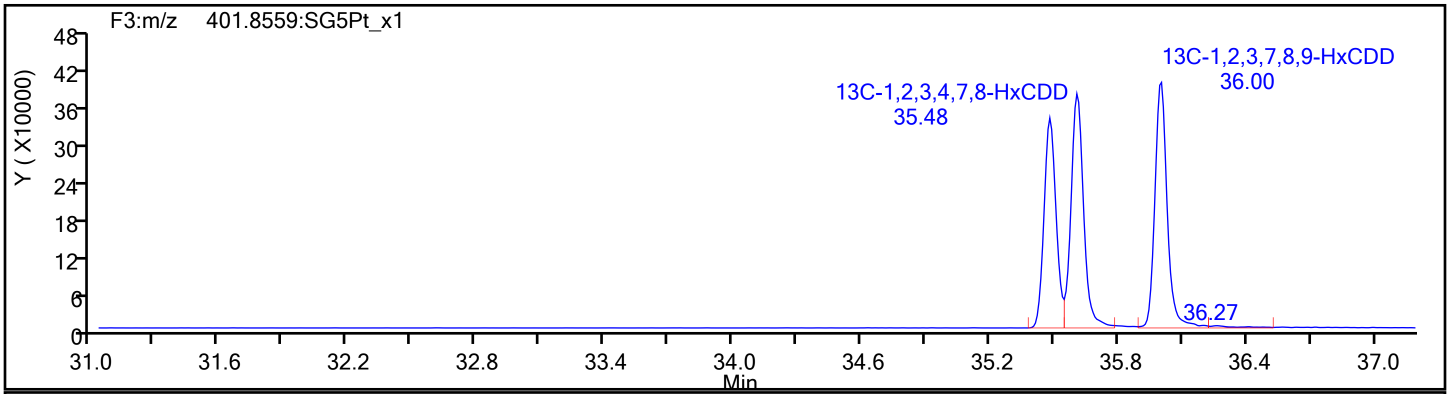

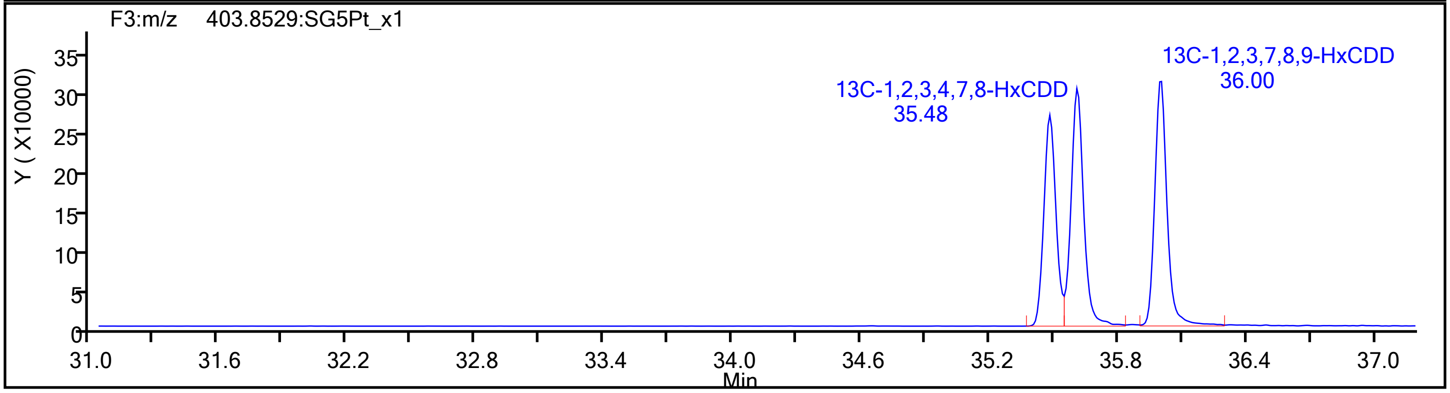

Report Date: 18-Sep-2020 10:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_4.d

Injection Date: 17-Sep-2020 13:16:00 Injection Vol: 1.0 ul

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Client ID:

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HpCDF

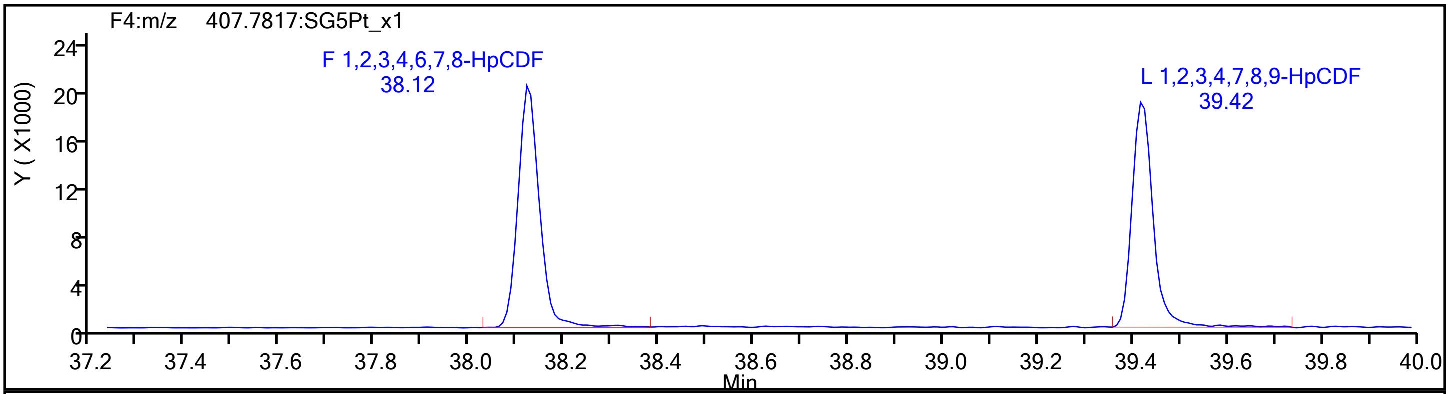

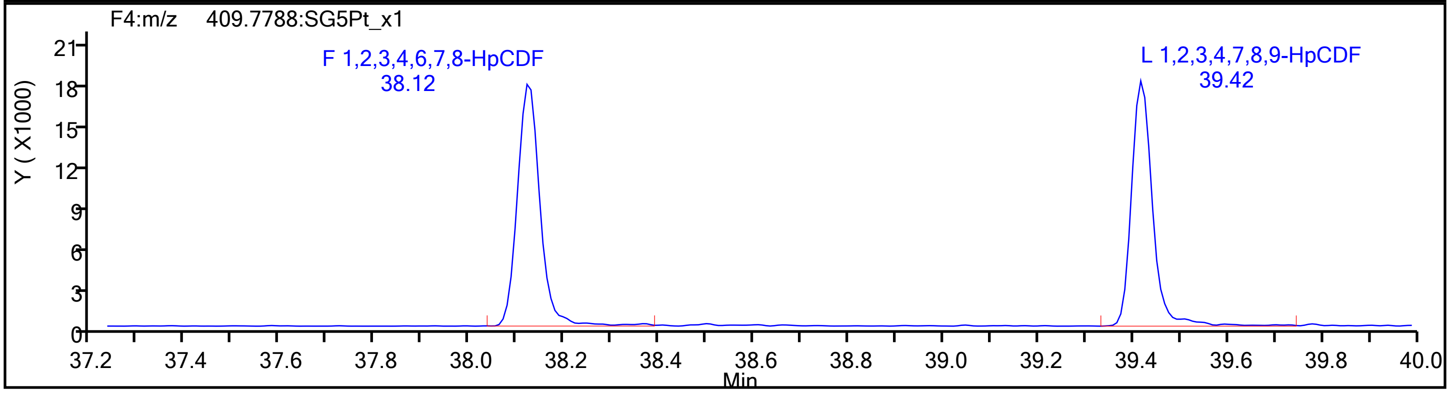

HpCDF Standards

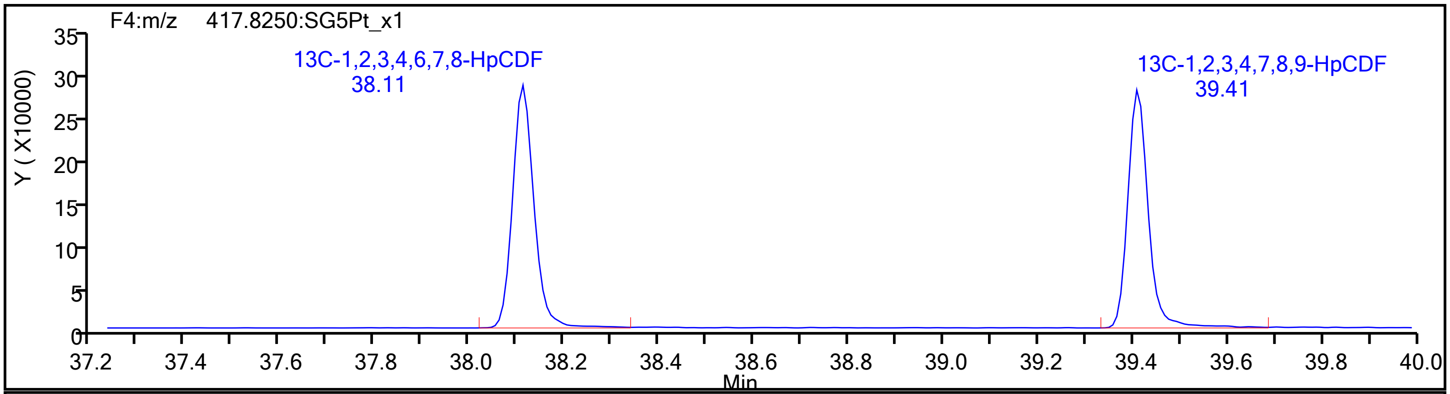

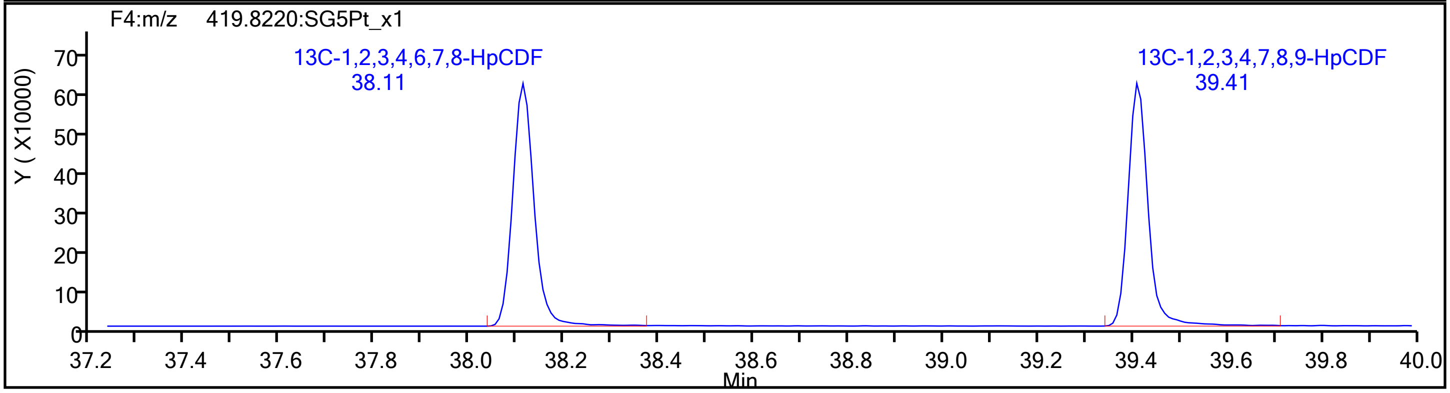

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Eurofins TestAmerica, Sacramento

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HpCDF

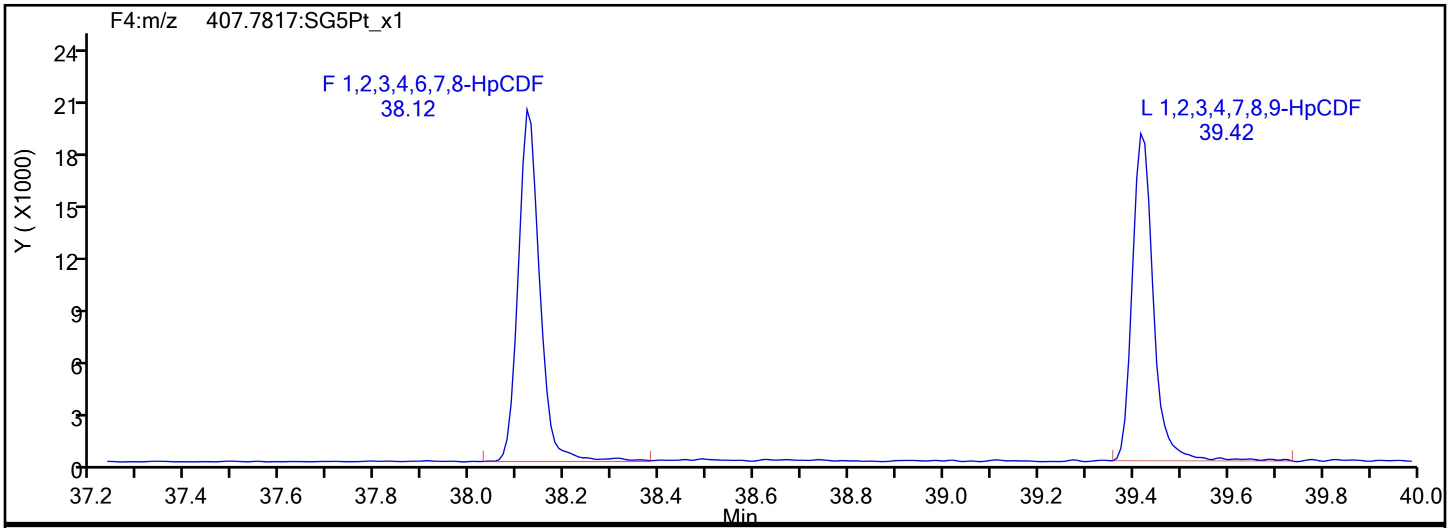

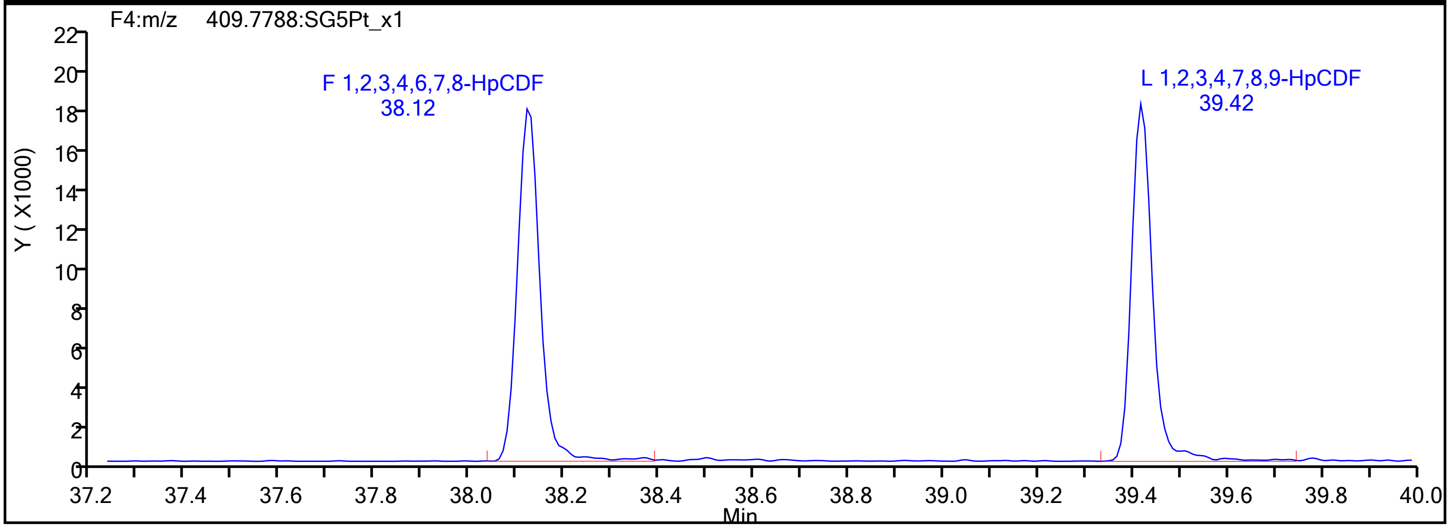

HpCDF Interference Mass

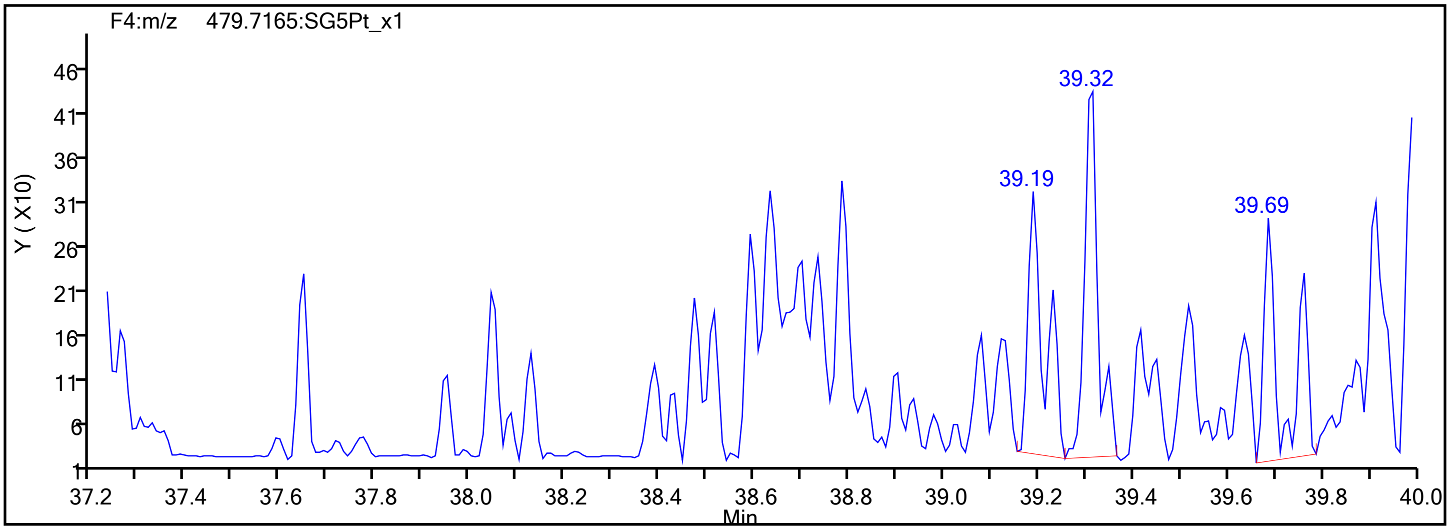

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Eurofins TestAmerica, Sacramento

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HpCDD

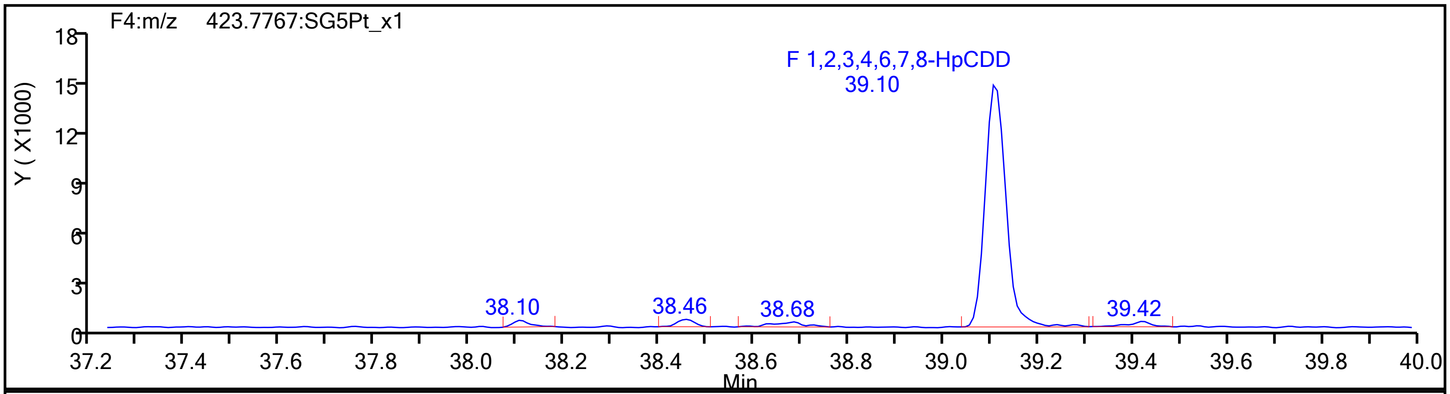

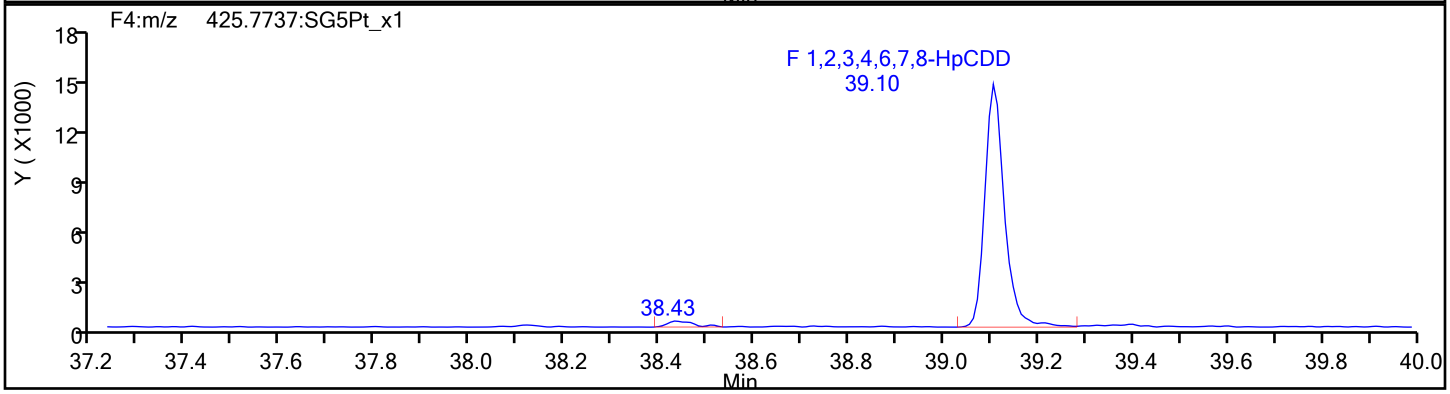

HpCDD Standards

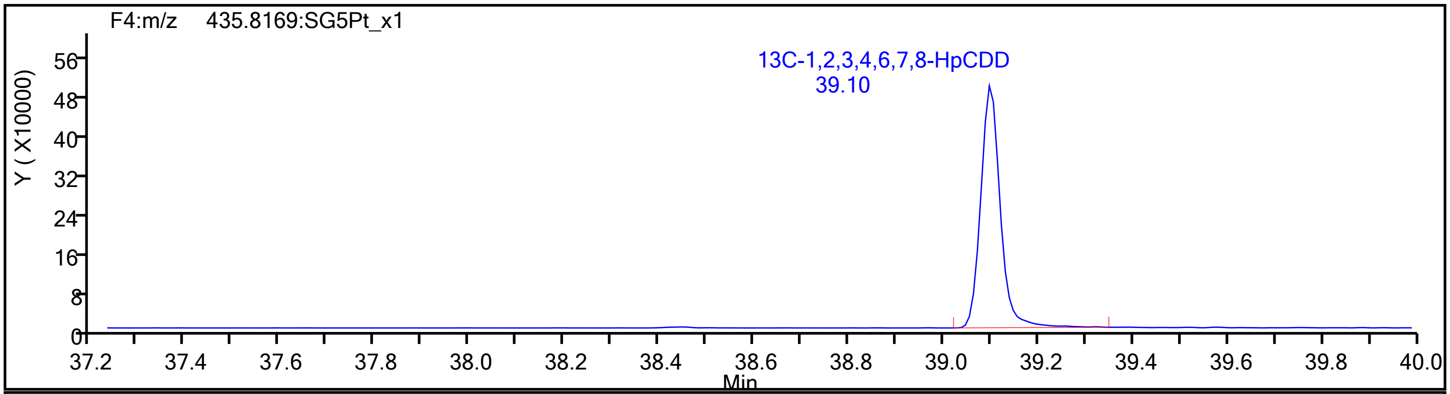

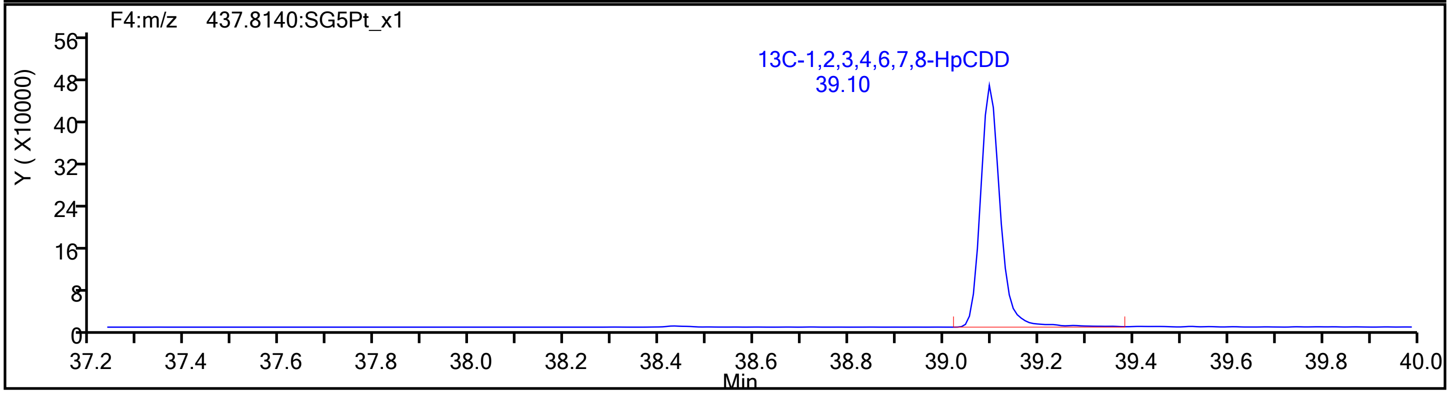

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Eurofins TestAmerica, Sacramento

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Client ID:			
Worklist#:	413255	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

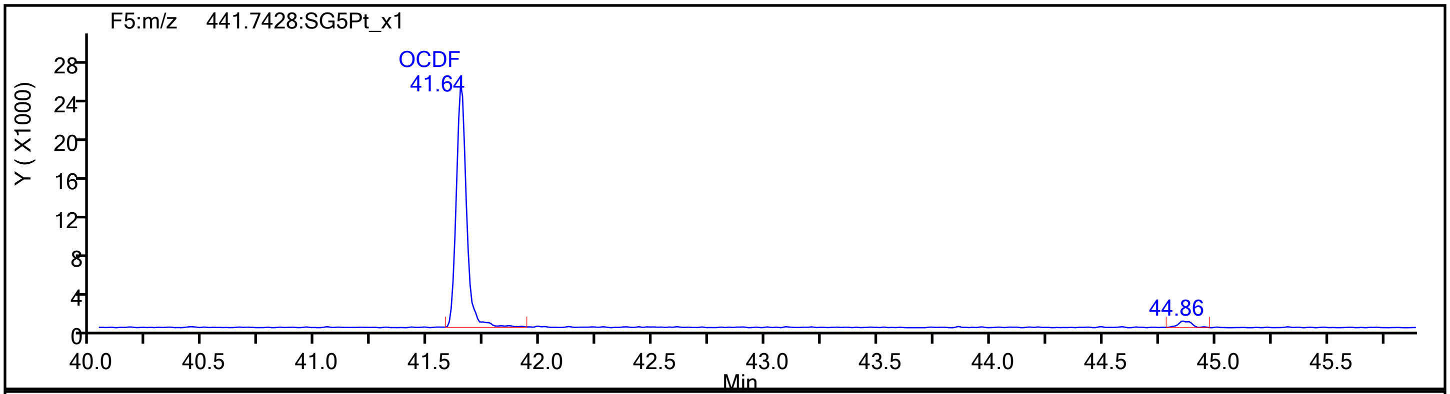

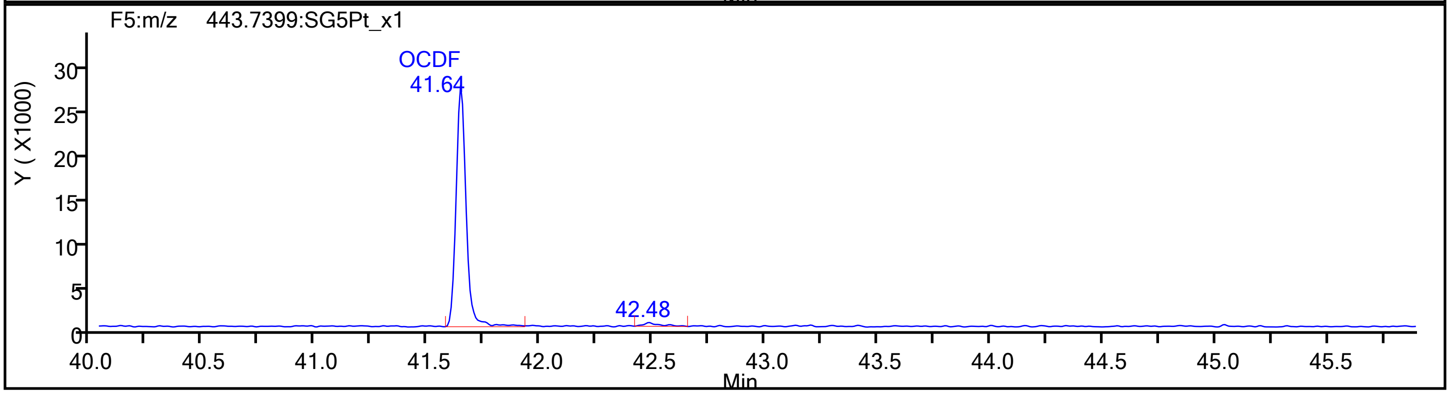

OCDF Standards

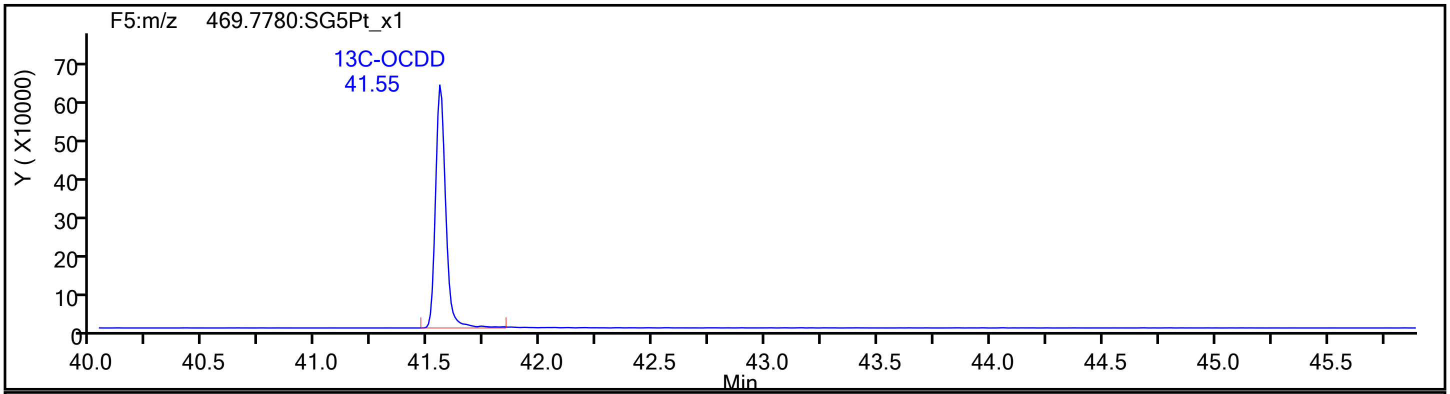

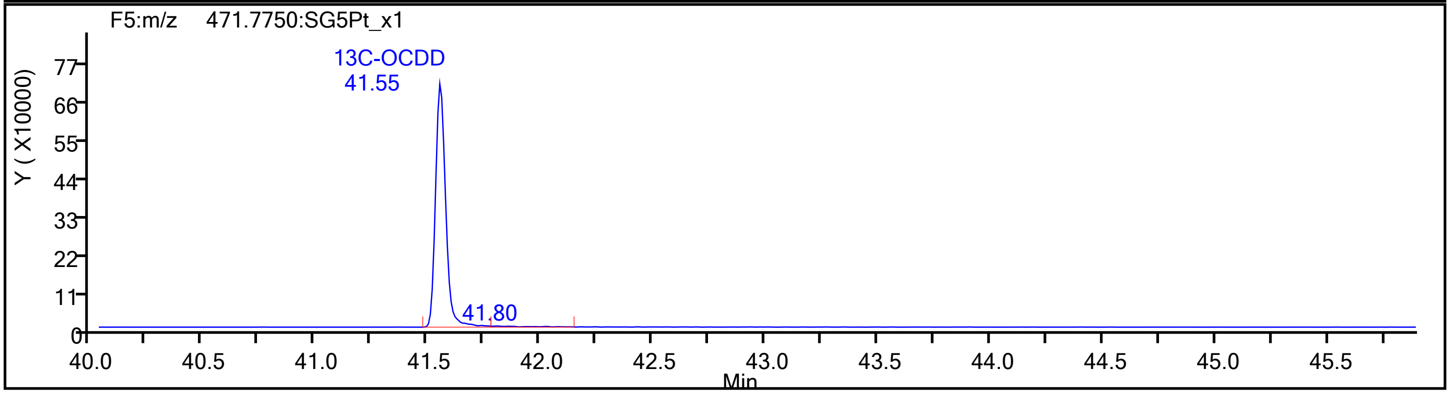

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Eurofins TestAmerica, Sacramento

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OCDF

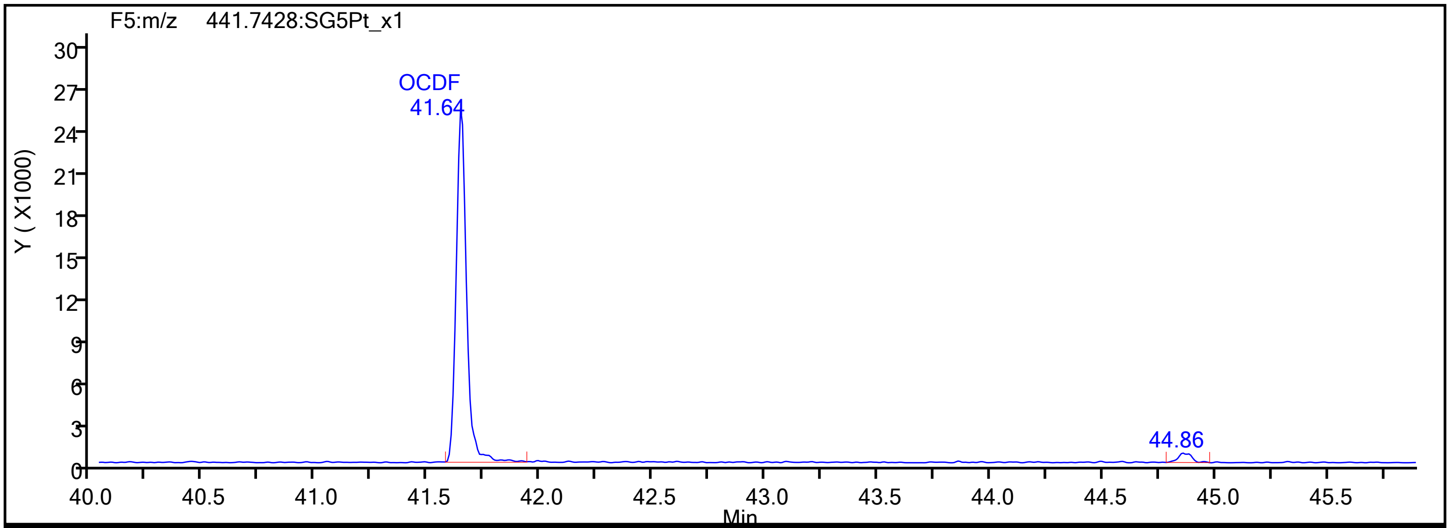

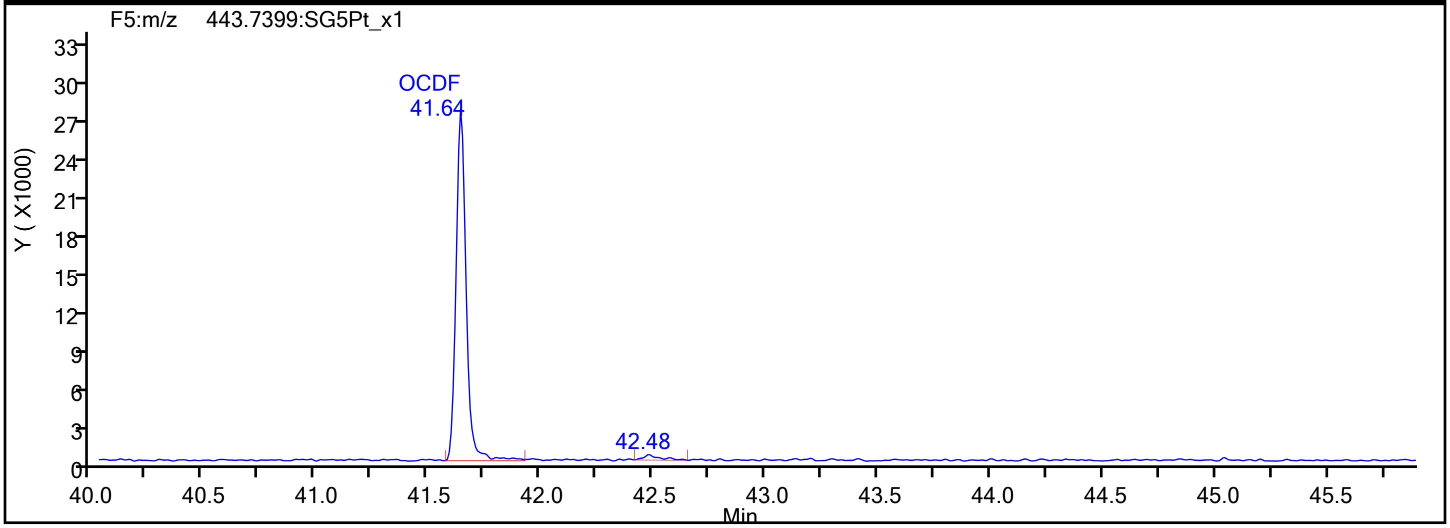

OCDF Interference Mass

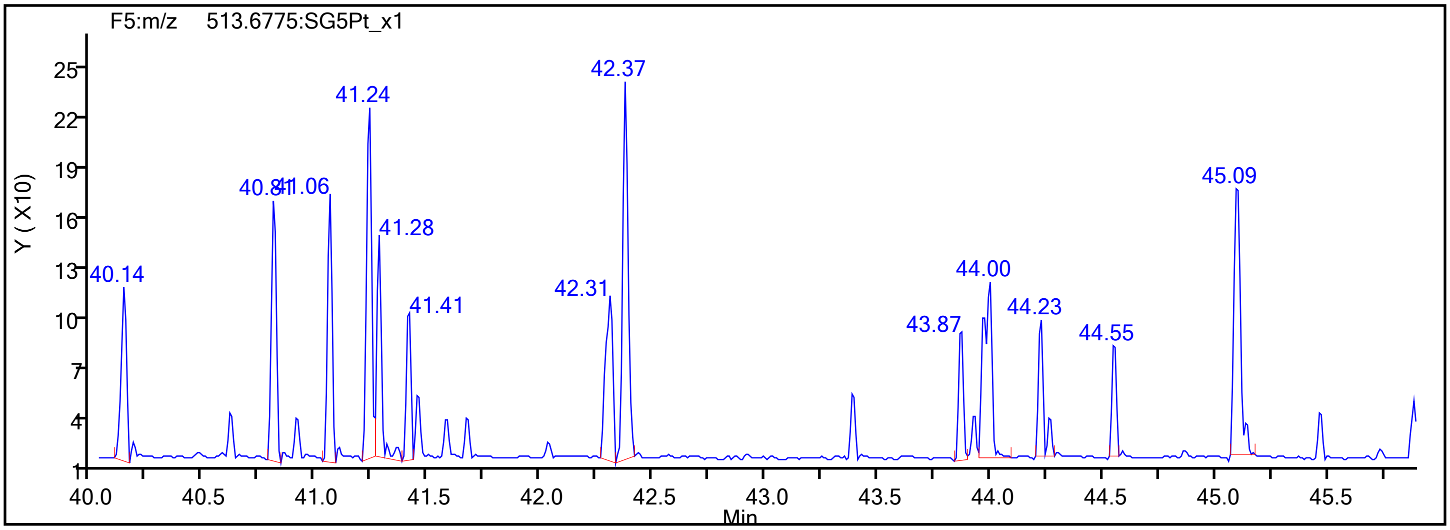

Report Date: 18-Sep-2020 10:59:57 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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OCDD

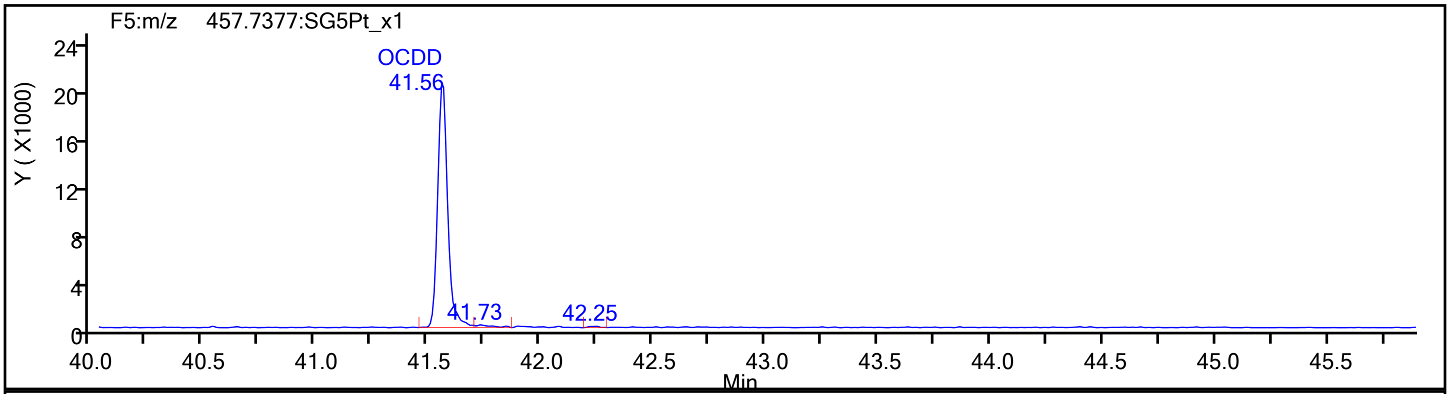

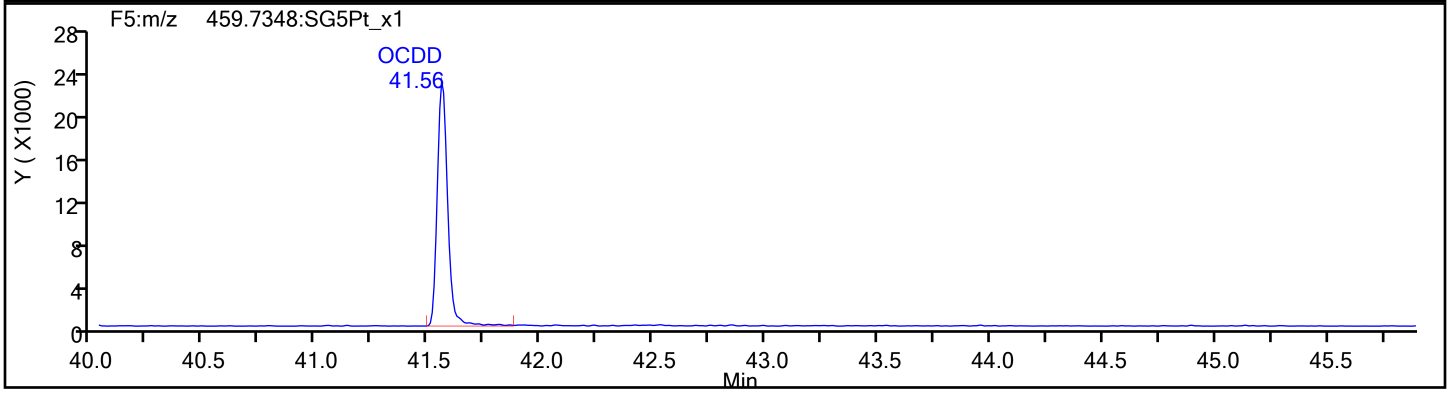

OCDD Standards

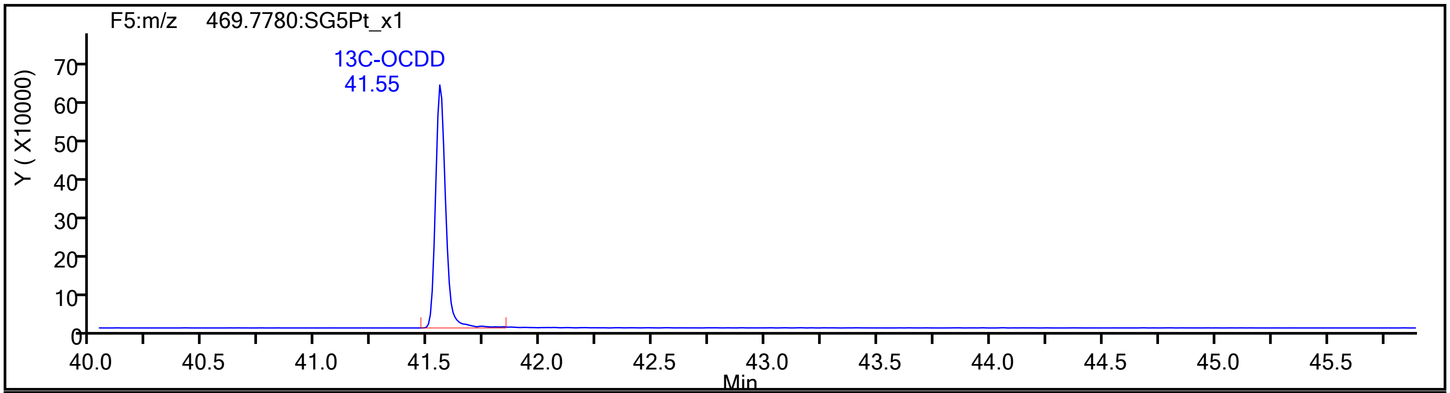

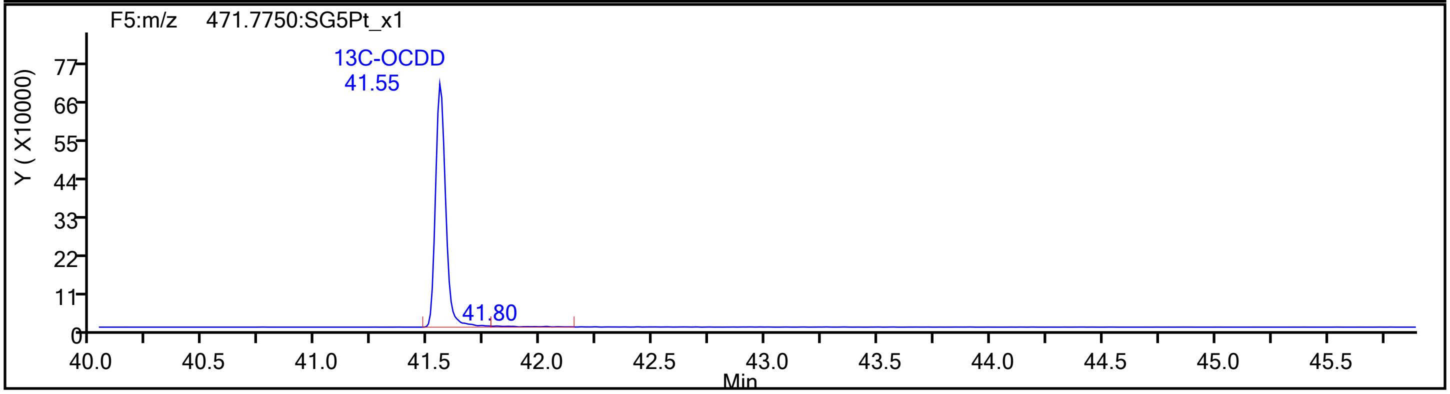

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Eurofins TestAmerica, Sacramento

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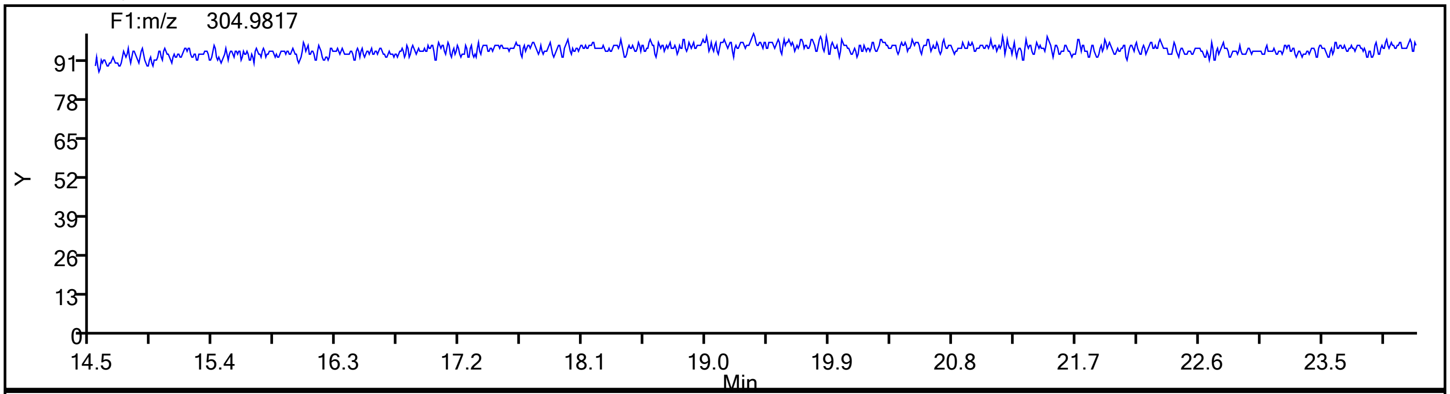

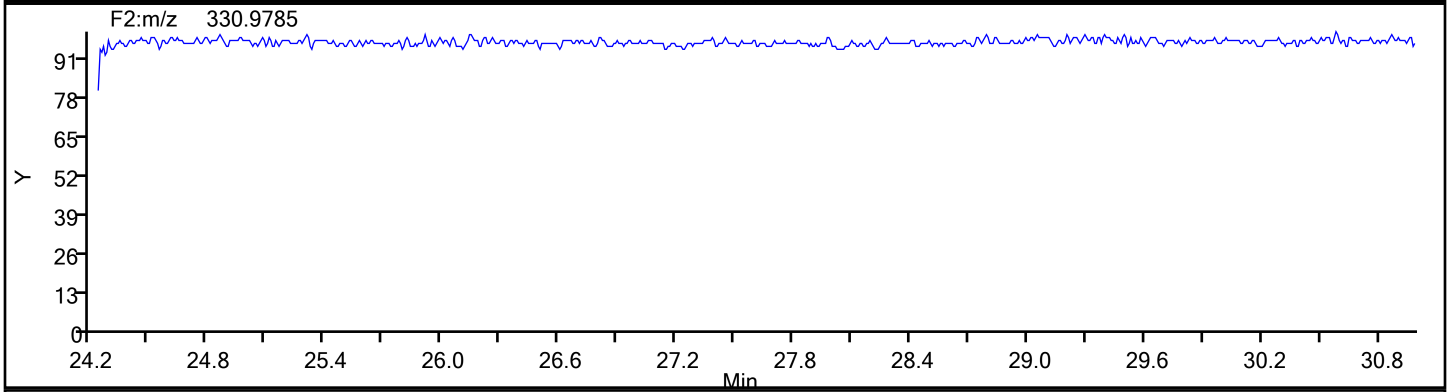

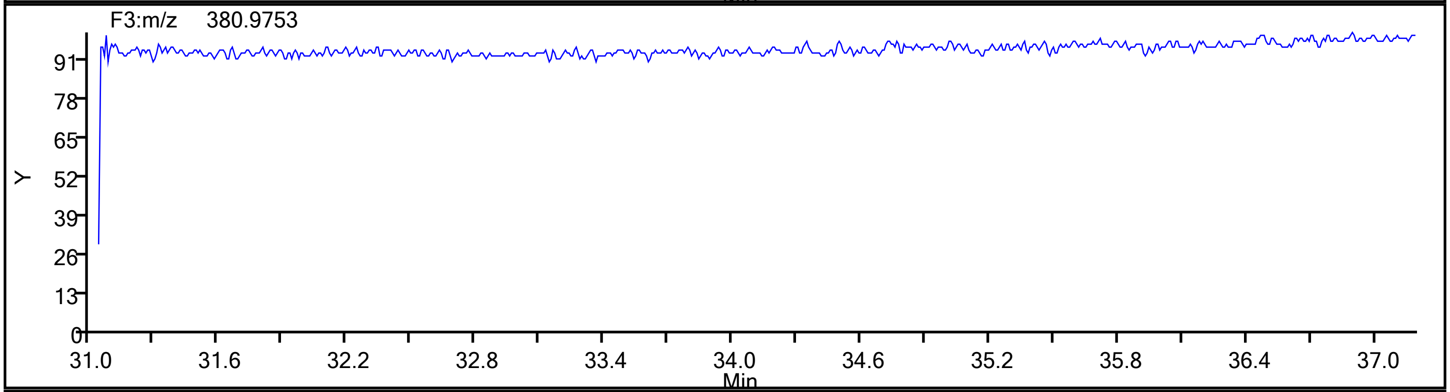

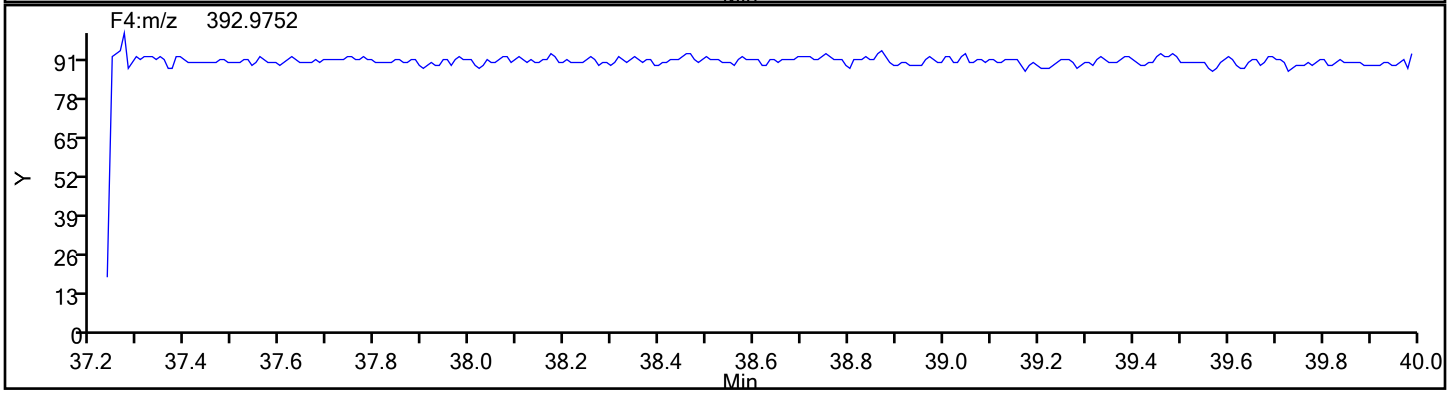

Eurofins TestAmerica, Sacramento

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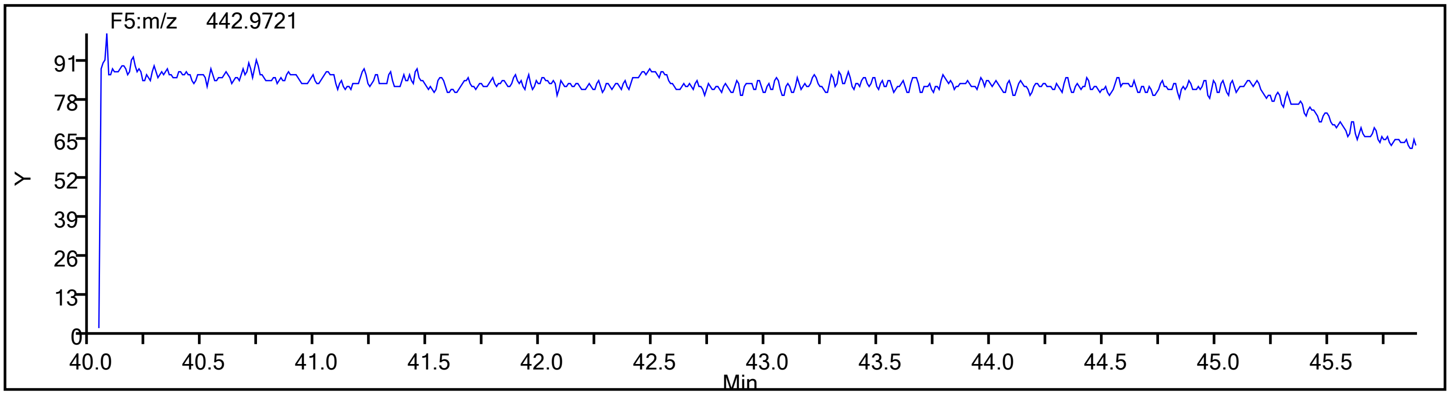

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
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Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 14:04:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:00 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:37:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.154	2300073	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.234	3531795	0.77	1.5883	96.7	96.7	0.4713	0.4713	96.67	
2,3,7,8-TCDF	19.251	80239	0.82	1.0857	2.093	2.093	0.0429	0.0429	105	
S Total TCDF					2.093	2.093	0.0429	0.0429		
D 13C-2,3,7,8-TCDD	20.515	2492630	0.81	1.1194	96.8	96.8	0.4908	0.4908	96.81	
$ 37Cl4-2,3,7,8-TCDD	20.541	50653		1.1468	1.920	1.920	0.0200	0.0200	96.02	
2,3,7,8-TCDD	20.541	55075	0.79	1.0810	2.044	2.044	0.0870	0.0870	102	M
S Total TCDD					2.044	2.044	0.0870	0.0870		
D 13C-1,2,3,7,8-PeCDF	26.307	3224518	1.59	1.4782	94.8	94.8	0.4817	0.4817	94.84	
1,2,3,7,8-PeCDF	26.324	347966	1.59	1.0547	10.2	10.2	0.0659	0.0659	102	
D 13C-2,3,4,7,8-PeCDF	27.772	3151439	1.56	1.3912	98.5	98.5	0.5119	0.5119	98.49	
2,3,4,7,8-PeCDF	27.797	346052	1.55	1.1035	9.950	9.950	0.0717	0.0717	99.50	
S Total PeCDF					20.2	20.2	0.0688	0.0688		
D 13C-1,2,3,7,8-PeCDD	28.547	2078935	1.59	0.9415	96.0	96.0	0.2099	0.2099	96.01	
1,2,3,7,8-PeCDD	28.572	231718	1.60	1.0680	10.4	10.4	0.0724	0.0724	104	
S Total PeCDD					10.4	10.4	0.0724	0.0724		
D 13C-1,2,3,4,7,8-HxCDF	34.193	2739797	0.53	1.1378	103.2	103.2	0.5268	0.5268	103	
1,2,3,4,7,8-HxCDF	34.210	348028	1.28	1.2643	10.0	10.0	0.0715	0.0715	100	
D 13C-1,2,3,6,7,8-HxCDF	34.370	3116925	0.52	1.3173	101.4	101.4	0.4550	0.4550	101	
1,2,3,6,7,8-HxCDF	34.387	393550	1.27	1.2230	10.3	10.3	0.0674	0.0674	103	
D 13C-2,3,4,6,7,8-HxCDF	35.280	2933370	0.53	1.2457	100.9	100.9	0.4812	0.4812	101	
2,3,4,6,7,8-HxCDF	35.297	376227	1.27	1.2464	10.3	10.3	0.0608	0.0608	103	
D 13C-1,2,3,7,8,9-HxCDF	36.231	2754056	0.53	1.1840	99.7	99.7	0.5062	0.5062	99.70	
1,2,3,7,8,9-HxCDF	36.248	360924	1.27	1.2638	10.4	10.4	0.0597	0.0597	104	
S Total HxCDF					41.0	41.0	0.0649	0.0649		
* 13C-1,2,3,7,8,9-HxCDD	36.029	2333146	1.29	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.507	2021094	1.25	0.8477	102.2	102.2	0.2999	0.2999	102	
1,2,3,4,7,8-HxCDD	35.524	237281	1.25	1.1561	10.2	10.2	0.0480	0.0480	102	
D 13C-1,2,3,6,7,8-HxCDD	35.633	2377971	1.25	0.9979	102.1	102.1	0.2548	0.2548	102	
1,2,3,6,7,8-HxCDD	35.650	248155	1.22	1.0284	10.1	10.1	0.0491	0.0491	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.037	258219	1.26	1.1789	9.958	9.958	0.0449	0.0449	99.58	
S Total HxCDD					30.3	30.3	0.0474	0.0474		
D 13C-1,2,3,4,6,7,8-HpCDF	38.139	2277691	0.45	0.9884	98.8	98.8	0.5297	0.5297	98.77	
1,2,3,4,6,7,8-HpCDF	38.148	346408	1.06	1.5064	10.1	10.1	0.0543	0.0543	101	
D 13C-1,2,3,4,7,8,9-HpCDF	39.437	2146658	0.46	0.9203	100.0	100.0	0.5689	0.5689	99.97	
1,2,3,4,7,8,9-HpCDF	39.445	309989	1.06	1.4548	9.926	9.926	0.0550	0.0550	99.26	
S Total HpCDF					20.0	20.0	0.0547	0.0547		
D 13C-1,2,3,4,6,7,8-HpCDD	39.125	2209893	1.09	0.9556	99.1	99.1	0.2520	0.2520	99.11	
1,2,3,4,6,7,8-HpCDD	39.134	240224	1.07	1.0640	10.2	10.2	0.0400	0.0400	102	
S Total HpCDD					10.2	10.2	0.0400	0.0400		
D 13C-OCDD	41.576	3347397	0.90	0.7420	193.3	193.3	0.2650	0.2650	96.67	
OCDF	41.669	479466	0.93	1.4296	20.0	20.0	0.0591	0.0591	100	
OCDD	41.585	393634	0.88	1.1293	20.8	20.8	0.0343	0.0343	104	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 14:04:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:00 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:37:40

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.154	20.145	0		1016140	145263	559	1397	260		
333.9338	20.162	20.145	1		1283933	189663	177	442	1072	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.234	19.222	1	0.954	1539781	230147	640	1600	360		
317.9389	19.234	19.222	1	0.954	1992014	300273	363	907	827	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.251	19.246	0	1.001	36261	5333	24	60	222		
305.8987	19.268	19.246	1	1.002	43978	6304	75	187	84	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.515	20.507	1	1.018	1115449	151139	559	1397	270		
333.9338	20.515	20.507	1	1.018	1377181	199768	177	442	1129	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.541	20.531	1	1.019	50653	7227	31	77	233		
2,3,7,8-TCDD											M
319.8965	20.541	20.532	1	1.001	24339	3385	102	255	33		M
321.8936	20.549	20.532	1	1.002	30736	4520	30	75	151	0.79(0.65-0.89)	M
13C-1,2,3,7,8-PeCDF											
351.9000	26.307	26.301	0	1.305	1979191	345089	572	1430	603		
353.8970	26.307	26.301	0	1.305	1245327	216080	382	955	566	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.324	26.321	0	1.001	213701	34677	69	172	503		
341.8567	26.332	26.321	1	1.001	134265	22052	87	217	253	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.772	27.762	1	1.378	1922131	301599	572	1430	527		
353.8970	27.763	27.762	0	1.378	1229308	191415	382	955	501	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.797	27.787	1	1.001	210345	31416	69	172	455		
341.8567	27.789	27.787	0	1.001	135707	19953	87	217	229	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.547	28.537	1	1.416	1277416	185800	174	435	1068		
369.8919	28.547	28.537	1	1.416	801519	117961	91	227	1296	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.572	28.562	1	1.001	142637	20472	76	190	269		
357.8516	28.572	28.562	1	1.001	89081	13187	18	45	733	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.193	34.181	1	0.949	949878	198530	499	1247	398		
385.8610	34.184	34.181	0	0.949	1789919	371508	930	2325	399	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.210	34.200	1	1.000	195580	40280	121	302	333		
375.8178	34.201	34.200	0	1.000	152448	31931	85	212	376	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.370	34.365	0	0.954	1068514	214589	499	1247	430		
385.8610	34.370	34.365	0	0.954	2048411	410142	930	2325	441	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.387	34.384	0	1.000	219850	43077	121	302	356		
375.8178	34.387	34.384	0	1.000	173700	34745	85	212	409	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.280	35.272	0	0.979	1012916	235761	499	1247	472		
385.8610	35.280	35.272	0	0.979	1920454	443320	930	2325	477	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.297	35.288	0	1.000	210668	48765	121	302	403		
375.8178	35.297	35.288	0	1.000	165559	38892	85	212	458	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.231	36.225	0	1.006	950889	237975	499	1247	477		
385.8610	36.231	36.225	0	1.006	1803167	444154	930	2325	478	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.248	36.240	0	1.000	201587	48890	121	302	404		
375.8178	36.248	36.240	0	1.000	159337	38933	85	212	458	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.029	36.021	0		1313826	333150	337	842	989		
403.8529	36.029	36.021	0		1019320	262796	269	672	977	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.507	35.502	0	0.986	1123546	283688	337	842	842		
403.8529	35.507	35.502	0	0.986	897548	224054	269	672	833	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.524	35.519	0	1.000	131810	33743	54	135	625		
391.8127	35.524	35.519	0	1.000	105471	26874	59	147	455	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.633	35.630	0	0.989	1322755	309717	337	842	919		
403.8529	35.633	35.630	0	0.989	1055216	248448	269	672	924	1.25(1.05-1.43)	

Report Date: 18-Sep-2020 11:00:10 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.650	35.646	0	1.000	136517	31904	54	135	591		
391.8127	35.650	35.646	0	1.000	111638	26358	59	147	447	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.037	36.033	0	1.015	144115	35857	54	135	664		
391.8127	36.037	36.033	0	1.015	114104	28698	59	147	486	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.139	38.132	0	1.059	709234	221375	410	1025	540		
419.8220	38.139	38.132	0	1.059	1568457	493249	838	2095	589	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.148	38.141	0	1.000	177962	55358	126	315	439		
409.7788	38.148	38.141	0	1.000	168446	53085	108	270	492	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.437	39.428	1	1.095	675229	228858	410	1025	558		
419.8220	39.437	39.428	1	1.095	1471429	502724	838	2095	600	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.445	39.438	0	1.000	159273	54053	126	315	429		
409.7788	39.445	39.438	0	1.000	150716	50777	108	270	470	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.125	39.118	0	1.086	1151428	392208	291	727	1348		
437.8140	39.125	39.118	0	1.086	1058465	359309	283	707	1270	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.134	39.126	0	1.000	123974	40994	74	185	554		
425.7737	39.134	39.126	0	1.000	116250	39483	54	135	731	1.07(0.88-1.20)	
13C-OCDD											
469.7780	41.576	41.572	0	1.154	1587471	507610	268	670	1894		
471.7750	41.576	41.572	0	1.154	1759926	551113	201	502	2742	0.90(0.76-1.02)	
OCDF											
441.7428	41.669	41.663	0	1.002	231022	73266	64	160	1145		
443.7399	41.669	41.663	0	1.002	248444	77037	115	287	670	0.93(0.76-1.02)	
OCDD											
457.7377	41.585	41.580	0	1.000	184794	59038	40	100	1476		
459.7348	41.585	41.580	0	1.000	208840	66176	42	105	1576	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:11

Chrom Revision: 2.3 16-Sep-2020 17:17:04
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d				
Injection Date:	17-Sep-2020 14:04:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	20.54
Area:	20980
Amount:	1.953067
Amount Units:	pg/ul

Processing Integration Results

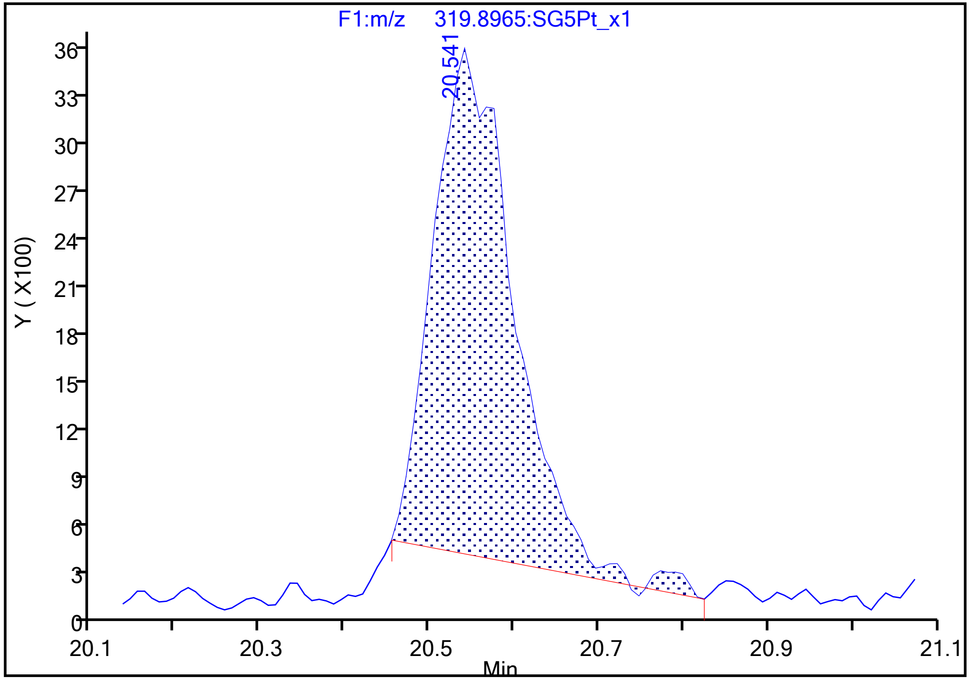

RT:	20.54
Area:	24339
Amount:	2.044004
Amount Units:	pg/ul

Manual Integration Results

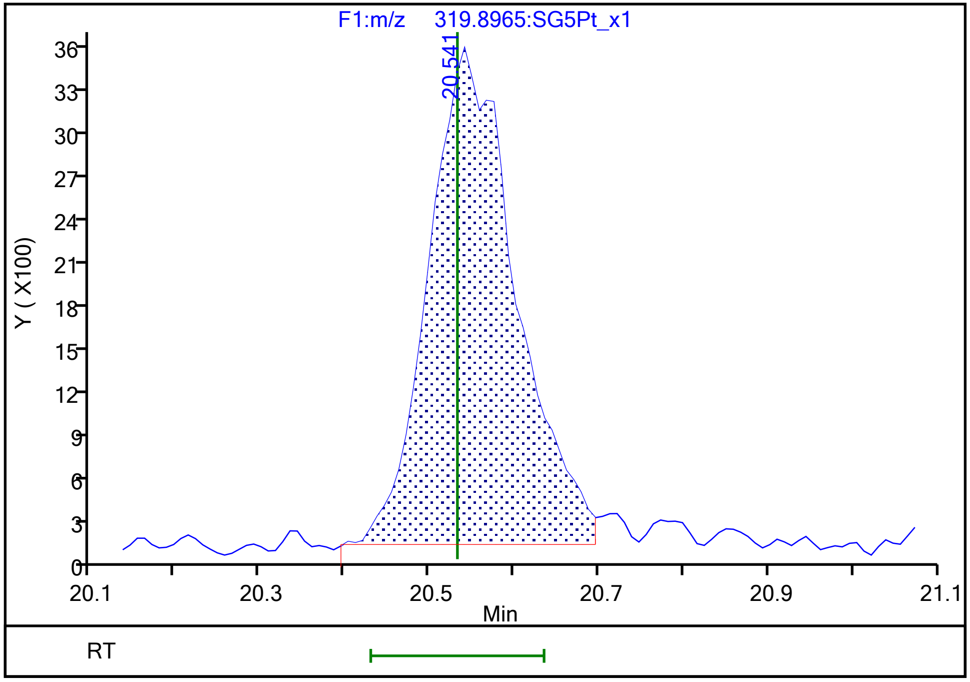

Reviewer: shardaa, 17-Sep-2020 18:36:57

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d
Injection Date: 17-Sep-2020 14:04:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 20.55
Area: 31050
Amount: 1.953067
Amount Units: pg/ul

Processing Integration Results

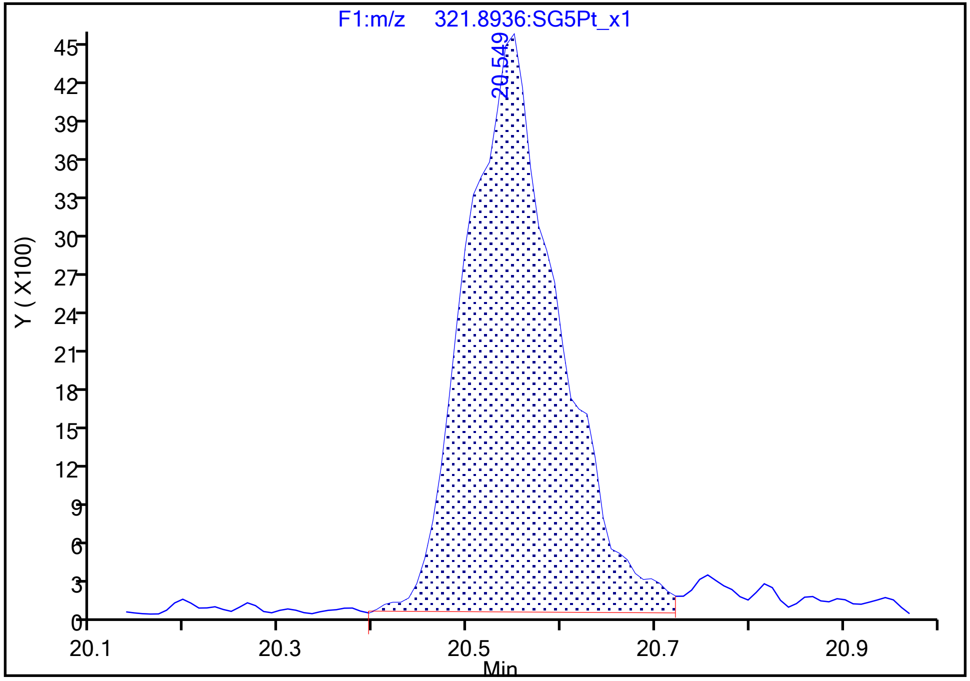

RT: 20.55
Area: 30736
Amount: 2.044004
Amount Units: pg/ul

Manual Integration Results

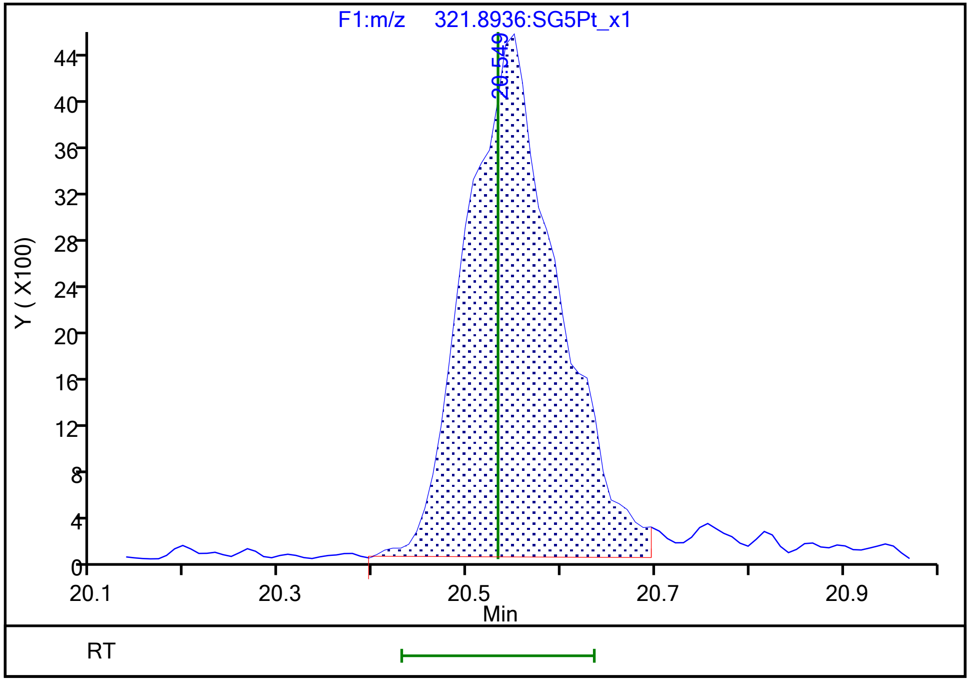

Reviewer: shardaa, 17-Sep-2020 18:37:01

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

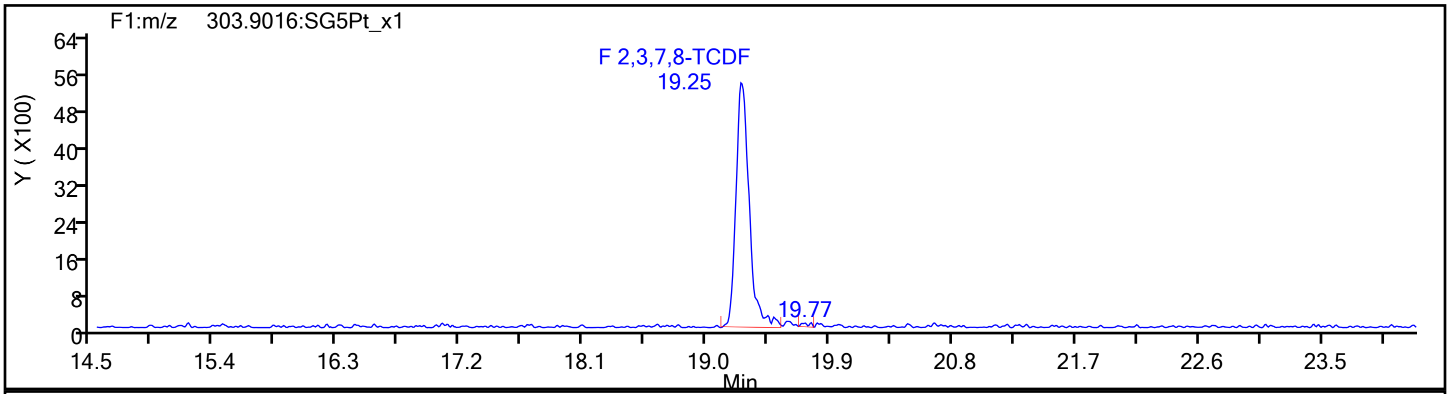

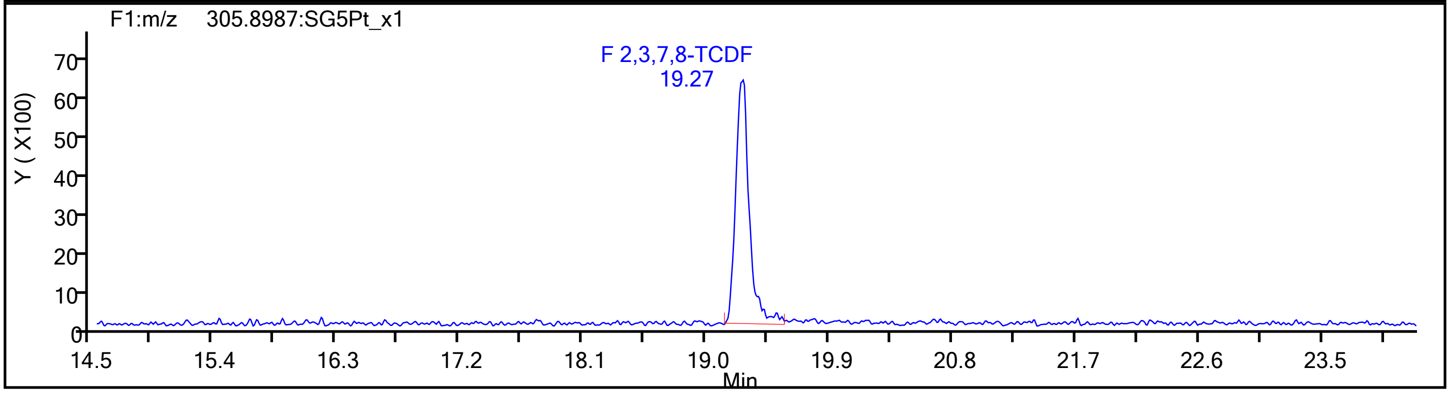

TCDF Standards

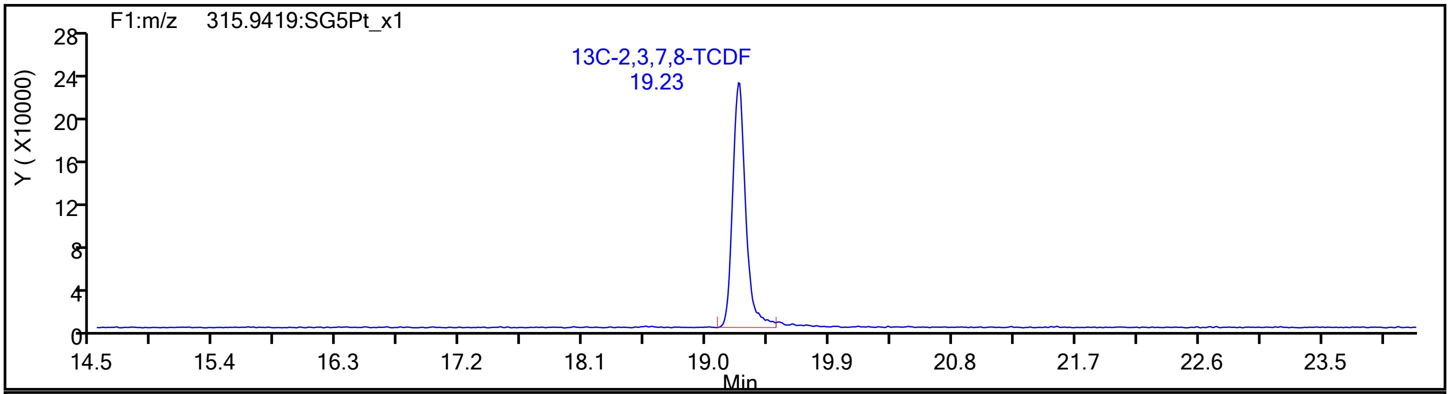

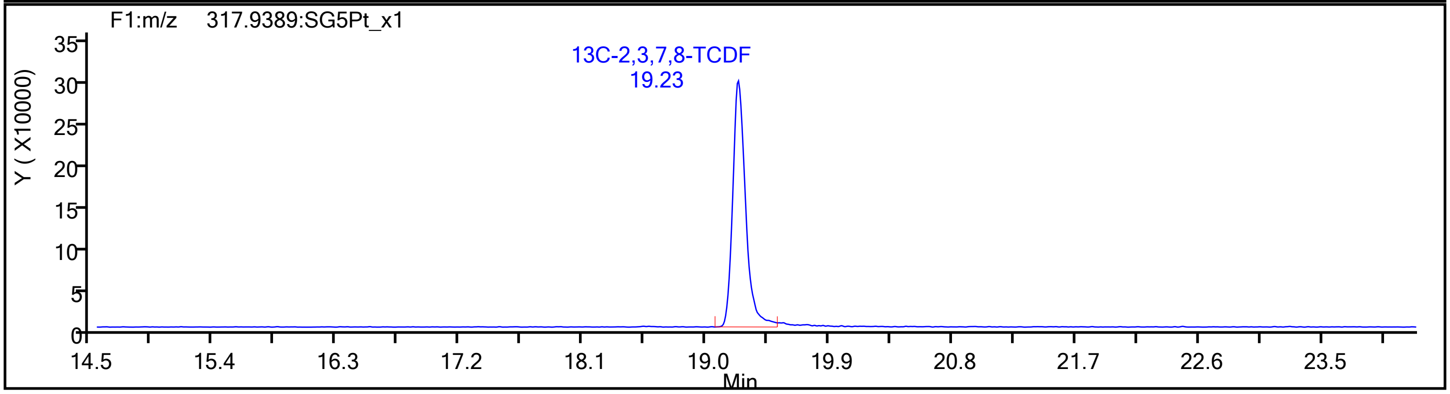

Report Date: 18-Sep-2020 11:00:11		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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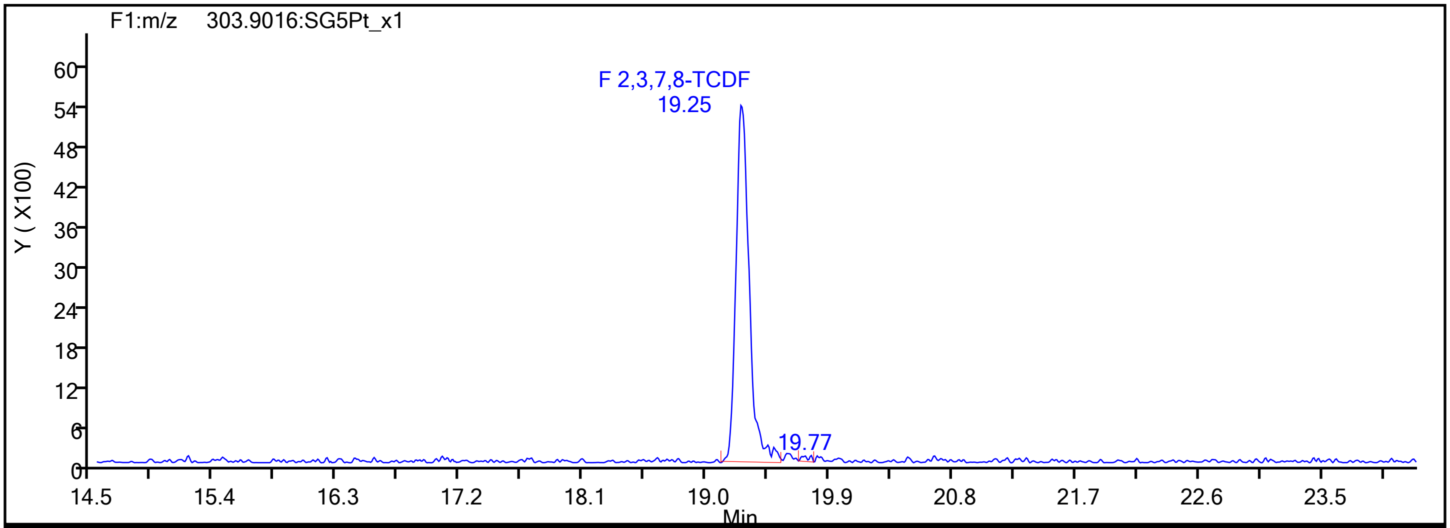

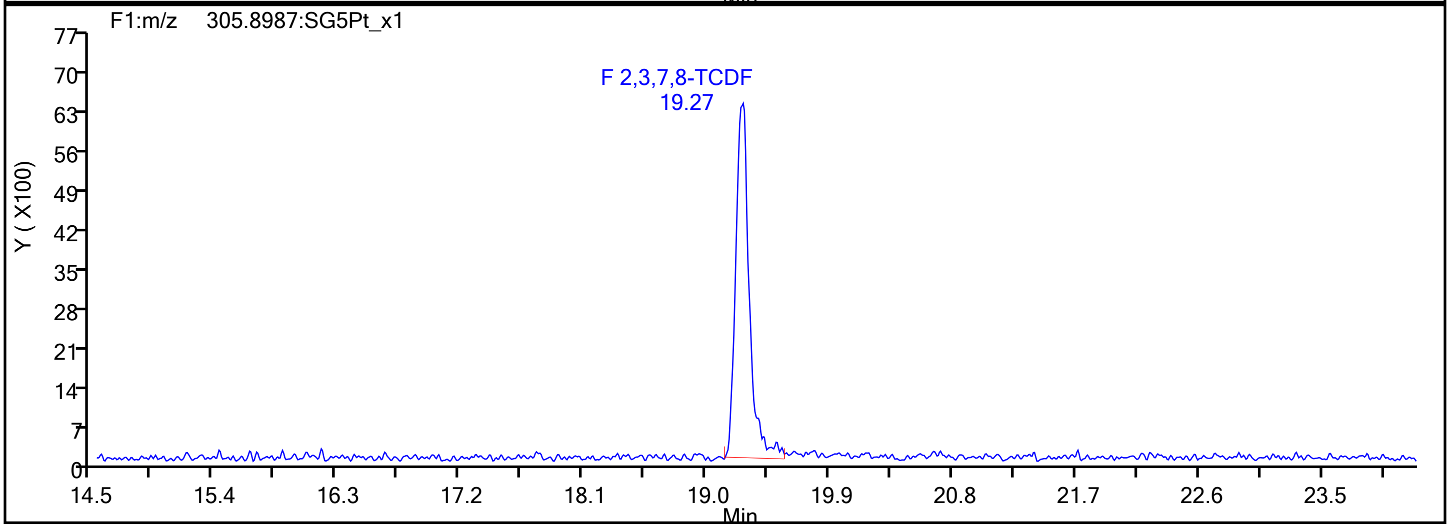

TCDF Interference Mass

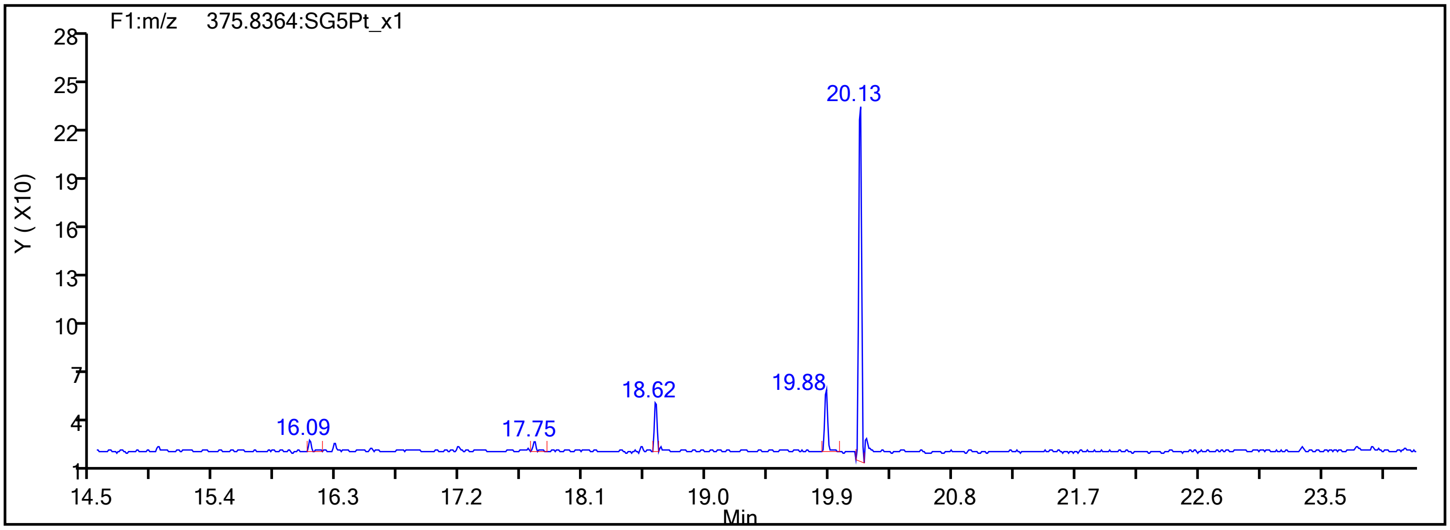

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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TCDD

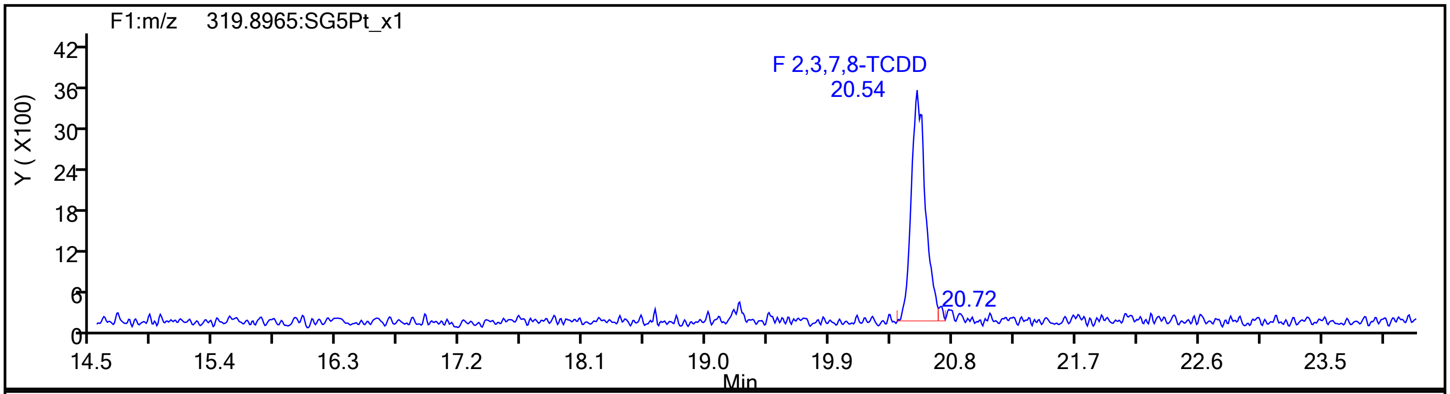

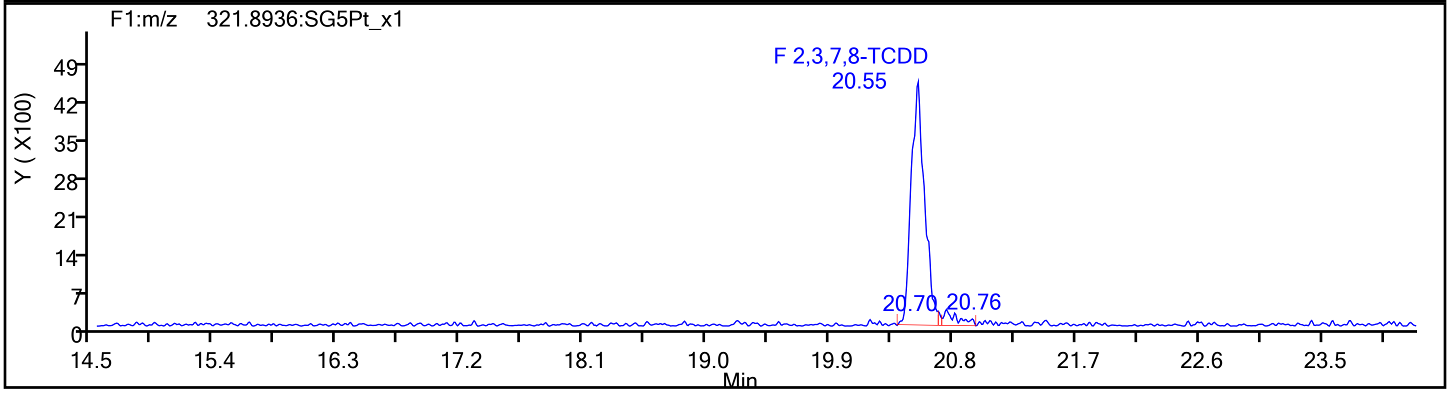

TCDD Standards

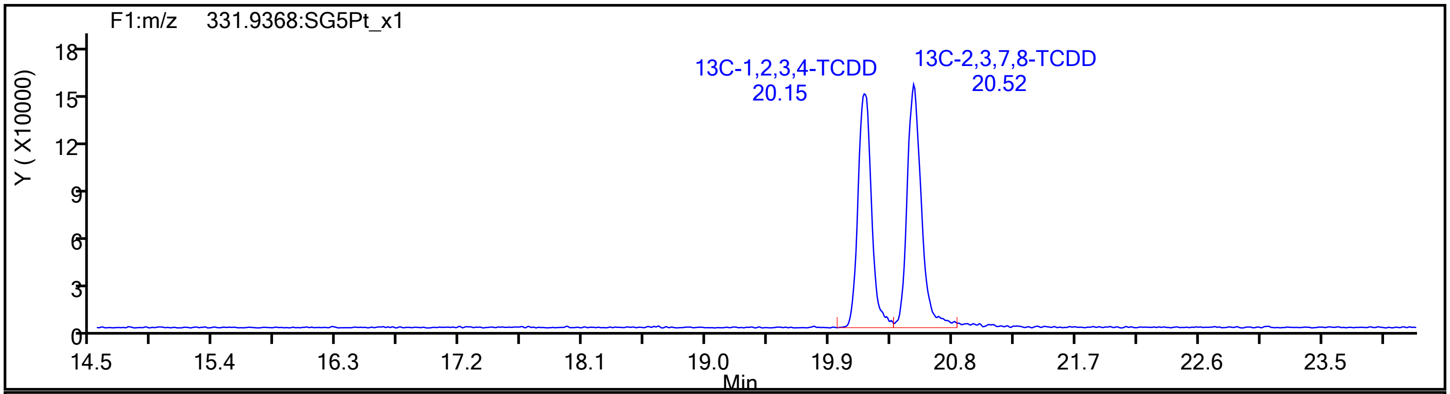

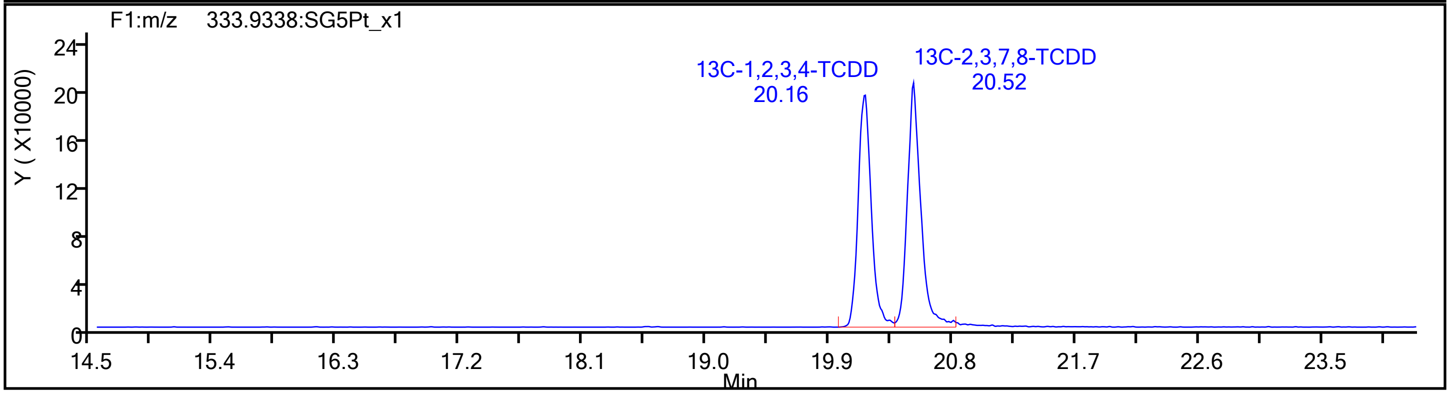

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

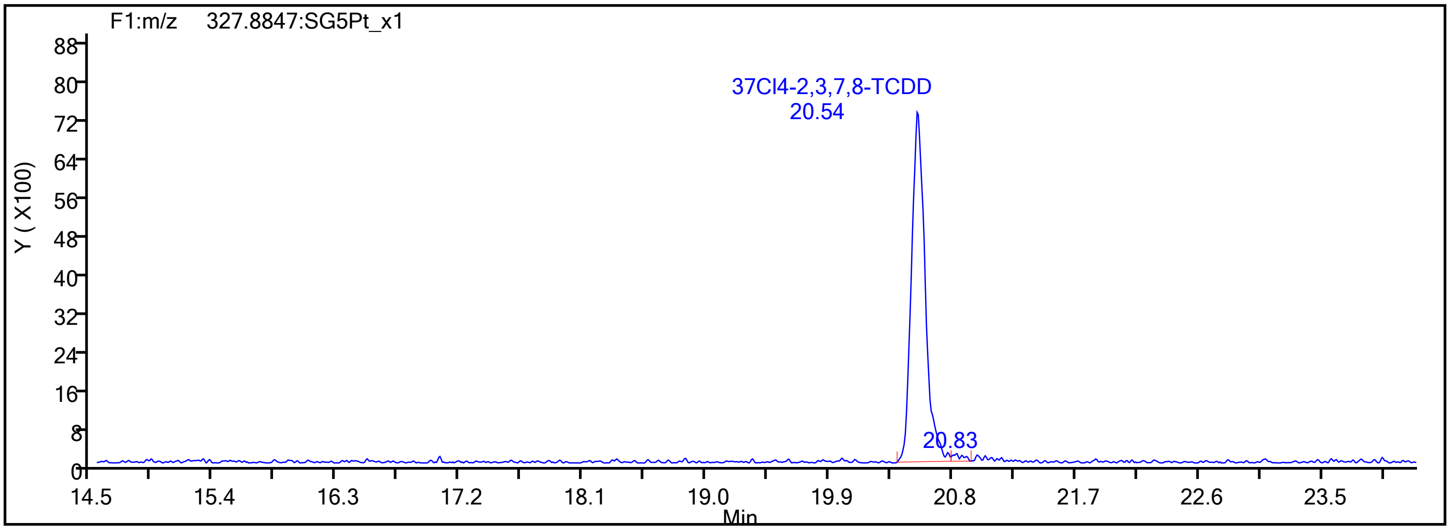

37Cl4-TCDD Standards

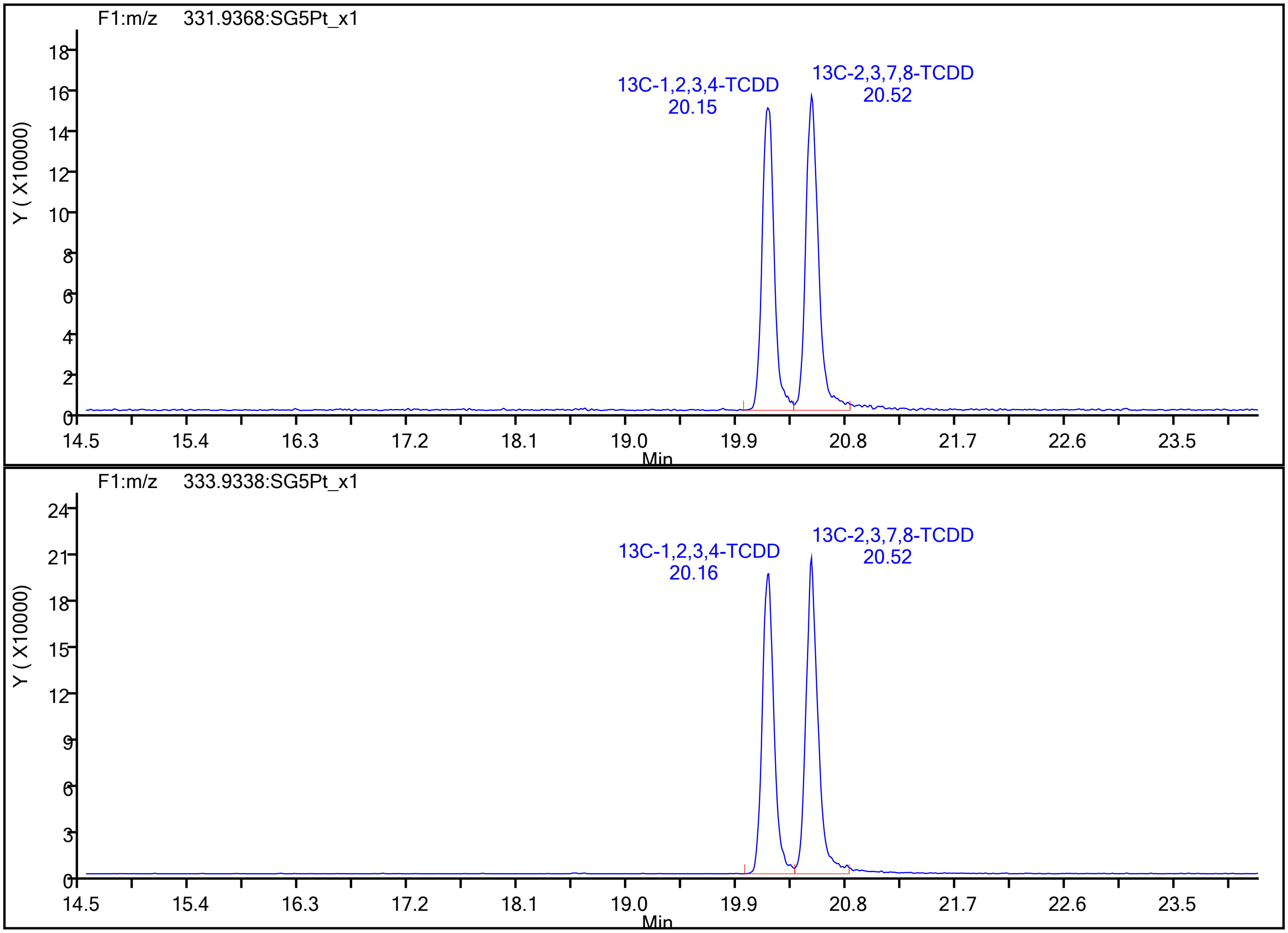

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

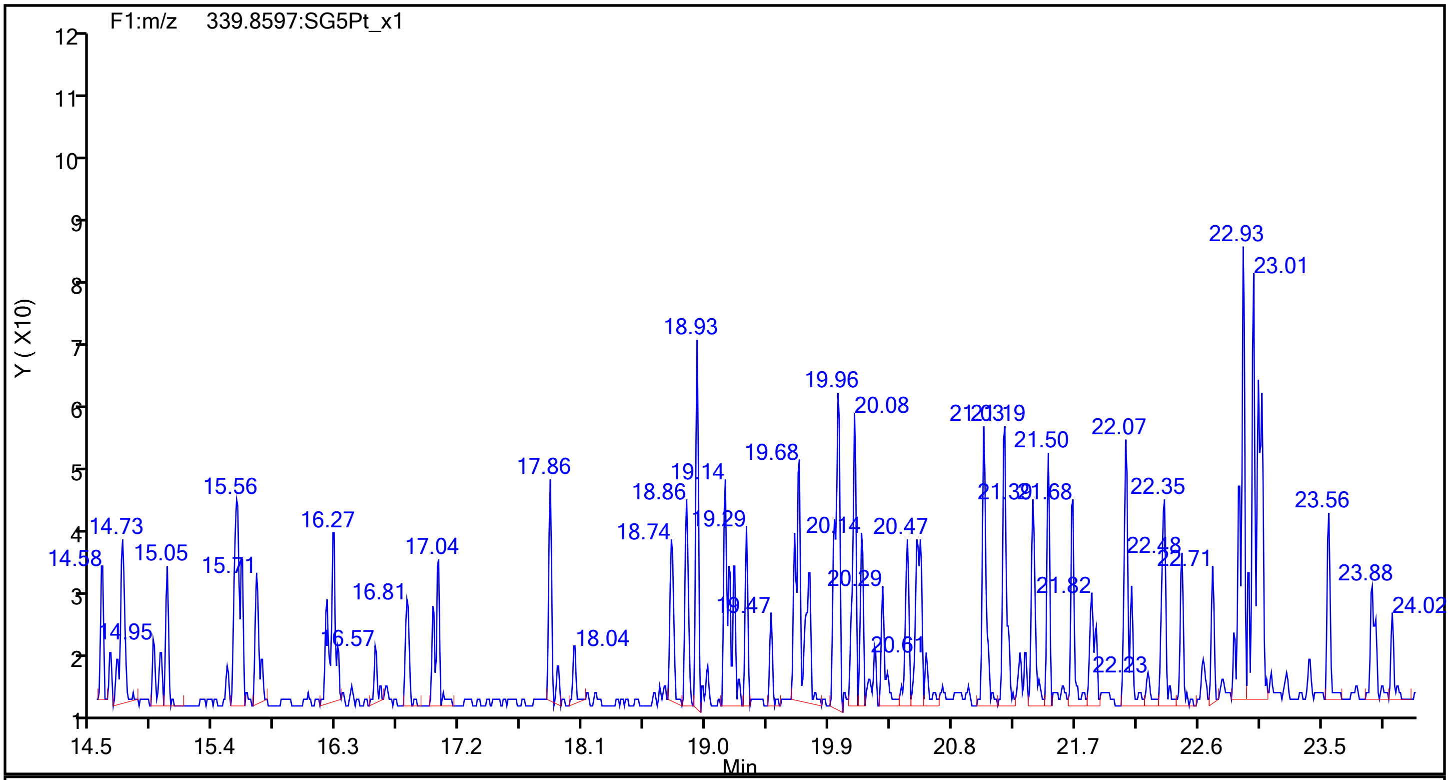

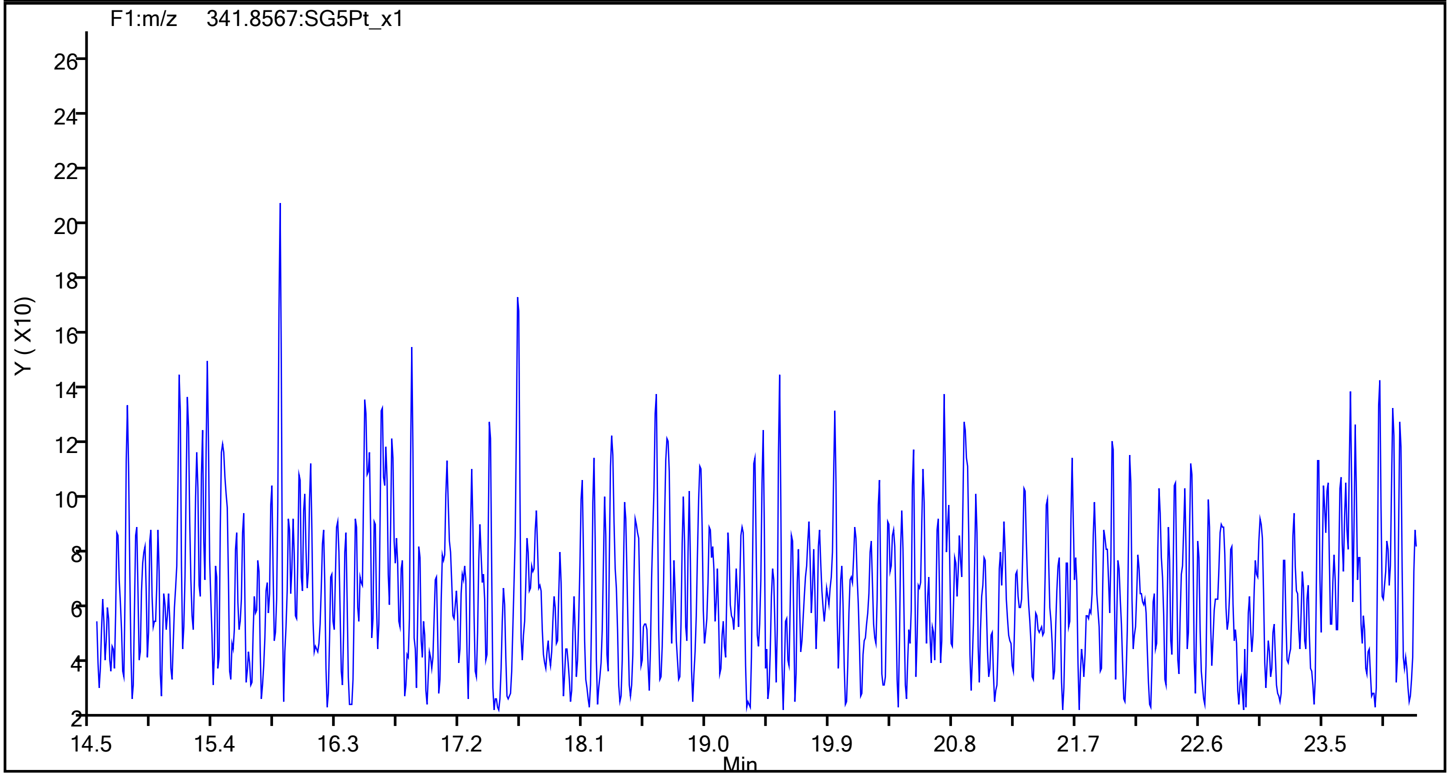

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

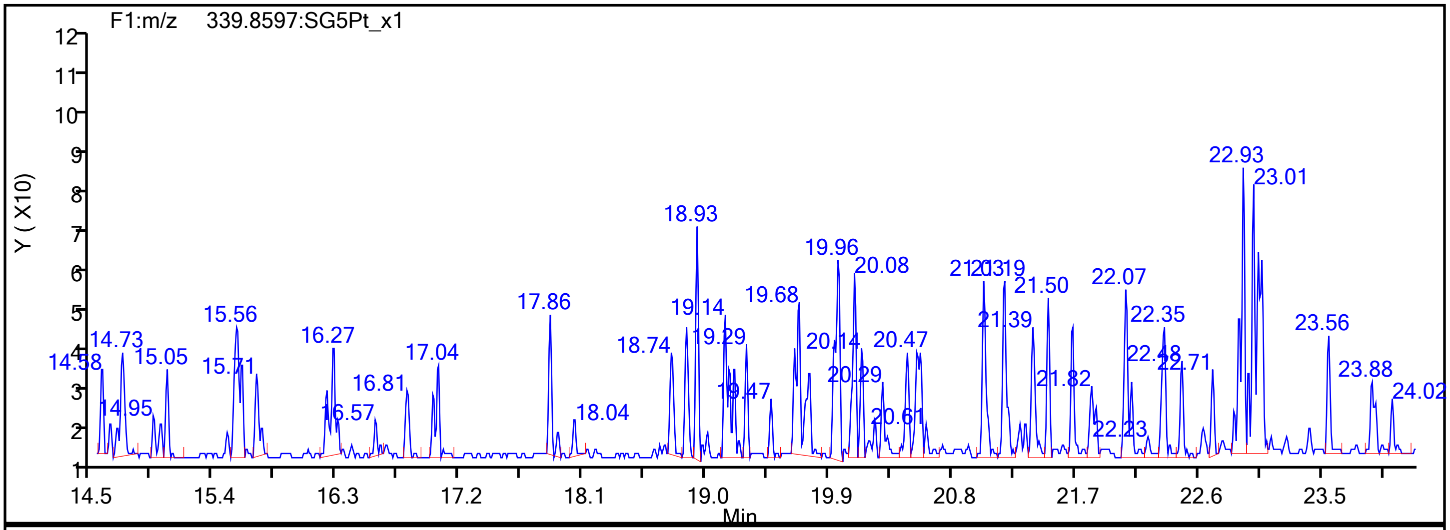

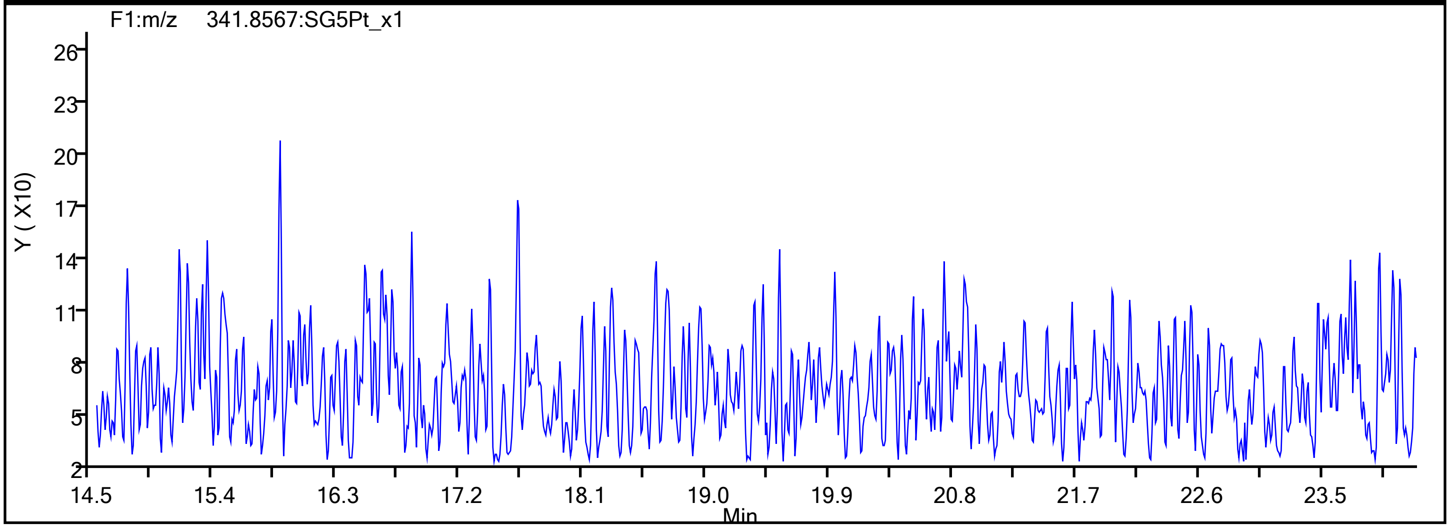

F1 PeCDFs Interference Mass

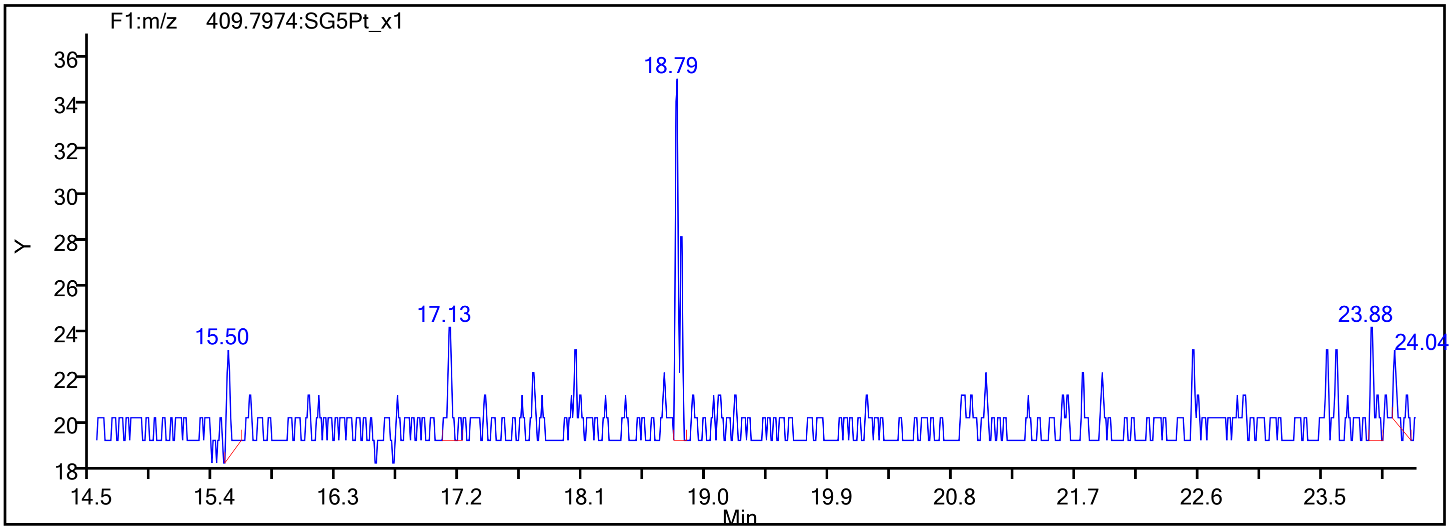

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Eurofins TestAmerica, Sacramento

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PeCDF

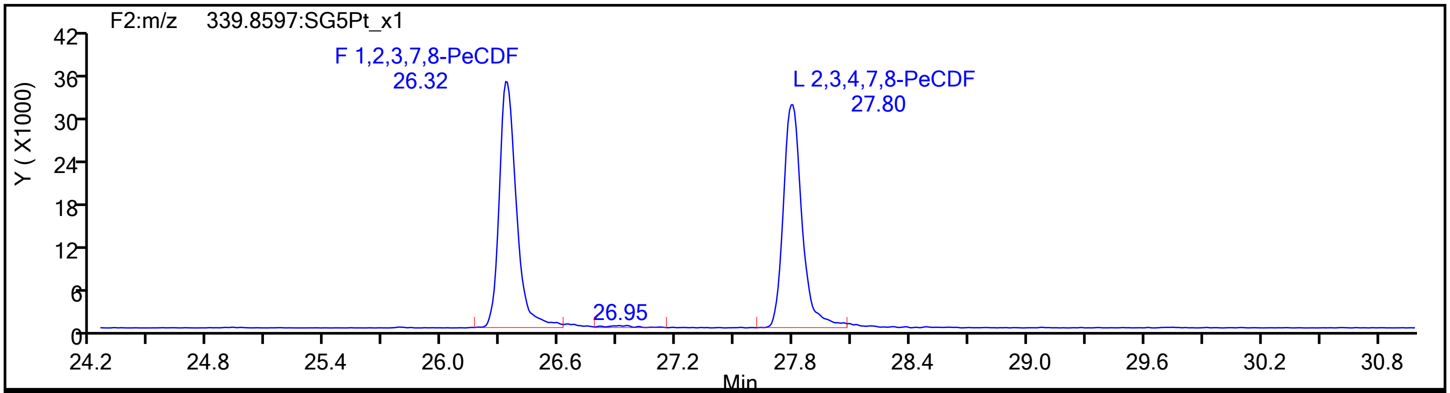

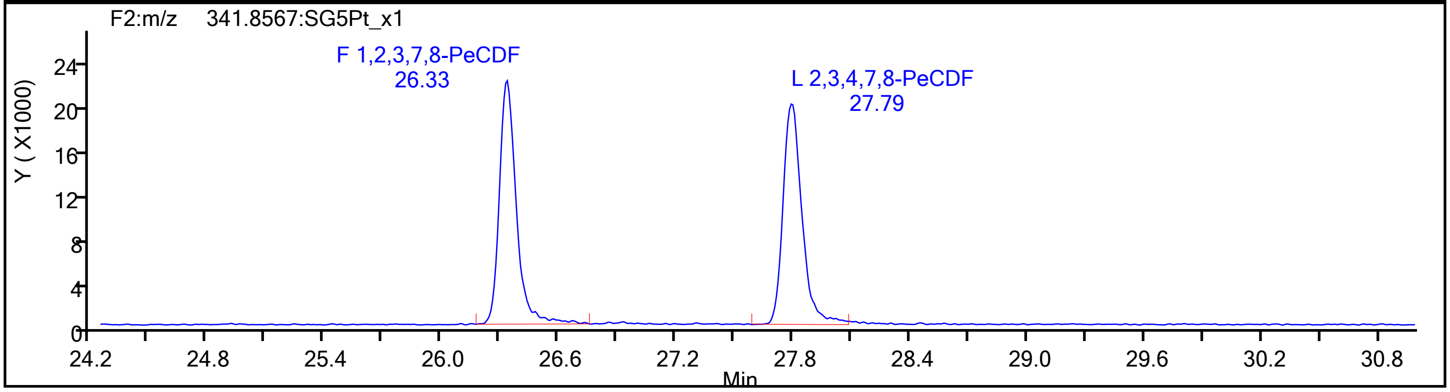

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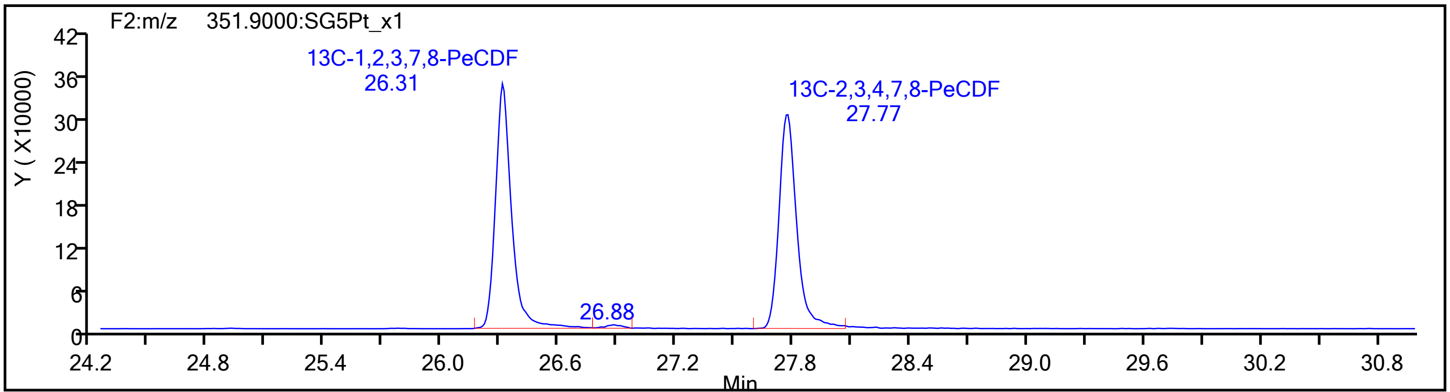

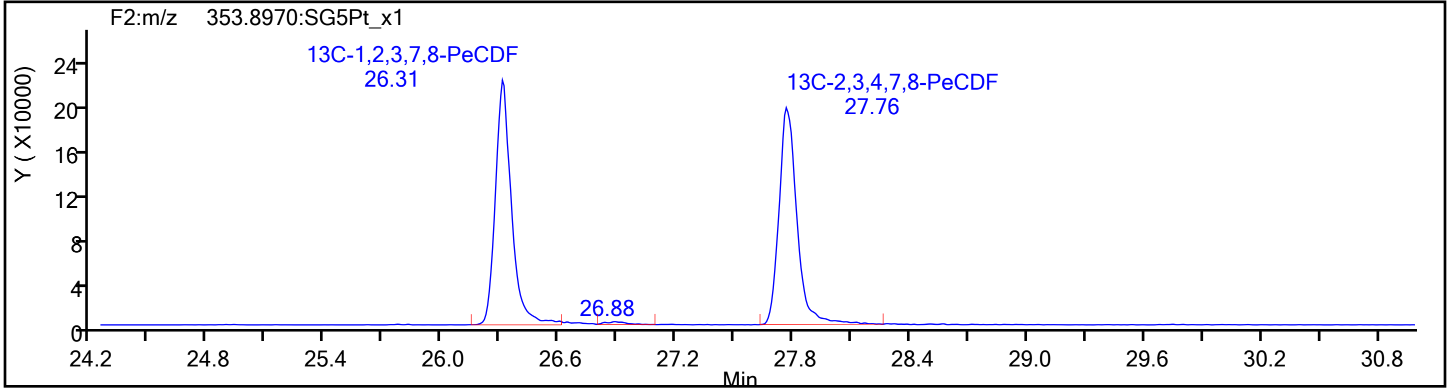

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Eurofins TestAmerica, Sacramento

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PeCDF

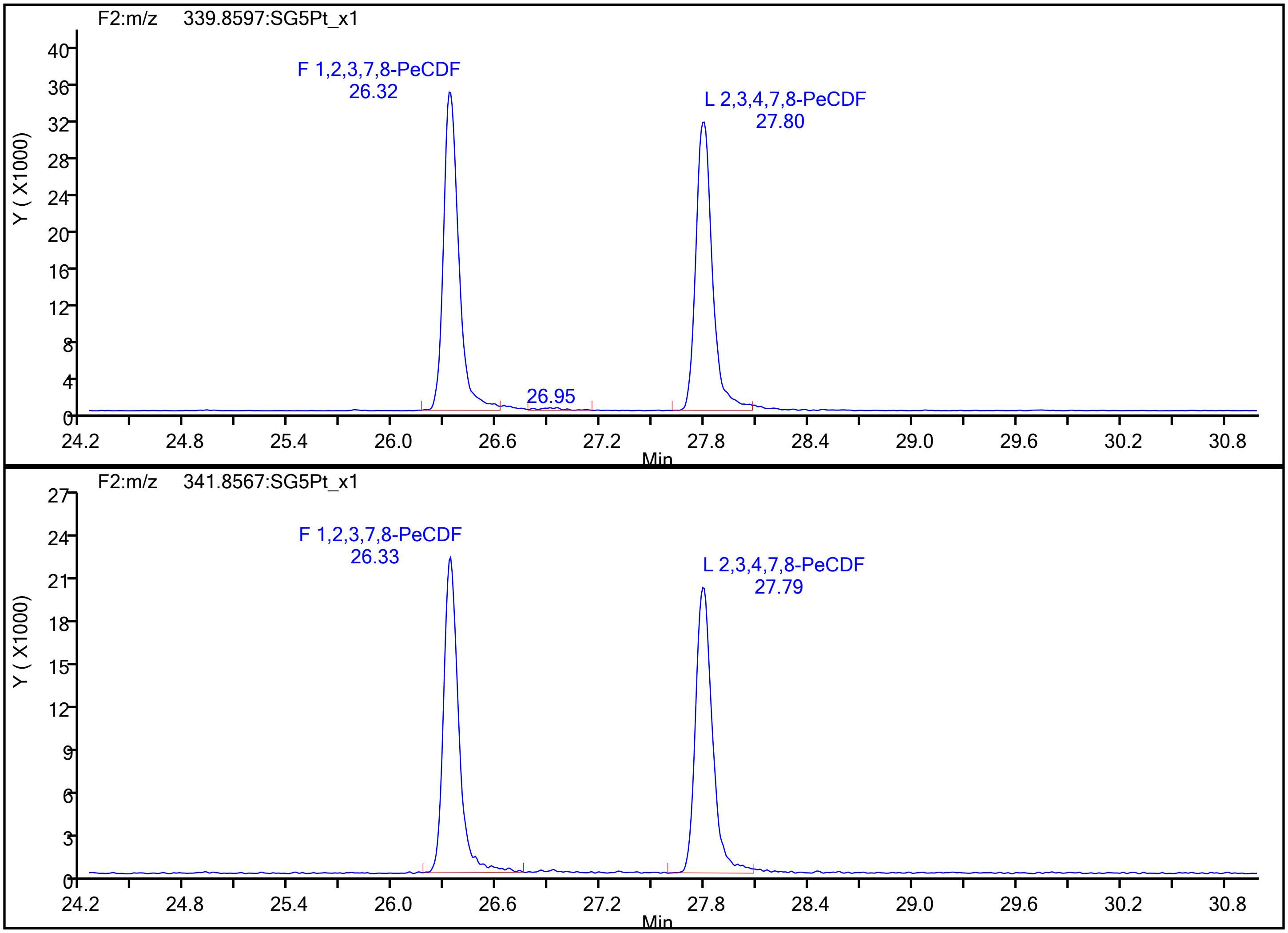

PeCDF Interference Mass

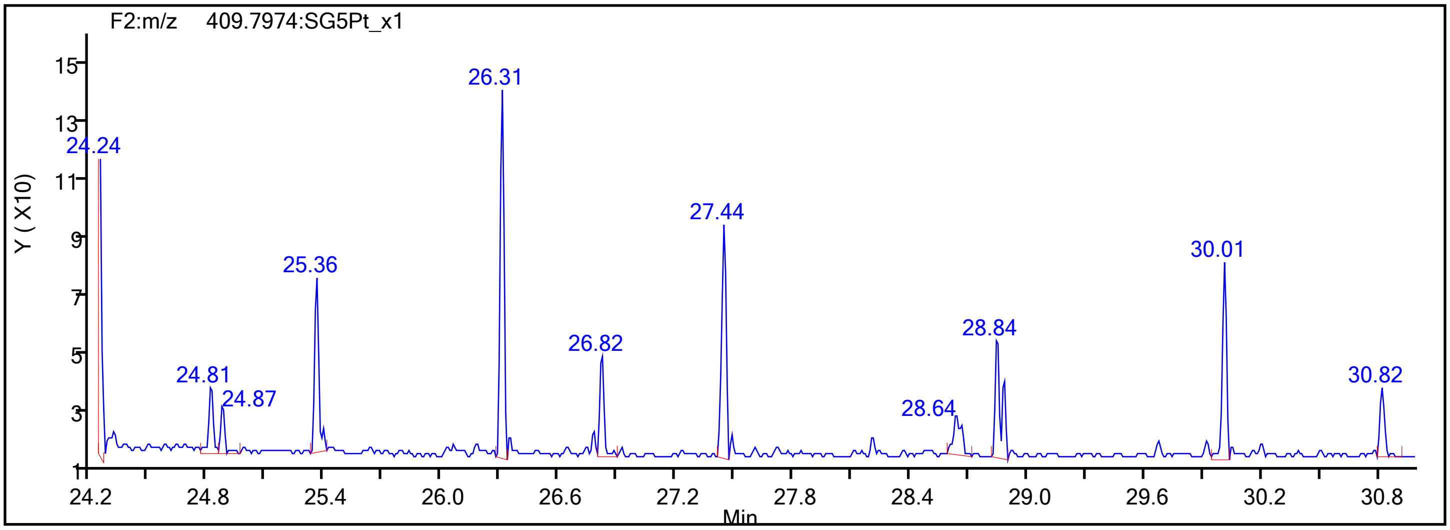

Report Date: 18-Sep-2020 11:00:11 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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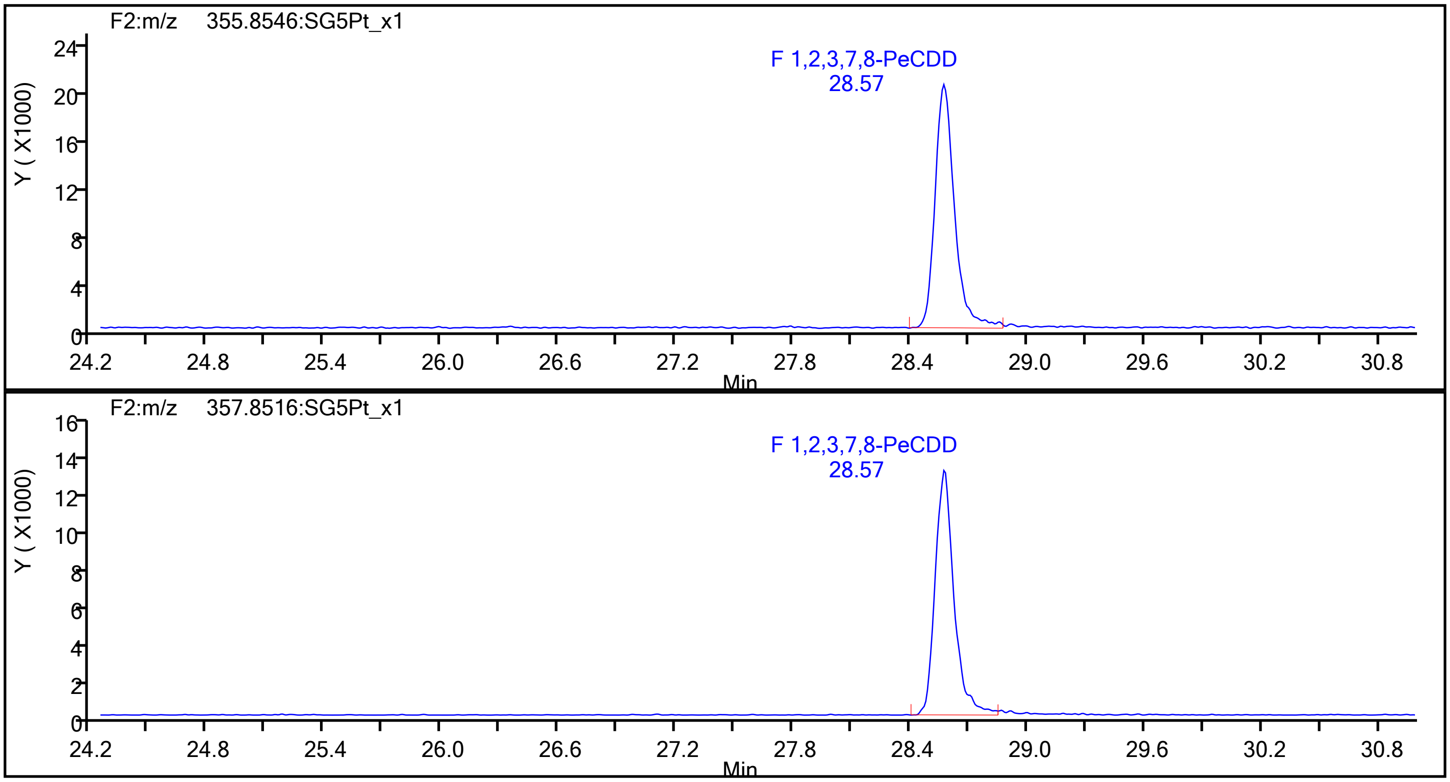

PeCDD Standards

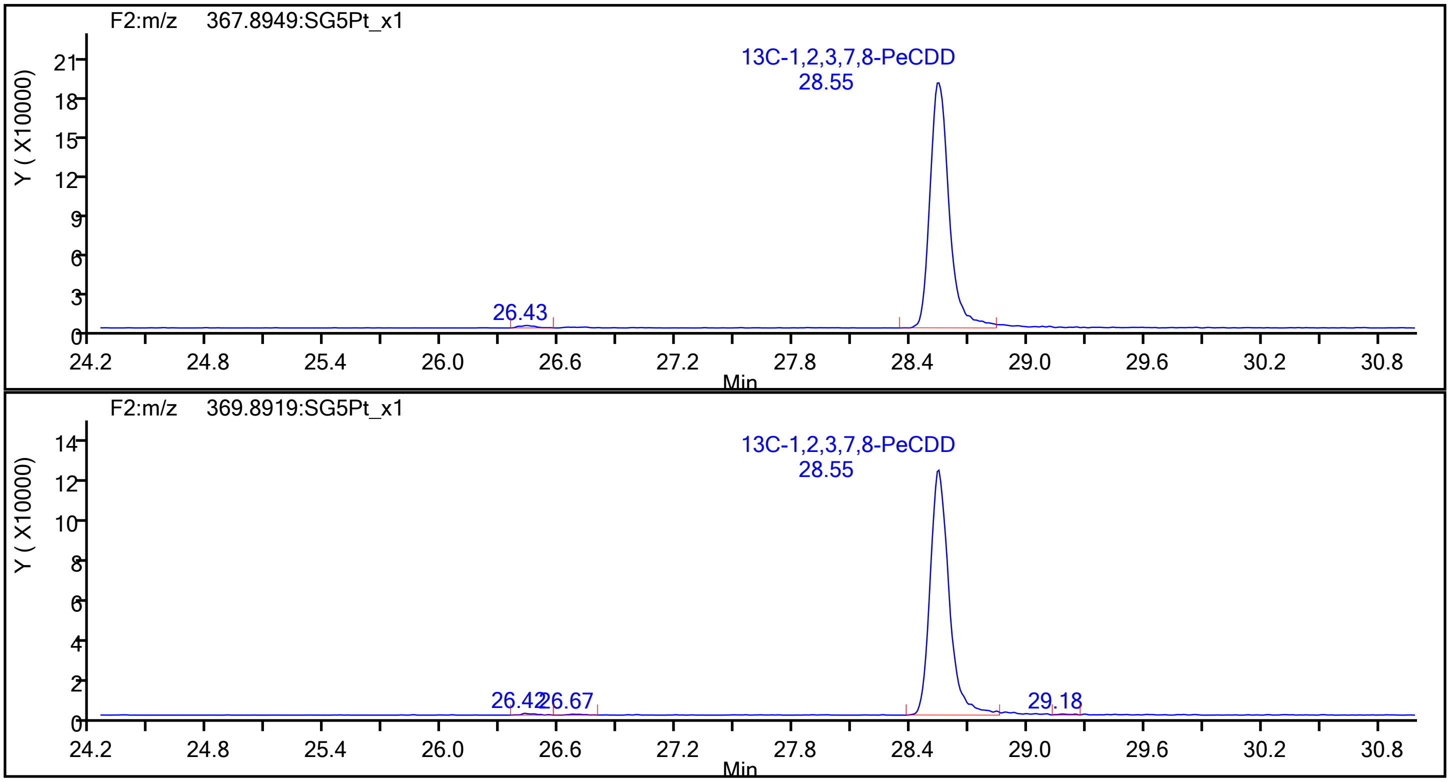

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HxCDF

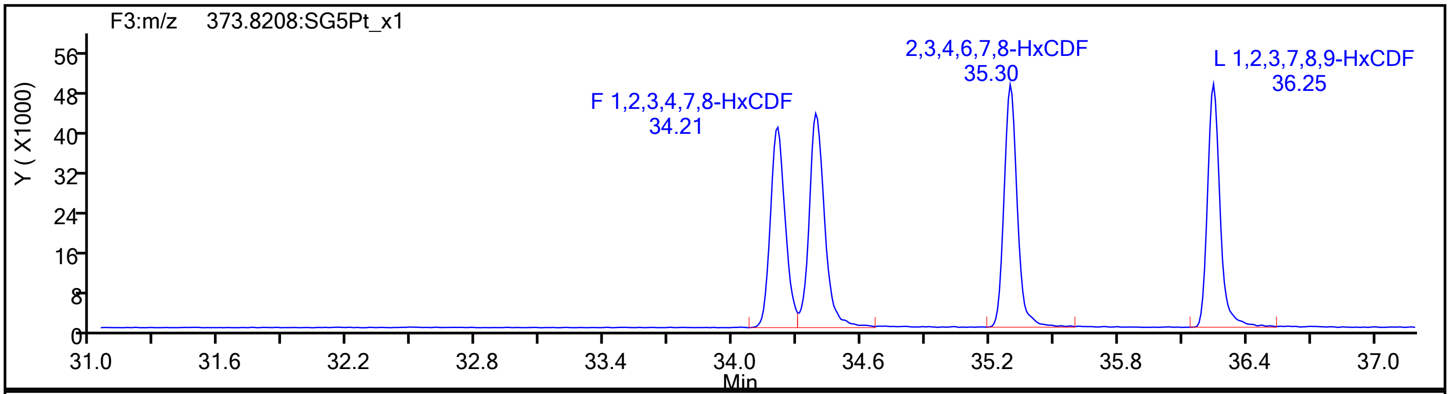

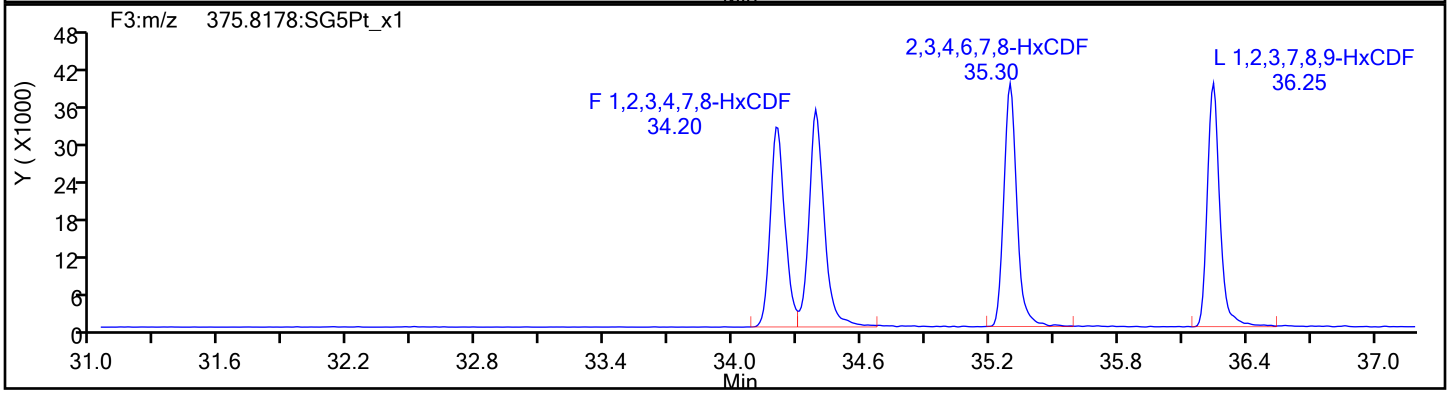

HxCDF Standards

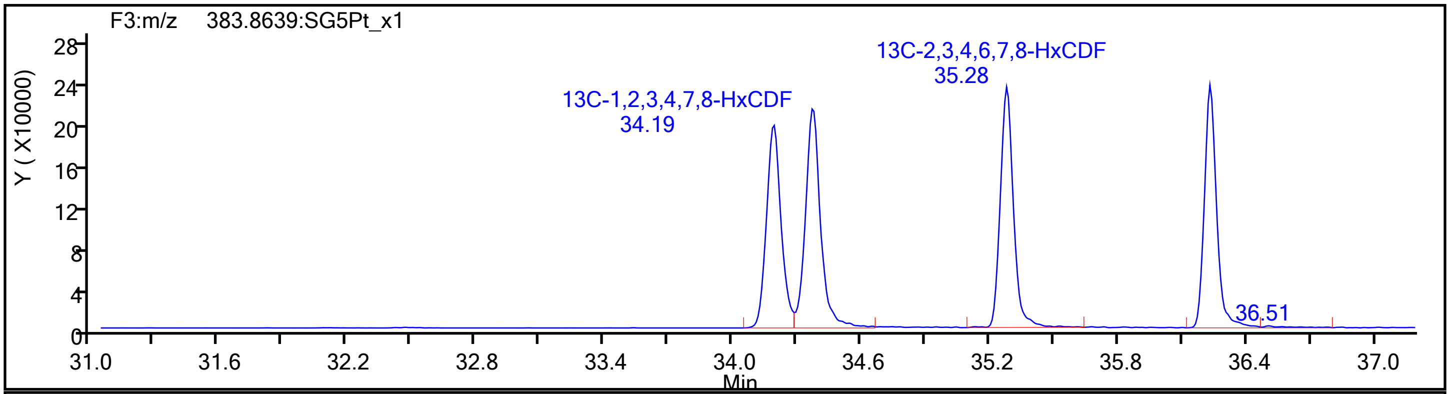

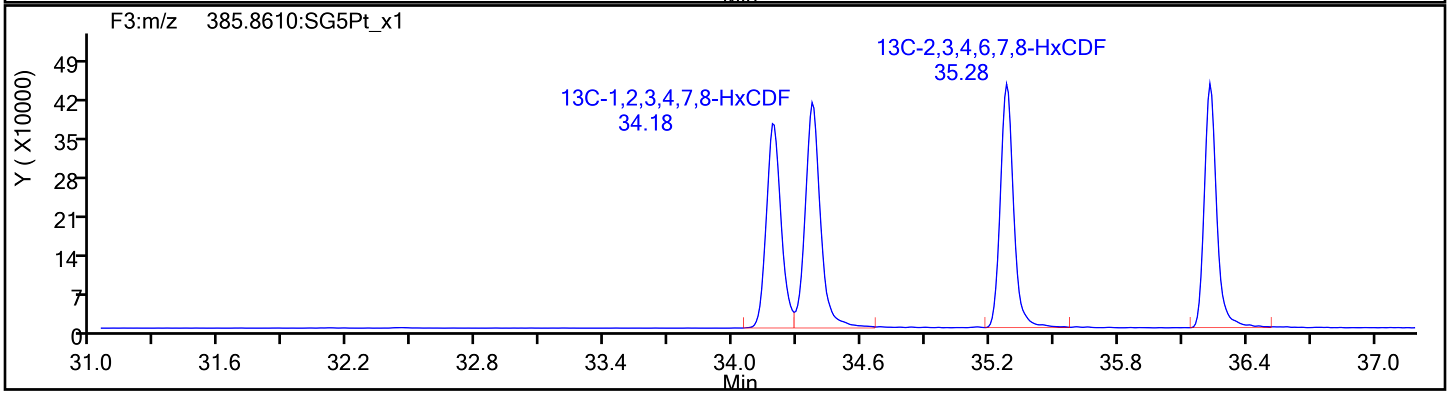

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Eurofins TestAmerica, Sacramento

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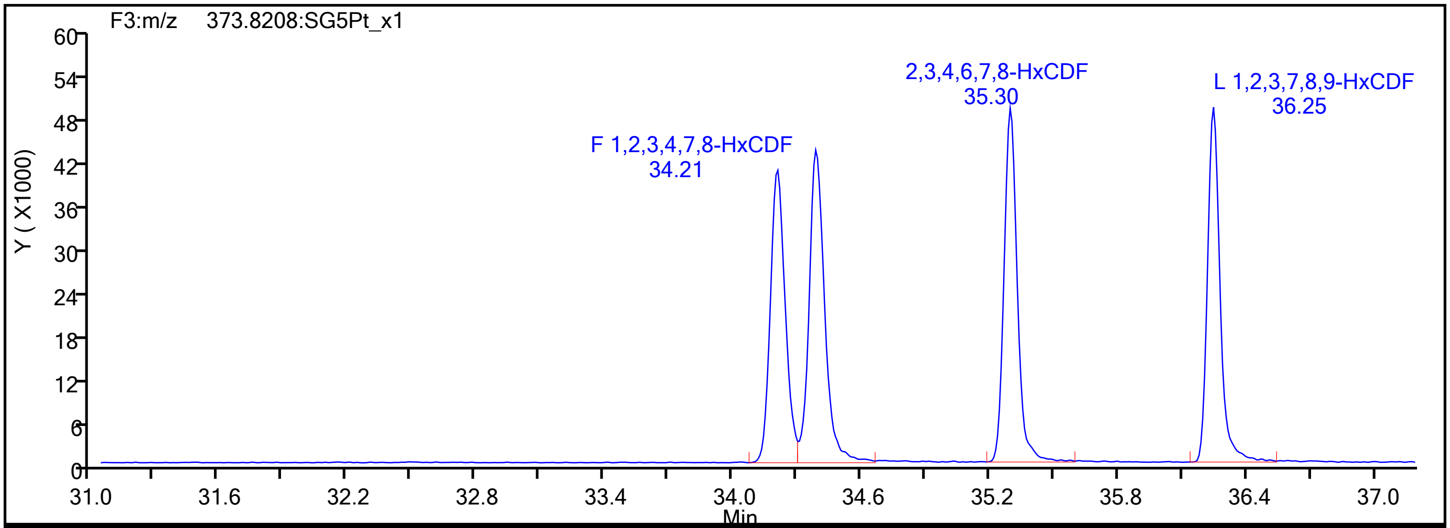

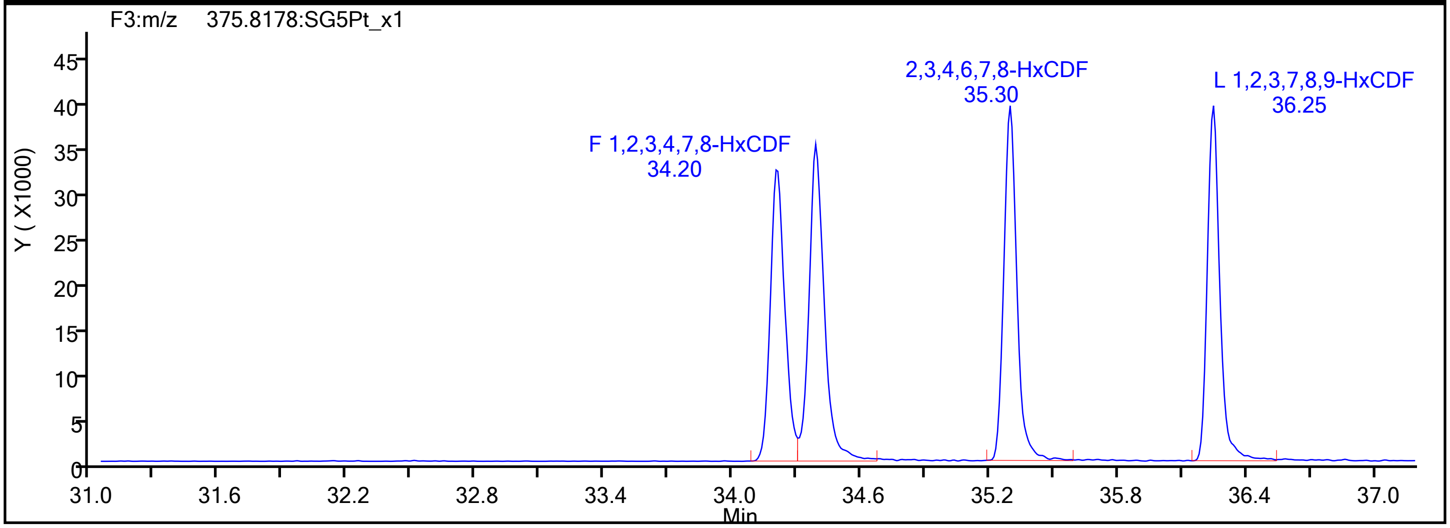

HxCDF Interference Mass

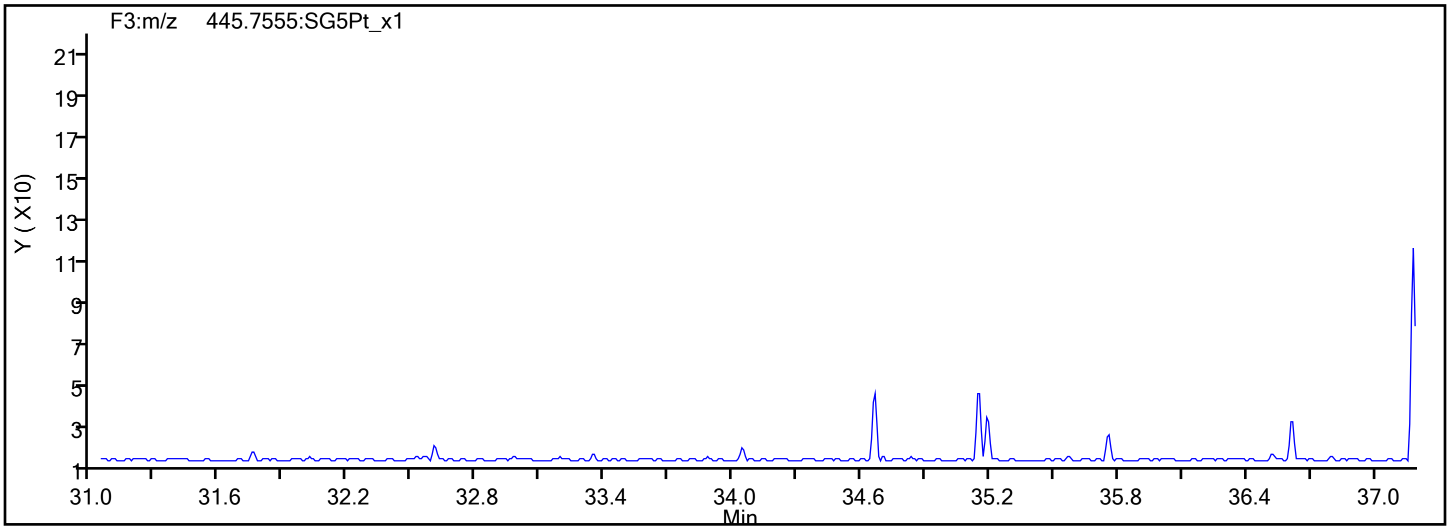

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HxCDD

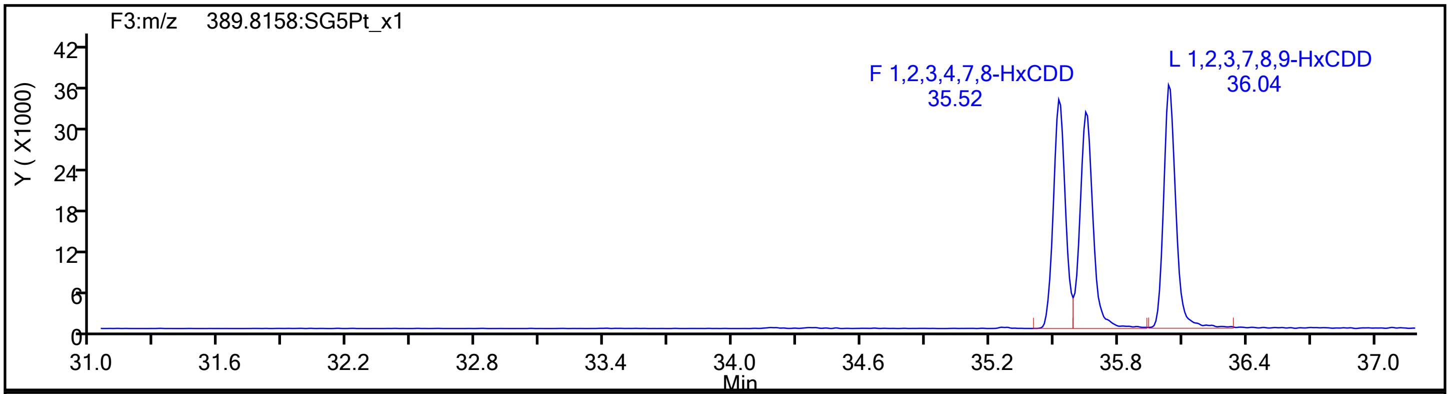

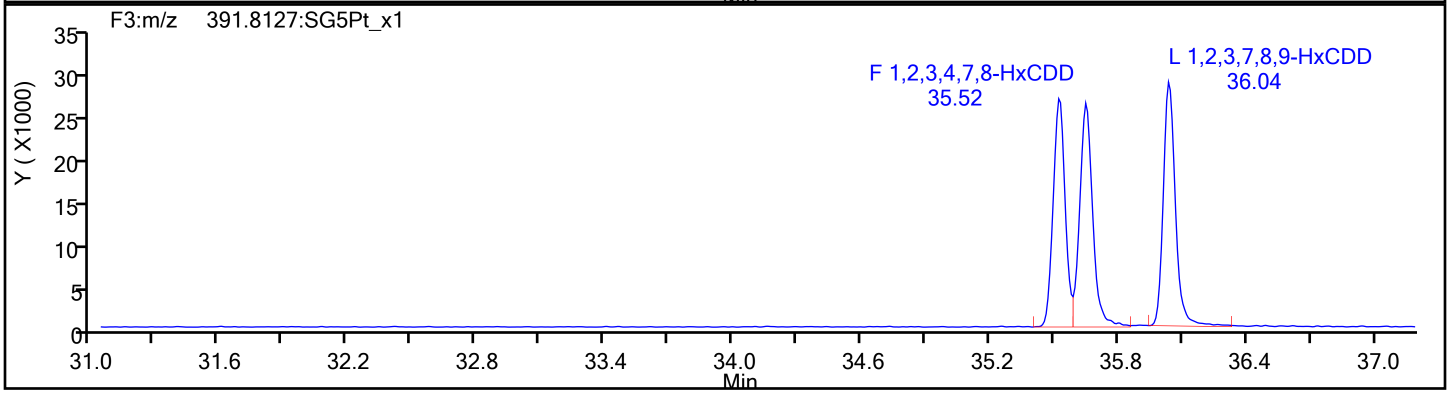

HxCDD Standards

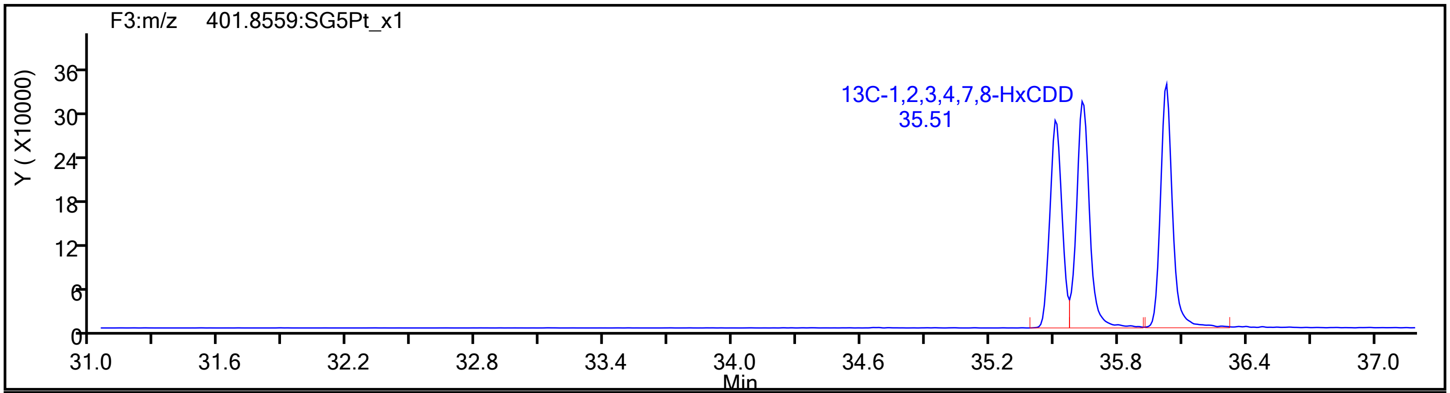

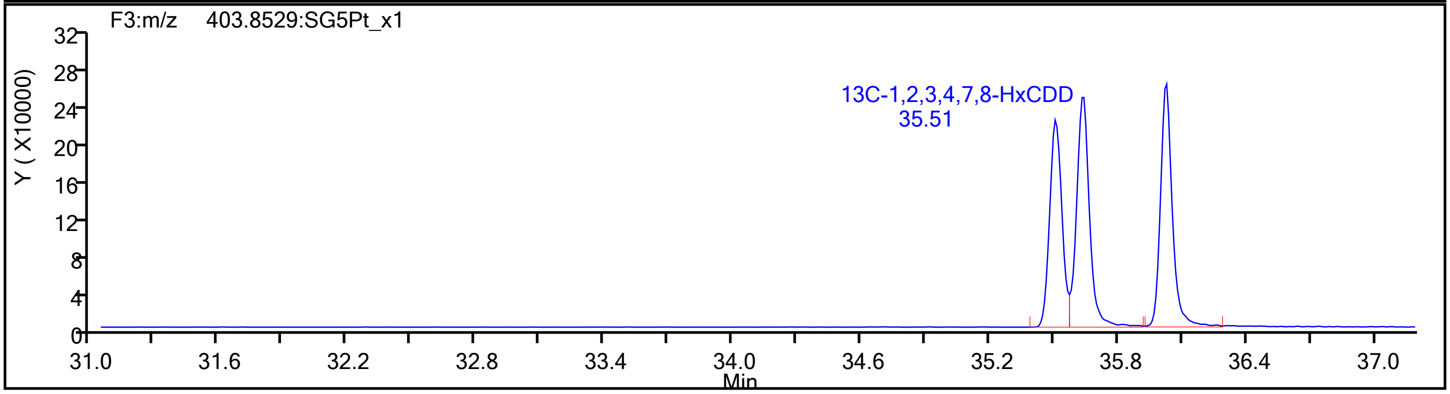

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Eurofins TestAmerica, Sacramento

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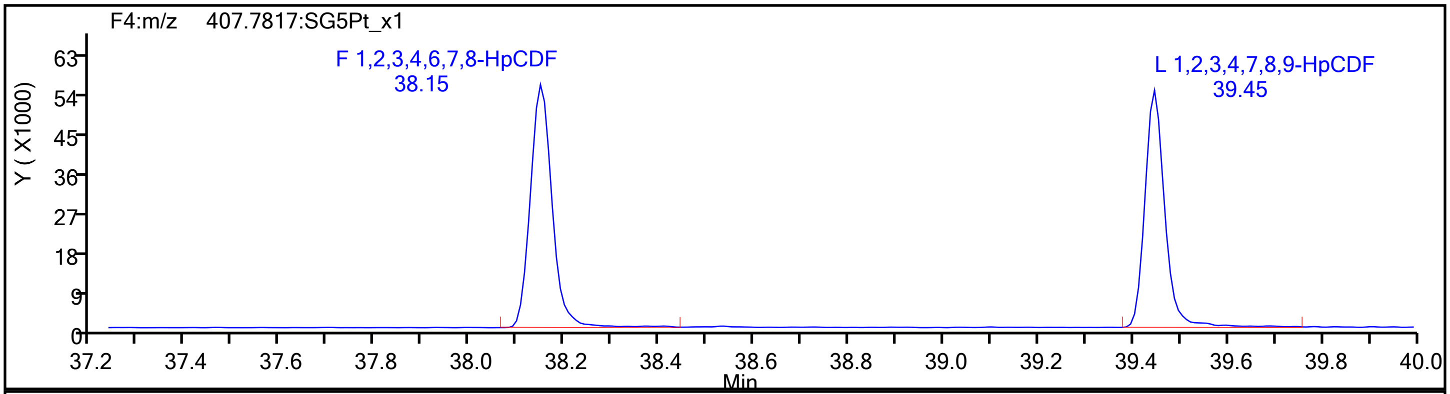

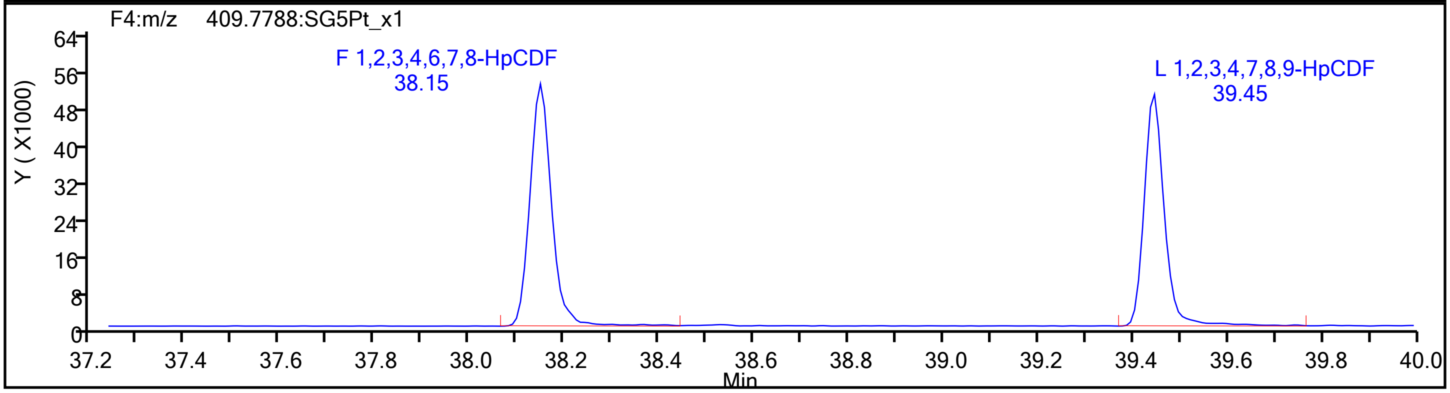

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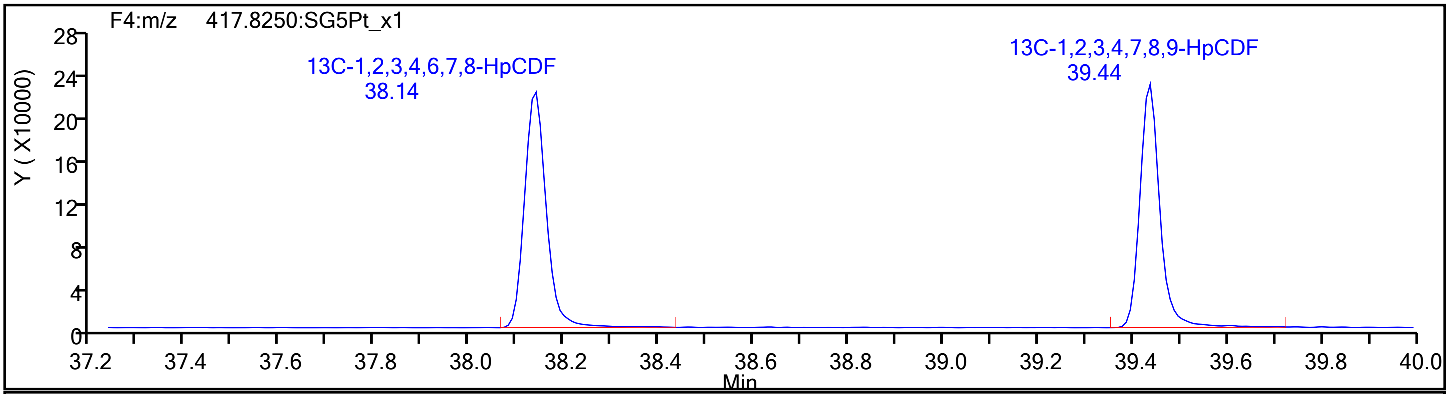

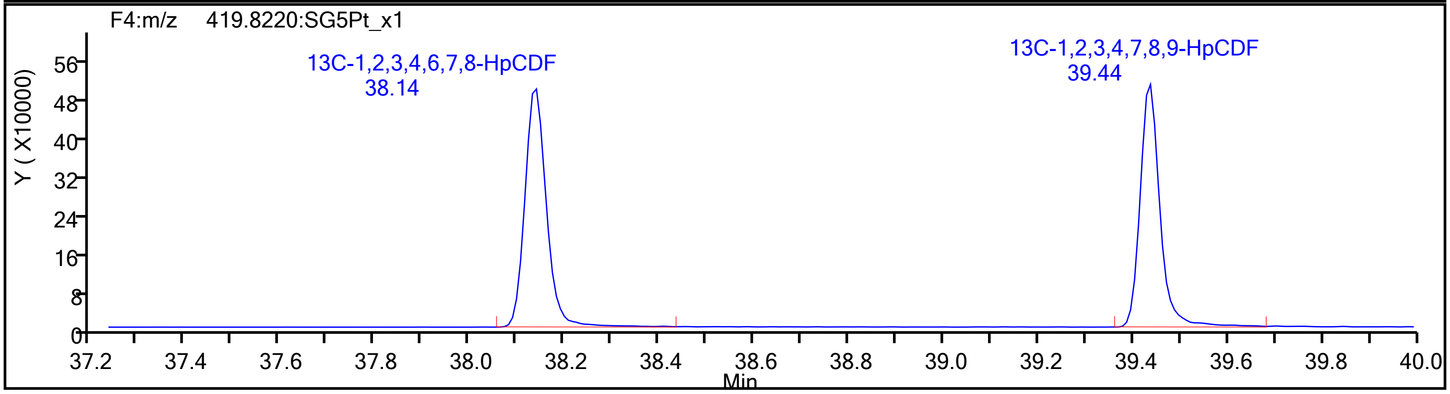

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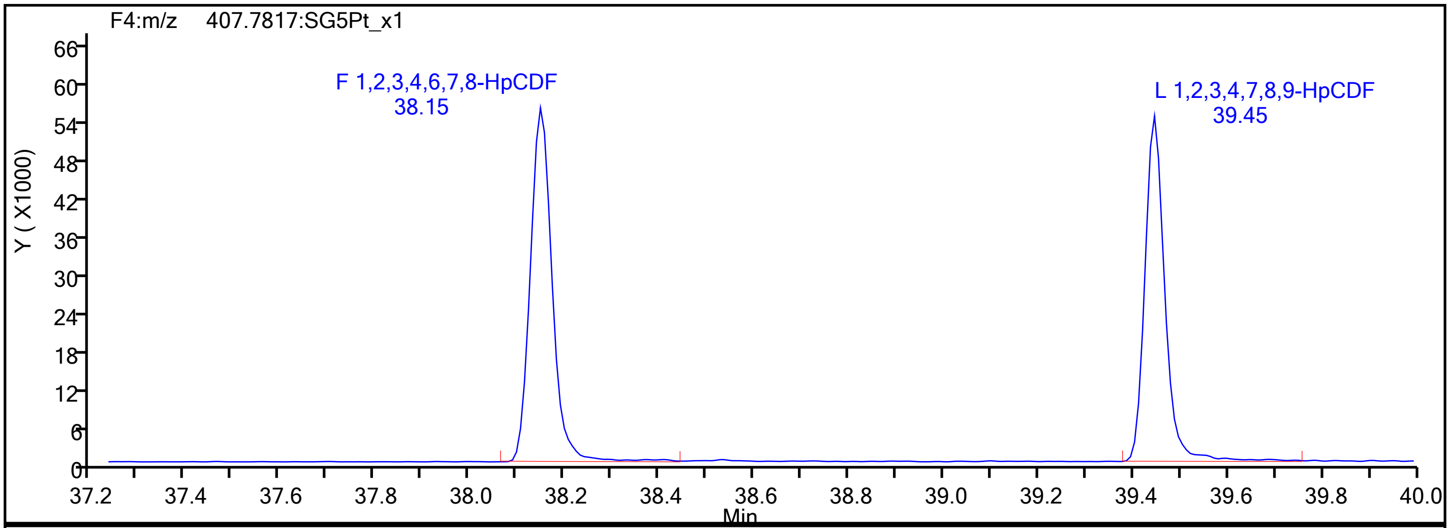

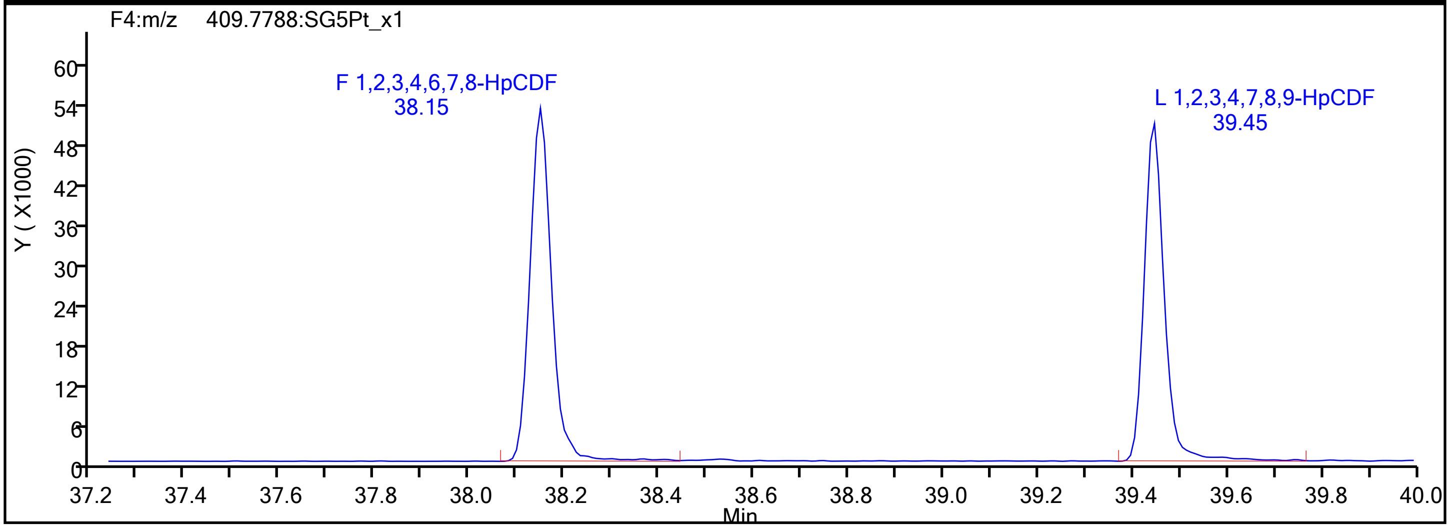

HpCDF Interference Mass

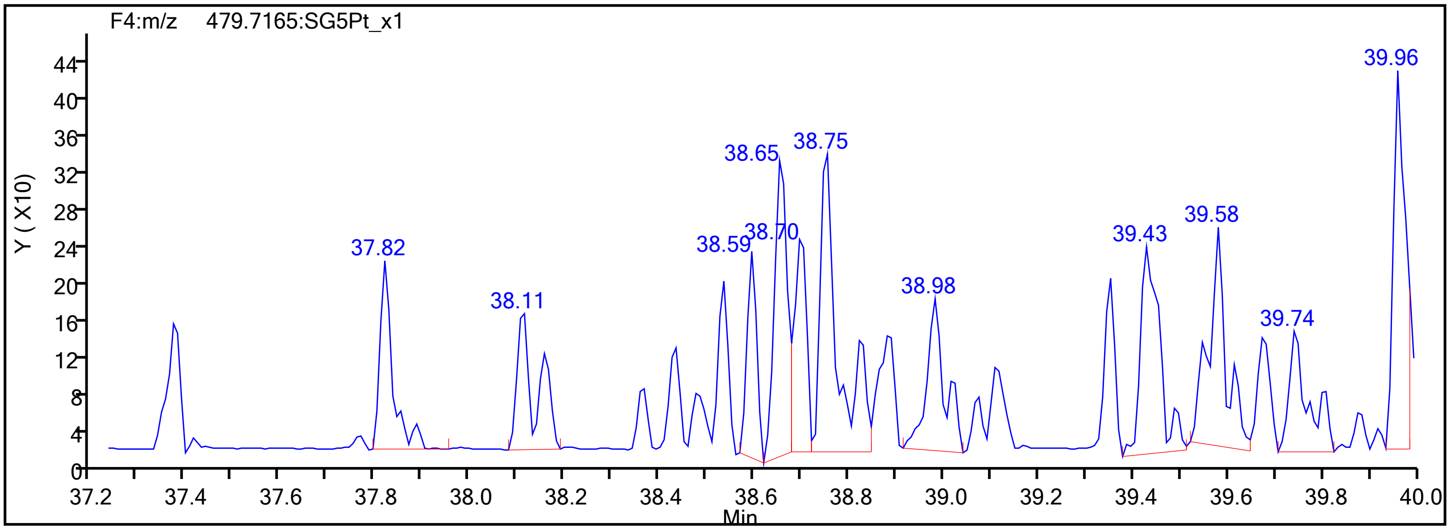

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HpCDD

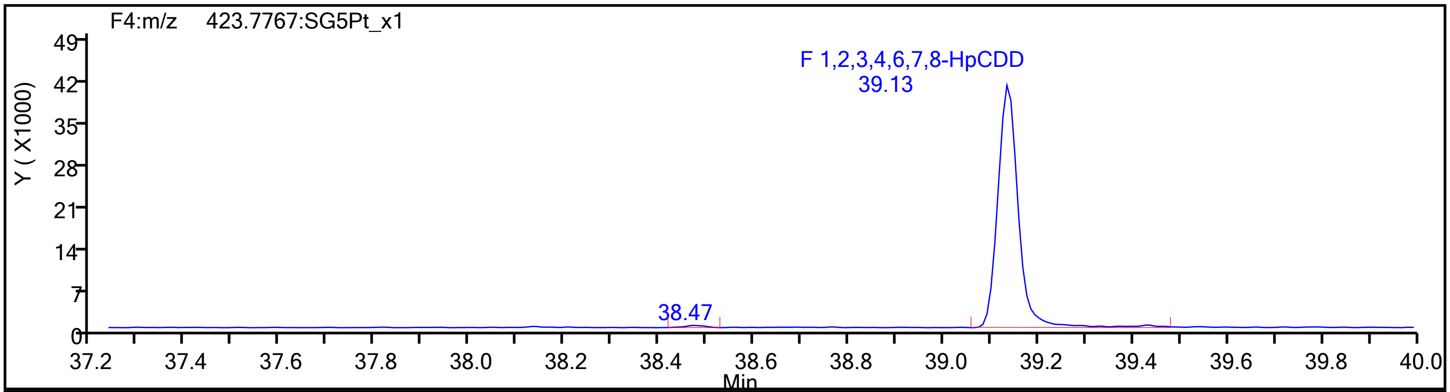

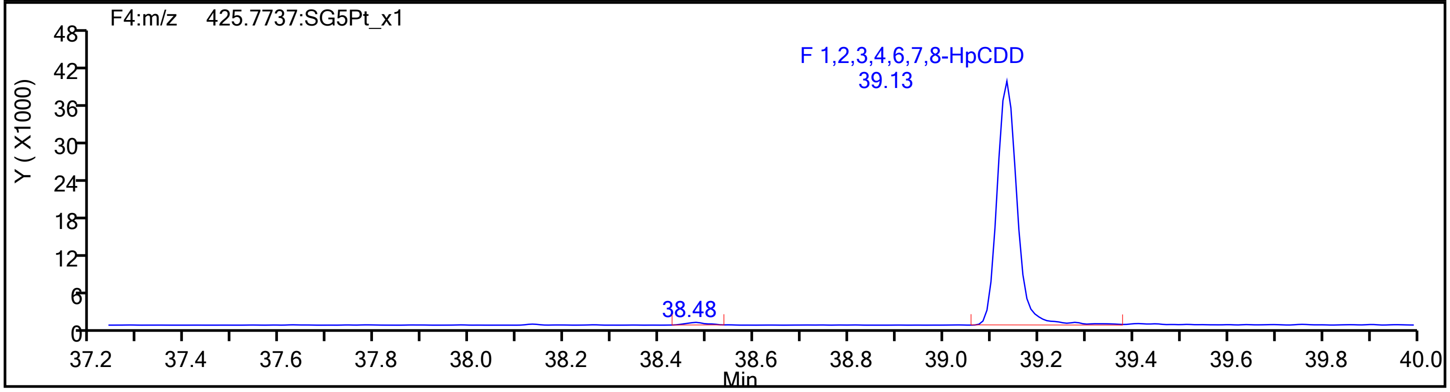

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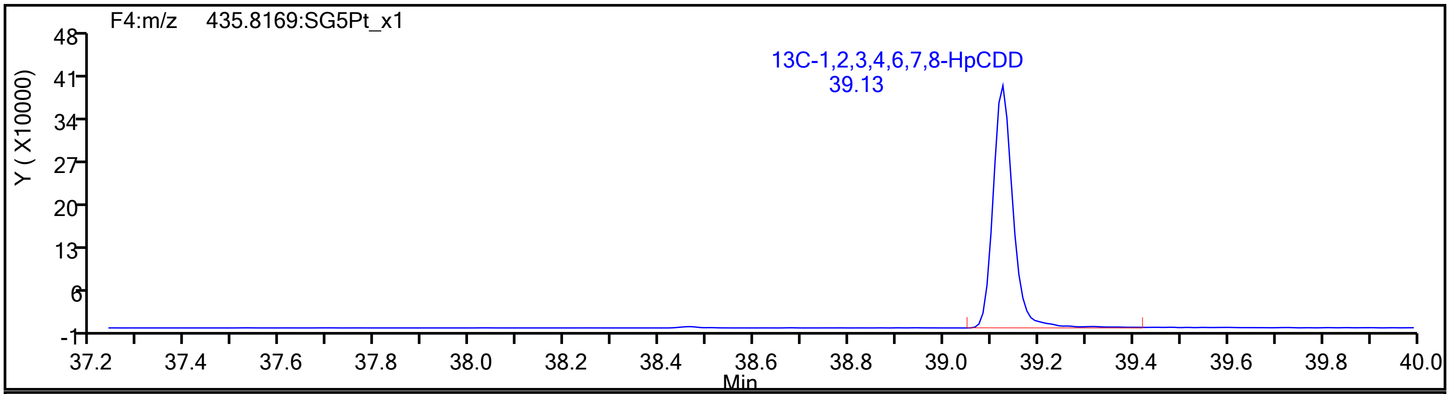

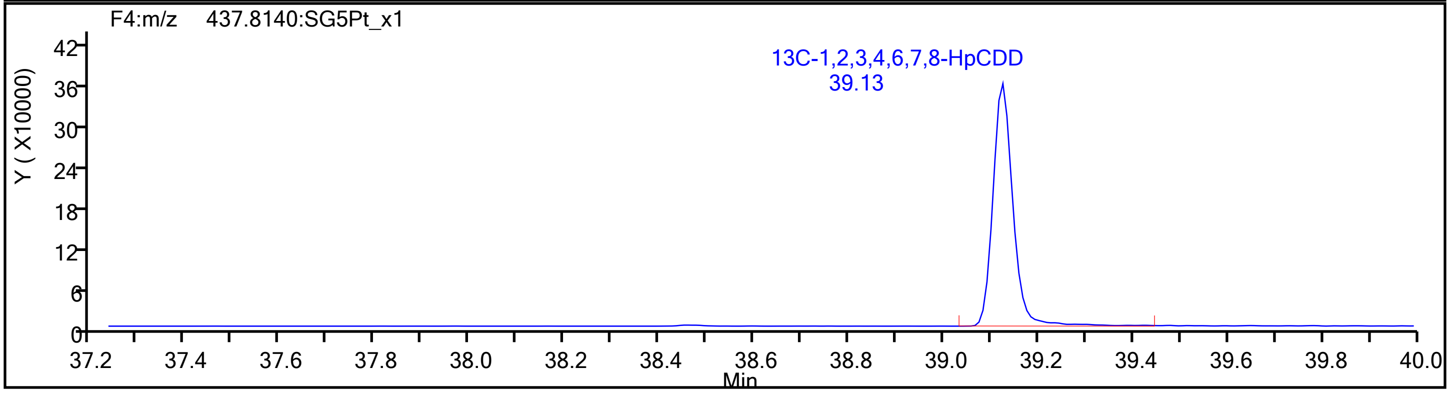

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

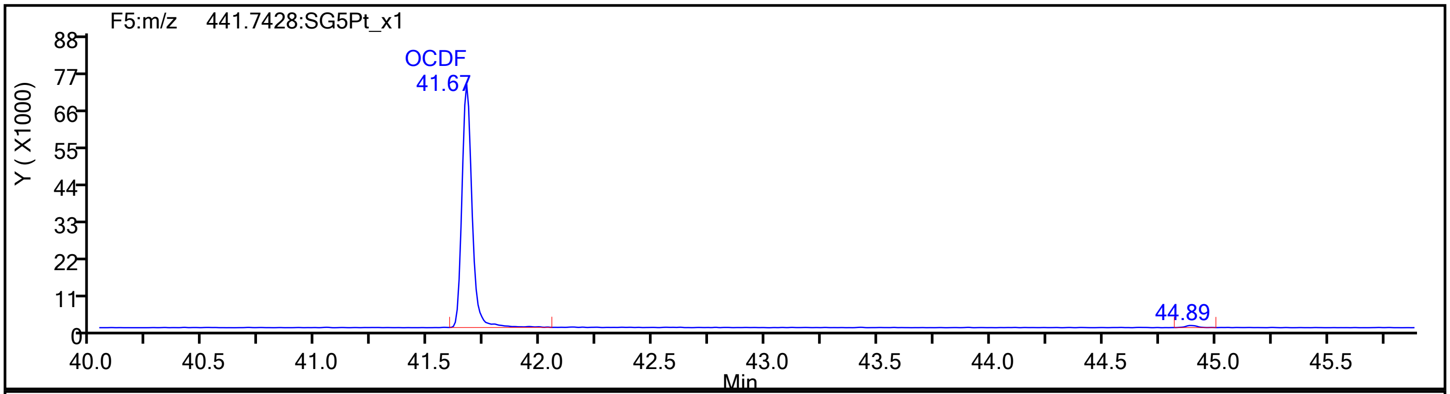

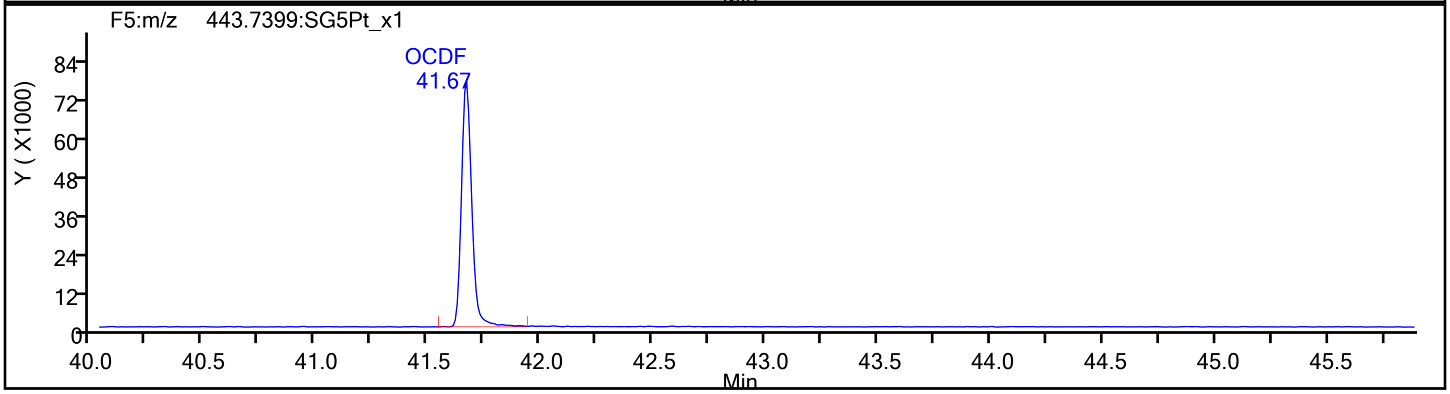

OCDF Standards

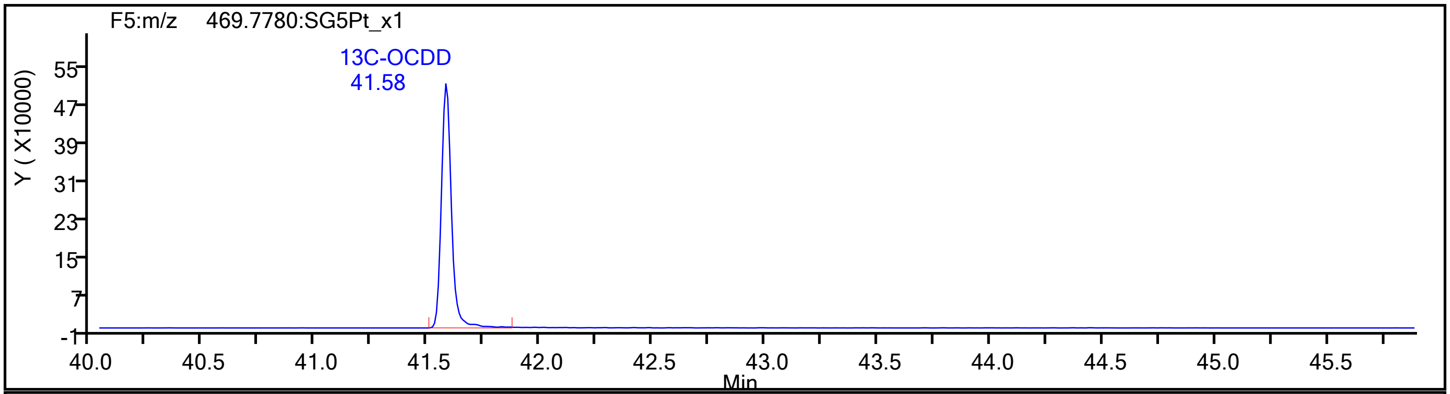

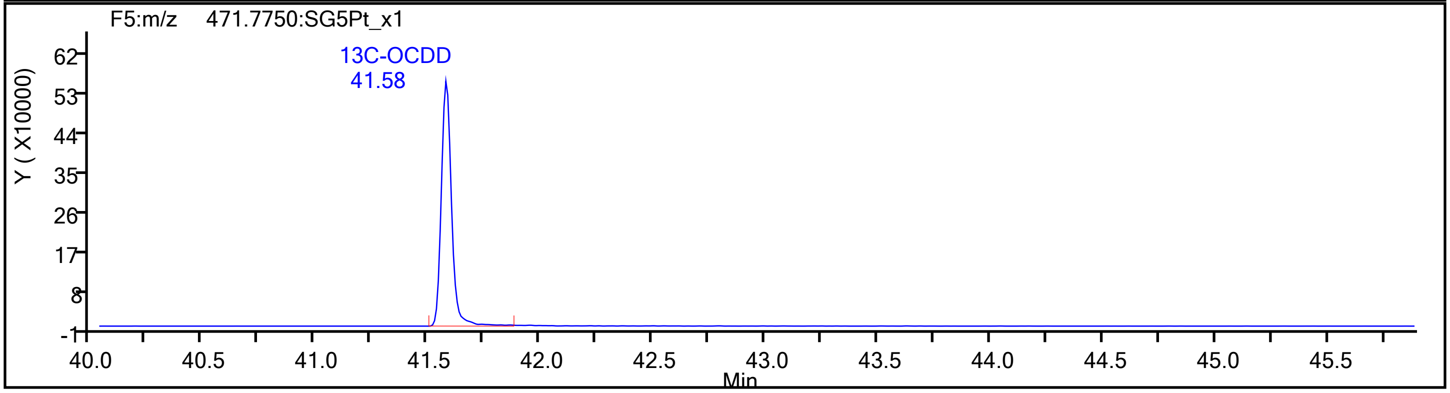

Report Date: 18-Sep-2020 11:00:12 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

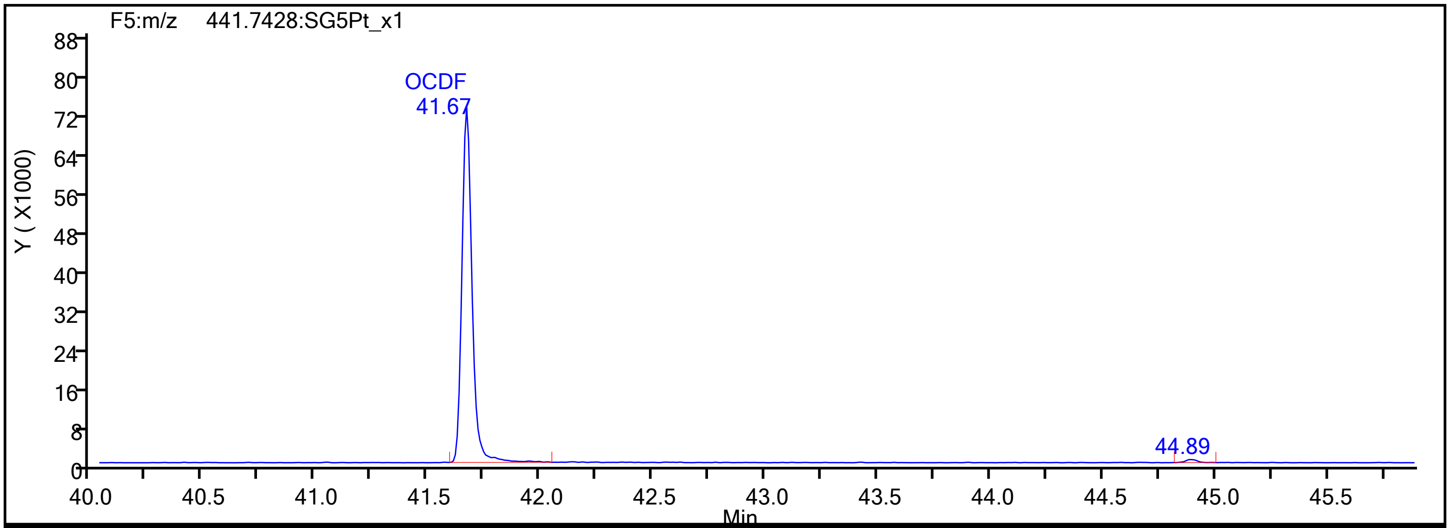

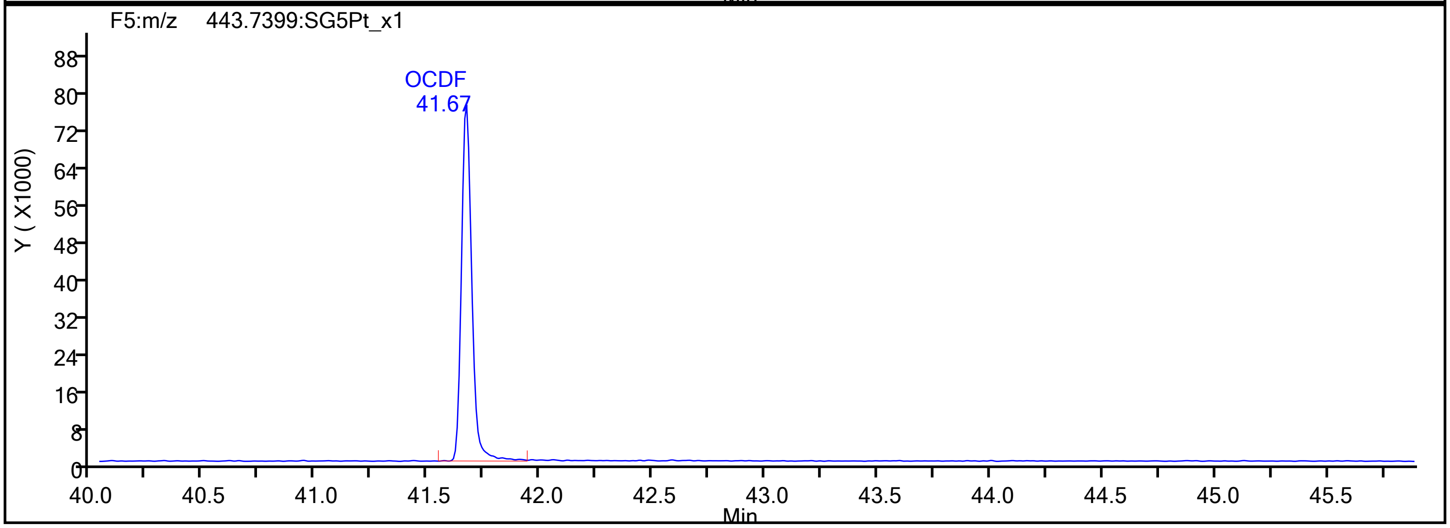

OCDF Interference Mass

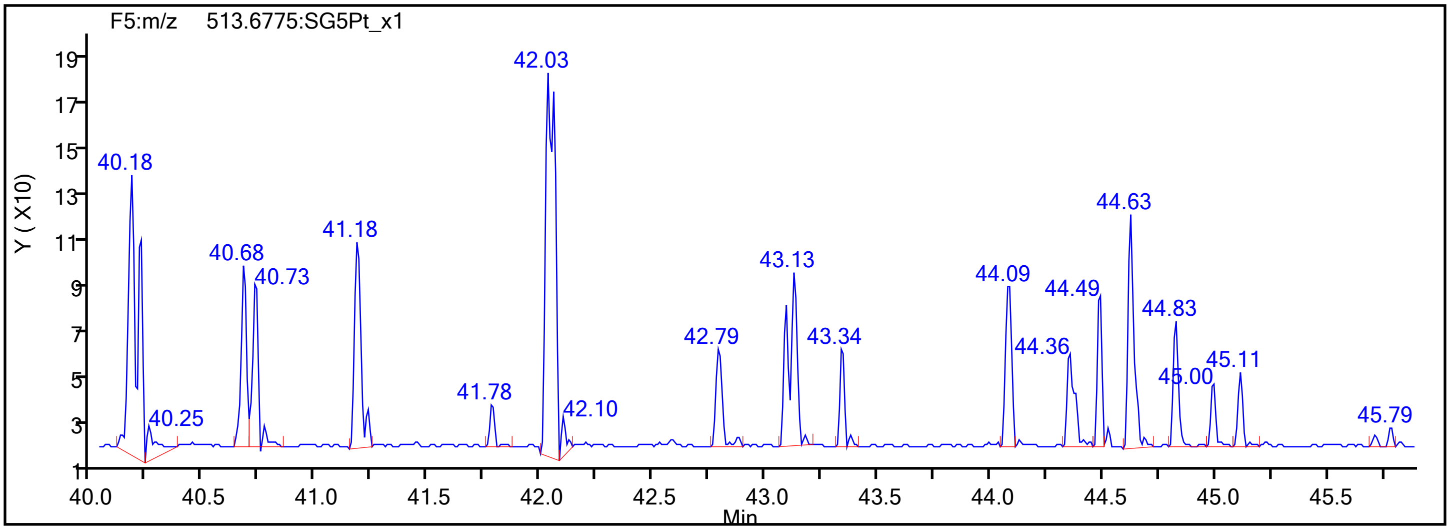

Report Date: 18-Sep-2020 11:00:12 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

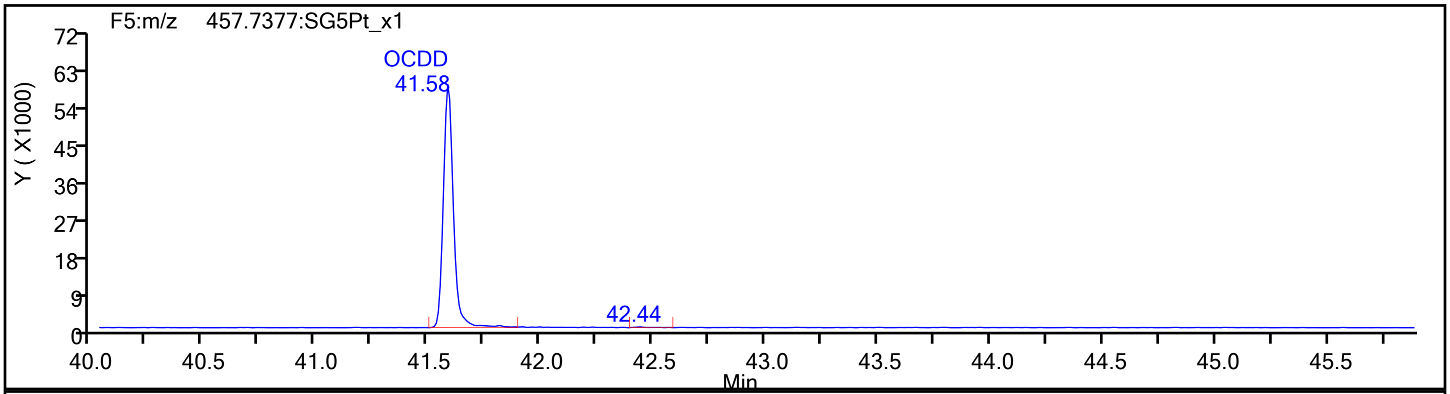

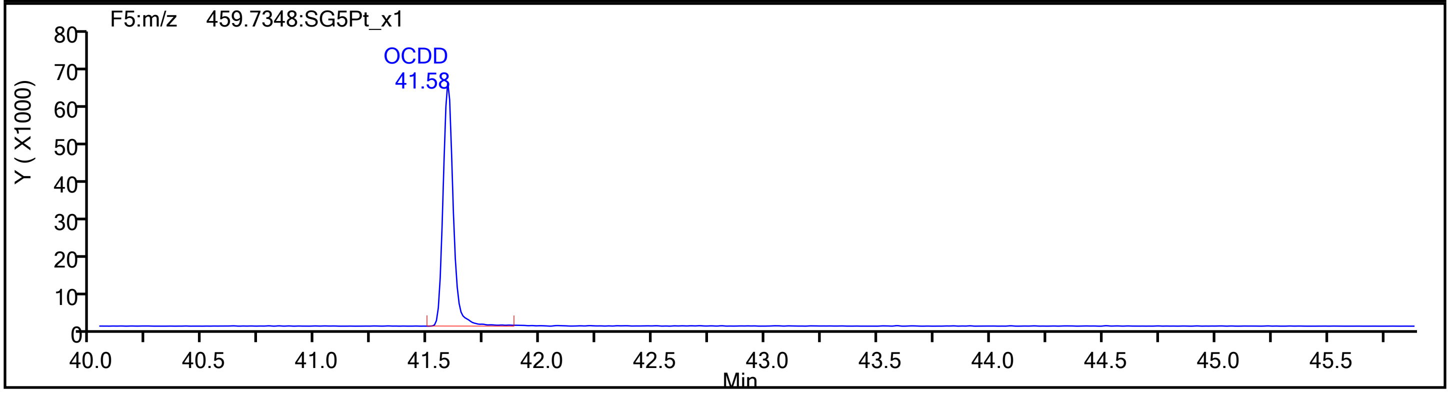

OCDD Standards

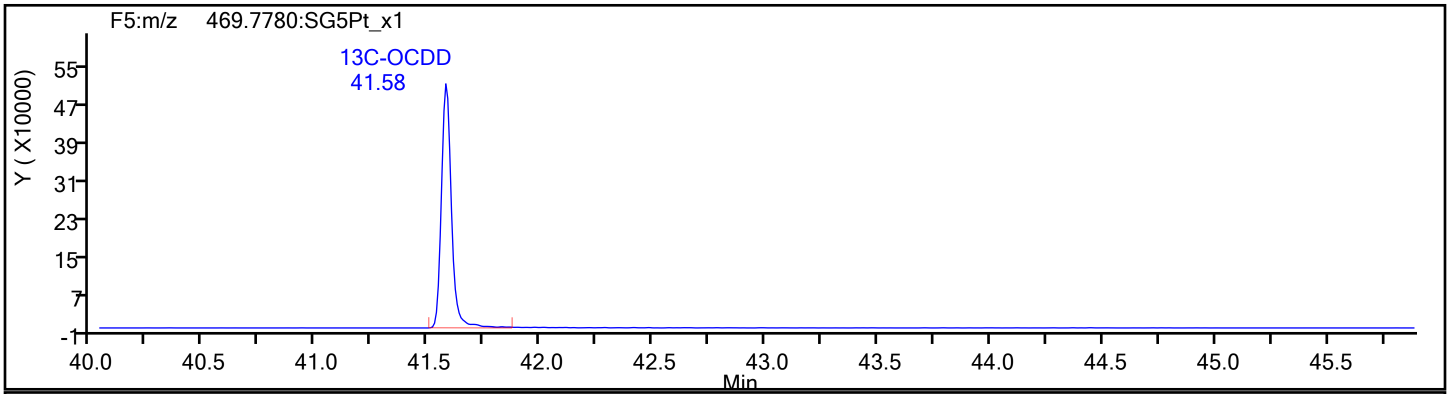

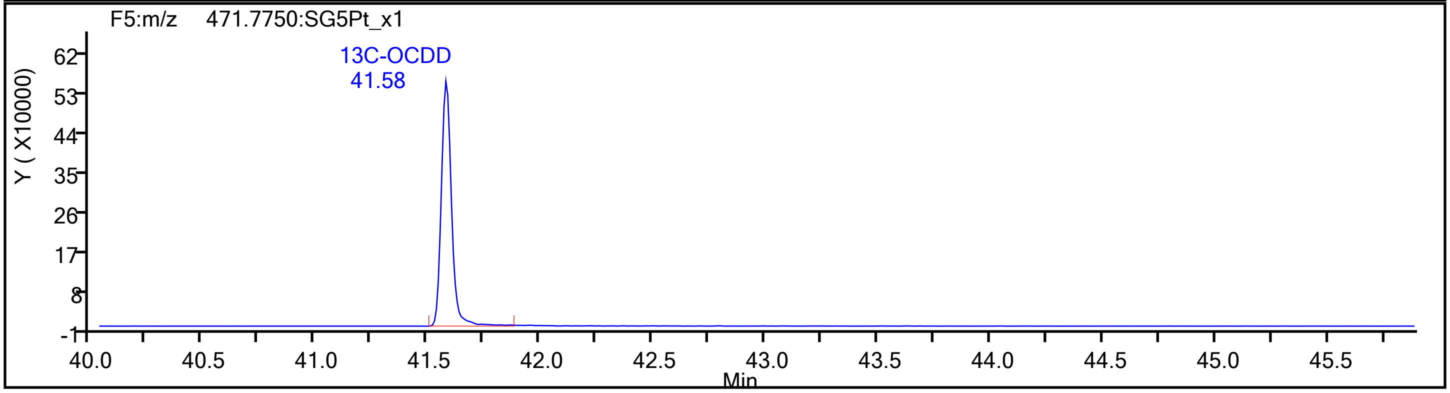

Report Date: 18-Sep-2020 11:00:12 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d

Injection Date: 17-Sep-2020 14:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

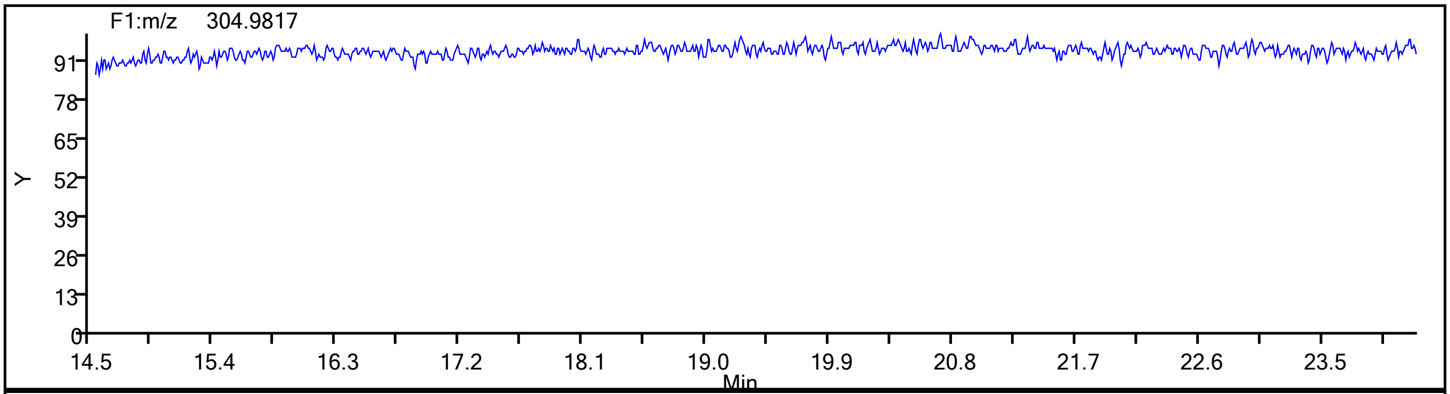

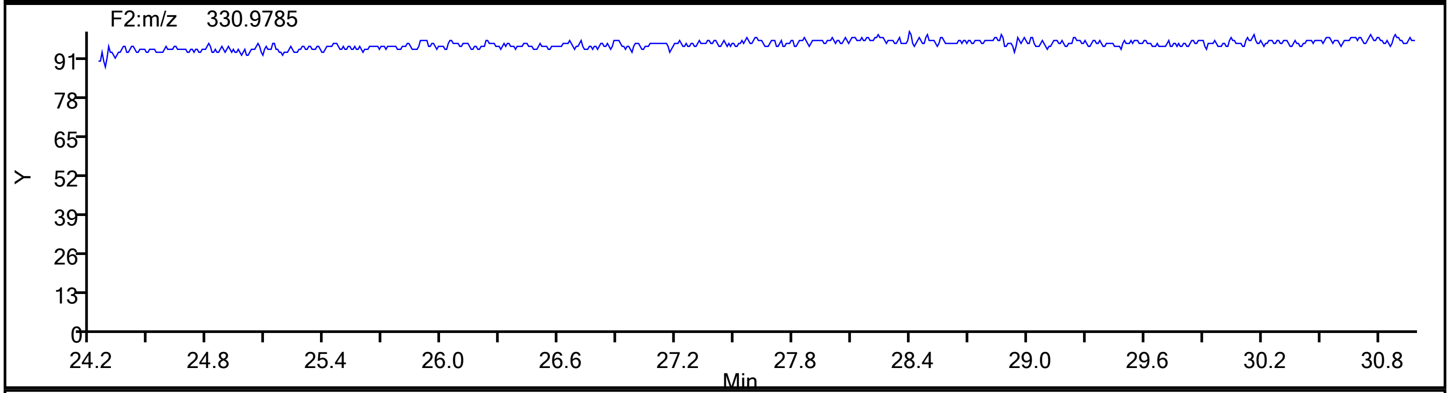

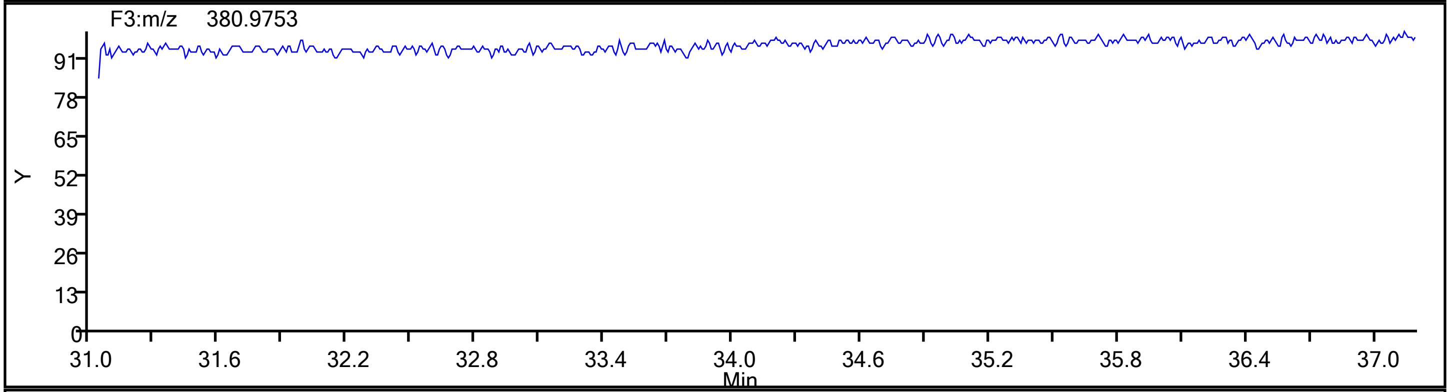

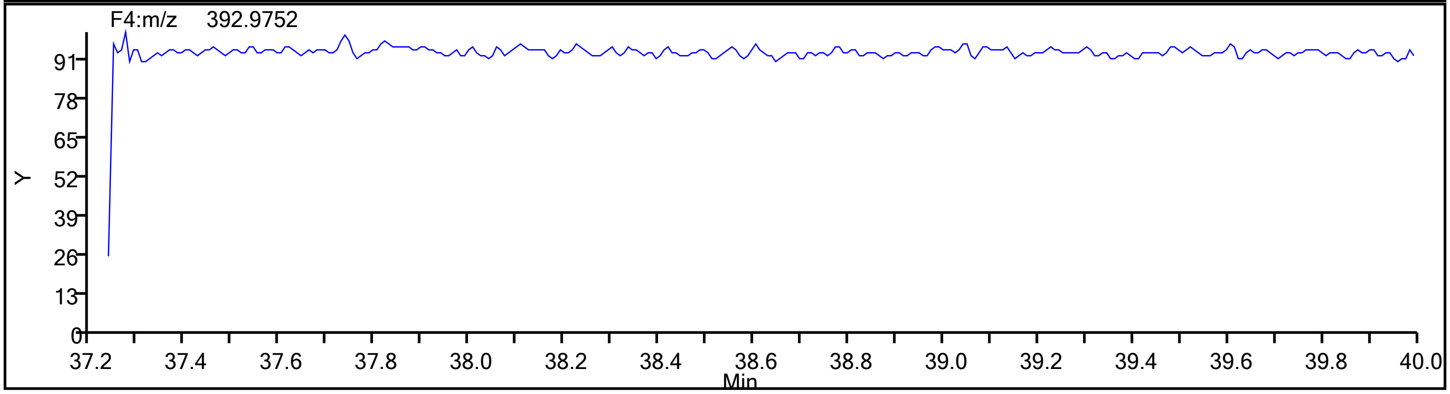

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_5.d		
Injection Date:	17-Sep-2020 14:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

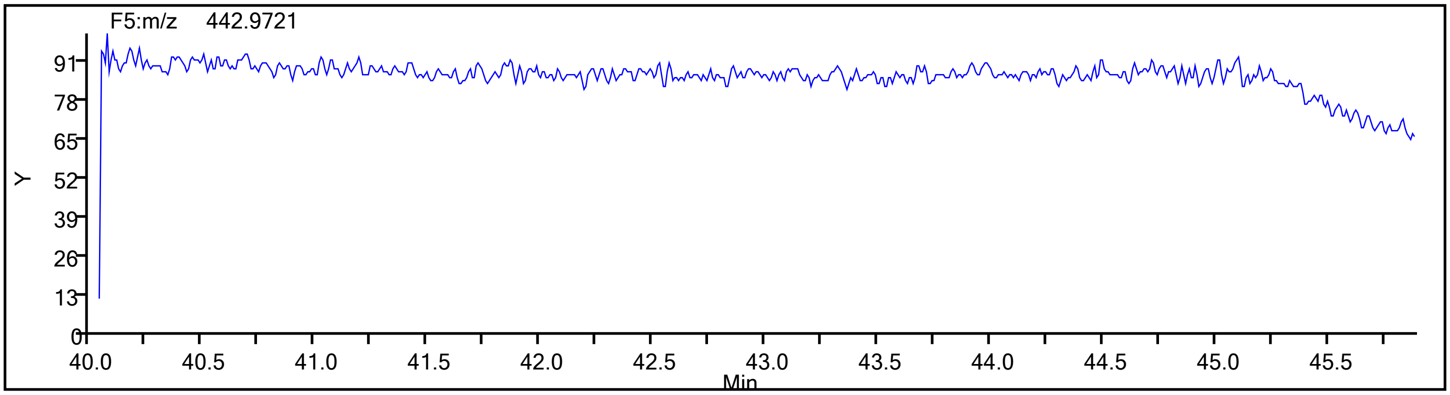

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 14:53:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:15 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:33:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.150	2813179	0.79	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.231	4542653	0.78	1.5883	101.7	101.7	0.3844	0.3844	102	
2,3,7,8-TCDF	19.256	474391	0.78	1.0857	9.619	9.619	0.0477	0.0477	96.19	
S Total TCDF					9.619	9.619	0.0477	0.0477		
D 13C-2,3,7,8-TCDD	20.511	3120967	0.83	1.1194	99.1	99.1	0.3561	0.3561	99.11	
$ 37Cl4-2,3,7,8-TCDD	20.537	319378		1.1468	9.900	9.900	0.0185	0.0185	99.00	
2,3,7,8-TCDD	20.537	327581	0.81	1.0810	9.710	9.710	0.0848	0.0848	97.10	
S Total TCDD					9.710	9.710	0.0848	0.0848		
D 13C-1,2,3,7,8-PeCDF	26.305	4275697	1.59	1.4782	102.8	102.8	0.4599	0.4599	103	
1,2,3,7,8-PeCDF	26.331	2200993	1.56	1.0547	48.8	48.8	0.2106	0.2106	97.62	
D 13C-2,3,4,7,8-PeCDF	27.762	3973993	1.60	1.3912	101.5	101.5	0.4887	0.4887	102	
2,3,4,7,8-PeCDF	27.788	2155859	1.55	1.1035	49.2	49.2	0.2324	0.2324	98.32	
S Total PeCDF					98.0	98.0	0.2215	0.2215		
D 13C-1,2,3,7,8-PeCDD	28.538	2681743	1.57	0.9415	101.3	101.3	0.2103	0.2103	101	
1,2,3,7,8-PeCDD	28.563	1406053	1.57	1.0680	49.1	49.1	0.0790	0.0790	98.18	
S Total PeCDD					49.1	49.1	0.0790	0.0790		
D 13C-1,2,3,4,7,8-HxCDF	34.183	3456400	0.54	1.1378	99.9	99.9	0.4632	0.4632	99.88	
1,2,3,4,7,8-HxCDF	34.200	2124449	1.27	1.2643	48.6	48.6	0.2657	0.2657	97.23	
D 13C-1,2,3,6,7,8-HxCDF	34.369	4006041	0.53	1.3173	100.0	100.0	0.4001	0.4001	100	
1,2,3,6,7,8-HxCDF	34.386	2377194	1.26	1.2230	48.5	48.5	0.2490	0.2490	97.04	
D 13C-2,3,4,6,7,8-HxCDF	35.270	3791155	0.53	1.2457	100.1	100.1	0.4231	0.4231	100	
2,3,4,6,7,8-HxCDF	35.287	2282654	1.26	1.2464	48.3	48.3	0.2165	0.2165	96.61	
D 13C-1,2,3,7,8,9-HxCDF	36.230	3526809	0.53	1.1840	97.9	97.9	0.4452	0.4452	97.94	
1,2,3,7,8,9-HxCDF	36.239	2160700	1.25	1.2638	48.5	48.5	0.2143	0.2143	96.96	
S Total HxCDF					193.9	193.9	0.2364	0.2364		
* 13C-1,2,3,7,8,9-HxCDD	36.020	3041432	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.506	2533537	1.27	0.8477	98.3	98.3	0.2643	0.2643	98.26	
1,2,3,4,7,8-HxCDD	35.523	1430853	1.28	1.1561	48.9	48.9	0.1240	0.1240	97.70	
D 13C-1,2,3,6,7,8-HxCDD	35.632	2993576	1.25	0.9979	98.6	98.6	0.2245	0.2245	98.64	
1,2,3,6,7,8-HxCDD	35.649	1511008	1.24	1.0284	49.1	49.1	0.1306	0.1306	98.16	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.036	1594191	1.26	1.1789	48.9	48.9	0.1177	0.1177	97.86	
S Total HxCDD					146.9	146.9	0.1241	0.1241		
D 13C-1,2,3,4,6,7,8-HpCDF	38.135	2934128	0.46	0.9884	97.6	97.6	0.5361	0.5361	97.61	
1,2,3,4,6,7,8-HpCDF	38.143	2172971	1.04	1.5064	49.2	49.2	0.2067	0.2067	98.33	
D 13C-1,2,3,4,7,8,9-HpCDF	39.432	2747864	0.46	0.9203	98.2	98.2	0.5758	0.5758	98.17	
1,2,3,4,7,8,9-HpCDF	39.441	1944648	1.04	1.4548	48.6	48.6	0.2141	0.2141	97.29	
S Total HpCDF					97.8	97.8	0.2104	0.2104		
D 13C-1,2,3,4,6,7,8-HpCDD	39.121	2834170	1.06	0.9556	97.5	97.5	0.2751	0.2751	97.51	
1,2,3,4,6,7,8-HpCDD	39.129	1486612	1.03	1.0640	49.3	49.3	0.1090	0.1090	98.60	
S Total HpCDD					49.3	49.3	0.1090	0.1090		
D 13C-OCDD	41.575	4436272	0.91	0.7420	196.6	196.6	0.2403	0.2403	98.28	
OCDF	41.668	3086889	0.92	1.4296	97.3	97.3	0.1036	0.1036	97.34	
OCDD	41.583	2401141	0.89	1.1293	95.9	95.9	0.0890	0.0890	95.85	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:25   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	17-Sep-2020 14:53:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00095				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 11:00:15	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1070				
First Level Reviewer: shardaa		Date:	17-Sep-2020 18:33:56		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.150	20.145	0		1244865	191129	497	1242	385		
333.9338	20.150	20.145	0		1568314	241626	193	482	1252	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.231	19.222	1	0.954	1992448	311865	680	1700	459		
317.9389	19.231	19.222	1	0.954	2550205	382597	377	942	1015	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.256	19.246	1	1.001	208136	31451	46	115	684		
305.8987	19.248	19.246	0	1.001	266255	40190	98	245	410	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.511	20.507	0	1.018	1414296	193812	497	1242	390		
333.9338	20.511	20.507	0	1.018	1706671	236936	193	482	1228	0.83(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.537	20.531	0	1.019	319378	43423	37	92	1174		
2,3,7,8-TCDD											
319.8965	20.537	20.532	0	1.001	147054	20456	114	285	179		
321.8936	20.537	20.532	0	1.001	180527	25138	44	110	571	0.81(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.305	26.301	0	1.305	2623829	444802	704	1760	632		
353.8970	26.297	26.301	0	1.305	1651868	273311	473	1182	578	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.331	26.321	1	1.001	1342756	220836	356	890	620		
341.8567	26.322	26.321	0	1.001	858237	140672	282	705	499	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.762	27.762	0	1.378	2445415	380203	704	1760	540		
353.8970	27.762	27.762	0	1.378	1528578	241799	473	1182	511	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.788	27.787	0	1.001	1311845	208485	356	890	586		
341.8567	27.788	27.787	0	1.001	844014	133442	282	705	473	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.538	28.537	0	1.416	1636983	251263	190	475	1322		
369.8919	28.538	28.537	0	1.416	1044760	163675	153	382	1070	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.563	28.562	0	1.001	859848	127255	104	260	1224		
357.8516	28.563	28.562	0	1.001	546205	80123	36	90	2226	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.183	34.181	0	0.949	1207475	248917	548	1370	454		
385.8610	34.183	34.181	0	0.949	2248925	464023	1080	2700	430	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.200	34.200	0	1.000	1187634	239728	549	1372	437		
375.8178	34.200	34.200	0	1.000	936815	190457	409	1022	466	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.369	34.365	0	0.954	1388484	274132	548	1370	500		
385.8610	34.369	34.365	0	0.954	2617557	512290	1080	2700	474	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.386	34.384	0	1.000	1323099	261151	549	1372	476		
375.8178	34.386	34.384	0	1.000	1054095	207861	409	1022	508	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.270	35.272	0	0.979	1315529	310008	548	1370	566		
385.8610	35.278	35.272	0	0.979	2475626	577644	1080	2700	535	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.287	35.288	0	1.000	1274389	290977	549	1372	530		
375.8178	35.287	35.288	0	1.000	1008265	231717	409	1022	567	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.230	36.225	0	1.006	1216344	302327	548	1370	552		
385.8610	36.230	36.225	0	1.006	2310465	582157	1080	2700	539	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.239	36.240	0	1.000	1201287	296519	549	1372	540		
375.8178	36.239	36.240	0	1.000	959413	235480	409	1022	576	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.020	36.021	0		1706866	427670	388	970	1102		
403.8529	36.020	36.021	0		1334566	344546	304	760	1133	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.506	35.502	0	0.986	1418867	374792	388	970	966		
403.8529	35.506	35.502	0	0.986	1114670	287719	304	760	946	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.523	35.519	0	1.000	803078	206325	210	525	983		
391.8127	35.514	35.519	0	1.000	627775	161743	170	425	951	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.632	35.630	0	0.989	1663439	395009	388	970	1018		
403.8529	35.632	35.630	0	0.989	1330137	312053	304	760	1026	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.649	35.646	0	1.000	836675	197335	210	525	940		
391.8127	35.649	35.646	0	1.000	674333	157330	170	425	925	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.036	36.033	0	1.015	888007	223378	210	525	1064		
391.8127	36.036	36.033	0	1.015	706184	176682	170	425	1039	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.135	38.132	0	1.059	928936	296932	503	1257	590		
419.8220	38.135	38.132	0	1.059	2005192	626970	1134	2835	553	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.143	38.141	0	1.000	1107984	348000	607	1517	573		
409.7788	38.143	38.141	0	1.000	1064987	338963	544	1360	623	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.432	39.428	0	1.095	862251	290607	503	1257	578		
419.8220	39.432	39.428	0	1.095	1885613	633030	1134	2835	558	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.441	39.438	0	1.000	991275	330139	607	1517	544		
409.7788	39.441	39.438	0	1.000	953373	320575	544	1360	589	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.121	39.118	0	1.086	1458927	492177	391	977	1259		
437.8140	39.121	39.118	0	1.086	1375243	460410	421	1052	1094	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.129	39.126	0	1.000	755770	252912	234	585	1081		
425.7737	39.129	39.126	0	1.000	730842	245222	208	520	1179	1.03(0.88-1.20)	
13C-OCDD											
469.7780	41.575	41.572	0	1.154	2107885	671427	251	627	2675		
471.7750	41.575	41.572	0	1.154	2328387	745998	300	750	2487	0.91(0.76-1.02)	
OCDF											
441.7428	41.668	41.663	0	1.002	1476941	465032	187	467	2487		
443.7399	41.668	41.663	0	1.002	1609948	501062	233	582	2150	0.92(0.76-1.02)	
OCDD											
457.7377	41.583	41.580	0	1.000	1128694	363983	139	347	2619		
459.7348	41.583	41.580	0	1.000	1272447	406889	146	365	2787	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:25   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00   Injection Vol: 1.0 ul

Instrument ID: DFS 1   Operator ID: Xcalibur_System

Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255   Sample Line#: 5

Column Type: DB-5   Column Dia: 0.32 mm

TCDF

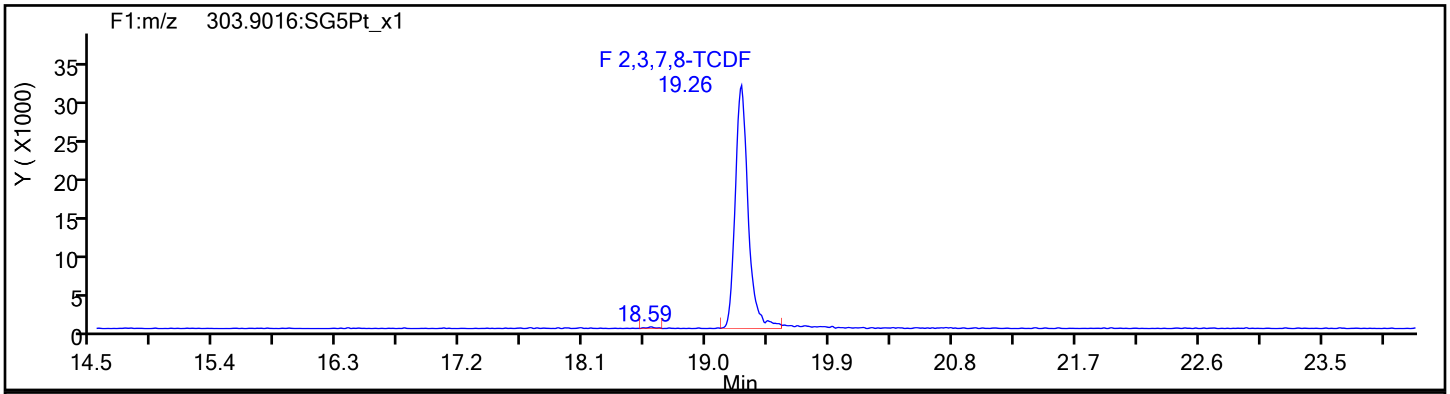

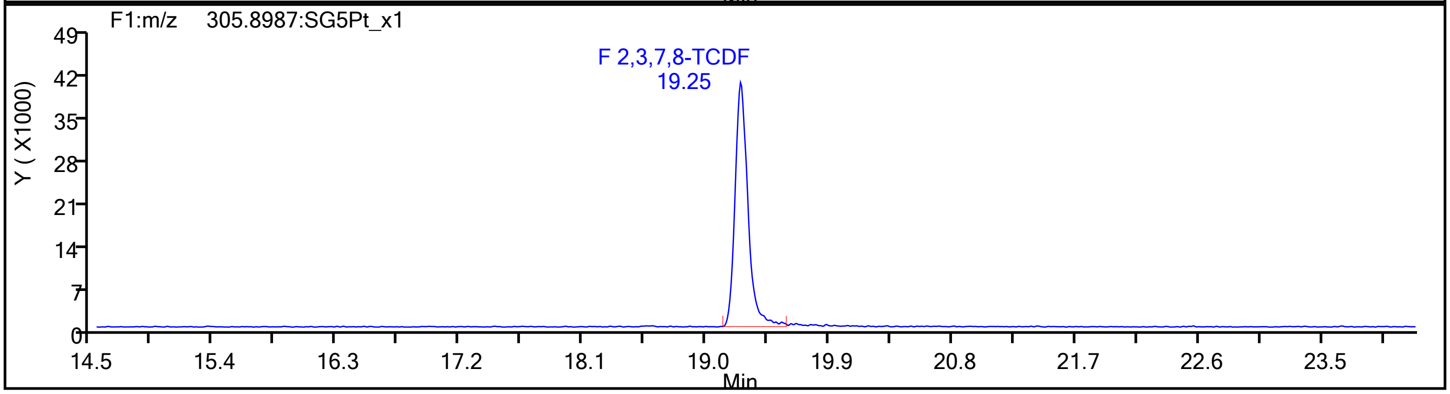

TCDF Standards

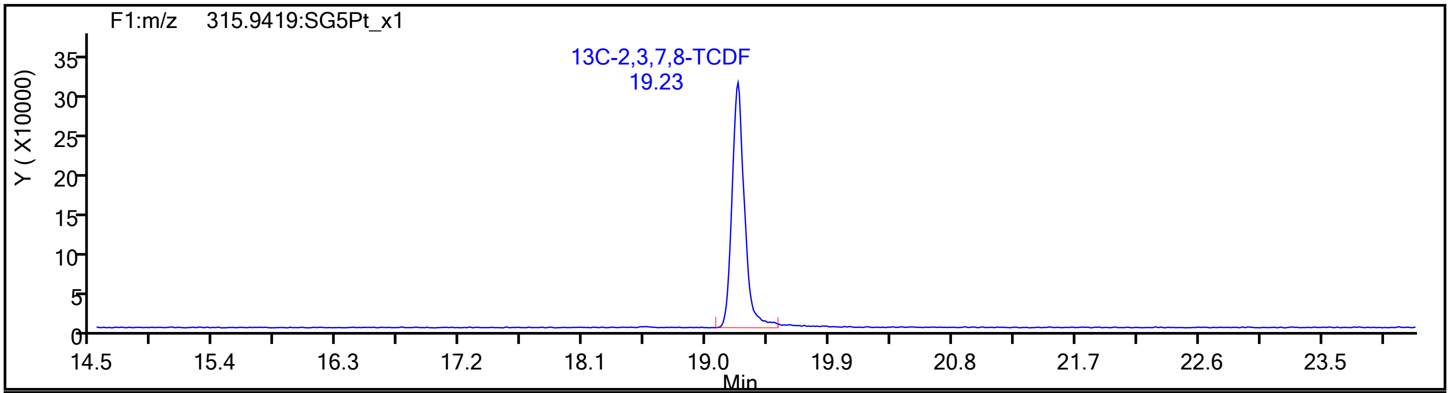

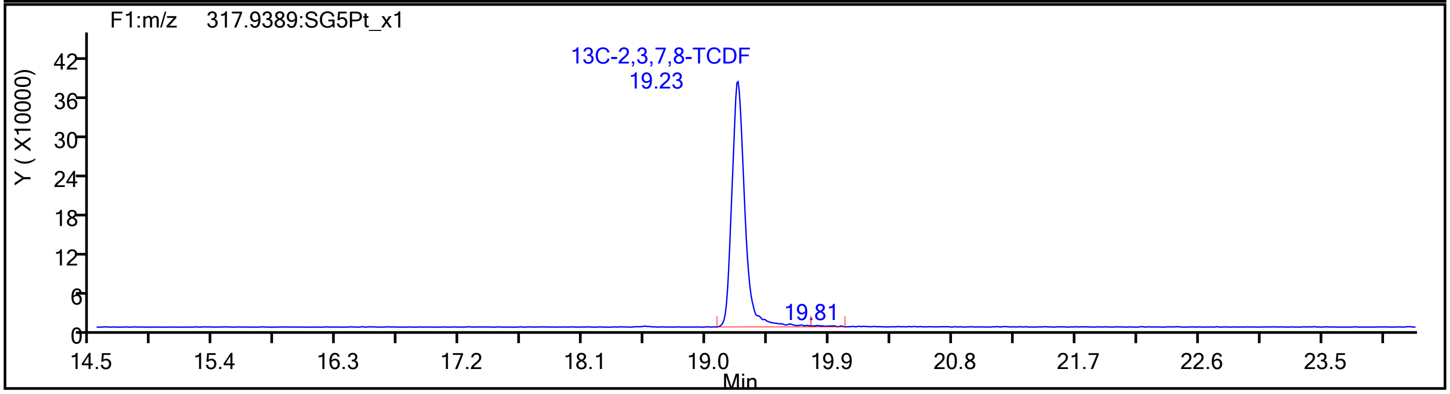

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

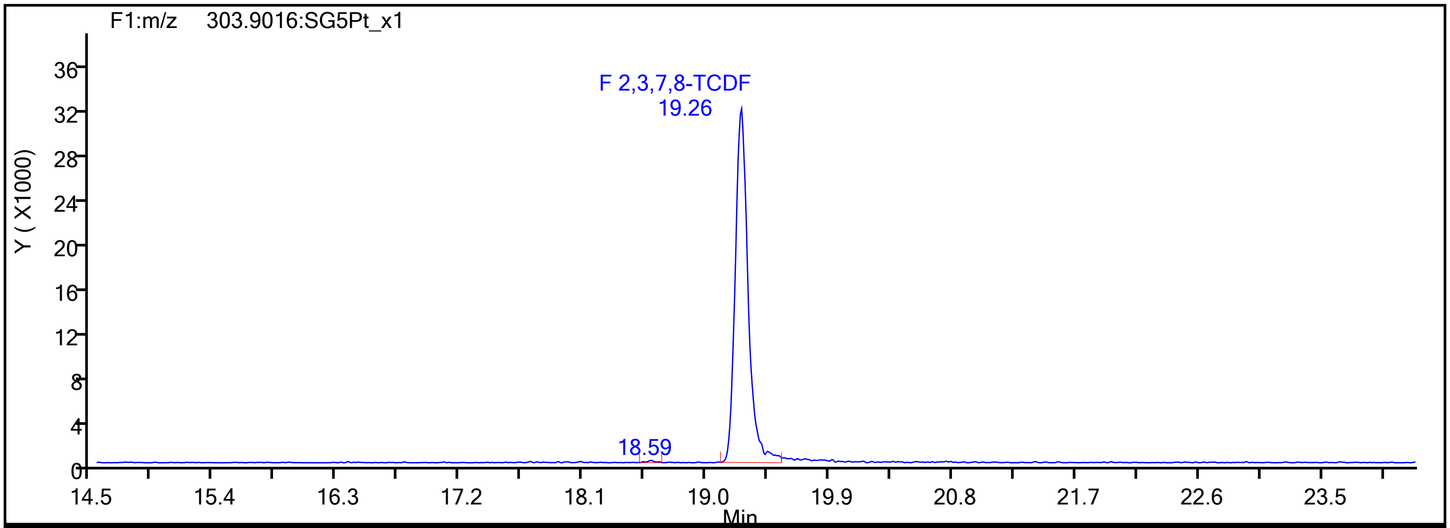

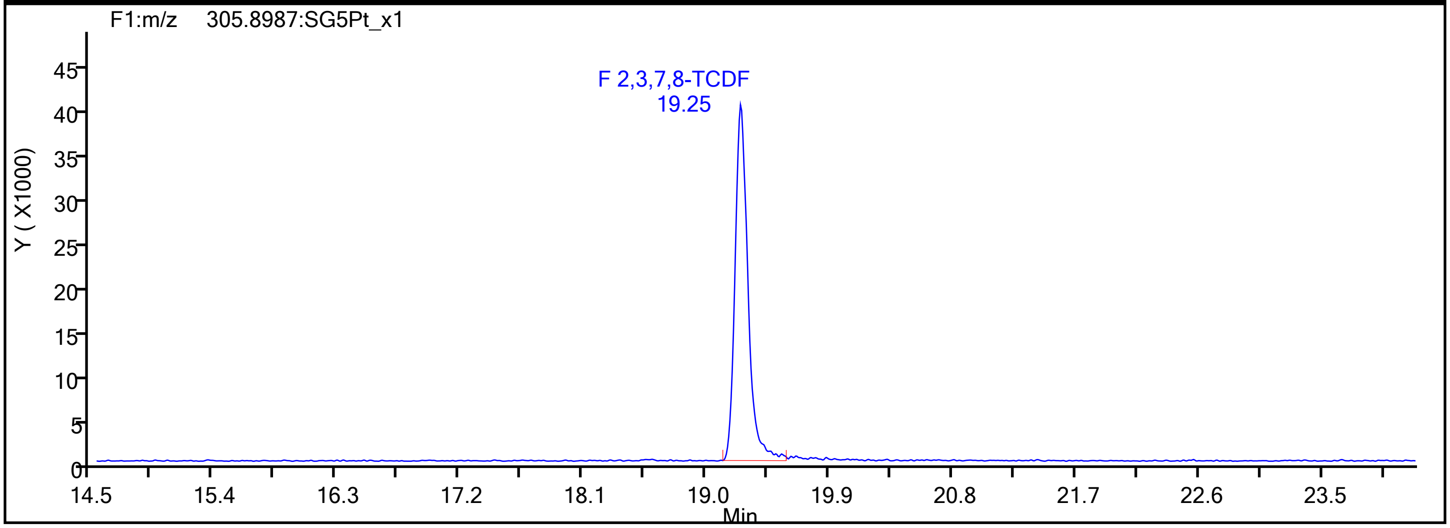

TCDF Interference Mass

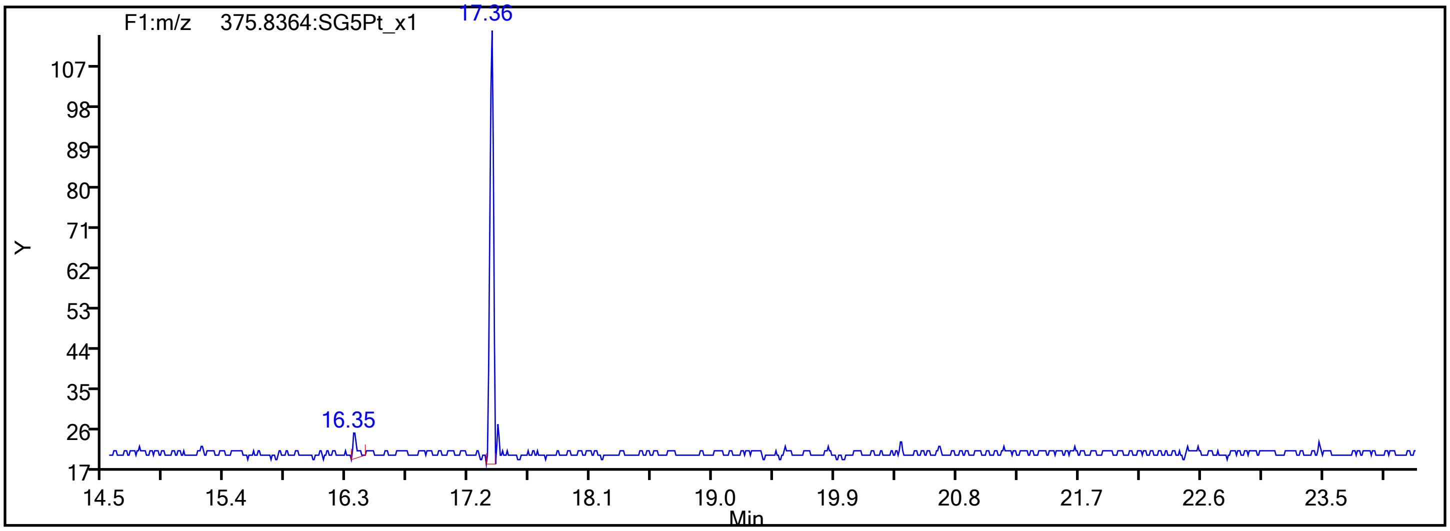

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

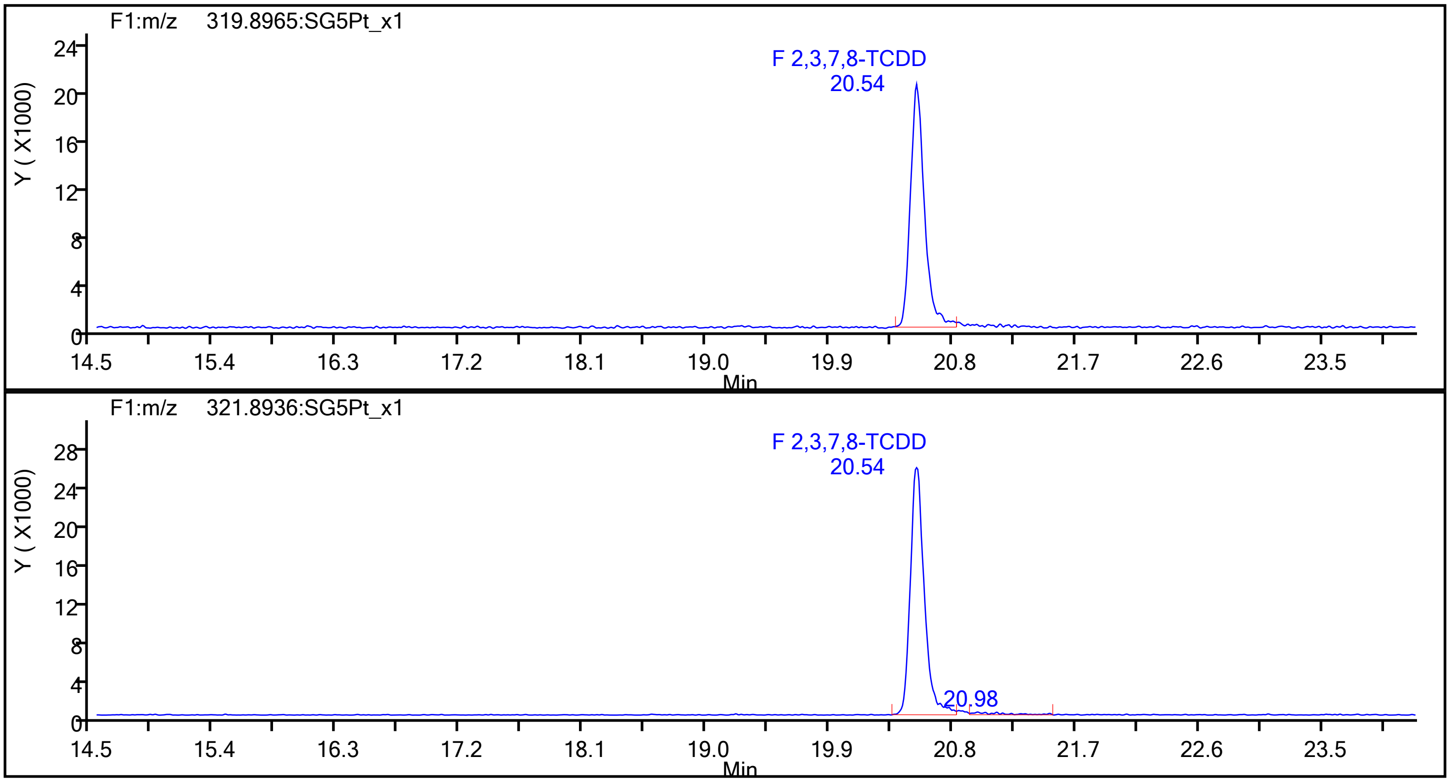

TCDD Standards

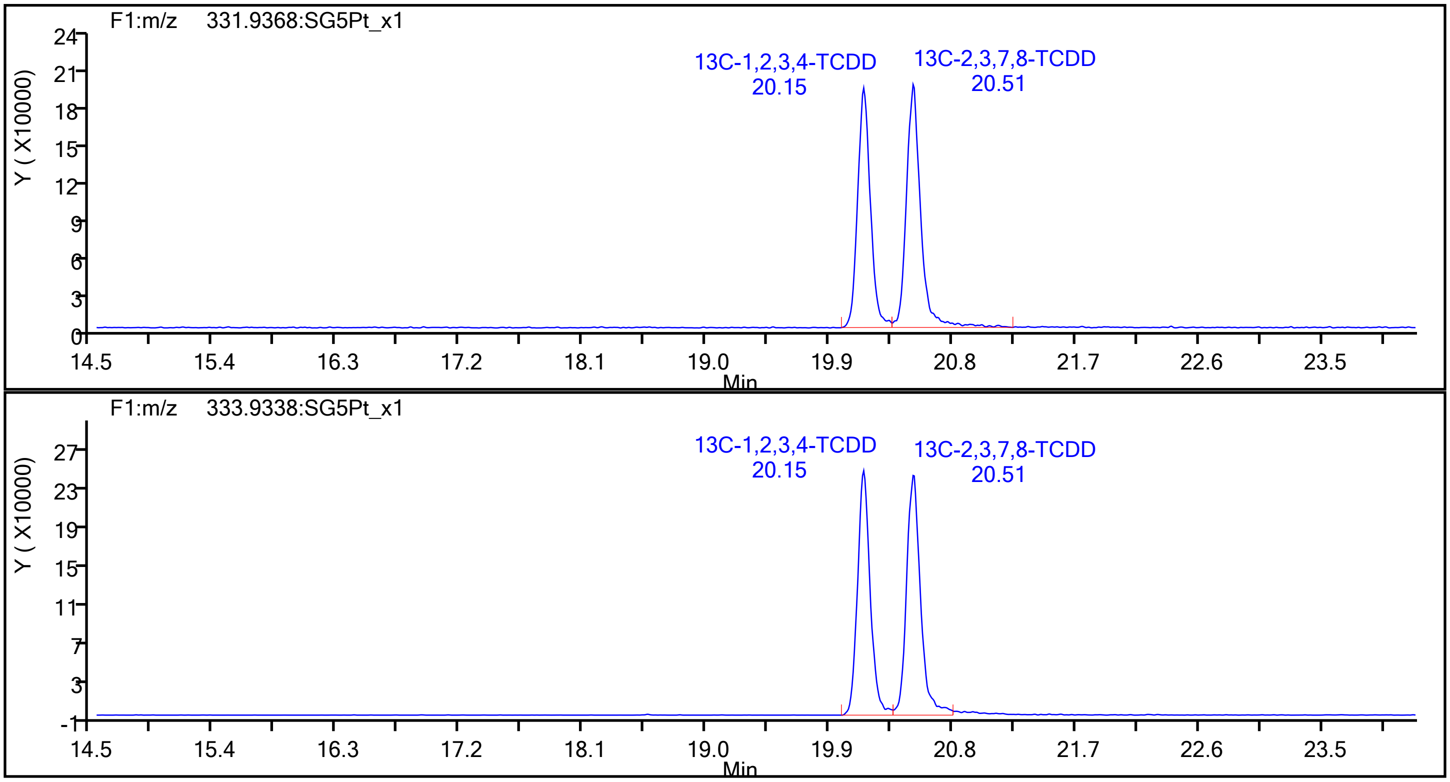

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

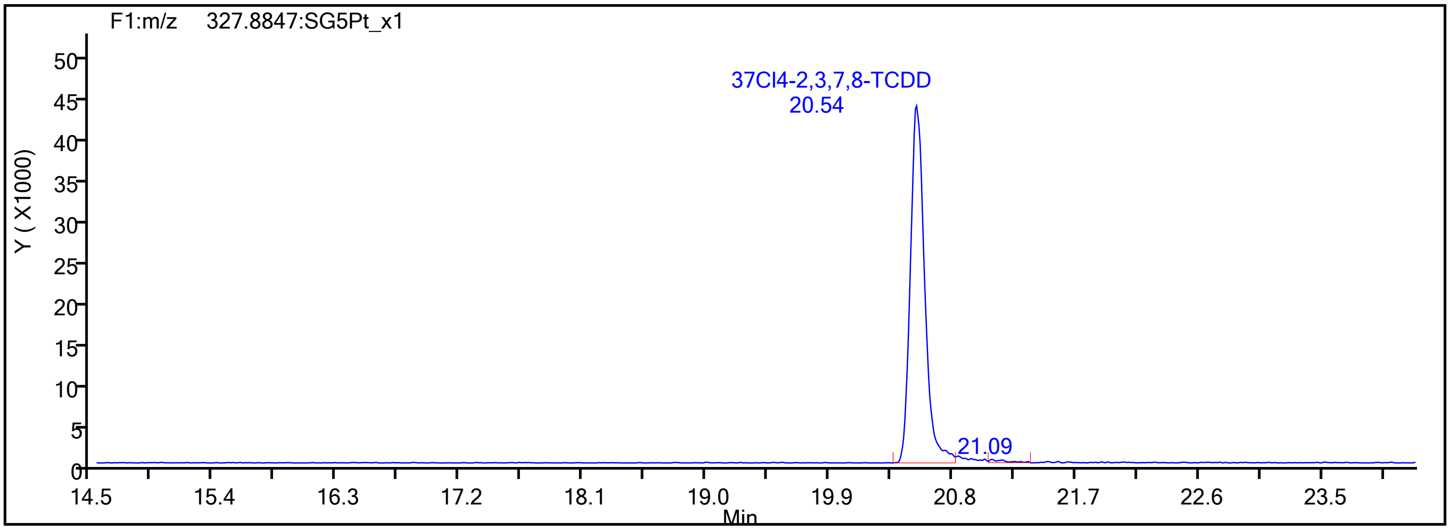

37Cl4-TCDD Standards

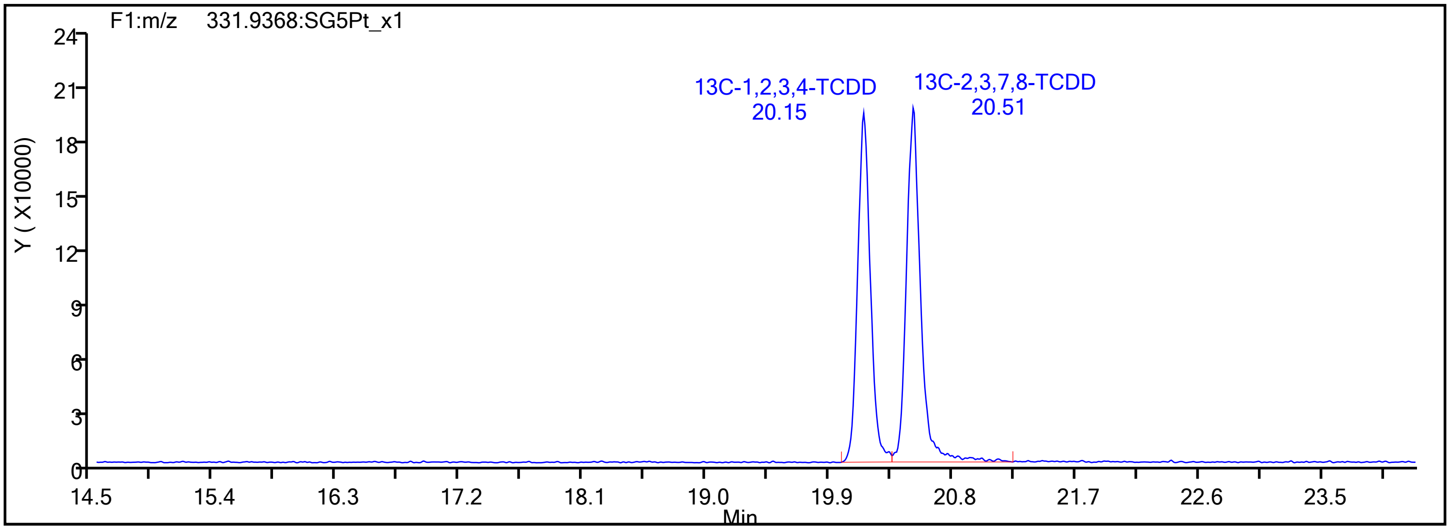

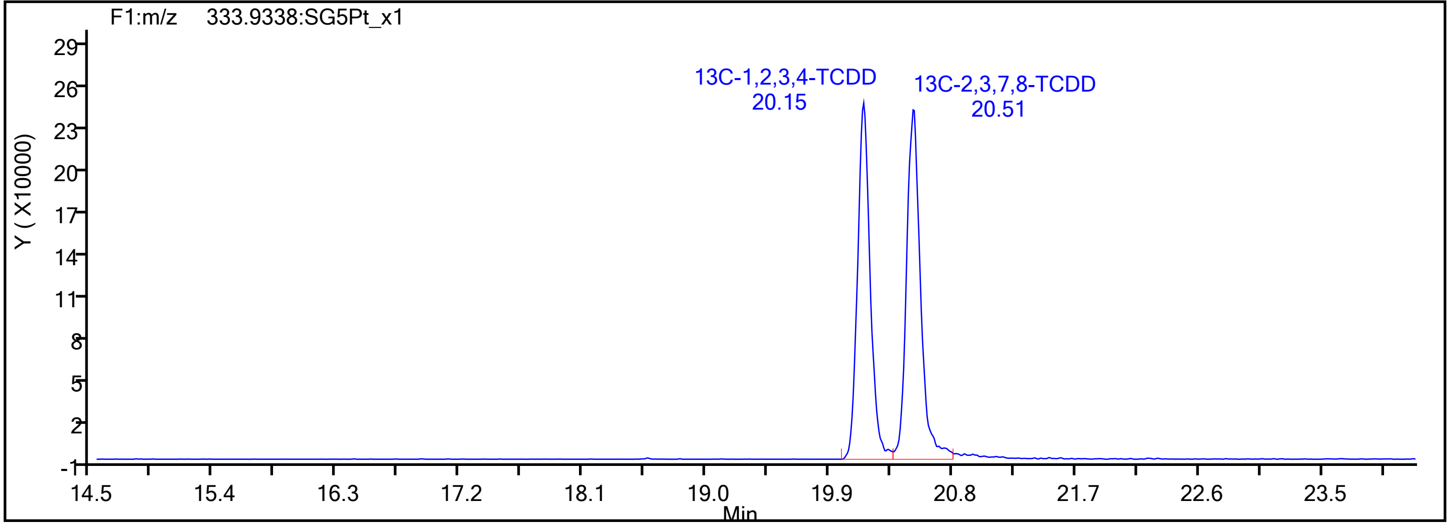

Report Date: 18-Sep-2020 11:00:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

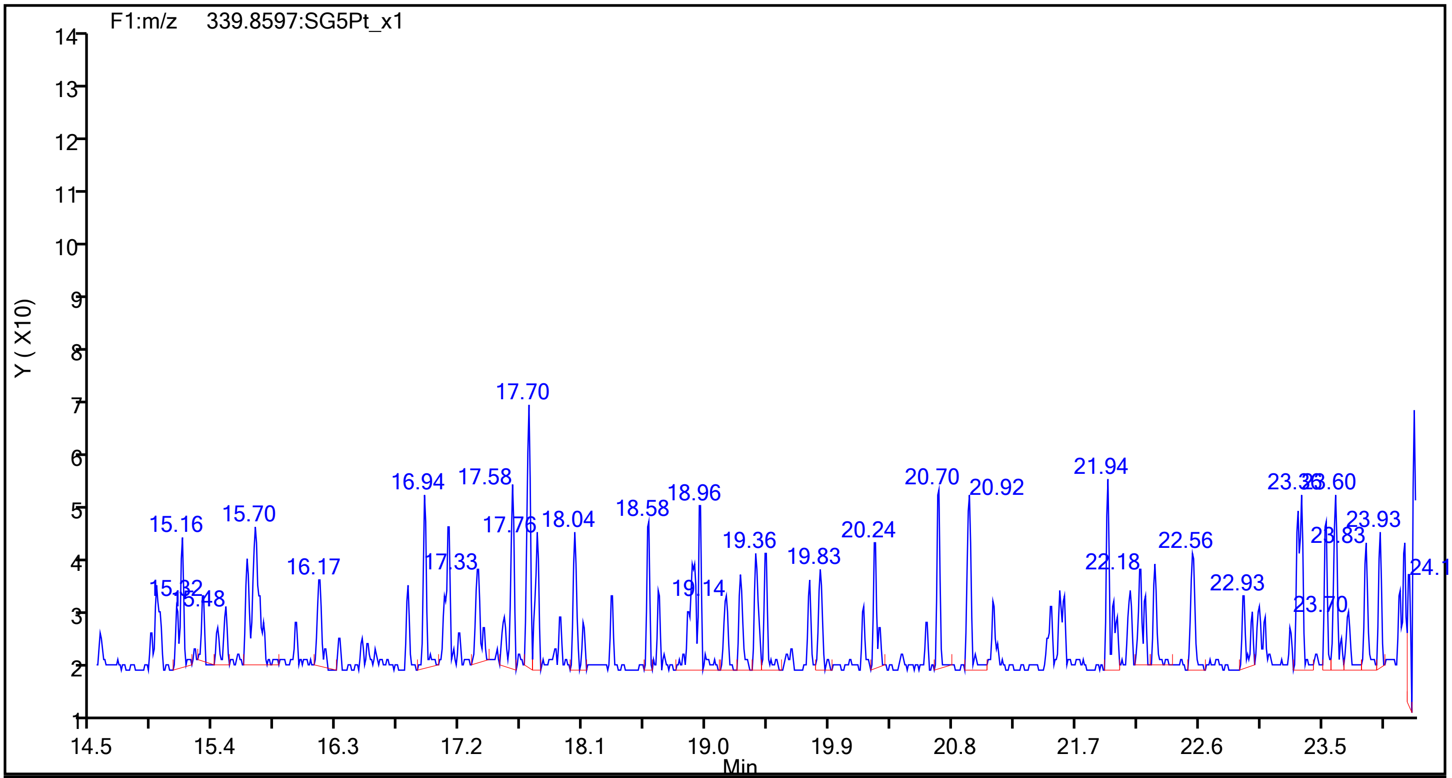

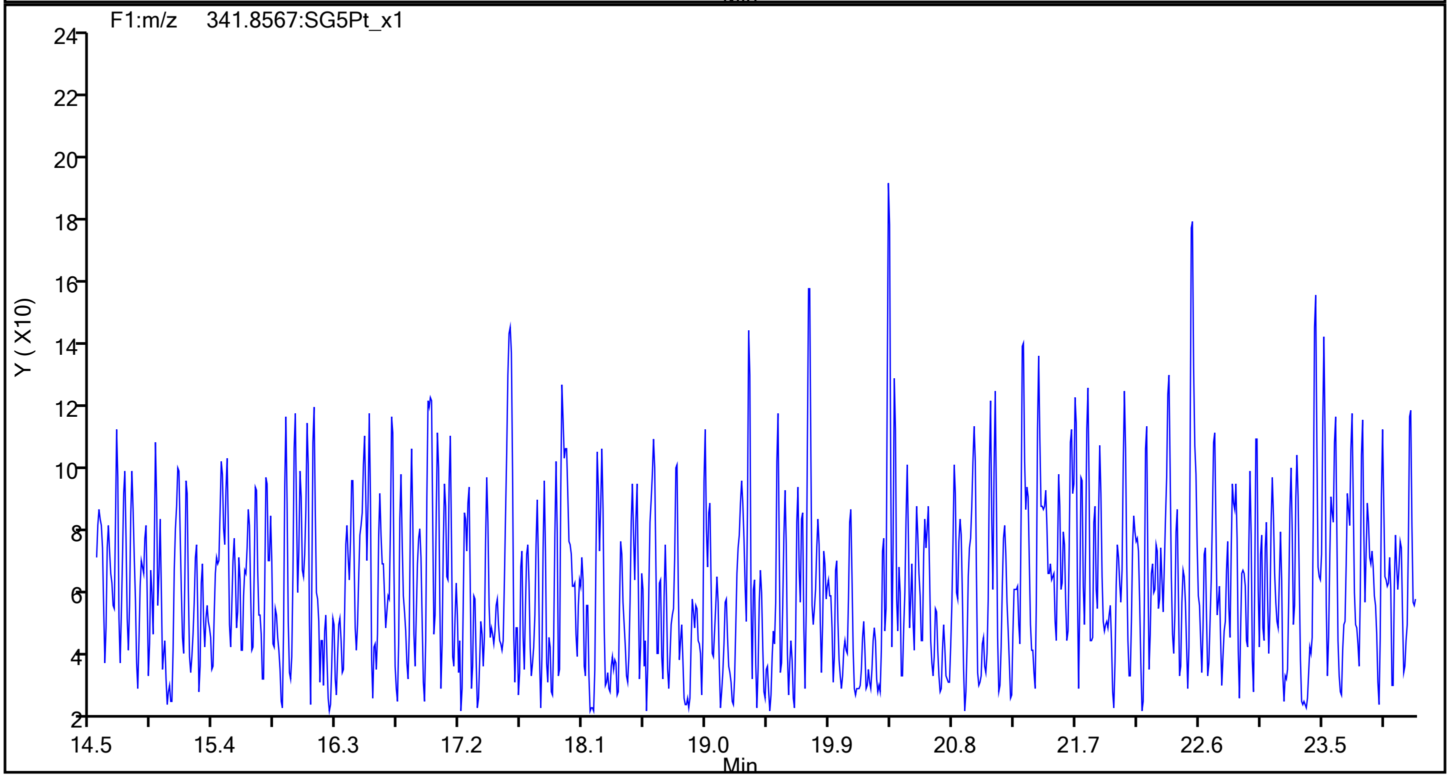

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

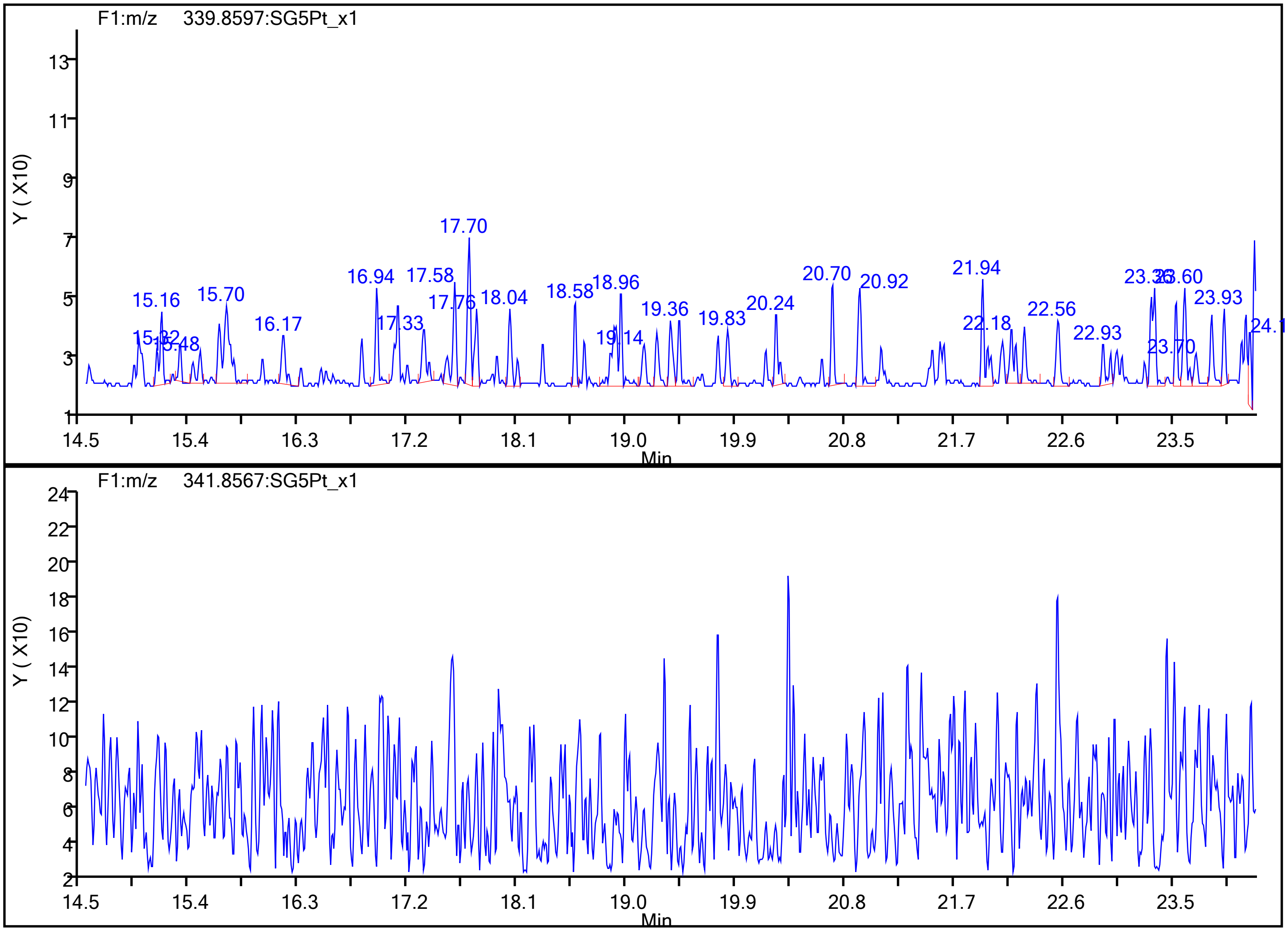

F1 PeCDFs Interference Mass

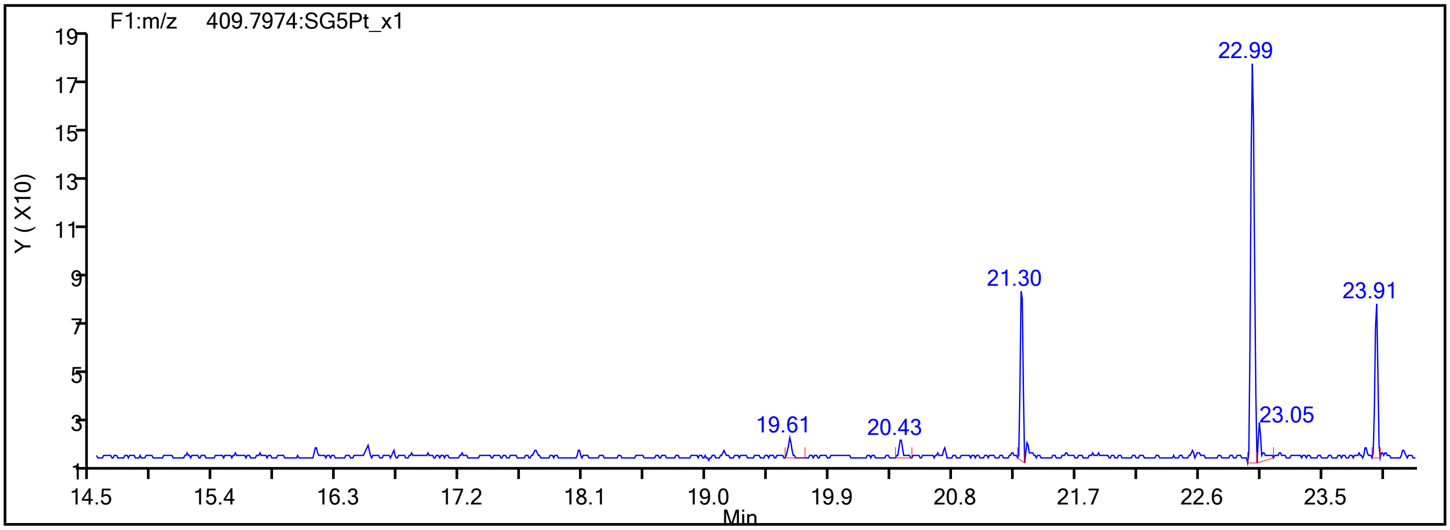

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

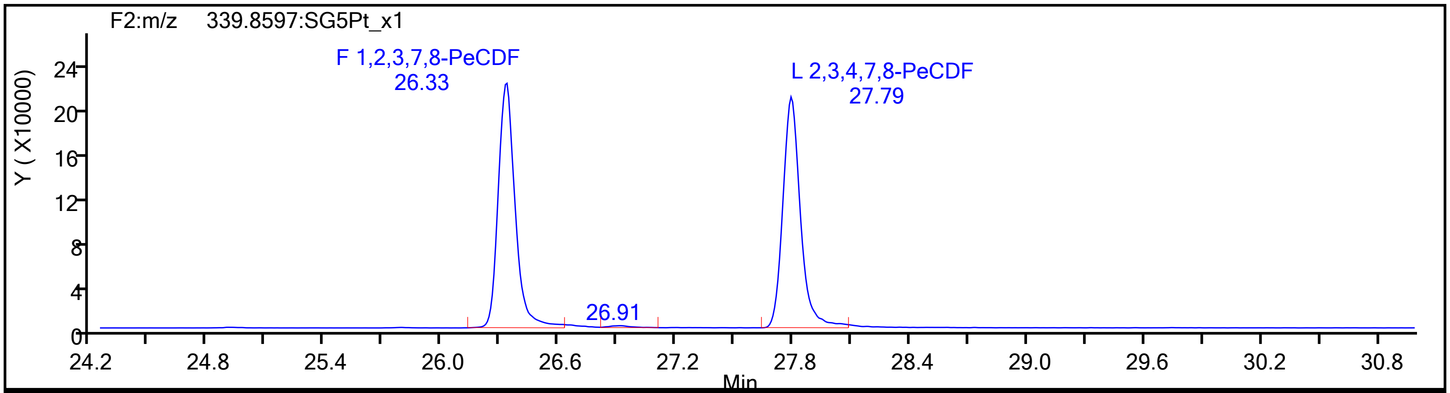

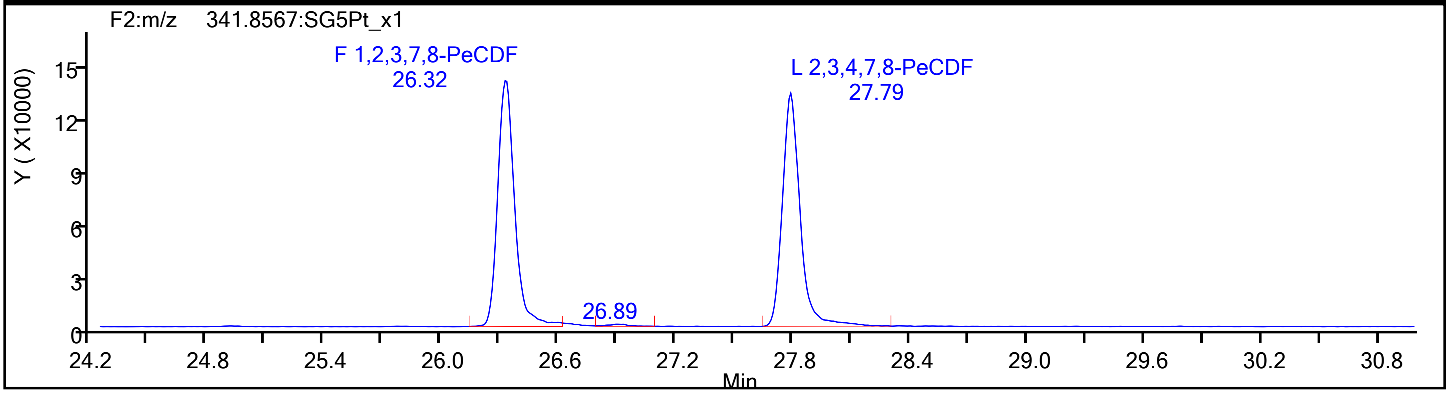

PeCDF Standards

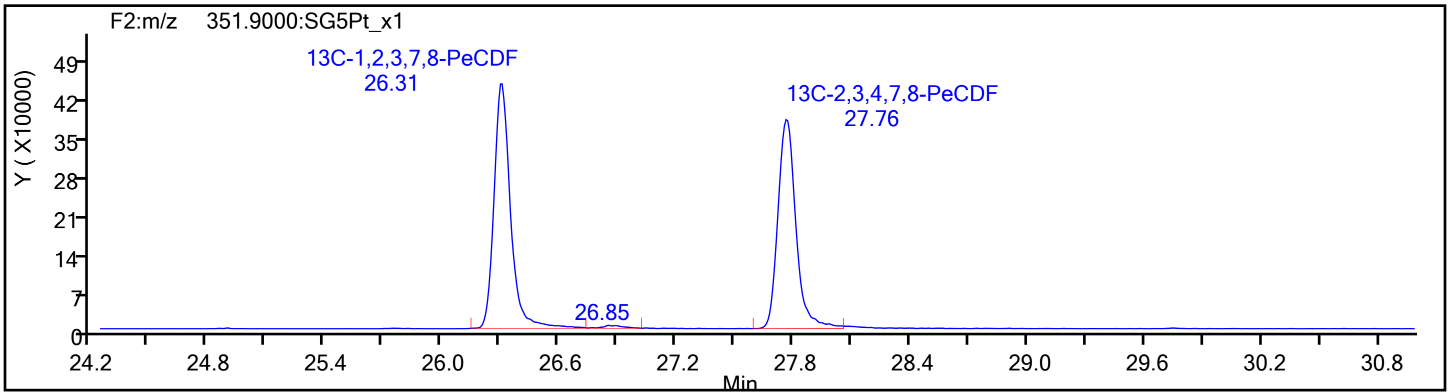

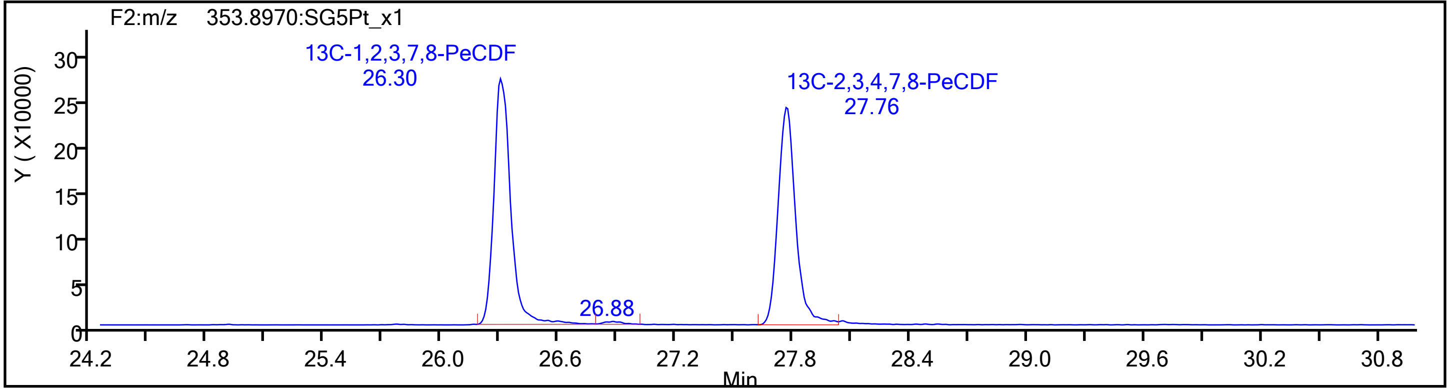

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

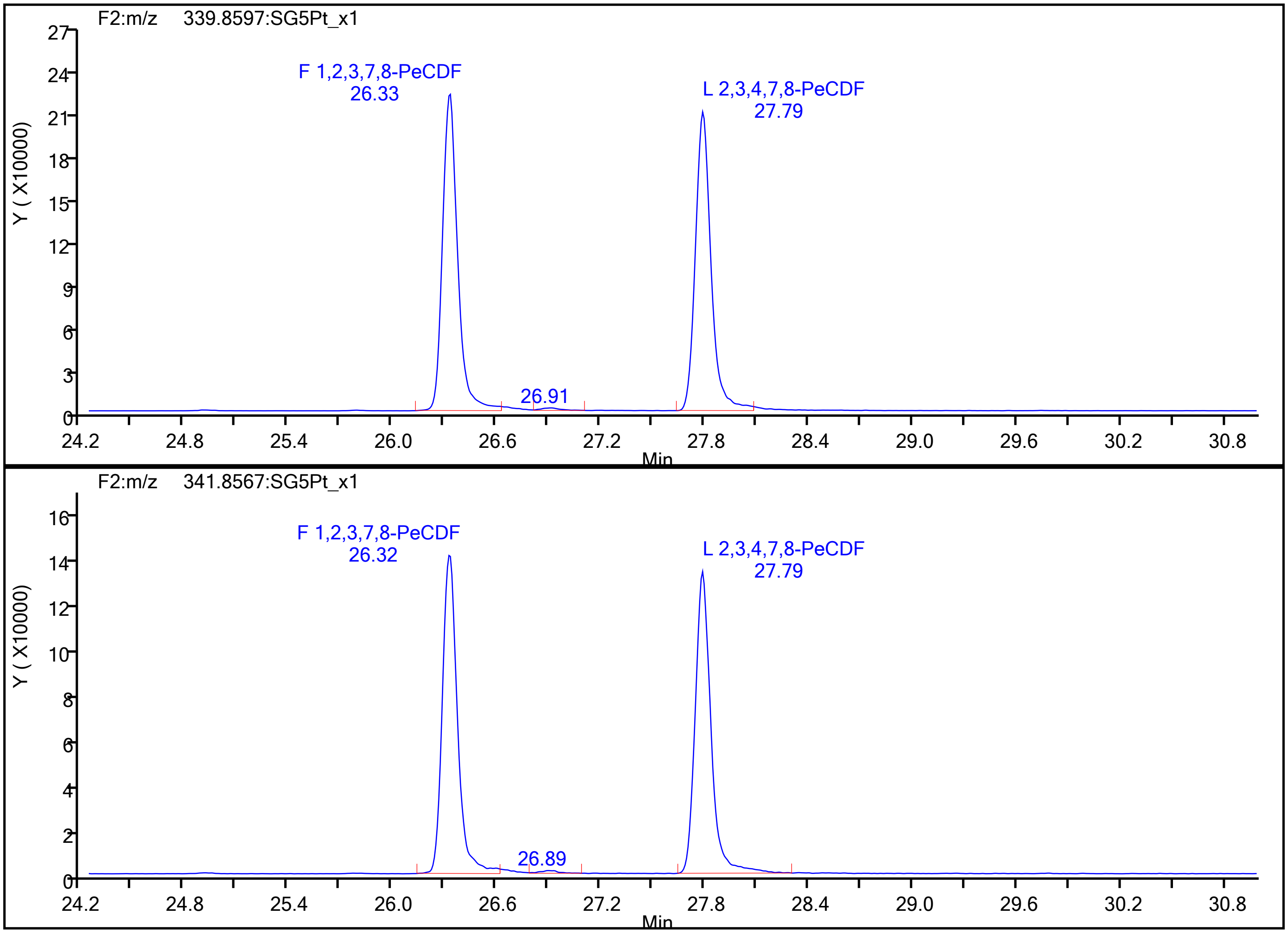

PeCDF Interference Mass

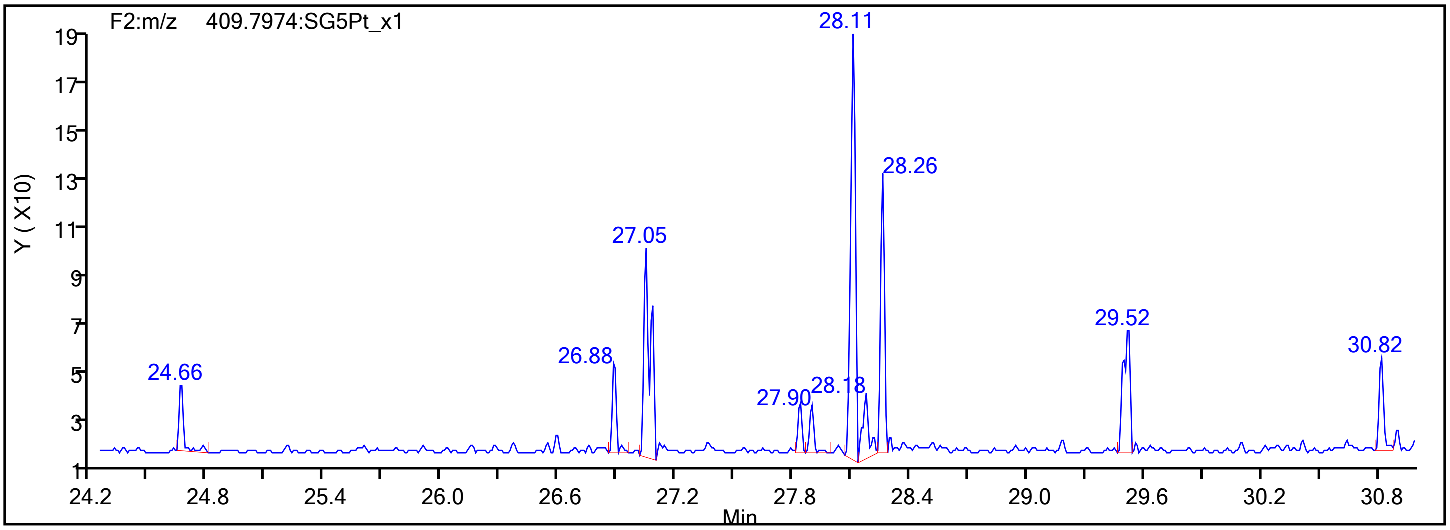

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d
Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

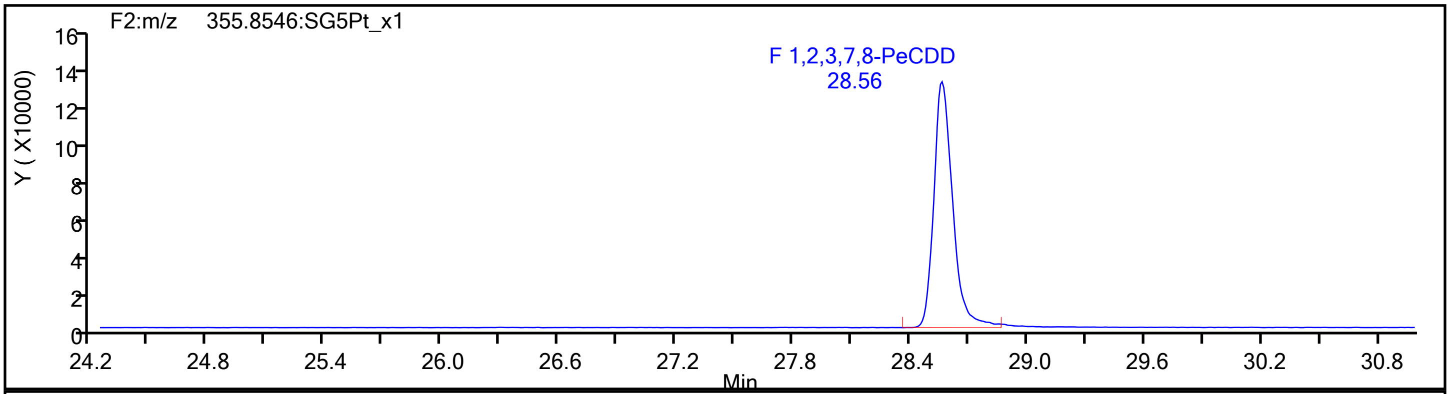

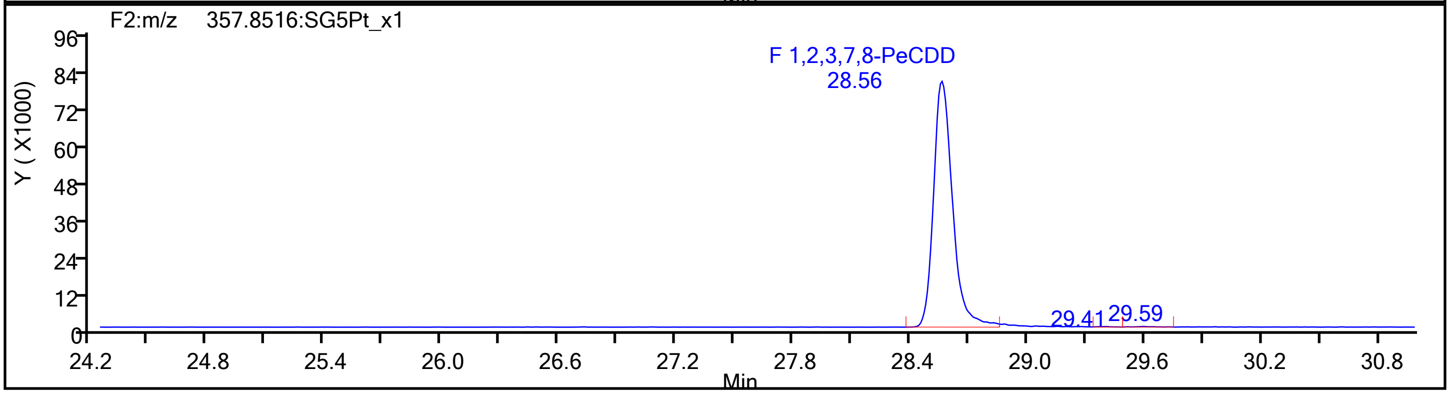

PeCDD Standards

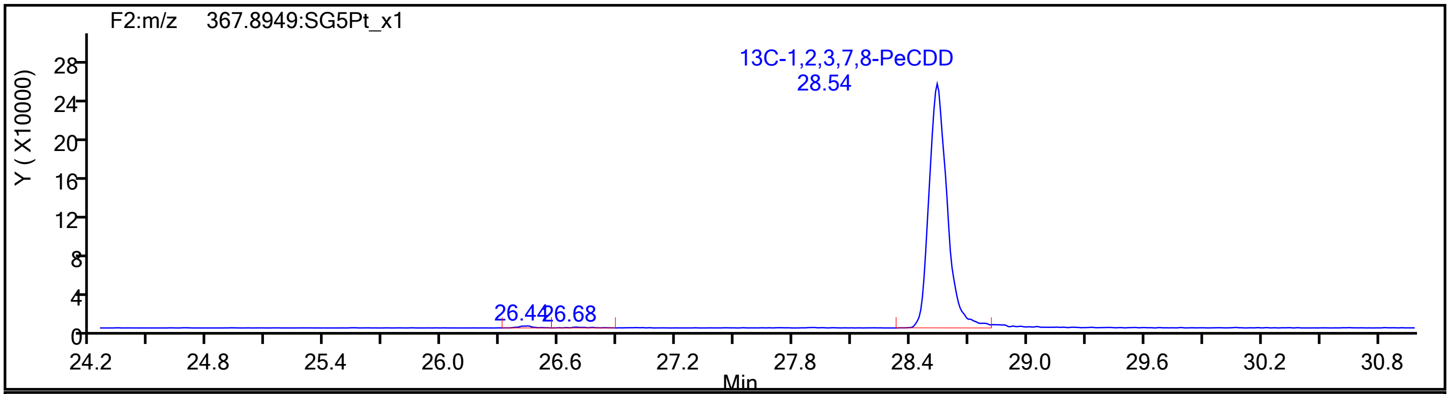

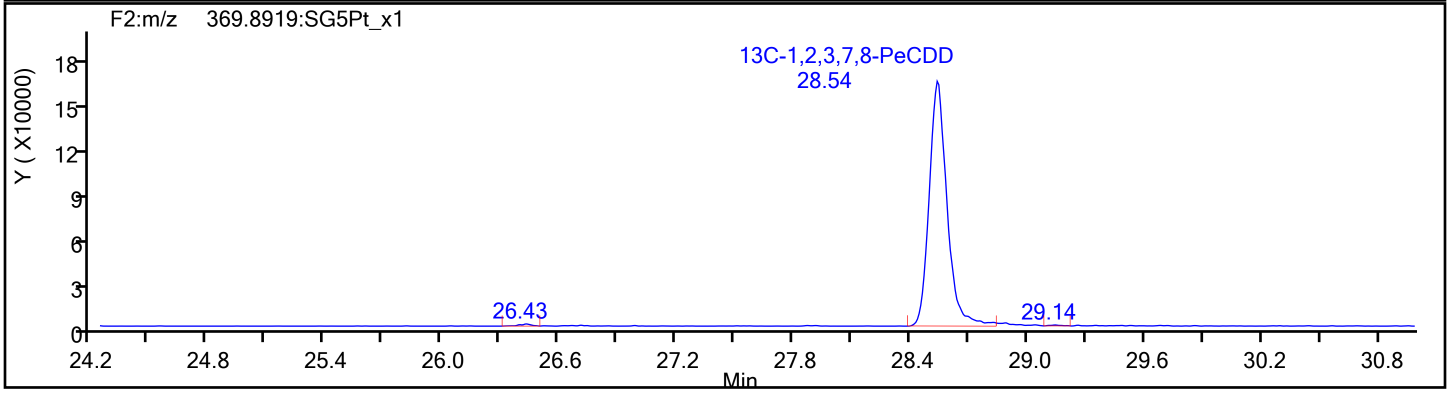

Report Date: 18-Sep-2020 11:00:26   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

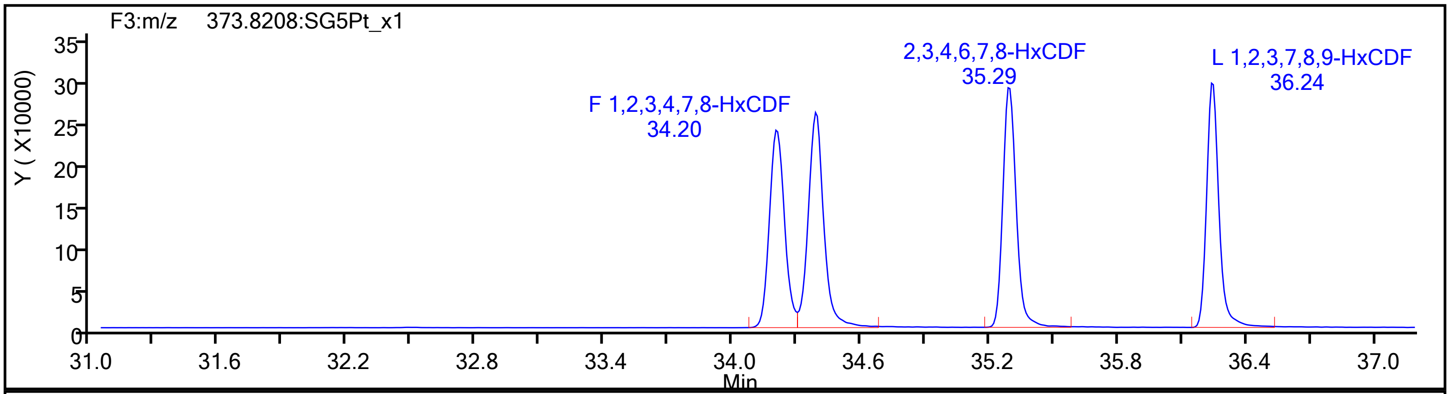

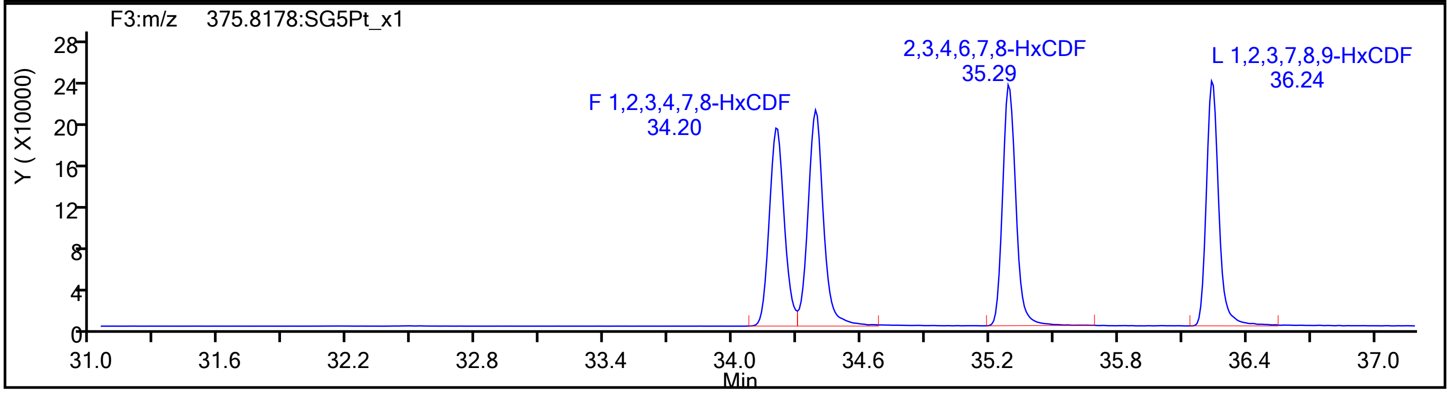

HxCDF Standards

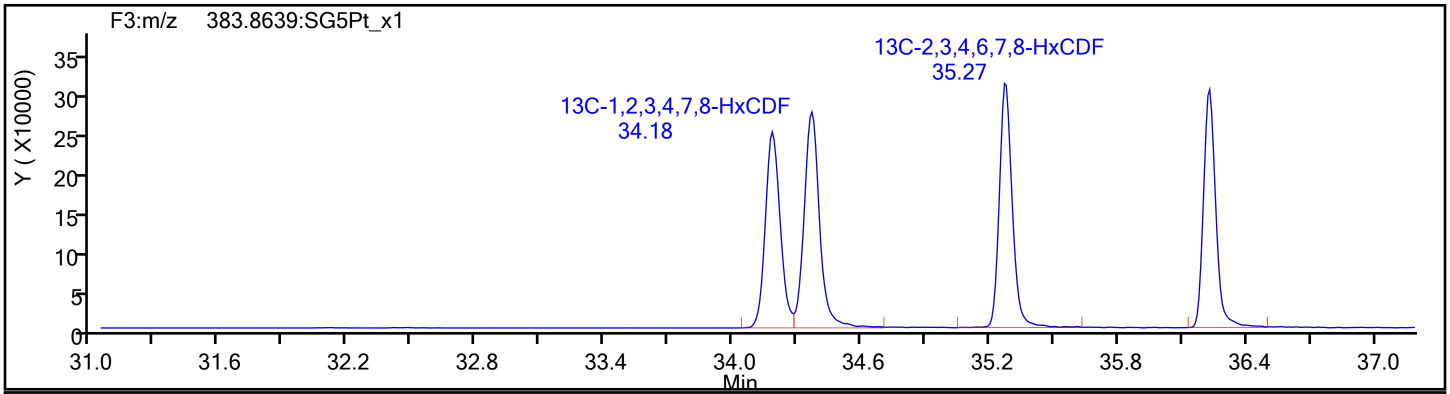

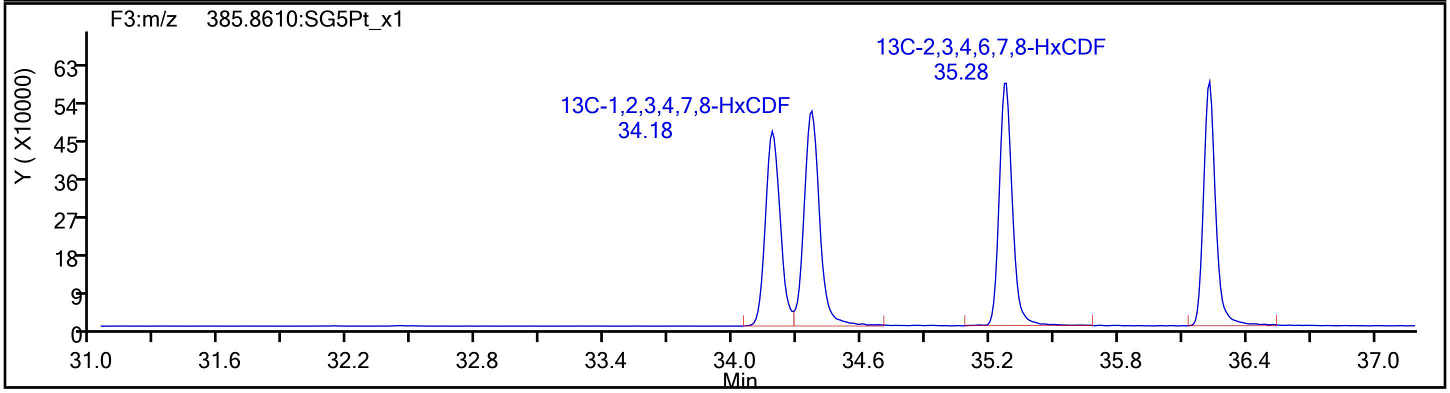

Report Date: 18-Sep-2020 11:00:26　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

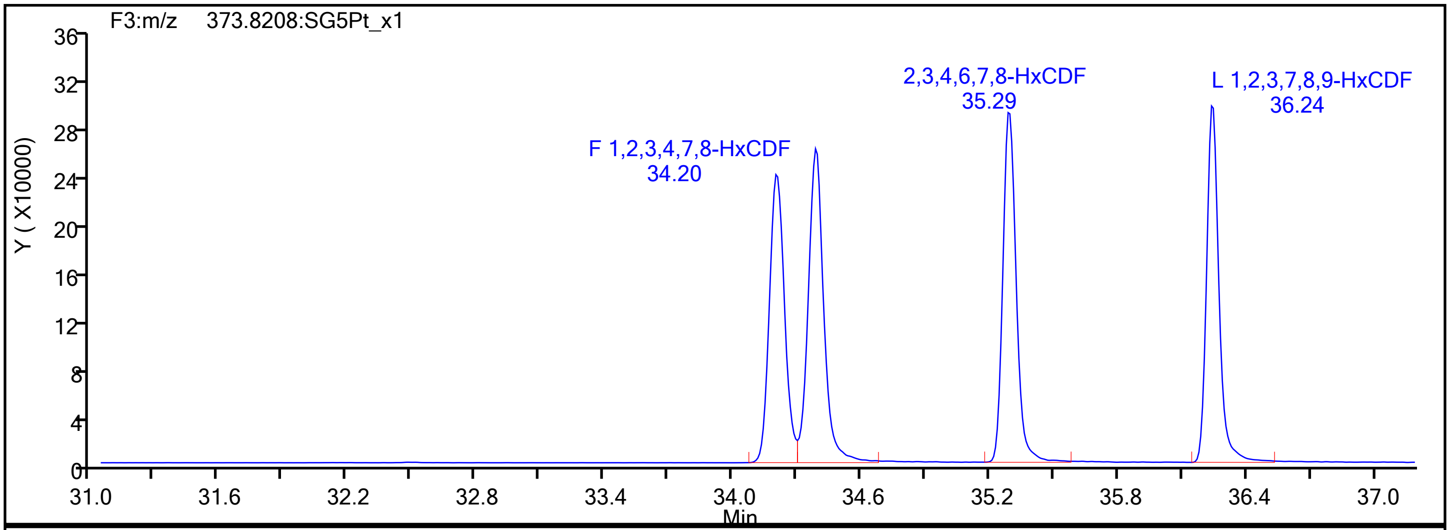

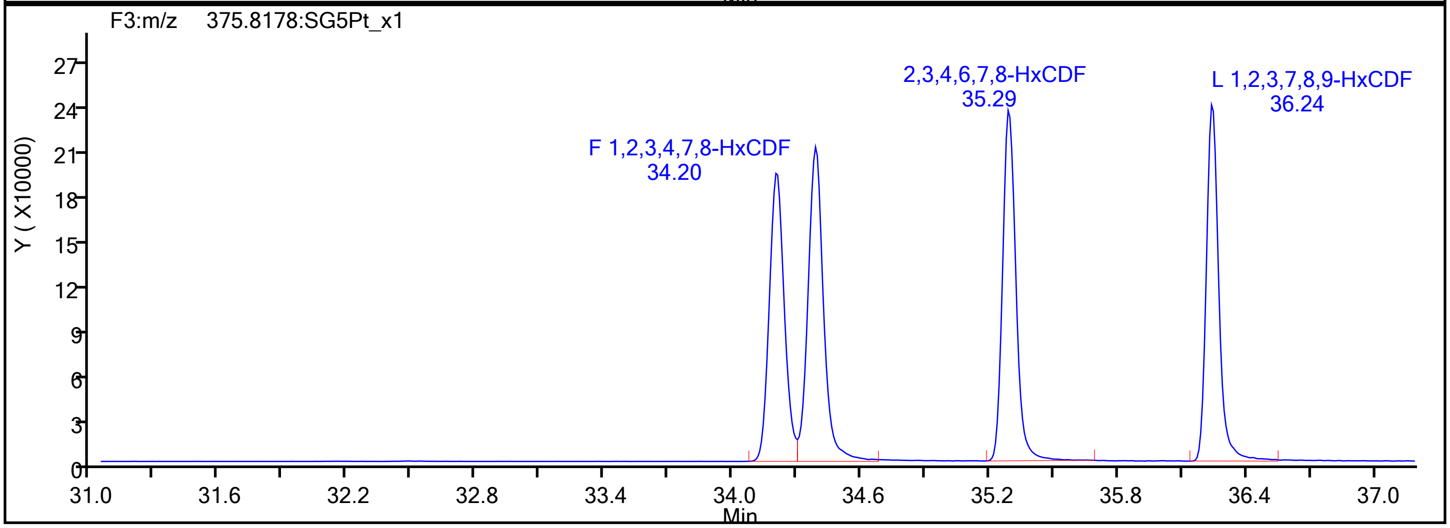

HxCDF Interference Mass

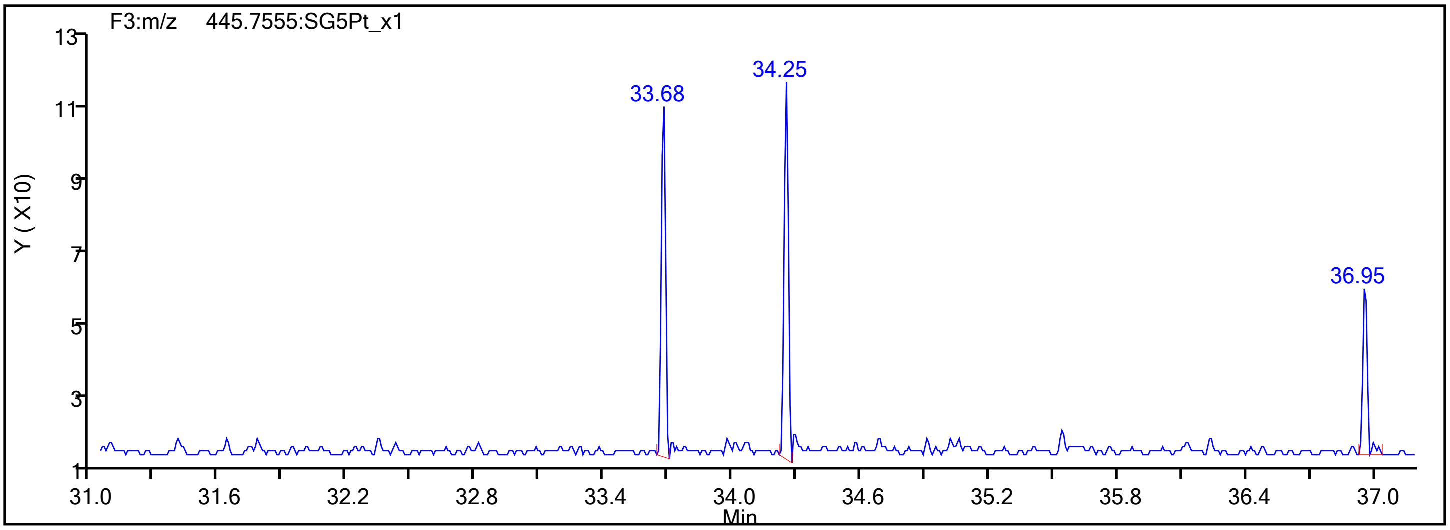

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date: 17-Sep-2020 14:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

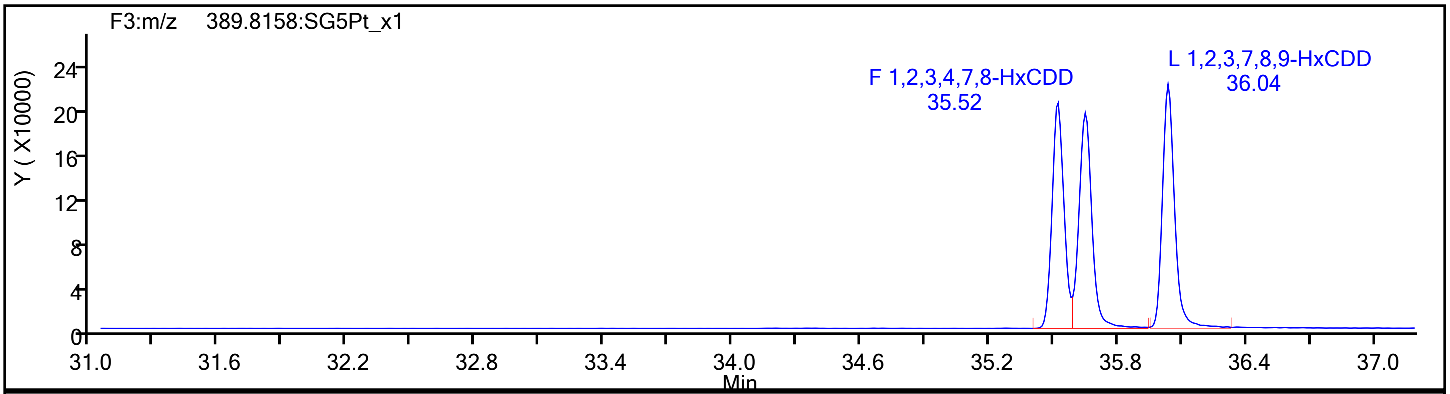

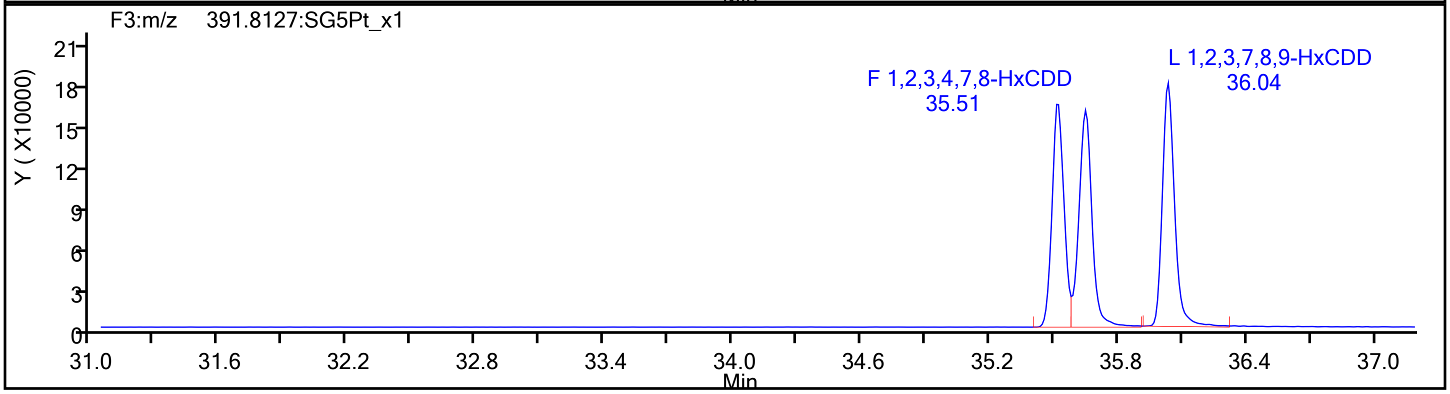

HxCDD Standards

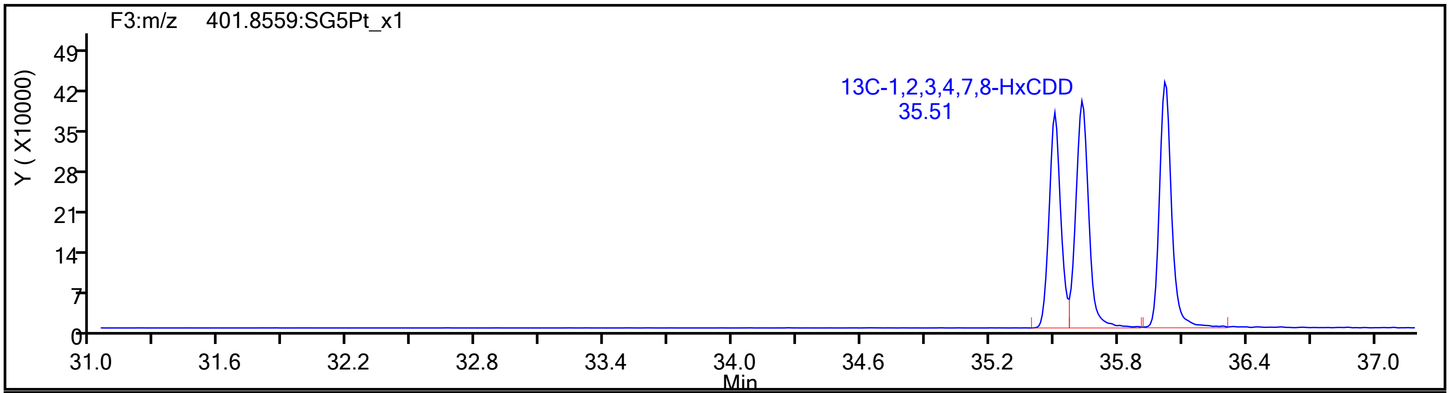

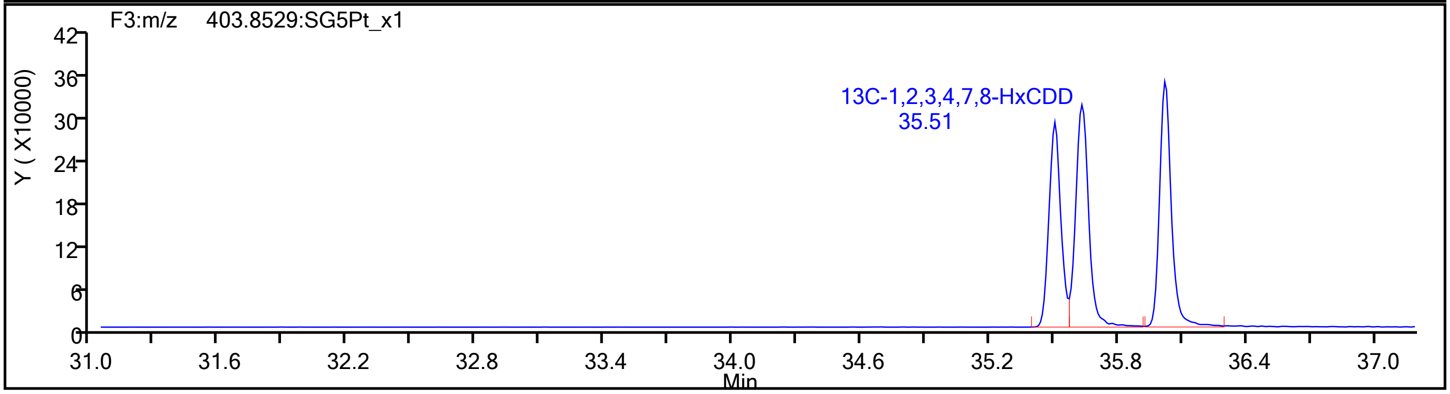

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

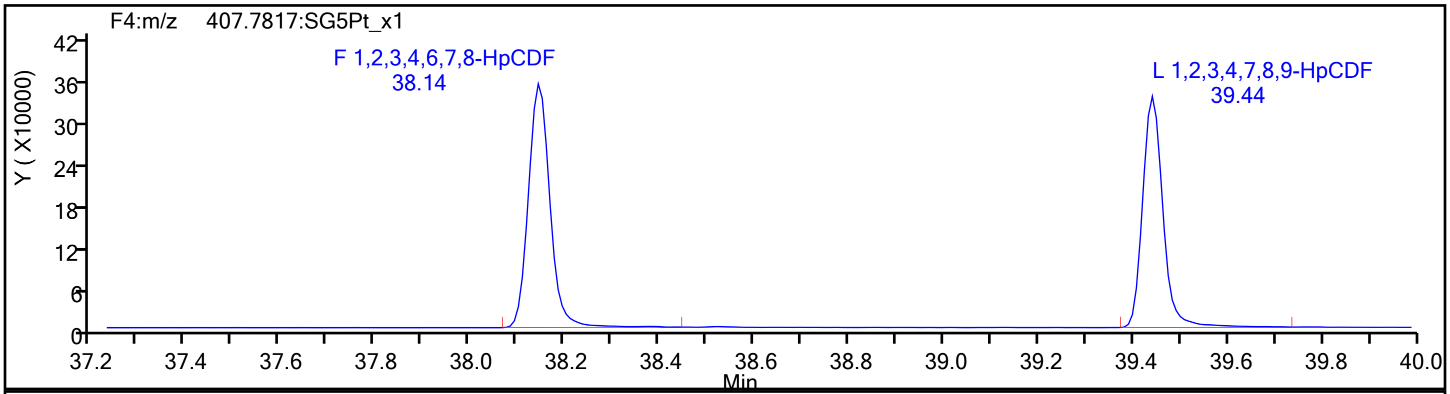

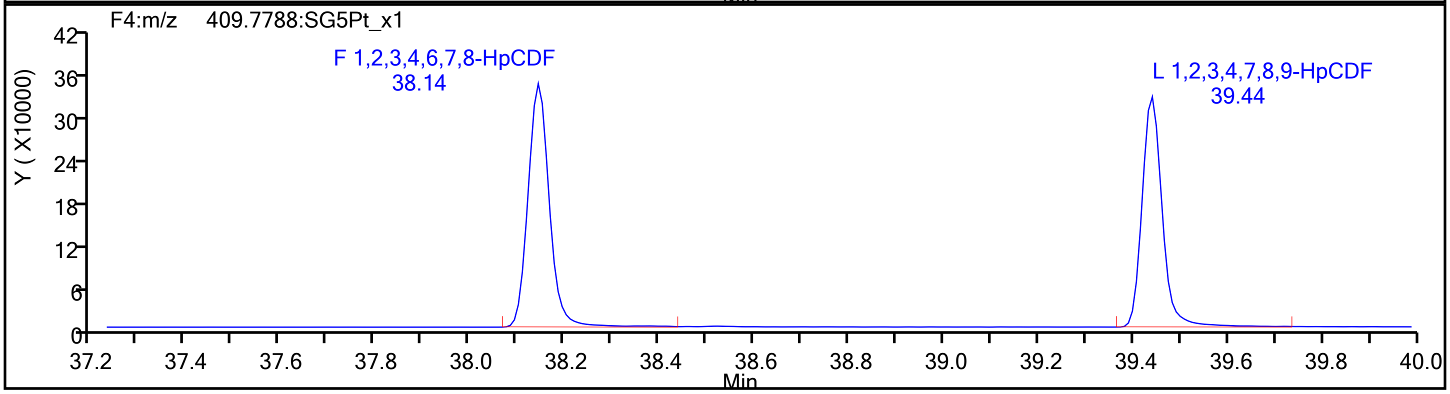

HpCDF Standards

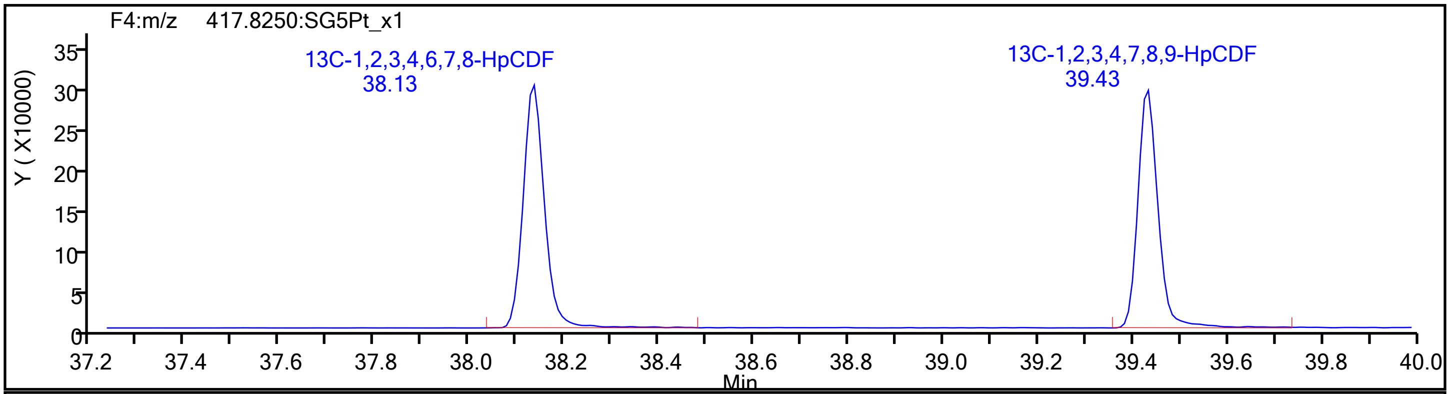

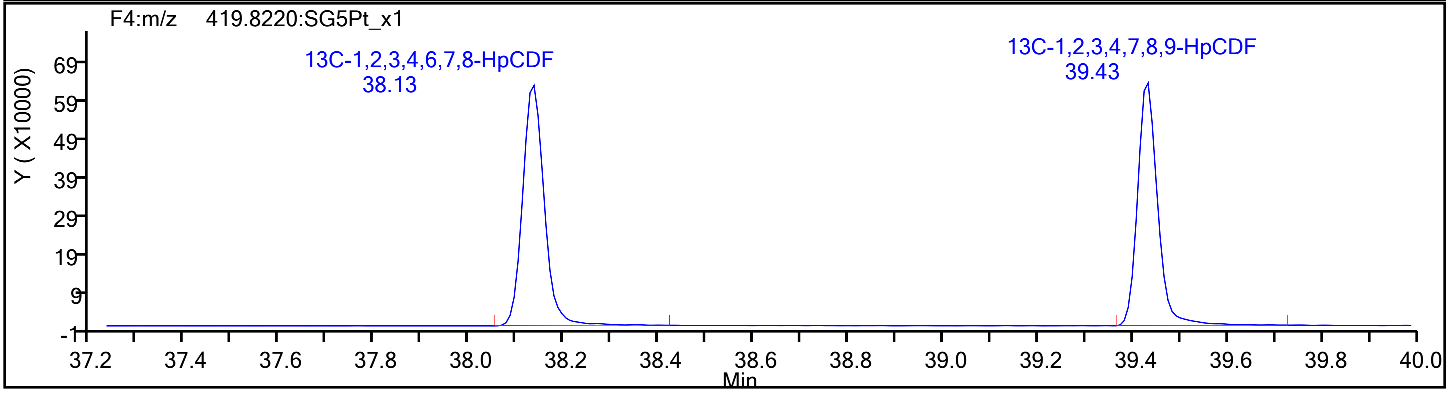

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

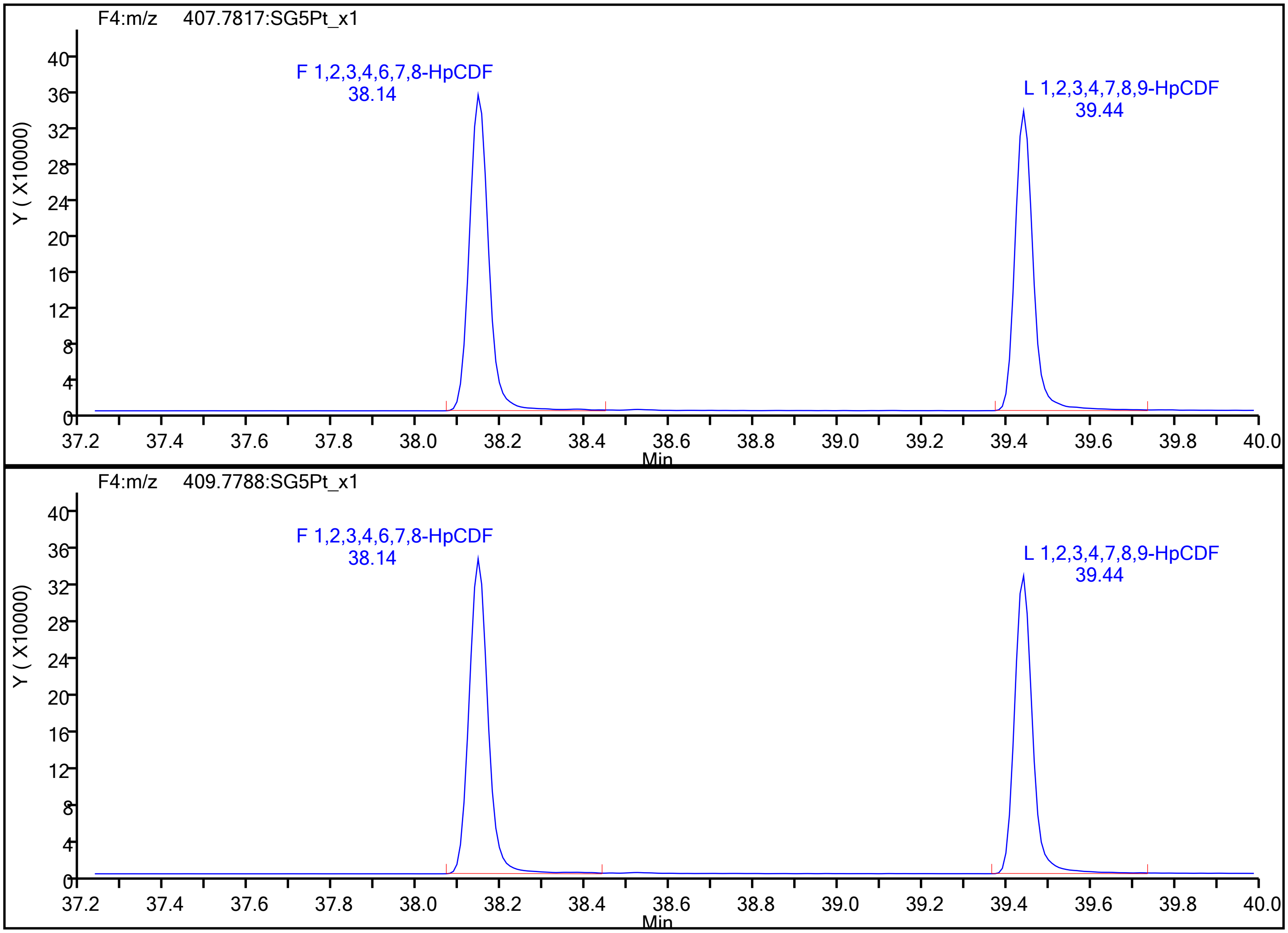

HpCDF Interference Mass

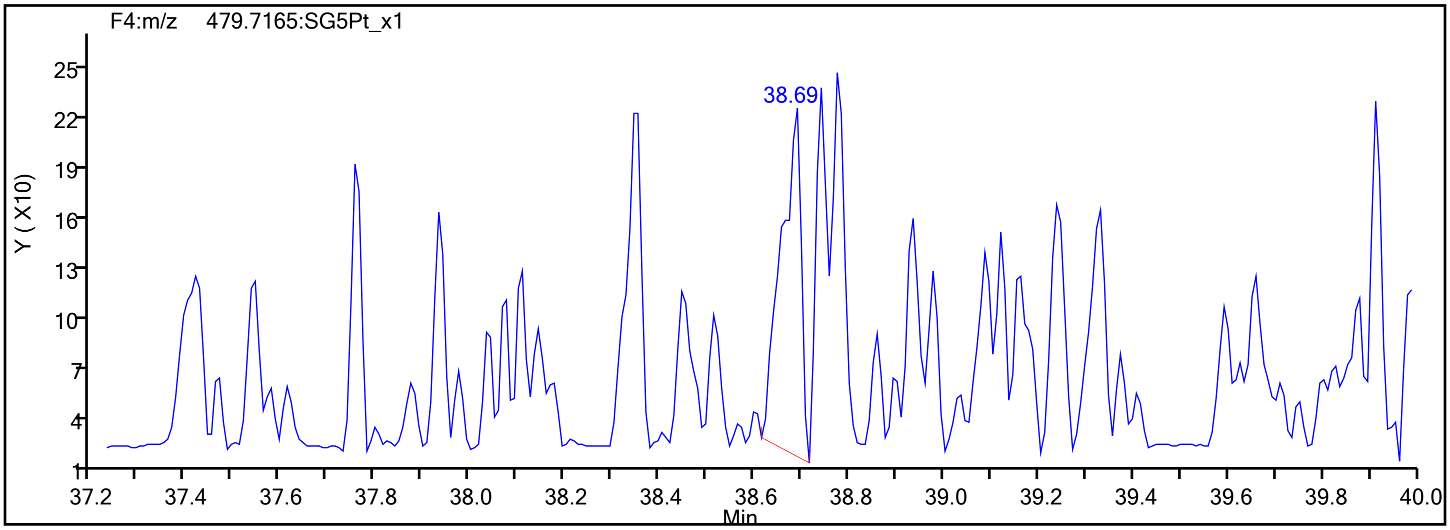

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

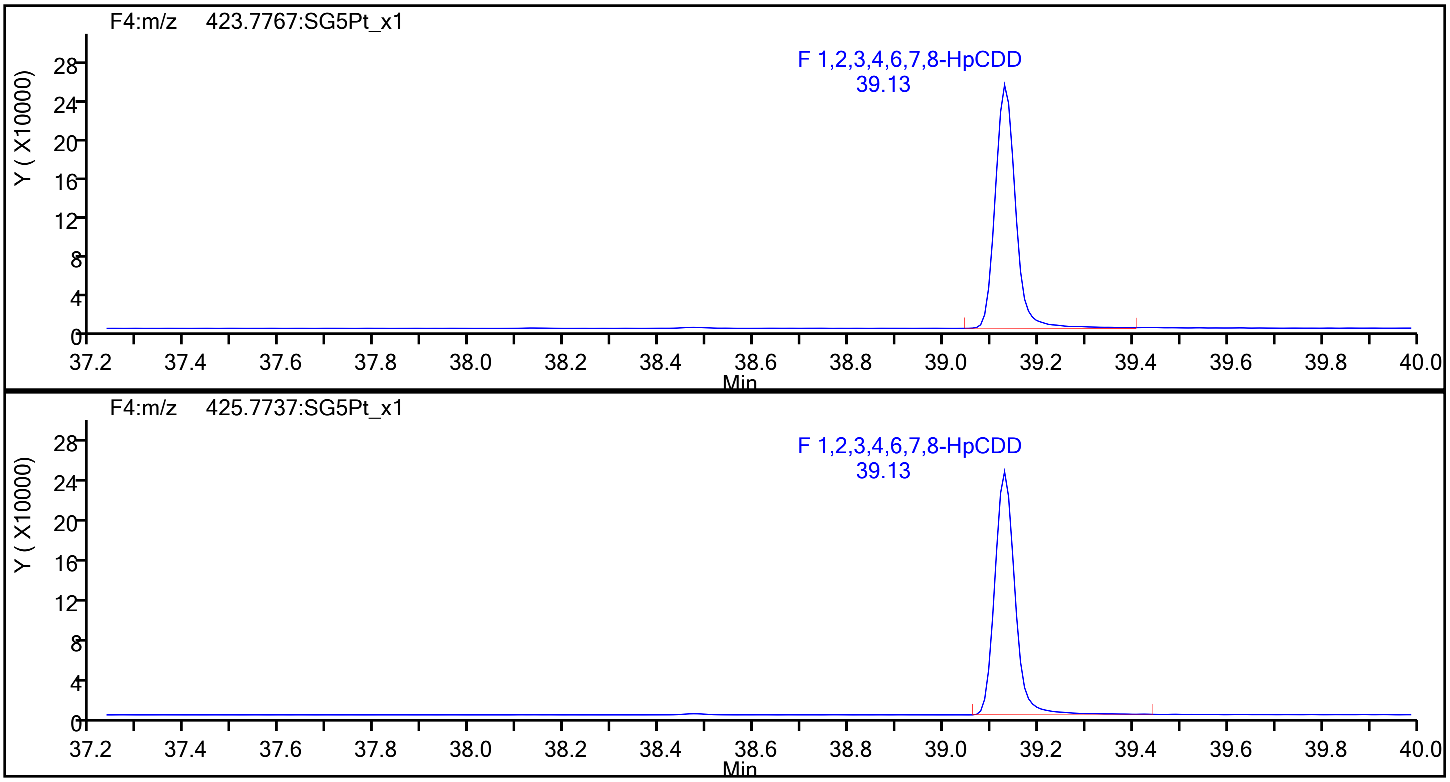

HpCDD Standards

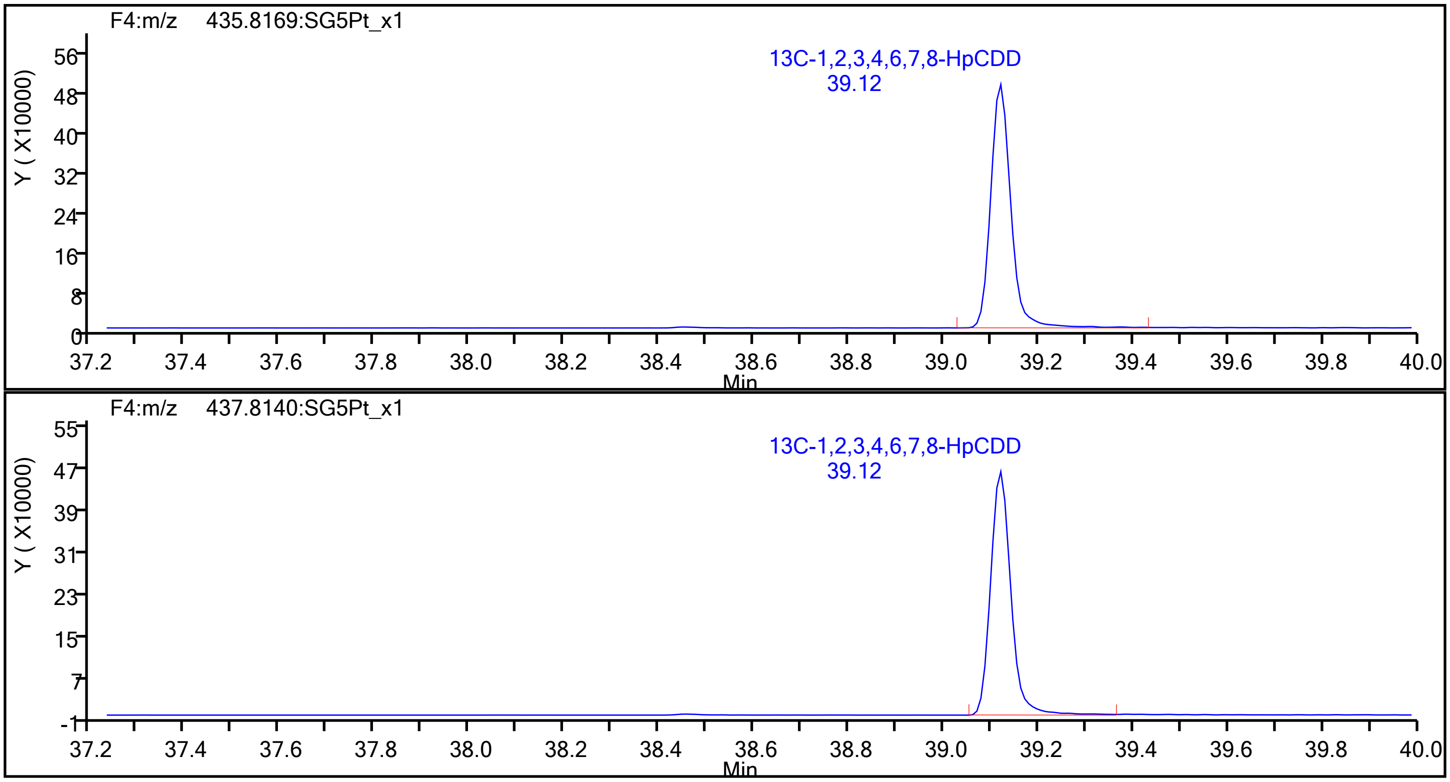

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

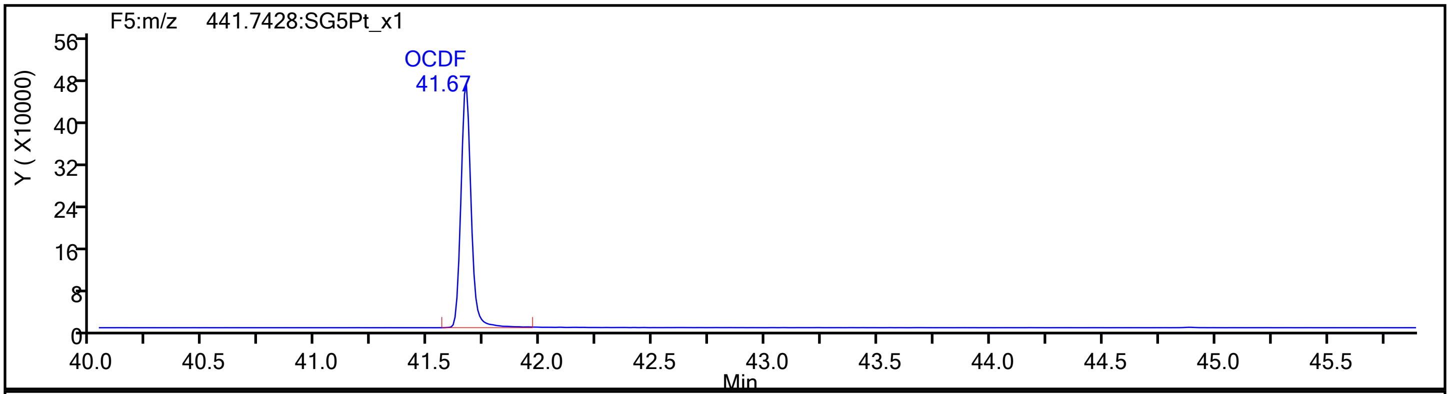

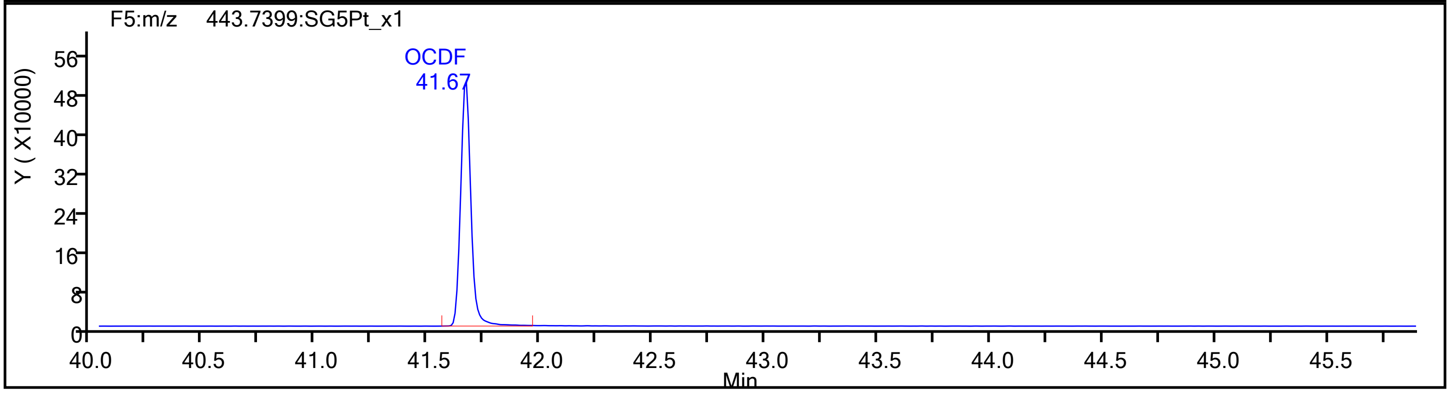

OCDF Standards

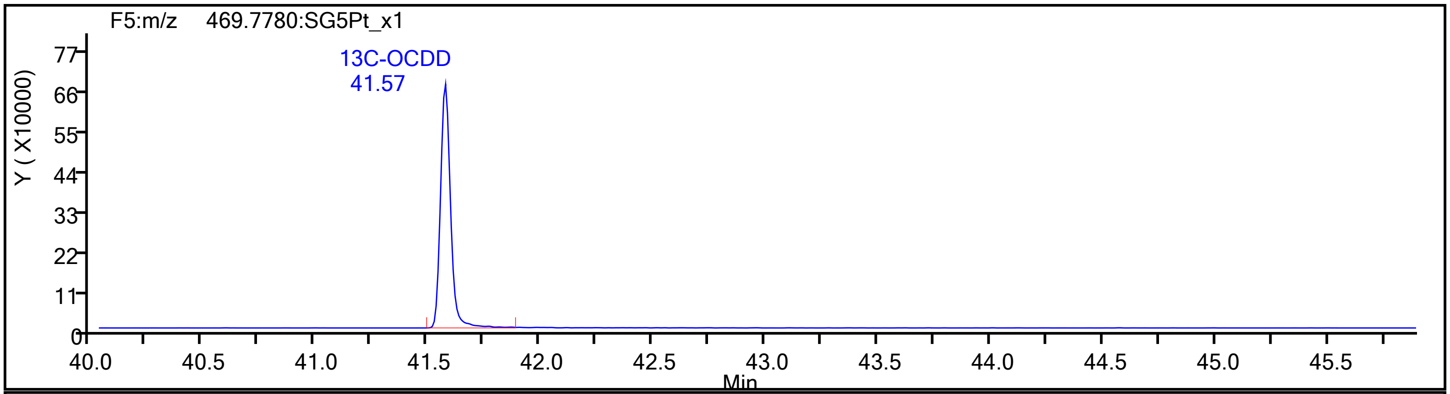

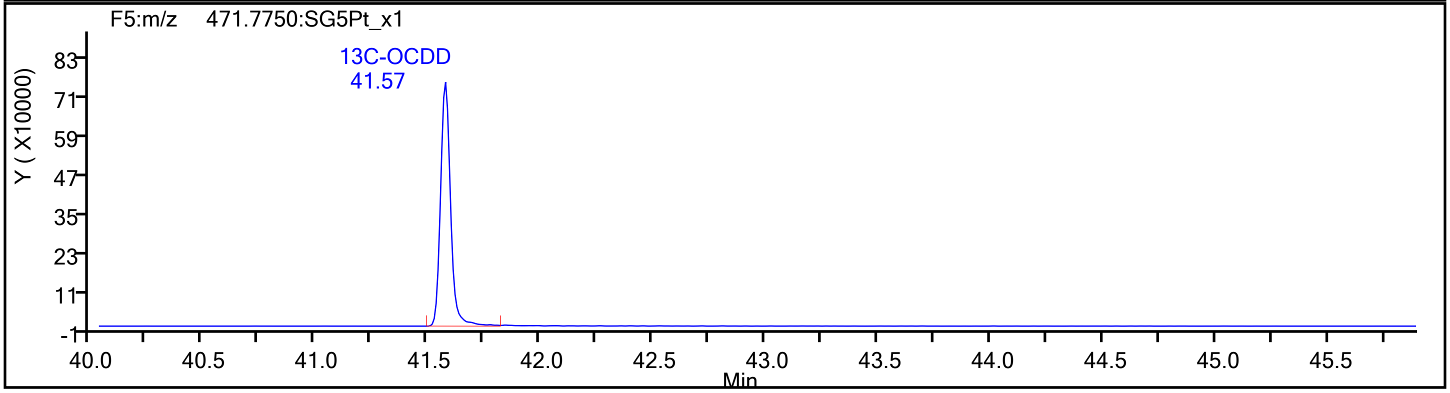

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d

Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

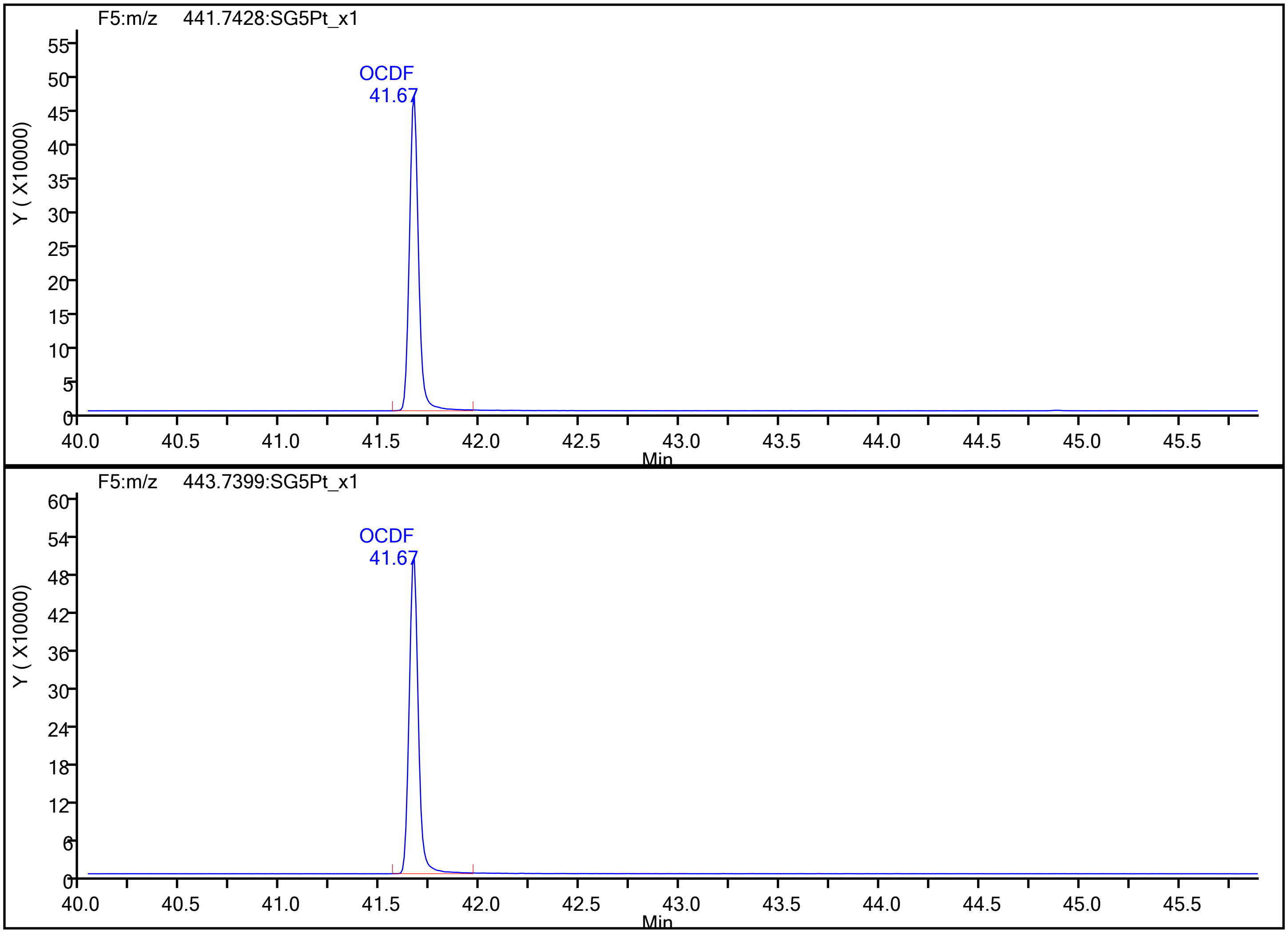

OCDF Interference Mass

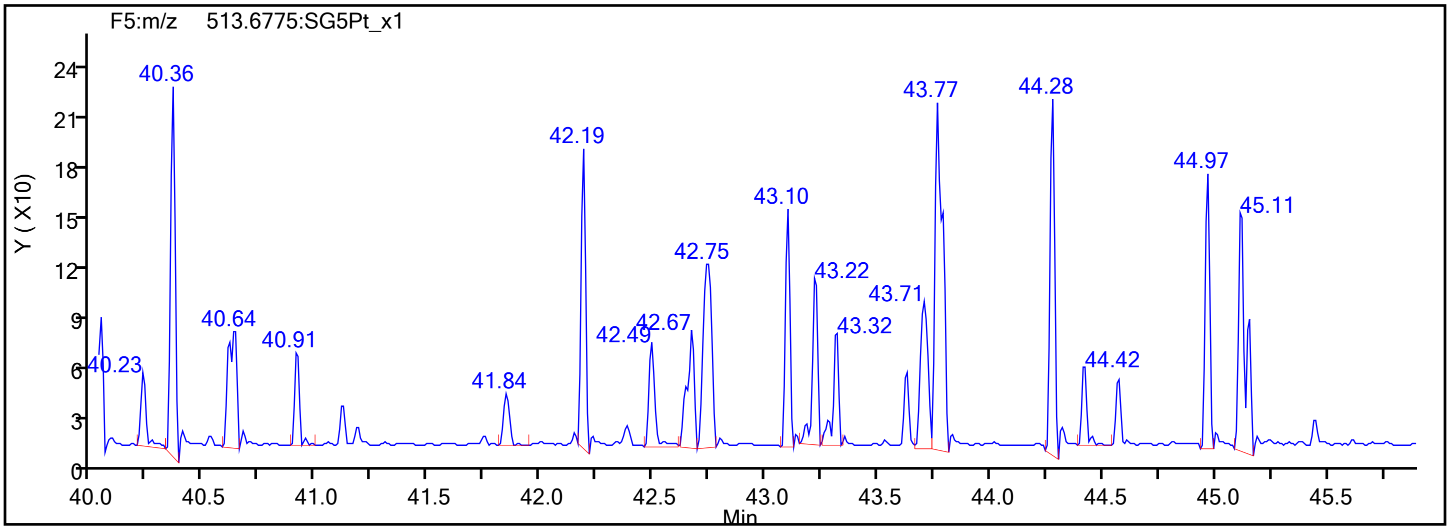

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

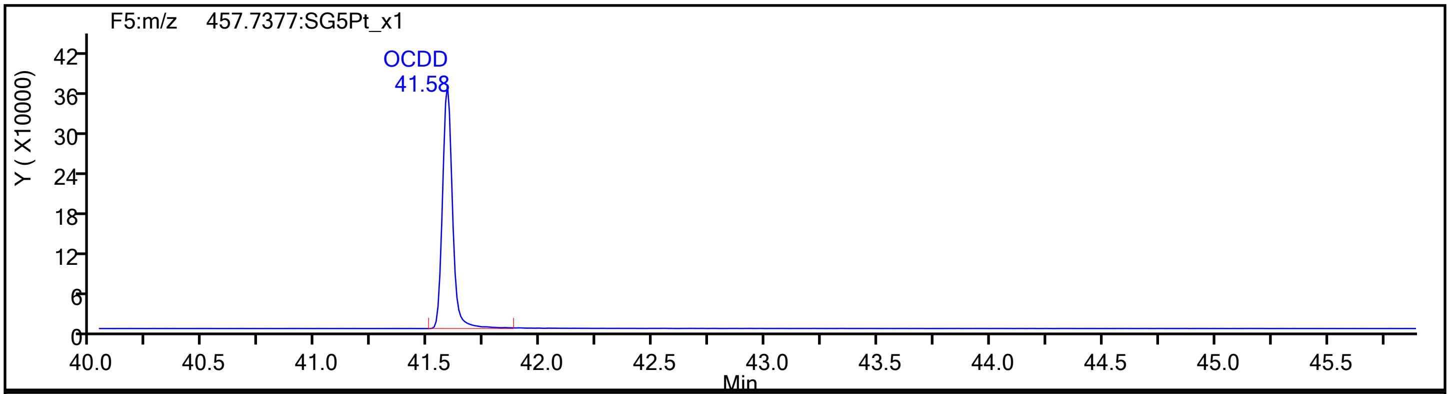

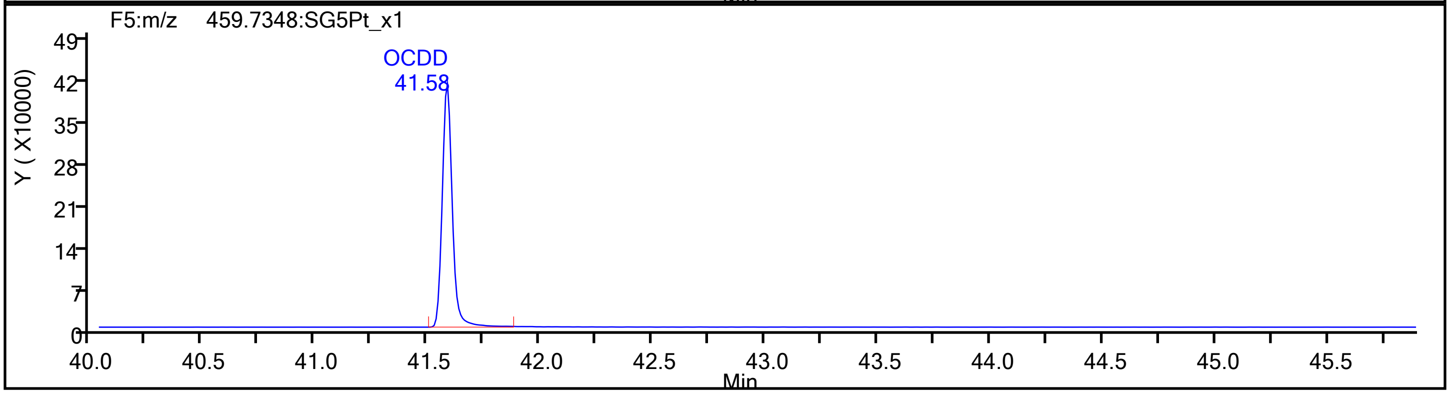

OCDD Standards

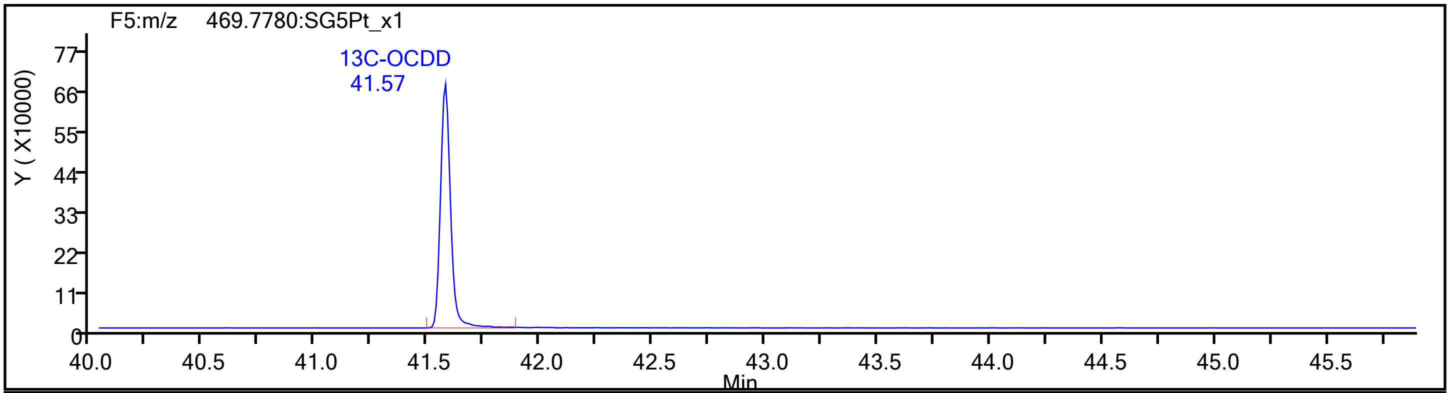

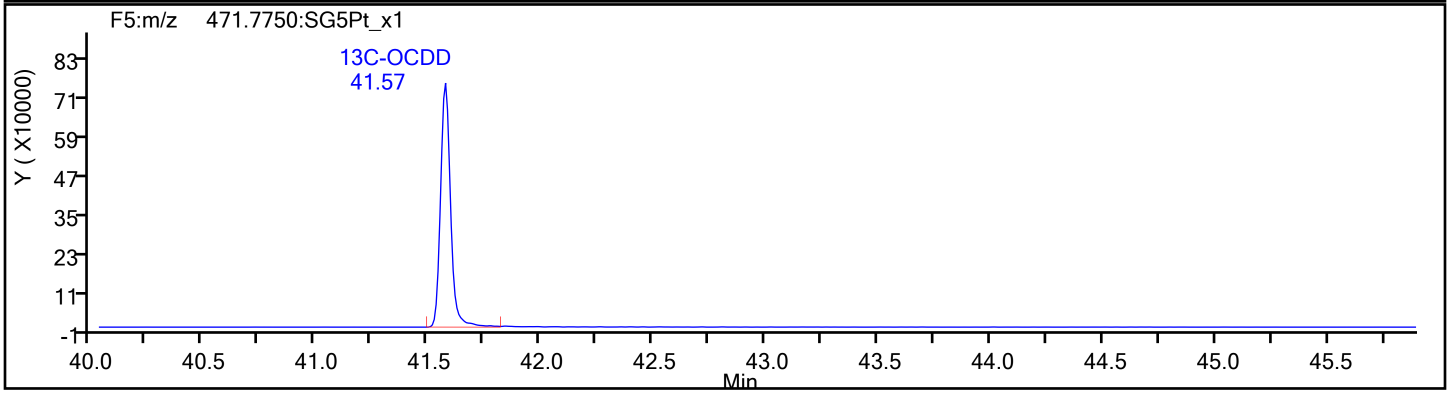

Report Date: 18-Sep-2020 11:00:26 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

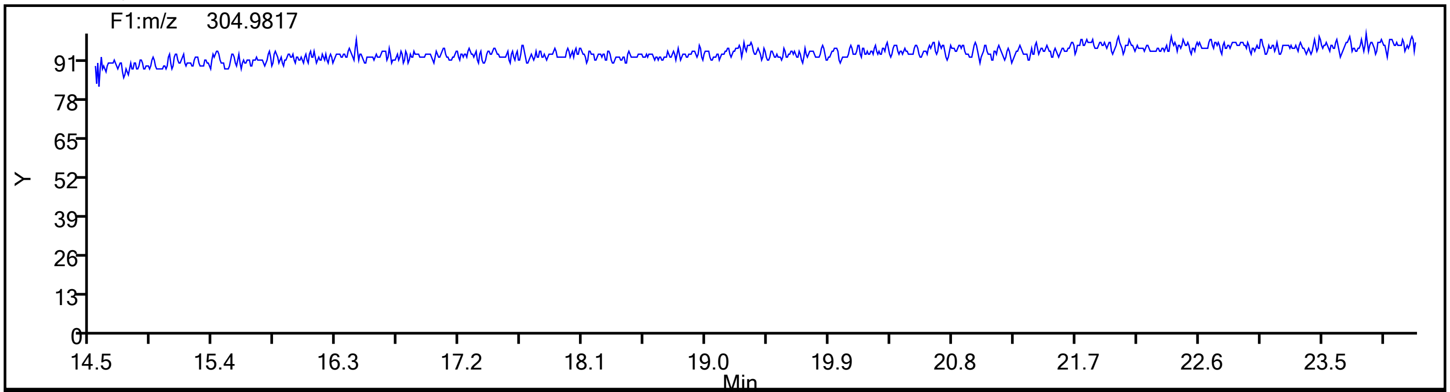

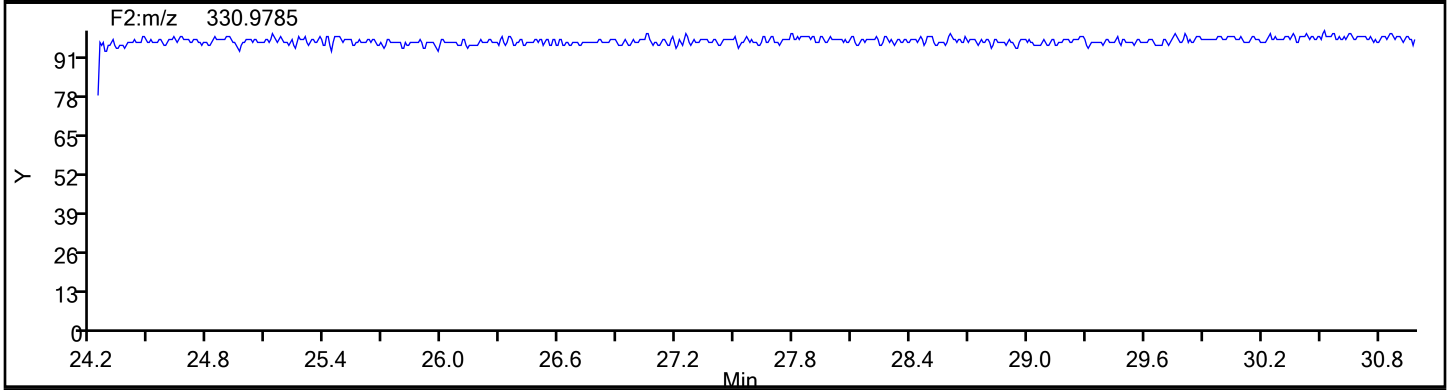

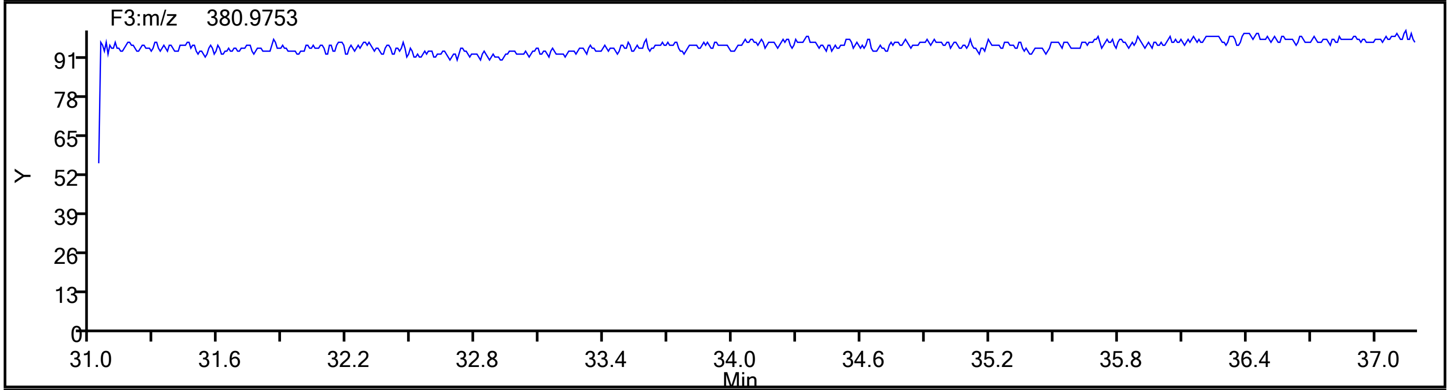

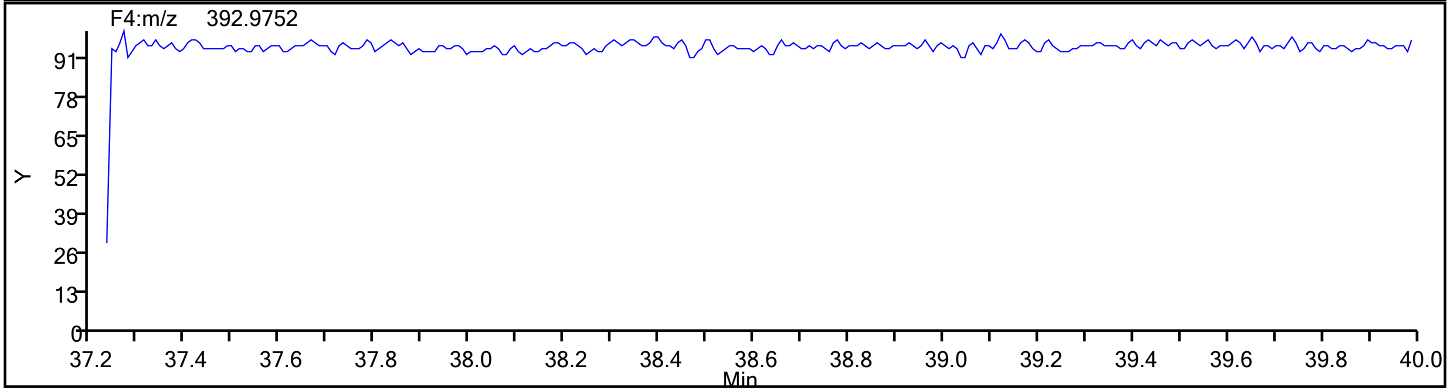

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_6.d		
Injection Date:	17-Sep-2020 14:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

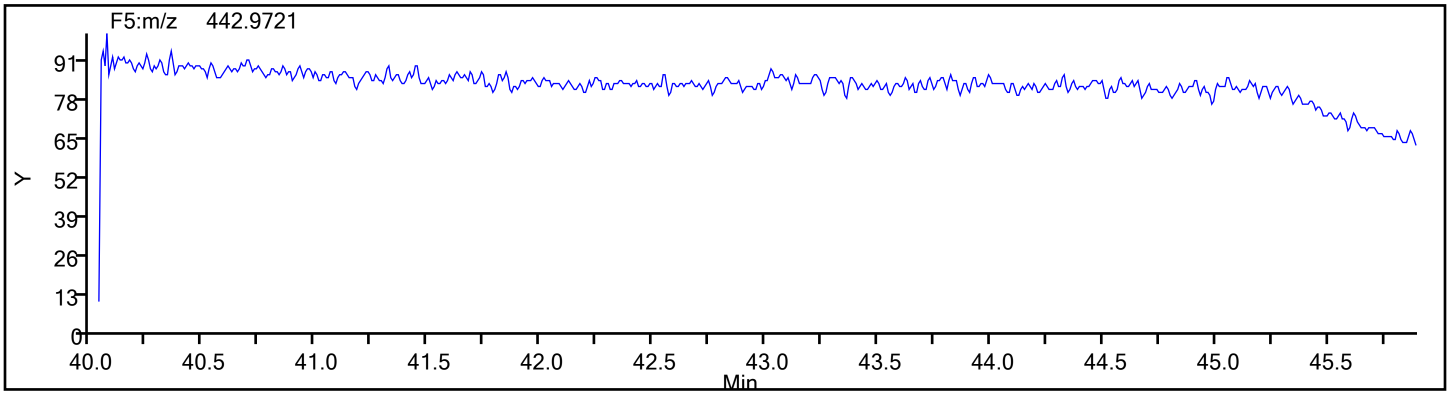

Report Date: 18-Sep-2020 11:00:39   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 5
Inject. Date: 17-Sep-2020 15:41:00   ALS Bottle#: 0   Worklist Smp#: 6
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:30   Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa   Date: 17-Sep-2020 18:40:07

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.153	2437882	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.224	3996116	0.80	1.5883	103.2	103.2	0.4333	0.4333	103	
2,3,7,8-TCDF	19.250	1665214	0.79	1.0857	38.4	38.4	0.0825	0.0825	95.96	
S Total TCDF					38.4	38.4	0.0825	0.0825		
D 13C-2,3,7,8-TCDD	20.514	2816107	0.80	1.1194	103.2	103.2	0.3645	0.3645	103	
$ 37Cl4-2,3,7,8-TCDD	20.539	1135994		1.1468	40.6	40.6	0.0480	0.0480	102	
2,3,7,8-TCDD	20.539	1160856	0.78	1.0810	38.1	38.1	0.1031	0.1031	95.34	
S Total TCDD					38.1	38.1	0.1031	0.1031		
D 13C-1,2,3,7,8-PeCDF	26.307	3719700	1.58	1.4782	103.2	103.2	0.4442	0.4442	103	
1,2,3,7,8-PeCDF	26.324	7463293	1.59	1.0547	190.2	190.2	0.6913	0.6913	95.12	
D 13C-2,3,4,7,8-PeCDF	27.756	3427156	1.59	1.3912	101.0	101.0	0.4720	0.4720	101	
2,3,4,7,8-PeCDF	27.781	7221609	1.56	1.1035	190.9	190.9	0.7602	0.7602	95.47	
S Total PeCDF					381.2	381.2	0.7257	0.7257		
D 13C-1,2,3,7,8-PeCDD	28.539	2364404	1.55	0.9415	103.0	103.0	0.2243	0.2243	103	
1,2,3,7,8-PeCDD	28.565	4786052	1.56	1.0680	189.5	189.5	0.2069	0.2069	94.77	
S Total PeCDD					189.5	189.5	0.2069	0.2069		
D 13C-1,2,3,4,7,8-HxCDF	34.177	2931726	0.53	1.1378	98.0	98.0	0.4606	0.4606	98.03	
1,2,3,4,7,8-HxCDF	34.203	7193761	1.26	1.2643	194.1	194.1	0.9826	0.9826	97.04	
D 13C-1,2,3,6,7,8-HxCDF	34.363	3458749	0.52	1.3173	99.9	99.9	0.3978	0.3978	99.90	
1,2,3,6,7,8-HxCDF	34.388	8101410	1.26	1.2230	191.5	191.5	0.9049	0.9049	95.76	
D 13C-2,3,4,6,7,8-HxCDF	35.272	3274841	0.53	1.2457	100.0	100.0	0.4207	0.4207	100	
2,3,4,6,7,8-HxCDF	35.289	7780338	1.26	1.2464	190.6	190.6	0.7683	0.7683	95.30	
D 13C-1,2,3,7,8,9-HxCDF	36.225	3135400	0.53	1.1840	100.8	100.8	0.4426	0.4426	101	
1,2,3,7,8,9-HxCDF	36.242	7442846	1.26	1.2638	187.8	187.8	0.7501	0.7501	93.92	
S Total HxCDF					764.0	764.0	0.8515	0.8515		
* 13C-1,2,3,7,8,9-HxCDD	36.023	2628376	1.26	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.500	2221816	1.27	0.8477	99.7	99.7	0.2540	0.2540	99.72	
1,2,3,4,7,8-HxCDD	35.517	4930619	1.24	1.1561	192.0	192.0	0.4408	0.4408	95.98	
D 13C-1,2,3,6,7,8-HxCDD	35.635	2651289	1.26	0.9979	101.1	101.1	0.2158	0.2158	101	
1,2,3,6,7,8-HxCDD	35.643	5196501	1.25	1.0284	190.6	190.6	0.4328	0.4328	95.29	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.031	5542974	1.25	1.1789	193.0	193.0	0.4030	0.4030	96.48	
S Total HxCDD					575.5	575.5	0.4255	0.4255		
D 13C-1,2,3,4,6,7,8-HpCDF	38.129	2616915	0.45	0.9884	100.7	100.7	0.4857	0.4857	101	
1,2,3,4,6,7,8-HpCDF	38.137	7423570	1.04	1.5064	188.3	188.3	0.7385	0.7385	94.16	
D 13C-1,2,3,4,7,8,9-HpCDF	39.426	2404416	0.45	0.9203	99.4	99.4	0.5216	0.5216	99.40	
1,2,3,4,7,8,9-HpCDF	39.434	6651383	1.04	1.4548	190.2	190.2	0.7698	0.7698	95.08	
S Total HpCDF					378.5	378.5	0.7542	0.7542		
D 13C-1,2,3,4,6,7,8-HpCDD	39.114	2565014	1.06	0.9556	102.1	102.1	0.2773	0.2773	102	
1,2,3,4,6,7,8-HpCDD	39.122	5106412	1.04	1.0640	187.1	187.1	0.3397	0.3397	93.55	
S Total HpCDD					187.1	187.1	0.3397	0.3397		
D 13C-OCDD	41.575	3927948	0.89	0.7420	201.4	201.4	0.2324	0.2324	101	
OCDF	41.659	10652820	0.92	1.4296	379.4	379.4	0.3004	0.3004	94.85	
OCDD	41.584	8253790	0.89	1.1293	372.1	372.1	0.3572	0.3572	93.03	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Sep-2020 15:41:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:30 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:40:07

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.153	20.145	0		1094659	165867	391	977	424		
333.9338	20.153	20.145	0		1343223	197347	202	505	977	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.224	19.222	0	0.954	1776014	272685	673	1682	405		
317.9389	19.224	19.222	0	0.954	2220102	337758	327	817	1033	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.250	19.246	0	1.001	735939	110364	85	212	1298		
305.8987	19.250	19.246	0	1.001	929275	141060	134	335	1053	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.514	20.507	0	1.018	1252108	174246	391	977	446		
333.9338	20.505	20.507	0	1.017	1563999	222203	202	505	1100	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.539	20.531	1	1.019	1135994	158595	80	200	1982		
2,3,7,8-TCDD											
319.8965	20.539	20.532	0	1.001	510117	70978	116	290	612		
321.8936	20.531	20.532	0	1.001	650739	89192	61	152	1462	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.307	26.301	0	1.305	2278262	391109	573	1432	683		
353.8970	26.307	26.301	0	1.305	1441438	243927	381	952	640	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.324	26.321	0	1.001	4578686	771006	1105	2762	698		
341.8567	26.324	26.321	0	1.001	2884607	490900	747	1867	657	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.756	27.762	0	1.377	2101624	339639	573	1432	593		
353.8970	27.756	27.762	0	1.377	1325532	212281	381	952	557	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.781	27.787	0	1.001	4405602	685703	1105	2762	621		
341.8567	27.781	27.787	0	1.001	2816007	440996	747	1867	590	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.539	28.537	0	1.416	1435499	223561	179	447	1249		
369.8919	28.539	28.537	0	1.416	928905	139354	128	320	1089	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.565	28.562	0	1.001	2919697	442166	229	572	1931		
357.8516	28.565	28.562	0	1.001	1866355	285991	92	230	3109	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.177	34.181	0	0.949	1015315	209527	473	1182	443		
385.8610	34.177	34.181	0	0.949	1916411	395595	931	2327	425	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.203	34.200	0	1.001	4005208	814692	1664	4160	490		
375.8178	34.203	34.200	0	1.001	3188553	649795	1343	3357	484	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.363	34.365	0	0.954	1183699	230383	473	1182	487		
385.8610	34.363	34.365	0	0.954	2275050	448862	931	2327	482	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.388	34.384	0	1.001	4514911	881304	1664	4160	530		
375.8178	34.388	34.384	0	1.001	3586499	698690	1343	3357	520	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.272	35.272	0	0.979	1128357	270515	473	1182	572		
385.8610	35.272	35.272	0	0.979	2146484	514425	931	2327	553	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.289	35.288	0	1.000	4331828	1016272	1664	4160	611		
375.8178	35.289	35.288	0	1.000	3448510	810249	1343	3357	603	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.225	36.225	0	1.006	1083331	271624	473	1182	574		
385.8610	36.225	36.225	0	1.006	2052069	521338	931	2327	560	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.242	36.240	0	1.000	4146460	1027471	1664	4160	617		
375.8178	36.233	36.240	0	1.000	3296386	813015	1343	3357	605	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.023	36.021	0		1462810	371556	317	792	1172		
403.8529	36.023	36.021	0		1165566	298210	260	650	1147	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.500	35.502	0	0.985	1244190	311845	317	792	984		
403.8529	35.508	35.502	0	0.986	977626	243469	260	650	936	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.517	35.519	0	1.000	2733184	702210	621	1552	1131		
391.8127	35.517	35.519	0	1.000	2197435	569088	511	1277	1114	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.635	35.630	0	0.989	1477693	354637	317	792	1119		
403.8529	35.626	35.630	0	0.989	1173596	281242	260	650	1082	1.26(1.05-1.43)	

Report Date: 18-Sep-2020 11:00:39 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.643	35.646	0	1.000	2889967	694650	621	1552	1119		
391.8127	35.643	35.646	0	1.000	2306534	559898	511	1277	1096	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.031	36.033	0	1.015	3084616	784726	621	1552	1264		
391.8127	36.031	36.033	0	1.015	2458358	630595	511	1277	1234	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.129	38.132	0	1.058	815692	258941	428	1070	605		
419.8220	38.129	38.132	0	1.058	1801223	573840	858	2145	669	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.137	38.141	0	1.000	3788334	1186981	1904	4760	623		
409.7788	38.137	38.141	0	1.000	3635236	1145501	1802	4505	636	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.426	39.428	0	1.094	747047	254920	428	1070	596		
419.8220	39.426	39.428	0	1.094	1657369	572363	858	2145	667	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.434	39.438	0	1.000	3385310	1140839	1904	4760	599		
409.7788	39.434	39.438	0	1.000	3266073	1114002	1802	4505	618	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.114	39.118	0	1.086	1318527	454501	374	935	1215		
437.8140	39.114	39.118	0	1.086	1246487	430815	336	840	1282	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.122	39.126	0	1.000	2598830	868729	664	1660	1308		
425.7737	39.122	39.126	0	1.000	2507582	845030	616	1540	1372	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.575	41.572	0	1.154	1845338	581259	223	557	2607		
471.7750	41.567	41.572	0	1.154	2082610	643405	239	597	2692	0.89(0.76-1.02)	
OCDF											
441.7428	41.659	41.663	0	1.002	5106237	1615956	489	1222	3305		
443.7399	41.659	41.663	0	1.002	5546583	1773450	563	1407	3150	0.92(0.76-1.02)	
OCDD											
457.7377	41.584	41.580	0	1.000	3892947	1211423	452	1130	2680		
459.7348	41.575	41.580	0	1.000	4360843	1358577	536	1340	2535	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:39 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

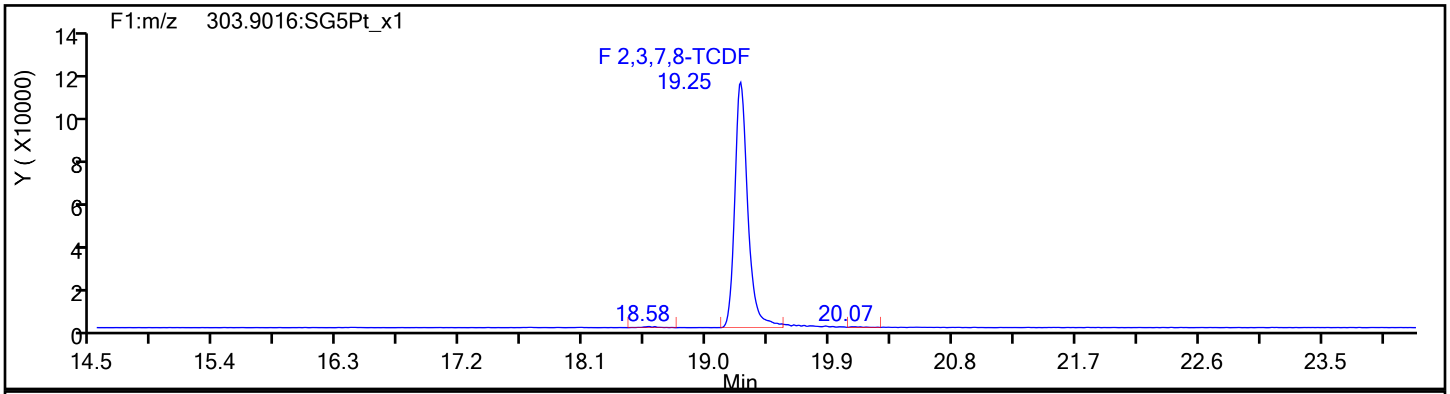

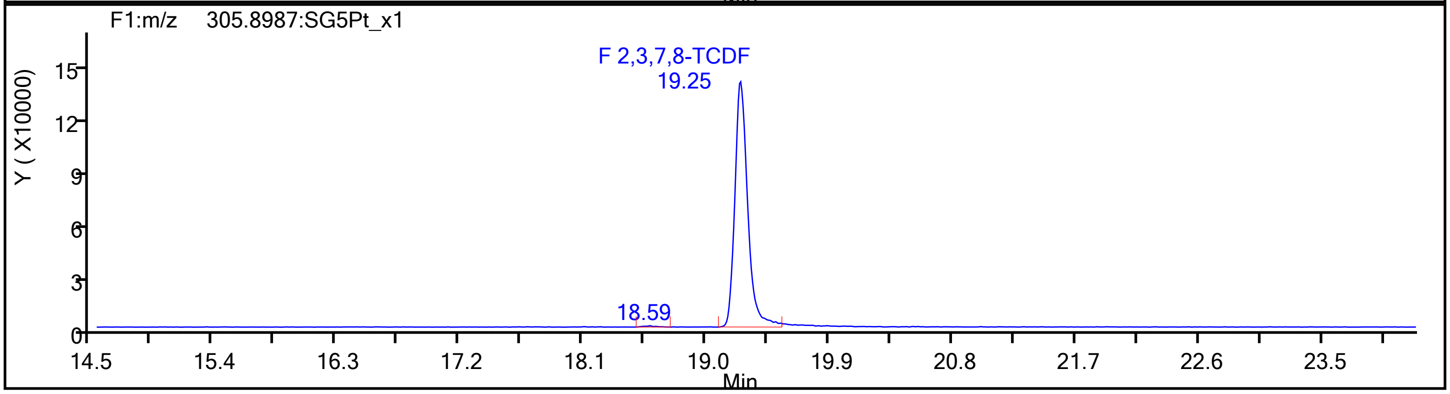

TCDF Standards

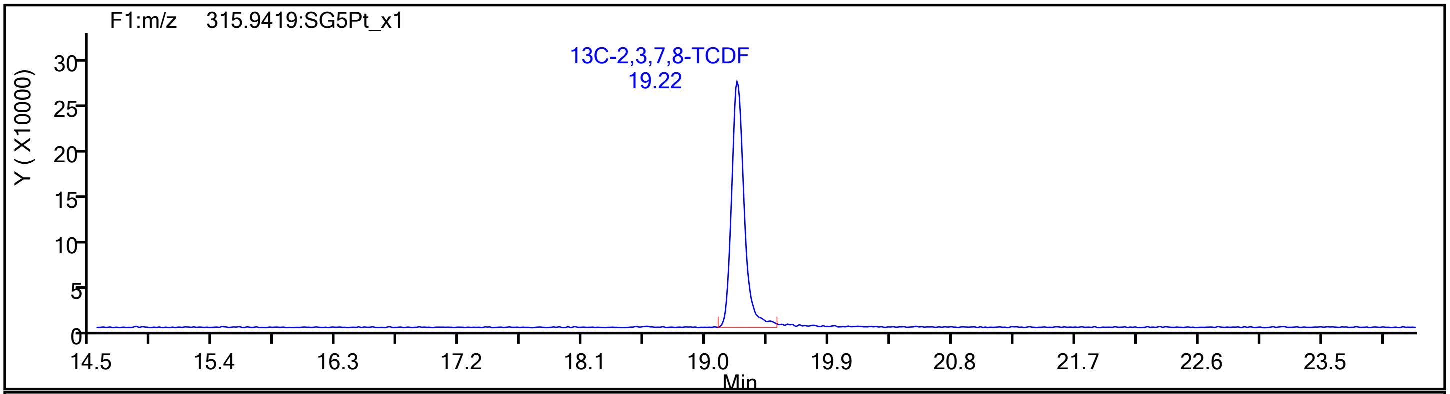

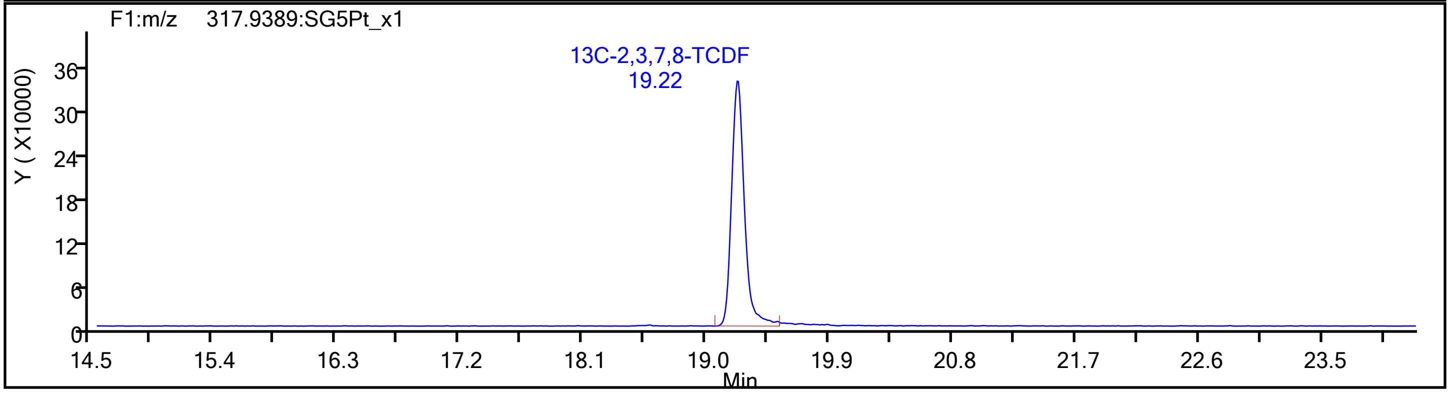

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

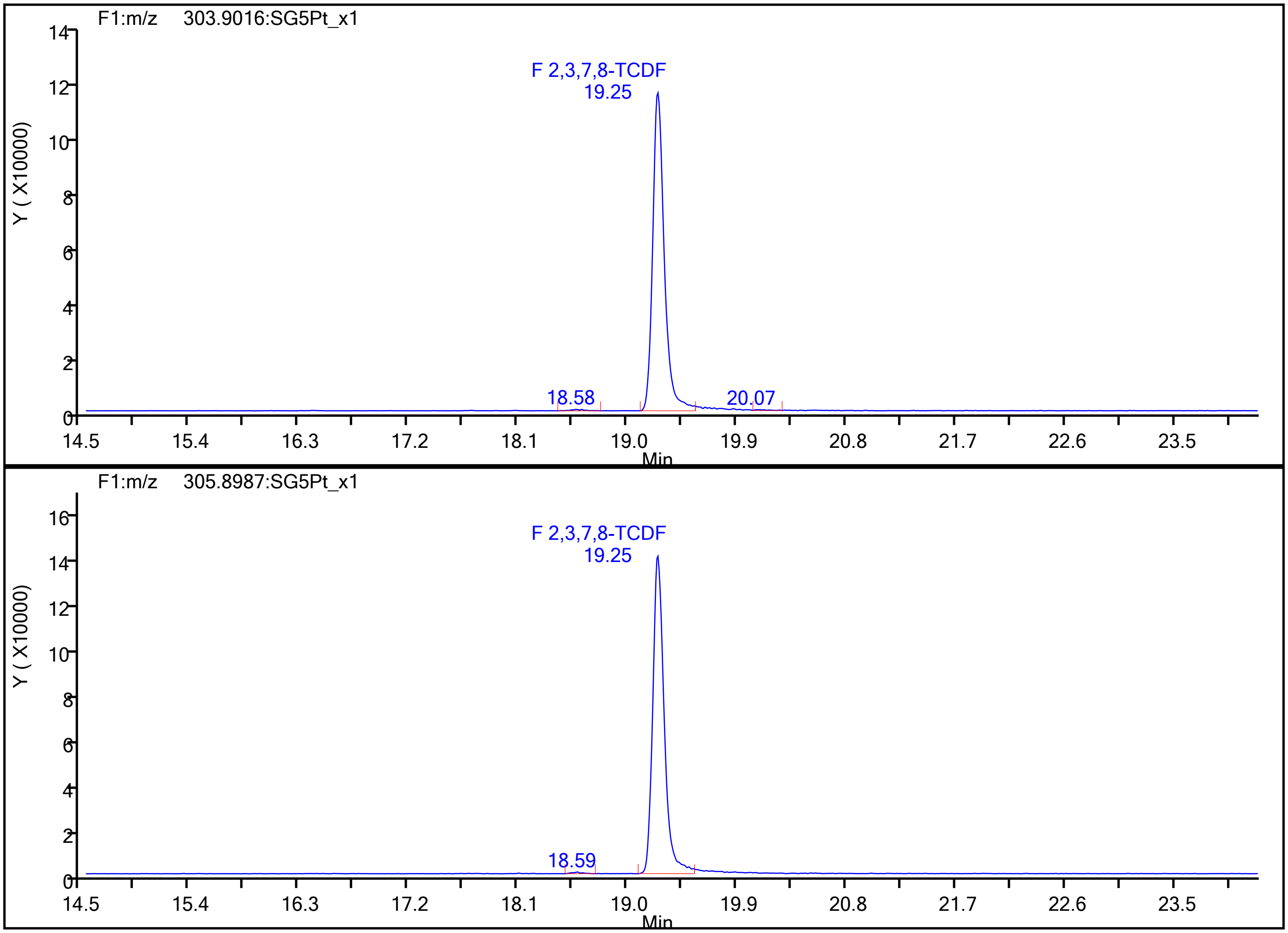

TCDF Interference Mass

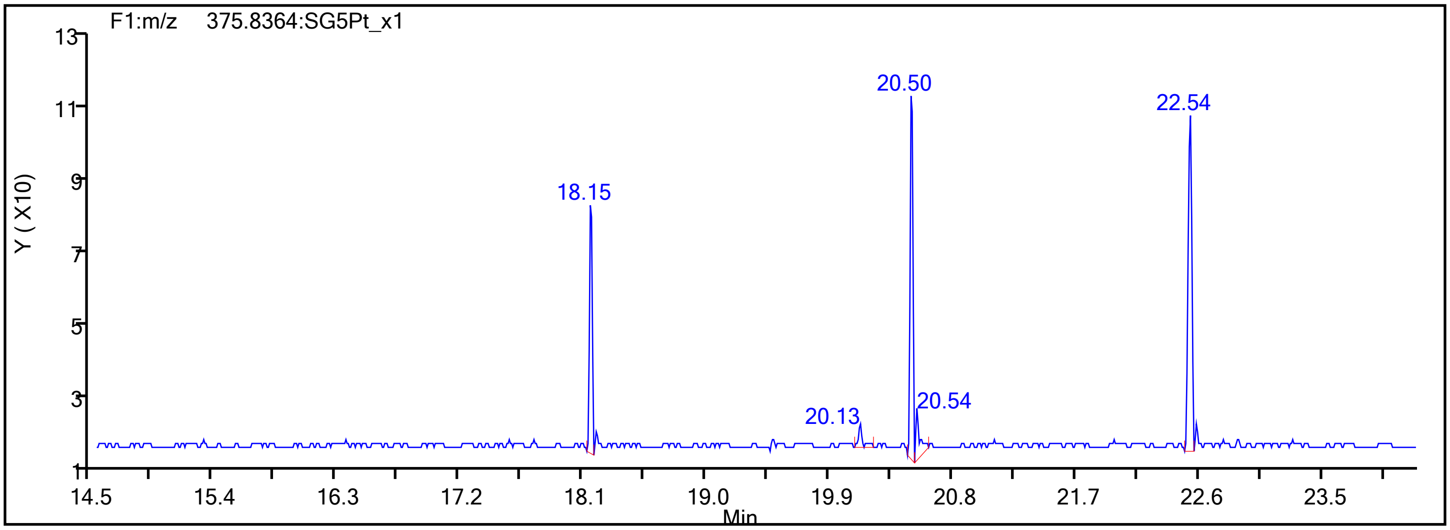

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

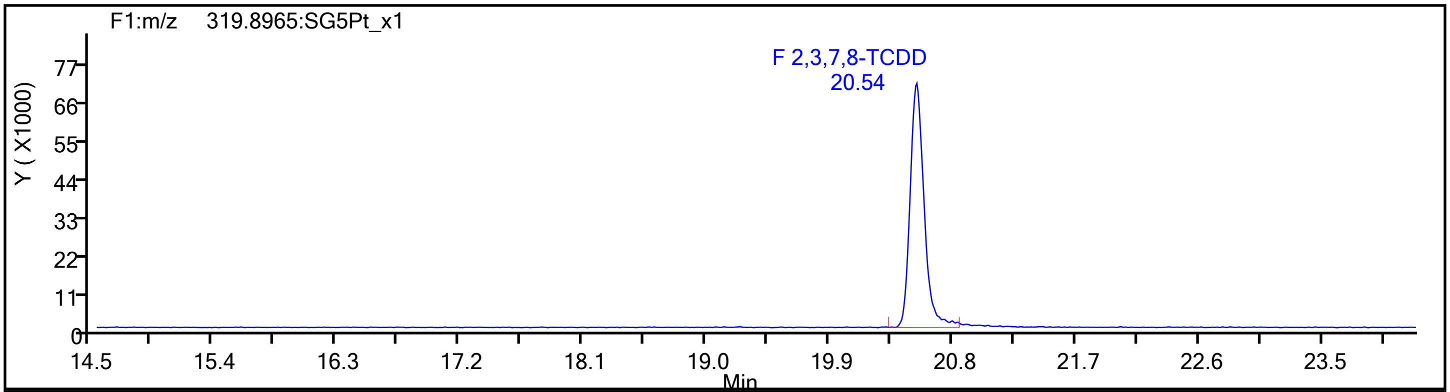

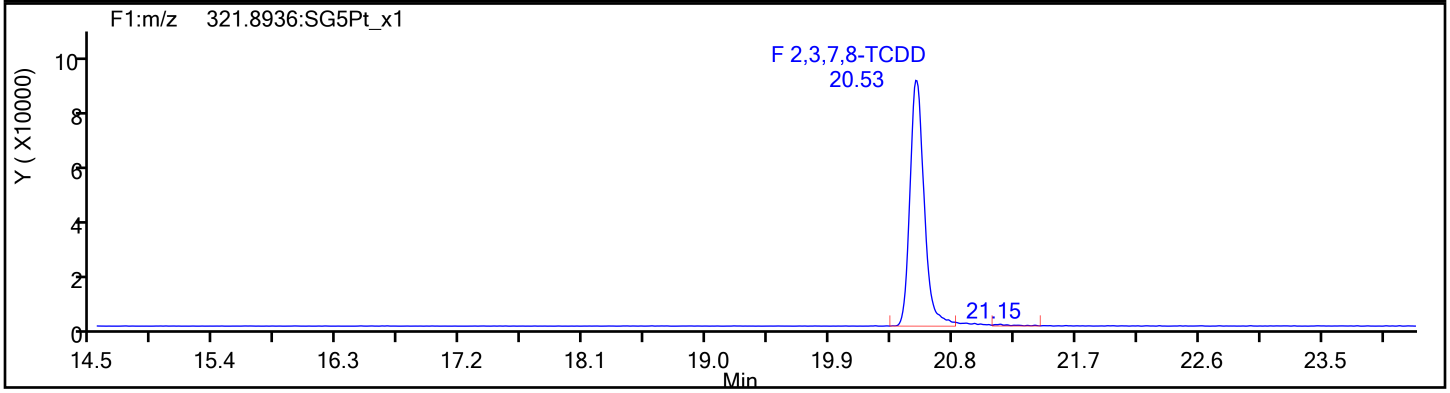

TCDD Standards

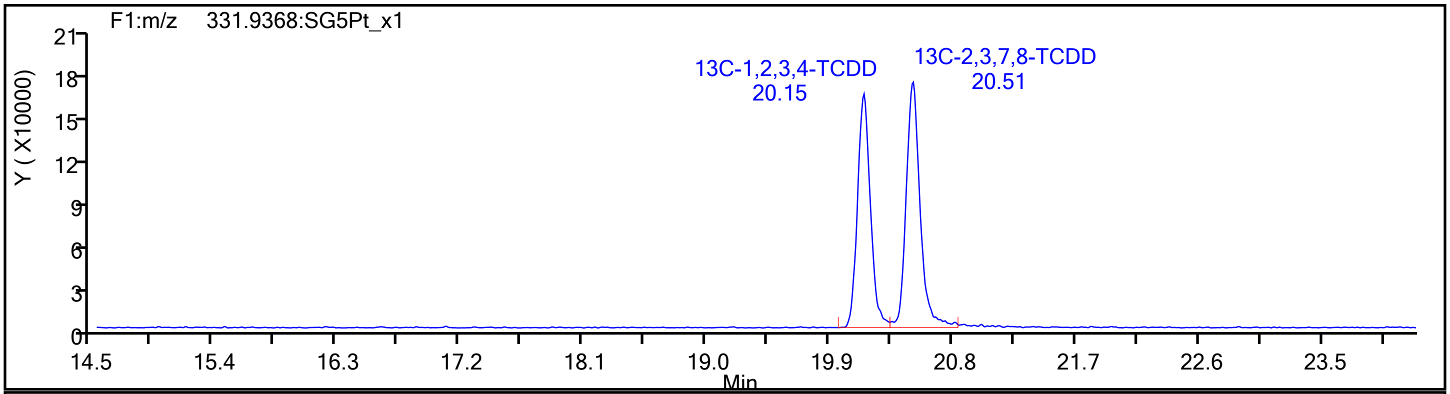

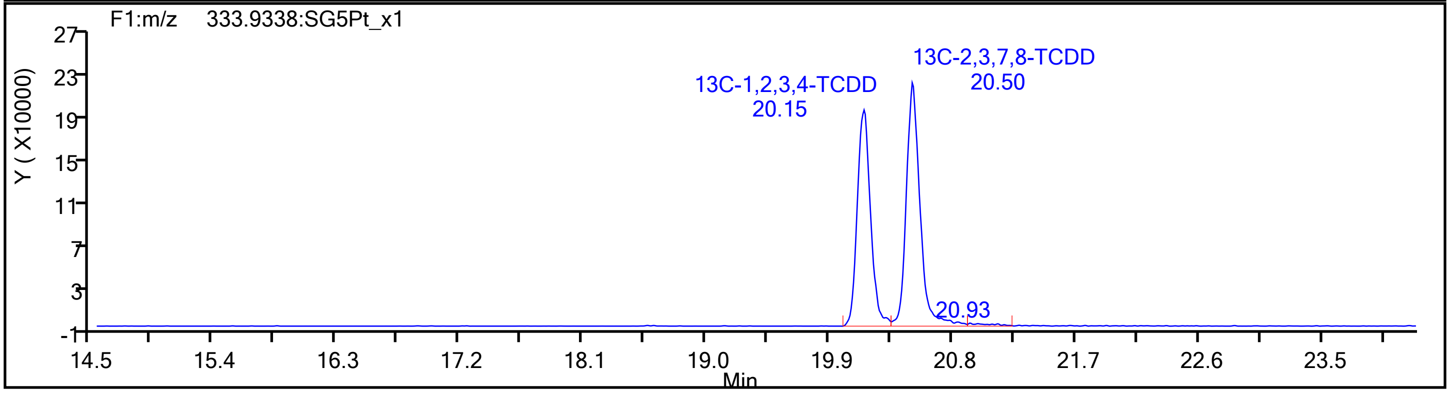

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

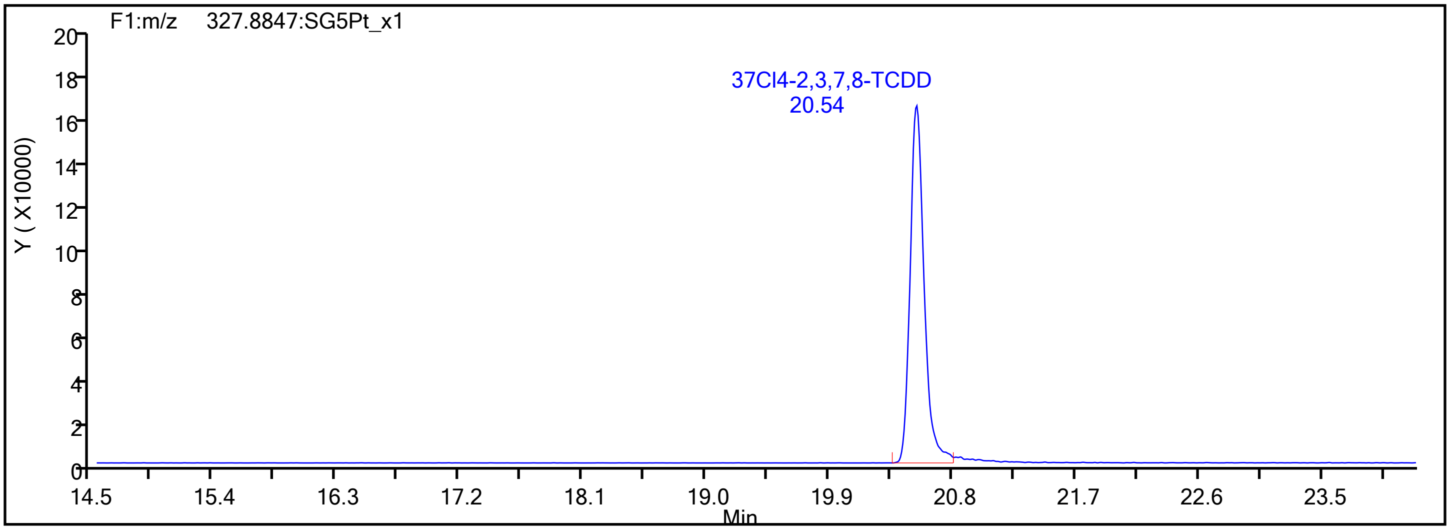

37Cl4-TCDD Standards

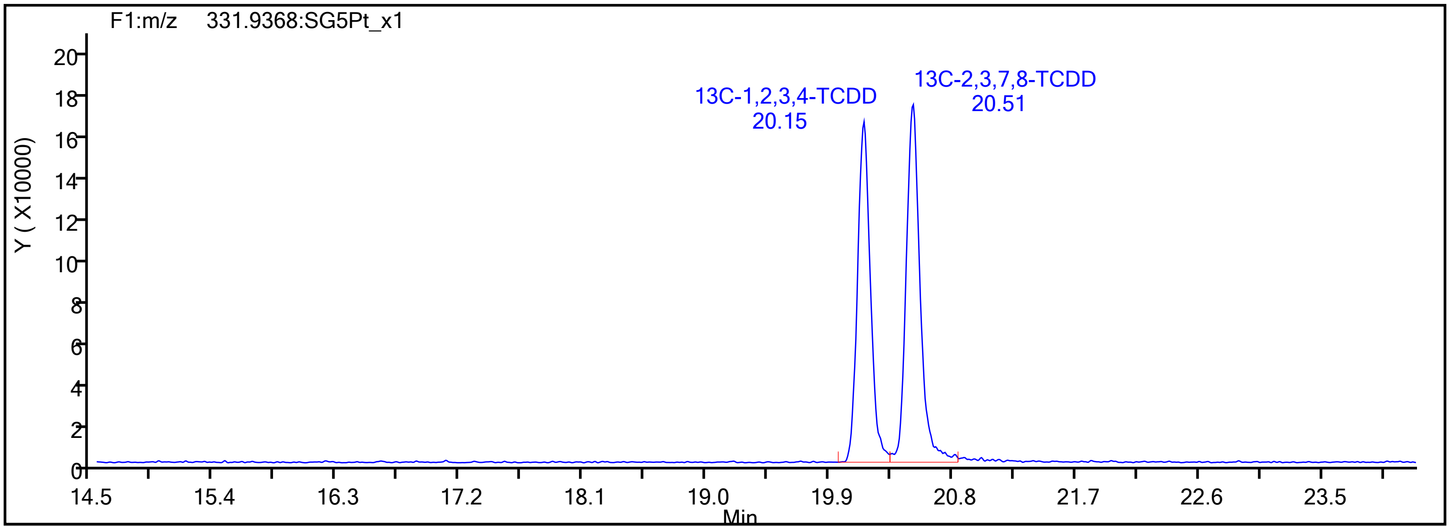

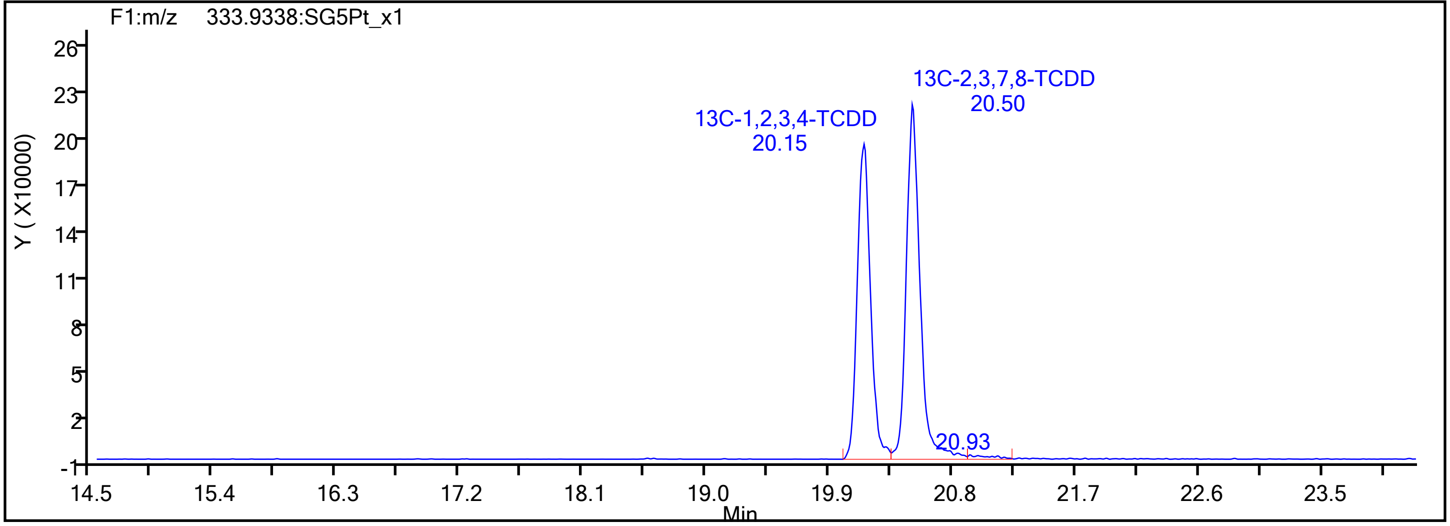

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

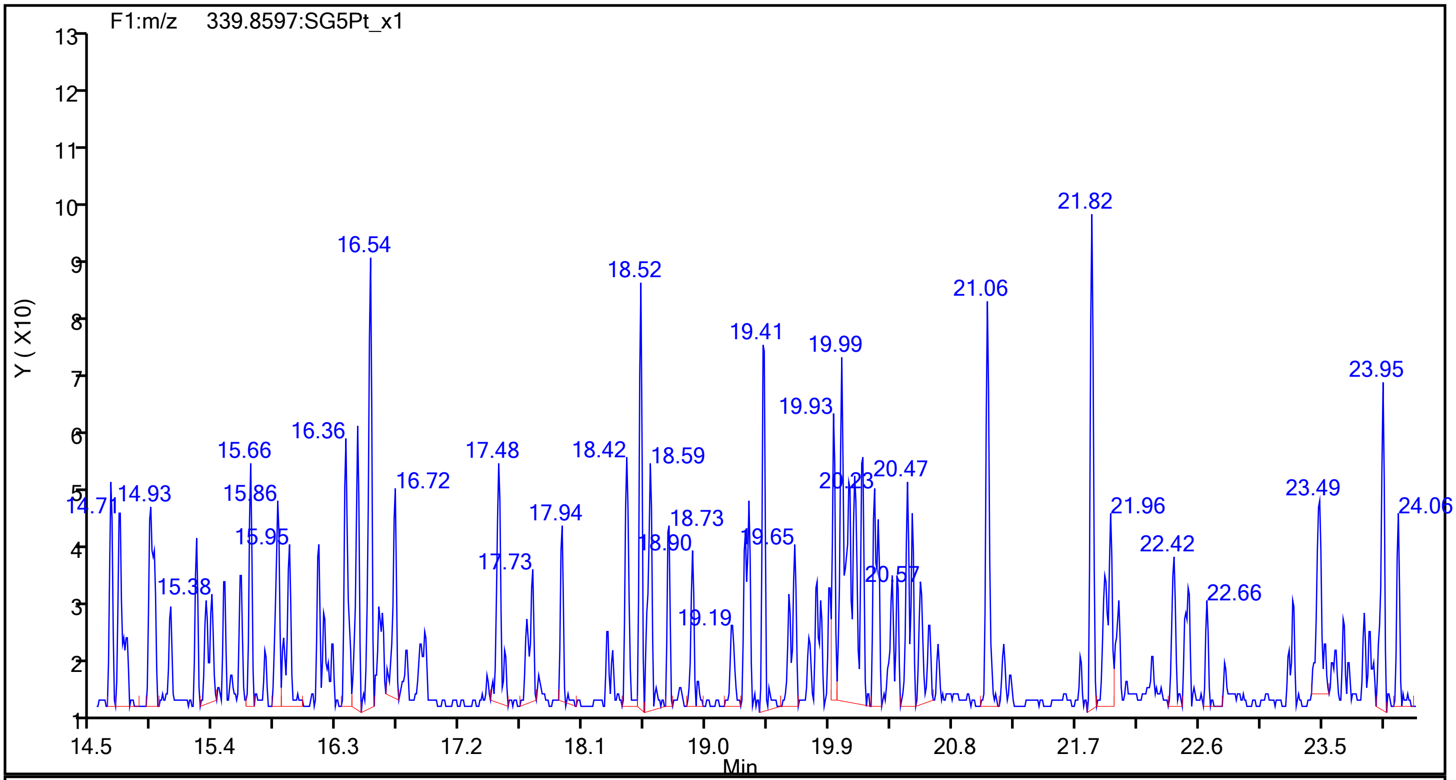

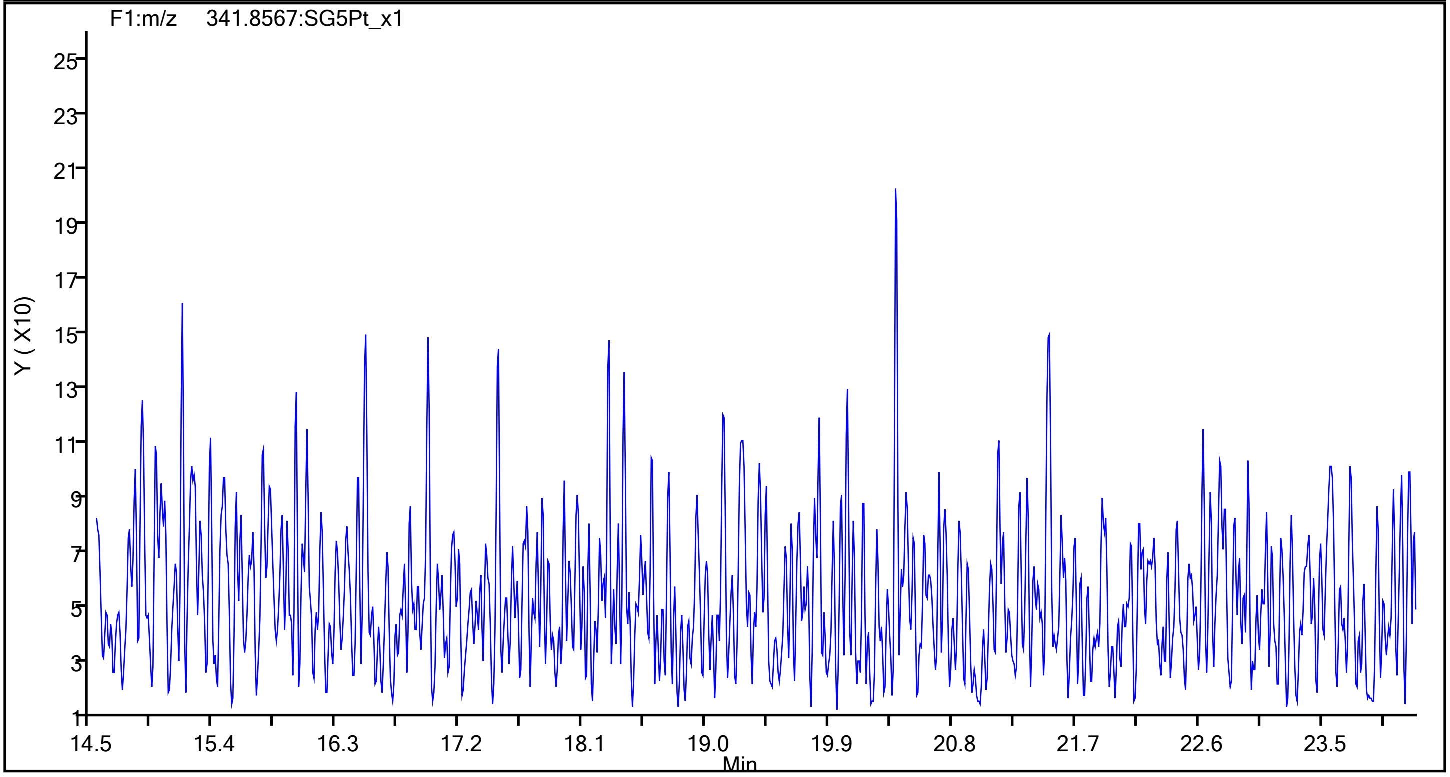

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date: 17-Sep-2020 15:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

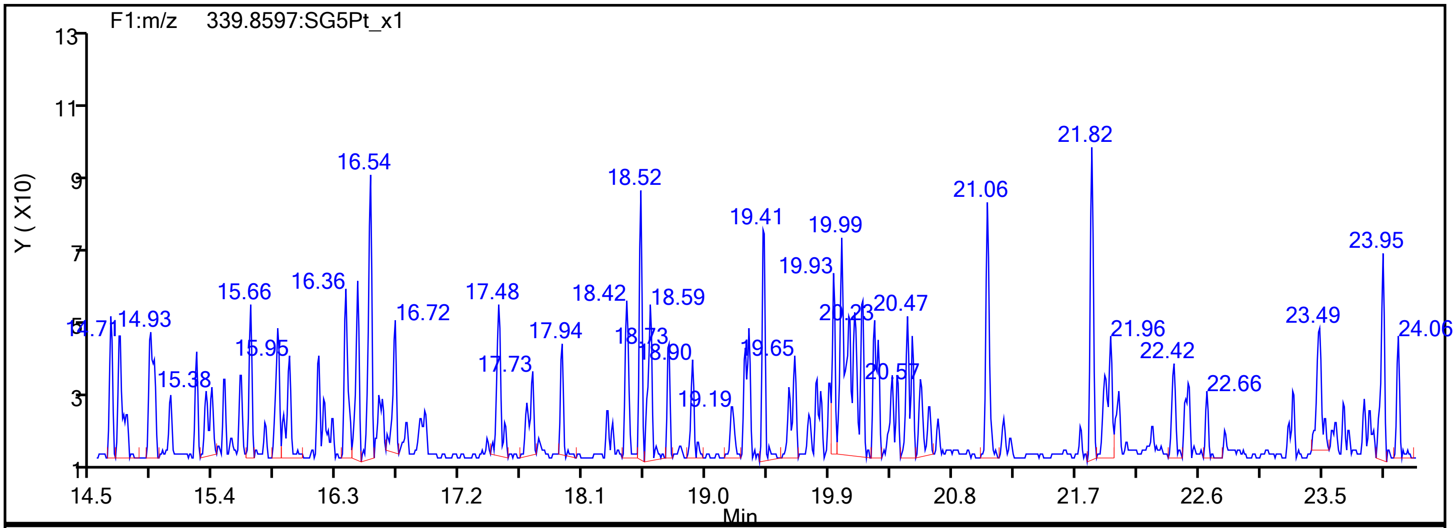

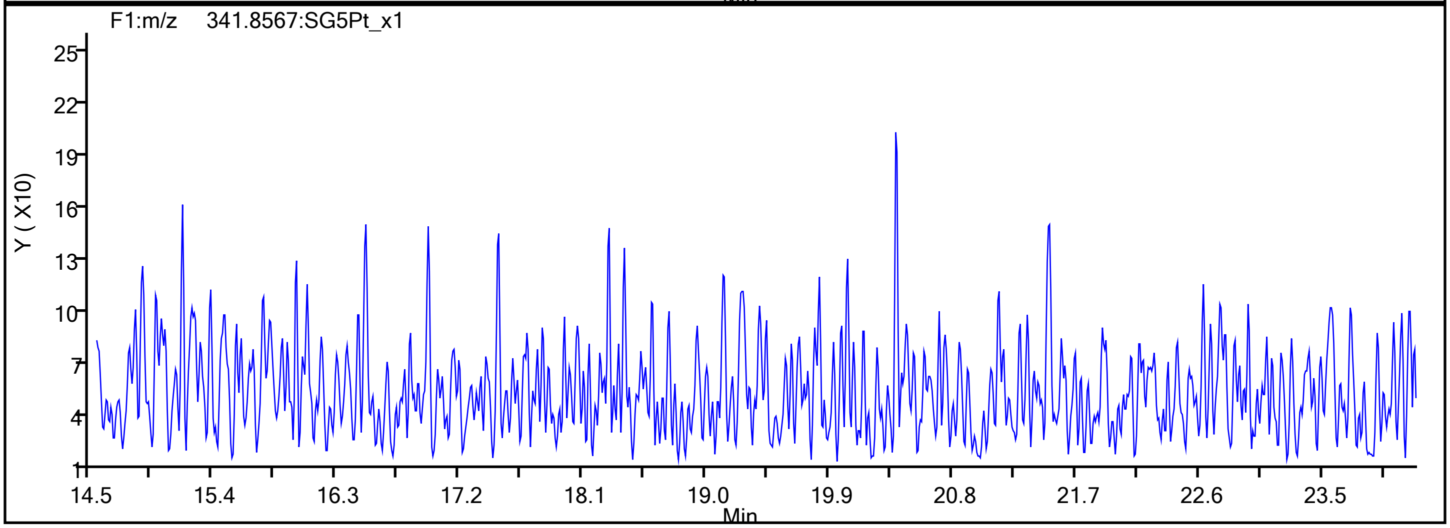

F1 PeCDFs Interference Mass

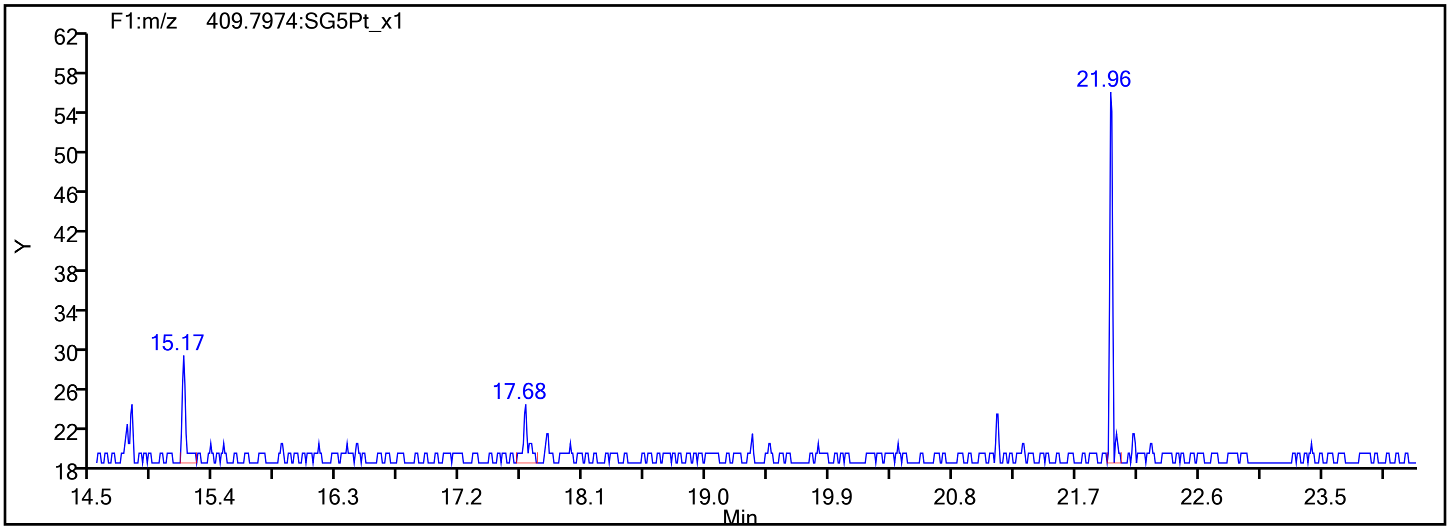

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

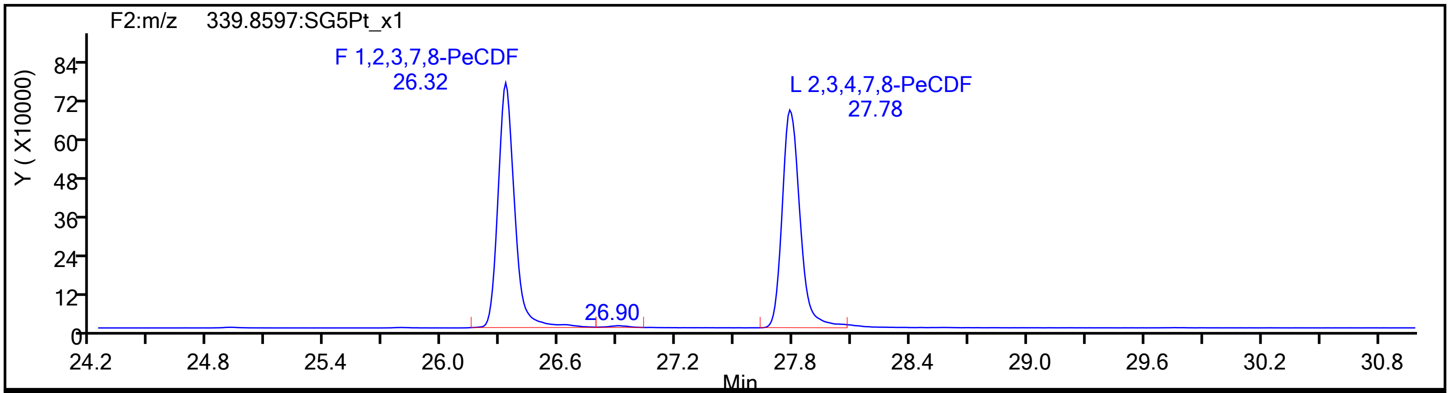

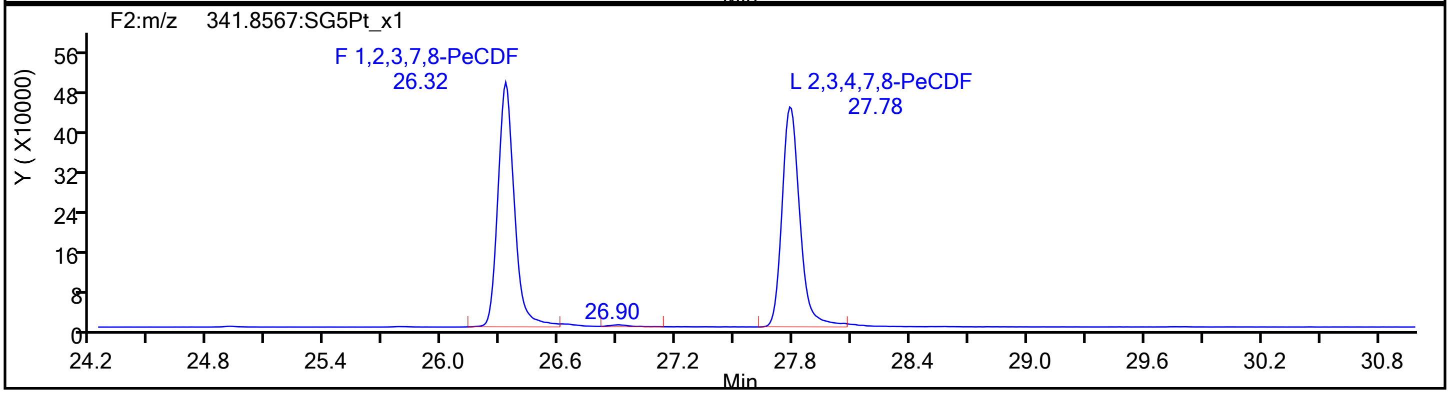

PeCDF Standards

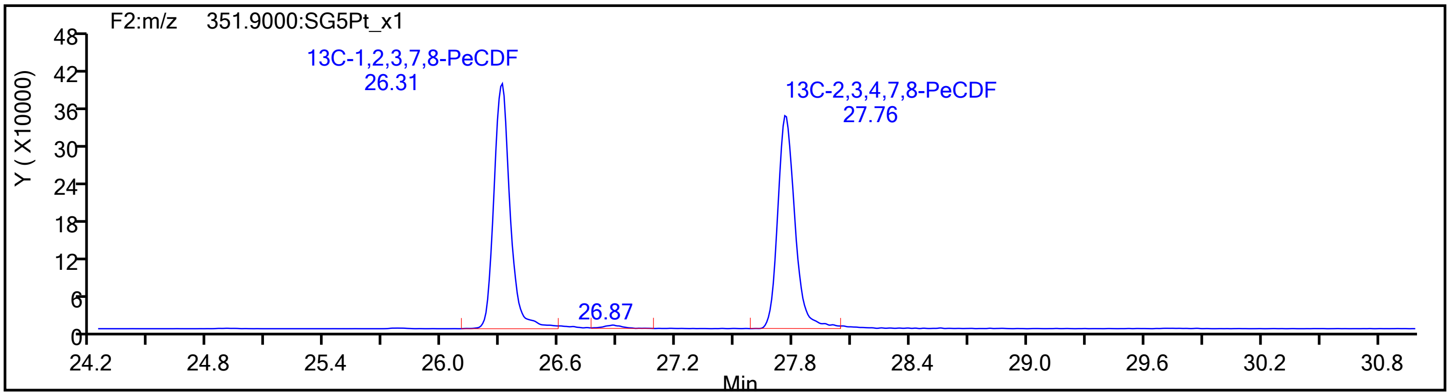

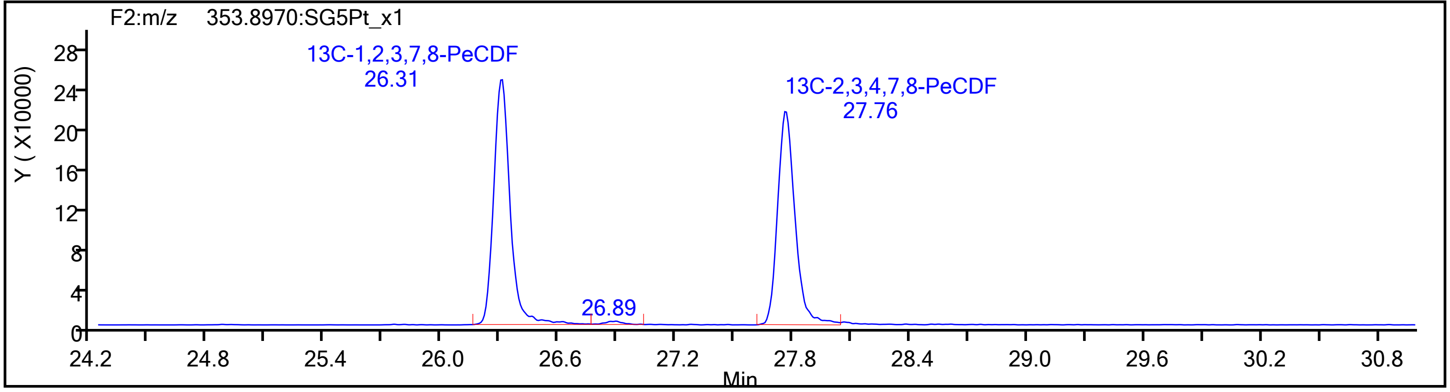

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

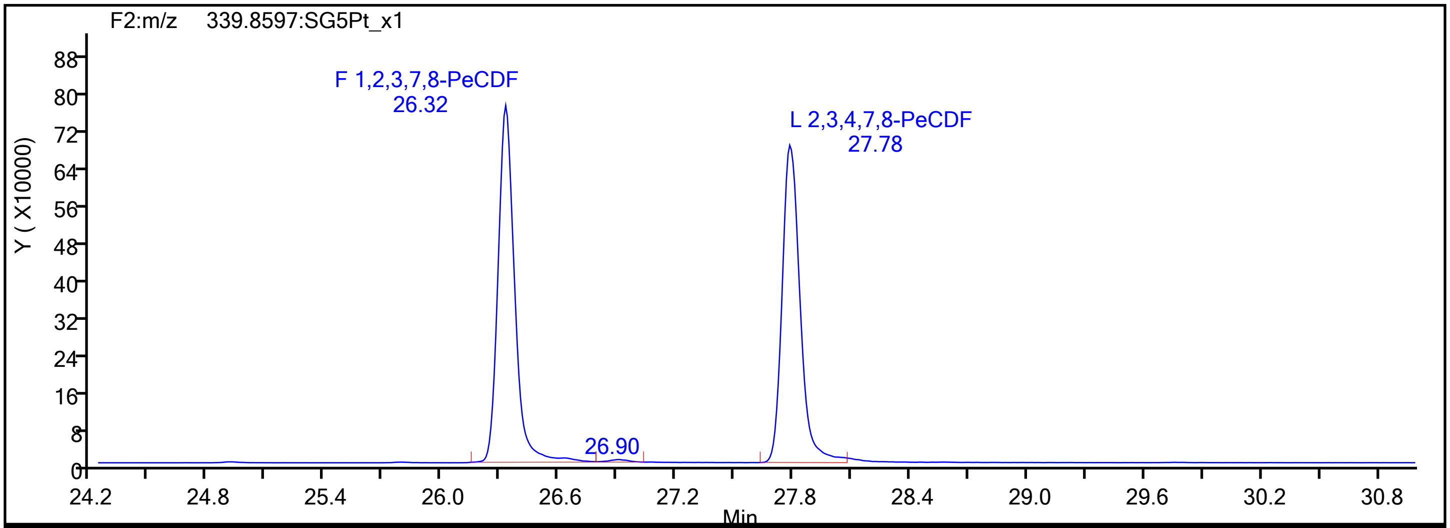

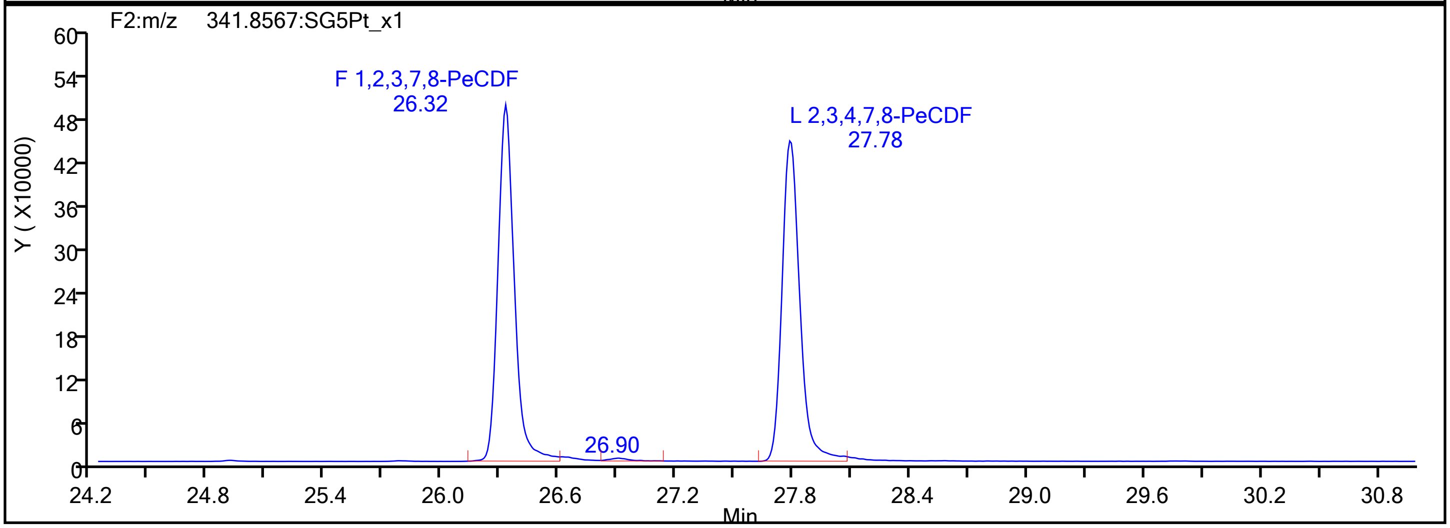

PeCDF Interference Mass

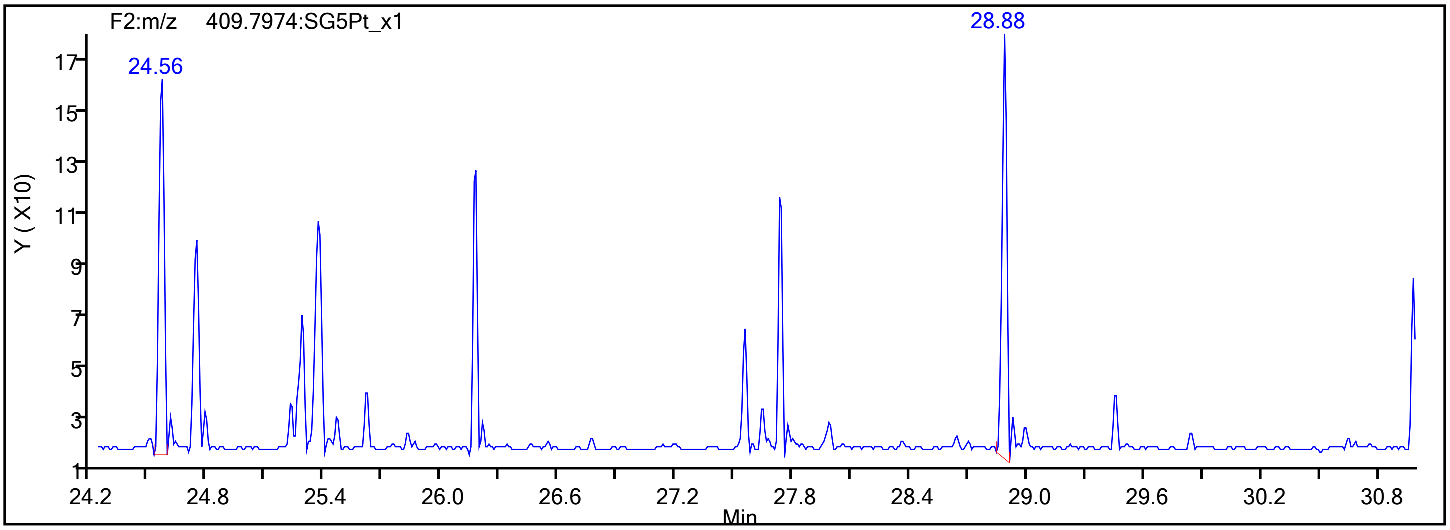

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

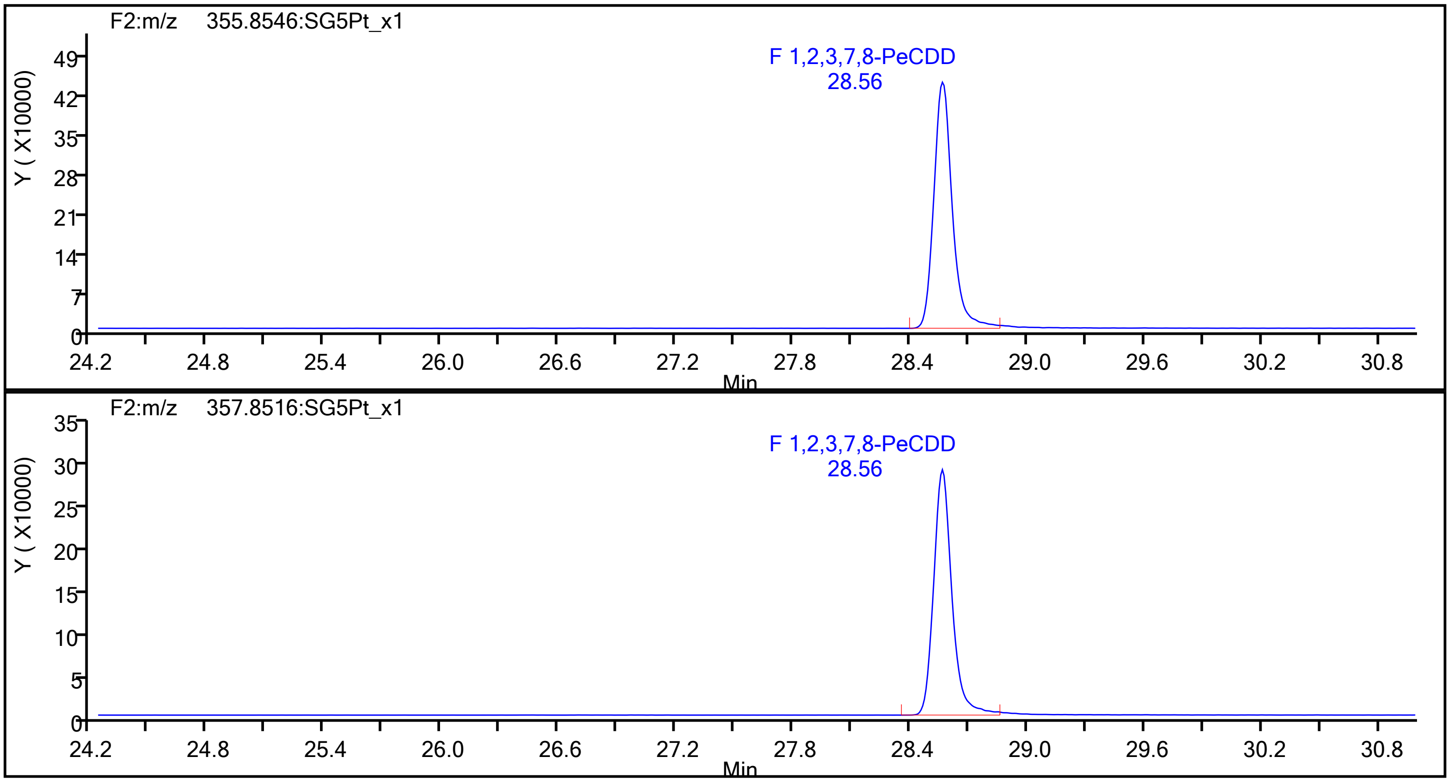

PeCDD Standards

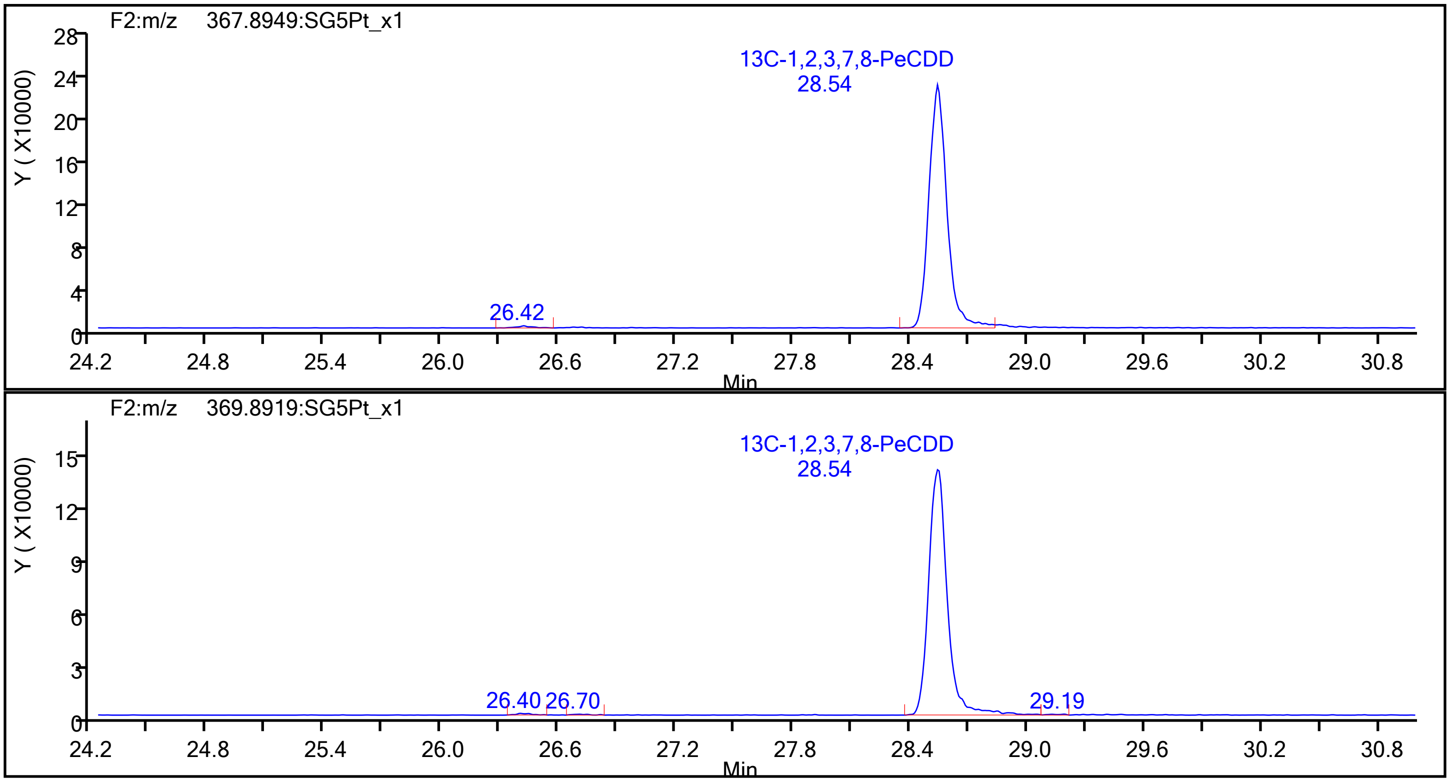

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

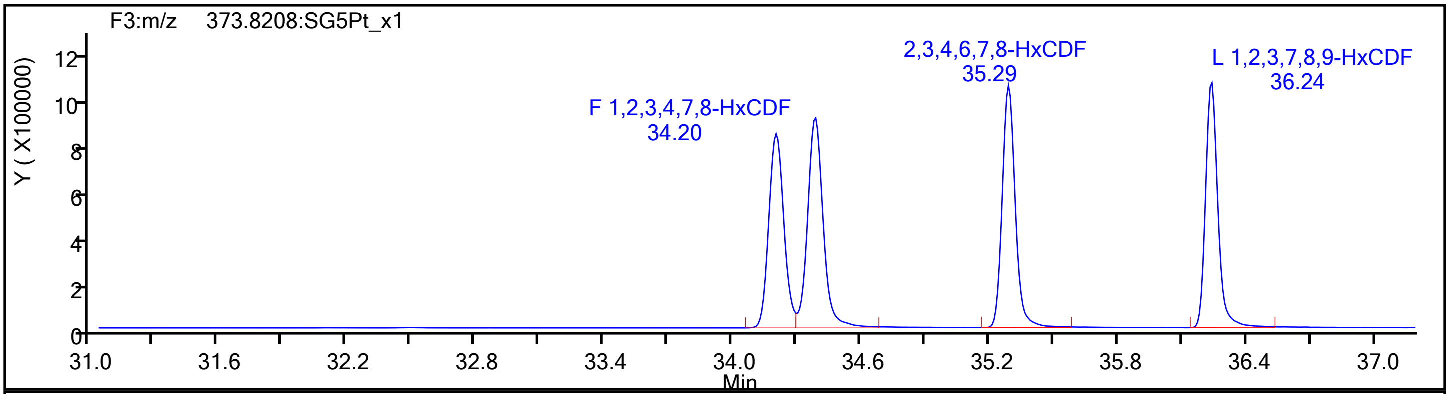

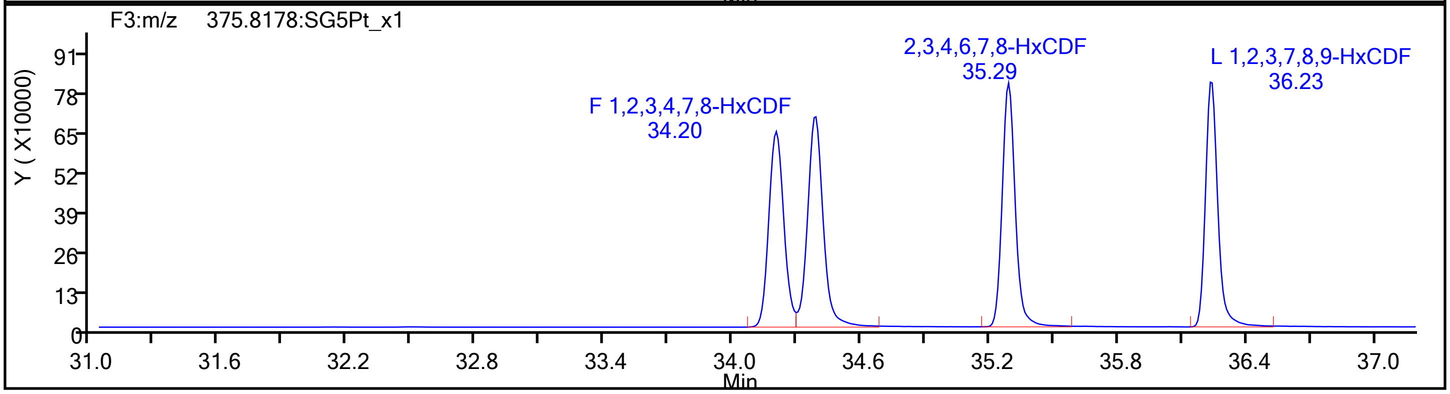

HxCDF Standards

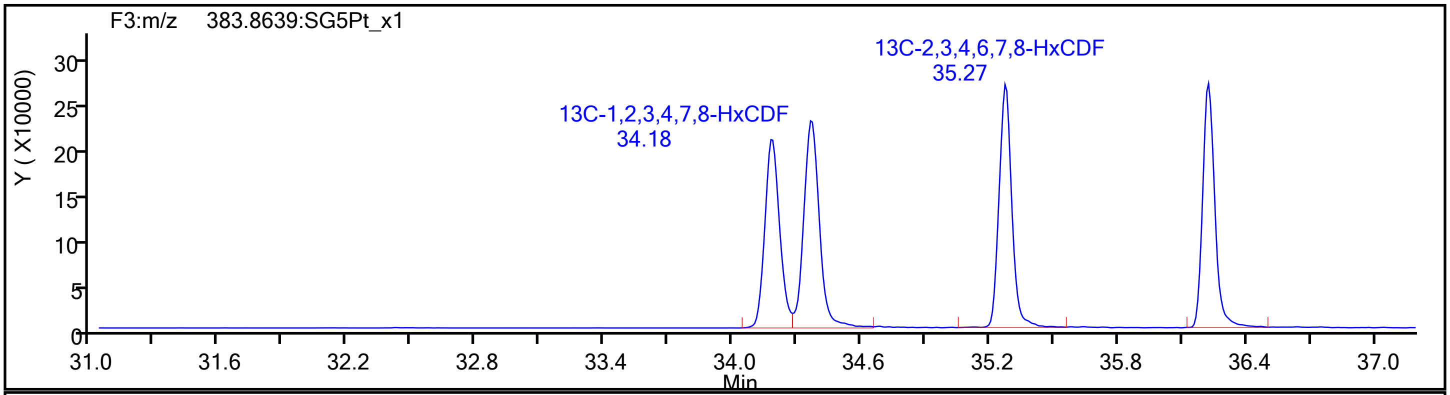

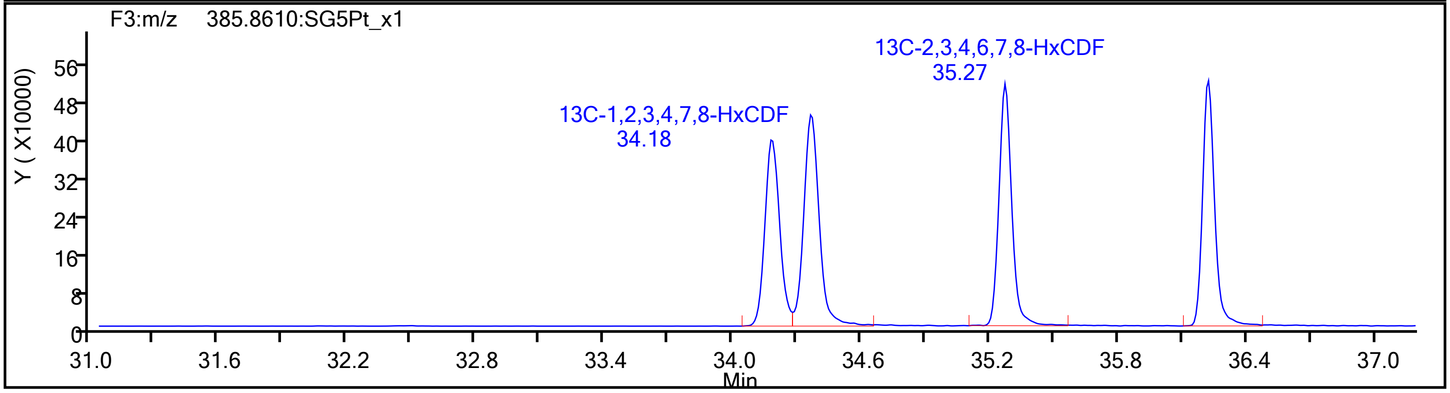

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

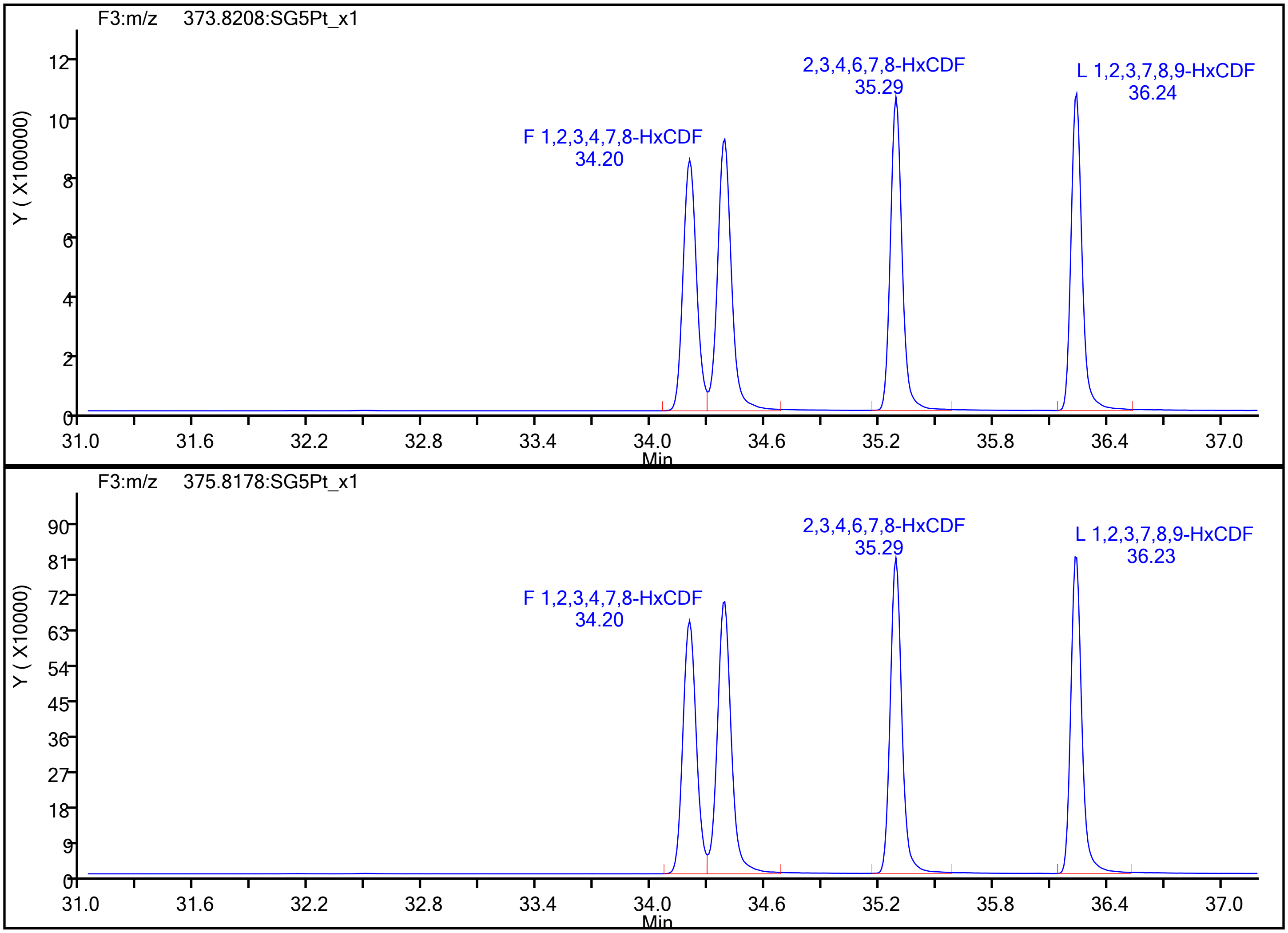

HxCDF Interference Mass

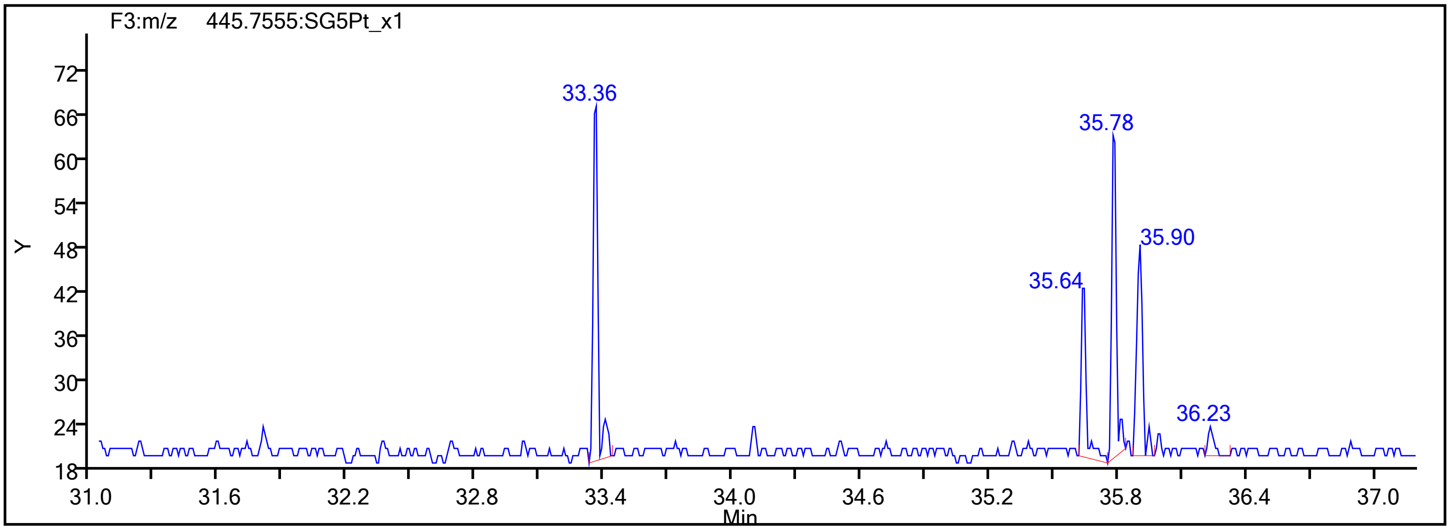

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

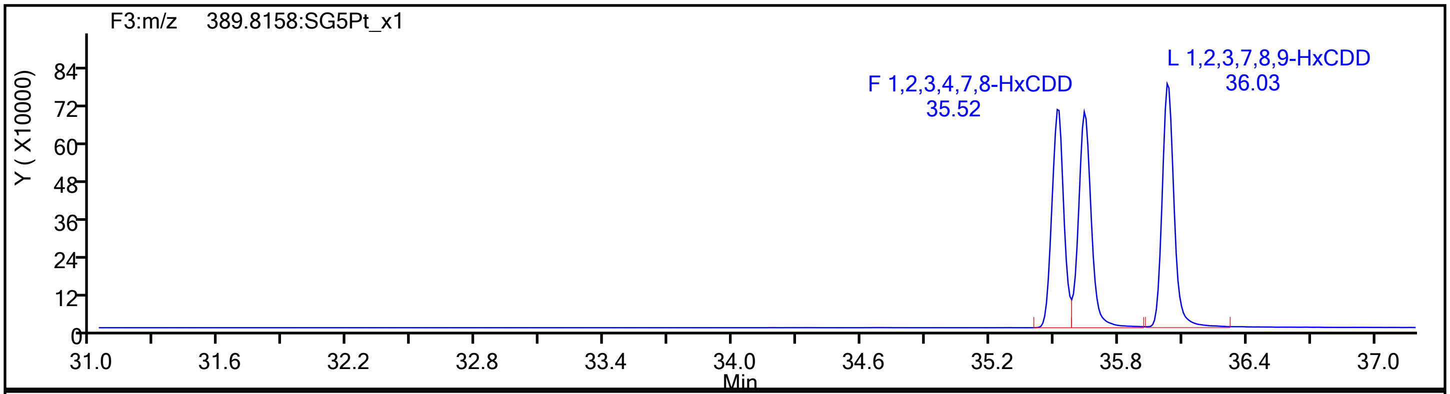

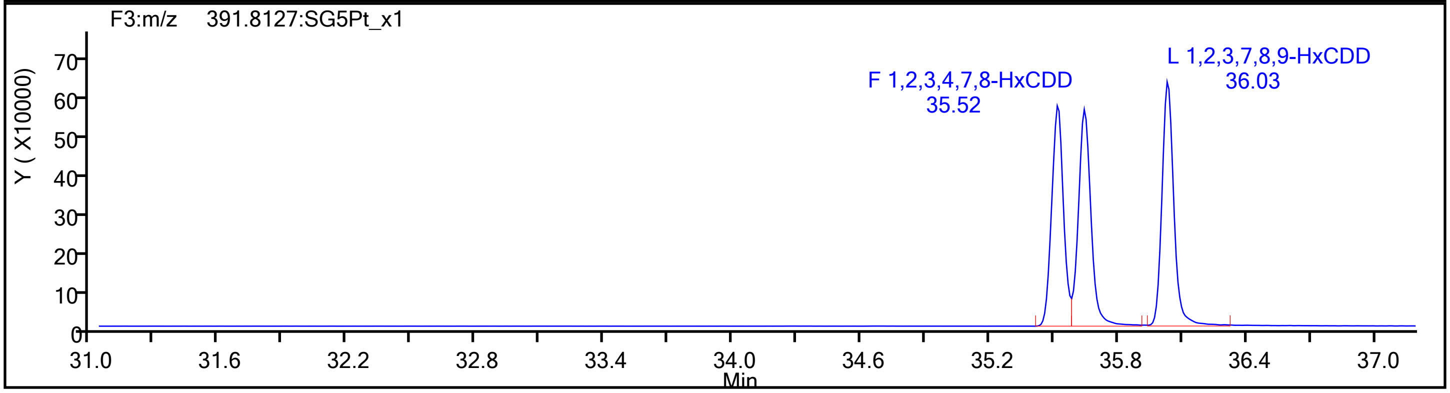

HxCDD Standards

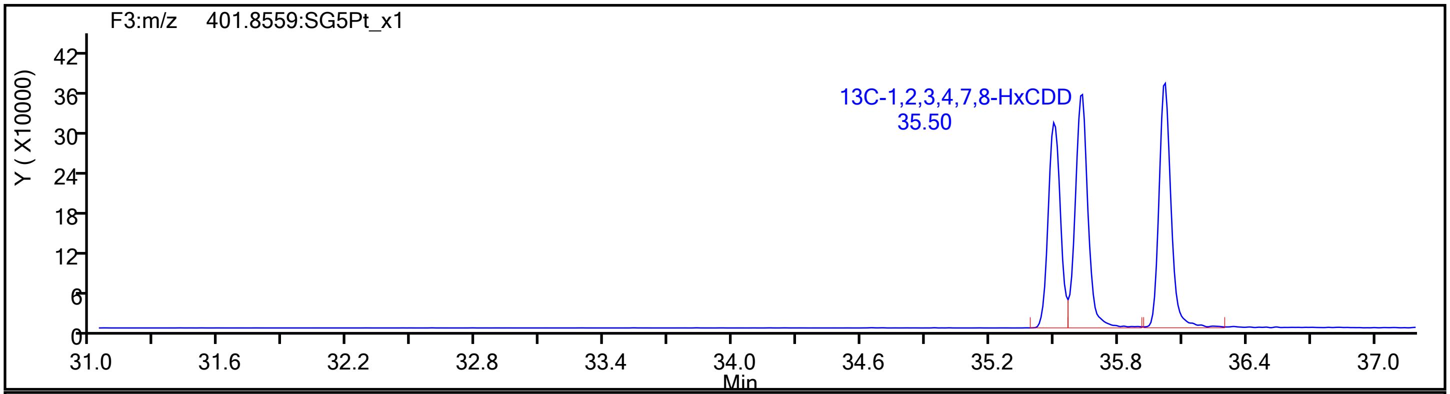

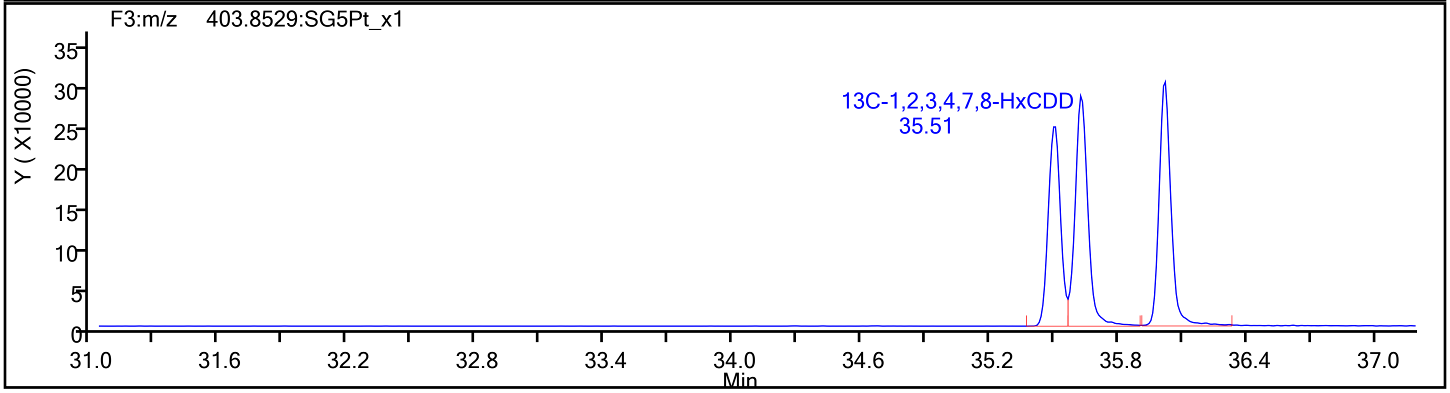

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

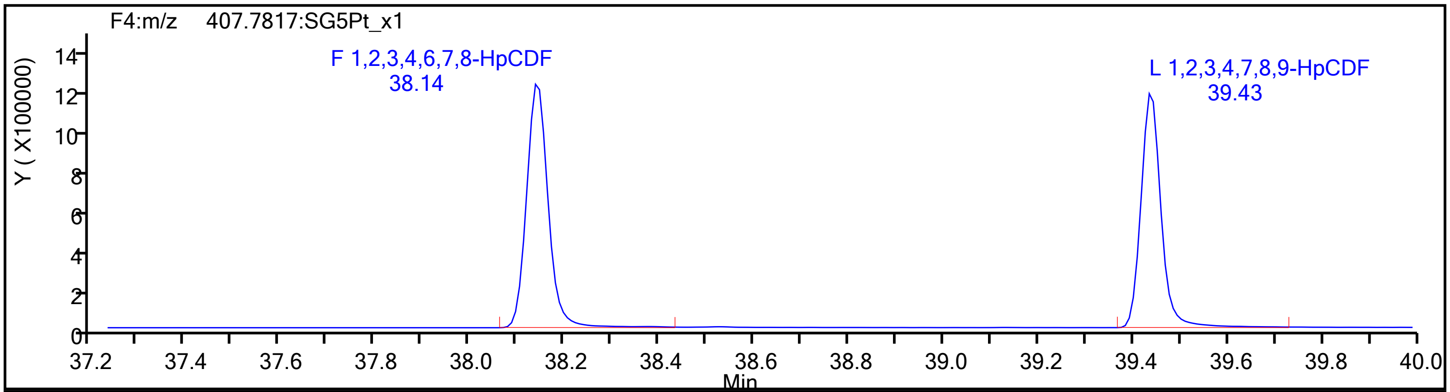

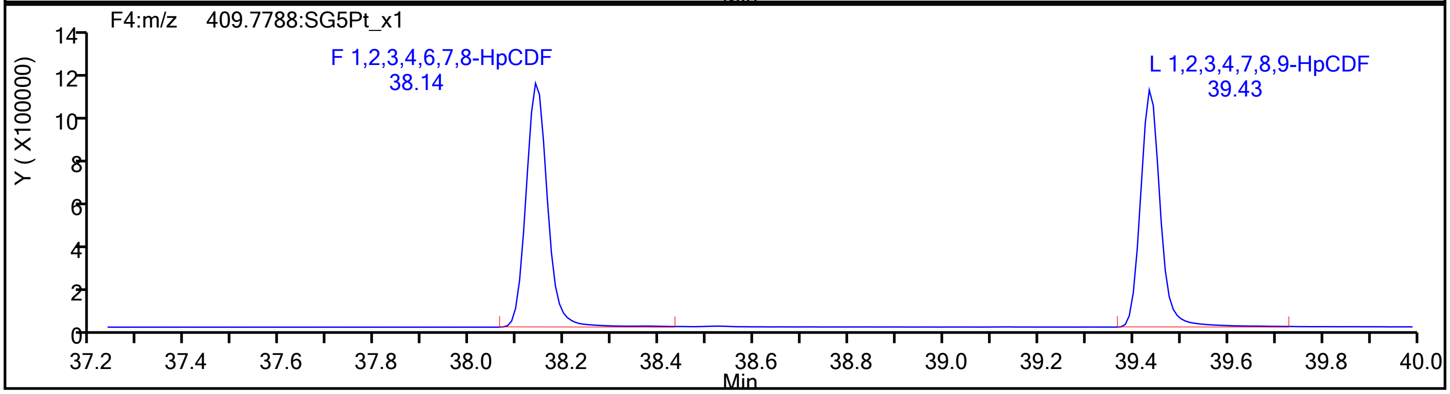

HpCDF Standards

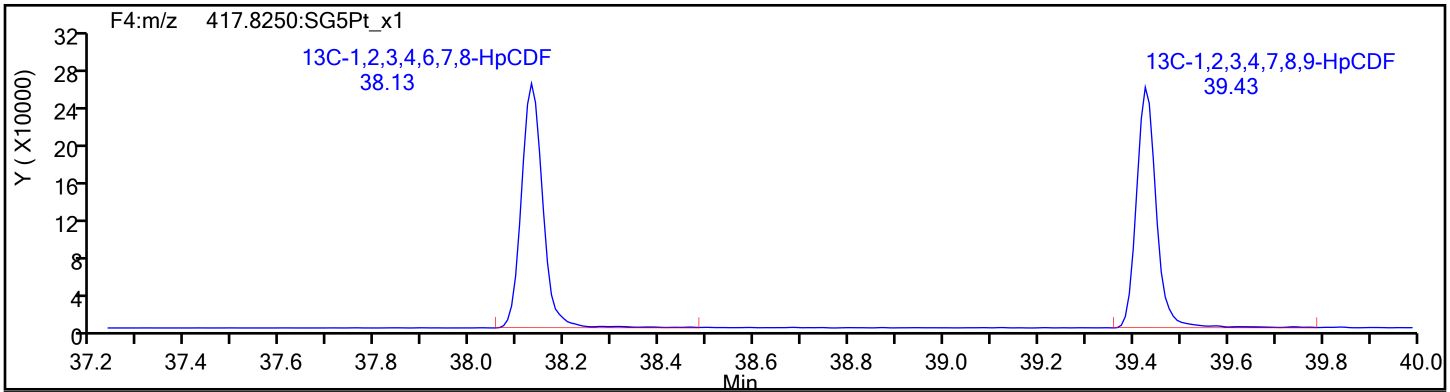

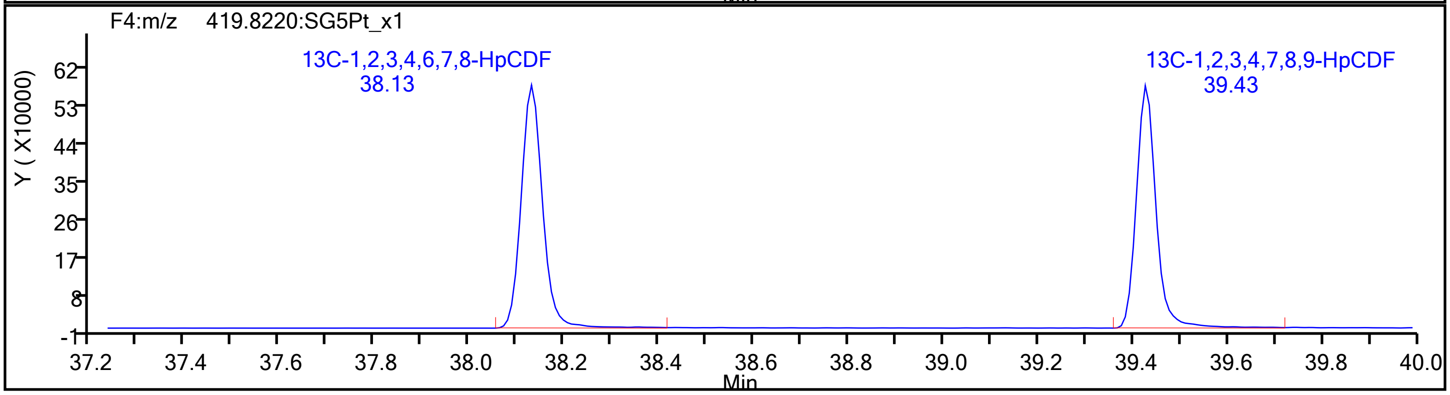

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

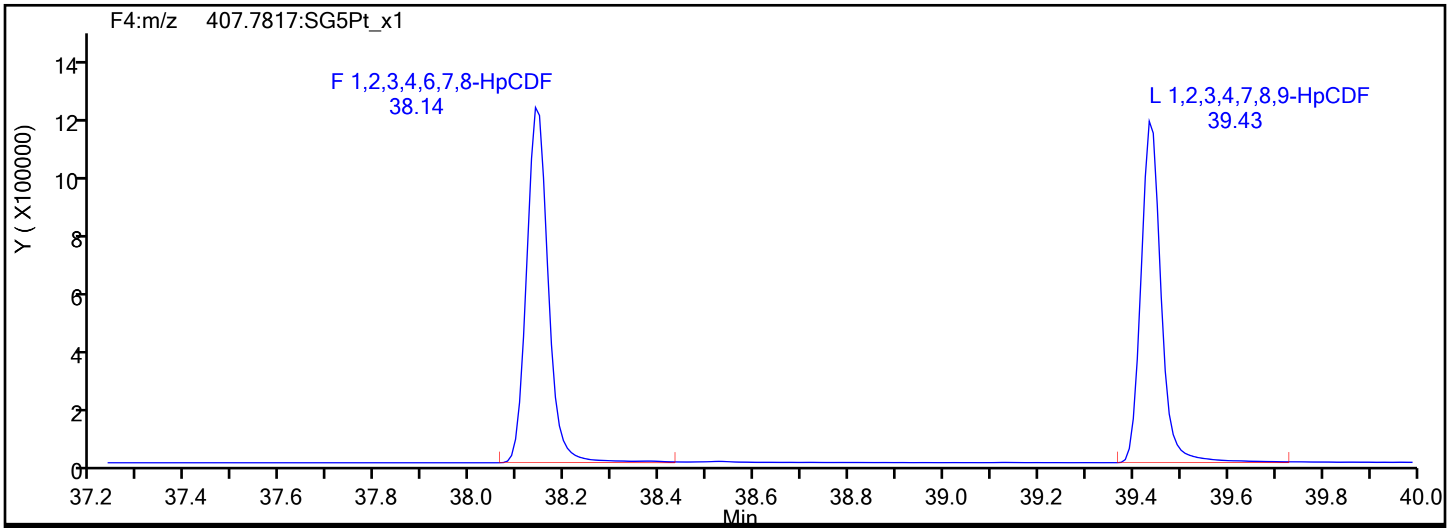

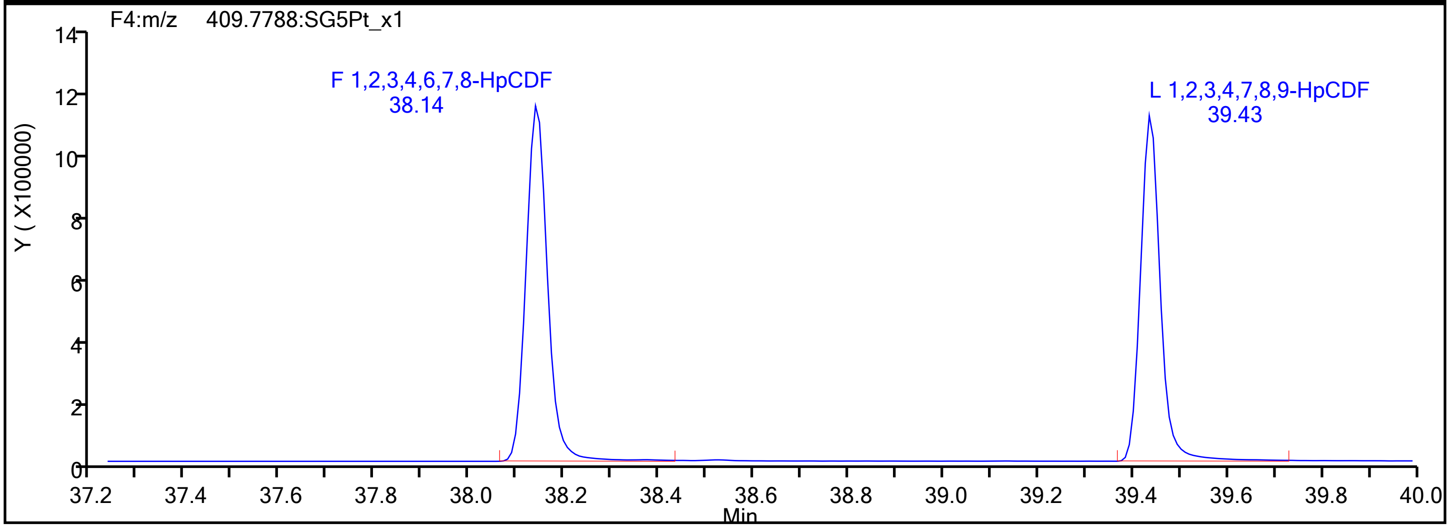

HpCDF Interference Mass

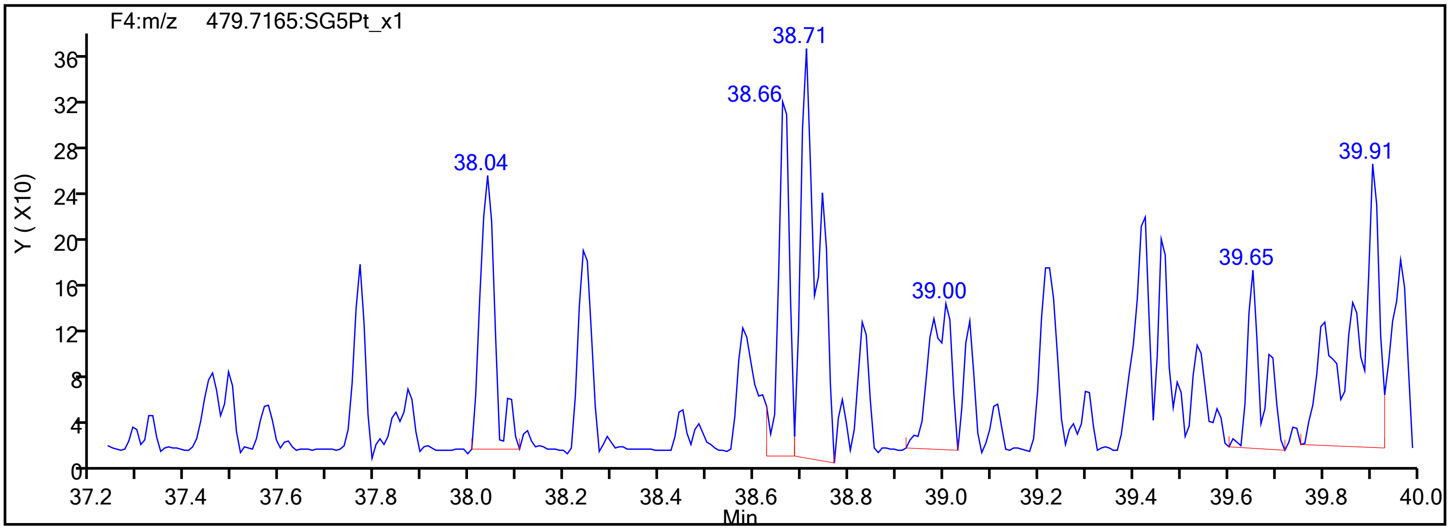

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d
Injection Date: 17-Sep-2020 15:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

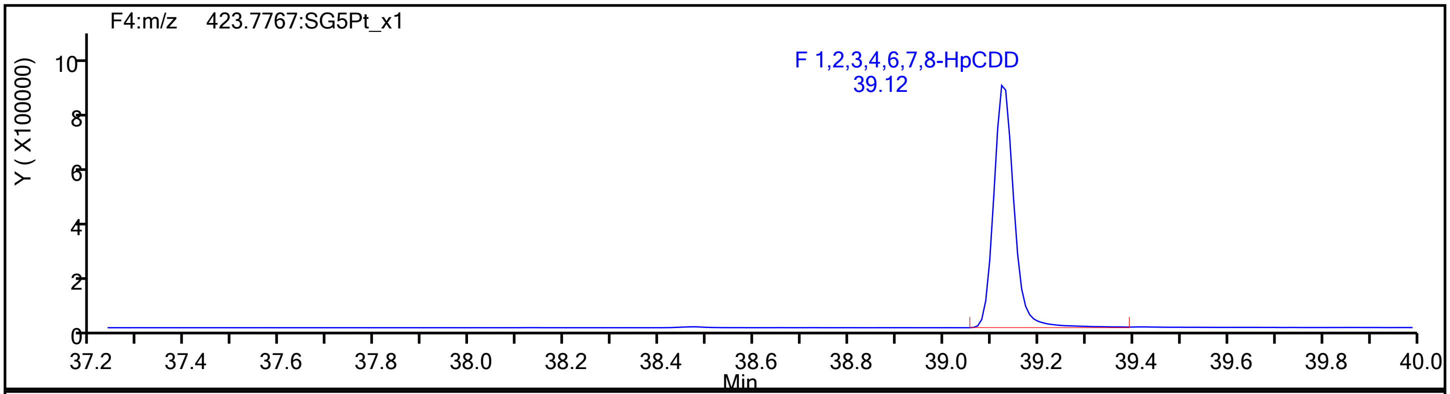

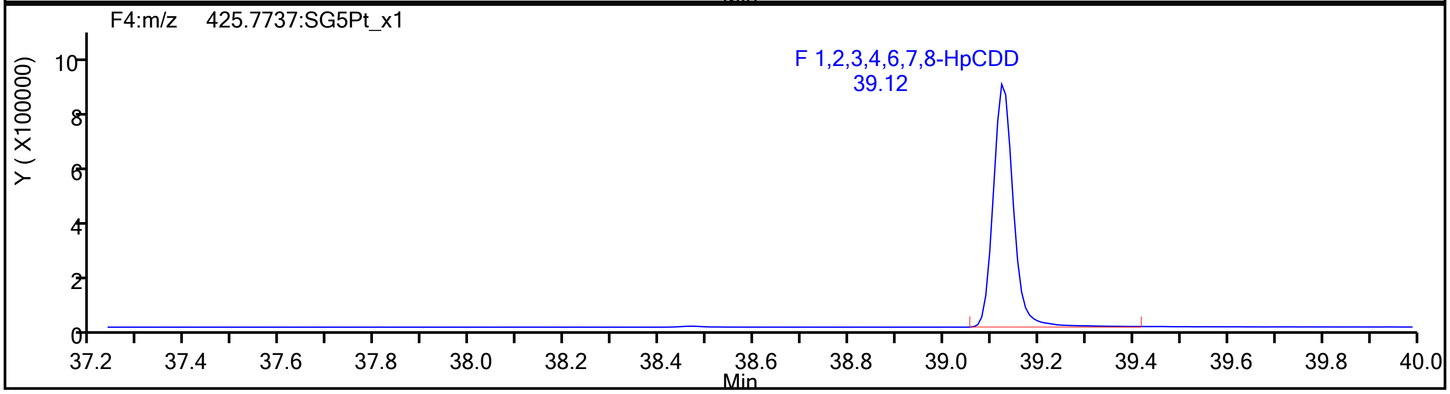

HpCDD Standards

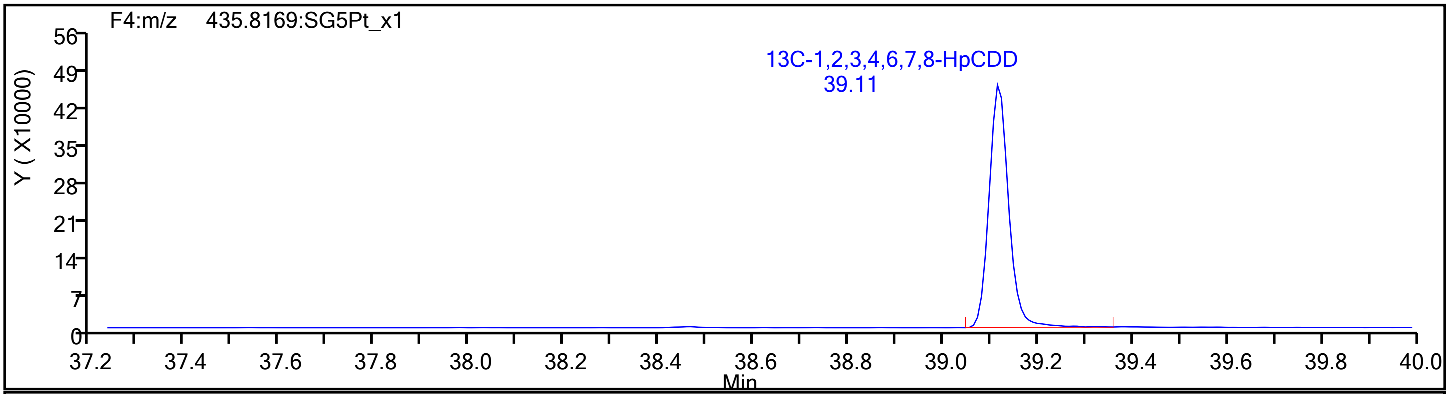

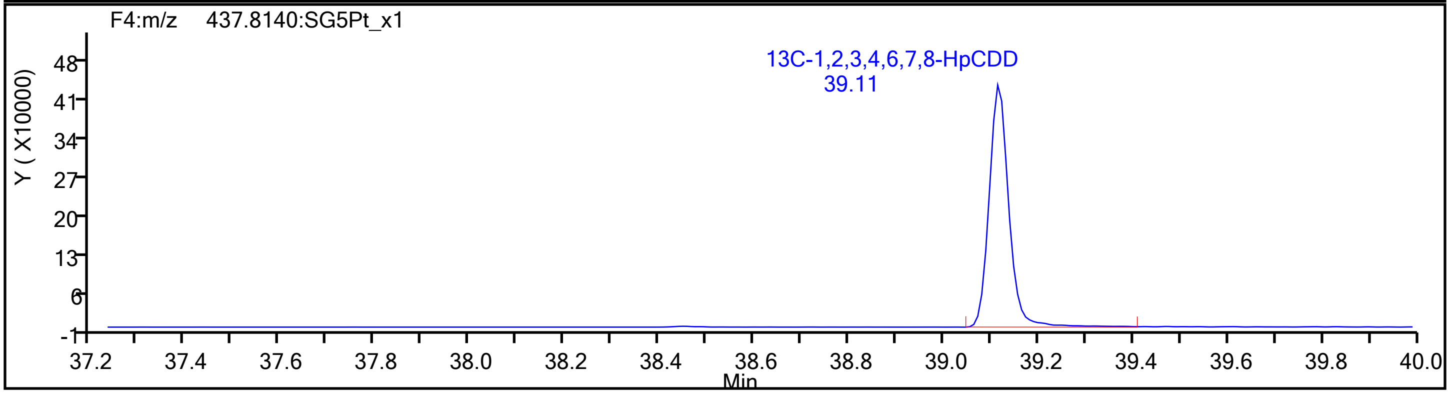

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

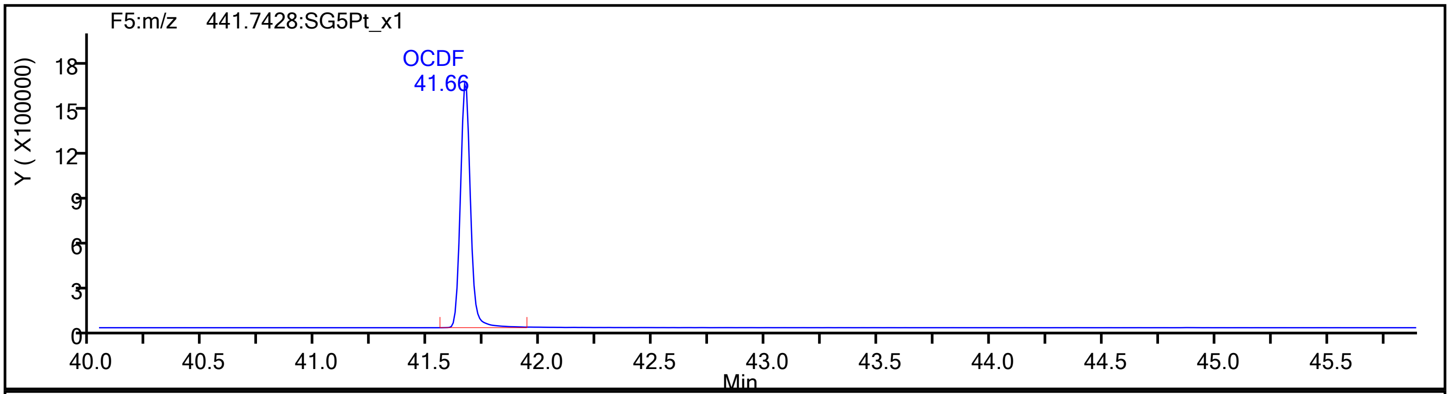

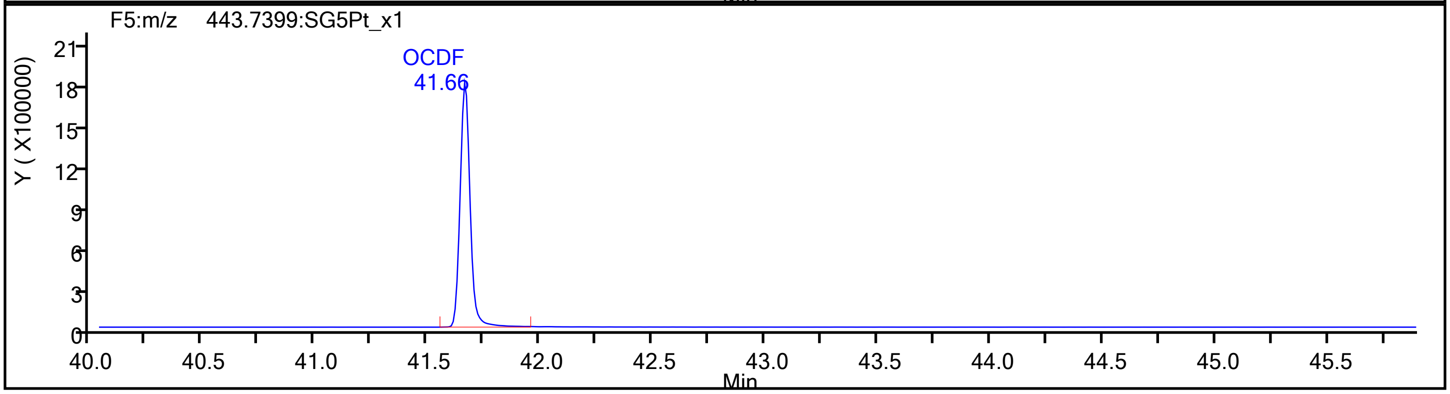

OCDF Standards

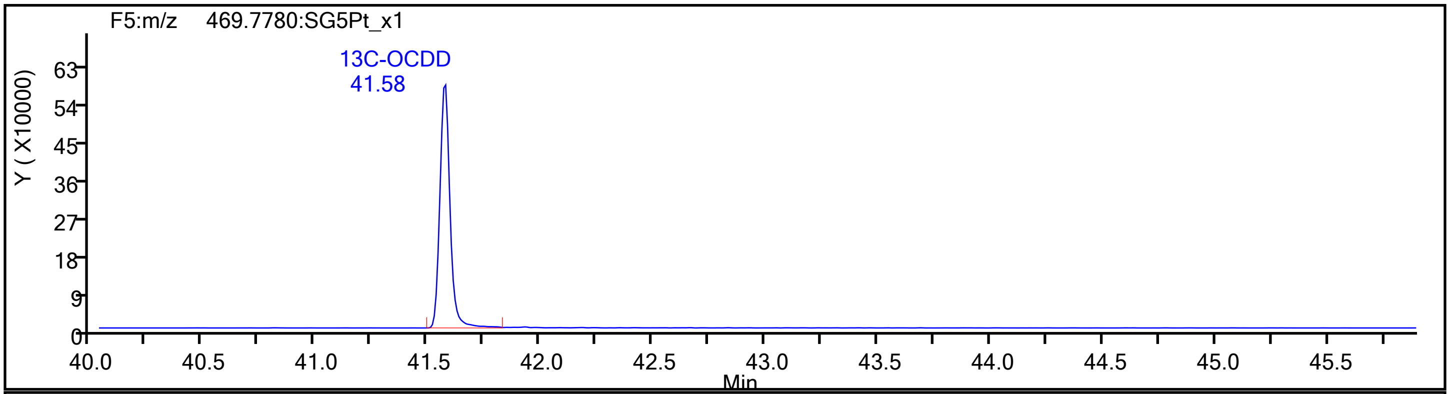

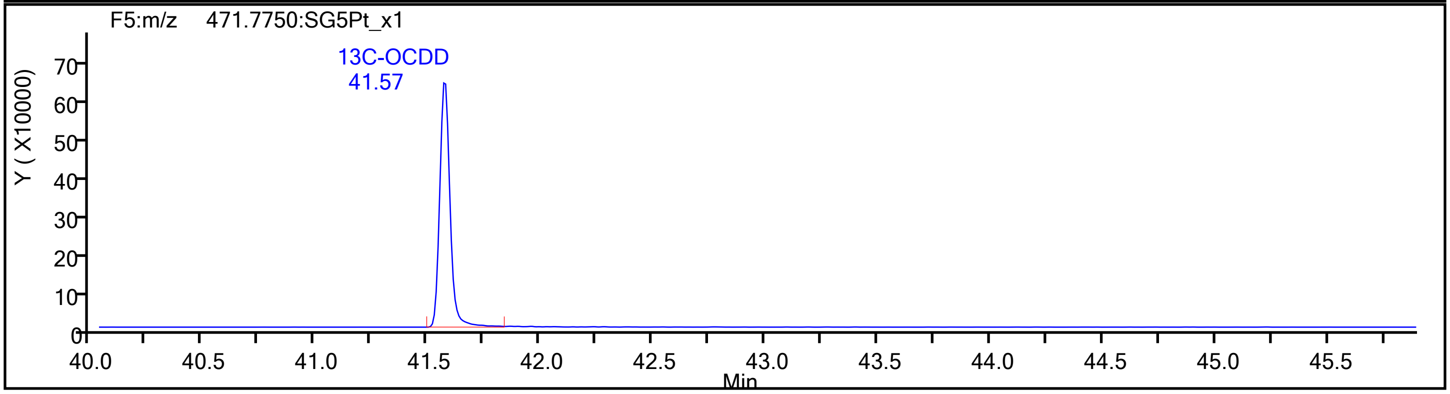

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

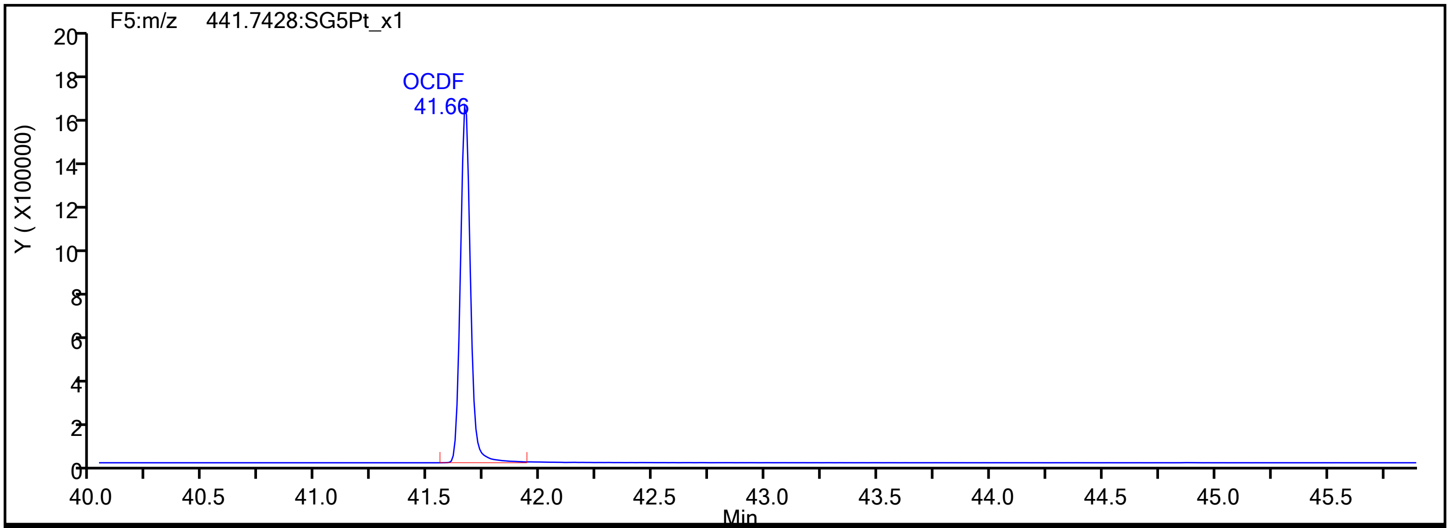

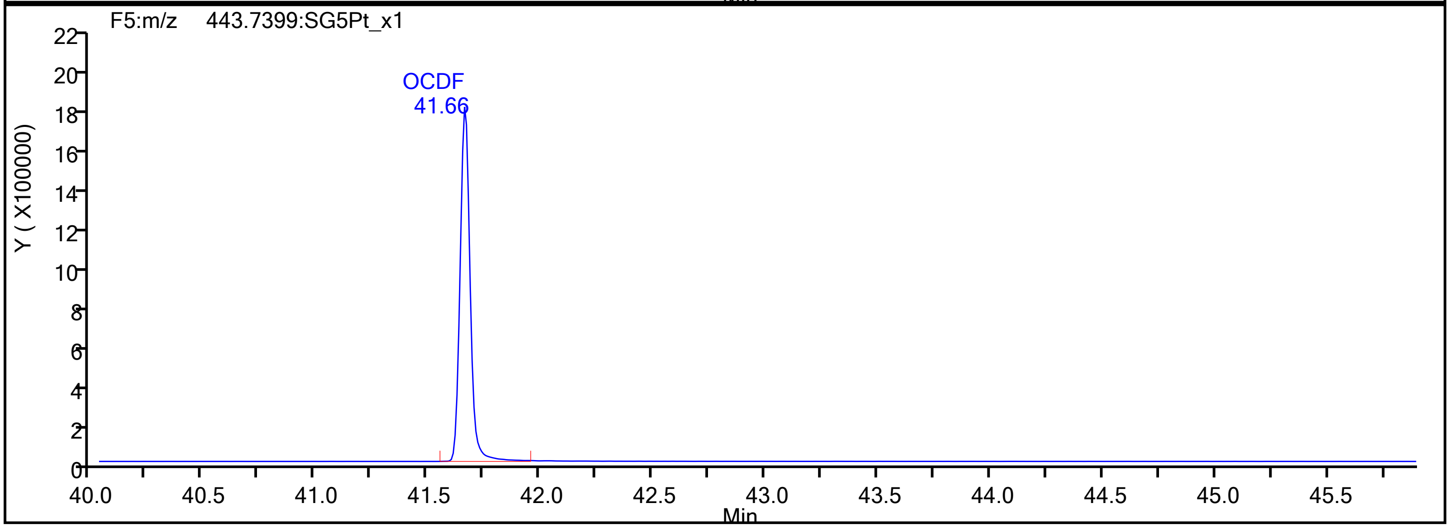

OCDF Interference Mass

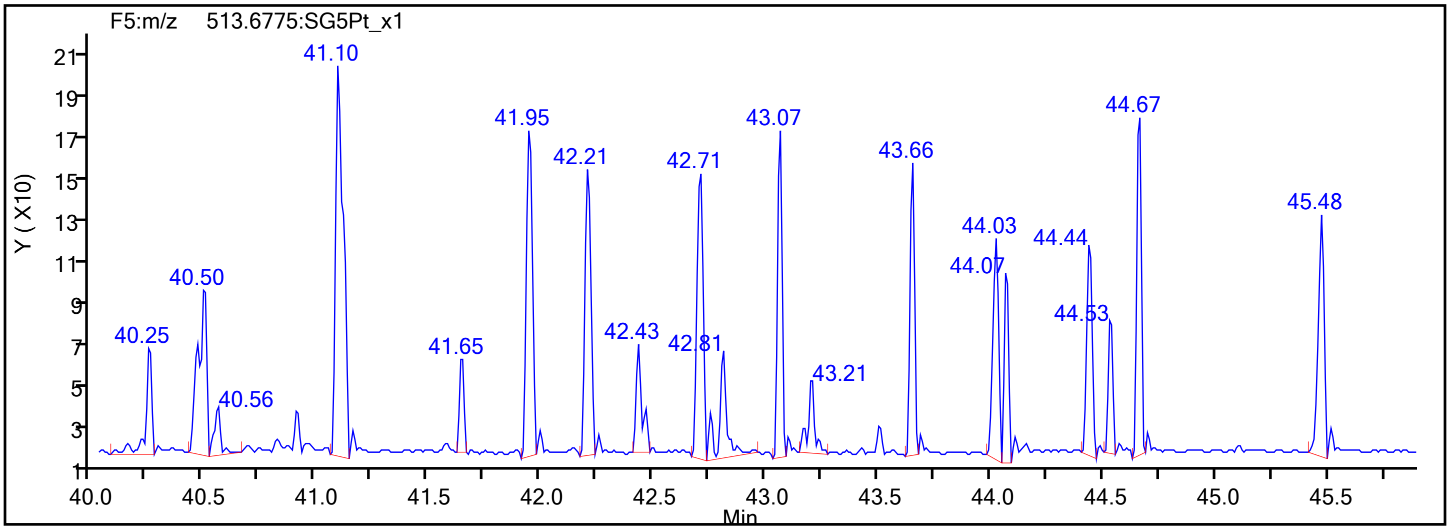

Report Date: 18-Sep-2020 11:00:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date: 17-Sep-2020 15:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

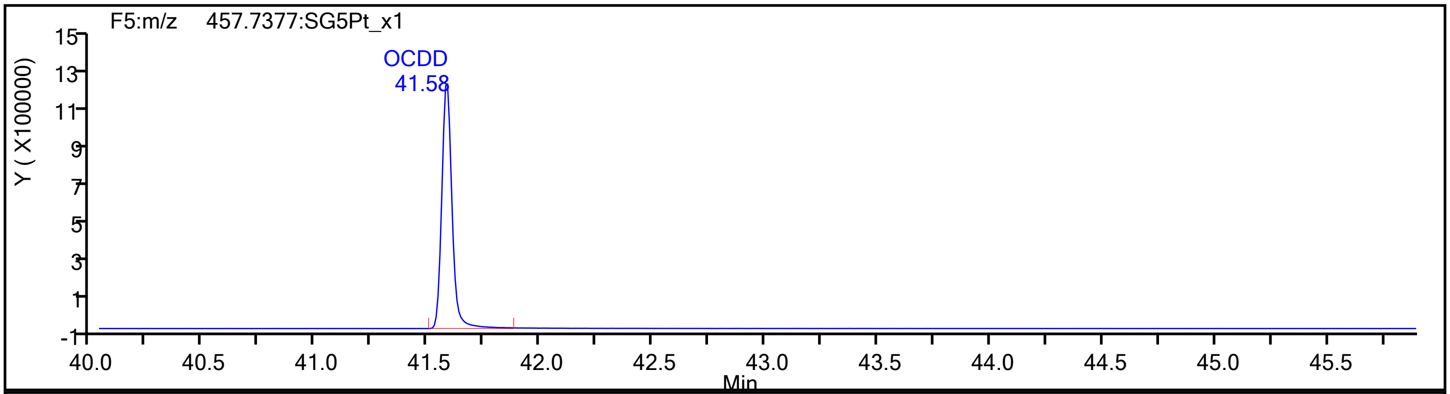

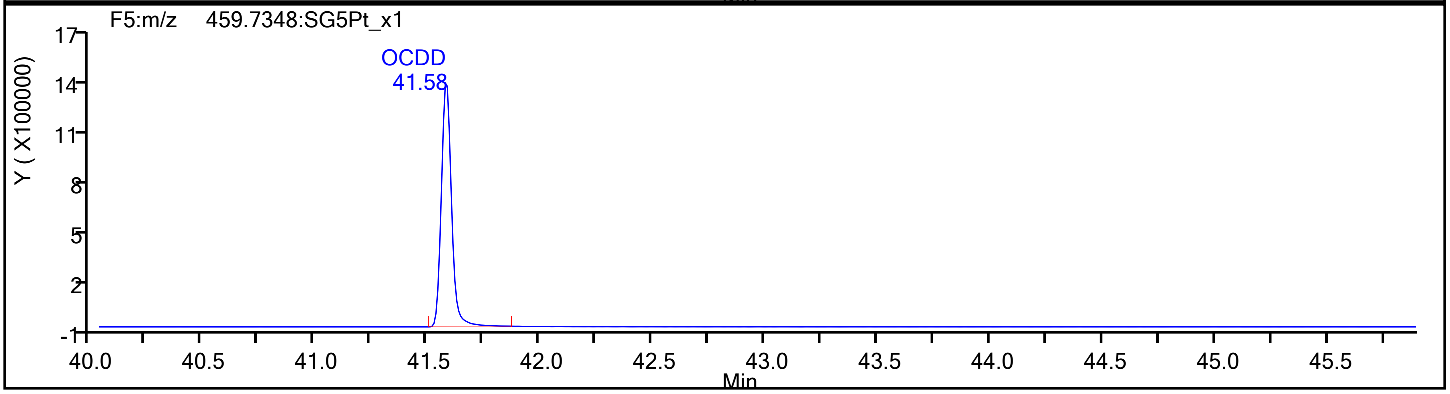

OCDD Standards

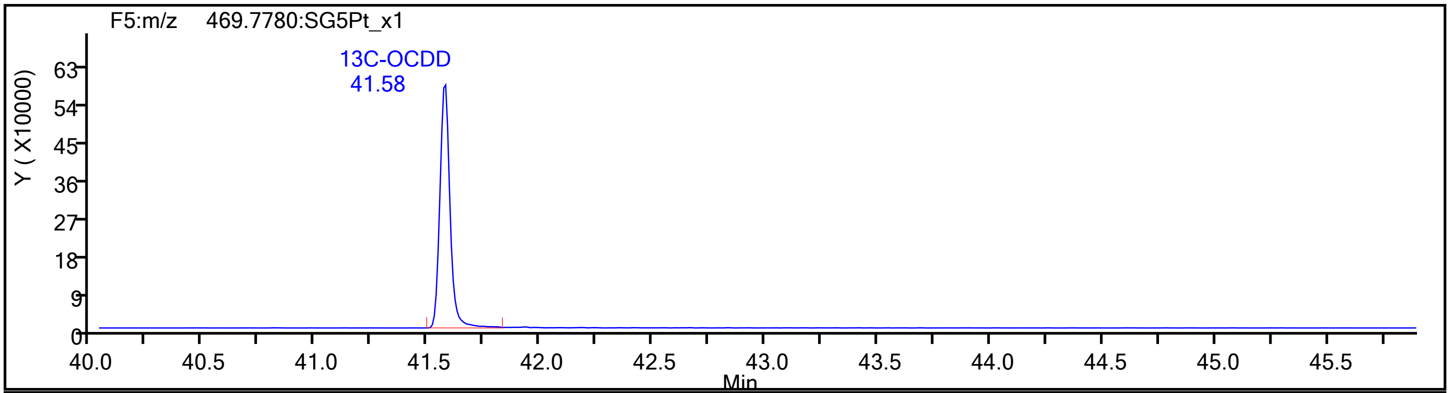

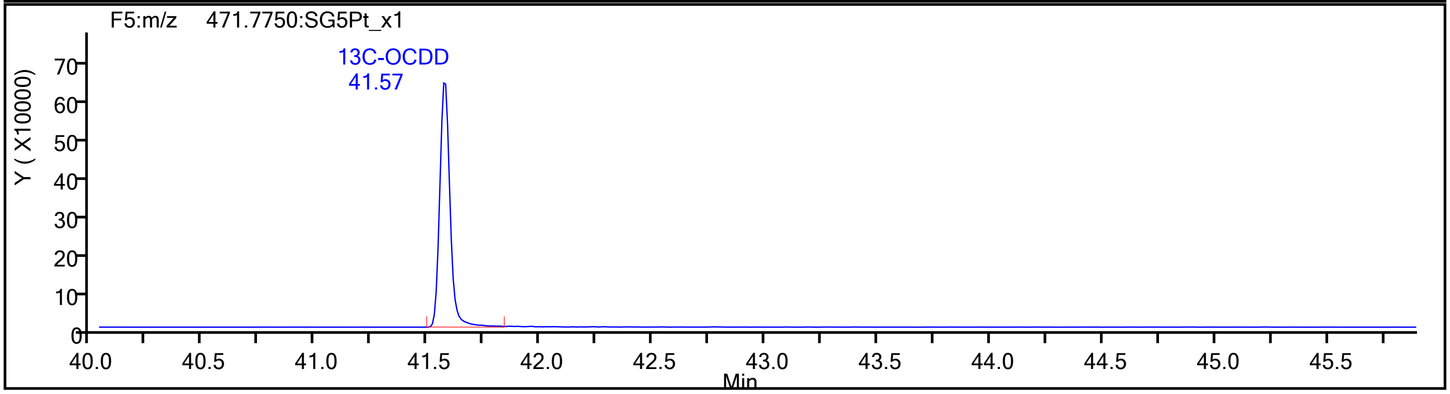

Report Date: 18-Sep-2020 11:00:41 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d

Injection Date: 17-Sep-2020 15:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

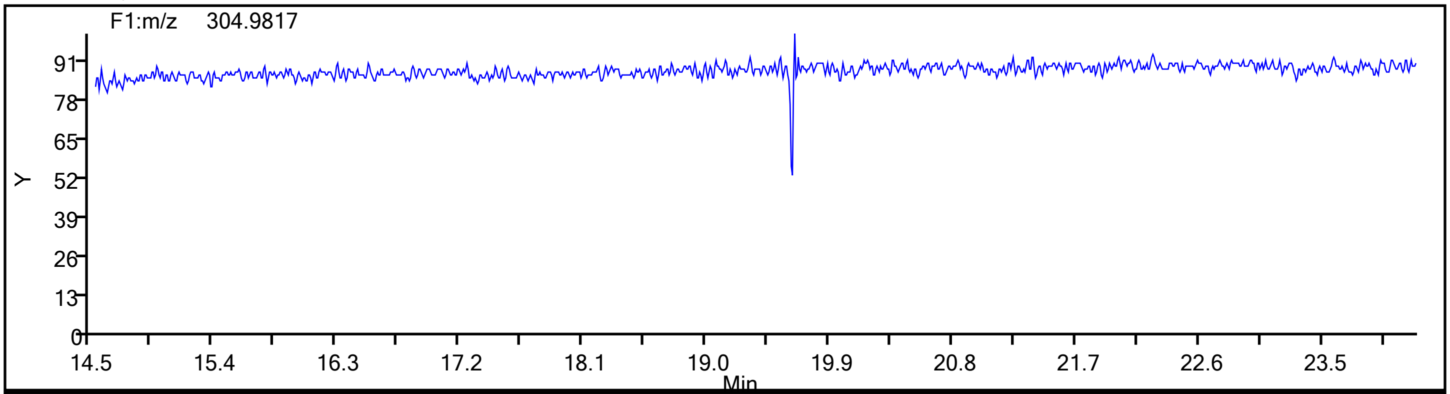

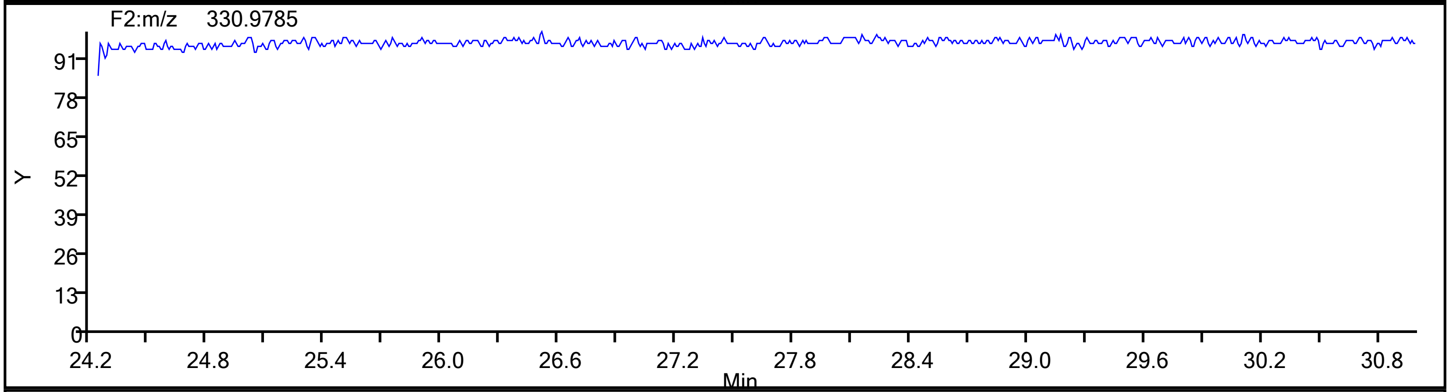

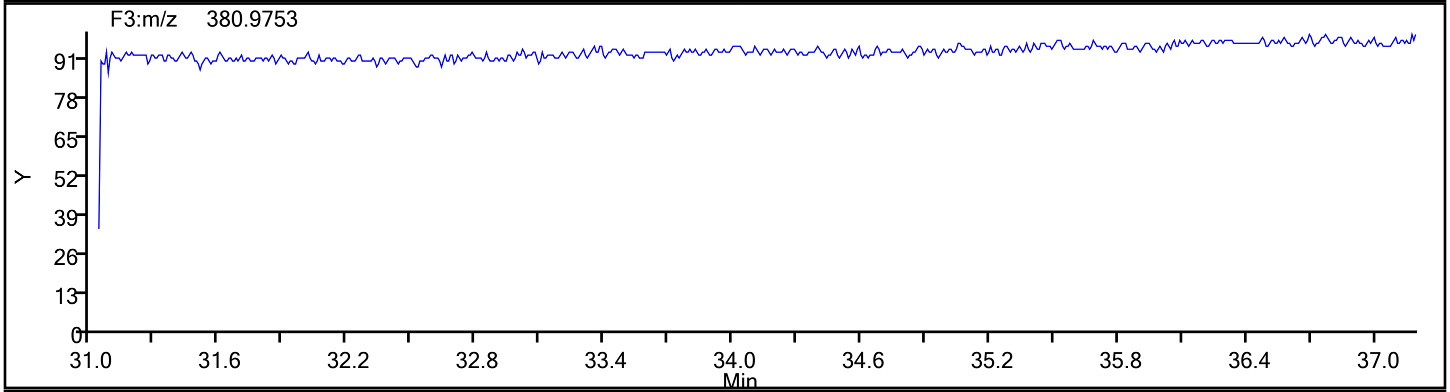

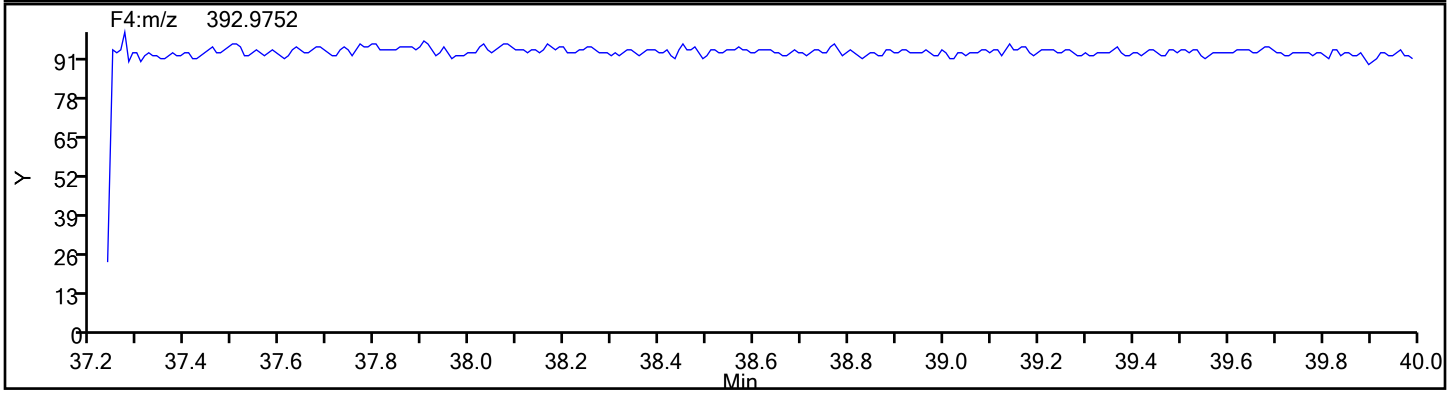

Report Date: 18-Sep-2020 11:00:41 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_7.d		
Injection Date:	17-Sep-2020 15:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

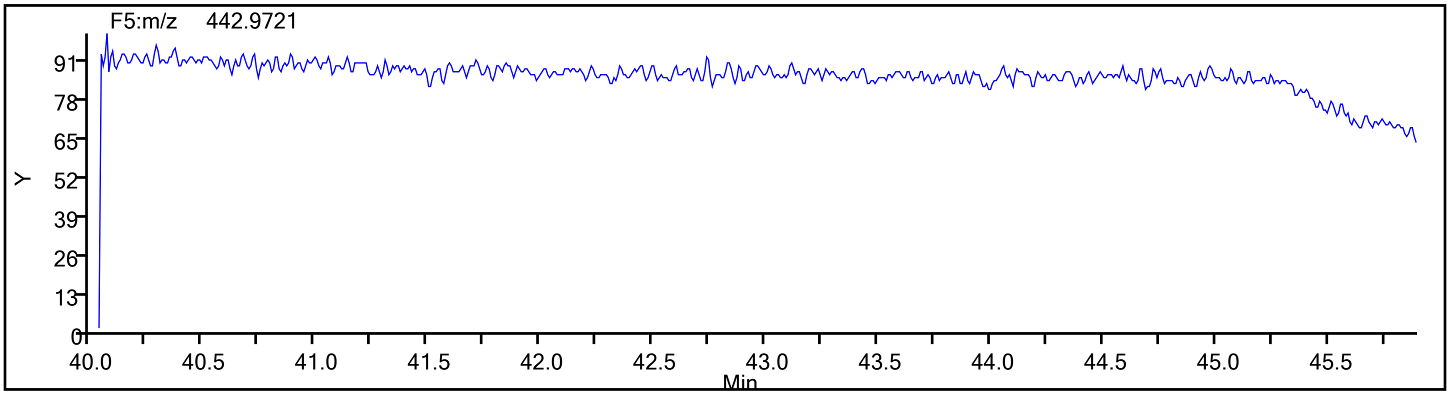

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	17-Sep-2020 16:30:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00031				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 11:00:44	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1070				

First Level Reviewer: shardaa Date: 17-Sep-2020 18:42:11

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.144	3199591	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.216	5066219	0.80	1.5883	99.7	99.7	0.3063	0.3063	99.69	
2,3,7,8-TCDF	19.242	10338981	0.79	1.0857	188.0	188.0	0.2088	0.2088	93.99	
S Total TCDF					188.0	188.0	0.2088	0.2088		
D 13C-2,3,7,8-TCDD	20.505	3670066	0.78	1.1194	102.5	102.5	0.2638	0.2638	102	
$ 37Cl4-2,3,7,8-TCDD	20.531	7405818		1.1468	201.8	201.8	0.1057	0.1057	101	
2,3,7,8-TCDD	20.531	7580962	0.78	1.0810	191.1	191.1	0.1674	0.1674	95.54	
S Total TCDD					191.1	191.1	0.1674	0.1674		
D 13C-1,2,3,7,8-PeCDF	26.306	4948994	1.54	1.4782	104.6	104.6	0.3775	0.3775	105	
1,2,3,7,8-PeCDF	26.331	48029276	1.57	1.0547	920.2	920.2	2.705	2.705	92.02	
D 13C-2,3,4,7,8-PeCDF	27.772	4682390	1.60	1.3912	105.2	105.2	0.4011	0.4011	105	
2,3,4,7,8-PeCDF	27.797	46990984	1.56	1.1035	909.4	909.4	3.002	3.002	90.94	
S Total PeCDF					1829.6	1829.6	2.854	2.854		
D 13C-1,2,3,7,8-PeCDD	28.547	3191360	1.58	0.9415	105.9	105.9	0.1630	0.1630	106	
1,2,3,7,8-PeCDD	28.572	30689802	1.55	1.0680	900.4	900.4	0.4988	0.4988	90.04	
S Total PeCDD					900.4	900.4	0.4988	0.4988		
D 13C-1,2,3,4,7,8-HxCDF	34.194	4185677	0.52	1.1378	101.0	101.0	0.3619	0.3619	101	
1,2,3,4,7,8-HxCDF	34.211	48519418	1.26	1.2643	916.9	916.9	3.684	3.684	91.69	
D 13C-1,2,3,6,7,8-HxCDF	34.379	4776398	0.53	1.3173	99.6	99.6	0.3126	0.3126	99.59	
1,2,3,6,7,8-HxCDF	34.396	53706793	1.26	1.2230	919.4	919.4	3.336	3.336	91.94	
D 13C-2,3,4,6,7,8-HxCDF	35.281	4517864	0.53	1.2457	99.6	99.6	0.3306	0.3306	99.62	
2,3,4,6,7,8-HxCDF	35.298	52489543	1.26	1.2464	932.1	932.1	3.103	3.103	93.21	
D 13C-1,2,3,7,8,9-HxCDF	36.233	4360996	0.52	1.1840	101.2	101.2	0.3478	0.3478	101	
1,2,3,7,8,9-HxCDF	36.250	50528283	1.27	1.2638	916.8	916.8	2.870	2.870	91.68	
S Total HxCDF					3685.2	3685.2	3.248	3.248		
* 13C-1,2,3,7,8,9-HxCDD	36.031	3640821	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.517	3126000	1.29	0.8477	101.3	101.3	0.2032	0.2032	101	
1,2,3,4,7,8-HxCDD	35.534	32309502	1.25	1.1561	894.0	894.0	1.663	1.663	89.40	
D 13C-1,2,3,6,7,8-HxCDD	35.643	3638034	1.27	0.9979	100.1	100.1	0.1726	0.1726	100	
1,2,3,6,7,8-HxCDD	35.660	34375082	1.26	1.0284	918.8	918.8	1.649	1.649	91.88	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.048	36648130	1.25	1.1789	919.2	919.2	1.529	1.529	91.92	
S Total HxCDD					2732.0	2732.0	1.614	1.614		
D 13C-1,2,3,4,6,7,8-HpCDF	38.146	3686056	0.45	0.9884	102.4	102.4	0.4027	0.4027	102	
1,2,3,4,6,7,8-HpCDF	38.154	51654249	1.03	1.5064	930.3	930.3	2.900	2.900	93.03	
D 13C-1,2,3,4,7,8,9-HpCDF	39.435	3395006	0.46	0.9203	101.3	101.3	0.4325	0.4325	101	
1,2,3,4,7,8,9-HpCDF	39.452	45362969	1.04	1.4548	918.5	918.5	3.041	3.041	91.85	
S Total HpCDF					1848.7	1848.7	2.970	2.970		
D 13C-1,2,3,4,6,7,8-HpCDD	39.132	3484029	1.07	0.9556	100.1	100.1	0.2085	0.2085	100	
1,2,3,4,6,7,8-HpCDD	39.140	33775862	1.04	1.0640	911.1	911.1	1.427	1.427	91.11	
S Total HpCDD					911.1	911.1	1.427	1.427		
D 13C-OCDD	41.583	5637421	0.90	0.7420	208.7	208.7	0.1795	0.1795	104	
OCDF	41.675	79546388	0.91	1.4296	1974.0	1974.0	1.007	1.007	98.70	
OCDD	41.591	58924724	0.88	1.1293	1851.1	1851.1	1.131	1.131	92.55	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 16:30:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 11:00:44 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1070

First Level Reviewer: shardaa Date: 17-Sep-2020 18:42:11

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.144	20.145	0		1429158	209136	406	1015	515		
333.9338	20.153	20.145	0		1770433	266665	156	390	1709	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.216	19.222	0	0.954	2258899	355063	601	1502	591		
317.9389	19.216	19.222	0	0.954	2807320	439018	325	812	1351	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.242	19.246	0	1.001	4570796	692908	331	827	2093		
305.8987	19.242	19.246	0	1.001	5768185	879960	389	972	2262	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.505	20.507	0	1.018	1610447	236345	406	1015	582		
333.9338	20.505	20.507	0	1.018	2059619	300901	156	390	1929	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.531	20.531	0	1.019	7405818	1058583	231	577	4583		
2,3,7,8-TCDD											
319.8965	20.531	20.532	0	1.001	3320778	475615	208	520	2287		
321.8936	20.531	20.532	0	1.001	4260184	616185	181	452	3404	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.306	26.301	0	1.306	3002142	543766	622	1555	874		
353.8970	26.306	26.301	0	1.306	1946852	334760	440	1100	761	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.331	26.321	1	1.001	29355515	5063715	6120	15300	827		
341.8567	26.323	26.321	0	1.001	18673761	3181810	3906	9765	815	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.772	27.762	1	1.379	2881681	465045	622	1555	748		
353.8970	27.772	27.762	1	1.379	1800709	291595	440	1100	663	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	27.797	27.787	1	1.001	28644923	4568246	6120	15300	746		
341.8567	27.789	27.787	0	1.001	18346061	2905966	3906	9765	744	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.547	28.537	1	1.417	1953198	305549	159	397	1922		
369.8919	28.547	28.537	1	1.417	1238162	191917	133	332	1443	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.572	28.562	1	1.001	18631631	2832323	647	1617	4378		
357.8516	28.572	28.562	1	1.001	12058171	1839862	413	1032	4455	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.194	34.181	1	0.949	1428251	301428	516	1290	584		
385.8610	34.194	34.181	1	0.949	2757426	581050	1067	2667	545	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.211	34.200	1	1.000	27084298	5696906	9238	23095	617		
375.8178	34.211	34.200	1	1.000	21435120	4505131	7202	18005	626	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.379	34.365	1	0.954	1653235	343080	516	1290	665		
385.8610	34.379	34.365	1	0.954	3123163	664225	1067	2667	623	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.396	34.384	1	1.000	29980575	6336863	9238	23095	686		
375.8178	34.396	34.384	1	1.000	23726218	4960100	7202	18005	689	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.281	35.272	1	0.979	1560255	368388	516	1290	714		
385.8610	35.281	35.272	1	0.979	2957609	694236	1067	2667	651	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.298	35.288	1	1.000	29282831	7162968	9238	23095	775		
375.8178	35.298	35.288	1	1.000	23206712	5673658	7202	18005	788	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.233	36.225	0	1.006	1499449	387951	516	1290	752		
385.8610	36.233	36.225	0	1.006	2861547	745225	1067	2667	698	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.250	36.240	1	1.000	28283644	7561508	9238	23095	819		
375.8178	36.250	36.240	1	1.000	22244639	5928244	7202	18005	823	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.031	36.021	1		2043925	542297	365	912	1486		
403.8529	36.031	36.021	1		1596896	418646	297	742	1410	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.517	35.502	1	0.986	1763422	447728	365	912	1227		
403.8529	35.517	35.502	1	0.986	1362578	350448	297	742	1180	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.534	35.519	1	1.000	17971757	4690837	3390	8475	1384		
391.8127	35.525	35.519	0	1.000	14337745	3684900	2750	6875	1340	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.643	35.630	1	0.989	2034449	507401	365	912	1390		
403.8529	35.643	35.630	1	0.989	1603585	397536	297	742	1339	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.660	35.646	1	1.000	19138549	4656810	3390	8475	1374		
391.8127	35.652	35.646	0	1.000	15236533	3708924	2750	6875	1349	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.048	36.033	1	1.015	20363383	5300555	3390	8475	1564		
391.8127	36.048	36.033	1	1.015	16284747	4170717	2750	6875	1517	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.146	38.132	1	1.059	1150954	376377	513	1282	734		
419.8220	38.146	38.132	1	1.059	2535102	817728	1017	2542	804	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.154	38.141	1	1.000	26245356	8916087	10668	26670	836		
409.7788	38.154	38.141	1	1.000	25408893	8545477	10197	25492	838	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.435	39.428	0	1.094	1074376	375751	513	1282	732		
419.8220	39.435	39.428	0	1.094	2320630	803344	1017	2542	790	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.452	39.438	1	1.000	23088367	8193911	10668	26670	768		
409.7788	39.443	39.438	0	1.000	22274602	7912261	10197	25492	776	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.132	39.118	1	1.086	1797887	609308	399	997	1527		
437.8140	39.132	39.118	1	1.086	1686142	570241	367	917	1554	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.140	39.126	1	1.000	17222651	6055565	3606	9015	1679		
425.7737	39.140	39.126	1	1.000	16553211	5739906	3559	8897	1613	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.583	41.572	1	1.154	2674374	881983	260	650	3392		
471.7750	41.583	41.572	1	1.154	2963047	963899	252	630	3825	0.90(0.76-1.02)	
OCDF											
441.7428	41.675	41.663	1	1.002	37794017	12915708	2472	6180	5225		
443.7399	41.675	41.663	1	1.002	41752371	14322889	2843	7107	5038	0.91(0.76-1.02)	
OCDD											
457.7377	41.591	41.580	1	1.000	27580886	9381101	2218	5545	4230		
459.7348	41.591	41.580	1	1.000	31343838	10776733	2497	6242	4316	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

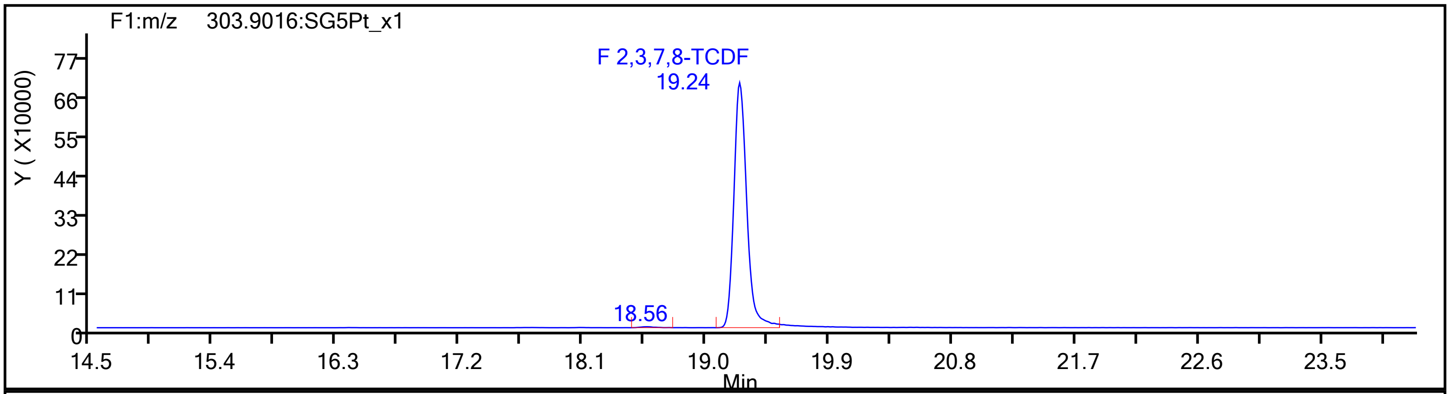

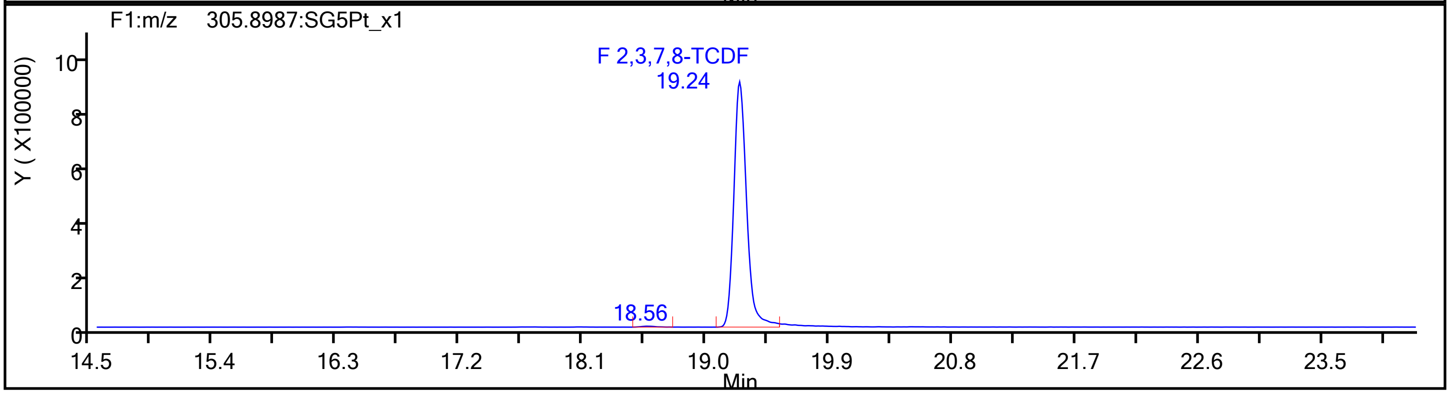

TCDF Standards

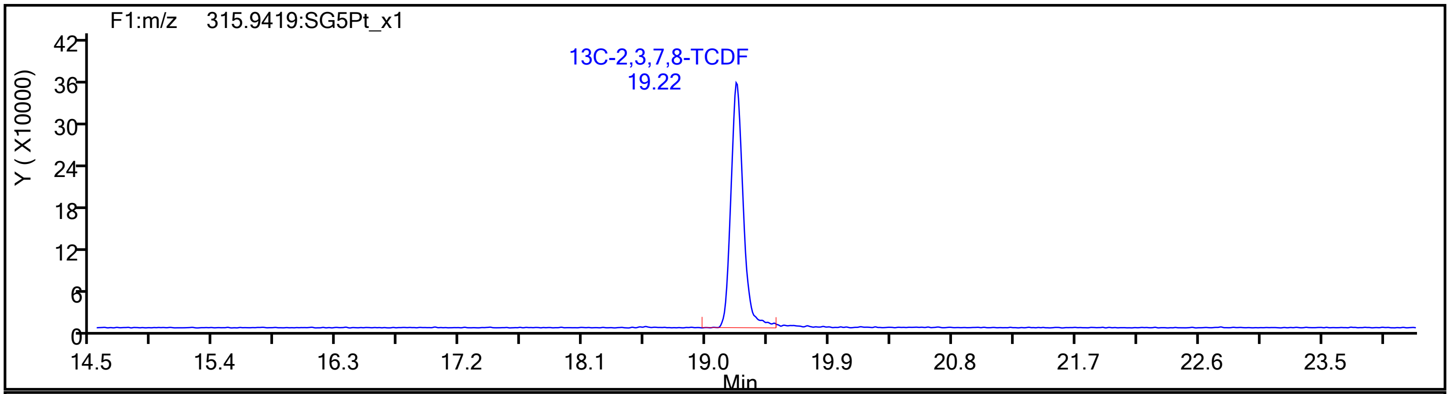

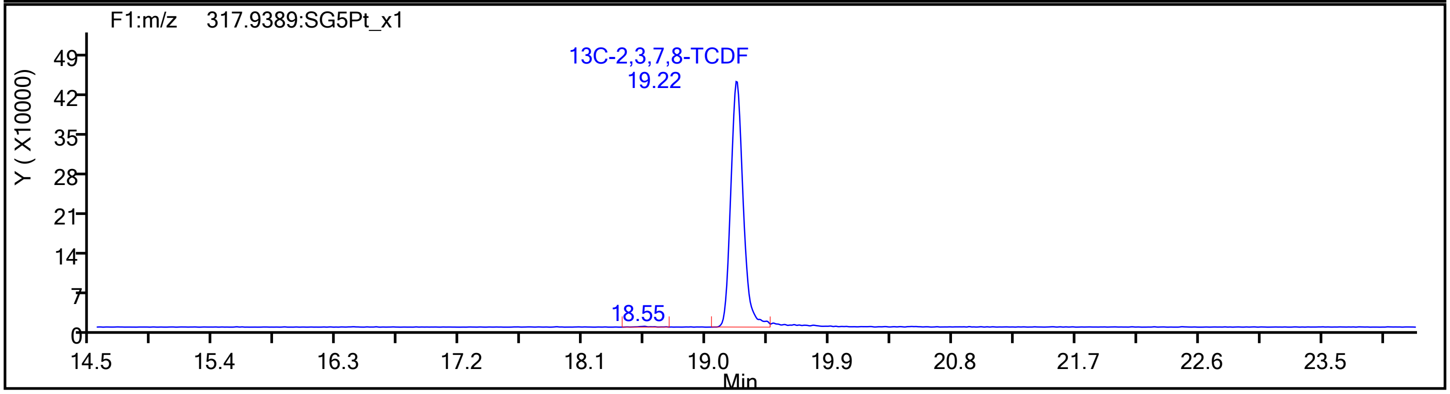

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

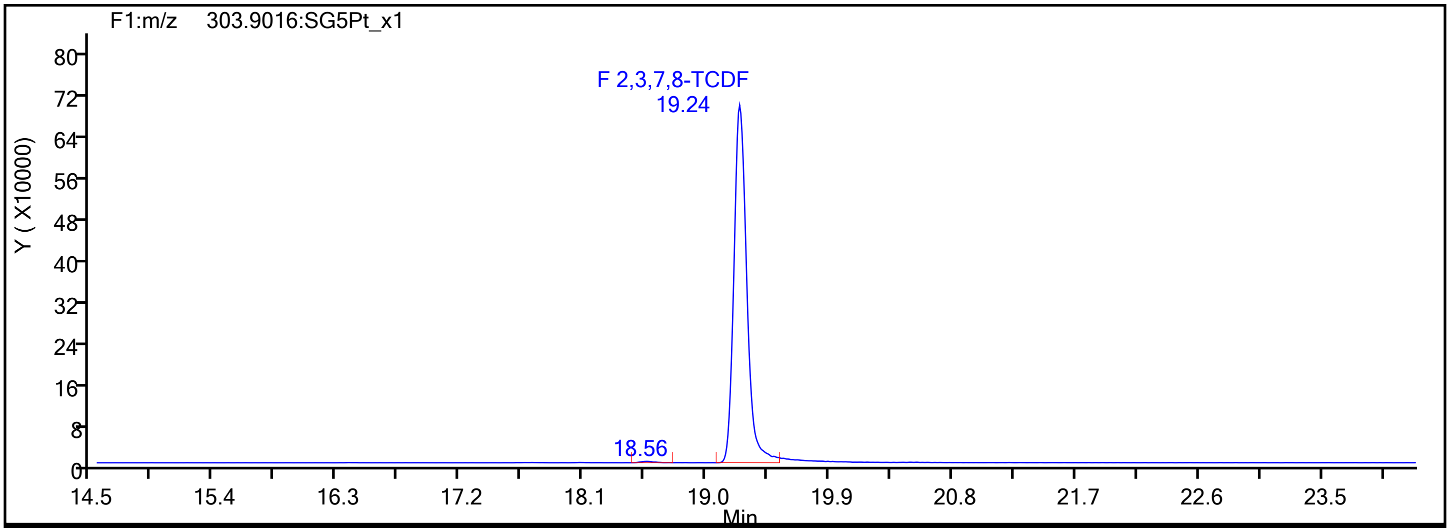

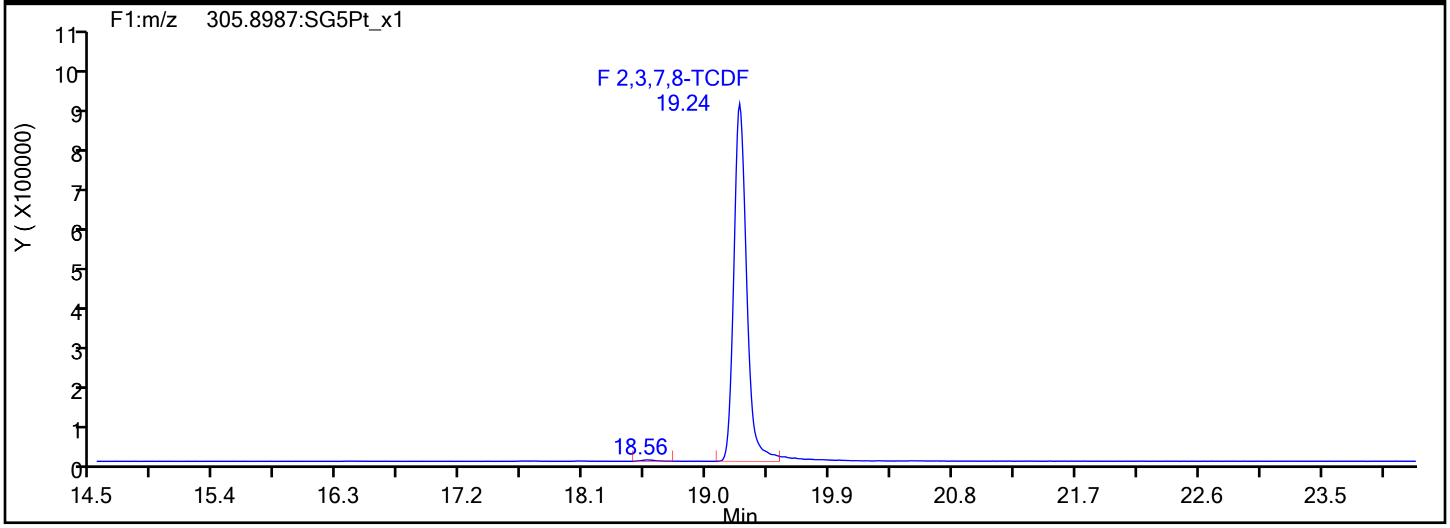

TCDF Interference Mass

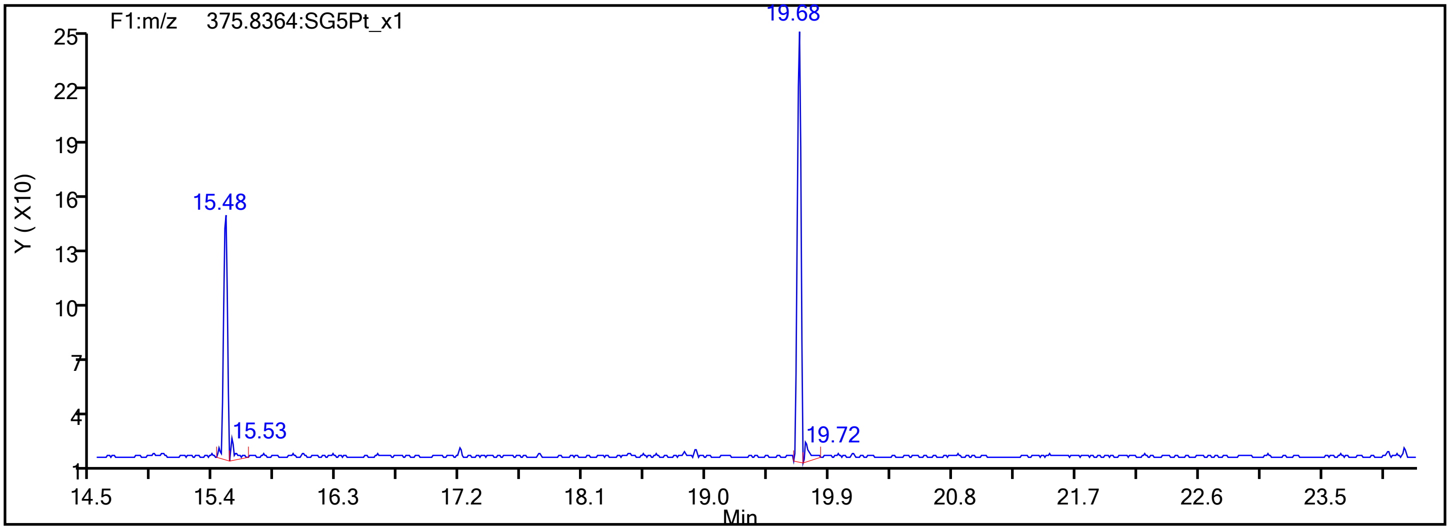

Report Date: 18-Sep-2020 11:00:55
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

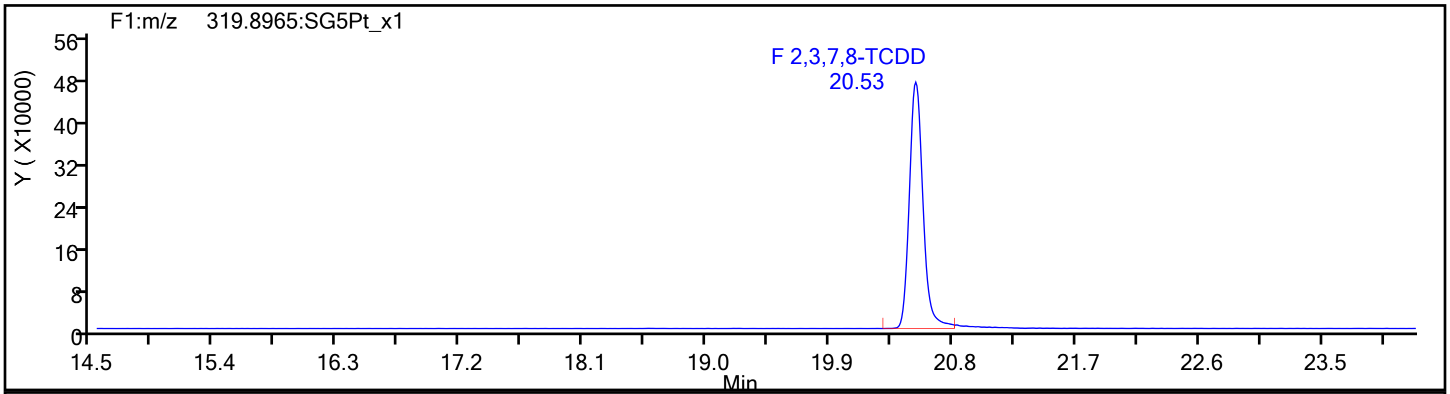

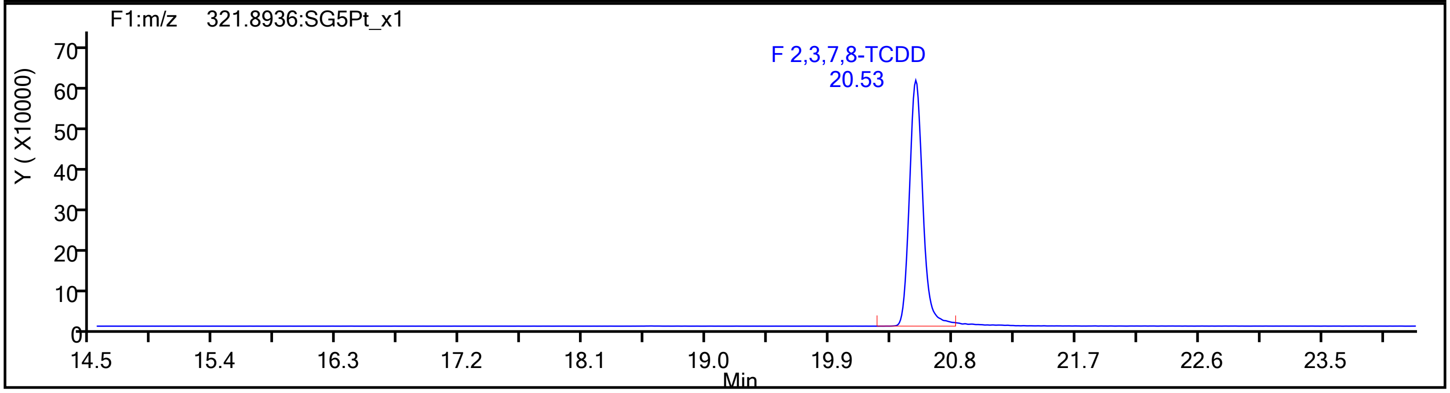

TCDD Standards

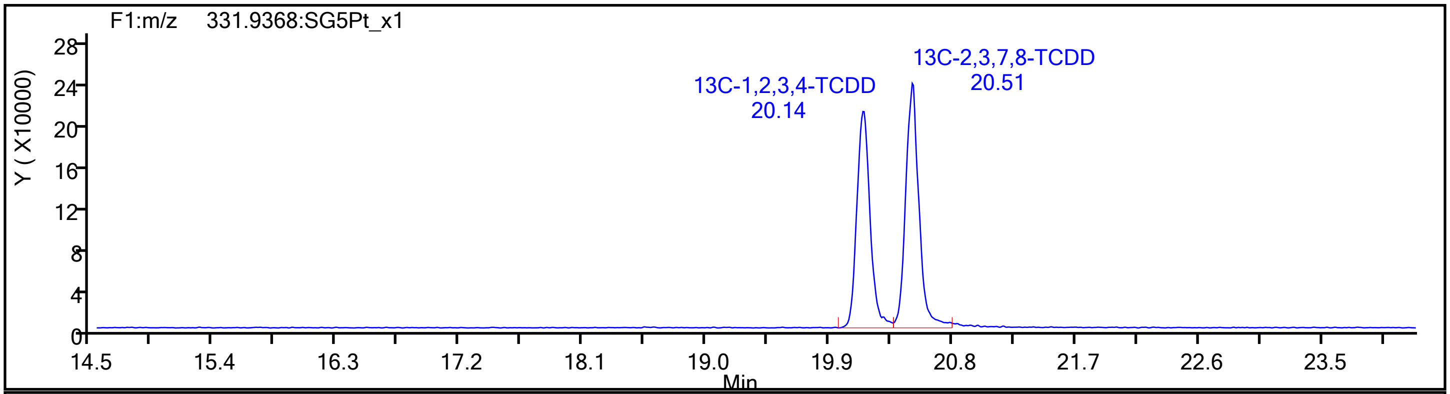

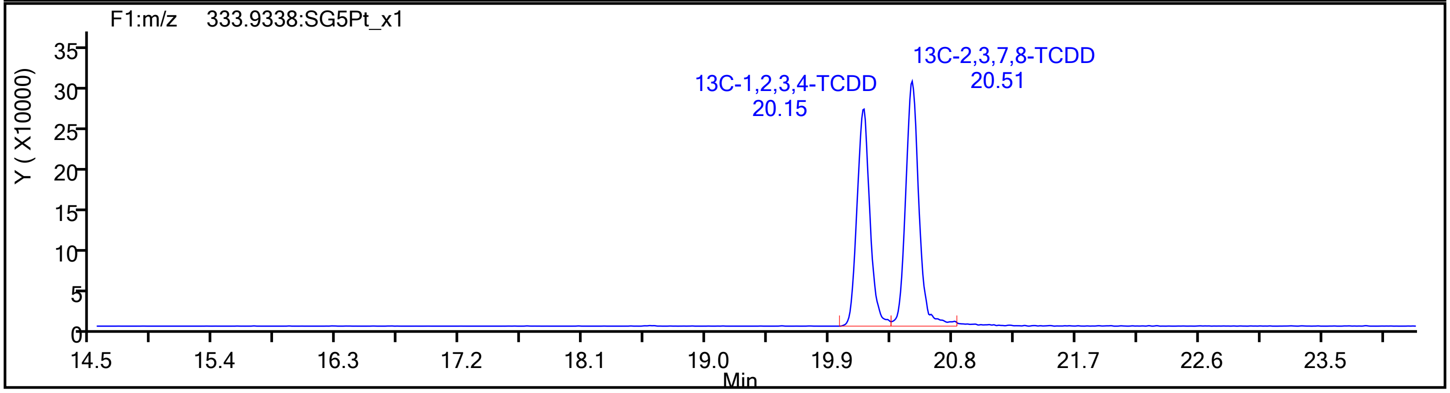

Report Date: 18-Sep-2020 11:00:55　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00　　Injection Vol: 1.0 ul
Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255　　Sample Line#: 7
Column Type: DB-5　　Column Dia: 0.32 mm

37Cl4-TCDD

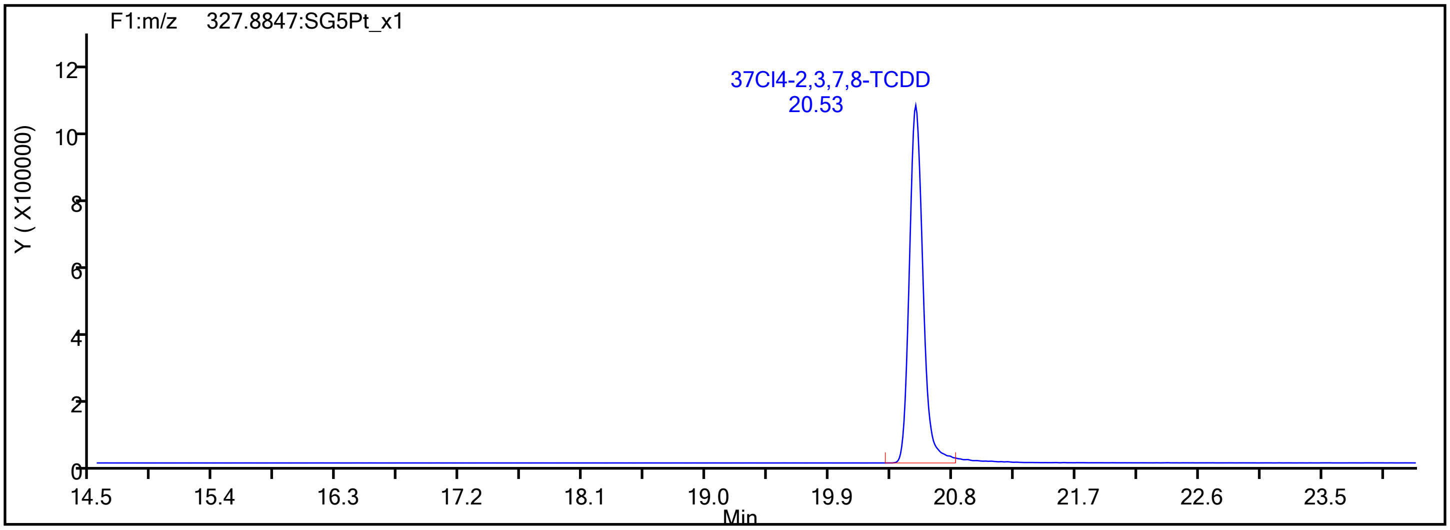

37Cl4-TCDD Standards

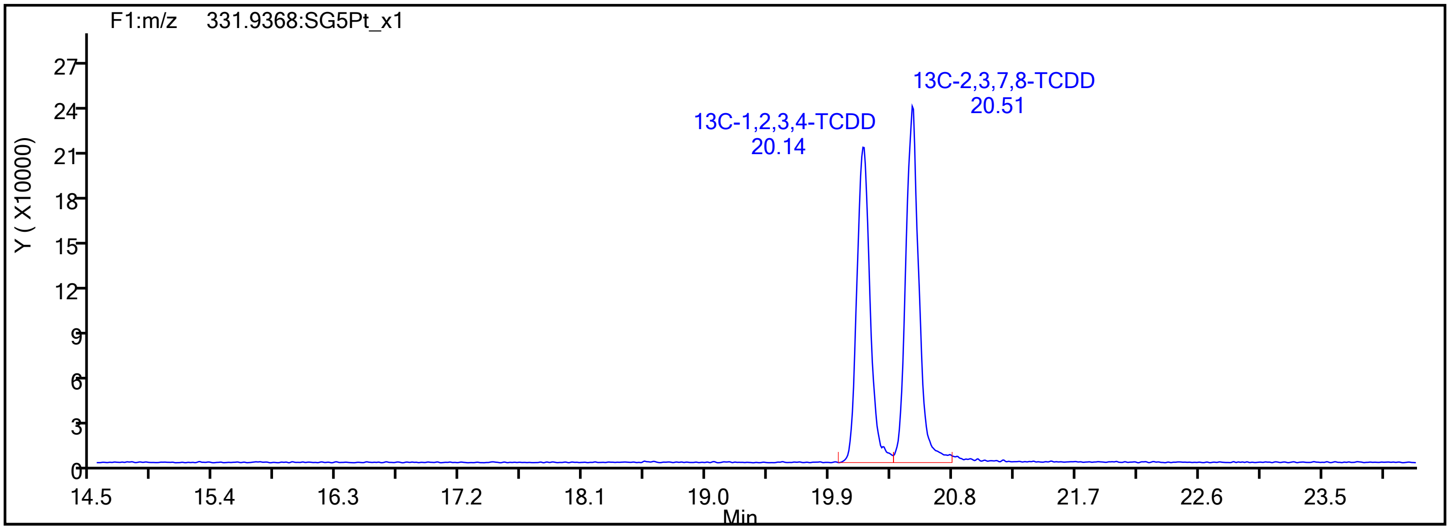

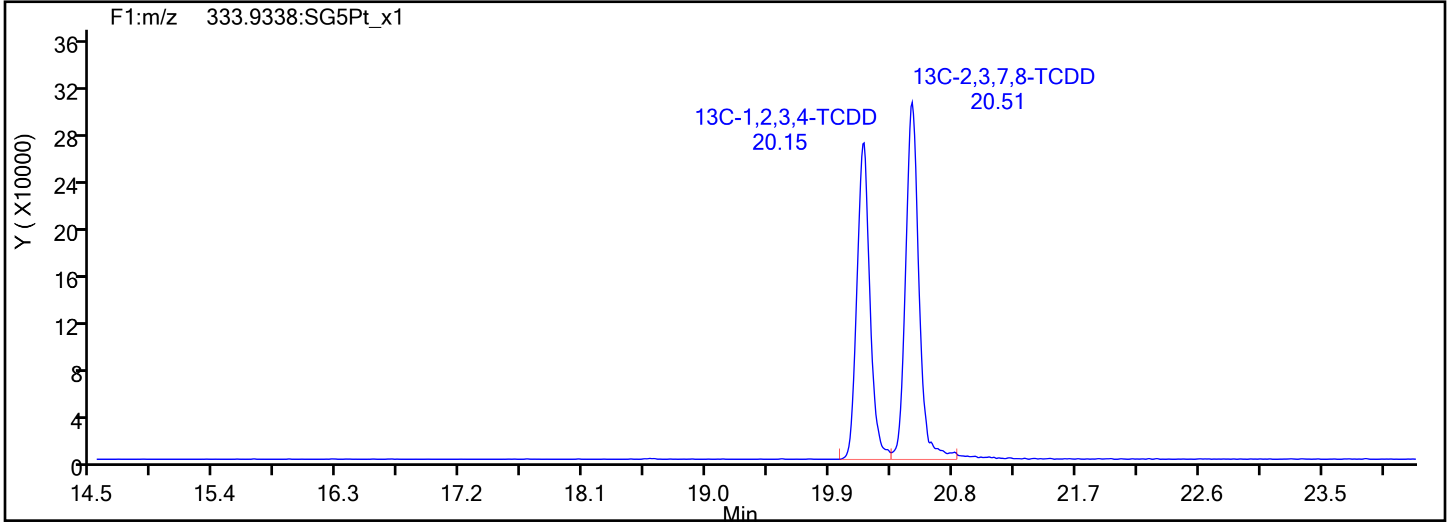

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

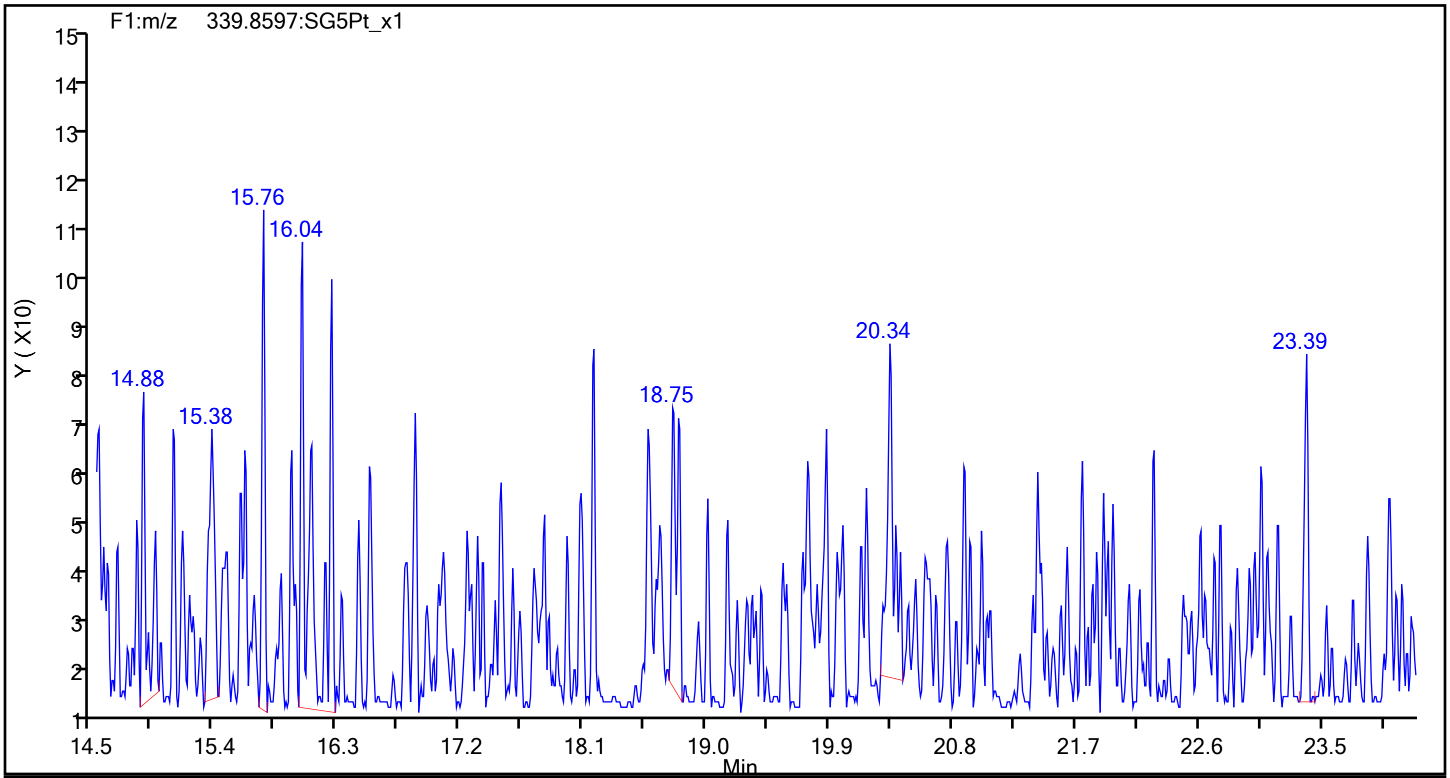

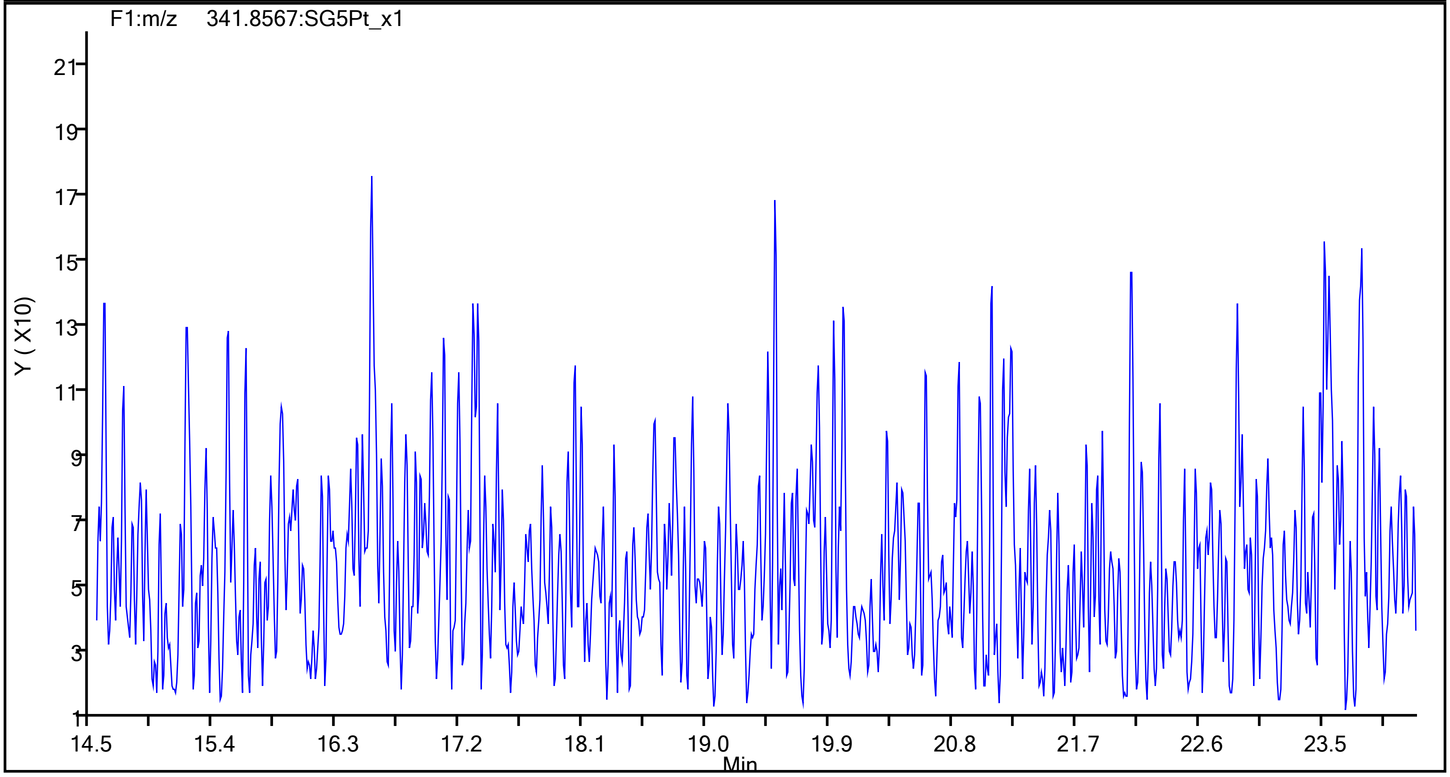

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

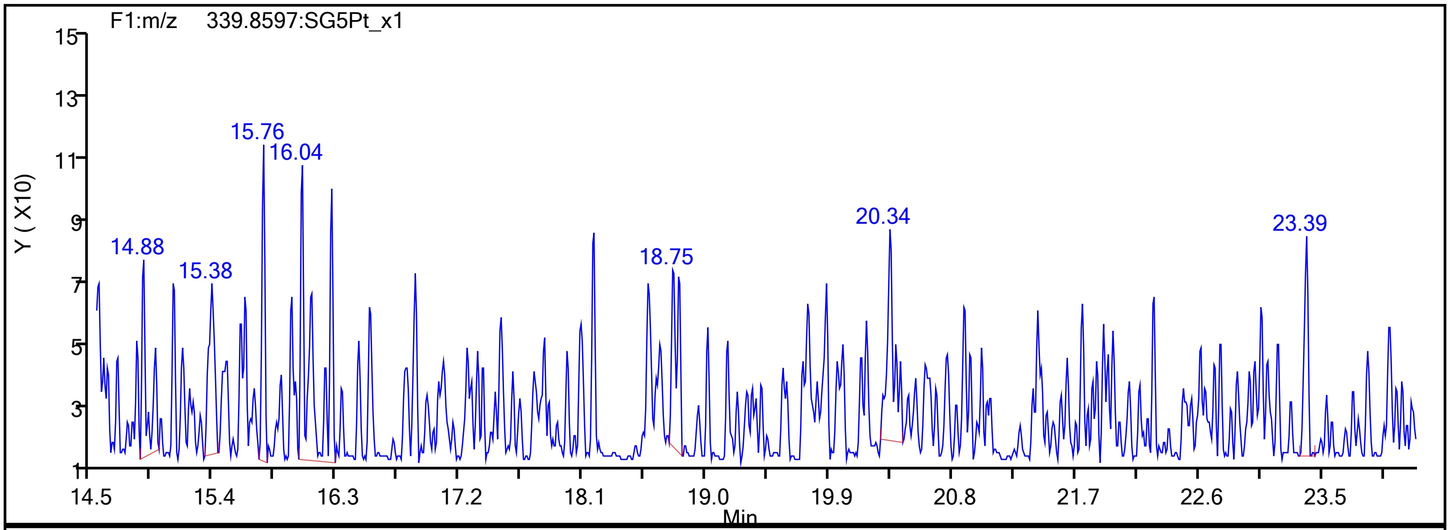

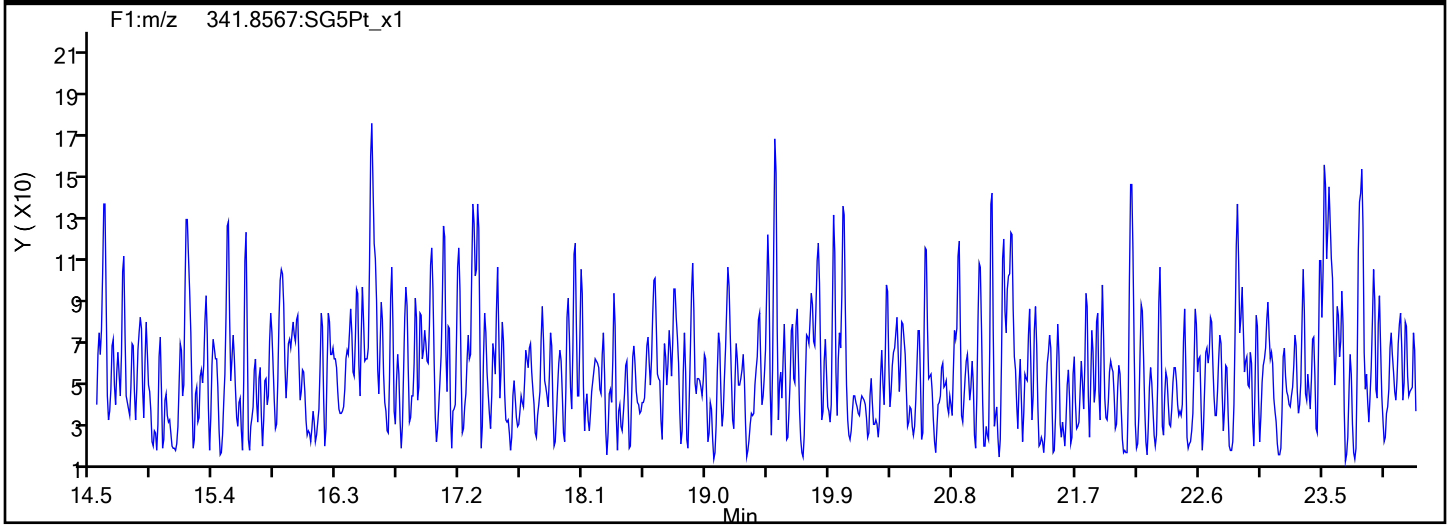

F1 PeCDFs Interference Mass

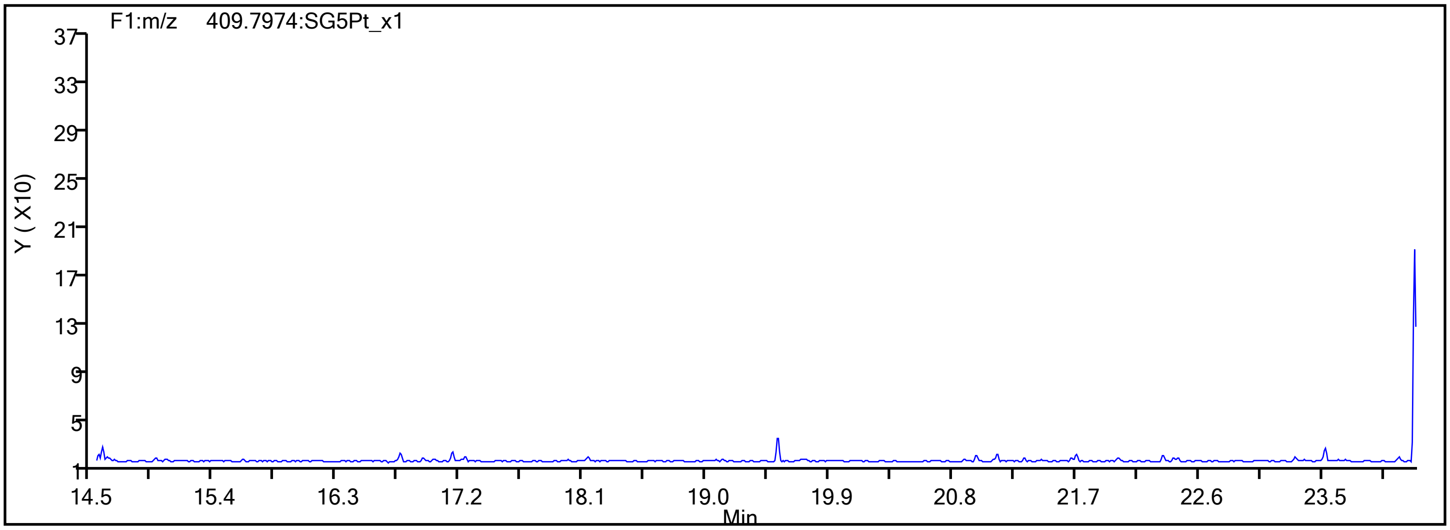

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

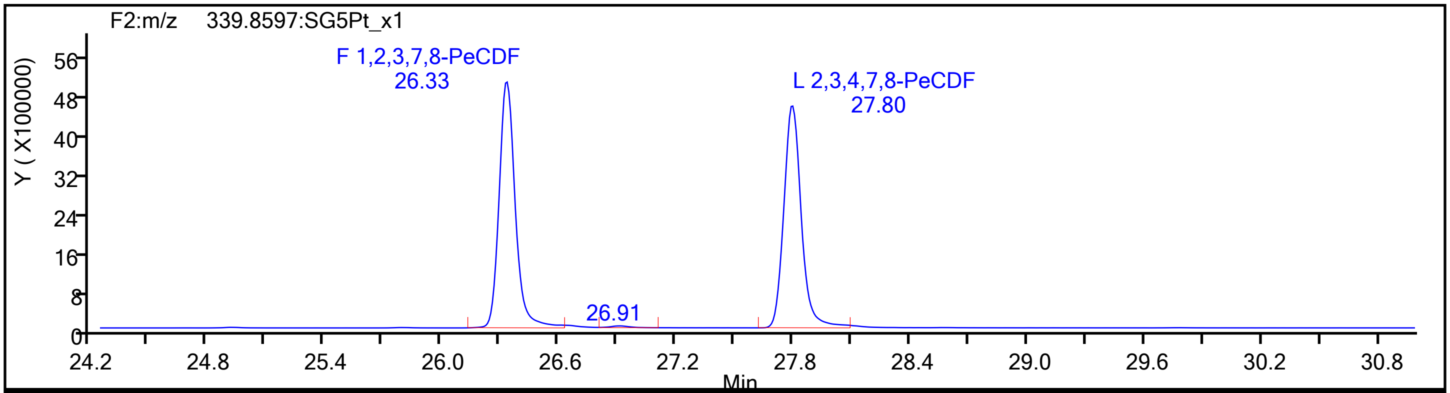

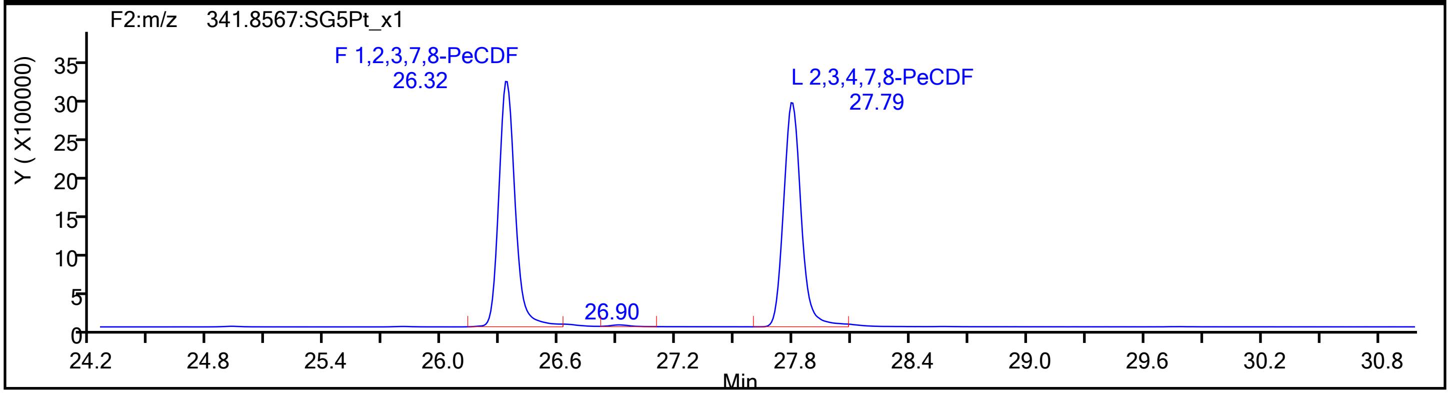

PeCDF Standards

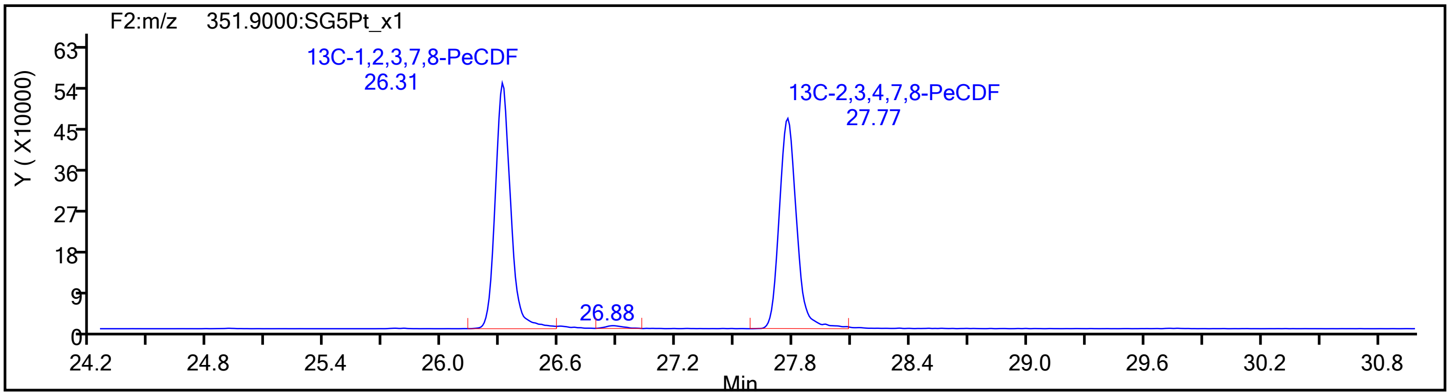

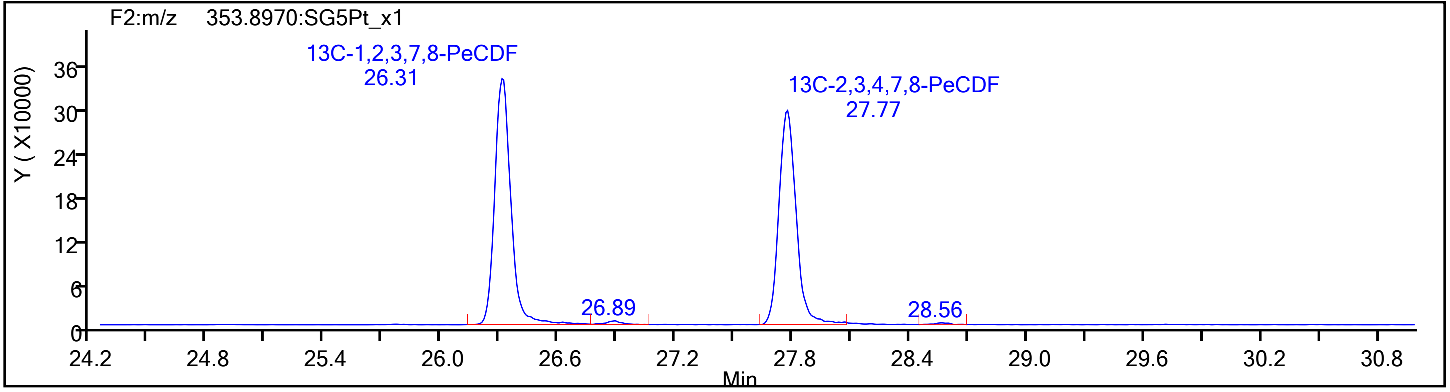

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

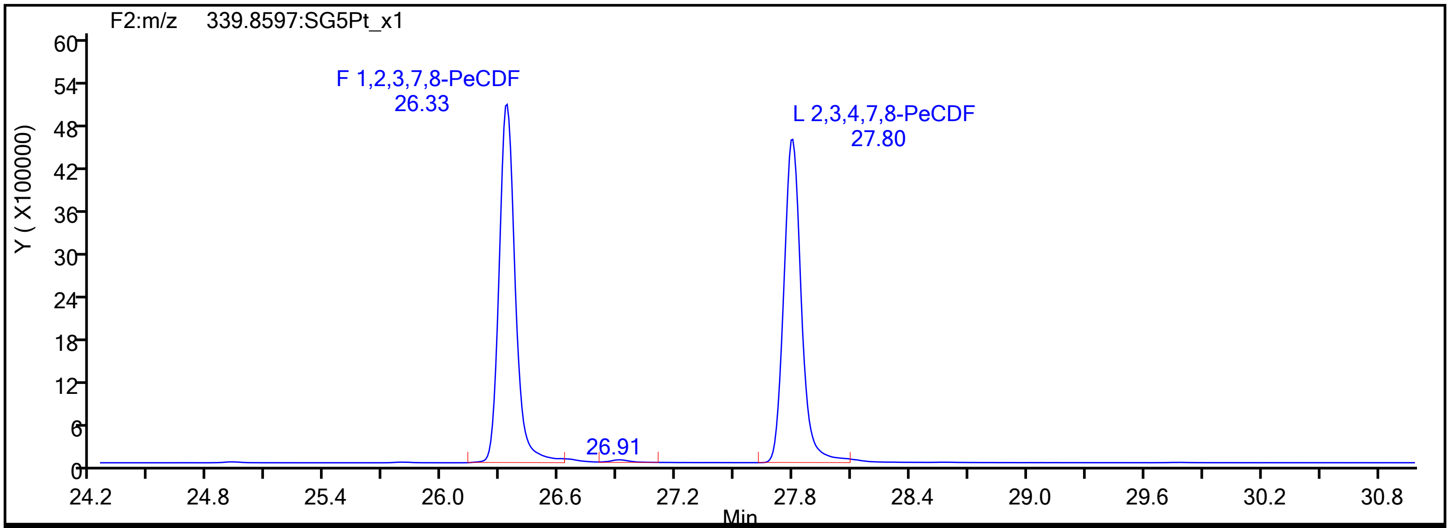

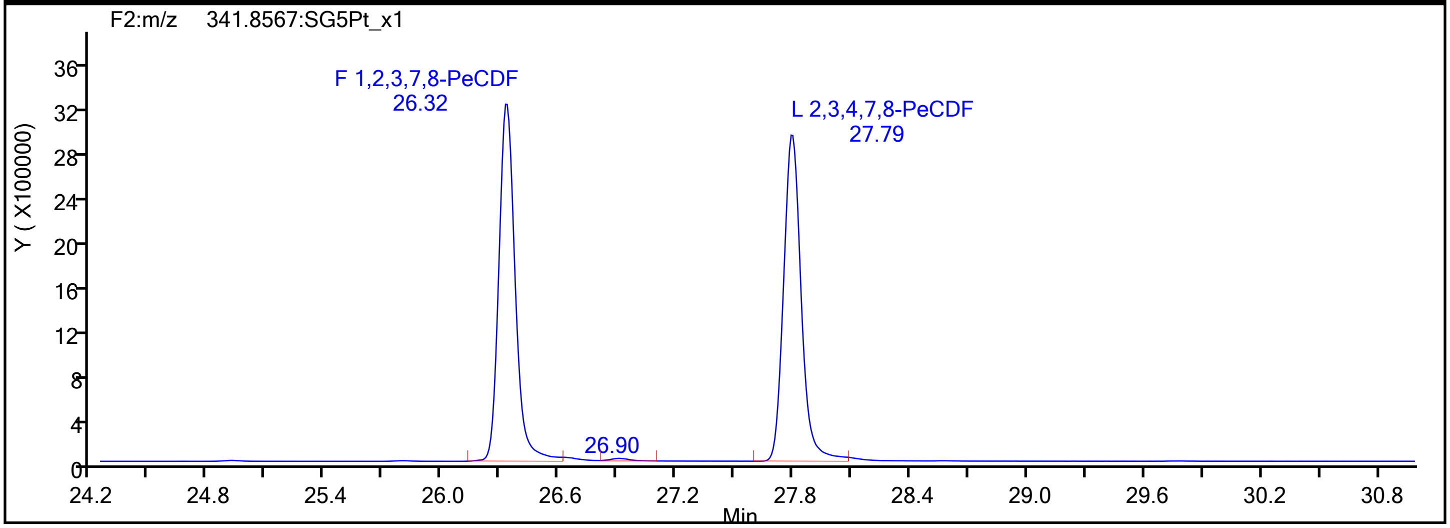

PeCDF Interference Mass

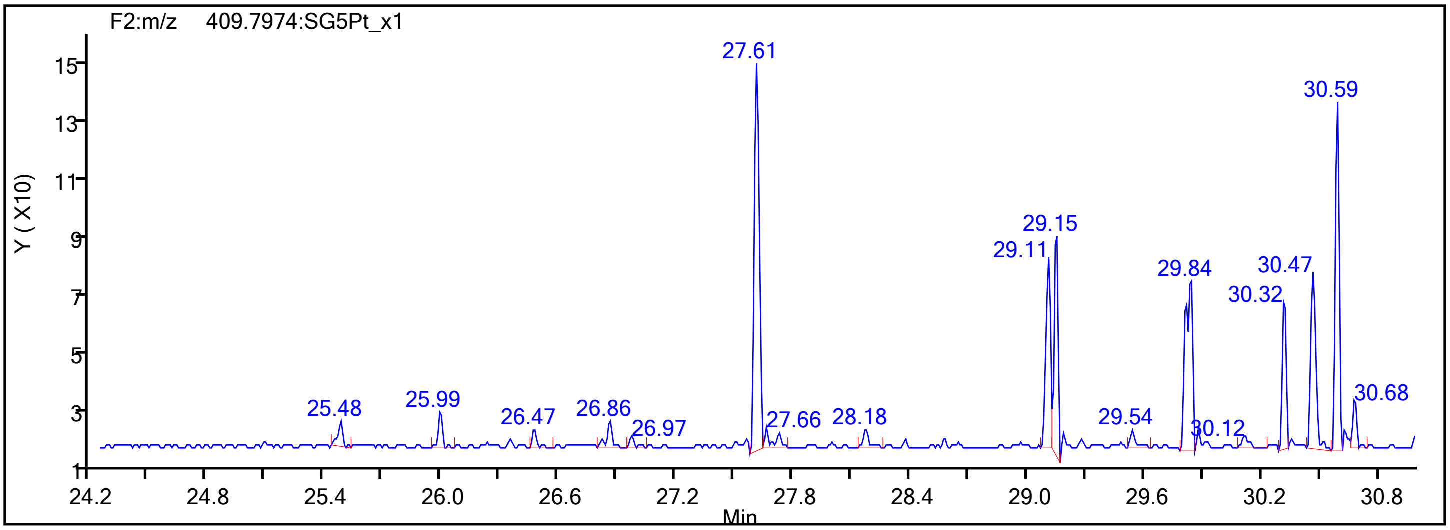

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

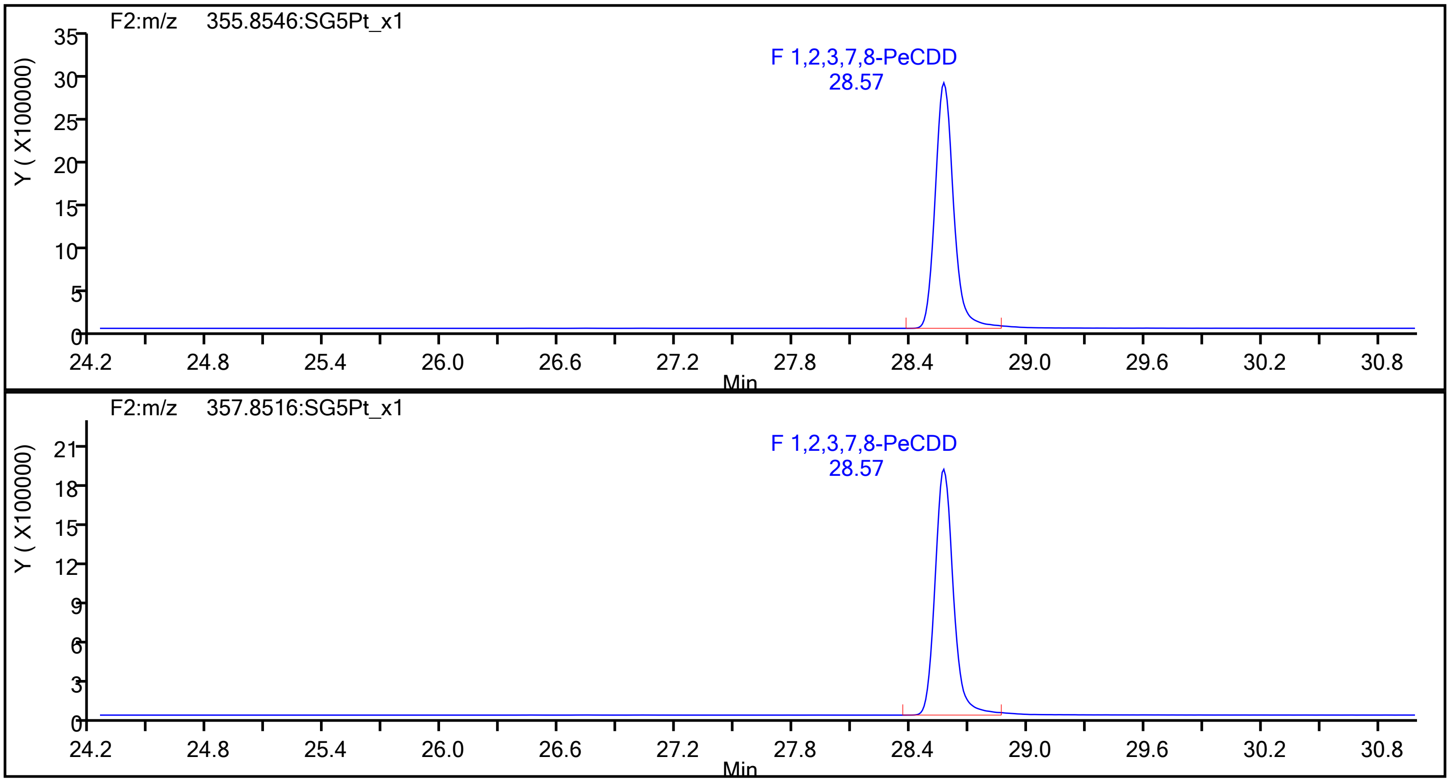

PeCDD Standards

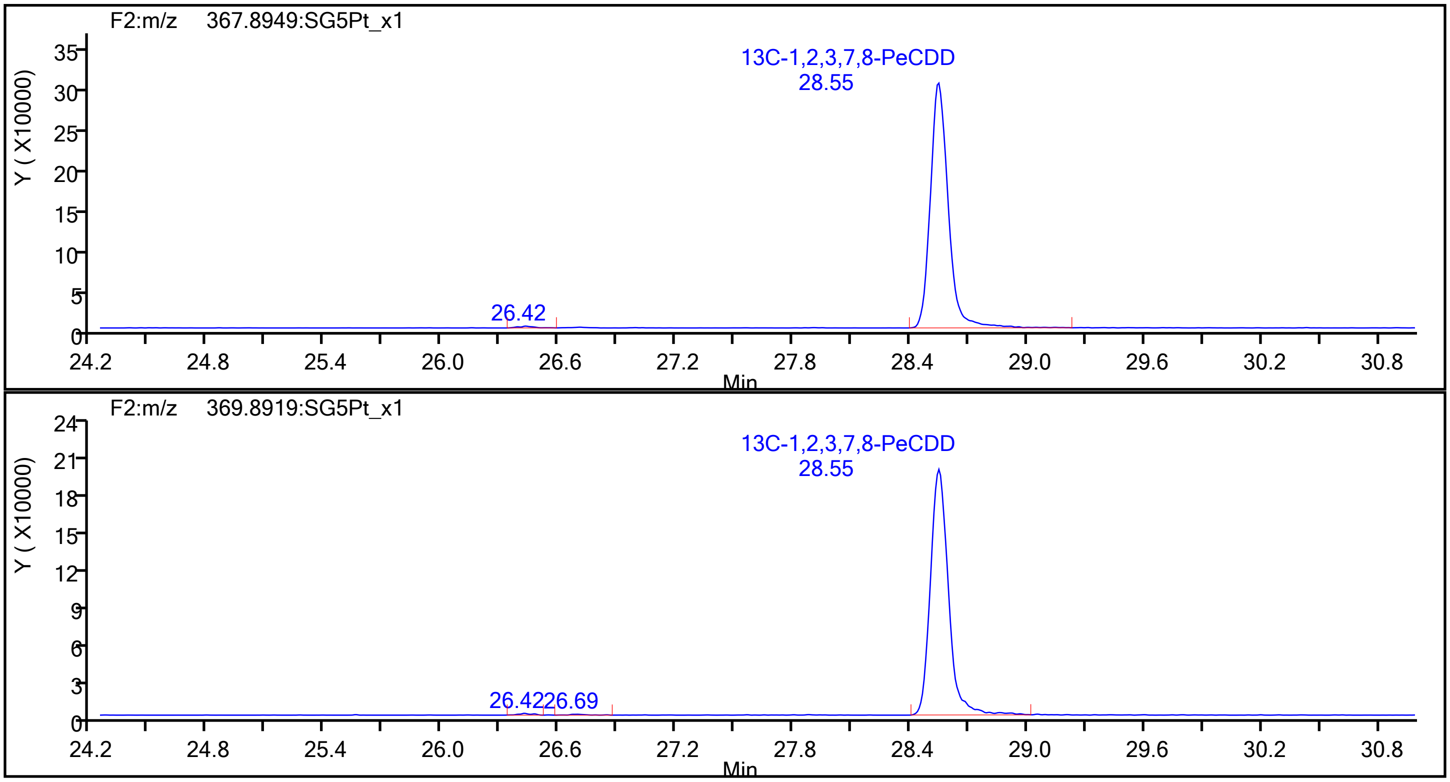

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

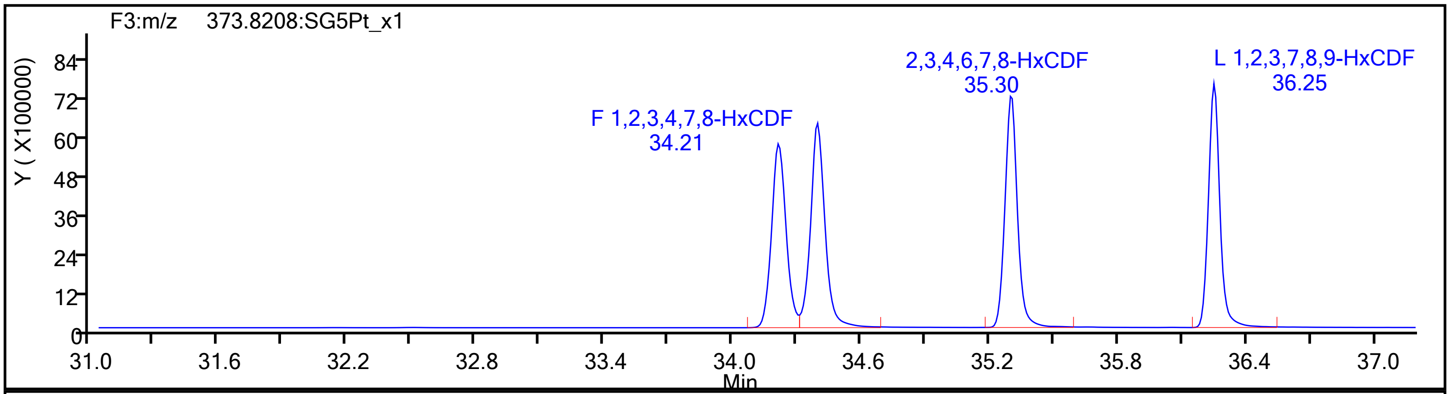

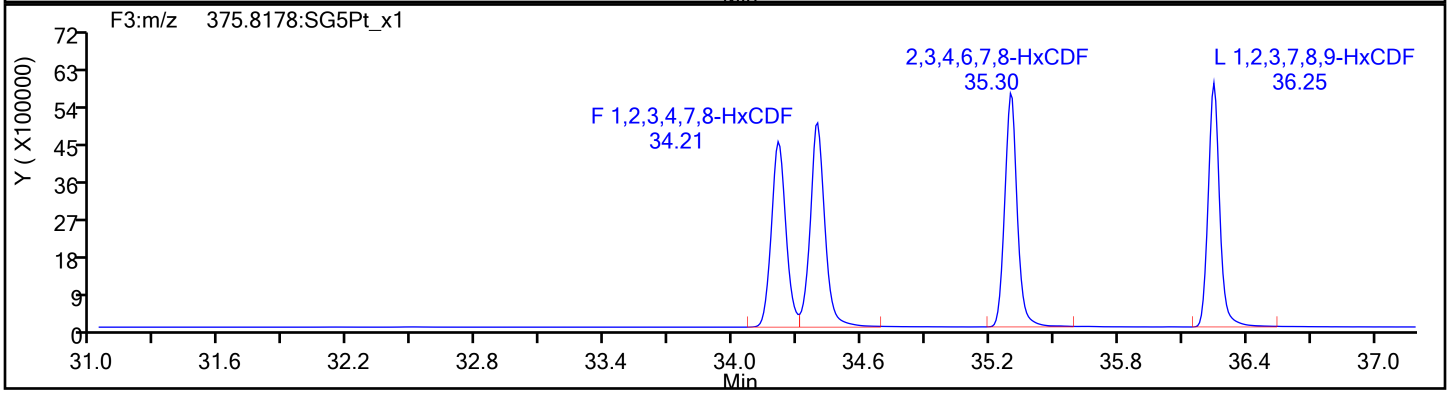

HxCDF Standards

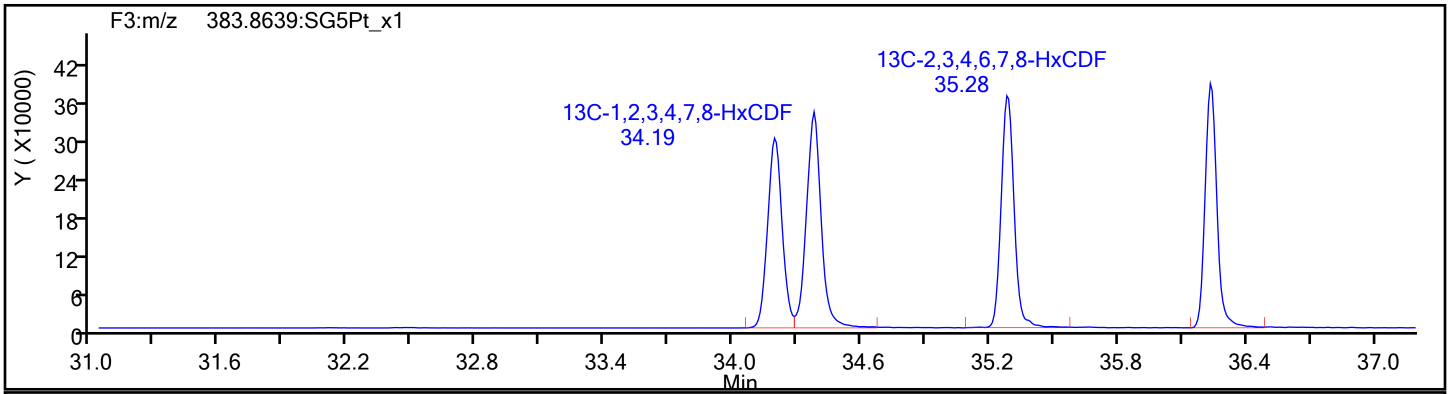

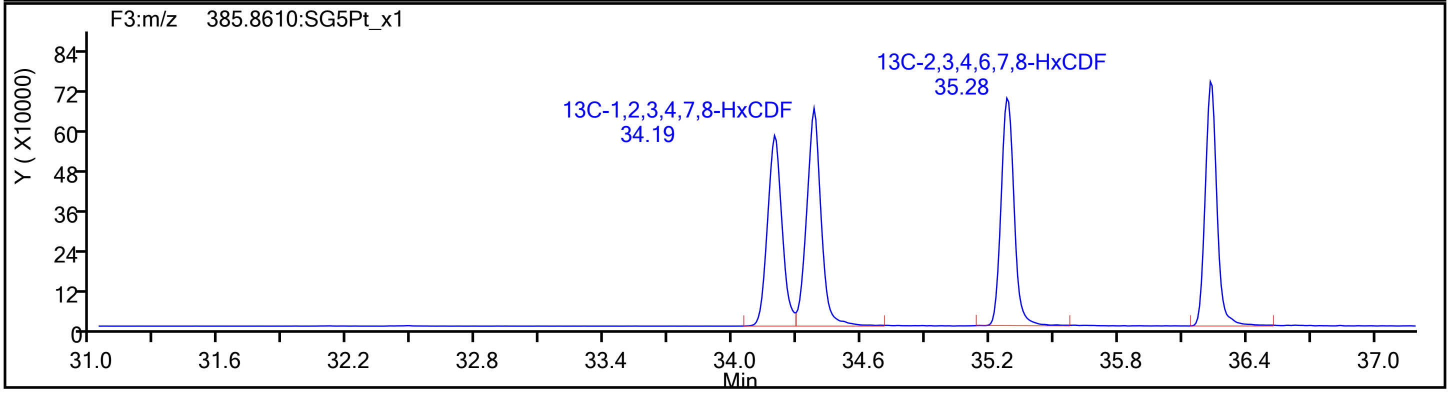

Report Date: 18-Sep-2020 11:00:55
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

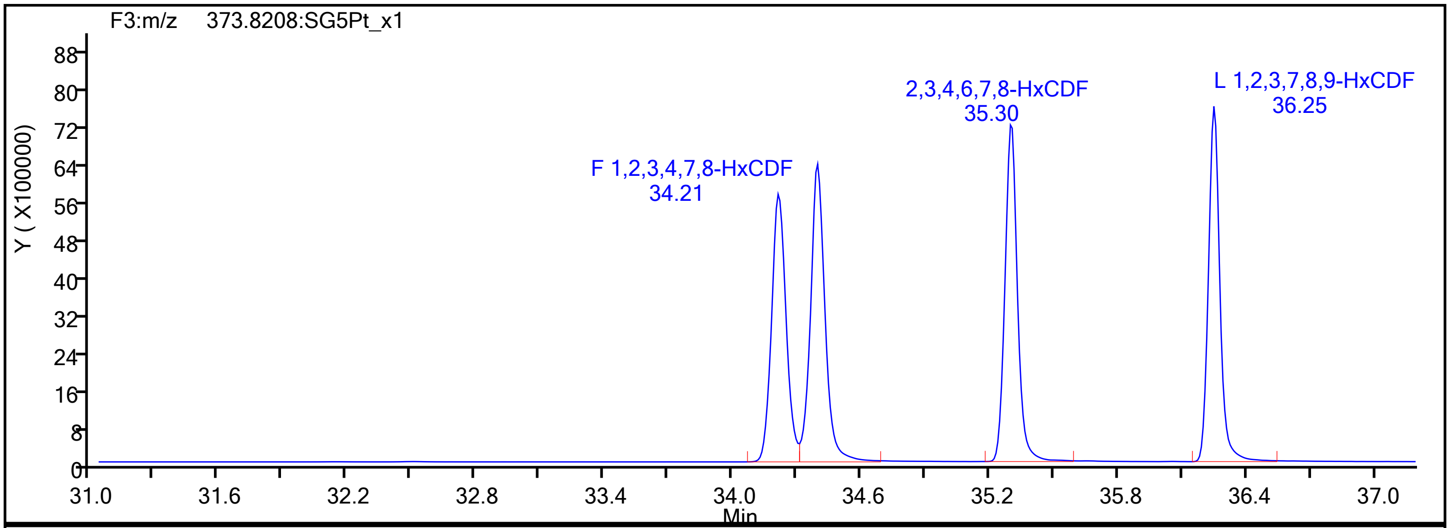

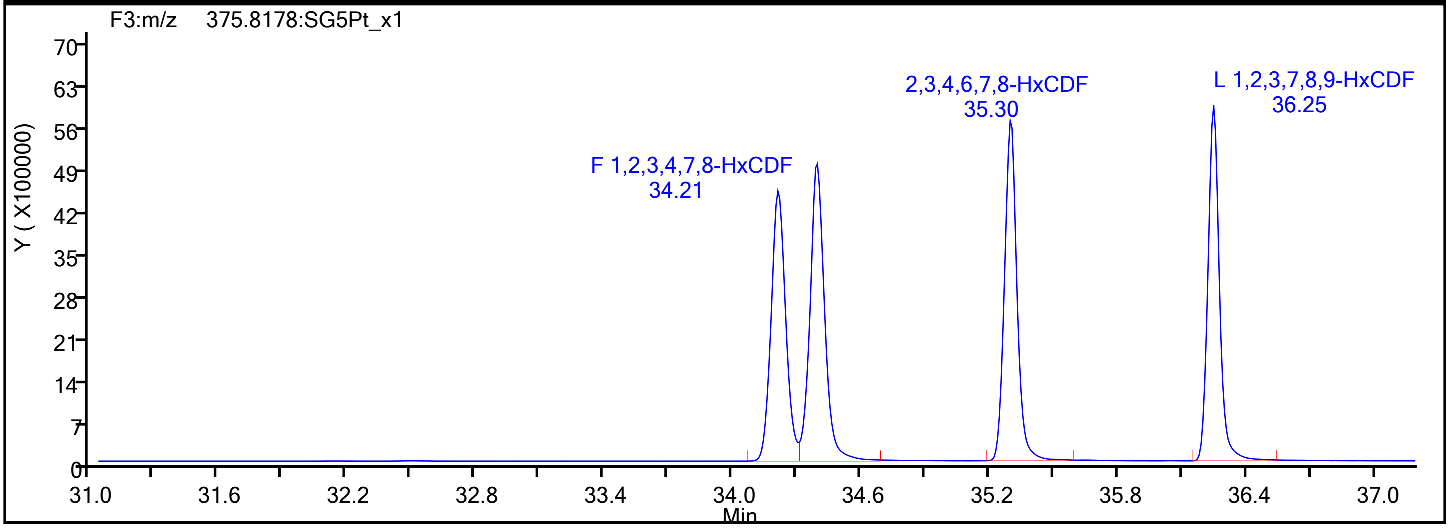

HxCDF Interference Mass

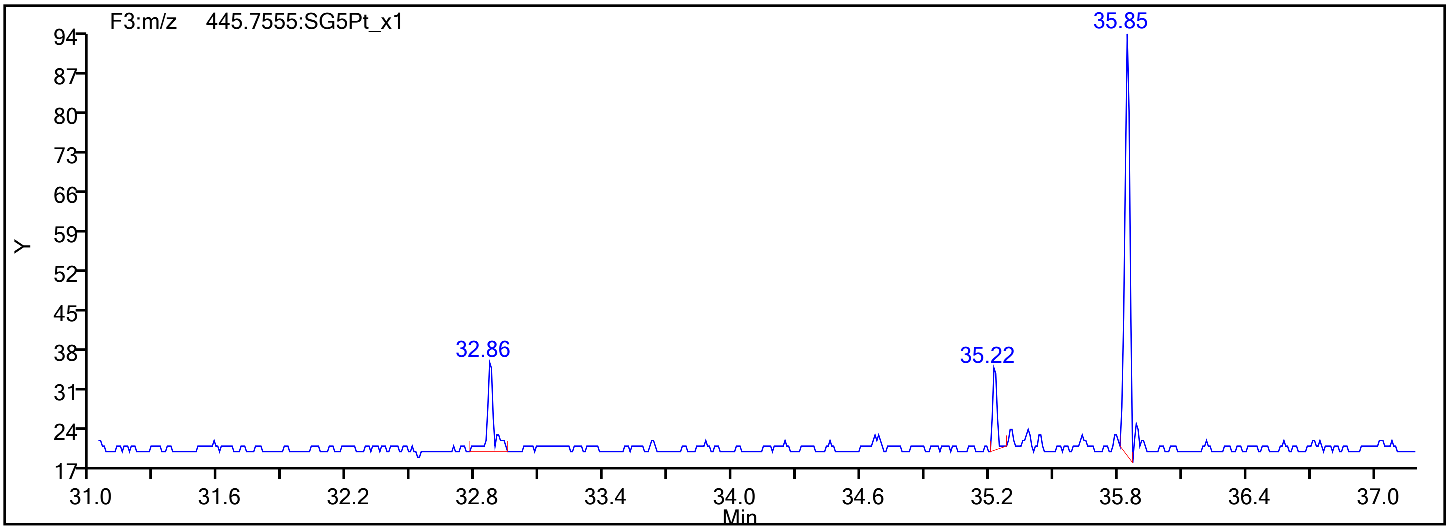

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

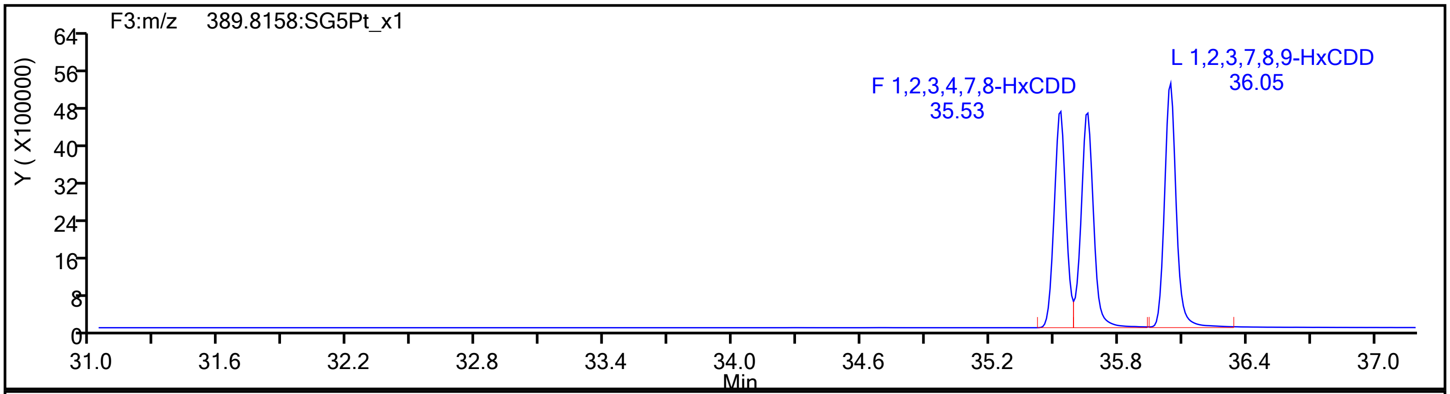

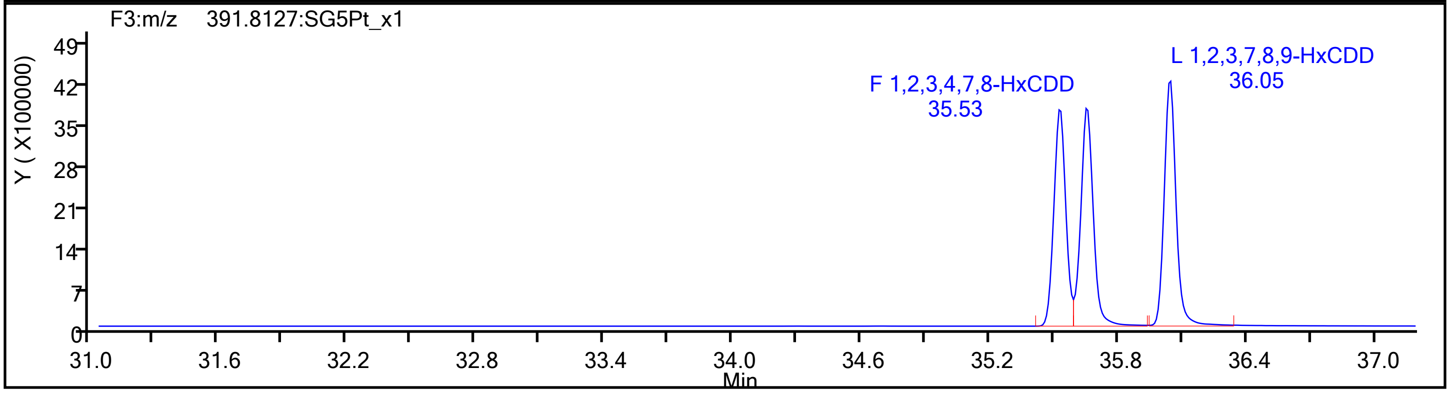

HxCDD Standards

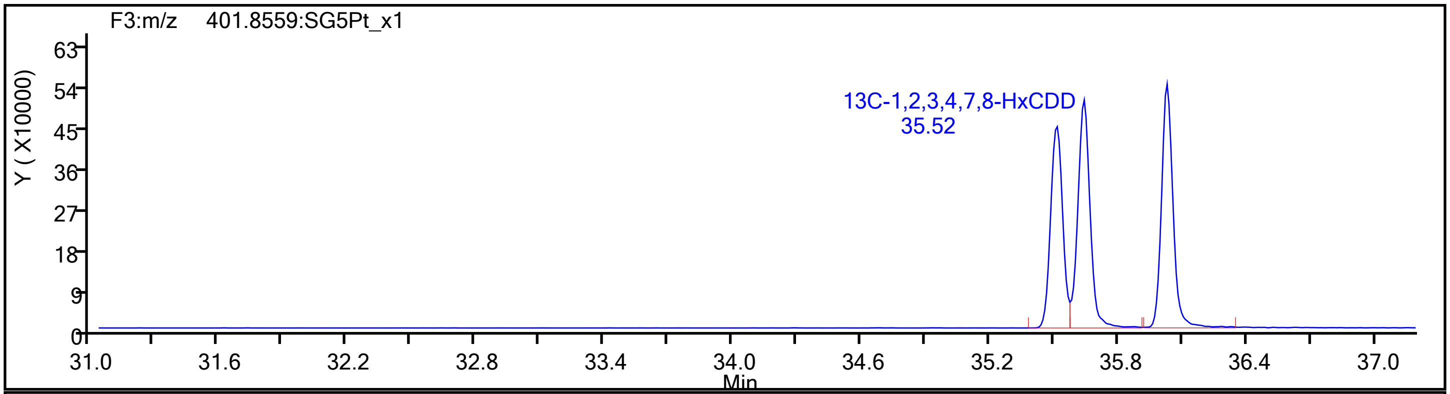

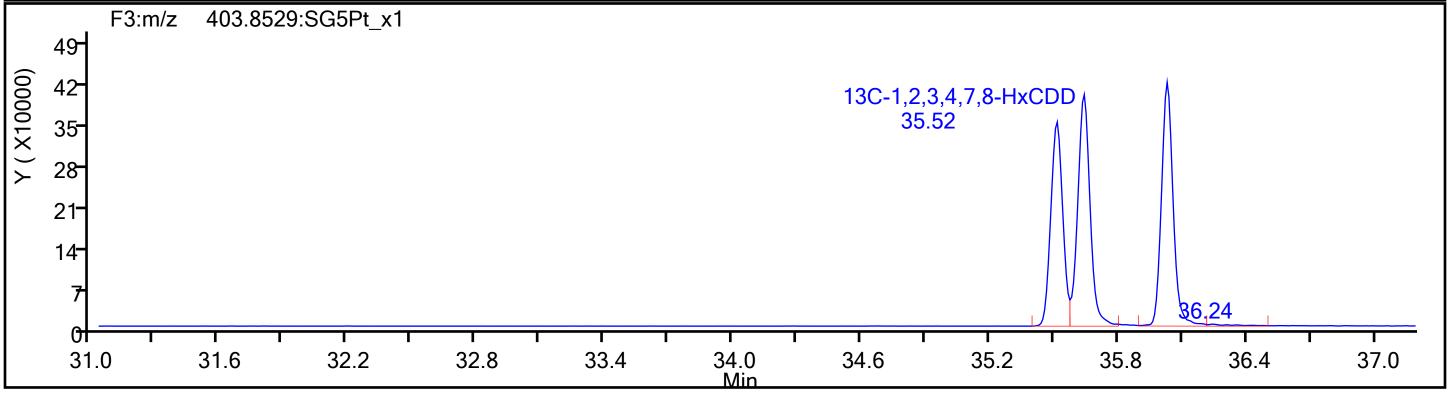

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

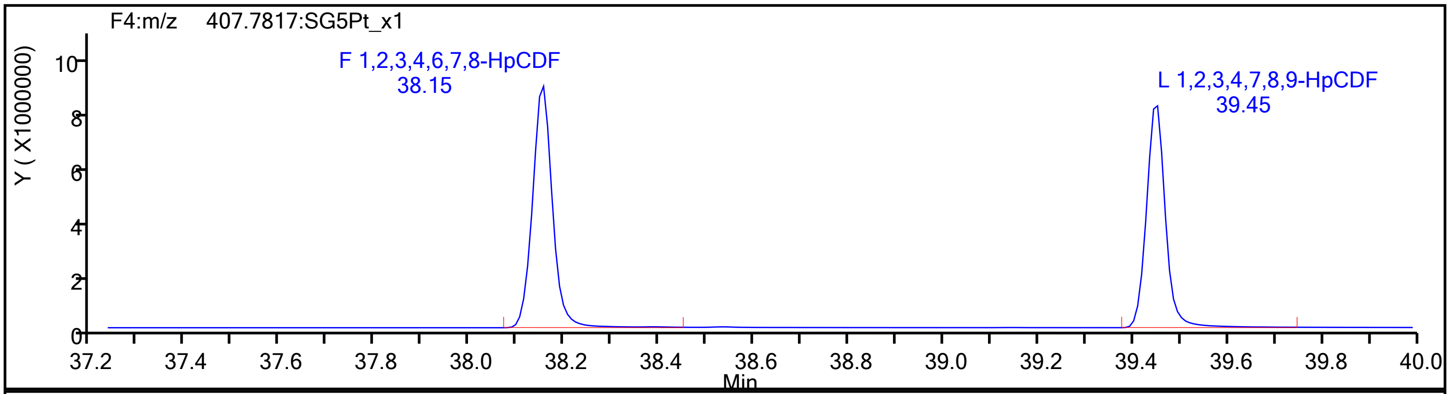

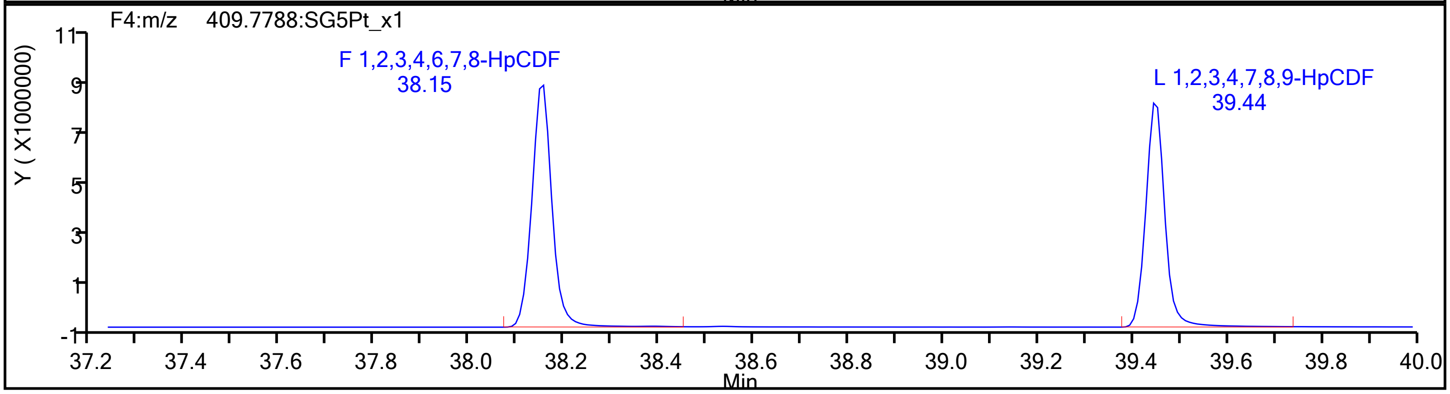

HpCDF Standards

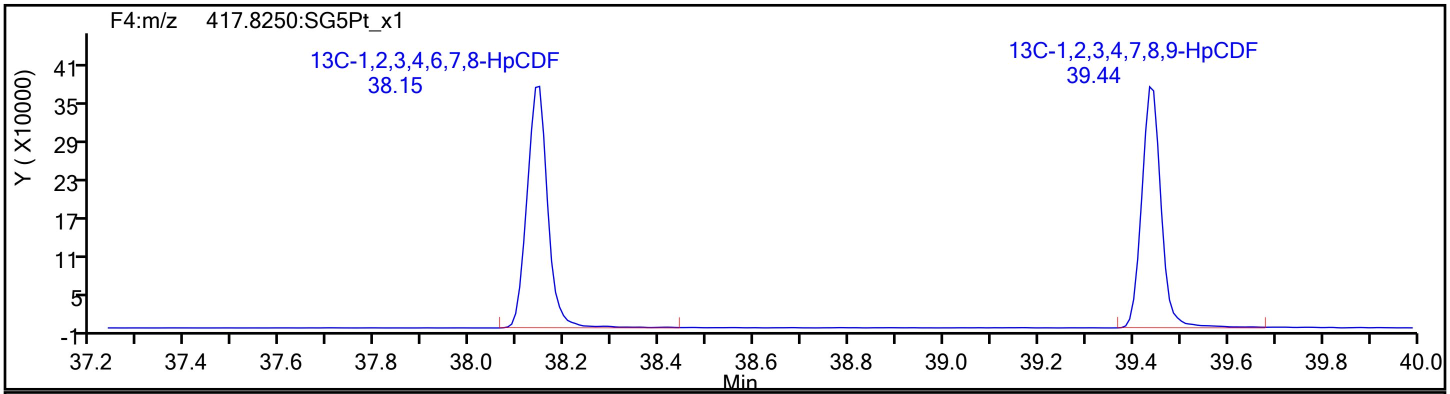

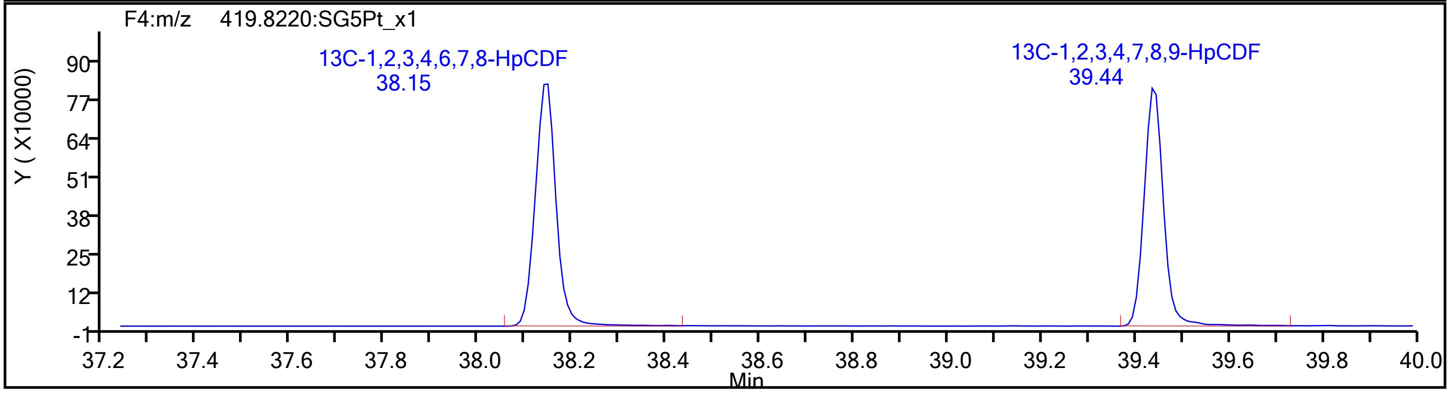

Report Date: 18-Sep-2020 11:00:55 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

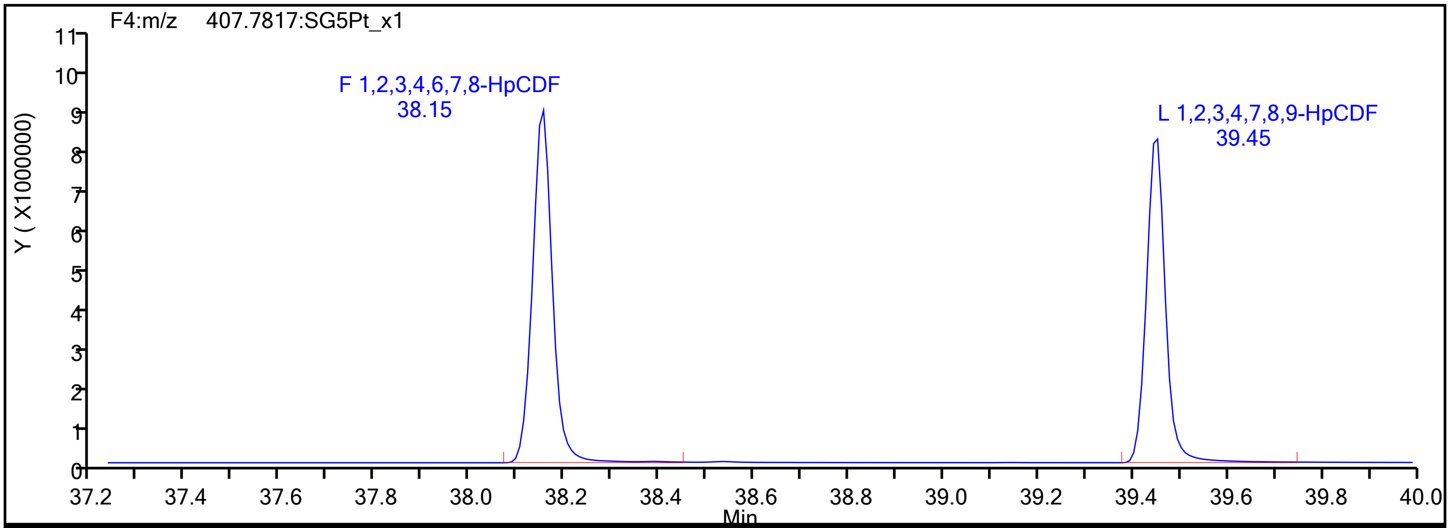

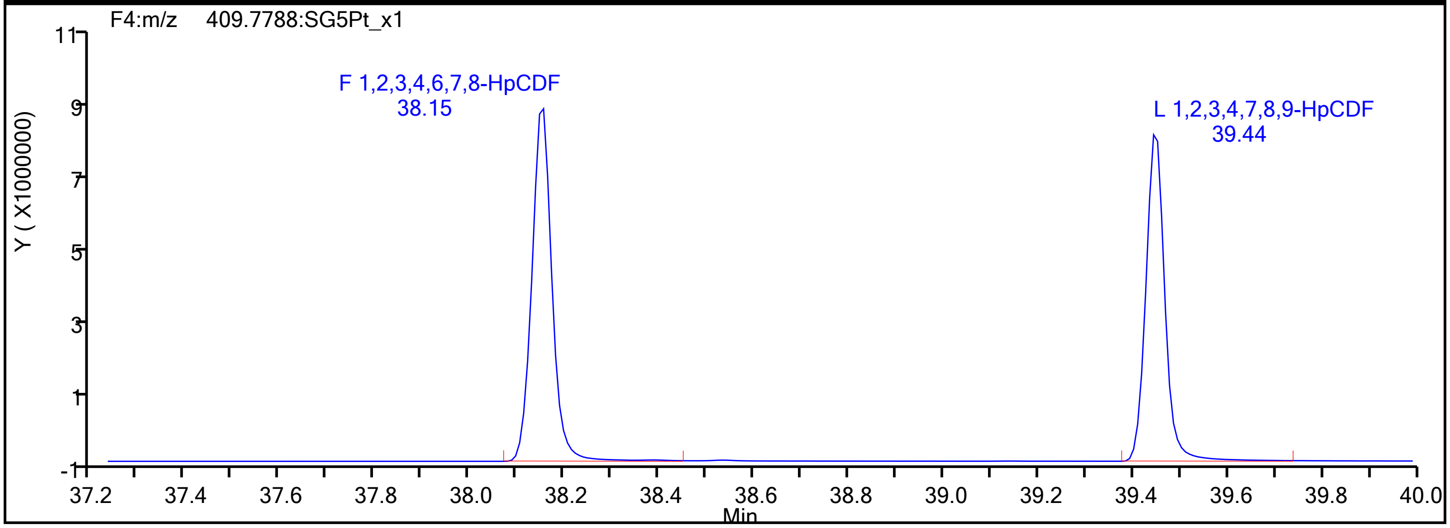

HpCDF Interference Mass

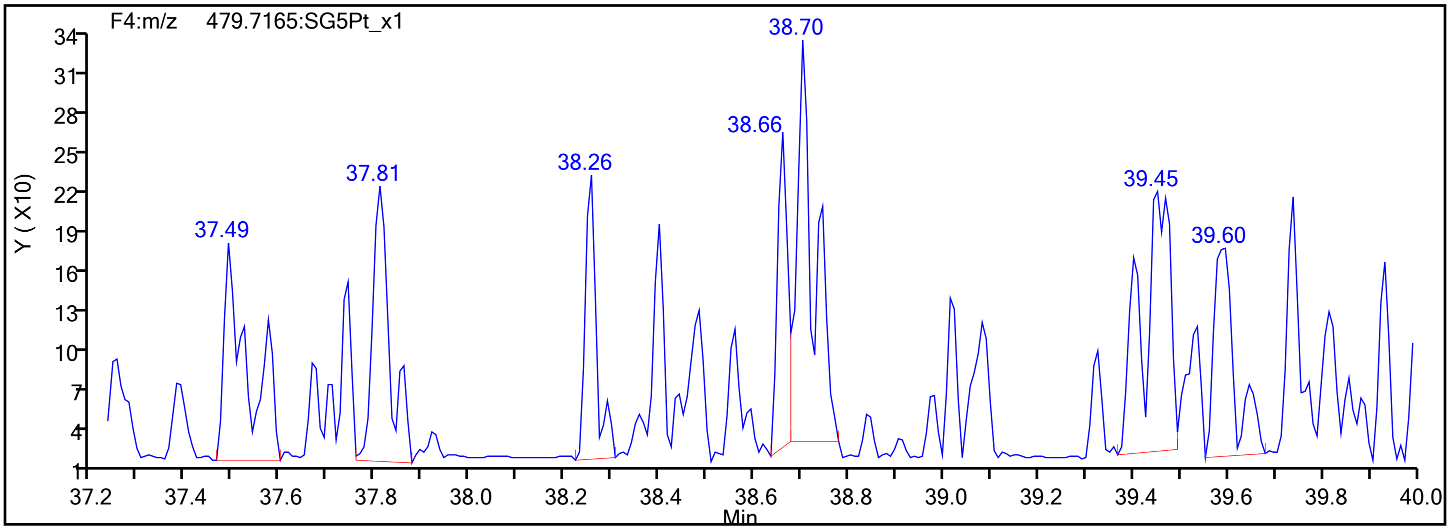

Report Date: 18-Sep-2020 11:00:56　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

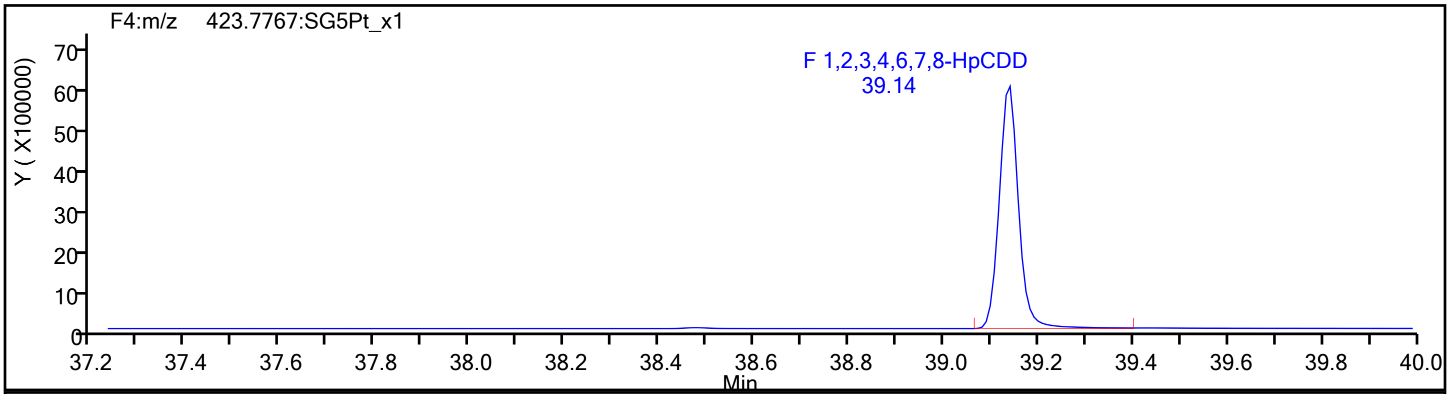

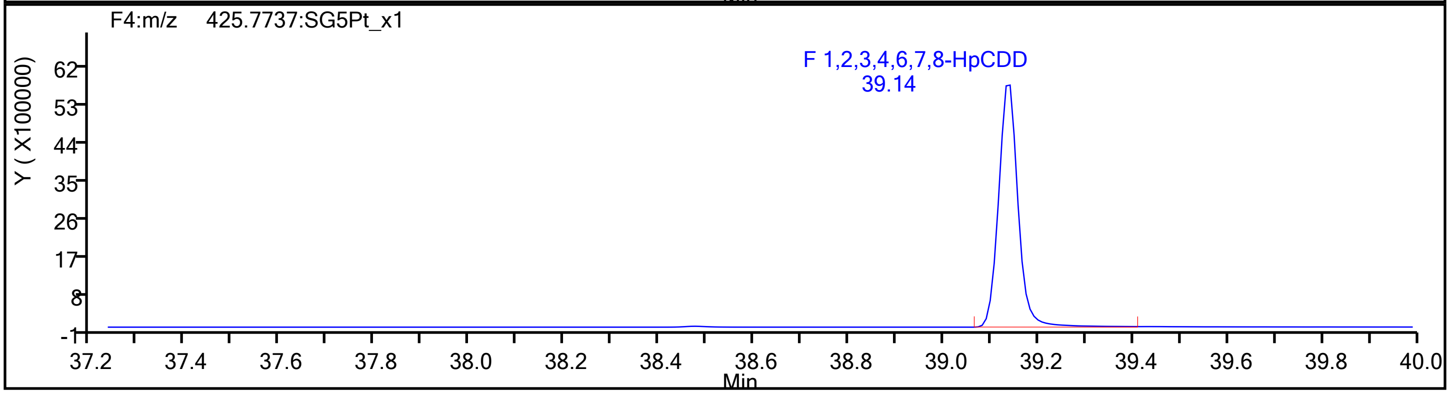

HpCDD Standards

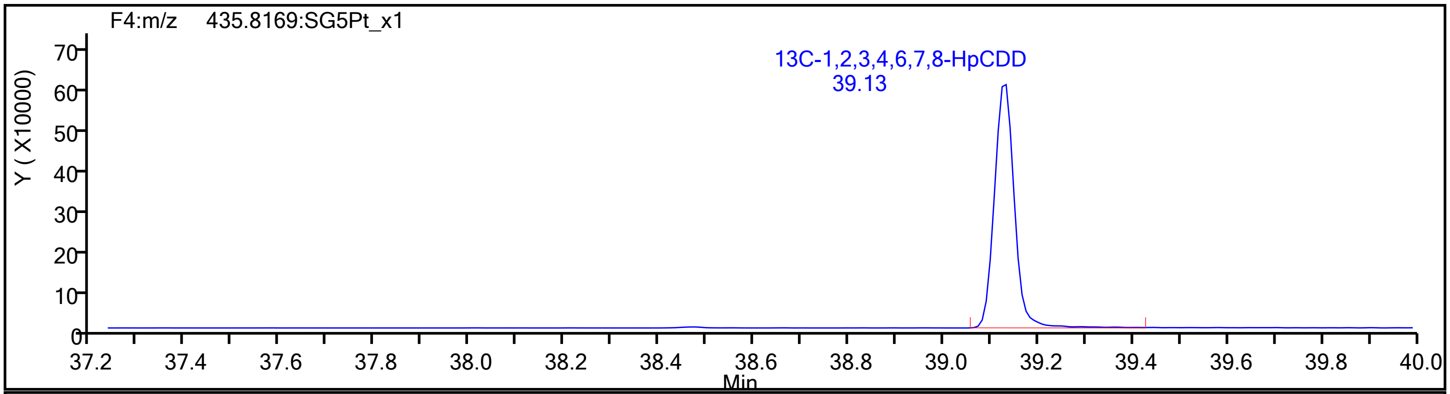

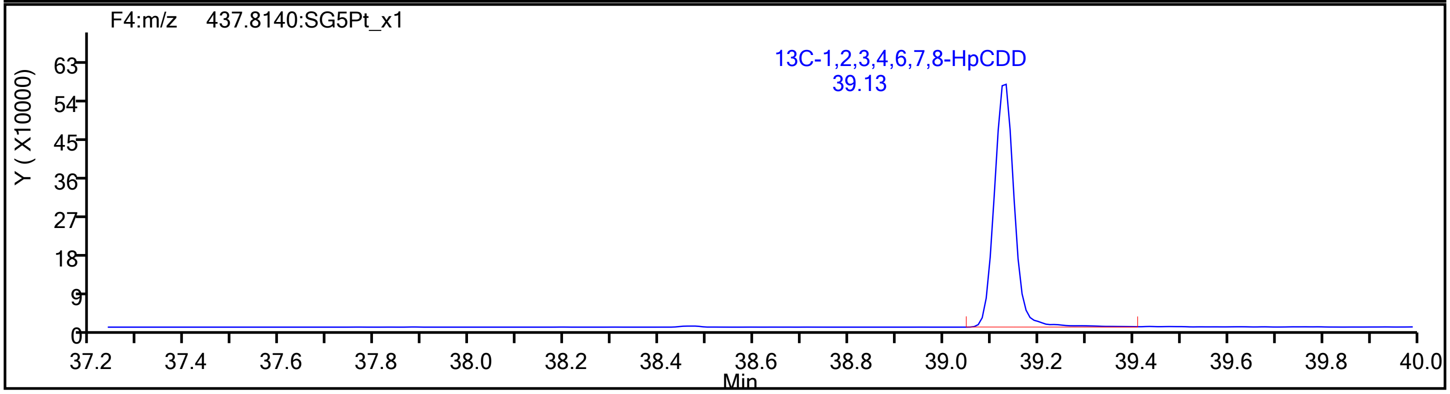

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

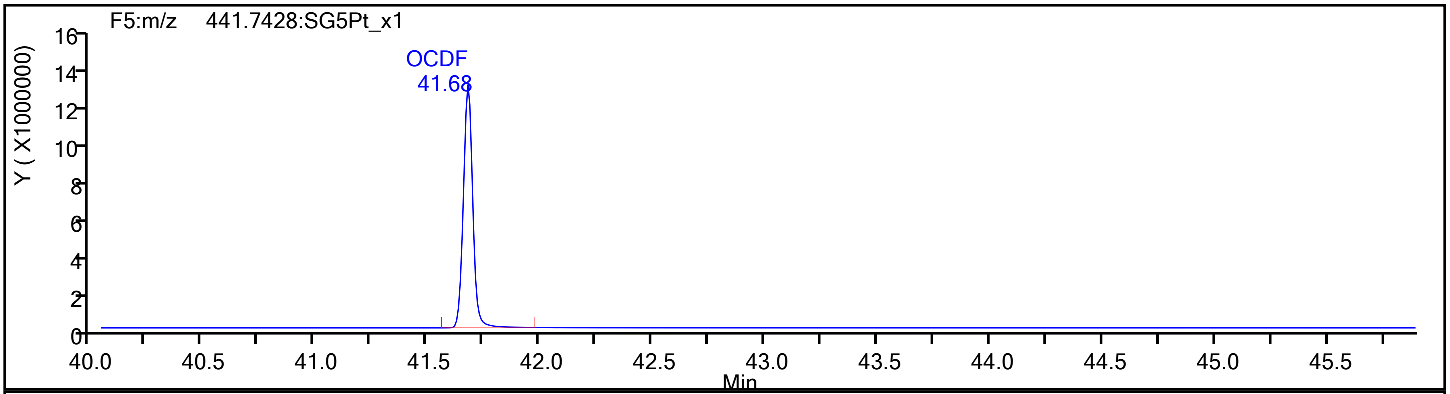

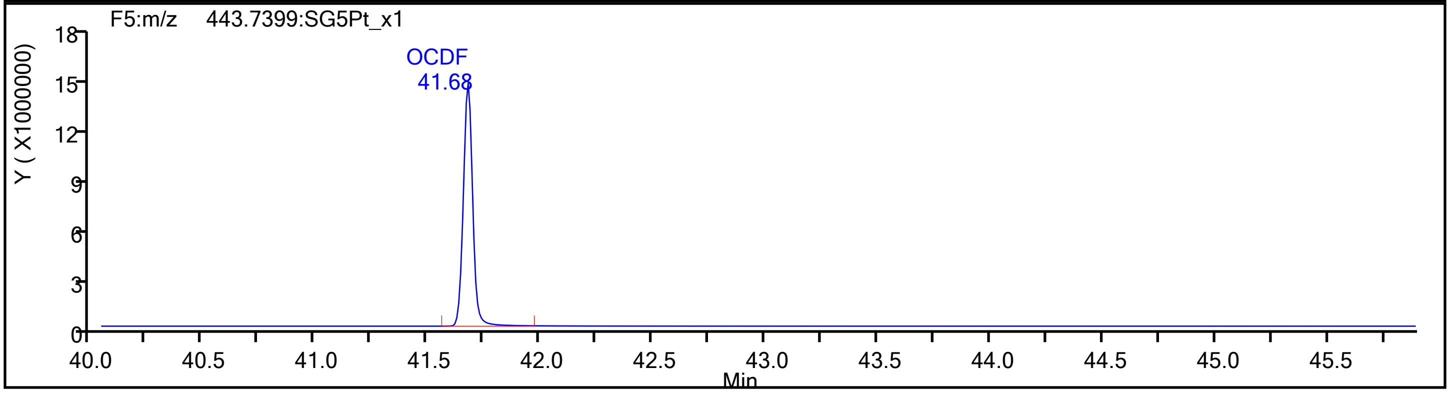

OCDF Standards

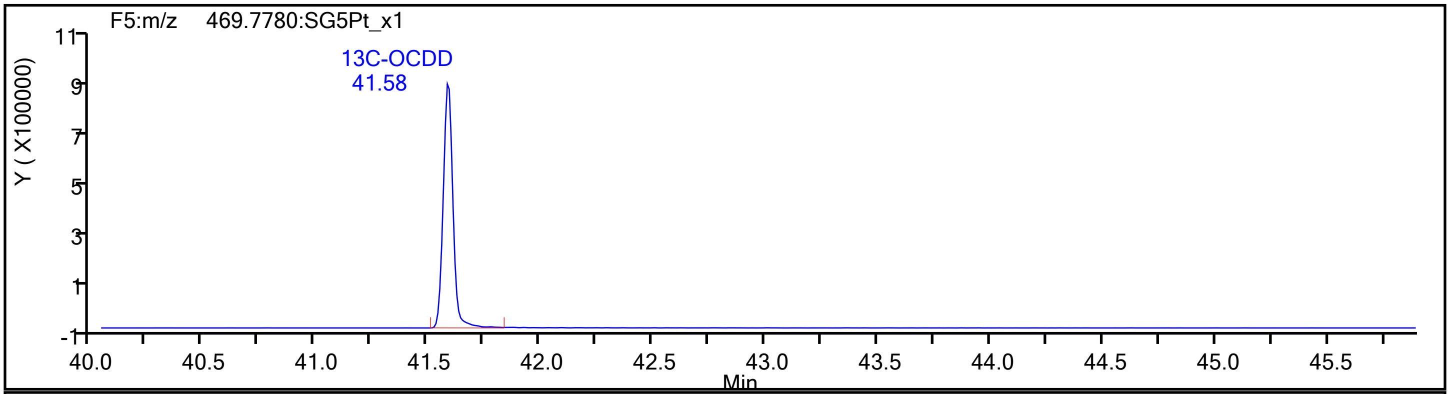

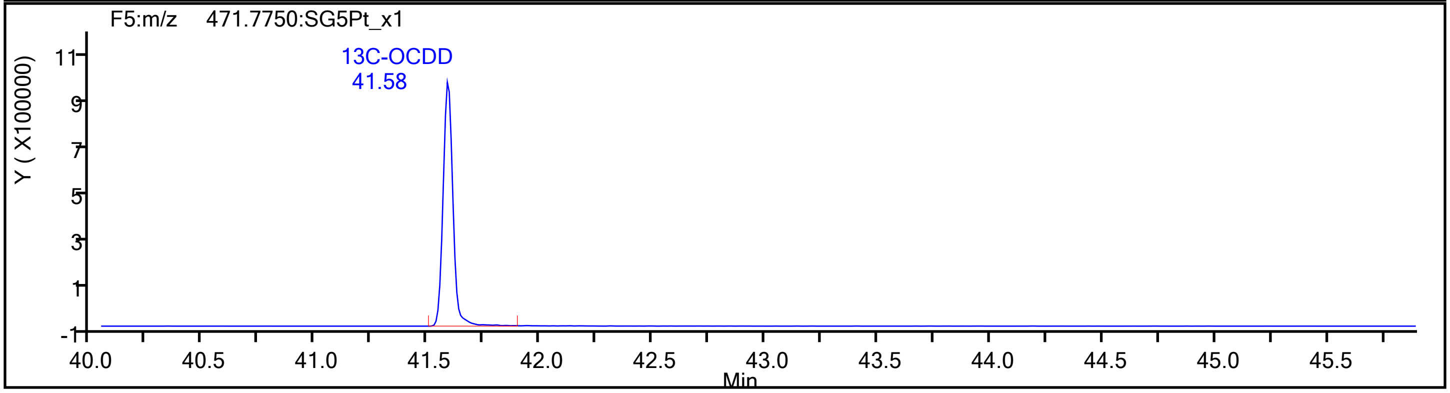

Report Date: 18-Sep-2020 11:00:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
Injection Date:	17-Sep-2020 16:30:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

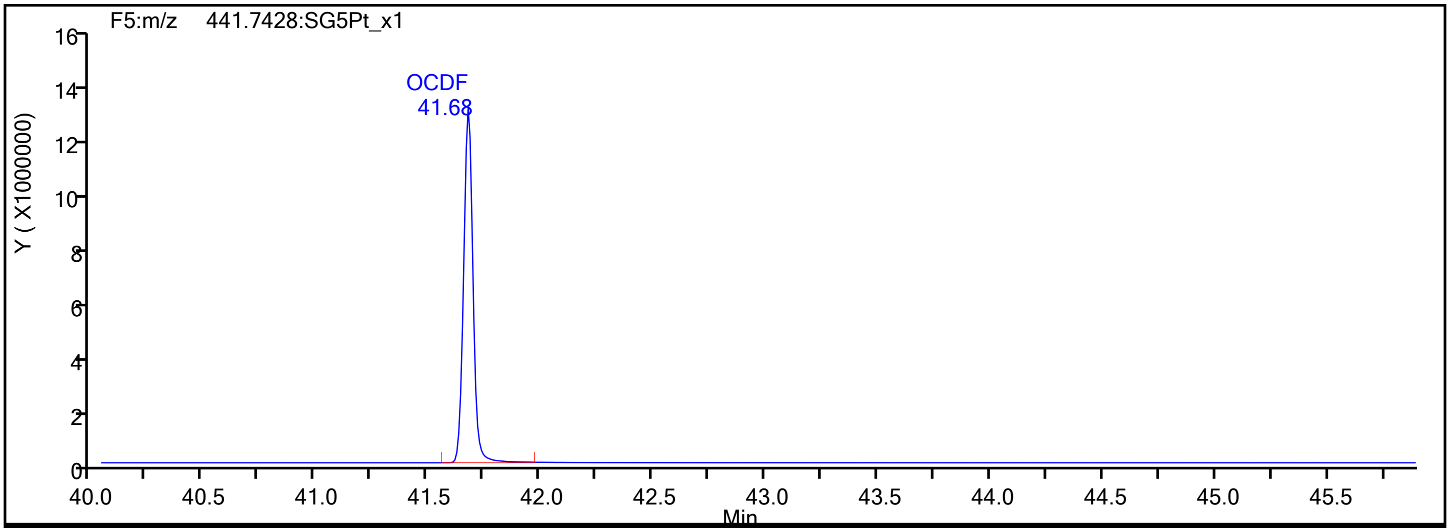

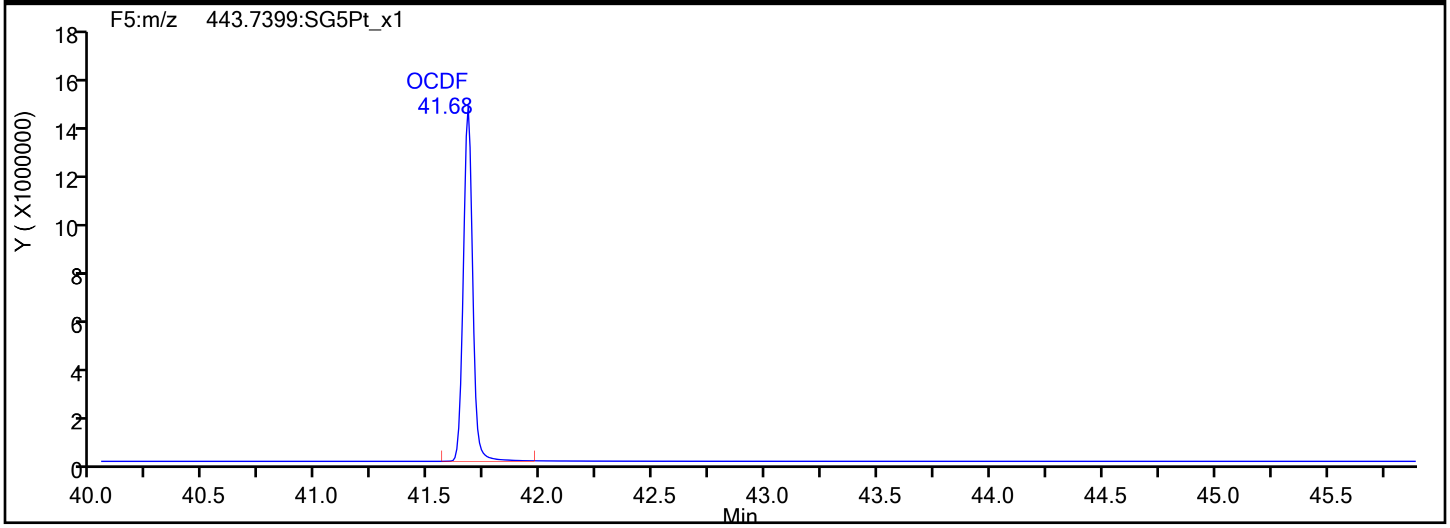

OCDF Interference Mass

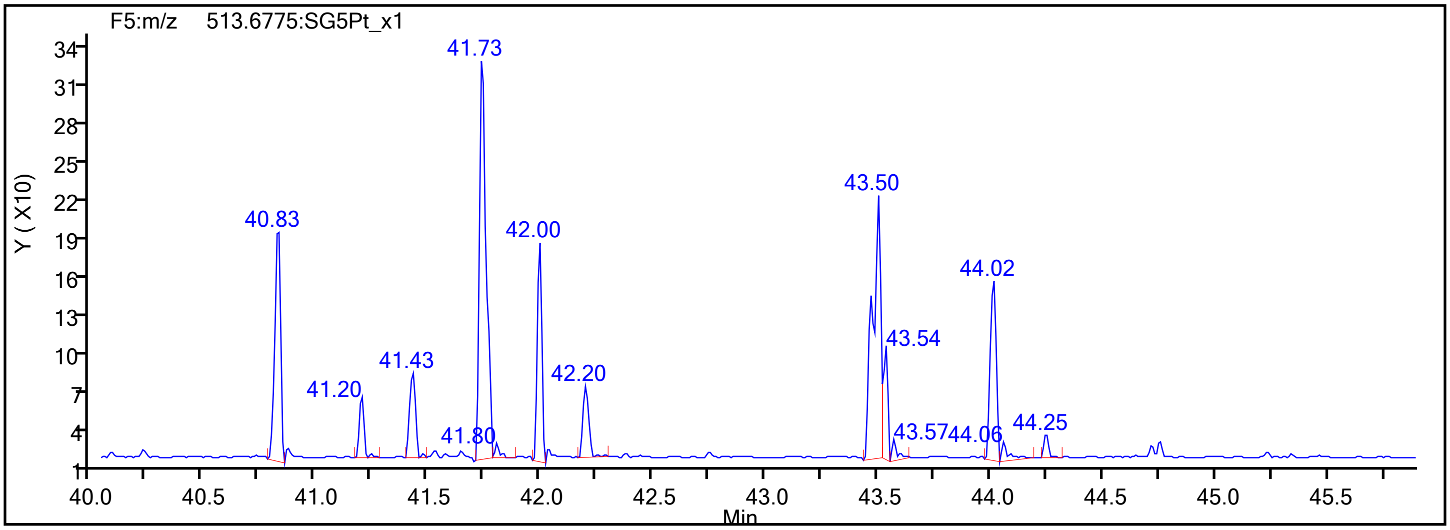

Report Date: 18-Sep-2020 11:00:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d
Injection Date: 17-Sep-2020 16:30:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

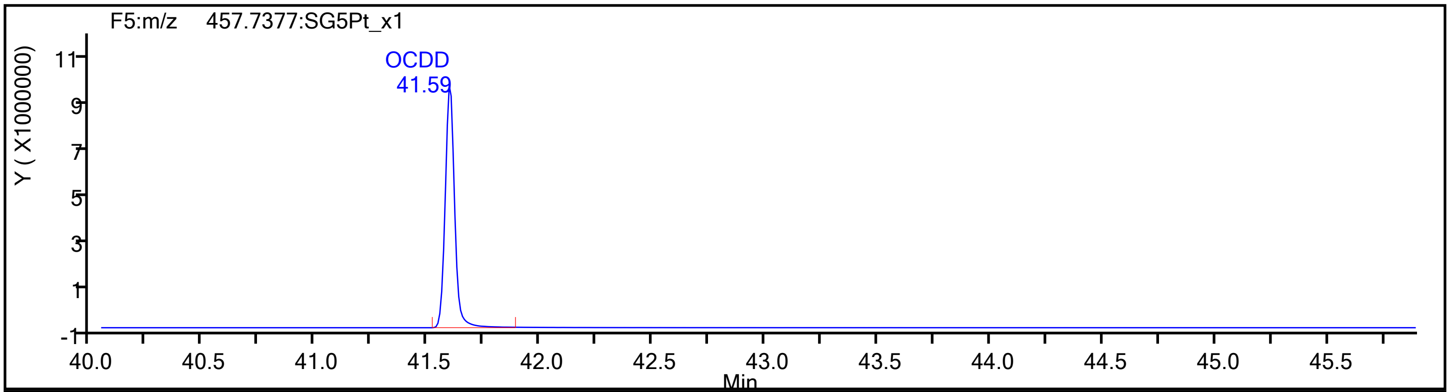

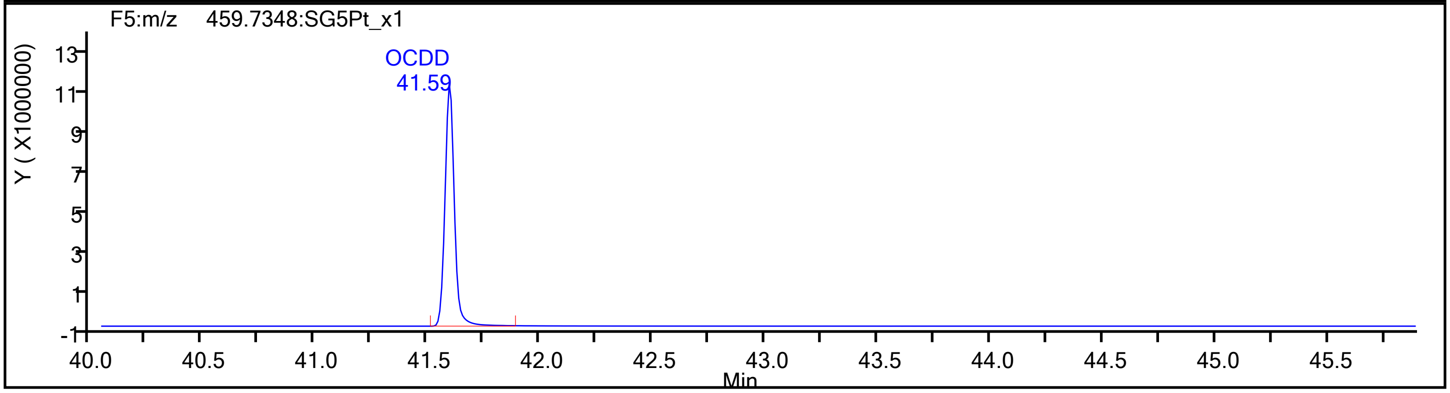

OCDD Standards

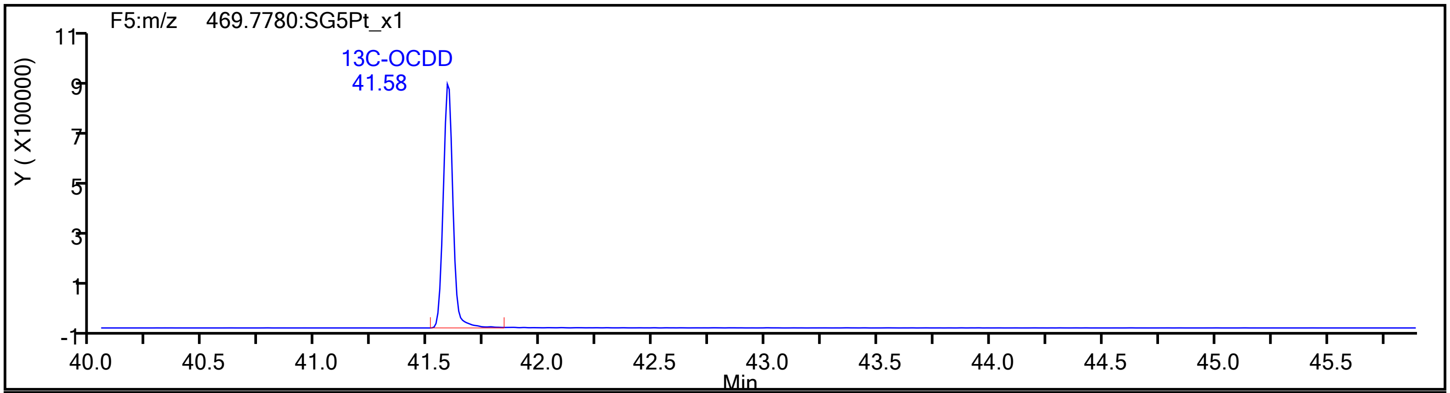

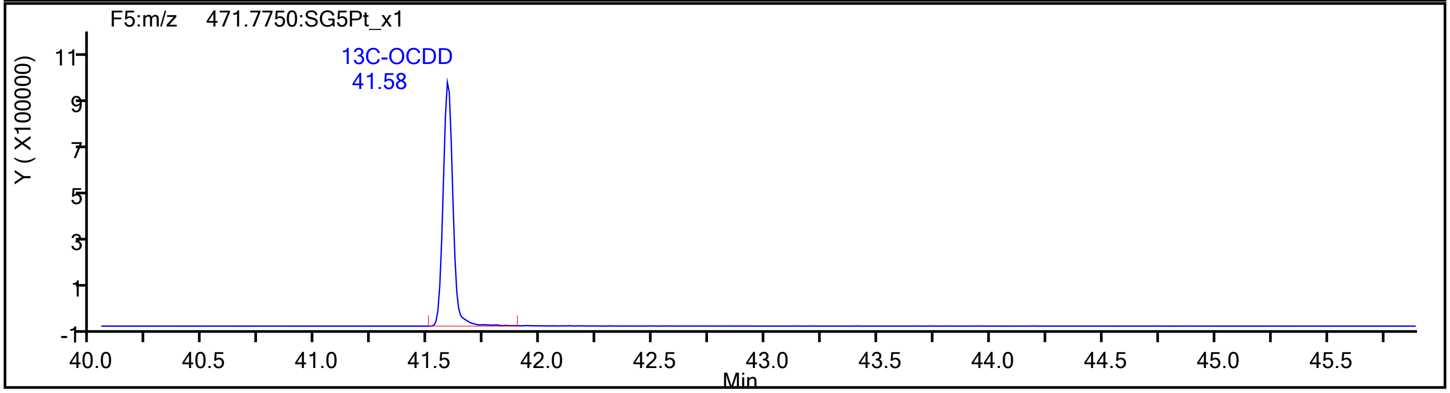

Report Date: 18-Sep-2020 11:00:56 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Injection Date: 17-Sep-2020 16:30:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

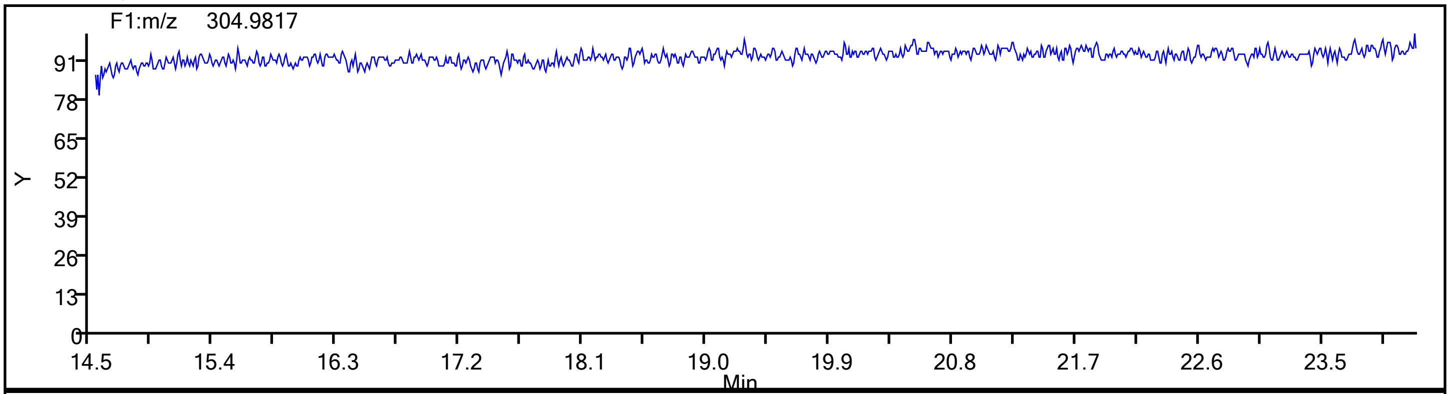

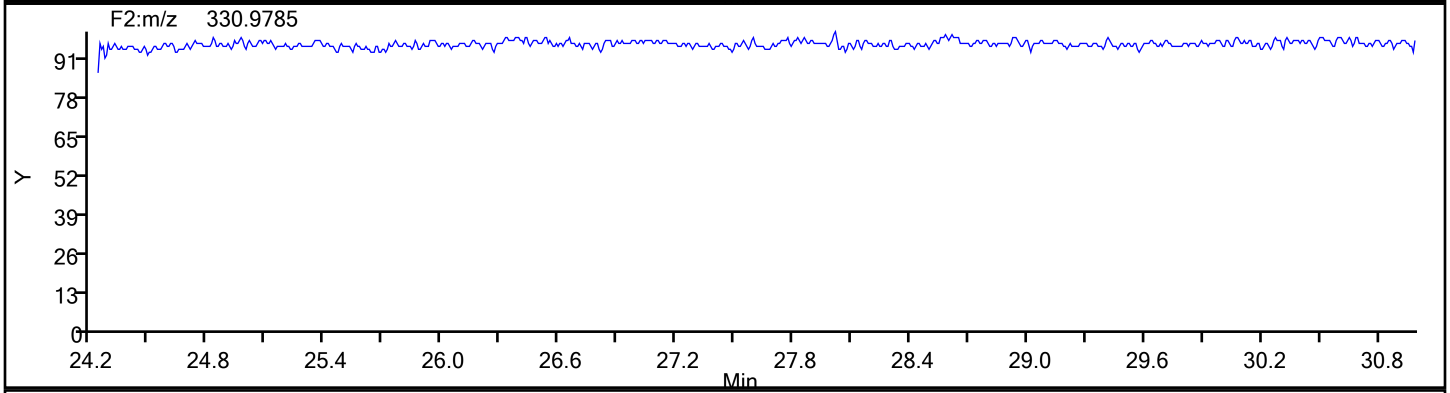

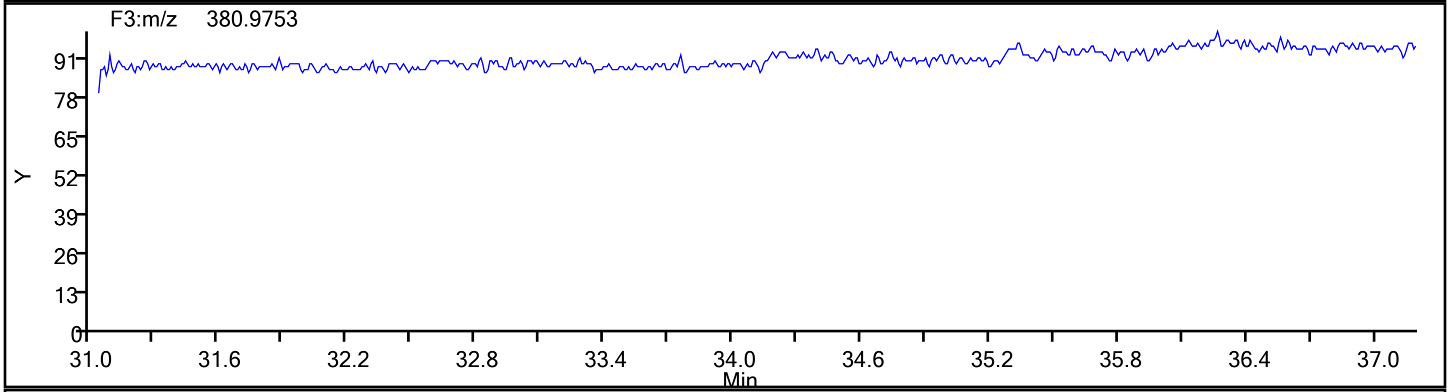

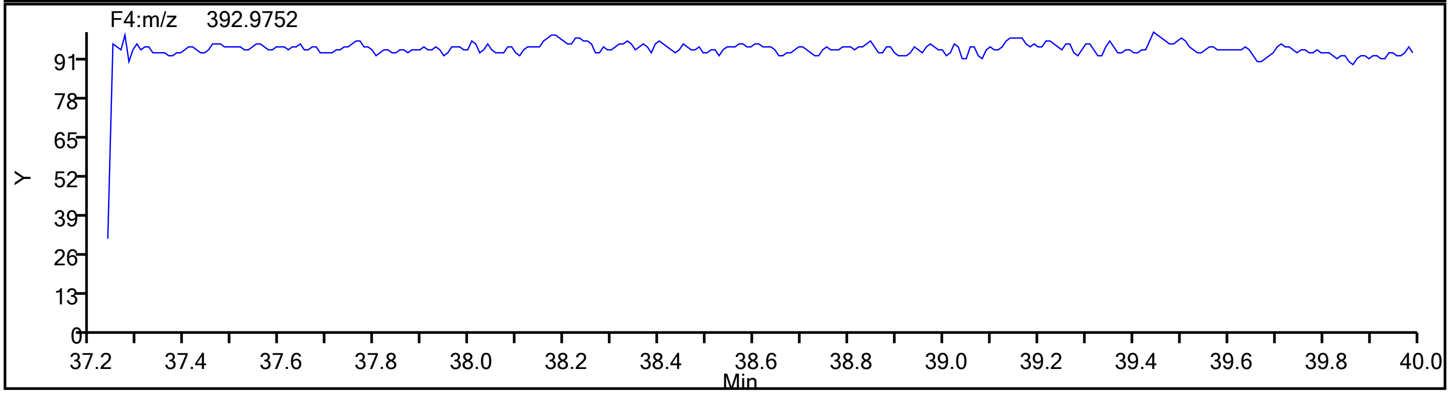

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

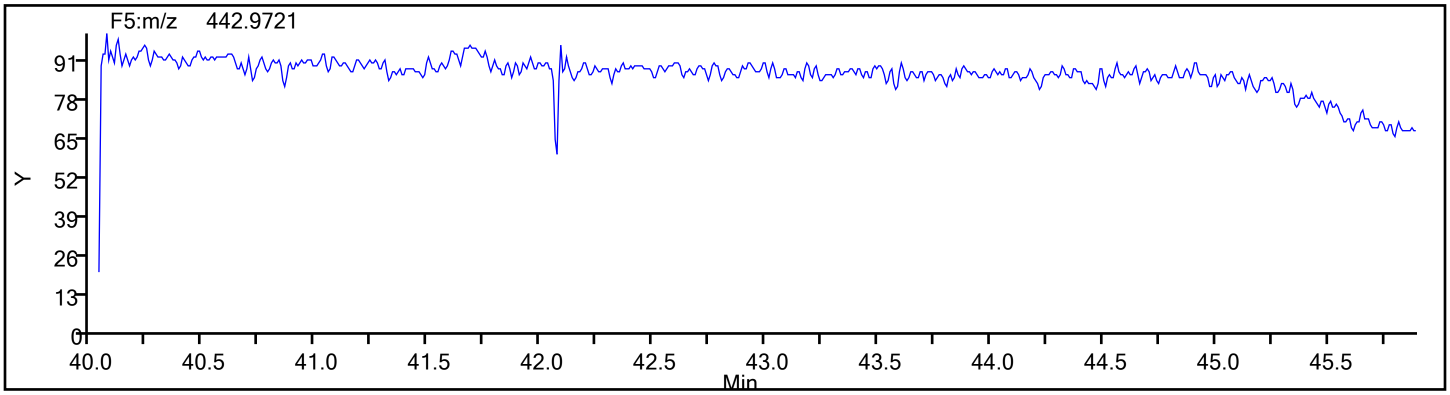

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): CPS 320-398641/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324
H (Peak Height) = 10494443

%R = 16 <= 25
Passed

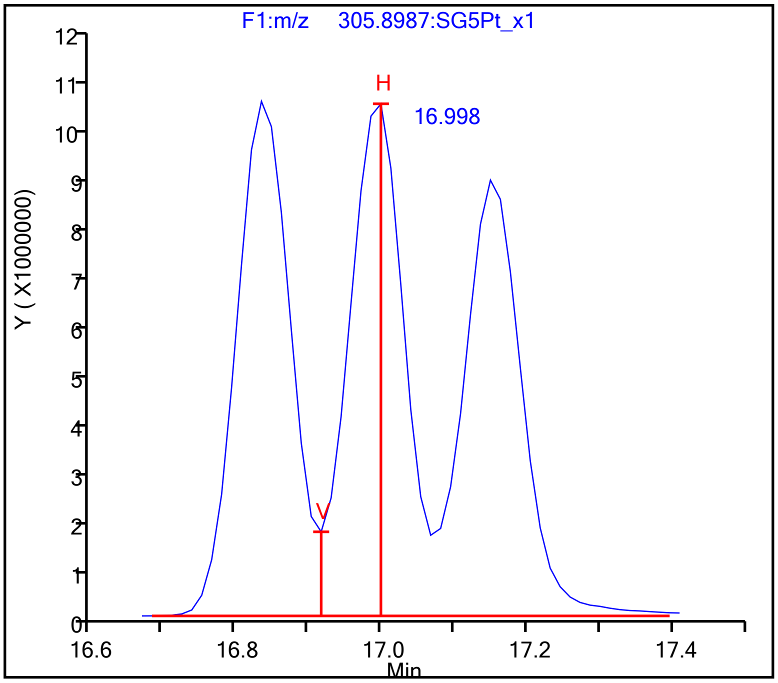

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-413255/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 09/17/2020 11:37

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.53	19

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d				
Injection Date:	17-Sep-2020 11:37:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 27657
H (Peak Height) = 143978

%R = 19 <= 25
Passed

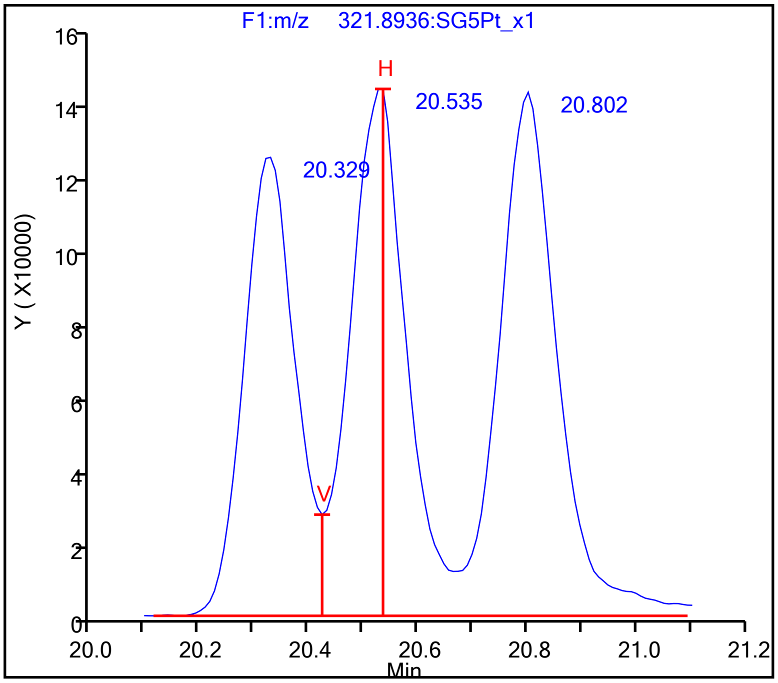

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-419031/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/23/2020 09:18

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	16.14	24

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d				
Injection Date:	23-Sep-2020 09:18:18	Instrument ID:	3D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:			
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 147705
H (Peak Height) = 604136

%R = 24 <= 25
Passed

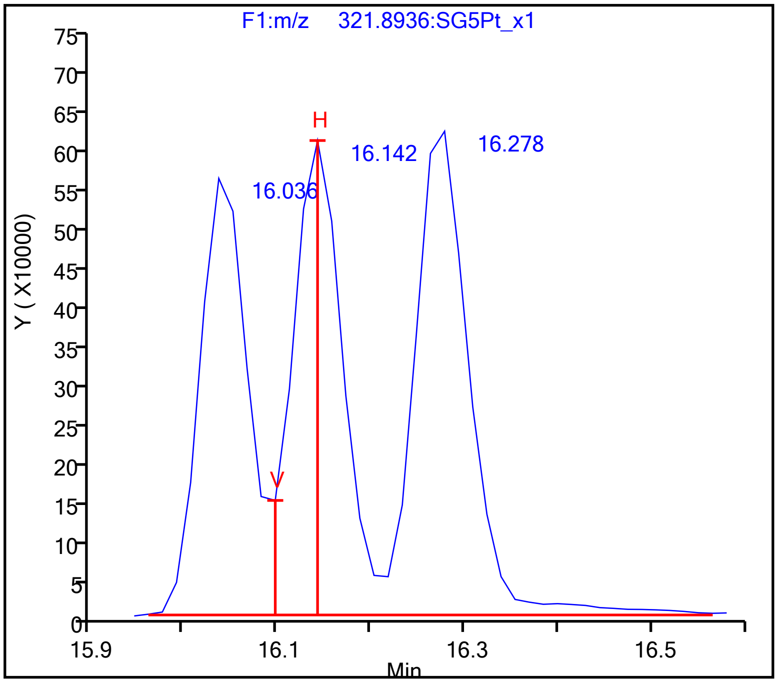

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-420113/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/08/2020 08:53

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	16.13	26

FORM VI 1613B

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Resolution Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Injection Date: 08-Oct-2020 08:53:23 Instrument ID: 3D5
Lims ID: WDM
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Column:
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4539365
H (Peak Height) = 17712796

%R = 26 <= 25
Failed

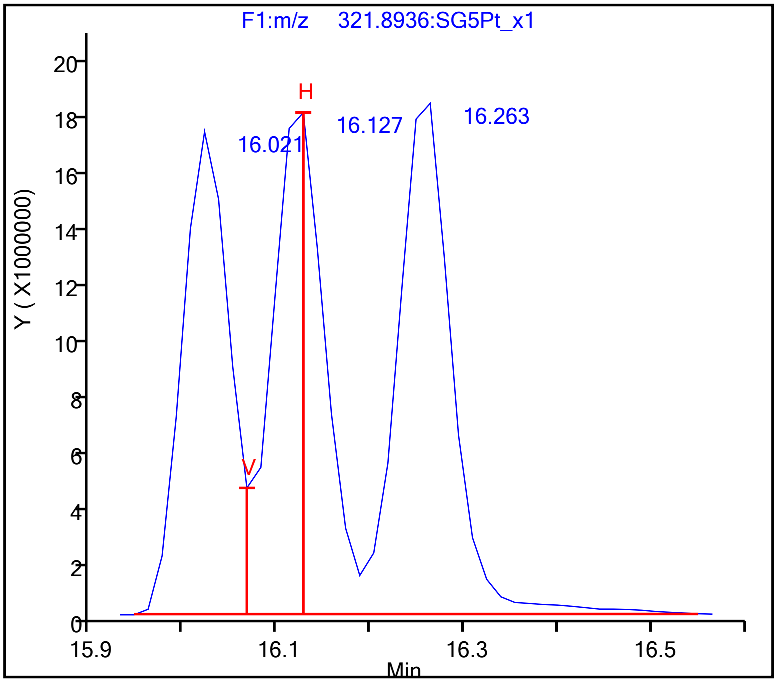

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-420482/8   Instrument ID (1): 3D5

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 10/09/2020 01:04

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	16.10	22

FORM VI 1613B

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d				
Injection Date:	09-Oct-2020 01:04:58	Instrument ID:	3D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	1	Worklist Smp#:	8
Injection Vol:	2.0 ul	Column:			
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4853048

H (Peak Height) = 21916574

%R = 22 <= 25

Passed

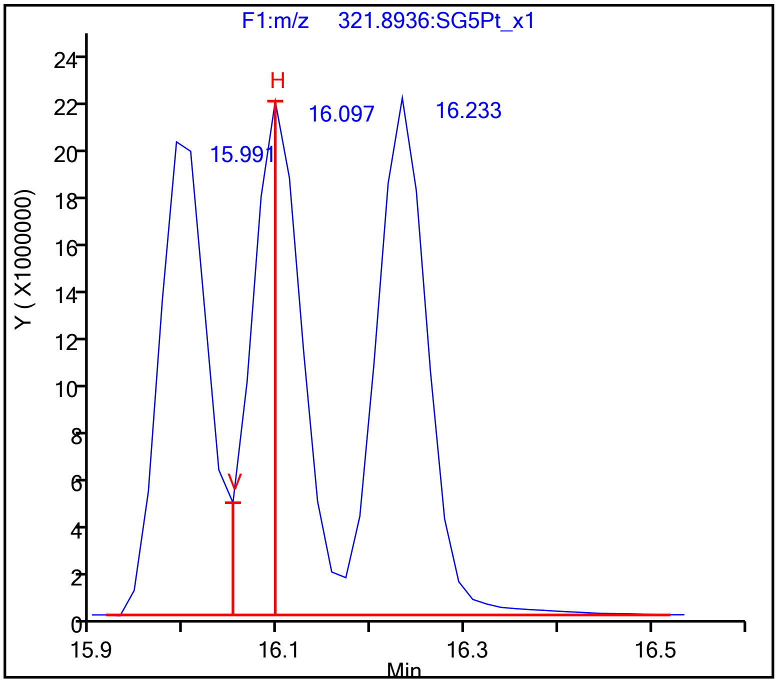

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-420483/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/09/2020 13:04

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	16.11	22

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d				
Injection Date:	09-Oct-2020 13:04:43	Instrument ID:	3D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:			
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2993766
H (Peak Height) = 13522088

%R = 22 <= 25
Passed

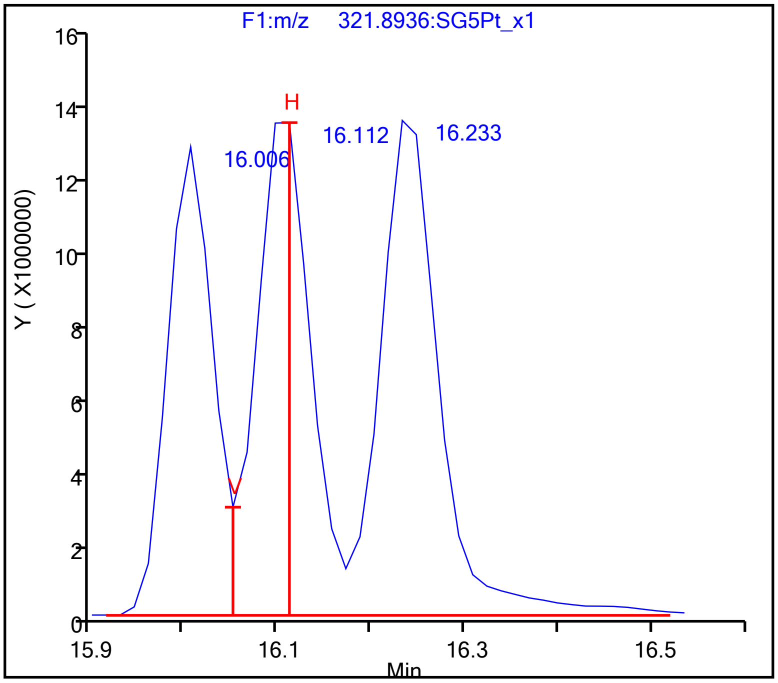

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-420640/15 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/10/2020 06:10

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.10	20

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d				
Injection Date:	10-Oct-2020 06:10:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 19640
H (Peak Height) = 100751

%R = 20 <= 25
Passed

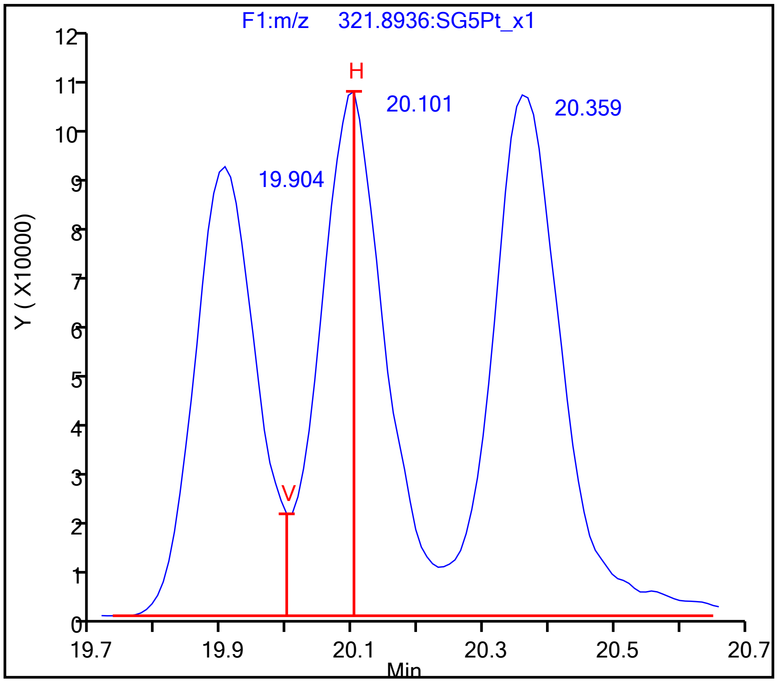

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-421107/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 10/12/2020 13:15

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	20.03	20

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d				
Injection Date:	12-Oct-2020 13:15:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 13206
H (Peak Height) = 65396

%R = 20 <= 25
Passed

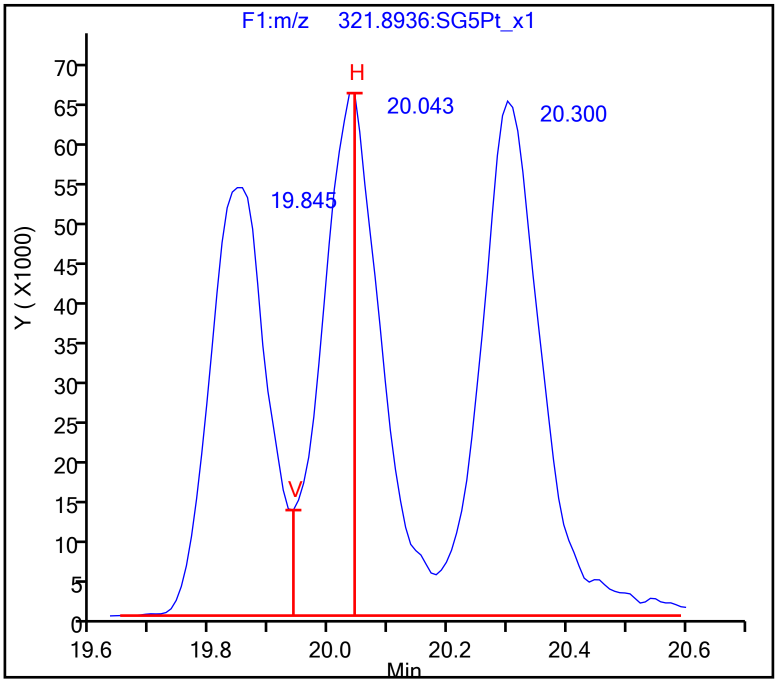

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): CPS 320-421482/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 10/12/2020 15:20

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.11	19

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d				
Injection Date:	12-Oct-2020 15:20:29	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1545349

H (Peak Height) = 8301456

%R = 19 <= 25

Passed

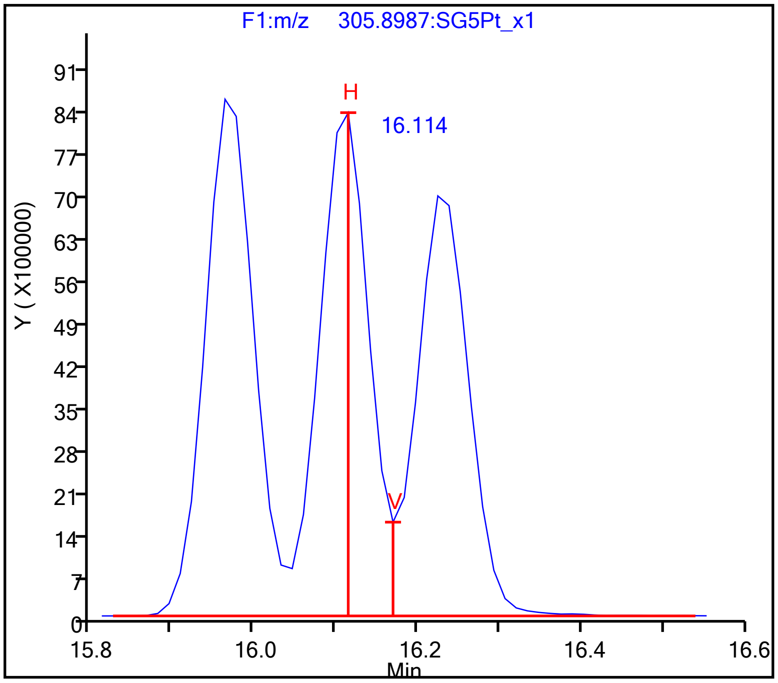

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d				
Injection Date:	12-Oct-2020 15:20:29	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): CPS 320-421876/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 10/13/2020 19:42

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.10	20

Report Date: 14-Oct-2020 17:38:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d				
Injection Date:	13-Oct-2020 19:42:32	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1918303
H (Peak Height) = 9485254

%R = 20 <= 25
Passed

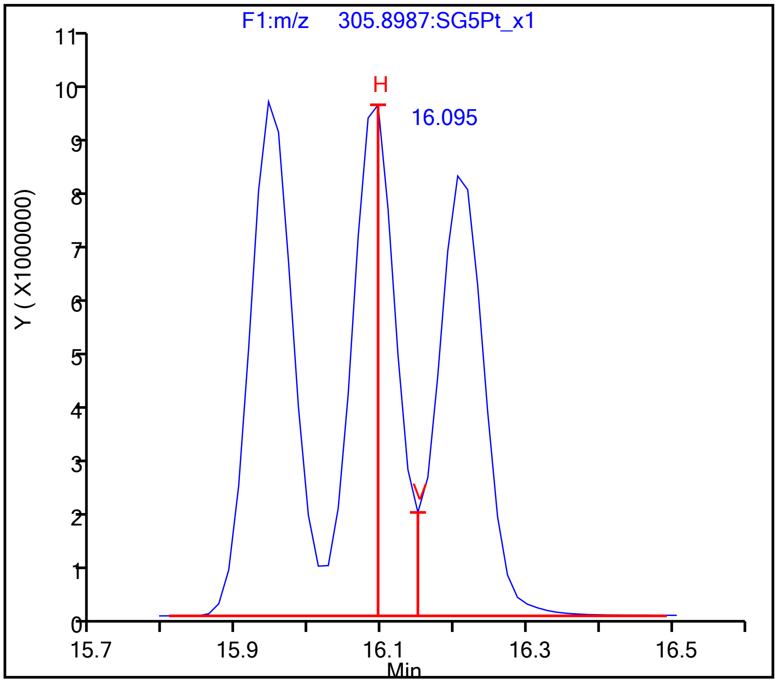

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d				
Injection Date:	13-Oct-2020 19:42:32	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): CPS 320-422080/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 10/14/2020 11:21

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.08	21

Report Date: 15-Oct-2020 13:53:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d				
Injection Date:	14-Oct-2020 11:21:45	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1855486
H (Peak Height) = 8917400

%R = 21 <= 25
Passed

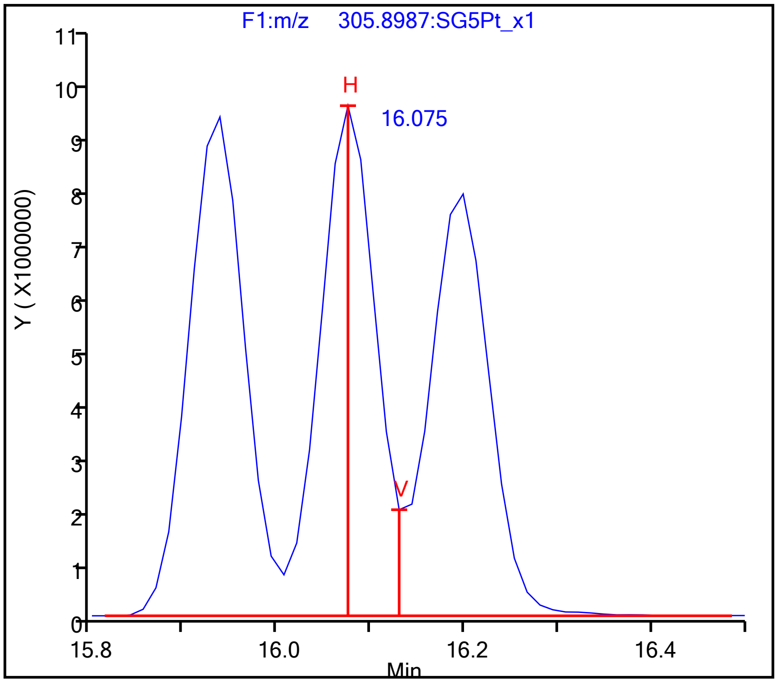

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d				
Injection Date:	14-Oct-2020 11:21:45	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-422239/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/15/2020 12:21

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.97	19

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d				
Injection Date:	15-Oct-2020 12:21:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 15236
H (Peak Height) = 79084

%R = 19 <= 25
Passed

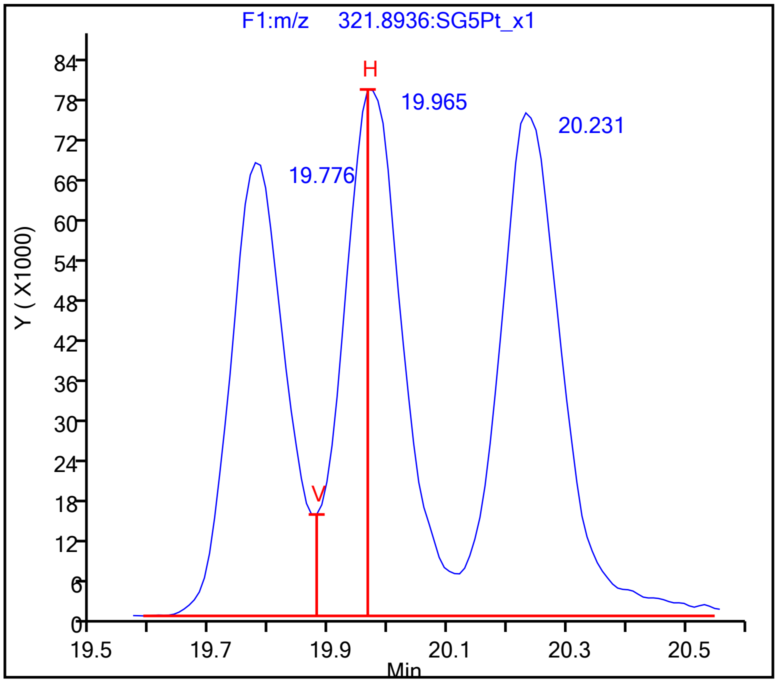

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID (1): WDM 320-422778/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/16/2020 17:42

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.96	21

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d				
Injection Date:	16-Oct-2020 17:42:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 19072
H (Peak Height) = 92729

%R = 21 <= 25
Passed

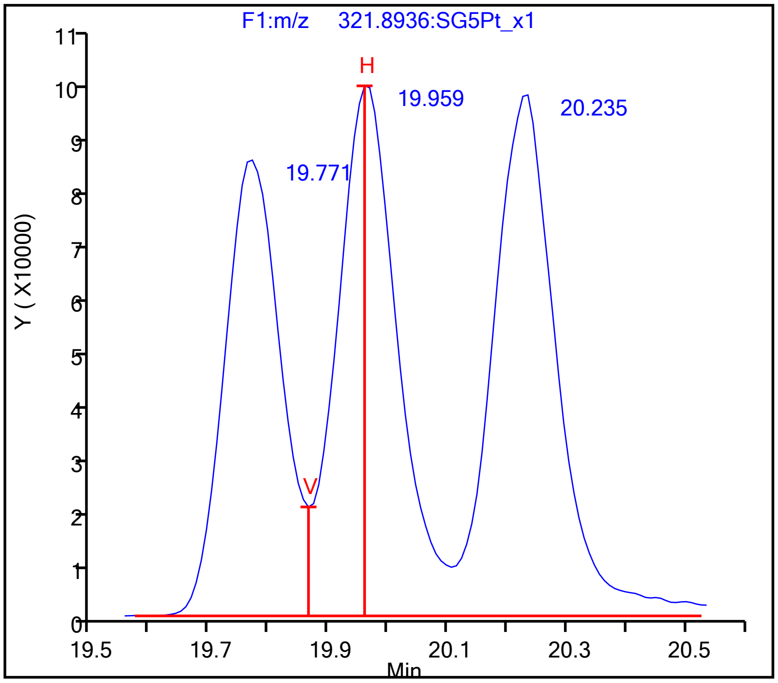

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Lab Sample ID: ICV 320-398641/9	Calibration Date: 07/25/2020 03:40
Instrument ID: 11D2	Calib Start Date: 07/24/2020 23:50
GC Column: DB-225 ID: 0.32(mm)	Calib End Date: 07/25/2020 02:23
Lab File ID: 24JL2011D2_009.d	Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

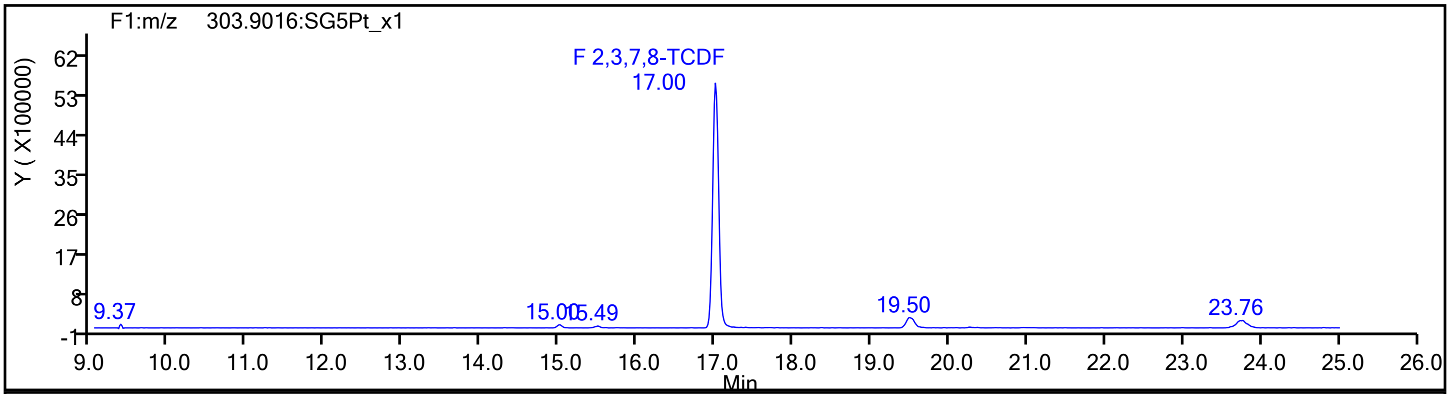

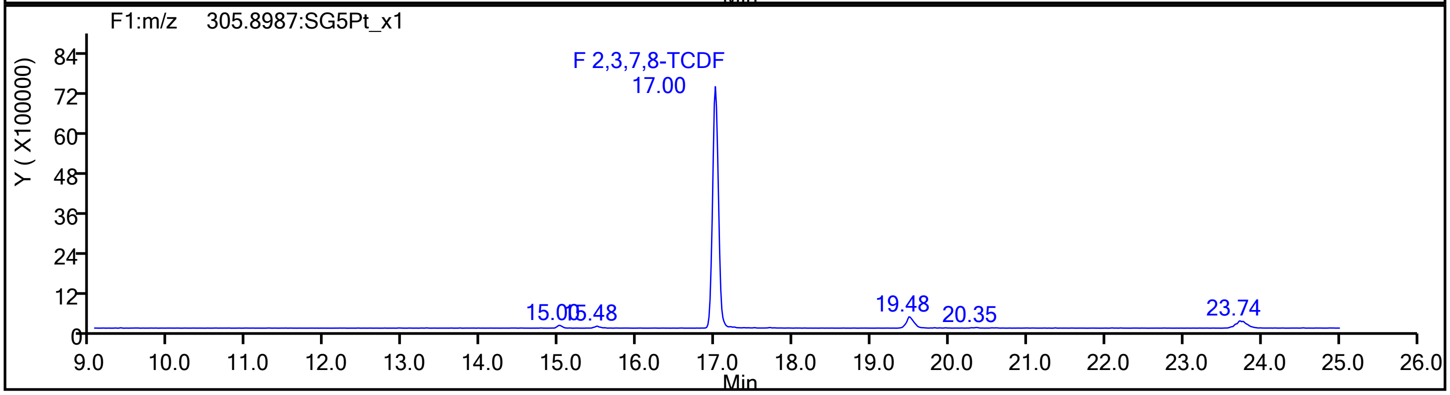

TCDF Standards

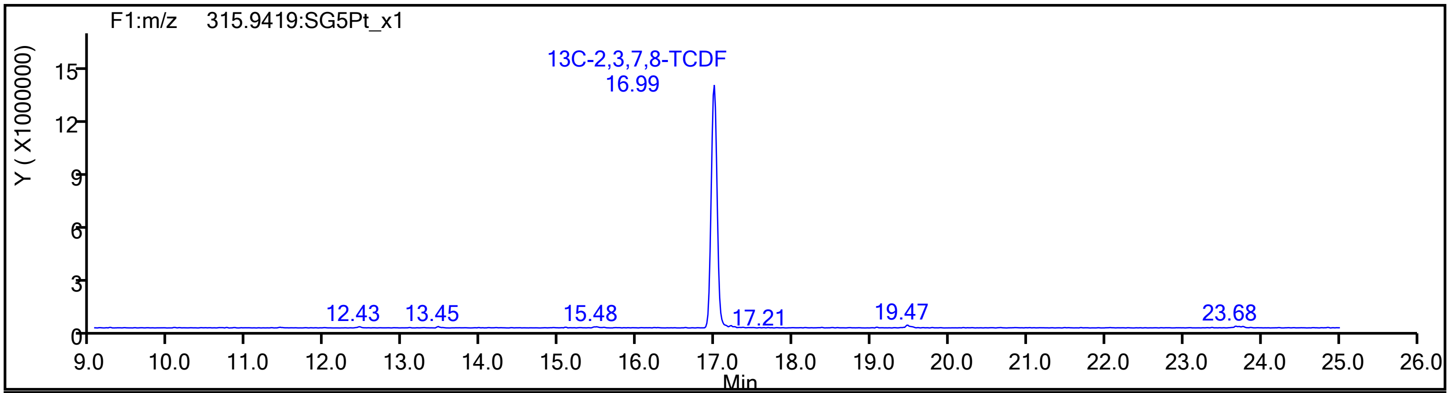

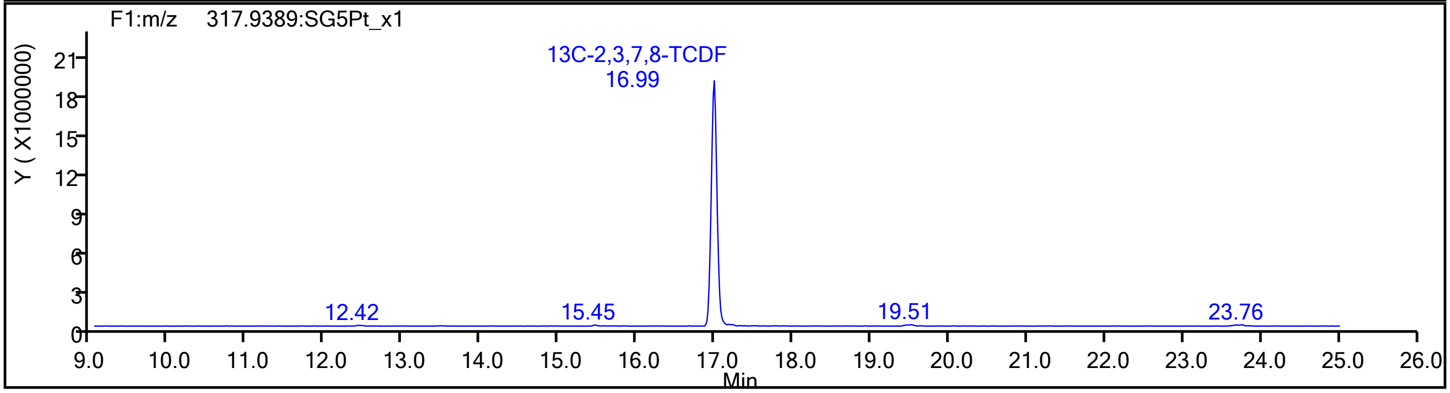

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d

Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

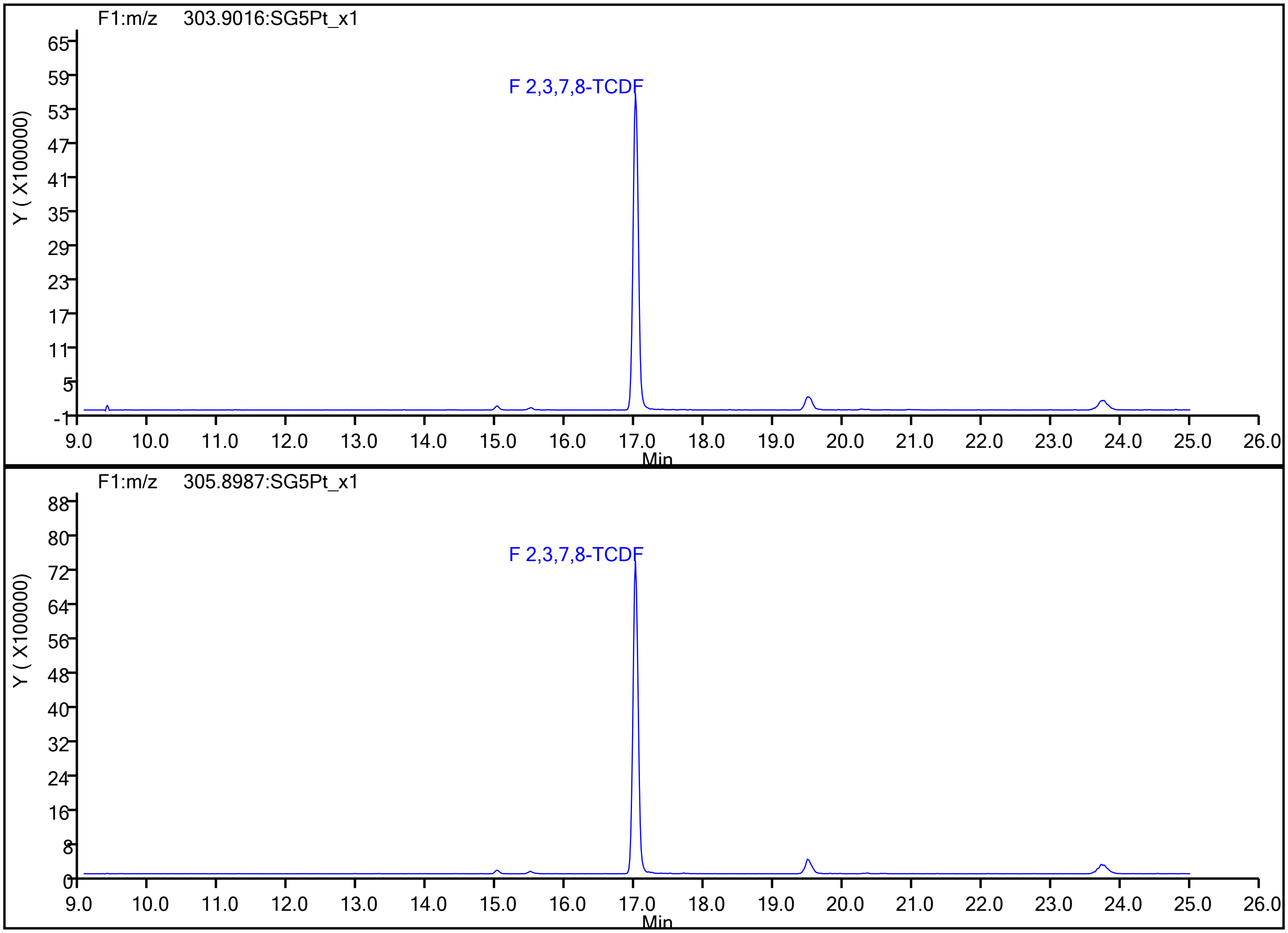

TCDF Interference Mass

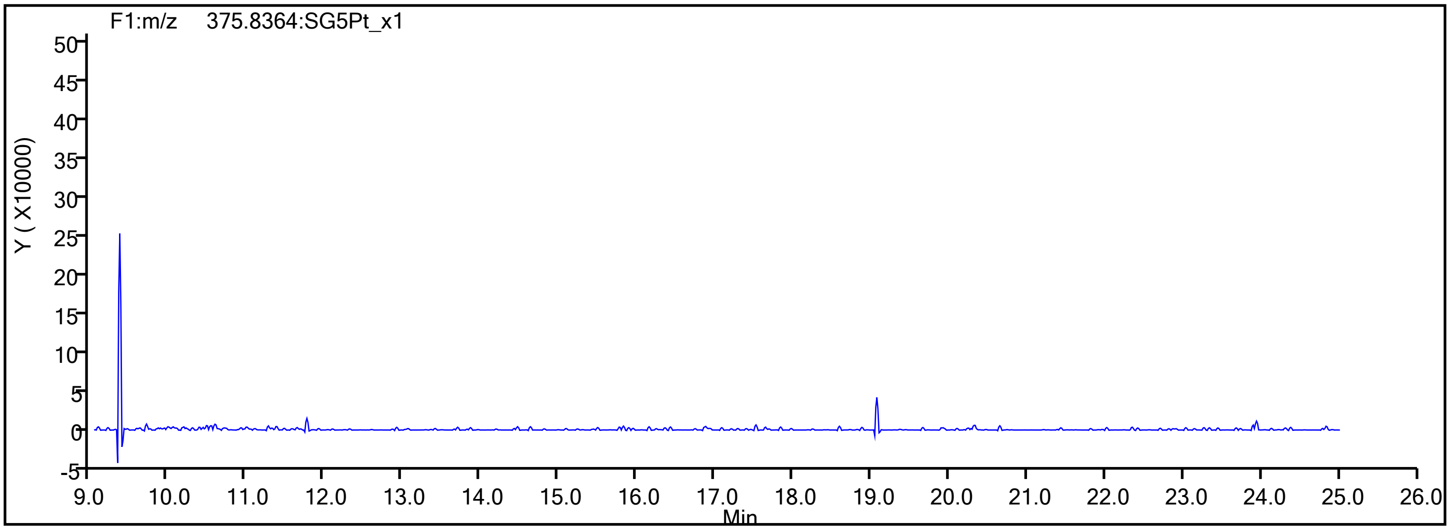

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

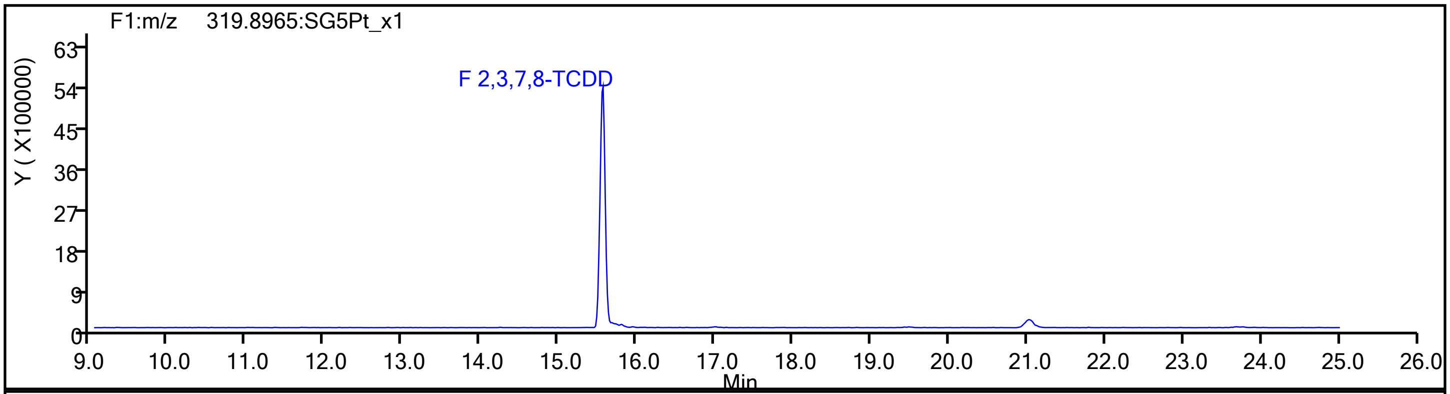

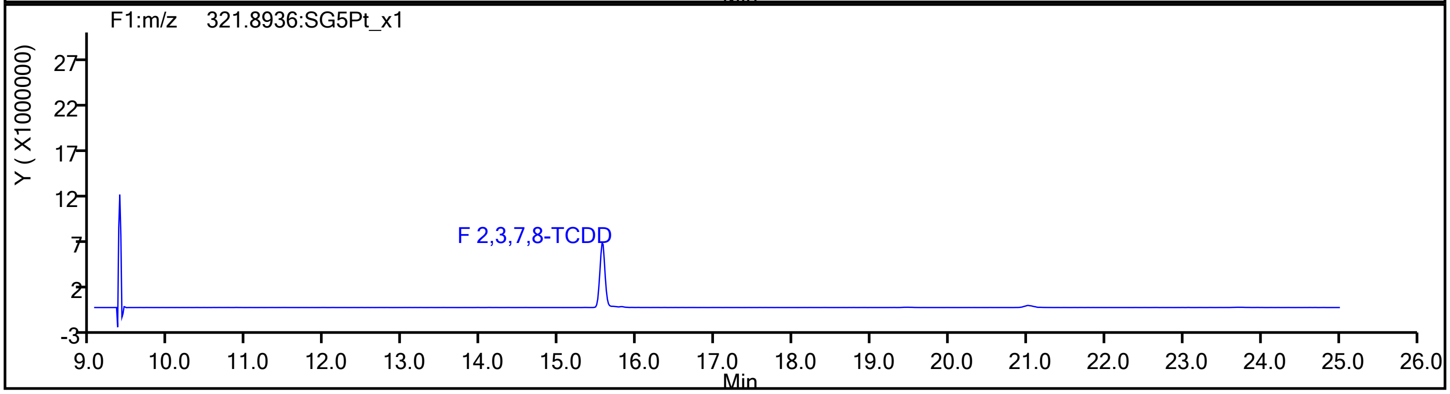

TCDD Standards

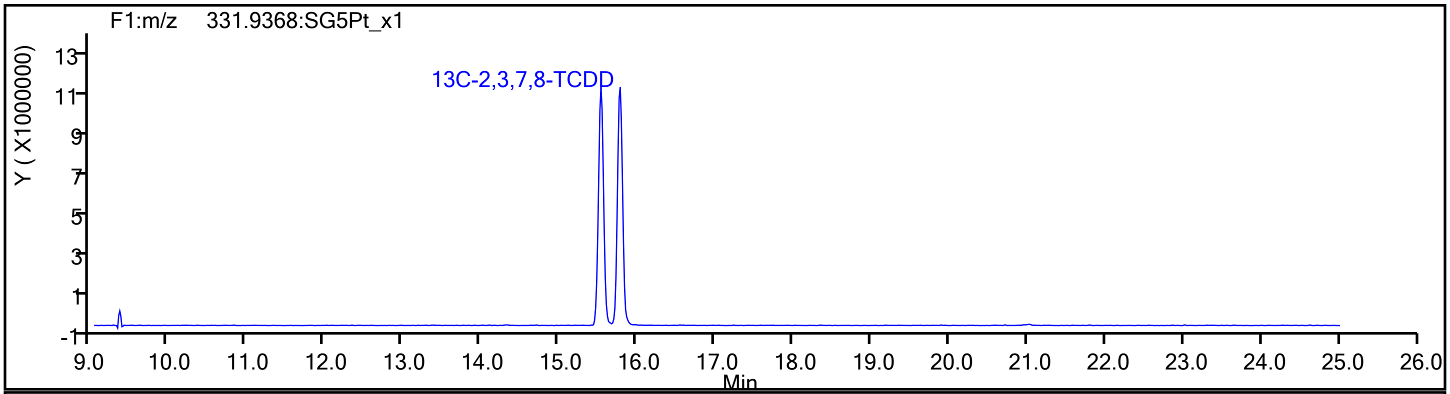

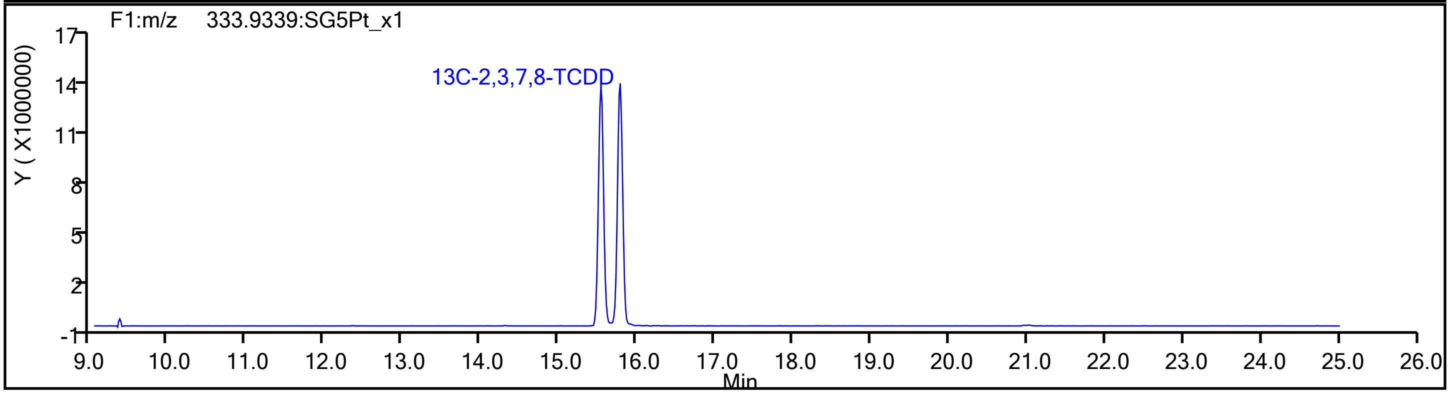

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

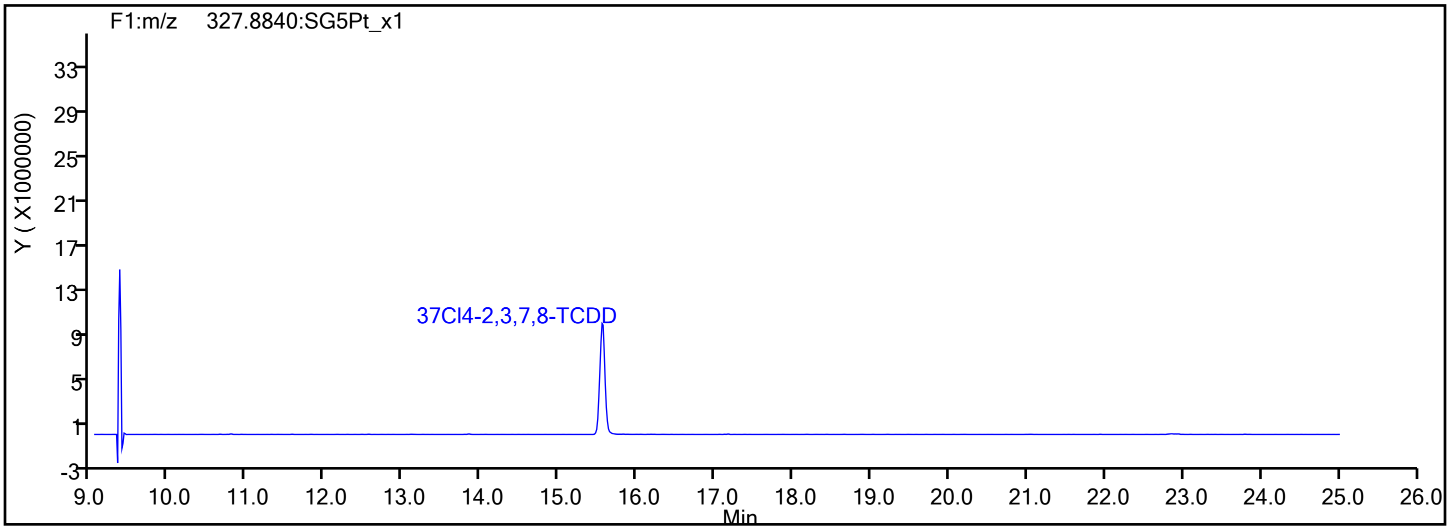

37Cl4-TCDD Standards

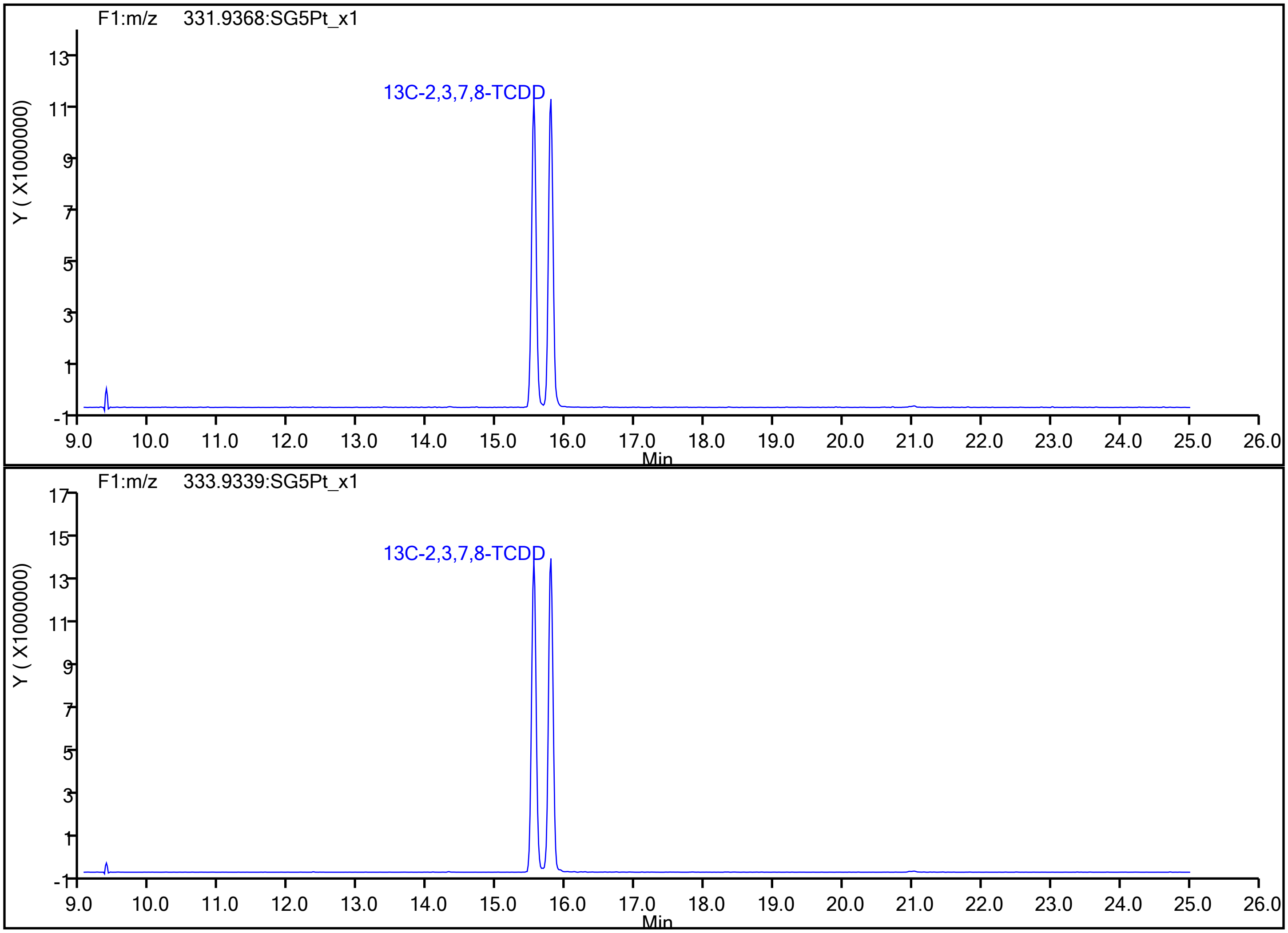

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

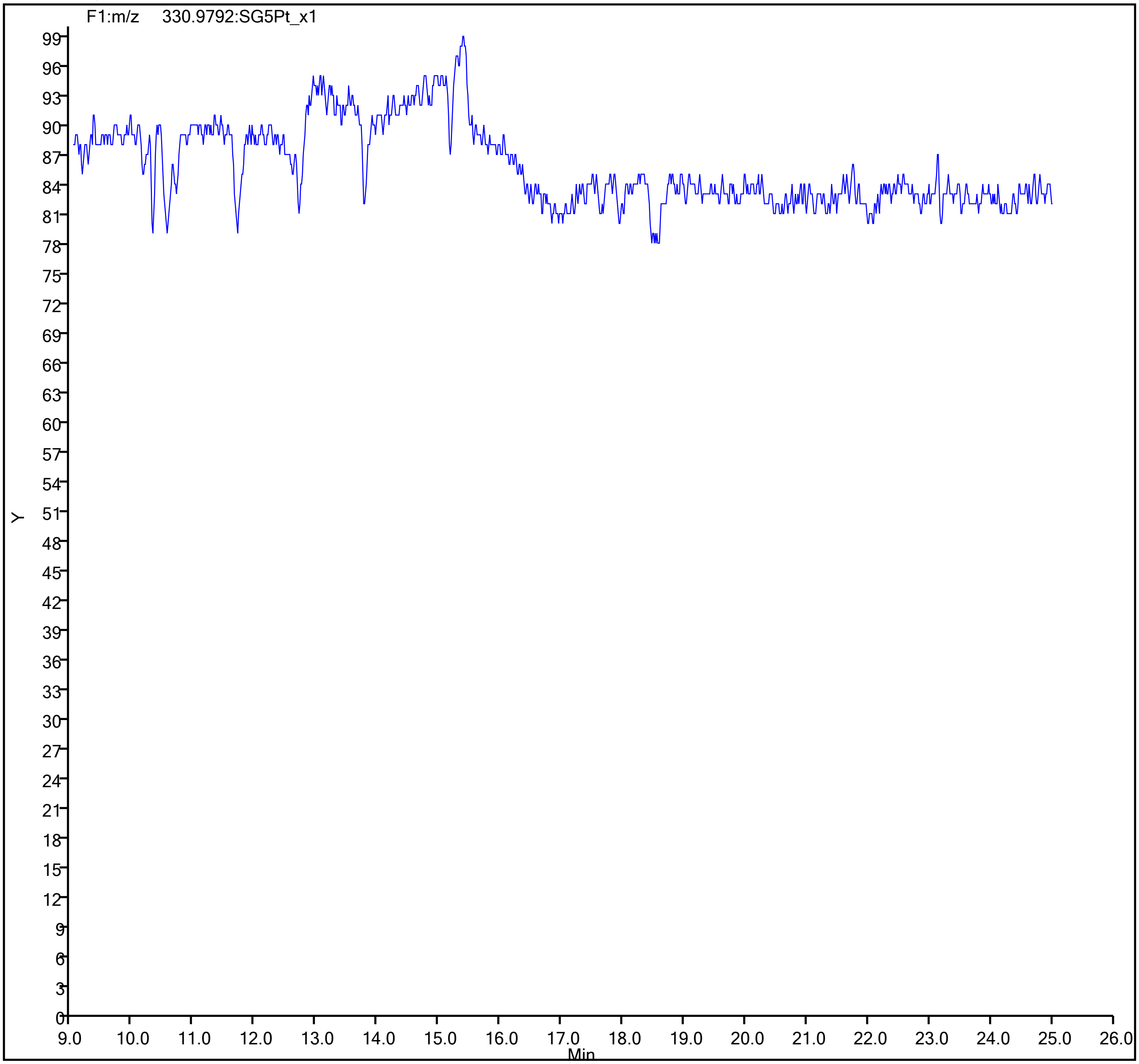

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-421482/2 Calibration Date: 10/12/2020 15:58

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 12OC20A11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.127		8.79	10.0	88	78-129
2,3,7,8-TCDF	AveID	0.9943	0.9330		9.38	10.0	94	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	1.007		102	100	102	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.579		101	100	101	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.025		10.3	10.0	103	79-127

FORM VII 1613B

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
12OC20A11D2	1	CPS 101220A	CPS HRDXNCP_00042				1.00000	
12OC20A11D2	2	CCV 101220B	CCV CS-4 HRDXNL4_00094				1.00000	
12OC20A11D2	3	SB 101220B	SB Solvent Blank C-14				1.00000	
12OC20A11D2	4	320-414968	320-64887-A-6-A	20	1613B/Solid	D183	10.00000	g
12OC20A11D2	5	320-414968	320-64887-A-4-A	20	1613B/Solid		10.00000	g
12OC20A11D2	6	320-417971	320-65130-A-19-A	20	1613B/Water	D186	1.00000	L
12OC20A11D2	7	320-417971	320-65130-A-17-A	20	1613B/Water		1.00000	L
12OC20A11D2	8	320-417971	320-65130-A-20-A	20	1613B/Water		1.00000	L
12OC20A11D2	9	320-417971	320-65130-A-21-A	20	1613B/Water		1.00000	L
12OC20A11D2	10	320-417971	320-65130-A-15-A	20	1613B/Water		1.00000	L
12OC20A11D2	11	320-417971	320-65130-A-16-A	20	1613B/Water		1.00000	L
12OC20A11D2	12	320-417971	320-65130-A-18-A	20	1613B/Water		1.00000	L
12OC20A11D2	13	320-417971	320-65130-A-22-A	20	1613B/Water		1.00000	L
12OC20A11D2	14	320-417971	320-65130-A-14-A (10X)	20	1613B/Water		1.00000	L
12OC20A11D2	15	SB 101220BC	SB Solvent Blank C-14				1.00000	
12OC20A11D2	16						1.00000	
12OC20A11D2	17						1.00000	
12OC20A11D2	18						1.00000	
12OC20A11D2	19						1.00000	
12OC20A11D2	20						1.00000	
12OC20A11D2	21						1.00000	
12OC20A11D2	22						1.00000	
12OC20A11D2	23						1.00000	
12OC20A11D2	24						1.00000	
12OC20A11D2	25		KSS 10-12-20				1.00000	
12OC20A11D2	26						1.00000	

logfile checked
10-13-20 ALM

Peak Locate Examination:12-OCT-2020:15:19 File:12OC20A11D2
Experiment:DB225RES Function:1 Reference:PFK

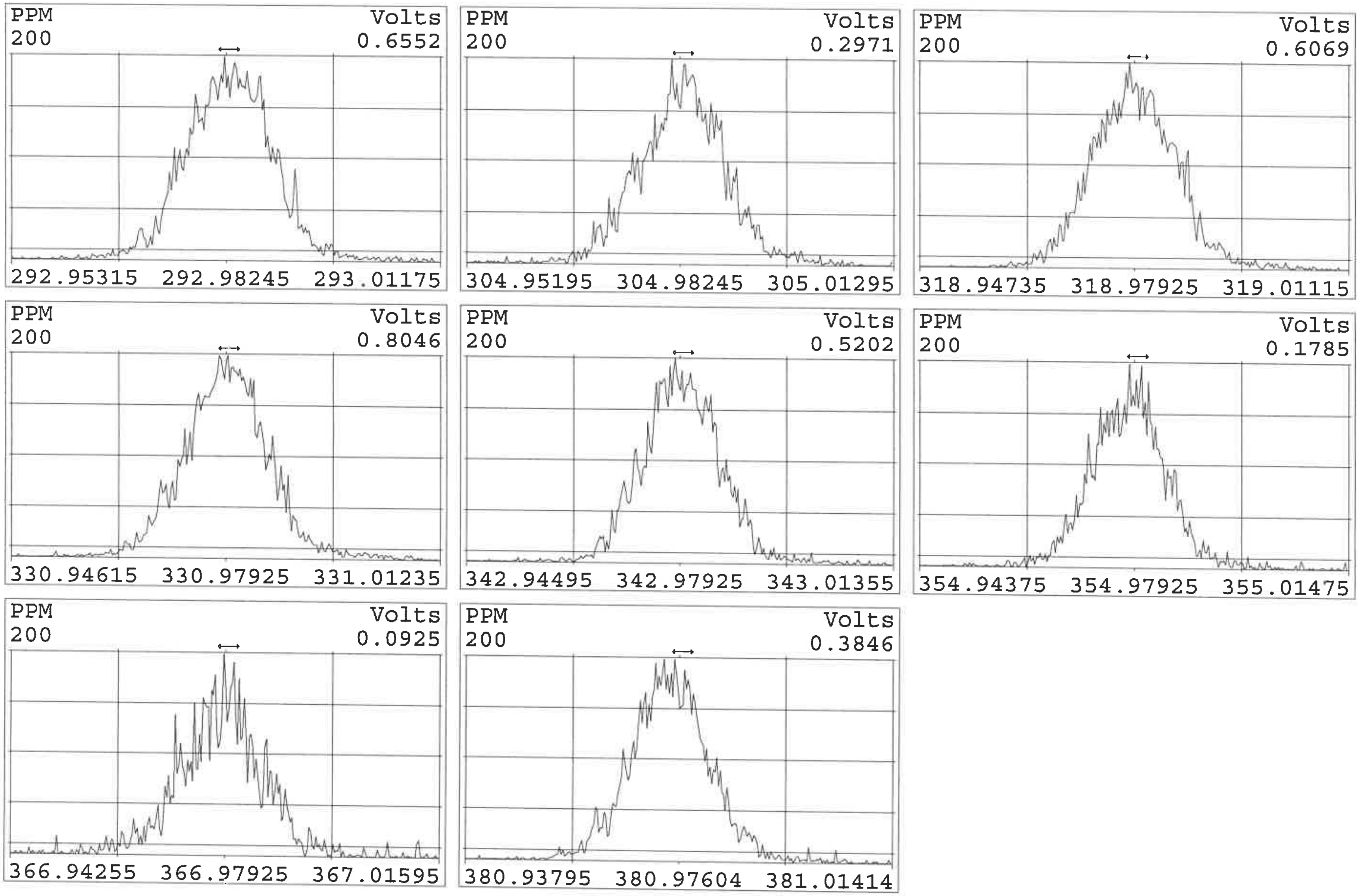

Peak Locate Examination:13-OCT-2020:01:16 File:RESCHK12OC20A11D2
Experiment:DB225RES Function:1 Reference:PFK

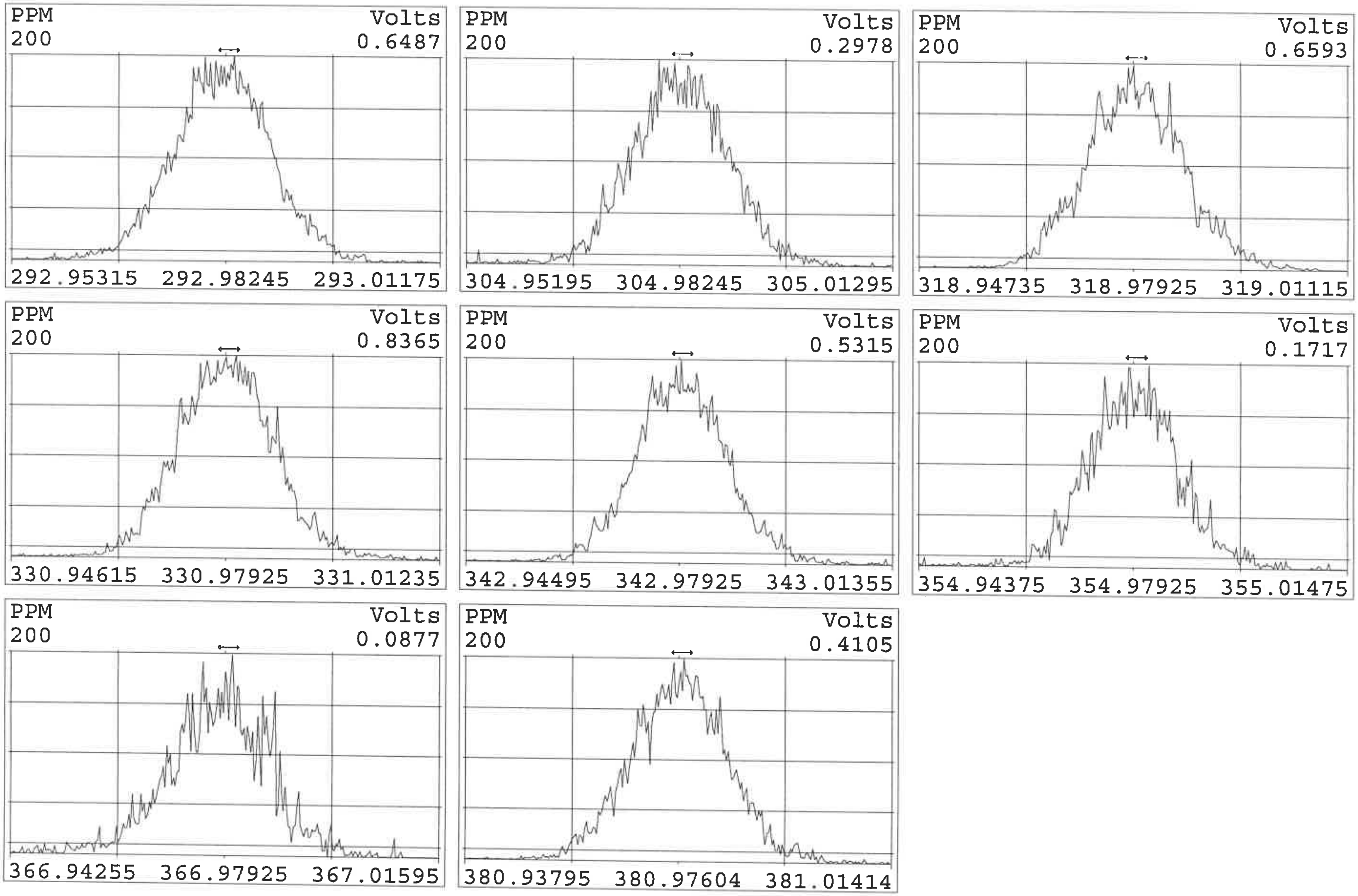

Report Date: 14-Oct-2020 12:17:31 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Oct-2020 15:58:47 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 12:17:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:21:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.967	80952316	0.80	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.092	127797375	0.80	1.5708	100.5	100.5	0.3719	0.3719	101	
2,3,7,8-TCDF	16.120	11923749	0.79	0.9943	9.384	9.384	0.0458	0.0458	93.84	
D 13C-2,3,7,8-TCDD	14.720	81538774	0.82	0.9834	102.4	102.4	0.2518	0.2518	102	
2,3,7,8-TCDD	14.734	9188923	0.75	1.2822	8.789	8.789	0.0899	0.0899	87.89	
$ 37Cl4-2,3,7,8-TCDD	14.734	8299977		0.9945	10.3	10.3	0.0654	0.0654	103	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 12:17:31 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	12-Oct-2020 15:58:47	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 12:17:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1633				

First Level Reviewer: shardaa Date: 13-Oct-2020 18:21:47

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.967	14.967	0		36090256	8793186	12072	30180	728		
333.9339	14.967	14.967	0		44862060	11101771	7635	19087	1454	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.092	16.092	0	1.075	56740790	13448400	26888	67220	500		
317.9389	16.092	16.092	0	1.075	71056585	16841746	19601	49002	859	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.120	16.120	0	1.002	5257222	1178647	2251	5627	524		
305.8987	16.106	16.120	-1	1.001	6666527	1500897	3272	8180	459	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.720	14.720	0	0.984	36617279	9004157	12072	30180	746		
333.9339	14.707	14.720	-1	0.983	44921495	11017373	7635	19087	1443	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.734	14.734	0	1.001	3936479	994374	4580	11450	217		
321.8936	14.734	14.734	0	1.001	5252444	1308180	4656	11640	281	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.734	14.734	0	0.984	8299977	2073987	5173	12932	401		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 12:17:31 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d		
Injection Date:	12-Oct-2020 15:58:47	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421482	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

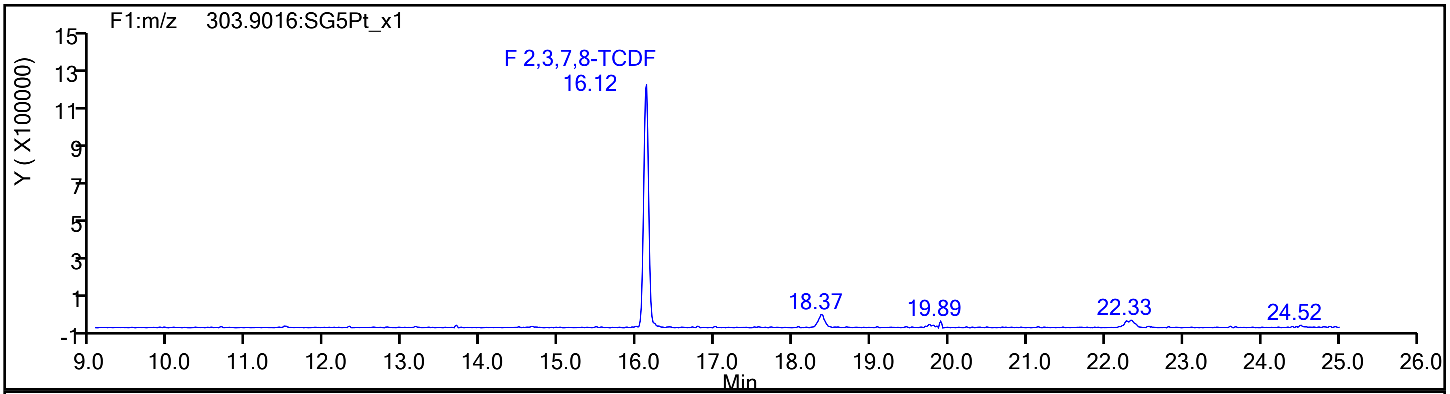

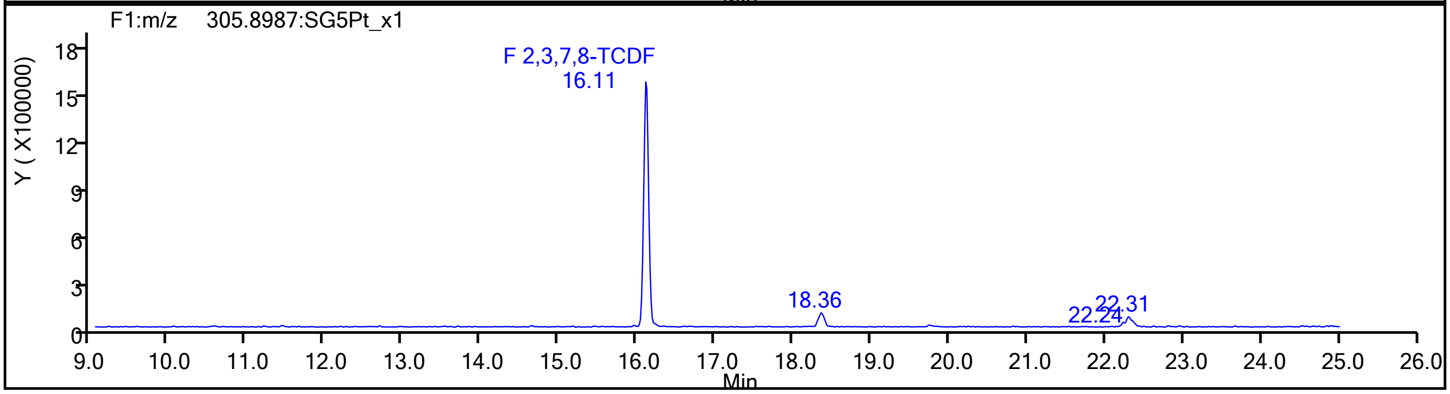

TCDF Standards

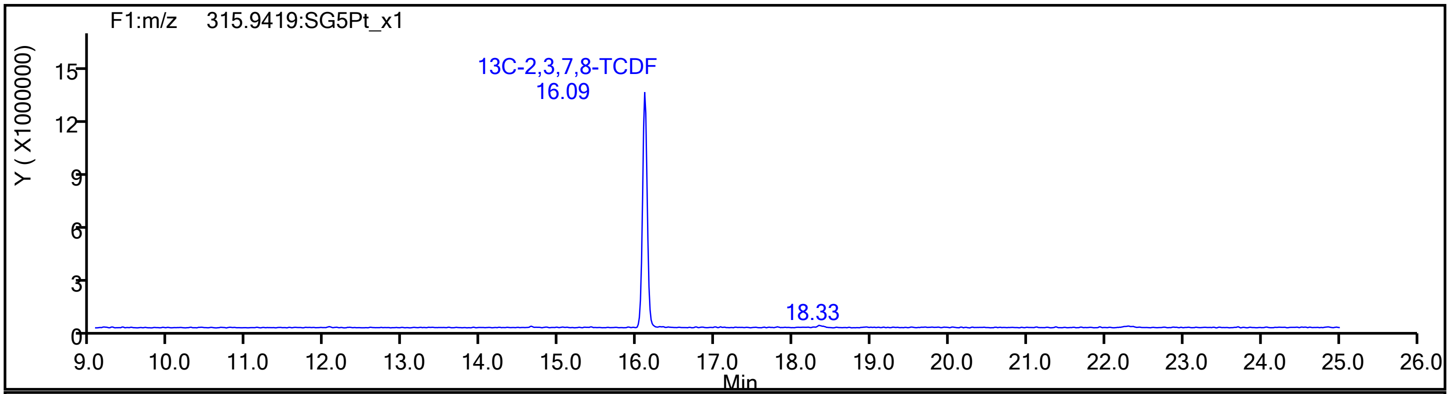

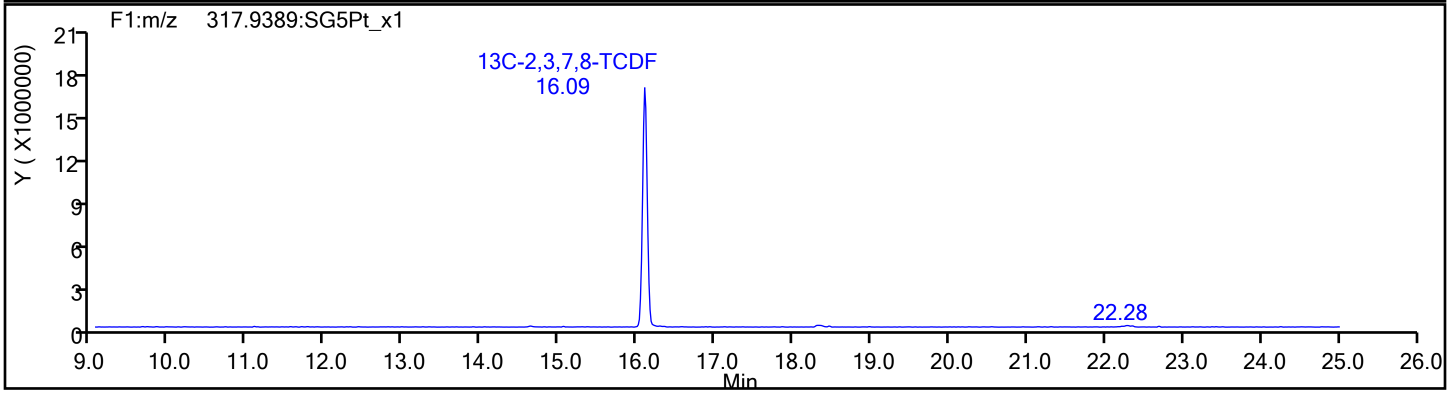

Report Date: 14-Oct-2020 12:17:31 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d		
Injection Date:	12-Oct-2020 15:58:47	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421482	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

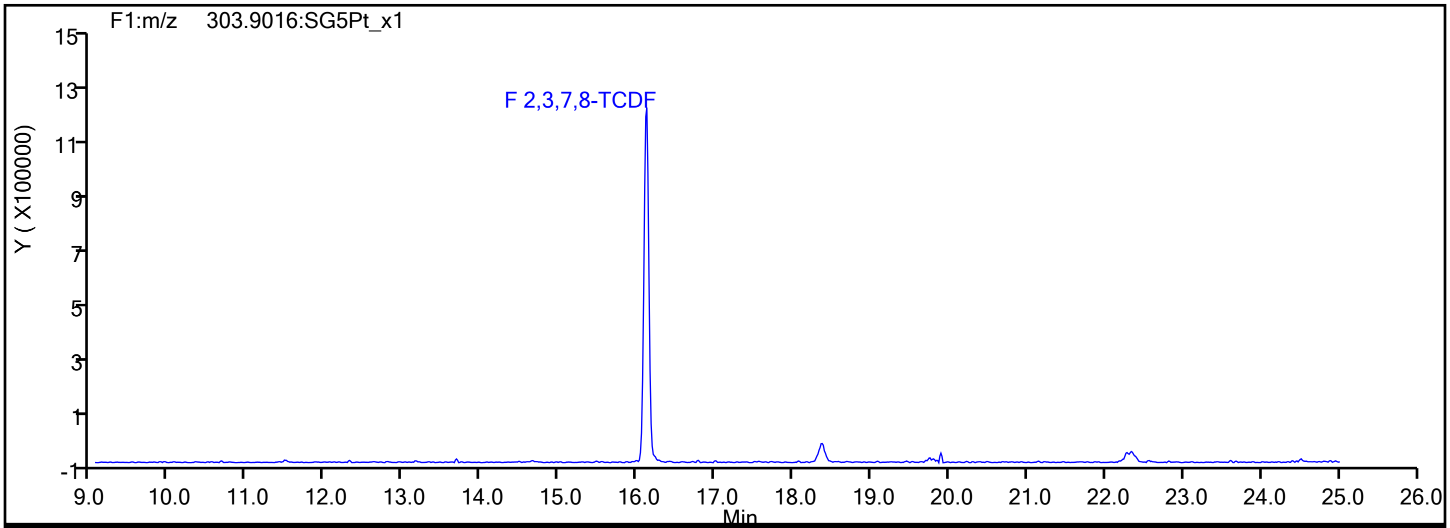

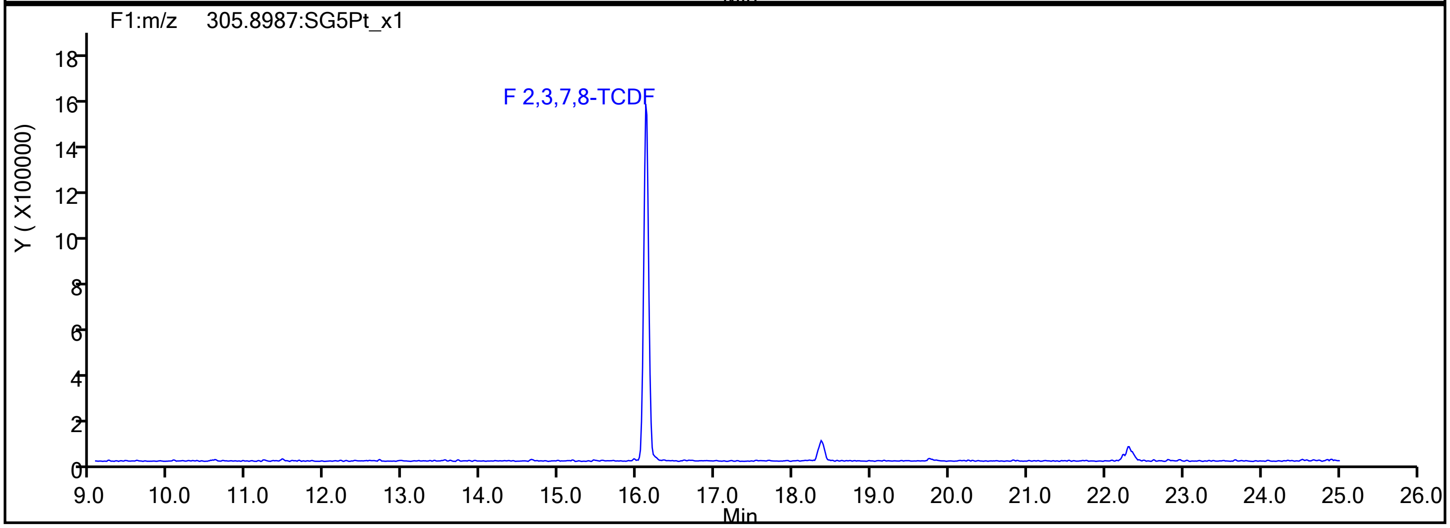

TCDF Interference Mass

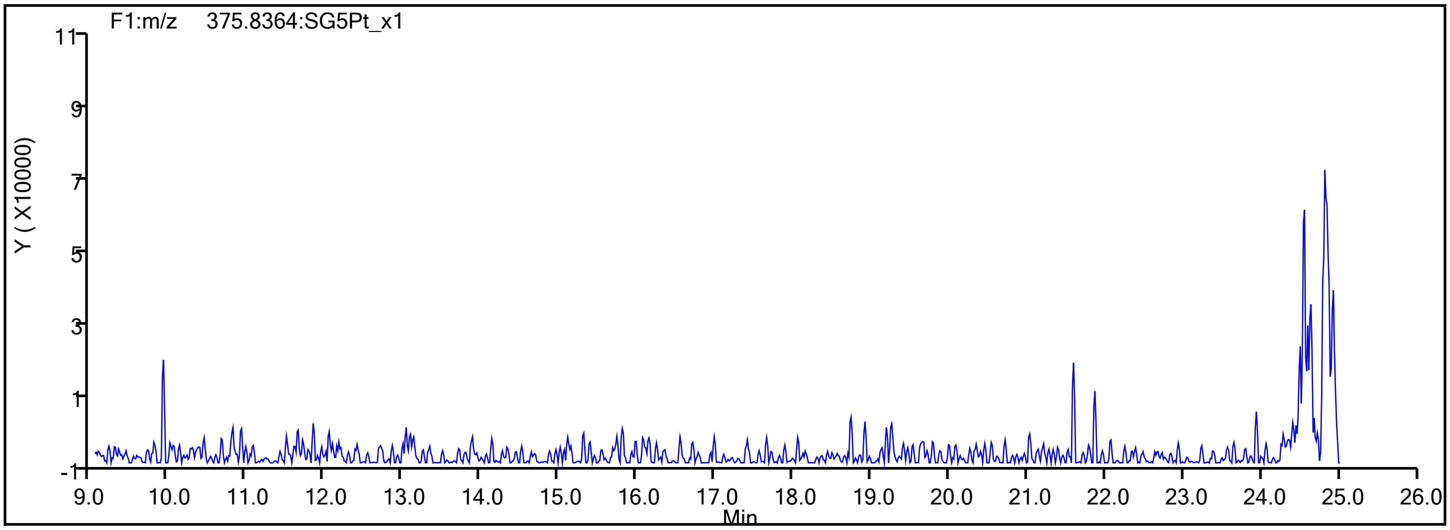

Report Date: 14-Oct-2020 12:17:31 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d

Injection Date: 12-Oct-2020 15:58:47
Injection Vol: 2.0 ul

Instrument ID: 11D2
Operator ID:

Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421482
Sample Line#: 2

Column Type: DB-225
Column Dia: 0.32 mm

TCDD

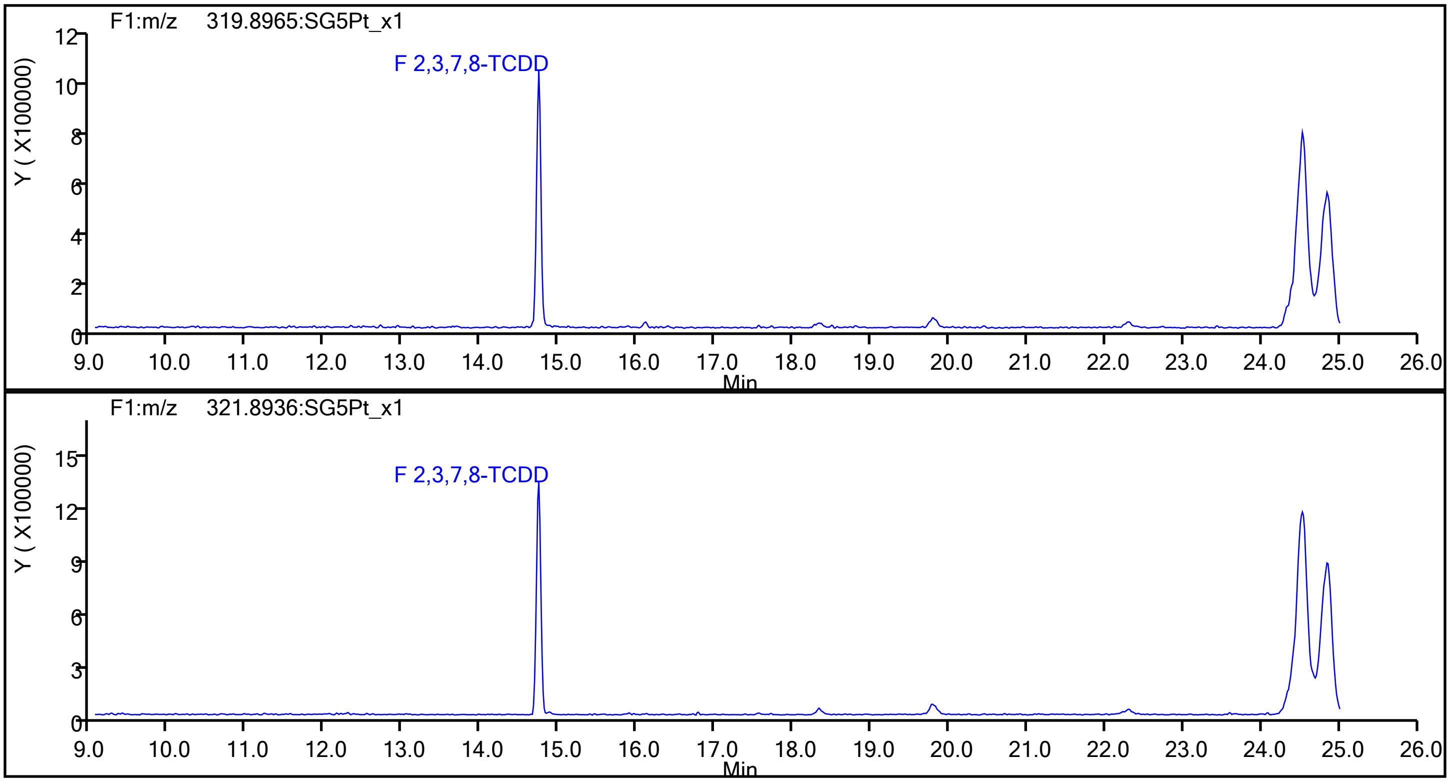

TCDD Standards

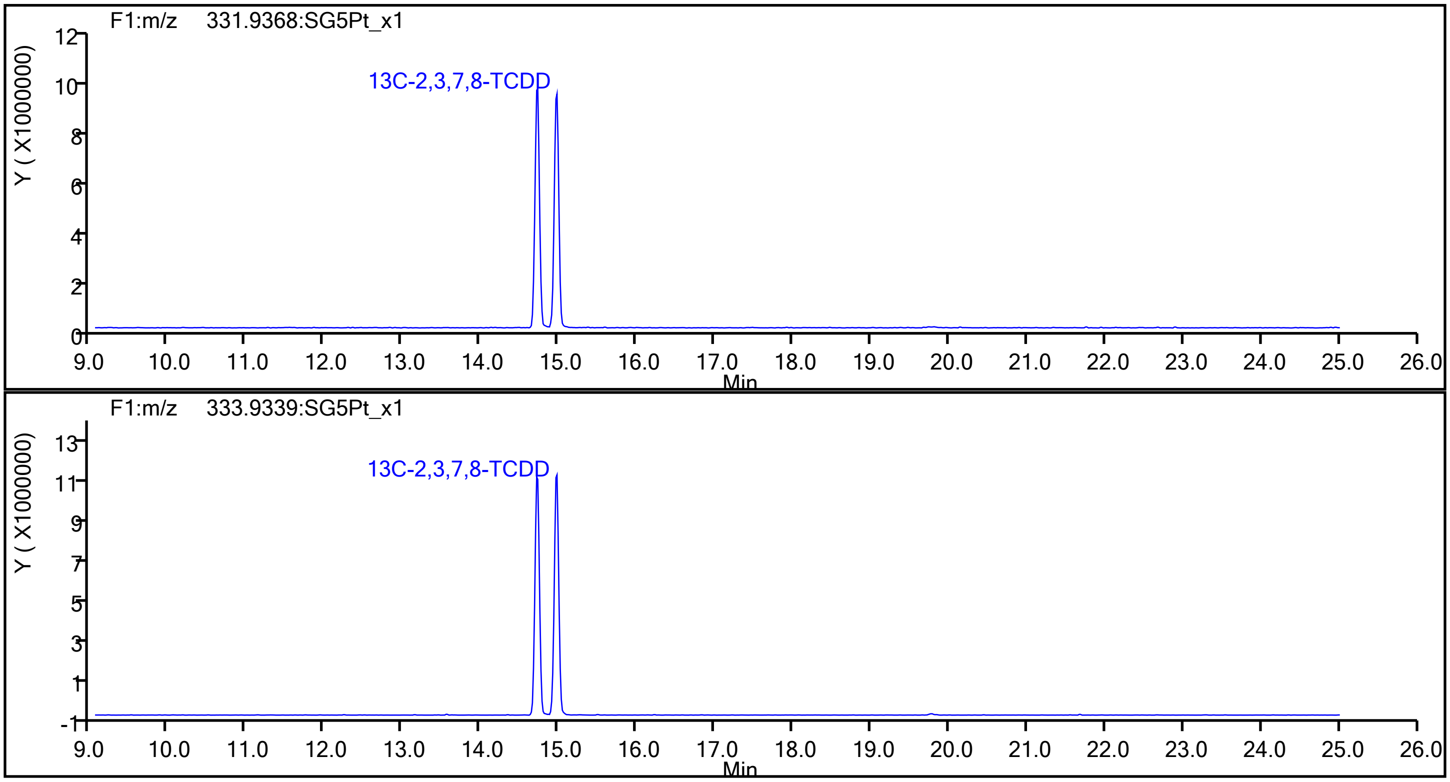

Report Date: 14-Oct-2020 12:17:31 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d

Injection Date: 12-Oct-2020 15:58:47 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421482 Sample Line#: 2

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

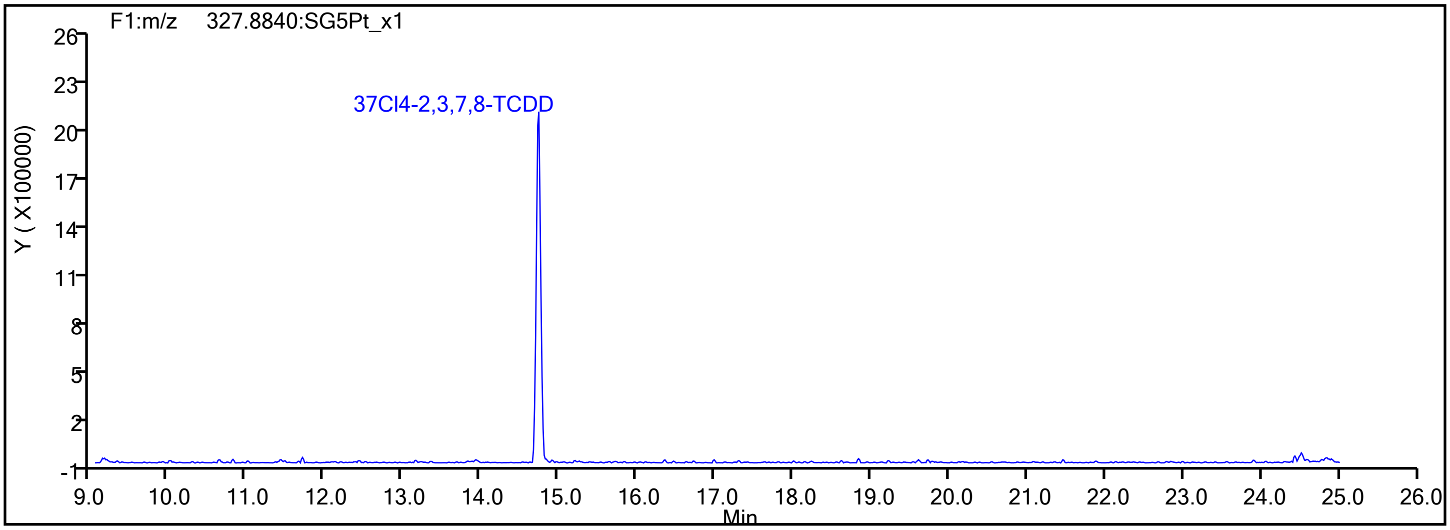

37Cl4-TCDD Standards

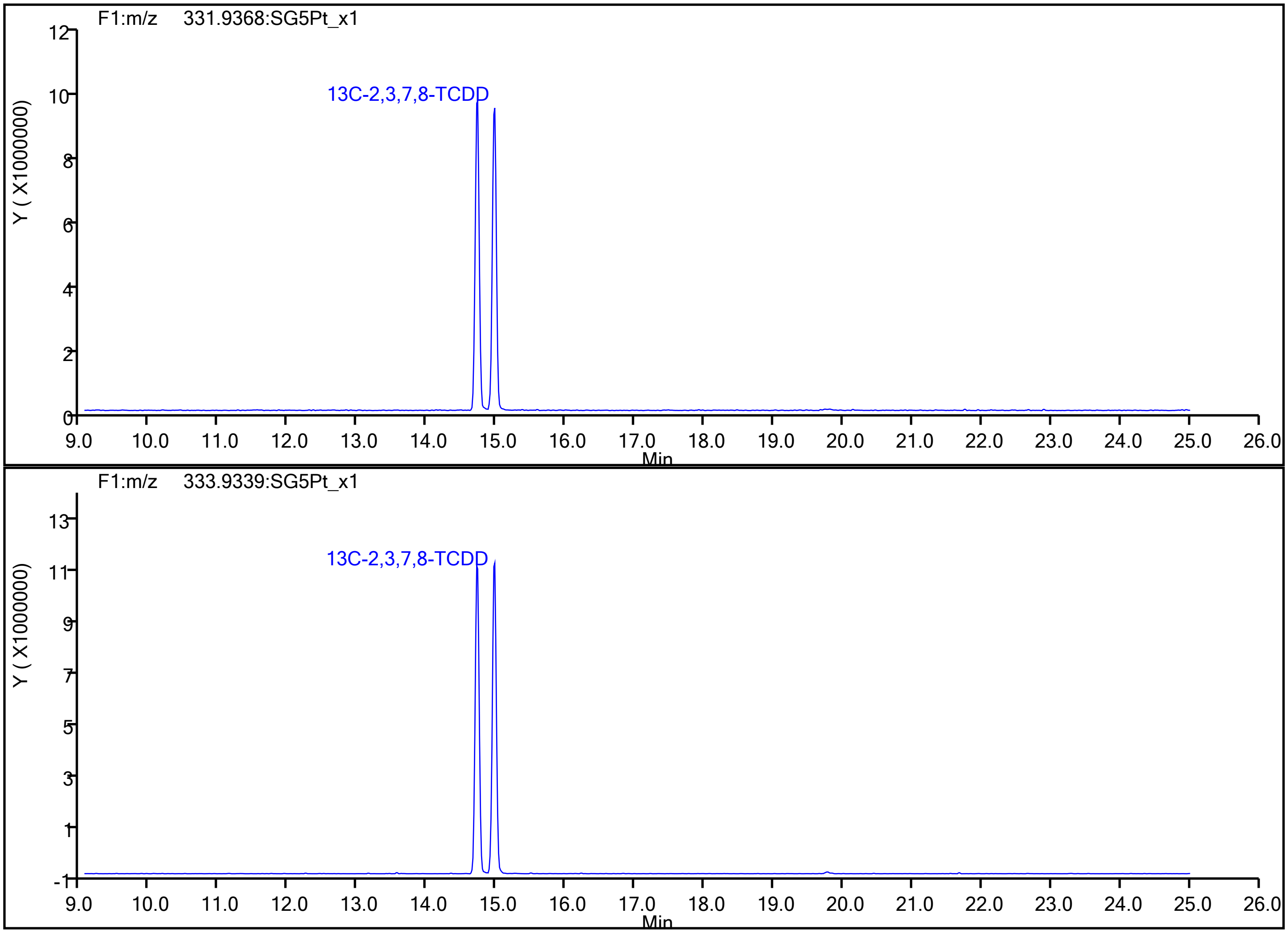

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_002.d		
Injection Date:	12-Oct-2020 15:58:47	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421482	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

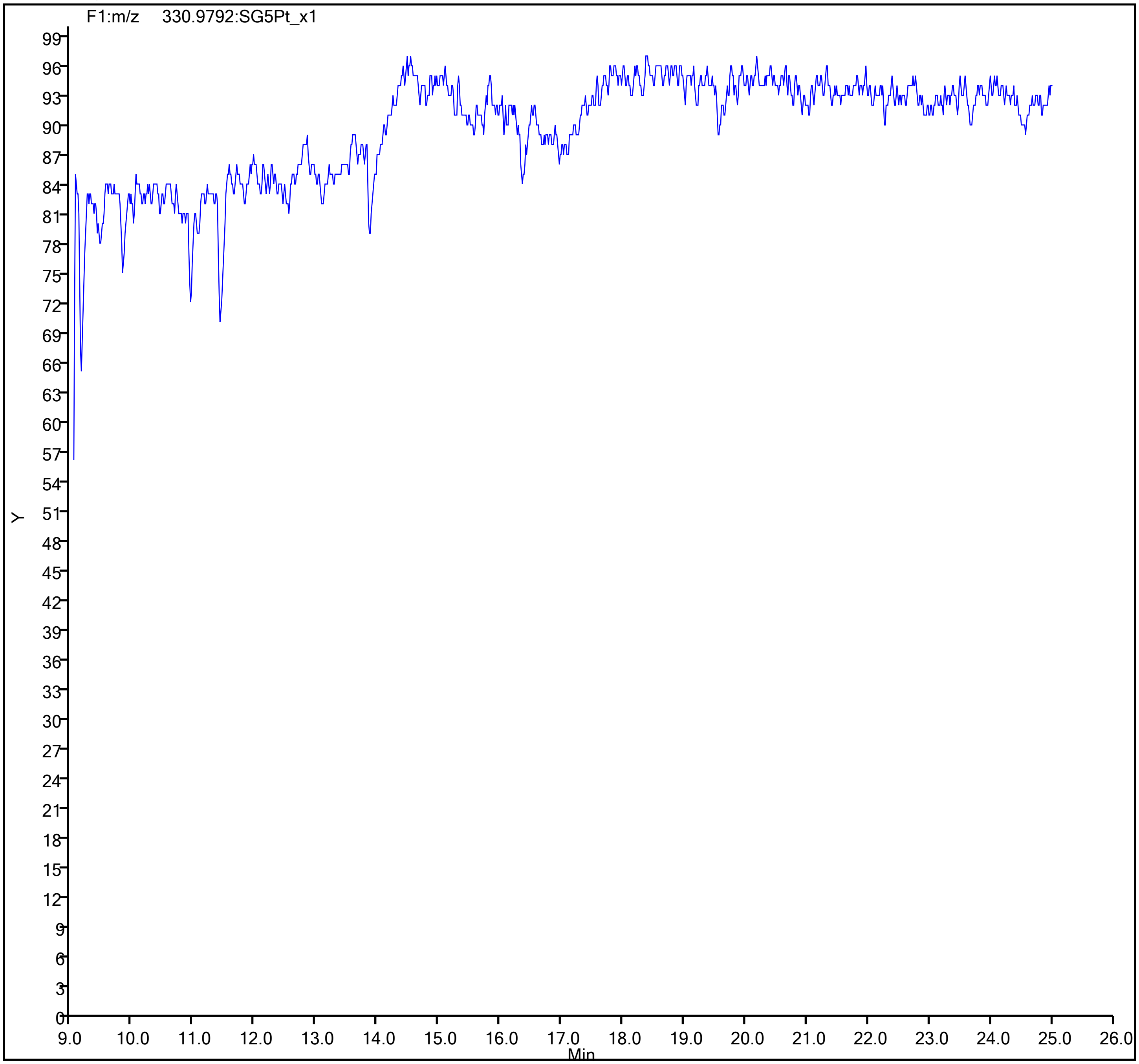

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento　Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-421876/2　Calibration Date: 10/13/2020 20:20

Instrument ID: 11D2　Calib Start Date: 07/24/2020 23:50

GC Column: DB-225　ID: 0.32(mm)　Calib End Date: 07/25/2020 02:23

Lab File ID: 13OC20A11D2_002.d　Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.146		8.94	10.0	89	78-129
2,3,7,8-TCDF	AveID	0.9943	0.9187		9.24	10.0	92	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	0.9563		97.3	100	97	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.621		103	100	103	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.047		10.5	10.0	105	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
13OC20A11D2	1	CPS 101320A	CPS HRDXNCP_00042				1.00000	
13OC20A11D2	2	CCV 101320B	CCV CS-4 HRDXNL4_00094				1.00000	
13OC20A11D2	3	SB 101320B	SB Solvent Blank C-14				1.00000	
13OC20A11D2	4	320-417490	320-65130-A-3-A	20	1613B/Water	D185	1.00000	
13OC20A11D2	5	320-417490	320-65130-A-5-A	20	1613B/Water		1.00000	
13OC20A11D2	6	320-417490	320-65130-A-9-A	20	1613B/Water		1.00000	
13OC20A11D2	7	320-417490	320-65130-A-1-A	20	1613B/Water		1.00000	
13OC20A11D2	8	320-417490	320-65130-A-2-A	20	1613B/Water		1.00000	
13OC20A11D2	9	320-417490	320-65130-A-11-A	20	1613B/Water		1.00000	
13OC20A11D2	10	320-417490	320-65130-A-7-A	20	1613B/Water		1.00000	
13OC20A11D2	11	320-417490	320-65130-A-8-A	20	1613B/Water		1.00000	
13OC20A11D2	12	320-417490	320-65130-A-12-A	20	1613B/Water		1.00000	
13OC20A11D2	13	320-417490	320-65130-A-4-A	20	1613B/Water		1.00000	
13OC20A11D2	14	320-417490	320-65130-A-10-A (5X)	20	1613B/Water		1.00000	
13OC20A11D2	15	320-417490	320-65130-A-13-A (100X)	20	1613B/Water		1.00000	
13OC20A11D2	16						1.00000	
13OC20A11D2	17						1.00000	
13OC20A11D2	18						1.00000	
13OC20A11D2	19						1.00000	
13OC20A11D2	20						1.00000	
13OC20A11D2	21						1.00000	
13OC20A11D2	22						1.00000	
13OC20A11D2	23		ALM 10-13-20				1.00000	
13OC20A11D2	24						1.00000	

Logfile ✓'d

10/14/20
KSS

Peak Locate Examination:13-OCT-2020:19:39 File:13OC20A11D2
Experiment:DB225RES Function:1 Reference:PFK

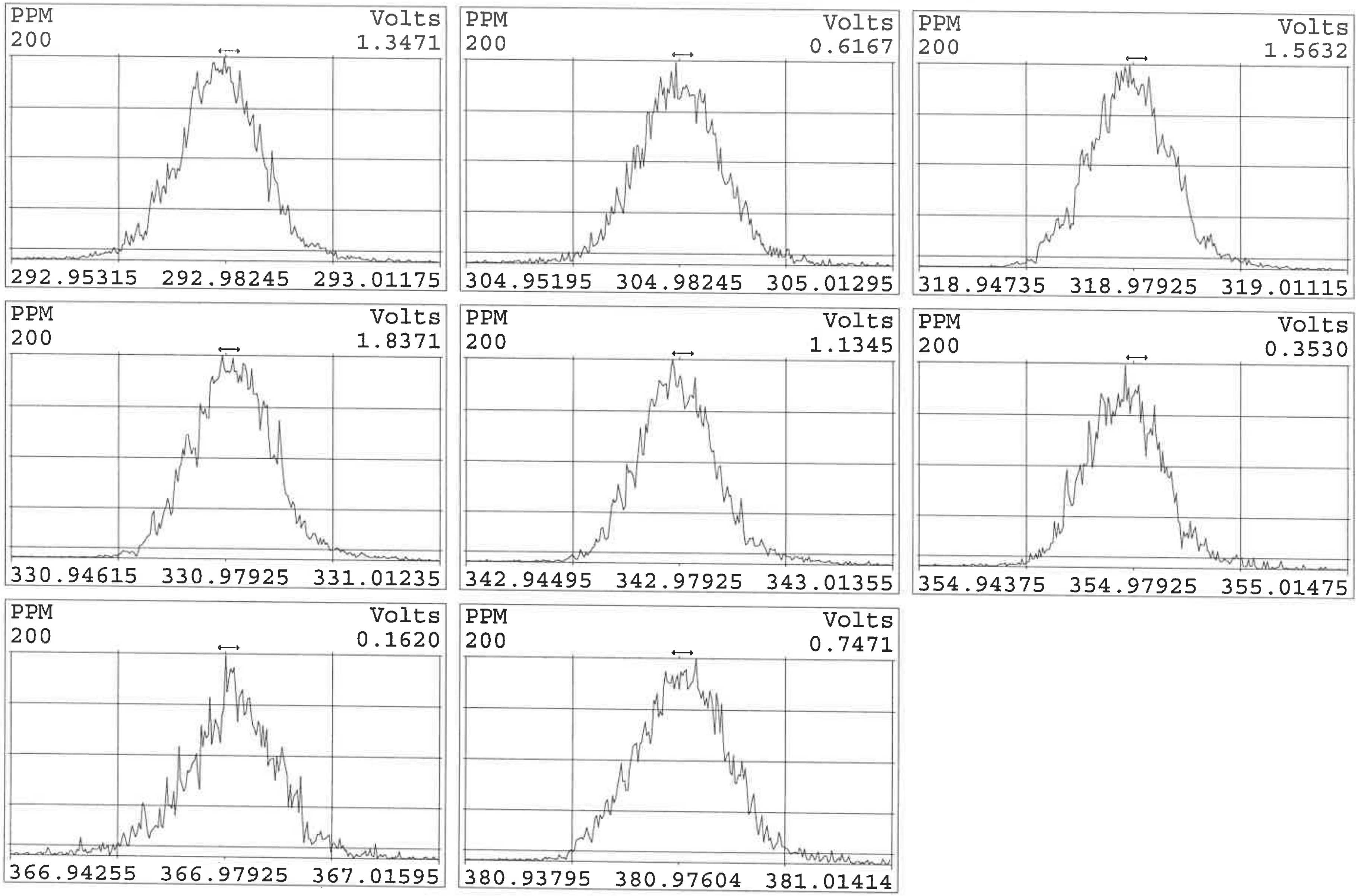

Peak Locate Examination:14-OCT-2020:06:38 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

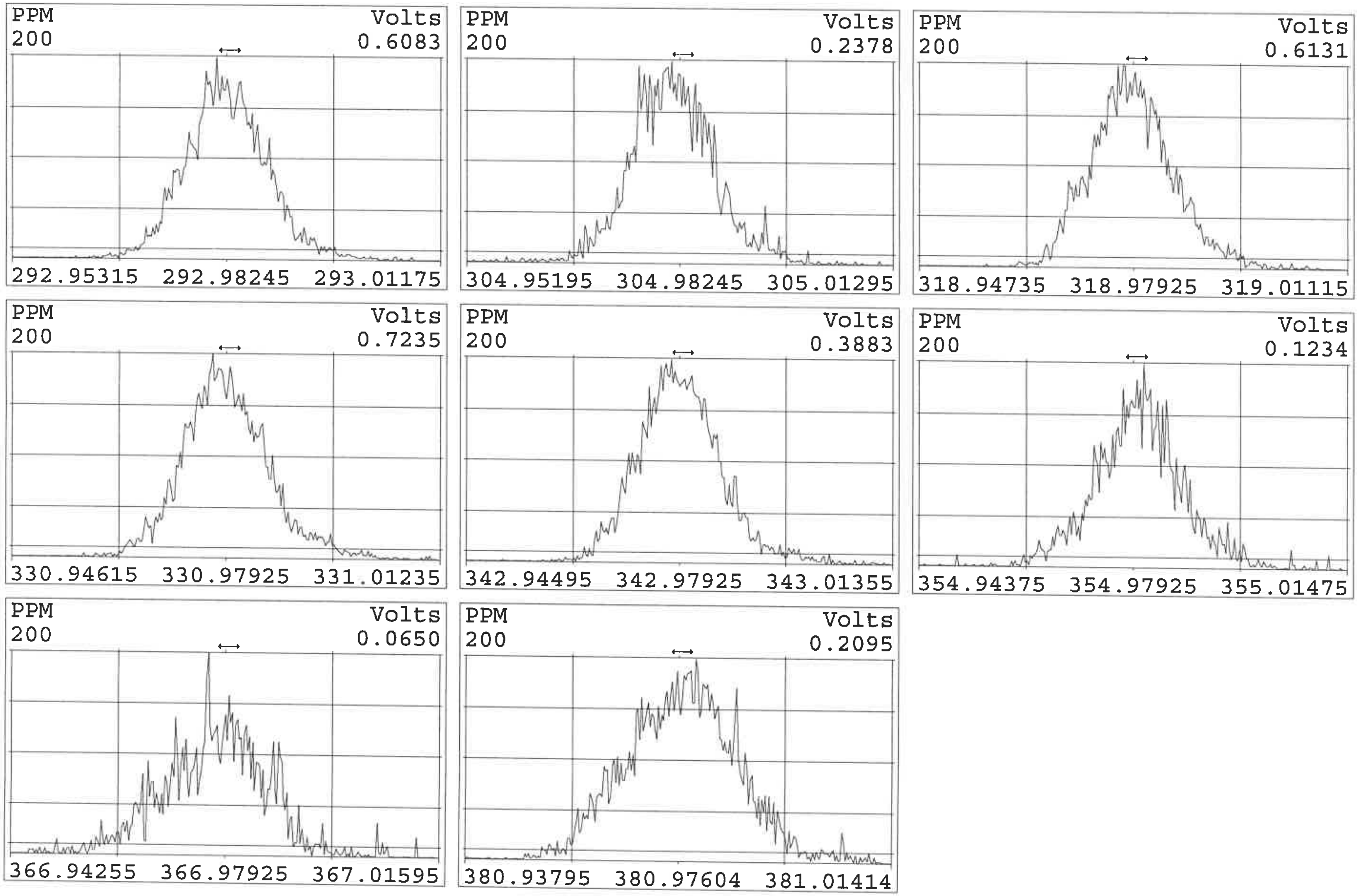

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	13-Oct-2020 20:20:49	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				
First Level Reviewer: stephensk		Date:	14-Oct-2020 17:32:41		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.928	93741557	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.067	151990185	0.80	1.5708	103.2	103.2	0.2785	0.2785	103	
2,3,7,8-TCDF	16.081	13963183	0.78	0.9943	9.240	9.240	0.0421	0.0421	92.40	
D 13C-2,3,7,8-TCDD	14.681	89649161	0.83	0.9834	97.3	97.3	0.1979	0.1979	97.25	
2,3,7,8-TCDD	14.709	10276067	0.80	1.2822	8.940	8.940	0.0684	0.0684	89.40	
$ 37Cl4-2,3,7,8-TCDD	14.709	9818081		0.9945	10.5	10.5	0.0421	0.0421	105	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	13-Oct-2020 20:20:49	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:52	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

First Level Reviewer: stephensk Date: 14-Oct-2020 17:32:41

Signal	RT (min.)	Adj RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.928	14.928	0		41935414	10482374	12581	31452	833		
333.9339	14.928	14.928	0		51806143	12882305	5606	14015	2298	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.067	16.067	0	1.076	67571676	15906867	26259	65647	606		
317.9389	16.067	16.067	0	1.076	84418509	19417647	14628	36570	1327	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.081	16.081	0	1.001	6128454	1407570	2413	6032	583		
305.8987	16.081	16.081	0	1.001	7834729	1798731	3505	8762	513	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.681	14.681	0	0.983	40642082	10355253	12581	31452	823		
333.9339	14.681	14.681	0	0.983	49007079	11993164	5606	14015	2139	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.709	14.709	0	1.002	4576425	1146335	4316	10790	266		
321.8936	14.695	14.709	-1	1.001	5699642	1423587	3527	8817	404	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.709	14.709	0	0.985	9818081	2282486	3917	9792	583		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_002.d

Injection Date:	13-Oct-2020 20:20:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

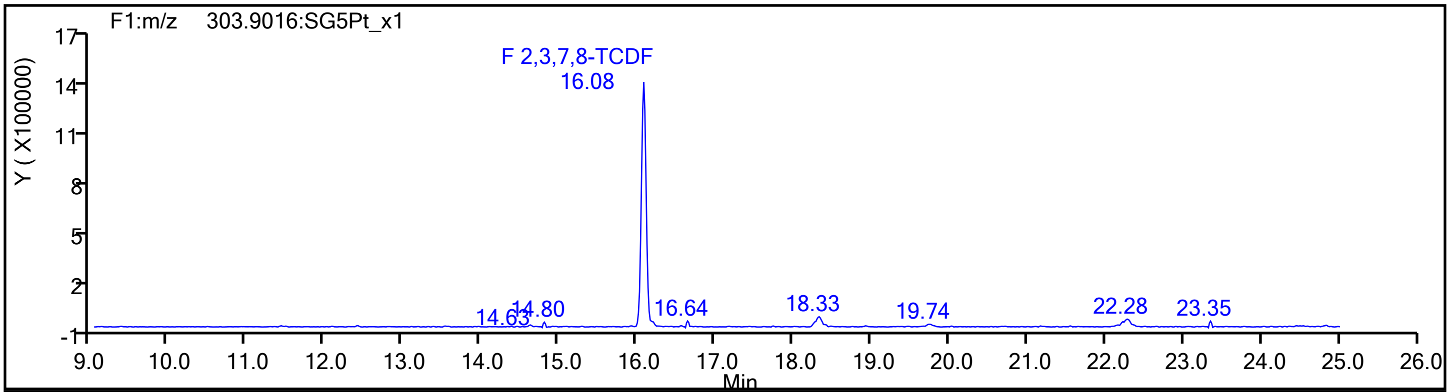

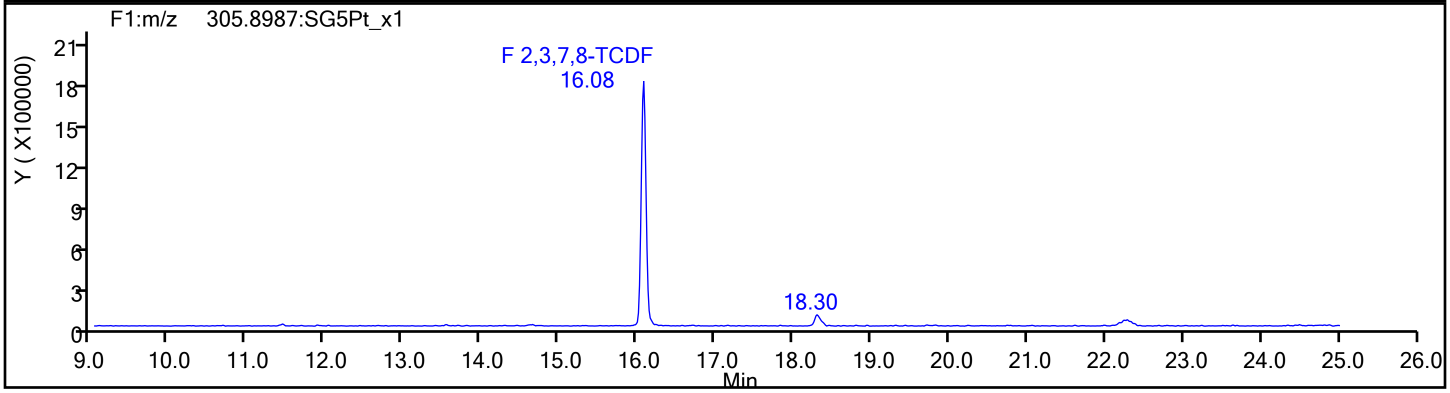

TCDF Standards

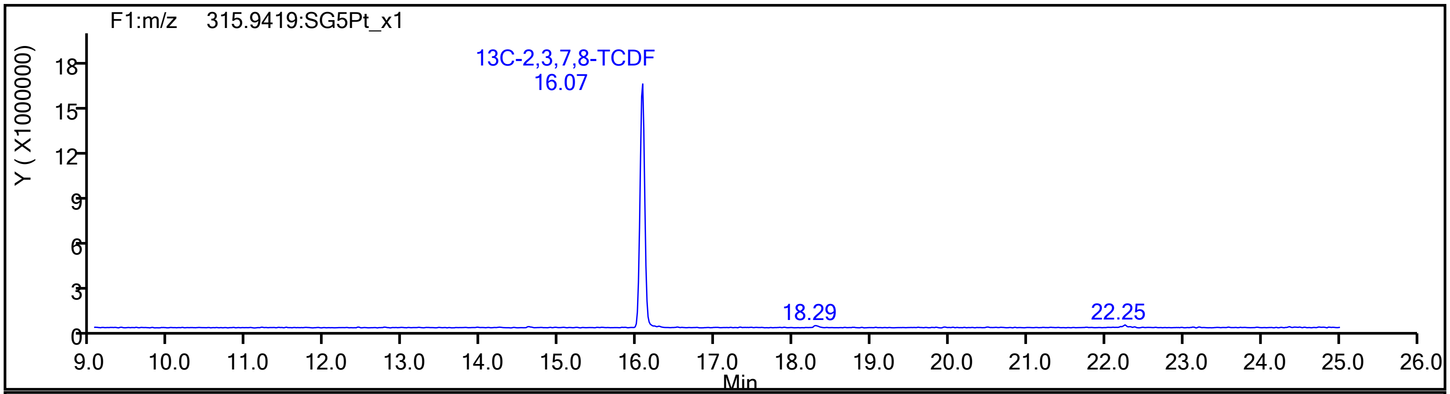

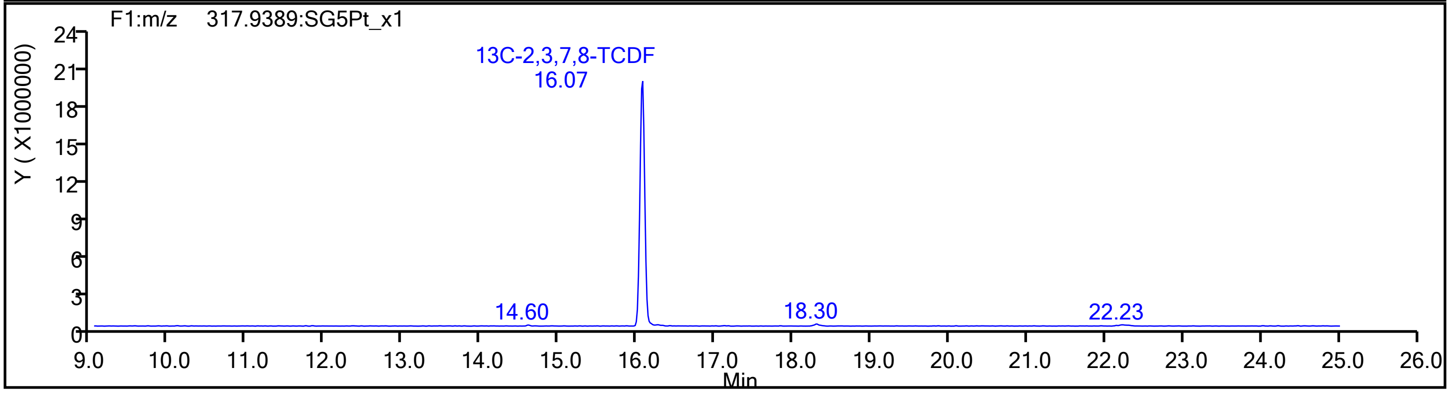

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_002.d		
Injection Date:	13-Oct-2020 20:20:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

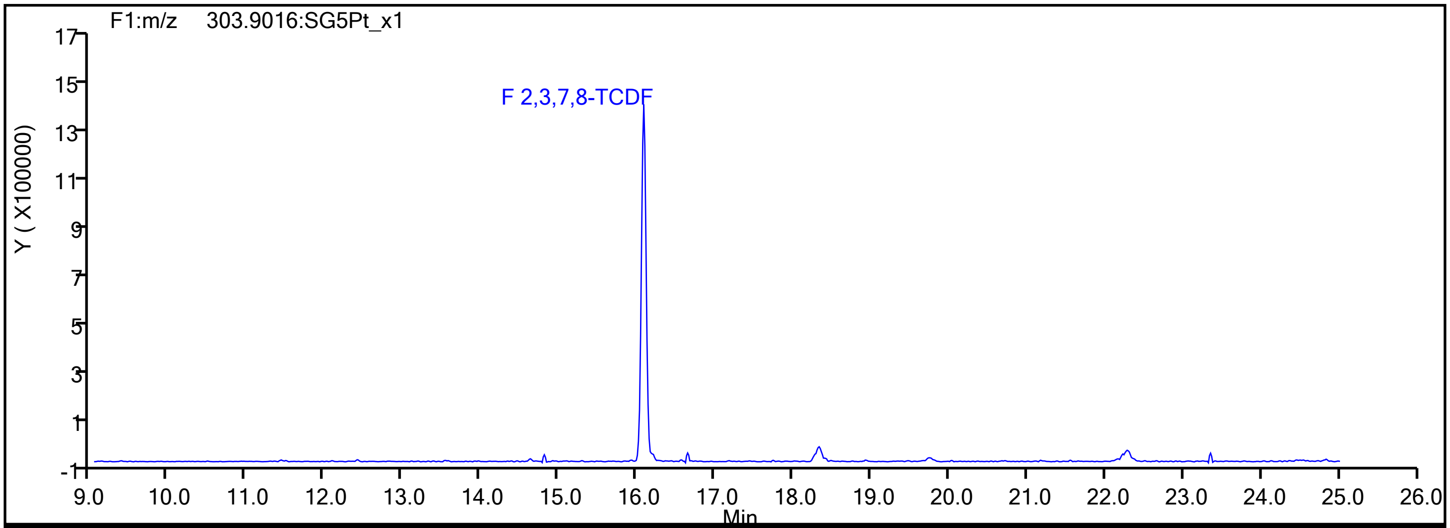

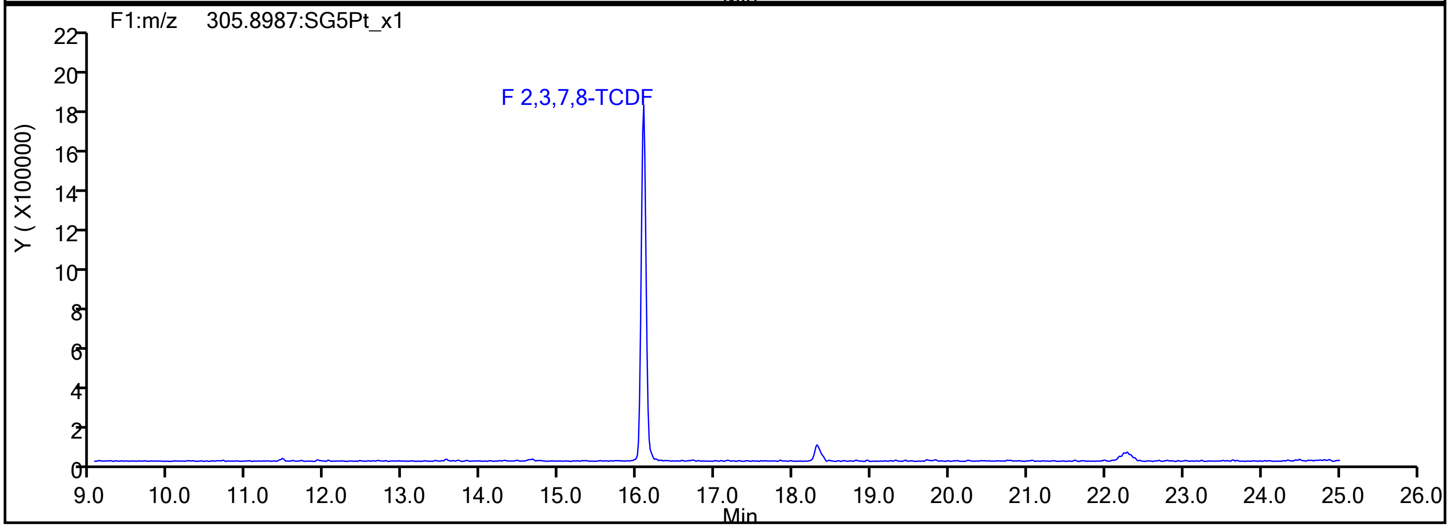

TCDF Interference Mass

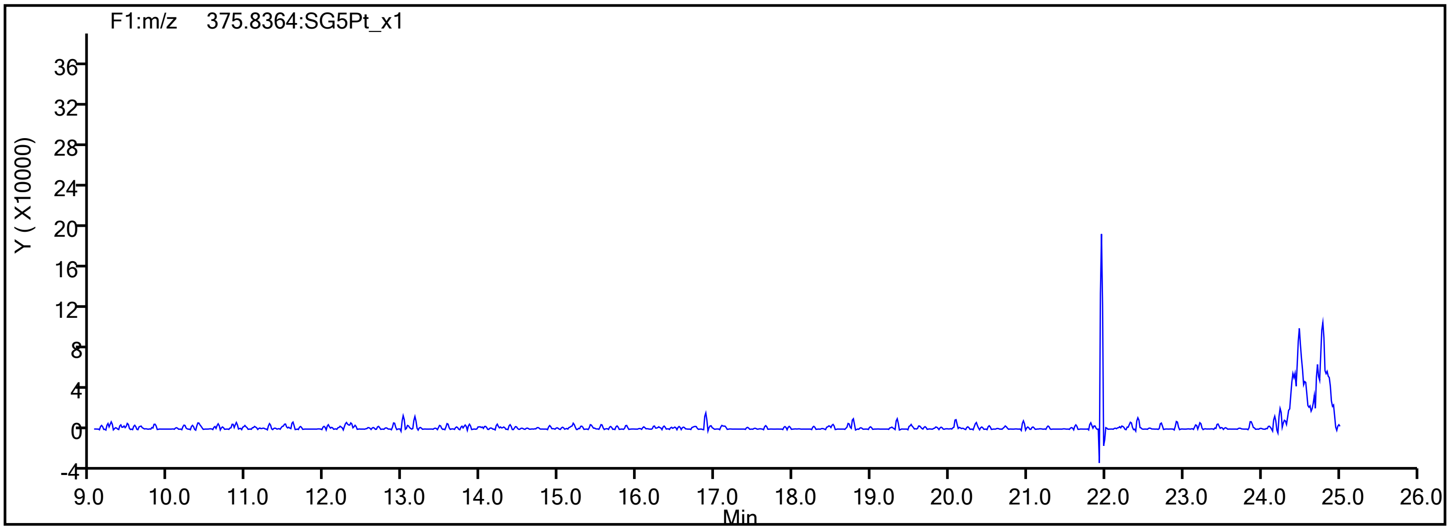

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_002.d		
Injection Date:	13-Oct-2020 20:20:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

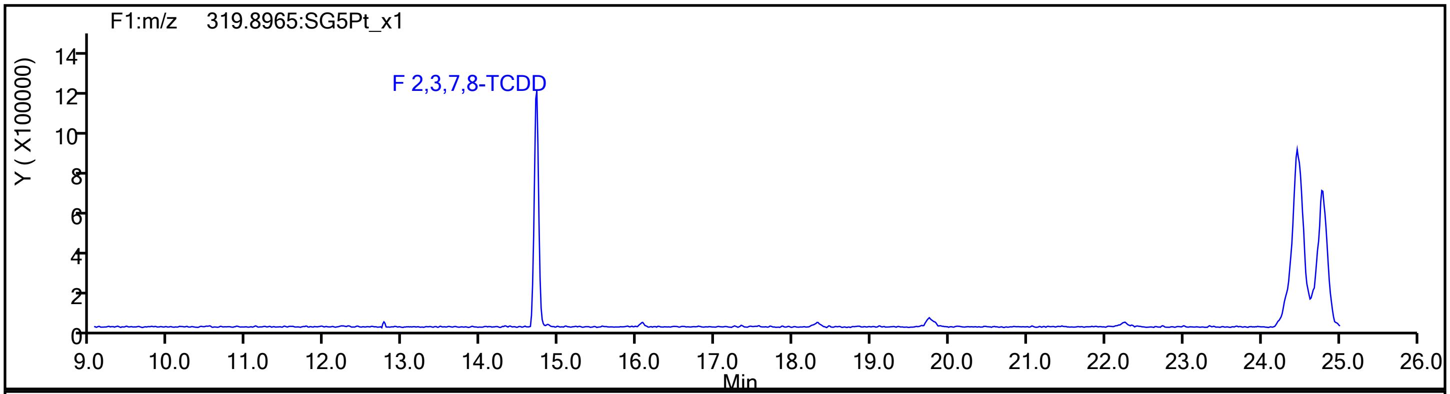

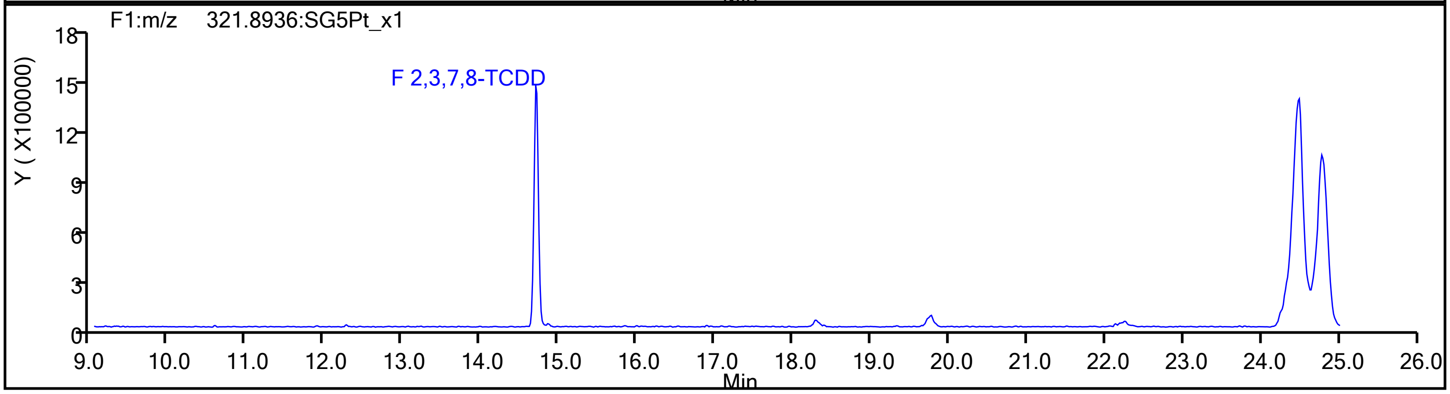

TCDD Standards

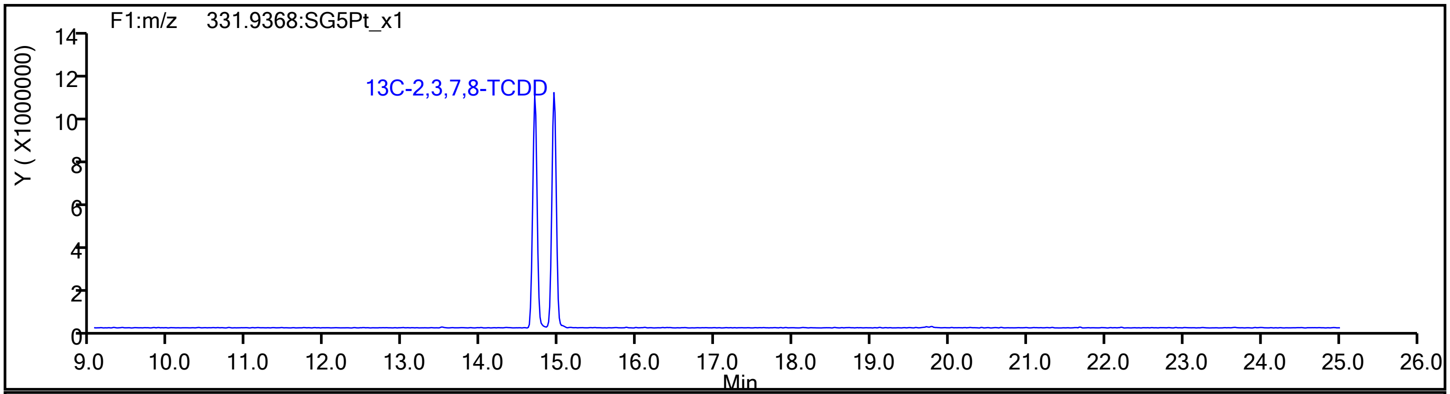

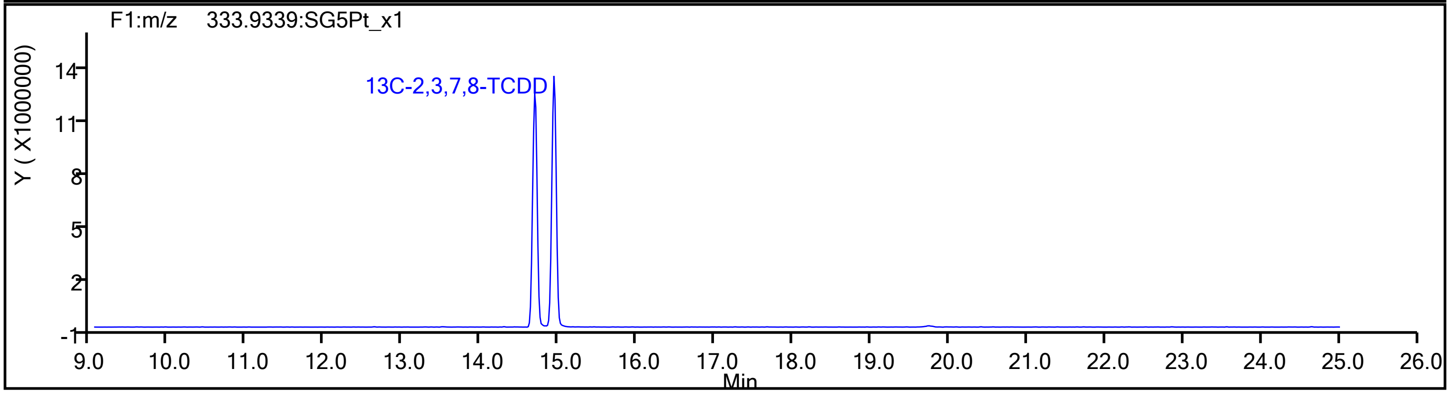

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_002.d
Injection Date: 13-Oct-2020 20:20:49
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421876
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

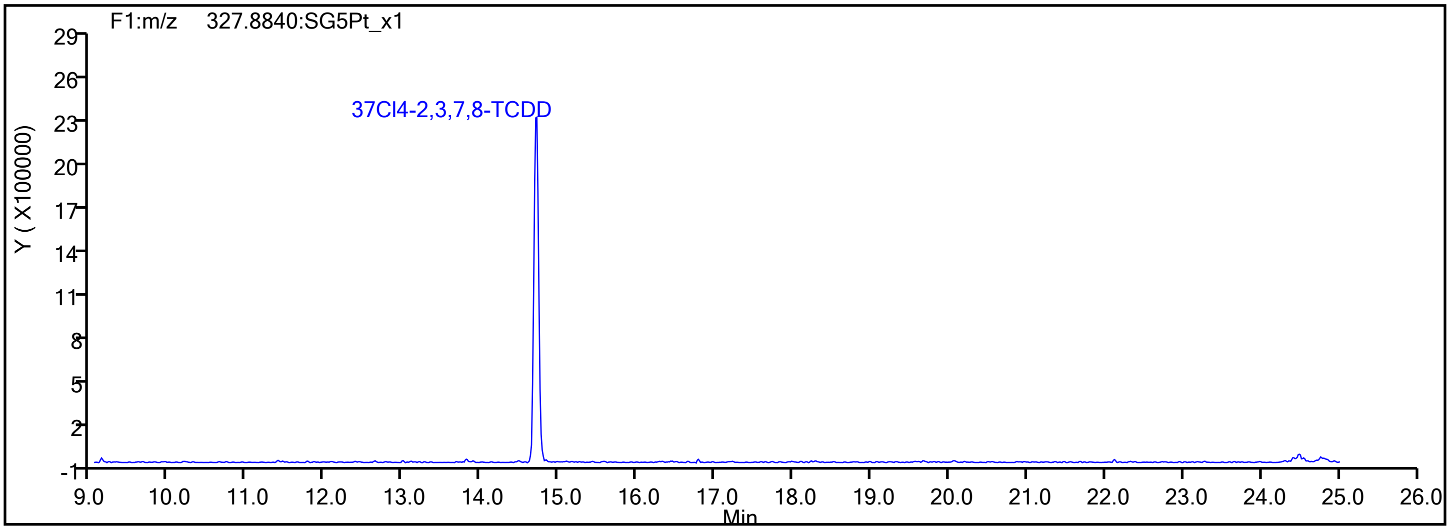

37Cl4-TCDD Standards

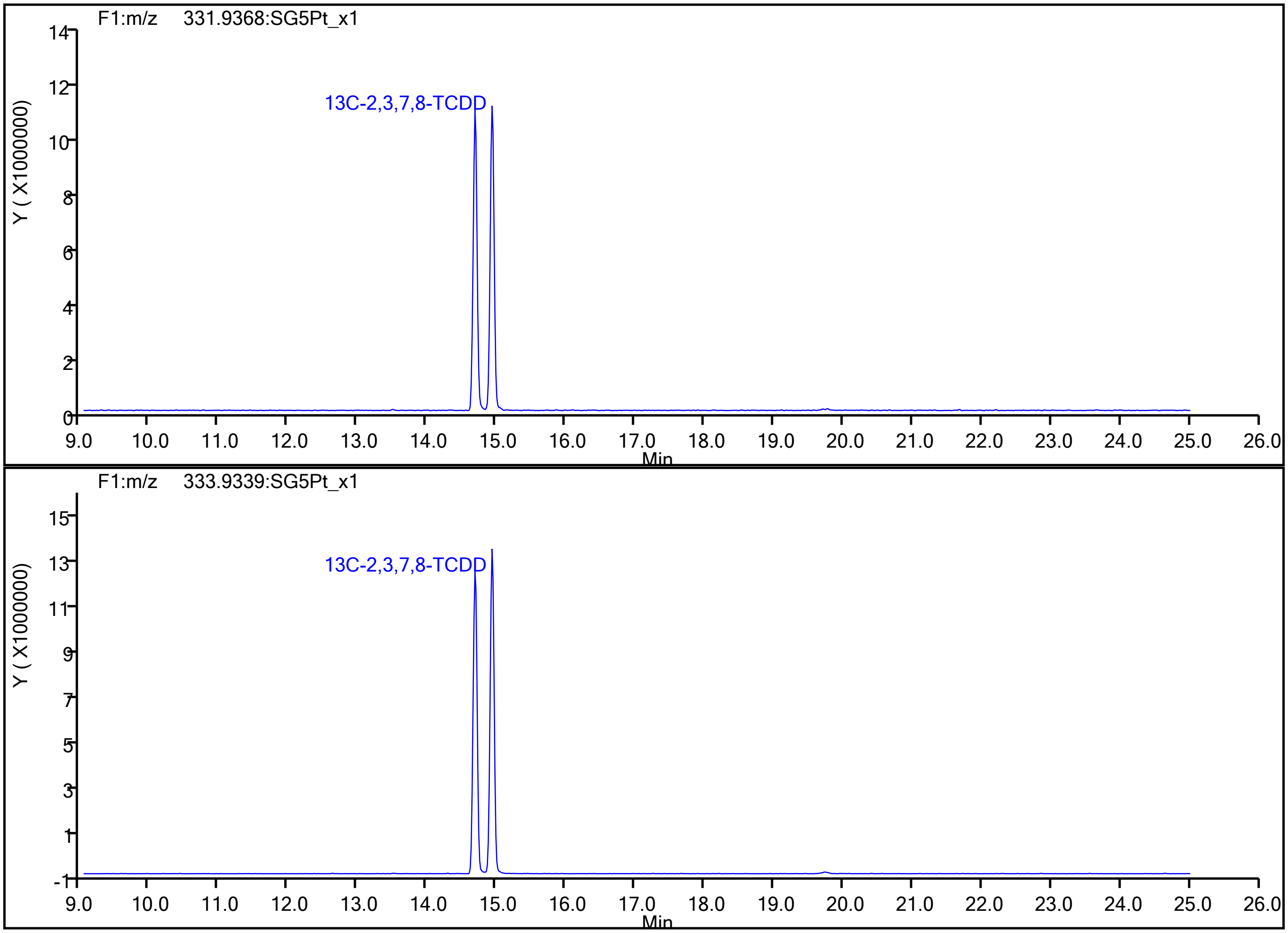

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Injection Date:	13-Oct-2020 20:20:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

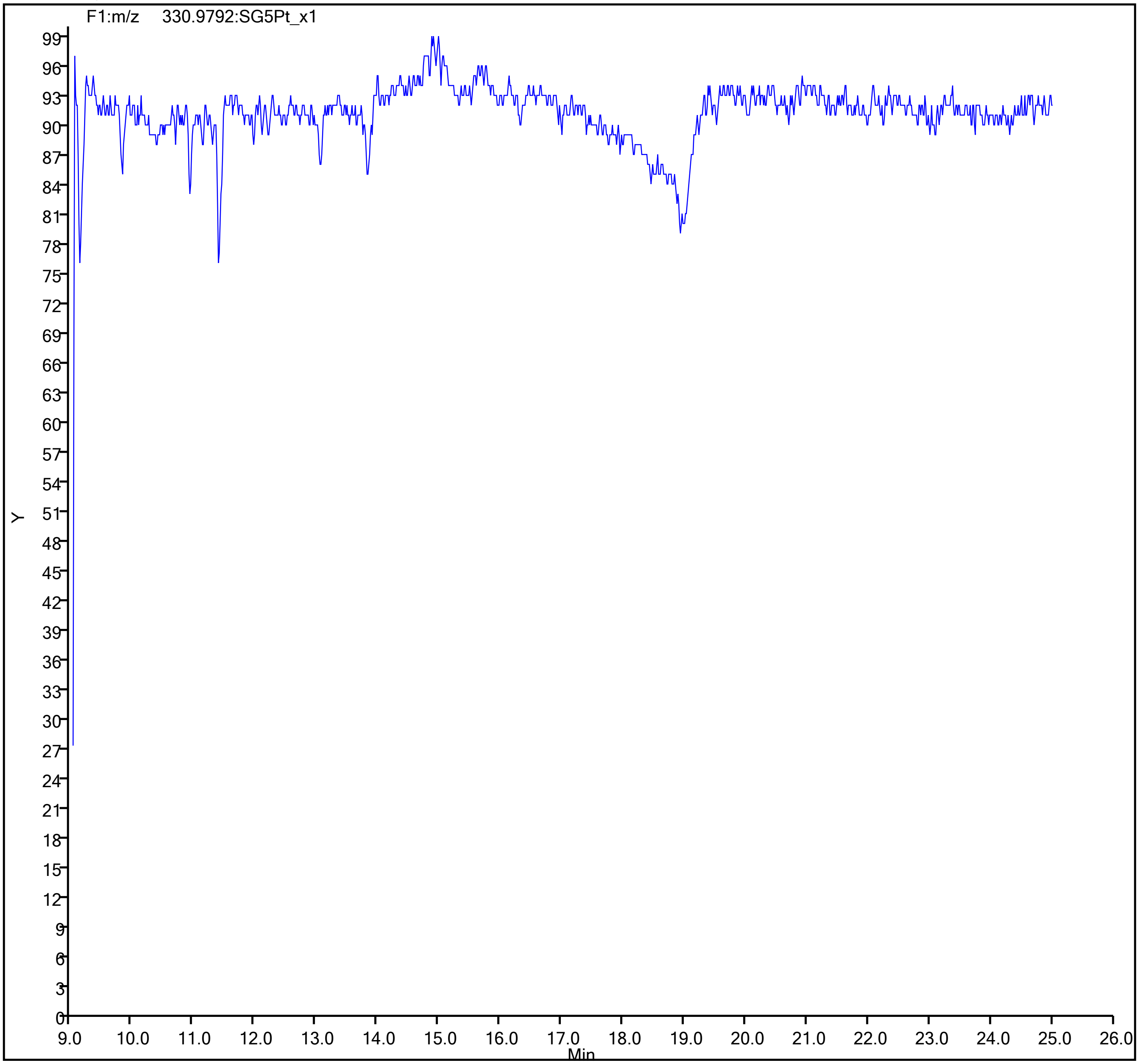

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-422080/2 Calibration Date: 10/14/2020 12:00

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 14OC2011D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.100		8.58	10.0	86	78-129
2,3,7,8-TCDF	AveID	0.9943	0.8923		8.97	10.0	90	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	0.996		101	100	101	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.531		97.5	100	97	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.047		10.5	10.0	105	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
14OC2011D2	1	CPS 101420	CPS HRDXNCP_00042				1.00000	
14OC2011D2	2	CCV 101420	CCV CS-4 HRDXNL4_00094				1.00000	
14OC2011D2	3	SB 101420	SB Solvent Blank C-14				1.00000	
14OC2011D2	4	320-414968	320-64887-A-7-A	20	1613B/Solid	D183	10.00000	g
14OC2011D2	5	320-414968	320-64887-A-8-A	20	1613B/Solid		10.00000	g
14OC2011D2	6	320-414968	320-64887-A-9-A	20	1613B/Solid		10.00000	g
14OC2011D2	7	320-414968	320-64887-A-10-A	20	1613B/Solid		10.00000	g
14OC2011D2	8	320-414968	320-64887-A-11-A	20	1613B/Solid		10.00000	g
14OC2011D2	9	320-417971	320-65130-A-20-A 5X	20	1613B/Water	D186	1.00000	L
14OC2011D2	10	320-417971	320-65130-A-18-A 10X	20	1613B/Water		1.00000	L
14OC2011D2	11	320-417971	320-65130-A-14-A 25X	20	1613B/Water		1.00000	L
14OC2011D2	12	320-416712	320-64937-A-4-C	40	8290A_D5/Sol.	D186	20.00000	g
14OC2011D2	13	320-416712	320-64947-B-4-A	40	8290A_D5/Sol.		20.00000	g
14OC2011D2	14	320-416712	320-64947-B-5-A	40	8290A_D5/Sol.		20.00000	g
14OC2011D2	15	320-416712	320-64947-B-6-A	40	8290A_D5/Sol.		20.00000	g
14OC2011D2	16	320-416712	320-64948-A-1-C	40	8290A_D5/Sol.		20.00000	g
14OC2011D2	17	320-416712	320-64948-A-2-C	40	8290A_D5/Sol.		20.00000	g
14OC2011D2	18	CCV 101420A	CCV CS-4 HRDXNL4_00094				1.00000	
14OC2011D2	19						1.00000	
14OC2011D2	20						1.00000	
14OC2011D2	21						1.00000	
14OC2011D2	22						1.00000	
14OC2011D2	23						1.00000	
14OC2011D2	24						1.00000	
14OC2011D2	25						1.00000	
14OC2011D2	26		KSS 10-14-20				1.00000	
14OC2011D2	27						1.00000	

log file checked
10-14-20 ALM

Peak Locate Examination:14-OCT-2020:11:20 File:14OC2011D2
Experiment:DB225RES Function:1 Reference:PFK

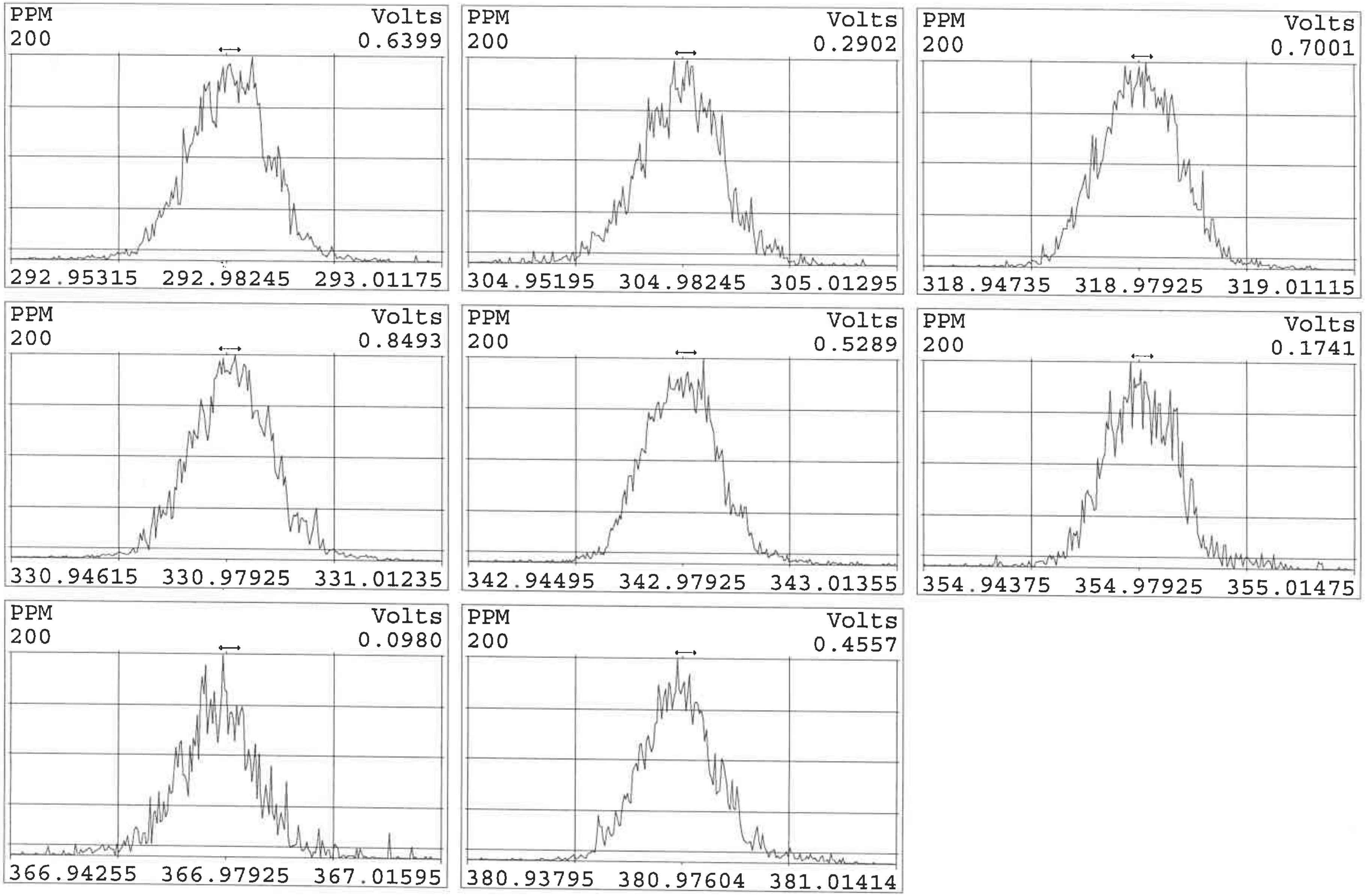

Peak Locate Examination:14-OCT-2020:23:08 File:RESCHK14OC2011D2
Experiment:DB225RES Function:1 Reference:PFK

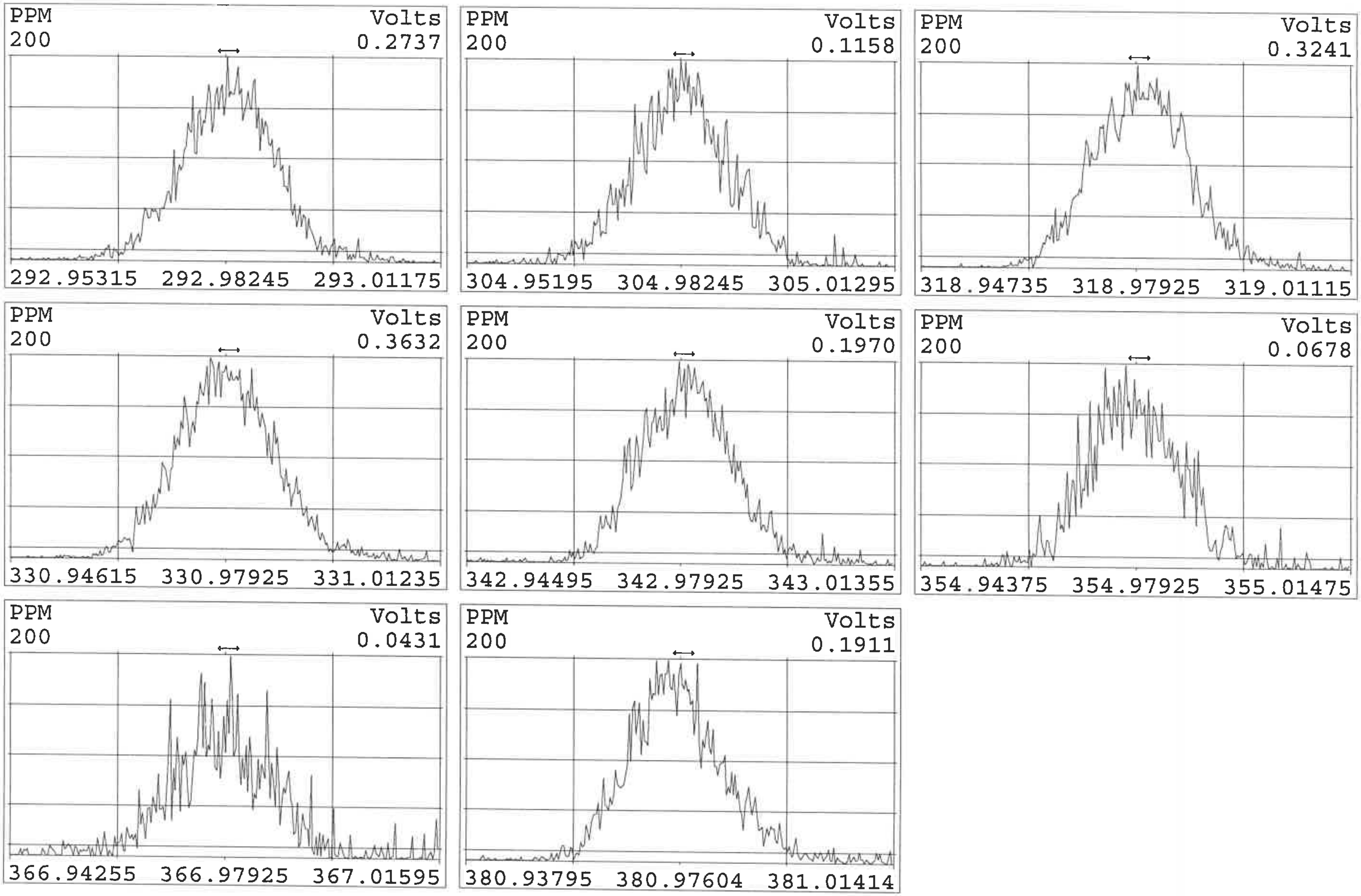

Report Date: 15-Oct-2020 13:36:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	14-Oct-2020 12:00:02	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	15-Oct-2020 13:36:51	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1615				
First Level Reviewer: stephensk		Date:	15-Oct-2020 11:44:59		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.925	98138413	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.050	150278779	0.79	1.5708	97.5	97.5	0.3170	0.3170	97.48	
2,3,7,8-TCDF	16.064	13409502	0.78	0.9943	8.974	8.974	0.0426	0.0426	89.74	
D 13C-2,3,7,8-TCDD	14.678	97739528	0.81	0.9834	101.3	101.3	0.1888	0.1888	101	
$ 37Cl4-2,3,7,8-TCDD	14.692	10273975		0.9945	10.5	10.5	0.0704	0.0704	105	
2,3,7,8-TCDD	14.692	10753661	0.77	1.2822	8.581	8.581	0.0864	0.0864	85.81	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 15-Oct-2020 13:36:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 14-Oct-2020 12:00:02 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:36:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: stephensk Date: 15-Oct-2020 11:44:59

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.925	14.925	0		44078009	10416050	12142	30355	858		
333.9339	14.911	14.925	-1		54060404	13121746	5335	13337	2460	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.050	16.050	0	1.075	66495608	15541047	30505	76262	509		
317.9389	16.050	16.050	0	1.075	83783171	19370433	16384	40960	1182	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.064	16.075	-1	1.001	5896580	1305064	2573	6432	507		
305.8987	16.064	16.075	-1	1.001	7512922	1724669	3339	8347	517	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.678	14.678	0	0.983	43810678	10784244	12142	30355	888		
333.9339	14.664	14.678	-1	0.983	53928850	13411392	5335	13337	2514	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.692	14.692	0	0.984	10273975	2569126	6596	16490	389		
2,3,7,8-TCDD											
319.8965	14.692	14.703	-1	1.001	4678934	1164128	4451	11127	262		
321.8936	14.692	14.703	-1	1.001	6074727	1513715	6275	15687	241	0.77(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 15-Oct-2020 13:36:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d
Injection Date: 14-Oct-2020 12:00:02
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422080
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

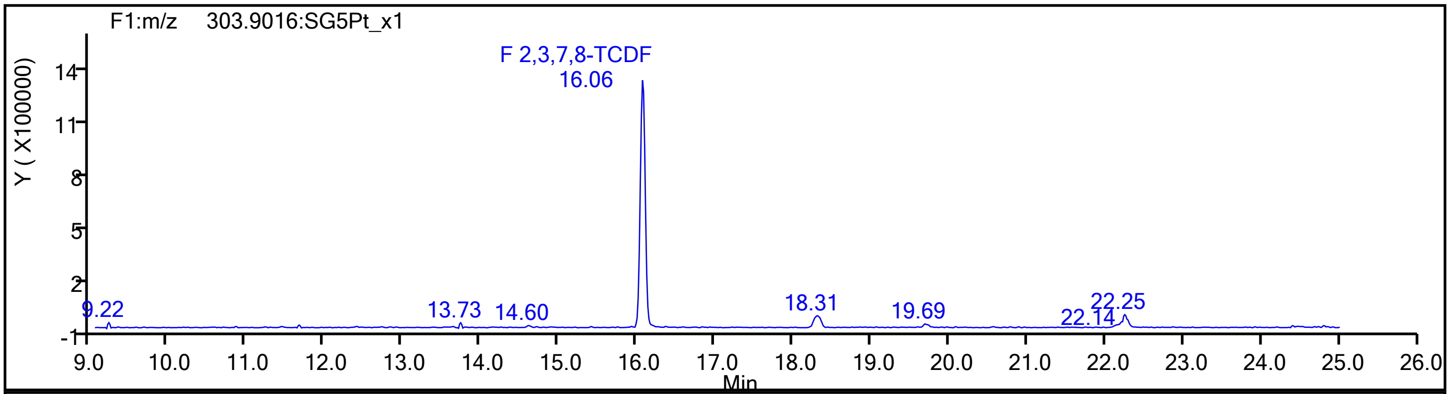

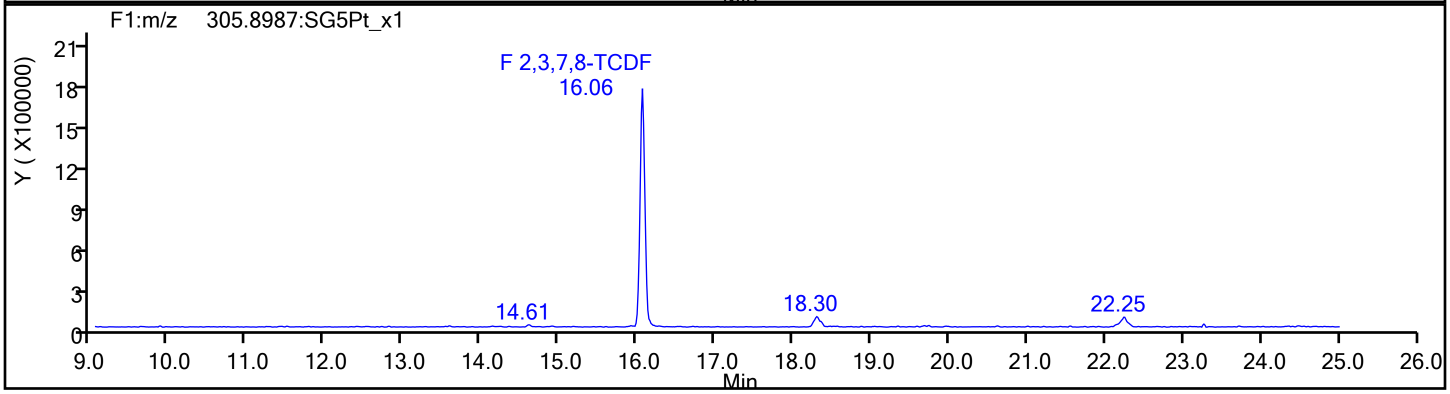

TCDF Standards

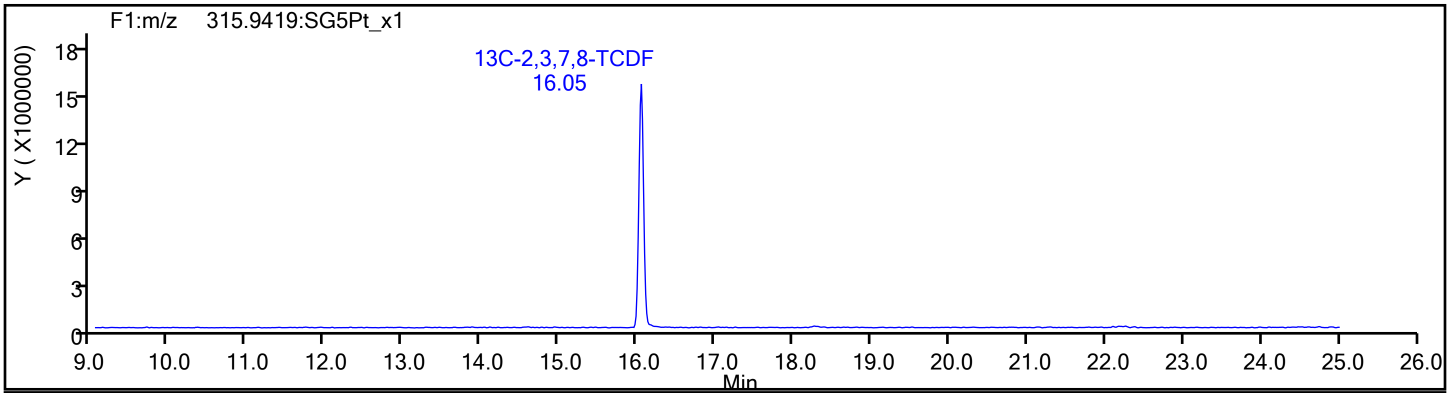

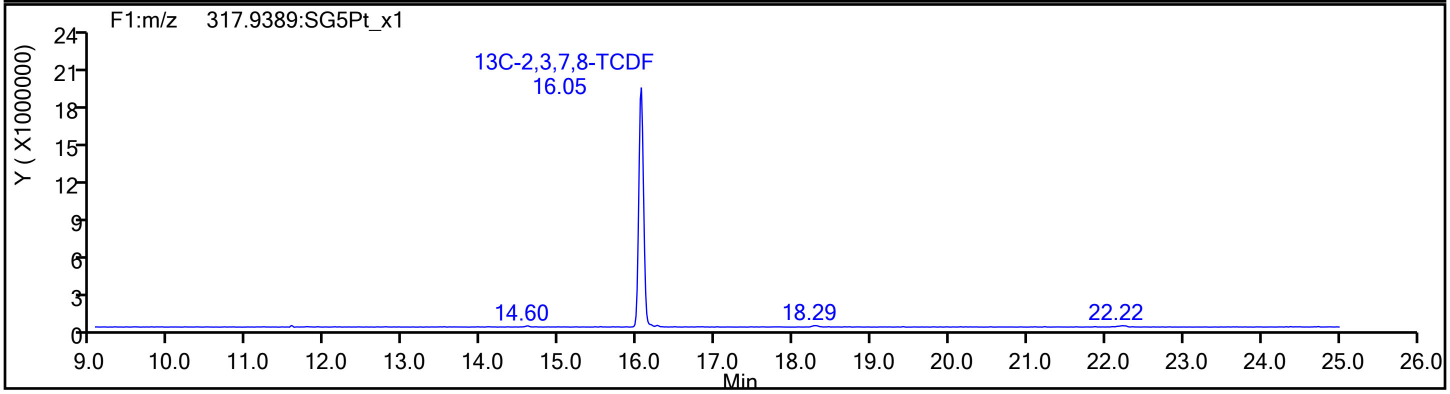

Report Date: 15-Oct-2020 13:36:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d		
Injection Date:	14-Oct-2020 12:00:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422080	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

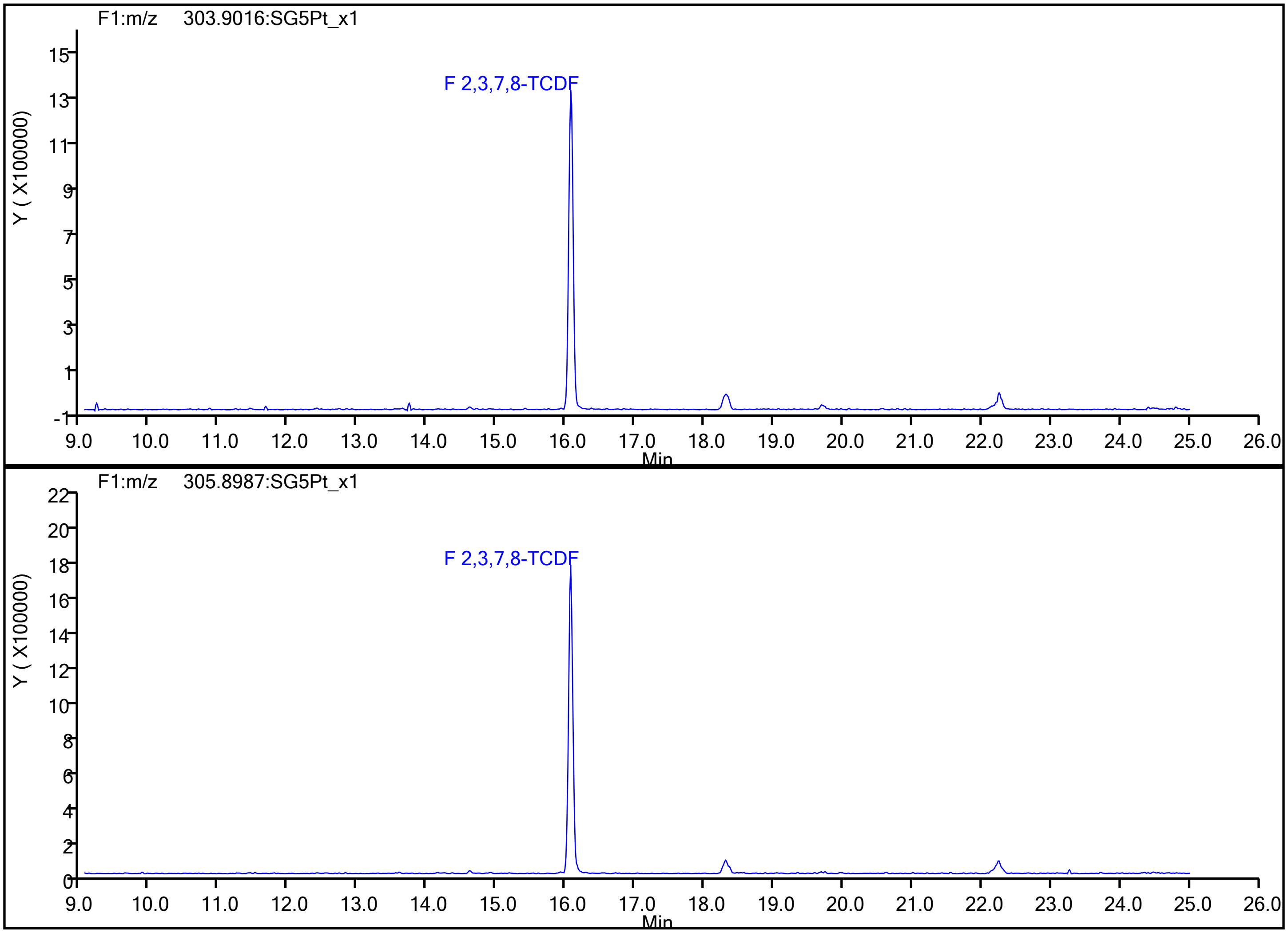

TCDF Interference Mass

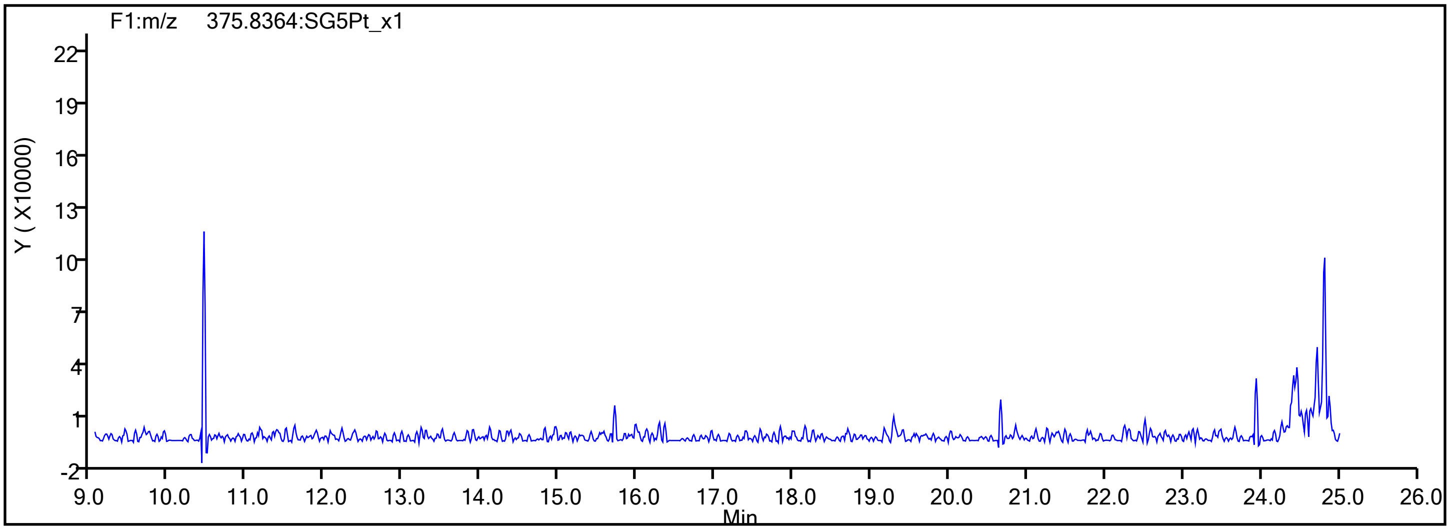

Report Date: 15-Oct-2020 13:36:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d		
Injection Date:	14-Oct-2020 12:00:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422080	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

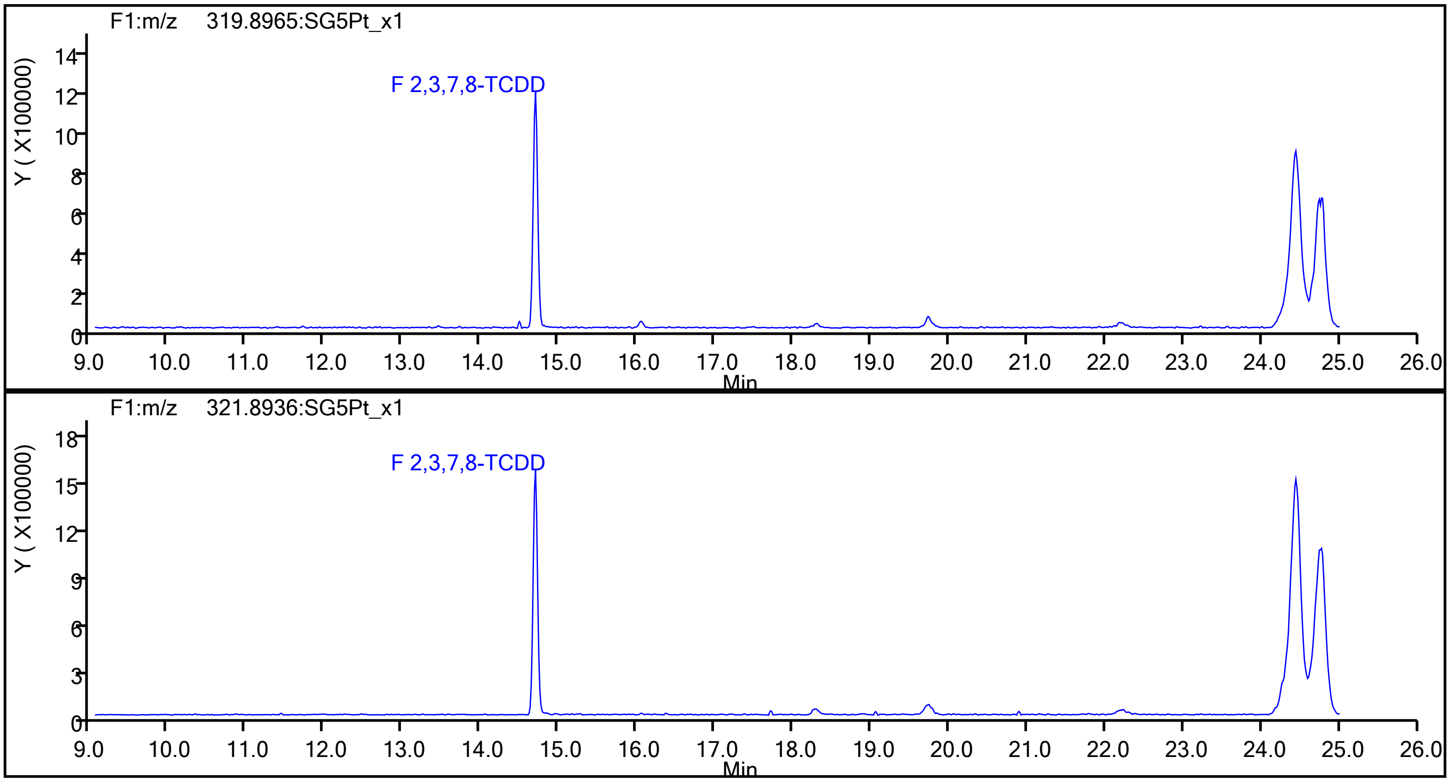

TCDD Standards

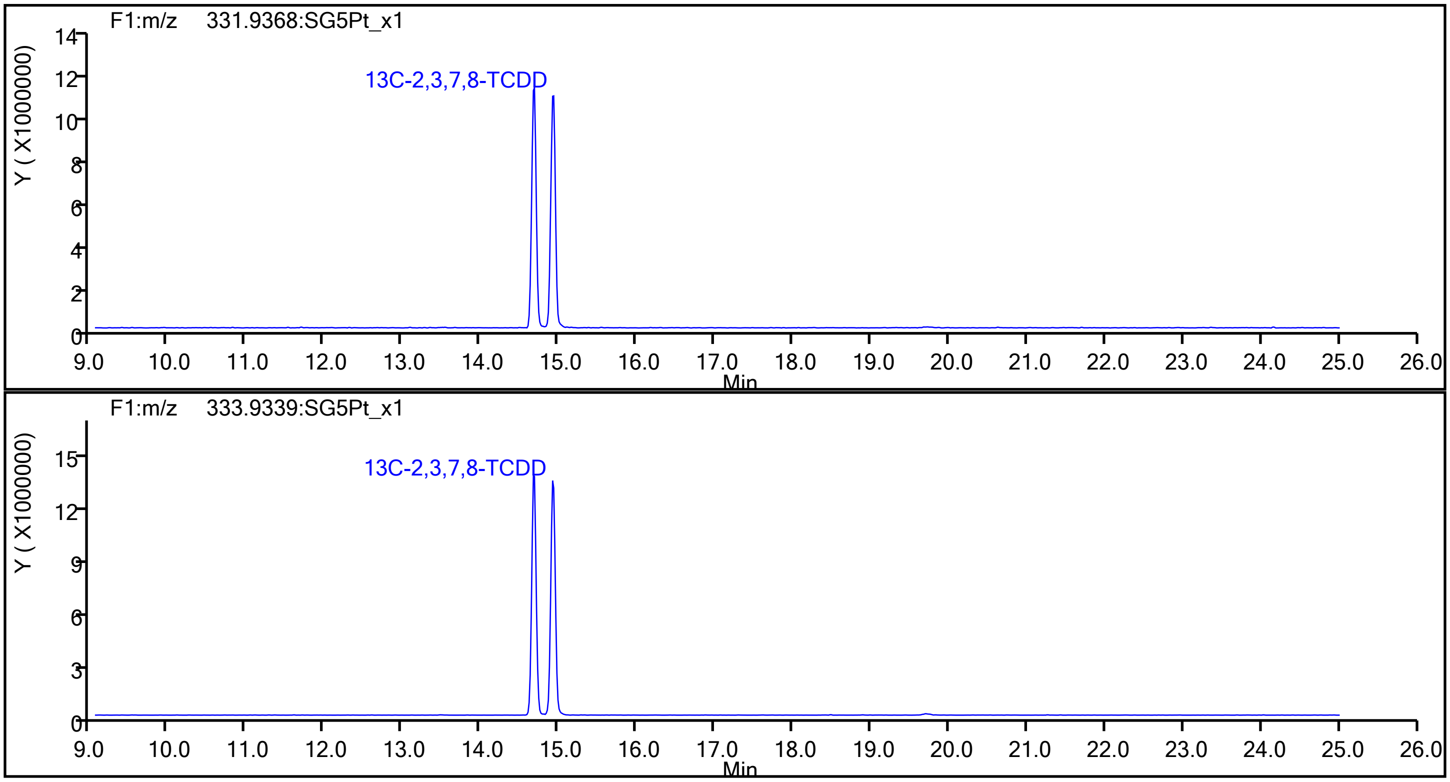

Report Date: 15-Oct-2020 13:36:51　Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d
Injection Date: 14-Oct-2020 12:00:02　Injection Vol: 2.0 ul
Instrument ID: 11D2　Operator ID:
Method: DXN_DB225_11D2　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422080　Sample Line#: 2
Column Type: DB-225　Column Dia: 0.32 mm

37Cl4-TCDD

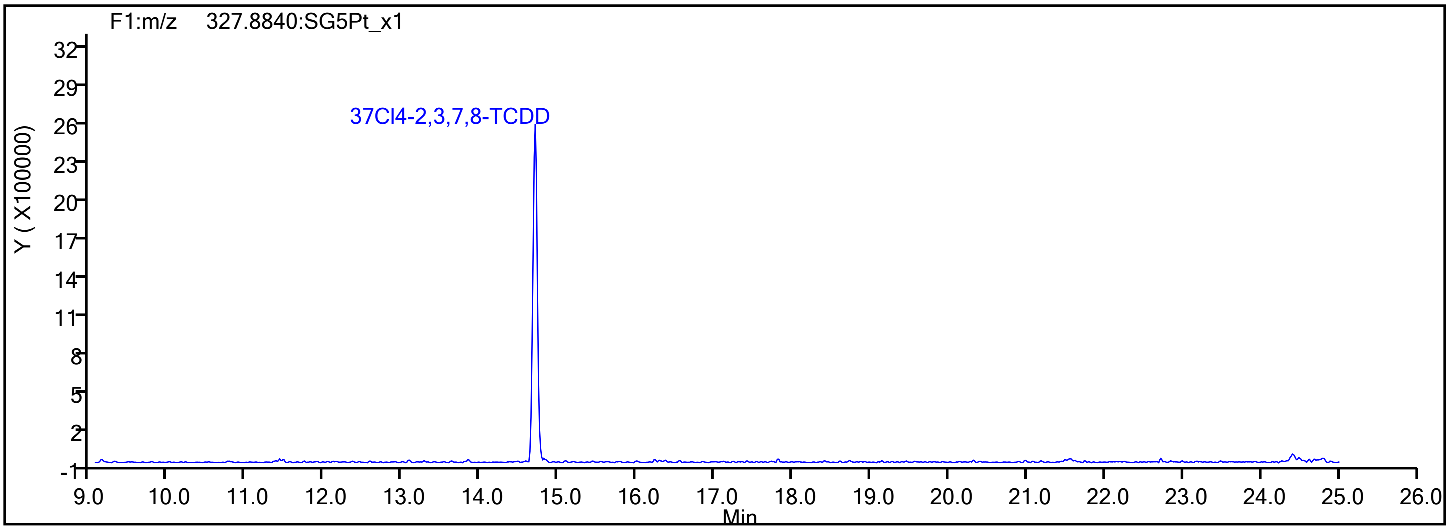

37Cl4-TCDD Standards

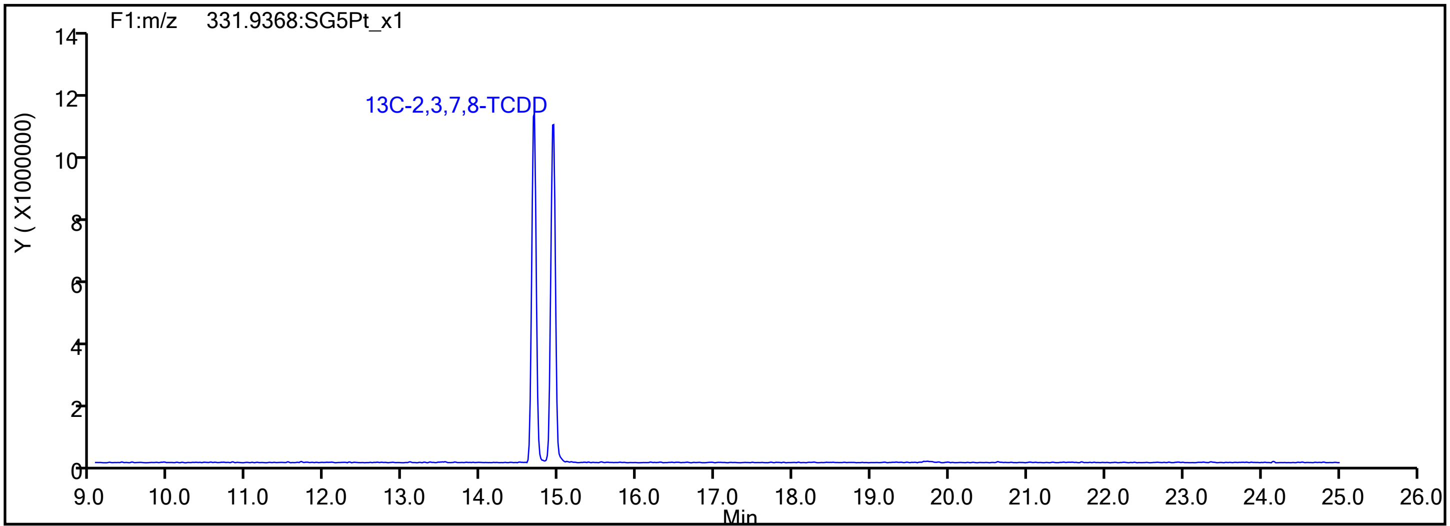

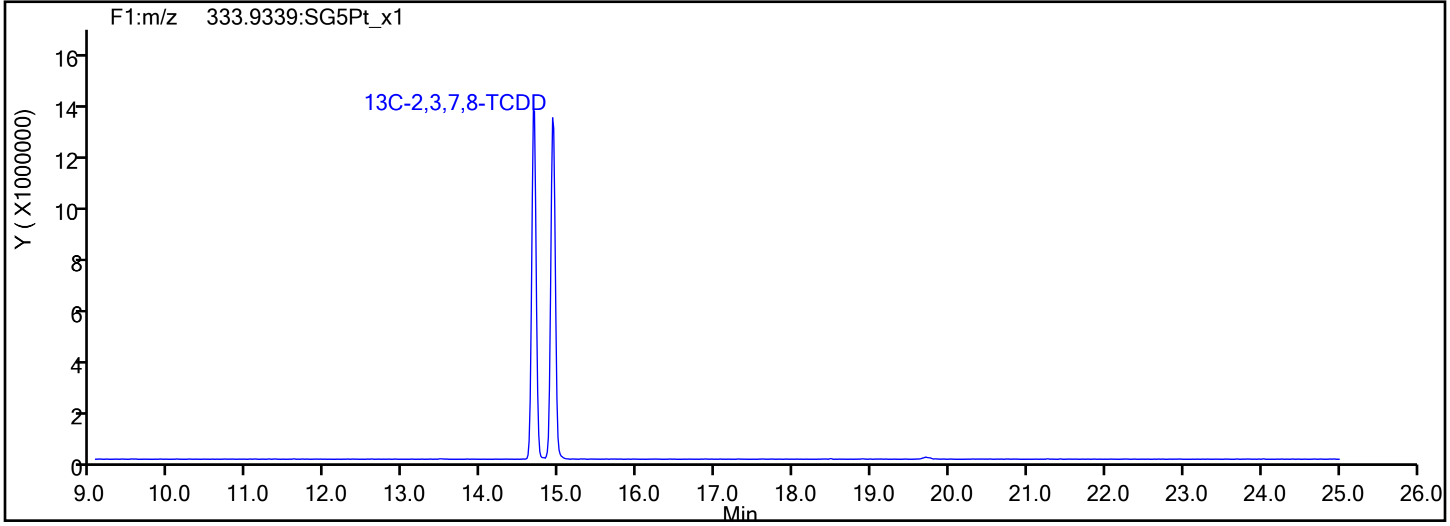

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_002.d		
Injection Date:	14-Oct-2020 12:00:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422080	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

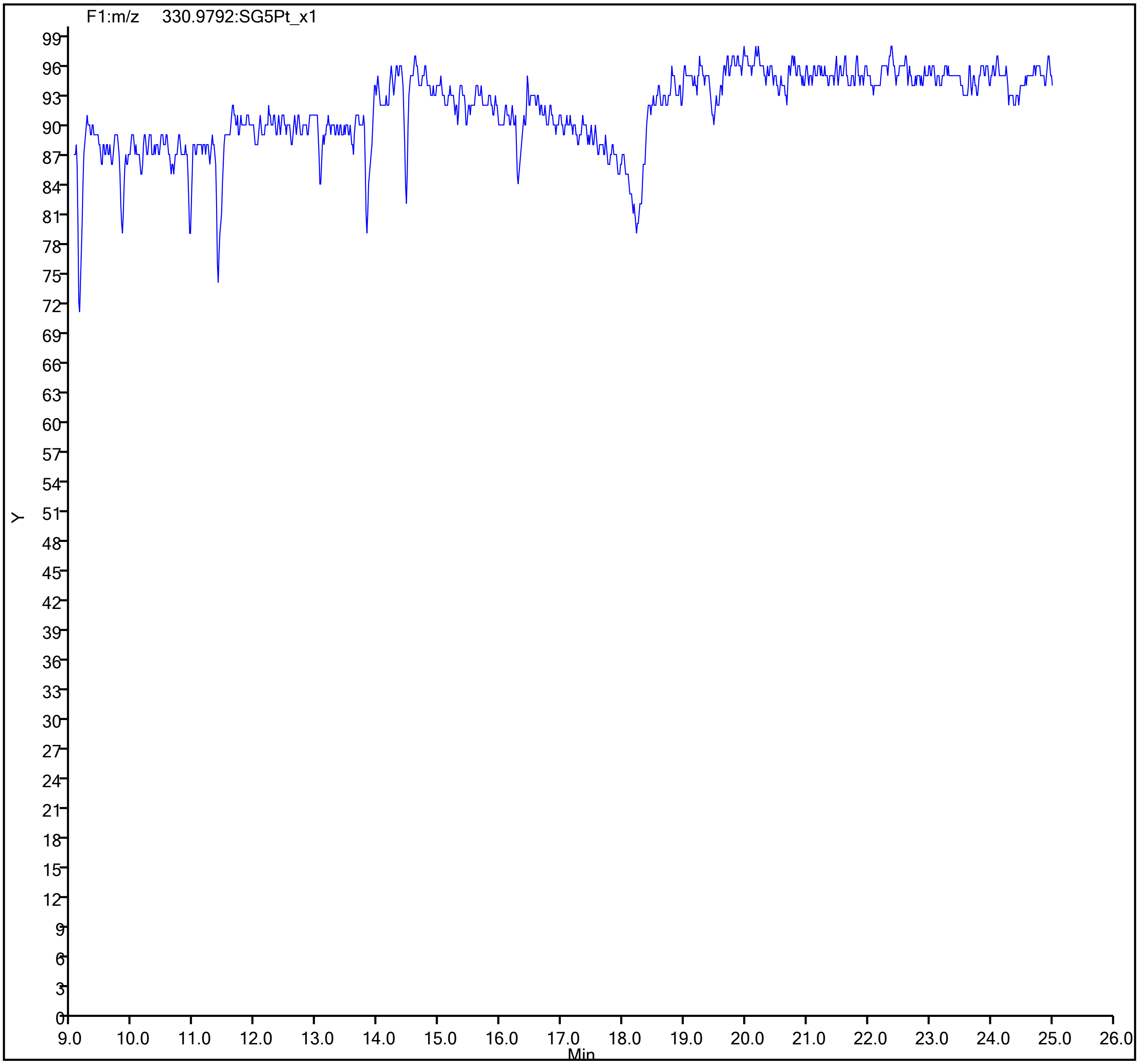

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: ICV 320-419031/9 Calibration Date: 10/05/2020 22:30

Instrument ID: 3D5 Calib Start Date: 10/05/2020 17:35

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/05/2020 20:45

Lab File ID: 05OC203D5_10.d Conc. Units: pg/uL

EPA Sample No.: ICV

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9534	0.8461		35.5	40.0	89	70-130
2,3,7,8-TCDD	AveID	1.020	0.9748		38.2	40.0	96	70-130
1,2,3,7,8-PeCDF	AveID	1.079	0.9395		174	200	87	70-130
2,3,4,7,8-PeCDF	AveID	1.097	1.084		198	200	99	70-130
1,2,3,7,8-PeCDD	AveID	1.140	0.9801		172	200	86	70-130
1,2,3,4,7,8-HxCDF	AveID	1.255	1.095		175	200	87	70-130
1,2,3,6,7,8-HxCDF	AveID	1.210	1.119		185	200	92	70-130
2,3,4,6,7,8-HxCDF	AveID	1.218	1.141		187	200	94	70-130
1,2,3,4,7,8-HxCDD	AveID	1.254	1.115		178	200	89	70-130
1,2,3,6,7,8-HxCDD	AveID	1.112	1.040		187	200	94	70-130
1,2,3,7,8,9-HxCDD	AveID	1.285	1.093		170	200	85	70-130
1,2,3,7,8,9-HxCDF	AveID	1.232	1.079		175	200	88	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.478	1.390		188	200	94	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.086	0.9781		180	200	90	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.378	1.255		182	200	91	70-130
OCDD	AveID	1.258	1.180		375	400	94	70-130
OCDF	AveID	1.725	1.577		366	400	91	70-130
13C-2,3,7,8-TCDF	Ave	1.484	1.282		86.3	100	86	71-140
13C-2,3,7,8-TCDD	Ave	1.087	1.108		102	100	102	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.394	1.241		89.0	100	89	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.337	1.214		90.8	100	91	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8475	0.7771		91.7	100	92	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.306	1.404		107	100	107	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.421	1.425		100	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.314	1.307		99.5	100	99	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8660	0.8978		104	100	104	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9827	1.006		102	100	102	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.320	1.282		97.1	100	97	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9410	0.9451		100	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9049	0.9665		107	100	107	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.8751	0.8986		103	100	103	77-129
13C-OCDD	Ave	0.5783	0.7027		243	200	122	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.122	1.068		38.1	40.0	95	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d
Lims ID: ICV
Client ID: ICV
Sample Type: ICV
Inject. Date: 05-Oct-2020 22:30:49 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 100520 ICV HRDXNIC_00046
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist:

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:25:33 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 13:46:49

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	277610243	0.78	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.462	355771414	0.75	1.4844	86.3	86.3	0.5090	0.5090	86.34	
2,3,7,8-TCDF	15.492	120400814	0.70	0.9534	35.5	35.5	0.1339	0.1339	88.74	
A Non-2,3,7,8-sub-TCDF	15.273						0.1339	0.1339		n
S Total TCDF					35.5	35.5	0.1339	0.1339		
$ 37Cl4-2,3,7,8-TCDD	16.097	118597312		1.1216	38.1	38.1	0.1567	0.1567	95.22	
D 13C-2,3,7,8-TCDD	16.081	307464745	0.80	1.0875	101.8	101.8	0.3472	0.3472	102	
2,3,7,8-TCDD	16.097	119881028	0.74	1.0205	38.2	38.2	0.0542	0.0542	95.52	
A Non-2,3,7,8-sub-TCDD	15.666	1705985	0.77	1.0205	0.6113	0.5437	0.0542	0.5437		RQ
S Total TCDD					38.8	38.8	0.0542	0.0542		RQ
D 13C-1,2,3,7,8-PeCDF	19.700	344651207	1.56	1.3943	89.0	89.0	0.2568	0.2568	89.04	
1,2,3,7,8-PeCDF	19.727	647617011	1.55	1.0794	174.1	174.1	0.7953	0.7953	87.04	
D 13C-2,3,4,7,8-PeCDF	20.832	337039055	1.59	1.3370	90.8	90.8	0.2678	0.2678	90.81	
2,3,4,7,8-PeCDF	20.845	730386003	1.57	1.0966	197.6	197.6	0.8561	0.8561	98.81	
A F1 PeCDFs	17.752						0.0333	0.0333		
A Non-2,3,7,8-sub-PeCDF	20.383	16578038	1.51	1.0880	4.470	4.470	0.8243	4.470		
S Total PeCDF					376.2	376.2	0.8257	0.8257		
D 13C-1,2,3,7,8-PeCDD	21.432	215741798	1.57	0.8475	91.7	91.7	0.1464	0.1464	91.69	
1,2,3,7,8-PeCDD	21.459	422900350	1.55	1.1397	172.0	172.0	0.2630	0.2630	86.00	
A Non-2,3,7,8-sub-PeCDD	20.573						0.2630	0.2630		
S Total PeCDD					172.0	172.0	0.2630	0.2630		
D 13C-1,2,3,4,7,8-HxCDF	26.759	279366601	0.53	1.3065	107.4	107.4	0.4079	0.4079	107	
1,2,3,4,7,8-HxCDF	26.786	611963278	1.21	1.2552	174.5	174.5	0.6663	0.6663	87.26	
D 13C-1,2,3,6,7,8-HxCDF	27.039	283606289	0.53	1.4213	100.3	100.3	0.3749	0.3749	100	
1,2,3,6,7,8-HxCDF	27.066	634775580	1.18	1.2102	184.9	184.9	0.7379	0.7379	92.47	
D 13C-2,3,4,6,7,8-HxCDF	28.597	260196532	0.52	1.3142	99.5	99.5	0.4055	0.4055	99.49	
2,3,4,6,7,8-HxCDF	28.623	593737730	1.24	1.2182	187.3	187.3	0.8464	0.8464	93.66	
D 13C-1,2,3,7,8,9-HxCDF	30.408	255127013	0.53	1.3204	97.1	97.1	0.4035	0.4035	97.09	
1,2,3,7,8,9-HxCDF	30.434	550652504	1.21	1.2319	175.2	175.2	0.5884	0.5884	87.60	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	27.525						0.6978	0.6978		
S Total HxCDF					722.0	722.0	0.7098	0.7098		
* 13C-1,2,3,7,8,9-HxCDD	30.101	199010166	1.30	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.090	178677449	1.29	0.8660	103.7	103.7	0.2979	0.2979	104	a
1,2,3,4,7,8-HxCDD	29.116	398589691	1.26	1.2535	178.0	178.0	0.4765	0.4765	88.98	
D 13C-1,2,3,6,7,8-HxCDD	29.356	200236271	1.29	0.9827	102.4	102.4	0.2625	0.2625	102	a
1,2,3,6,7,8-HxCDD	29.382	416466495	1.26	1.1117	187.1	187.1	0.5013	0.5013	93.54	
1,2,3,7,8,9-HxCDD	30.128	414187974	1.25	1.2852	170.1	170.1	0.4486	0.4486	85.05	
A Non-2,3,7,8-sub-HxCDD	27.938						0.4738	0.4738		
S Total HxCDD					535.2	535.2	0.4754	0.4754		
D 13C-1,2,3,4,6,7,8-HpCDF	32.559	188075348	0.45	0.9410	100.4	100.4	1.861	1.861	100	
1,2,3,4,6,7,8-HpCDF	32.571	522943092	1.06	1.4783	188.1	188.1	2.510	2.510	94.04	
D 13C-1,2,3,4,7,8,9-HpCDF	33.653	178824391	0.45	0.8751	102.7	102.7	2.001	2.001	103	
1,2,3,4,7,8,9-HpCDF	33.665	448798090	1.01	1.3784	182.1	182.1	2.359	2.359	91.04	
A Non-2,3,7,8-sub-HpCDF	33.124						2.427	2.427		
S Total HpCDF					370.2	370.2	2.435	2.435		
D 13C-1,2,3,4,6,7,8-HpCDD	33.410	192335286	1.12	0.9049	106.8	106.8	1.783	1.783	107	
1,2,3,4,6,7,8-HpCDD	33.410	376241635	1.04	1.0862	180.1	180.1	0.5457	0.5457	90.04	
A Non-2,3,7,8-sub-HpCDD	33.339						0.5457	0.5457		
S Total HpCDD					180.1	180.1	0.5457	0.5457		
D 13C-OCDD	35.570	279703357	0.94	0.5783	243.0	243.0	1.230	1.230	122	
OCDF	35.642	882317706	0.92	1.7248	365.8	365.8	0.4031	0.4031	91.44	
OCDD	35.582	660302028	0.91	1.2576	375.4	375.4	0.9736	0.9736	93.86	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Report Date: 08-Oct-2020 15:25:35 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d
Lims ID: ICV
Client ID: ICV
Sample Type: ICV
Inject. Date: 05-Oct-2020 22:30:49 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 100520 ICV HRDXNIC_00046
Misc. Info.: 05OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist:

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:25:33 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 13:46:49

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.930	-1		121803718	34226992	61087	152717	560		
333.9339	15.915	15.930	-1		155806525	43960655	56989	142472	771	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.462	15.522	-4	0.972	152242741	43035972	120161	300402	358		
317.9389	15.462	15.522	-4	0.972	203528673	55929408	116155	290387	482	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.537	-3	1.002	49479340	12989608	31003	77507	419		
305.8987	15.477	15.537	-4	1.001	70921474	18548461	19551	48877	949	0.70(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	14.932	15.273	-20	0.966	326977	100363	31003	77507	3		
305.8987	14.932	15.273	-20	0.966	494236	142274	19551	48877	7	0.66(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.097	0	1.011	118597312	31322915	54962	137405	570		
13C-2,3,7,8-TCDD											
331.9368	16.081	16.127	-3	1.010	136645622	35410631	61087	152717	580		
333.9339	16.081	16.127	-3	1.010	170819123	44250383	56989	142472	776	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.142	-3	1.001	51009277	13538593	8025	20062	1687		
321.8936	16.097	16.142	-3	1.001	68871751	18381124	9614	24035	1912	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	16.006	15.666	20	0.995	742152	261811	8025	20062	33		
321.8936	16.006	15.666	20	0.995	1175805	387109	9614	24035	40	0.63(0.65-0.89)	
	Empc Correction				963833	340014	9614	24035	35		

Report Date: 08-Oct-2020 15:25:35 Chrom Revision: 2.3 06-Oct-2020 14:45:12
Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	19.700	19.714	-1	1.238	209762780	43785597	65807	164517	665		
353.8970	19.700	19.714	-1	1.238	134888427	28411270	46183	115457	615	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.727	19.727	0	1.001	393310624	81259241	148730	371825	546		
341.8567	19.714	19.727	-1	1.001	254306387	50824239	99158	247895	513	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.832	20.832	0	1.309	207105254	40899292	65807	164517	622		
353.8970	20.818	20.832	-1	1.308	129933801	25111201	46183	115457	544	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.845	20.846	0	1.001	446264872	87584340	148730	371825	589		
341.8567	20.845	20.846	0	1.001	284121131	56059463	99158	247895	565	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.752						4511	11277			
341.8567	17.752						5492	13730			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.164	20.383	-13	1.024	9982481	1946417	148730	371825	13		
341.8567	20.164	20.383	-13	1.024	6595557	1285819	99158	247895	13	1.51(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.432	21.445	-1	1.347	131635460	23989926	22670	56675	1058		
369.8919	21.432	21.445	-1	1.347	84106338	15132655	16123	40307	939	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.459	21.473	-1	1.001	257078531	47591128	27987	69967	1700		
357.8516	21.459	21.473	-1	1.001	165821819	30505711	18912	47280	1613	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.573						27987	69967			
357.8516	20.573						18912	47280			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.759	26.773	-1	0.889	97341961	14130158	25957	64892	544		
385.8610	26.759	26.773	-1	0.889	182024640	26007268	44554	111385	584	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.786	26.799	-1	1.001	334947215	48040776	70841	177102	678		
375.8178	26.786	26.799	-1	1.001	277016063	39236044	63437	158592	619	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.039	27.039	0	0.898	97790224	12946217	25957	64892	499		
385.8610	27.039	27.039	0	0.898	185816065	24646057	44554	111385	553	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.066	27.079	-1	1.001	343923760	46044514	70841	177102	650		
375.8178	27.066	27.079	-1	1.001	290851820	38497303	63437	158592	607	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.597	28.583	1	0.950	88799734	11198963	25957	64892	431		
385.8610	28.597	28.583	1	0.950	171396798	21356304	44554	111385	479	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.623	28.637	-1	1.001	328409594	41340256	70841	177102	584		
375.8178	28.623	28.637	-1	1.001	265328136	32767928	63437	158592	517	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.408	0	1.010	88188573	15952609	25957	64892	615		
385.8610	30.408	30.408	0	1.010	166938440	30358486	44554	111385	681	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.434	30.434	0	1.001	301759481	52024221	70841	177102	734		
375.8178	30.434	30.434	0	1.001	248893023	46176709	63437	158592	728	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.525						70841	177102			
375.8178	27.525						63437	158592			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.101	30.101	0		112588800	18671793	20105	50262	929		
403.8529	30.101	30.101	0		86421366	14409835	14036	35090	1027	1.30(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.090	29.090	0	0.966	100655422	12312397	20105	50262	612		a
403.8529	29.090	29.090	0	0.966	78022027	9447370	14036	35090	673	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.116	29.116	0	1.001	222129389	28202981	29234	73085	965		
391.8127	29.116	29.116	0	1.001	176460302	22579261	22750	56875	992	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.356	29.356	0	0.975	112726046	13128568	20105	50262	653		a
403.8529	29.343	29.356	-1	0.975	87510225	10192898	14036	35090	726	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.382	29.382	0	1.001	232229197	28230523	29234	73085	966		
391.8127	29.382	29.382	0	1.001	184237298	22042549	22750	56875	969	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.128	30.128	0	1.036	230026882	38427907	29234	73085	1314		
391.8127	30.128	30.128	0	1.036	184161092	30537730	22750	56875	1342	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.938						29234	73085			
391.8127	27.938						22750	56875			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.559	32.547	1	1.082	57940162	19443569	53307	133267	365		
419.8220	32.559	32.547	1	1.082	130135186	44213181	178431	446077	248	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.571	32.571	0	1.000	269216390	90688805	452157	1130392	201		
409.7789	32.559	32.571	-1	1.000	253726702	86603725	492561	1231402	176	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.653	33.641	1	1.118	55334801	22919817	53307	133267	430		
419.8220	33.653	33.641	1	1.118	123489590	49700541	178431	446077	279	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.665	33.677	-1	1.000	225361087	89528225	452157	1130392	198		
409.7789	33.665	33.677	-1	1.000	223437003	82926179	492561	1231402	168	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.124						452157	1130392			
409.7789	33.124						492561	1231402			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.410	33.398	1	1.110	101535035	38159784	181068	452670	211		
437.8140	33.410	33.398	1	1.110	90800251	34797874	32456	81140	1072	1.12(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.422	-1	1.000	191728583	74496732	76755	191887	971		
425.7737	33.410	33.422	-1	1.000	184513052	73988859	96229	240572	769	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						76755	191887			
425.7737	33.339						96229	240572			
13C-OCDD											
469.7779	35.570	35.570	0	1.182	135412350	48571537	42188	105470	1151		
471.7750	35.570	35.570	0	1.182	144291007	53596061	51944	129860	1032	0.94(0.76-1.02)	
OCDF											
441.7428	35.642	35.642	0	1.002	421768518	156370589	31265	78162	5001		
443.7399	35.642	35.642	0	1.002	460549188	169742894	110819	277047	1532	0.92(0.76-1.02)	
OCDD											
457.7377	35.582	35.570	1	1.000	313772791	115822518	100524	251310	1152		
459.7348	35.582	35.570	1	1.000	346529237	124423143	149667	374167	831	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

a - User Assigned ID

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d
Lims ID: ICV
Client ID: ICV
Inject. Date: 05-Oct-2020 22:30:49
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 419031
Lims Sample ID: 9
Sublist:

Non-2,3,7,8-sub-TCDD, RT: 15.666

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	307464745	79661014

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	307464745	79661014

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.006	742152	261811	1175805	387109	0.6113	0.63	RQ
16.006	742152	261811	963833	340014	0.5437		Empc Correction
Signal Totals:							
	742152	261811	963833	340014			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1917957	648920				0.63	RQ
	1705985	601825					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6113 = (1917957 * 100.000) / (307464745 * 1.020)
Empc Amount: 0.5437 = (1705985 * 100.000) / (307464745 * 1.020)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d		
Lims ID:	ICV		
Client ID:	ICV		
Inject. Date:	05-Oct-2020 22:30:49	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	419031	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 20.383

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	344651207	72196867
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	337039055	66010493

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	340845131	69103680

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.164	9982481	1946417	6595557	1285819	4.47	1.51	
Signal Totals:							
	9982481	1946417	6595557	1285819			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16578038	3232236				1.51	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 4.470 = (16578038 * 100.000) / (340845131 * 1.088)

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d				
Injection Date:	05-Oct-2020 22:30:49	Instrument ID:	3D5		
Lims ID:	ICV				
Client ID:	ICV				
Operator ID:	SMA	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.09

Processing Integration Results

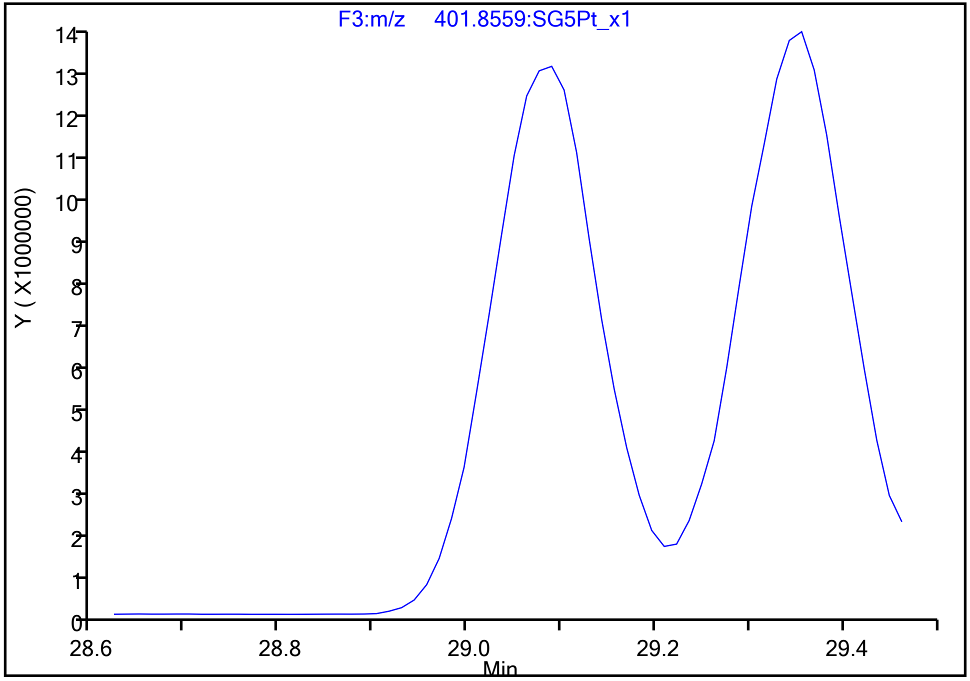

Manual Integration Results

RT: 29.09
Area: 100655422
Amount: 103.6728
Amount Units: pg/ul

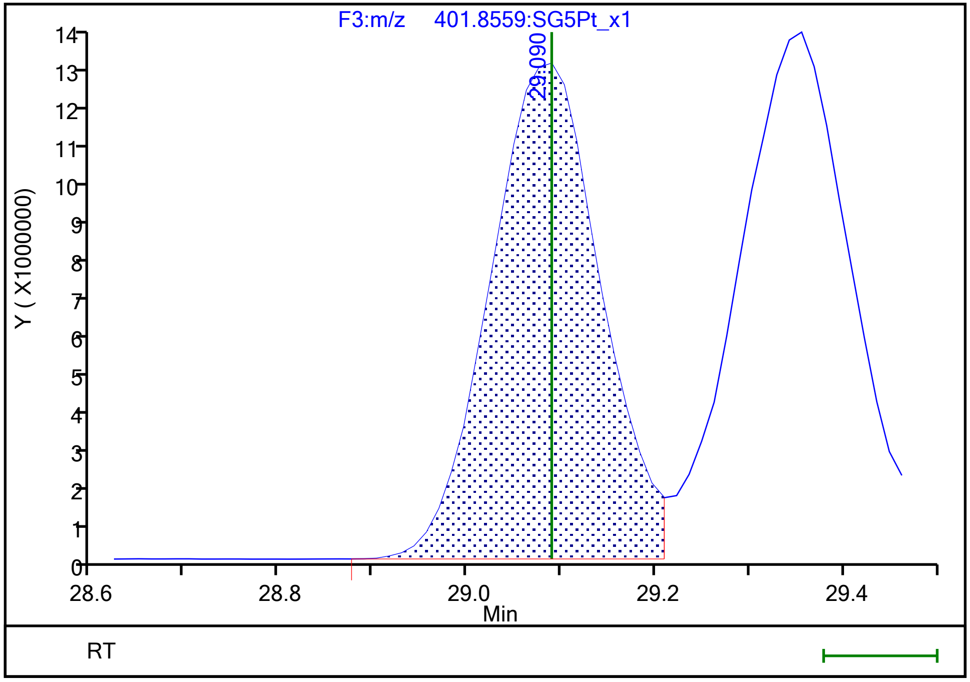

Reviewer: arghestanis, 08-Oct-2020 14:43:25
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d
Injection Date: 05-Oct-2020 22:30:49
Instrument ID: 3D5
Lims ID: ICV
Client ID: ICV
Operator ID: SMA
ALS Bottle#: 8
Worklist Smp#: 9
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT: 30.10
Area: 112588800
Amount: 101.7609
Amount Units: pg/ul

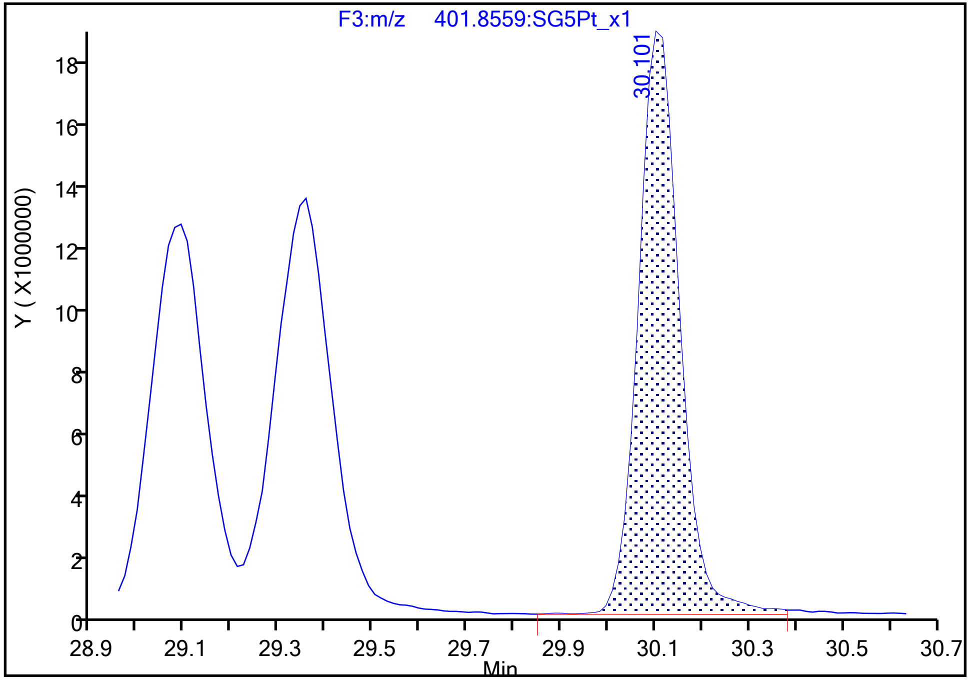

Manual Integration Results

RT: 29.36
Area: 112726046
Amount: 102.3878
Amount Units: pg/ul

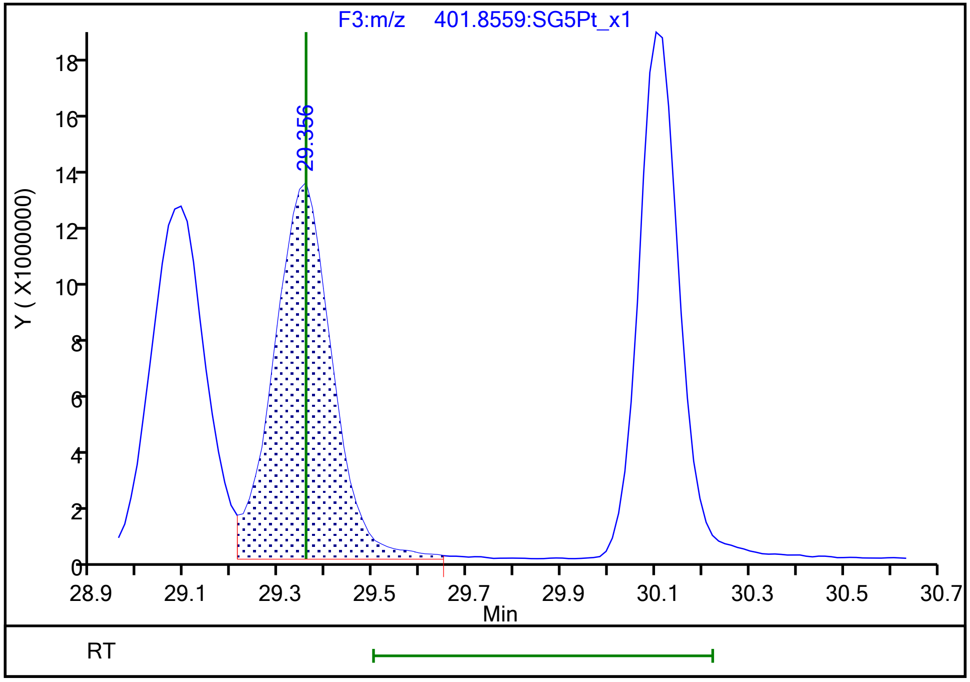

Reviewer: arghestanis, 08-Oct-2020 14:43:34
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Report Date: 08-Oct-2020 15:25:35 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d		
Injection Date:	05-Oct-2020 22:30:49	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	ICV		
Worklist#:	419031	Sample Line#:	9
Column Type:		Column Dia:	

TCDF

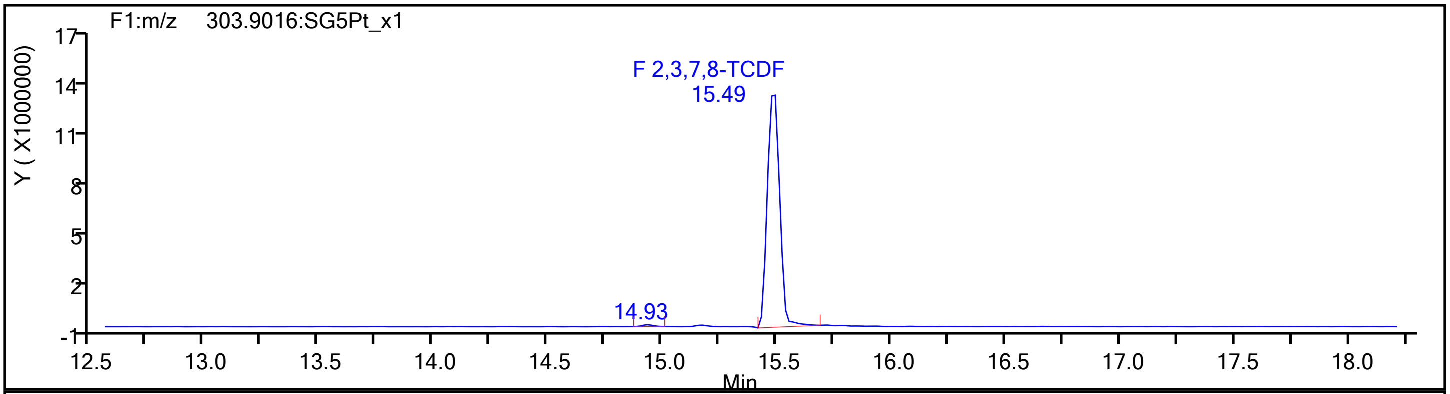

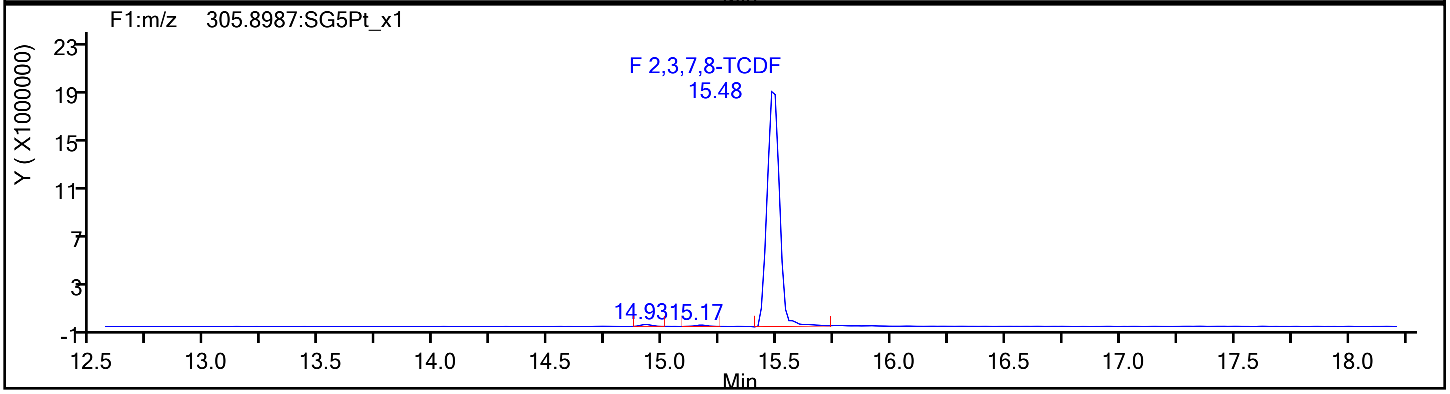

TCDF Standards

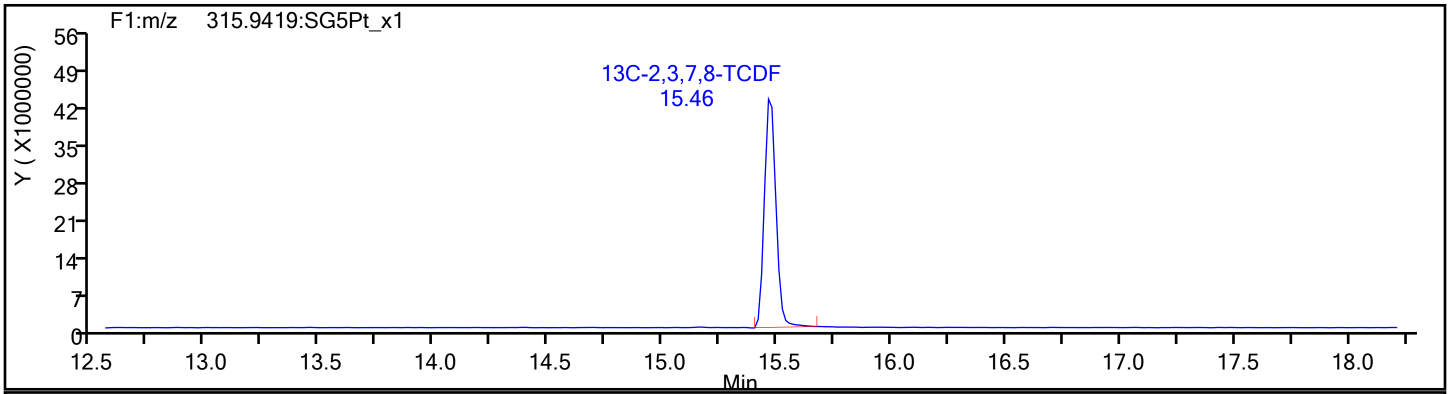

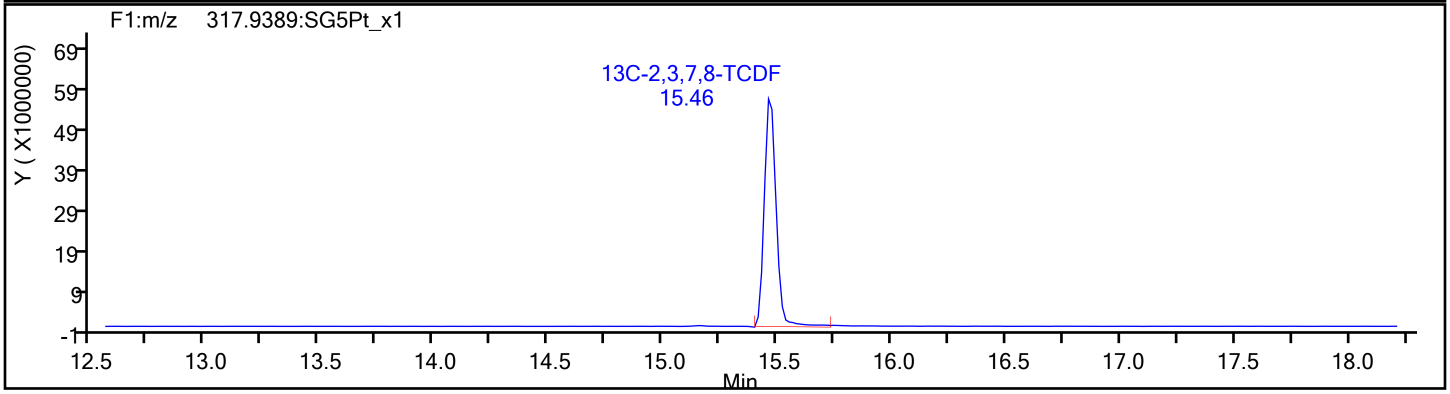

Report Date: 08-Oct-2020 15:25:35 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d

Injection Date: 05-Oct-2020 22:30:49

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID: ICV

Worklist#: 419031

Sample Line#: 9

Column Type:

Column Dia:

TCDF

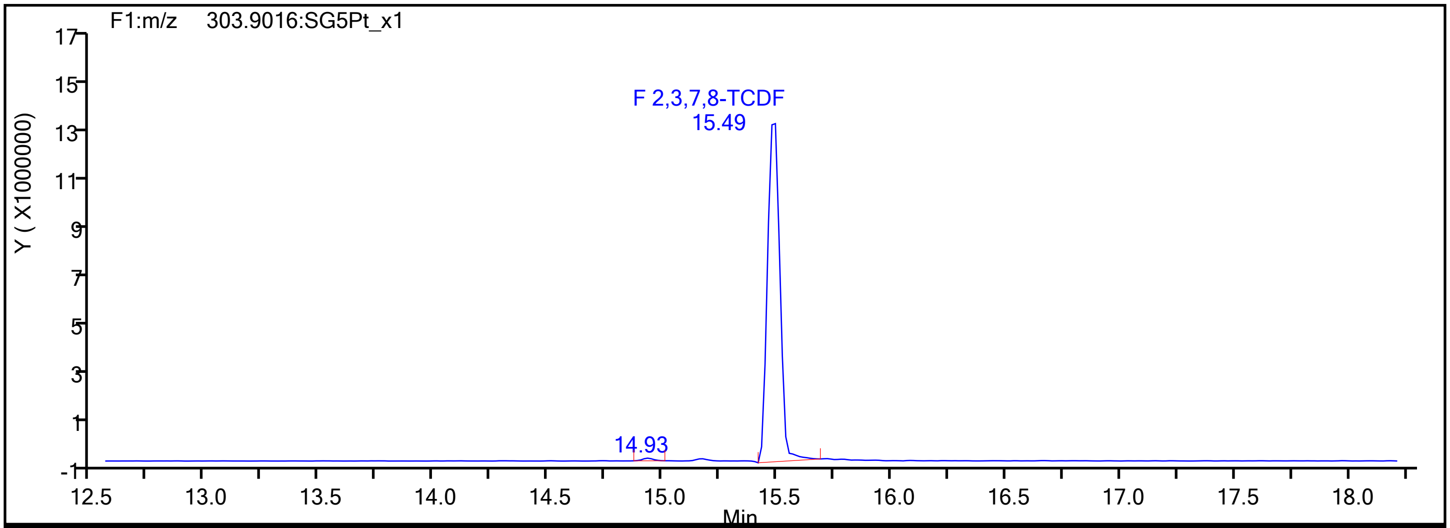

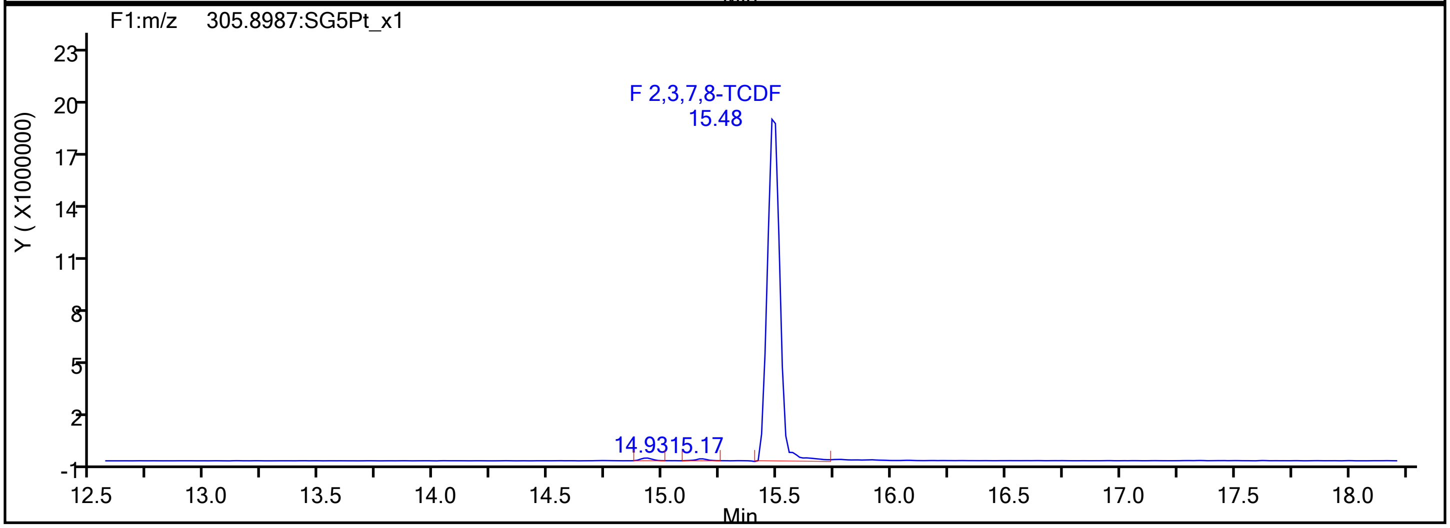

TCDF Interference Mass

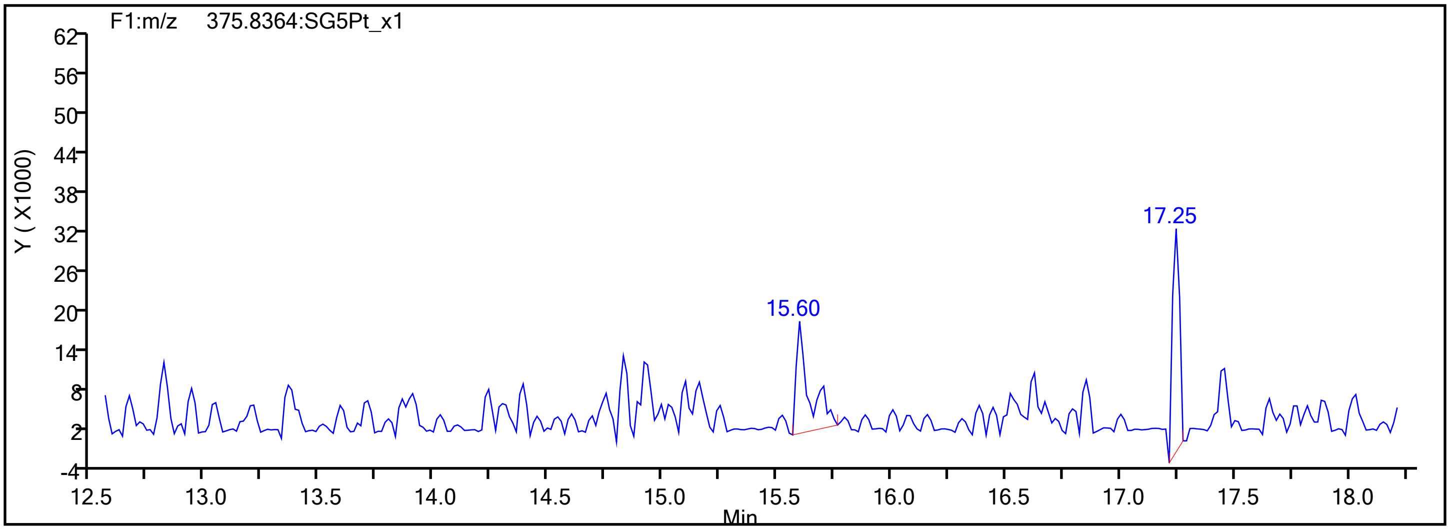

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 22:30:49 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: ICV

Worklist#: 419031 Sample Line#: 9

Column Type: Column Dia:

TCDD

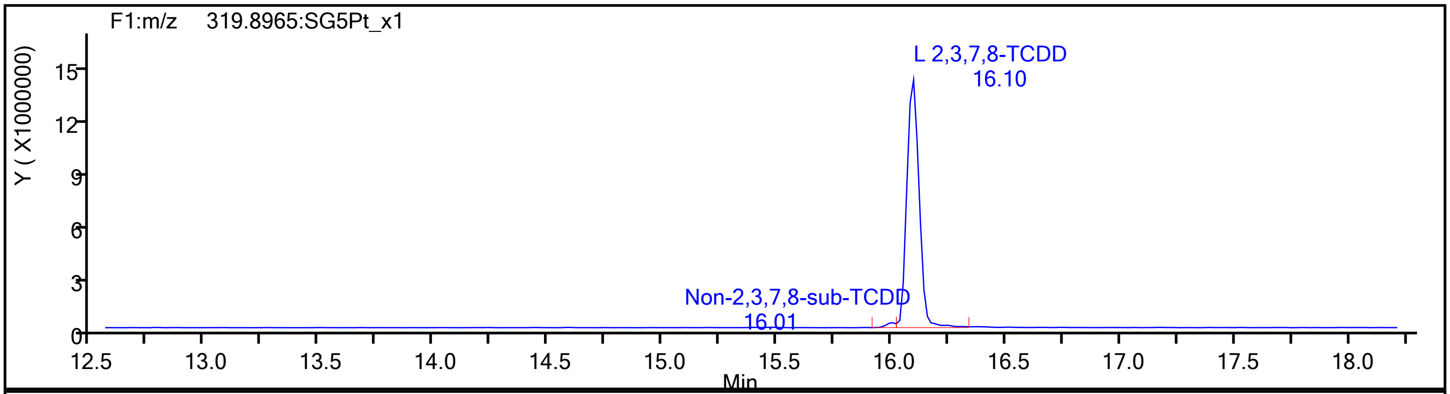

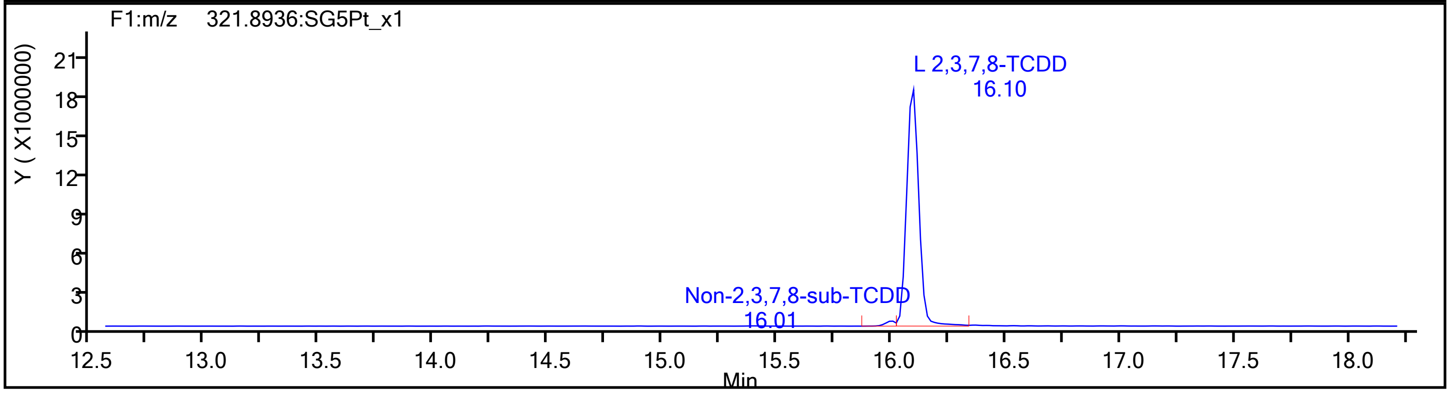

TCDD Standards

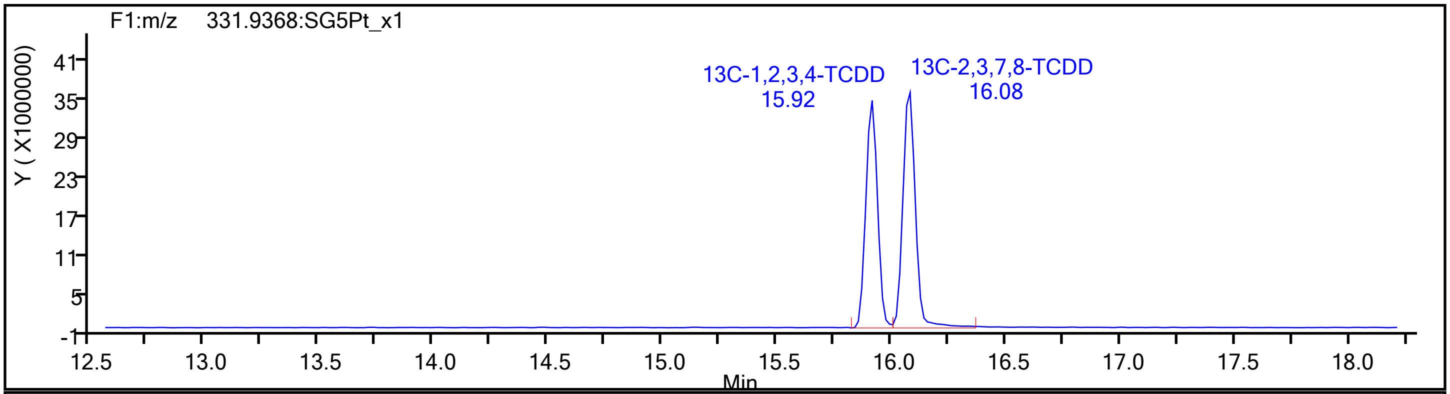

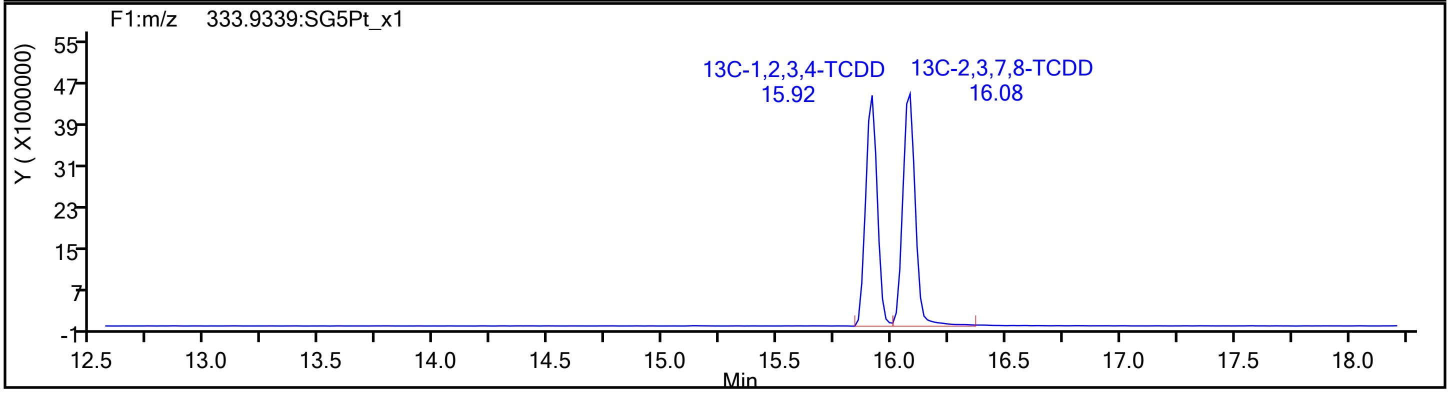

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Eurofins TestAmerica, Sacramento

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Column Type:		Column Dia:	

37Cl4-TCDD

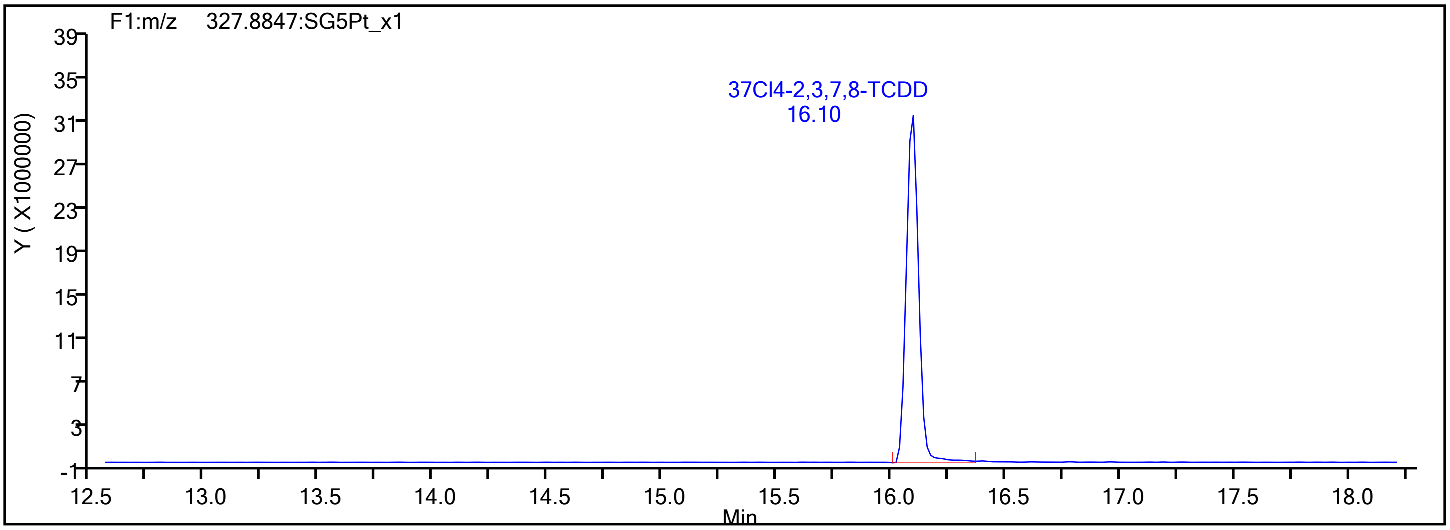

37Cl4-TCDD Standards

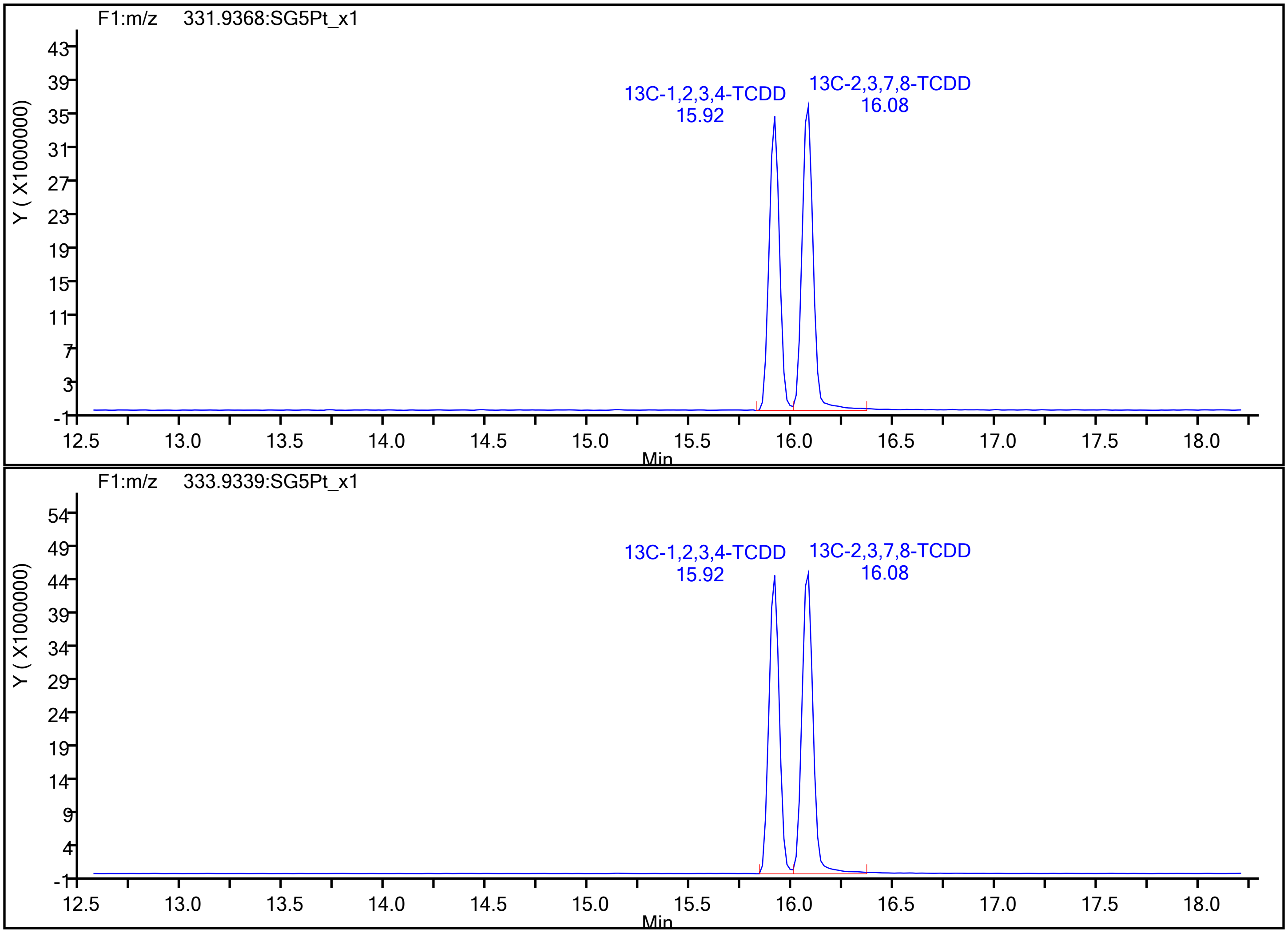

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Client ID:	ICV		
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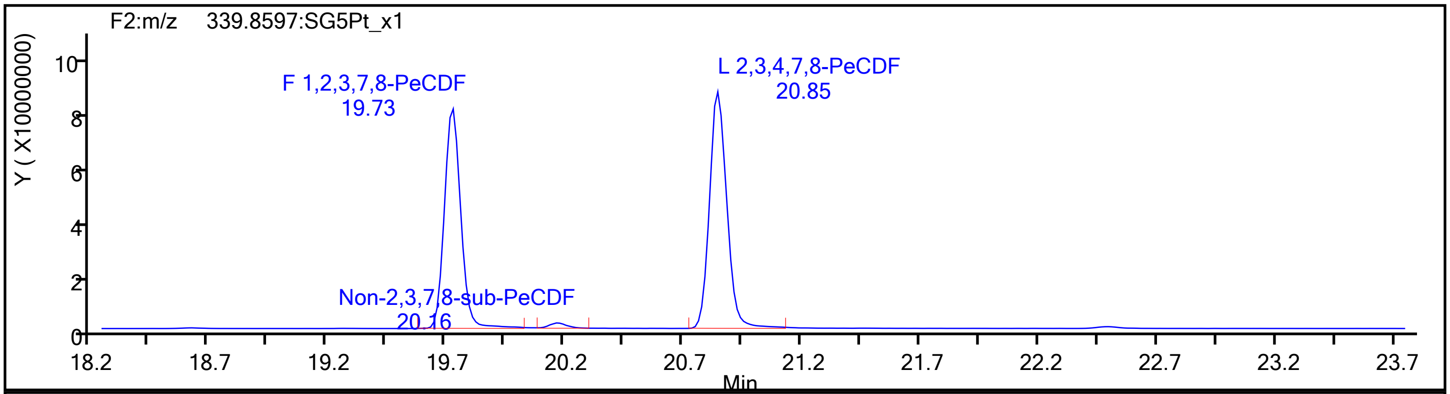

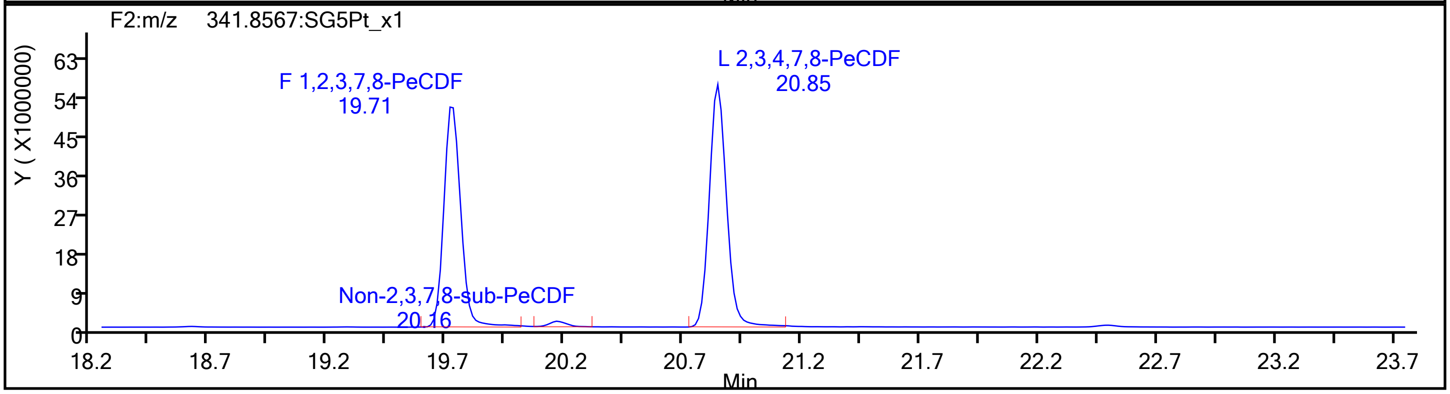

PeCDF Standards

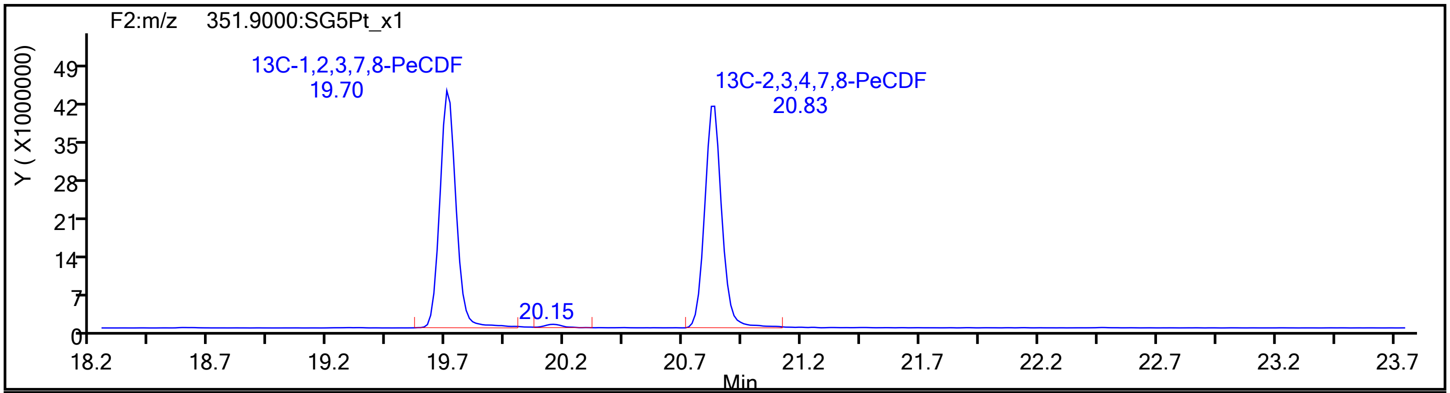

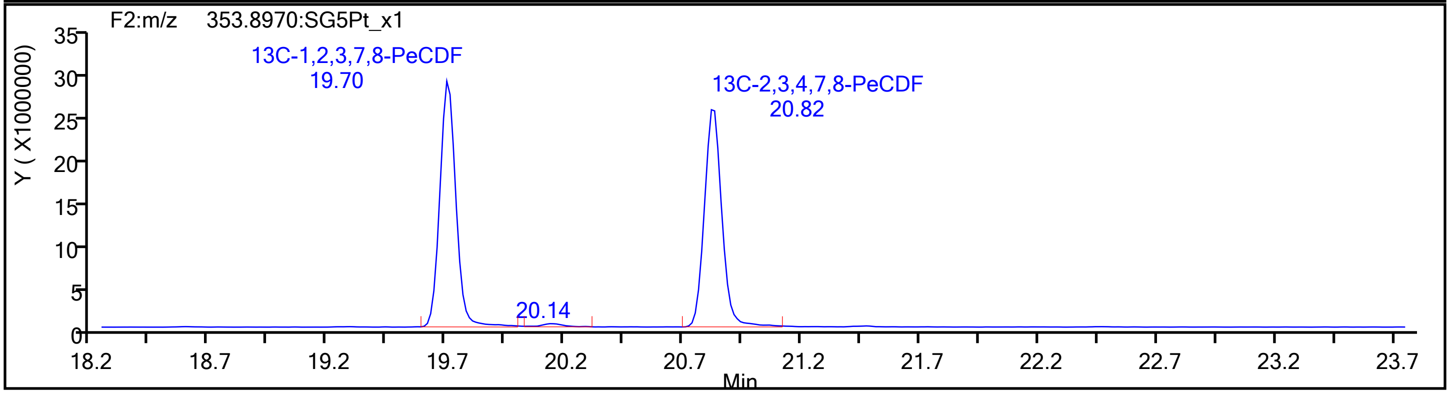

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: SMA
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Client ID: ICV
Worklist#: 419031
Sample Line#: 9
Column Type:
Column Dia:

PeCDF

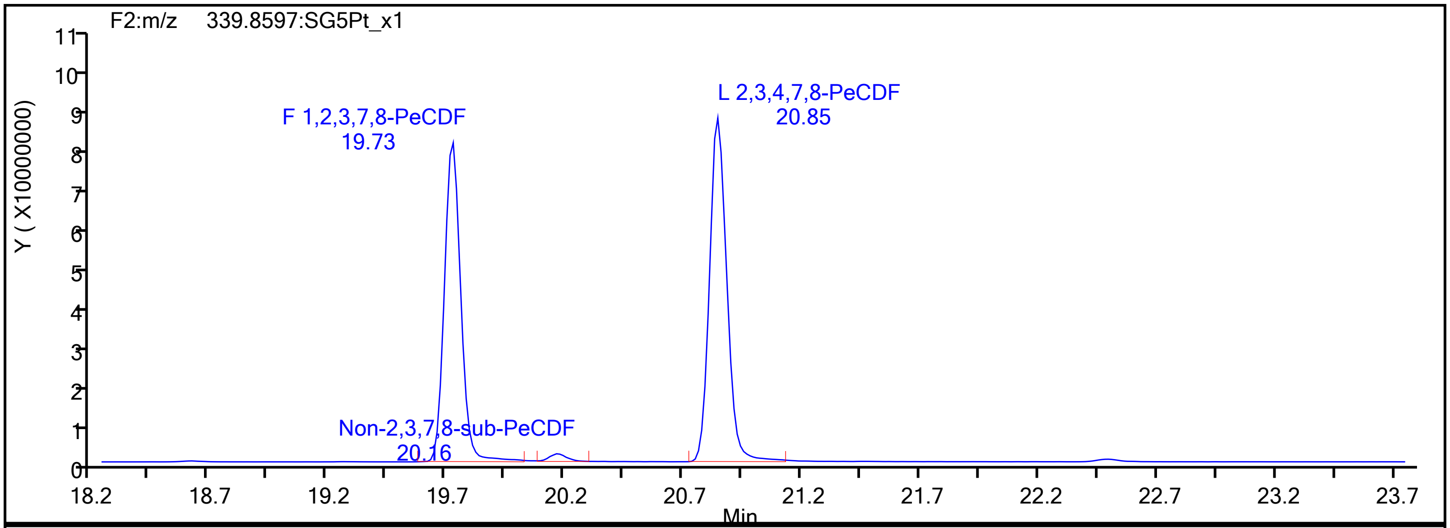

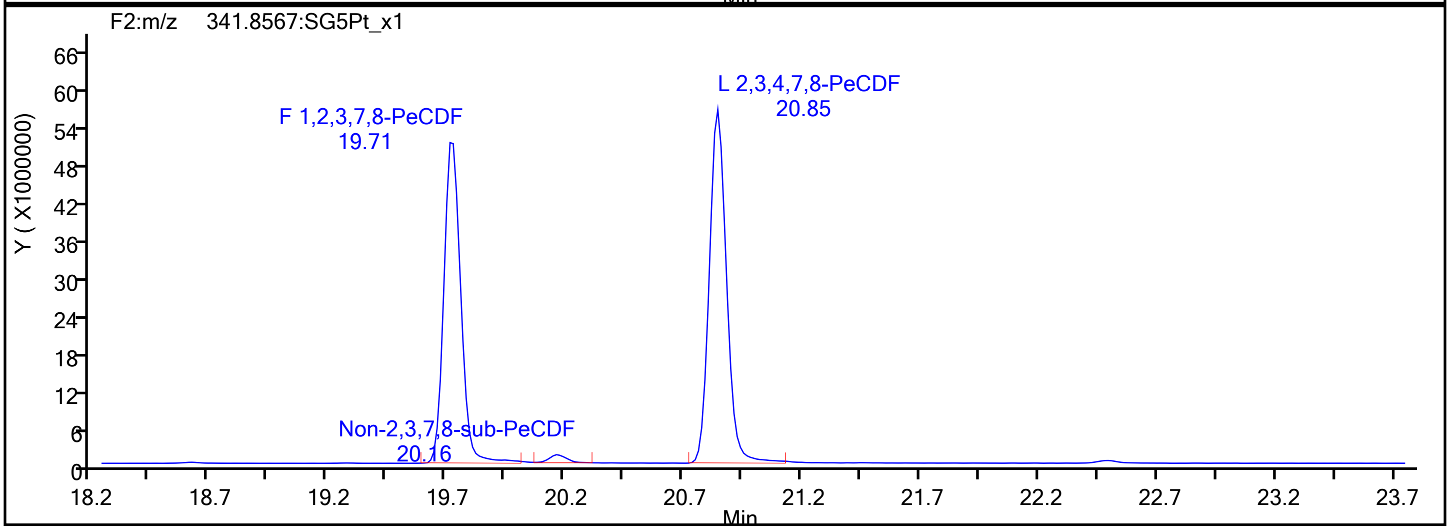

PeCDF Interference Mass

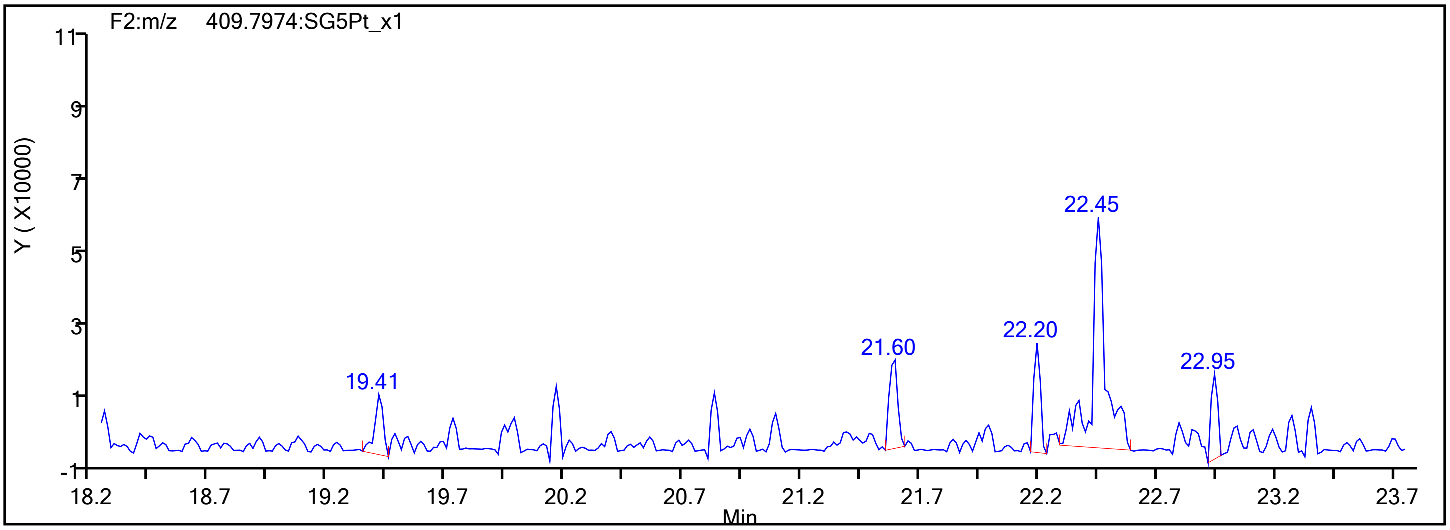

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 22:30:49 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

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Client ID: ICV

Worklist#: 419031 Sample Line#: 9

Column Type: Column Dia:

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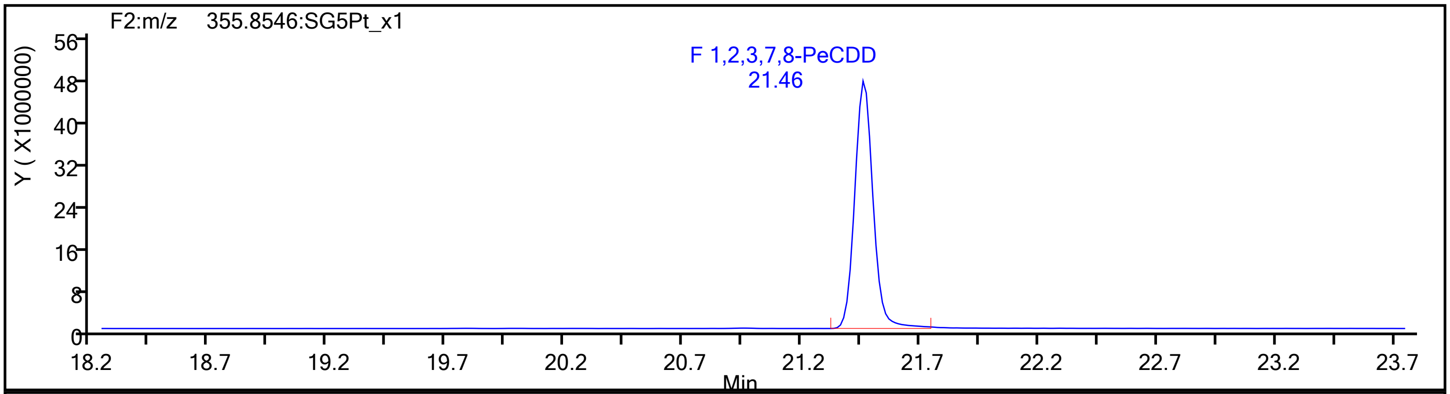

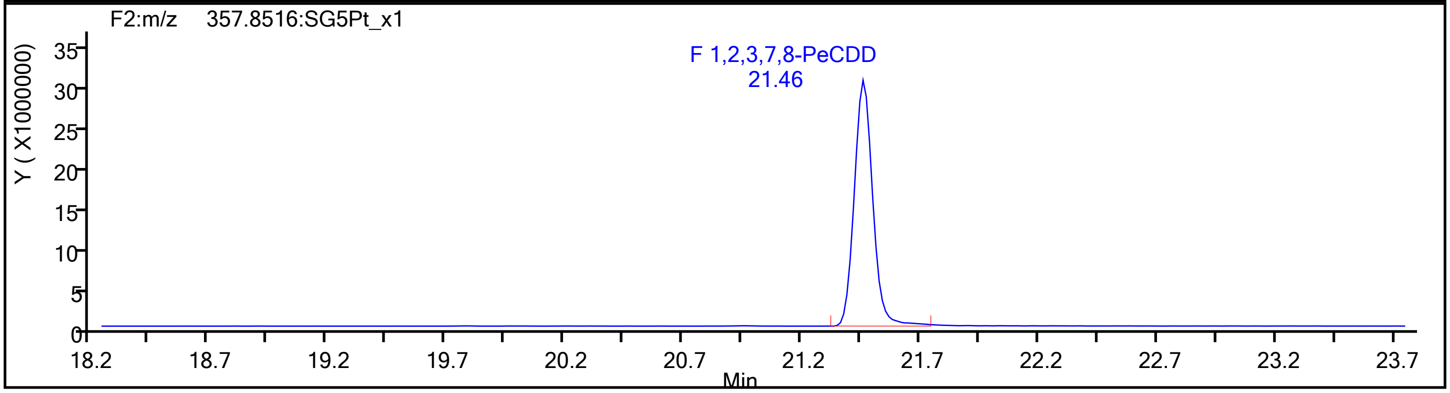

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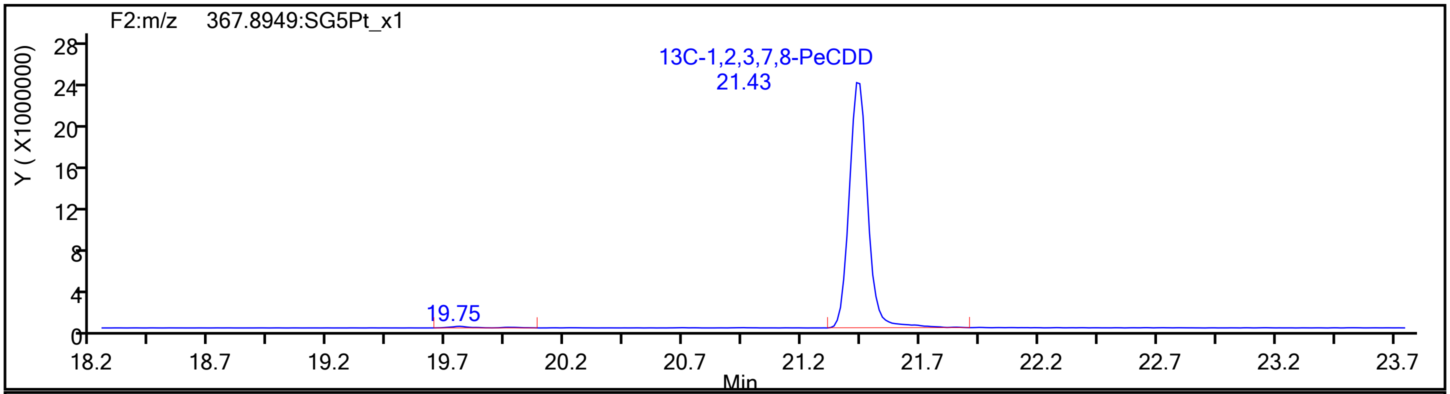

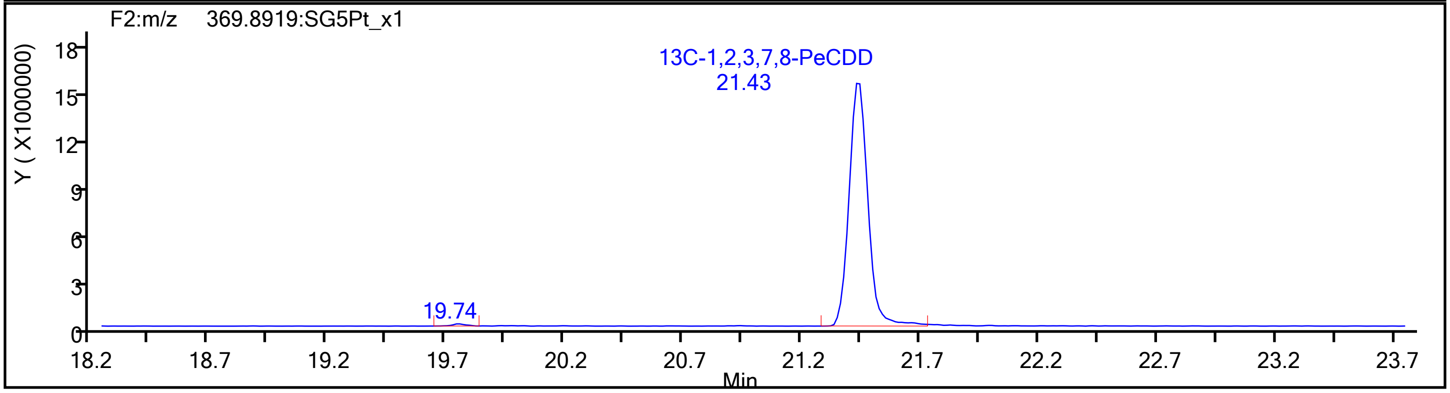

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	ICV		
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Column Type:		Column Dia:	

HxCDF

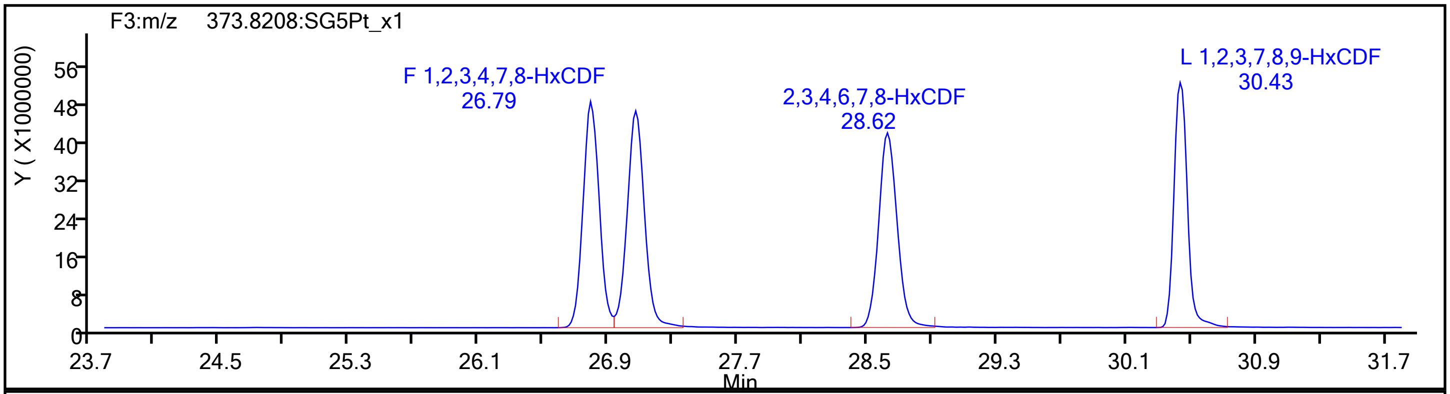

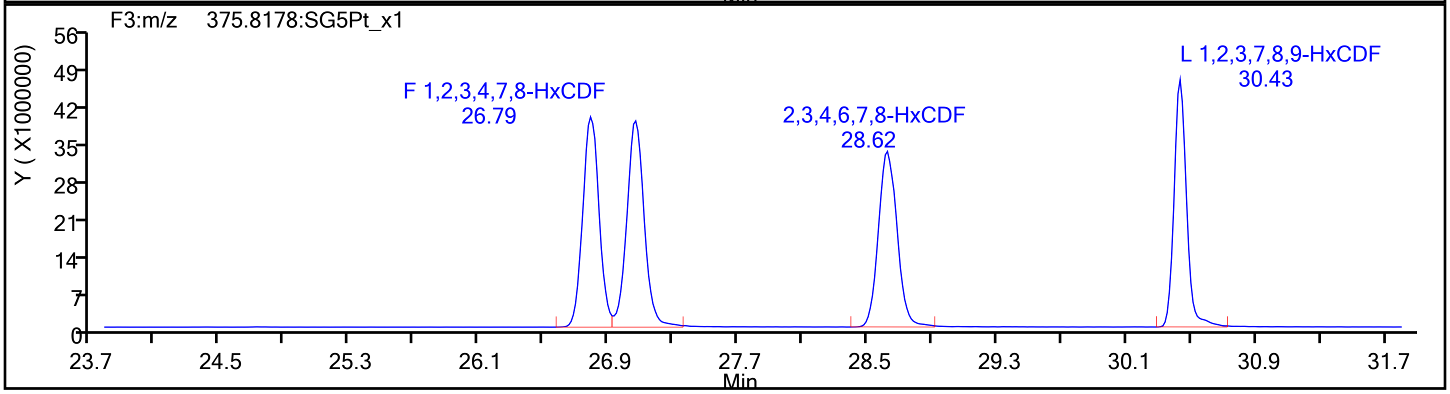

HxCDF Standards

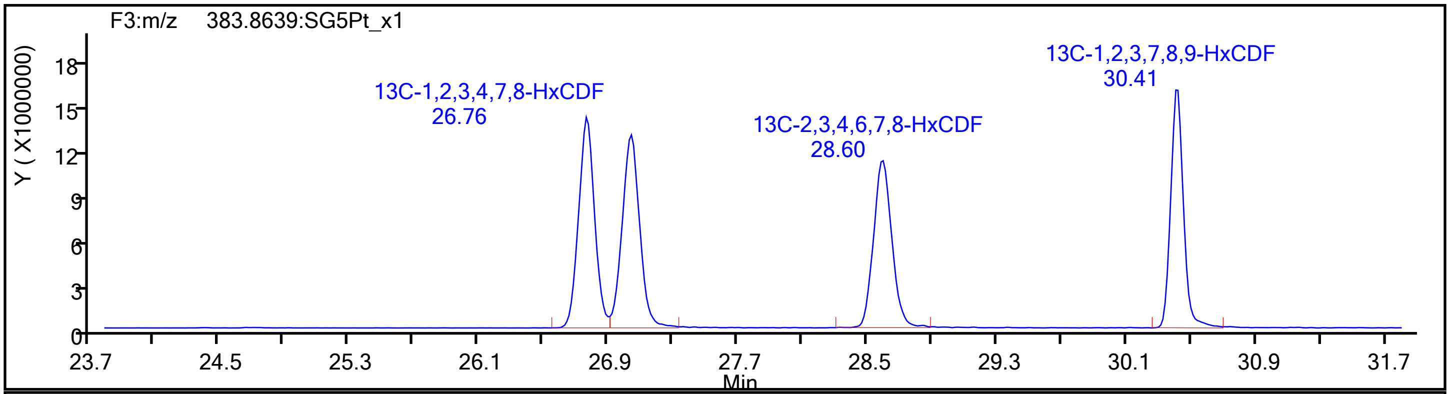

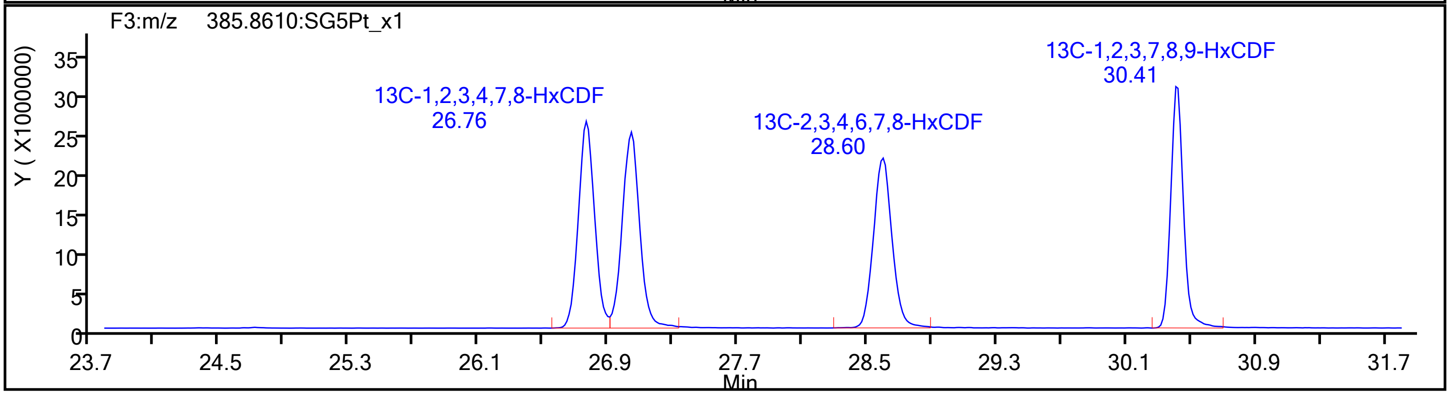

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Eurofins TestAmerica, Sacramento

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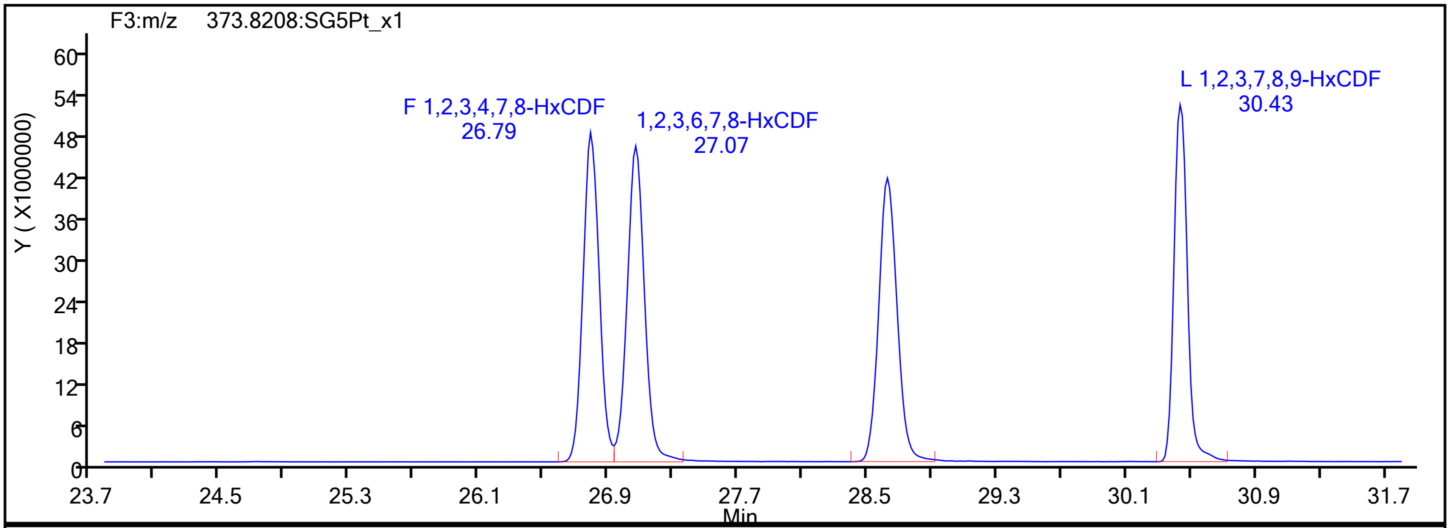

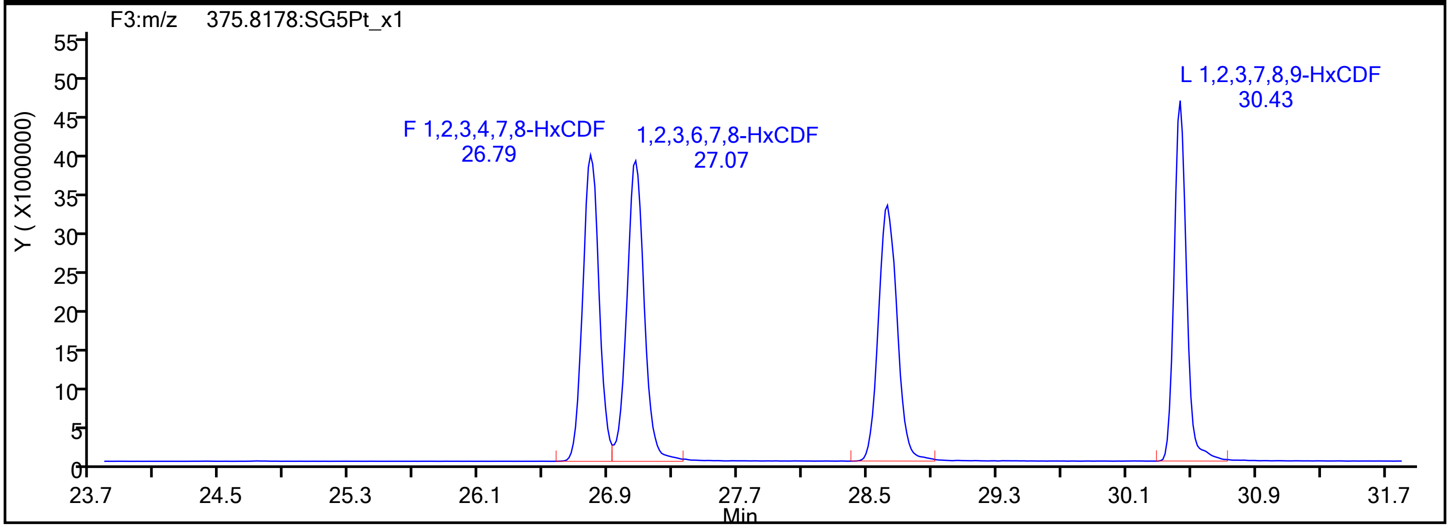

HxCDF Interference Mass

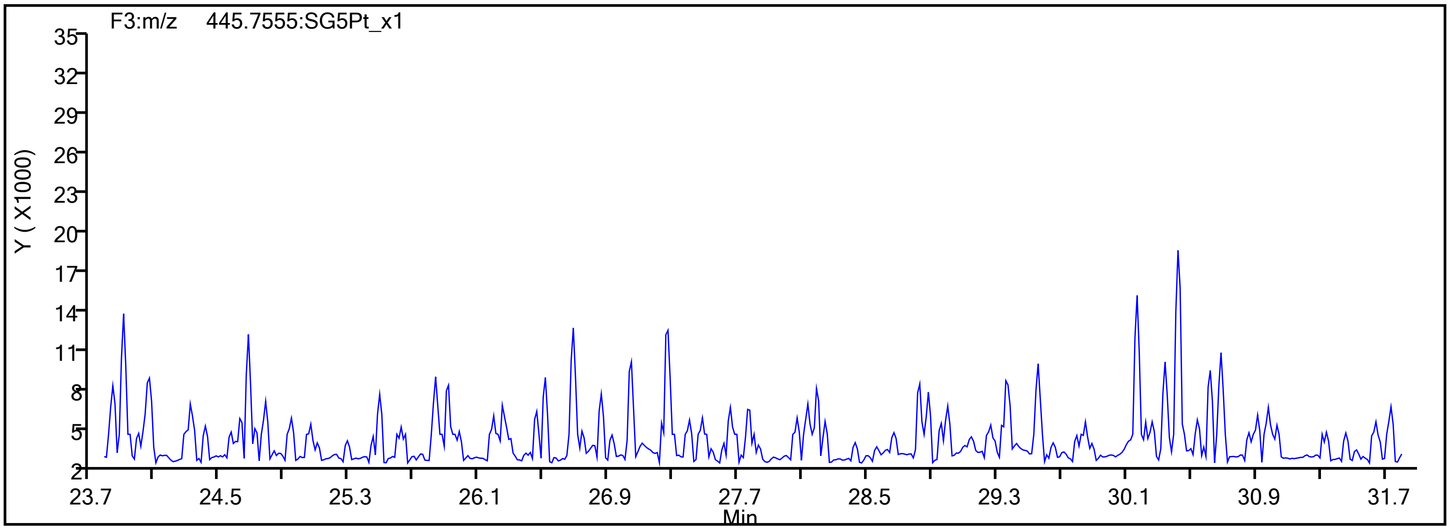

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 22:30:49 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID: ICV

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Column Type: Column Dia:

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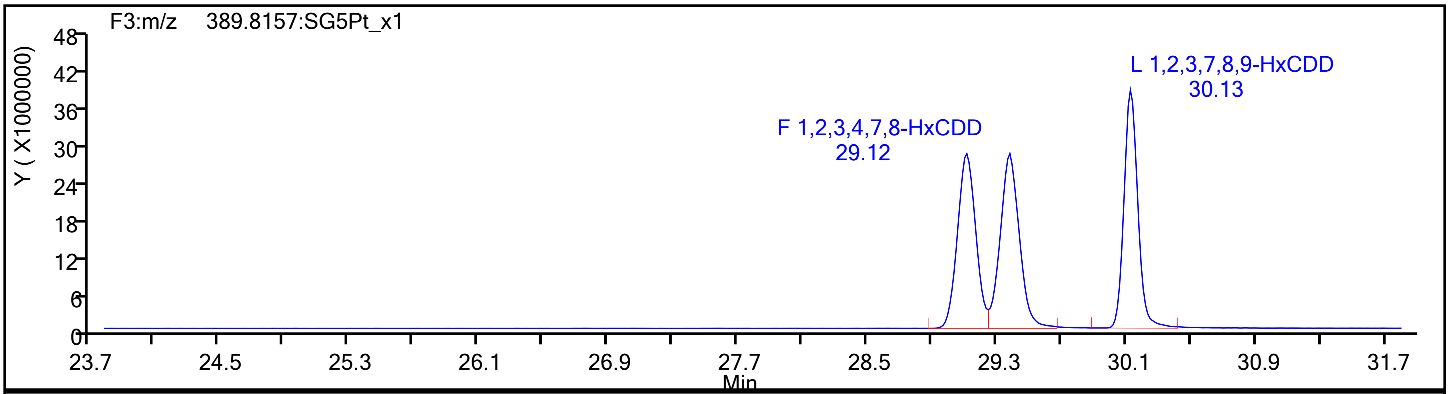

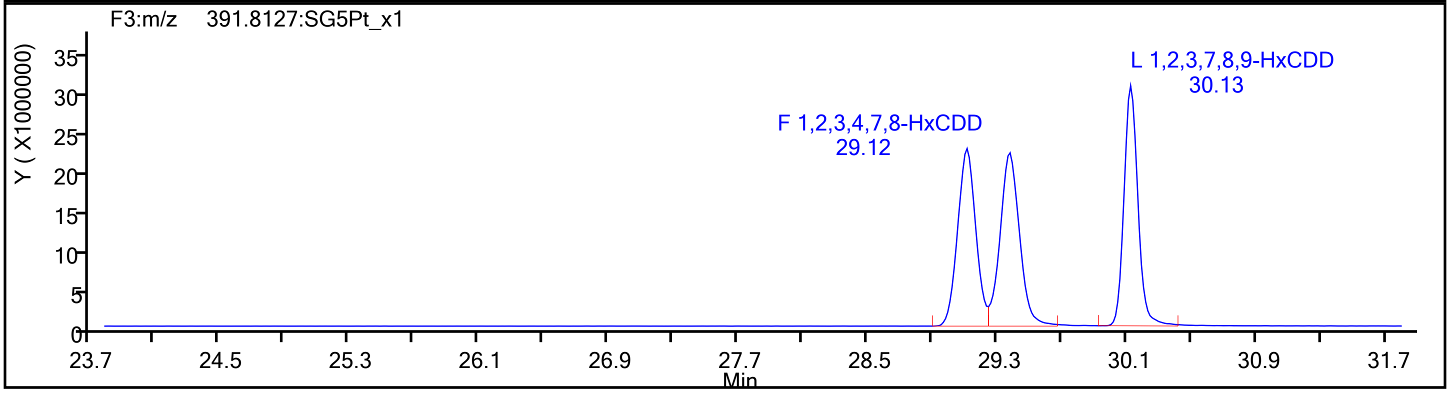

HxCDD Standards

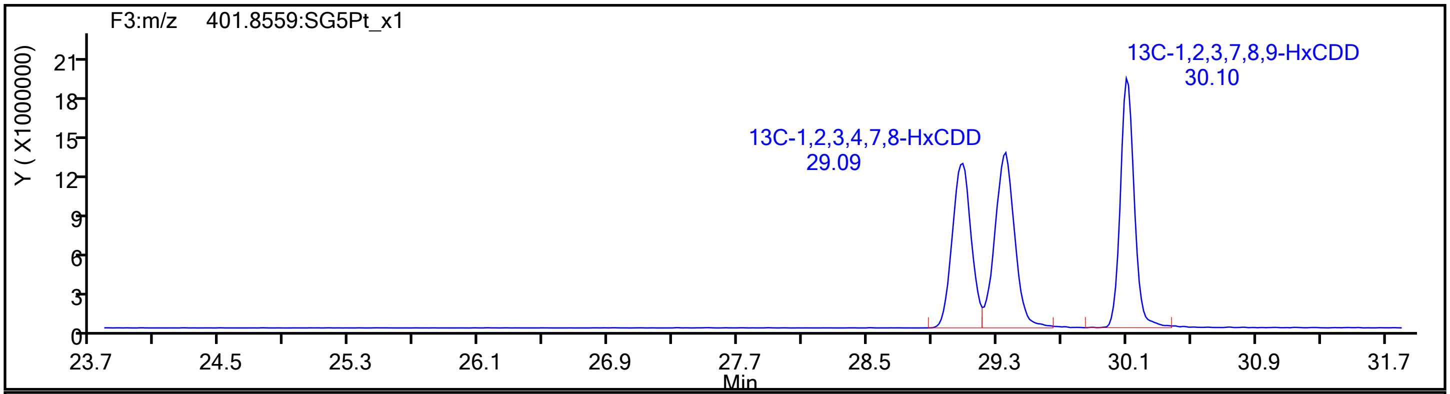

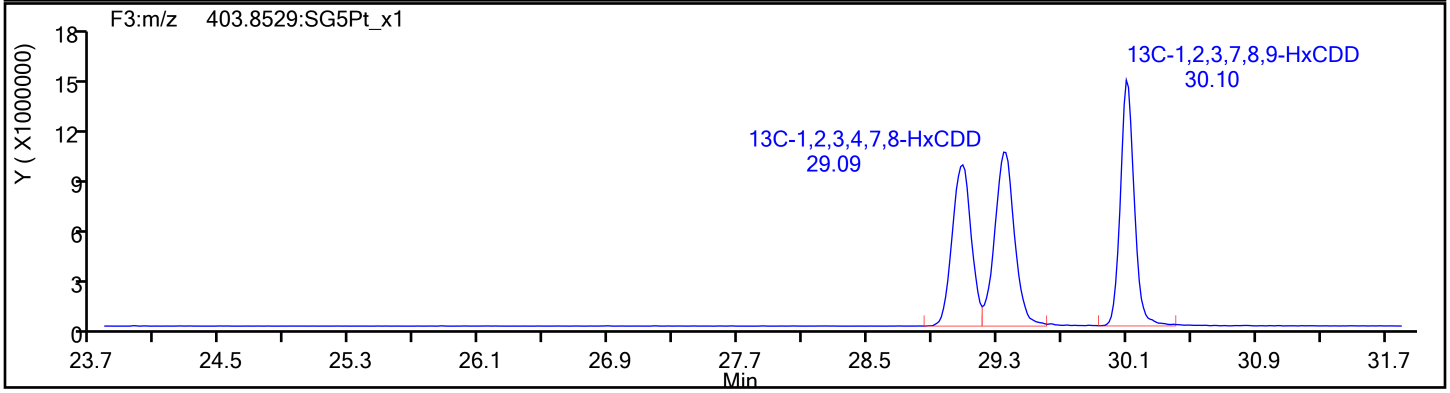

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5 Operator ID: SMA

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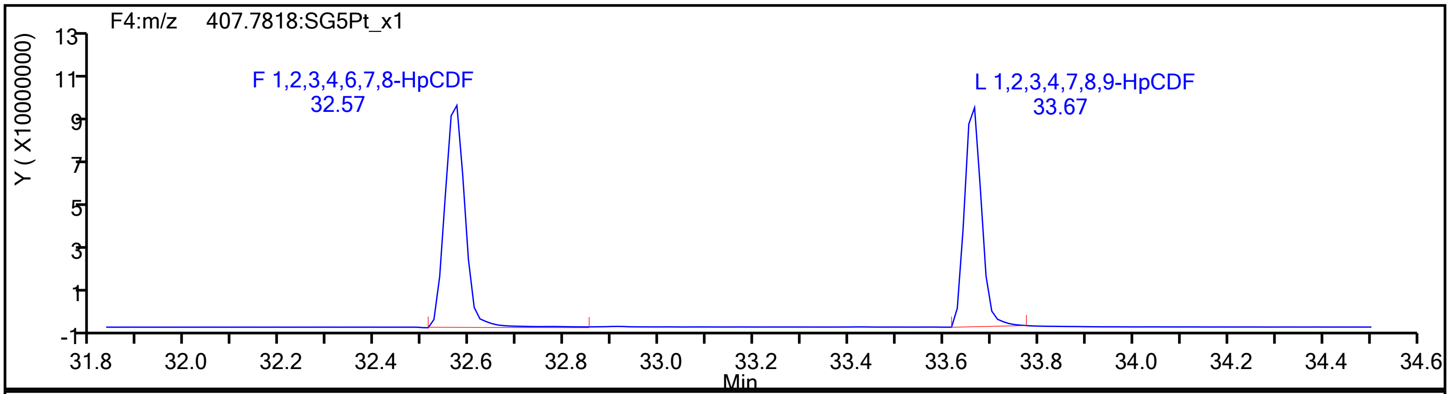

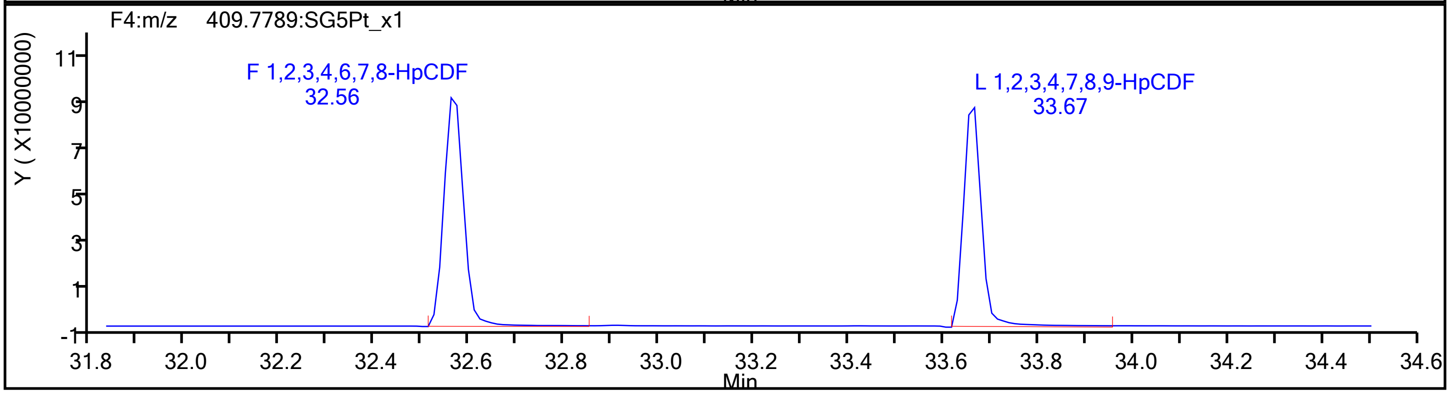

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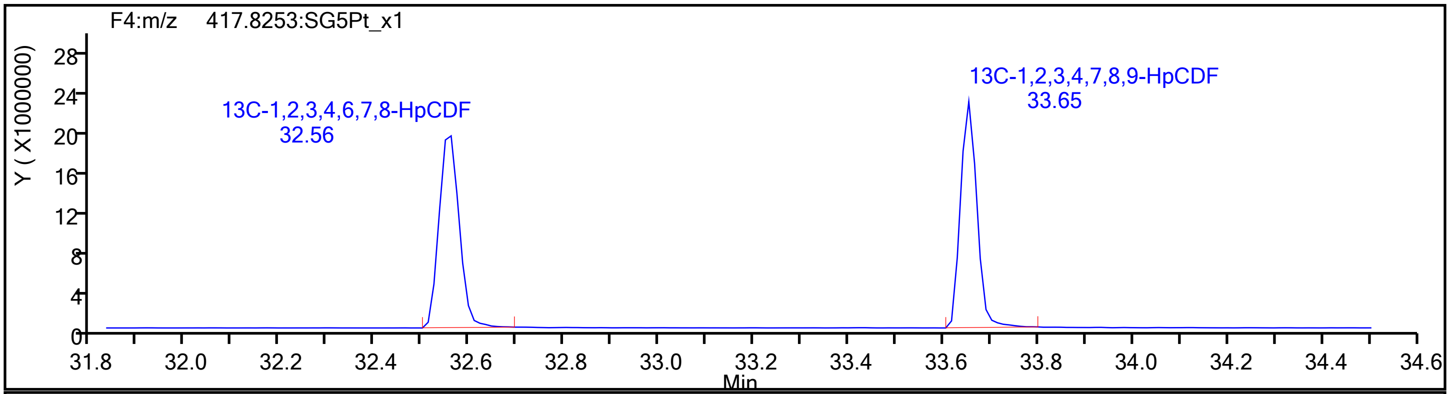

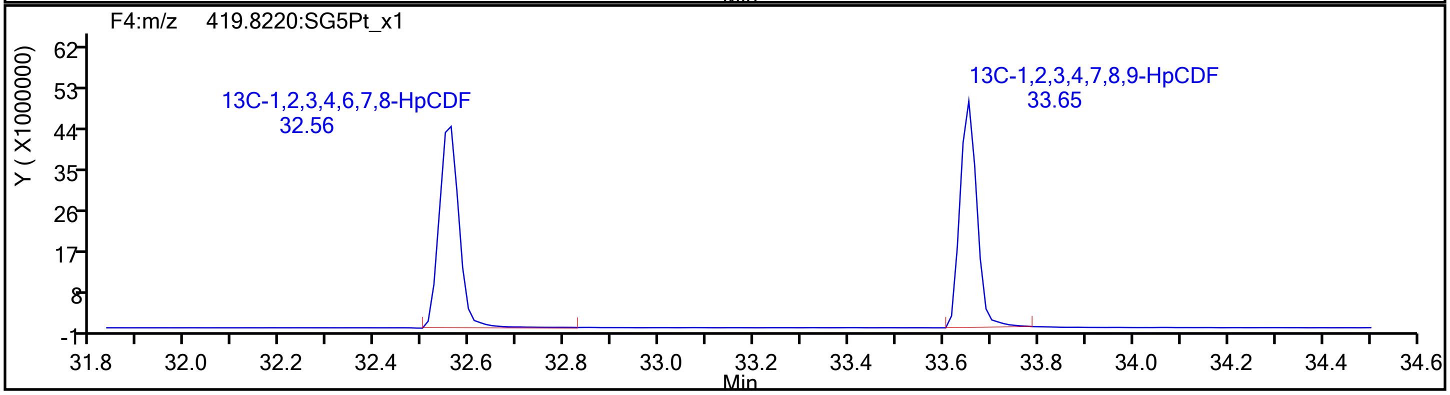

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Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

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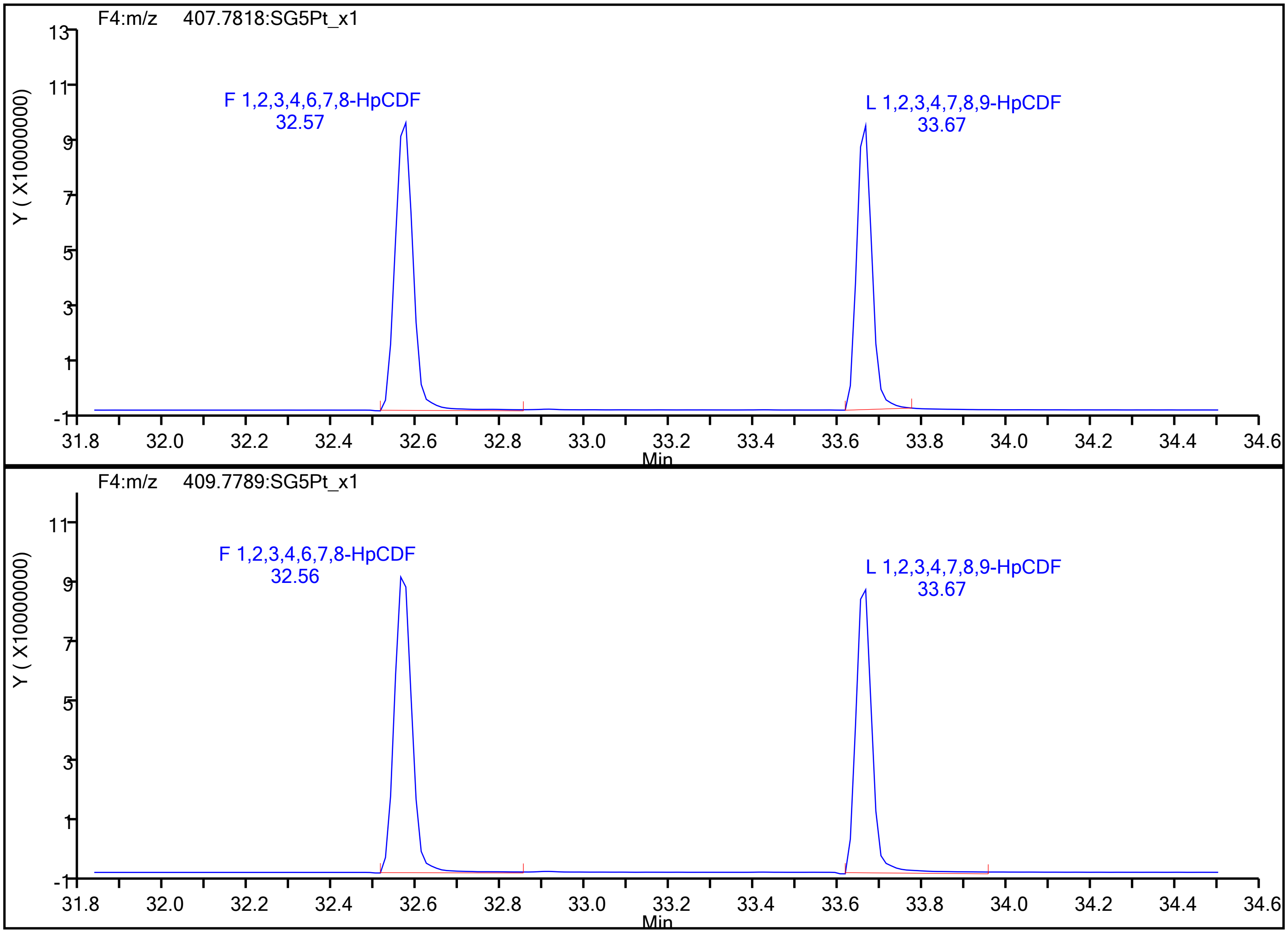

HpCDF Interference Mass

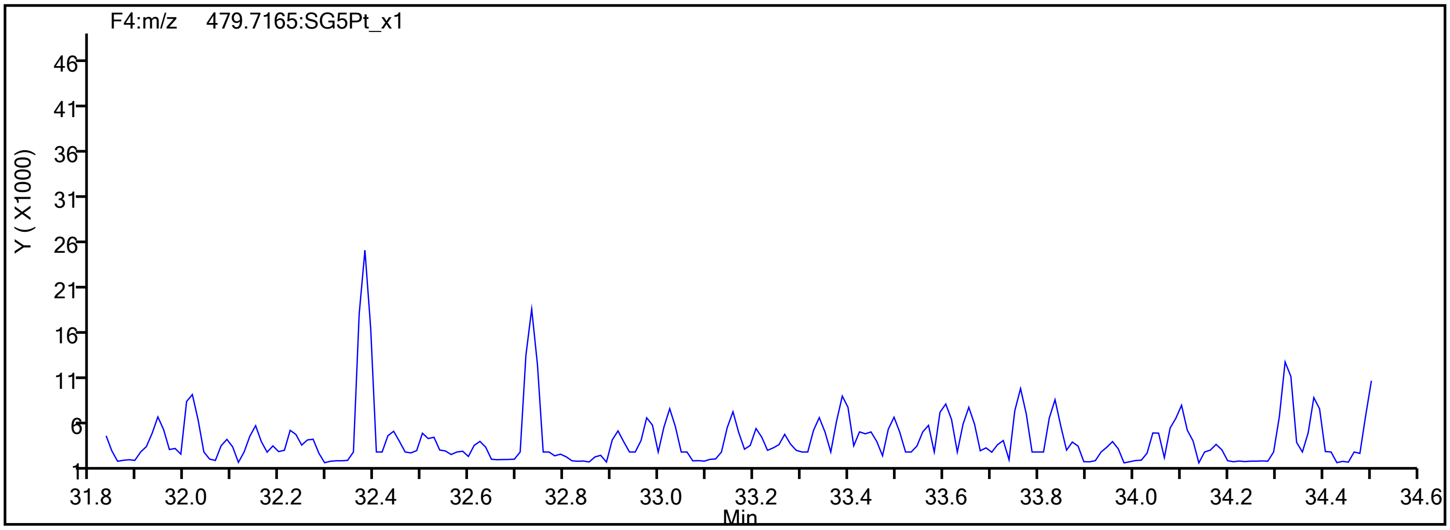

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Oct-2020 22:30:49

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

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Worklist#: 419031

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Column Dia:

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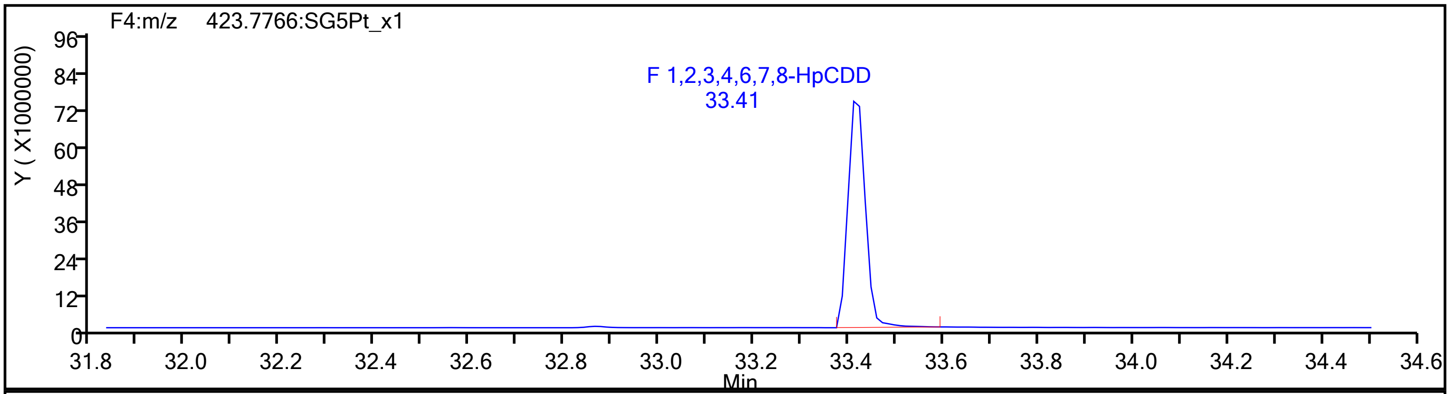

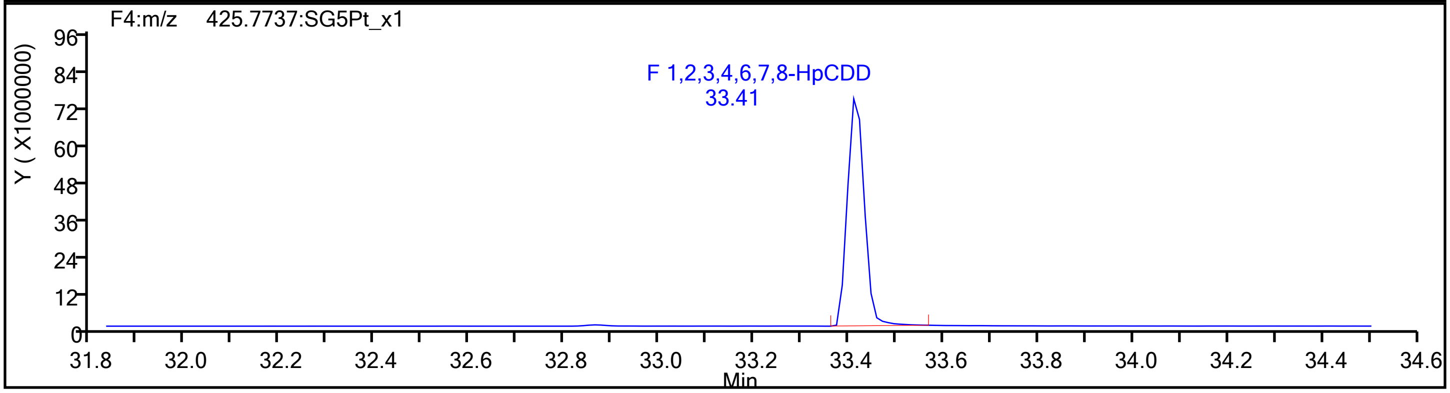

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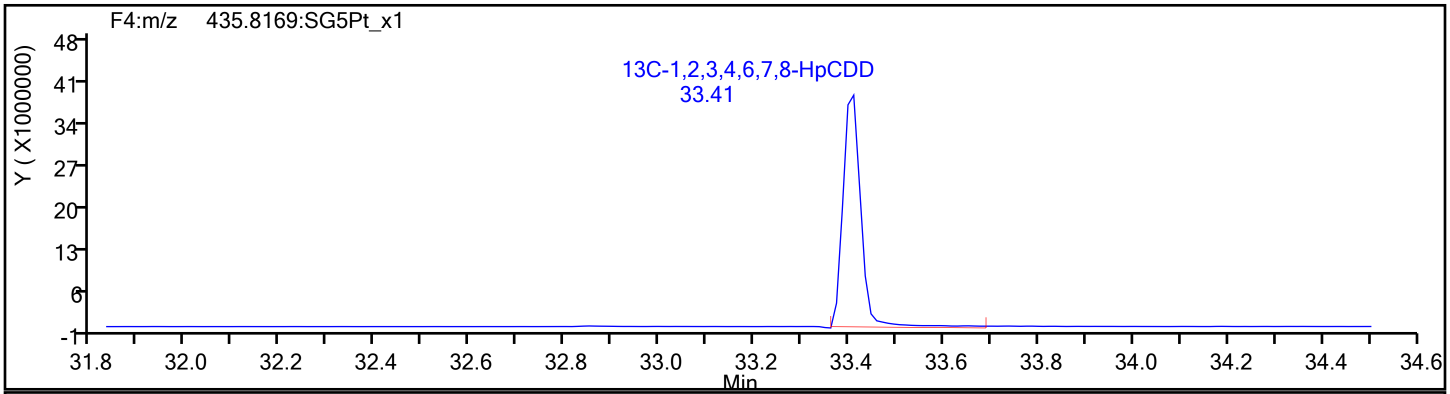

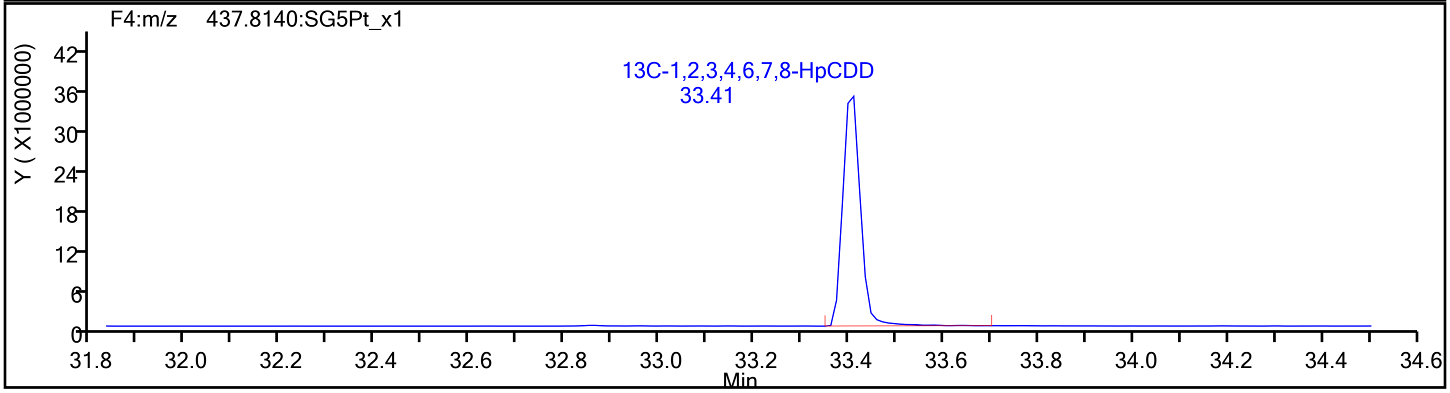

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Eurofins TestAmerica, Sacramento

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OCDF

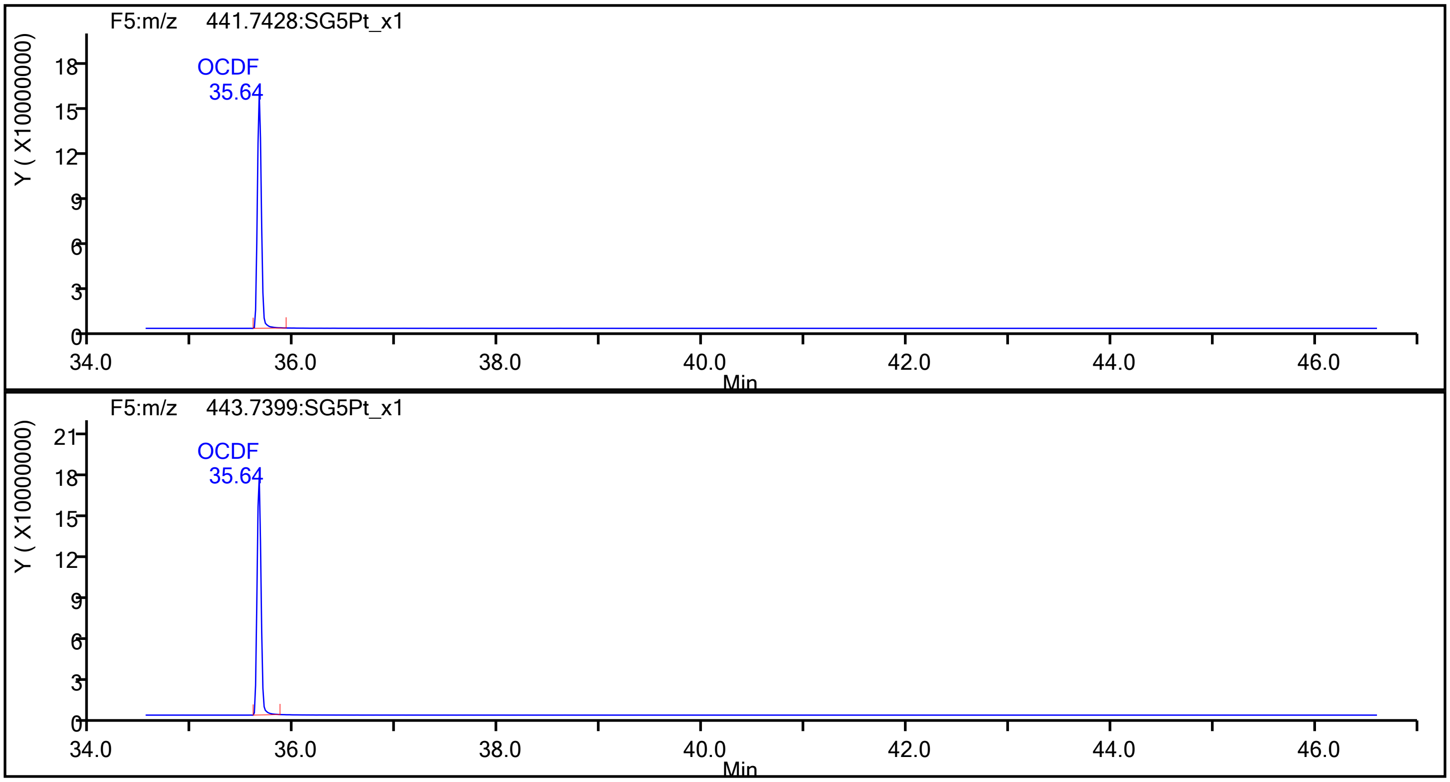

OCDF Standards

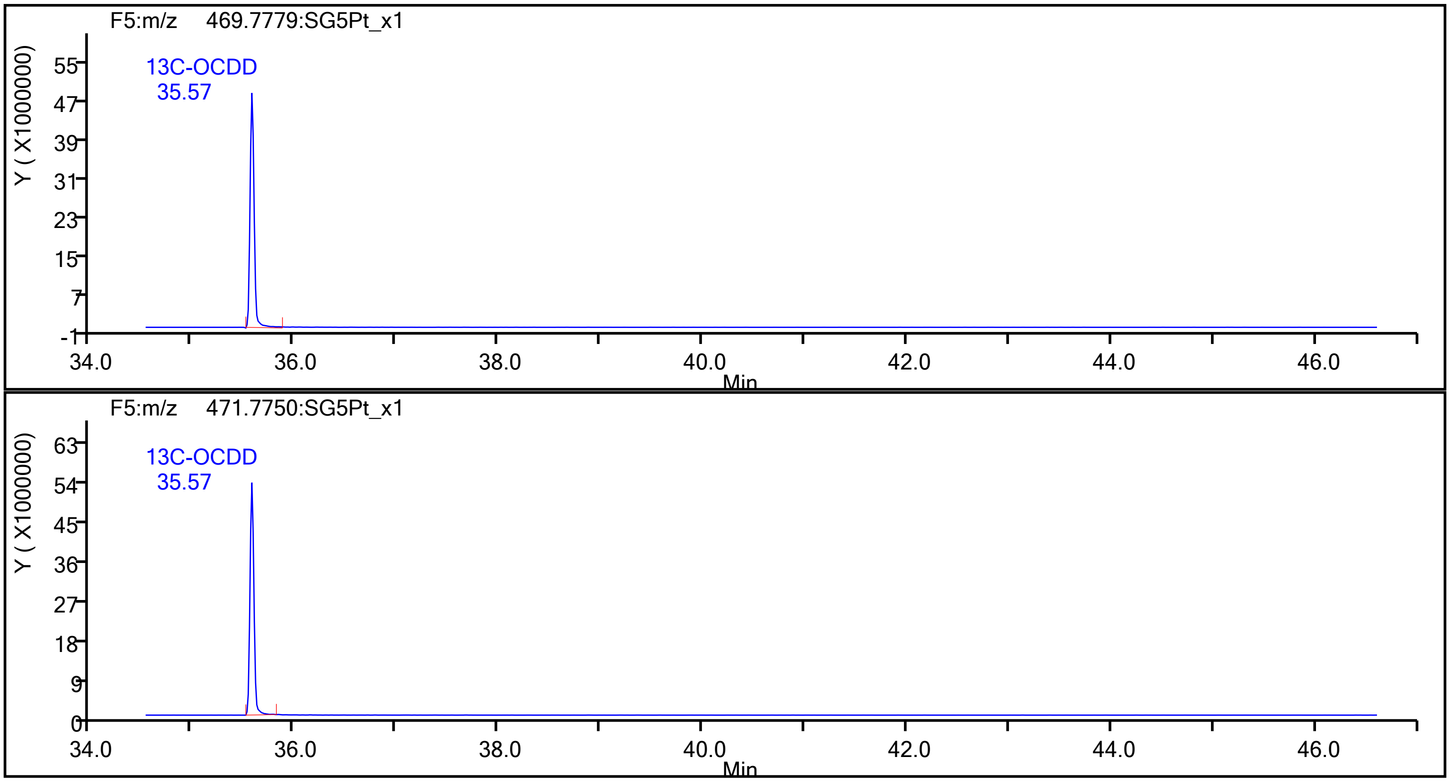

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Eurofins TestAmerica, Sacramento

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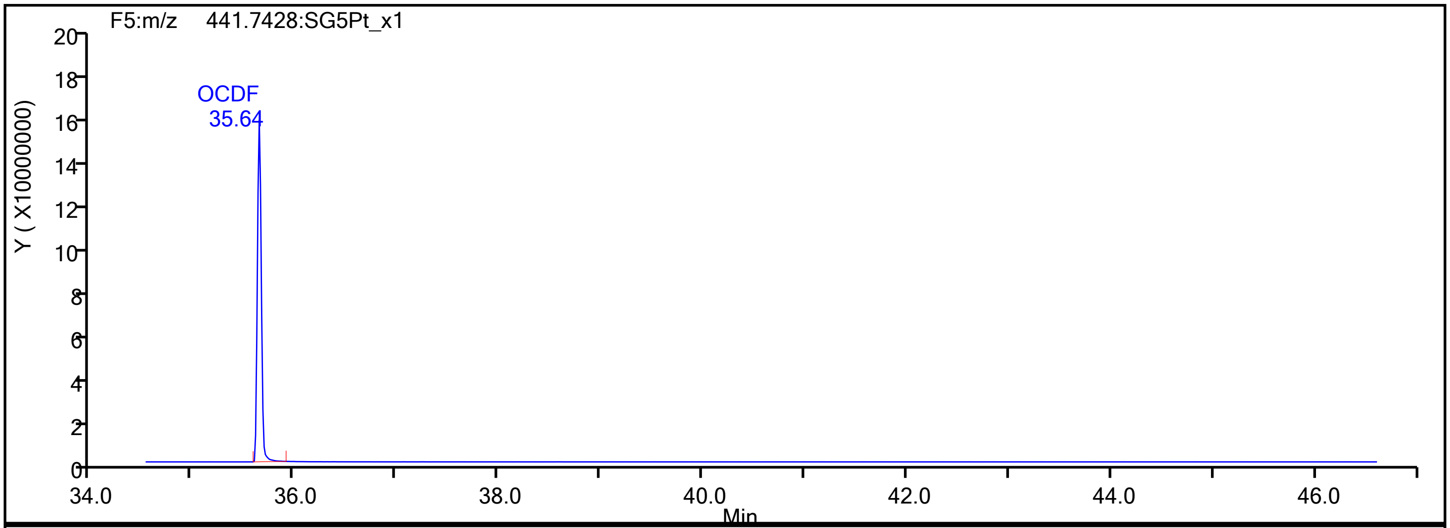

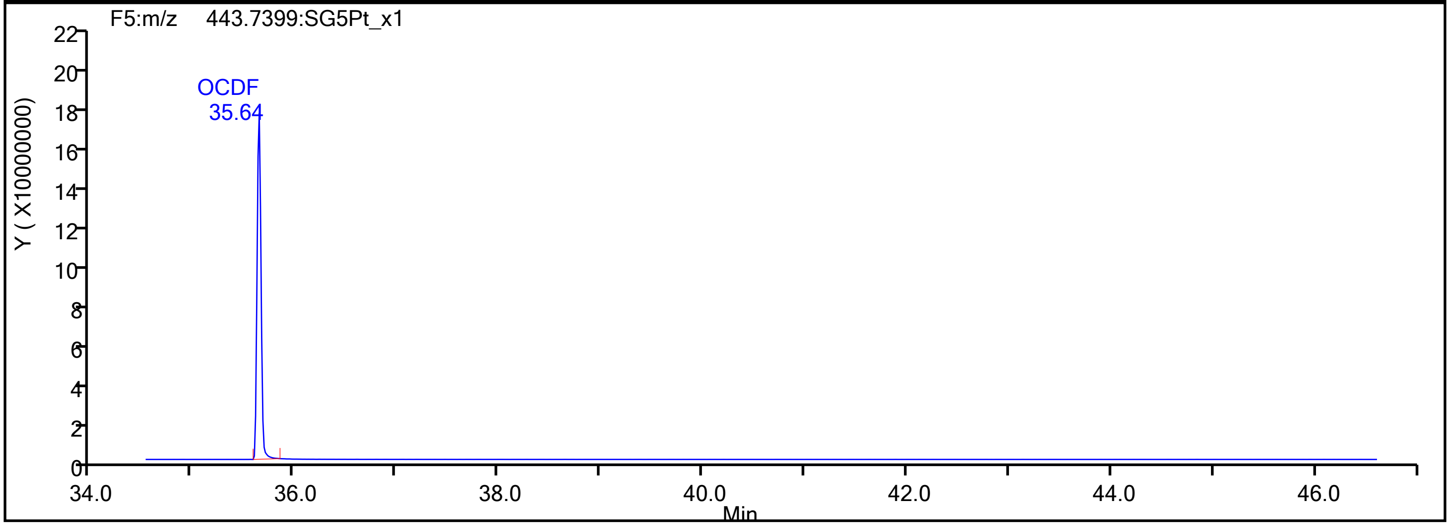

OCDF Interference Mass

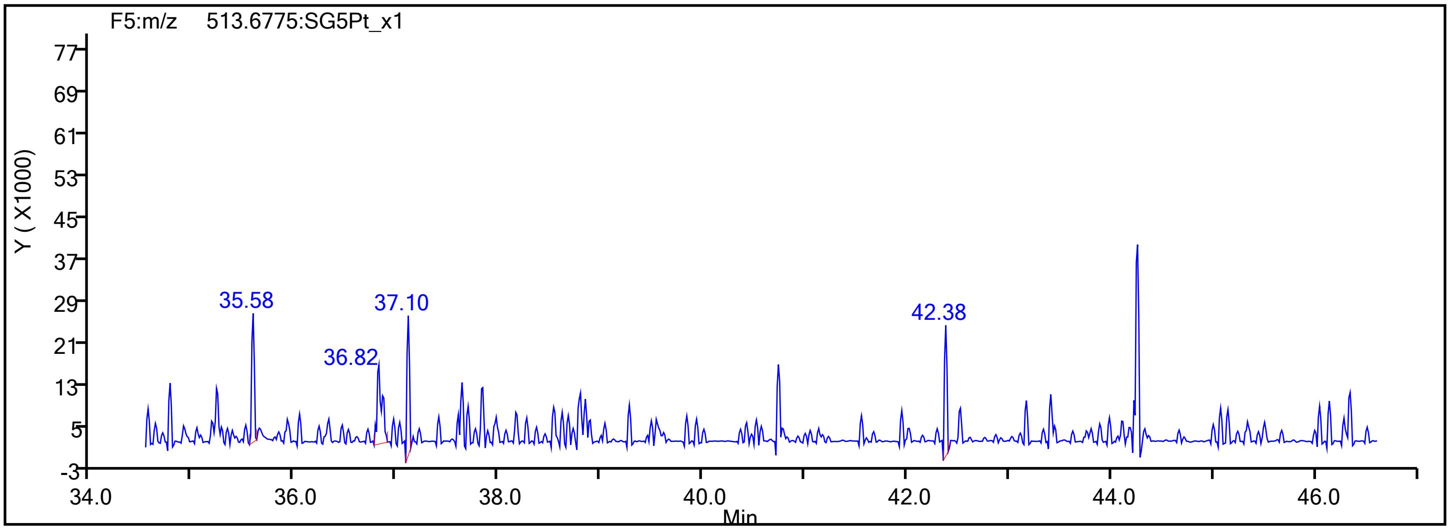

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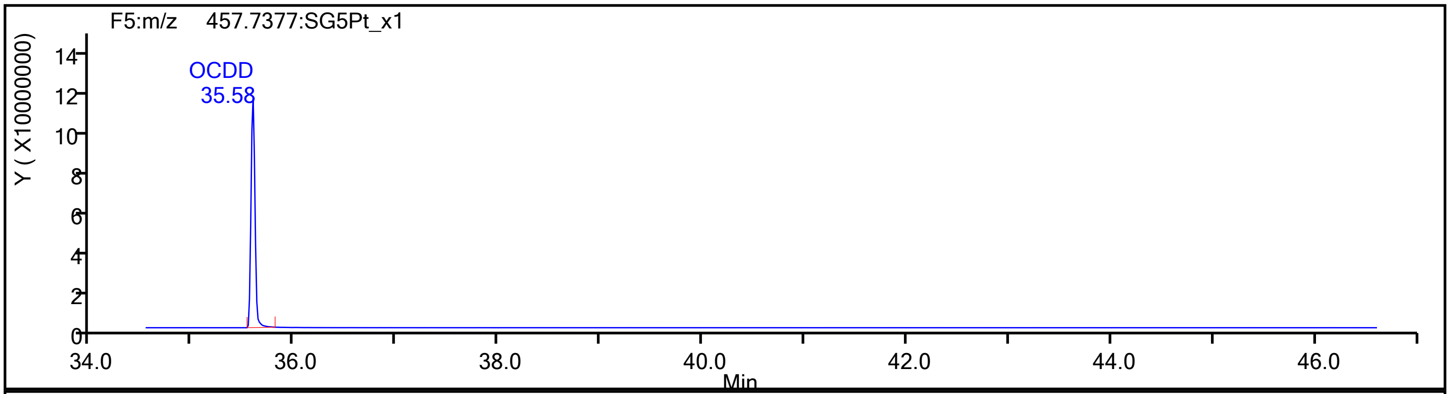

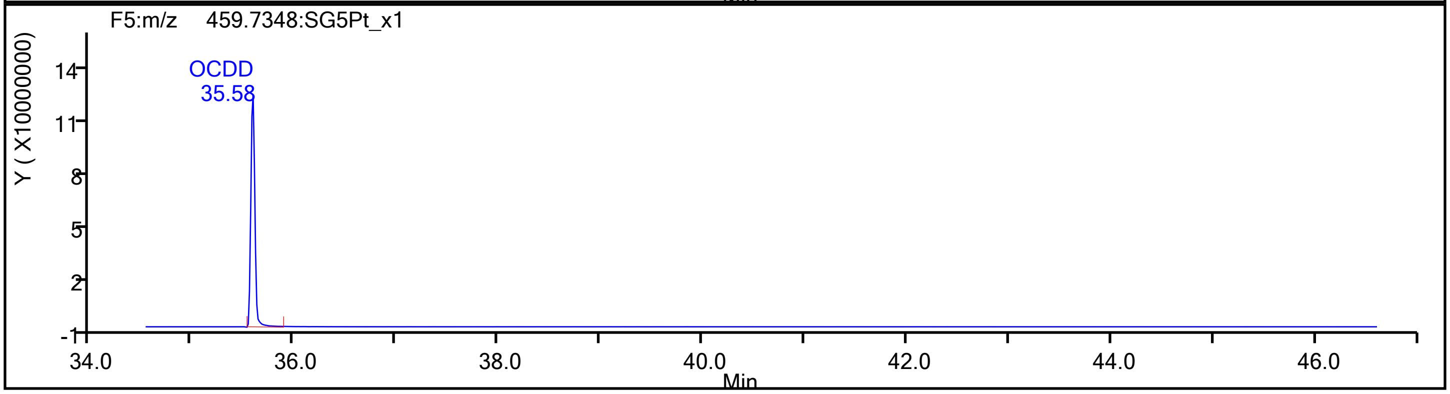

OCDD Standards

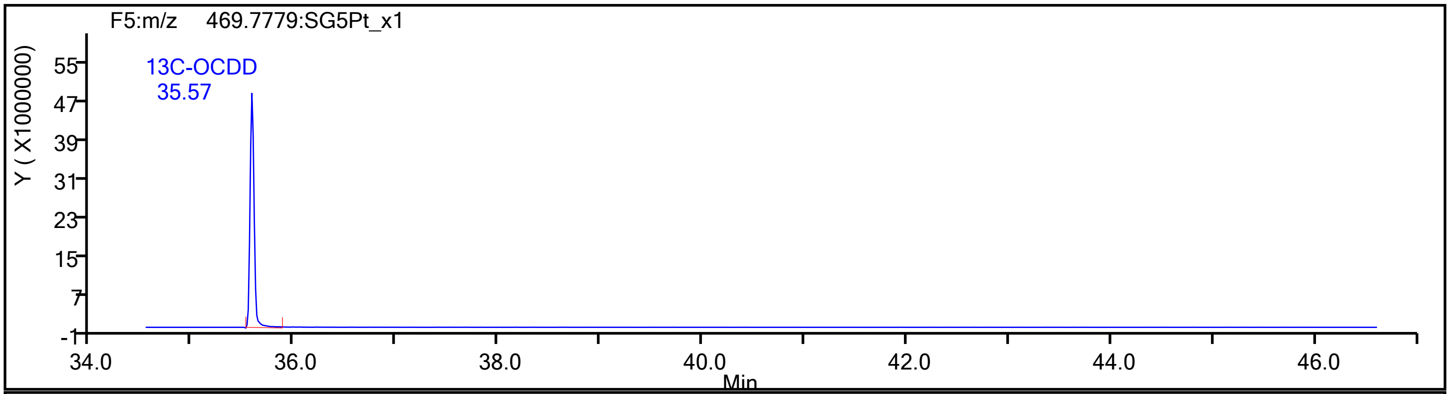

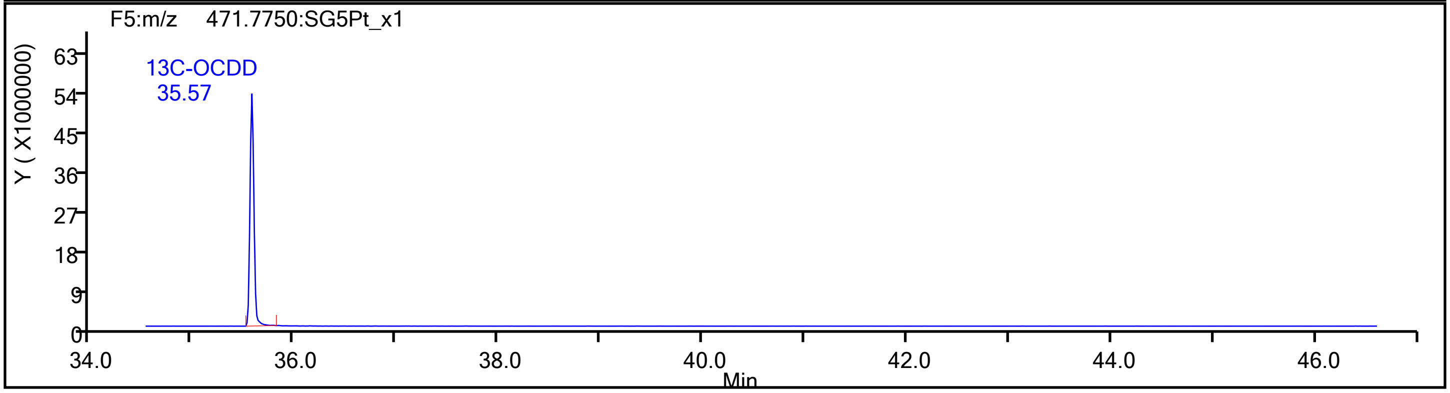

Report Date: 08-Oct-2020 15:25:35 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d		
Injection Date:	05-Oct-2020 22:30:49	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	ICV		
Worklist#:	419031	Sample Line#:	9
Column Type:		Column Dia:	

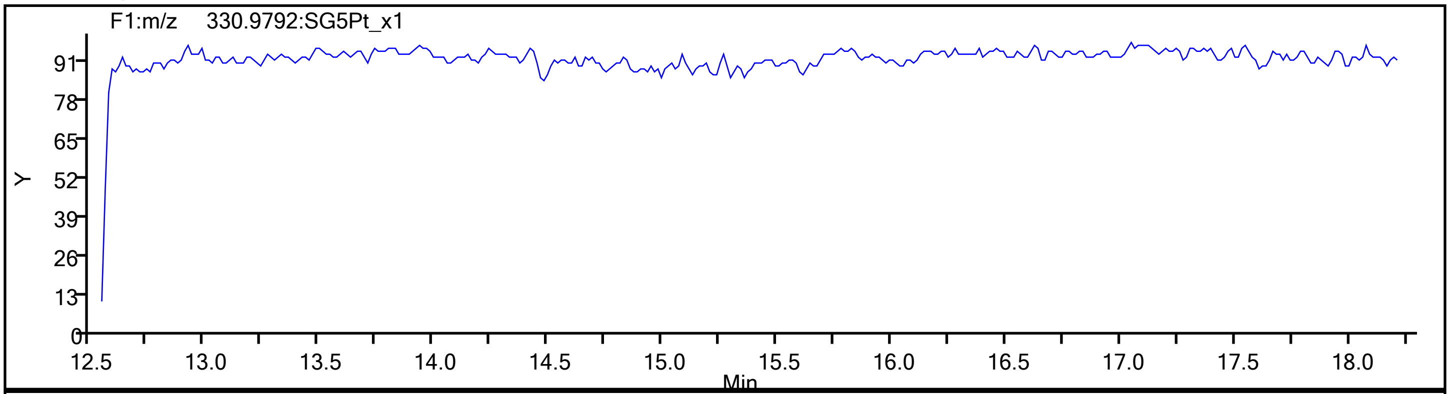

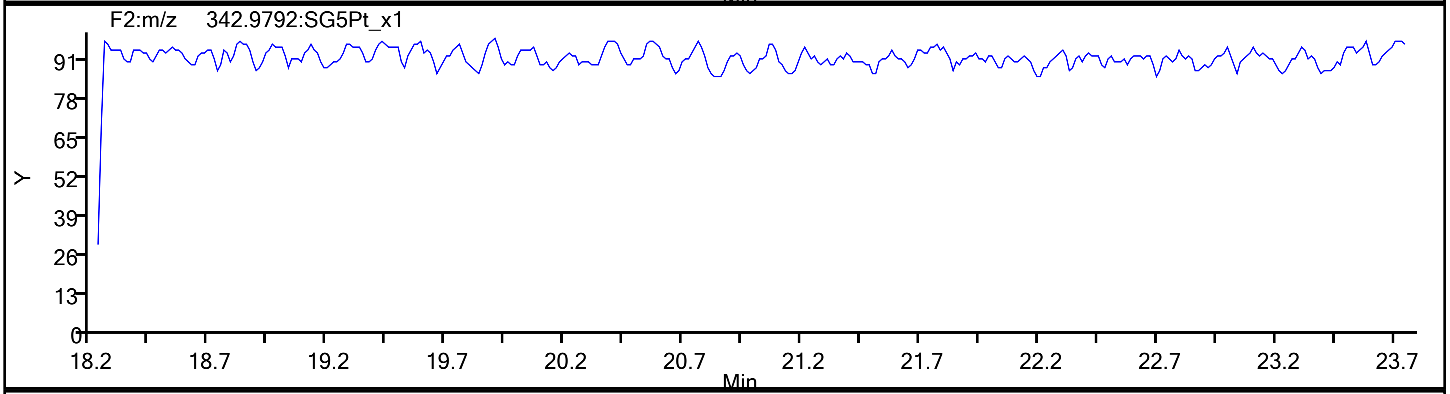

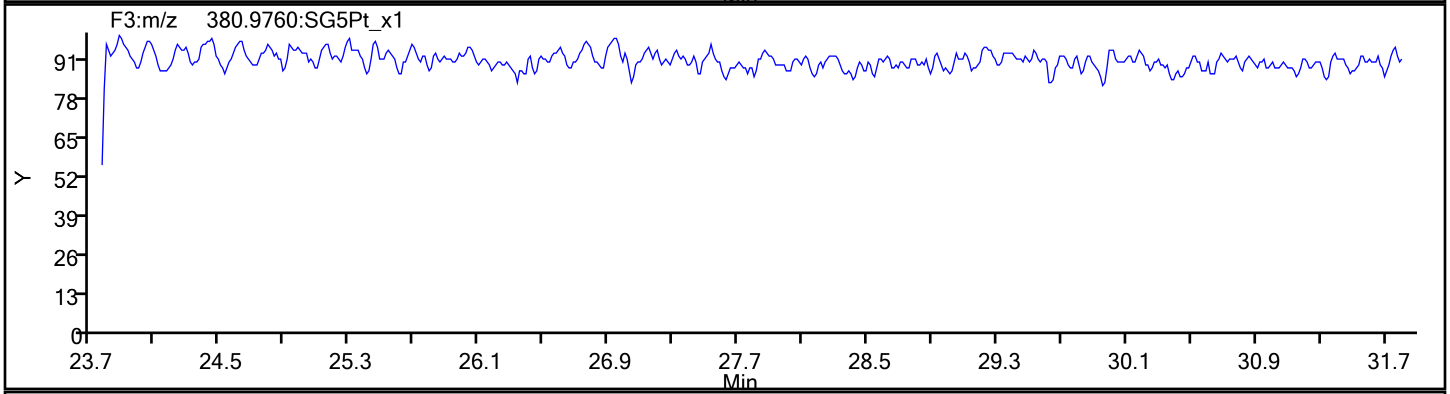

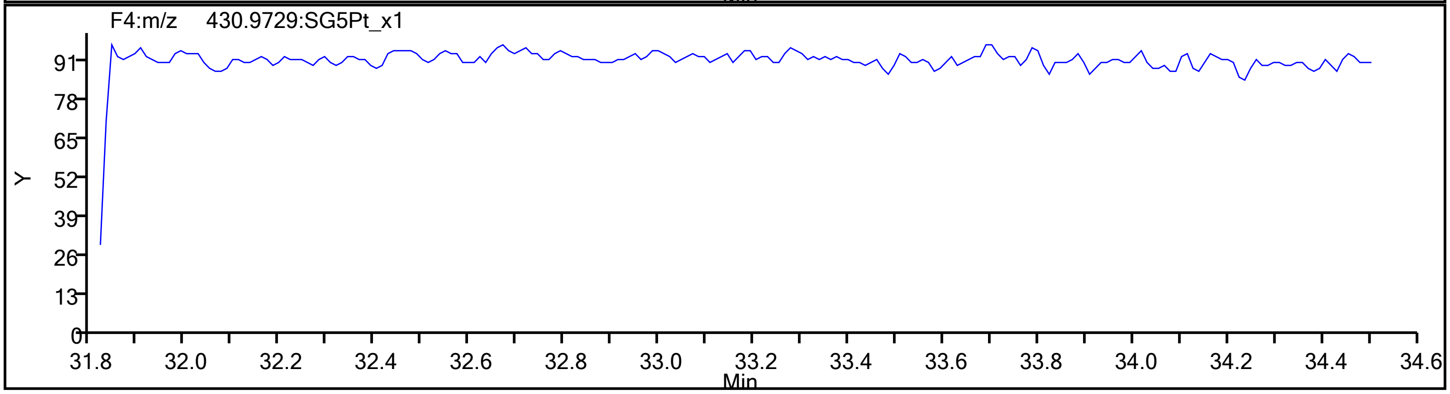

Report Date: 08-Oct-2020 15:25:35 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_10.d		
Injection Date:	05-Oct-2020 22:30:49	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:	ICV		
Worklist#:	419031	Sample Line#:	9
Column Type:		Column Dia:	

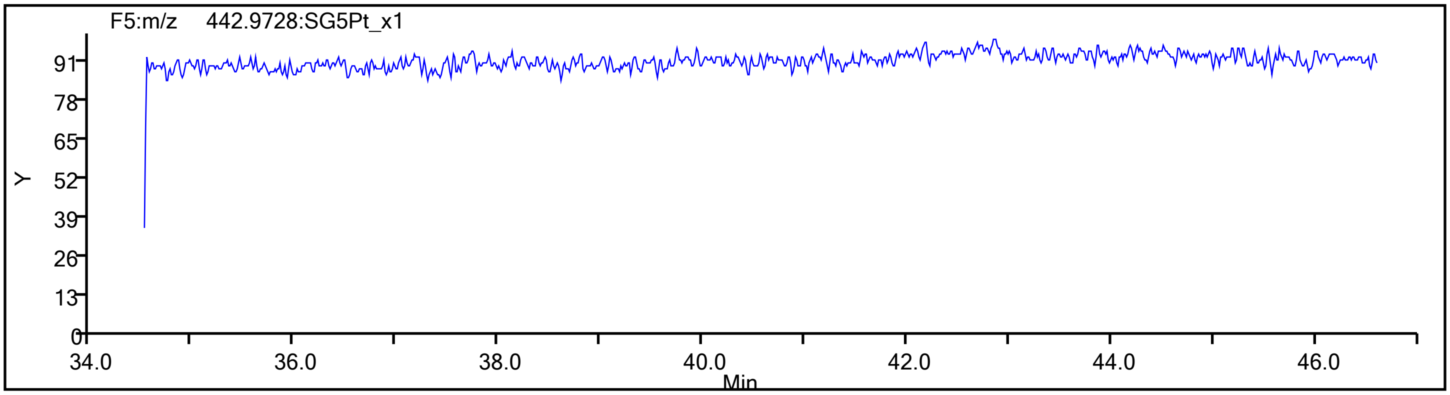

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-420113/2 Calibration Date: 10/08/2020 09:51

Instrument ID: 3D5 Calib Start Date: 10/05/2020 17:35

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/05/2020 20:45

Lab File ID: 08OC203D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9534	0.9624		10.1	10.0	101	84-120
2,3,7,8-TCDD	AveID	1.020	1.061		10.4	10.0	104	78-129
1,2,3,7,8-PeCDF	AveID	1.079	1.001		46.4	50.0	93	82-120
2,3,4,7,8-PeCDF	AveID	1.097	1.067		48.7	50.0	97	82-122
1,2,3,7,8-PeCDD	AveID	1.140	1.083		47.5	50.0	95	78-130
1,2,3,4,7,8-HxCDF	AveID	1.255	1.214		48.4	50.0	97	90-112
1,2,3,6,7,8-HxCDF	AveID	1.210	1.174		48.5	50.0	97	88-114
2,3,4,6,7,8-HxCDF	AveID	1.218	1.171		48.0	50.0	96	88-114
1,2,3,4,7,8-HxCDD	AveID	1.254	1.150		45.9	50.0	92	78-128
1,2,3,6,7,8-HxCDD	AveID	1.112	0.9931		44.7	50.0	89	78-128
1,2,3,7,8,9-HxCDD	AveID	1.285	1.126		43.8	50.0	88	82-122
1,2,3,7,8,9-HxCDF	AveID	1.232	1.179		47.9	50.0	96	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.478	1.432		48.4	50.0	97	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.086	1.025		47.2	50.0	94	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.378	1.369		49.7	50.0	99	86-116
OCDD	AveID	1.258	1.147		91.2	100	91	79-126
OCDF	AveID	1.725	1.532		88.8	100	89	63-159
13C-2,3,7,8-TCDF	Ave	1.484	1.520		102	100	102	71-140
13C-2,3,7,8-TCDD	Ave	1.087	1.099		101	100	101	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.394	1.205		86.4	100	86	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.337	1.141		85.3	100	85	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8475	0.7480		88.3	100	88	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.306	1.222		93.5	100	94	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.421	1.331		93.6	100	94	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.314	1.253		95.4	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8660	0.8298		95.8	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9827	1.025		104	100	104	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.320	1.208		91.5	100	91	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9410	0.9245		98.2	100	98	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9049	0.9253		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.8751	0.8381		95.8	100	96	77-129
13C-OCDD	Ave	0.5783	0.6430		222	200	111	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.122	1.148		10.2	10.0	102	79-127

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\08OC203D5.SPL

Last Modified: Thursday, October 08, 2020 11:55:47 Pacific Daylight Time

Printed: Thursday, October 08, 2020 11:57:16 Pacific Daylight Time

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	08OC203D5_1	WDM HRDXNCP_00042	WDM 100820	Tray1:1	DXN		SMA
2	08OC203D5_2	CCV HRDXNL4_00095	CCV 100820	Tray1:2	8290/1613B		SMA
3	08OC203D5_3	SB Solvent Blank C-14	SB 100820	Tray1:3			SMA
4	08OC203D5_4	MB 320-417490/1-A	MB 320-417490/1-A	Tray1:4	1613B/Water	D185	SMA
5	08OC203D5_5	LCS 320-417490/2-A	LCS 320-417490/2-A	Tray1:5	1613B/Water		SMA
6	08OC203D5_6	LCSD 320-417490/3-A	LCSD 320-417490/3-A	Tray1:6	1613B/Water		SMA
7	08OC203D5_7	500-188477-T-6-A	500-188477-T-6-A	Tray1:7	1613B/Water		SMA
8	08OC203D5_8	500-188477-U-7-A	500-188477-U-7-A	Tray1:8	1613B/Water		SMA
9	08OC203D5_9	500-188477-T-8-A	500-188477-T-8-A	Tray1:9	1613B/Water		SMA

log file checked
10-08-20 ALM

Sample Size	Units	MS File	Inlet File	Inject Volume	Sample Type	Conc A	Conc B	Conc C	Conc D
1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---
1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---	---

Conc E	Conc F	Conc G	Process	Process Options	Action On Error
---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	FBAT_ML_FileMover	---	---
---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error

s5

C:\CHROM
C:\CHROM
C:\CHROM
C:\CHROM
C:\CHROM
C:\CHROM
C:\CHROM

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, October 08, 2020 08:47:43 Pacific Daylight Time

M 292.9824 R 13511

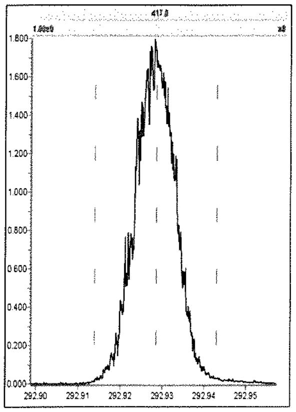

M 304.9824 R 13732

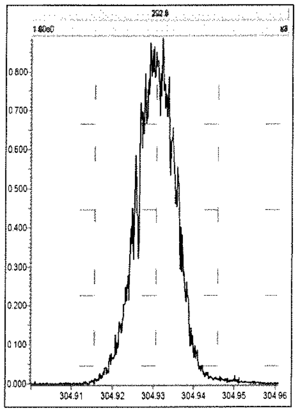

M 318.9792 R 14793

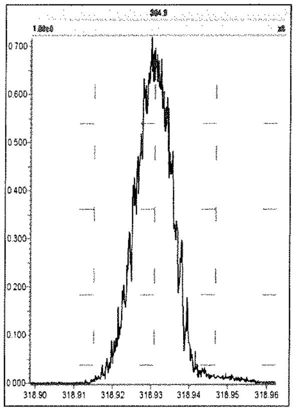

M 330.9792 R 15058

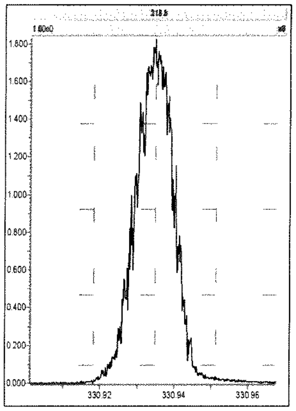

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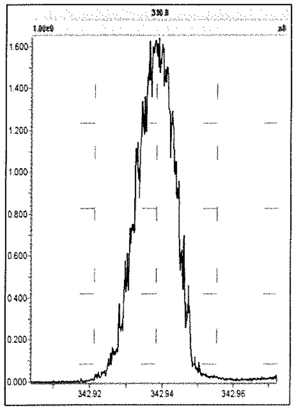

M 354.9792 R 14620

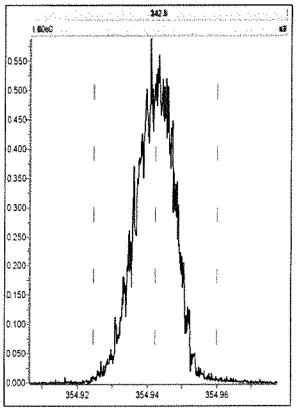

M 366.9792 R 13811

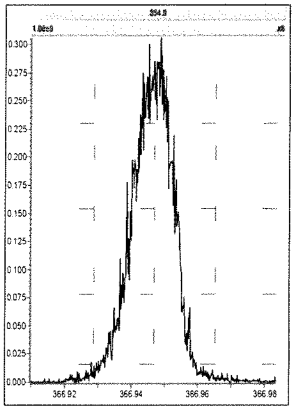

M 380.9760 R 13886

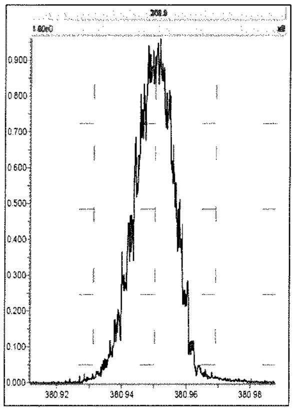

M 392.9760 R 13299

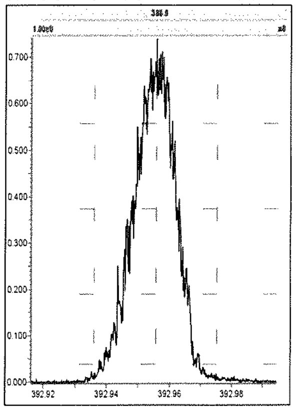

M 404.9760 R 12077

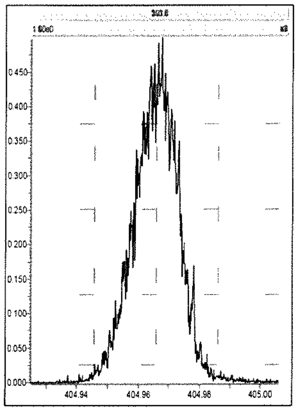

M 416.9760 R 12693

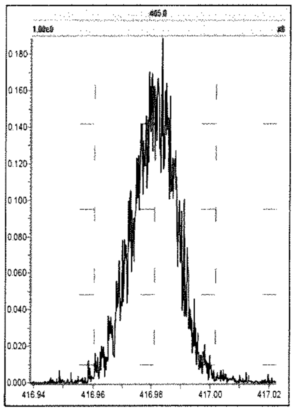

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, October 08, 2020 08:48:55 Pacific Daylight Time

M 318.9792 R 14286

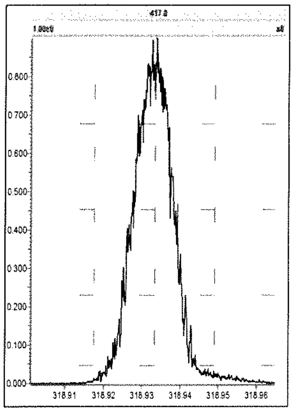

M 330.9792 R 14203

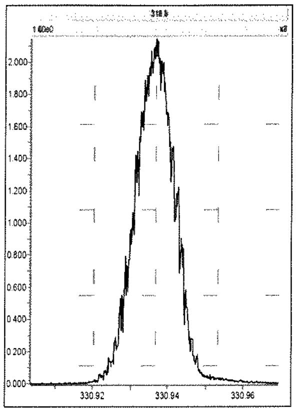

M 342.9792 R 14789

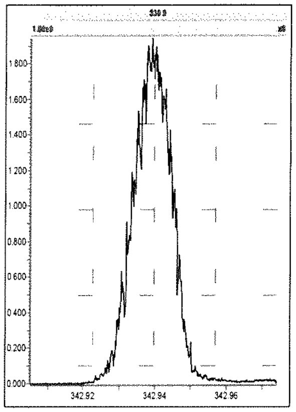

M 354.9792 R 15338

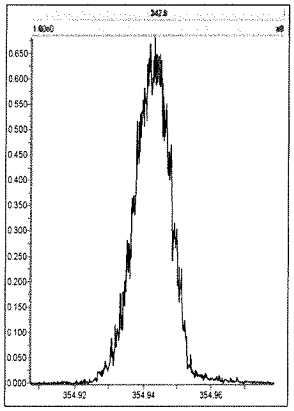

M 366.9792 R 13965

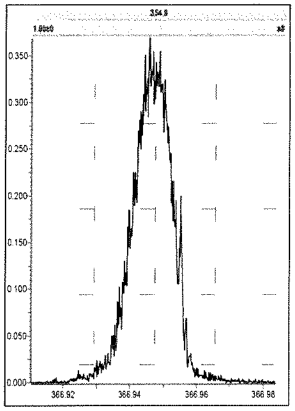

M 380.9760 R 13886

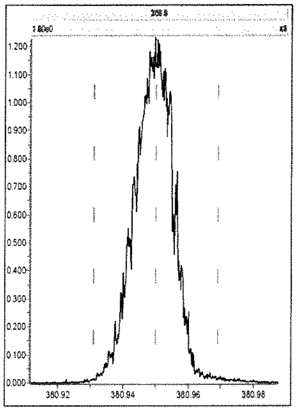

M 392.9760 R 14536

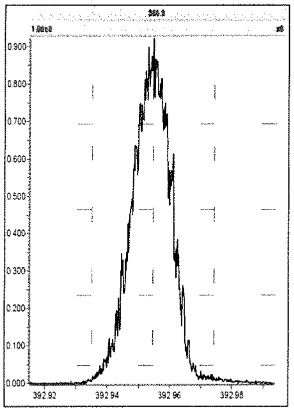

M 404.9760 R 14450

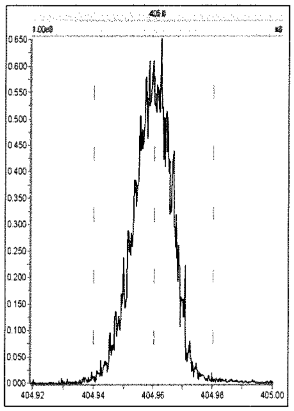

M 416.9760 R 14967

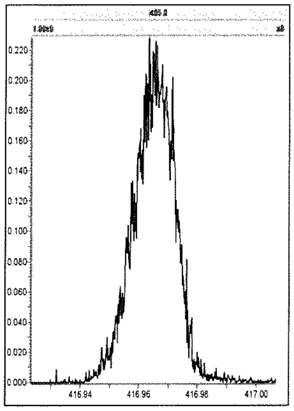

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, October 08, 2020 08:49:42 Pacific Daylight Time

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M 366.9792 R 13888

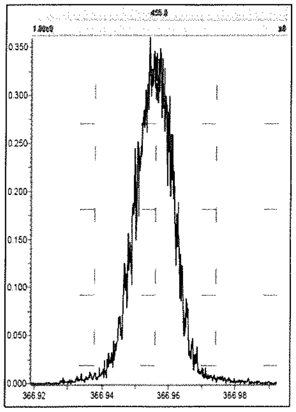

M 380.9760 R 15149

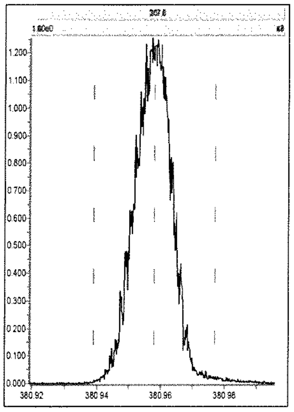

M 392.9760 R 15333

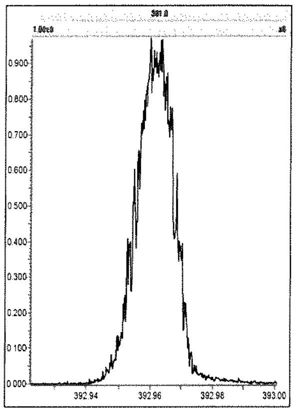

M 404.9760 R 15431

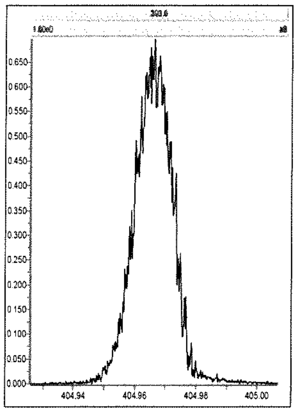

M 416.9760 R 15435

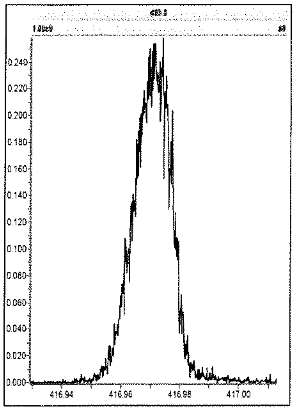

M 430.9728 R 14883

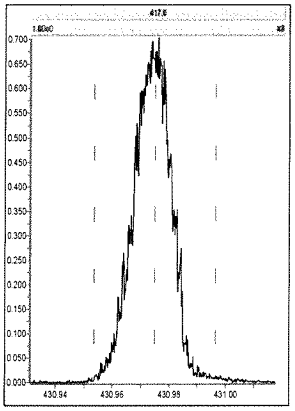

M 442.9728 R 15924

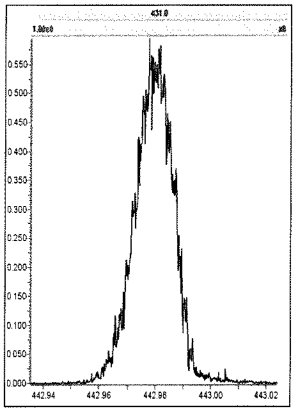

M 454.9728 R 13735

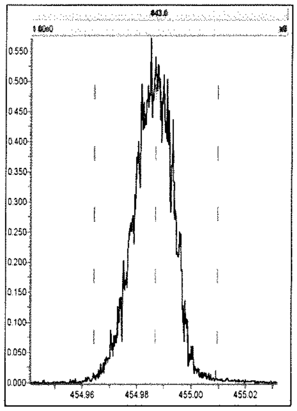

Experiment Calibration Report **MassLynx 4.1**

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, October 08, 2020 08:50:43 Pacific Daylight Time

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M 380.9760 R 14204

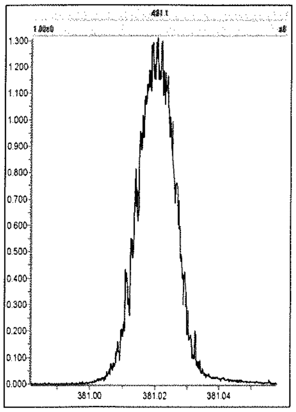

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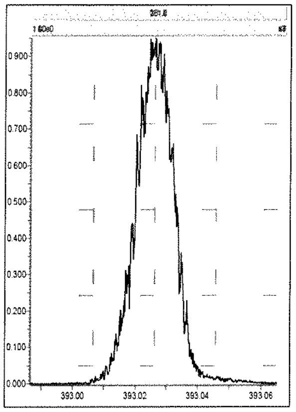

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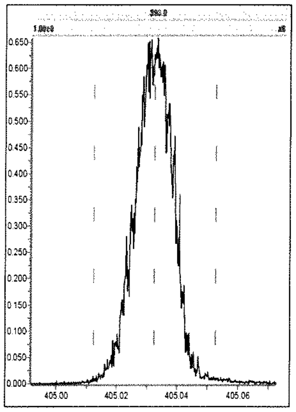

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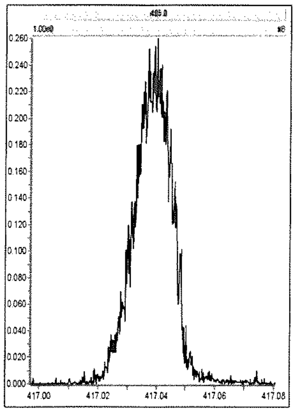

M 430.9728 R 14285

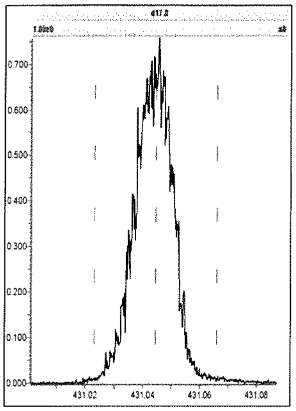

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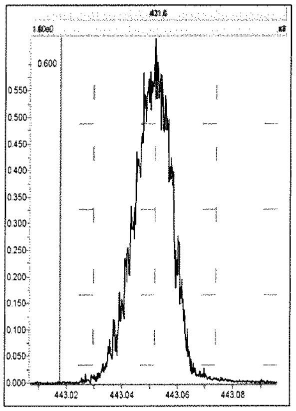

M 454.9728 R 15056

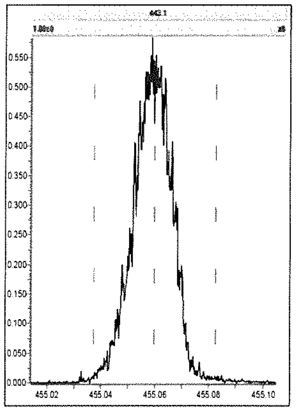

M 466.9728 R 14450

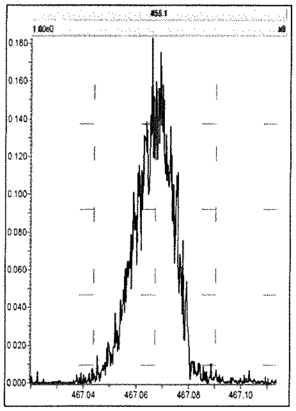

M 480.9696 R 14043

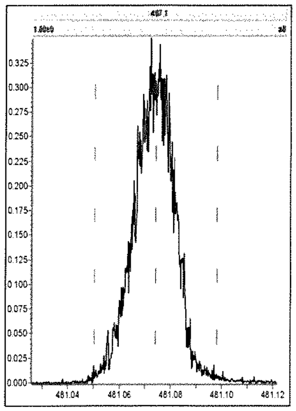

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, October 08, 2020 08:51:52 Pacific Daylight Time

M 380.9760 R 15337

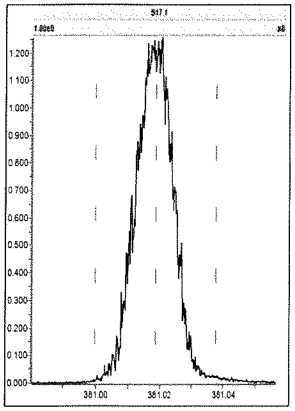

M 392.9760 R 14533

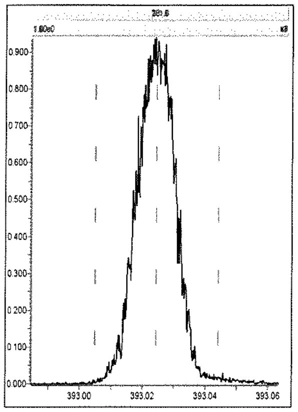

M 404.9760 R 15153

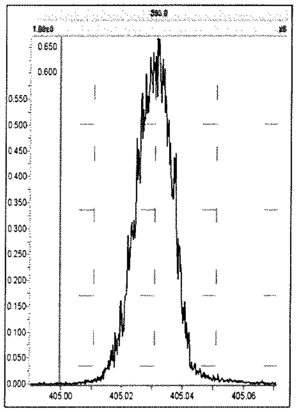

M 416.9760 R 14620

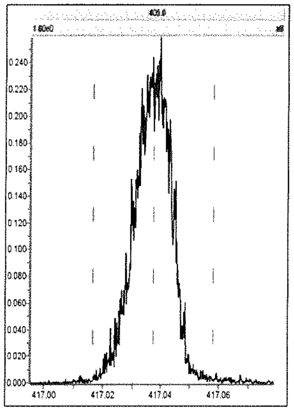

M 430.9728 R 14969

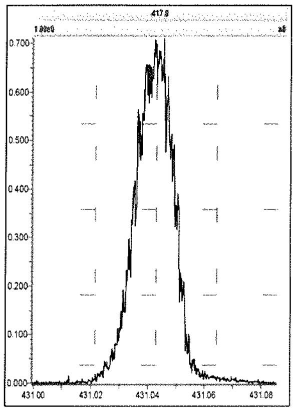

M 442.9728 R 14703

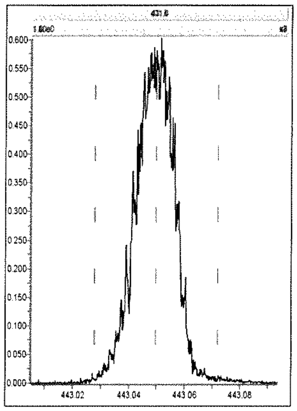

M 454.9728 R 13510

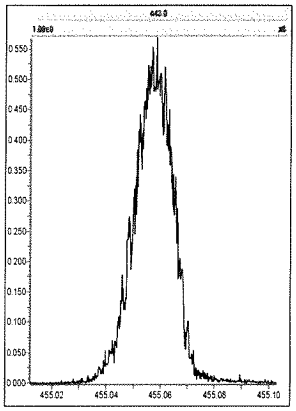

M 466.9728 R 14792

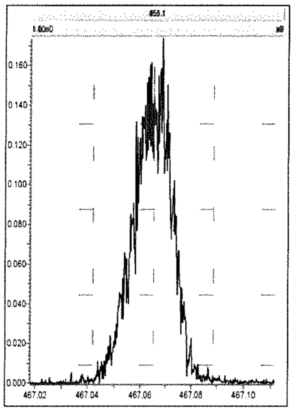

M 480.9696 R 14043

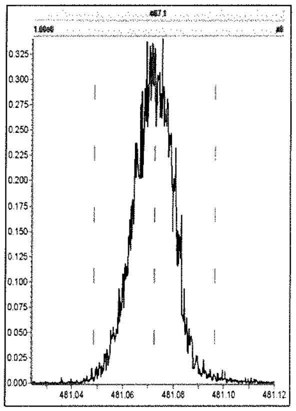

M 492.9696 R 12439

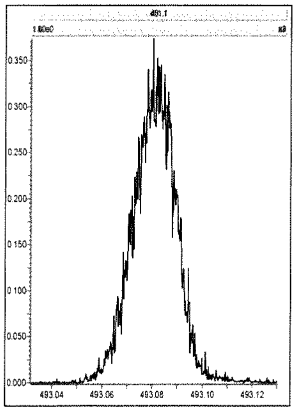

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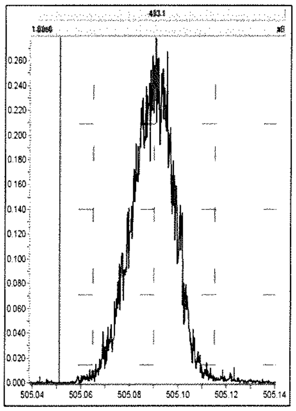

M 516.9697 R 13516

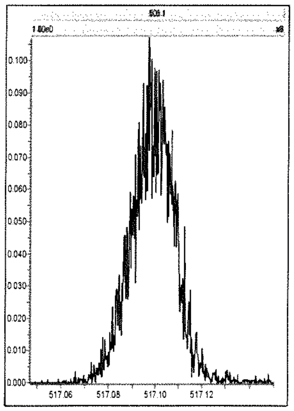

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, October 08, 2020 17:55:03 Pacific Daylight Time

M 292.9824 R 12819

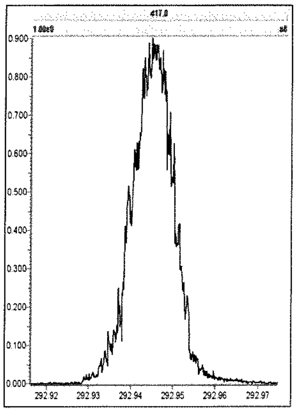

M 304.9824 R 13161

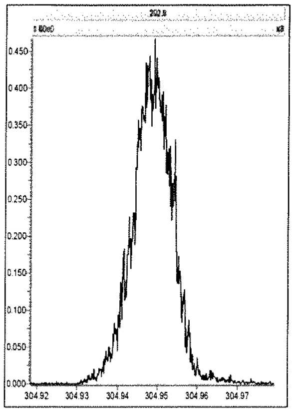

M 318.9792 R 13884

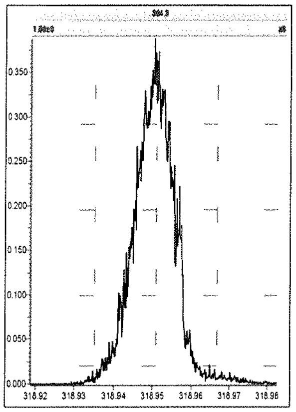

M 330.9792 R 13888

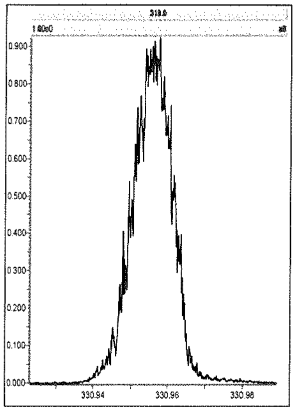

M 342.9792 R 14532

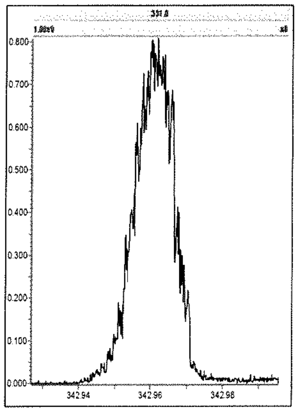

M 354.9792 R 13732

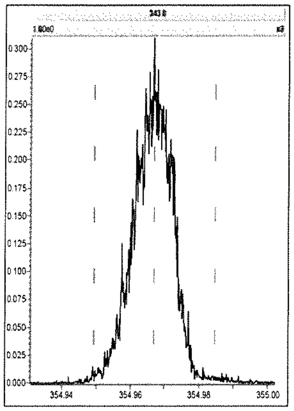

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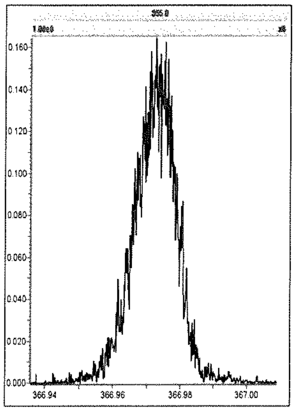

M 380.9760 R 13296

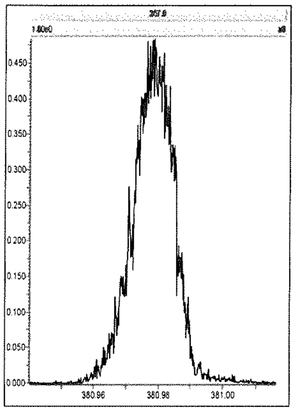

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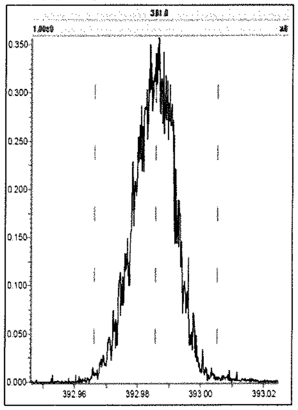

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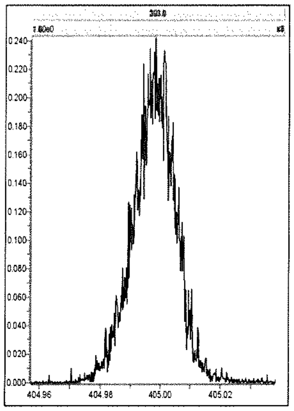

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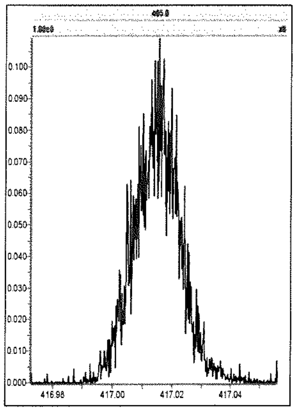

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, October 08, 2020 17:56:52 Pacific Daylight Time

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M 318.9792 R 13370

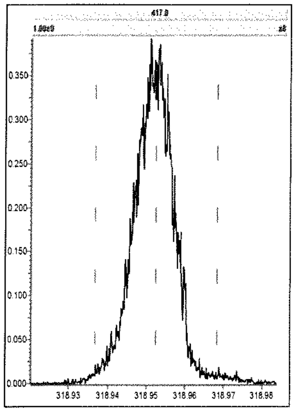

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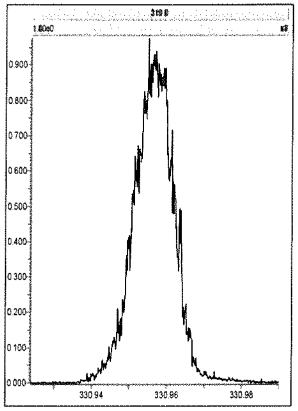

M 342.9792 R 14121

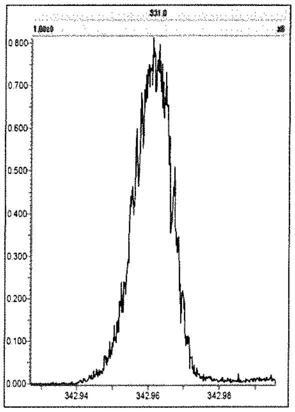

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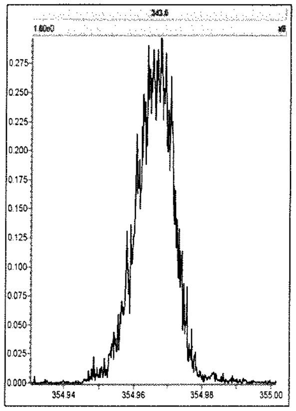

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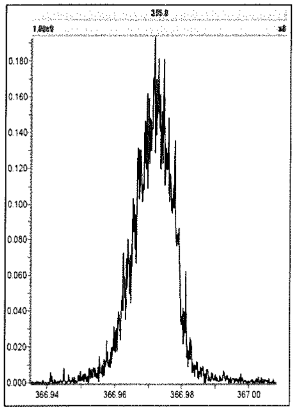

M 380.9760 R 15342

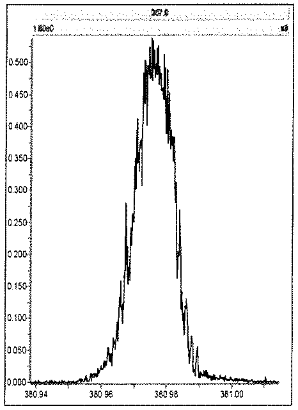

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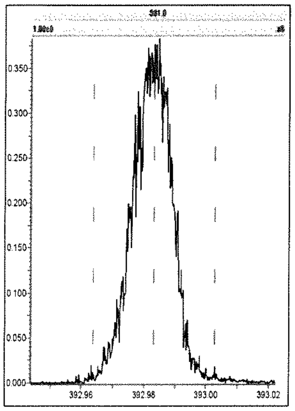

M 404.9760 R 13884

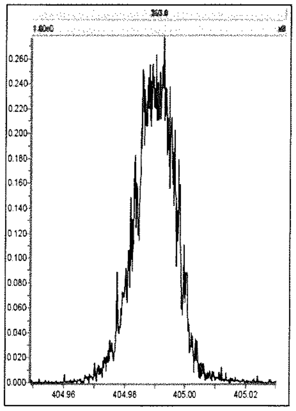

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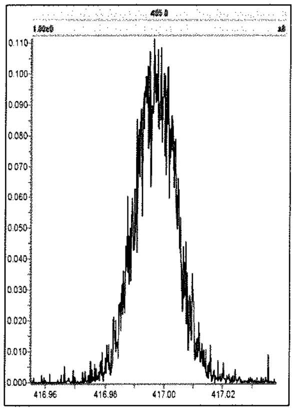

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, October 08, 2020 17:57:46 Pacific Daylight Time

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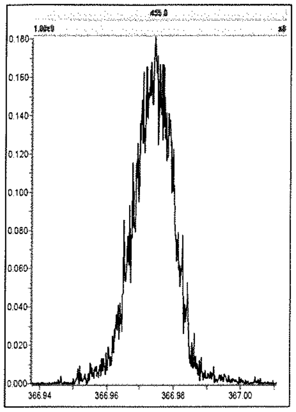

M 380.9760 R 14284

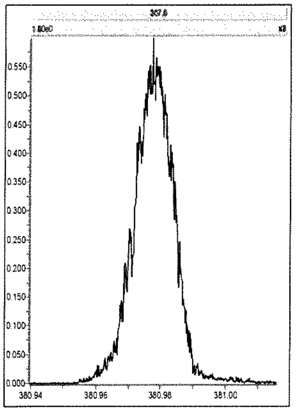

M 392.9760 R 14708

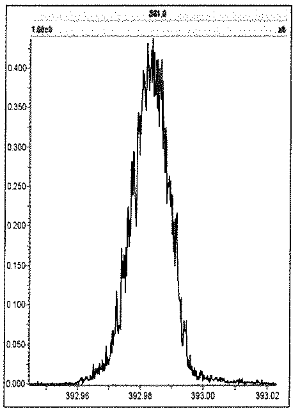

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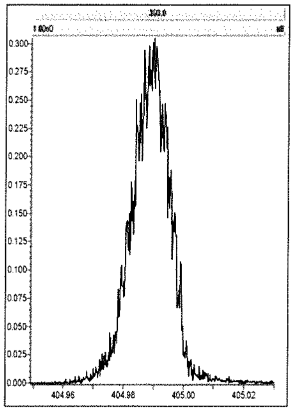

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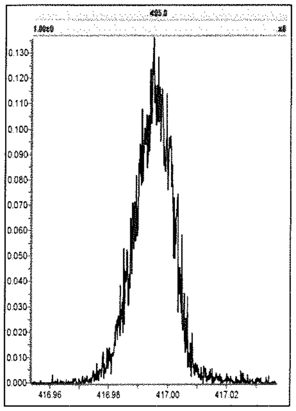

M 430.9728 R 13584

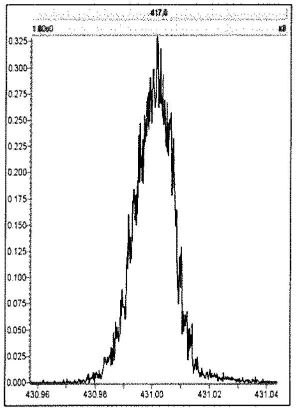

M 442.9728 R 14707

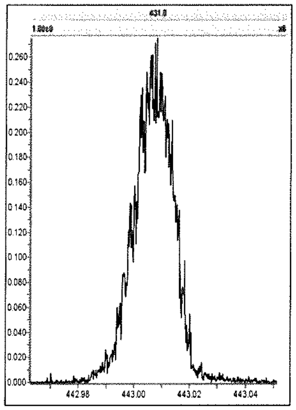

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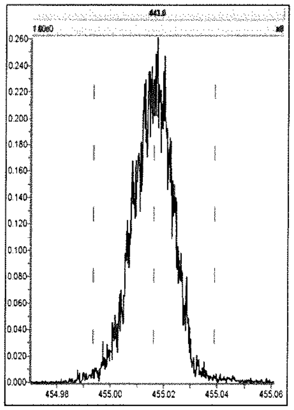

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

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M 380.9760 R 13293

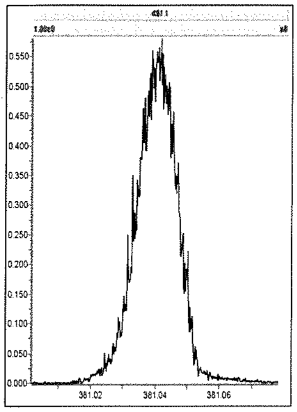

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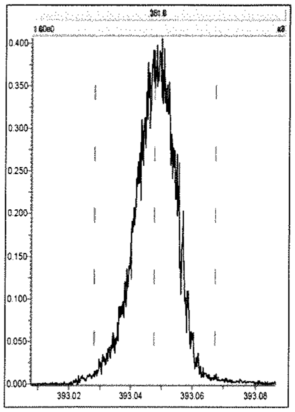

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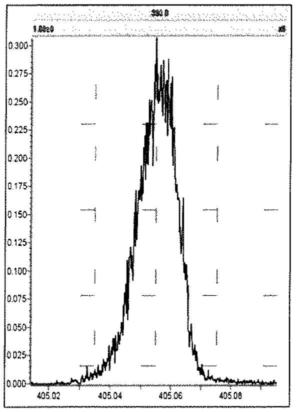

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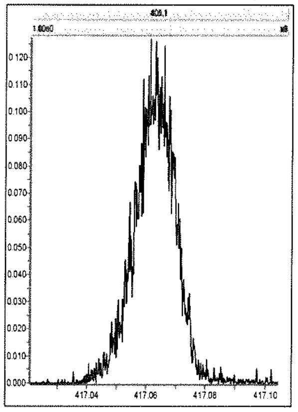

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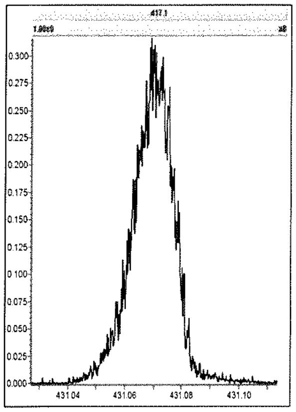

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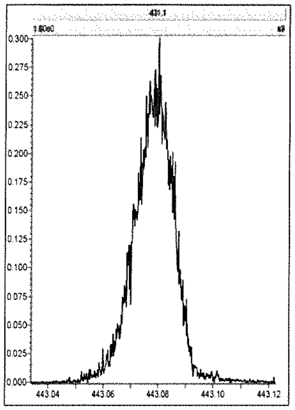

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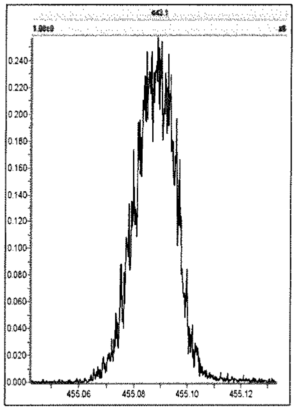

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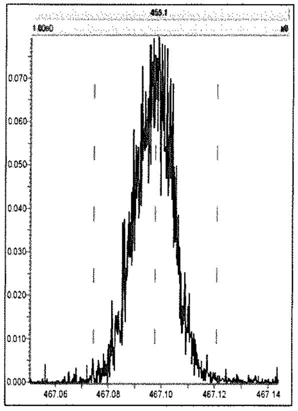

M 480.9696 R 12499

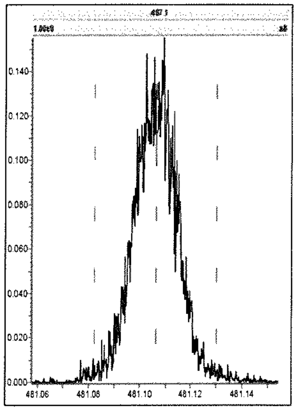

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, October 08, 2020 18:00:40 Pacific Daylight Time

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M 380.9760 R 12627

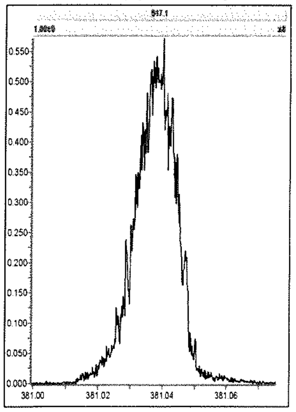

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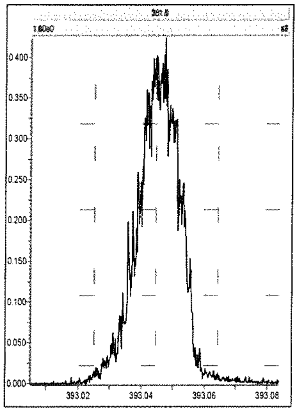

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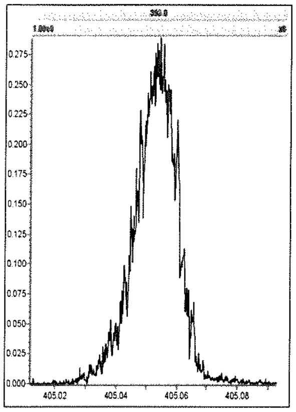

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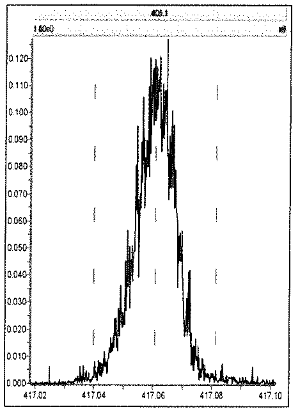

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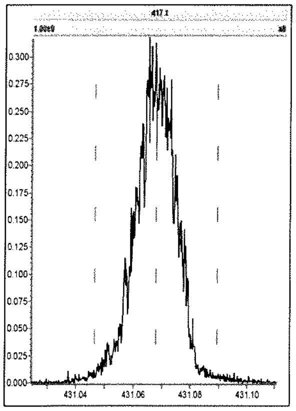

M 442.9728 R 13810

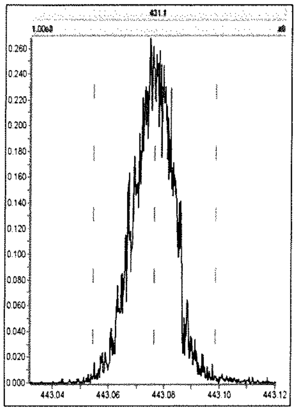

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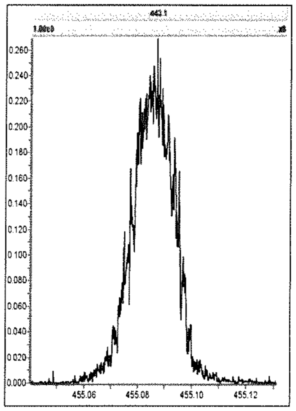

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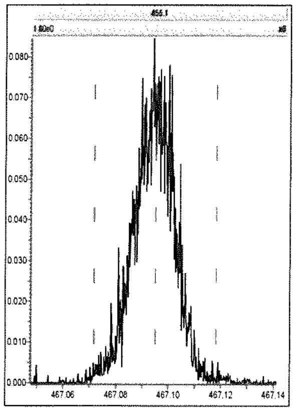

M 480.9696 R 13088

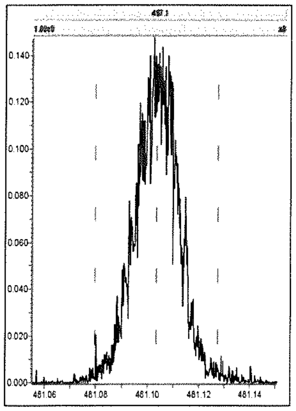

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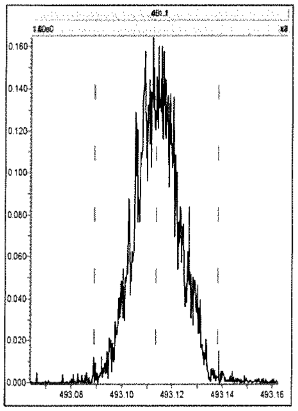

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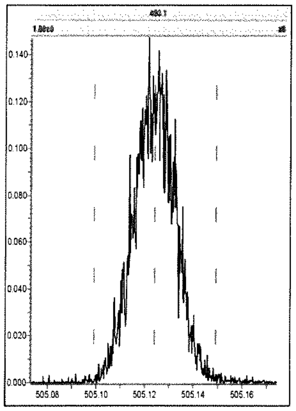

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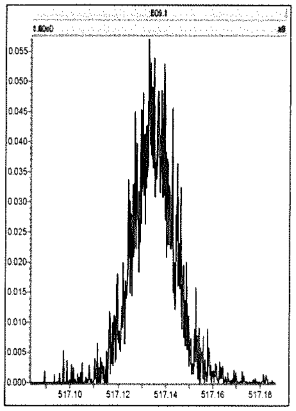

Report Date: 12-Oct-2020 13:49:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

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Client ID:
Sample Type: CCV
Inject. Date: 08-Oct-2020 09:51:06 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 100820 CCV HRDXNL4_00095
Misc. Info.: 07OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 13:49:40 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1639

First Level Reviewer: messecara Date: 08-Oct-2020 23:26:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.930	253420175	0.81	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.492	385249061	0.80	1.4844	102.4	102.4	0.5048	0.5048	102	
2,3,7,8-TCDF	15.507	37077057	0.74	0.9534	10.1	10.1	0.0549	0.0549	101	
A Non-2,3,7,8-sub-TCDF	15.250						0.0549	0.0549		
S Total TCDF					10.1	10.1	0.0549	0.0549		
D 13C-2,3,7,8-TCDD	16.097	278471182	0.79	1.0875	101.0	101.0	0.3676	0.3676	101	
2,3,7,8-TCDD	16.112	29552879	0.81	1.0205	10.4	10.4	0.0439	0.0439	104	
$ 37Cl4-2,3,7,8-TCDD	16.112	29093994		1.1216	10.2	10.2	0.0208	0.0208	102	
A Non-2,3,7,8-sub-TCDD	15.643						0.0439	0.0439		
S Total TCDD					10.4	10.4	0.0439	0.0439		
D 13C-1,2,3,7,8-PeCDF	19.714	305351192	1.57	1.3943	86.4	86.4	0.3176	0.3176	86.42	
1,2,3,7,8-PeCDF	19.727	152856958	1.58	1.0794	46.4	46.4	0.2387	0.2387	92.76	
D 13C-2,3,4,7,8-PeCDF	20.832	289152375	1.57	1.3370	85.3	85.3	0.3312	0.3312	85.34	
2,3,4,7,8-PeCDF	20.859	154314781	1.55	1.0966	48.7	48.7	0.2644	0.2644	97.33	
A F1 PeCDFs	17.745						0.0208	0.0208		
A Non-2,3,7,8-sub-PeCDF	20.369						0.2508	0.2508		
S Total PeCDF					95.0	95.0	0.2515	0.2515		
D 13C-1,2,3,7,8-PeCDD	21.445	189549127	1.55	0.8475	88.3	88.3	0.1717	0.1717	88.25	
1,2,3,7,8-PeCDD	21.473	102663542	1.53	1.1397	47.5	47.5	0.1284	0.1284	95.05	
A Non-2,3,7,8-sub-PeCDD	20.552						0.1284	0.1284		
S Total PeCDD					47.5	47.5	0.1284	0.1284		
D 13C-1,2,3,4,7,8-HxCDF	26.746	224559540	0.53	1.3065	93.5	93.5	0.5326	0.5326	93.53	
1,2,3,4,7,8-HxCDF	26.772	136290966	1.20	1.2552	48.4	48.4	0.2639	0.2639	96.70	
D 13C-1,2,3,6,7,8-HxCDF	27.025	244520511	0.52	1.4213	93.6	93.6	0.4896	0.4896	93.62	
1,2,3,6,7,8-HxCDF	27.052	143537562	1.22	1.2102	48.5	48.5	0.2801	0.2801	97.01	
D 13C-2,3,4,6,7,8-HxCDF	28.583	230299398	0.53	1.3142	95.4	95.4	0.5295	0.5295	95.35	
2,3,4,6,7,8-HxCDF	28.610	134799272	1.19	1.2182	48.0	48.0	0.3078	0.3078	96.09	
D 13C-1,2,3,7,8,9-HxCDF	30.408	221945052	0.54	1.3204	91.5	91.5	0.5270	0.5270	91.46	
1,2,3,7,8,9-HxCDF	30.421	130844679	1.21	1.2319	47.9	47.9	0.2247	0.2247	95.71	
A Non-2,3,7,8-sub-HxCDF	27.498						0.2657	0.2657		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					192.8	192.8	0.2691	0.2691		
* 13C-1,2,3,7,8,9-HxCDD	30.088	183779427	1.26	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.063	152497153	1.26	0.8660	95.8	95.8	0.3340	0.3340	95.82	a
1,2,3,4,7,8-HxCDD	29.103	87711814	1.24	1.2535	45.9	45.9	0.2077	0.2077	91.77	
D 13C-1,2,3,6,7,8-HxCDD	29.329	188373102	1.24	0.9827	104.3	104.3	0.2943	0.2943	104	a
1,2,3,6,7,8-HxCDD	29.369	93540432	1.24	1.1117	44.7	44.7	0.1979	0.1979	89.33	
1,2,3,7,8,9-HxCDD	30.115	95992996	1.25	1.2852	43.8	43.8	0.1856	0.1856	87.65	
A Non-2,3,7,8-sub-HxCDD	27.931						0.1960	0.1960		
S Total HxCDD					134.4	134.4	0.1971	0.1971		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	169912277	0.46	0.9410	98.2	98.2	1.387	1.387	98.25	
1,2,3,4,6,7,8-HpCDF	32.559	121682630	1.09	1.4783	48.4	48.4	0.3544	0.3544	96.89	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	154025362	0.46	0.8751	95.8	95.8	1.491	1.491	95.77	
1,2,3,4,7,8,9-HpCDF	33.653	105460647	1.04	1.3784	49.7	49.7	0.3828	0.3828	99.35	
A Non-2,3,7,8-sub-HpCDF	33.118						0.3681	0.3681		
S Total HpCDF					98.1	98.1	0.3686	0.3686		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	170059032	1.01	0.9049	102.3	102.3	1.803	1.803	102	
1,2,3,4,6,7,8-HpCDD	33.410	87153175	1.05	1.0862	47.2	47.2	0.5594	0.5594	94.36	
A Non-2,3,7,8-sub-HpCDD	33.339						0.5594	0.5594		
S Total HpCDD					47.2	47.2	0.5594	0.5594		
D 13C-OCDD	35.570	236324942	0.93	0.5783	222.4	222.4	1.896	1.896	111	
OCDF	35.642	180996144	0.94	1.7248	88.8	88.8	0.1697	0.1697	88.81	
OCDD	35.570	135533152	0.91	1.2576	91.2	91.2	0.0941	0.0941	91.21	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 08-Oct-2020 09:51:06 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 100820 CCV HRDXNL4_00095
Misc. Info.: 07OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 13:49:40 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1639

First Level Reviewer: messecara Date: 08-Oct-2020 23:26:42

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.930	15.930	0		113239928	31265517	47991	119977	651		
333.9339	15.930	15.930	0		140180247	38709599	63899	159747	606	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.492	15.492	0	0.972	171570487	45821675	85865	214662	534		
317.9389	15.492	15.492	0	0.972	213678574	56407073	123866	309665	455	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.507	15.507	0	1.001	15794708	4132587	10503	26257	393		
305.8987	15.492	15.507	-1	1.000	21282349	5558973	10914	27285	509	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.250						10503	26257			
305.8987	15.250						10914	27285			
13C-2,3,7,8-TCDD											
331.9368	16.097	16.097	0	1.010	123266345	30806732	47991	119977	642		
333.9339	16.097	16.097	0	1.010	155204837	38633922	63899	159747	605	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.112	16.112	0	1.001	13199882	3395662	6138	15345	553		
321.8936	16.112	16.112	0	1.001	16352997	4269413	6294	15735	678	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.112	16.112	0	1.011	29093994	7437609	6538	16345	1138		
A Non-2,3,7,8-sub-TCDD											
319.8965	15.643						6138	15345			
321.8936	15.643						6294	15735			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	19.714	19.714	0	1.237	186312307	35901165	74978	187445	479		
353.8970	19.714	19.714	0	1.237	119038885	23063366	48969	122422	471	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.727	19.727	0	1.001	93520316	18304101	35311	88277	518		
341.8567	19.727	19.727	0	1.001	59336642	11419216	25445	63612	449	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.832	20.832	0	1.308	176710911	31754160	74978	187445	424		
353.8970	20.832	20.832	0	1.308	112441464	20630275	48969	122422	421	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.859	20.859	0	1.001	93710566	16782813	35311	88277	475		
341.8567	20.845	20.859	-1	1.001	60604215	10900169	25445	63612	428	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.745						2174	5435			
341.8567	17.745						2857	7142			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.369						35311	88277			
341.8567	20.369						25445	63612			
13C-1,2,3,7,8-PeCDD											
367.8949	21.445	21.445	0	1.346	115163723	19006560	24961	62402	761		
369.8919	21.445	21.445	0	1.346	74385404	12178122	15767	39417	772	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.473	21.473	0	1.001	62104568	10811132	11587	28967	933		
357.8516	21.459	21.473	-1	1.001	40558974	7035896	6673	16682	1054	1.53(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.552						11587	28967			
357.8516	20.552						6673	16682			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.746	26.746	0	0.889	77839158	10940847	25757	64392	425		
385.8610	26.746	26.746	0	0.889	146720382	19923418	50219	125547	397	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.772	26.772	0	1.001	74375302	10264377	22517	56292	456		
375.8178	26.772	26.772	0	1.001	61915664	8682416	18382	45955	472	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.025	27.025	0	0.898	84044088	10410537	25757	64392	404		
385.8610	27.025	27.025	0	0.898	160476423	19754305	50219	125547	393	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.052	27.052	0	1.001	78871252	10045702	22517	56292	446		
375.8178	27.052	27.052	0	1.001	64666310	8104487	18382	45955	441	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.583	28.583	0	0.950	79732416	9360716	25757	64392	363		
385.8610	28.583	28.583	0	0.950	150566982	17908915	50219	125547	357	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.610	28.610	0	1.001	73194391	8437053	22517	56292	375		
375.8178	28.623	28.610	1	1.001	61604881	7129775	18382	45955	388	1.19(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.408	0	1.011	77548828	12811975	25757	64392	497		
385.8610	30.408	30.408	0	1.011	144396224	24127514	50219	125547	480	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.421	30.421	0	1.000	71529097	11789619	22517	56292	524		
375.8178	30.421	30.421	0	1.000	59315582	9831075	18382	45955	535	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.498						22517	56292			
375.8178	27.498						18382	45955			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.088	30.088	0		102332946	15050965	14472	36180	1040		
403.8529	30.088	30.088	0		81446481	12246566	17108	42770	716	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.063	29.063	0	0.966	84958625	9924272	14472	36180	686		a
403.8529	29.063	29.063	0	0.966	67538528	7964873	17108	42770	466	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.103	29.103	0	1.001	48516049	5705739	9507	23767	600		
391.8127	29.103	29.103	0	1.001	39195765	4696017	9120	22800	515	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.329	29.329	0	0.975	104093781	11729744	14472	36180	811		a
403.8529	29.329	29.329	0	0.975	84279321	9431667	17108	42770	551	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.369	29.369	0	1.001	51739487	5608949	9507	23767	590		
391.8127	29.356	29.369	-1	1.001	41800945	4541575	9120	22800	498	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.115	30.115	0	1.036	53274433	8056664	9507	23767	847		
391.8127	30.115	30.115	0	1.036	42718563	6447700	9120	22800	707	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						9507	23767			
391.8127	27.931						9120	22800			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.082	53336971	17084631	42784	106960	399		
419.8220	32.547	32.547	0	1.082	116575306	38028225	99701	249252	381	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	63385849	20459798	56267	140667	364		
409.7789	32.559	32.559	0	1.000	58296781	18623414	59244	148110	314	1.09(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.118	48259483	16914784	42784	106960	395		
419.8220	33.641	33.641	0	1.118	105765879	37820131	99701	249252	379	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	53867303	19603553	56267	140667	348		
409.7789	33.653	33.653	0	1.000	51593344	18727907	59244	148110	316	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.118						56267	140667			
409.7789	33.118						59244	148110			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	85480294	32340670	82077	205192	394		
437.8140	33.398	33.398	0	1.110	84578738	30357263	96078	240195	316	1.01(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	44575917	15829501	68915	172287	230		
425.7737	33.410	33.410	0	1.000	42577258	15075715	83484	208710	181	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						68915	172287			
425.7737	33.339						83484	208710			
13C-OCDD											
469.7779	35.570	35.570	0	1.182	113885732	36302474	96859	242147	375		
471.7750	35.558	35.570	-1	1.182	122439210	39361646	22865	57162	1721	0.93(0.76-1.02)	
OCDF											
441.7428	35.642	35.642	0	1.002	87915553	28466396	37965	94912	750		
443.7399	35.630	35.642	-1	1.002	93080591	31632717	6321	15802	5004	0.94(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	64523368	21066780	4571	11427	4609		
459.7348	35.570	35.570	0	1.000	71009784	23827109	13335	33337	1787	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_2.d				
Injection Date:	08-Oct-2020 09:51:06	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.06

Processing Integration Results

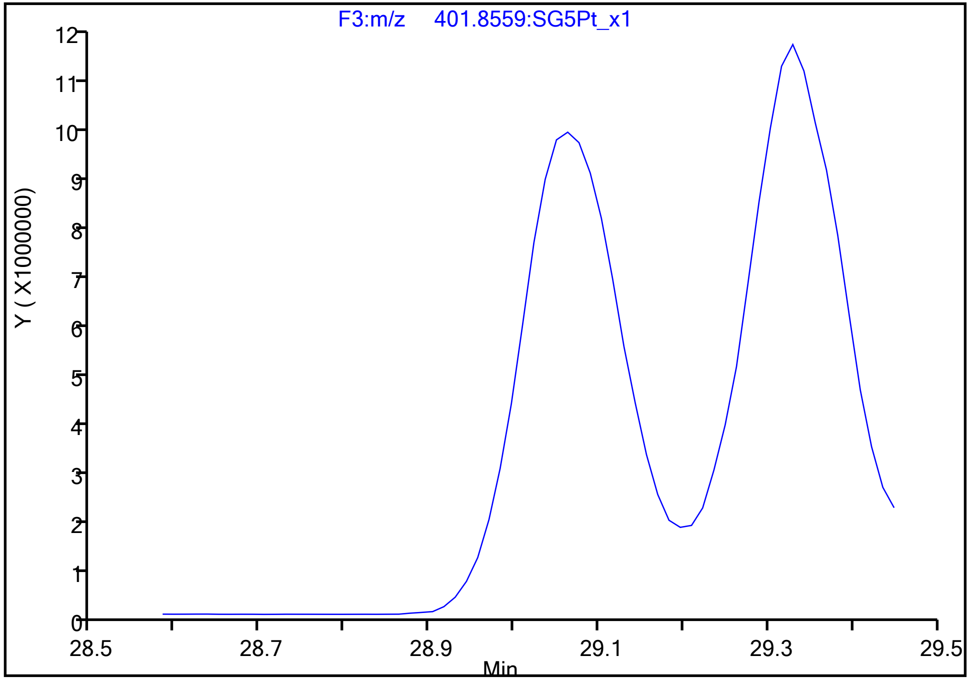

Manual Integration Results

RT: 29.06

Area: 84958625

Amount: 95.815416

Amount Units: pg/ul

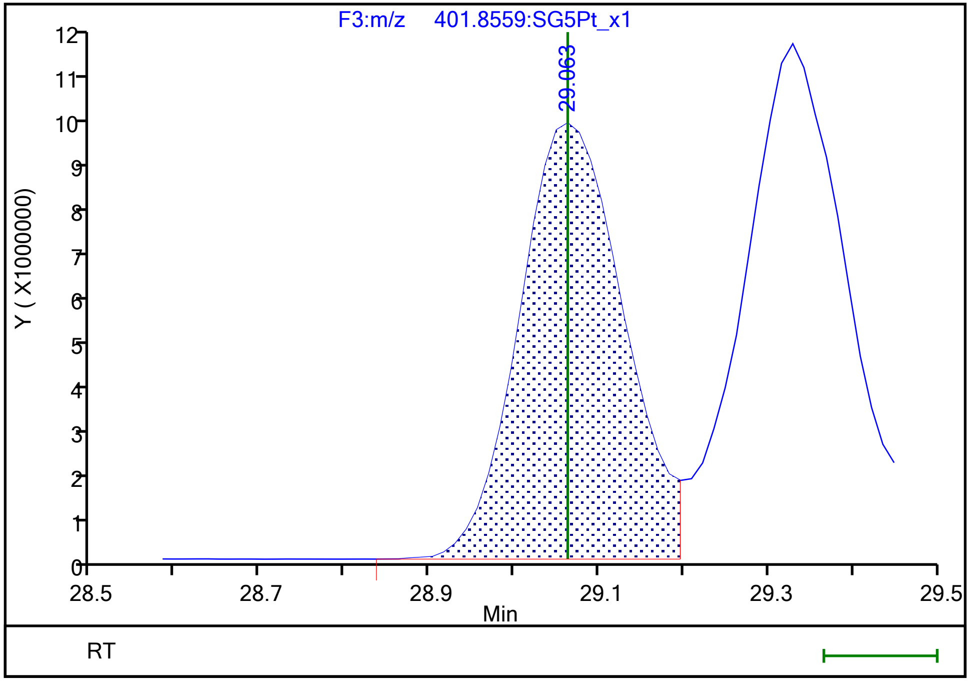

Reviewer: messecara, 08-Oct-2020 23:38:10

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 12-Oct-2020 13:49:41

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_2.d				
Injection Date:	08-Oct-2020 09:51:06	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.09
Area:	102332946
Amount:	101.7609
Amount Units:	pg/ul

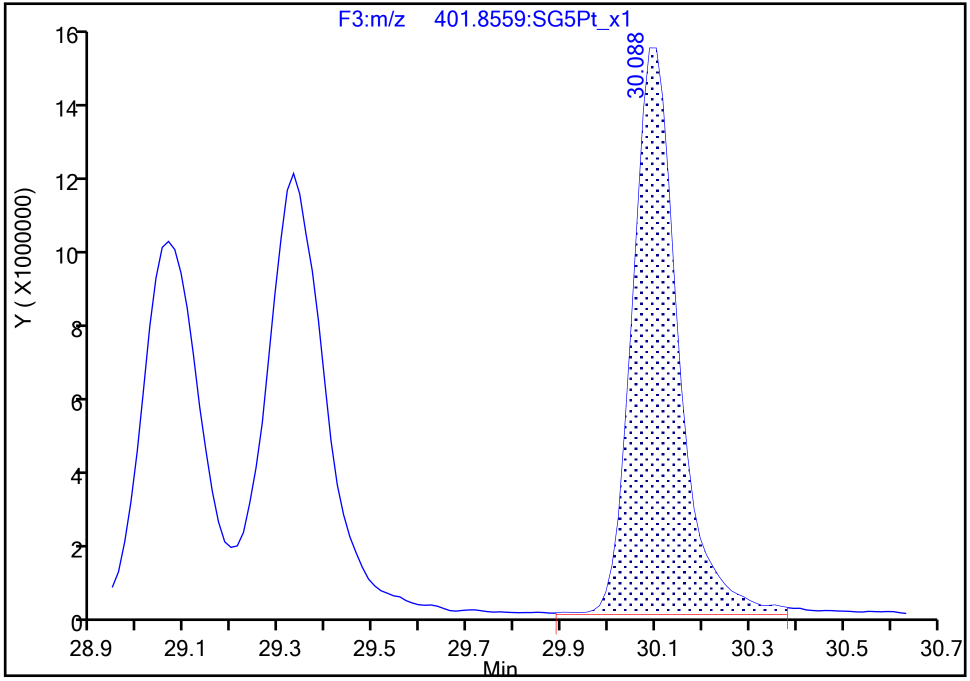

Manual Integration Results

RT:	29.33
Area:	104093781
Amount:	104.3045
Amount Units:	pg/ul

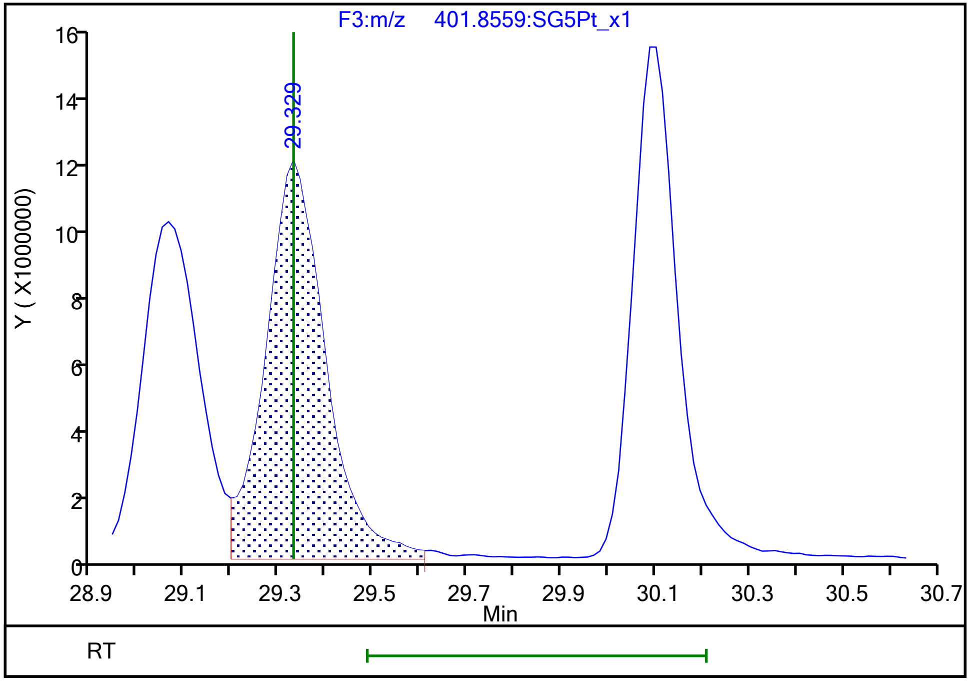

Reviewer: messecara, 08-Oct-2020 23:38:21

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	2
Column Type:		Column Dia:	

TCDF

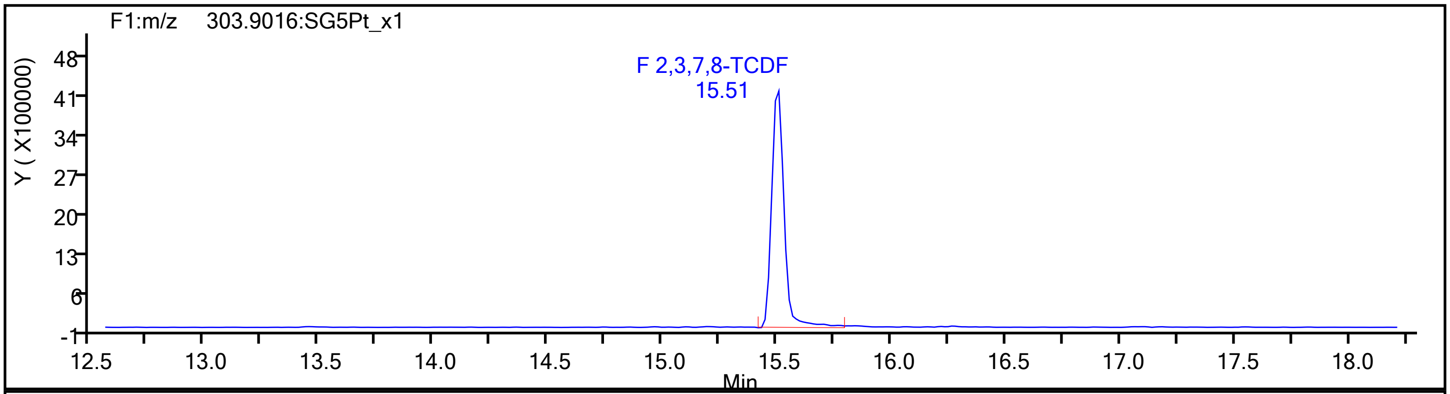

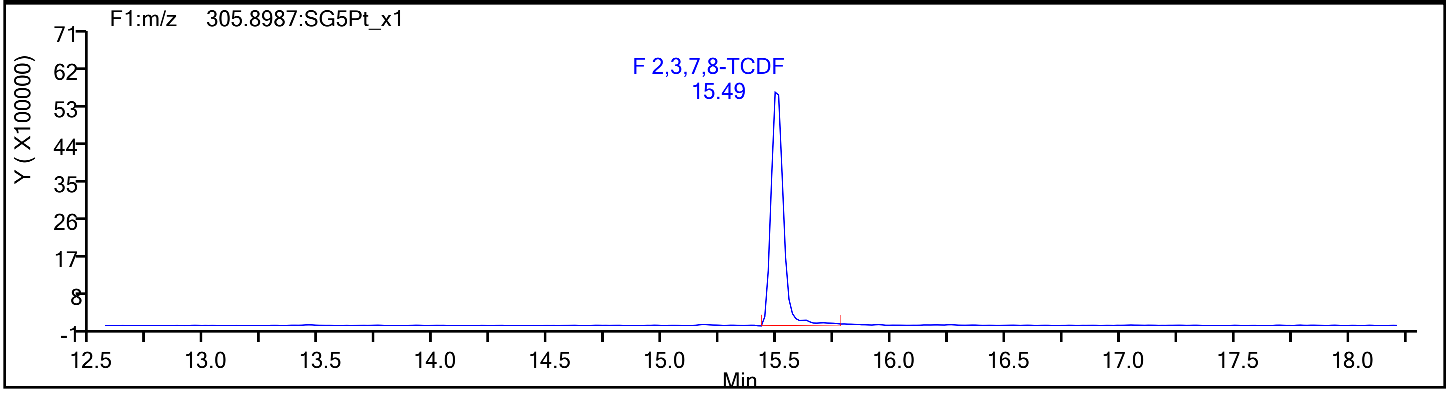

TCDF Standards

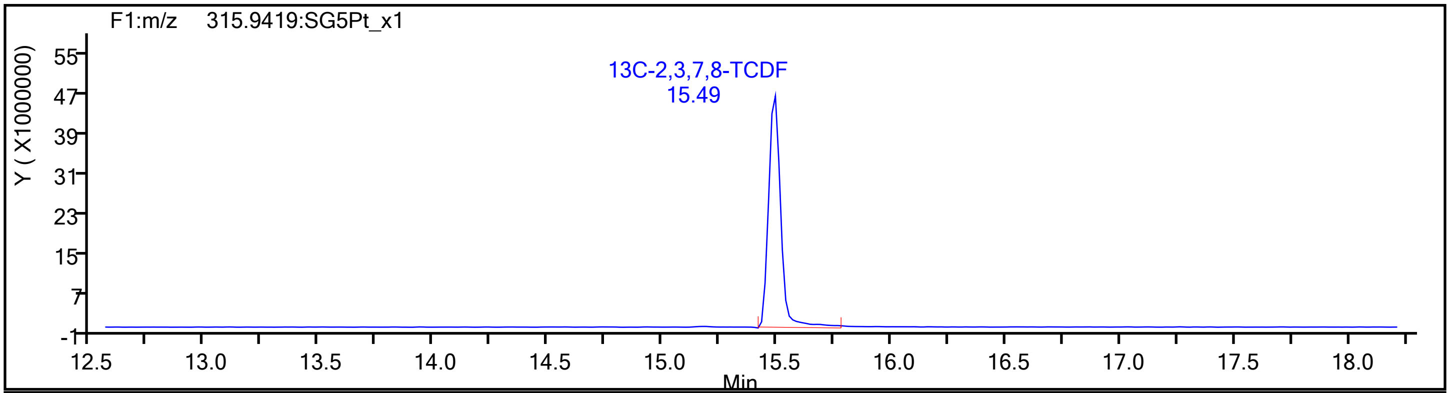

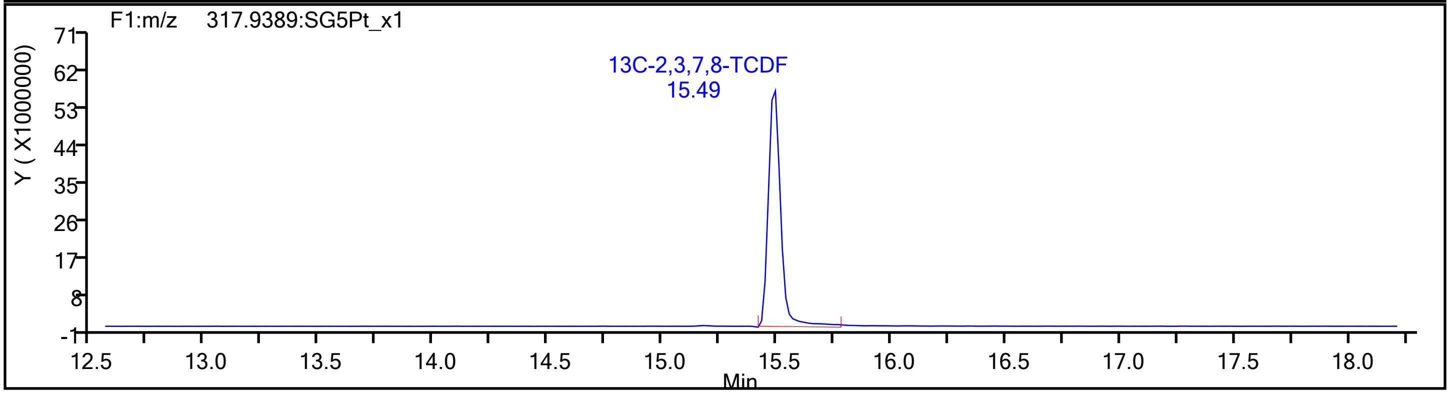

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type:
Column Dia:

TCDF

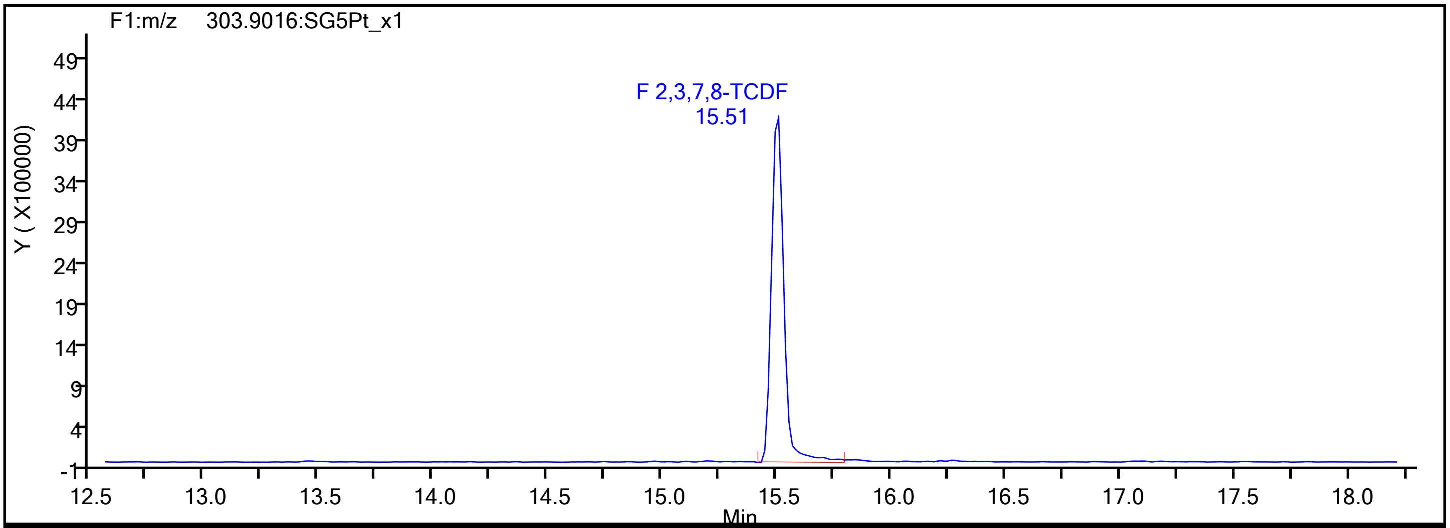

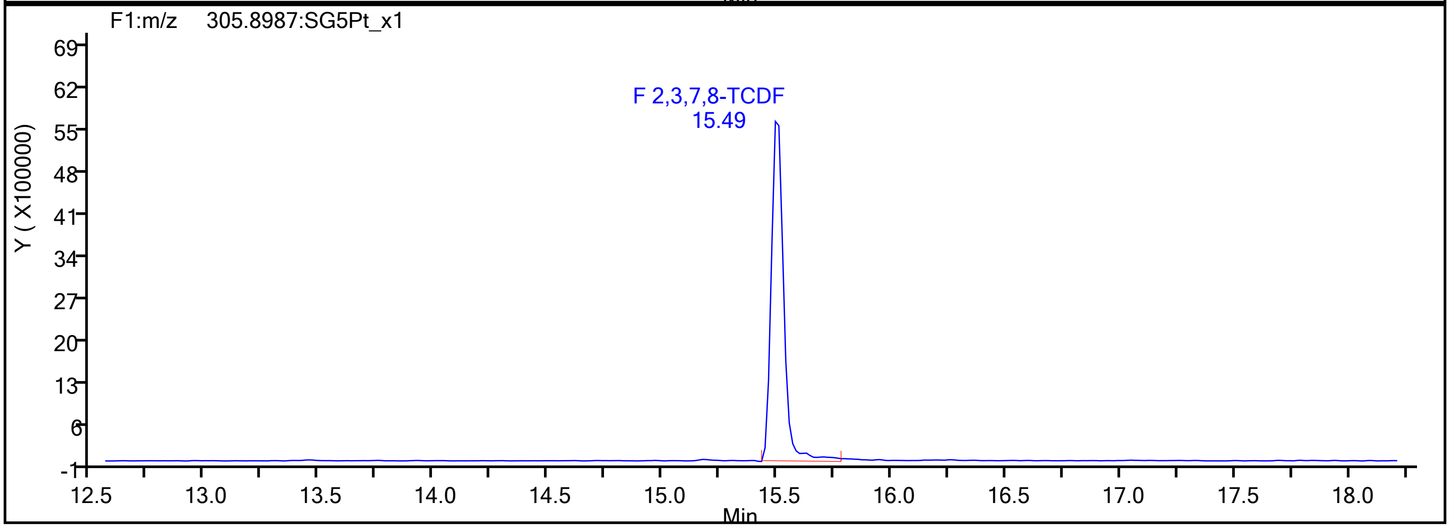

TCDF Interference Mass

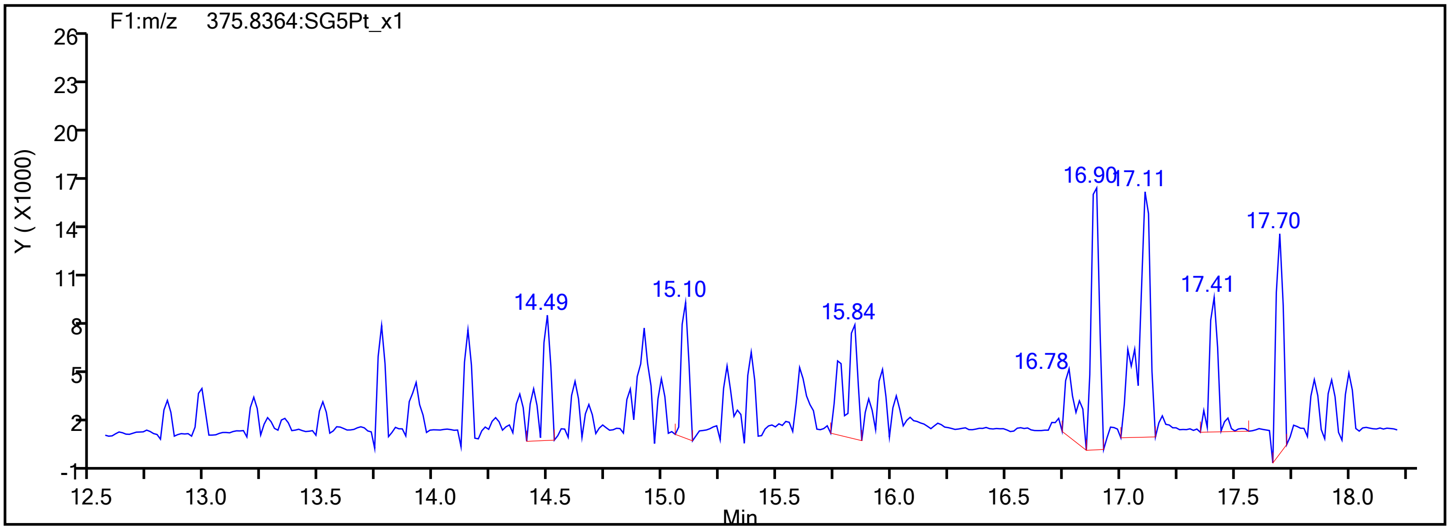

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	2
Column Type:		Column Dia:	

TCDD

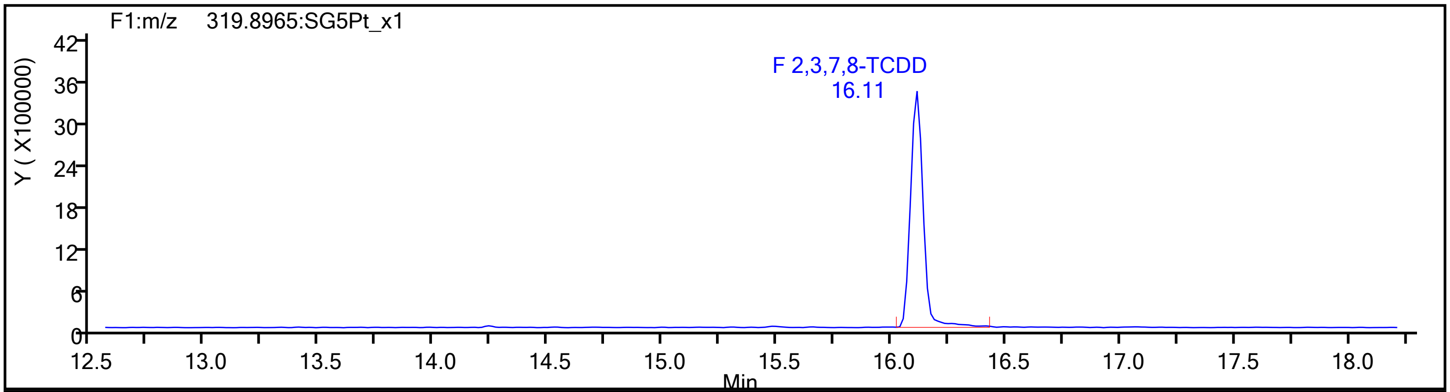

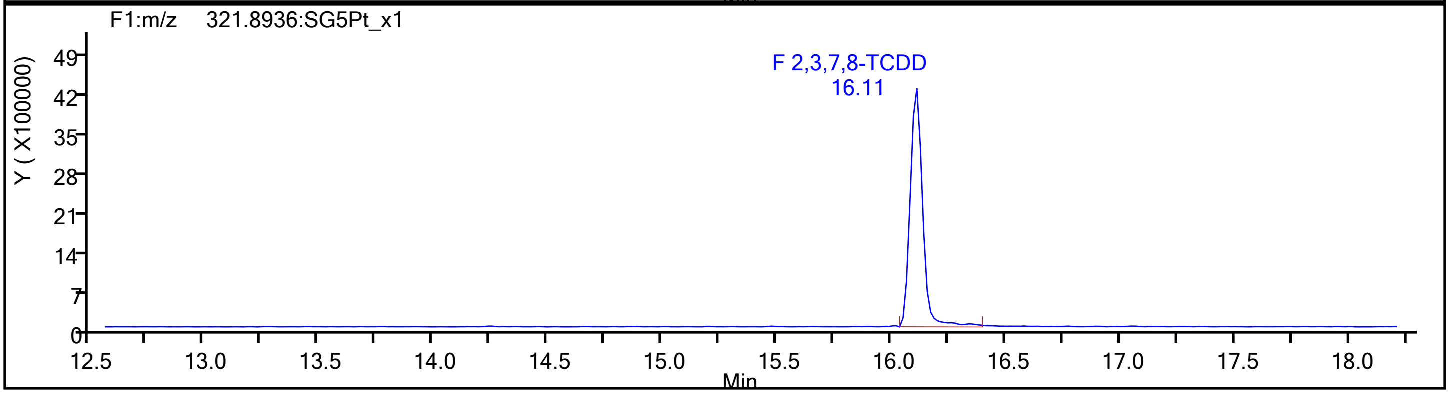

TCDD Standards

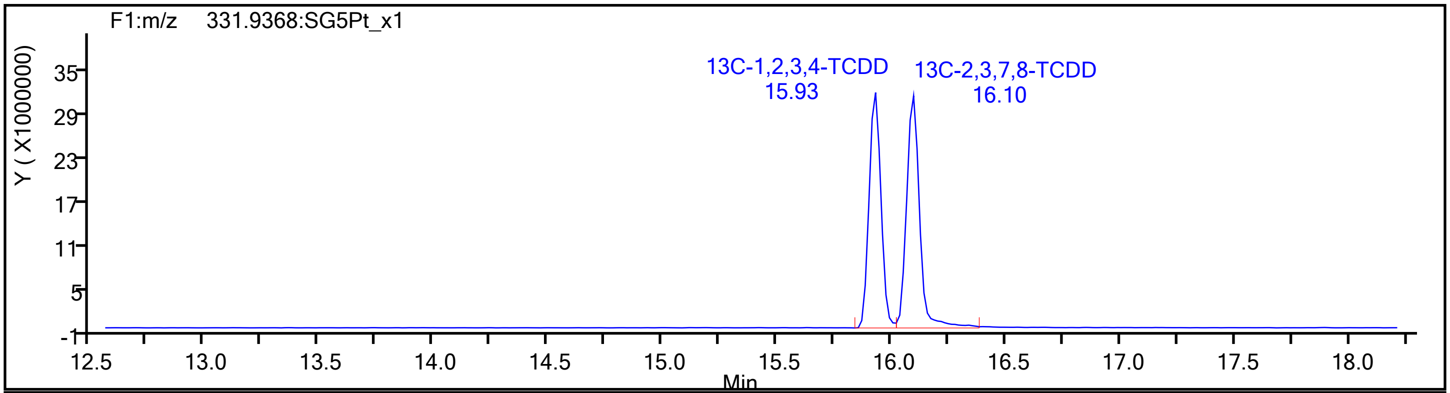

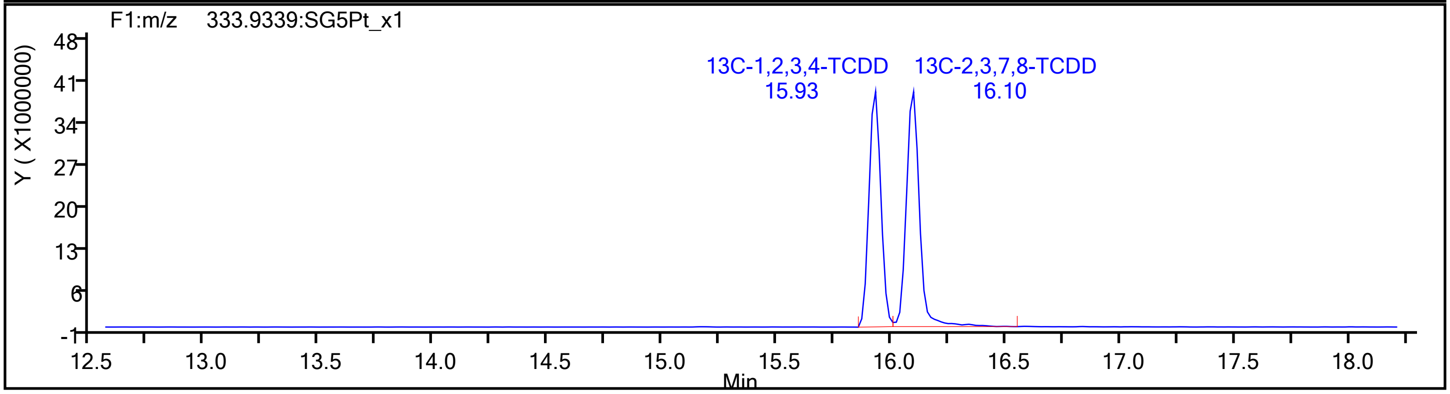

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 08-Oct-2020 09:51:06

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 2

Column Type:

Column Dia:

37Cl4-TCDD

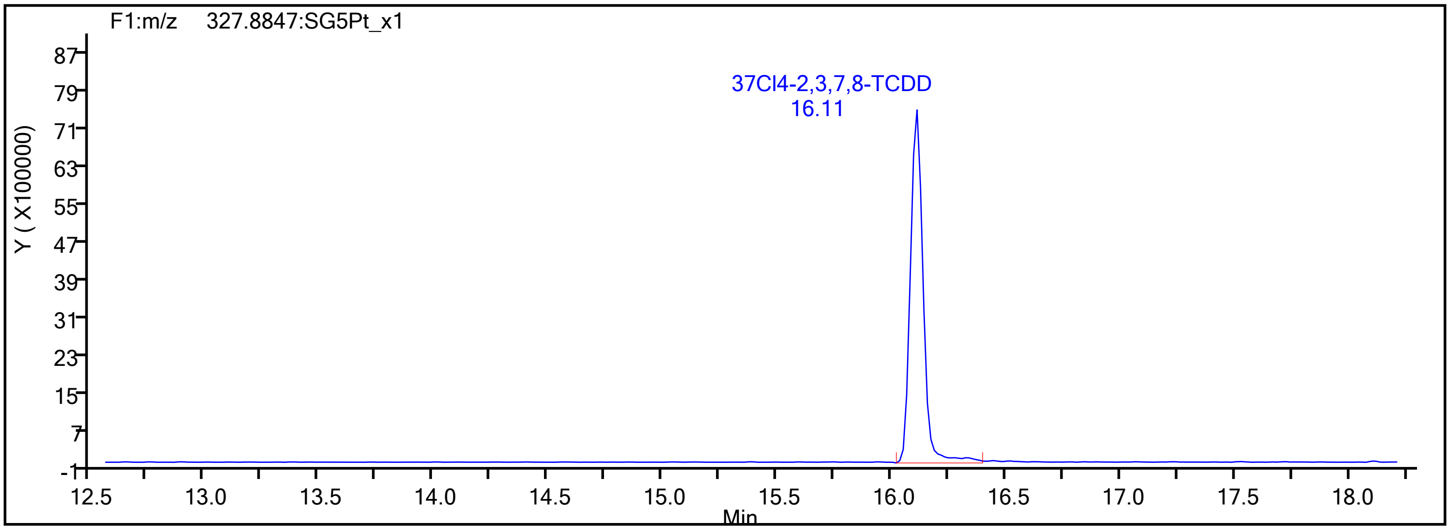

37Cl4-TCDD Standards

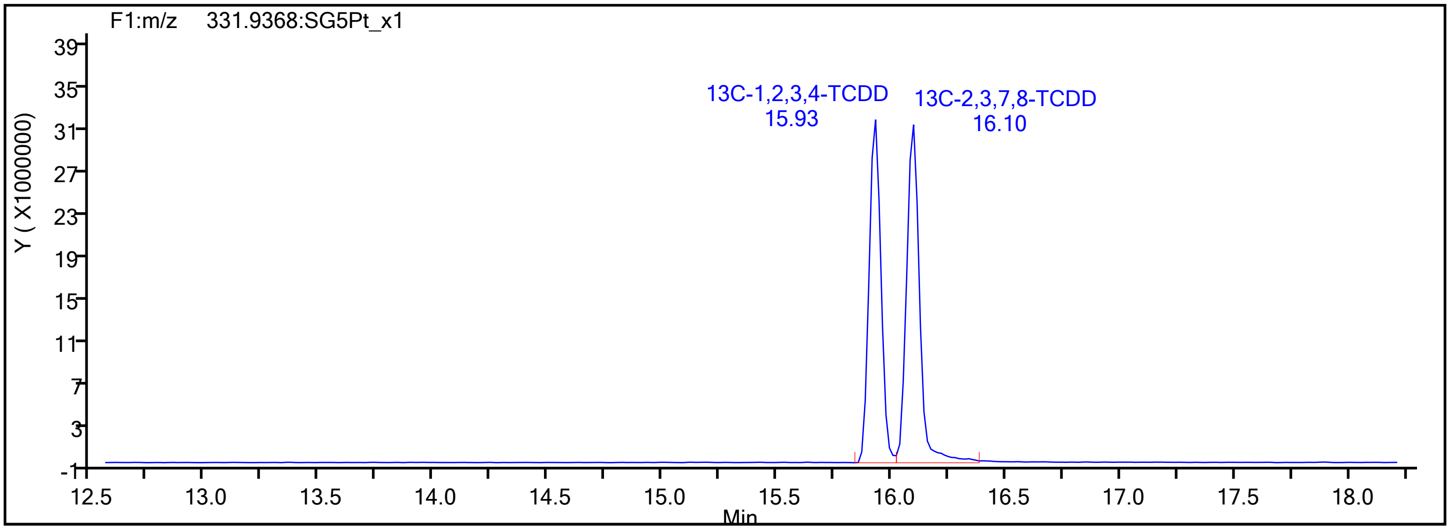

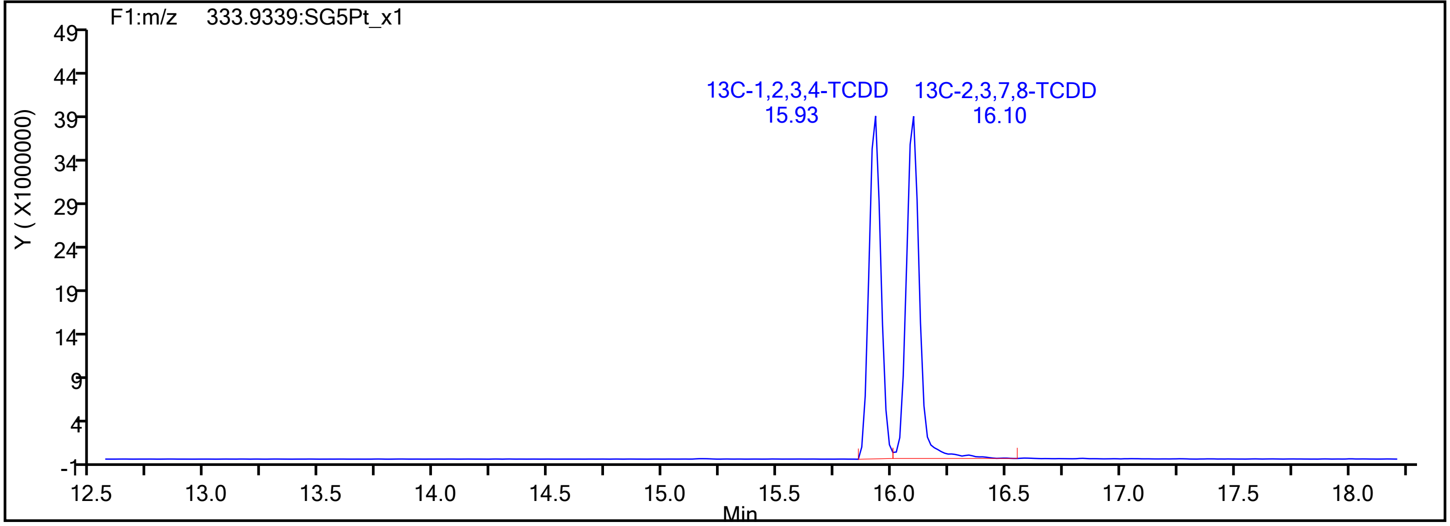

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
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Client ID:			
Worklist#:	420113	Sample Line#:	2
Column Type:		Column Dia:	

PeCDF

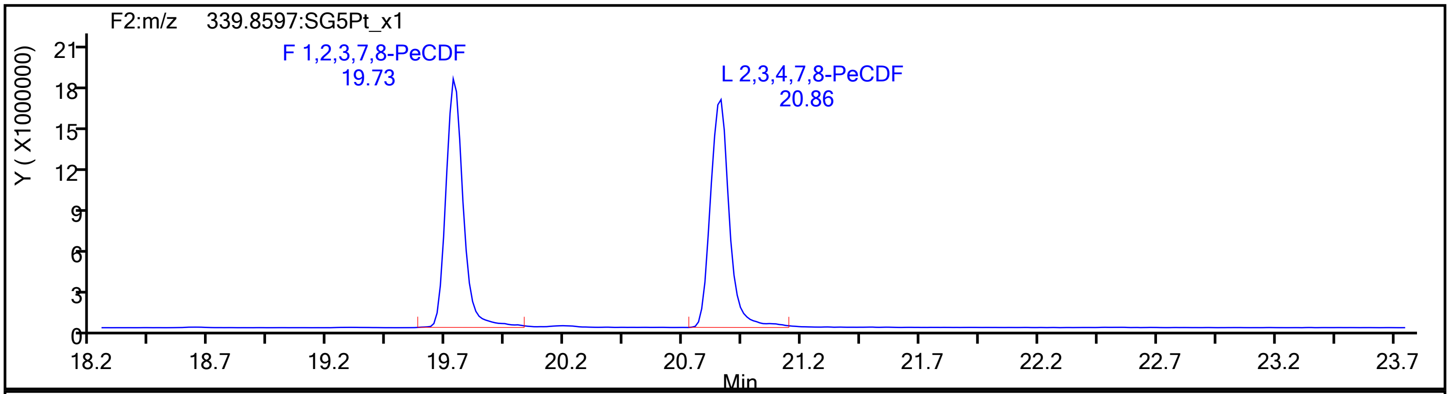

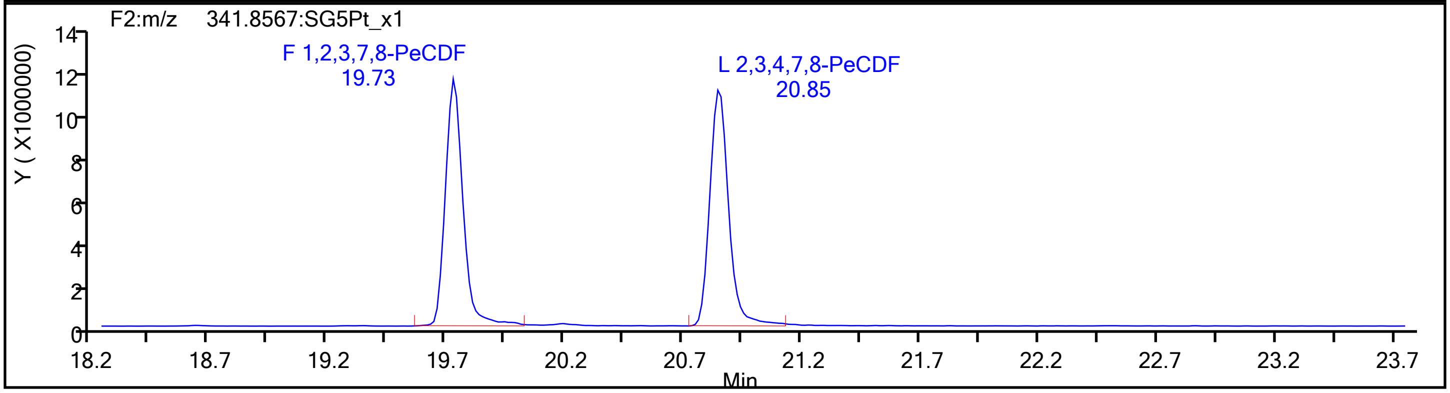

PeCDF Standards

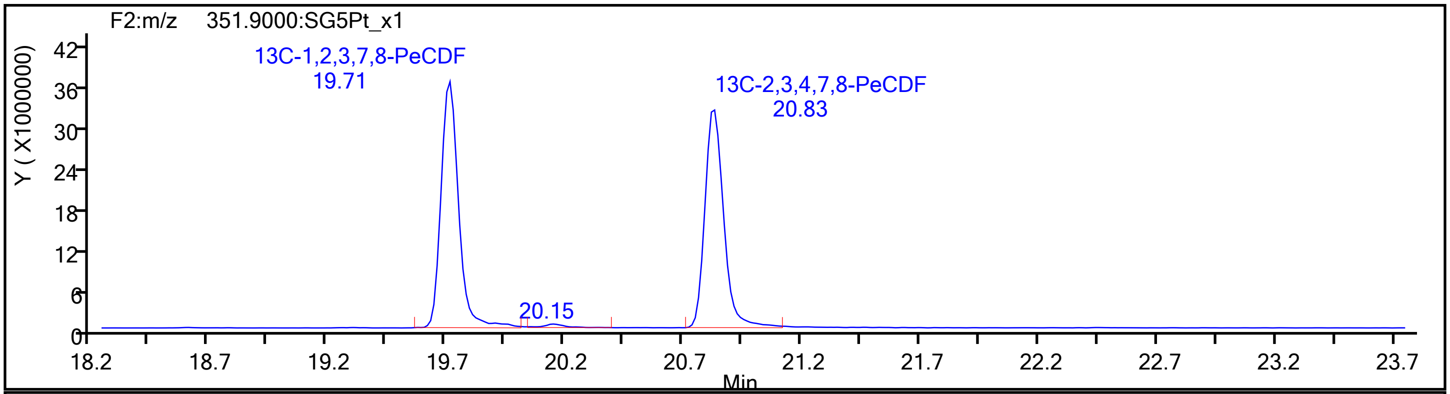

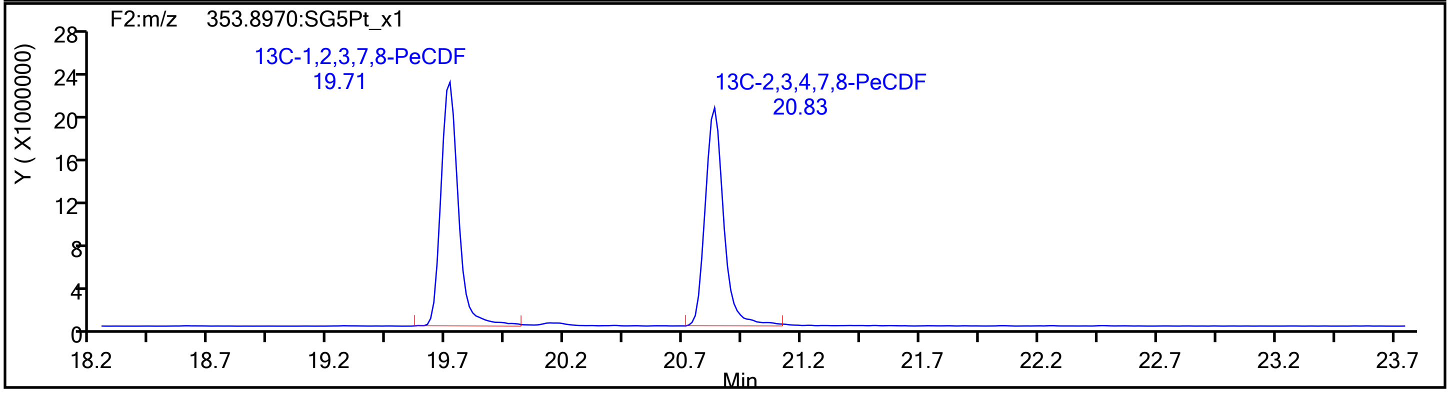

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
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PeCDF

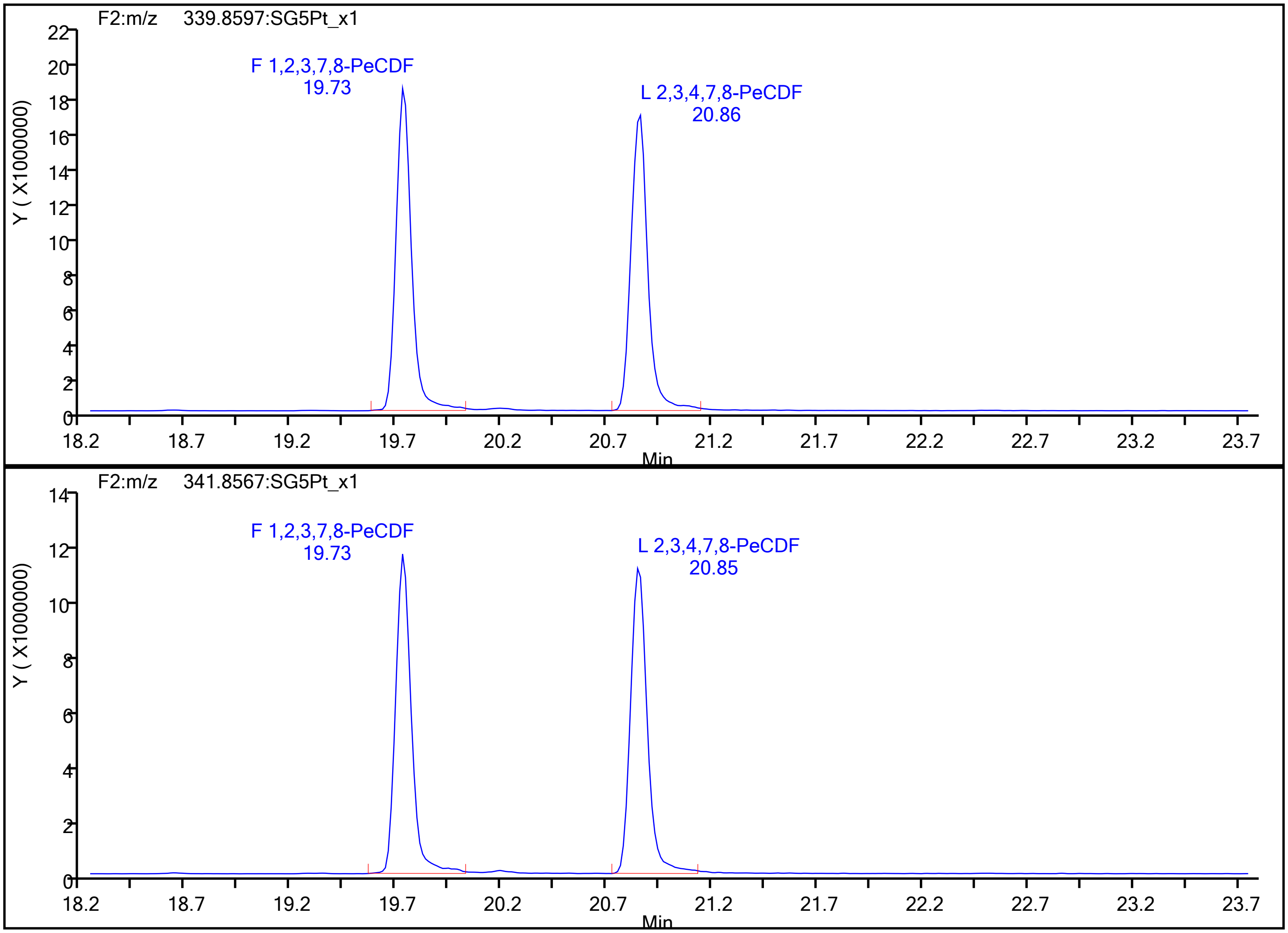

PeCDF Interference Mass

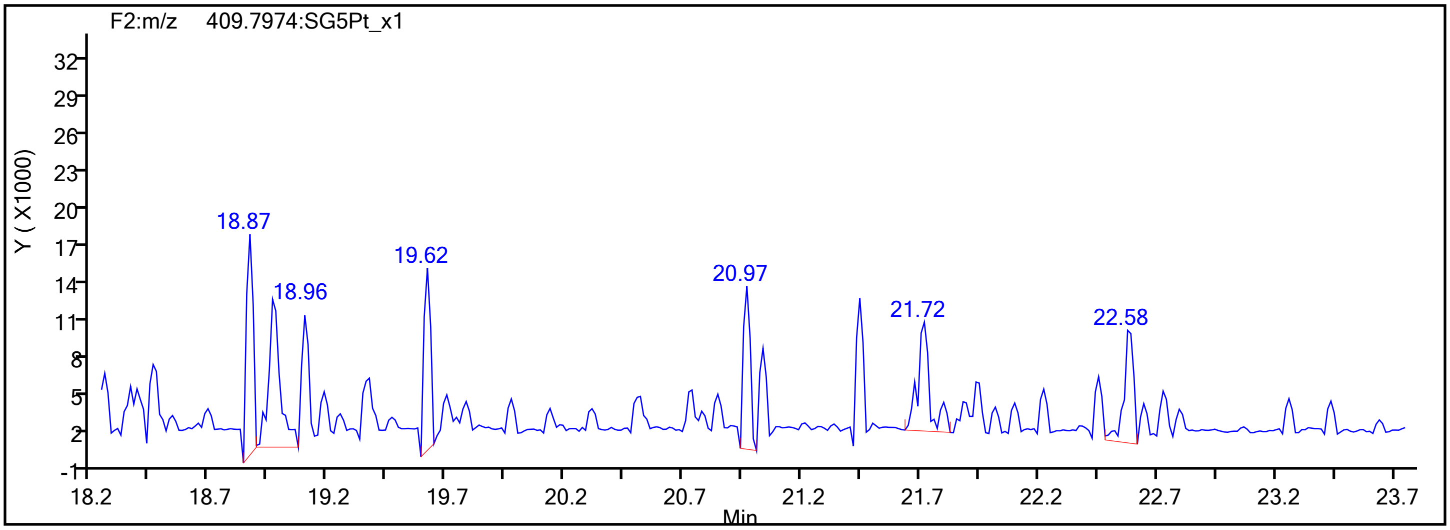

Report Date: 12-Oct-2020 13:49:41
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 08-Oct-2020 09:51:06
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Client ID:
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Column Type:
Column Dia:

PeCDD

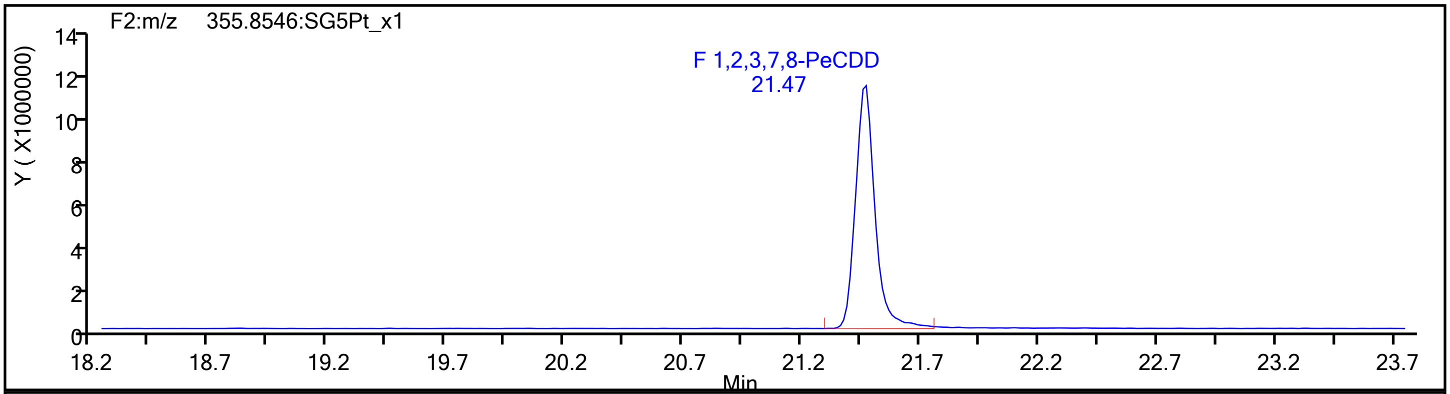

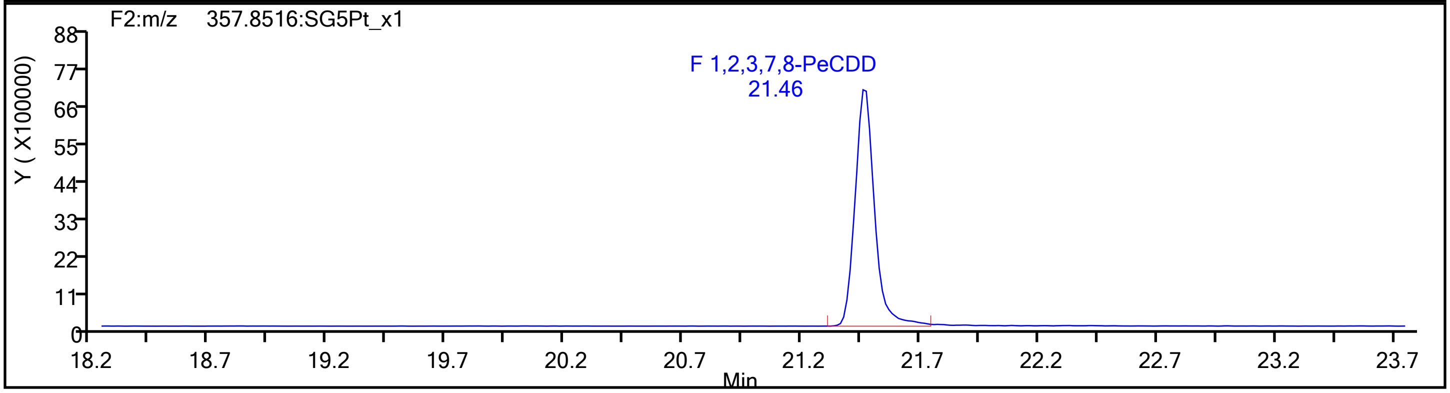

PeCDD Standards

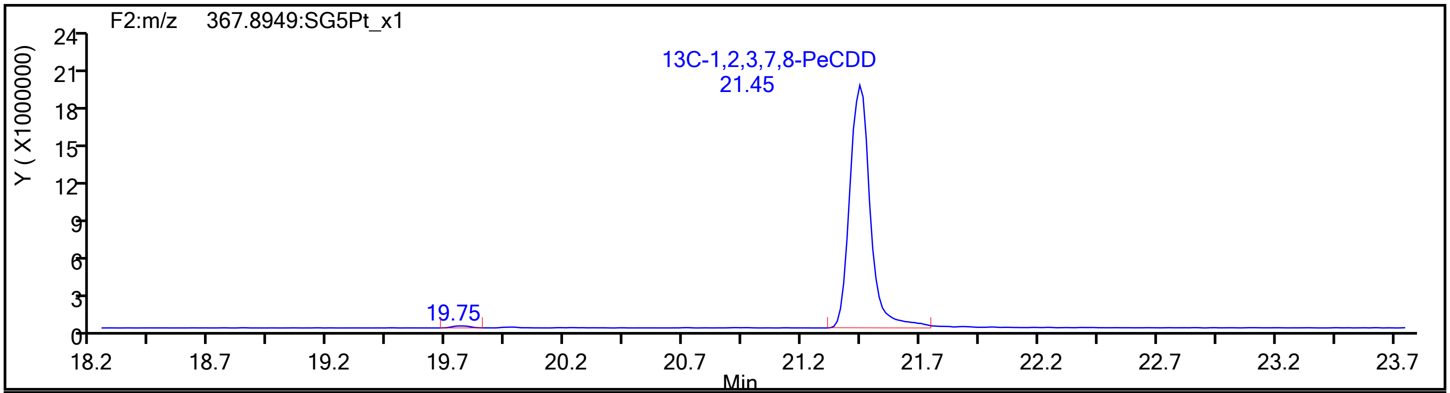

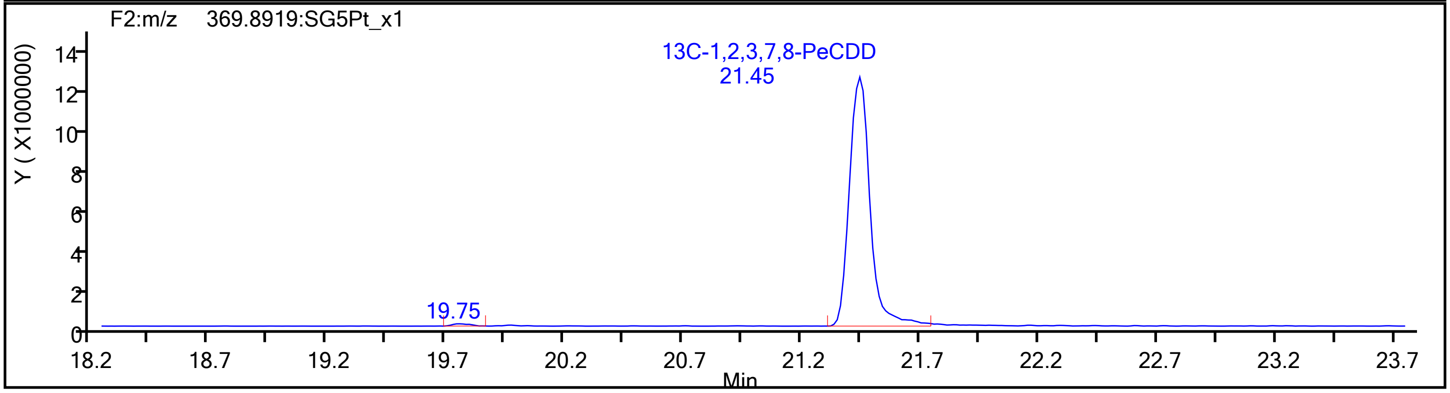

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Eurofins TestAmerica, Sacramento

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Instrument ID: 3D5
Operator ID: SMA
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Client ID:
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HxCDF

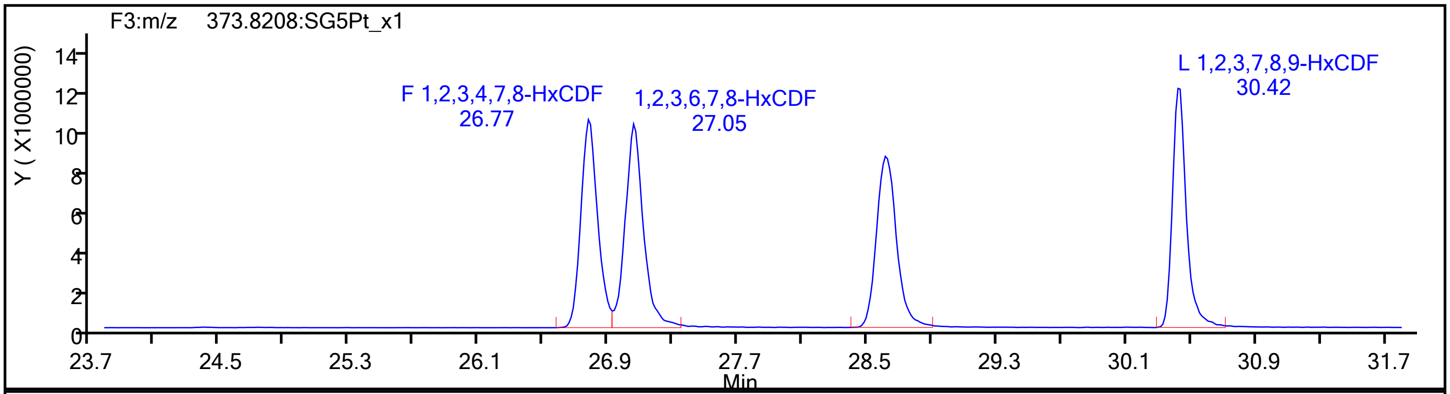

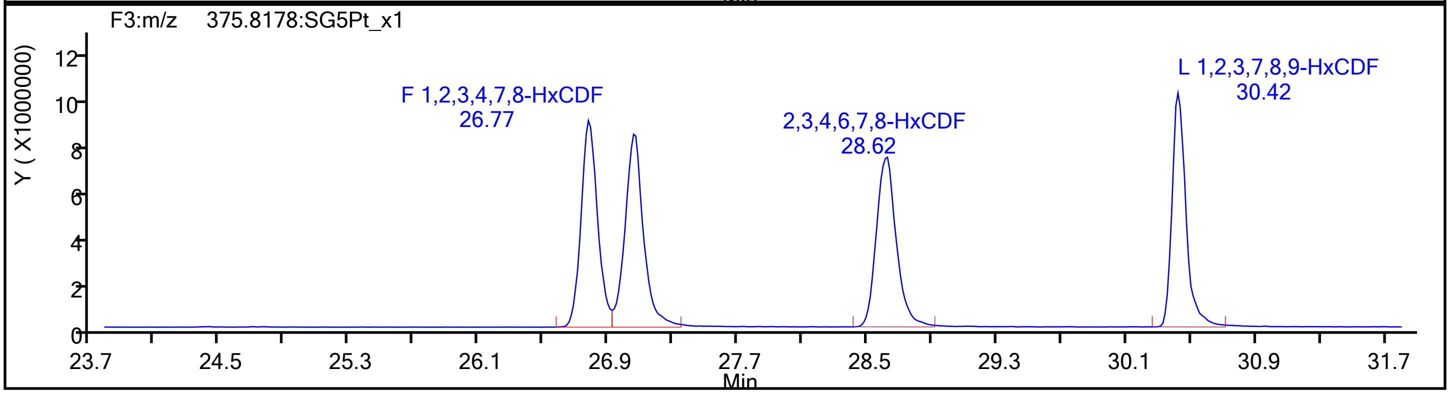

HxCDF Standards

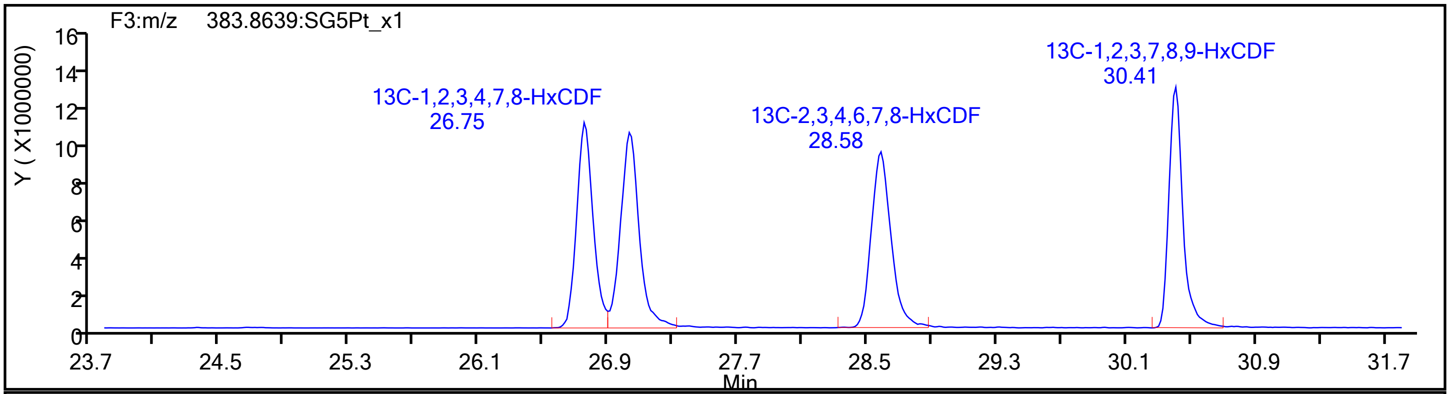

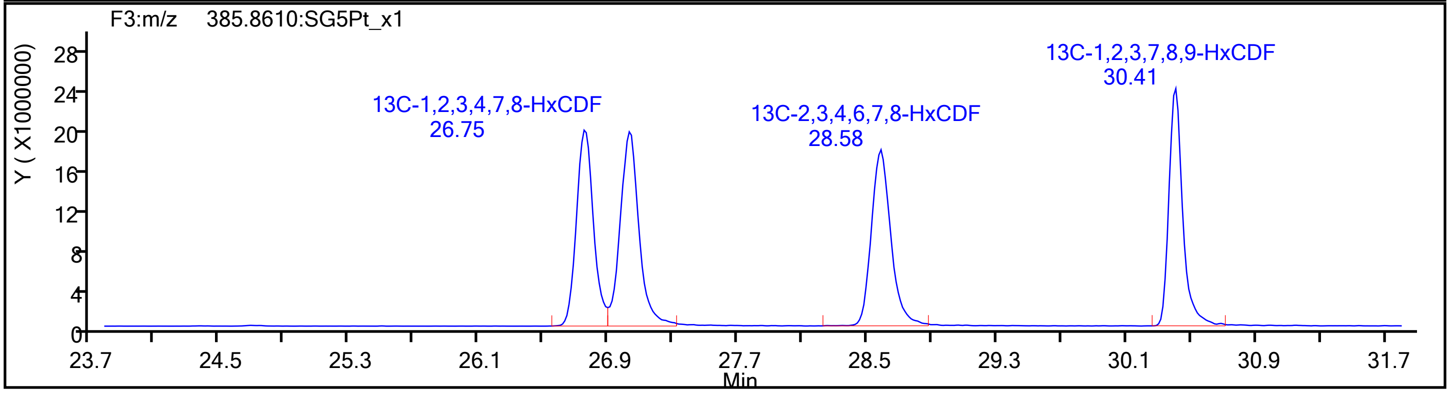

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
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HxCDF

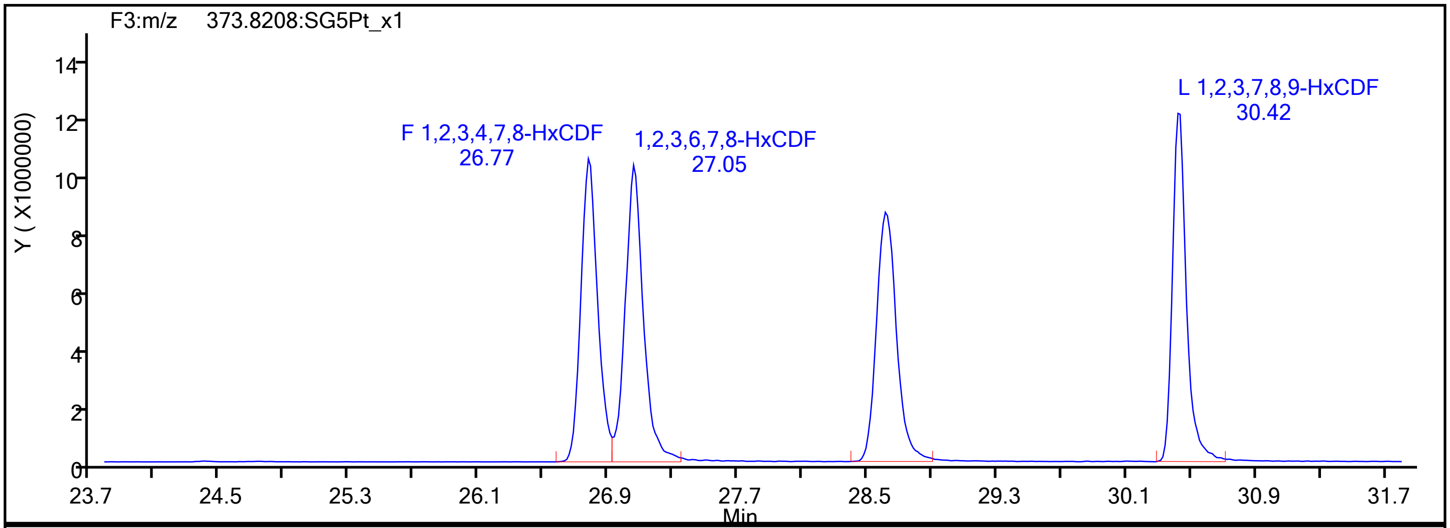

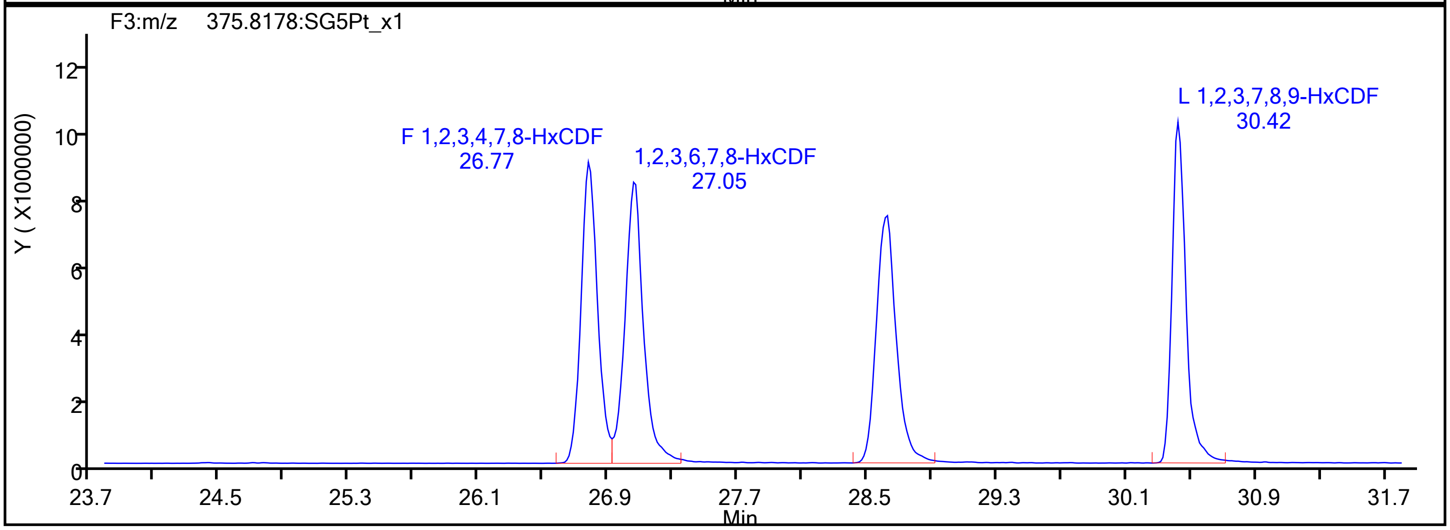

HxCDF Interference Mass

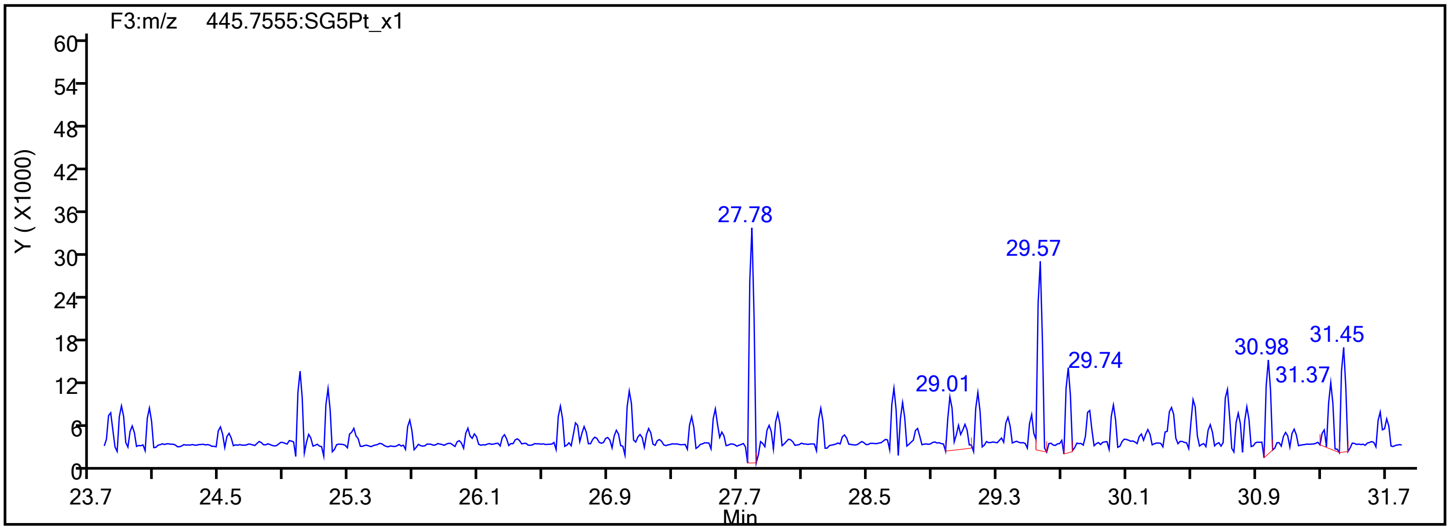

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Eurofins TestAmerica, Sacramento

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Injection Date: 08-Oct-2020 09:51:06
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
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Column Dia:

HxCDD

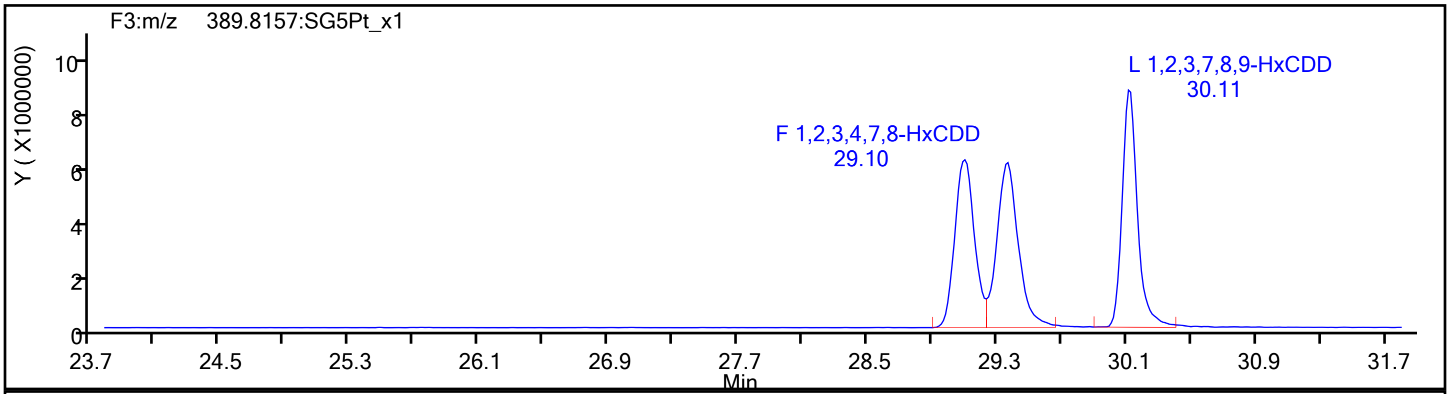

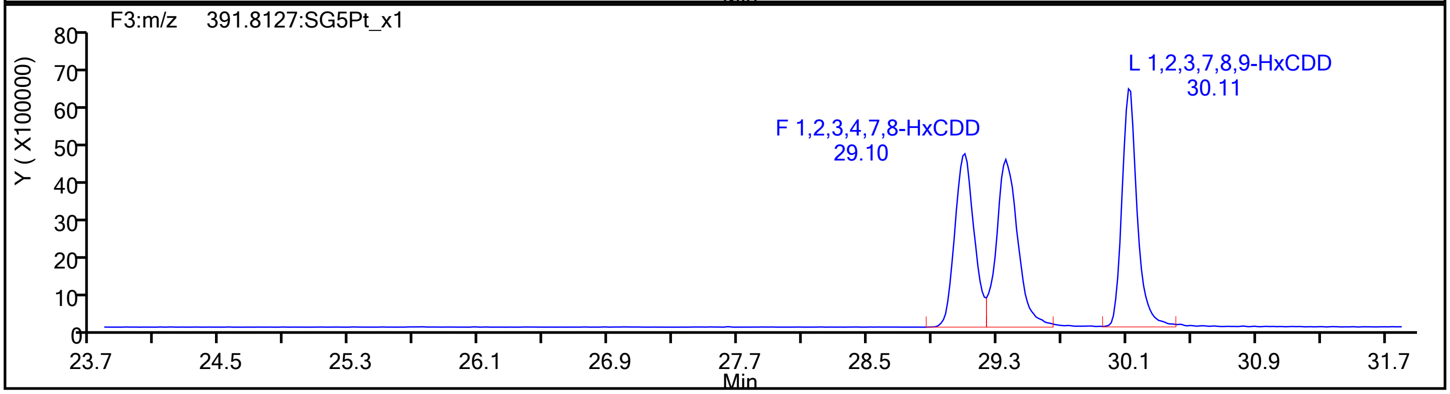

HxCDD Standards

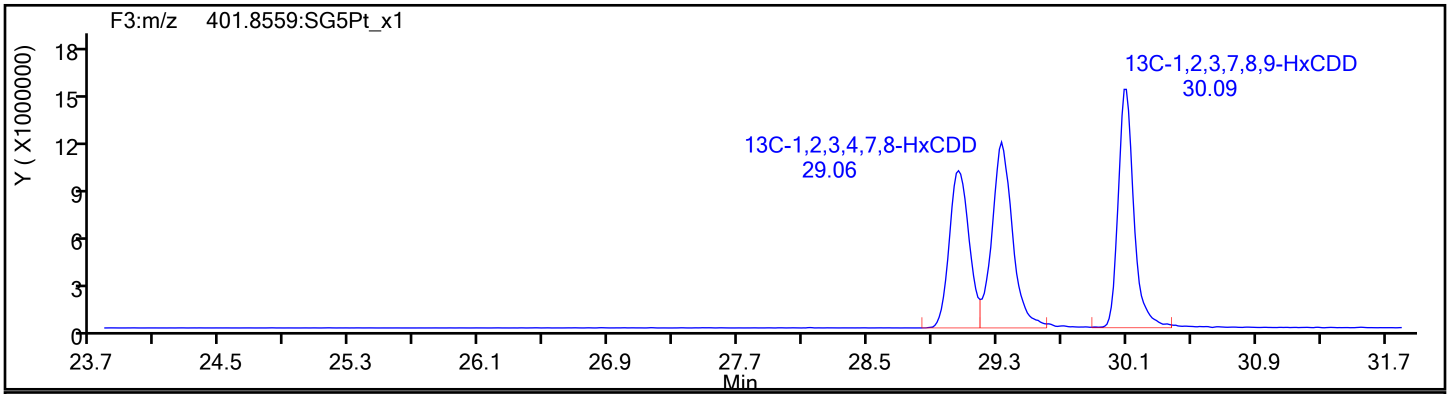

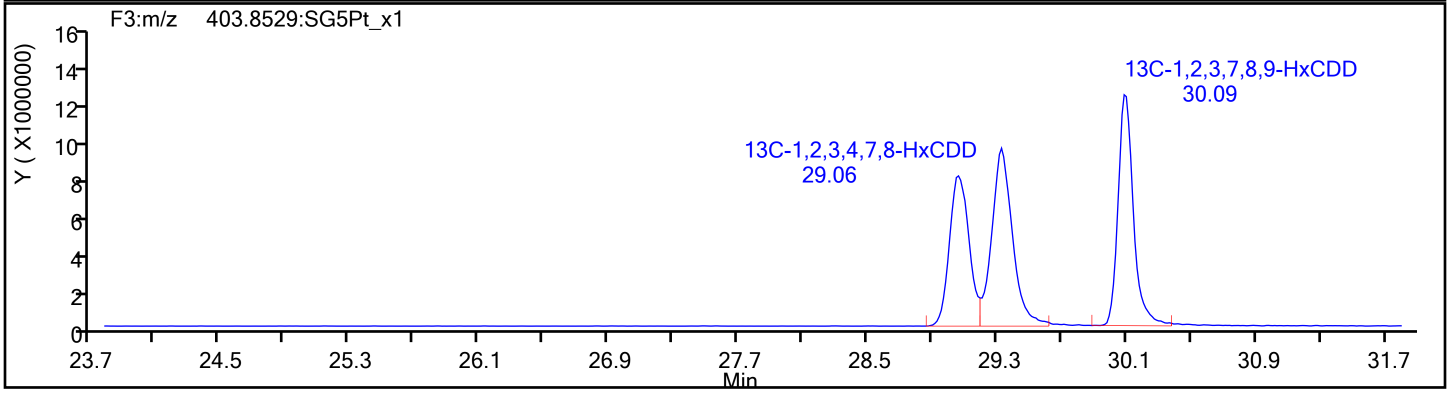

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 08-Oct-2020 09:51:06
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
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Client ID:
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Sample Line#: 2
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Column Dia:

HpCDF

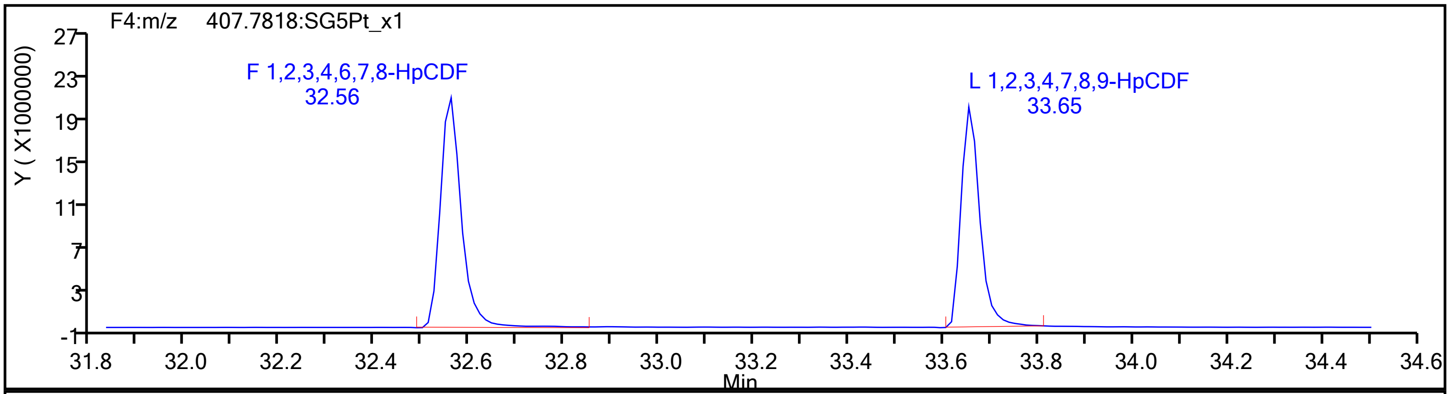

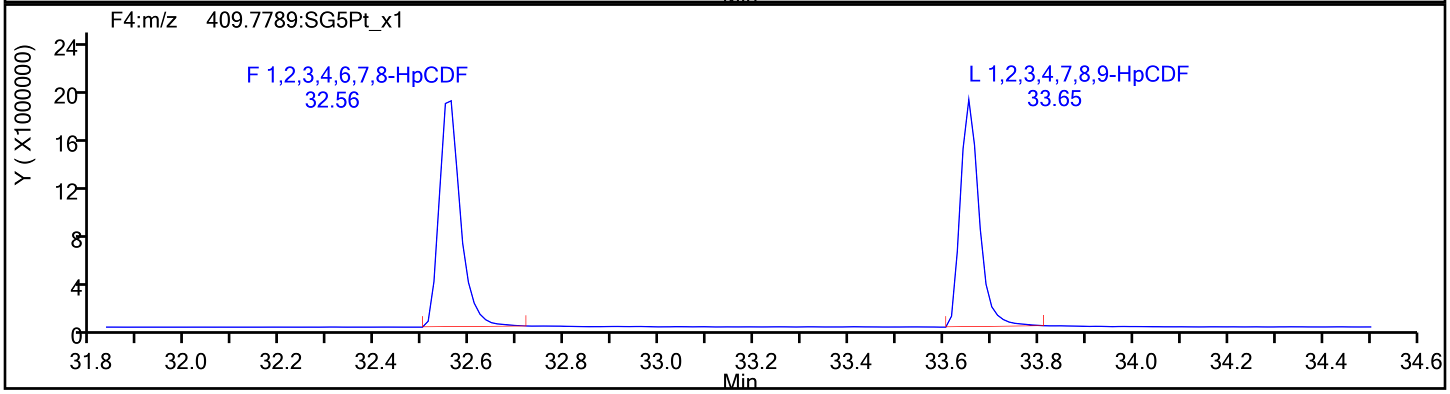

HpCDF Standards

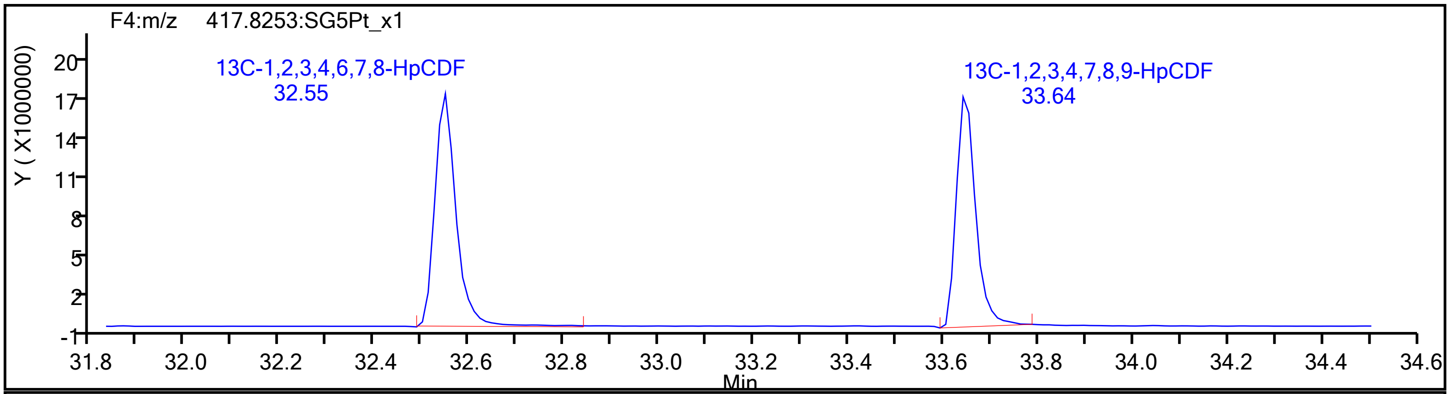

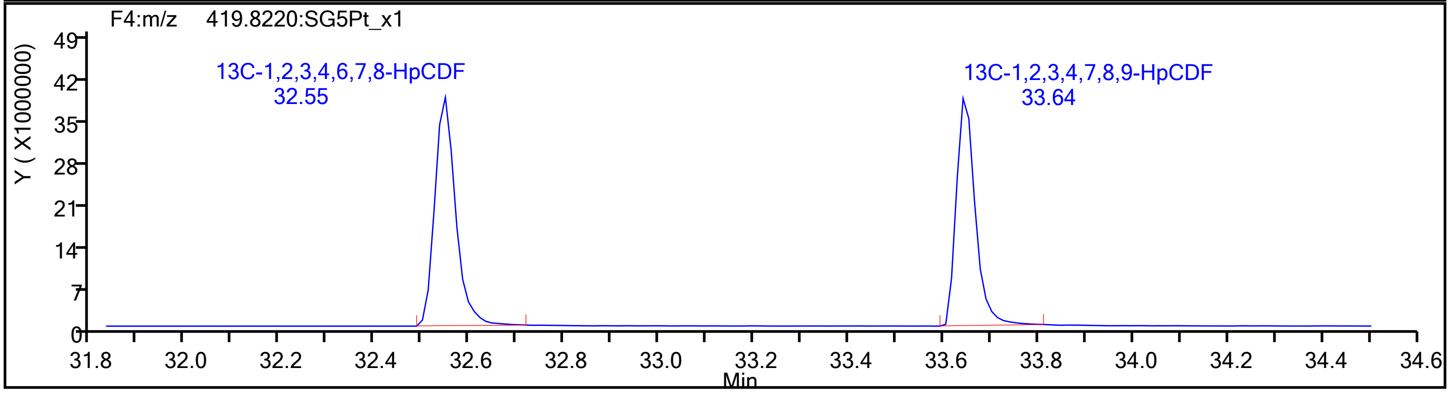

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HpCDF

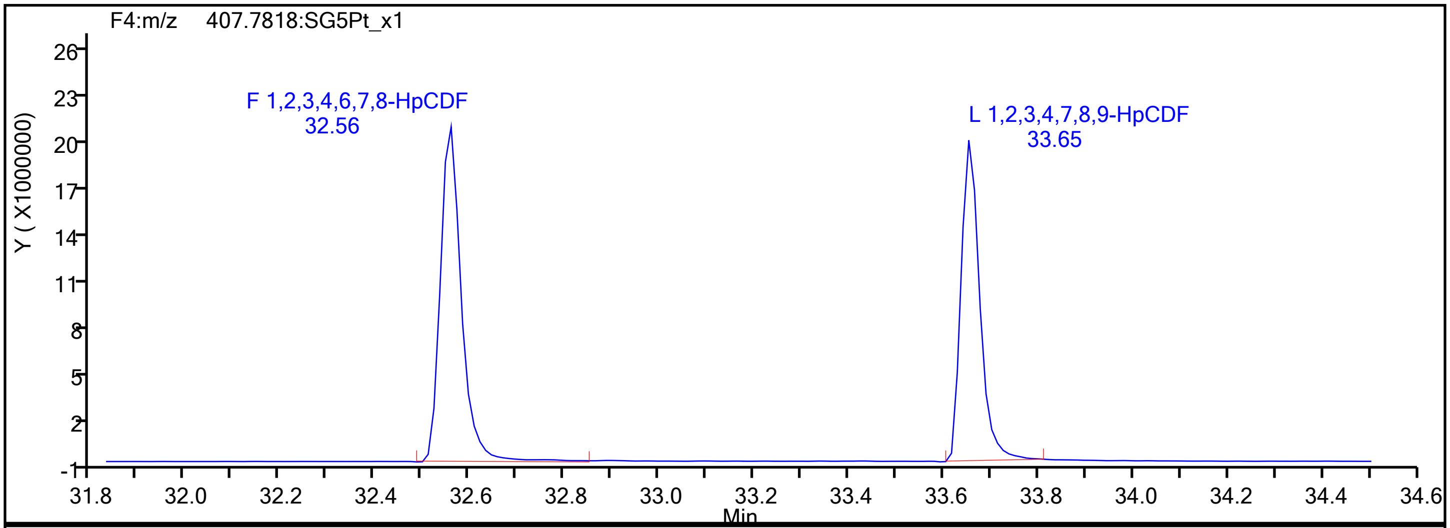

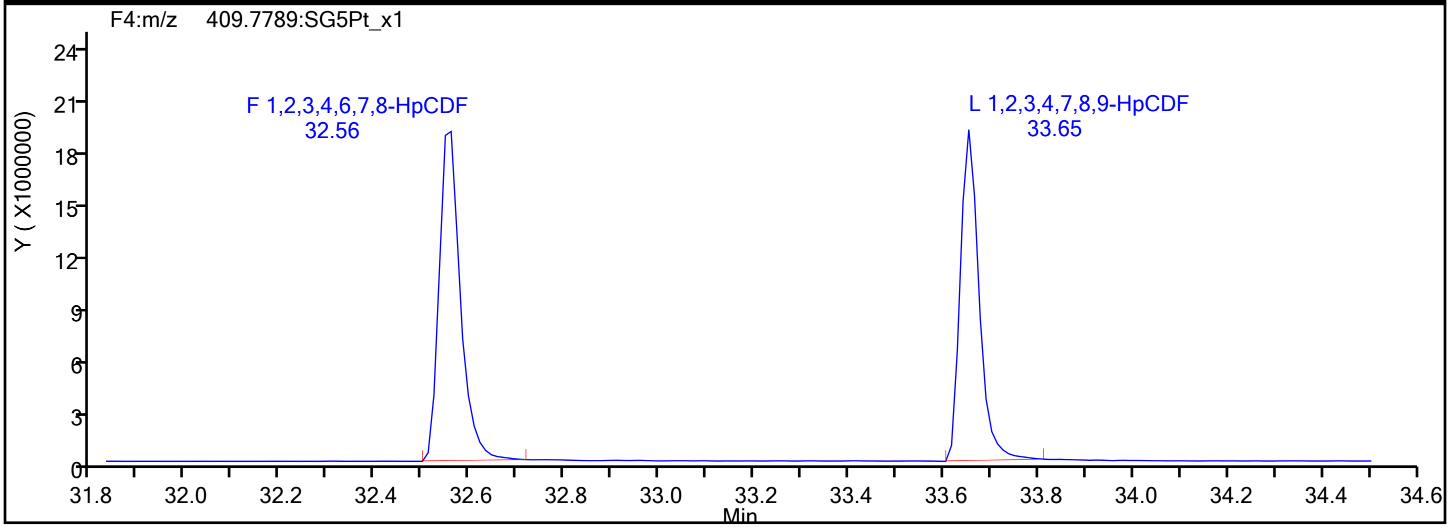

HpCDF Interference Mass

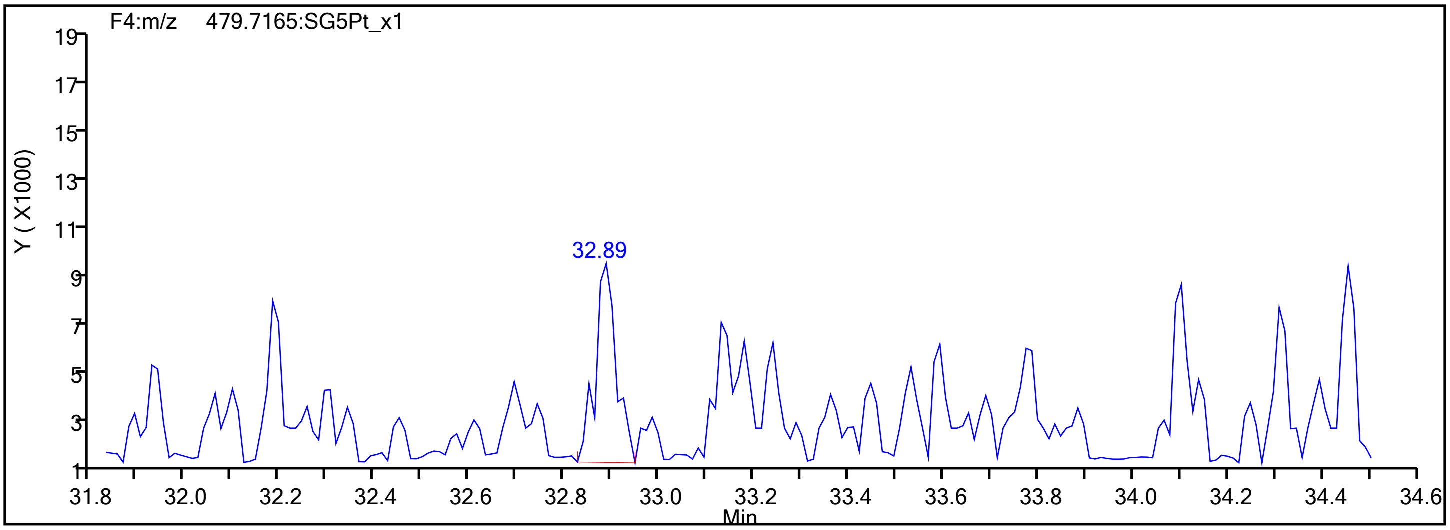

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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HpCDD

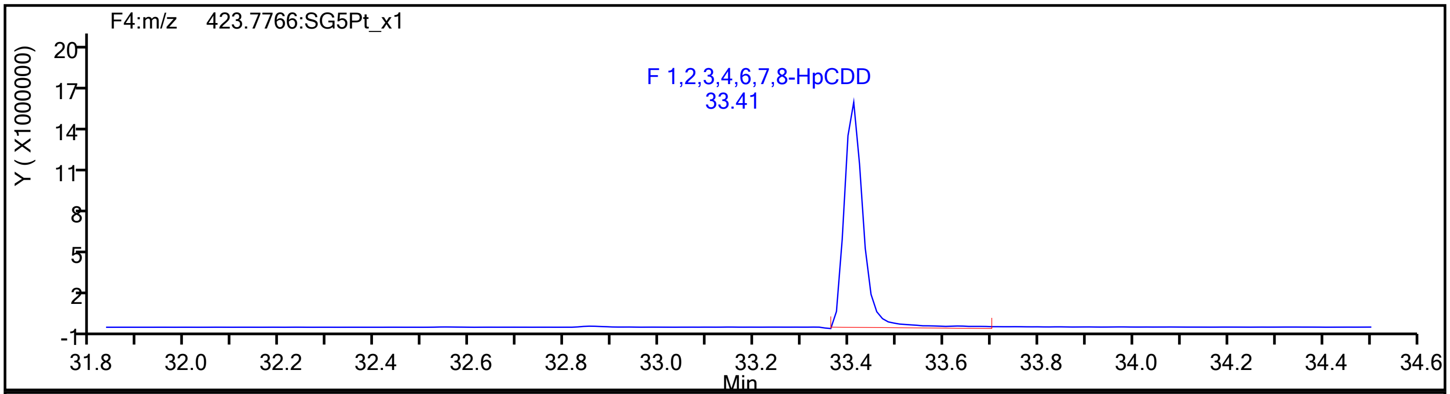

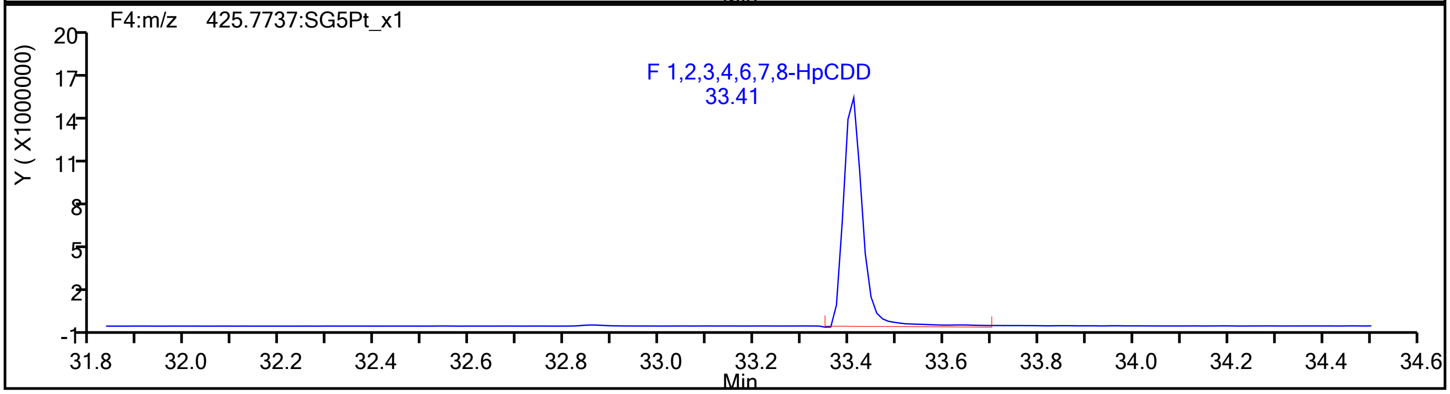

HpCDD Standards

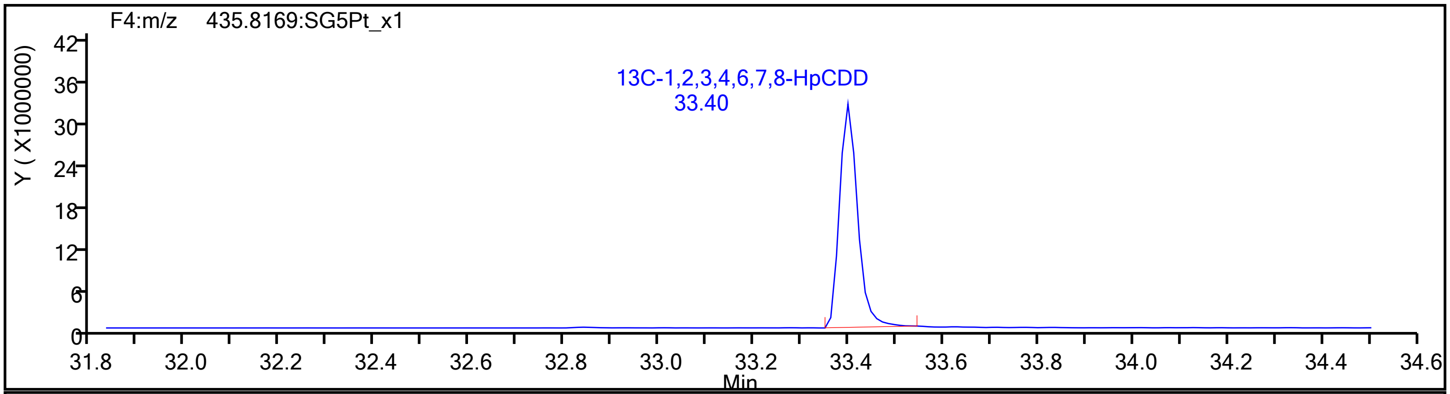

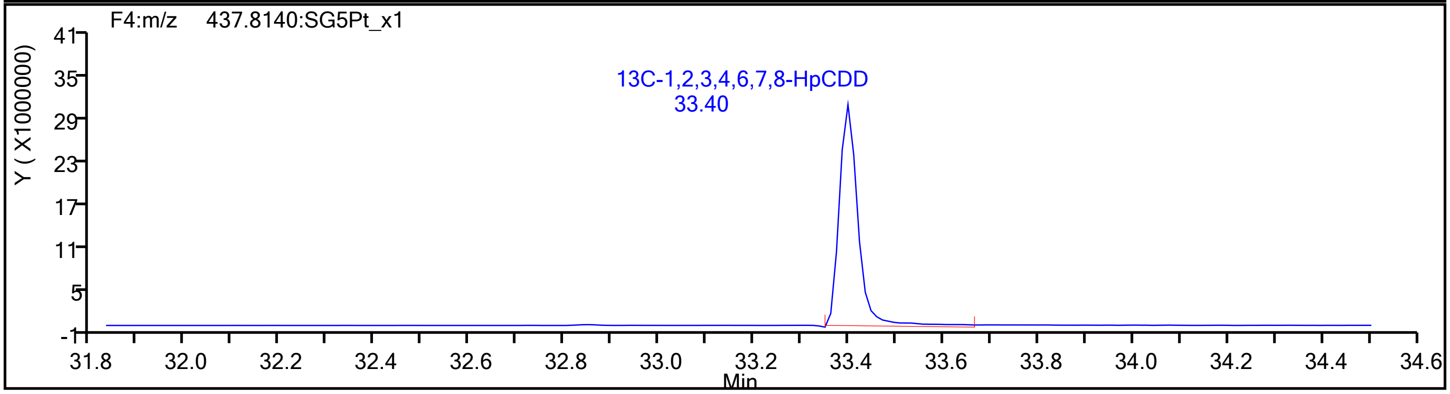

Report Date: 12-Oct-2020 13:49:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 2
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Column Dia:

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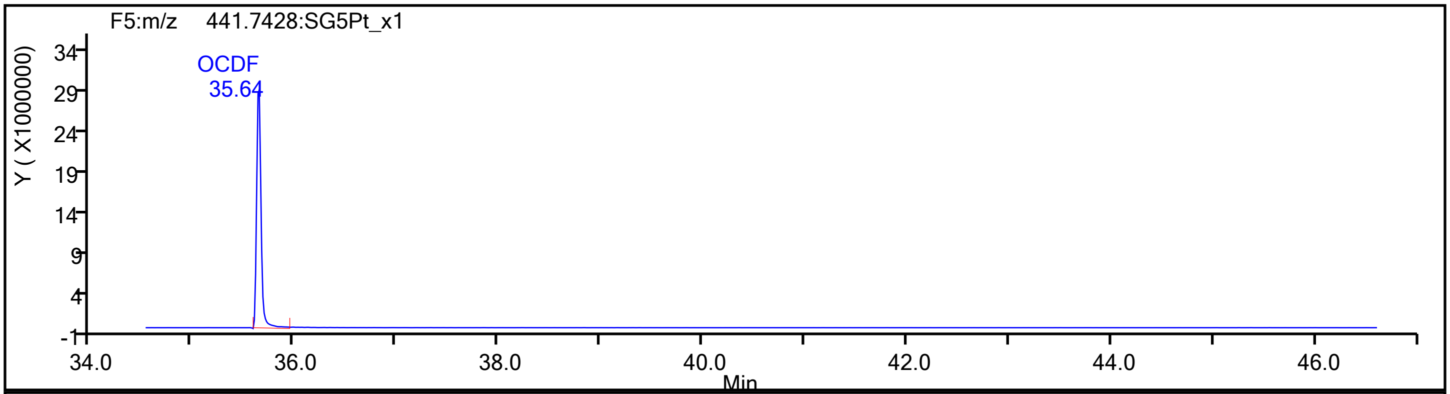

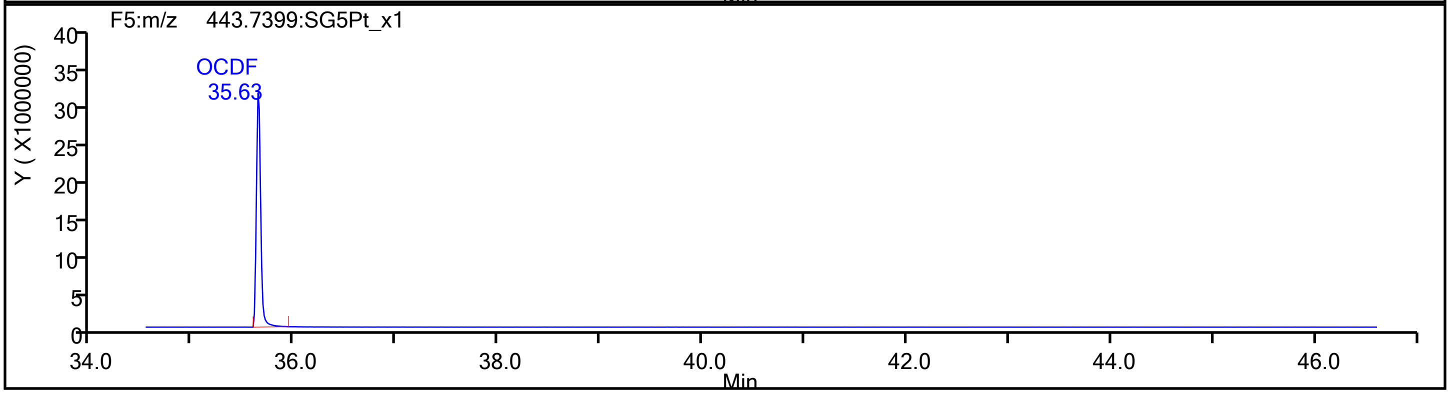

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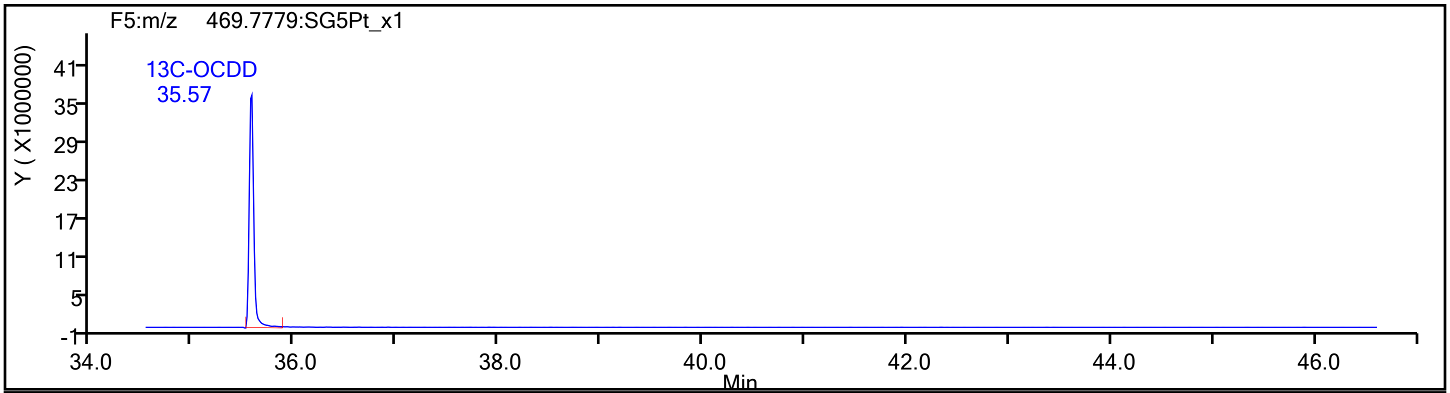

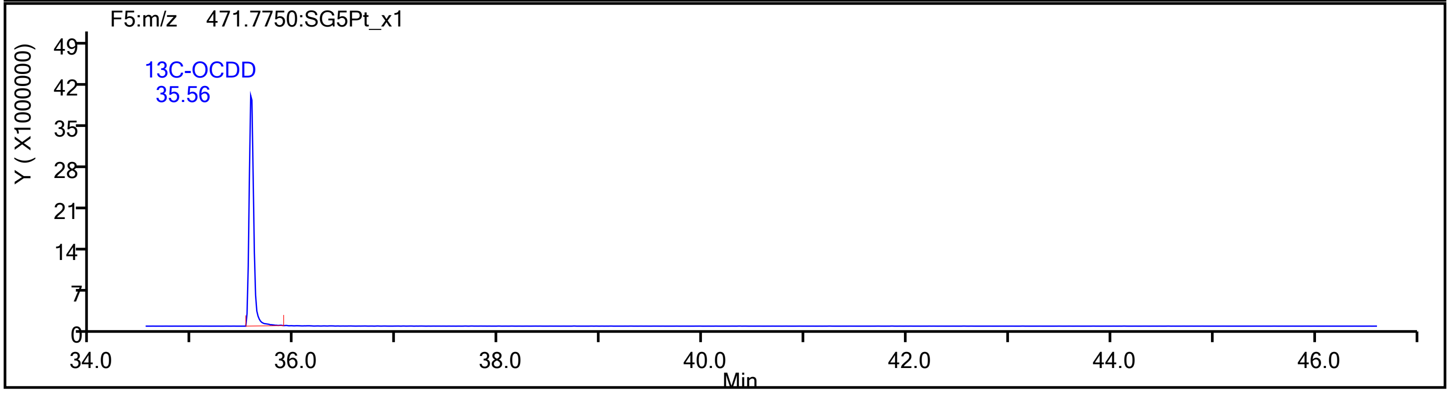

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Eurofins TestAmerica, Sacramento

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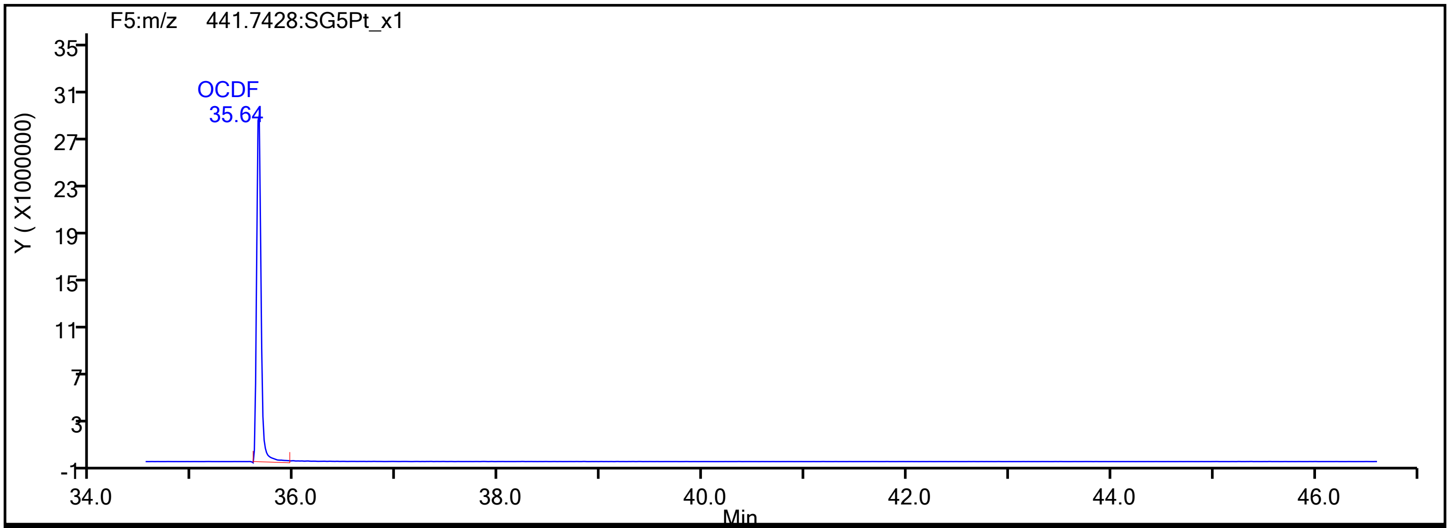

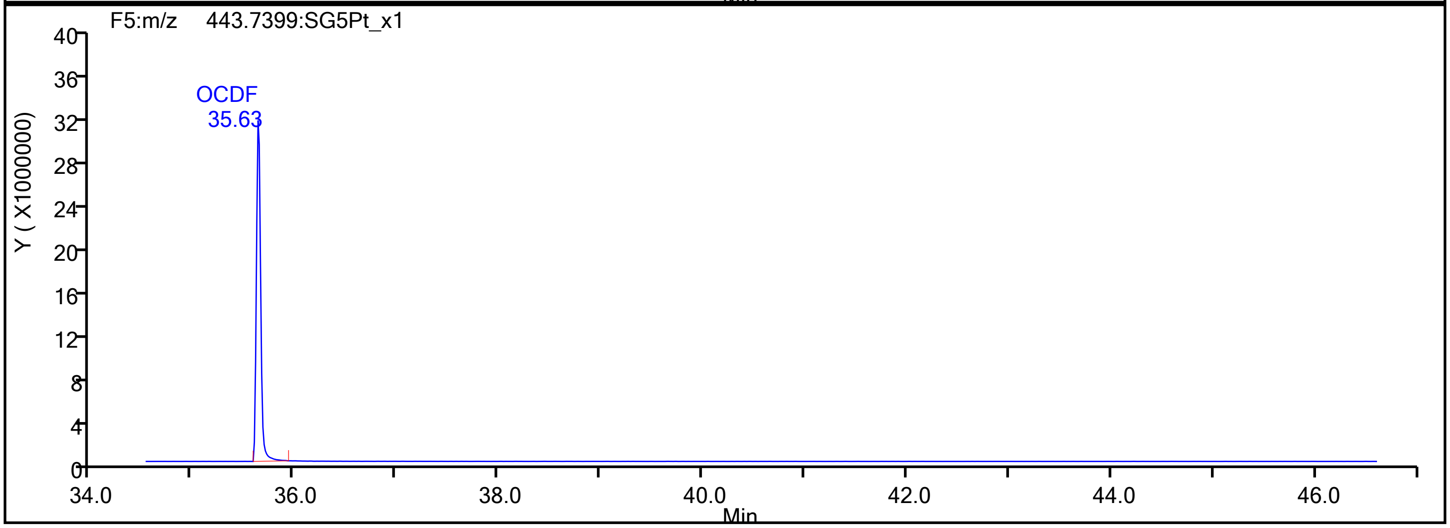

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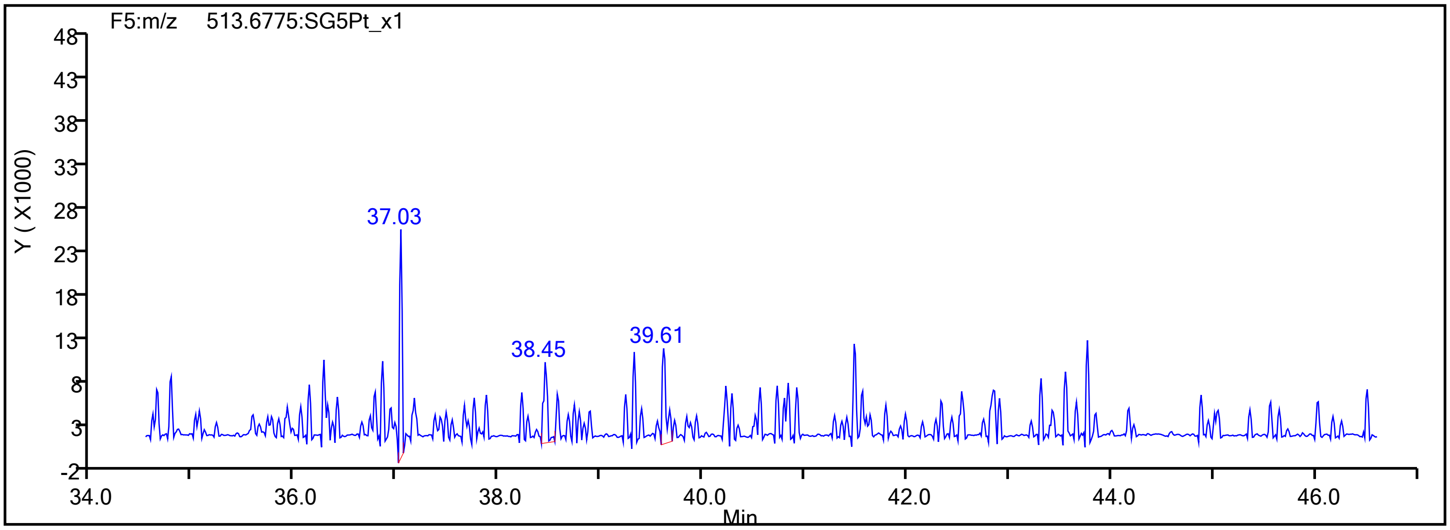

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Eurofins TestAmerica, Sacramento

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Worklist#:	420113	Sample Line#:	2
Column Type:		Column Dia:	

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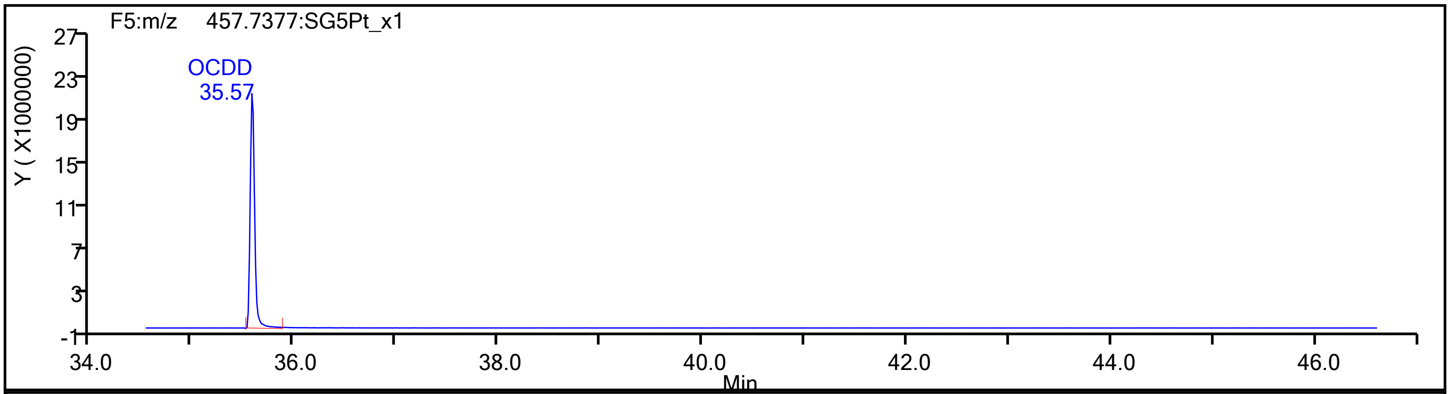

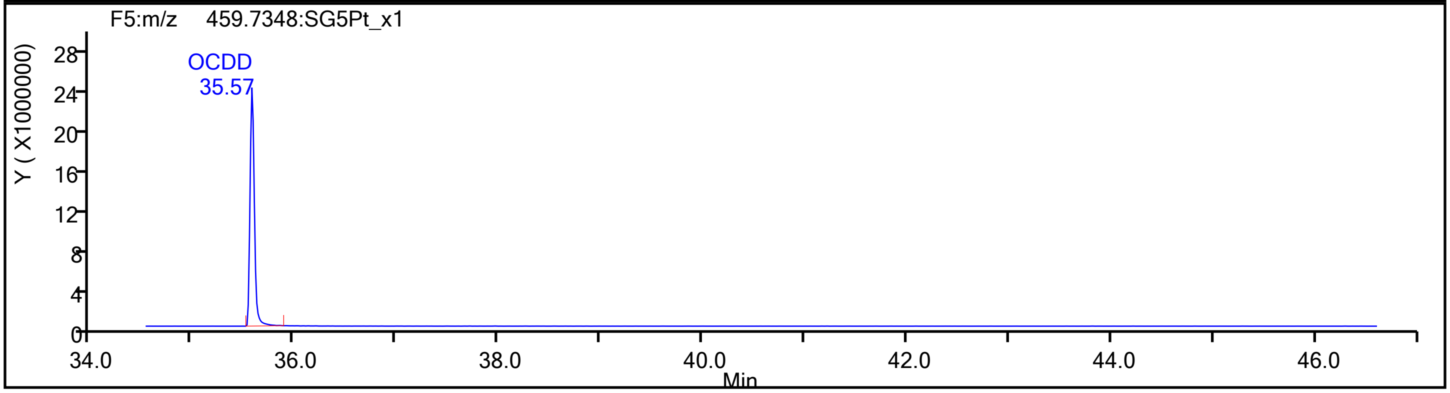

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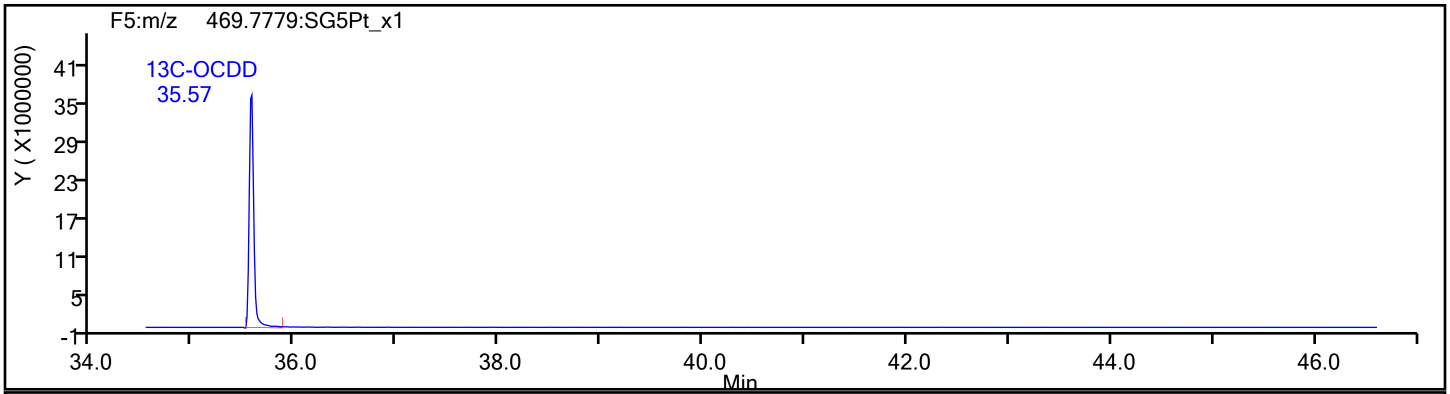

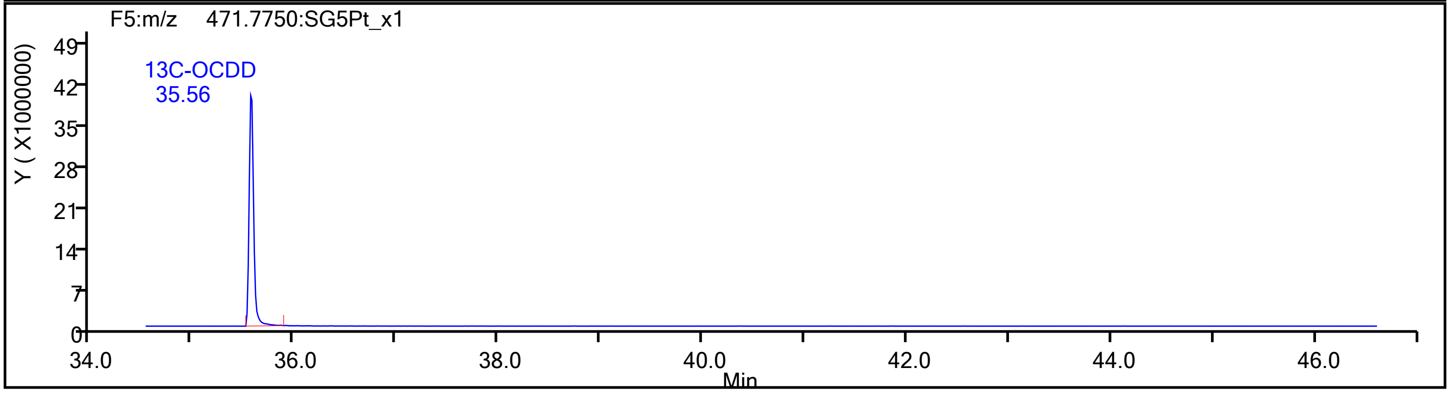

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Eurofins TestAmerica, Sacramento

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Injection Date: 08-Oct-2020 09:51:06 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113 Sample Line#: 2

Column Type: Column Dia:

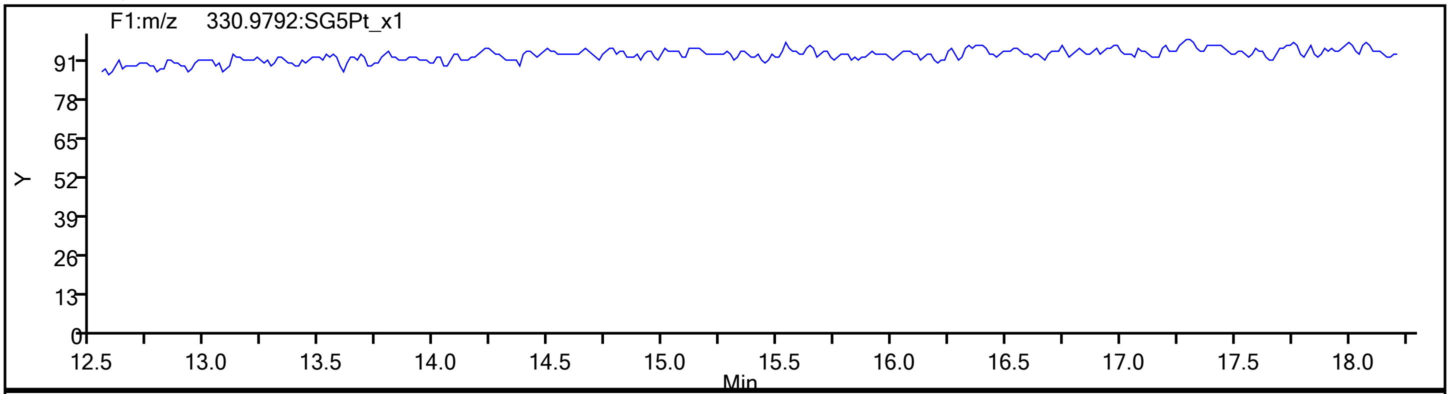
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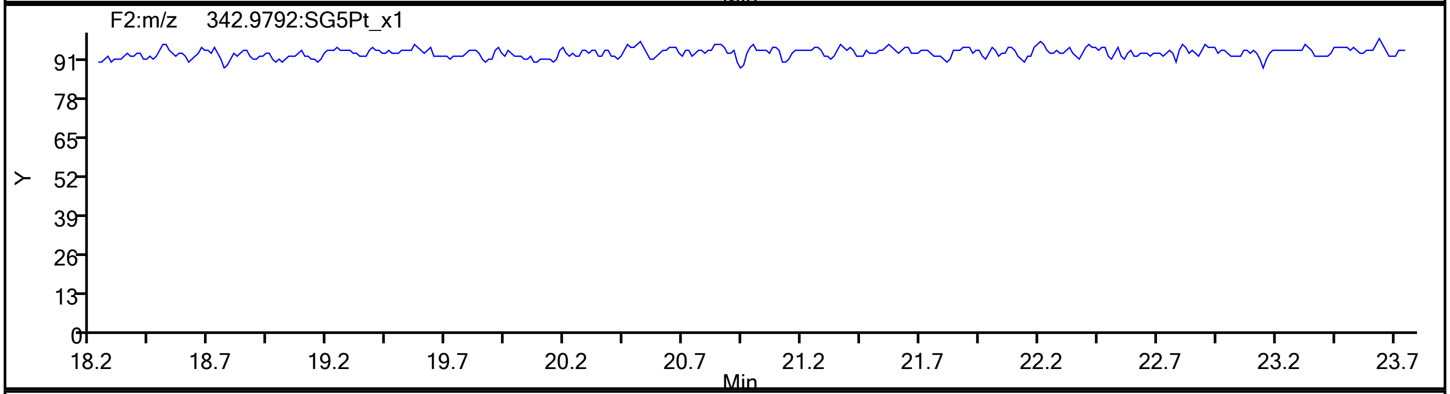
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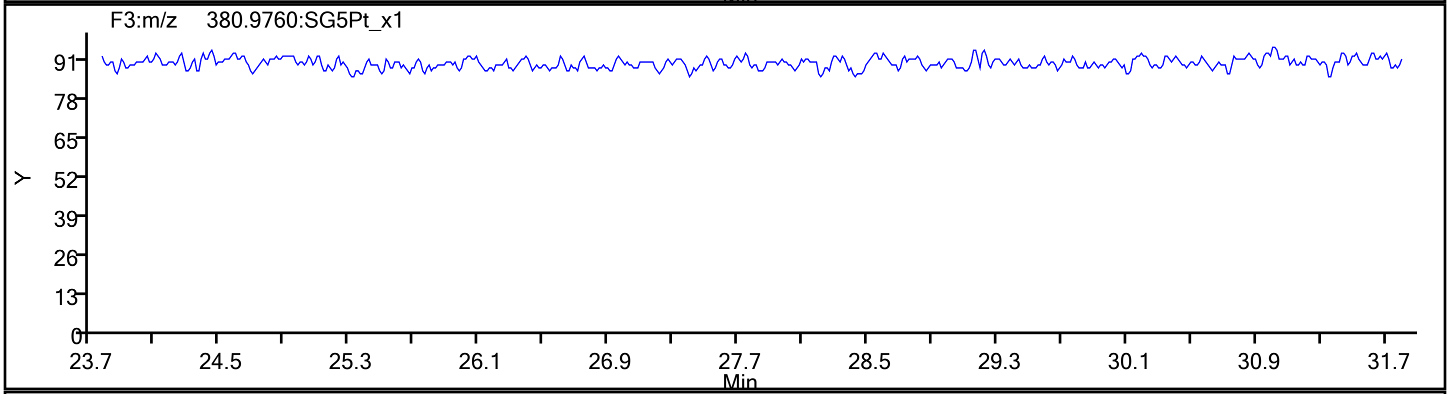
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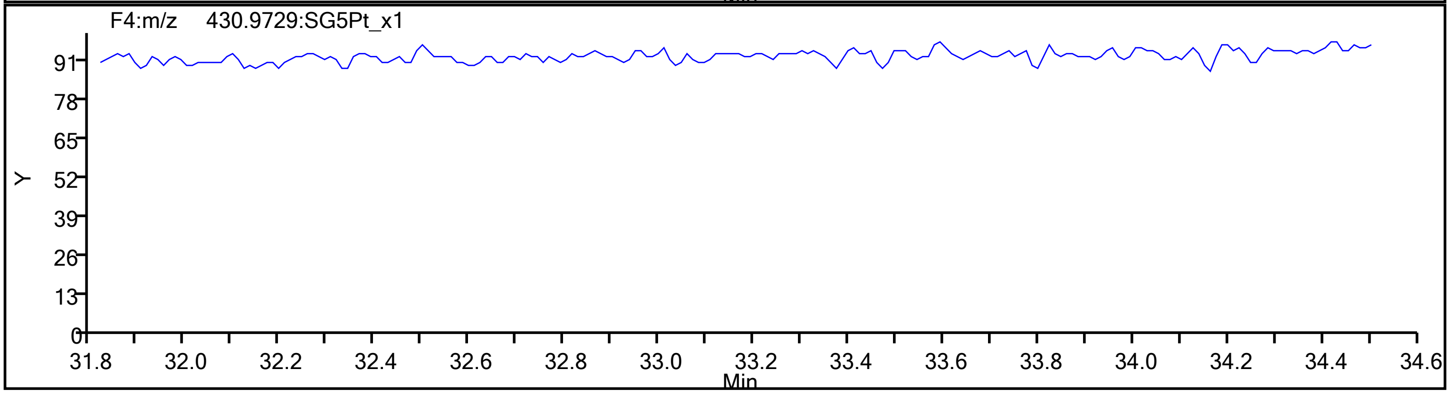
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Client ID:			
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Column Type:		Column Dia:	

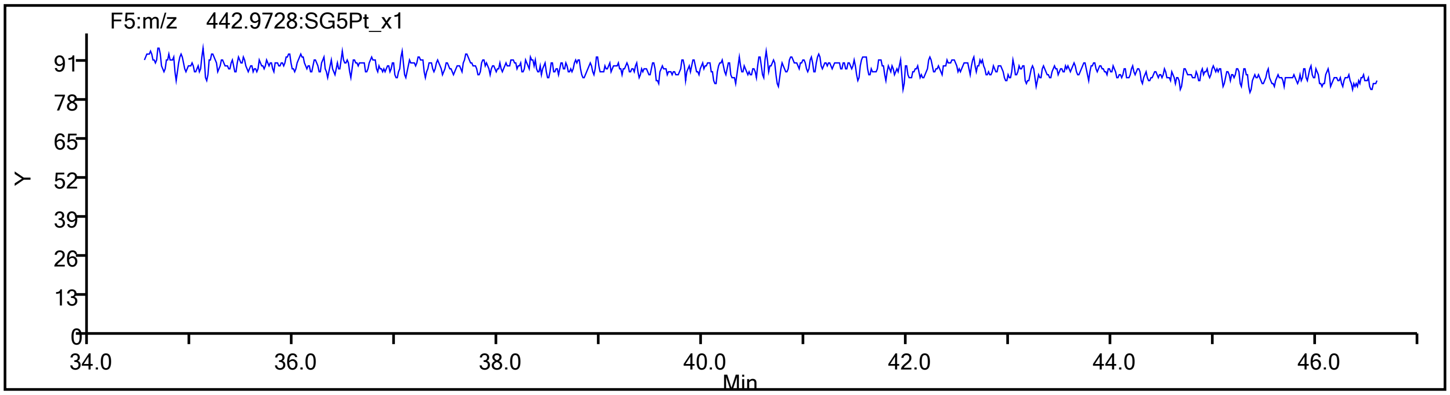

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-420482/9 Calibration Date: 10/09/2020 01:52

Instrument ID: 3D5 Calib Start Date: 10/05/2020 17:35

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/05/2020 20:45

Lab File ID: 08OC20A3D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9534	1.024		10.7	10.0	107	84-120
2,3,7,8-TCDD	AveID	1.020	1.064		10.4	10.0	104	78-129
1,2,3,7,8-PeCDF	AveID	1.079	1.018		47.1	50.0	94	82-120
2,3,4,7,8-PeCDF	AveID	1.097	1.070		48.8	50.0	98	82-122
1,2,3,7,8-PeCDD	AveID	1.140	1.048		46.0	50.0	92	78-130
1,2,3,4,7,8-HxCDF	AveID	1.255	1.257		50.1	50.0	100	90-112
1,2,3,6,7,8-HxCDF	AveID	1.210	1.198		49.5	50.0	99	88-114
2,3,4,6,7,8-HxCDF	AveID	1.218	1.198		49.2	50.0	98	88-114
1,2,3,4,7,8-HxCDD	AveID	1.254	1.126		44.9	50.0	90	78-128
1,2,3,6,7,8-HxCDD	AveID	1.112	1.010		45.4	50.0	91	78-128
1,2,3,7,8,9-HxCDD	AveID	1.285	1.140		44.3	50.0	89	82-122
1,2,3,7,8,9-HxCDF	AveID	1.232	1.222		49.6	50.0	99	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.478	1.429		48.3	50.0	97	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.086	0.997		45.9	50.0	92	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.378	1.452		52.7	50.0	105	86-116
OCDD	AveID	1.258	1.152		91.6	100	92	79-126
OCDF	AveID	1.725	1.562		90.6	100	91	63-159
13C-2,3,7,8-TCDF	Ave	1.484	1.508		102	100	102	71-140
13C-2,3,7,8-TCDD	Ave	1.087	1.097		101	100	101	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.394	1.226		87.9	100	88	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.337	1.188		88.9	100	89	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8475	0.7979		94.1	100	94	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.306	1.239		94.9	100	95	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.421	1.394		98.1	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.314	1.245		94.7	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8660	0.8512		98.3	100	98	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9827	1.001		102	100	102	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.320	1.263		95.6	100	96	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9410	0.9433		100	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9049	0.9206		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.8751	0.8509		97.2	100	97	77-129
13C-OCDD	Ave	0.5783	0.6368		220	200	110	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.122	1.135		10.1	10.0	101	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\08OC20A3D5.SPL
Last Modified: Thursday, October 08, 2020 21:08:36 Pacific Daylight Time
Printed: Thursday, October 08, 2020 21:08:42 Pacific Daylight Time

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	08OC20A3D5_1	WDM HRDXNCP_00042	WDM 100820A	Tray1:1	DXN		ALM
2	08OC20A3D5_2	CCV HRDXNL4_00095	CCV 100820A	Tray1:2	8290/1613B		ALM
3	08OC20A3D5_3	SB Solvent Blank C-14	SB 100820A	Tray1:3			ALM
4	08OC20A3D5_4	MB 320-417044/1-A	MB 320-417044/1-A	Tray1:4	1613B/Water	D184	ALM
5	08OC20A3D5_5	LCS 320-417044/2-A	LCS 320-417044/2-A	Tray1:5	1613B/Water		ALM
6	08OC20A3D5_6	LCSD 320-417044/3-A	LCSD 320-417044/3-A	Tray1:6	1613B/Water		ALM
7	08OC20A3D5_7	280-140873-B-2-A	280-140873-B-2-A	Tray1:7	1613B/Water		ALM
8	08OC20A3D5_8	WDM HRDXNCP_00042	WDM 100820B	Tray1:1	DXN		ALM
9	08OC20A3D5_9	CCV HRDXNL4_00095	CCV 100820B	Tray1:2	8290/1613B		ALM
10	08OC20A3D5_10	SB Solvent Blank C-14	SB 100820B	Tray1:3			ALM
11	08OC20A3D5_11	320-65130-A-1-A	320-65130-A-1-A	Tray1:8	1613B/Water	D185	ALM
12	08OC20A3D5_12	320-65130-A-2-A	320-65130-A-2-A	Tray1:9	1613B/Water		ALM
13	08OC20A3D5_13	320-65130-A-3-A	320-65130-A-3-A	Tray1:10	1613B/Water		ALM
14	08OC20A3D5_14	320-65130-A-4-A	320-65130-A-4-A	Tray1:11	1613B/Water		ALM
15	08OC20A3D5_15	320-65130-A-5-A	320-65130-A-5-A	Tray1:12	1613B/Water		ALM
16	08OC20A3D5_16	320-65130-A-7-A	320-65130-A-7-A	Tray1:13	1613B/Water		ALM
17	08OC20A3D5_17	320-65130-A-8-A	320-65130-A-8-A	Tray1:14	1613B/Water		ALM
18	08OC20A3D5_18	320-65130-A-9-A	320-65130-A-9-A	Tray1:15	1613B/Water		ALM
19	08OC20A3D5_19	320-65130-A-10-A	320-65130-A-10-A	Tray1:16	1613B/Water		ALM
20	08OC20A3D5_20	SB Solvent Blank C-14	SB 100820C	Tray1:3			ALM

Logfile checked
10/09/20 SMA

Resolution Check Report **MassLynx 4.1**

Printed: Friday, October 09, 2020 01:01:04 Pacific Daylight Time

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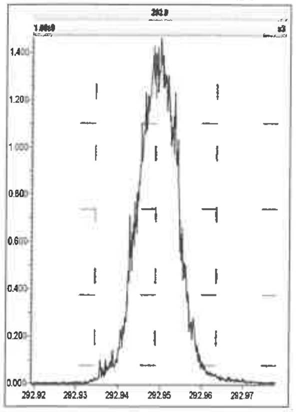

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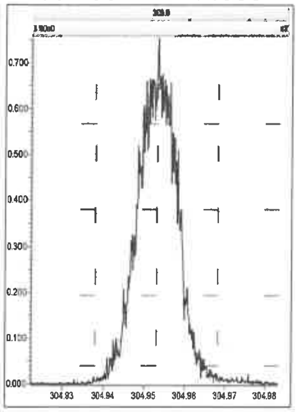

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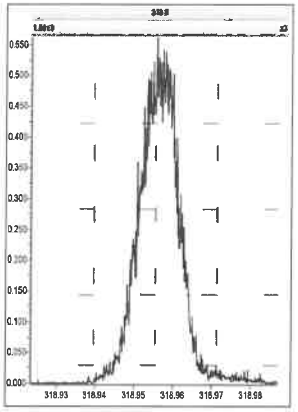

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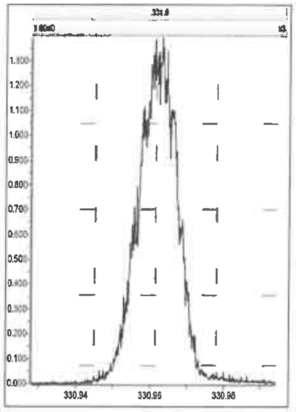

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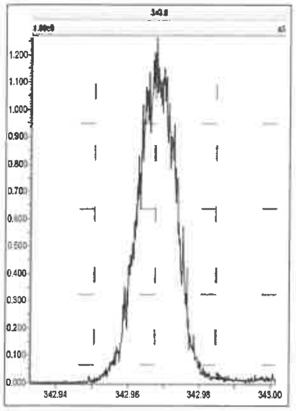

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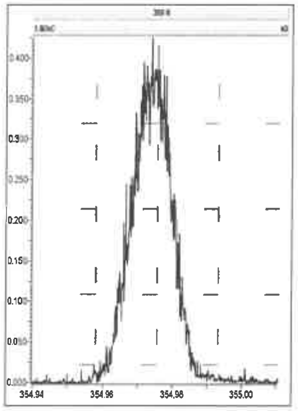

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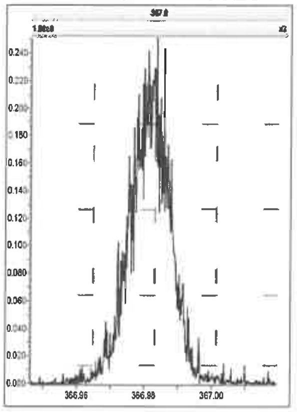

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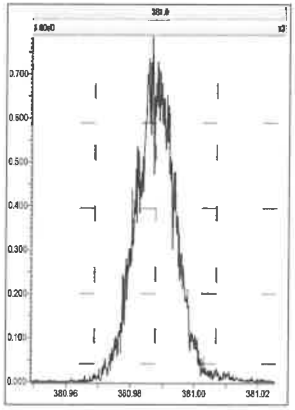

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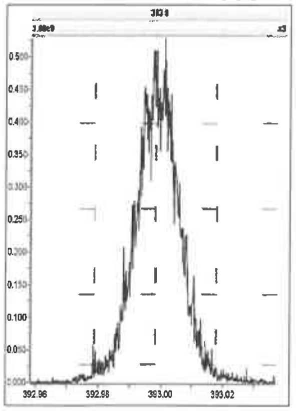

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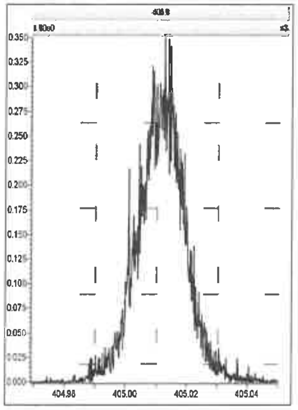

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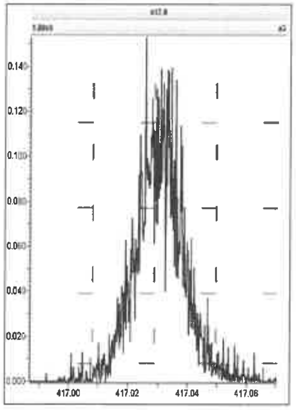

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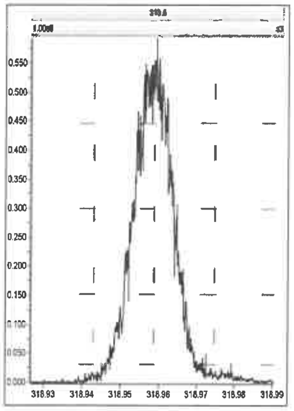

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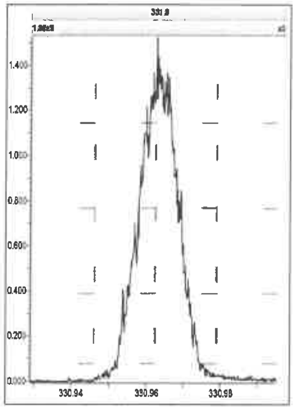

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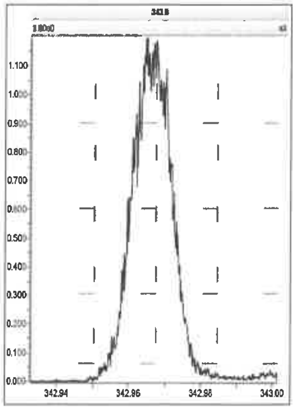

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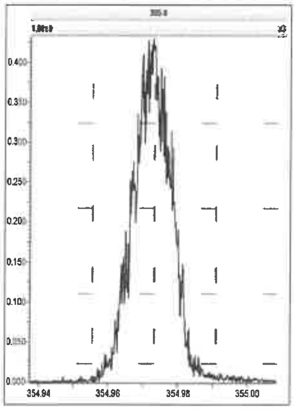

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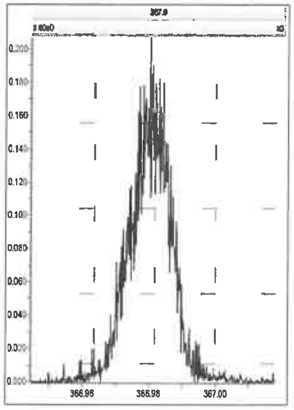

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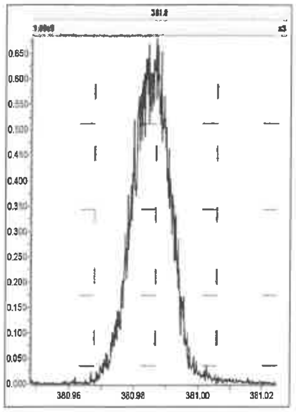

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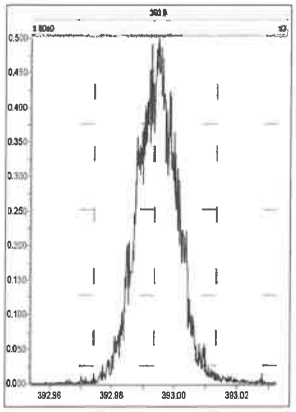

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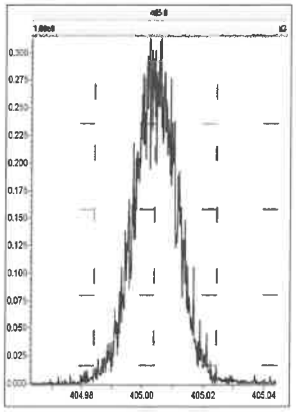

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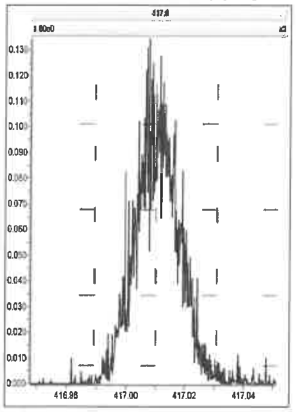

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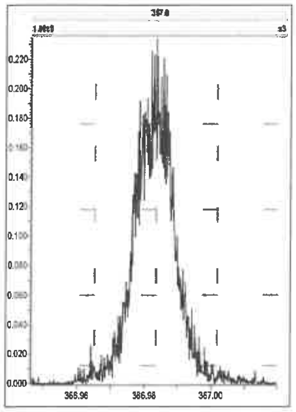

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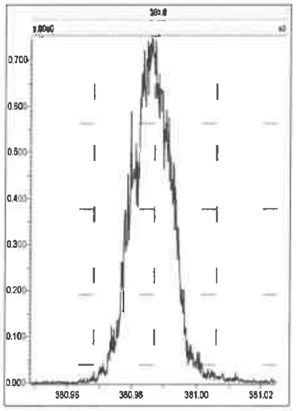

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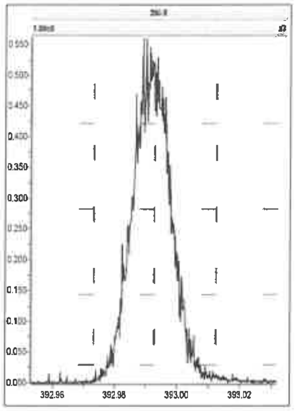

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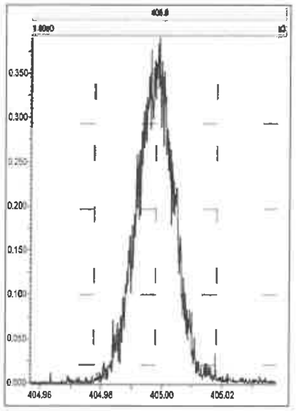

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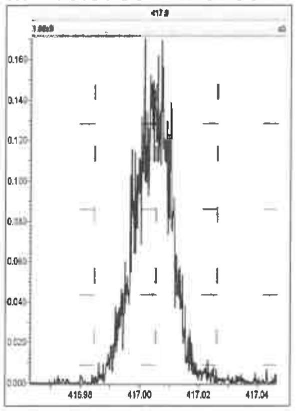

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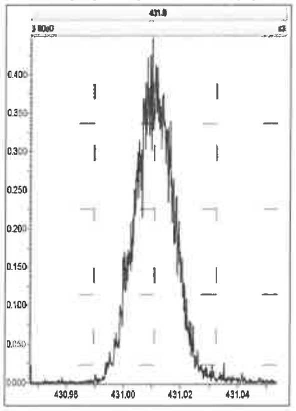

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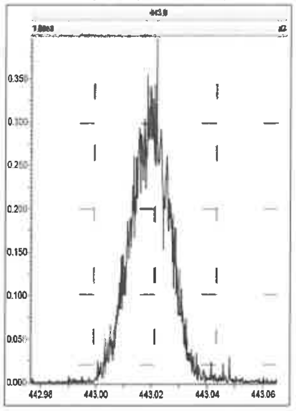

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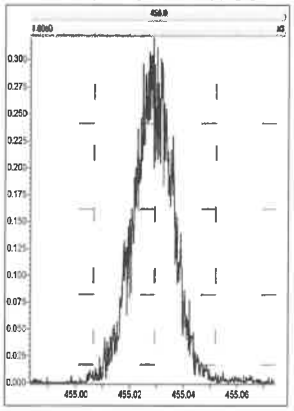

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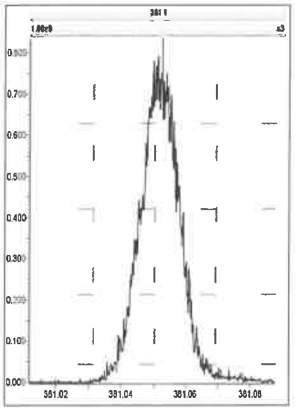

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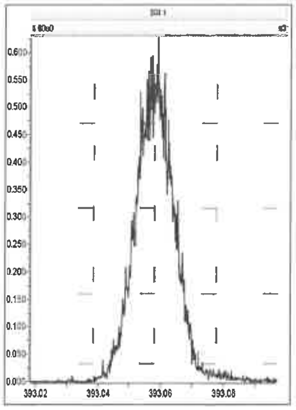

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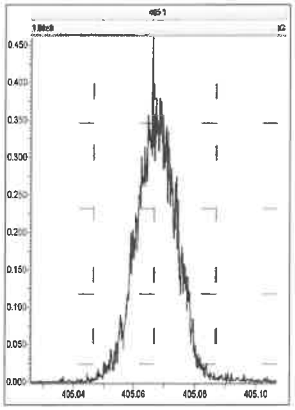

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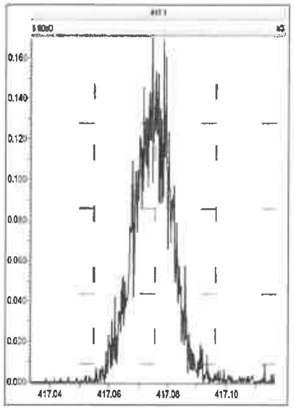

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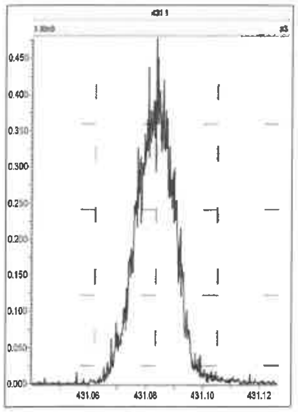

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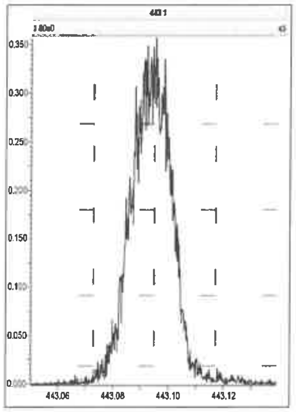

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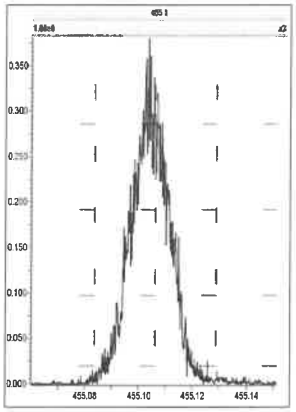

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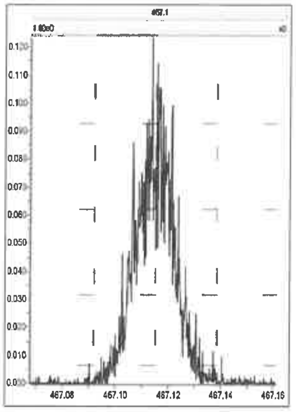

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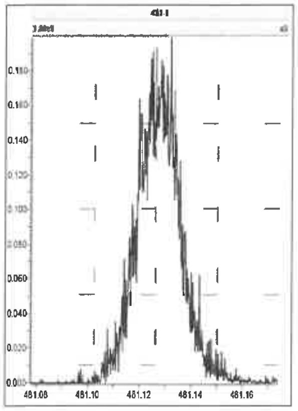

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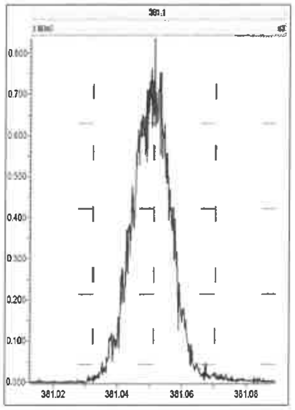

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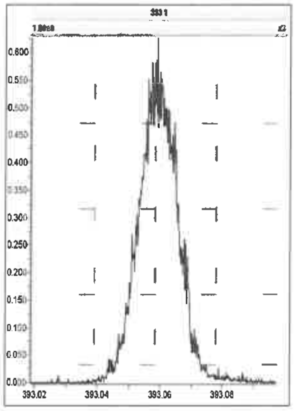

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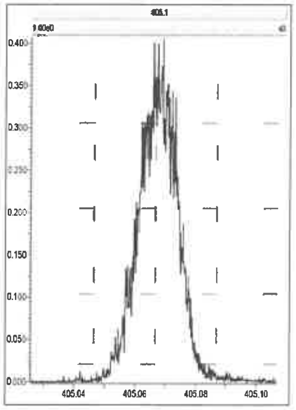

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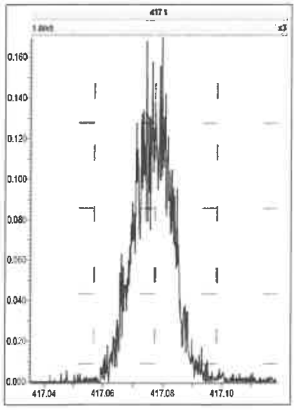

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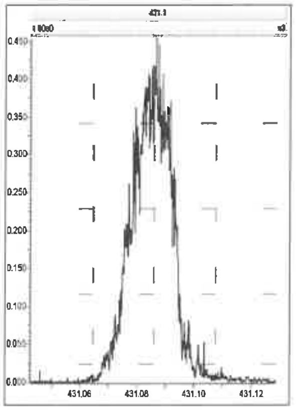

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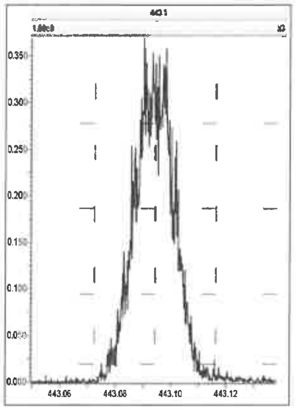

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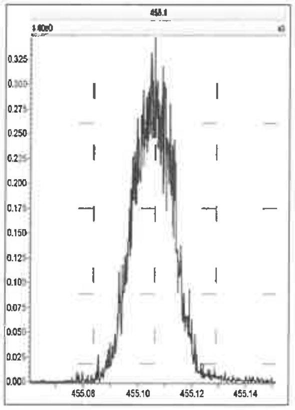

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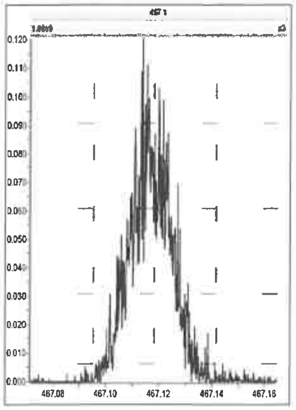

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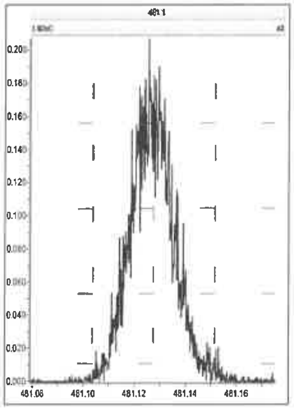

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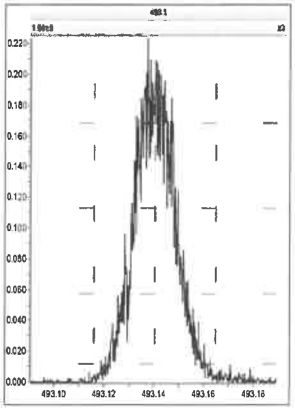

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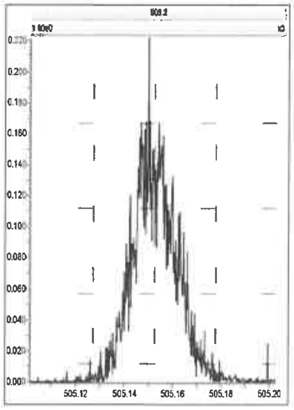

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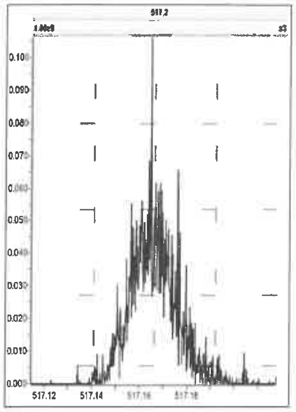

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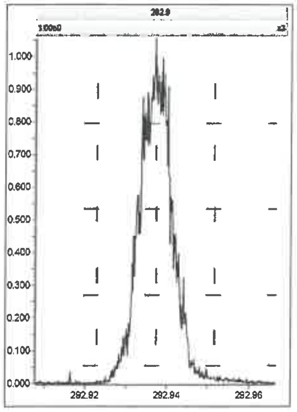

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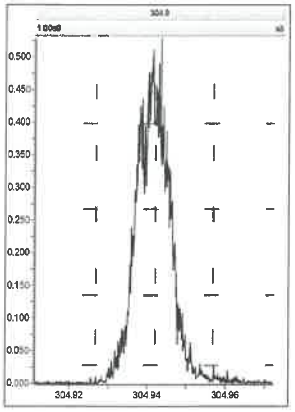

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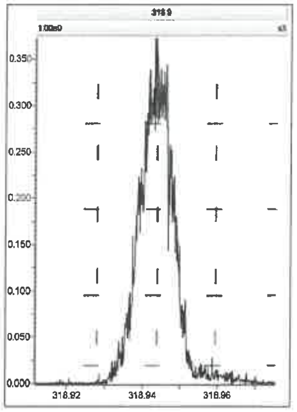

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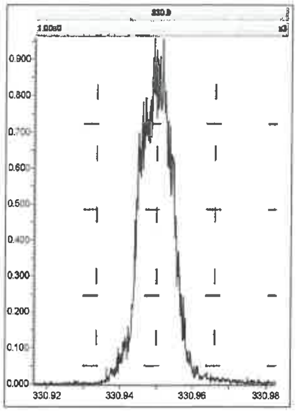

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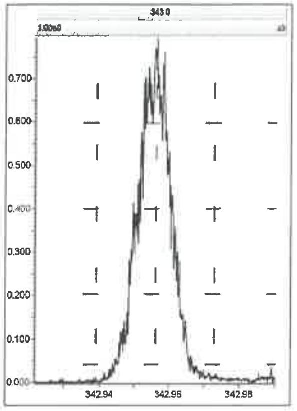

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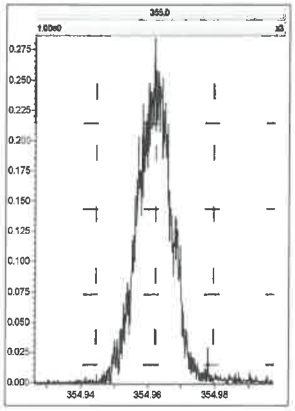

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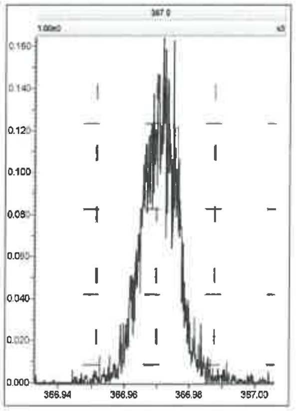

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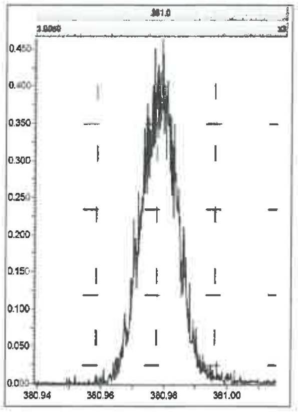

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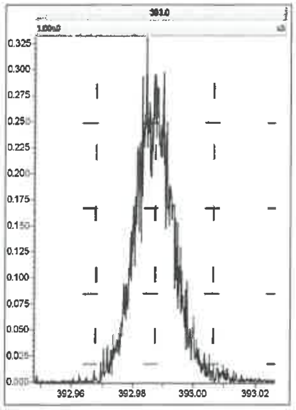

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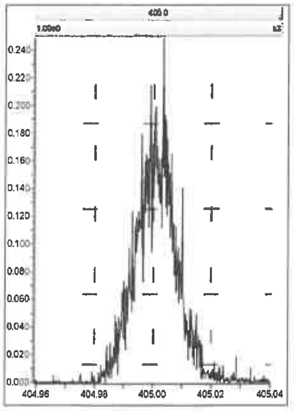

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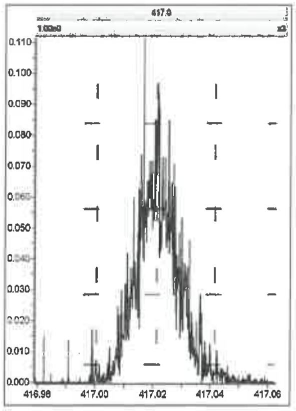

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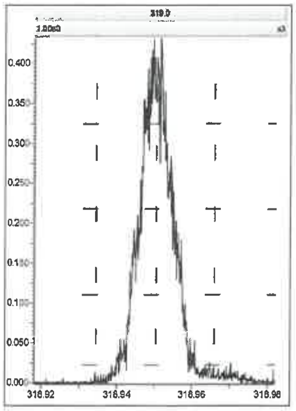

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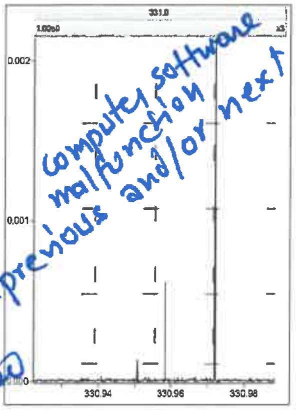

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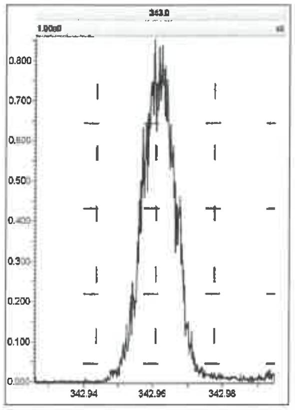

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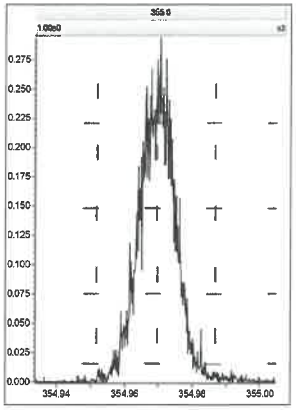

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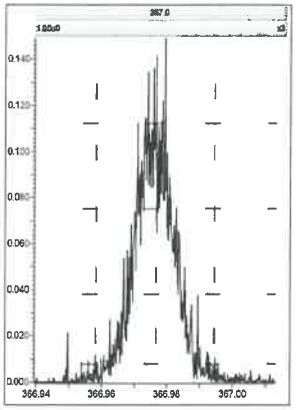

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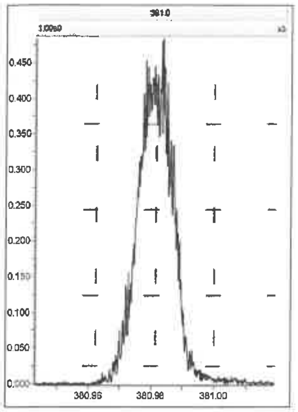

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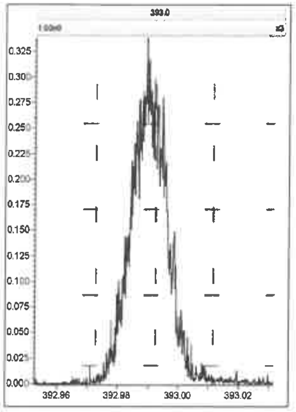

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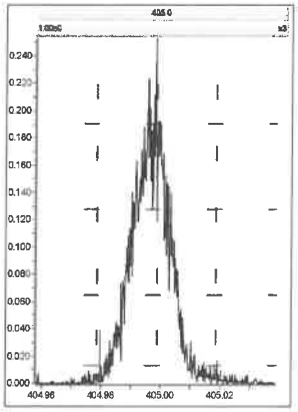

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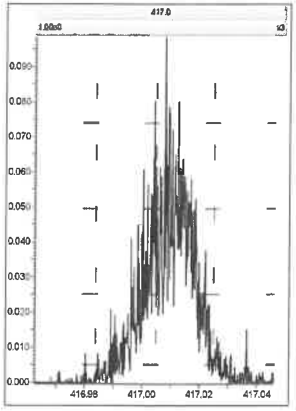

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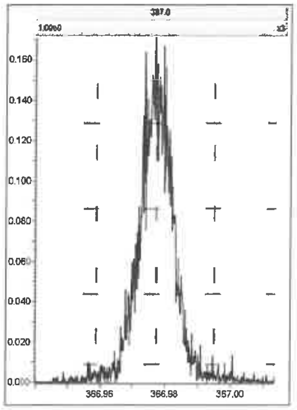

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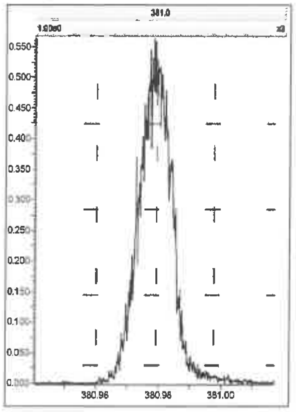

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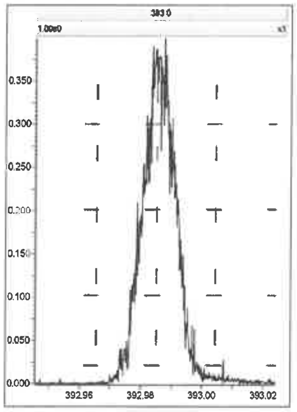

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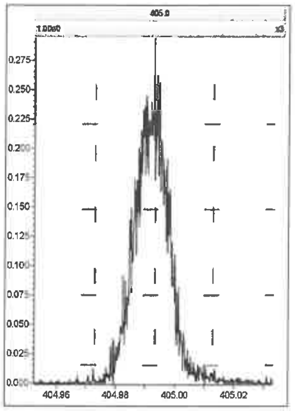

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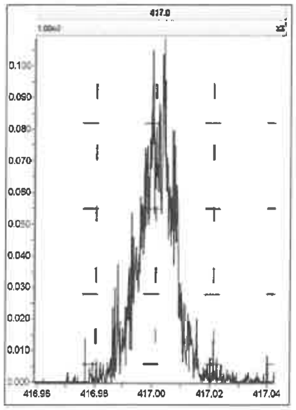

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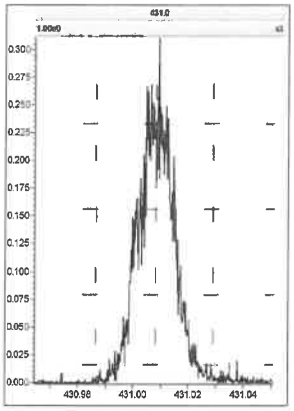

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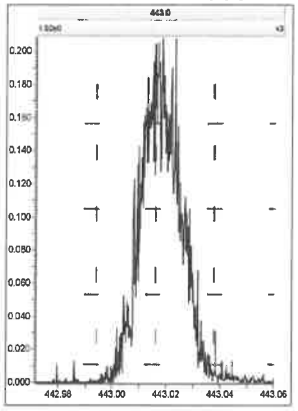

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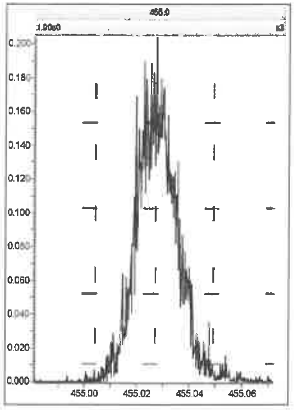

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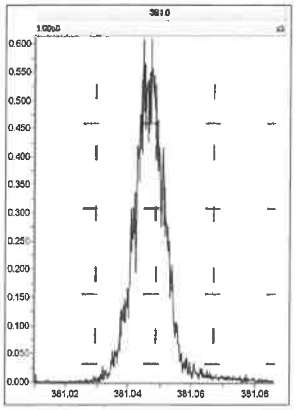

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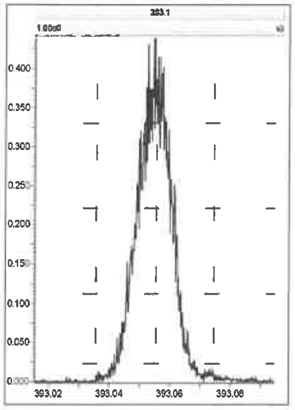

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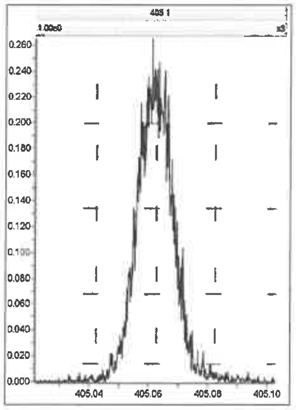

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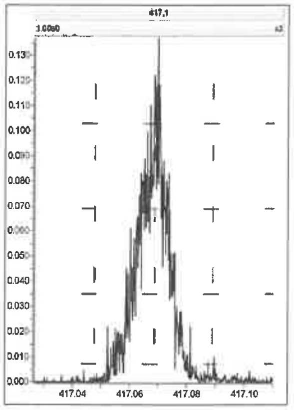

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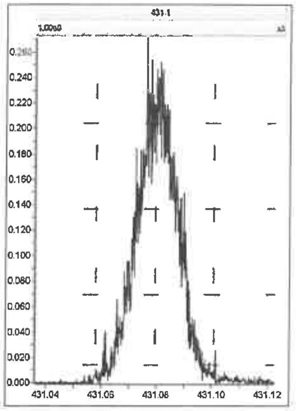

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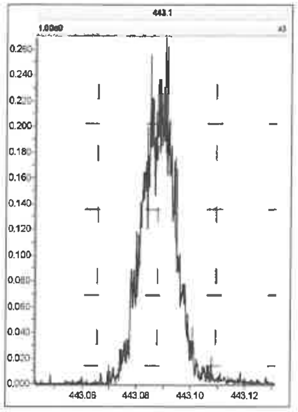

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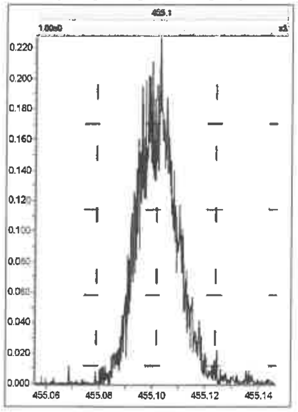

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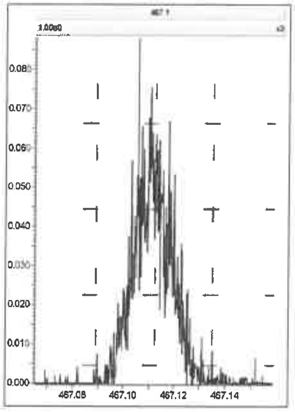

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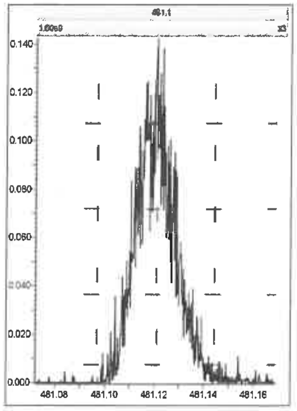

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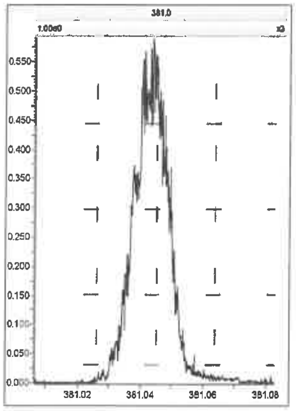

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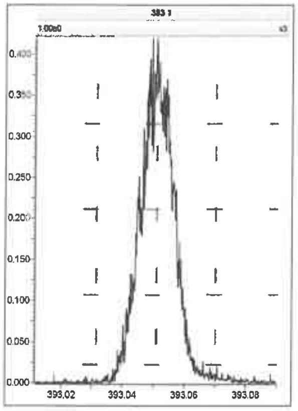

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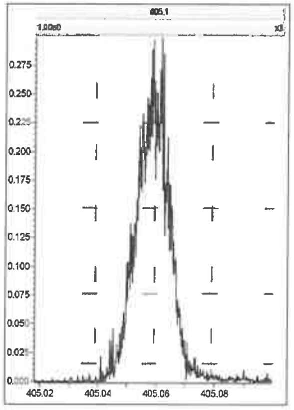

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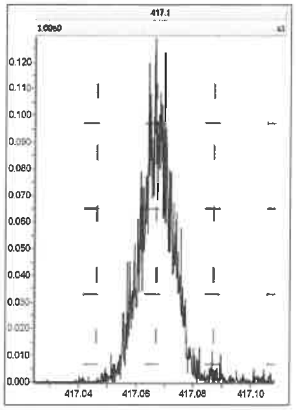

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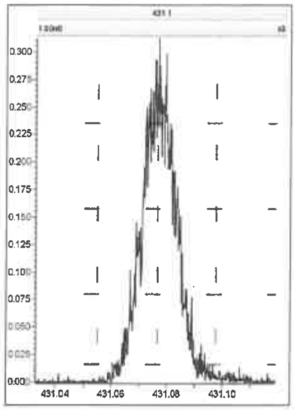

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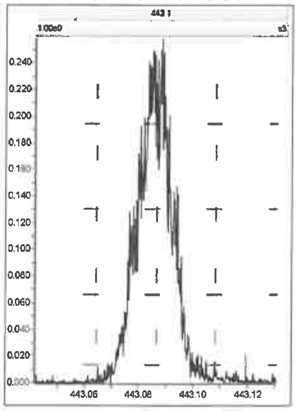

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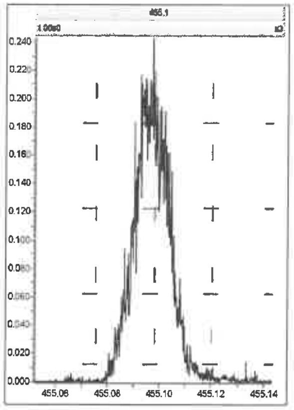

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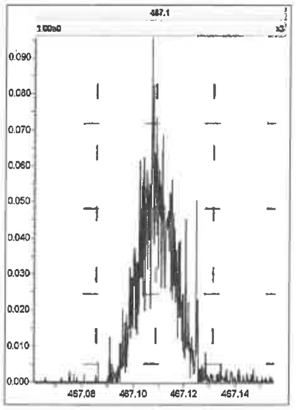

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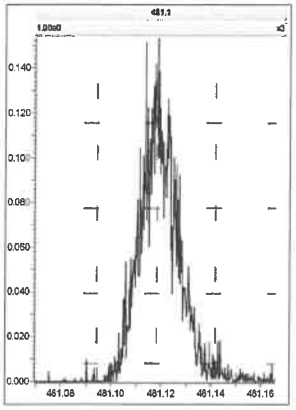

M 492.9696 R 14296

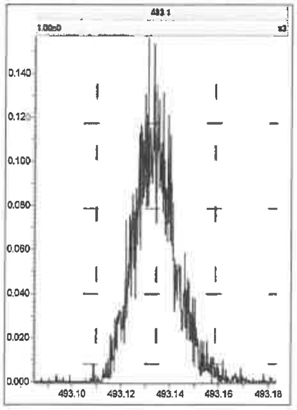

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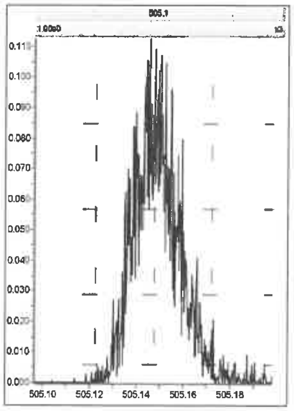

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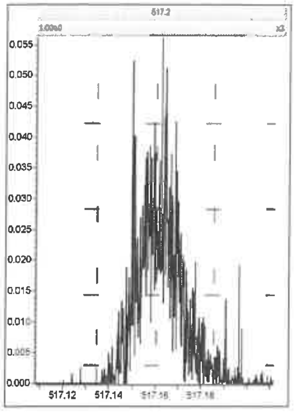

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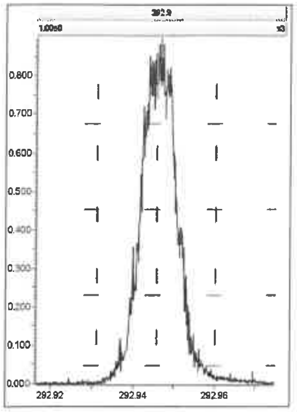

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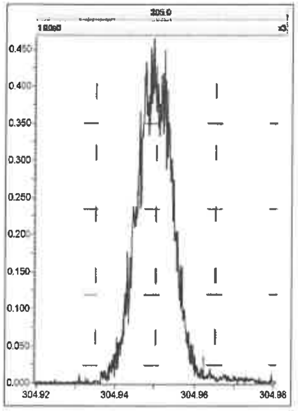

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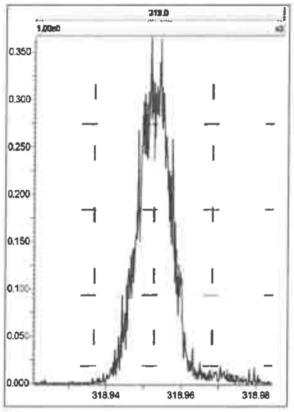

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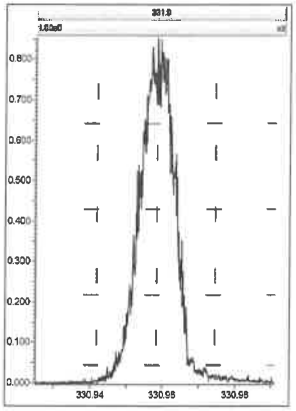

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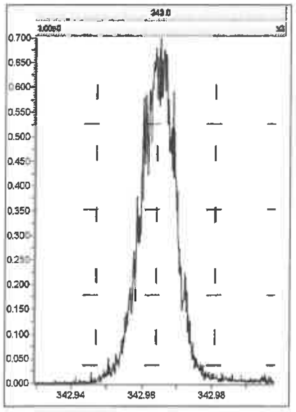

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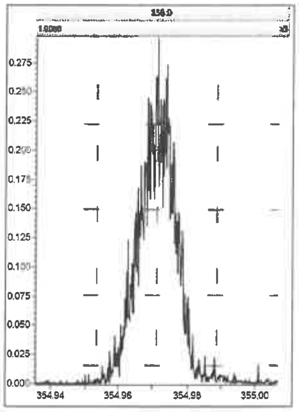

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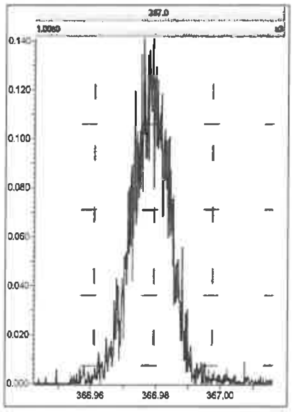

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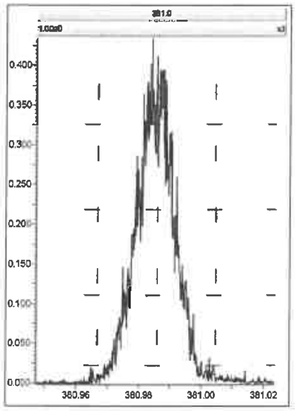

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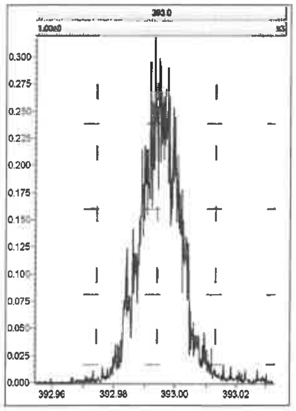

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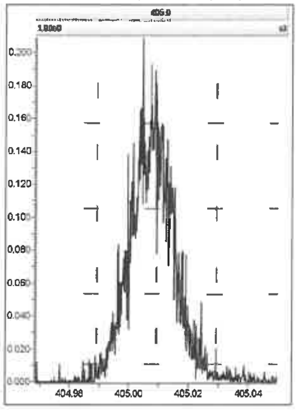

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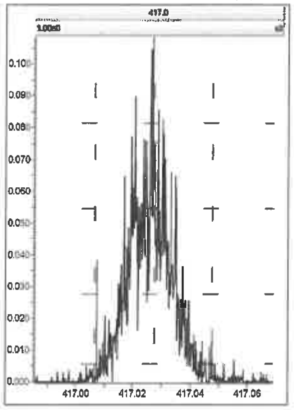

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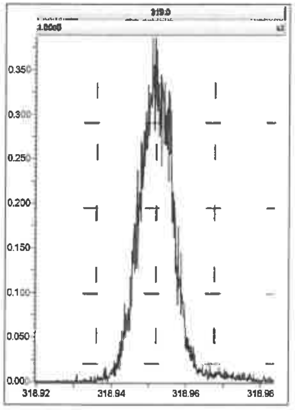

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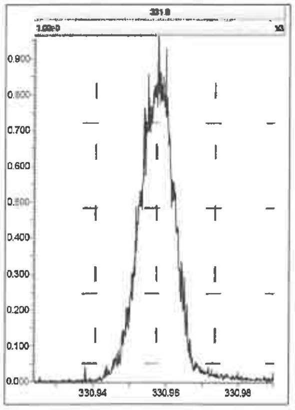

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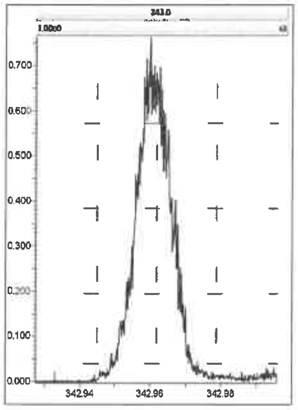

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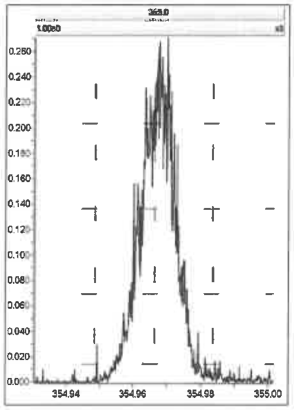

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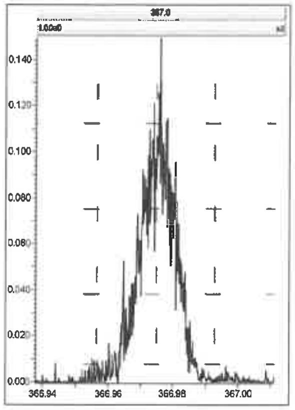

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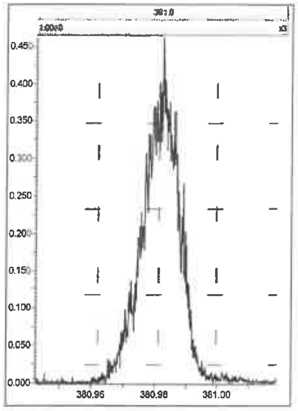

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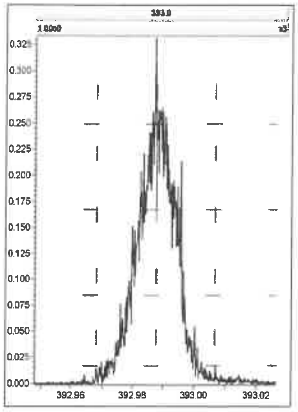

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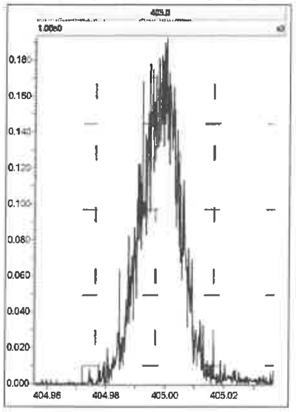

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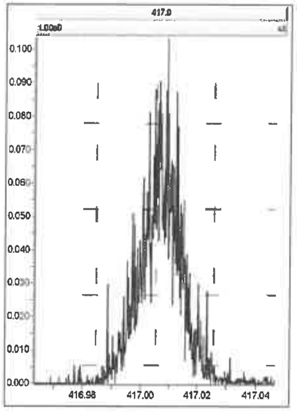

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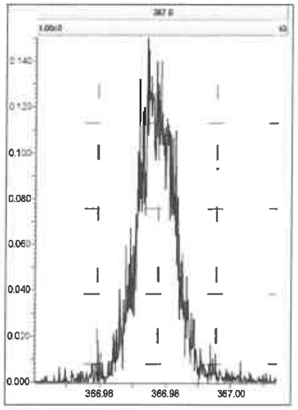

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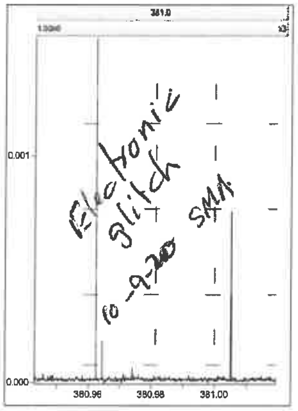

Electronic glitch 10-9-20 SMA

M 392.9760 R 15627

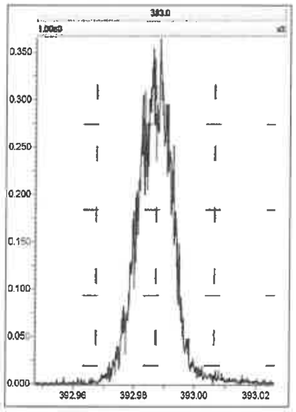

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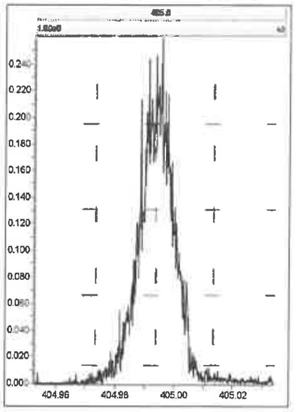

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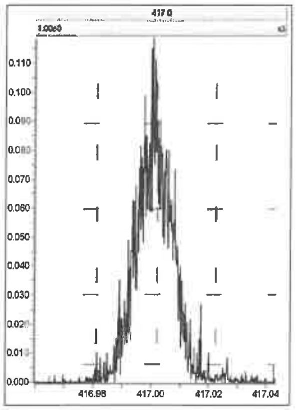

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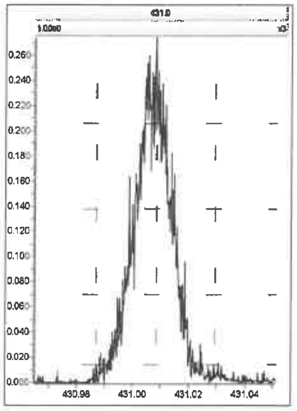

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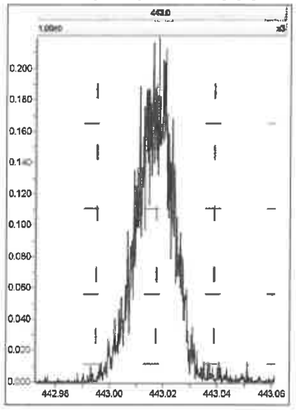

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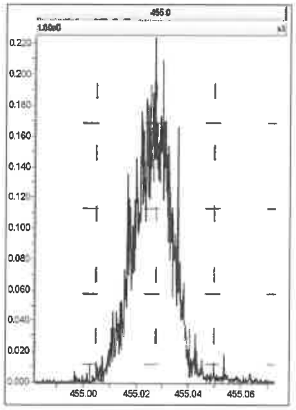

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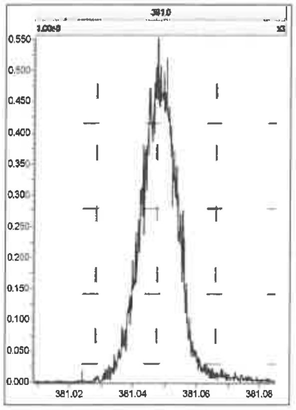

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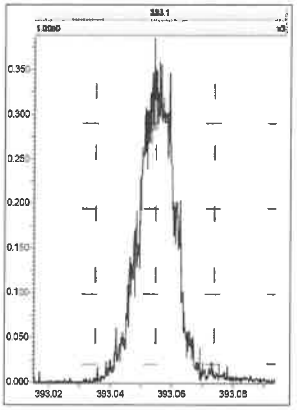

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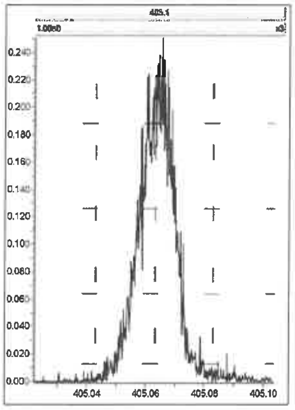

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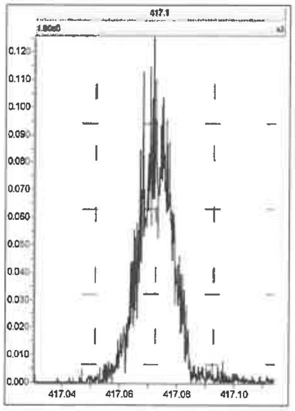

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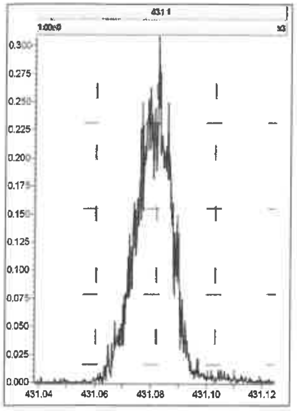

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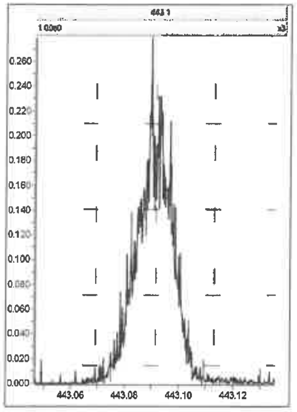

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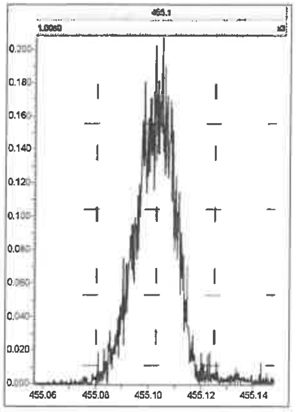

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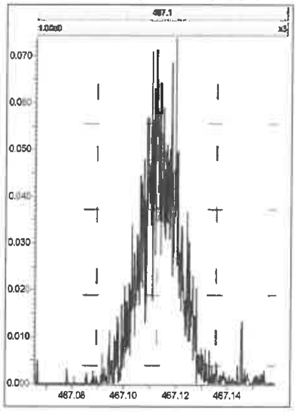

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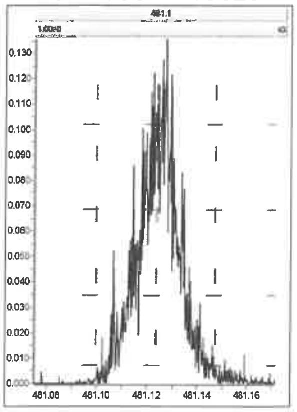

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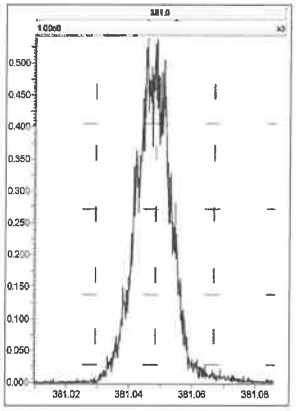

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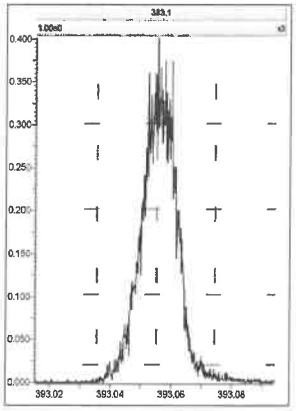

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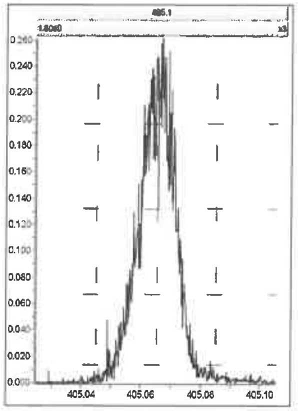

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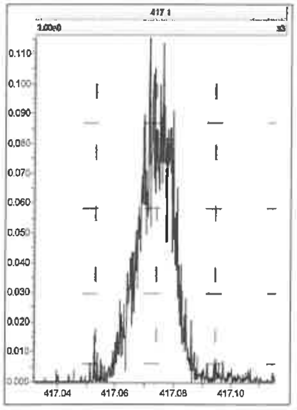

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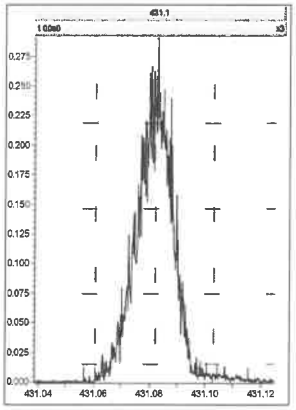

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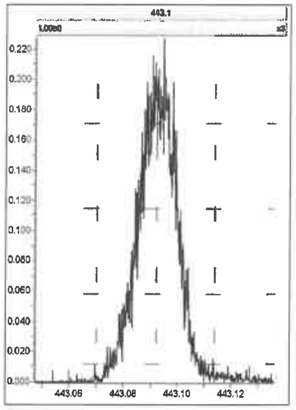

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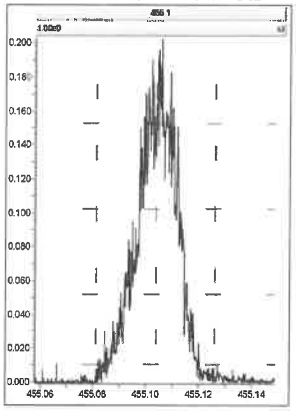

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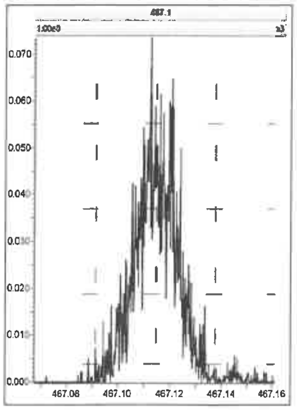

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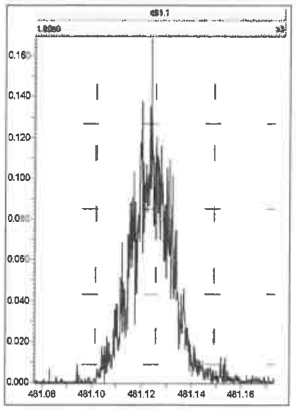

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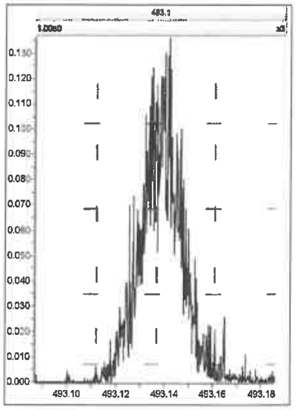

M 504.9696 R 13687

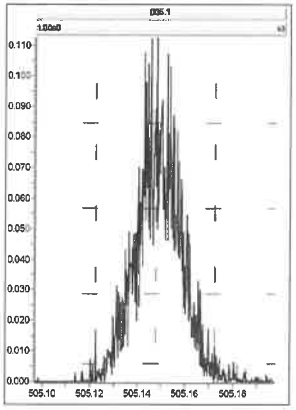

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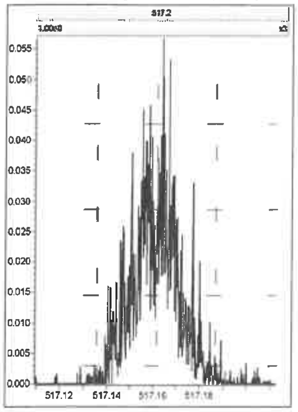

Report Date: 12-Oct-2020 18:04:31 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 09-Oct-2020 01:52:52 ALS Bottle#: 2 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 100820B CCV HRDXNL4_00095
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 18:04:31 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: shardaa Date: 12-Oct-2020 17:54:32

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.930	276449658	0.77	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.492	416914834	0.79	1.4844	101.6	101.6	0.3633	0.3633	102	
2,3,7,8-TCDF	15.492	42701866	0.77	0.9534	10.7	10.7	0.0459	0.0459	107	
A Non-2,3,7,8-sub-TCDF	15.227						0.0459	0.0459		
S Total TCDF					10.7	10.7	0.0459	0.0459		
D 13C-2,3,7,8-TCDD	16.081	303348527	0.79	1.0875	100.9	100.9	0.2232	0.2232	101	
2,3,7,8-TCDD	16.112	32273619	0.76	1.0205	10.4	10.4	0.0404	0.0404	104	
$ 37Cl4-2,3,7,8-TCDD	16.112	31368429		1.1216	10.1	10.1	0.0191	0.0191	101	
A Non-2,3,7,8-sub-TCDD	15.620						0.0404	0.0404		
S Total TCDD					10.4	10.4	0.0404	0.0404		
D 13C-1,2,3,7,8-PeCDF	19.700	338872138	1.55	1.3943	87.9	87.9	0.3055	0.3055	87.91	
1,2,3,7,8-PeCDF	19.727	172409726	1.58	1.0794	47.1	47.1	0.2134	0.2134	94.27	
D 13C-2,3,4,7,8-PeCDF	20.818	328475092	1.55	1.3370	88.9	88.9	0.3186	0.3186	88.87	
2,3,4,7,8-PeCDF	20.846	175768176	1.57	1.0966	48.8	48.8	0.2352	0.2352	97.59	
A F1 PeCDFs	17.730						0.0139	0.0139		n
A Non-2,3,7,8-sub-PeCDF	20.349						0.2237	0.2237		
S Total PeCDF					95.9	95.9	0.2243	0.2243		
D 13C-1,2,3,7,8-PeCDD	21.432	220589518	1.59	0.8475	94.1	94.1	0.1309	0.1309	94.15	
1,2,3,7,8-PeCDD	21.459	115538885	1.54	1.1397	46.0	46.0	0.0986	0.0986	91.92	
A Non-2,3,7,8-sub-PeCDD	20.518						0.0986	0.0986		
S Total PeCDD					46.0	46.0	0.0986	0.0986		
D 13C-1,2,3,4,7,8-HxCDF	26.733	261721099	0.52	1.3065	94.9	94.9	0.5167	0.5167	94.85	
1,2,3,4,7,8-HxCDF	26.759	164470847	1.24	1.2552	50.1	50.1	0.2701	0.2701	100	
D 13C-1,2,3,6,7,8-HxCDF	27.012	294356648	0.53	1.4213	98.1	98.1	0.4749	0.4749	98.07	
1,2,3,6,7,8-HxCDF	27.039	176282793	1.25	1.2102	49.5	49.5	0.2754	0.2754	98.97	
D 13C-2,3,4,6,7,8-HxCDF	28.570	262906949	0.52	1.3142	94.7	94.7	0.5136	0.5136	94.72	
2,3,4,6,7,8-HxCDF	28.597	157516828	1.23	1.2182	49.2	49.2	0.3157	0.3157	98.36	
D 13C-1,2,3,7,8,9-HxCDF	30.394	266693967	0.53	1.3204	95.6	95.6	0.5112	0.5112	95.63	
1,2,3,7,8,9-HxCDF	30.408	162935296	1.26	1.2319	49.6	49.6	0.2190	0.2190	99.19	
A Non-2,3,7,8-sub-HxCDF	27.465						0.2656	0.2656		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					198.3	198.3	0.2701	0.2701		
* 13C-1,2,3,7,8,9-HxCDD	30.088	211190796	1.28	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.036	179766211	1.27	0.8660	98.3	98.3	0.3372	0.3372	98.29	a
1,2,3,4,7,8-HxCDD	29.076	101250773	1.28	1.2535	44.9	44.9	0.1716	0.1716	89.87	
D 13C-1,2,3,6,7,8-HxCDD	29.316	211343460	1.25	0.9827	101.8	101.8	0.2972	0.2972	102	a
1,2,3,6,7,8-HxCDD	29.356	106734749	1.25	1.1117	45.4	45.4	0.1799	0.1799	90.86	
1,2,3,7,8,9-HxCDD	30.101	111422169	1.26	1.2852	44.3	44.3	0.1613	0.1613	88.67	
A Non-2,3,7,8-sub-HxCDD	27.931						0.1703	0.1703		
S Total HxCDD					134.7	134.7	0.1709	0.1709		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	199224090	0.45	0.9410	100.2	100.2	1.847	1.847	100	
1,2,3,4,6,7,8-HpCDF	32.547	142385756	1.04	1.4783	48.3	48.3	0.5606	0.5606	96.69	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	179700597	0.45	0.8751	97.2	97.2	1.986	1.986	97.23	
1,2,3,4,7,8,9-HpCDF	33.653	130460332	1.00	1.3784	52.7	52.7	0.5842	0.5842	105	
A Non-2,3,7,8-sub-HpCDF	33.100						0.5719	0.5719		
S Total HpCDF					101.0	101.0	0.5724	0.5724		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	194413182	1.14	0.9049	101.7	101.7	3.072	3.072	102	
1,2,3,4,6,7,8-HpCDD	33.410	96877724	1.09	1.0862	45.9	45.9	0.3592	0.3592	91.75	
A Non-2,3,7,8-sub-HpCDD	33.339						0.3592	0.3592		
S Total HpCDD					45.9	45.9	0.3592	0.3592		
D 13C-OCDD	35.558	268965439	0.91	0.5783	220.2	220.2	0.7512	0.7512	110	
OCDF	35.630	210039970	0.90	1.7248	90.6	90.6	0.0691	0.0691	90.55	
OCDD	35.570	154951743	0.86	1.2576	91.6	91.6	0.2308	0.2308	91.62	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	09-Oct-2020 01:52:52	ALS Bottle#:	2	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV 100820B CCV HRDXNL4_00095				
Misc. Info.:	08OC20A3D5				
Operator ID:	ALM	Instrument ID:	3D5		
Sublist:	chrom-Dioxin_3D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Oct-2020 18:04:31	Calib Date:	05-Oct-2020 20:45:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Column 1 :		Det: F1:HRSIR			
Process Host:	CTX1627				
First Level Reviewer: shardaa		Date:	12-Oct-2020 17:54:32		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.930	15.930	0		120413915	33514492	32664	81660	1026		
333.9339	15.930	15.930	0		156035743	42635852	41268	103170	1033	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.492	15.492	0	0.972	184067660	47837439	121363	303407	394		
317.9389	15.477	15.492	-1	0.972	232847174	59999409	42908	107270	1398	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.492	0	1.000	18568513	4906671	12021	30052	408		
305.8987	15.492	15.492	0	1.000	24133353	6308413	6839	17097	922	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.227						12021	30052			
305.8987	15.227						6839	17097			
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.009	133863893	32910864	32664	81660	1008		
333.9339	16.081	16.081	0	1.009	169484634	41980315	41268	103170	1017	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.112	16.112	0	1.002	13970412	3517423	6584	16460	534		
321.8936	16.112	16.112	0	1.002	18303207	4526543	5765	14412	785	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.112	16.112	0	1.011	31368429	7696342	6520	16300	1180		
A Non-2,3,7,8-sub-TCDD											
319.8965	15.620						6584	16460			
321.8936	15.620						5765	14412			

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	19.700	19.700	0	1.237	205749983	41699625	77089	192722	541		
353.8970	19.700	19.700	0	1.237	133122155	26763884	52678	131695	508	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.727	19.727	0	1.001	105702657	21153013	37651	94127	562		
341.8567	19.727	19.727	0	1.001	66707069	13240389	25440	63600	520	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.818	20.818	0	1.307	199530921	37138692	77089	192722	482		
353.8970	20.818	20.818	0	1.307	128944171	24004630	52678	131695	456	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.846	20.846	0	1.001	107327211	19647421	37651	94127	522		
341.8567	20.832	20.846	-1	1.001	68440965	12726075	25440	63600	500	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.306	17.730	-25	0.878	121000	8579	1469	3672	6		
341.8567	17.291	17.730	-26	0.878	83676	17146	2454	6135	7	1.45(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.349						37651	94127			
341.8567	20.349						25440	63600			
13C-1,2,3,7,8-PeCDD											
367.8949	21.432	21.432	0	1.345	135402443	23760926	21480	53700	1106		
369.8919	21.432	21.432	0	1.345	85187075	15004042	12305	30762	1219	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.459	21.459	0	1.001	70041545	11809247	10650	26625	1109		
357.8516	21.459	21.459	0	1.001	45497340	7675776	6772	16930	1133	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.518						10650	26625			
357.8516	20.518						6772	16930			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.733	26.733	0	0.888	89966009	12775183	30724	76810	416		
385.8610	26.733	26.733	0	0.888	171755090	23639678	55991	139977	422	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.759	26.759	0	1.001	91195627	12543468	27731	69327	452		
375.8178	26.759	26.759	0	1.001	73275220	10029805	21660	54150	463	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.012	27.012	0	0.898	102029963	12890204	30724	76810	420		
385.8610	27.012	27.012	0	0.898	192326685	24156901	55991	139977	431	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.039	27.039	0	1.001	97893924	12308672	27731	69327	444		
375.8178	27.039	27.039	0	1.001	78388869	9711770	21660	54150	448	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.570	28.570	0	0.950	90135105	10935493	30724	76810	356		
385.8610	28.557	28.570	-1	0.949	172771844	21169430	55991	139977	378	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.597	28.597	0	1.001	86789432	10253558	27731	69327	370		
375.8178	28.583	28.597	-1	1.000	70727396	8371922	21660	54150	387	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.394	30.394	0	1.010	91906122	15705876	30724	76810	511		
385.8610	30.394	30.394	0	1.010	174787845	30067625	55991	139977	537	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.408	30.408	0	1.000	90840299	15206932	27731	69327	548		
375.8178	30.408	30.408	0	1.000	72094997	12146740	21660	54150	561	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.465						27731	69327			
375.8178	27.465						21660	54150			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.088	30.088	0		118731345	18012961	20445	51112	881		
403.8529	30.088	30.088	0		92459451	14103695	17070	42675	826	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.036	29.036	0	0.965	100601217	12508522	20445	51112	612		a
403.8529	29.049	29.036	1	0.965	79164994	9922550	17070	42675	581	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.076	29.076	0	1.001	56761588	6803140	10057	25142	676		
391.8127	29.076	29.076	0	1.001	44489185	5541993	9244	23110	600	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.316	29.316	0	0.974	117567678	13449664	20445	51112	658		a
403.8529	29.316	29.316	0	0.974	93775782	10678302	17070	42675	626	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.356	29.356	0	1.001	59303068	6819208	10057	25142	678		
391.8127	29.356	29.356	0	1.001	47431681	5330531	9244	23110	577	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.101	30.101	0	1.037	62168362	9605899	10057	25142	955		
391.8127	30.101	30.101	0	1.037	49253807	7734259	9244	23110	837	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						10057	25142			
391.8127	27.931						9244	23110			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.082	61595080	19850829	80082	200205	248		
419.8220	32.535	32.547	-1	1.081	137629010	44725684	143184	357960	312	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	72577107	23238624	102283	255707	227		
409.7789	32.547	32.547	0	1.000	69808649	23098588	111797	279492	207	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.118	55977797	20505072	80082	200205	256		
419.8220	33.641	33.641	0	1.118	123722800	45957627	143184	357960	321	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	65068379	23974644	102283	255707	234		
409.7789	33.653	33.653	0	1.000	65391953	23146836	111797	279492	207	1.00(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.100						102283	255707			
409.7789	33.100						111797	279492			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	103407445	36352733	193673	484182	188		
437.8140	33.398	33.398	0	1.110	91005737	33300325	163483	408707	204	1.14(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	50439958	17613468	85012	212530	207		
425.7737	33.410	33.410	0	1.000	46437766	16355579	23699	59247	690	1.09(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						85012	212530			
425.7737	33.339						23699	59247			
13C-OCDD											
469.7779	35.558	35.558	0	1.182	127994982	41045274	28845	72112	1423		
471.7750	35.558	35.558	0	1.182	140970457	47298748	26963	67407	1754	0.91(0.76-1.02)	
OCDF											
441.7428	35.630	35.630	0	1.002	99446593	33059840	6277	15692	5267		
443.7399	35.630	35.630	0	1.002	110593377	36912038	14778	36945	2498	0.90(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	71784349	24217441	21420	53550	1131		
459.7348	35.570	35.570	0	1.000	83167394	26987218	29853	74632	904	0.86(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 12-Oct-2020 18:04:31

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d				
Injection Date:	09-Oct-2020 01:52:52	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	2	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.04

Processing Integration Results

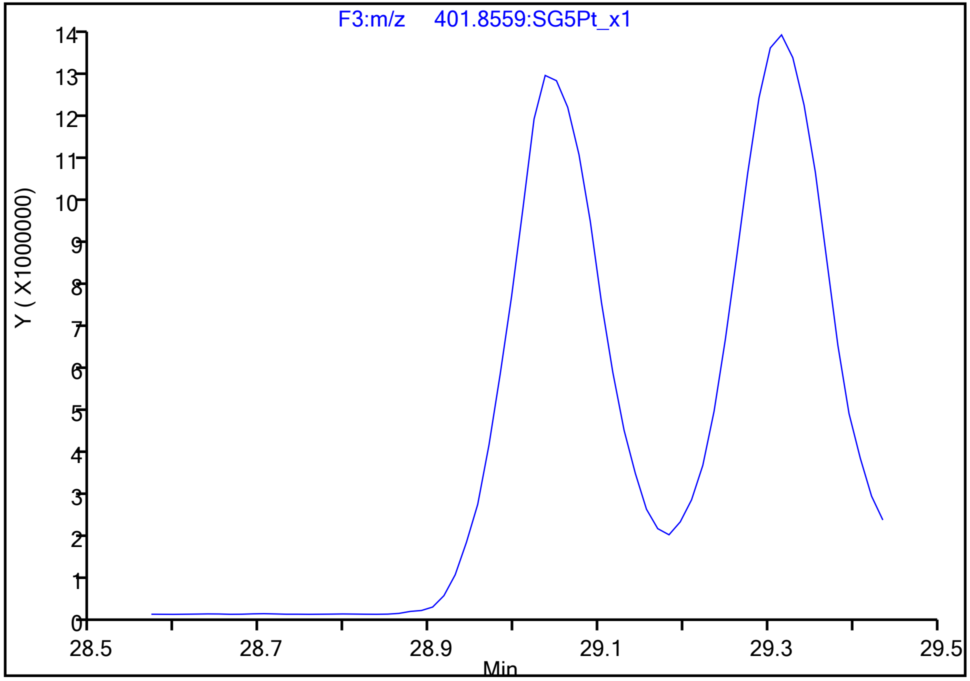

Manual Integration Results

RT: 29.04

Area: 100601217

Amount: 98.288708

Amount Units: pg/ul

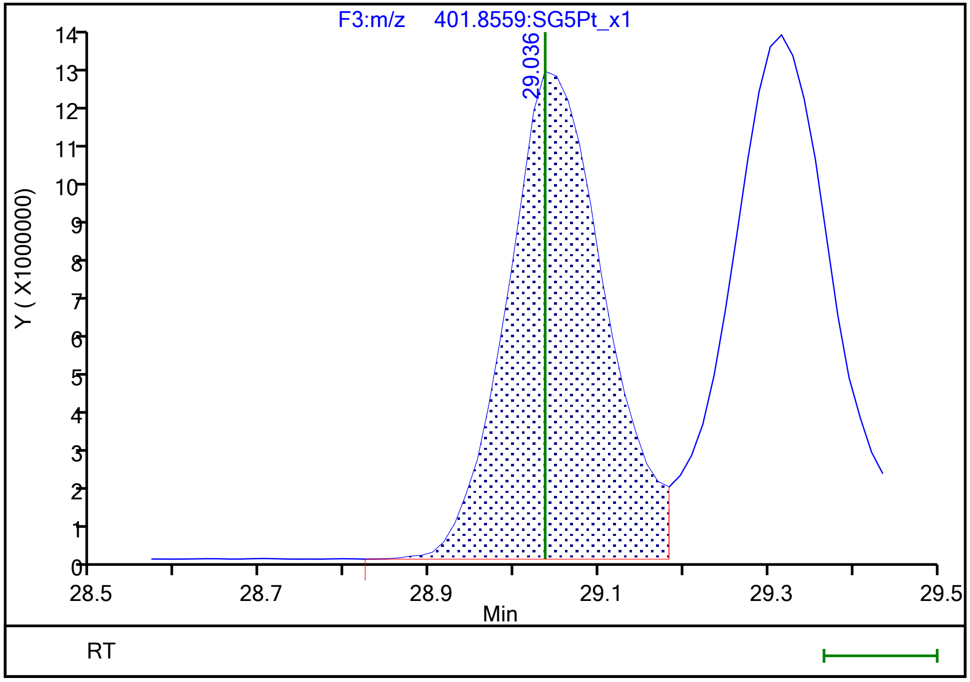

Reviewer: shardaa, 12-Oct-2020 17:59:57

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d				
Injection Date:	09-Oct-2020 01:52:52	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	2	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT: 30.09
Area: 118731345
Amount: 101.7609
Amount Units: pg/ul

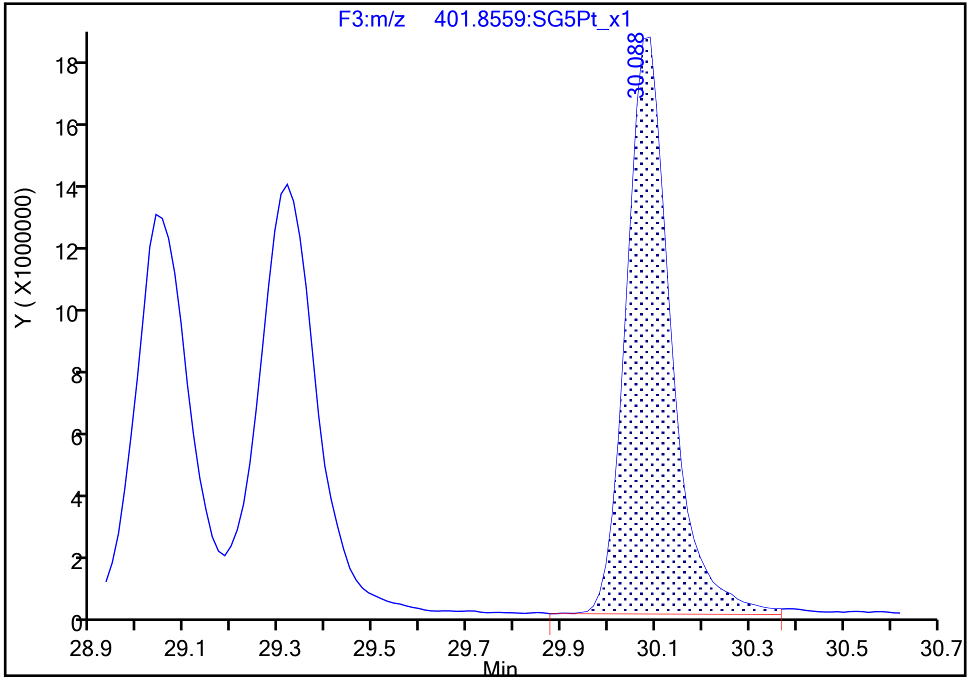

Manual Integration Results

RT: 29.32
Area: 117567678
Amount: 101.8345
Amount Units: pg/ul

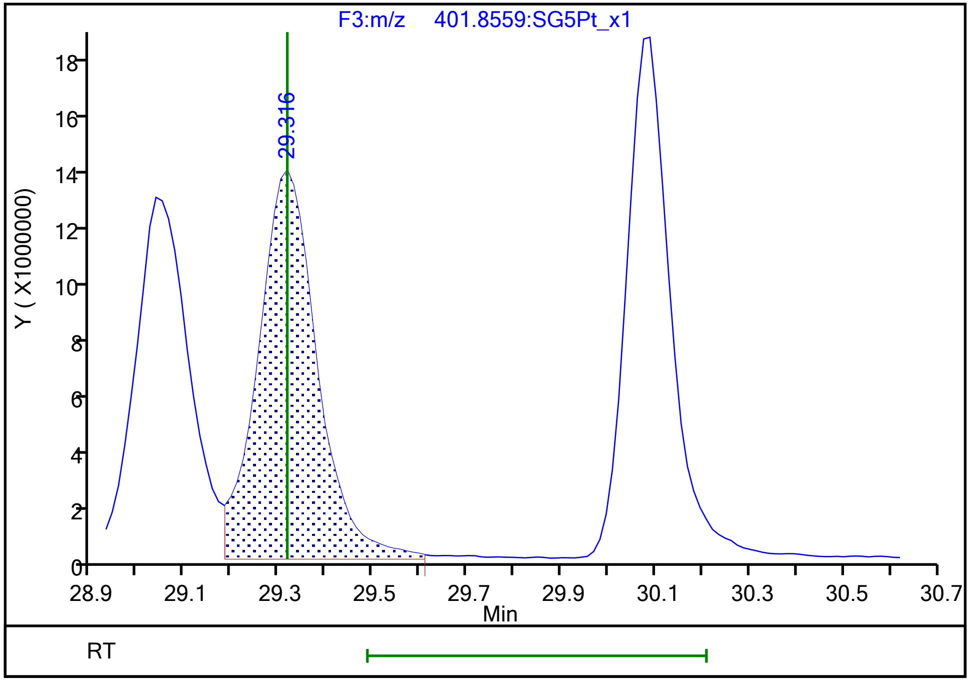

Reviewer: shardaa, 12-Oct-2020 18:00:05

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 12-Oct-2020 18:04:31 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d		
Injection Date:	09-Oct-2020 01:52:52	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	9
Column Type:		Column Dia:	

TCDF

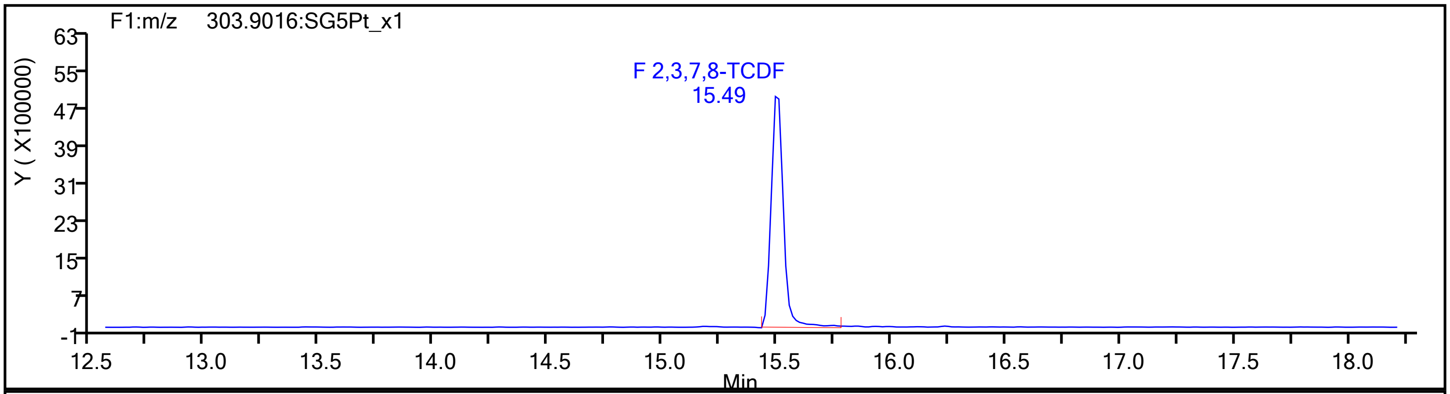

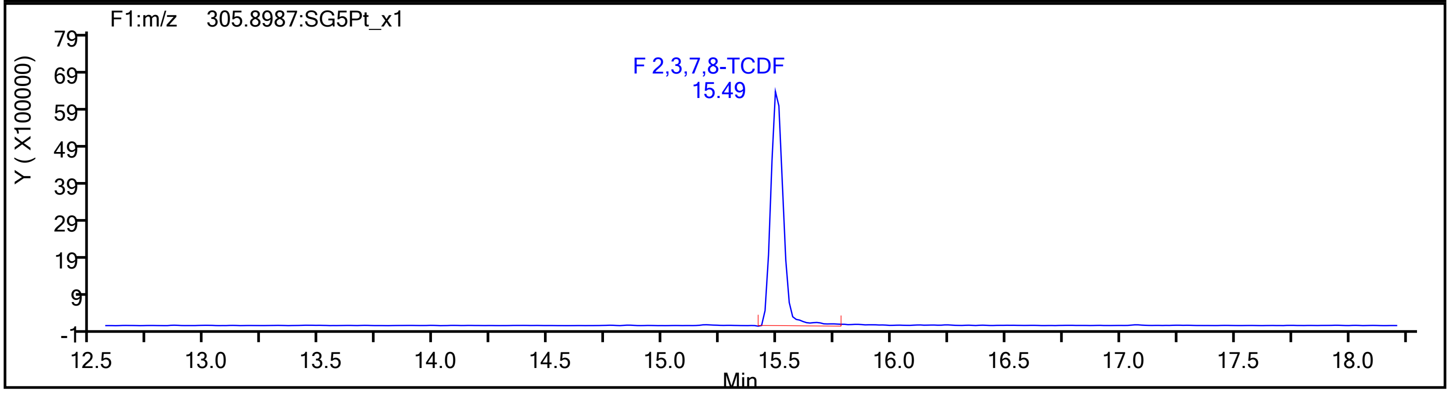

TCDF Standards

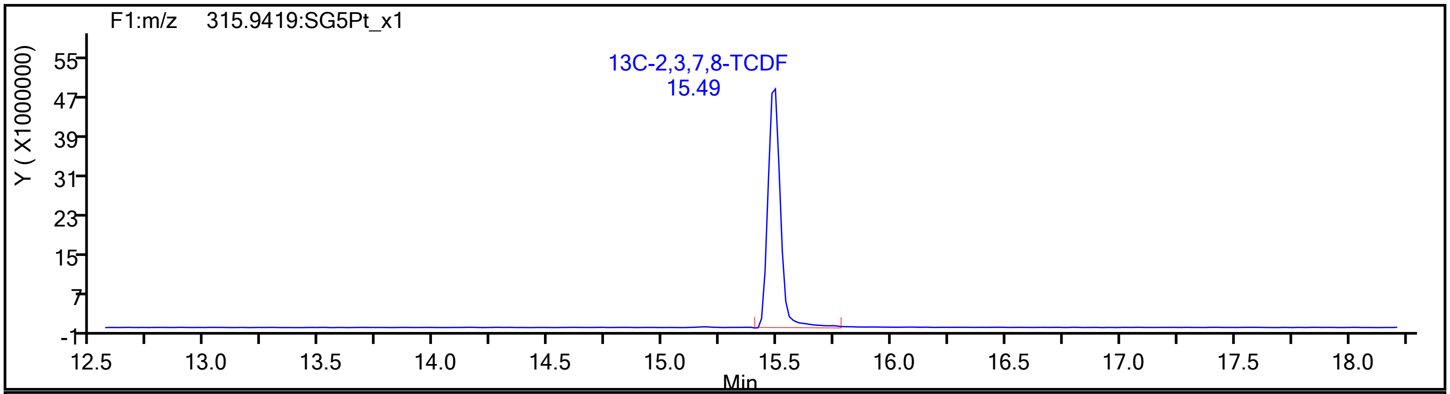

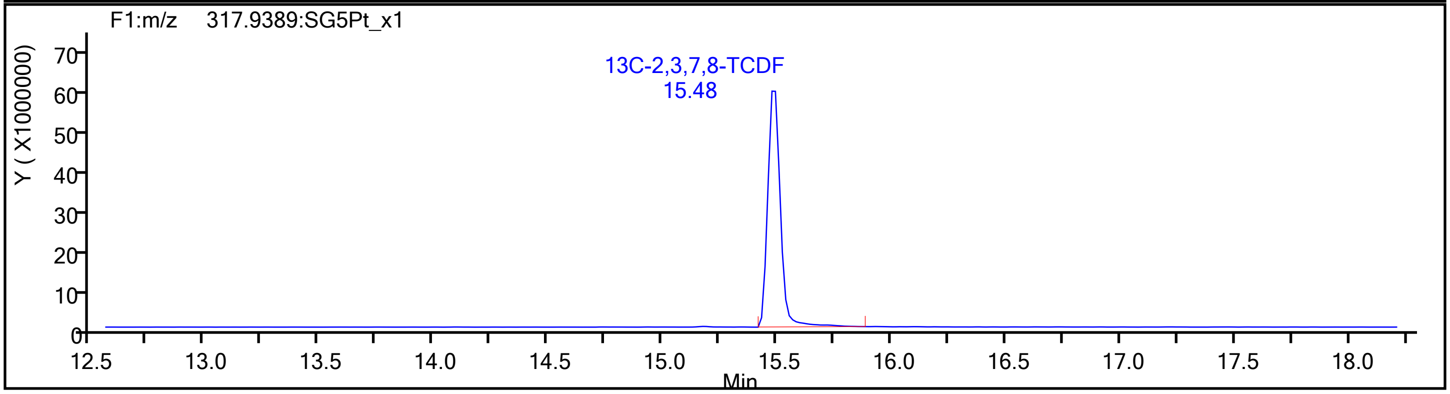

Report Date: 12-Oct-2020 18:04:31 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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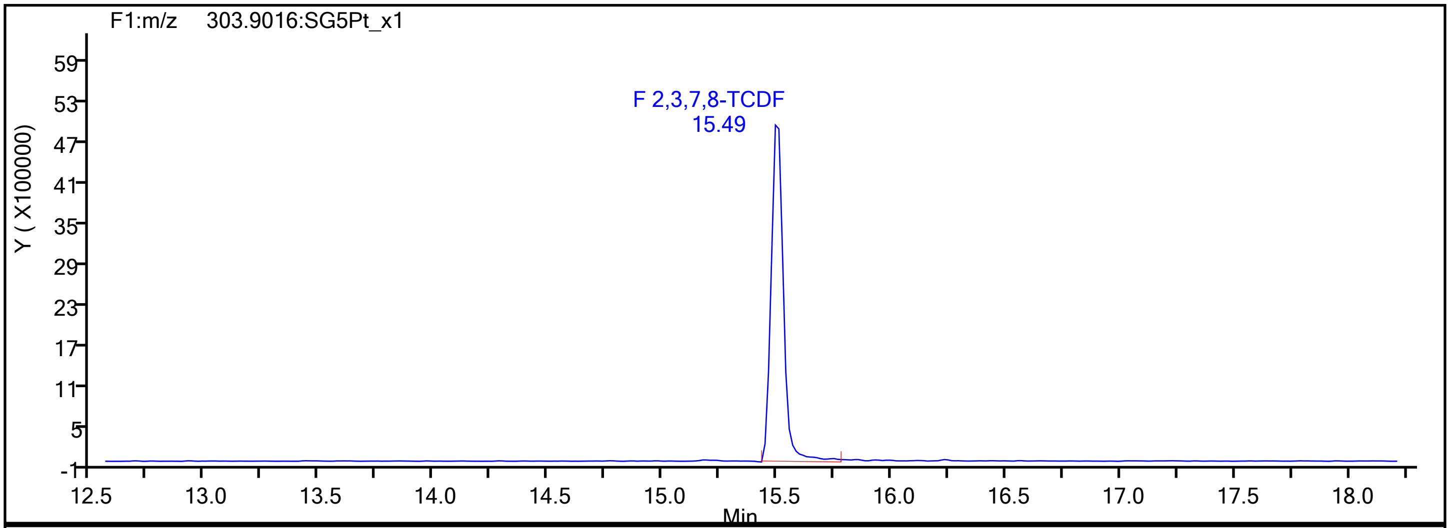

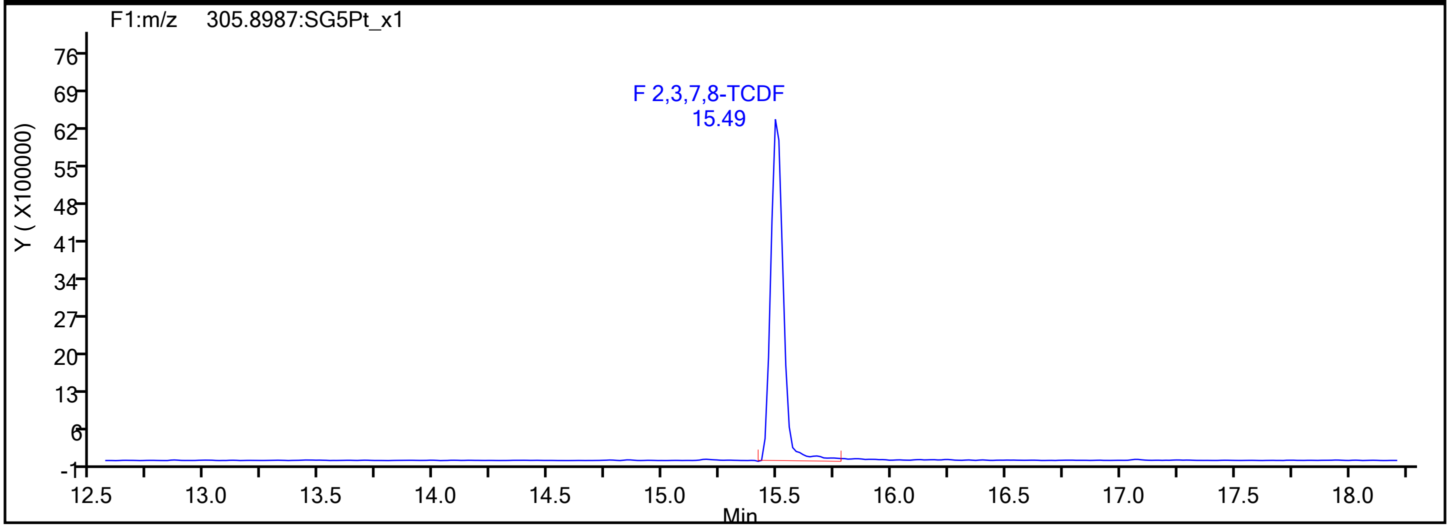

TCDF Interference Mass

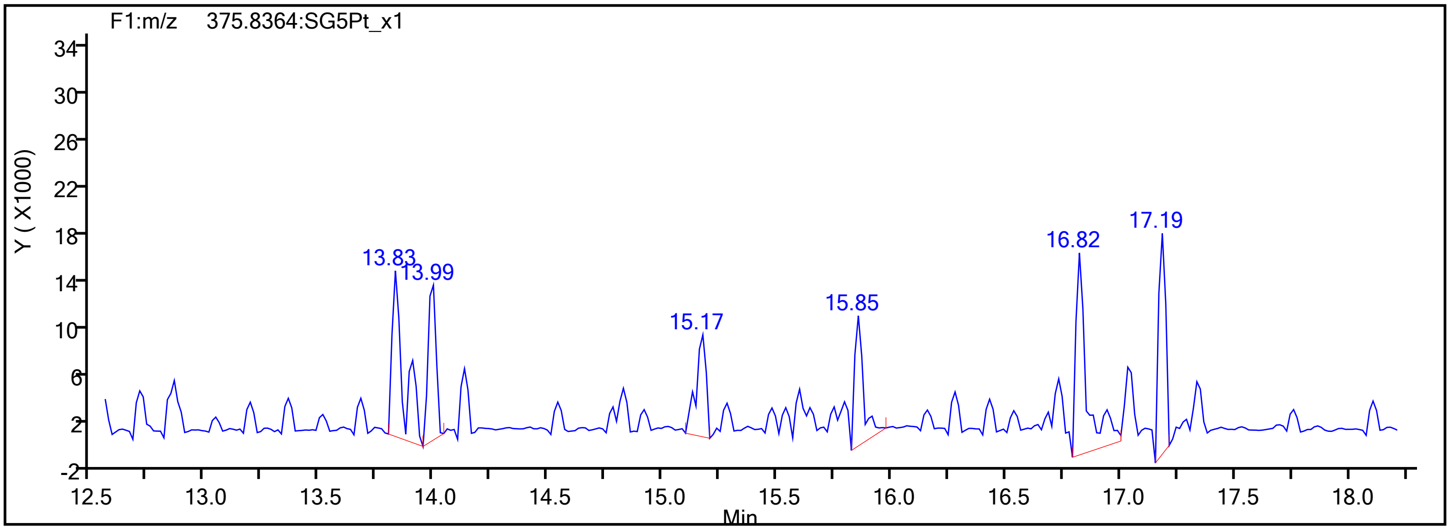

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TCDD

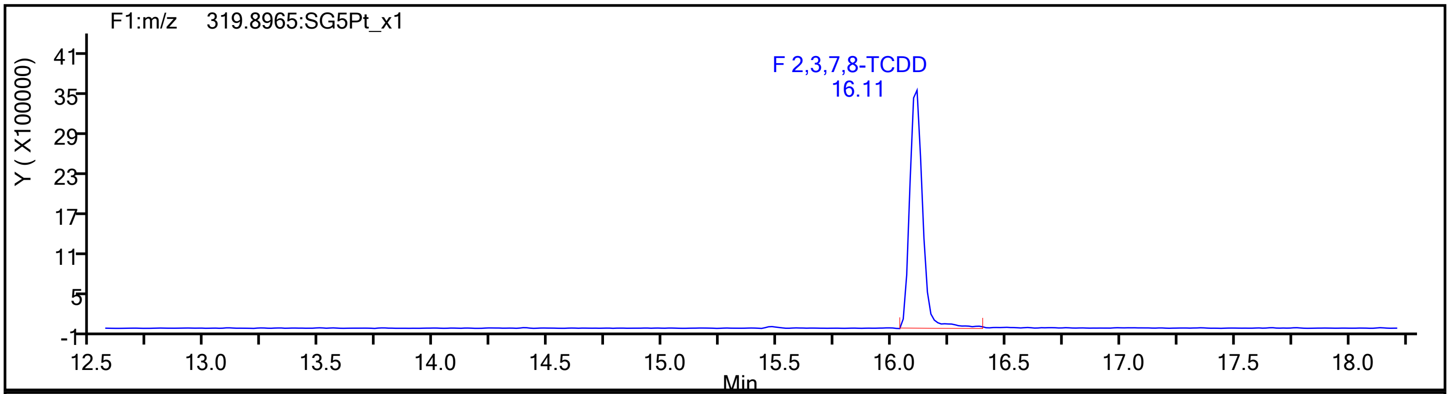

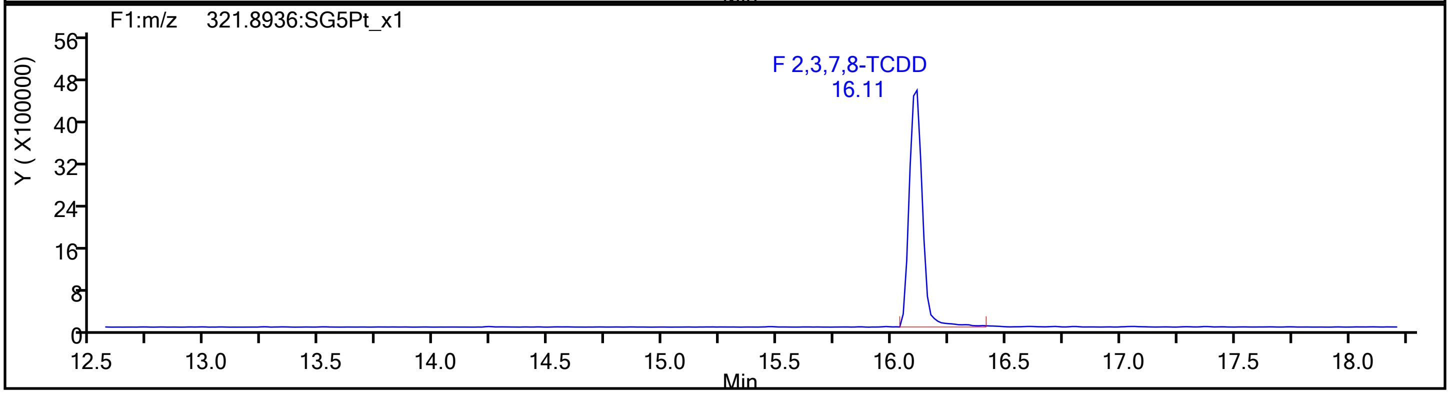

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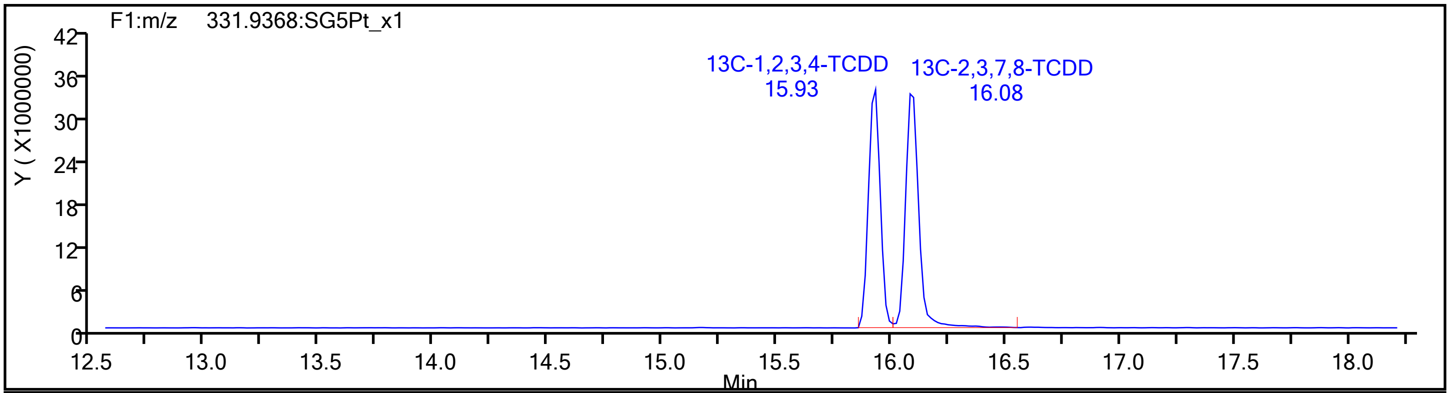

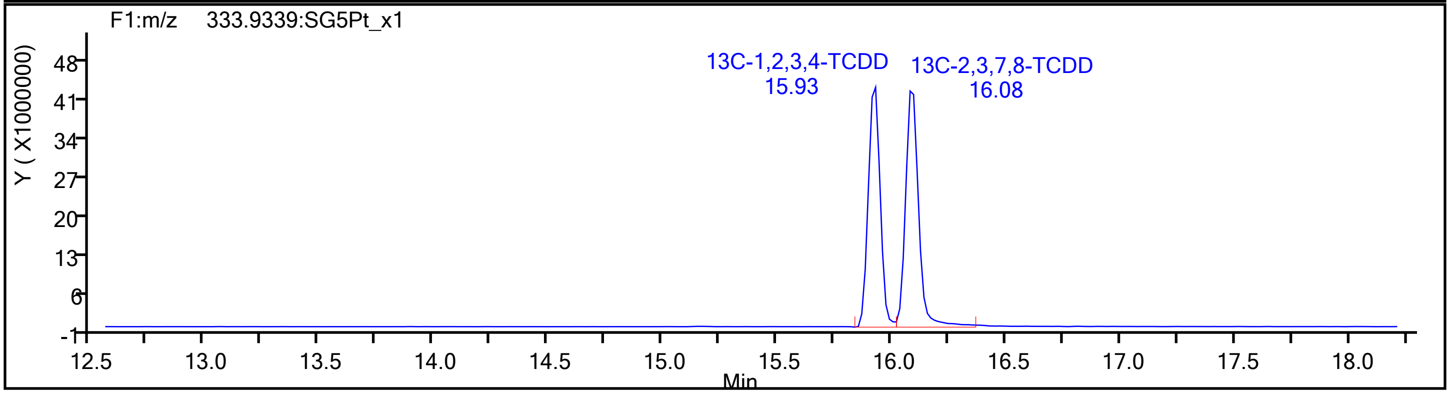

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37Cl4-TCDD

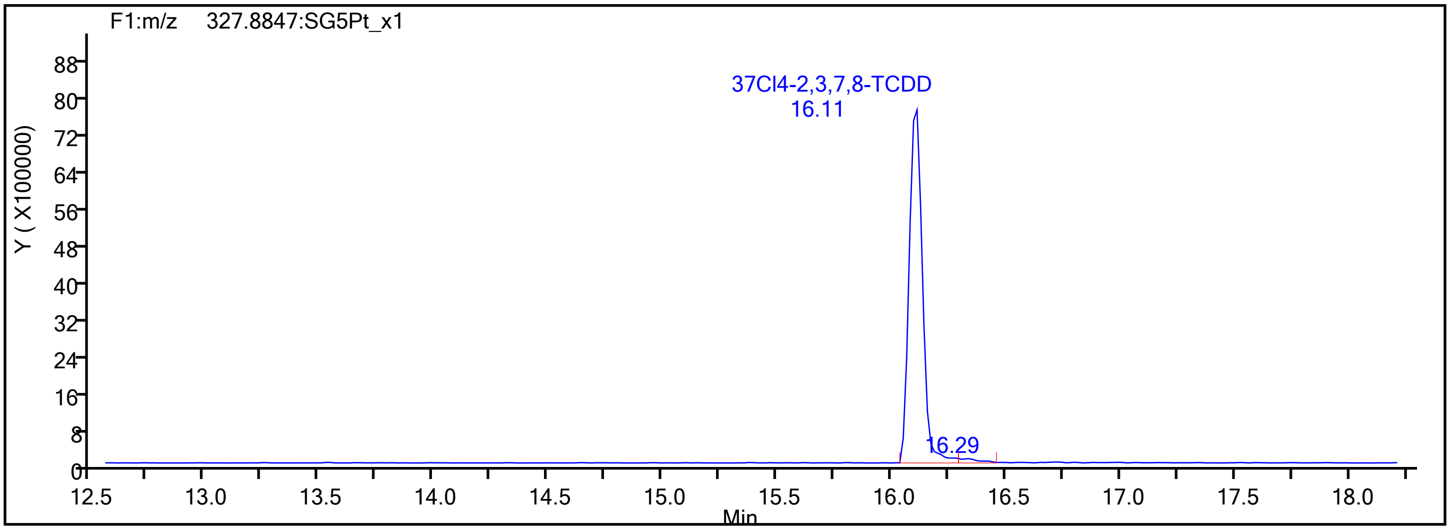

37Cl4-TCDD Standards

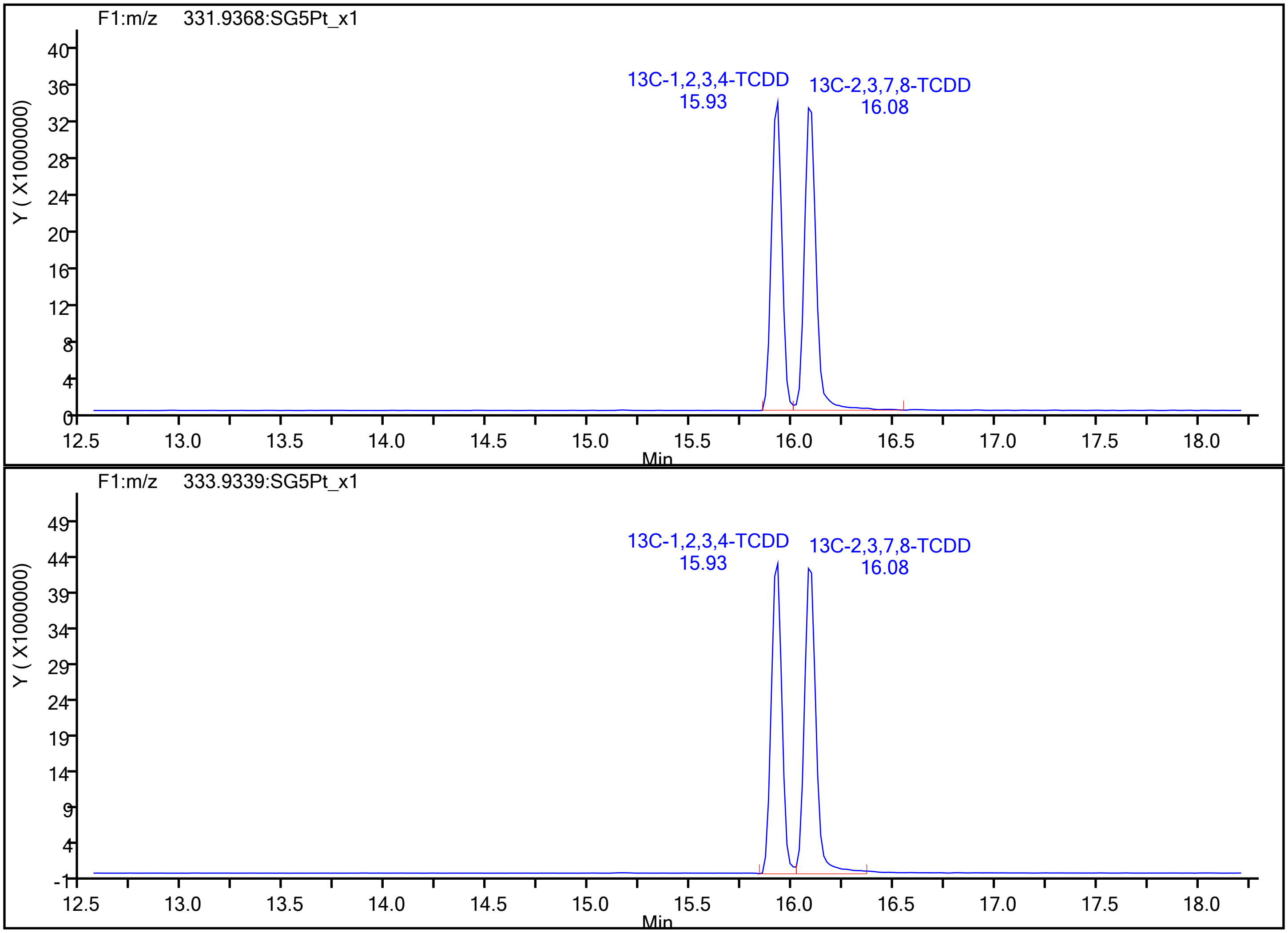

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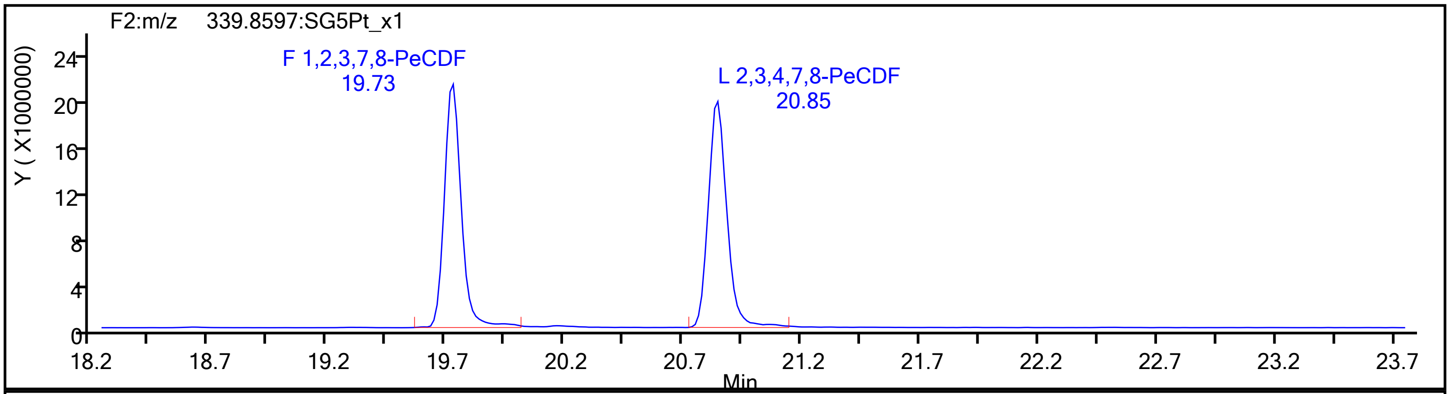

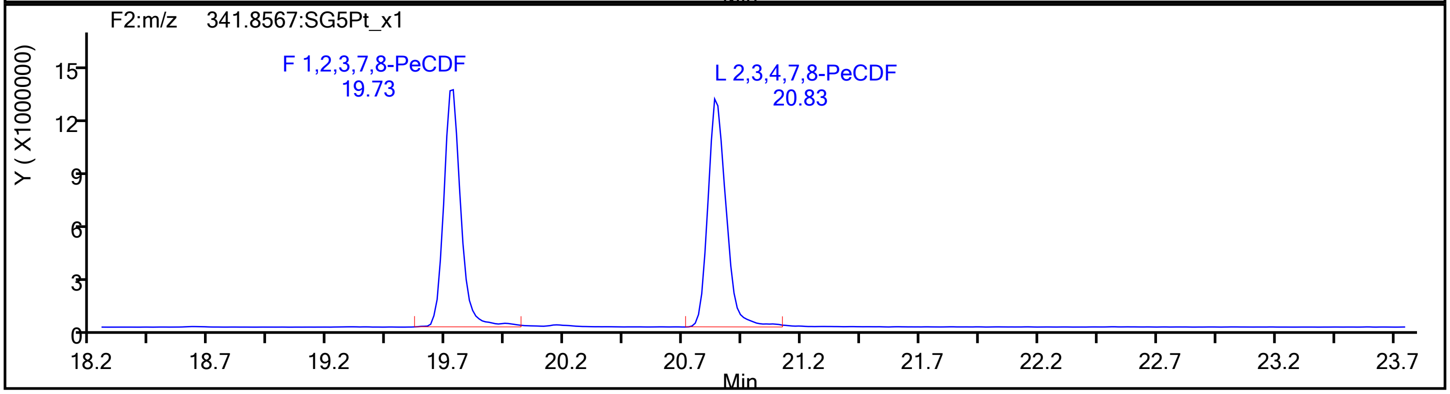

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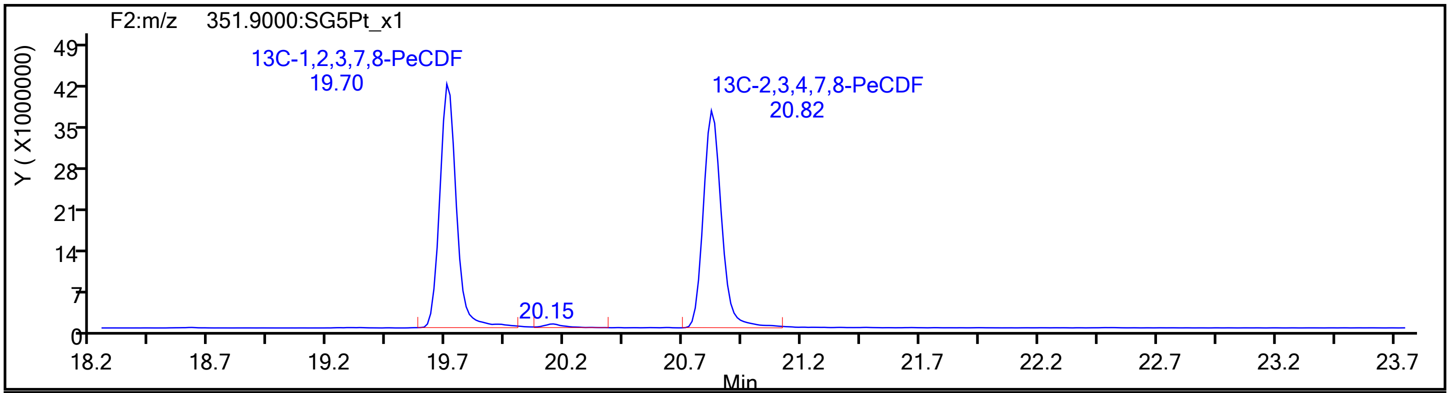

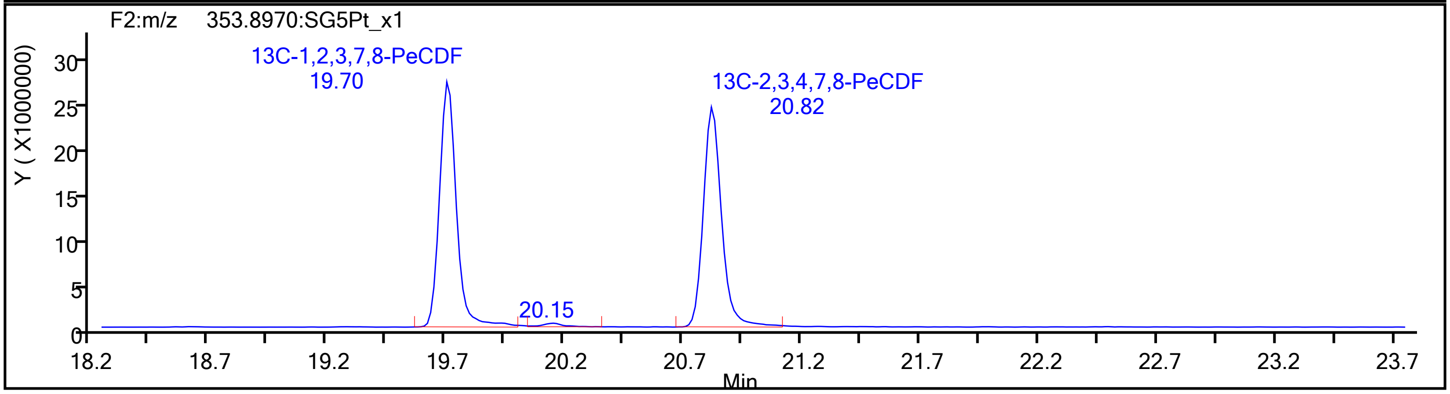

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Eurofins TestAmerica, Sacramento

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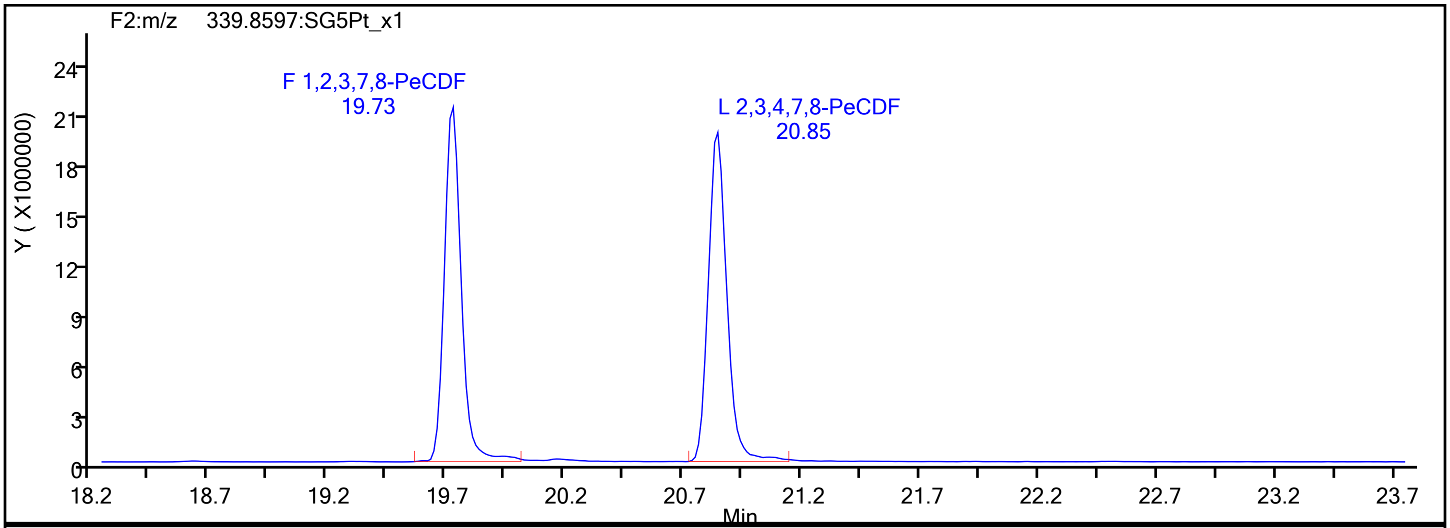

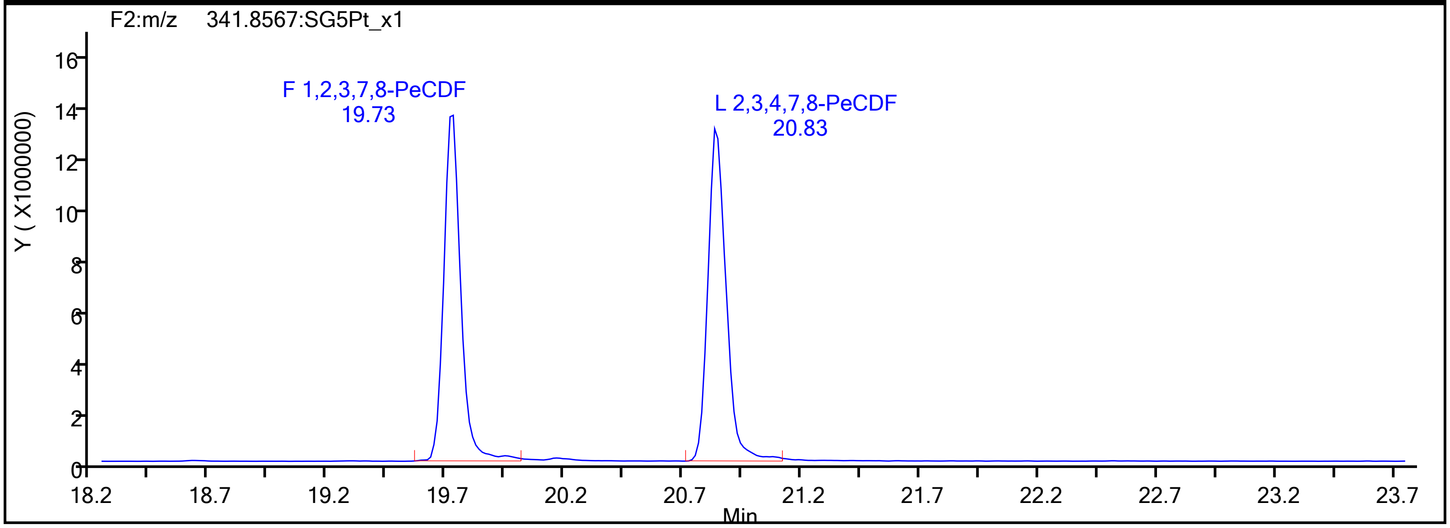

PeCDF Interference Mass

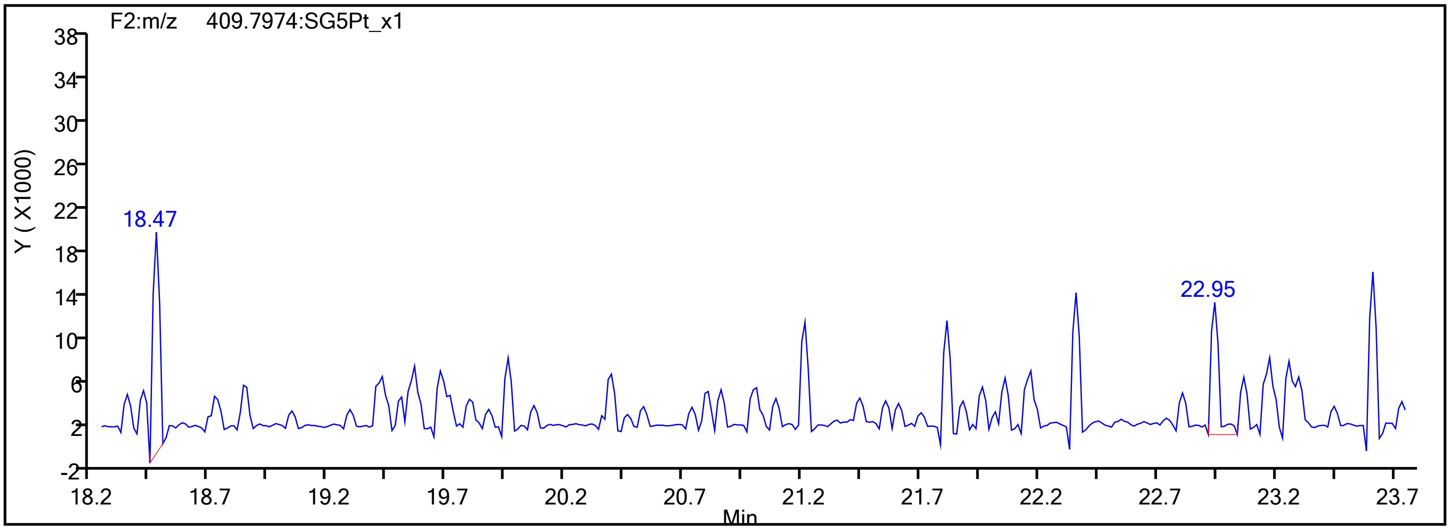

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Eurofins TestAmerica, Sacramento

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PeCDD

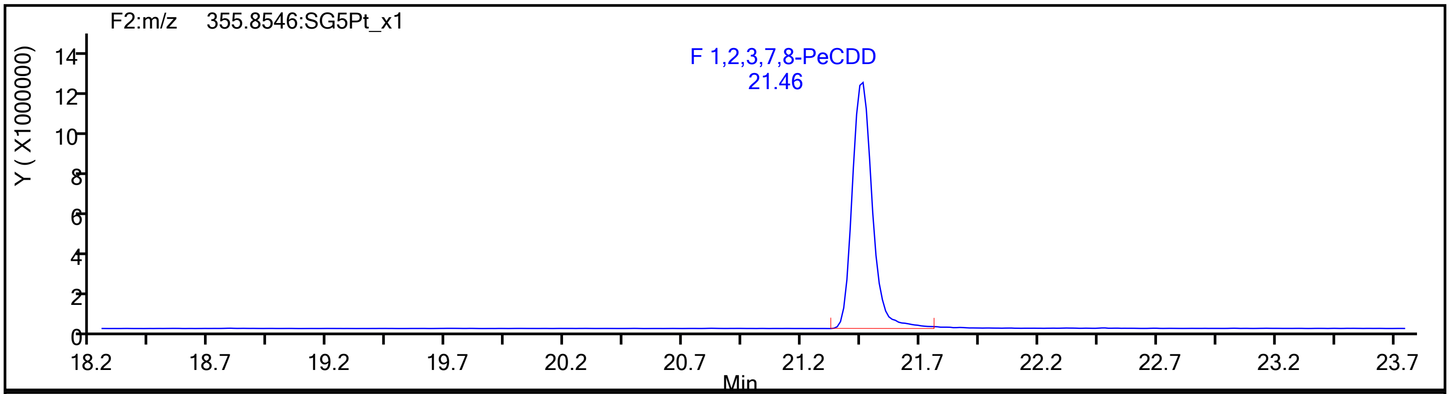

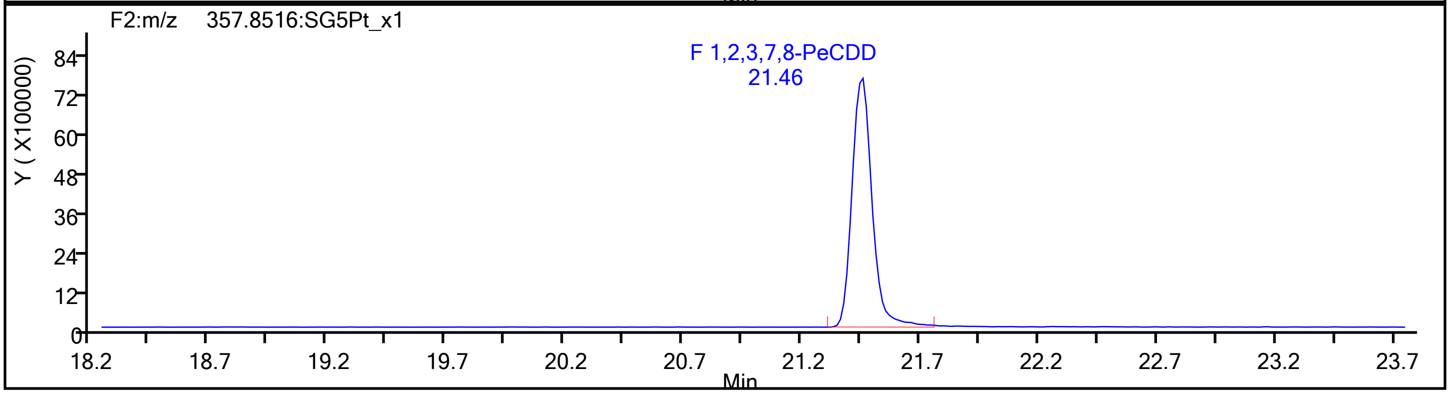

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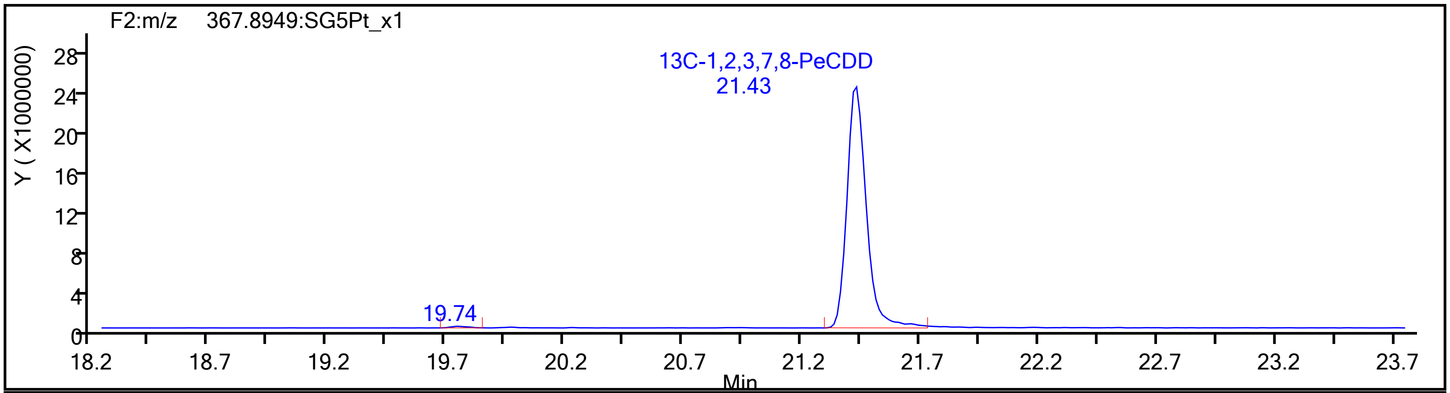

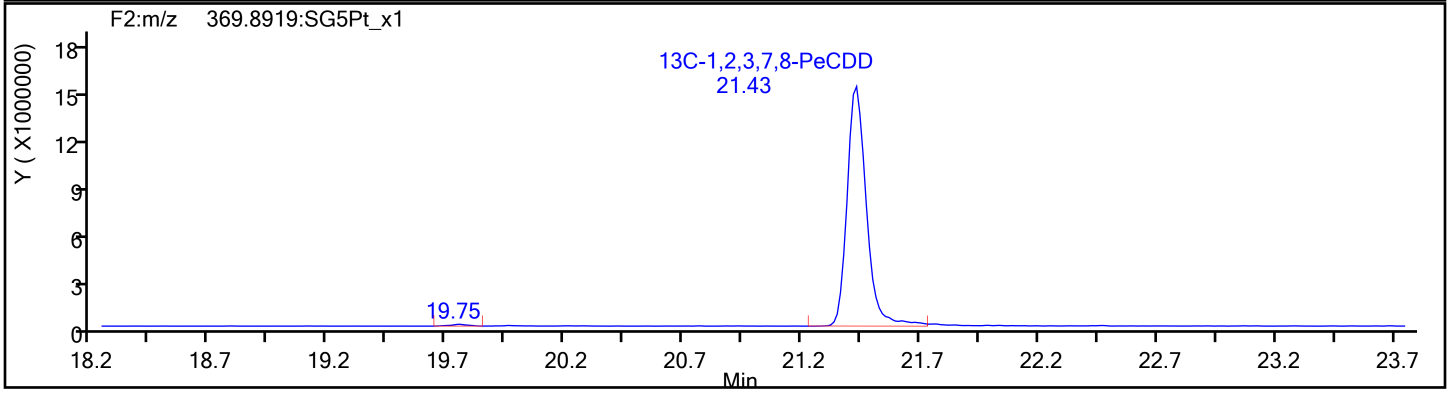

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Eurofins TestAmerica, Sacramento

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HxCDF

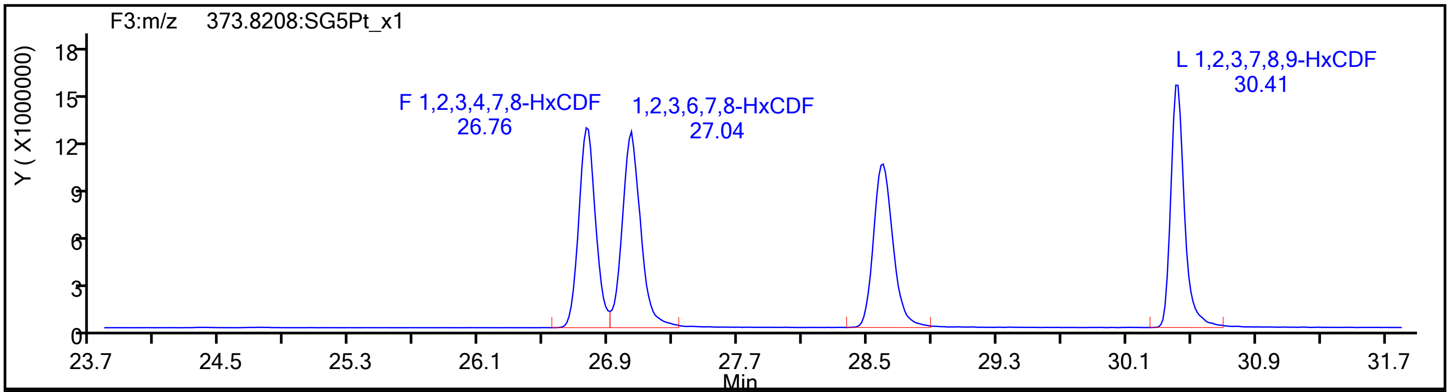

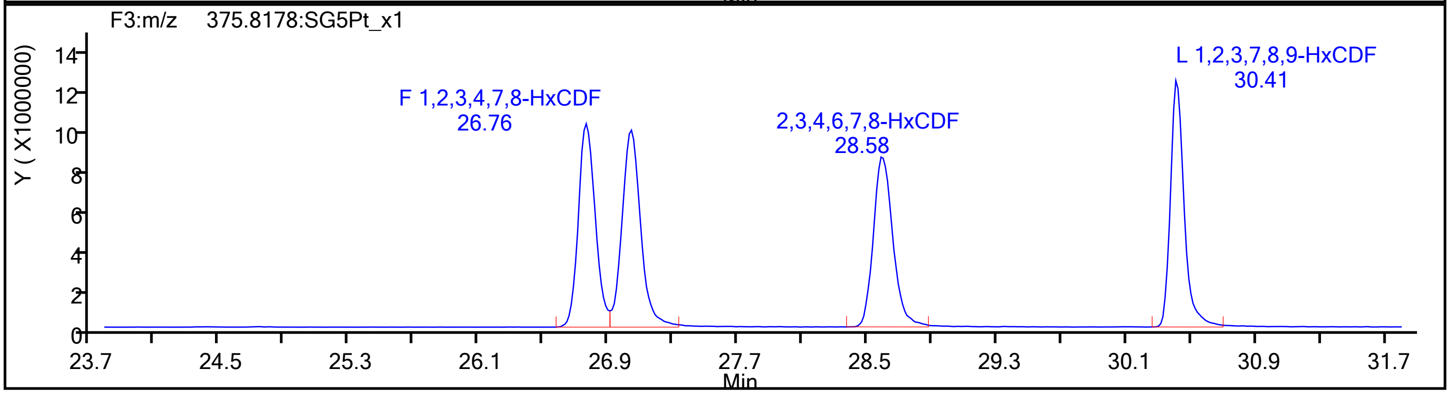

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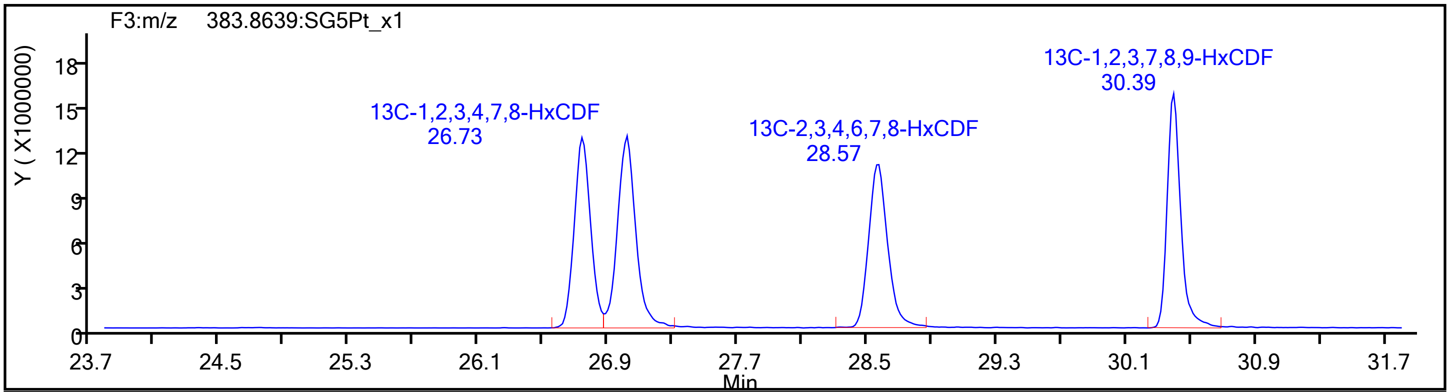

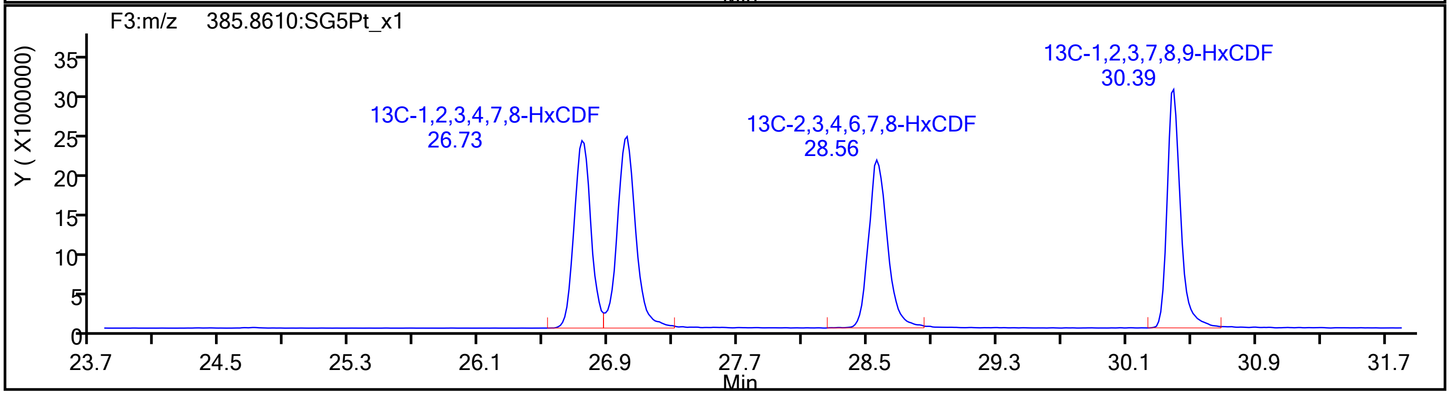

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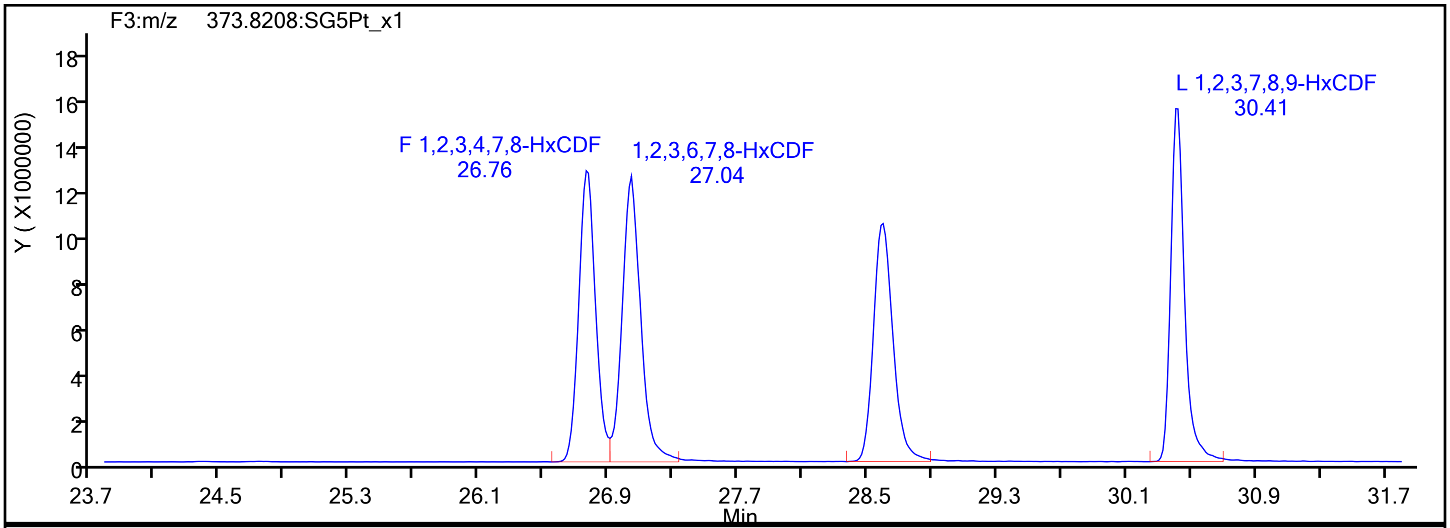

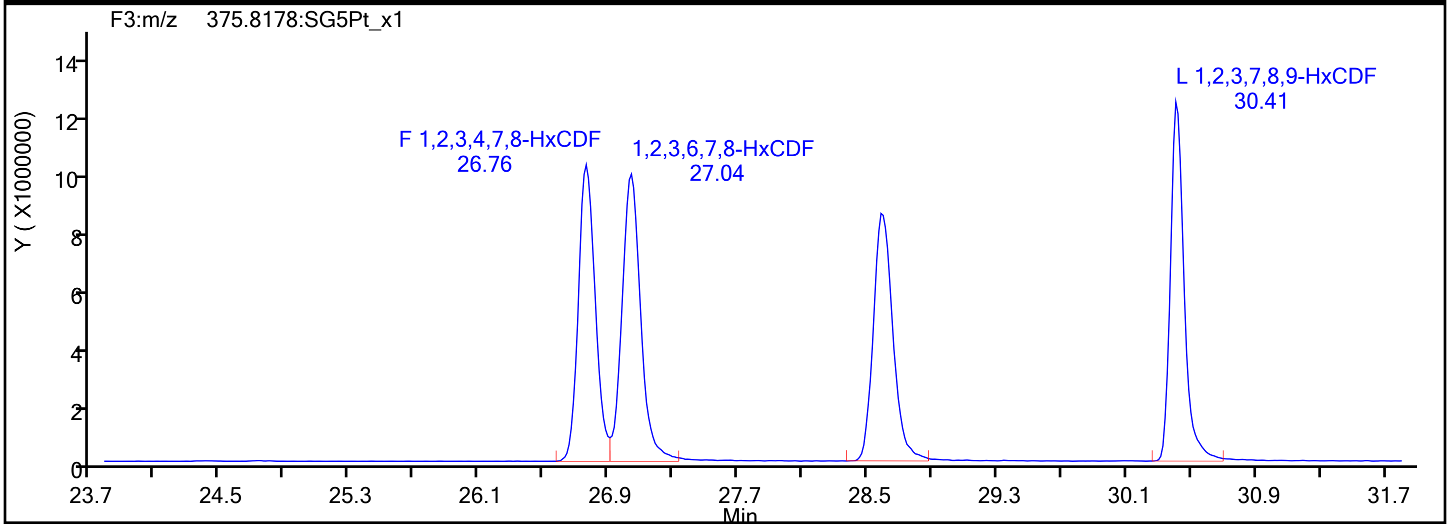

HxCDF Interference Mass

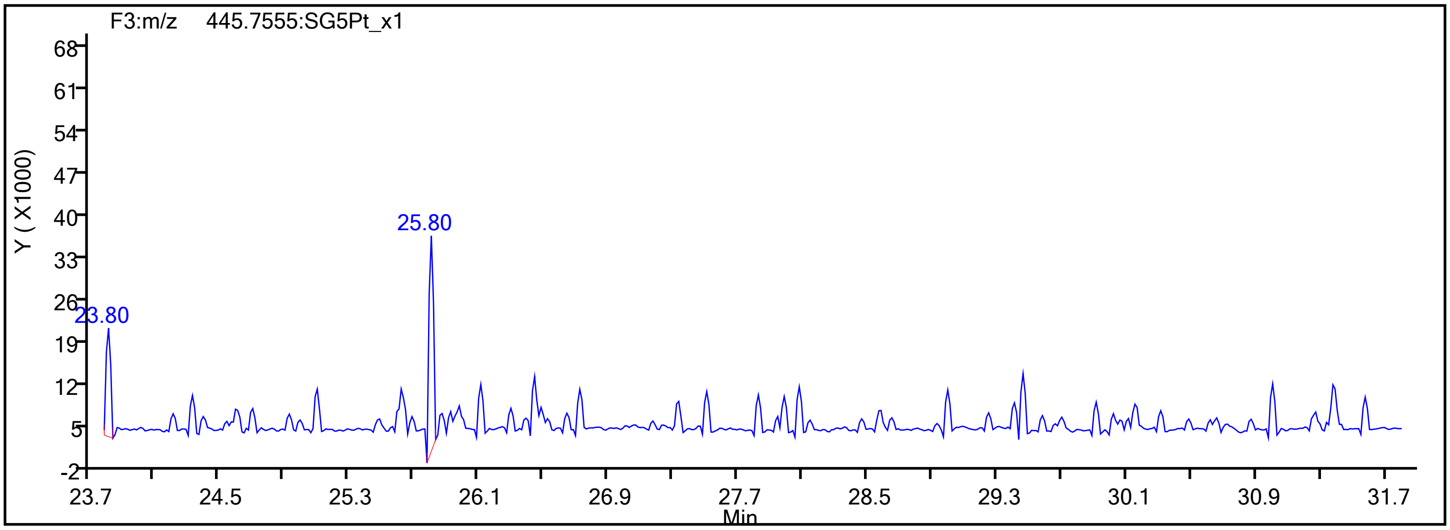

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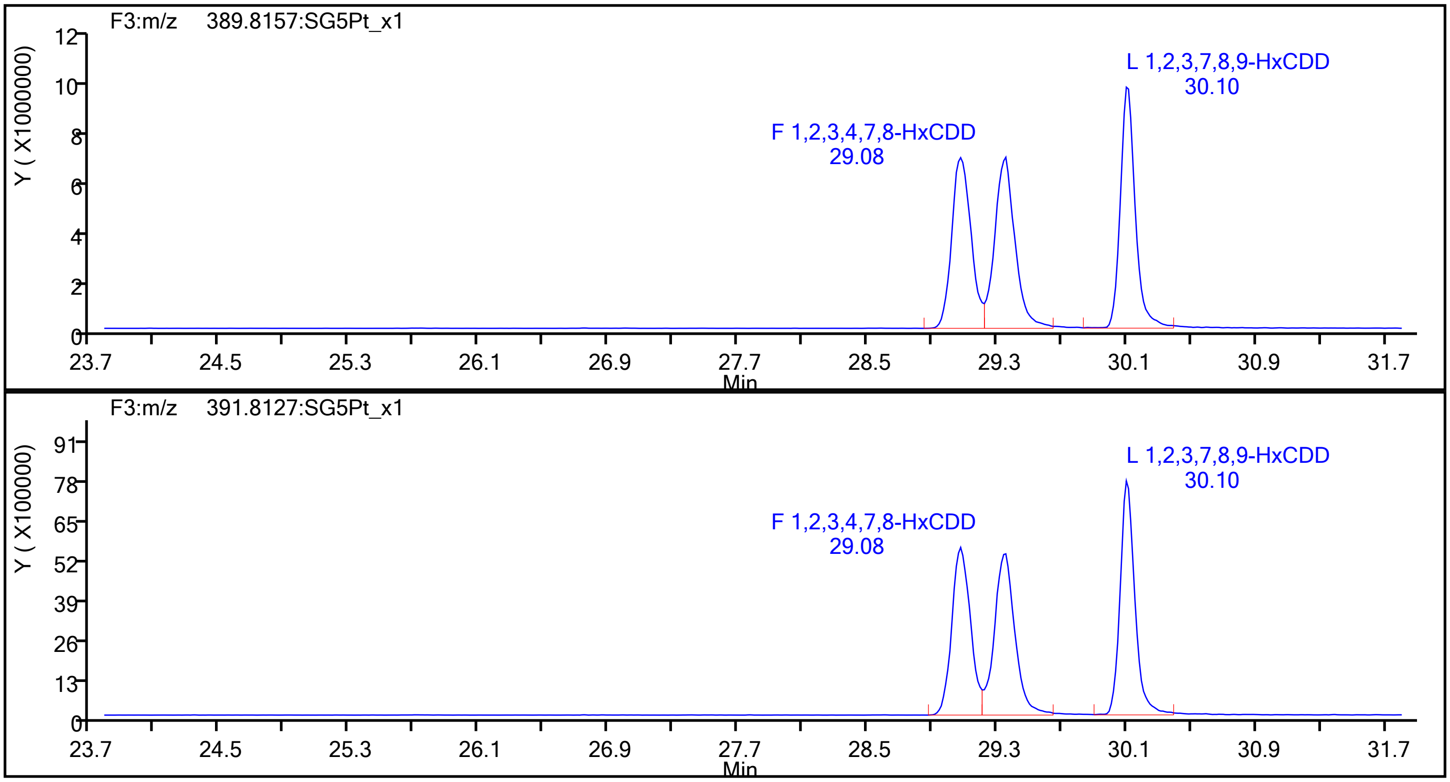

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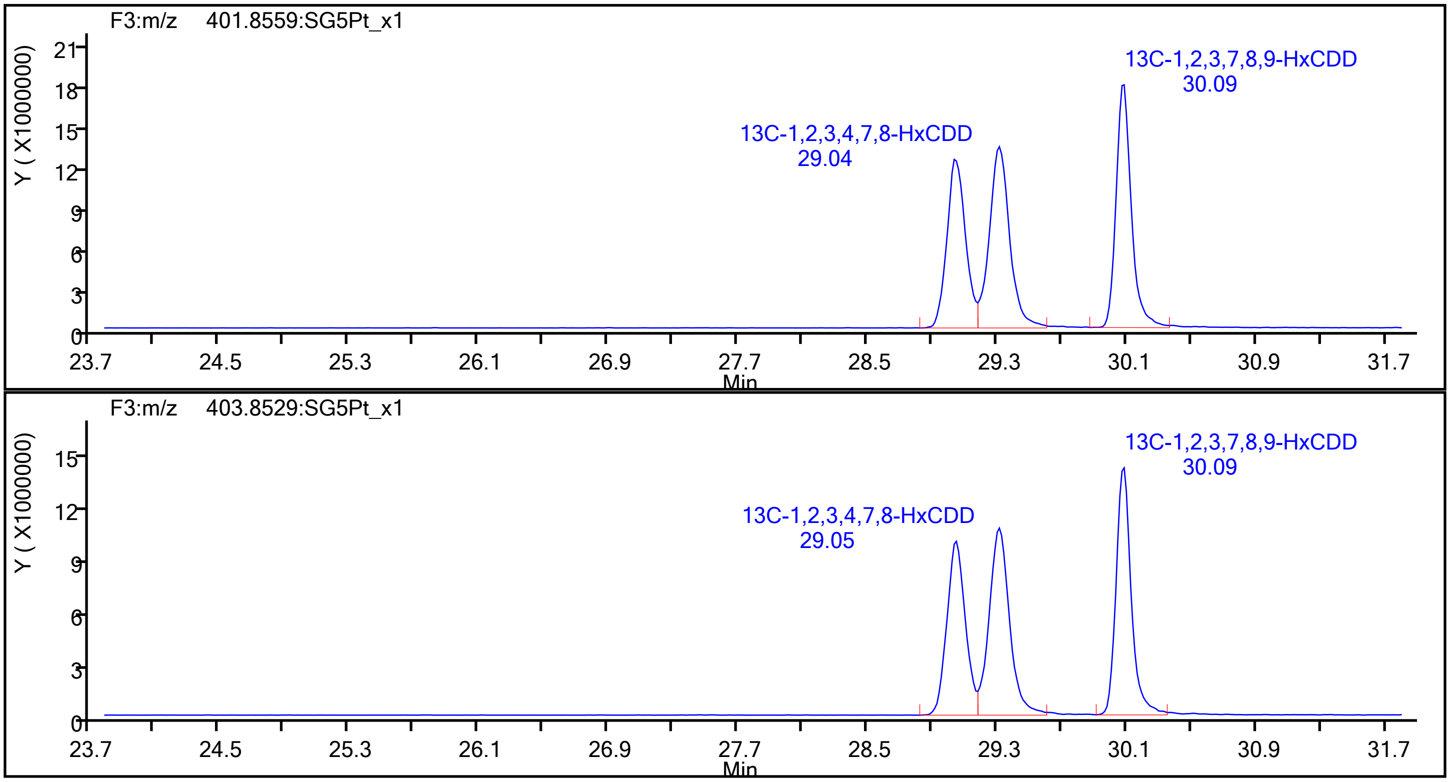

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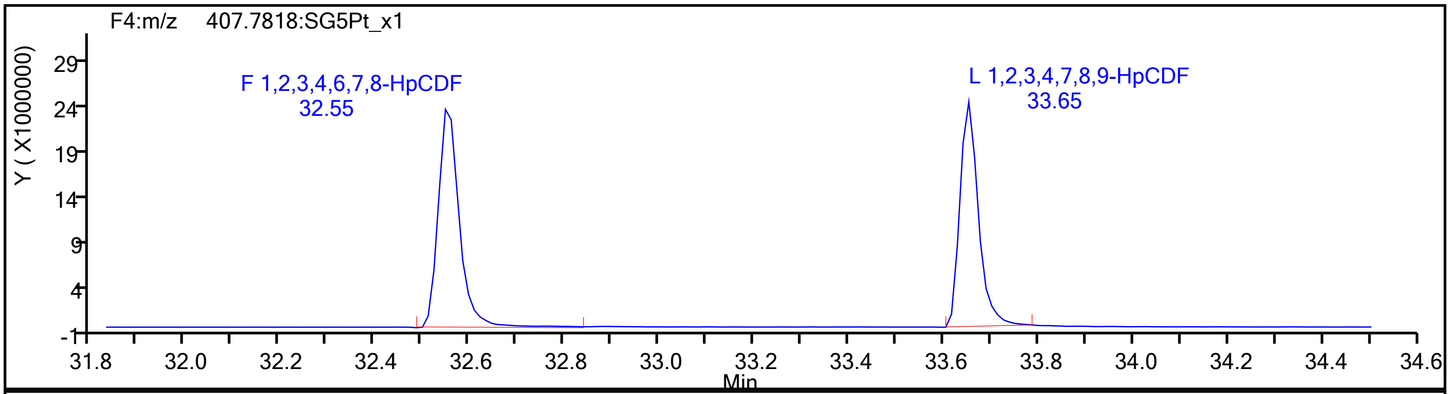

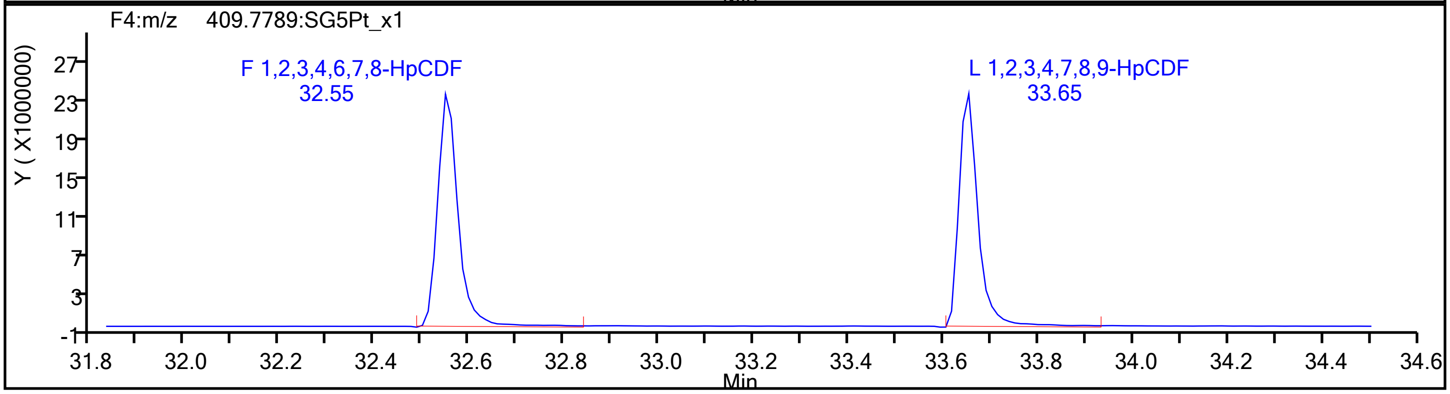

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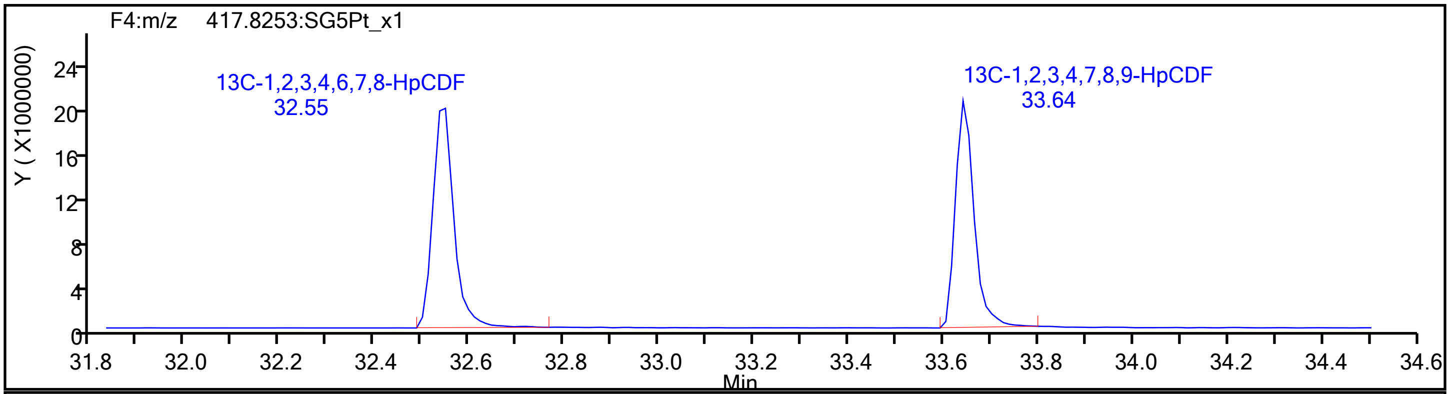

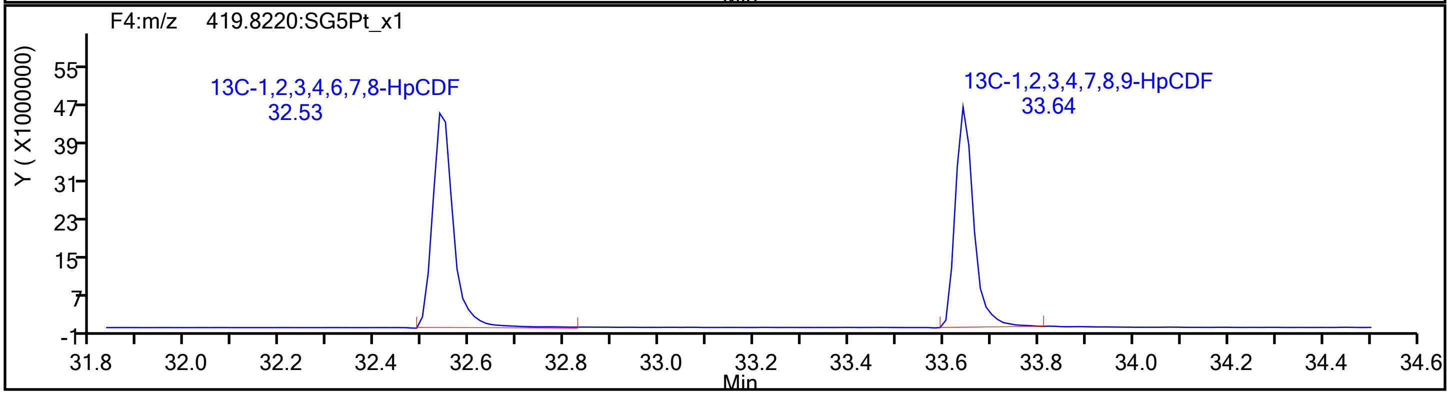

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Eurofins TestAmerica, Sacramento

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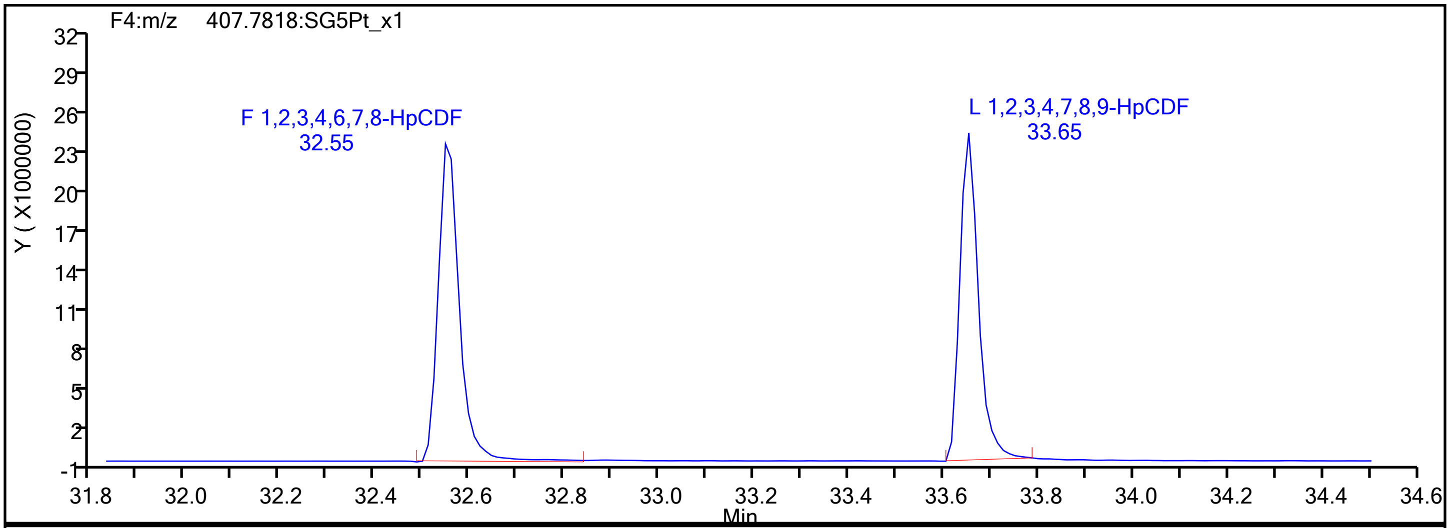

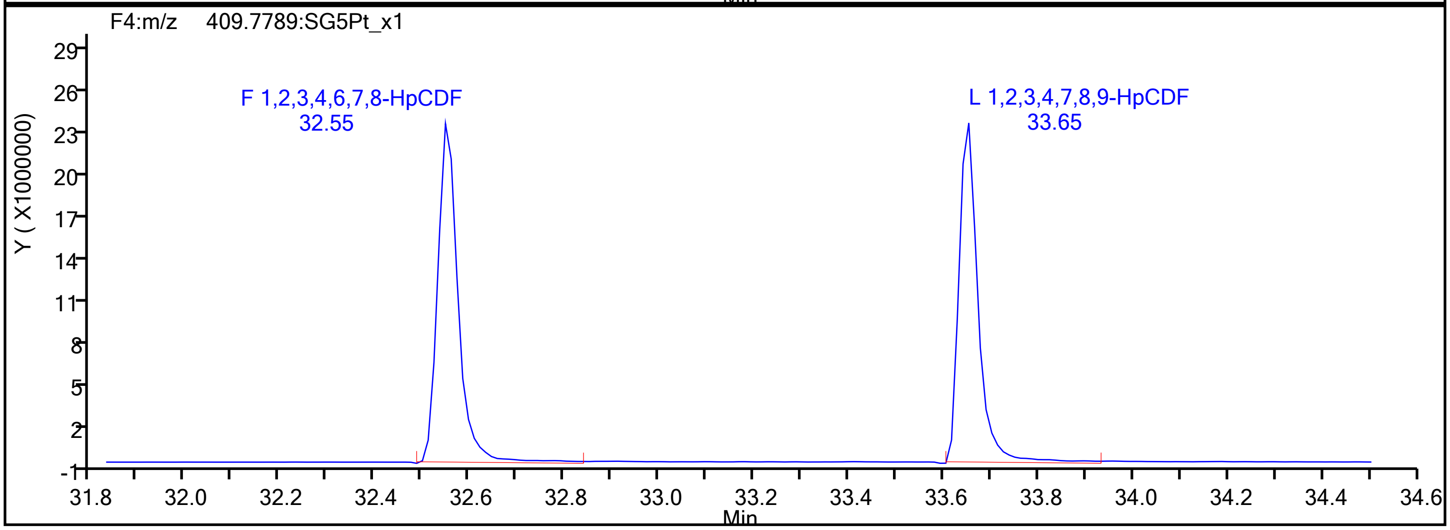

HpCDF Interference Mass

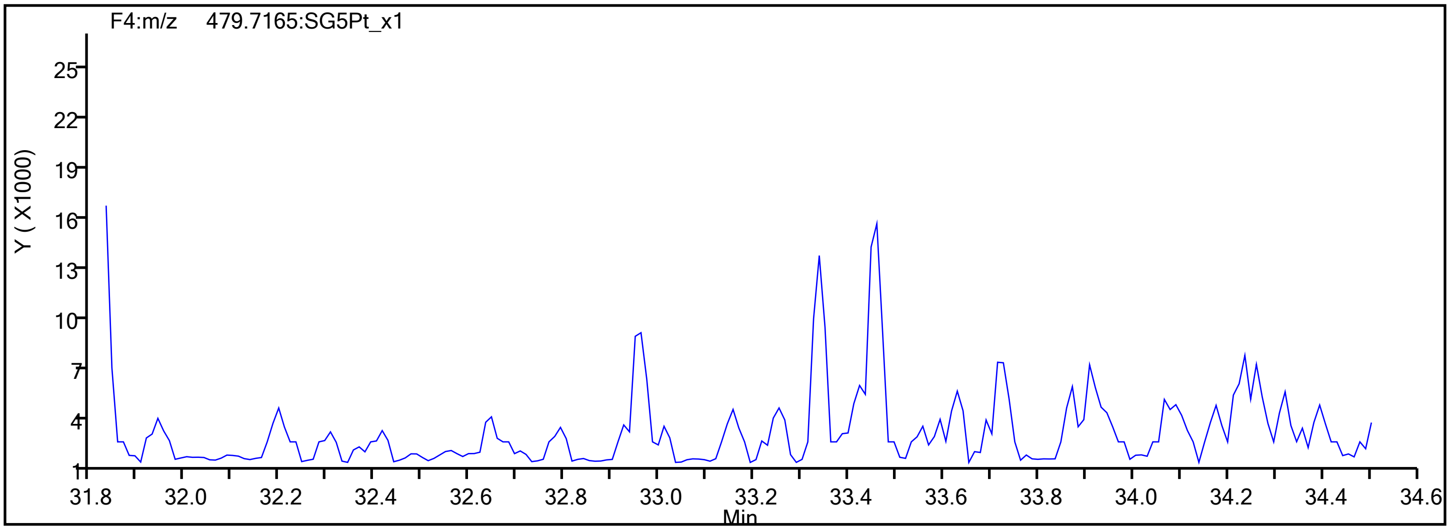

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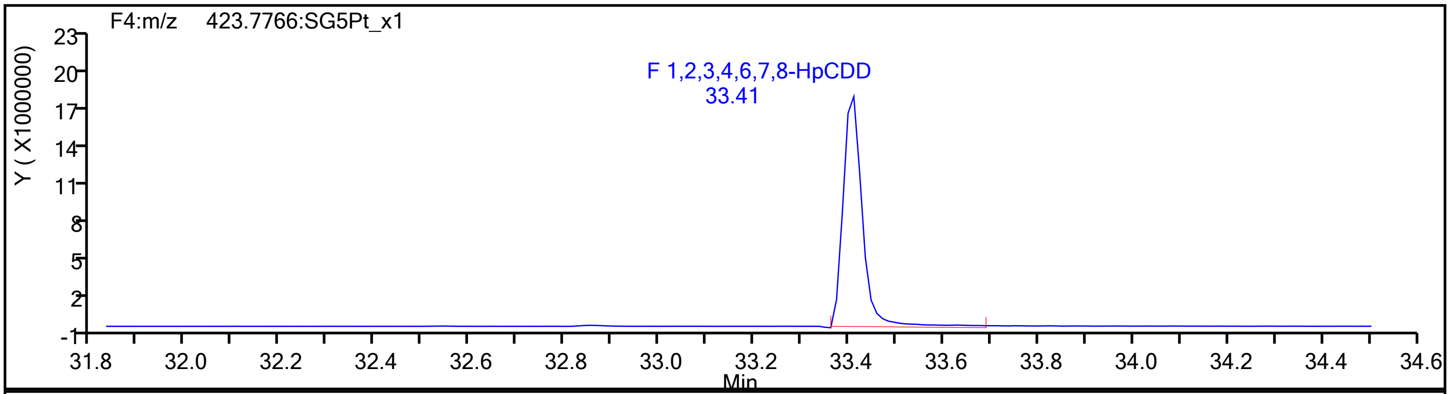

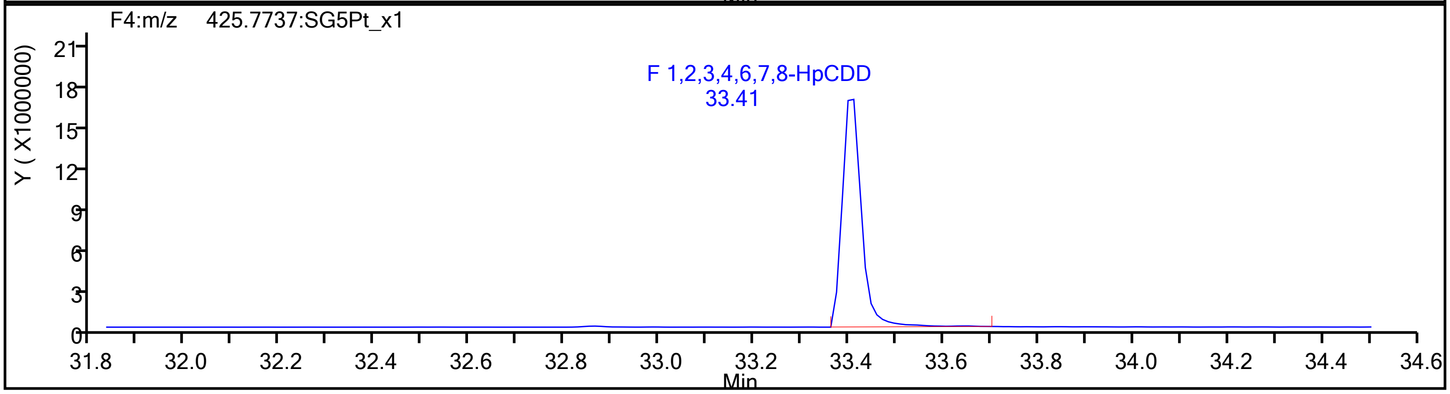

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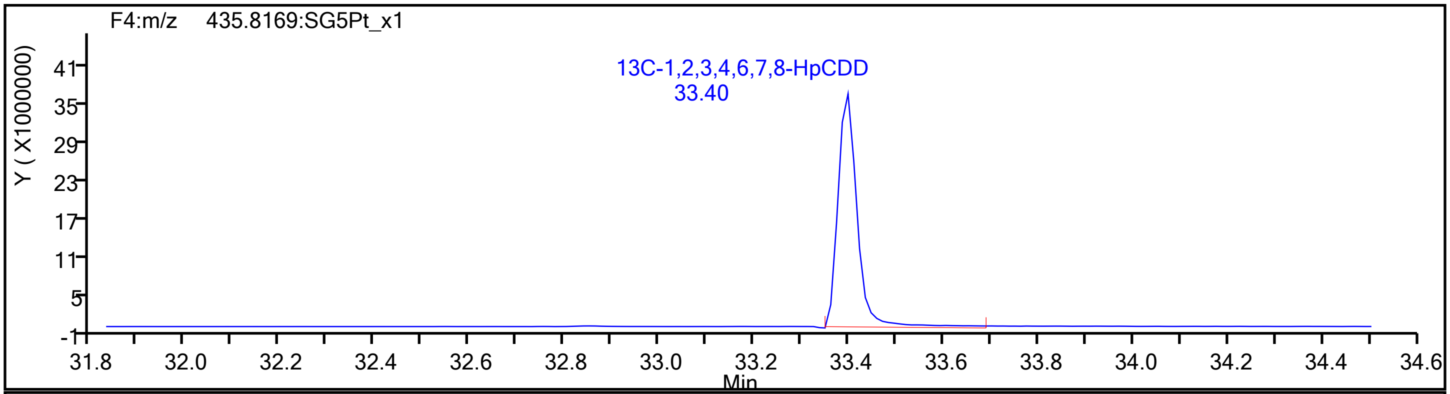

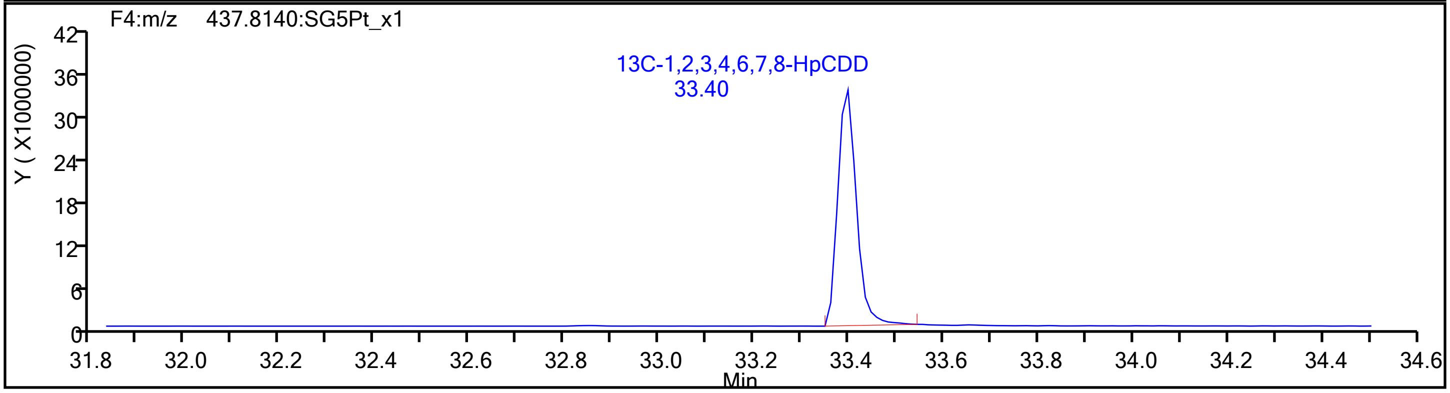

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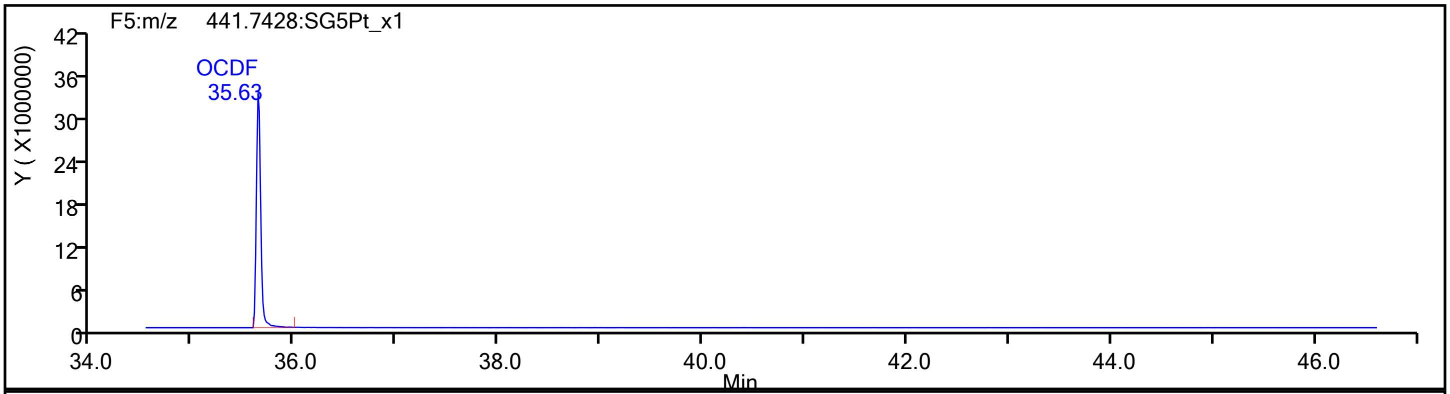

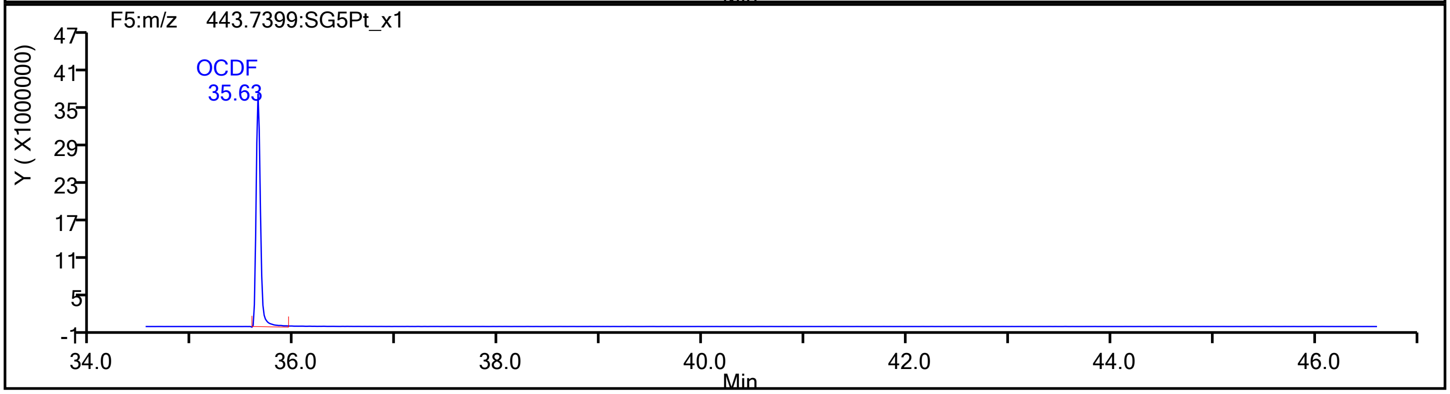

OCDF Standards

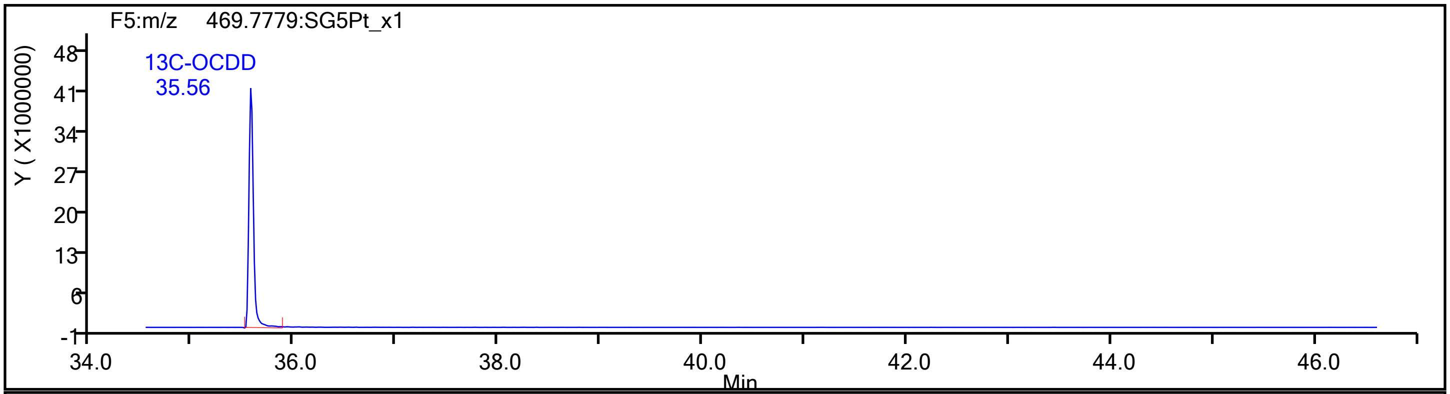

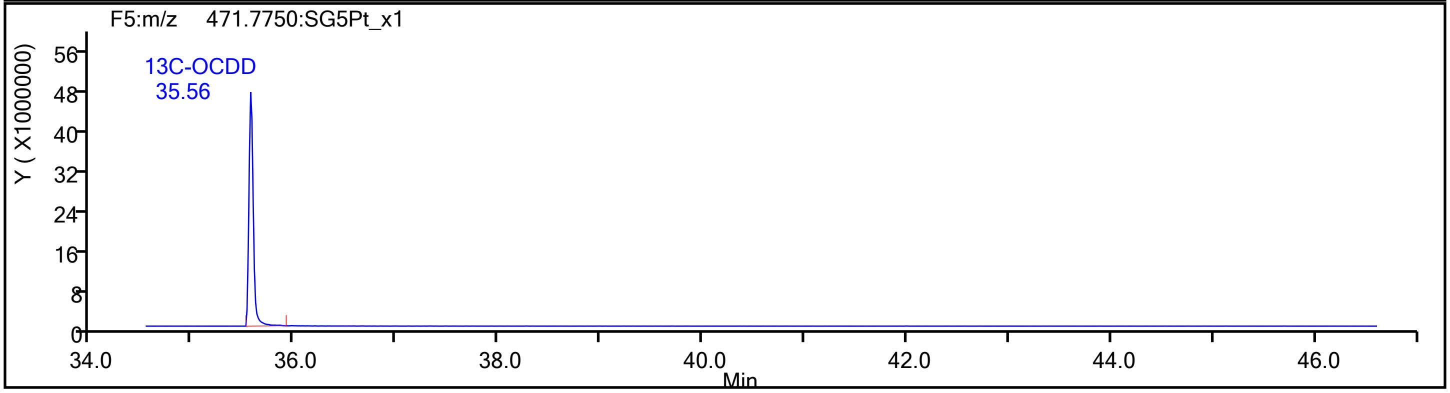

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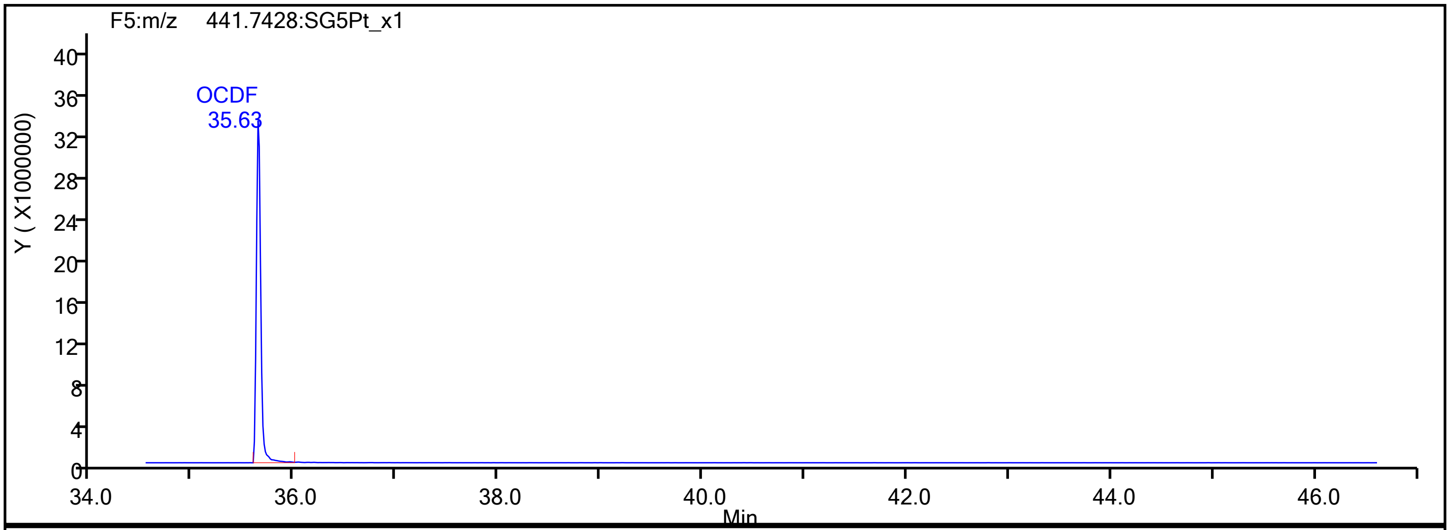

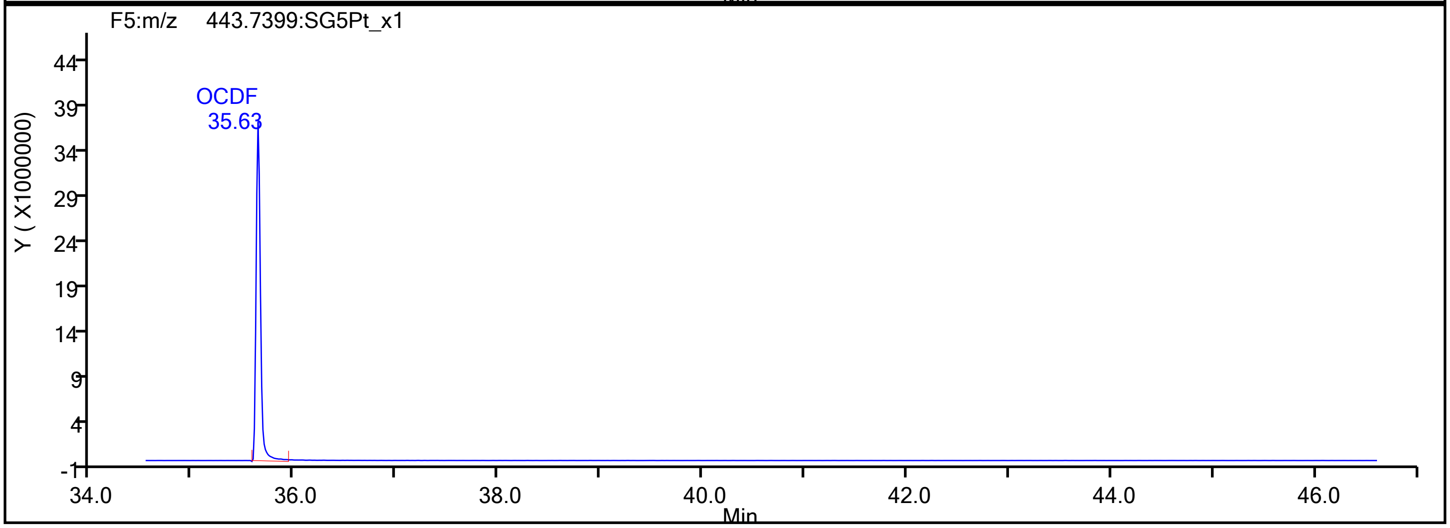

OCDF Interference Mass

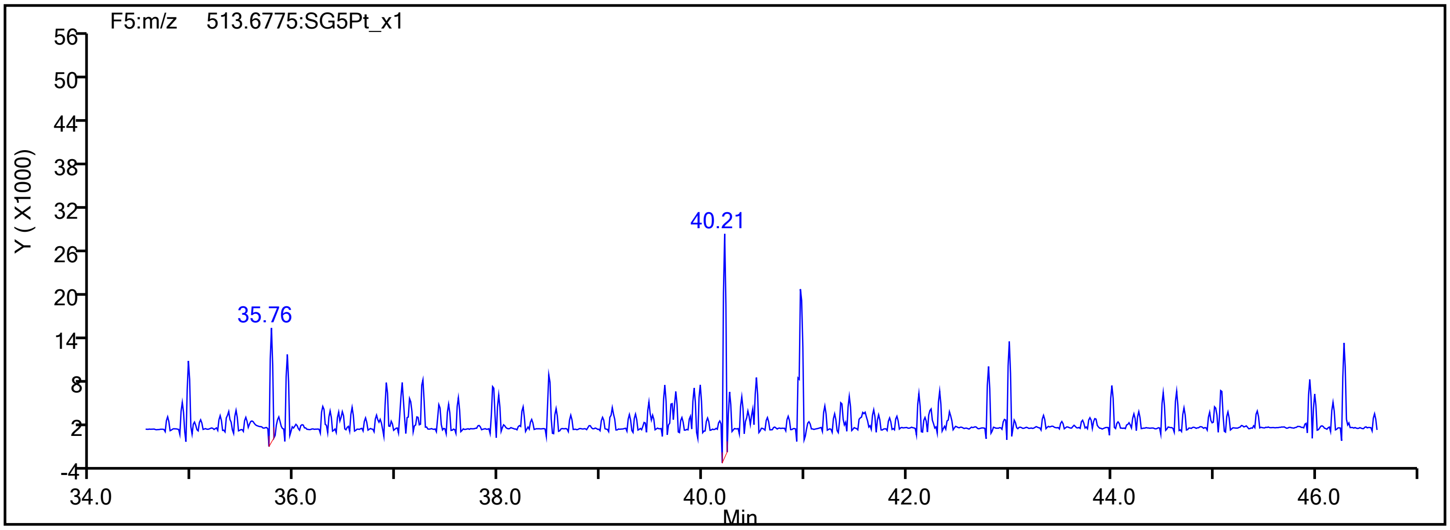

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d		
Injection Date:	09-Oct-2020 01:52:52	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	9
Column Type:		Column Dia:	

OCDD

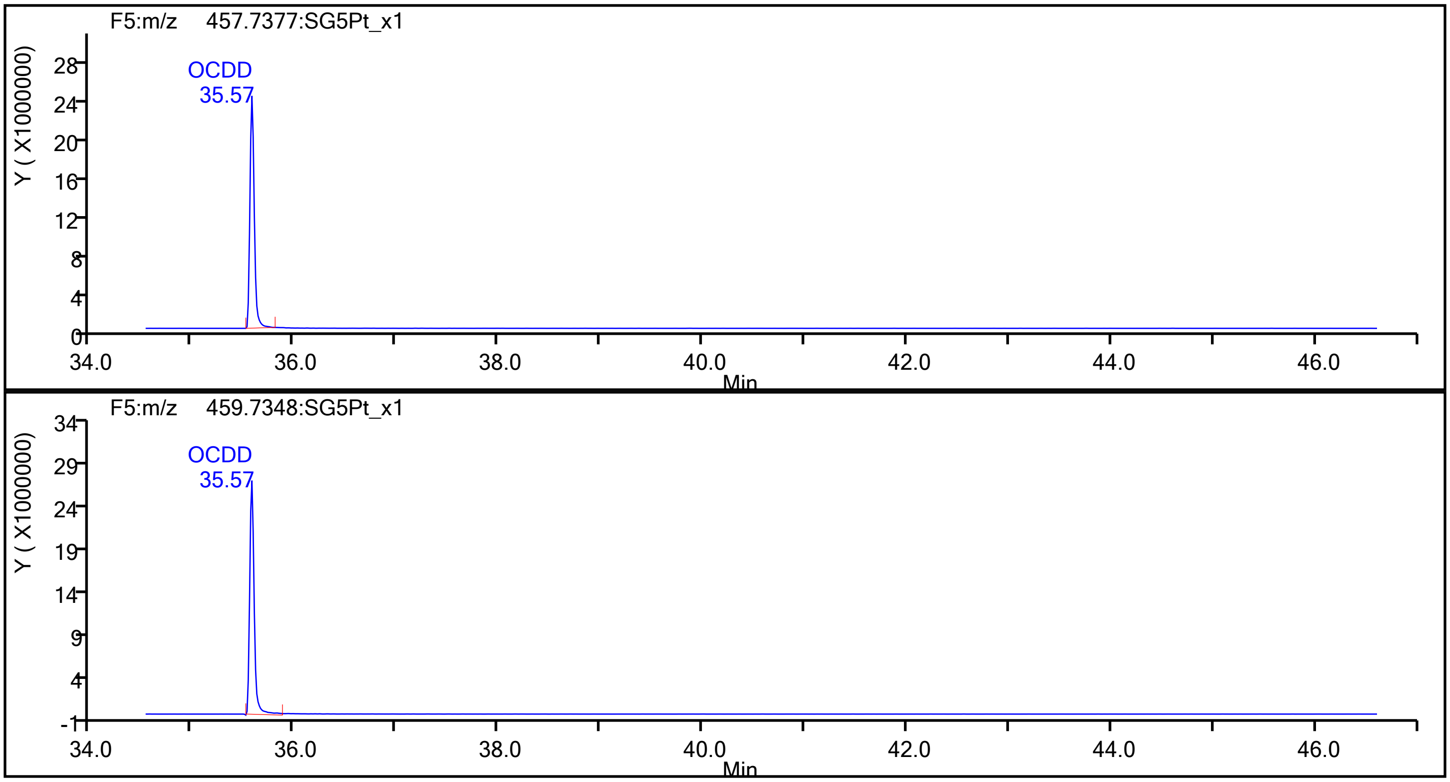

OCDD Standards

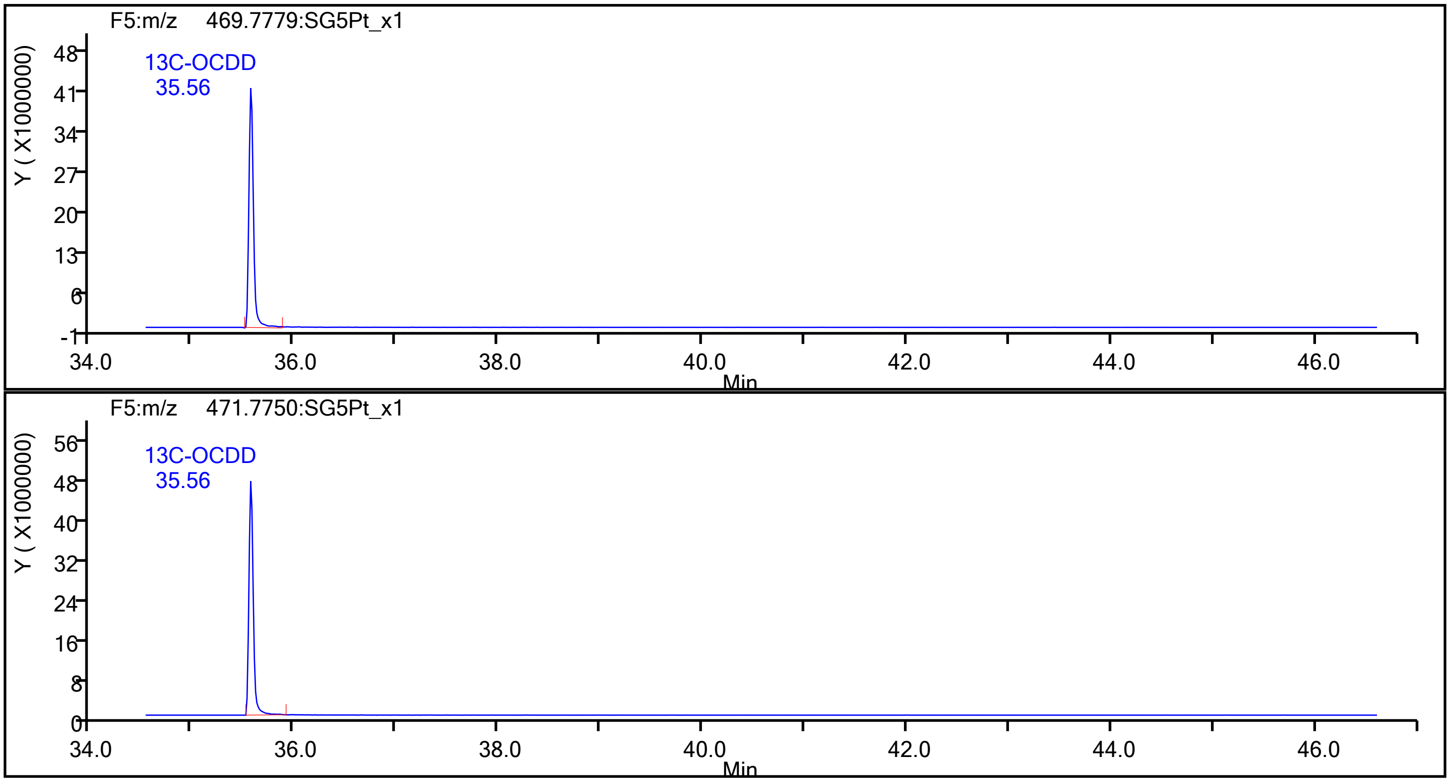

Report Date: 12-Oct-2020 18:04:31　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d

Injection Date: 09-Oct-2020 01:52:52　Injection Vol: 2.0 ul

Instrument ID: 3D5　Operator ID: ALM

Method: Dioxin_3D5　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420482　Sample Line#: 9

Column Type:　Column Dia:

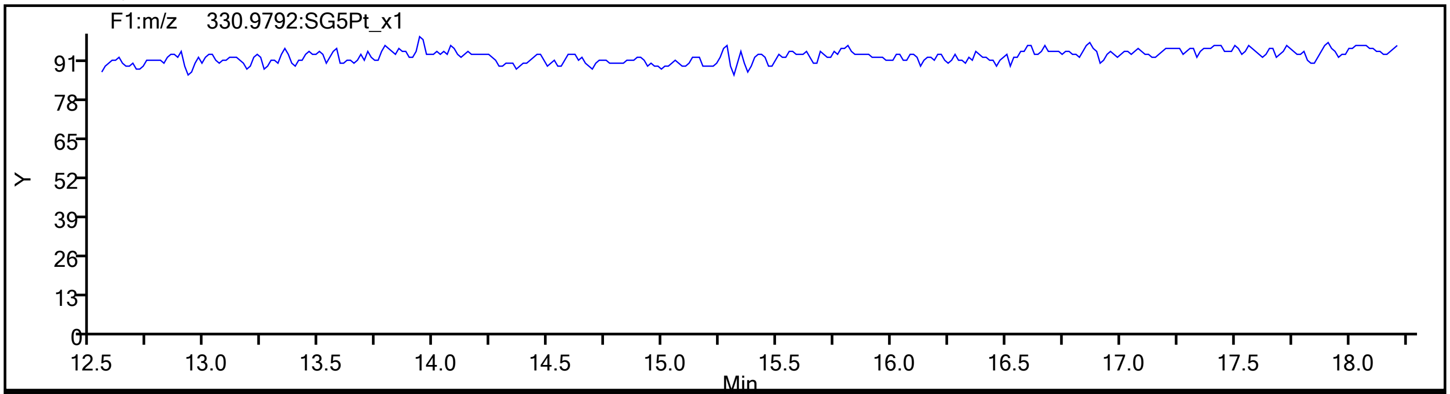

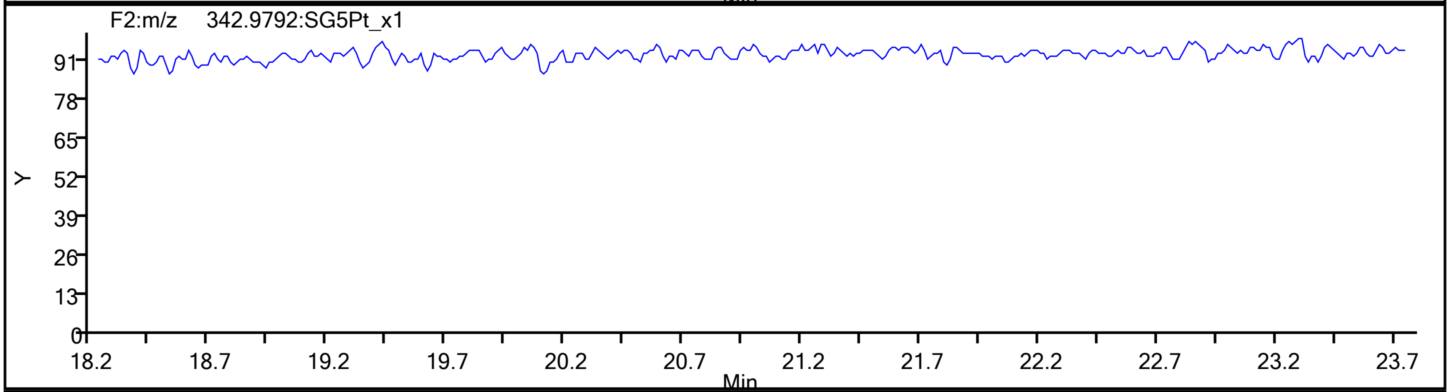

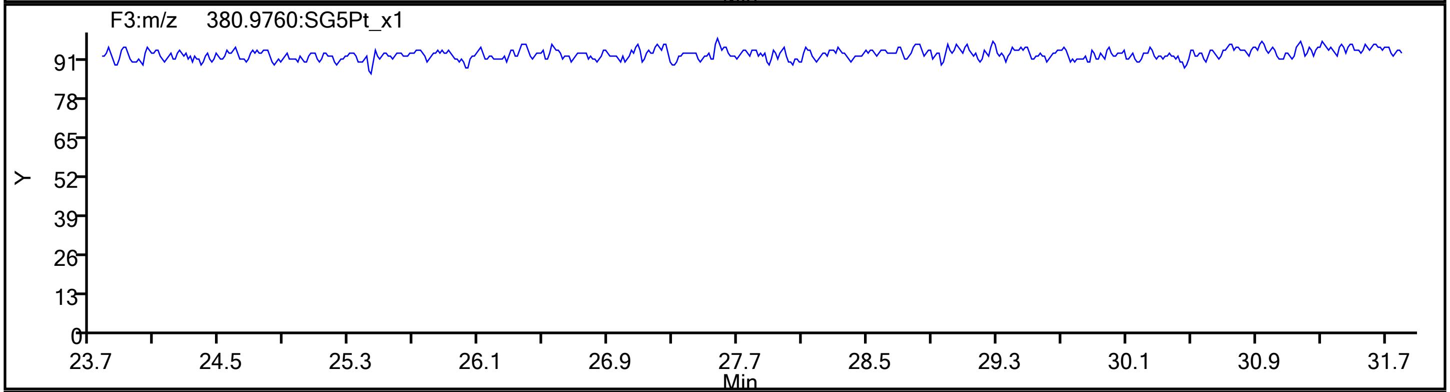

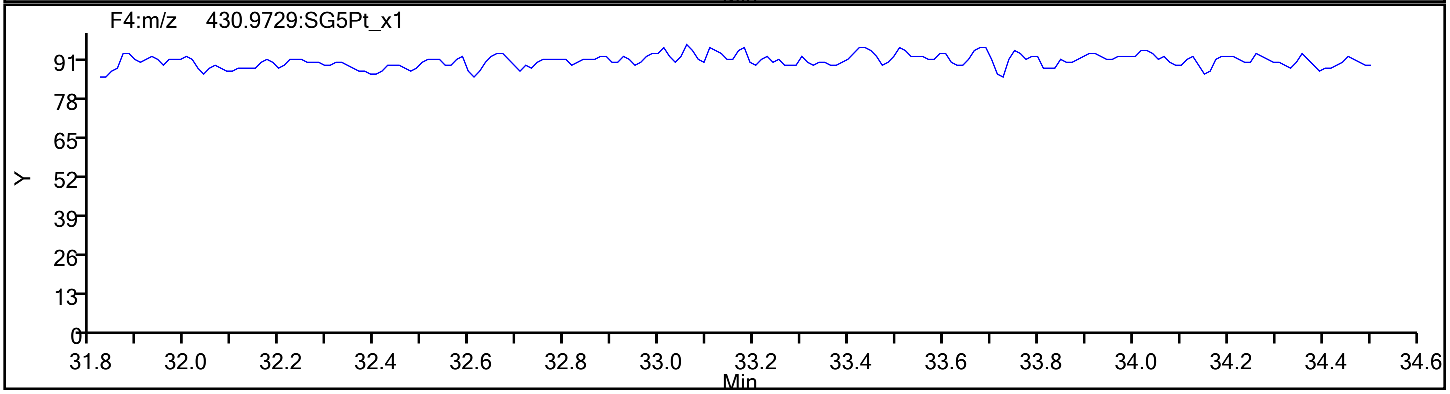

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_9.d
Injection Date: 09-Oct-2020 01:52:52 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: ALM
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420482 Sample Line#: 9
Column Type: Column Dia:

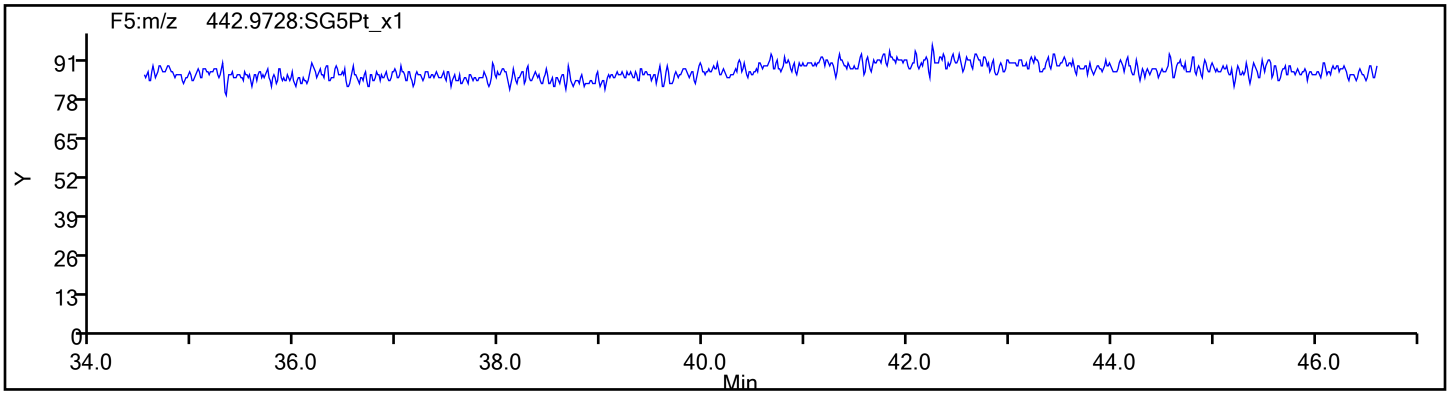

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-420483/2 Calibration Date: 10/09/2020 13:52

Instrument ID: 3D5 Calib Start Date: 10/05/2020 17:35

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/05/2020 20:45

Lab File ID: 09OC203D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9534	1.064		11.2	10.0	112	84-120
2,3,7,8-TCDD	AveID	1.020	1.058		10.4	10.0	104	78-129
1,2,3,7,8-PeCDF	AveID	1.079	1.040		48.2	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	1.097	1.081		49.3	50.0	99	82-122
1,2,3,7,8-PeCDD	AveID	1.140	1.039		45.6	50.0	91	78-130
1,2,3,4,7,8-HxCDF	AveID	1.255	1.251		49.8	50.0	100	90-112
1,2,3,6,7,8-HxCDF	AveID	1.210	1.226		50.7	50.0	101	88-114
2,3,4,6,7,8-HxCDF	AveID	1.218	1.216		49.9	50.0	100	88-114
1,2,3,4,7,8-HxCDD	AveID	1.254	1.159		46.2	50.0	92	78-128
1,2,3,6,7,8-HxCDD	AveID	1.112	1.046		47.1	50.0	94	78-128
1,2,3,7,8,9-HxCDD	AveID	1.285	1.247		48.5	50.0	97	82-122
1,2,3,7,8,9-HxCDF	AveID	1.232	1.242		50.4	50.0	101	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.478	1.445		48.9	50.0	98	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.086	0.9823		45.2	50.0	90	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.378	1.394		50.6	50.0	101	86-116
OCDD	AveID	1.258	1.155		91.8	100	92	79-126
OCDF	AveID	1.725	1.617		93.8	100	94	63-159
13C-2,3,7,8-TCDF	Ave	1.484	1.572		106	100	106	71-140
13C-2,3,7,8-TCDD	Ave	1.087	1.081		99.4	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.394	1.248		89.5	100	90	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.337	1.105		82.7	100	83	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8475	0.8622		102	100	102	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.306	1.272		97.4	100	97	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.421	1.338		94.2	100	94	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.314	1.258		95.7	100	96	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8660	0.7849		90.6	100	91	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.9827	0.9182		93.4	100	93	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.320	1.173		88.8	100	89	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9410	0.9410		100	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9049	0.8957		99.0	100	99	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.8751	0.8459		96.7	100	97	77-129
13C-OCDD	Ave	0.5783	0.6325		219	200	109	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.122	1.104		9.84	10.0	98	79-127

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\09OC203D5.SPL Page 1 of 8
Last Modified: Saturday, October 10, 2020 17:04:41 Pacific Daylight Time
Printed: Saturday, October 10, 2020 17:04:45 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	09OC203D5_1	WDM HRDXNCP_00042	WDM 100920C	Tray1:33	DXN	
2	09OC203D5_2	CCV HRDXNL4_00095	CCV 100920	Tray1:2	8290/1613B	
3	09OC203D5_3	SB Solvent Blank C-14	SB 100920	Tray1:3		
4	09OC203D5_4	320-65130-A-11-A	320-65130-A-11-A	Tray1:4	1613B/Water	D185
5	09OC203D5_5	320-65130-A-12-A	320-65130-A-12-A	Tray1:5	1613B/Water	
6	09OC203D5_6	320-65130-A-13-A	320-65130-A-13-A	Tray1:6	1613B/Water	
7	09OC203D5_7	320-64887-A-7-A	320-64887-A-7-A	Tray1:7	1613B/Solid	D183
8	09OC203D5_8	320-64887-A-8-A	320-64887-A-8-A	Tray1:8	1613B/Solid	
9	09OC203D5_9	320-64887-A-9-A	320-64887-A-9-A	Tray1:9	1613B/Solid	
10	09OC203D5_10	320-64887-A-10-A	320-64887-A-10-A	Tray1:10	1613B/Solid	
11	09OC203D5_11	320-64887-A-11-A	320-64887-A-11-A	Tray1:11	1613B/Solid	---
12	09OC203D5_12	SB Solvent Blank C-14	SB 100920A	Tray1:3		
13	09OC203D5_13	WDM HRDXNCP_00042	WDM 100920A	Tray1:1	DXN	
14	09OC203D5_14	CCV HRDXNL4_00095	CCV 100920A	Tray1:2	8290/1613B	
15	09OC203D5_15	SB Solvent Blank C-14	SB 100920B	Tray1:3		
16	09OC203D5_16	QC 100720-4 TO9 PUF	QC 100720-4 TO9 PUF	Tray1:12	TO9	85
17	09OC203D5_17	MB 320-419524/1-A	MB 320-419524/1-A	Tray1:13	1613B/Water	D187
18	09OC203D5_18	LCS 320-419524/2-A	LCS 320-419524/2-A	Tray1:14	1613B/Water	
19	09OC203D5_19	LCSD 320-419524/3-A	LCSD 320-419524/3-A	Tray1:15	1613B/Water	
20	09OC203D5_20	280-141077-A-2-A	280-141077-A-2-A	Tray1:16	1613B/Water	---
21	09OC203D5_21	SB Solvent Blank C-14	SB 100920C	Tray1:3		
22	09OC203D5_22	WDM HRDXNCP_00042	WDM 100920B	Tray1:1	DXN	
23	09OC203D5_23	CCV HRDXNL4_00095	CCV 100920B	Tray1:2	8290/1613B	
24	09OC203D5_24	SB Solvent Blank C-14	SB 100920D	Tray1:3		
25	09OC203D5_25	MB 320-419525/1-A	MB 320-419525/1-A	Tray1:17	8290A/Water	D187
26	09OC203D5_26	LCS 320-419525/2-A	LCS 320-419525/2-A	Tray1:18	8290A/Water	
27	09OC203D5_27	LCSD 320-419525/3-A	LCSD 320-419525/3-A	Tray1:19	8290A/Water	
28	09OC203D5_28	180-111697-A-3-A	180-111697-A-3-A	Tray1:20	8290A/Water	
29	09OC203D5_29	180-111697-A-8-A	180-111697-A-8-A	Tray1:21	8290A/Water	---
30	09OC203D5_30	180-111805-A-11-A	180-111805-A-11-A	Tray1:22	8290A/Water	
31	09OC203D5_31	180-111805-A-12-A	180-111805-A-12-A	Tray1:23	8290A/Water	
32	09OC203D5_32	180-111805-B-13-A	180-111805-B-13-A	Tray1:24	8290A/Water	---
33	09OC203D5_33	SB Solvent Blank C-14	SB 100920E	Tray1:3		
34	09OC203D5_34	CCV HRDXNL4_00095	CCV 100920C	Tray1:2	8290/1613B	
35	09OC203D5_35	WDM HRDXNCP_00042	WDM 100920B	Tray1:1	DXN	
36	09OC203D5_36	SB Solvent Blank C-14	SB 100920F	Tray1:3		
37	09OC203D5_37	mb 320-419079/1-a	mb 320-419079/1-a	Tray1:25	1613B/DW	D187
38	09OC203D5_38	lcs 320-419079/2-a	lcs 320-419079/2-a	Tray1:26	1613B/DW	
39	09OC203D5_39	lcsd 320-419079/3-a	lcsd 320-419079/3-a	Tray1:27	1613B/DW	
40	09OC203D5_40	llcs 320-419079/4-a	llcs 320-419079/4-a	Tray1:28	1613B/DW	
41	09OC203D5_41	550-150162-s-1-a	550-150162-s-1-a	Tray1:29	1613B/DW	
42	09OC203D5_42	660-104742-d-1-a	660-104742-d-1-a	Tray1:30	1613B/DW	
43	09OC203D5_43	660-104751-d-1-a	660-104751-d-1-a	Tray1:31	1613B/DW	
44	09OC203D5_44	660-104752-d-1-a	660-104752-d-1-a	Tray1:32	1613B/DW	---
45	09OC203D5_45	320-64887-A-7-A RI for CO?	320-64887-A-7-A	Tray1:33	1613B/Solid	D183
46	09OC203D5_46	SB Solvent Blank C-14	SB 100920G	Tray1:3		
47	09OC203D5_47	WDM HRDXNCP_00042	WDM 100920D	Tray1:1	DXN	
48	09OC203D5_48	CCV HRDXNL4_00095	CCV 100920D	Tray1:2	8290/1613B	
49	09OC203D5_49	SB Solvent Blank C-14	SB 100920H	Tray1:3		
50	09OC203D5_50	mb 320-414857/1-a	mb 320-414857/1-a	Tray1:34	1613B/DW	D181
51	09OC203D5_51	lcs 320-414857/2-a	lcs 320-414857/2-a	Tray1:35	1613B/DW	
52	09OC203D5_52	lcsd 320-414857/3-a	lcsd 320-414857/3-a	Tray1:36	1613B/DW	
– 53	09OC203D5_53	llcs 320-414857/4-a	llcs 320-414857/4-a	Tray1:37	1613B/DW ← filament failed 10/12/20 KS	
54	09OC203D5_54	550-149264-ah-1-a	550-149264-ah-1-a	Tray1:38	1613B/DW	
55	09OC203D5_55	mb 320-418768/1-a	mb 320-418768/1-a	Tray1:39	1613B/DW	D187
56	09OC203D5_56	lcs 320-418768/2-a	lcs 320-418768/2-a	Tray1:40	1613B/DW	
57	09OC203D5_57	lcsd 320-418768/3-a	lcsd 320-418768/3-a	Tray1:41	1613B/DW	---
58	09OC203D5_58	llcs 320-418768/4-a	llcs 320-418768/4-a	Tray1:42	1613B/DW	---

10-12-20 ALM

logfile checked
10-12-20 ALM

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
59	09OC203D5_59	550-150016-aa-2-a	550-150016-aa-2-a	Tray1:43	1613B/DW	
60	09OC203D5_60	SB Solvent Blank C-14	SB 100920I	Tray1:3		
61	09OC203D5_61	WDM HRDXNCP_00042	WDM 100920E	Tray1:1	DXN	
62	09OC203D5_62	CCV HRDXNL4_00095	CCV 100920E	Tray1:2	8290/1613B	
63	09OC203D5_63	SB Solvent Blank C-14	SB 100920J	Tray1:3		

10-12-20
ALM

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Sample Type	Conc A	Conc B	Conc C
SMA	1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
SMA, ALM	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	10.000000	L	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Sample Type	Conc A	Conc B	Conc C
KSS	10.000000	g	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000	---	Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---
KSS	1.000000		Dioxin3D5	dioxinnogc	2.000000	Analyte	---	---	---

Conc D	Conc E	Conc F	Conc G	Process	Process Options	Action On Error
---	---	---	---	FBAT_ML_FileMover	---	---
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---	---	---	---	FBAT_ML_FileMover	---	---
---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	---	FBAT_ML_FileMover	---	---
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---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	---	FBAT_ML_FileMover	---	---
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---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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---	---	---	---	FBAT_ML_FileMover	---	---
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---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error

Conc D	Conc E	Conc F	Conc G	Process	Process Options	Action On Error
---	---	---	---	FBAT_ML_FileMover	---	---
---	---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	---	---	FBAT_ML_FileMover	---	---
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Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Friday, October 09, 2020 12:59:07 Pacific Daylight Time

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M 292.9824 R 12754

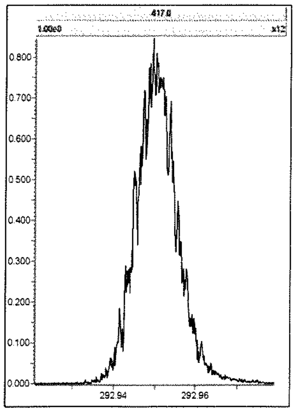

M 304.9824 R 13437

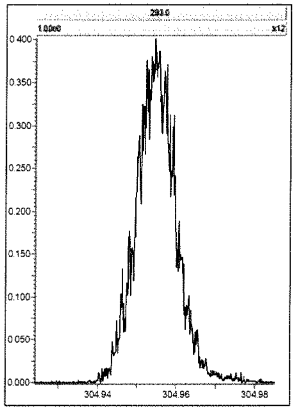

M 318.9792 R 14281

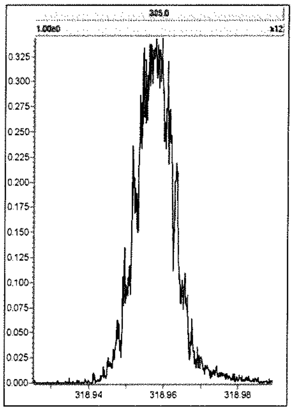

M 330.9792 R 14450

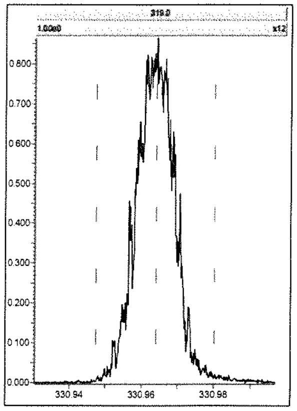

M 342.9792 R 14710

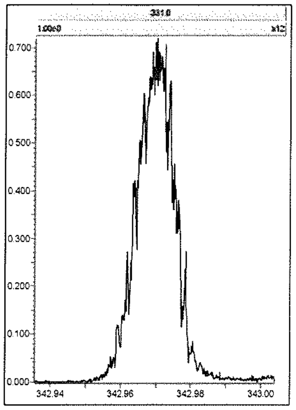

M 354.9792 R 14972

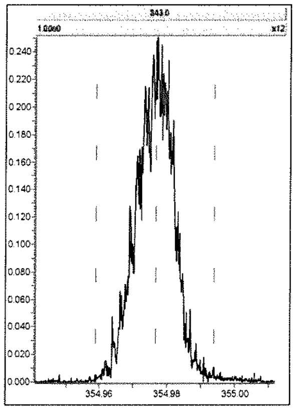

M 366.9792 R 14368

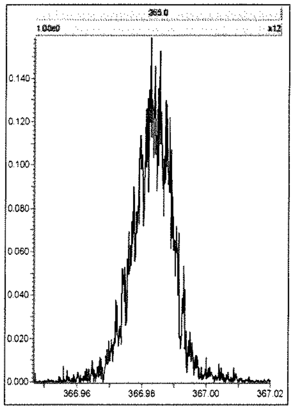

M 380.9760 R 14044

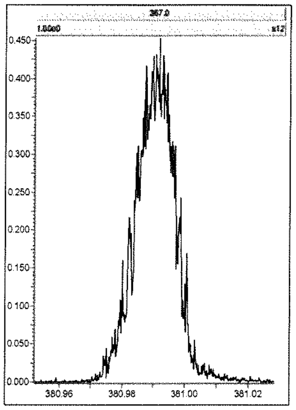

M 392.9760 R 14709

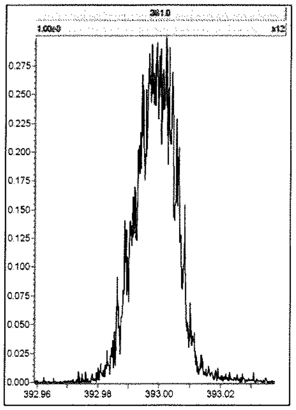

M 404.9760 R 14120

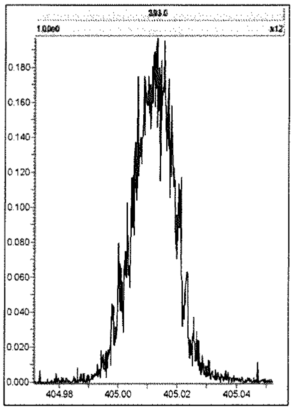

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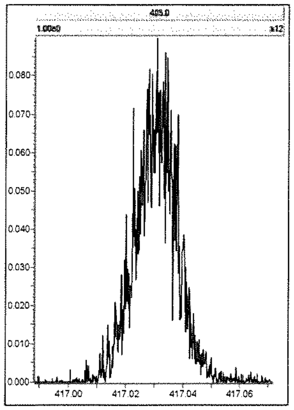

File:	Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)
Printed:	Friday, October 09, 2020 12:59:37 Pacific Daylight Time

M 318.9792 R 12757

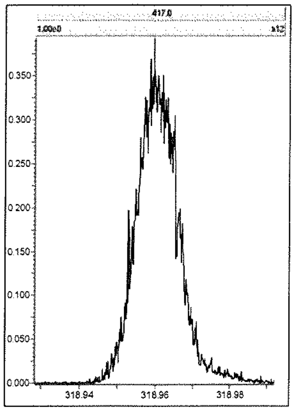

M 330.9792 R 12953

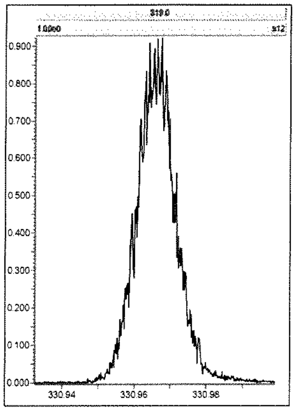

M 342.9792 R 12818

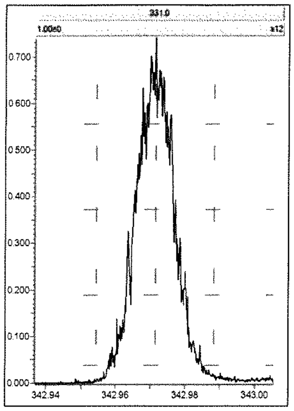

M 354.9792 R 13365

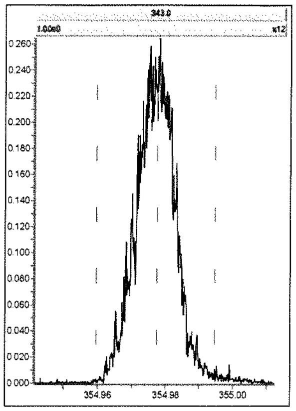

M 366.9792 R 13158

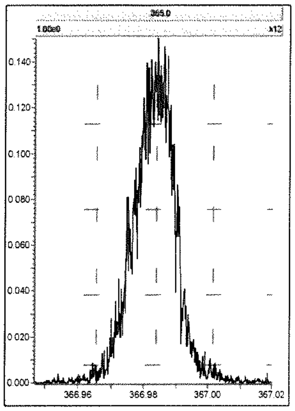

M 380.9760 R 14203

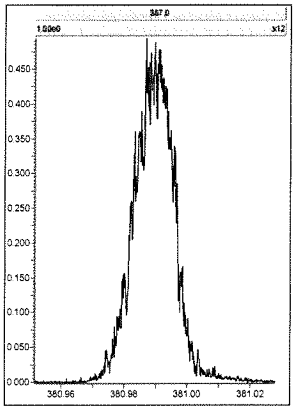

M 392.9760 R 13733

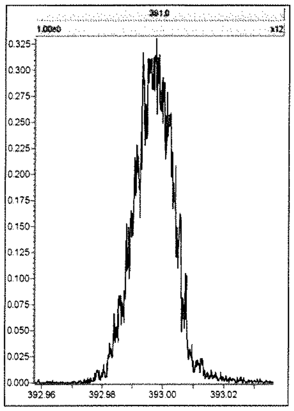

M 404.9760 R 13017

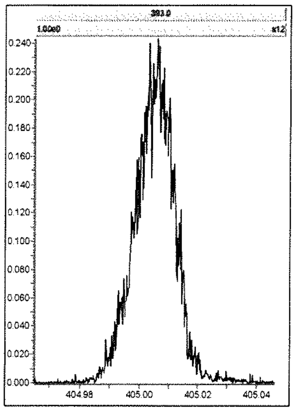

M 416.9760 R 13888

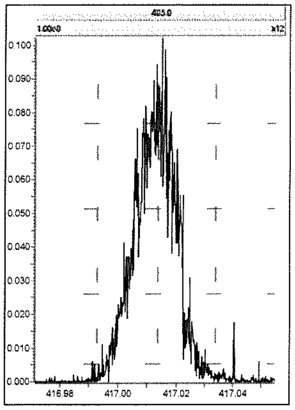

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Friday, October 09, 2020 13:00:24 Pacific Daylight Time

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M 366.9792 R 12500

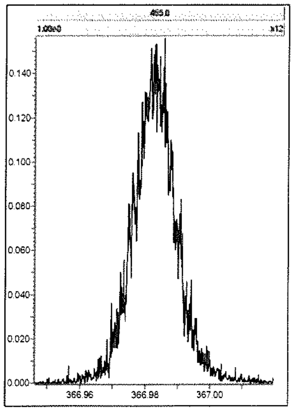

M 380.9760 R 12441

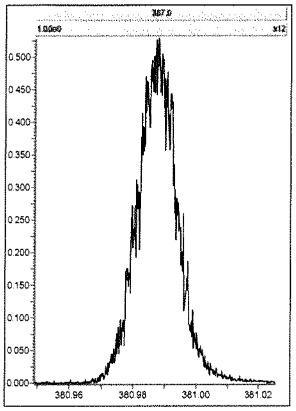

M 392.9760 R 13091

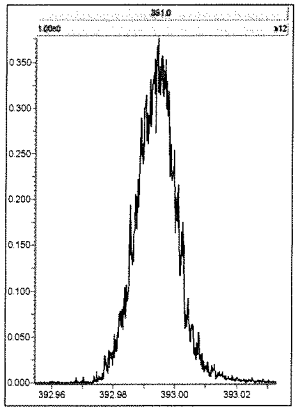

M 404.9760 R 12954

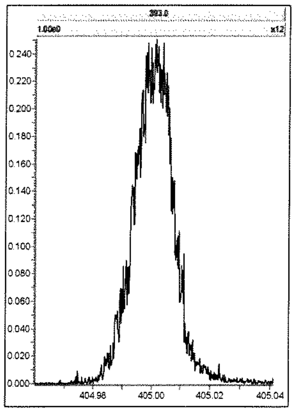

M 416.9760 R 13811

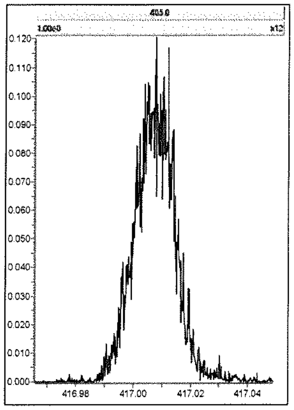

M 430.9728 R 13439

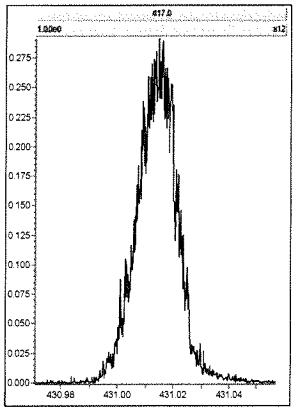

M 442.9728 R 13155

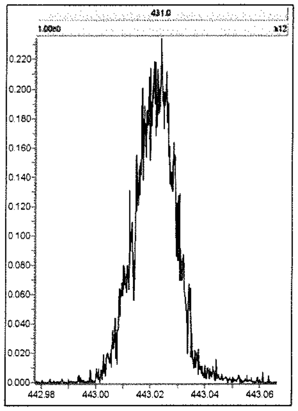

M 454.9728 R 13513

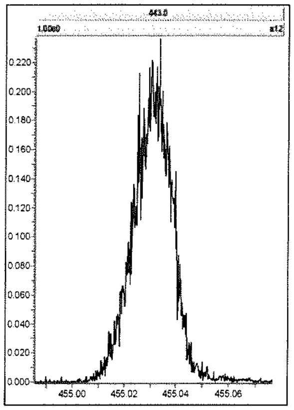

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Friday, October 09, 2020 13:01:11 Pacific Daylight Time

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M 380.9760 R 12686

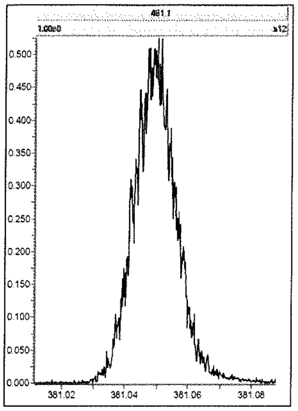

M 392.9760 R 13025

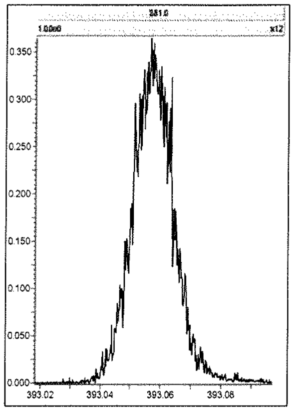

M 404.9760 R 12951

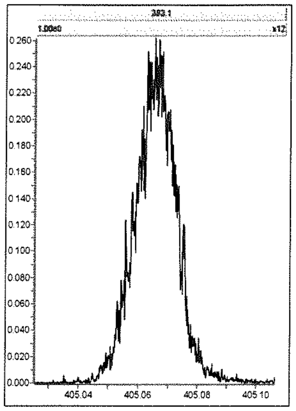

M 416.9760 R 12137

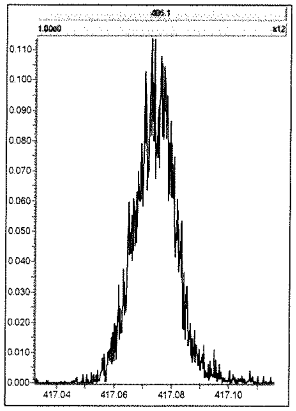

M 430.9728 R 12751

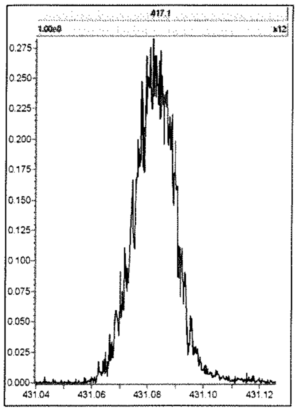

M 442.9728 R 13368

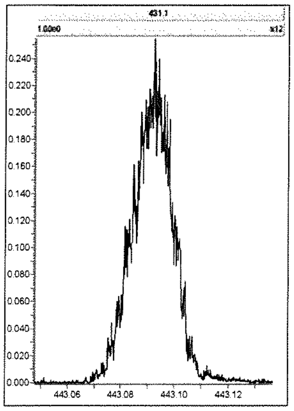

M 454.9728 R 13155

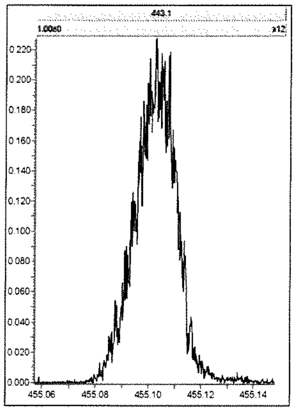

M 466.9728 R 14794

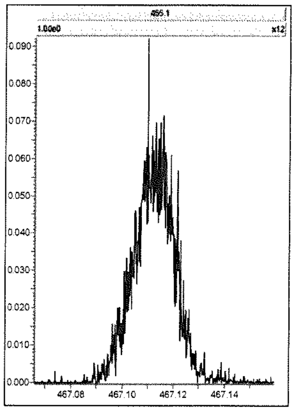

M 480.9696 R 13509

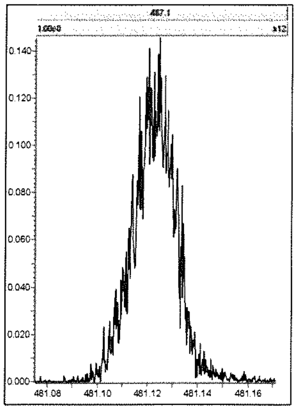

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: Dioxin3D5.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Friday, October 09, 2020 13:01:57 Pacific Daylight Time

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M 380.9760 R 12954

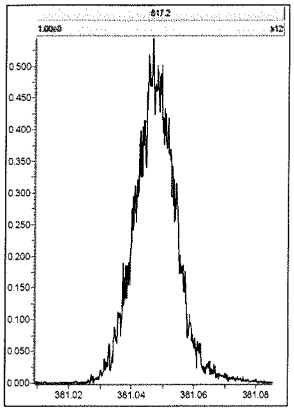

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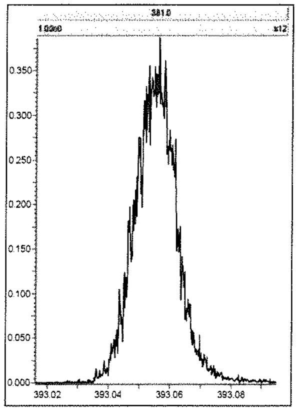

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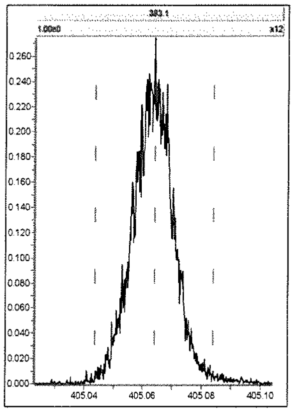

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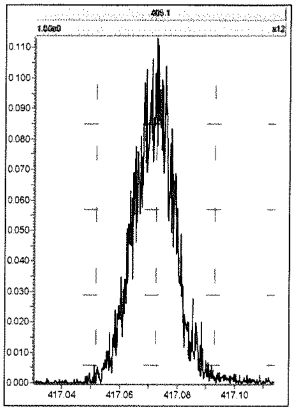

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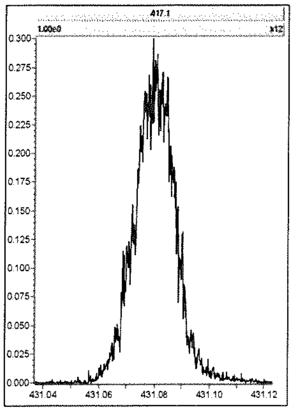

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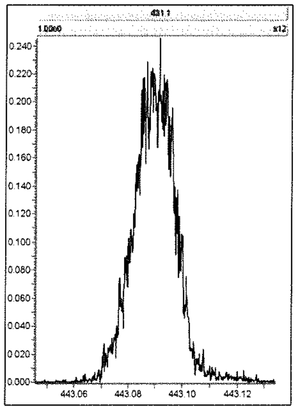

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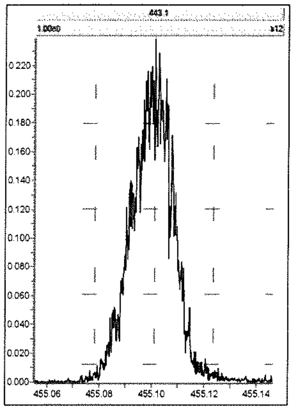

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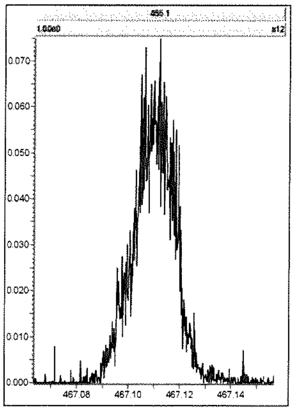

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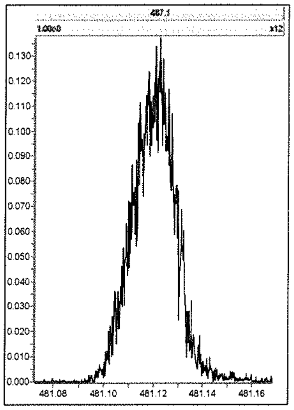

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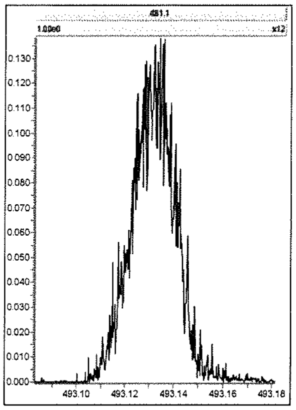

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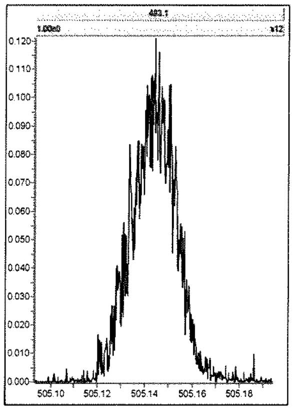

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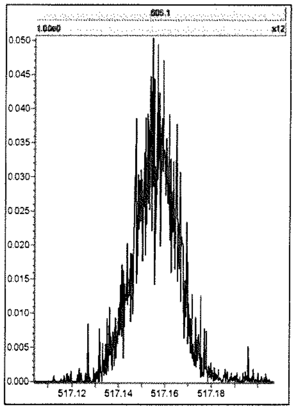

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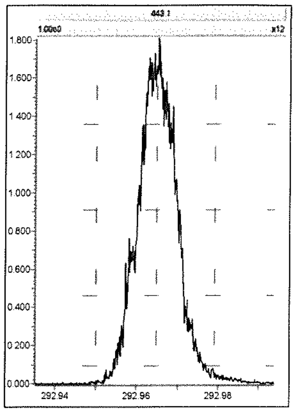

M 304.9824 R 14093

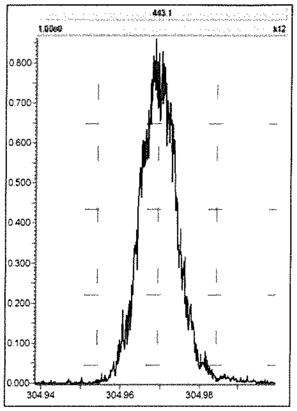

M 318.9792 R 14577

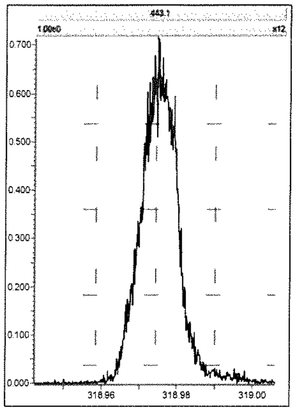

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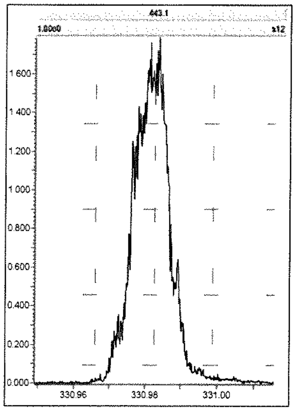

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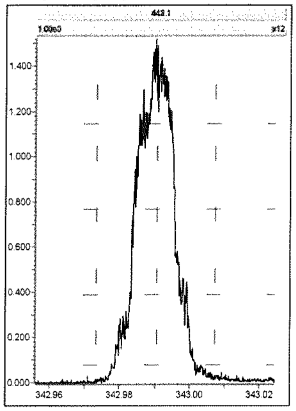

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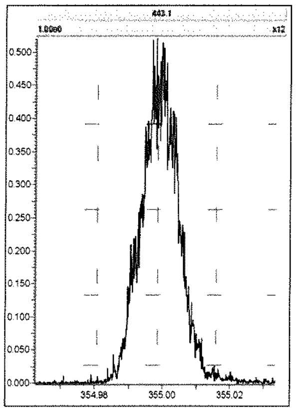

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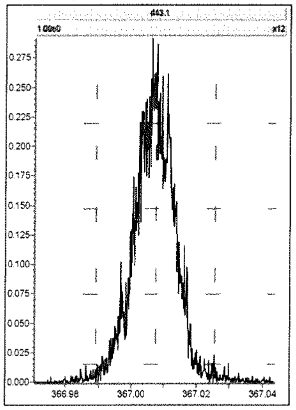

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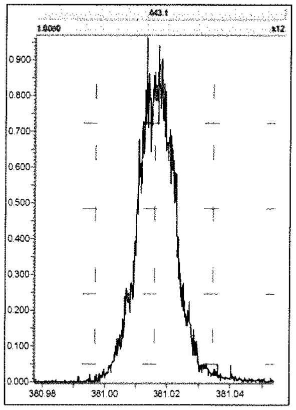

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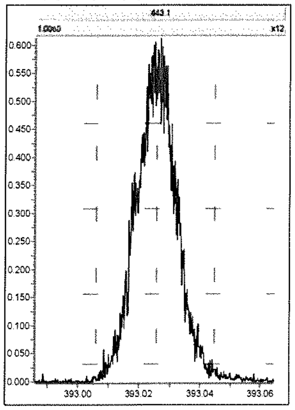

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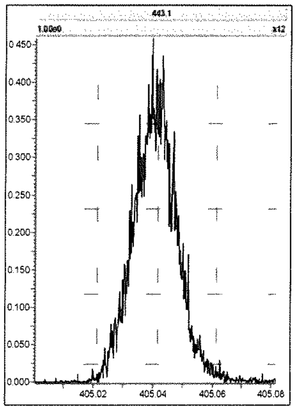

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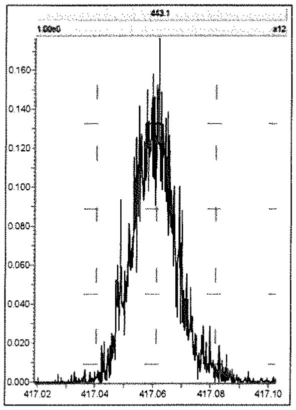

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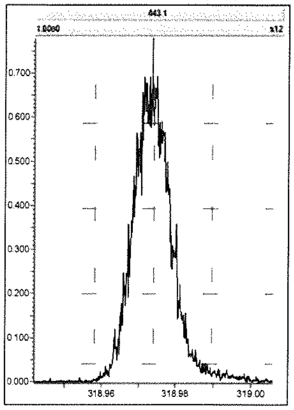

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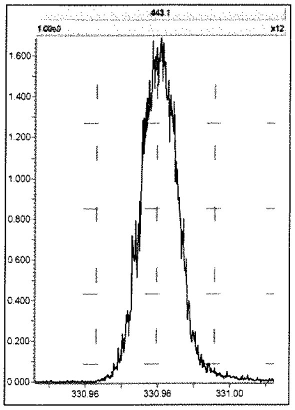

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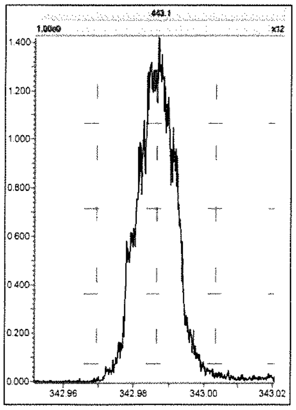

M 354.9792 R 14367

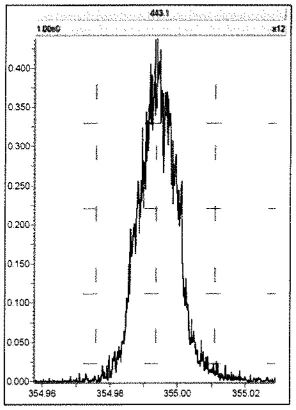

M 366.9792 R 13026

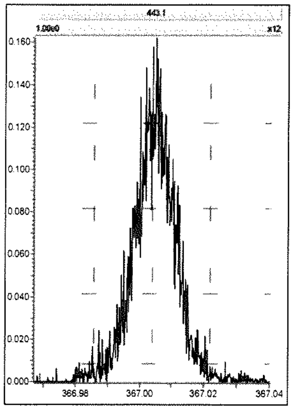

M 380.9760 R 13557

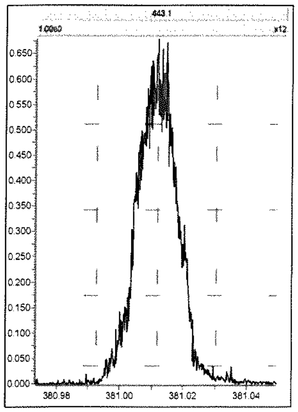

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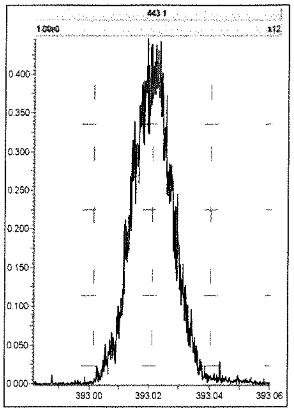

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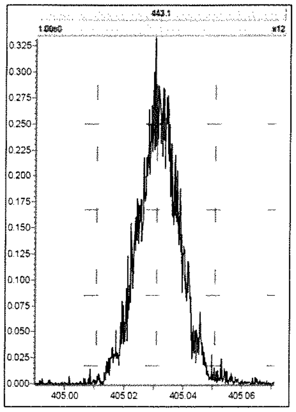

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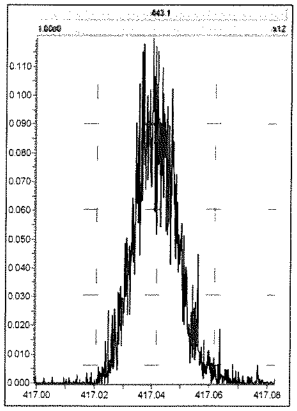

M 366.9792 R 13550

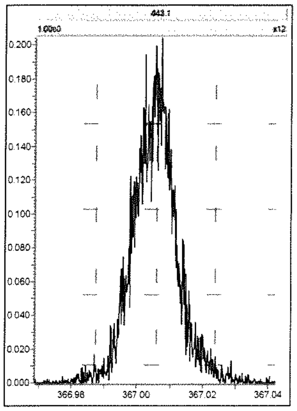

M 380.9760 R 13354

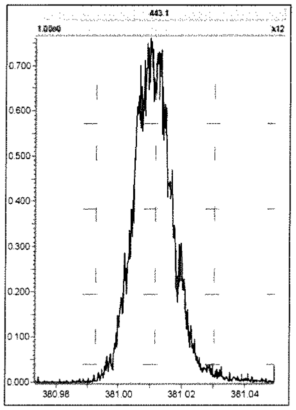

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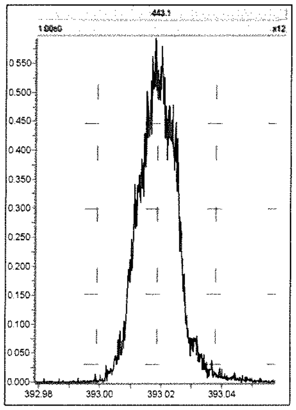

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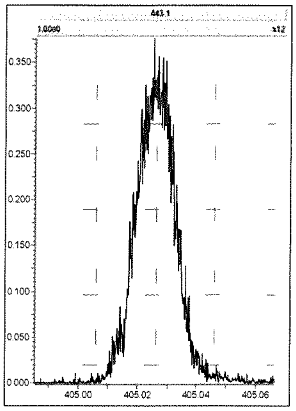

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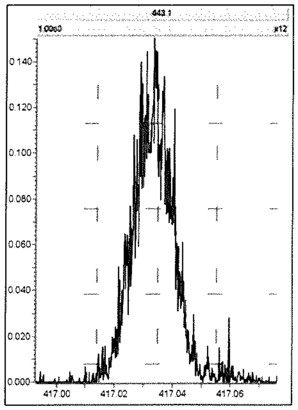

M 430.9728 R 13600

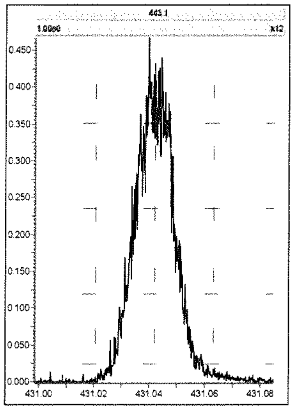

M 442.9728 R 13786

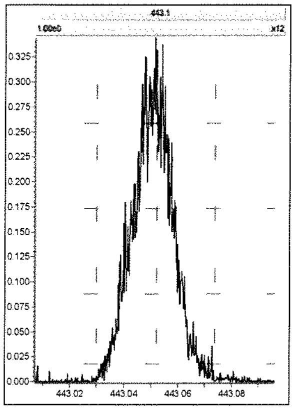

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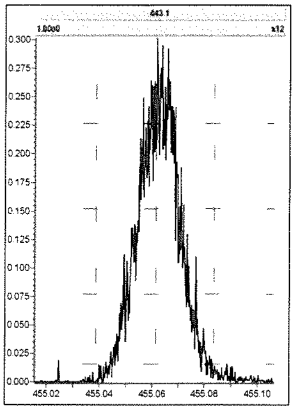

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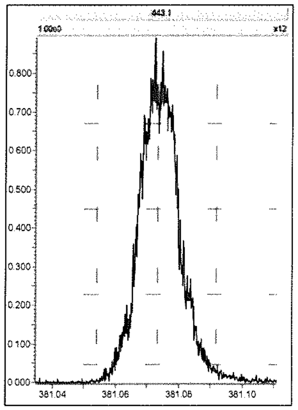

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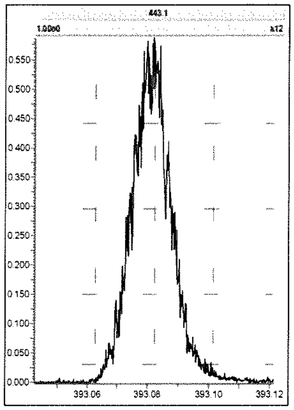

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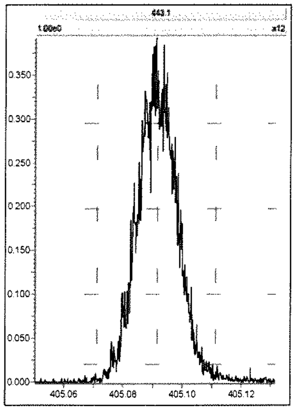

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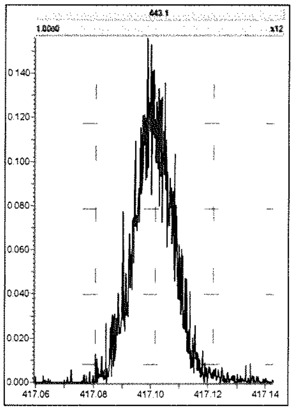

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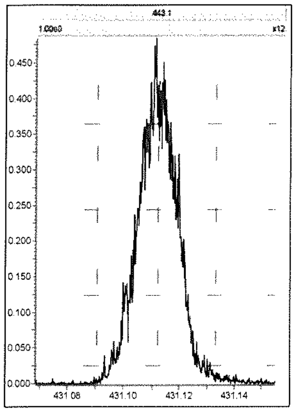

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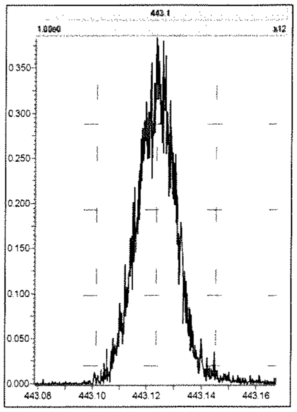

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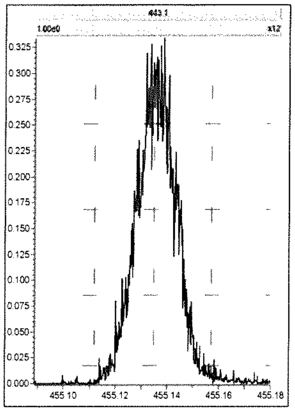

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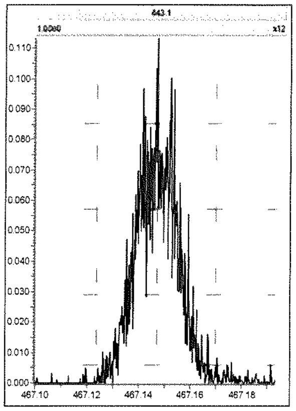

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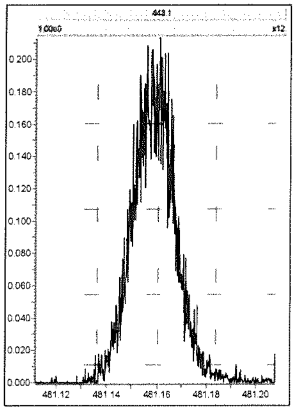

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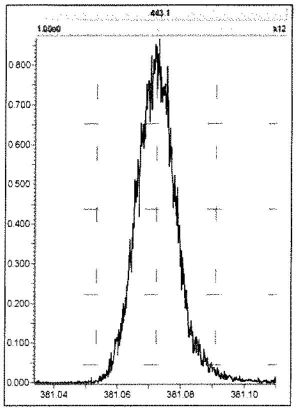

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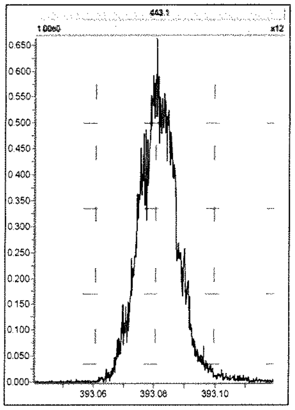

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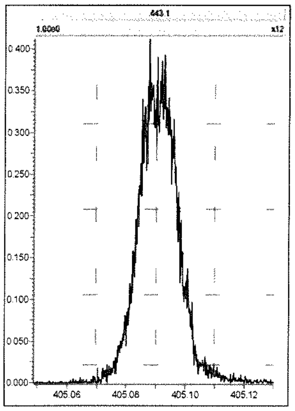

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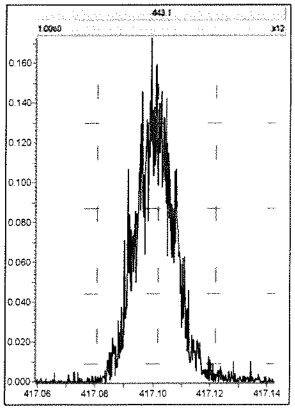

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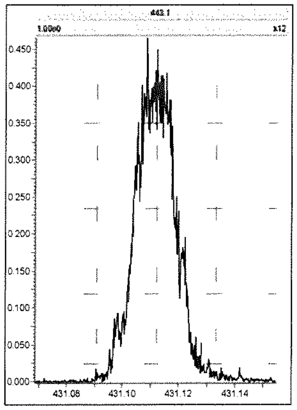

M 442.9728 R 13587

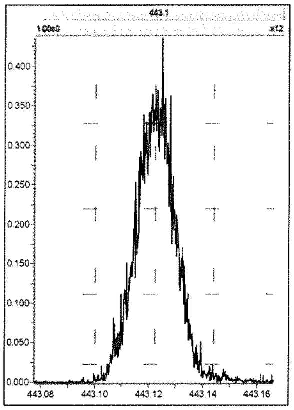

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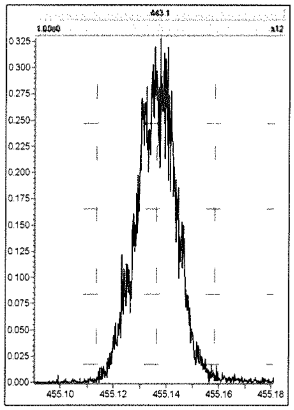

M 466.9728 R 14474

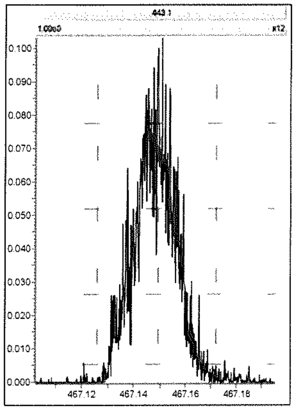

M 480.9696 R 13297

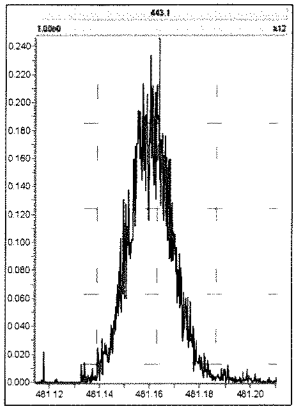

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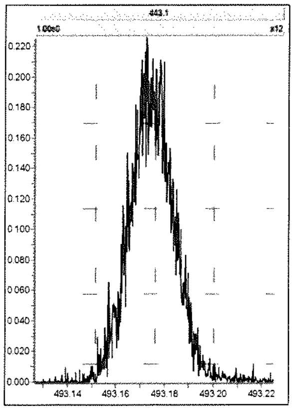

M 504.9696 R 12225

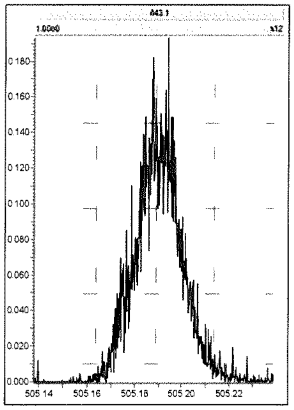

M 516.9697 R 14748

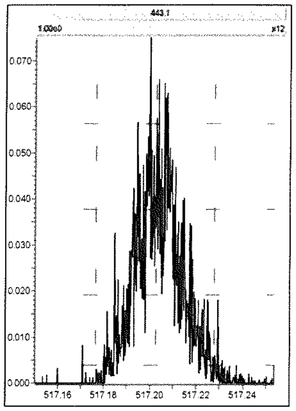

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 09-Oct-2020 13:52:24 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 100920 CCV HRDXNL4_00095
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5
Sublist: chrom-Dioxin_3D5*sub1

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 01:56:37 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1652

First Level Reviewer: messecara Date: 13-Oct-2020 01:55:29

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.915	230101856	0.80	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.477	361753386	0.77	1.4844	105.9	105.9	0.4330	0.4330	106	
2,3,7,8-TCDF	15.492	38484823	0.82	0.9534	11.2	11.2	0.0546	0.0546	112	
A Non-2,3,7,8-sub-TCDF	15.220						0.0546	0.0546		
S Total TCDF					11.2	11.2	0.0546	0.0546		
D 13C-2,3,7,8-TCDD	16.081	248757814	0.78	1.0875	99.4	99.4	0.4383	0.4383	99.41	
2,3,7,8-TCDD	16.097	26308042	0.78	1.0205	10.4	10.4	0.0346	0.0346	104	
$ 37Cl4-2,3,7,8-TCDD	16.097	25408270		1.1216	9.845	9.845	0.0202	0.0202	98.45	
A Non-2,3,7,8-sub-TCDD	15.613						0.0346	0.0346		
S Total TCDD					10.4	10.4	0.0346	0.0346		
D 13C-1,2,3,7,8-PeCDF	19.686	287181235	1.54	1.3943	89.5	89.5	0.3240	0.3240	89.51	
1,2,3,7,8-PeCDF	19.714	149380987	1.55	1.0794	48.2	48.2	0.2371	0.2371	96.38	
D 13C-2,3,4,7,8-PeCDF	20.805	254376459	1.57	1.3370	82.7	82.7	0.3379	0.3379	82.69	a
2,3,4,7,8-PeCDF	20.832	137546717	1.59	1.0966	49.3	49.3	0.2878	0.2878	98.61	
A F1 PeCDFs	17.722						0.0151	0.0151		
A Non-2,3,7,8-sub-PeCDF	20.335						0.2598	0.2598		
S Total PeCDF					97.5	97.5	0.2624	0.2624		
D 13C-1,2,3,7,8-PeCDD	21.418	198389477	1.58	0.8475	101.7	101.7	0.1863	0.1863	102	
1,2,3,7,8-PeCDD	21.432	103023528	1.54	1.1397	45.6	45.6	0.0885	0.0885	91.13	
A Non-2,3,7,8-sub-PeCDD	20.491						0.0885	0.0885		
S Total PeCDD					45.6	45.6	0.0885	0.0885		
D 13C-1,2,3,4,7,8-HxCDF	26.706	213919412	0.54	1.3065	97.4	97.4	0.5172	0.5172	97.38	a
1,2,3,4,7,8-HxCDF	26.746	133771589	1.21	1.2552	49.8	49.8	0.3030	0.3030	99.64	
D 13C-1,2,3,6,7,8-HxCDF	26.986	225024795	0.54	1.4213	94.2	94.2	0.4754	0.4754	94.17	
1,2,3,6,7,8-HxCDF	27.012	137933926	1.25	1.2102	50.7	50.7	0.3326	0.3326	101	
D 13C-2,3,4,6,7,8-HxCDF	28.544	211448629	0.53	1.3142	95.7	95.7	0.5141	0.5141	95.69	
2,3,4,6,7,8-HxCDF	28.570	128543902	1.24	1.2182	49.9	49.9	0.3521	0.3521	99.80	
D 13C-1,2,3,7,8,9-HxCDF	30.381	197188901	0.52	1.3204	88.8	88.8	0.5117	0.5117	88.82	
1,2,3,7,8,9-HxCDF	30.394	122429413	1.20	1.2319	50.4	50.4	0.2543	0.2543	101	
A Non-2,3,7,8-sub-HxCDF	27.432						0.3060	0.3060		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					200.8	200.8	0.3105	0.3105		
* 13C-1,2,3,7,8,9-HxCDD	30.075	168136726	1.25	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.010	131971689	1.25	0.8660	90.6	90.6	0.2836	0.2836	90.63	a
1,2,3,4,7,8-HxCDD	29.036	76468694	1.28	1.2535	46.2	46.2	0.1831	0.1831	92.45	
D 13C-1,2,3,6,7,8-HxCDD	29.289	154388520	1.23	0.9827	93.4	93.4	0.2499	0.2499	93.44	a
1,2,3,6,7,8-HxCDD	29.329	80769050	1.25	1.1117	47.1	47.1	0.2207	0.2207	94.12	
1,2,3,7,8,9-HxCDD	30.088	89263182	1.24	1.2852	48.5	48.5	0.1845	0.1845	97.02	
A Non-2,3,7,8-sub-HxCDD	27.845						0.1949	0.1949		
S Total HxCDD					141.8	141.8	0.1961	0.1961		
D 13C-1,2,3,4,6,7,8-HpCDF	32.535	158215619	0.45	0.9410	100.0	100.0	1.832	1.832	100	
1,2,3,4,6,7,8-HpCDF	32.547	114330596	1.04	1.4783	48.9	48.9	0.5269	0.5269	97.76	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	142235100	0.43	0.8751	96.7	96.7	1.970	1.970	96.67	a
1,2,3,4,7,8,9-HpCDF	33.653	99162292	1.03	1.3784	50.6	50.6	0.5938	0.5938	101	
A Non-2,3,7,8-sub-HpCDF	33.088						0.5589	0.5589		
S Total HpCDF					99.5	99.5	0.5604	0.5604		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	150603324	1.05	0.9049	99.0	99.0	2.895	2.895	98.99	
1,2,3,4,6,7,8-HpCDD	33.410	73966845	1.04	1.0862	45.2	45.2	0.1768	0.1768	90.43	
A Non-2,3,7,8-sub-HpCDD	33.339						0.1768	0.1768		
S Total HpCDD					45.2	45.2	0.1768	0.1768		
D 13C-OCDD	35.558	212678444	0.88	0.5783	218.7	218.7	0.8263	0.8263	109	
OCDF	35.630	172003185	0.89	1.7248	93.8	93.8	0.1273	0.1273	93.78	
OCDD	35.570	122827470	0.89	1.2576	91.8	91.8	0.2461	0.2461	91.85	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	09-Oct-2020 13:52:24	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV 100920 CCV HRDXNL4_00095				
Misc. Info.:	09OC203D5				
Operator ID:	SMA	Instrument ID:	3D5		
Sublist:	chrom-Dioxin_3D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	13-Oct-2020 01:56:37	Calib Date:	05-Oct-2020 20:45:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d				
Column 1 :		Det: F1:HRSIR			
Process Host:	CTX1652				
First Level Reviewer: messecara		Date:	13-Oct-2020 01:55:29		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.915	15.915	0		102339962	27959611	29627	74067	944		
333.9339	15.915	15.915	0		127761894	35271961	90928	227320	388	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	0.972	156969669	41381485	85023	212557	487		
317.9389	15.477	15.477	0	0.972	204783717	53618190	77530	193825	692	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.492	15.492	0	1.001	17334369	4498311	6537	16342	688		
305.8987	15.492	15.492	0	1.001	21150454	5323462	13254	33135	402	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.220						6537	16342			
305.8987	15.220						13254	33135			
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.010	109081077	27722460	29627	74067	936		
333.9339	16.081	16.081	0	1.010	139676737	34807239	90928	227320	383	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.097	0	1.001	11535957	2844951	4365	10912	652		
321.8936	16.097	16.097	0	1.001	14772085	3645391	4457	11142	818	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.097	16.097	0	1.011	25408270	6221999	5724	14310	1087		
A Non-2,3,7,8-sub-TCDD											
319.8965	15.613						4365	10912			
321.8936	15.613						4457	11142			

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	19.686	19.686	0	1.237	174289523	34727879	69436	173590	500		
353.8970	19.686	19.686	0	1.237	112891712	22283341	44818	112045	497	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.714	19.714	0	1.001	90701779	17479648	35090	87725	498		
341.8567	19.714	19.714	0	1.001	58679208	11137918	23263	58157	479	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	20.805	20.805	0	1.307	155526576	27982047	69436	173590	403		a
353.8970	20.805	20.805	0	1.307	98849883	18241443	44818	112045	407	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.832	20.832	0	1.001	84366439	16052940	35090	87725	457		
341.8567	20.832	20.832	0	1.001	53180278	10045374	23263	58157	432	1.59(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.722						1352	3380			
341.8567	17.722						2040	5100			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.335						35090	87725			
341.8567	20.335						23263	58157			
13C-1,2,3,7,8-PeCDD											
367.8949	21.418	21.418	0	1.346	121473949	21285596	23629	59072	901		
369.8919	21.418	21.418	0	1.346	76915528	13332683	16304	40760	818	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.432	21.432	0	1.001	62426345	10404958	7867	19667	1323		
357.8516	21.432	21.432	0	1.001	40597183	6847587	6100	15250	1123	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.491						7867	19667			
357.8516	20.491						6100	15250			
13C-1,2,3,4,7,8-HxCDF											a
383.8639	26.706	26.706	0	0.888	74810932	10452112	25559	63897	409		a
385.8610	26.719	26.706	1	0.888	139108480	18892876	44806	112015	422	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.746	26.746	0	1.001	73294502	9971778	24974	62435	399		
375.8178	26.733	26.746	-1	1.001	60477087	8265452	19664	49160	420	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	26.986	26.986	0	0.897	78702767	9610495	25559	63897	376		
385.8610	26.986	26.986	0	0.897	146322028	18115030	44806	112015	404	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.012	27.012	0	1.001	76507433	9531592	24974	62435	382		
375.8178	27.012	27.012	0	1.001	61426493	7641086	19664	49160	389	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.544	28.544	0	0.949	73230305	8923689	25559	63897	349		
385.8610	28.544	28.544	0	0.949	138218324	17096525	44806	112015	382	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.570	28.570	0	1.001	71059558	8738527	24974	62435	350		
375.8178	28.570	28.570	0	1.001	57484344	6885732	19664	49160	350	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.381	30.381	0	1.010	67766876	12152841	25559	63897	475		
385.8610	30.381	30.381	0	1.010	129422025	23463262	44806	112015	524	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.394	30.394	0	1.000	66711778	11205887	24974	62435	449		
375.8178	30.394	30.394	0	1.000	55717635	9590366	19664	49160	488	1.20(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.432						24974	62435			
375.8178	27.432						19664	49160			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.075	30.075	0		93326450	14360413	15397	38492	933		
403.8529	30.062	30.075	-1		74810276	11675041	10181	25452	1147	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.010	29.010	0	0.965	73231828	10100073	15397	38492	656		a
403.8529	29.010	29.010	0	0.965	58739861	7825643	10181	25452	769	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.036	29.036	0	1.001	42858042	5166087	8905	22262	580		
391.8127	29.036	29.036	0	1.001	33610652	3990250	7551	18877	528	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.289	29.289	0	0.974	85150956	9174737	15397	38492	596		a
403.8529	29.289	29.289	0	0.974	69237564	7591433	10181	25452	746	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.329	29.329	0	1.001	44926641	5114264	8905	22262	574		
391.8127	29.329	29.329	0	1.001	35842409	4028809	7551	18877	534	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.088	30.088	0	1.037	49381398	7921407	8905	22262	890		
391.8127	30.088	30.088	0	1.037	39881784	6261303	7551	18877	829	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.845						8905	22262			
391.8127	27.845						7551	18877			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.535	32.535	0	1.082	48897876	16348995	52135	130337	314		
419.8220	32.535	32.535	0	1.082	109317743	37227152	127387	318467	292	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	58419899	19325596	80940	202350	239		
409.7789	32.547	32.547	0	1.000	55910697	18740616	86002	215005	218	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8253	33.641	33.641	0	1.119	42453392	15782682	52135	130337	303		a
419.8220	33.641	33.641	0	1.119	99781708	35204478	127387	318467	276	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	50287314	17449982	80940	202350	216		
409.7789	33.653	33.653	0	1.000	48874978	16659448	86002	215005	194	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.088						80940	202350			
409.7789	33.088						86002	215005			

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	77174492	27334991	135742	339355	201		
437.8140	33.398	33.398	0	1.110	73428832	25978477	137094	342735	189	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	37717618	13597360	20024	50060	679		
425.7737	33.398	33.410	-1	1.000	36249227	12929725	20938	52345	618	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						20024	50060			
425.7737	33.339						20938	52345			
13C-OCDD											
469.7779	35.558	35.558	0	1.182	99661011	34170778	26878	67195	1271		
471.7750	35.558	35.558	0	1.182	113017433	38540340	22887	57217	1684	0.88(0.76-1.02)	
OCDF											
441.7428	35.630	35.630	0	1.002	80806922	27433910	14490	36225	1893		
443.7399	35.630	35.630	0	1.002	91196263	30831818	17443	43607	1768	0.89(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	57806805	20107278	12965	32412	1551		
459.7348	35.570	35.570	0	1.000	65020665	21325645	32037	80092	666	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d				
Injection Date:	09-Oct-2020 13:52:24	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Not Detected

Expected RT: 20.80

Processing Integration Results

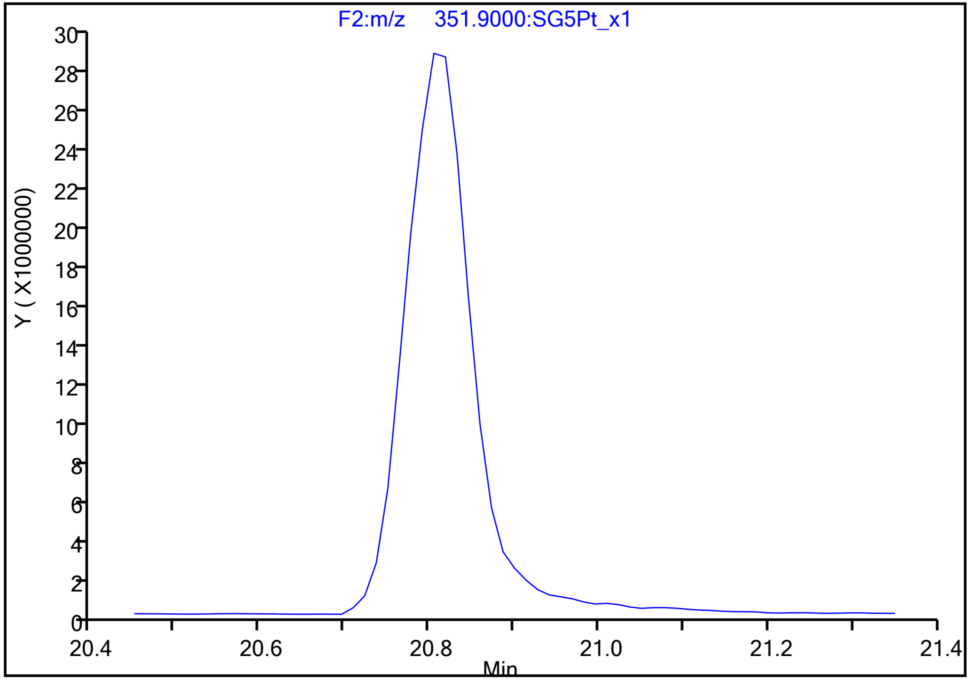

Manual Integration Results

RT: 20.80

Area: 155526576

Amount: 82.687114

Amount Units: pg/ul

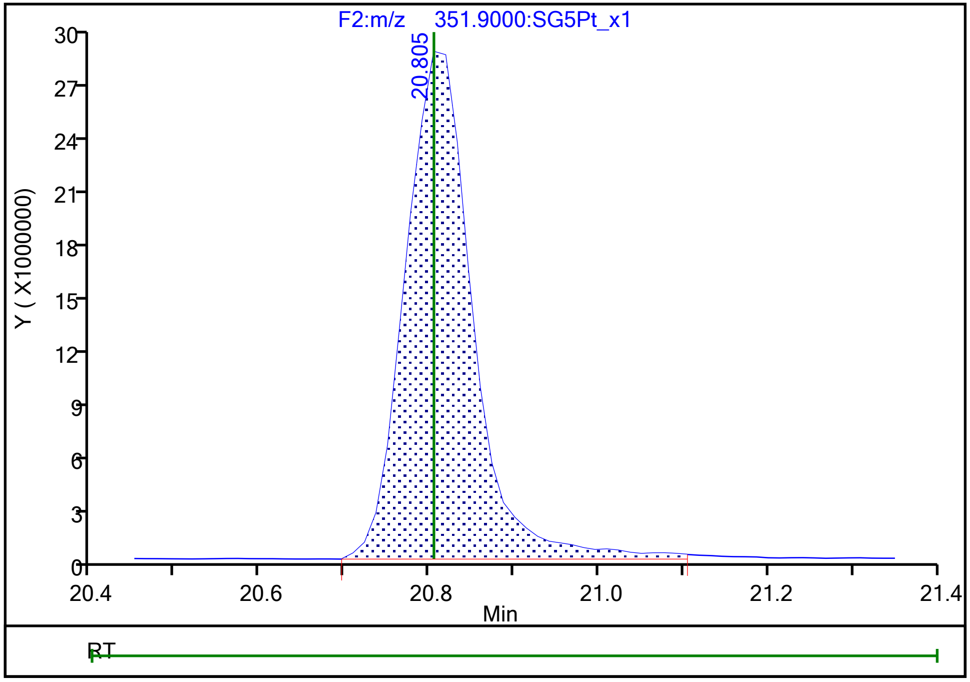

Reviewer: messecara, 13-Oct-2020 00:01:12

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d				
Injection Date:	09-Oct-2020 13:52:24	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Not Detected
Expected RT: 26.71

Processing Integration Results

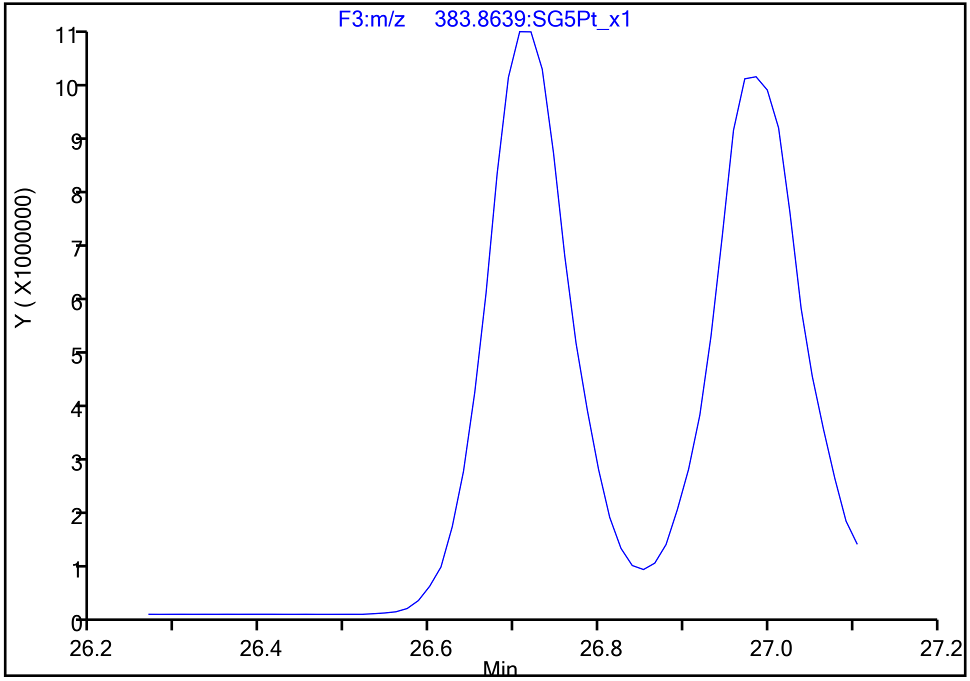

Manual Integration Results

RT: 26.71
Area: 74810932
Amount: 97.382764
Amount Units: pg/ul

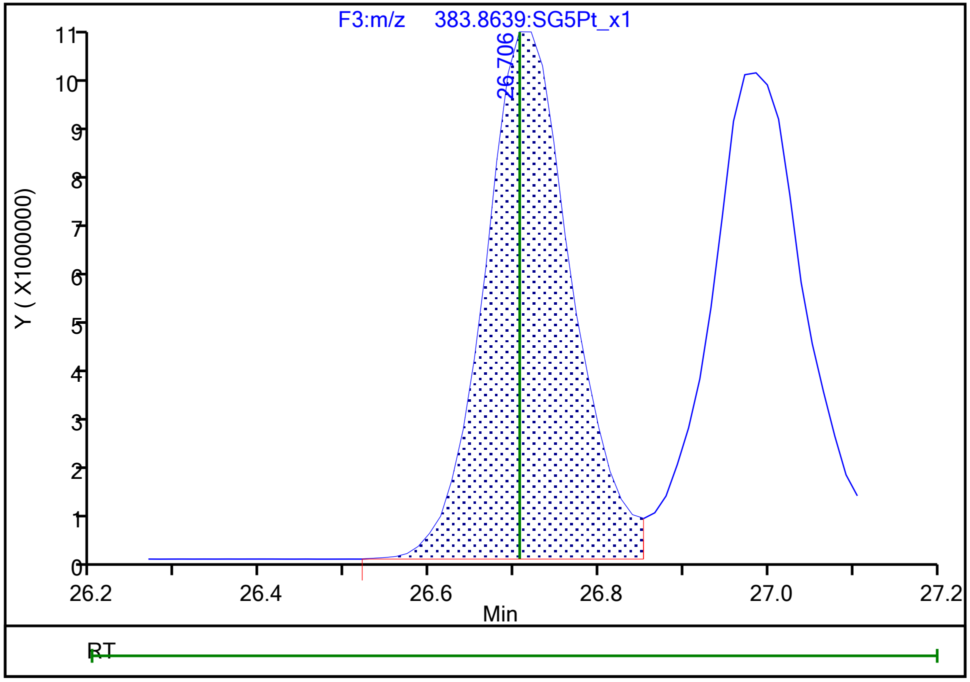

Reviewer: messecara, 13-Oct-2020 00:01:20
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d				
Injection Date:	09-Oct-2020 13:52:24	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.01

Processing Integration Results

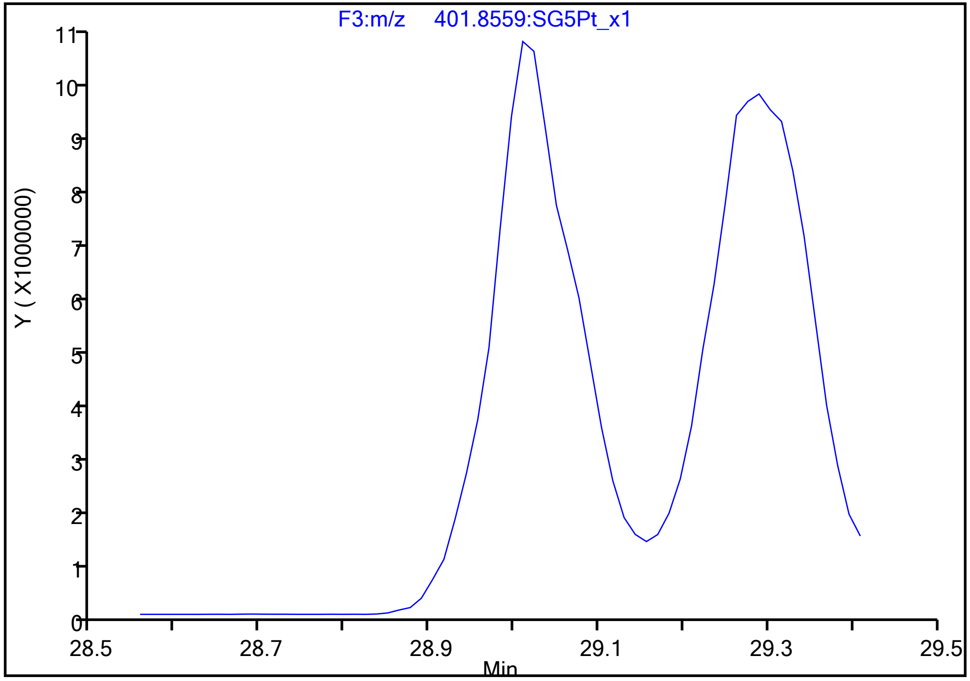

RT: 29.01
Area: 73231828
Amount: 90.633497
Amount Units: pg/ul

Manual Integration Results

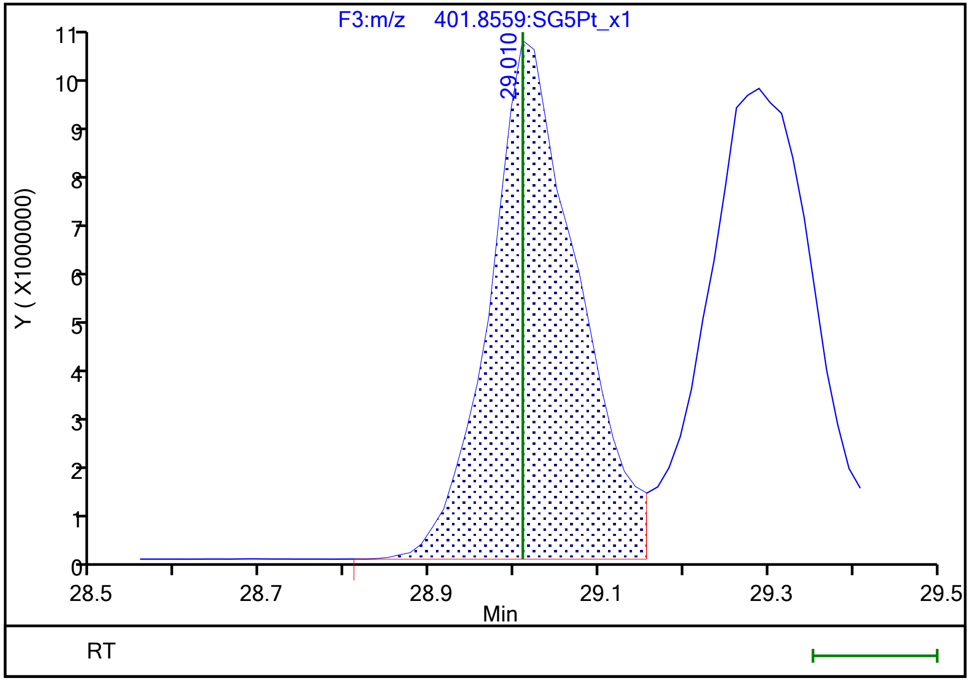

Reviewer: messecara, 13-Oct-2020 00:01:29
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d				
Injection Date:	09-Oct-2020 13:52:24	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT:	30.07
Area:	93326450
Amount:	101.7609
Amount Units:	pg/ul

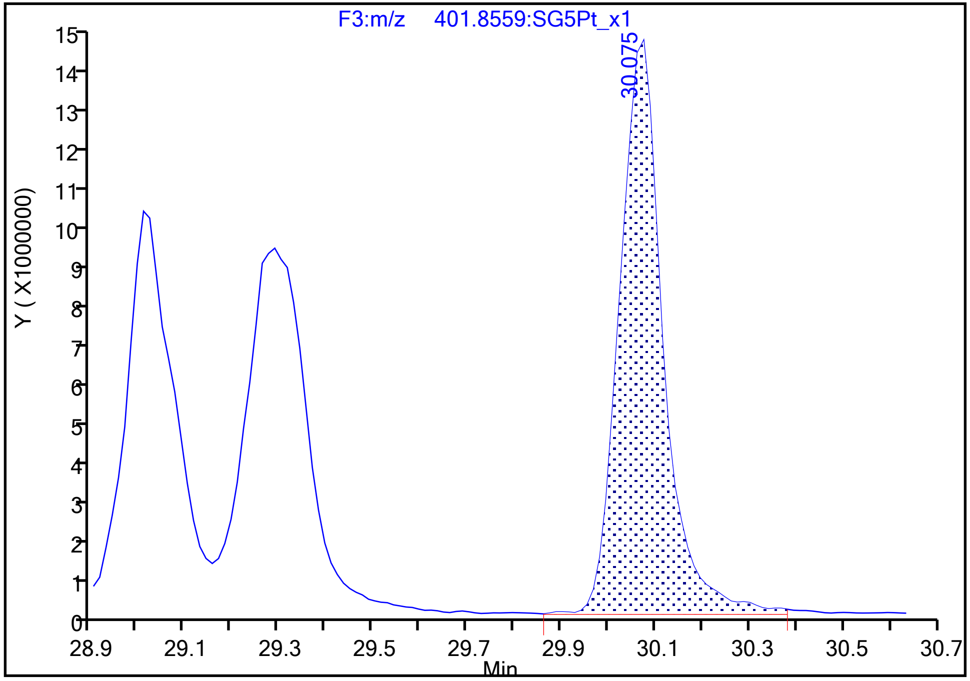

Manual Integration Results

RT:	29.29
Area:	85150956
Amount:	93.440108
Amount Units:	pg/ul

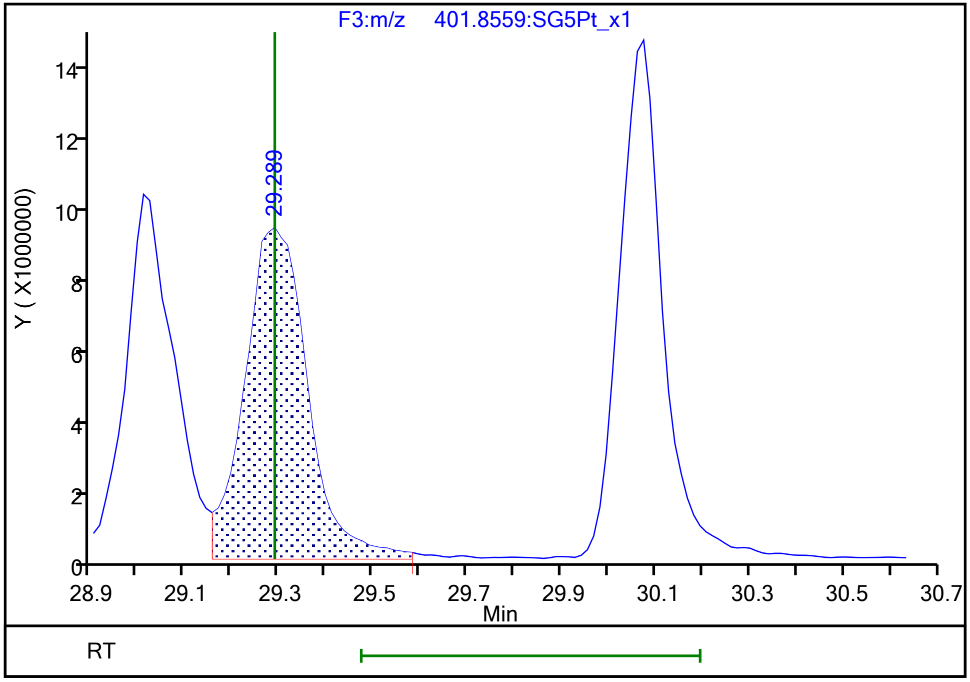

Reviewer: messecara, 13-Oct-2020 01:54:56

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d				
Injection Date:	09-Oct-2020 13:52:24	Instrument ID:	3D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Processing Integration Results

Not Detected
Expected RT: 33.64

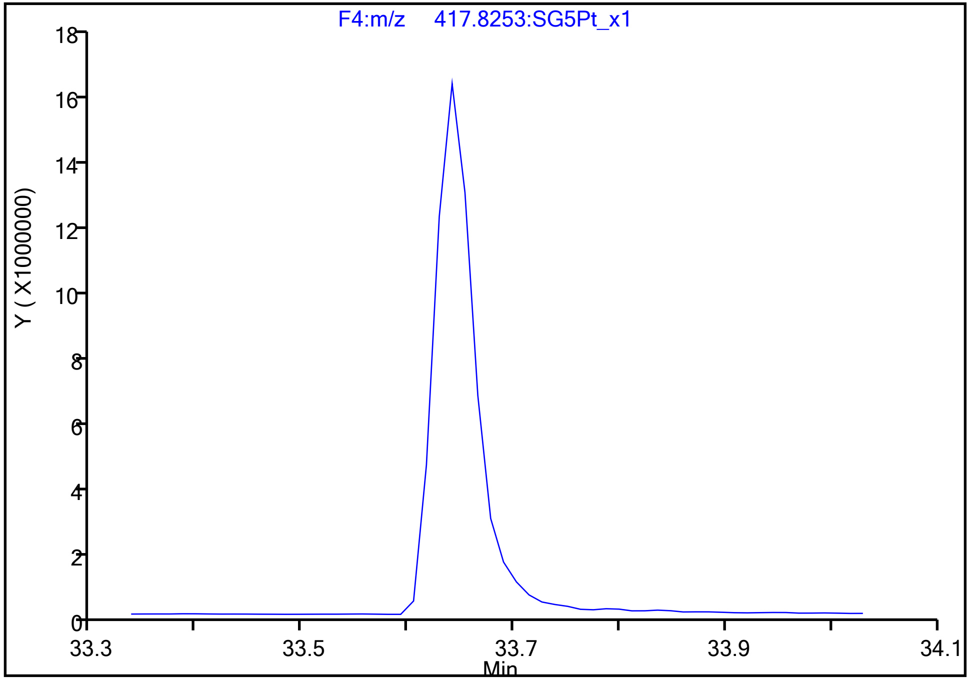

Manual Integration Results

RT: 33.64
Area: 42453392
Amount: 96.669543
Amount Units: pg/ul

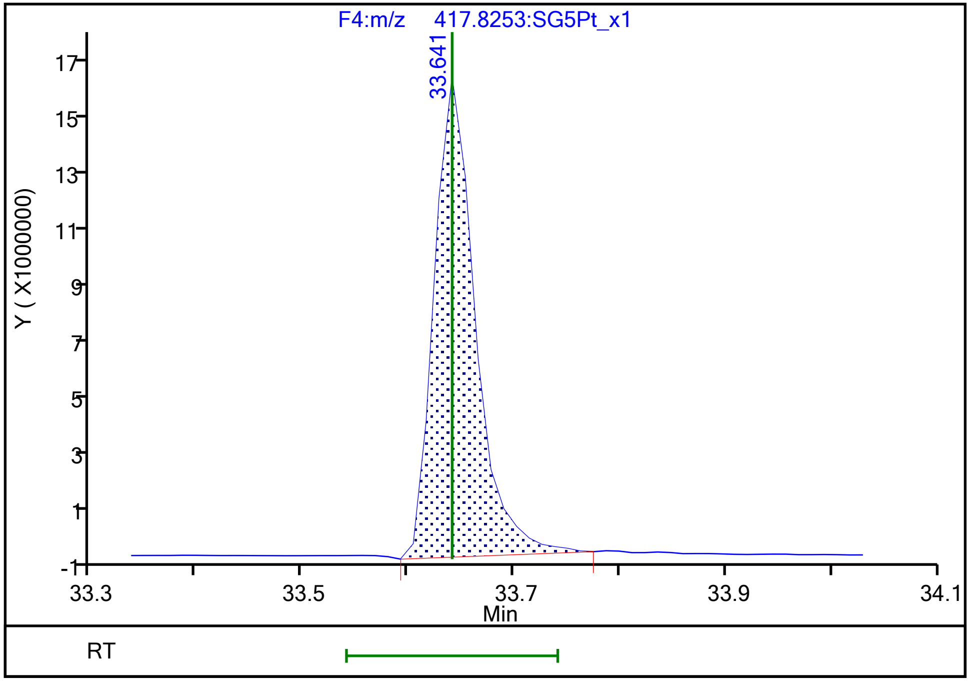

Reviewer: messecara, 13-Oct-2020 00:01:37
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d
Injection Date: 09-Oct-2020 13:52:24 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483 Sample Line#: 2
Column Type: Column Dia:

TCDF

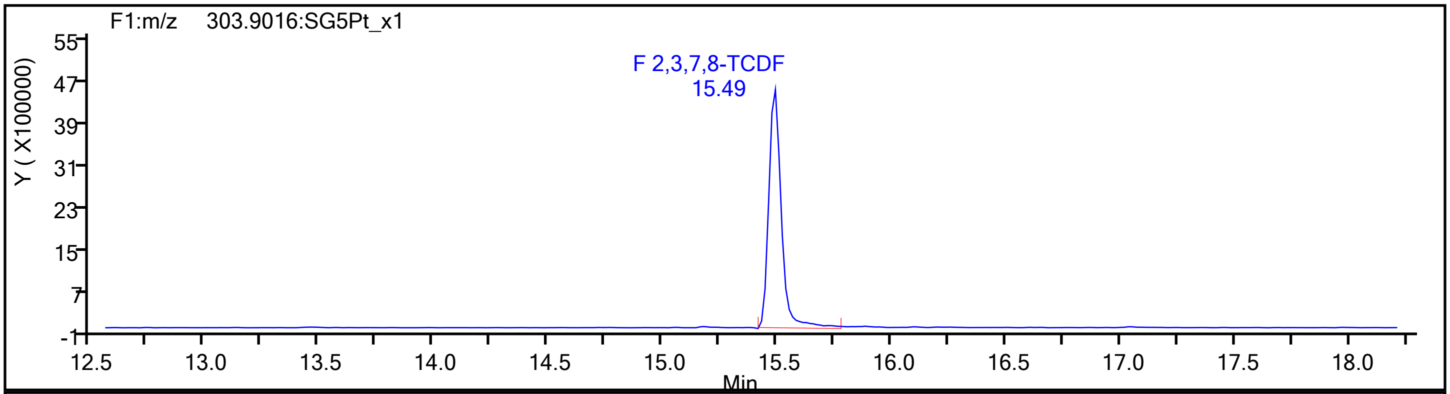

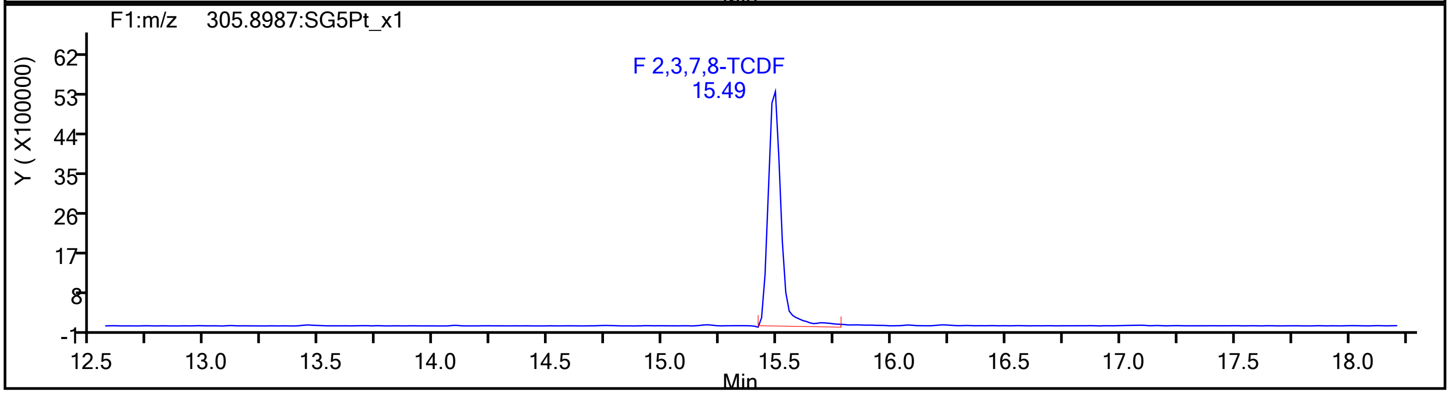

TCDF Standards

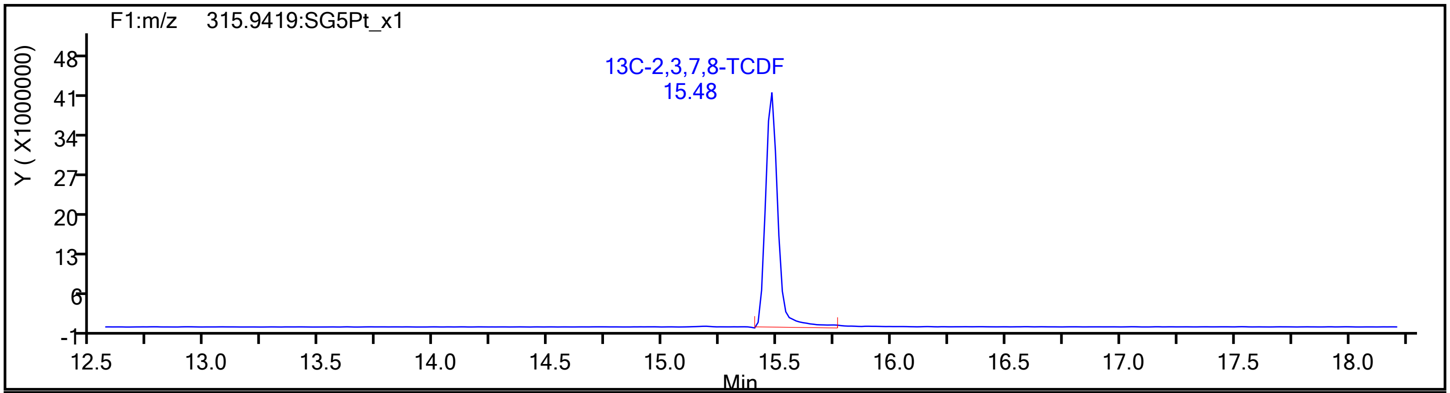

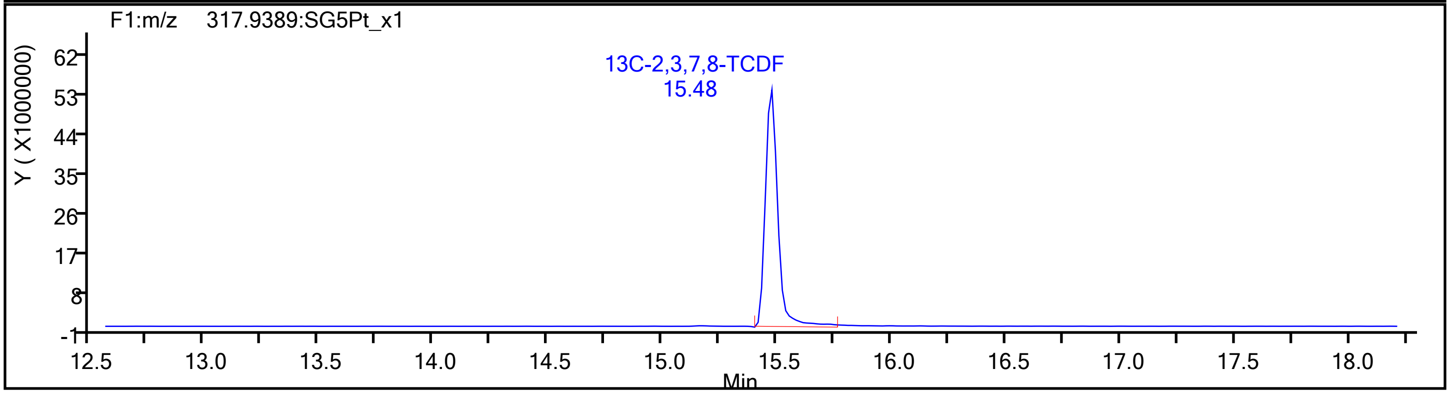

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	2
Column Type:		Column Dia:	

TCDF

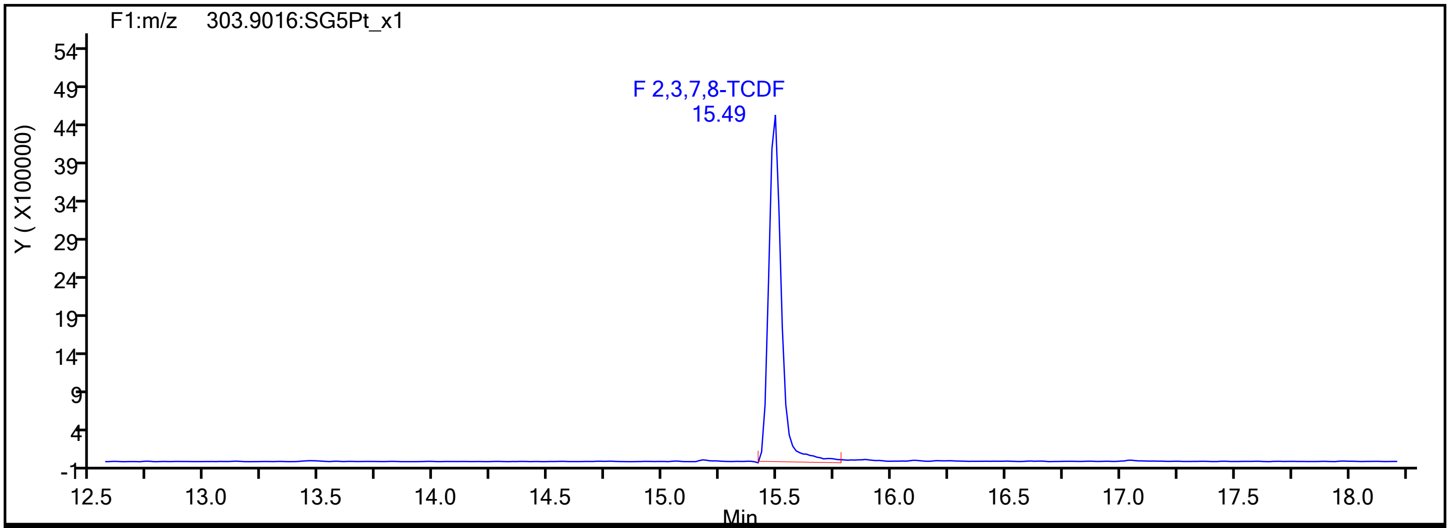

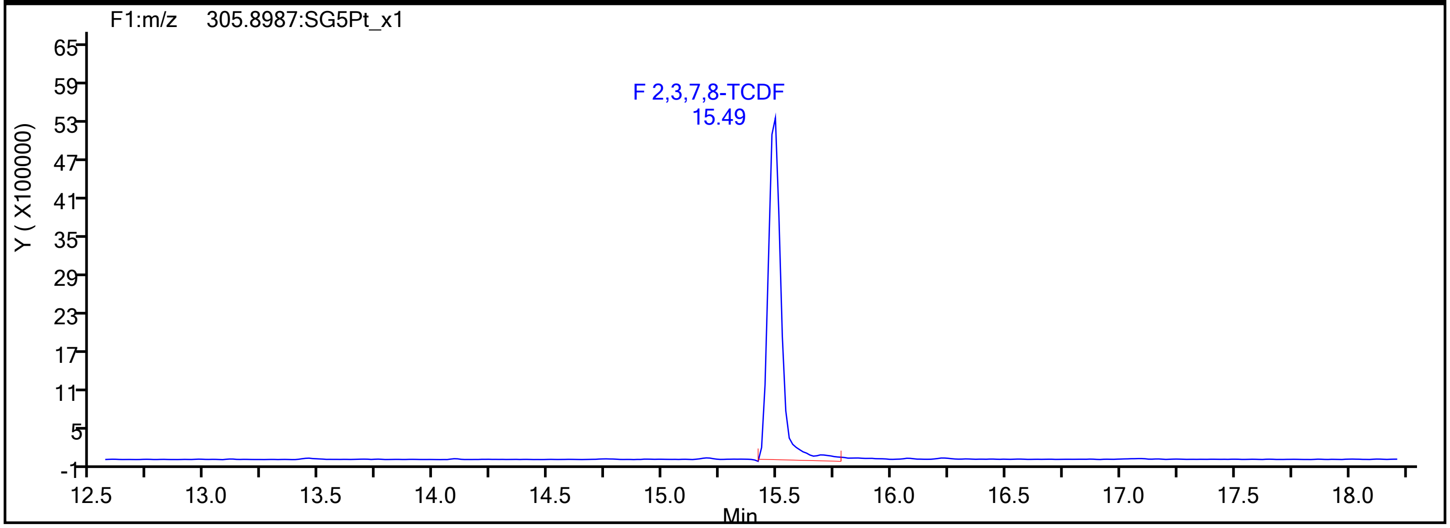

TCDF Interference Mass

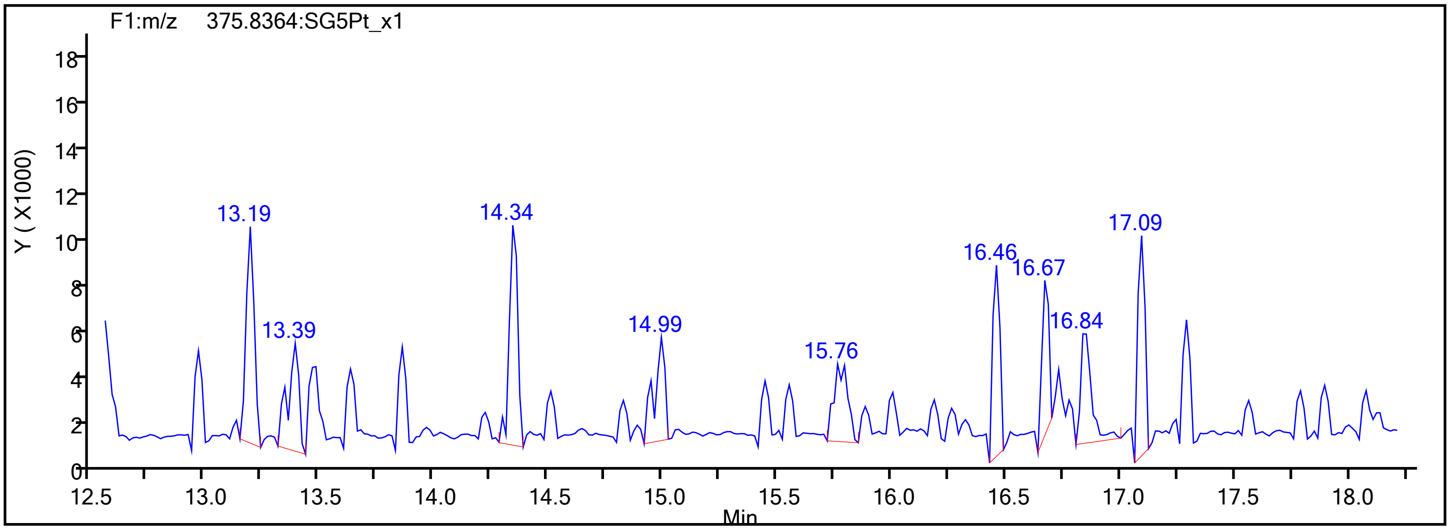

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 13:52:24 Injection Vol: 2.0 ul
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Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483 Sample Line#: 2
Column Type: Column Dia:

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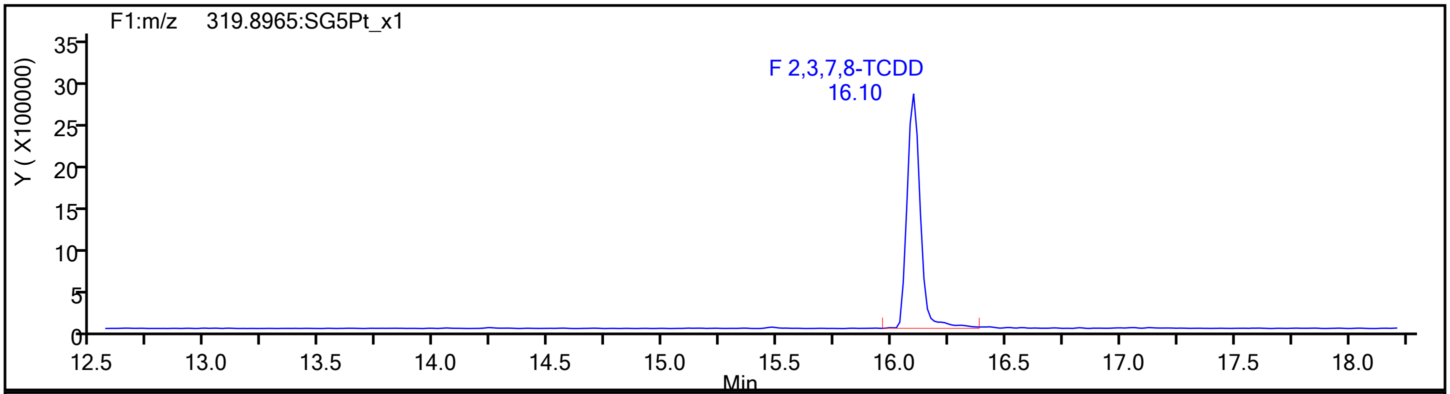

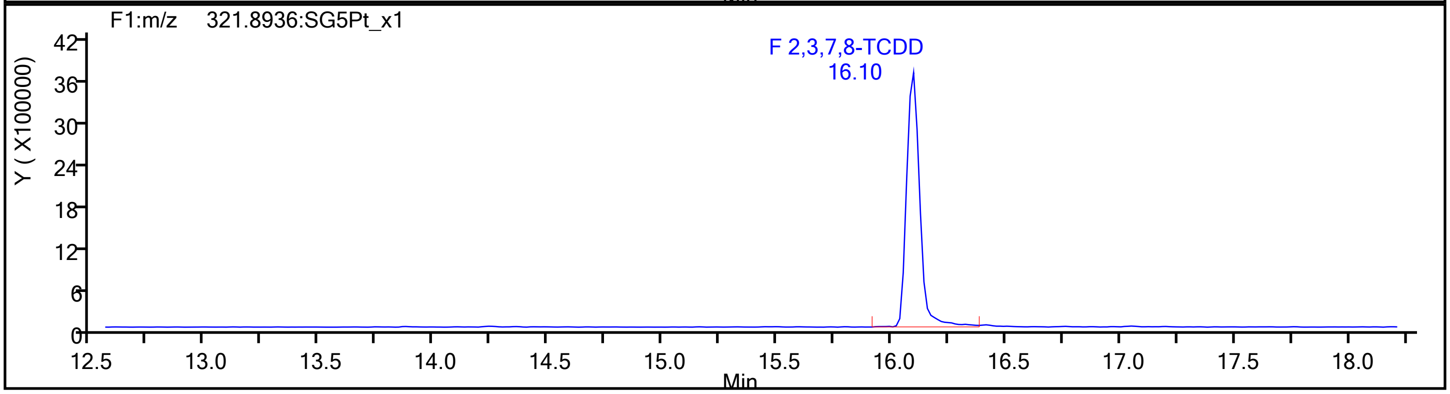

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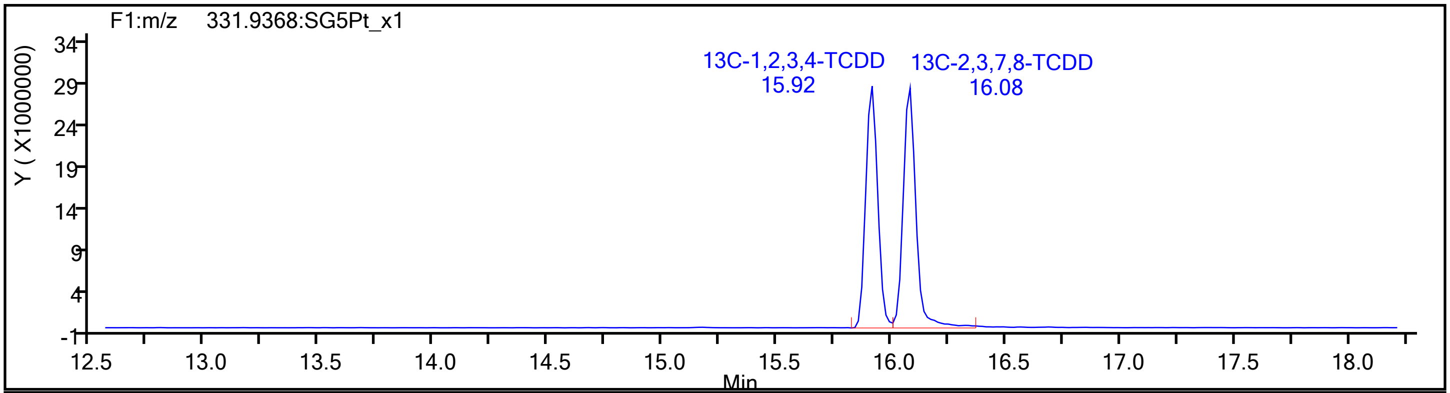

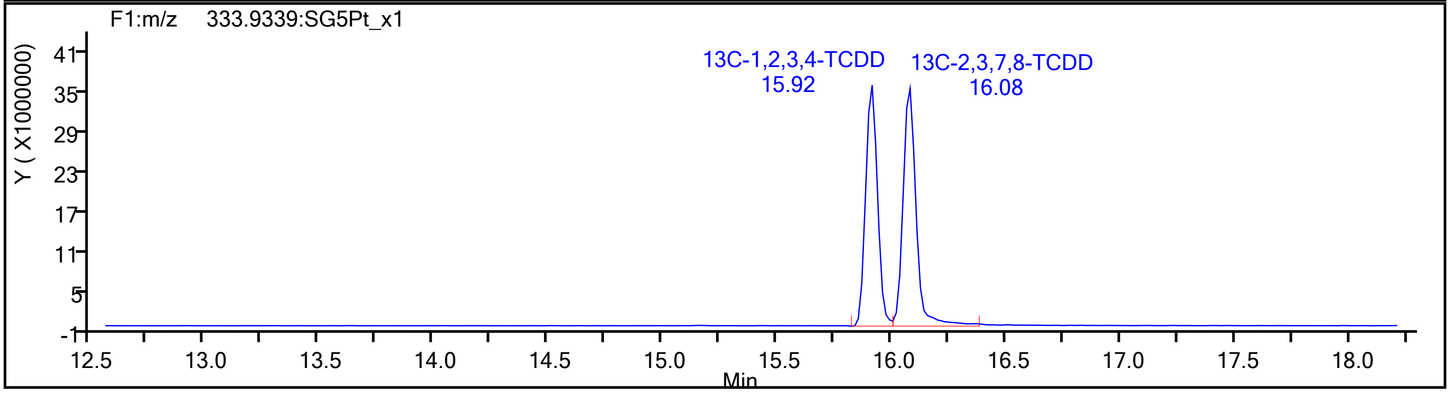

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 13:52:24	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	2
Column Type:		Column Dia:	

37Cl4-TCDD

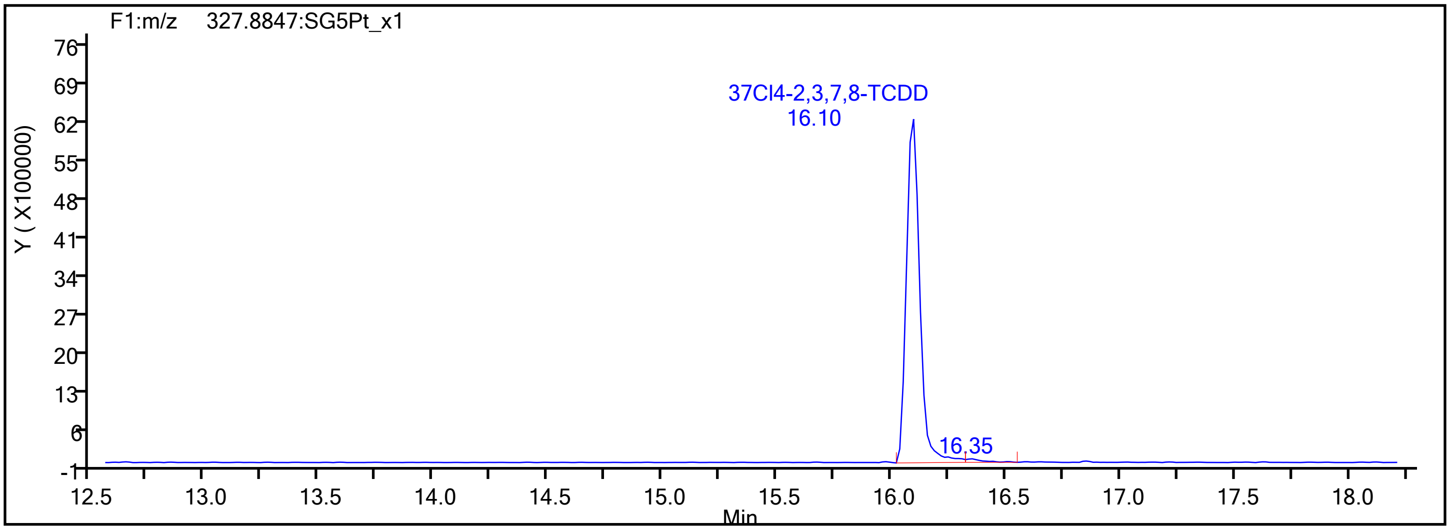

37Cl4-TCDD Standards

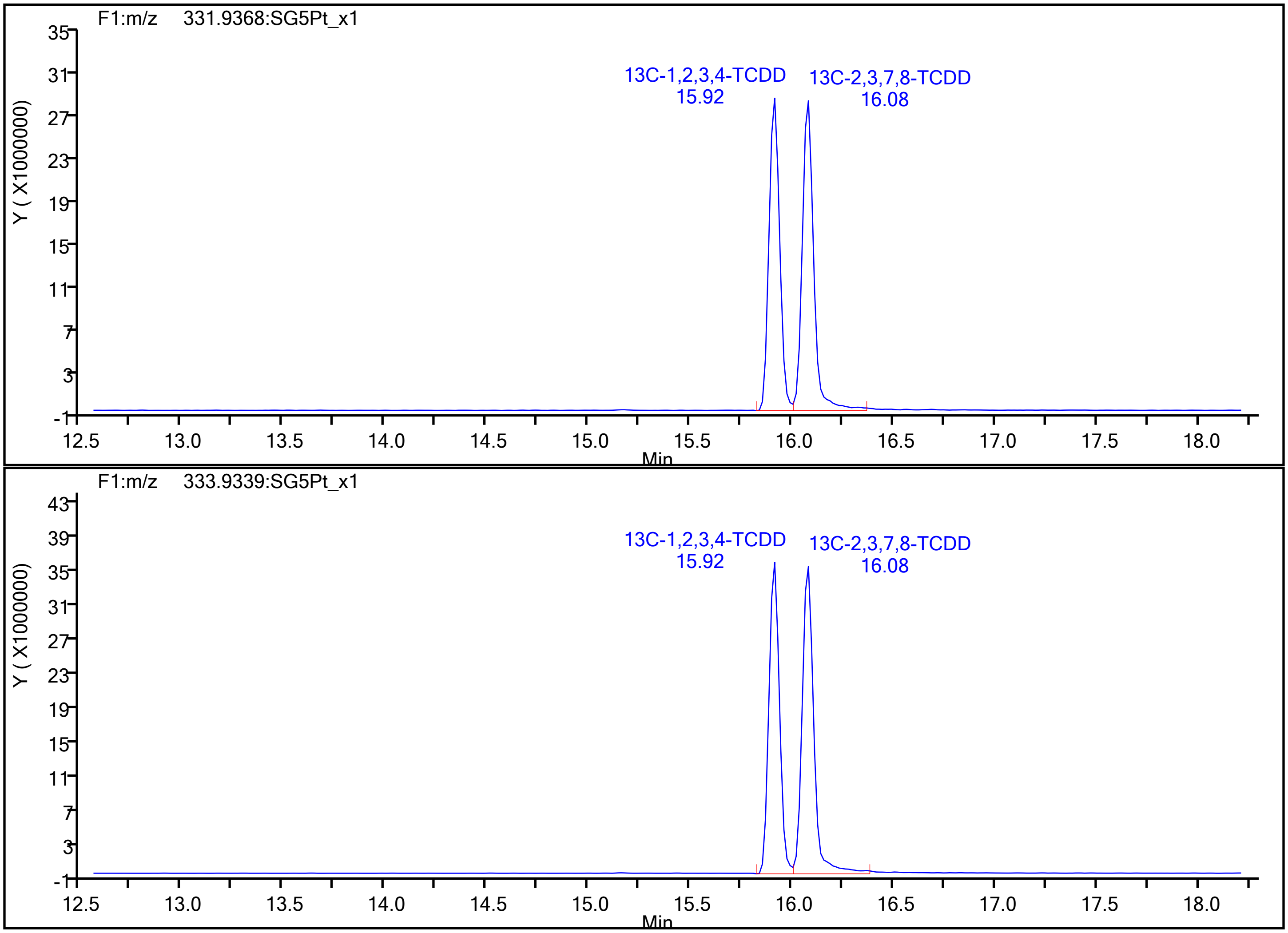

Report Date: 13-Oct-2020 01:56:38
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 13:52:24
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 2
Column Type:
Column Dia:

PeCDF

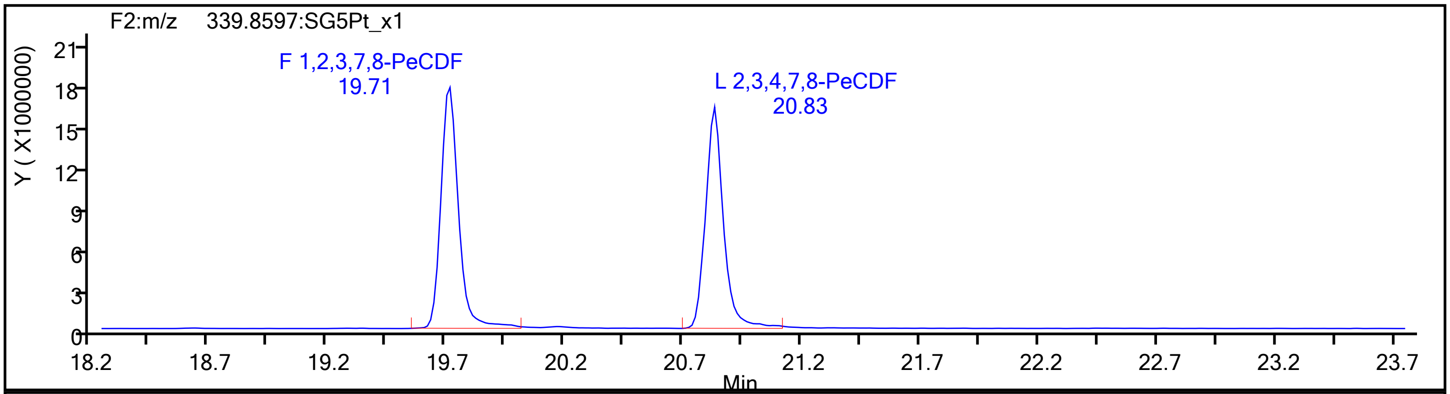

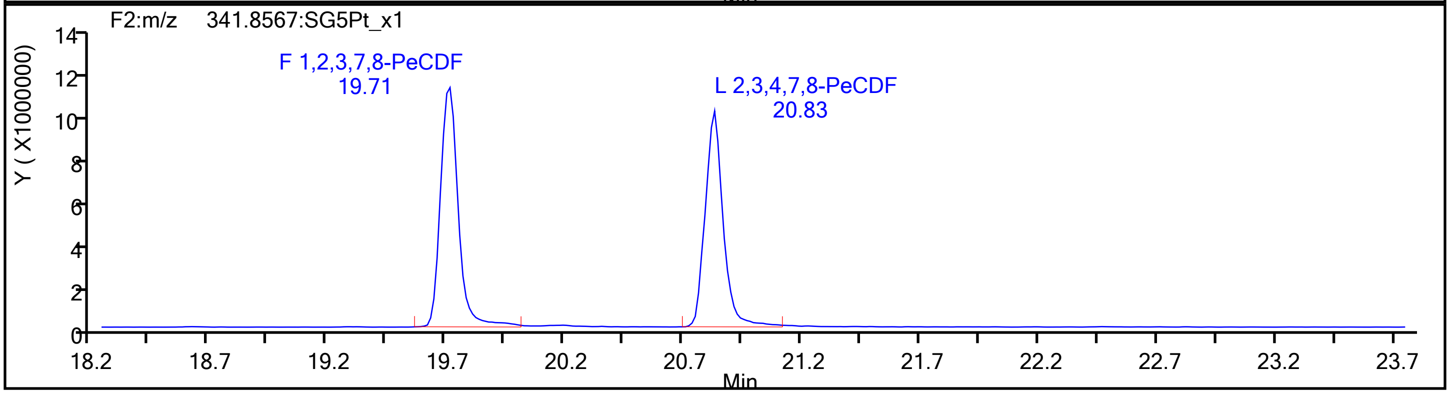

PeCDF Standards

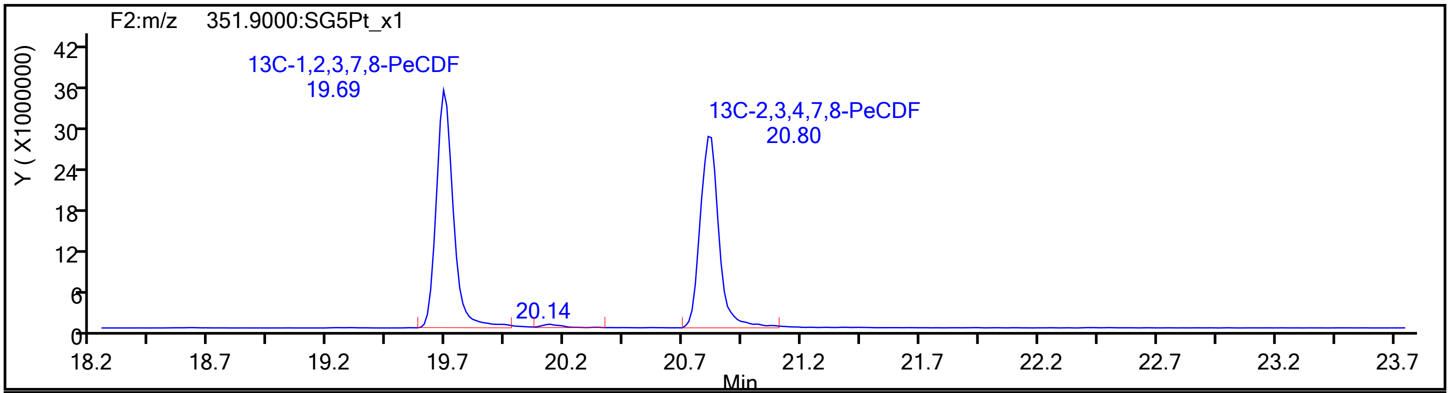

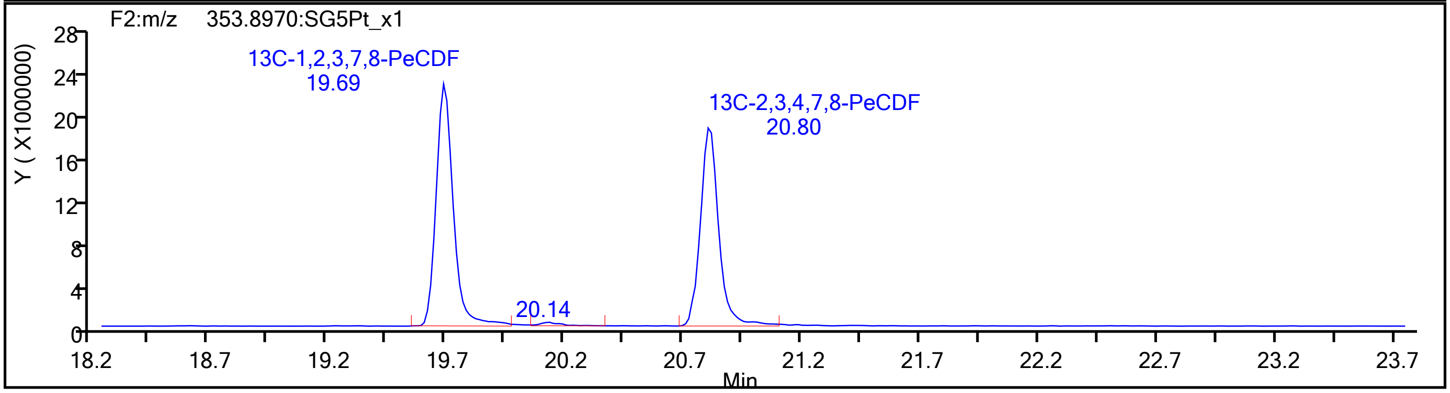

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d

Injection Date: 09-Oct-2020 13:52:24

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420483

Sample Line#: 2

Column Type:

Column Dia:

PeCDF

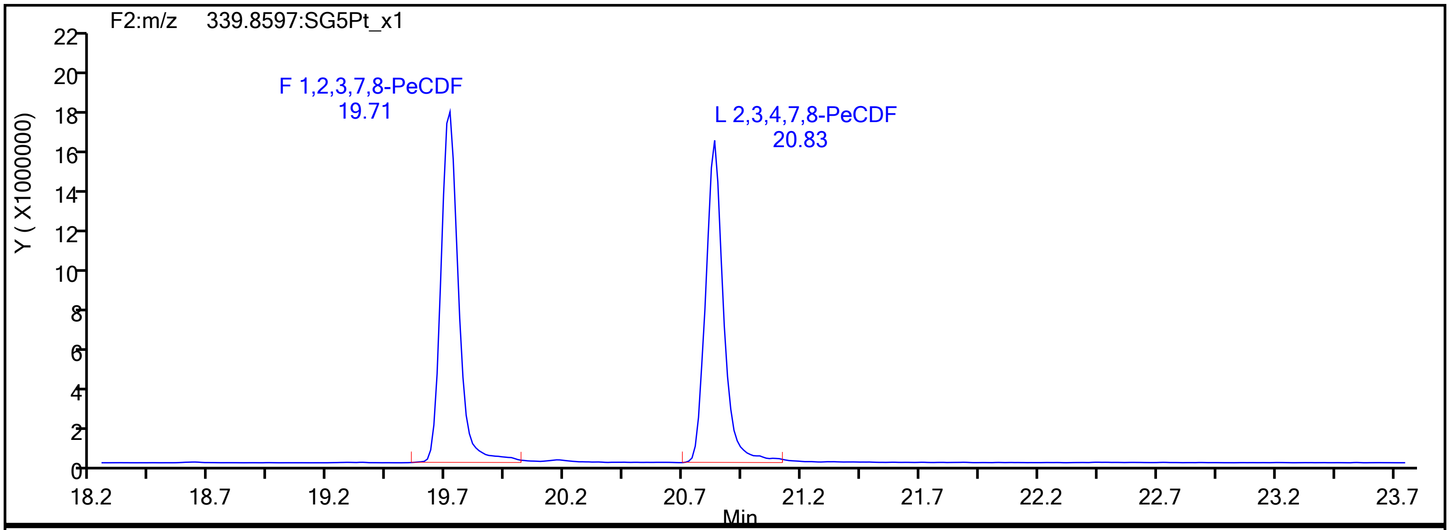

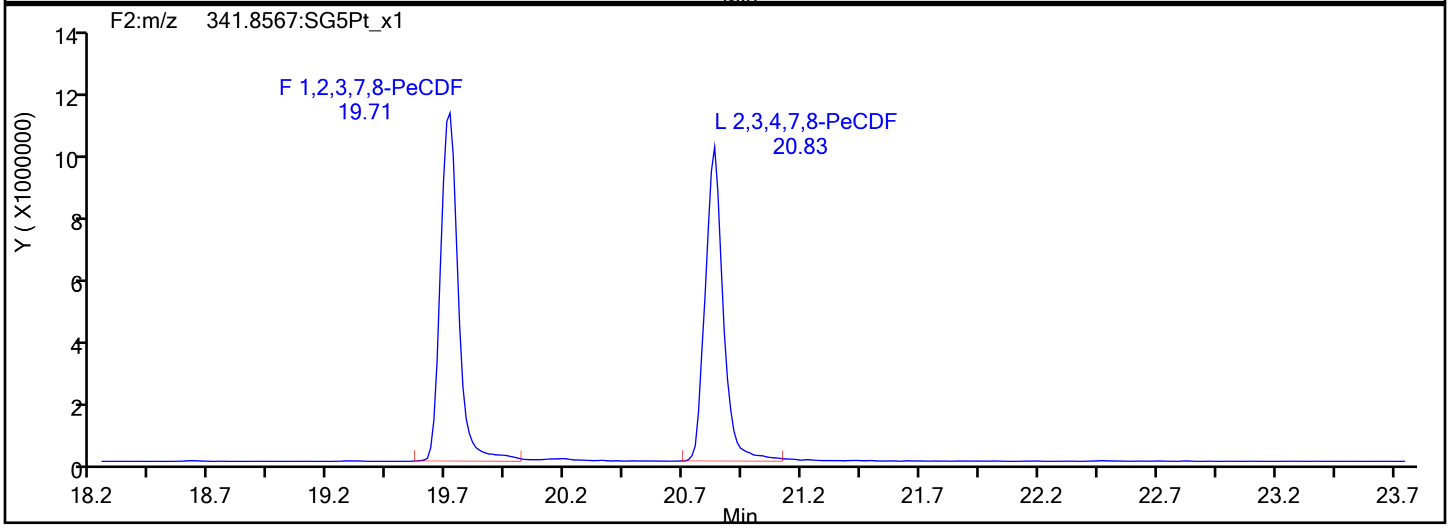

PeCDF Interference Mass

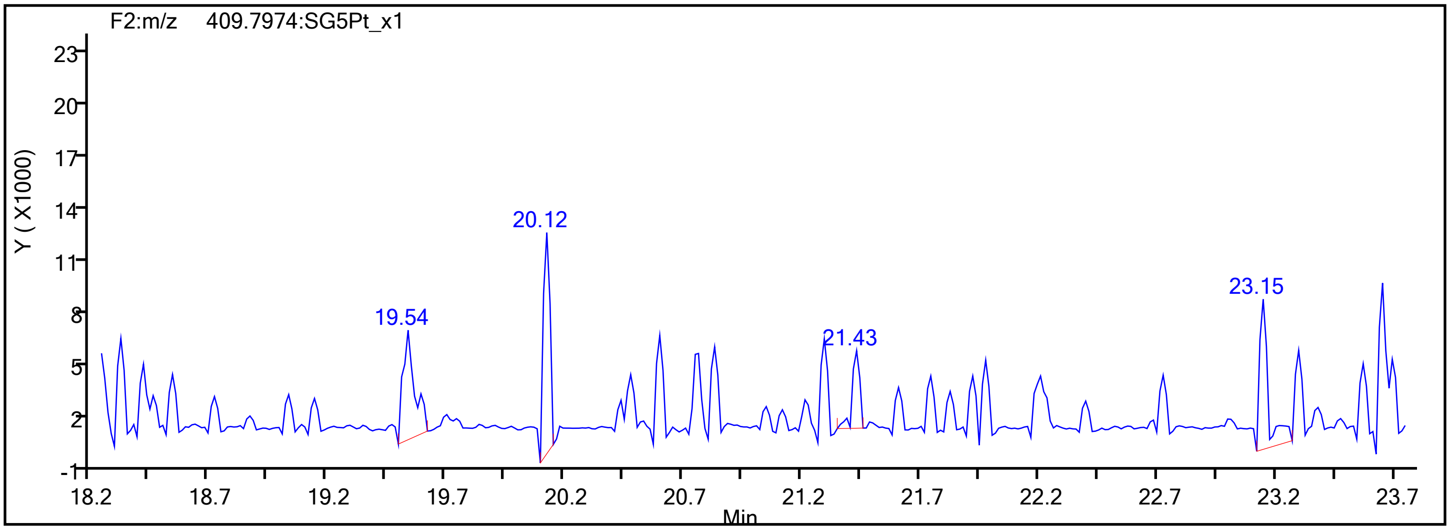

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Eurofins TestAmerica, Sacramento

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Client ID:			
Worklist#:	420483	Sample Line#:	2
Column Type:		Column Dia:	

PeCDD

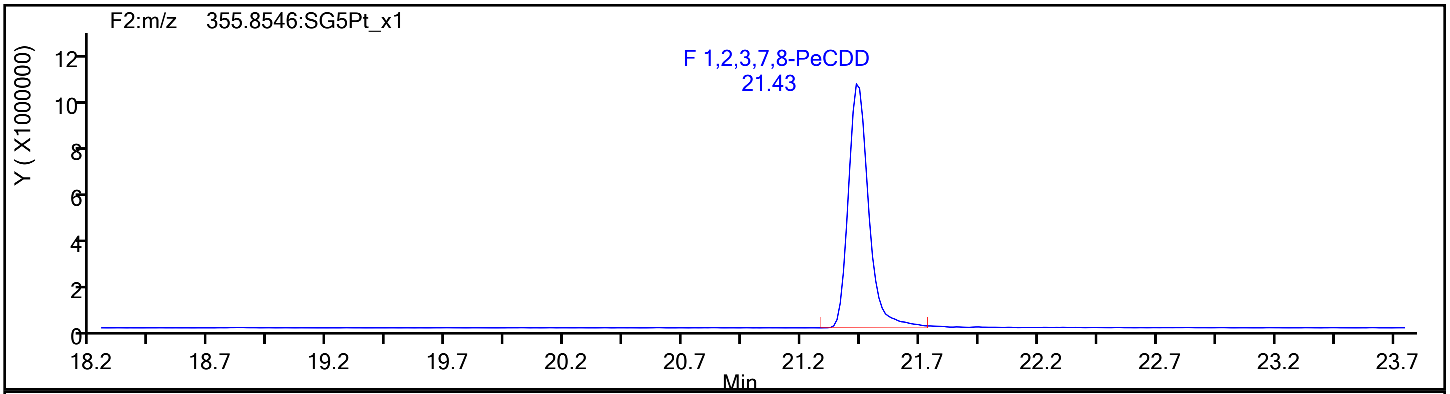

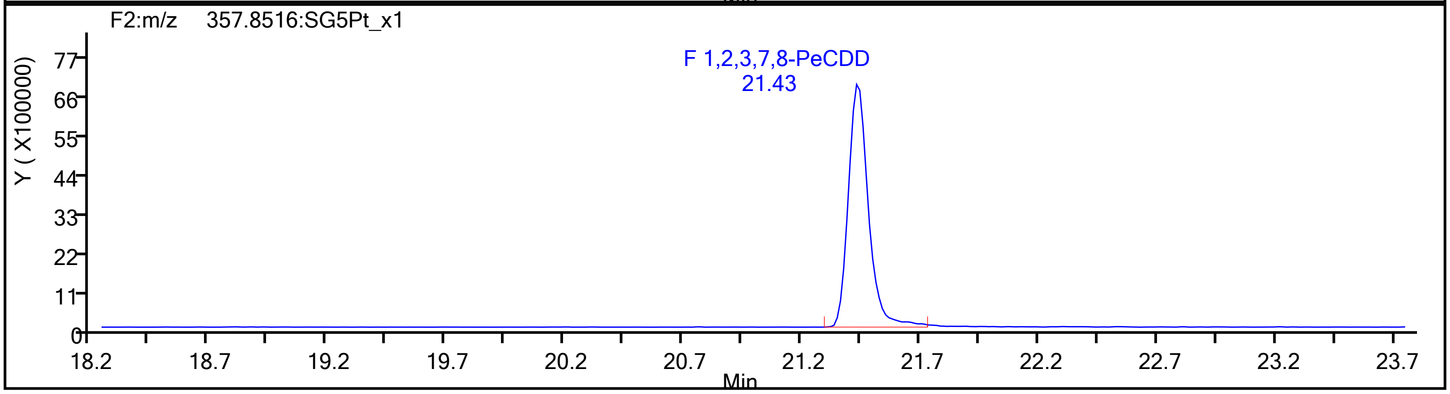

PeCDD Standards

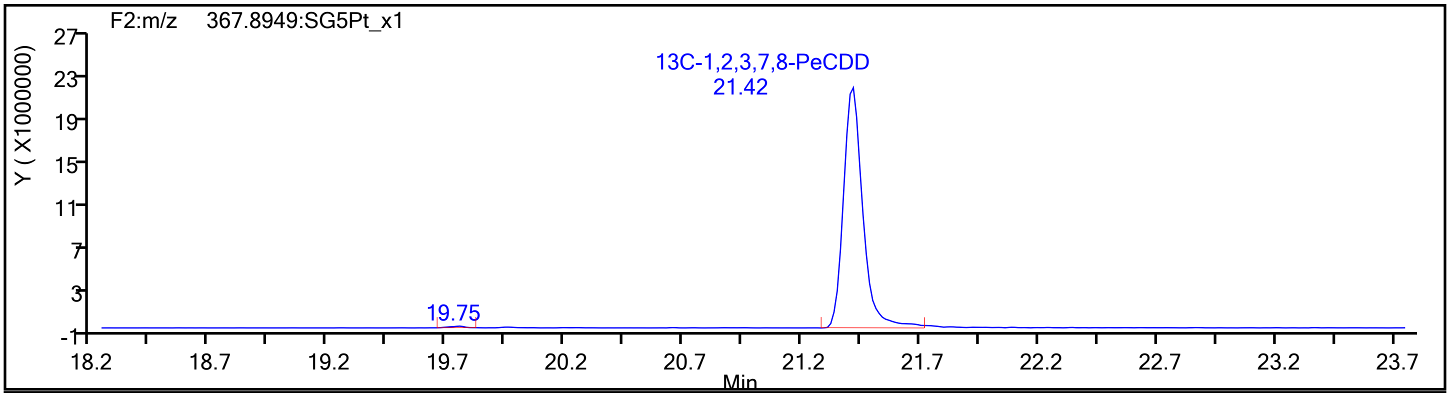

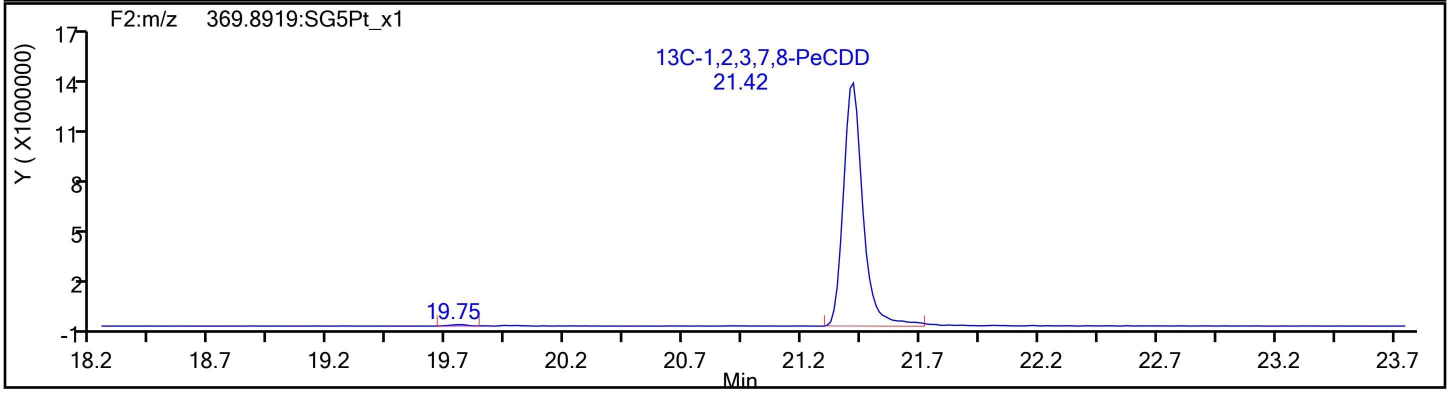

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Eurofins TestAmerica, Sacramento

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Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	2
Column Type:		Column Dia:	

HxCDF

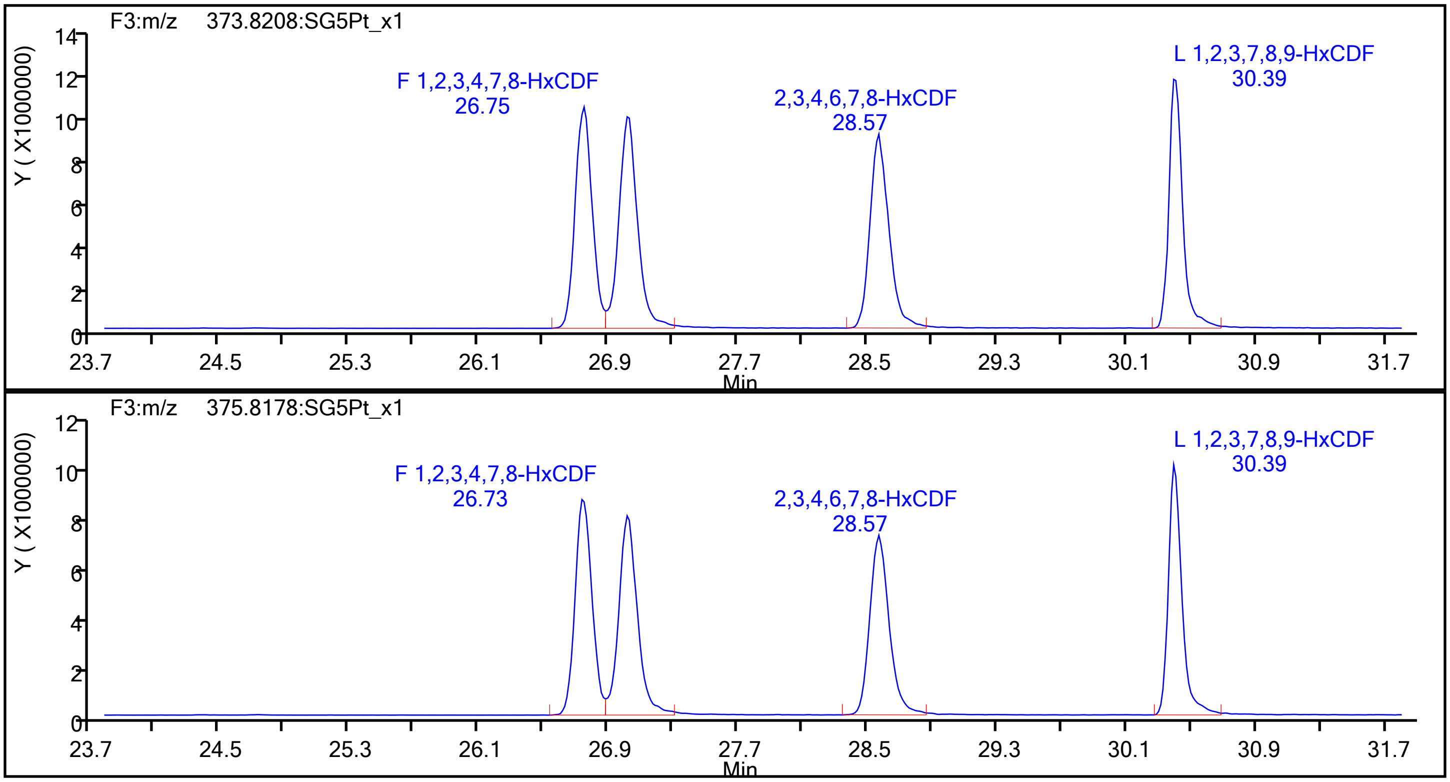

HxCDF Standards

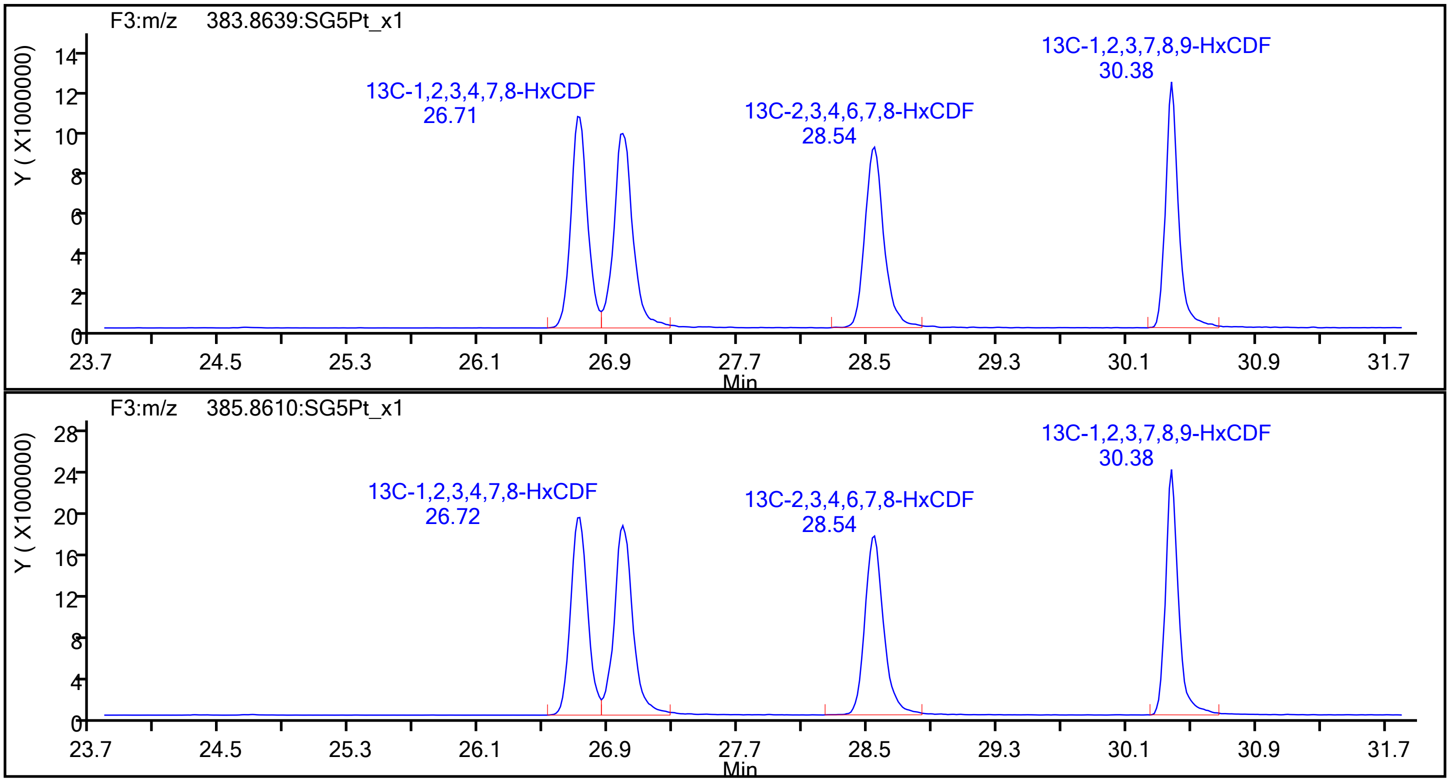

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Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 13:52:24

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

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Column Type:

Column Dia:

HxCDF

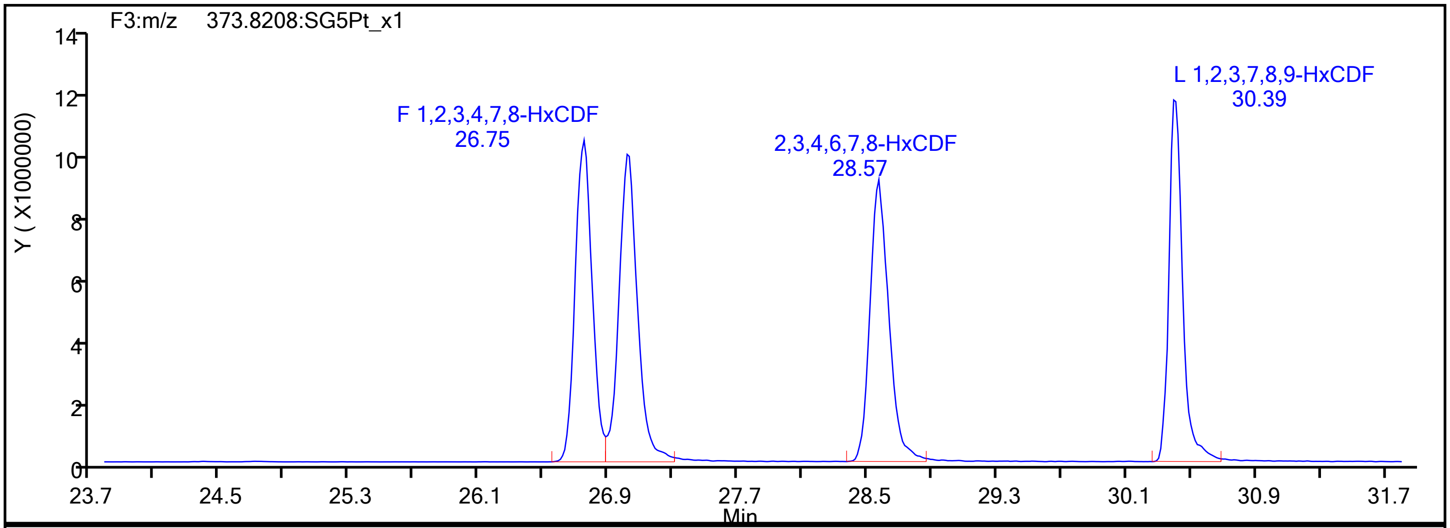

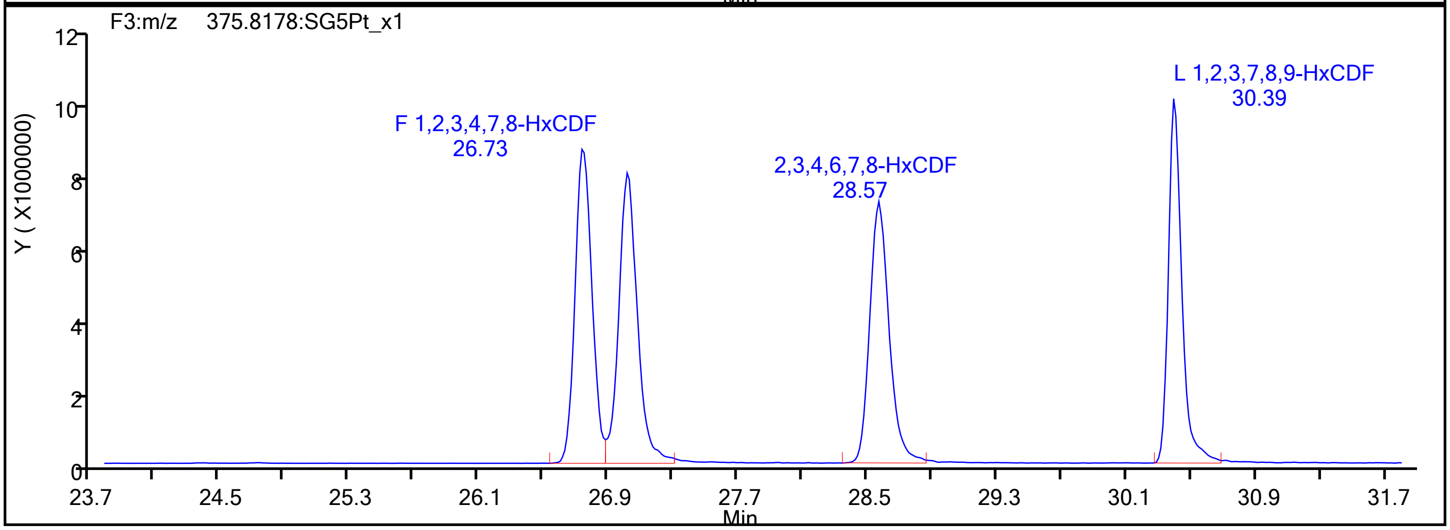

HxCDF Interference Mass

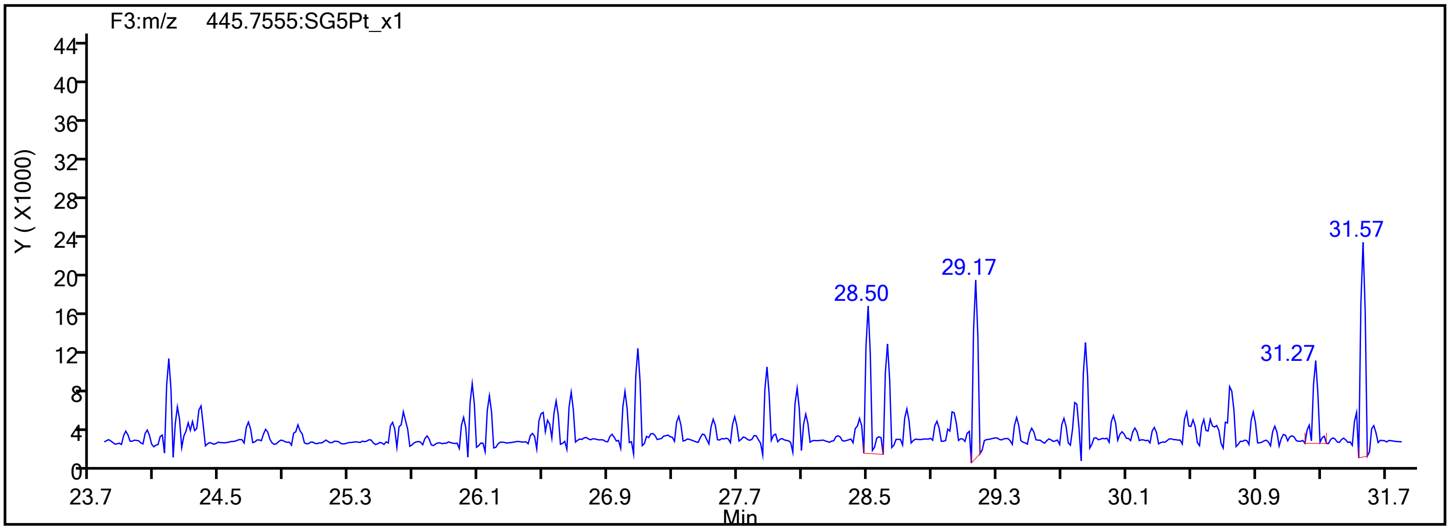

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Eurofins TestAmerica, Sacramento

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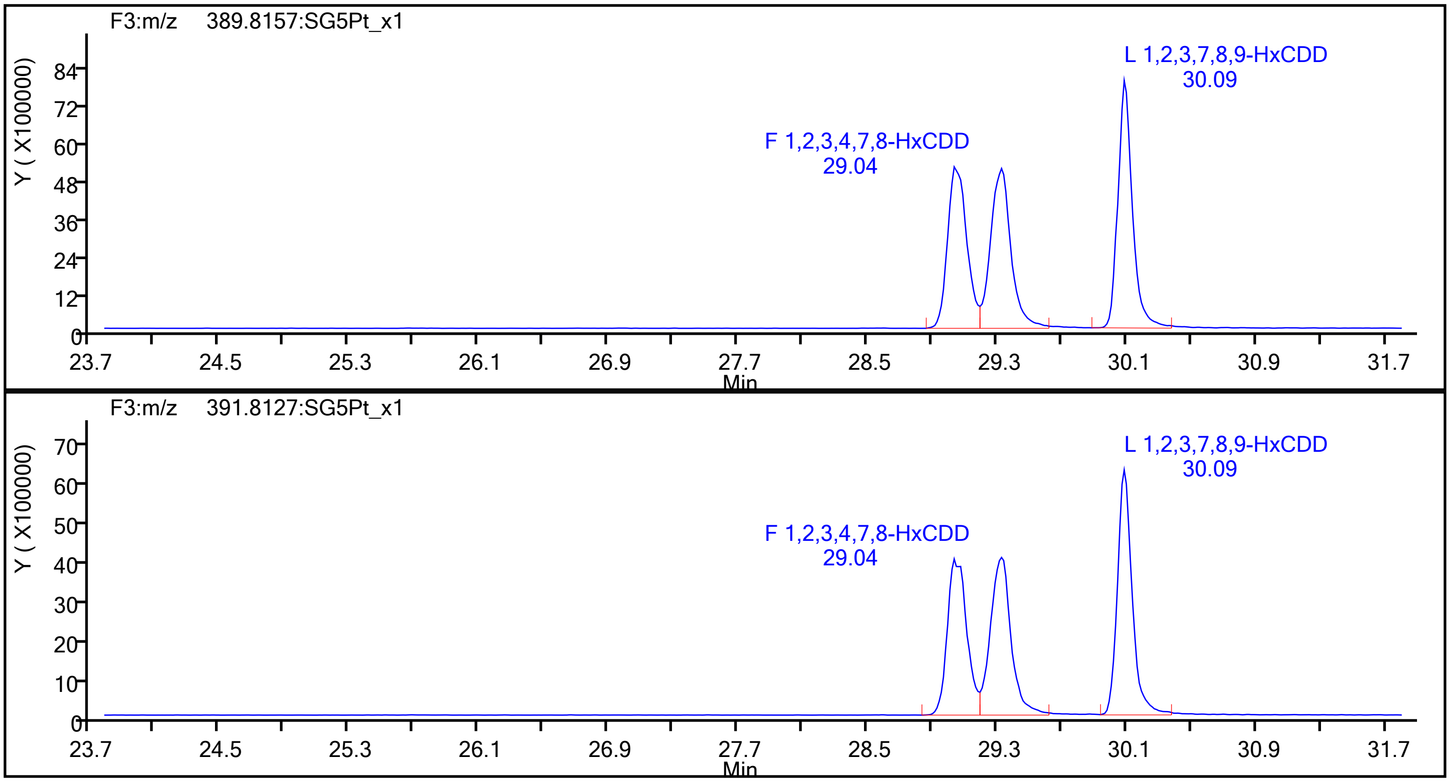

HxCDD Standards

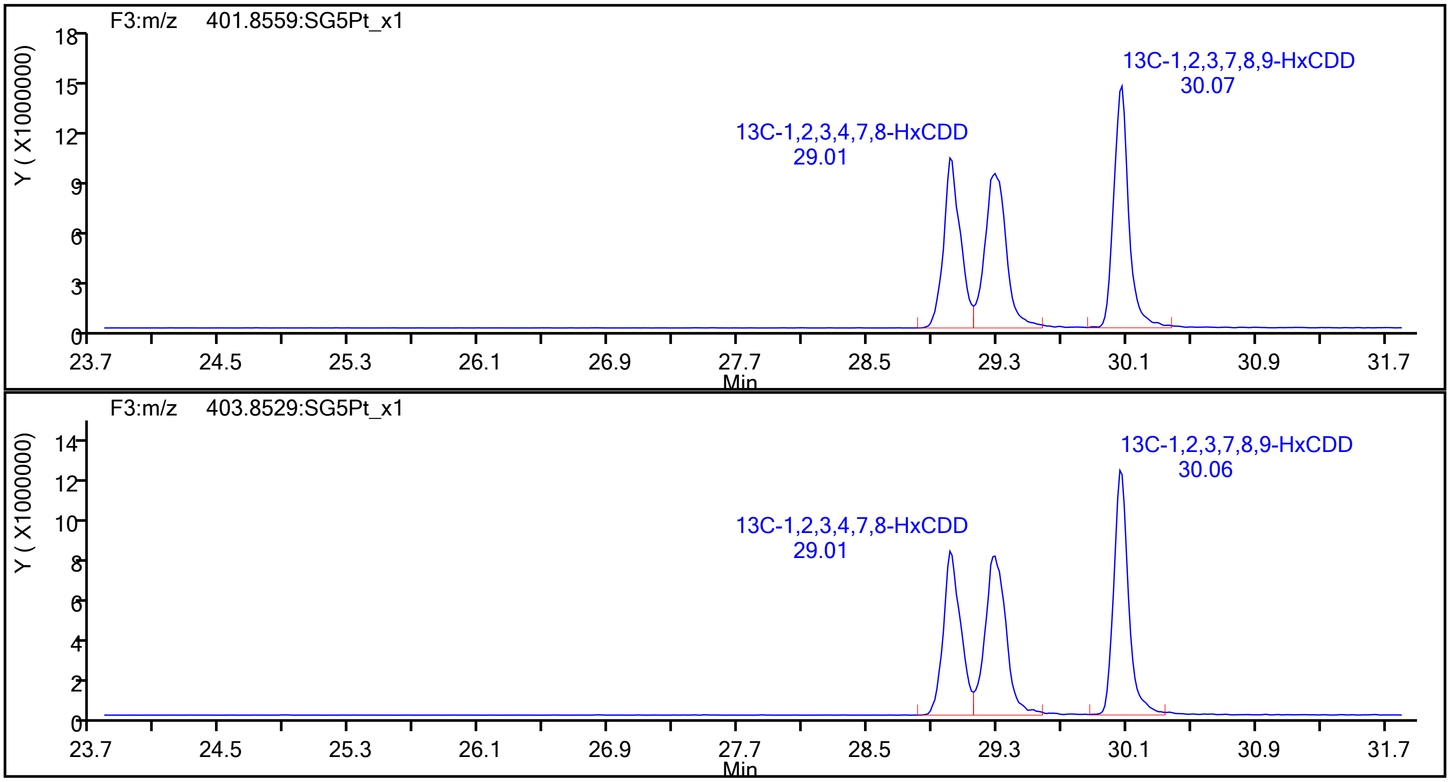

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Eurofins TestAmerica, Sacramento

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HpCDF

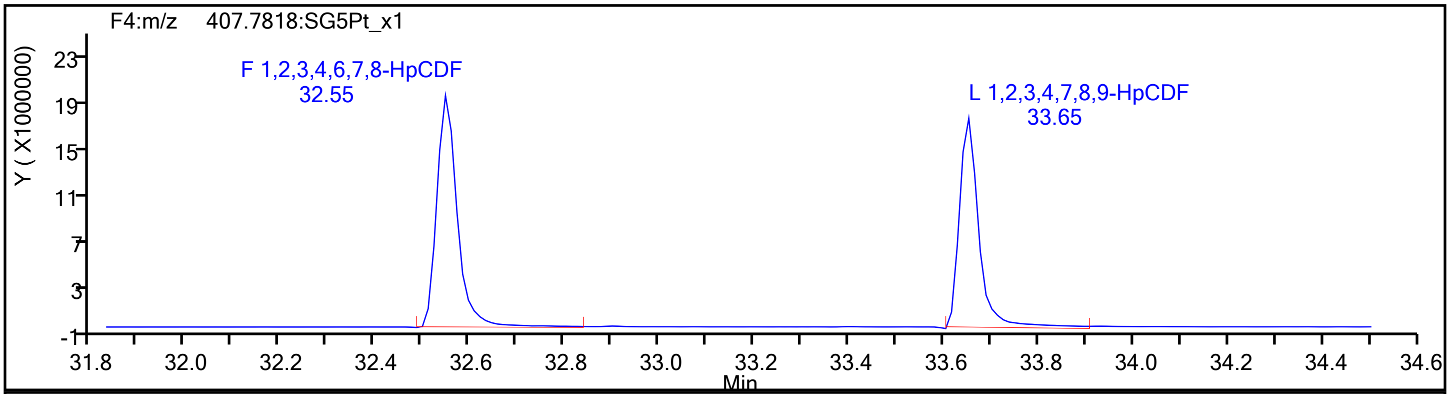

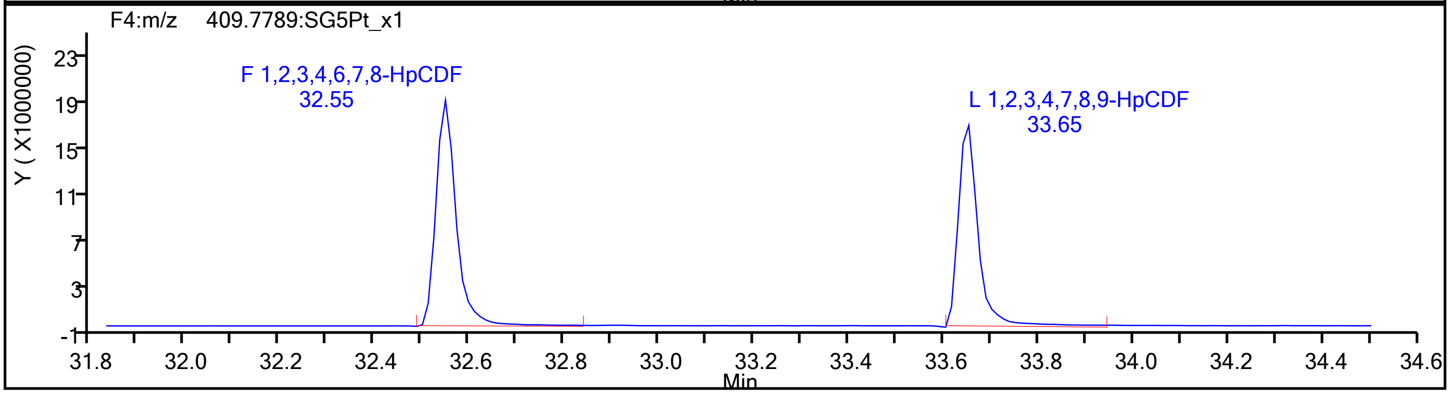

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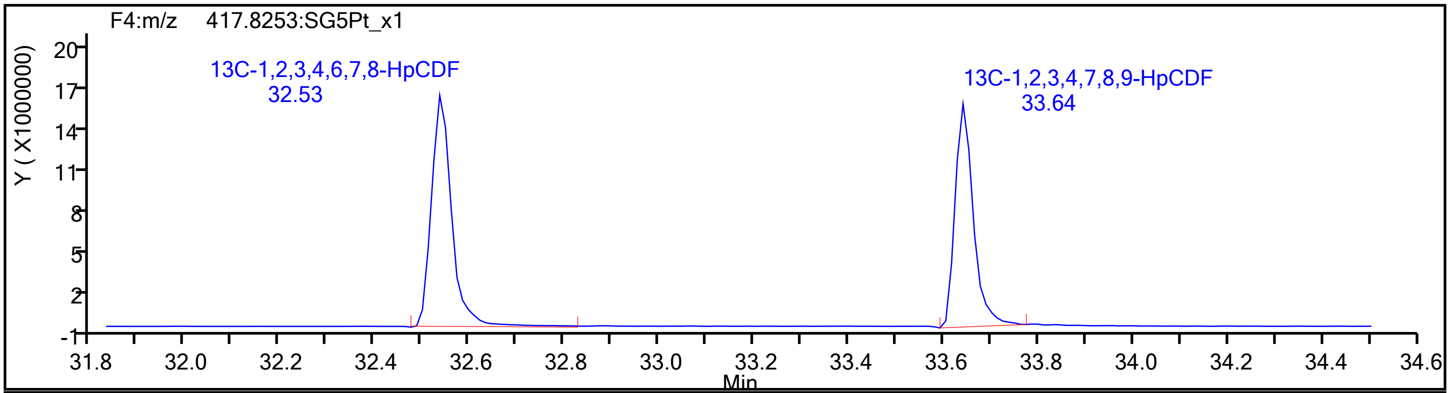

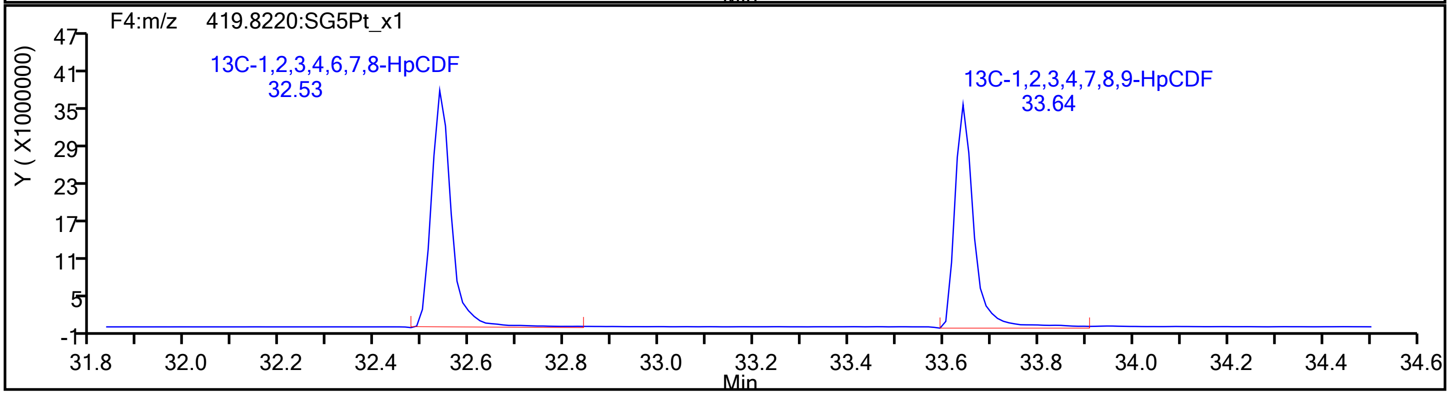

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d		
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Instrument ID:	3D5	Operator ID:	SMA
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Column Type:		Column Dia:	

HpCDF

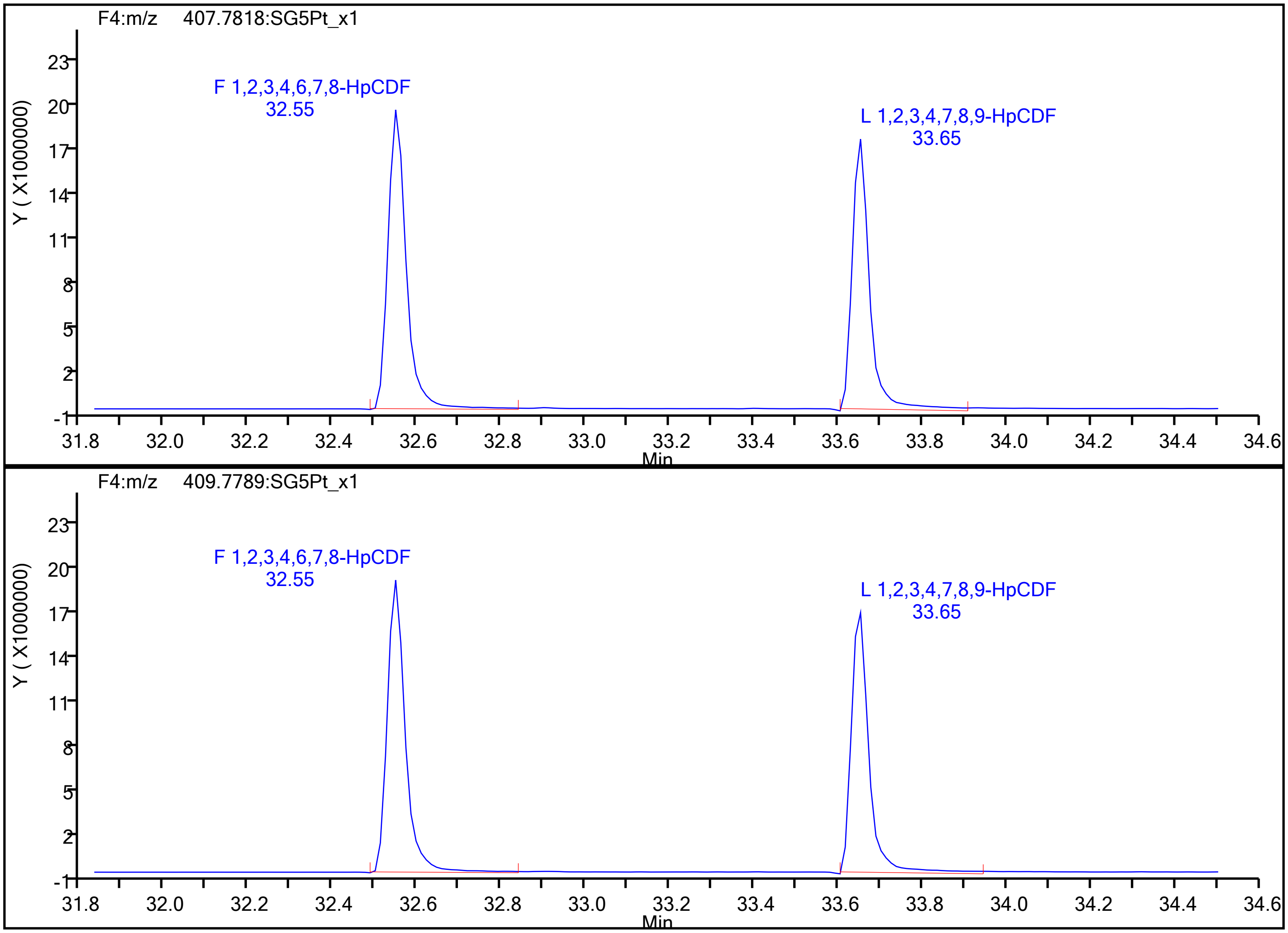

HpCDF Interference Mass

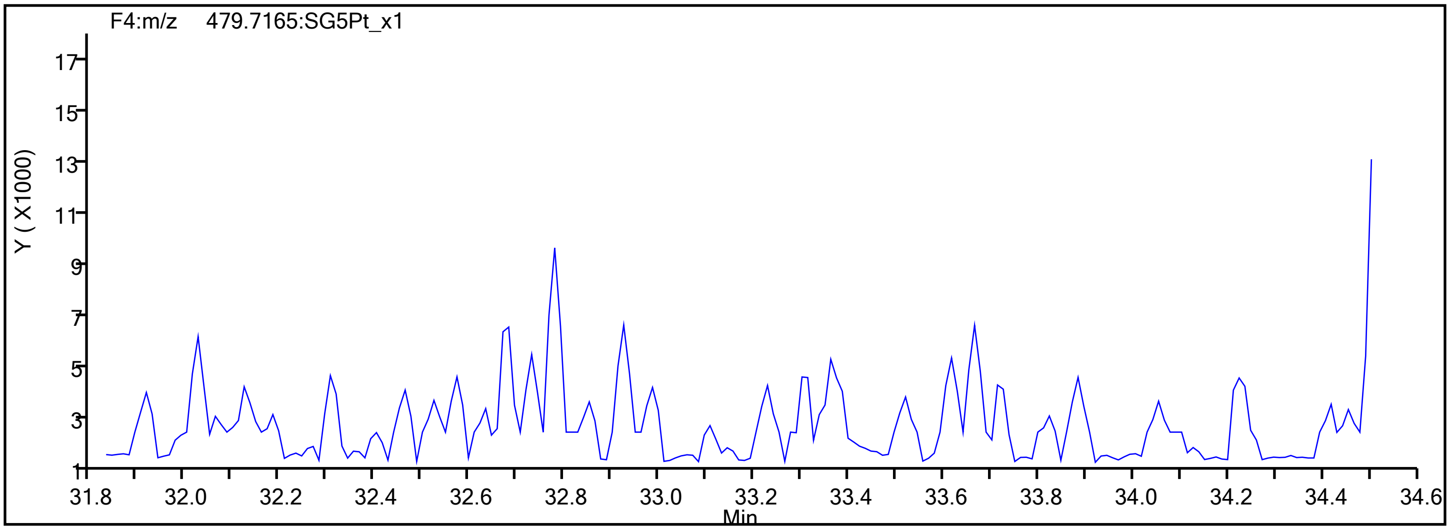

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d
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Injection Vol: 2.0 ul
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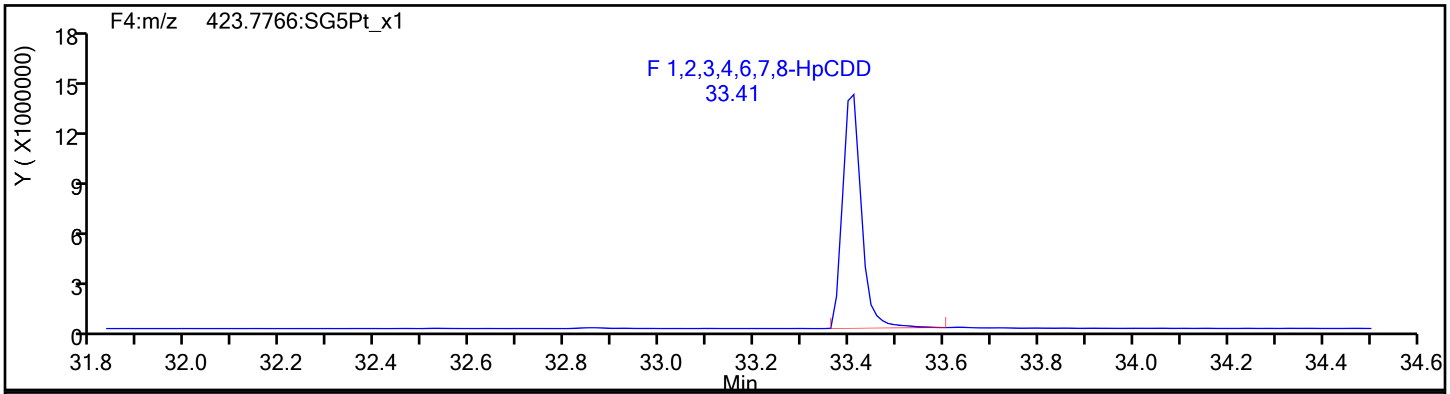

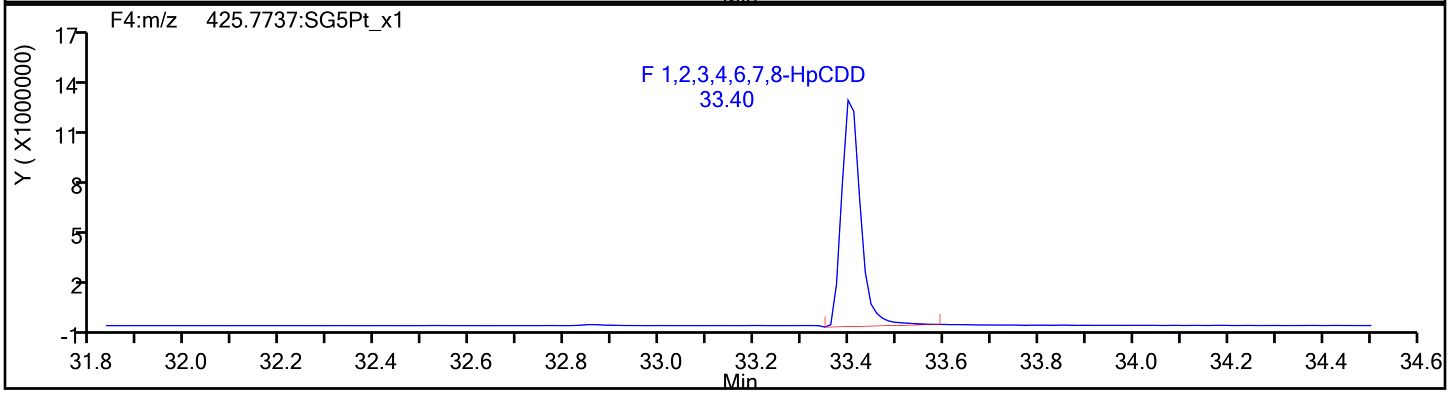

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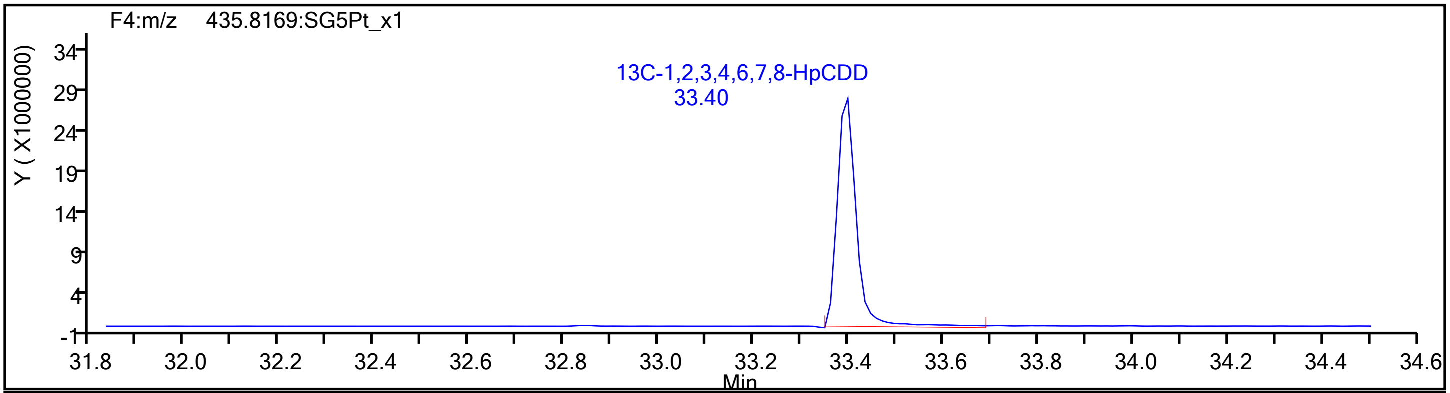

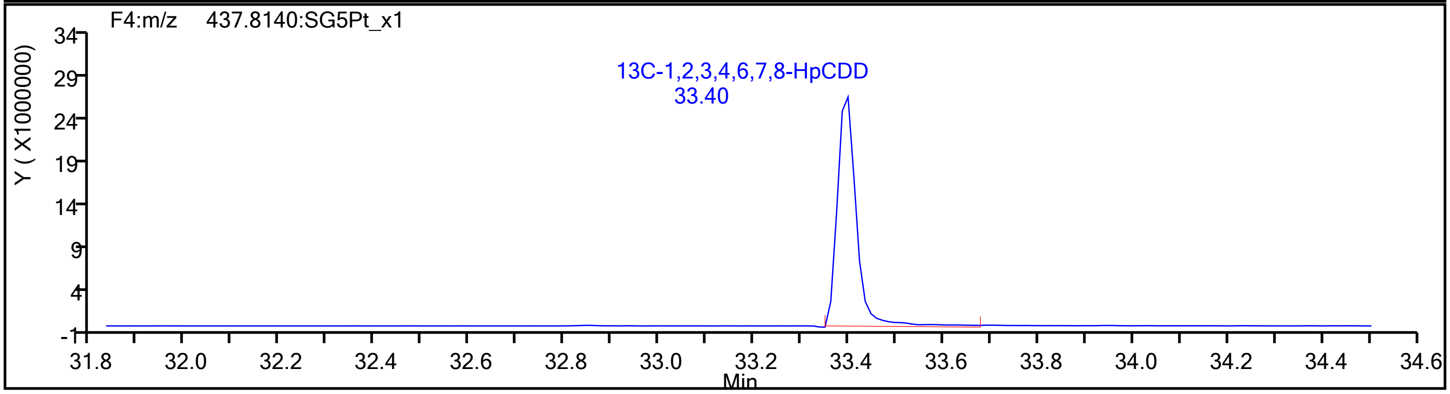

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OCDF

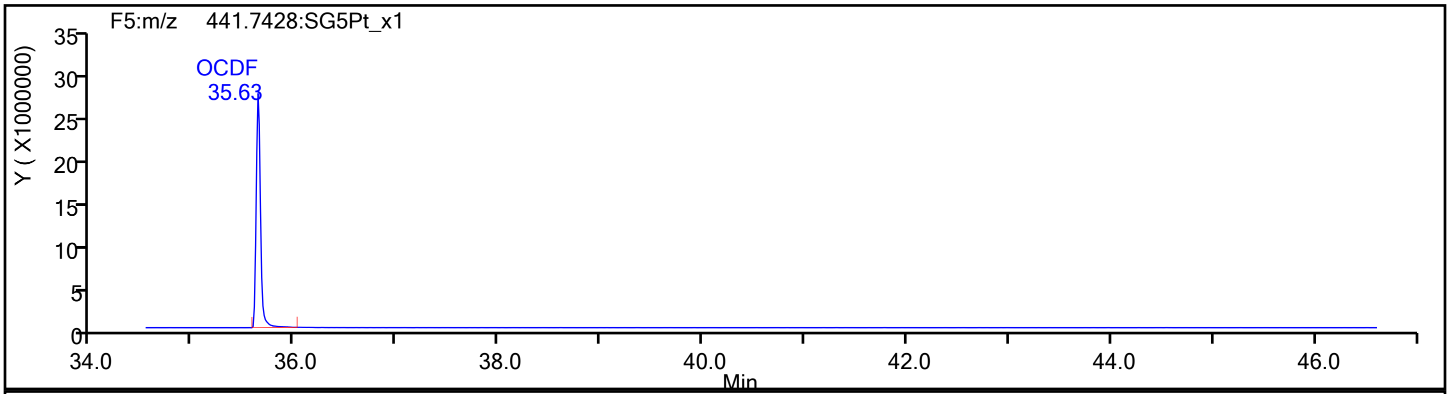

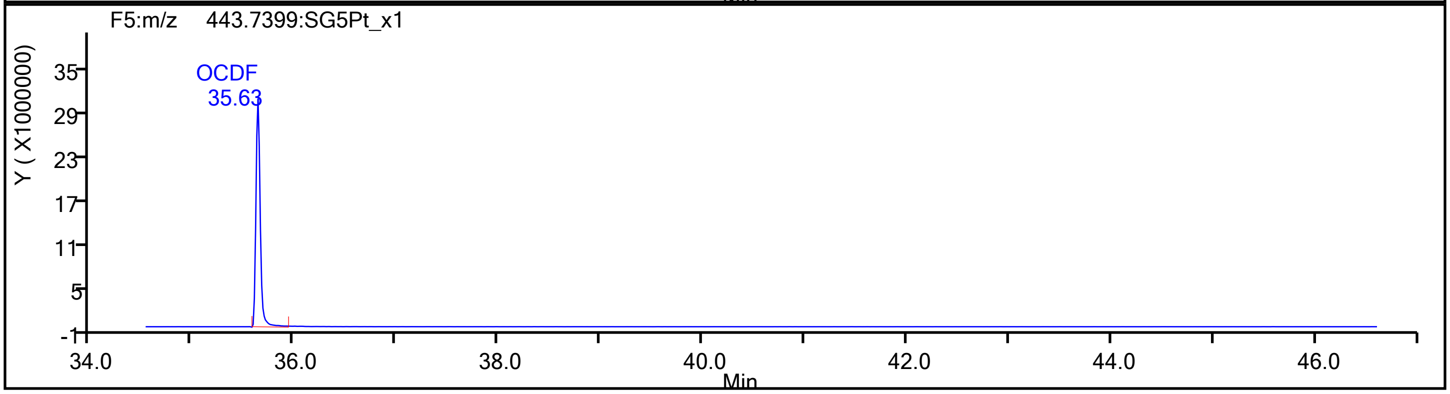

OCDF Standards

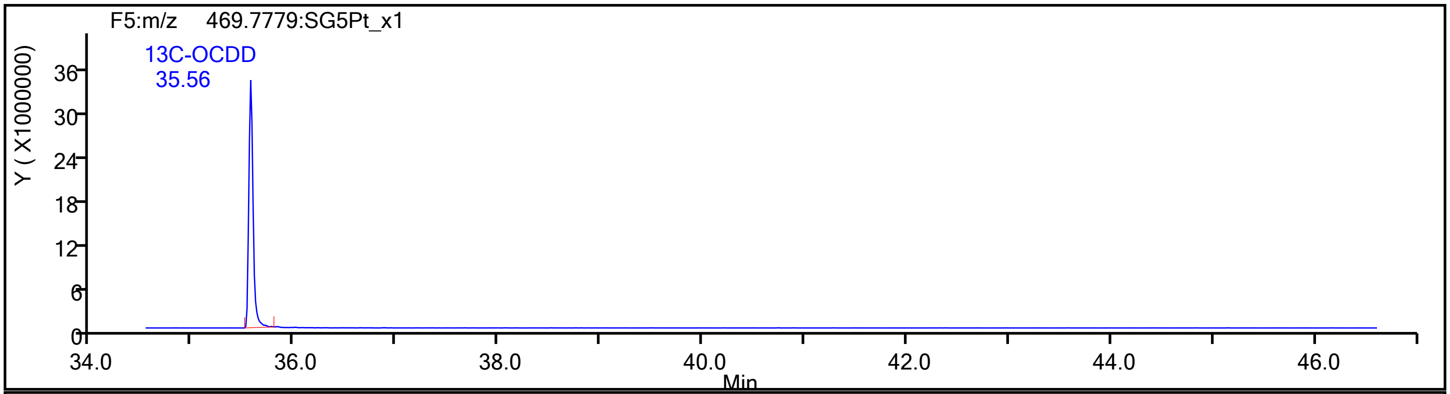

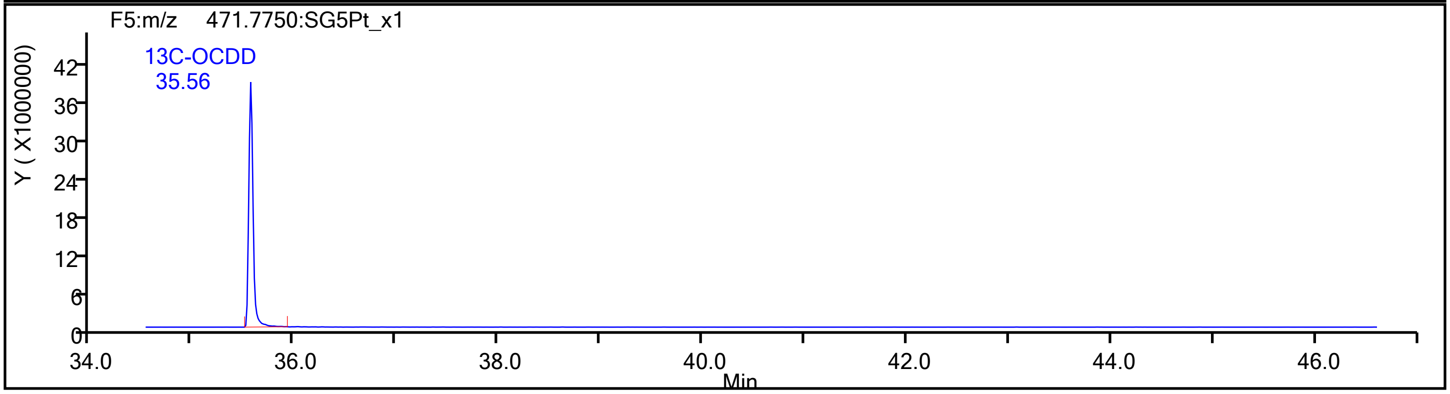

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Eurofins TestAmerica, Sacramento

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OCDF

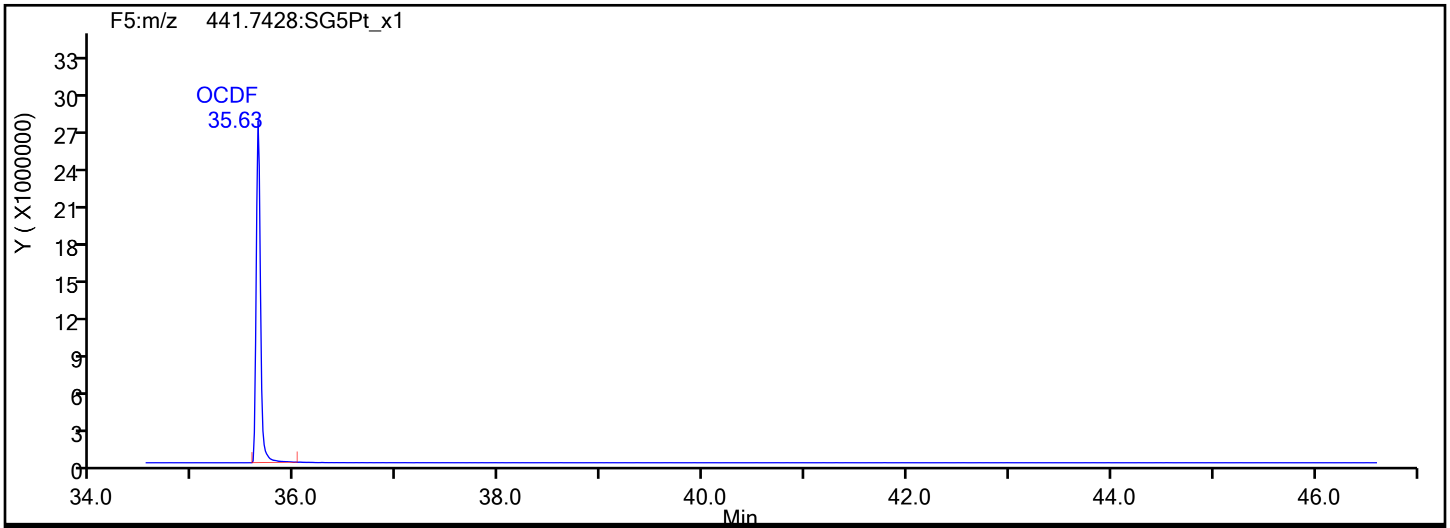

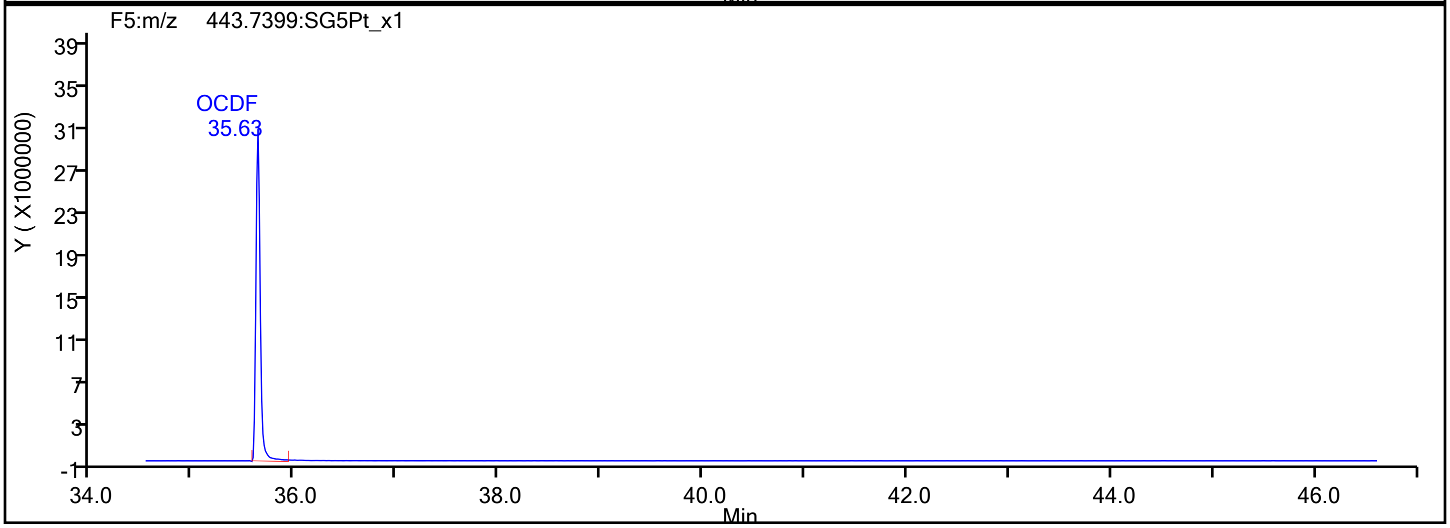

OCDF Interference Mass

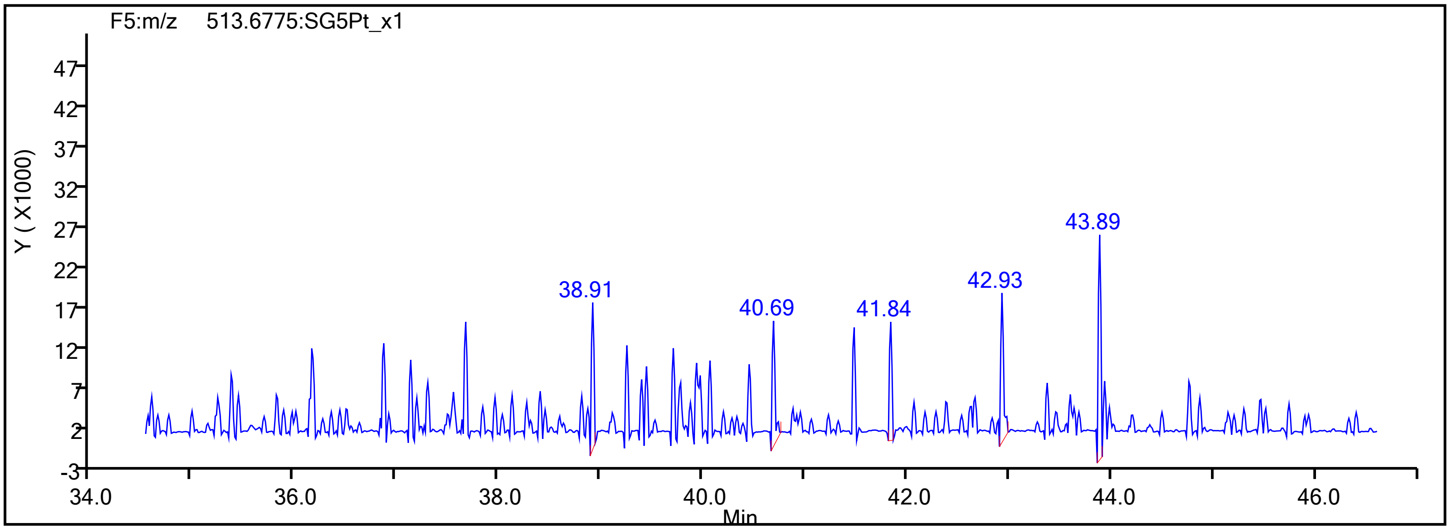

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d		
Injection Date:	09-Oct-2020 13:52:24	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	2
Column Type:		Column Dia:	

OCDD

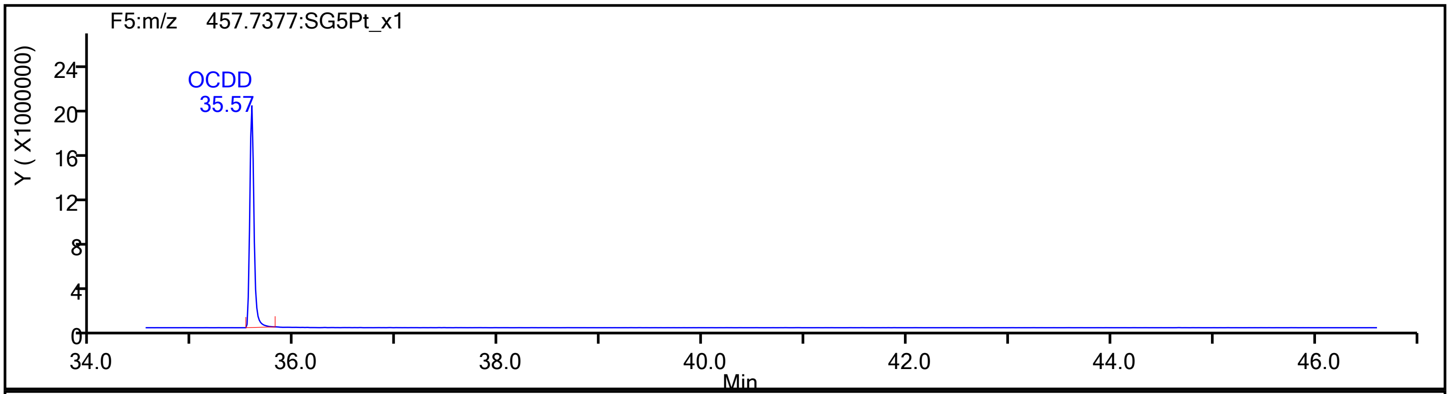

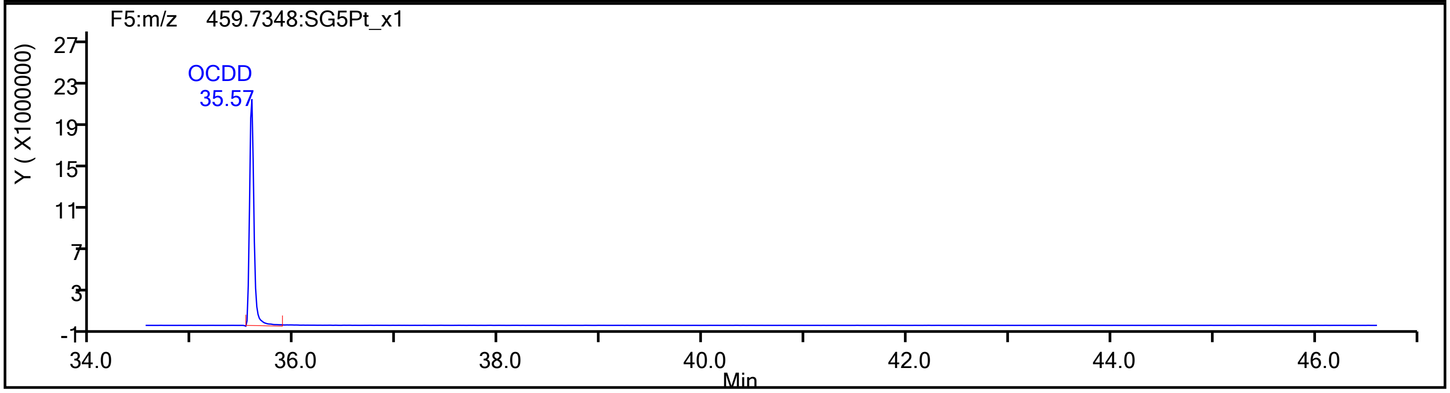

OCDD Standards

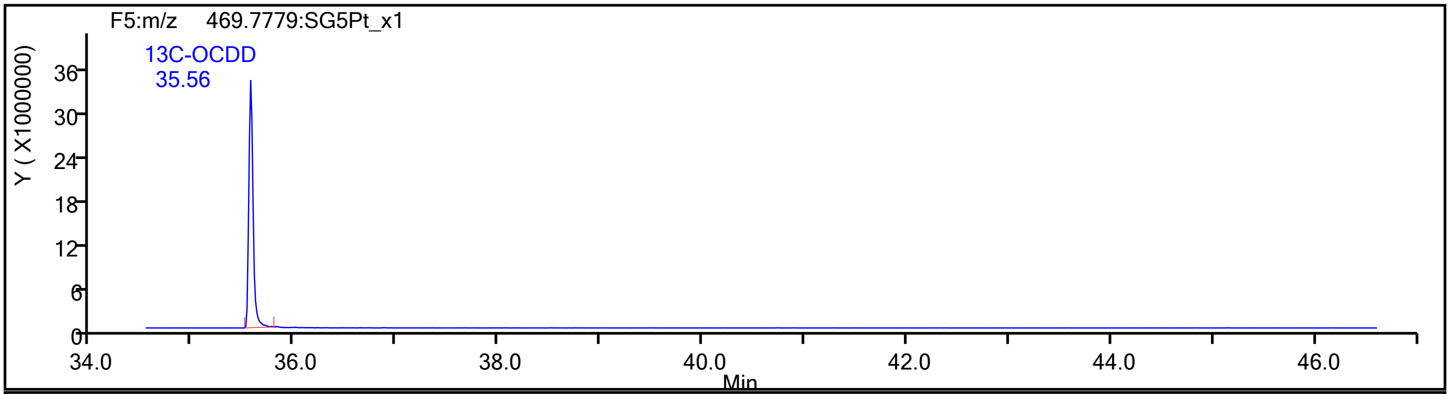

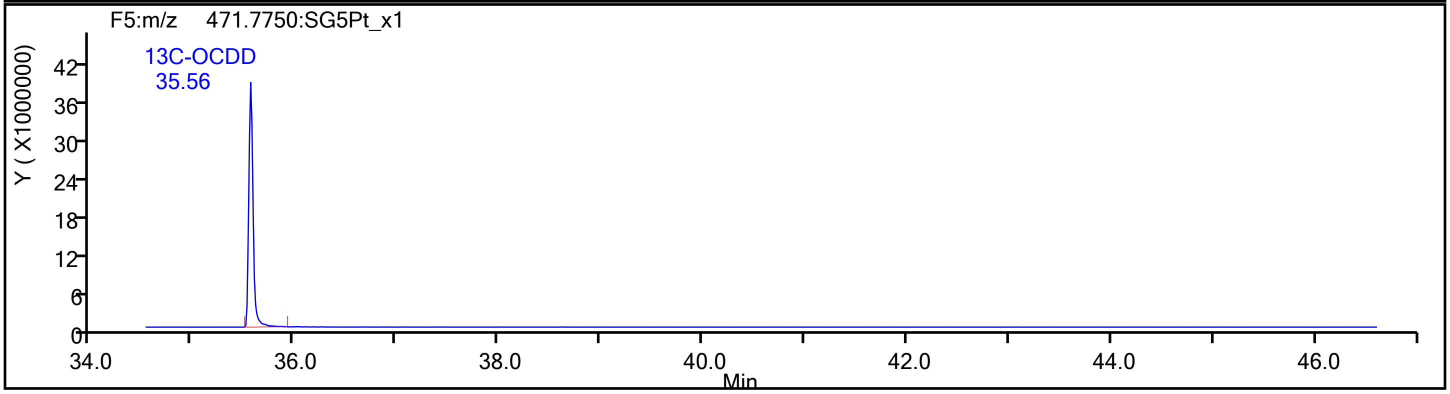

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d
Injection Date: 09-Oct-2020 13:52:24
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483
Sample Line#: 2
Column Type:
Column Dia:

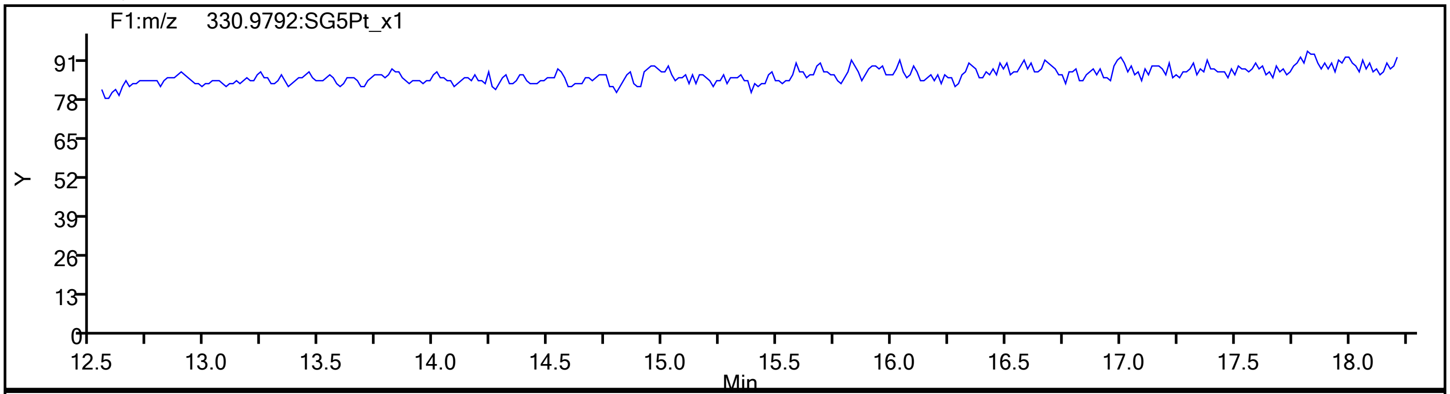

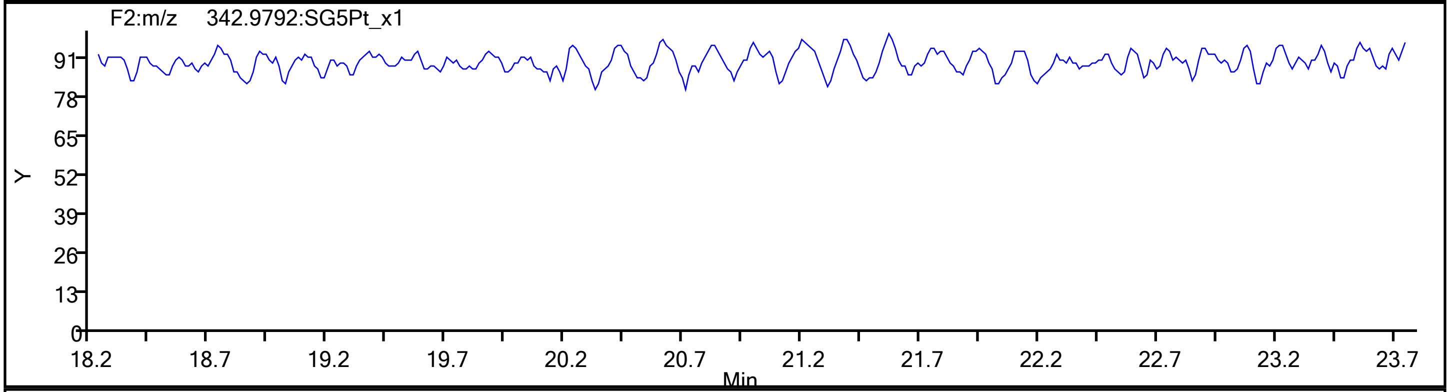

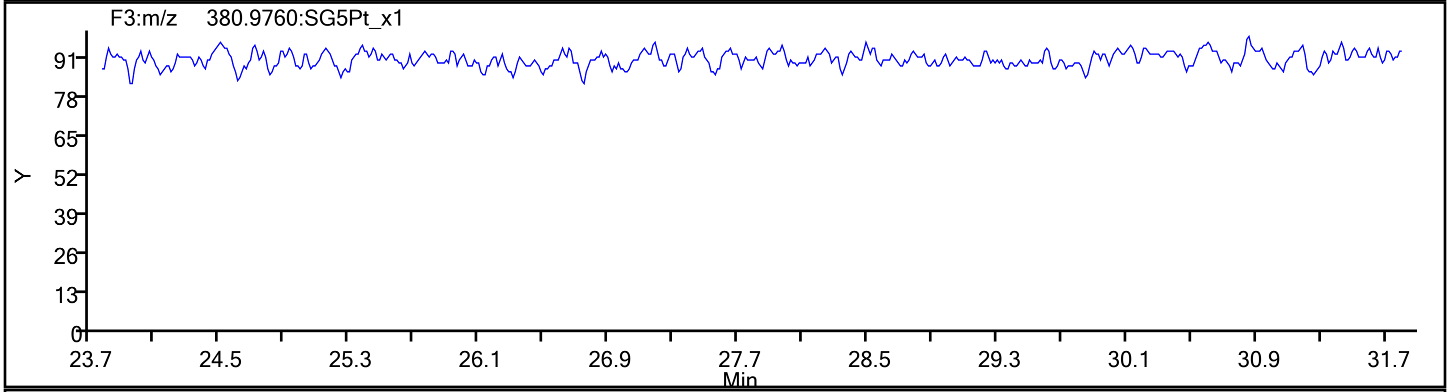

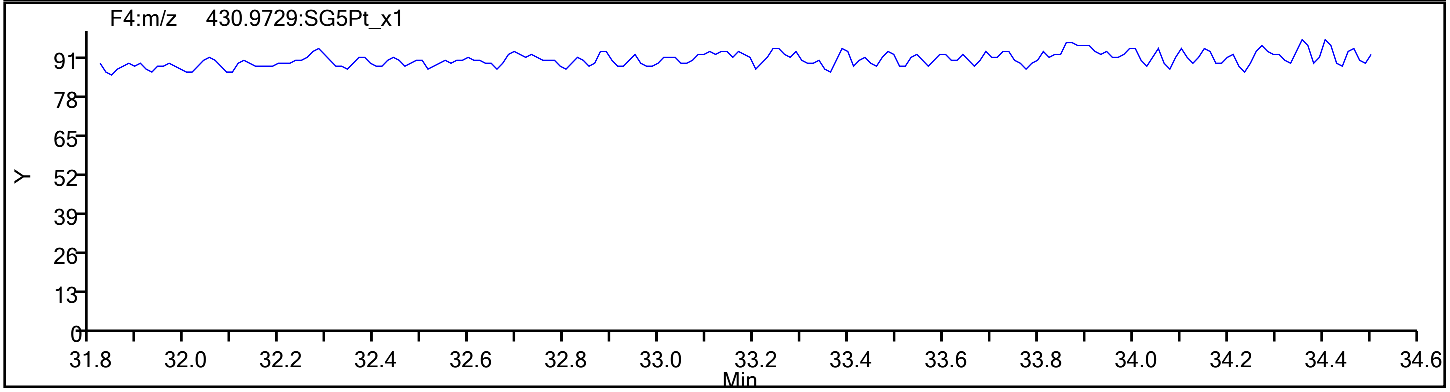

Report Date: 13-Oct-2020 01:56:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_2.d

Injection Date: 09-Oct-2020 13:52:24

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420483

Sample Line#: 2

Column Type:

Column Dia:

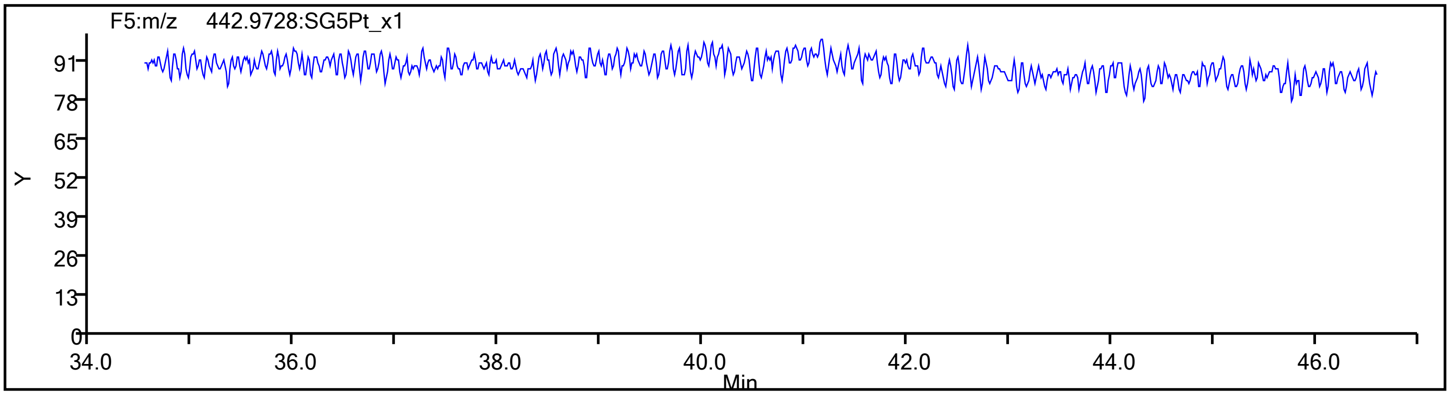

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: ICV 320-413255/9 Calibration Date: 09/17/2020 18:07

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 17se20dfs1_10.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.044		38.5	40.0	96	70-130
2,3,7,8-TCDD	AveID	1.081	1.087		40.2	40.0	101	70-130
1,2,3,7,8-PeCDF	AveID	1.055	0.9812		186	200	93	70-130
2,3,4,7,8-PeCDF	AveID	1.104	1.101		199	200	100	70-130
1,2,3,7,8-PeCDD	AveID	1.068	0.9687		181	200	91	70-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.190		188	200	94	70-130
1,2,3,6,7,8-HxCDF	AveID	1.223	1.204		197	200	98	70-130
2,3,4,6,7,8-HxCDF	AveID	1.246	1.227		197	200	98	70-130
1,2,3,4,7,8-HxCDD	AveID	1.156	1.078		186	200	93	70-130
1,2,3,6,7,8-HxCDD	AveID	1.028	1.027		200	200	100	70-130
1,2,3,7,8,9-HxCDD	AveID	1.179	1.087		184	200	92	70-130
1,2,3,7,8,9-HxCDF	AveID	1.264	1.152		182	200	91	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.461		194	200	97	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.012		190	200	95	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.318		181	200	91	70-130
OCDD	AveID	1.129	1.091		386	400	97	70-130
OCDF	AveID	1.430	1.358		380	400	95	70-130
13C-2,3,7,8-TCDF	Ave	1.588	1.529		96.3	100	96	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.104		98.6	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.483		100	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.470		106	100	106	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9478		101	100	101	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.162		102	100	102	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.283		97.4	100	97	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.247		100	100	100	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8698		103	100	103	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	1.008		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.196		101	100	101	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	0.9891		100	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9529		99.7	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.9766		106	100	106	77-129
13C-OCDD	Ave	0.7420	0.7100		191	200	96	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.114		38.9	40.0	97	79-127

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 18:07:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 08:47:54 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1028

First Level Reviewer: krenns Date: 21-Sep-2020 08:47:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.122	2659596	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.186	4067134	0.80	1.5883	96.3	96.3	0.3357	0.3357	96.28	
2,3,7,8-TCDF	19.220	1698476	0.78	1.0857	38.5	38.5	0.0690	0.0690	96.17	
A Non-2,3,7,8-sub-TCDF	18.794	22290	0.77	1.0857	0.6140	0.5048	0.0690	0.3462		RQ
S Total TCDF					39.1	39.0	0.0690	0.0690		RQ
D 13C-2,3,7,8-TCDD	20.474	2936527	0.78	1.1194	98.6	98.6	0.3199	0.3199	98.63	
2,3,7,8-TCDD	20.500	1277292	0.79	1.0810	40.2	40.2	0.1149	0.1149	101	
$ 37Cl4-2,3,7,8-TCDD	20.508	1185629		1.1468	38.9	38.9	0.0374	0.0374	97.18	
A Non-2,3,7,8-sub-TCDD	19.607	20912	0.66	1.0810	0.6588	0.6588	0.1149	0.6588		
S Total TCDD					40.9	40.9	0.1149	0.1149		
D 13C-1,2,3,7,8-PeCDF	26.281	3942977	1.60	1.4782	100.3	100.3	0.4662	0.4662	100	
1,2,3,7,8-PeCDF	26.307	7737830	1.56	1.0547	186.1	186.1	0.9257	0.9257	93.04	
D 13C-2,3,4,7,8-PeCDF	27.747	3909476	1.61	1.3912	105.7	105.7	0.4954	0.4954	106	
2,3,4,7,8-PeCDF	27.764	8605609	1.55	1.1035	199.5	199.5	0.9067	0.9067	99.73	
A F1 PeCDFs	23.600						0.0195	0.0195		
A Non-2,3,7,8-sub-PeCDF	26.993	175820	1.44	1.0791	4.150	4.150	0.9159	4.150		
S Total PeCDF					389.7	389.7	0.9162	0.9162		
D 13C-1,2,3,7,8-PeCDD	28.521	2520875	1.58	0.9415	100.7	100.7	0.2155	0.2155	101	
1,2,3,7,8-PeCDD	28.547	4883935	1.57	1.0680	181.4	181.4	0.1964	0.1964	90.70	
A Non-2,3,7,8-sub-PeCDD	27.362						0.1964	0.1964		
S Total PeCDD					181.4	181.4	0.1964	0.1964		
D 13C-1,2,3,4,7,8-HxCDF	34.167	3317674	0.52	1.1378	102.1	102.1	0.4285	0.4285	102	
1,2,3,4,7,8-HxCDF	34.183	7893407	1.26	1.2643	188.2	188.2	0.9832	0.9832	94.09	
D 13C-1,2,3,6,7,8-HxCDF	34.352	3662372	0.53	1.3173	97.4	97.4	0.3702	0.3702	97.37	
1,2,3,6,7,8-HxCDF	34.368	8821654	1.26	1.2230	196.9	196.9	0.9566	0.9566	98.47	
D 13C-2,3,4,6,7,8-HxCDF	35.253	3561346	0.53	1.2457	100.1	100.1	0.3914	0.3914	100	
2,3,4,6,7,8-HxCDF	35.278	8739194	1.25	1.2464	196.9	196.9	0.8181	0.8181	98.44	
D 13C-1,2,3,7,8,9-HxCDF	36.214	3415580	0.53	1.1840	101.0	101.0	0.4118	0.4118	101	
1,2,3,7,8,9-HxCDF	36.222	7866401	1.26	1.2638	182.2	182.2	0.7504	0.7504	91.12	
A Non-2,3,7,8-sub-HxCDF	34.213						0.8666	0.8666		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					764.2	764.2	0.8770	0.8770		
* 13C-1,2,3,7,8,9-HxCDD	36.003	2855258	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.489	2483443	1.28	0.8477	102.6	102.6	0.2603	0.2603	103	
1,2,3,4,7,8-HxCDD	35.506	5352631	1.24	1.1561	186.4	186.4	0.3893	0.3893	93.22	
D 13C-1,2,3,6,7,8-HxCDD	35.615	2878782	1.26	0.9979	101.0	101.0	0.2211	0.2211	101	
1,2,3,6,7,8-HxCDD	35.632	5913816	1.25	1.0284	199.8	199.8	0.4167	0.4167	99.88	
1,2,3,7,8,9-HxCDD	36.020	5830430	1.25	1.1789	184.5	184.5	0.3724	0.3724	92.23	
A Non-2,3,7,8-sub-HxCDD	34.672						0.3916	0.3916		
S Total HxCDD					570.6	570.6	0.3928	0.3928		
D 13C-1,2,3,4,6,7,8-HpCDF	38.111	2824206	0.45	0.9884	100.1	100.1	0.4850	0.4850	100	
1,2,3,4,6,7,8-HpCDF	38.127	8252143	1.04	1.5064	194.0	194.0	0.7191	0.7191	96.98	
D 13C-1,2,3,4,7,8,9-HpCDF	39.417	2788517	0.46	0.9203	106.1	106.1	0.5209	0.5209	106	
1,2,3,4,7,8,9-HpCDF	39.425	7351404	1.05	1.4548	181.2	181.2	0.7105	0.7105	90.61	
A Non-2,3,7,8-sub-HpCDF	38.769						0.7145	0.7145		
S Total HpCDF					375.2	375.2	0.7148	0.7148		
D 13C-1,2,3,4,6,7,8-HpCDD	39.105	2720911	1.07	0.9556	99.7	99.7	0.2510	0.2510	99.72	
1,2,3,4,6,7,8-HpCDD	39.113	5505027	1.04	1.0640	190.2	190.2	0.4107	0.4107	95.08	
A Non-2,3,7,8-sub-HpCDD	38.941						0.4107	0.4107		n
S Total HpCDD					190.2	190.2	0.4107	0.4107		
D 13C-OCDD	41.558	4054717	0.91	0.7420	191.4	191.4	0.2171	0.2171	95.69	
OCDF	41.650	11016379	0.92	1.4296	380.1	380.1	0.2826	0.2826	95.02	
OCDD	41.566	8848500	0.89	1.1293	386.5	386.5	0.3109	0.3109	96.62	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 18:07:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 21-Sep-2020 08:47:54 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1028

First Level Reviewer: krenns Date: 21-Sep-2020 08:47:54

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.122	20.144	-1		1192172	168399	420	1050	401		
333.9338	20.113	20.144	-2		1467424	216105	131	327	1650	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.186	19.216	-2	0.953	1808713	271614	550	1375	494		
317.9389	19.194	19.216	-1	0.954	2258421	338593	270	675	1254	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.220	19.242	-1	1.002	745461	108291	66	165	1641		
305.8987	19.211	19.242	-2	1.001	953015	140652	117	292	1202	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	18.043	18.794	-45	0.940	6651	1061	66	165	16		
305.8987	18.052	18.794	-44	0.941	10939	1668	117	292	14	0.61(0.65-0.89)	
	Empc Correction				8637	1377	117	292	12		
303.9016	18.550	18.794	-15	0.967	5566	848	66	165	13		
	Empc Correction				3046	636	66	165	10		
305.8987	18.533	18.794	-16	0.966	3956	827	117	292	7	1.41(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.474	20.505	-2	1.018	1291302	175390	420	1050	418		
333.9338	20.474	20.505	-2	1.018	1645225	223004	131	327	1702	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.500	20.531	-2	1.001	562437	76985	124	310	621		
321.8936	20.500	20.531	-2	1.001	714855	98574	74	185	1332	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.508	20.531	-1	1.019	1185629	160389	66	165	2430		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											
319.8965	20.311	19.607	42	0.992	8322	1925	124	310	16		
321.8936	20.328	19.607	43	0.993	12590	2246	74	185	30	0.66(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.281	26.306	-1	1.306	2427118	406452	621	1552	655		
353.8970	26.281	26.306	-1	1.306	1515859	252400	439	1097	575	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.307	26.331	-1	1.001	4714022	776980	1553	3882	500		
341.8567	26.307	26.331	-1	1.001	3023808	492959	1020	2550	483	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.747	27.772	-1	1.379	2411072	397541	621	1552	640		
353.8970	27.747	27.772	-1	1.379	1498404	245248	439	1097	559	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.764	27.797	-2	1.001	5235926	830056	1553	3882	534		
341.8567	27.764	27.797	-2	1.001	3369683	534849	1020	2550	524	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.600						15	37			
341.8567	23.600						40	100			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.871	26.993	-7	1.022	103730	17576	1553	3882	11		
341.8567	26.871	26.993	-7	1.022	72090	11766	1020	2550	12	1.44(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.521	28.547	-2	1.417	1543850	235852	164	410	1438		
369.8919	28.521	28.547	-2	1.417	977025	155952	148	370	1054	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.547	28.572	-2	1.001	2982453	453378	217	542	2089		
357.8516	28.547	28.572	-2	1.001	1901482	286670	112	280	2560	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.362						217	542			
357.8516	27.362						112	280			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.167	34.194	-2	0.949	1134792	228722	510	1275	448		
385.8610	34.167	34.194	-2	0.949	2182882	440783	915	2287	482	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.183	34.211	-2	1.000	4393738	873234	1872	4680	466		
375.8178	34.183	34.211	-2	1.000	3499669	701204	1457	3642	481	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.352	34.379	-2	0.954	1264493	241979	510	1275	474		
385.8610	34.352	34.379	-2	0.954	2397879	469362	915	2287	513	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.368	34.396	-2	1.000	4918121	964693	1872	4680	515		
375.8178	34.368	34.396	-2	1.000	3903533	764281	1457	3642	525	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.253	35.281	-2	0.979	1236977	281991	510	1275	553		
385.8610	35.253	35.281	-2	0.979	2324369	534155	915	2287	584	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	35.278	35.298	-1	1.001	4862378	1105500	1872	4680	591		
375.8178	35.270	35.298	-2	1.000	3876816	888903	1457	3642	610	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.214	36.233	-1	1.006	1180099	304598	510	1275	597		
385.8610	36.214	36.233	-1	1.006	2235481	573001	915	2287	626	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.222	36.250	-2	1.000	4392368	1096618	1872	4680	586		
375.8178	36.222	36.250	-2	1.000	3474033	881252	1457	3642	605	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.213						1872	4680			
375.8178	34.213						1457	3642			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.003	36.031	-2		1586177	403442	363	907	1111		
403.8529	36.003	36.031	-2		1269081	327090	282	705	1160	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.489	35.517	-2	0.986	1394556	368017	363	907	1014		
403.8529	35.489	35.517	-2	0.986	1088887	281939	282	705	1000	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.506	35.534	-2	1.000	2964676	767235	638	1595	1203		
391.8127	35.506	35.534	-2	1.000	2387955	615184	532	1330	1156	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.615	35.643	-2	0.989	1604431	378708	363	907	1043		
403.8529	35.615	35.643	-2	0.989	1274351	303839	282	705	1077	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.632	35.660	-2	1.000	3287779	781634	638	1595	1225		
391.8127	35.632	35.660	-2	1.000	2626037	621879	532	1330	1169	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.020	36.048	-2	1.015	3238630	831532	638	1595	1303		
391.8127	36.020	36.048	-2	1.015	2591800	661242	532	1330	1243	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.672						638	1595			
391.8127	34.672						532	1330			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.111	38.146	-2	1.059	876384	288604	494	1235	584		
419.8220	38.111	38.146	-2	1.059	1947822	626711	907	2267	691	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.127	38.154	-2	1.000	4212100	1336957	2017	5042	663		
409.7788	38.127	38.154	-2	1.000	4040043	1273790	1949	4872	654	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.417	39.435	-1	1.095	873746	297798	494	1235	603		
419.8220	39.417	39.435	-1	1.095	1914771	661413	907	2267	729	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.425	39.452	-2	1.000	3766281	1310691	2017	5042	650		
409.7788	39.425	39.452	-2	1.000	3585123	1246789	1949	4872	640	1.05(0.88-1.20)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.769						2017	5042			
409.7788	38.769						1949	4872			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.105	39.132	-2	1.086	1406669	482668	436	1090	1107		
437.8140	39.105	39.132	-2	1.086	1314242	452251	265	662	1707	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.113	39.140	-2	1.000	2812145	983165	865	2162	1137		
425.7737	39.113	39.140	-2	1.000	2692882	936675	769	1922	1218	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.447	38.941	-30	0.983	22616	7798	865	2162	9		
425.7737	38.447	38.941	-30	0.983	20785	6994	769	1922	9	1.09(0.88-1.20)	
13C-OCDD											
469.7780	41.558	41.583	-1	1.154	1930627	630577	238	595	2649		
471.7750	41.558	41.583	-1	1.154	2124090	702205	233	582	3014	0.91(0.76-1.02)	
OCDF											
441.7428	41.650	41.675	-1	1.002	5267434	1701746	468	1170	3636		
443.7399	41.650	41.675	-1	1.002	5748945	1849177	609	1522	3036	0.92(0.76-1.02)	
OCDD											
457.7377	41.566	41.591	-1	1.000	4172866	1361068	465	1162	2927		
459.7348	41.566	41.591	-1	1.000	4675634	1528433	471	1177	3245	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Sep-2020 18:07:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413255 Lims Sample ID: 9
Sublist:

Non-2,3,7,8-sub-TCDF, RT: 18.794

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	4067134	610207

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	4067134	610207

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.043	6651	1061	10939	1668	0.3984	0.61	RQ
18.043	6651	1061	8637	1377	0.3462		Empc Correction
18.550	5566	848	3956	827	0.2156	1.41	RnQ
18.550	3046	636	3956	827	0.1586		Empc Correction
Signal Totals:							
	9697	1697	12593	2204			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27112	4404				0.82	RQ
	22290	3901					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6140 = (27112 * 100.000) / (4067134 * 1.086)
Empc Amount: 0.5048 = (22290 * 100.000) / (4067134 * 1.086)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 18:07:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-TCDD, RT: 19.607

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	2936527	398394

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	2936527	398394

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.311	8322	1925	12590	2246	0.6588	0.66	
Signal Totals:							
	8322	1925	12590	2246			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	20912	4171				0.66	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.6588 = (20912 * 100.000) / (2936527 * 1.081)

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 18:07:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 26.993

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	3942977	658852
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	3909476	642789

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	3926226	650820

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.871	103730	17576	72090	11766	4.15	1.44	
Signal Totals:							
	103730	17576	72090	11766			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	175820	29342				1.44	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.150 = (175820 * 100.000) / (3926226 * 1.079)

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

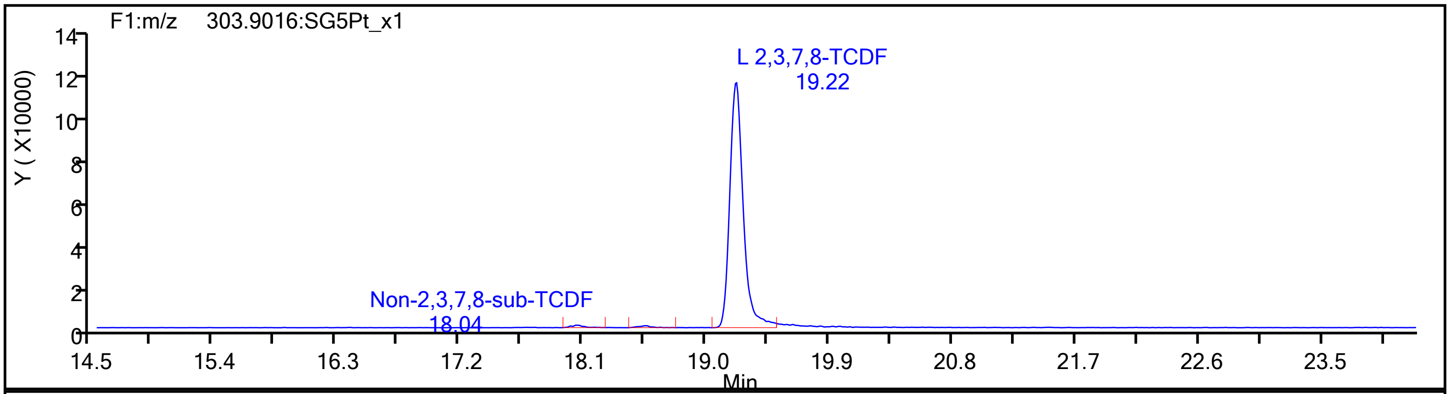

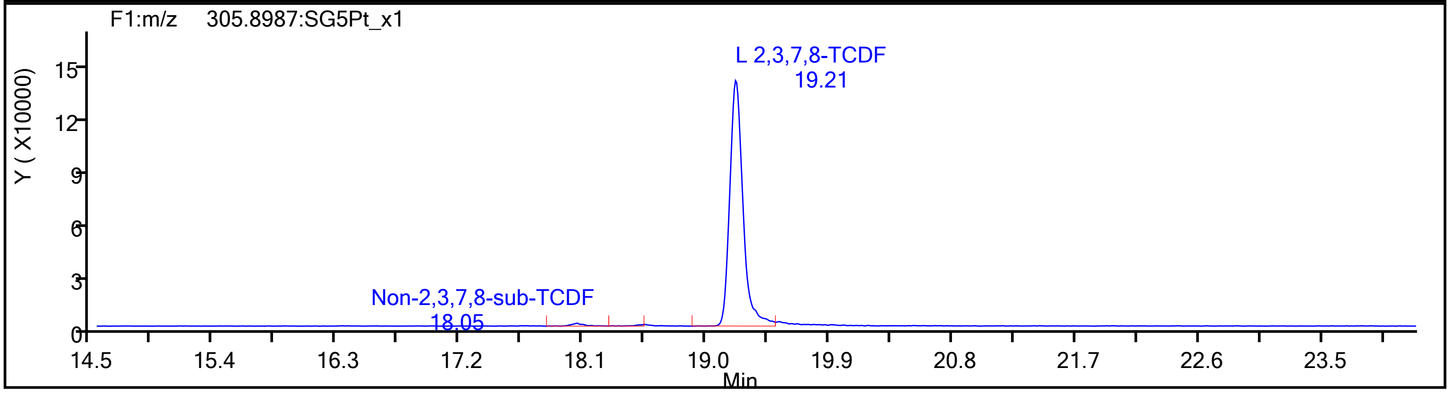

TCDF Standards

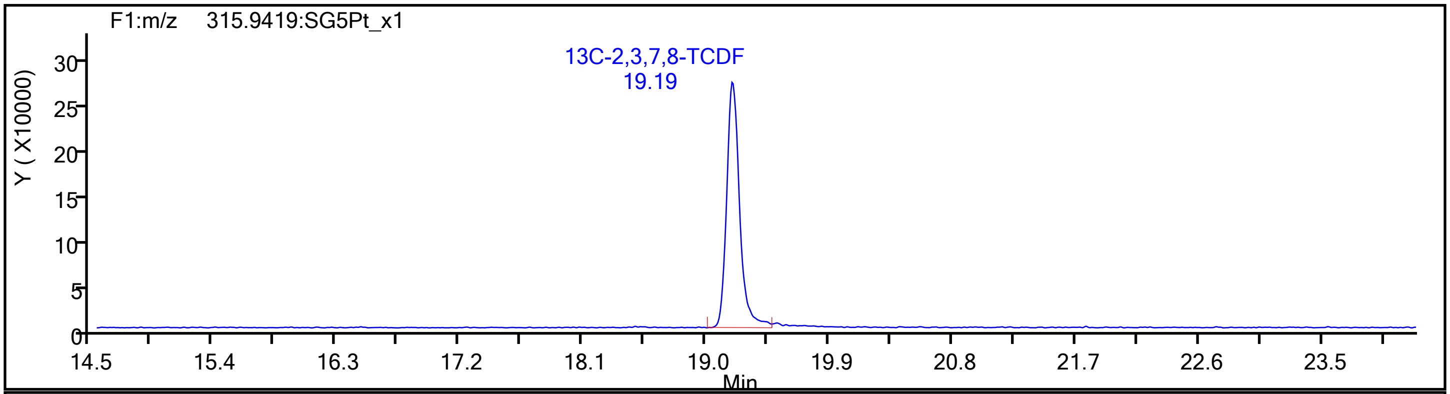

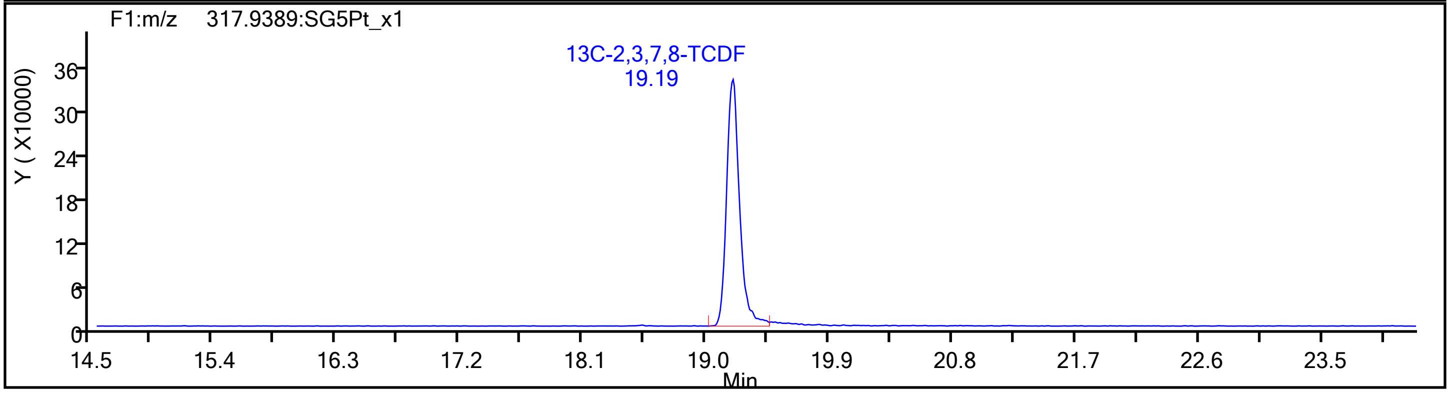

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

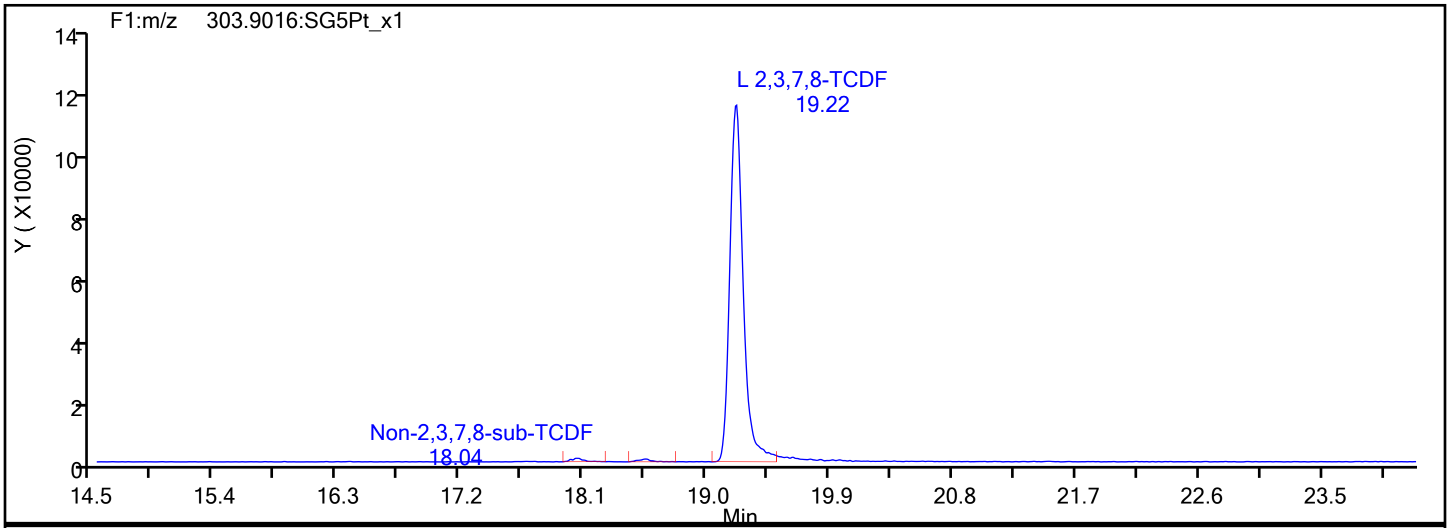

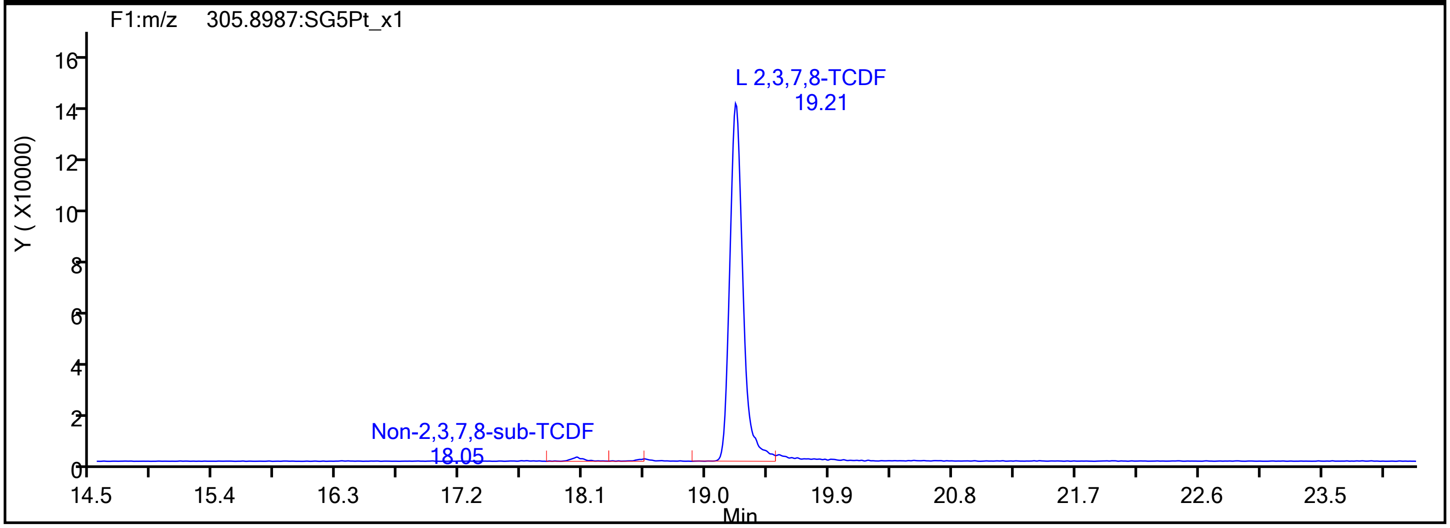

TCDF Interference Mass

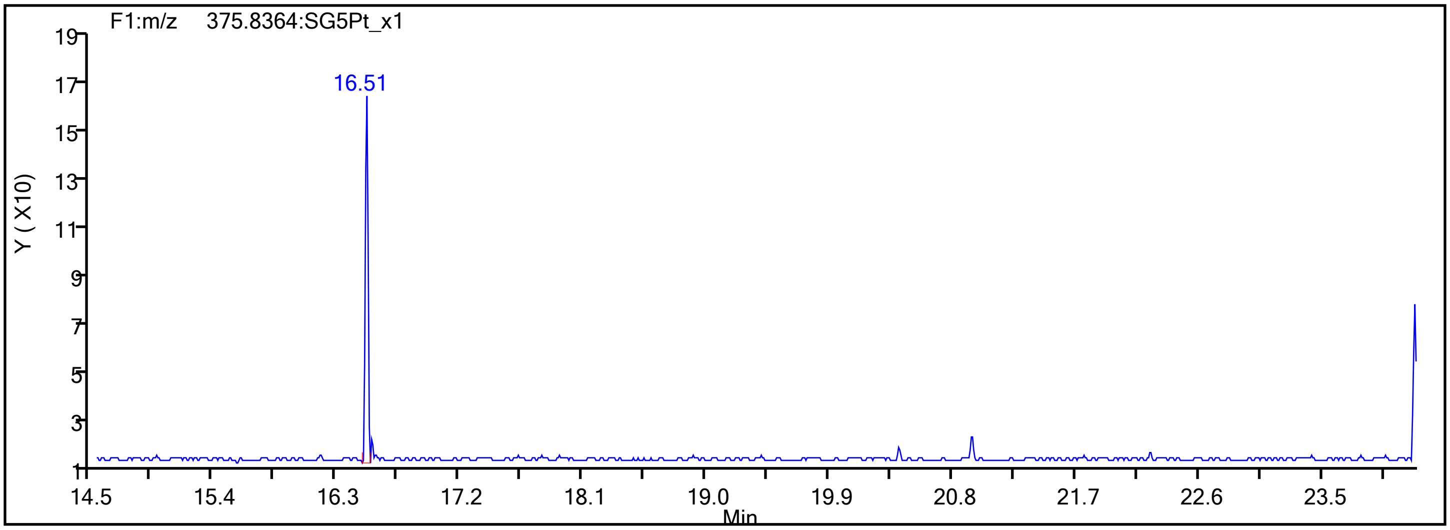

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

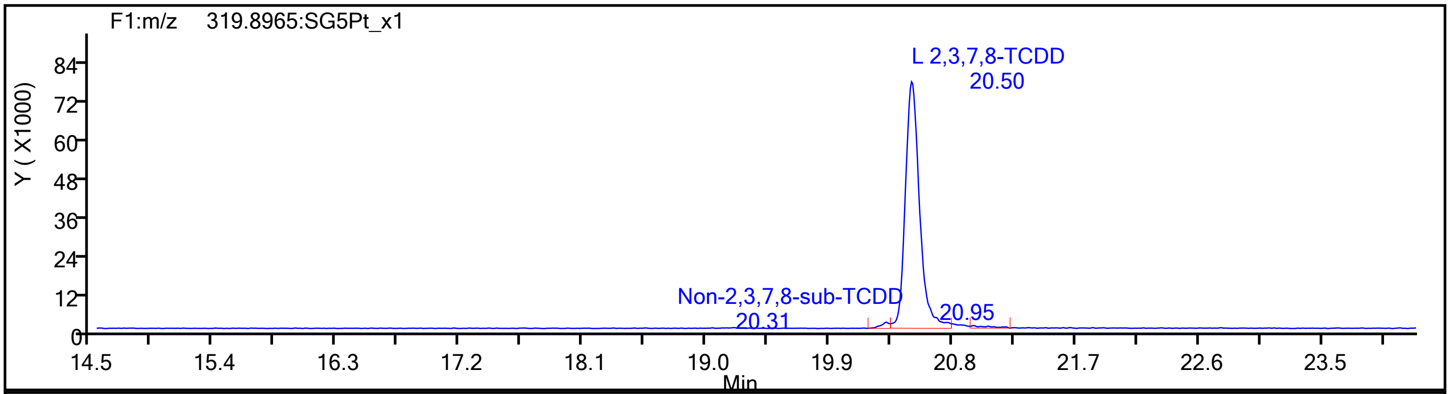

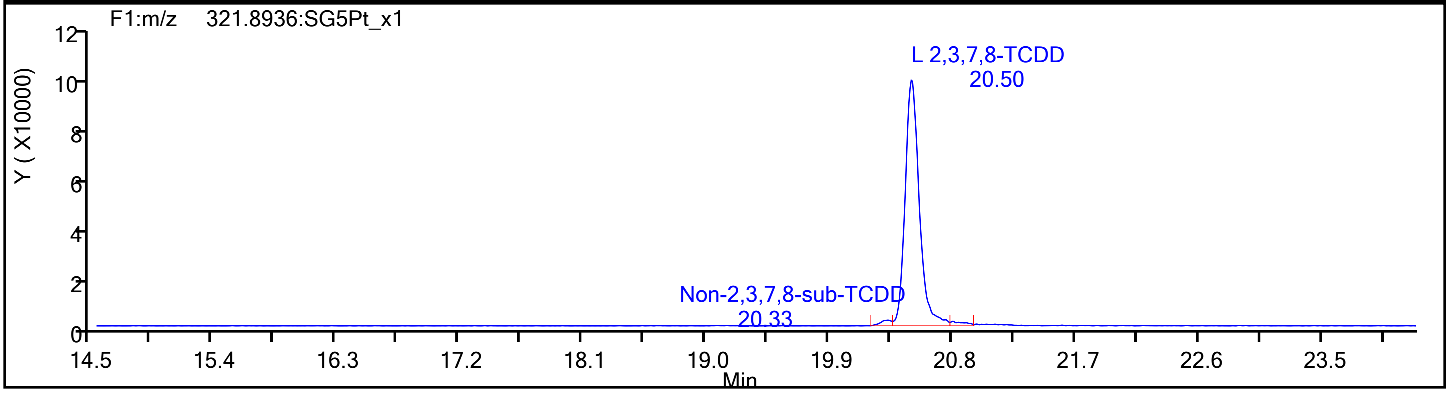

TCDD Standards

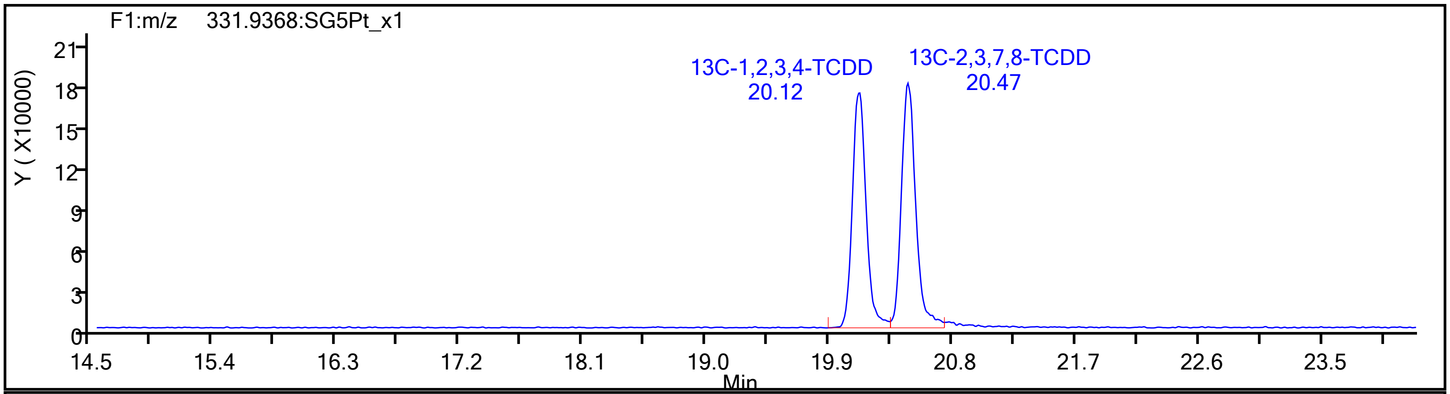

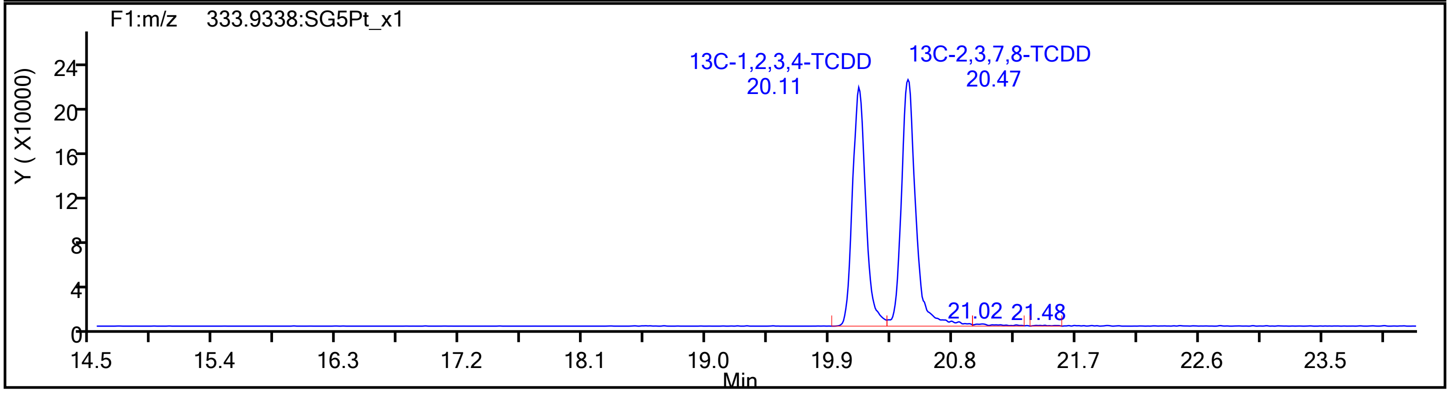

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d

Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

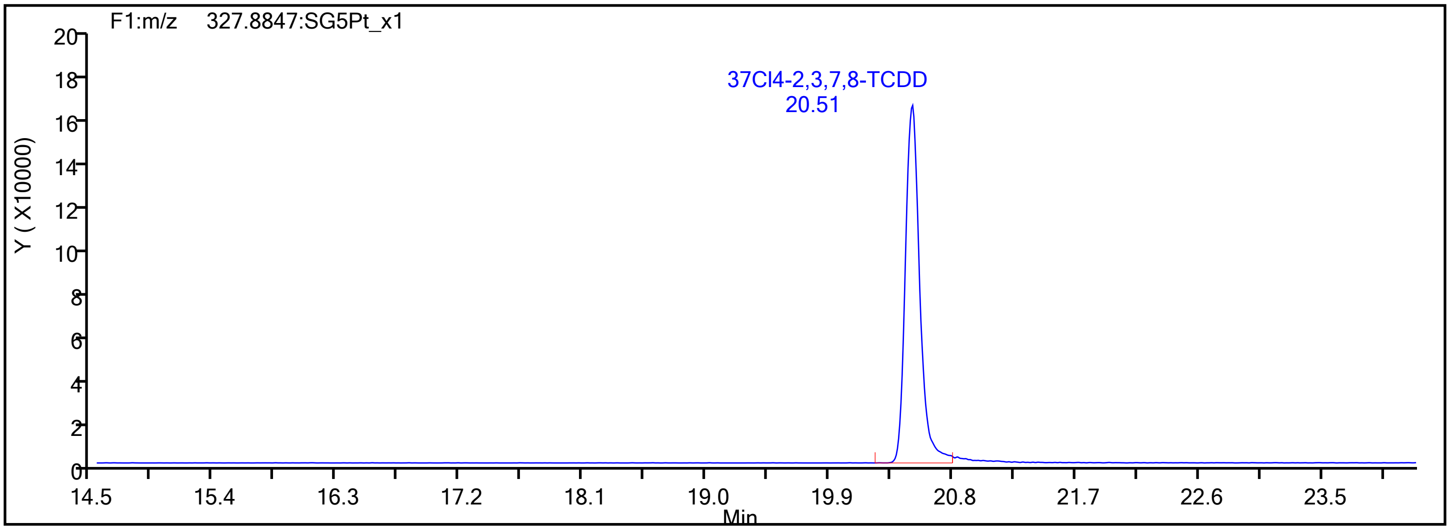

37Cl4-TCDD Standards

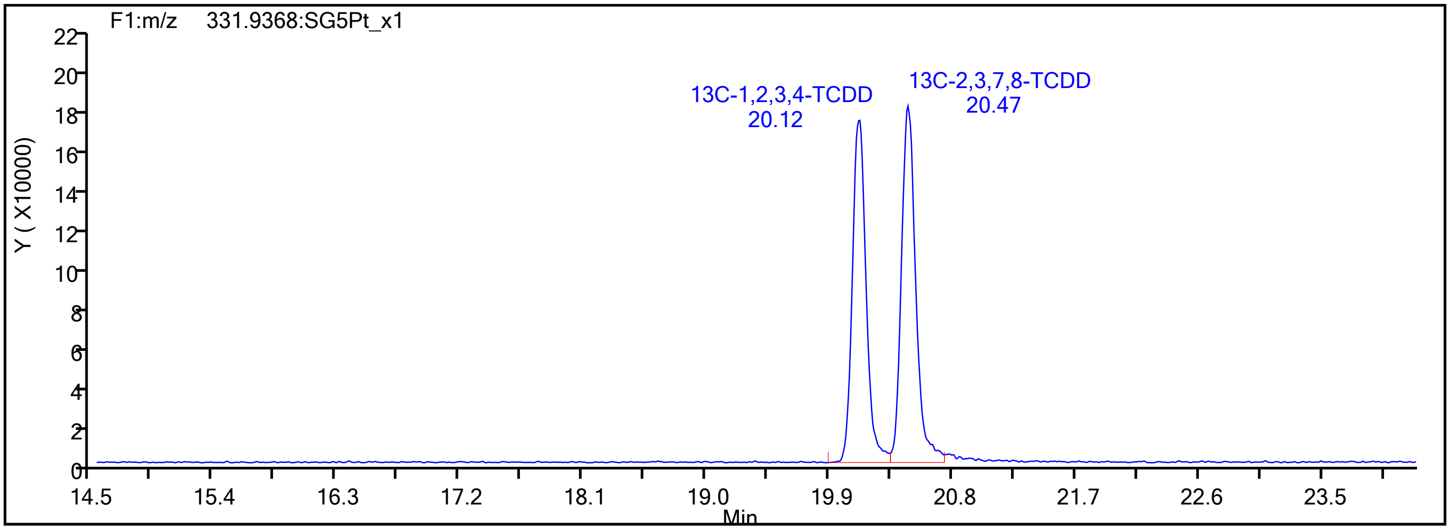

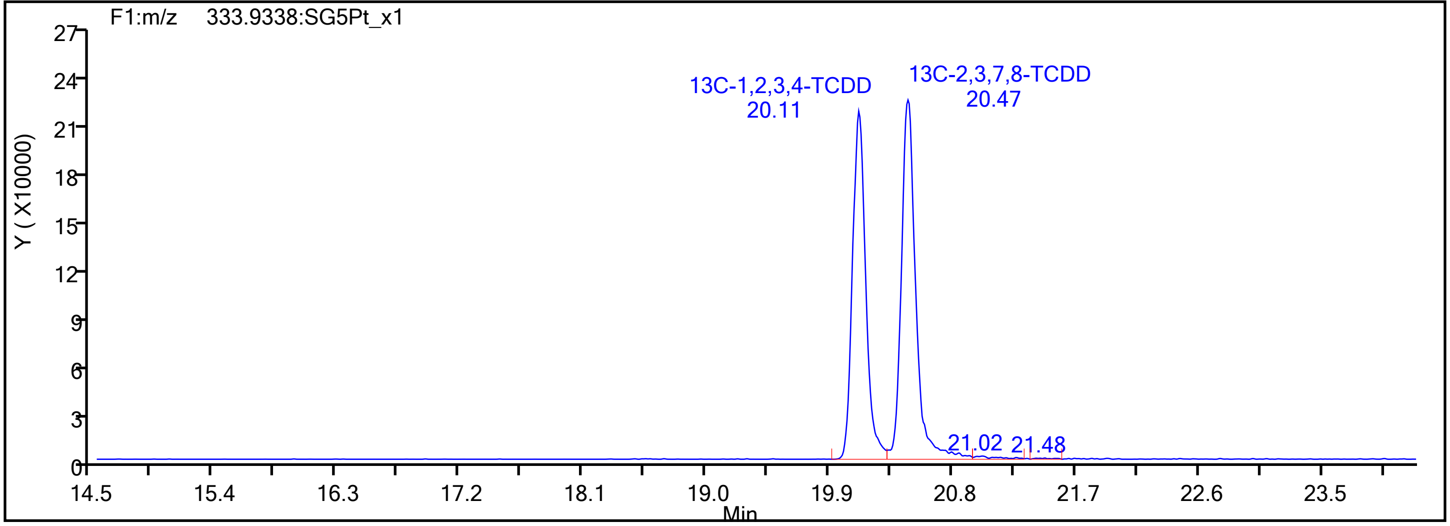

Report Date: 21-Sep-2020 08:48:04   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d		
Injection Date:	17-Sep-2020 18:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

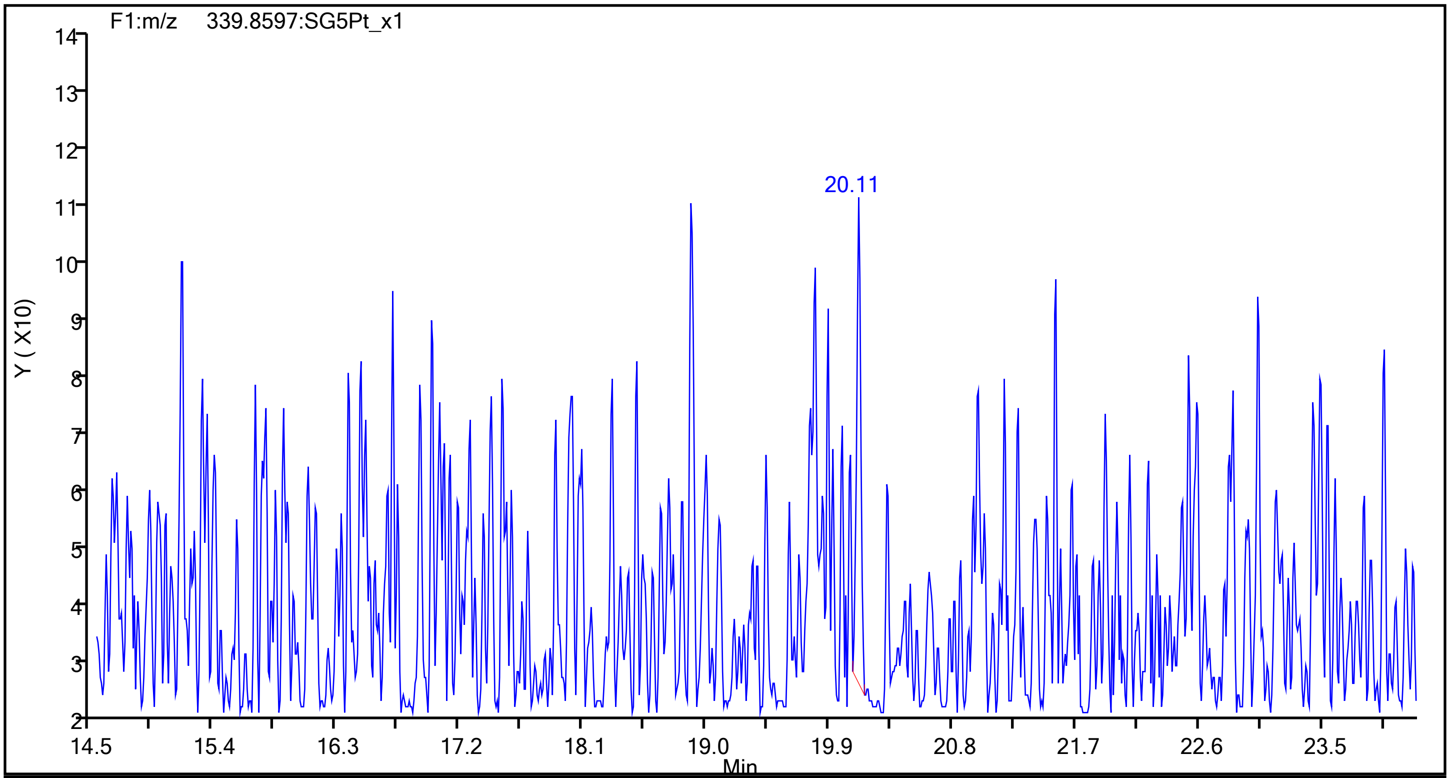

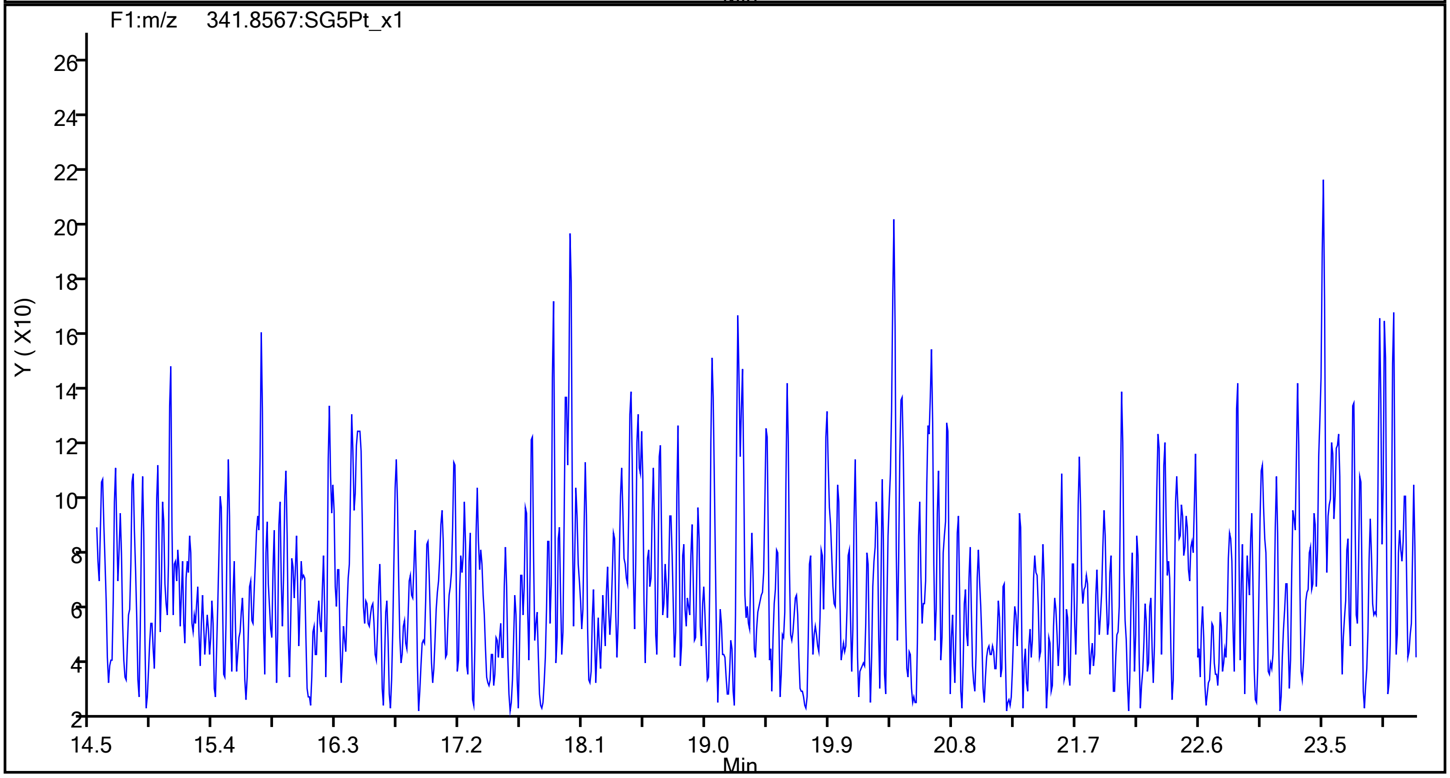

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d

Injection Date: 17-Sep-2020 18:07:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255
Sample Line#: 9

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

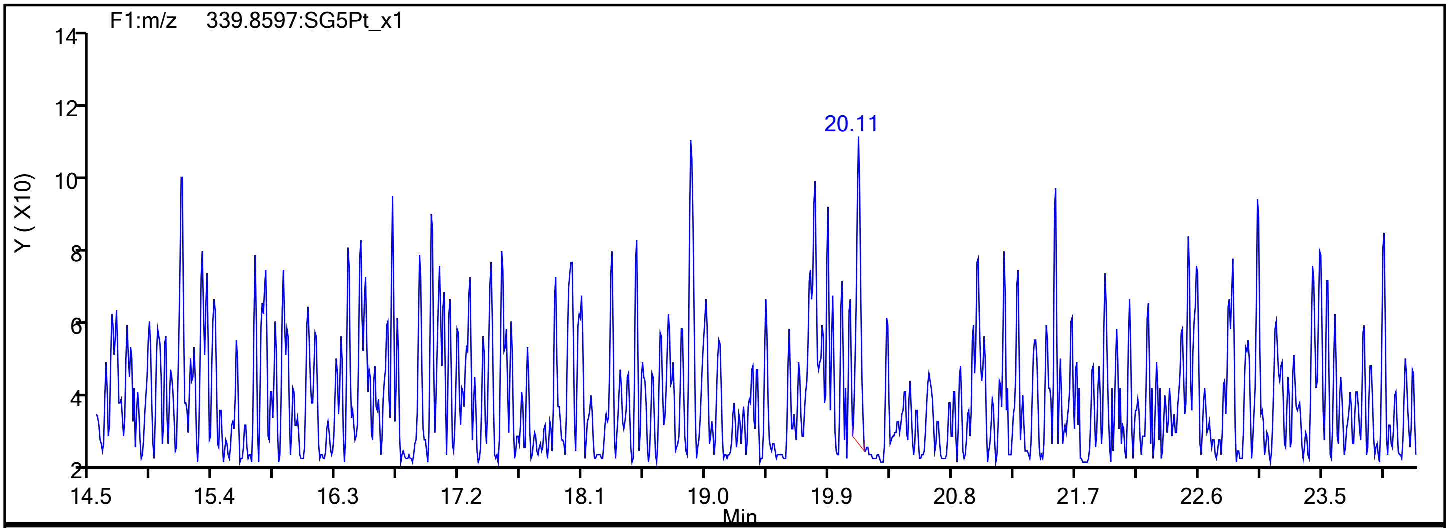

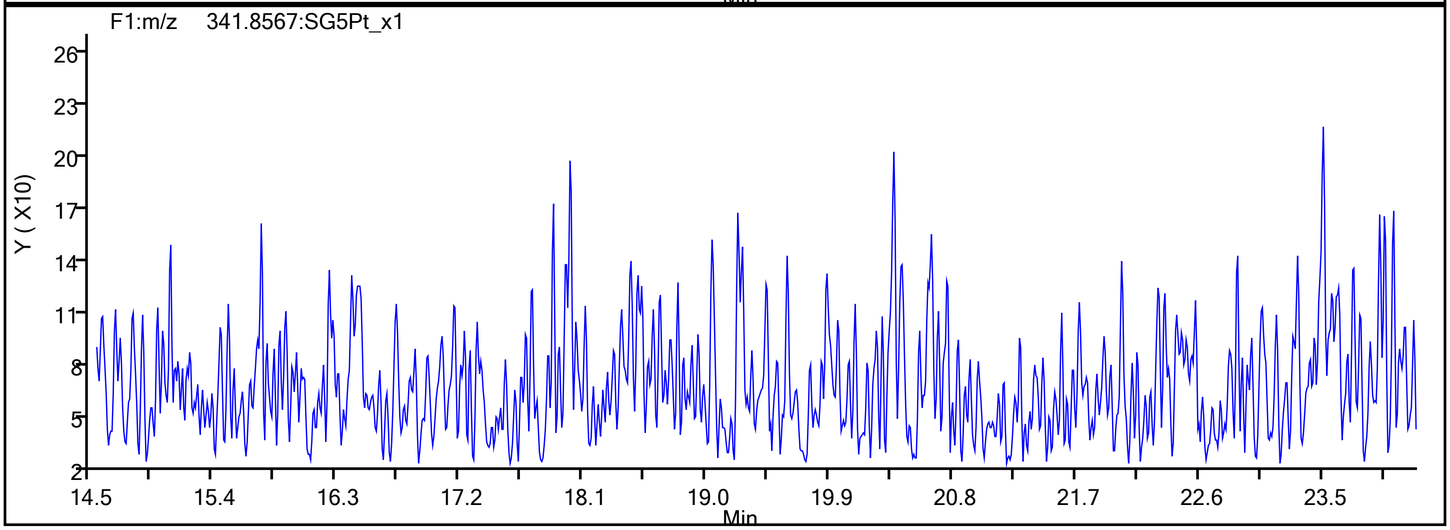

F1 PeCDFs Interference Mass

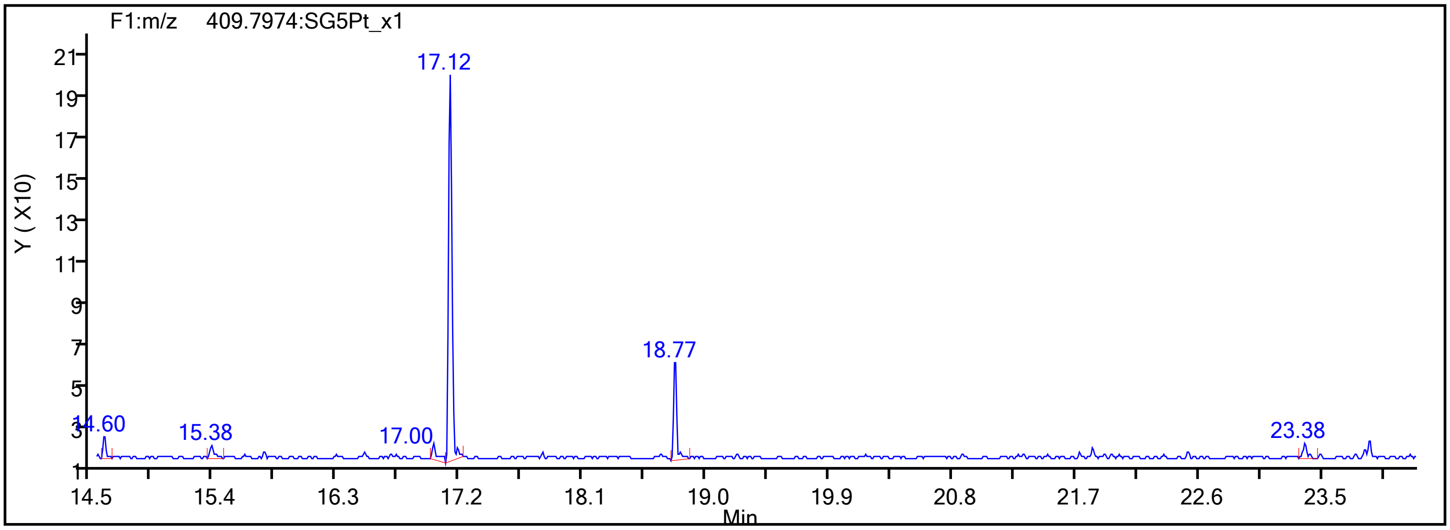

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_10.d
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Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

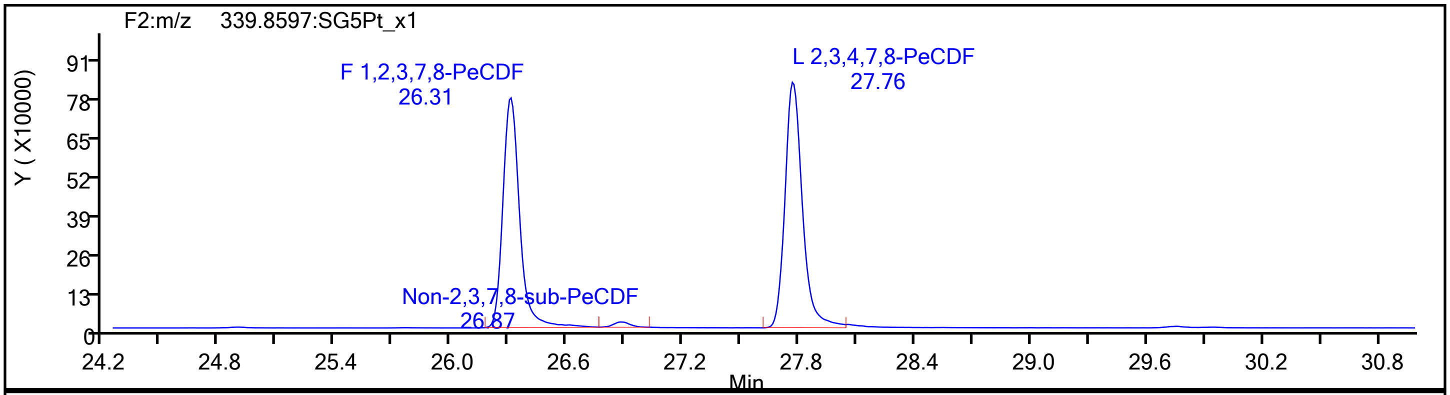

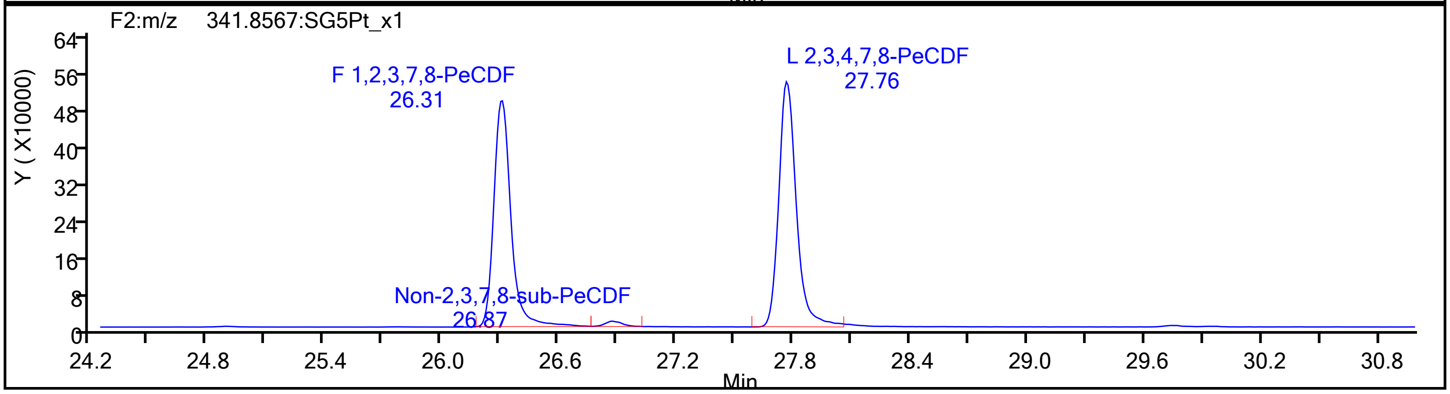

PeCDF Standards

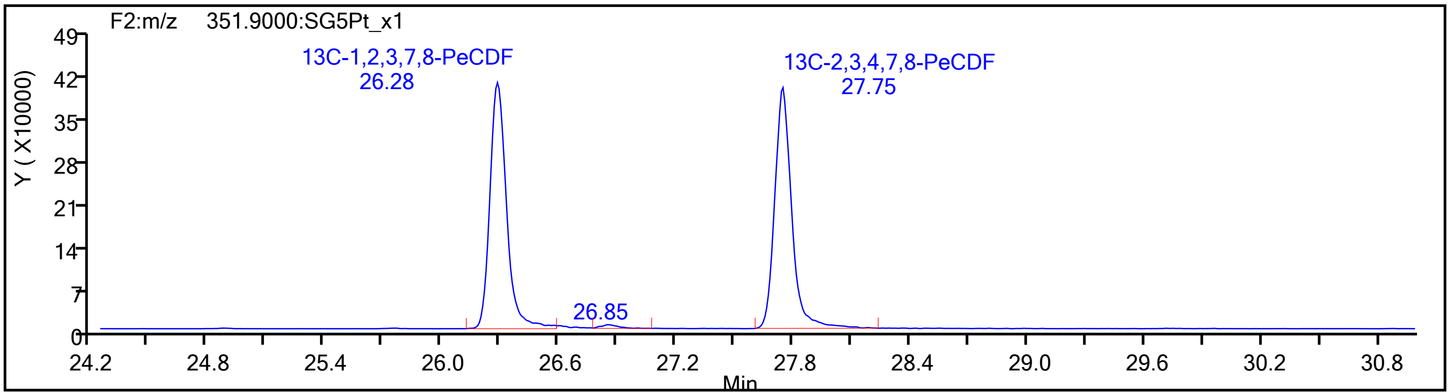

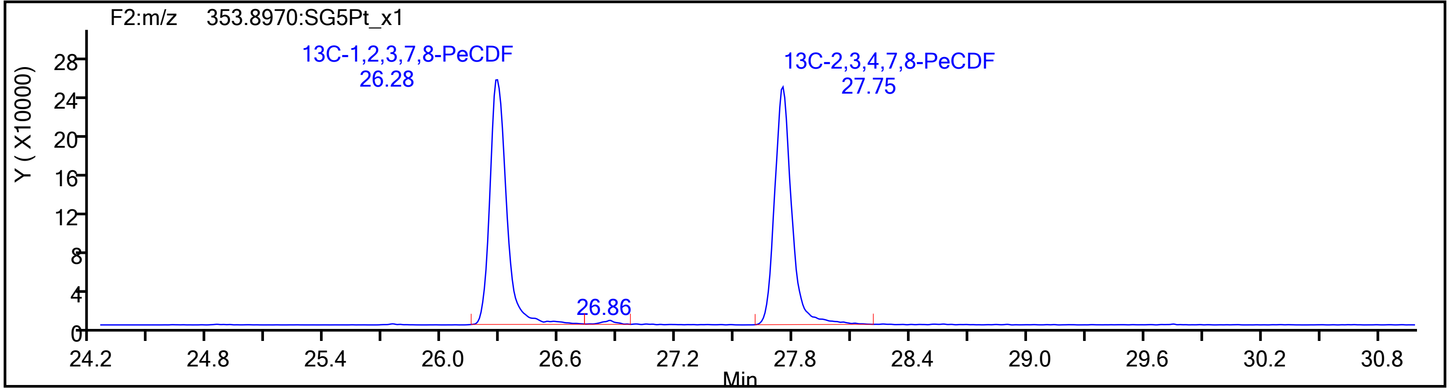

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PeCDF

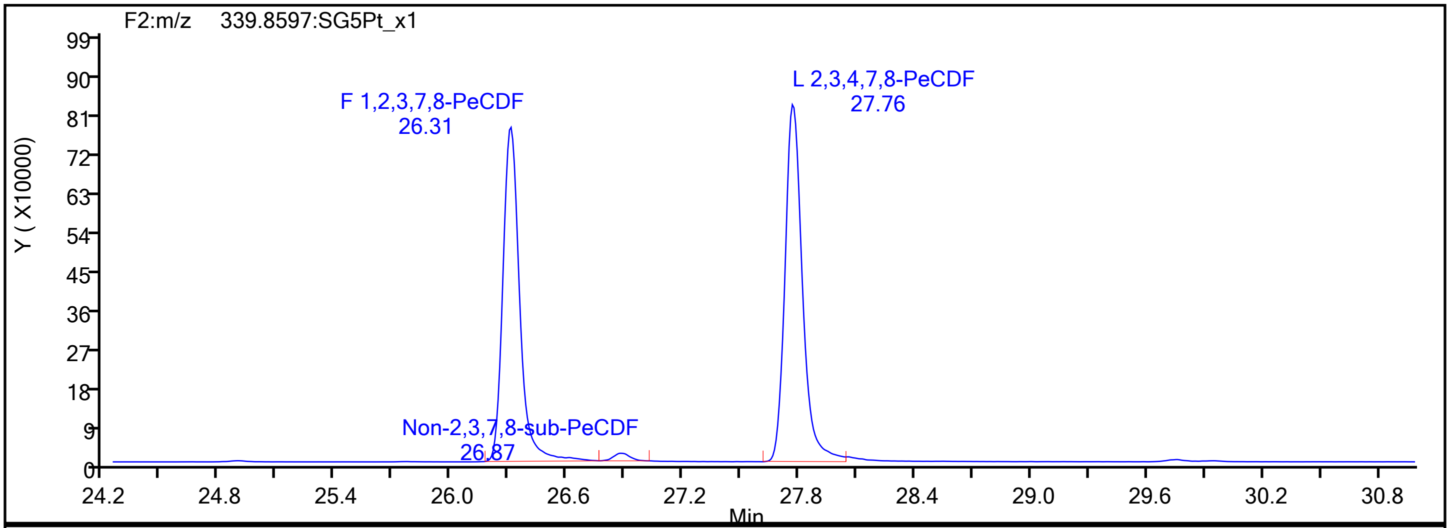

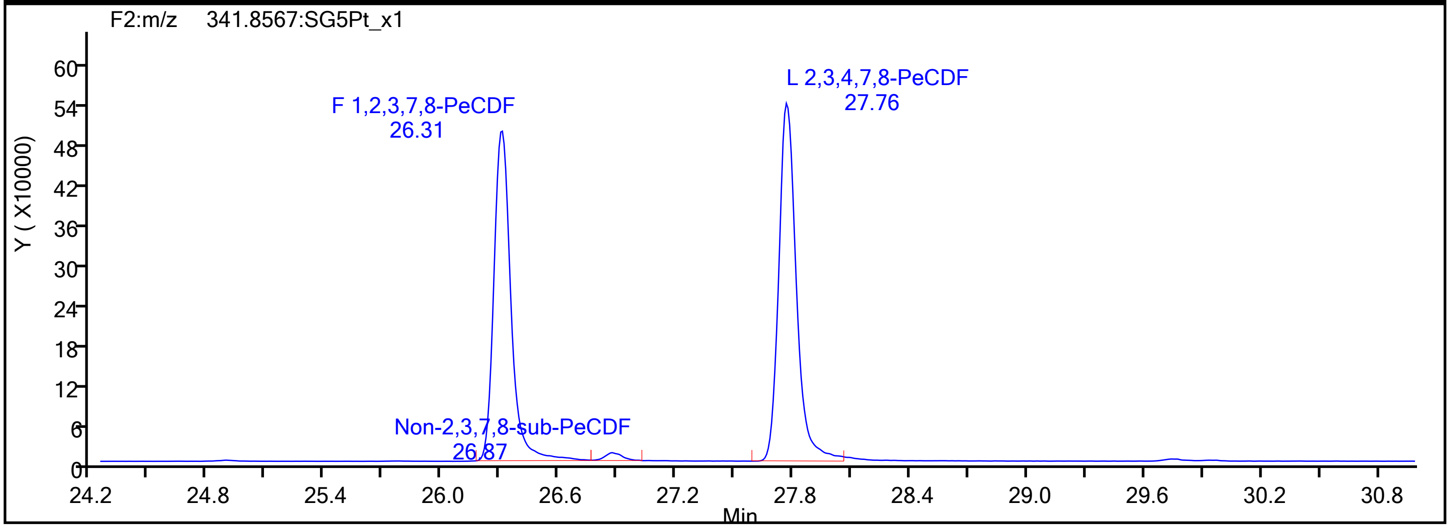

PeCDF Interference Mass

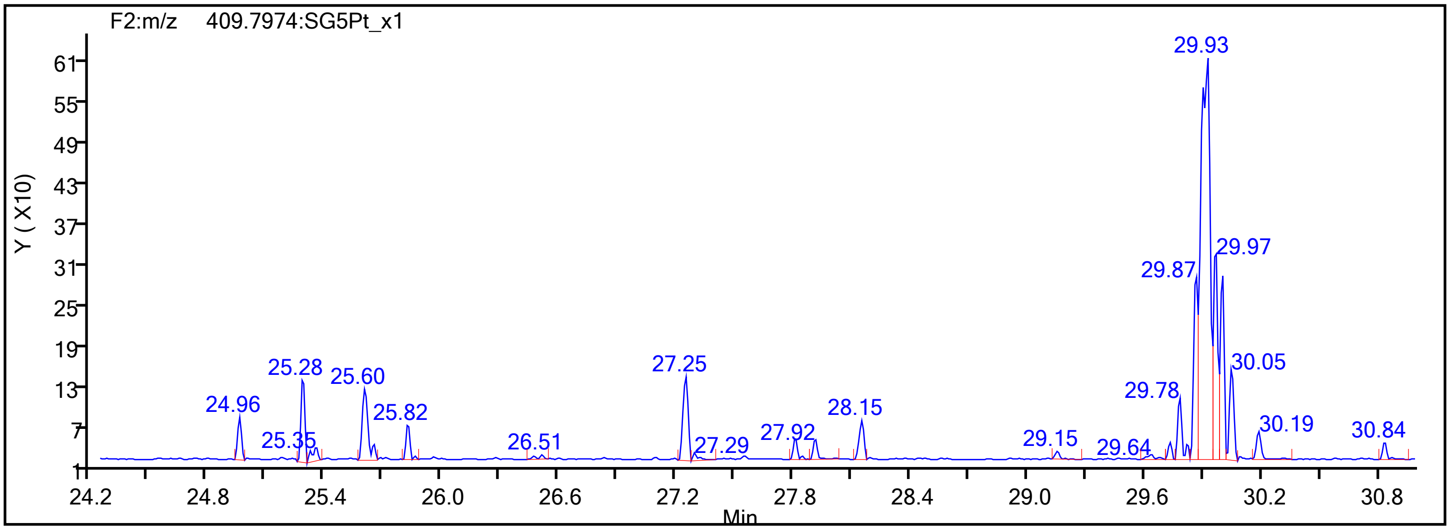

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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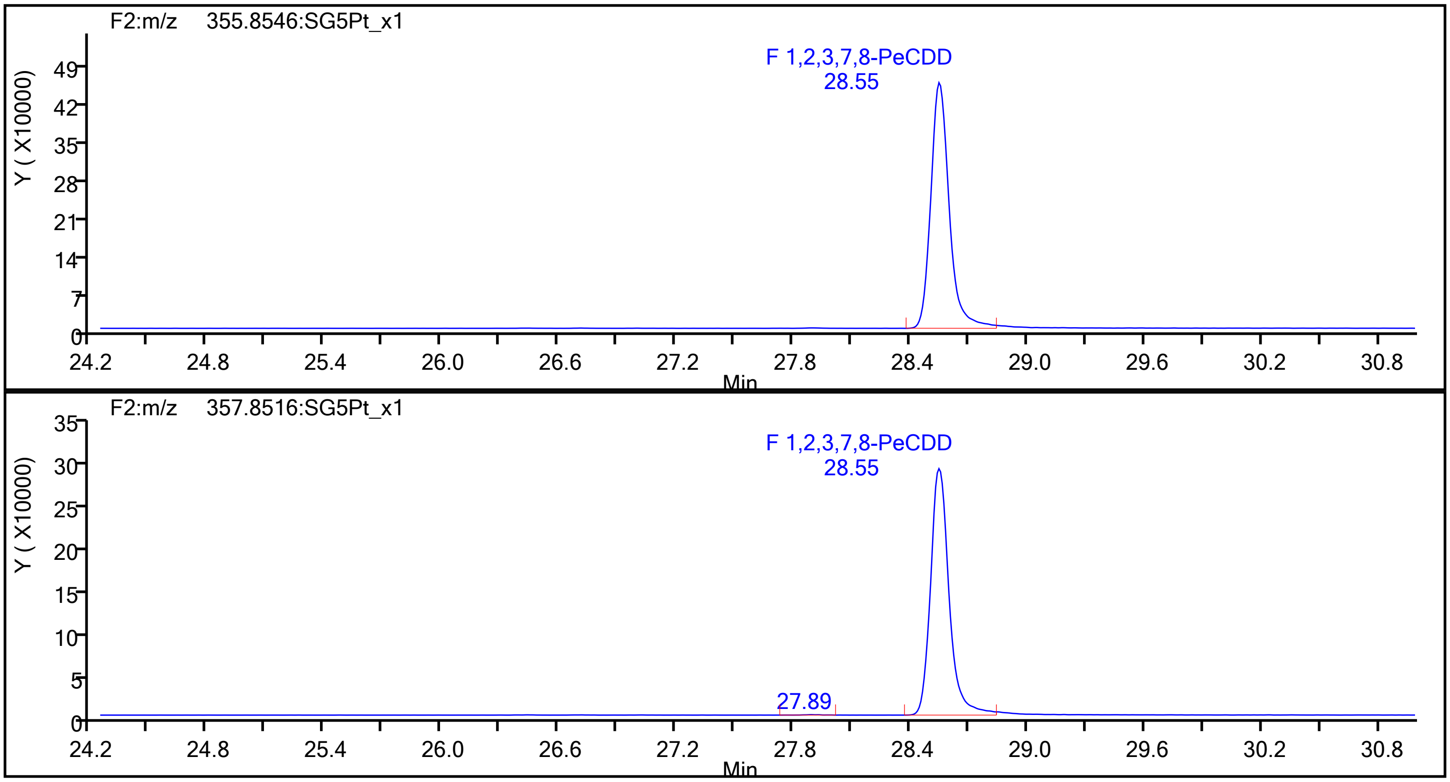

PeCDD Standards

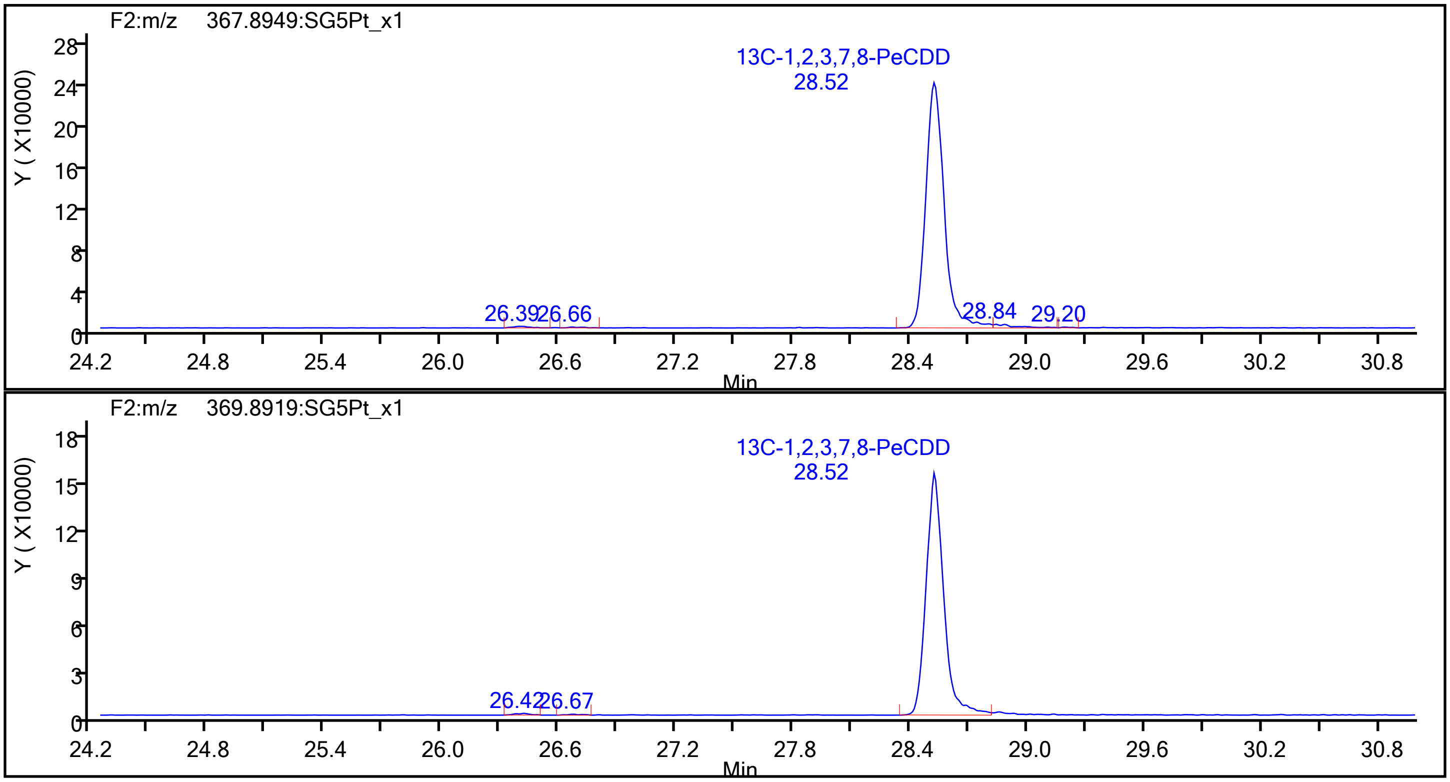

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

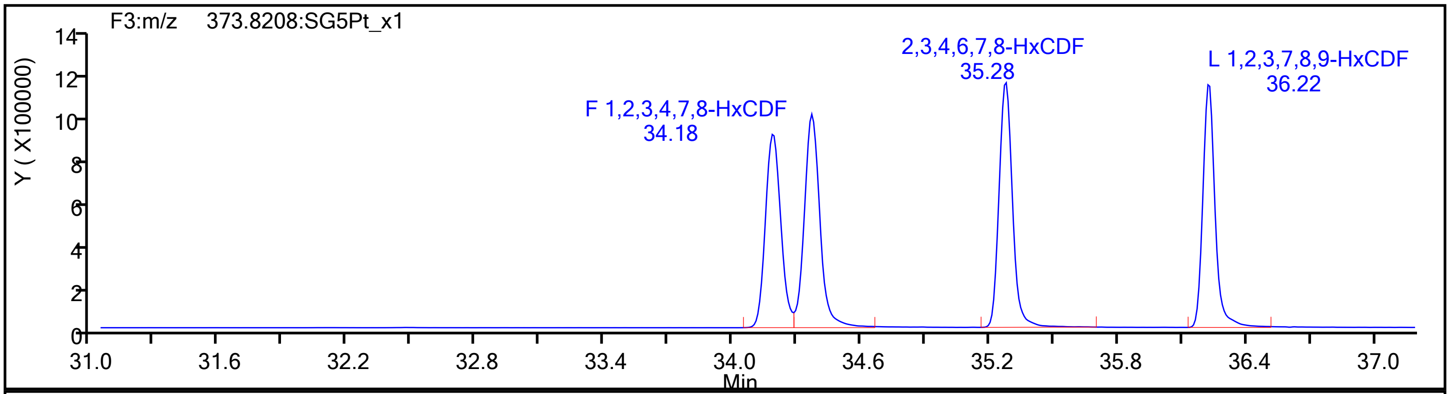

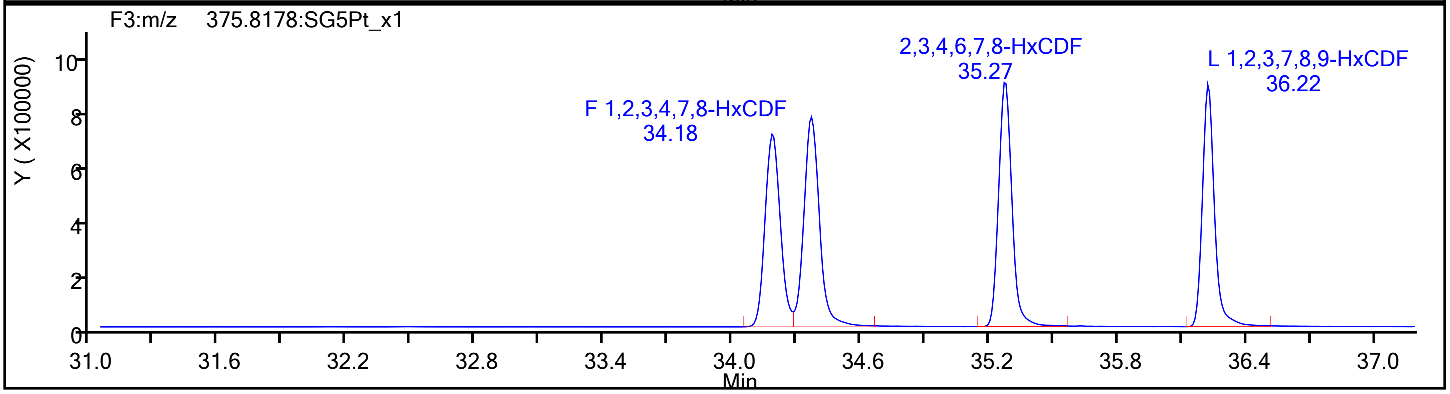

HxCDF Standards

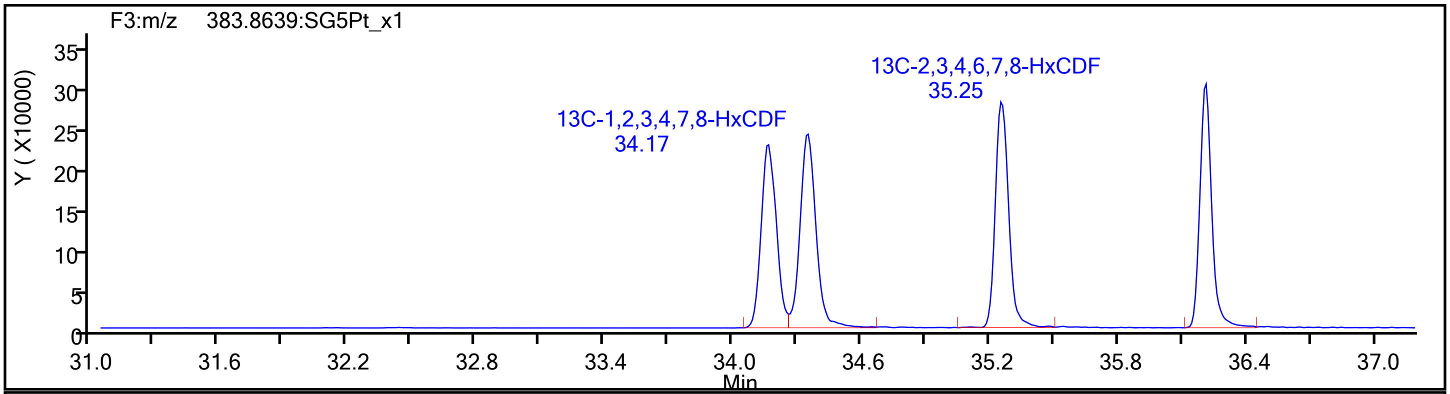

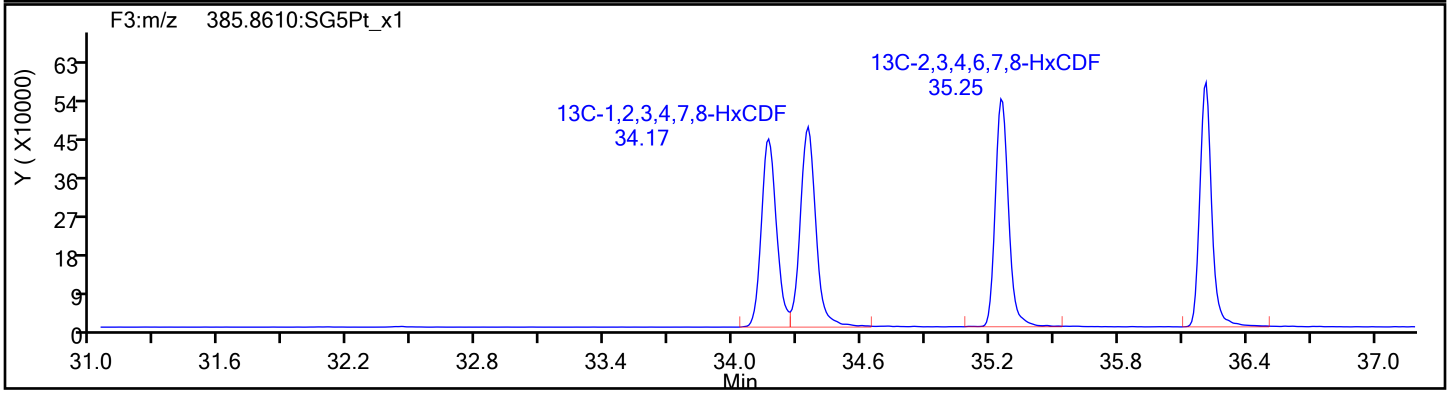

Report Date: 21-Sep-2020 08:48:04 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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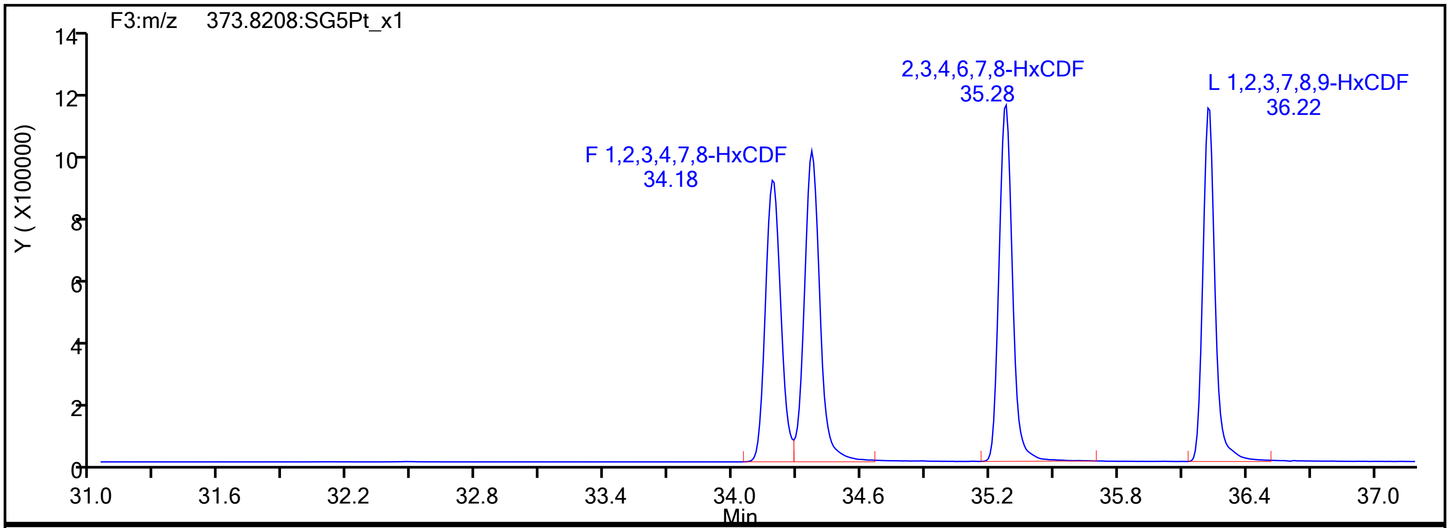

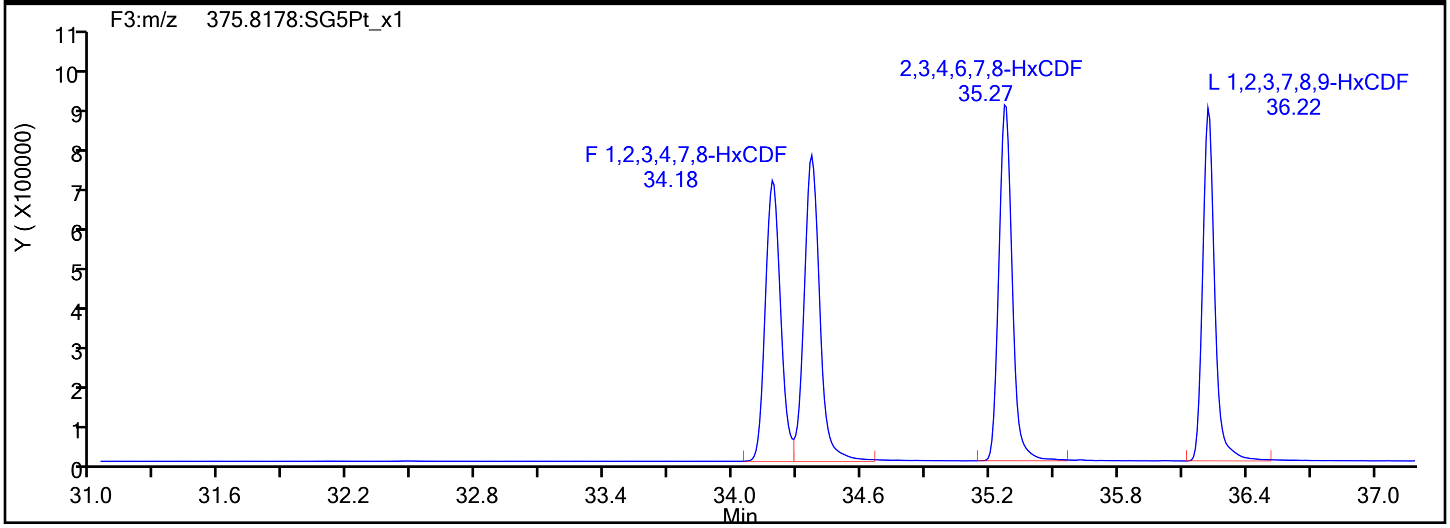

HxCDF Interference Mass

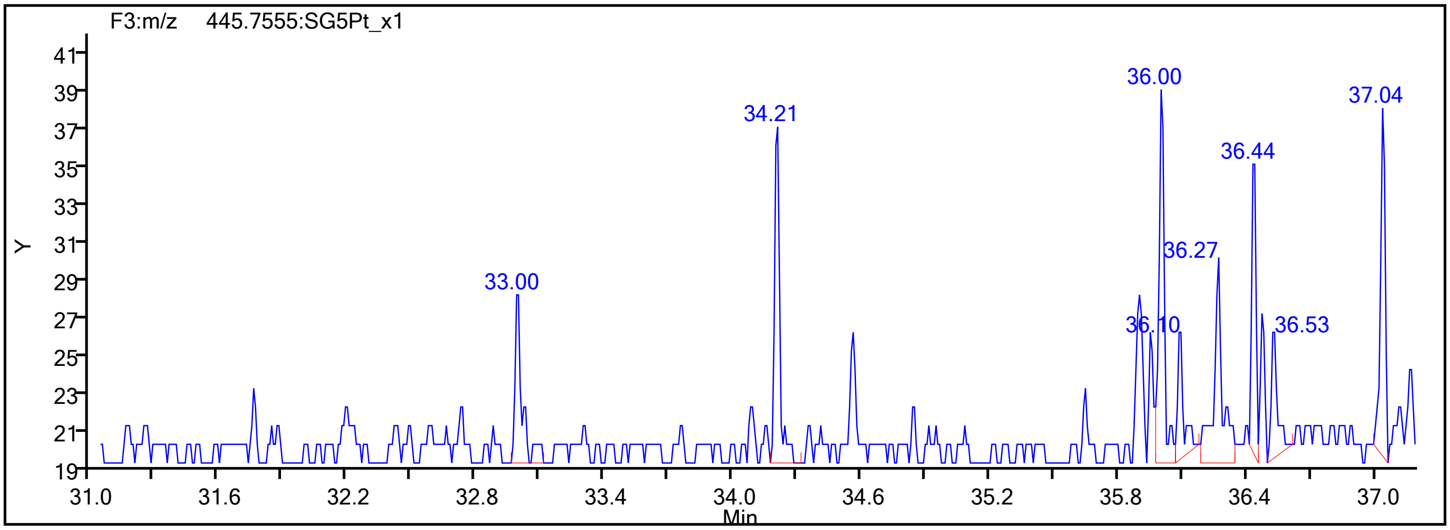

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Eurofins TestAmerica, Sacramento

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HxCDD

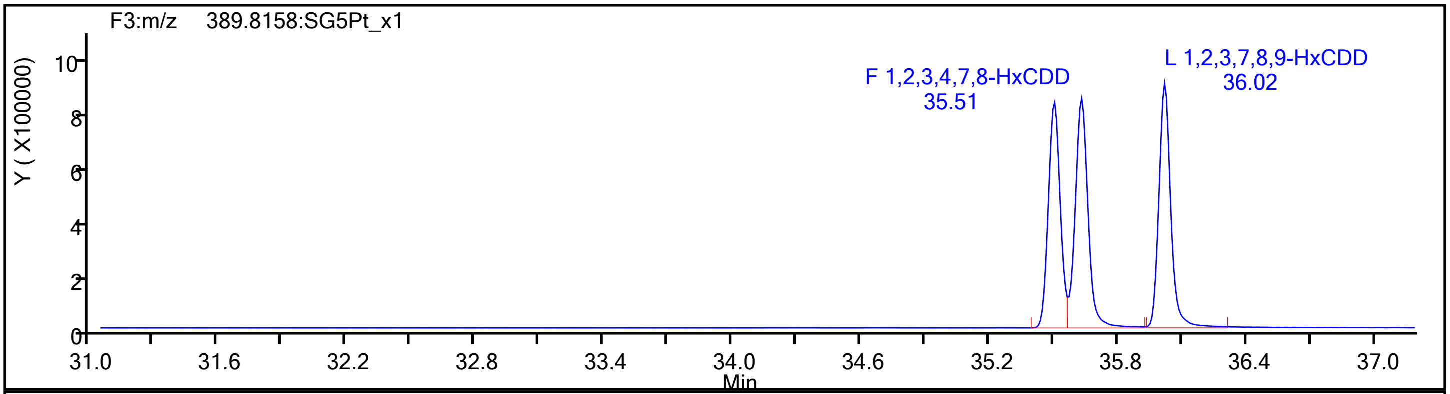

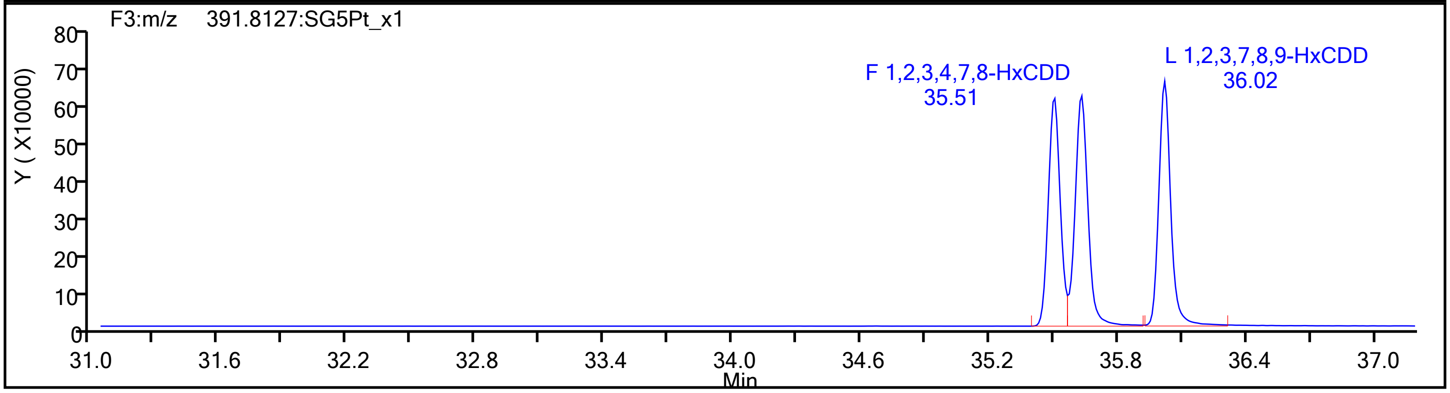

HxCDD Standards

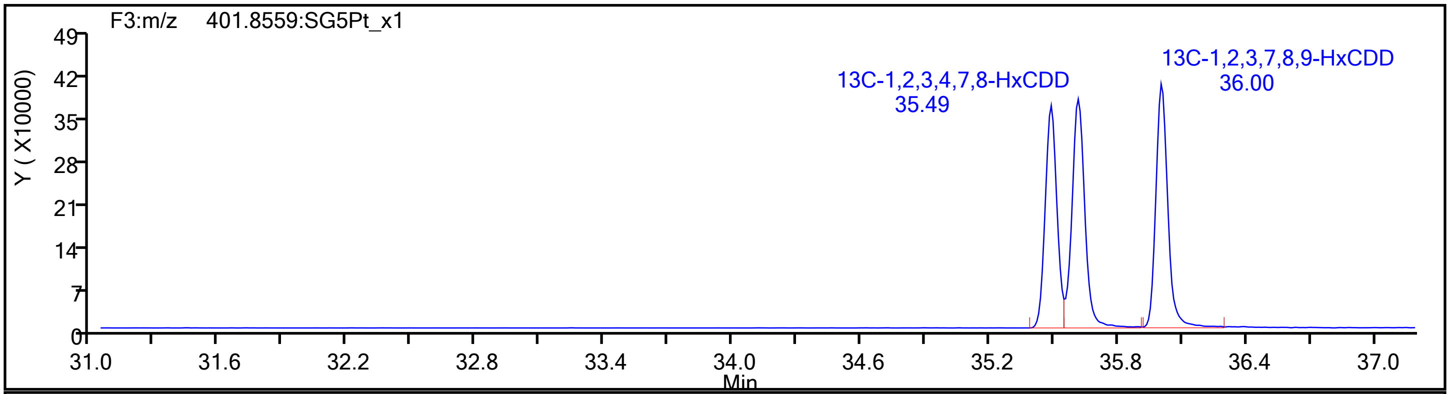

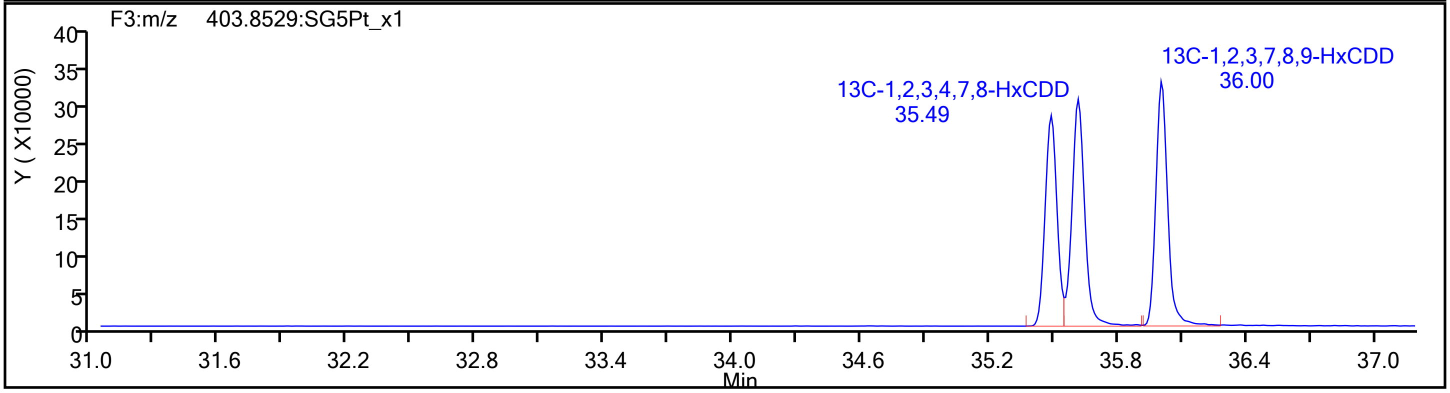

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Eurofins TestAmerica, Sacramento

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HpCDF

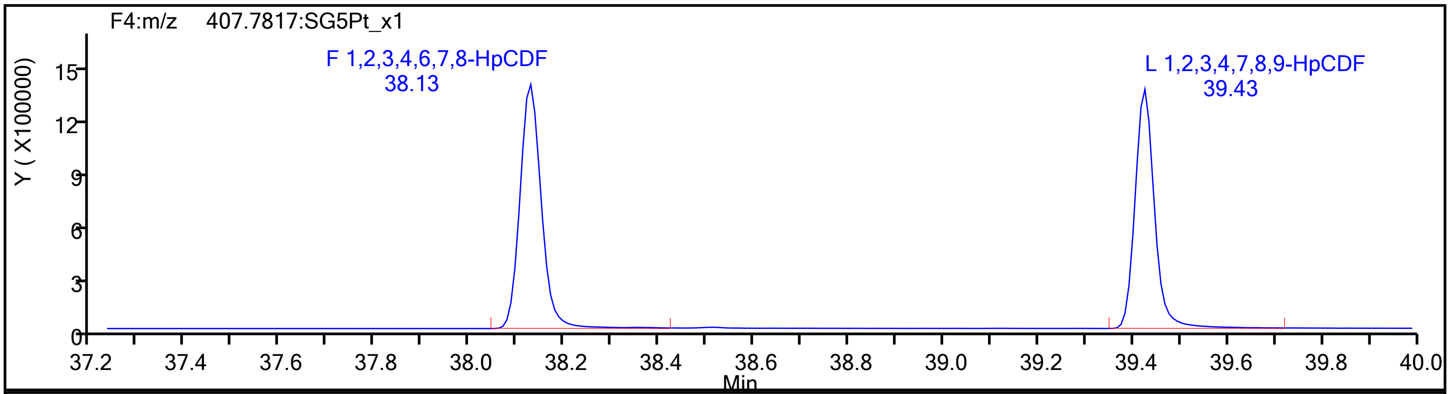

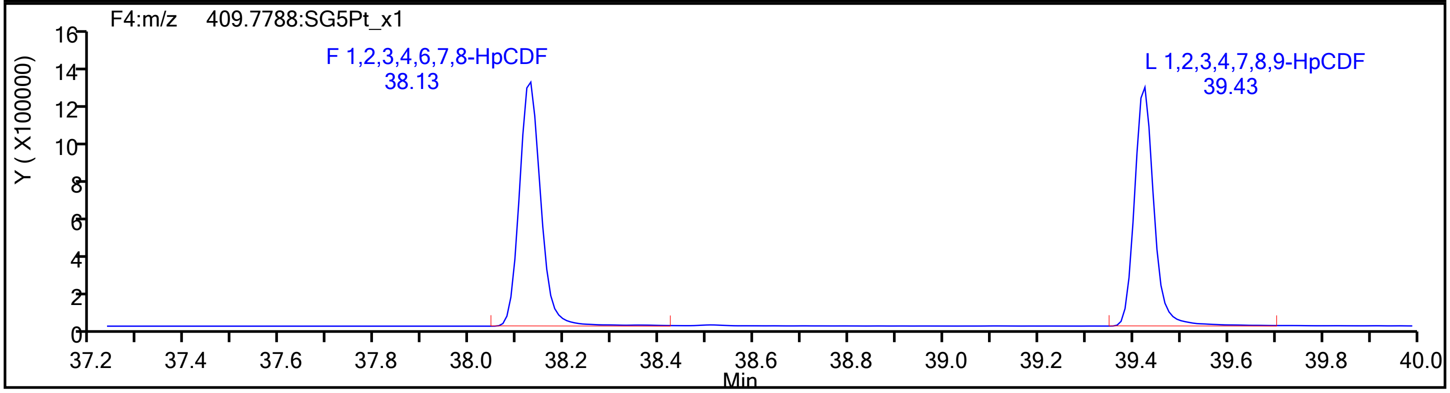

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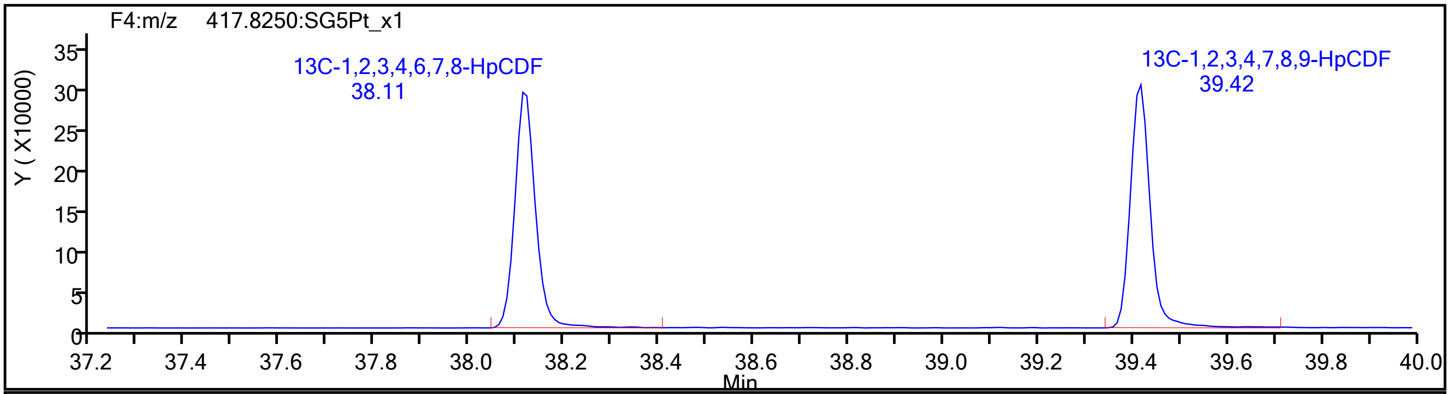

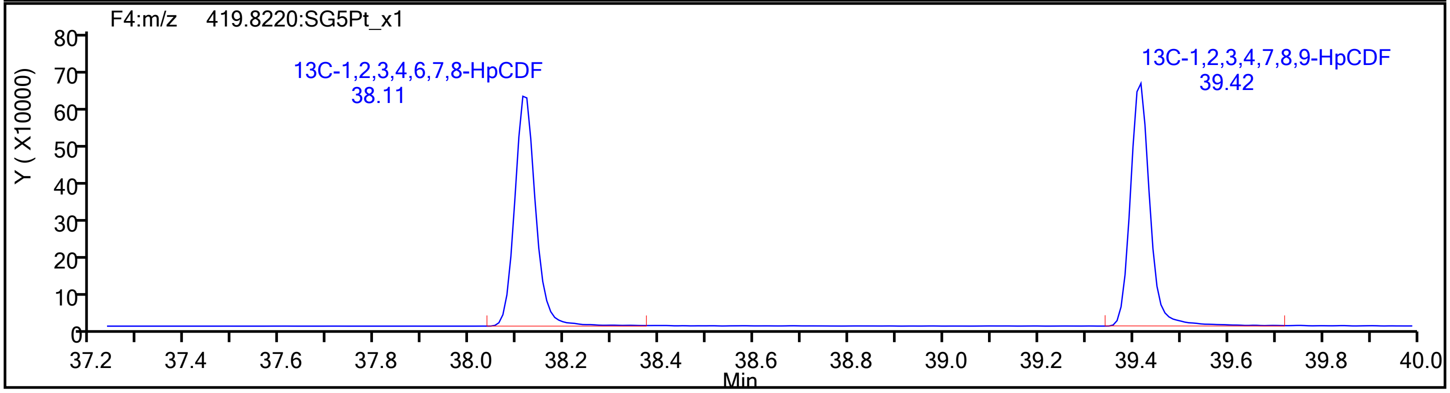

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HpCDF

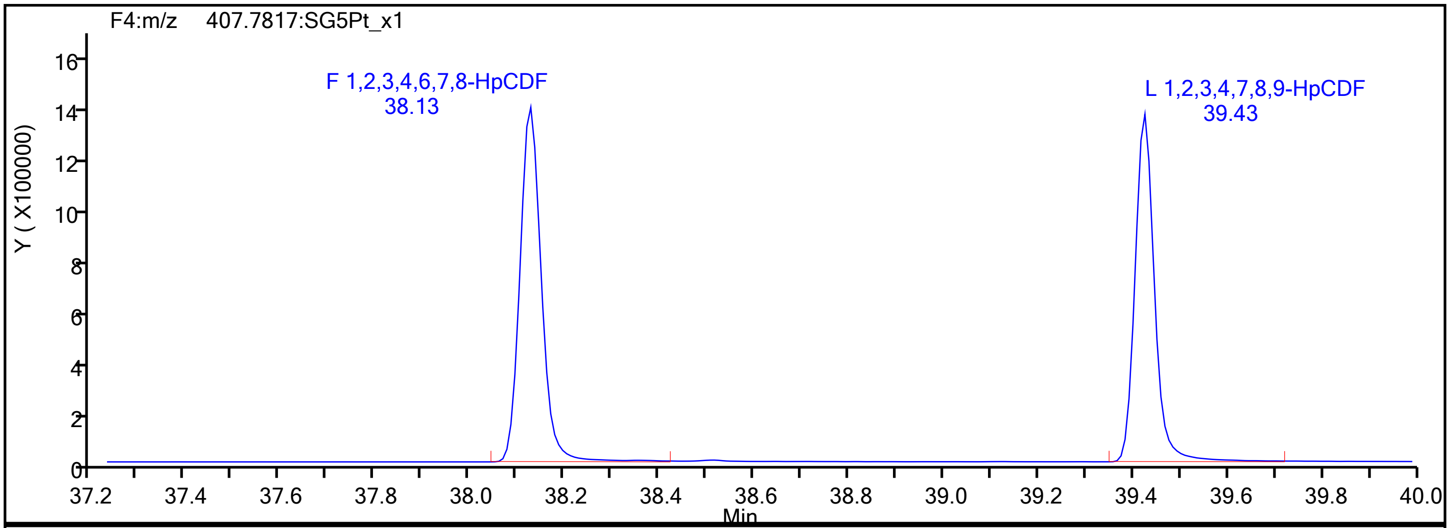

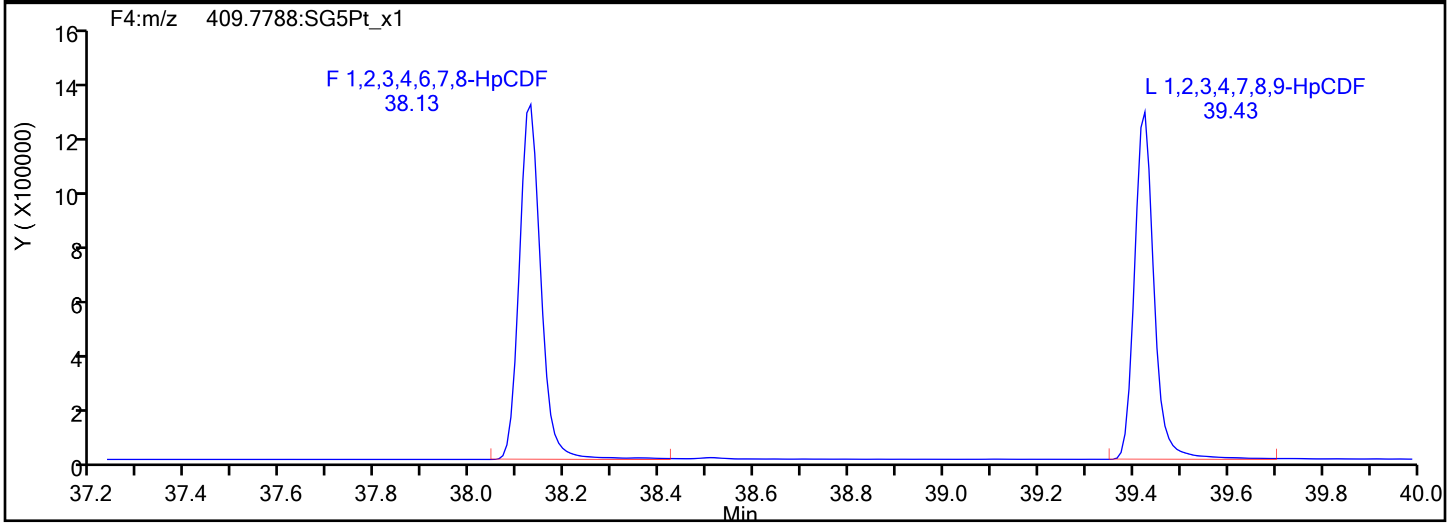

HpCDF Interference Mass

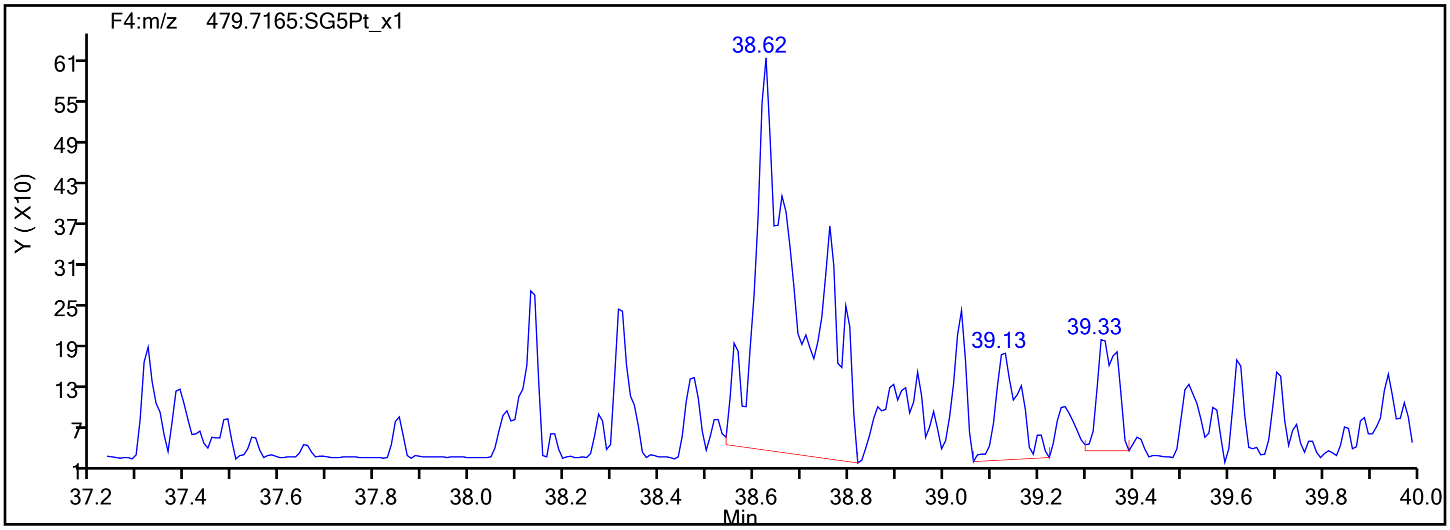

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Eurofins TestAmerica, Sacramento

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HpCDD

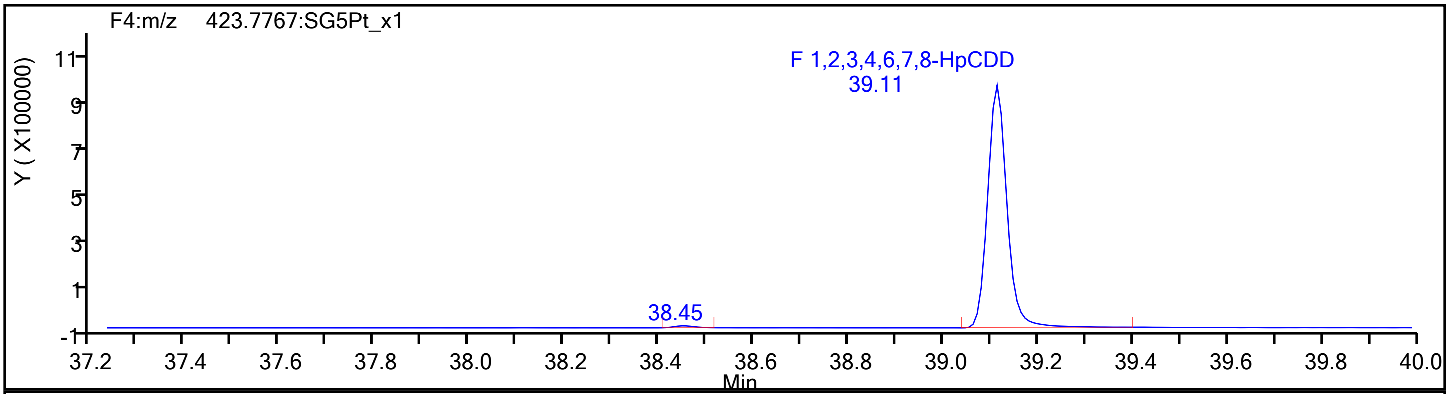

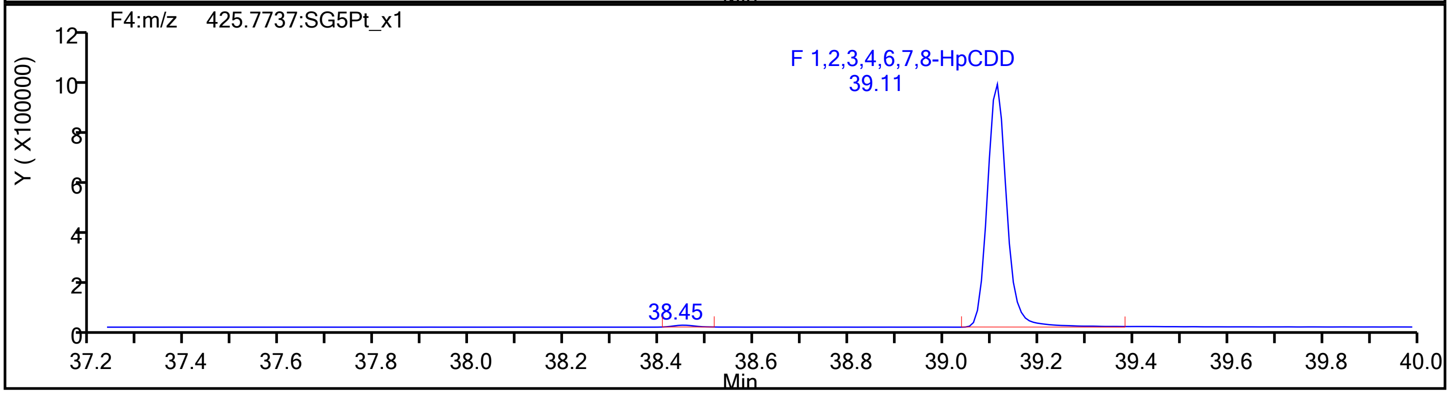

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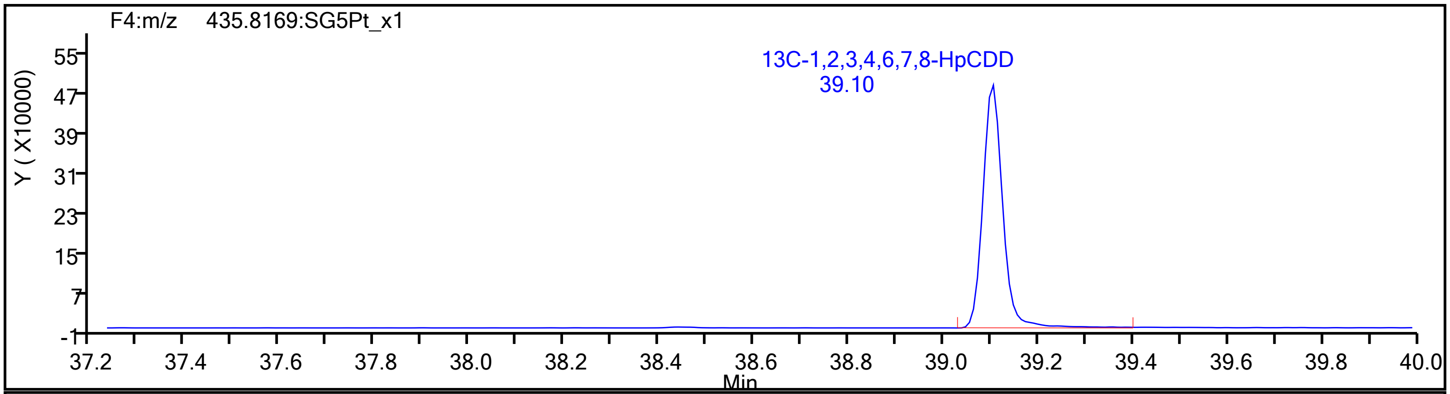

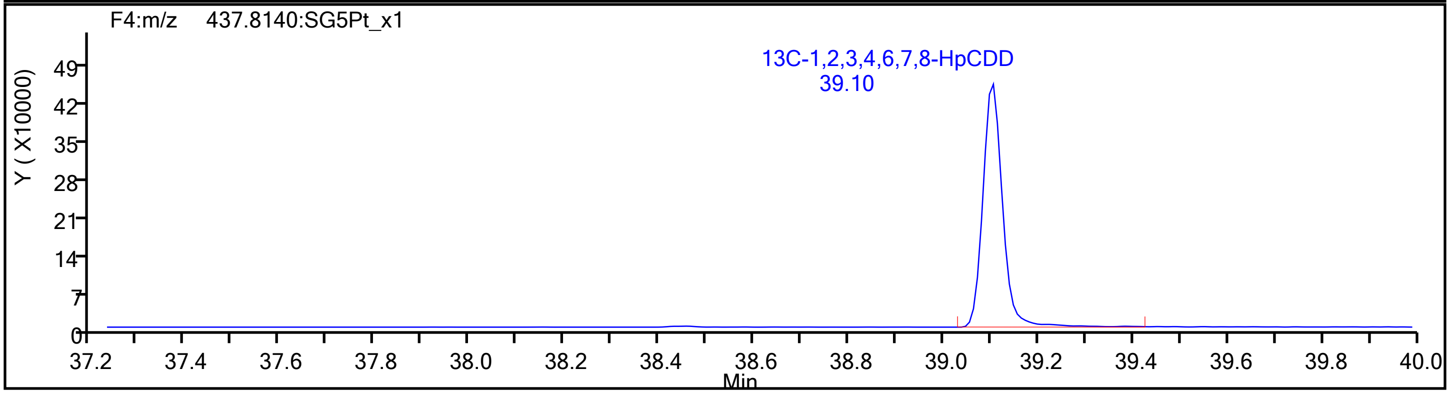

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Eurofins TestAmerica, Sacramento

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Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 9
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Column Dia: 0.32 mm

OCDF

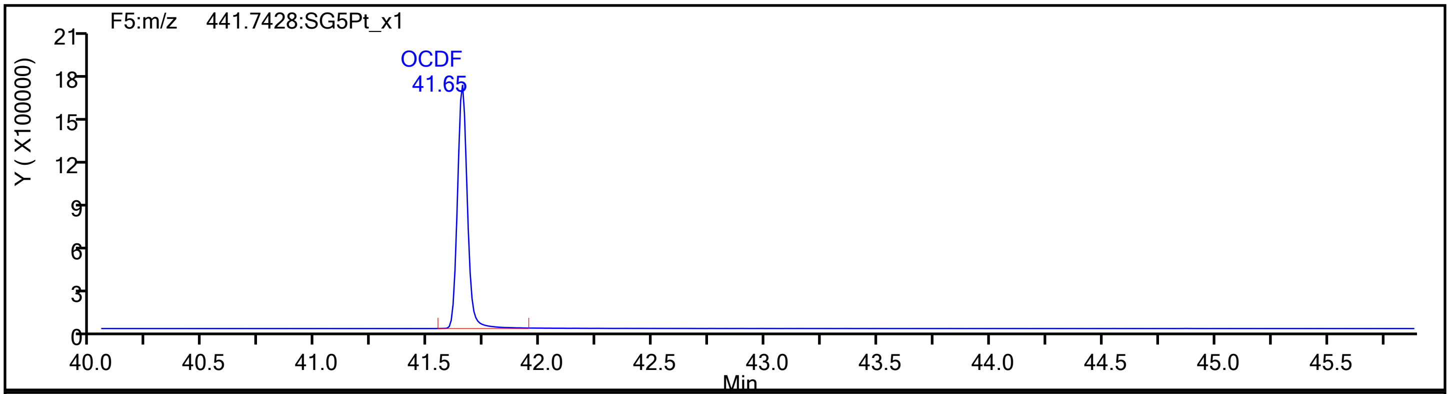

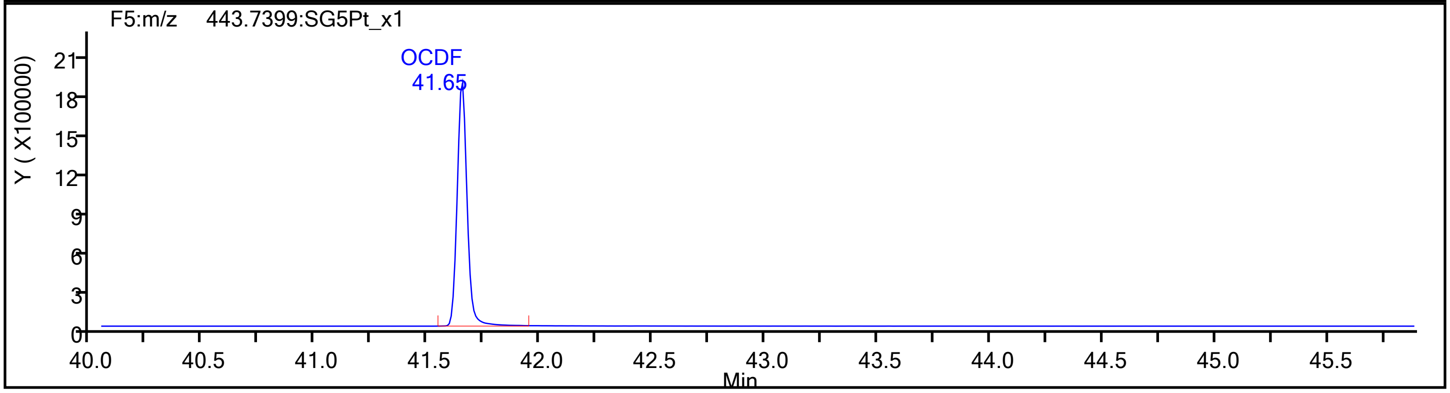

OCDF Standards

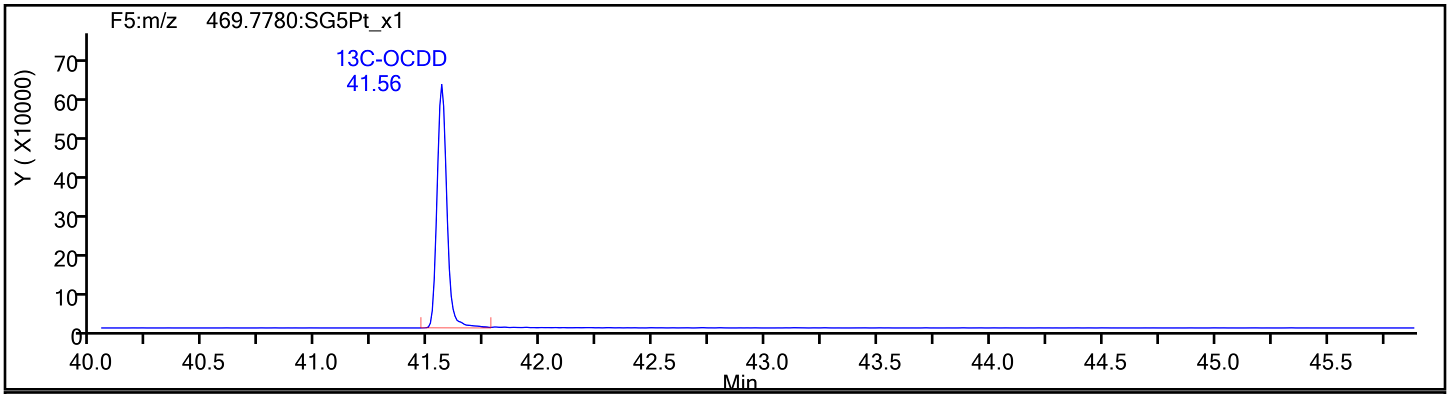

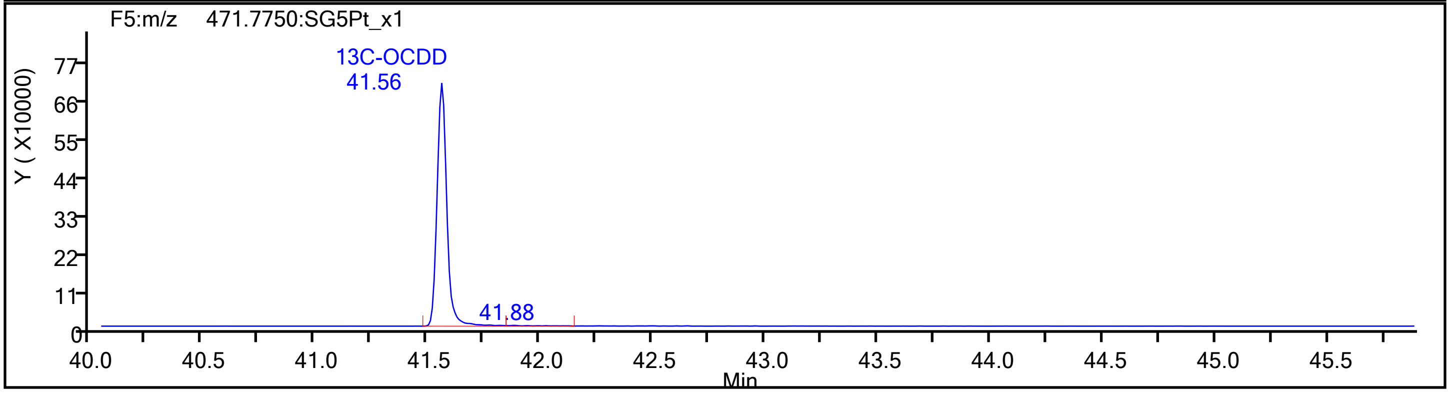

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

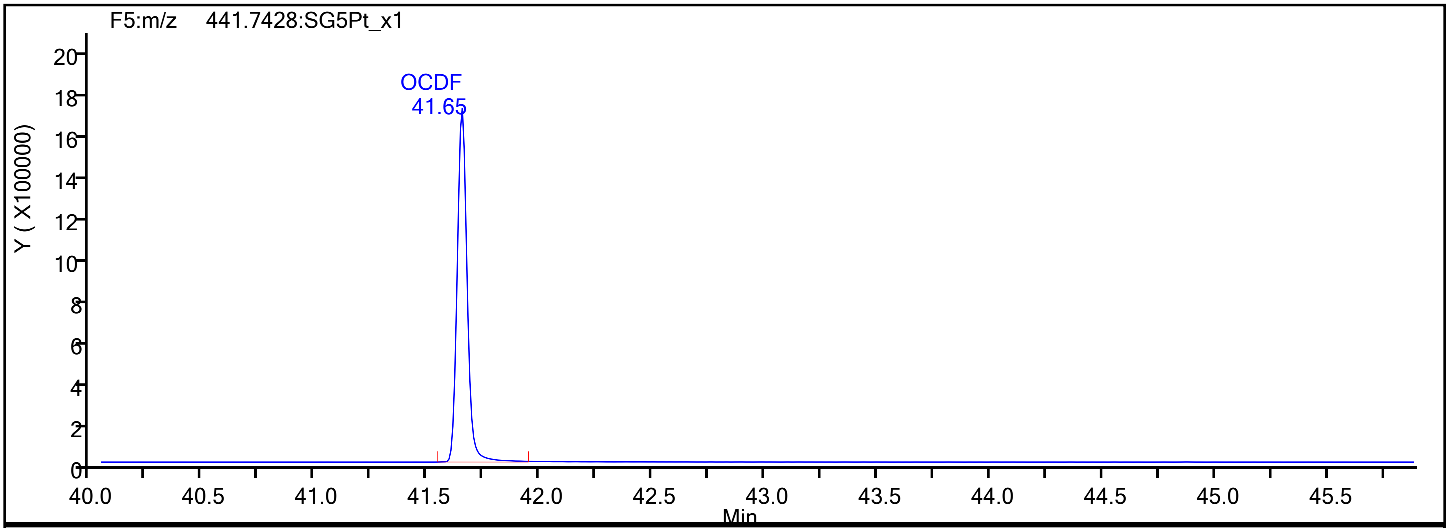

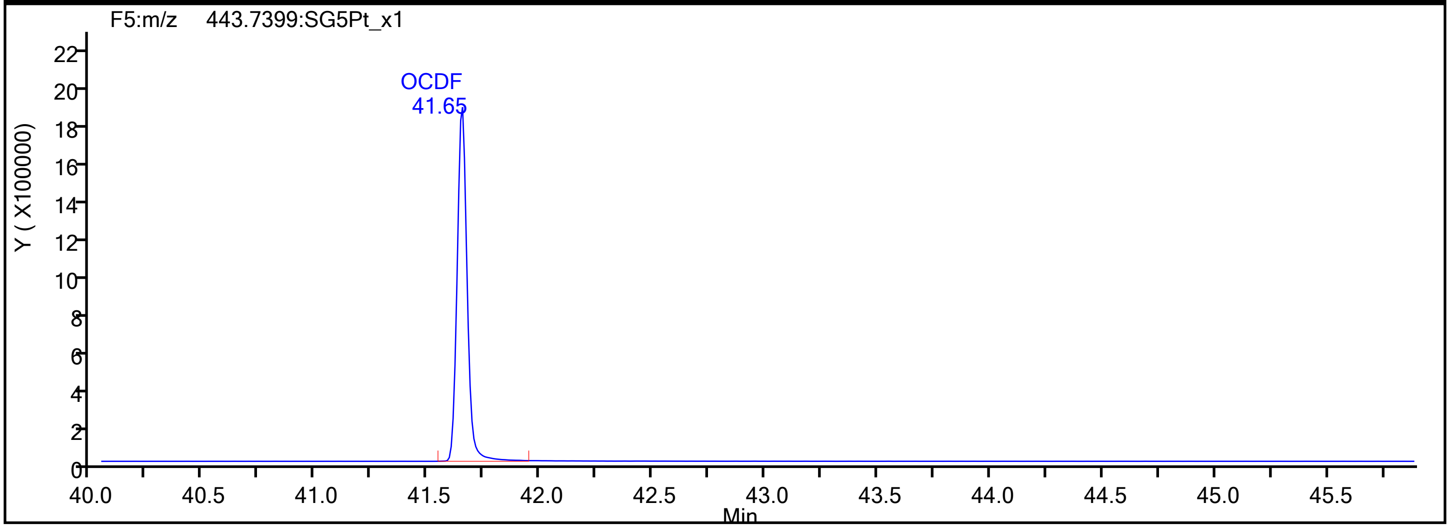

OCDF Interference Mass

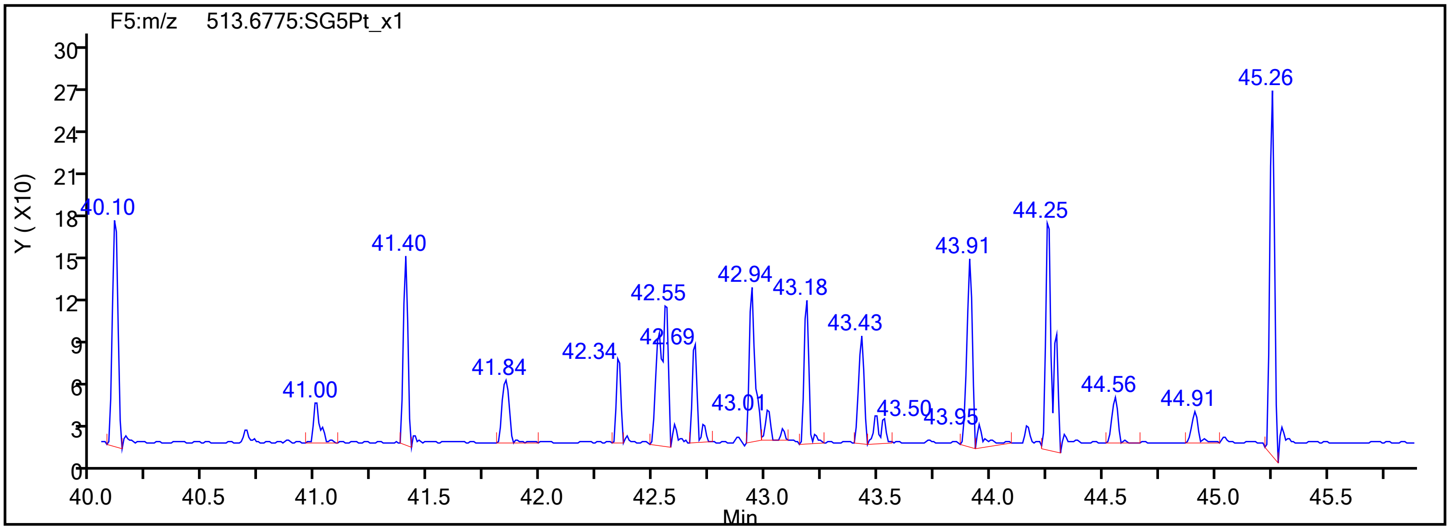

Report Date: 21-Sep-2020 08:48:05 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

OCDD

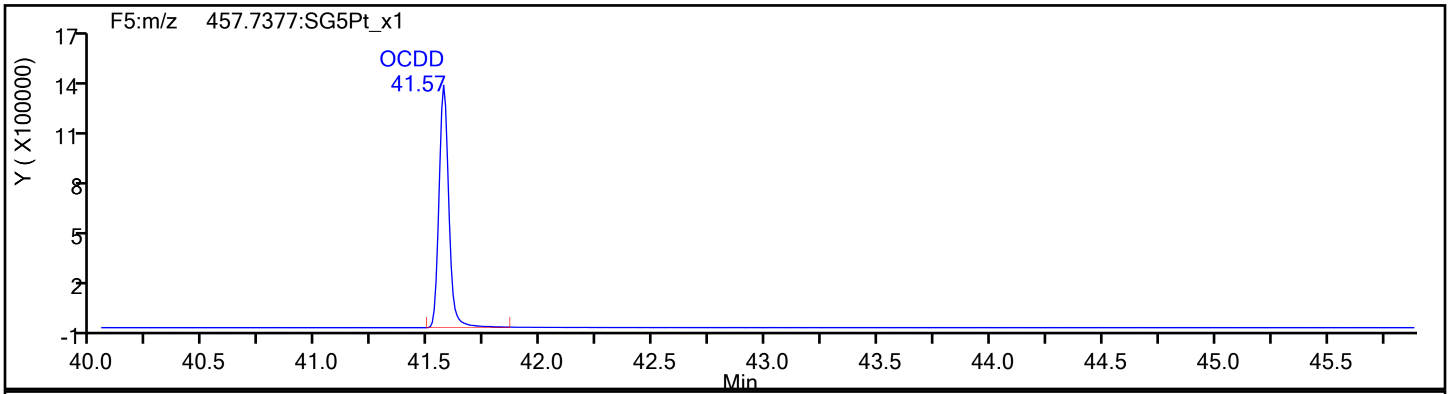

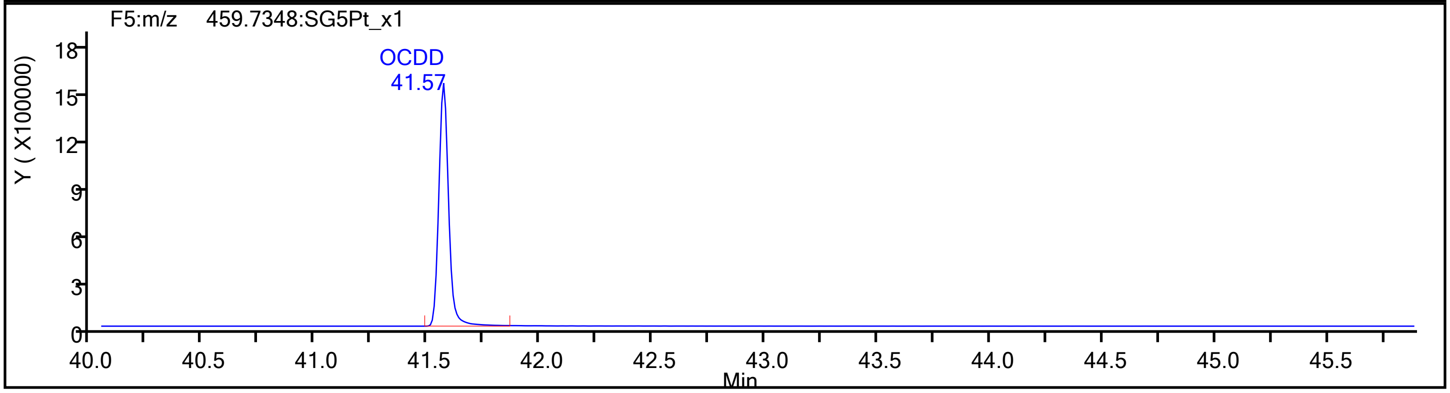

OCDD Standards

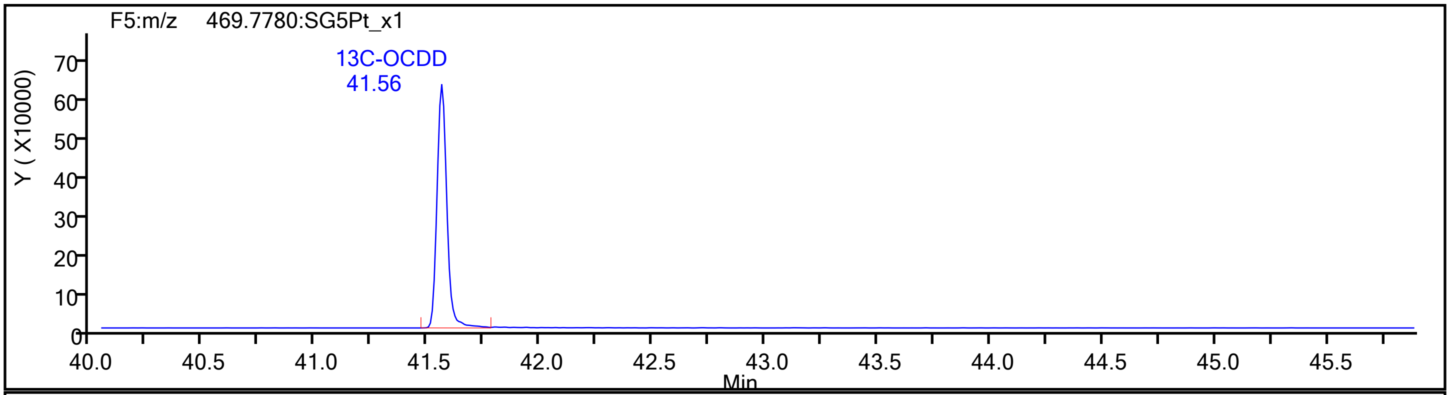

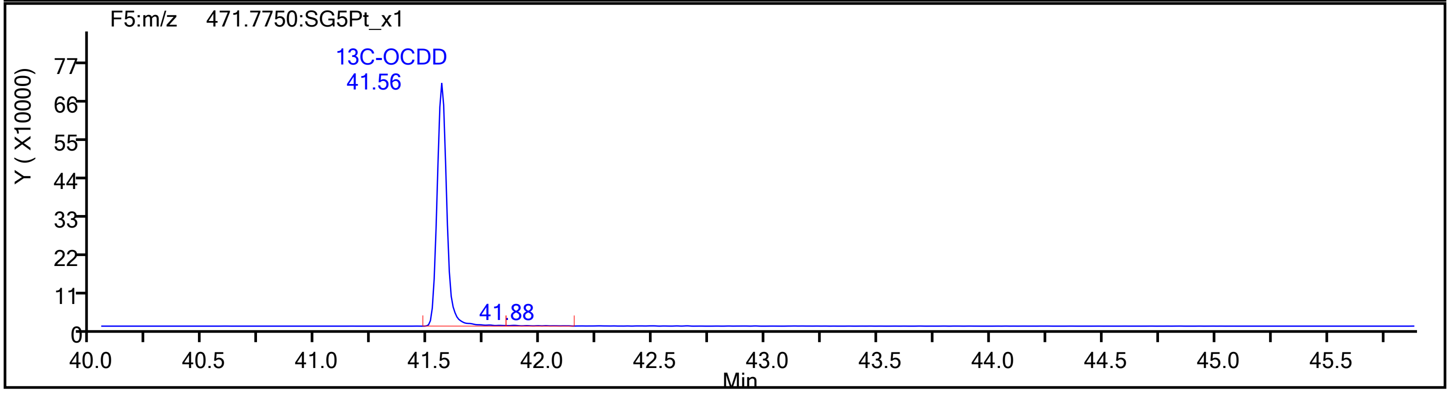

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Eurofins TestAmerica, Sacramento

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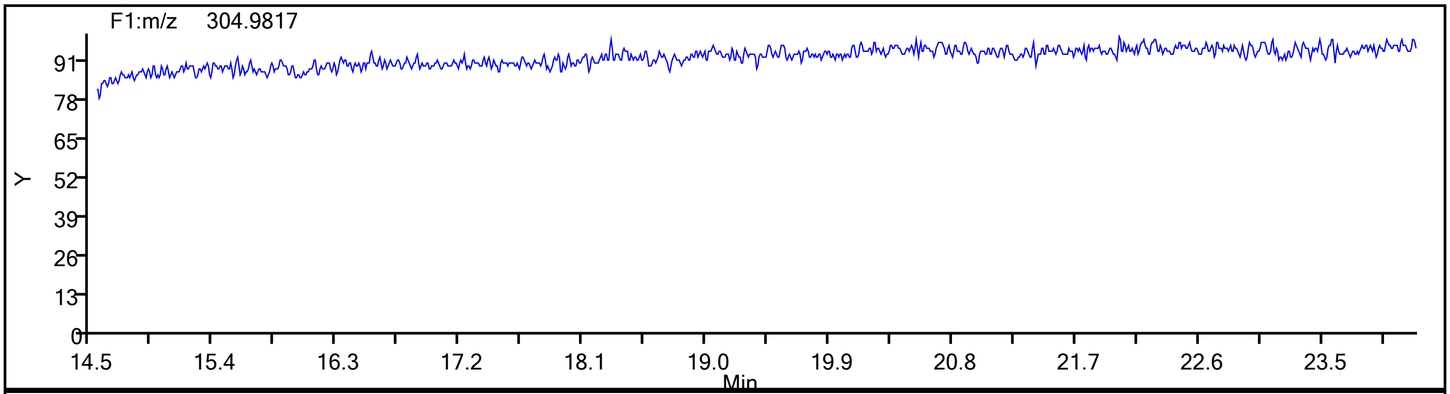

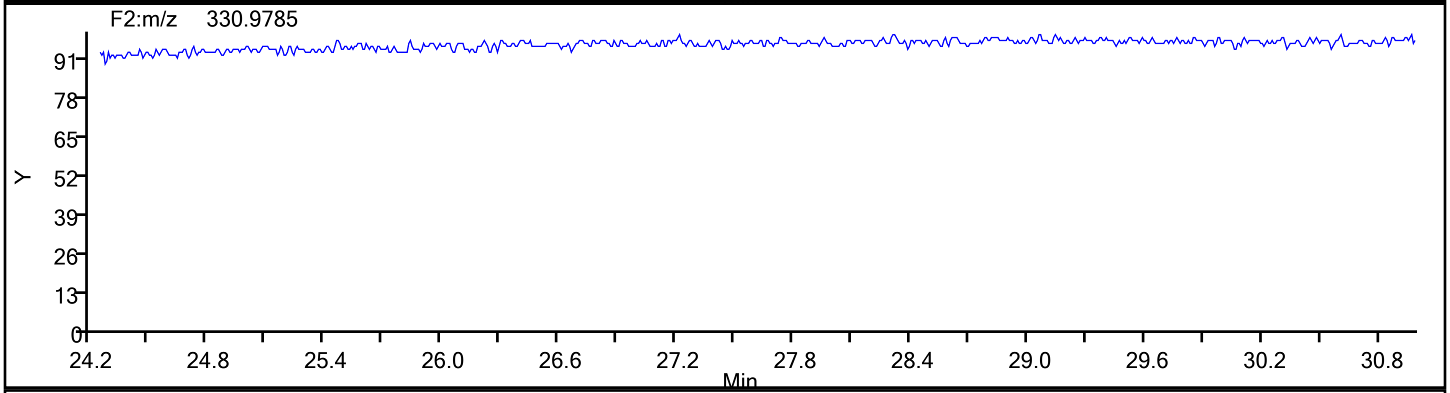

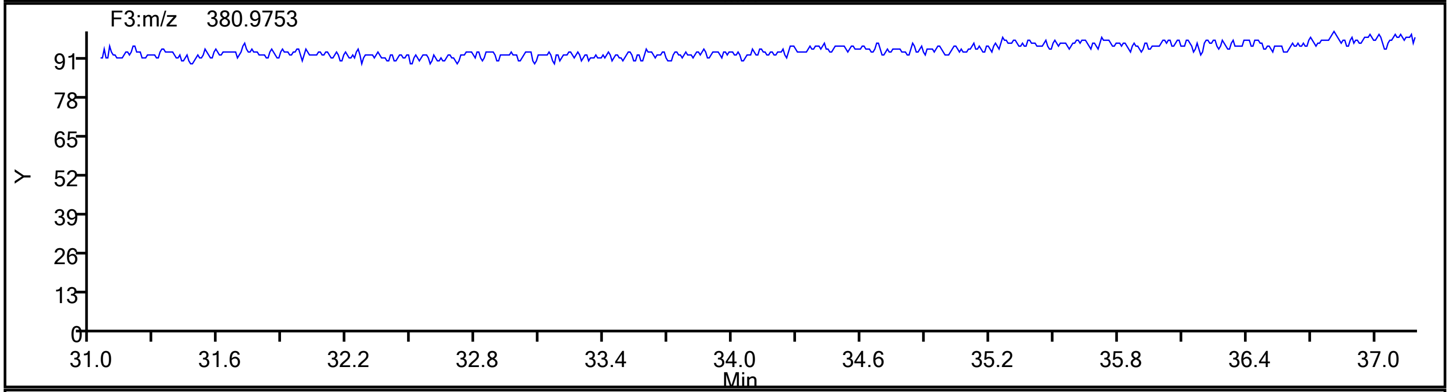

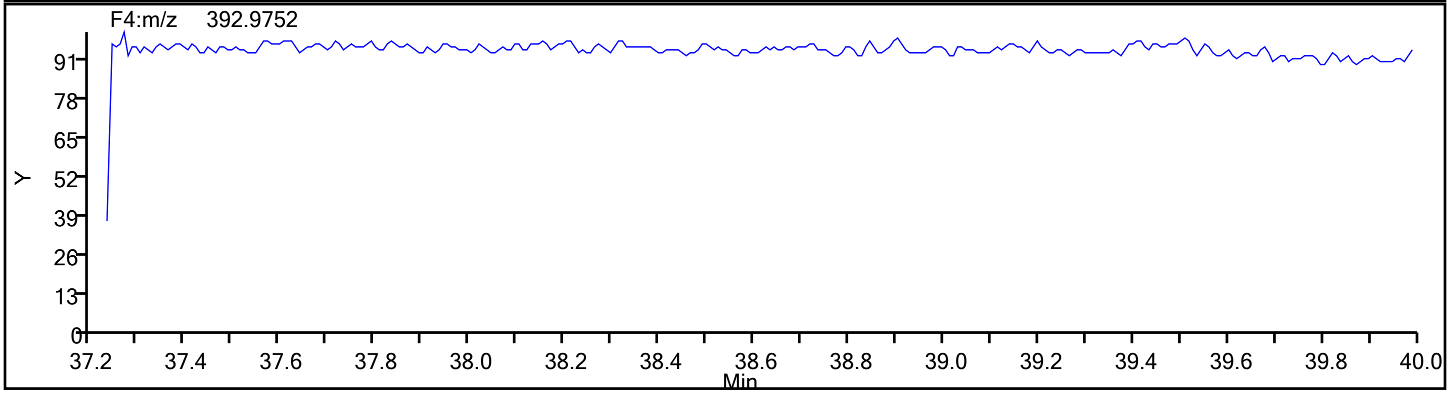

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 18:07:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

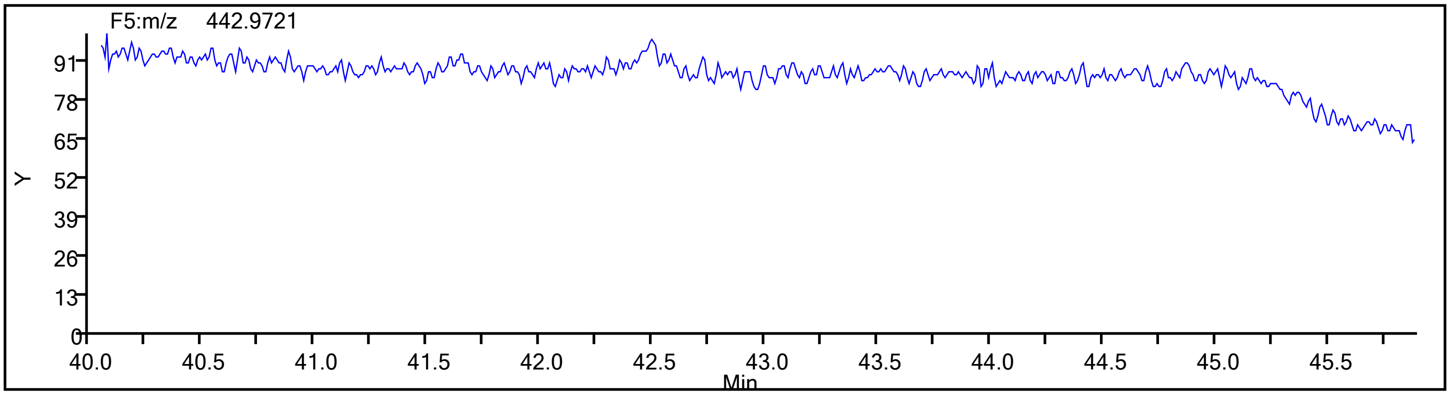

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-420640/14 Calibration Date: 10/10/2020 05:03

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 09oc20dfs1_16.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.074		9.89	10.0	99	84-120
2,3,7,8-TCDD	AveID	1.081	1.054		9.75	10.0	98	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.019		48.3	50.0	97	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.073		48.6	50.0	97	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.039		48.7	50.0	97	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.277		50.5	50.0	101	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.209		49.4	50.0	99	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.220		48.9	50.0	98	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.098		47.5	50.0	95	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	0.9715		47.2	50.0	94	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.126		47.8	50.0	96	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.222		48.3	50.0	97	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.420		47.1	50.0	94	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.030		48.4	50.0	97	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.370		47.1	50.0	94	86-116
OCDD	AveID	1.129	1.040		92.1	100	92	79-126
OCDF	AveID	1.430	1.289		90.1	100	90	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.502		94.6	100	95	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.087		97.1	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.341		90.7	100	91	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.237		88.9	100	89	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.8478		90.1	100	90	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	0.9814		86.3	100	86	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.173		89.1	100	89	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.151		92.4	100	92	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8156		96.2	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	0.9852		98.7	100	99	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.098		92.8	100	93	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	1.032		104	100	104	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	1.055		110	100	110	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.9393		102	100	102	77-129
13C-OCDD	Ave	0.7420	0.8685		234	200	117	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.129		9.85	10.0	98	79-127

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	090C20DFS1_1	Resolution Check	RC 100920	46			AJS	1.000	
2	090C20DFS1_2	WDM HRDXNCP_00042	WDM 100920 ✓	1	8290/1613B		AJS	1.000	
3	090C20DFS1_3	CCV CS-4 HRDXNL4_00095	CCV 100920 ✓	2	8290/1613B		AJS	1.000	
4	090C20DFS1_4	SB Solvent Blank C-14	SB 100920	3			AJS	1.000	
5	090C20DFS1_5	310-191668-H-1-A	310-191668-H-1-A	4	8290A/Water	D185	AJS	1.000	L
6	090C20DFS1_6	310-191668-F-2-A	310-191668-F-2-A	5	8290A/Water		AJS	1.000	L
7	090C20DFS1_7	320-65011-B-1-A	320-65011-B-1-A	6	8290A_D5/Water		AJS	1.000	L
8	090C20DFS1_8	320-65011-B-2-A	320-65011-B-2-A	7	8290A_D5/Water		AJS	1.000	L
9	090C20DFS1_9	320-65011-A-3-A	320-65011-A-3-A	8	8290A_D5/Water		AJS	1.000	L
10	090C20DFS1_10	320-65011-A-4-A	320-65011-A-4-A	9	8290A_D5/Water		AJS	1.000	L
11	090C20DFS1_11	680-189265-C-1-A	680-189265-C-1-A	10	1613B_T/Water	D186	AJS	1.000	L
12	090C20DFS1_12	320-65130-A-14-A	320-65130-A-14-A	11	1613B/Water		AJS	1.000	L
13	090C20DFS1_13	320-65130-A-15-A	320-65130-A-15-A	12	1613B/Water		AJS	1.000	L
14	090C20DFS1_14	SB Solvent Blank C-14	SB 100920A	3			AJS	1.000	
15	090C20DFS1_15	Resolution Check	RC 100920A ✓	46			AJS	1.000	
16	090C20DFS1_16	CCV CS-4 HRDXNL4_00095	CCV 100920A ✓	2	8290/1613B		AJS	1.000	
17	090C20DFS1_17	Resolution Check	RC 100920B ✓	46			AJS	1.000	
18	090C20DFS1_18	WDM HRDXNCP_00042	WDM 100920A ✓	1	8290/1613B		AJS	1.000	
19	090C20DFS1_19	SB Solvent Blank C-14	SB 100920B	3			AJS	1.000	
20	090C20DFS1_20	MB 320-417971/1-A	MB 320-417971/1-A	13	1613B(T)/Water	D186	AJS	1.000	L
21	090C20DFS1_21	LCS 320-417971/2-A	LCS 320-417971/2-A	14	1613B(T)/Water		AJS	1.000	L
22	090C20DFS1_22	LCSD 320-417971/3-A	LCSD 320-417971/3-A	15	1613B(T)/Water		AJS	1.000	L
23	090C20DFS1_23	320-65130-A-16-A	320-65130-A-16-A	16	1613B/Water		AJS	1.000	L
24	090C20DFS1_24	320-65130-A-17-A	320-65130-A-17-A	17	1613B/Water		AJS	1.000	L
25	090C20DFS1_25	320-65130-A-18-A	320-65130-A-18-A	18	1613B/Water		AJS	1.000	L
26	090C20DFS1_26	320-65130-A-19-A	320-65130-A-19-A	19	1613B/Water		AJS	1.000	L
27	090C20DFS1_27	320-65130-A-20-A	320-65130-A-20-A	20	1613B/Water		AJS	1.000	L
28	090C20DFS1_28	320-65130-A-21-A	320-65130-A-21-A	21	1613B/Water		AJS	1.000	L
29	090C20DFS1_29	320-65130-A-22-A	320-65130-A-22-A	22	1613B/Water		AJS	1.000	L
30	090C20DFS1_30	Resolution Check	RC 100920C ✓	46			AJS	1.000	
31	090C20DFS1_31	WDM HRDXNCP_00042	WDM 100920B	1	8290/1613B		AJS	1.000	
32	090C20DFS1_32	CCV CS-4 HRDXNL4_00095	CCV 100920B	2	8290/1613B		AJS	1.000	
33	090C20DFS1_33	SB Solvent Blank C-14	SB 100920C	3			AJS	1.000	
34	090C20DFS1_34	MB 320-417456/1-A	MB 320-417456/1-A	23	1613B/Solid	D185	AJS	10.000	g
35	090C20DFS1_35	LCS 320-417456/2-A	LCS 320-417456/2-A	24	1613B/Solid		AJS	10.000	g
36	090C20DFS1_36	500-188477-D-1-A	500-188477-D-1-A	25	1613B/Solid		AJS	10.000	g
37	090C20DFS1_37	500-188477-D-2-A	500-188477-D-2-A	26	1613B/Solid		AJS	10.000	g
38	090C20DFS1_38	500-188477-D-3-A	500-188477-D-3-A	27	1613B/Solid		AJS	10.000	g
39	090C20DFS1_39	500-188477-D-4-A	500-188477-D-4-A	28	1613B/Solid		AJS	10.000	g
40	090C20DFS1_40	500-188477-D-4-B MS	500-188477-D-4-B MS	29	1613B/Solid		AJS	10.000	g
41	090C20DFS1_41	500-188477-D-4-C MSD	500-188477-D-4-C MSD	30	1613B/Solid		AJS	10.000	g
42	090C20DFS1_42	500-188477-D-5-A	500-188477-D-5-A	31	1613B/Solid		AJS	10.000	g
43	090C20DFS1_43	Resolution Check	RC 100920D	46			AJS	1.000	
44	090C20DFS1_44	SB Solvent Blank C-14	SB 100920D	3			AJS	1.000	
45	090C20DFS1_45	Resolution Check	RC 100920E	46			AJS	1.000	
46	090C20DFS1_46	WDM HRDXNCP_00042	WDM 100920C	1	8290/1613B		AJS	1.000	
47	090C20DFS1_47	CCV CS-4 HRDXNL4_00095	CCV 100920C	2	8290/1613B		AJS	1.000	
48	090C20DFS1_48	SB Solvent Blank C-14	SB 100920E	3			AJS	1.000	
49	090C20DFS1_49	MB 320-413850/1-A	MB 320-413850/1-A	32	8290/Water	84	AJS	1.000	L
50	090C20DFS1_50	LCS 320-413850/2-A	LCS 320-413850/2-A	33	8290/Water		AJS	1.000	L
51	090C20DFS1_51	LCSD 320-413850/3-A	LCSD 320-413850/3-A	34	8290/Water		AJS	1.000	L
52	090C20DFS1_52	320-64641-A-1-B	320-64641-A-1-B	35	8290/Water		AJS	1.000	L
53	090C20DFS1_53	320-64937-A-1-C	320-64937-A-1-C	36	8290A_D5/Solid	D186	AJS	20.000	g
54	090C20DFS1_54	320-64937-B-2-C	320-64937-B-2-C	37	8290A_D5/Solid		AJS	20.000	g
55	090C20DFS1_55	320-64937-B-3-A	320-64937-B-3-A	38	8290A_D5/Solid		AJS	20.000	g
56	090C20DFS1_56	320-64937-A-4-C	320-64937-A-4-C	39	8290A_D5/Solid		AJS	20.000	g

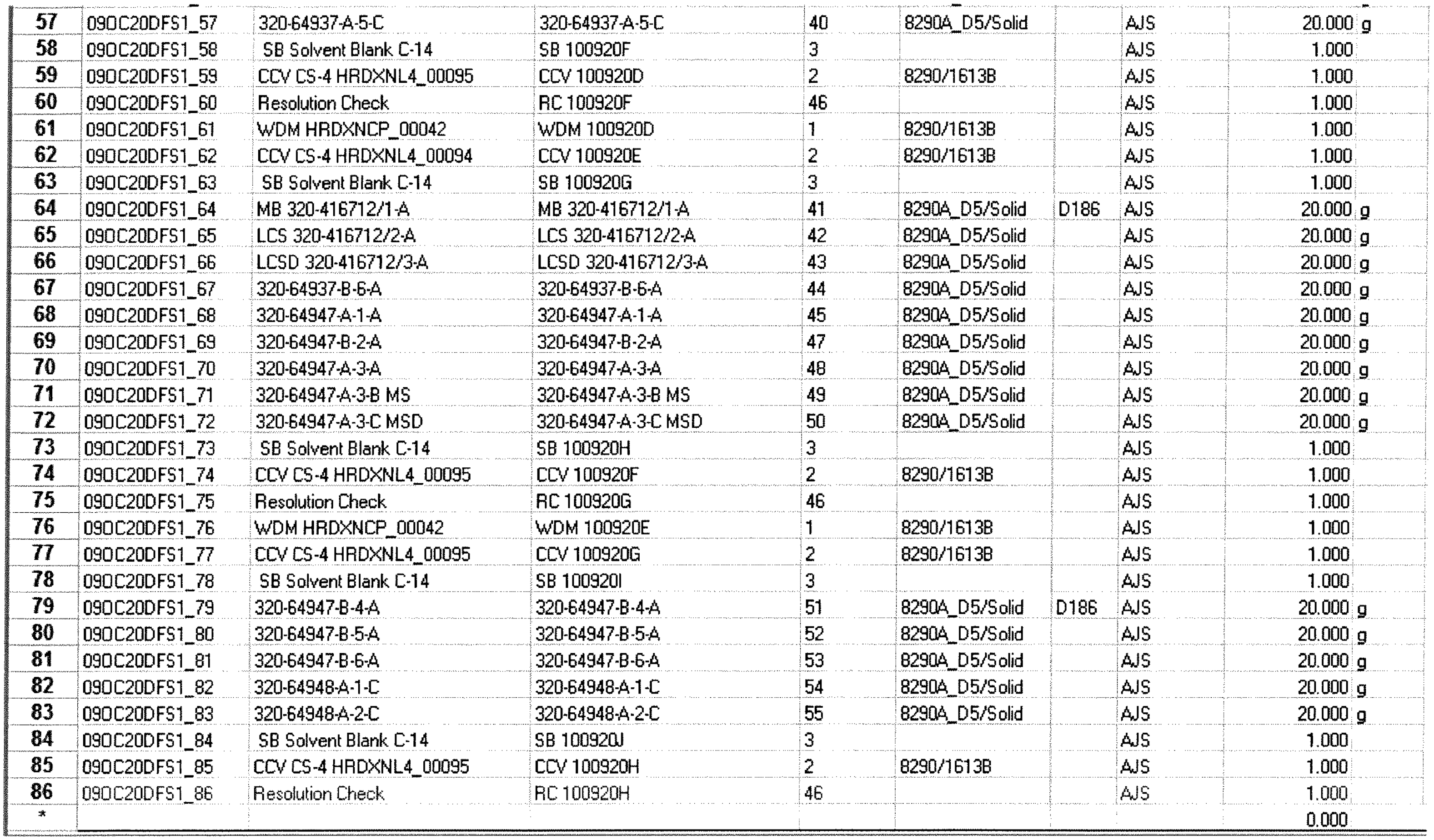

57	090C20DFS1_57	320-64937-A-5-C	320-64937-A-5-C	40	8290A_D5/Solid		AJS	20.000	g
58	090C20DFS1_58	SB Solvent Blank C-14	SB 100920F	3			AJS	1.000	
59	090C20DFS1_59	CCV CS-4 HRDXNL4_00095	CCV 100920D	2	8290/1613B		AJS	1.000	
60	090C20DFS1_60	Resolution Check	RC 100920F	46			AJS	1.000	
61	090C20DFS1_61	WDM HRDXNCP_00042	WDM 100920D	1	8290/1613B		AJS	1.000	
62	090C20DFS1_62	CCV CS-4 HRDXNL4_00094	CCV 100920E	2	8290/1613B		AJS	1.000	
63	090C20DFS1_63	SB Solvent Blank C-14	SB 100920G	3			AJS	1.000	
64	090C20DFS1_64	MB 320-416712/1-A	MB 320-416712/1-A	41	8290A_D5/Solid	D186	AJS	20.000	g
65	090C20DFS1_65	LCS 320-416712/2-A	LCS 320-416712/2-A	42	8290A_D5/Solid		AJS	20.000	g
66	090C20DFS1_66	LCSD 320-416712/3-A	LCSD 320-416712/3-A	43	8290A_D5/Solid		AJS	20.000	g
67	090C20DFS1_67	320-64937-B-6-A	320-64937-B-6-A	44	8290A_D5/Solid		AJS	20.000	g
68	090C20DFS1_68	320-64947-A-1-A	320-64947-A-1-A	45	8290A_D5/Solid		AJS	20.000	g
69	090C20DFS1_69	320-64947-B-2-A	320-64947-B-2-A	47	8290A_D5/Solid		AJS	20.000	g
70	090C20DFS1_70	320-64947-A-3-A	320-64947-A-3-A	48	8290A_D5/Solid		AJS	20.000	g
71	090C20DFS1_71	320-64947-A-3-B MS	320-64947-A-3-B MS	49	8290A_D5/Solid		AJS	20.000	g
72	090C20DFS1_72	320-64947-A-3-C MSD	320-64947-A-3-C MSD	50	8290A_D5/Solid		AJS	20.000	g
73	090C20DFS1_73	SB Solvent Blank C-14	SB 100920H	3			AJS	1.000	
74	090C20DFS1_74	CCV CS-4 HRDXNL4_00095	CCV 100920F	2	8290/1613B		AJS	1.000	
75	090C20DFS1_75	Resolution Check	RC 100920G	46			AJS	1.000	
76	090C20DFS1_76	WDM HRDXNCP_00042	WDM 100920E	1	8290/1613B		AJS	1.000	
77	090C20DFS1_77	CCV CS-4 HRDXNL4_00095	CCV 100920G	2	8290/1613B		AJS	1.000	
78	090C20DFS1_78	SB Solvent Blank C-14	SB 100920I	3			AJS	1.000	
79	090C20DFS1_79	320-64947-B-4-A	320-64947-B-4-A	51	8290A_D5/Solid	D186	AJS	20.000	g
80	090C20DFS1_80	320-64947-B-5-A	320-64947-B-5-A	52	8290A_D5/Solid		AJS	20.000	g
81	090C20DFS1_81	320-64947-B-6-A	320-64947-B-6-A	53	8290A_D5/Solid		AJS	20.000	g
82	090C20DFS1_82	320-64948-A-1-C	320-64948-A-1-C	54	8290A_D5/Solid		AJS	20.000	g
83	090C20DFS1_83	320-64948-A-2-C	320-64948-A-2-C	55	8290A_D5/Solid		AJS	20.000	g
84	090C20DFS1_84	SB Solvent Blank C-14	SB 100920J	3			AJS	1.000	
85	090C20DFS1_85	CCV CS-4 HRDXNL4_00095	CCV 100920H	2	8290/1613B		AJS	1.000	
86	090C20DFS1_86	Resolution Check	RC 100920H	46			AJS	1.000	
*								0.000	

logfile checked
10-10-20 ALM

Resolution Check Report (DFS SN: 3487)

Date: 10 Oct 2020 04:44
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12110 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11983 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12298 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12243 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12081 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11989 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11576 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11718 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11629 [5%height]

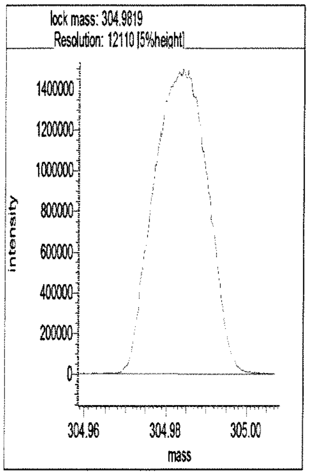

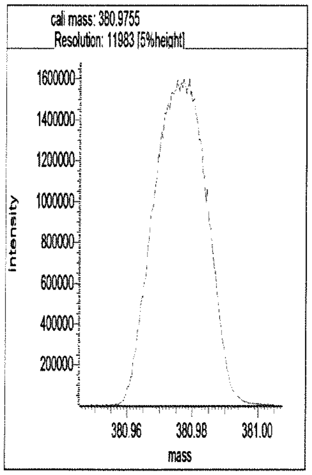

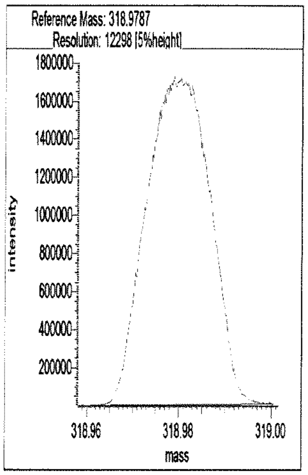

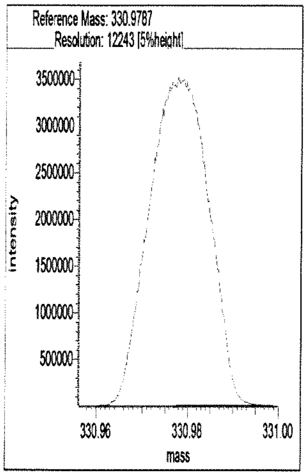

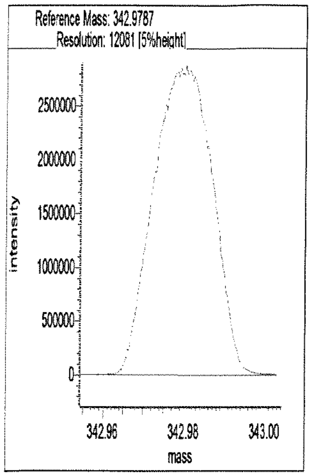

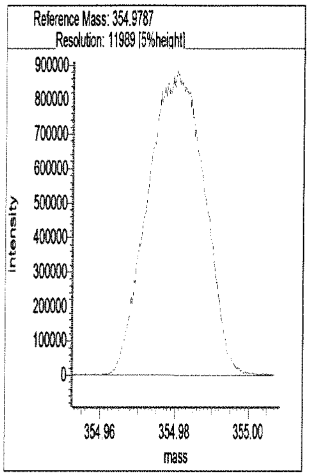

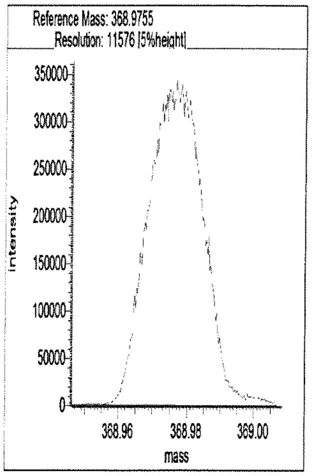

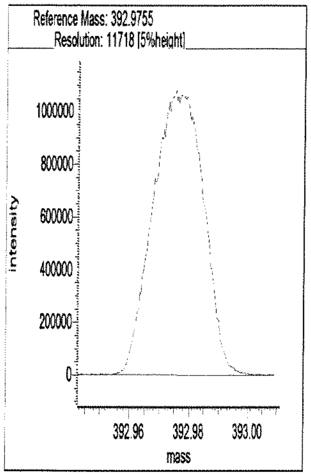

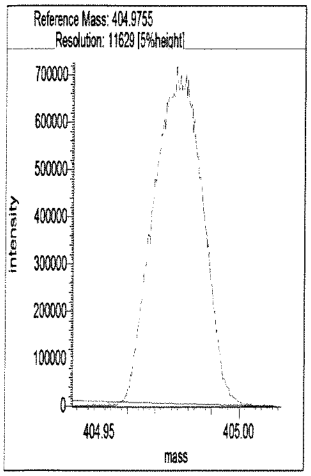

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12161 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12227 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12040 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12377 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12120 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12058 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11997 [5%height]

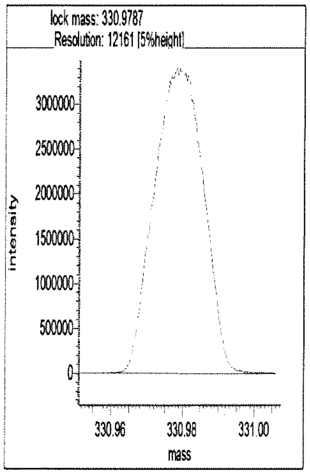

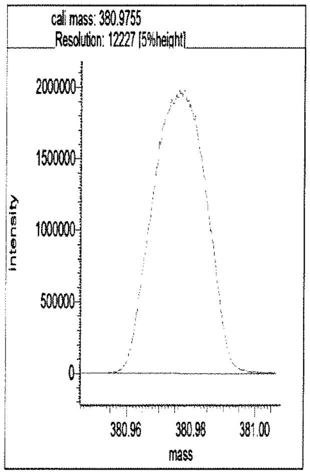

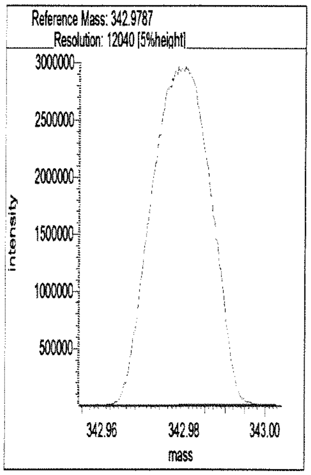

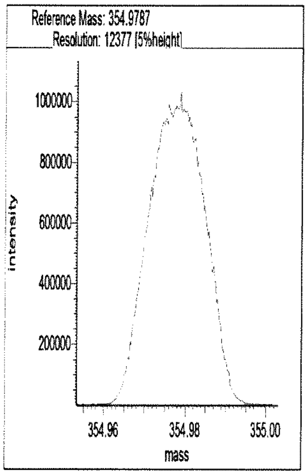

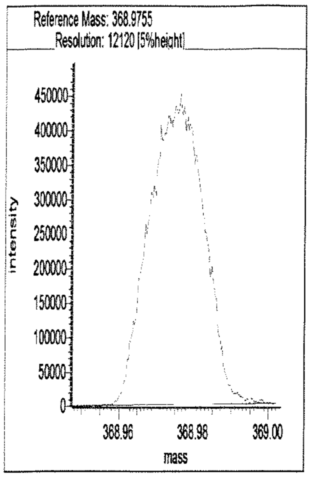

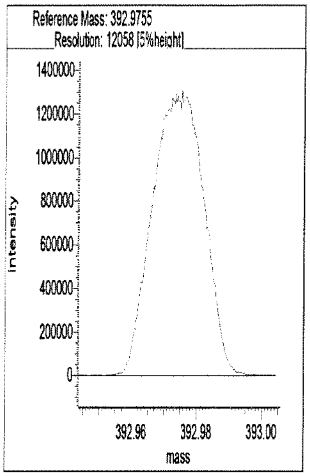

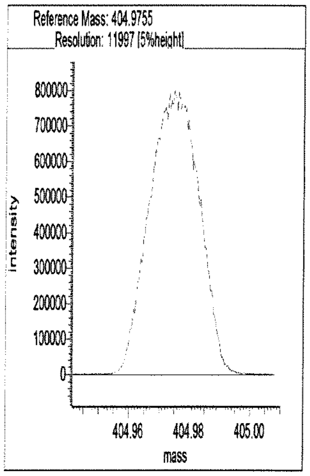

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12297 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12252 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12262 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12725 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12424 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12161 [5%height]

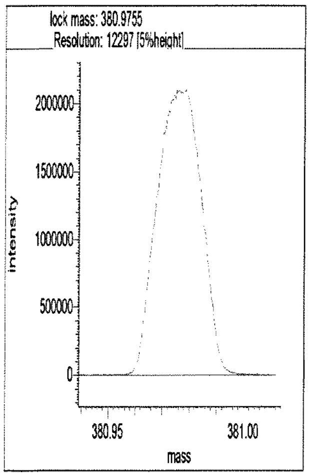

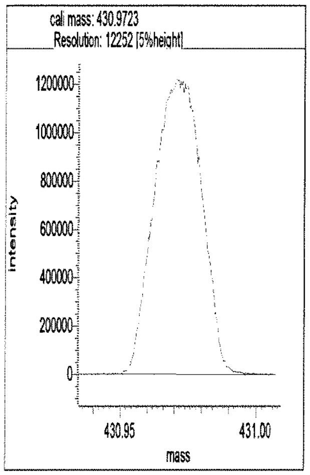

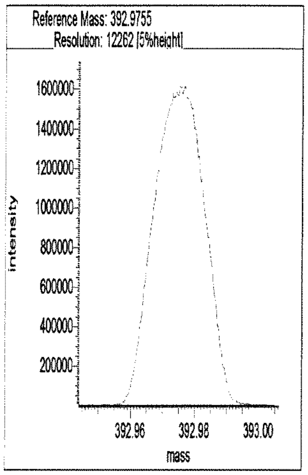

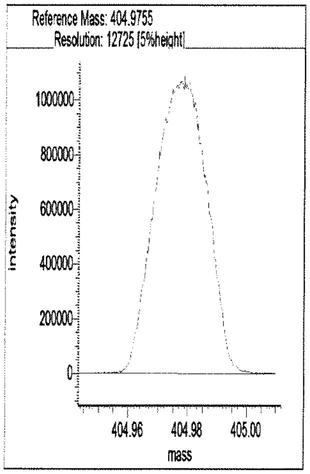

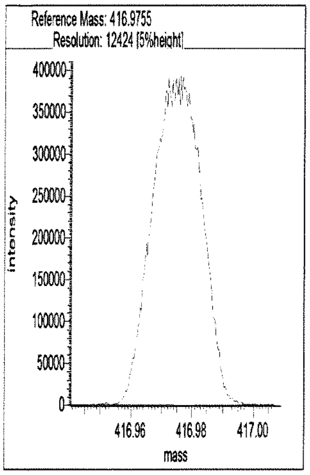

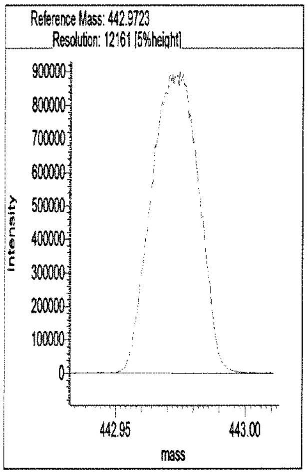

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12397 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11998 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12303 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12528 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12152 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12405 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12107 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12027 [5%height]

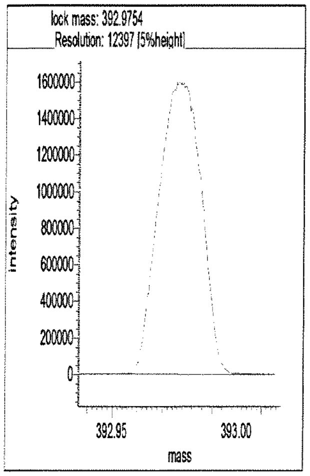

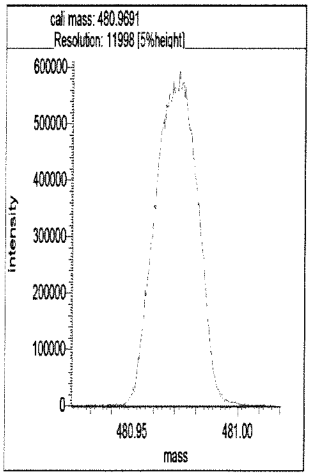

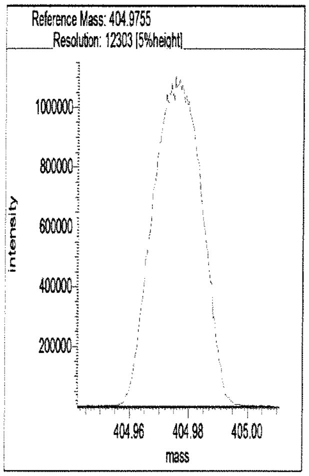

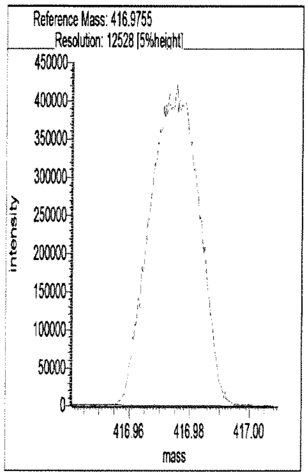

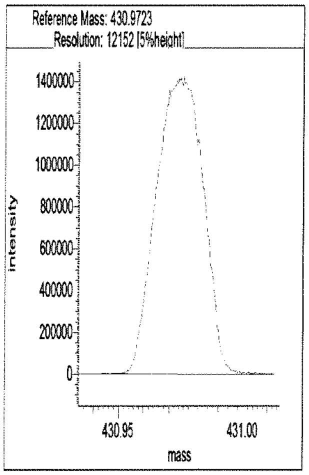

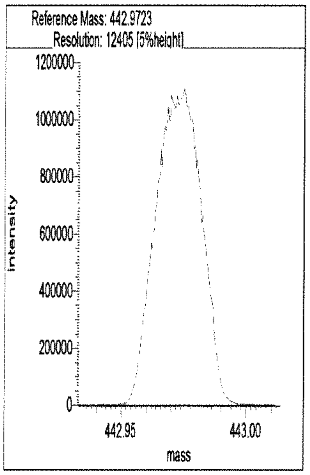

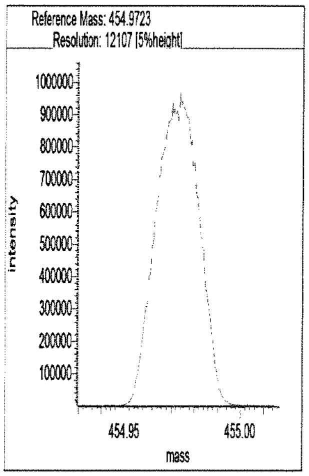

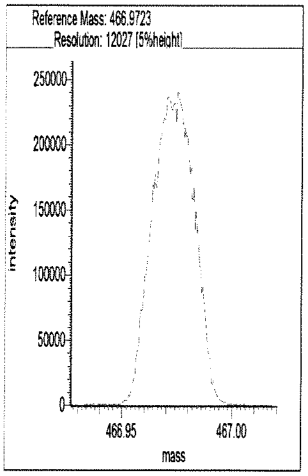

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12206 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12256 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12522 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12475 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12416 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12378 [5%height]

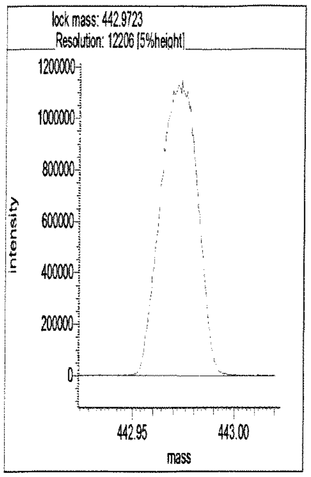
lock mass: 442.9723
Resolution: 12206 [5%height]

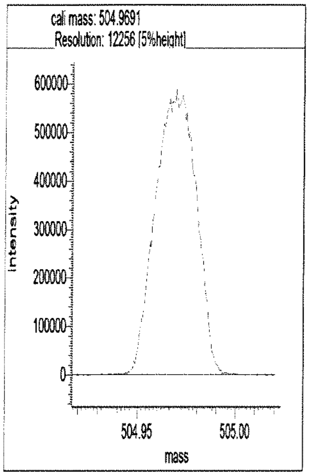
cali mass: 504.9691
Resolution: 12256 [5%height]

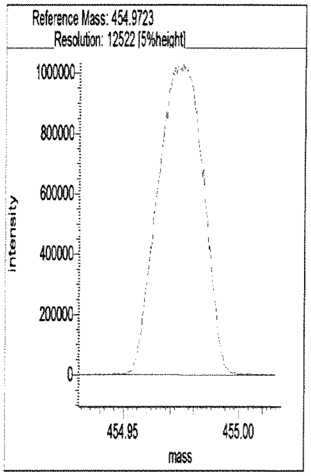
Reference Mass: 454.9723
Resolution: 12522 [5%height]

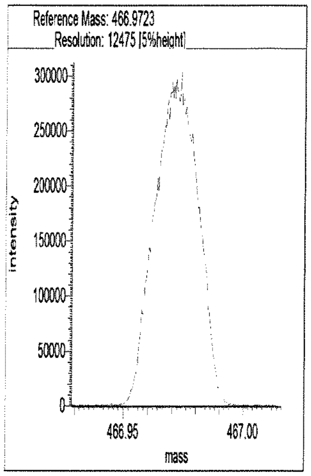
Reference Mass: 466.9723
Resolution: 12475 [5%height]

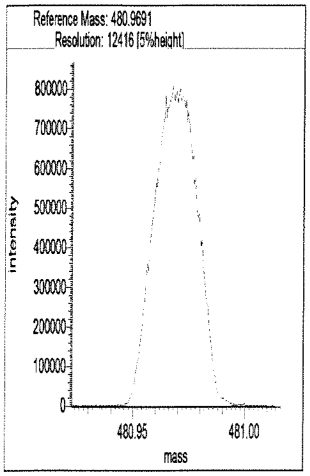
Reference Mass: 480.9691
Resolution: 12416 [5%height]

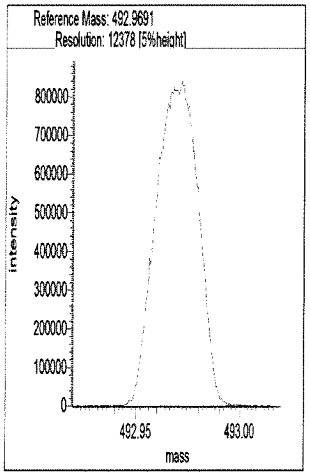
Reference Mass: 492.9691
Resolution: 12378 [5%height]

Resolution Check Report (DFS SN: 3487)

Date: 10 Oct 2020 15:44
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11969 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11881 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12138 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12149 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12035 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12393 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11149 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11640 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11660 [5%height]

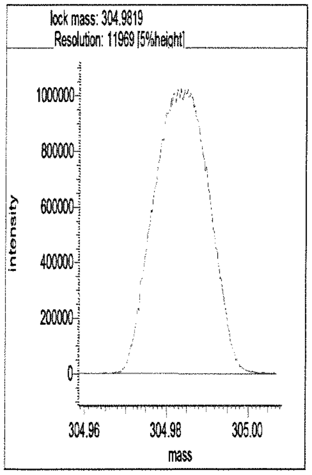
lock mass: 304.9819
Resolution: 11969 [5%height]

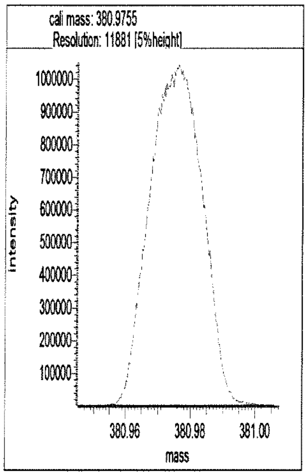
cali mass: 380.9755
Resolution: 11881 [5%height]

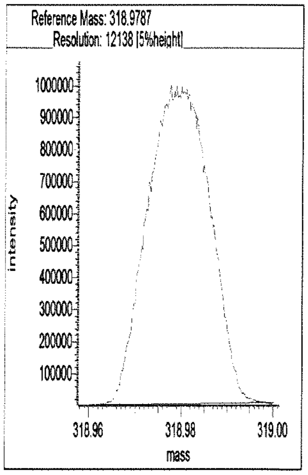
Reference Mass: 318.9787
Resolution: 12138 [5%height]

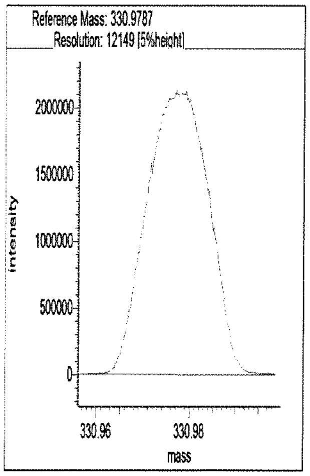
Reference Mass: 330.9787
Resolution: 12149 [5%height]

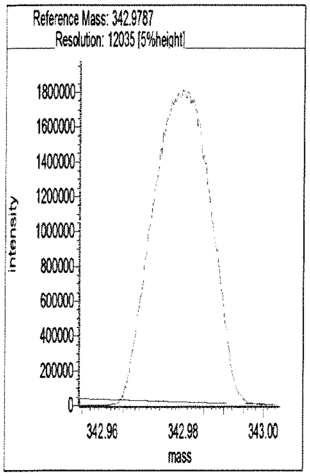

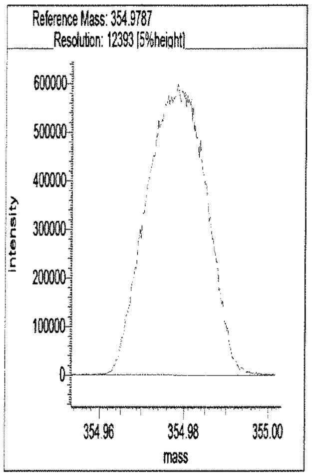

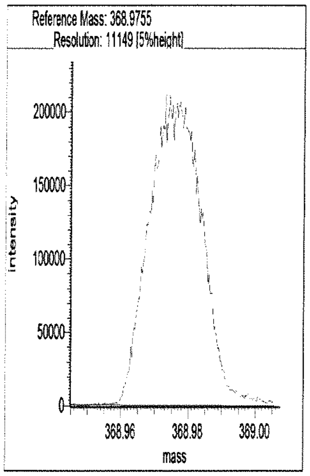

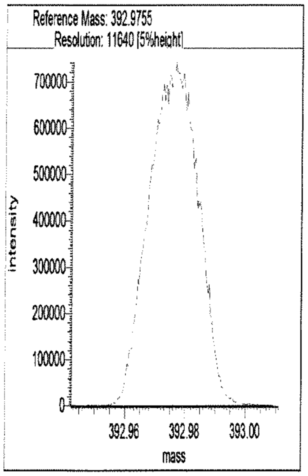

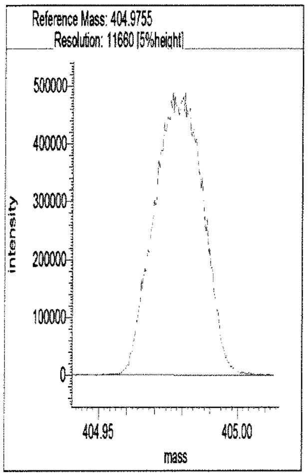

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12044 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12165 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11984 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12301 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12089 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12046 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11759 [5%height]

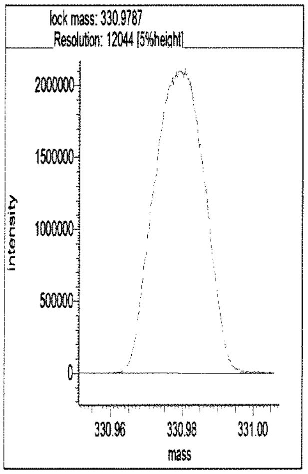

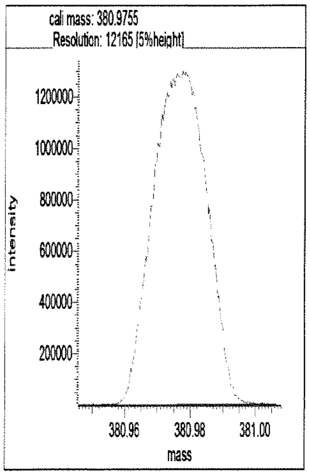

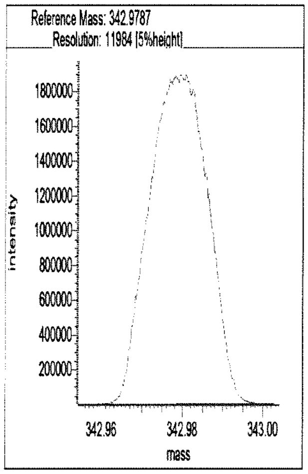

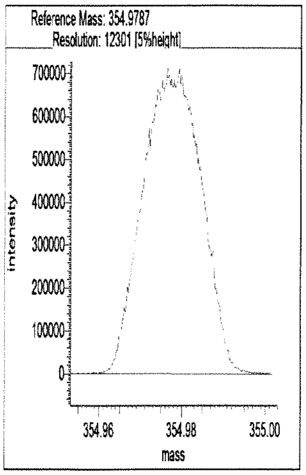

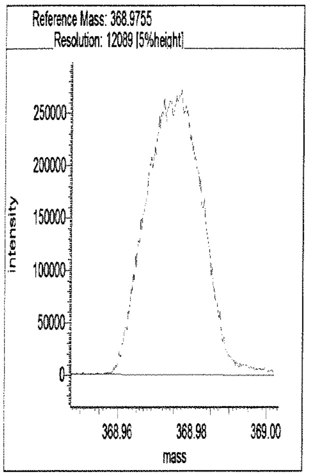

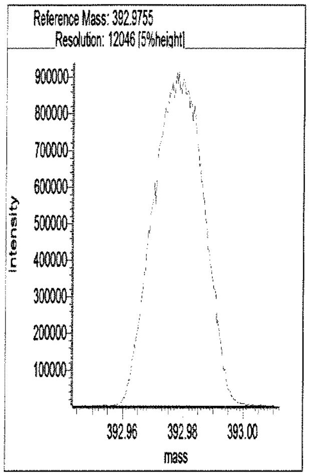

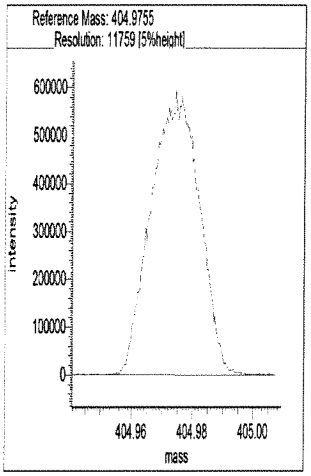

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12051 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12040 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12251 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12345 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12236 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12171 [5%height]

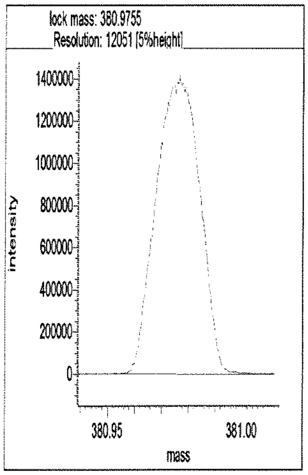

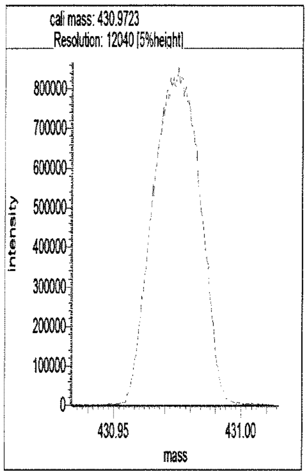

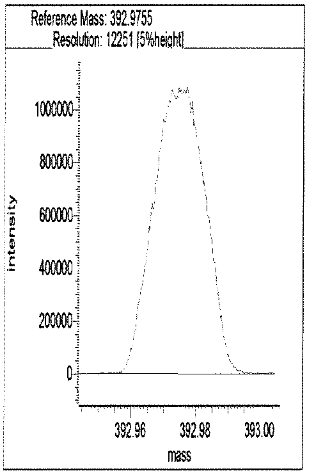

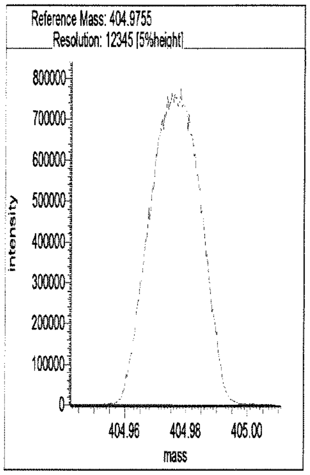

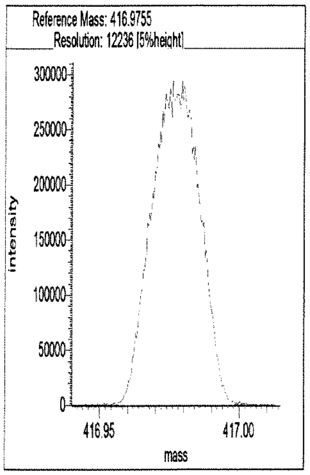

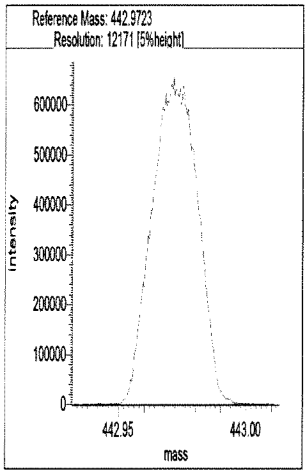

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12041 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12262 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12249 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12231 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12316 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12178 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12351 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12242 [5%height]

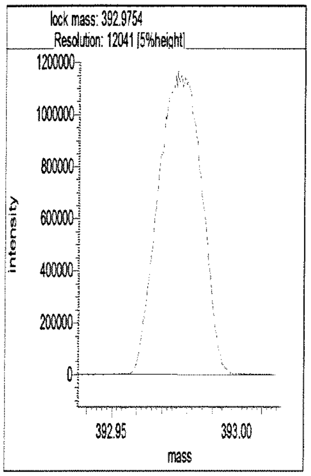

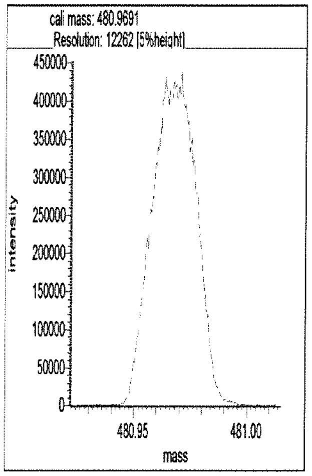

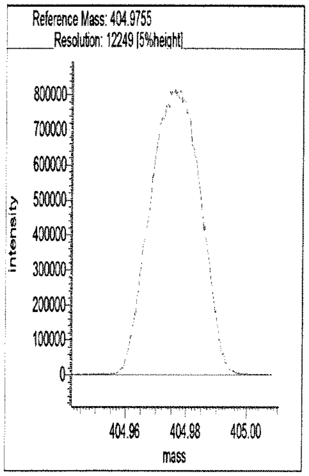

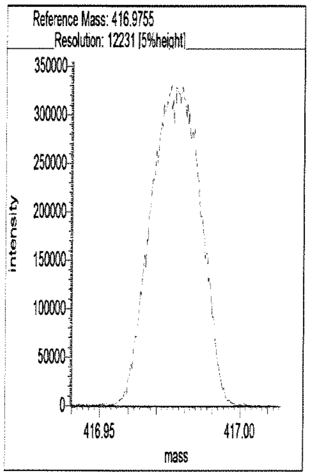

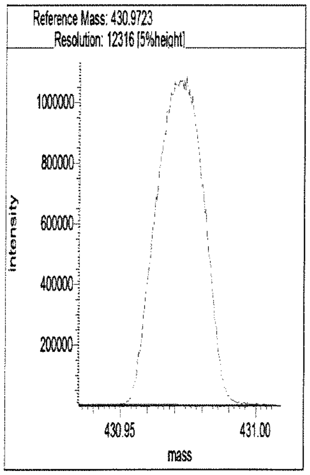

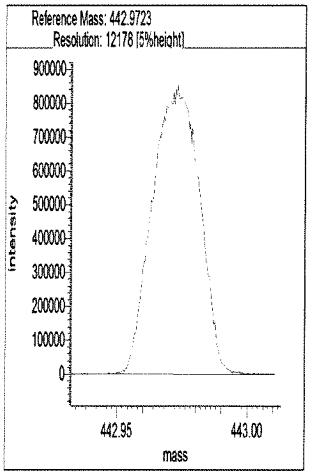

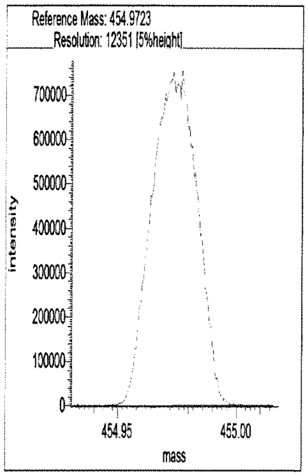

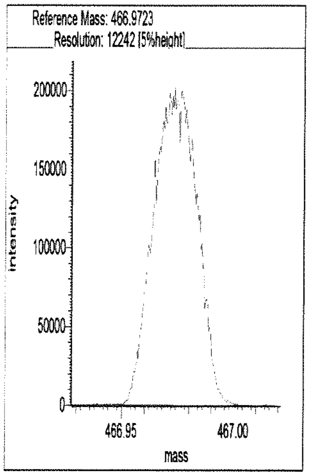

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12025 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12423 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12281 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12274 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12159 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12293 [5%height]

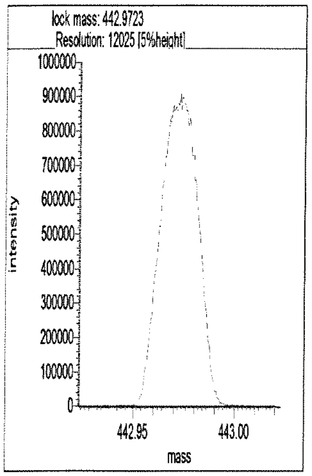
lock mass: 442.9723
Resolution: 12025 [5%height]
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

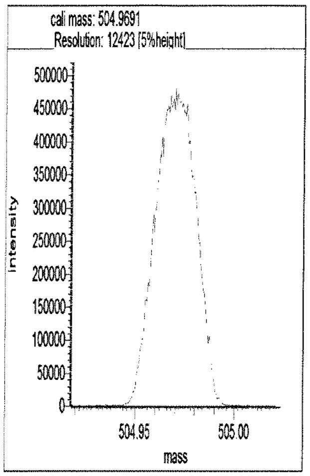
cali mass: 504.9691
Resolution: 12423 [5%height]
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

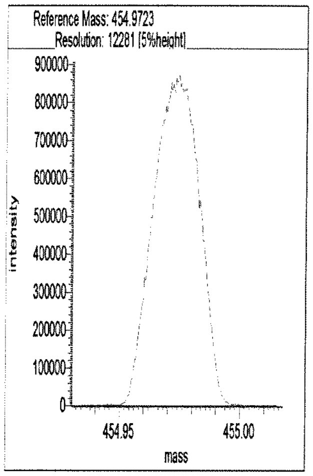
Reference Mass: 454.9723
Resolution: 12281 [5%height]
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

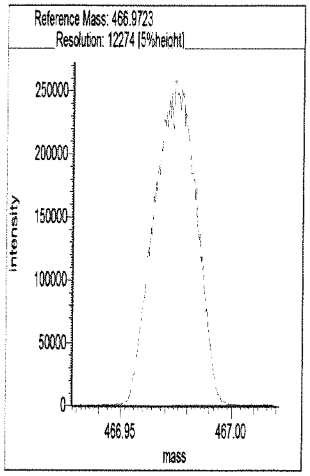
Reference Mass: 466.9723
Resolution: 12274 [5%height]
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

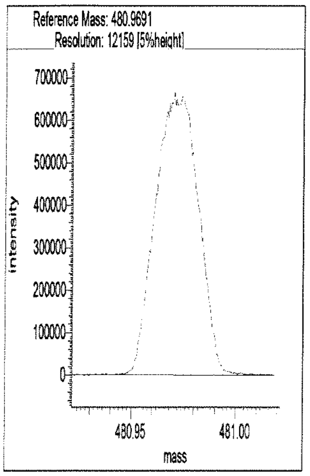
Reference Mass: 480.9691
Resolution: 12159 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

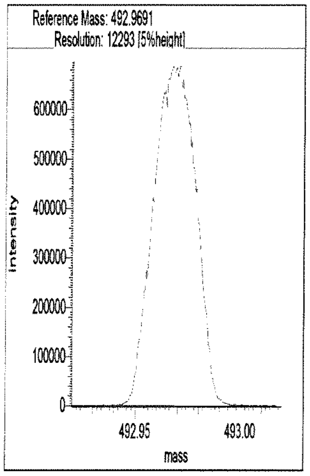
Reference Mass: 492.9691
Resolution: 12293 [5%height]
600000
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	10-Oct-2020 05:03:00	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	10-Oct-2020 23:26:32	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1632				

First Level Reviewer: messecara Date: 10-Oct-2020 22:57:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.716	2727698	0.83	2.7E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.831	4097108	0.79	1.5883	94.6	94.6	0.5158	0.5158	94.57	
2,3,7,8-TCDF	18.857	439901	0.76	1.0857	9.890	9.890	0.0789	0.0789	98.90	
A Non-2,3,7,8-sub-TCDF	18.445						0.0789	0.0789		
S Total TCDF					9.890	9.890	0.0789	0.0789		
D 13C-2,3,7,8-TCDD	20.068	2965195	0.78	1.1194	97.1	97.1	0.4277	0.4277	97.11	
2,3,7,8-TCDD	20.103	312590	0.78	1.0810	9.752	9.752	0.1136	0.1136	97.52	
$ 37Cl4-2,3,7,8-TCDD	20.103	308071		1.1468	9.849	9.849	0.0281	0.0281	98.49	
A Non-2,3,7,8-sub-TCDD	19.230						0.1136	0.1136		
S Total TCDD					9.752	9.752	0.1136	0.1136		
D 13C-1,2,3,7,8-PeCDF	25.934	3657095	1.59	1.4782	90.7	90.7	0.3226	0.3226	90.70	
1,2,3,7,8-PeCDF	25.951	1862803	1.57	1.0547	48.3	48.3	0.1812	0.1812	96.59	
D 13C-2,3,4,7,8-PeCDF	27.359	3373813	1.59	1.3912	88.9	88.9	0.3428	0.3428	88.91	
2,3,4,7,8-PeCDF	27.376	1809719	1.57	1.1035	48.6	48.6	0.2051	0.2051	97.21	
A F1 PeCDFs	23.072	264	1.55	1.0791	0.0404	0.006959	0.0190	0.0190	0.00	RQ
A Non-2,3,7,8-sub-PeCDF	26.486						0.1920	0.1920		Rn
S Total PeCDF					96.9	96.9	0.1931	0.1931		RQ
D 13C-1,2,3,7,8-PeCDD	28.109	2312513	1.60	0.9415	90.1	90.1	0.2604	0.2604	90.05	
1,2,3,7,8-PeCDD	28.134	1201610	1.56	1.0680	48.7	48.7	0.1044	0.1044	97.31	
A Non-2,3,7,8-sub-PeCDD	27.005						0.1044	0.1044		
S Total PeCDD					48.7	48.7	0.1044	0.1044		
D 13C-1,2,3,4,7,8-HxCDF	33.838	2810760	0.53	1.1378	86.3	86.3	0.3030	0.3030	86.25	
1,2,3,4,7,8-HxCDF	33.855	1794694	1.27	1.2643	50.5	50.5	0.2180	0.2180	101	
D 13C-1,2,3,6,7,8-HxCDF	34.024	3360207	0.53	1.3173	89.1	89.1	0.2617	0.2617	89.06	
1,2,3,6,7,8-HxCDF	34.049	2030650	1.26	1.2230	49.4	49.4	0.1889	0.1889	98.82	
D 13C-2,3,4,6,7,8-HxCDF	34.976	3295710	0.53	1.2457	92.4	92.4	0.2767	0.2767	92.37	
2,3,4,6,7,8-HxCDF	35.001	2009657	1.26	1.2464	48.9	48.9	0.1640	0.1640	97.84	
D 13C-1,2,3,7,8,9-HxCDF	35.962	3145725	0.53	1.1840	92.8	92.8	0.2912	0.2912	92.76	
1,2,3,7,8,9-HxCDF	35.979	1921996	1.26	1.2638	48.3	48.3	0.1505	0.1505	96.69	
A Non-2,3,7,8-sub-HxCDF	33.880						0.1768	0.1768		
S Total HxCDF					197.2	197.2	0.1804	0.1804		

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.760	2864165	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.220	2335981	1.25	0.8477	96.2	96.2	0.2062	0.2062	96.21	
1,2,3,4,7,8-HxCDD	35.237	1282575	1.25	1.1561	47.5	47.5	0.0922	0.0922	94.99	
D 13C-1,2,3,6,7,8-HxCDD	35.355	2821841	1.26	0.9979	98.7	98.7	0.1752	0.1752	98.73	
1,2,3,6,7,8-HxCDD	35.372	1370662	1.26	1.0284	47.2	47.2	0.0915	0.0915	94.46	
1,2,3,7,8,9-HxCDD	35.768	1452340	1.26	1.1789	47.8	47.8	0.0848	0.0848	95.54	
A Non-2,3,7,8-sub-HxCDD	34.390						0.0892	0.0892		
S Total HxCDD					142.5	142.5	0.0895	0.0895		
D 13C-1,2,3,4,6,7,8-HpCDF	37.927	2956296	0.45	0.9884	104.4	104.4	0.3896	0.3896	104	
1,2,3,4,6,7,8-HpCDF	37.935	2099068	1.04	1.5064	47.1	47.1	0.1407	0.1407	94.27	
D 13C-1,2,3,4,7,8,9-HpCDF	39.233	2690309	0.45	0.9203	102.1	102.1	0.4184	0.4184	102	
1,2,3,4,7,8,9-HpCDF	39.250	1842766	1.03	1.4548	47.1	47.1	0.1453	0.1453	94.17	
A Non-2,3,7,8-sub-HpCDF	38.611						0.1429	0.1429		
S Total HpCDF					94.2	94.2	0.1430	0.1430		
D 13C-1,2,3,4,6,7,8-HpCDD	38.921	3020578	1.07	0.9556	110.4	110.4	0.2523	0.2523	110	
1,2,3,4,6,7,8-HpCDD	38.938	1555963	1.05	1.0640	48.4	48.4	0.0880	0.0880	96.83	
A Non-2,3,7,8-sub-HpCDD	38.941						0.0880	0.0880		
S Total HpCDD					48.4	48.4	0.0880	0.0880		
D 13C-OCDD	41.373	4975202	0.90	0.7420	234.1	234.1	0.3287	0.3287	117	
OCDF	41.457	3205579	0.91	1.4296	90.1	90.1	0.1210	0.1210	90.14	
OCDD	41.381	2588040	0.89	1.1293	92.1	92.1	0.1078	0.1078	92.12	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	10-Oct-2020 05:03:00	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00094				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	10-Oct-2020 23:26:32	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1632				
First Level Reviewer: messecara		Date:	10-Oct-2020 22:57:52		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.716	19.716	0		1234684	188022	603	1507	312		a
333.9338	19.724	19.716	1		1493014	236980	211	527	1123	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.831	18.831	0	0.955	1809472	286506	865	2162	331		
317.9389	18.822	18.831	-1	0.955	2287636	361307	528	1320	684	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.857	18.857	0	1.001	189474	30833	77	192	400		
305.8987	18.848	18.857	-1	1.001	250427	37640	145	362	260	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.445						77	192			
305.8987	18.445						145	362			
13C-2,3,7,8-TCDD											
331.9368	20.068	20.068	0	1.018	1299701	184358	603	1507	306		
333.9338	20.068	20.068	0	1.018	1665494	224562	211	527	1064	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.103	20.103	0	1.002	137049	19423	144	360	135		
321.8936	20.086	20.103	-1	1.001	175541	23353	57	142	410	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.103	20.103	0	1.020	308071	42690	55	137	776		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.230						144	360			
321.8936	19.230						57	142			
13C-1,2,3,7,8-PeCDF											
351.9000	25.934	25.934	0	1.315	2243132	393017	475	1187	827		
353.8970	25.926	25.934	-1	1.315	1413963	242750	336	840	722	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.951	25.951	0	1.001	1137884	196020	264	660	743		
341.8567	25.951	25.951	0	1.001	724919	122631	222	555	552	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.359	27.359	0	1.388	2071406	327625	475	1187	690		
353.8970	27.350	27.359	-1	1.387	1302407	209207	336	840	623	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.376	27.376	0	1.001	1104549	177283	264	660	672		
341.8567	27.376	27.376	0	1.001	705170	112828	222	555	508	1.57(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	23.358	23.072	17	0.901	161	79	3	7	26		
341.8567	23.401	23.072	20	0.902	1372	268	45	112	6	0.12(1.32-1.78)	
	Empc Correction				103	50	45	112	1		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.524	26.488	2	1.023	10492	1645	264	660	6		
341.8567	26.516	26.488	2	1.022	5030	1061	222	555	5	2.09(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.109	28.109	0	1.426	1424232	226759	162	405	1400		
369.8919	28.109	28.109	0	1.426	888281	136557	255	637	536	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.134	28.134	0	1.001	732002	111340	122	305	913		
357.8516	28.143	28.134	1	1.001	469608	70581	40	100	1765	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.005						122	305			
357.8516	27.005						40	100			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.838	33.838	0	0.946	971477	192257	325	812	592		
385.8610	33.838	33.838	0	0.946	1839283	341001	657	1642	519	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.855	33.855	0	1.000	1002587	198320	342	855	580		
375.8178	33.855	33.855	0	1.000	792107	155685	246	615	633	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.024	34.024	0	0.951	1168558	221364	325	812	681		
385.8610	34.032	34.024	1	0.952	2191649	414846	657	1642	631	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.049	34.049	0	1.001	1133875	213219	342	855	623		
375.8178	34.049	34.049	0	1.001	896775	166985	246	615	679	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.976	34.976	0	0.978	1146932	252970	325	812	778		
385.8610	34.984	34.976	1	0.978	2148778	466054	657	1642	709	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.001	35.001	0	1.001	1122125	245395	342	855	718		
375.8178	35.001	35.001	0	1.001	887532	196264	246	615	798	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.962	35.962	0	1.006	1084357	266810	325	812	821		
385.8610	35.962	35.962	0	1.006	2061368	506121	657	1642	770	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.979	35.979	0	1.000	1072442	271762	342	855	795		
375.8178	35.979	35.979	0	1.000	849554	210419	246	615	855	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.880						342	855			
375.8178	33.880						246	615			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.760	35.760	0		1588807	391918	298	745	1315		
403.8529	35.760	35.760	0		1275358	320248	200	500	1601	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.220	35.220	0	0.985	1298365	321145	298	745	1078		
403.8529	35.220	35.220	0	0.985	1037616	257581	200	500	1288	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.237	35.237	0	1.000	712898	179522	126	315	1425		
391.8127	35.237	35.237	0	1.000	569677	143342	121	302	1185	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.355	35.355	0	0.989	1574584	362151	298	745	1215		
403.8529	35.355	35.355	0	0.989	1247257	293241	200	500	1466	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.372	35.372	0	1.000	765214	176613	126	315	1402		
391.8127	35.372	35.372	0	1.000	605448	141627	121	302	1170	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.768	35.768	0	1.016	810428	202102	126	315	1604		
391.8127	35.768	35.768	0	1.016	641912	160172	121	302	1324	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.390						126	315			
391.8127	34.390						121	302			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.927	37.927	0	1.061	920450	288720	403	1007	716		
419.8220	37.919	37.927	-1	1.060	2035846	633944	694	1735	913	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.935	37.935	0	1.000	1069506	340028	404	1010	842		
409.7788	37.935	37.935	0	1.000	1029562	326129	378	945	863	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.233	39.233	0	1.097	833571	284418	403	1007	706		
419.8220	39.233	39.233	0	1.097	1856738	640419	694	1735	923	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.250	39.250	0	1.000	936579	322778	404	1010	799		
409.7788	39.250	39.250	0	1.000	906187	307697	378	945	814	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.611						404	1010			
409.7788	38.611						378	945			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.921	38.921	0	1.088	1560509	531188	377	942	1409		
437.8140	38.921	38.921	0	1.088	1460069	496765	310	775	1602	1.07(0.88-1.20)	

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.938	38.938	0	1.000	796531	270543	209	522	1294		
425.7737	38.930	38.938	-1	1.000	759432	256793	176	440	1459	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						209	522			
425.7737	38.941						176	440			
13C-OCDD											
469.7780	41.373	41.373	0	1.157	2362519	819779	328	820	2499		
471.7750	41.373	41.373	0	1.157	2612683	908562	367	917	2476	0.90(0.76-1.02)	
OCDF											
441.7428	41.457	41.457	0	1.002	1530765	508369	244	610	2083		
443.7399	41.457	41.457	0	1.002	1674814	564271	354	885	1594	0.91(0.76-1.02)	
OCDD											
457.7377	41.381	41.381	0	1.000	1215215	421877	203	507	2078		
459.7348	41.381	41.381	0	1.000	1372825	474297	218	545	2176	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- n - Failed Sig-To-Noise Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d
Lims ID: CCV
Client ID:
Inject. Date: 10-Oct-2020 05:03:00
Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 14
Sublist: chrom-Dioxin_DFS1*sub1

F1 PeCDFs, RT: 23.072

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	3657095	635767
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	3373813	536832

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	3515454	586299

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.358	161	79	1372	268	0.0404	0.12	RnQ
23.358	161	79	103	50	0.006959		Empc Correction
Signal Totals:							
	161	79	103	50			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1533	347				0.12	RQ
	264	129					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0404 = (1533 * 100.000) / (3515454 * 1.079)
Empc Amount: 0.006959 = (264 * 100.000) / (3515454 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d				
Injection Date:	10-Oct-2020 05:03:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 19.72

Processing Integration Results

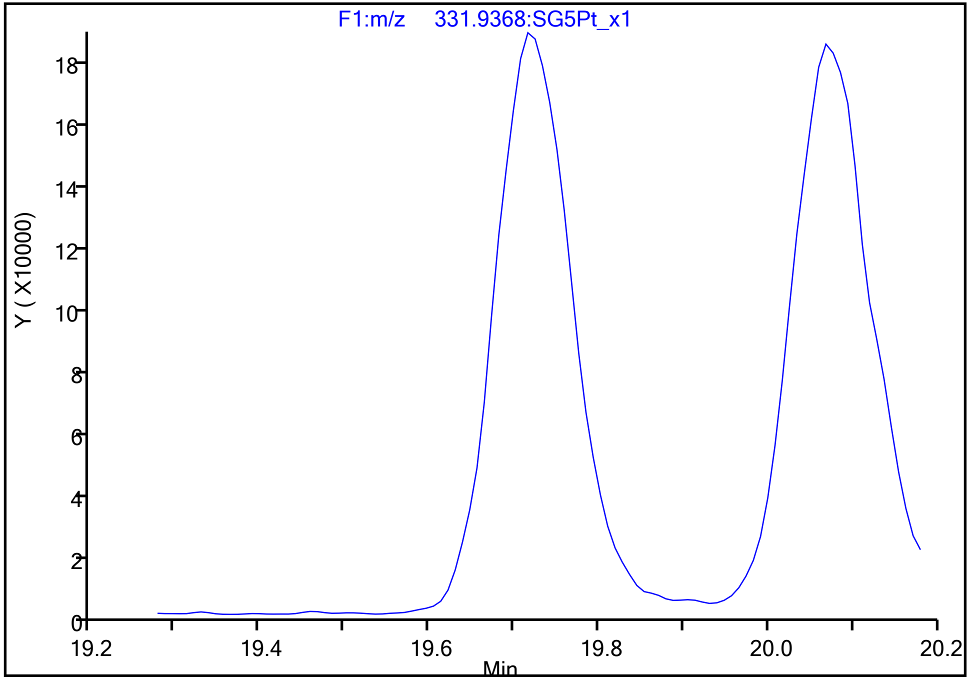

RT: 19.72
Area: 1234684
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

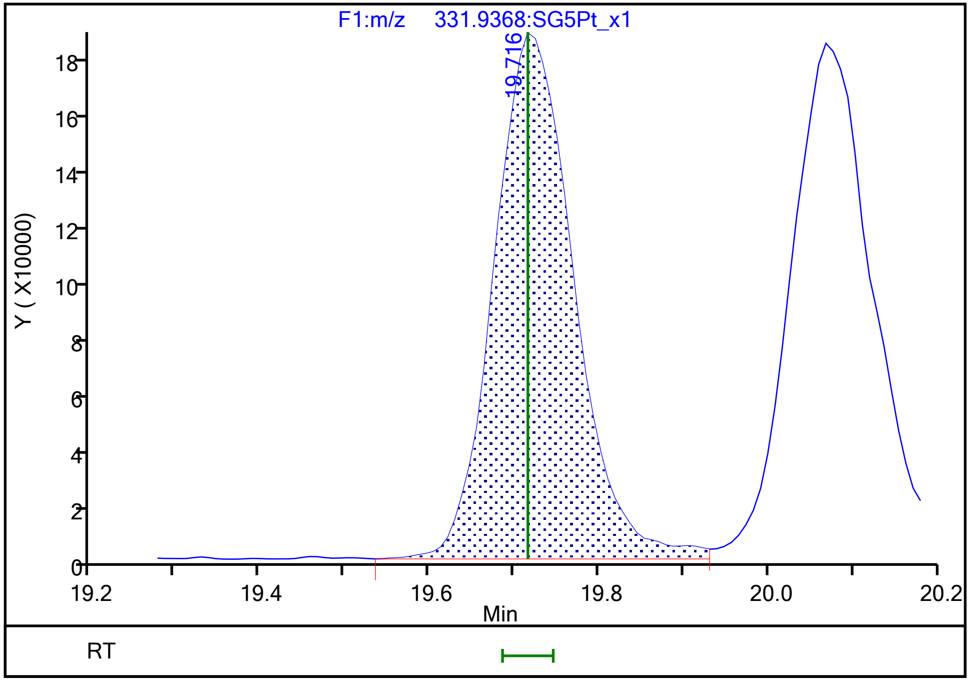

Reviewer: messecara, 10-Oct-2020 22:55:38
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 10-Oct-2020 23:26:39 | Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

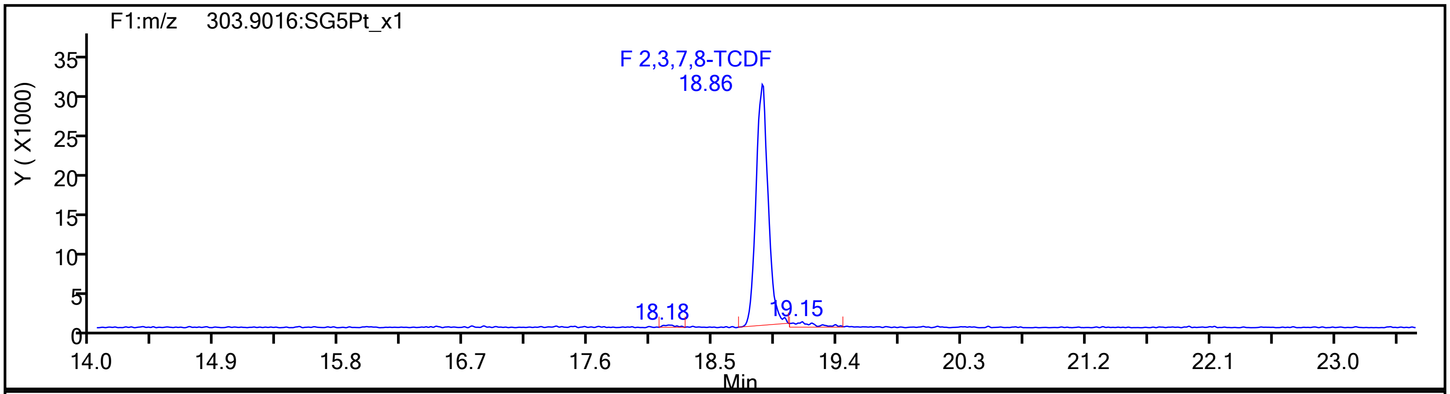

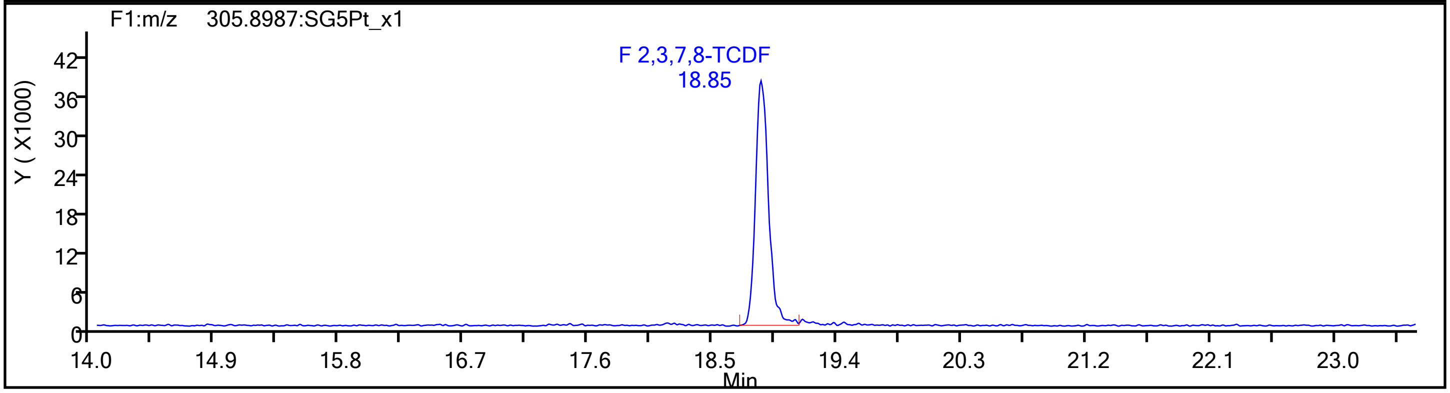

TCDF Standards

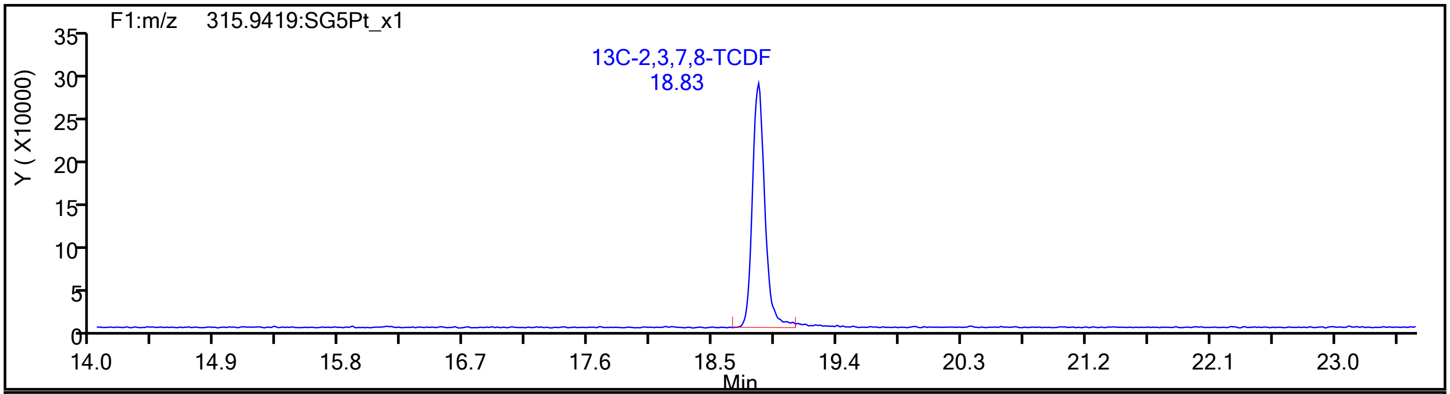

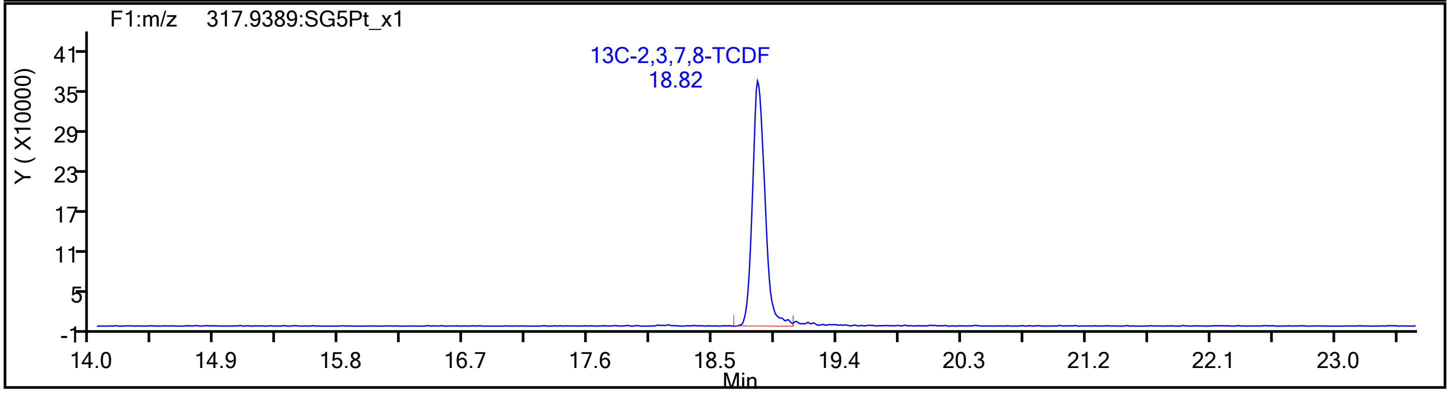

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Injection Date: 10-Oct-2020 05:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

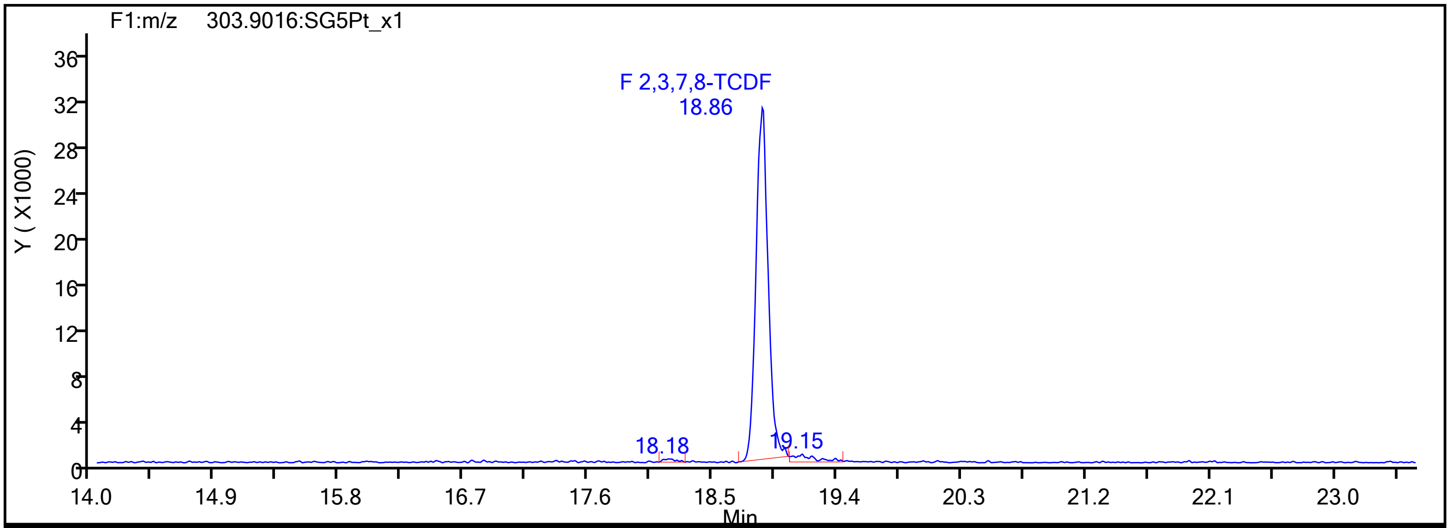

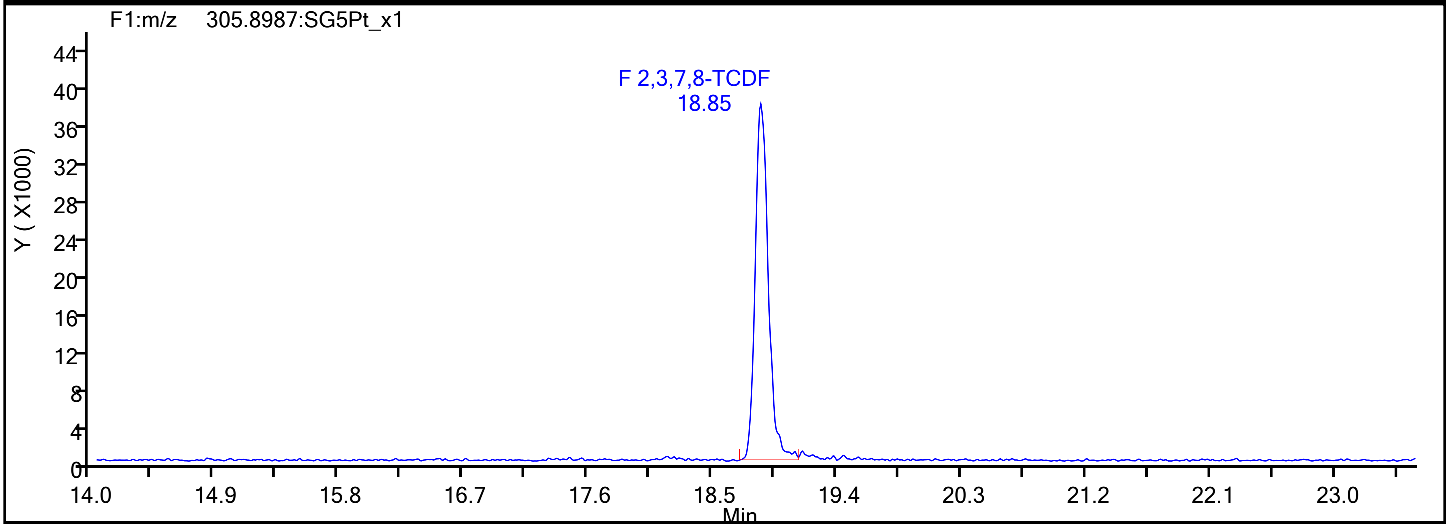

TCDF Interference Mass

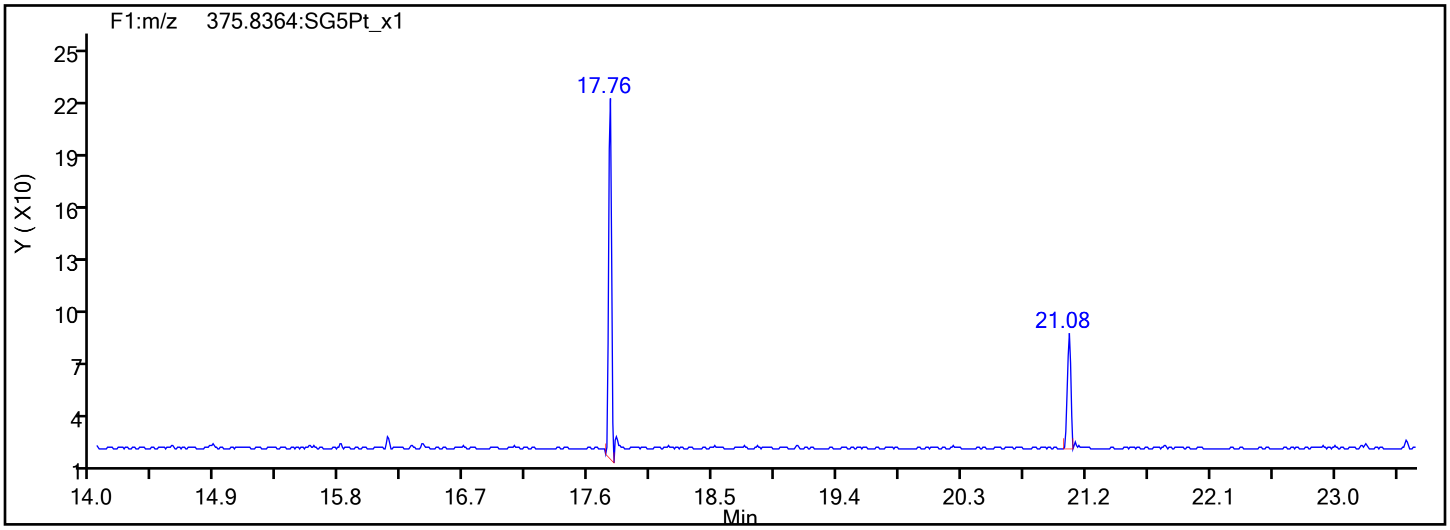

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d
Injection Date: 10-Oct-2020 05:03:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640 Sample Line#: 14
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

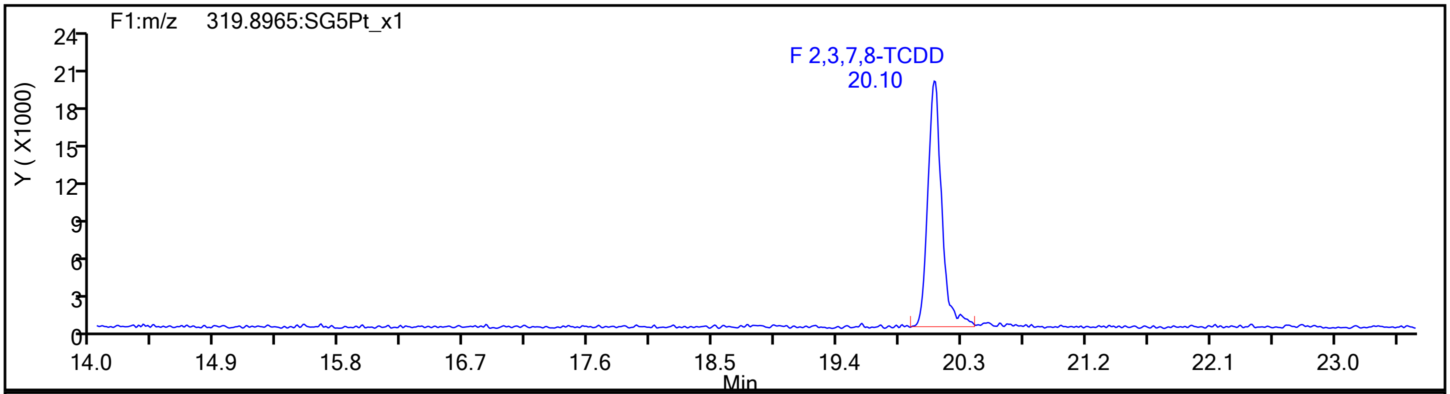

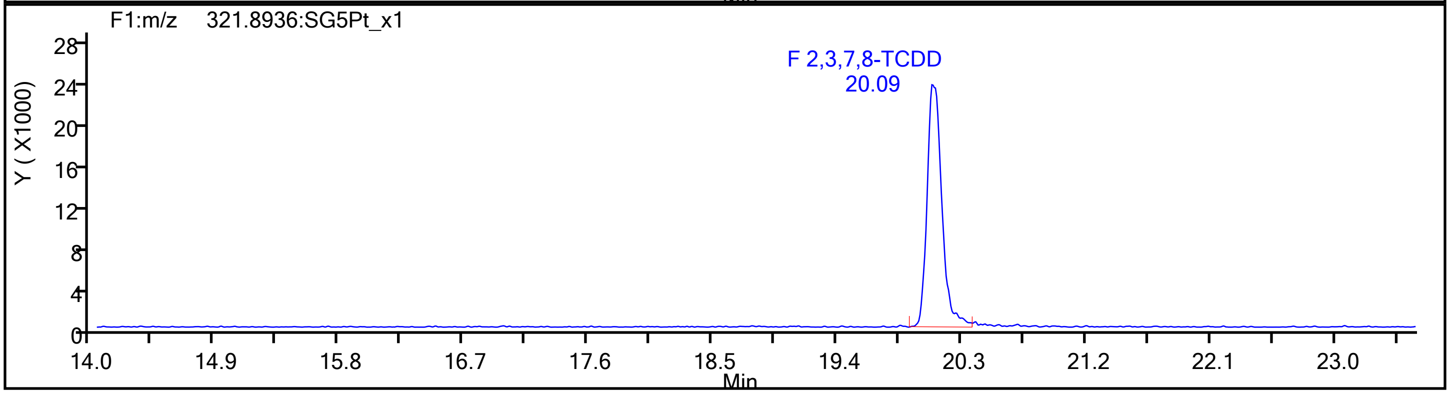

TCDD Standards

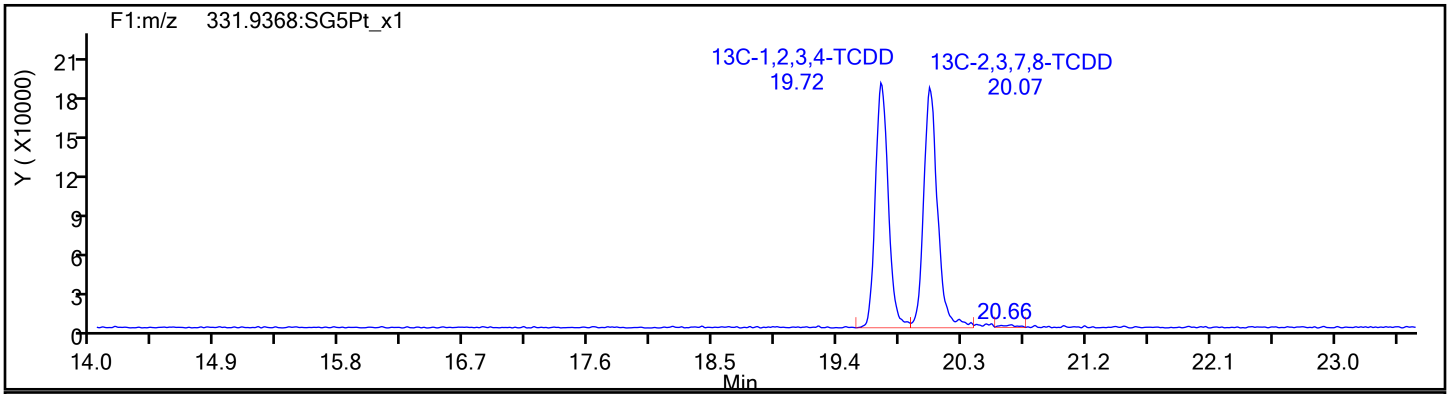

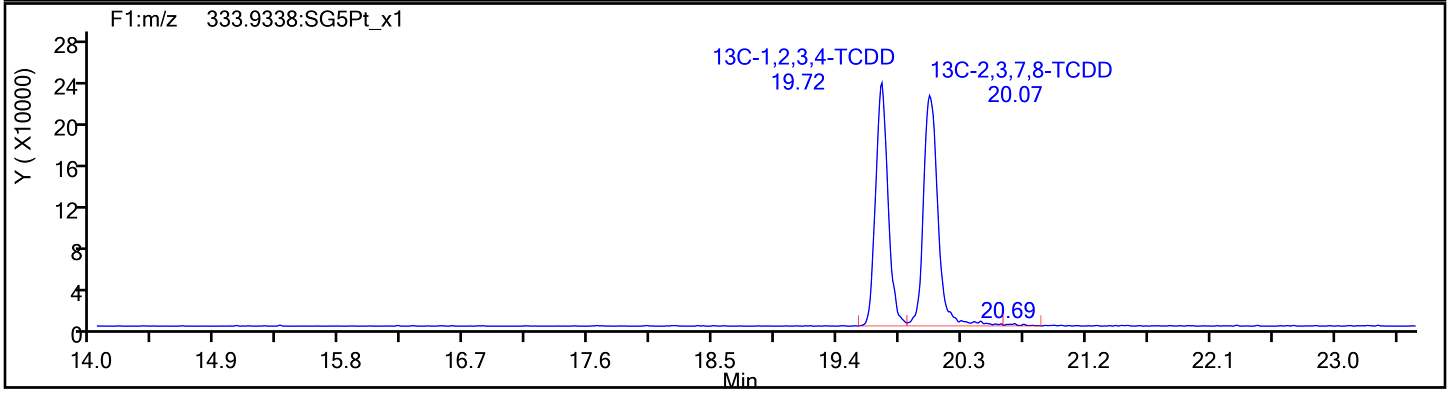

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Injection Date: 10-Oct-2020 05:03:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640 Sample Line#: 14

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

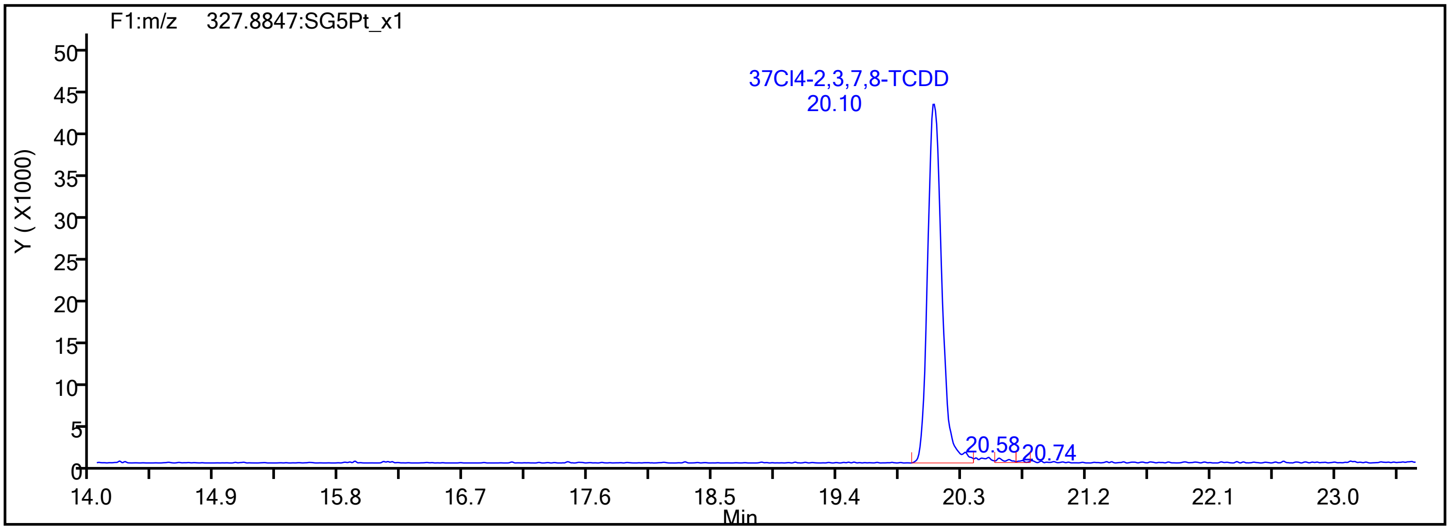

37Cl4-TCDD Standards

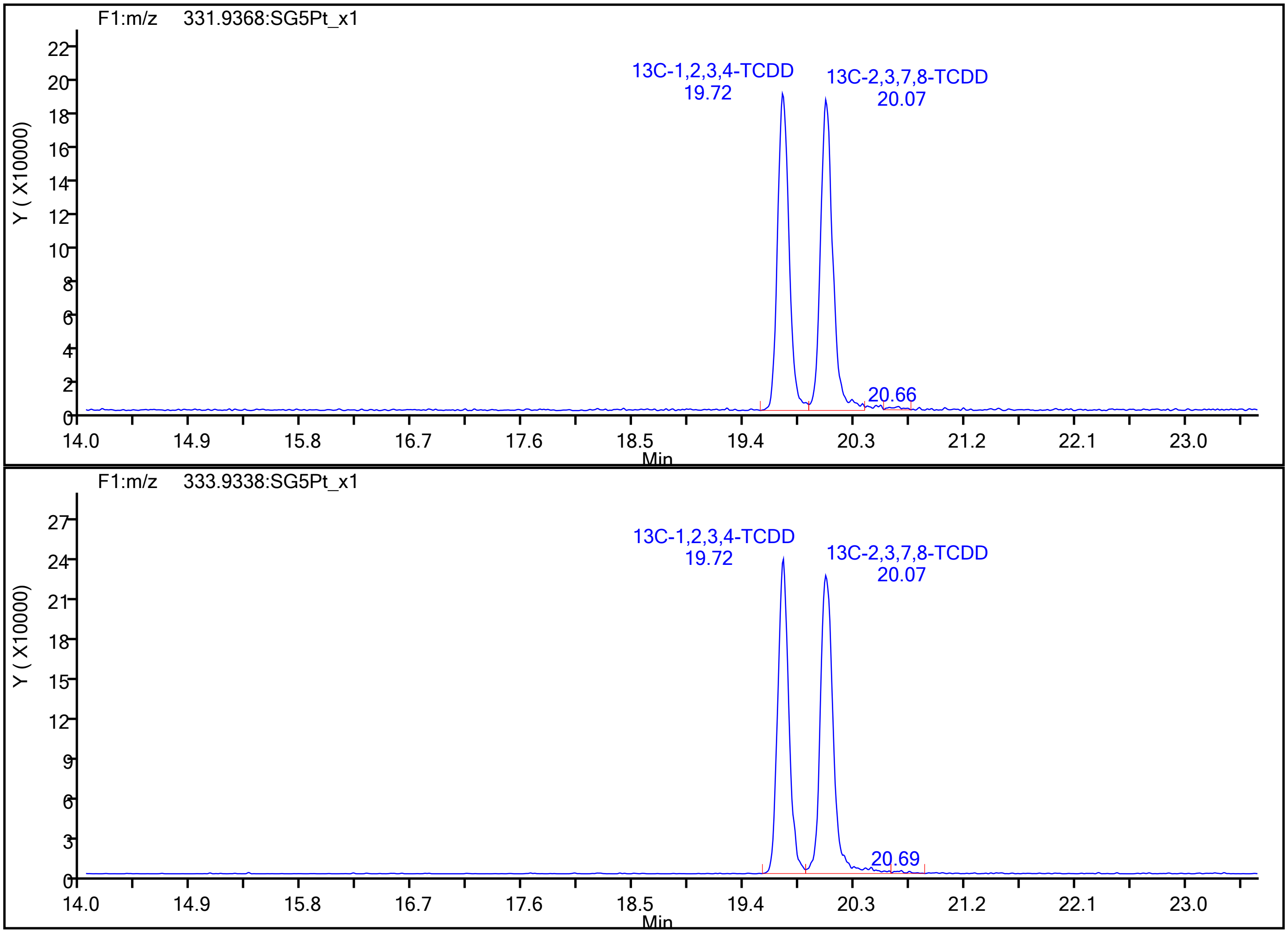

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

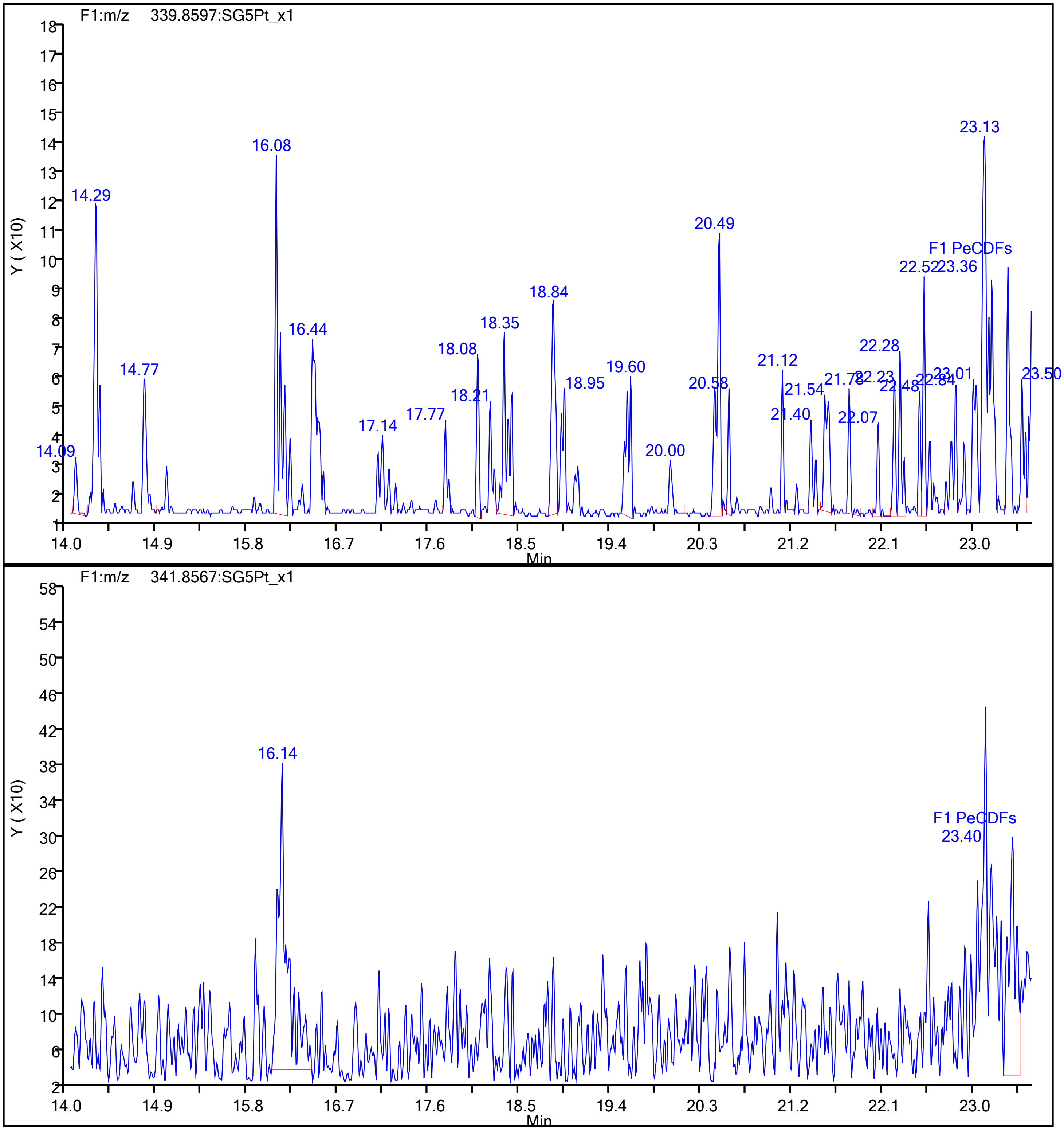

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Injection Date: 10-Oct-2020 05:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

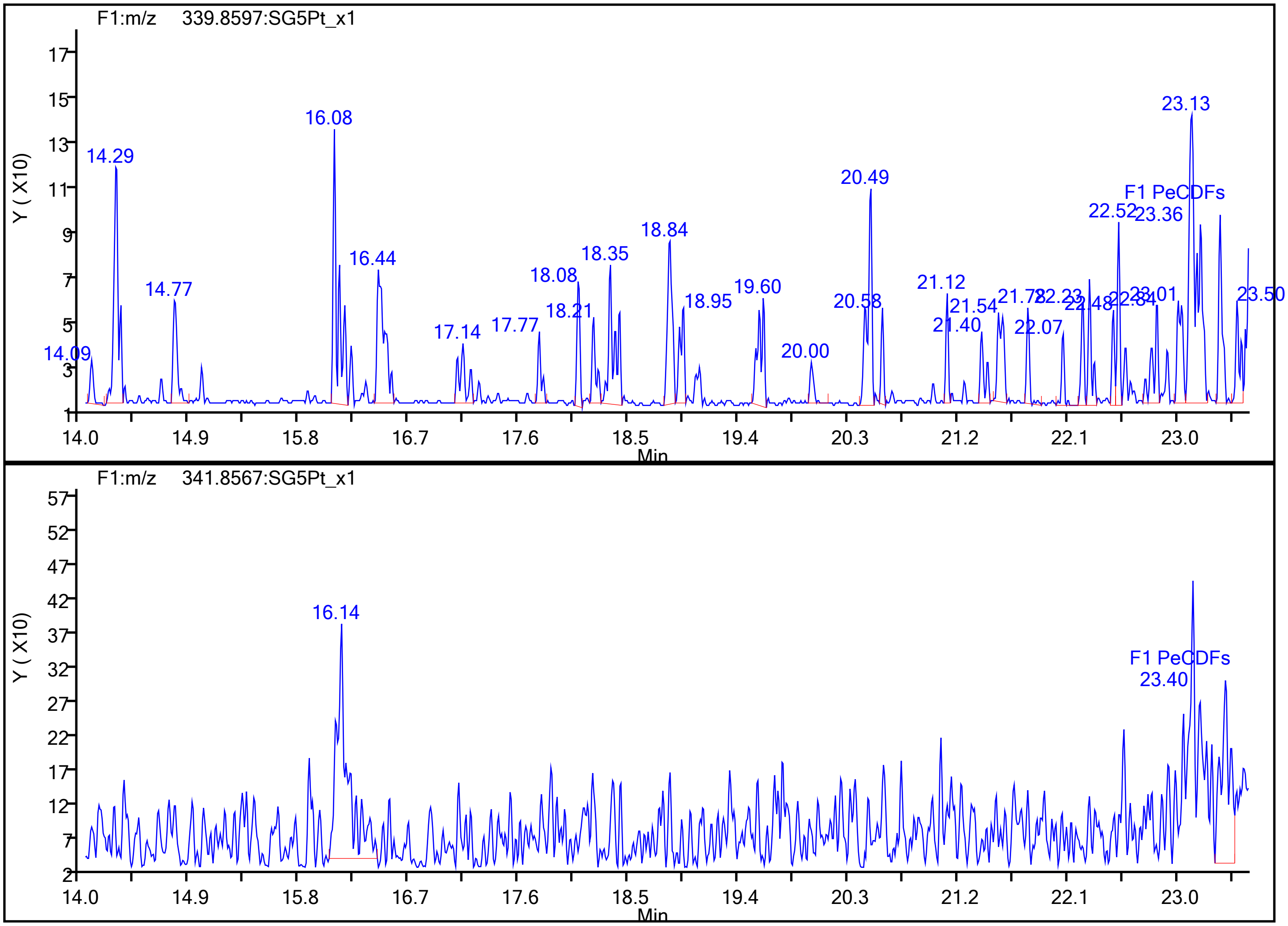

F1 PeCDFs Interference Mass

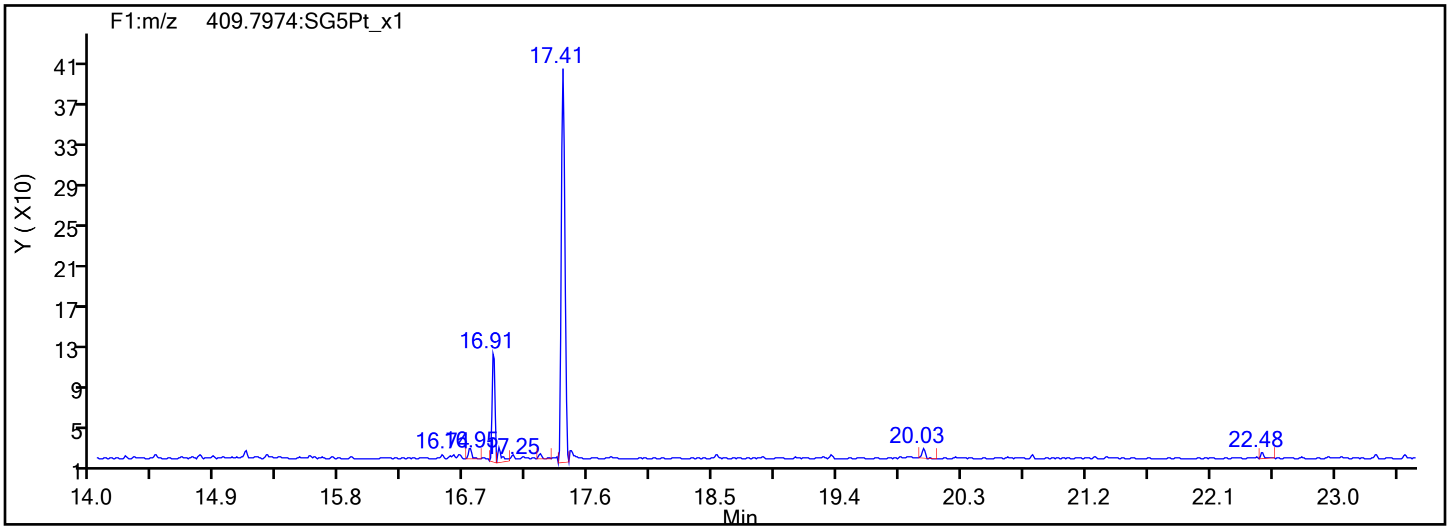

Report Date: 10-Oct-2020 23:26:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

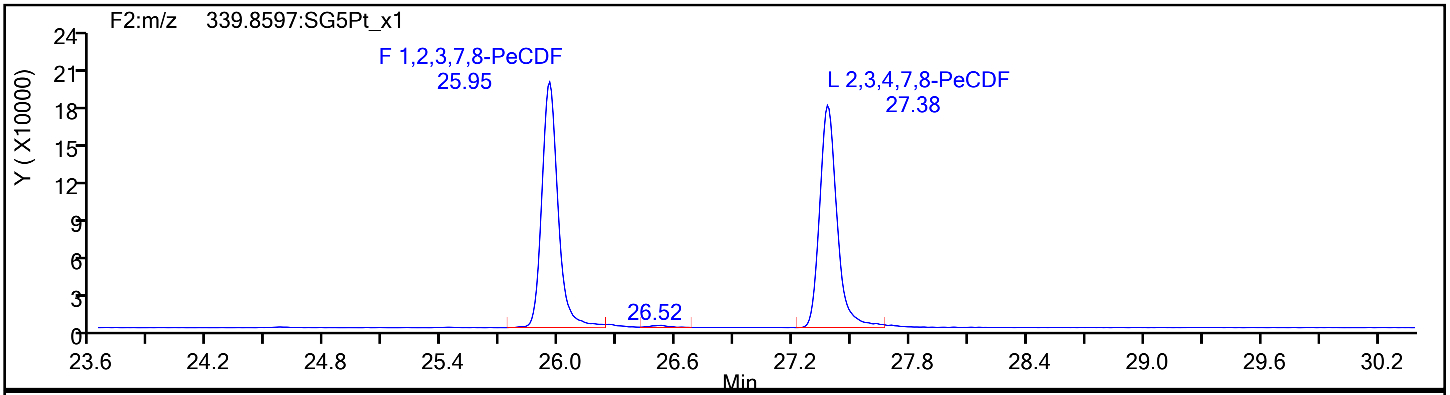

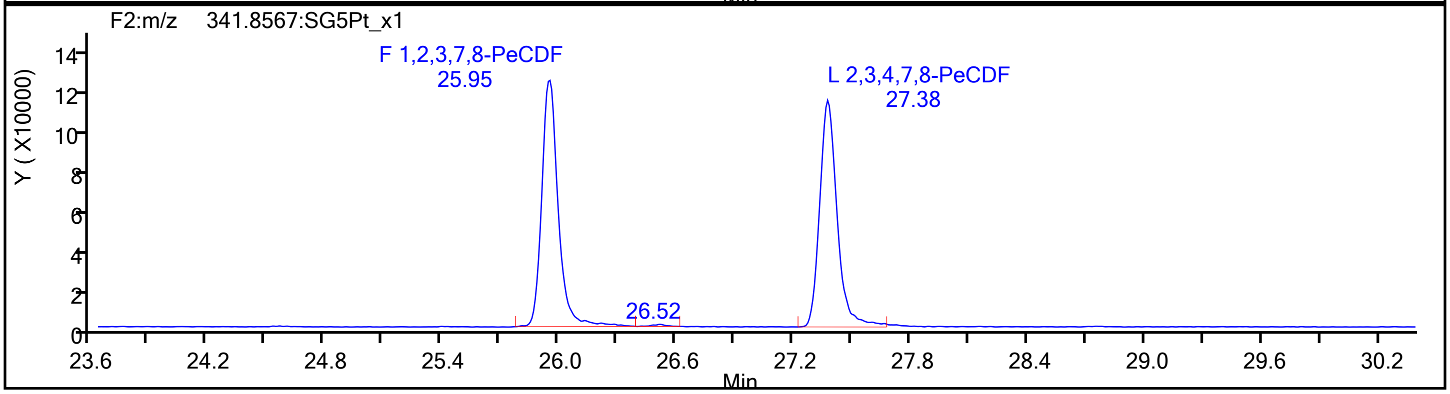

PeCDF Standards

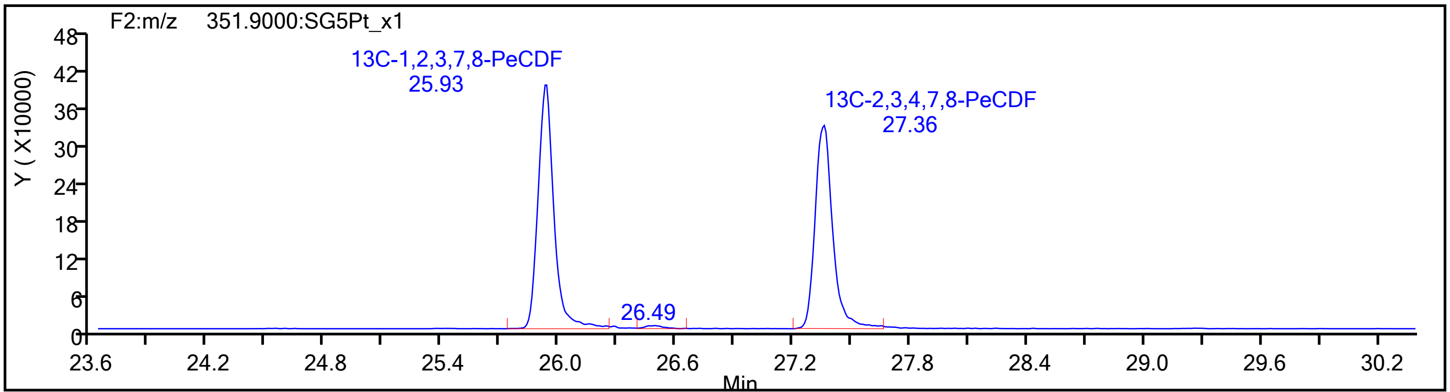

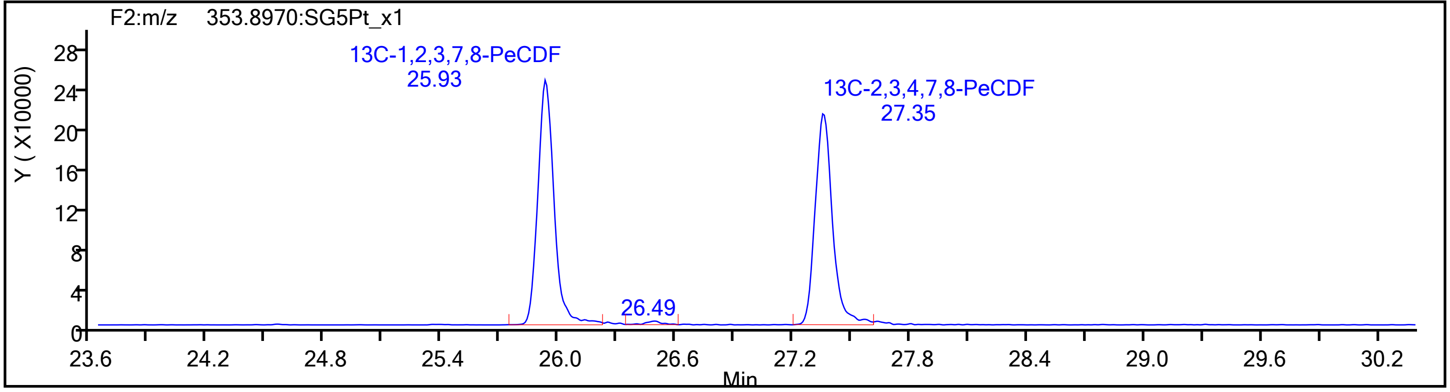

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

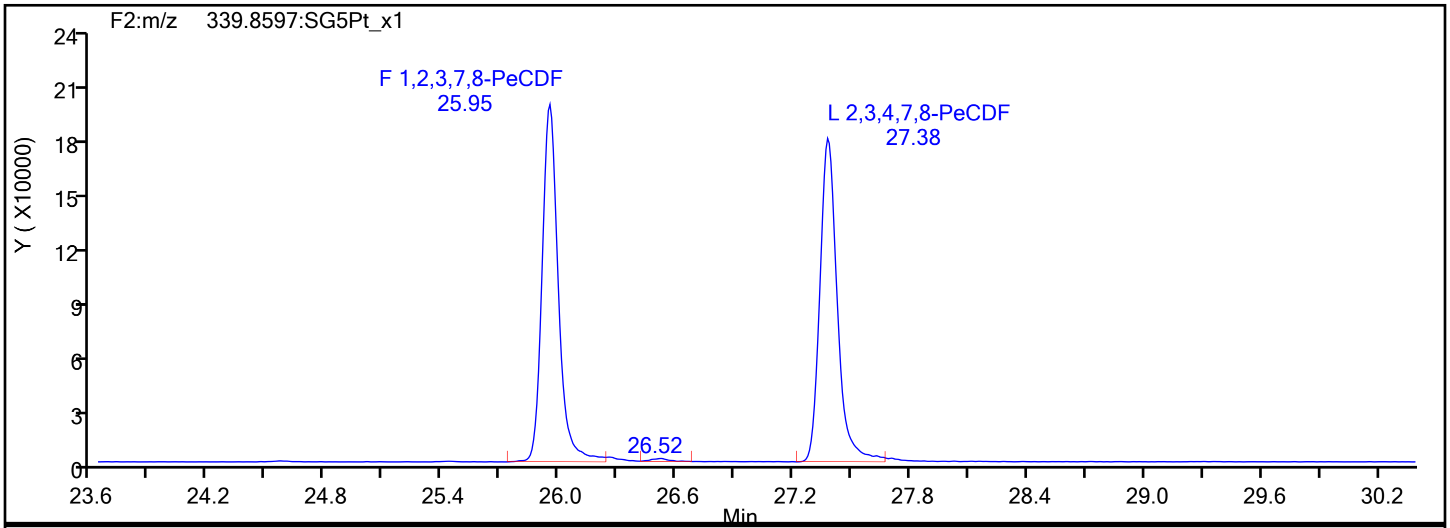

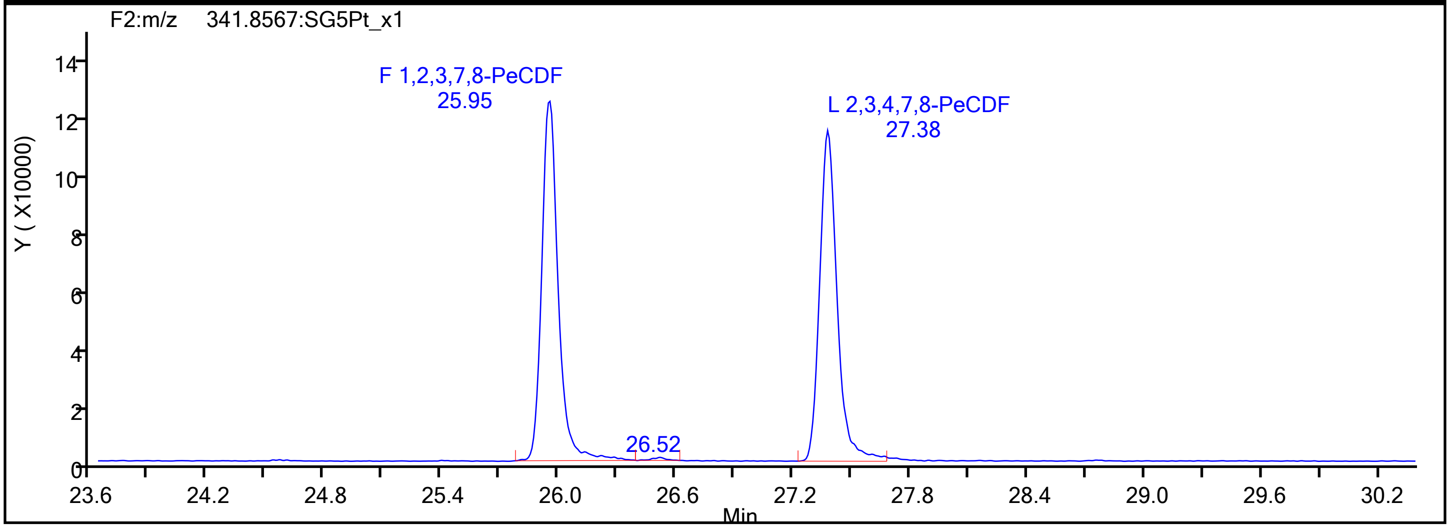

PeCDF Interference Mass

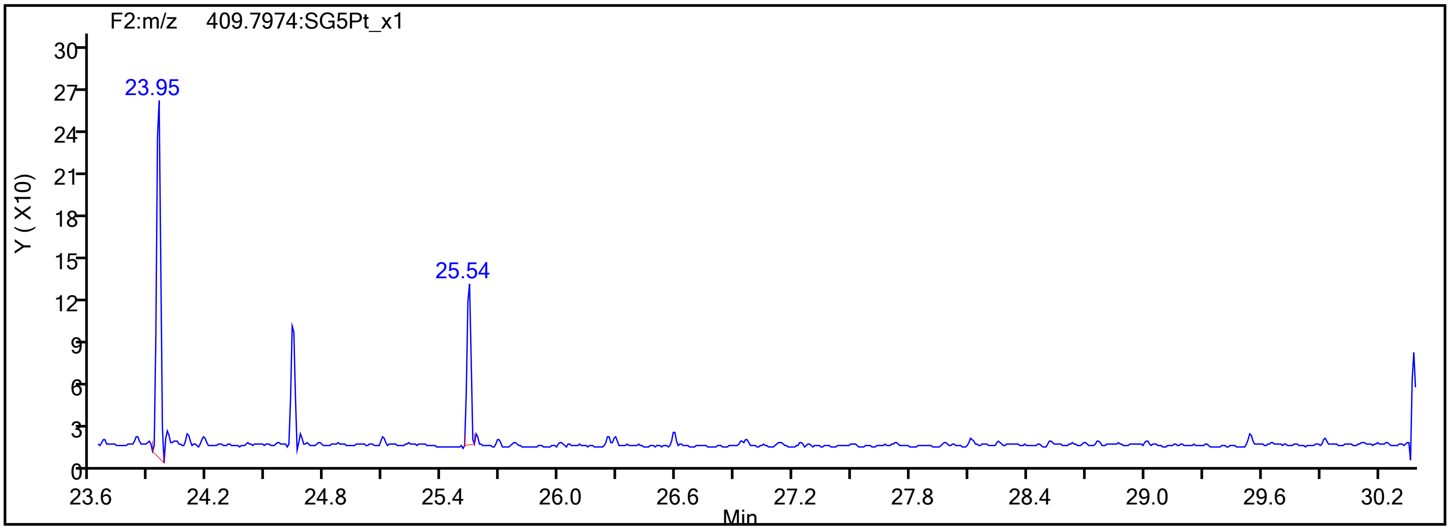

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d

Injection Date: 10-Oct-2020 05:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

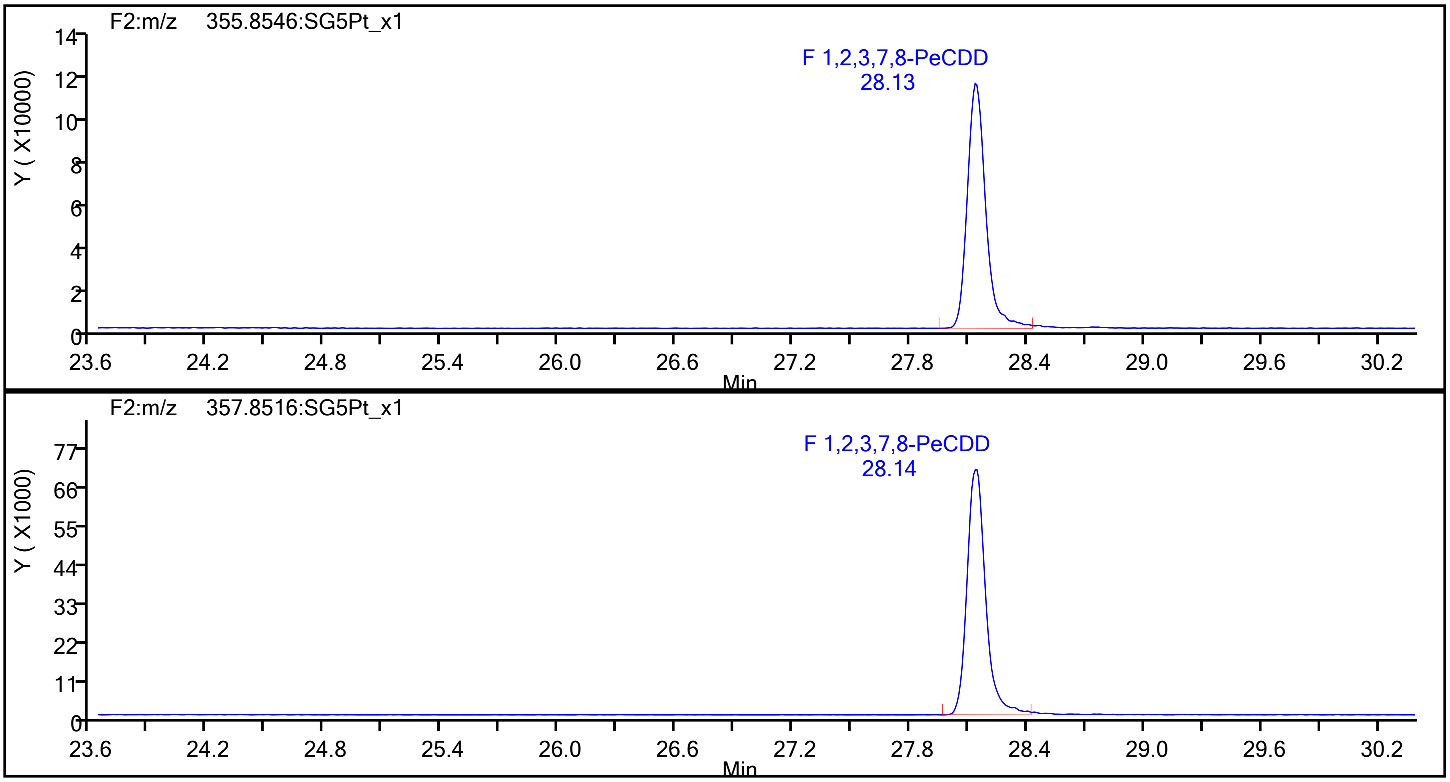

PeCDD Standards

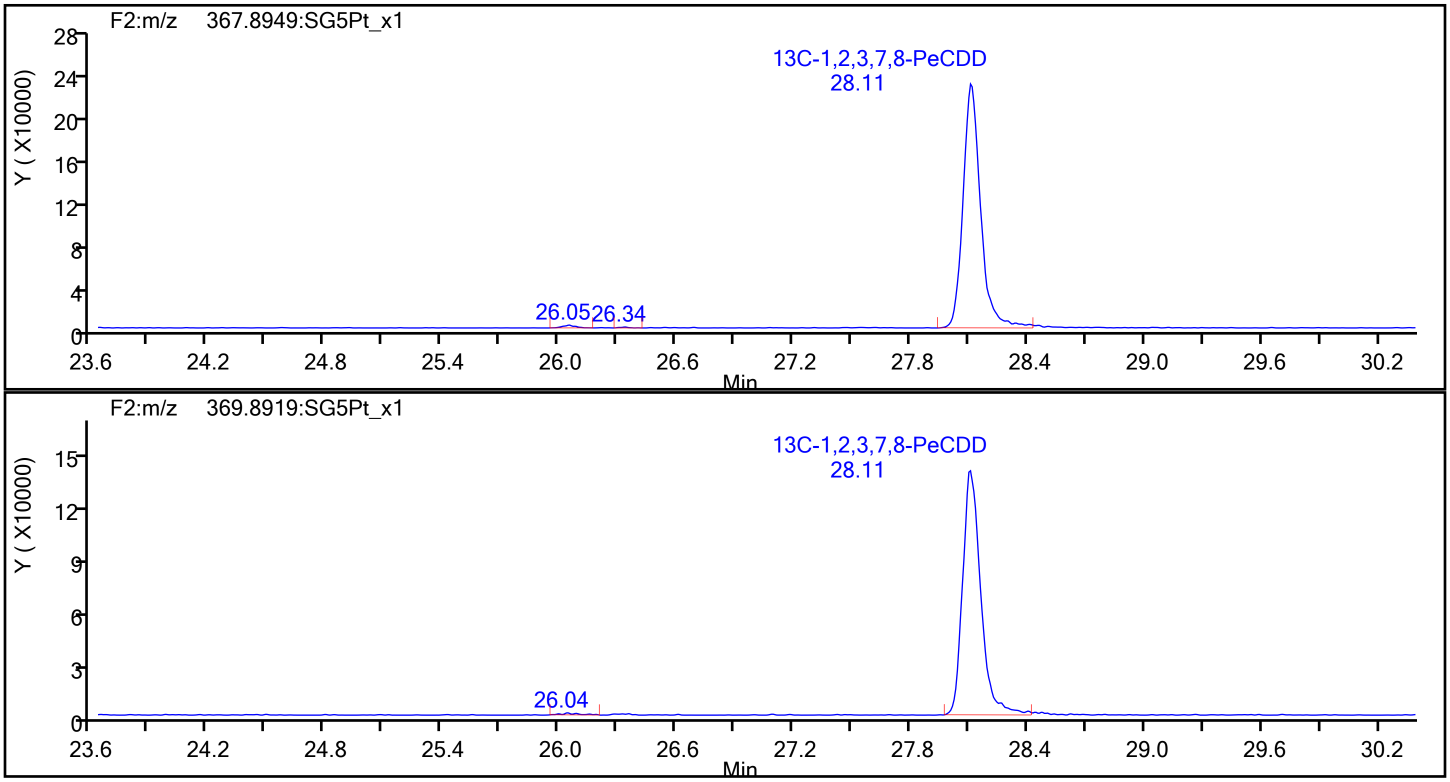

Report Date: 10-Oct-2020 23:26:40
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d
Injection Date: 10-Oct-2020 05:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

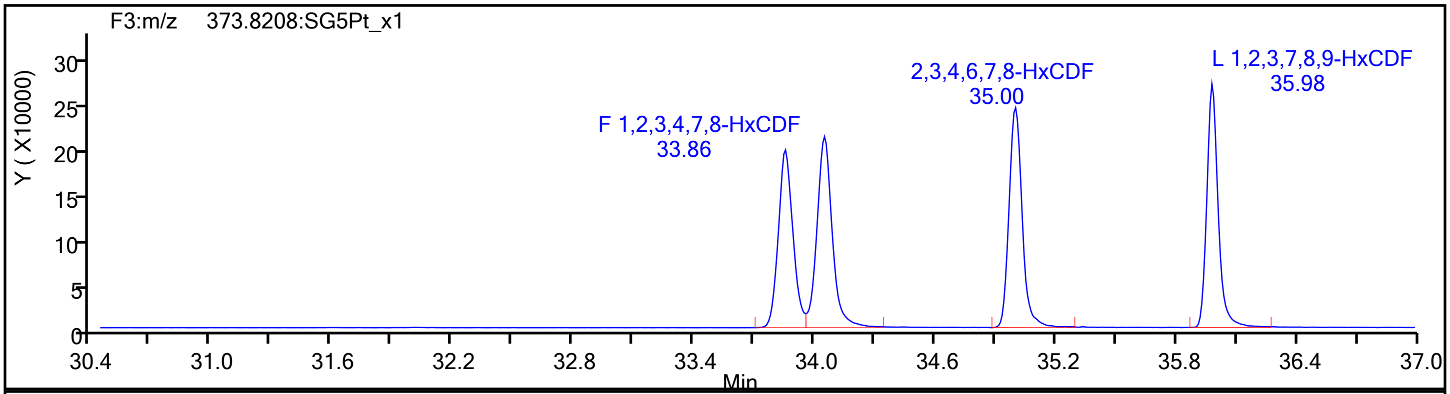

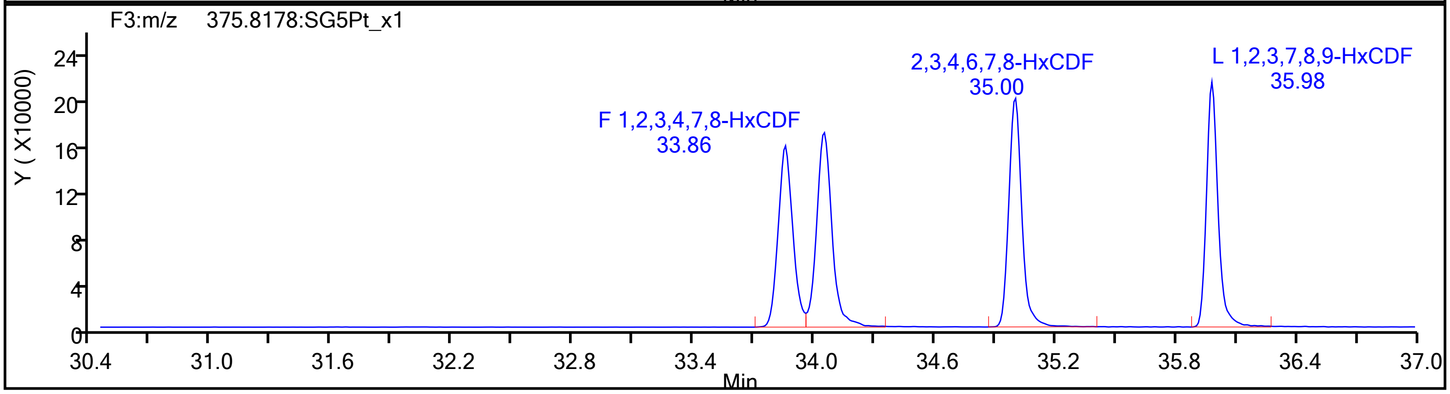

HxCDF Standards

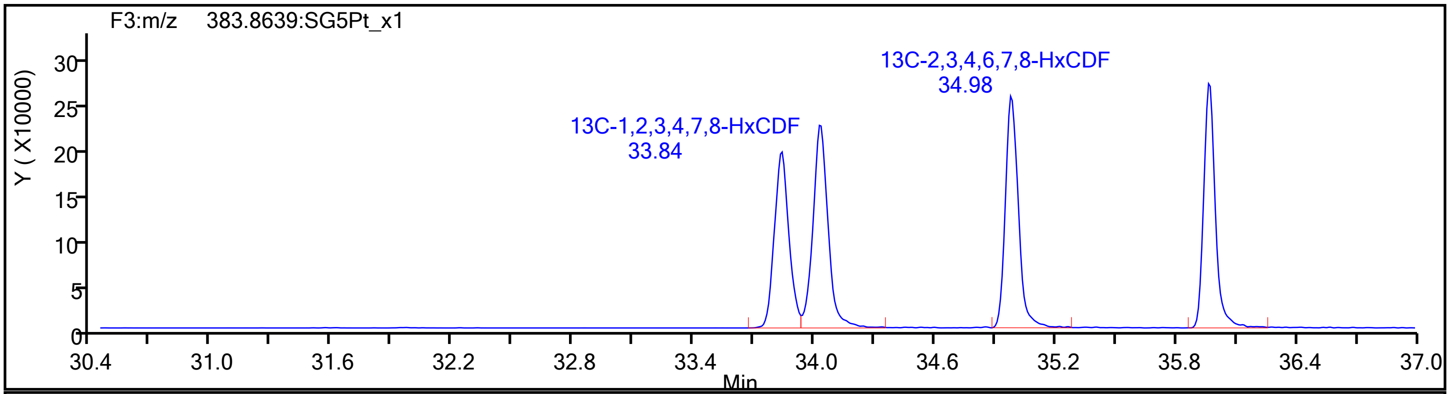

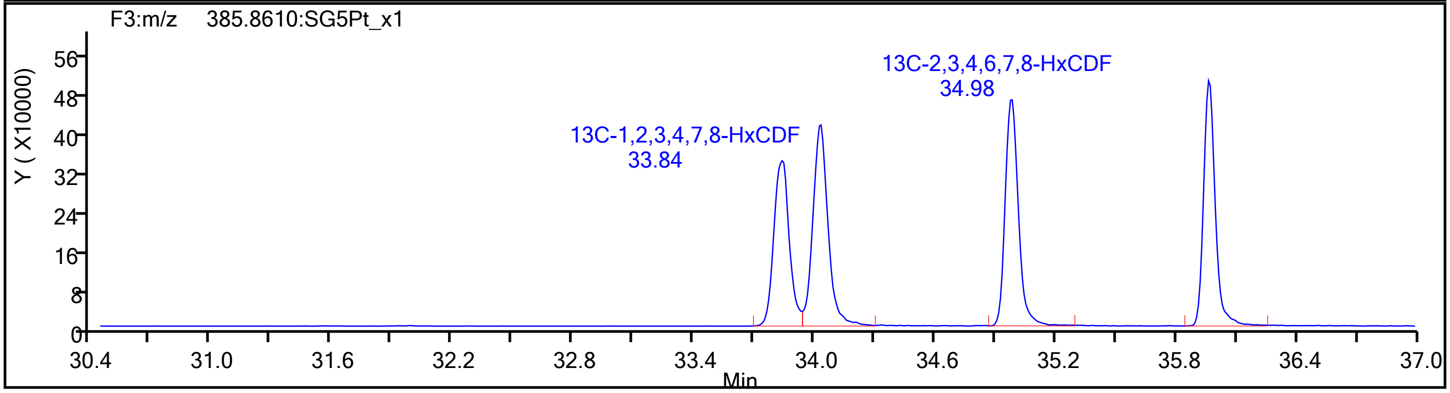

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

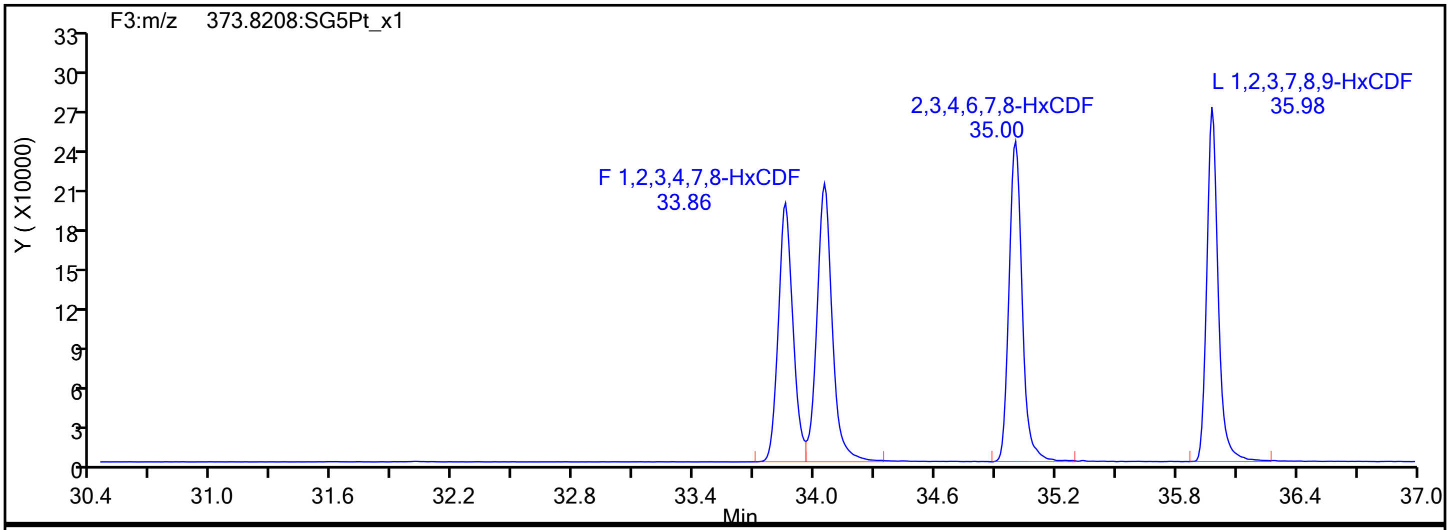

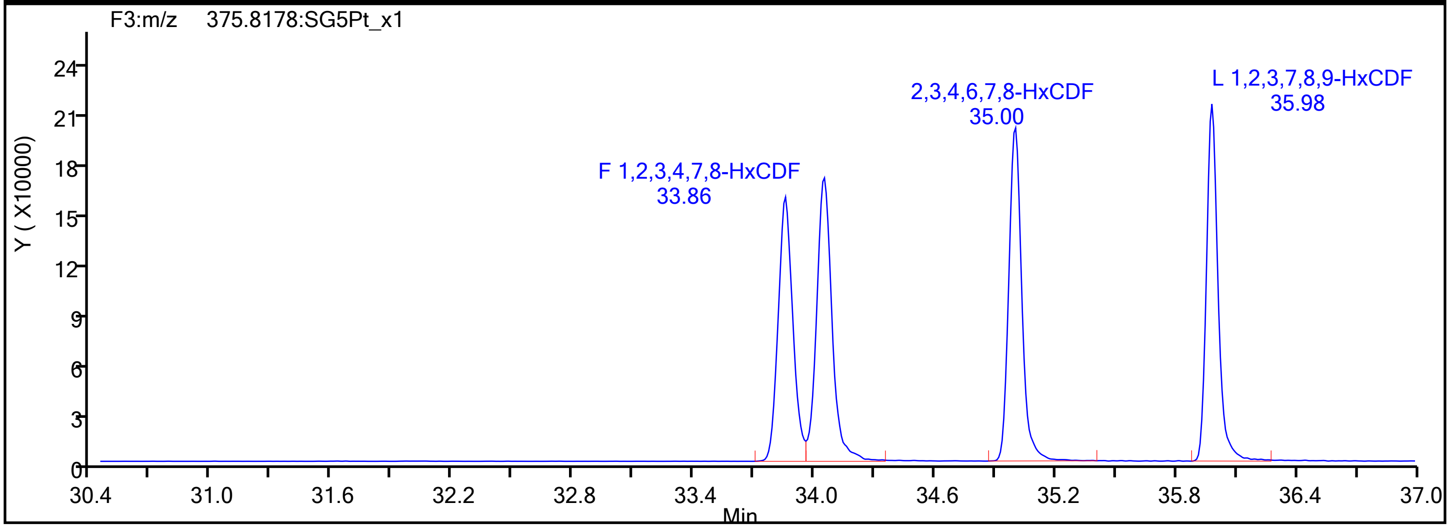

HxCDF Interference Mass

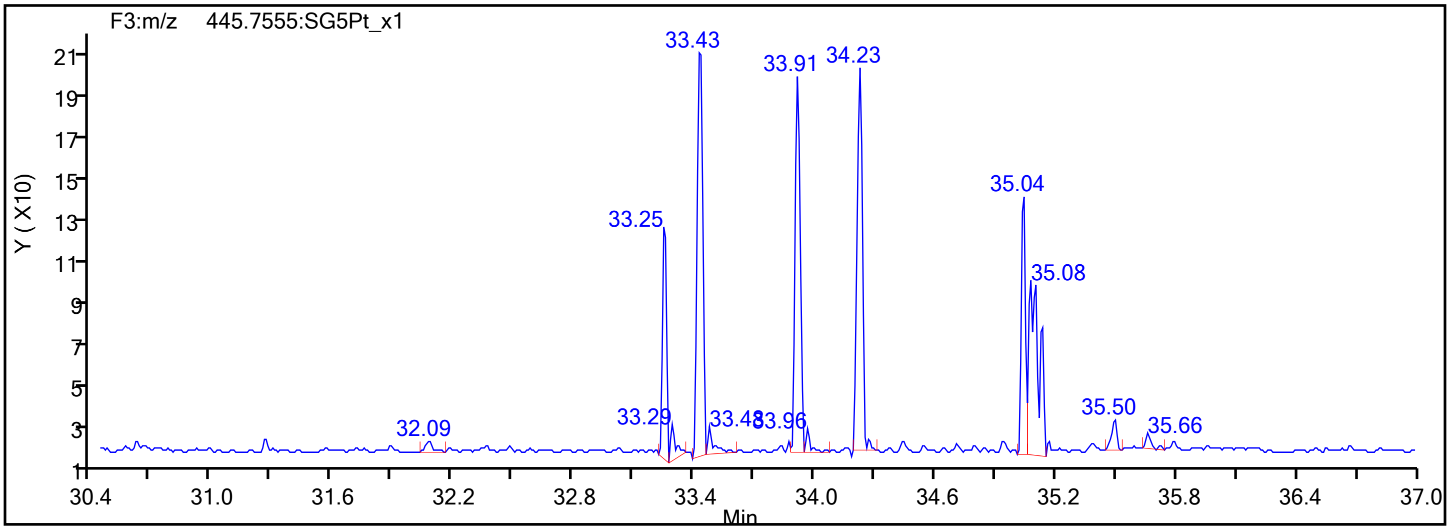

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d
Injection Date: 10-Oct-2020 05:03:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640 Sample Line#: 14
Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

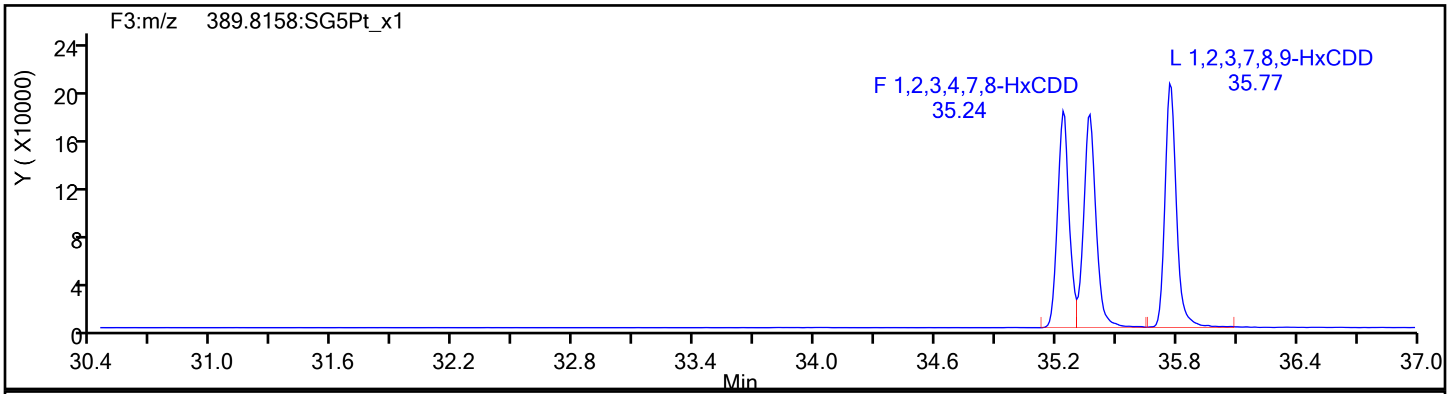

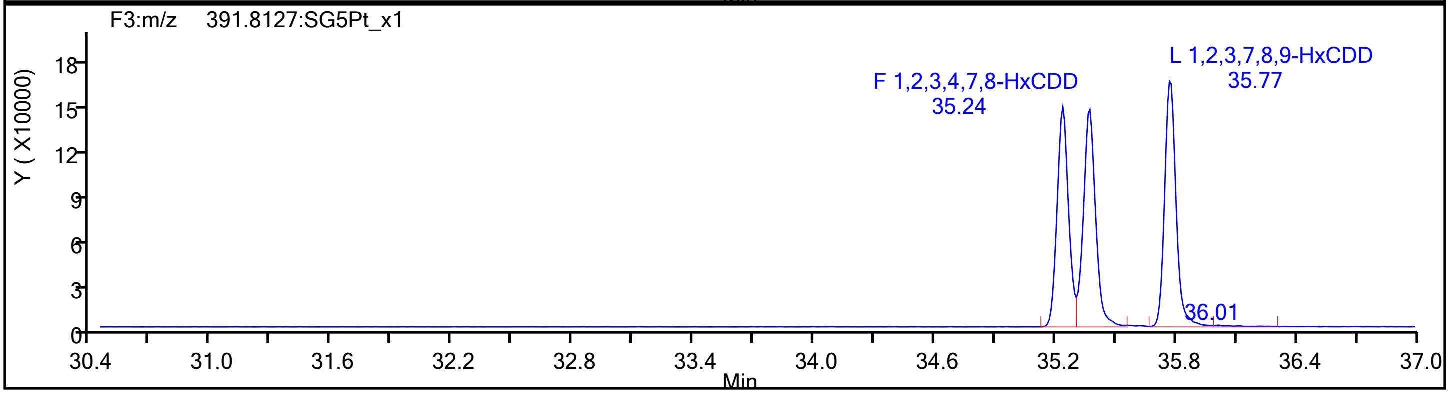

HxCDD Standards

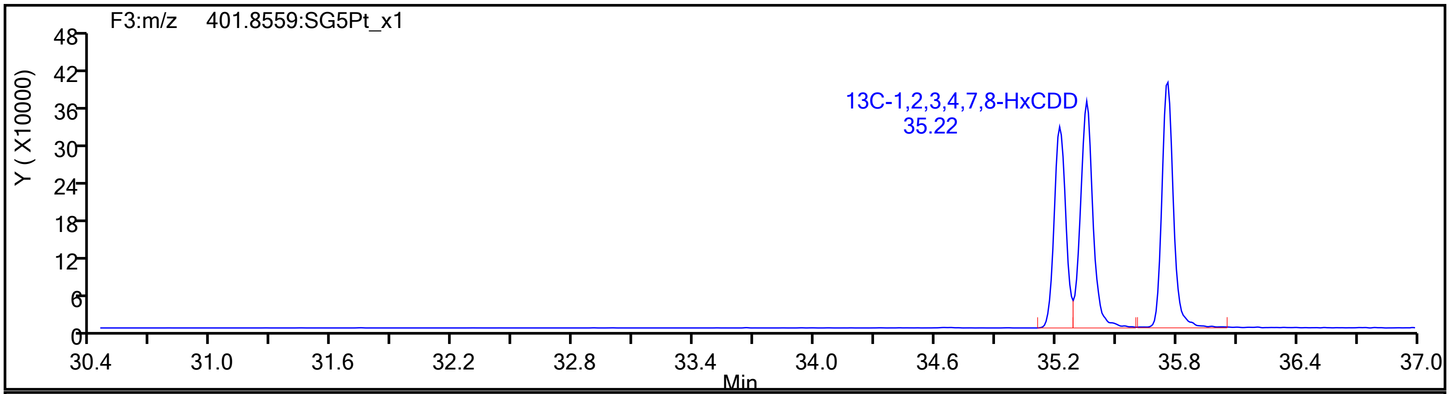

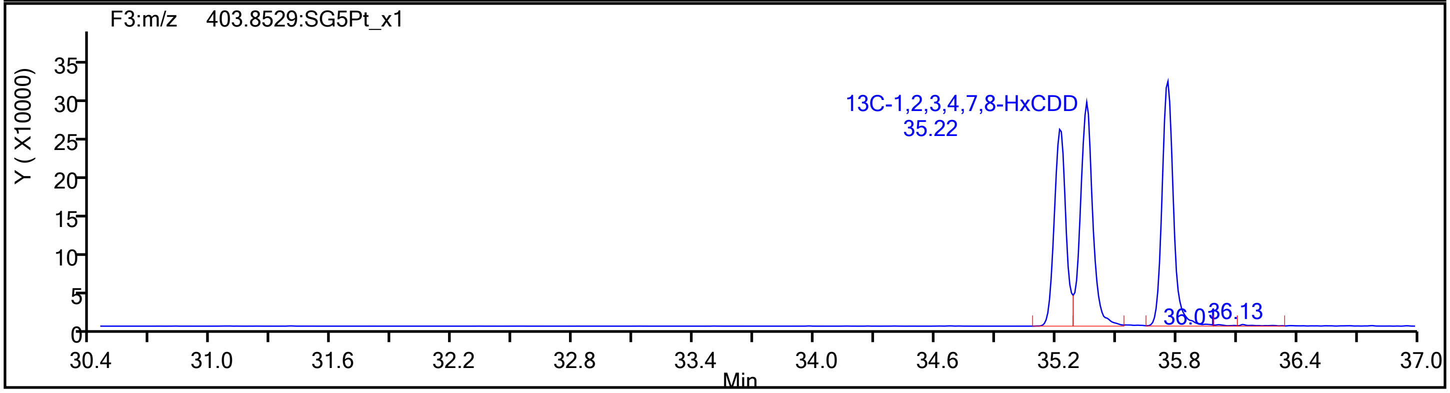

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d
Injection Date: 10-Oct-2020 05:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

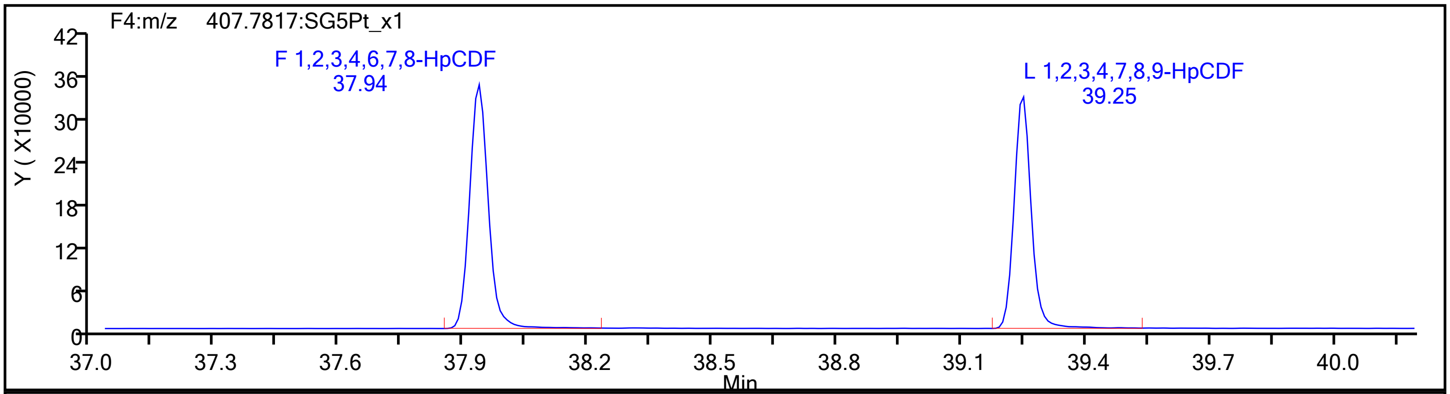

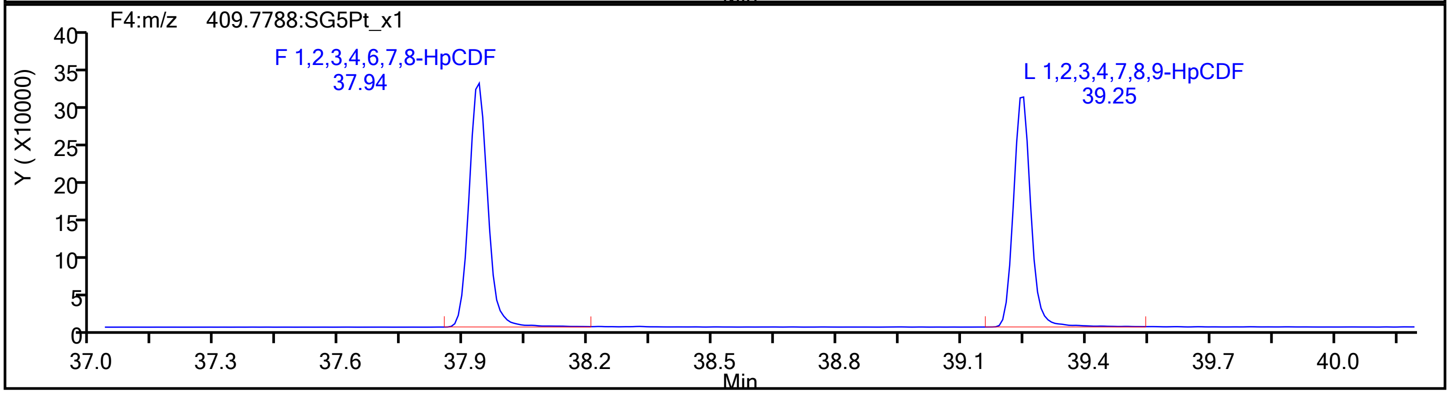

HpCDF Standards

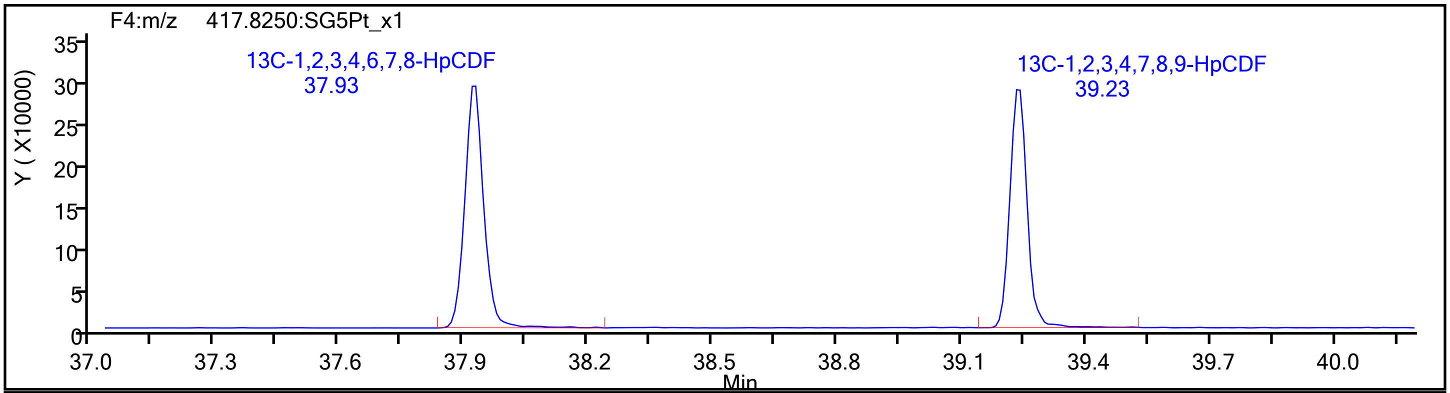

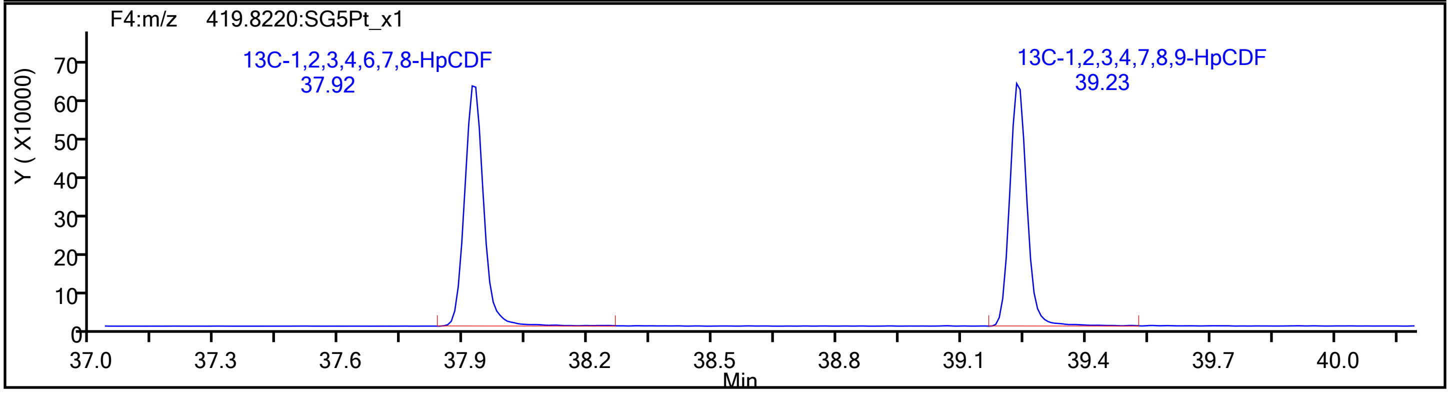

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

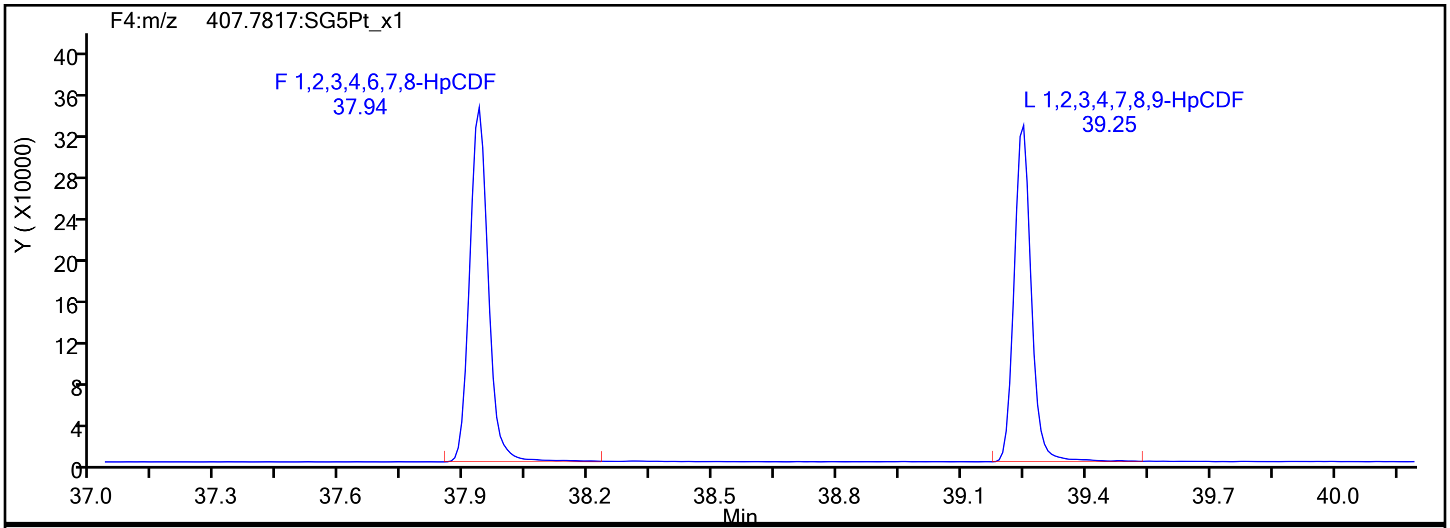

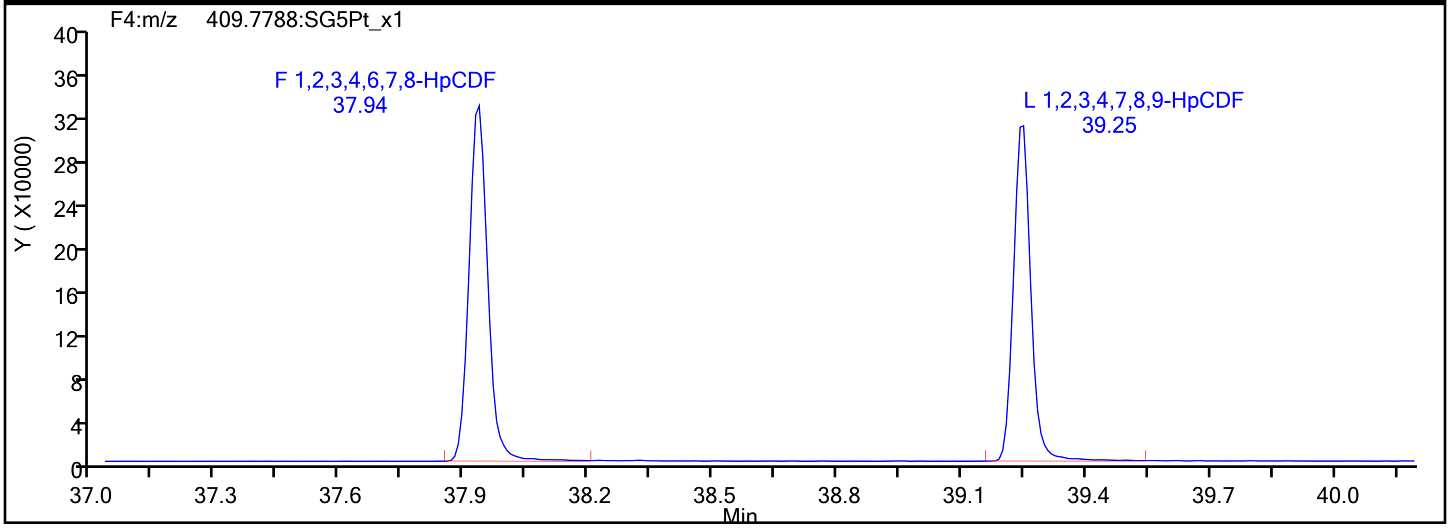

HpCDF Interference Mass

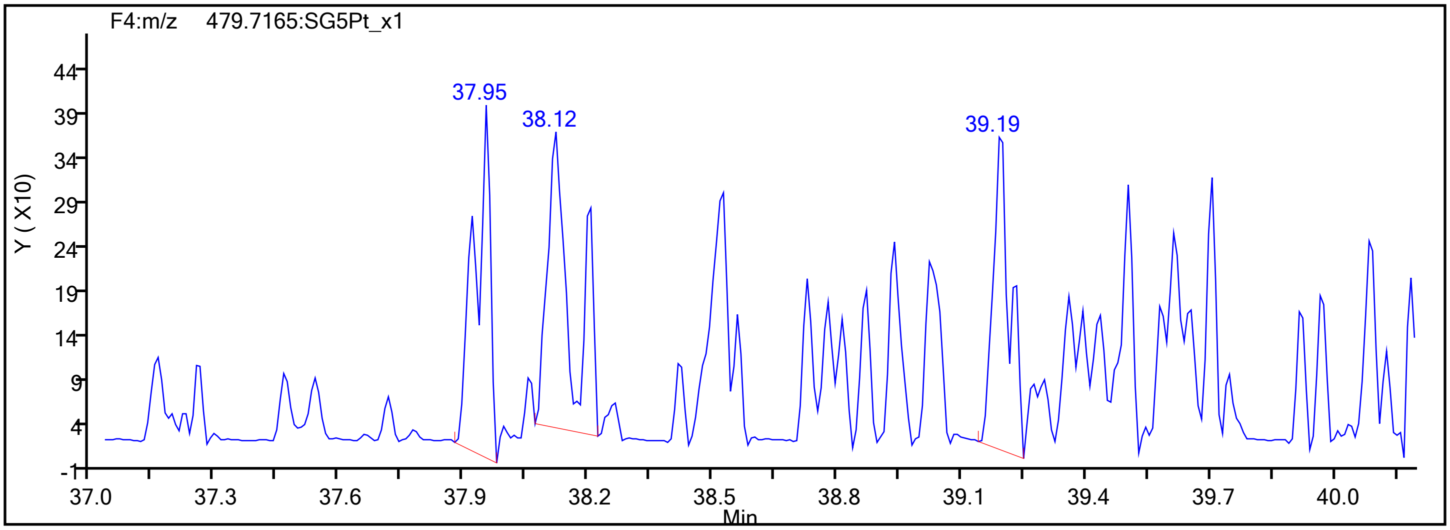

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d
Injection Date: 10-Oct-2020 05:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

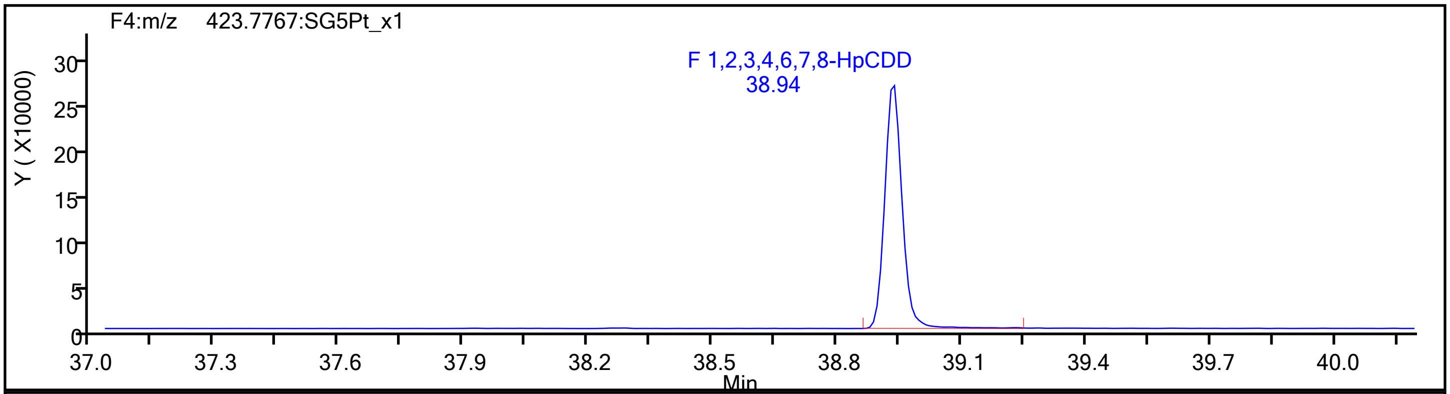

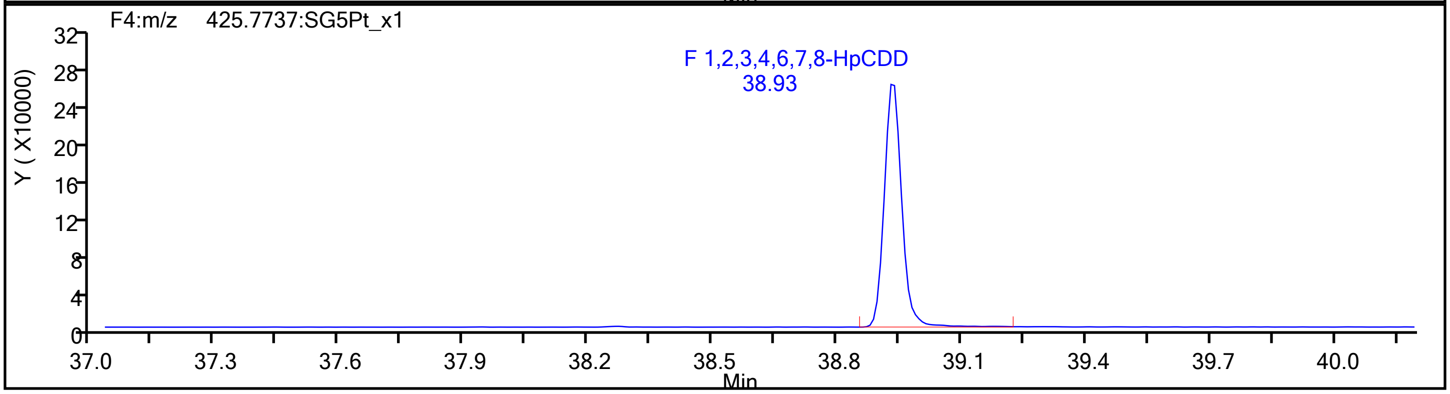

HpCDD Standards

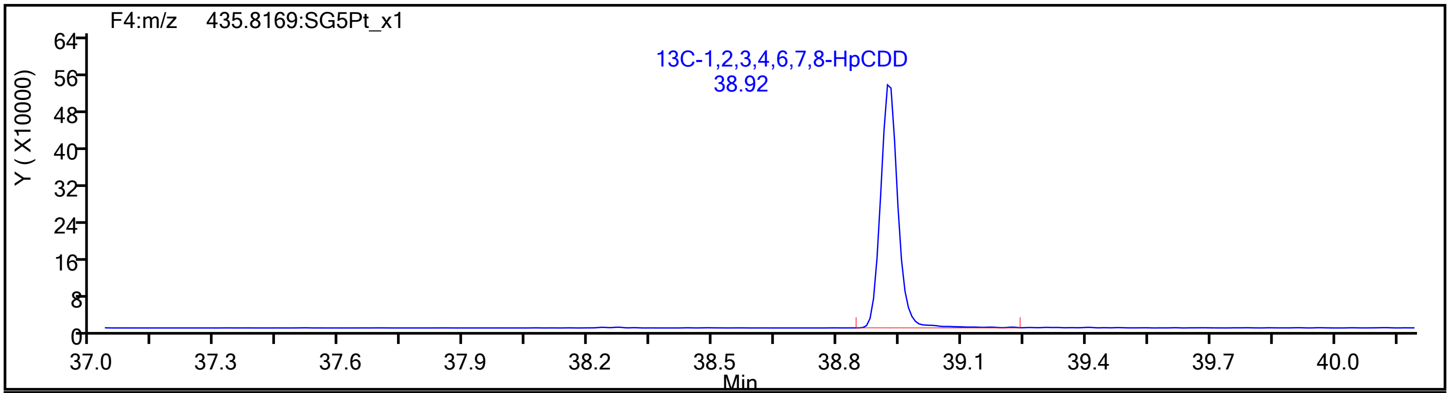

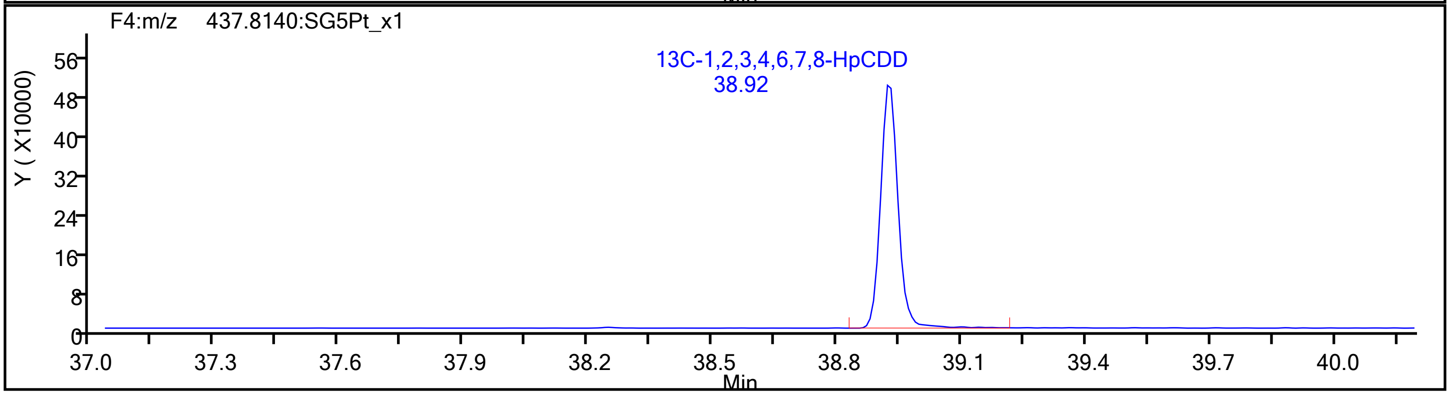

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

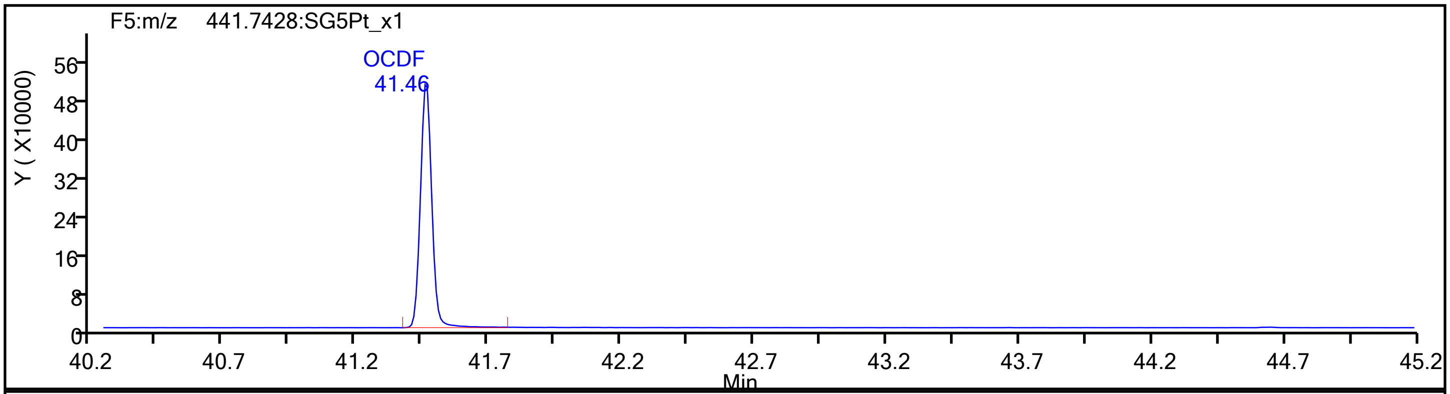

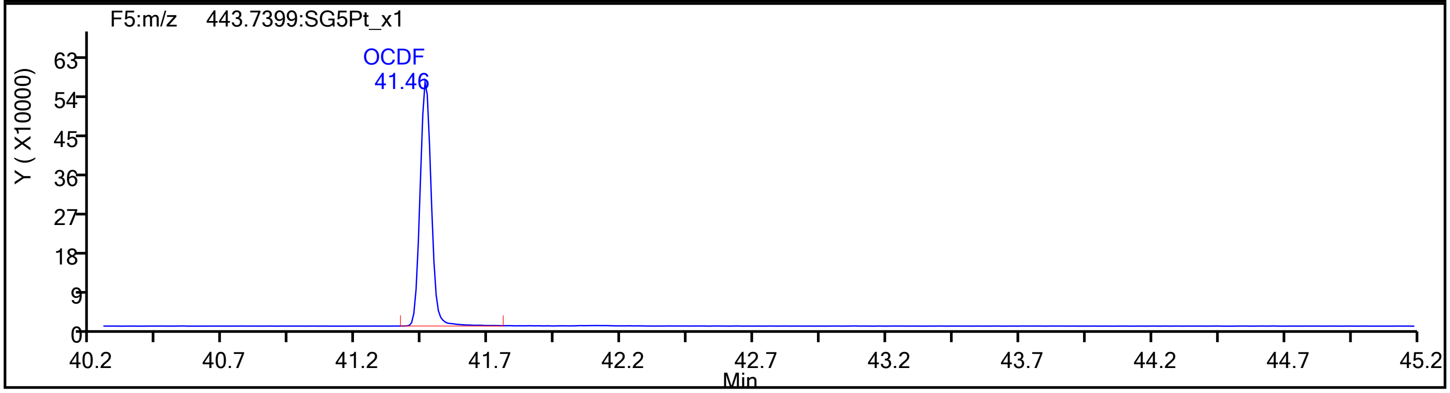

OCDF Standards

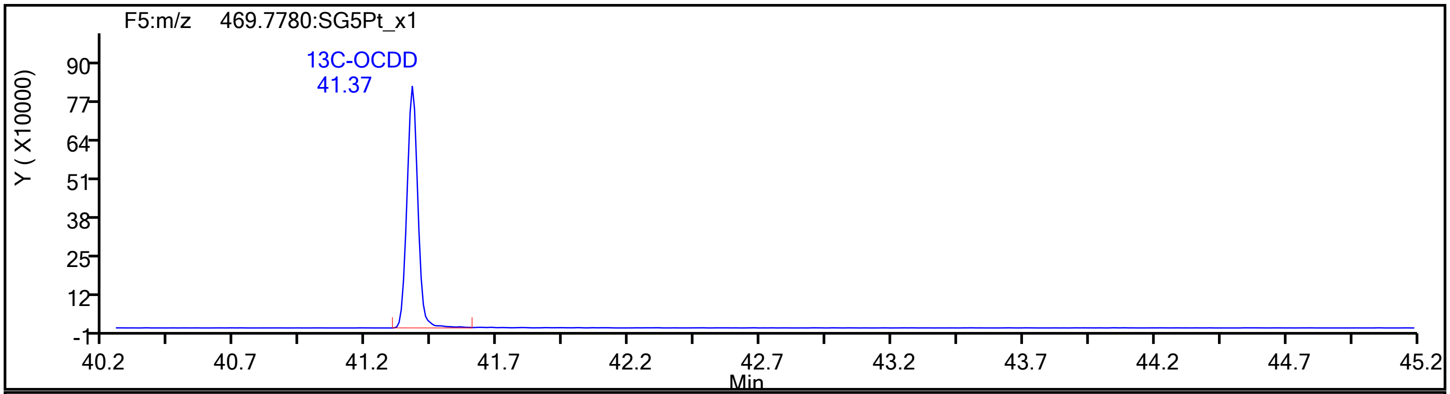

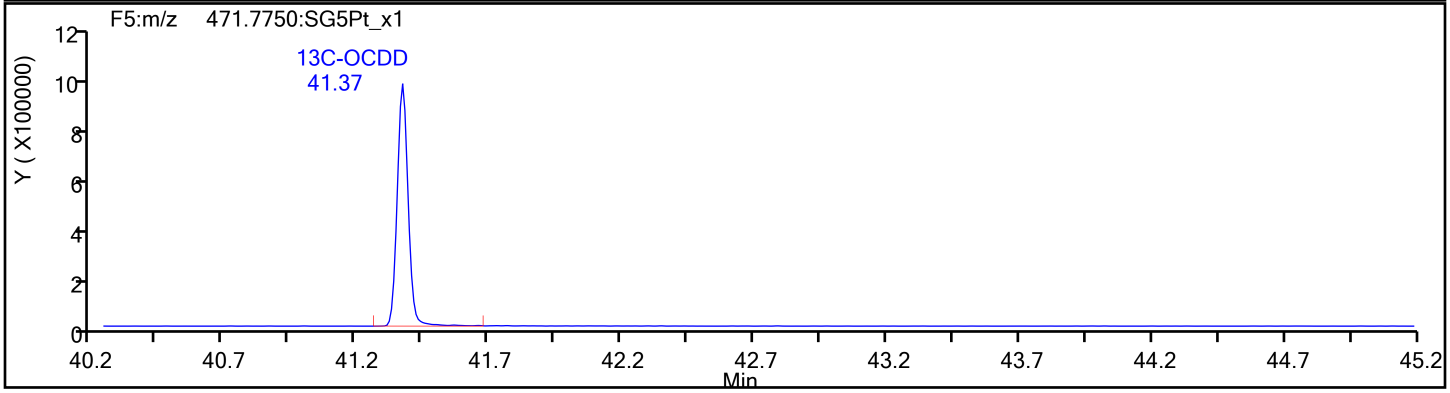

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

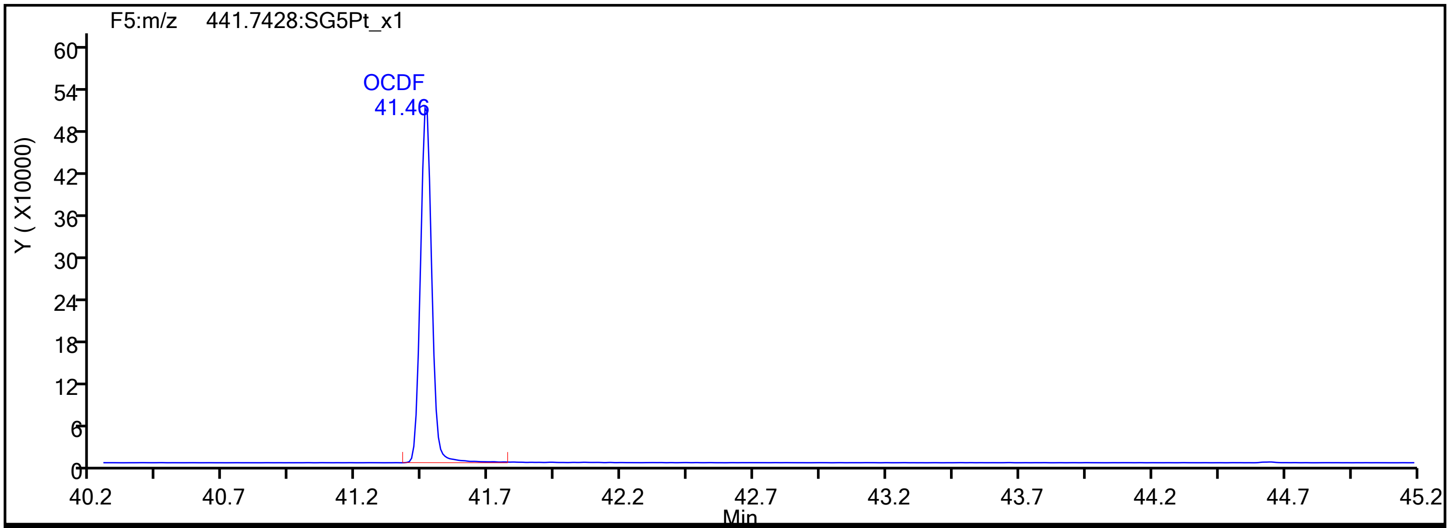

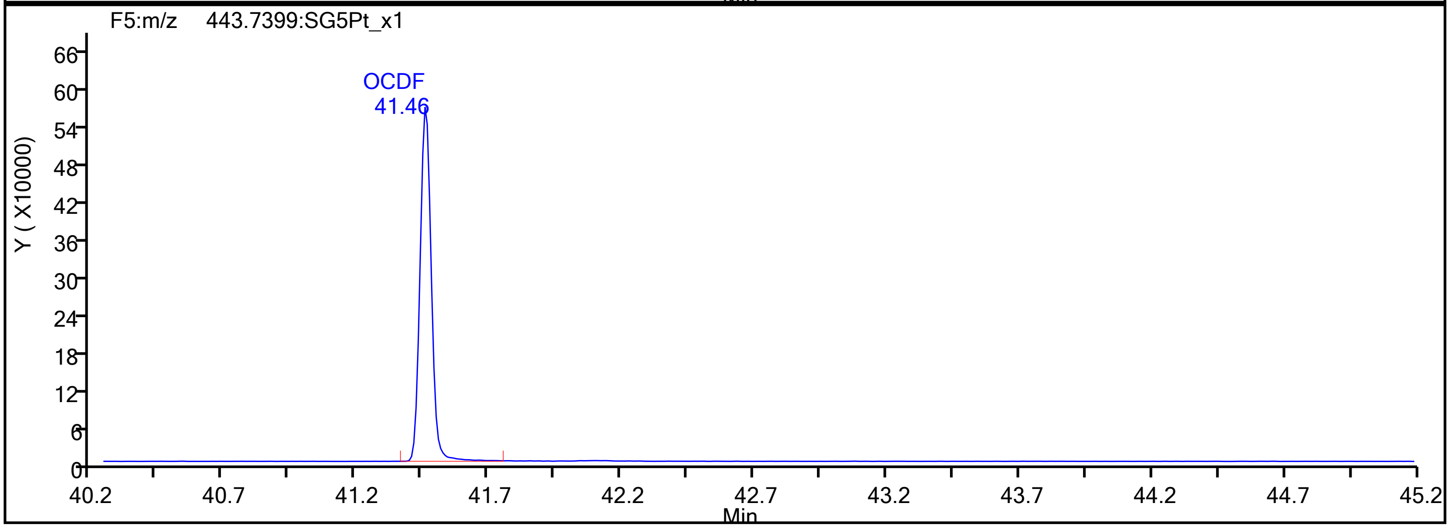

OCDF Interference Mass

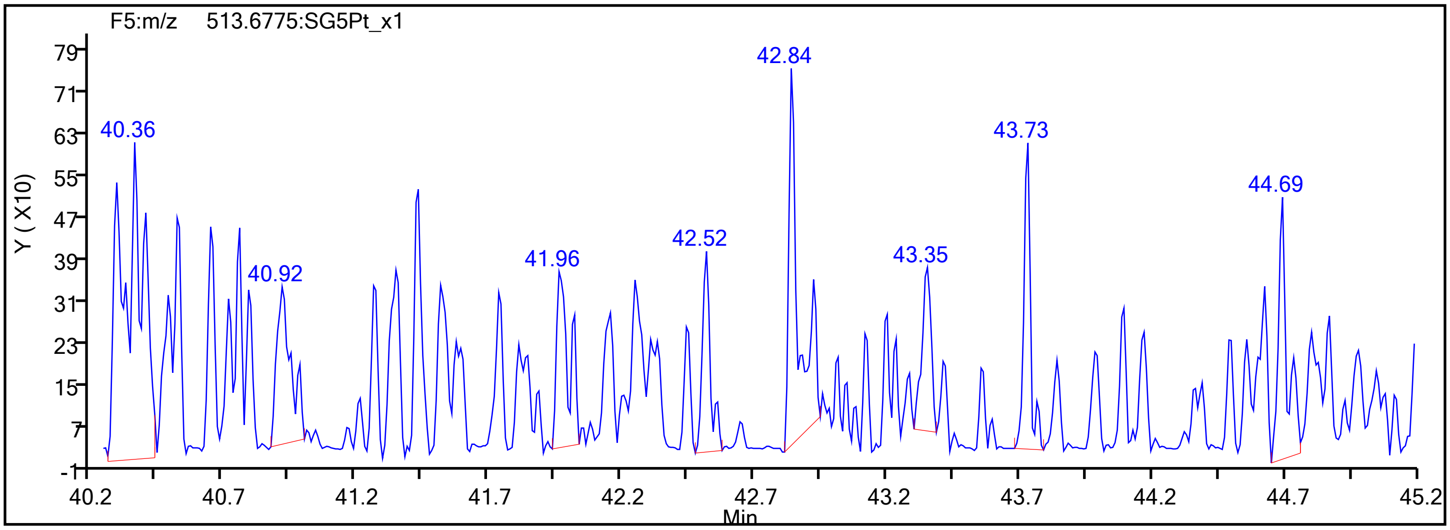

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

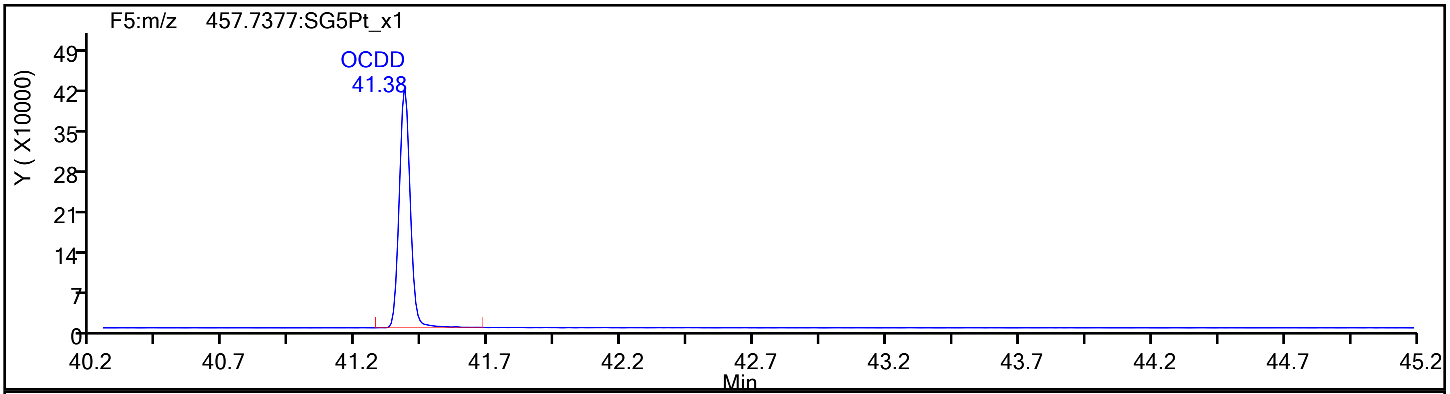

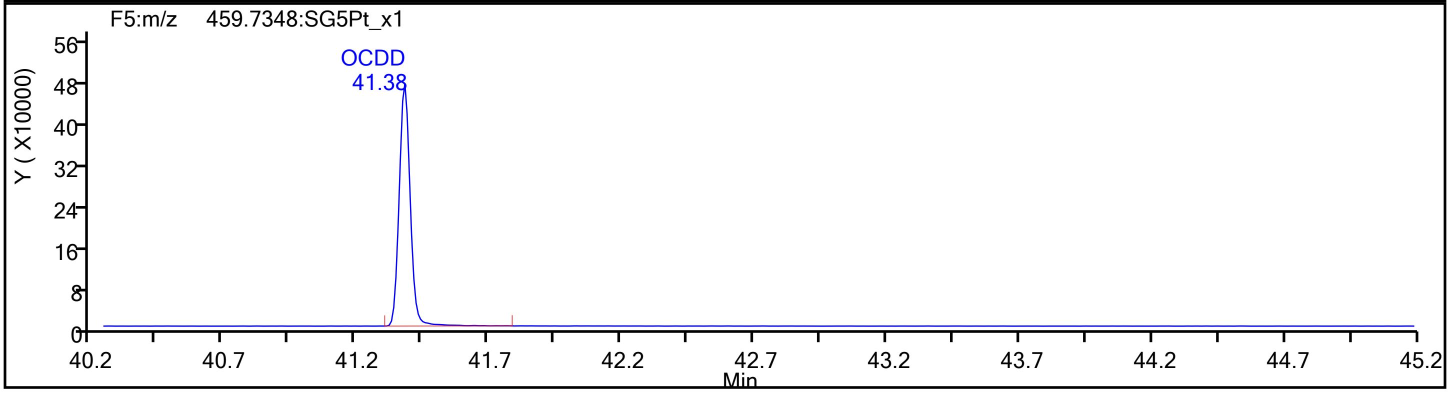

OCDD Standards

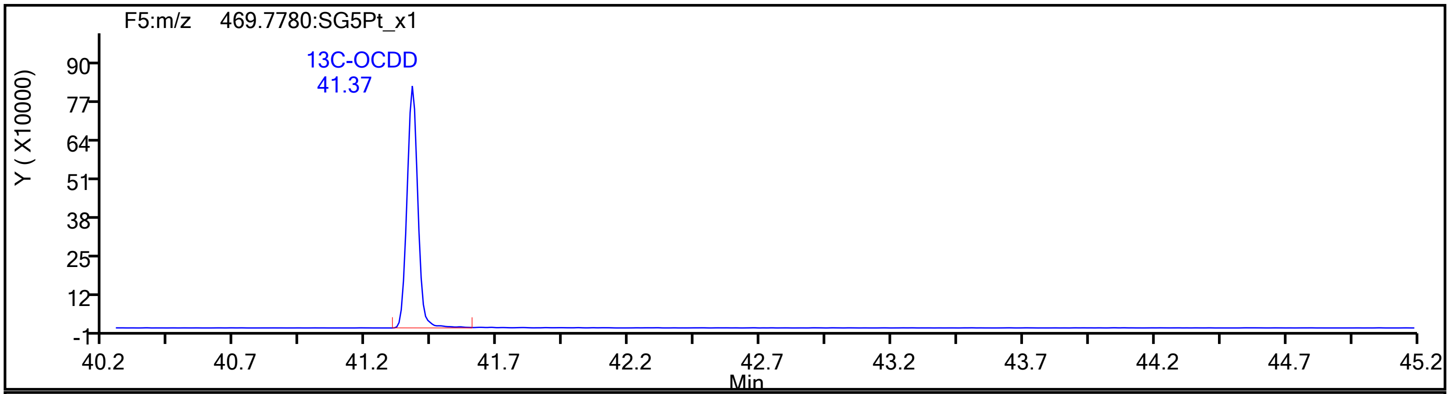

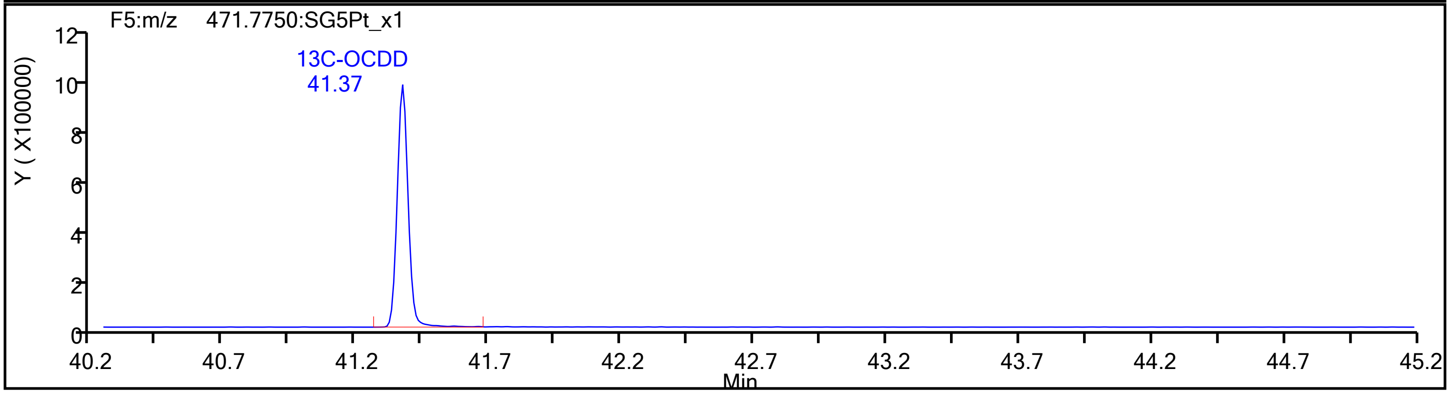

Report Date: 10-Oct-2020 23:26:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

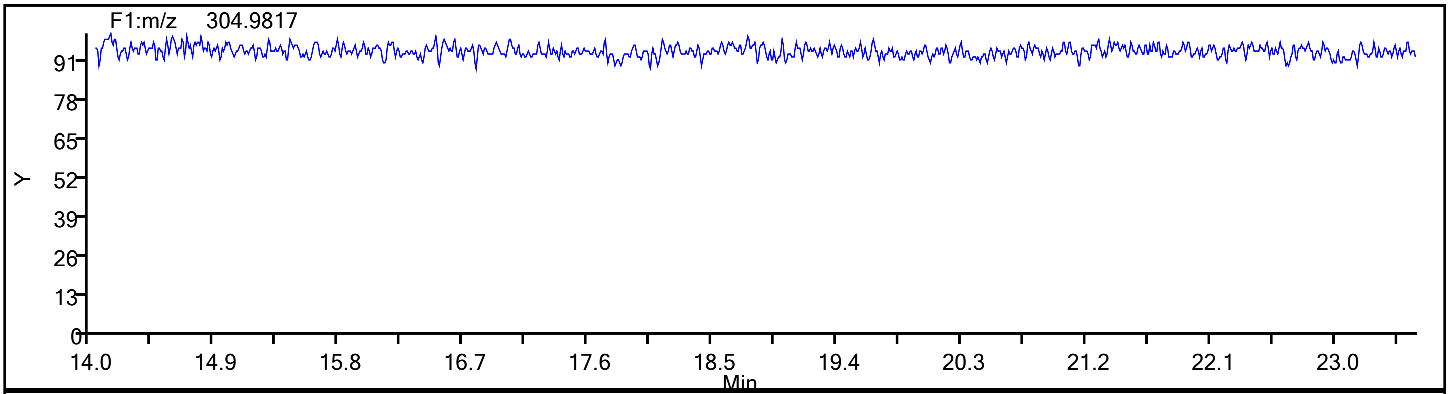

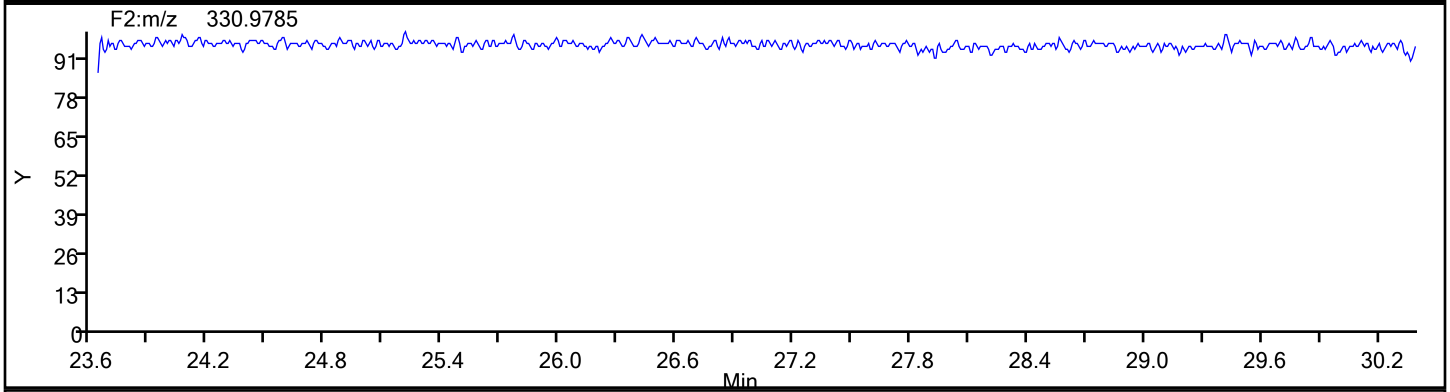

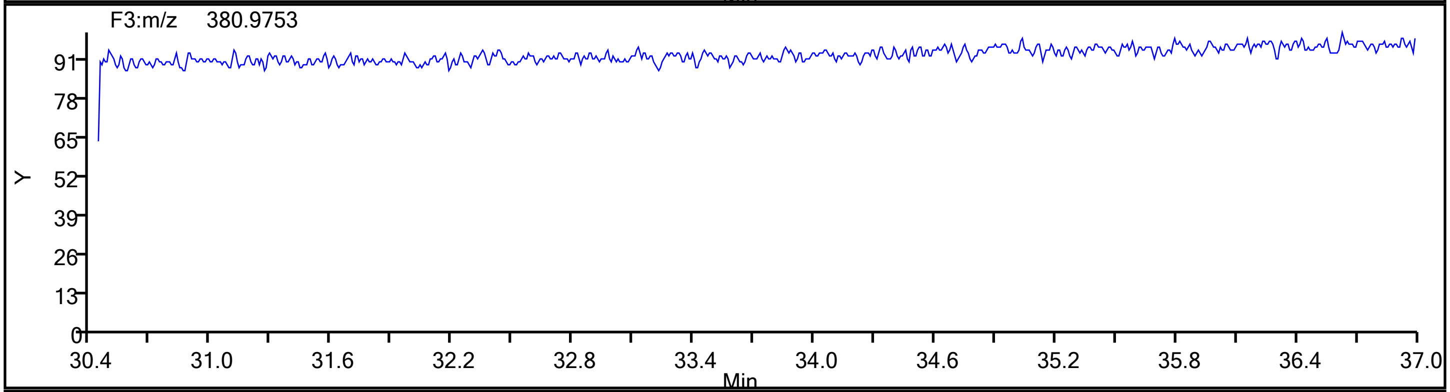

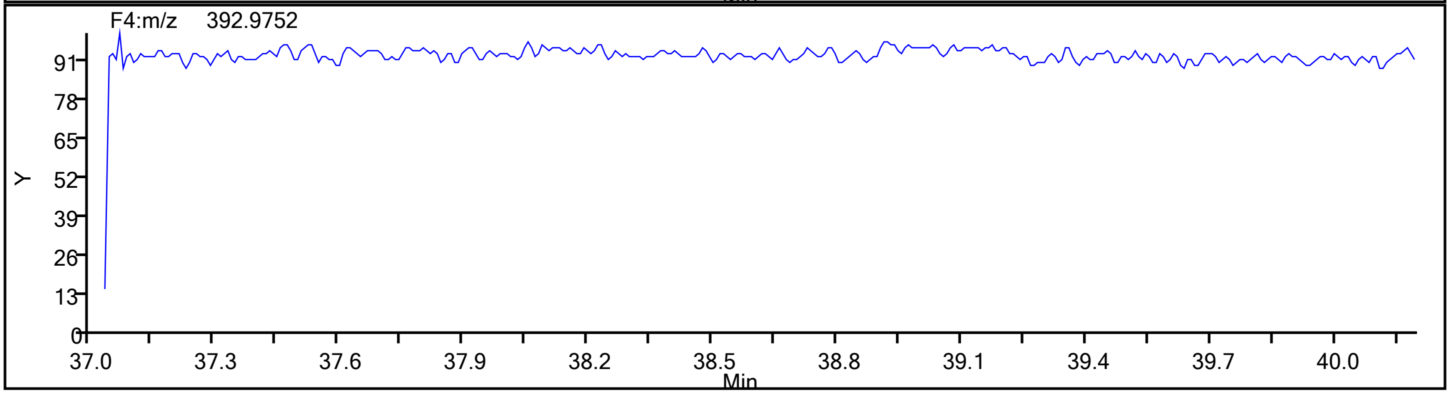

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_16.d		
Injection Date:	10-Oct-2020 05:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

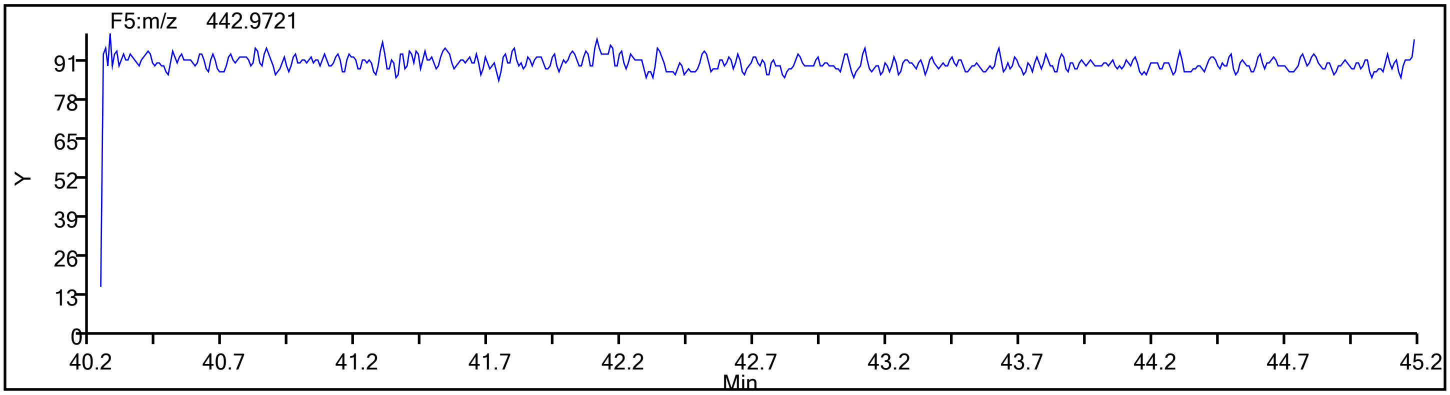

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-421107/2 Calibration Date: 10/12/2020 14:03

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 12oc20dfs1_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.187		10.9	10.0	109	84-120
2,3,7,8-TCDD	AveID	1.081	1.175		10.9	10.0	109	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.088		51.6	50.0	103	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.146		51.9	50.0	104	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.075		50.3	50.0	101	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.384		54.7	50.0	109	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.355		55.4	50.0	111	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.334		53.5	50.0	107	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.183		51.2	50.0	102	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	1.049		51.0	50.0	102	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.229		52.1	50.0	104	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.335		52.8	50.0	106	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.549		51.4	50.0	103	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.091		51.3	50.0	103	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.466		50.4	50.0	101	86-116
OCDD	AveID	1.129	1.141		101	100	101	79-126
OCDF	AveID	1.430	1.698		119	100	119	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.653		104	100	104	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.031		92.1	100	92	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.338		90.5	100	91	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.226		88.1	100	88	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.7883		83.7	100	84	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.198		105	100	105	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.436		109	100	109	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.390		112	100	112	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8110		95.7	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	0.9844		98.7	100	99	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.281		108	100	108	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	1.014		103	100	103	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	1.010		106	100	106	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	1.025		111	100	111	77-129
13C-OCDD	Ave	0.7420	0.8799		237	200	119	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.122		9.78	10.0	98	79-127

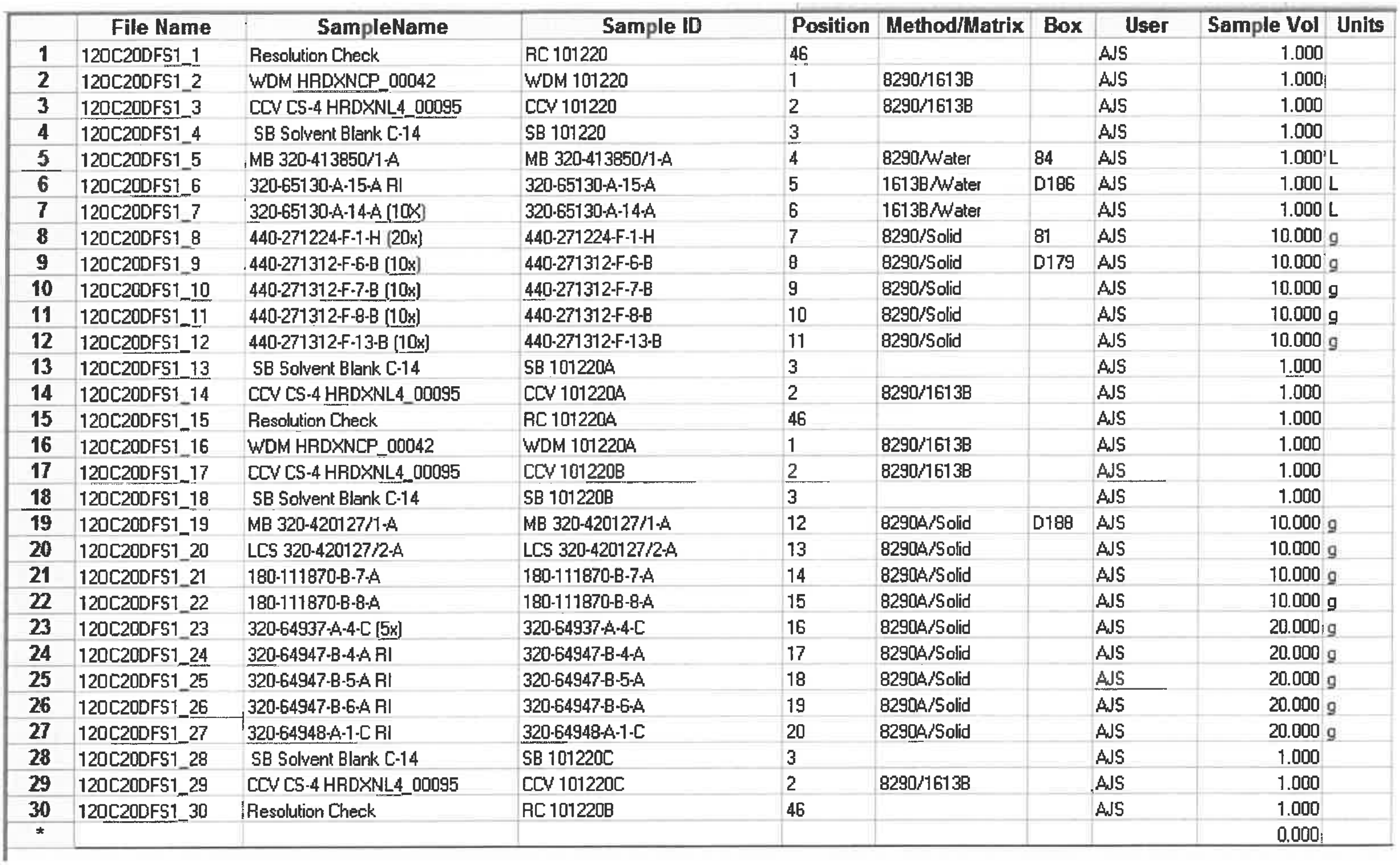

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	120C20DFS1_1	Resolution Check	RC 101220	46			AJS	1.000	
2	120C20DFS1_2	WDM HRDXNCP_00042	WDM 101220	1	8290/1613B		AJS	1.000	
3	120C20DFS1_3	CCV CS-4 HRDXNL4_00095	CCV 101220	2	8290/1613B		AJS	1.000	
4	120C20DFS1_4	SB Solvent Blank C-14	SB 101220	3			AJS	1.000	
5	120C20DFS1_5	MB 320-413850/1-A	MB 320-413850/1-A	4	8290/Water	84	AJS	1.000	L
6	120C20DFS1_6	320-65130-A-15-A RI	320-65130-A-15-A	5	1613B/Water	D186	AJS	1.000	L
7	120C20DFS1_7	320-65130-A-14-A (10X)	320-65130-A-14-A	6	1613B/Water		AJS	1.000	L
8	120C20DFS1_8	440-271224-F-1-H (20x)	440-271224-F-1-H	7	8290/Solid	81	AJS	10.000	g
9	120C20DFS1_9	440-271312-F-6-B (10x)	440-271312-F-6-B	8	8290/Solid	D179	AJS	10.000	g
10	120C20DFS1_10	440-271312-F-7-B (10x)	440-271312-F-7-B	9	8290/Solid		AJS	10.000	g
11	120C20DFS1_11	440-271312-F-8-B (10x)	440-271312-F-8-B	10	8290/Solid		AJS	10.000	g
12	120C20DFS1_12	440-271312-F-13-B (10x)	440-271312-F-13-B	11	8290/Solid		AJS	10.000	g
13	120C20DFS1_13	SB Solvent Blank C-14	SB 101220A	3			AJS	1.000	
14	120C20DFS1_14	CCV CS-4 HRDXNL4_00095	CCV 101220A	2	8290/1613B		AJS	1.000	
15	120C20DFS1_15	Resolution Check	RC 101220A	46			AJS	1.000	
16	120C20DFS1_16	WDM HRDXNCP_00042	WDM 101220A	1	8290/1613B		AJS	1.000	
17	120C20DFS1_17	CCV CS-4 HRDXNL4_00095	CCV 101220B	2	8290/1613B		AJS	1.000	
18	120C20DFS1_18	SB Solvent Blank C-14	SB 101220B	3			AJS	1.000	
19	120C20DFS1_19	MB 320-420127/1-A	MB 320-420127/1-A	12	8290A/Solid	D188	AJS	10.000	g
20	120C20DFS1_20	LCS 320-420127/2-A	LCS 320-420127/2-A	13	8290A/Solid		AJS	10.000	g
21	120C20DFS1_21	180-111870-B-7-A	180-111870-B-7-A	14	8290A/Solid		AJS	10.000	g
22	120C20DFS1_22	180-111870-B-8-A	180-111870-B-8-A	15	8290A/Solid		AJS	10.000	g
23	120C20DFS1_23	320-64937-A-4-C (5x)	320-64937-A-4-C	16	8290A/Solid		AJS	20.000	g
24	120C20DFS1_24	320-64947-B-4-A RI	320-64947-B-4-A	17	8290A/Solid		AJS	20.000	g
25	120C20DFS1_25	320-64947-B-5-A RI	320-64947-B-5-A	18	8290A/Solid		AJS	20.000	g
26	120C20DFS1_26	320-64947-B-6-A RI	320-64947-B-6-A	19	8290A/Solid		AJS	20.000	g
27	120C20DFS1_27	320-64948-A-1-C RI	320-64948-A-1-C	20	8290A/Solid		AJS	20.000	g
28	120C20DFS1_28	SB Solvent Blank C-14	SB 101220C	3			AJS	1.000	
29	120C20DFS1_29	CCV CS-4 HRDXNL4_00095	CCV 101220C	2	8290/1613B		AJS	1.000	
30	120C20DFS1_30	Resolution Check	RC 101220B	46			AJS	1.000	
*								0.000	

logfile checked
10-12-20 ALM

Resolution Check Report (DFS SN: 3487)

Date: 12 Oct 2020 12:56
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13222 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 13514 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 13208 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 13226 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13419 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 13589 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12456 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 13248 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13189 [5%height]

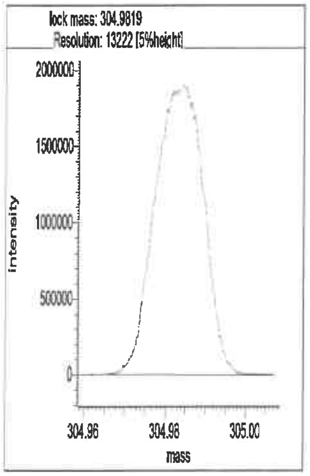

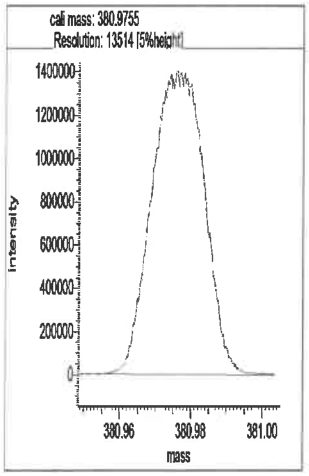

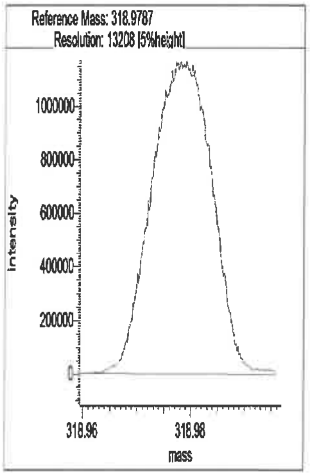

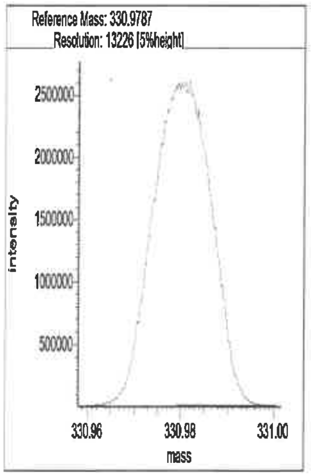

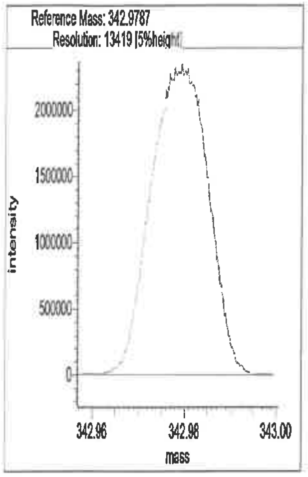

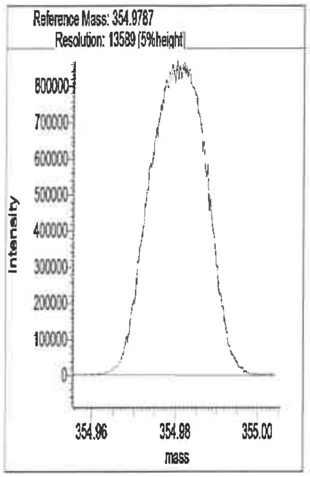

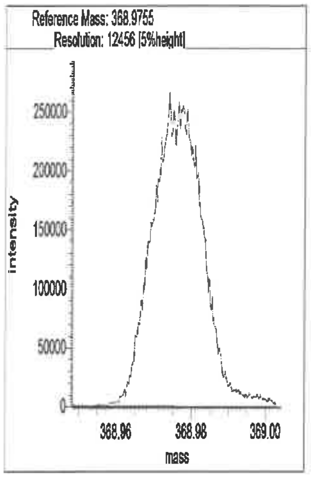

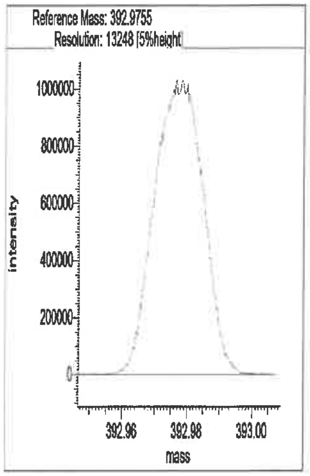

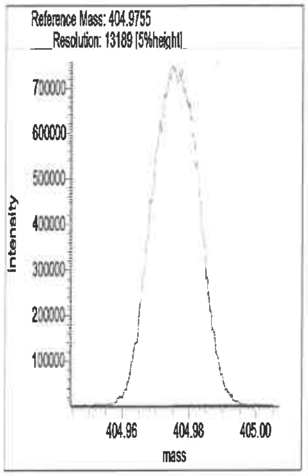

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13264 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 13547 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 13491 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 13774 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12449 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 13506 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13356 [5%height]

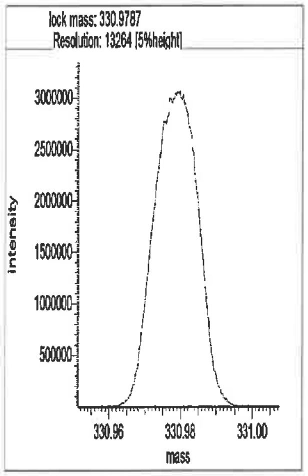

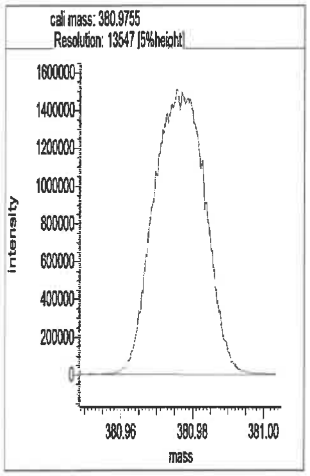

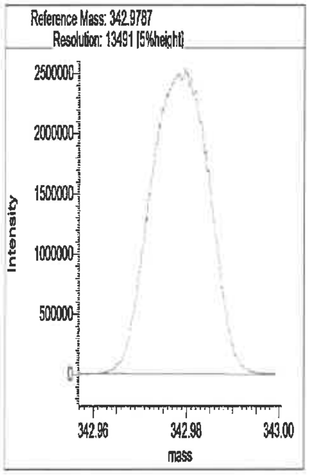

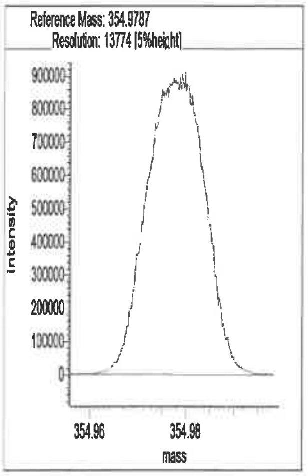

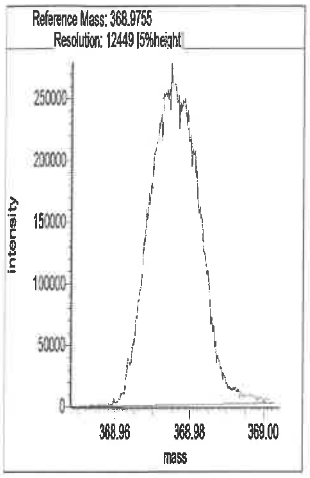

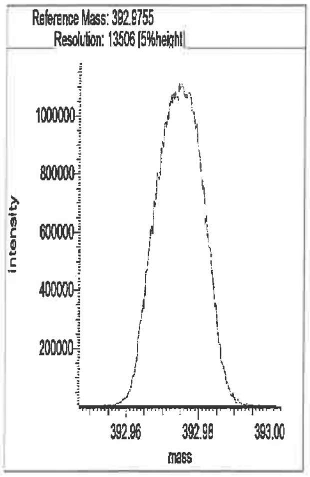

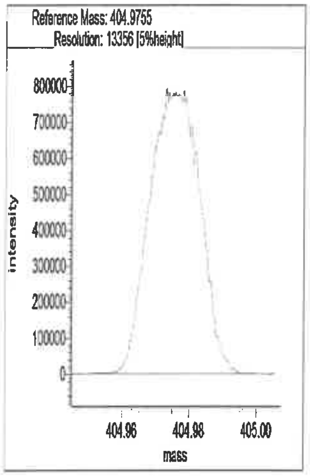

Segment 3

Lock mass 380.9755 [m/z] Resolution: 13212 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 13664 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 13428 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13605 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13884 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13645 [5%height]

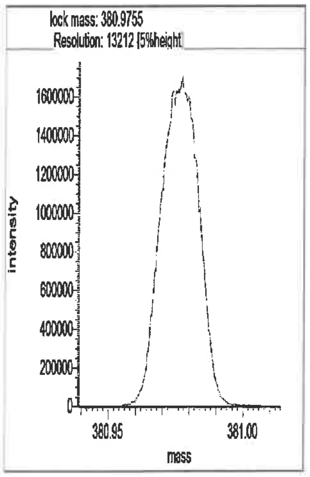

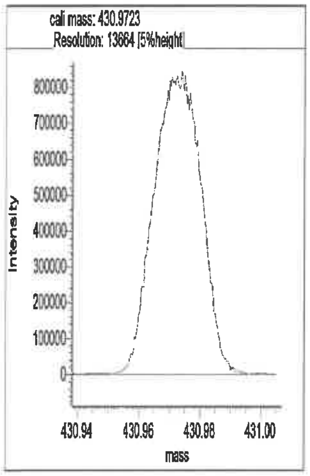

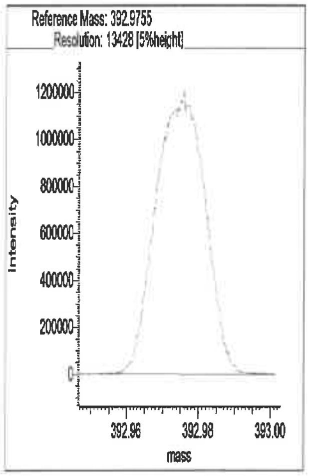

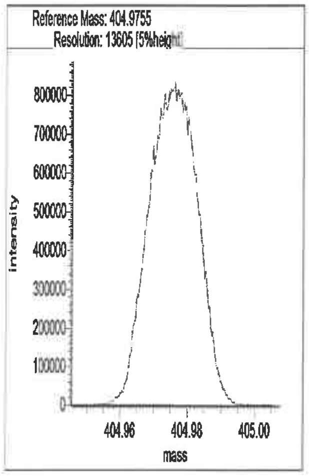

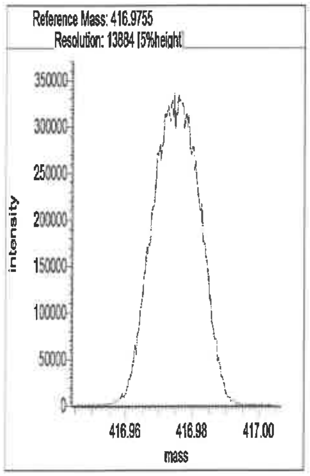

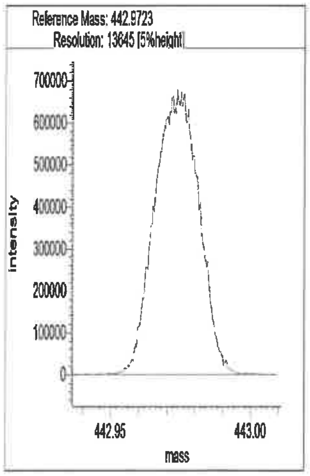

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13297 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 13182 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13419 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 13677 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 13530 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 13611 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13853 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 14014 [5%height]

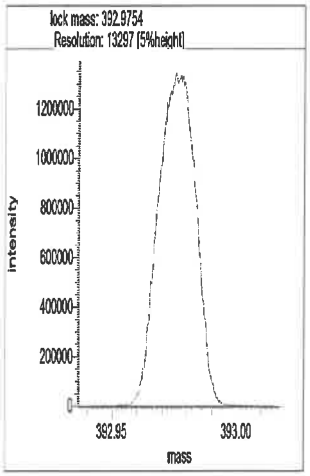

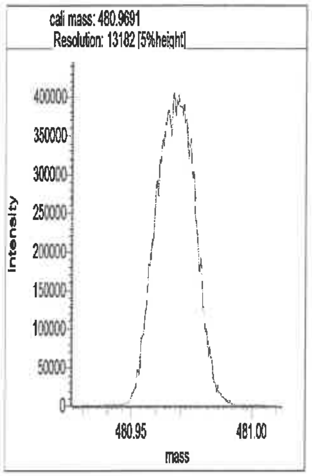

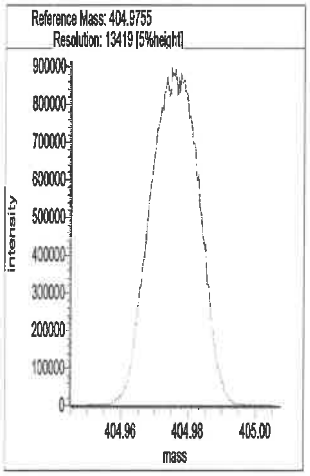

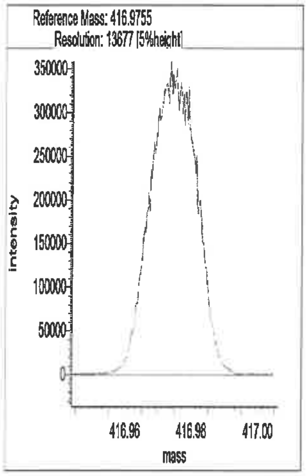

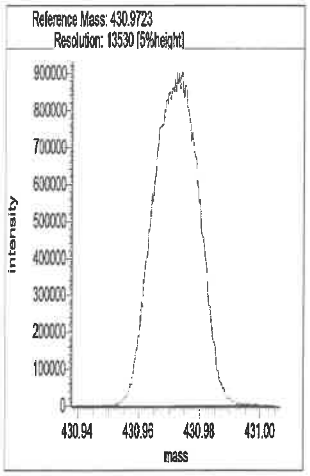

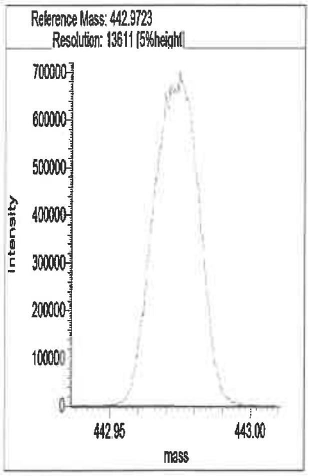

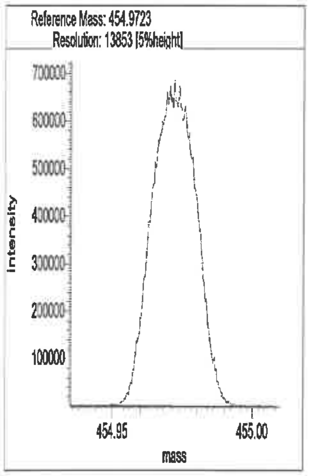

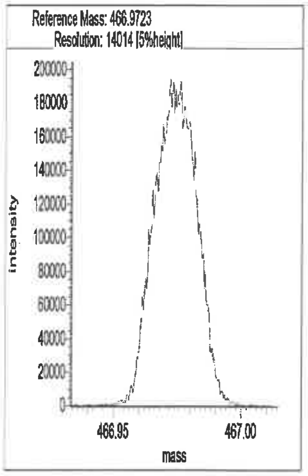

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13450 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 13760 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13923 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13860 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 13518 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 13700 [5%height]

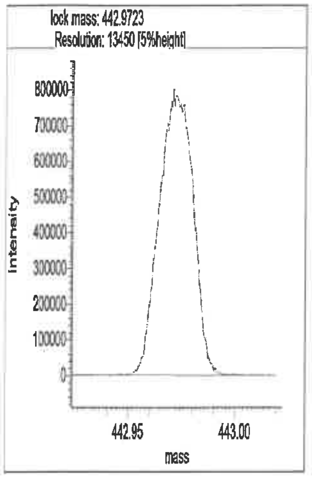
lock mass: 442.9723
Resolution: 13450 [5%height]

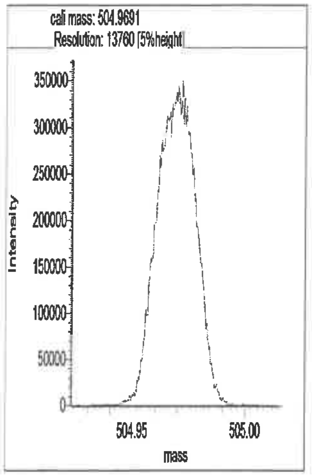
cali mass: 504.9691
Resolution: 13760 [5%height]

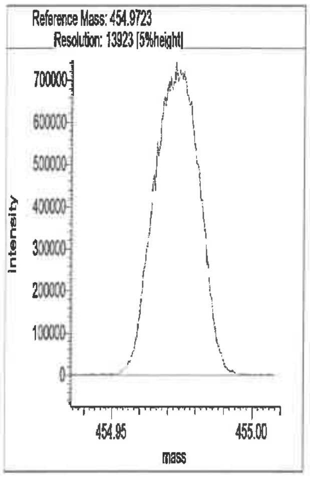
Reference Mass: 454.9723
Resolution: 13923 [5%height]

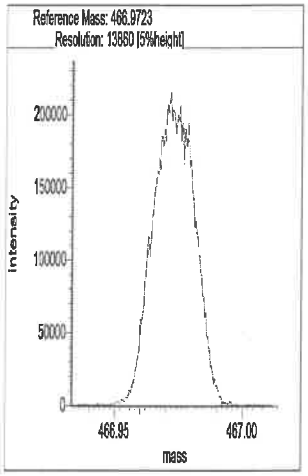
Reference Mass: 466.9723
Resolution: 13860 [5%height]

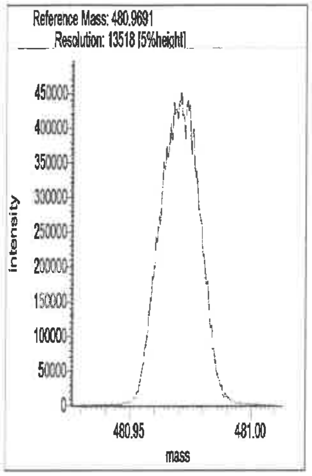
Reference Mass: 480.9691
Resolution: 13518 [5%height]

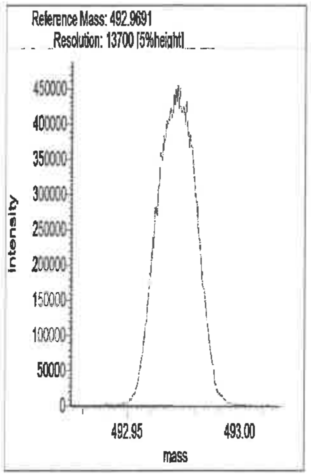
Reference Mass: 492.9691
Resolution: 13700 [5%height]

Resolution Check Report (DFS SN: 3487)

Date: 12 Oct 2020 23:44
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13235 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 13348 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 13111 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 13453 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13403 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 13426 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 13236 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 13058 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13283 [5%height]

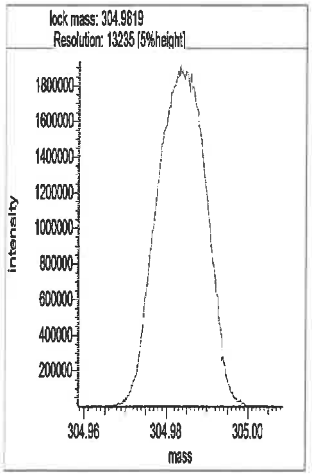

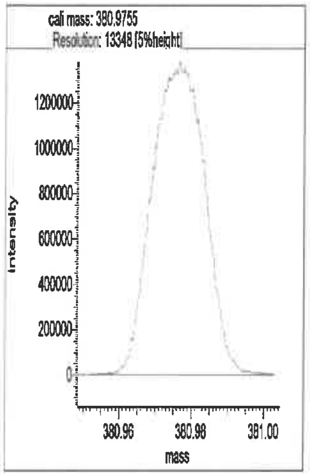

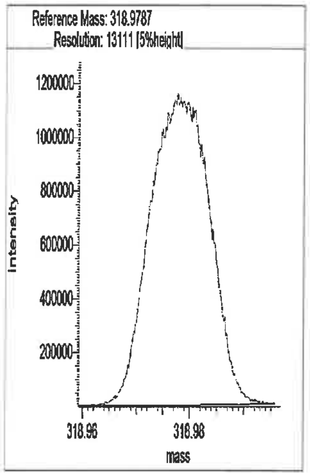

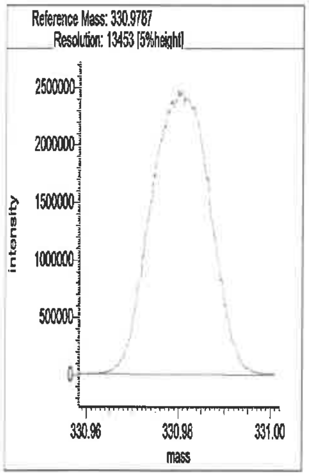

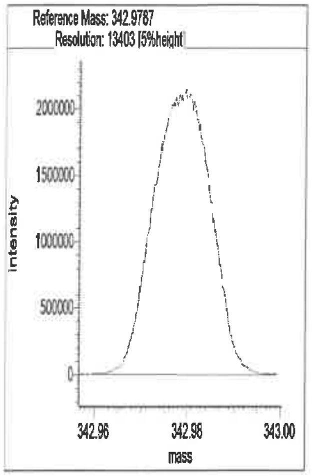

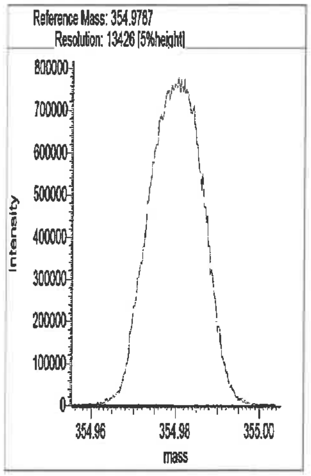

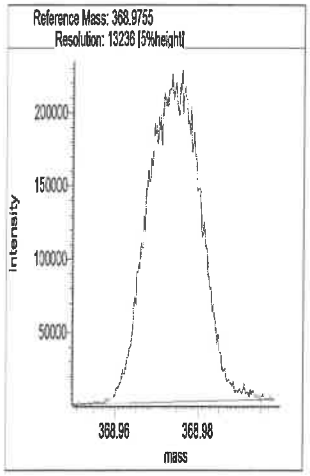

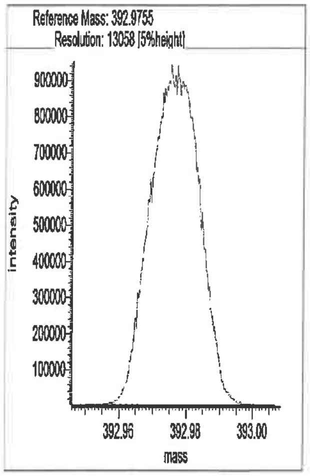

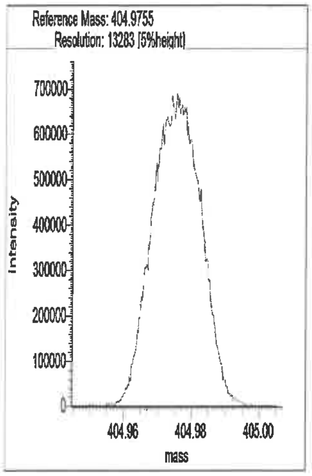

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13088 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 13430 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 13239 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 13406 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12725 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 13334 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13429 [5%height]

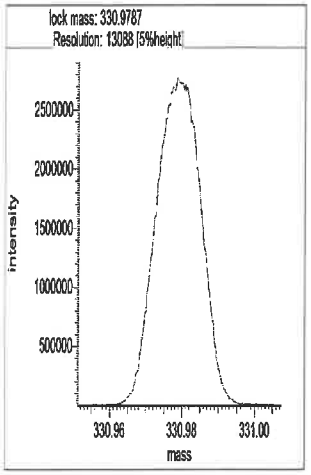

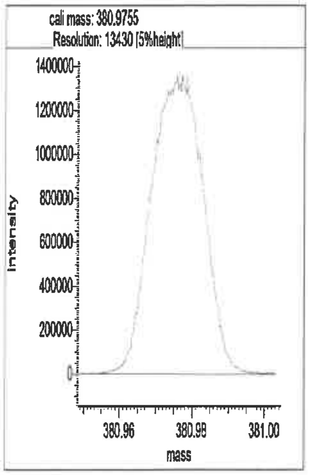

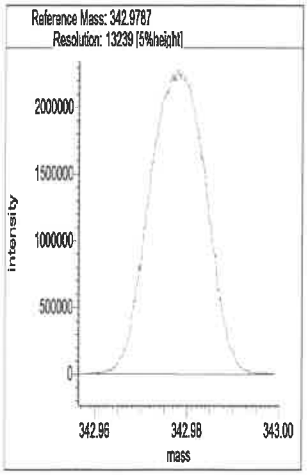

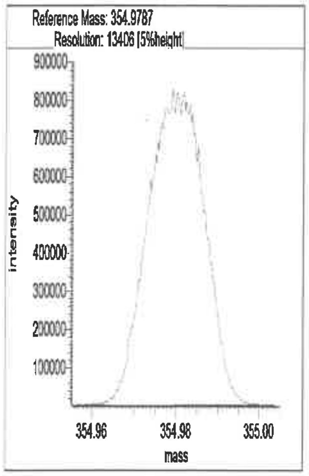

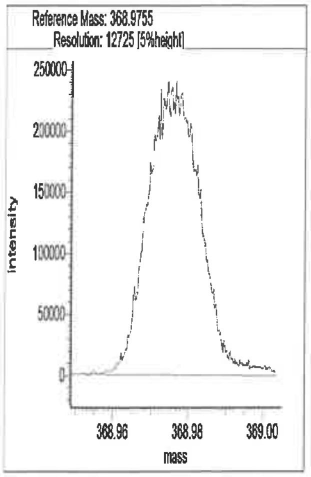

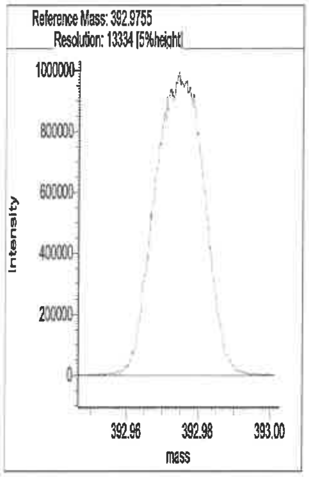

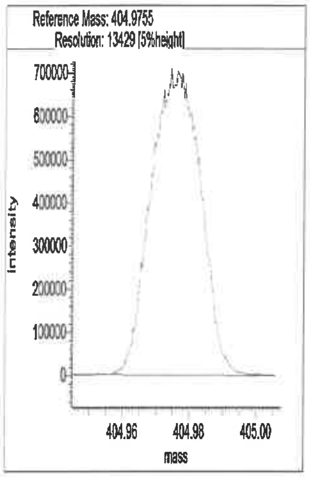

Segment 3

Lock mass 380.9755 [m/z] Resolution: 13025 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 13484 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 13322 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13239 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13812 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13719 [5%height]

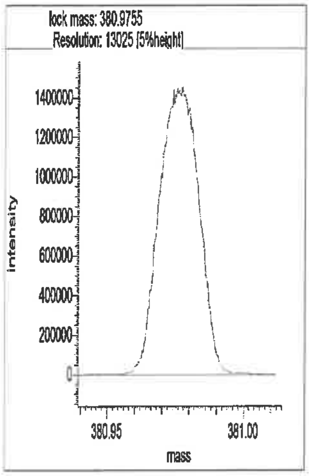

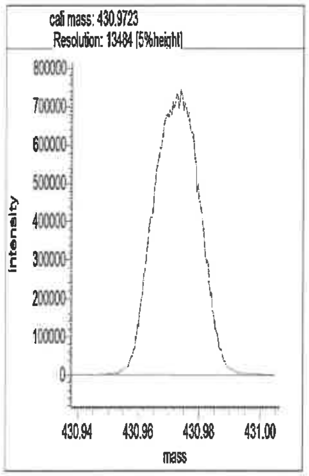

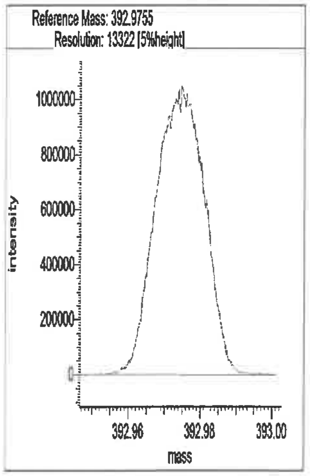

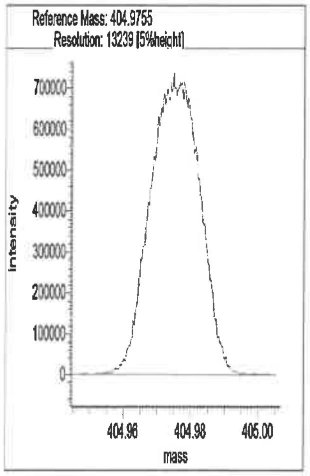

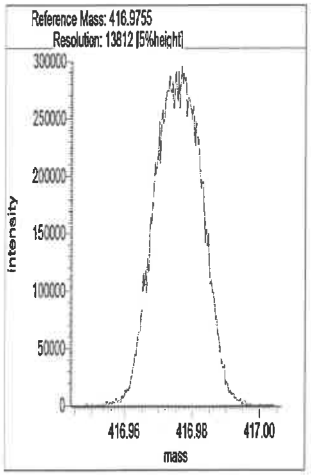

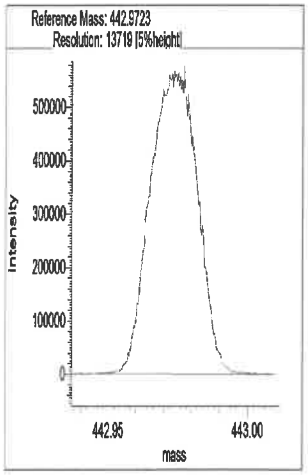

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13210 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 13458 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13391 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13162 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 13491 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13420 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 13926 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 13745 [5%height]

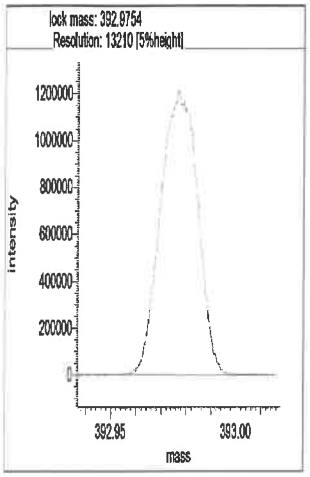

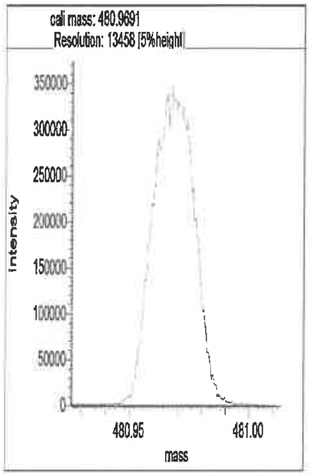

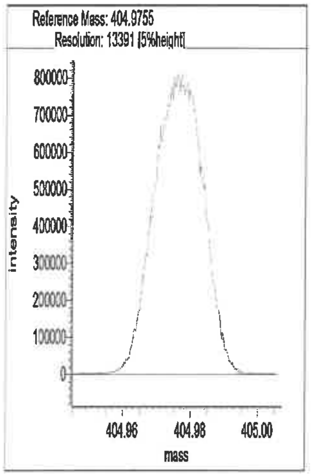

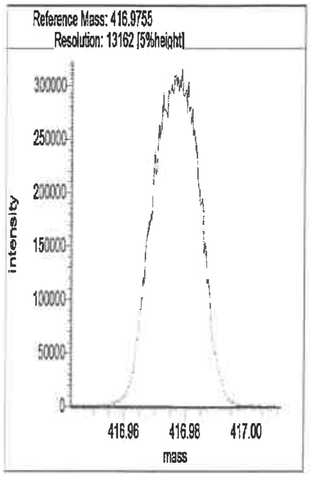

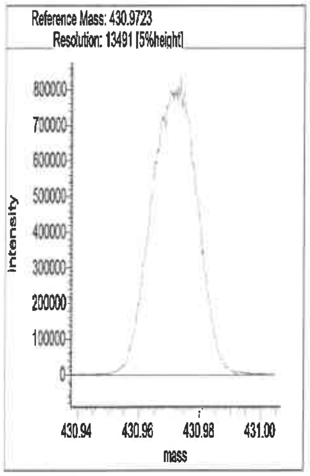

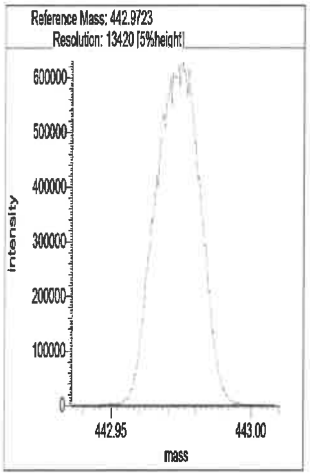

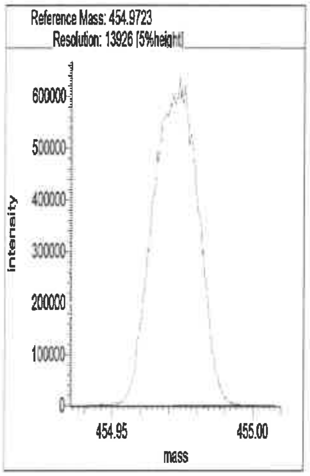

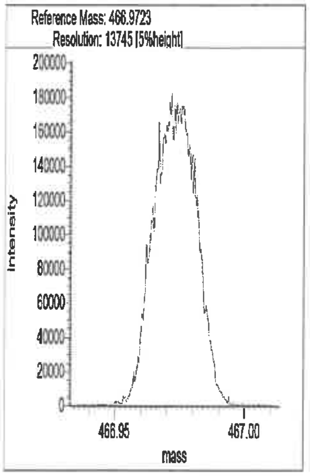

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13264 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 13439 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 13295 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 13693 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 13454 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 13711 [5%height]

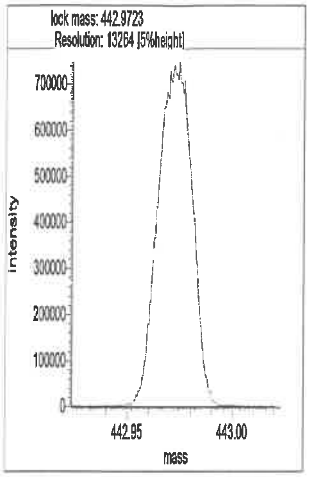
lock mass: 442.9723
Resolution: 13264 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

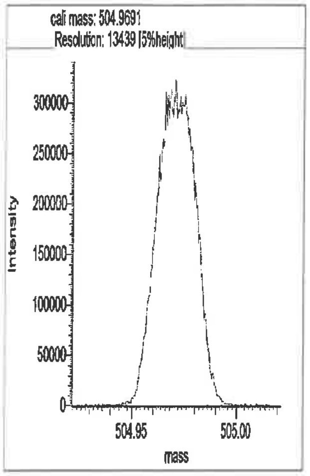
cali mass: 504.9691
Resolution: 13439 [5%height]
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

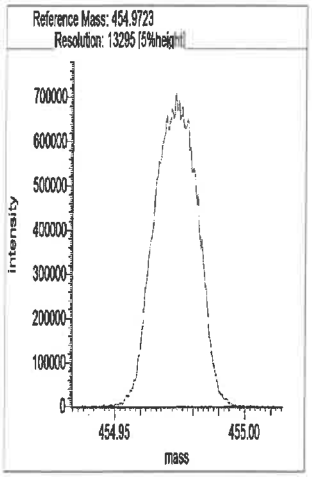
Reference Mass: 454.9723
Resolution: 13295 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

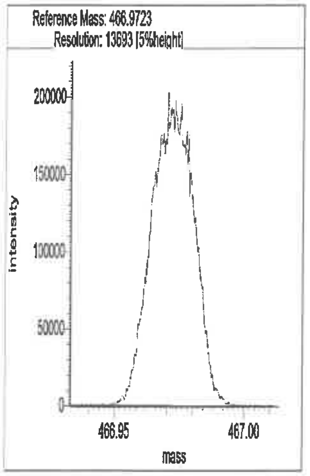
Reference Mass: 466.9723
Resolution: 13693 [5%height]
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100000
50000
0
intensity
466.95
467.00
mass

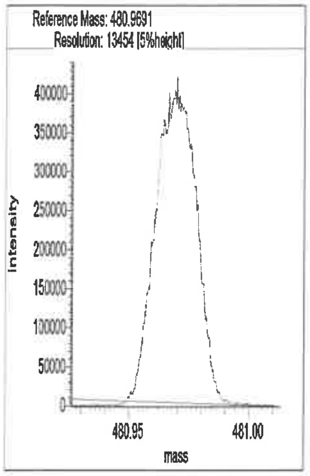
Reference Mass: 480.9691
Resolution: 13454 [5%height]
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150000
100000
50000
0
intensity
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481.00
mass

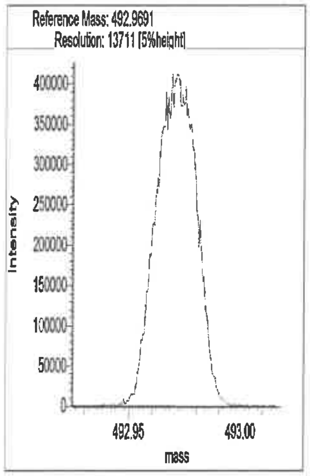
Reference Mass: 492.9691
Resolution: 13711 [5%height]
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300000
250000
200000
150000
100000
50000
0
intensity
492.95
493.00
mass

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Oct-2020 14:03:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 10:45:46 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 10:38:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.631	1270071	0.80	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.738	2099768	0.84	1.5883	104.1	104.1	0.7929	0.7929	104	
2,3,7,8-TCDF	18.746	249337	0.78	1.0857	10.9	10.9	0.1221	0.1221	109	
A Non-2,3,7,8-sub-TCDF	18.359						0.1221	0.1221		
S Total TCDF					10.9	10.9	0.1221	0.1221		
D 13C-2,3,7,8-TCDD	19.965	1309016	0.82	1.1194	92.1	92.1	0.7333	0.7333	92.07	
$ 37Cl4-2,3,7,8-TCDD	19.991	142473		1.1468	9.782	9.782	0.0323	0.0323	97.82	
2,3,7,8-TCDD	20.000	153804	0.85	1.0810	10.9	10.9	0.1405	0.1405	109	
A Non-2,3,7,8-sub-TCDD	19.141						0.1405	0.1405		
S Total TCDD					10.9	10.9	0.1405	0.1405		
D 13C-1,2,3,7,8-PeCDF	25.859	1699884	1.64	1.4782	90.5	90.5	0.4359	0.4359	90.54	
1,2,3,7,8-PeCDF	25.876	924417	1.58	1.0547	51.6	51.6	0.2707	0.2707	103	
D 13C-2,3,4,7,8-PeCDF	27.275	1557292	1.59	1.3912	88.1	88.1	0.4632	0.4632	88.14	
2,3,4,7,8-PeCDF	27.300	892064	1.60	1.1035	51.9	51.9	0.3037	0.3037	104	
A F1 PeCDFs	23.029	59	1.55	1.0791	0.3220	0.003357	0.0338	0.0338	0.00	RQ
A Non-2,3,7,8-sub-PeCDF	26.465						0.2857	0.2857		
S Total PeCDF					103.8	103.5	0.2872	0.2872		RQ
D 13C-1,2,3,7,8-PeCDD	28.033	1001242	1.59	0.9415	83.7	83.7	0.2908	0.2908	83.74	
1,2,3,7,8-PeCDD	28.058	537982	1.58	1.0680	50.3	50.3	0.1648	0.1648	101	
A Non-2,3,7,8-sub-PeCDD	26.926						0.1648	0.1648		
S Total PeCDD					50.3	50.3	0.1648	0.1648		
D 13C-1,2,3,4,7,8-HxCDF	33.776	1205334	0.53	1.1378	105.3	105.3	0.5798	0.5798	105	
1,2,3,4,7,8-HxCDF	33.802	834181	1.29	1.2643	54.7	54.7	0.3435	0.3435	109	
D 13C-1,2,3,6,7,8-HxCDF	33.979	1444823	0.52	1.3173	109.0	109.0	0.5008	0.5008	109	
1,2,3,6,7,8-HxCDF	33.995	979108	1.28	1.2230	55.4	55.4	0.2909	0.2909	111	
D 13C-2,3,4,6,7,8-HxCDF	34.939	1398163	0.56	1.2457	111.6	111.6	0.5295	0.5295	112	
2,3,4,6,7,8-HxCDF	34.948	932773	1.31	1.2464	53.5	53.5	0.2451	0.2451	107	
D 13C-1,2,3,7,8,9-HxCDF	35.925	1288861	0.56	1.1840	108.2	108.2	0.5571	0.5571	108	
1,2,3,7,8,9-HxCDF	35.942	860389	1.31	1.2638	52.8	52.8	0.2538	0.2538	106	
A Non-2,3,7,8-sub-HxCDF	33.797						0.2783	0.2783		
S Total HxCDF					216.5	216.5	0.2833	0.2833		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.715	1005832	1.26	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.175	815751	1.25	0.8477	95.7	95.7	0.3845	0.3845	95.67	
1,2,3,4,7,8-HxCDD	35.200	482437	1.23	1.1561	51.2	51.2	0.1444	0.1444	102	
D 13C-1,2,3,6,7,8-HxCDD	35.310	990135	1.27	0.9979	98.7	98.7	0.3267	0.3267	98.65	
1,2,3,6,7,8-HxCDD	35.327	519223	1.29	1.0284	51.0	51.0	0.1385	0.1385	102	
1,2,3,7,8,9-HxCDD	35.740	554953	1.31	1.1789	52.1	52.1	0.1304	0.1304	104	
A Non-2,3,7,8-sub-HxCDD	34.320						0.1371	0.1371		
S Total HxCDD					154.3	154.3	0.1377	0.1377		
D 13C-1,2,3,4,6,7,8-HpCDF	37.891	1019458	0.44	0.9884	102.5	102.5	0.7726	0.7726	103	
1,2,3,4,6,7,8-HpCDF	37.908	789348	1.05	1.5064	51.4	51.4	0.2477	0.2477	103	
D 13C-1,2,3,4,7,8,9-HpCDF	39.214	1031361	0.45	0.9203	111.4	111.4	0.8297	0.8297	111	
1,2,3,4,7,8,9-HpCDF	39.223	756046	1.04	1.4548	50.4	50.4	0.2288	0.2288	101	
A Non-2,3,7,8-sub-HpCDF	38.563						0.2377	0.2377		
S Total HpCDF					101.8	101.8	0.2383	0.2383		
D 13C-1,2,3,4,6,7,8-HpCDD	38.902	1015488	1.09	0.9556	105.6	105.6	0.3792	0.3792	106	
1,2,3,4,6,7,8-HpCDD	38.910	553836	1.02	1.0640	51.3	51.3	0.1243	0.1243	103	
A Non-2,3,7,8-sub-HpCDD	38.941						0.1243	0.1243		
S Total HpCDD					51.3	51.3	0.1243	0.1243		
D 13C-OCDD	41.349	1770007	0.92	0.7420	237.1	237.1	0.4018	0.4018	119	
OCDF	41.433	1502471	0.93	1.4296	118.8	118.8	0.1789	0.1789	119	
OCDD	41.357	1009389	0.90	1.1293	101.0	101.0	0.1387	0.1387	101	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Oct-2020 14:03:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 10:45:46 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 10:38:06

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.631	19.631	0		566426	86976	491	1227	177		
333.9338	19.631	19.631	0		703645	107333	147	367	730	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.738	18.738	0	0.955	955582	150050	689	1722	218		
317.9389	18.738	18.738	0	0.955	1144186	179621	290	725	619	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.746	18.746	0	1.000	109635	15653	71	177	220		
305.8987	18.755	18.746	1	1.001	139702	20545	104	260	198	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.359						71	177			
305.8987	18.359						104	260			
13C-2,3,7,8-TCDD											
331.9368	19.965	19.965	0	1.017	590610	82570	491	1227	168		
333.9338	19.974	19.965	1	1.017	718406	106429	147	367	724	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.991	19.991	0	1.018	142473	20369	29	72	702		
2,3,7,8-TCDD											
319.8965	20.000	20.000	0	1.002	70520	10500	85	212	124		
321.8936	20.000	20.000	0	1.002	83284	12296	30	75	410	0.85(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.141						85	212			
321.8936	19.141						30	75			
13C-1,2,3,7,8-PeCDF											
351.9000	25.859	25.859	0	1.317	1056010	182980	307	767	596		
353.8970	25.859	25.859	0	1.317	643874	113035	194	485	583	1.64(1.32-1.78)	

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.876	25.876	0	1.001	566658	94704	169	422	560		
341.8567	25.876	25.876	0	1.001	357759	58783	169	422	348	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.275	27.275	0	1.389	955554	154963	307	767	505		
353.8970	27.275	27.275	0	1.389	601738	97175	194	485	501	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.300	27.300	0	1.001	548860	84978	169	422	503		
341.8567	27.300	27.300	0	1.001	343204	54259	169	422	321	1.60(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	22.997	23.029	-2	0.889	36	14	3	7	5		
341.8567	23.014	23.029	-1	0.890	5622	611	37	92	17	0.01(1.32-1.78)	
	Empc Correction				23	9	37	92	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.465						169	422			
341.8567	26.465						169	422			
13C-1,2,3,7,8-PeCDD											
367.8949	28.033	28.033	0	1.428	613915	94291	127	317	742		
369.8919	28.033	28.033	0	1.428	387327	61943	86	215	720	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.058	28.058	0	1.001	329562	49629	75	187	662		
357.8516	28.058	28.058	0	1.001	208420	30993	35	87	886	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.926						75	187			
357.8516	26.926						35	87			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.776	33.776	0	0.946	418180	75036	214	535	351		
385.8610	33.776	33.776	0	0.946	787154	141387	403	1007	351	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.802	33.802	0	1.001	469886	87549	219	547	400		
375.8178	33.793	33.802	-1	1.000	364295	66553	157	392	424	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.979	33.979	0	0.951	497112	88920	214	535	416		
385.8610	33.970	33.979	-1	0.951	947711	175291	403	1007	435	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.995	33.995	0	1.000	550052	94023	219	547	429		
375.8178	33.995	33.995	0	1.000	429056	73403	157	392	468	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.939	34.939	0	0.978	499520	110386	214	535	516		
385.8610	34.939	34.939	0	0.978	898643	197257	403	1007	489	0.56(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.948	34.948	0	1.000	528822	109831	219	547	502		
375.8178	34.948	34.948	0	1.000	403951	86059	157	392	548	1.31(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.925	35.925	0	1.006	461842	102194	214	535	478		
385.8610	35.925	35.925	0	1.006	827019	190858	403	1007	474	0.56(0.43-0.59)	

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.942	35.942	0	1.000	488710	108054	219	547	493		
375.8178	35.942	35.942	0	1.000	371679	83951	157	392	535	1.31(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.797						219	547			
375.8178	33.797						157	392			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.715	35.715	0		560988	131458	172	430	764		
403.8529	35.715	35.715	0		444844	102304	133	332	769	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.175	35.175	0	0.985	452692	106914	172	430	622		
403.8529	35.184	35.175	1	0.985	363059	84824	133	332	638	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.200	35.200	0	1.001	265991	60025	64	160	938		
391.8127	35.192	35.200	-1	1.000	216446	50130	64	160	783	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.310	35.310	0	0.989	553084	125735	172	430	731		
403.8529	35.310	35.310	0	0.989	437051	98945	133	332	744	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.327	35.327	0	1.000	292224	64843	64	160	1013		
391.8127	35.327	35.327	0	1.000	226999	49482	64	160	773	1.29(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.740	35.740	0	1.016	314524	71245	64	160	1113		
391.8127	35.732	35.740	-1	1.016	240429	55132	64	160	861	1.31(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.320						64	160			
391.8127	34.320						64	160			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.891	37.891	0	1.061	313676	88133	227	567	388		
419.8220	37.891	37.891	0	1.061	705782	199911	487	1217	410	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.908	37.908	0	1.000	404308	113815	233	582	488		
409.7788	37.899	37.908	-1	1.000	385040	104416	197	492	530	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.214	39.214	0	1.098	320100	99165	227	567	437		
419.8220	39.214	39.214	0	1.098	711261	223818	487	1217	460	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.223	39.223	0	1.000	384545	119738	233	582	514		
409.7788	39.223	39.223	0	1.000	371501	114870	197	492	583	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.563						233	582			
409.7788	38.563						197	492			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.902	38.902	0	1.089	529305	154080	165	412	934		
437.8140	38.902	38.902	0	1.089	486183	144606	174	435	831	1.09(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.910	38.910	0	1.000	280328	79318	82	205	967		
425.7737	38.910	38.910	0	1.000	273508	77870	76	190	1025	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						82	205			
425.7737	38.941						76	190			
13C-OCDD											
469.7780	41.349	41.349	0	1.158	848281	241703	157	392	1540		
471.7750	41.349	41.349	0	1.158	921726	262674	122	305	2153	0.92(0.76-1.02)	
OCDF											
441.7428	41.433	41.433	0	1.002	723113	206228	131	327	1574		
443.7399	41.433	41.433	0	1.002	779358	220825	127	317	1739	0.93(0.76-1.02)	
OCDD											
457.7377	41.357	41.357	0	1.000	477783	133953	70	175	1914		
459.7348	41.357	41.357	0	1.000	531606	147886	88	220	1681	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Lims ID:	CCV		
Client ID:			
Inject. Date:	12-Oct-2020 14:03:00	Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	2
Sublist:	chrom-Dioxin_DFS1*sub1		

F1 PeCDFs, RT: 23.029

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	1699884	296015
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	1557292	252138

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	1628588	274076

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.997	36	14	5622	611	0.3220	0.01	RnQ
22.997	36	14	23	9	0.003357		Empc Correction
Signal Totals:							
	36	14	23	9			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5658	625				0.01	RQ
	59	23					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3220 = (5658 * 100.000) / (1628588 * 1.079)
Empc Amount: 0.003357 = (59 * 100.000) / (1628588 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

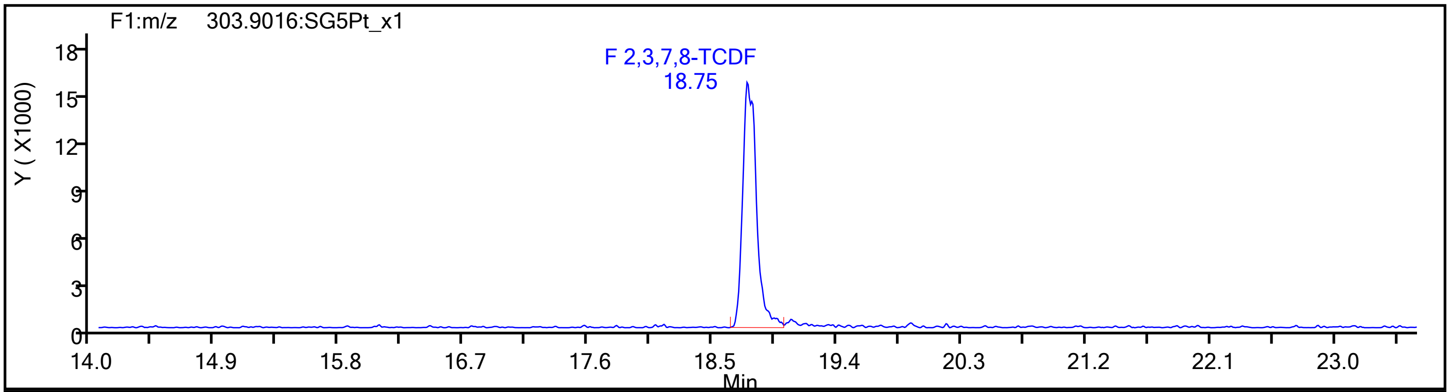

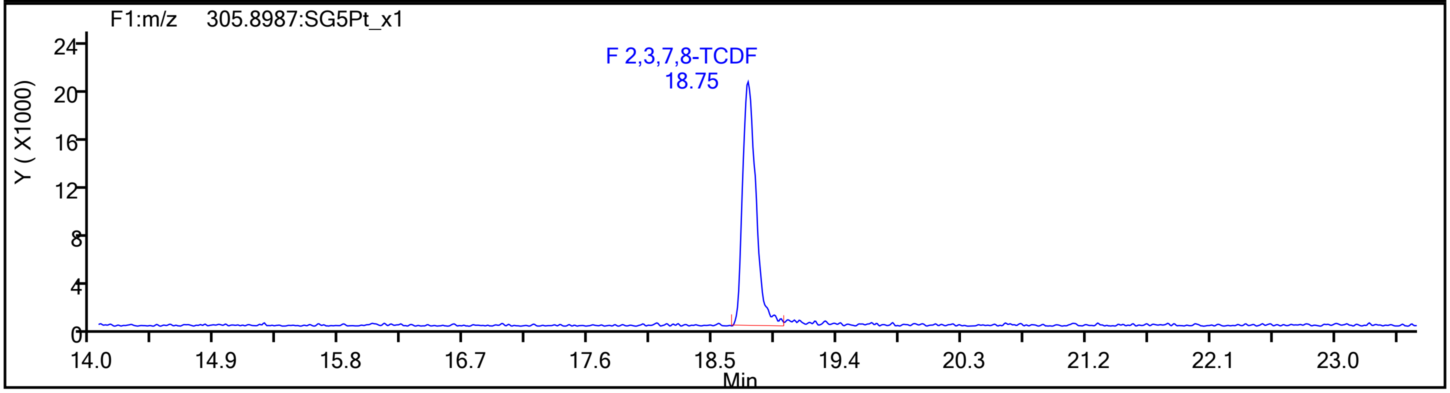

TCDF Standards

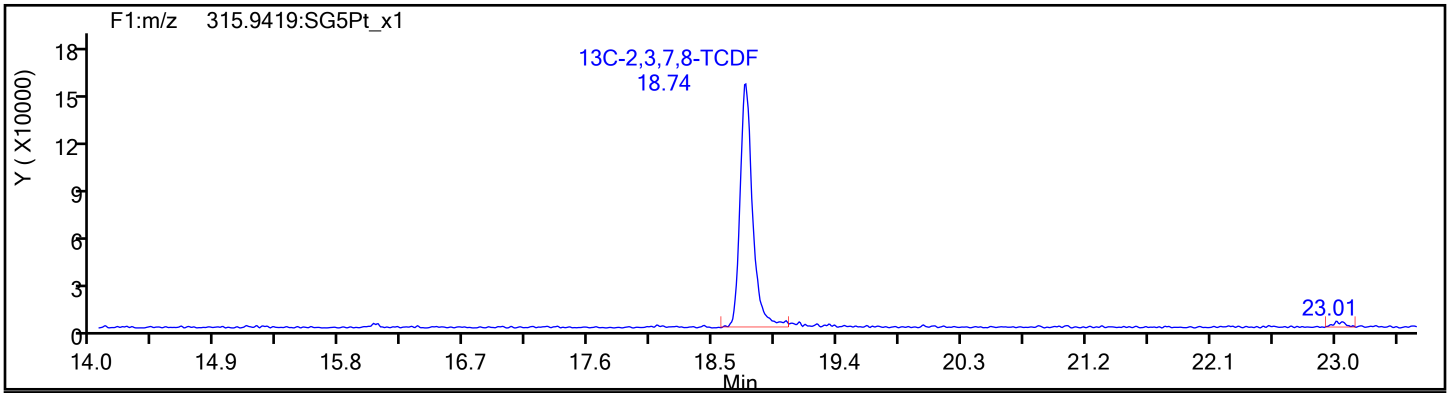

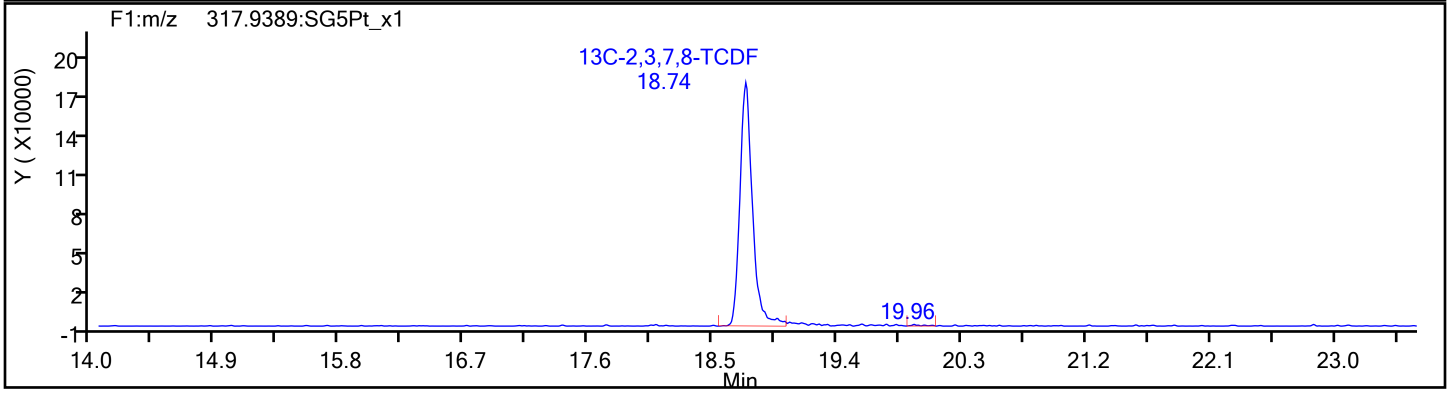

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Injection Date: 12-Oct-2020 14:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421107

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

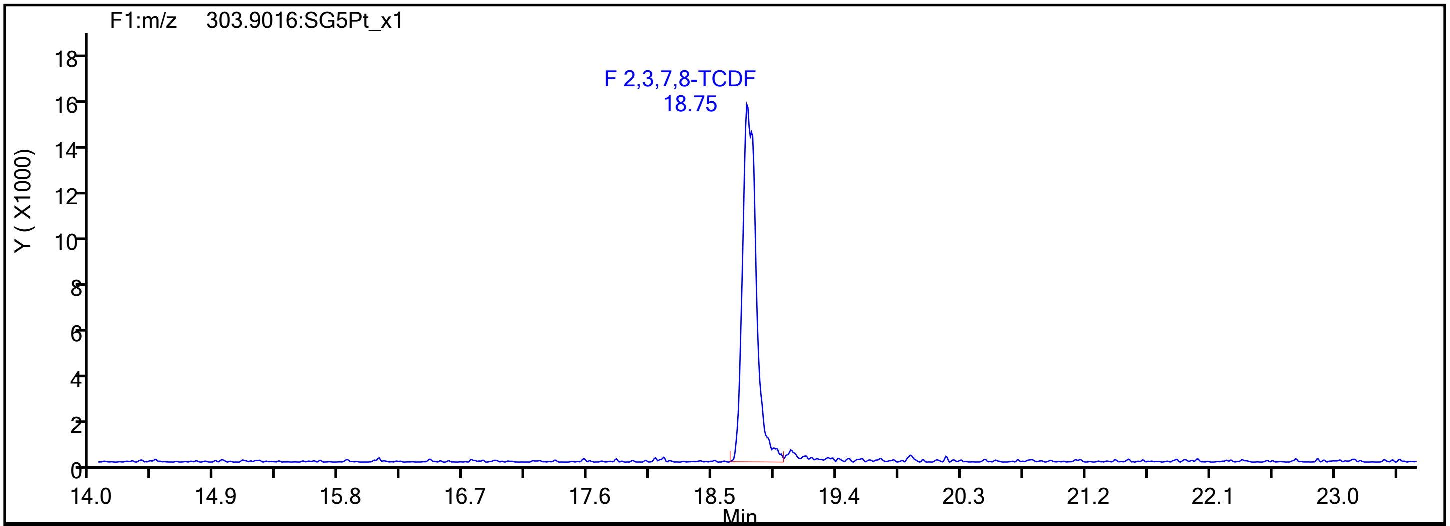

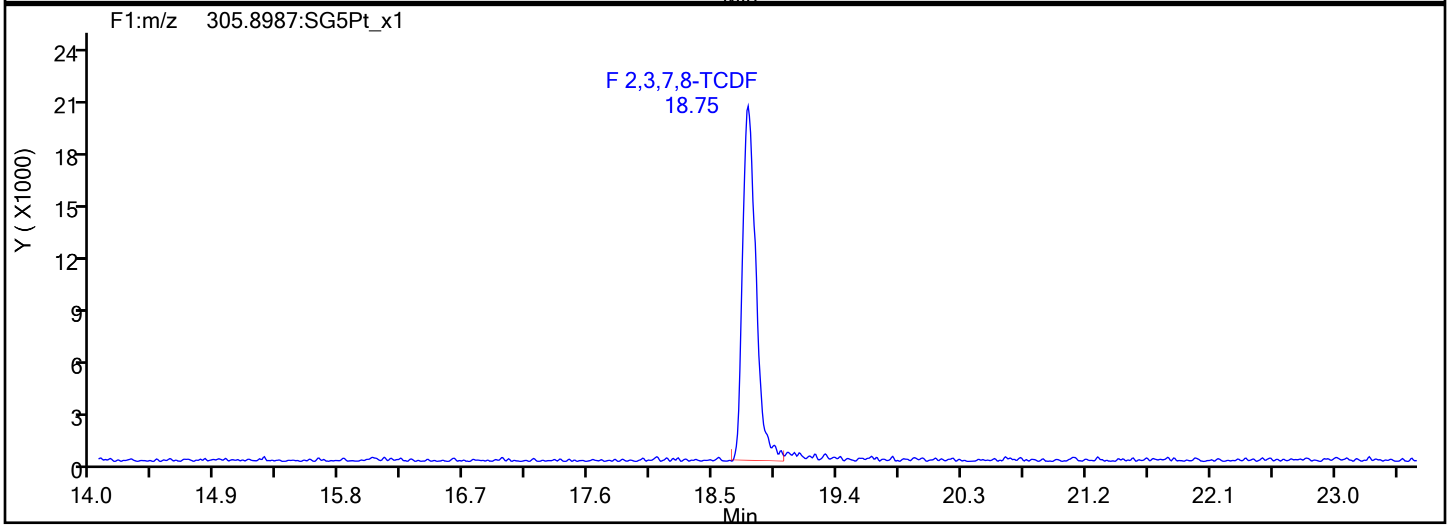

TCDF Interference Mass

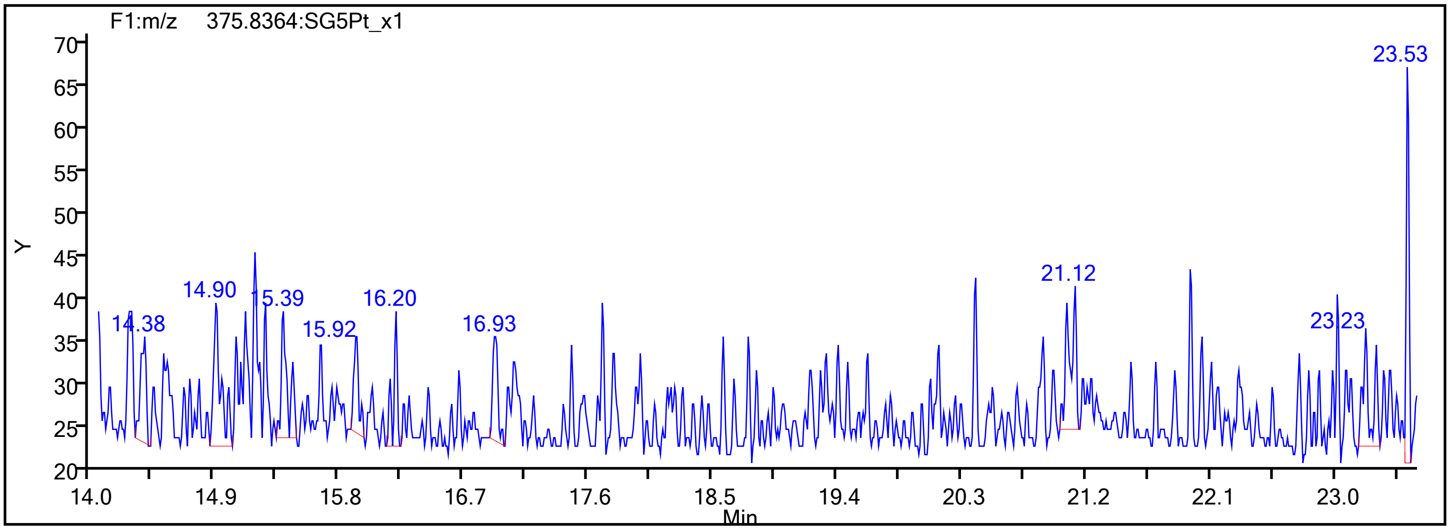

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Injection Date: 12-Oct-2020 14:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

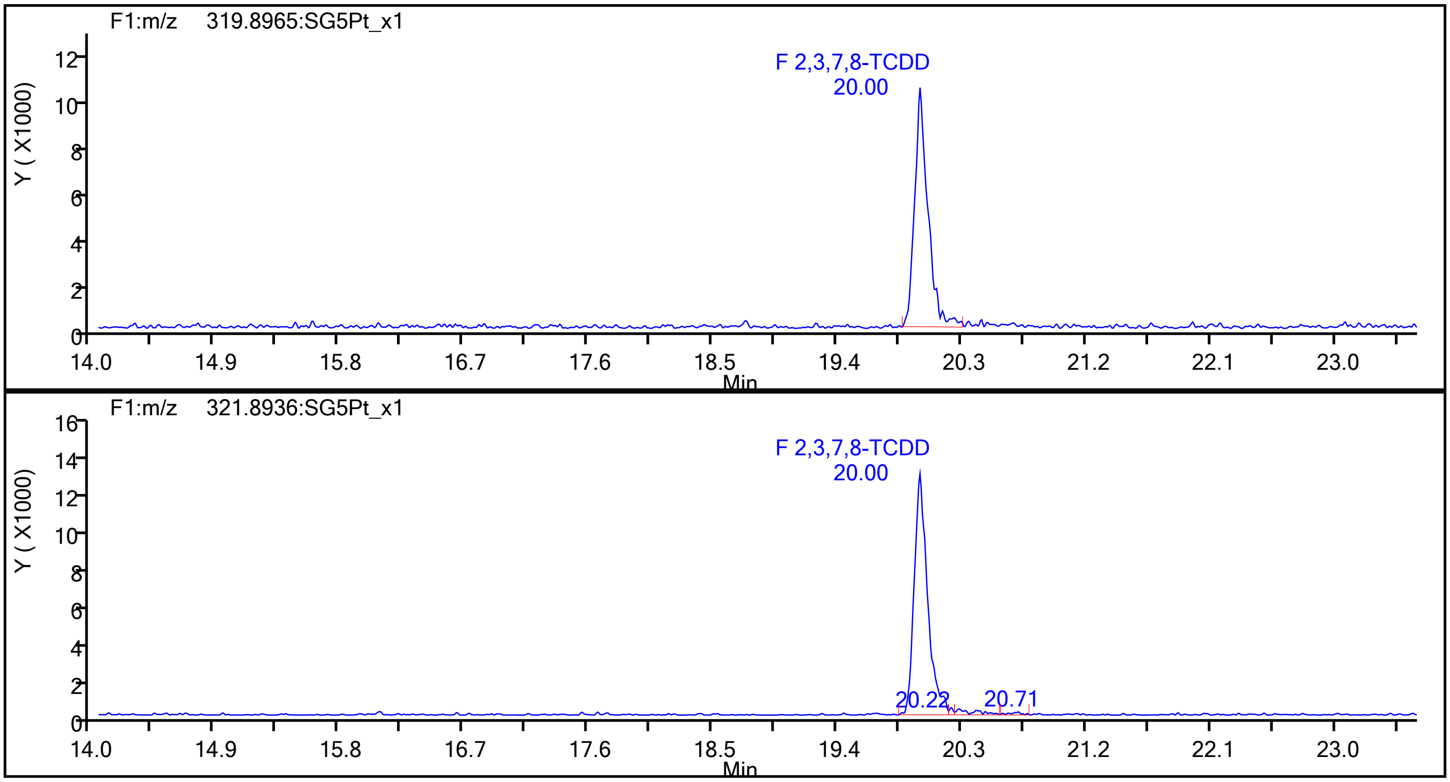

TCDD Standards

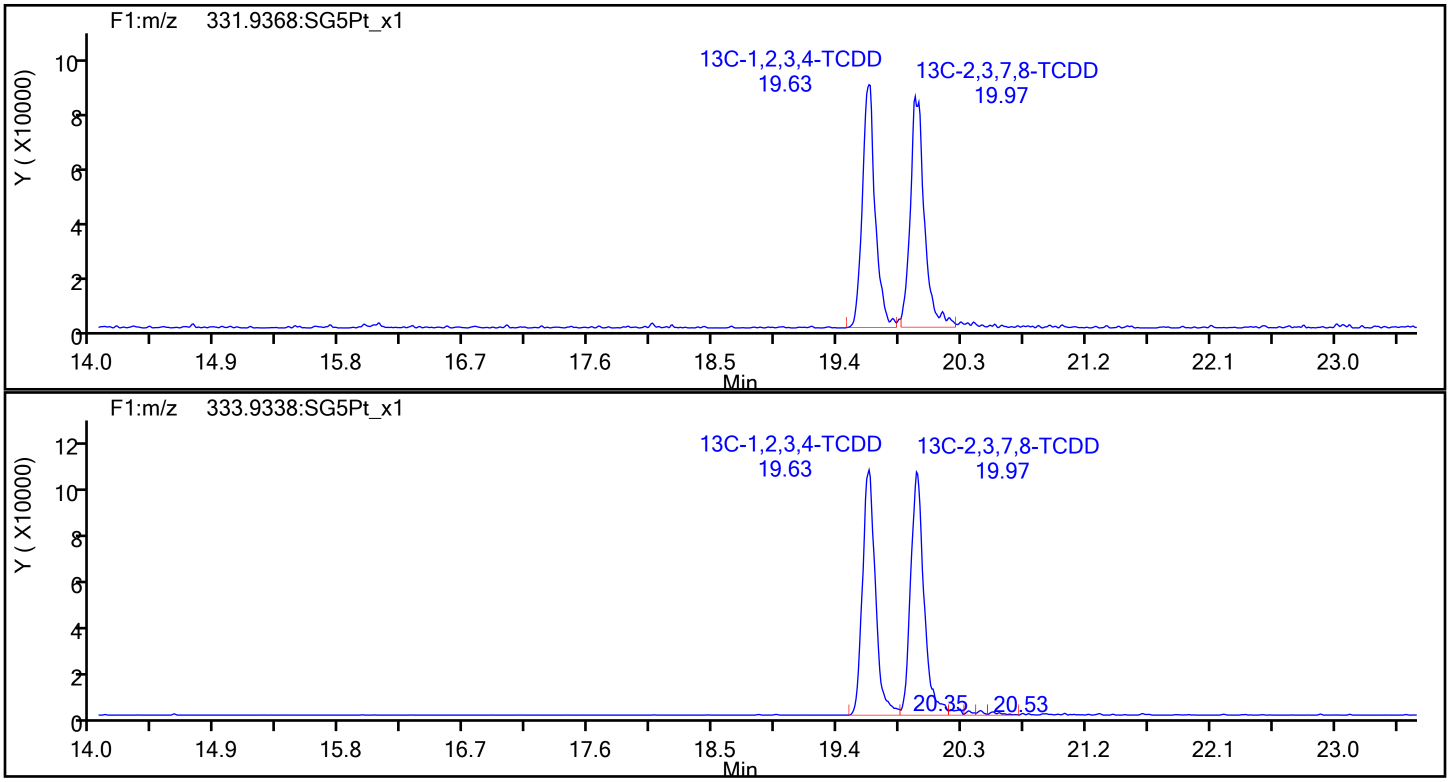

Report Date: 13-Oct-2020 10:45:48
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Injection Date: 12-Oct-2020 14:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

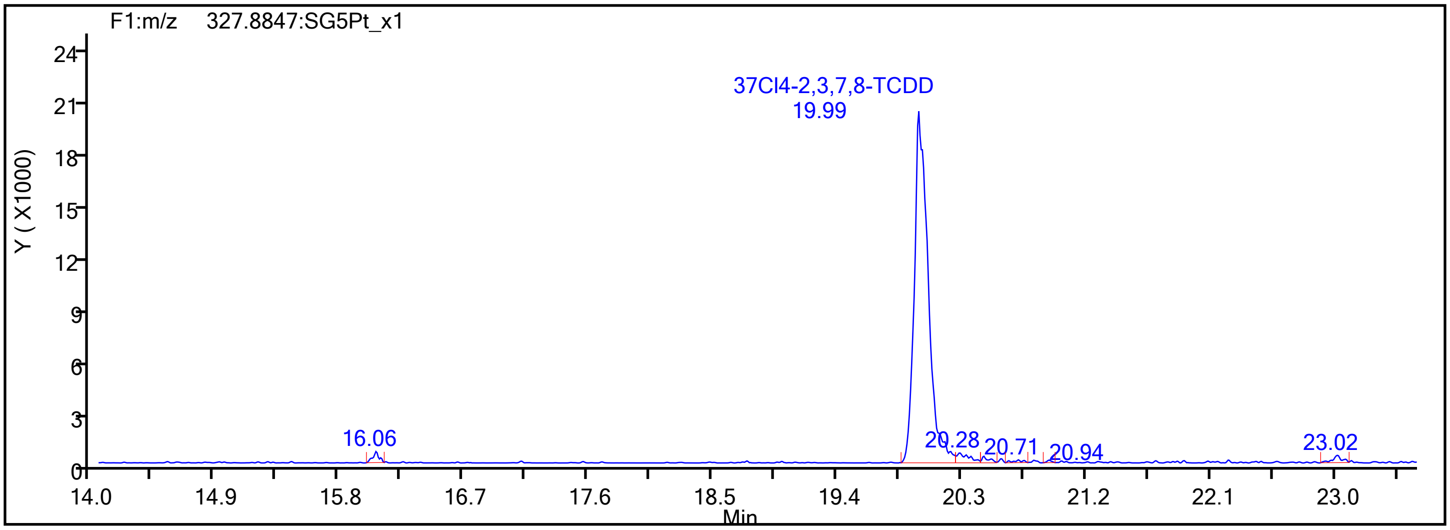

37Cl4-TCDD Standards

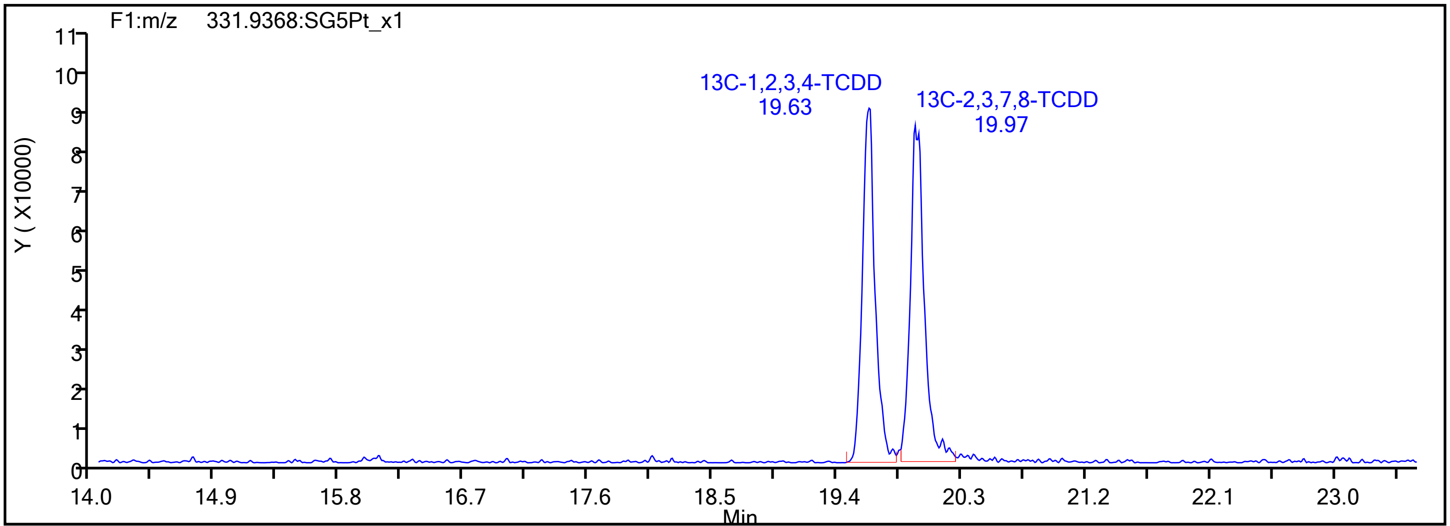

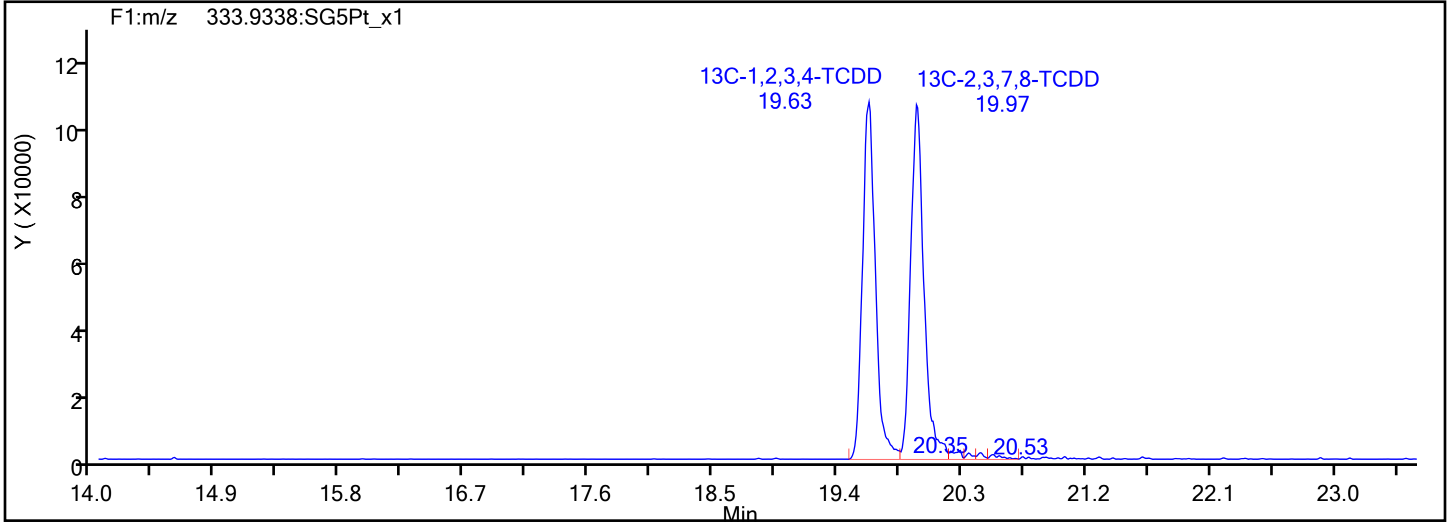

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

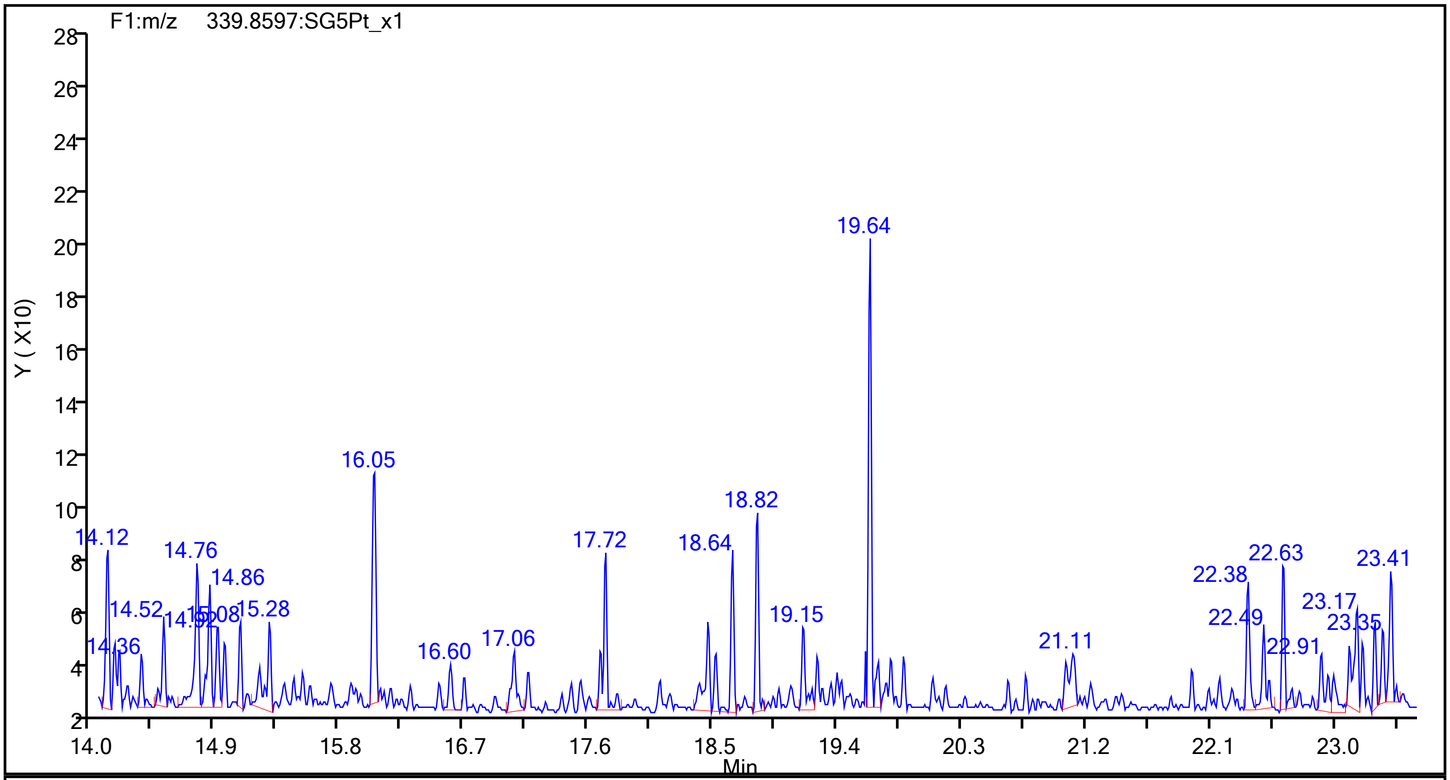

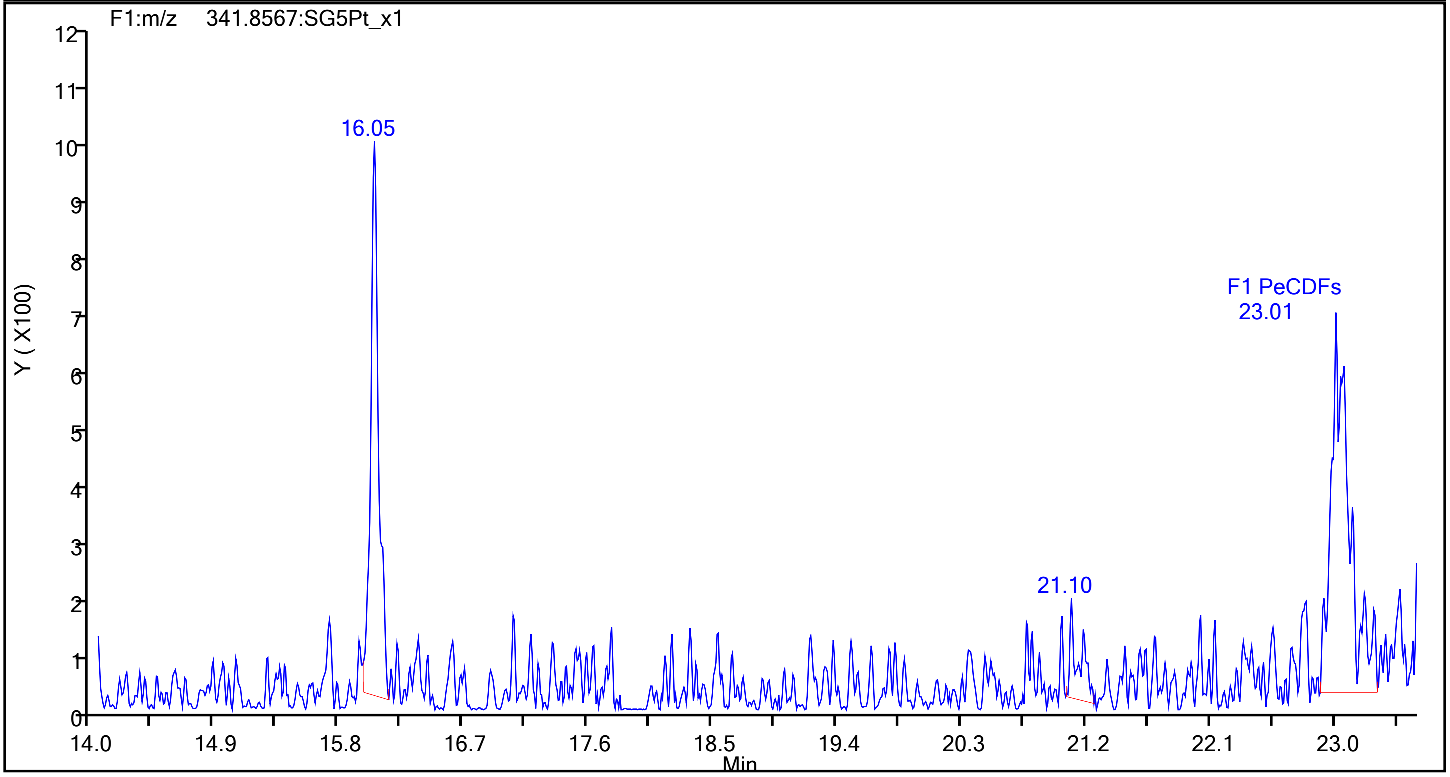

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

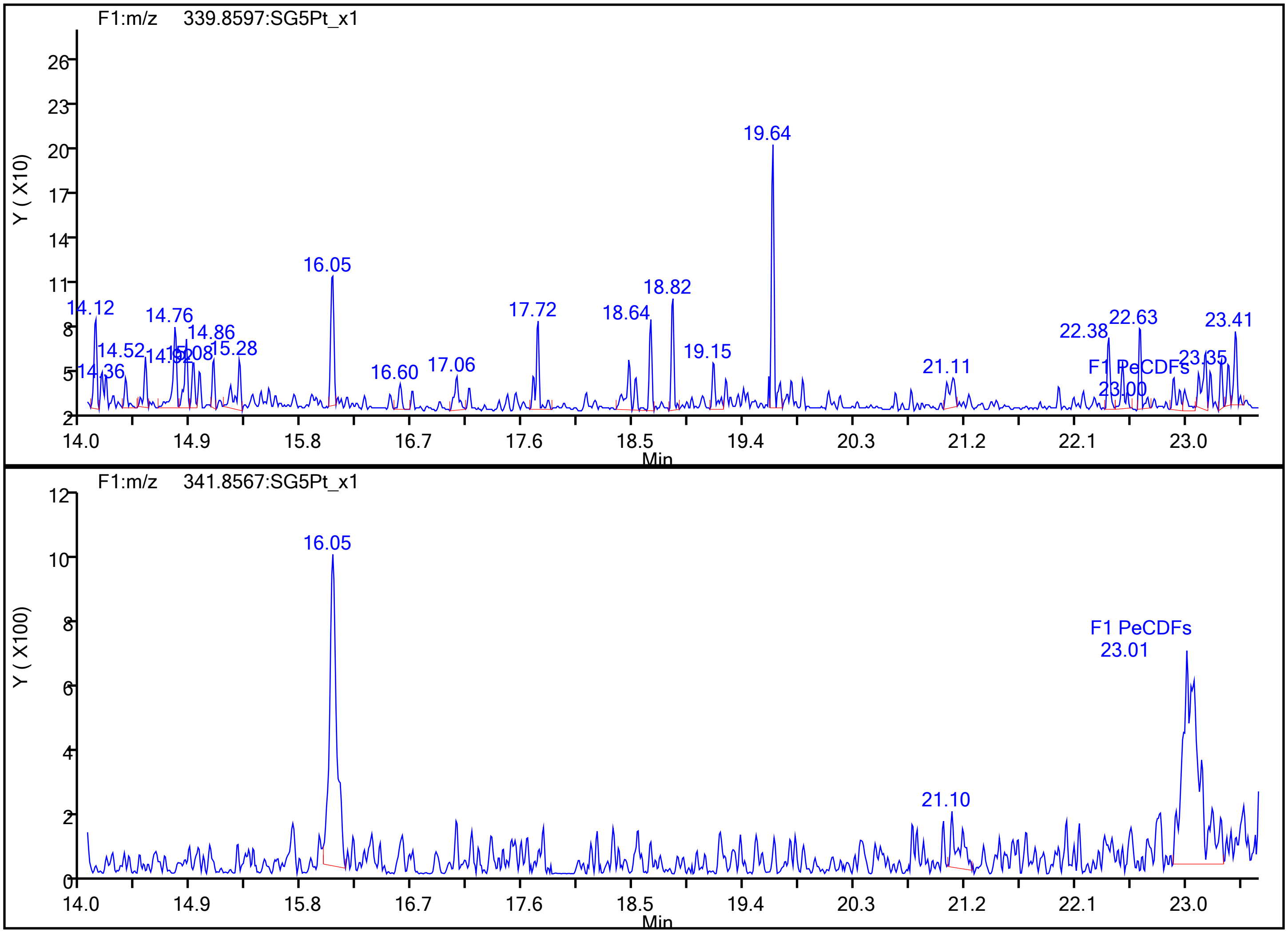

F1 PeCDFs Interference Mass

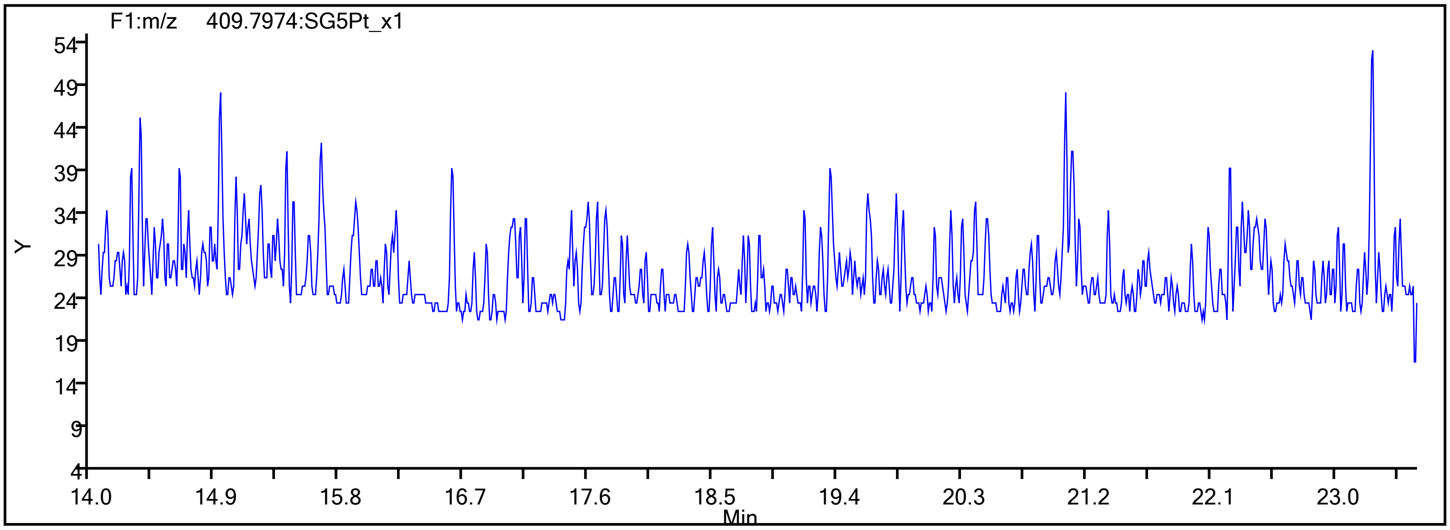

Report Date: 13-Oct-2020 10:45:48 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

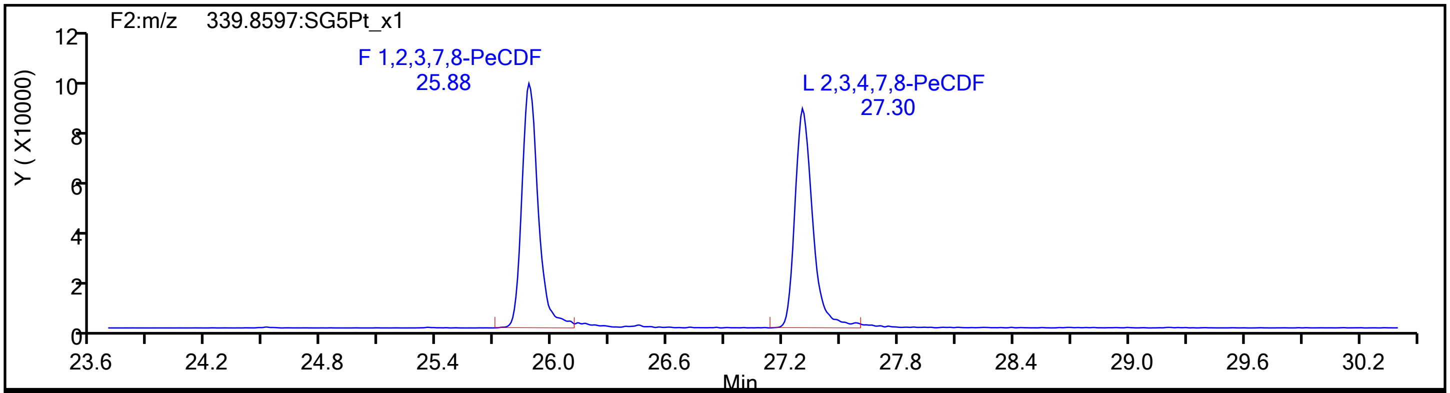

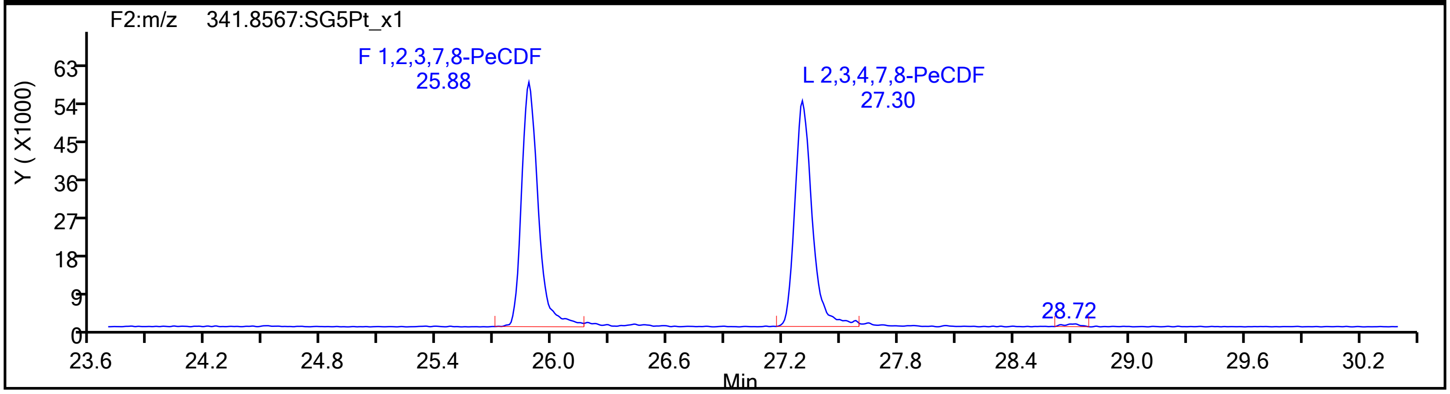

PeCDF Standards

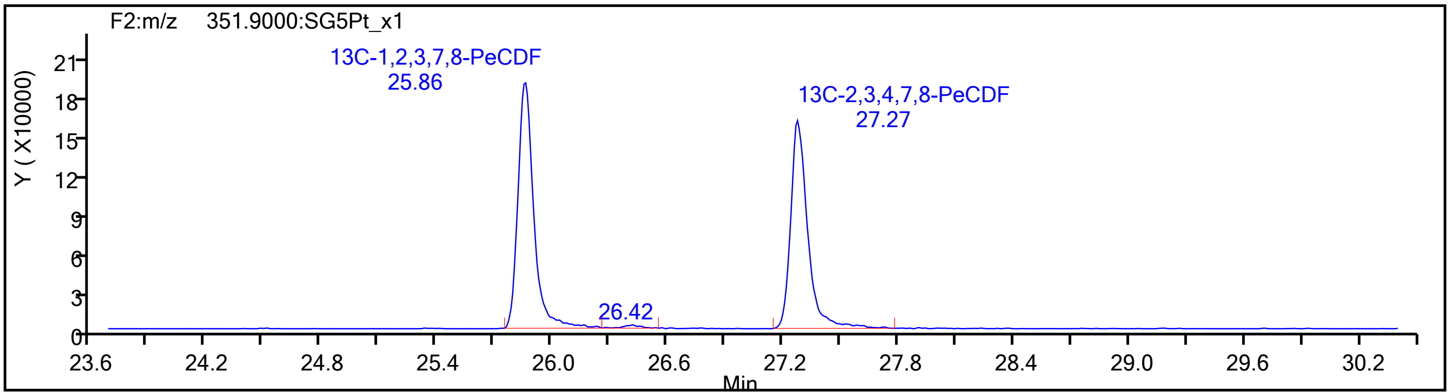

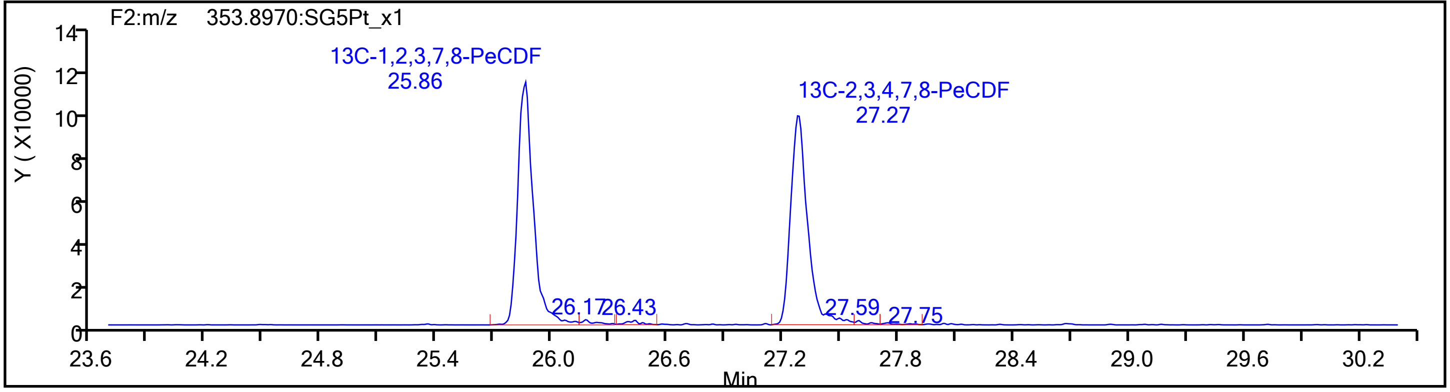

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

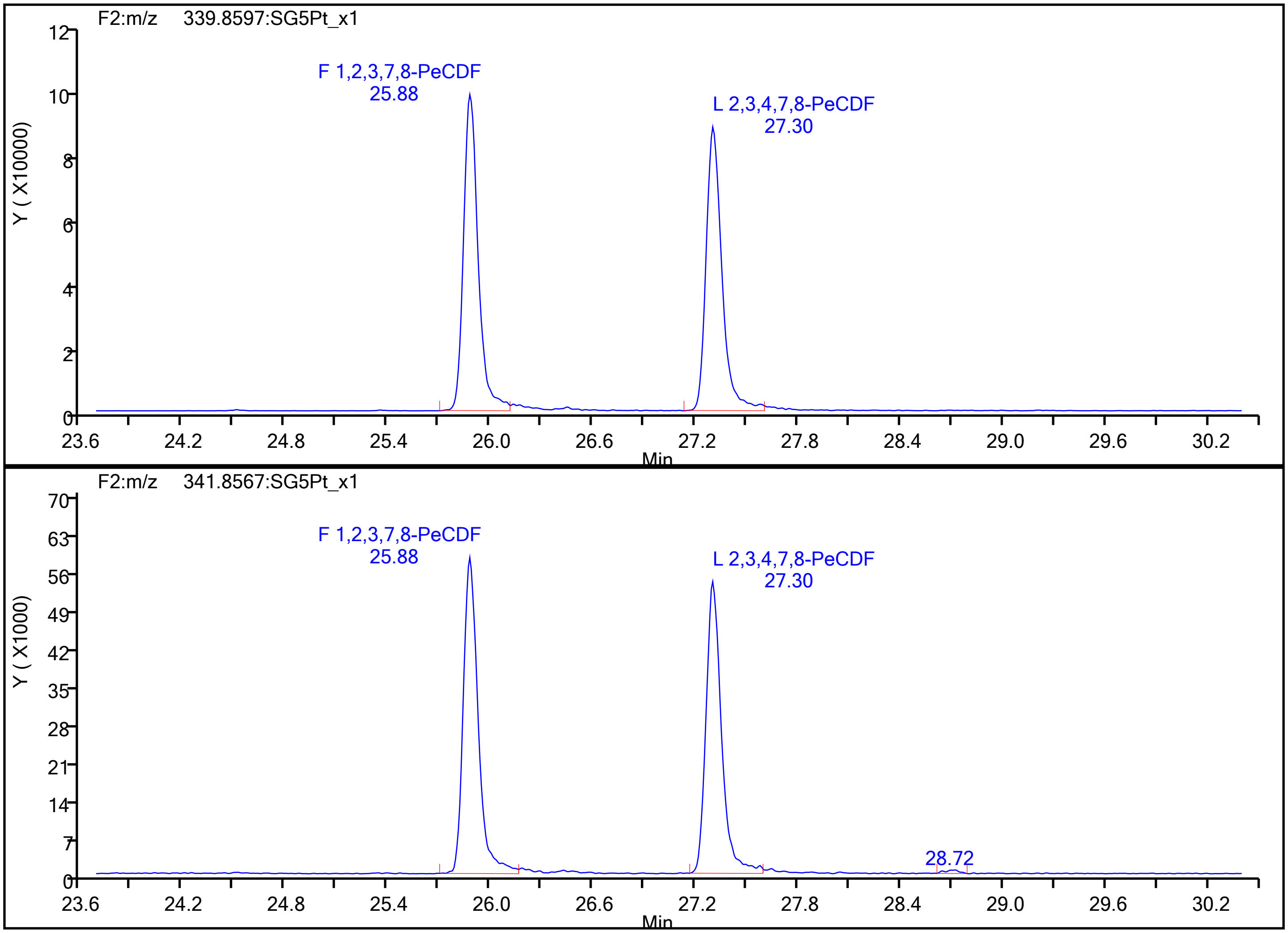

PeCDF Interference Mass

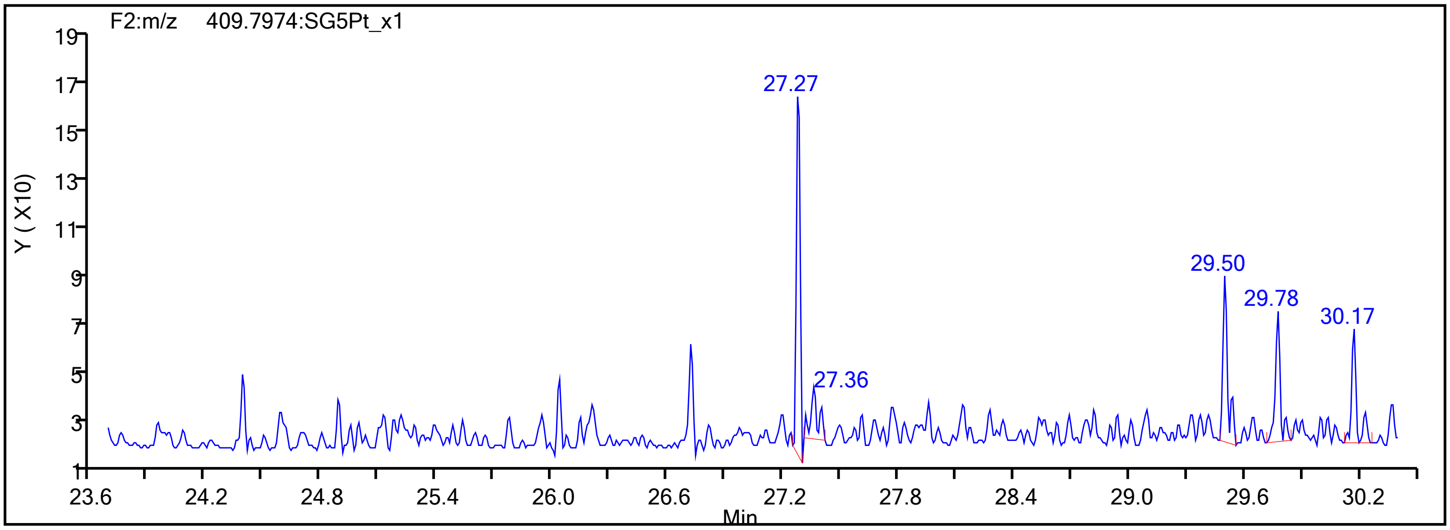

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

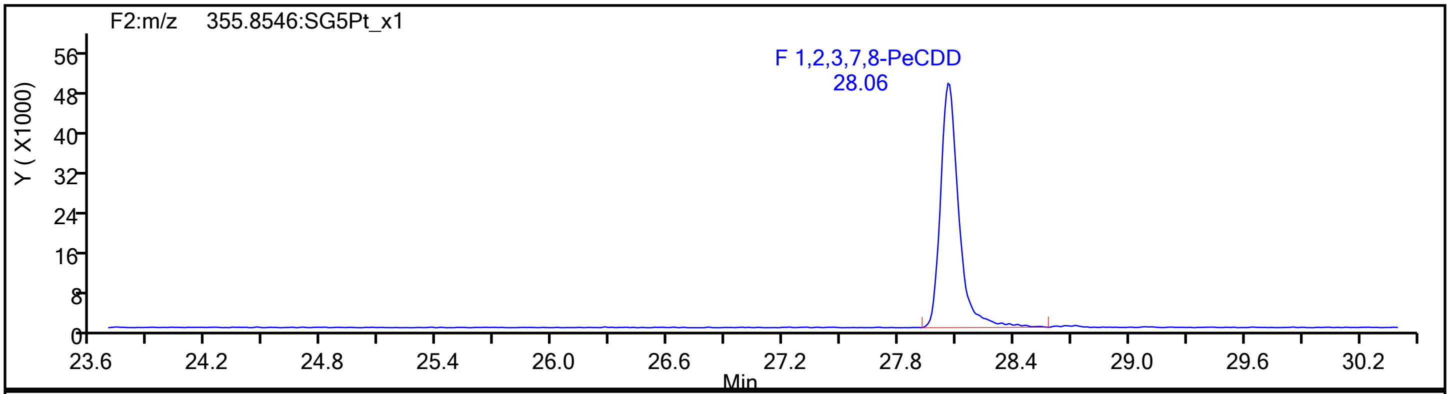

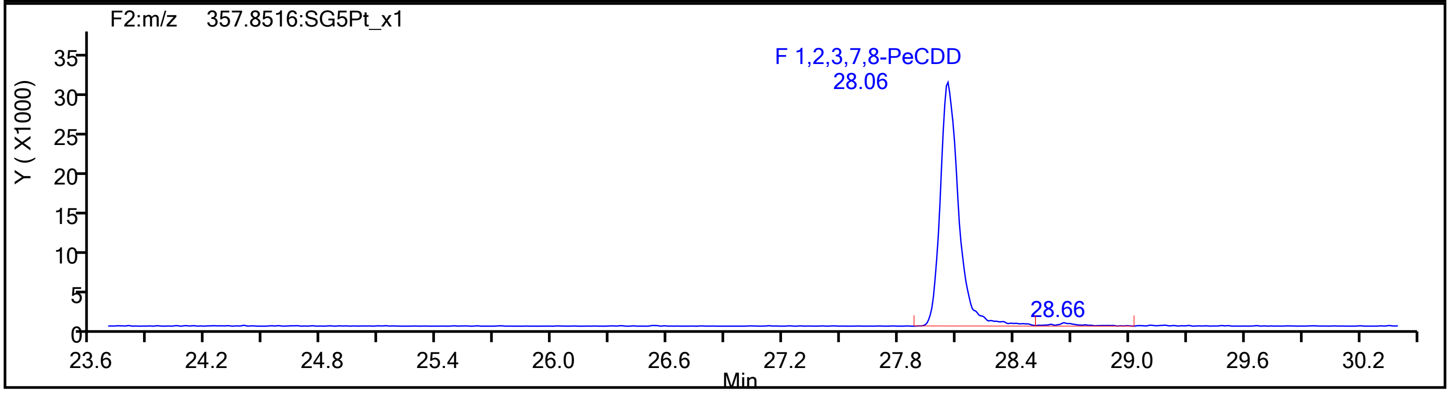

PeCDD Standards

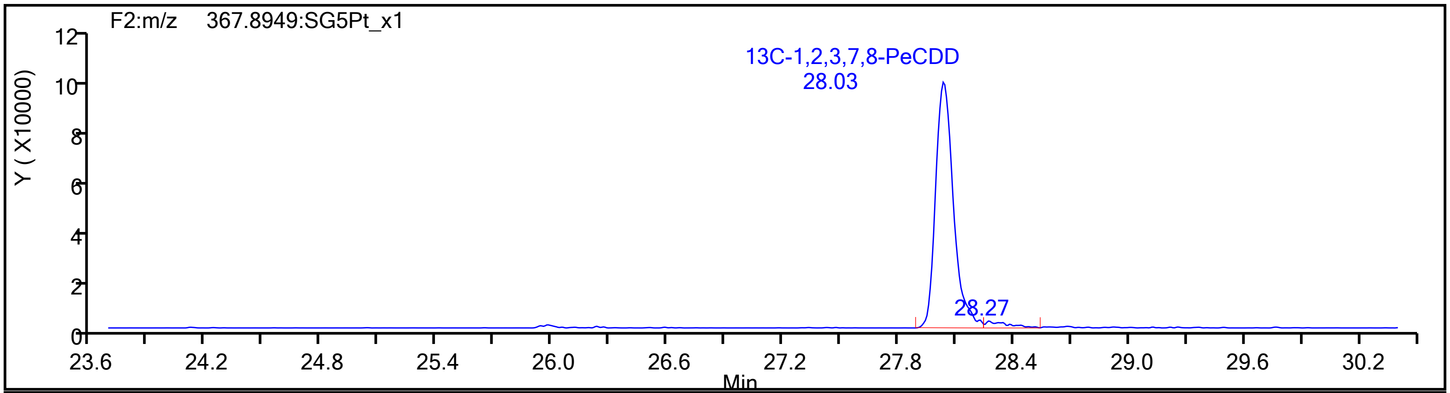

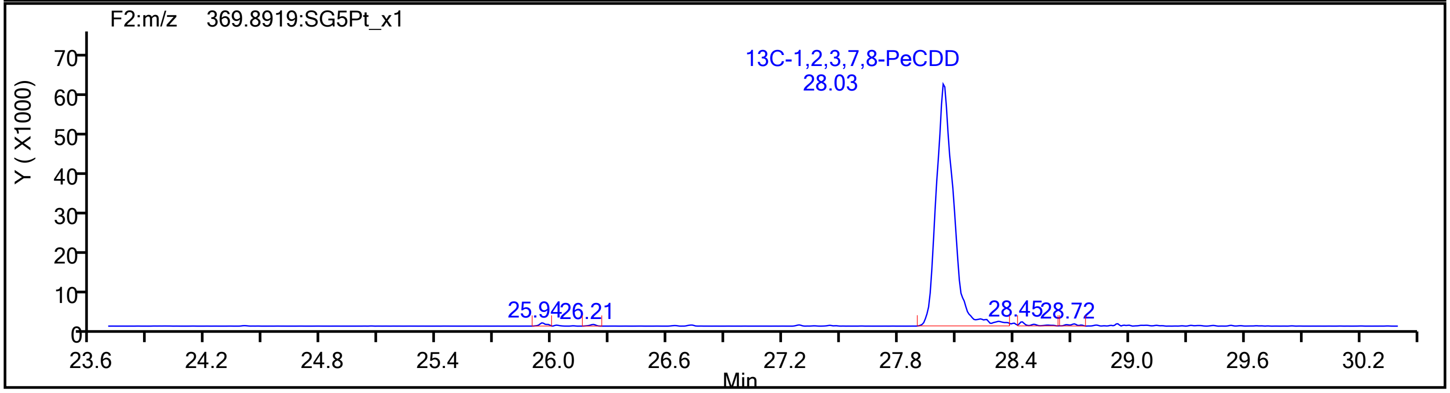

Report Date: 13-Oct-2020 10:45:49   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Injection Date: 12-Oct-2020 14:03:00   Injection Vol: 1.0 ul

Instrument ID: DFS 1   Operator ID: Xcalibur_System

Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421107   Sample Line#: 2

Column Type: DB-5   Column Dia: 0.32 mm

HxCDF

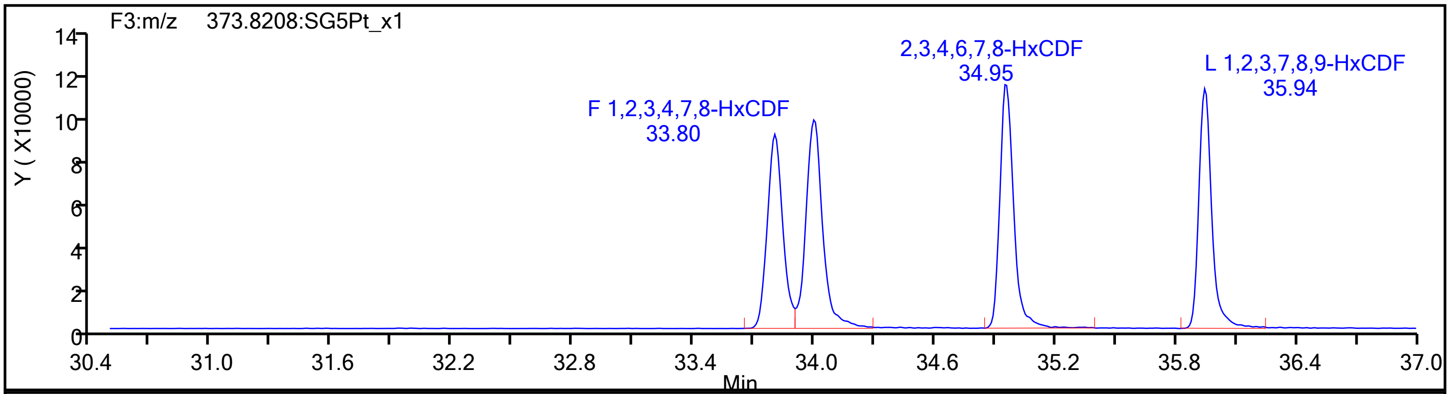

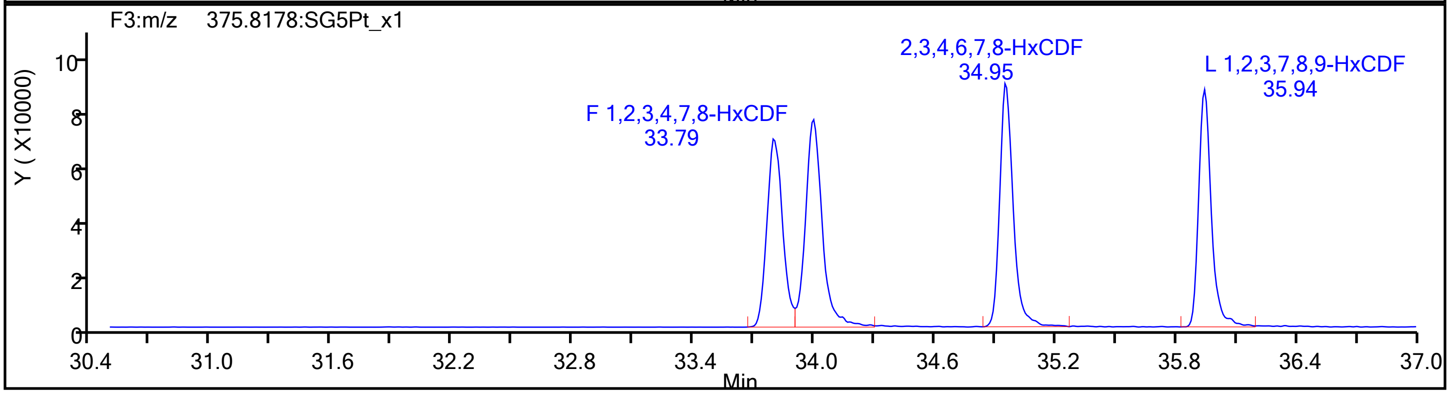

HxCDF Standards

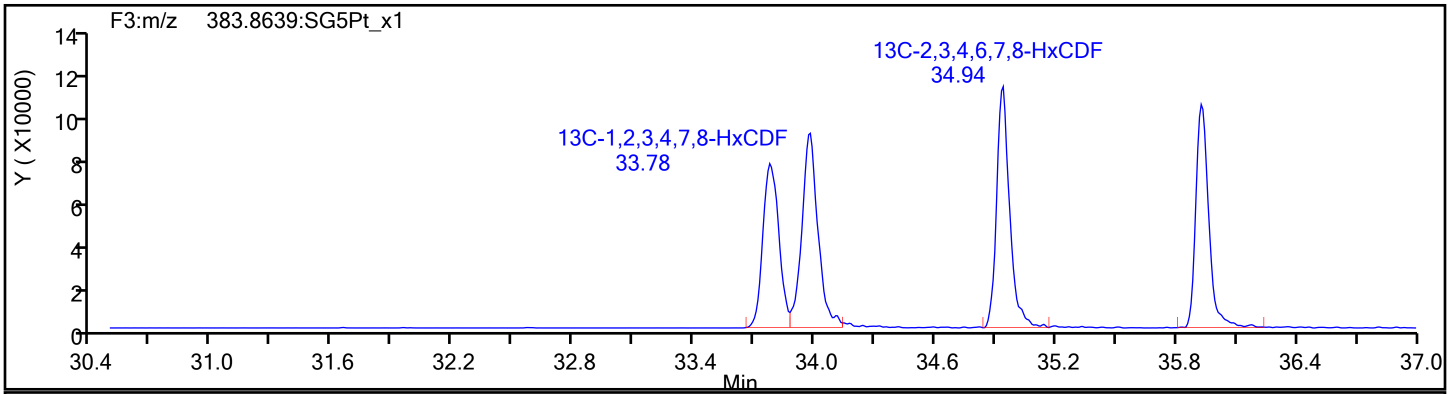

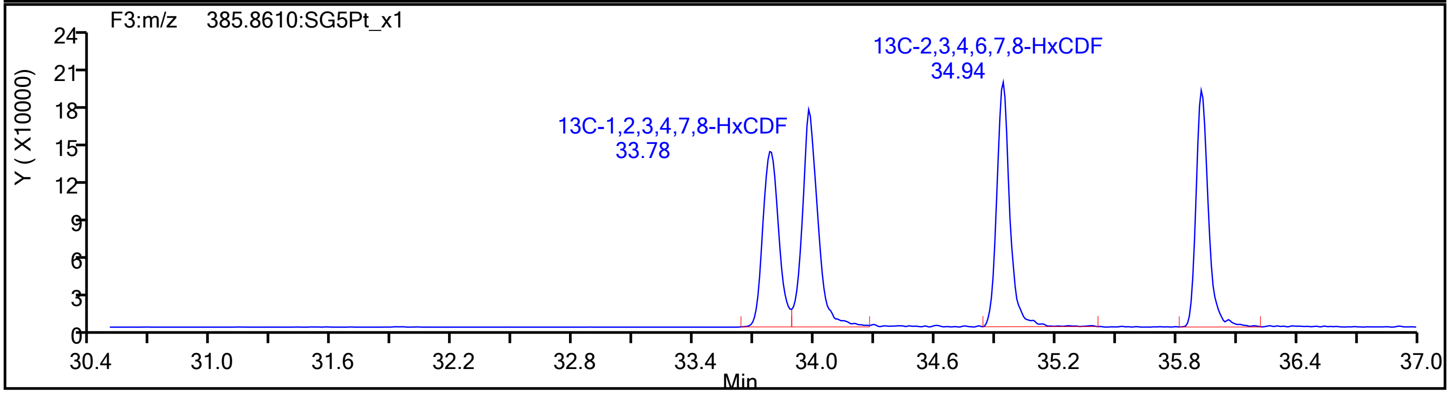

Report Date: 13-Oct-2020 10:45:49   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Injection Date: 12-Oct-2020 14:03:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5   Column Dia: 0.32 mm

HxCDF

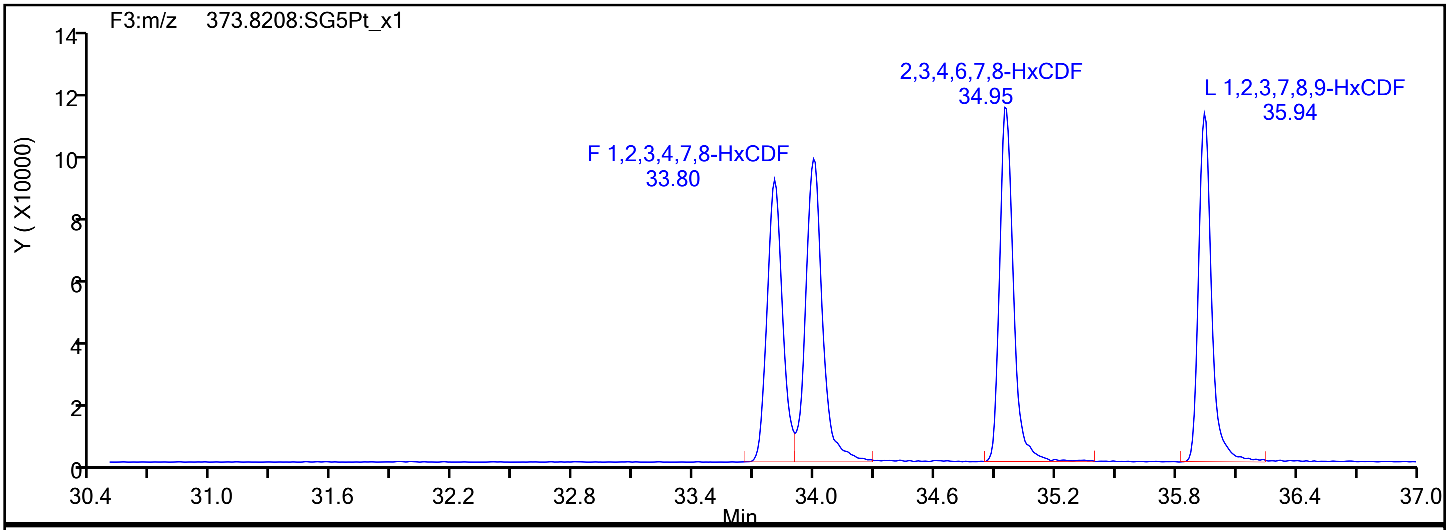

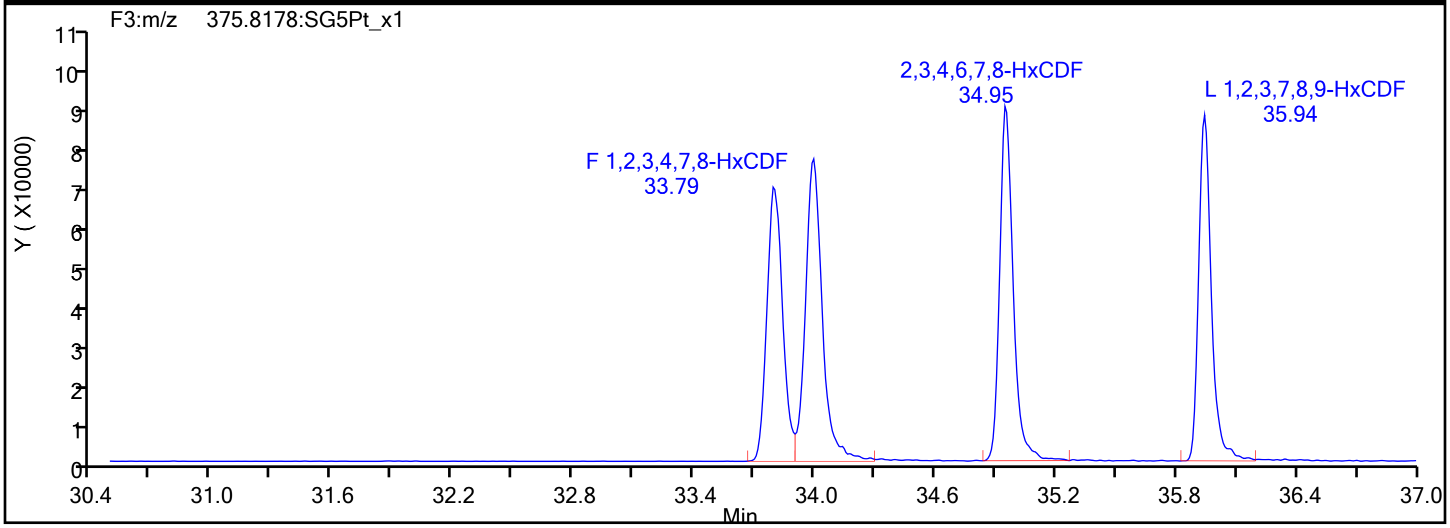

HxCDF Interference Mass

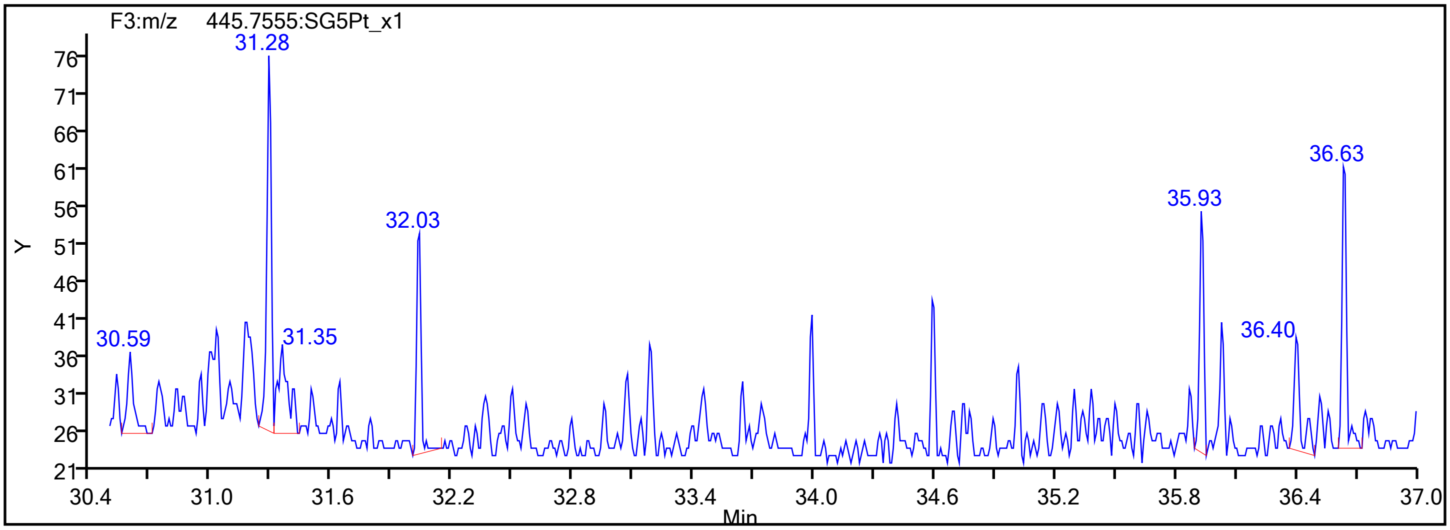

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

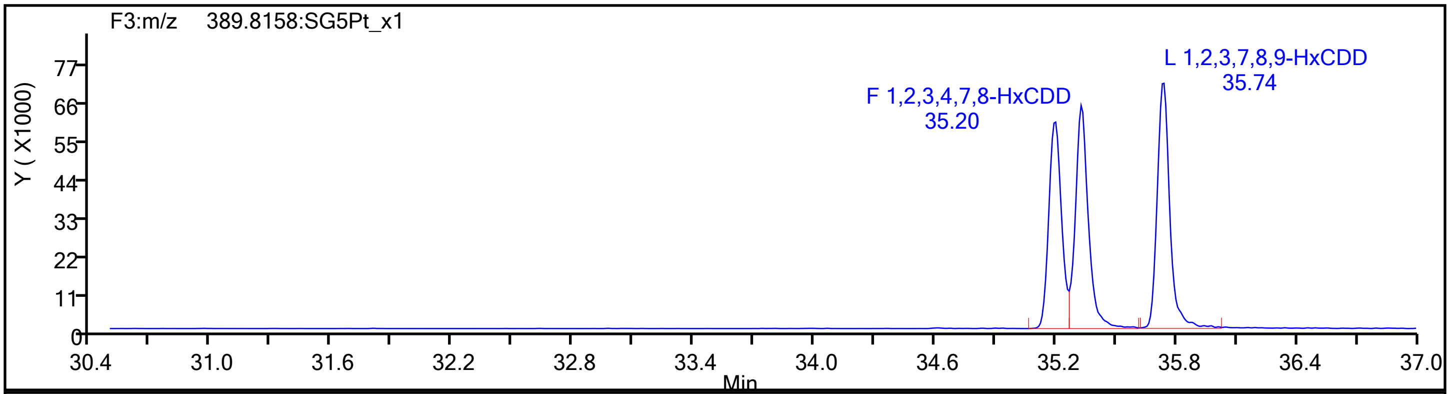

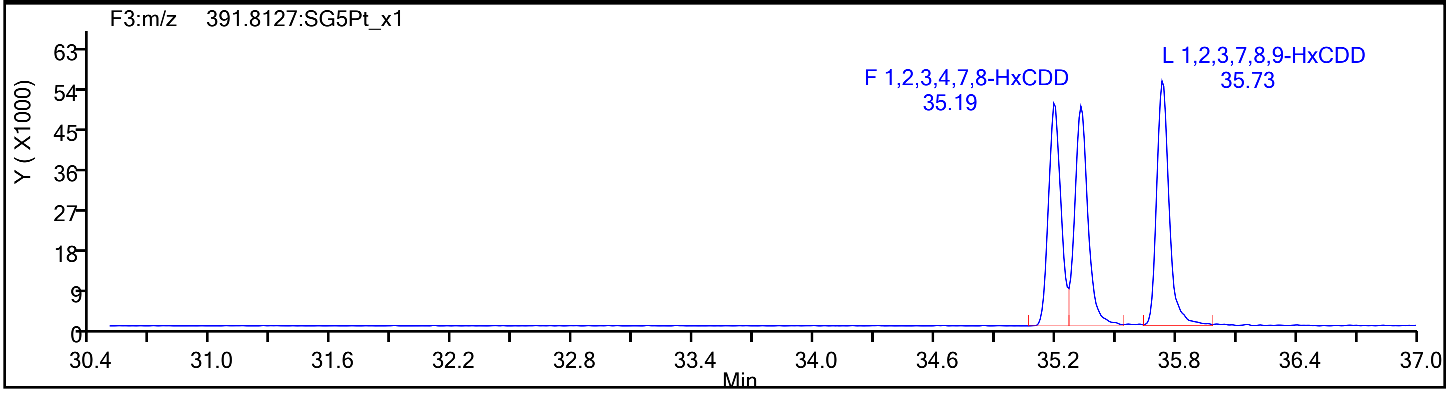

HxCDD Standards

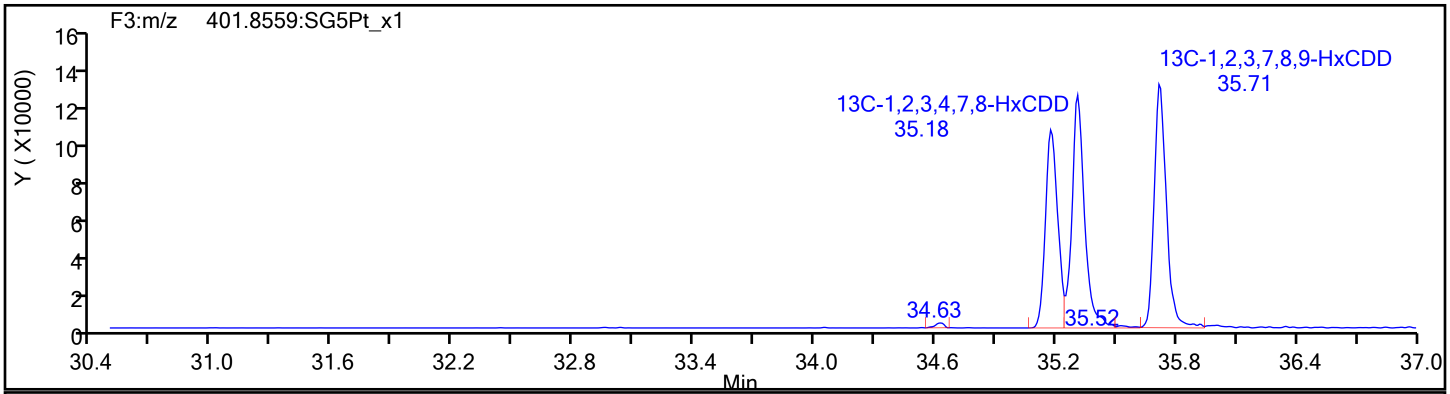

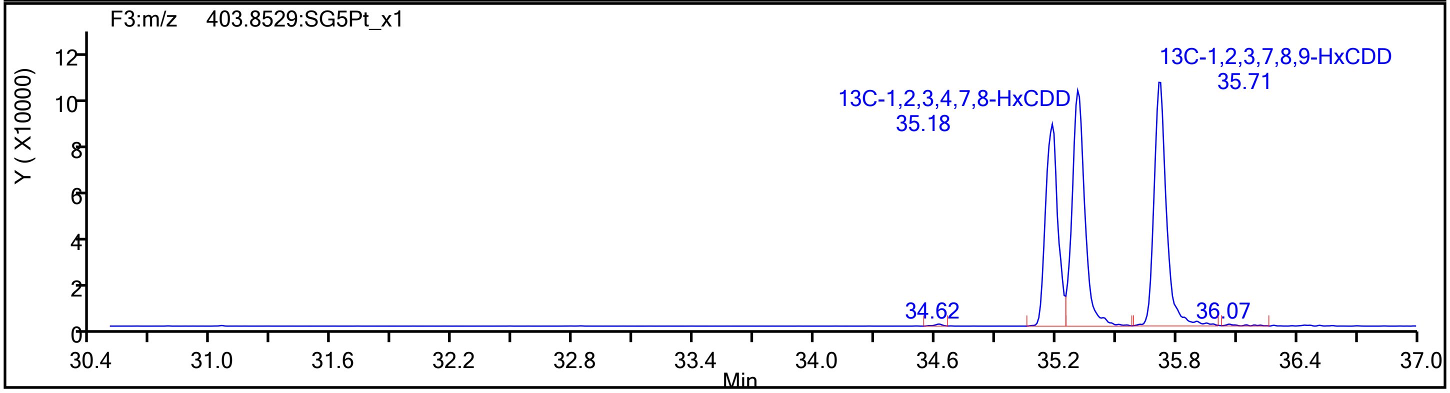

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

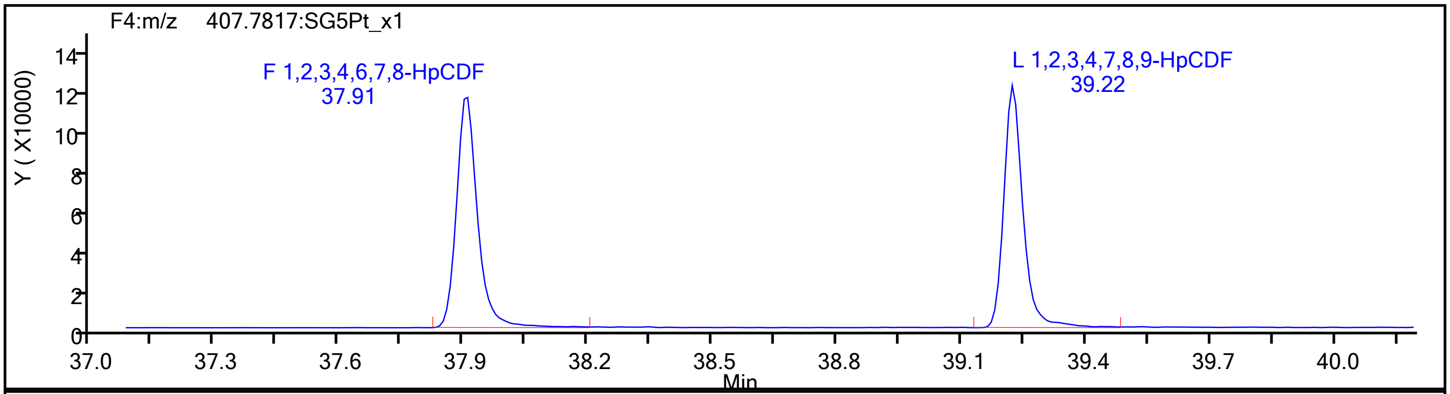

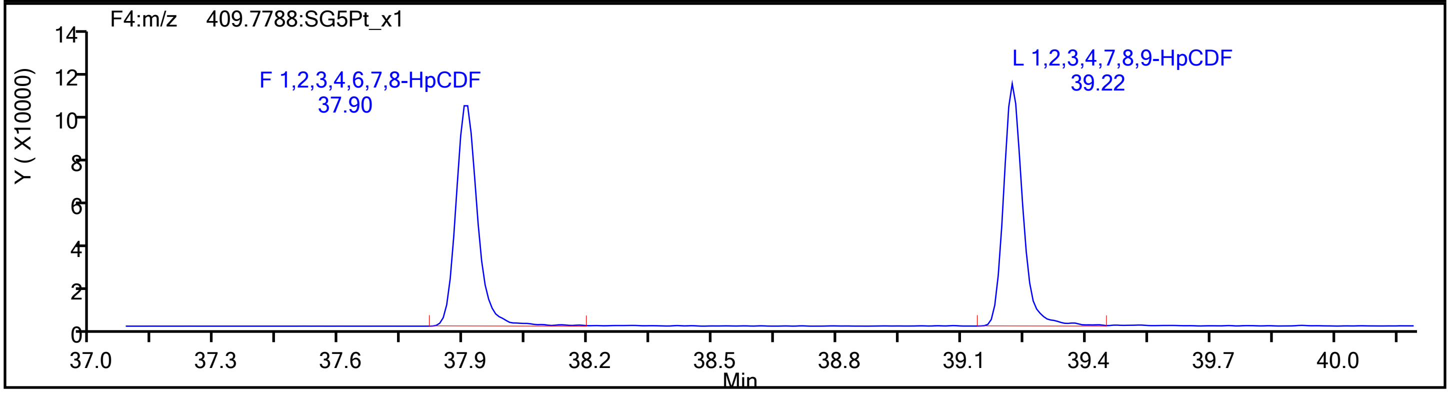

HpCDF Standards

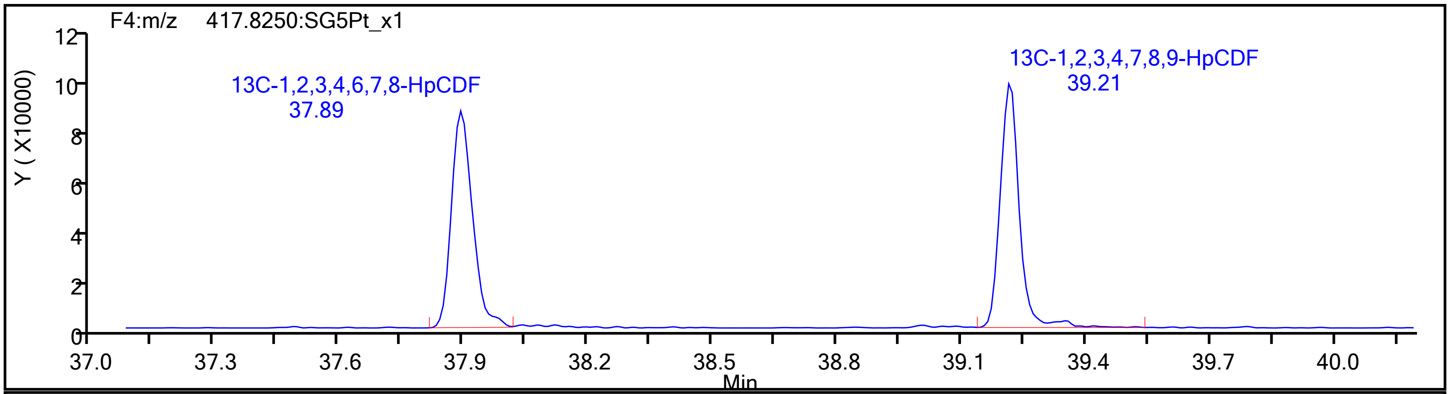

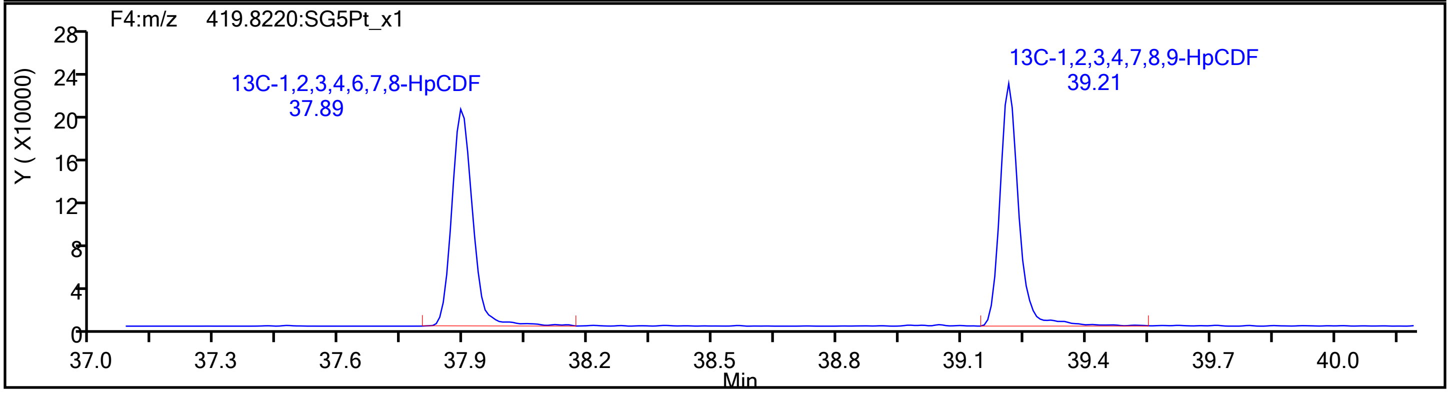

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

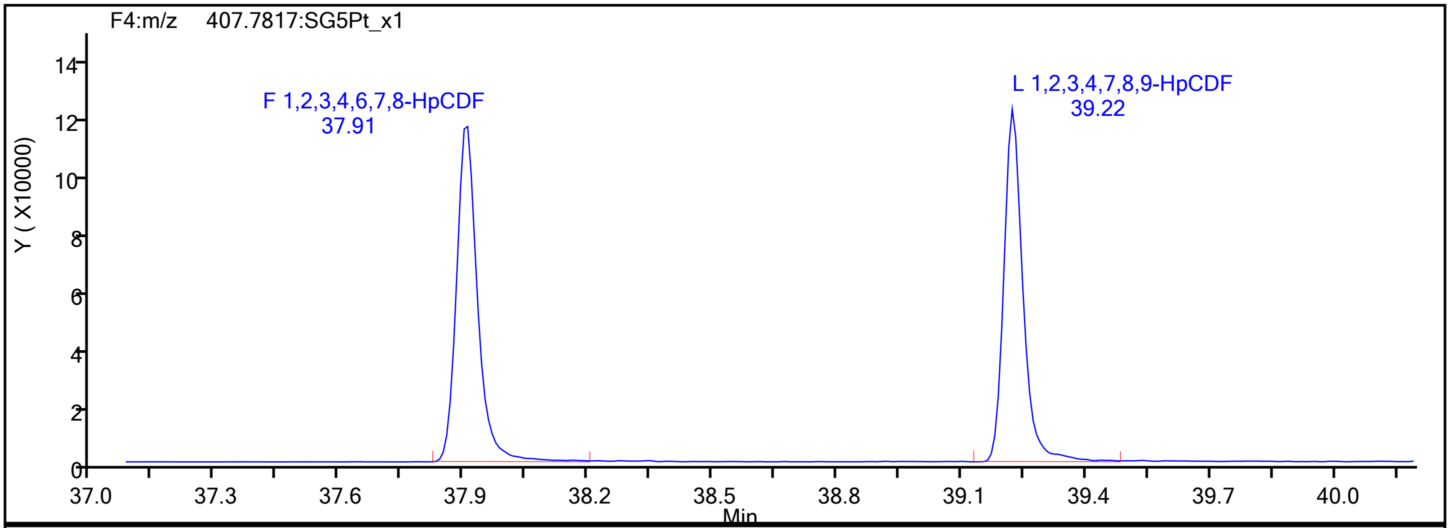

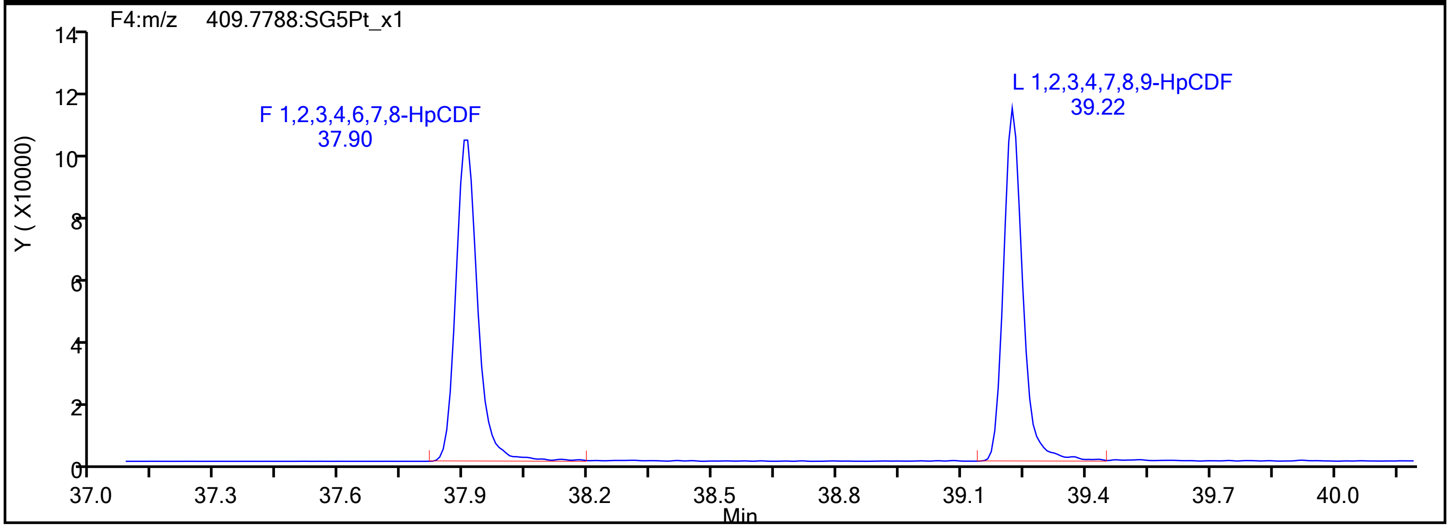

HpCDF Interference Mass

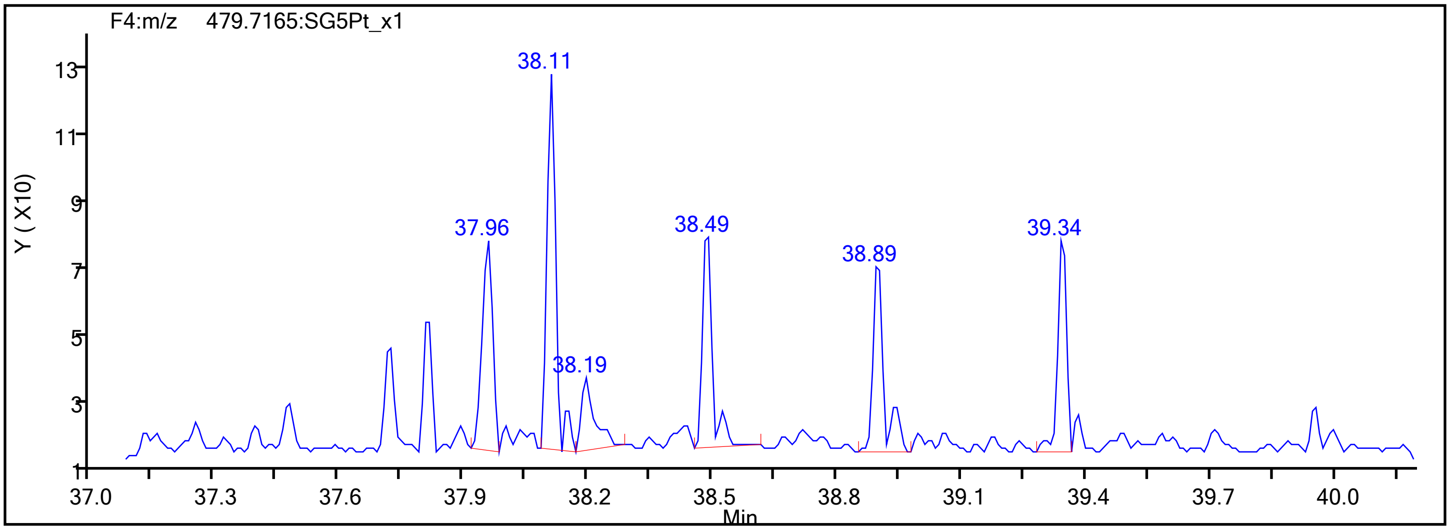

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Injection Date: 12-Oct-2020 14:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

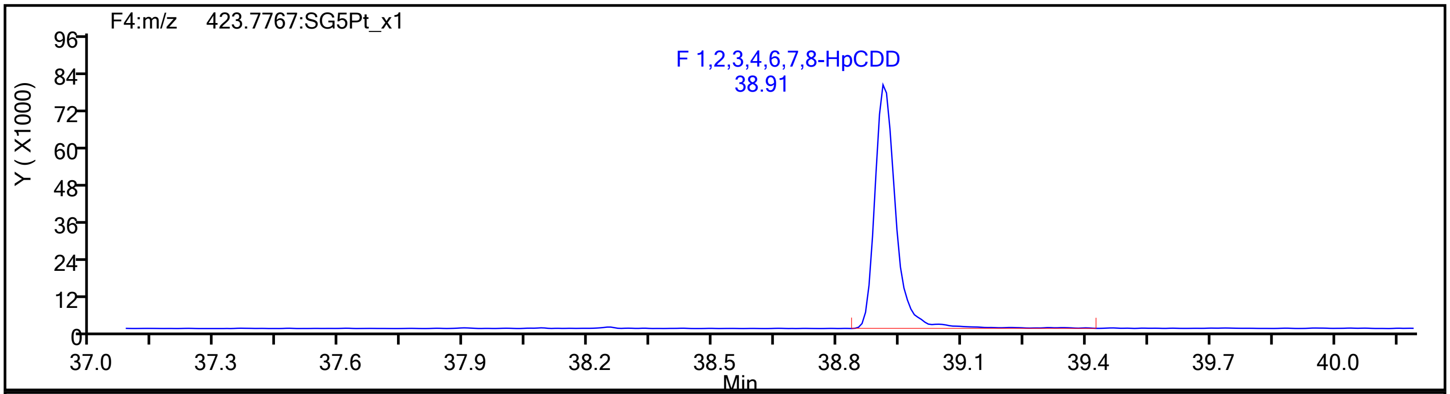

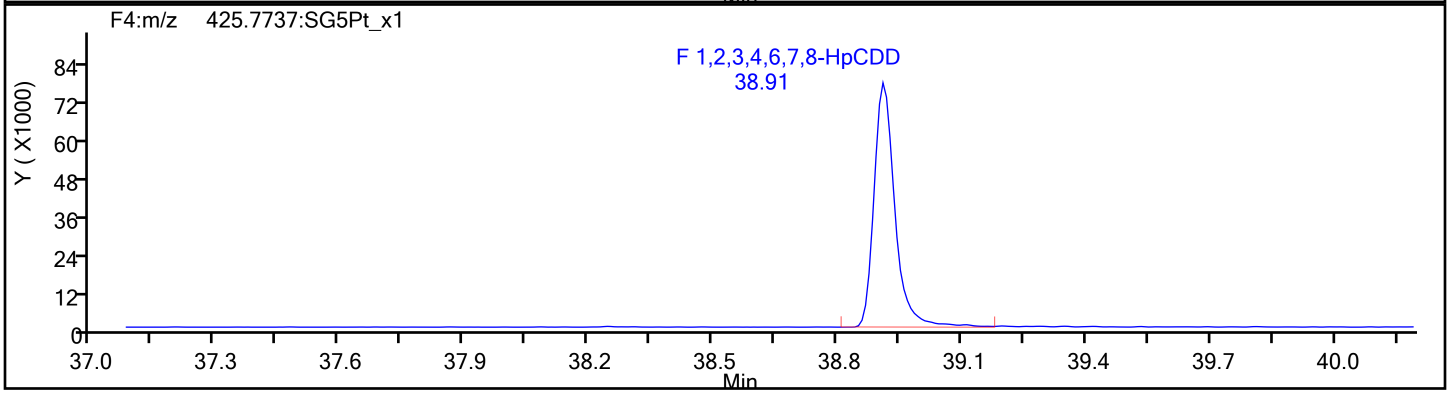

HpCDD Standards

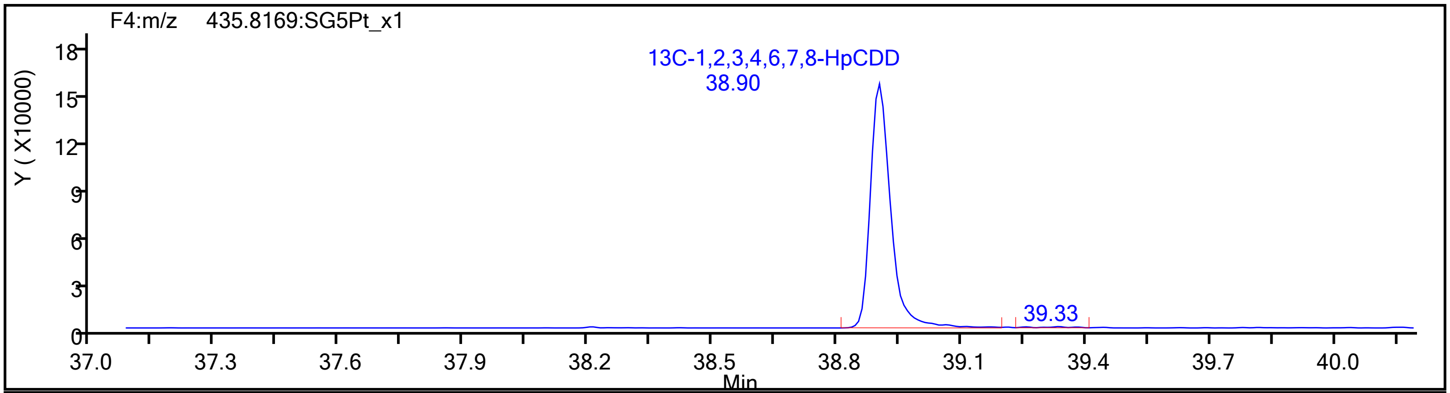

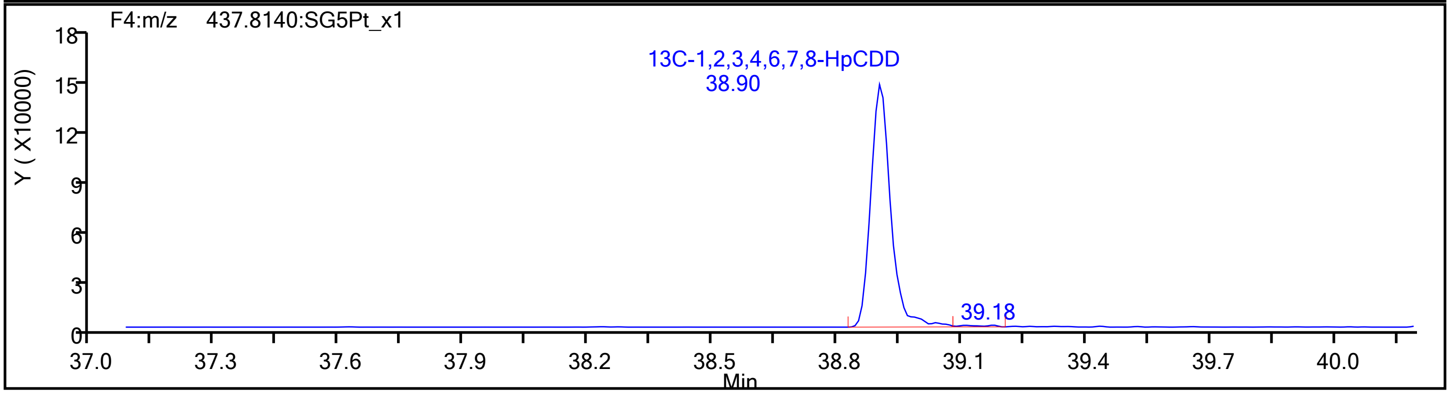

Report Date: 13-Oct-2020 10:45:49
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Injection Date: 12-Oct-2020 14:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

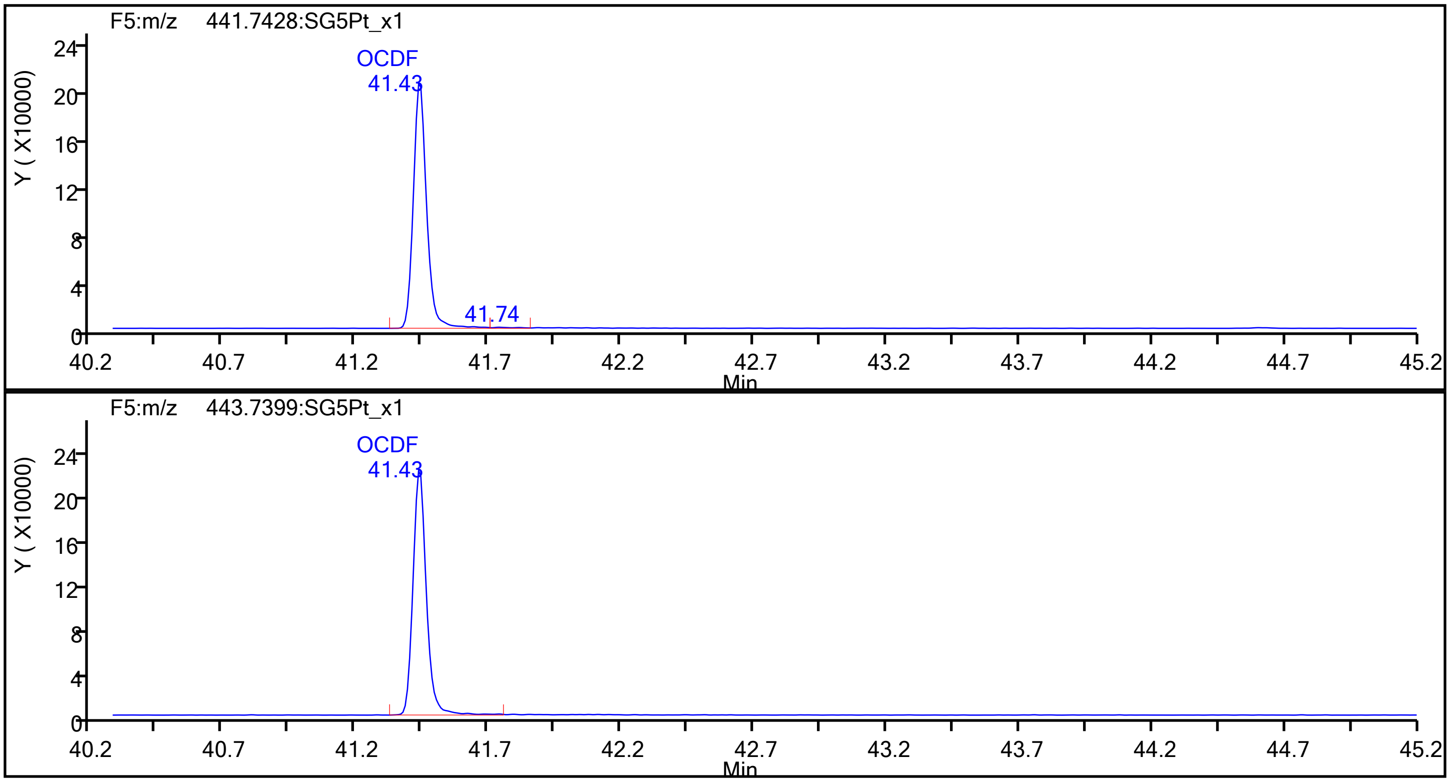

OCDF Standards

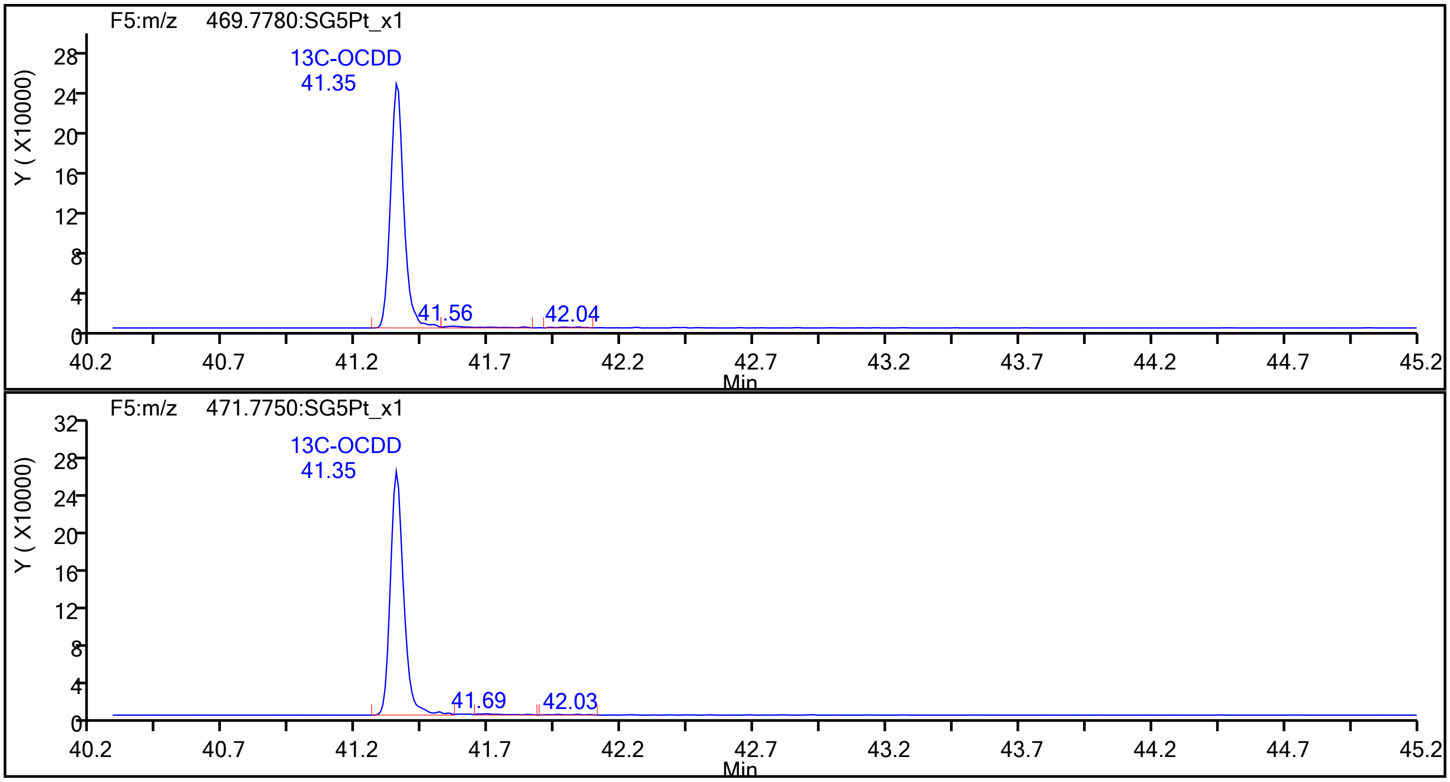

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d

Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

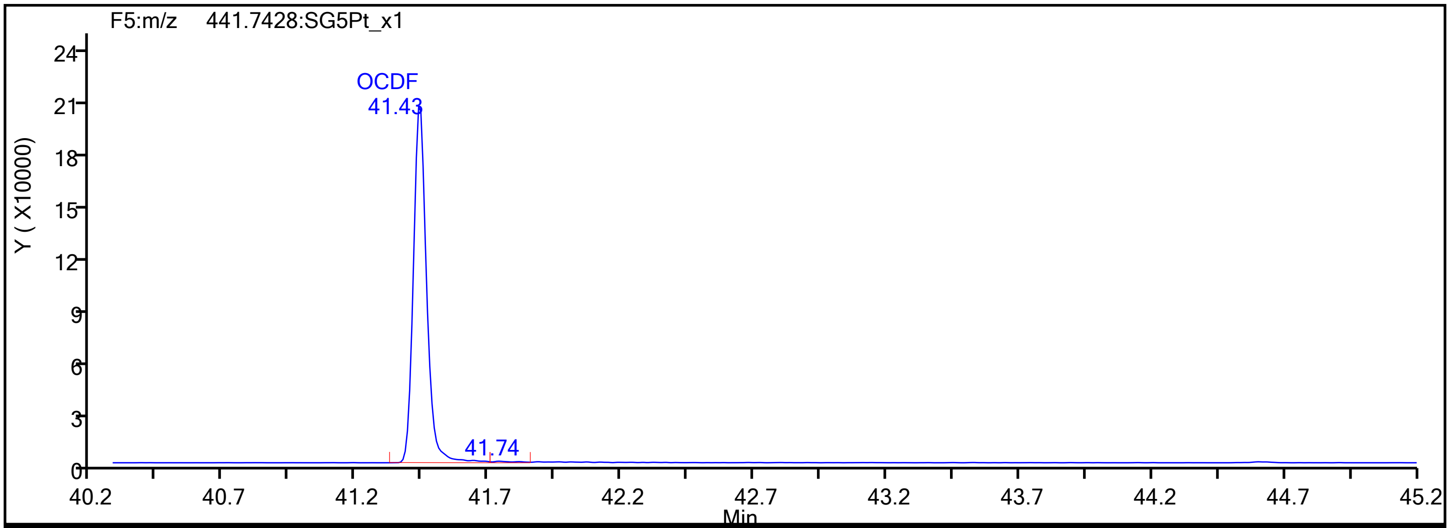

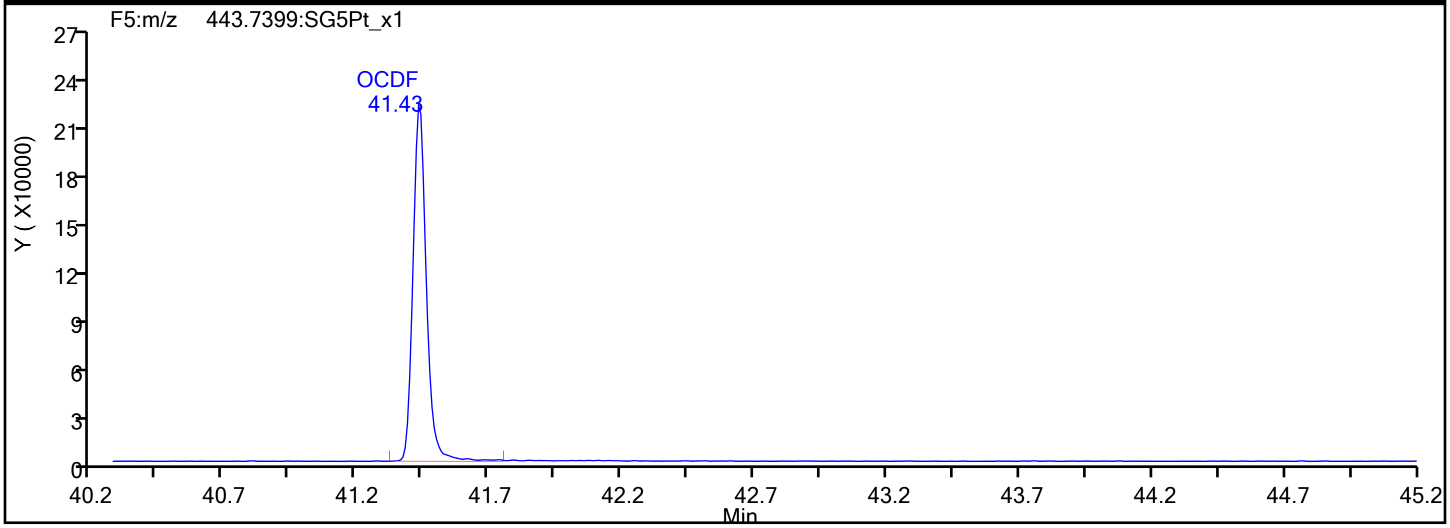

OCDF Interference Mass

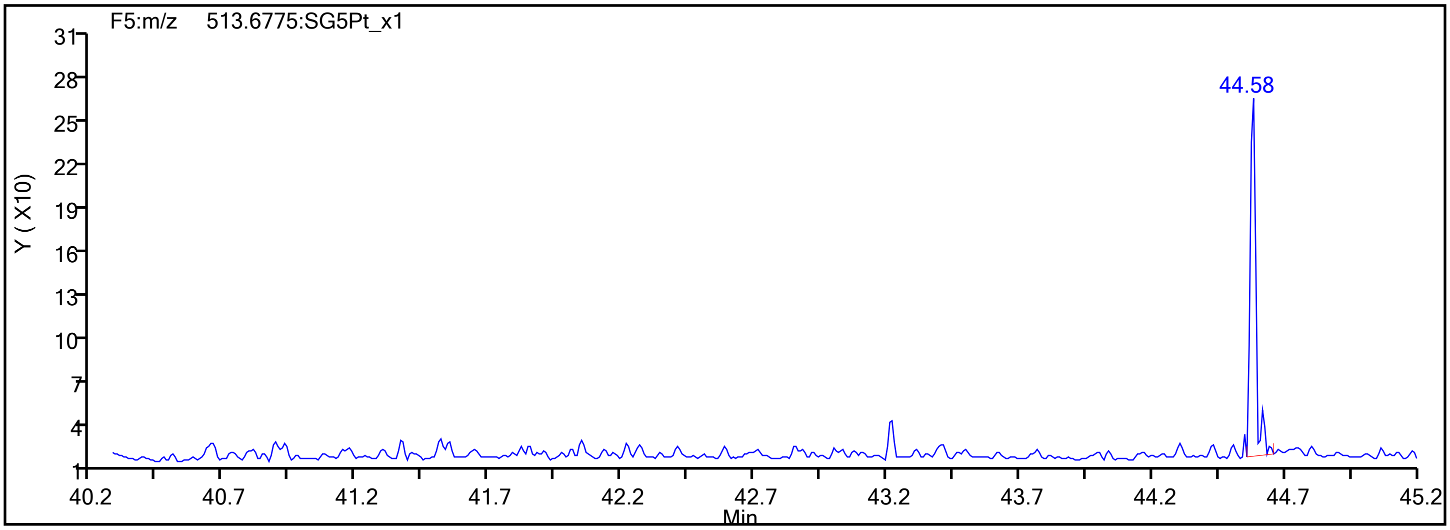

Report Date: 13-Oct-2020 10:45:49
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Injection Date: 12-Oct-2020 14:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

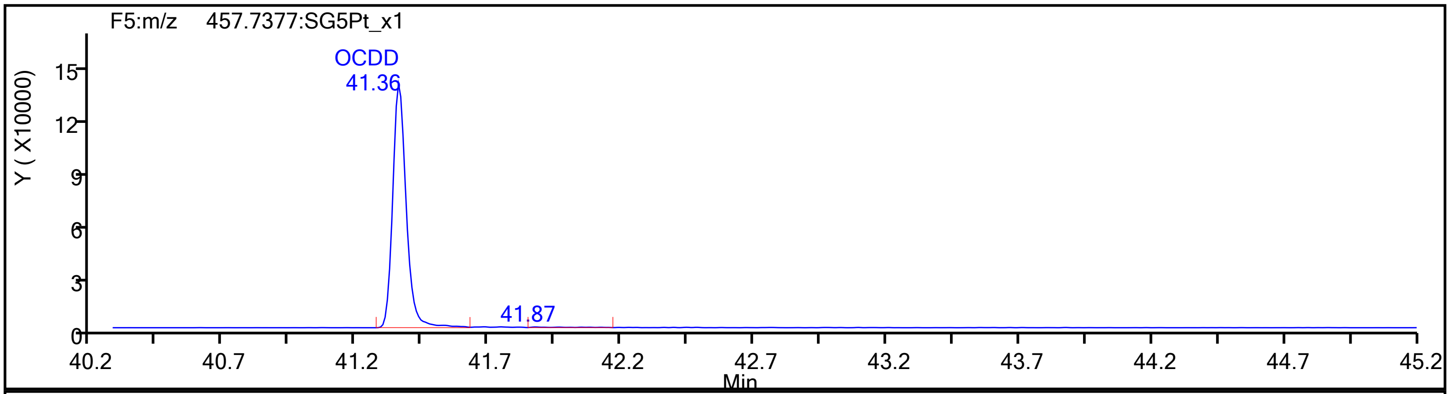

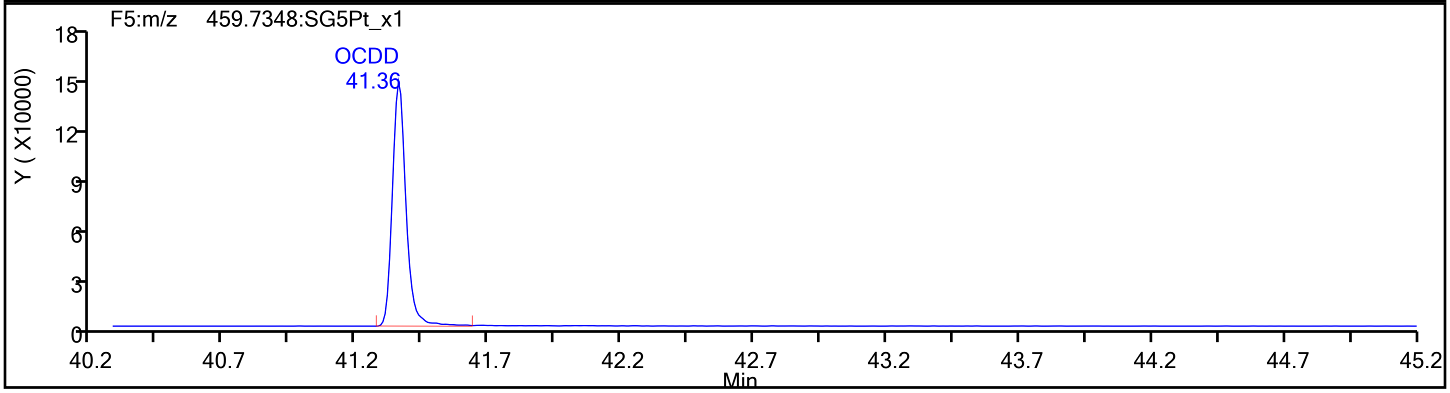

OCDD Standards

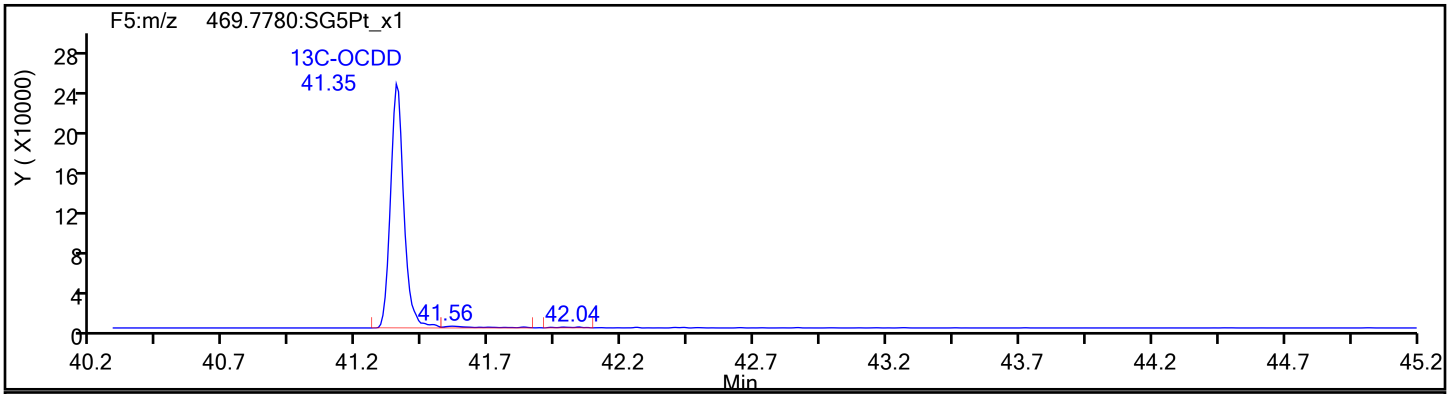

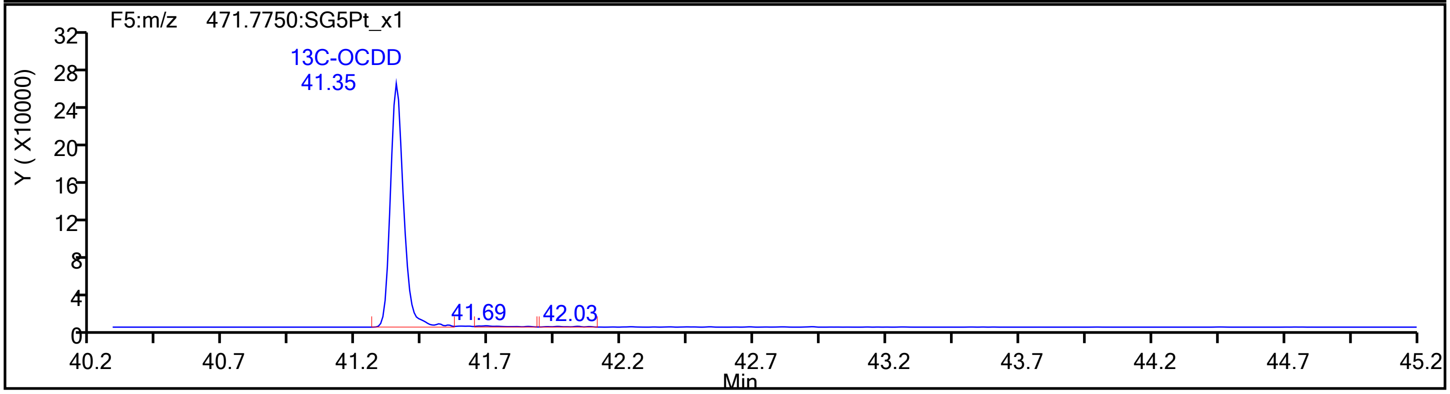

Report Date: 13-Oct-2020 10:45:49 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d
Injection Date: 12-Oct-2020 14:03:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107 Sample Line#: 2
Column Type: DB-5 Column Dia: 0.32 mm

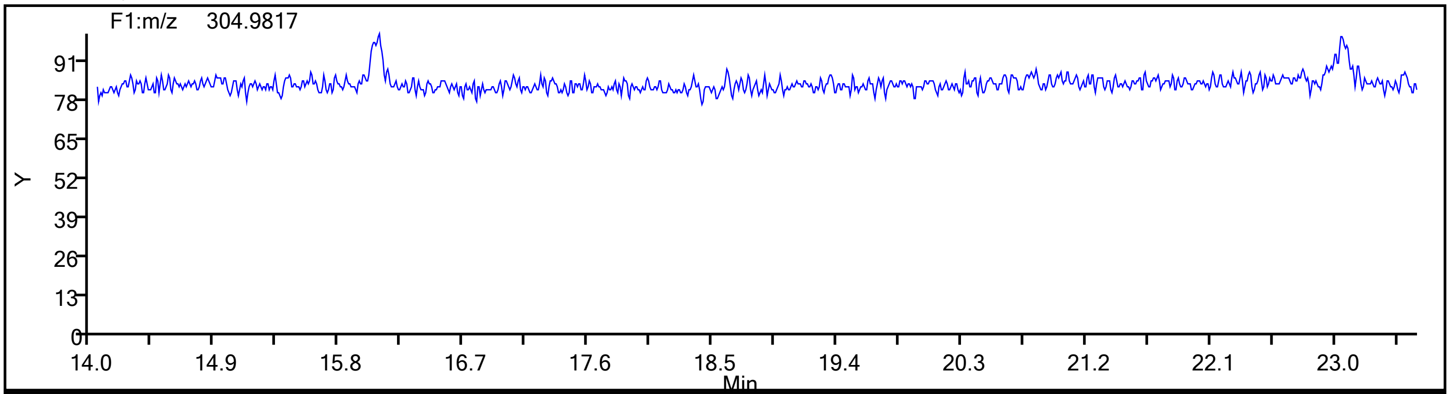

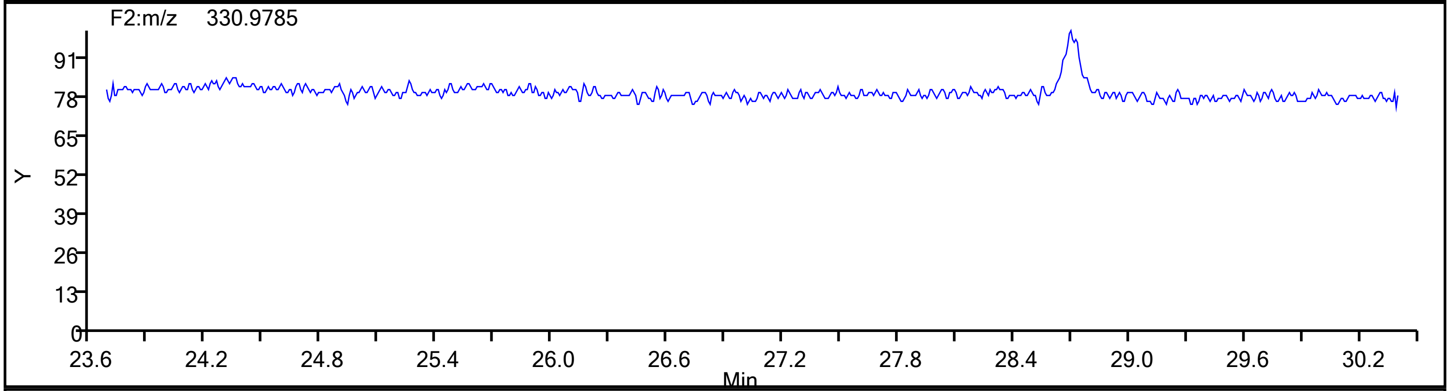

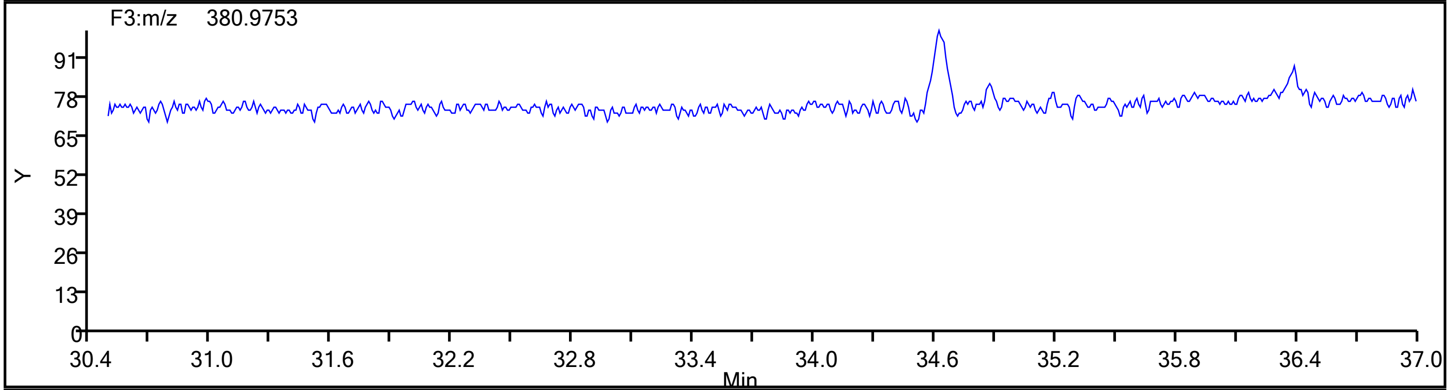

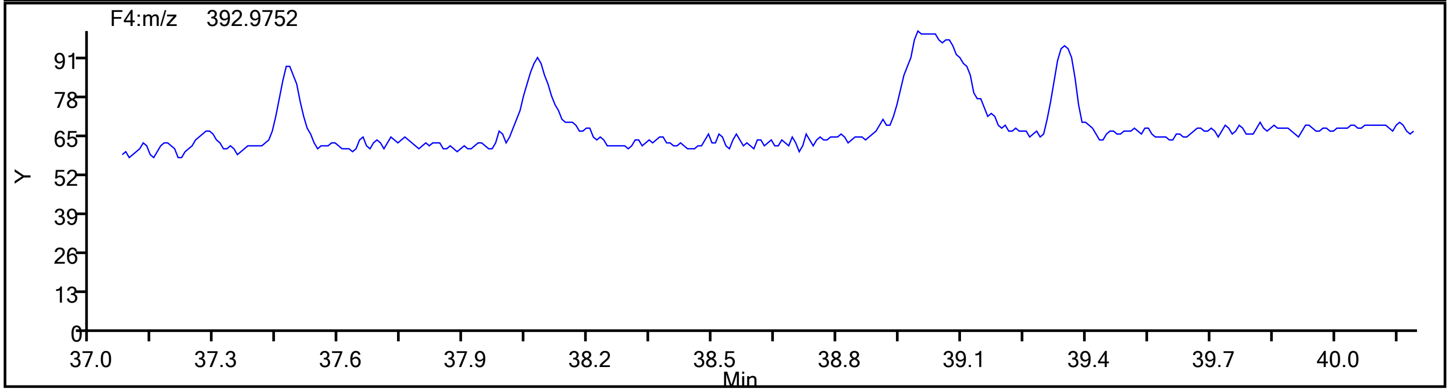

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_3.d		
Injection Date:	12-Oct-2020 14:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

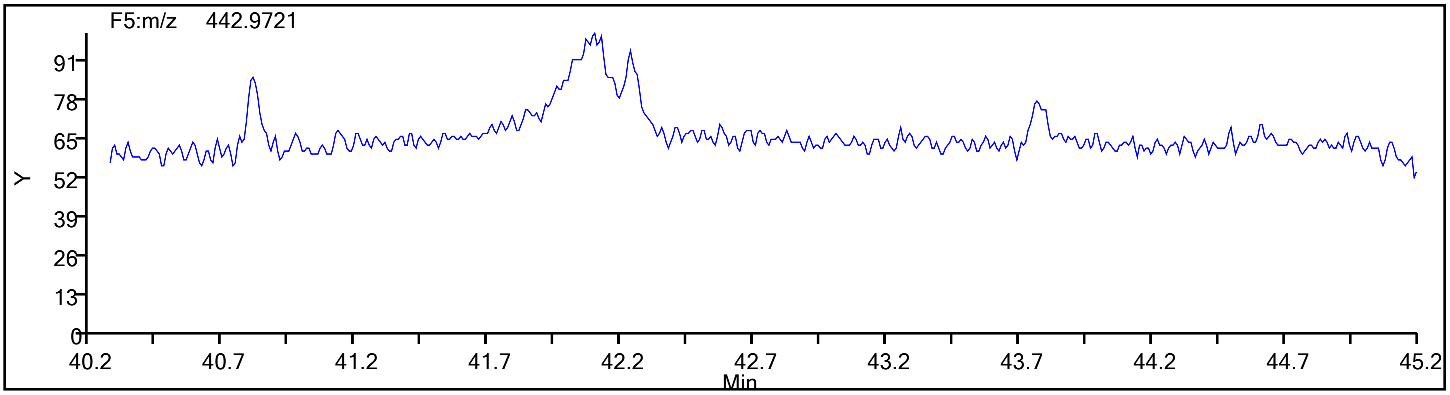

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-422239/2 Calibration Date: 10/15/2020 13:08

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 15oc20dfs1_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.140		10.5	10.0	105	84-120
2,3,7,8-TCDD	AveID	1.081	1.034		9.57	10.0	96	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.076		51.0	50.0	102	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.124		50.9	50.0	102	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.039		48.7	50.0	97	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.319		52.2	50.0	104	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.277		52.2	50.0	104	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.256		50.4	50.0	101	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.119		48.4	50.0	97	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	1.048		50.9	50.0	102	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.174		49.8	50.0	100	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.292		51.1	50.0	102	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.535		51.0	50.0	102	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.036		48.7	50.0	97	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.467		50.4	50.0	101	86-116
OCDD	AveID	1.129	1.118		99.0	100	99	79-126
OCDF	AveID	1.430	1.477		103	100	103	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.625		102	100	102	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.076		96.1	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.307		88.4	100	88	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.184		85.1	100	85	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.7730		82.1	100	82	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.144		101	100	101	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.408		107	100	107	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.426		115	100	115	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8553		101	100	101	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	1.011		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.332		112	100	112	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	1.087		110	100	110	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	1.015		106	100	106	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.996		108	100	108	77-129
13C-OCDD	Ave	0.7420	0.8740		236	200	118	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.112		9.69	10.0	97	79-127

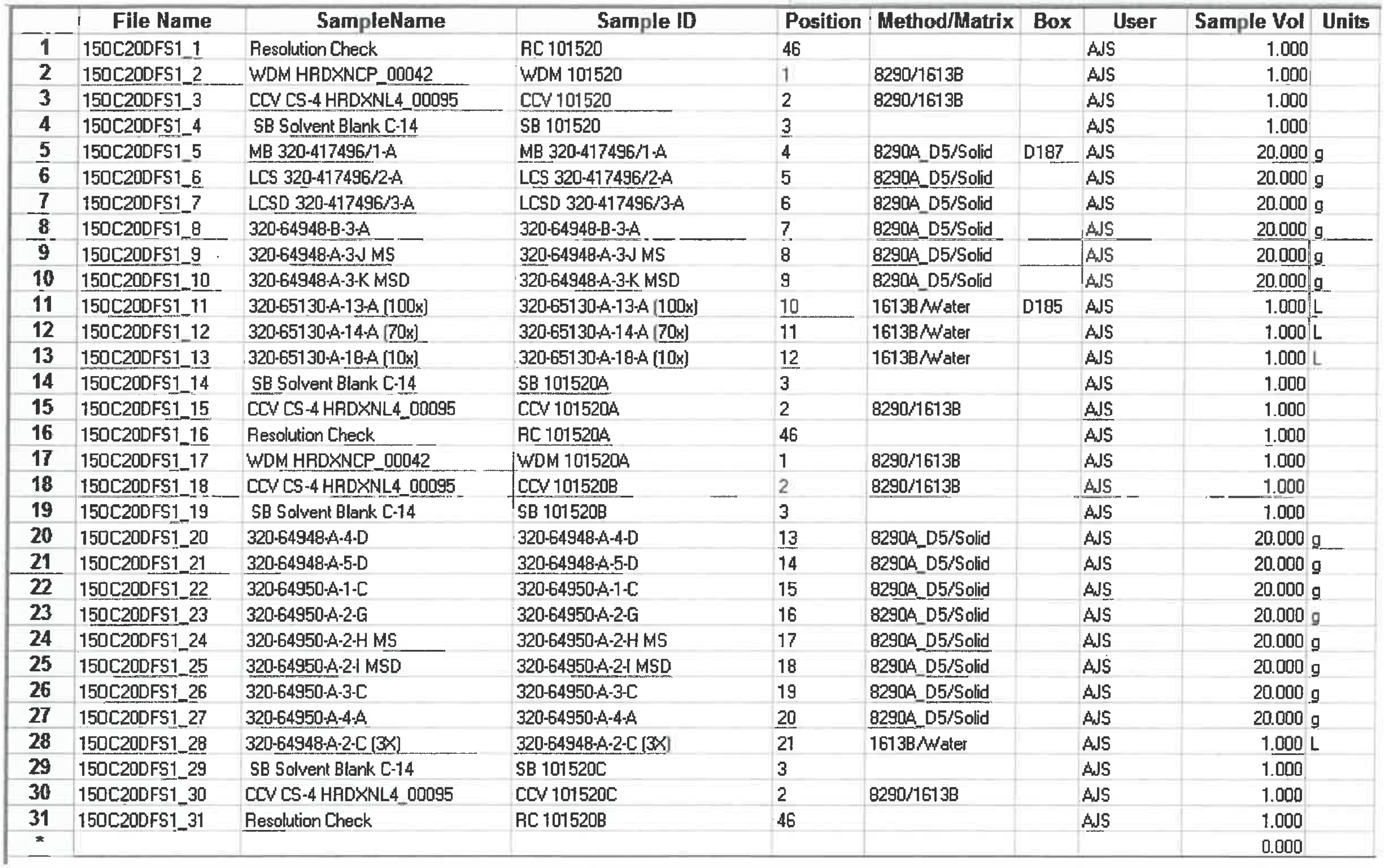

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	150C20DFS1_1	Resolution Check	RC 101520	46			AJS	1.000	
2	150C20DFS1_2	WDM HRDXNCP_00042	WDM 101520	1	8290/1613B		AJS	1.000	
3	150C20DFS1_3	CCV CS-4 HRDXNL4_00095	CCV 101520	2	8290/1613B		AJS	1.000	
4	150C20DFS1_4	SB Solvent Blank C-14	SB 101520	3			AJS	1.000	
5	150C20DFS1_5	MB 320-417496/1-A	MB 320-417496/1-A	4	8290A_D5/Solid	D187	AJS	20.000	g
6	150C20DFS1_6	LCS 320-417496/2-A	LCS 320-417496/2-A	5	8290A_D5/Solid		AJS	20.000	g
7	150C20DFS1_7	LCSD 320-417496/3-A	LCSD 320-417496/3-A	6	8290A_D5/Solid		AJS	20.000	g
8	150C20DFS1_8	320-64948-B-3-A	320-64948-B-3-A	7	8290A_D5/Solid		AJS	20.000	g
9	150C20DFS1_9	320-64948-A-3-J MS	320-64948-A-3-J MS	8	8290A_D5/Solid		AJS	20.000	g
10	150C20DFS1_10	320-64948-A-3-K MSD	320-64948-A-3-K MSD	9	8290A_D5/Solid		AJS	20.000	g
11	150C20DFS1_11	320-65130-A-13-A (100x)	320-65130-A-13-A (100x)	10	1613B/Water	D185	AJS	1.000	L
12	150C20DFS1_12	320-65130-A-14-A (70x)	320-65130-A-14-A (70x)	11	1613B/Water		AJS	1.000	L
13	150C20DFS1_13	320-65130-A-18-A (10x)	320-65130-A-18-A (10x)	12	1613B/Water		AJS	1.000	L
14	150C20DFS1_14	SB Solvent Blank C-14	SB 101520A	3			AJS	1.000	
15	150C20DFS1_15	CCV CS-4 HRDXNL4_00095	CCV 101520A	2	8290/1613B		AJS	1.000	
16	150C20DFS1_16	Resolution Check	RC 101520A	46			AJS	1.000	
17	150C20DFS1_17	WDM HRDXNCP_00042	WDM 101520A	1	8290/1613B		AJS	1.000	
18	150C20DFS1_18	CCV CS-4 HRDXNL4_00095	CCV 101520B	2	8290/1613B		AJS	1.000	
19	150C20DFS1_19	SB Solvent Blank C-14	SB 101520B	3			AJS	1.000	
20	150C20DFS1_20	320-64948-A-4-D	320-64948-A-4-D	13	8290A_D5/Solid		AJS	20.000	g
21	150C20DFS1_21	320-64948-A-5-D	320-64948-A-5-D	14	8290A_D5/Solid		AJS	20.000	g
22	150C20DFS1_22	320-64950-A-1-C	320-64950-A-1-C	15	8290A_D5/Solid		AJS	20.000	g
23	150C20DFS1_23	320-64950-A-2-G	320-64950-A-2-G	16	8290A_D5/Solid		AJS	20.000	g
24	150C20DFS1_24	320-64950-A-2-H MS	320-64950-A-2-H MS	17	8290A_D5/Solid		AJS	20.000	g
25	150C20DFS1_25	320-64950-A-2-I MSD	320-64950-A-2-I MSD	18	8290A_D5/Solid		AJS	20.000	g
26	150C20DFS1_26	320-64950-A-3-C	320-64950-A-3-C	19	8290A_D5/Solid		AJS	20.000	g
27	150C20DFS1_27	320-64950-A-4-A	320-64950-A-4-A	20	8290A_D5/Solid		AJS	20.000	g
28	150C20DFS1_28	320-64948-A-2-C (3X)	320-64948-A-2-C (3X)	21	1613B/Water		AJS	1.000	L
29	150C20DFS1_29	SB Solvent Blank C-14	SB 101520C	3			AJS	1.000	
30	150C20DFS1_30	CCV CS-4 HRDXNL4_00095	CCV 101520C	2	8290/1613B		AJS	1.000	
31	150C20DFS1_31	Resolution Check	RC 101520B	46			AJS	1.000	
*								0.000	

LogFile checked
10/16/20 SMA

Resolution Check Report (DFS SN: 3487)

Date:	15 Oct 2020 12:01
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12335 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12417 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12363 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12401 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12424 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12428 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11403 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12424 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12424 [5%height]

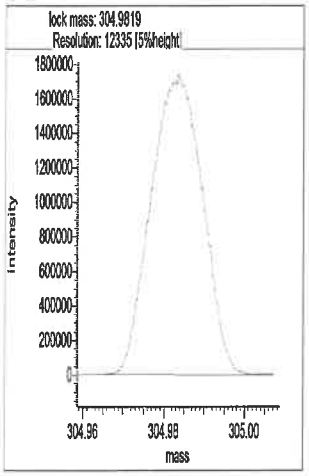

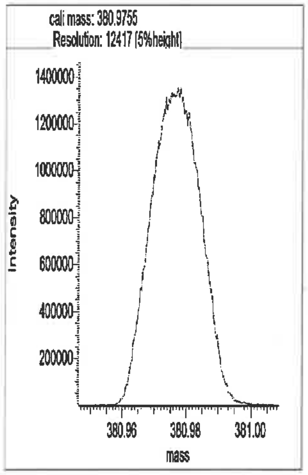

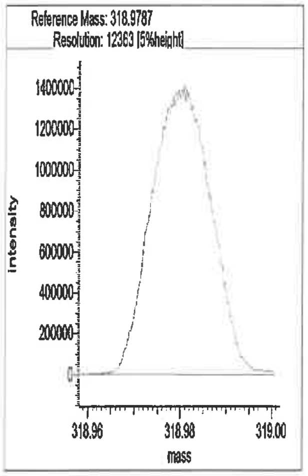

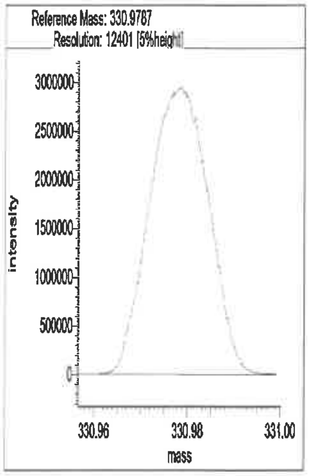

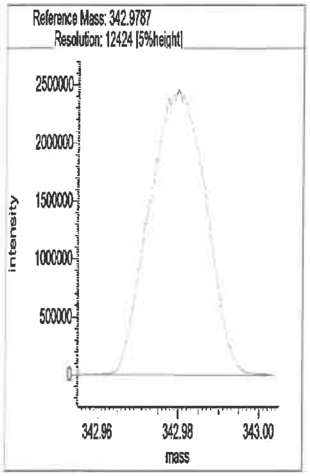

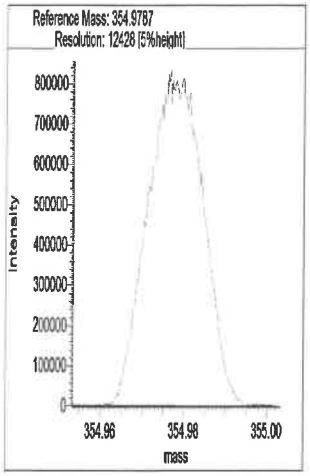

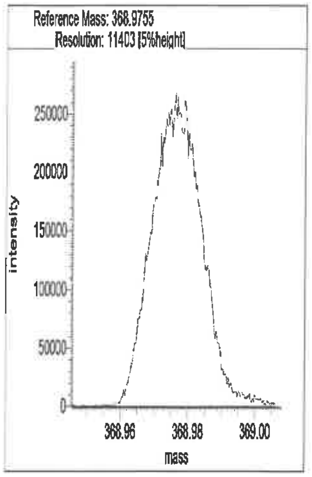

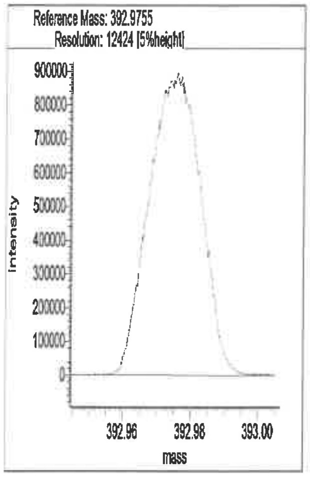

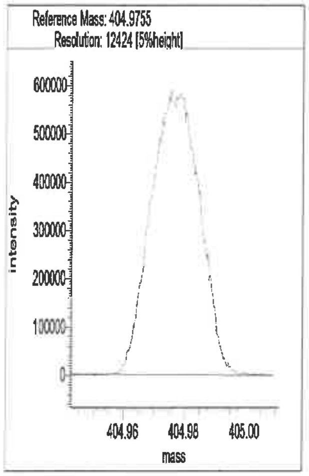

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12209 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12514 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12200 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12491 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11417 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12602 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12504 [5%height]

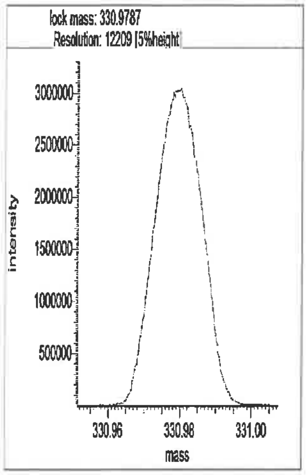

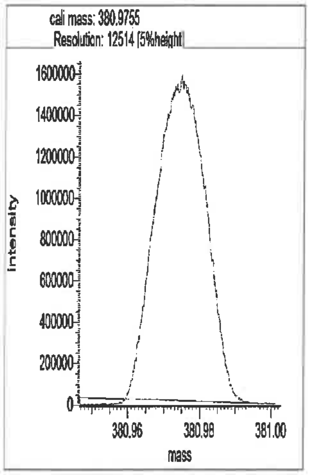

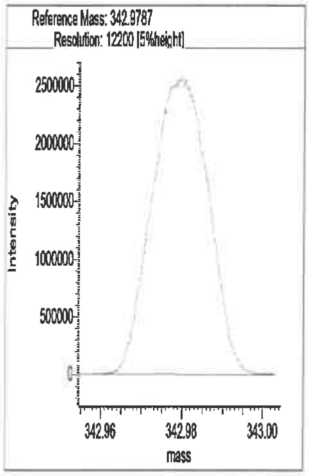

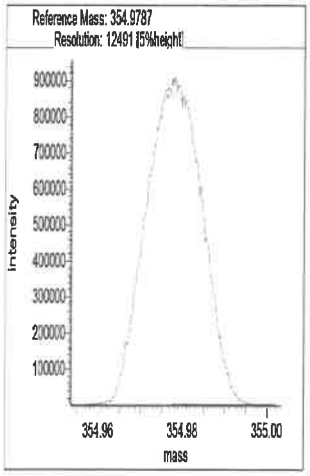

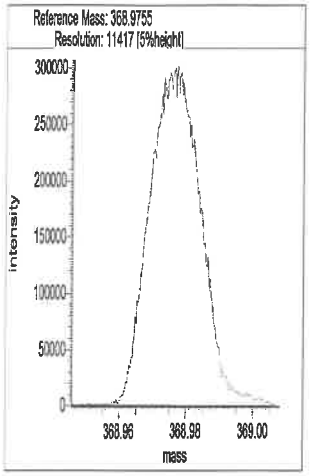

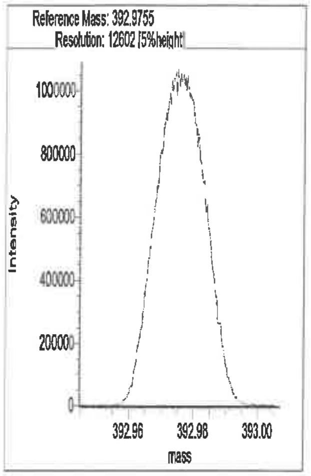

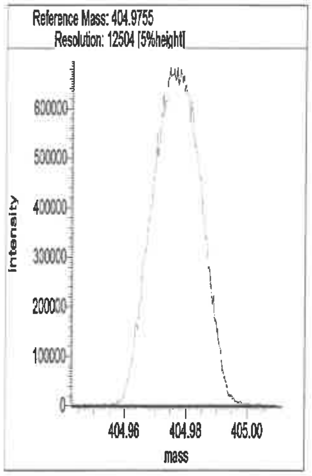

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12292 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12393 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12643 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12545 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12520 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12374 [5%height]

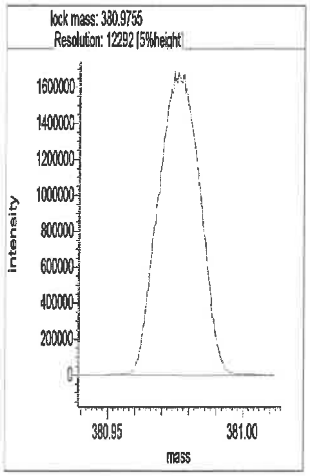

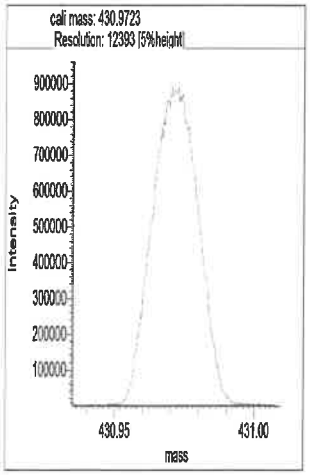

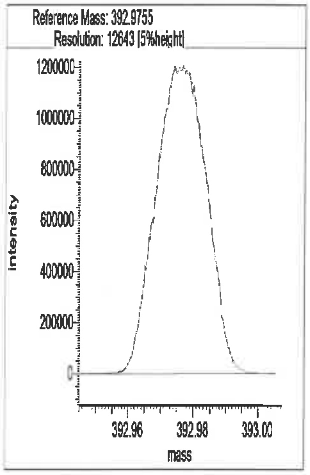

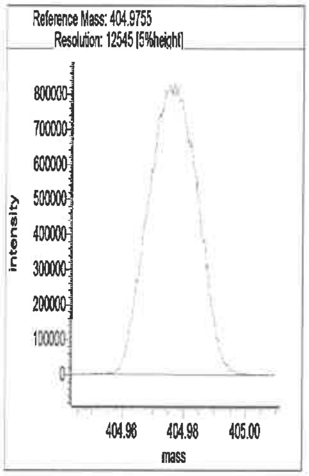

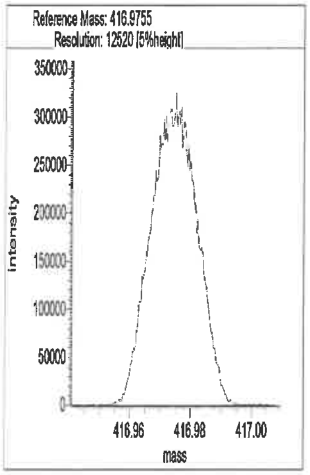

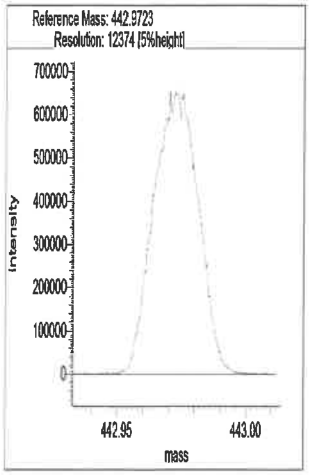

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12474 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12454 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12428 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12466 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12363 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12659 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12662 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12604 [5%height]

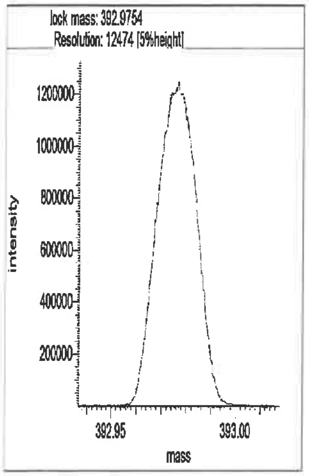

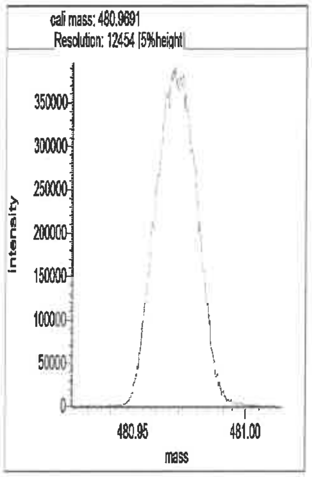

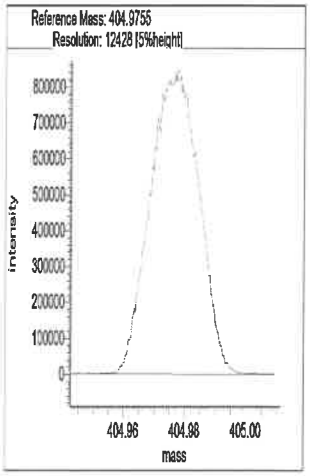

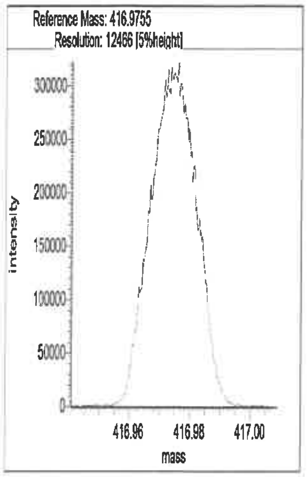

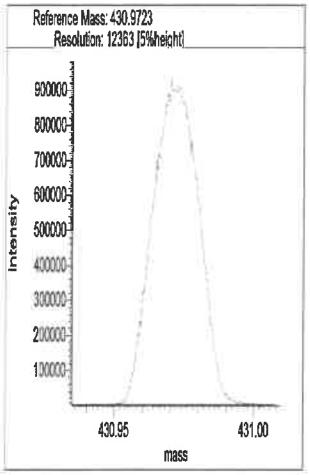

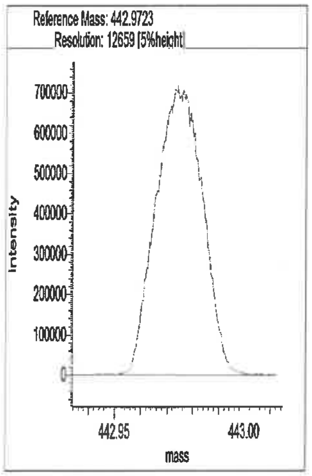

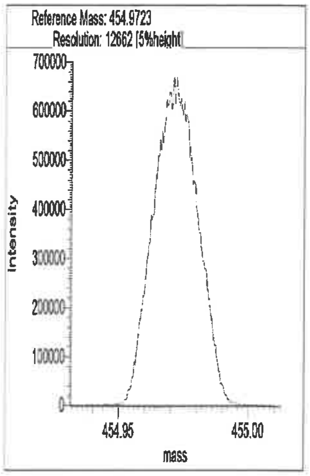

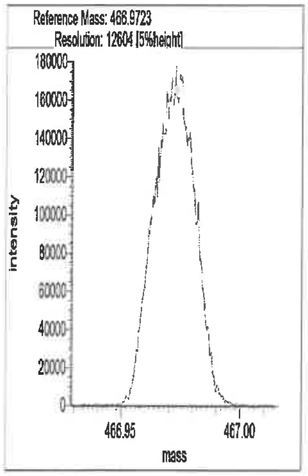

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12227 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12492 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12419 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12598 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12490 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12456 [5%height]

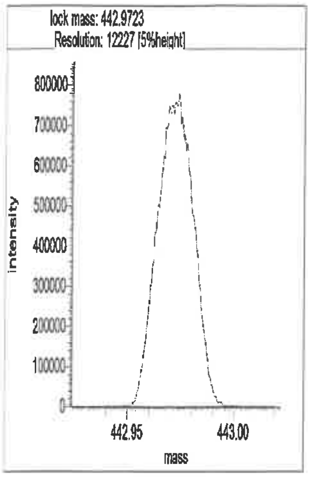
lock mass: 442.9723
Resolution: 12227 [5%height]

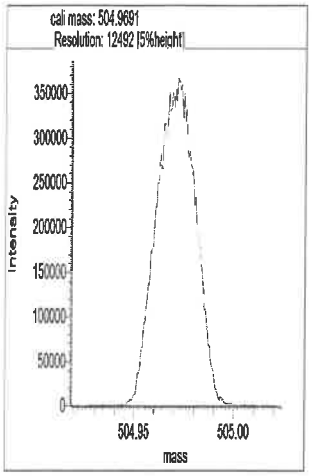
cali mass: 504.9691
Resolution: 12492 [5%height]

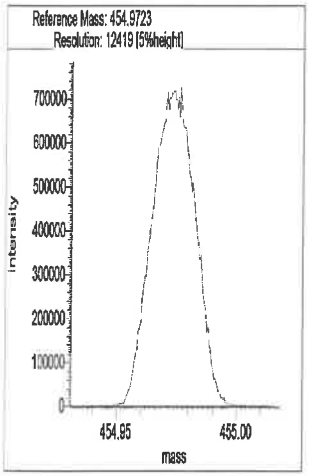
Reference Mass: 454.9723
Resolution: 12419 [5%height]

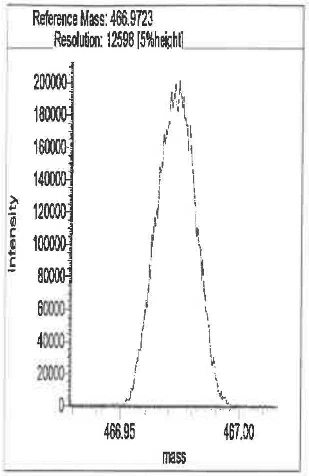
Reference Mass: 466.9723
Resolution: 12598 [5%height]

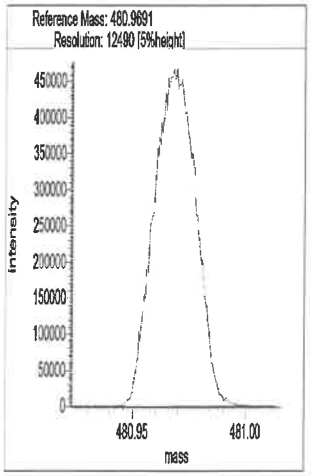
Reference Mass: 480.9691
Resolution: 12490 [5%height]

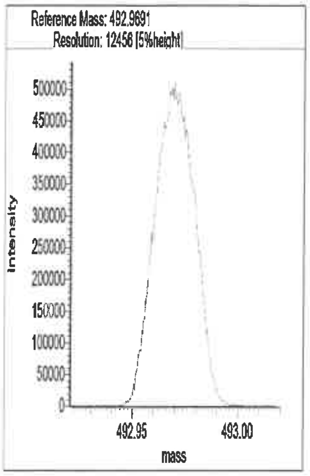
Reference Mass: 492.9691
Resolution: 12456 [5%height]

Resolution Check Report (DFS SN: 3487)

Date: 15 Oct 2020 23:32
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12087 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12337 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12074 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12309 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12455 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12588 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11455 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12286 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12184 [5%height]

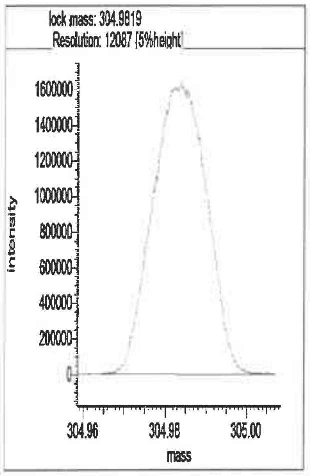

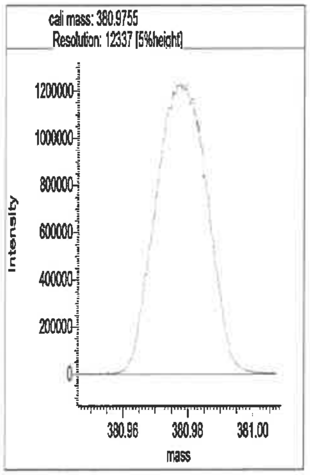

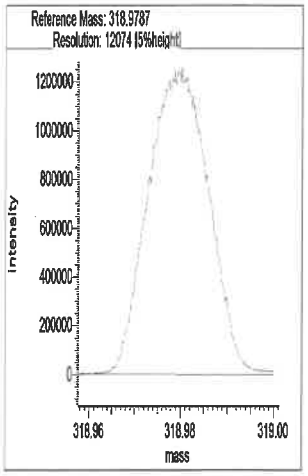

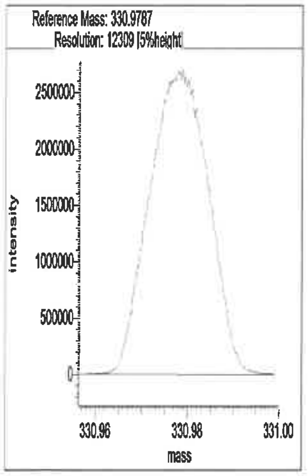

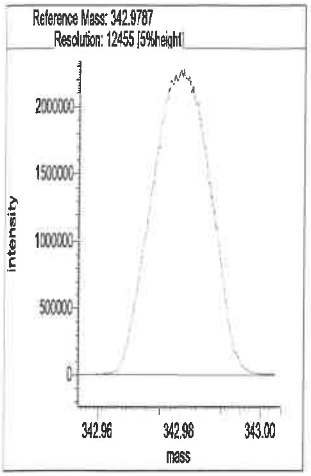

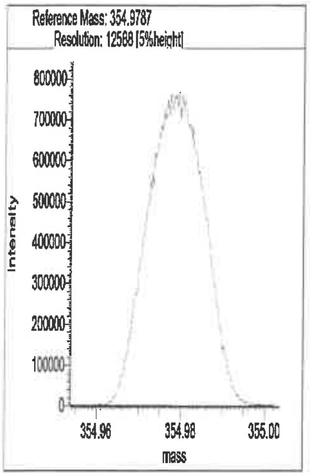

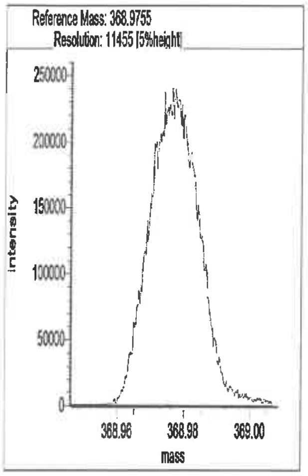

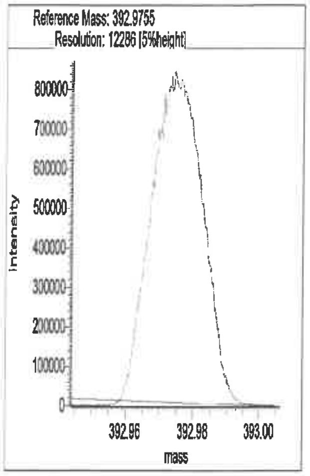

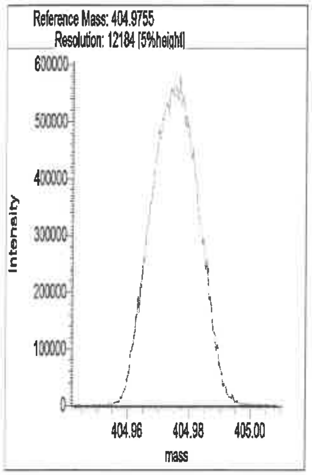

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12143 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12327 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12249 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12258 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11411 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12515 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12133 [5%height]

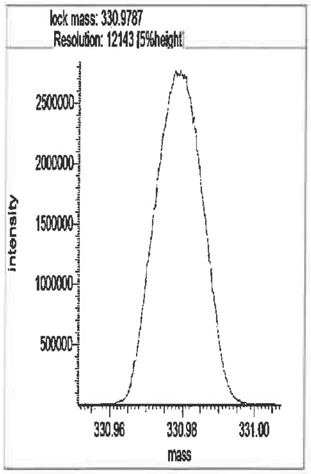

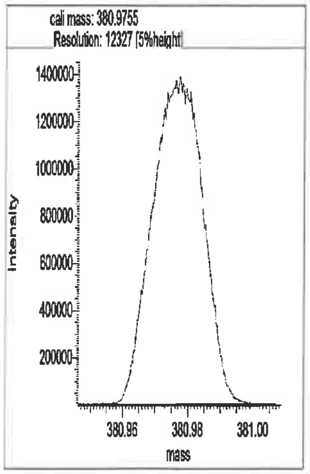

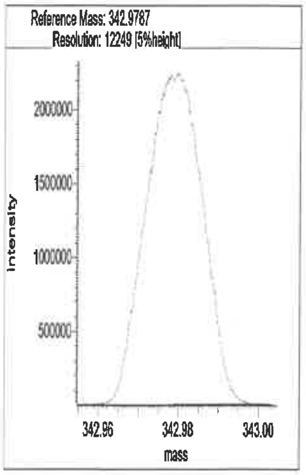

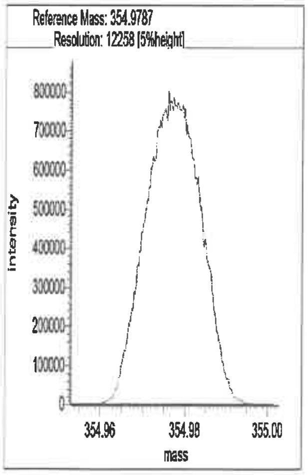

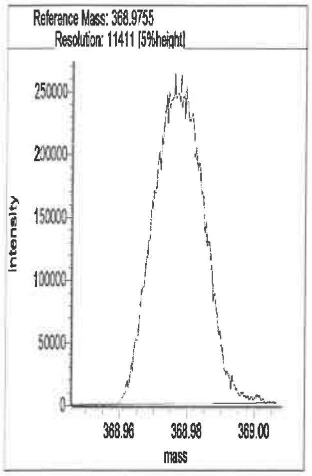

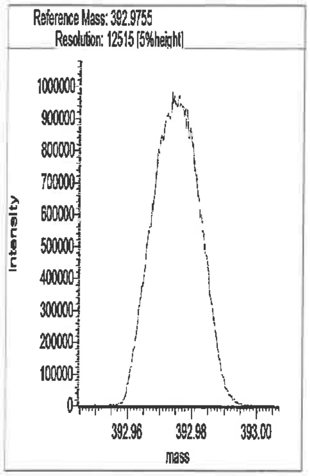

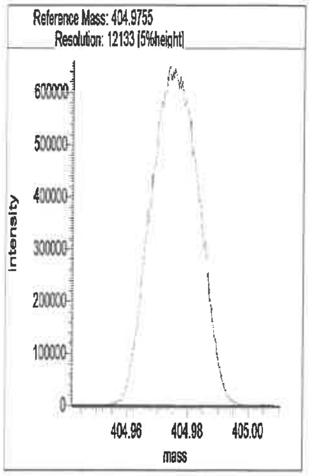

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11960 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12231 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11996 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12225 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12300 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12073 [5%height]

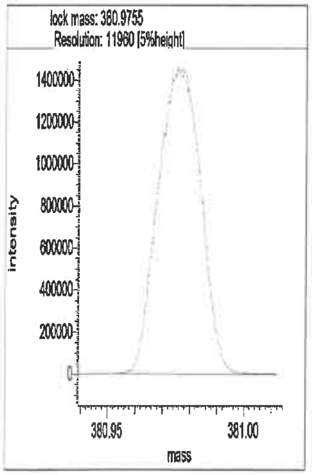

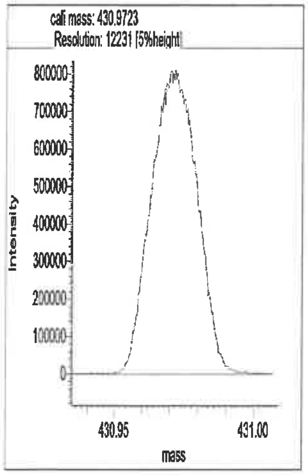

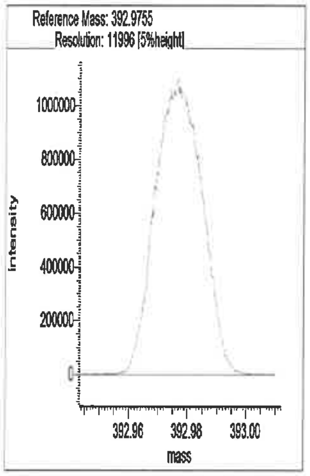

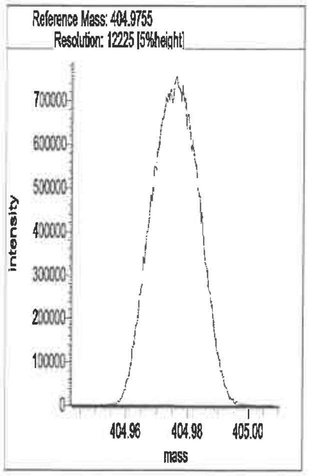

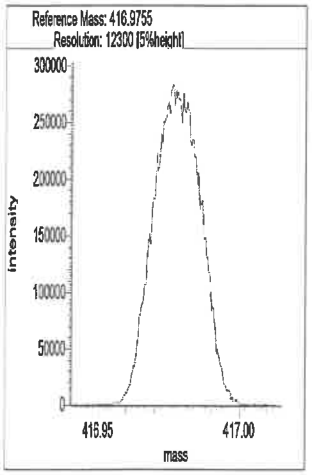

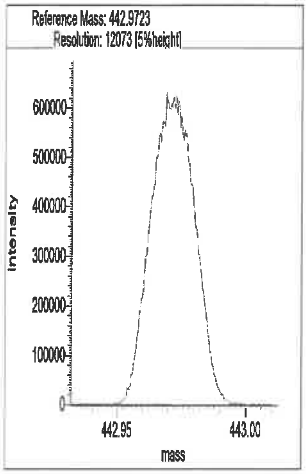

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12097 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12186 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12143 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12430 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12341 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12276 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12358 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11831 [5%height]

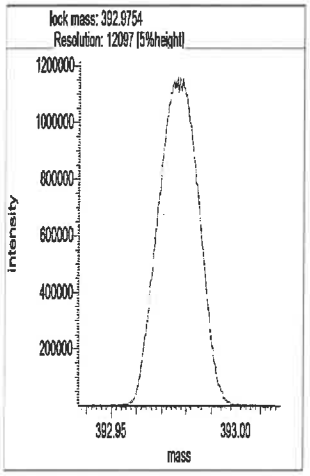

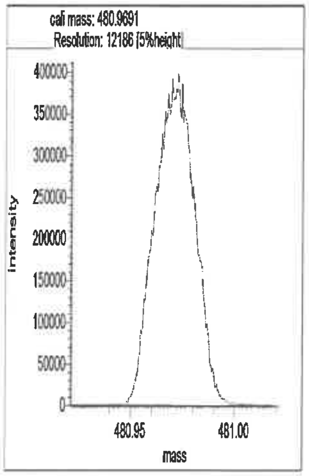

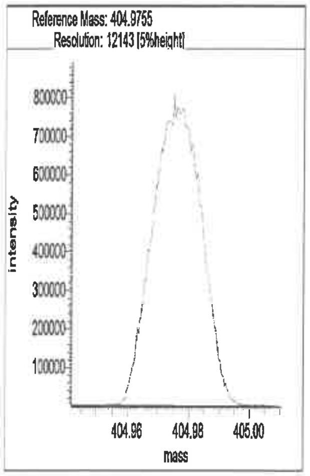

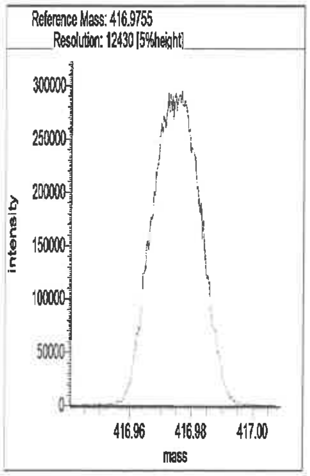

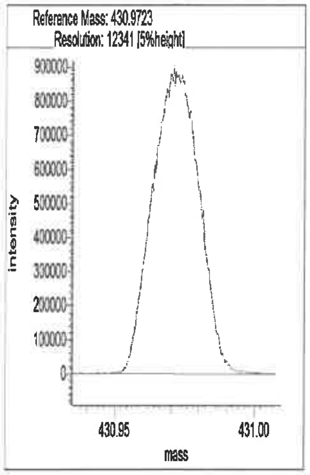

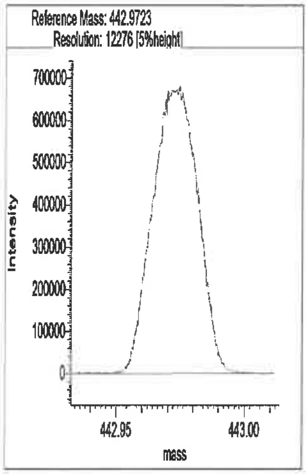

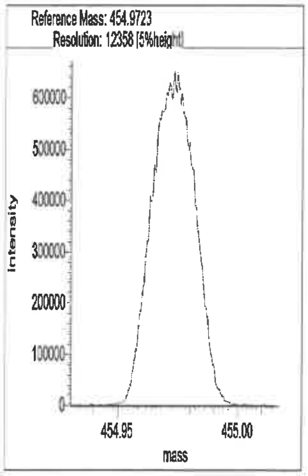

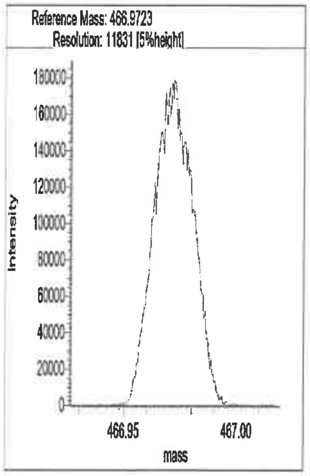

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12390 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12589 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12278 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12732 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12390 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12339 [5%height]

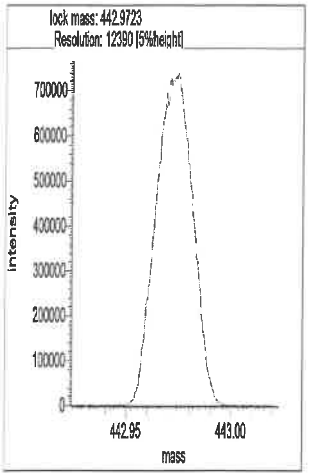
lock mass: 442.9723
Resolution: 12390 [5%height]

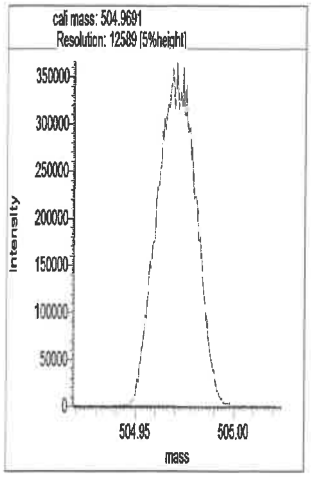
cali mass: 504.9691
Resolution: 12589 [5%height]

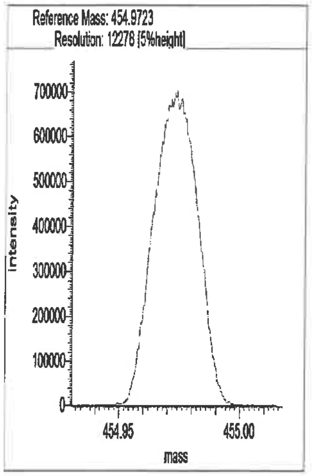
Reference Mass: 454.9723
Resolution: 12278 [5%height]

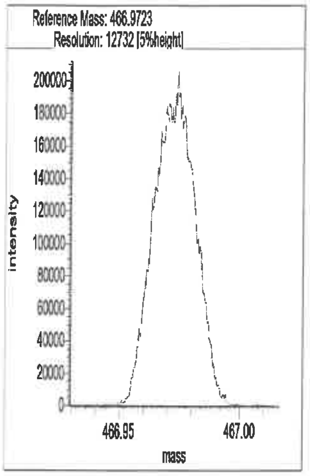
Reference Mass: 466.9723
Resolution: 12732 [5%height]

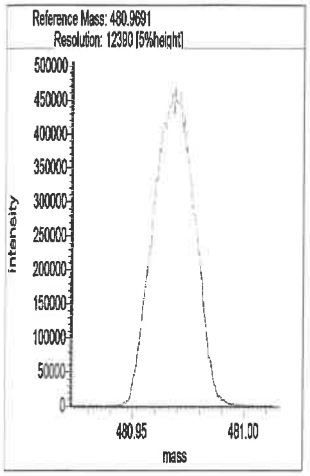
Reference Mass: 480.9691
Resolution: 12390 [5%height]

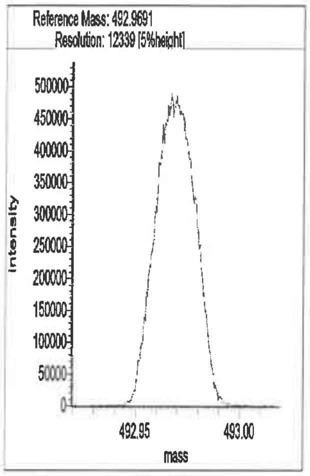
Reference Mass: 492.9691
Resolution: 12339 [5%height]

Report Date: 16-Oct-2020 10:28:48 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 15-Oct-2020 13:08:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 10:28:46 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: shardaa Date: 16-Oct-2020 09:49:46

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.534	2087345	0.82	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.632	3392847	0.80	1.5883	102.3	102.3	0.5399	0.5399	102	
2,3,7,8-TCDF	18.666	386628	0.81	1.0857	10.5	10.5	0.0810	0.0810	105	
A Non-2,3,7,8-sub-TCDF	18.294						0.0810	0.0810		Rn
S Total TCDF					10.5	10.5	0.0810	0.0810		
D 13C-2,3,7,8-TCDD	19.877	2246097	0.80	1.1194	96.1	96.1	0.3570	0.3570	96.13	
$ 37Cl4-2,3,7,8-TCDD	19.903	232047		1.1468	9.694	9.694	0.0235	0.0235	96.94	
2,3,7,8-TCDD	19.912	232253	0.85	1.0810	9.566	9.566	0.1033	0.1033	95.66	
A Non-2,3,7,8-sub-TCDD	19.080						0.1033	0.1033		
S Total TCDD					9.566	9.566	0.1033	0.1033		
D 13C-1,2,3,7,8-PeCDF	25.789	2727686	1.59	1.4782	88.4	88.4	0.3453	0.3453	88.40	
1,2,3,7,8-PeCDF	25.814	1468094	1.61	1.0547	51.0	51.0	0.2040	0.2040	102	
D 13C-2,3,4,7,8-PeCDF	27.212	2470938	1.57	1.3912	85.1	85.1	0.3669	0.3669	85.09	
2,3,4,7,8-PeCDF	27.237	1388232	1.59	1.1035	50.9	50.9	0.2243	0.2243	102	
A F1 PeCDFs	22.995						0.0137	0.0137		
A Non-2,3,7,8-sub-PeCDF	26.447						0.2134	0.2134		
S Total PeCDF					101.9	101.9	0.2142	0.2142		
D 13C-1,2,3,7,8-PeCDD	27.970	1613586	1.51	0.9415	82.1	82.1	0.1600	0.1600	82.11	
1,2,3,7,8-PeCDD	28.003	838513	1.58	1.0680	48.7	48.7	0.1085	0.1085	97.31	
A Non-2,3,7,8-sub-PeCDD	26.883						0.1085	0.1085		
S Total PeCDD					48.7	48.7	0.1085	0.1085		
D 13C-1,2,3,4,7,8-HxCDF	33.732	1899250	0.53	1.1378	100.5	100.5	0.5583	0.5583	101	
1,2,3,4,7,8-HxCDF	33.749	1252562	1.29	1.2643	52.2	52.2	0.3433	0.3433	104	
D 13C-1,2,3,6,7,8-HxCDF	33.926	2336824	0.53	1.3173	106.9	106.9	0.4823	0.4823	107	
1,2,3,6,7,8-HxCDF	33.943	1492476	1.27	1.2230	52.2	52.2	0.3023	0.3023	104	
D 13C-2,3,4,6,7,8-HxCDF	34.894	2367945	0.53	1.2457	114.5	114.5	0.5100	0.5100	115	
2,3,4,6,7,8-HxCDF	34.911	1486905	1.28	1.2464	50.4	50.4	0.2428	0.2428	101	
D 13C-1,2,3,7,8,9-HxCDF	35.888	2210769	0.53	1.1840	112.5	112.5	0.5365	0.5365	112	
1,2,3,7,8,9-HxCDF	35.904	1427719	1.27	1.2638	51.1	51.1	0.2387	0.2387	102	
A Non-2,3,7,8-sub-HxCDF	33.770						0.2753	0.2753		
S Total HxCDF					205.9	205.9	0.2818	0.2818		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.685	1660131	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.147	1419968	1.33	0.8477	100.9	100.9	0.3105	0.3105	101	
1,2,3,4,7,8-HxCDD	35.155	794718	1.26	1.1561	48.4	48.4	0.1514	0.1514	96.82	
D 13C-1,2,3,6,7,8-HxCDD	35.273	1678778	1.25	0.9979	101.3	101.3	0.2638	0.2638	101	
1,2,3,6,7,8-HxCDD	35.290	879552	1.27	1.0284	50.9	50.9	0.1521	0.1521	102	
1,2,3,7,8,9-HxCDD	35.694	909556	1.23	1.1789	49.8	49.8	0.1401	0.1401	99.59	
A Non-2,3,7,8-sub-HxCDD	34.296						0.1473	0.1473		
S Total HxCDD					149.2	149.2	0.1479	0.1479		
D 13C-1,2,3,4,6,7,8-HpCDF	37.868	1804685	0.46	0.9884	110.0	110.0	0.6868	0.6868	110	
1,2,3,4,6,7,8-HpCDF	37.877	1385525	1.05	1.5064	51.0	51.0	0.2815	0.2815	102	
D 13C-1,2,3,4,7,8,9-HpCDF	39.190	1653885	0.44	0.9203	108.3	108.3	0.7376	0.7376	108	
1,2,3,4,7,8,9-HpCDF	39.198	1213343	1.05	1.4548	50.4	50.4	0.2919	0.2919	101	
A Non-2,3,7,8-sub-HpCDF	38.560						0.2866	0.2866		
S Total HpCDF					101.4	101.4	0.2867	0.2867		
D 13C-1,2,3,4,6,7,8-HpCDD	38.878	1684335	1.11	0.9556	106.2	106.2	0.4476	0.4476	106	
1,2,3,4,6,7,8-HpCDD	38.887	872192	1.06	1.0640	48.7	48.7	0.1595	0.1595	97.34	
A Non-2,3,7,8-sub-HpCDD	38.941						0.1595	0.1595		
S Total HpCDD					48.7	48.7	0.1595	0.1595		
D 13C-OCDD	41.325	2901805	0.91	0.7420	235.6	235.6	0.4434	0.4434	118	
OCDF	41.409	2143631	0.92	1.4296	103.3	103.3	0.1257	0.1257	103	
OCDD	41.333	1621919	0.90	1.1293	99.0	99.0	0.1043	0.1043	98.98	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 15-Oct-2020 13:08:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 10:28:46 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: shardaa Date: 16-Oct-2020 09:49:46

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.534	19.534	0		937477	142598	372	930	383		
333.9338	19.525	19.534	-1		1149868	180668	145	362	1246	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.632	18.632	0	0.954	1505363	239459	756	1890	317		
317.9389	18.632	18.632	0	0.954	1887484	285737	353	882	809	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.666	18.666	0	1.002	173175	27606	63	157	438		
305.8987	18.658	18.666	-1	1.001	213453	31069	122	305	255	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.027	18.294	44	1.021	3514	379	63	157	6		
305.8987	19.104	18.294	48	1.025	1480	483	122	305	4	2.37(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.877	19.877	0	1.018	998781	144252	372	930	388		
333.9338	19.886	19.877	1	1.018	1247316	179808	145	362	1240	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.903	19.903	0	1.019	232047	34233	35	87	978		
2,3,7,8-TCDD											
319.8965	19.912	19.912	0	1.002	106881	16524	100	250	165		
321.8936	19.903	19.912	-1	1.001	125372	18916	45	112	420	0.85(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.080						100	250			
321.8936	19.080						45	112			
13C-1,2,3,7,8-PeCDF											
351.9000	25.789	25.789	0	1.320	1674157	287355	425	1062	676		
353.8970	25.789	25.789	0	1.320	1053529	182995	235	587	779	1.59(1.32-1.78)	

Report Date: 16-Oct-2020 10:28:48 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.814	25.814	0	1.001	905484	155201	242	605	641		
341.8567	25.814	25.814	0	1.001	562610	95778	163	407	588	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.212	27.212	0	1.393	1511013	250792	425	1062	590		
353.8970	27.221	27.212	1	1.394	959925	157973	235	587	672	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.237	27.237	0	1.001	852503	139685	242	605	577		
341.8567	27.237	27.237	0	1.001	535729	85594	163	407	525	1.59(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.995						4	10			
341.8567	22.995						22	55			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.447						242	605			
341.8567	26.447						163	407			
13C-1,2,3,7,8-PeCDD											
367.8949	27.970	27.970	0	1.432	970128	148156	133	332	1114		
369.8919	27.978	27.970	1	1.432	643458	95275	62	155	1537	1.51(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.003	28.003	0	1.001	513862	78817	88	220	896		
357.8516	27.995	28.003	-1	1.001	324651	51078	25	62	2043	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.883						88	220			
357.8516	26.883						25	62			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.732	33.732	0	0.945	661947	127866	351	877	364		
385.8610	33.732	33.732	0	0.945	1237303	238440	653	1632	365	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.749	33.749	0	1.000	704941	130730	349	872	375		
375.8178	33.749	33.749	0	1.000	547621	102945	287	717	359	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.926	33.926	0	0.951	812837	146820	351	877	418		
385.8610	33.926	33.926	0	0.951	1523987	283184	653	1632	434	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.943	33.943	0	1.000	835035	154597	349	872	443		
375.8178	33.943	33.943	0	1.000	657441	122327	287	717	426	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.894	34.894	0	0.978	824388	179780	351	877	512		
385.8610	34.894	34.894	0	0.978	1543557	345649	653	1632	529	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.911	34.911	0	1.000	835368	177765	349	872	509		
375.8178	34.911	34.911	0	1.000	651537	142163	287	717	495	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.888	35.888	0	1.006	764201	182790	351	877	521		
385.8610	35.888	35.888	0	1.006	1446568	344374	653	1632	527	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.904	35.904	0	1.000	799286	185407	349	872	531		
375.8178	35.904	35.904	0	1.000	628433	148493	287	717	517	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.770						349	872			
375.8178	33.770						287	717			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.685	35.685	0		931095	222802	247	617	902		
403.8529	35.685	35.685	0		729036	172307	169	422	1020	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.147	35.147	0	0.985	809597	195830	247	617	793		
403.8529	35.138	35.147	-1	0.985	610371	149924	169	422	887	1.33(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.155	35.155	0	1.000	442853	107343	125	312	859		
391.8127	35.155	35.155	0	1.000	351865	85533	117	292	731	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.273	35.273	0	0.988	934096	218059	247	617	883		
403.8529	35.273	35.273	0	0.988	744682	168744	169	422	998	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.290	35.290	0	1.000	491776	112556	125	312	900		
391.8127	35.290	35.290	0	1.000	387776	88456	117	292	756	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.694	35.694	0	1.016	501538	120221	125	312	962		
391.8127	35.694	35.694	0	1.016	408018	98459	117	292	842	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.296						125	312			
391.8127	34.296						117	292			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.868	37.868	0	1.061	566864	171234	398	995	430		
419.8220	37.868	37.868	0	1.061	1237821	373513	675	1687	553	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.877	37.877	0	1.000	710808	213436	495	1237	431		
409.7788	37.877	37.877	0	1.000	674717	198108	429	1072	462	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.190	39.190	0	1.098	505730	167630	398	995	421		
419.8220	39.190	39.190	0	1.098	1148155	376270	675	1687	557	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.198	39.198	0	1.000	620388	204634	495	1237	413		
409.7788	39.198	39.198	0	1.000	592955	196287	429	1072	458	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.560						495	1237			
409.7788	38.560						429	1072			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.878	38.878	0	1.089	886462	295716	377	942	784		
437.8140	38.878	38.878	0	1.089	797873	264074	299	747	883	1.11(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.887	38.887	0	1.000	448090	146269	197	492	742		
425.7737	38.887	38.887	0	1.000	424102	139234	183	457	761	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						197	492			
425.7737	38.941						183	457			
13C-OCDD											
469.7780	41.325	41.325	0	1.158	1383762	452997	195	487	2323		
471.7750	41.325	41.325	0	1.158	1518043	509388	325	812	1567	0.91(0.76-1.02)	
OCDF											
441.7428	41.409	41.409	0	1.002	1027642	334054	147	367	2272		
443.7399	41.409	41.409	0	1.002	1115989	367496	199	497	1847	0.92(0.76-1.02)	
OCDD											
457.7377	41.333	41.333	0	1.000	769066	259192	116	290	2234		
459.7348	41.333	41.333	0	1.000	852853	288648	111	277	2600	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_3.d		
Injection Date:	15-Oct-2020 13:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

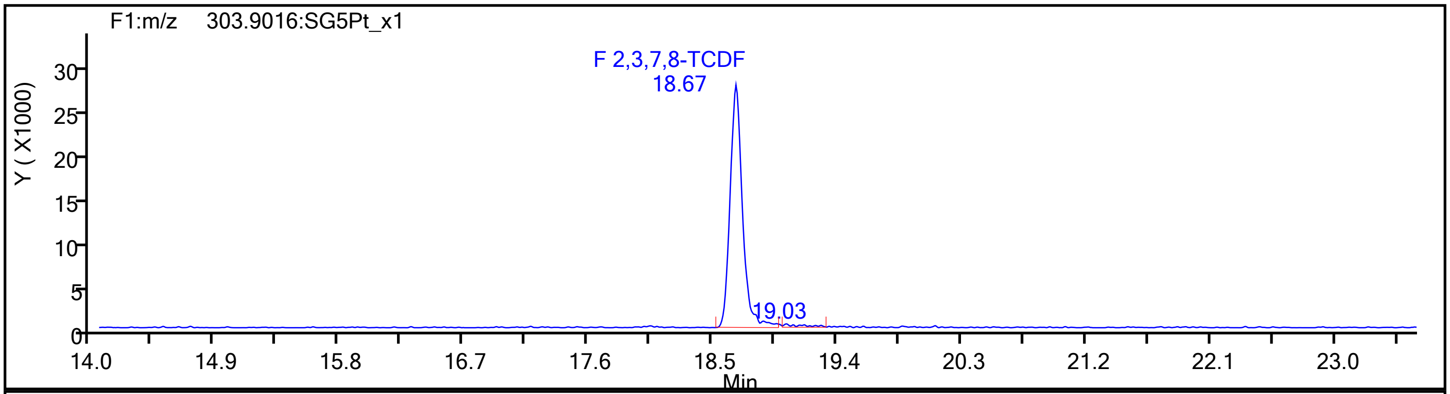

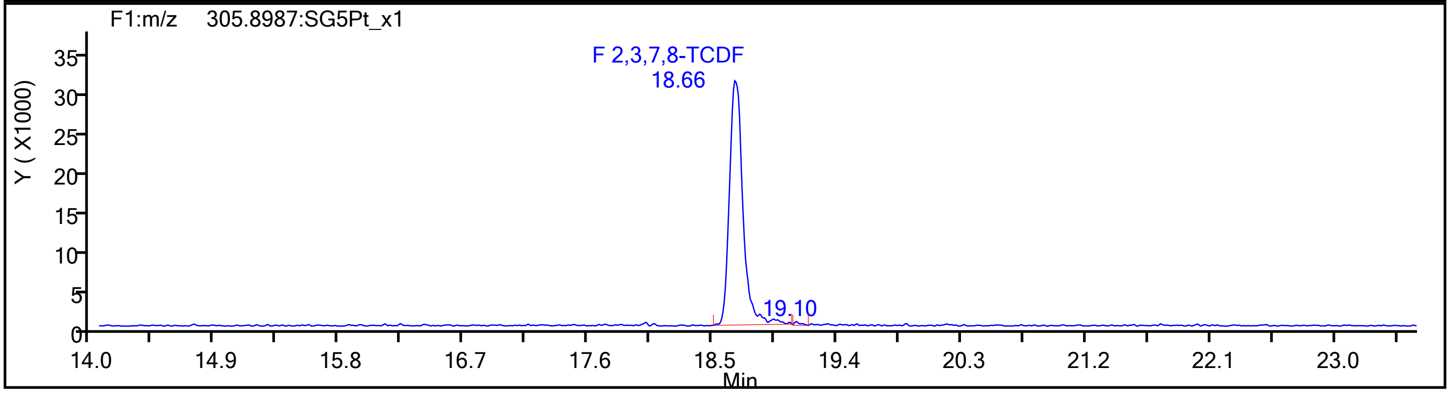

TCDF Standards

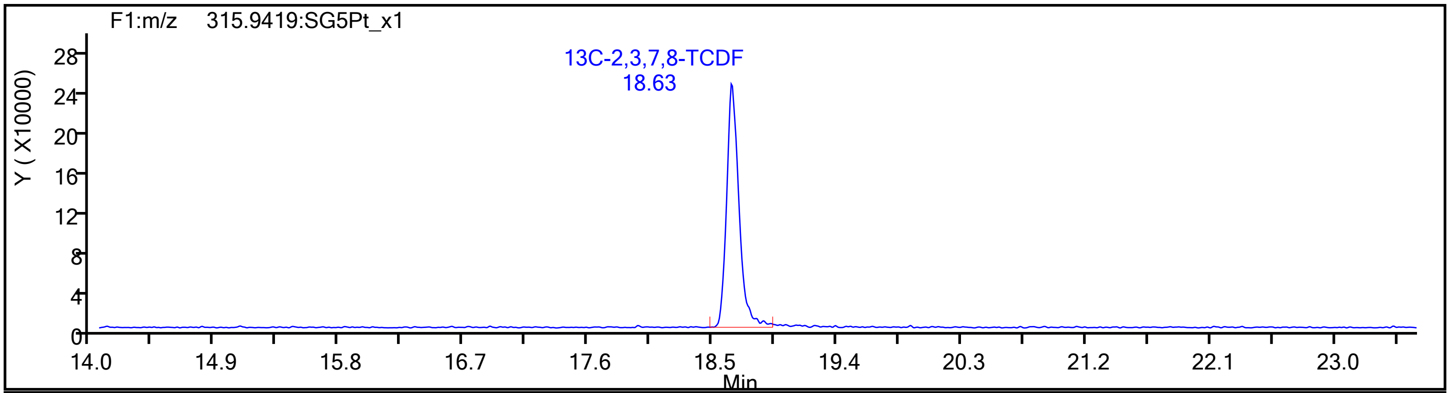

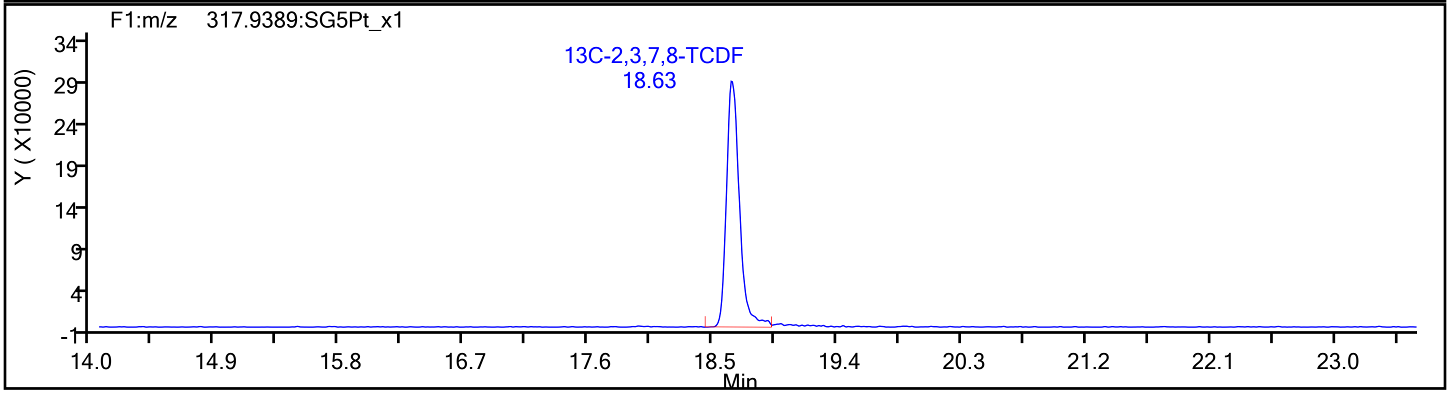

Report Date: 16-Oct-2020 10:28:48 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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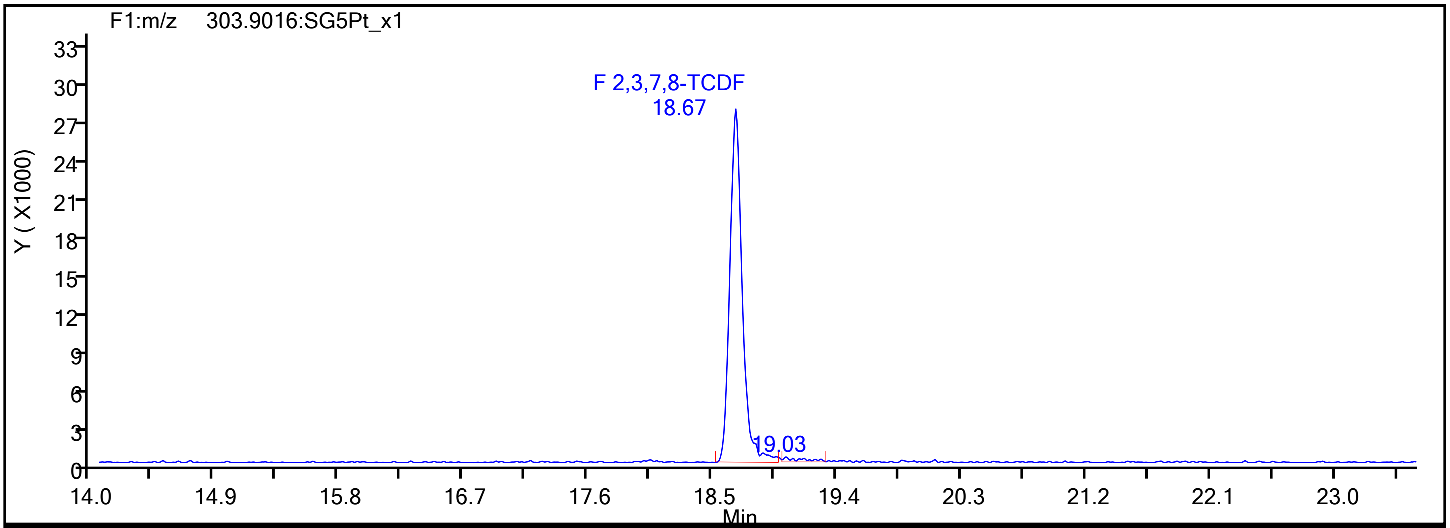

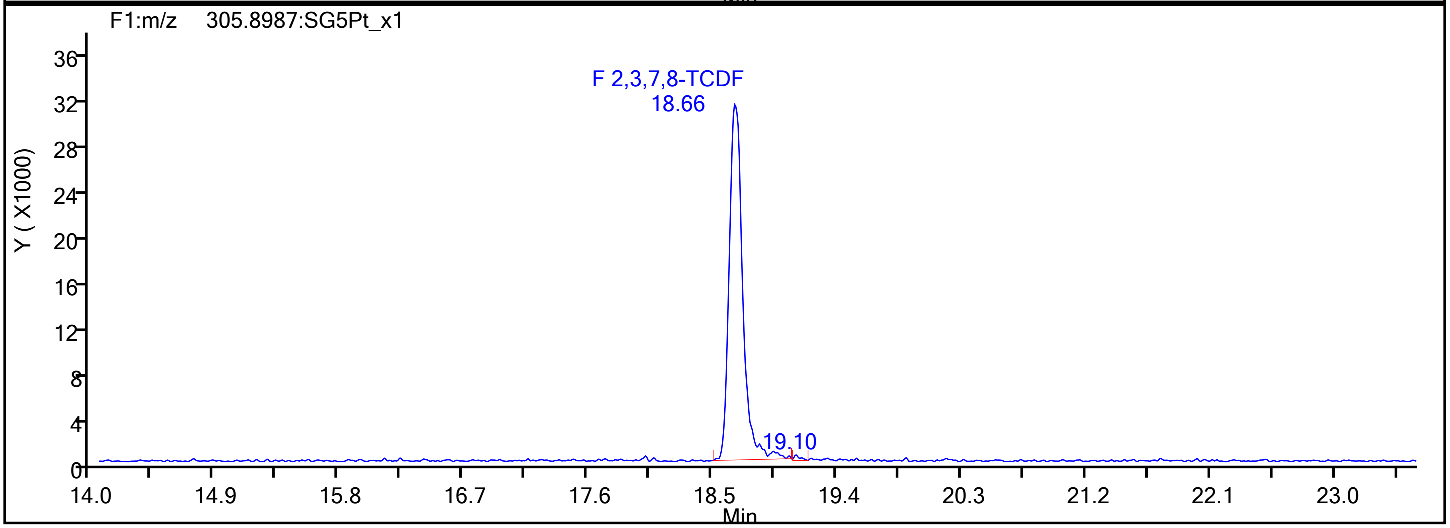

TCDF Interference Mass

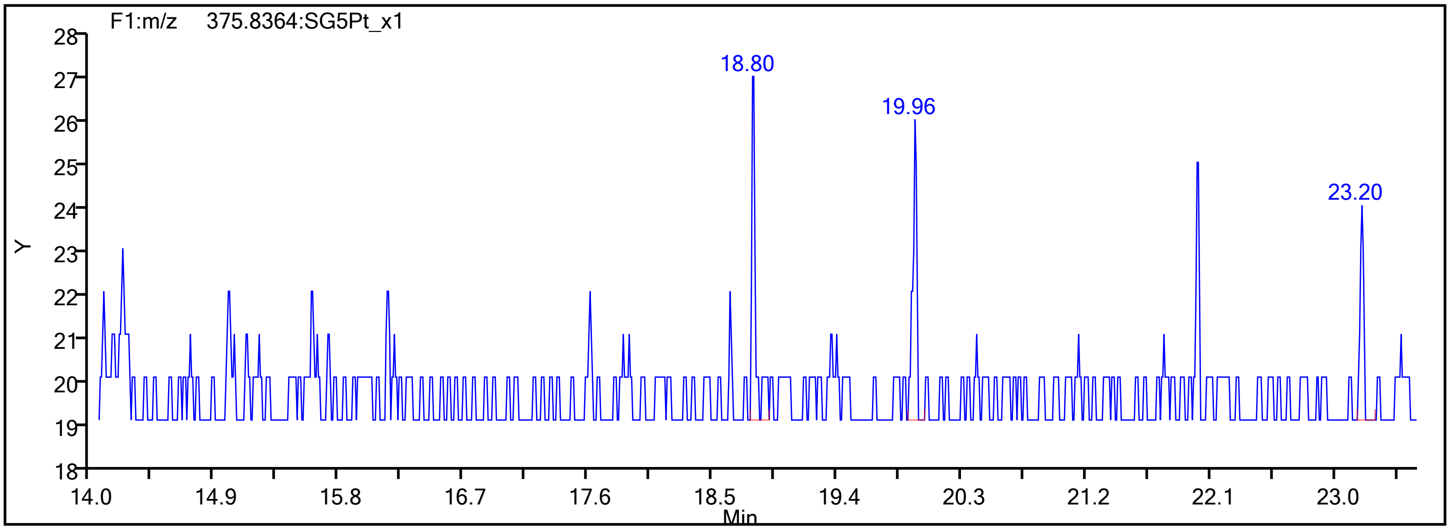

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Eurofins TestAmerica, Sacramento

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TCDD

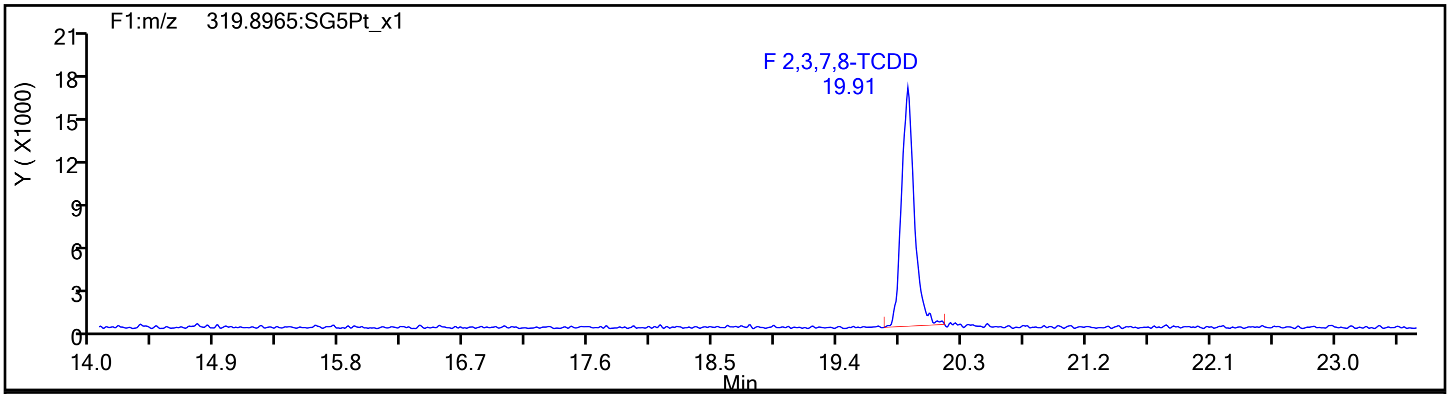

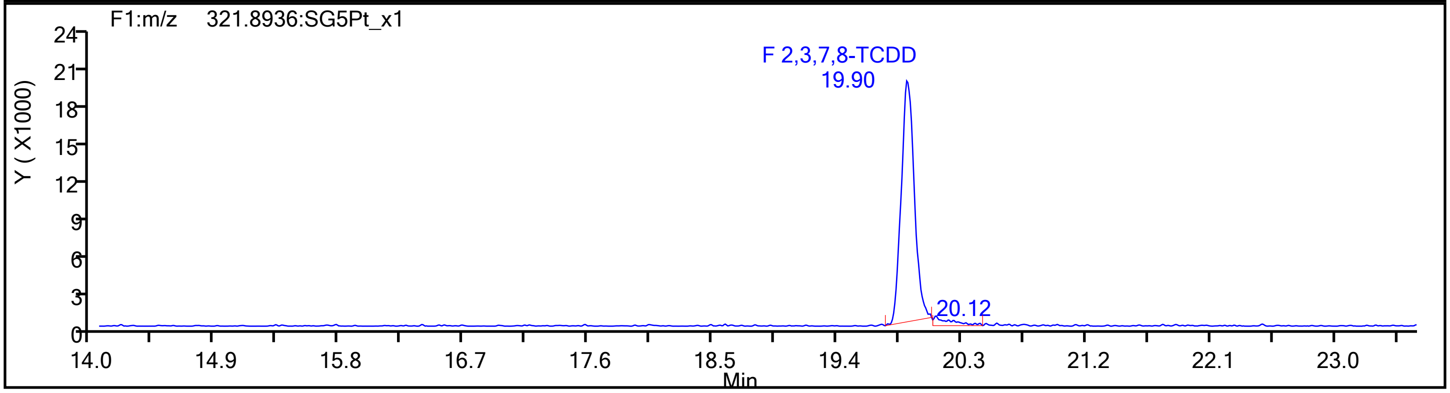

TCDD Standards

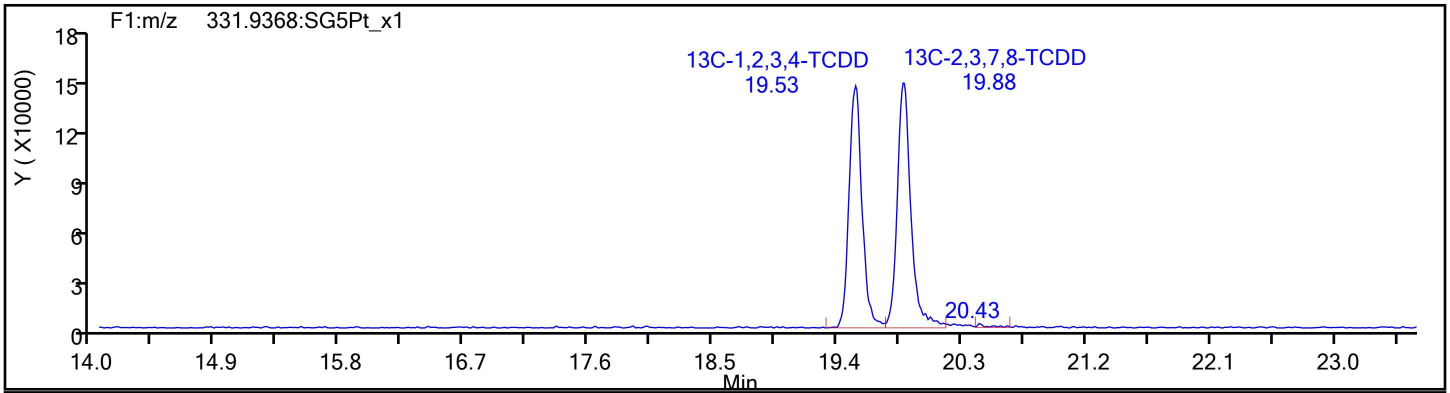

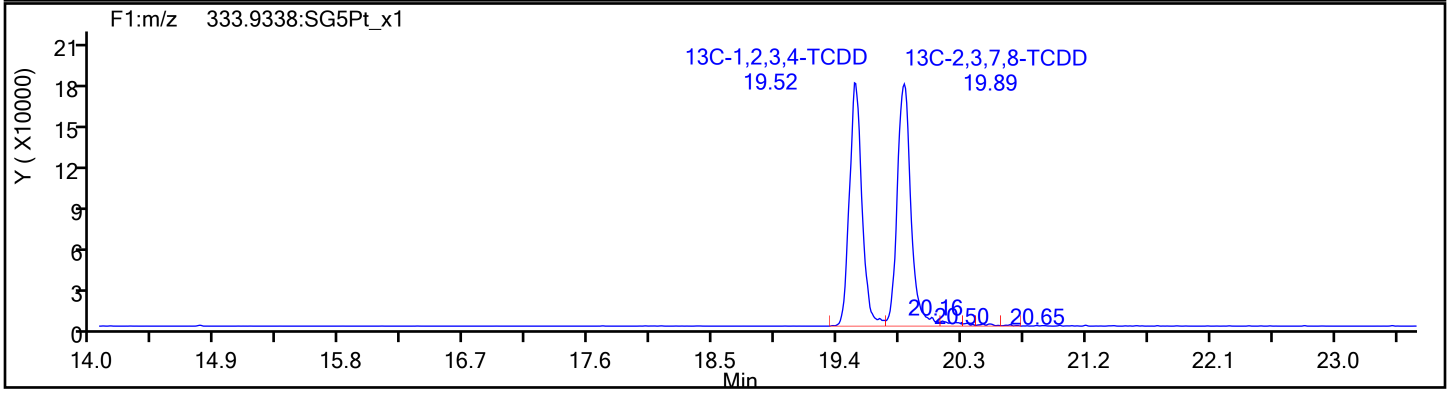

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

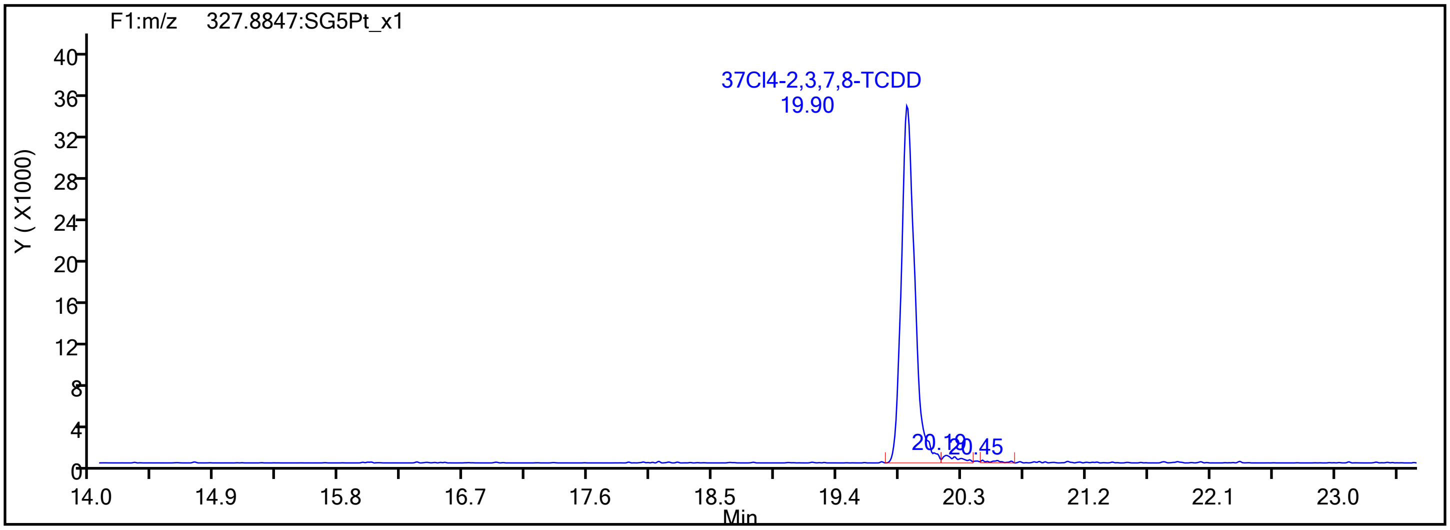

37Cl4-TCDD Standards

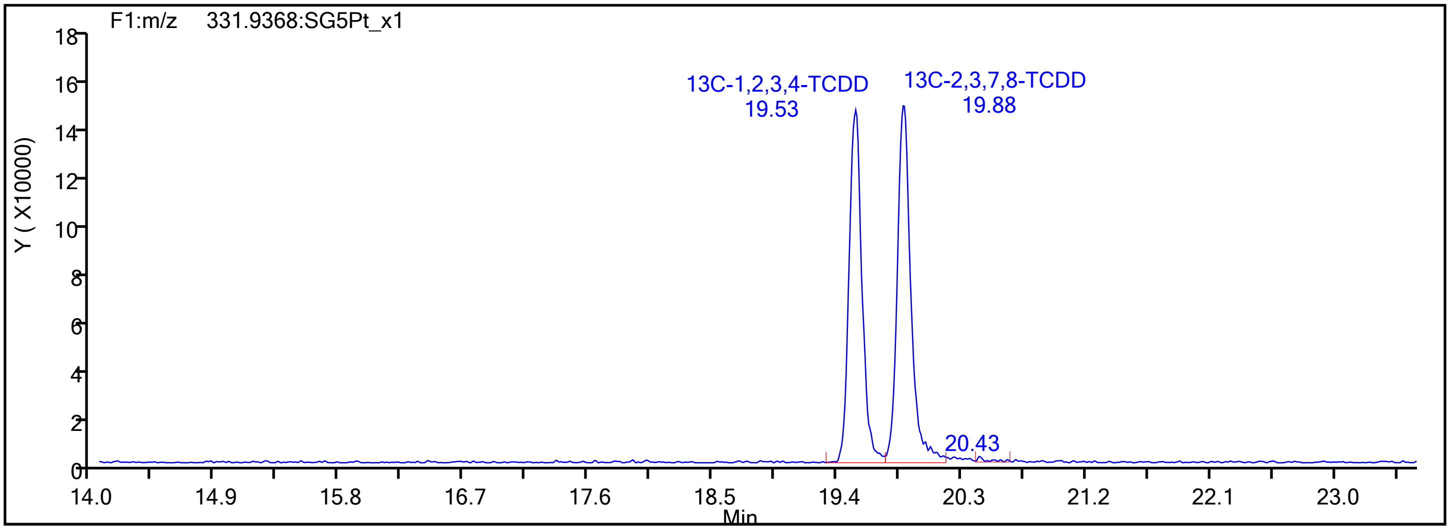

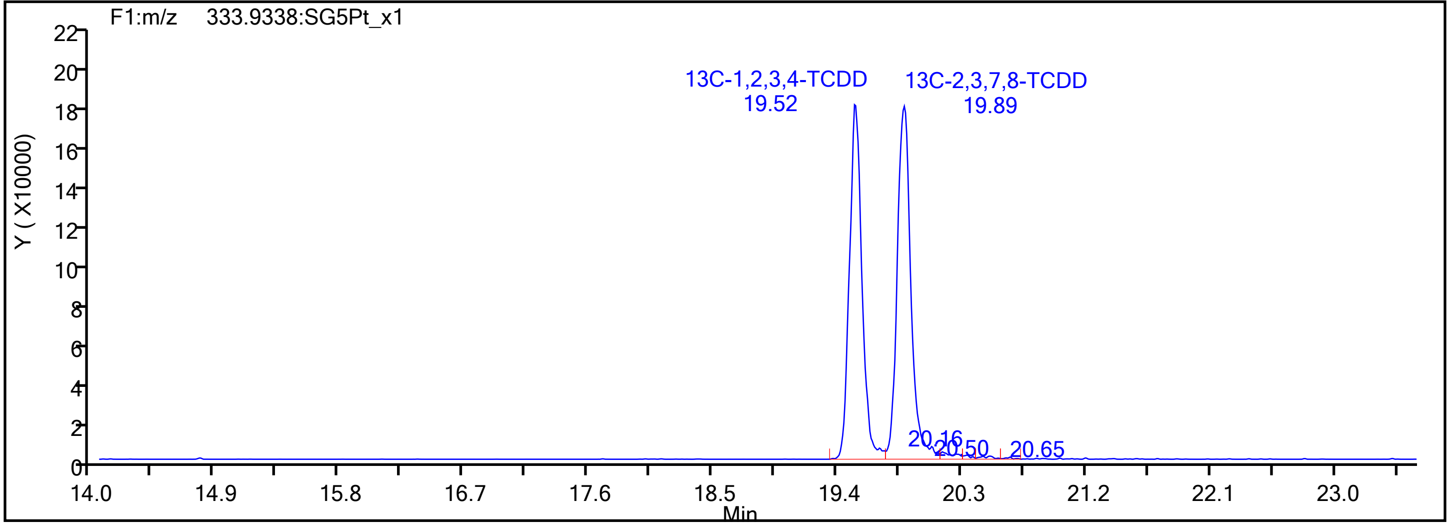

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F1 PeCDFs

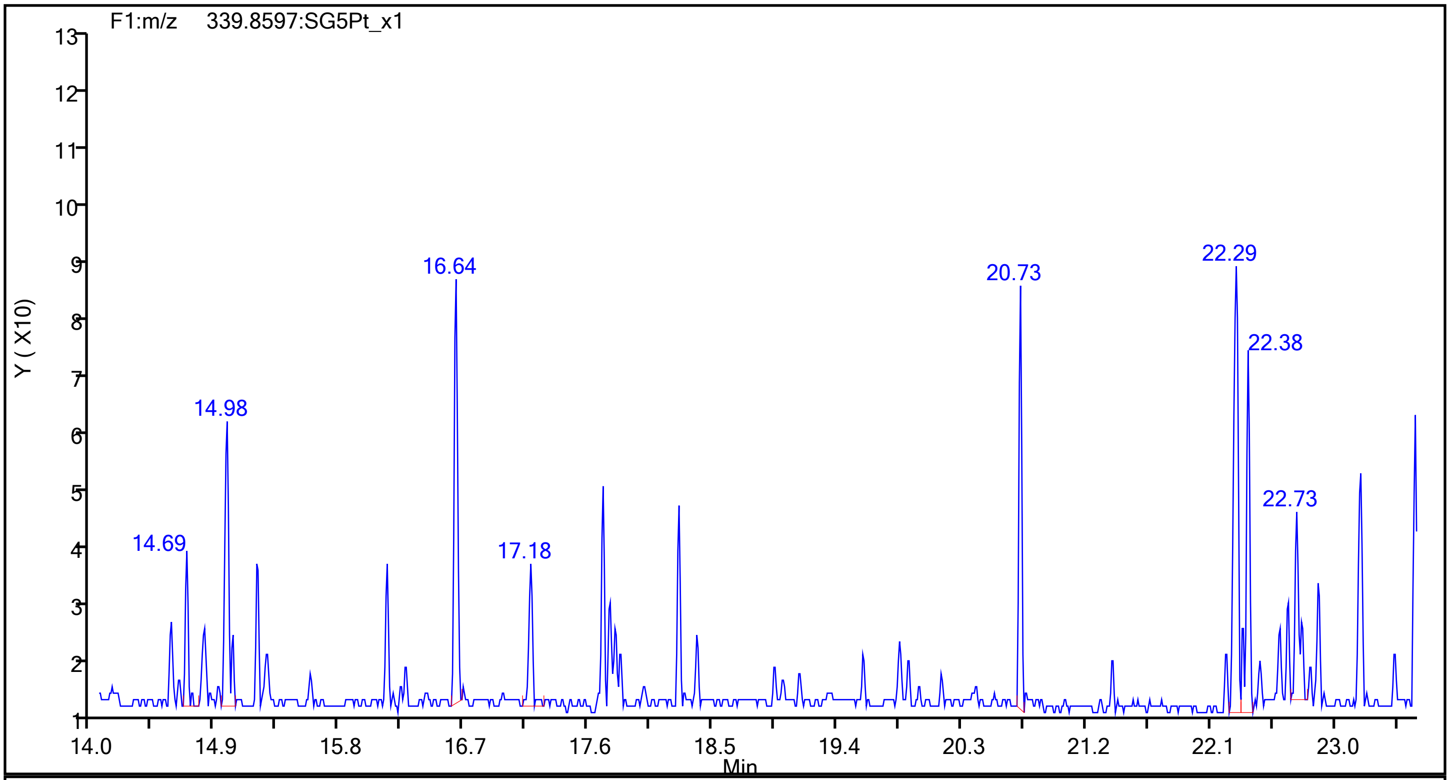

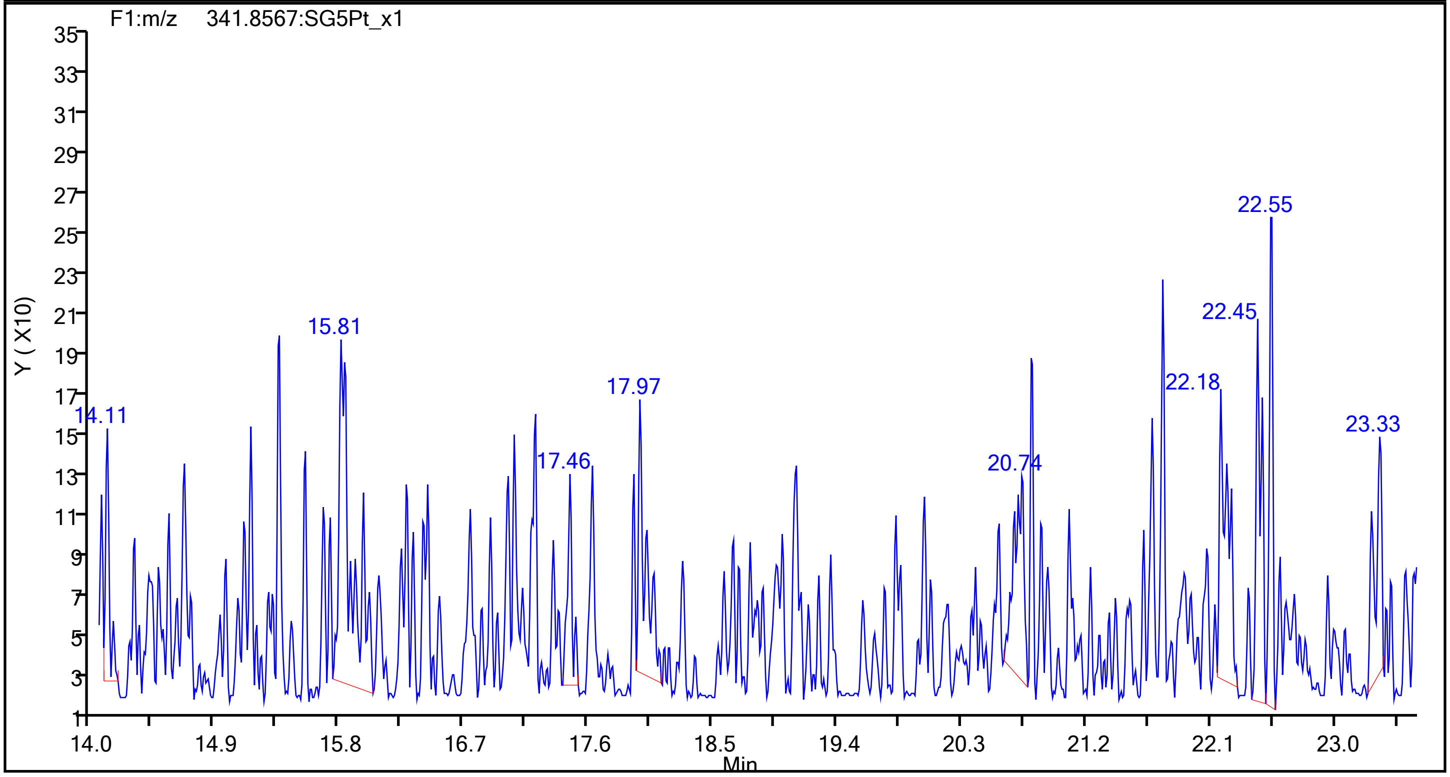

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

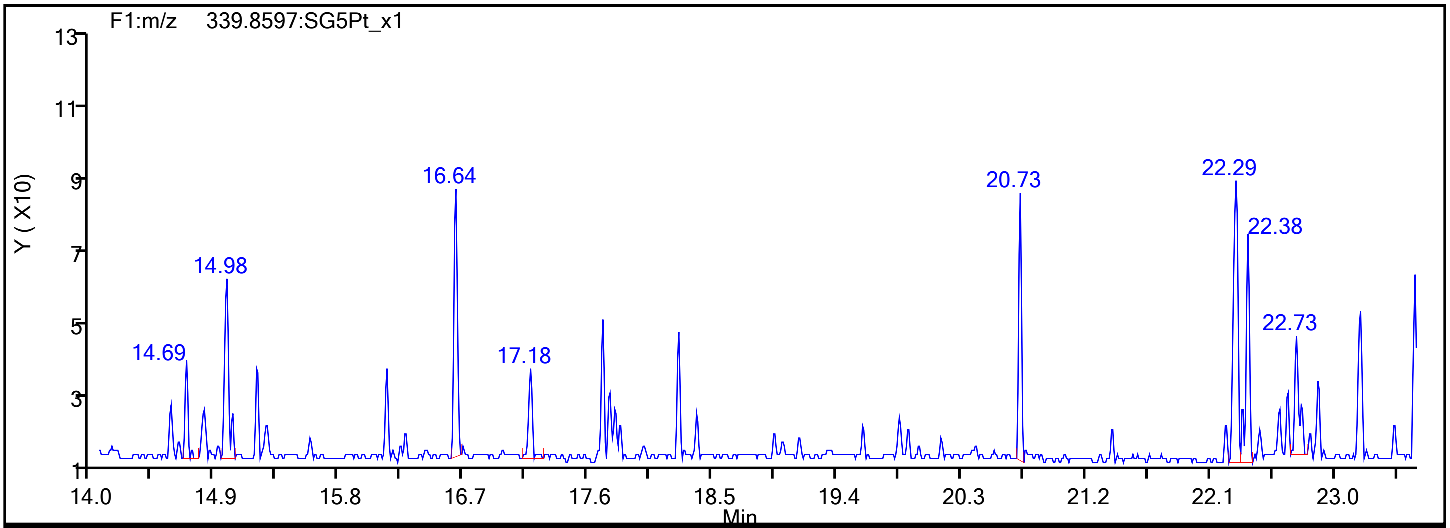

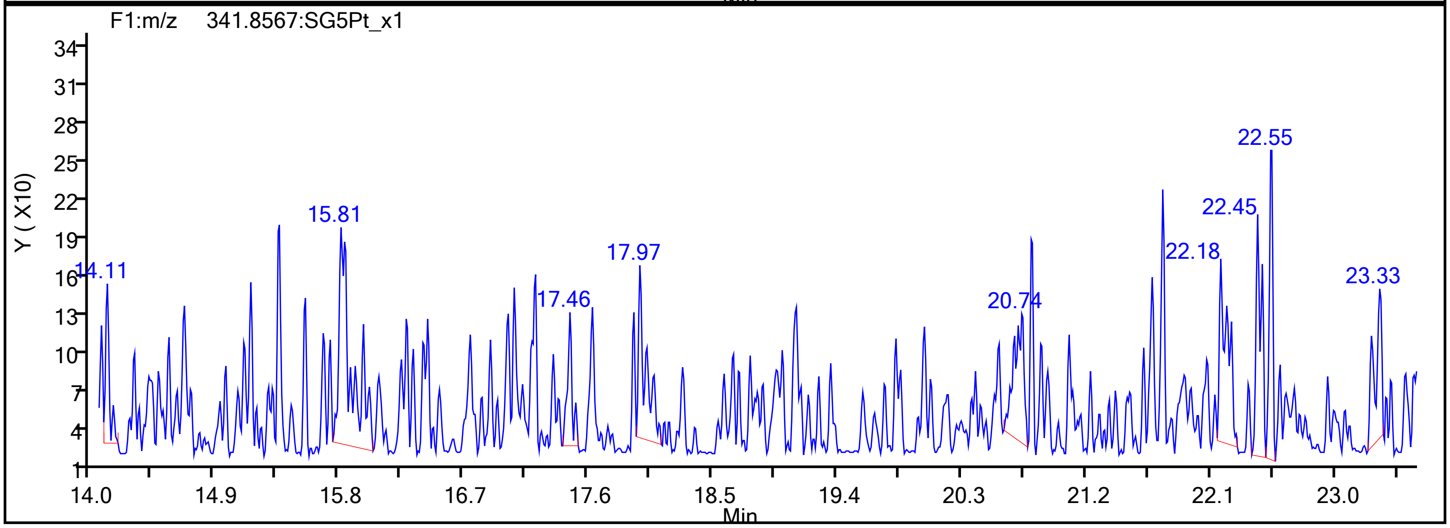

F1 PeCDFs Interference Mass

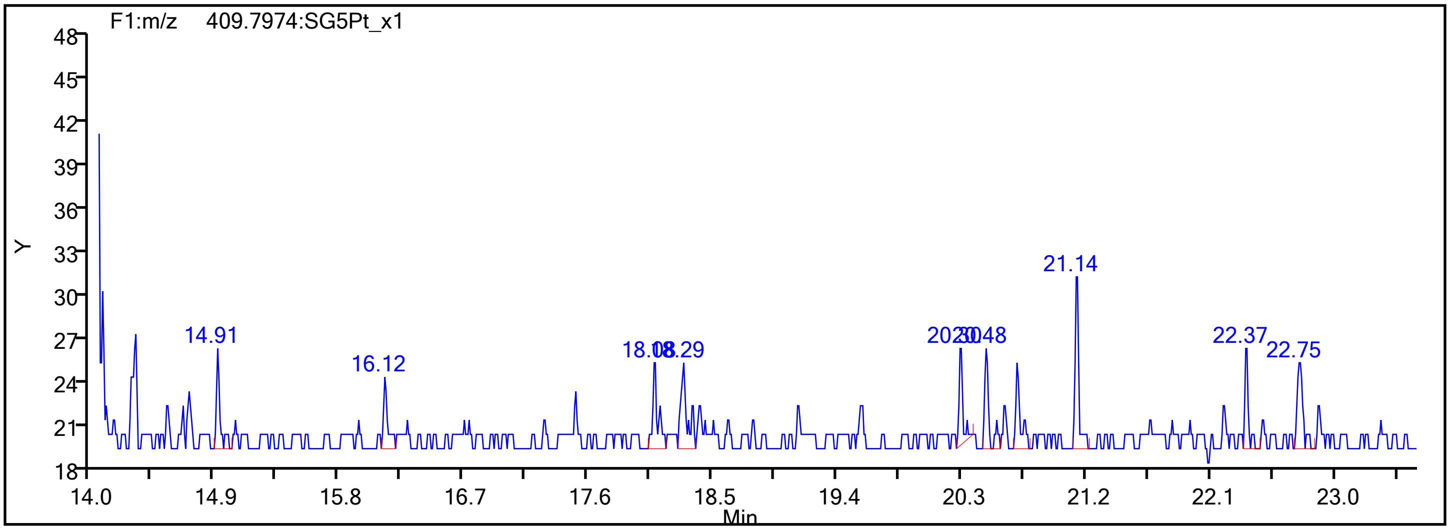

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Eurofins TestAmerica, Sacramento

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PeCDF

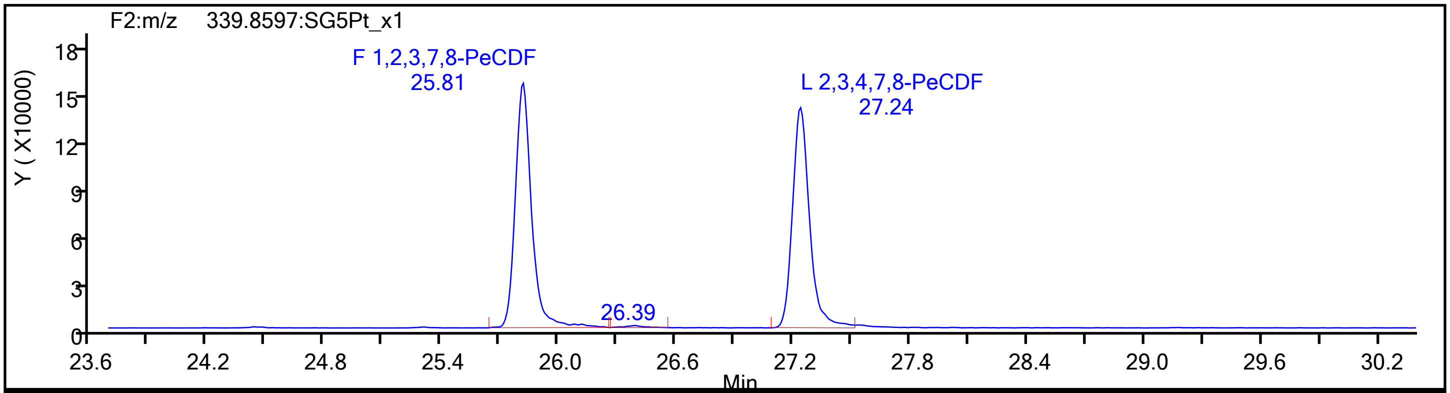

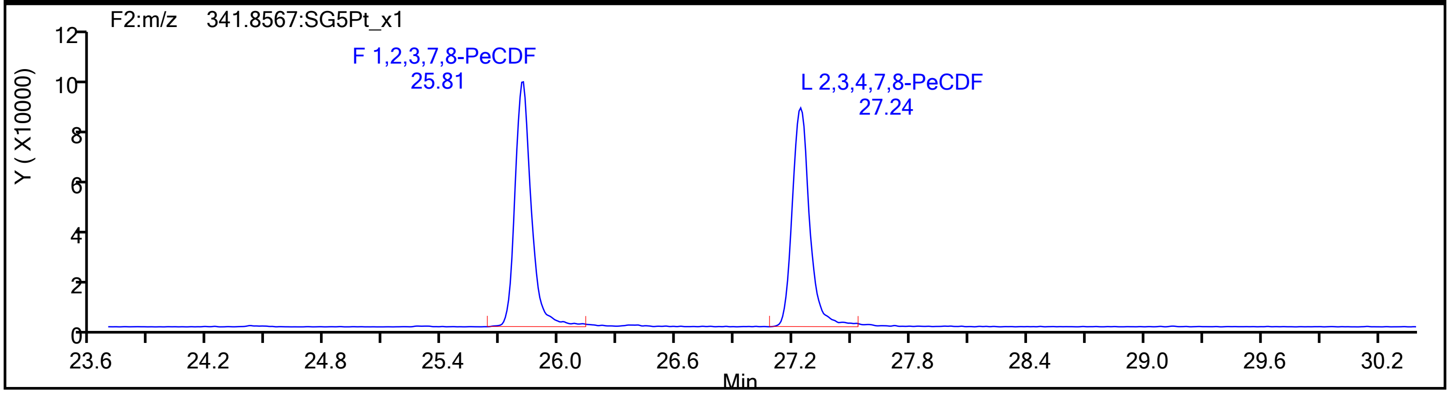

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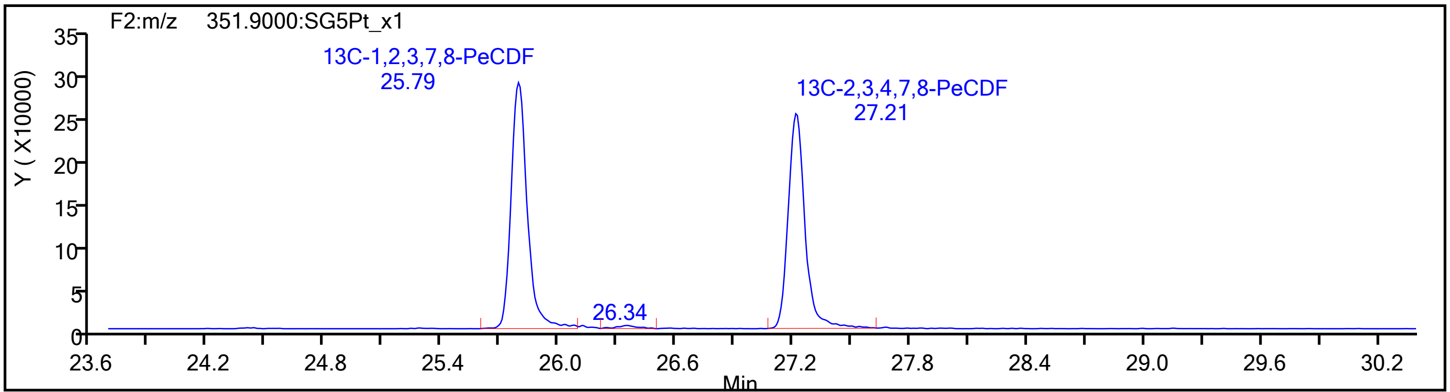

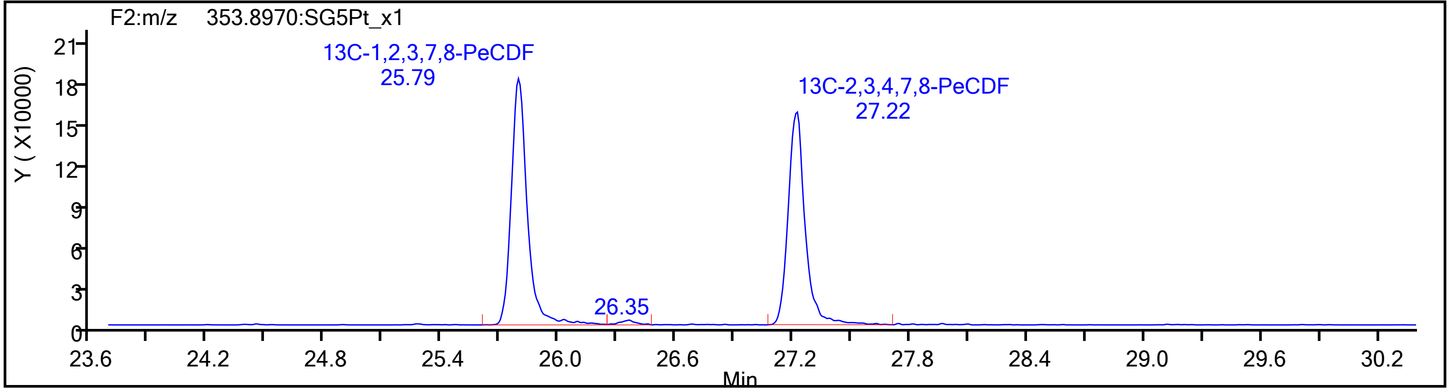

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Eurofins TestAmerica, Sacramento

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PeCDF

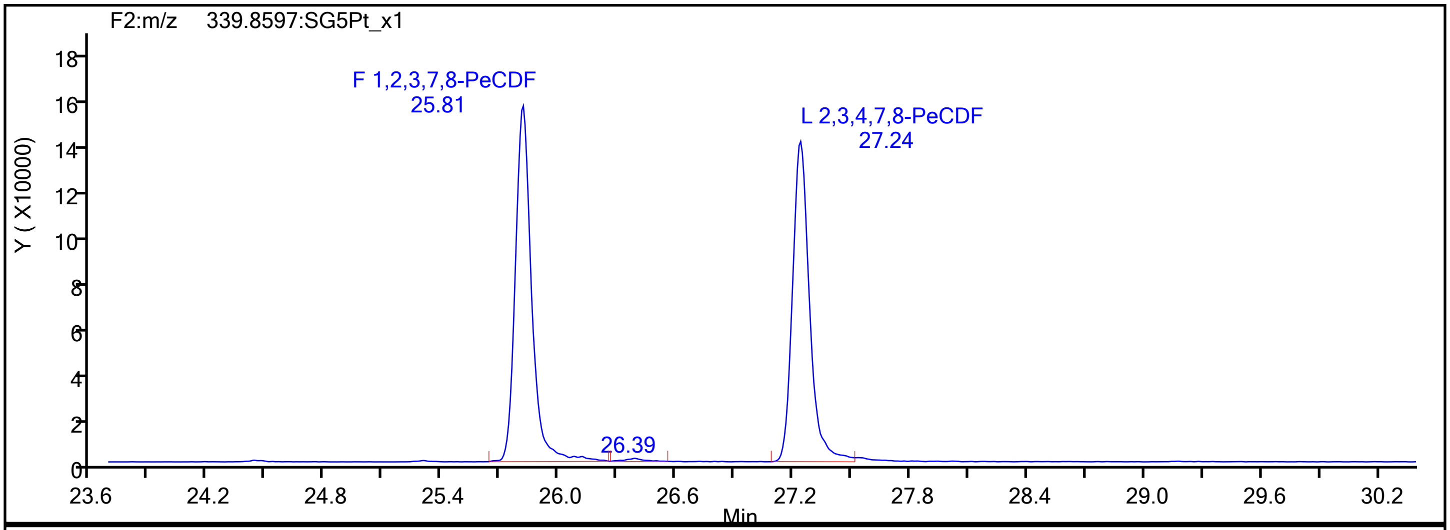

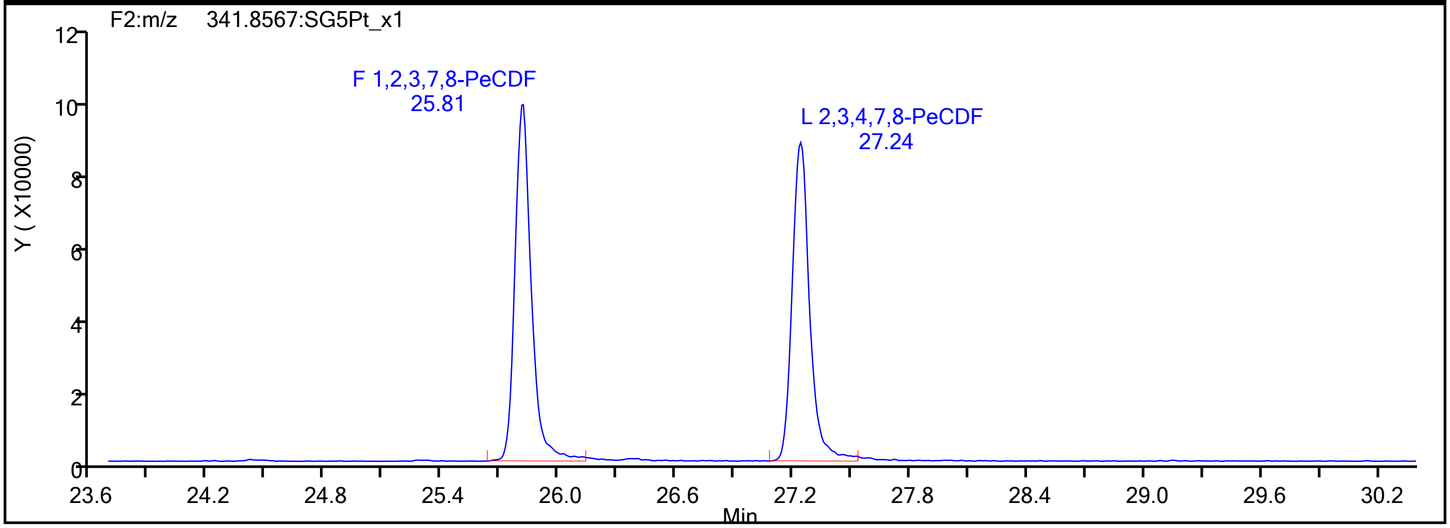

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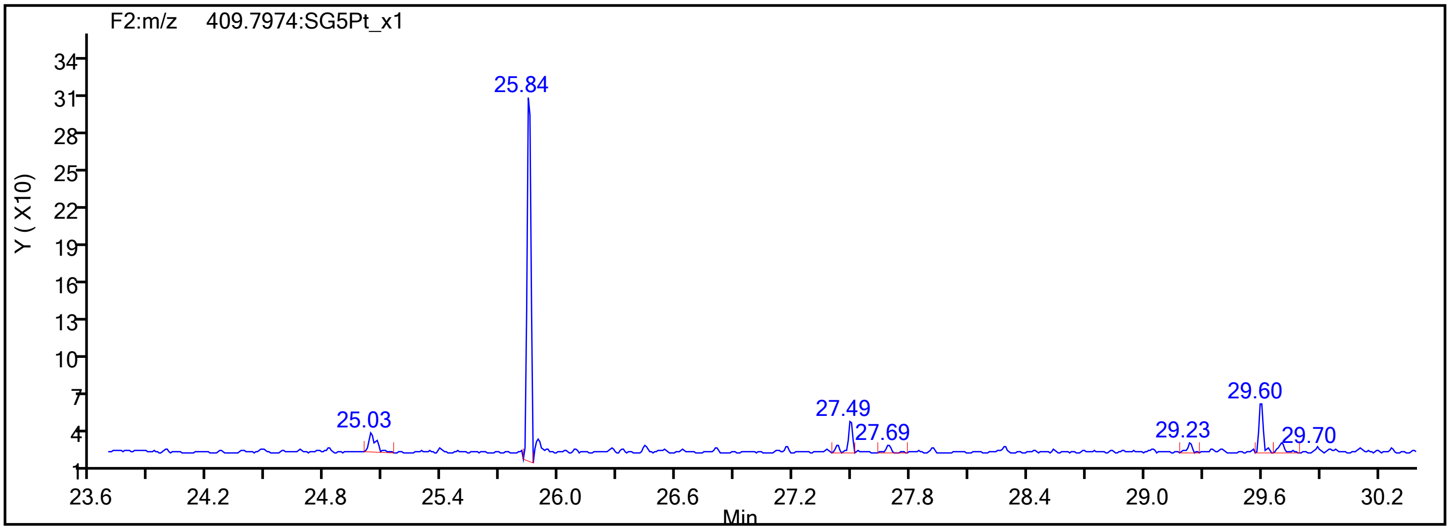

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Eurofins TestAmerica, Sacramento

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PeCDD

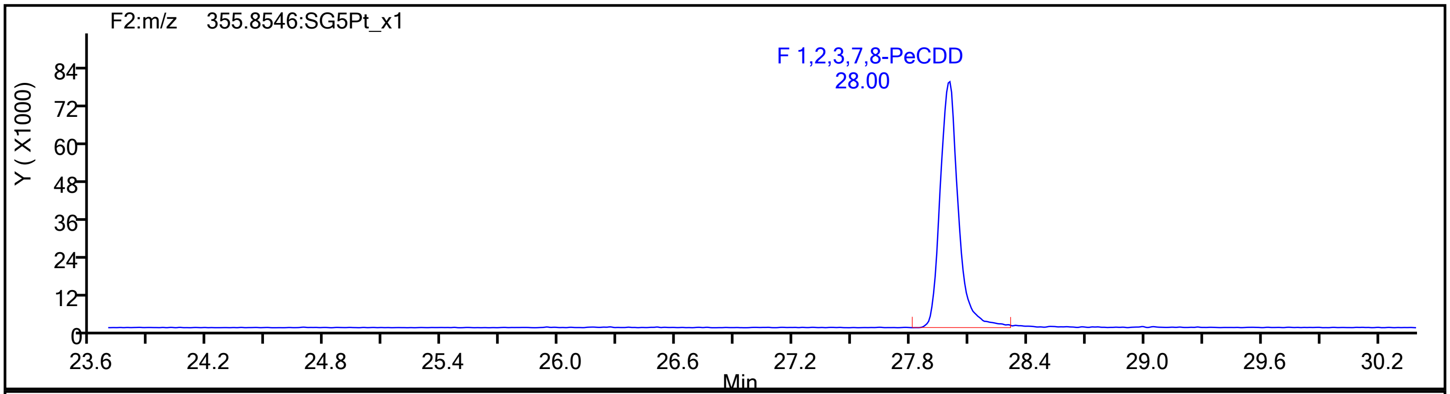

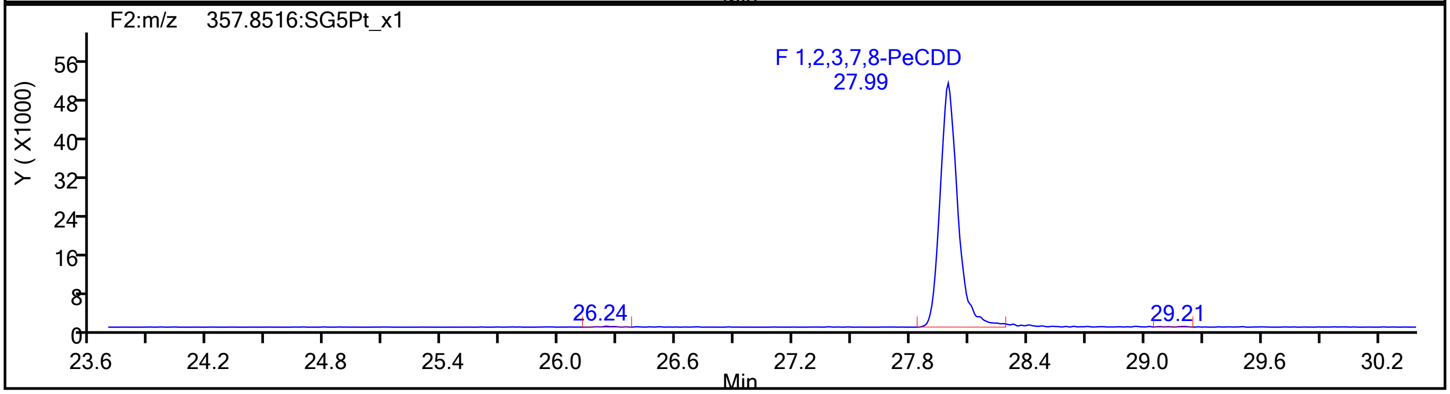

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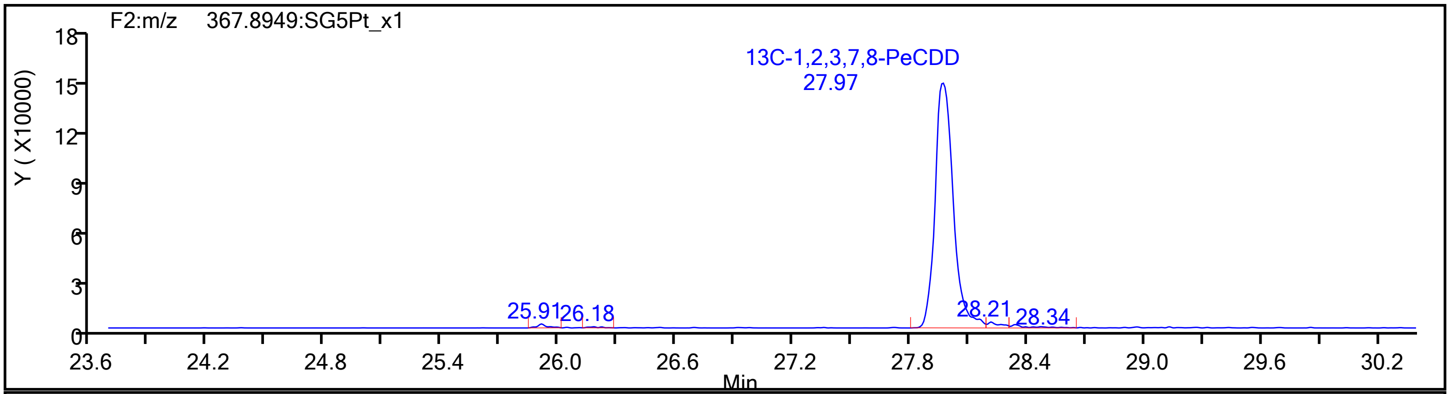

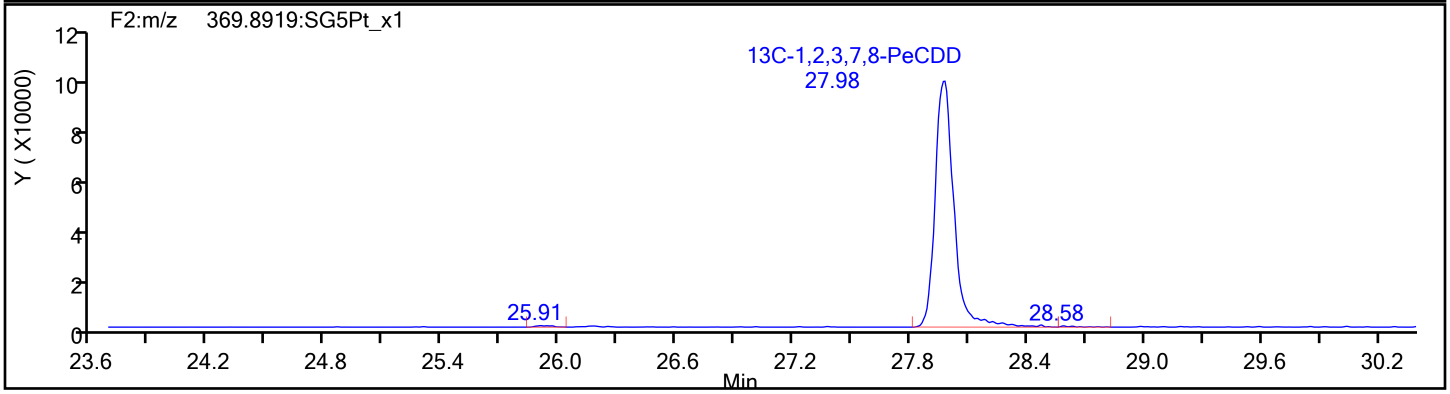

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Eurofins TestAmerica, Sacramento

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HxCDF

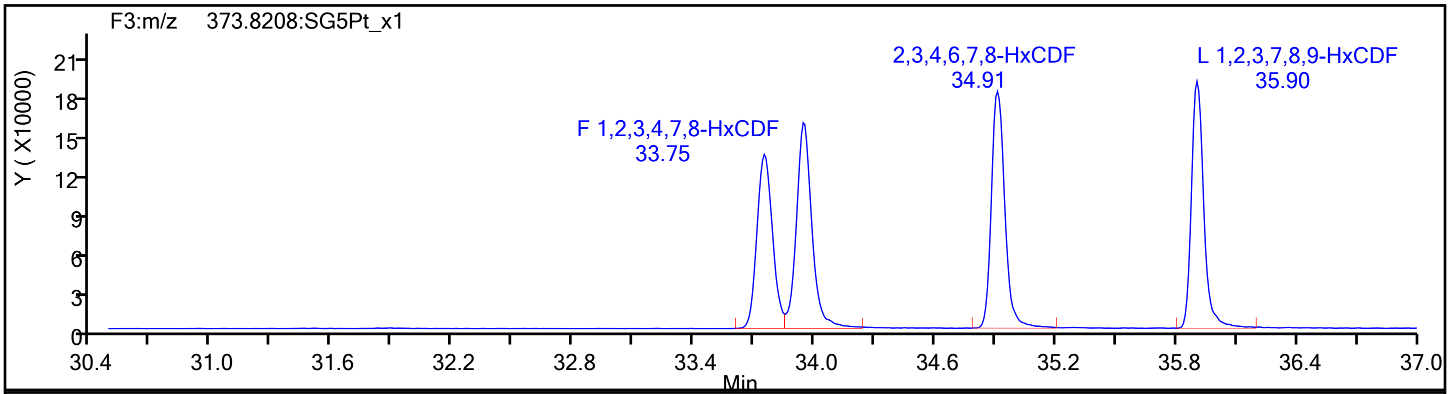

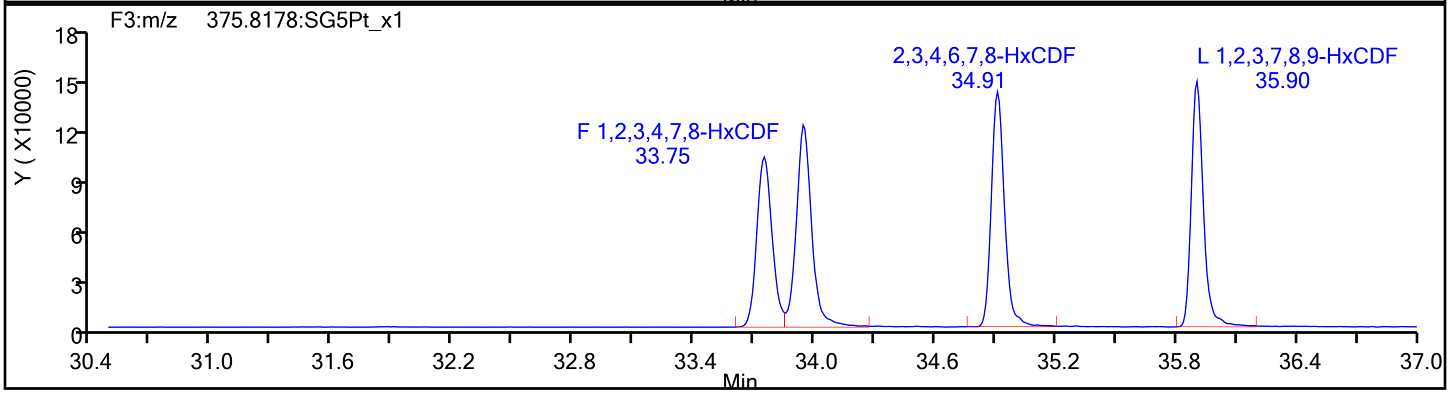

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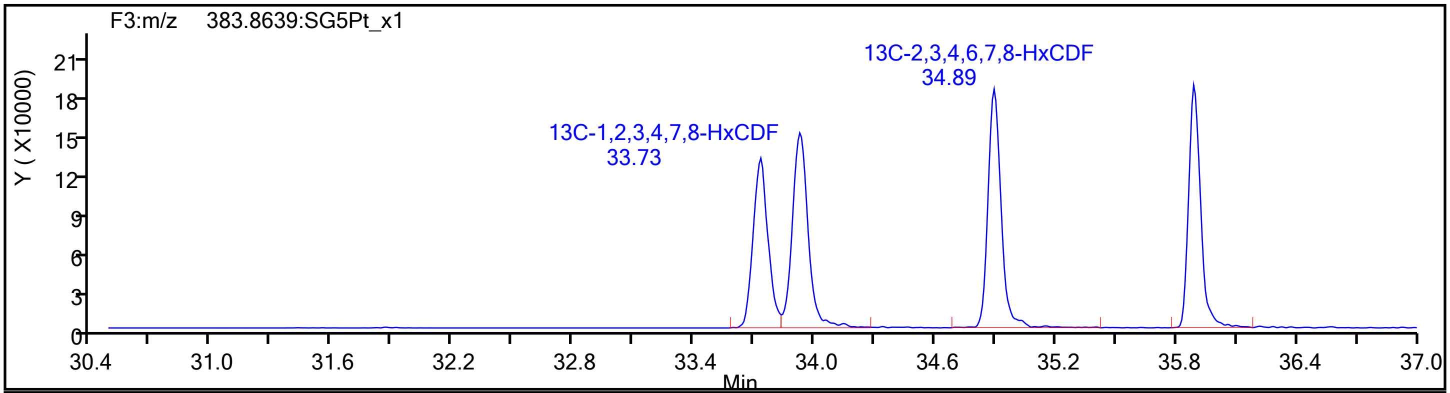

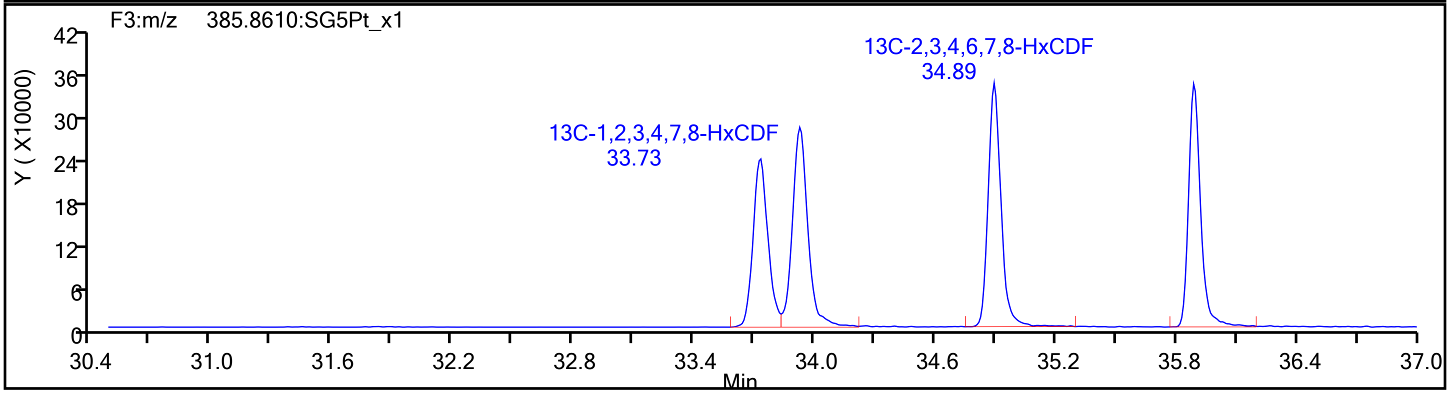

Eurofins TestAmerica, Sacramento

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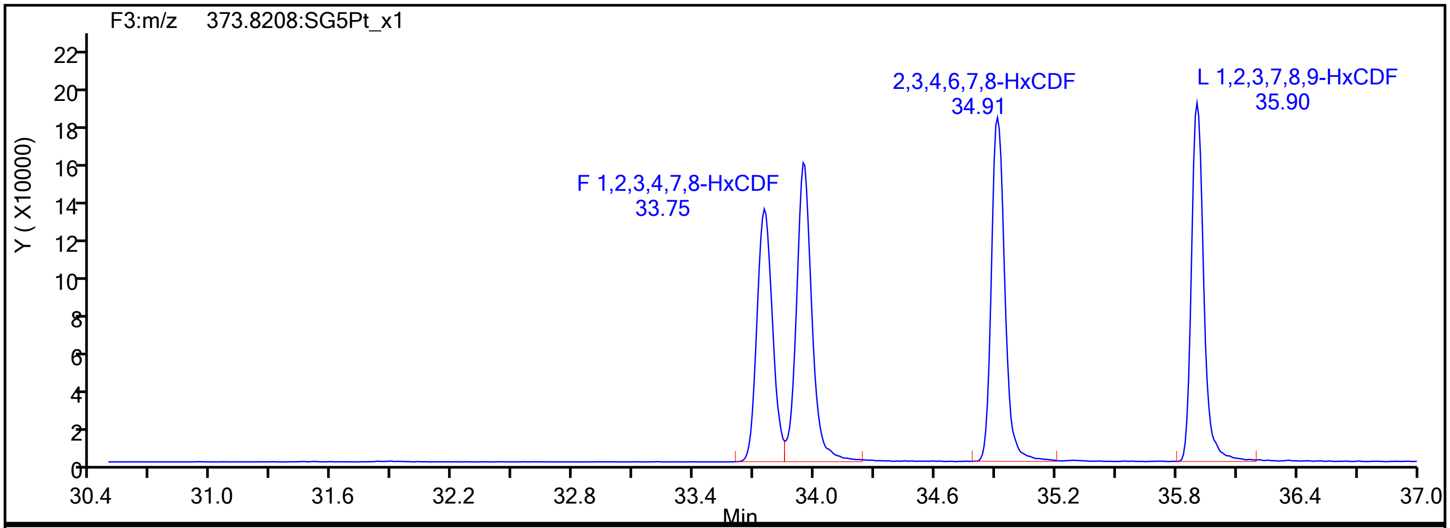

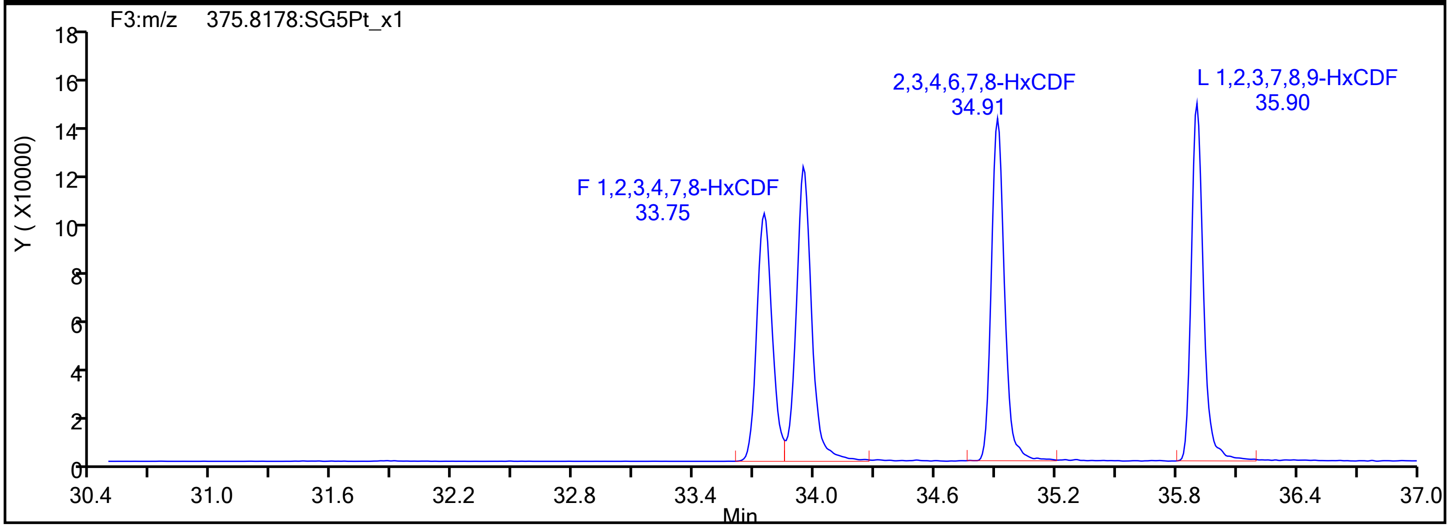

HxCDF Interference Mass

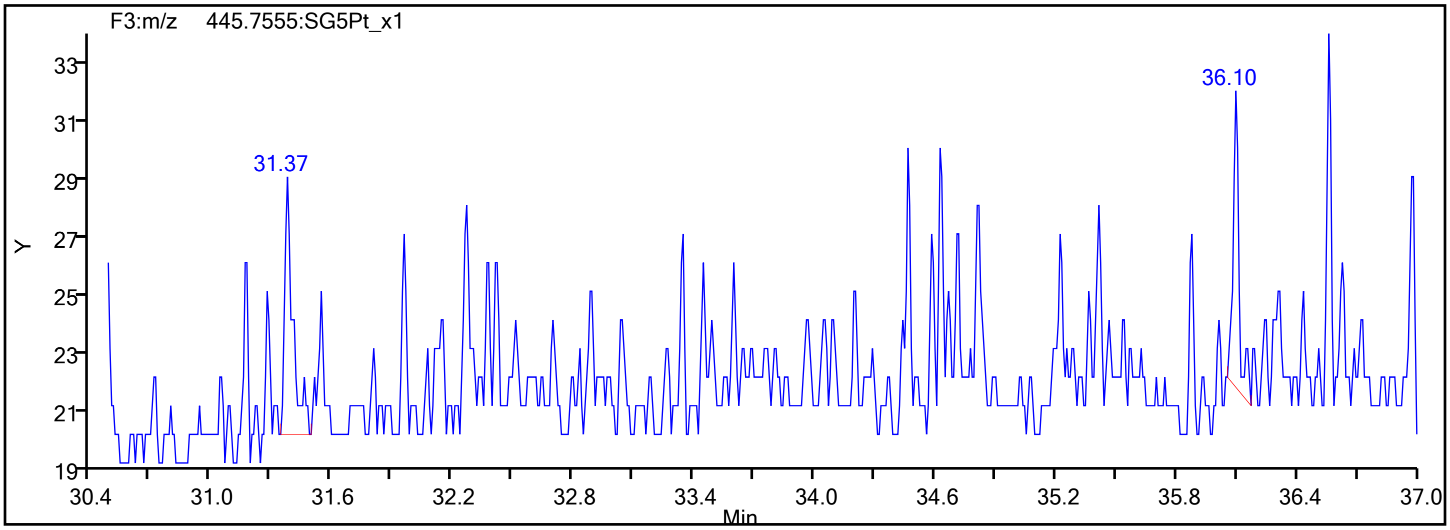

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Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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HxCDD

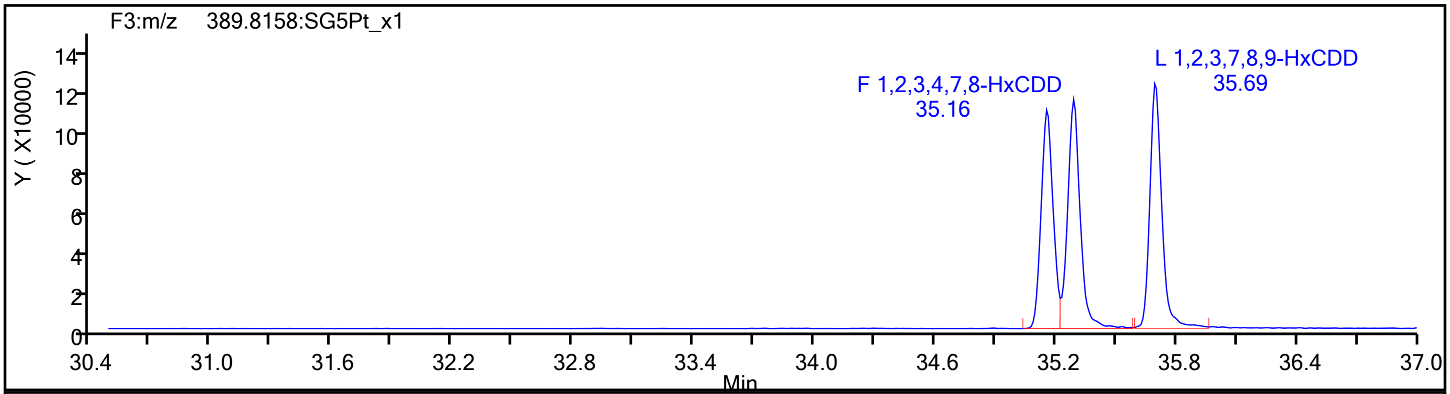

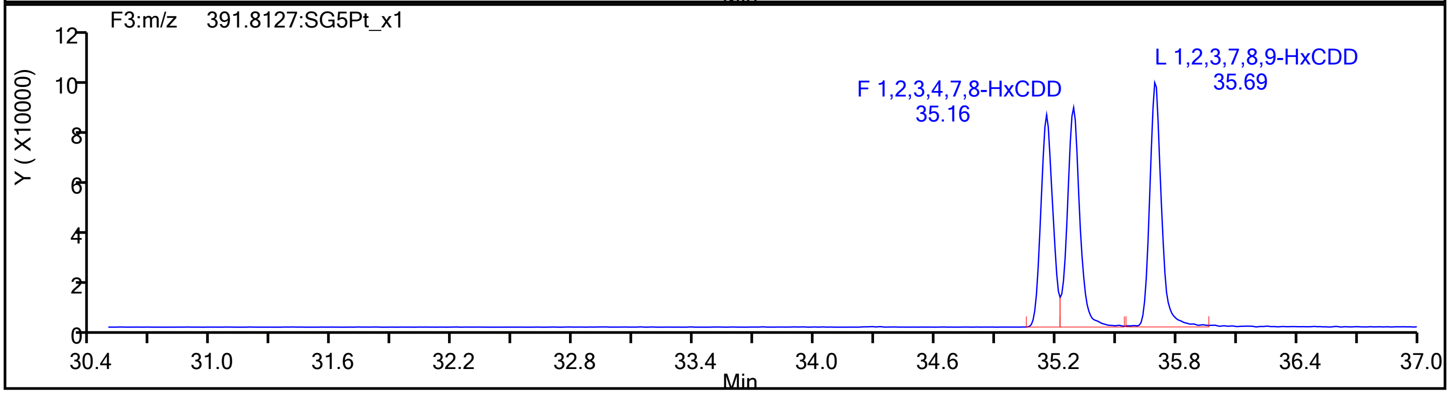

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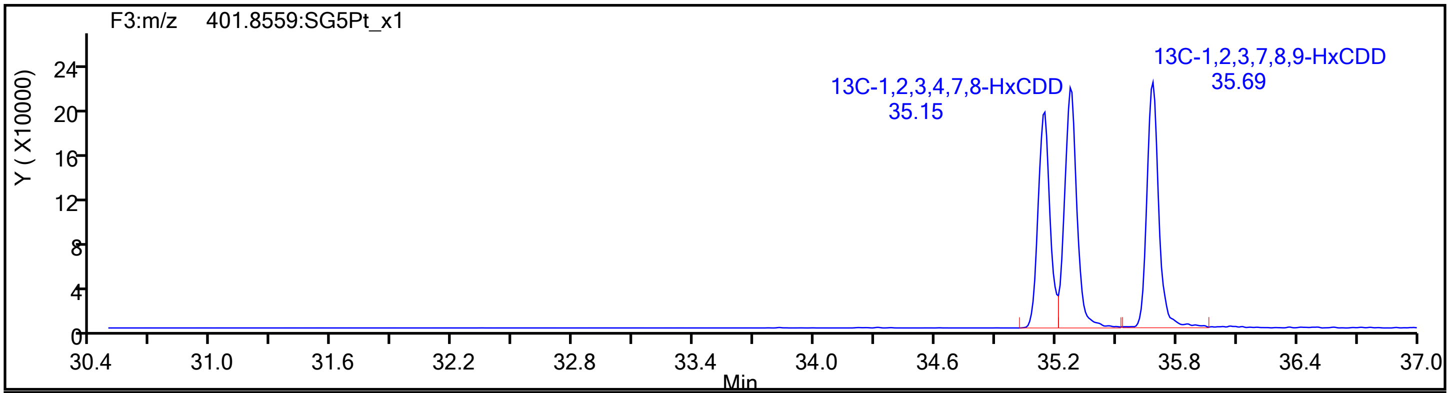

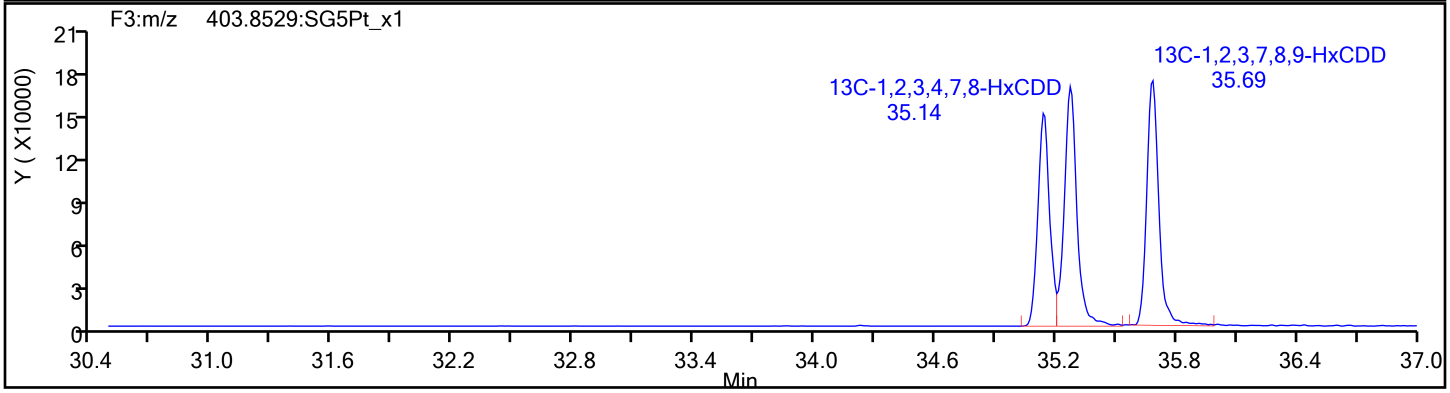

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Eurofins TestAmerica, Sacramento

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HpCDF

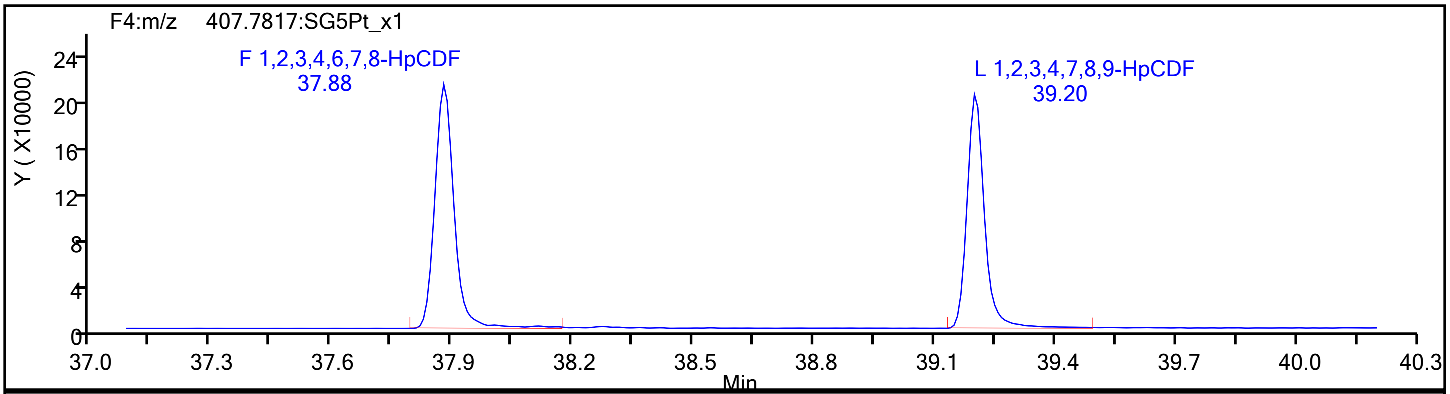

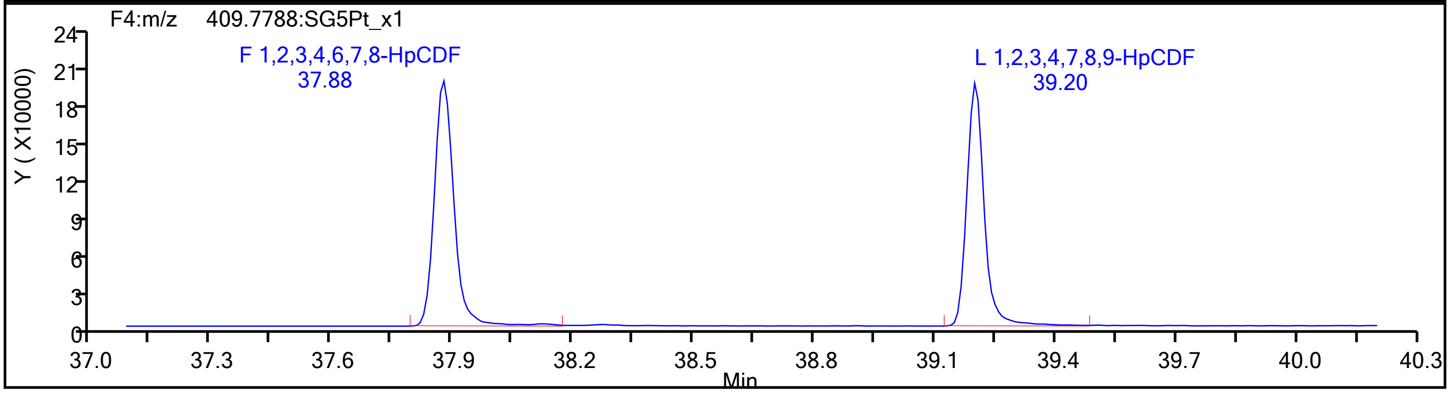

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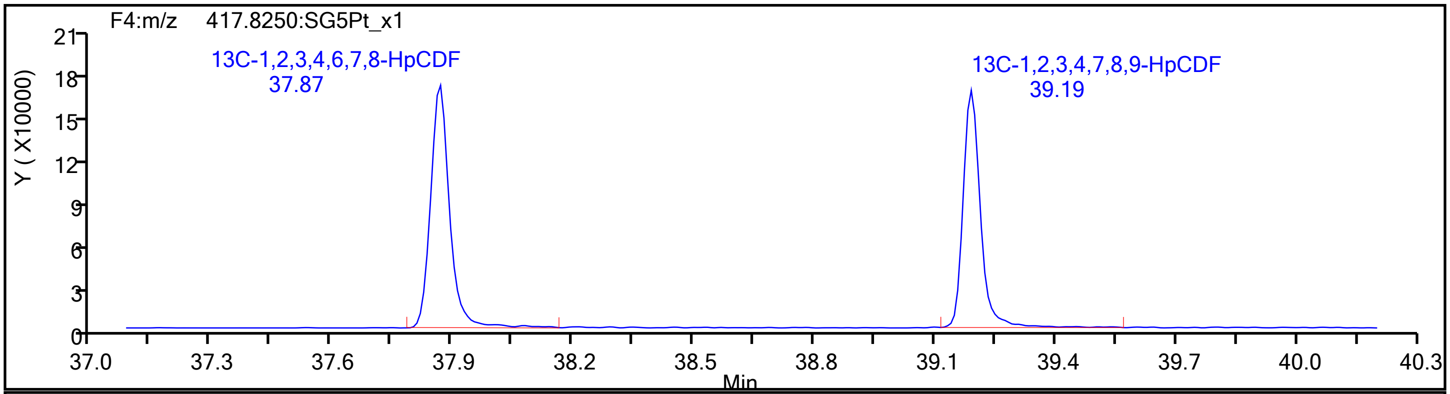

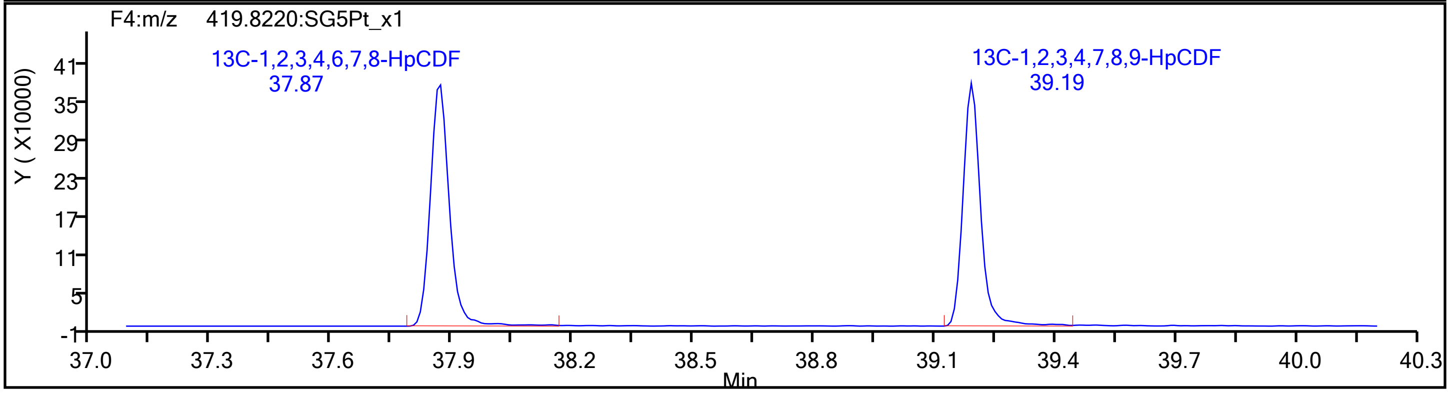

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Eurofins TestAmerica, Sacramento

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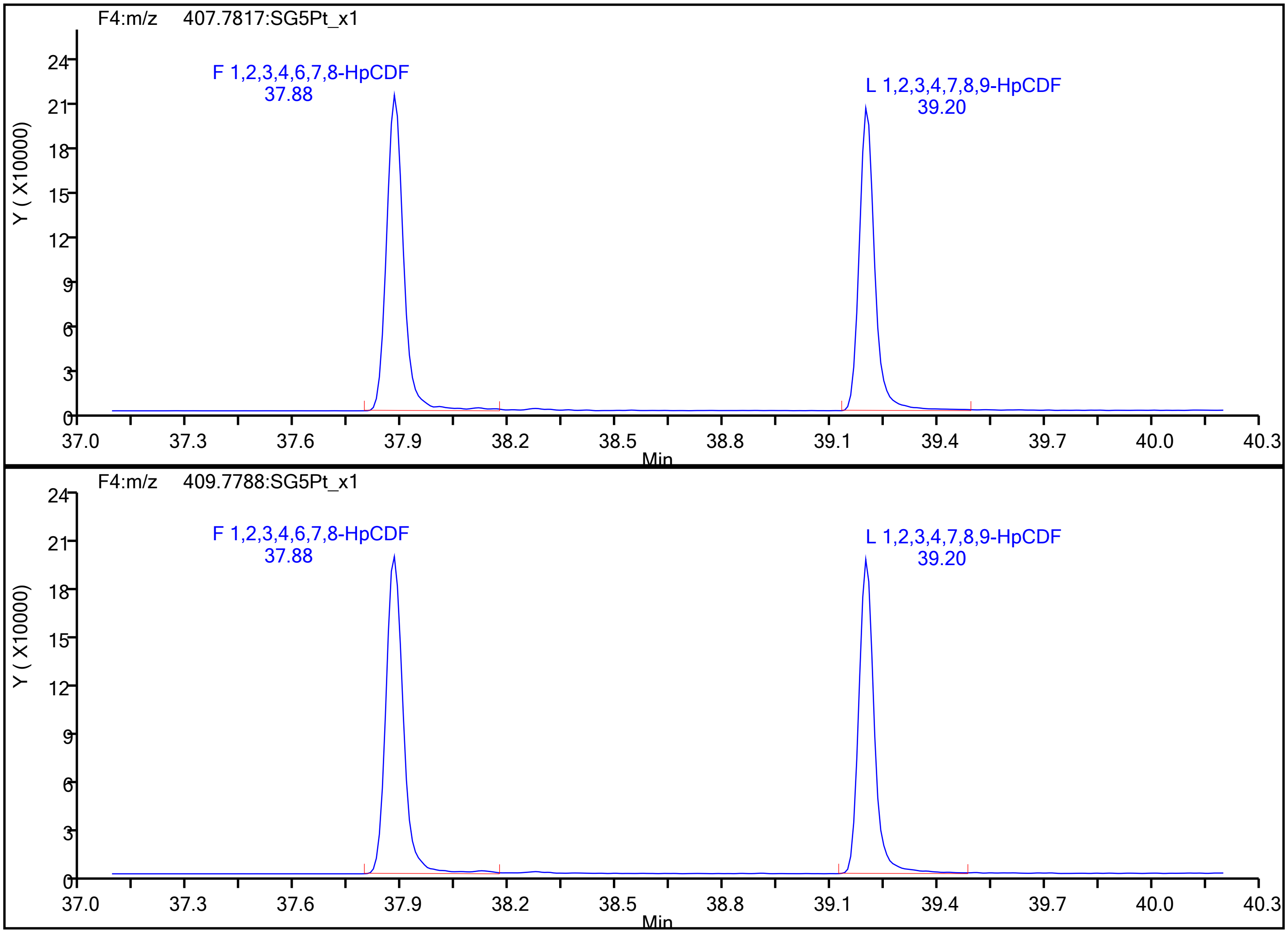

HpCDF Interference Mass

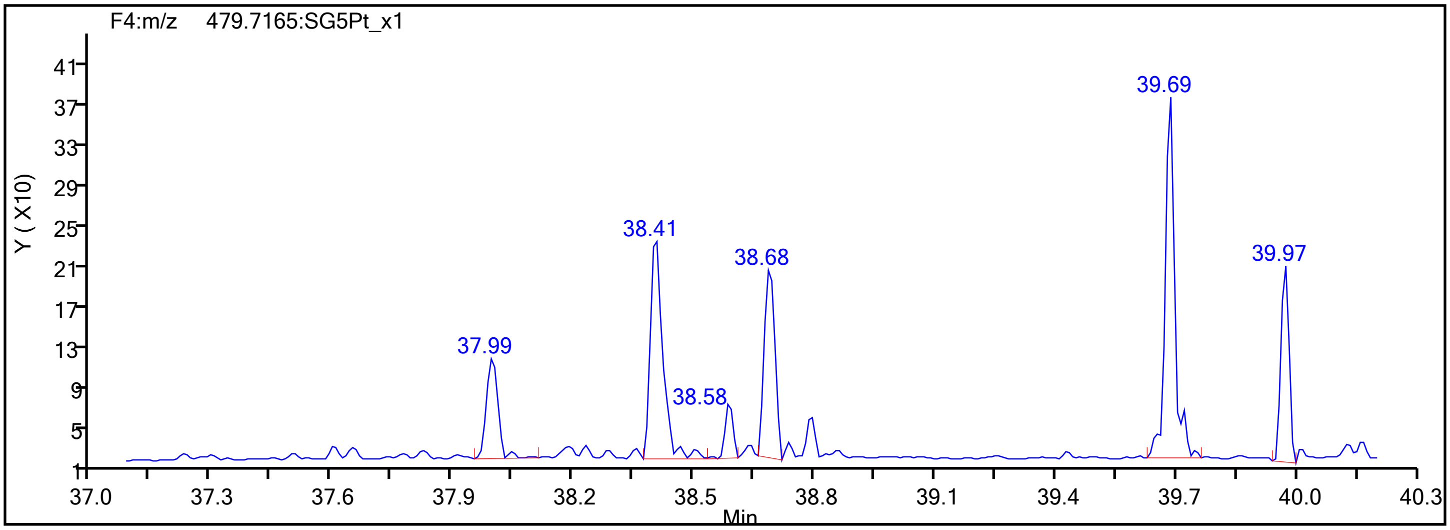

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HpCDD

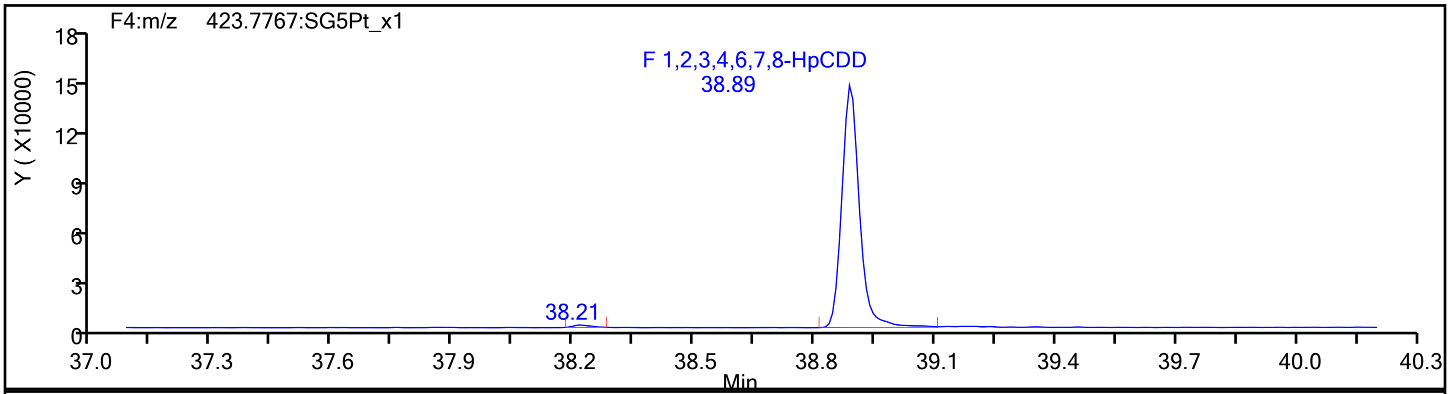

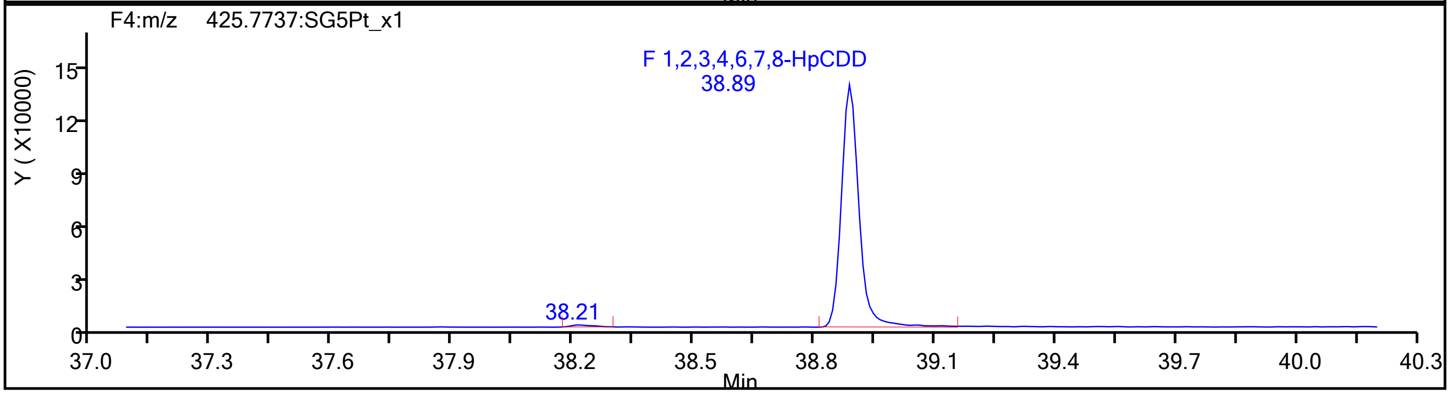

HpCDD Standards

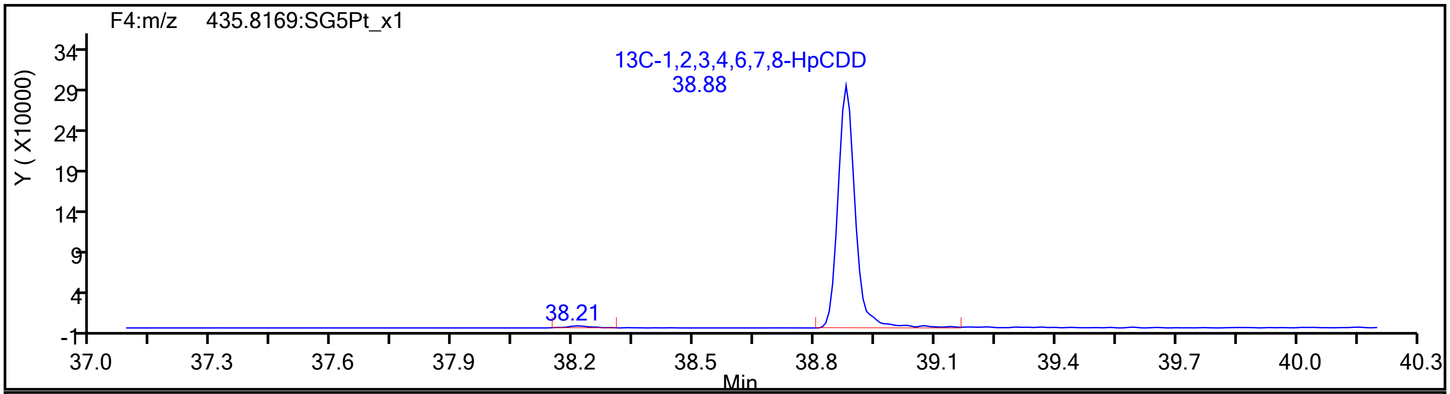

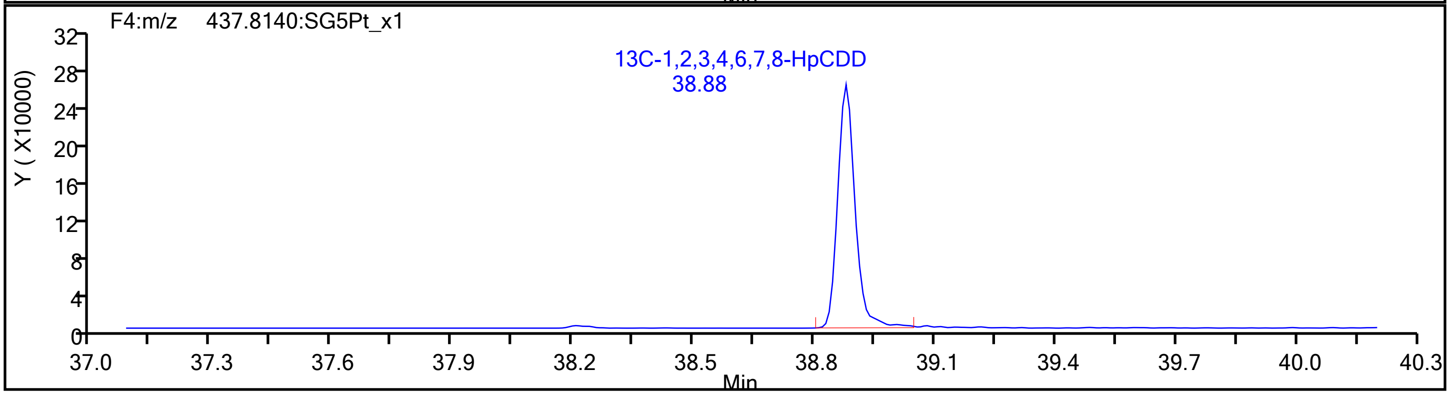

Report Date: 16-Oct-2020 10:28:49   Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2020 13:08:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422239   Sample Line#: 2
Column Type: DB-5   Column Dia: 0.32 mm

OCDF

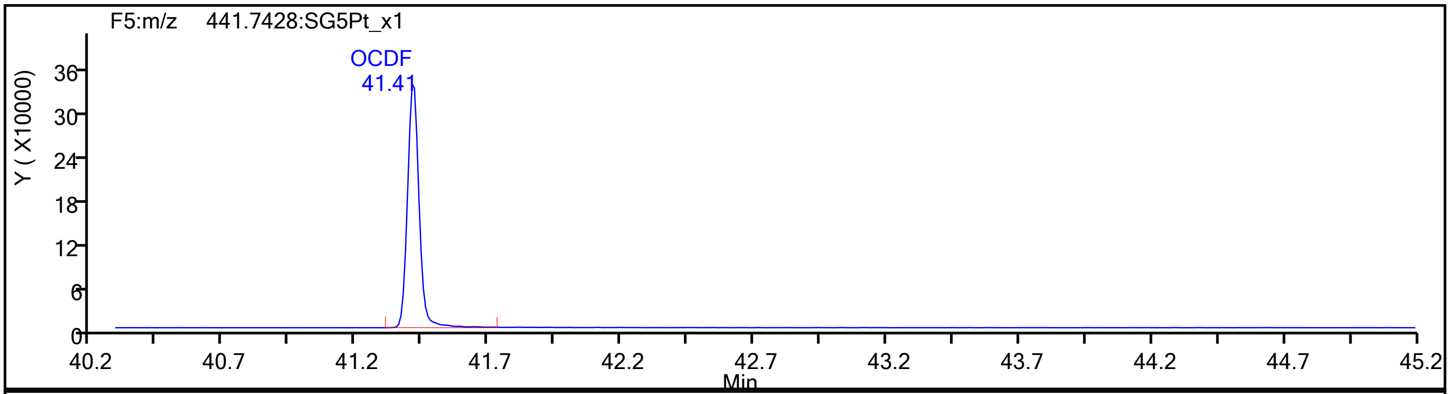

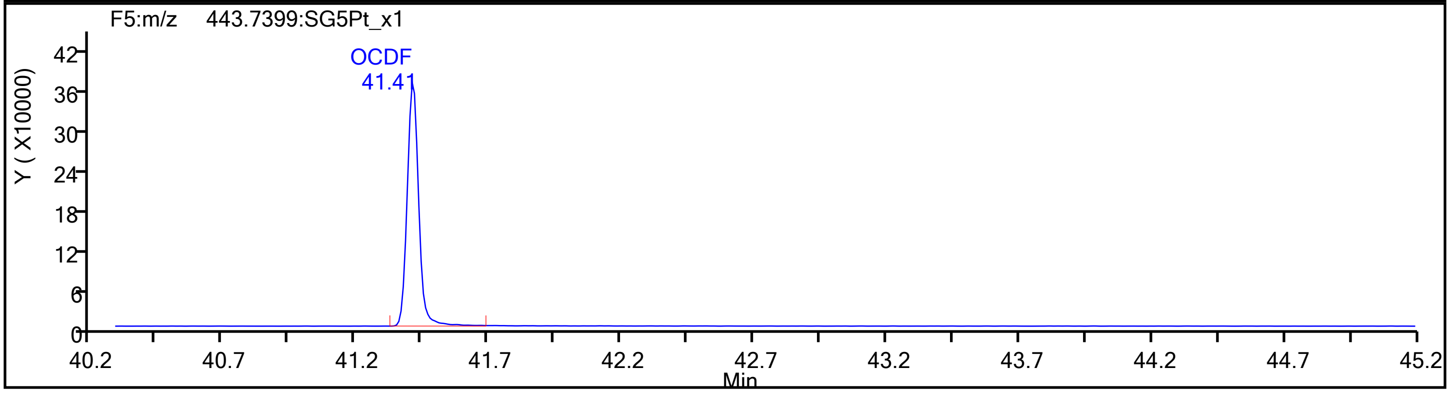

OCDF Standards

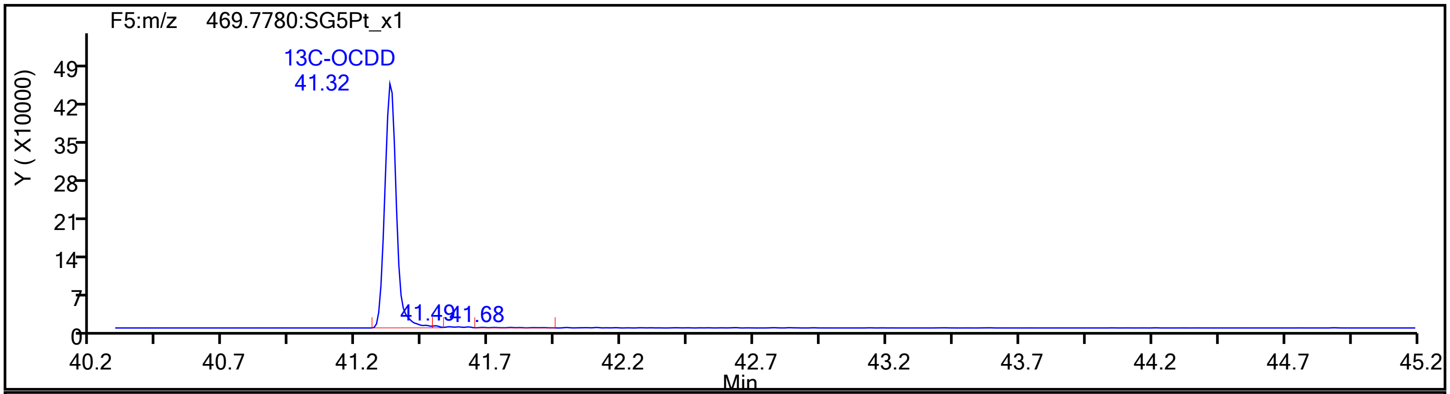

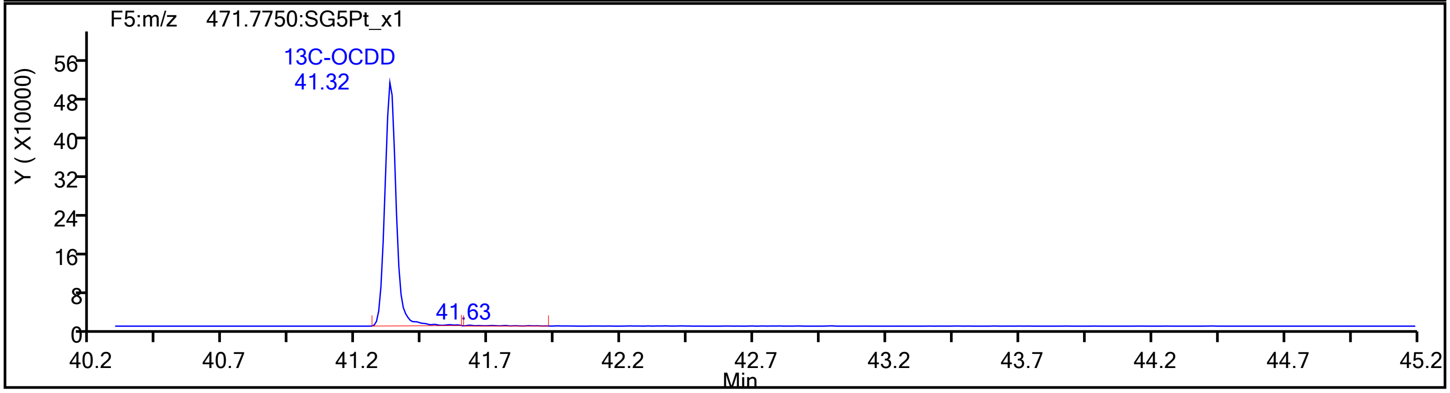

Report Date: 16-Oct-2020 10:28:49 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

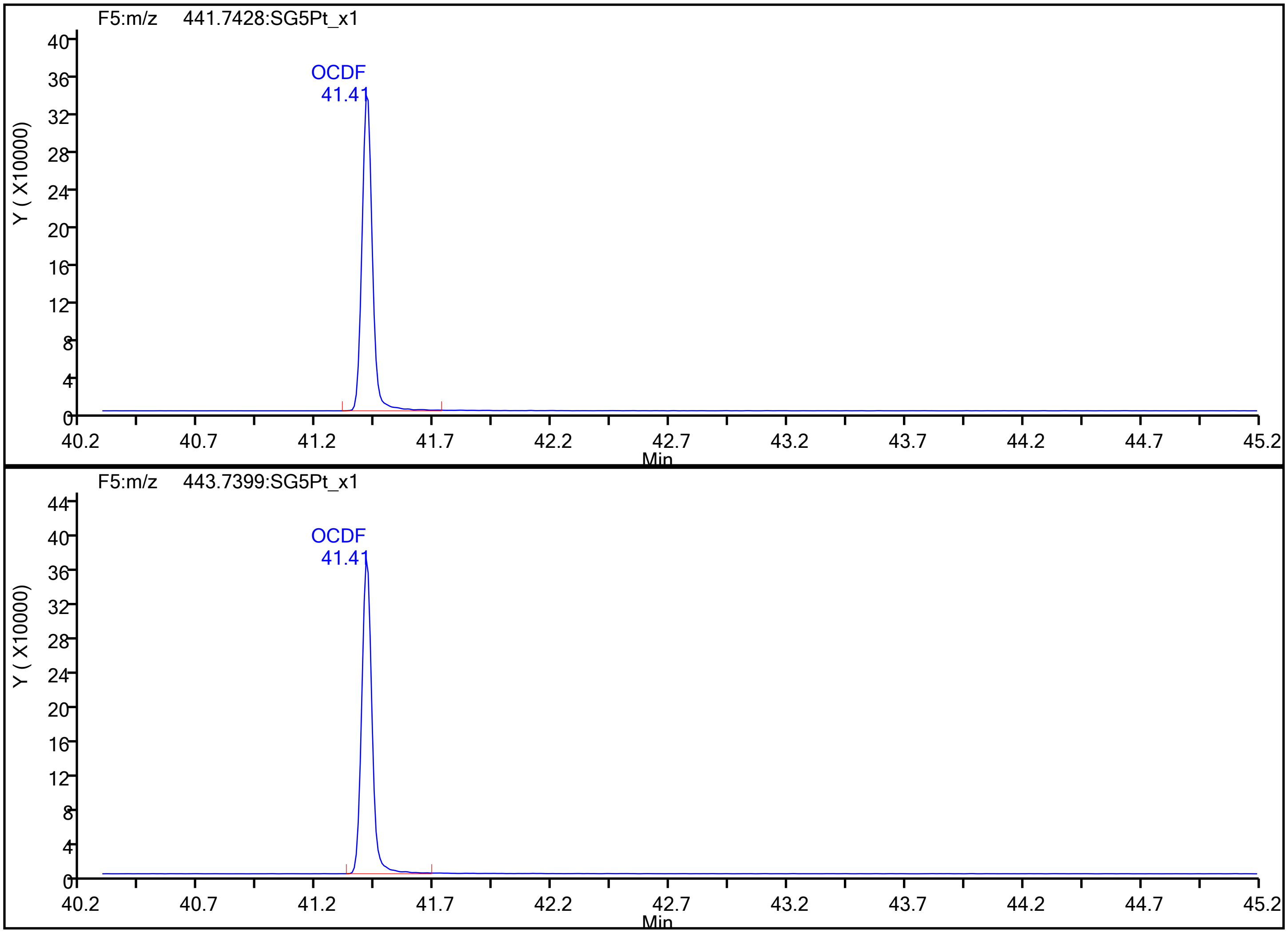

OCDF Interference Mass

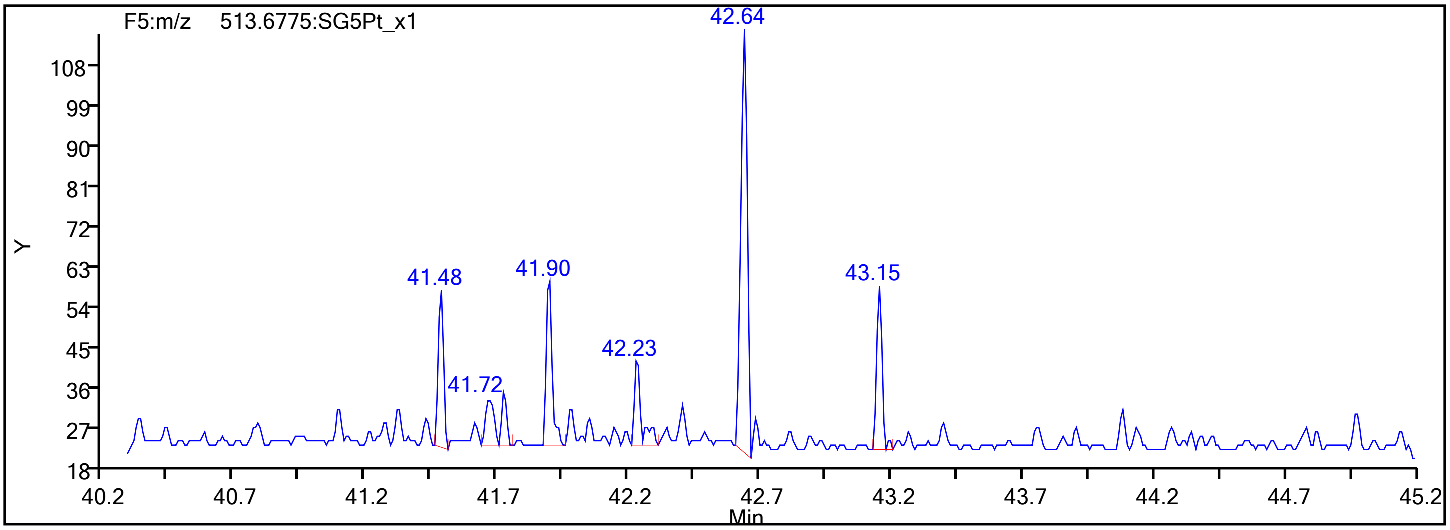

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

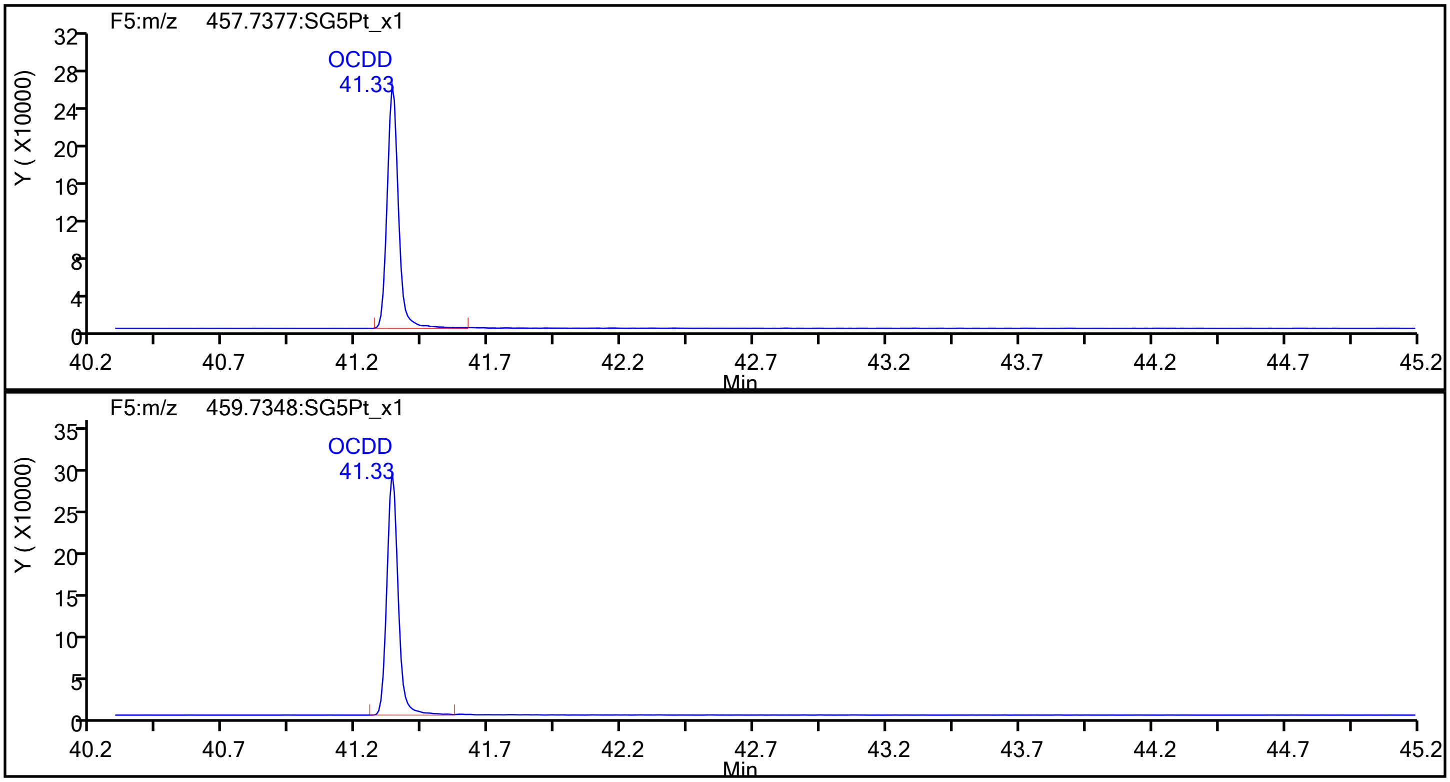

OCDD Standards

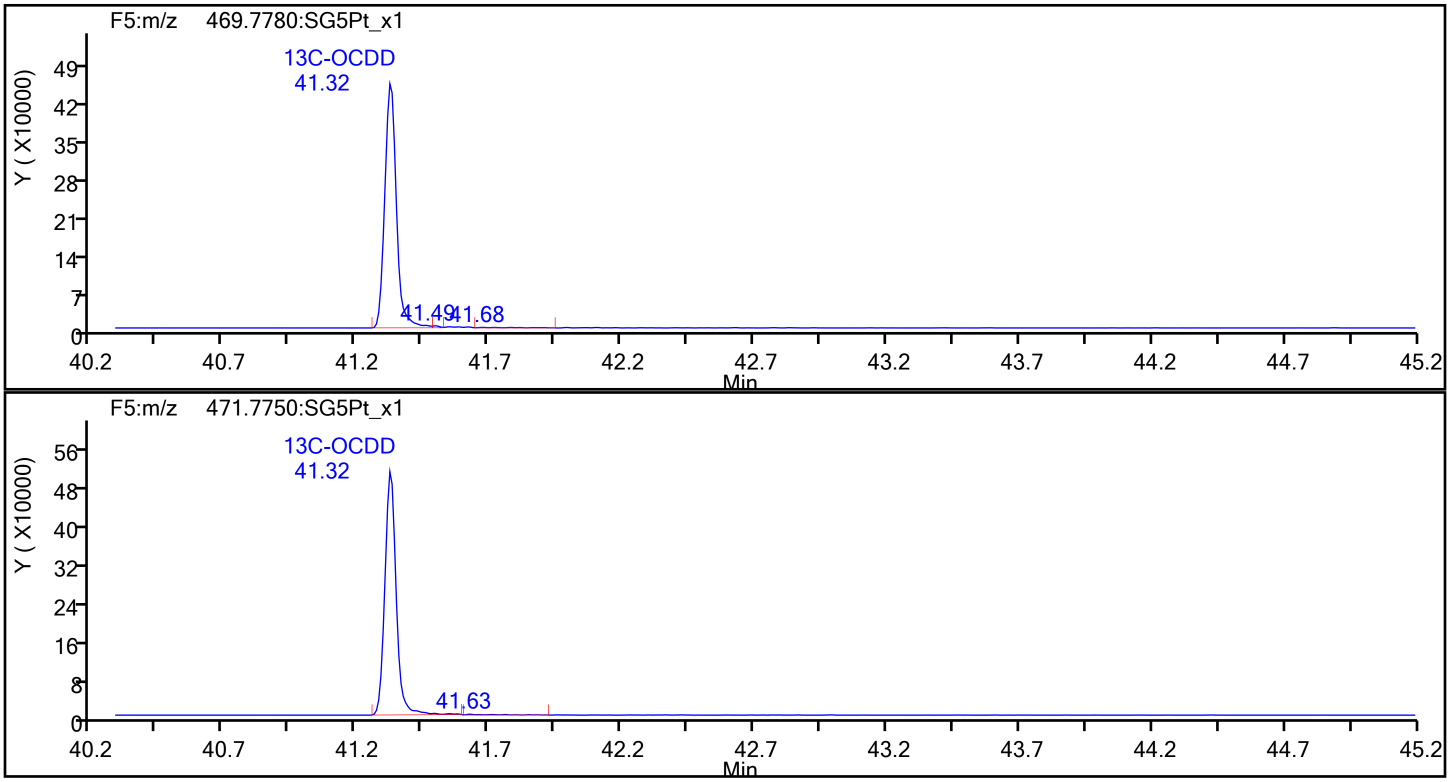

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_3.d

Injection Date: 15-Oct-2020 13:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422239
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

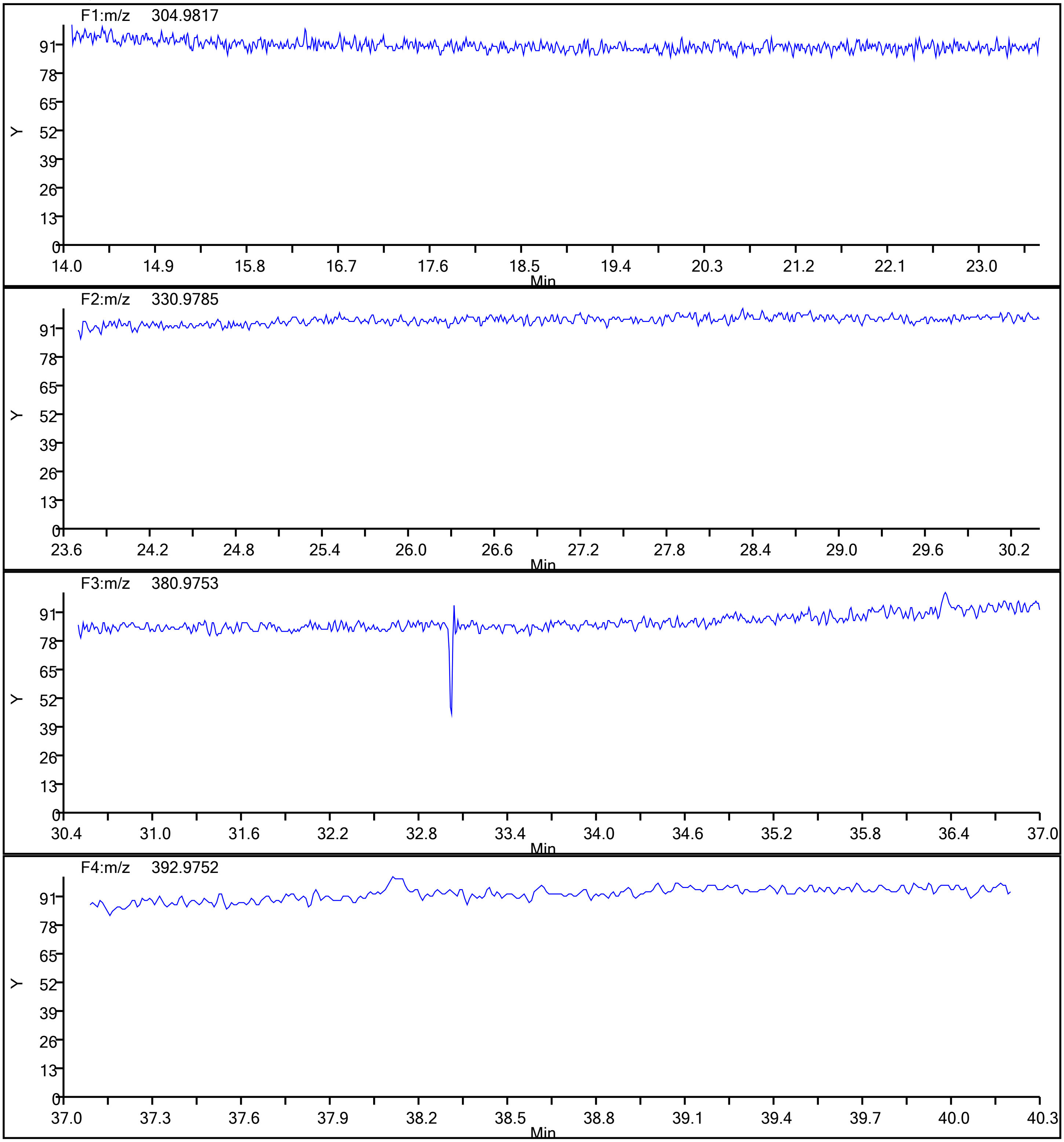

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_3.d		
Injection Date:	15-Oct-2020 13:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

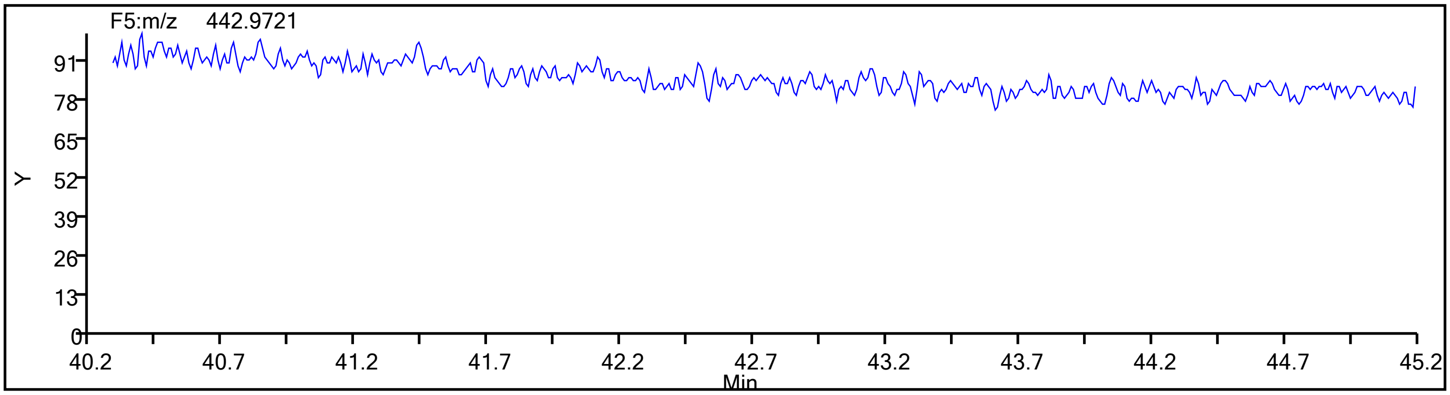

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Lab Sample ID: CCV 320-422778/2 Calibration Date: 10/16/2020 18:29

Instrument ID: DFS 1 Calib Start Date: 09/17/2020 13:16

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 16:30

Lab File ID: 16oc20adfs1_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.086	1.087		10.0	10.0	100	84-120
2,3,7,8-TCDD	AveID	1.081	0.9943		9.20	10.0	92	78-129
1,2,3,7,8-PeCDF	AveID	1.055	1.036		49.1	50.0	98	82-120
2,3,4,7,8-PeCDF	AveID	1.104	1.090		49.4	50.0	99	82-122
1,2,3,7,8-PeCDD	AveID	1.068	1.008		47.2	50.0	94	78-130
1,2,3,4,7,8-HxCDF	AveID	1.264	1.279		50.6	50.0	101	90-112
1,2,3,6,7,8-HxCDF	AveID	1.223	1.241		50.7	50.0	101	88-114
2,3,4,6,7,8-HxCDF	AveID	1.246	1.243		49.8	50.0	100	88-114
1,2,3,4,7,8-HxCDD	AveID	1.156	1.113		48.1	50.0	96	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	1.001		48.7	50.0	97	78-128
1,2,3,7,8,9-HxCDD	AveID	1.179	1.133		48.1	50.0	96	82-122
1,2,3,7,8,9-HxCDF	AveID	1.264	1.251		49.5	50.0	99	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.506	1.458		48.4	50.0	97	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.064	1.007		47.3	50.0	95	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.455	1.424		48.9	50.0	98	86-116
OCDD	AveID	1.129	1.079		95.6	100	96	79-126
OCDF	AveID	1.430	1.422		99.4	100	99	63-159
13C-2,3,7,8-TCDF	Ave	1.588	1.490		93.8	100	94	71-140
13C-2,3,7,8-TCDD	Ave	1.119	1.085		96.9	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.478	1.370		92.7	100	93	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.391	1.266		91.0	100	91	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.9415	0.9094		96.6	100	97	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.138	1.119		98.4	100	98	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.317	1.318		100	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.246	1.276		102	100	102	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8477	0.8402		99.1	100	99	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.998	1.005		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.184	1.173		99.1	100	99	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9884	1.000		101	100	101	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9556	0.9848		103	100	103	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9203	0.9051		98.4	100	98	77-129
13C-OCDD	Ave	0.7420	0.8116		219	200	109	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.147	1.134		9.89	10.0	99	79-127

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	160C20ADFS1_1	Resolution Check	RC 101620	46			AJS	1.000	
2	160C20ADFS1_2	WDM HRDXNCP_00042	WDM 101620	1	8290/1613B		AJS	1.000	
3	160C20ADFS1_3	CCV CS-4 HRDXNL4_00095	CCV 101620	2	8290/1613B		AJS	1.000	
4	160C20ADFS1_4	SB Solvent Blank C-14	SB 101620	3			AJS	1.000	
5	160C20ADFS1_5	320-64948-A-2-C (3X)	320-64948-A-2-C (3X)	4	8290A_D5/Solid	D186	AJS	20.000	g
6	160C20ADFS1_6	320-64948-A-4-D	320-64948-A-4-D	5	8290A_D5/Solid	D186	AJS	20.000	g
7	160C20ADFS1_7	320-64948-A-5-D (2X)	320-64948-A-5-D (2X)	6	8290A_D5/Solid		AJS	20.000	g
8	160C20ADFS1_8	320-64948-A-5-D	320-64948-A-5-D	7	8290A_D5/Solid		AJS	20.000	g
9	160C20ADFS1_9	320-64950-A-1-C	320-64950-A-1-C	8	8290A_D5/Solid		AJS	20.000	g
10	160C20ADFS1_10	320-64950-A-2-G	320-64950-A-2-G	9	8290A_D5/Solid		AJS	20.000	g
11	160C20ADFS1_11	320-64950-A-2-H MS	320-64950-A-2-H MS	10	8290A_D5/Solid		AJS	20.000	g
12	160C20ADFS1_12	320-64950-A-2-I MSD	320-64950-A-2-I MSD	11	8290A_D5/Solid		AJS	20.000	g
13	160C20ADFS1_13	320-65130-A-13-A (40x)	320-65130-A-13-A (40X)	12	1613B/Water	D185	AJS	1.000	L
14	160C20ADFS1_14	SB Solvent Blank C-14	SB 101620A	3			AJS	1.000	
15	160C20ADFS1_15	CCV CS-4 HRDXNL4_00095	CCV 101620A	2	8290/1613B		AJS	1.000	
16	160C20ADFS1_16	Resolution Check	RC 101620A	46			AJS	1.000	
17	160C20ADFS1_17	WDM HRDXNCP_00042	WDM 101620A	1	8290/1613B		AJS	1.000	
18	160C20ADFS1_18	CCV CS-4 HRDXNL4_00095	CCV 101620B	2	8290/1613B		AJS	1.000	
19	160C20ADFS1_19	SB Solvent Blank C-14	SB 101620B	3			AJS	1.000	
20	160C20ADFS1_20	320-64950-A-3-C	320-64950-A-3-C	13	8290A_D5/Solid	D186	AJS	20.000	g
21	160C20ADFS1_21	320-64950-A-4-A	320-64950-A-4-A	14	8290A_D5/Solid		AJS	20.000	g
22	160C20ADFS1_22	320-64998-A-1-A (4x)	320-64998-A-1-A (4x)	15	8290A_D5/Solid		AJS	20.000	g
23	160C20ADFS1_23	320-64998-A-3-E (2x)	320-64998-A-3-E (2x)	16	8290A_D5/Solid		AJS	20.000	g
24	160C20ADFS1_24	160-39706-M-6-A	160-39706-M-6-A	17	8290A_D5/Solid	D187	AJS	10.000	g
25	160C20ADFS1_25	160-39706-M-6-B MS	160-39706-M-6-B MS	18	8290A_D5/Solid		AJS	10.000	g
26	160C20ADFS1_26	160-39706-M-6-C MSD	160-39706-M-6-C MSD	19	8290A_D5/Solid		AJS	10.000	g
27	160C20ADFS1_27	160-39708-Q-6-A	160-39708-Q-6-A	20	8290A_D5/Solid		AJS	10.000	g
28	160C20ADFS1_28	160-39709-N-6-A	160-39709-N-6-A	21	8290A_D5/Solid		AJS	10.000	g
29	160C20ADFS1_29	SB Solvent Blank C-14	SB 101620C	3			AJS	1.000	
30	160C20ADFS1_30	CCV CS-4 HRDXNL4_00095	CCV 101620C	2	8290/1613B		AJS	1.000	
31	160C20ADFS1_31	Resolution Check	RC 101620B	46			AJS	1.000	
32	160C20ADFS1_32	WDM HRDXNCP_00042	WDM 101620B	1	8290/1613B		AJS	1.000	
33	160C20ADFS1_33	CCV CS-4 HRDXNL4_00095	CCV 101620D	2	8290/1613B		AJS	1.000	
34	160C20ADFS1_34	SB Solvent Blank C-14	SB 101620D	3			AJS	1.000	
35	160C20ADFS1_35	MB 320-419432/1-A	MB 320-419432/1-A	22	8290A_D5/Solid	D188	AJS	20.000	g
36	160C20ADFS1_36	LCS 320-419432/2-A	LCS 320-419432/2-A	23	8290A_D5/Solid		AJS	20.000	g
37	160C20ADFS1_37	LCSD 320-419432/3-A	LCSD 320-419432/3-A	24	8290A_D5/Solid		AJS	20.000	g
38	160C20ADFS1_38	320-65007-B-3-C	320-65007-B-3-C	25	8290A_D5/Solid		AJS	20.000	g
39	160C20ADFS1_39	320-65007-A-3-K MS	320-65007-A-3-K MS	26	8290A_D5/Solid		AJS	20.000	g
40	160C20ADFS1_40	320-65007-A-3-L MSD	320-65007-A-3-L MSD	27	8290A_D5/Solid		AJS	20.000	g
41	160C20ADFS1_41	180-111697-B-1-A	180-111697-B-1-A	28	8290A/Solid	D187	AJS	10.000	g
42	160C20ADFS1_42	180-111697-B-2-A	180-111697-B-2-A	29	8290A/Solid		AJS	10.000	g
43	160C20ADFS1_43	180-111697-B-4-A	180-111697-B-4-A	30	8290A/Solid		AJS	10.000	g
44	160C20ADFS1_44	SB Solvent Blank C-14	SB 101620F	3			AJS	1.000	
45	160C20ADFS1_45	CCV CS-4 HRDXNL4_00095	CCV 101620E	2	8290/1613B		AJS	1.000	
46	160C20ADFS1_46	Resolution Check	RC 101620C	46			AJS	1.000	
47	160C20ADFS1_47	WDM HRDXNCP_00042	WDM 101620C	1	8290/1613B		AJS	1.000	
48	160C20ADFS1_48	CCV CS-4 HRDXNL4_00095	CCV 101620F	2	8290/1613B		AJS	1.000	
49	160C20ADFS1_49	SB Solvent Blank C-14	SB 101620F	3			AJS	1.000	
50	160C20ADFS1_50	MB 320-419261/1-A	MB 320-419261/1-A	31	8290/A/D5/Solid	D187	AJS	10.000	g
51	160C20ADFS1_51	LCS 320-419261/2-A	LCS 320-419261/2-A	32	8290/A/D5/Solid		AJS	10.000	g
52	160C20ADFS1_52	LCSD 320-419261/3-A	LCSD 320-419261/3-A	33	8290/A/D5/Solid		AJS	10.000	g
53	160C20ADFS1_53	180-111697-B-5-A	180-111697-B-5-A	34	8290A/Solid		AJS	10.000	g
54	160C20ADFS1_54	180-111697-B-6-A	180-111697-B-6-A	35	8290A/Solid		AJS	10.000	g
55	160C20ADFS1_55	180-111697-B-7-A	180-111697-B-7-A	36	8290A/Solid		AJS	10.000	g
56	160C20ADFS1_56	180-111697-B-9-A	180-111697-B-9-A	37	8290A/Solid		AJS	10.000	g

57	16OC20ADFS1_57	180-111697-B-10-A	180-111697-B-10-A	38	8290A/Solid		AJS	10.000	g
58	16OC20ADFS1_58	180-111697-B-11-A	180-111697-B-11-A	39	8290A/Solid		AJS	10.000	g
59	16OC20ADFS1_59	SB Solvent Blank C-14	SB 101620G	3			AJS	1.000	
60	16OC20ADFS1_60	Resolution Check	RC 101620D	46			AJS	1.000	
61	16OC20ADFS1_61	CCV CS-4 HRDXNL4_00095	CCV 101620G	2	8290/1613B		AJS	1.000	
62	16OC20ADFS1_62	Resolution Check	RC 101620E	46			AJS	1.000	
63	16OC20ADFS1_63	WDM HRDXNCP_00042	WDM 101620D	1	8290/1613B		AJS	1.000	
64	16OC20ADFS1_64	SB Solvent Blank C-14	SB 101620H	3			AJS	1.000	
65	16OC20ADFS1_65	180-111697-B-12-A	180-111697-B-12-A	40	8290A/Solid	D187	AJS	10.000	g
66	16OC20ADFS1_66	570-40048-A-7-A	570-40048-A-7-A	41	8290/Solid		AJS	10.000	g
67	16OC20ADFS1_67	570-40048-A-12-A	570-40048-A-12-A	42	8290/Solid		AJS	10.000	g
68	16OC20ADFS1_68	570-40048-A-13-A	570-40048-A-13-A	43	8290/Solid		AJS	10.000	g
69	16OC20ADFS1_69	180-111868-A-1-A	180-111868-A-1-A	44	8290A/Water	D188	AJS	1.000	L
70	16OC20ADFS1_70	180-111869-A-11-A	180-111869-A-11-A	45	8290A/Water		AJS	1.000	L
71	16OC20ADFS1_71	180-111870-B-9-A	180-111870-B-9-A	47	8290A/Water		AJS	1.000	L
72	16OC20ADFS1_72	LCS 320-420196/2-A	LCS 320-420196/2-A	48	8290A/Water		AJS	1.000	L
73	16OC20ADFS1_73	LCSD 320-420196/3-A	LCSD 320-420196/3-A	49	8290A/Water		AJS	1.000	L
74	16OC20ADFS1_74	MB 320-420196/1-A	MB 320-420196/1-A	50	8290A/Water		AJS	1.000	L
75	16OC20ADFS1_75	CCV CS-4 HRDXNL4_00095	CCV 101620H	2	8290/1613B		AJS	1.000	
76	16OC20ADFS1_76	Resolution Check	RC 101620F	46			AJS	1.000	

logfile checked
10-17-20 ALM

Resolution Check Report (DFS SN: 3487)

Date:	16 Oct 2020 17:22
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12229 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12449 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11714 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11821 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11963 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12050 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12141 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12550 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12559 [5%height]

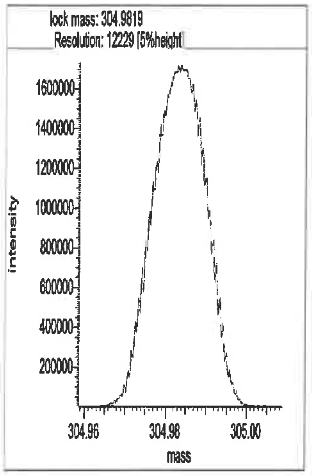

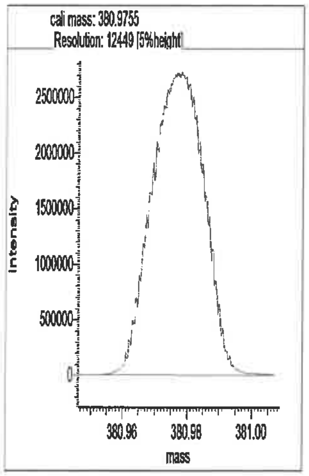

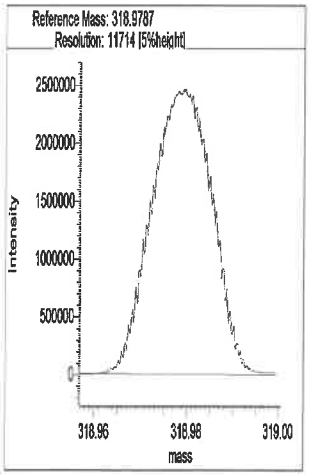

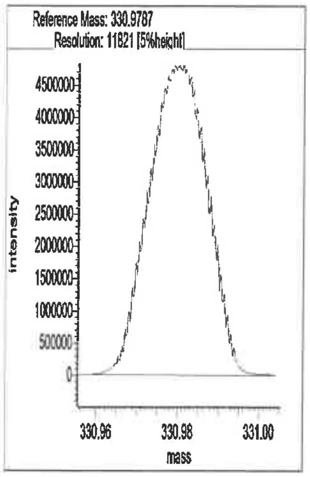

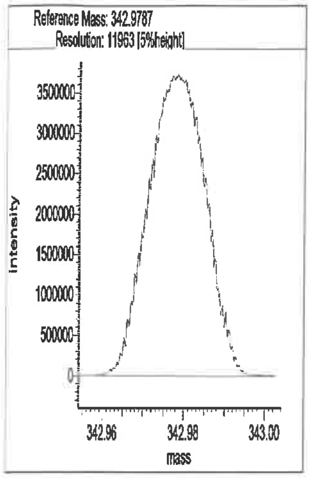

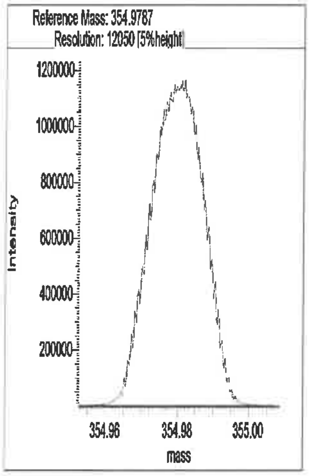

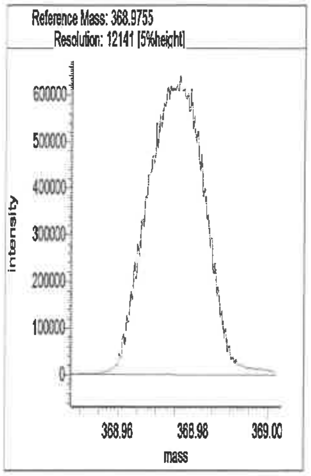

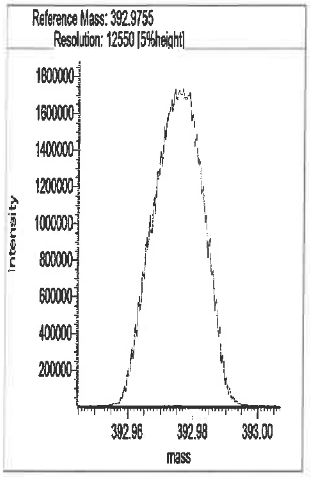

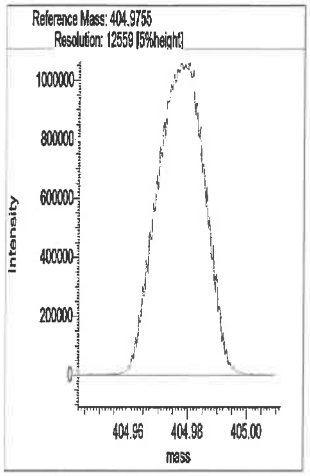

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12167 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12370 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12116 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12294 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11965 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12075 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12494 [5%height]

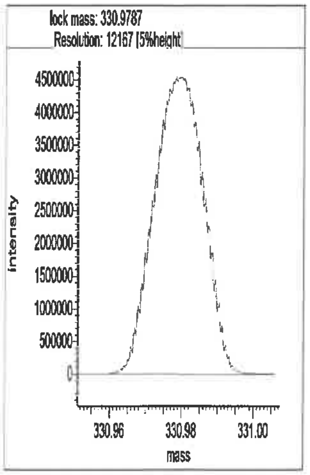

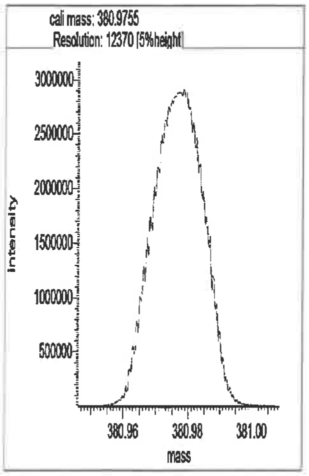

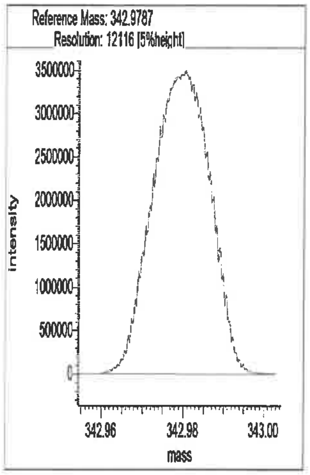

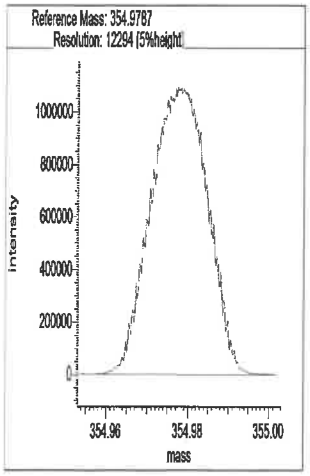

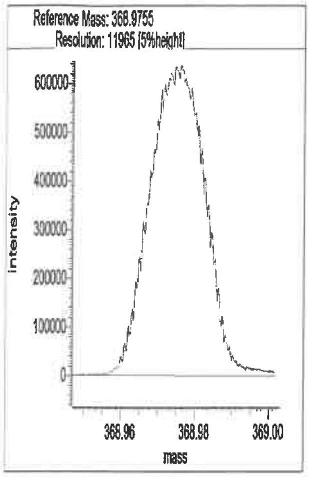

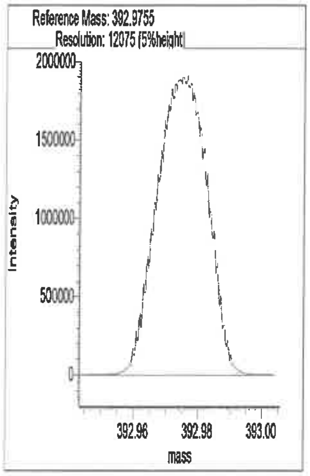

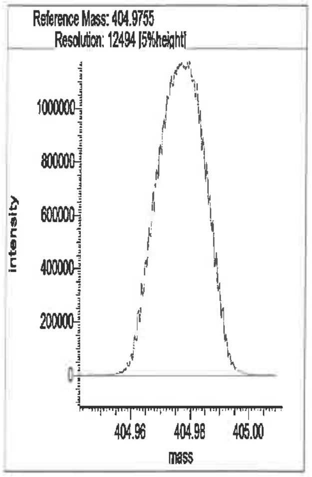

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12177 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12333 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11852 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11915 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11729 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12388 [5%height]

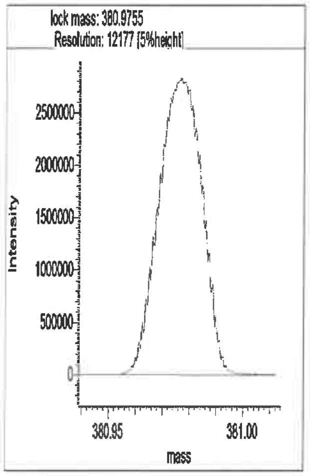

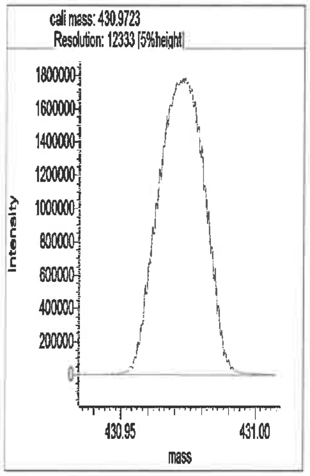

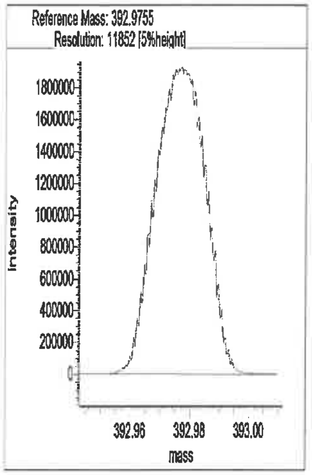

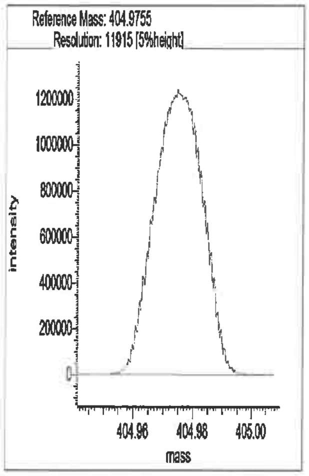

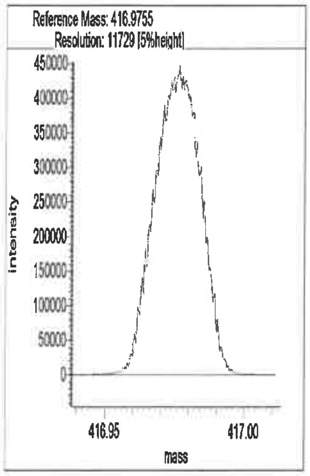

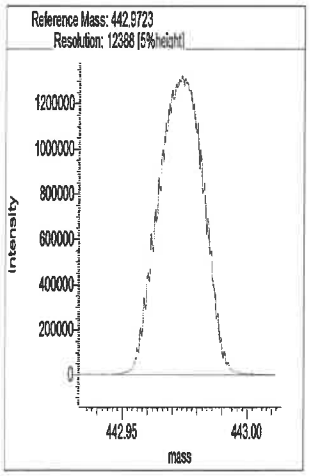

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11762 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11983 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11990 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11824 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11600 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12287 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11895 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12457 [5%height]

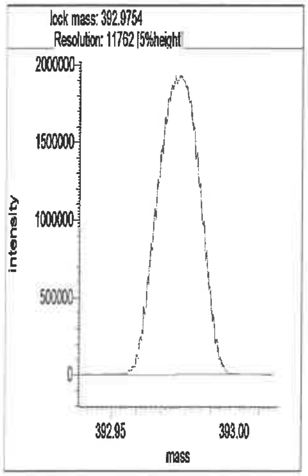

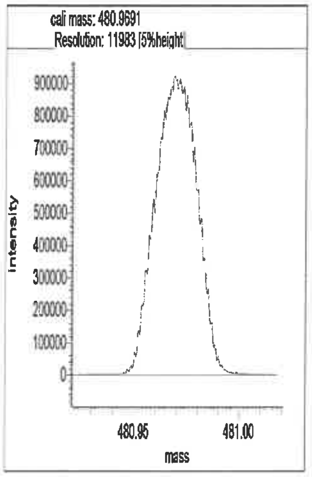

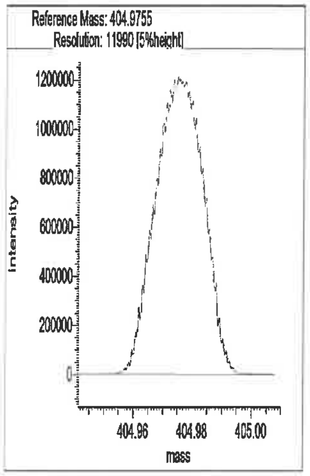

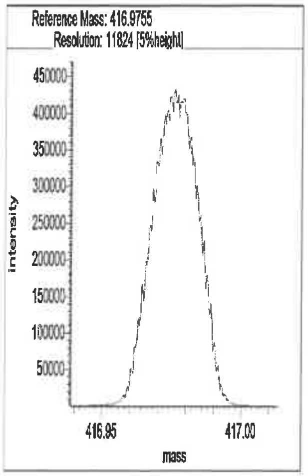

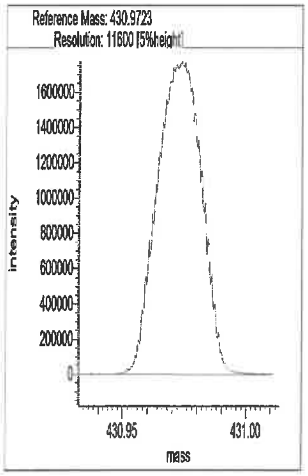

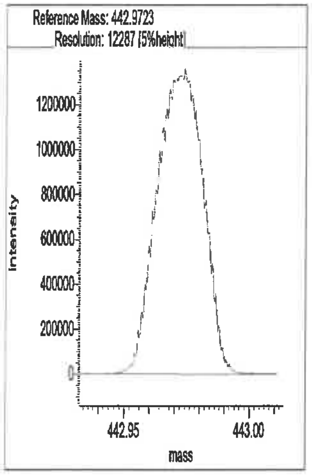

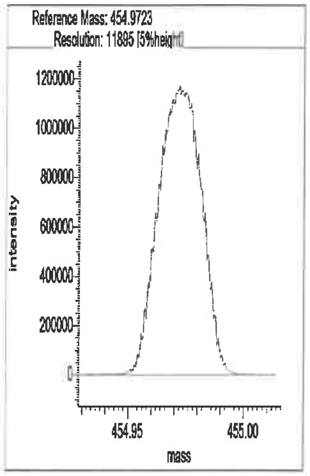

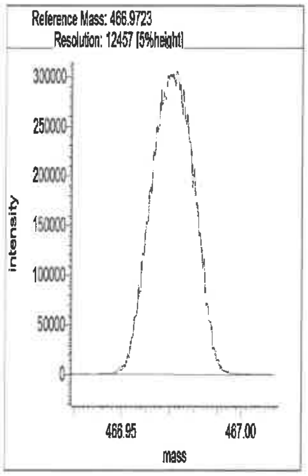

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11648 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12210 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11813 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12251 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12281 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12086 [5%height]

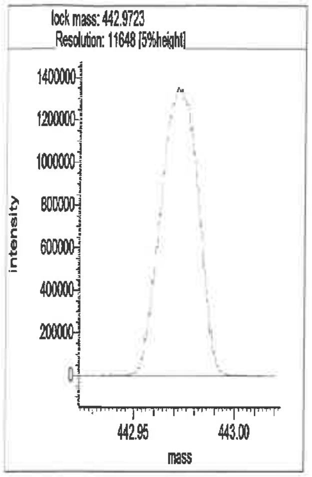
lock mass: 442.9723
Resolution: 11648 [5%height]
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

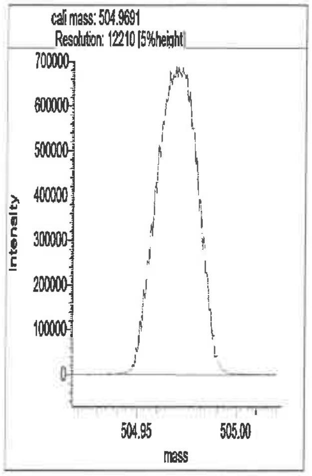
cali mass: 504.9691
Resolution: 12210 [5%height]
700000
600000
500000
400000
300000
200000
100000
0
intensity
504.95
505.00
mass

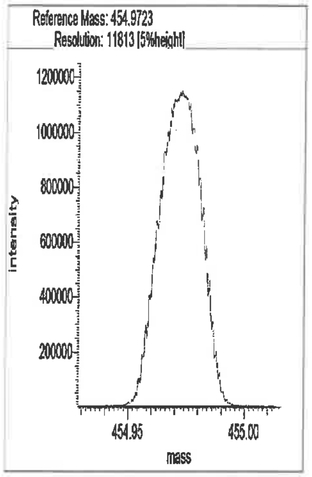
Reference Mass: 454.9723
Resolution: 11813 [5%height]
1200000
1000000
800000
600000
400000
200000
intensity
454.95
455.00
mass

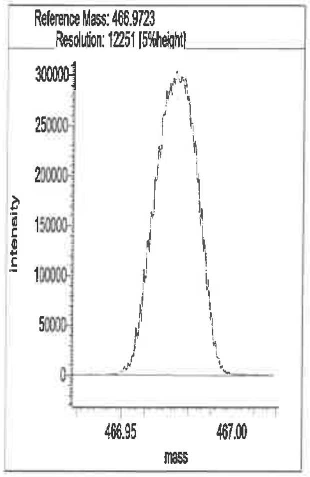
Reference Mass: 466.9723
Resolution: 12251 [5%height]
300000
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

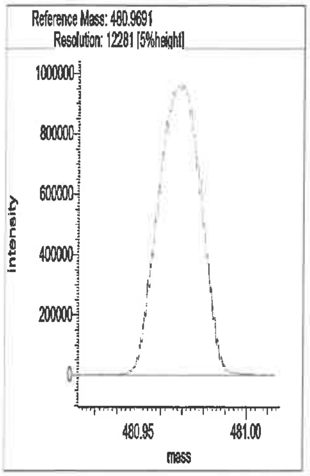
Reference Mass: 480.9691
Resolution: 12281 [5%height]
1000000
800000
600000
400000
200000
0
intensity
480.95
481.00
mass

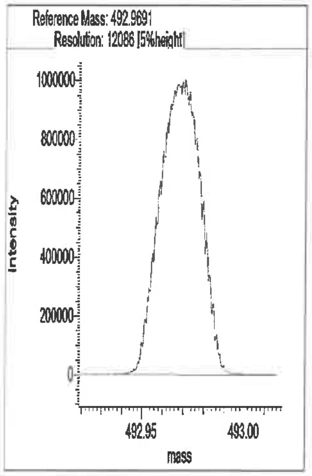
Reference Mass: 492.9691
Resolution: 12086 [5%height]
1000000
800000
600000
400000
200000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	17 Oct 2020 04:53
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 10465 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 10605 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 10533 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 10578 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 10615 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 10776 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10203 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 10730 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 10664 [5%height]

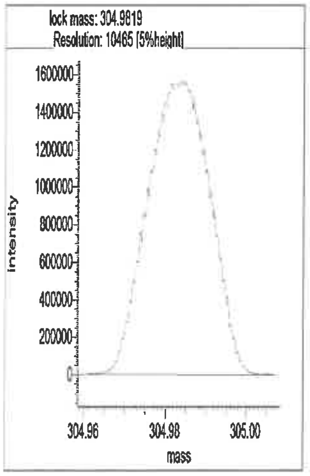

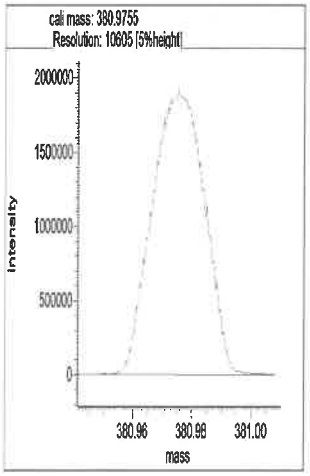

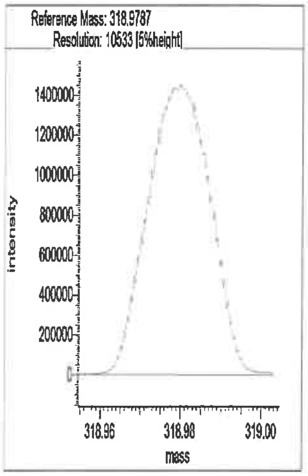

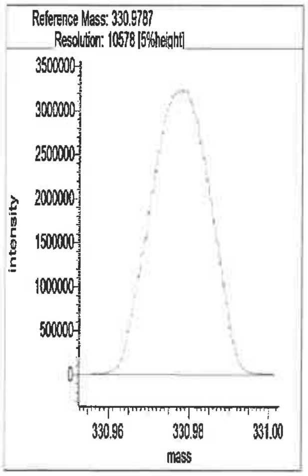

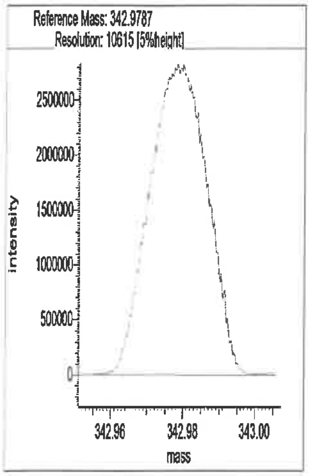

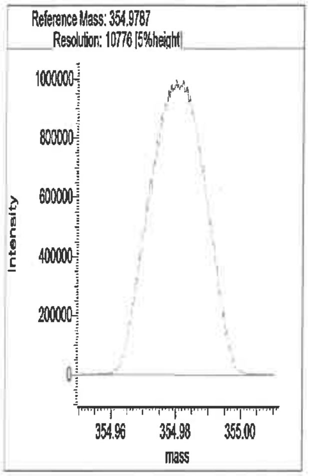

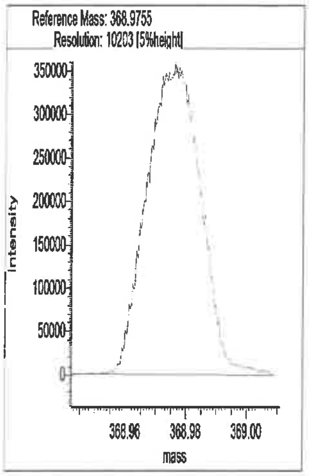

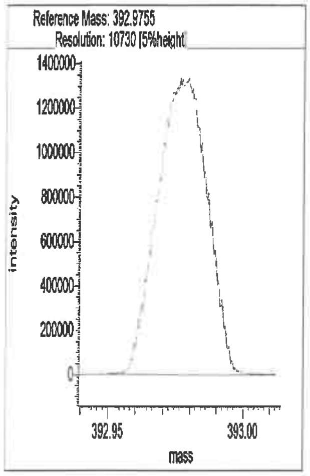

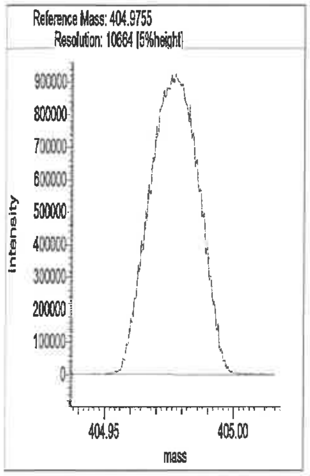

Segment 2

Lock mass 330.9787 [m/z] Resolution: 10548 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 10631 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 10527 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 10536 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10277 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 10694 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10896 [5%height]

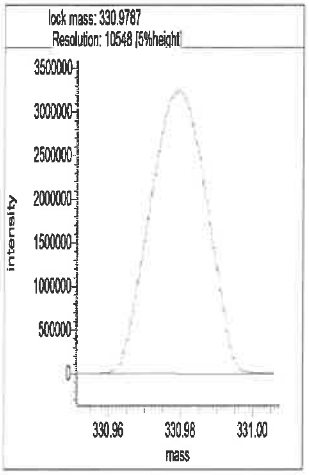

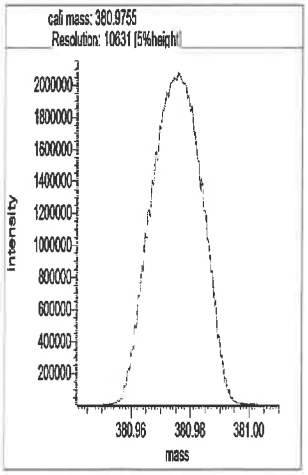

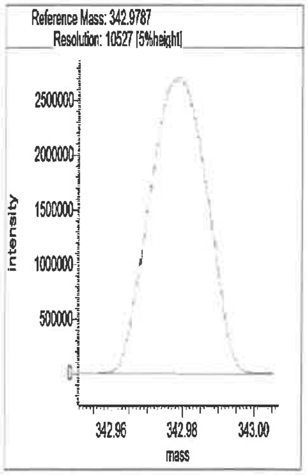

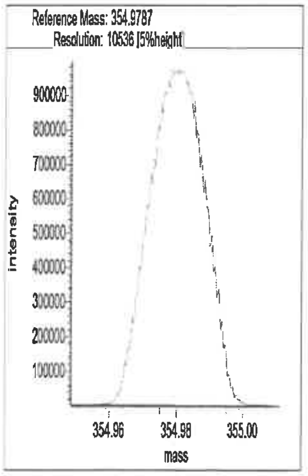

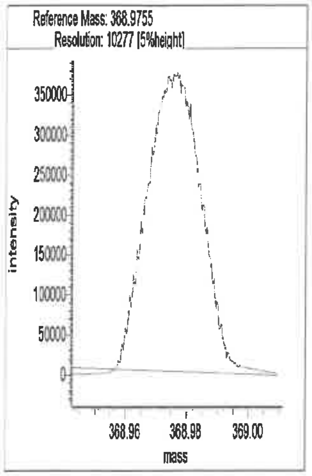

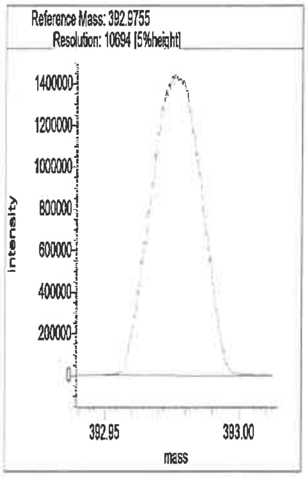

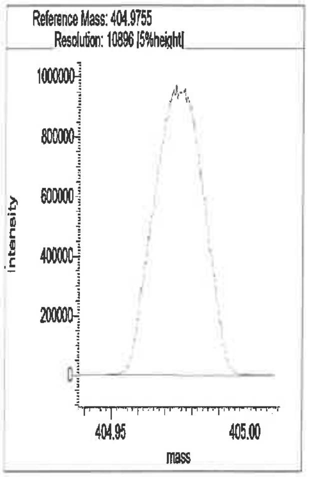

Segment 3

Lock mass 380.9755 [m/z] Resolution: 10756 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 10686 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 10602 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10616 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 10896 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 10710 [5%height]

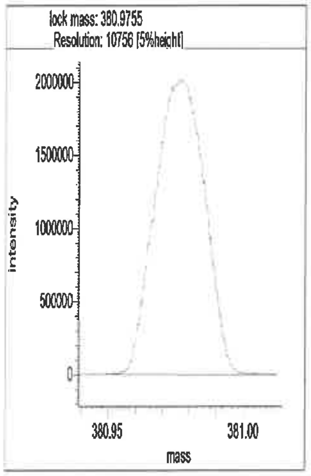

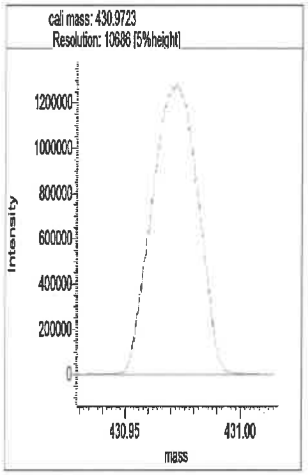

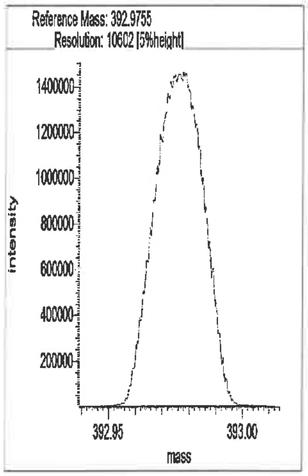

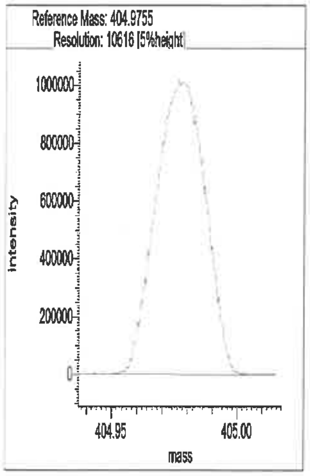

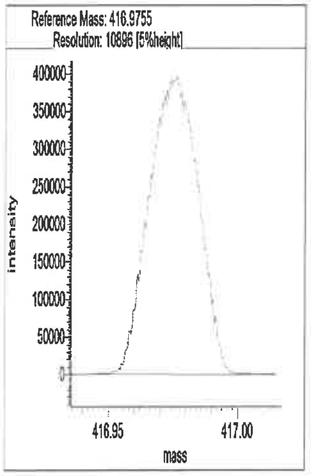

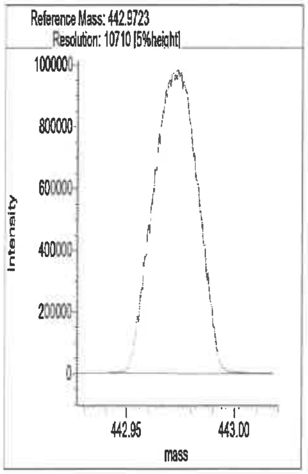

Segment 4

Lock mass 392.9754 [m/z] Resolution: 10856 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 10743 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10906 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 10656 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 10628 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 10628 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 10933 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 10888 [5%height]

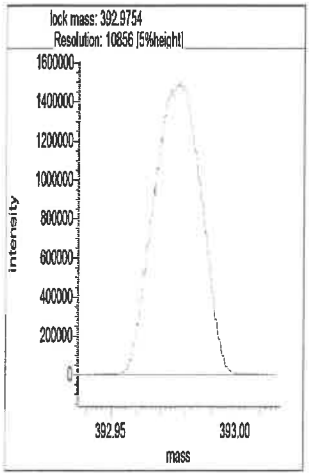

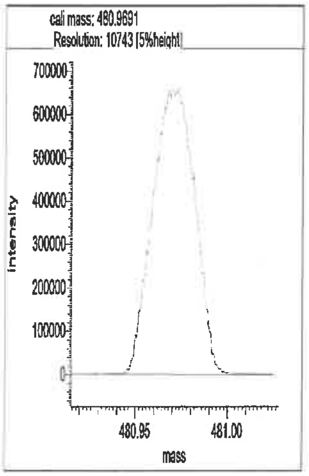

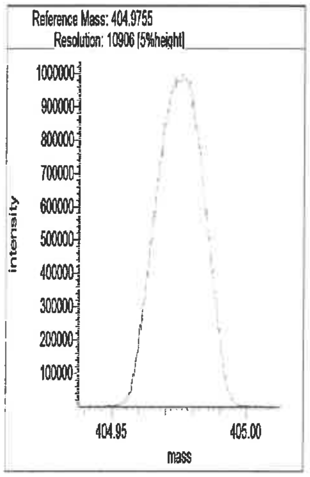

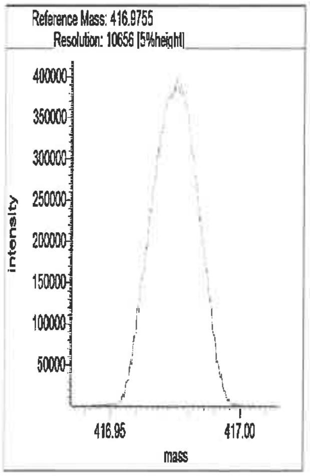

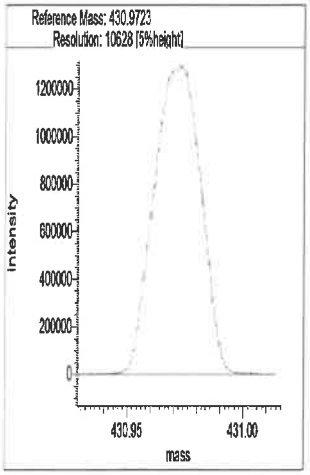

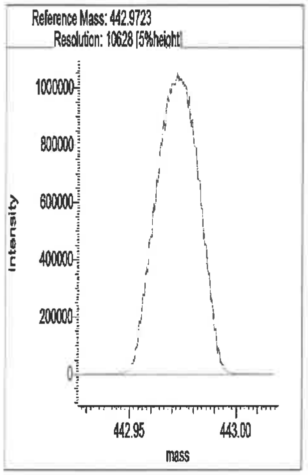

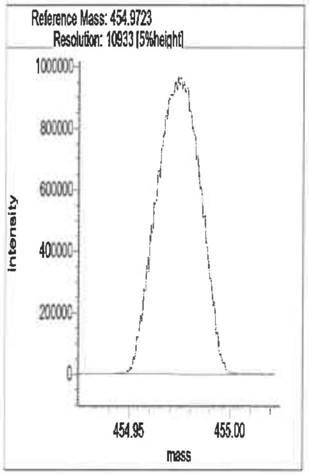

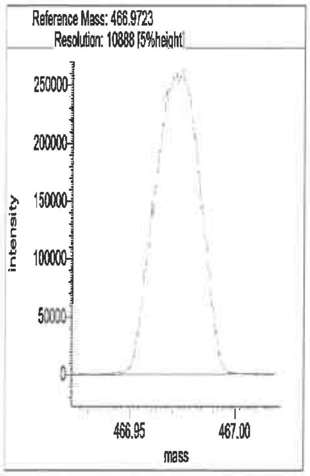

Segment 5

Lock mass 442.9723 [m/z] Resolution: 10924 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 10783 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 10661 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 10576 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 10830 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 10766 [5%height]

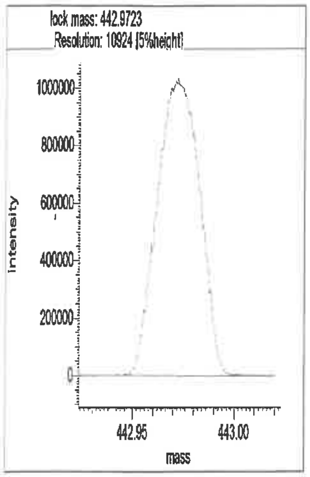
lock mass: 442.9723
Resolution: 10924 [5%height]
Intensity
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

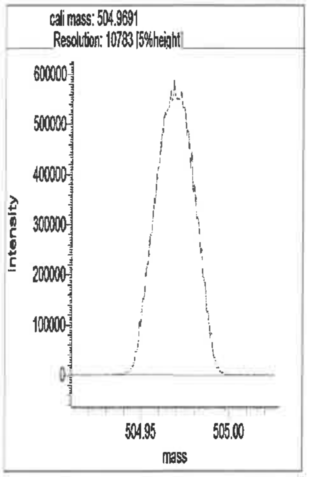
cali mass: 504.9691
Resolution: 10783 [5%height]
Intensity
600000
500000
400000
300000
200000
100000
0
504.95
505.00
mass

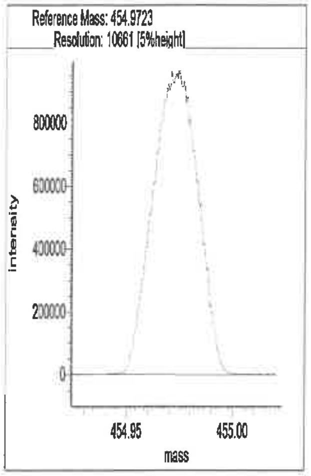
Reference Mass: 454.9723
Resolution: 10661 [5%height]
Intensity
800000
600000
400000
200000
0
454.95
455.00
mass

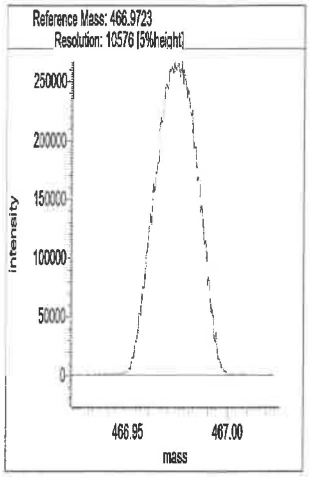
Reference Mass: 466.9723
Resolution: 10576 [5%height]
Intensity
250000
200000
150000
100000
50000
0
466.95
467.00
mass

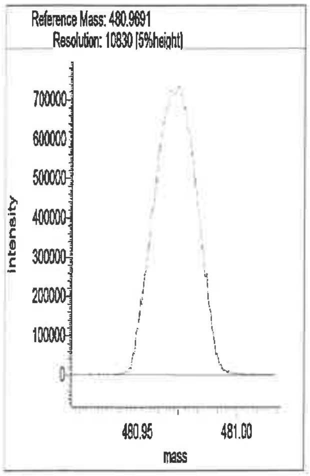
Reference Mass: 480.9691
Resolution: 10830 [5%height]
Intensity
700000
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

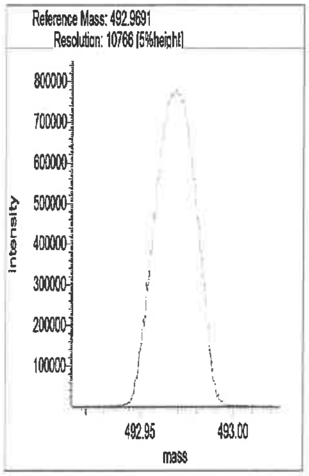
Reference Mass: 492.9691
Resolution: 10766 [5%height]
Intensity
800000
700000
600000
500000
400000
300000
200000
100000
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 16-Oct-2020 18:29:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Oct-2020 12:20:54 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: shardaa Date: 17-Oct-2020 12:18:43

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.537	2405645	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.652	3584566	0.79	1.5883	93.8	93.8	0.5436	0.5436	93.81	
2,3,7,8-TCDF	18.669	389660	0.81	1.0857	10.0	10.0	0.0604	0.0604	100	
A Non-2,3,7,8-sub-TCDF	18.277						0.0604	0.0604		
S Total TCDF					10.0	10.0	0.0604	0.0604		
D 13C-2,3,7,8-TCDD	19.881	2609601	0.80	1.1194	96.9	96.9	0.4622	0.4622	96.91	
2,3,7,8-TCDD	19.898	259467	0.85	1.0810	9.198	9.198	0.1345	0.1345	91.98	
$ 37Cl4-2,3,7,8-TCDD	19.906	272808		1.1468	9.889	9.889	0.0288	0.0288	98.89	
A Non-2,3,7,8-sub-TCDD	19.063						0.1345	0.1345		
S Total TCDD					9.198	9.198	0.1345	0.1345		
D 13C-1,2,3,7,8-PeCDF	25.793	3296616	1.57	1.4782	92.7	92.7	0.4320	0.4320	92.71	
1,2,3,7,8-PeCDF	25.819	1707854	1.58	1.0547	49.1	49.1	0.2181	0.2181	98.24	
D 13C-2,3,4,7,8-PeCDF	27.208	3046650	1.61	1.3912	91.0	91.0	0.4590	0.4590	91.03	
2,3,4,7,8-PeCDF	27.242	1659693	1.58	1.1035	49.4	49.4	0.2387	0.2387	98.73	
A F1 PeCDFs	22.977						0.0255	0.0255		
A Non-2,3,7,8-sub-PeCDF	26.437						0.2276	0.2276		Rn
S Total PeCDF					98.5	98.5	0.2284	0.2284		
D 13C-1,2,3,7,8-PeCDD	27.966	2187719	1.57	0.9415	96.6	96.6	0.2316	0.2316	96.60	
1,2,3,7,8-PeCDD	27.992	1102102	1.55	1.0680	47.2	47.2	0.0942	0.0942	94.34	
A Non-2,3,7,8-sub-PeCDD	26.858						0.0942	0.0942		
S Total PeCDD					47.2	47.2	0.0942	0.0942		
D 13C-1,2,3,4,7,8-HxCDF	33.729	2597649	0.53	1.1378	98.4	98.4	0.4692	0.4692	98.38	
1,2,3,4,7,8-HxCDF	33.746	1660959	1.29	1.2643	50.6	50.6	0.2826	0.2826	101	
D 13C-1,2,3,6,7,8-HxCDF	33.923	3057725	0.54	1.3173	100.0	100.0	0.4053	0.4053	100	
1,2,3,6,7,8-HxCDF	33.948	1897223	1.26	1.2230	50.7	50.7	0.2674	0.2674	101	
D 13C-2,3,4,6,7,8-HxCDF	34.891	2961886	0.54	1.2457	102.5	102.5	0.4286	0.4286	102	
2,3,4,6,7,8-HxCDF	34.908	1840329	1.27	1.2464	49.8	49.8	0.2199	0.2199	99.70	
D 13C-1,2,3,7,8,9-HxCDF	35.893	2723264	0.52	1.1840	99.1	99.1	0.4509	0.4509	99.11	
1,2,3,7,8,9-HxCDF	35.910	1704022	1.28	1.2638	49.5	49.5	0.2211	0.2211	99.03	
A Non-2,3,7,8-sub-HxCDF	33.742						0.2447	0.2447		
S Total HxCDF					200.7	200.7	0.2478	0.2478		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.682	2320785	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.135	1950039	1.27	0.8477	99.1	99.1	0.2534	0.2534	99.12	
1,2,3,4,7,8-HxCDD	35.152	1084987	1.28	1.1561	48.1	48.1	0.1264	0.1264	96.26	
D 13C-1,2,3,6,7,8-HxCDD	35.278	2332564	1.27	0.9979	100.7	100.7	0.2153	0.2153	101	
1,2,3,6,7,8-HxCDD	35.287	1167196	1.23	1.0284	48.7	48.7	0.1253	0.1253	97.31	
1,2,3,7,8,9-HxCDD	35.699	1213186	1.26	1.1789	48.1	48.1	0.1162	0.1162	96.12	
A Non-2,3,7,8-sub-HxCDD	34.272						0.1222	0.1222		
S Total HxCDD					144.8	144.8	0.1226	0.1226		
D 13C-1,2,3,4,6,7,8-HpCDF	37.867	2320498	0.45	0.9884	101.2	101.2	0.4669	0.4669	101	
1,2,3,4,6,7,8-HpCDF	37.875	1691184	1.05	1.5064	48.4	48.4	0.2037	0.2037	96.76	
D 13C-1,2,3,4,7,8,9-HpCDF	39.188	2100621	0.46	0.9203	98.4	98.4	0.5015	0.5015	98.35	
1,2,3,4,7,8,9-HpCDF	39.205	1495724	1.05	1.4548	48.9	48.9	0.2236	0.2236	97.89	
A Non-2,3,7,8-sub-HpCDF	38.545						0.2133	0.2133		
S Total HpCDF					97.3	97.3	0.2137	0.2137		
D 13C-1,2,3,4,6,7,8-HpCDD	38.877	2285441	1.05	0.9556	103.0	103.0	0.3155	0.3155	103	
1,2,3,4,6,7,8-HpCDD	38.885	1151060	1.04	1.0640	47.3	47.3	0.1240	0.1240	94.67	
A Non-2,3,7,8-sub-HpCDD	38.941						0.1240	0.1240		
S Total HpCDD					47.3	47.3	0.1240	0.1240		
D 13C-OCDD	41.331	3767166	0.89	0.7420	218.8	218.8	0.6219	0.6219	109	
OCDF	41.415	2677765	0.91	1.4296	99.4	99.4	0.1737	0.1737	99.44	
OCDD	41.339	2033051	0.89	1.1293	95.6	95.6	0.1640	0.1640	95.57	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 16-Oct-2020 18:29:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Oct-2020 12:20:54 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: shardaa Date: 17-Oct-2020 12:18:43

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.537	19.537	0		1074409	162080	518	1295	313		
333.9338	19.537	19.537	0		1331236	207046	246	615	842	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.652	18.652	0	0.955	1579094	242937	776	1940	313		
317.9389	18.643	18.652	-1	0.954	2005472	317124	499	1247	636	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.669	18.669	0	1.001	174409	26738	51	127	524		
305.8987	18.669	18.669	0	1.001	215251	31767	96	240	331	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.277						51	127			
305.8987	18.277						96	240			
13C-2,3,7,8-TCDD											
331.9368	19.881	19.881	0	1.018	1158343	163557	518	1295	316		
333.9338	19.881	19.881	0	1.018	1451258	207956	246	615	845	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.898	19.898	0	1.001	119079	16345	168	420	97		
321.8936	19.915	19.898	1	1.002	140388	20994	48	120	437	0.85(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.906	19.906	0	1.019	272808	37438	49	122	764		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.063						168	420			
321.8936	19.063						48	120			
13C-1,2,3,7,8-PeCDF											
351.9000	25.793	25.793	0	1.320	2016340	347378	560	1400	620		
353.8970	25.785	25.793	-1	1.320	1280276	215671	383	957	563	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.819	25.819	0	1.001	1046453	174808	302	755	579		
341.8567	25.810	25.819	-1	1.001	661401	111372	216	540	516	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.208	27.208	0	1.393	1881015	305281	560	1400	545		
353.8970	27.208	27.208	0	1.393	1165635	186358	383	957	487	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.242	27.242	0	1.001	1015789	160774	302	755	532		
341.8567	27.234	27.242	-1	1.001	643904	101635	216	540	471	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.977						7	17			
341.8567	22.977						51	127			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.366	26.427	-4	1.022	11669	1567	302	755	5		
341.8567	26.366	26.427	-4	1.022	9061	1094	216	540	5	1.29(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.966	27.966	0	1.431	1336493	204829	176	440	1164		
369.8919	27.966	27.966	0	1.431	851226	130075	146	365	891	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.992	27.992	0	1.001	669875	100856	101	252	999		
357.8516	27.992	27.992	0	1.001	432227	64819	34	85	1906	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.858						101	252			
357.8516	26.858						34	85			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.729	33.729	0	0.945	900469	174736	387	967	452		
385.8610	33.729	33.729	0	0.945	1697180	329565	808	2020	408	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.746	33.746	0	1.001	934948	177819	402	1005	442		
375.8178	33.746	33.746	0	1.001	726011	138983	319	797	436	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.923	33.923	0	0.951	1071358	190527	387	967	492		
385.8610	33.923	33.923	0	0.951	1986367	360394	808	2020	446	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.948	33.948	0	1.001	1058930	189052	402	1005	470		
375.8178	33.948	33.948	0	1.001	838293	148136	319	797	464	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.891	34.891	0	0.978	1038476	229611	387	967	593		
385.8610	34.891	34.891	0	0.978	1923410	427751	808	2020	529	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.908	34.908	0	1.000	1031097	225570	402	1005	561		
375.8178	34.908	34.908	0	1.000	809232	177456	319	797	556	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.893	35.893	0	1.006	934533	220254	387	967	569		
385.8610	35.893	35.893	0	1.006	1788731	424715	808	2020	526	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.910	35.910	0	1.000	955844	223806	402	1005	557		
375.8178	35.901	35.910	-1	1.000	748178	174810	319	797	548	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.742						402	1005			
375.8178	33.742						319	797			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.682	35.682	0		1301381	313883	251	627	1251		
403.8529	35.682	35.682	0		1019404	245612	230	575	1068	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.135	35.135	0	0.985	1090978	257990	251	627	1028		
403.8529	35.135	35.135	0	0.985	859061	203955	230	575	887	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.152	35.152	0	1.000	608365	143808	137	342	1050		
391.8127	35.152	35.152	0	1.000	476622	115422	133	332	868	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.278	35.278	0	0.989	1302993	292413	251	627	1165		
403.8529	35.270	35.278	-1	0.988	1029571	231333	230	575	1006	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.287	35.287	0	1.000	644378	143804	137	342	1050		
391.8127	35.287	35.287	0	1.000	522818	115421	133	332	868	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.699	35.699	0	1.016	676751	159979	137	342	1168		
391.8127	35.699	35.699	0	1.016	536435	127192	133	332	956	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.272						137	342			
391.8127	34.272						133	332			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.867	37.867	0	1.061	722535	223299	362	905	617		
419.8220	37.867	37.867	0	1.061	1597963	493489	671	1677	735	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.875	37.875	0	1.000	865629	260709	448	1120	582		
409.7788	37.875	37.875	0	1.000	825555	248239	432	1080	575	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.188	39.188	0	1.098	660706	210711	362	905	582		
419.8220	39.188	39.188	0	1.098	1439915	465691	671	1677	694	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.205	39.205	0	1.000	764848	244519	448	1120	546		
409.7788	39.197	39.205	-1	1.000	730876	233034	432	1080	539	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.545						448	1120			
409.7788	38.545						432	1080			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.877	38.877	0	1.090	1173004	383407	358	895	1071		
437.8140	38.877	38.877	0	1.090	1112437	359616	317	792	1134	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.885	38.885	0	1.000	586978	187774	212	530	886		
425.7737	38.885	38.885	0	1.000	564082	183117	180	450	1017	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						212	530			
425.7737	38.941						180	450			
13C-OCDD											
469.7780	41.331	41.331	0	1.158	1774767	580826	539	1347	1078		
471.7750	41.331	41.331	0	1.158	1992399	644853	494	1235	1305	0.89(0.76-1.02)	
OCDF											
441.7428	41.415	41.415	0	1.002	1277464	414568	275	687	1508		
443.7399	41.415	41.415	0	1.002	1400301	453553	334	835	1358	0.91(0.76-1.02)	
OCDD											
457.7377	41.339	41.339	0	1.000	958921	308860	220	550	1404		
459.7348	41.339	41.339	0	1.000	1074130	345654	234	585	1477	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d		
Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

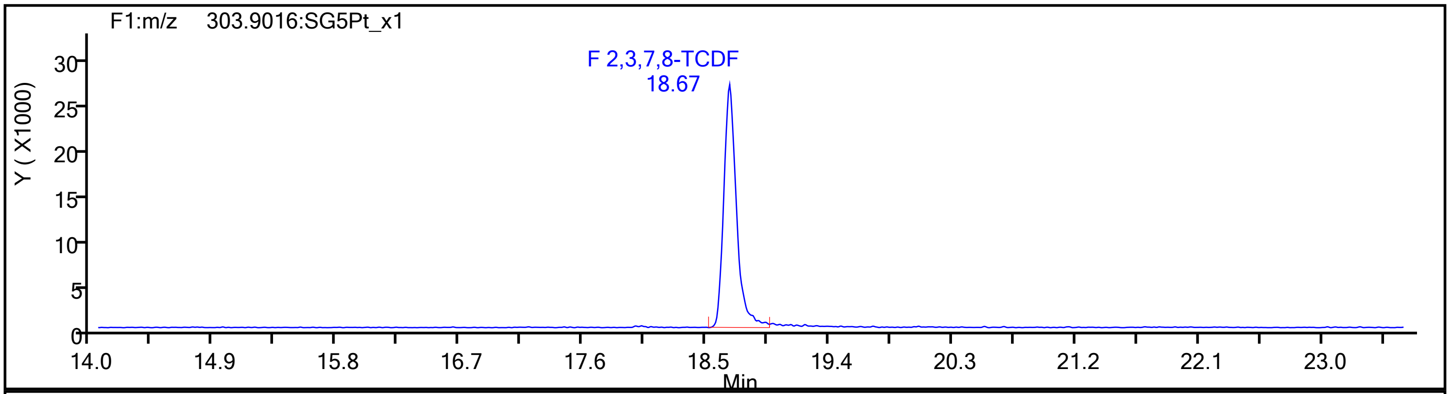

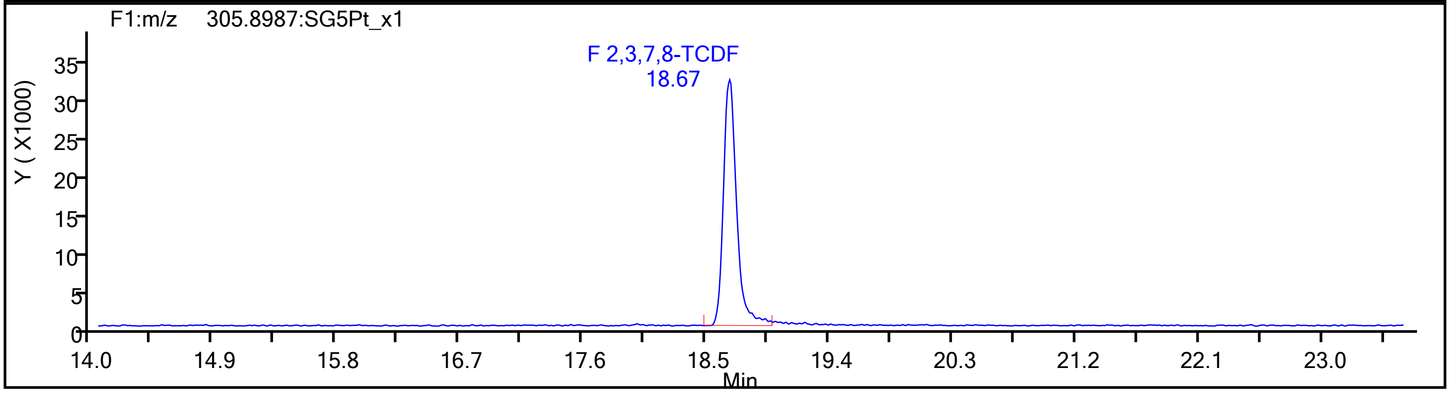

TCDF Standards

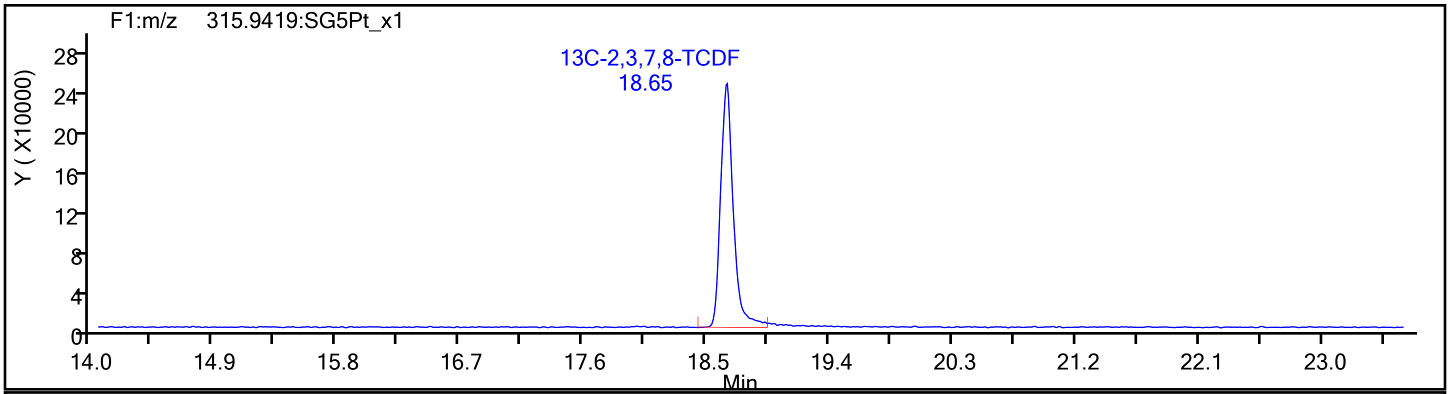

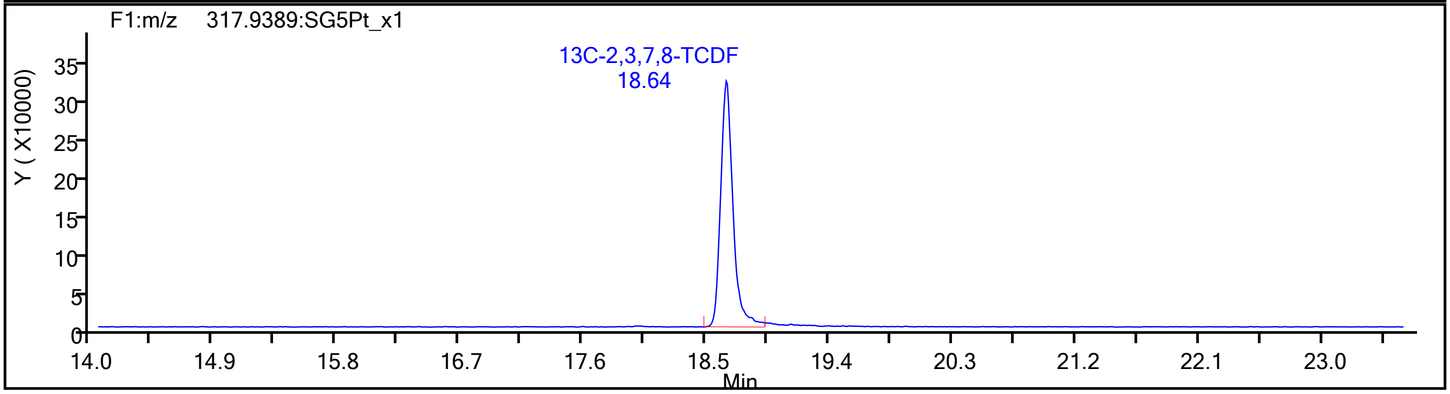

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

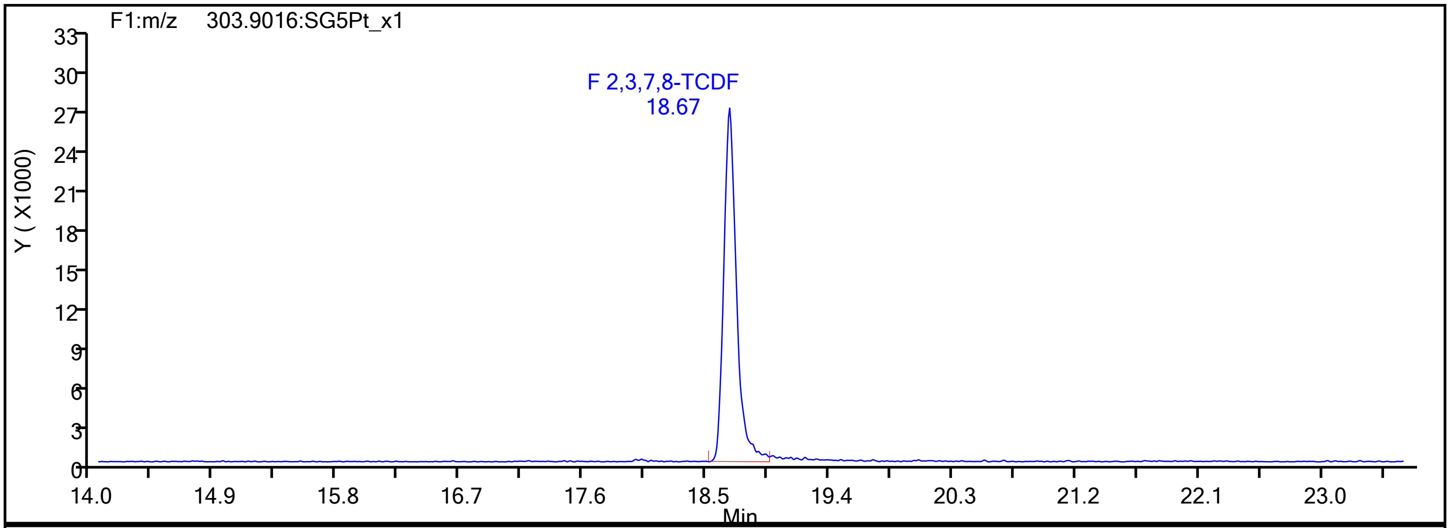

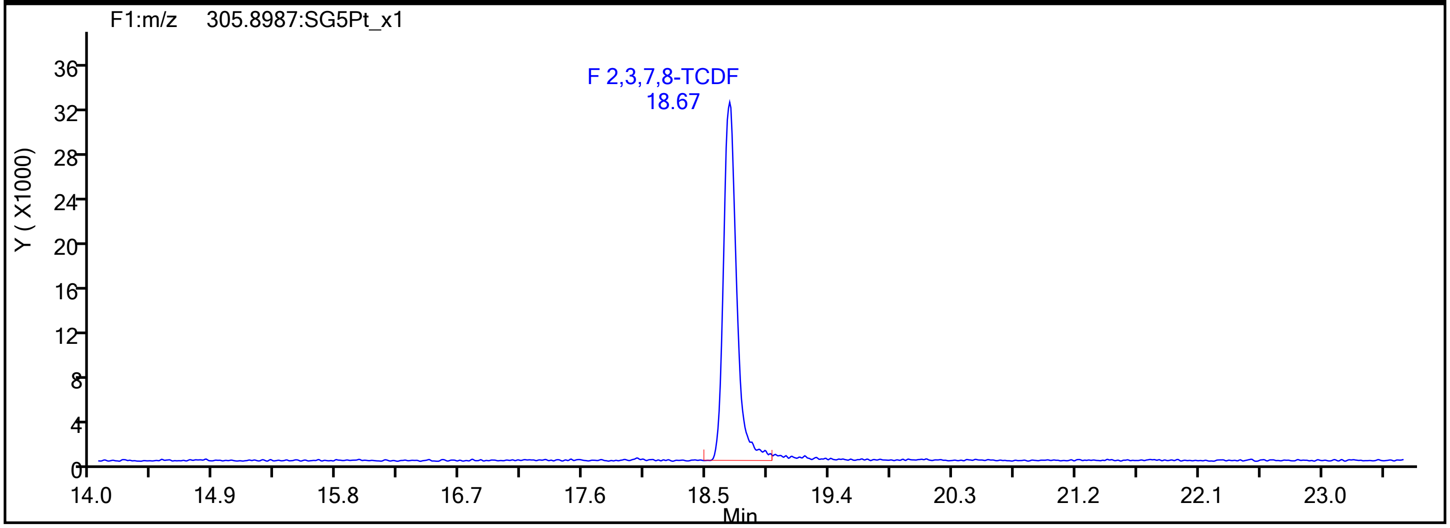

TCDF Interference Mass

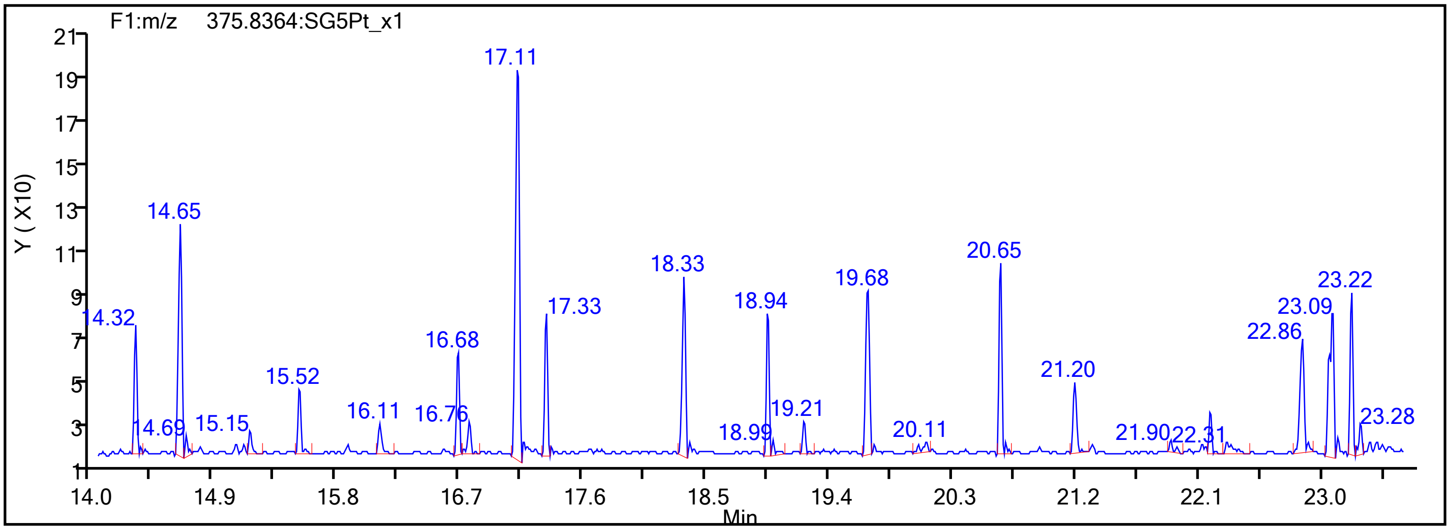

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d

Injection Date: 16-Oct-2020 18:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

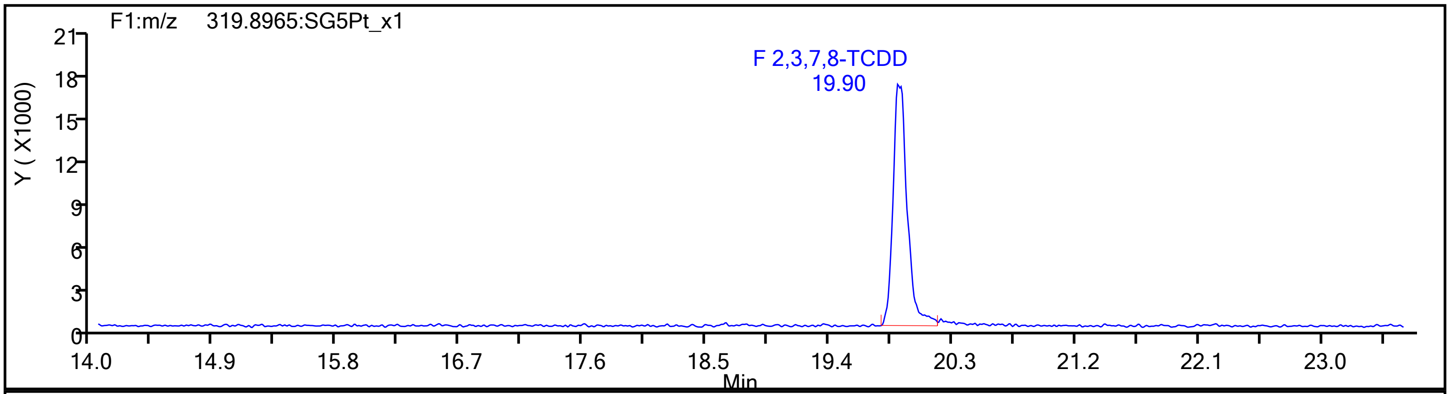

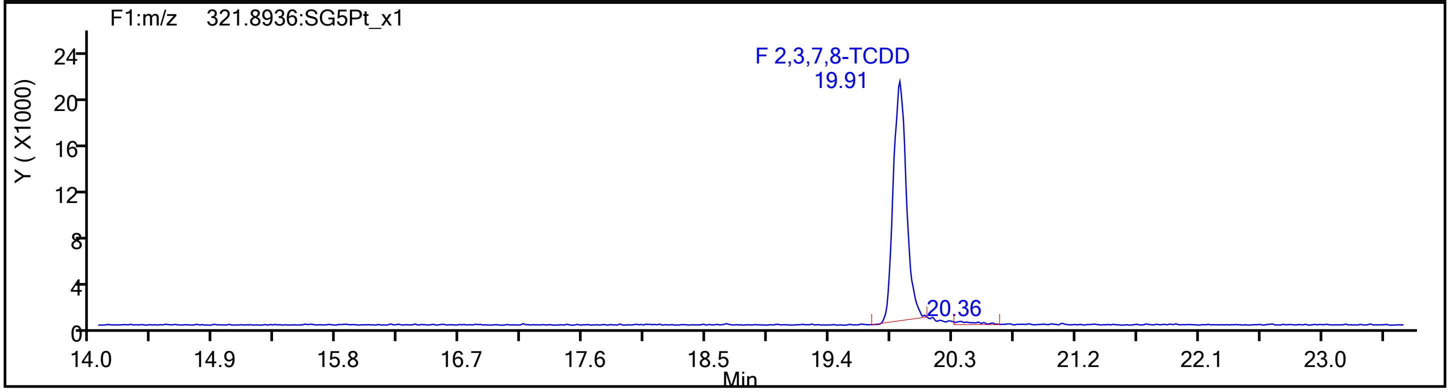

TCDD Standards

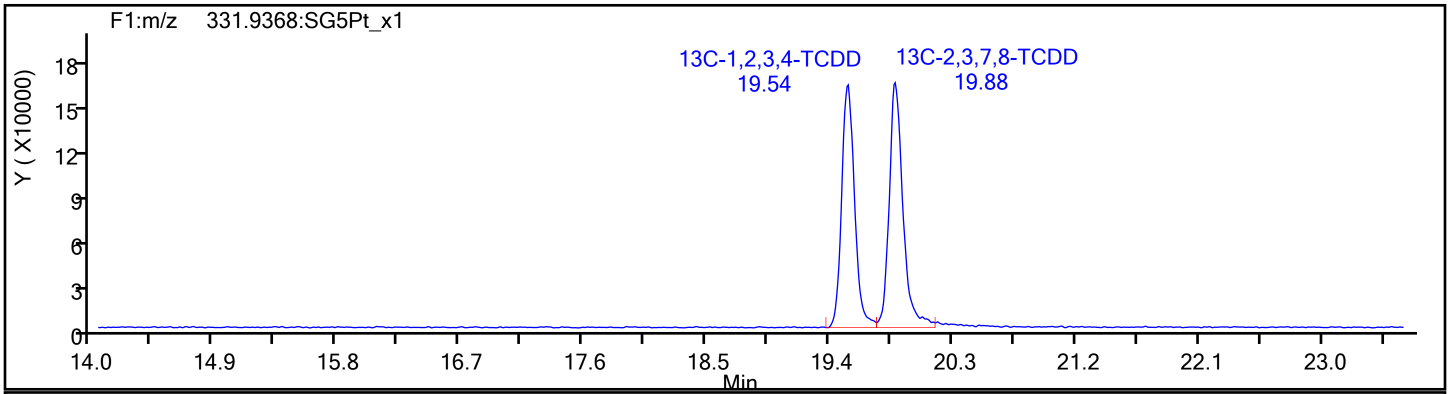

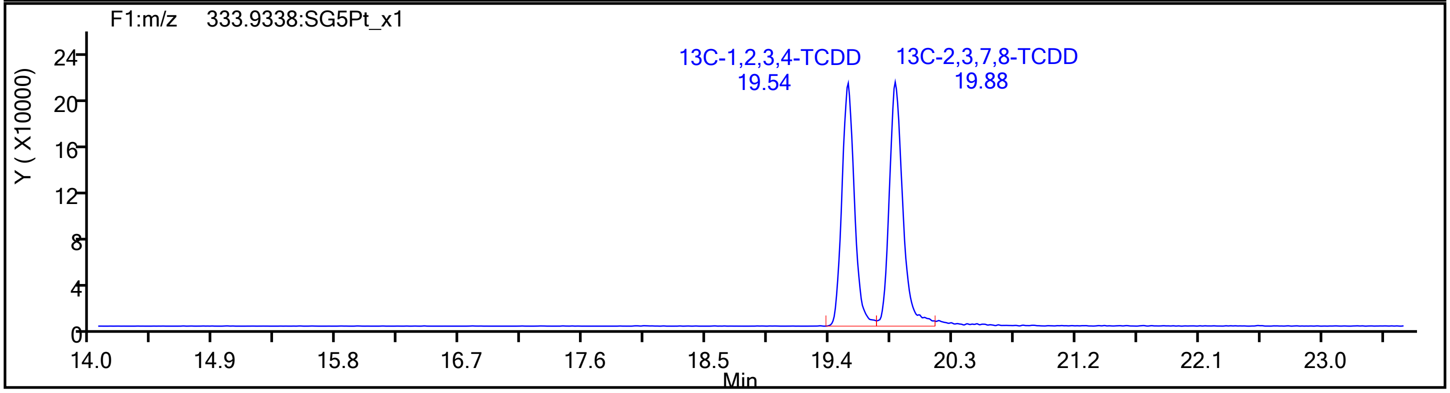

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

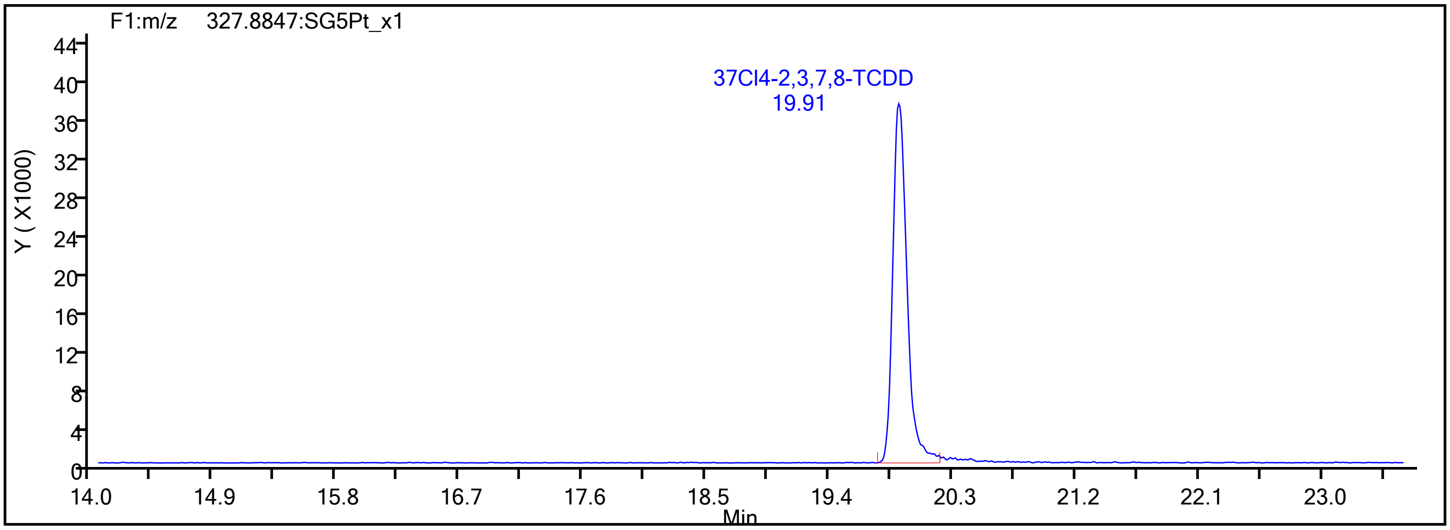

37Cl4-TCDD Standards

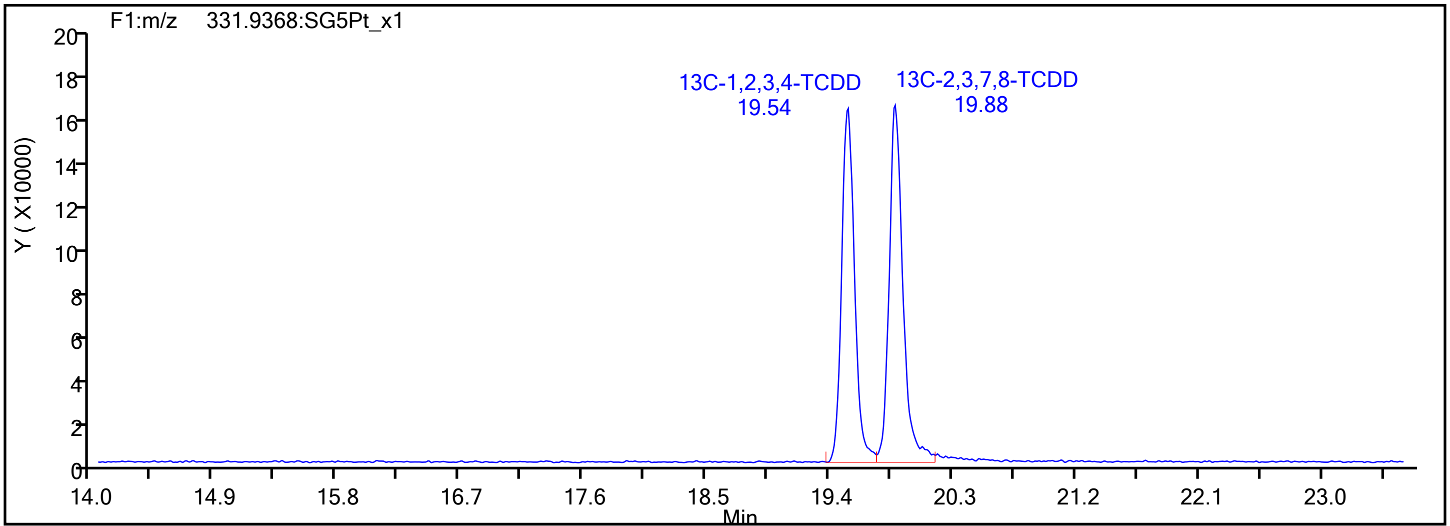

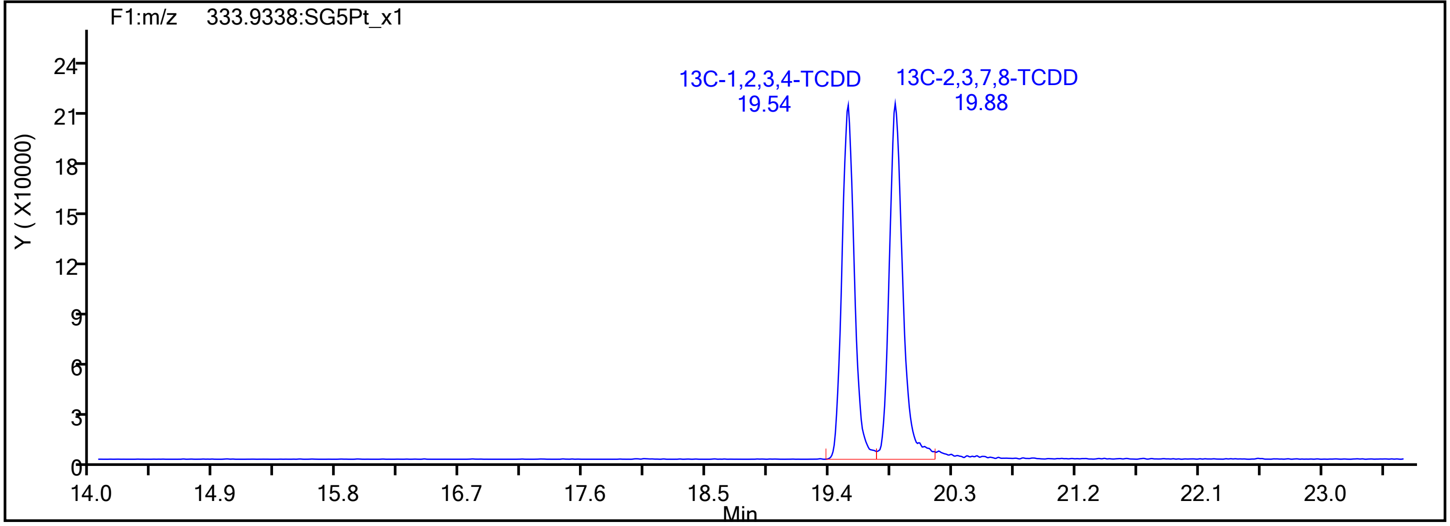

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

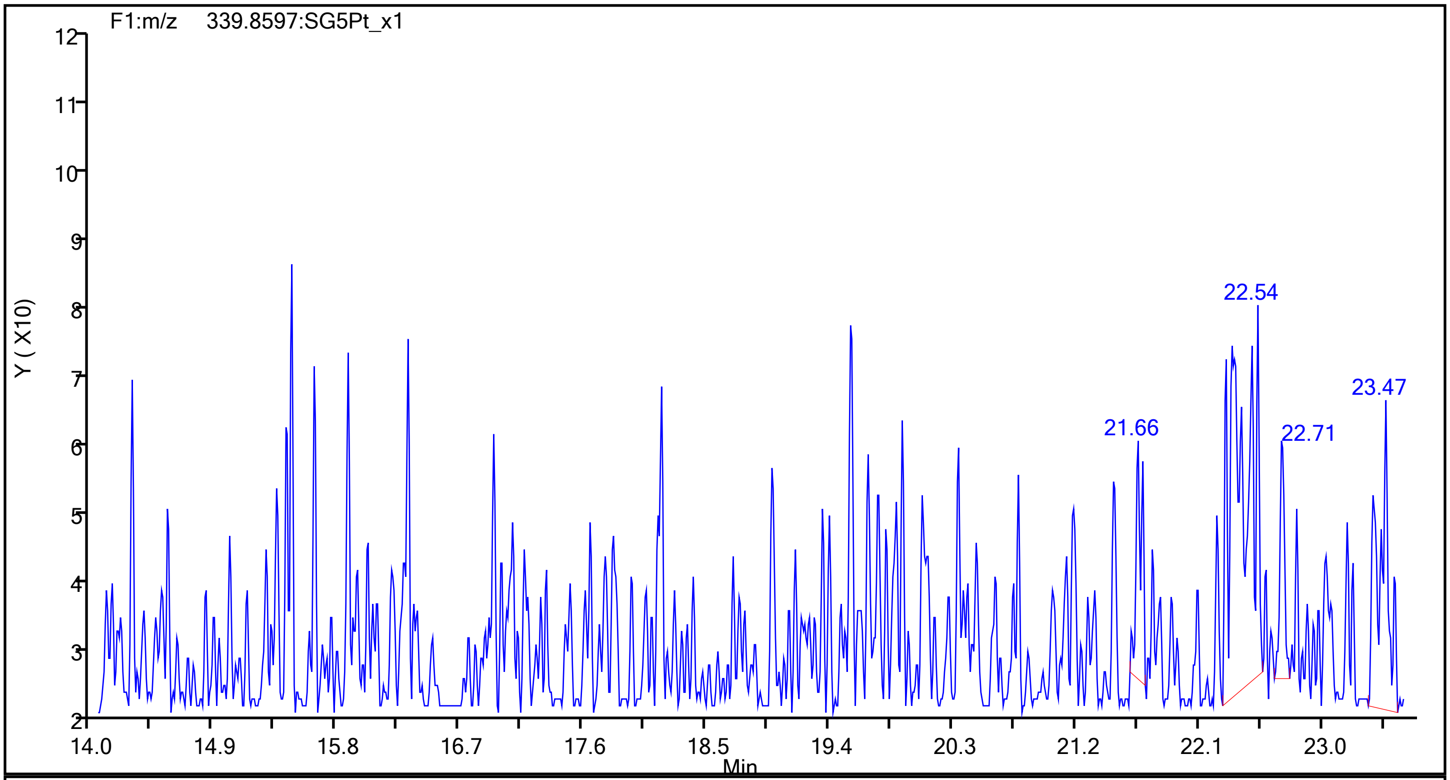

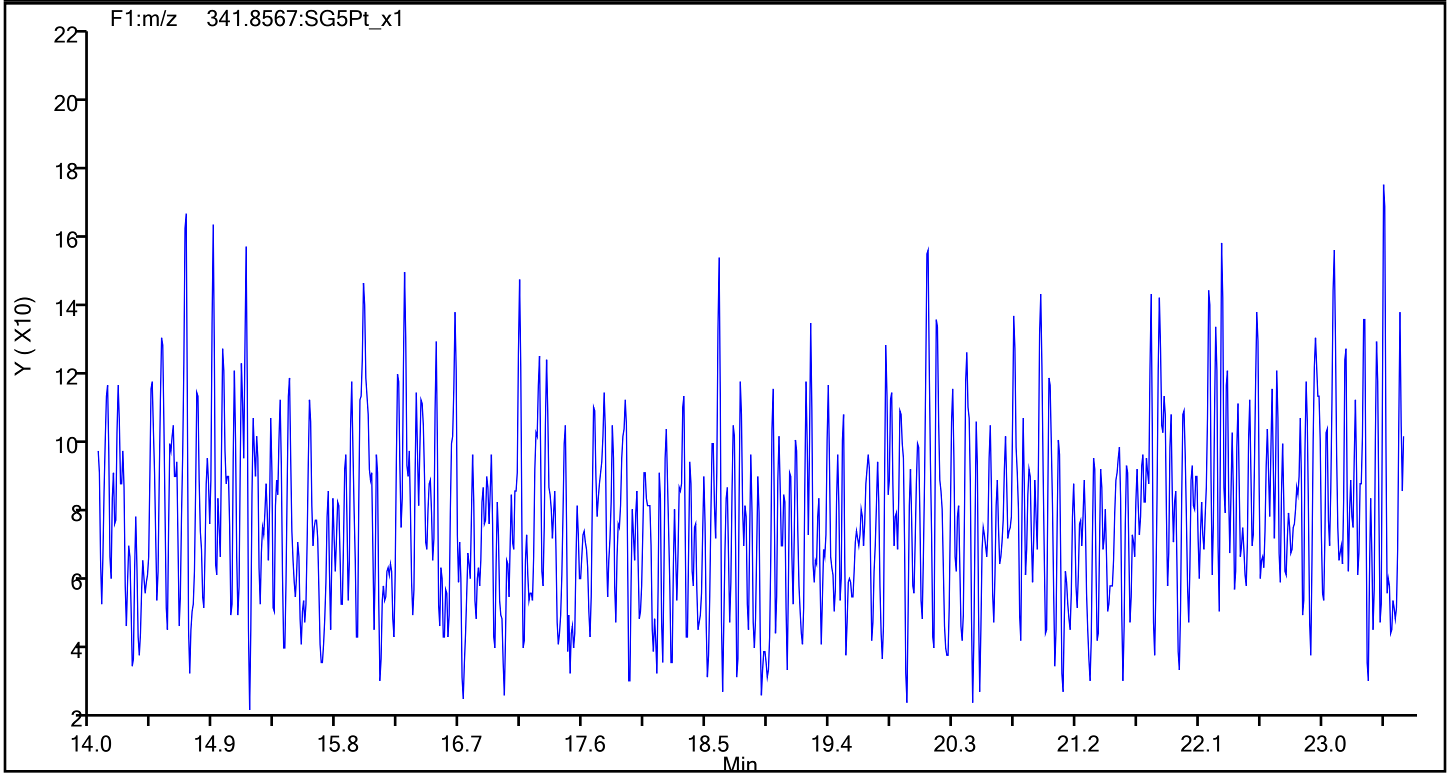

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

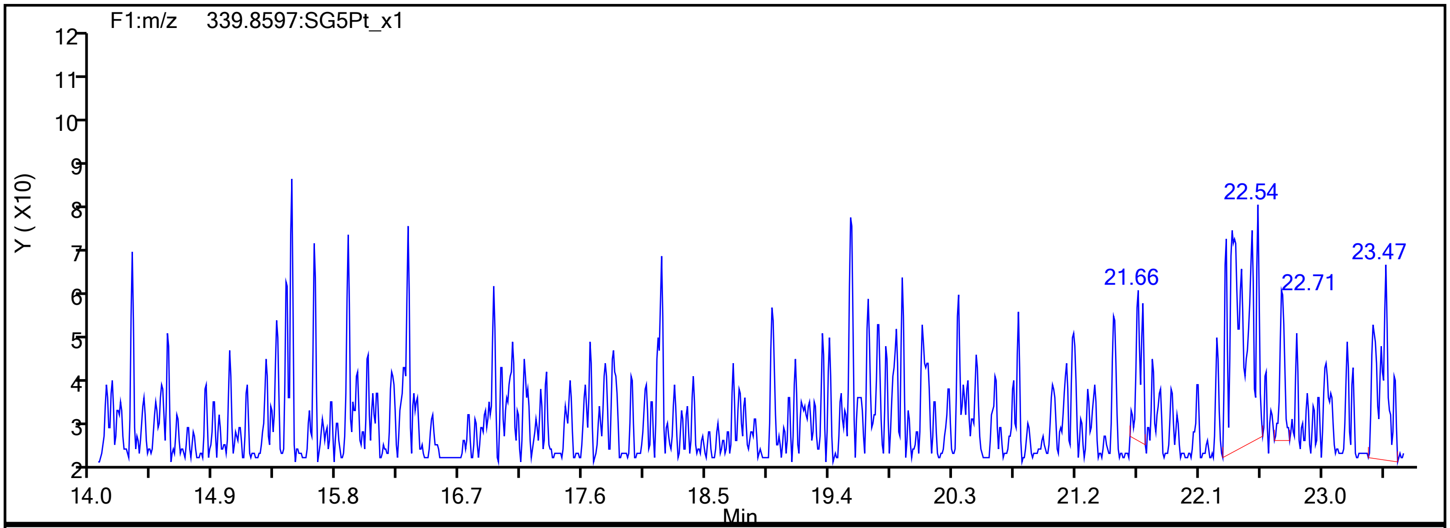

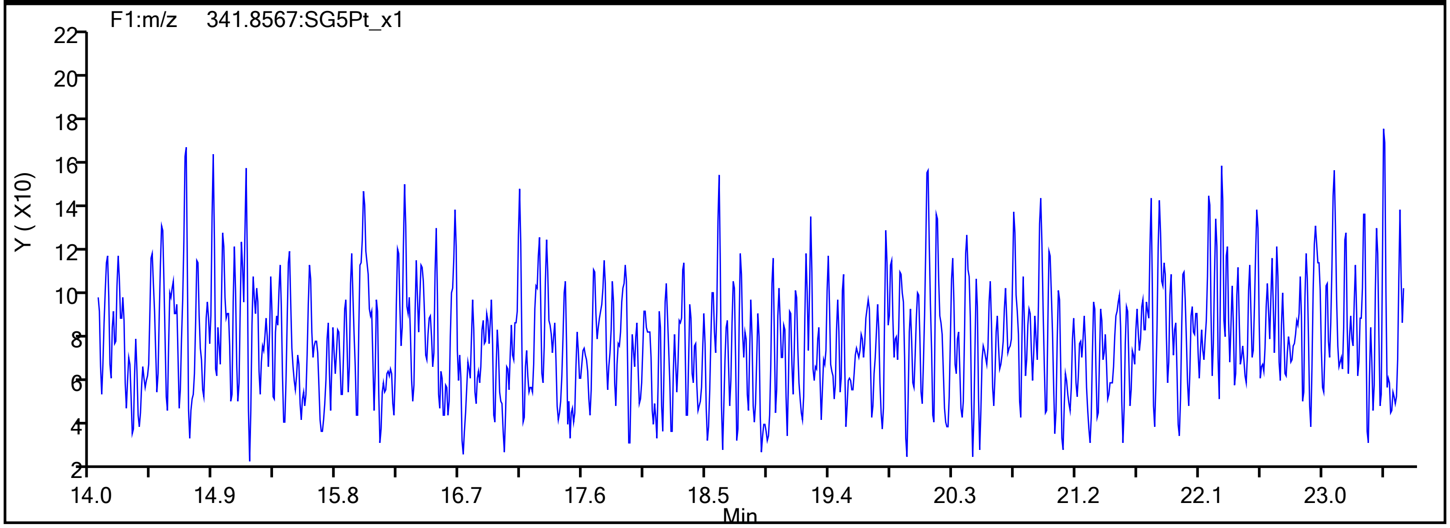

F1 PeCDFs Interference Mass

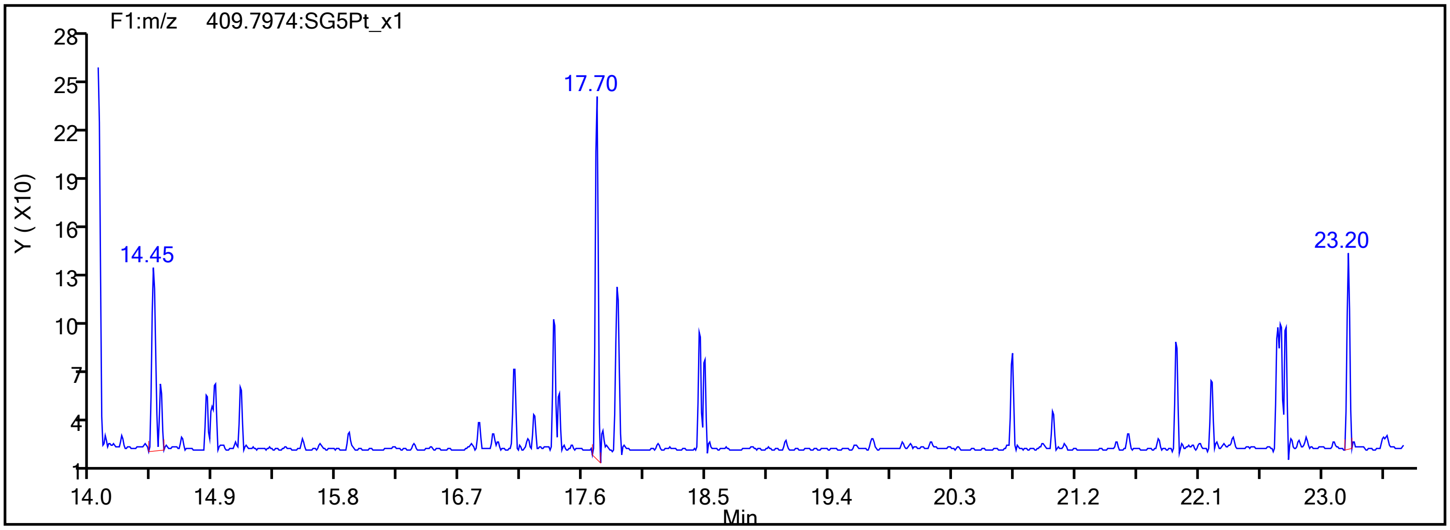

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

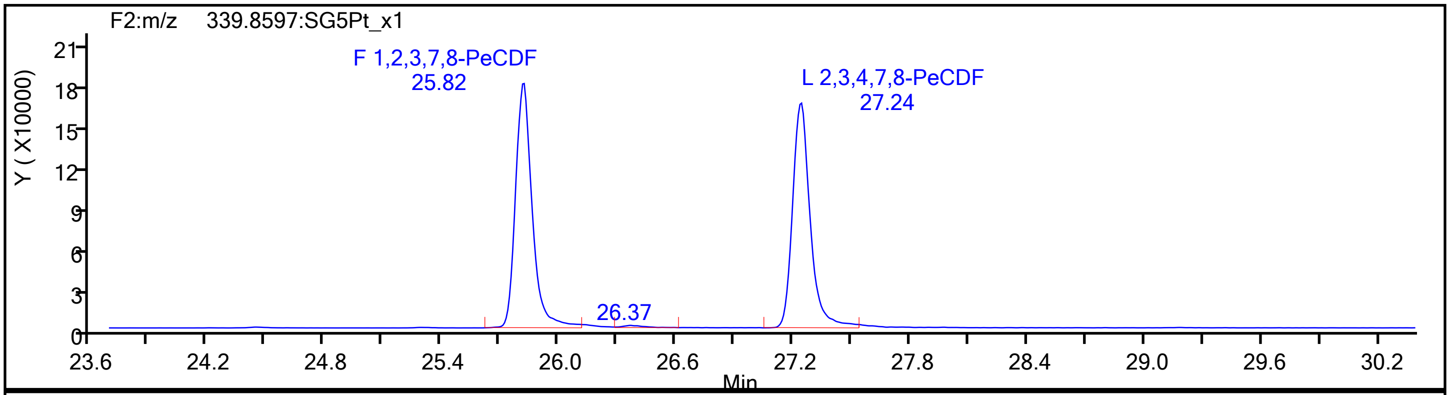

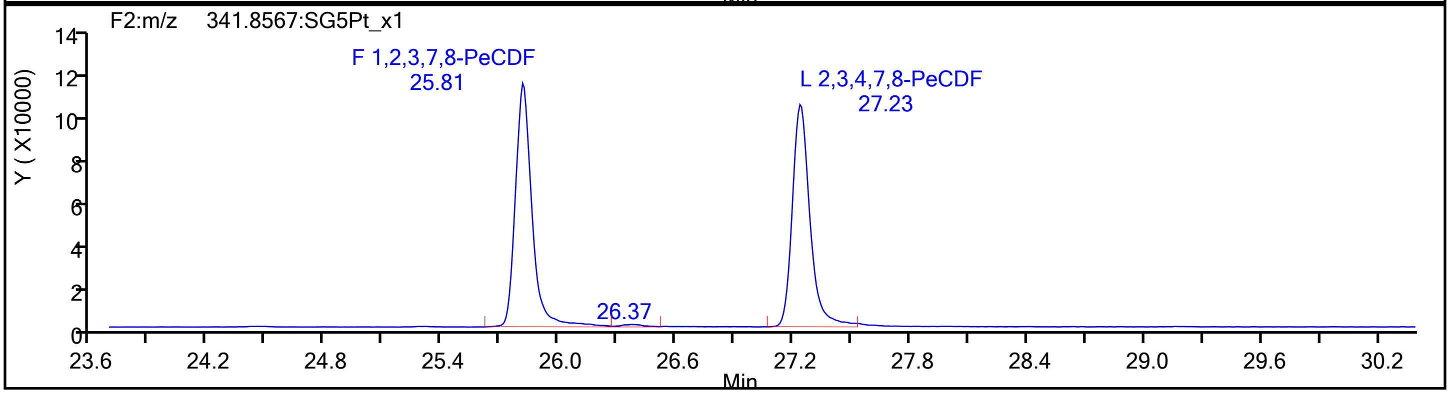

PeCDF Standards

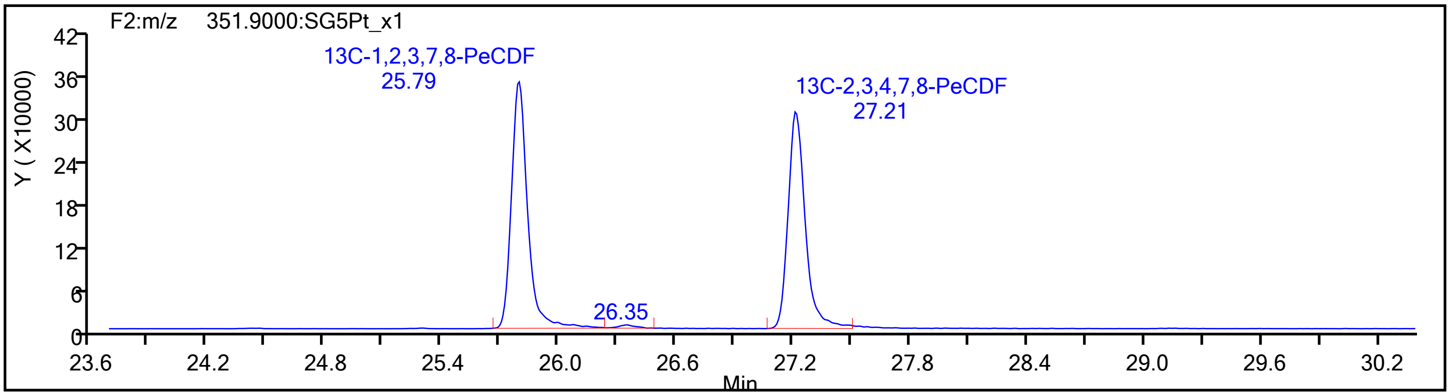

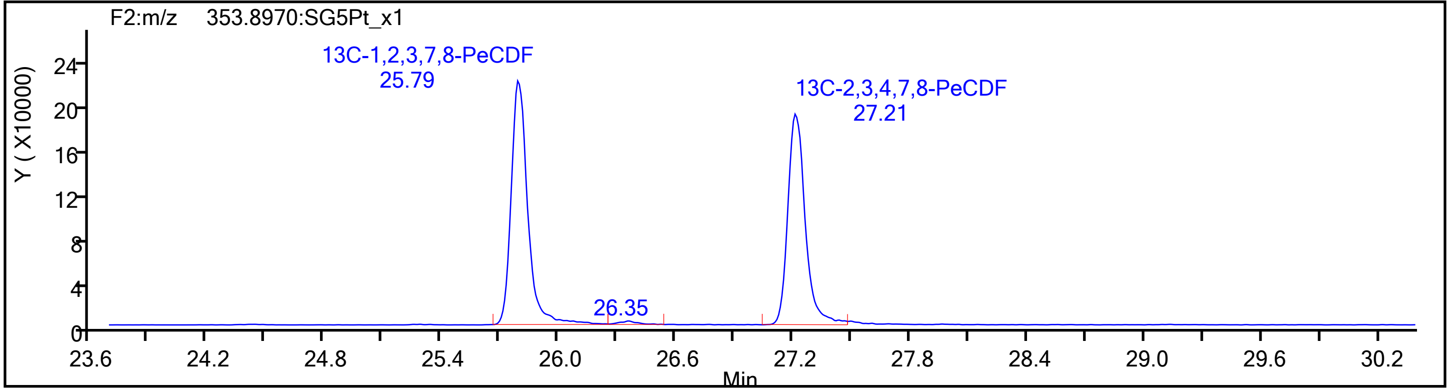

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date: 16-Oct-2020 18:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

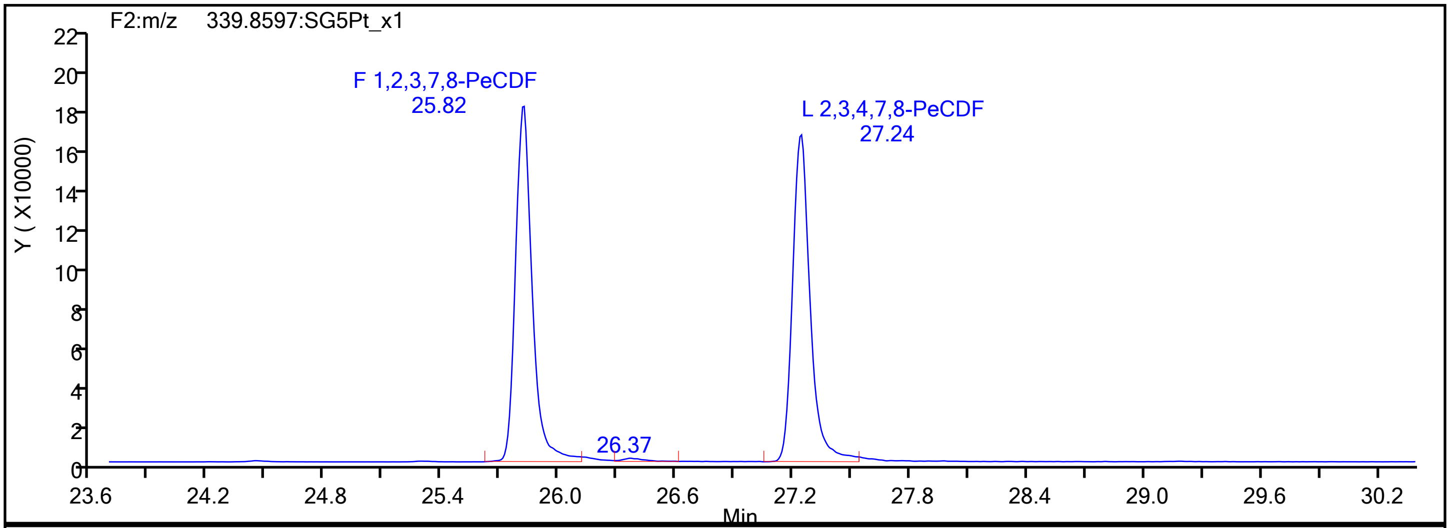

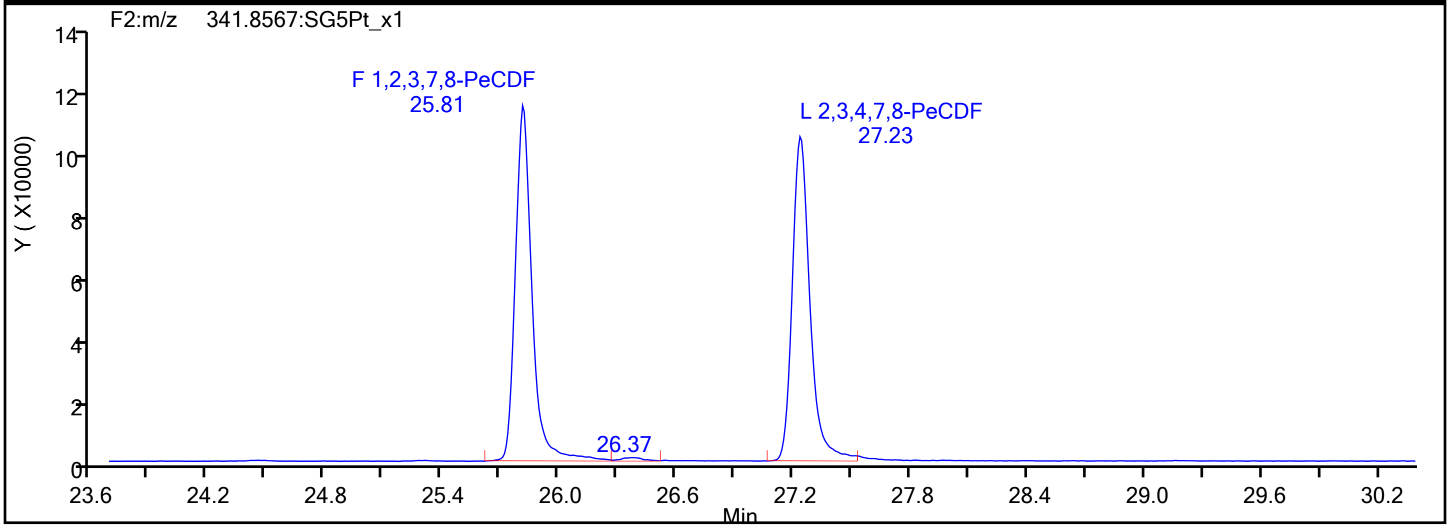

PeCDF Interference Mass

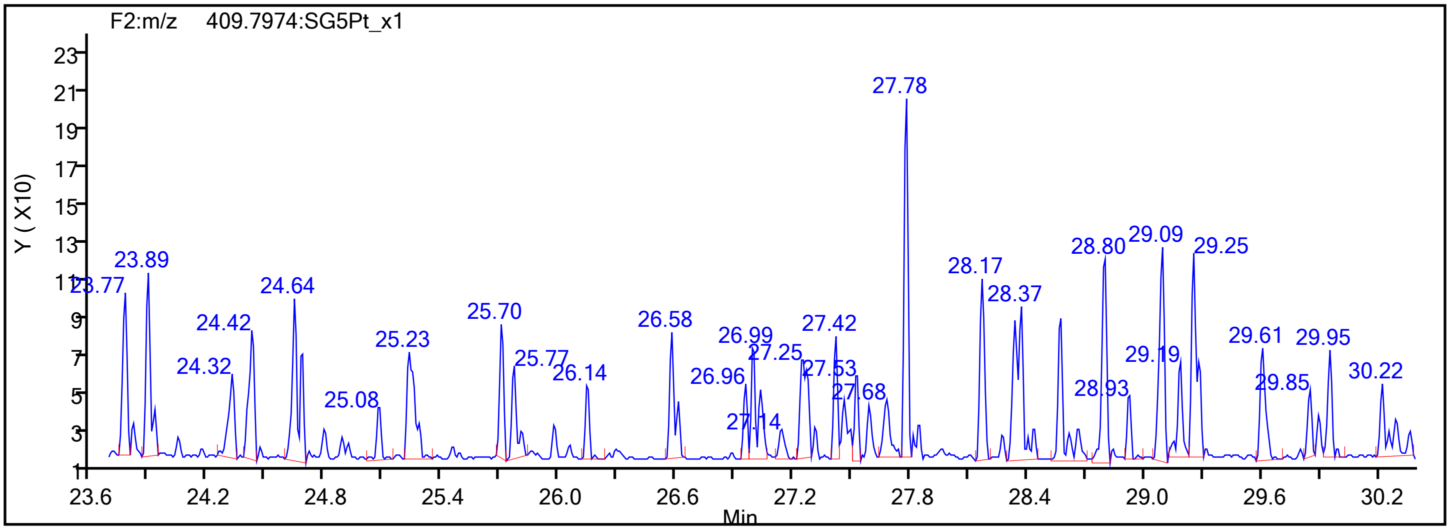

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d
Injection Date: 16-Oct-2020 18:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 422778
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

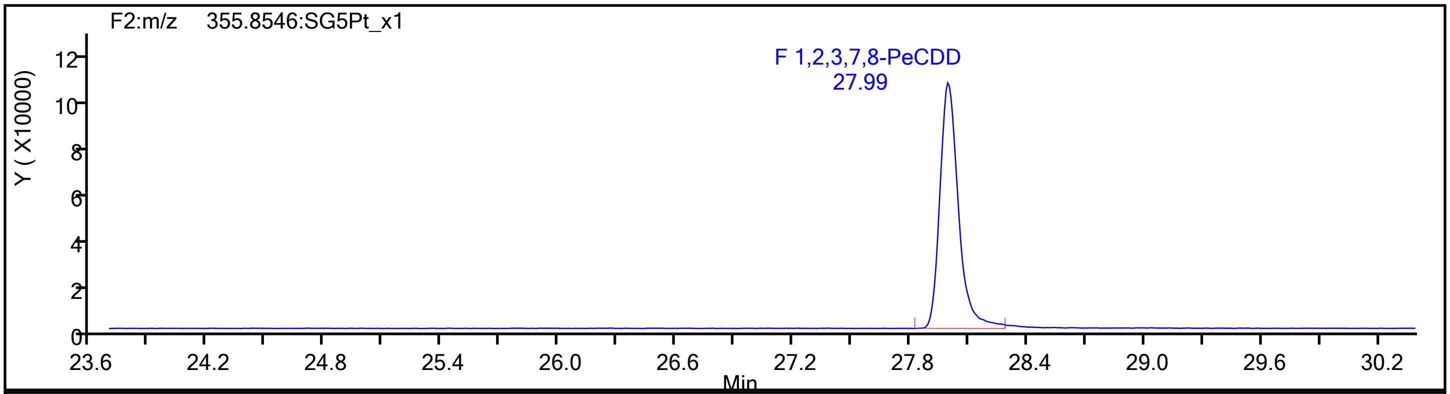

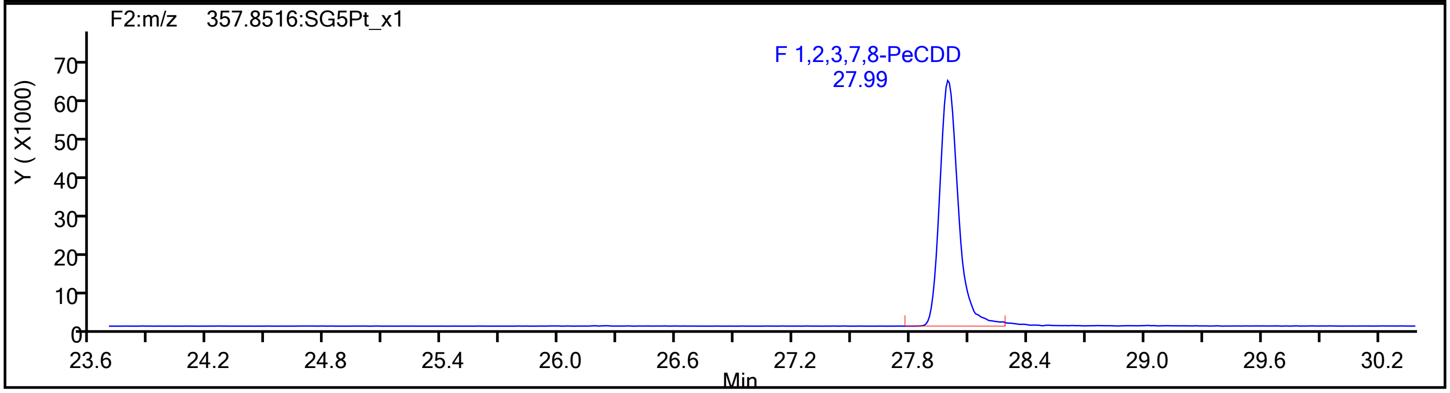

PeCDD Standards

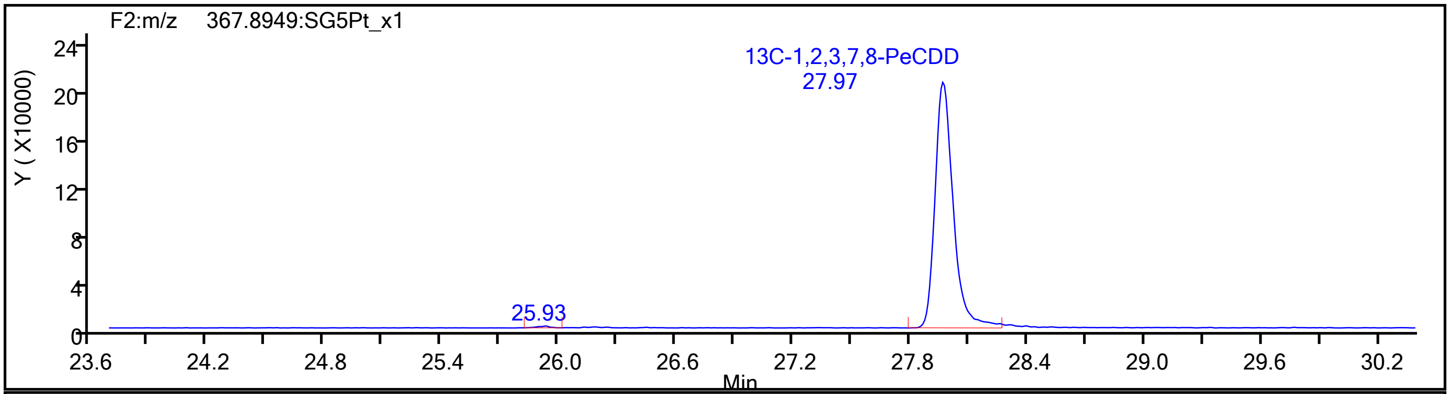

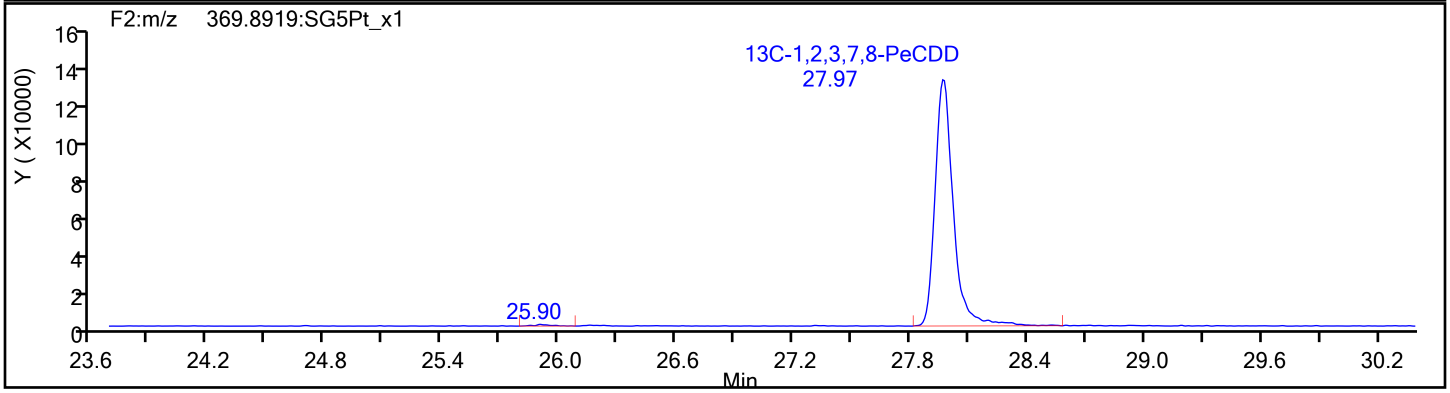

Report Date: 17-Oct-2020 12:20:56 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d

Injection Date: 16-Oct-2020 18:29:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422778 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

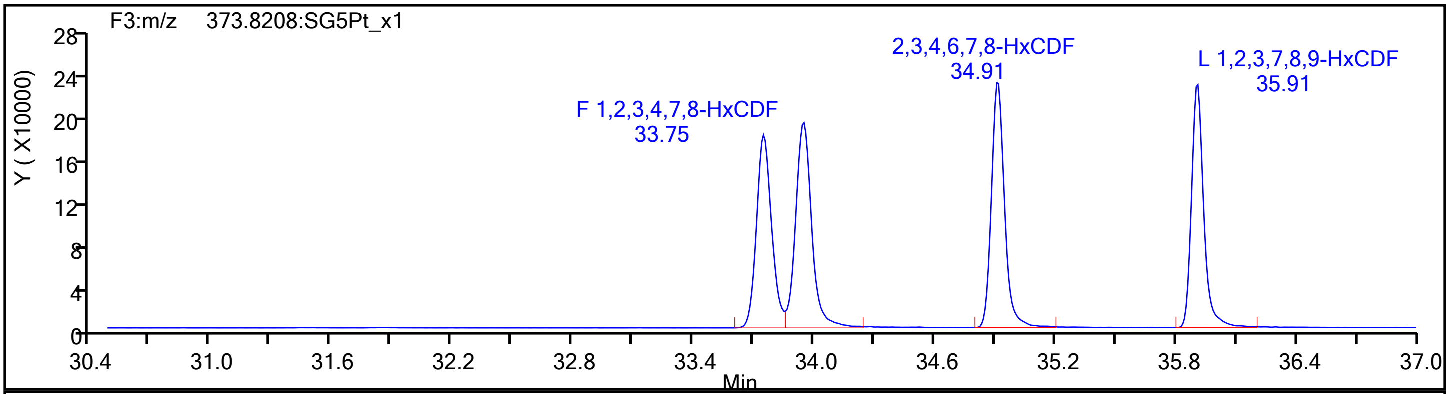

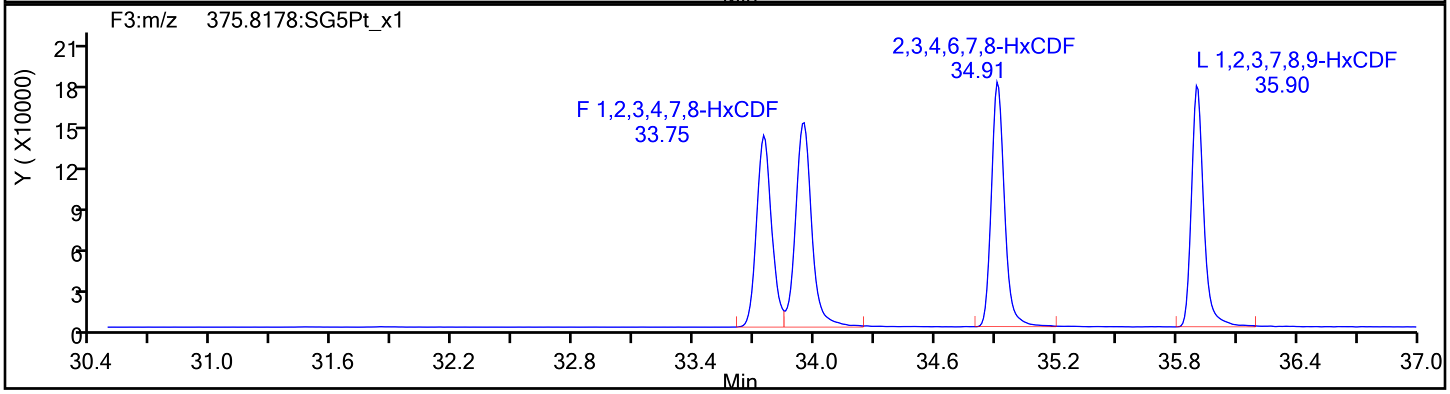

HxCDF Standards

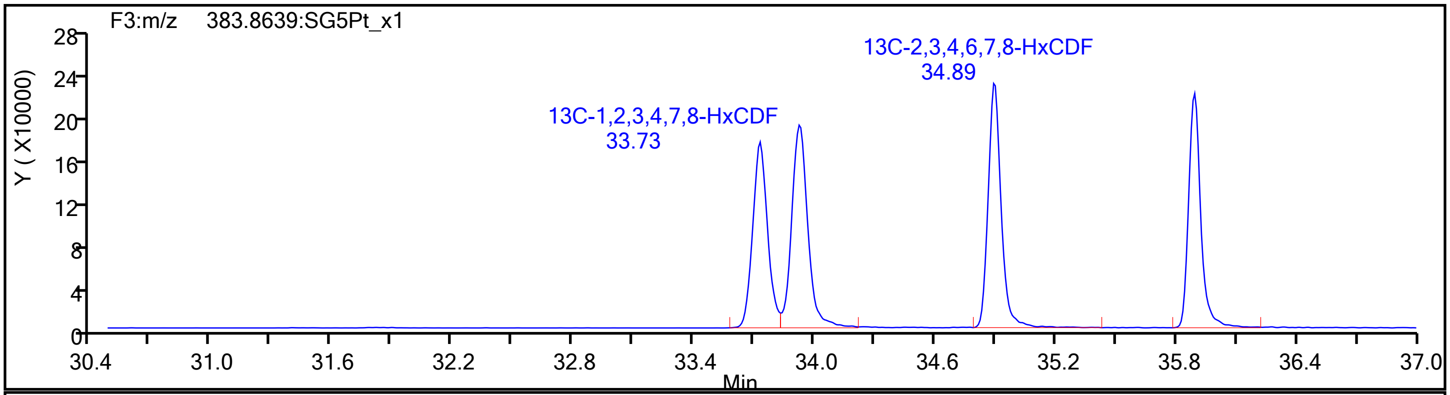

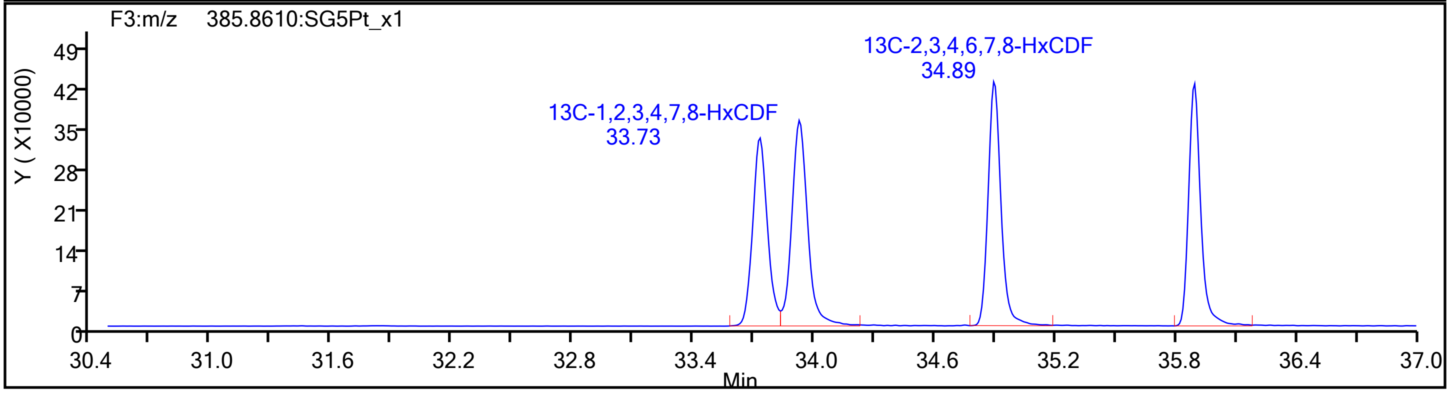

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

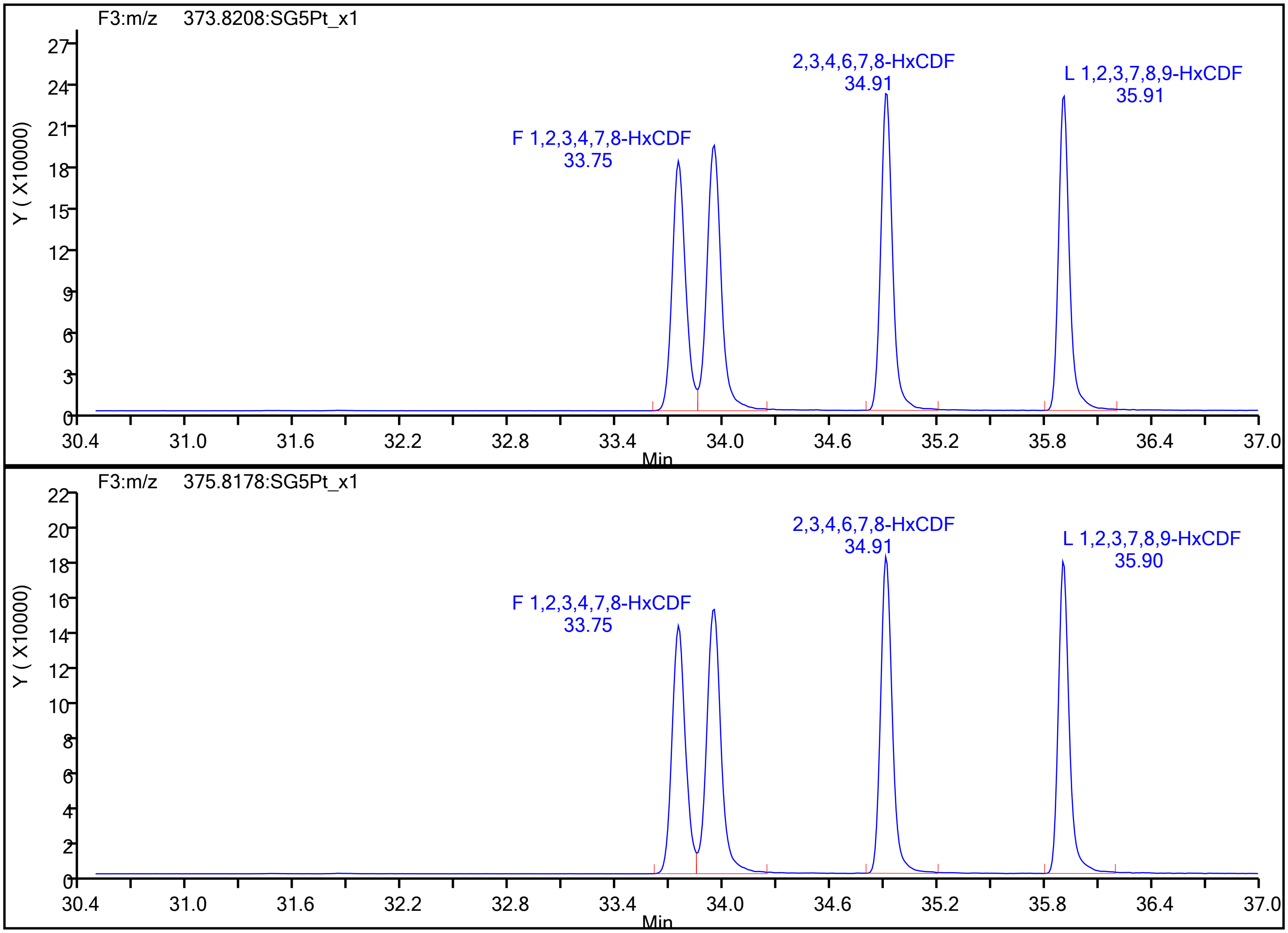

HxCDF Interference Mass

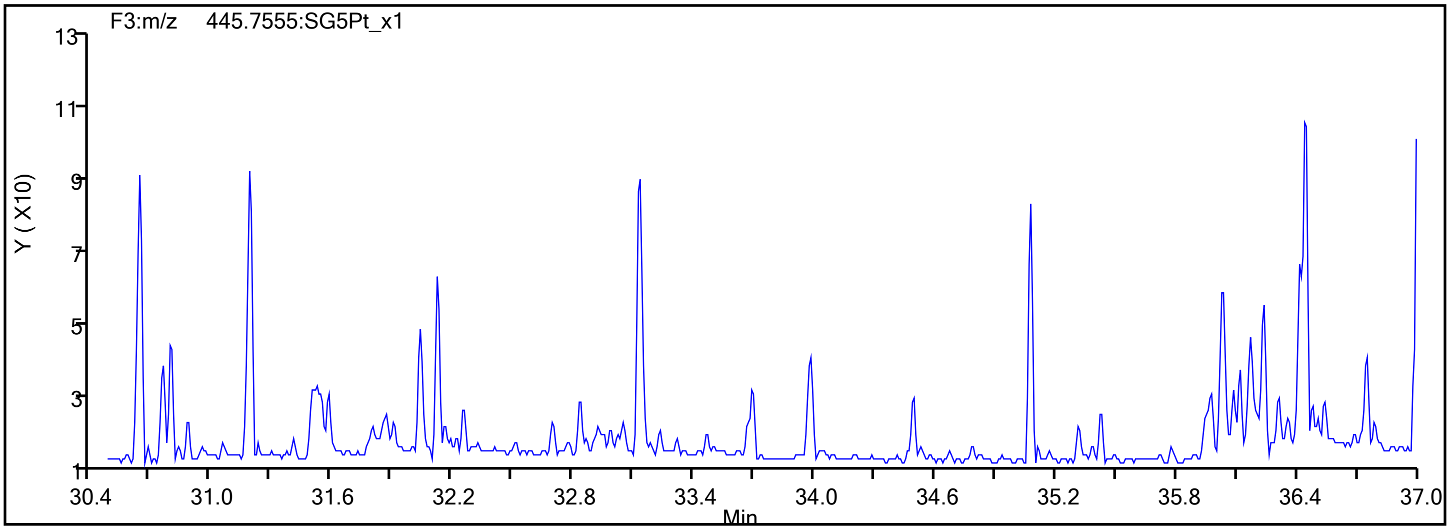

Report Date: 17-Oct-2020 12:20:56	Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

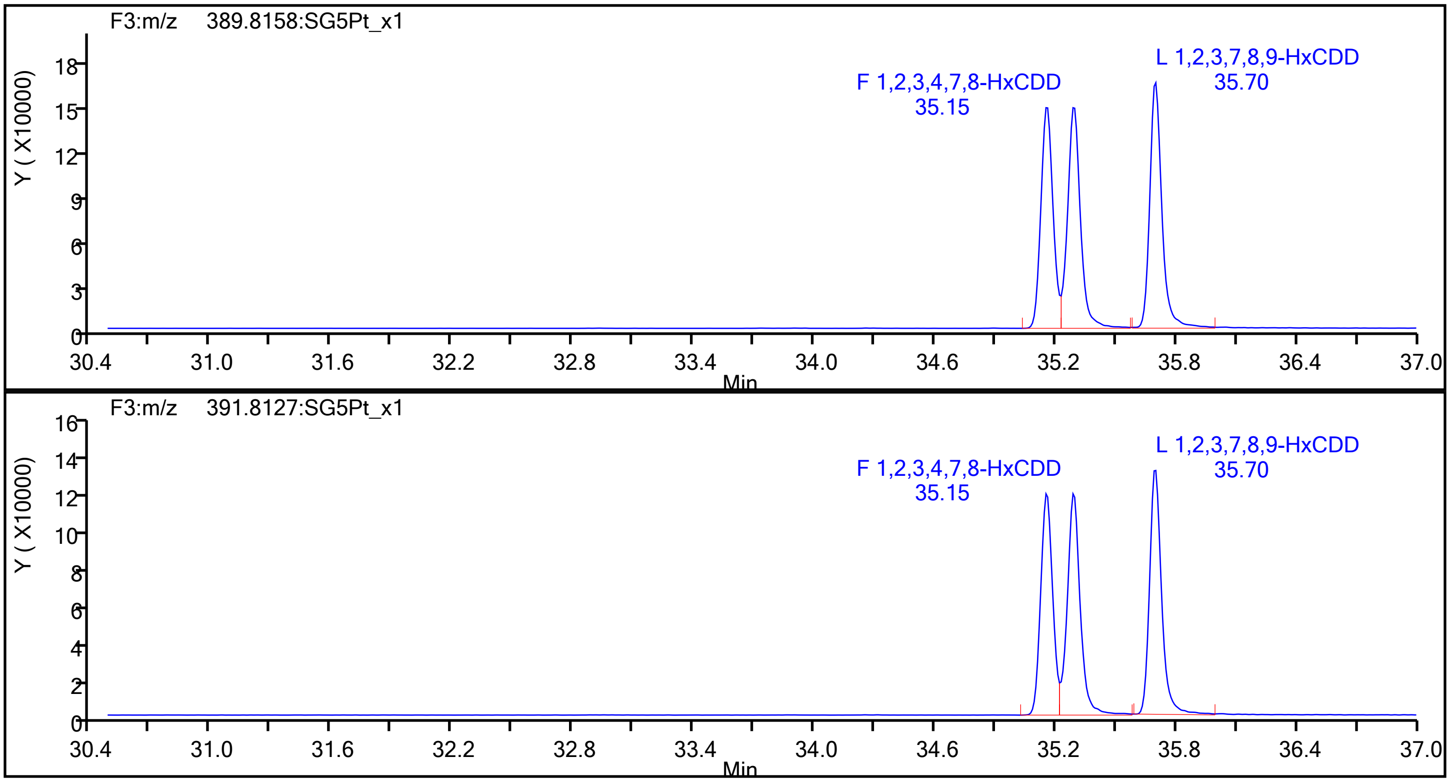

HxCDD Standards

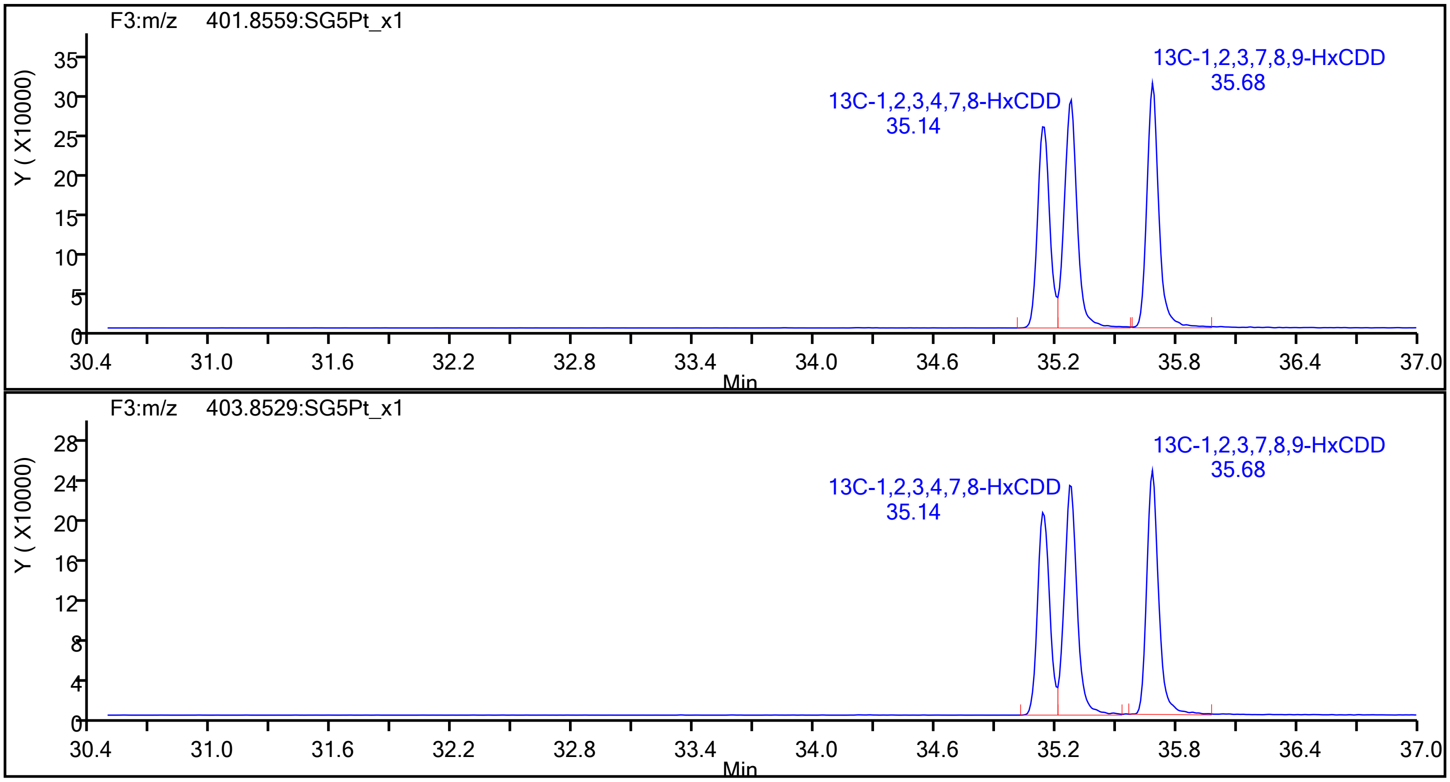

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

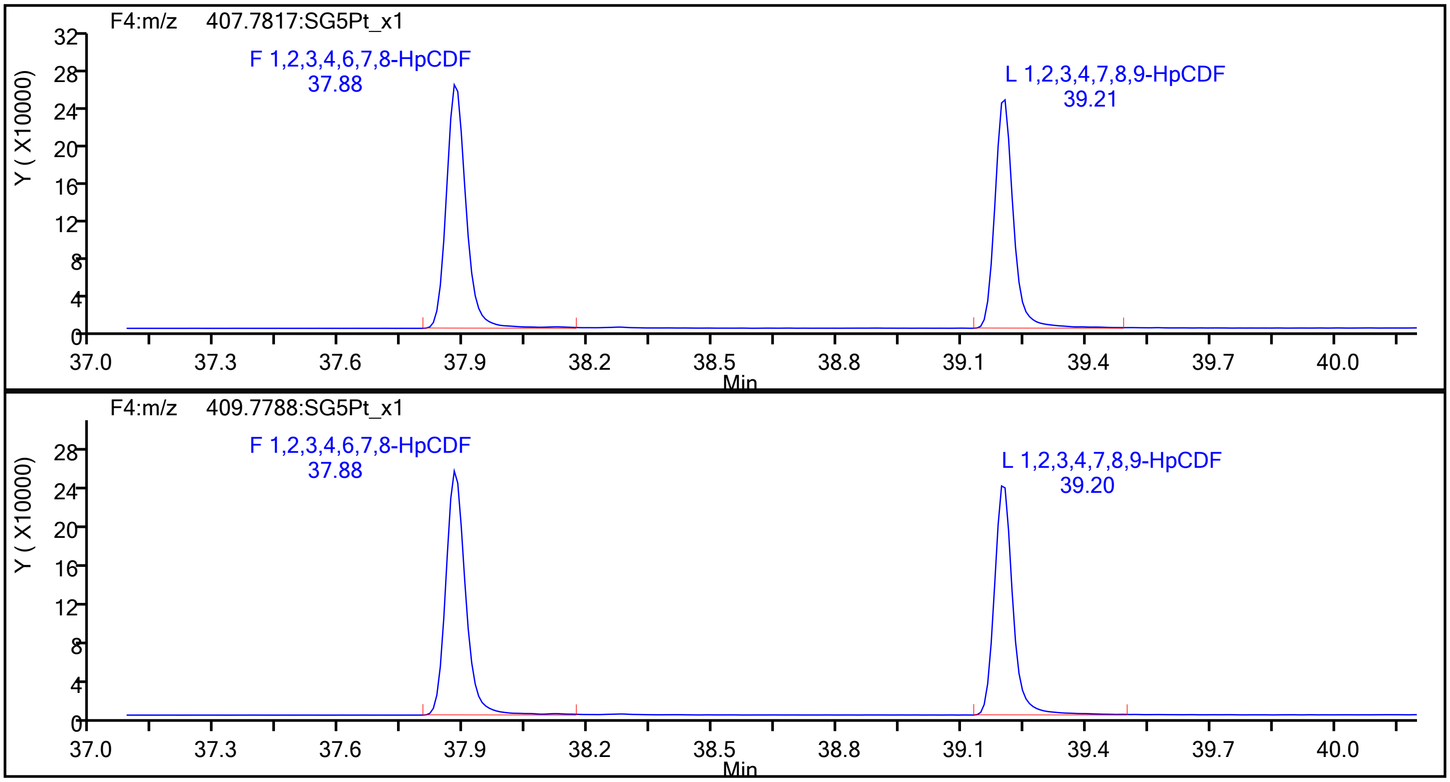

HpCDF Standards

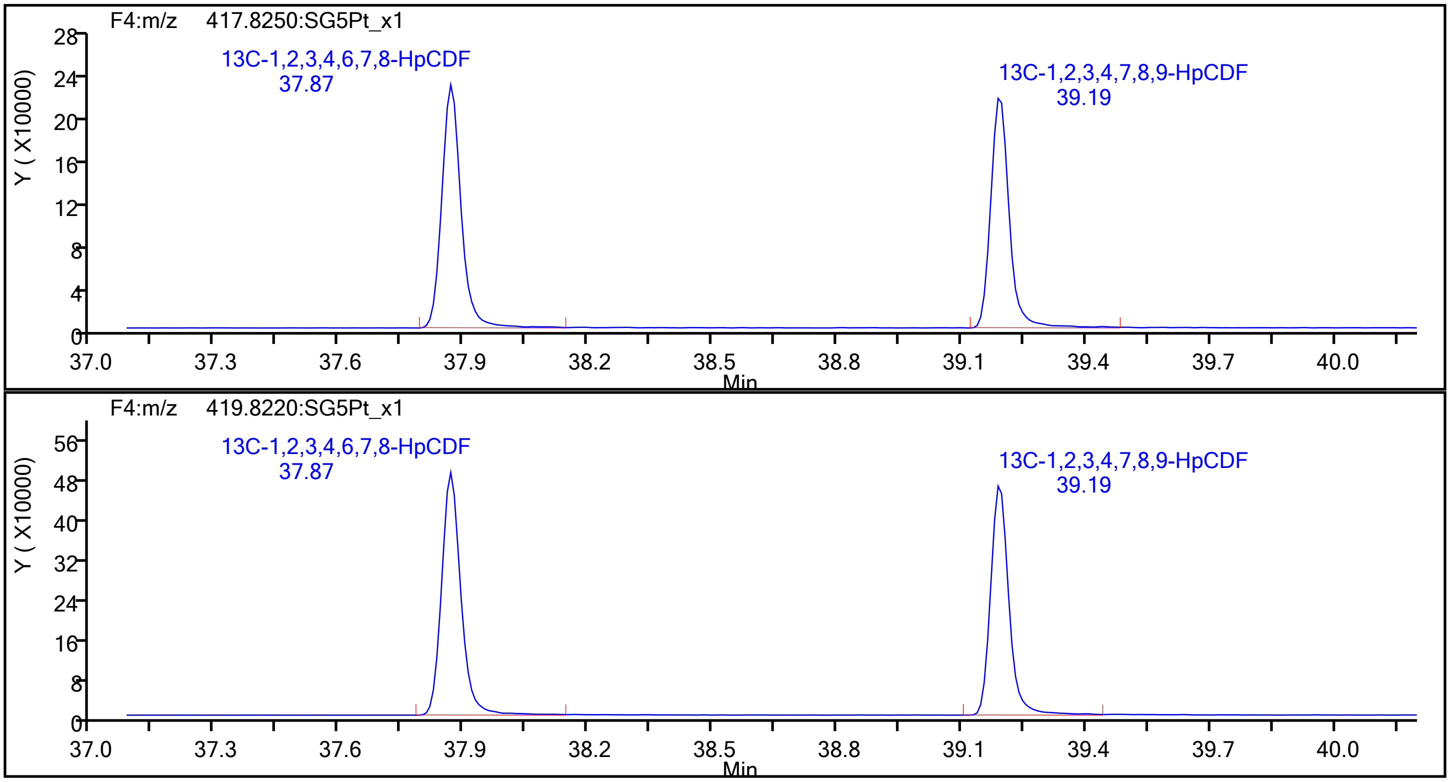

Report Date: 17-Oct-2020 12:20:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d		
Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

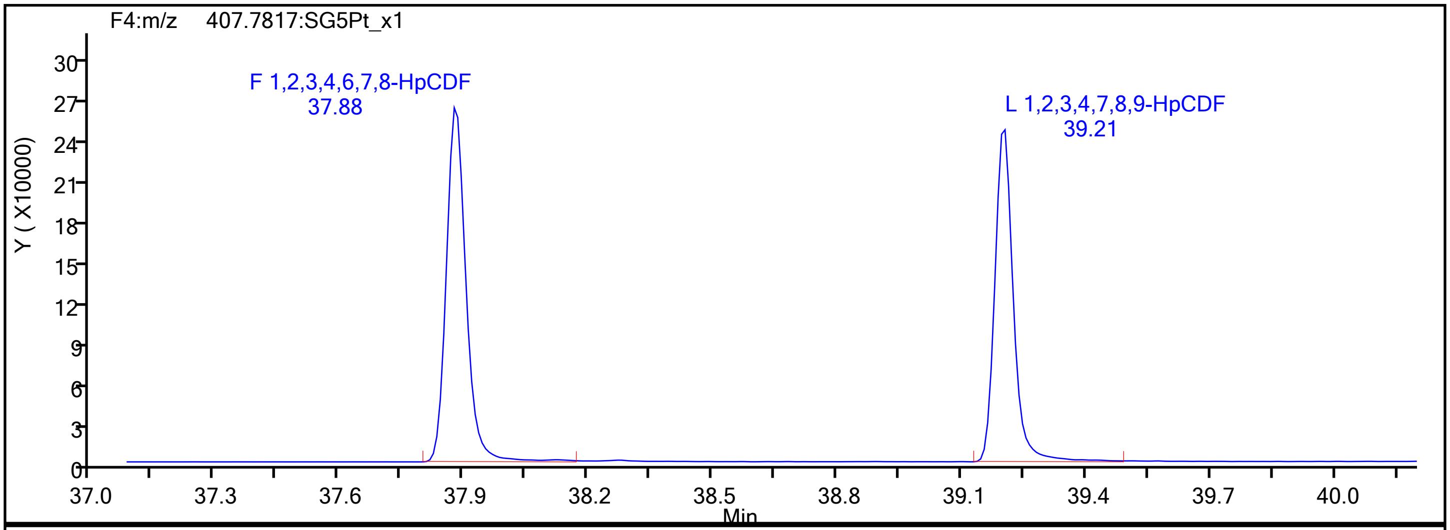

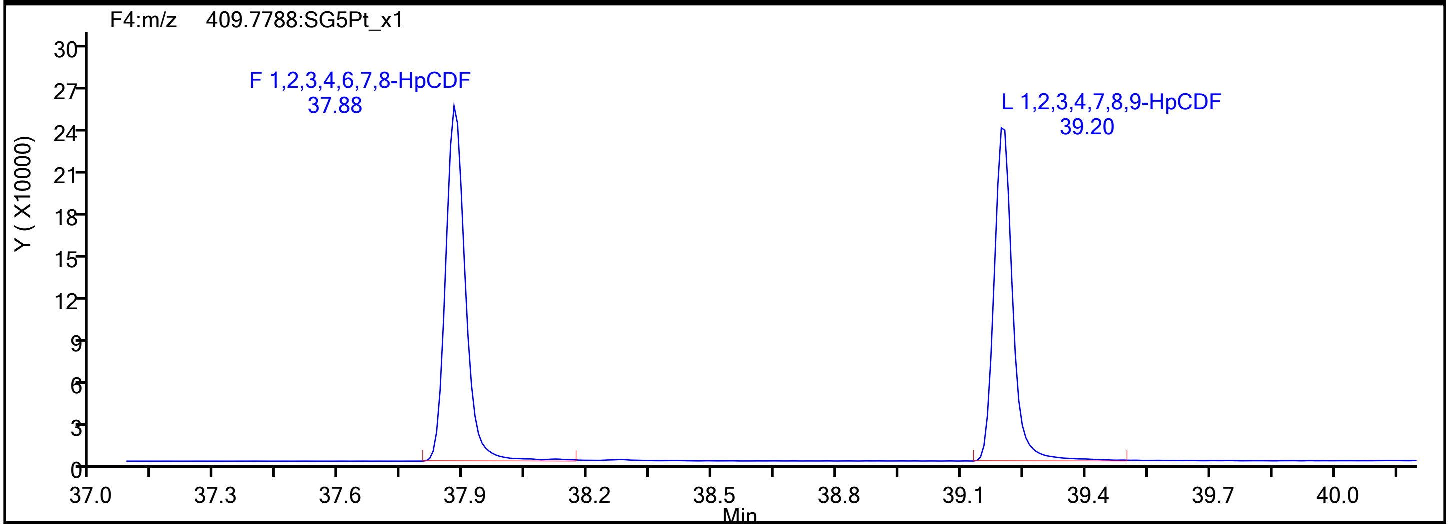

HpCDF Interference Mass

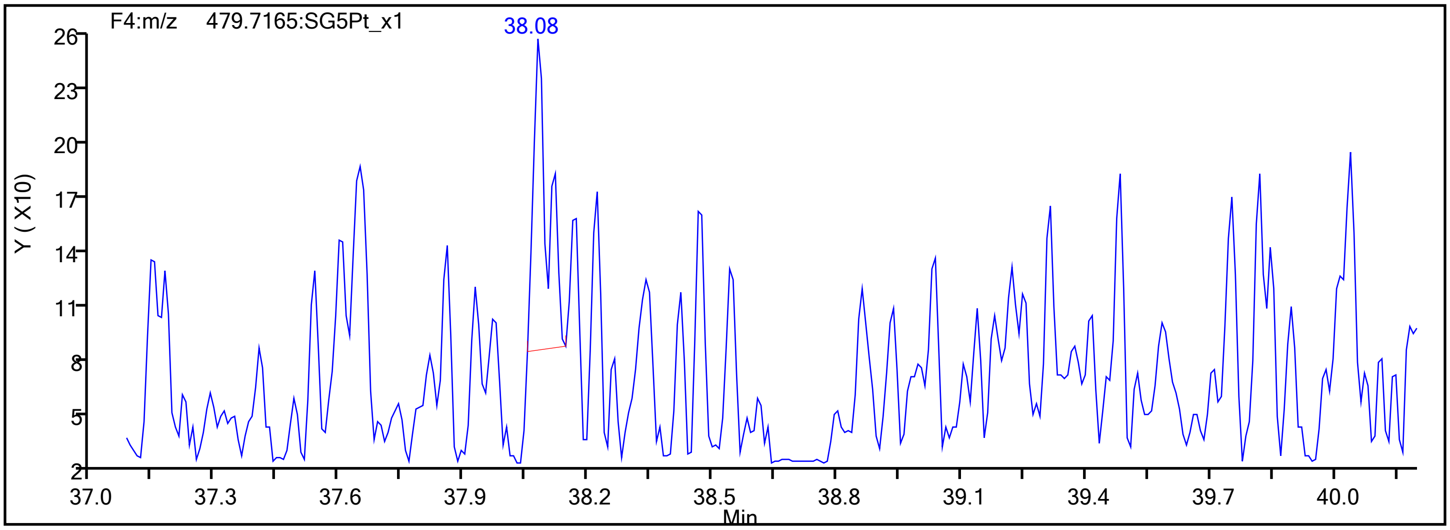

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d
Injection Date: 16-Oct-2020 18:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

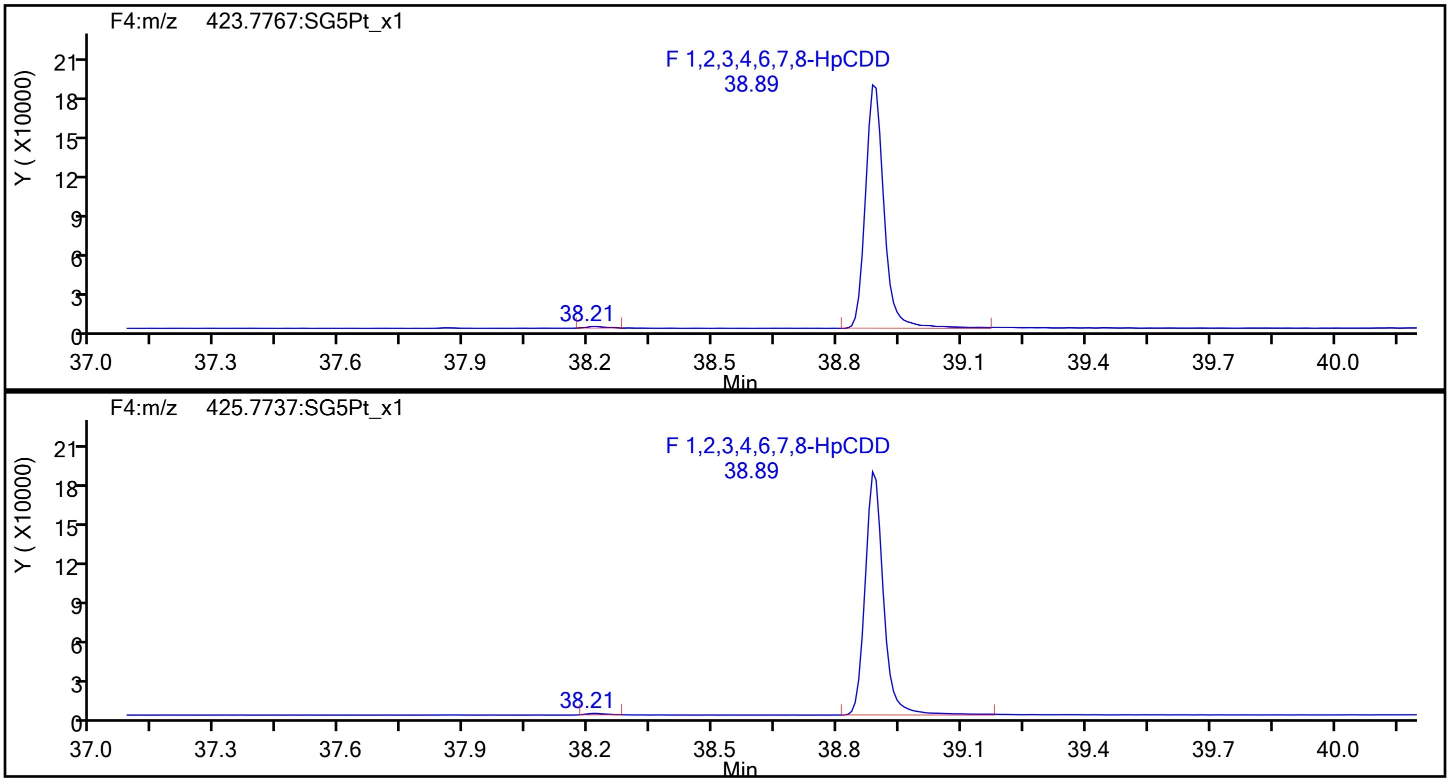

HpCDD Standards

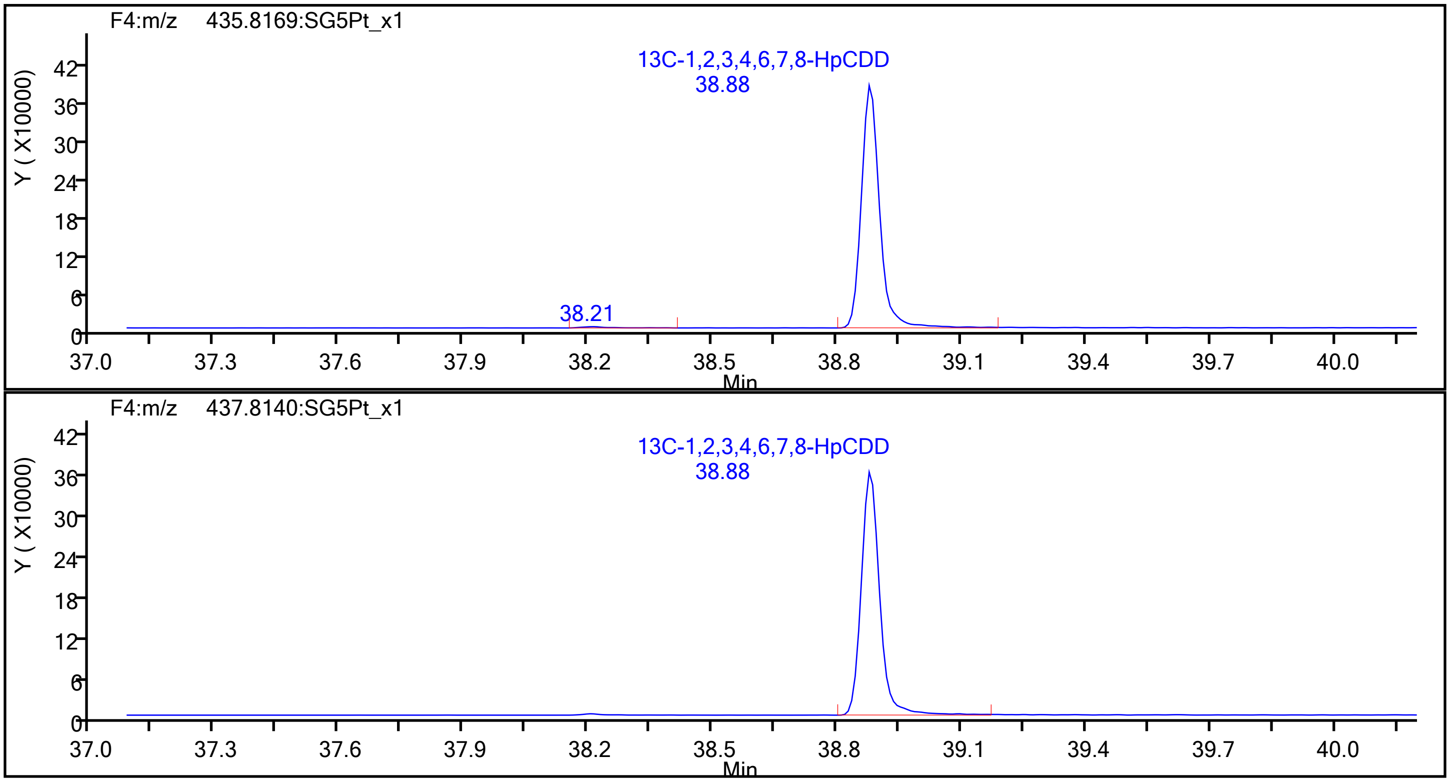

Report Date: 17-Oct-2020 12:20:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d

Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

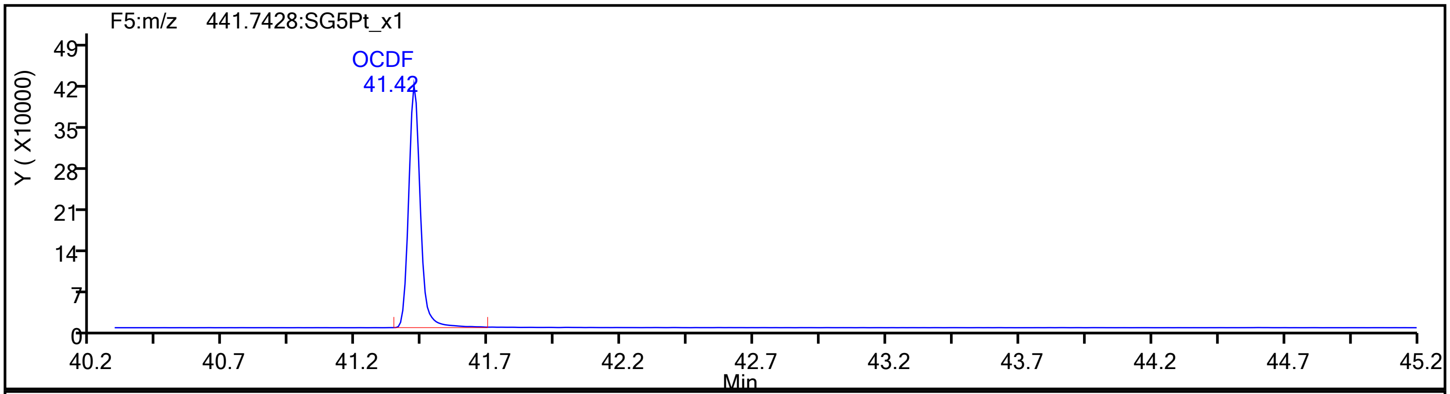

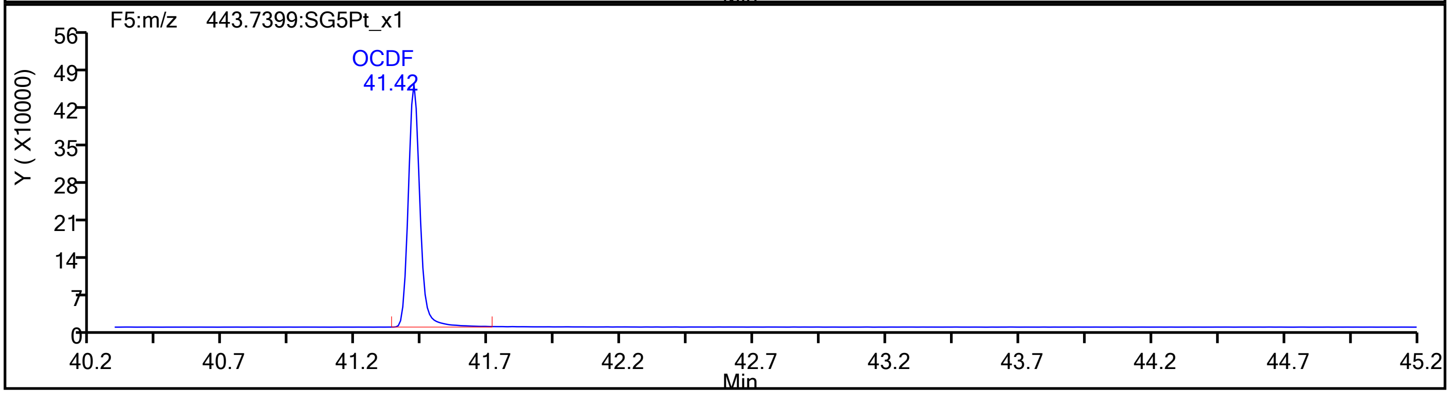

OCDF Standards

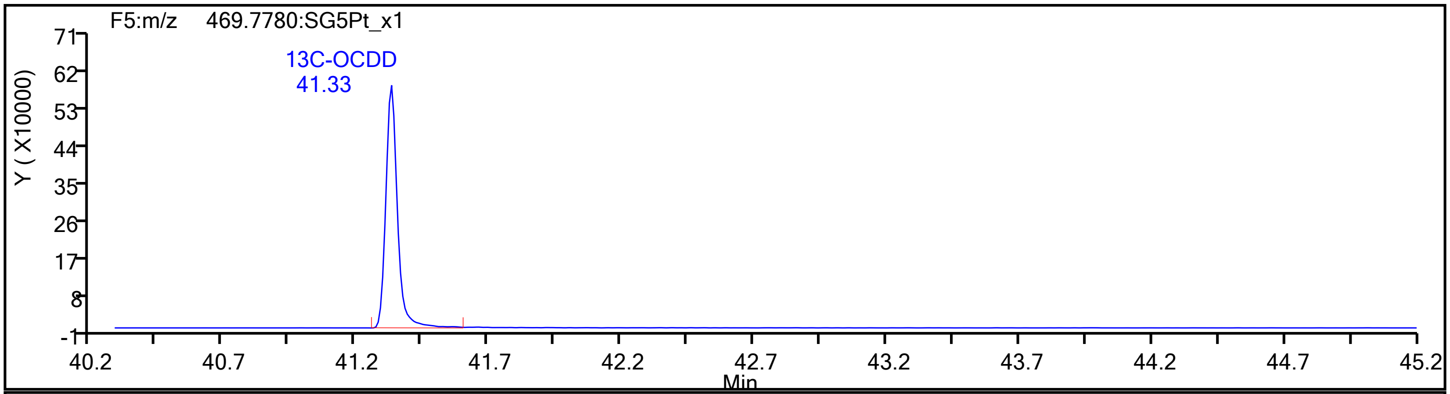

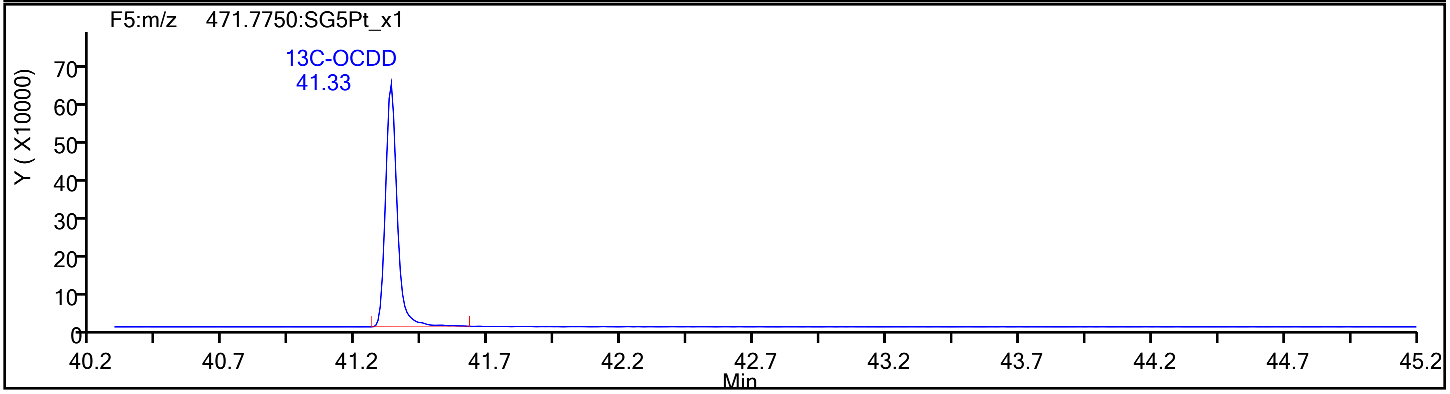

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d		
Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

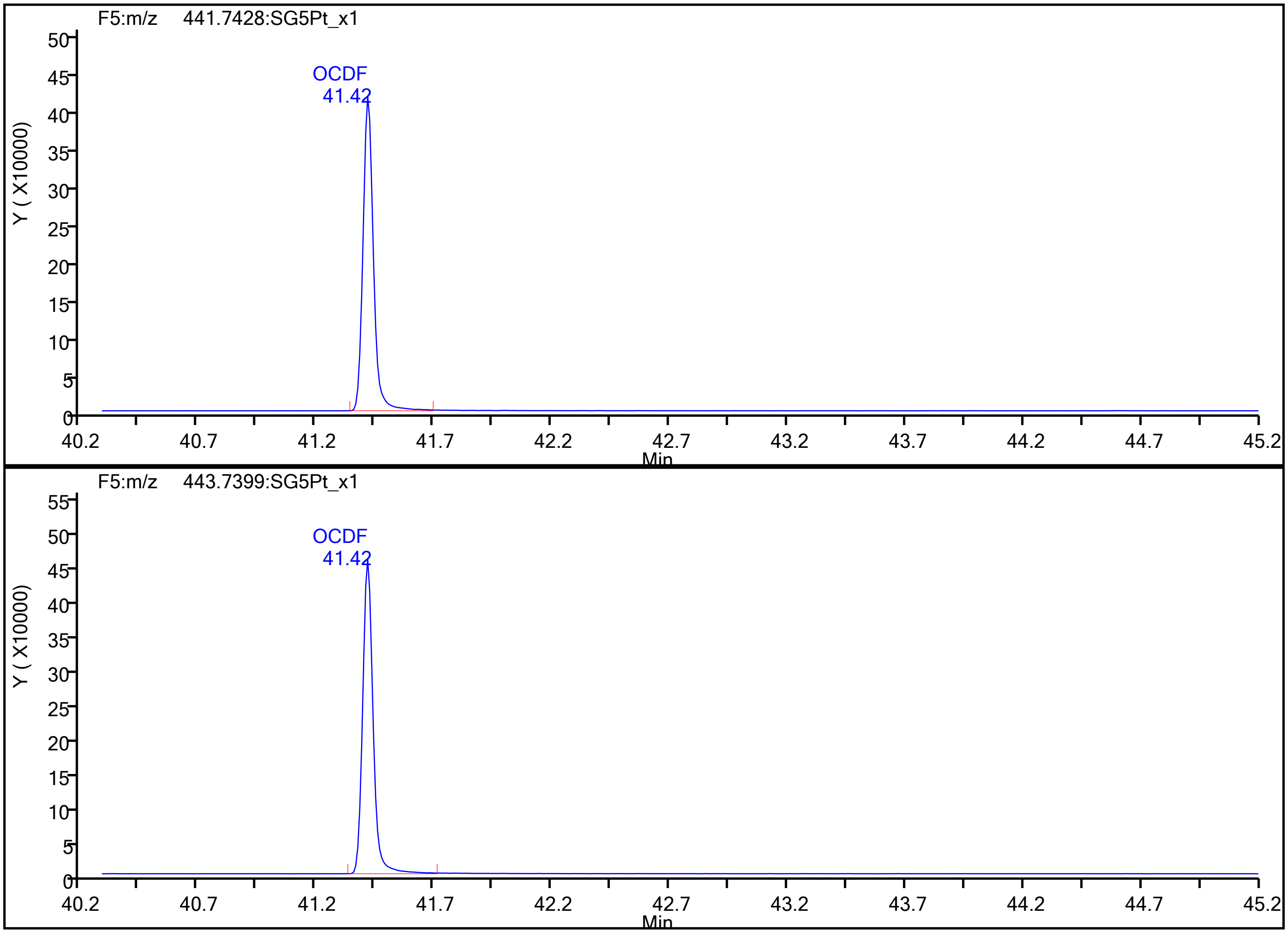

OCDF Interference Mass

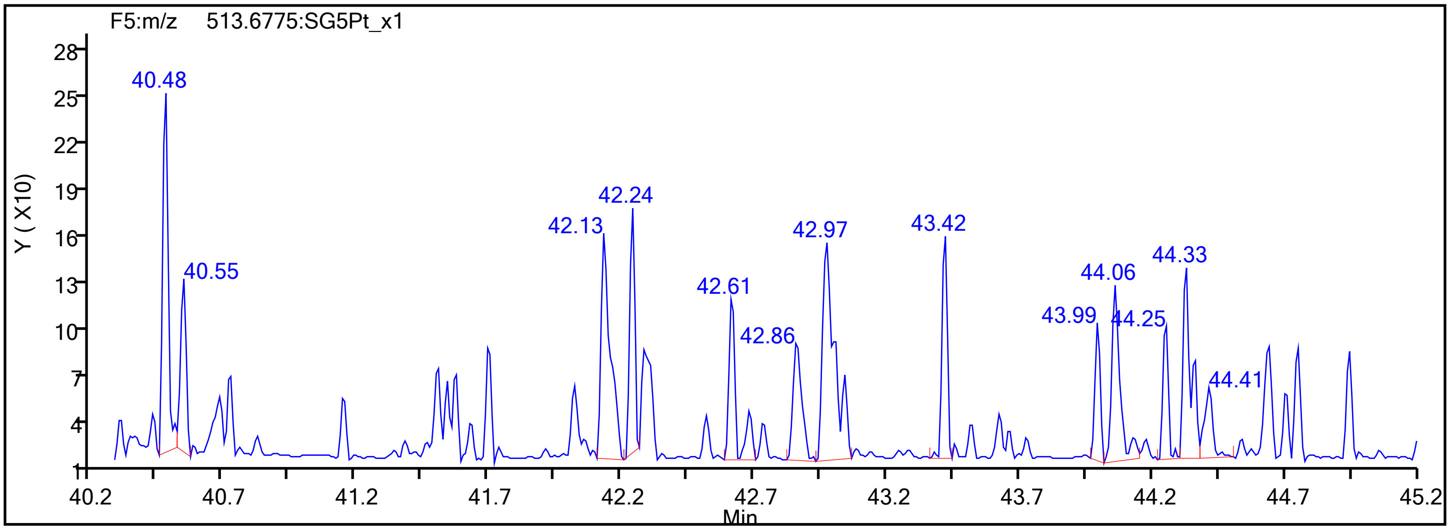

Report Date: 17-Oct-2020 12:20:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d
Injection Date: 16-Oct-2020 18:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

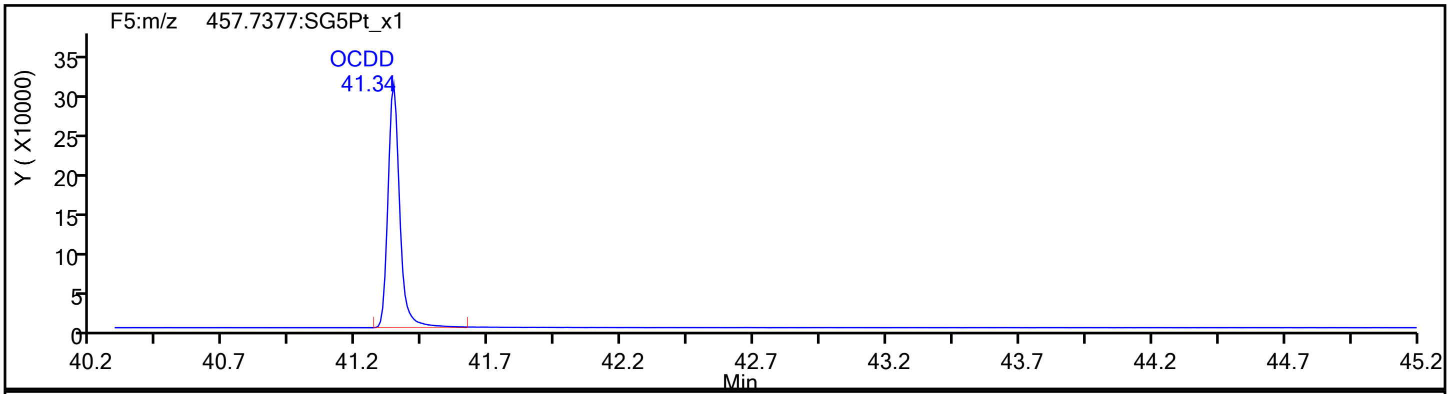

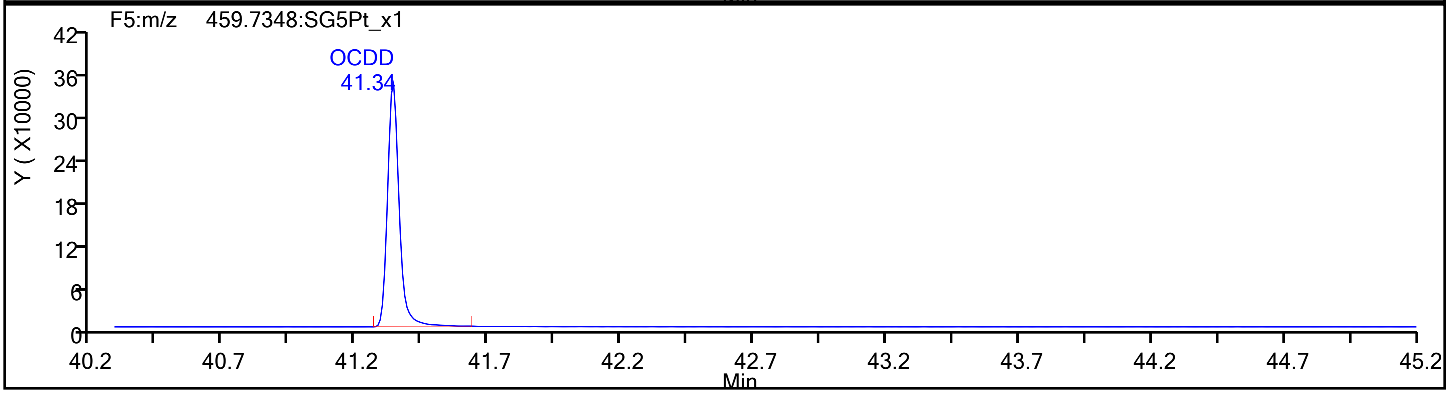

OCDD Standards

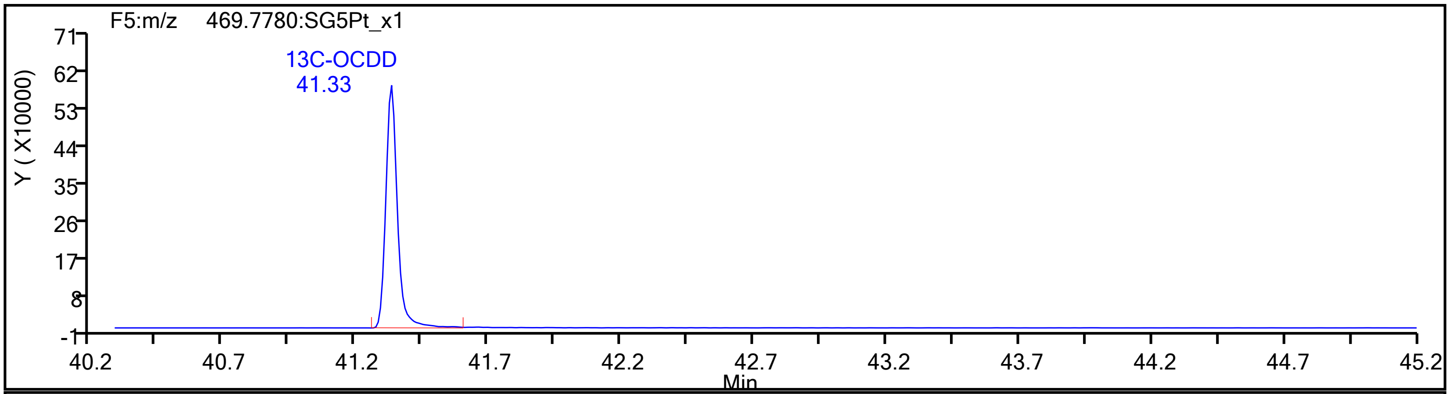

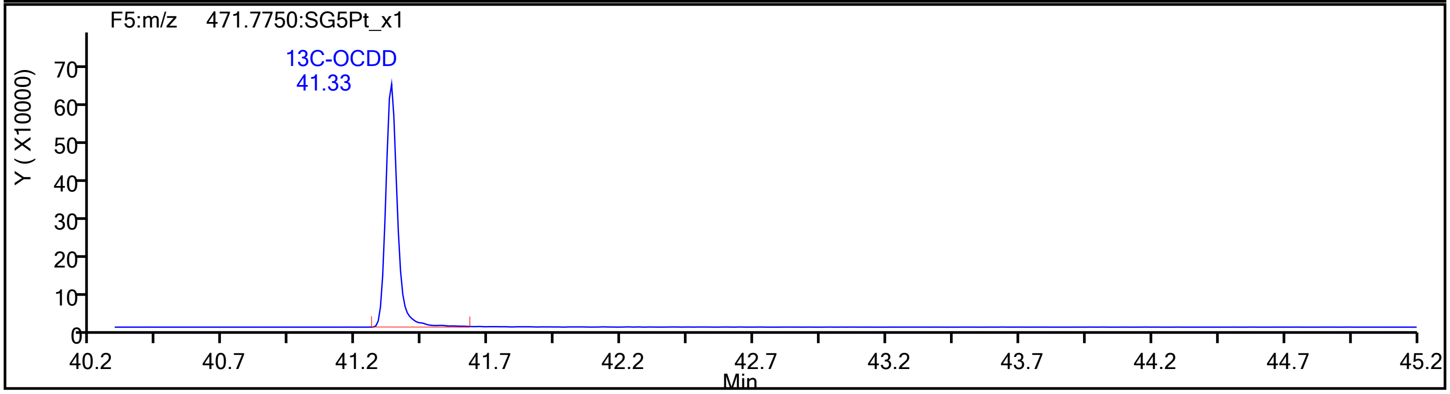

Report Date: 17-Oct-2020 12:20:57 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d

Injection Date: 16-Oct-2020 18:29:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422778 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

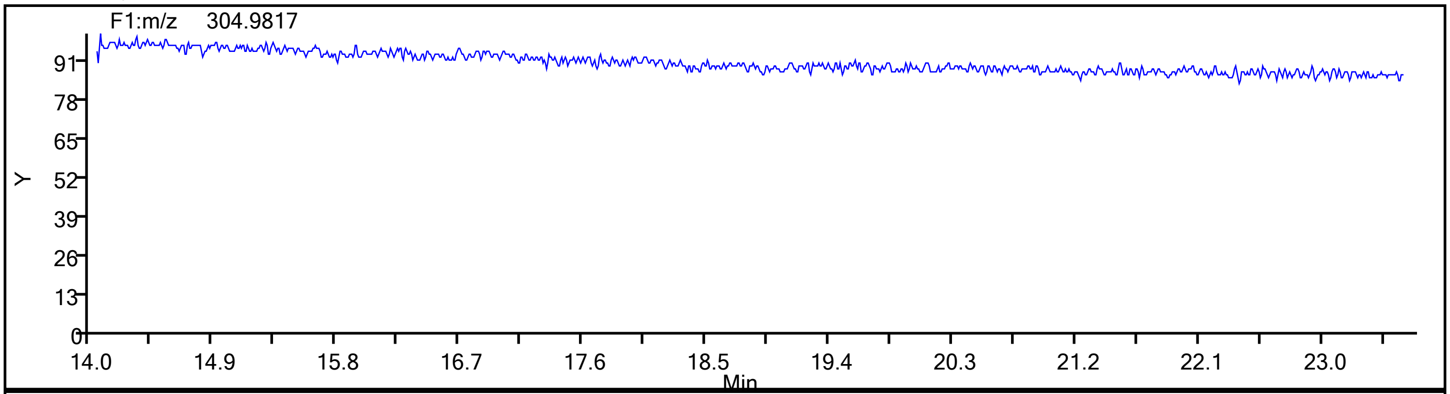

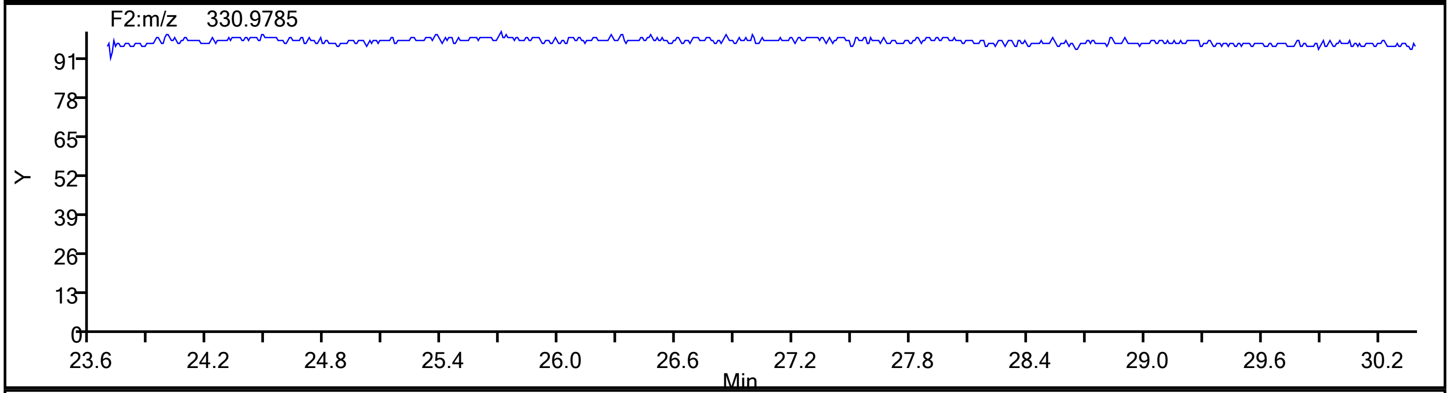

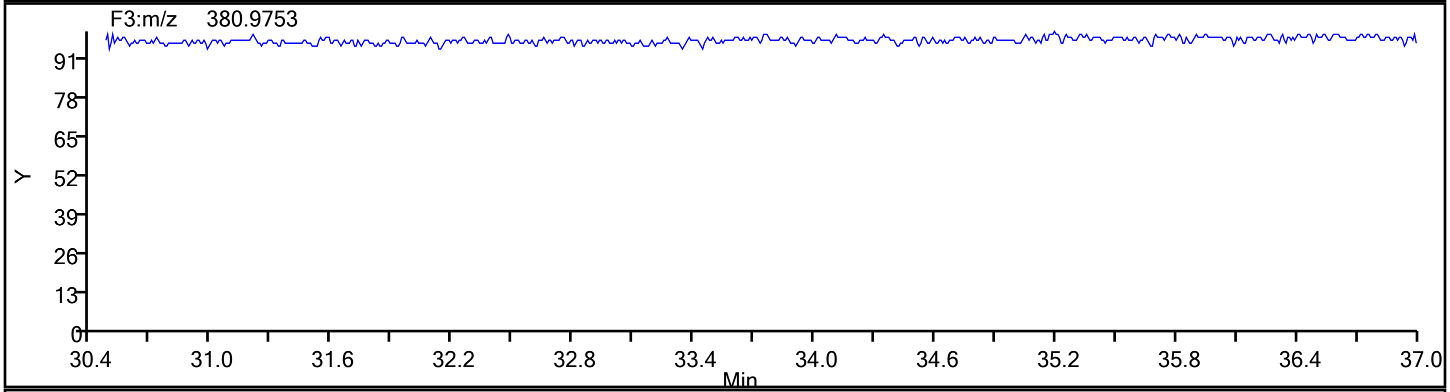

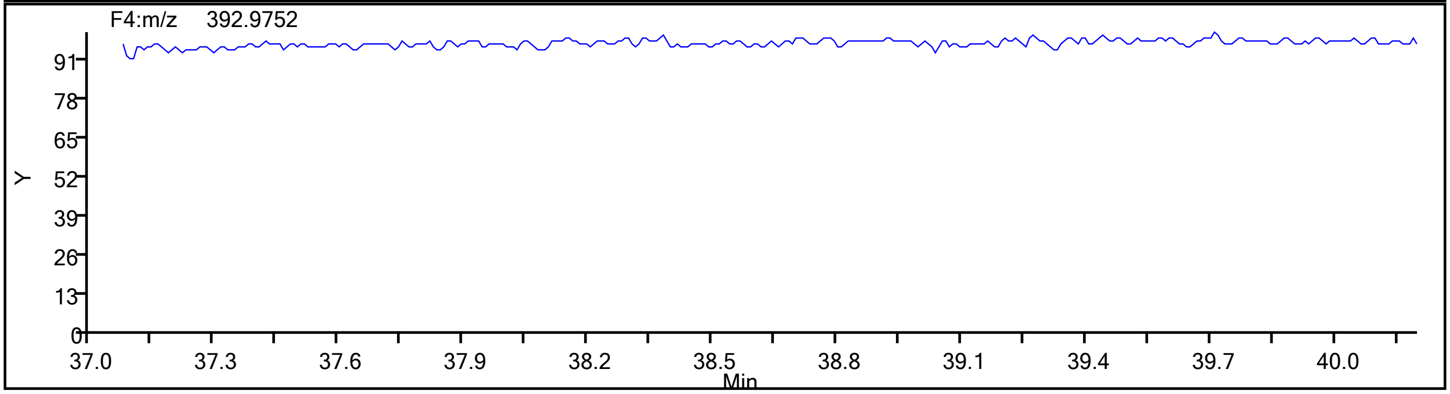

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_3.d

Injection Date:	16-Oct-2020 18:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

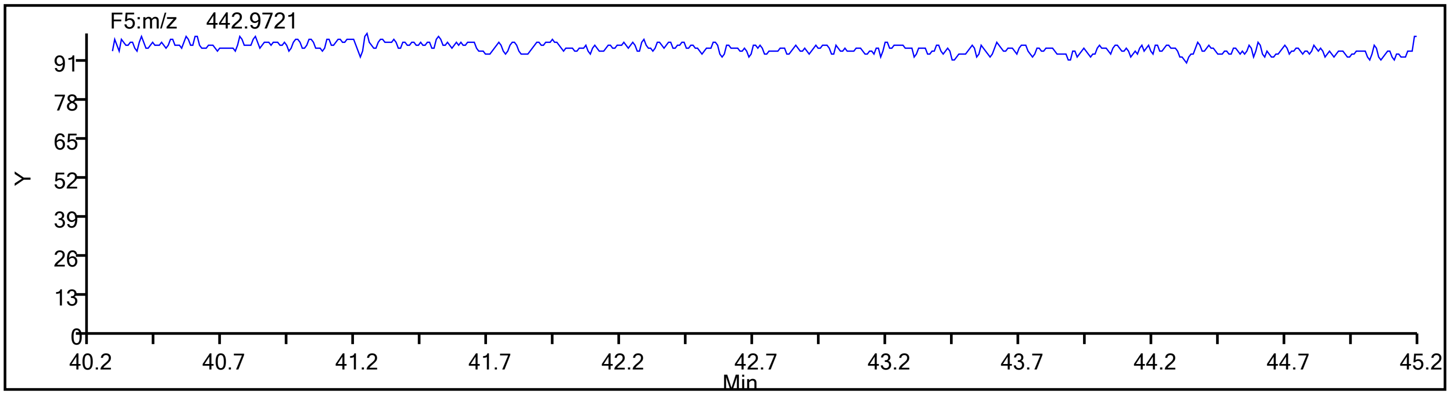

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

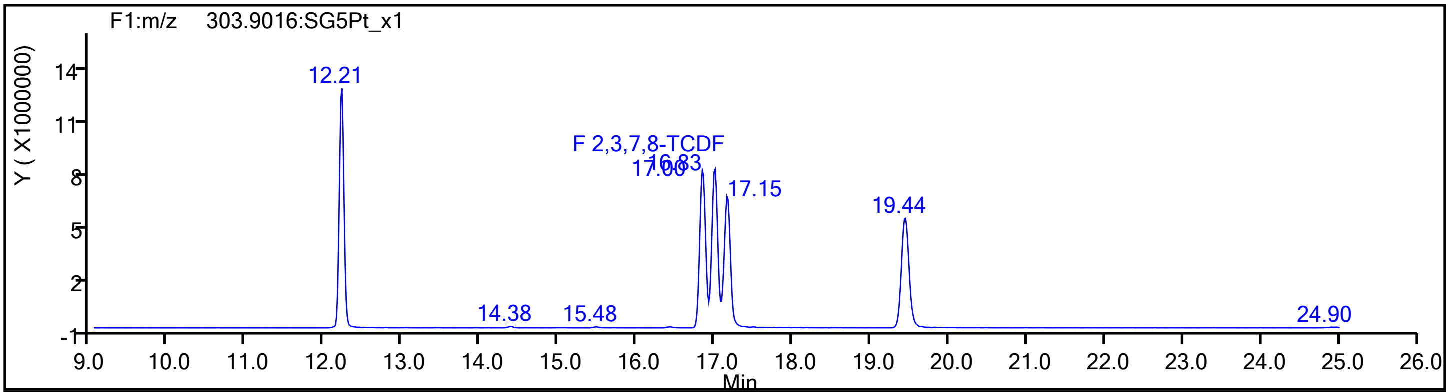

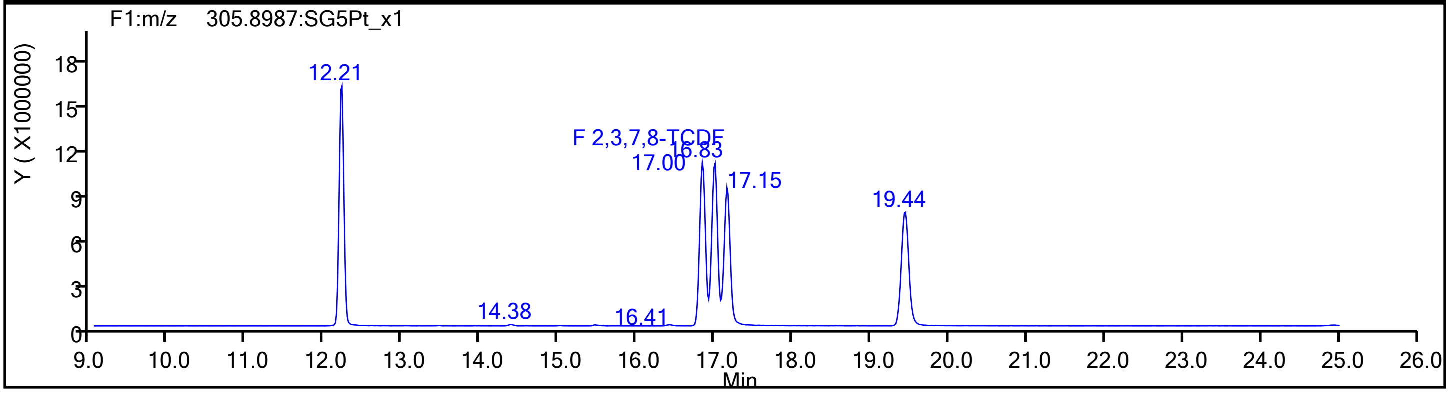

TCDF Standards

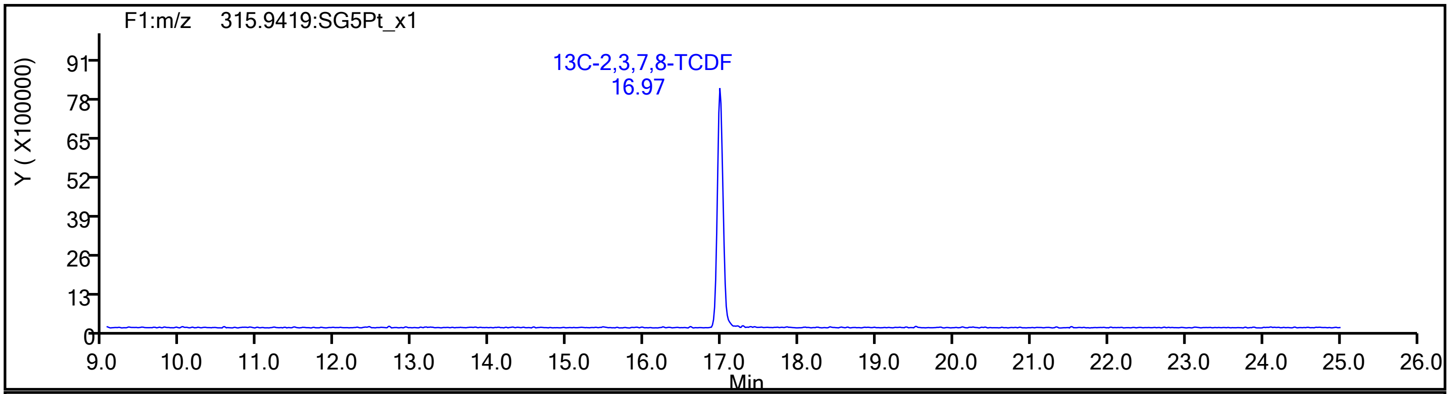

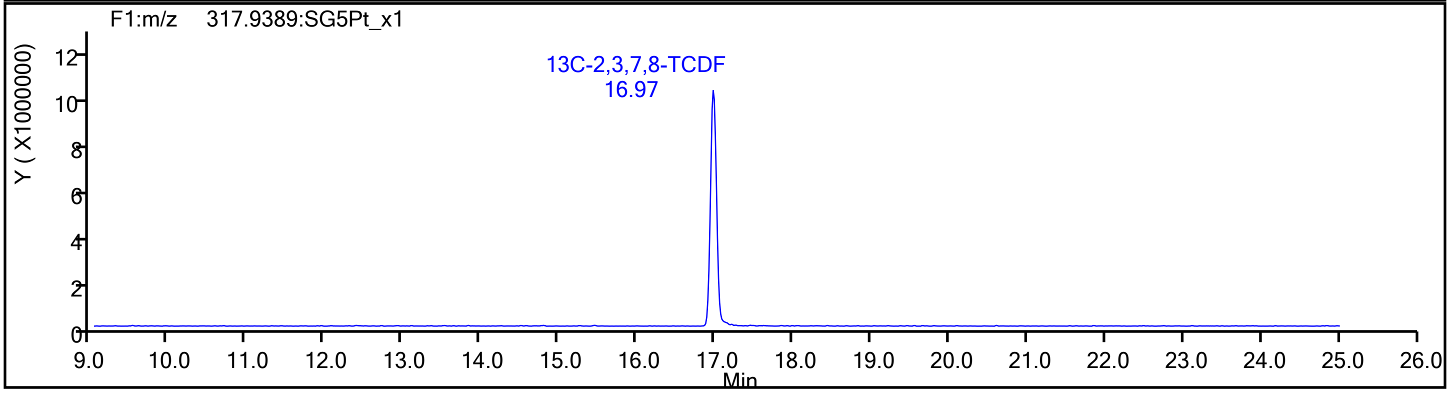

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

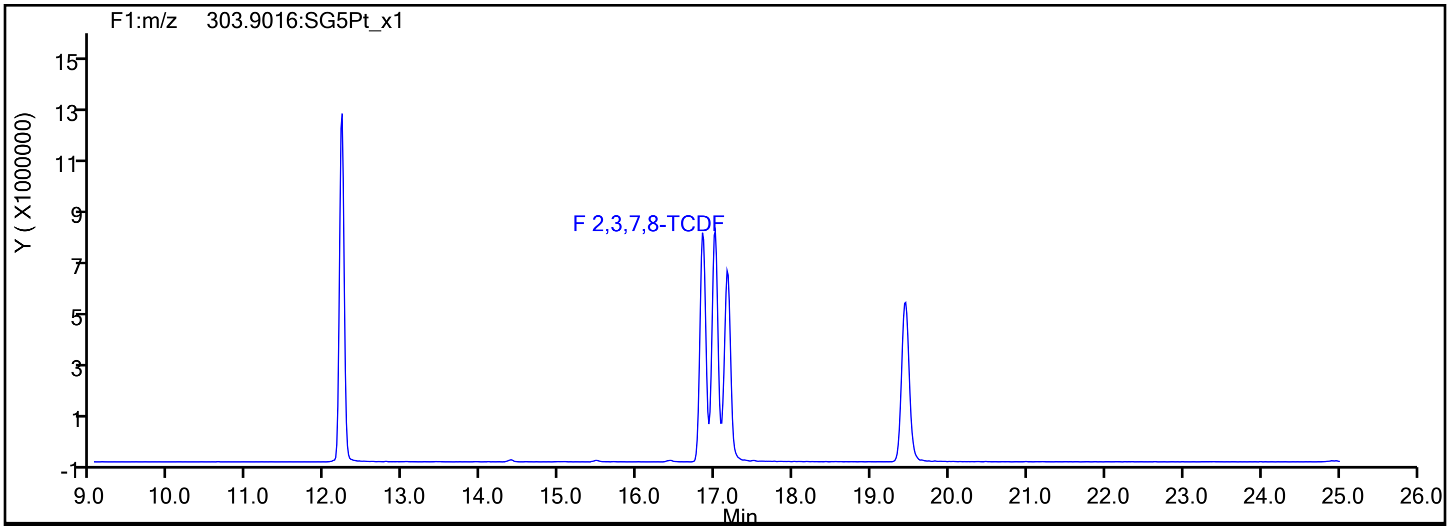

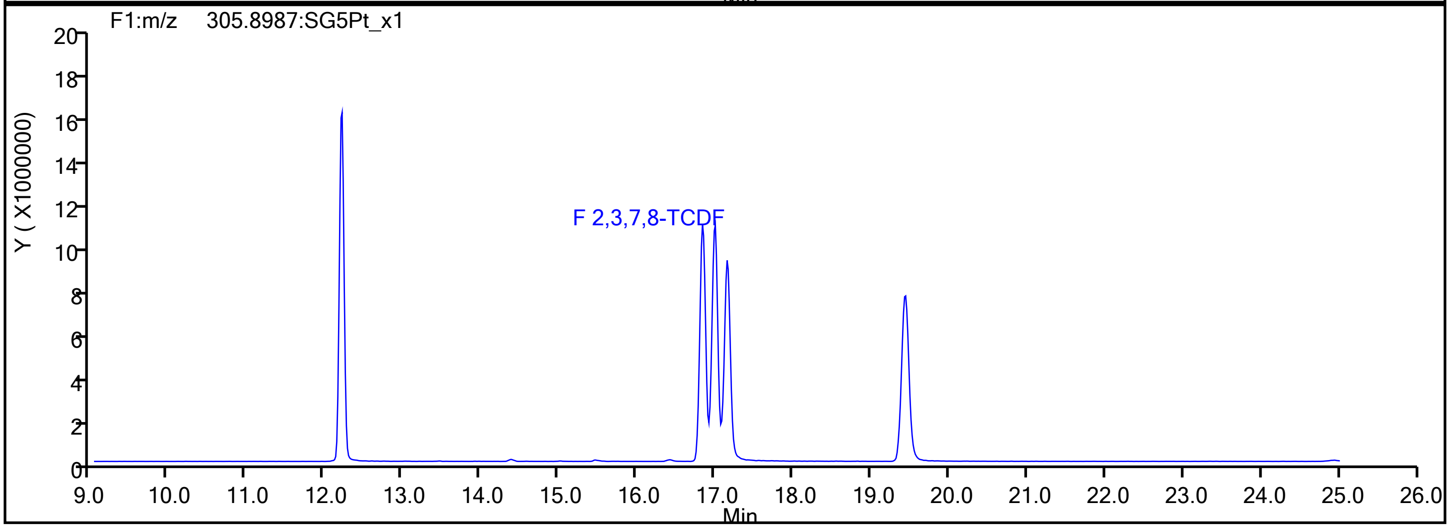

TCDF Interference Mass

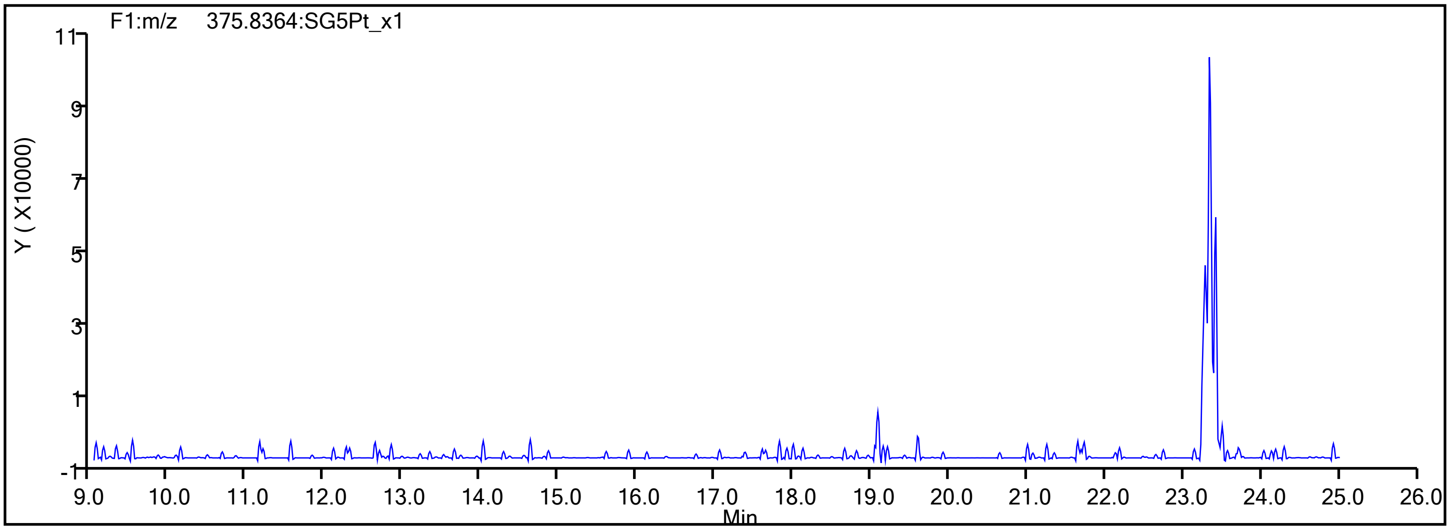

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

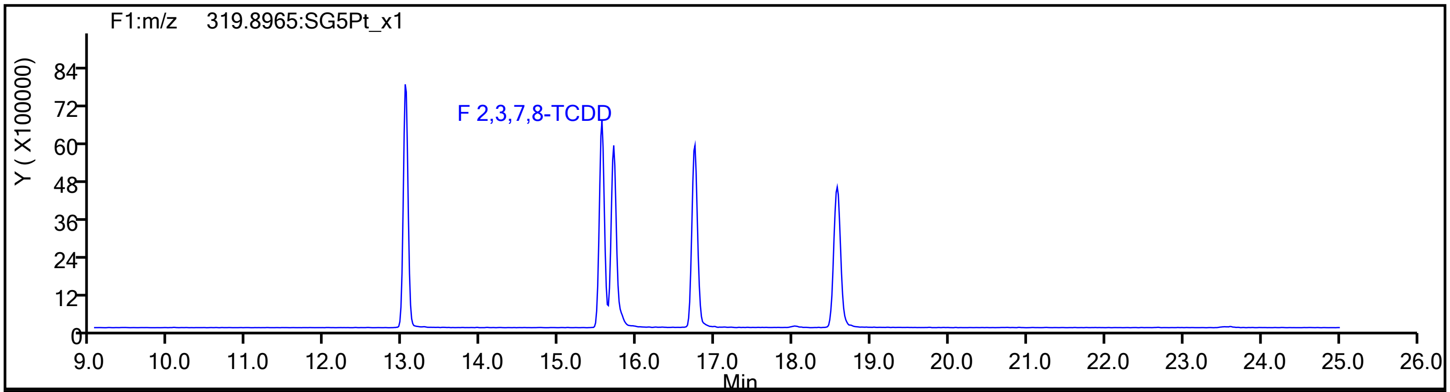

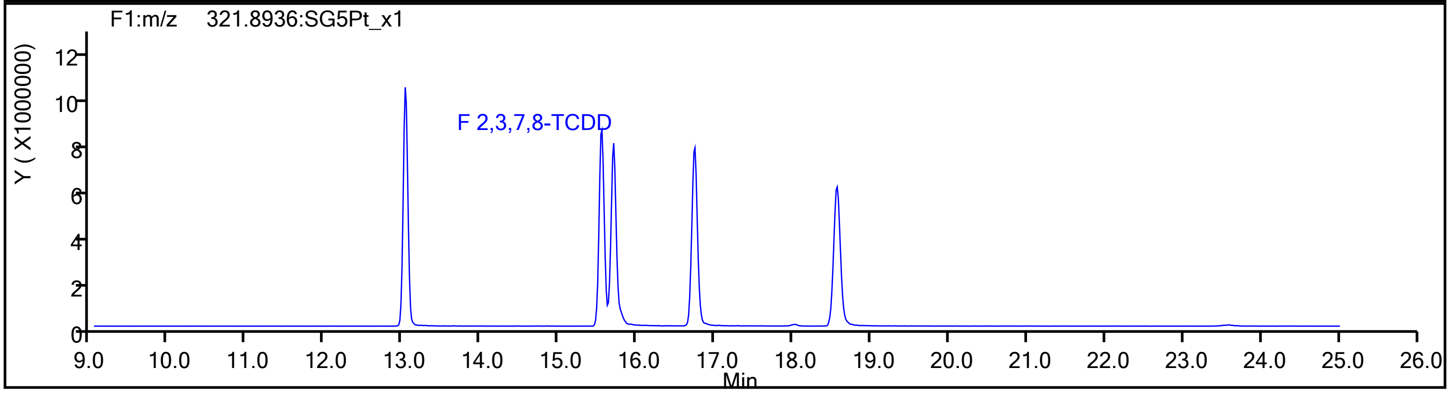

TCDD Standards

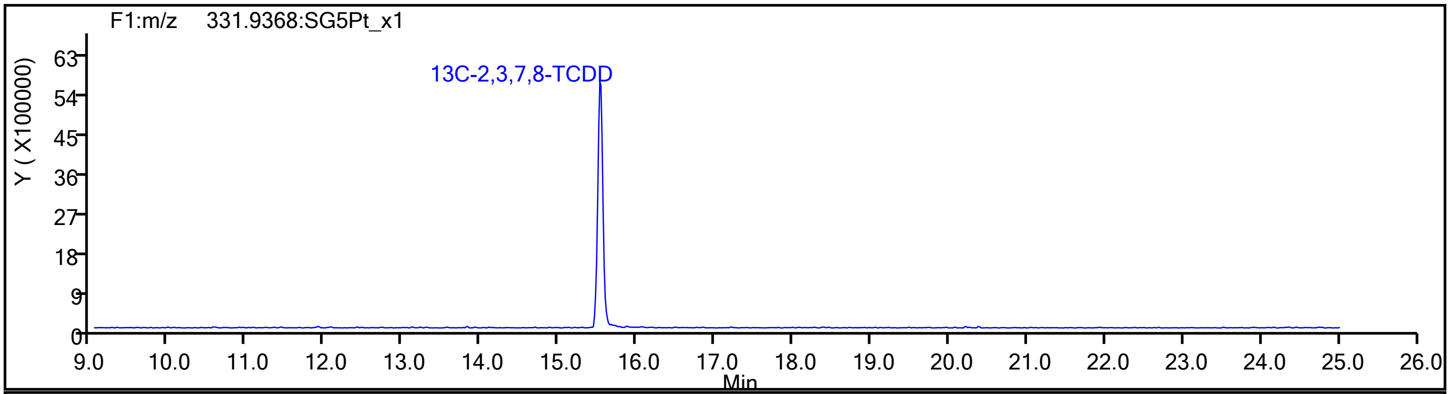

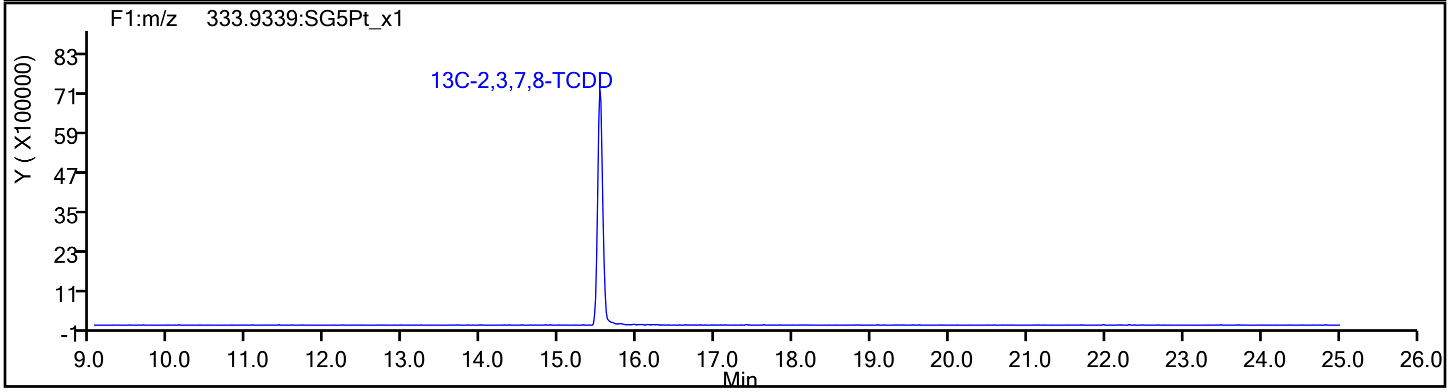

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

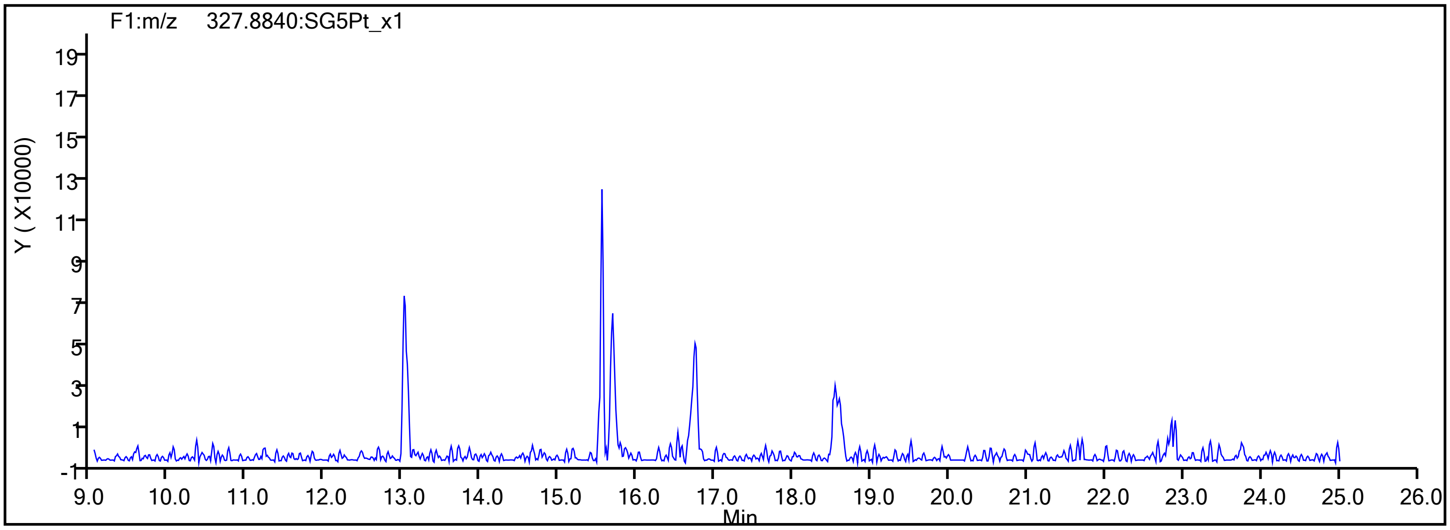

37Cl4-TCDD Standards

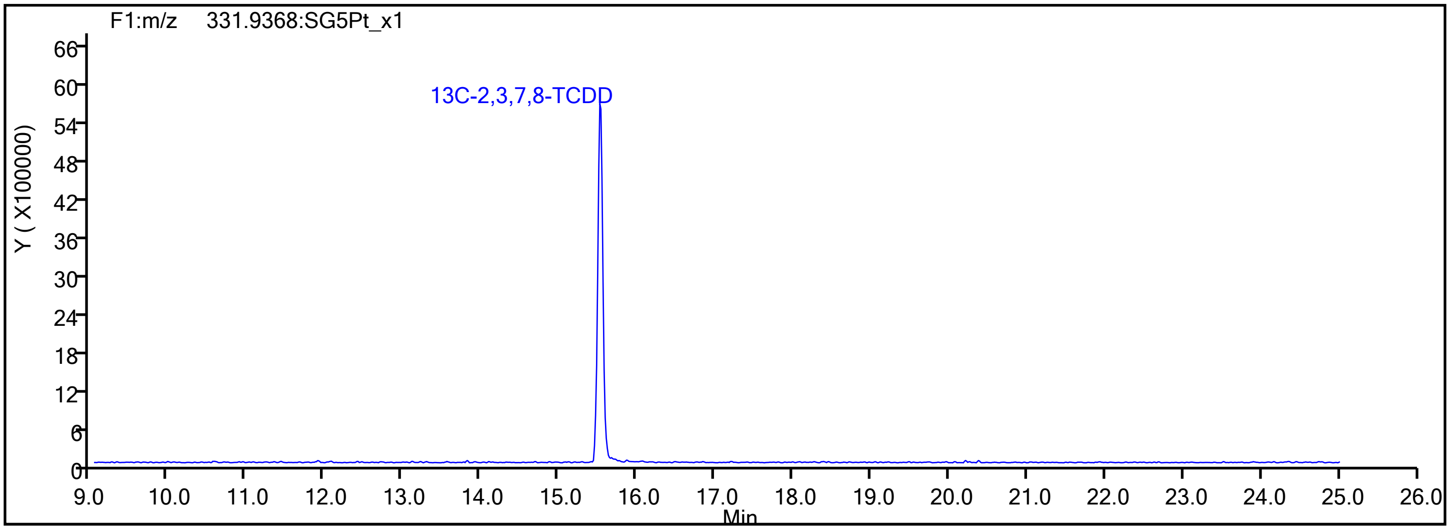

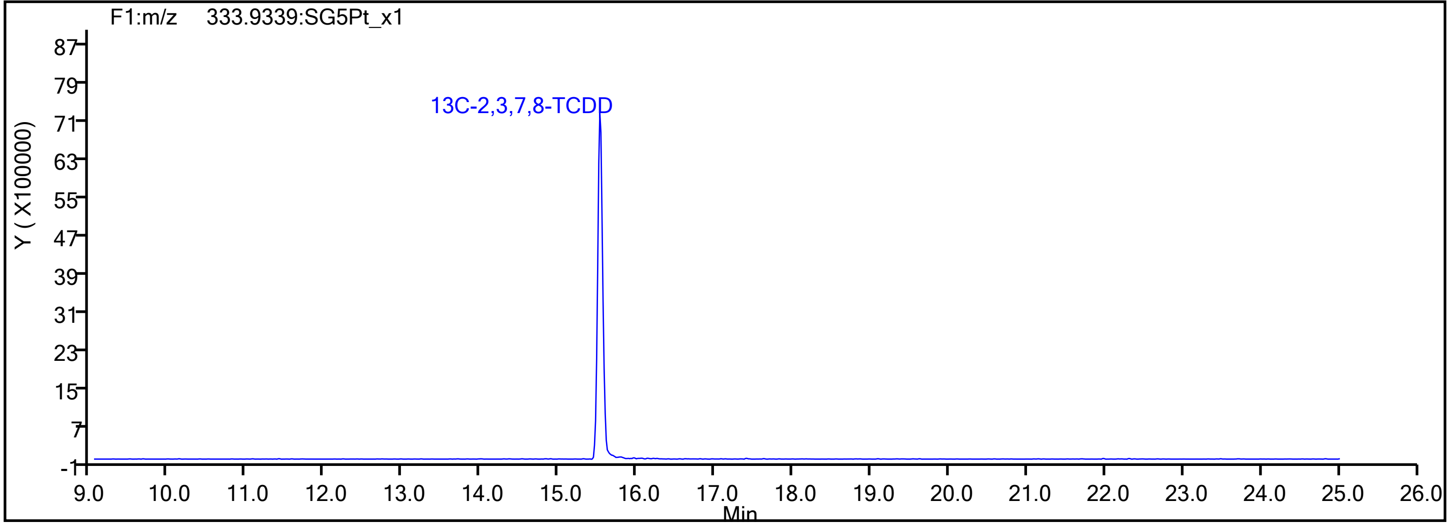

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

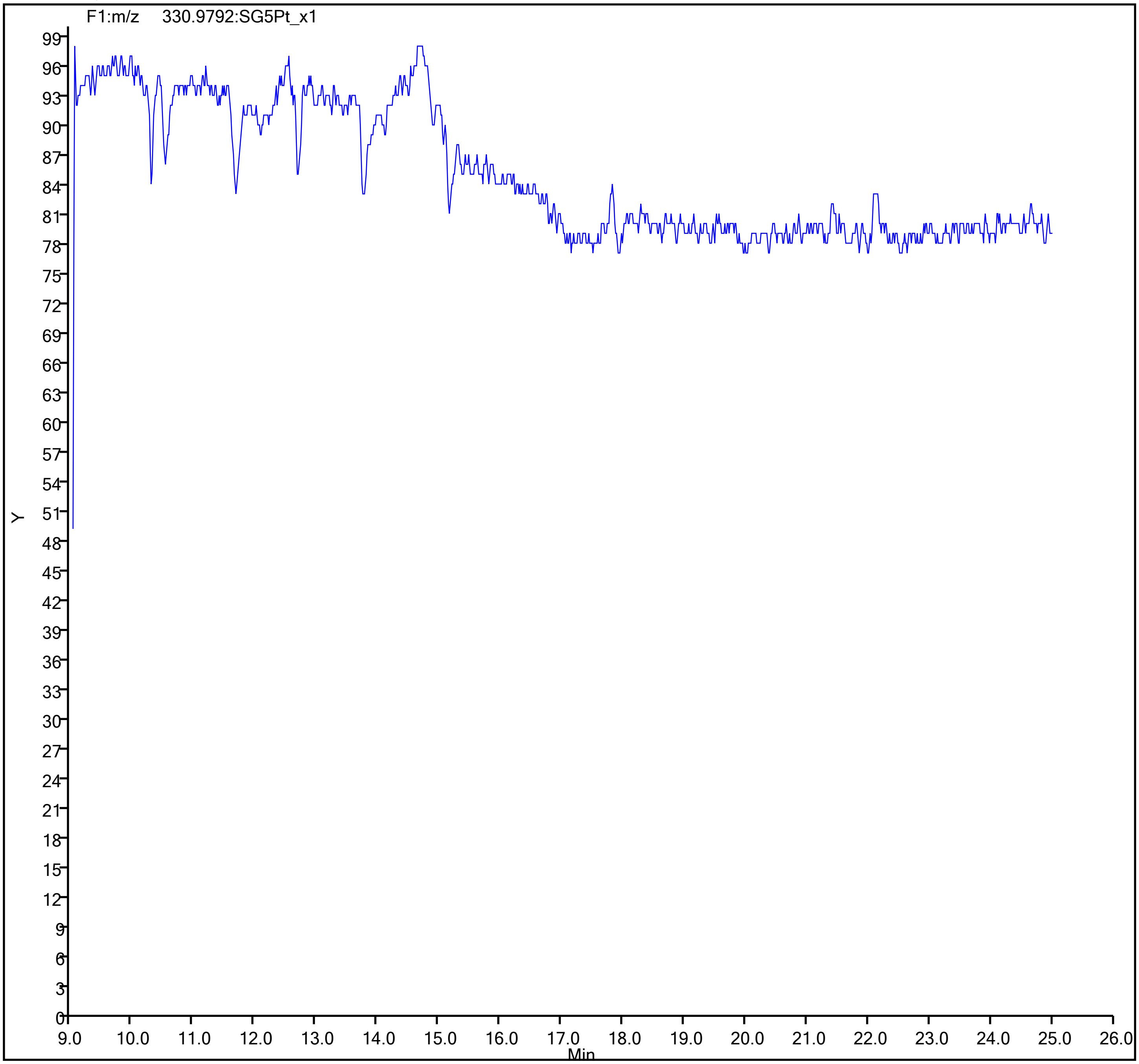

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	12-Oct-2020 15:20:29	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 12:17:32	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1633				
First Level Reviewer: shardaa		Date:	13-Oct-2020 18:21:28		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.087	60615142	0.83	1.5708					0.00	
2,3,7,8-TCDF	16.114	61584979	0.77	0.9943	40.9	40.9	0.0751	0.0751		
D 13C-2,3,7,8-TCDD	14.715	32898253	0.81	0.9834					0.00	
2,3,7,8-TCDD	14.729	41129624	0.78	1.2822	39.0	39.0	0.0979	0.0979		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 12:17:32 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 12-Oct-2020 15:20:29 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 12:17:32 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1633

First Level Reviewer: shardaa Date: 13-Oct-2020 18:21:28

Signal	RT (min.)	Adj RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.087	16.087	0	1.000	27406469	6244357	23793	59482	262		
317.9389	16.087	16.087	0	1.000	33208673	7764887	12176	30440	638	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.114	16.114	0	1.002	26800044	6441353	5639	14097	1142		
305.8987	16.114	16.114	0	1.002	34784935	8302535	4820	12050	1723	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.715	14.715	0	1.000	14768162	3842701	12283	30707	313		
333.9339	14.715	14.715	0	1.000	18130091	4562466	4773	11932	956	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.729	14.729	0	1.001	18077569	4657846	5234	13085	890		
321.8936	14.729	14.729	0	1.001	23052055	5956194	5317	13292	1120	0.78(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 12:17:32 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d

Injection Date: 12-Oct-2020 15:20:29
Injection Vol: 2.0 ul

Instrument ID: 11D2
Operator ID:

Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421482
Sample Line#: 1

Column Type: DB-225
Column Dia: 0.32 mm

TCDF

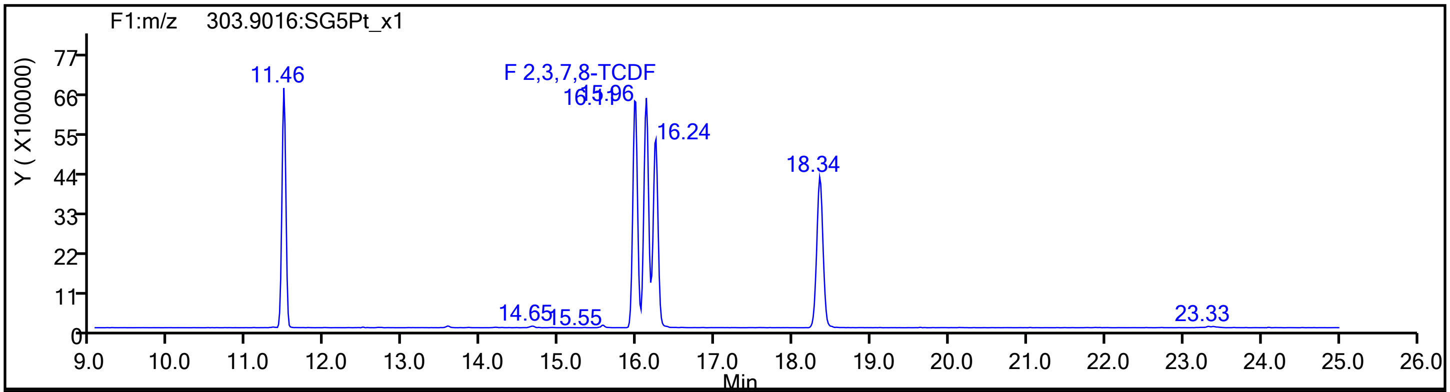

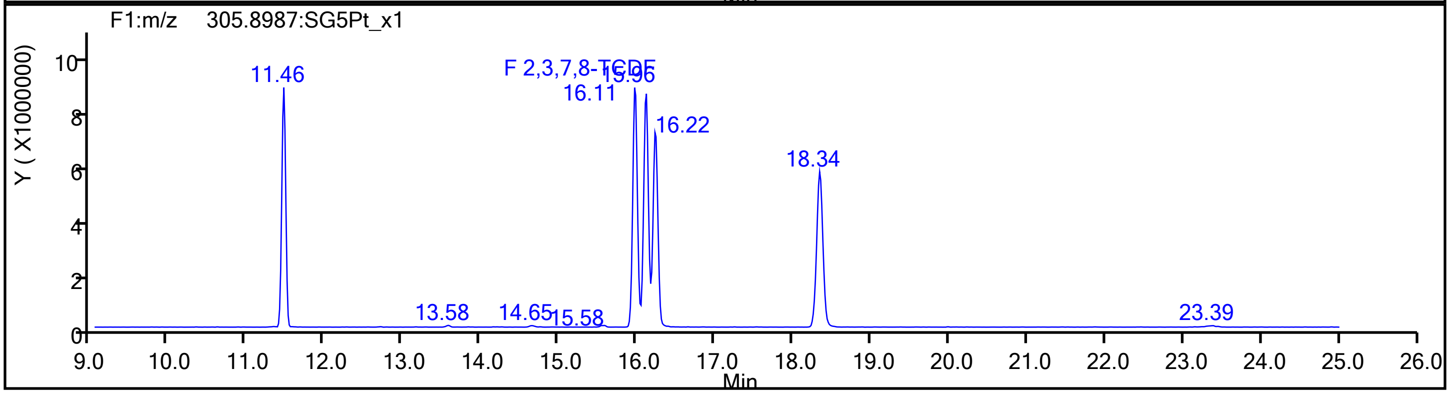

TCDF Standards

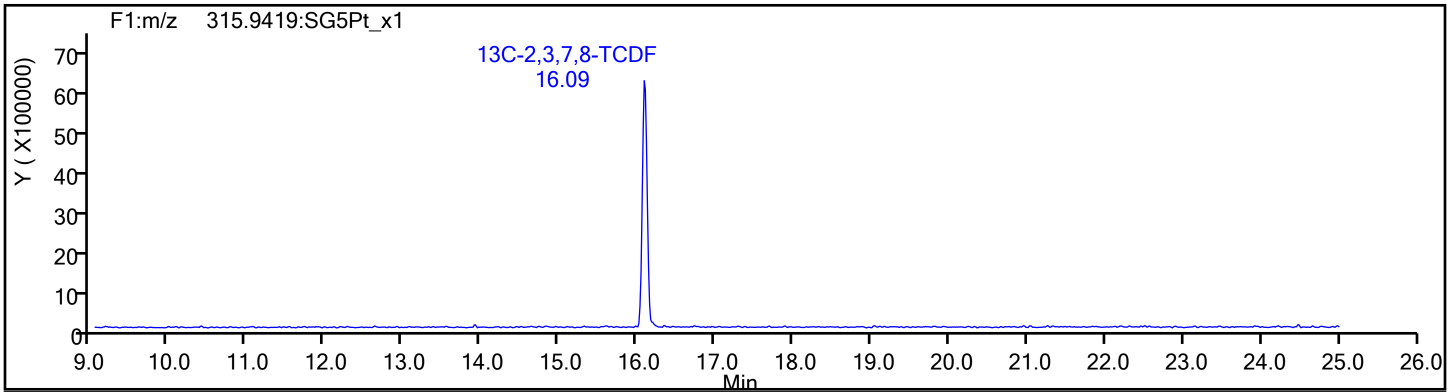

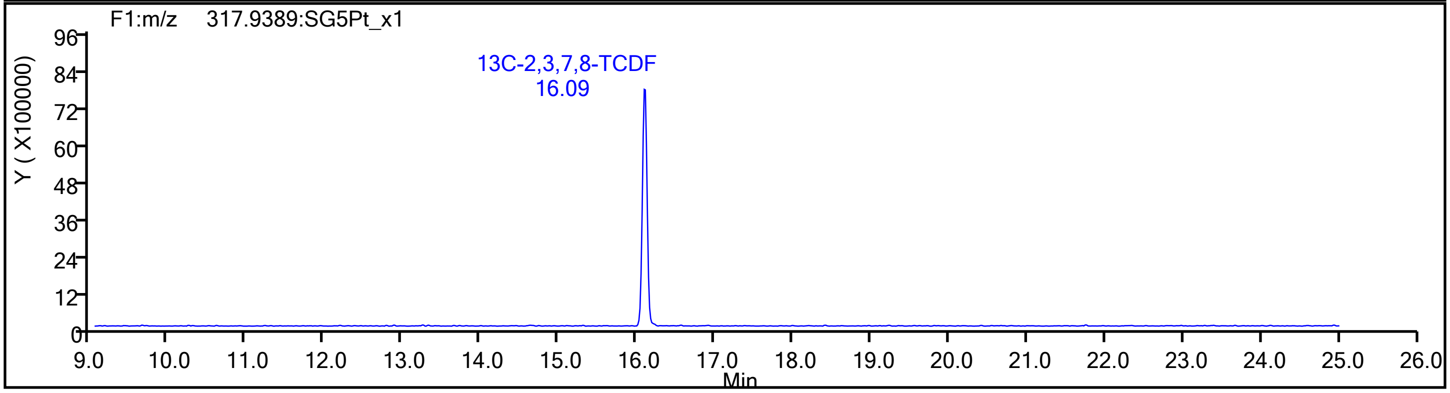

Report Date: 14-Oct-2020 12:17:32 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d
Injection Date: 12-Oct-2020 15:20:29
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421482
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

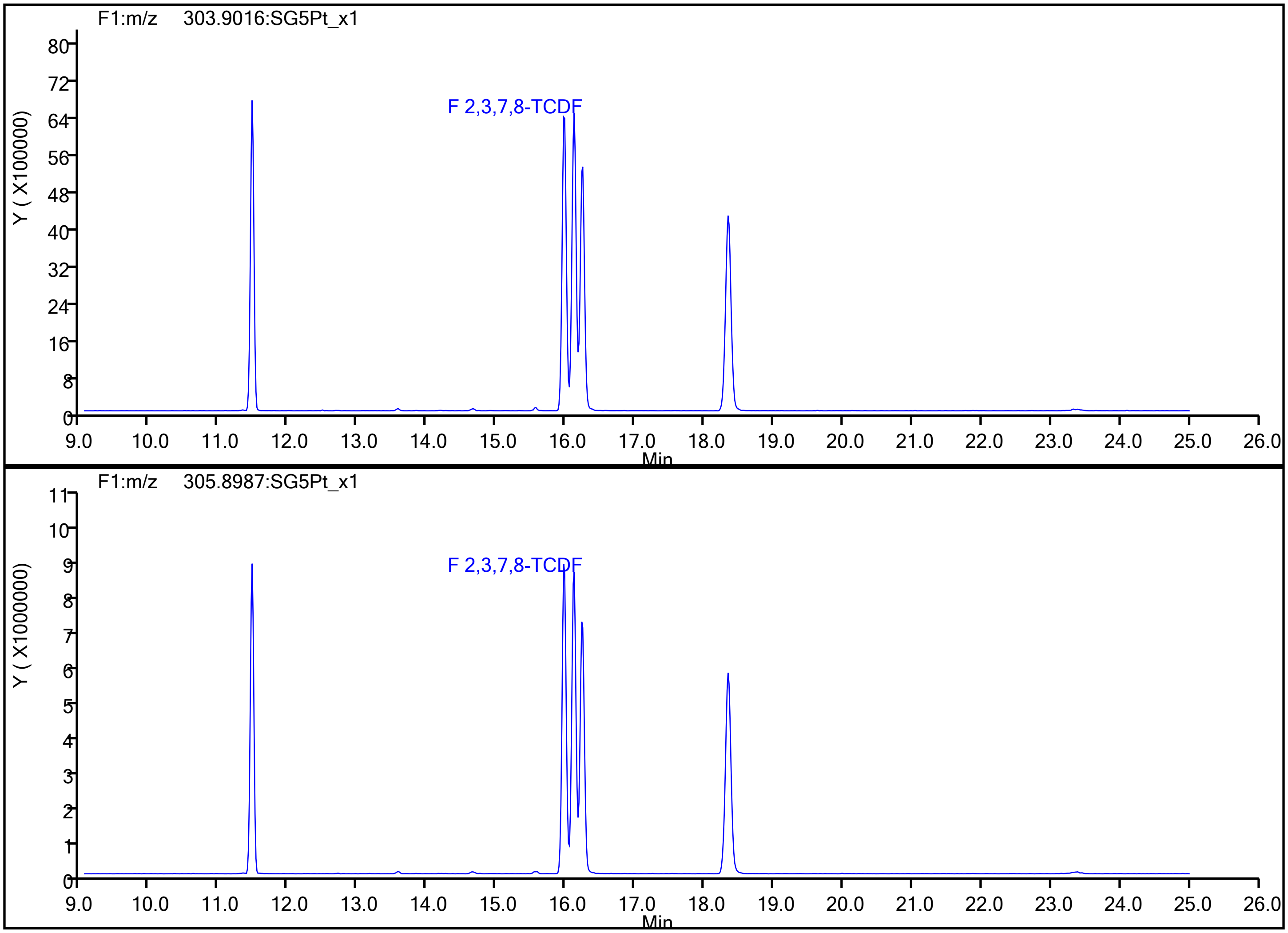

TCDF Interference Mass

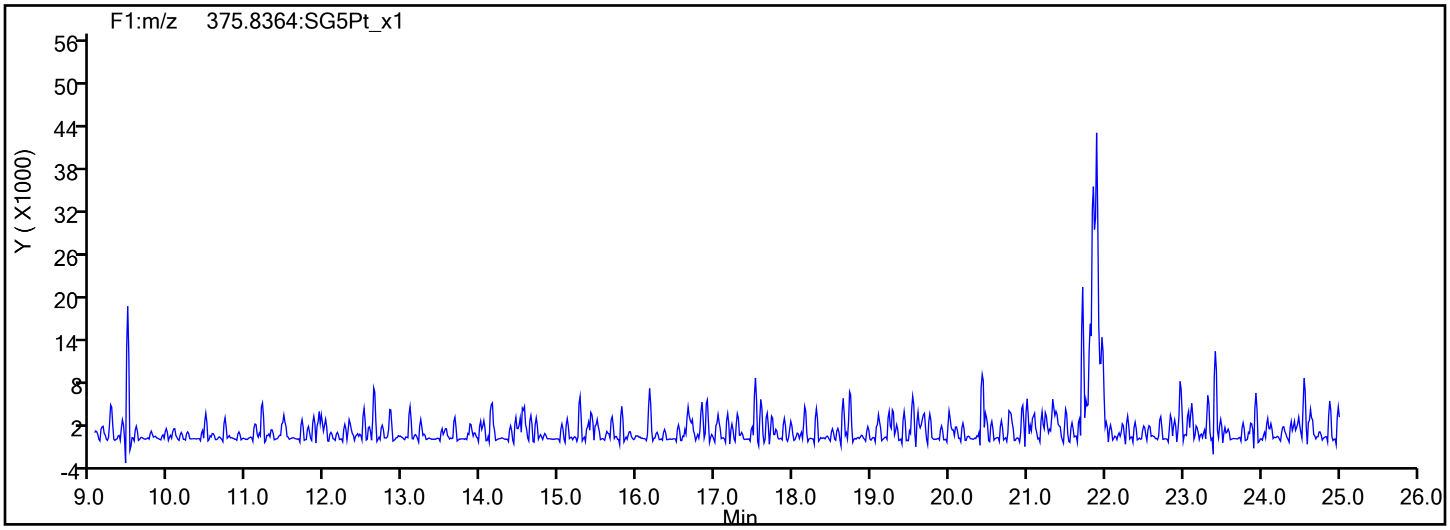

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d		
Injection Date:	12-Oct-2020 15:20:29	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421482	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

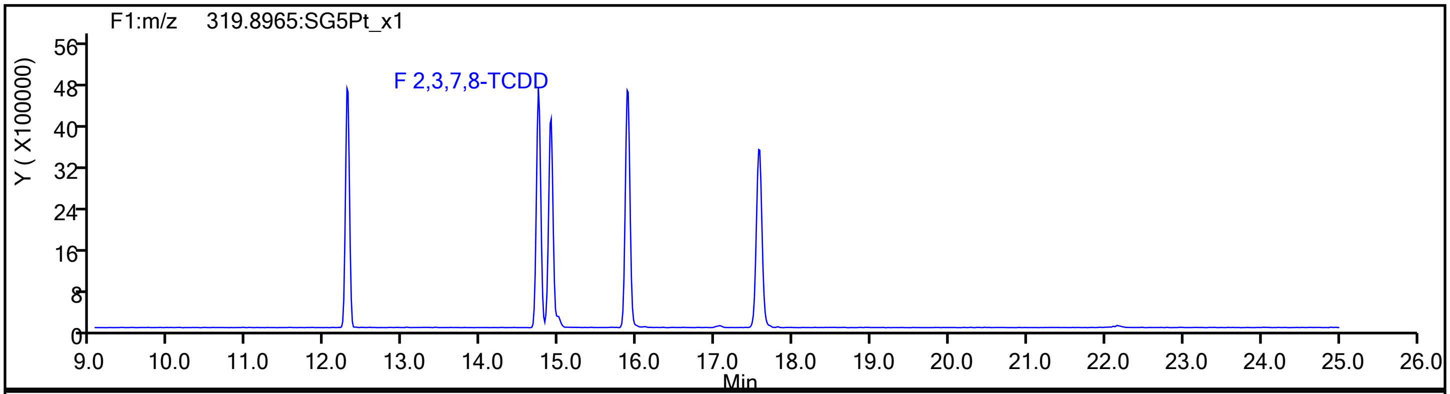

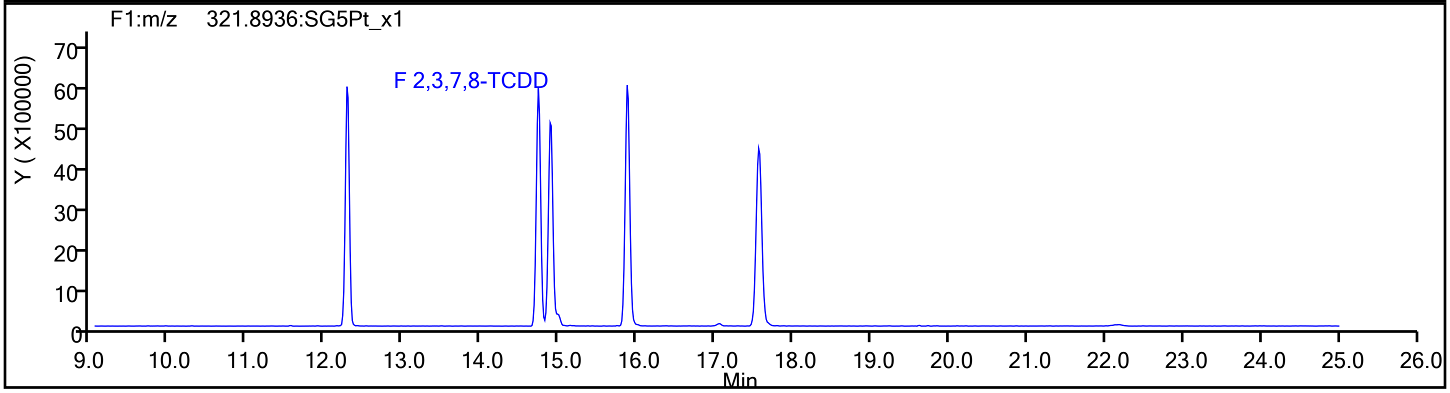

TCDD Standards

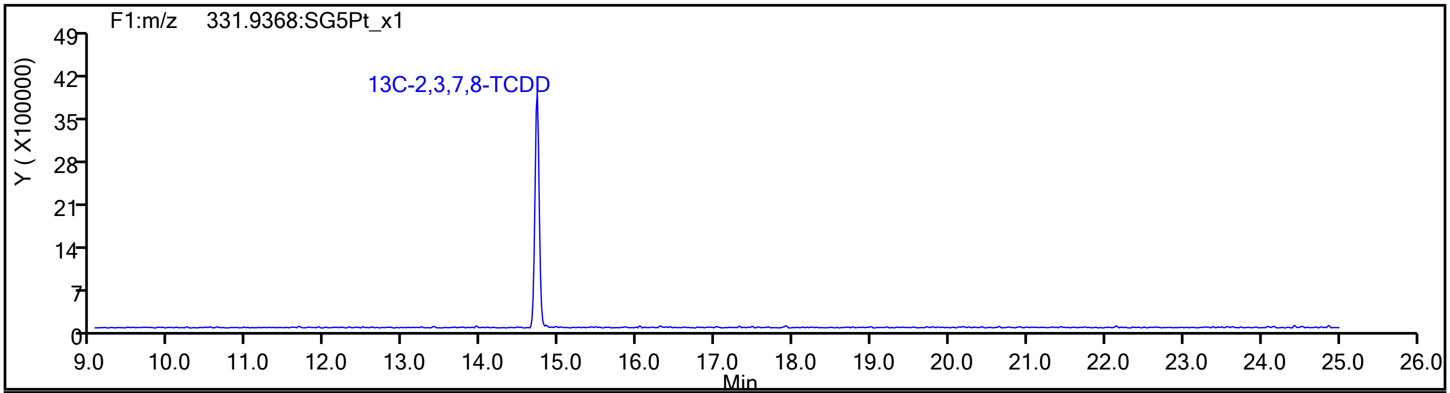

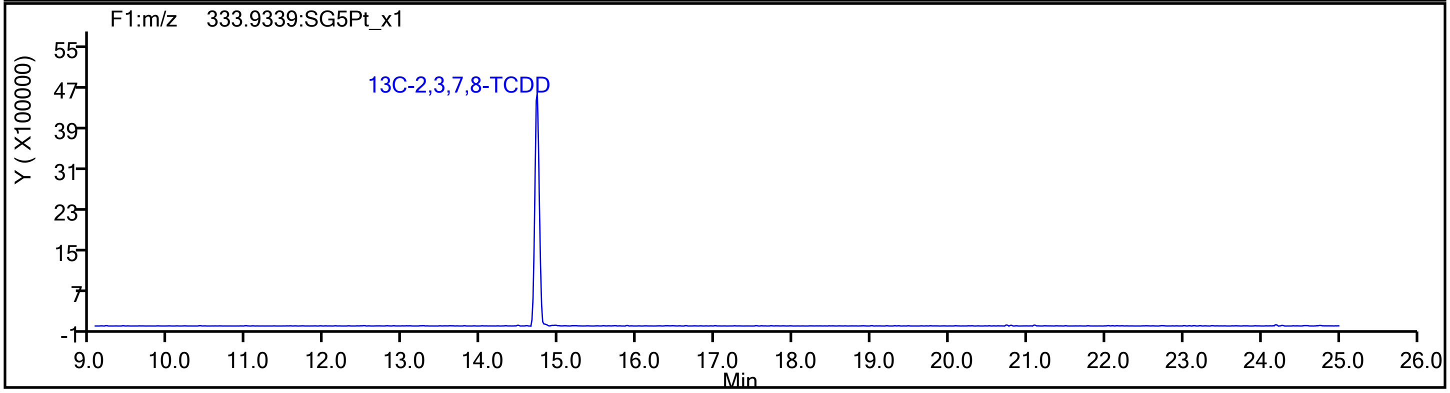

Report Date: 14-Oct-2020 12:17:32   Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d
Injection Date: 12-Oct-2020 15:20:29   Injection Vol: 2.0 ul
Instrument ID: 11D2   Operator ID:
Method: DXN_DB225_11D2   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421482   Sample Line#: 1
Column Type: DB-225   Column Dia: 0.32 mm

37Cl4-TCDD

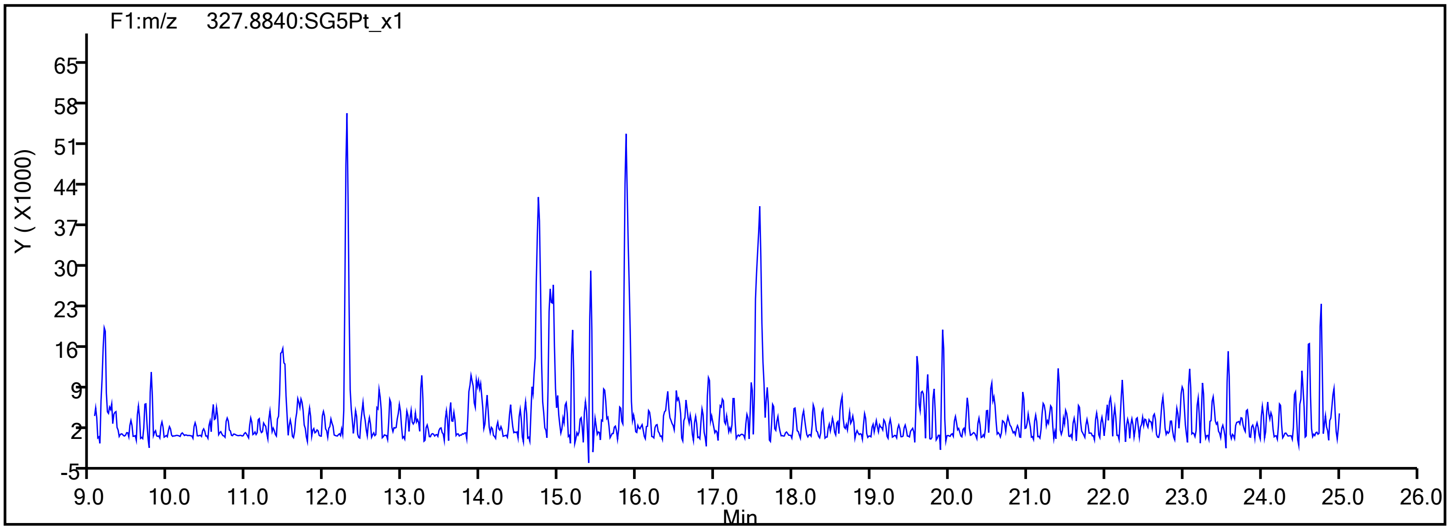

37Cl4-TCDD Standards

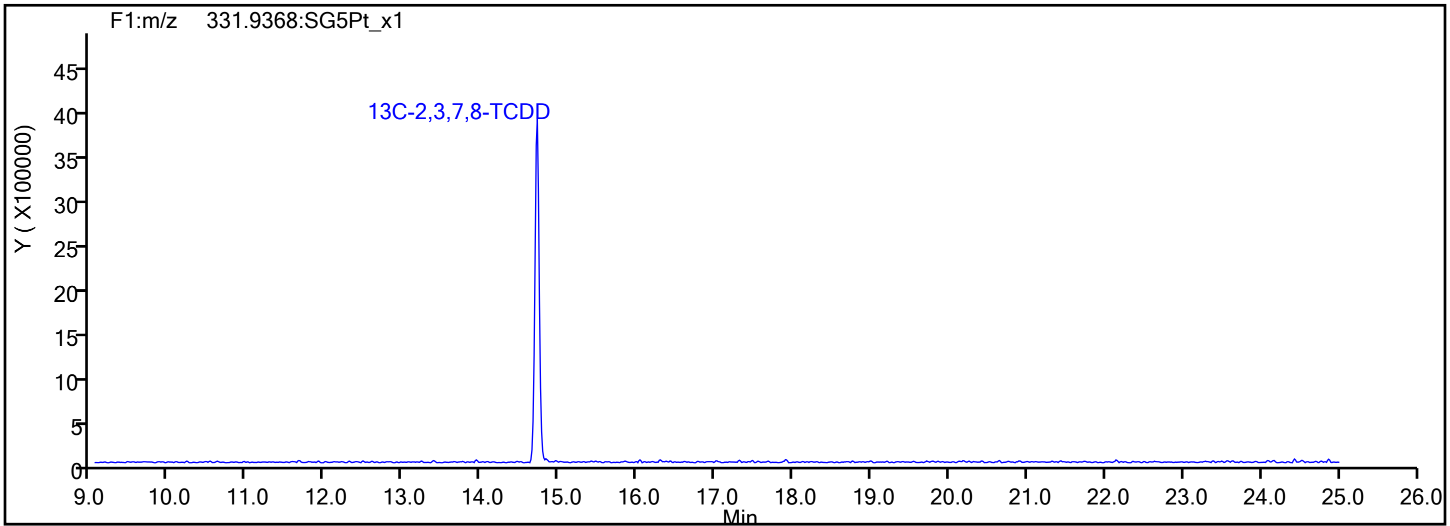

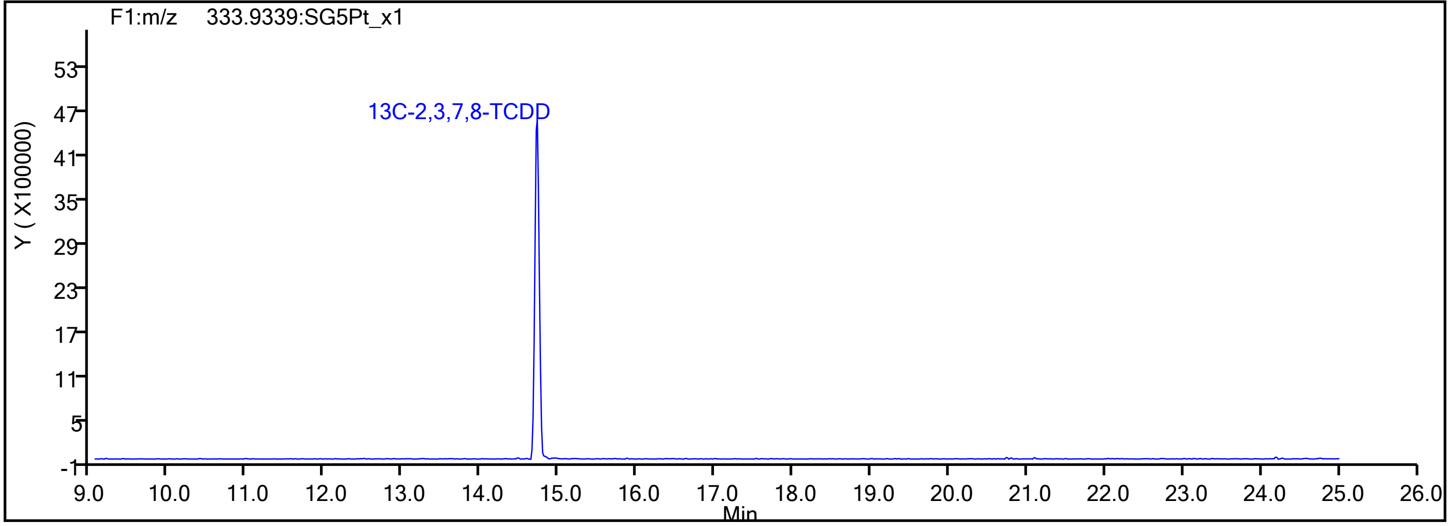

Report Date: 14-Oct-2020 12:17:32 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201013-105325.b\12OC20A11D2_001.d

Injection Date: 12-Oct-2020 15:20:29 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421482 Sample Line#: 1

Column Type: DB-225 Column Dia: 0.32 mm

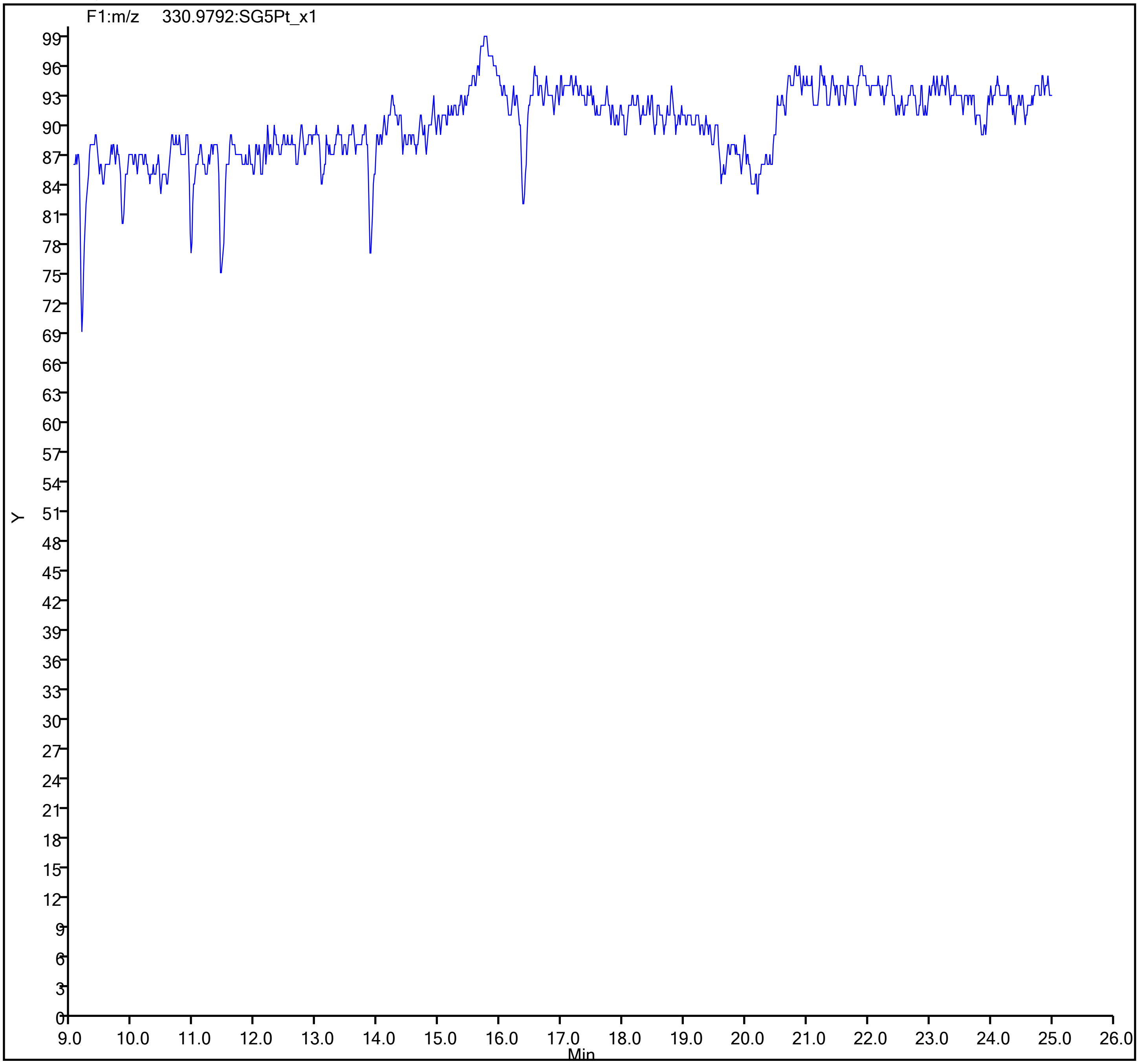

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	13-Oct-2020 19:42:32	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 17:38:51	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1669				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.081	71325078	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.095	70916813	0.75	0.9943	40.0	40.0	0.0865	0.0865		
D 13C-2,3,7,8-TCDD	14.695	38388171	0.77	0.9834					0.00	
2,3,7,8-TCDD	14.709	47143988	0.78	1.2822	38.3	38.3	0.0884	0.0884		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 13-Oct-2020 19:42:32 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 17:38:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1669

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.081	16.081	0	1.000	31502029	7421241	26179	65447	283		
317.9389	16.067	16.081	-1	1.000	39823049	9099846	13595	33987	669	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.095	16.095	0	1.001	30300269	7338249	6430	16075	1141		
305.8987	16.095	16.095	0	1.001	40616544	9486539	7783	19457	1219	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.695	14.695	0	1.000	16726401	4067422	13259	33147	307		
333.9339	14.695	14.695	0	1.000	21661770	5461748	9975	24937	548	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.709	14.709	0	1.001	20613687	5157152	5986	14965	862		
321.8936	14.709	14.709	0	1.001	26530301	6607935	4813	12032	1373	0.78(0.65-0.89)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 14-Oct-2020 17:38:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d

Injection Date: 13-Oct-2020 19:42:32

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421876

Sample Line#: 1

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

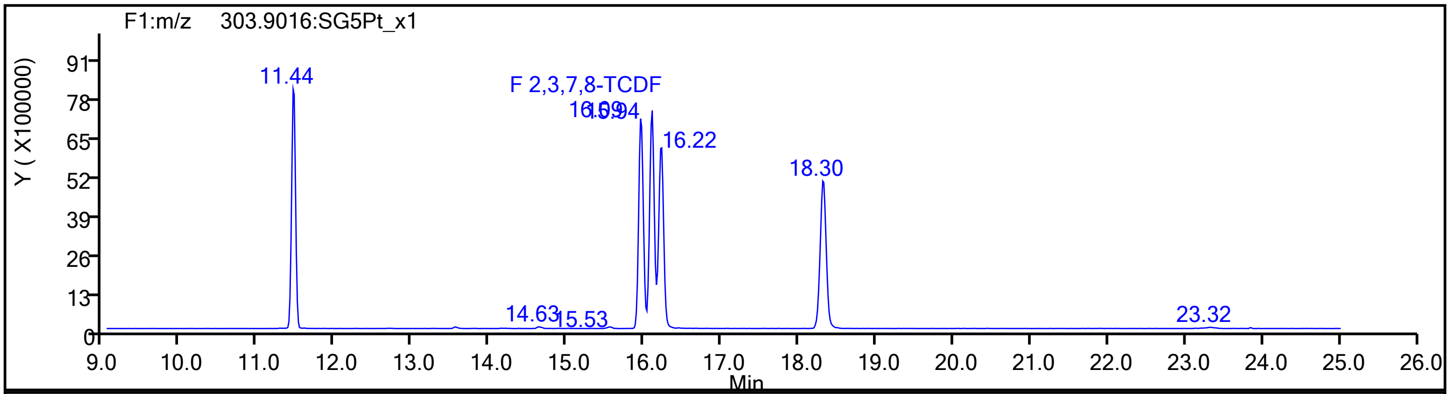

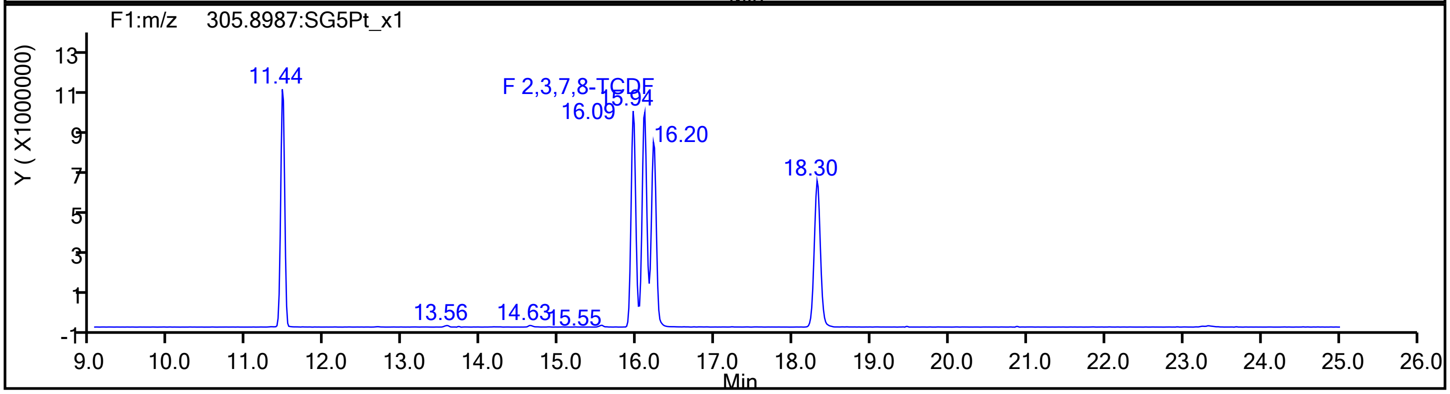

TCDF Standards

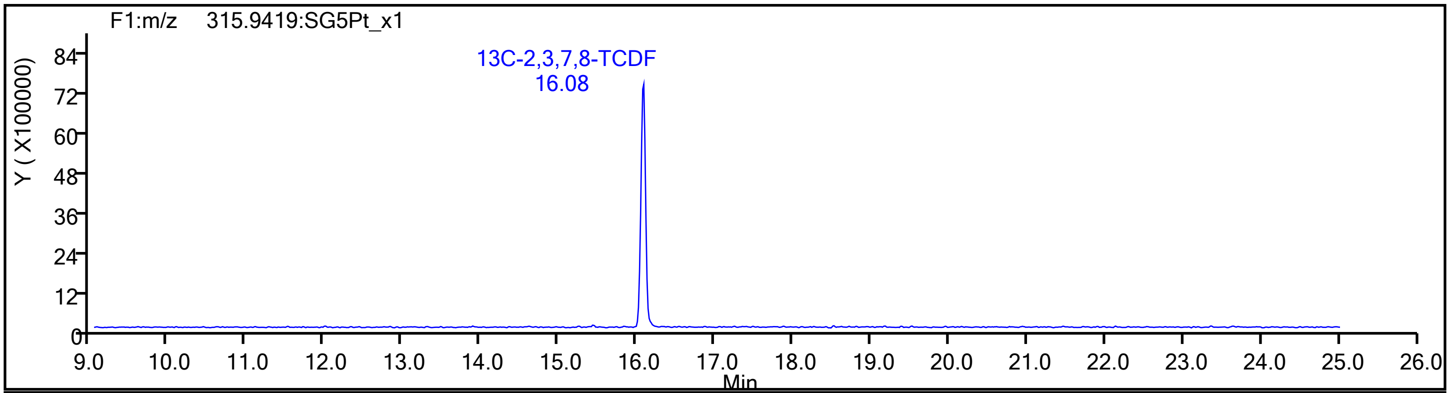

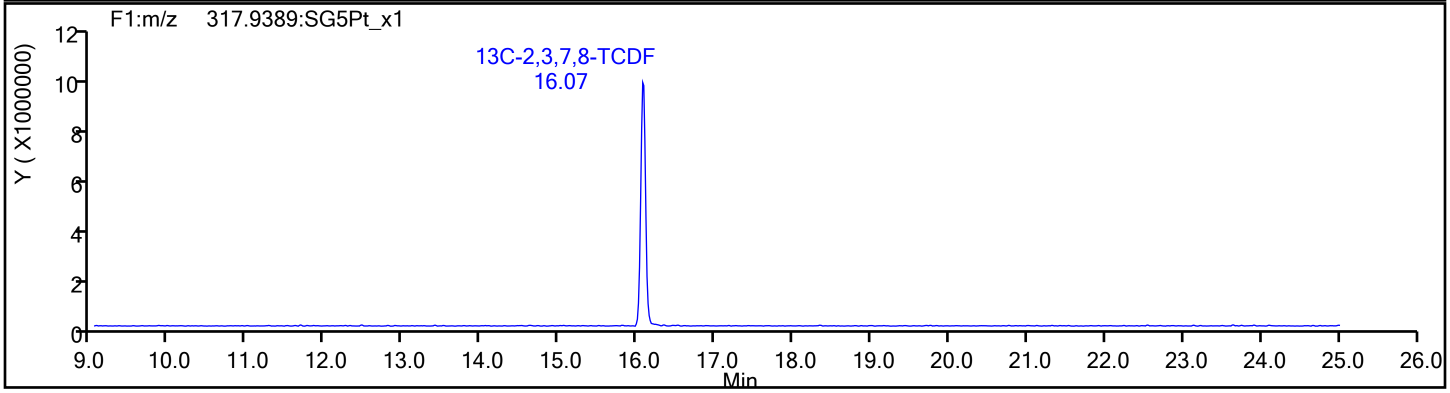

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d		
Injection Date:	13-Oct-2020 19:42:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

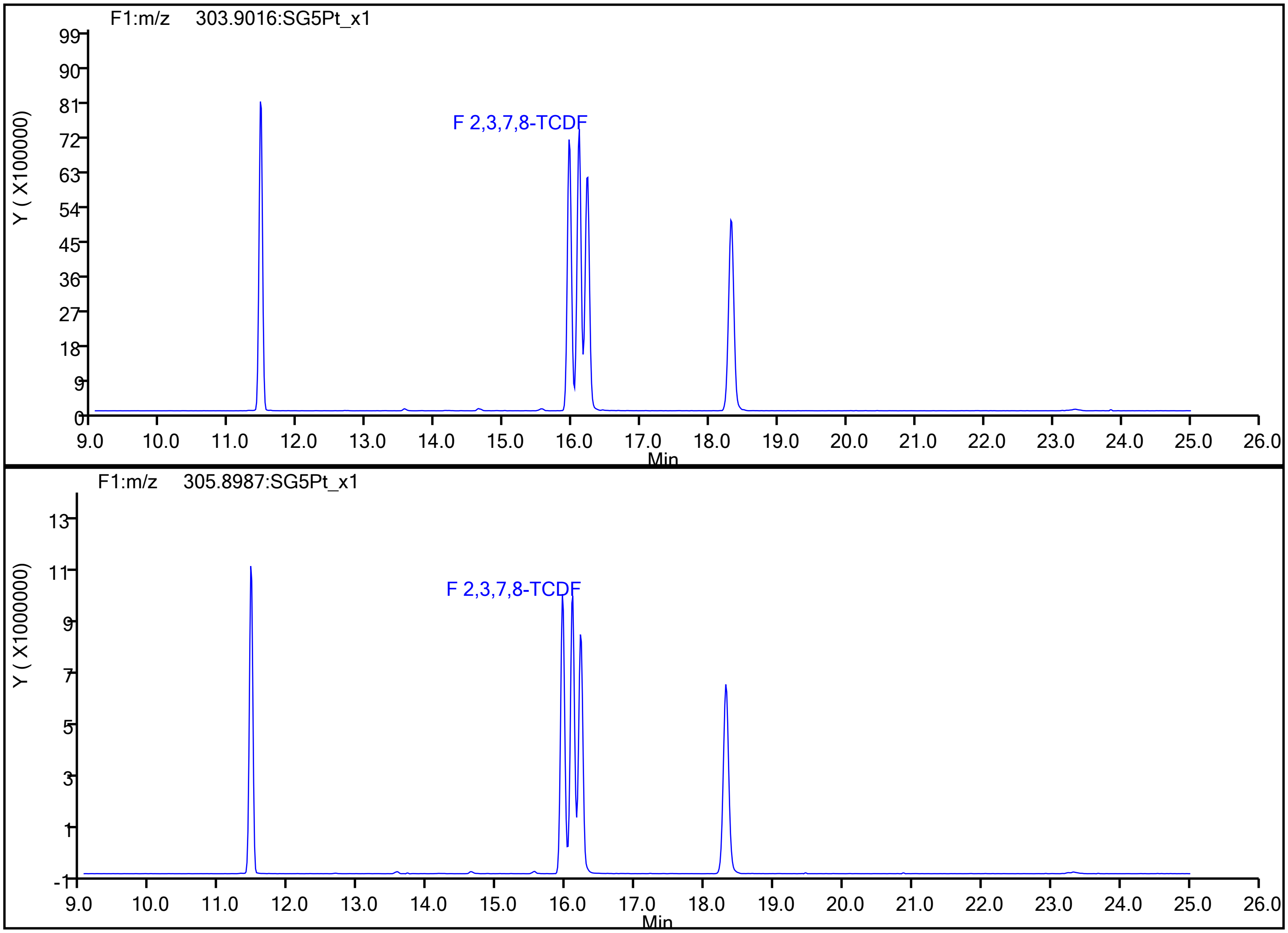

TCDF Interference Mass

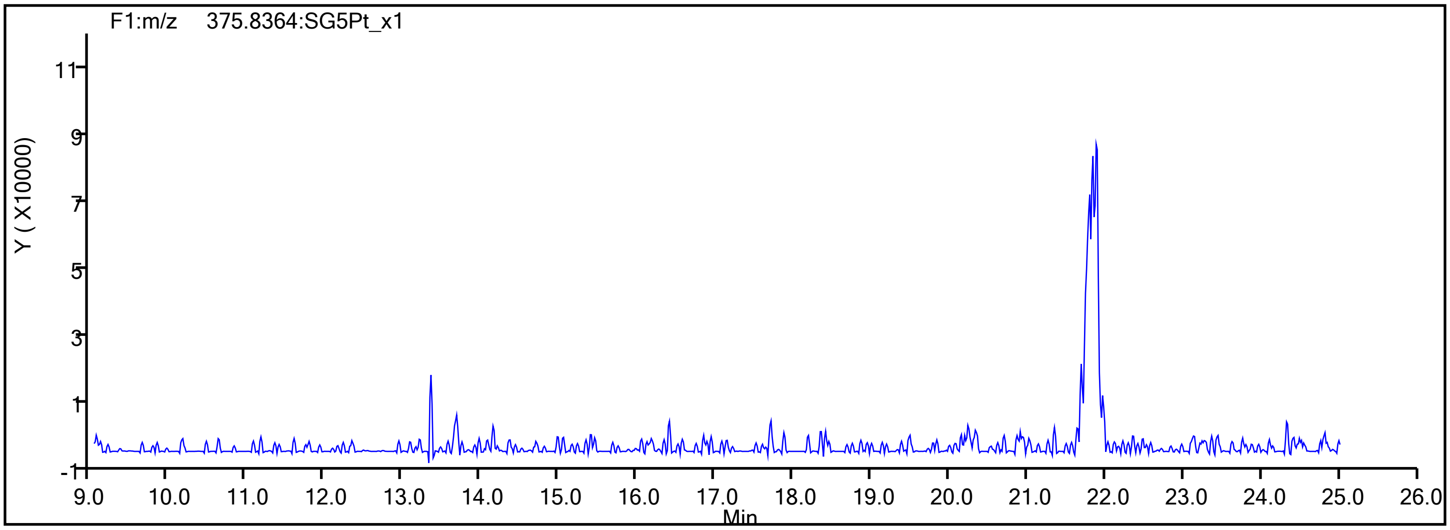

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d		
Injection Date:	13-Oct-2020 19:42:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

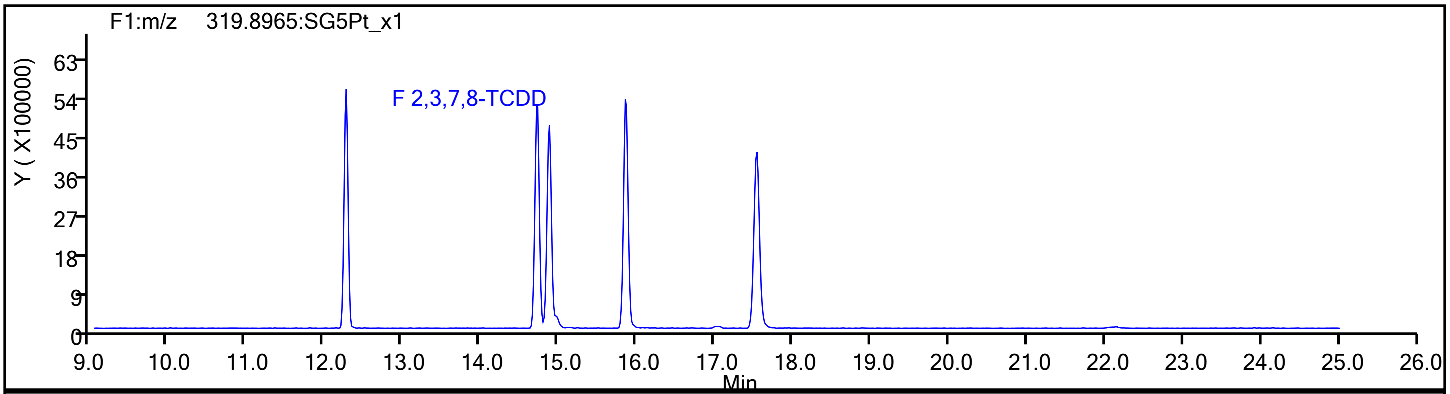

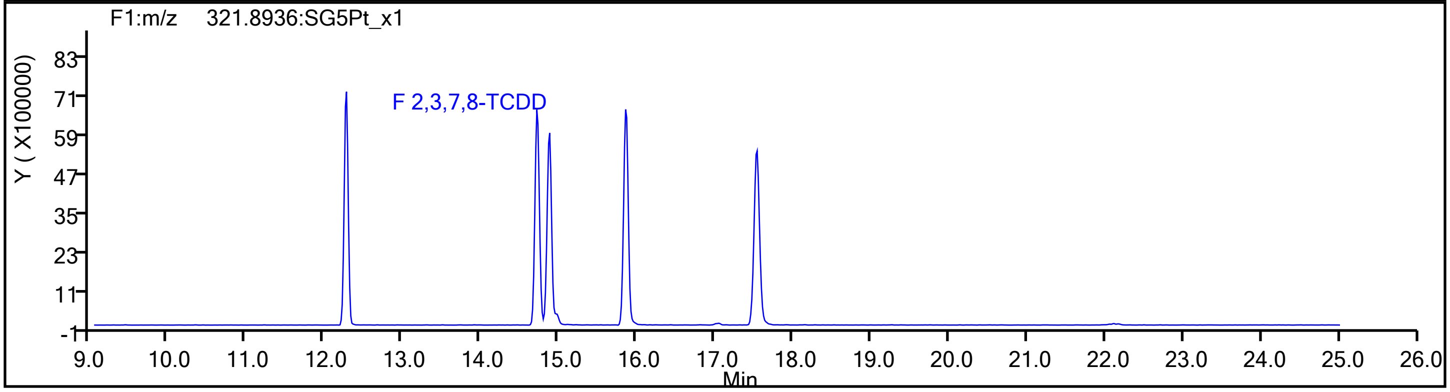

TCDD Standards

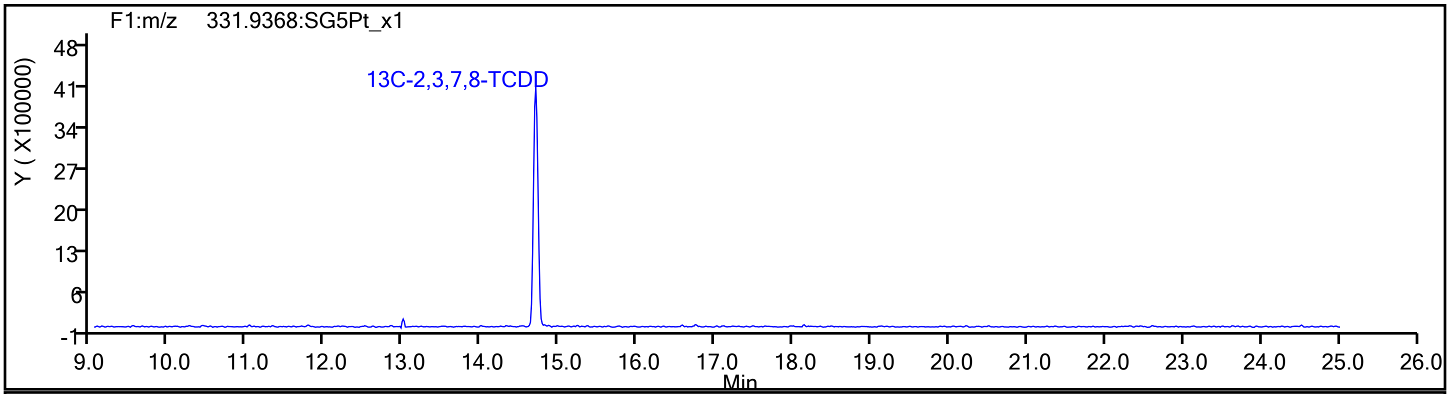

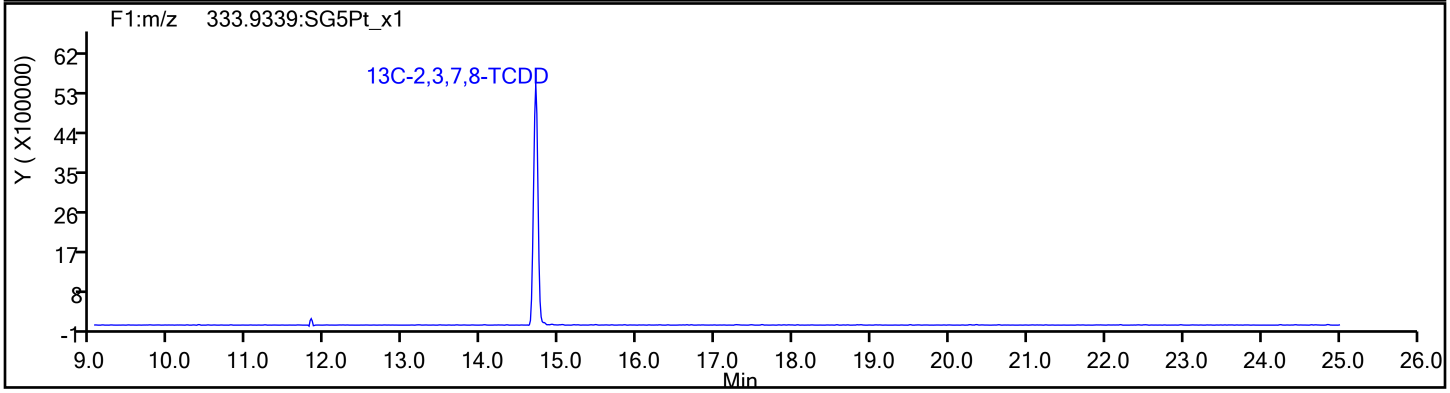

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d		
Injection Date:	13-Oct-2020 19:42:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

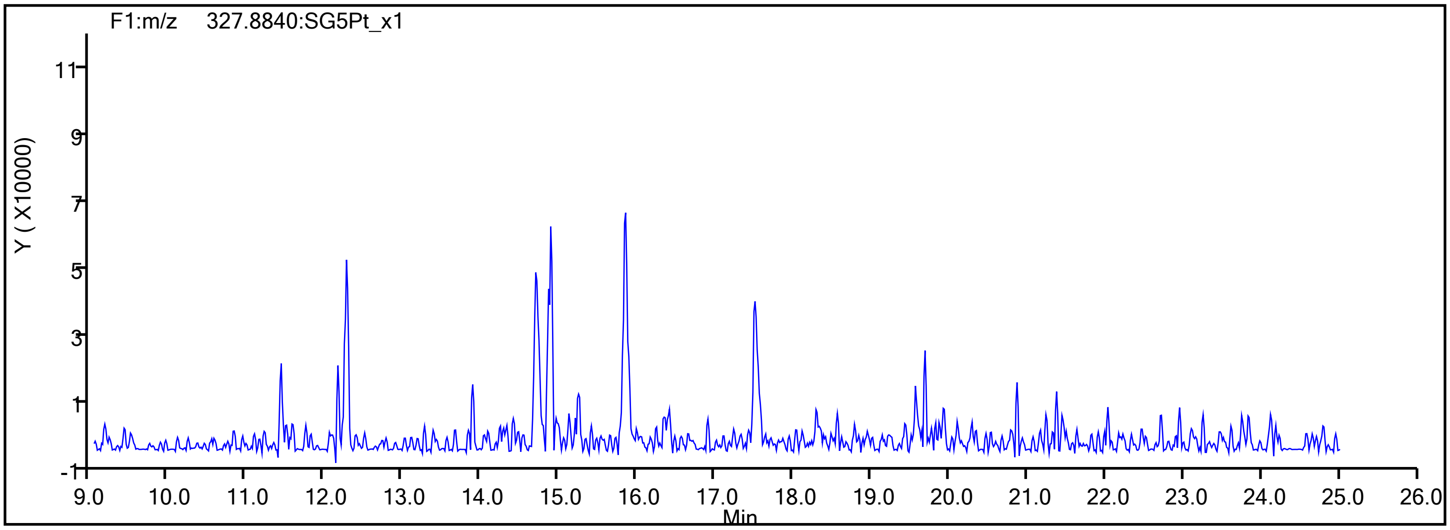

37Cl4-TCDD Standards

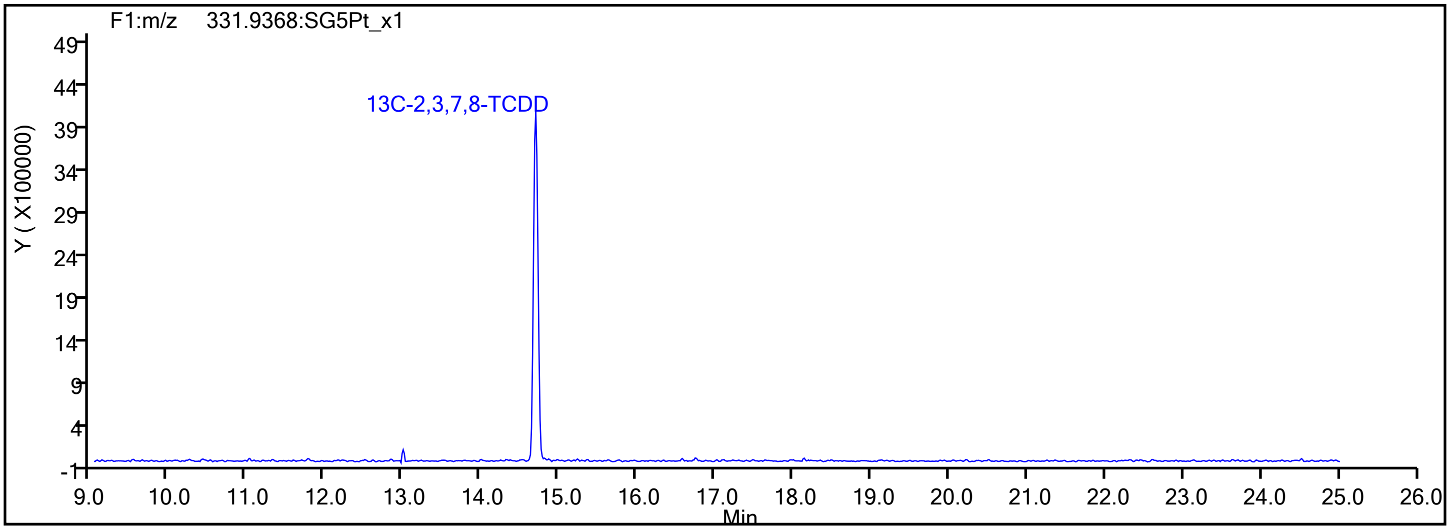

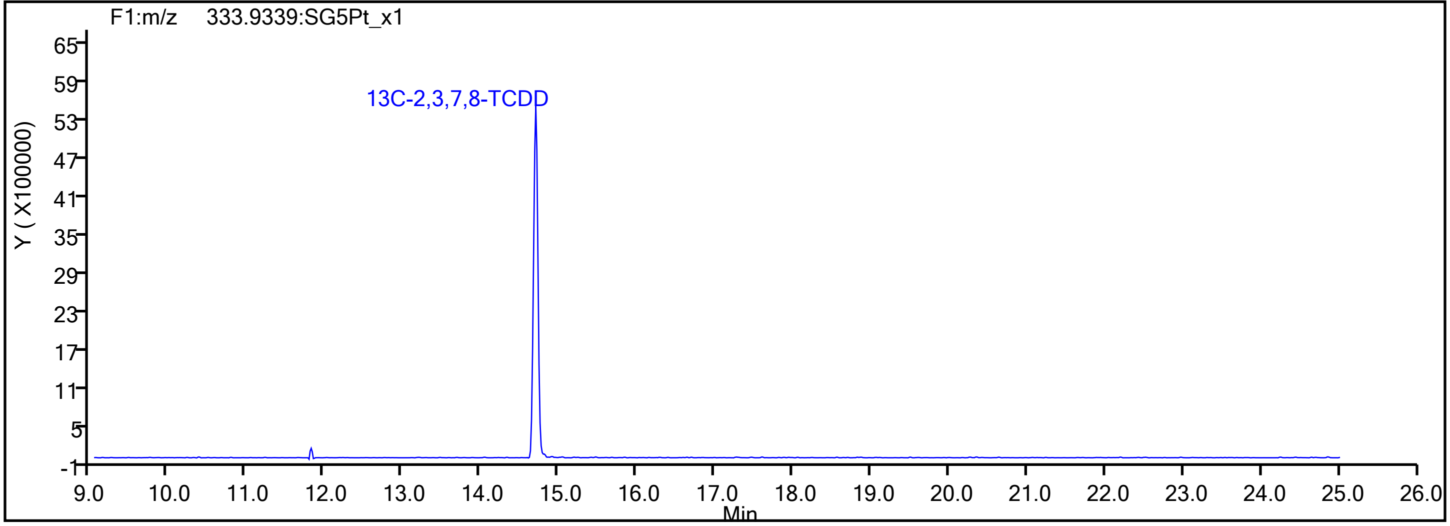

Report Date: 14-Oct-2020 17:38:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201014-105418.b\13OC20A11D2_001.d		
Injection Date:	13-Oct-2020 19:42:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421876	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

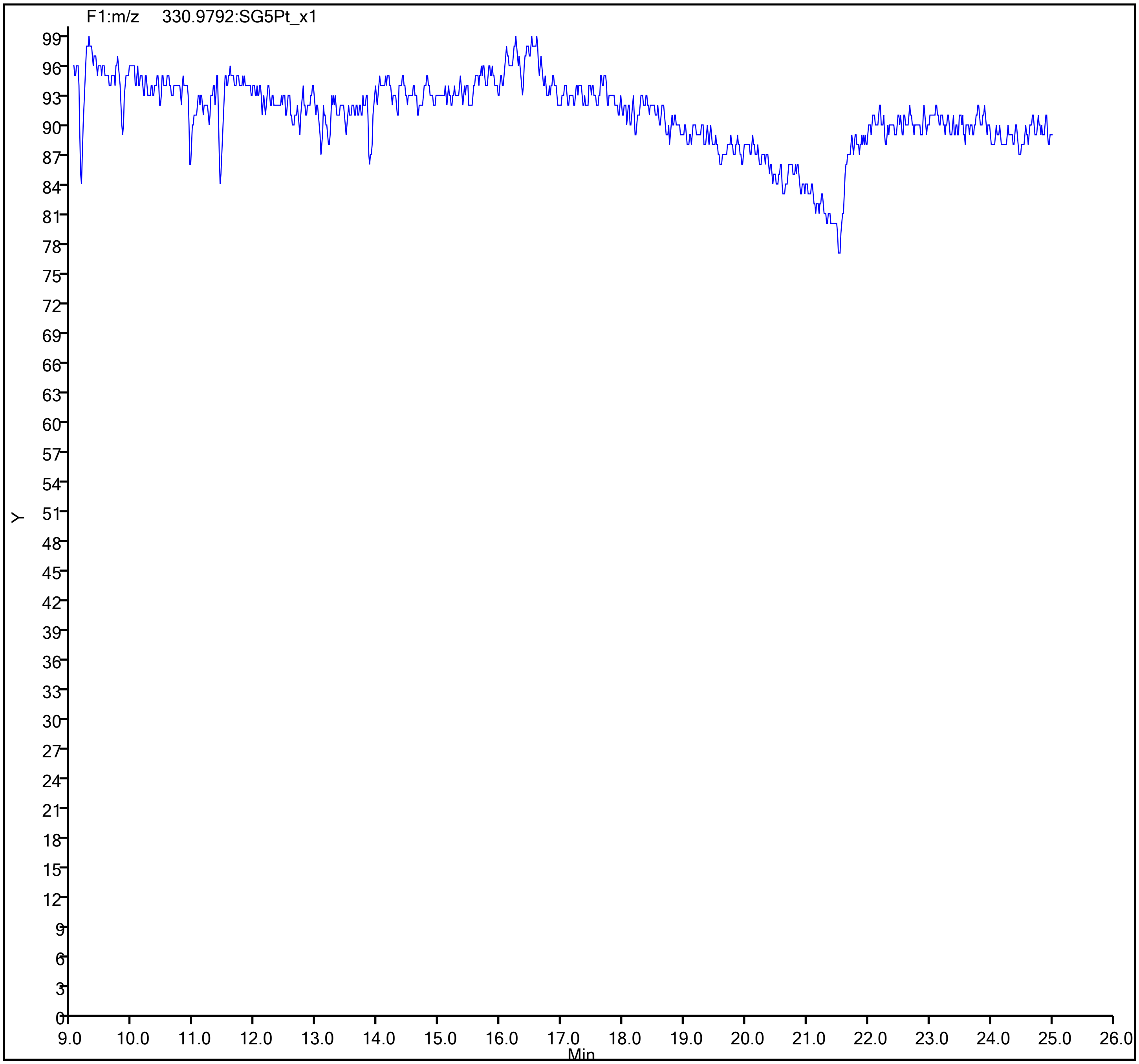

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 14-Oct-2020 11:21:45 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:53:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: stephensk Date: 15-Oct-2020 11:44:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.061	66025477	0.78	1.5708					0.00	
2,3,7,8-TCDF	16.075	66025357	0.81	0.9943	40.2	40.2	0.0735	0.0735		
D 13C-2,3,7,8-TCDD	14.675	38893442	0.80	0.9834					0.00	
2,3,7,8-TCDD	14.703	47228215	0.78	1.2822	37.9	37.9	0.0913	0.0913		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 15-Oct-2020 13:53:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 14-Oct-2020 11:21:45 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Oct-2020 13:53:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1615

First Level Reviewer: stephensk Date: 15-Oct-2020 11:44:19

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.061	16.061	0	1.000	29010845	6960657	26709	66772	261		
317.9389	16.061	16.061	0	1.000	37014632	8629919	13453	33632	641	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.075	16.075	0	1.001	29470241	7038262	6247	15617	1127		
305.8987	16.075	16.075	0	1.001	36555116	8919452	5141	12852	1735	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.675	14.675	0	1.000	17255943	4354819	10463	26157	416		
333.9339	14.675	14.675	0	1.000	21637499	5531699	3683	9207	1502	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.703	14.703	0	1.002	20664295	5242689	6364	15910	824		
321.8936	14.703	14.703	0	1.002	26563920	6659930	5214	13035	1277	0.78(0.65-0.89)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 15-Oct-2020 13:53:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d
Injection Date: 14-Oct-2020 11:21:45 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422080 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

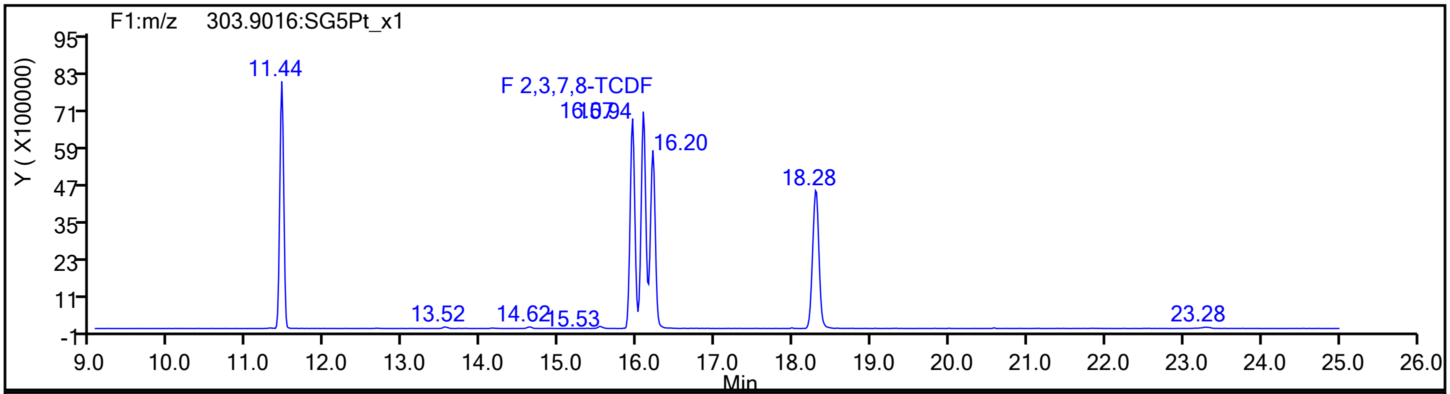

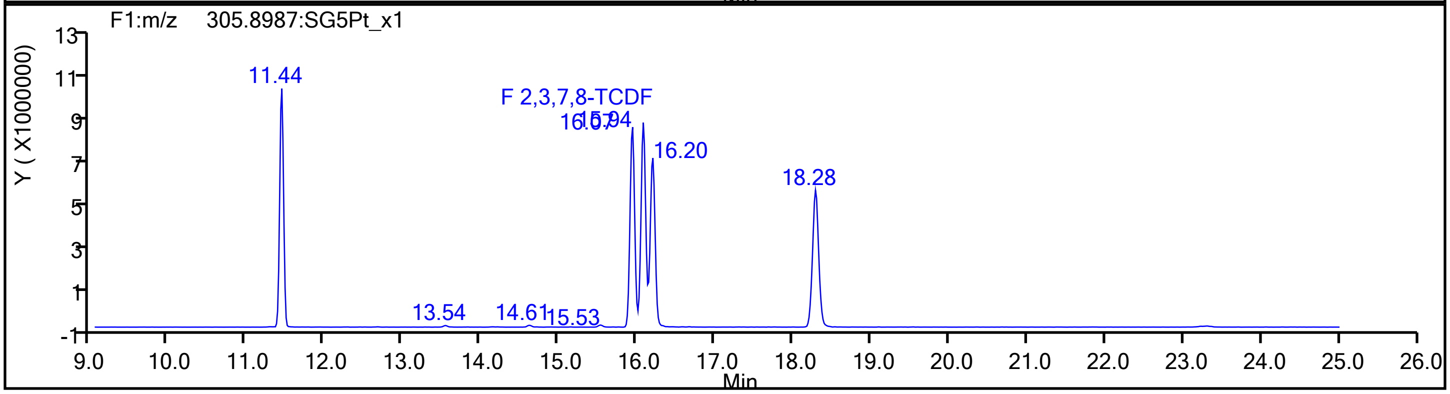

TCDF Standards

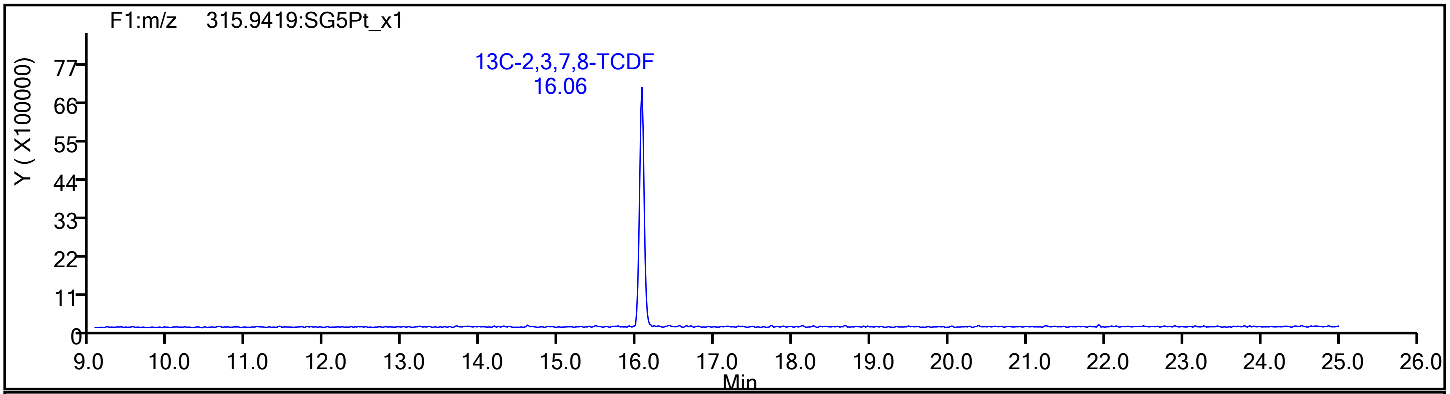

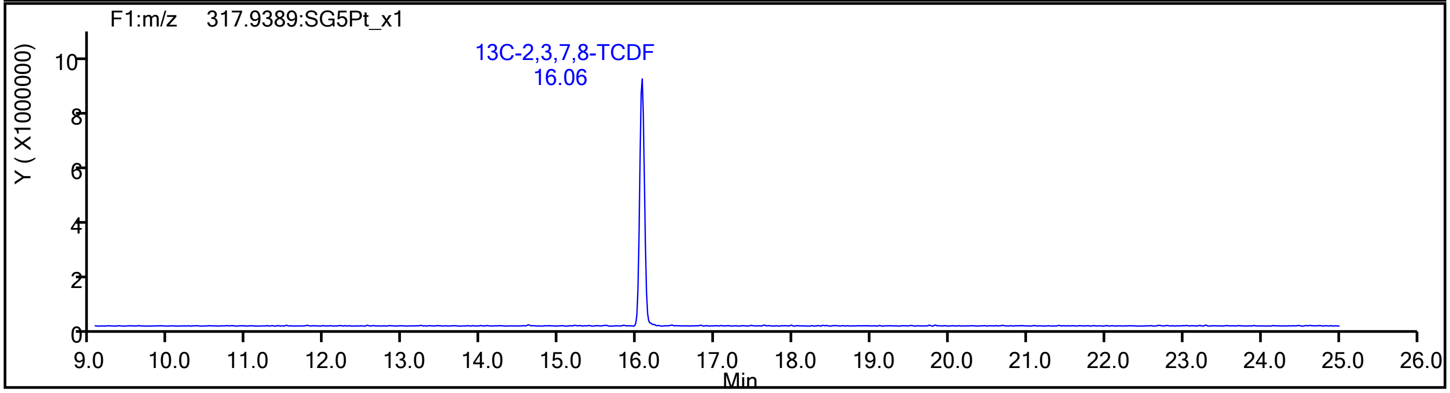

Report Date: 15-Oct-2020 13:53:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d		
Injection Date:	14-Oct-2020 11:21:45	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422080	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

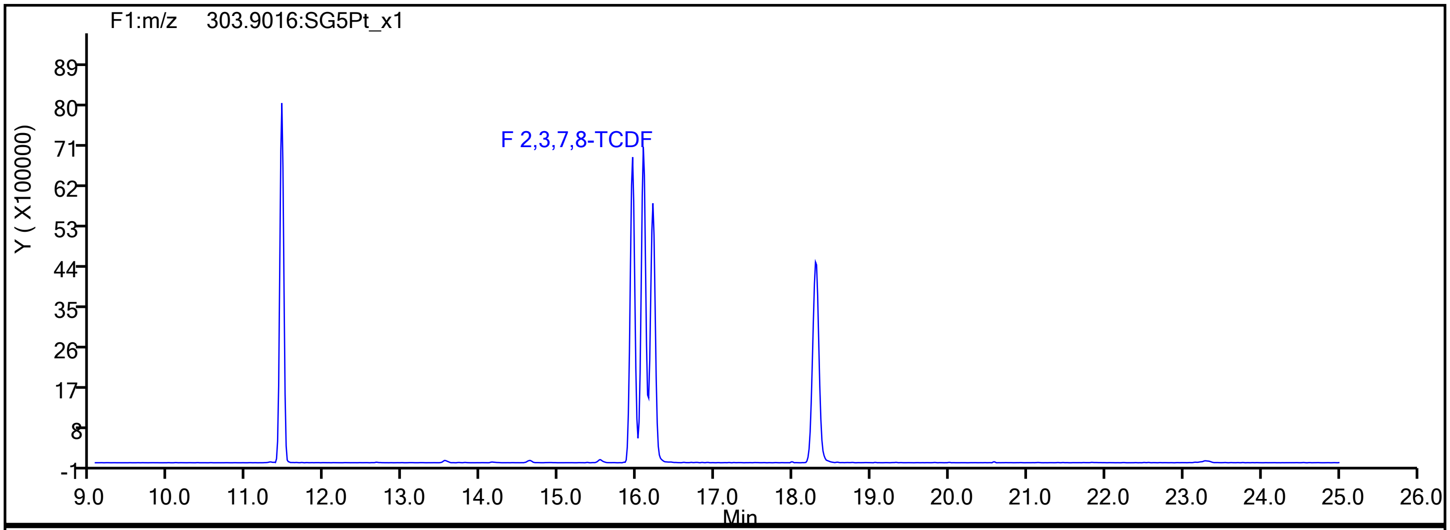

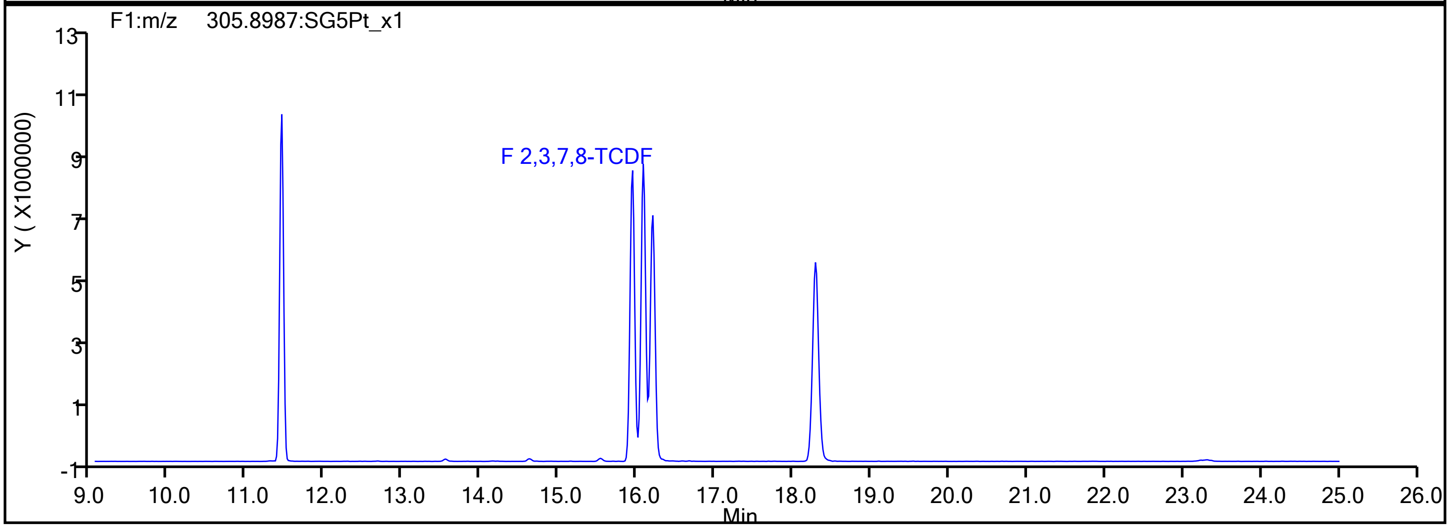

TCDF Interference Mass

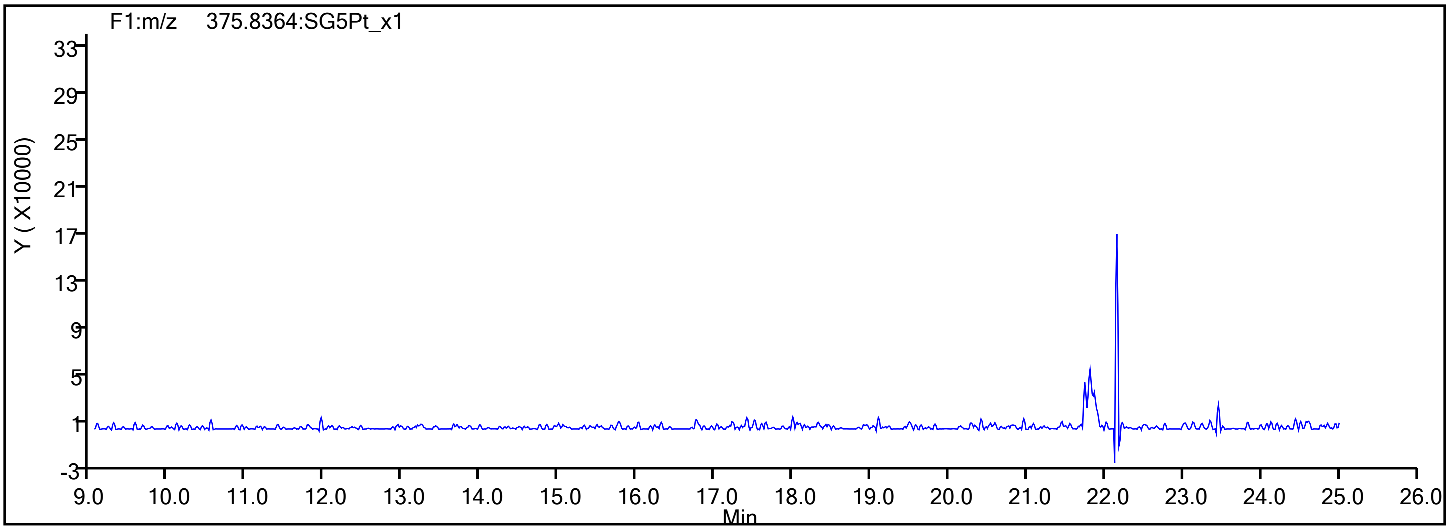

Report Date: 15-Oct-2020 13:53:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d

Injection Date:	14-Oct-2020 11:21:45	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422080	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

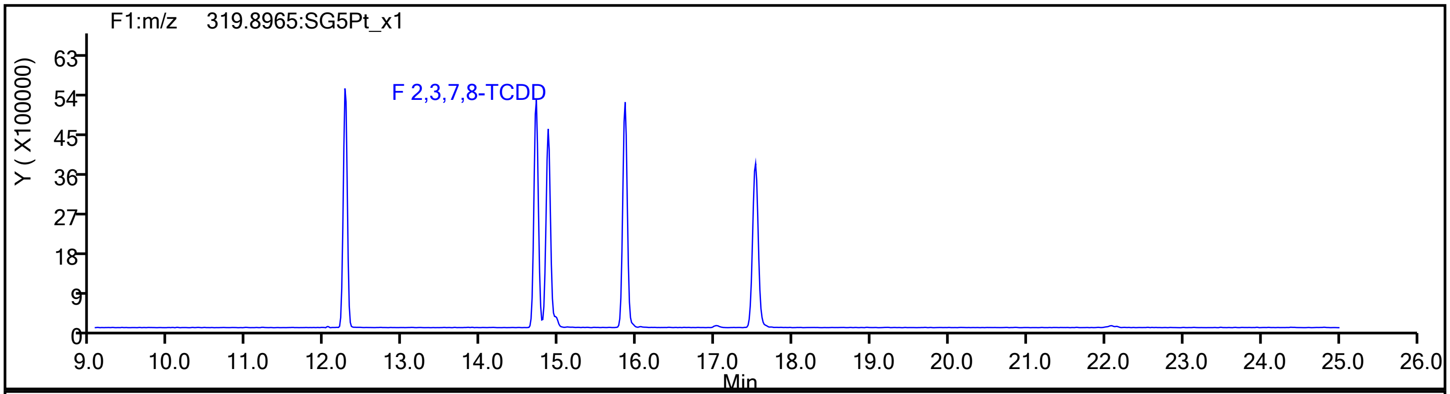

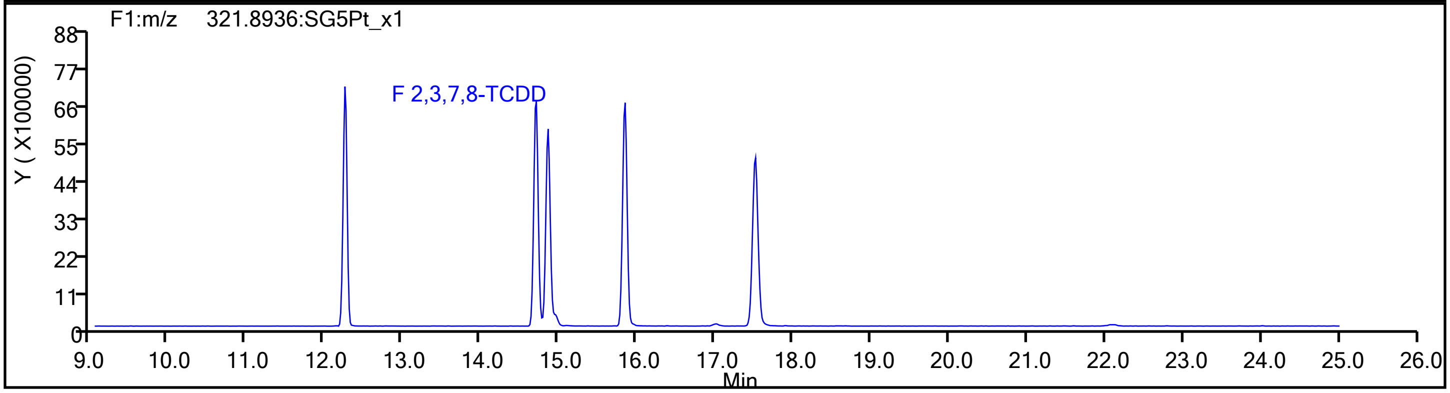

TCDD Standards

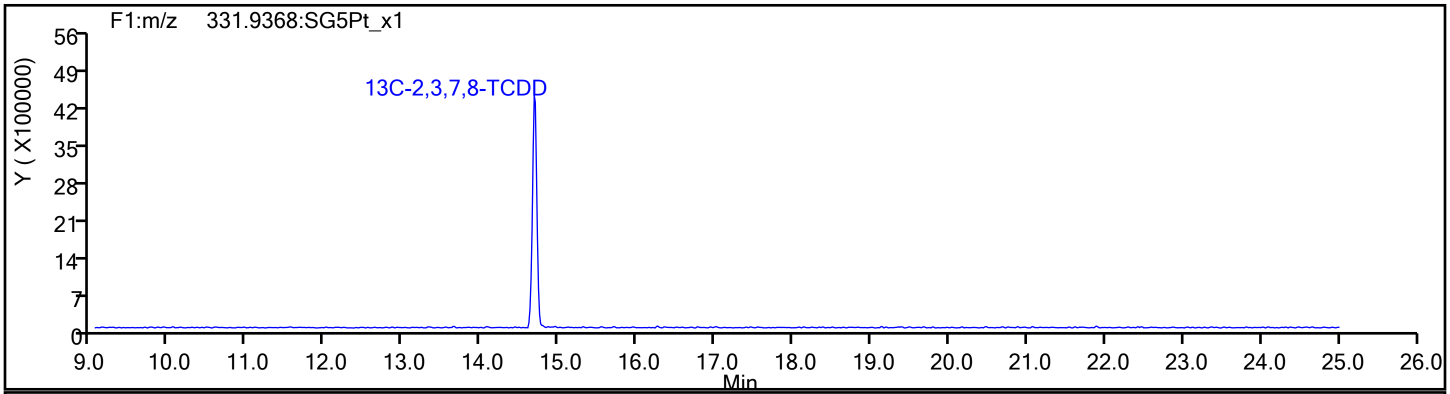

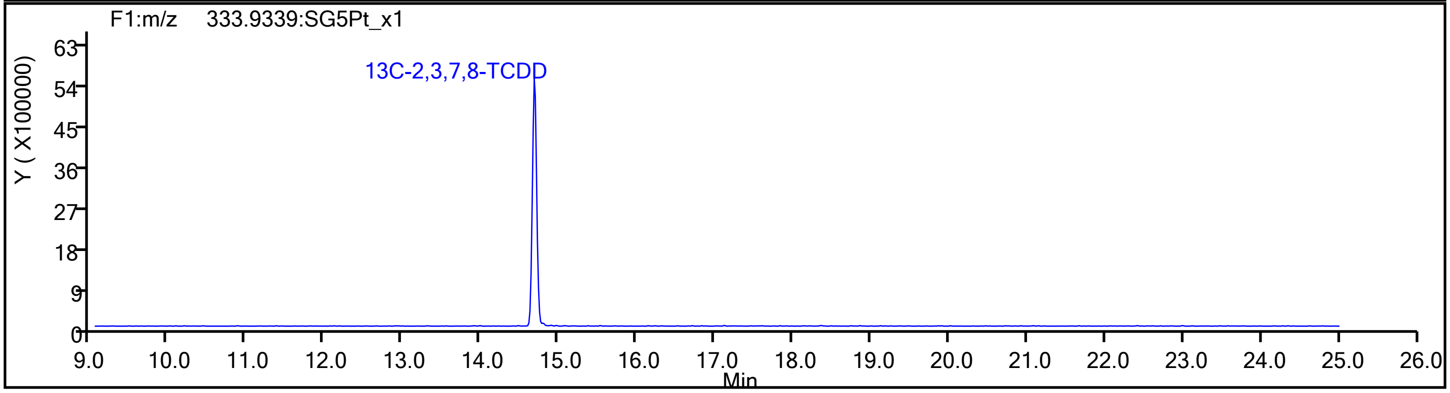

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d

Injection Date:	14-Oct-2020 11:21:45	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422080	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

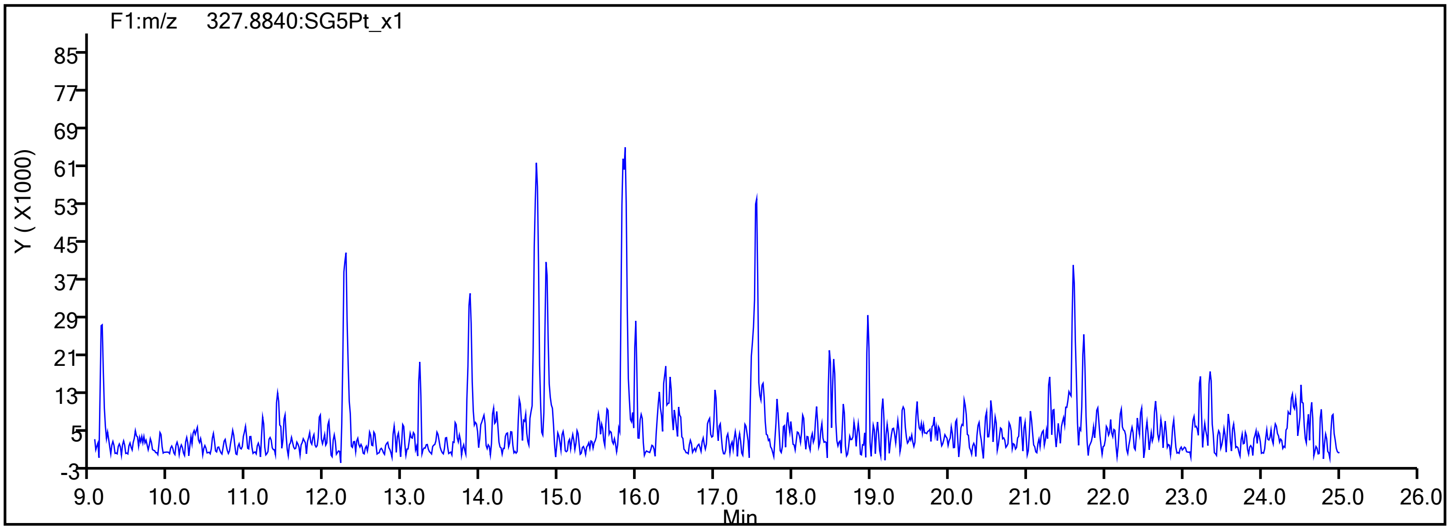

37Cl4-TCDD Standards

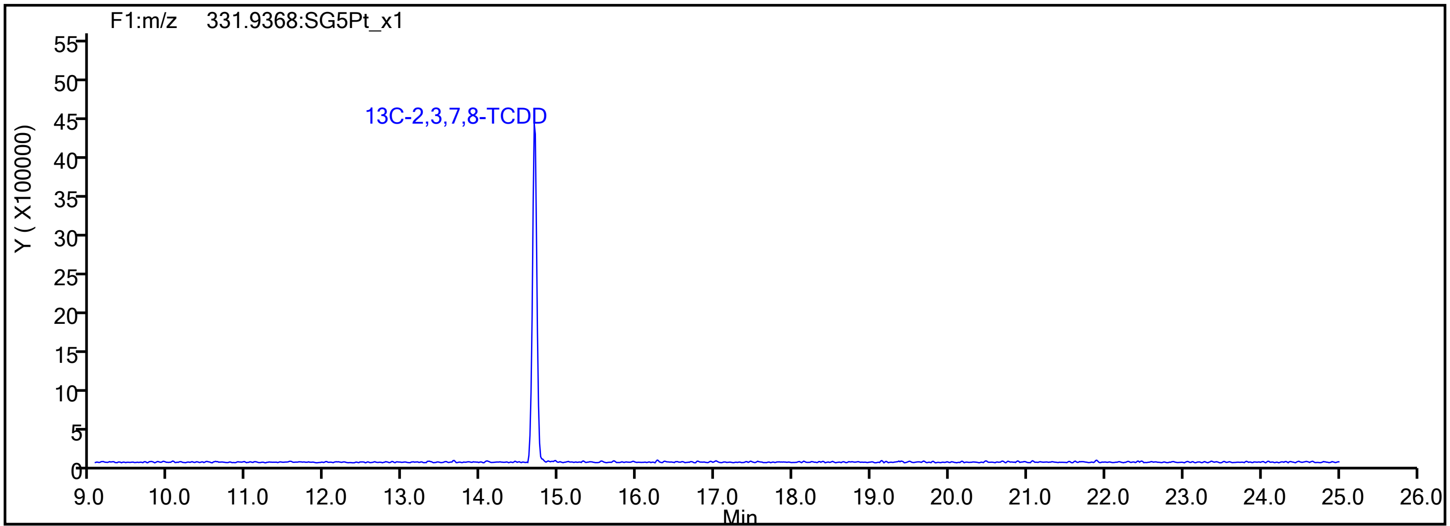

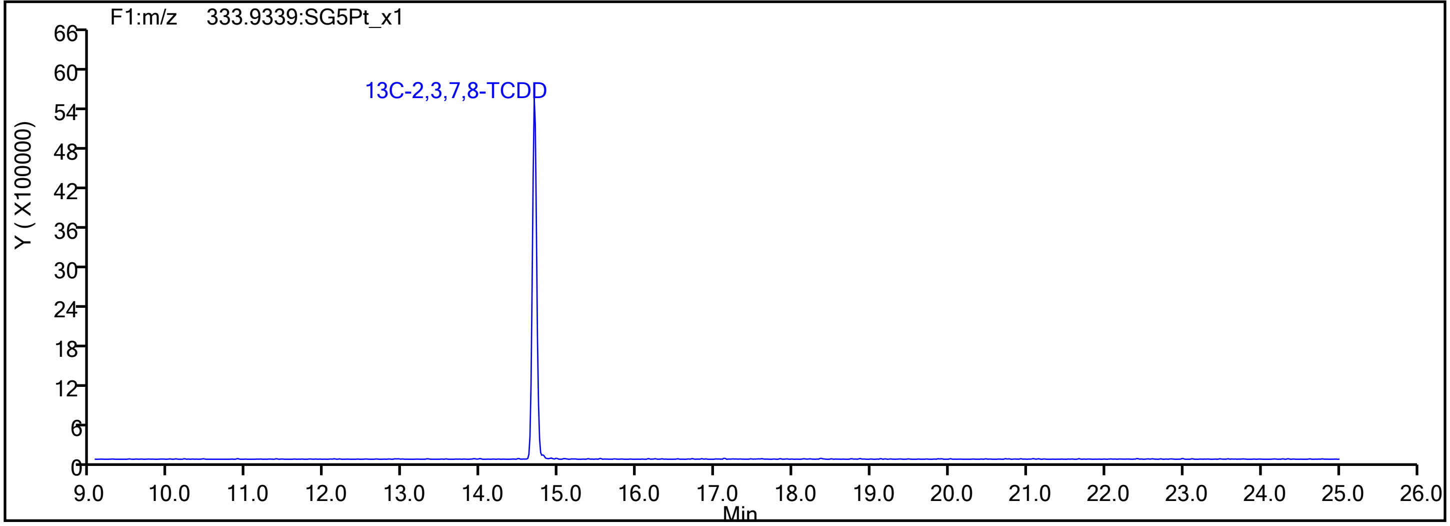

Report Date: 15-Oct-2020 13:53:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201015-105457.b\14OC2011D2_001.d

Injection Date: 14-Oct-2020 11:21:45 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422080 Sample Line#: 1

Column Type: DB-225 Column Dia: 0.32 mm

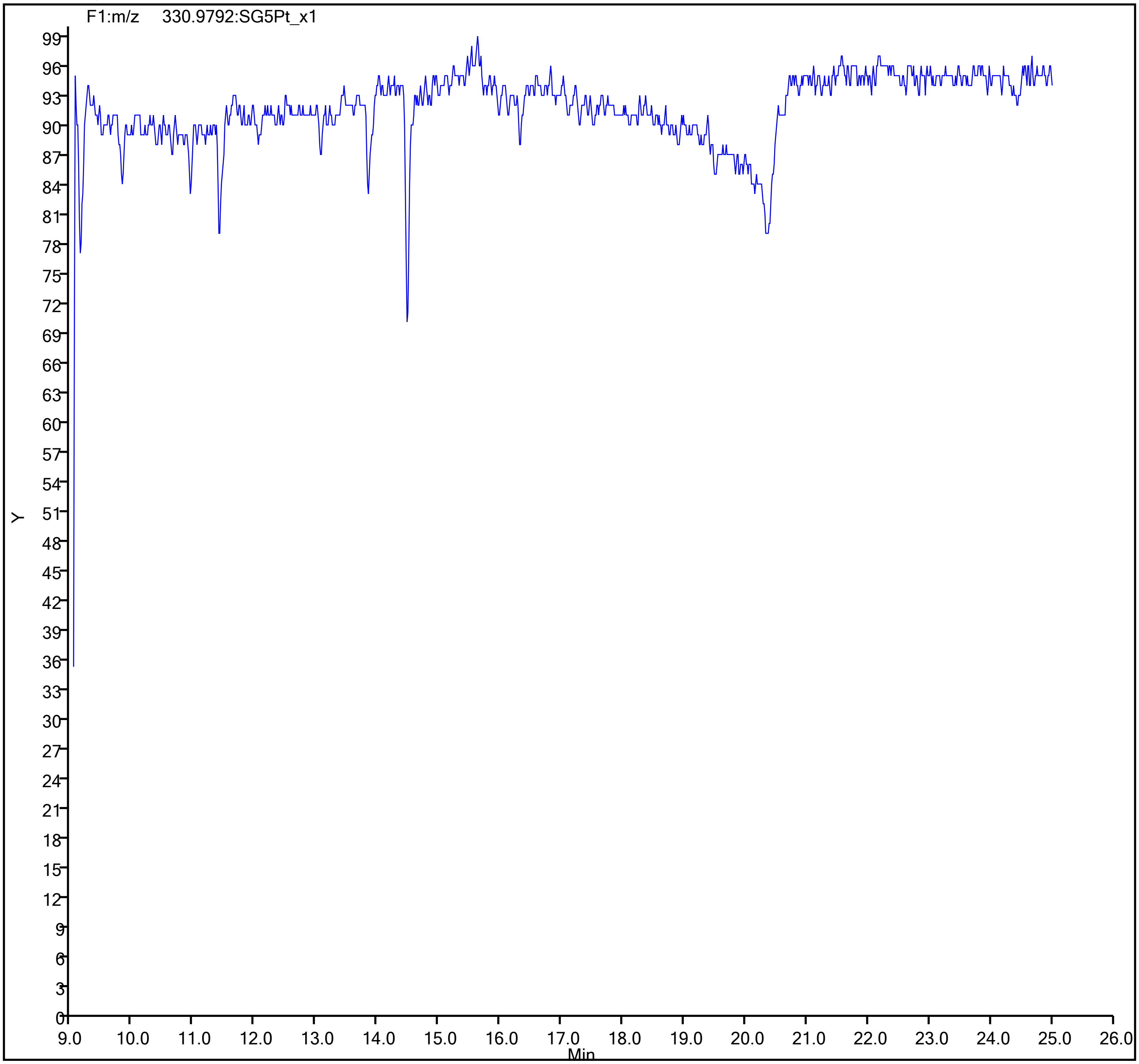

Report Date: 08-Oct-2020 15:23:46 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 23-Sep-2020 09:18:18 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 092320A WDM HRDXNCP_00040
Misc. Info.: 23SE203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:23:45 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:21:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	15.537	11920321	0.77	0.9534	75.3	65.9	1.619	1.619		RQ
D 13C-2,3,7,8-TCDF	15.522	7586266	1.22	1.4844					0.00	R
A Non-2,3,7,8-sub-TCDF	15.273	12287288	0.77	0.9534	75.2	68.0	1.619	40.4		RQ
S Total TCDF					150.5	133.9	1.619	1.619		RQ
2,3,7,8-TCDD	16.142	4062792	0.81	1.0205	39.3	39.3	0.5556	0.5556		
D 13C-2,3,7,8-TCDD	16.127	4054948	0.68	1.0875					0.00	
A Non-2,3,7,8-sub-TCDD	15.666	9216879	0.77	1.0205	89.1	89.1	0.5556	54.2		
S Total TCDD					128.4	128.4	0.5556	0.5556		
A F1 PeCDFs	17.752	8360569	1.59	0.0000						
A Non-2,3,7,8-sub-PeCDF	20.383	16885459	1.59	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	20.573	20200015	1.53	0.0000						
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	27.525	30804916	1.17	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	27.938	26015521	1.24	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	32.571	12351408	0.99	1.4783						
1,2,3,4,7,8,9-HpCDF	33.677	11342914	0.98	1.3784						
A Non-2,3,7,8-sub-HpCDF	33.124						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	33.422	10745139	1.08	1.0862						
A Non-2,3,7,8-sub-HpCDD	33.339						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	13.481	19088550	0.80							
1,3,6,8-TCDD	14.267	7710164	0.79							
2,3,4,7-TCDF	15.537	13622479	1.02							Ra
1,2,3,7-TCDD	16.036	3605207	0.78							a
1,2,3,9-TCDF	16.263	5685144	1.02							Ra
1,2,3,9-TCDD	16.278	4534326	0.78							a

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	17.064	2419234								a
1,2,8,9-TCDF	17.064	7908176	0.92							Ra
1,3,4,6,8-PeCDF	17.322	8360569	1.59							a
1,2,4,7,9-PeCDD	18.814	5387577	1.53							a
1,2,3,8,9-PeCDD	22.332	14812438	1.53							a
1,2,3,8,9-PeCDF	22.509	10366091								a
1,2,3,4,6,8-HxCDF	24.429	17107101	1.19							a
1,2,4,6,7,9-HxCDD	25.734	13711264	1.26							a
1,2,3,4,6,7-HxCDD	30.075	12304257	1.22							a
1,2,3,4,8,9-HxCDF	30.621	13697815	1.15							a
1,2,3,4,6,7,9-HpCDD	32.863	11513487	1.04							
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 23-Sep-2020 09:18:18 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 092320A WDM HRDXNCP_00040
Misc. Info.: 23SE203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 08-Oct-2020 15:23:45 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1622

First Level Reviewer: arghestanis Date: 06-Oct-2020 11:21:28

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											RQ
303.9016	15.537	15.516	1	1.001	6887834	1765939	12611	31527	140		
	Empc Correction				5185676	1343221	12611	31527	107		
305.8987	15.537	15.516	1	1.001	6734645	1744444	19537	48842	89	1.02(0.65-0.89)	
13C-2,3,7,8-TCDF											R
315.9419	15.522	15.522	0	1.000	4168071	1149016	7846	19615	146		
317.9389	15.522	15.522	0	1.000	3418195	933802	2465	6162	379	1.22(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.263	15.273	59	1.048	2869832	761629	12611	31527	60		
	Empc Correction				2167790	583204	12611	31527	46		
305.8987	16.263	15.273	59	1.048	2815312	757409	19537	48842	39	1.02(0.65-0.89)	
303.9016	17.064	15.273	107	1.099	3781517	920484	12611	31527	73		
	Empc Correction				3177527	743577	12611	31527	59		
305.8987	17.064	15.273	107	1.099	4126659	965685	19537	48842	49	0.92(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.142	16.121	1	1.001	1822493	501918	2675	6687	188		
321.8936	16.142	16.121	1	1.001	2240299	604136	3236	8090	187	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.127	16.127	0	1.000	1643218	420852	3449	8622	122		
333.9339	16.127	16.127	0	1.000	2411730	621594	1645	4112	378	0.68(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	16.036	15.666	22	0.994	1579121	434645	2675	6687	162		
321.8936	16.036	15.666	22	0.994	2026086	556043	3236	8090	172	0.78(0.65-0.89)	
319.8965	17.064	15.666	84	1.058	2419234	567985	2675	6687	212		
321.8936	17.064	15.666	84	1.058	3192438	763322	3236	8090	236	0.76(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A F1 PeCDFs											
339.8597	17.322	17.752	-26	1.000	5129512	1244550	664	1660	1874		
341.8567	17.322	17.752	-26	1.000	3231057	783712	711	1777	1102	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.509	20.383	127	1.000	10366091	1681445	2425	6062	693		
341.8567	22.509	20.383	127	1.000	6519368	1047742	1687	4217	621	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	18.814	20.573	-105	1.000	3257347	626904	3100	7750	202		
357.8516	18.814	20.573	-105	1.000	2130230	420061	1805	4512	233	1.53(1.32-1.78)	
355.8546	22.332	20.573	105	1.000	8961762	1440417	3100	7750	465		
357.8516	22.332	20.573	105	1.000	5850676	939262	1805	4512	520	1.53(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	24.429	27.525	-185	1.000	9281842	1414478	2560	6400	553		
375.8178	24.429	27.525	-185	1.000	7825259	1154956	2084	5210	554	1.19(1.05-1.43)	
373.8208	30.621	27.525	185	1.000	7331966	1277485	2560	6400	499		
375.8178	30.621	27.525	185	1.000	6365849	1233505	2084	5210	592	1.15(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	25.734	27.938	-132	1.000	7636793	1062732	1854	4635	573		
391.8127	25.734	27.938	-132	1.000	6074471	842917	1914	4785	440	1.26(1.05-1.43)	
389.8157	30.075	27.938	128	1.000	6764158	1055079	1854	4635	569		
391.8127	30.075	27.938	128	1.000	5540099	836972	1914	4785	437	1.22(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.571	32.559	1	1.000	6133195	1839476	7125	17812	258		
409.7789	32.571	32.559	1	1.000	6218213	1893732	7435	18587	255	0.99(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.677	33.653	1	1.000	5614902	1692717	7125	17812	238		
409.7789	33.665	33.653	1	1.000	5728012	1825032	7435	18587	245	0.98(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.124						7125	17812			
409.7789	33.124						7435	18587			
1,2,3,4,6,7,8-HpCDD											
423.7766	33.422	33.410	1	1.000	5574302	1828533	9835	24587	186		
425.7737	33.422	33.410	1	1.000	5170837	1808320	6408	16020	282	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						9835	24587			
425.7737	33.339						6408	16020			
1,3,6,8-TCDF											
303.9016	13.481	13.481	0		8471803	2793169	12611	31527	221		
305.8987	13.481	13.481	0		10616747	3486616	19537	48842	178	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	14.267	14.267	0		3400603	1048265	2675	6687	392		
321.8936	14.252	14.267	-1		4309561	1286709	3236	8090	398	0.79(0.65-0.89)	
2,3,4,7-TCDF											Ra
303.9016	15.537	15.537	0		6887834	1765939	12611	31527	140		a
305.8987	15.537	15.537	0		6734645	1744444	19537	48842	89	1.02(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7-TCDD											a
319.8965	16.036	16.036	0		1579121	434645	2675	6687	162		a
321.8936	16.036	16.036	0		2026086	556043	3236	8090	172	0.78(0.65-0.89)	
1,2,3,9-TCDF											Ra
303.9016	16.263	16.263	0		2869832	761629	12611	31527	60		a
305.8987	16.263	16.263	0		2815312	757409	19537	48842	39	1.02(0.65-0.89)	
1,2,3,9-TCDD											a
319.8965	16.278	16.278	0		1981010	476814	2675	6687	178		a
321.8936	16.278	16.278	0		2553316	615930	3236	8090	190	0.78(0.65-0.89)	
1,2,8,9-TCDD											a
319.8965	17.064	17.064	0		2419234	567985	2675	6687	212		a
1,2,8,9-TCDF											Ra
303.9016	17.064	17.064	0		3781517	920484	12611	31527	73		a
305.8987	17.064	17.064	0		4126659	965685	19537	48842	49	0.92(0.65-0.89)	
1,3,4,6,8-PeCDF											a
339.8597	17.322	17.322	0		5129512	1244550	664	1660	1874		a
341.8567	17.322	17.322	0		3231057	783712	711	1777	1102	1.59(1.32-1.78)	
1,2,4,7,9-PeCDD											a
355.8546	18.814	18.814	0		3257347	626904	3100	7750	202		a
357.8516	18.814	18.814	0		2130230	420061	1805	4512	233	1.53(1.32-1.78)	
1,2,3,8,9-PeCDD											a
355.8546	22.332	22.332	0		8961762	1440417	3100	7750	465		a
357.8516	22.332	22.332	0		5850676	939262	1805	4512	520	1.53(1.32-1.78)	
1,2,3,8,9-PeCDF											a
339.8597	22.509	22.509	0		10366091	1681445	2425	6062	693		a
1,2,3,4,6,8-HxCDF											a
373.8208	24.429	24.429	0		9281842	1414478	2560	6400	553		a
375.8178	24.429	24.429	0		7825259	1154956	2084	5210	554	1.19(1.05-1.43)	
1,2,4,6,7,9-HxCDD											a
389.8157	25.734	25.734	0		7636793	1062732	1854	4635	573		a
391.8127	25.734	25.734	0		6074471	842917	1914	4785	440	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											a
389.8157	30.075	30.075	0		6764158	1055079	1854	4635	569		a
391.8127	30.075	30.075	0		5540099	836972	1914	4785	437	1.22(1.05-1.43)	
1,2,3,4,8,9-HxCDF											a
373.8208	30.621	30.621	0		7331966	1277485	2560	6400	499		a
375.8178	30.621	30.621	0		6365849	1233505	2084	5210	592	1.15(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	32.863	32.863	0		5869938	1847958	9835	24587	188		
425.7737	32.863	32.863	0		5643549	1802836	6408	16020	281	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

a - User Assigned ID

Reagents:

HRDXNCP_00042	Amount Added: 1.00	Units: mL

Report Date: 08-Oct-2020 15:23:46 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	23-Sep-2020 09:18:18	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	419031	Lims Sample ID:	1

Non-2,3,7,8-sub-TCDF, RT: 15.273

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	40.000	7586266	2082818

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		40.000	7586266	2082818

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.263	2869832	761629	2815312	757409	31.4	1.02	RQ
16.263	2167790	583204	2815312	757409	27.6		Empc Correction
17.064	3781517	920484	4126659	965685	43.7	0.92	RQ
17.064	3177527	743577	4126659	965685	40.4		Empc Correction
Signal Totals:							
	5345317	1326781	6941971	1723094			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13593320	3405207				0.96	RQ
	12287288	3049875					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 75.177 = (13593320 * 40.000) / (7586266 * 0.953)

Empc Amount: 67.954 = (12287288 * 40.000) / (7586266 * 0.953)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	23-Sep-2020 09:18:18	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	419031	Lims Sample ID:	1

Non-2,3,7,8-sub-TCDD, RT: 15.666

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	40.000	4054948	1042446

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		40.000	4054948	1042446

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.036	1579121	434645	2026086	556043	34.9	0.78	
17.064	2419234	567985	3192438	763322	54.2	0.76	
Signal Totals:							
	3998355	1002630	5218524	1319365			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	9216879	2321995				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 89.096 = (9216879 * 40.000) / (4054948 * 1.020)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Lims ID: WDM
Client ID:
Inject. Date: 23-Sep-2020 09:18:18
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 419031
Lims Sample ID: 1

F1 PeCDFs, RT: 17.752

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079				
2,3,4,7,8-PeCDF	1.097				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
17.322	5129512	1244550	3231057	783712		1.59	
Signal Totals:							
	5129512	1244550	3231057	783712			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8360569	2028262				1.59	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (8360569 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Lims ID: WDM
Client ID:
Inject. Date: 23-Sep-2020 09:18:18 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 419031 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 20.383

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079				
2,3,4,7,8-PeCDF	1.097				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.509	10366091	1681445	6519368	1047742		1.59	
Signal Totals:							
	10366091	1681445	6519368	1047742			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16885459	2729187				1.59	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (16885459 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	23-Sep-2020 09:18:18	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	419031	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDD, RT: 20.573

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.140				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
18.814	3257347	626904	2130230	420061		1.53	
22.332	8961762	1440417	5850676	939262		1.53	
Signal Totals:							
	12219109	2067321	7980906	1359323			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	20200015	3426644				1.53	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (20200015 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Lims ID: WDM
Client ID:
Inject. Date: 23-Sep-2020 09:18:18 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 419031 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDF, RT: 27.525

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255				
1,2,3,6,7,8-HxCDF	1.210				
2,3,4,6,7,8-HxCDF	1.218				
1,2,3,7,8,9-HxCDF	1.232				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
24.429	9281842	1414478	7825259	1154956		1.19	
30.621	7331966	1277485	6365849	1233505		1.15	
Signal Totals:							
	16613808	2691963	14191108	2388461			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	30804916	5080424				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (30804916 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Lims ID: WDM
Client ID:
Inject. Date: 23-Sep-2020 09:18:18 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 419031 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 27.938

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254				
1,2,3,6,7,8-HxCDD	1.112				
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
25.734	7636793	1062732	6074471	842917		1.26	
30.075	6764158	1055079	5540099	836972		1.22	
Signal Totals:							
	14400951	2117811	11614570	1679889			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	26015521	3797700				1.24	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (26015521 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

TCDF

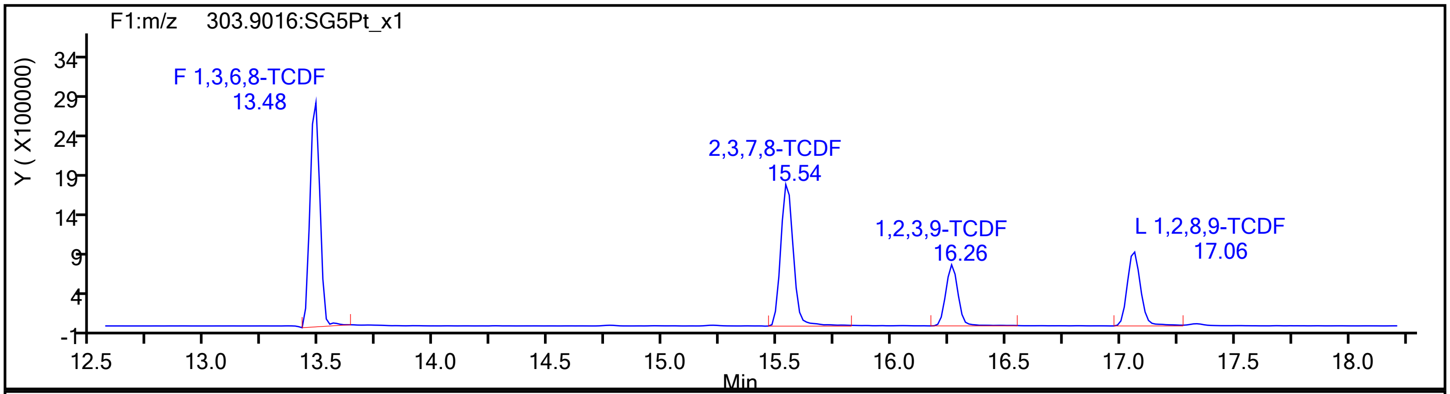

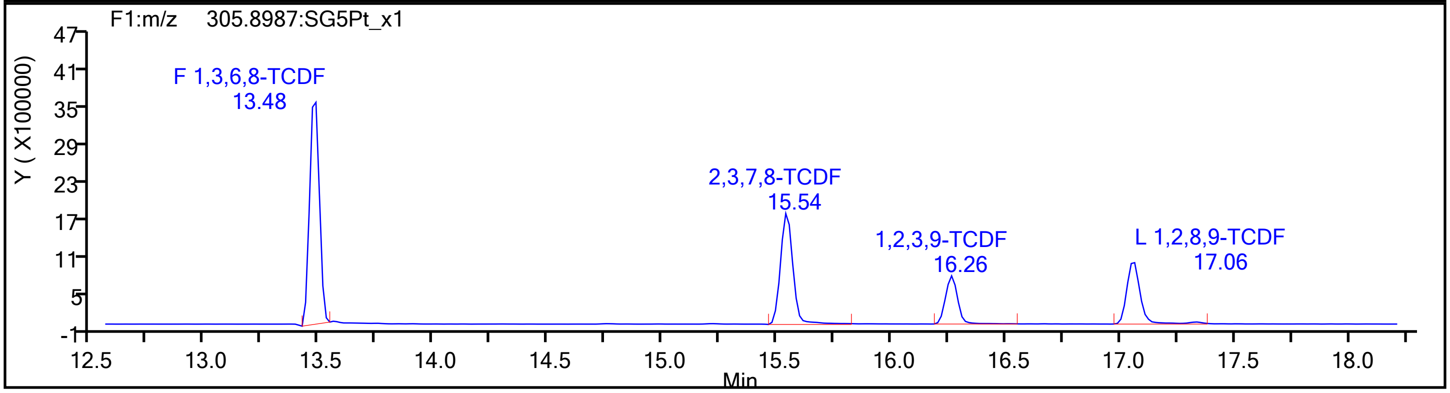

TCDF Standards

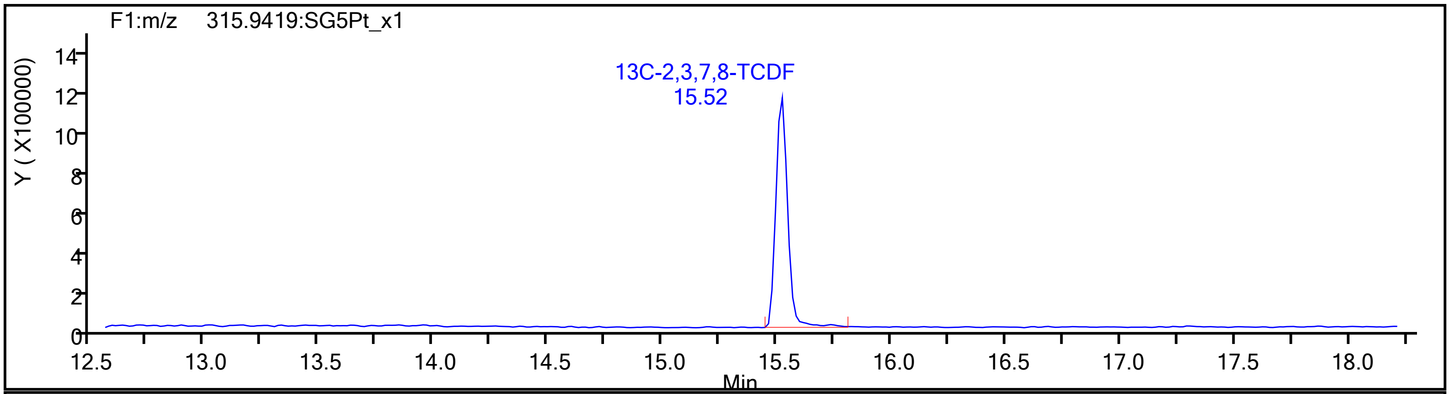

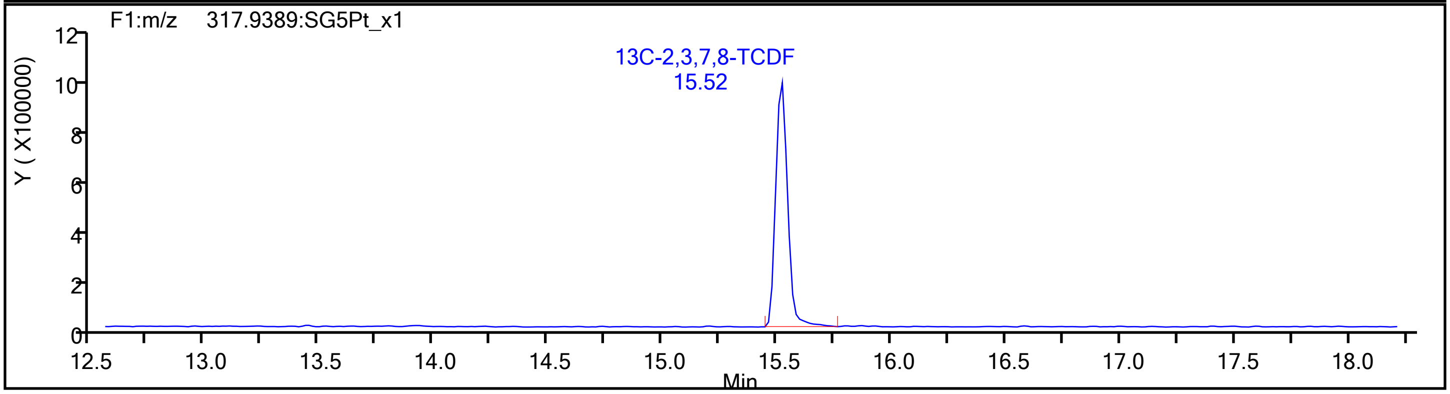

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d

Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

TCDF

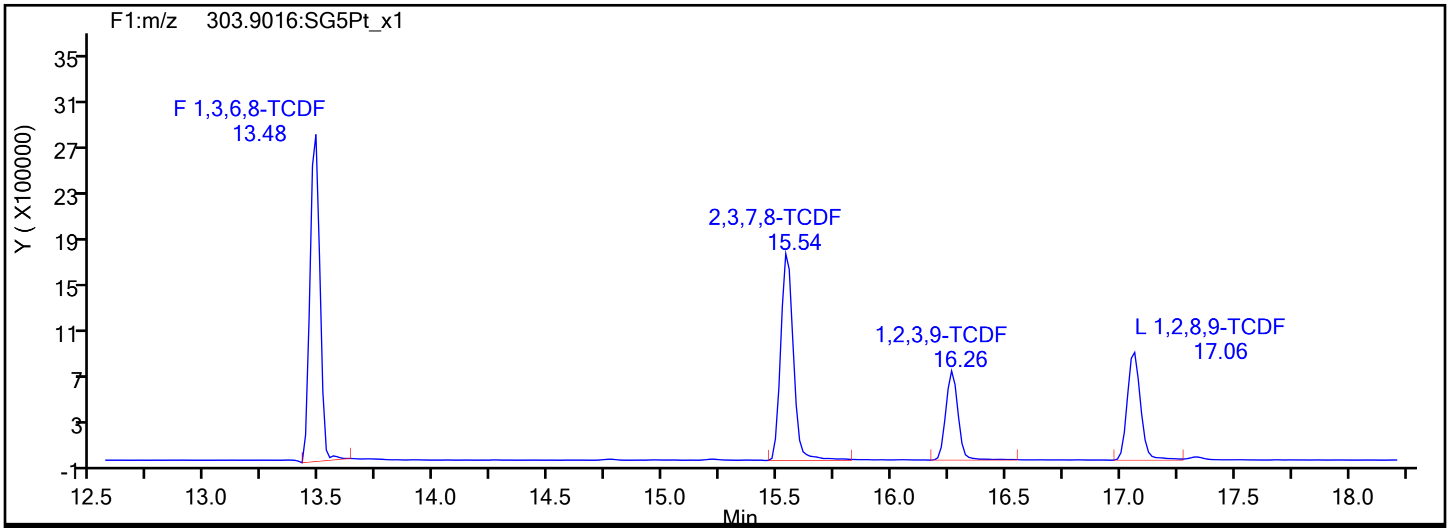

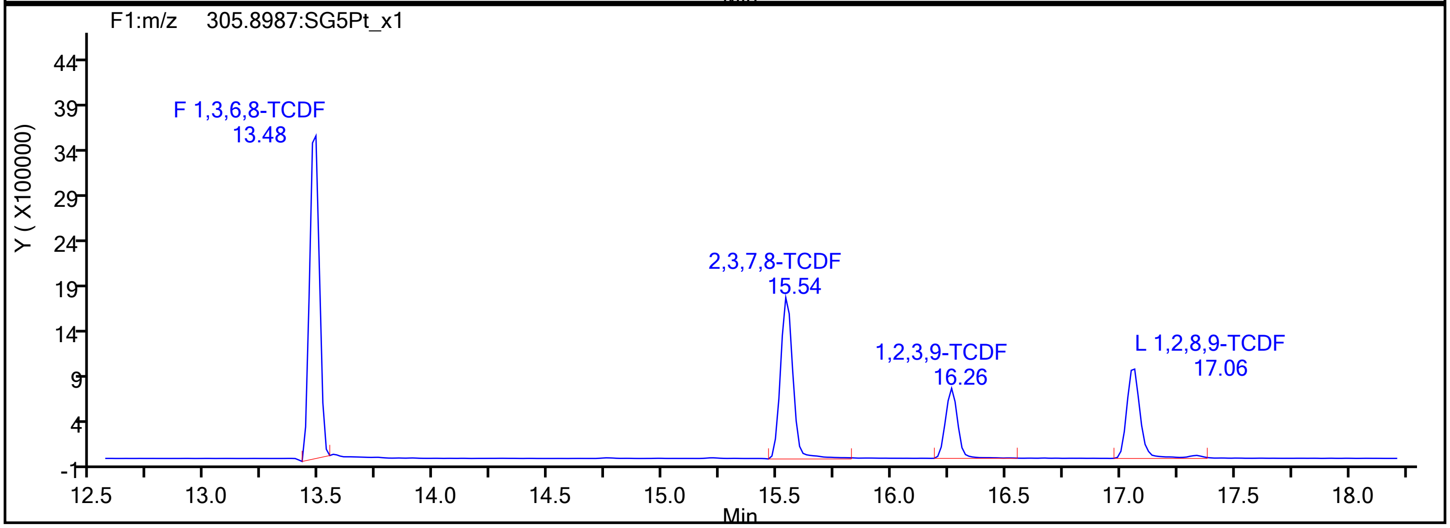

TCDF Interference Mass

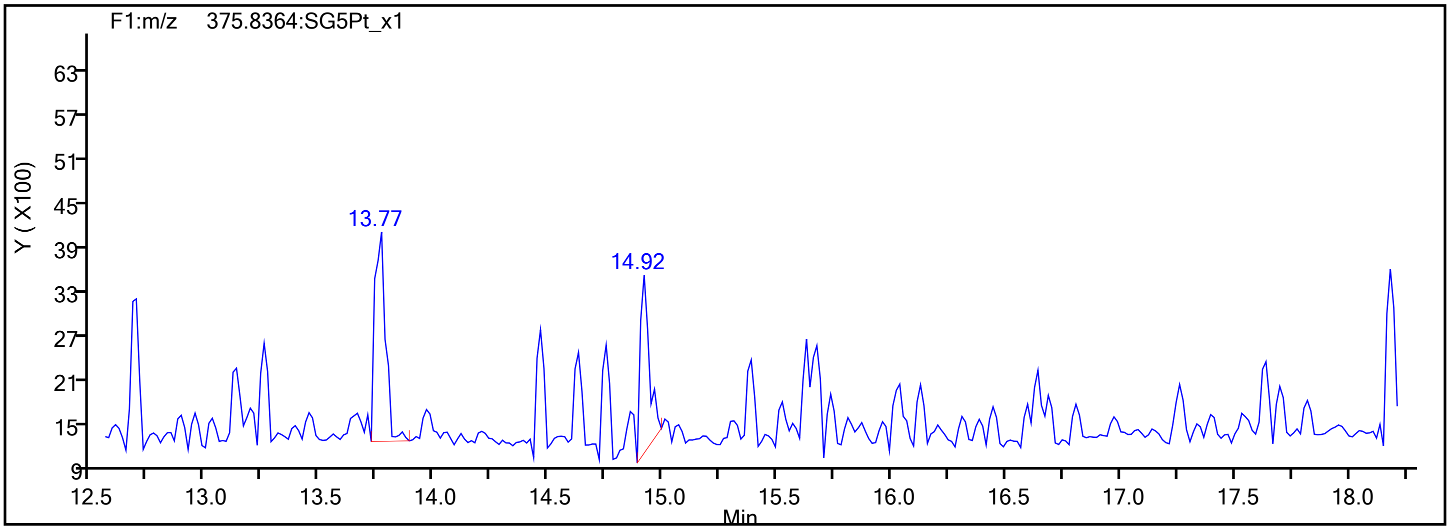

Report Date: 08-Oct-2020 15:23:46 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Injection Date: 23-Sep-2020 09:18:18
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 419031
Sample Line#: 1
Column Type:
Column Dia:

TCDD

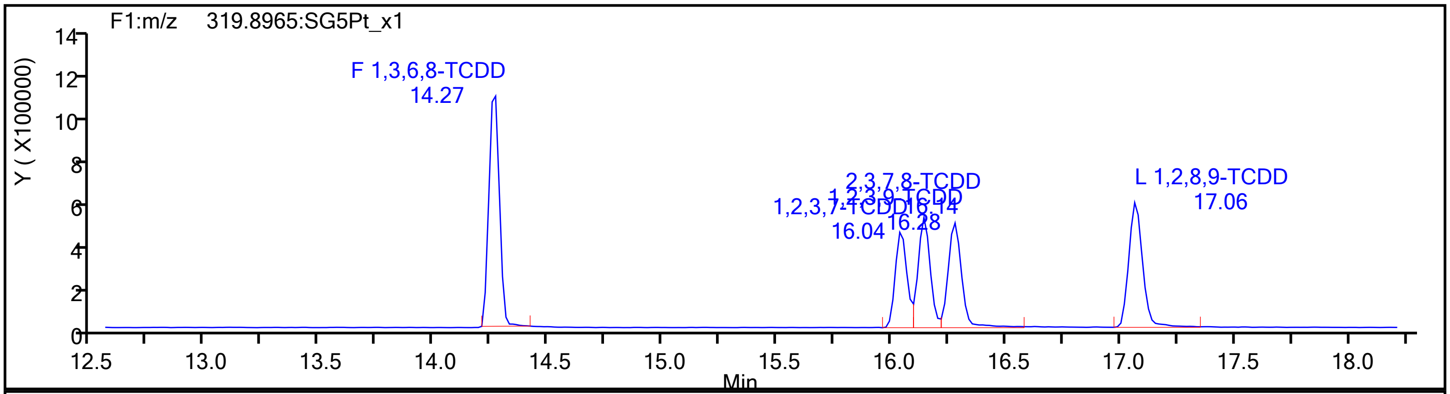

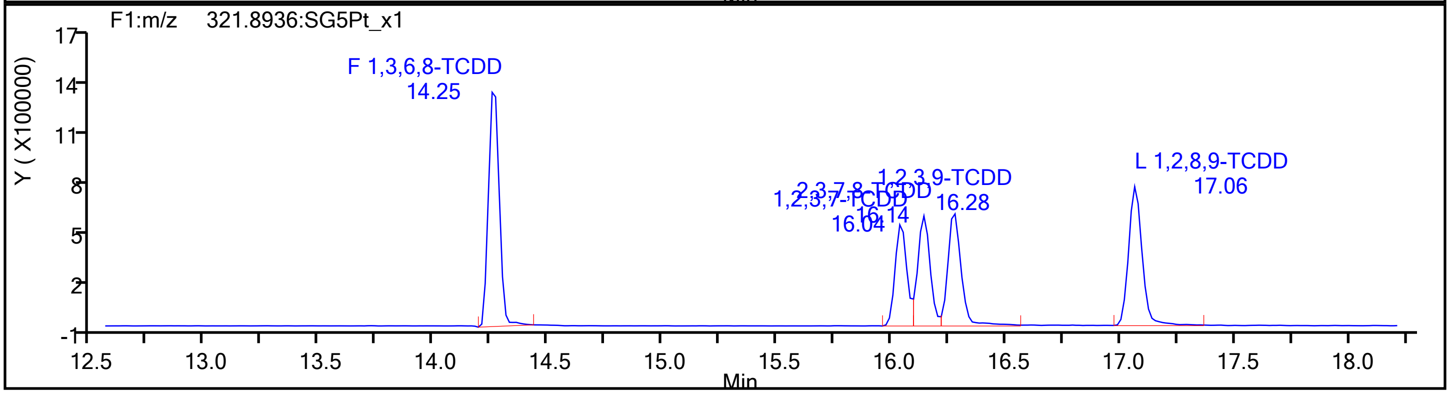

TCDD Standards

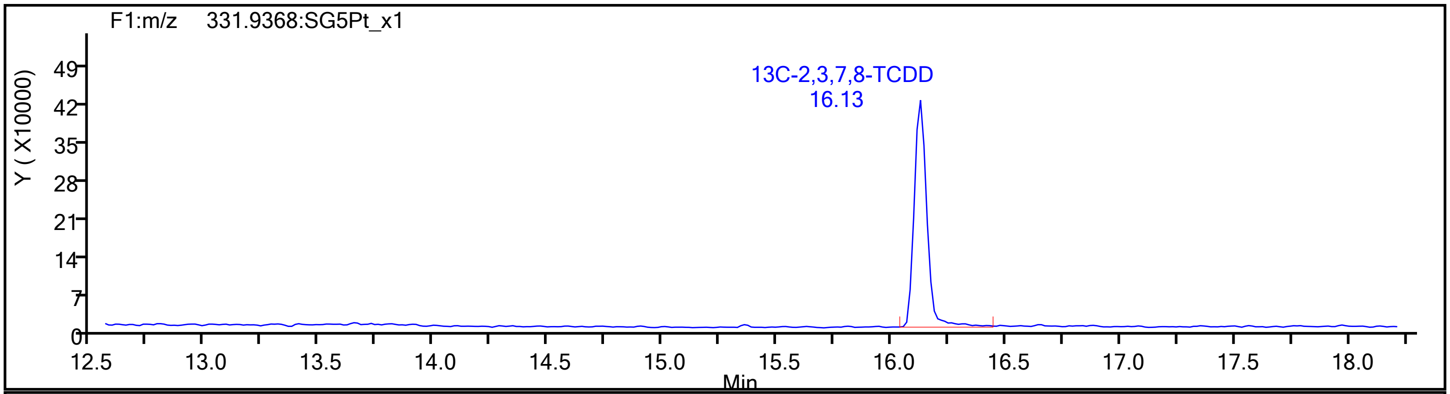

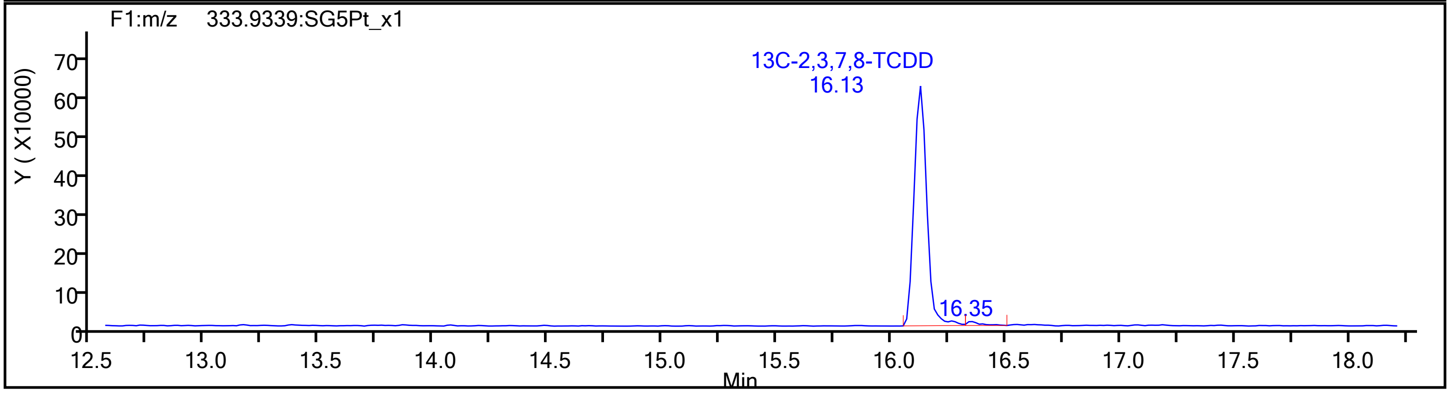

Report Date: 08-Oct-2020 15:23:46 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

37Cl4-TCDD

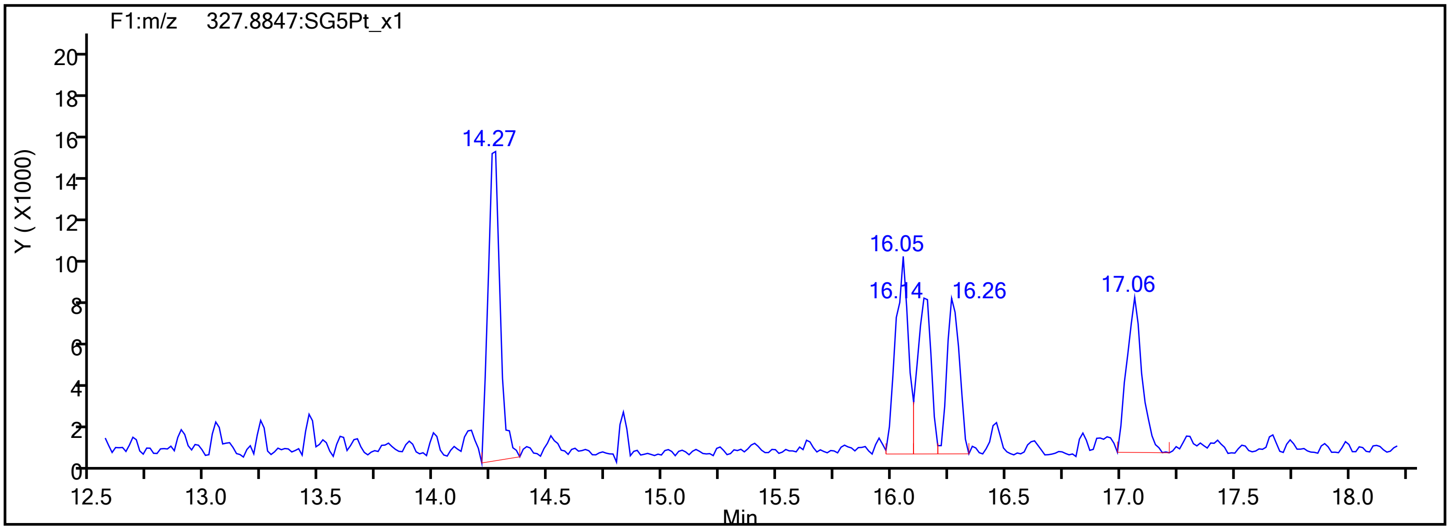

37Cl4-TCDD Standards

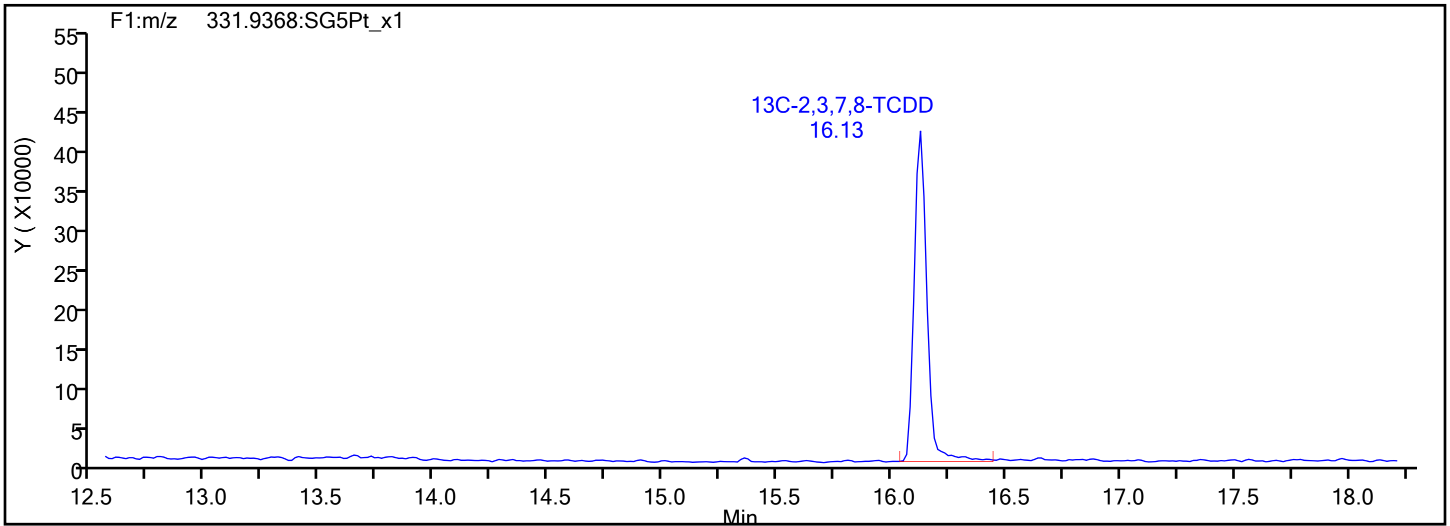

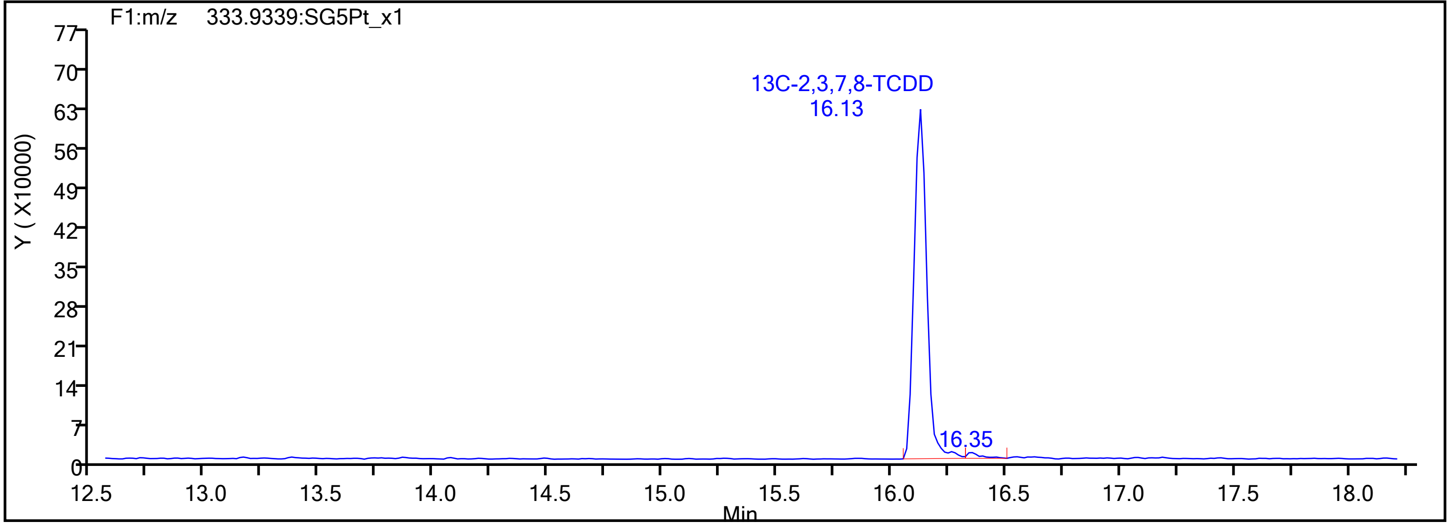

Report Date: 08-Oct-2020 15:23:46 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d

Injection Date: 23-Sep-2020 09:18:18 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 419031 Sample Line#: 1

Column Type: Column Dia:

PeCDF

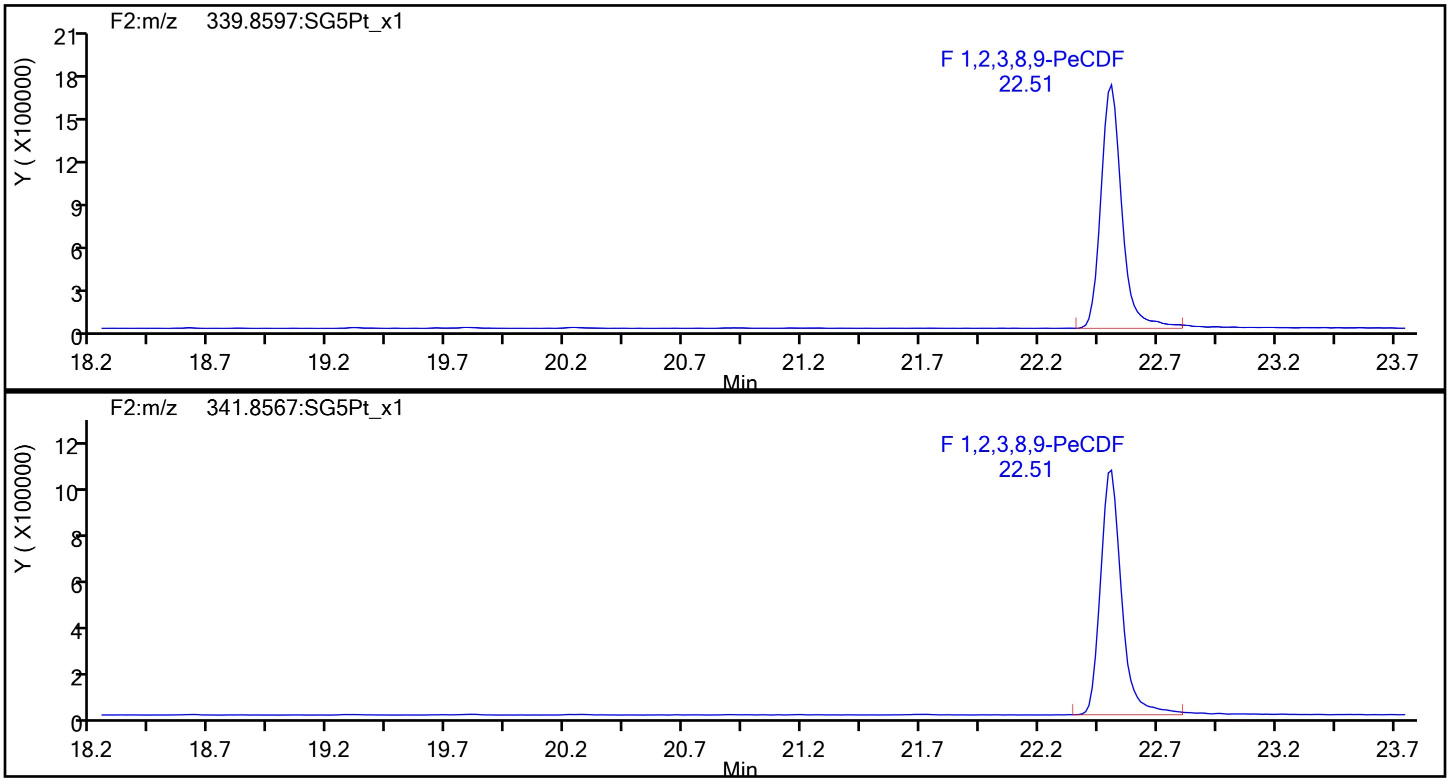

PeCDF Standards

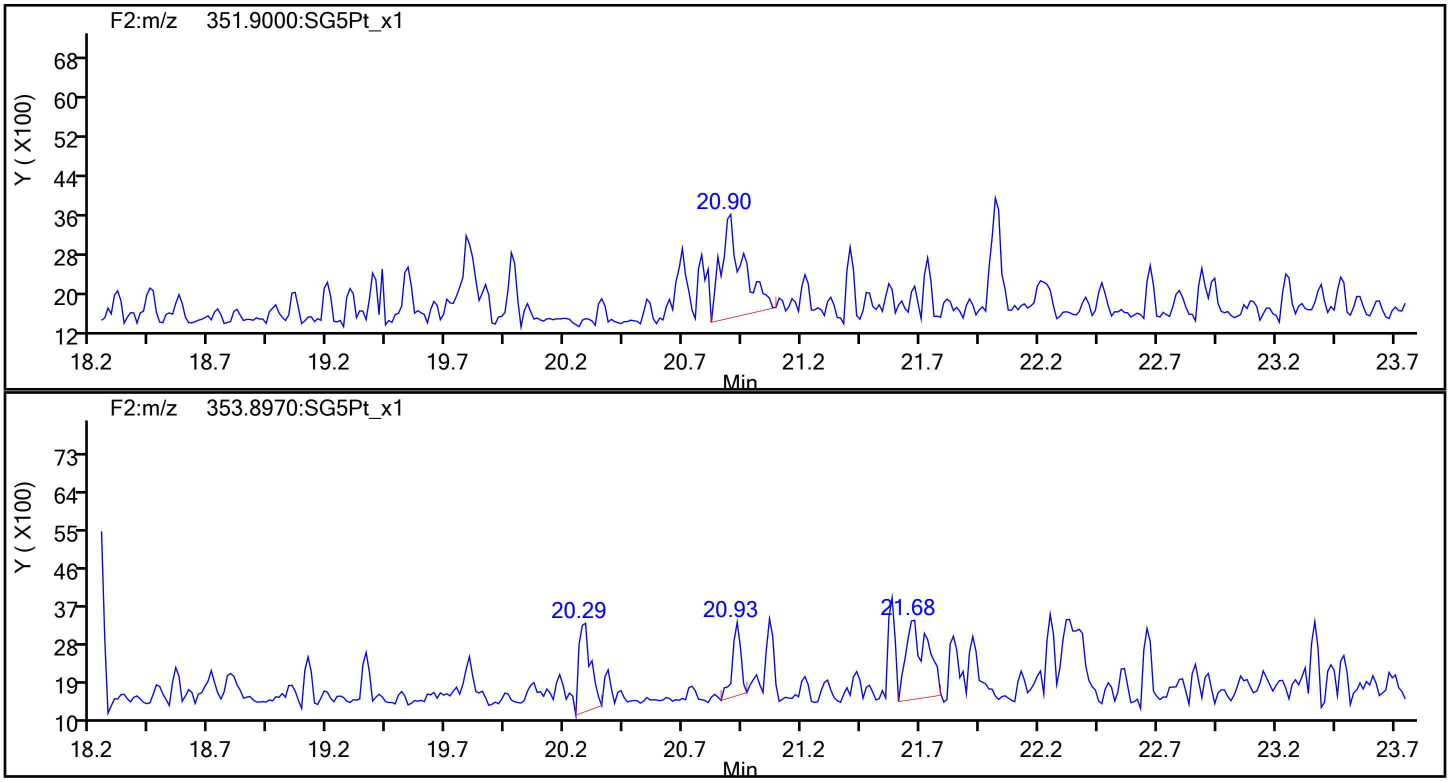

Report Date: 08-Oct-2020 15:23:46 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

PeCDF

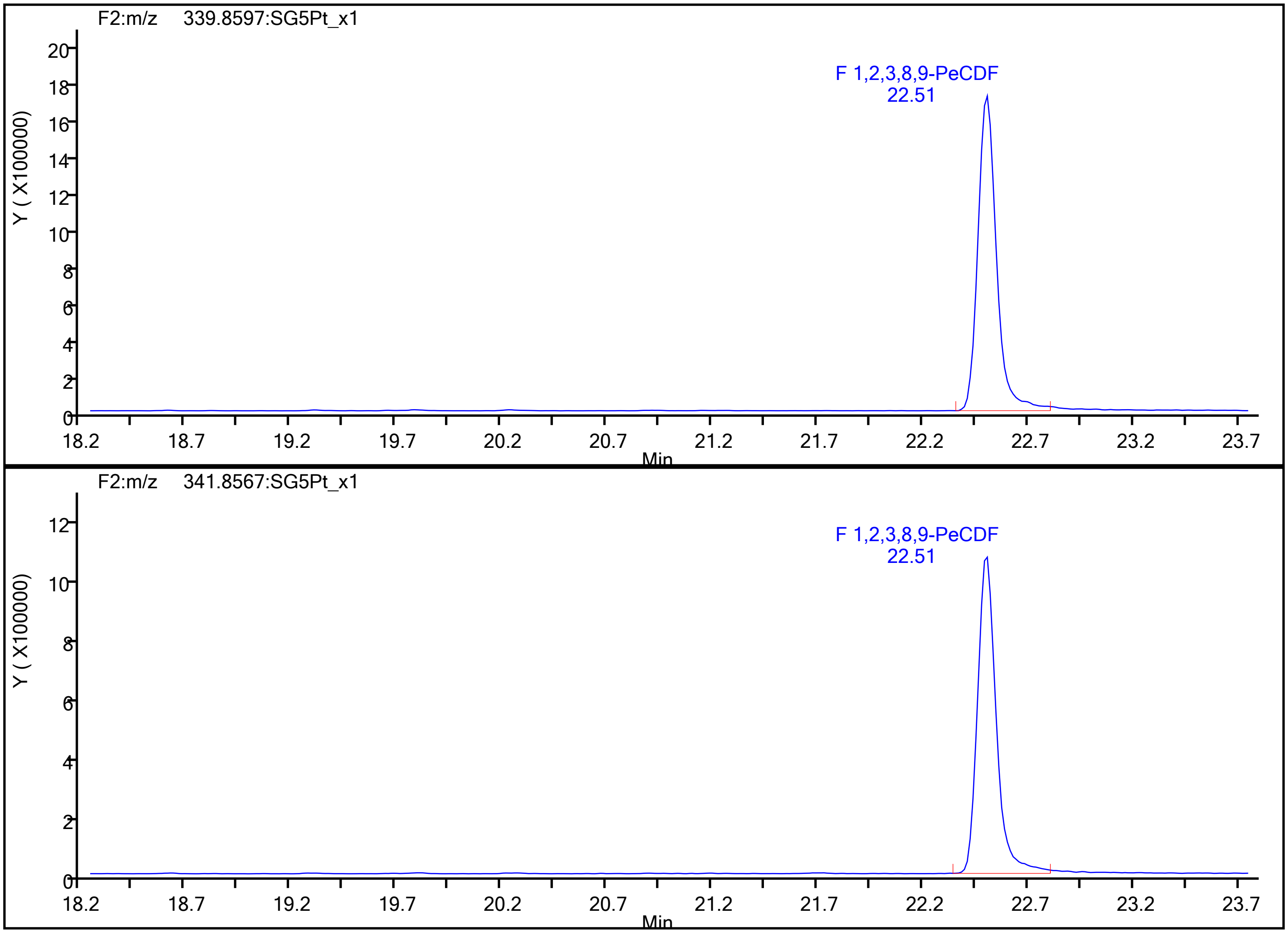

PeCDF Interference Mass

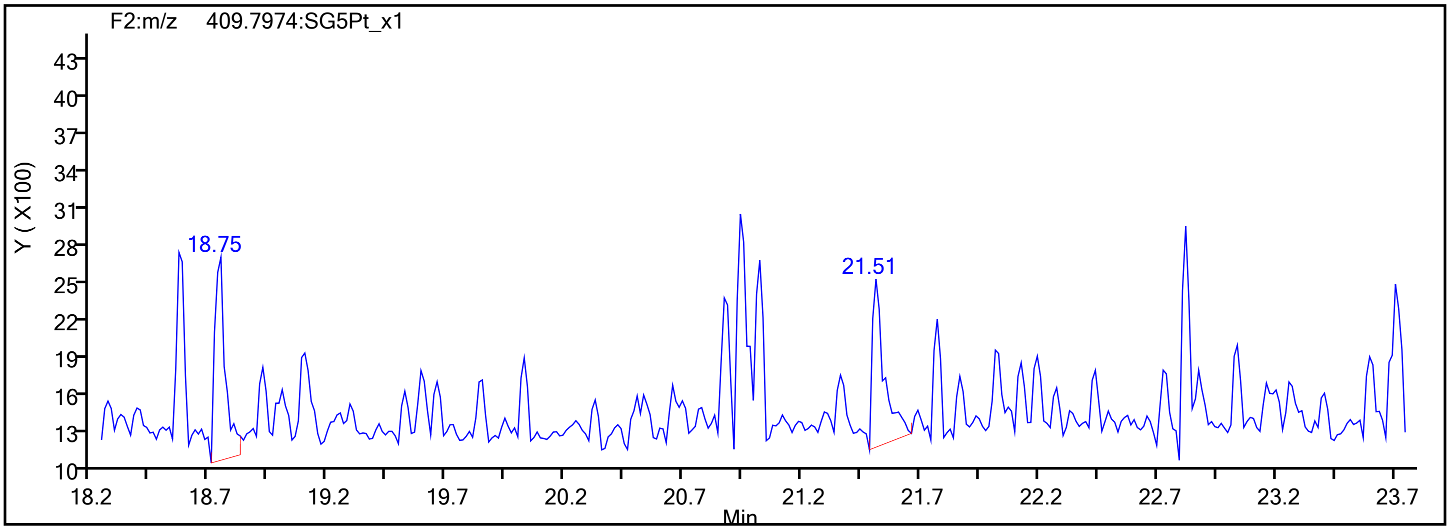

Report Date: 08-Oct-2020 15:23:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Injection Date: 23-Sep-2020 09:18:18
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 419031
Sample Line#: 1
Column Type:
Column Dia:

PeCDD

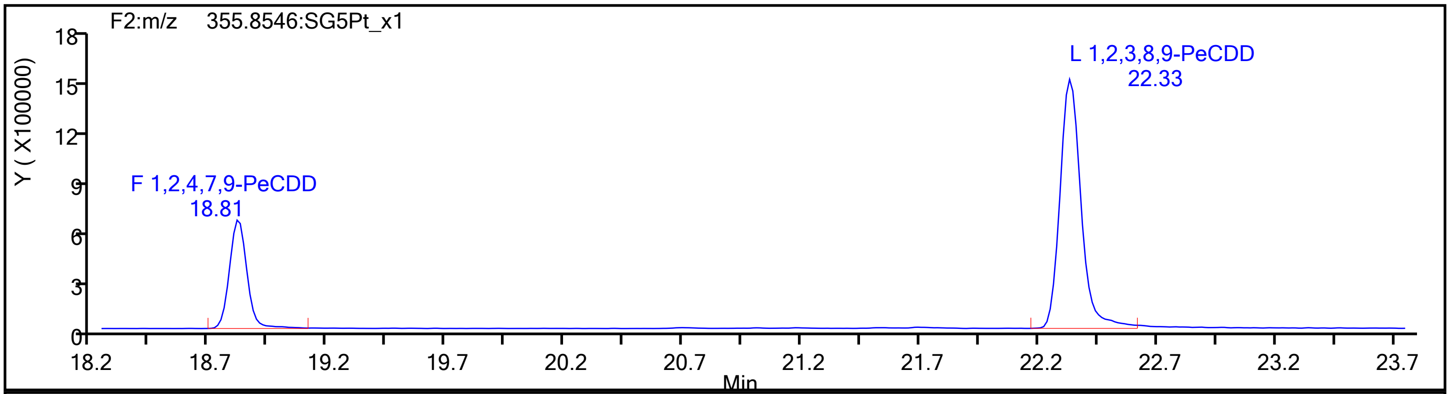

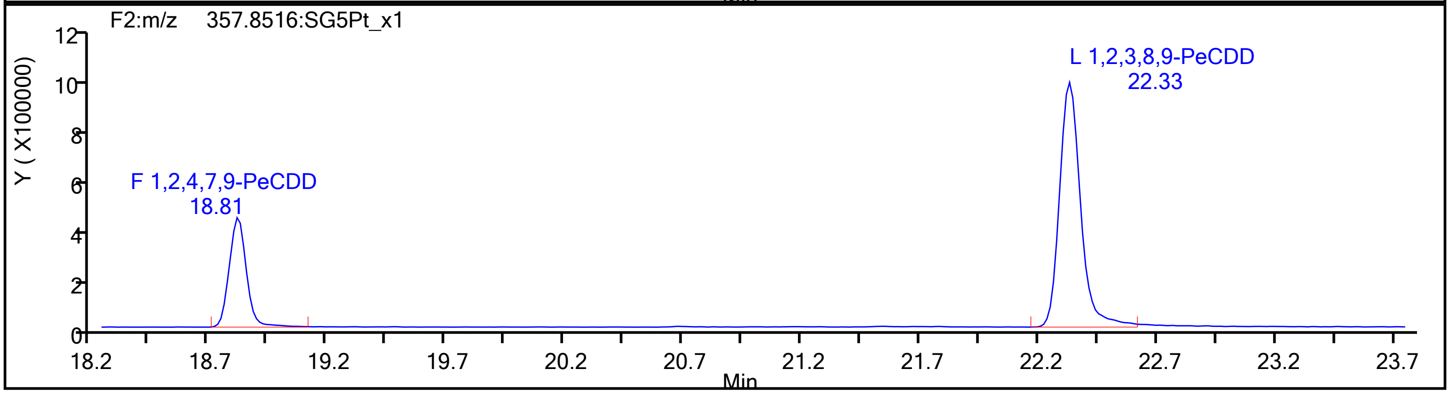

PeCDD Standards

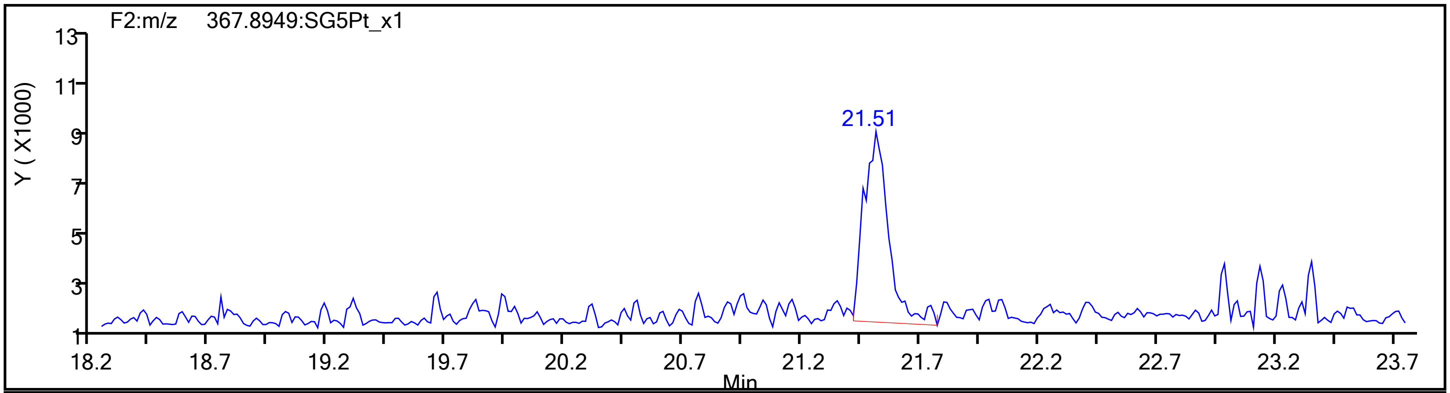

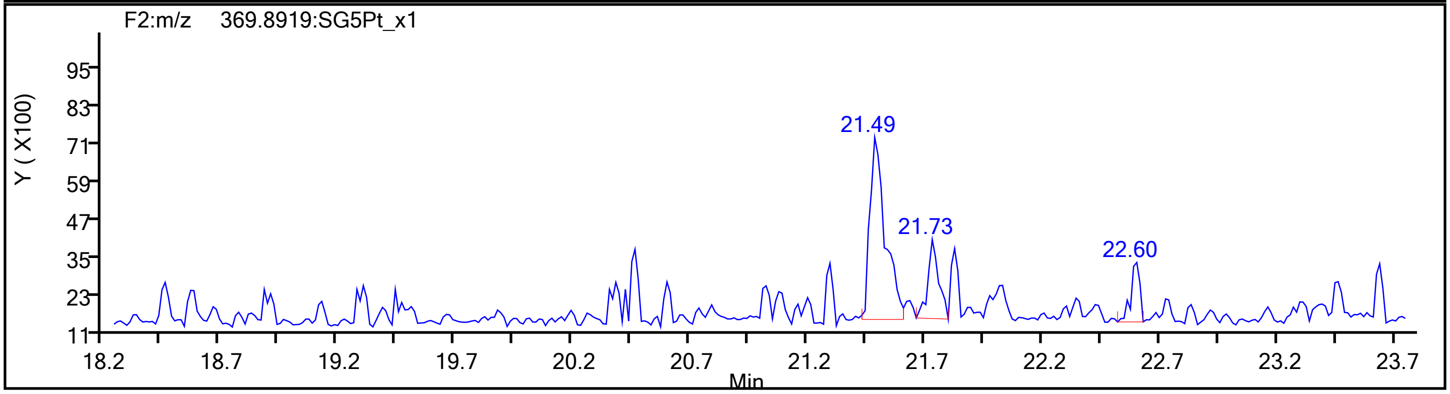

Report Date: 08-Oct-2020 15:23:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

HxCDF

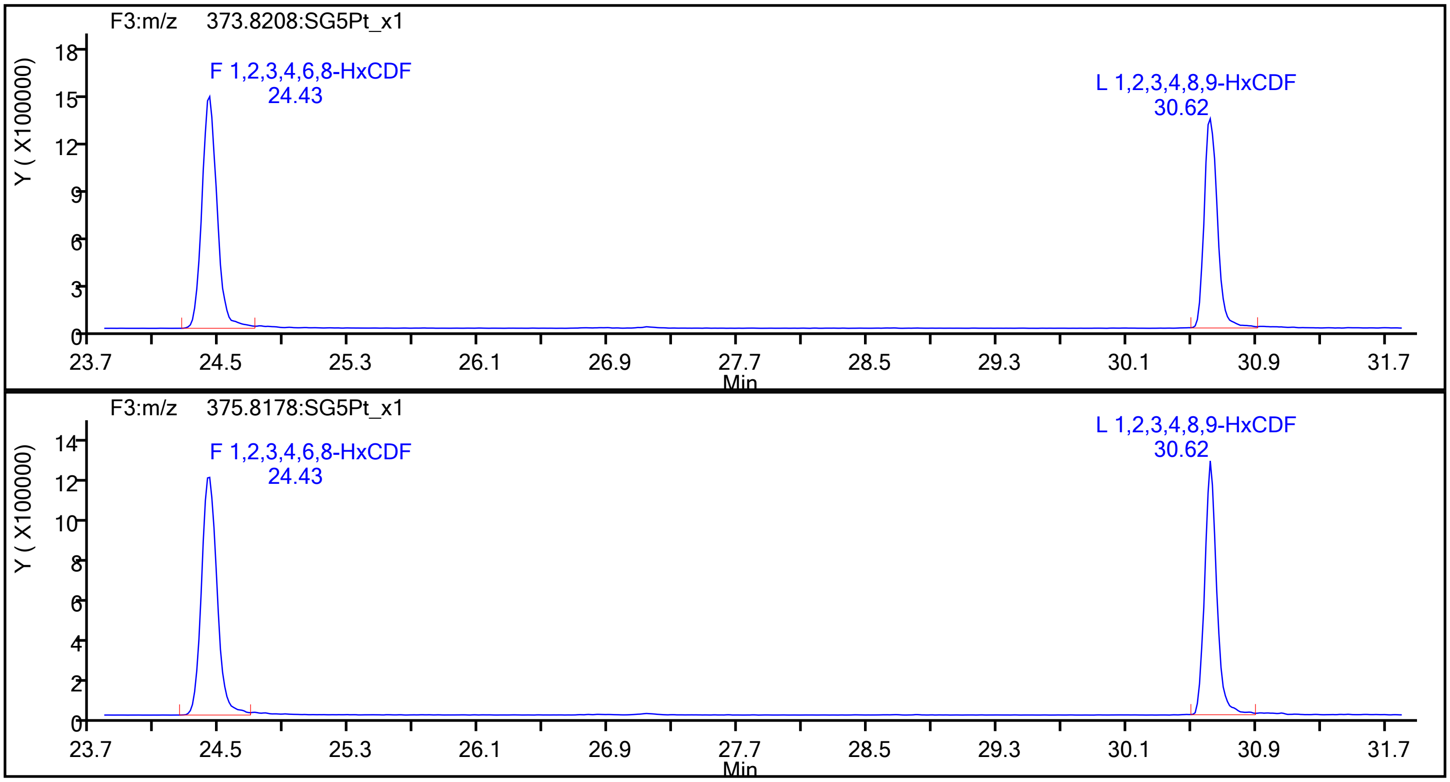

HxCDF Standards

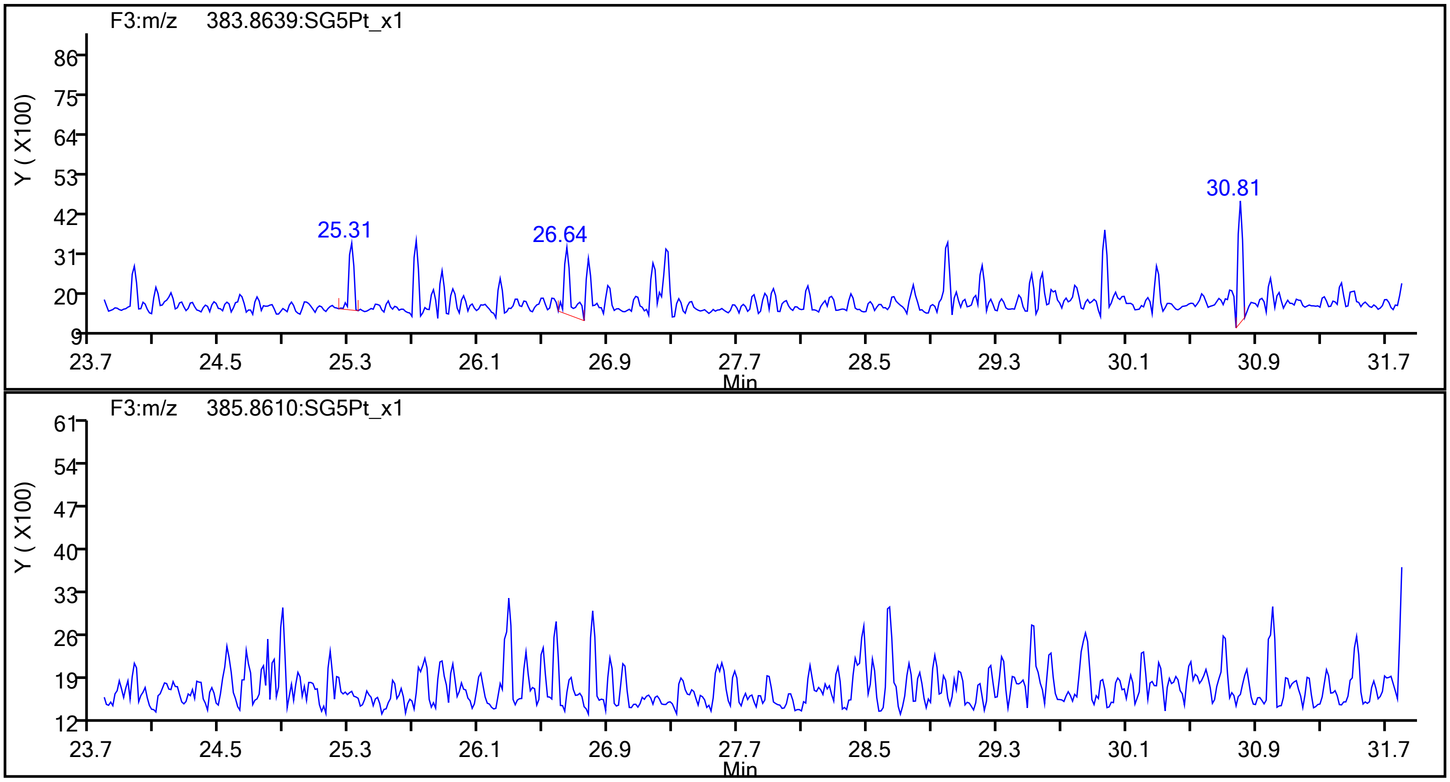

Report Date: 08-Oct-2020 15:23:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Injection Date: 23-Sep-2020 09:18:18
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 419031
Sample Line#: 1
Column Type:
Column Dia:

HxCDF

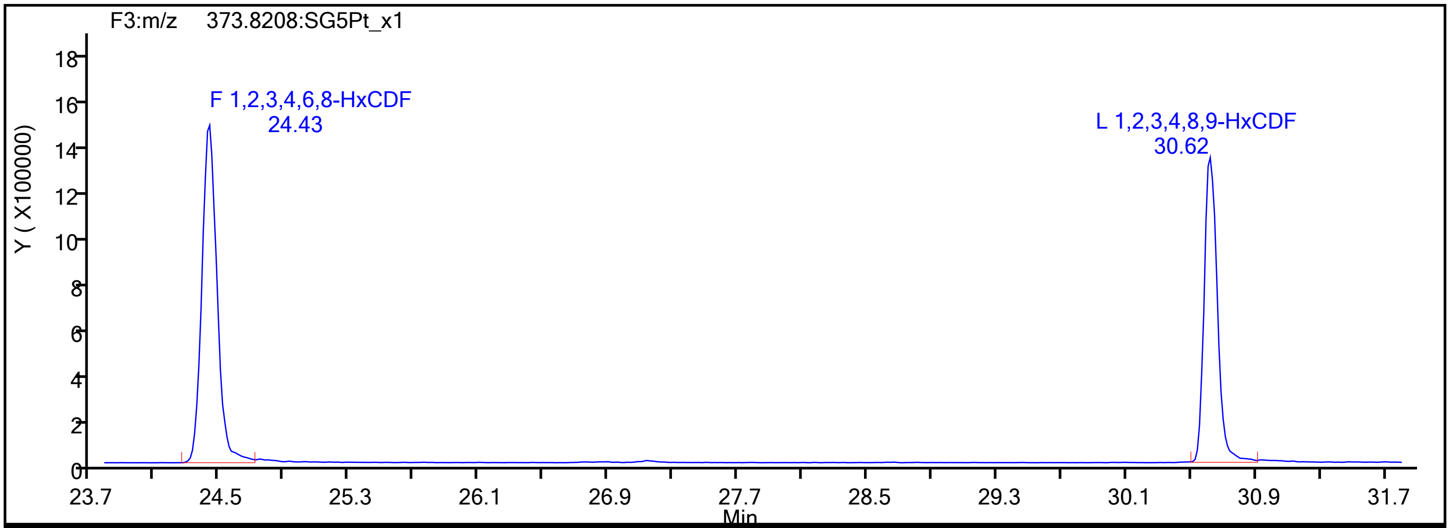

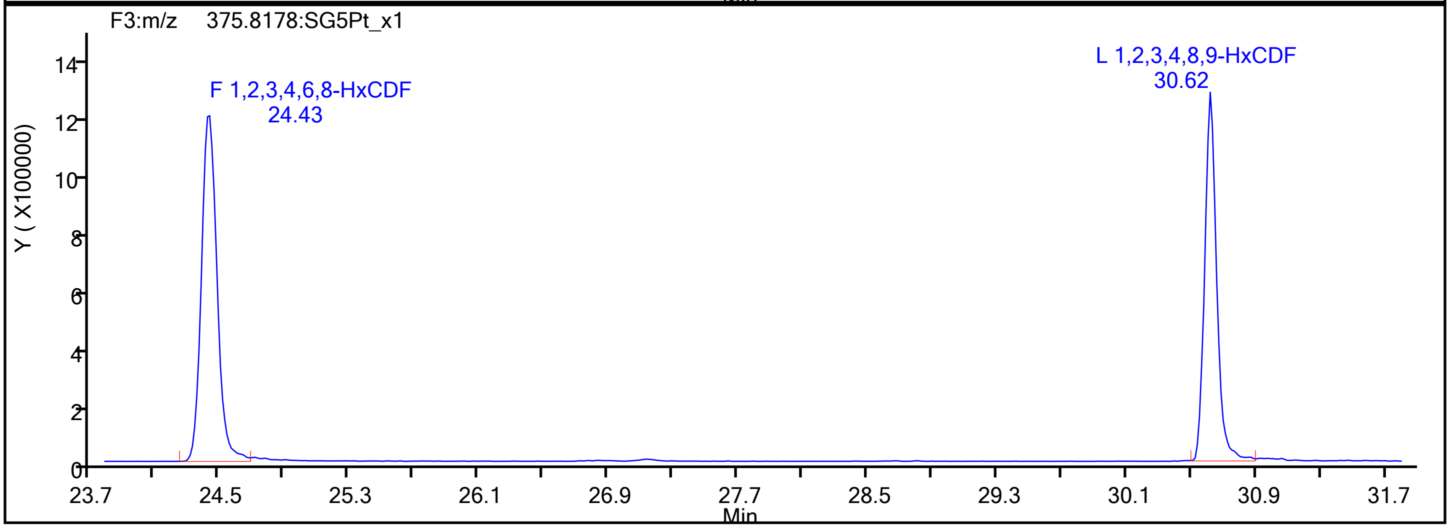

HxCDF Interference Mass

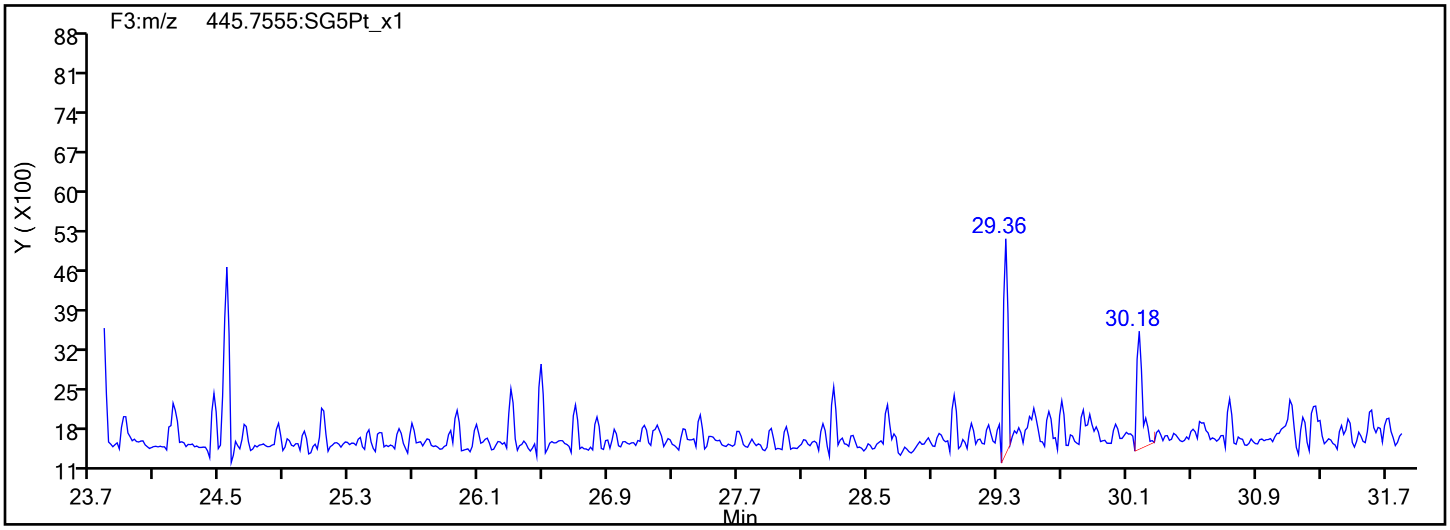

Report Date: 08-Oct-2020 15:23:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

HpCDF

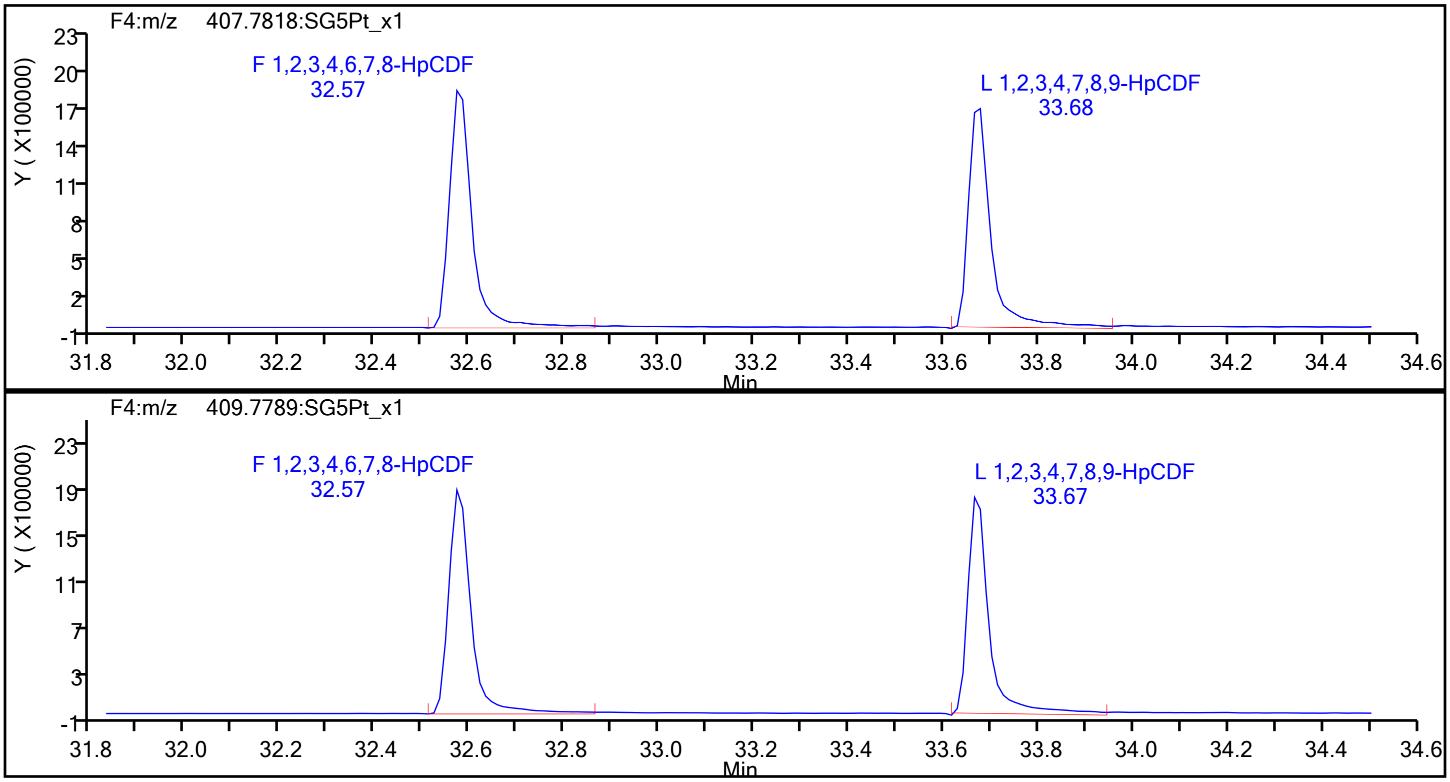

HpCDF Standards

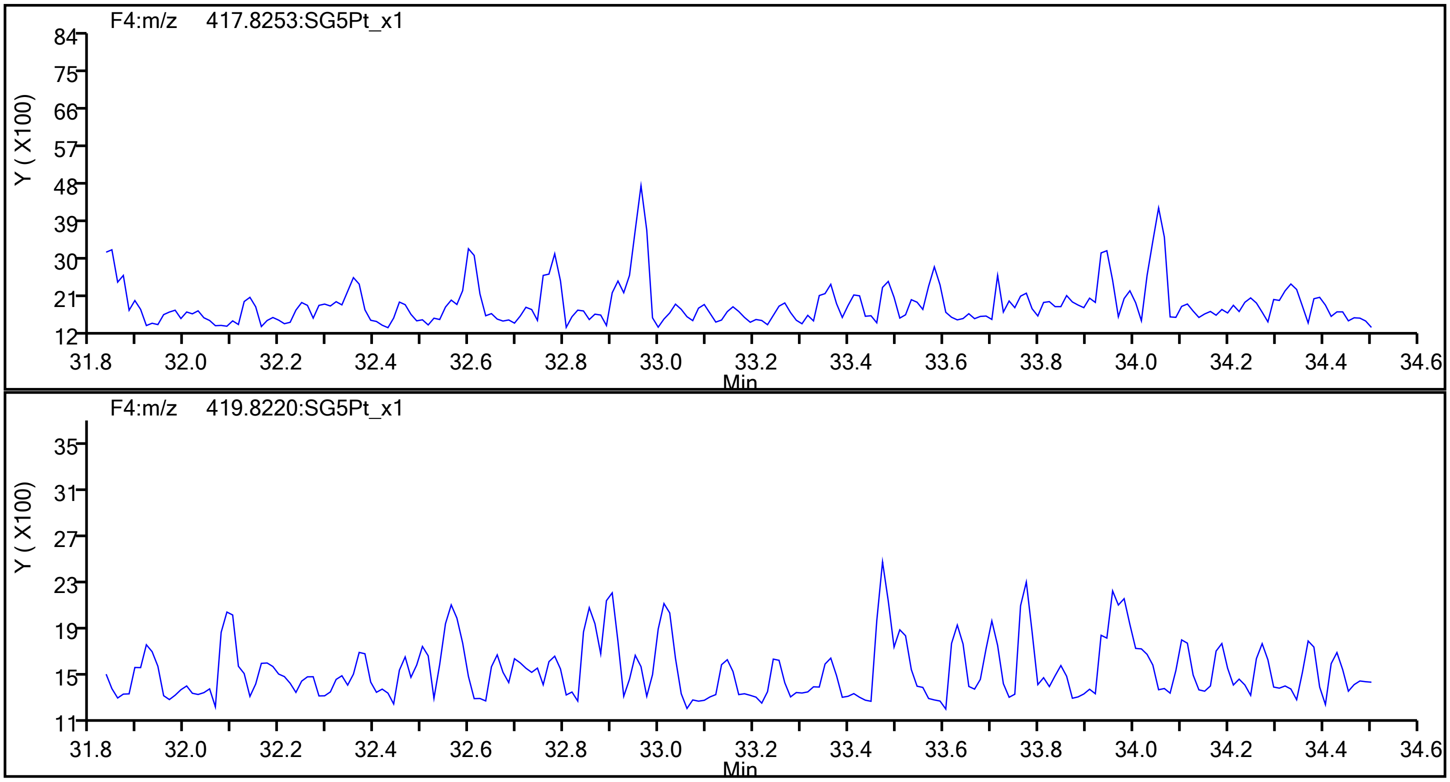

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d
Injection Date: 23-Sep-2020 09:18:18
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 419031
Sample Line#: 1
Column Type:
Column Dia:

HpCDF

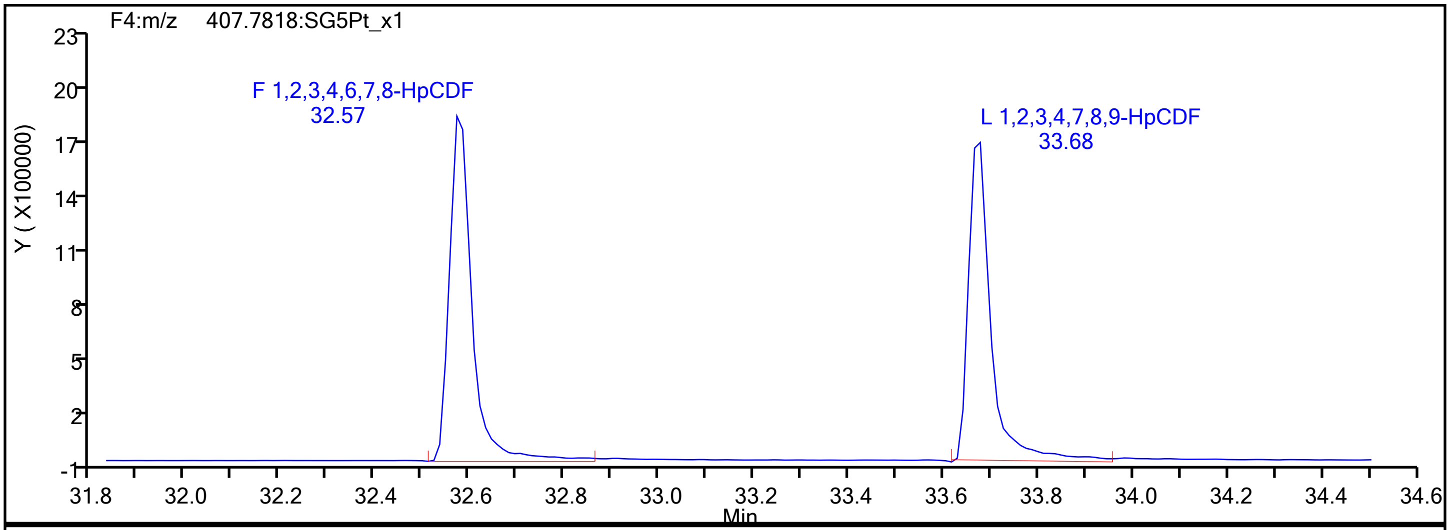

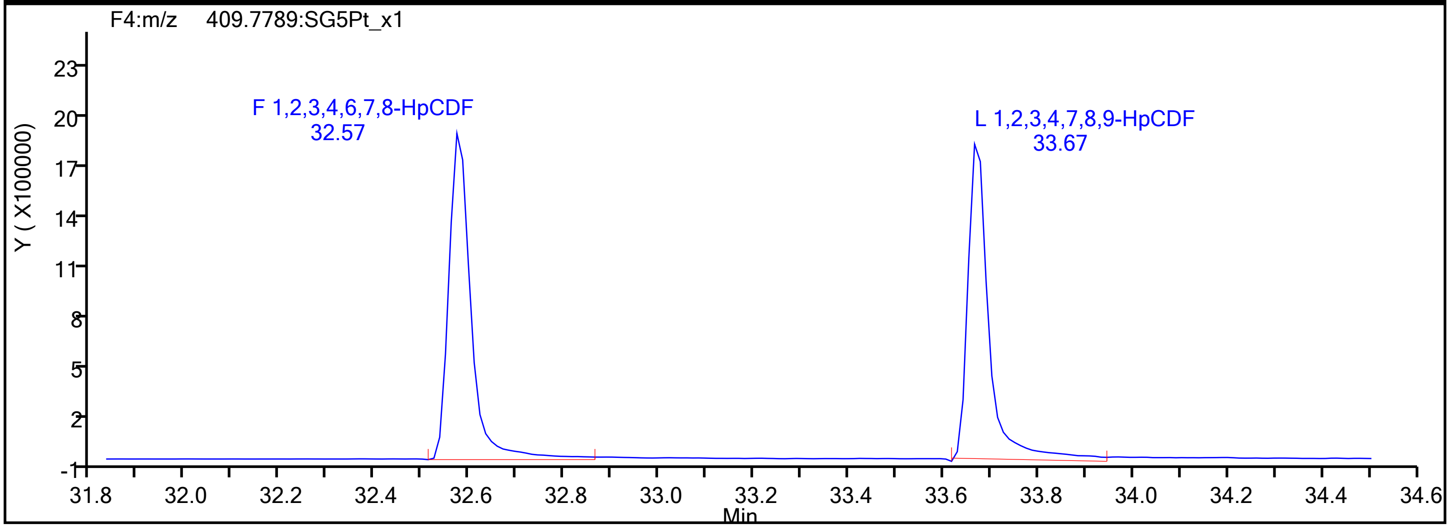

HpCDF Interference Mass

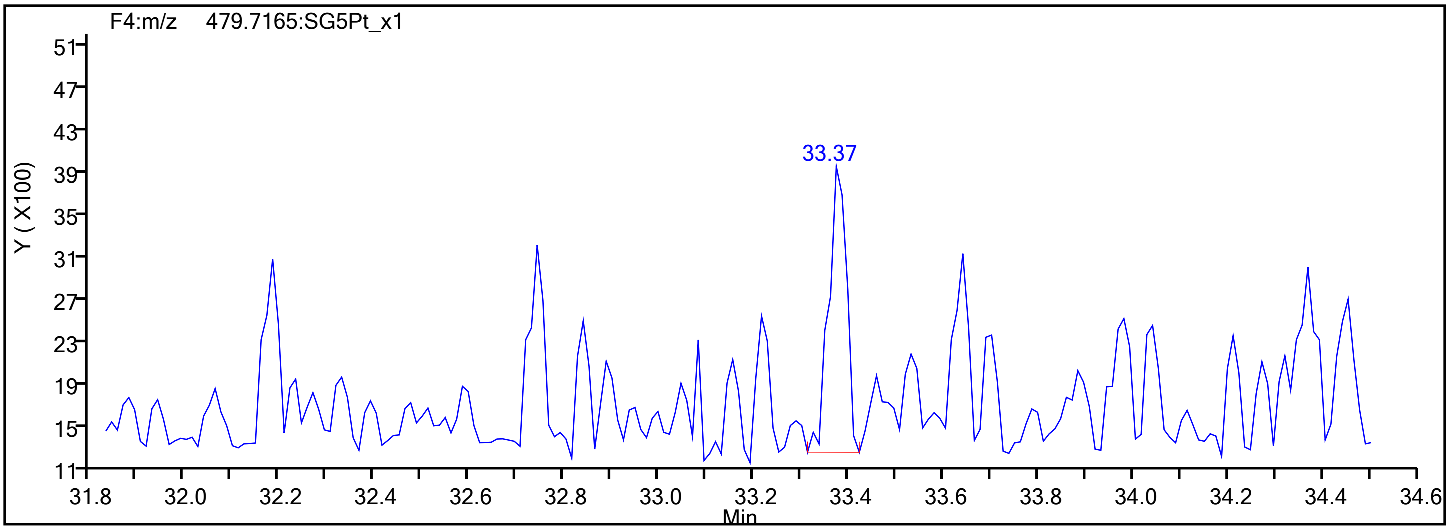

Report Date: 08-Oct-2020 15:23:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

HpCDD

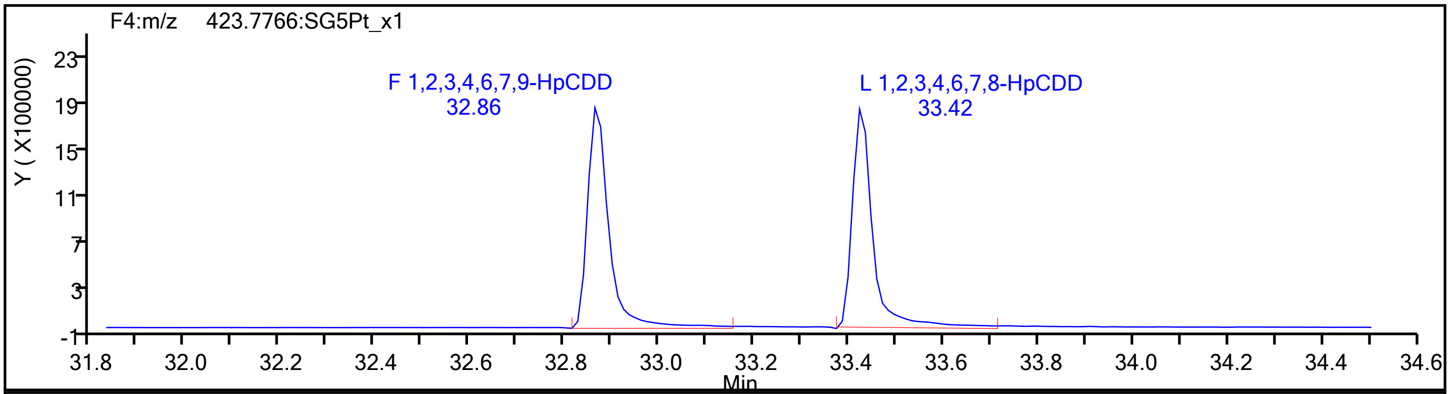

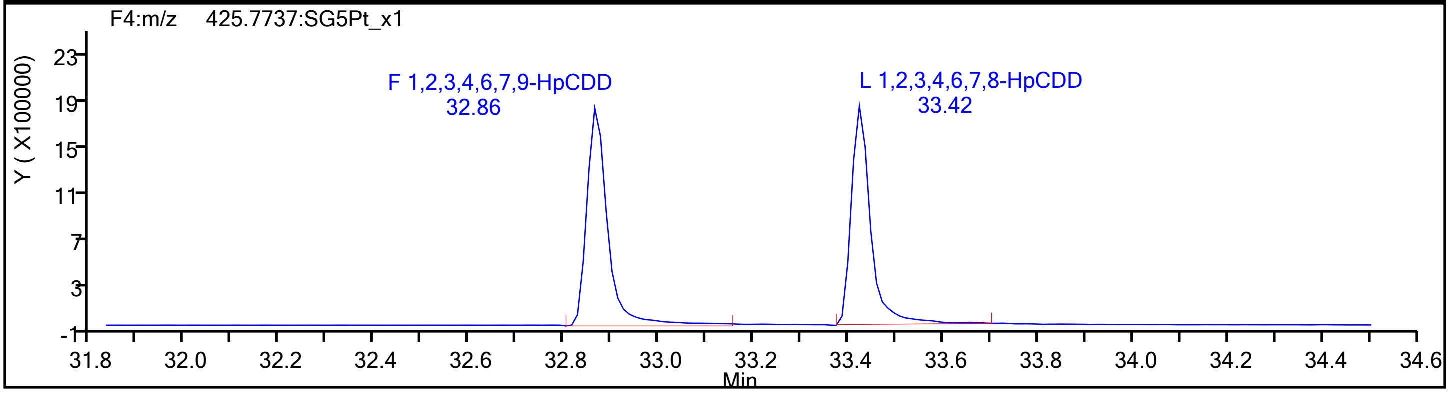

HpCDD Standards

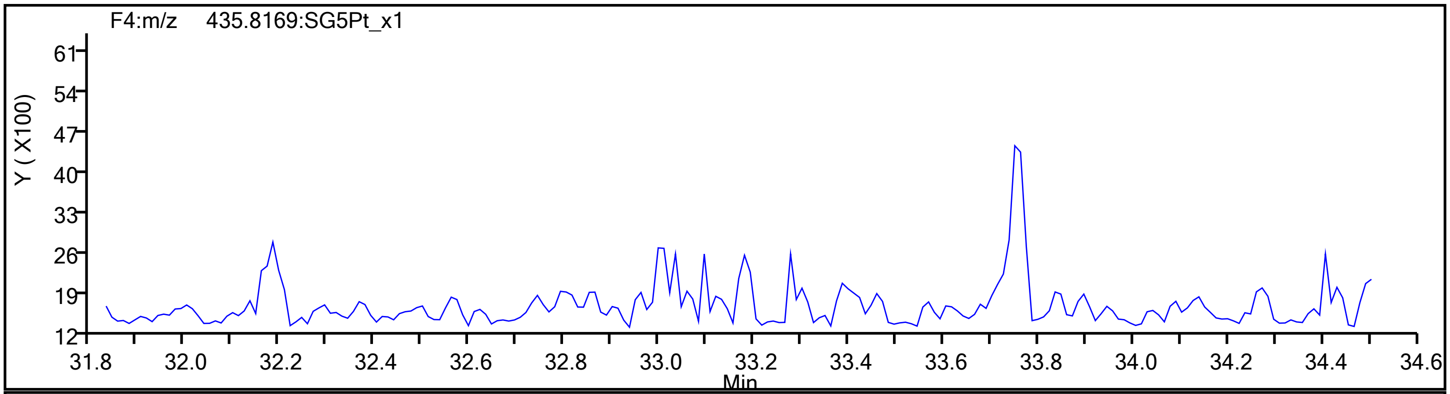

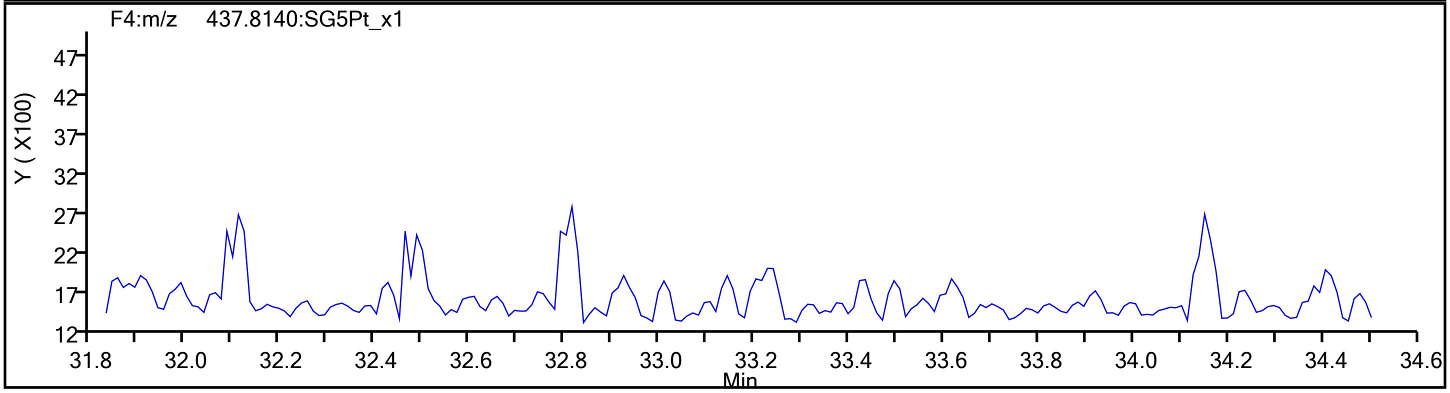

Report Date: 08-Oct-2020 15:23:47 Chrom Revision: 2.3 06-Oct-2020 14:45:12

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d

Injection Date: 23-Sep-2020 09:18:18
Injection Vol: 2.0 ul

Instrument ID: 3D5
Operator ID: SMA

Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 419031
Sample Line#: 1

Column Type:
Column Dia:

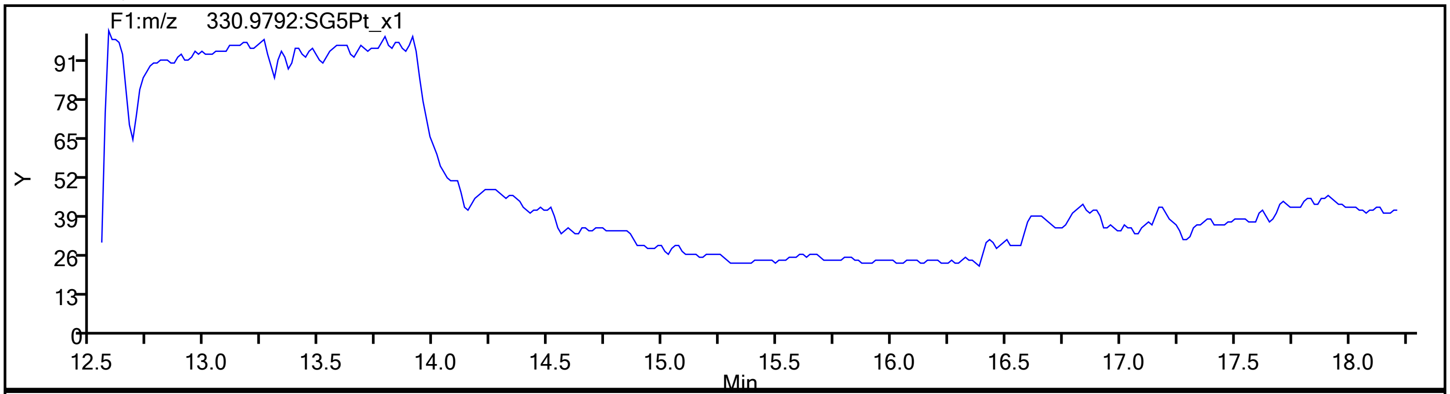

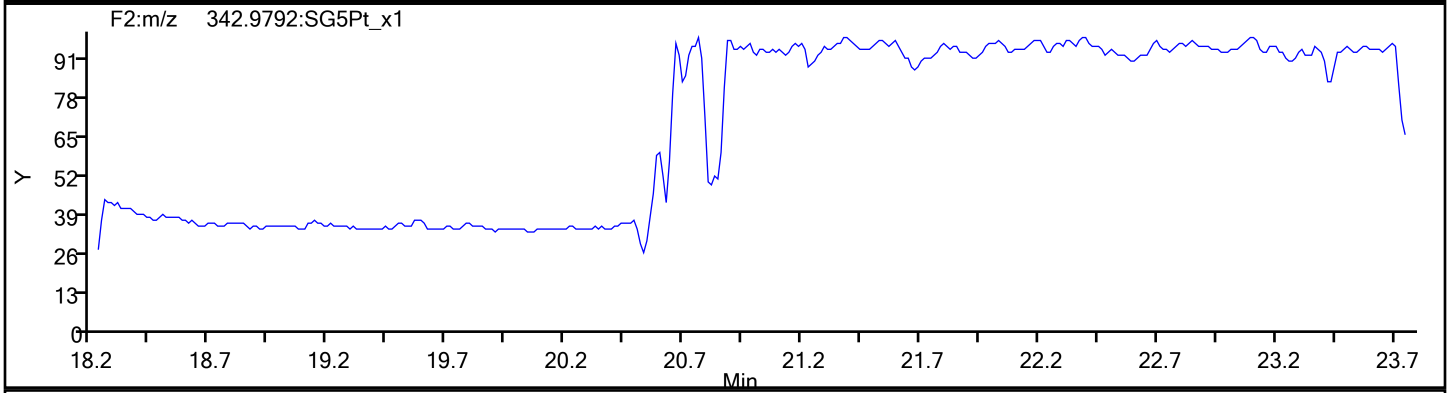

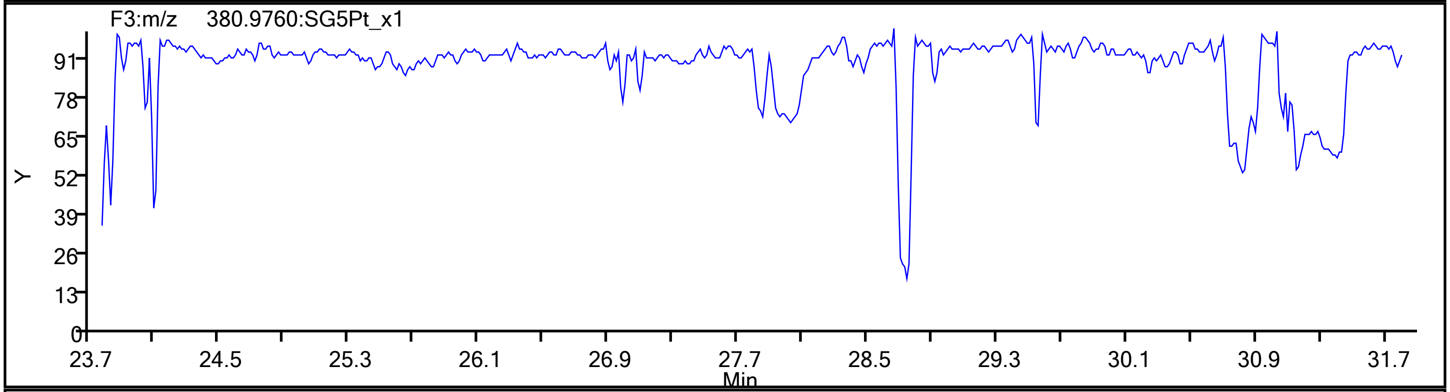

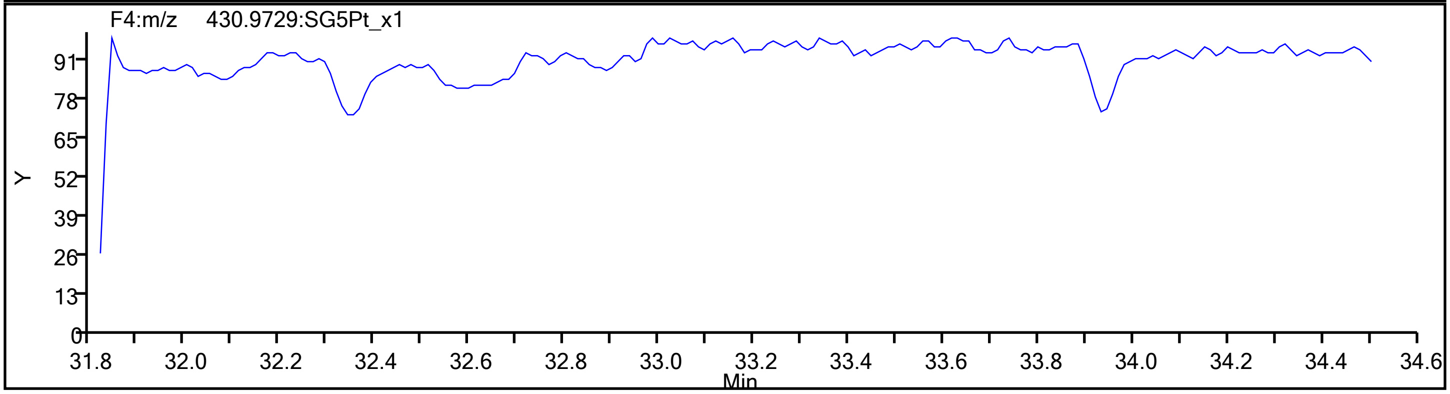

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\23SE203D5_2.d		
Injection Date:	23-Sep-2020 09:18:18	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	419031	Sample Line#:	1
Column Type:		Column Dia:	

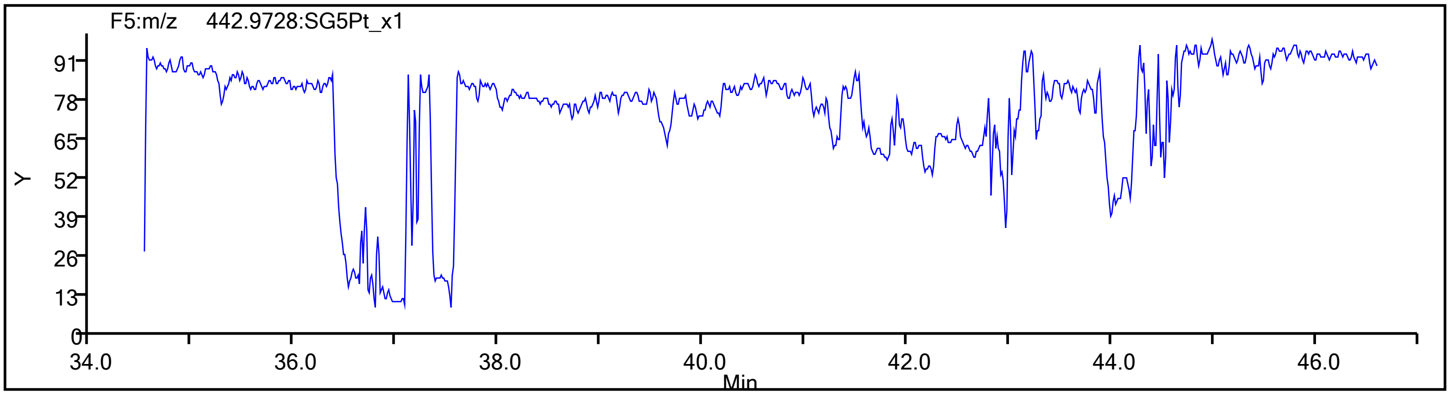

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 08-Oct-2020 08:53:23 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 100820 WDM HRDXNCP_00042
Misc. Info.: 07OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 13:49:39 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1639

First Level Reviewer: arghestanis Date: 09-Oct-2020 09:27:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	15.507	171626358	0.81	1.4844					0.00	
2,3,7,8-TCDF	15.522	342225461	0.76	0.9534	83.7	83.7	0.7624	0.7624		
A Non-2,3,7,8-sub-TCDF	15.250						0.7624	0.7624		
S Total TCDF					83.7	83.7	0.7624	0.7624		
D 13C-2,3,7,8-TCDD	16.112	118082741	0.78	1.0875					0.00	
2,3,7,8-TCDD	16.127	116123536	0.76	1.0205	38.5	38.5	0.3274	0.3274		Ma
A Non-2,3,7,8-sub-TCDD	15.643						0.3274	0.3274		
S Total TCDD					38.5	38.5	0.3274	0.3274		
A F1 PeCDFs	17.745						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	20.369	927604	1.71	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	20.552						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	27.498						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	27.931	904816	1.32	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	32.571	107144587	1.01	1.4783						
1,2,3,4,7,8,9-HpCDF	33.665	94833509	1.03	1.3784						
A Non-2,3,7,8-sub-HpCDF	33.118						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	33.422	79454576	1.04	1.0862						
A Non-2,3,7,8-sub-HpCDD	33.339						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	13.451	199563570	0.77							
1,3,6,8-TCDD	14.237	125045120	0.77							
2,3,4,7-TCDF	15.522	342225461	0.76							
1,2,3,7-TCDD	16.021	111568395	0.74							M
1,2,3,9-TCDF	16.248	152470482	0.79							
1,2,3,9-TCDD	16.263	136208951	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	17.049	51288127								
1,2,8,9-TCDF	17.049	155380147	0.77							
1,3,4,6,8-PeCDF	17.306	146100055	1.55							
1,2,4,7,9-PeCDD	18.800	106757608	1.54							
1,2,3,8,9-PeCDD	22.305	99929263	1.53							
1,2,3,8,9-PeCDF	22.482	77094393								
1,2,3,4,6,8-HxCDF	24.389	134540780	1.24							
1,2,4,6,7,9-HxCDD	25.708	100474728	1.25							
1,2,3,4,6,7-HxCDD	30.048	88770698	1.24							
1,2,3,4,8,9-HxCDF	30.608	110613716	1.25							
1,2,3,4,6,7,9-HpCDD	32.863	83949789	1.03							
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 08-Oct-2020 08:53:23 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 100820 WDM HRDXNCP_00042
Misc. Info.: 07OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 13:49:39 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1639

First Level Reviewer: arghestanis Date: 09-Oct-2020 09:27:40

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	15.507	15.507	0	1.000	76948886	20756380	59800	149500	347		
317.9389	15.507	15.507	0	1.000	94677472	25394837	51153	127882	496	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.522	15.522	0	1.001	147552475	38173108	210324	525810	181		
305.8987	15.522	15.522	0	1.001	194672986	50576356	125143	312857	404	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.250						210324	525810			
305.8987	15.250						125143	312857			
13C-2,3,7,8-TCDD											
331.9368	16.112	16.112	0	1.000	51579601	13206572	20701	51752	638		
333.9339	16.112	16.112	0	1.000	66503140	17025818	13488	33720	1262	0.78(0.65-0.89)	
2,3,7,8-TCDD											Ma
319.8965	16.127	16.127	0	1.001	50130837	13730048	45565	113912	301		M
321.8936	16.127	16.127	0	1.001	65992699	17712795	55427	138567	320	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	15.643						45565	113912			
321.8936	15.643						55427	138567			
A F1 PeCDFs											
339.8597	17.745						15836	39590			
341.8567	17.745						9776	24440			
A Non-2,3,7,8-sub-PeCDF											
339.8597	19.782	20.369	-35	1.000	585607	95261	20103	50257	5		
341.8567	19.782	20.369	-35	1.000	341997	60077	12706	31765	5	1.71(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.552						24478	61195			
357.8516	20.552						14214	35535			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.498						16581	41452			
375.8178	27.498						12915	32287			
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.545	27.931	-23	1.000	515051	61468	9545	23862	6		
391.8127	27.545	27.931	-23	1.000	389765	47700	8506	21265	6	1.32(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.571	32.571	0	1.000	53810414	17979246	47401	118502	379		
409.7789	32.571	32.571	0	1.000	53334173	17067313	57255	143137	298	1.01(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.665	33.665	0	1.000	48189634	17068469	47401	118502	360		
409.7789	33.665	33.665	0	1.000	46643875	16752425	57255	143137	293	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.118						47401	118502			
409.7789	33.118						57255	143137			
1,2,3,4,6,7,8-HpCDD											
423.7766	33.422	33.422	0	1.000	40577898	14597969	56528	141320	258		
425.7737	33.422	33.422	0	1.000	38876678	13647381	74650	186625	183	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						56528	141320			
425.7737	33.339						74650	186625			
1,3,6,8-TCDF											
303.9016	13.451	13.451	0		86849499	26337687	210324	525810	125		
305.8987	13.451	13.451	0		112714071	34241156	125143	312857	274	0.77(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	14.237	14.237	0		54330437	15732319	45565	113912	345		
321.8936	14.237	14.237	0		70714683	20374363	55427	138567	368	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	15.522	15.522	0		147552475	38173108	210324	525810	181		
305.8987	15.522	15.522	0		194672986	50576356	125143	312857	404	0.76(0.65-0.89)	
1,2,3,7-TCDD											M
319.8965	16.021	16.021	0		47341062	12513497	45565	113912	275		M
321.8936	16.021	16.021	0		64227333	17038275	55427	138567	307	0.74(0.65-0.89)	M
1,2,3,9-TCDF											
303.9016	16.248	16.248	0		67388948	17435932	210324	525810	83		
305.8987	16.248	16.248	0		85081534	22175246	125143	312857	177	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	16.263	16.263	0		60193384	14330496	45565	113912	315		
321.8936	16.263	16.263	0		76015567	18035135	55427	138567	325	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	17.049	17.049	0		51288127	12674849	45565	113912	278		
1,2,8,9-TCDF											
303.9016	17.049	17.049	0		67428781	16233637	210324	525810	77		
305.8987	17.034	17.049	-1		87951366	21768316	125143	312857	174	0.77(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	17.306	17.306	0		88736122	20214497	15836	39590	1276		
341.8567	17.306	17.306	0		57363933	12957017	9776	24440	1325	1.55(1.32-1.78)	

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	18.800	18.800	0		64783872	12012616	24478	61195	491		
357.8516	18.800	18.800	0		41973736	7587866	14214	35535	534	1.54(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	22.305	22.305	0		60365616	10025136	24478	61195	410		
357.8516	22.305	22.305	0		39563647	6501201	14214	35535	457	1.53(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	22.482	22.482	0		77094393	12711784	20103	50257	632		
1,2,3,4,6,8-HxCDF											
373.8208	24.389	24.389	0		74553675	11074641	16581	41452	668		
375.8178	24.389	24.389	0		59987105	8890811	12915	32287	688	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	25.708	25.708	0		55811056	7677443	9545	23862	804		
391.8127	25.694	25.708	-1		44663672	6389375	8506	21265	751	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	30.048	30.048	0		49118875	7373446	9545	23862	772		
391.8127	30.048	30.048	0		39651823	5890324	8506	21265	692	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	30.608	30.608	0		61553886	11400098	16581	41452	688		
375.8178	30.594	30.608	-1		49059830	8828371	12915	32287	684	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	32.863	32.863	0		42685043	14365170	56528	141320	254		
425.7737	32.863	32.863	0		41264746	13473980	74650	186625	180	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	08-Oct-2020 08:53:23	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420113	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 20.369

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079				
2,3,4,7,8-PeCDF	1.097				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
19.782	585607	95261	341997	60077		1.71	
Signal Totals:							
	585607	95261	341997	60077			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	927604	155338				1.71	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (927604 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	08-Oct-2020 08:53:23	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420113	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 27.931

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254				
1,2,3,6,7,8-HxCDD	1.112				
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
27.545	515051	61468	389765	47700		1.32	
Signal Totals:							
	515051	61468	389765	47700			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	904816	109168				1.32	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (904816 * 0.0) / (0 * 0.000)

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Injection Date:	08-Oct-2020 08:53:23	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	1
Column Type:		Column Dia:	

TCDF

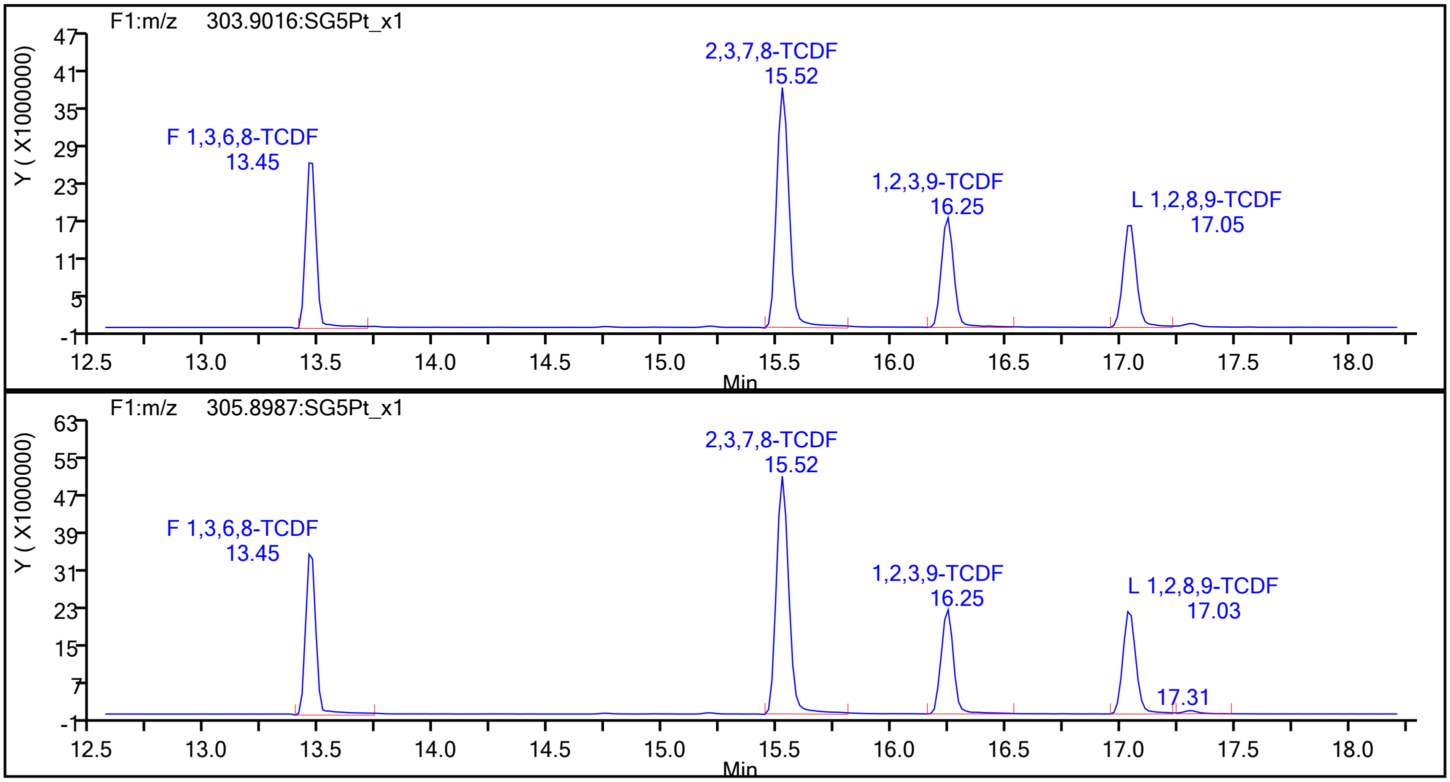

TCDF Standards

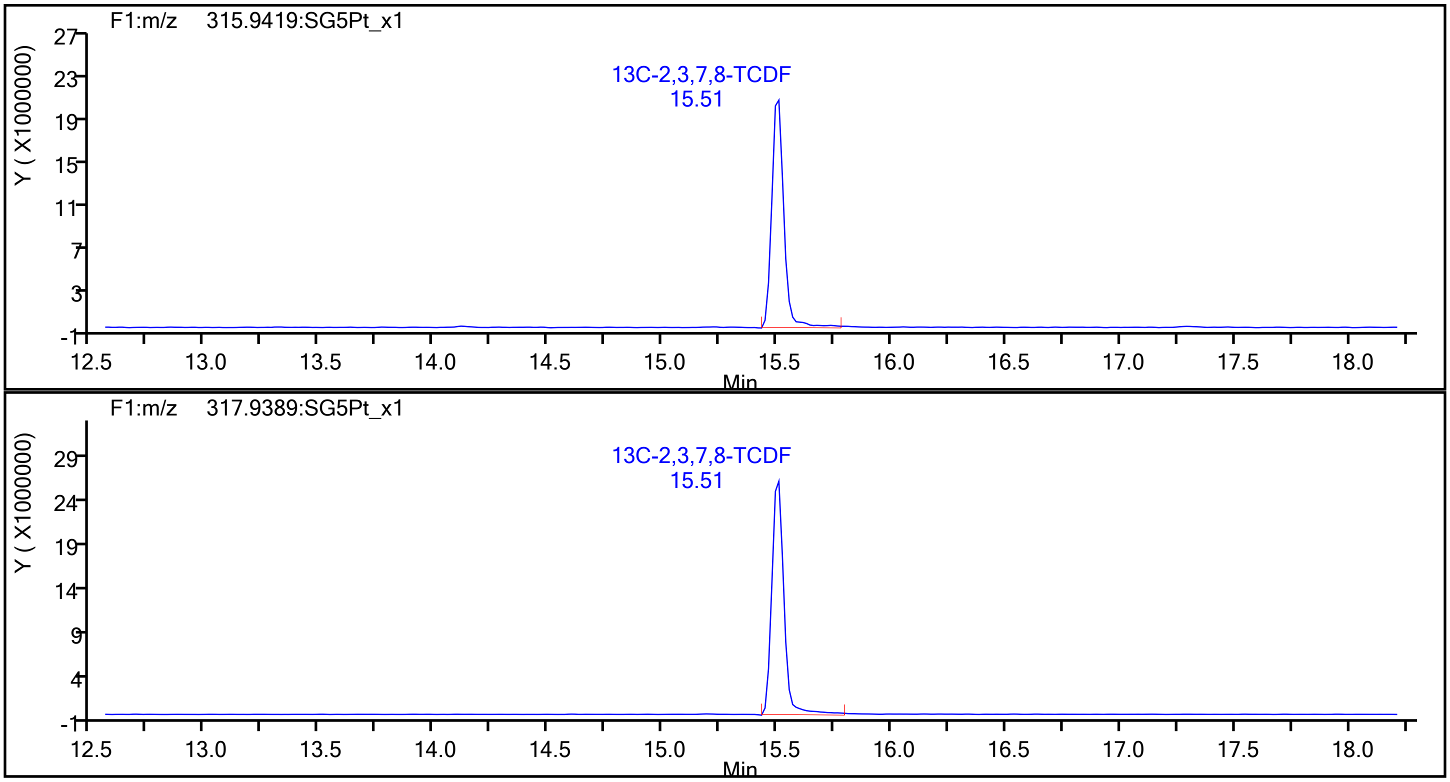

Report Date: 12-Oct-2020 13:49:39　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Injection Date:	08-Oct-2020 08:53:23	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	1
Column Type:		Column Dia:	

TCDF

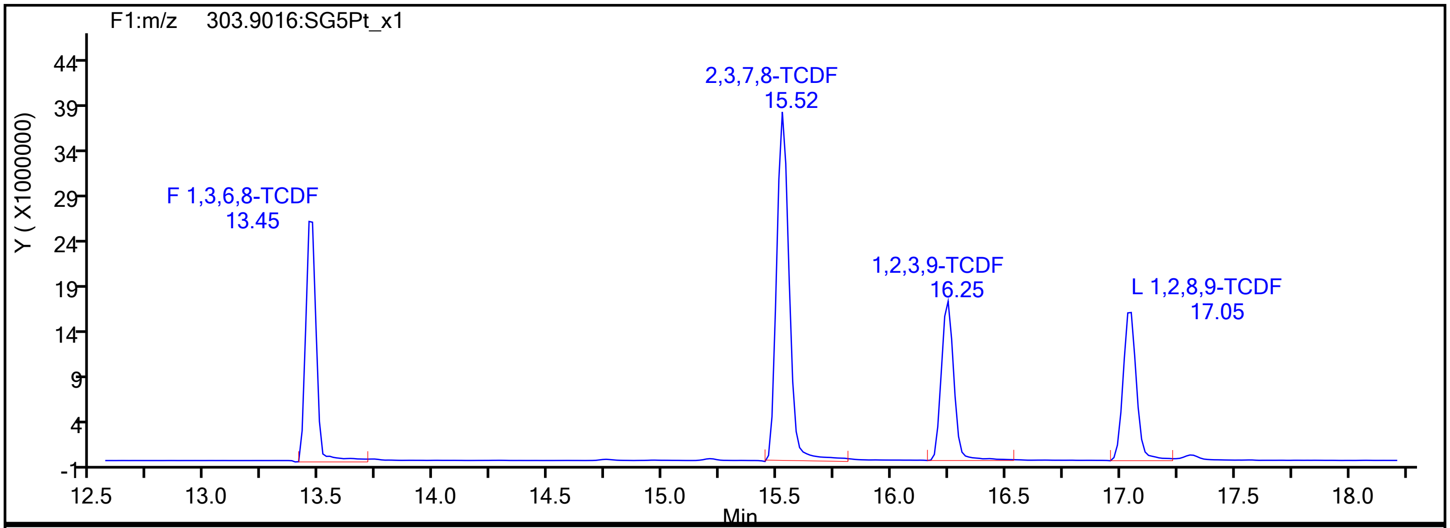

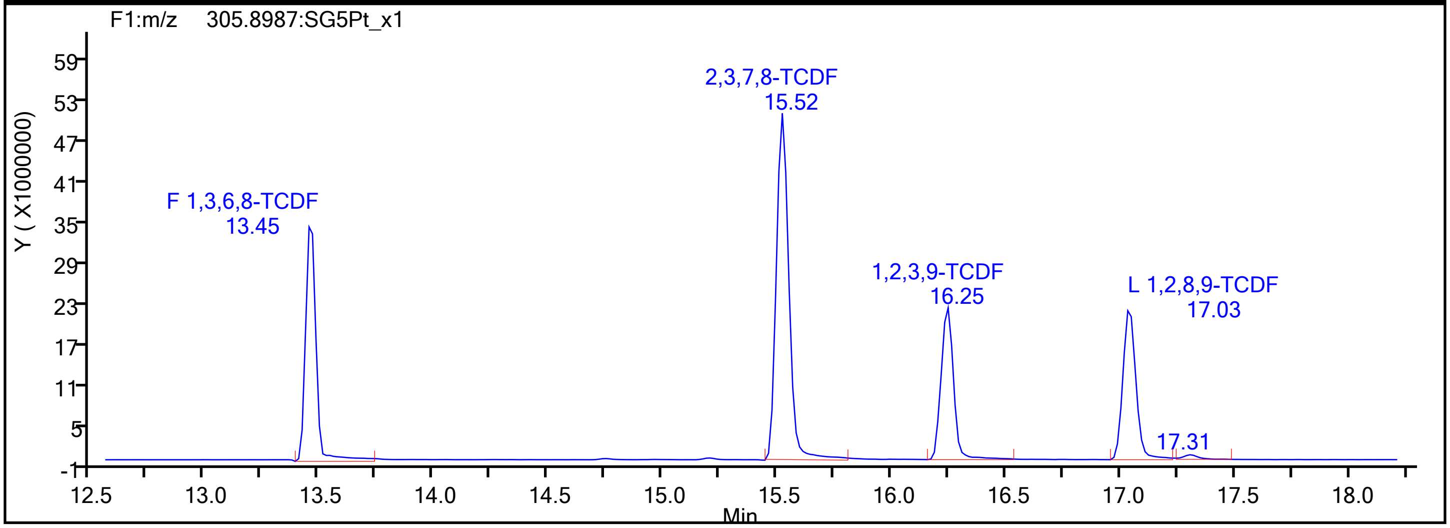

TCDF Interference Mass

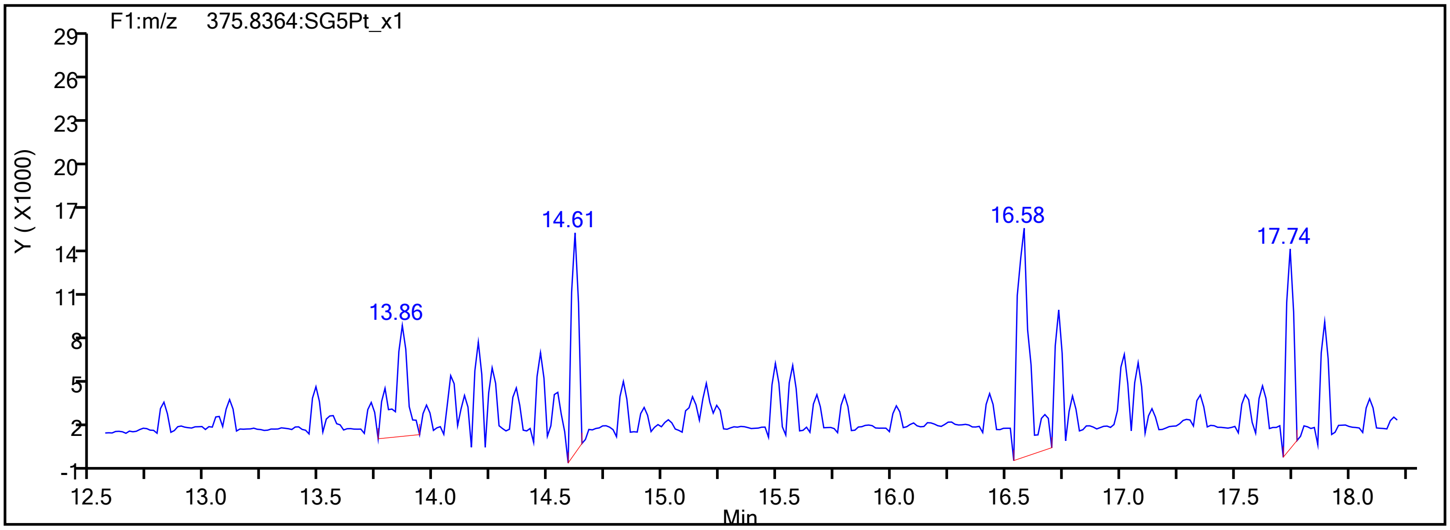

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d

Injection Date: 08-Oct-2020 08:53:23 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113 Sample Line#: 1

Column Type: Column Dia:

TCDD

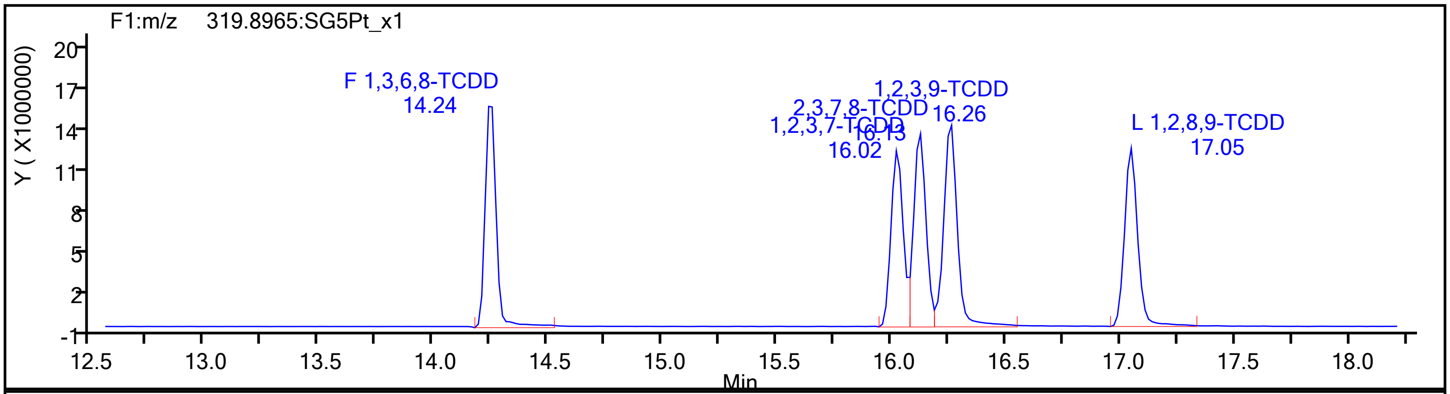

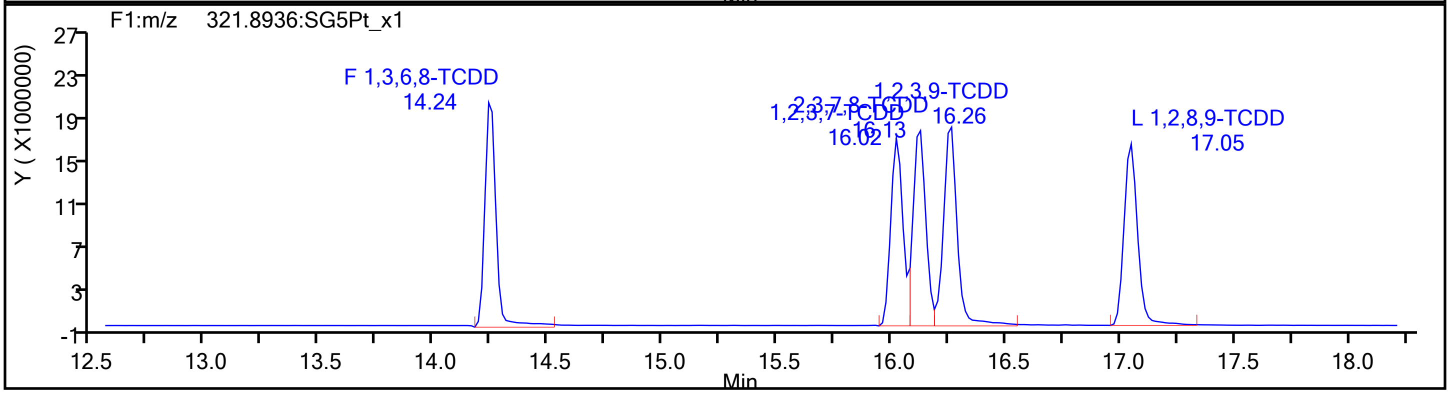

TCDD Standards

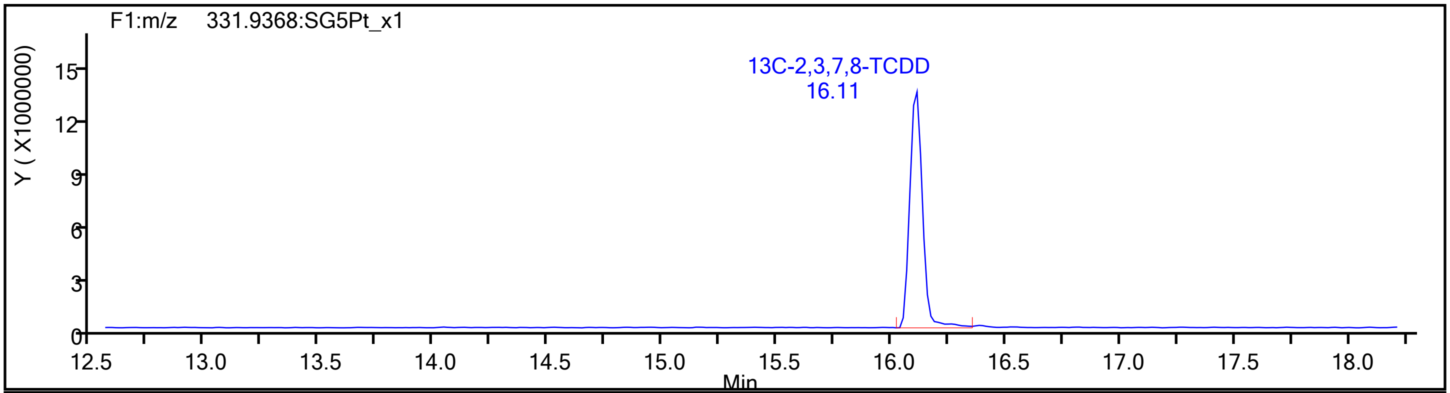

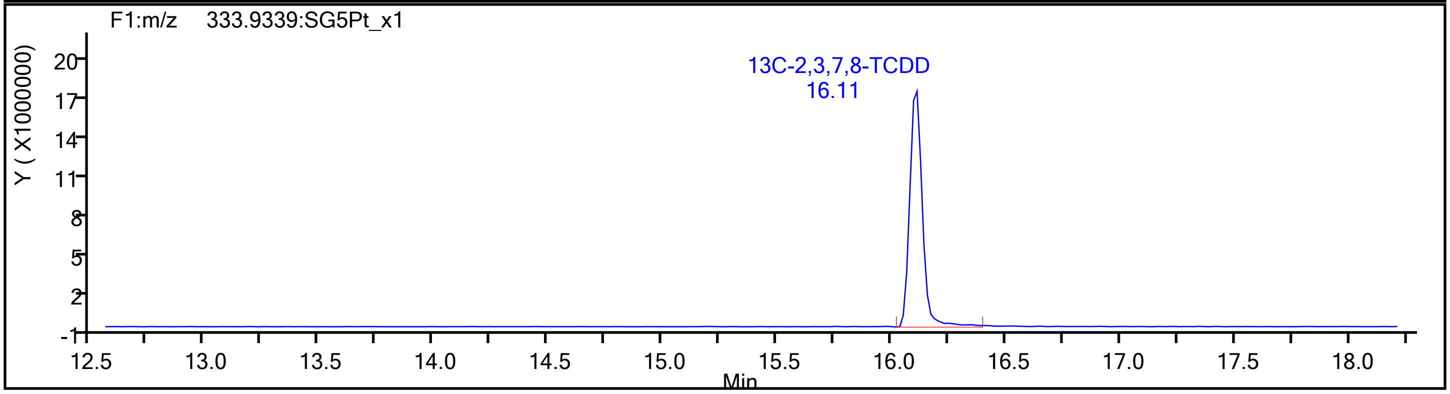

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Injection Date: 08-Oct-2020 08:53:23
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 1
Column Type:
Column Dia:

37Cl4-TCDD

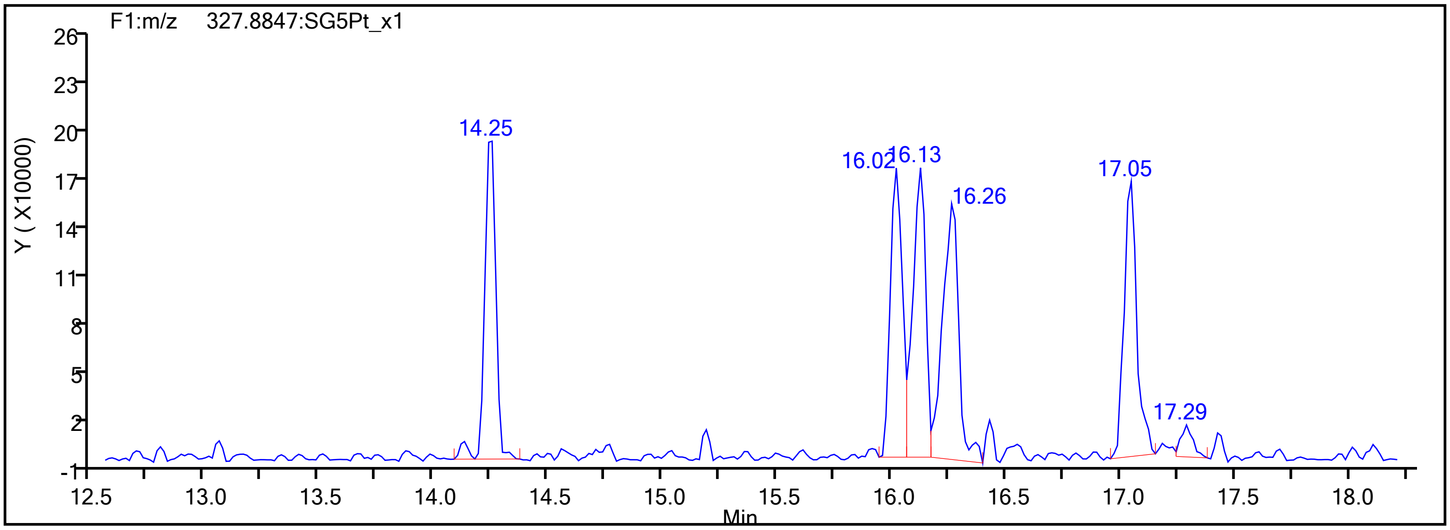

37Cl4-TCDD Standards

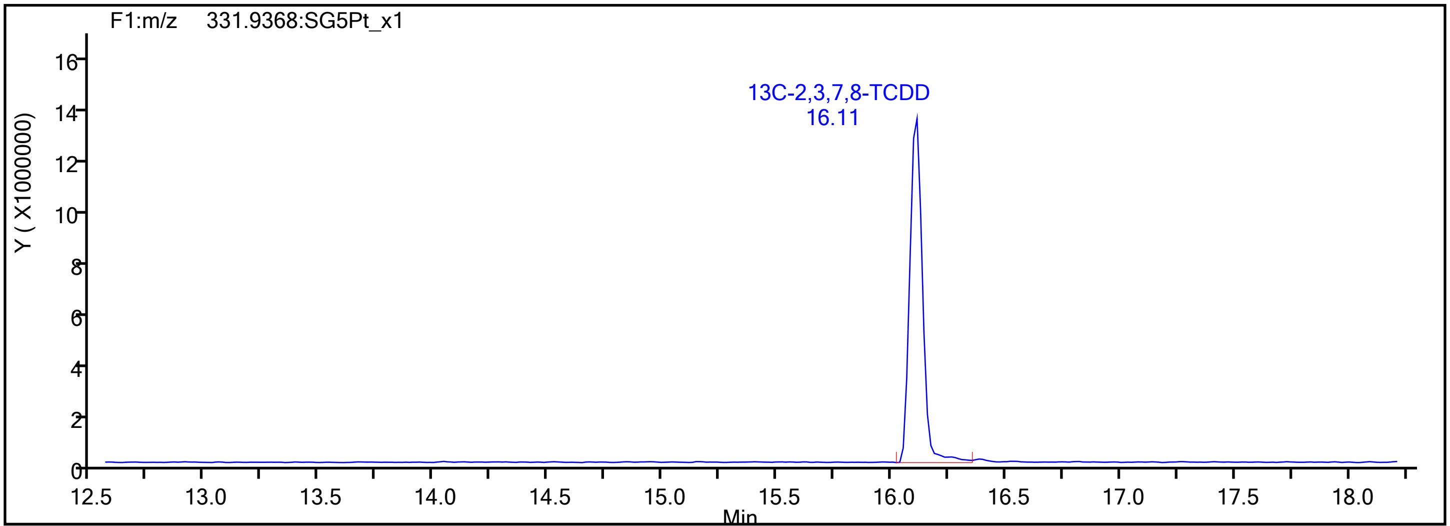

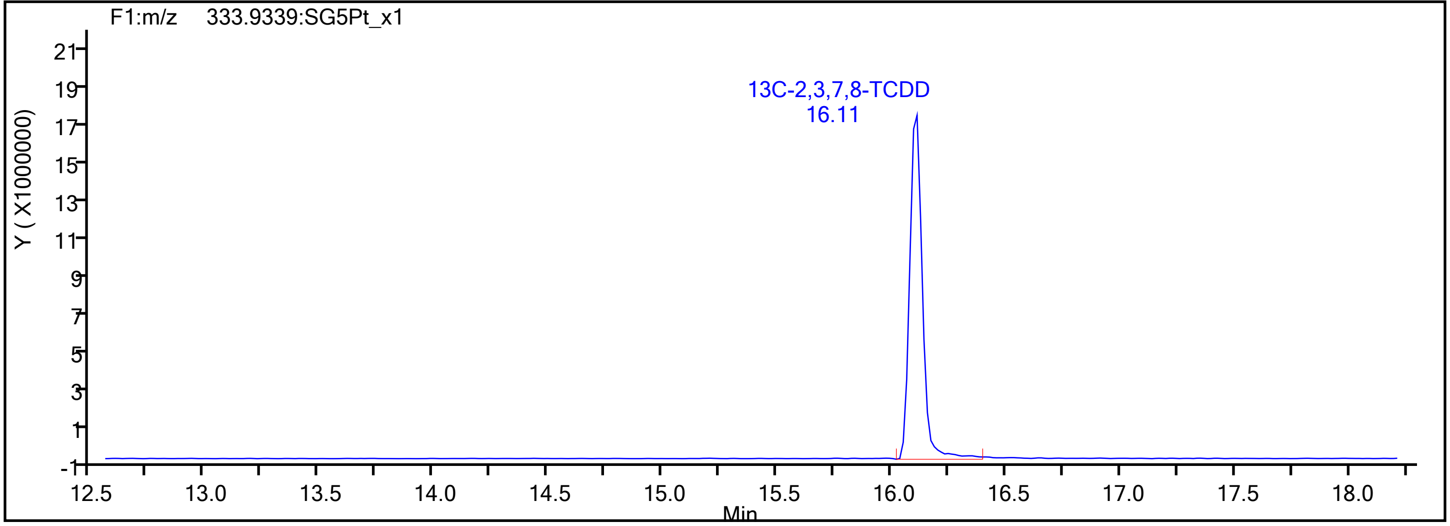

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Injection Date:	08-Oct-2020 08:53:23	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	1
Column Type:		Column Dia:	

PeCDF

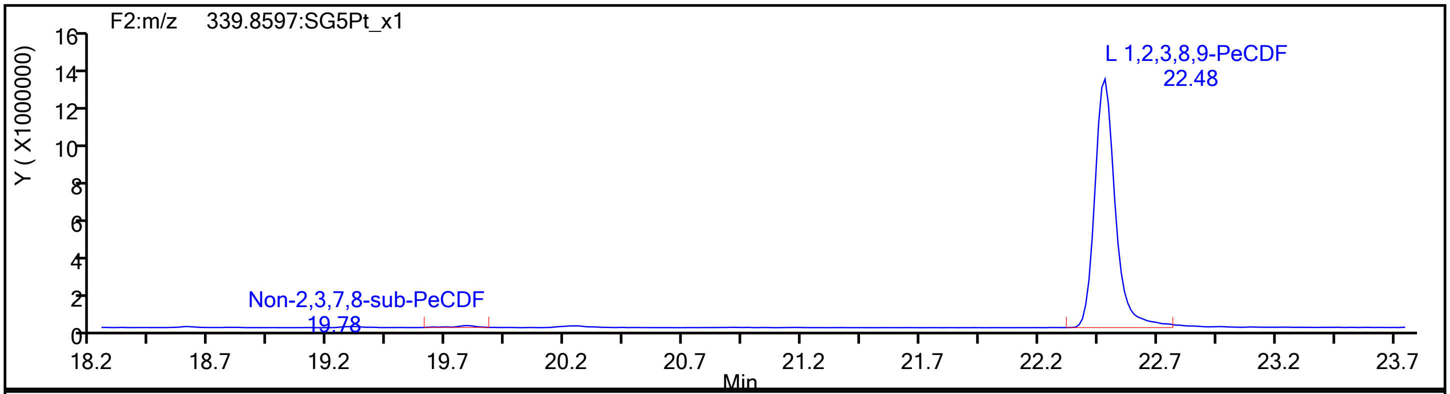

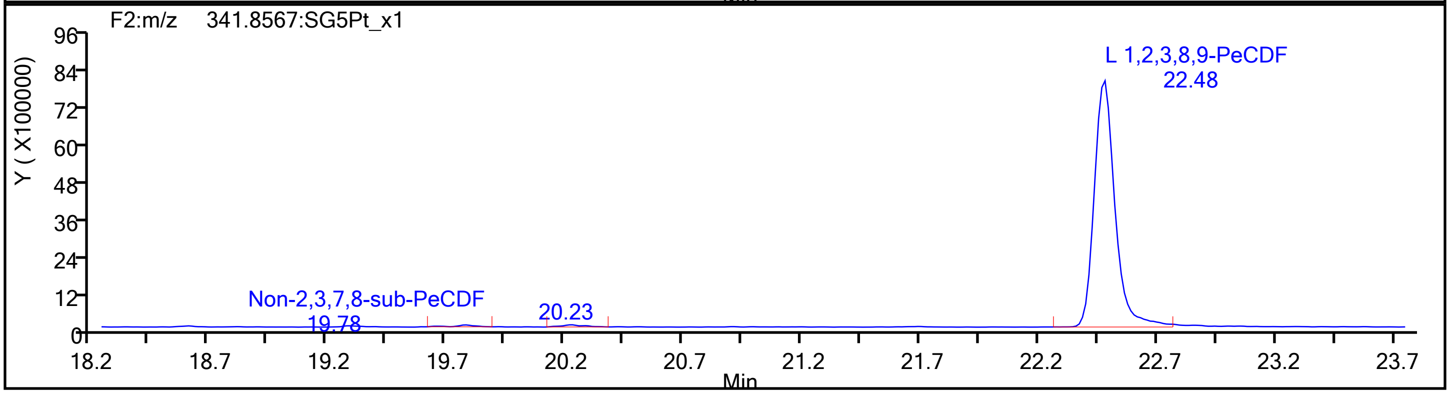

PeCDF Standards

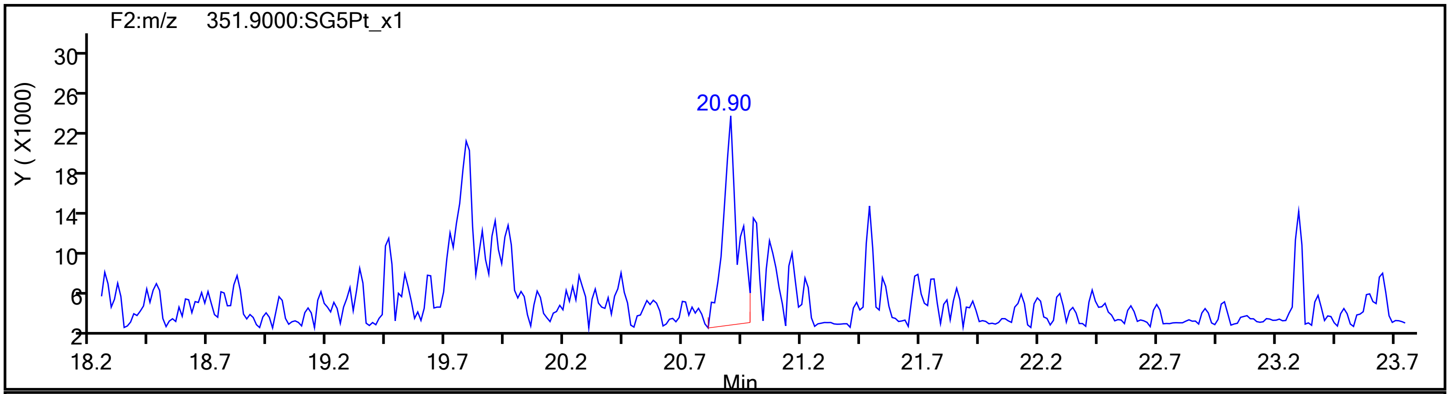

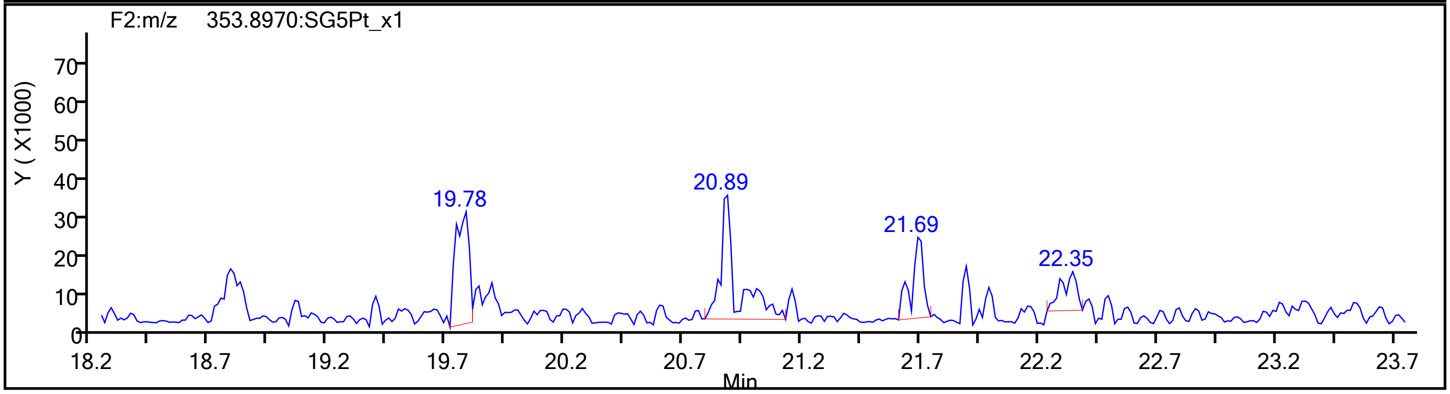

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Injection Date:	08-Oct-2020 08:53:23	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	1
Column Type:		Column Dia:	

PeCDF

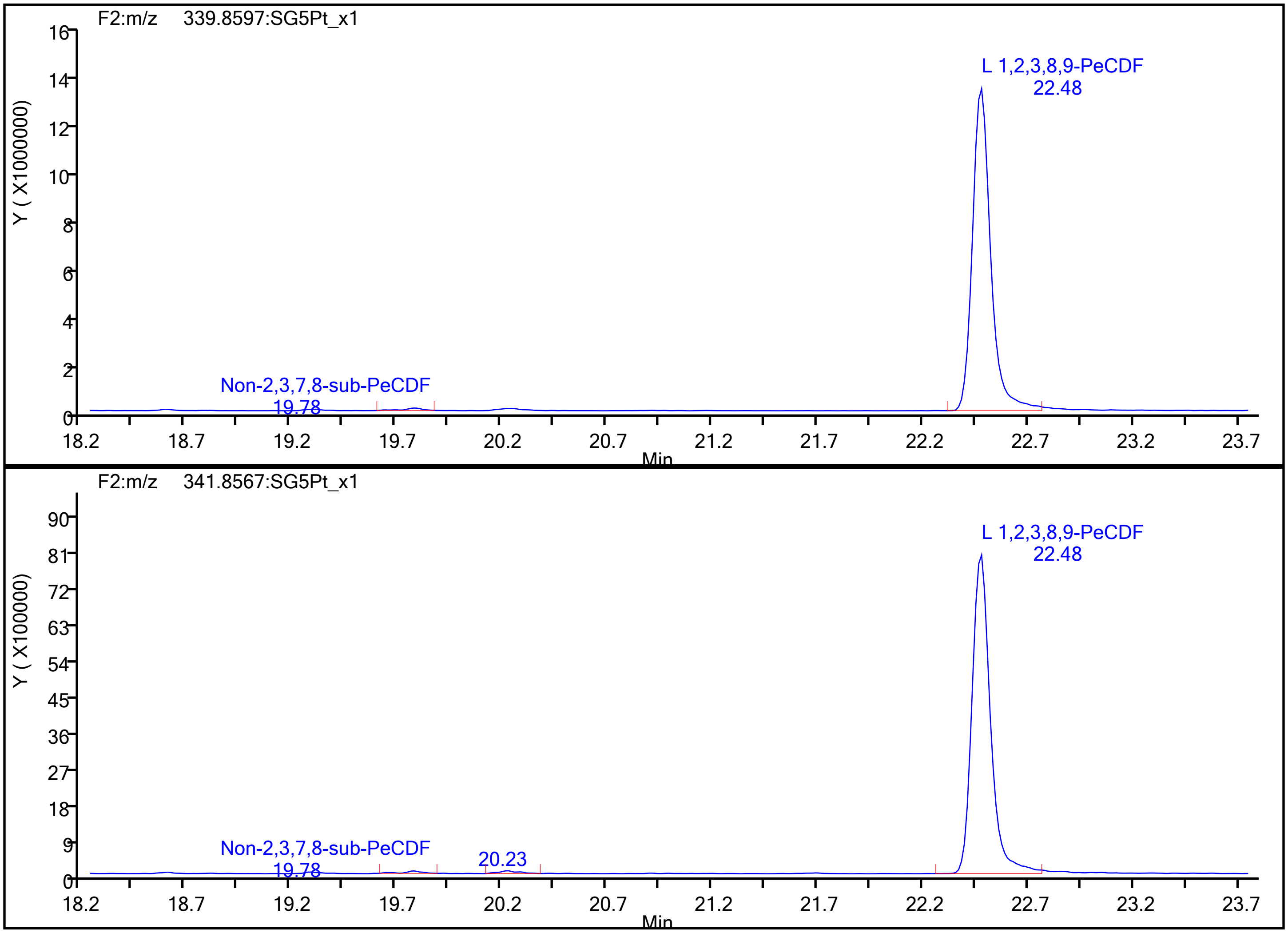

PeCDF Interference Mass

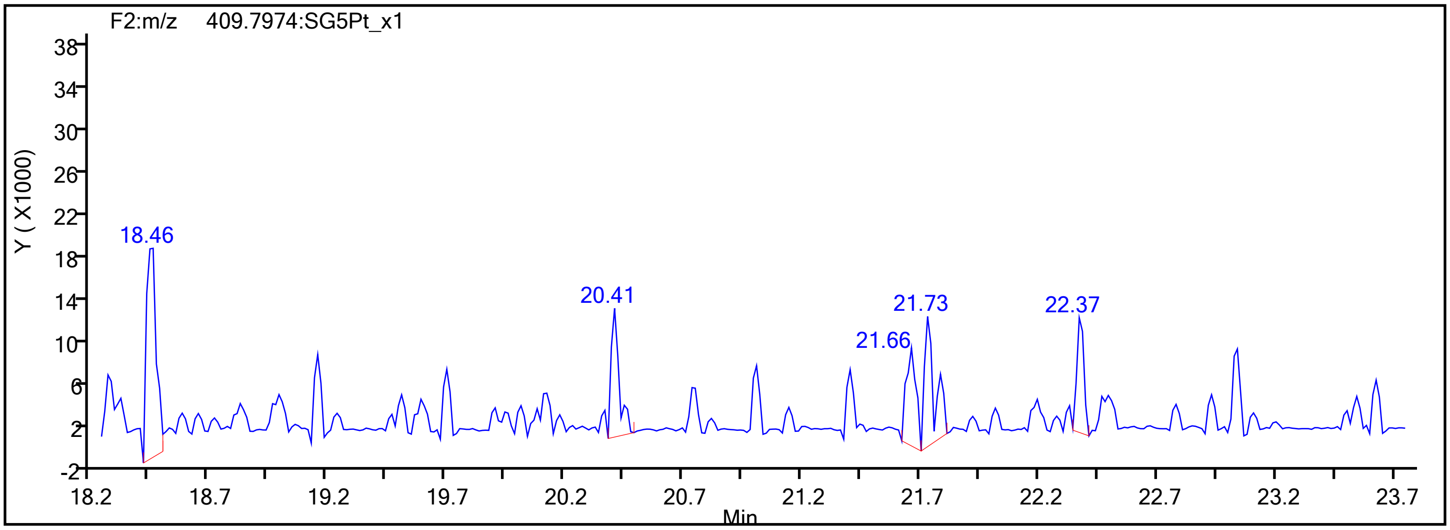

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Injection Date: 08-Oct-2020 08:53:23
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 1
Column Type:
Column Dia:

PeCDD

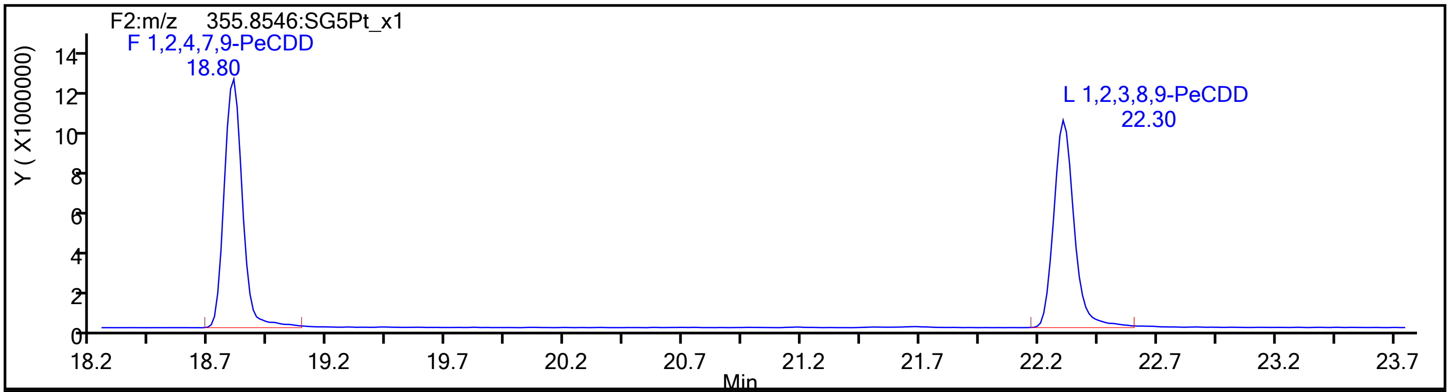

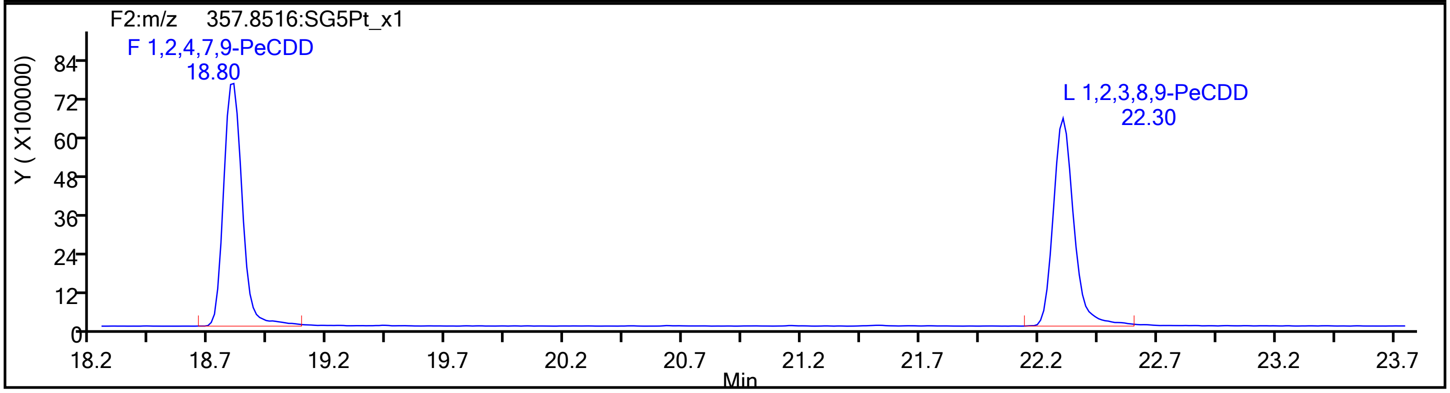

PeCDD Standards

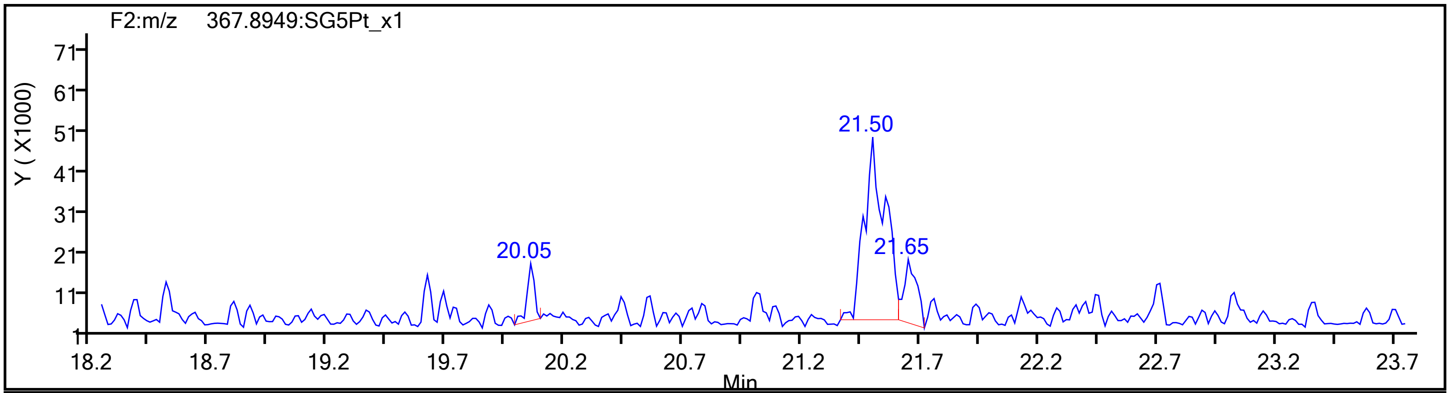

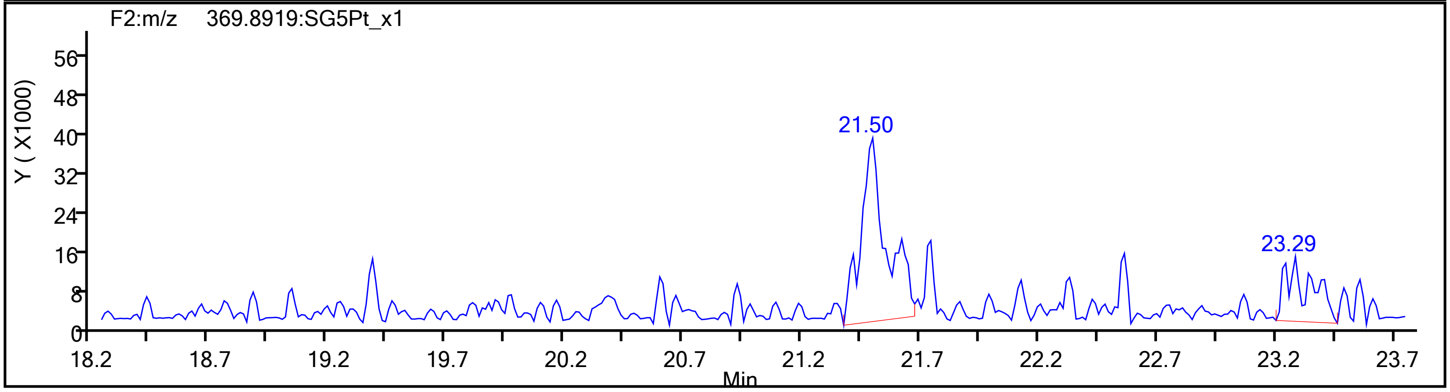

Report Date: 12-Oct-2020 13:49:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Injection Date: 08-Oct-2020 08:53:23 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113 Sample Line#: 1
Column Type: Column Dia:

HxCDF

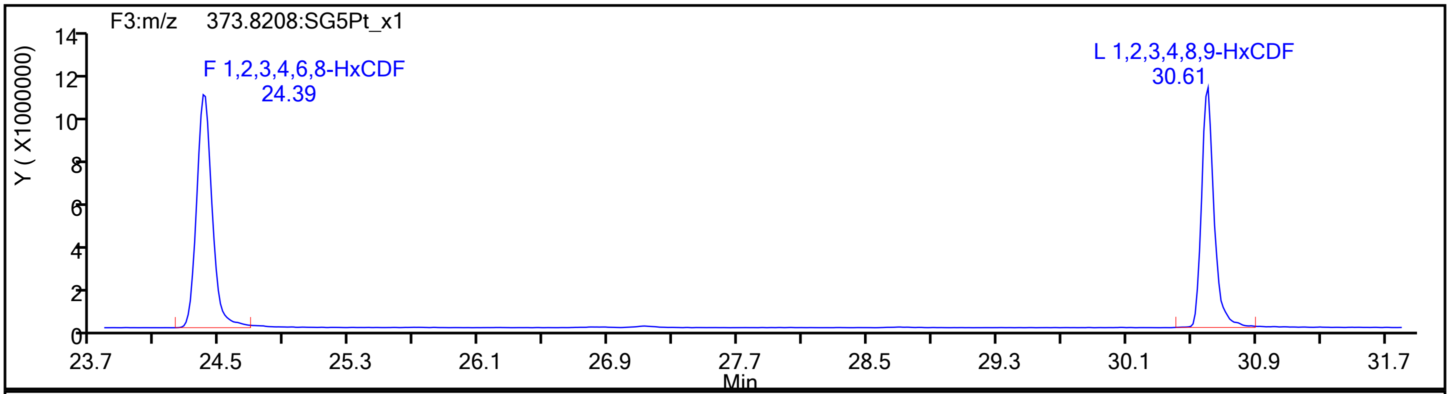

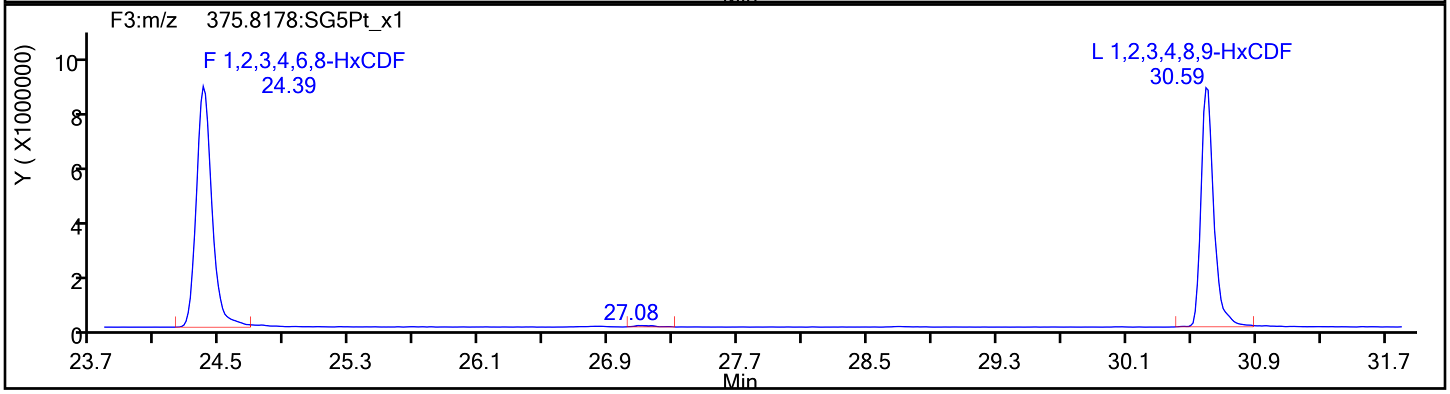

HxCDF Standards

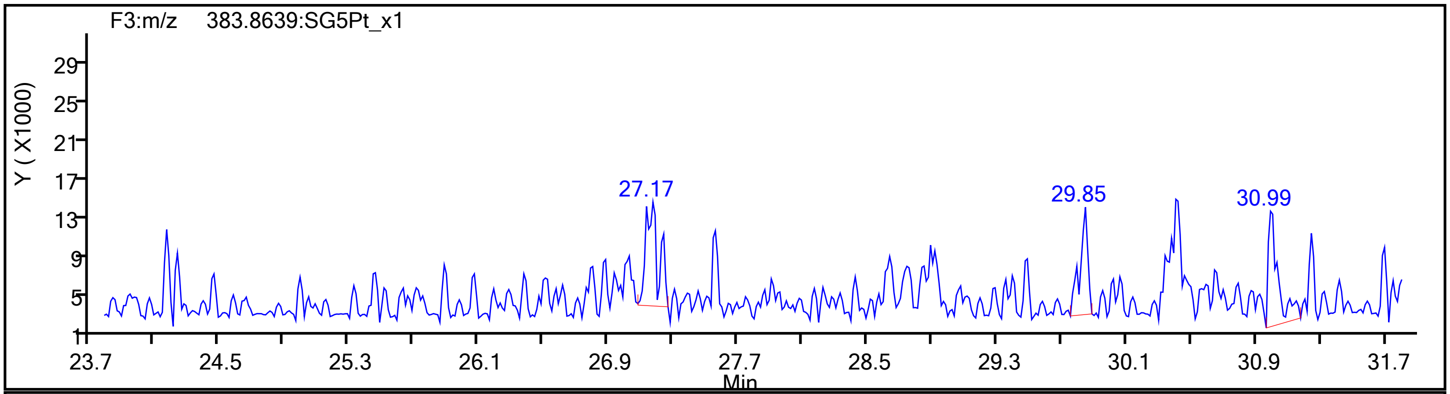

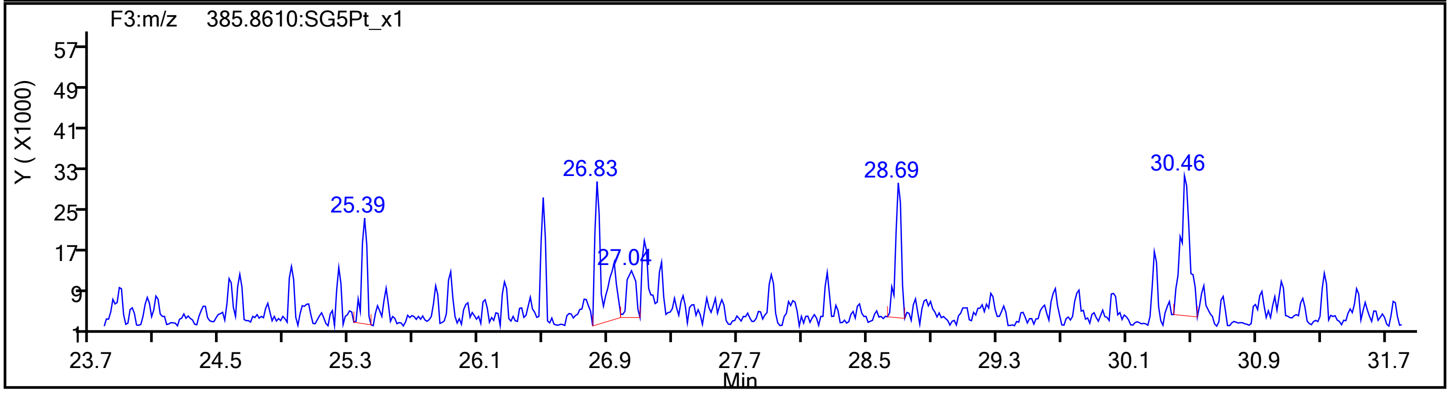

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Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d
Injection Date: 08-Oct-2020 08:53:23
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 1
Column Type:
Column Dia:

HxCDF

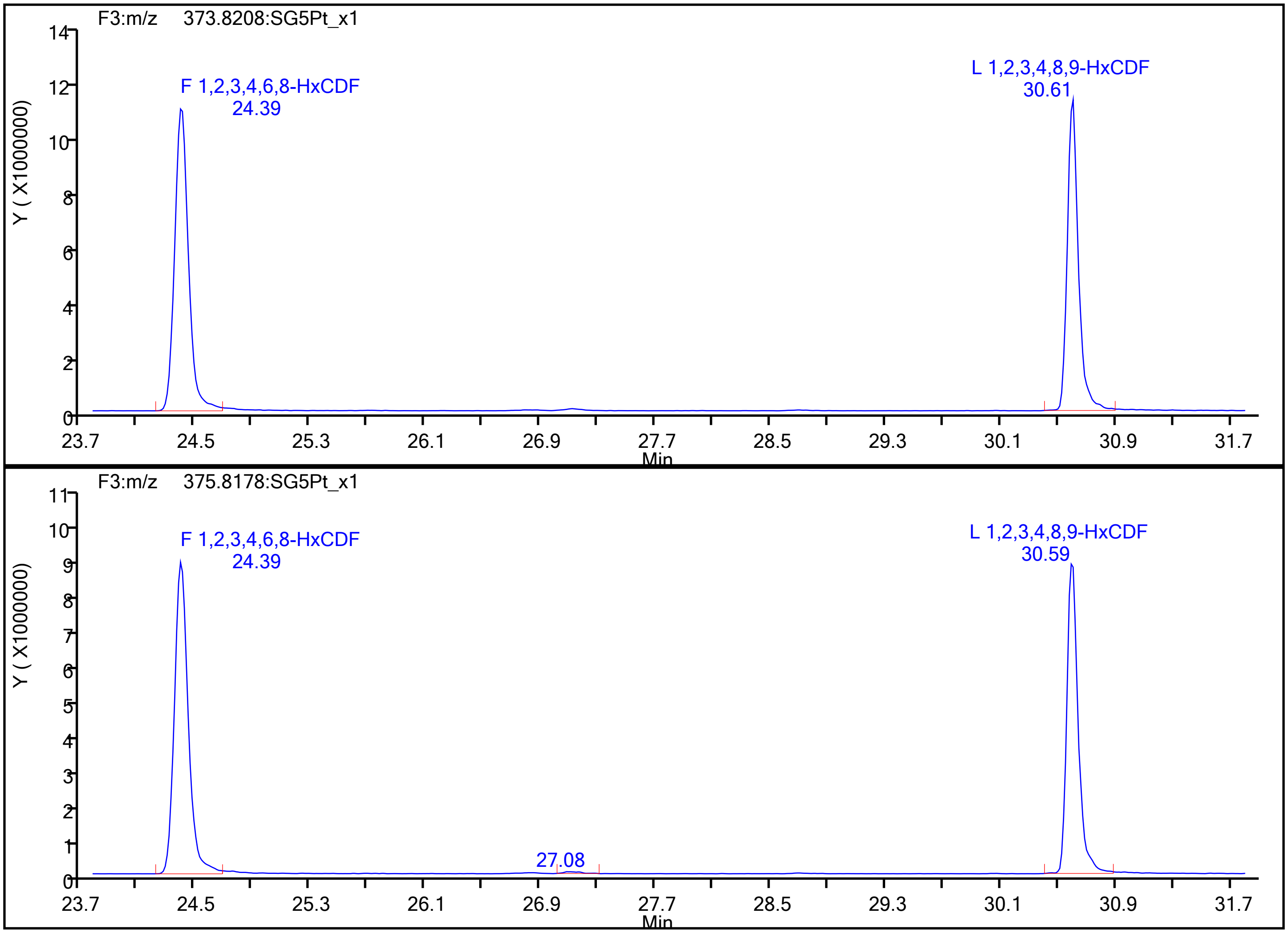

HxCDF Interference Mass

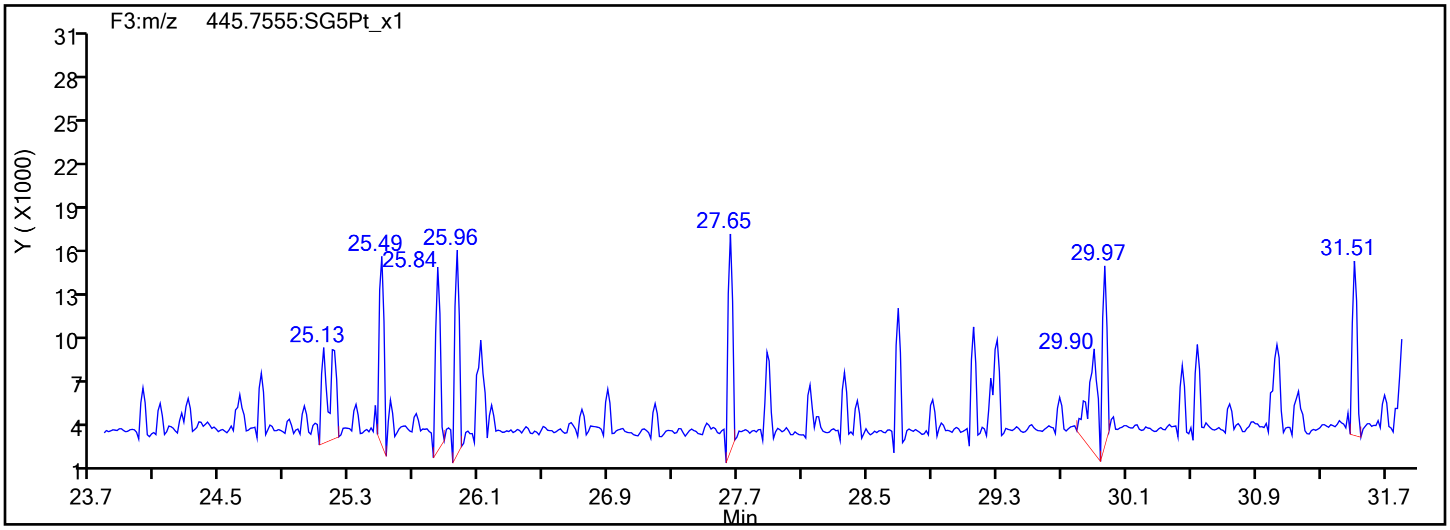

Report Date: 12-Oct-2020 13:49:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Injection Date:	08-Oct-2020 08:53:23	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	1
Column Type:		Column Dia:	

HpCDF

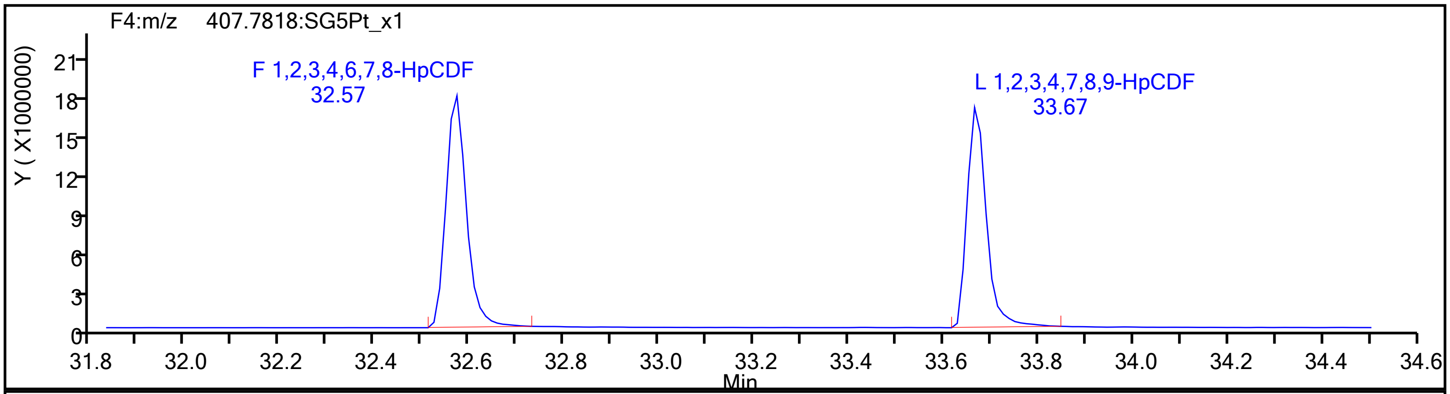

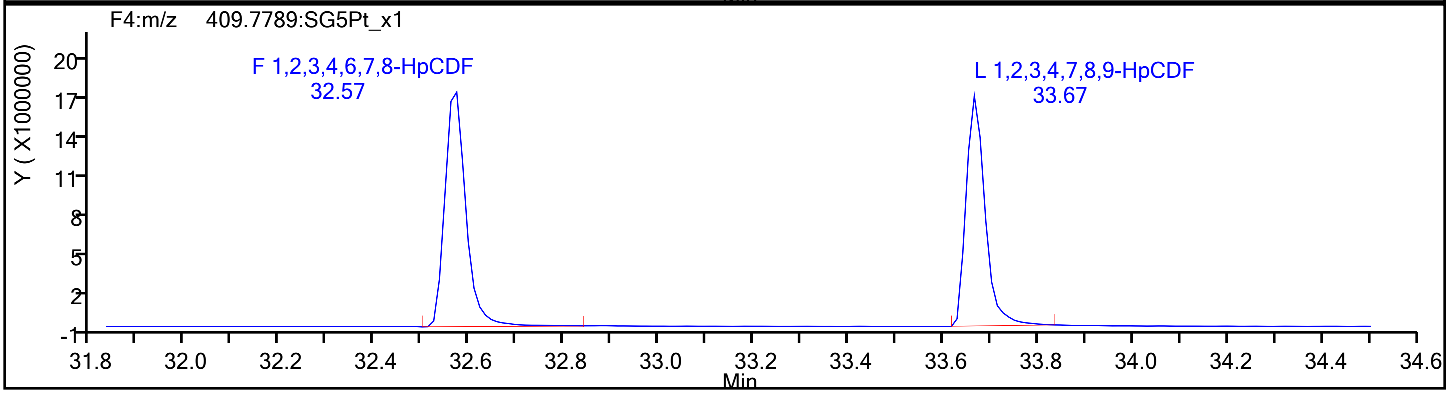

HpCDF Standards

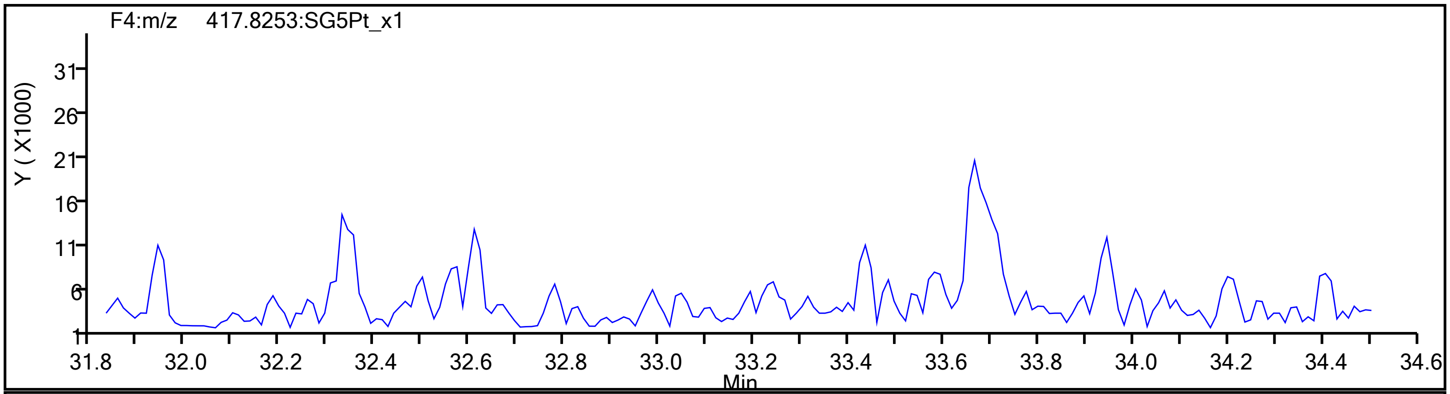

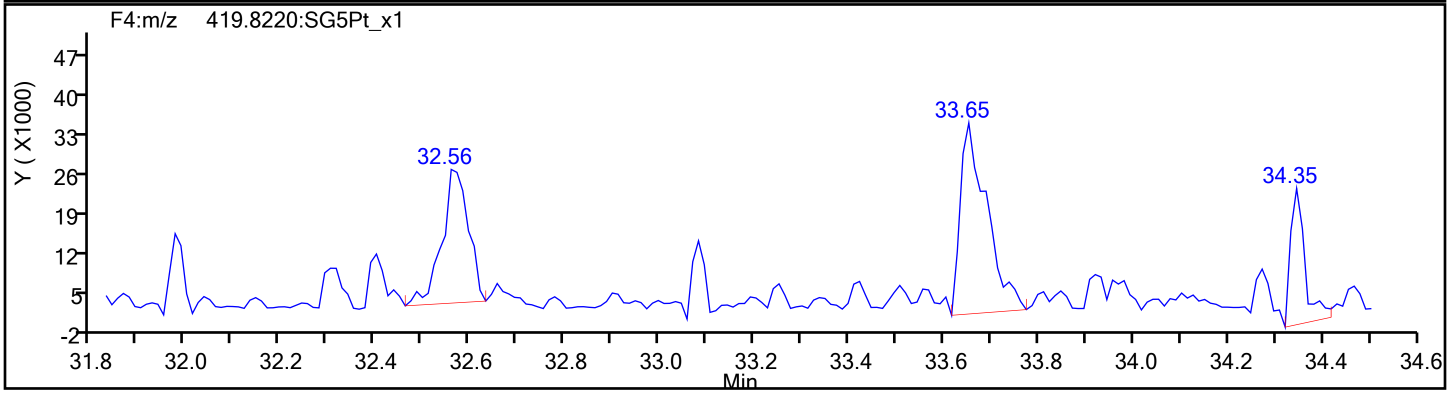

Report Date: 12-Oct-2020 13:49:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d		
Injection Date:	08-Oct-2020 08:53:23	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	1
Column Type:		Column Dia:	

HpCDF

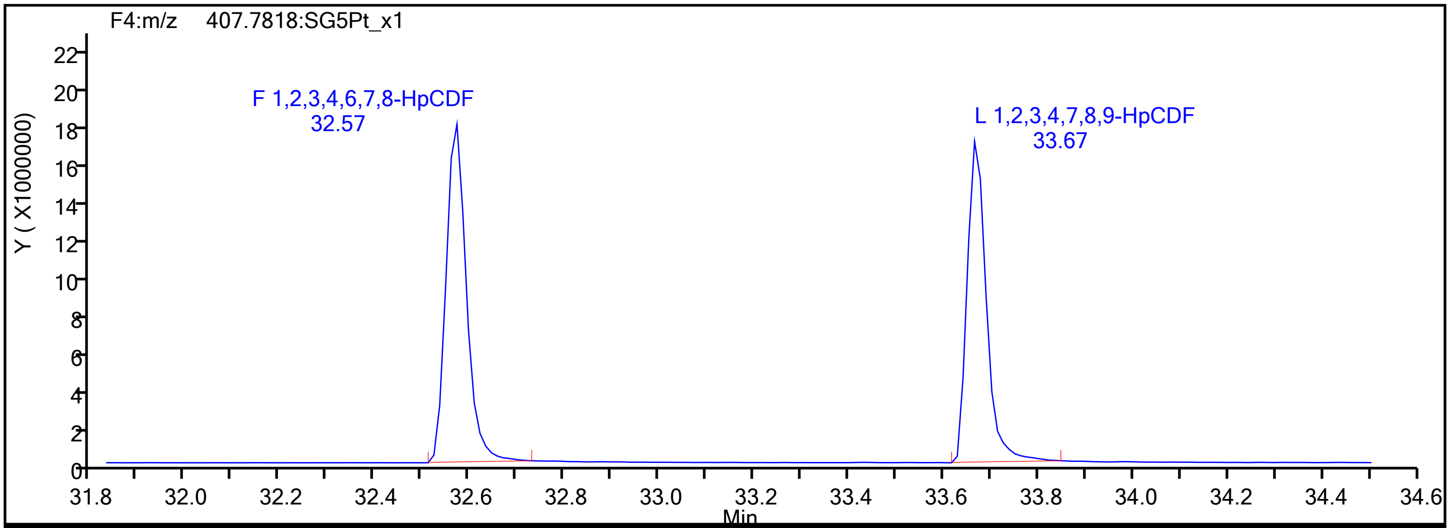

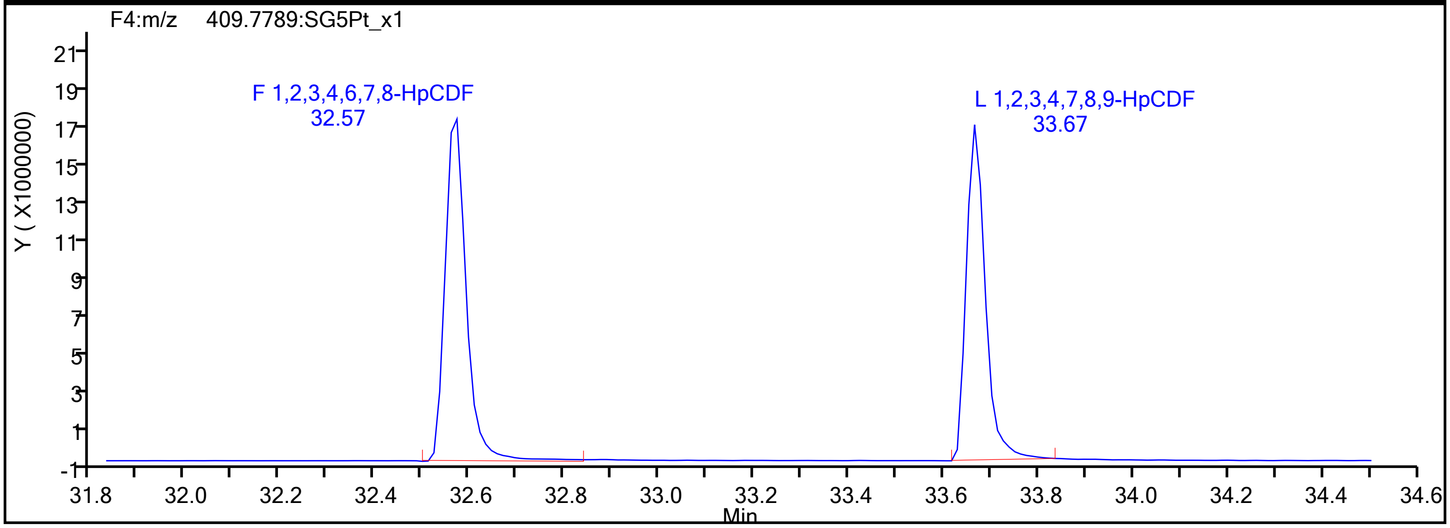

HpCDF Interference Mass

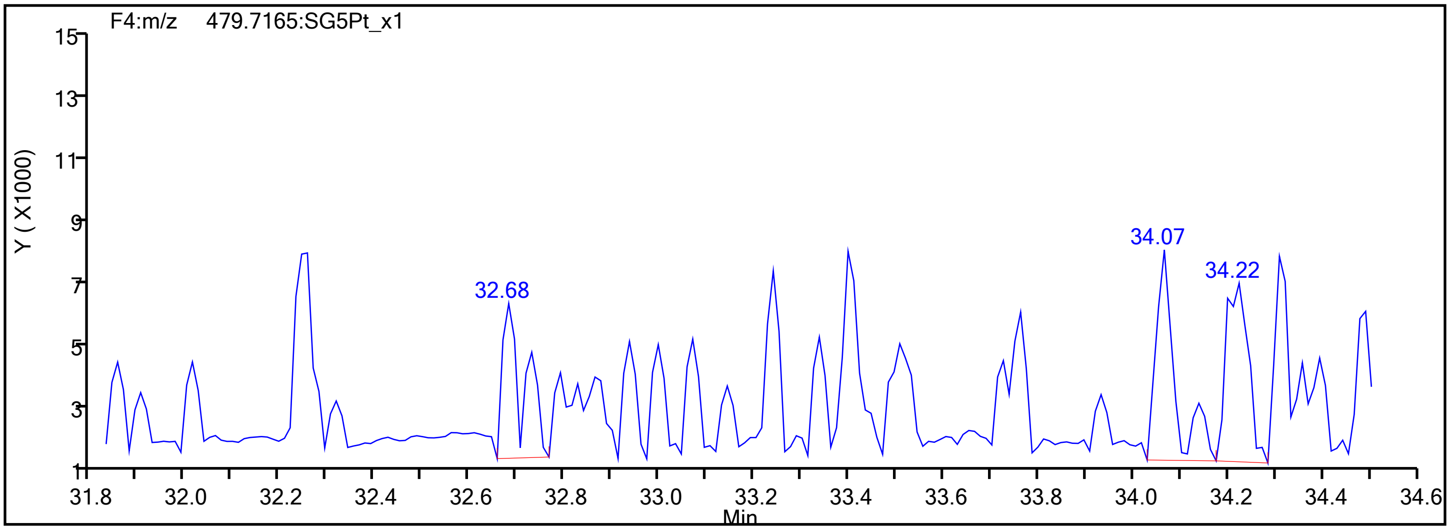

Report Date: 12-Oct-2020 13:49:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d

Injection Date: 08-Oct-2020 08:53:23

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 1

Column Type:

Column Dia:

HpCDD

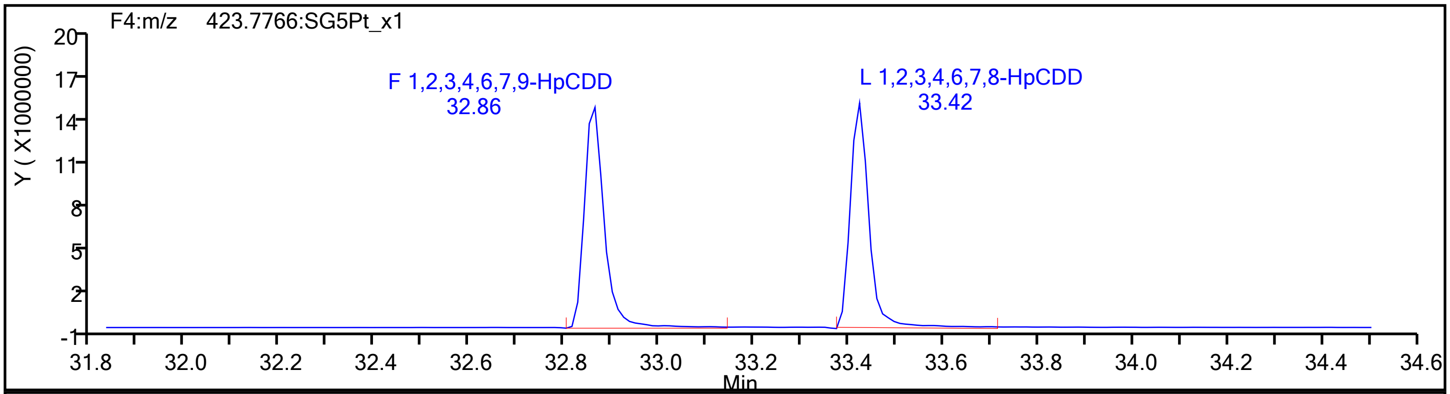

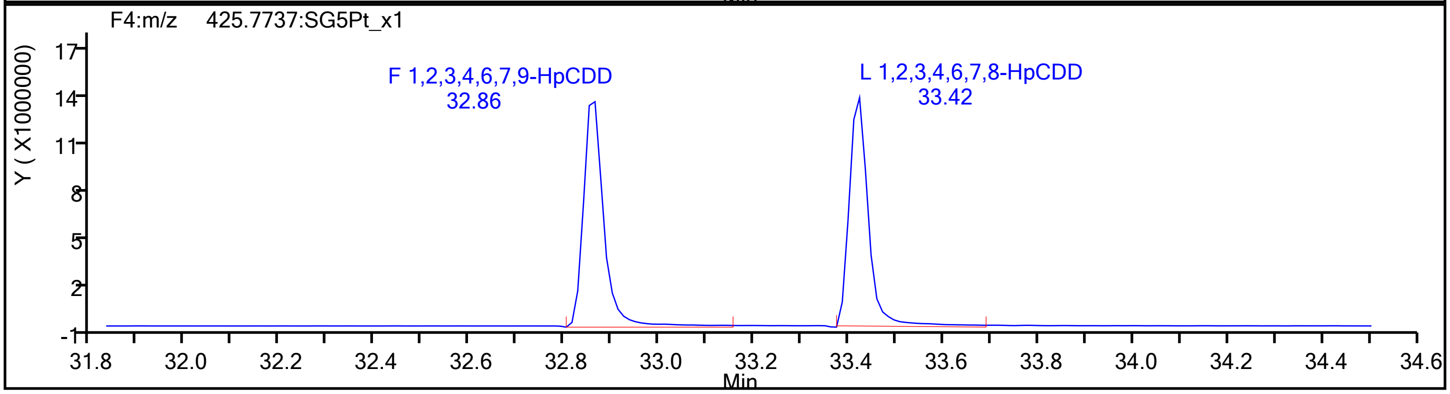

HpCDD Standards

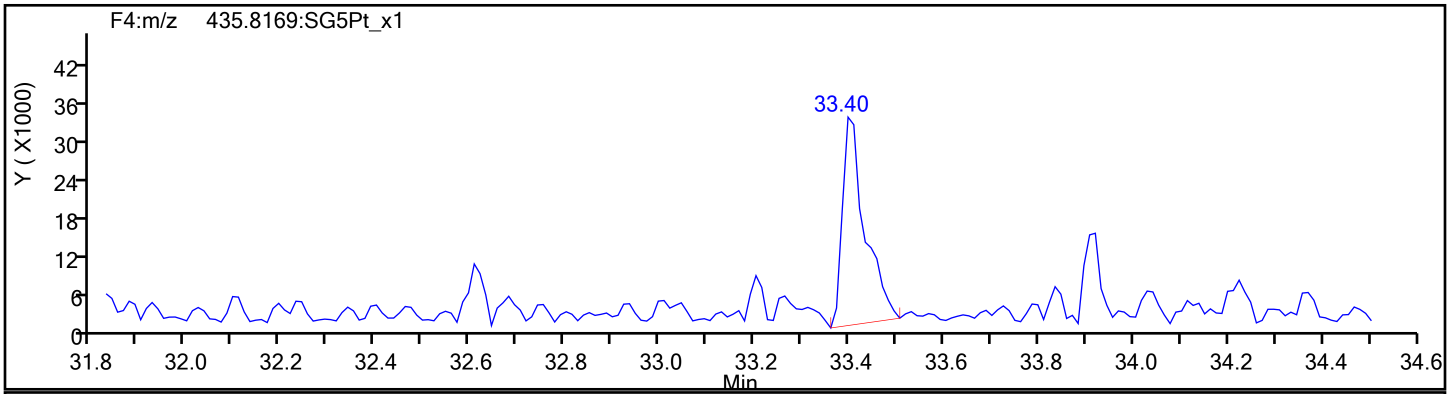

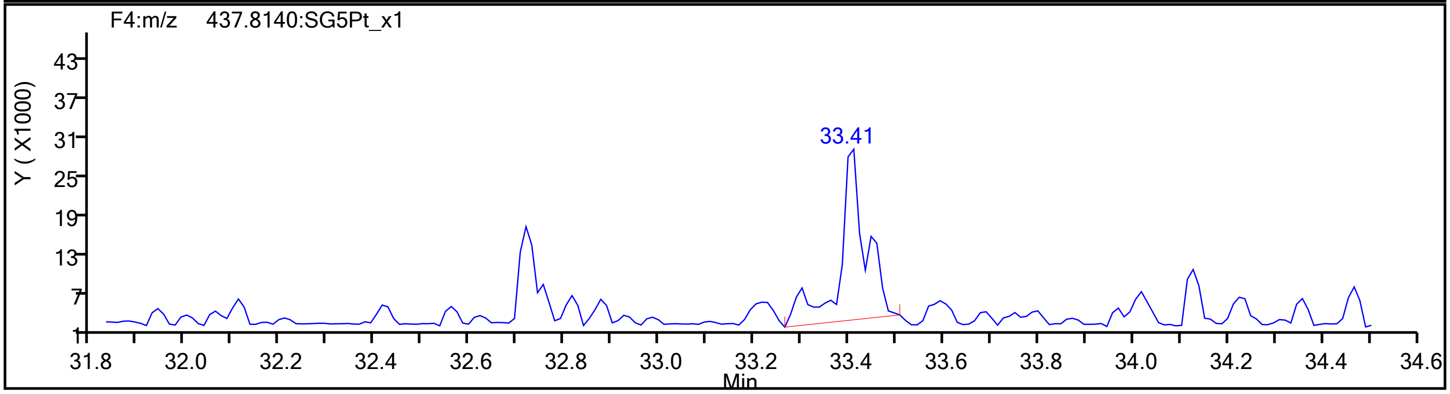

Report Date: 12-Oct-2020 13:49:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d

Injection Date: 08-Oct-2020 08:53:23

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 1

Column Type:

Column Dia:

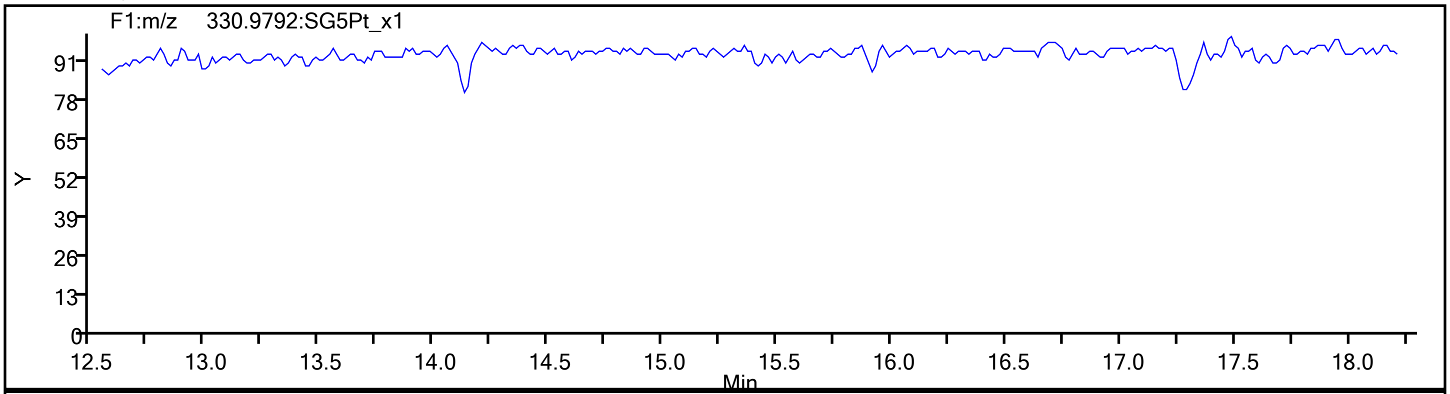

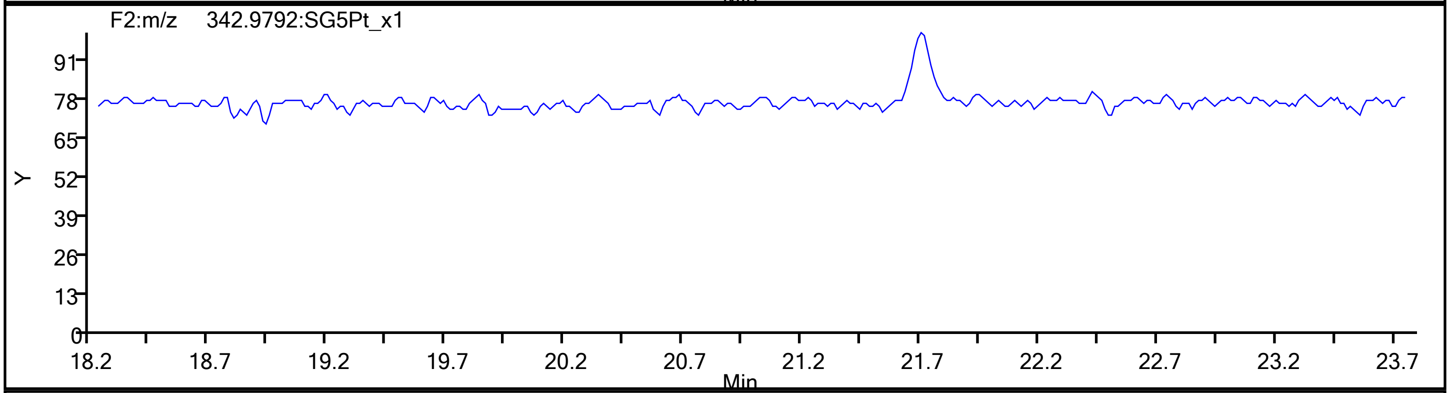

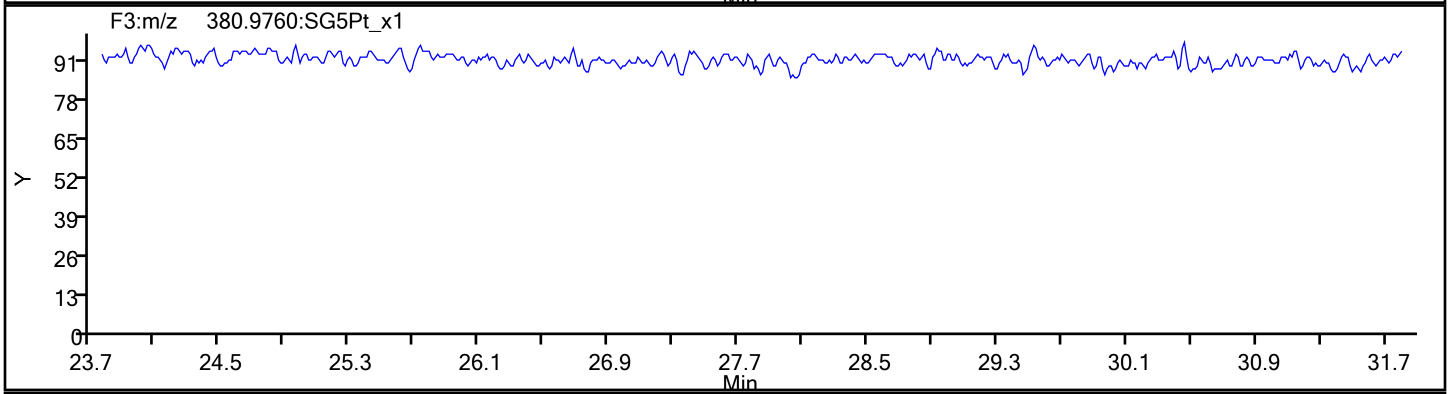

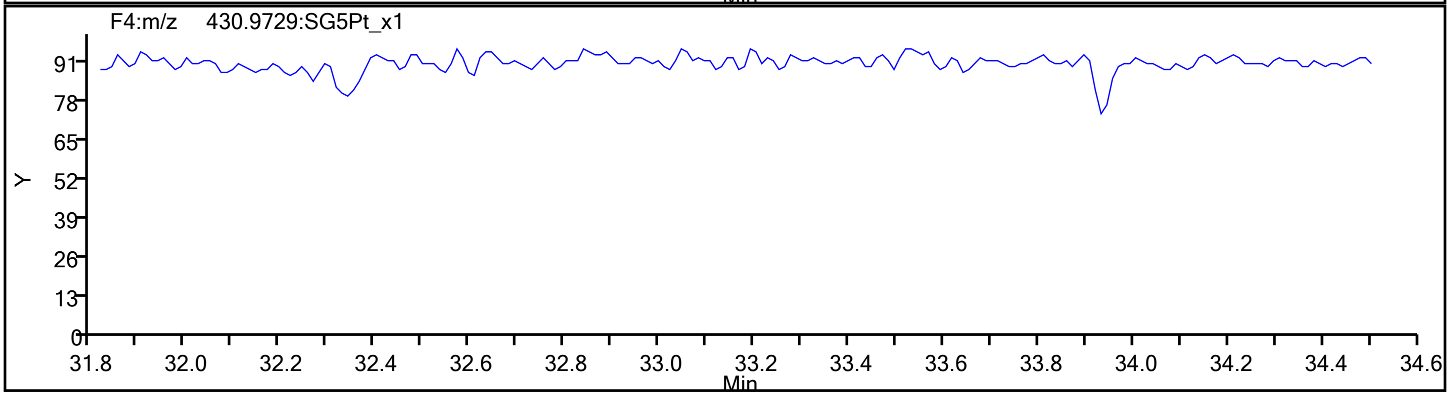

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_1.d

Injection Date: 08-Oct-2020 08:53:23

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 1

Column Type:

Column Dia:

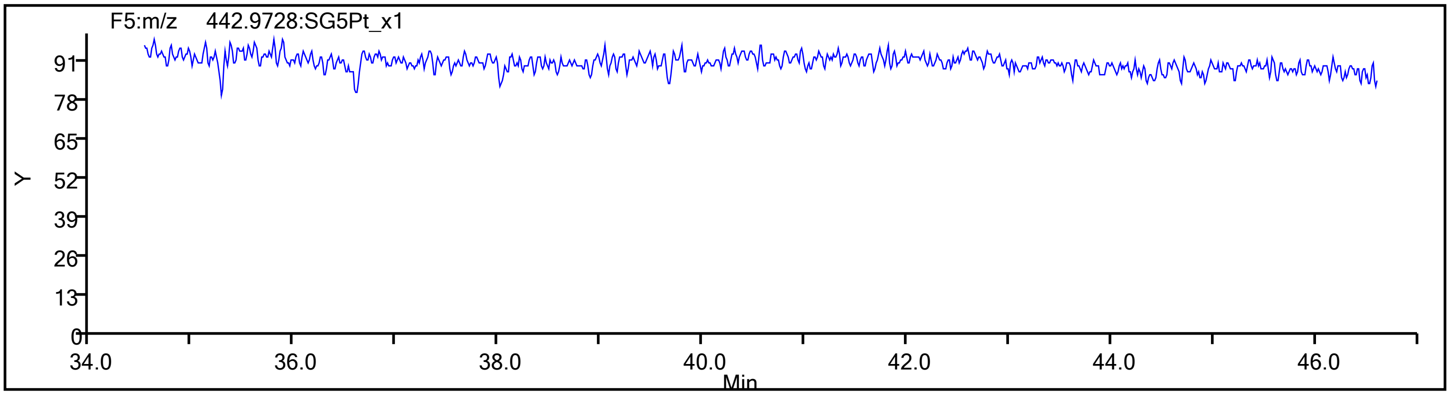

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 09-Oct-2020 01:04:58 ALS Bottle#: 1 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 100820B WDM HRDXNCP_00042
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 18:04:32 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: shardaa Date: 12-Oct-2020 17:53:50

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	15.477	201990138	0.79	1.4844					0.00	
2,3,7,8-TCDF	15.507	418161561	0.78	0.9534	86.9	86.9	0.4258	0.4258		
A Non-2,3,7,8-sub-TCDF	15.227	5286608	0.82	0.9534	1.098	1.098	0.4258	1.098		
S Total TCDF					88.0	88.0	0.4258	0.4258		
D 13C-2,3,7,8-TCDD	16.081	135047044	0.79	1.0875					0.00	
2,3,7,8-TCDD	16.097	146365213	0.80	1.0205	42.5	42.5	0.4651	0.4651		
A Non-2,3,7,8-sub-TCDD	15.620						0.4651	0.4651		
S Total TCDD					42.5	42.5	0.4651	0.4651		
A F1 PeCDFs	17.730						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	20.349						0.0	0.0		
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	20.518						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	27.465						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	27.931						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	32.547	138354195	1.07	1.4783						
1,2,3,4,7,8,9-HpCDF	33.653	126131715	1.05	1.3784						
A Non-2,3,7,8-sub-HpCDF	33.100						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	33.398	95690044	1.04	1.0862						
A Non-2,3,7,8-sub-HpCDD	33.339						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	13.436	210366780	0.78							
1,3,6,8-TCDD	14.222	137081550	0.77							
2,3,4,7-TCDF	15.507	418161561	0.78							
1,2,3,7-TCDD	16.006	130270938	0.76							
1,2,3,9-TCDF	16.218	181588006	0.78							
1,2,3,9-TCDD	16.233	153506066	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	17.019	62910538								
1,2,8,9-TCDF	17.019	185495528	0.81							
1,3,4,6,8-PeCDF	17.276	161024730	1.57							
1,2,4,7,9-PeCDD	18.773	124387606	1.53							
1,2,3,8,9-PeCDD	22.264	123909347	1.55							
1,2,3,8,9-PeCDF	22.441	95845759								
1,2,3,4,6,8-HxCDF	24.363	170710771	1.19							
1,2,4,6,7,9-HxCDD	25.667	125916167	1.25							
1,2,3,4,6,7-HxCDD	30.008	113136873	1.24							
1,2,3,4,8,9-HxCDF	30.567	151843166	1.22							
1,2,3,4,6,7,9-HpCDD	32.839	105180712	1.08							
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 09-Oct-2020 01:04:58 ALS Bottle#: 1 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 100820B WDM HRDXNCP_00042
Misc. Info.: 08OC20A3D5
Operator ID: ALM Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 18:04:32 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: shardaa Date: 12-Oct-2020 17:53:50

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	15.477	15.477	0	1.000	89146928	25252160	34238	85595	738		
317.9389	15.477	15.477	0	1.000	112843210	32267201	26053	65132	1239	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.507	15.507	0	1.002	183727797	46546364	95917	239792	485		
305.8987	15.492	15.507	-1	1.001	234433764	58123345	137584	343960	422	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.291	15.227	124	1.117	2387921	508681	95917	239792	5		
305.8987	17.291	15.227	124	1.117	2898687	671829	137584	343960	5	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.081	16.081	0	1.000	59626308	15487762	23381	58452	662		
333.9339	16.081	16.081	0	1.000	75420736	20034014	12594	31485	1591	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.097	16.097	0	1.001	64914389	17344627	61349	153372	283		
321.8936	16.097	16.097	0	1.001	81450824	21903839	107236	268090	204	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	15.620						61349	153372			
321.8936	15.620						107236	268090			
A F1 PeCDFs											
339.8597	17.730						24755	61887			
341.8567	17.730						16476	41190			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.349						23501	58752			
341.8567	20.349						16514	41285			
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.518						22327	55817			
357.8516	20.518						14527	36317			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.465						20102	50255			
375.8178	27.465						15707	39267			
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						13209	33022			
391.8127	27.931						13537	33842			
1,2,3,4,6,7,8-HpCDF											
407.7818	32.547	32.547	0	1.000	71361818	23717674	129640	324100	183		
409.7789	32.547	32.547	0	1.000	66992377	22269174	55697	139242	400	1.07(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	64639953	22017254	129640	324100	170		
409.7789	33.653	33.653	0	1.000	61491762	20250666	55697	139242	364	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.100						129640	324100			
409.7789	33.100						55697	139242			
1,2,3,4,6,7,8-HpCDD											
423.7766	33.398	33.398	0	1.000	48731262	18248444	69037	172592	264		
425.7737	33.398	33.398	0	1.000	46958782	17971880	34747	86867	517	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						69037	172592			
425.7737	33.339						34747	86867			
1,3,6,8-TCDF											
303.9016	13.436	13.436	0		92304378	31072978	95917	239792	324		
305.8987	13.436	13.436	0		118062402	41072272	137584	343960	299	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	14.222	14.222	0		59828428	19222076	61349	153372	313		
321.8936	14.222	14.222	0		77253122	24456622	107236	268090	228	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	15.507	15.507	0		183727797	46546364	95917	239792	485		
305.8987	15.492	15.507	-1		234433764	58123345	137584	343960	422	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	16.006	16.006	0		56191660	15363631	61349	153372	250		
321.8936	15.991	16.006	-1		74079278	20184050	107236	268090	188	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	16.218	16.218	0		79342671	20737806	95917	239792	216		
305.8987	16.218	16.218	0		102245335	26795929	137584	343960	195	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	16.233	16.233	0		67704470	17232131	61349	153372	281		
321.8936	16.233	16.233	0		85801596	22055559	107236	268090	206	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	17.019	17.019	0		62910538	15227664	61349	153372	248		
1,2,8,9-TCDF											
303.9016	17.019	17.019	0		83254677	20858943	95917	239792	217		
305.8987	17.019	17.019	0		102240851	25975588	137584	343960	189	0.81(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	17.276	17.276	0		98426730	23183982	24755	61887	937		
341.8567	17.276	17.276	0		62598000	14592203	16476	41190	886	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	18.773	18.773	0		75230538	14327273	22327	55817	642		
357.8516	18.773	18.773	0		49157068	9343836	14527	36317	643	1.53(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	22.264	22.264	0		75240320	12401335	22327	55817	555		
357.8516	22.264	22.264	0		48669027	8071741	14527	36317	556	1.55(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	22.441	22.441	0		95845759	15660165	23501	58752	666		
1,2,3,4,6,8-HxCDF											
373.8208	24.363	24.363	0		92596854	14028767	20102	50255	698		
375.8178	24.349	24.363	-1		78113917	11840988	15707	39267	754	1.19(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	25.667	25.667	0		69883542	9663418	13209	33022	732		
391.8127	25.667	25.667	0		56032625	7718025	13537	33842	570	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	30.008	30.008	0		62708275	9643204	13209	33022	730		
391.8127	30.008	30.008	0		50428598	7838125	13537	33842	579	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	30.567	30.567	0		83541710	16074258	20102	50255	800		
375.8178	30.567	30.567	0		68301456	12751976	15707	39267	812	1.22(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	32.839	32.839	0		54668869	18988057	69037	172592	275		
425.7737	32.839	32.839	0		50511843	18194111	34747	86867	524	1.08(0.88-1.20)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d
Lims ID: WDM
Client ID:
Inject. Date: 09-Oct-2020 01:04:58
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 3D5
Operator: ALM
Lims Batch ID: 420482
Lims Sample ID: 8

Non-2,3,7,8-sub-TCDF, RT: 15.227

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	40.000	201990138	57519361

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		40.000	201990138	57519361

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.291	2387921	508681	2898687	671829	1.10	0.82	
Signal Totals:							
	2387921	508681	2898687	671829			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5286608	1180510				0.82	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.098 = (5286608 * 40.000) / (201990138 * 0.953)

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d

Injection Date: 09-Oct-2020 01:04:58 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420482 Sample Line#: 8

Column Type: Column Dia:

TCDF

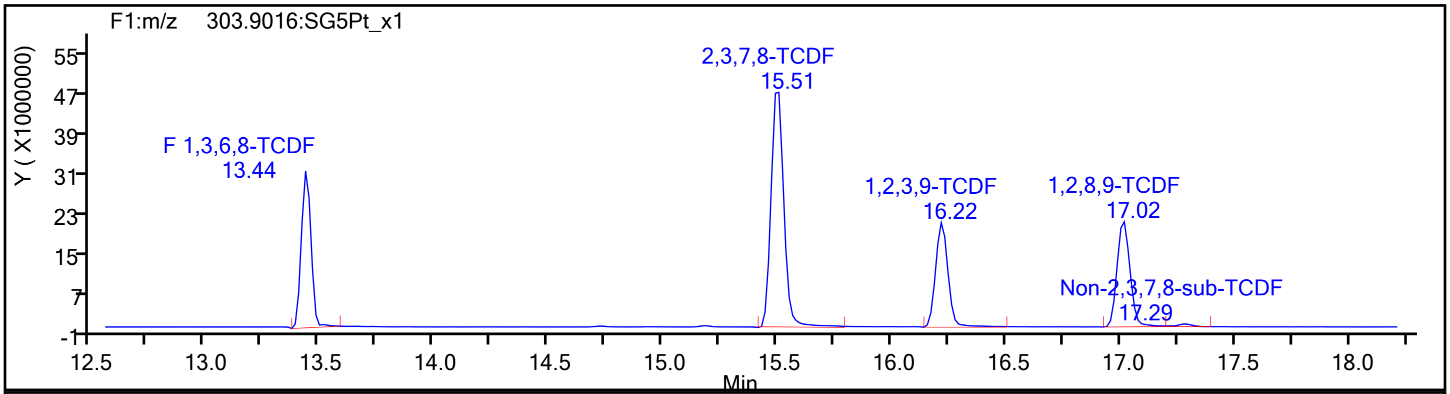

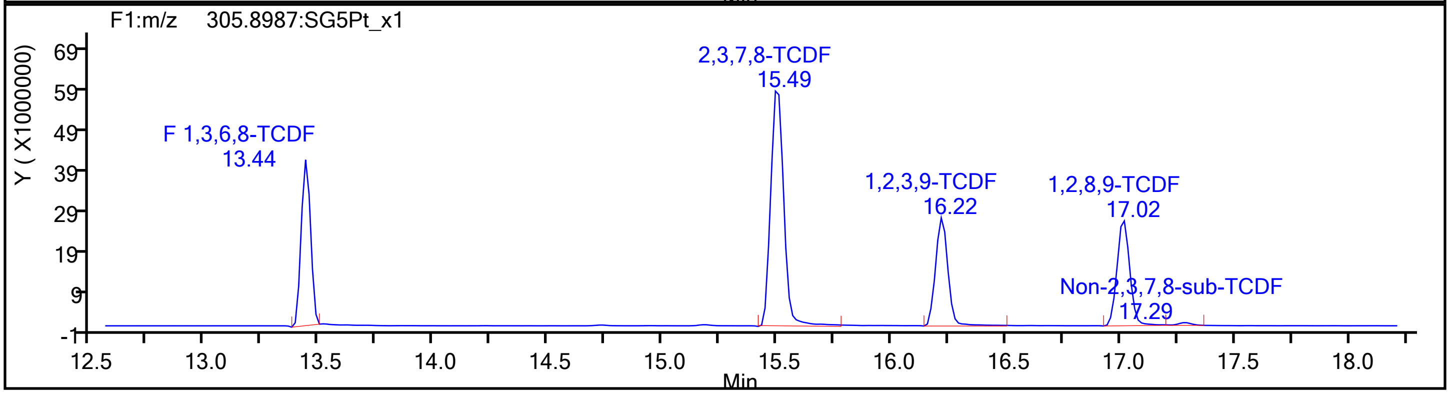

TCDF Standards

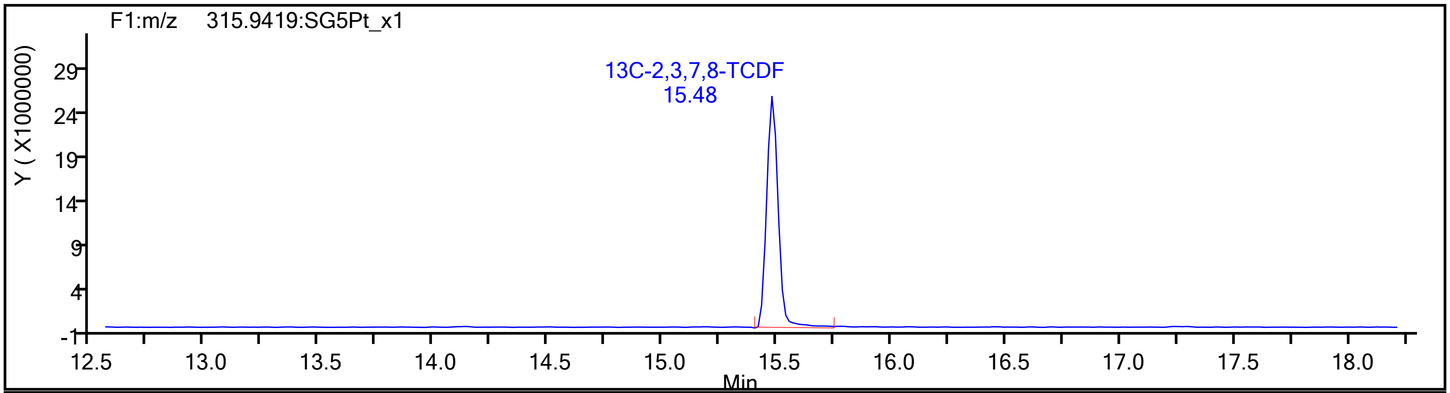

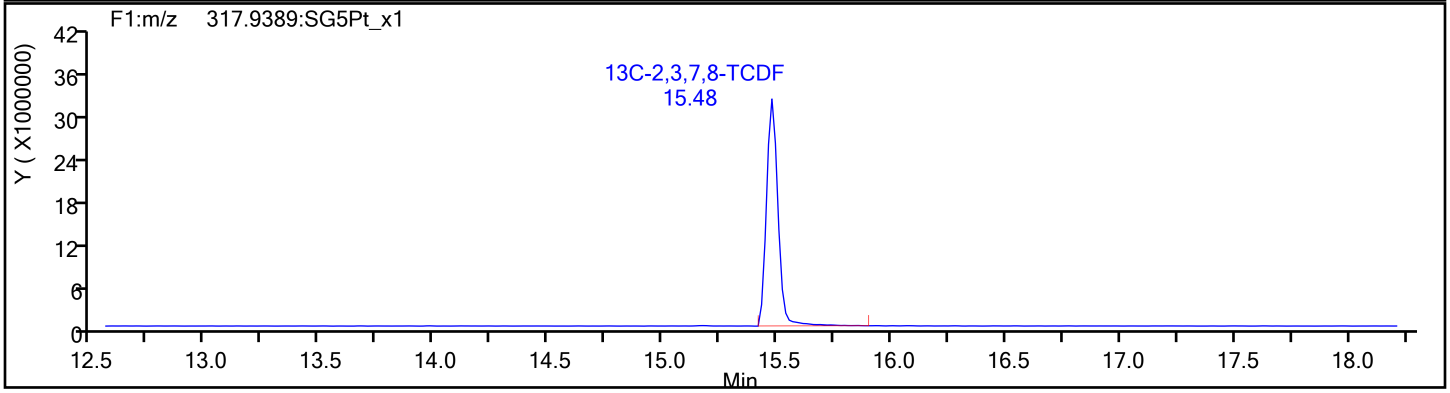

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d
Injection Date: 09-Oct-2020 01:04:58
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420482
Sample Line#: 8
Column Type:
Column Dia:

TCDF

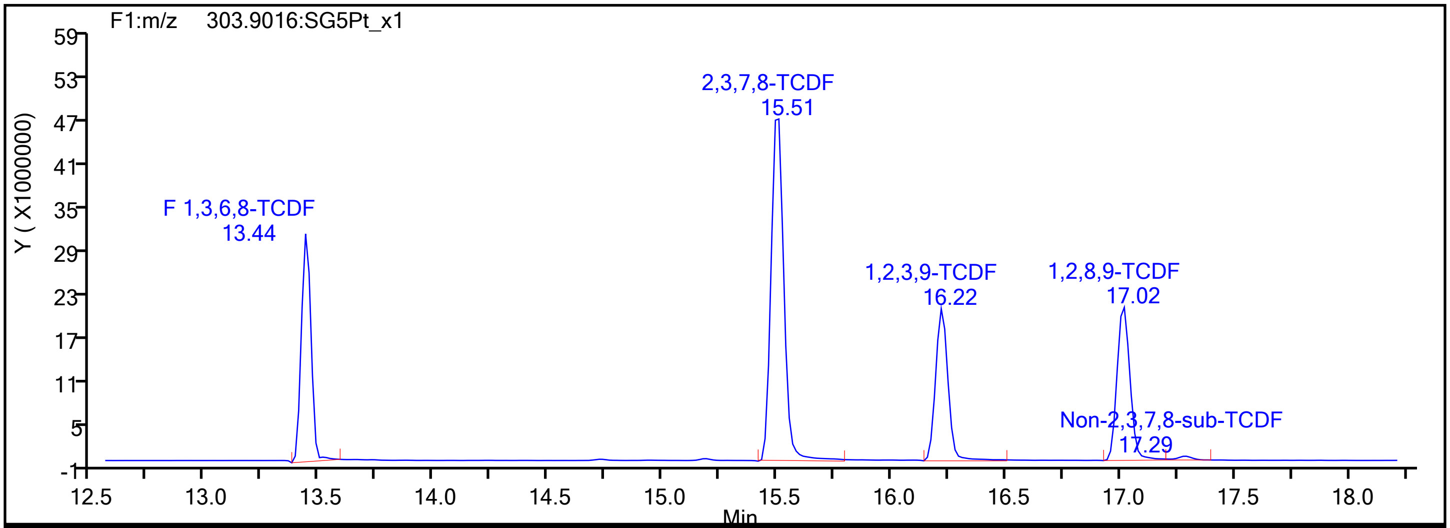

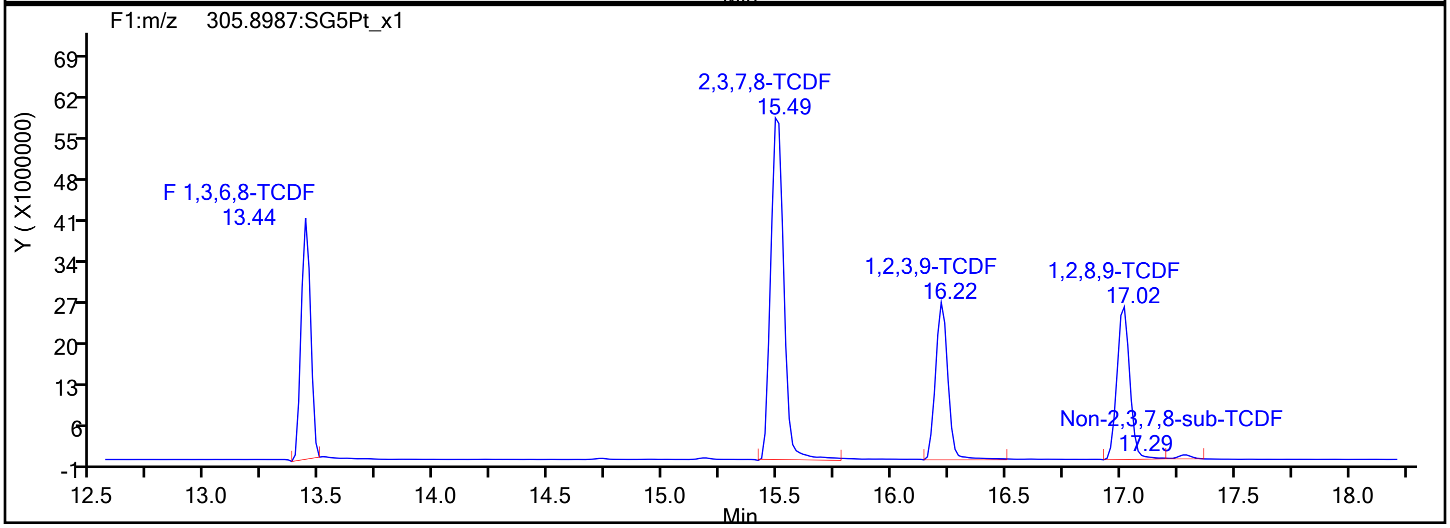

TCDF Interference Mass

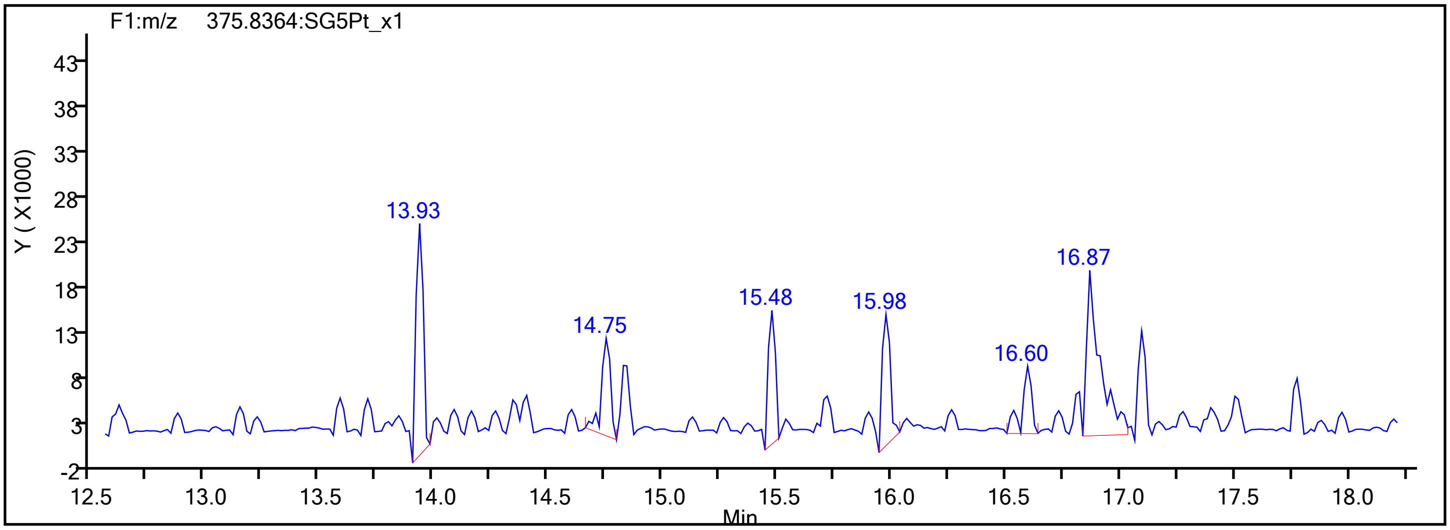

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d		
Injection Date:	09-Oct-2020 01:04:58	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

TCDD

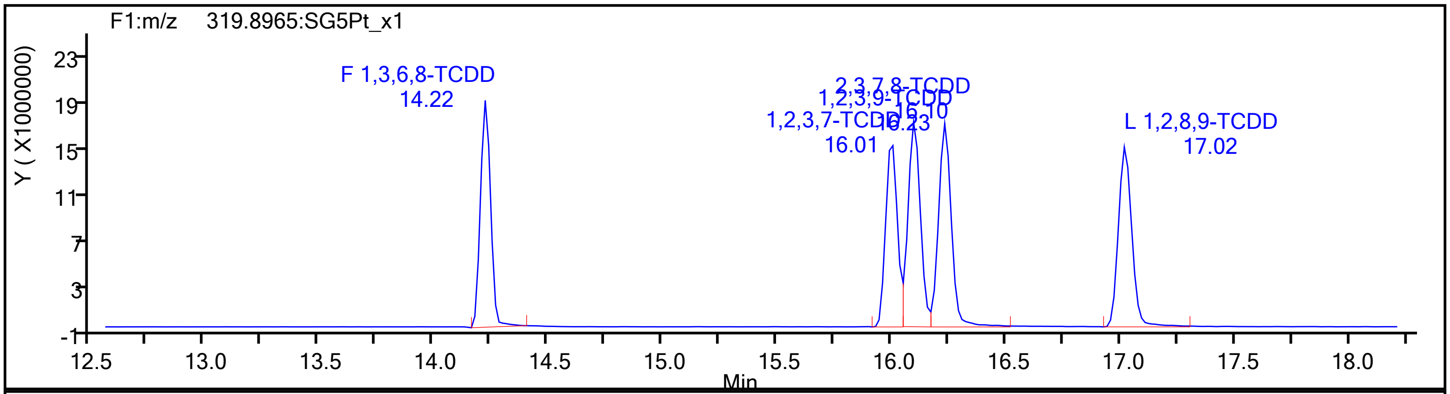

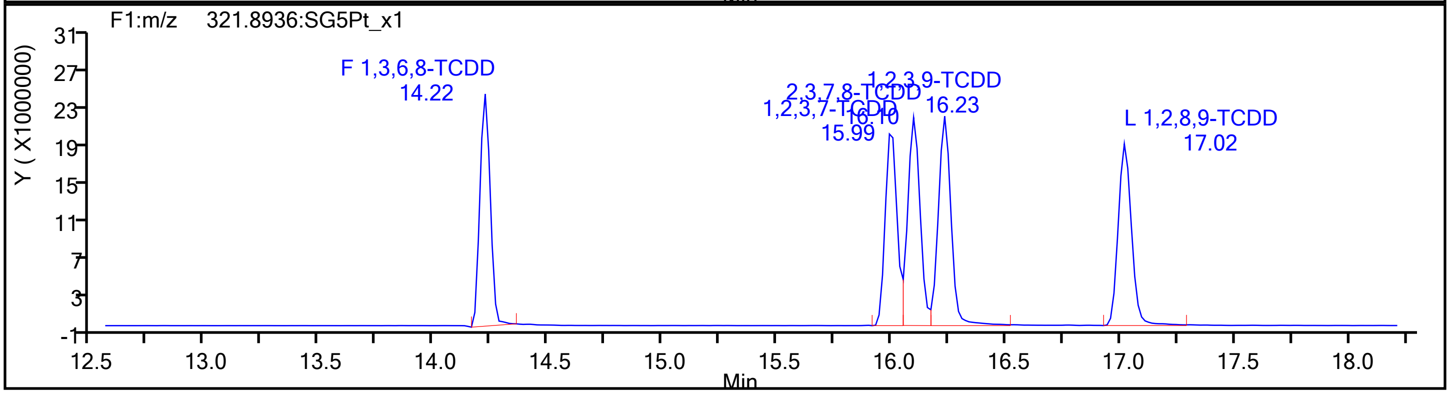

TCDD Standards

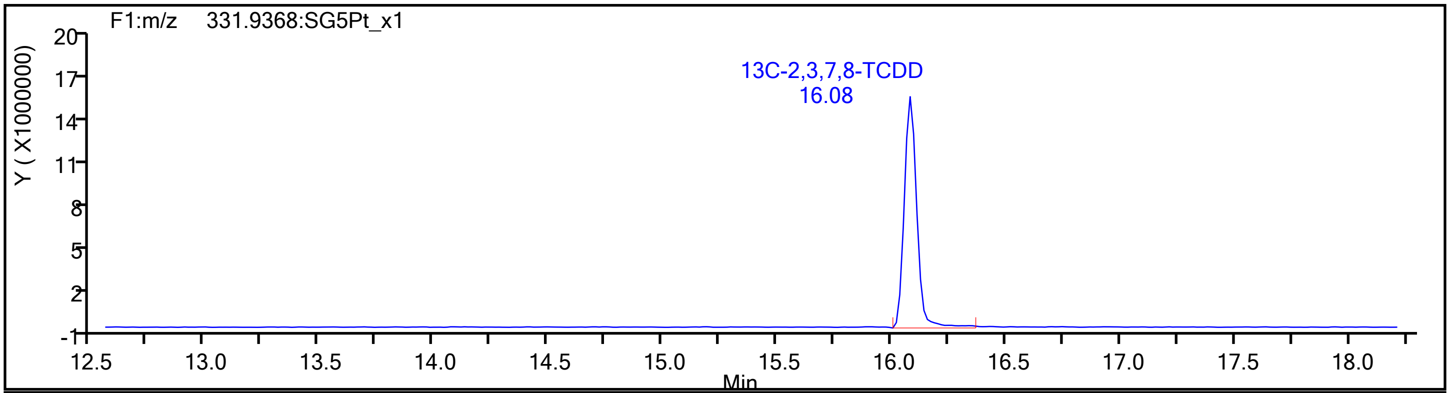

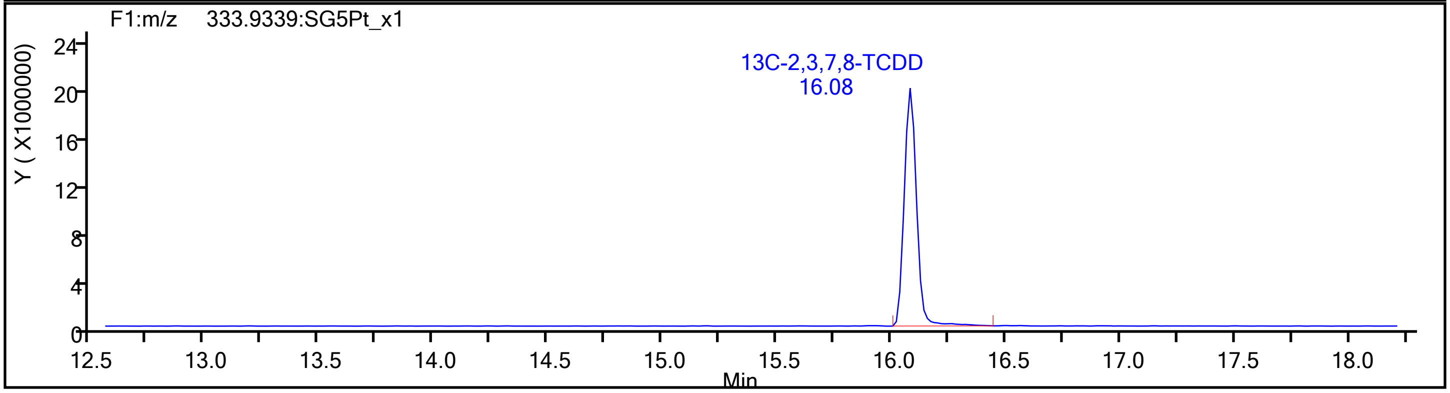

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d		
Injection Date:	09-Oct-2020 01:04:58	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

37Cl4-TCDD

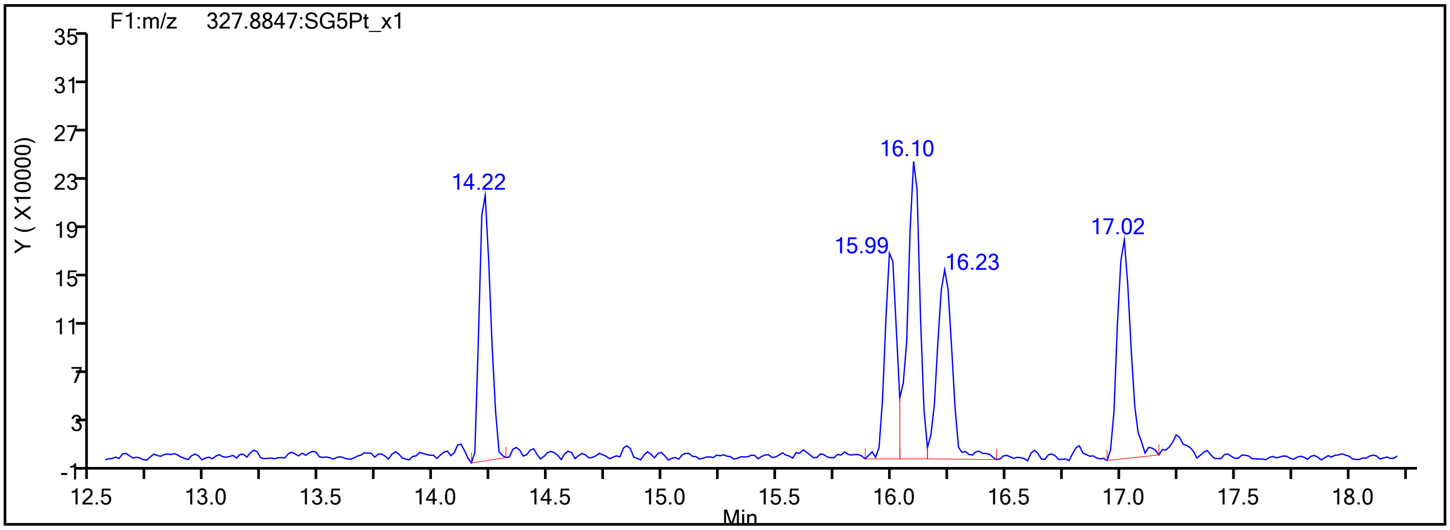

37Cl4-TCDD Standards

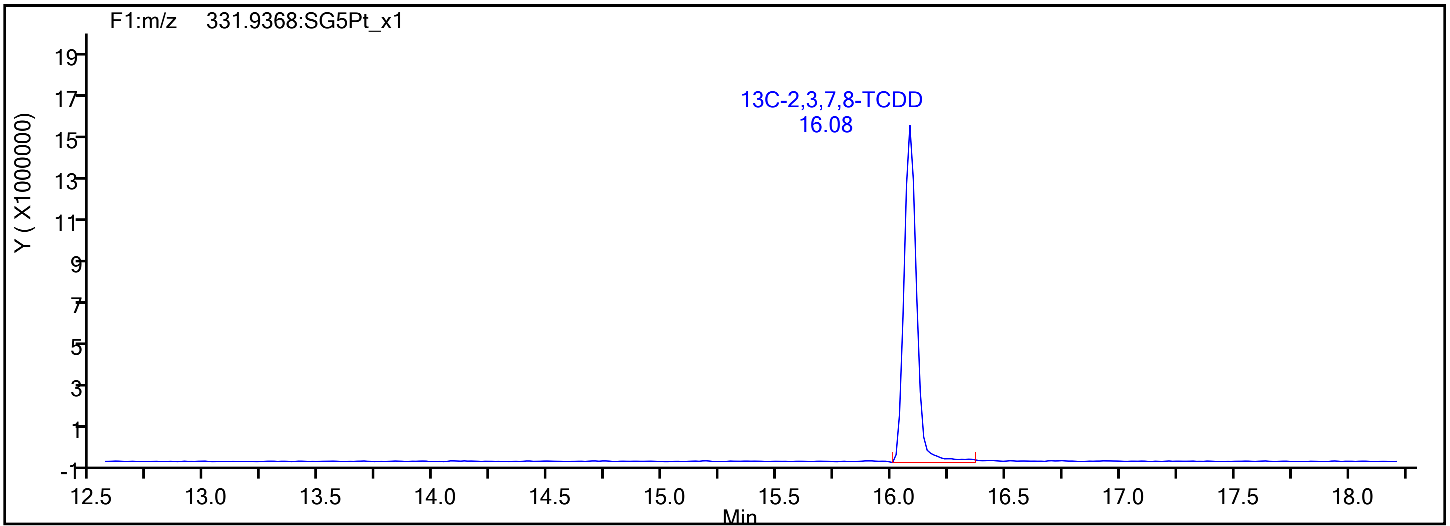

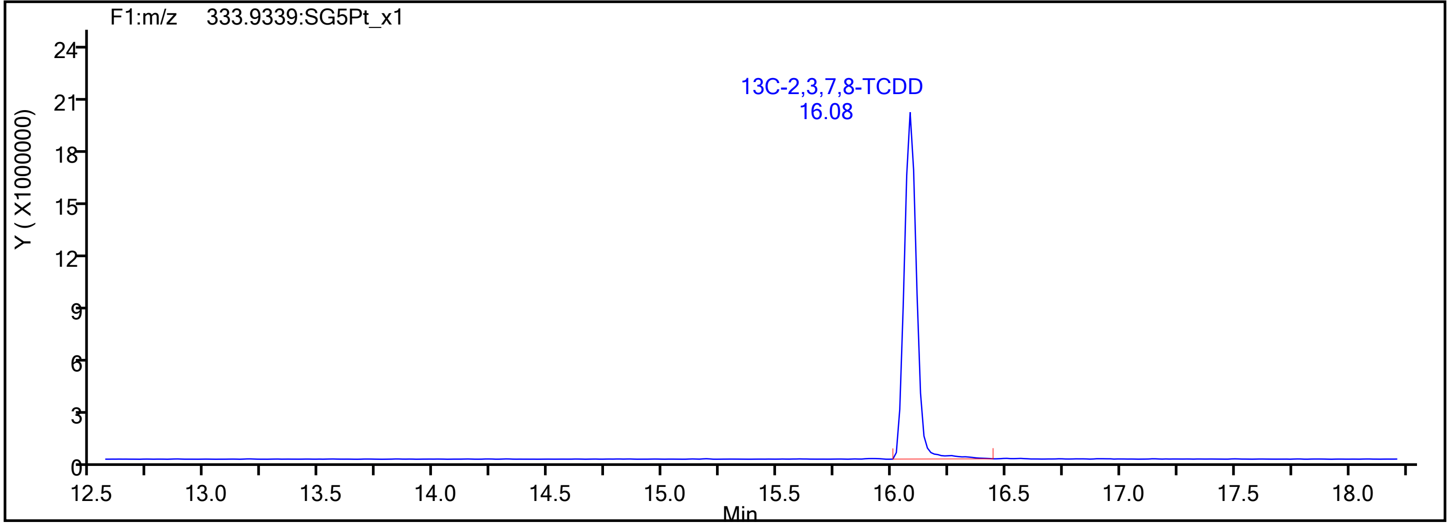

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d		
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Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

PeCDF

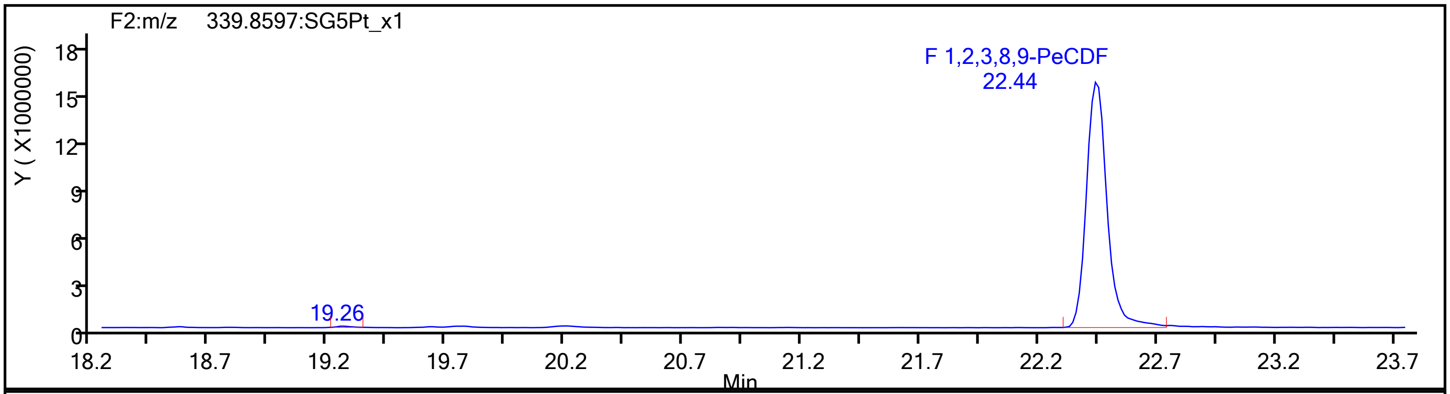

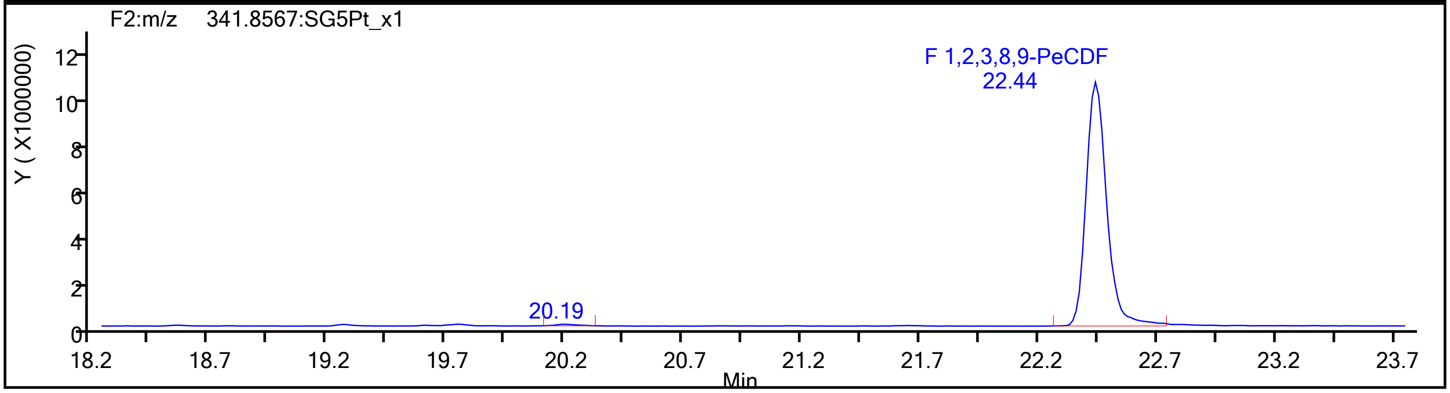

PeCDF Standards

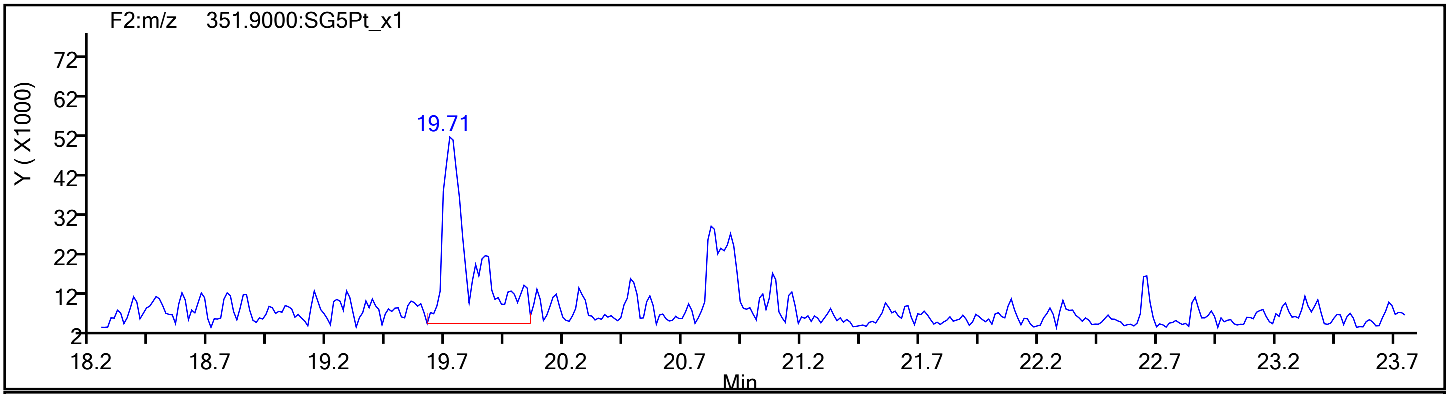

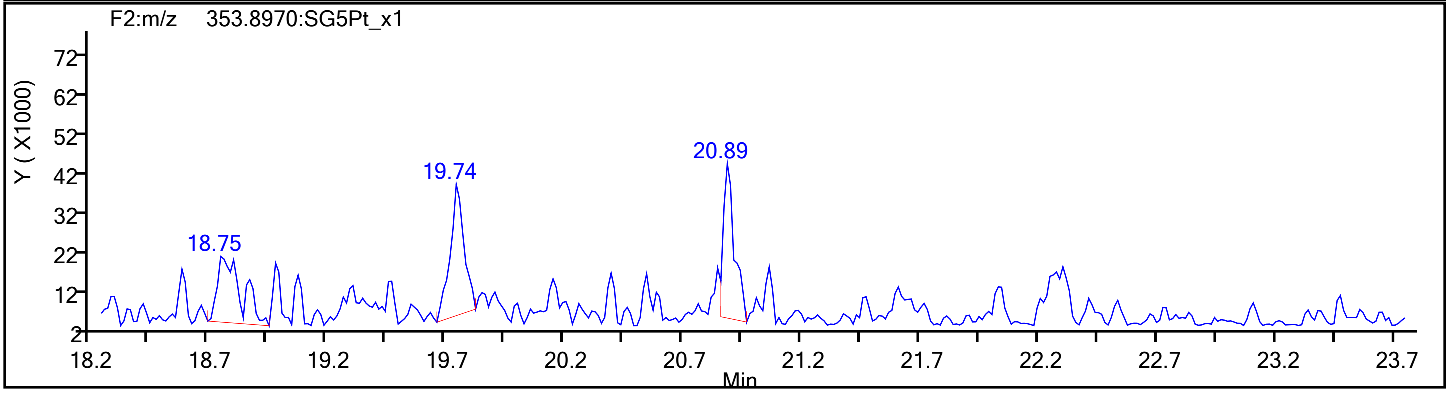

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d		
Injection Date:	09-Oct-2020 01:04:58	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

PeCDF

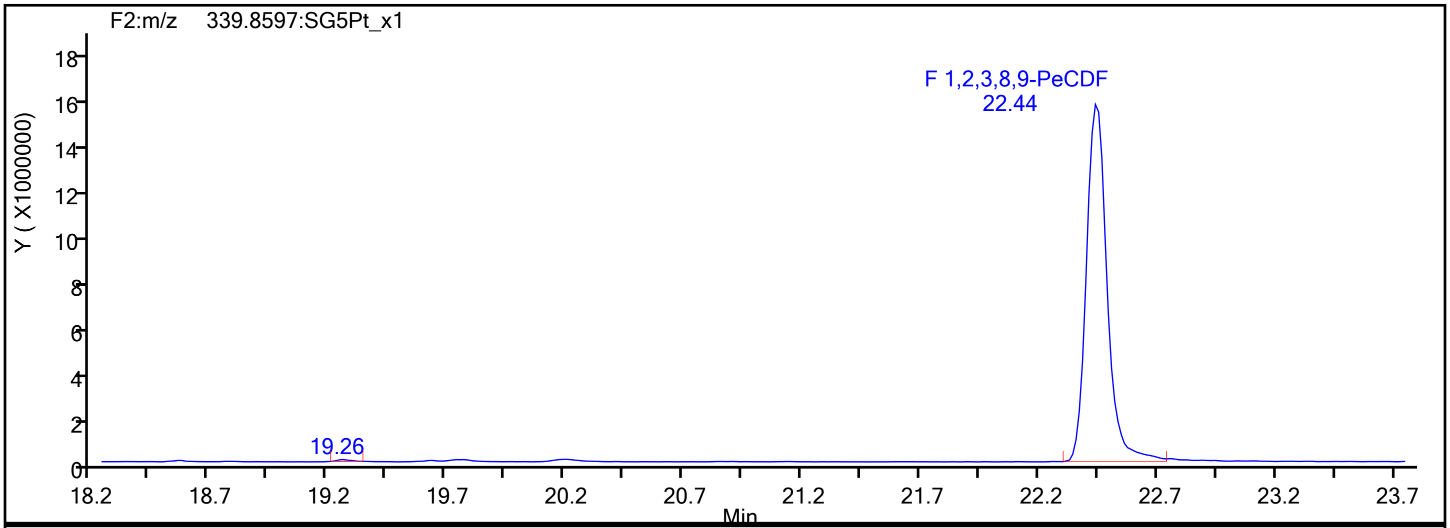

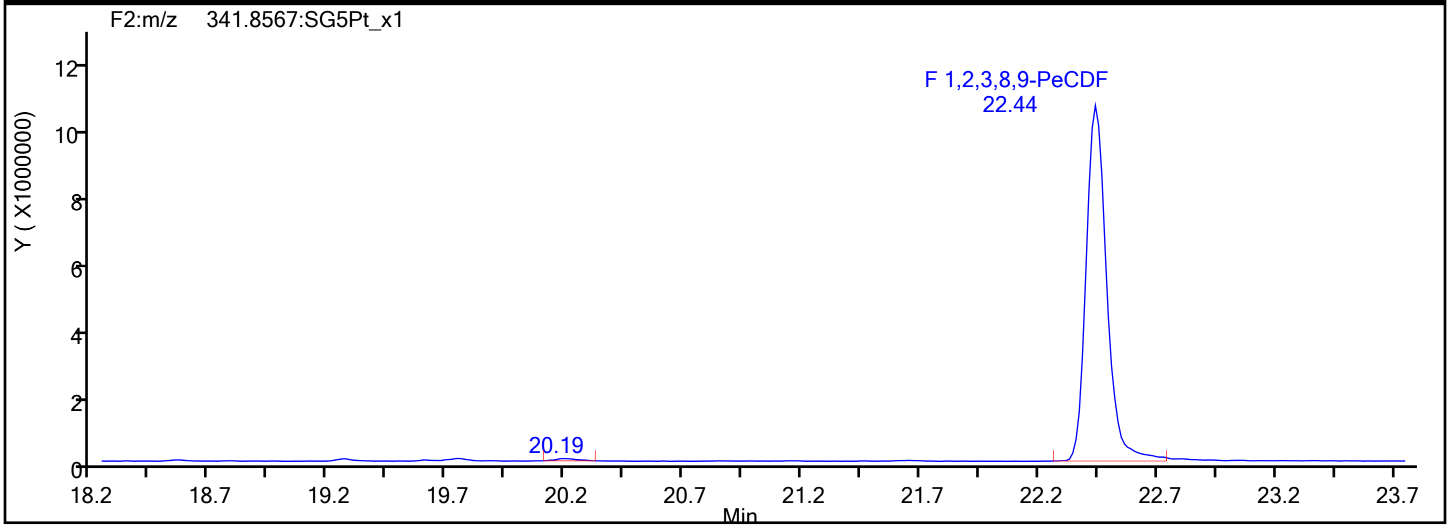

PeCDF Interference Mass

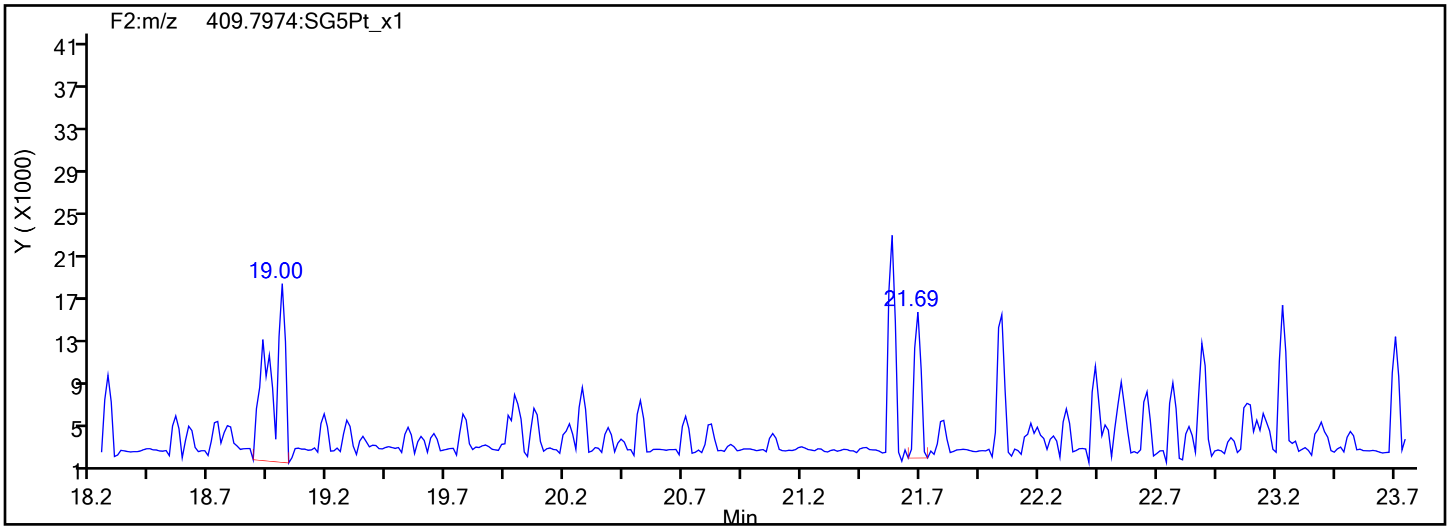

Report Date: 12-Oct-2020 18:04:32   Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d
Injection Date: 09-Oct-2020 01:04:58   Injection Vol: 2.0 ul
Instrument ID: 3D5   Operator ID: ALM
Method: Dioxin_3D5   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420482   Sample Line#: 8
Column Type: Column Dia:

PeCDD

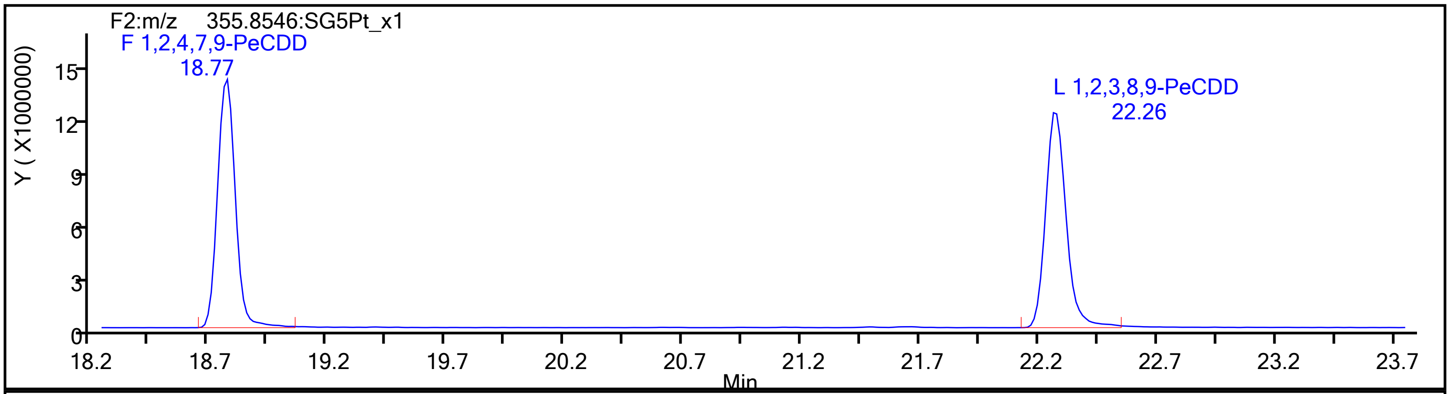

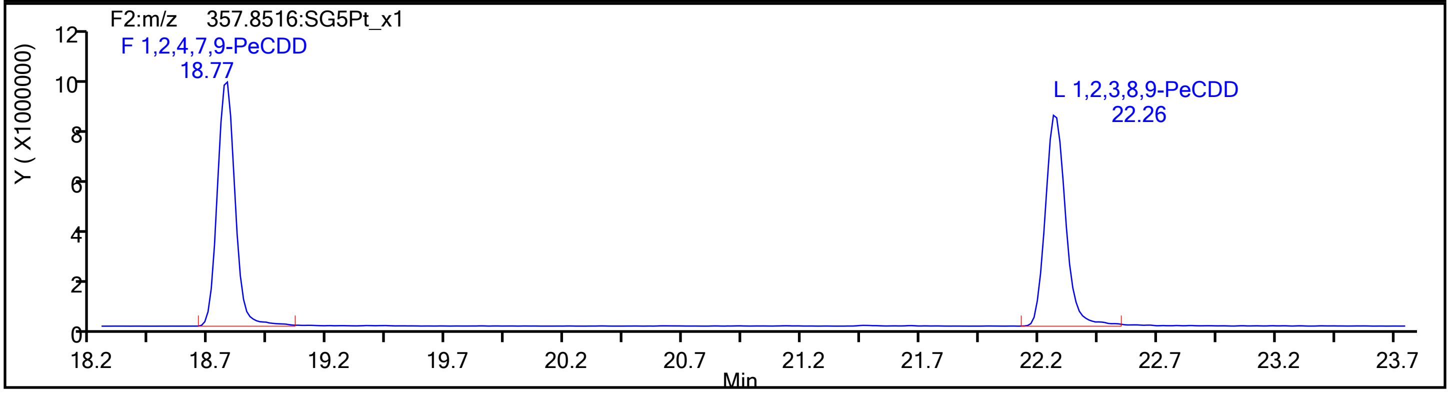

PeCDD Standards

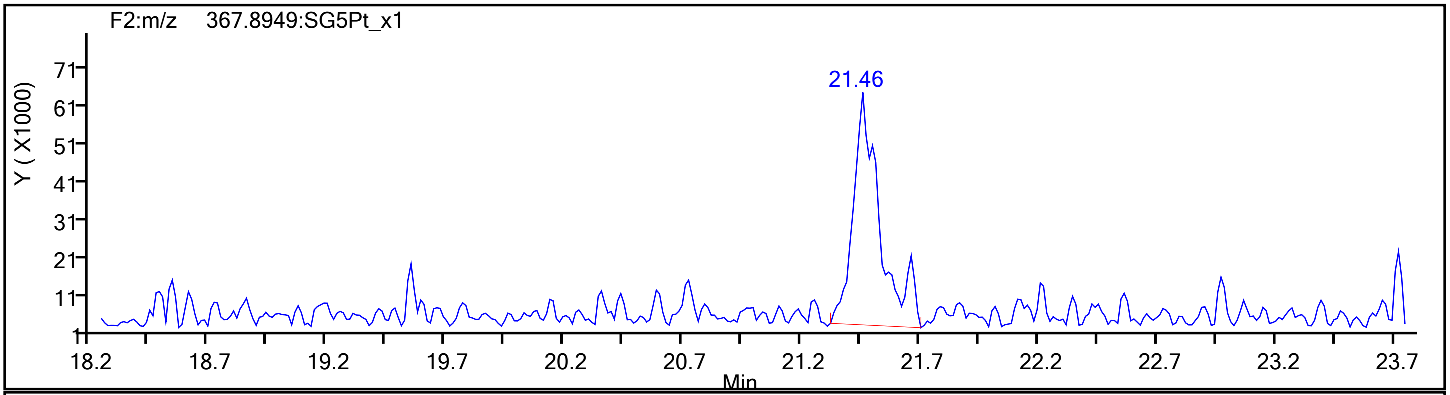

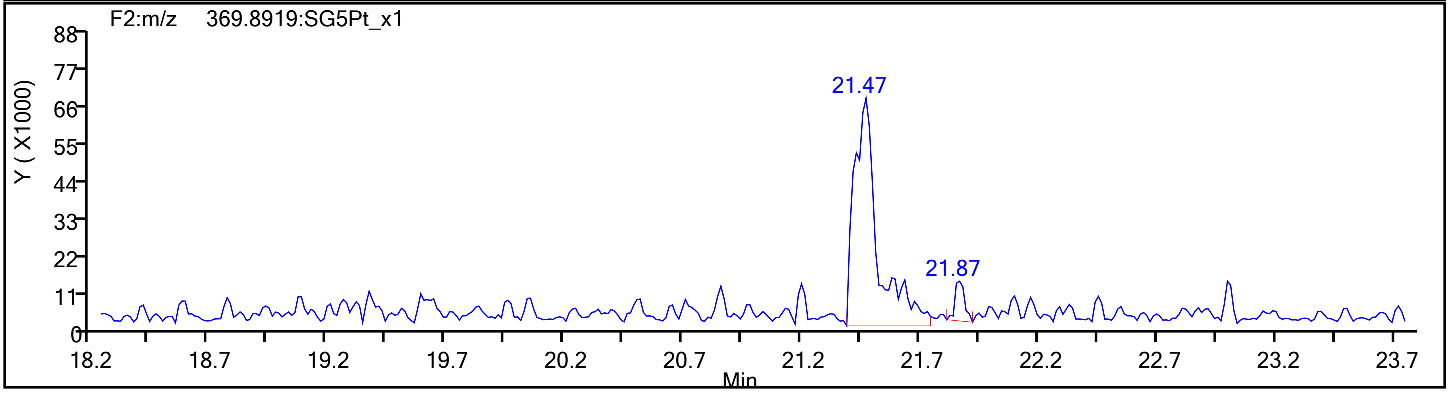

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 01:04:58

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420482

Sample Line#: 8

Column Type:

Column Dia:

HxCDF

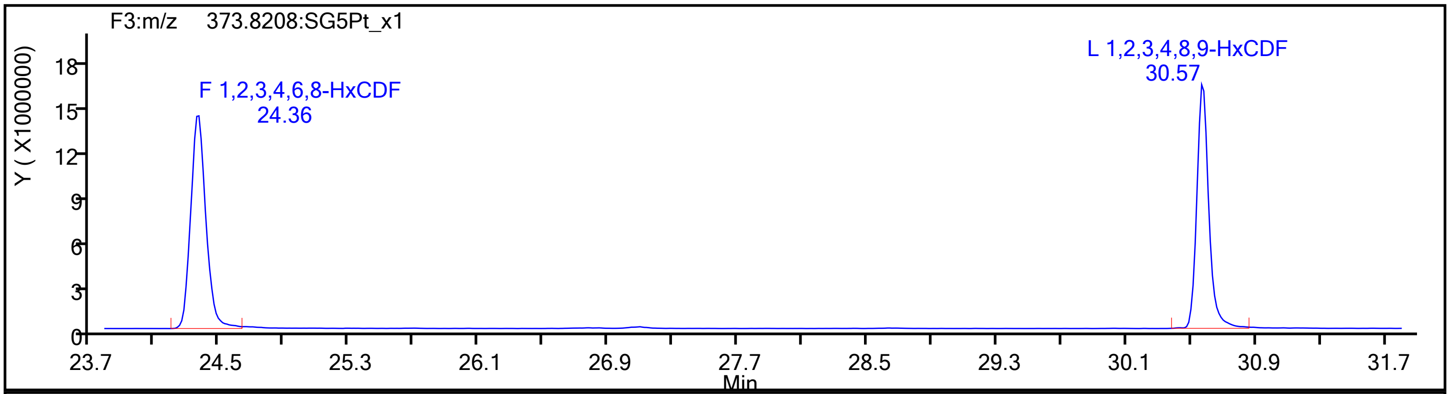

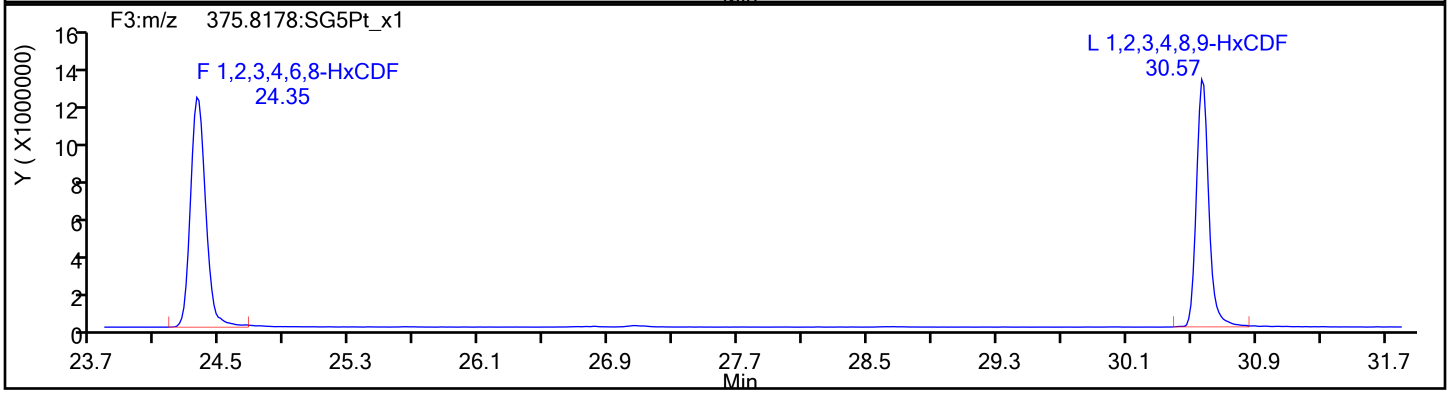

HxCDF Standards

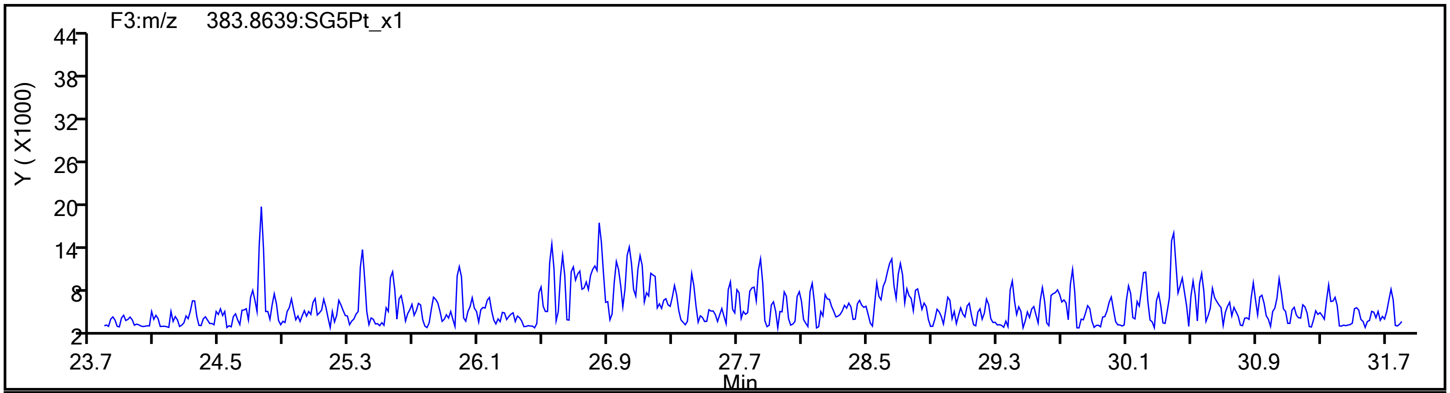

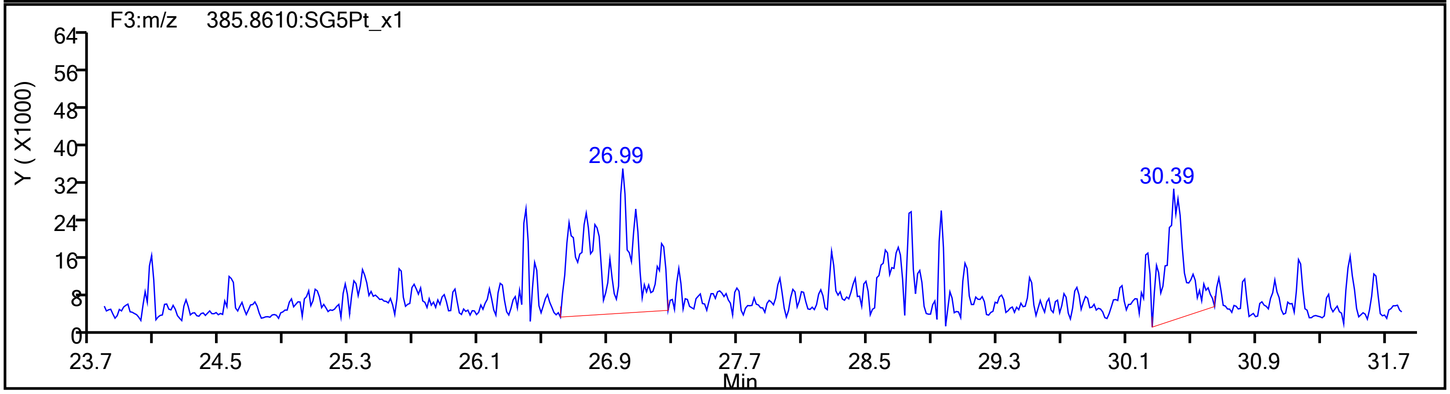

Report Date: 12-Oct-2020 18:04:32　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 01:04:58	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

HxCDF

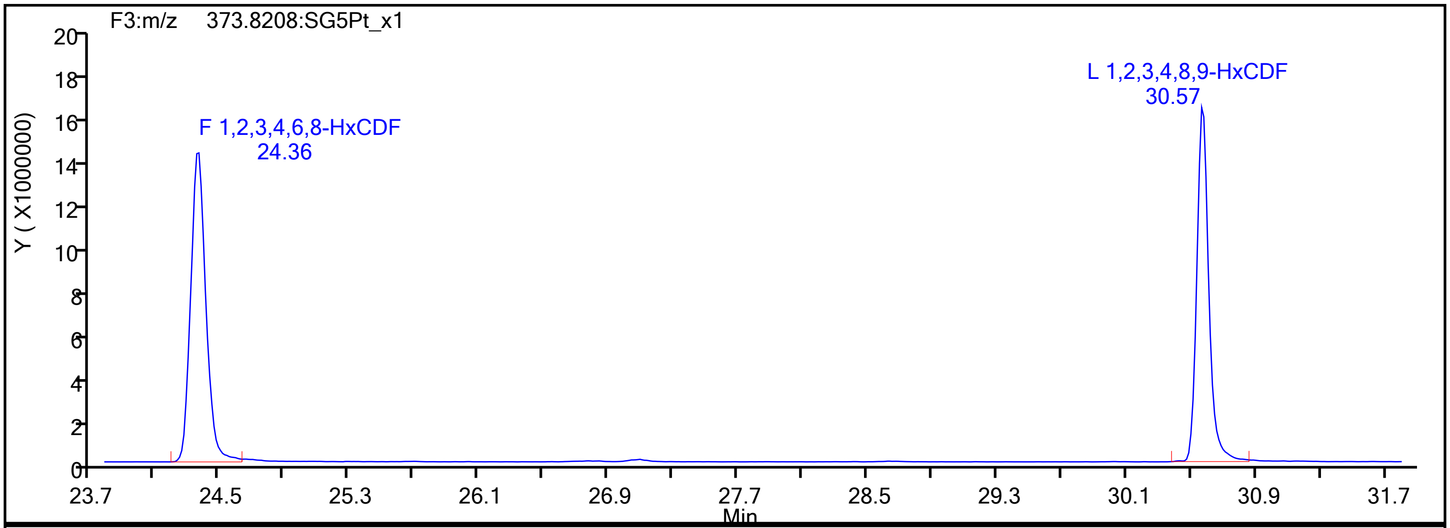

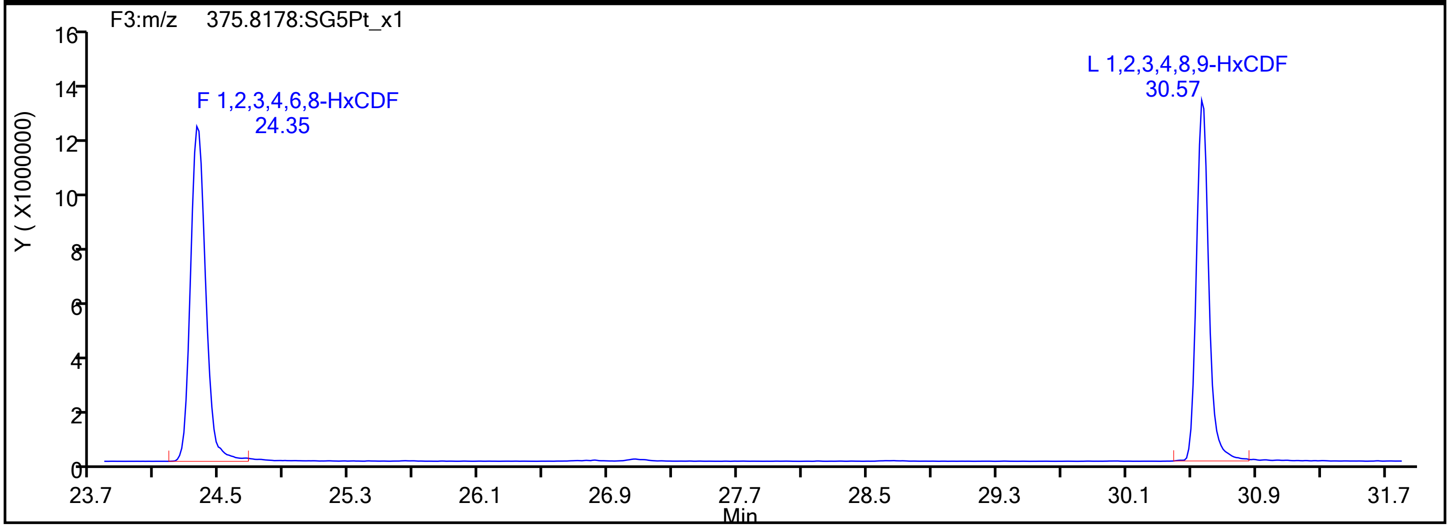

HxCDF Interference Mass

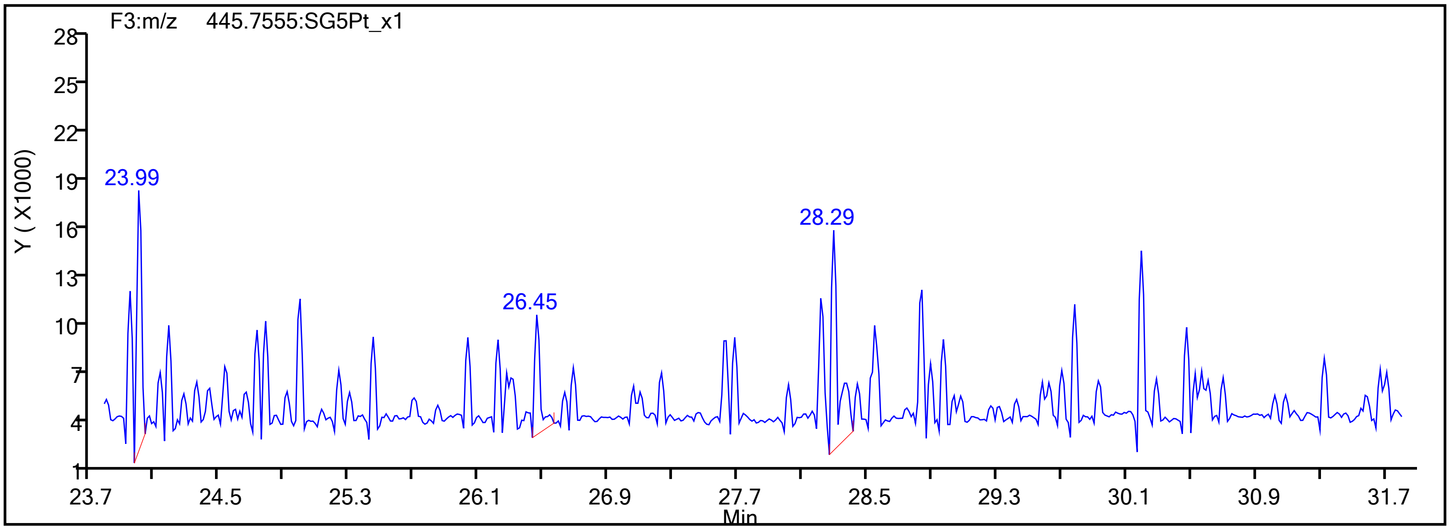

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105091.b\08OC20A3D5_8.d

Injection Date: 09-Oct-2020 01:04:58 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: ALM

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420482 Sample Line#: 8

Column Type: Column Dia:

HpCDF

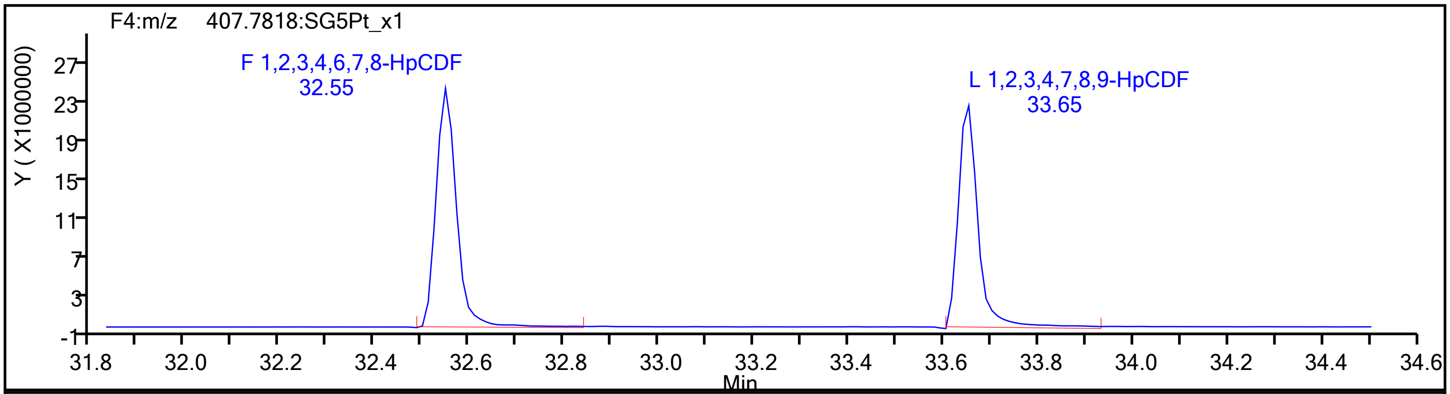

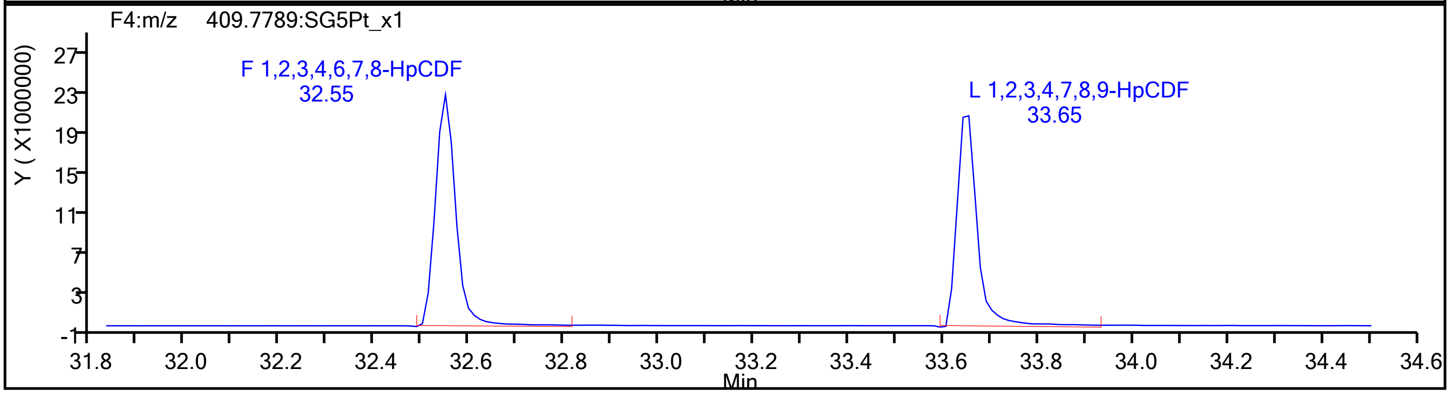

HpCDF Standards

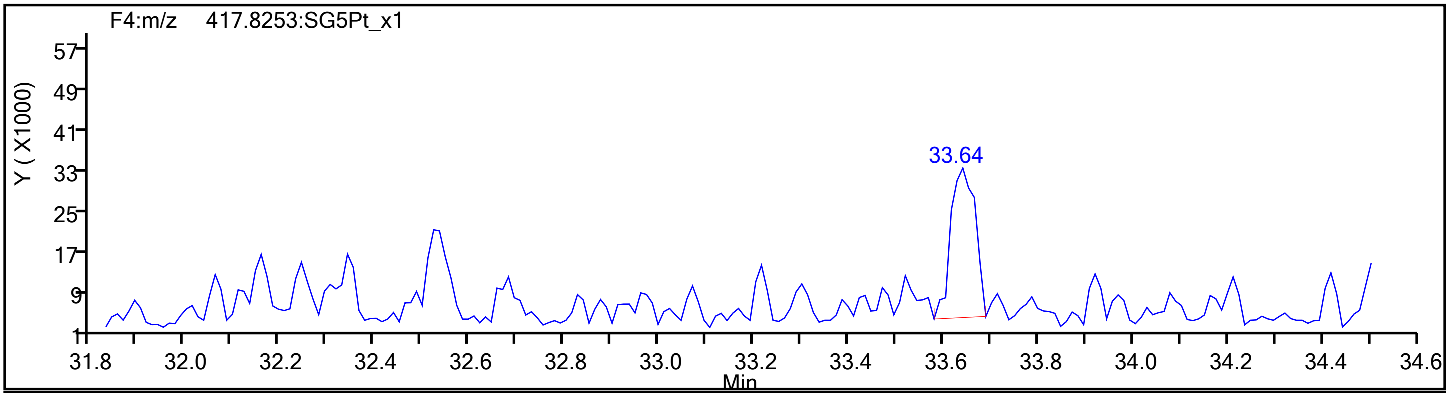

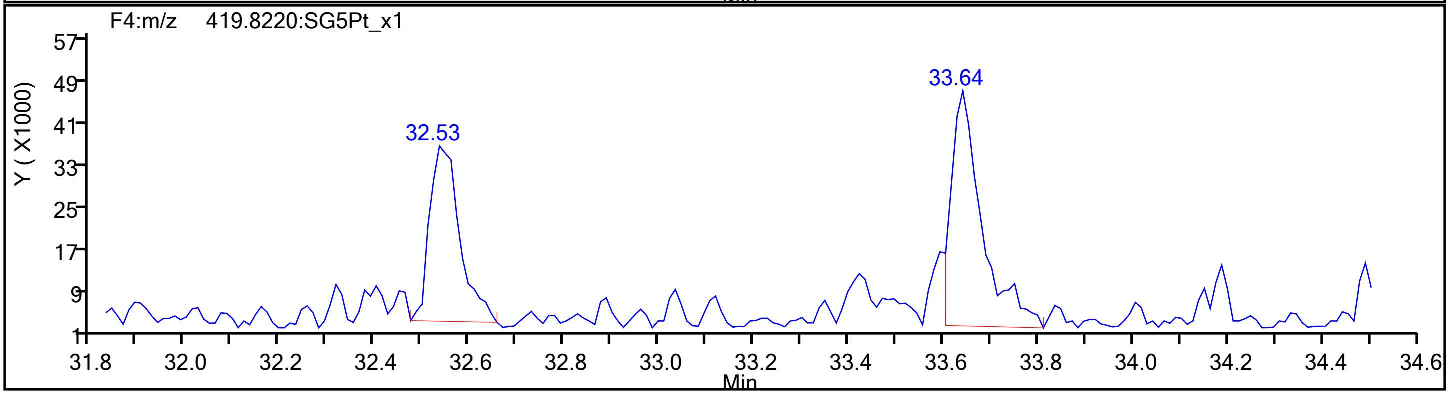

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date:	09-Oct-2020 01:04:58	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

HpCDF

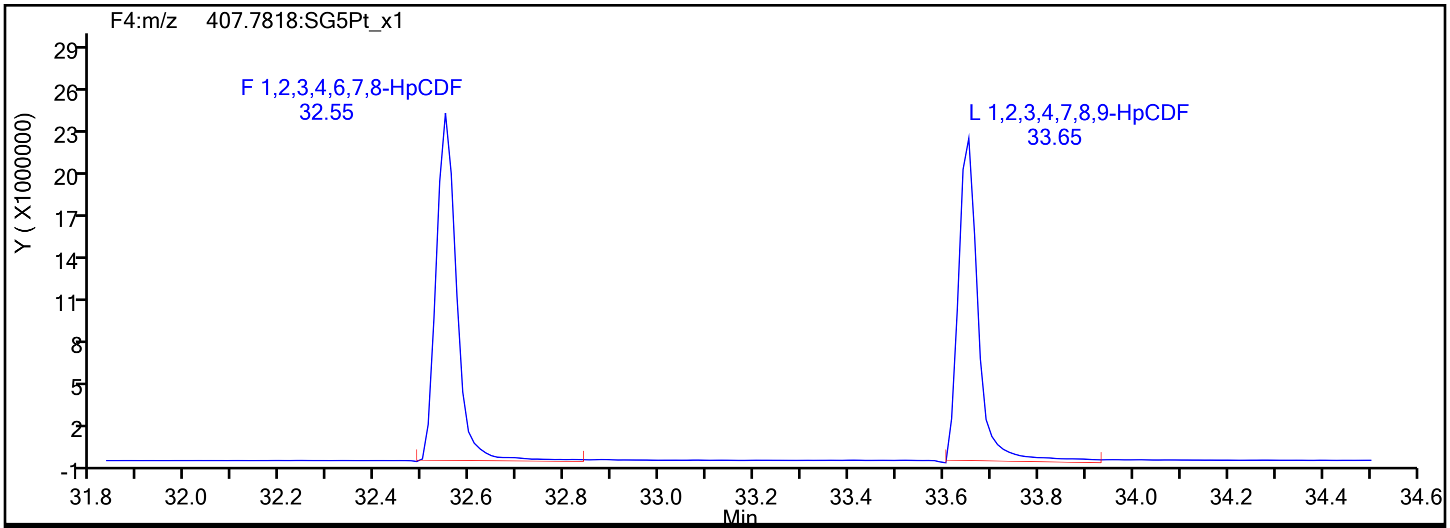

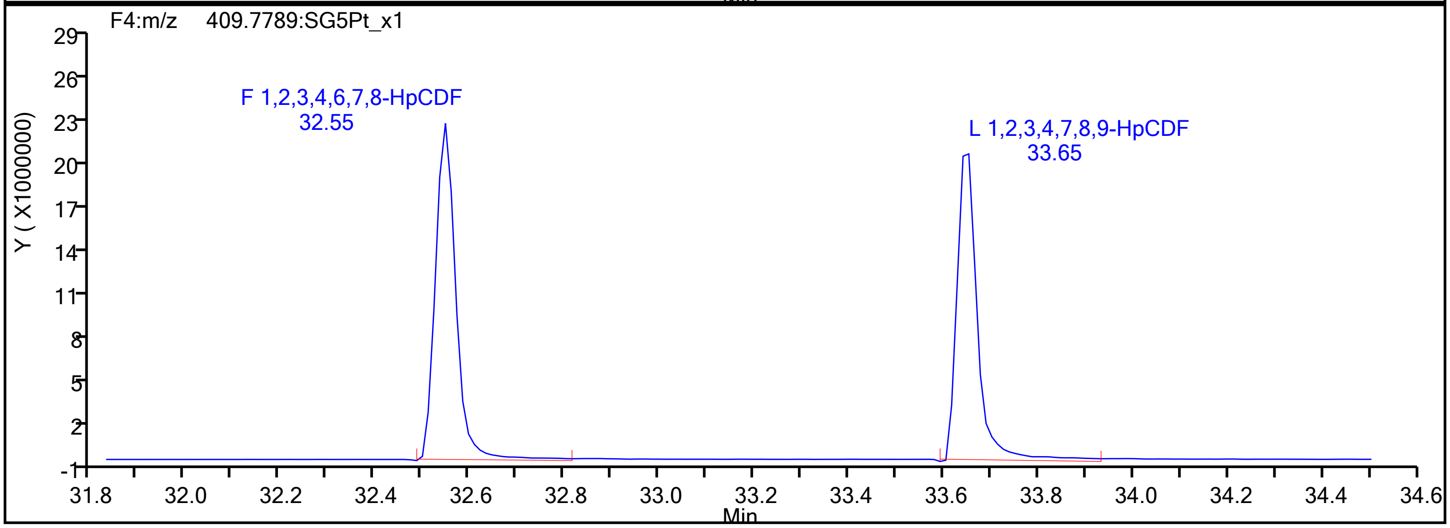

HpCDF Interference Mass

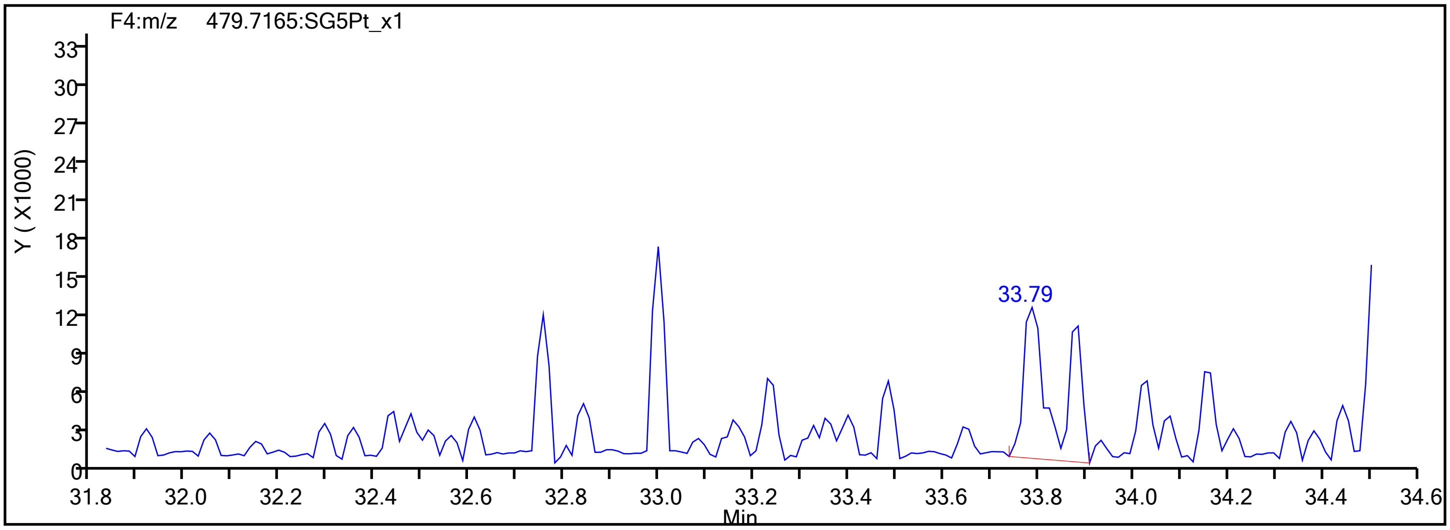

Report Date: 12-Oct-2020 18:04:32 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: ALM
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420482
Sample Line#: 8
Column Type:
Column Dia:

HpCDD

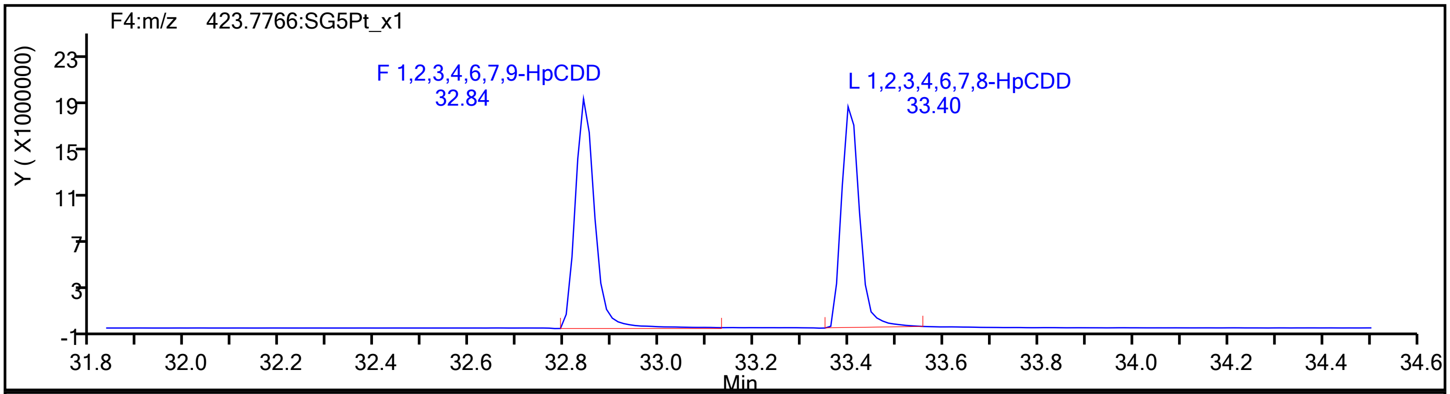

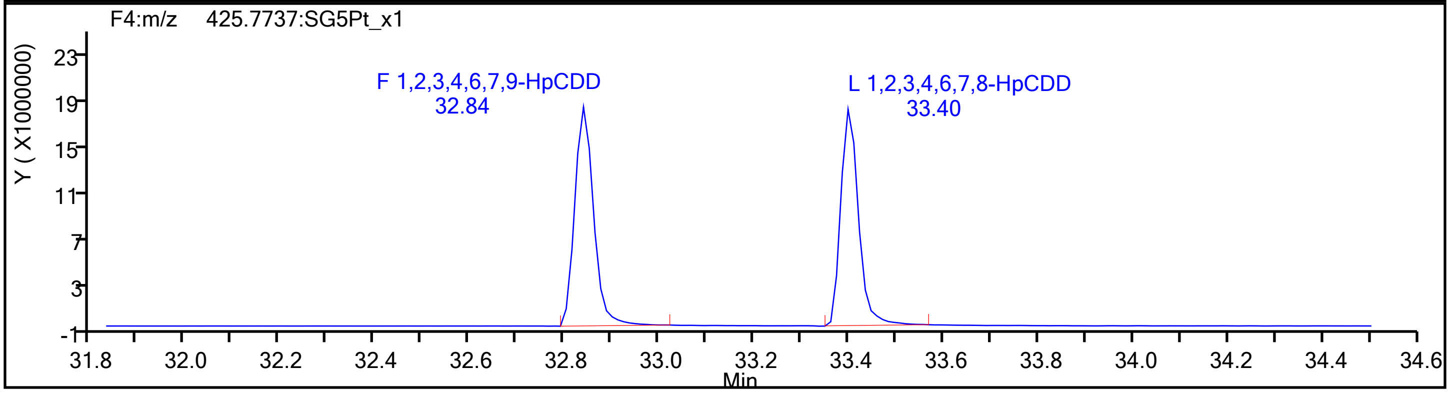

HpCDD Standards

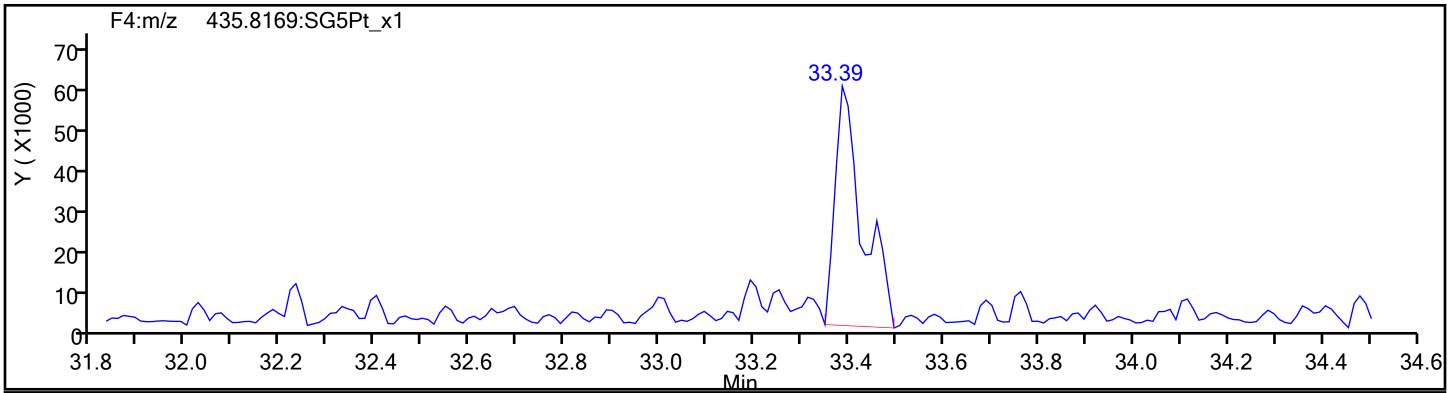

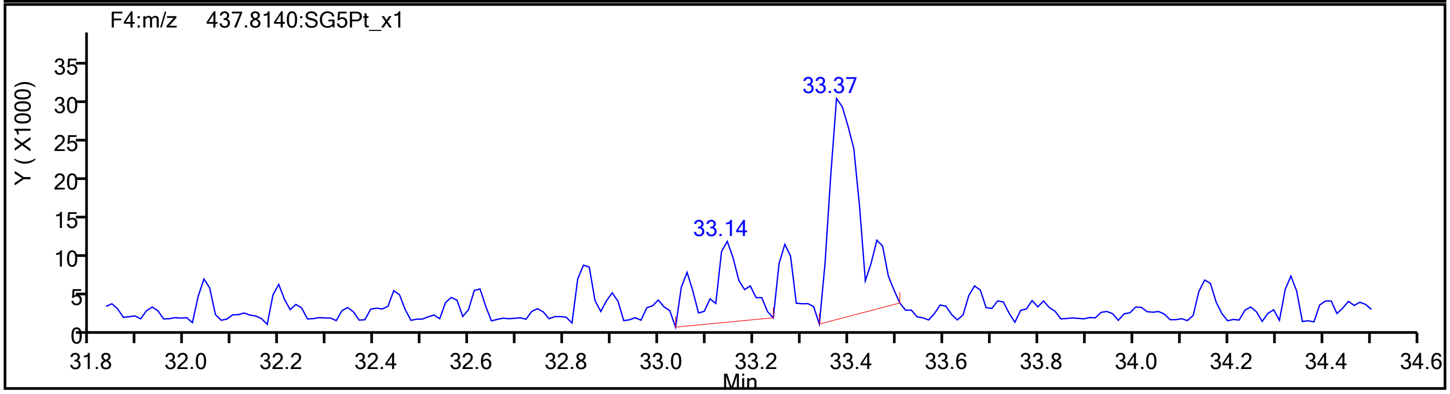

Report Date: 12-Oct-2020 18:04:33 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 09-Oct-2020 01:04:58

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: ALM

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420482

Sample Line#: 8

Column Type:

Column Dia:

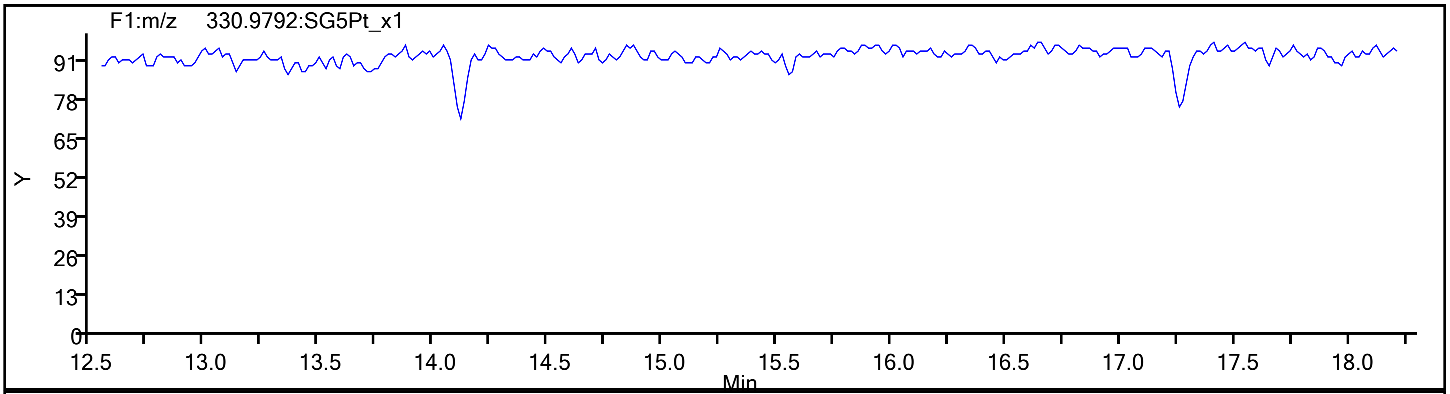

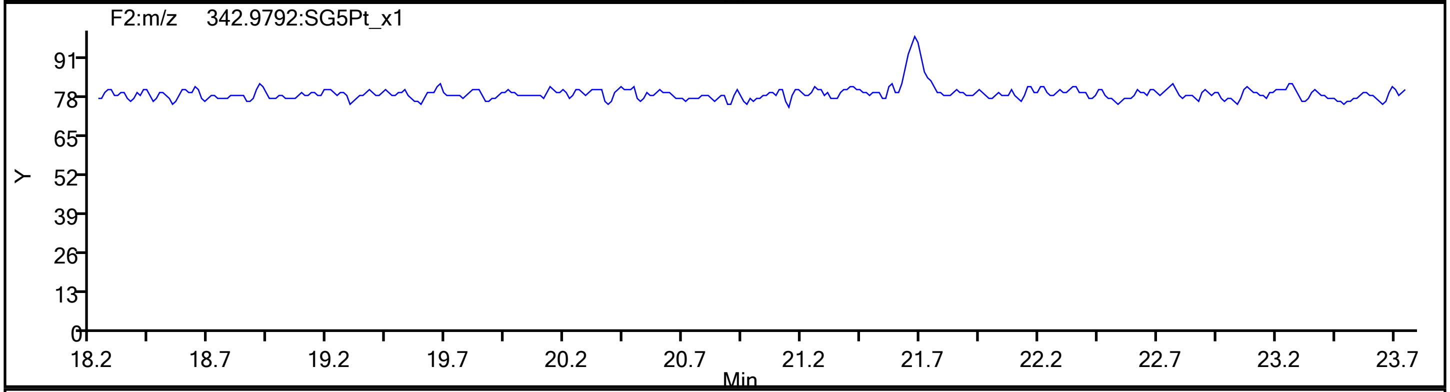

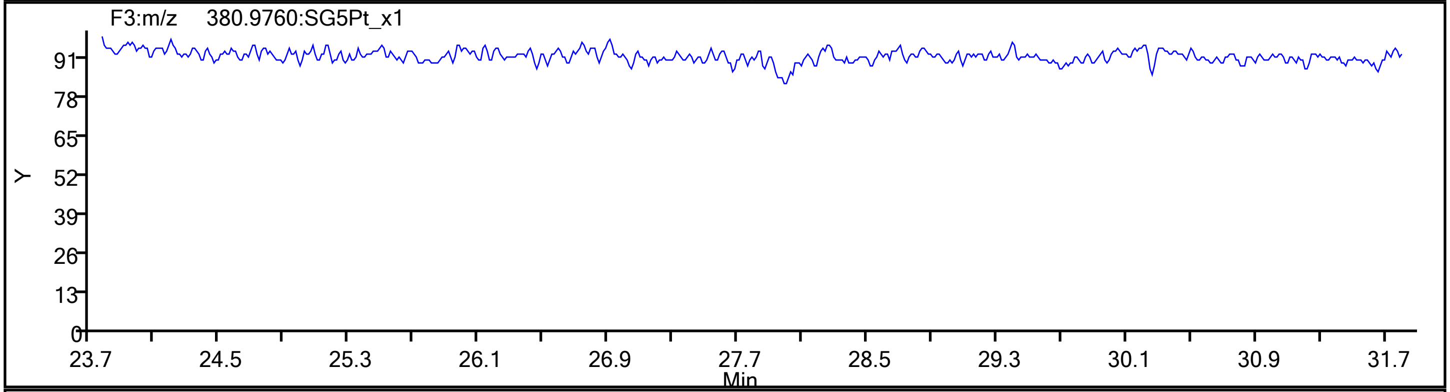

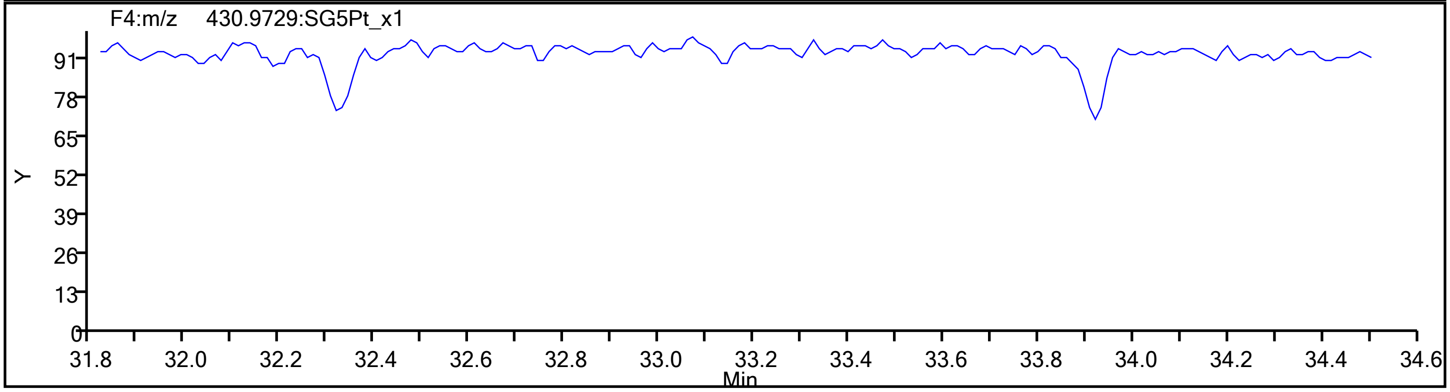

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Injection Date:	09-Oct-2020 01:04:58	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	ALM
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420482	Sample Line#:	8
Column Type:		Column Dia:	

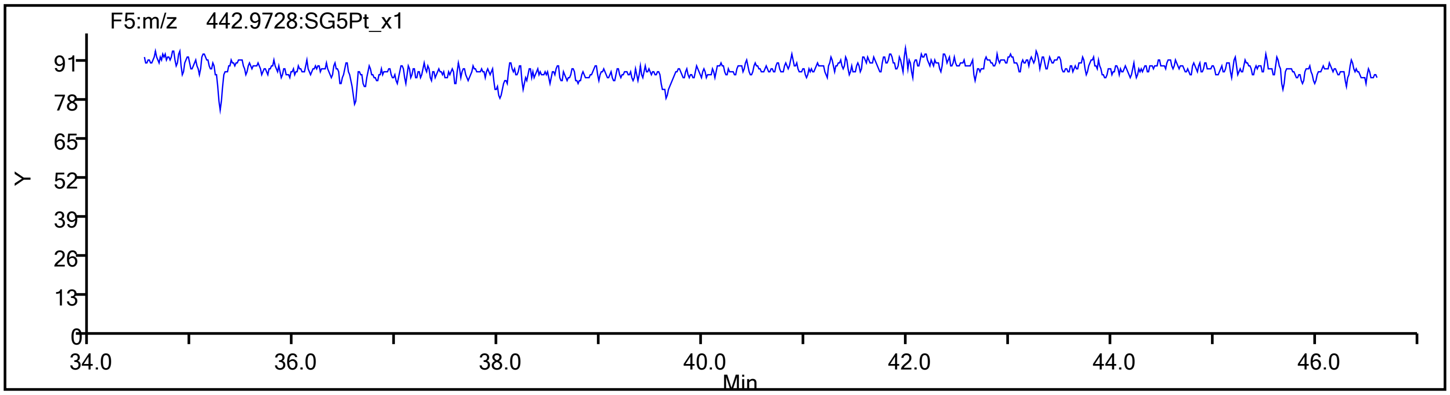

Report Date: 13-Oct-2020 00:29:20 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 09-Oct-2020 13:04:43 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 100920 WDM HRDXNCP_00042
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 00:29:20 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1645

First Level Reviewer: stephensk Date: 10-Oct-2020 16:00:22

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	15.492	137156822	0.75	1.4844					0.00	
2,3,7,8-TCDF	15.507	280702147	0.78	0.9534	85.9	85.9	1.085	1.085		
A Non-2,3,7,8-sub-TCDF	15.235						1.085	1.085		
S Total TCDF					85.9	85.9	1.085	1.085		
D 13C-2,3,7,8-TCDD	16.082	90059554	0.79	1.0875					0.00	
2,3,7,8-TCDD	16.112	95382457	0.75	1.0205	41.5	41.5	0.4421	0.4421		
A Non-2,3,7,8-sub-TCDD	15.635						0.4421	0.4421		
S Total TCDD					41.5	41.5	0.4421	0.4421		
A F1 PeCDFs	17.730						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	20.356	1268010	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	20.525						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	27.472	478333	1.24	0.0000						RQ
S Total HxCDF										RQ
A Non-2,3,7,8-sub-HxCDD	27.904	457418	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	32.559	74105597	1.07	1.4783						
1,2,3,4,7,8,9-HpCDF	33.665	66052393	1.05	1.3784						
A Non-2,3,7,8-sub-HpCDF	33.112						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	33.410	51881195	1.05	1.0862						
A Non-2,3,7,8-sub-HpCDD	33.339						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	13.451	158493896	0.80							
1,3,6,8-TCDD	14.237	101661042	0.77							
2,3,4,7-TCDF	15.507	280702147	0.78							
1,2,3,7-TCDD	16.006	77418986	0.78							
1,2,3,9-TCDF	16.233	120938924	0.81							
1,2,3,9-TCDD	16.248	109735838	0.80							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDF	17.019	124144037	0.81							
1,2,8,9-TCDD	17.034	39691961								
1,3,4,6,8-PeCDF	17.276	111939770	1.56							
1,2,4,7,9-PeCDD	18.773	82794092	1.52							
1,2,3,8,9-PeCDD	22.277	75270430	1.55							
1,2,3,8,9-PeCDF	22.455	56286348								
1,2,3,4,6,8-HxCDF	24.362	95372920	1.21							
1,2,4,6,7,9-HxCDD	25.667	65444659	1.27							
1,2,3,4,6,7-HxCDD	30.035	62899528	1.24							
1,2,3,4,8,9-HxCDF	30.581	80105706	1.23							
1,2,3,4,6,7,9-HpCDD	32.851	55750601	1.05							
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 00:29:20 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 09-Oct-2020 13:04:43 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 100920 WDM HRDXNCP_00042
Misc. Info.: 09OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 00:29:20 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1645

First Level Reviewer: stephensk Date: 10-Oct-2020 16:00:22

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	15.492	15.492	0	1.000	58628021	14561053	39721	99302	367		
317.9389	15.492	15.492	0	1.000	78528801	19519485	44949	112372	434	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.507	15.507	0	1.001	122965013	30550580	146121	365302	209		
305.8987	15.507	15.507	0	1.001	157737134	38876333	206381	515952	188	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.235						146121	365302			
305.8987	15.235						206381	515952			
13C-2,3,7,8-TCDD											
331.9368	16.082	16.082	0	1.000	39776957	9613509	15222	38055	632		
333.9339	16.082	16.082	0	1.000	50282597	11882765	12424	31060	956	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.112	16.112	0	1.002	40850965	10324209	44202	110505	234		
321.8936	16.112	16.112	0	1.002	54531492	13512957	52786	131965	256	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	15.635						44202	110505			
321.8936	15.635						52786	131965			
A F1 PeCDFs											
339.8597	17.730						12682	31705			
341.8567	17.730						8063	20157			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	19.768	20.356	-35	1.000	305574	59216	13275	33187	4		
341.8567	19.768	20.356	-35	1.000	281136	53191	9570	23925	6	1.09(1.32-1.78)	
339.8597	20.205	20.356	-9	1.000	485127	53012	13275	33187	4		
341.8567	20.218	20.356	-8	1.000	280165	39420	9570	23925	4	1.73(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.525						21921	54802			
357.8516	20.525						8475	21187			
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	27.092	27.472	-23	1.000	264792	31392	10084	25210	3		
375.8178	27.119	27.472	-21	1.000	368317	36605	8683	21707	4	0.72(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQ
389.8157	27.545	27.904	-22	1.000	253214	40566	8063	20157	5		
391.8127	27.492	27.904	-25	1.000	333924	30967	7000	17500	4	0.76(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	38342964	10584894	41586	103965	255		
409.7789	32.559	32.559	0	1.000	35762633	9743900	36736	91840	265	1.07(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.665	33.665	0	1.000	33870002	9599801	41586	103965	231		
409.7789	33.653	33.665	-1	1.000	32182391	9516109	36736	91840	259	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.112						41586	103965			
409.7789	33.112						36736	91840			
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	26600669	8294372	28797	71992	288		
425.7737	33.410	33.410	0	1.000	25280526	7972426	28687	71717	278	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						28797	71992			
425.7737	33.339						28687	71717			
1,3,6,8-TCDF											
303.9016	13.451	13.451	0		70527499	20743221	146121	365302	142		
305.8987	13.451	13.451	0		87966397	25775240	206381	515952	125	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	14.237	14.237	0		44089499	12477652	44202	110505	282		
321.8936	14.237	14.237	0		57571543	15574440	52786	131965	295	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	15.507	15.507	0		122965013	30550580	146121	365302	209		
305.8987	15.507	15.507	0		157737134	38876333	206381	515952	188	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	16.006	16.006	0		33965352	10022573	44202	110505	227		
321.8936	16.006	16.006	0		43453634	12855317	52786	131965	244	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	16.233	16.233	0		54201713	13031602	146121	365302	89		
305.8987	16.218	16.233	-1		66737211	16343565	206381	515952	79	0.81(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	16.248	16.248	0		48830173	10386486	44202	110505	235		
321.8936	16.233	16.248	-1		60905665	13580697	52786	131965	257	0.80(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	17.019	17.019	0		55378448	13145331	146121	365302	90		
305.8987	17.019	17.019	0		68765589	16150328	206381	515952	78	0.81(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	17.034	17.034	0		39691961	8633772	44202	110505	195		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	17.276	17.276	0		68184863	14279232	12682	31705	1126		
341.8567	17.276	17.276	0		43754907	9225988	8063	20157	1144	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	18.773	18.773	0		49905112	8725748	21921	54802	398		
357.8516	18.773	18.773	0		32888980	5764623	8475	21187	680	1.52(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	22.277	22.277	0		45706473	6924338	21921	54802	316		
357.8516	22.277	22.277	0		29563957	4440296	8475	21187	524	1.55(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	22.455	22.455	0		56286348	7999724	13275	33187	603		
1,2,3,4,6,8-HxCDF											
373.8208	24.362	24.362	0		52147399	6762661	10084	25210	671		
375.8178	24.362	24.362	0		43225521	5740623	8683	21707	661	1.21(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	25.667	25.667	0		36572190	4338848	8063	20157	538		
391.8127	25.667	25.667	0		28872469	3563402	7000	17500	509	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	30.035	30.035	0		34793777	4636172	8063	20157	575		
391.8127	30.021	30.035	-1		28105751	3700524	7000	17500	529	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	30.581	30.581	0		44227967	6716828	10084	25210	666		
375.8178	30.581	30.581	0		35877739	5222971	8683	21707	602	1.23(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	32.851	32.851	0		28559128	8493480	28797	71992	295		
425.7737	32.851	32.851	0		27191473	8248799	28687	71717	288	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	09-Oct-2020 13:04:43	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 20.356

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079				
2,3,4,7,8-PeCDF	1.097				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
19.768	305574	59216	281136	53191		1.09	R
20.205	485127	53012	280165	39420		1.73	
Signal Totals:							
	790701	112228	561301	92611			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1352002	204839				1.41	RQ
	1268010	189851					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (1352002 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (1268010 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	09-Oct-2020 13:04:43	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420483	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 27.472

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.255				
1,2,3,6,7,8-HxCDF	1.210				
2,3,4,6,7,8-HxCDF	1.218				
1,2,3,7,8,9-HxCDF	1.232				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.092	264792	31392	368317	36605		0.72	R
Signal Totals:							
	264792	31392	368317	36605			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	633109	67997				0.72	RQ
	478333	56708					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.0 = (633109 * 0.0) / (0 * 0.000)

Empc Amount: 0.0 = (478333 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 09-Oct-2020 13:04:43 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 420483 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 27.845

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.254				
1,2,3,6,7,8-HxCDD	1.112				
1,2,3,7,8,9-HxCDD	1.285				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
27.545	253214	40566	333924	30967		0.76	R
Signal Totals:							
	253214	40566	333924	30967			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	587138	71533				0.76	RQ
	457418	73280					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (587138 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (457418 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d
Injection Date: 09-Oct-2020 13:04:43
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483
Sample Line#: 1
Column Type:
Column Dia:

TCDF

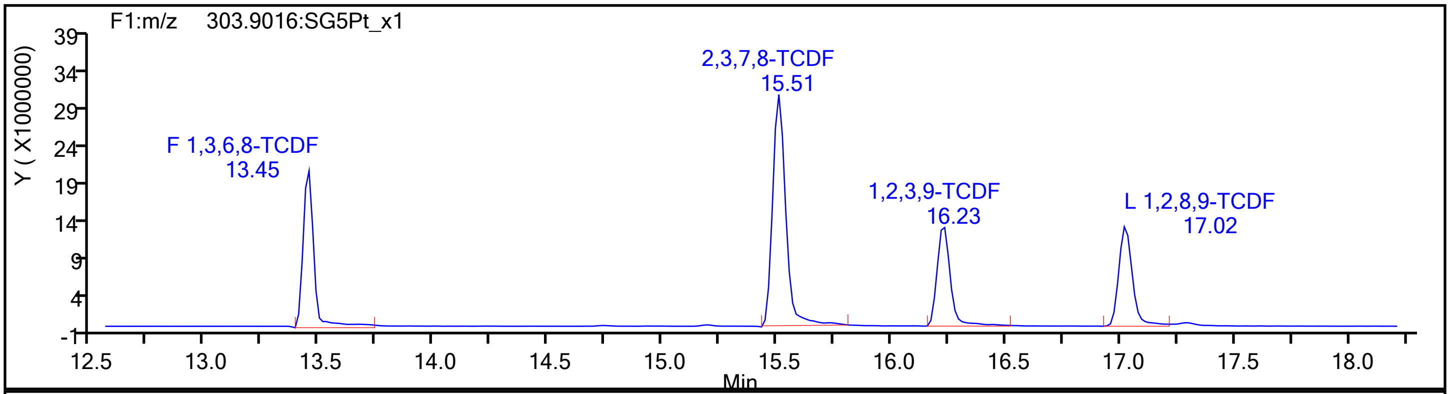

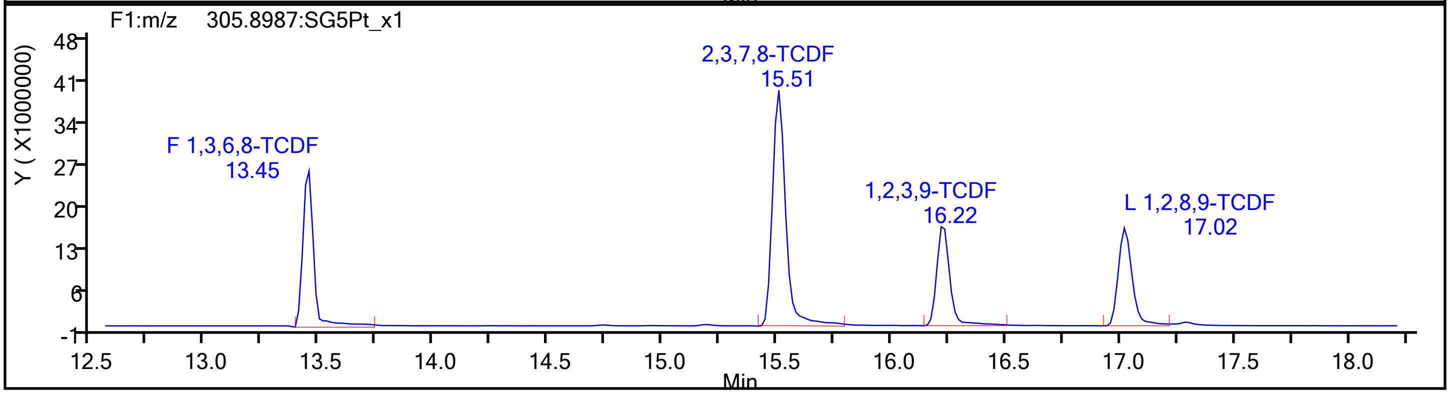

TCDF Standards

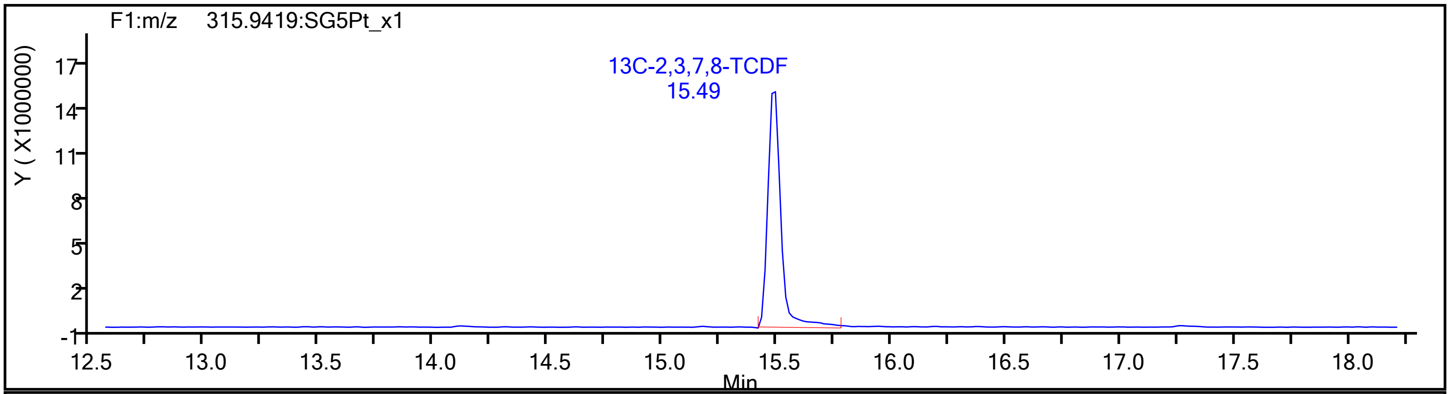

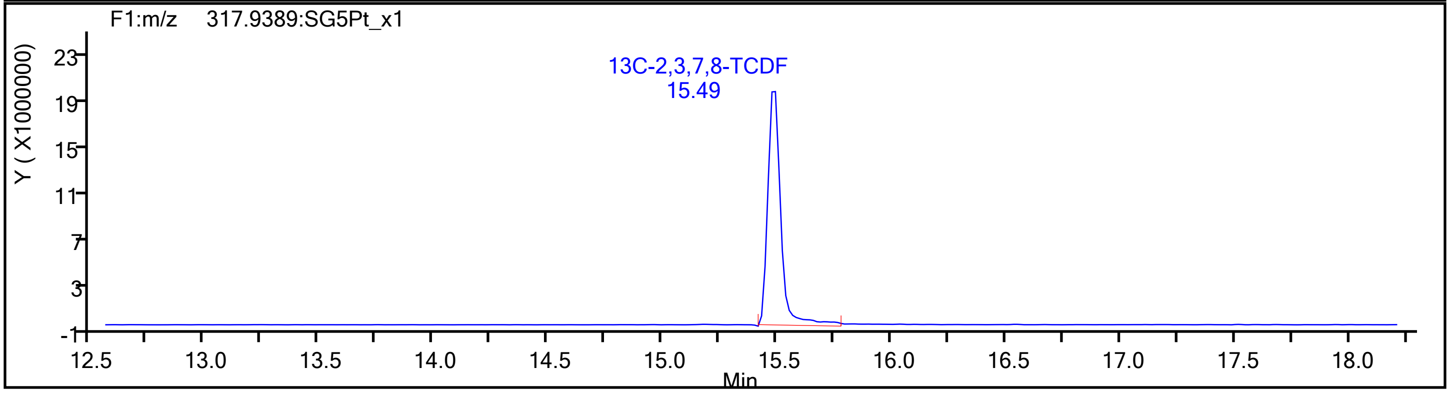

Report Date: 13-Oct-2020 00:29:21　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d

Injection Date: 09-Oct-2020 13:04:43
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483
Sample Line#: 1
Column Type:
Column Dia:

TCDF

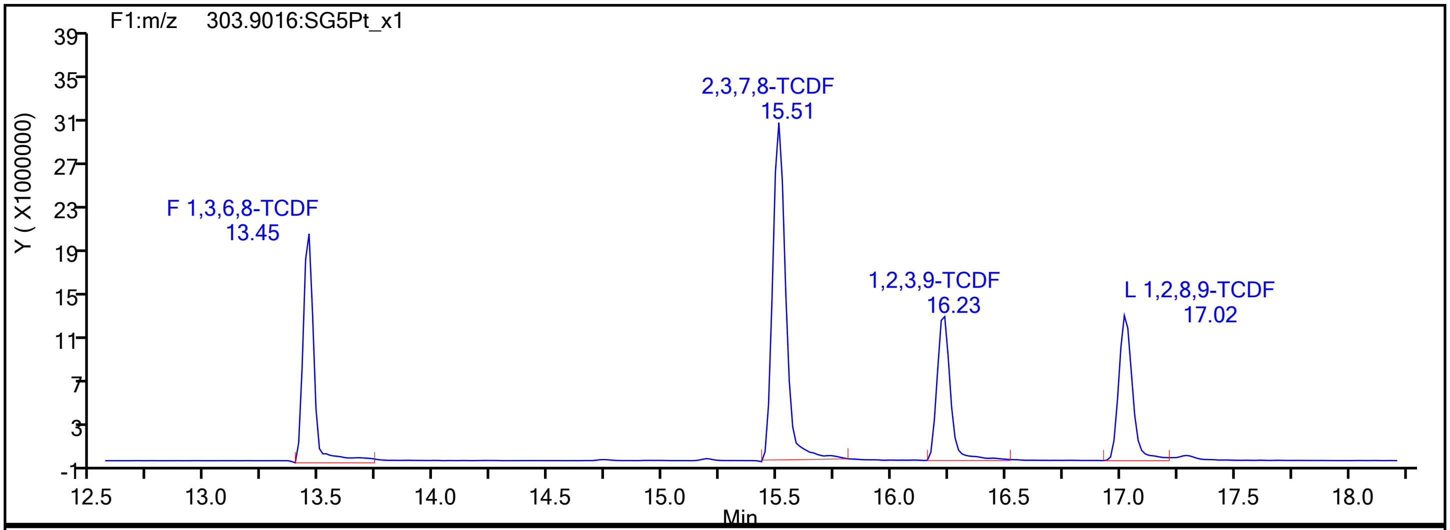

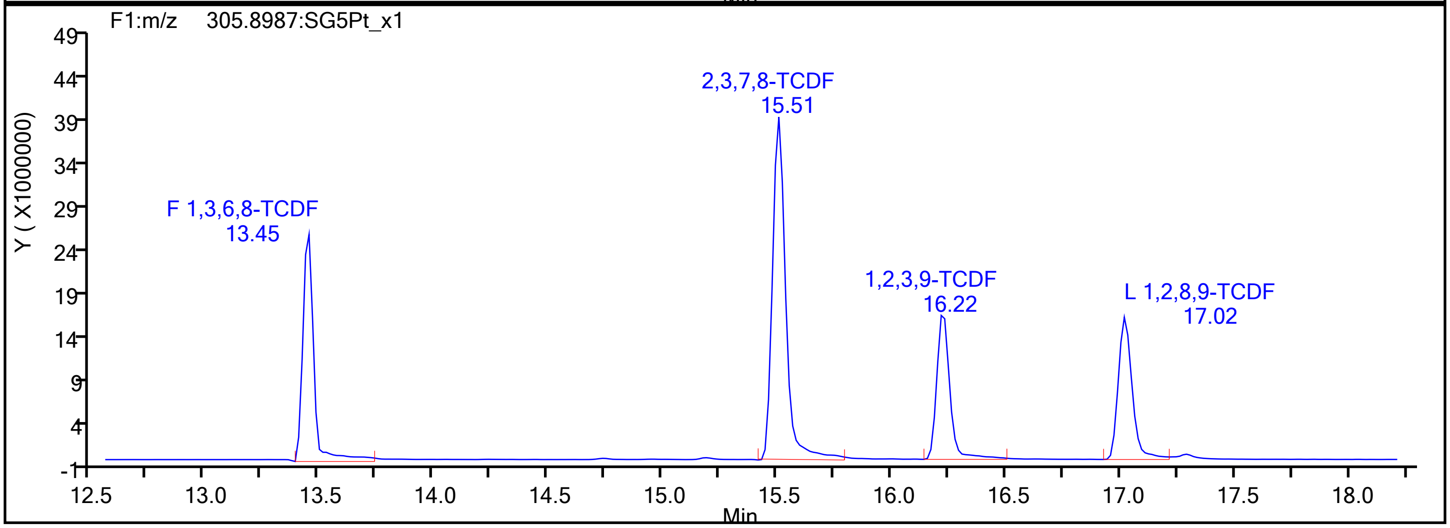

TCDF Interference Mass

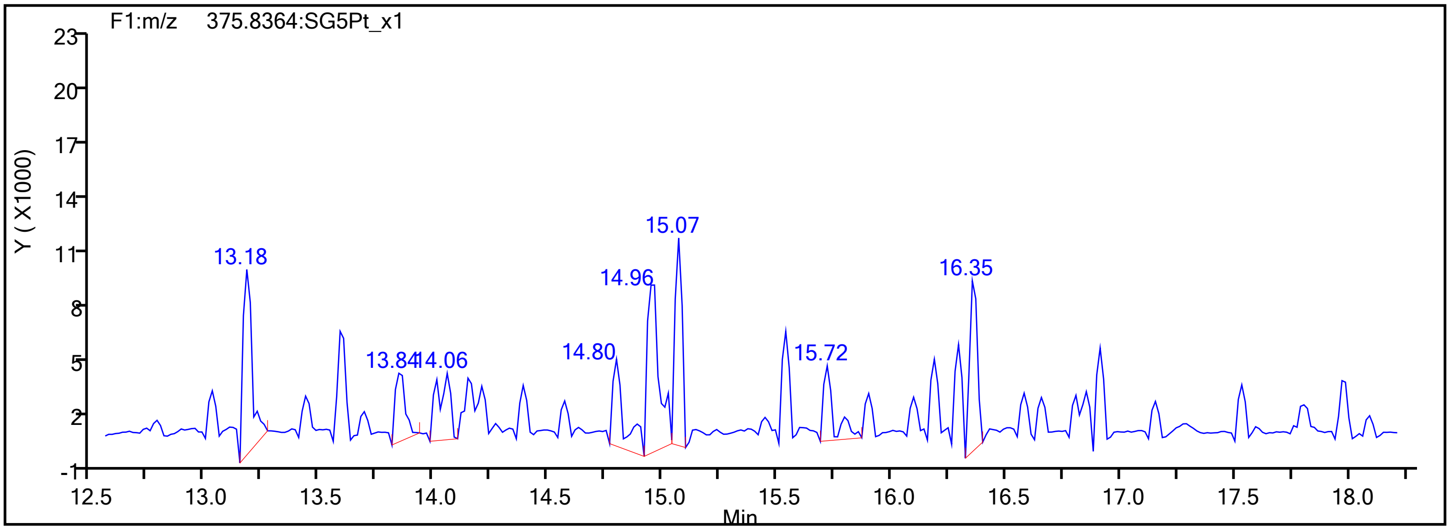

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d
Injection Date: 09-Oct-2020 13:04:43
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483
Sample Line#: 1
Column Type:
Column Dia:

TCDD

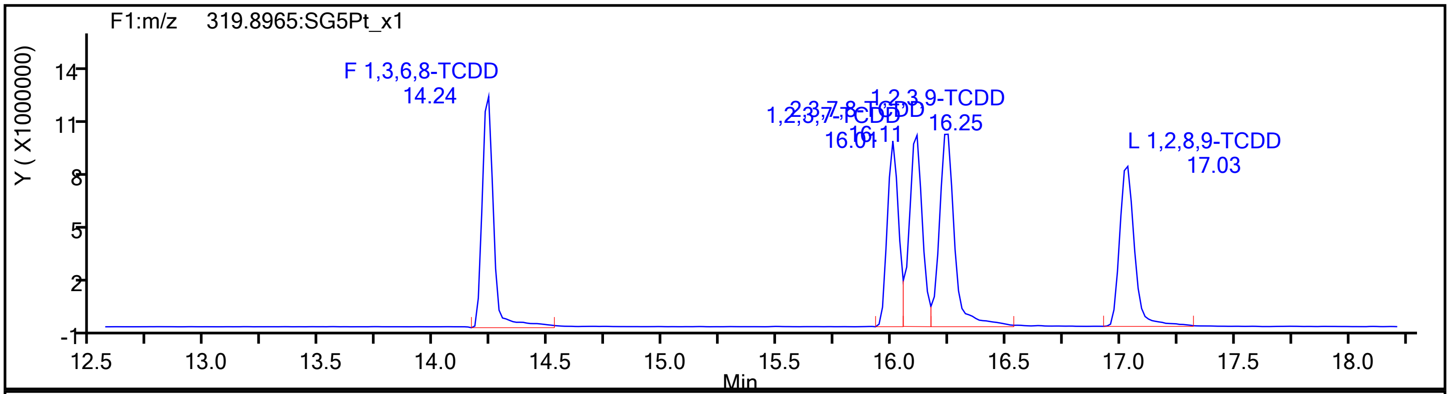

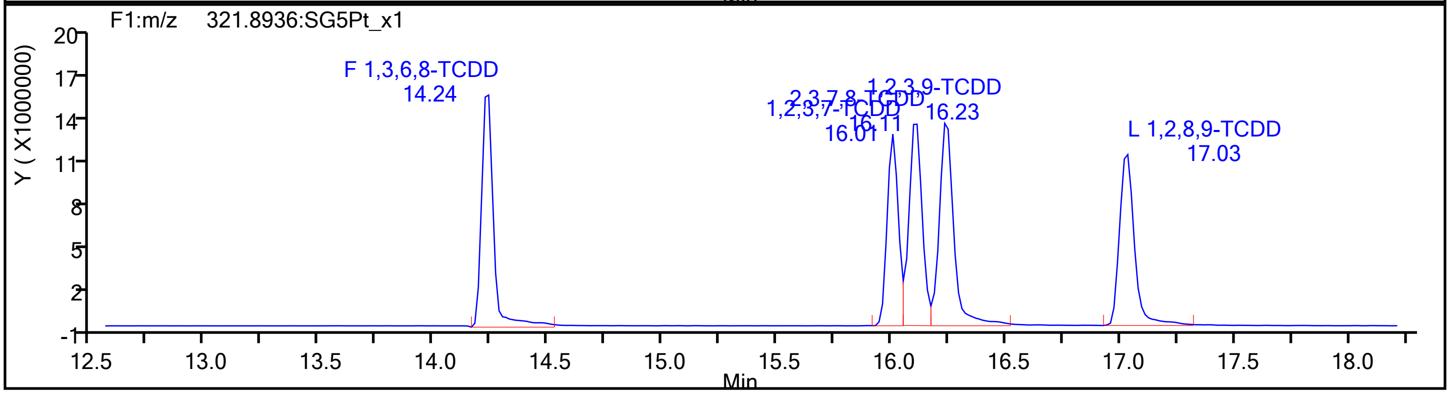

TCDD Standards

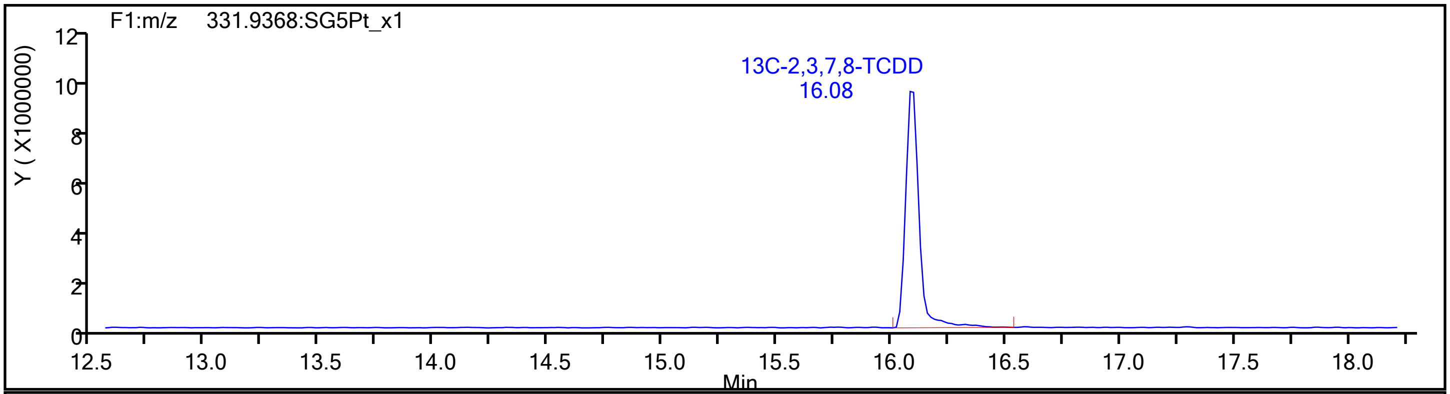

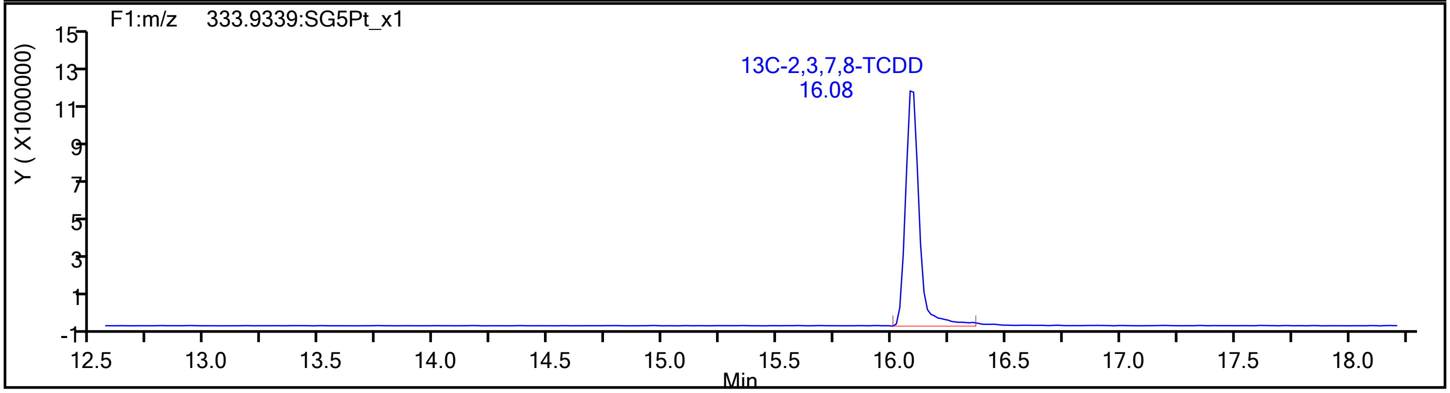

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

37Cl4-TCDD

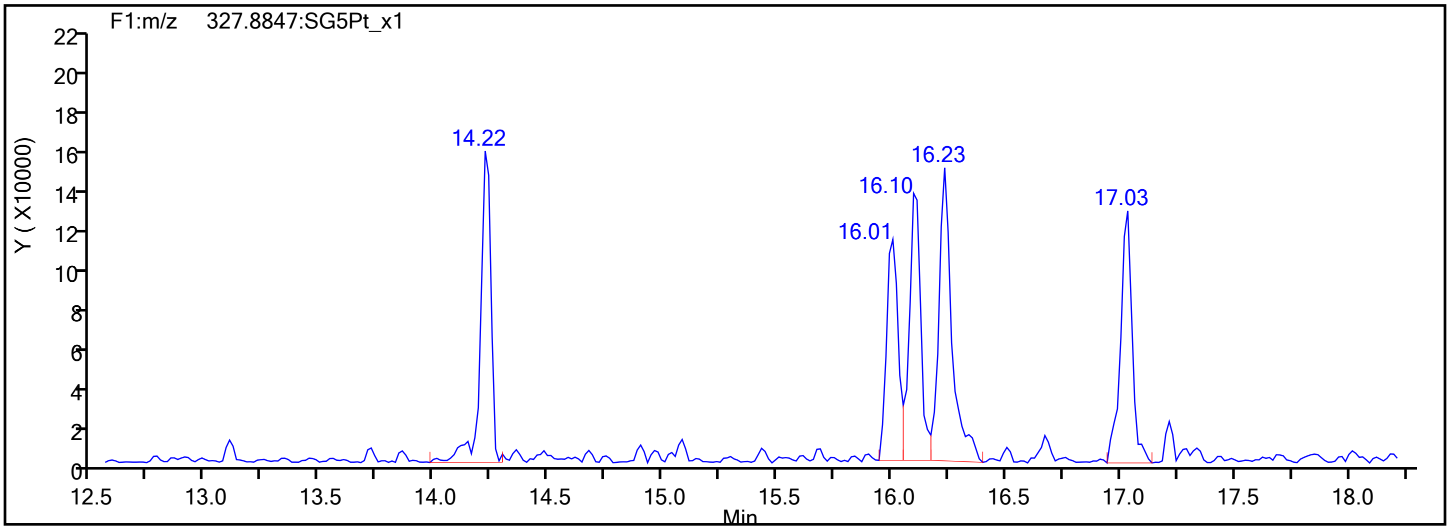

37Cl4-TCDD Standards

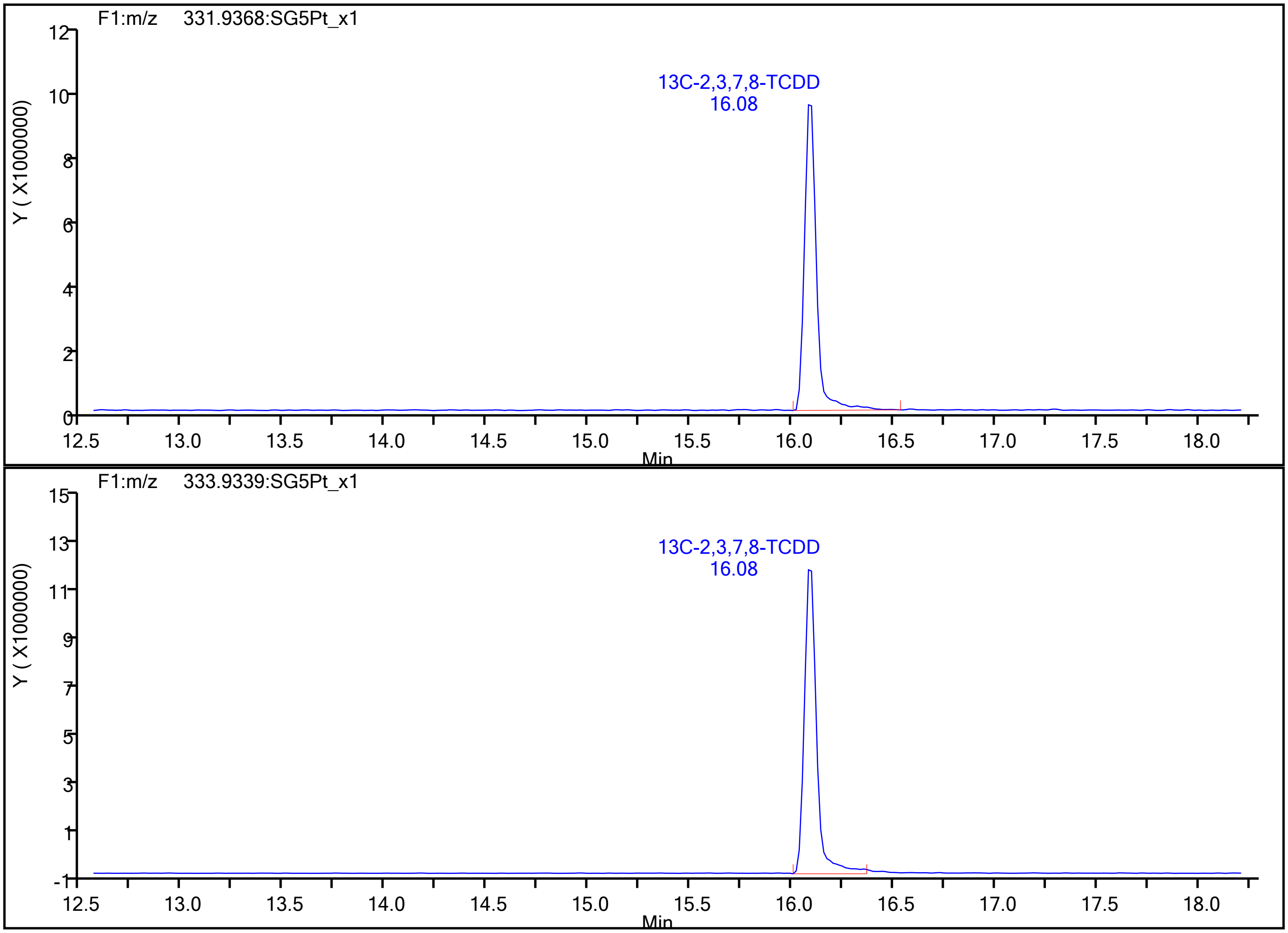

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

PeCDF

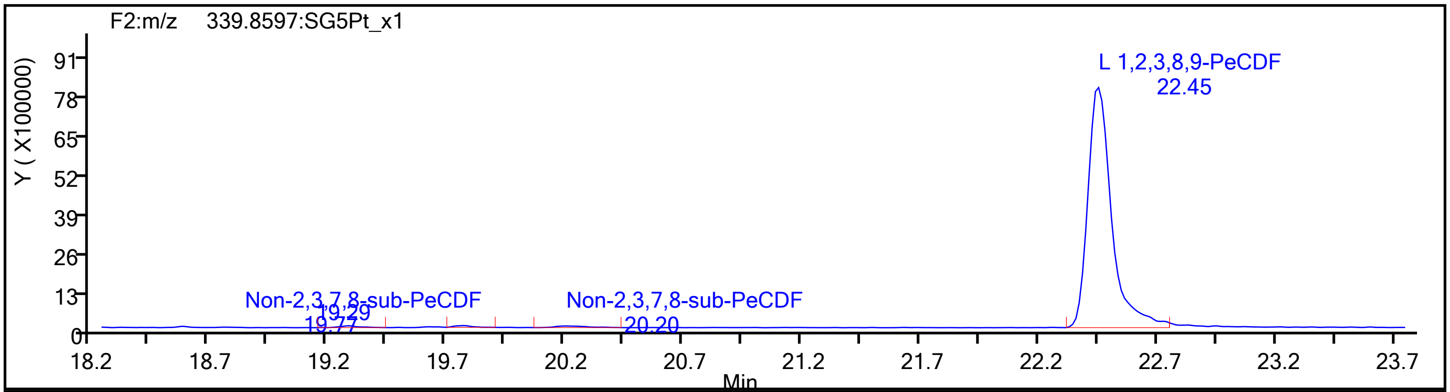

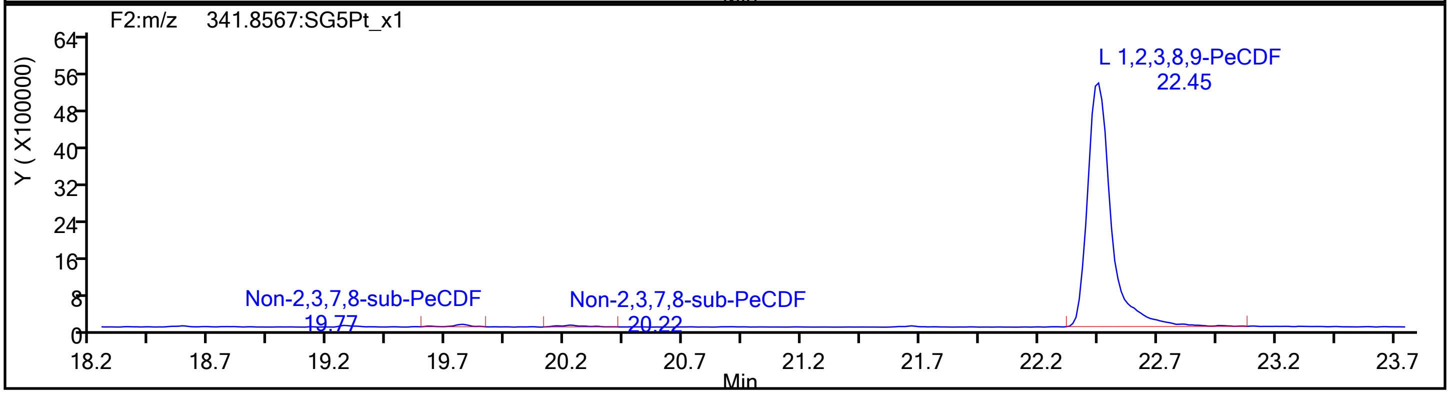

PeCDF Standards

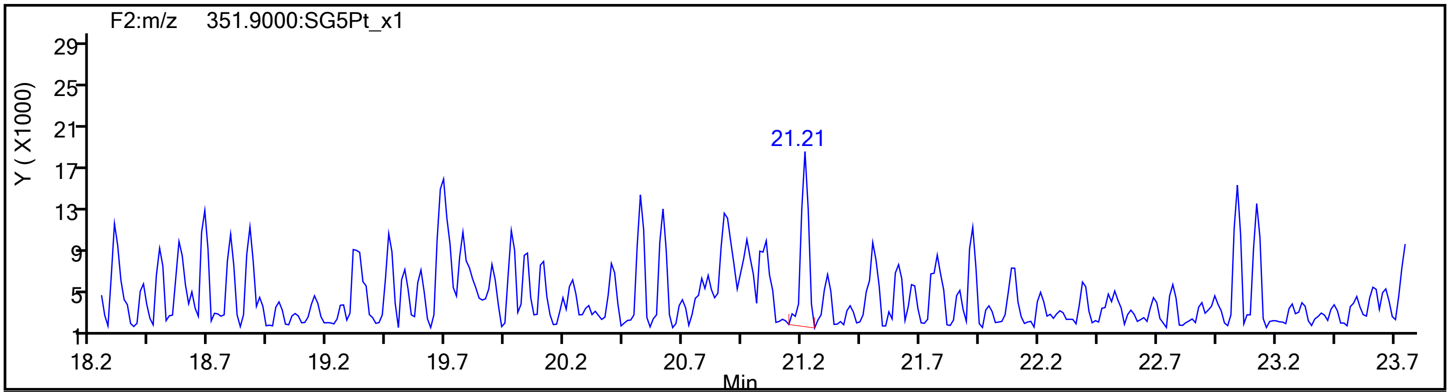

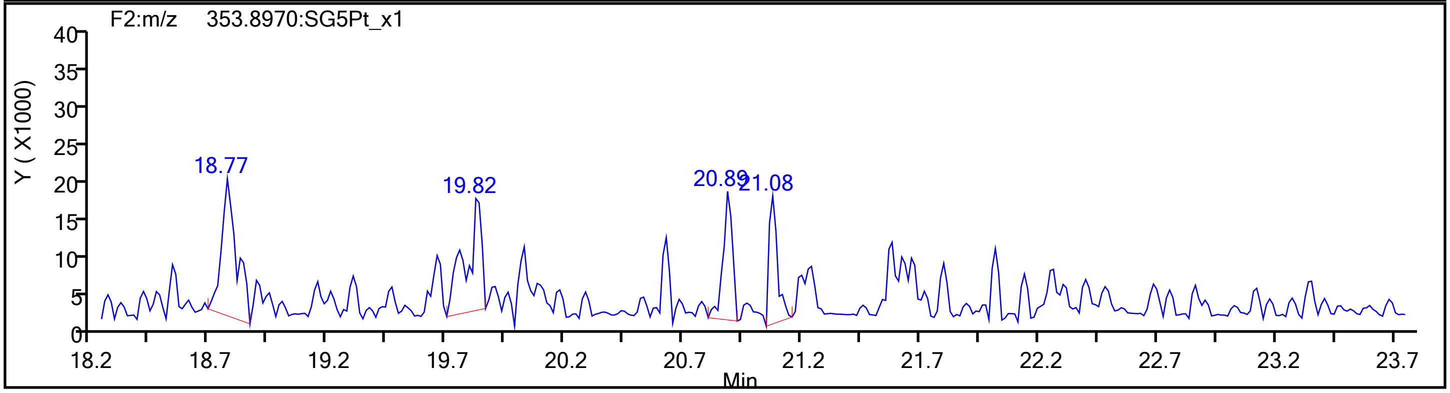

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d

Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

PeCDF

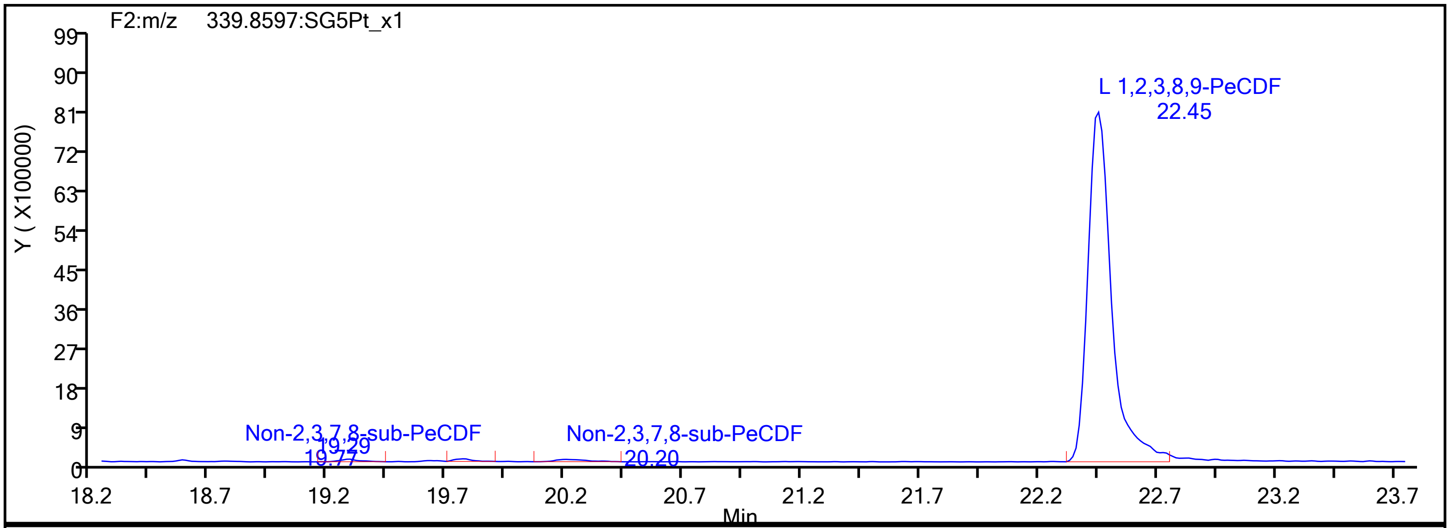

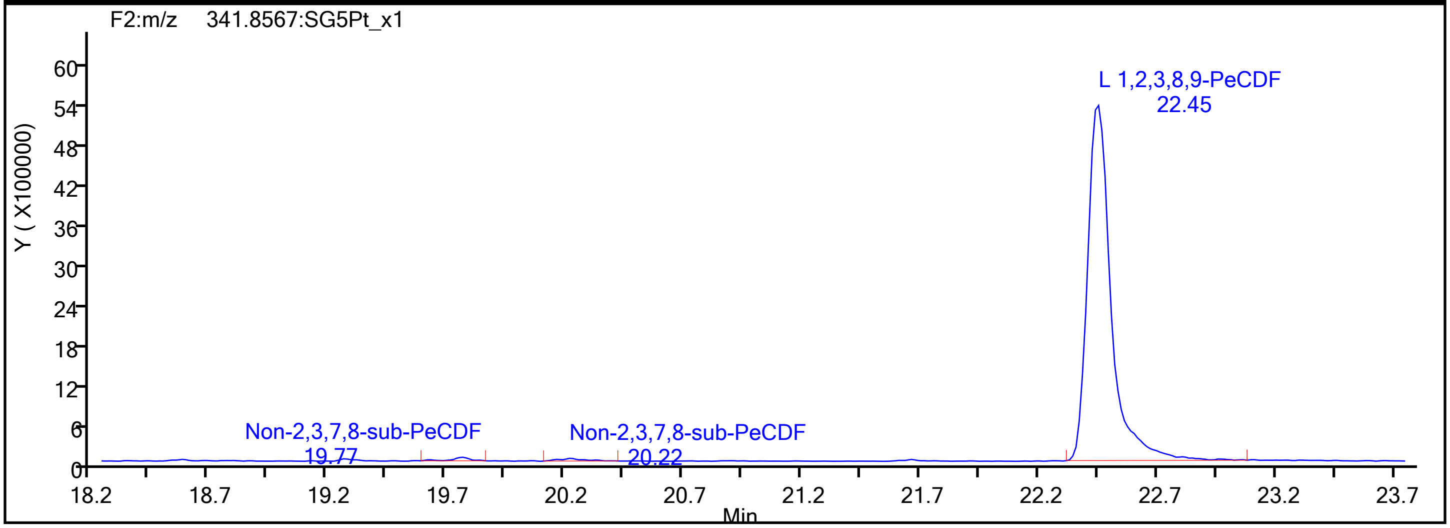

PeCDF Interference Mass

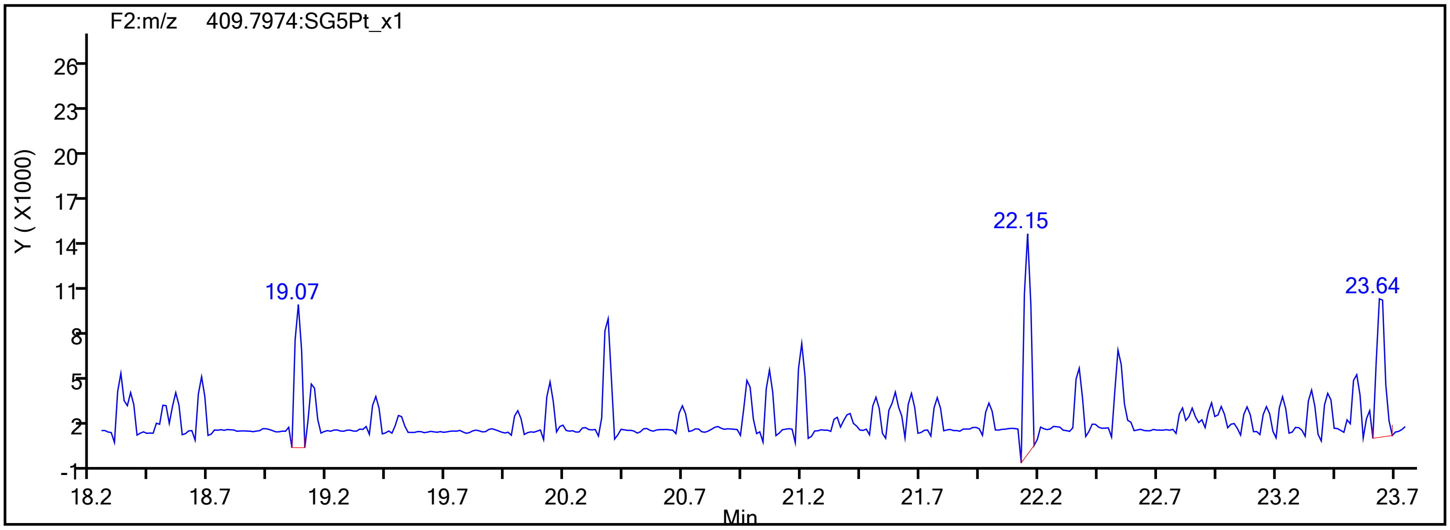

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

PeCDD

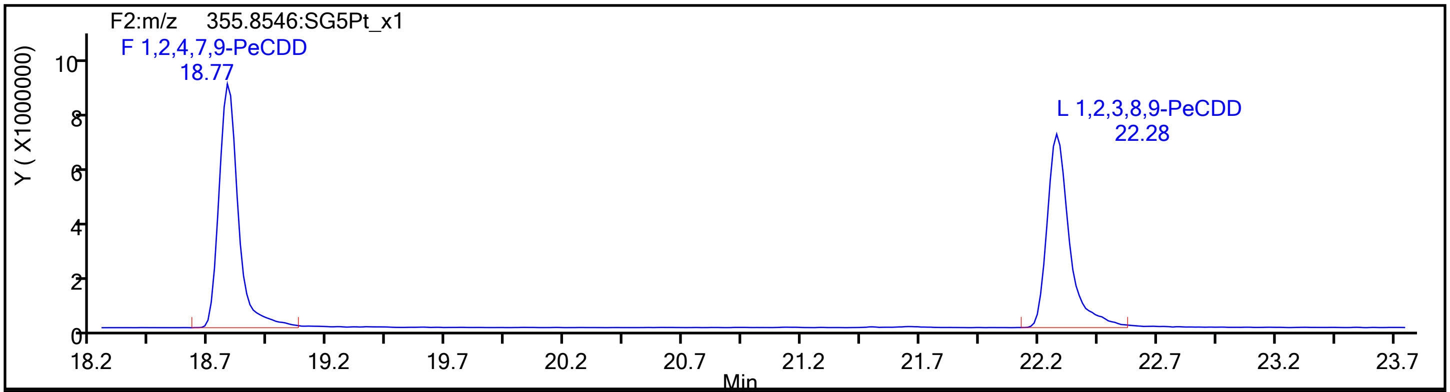

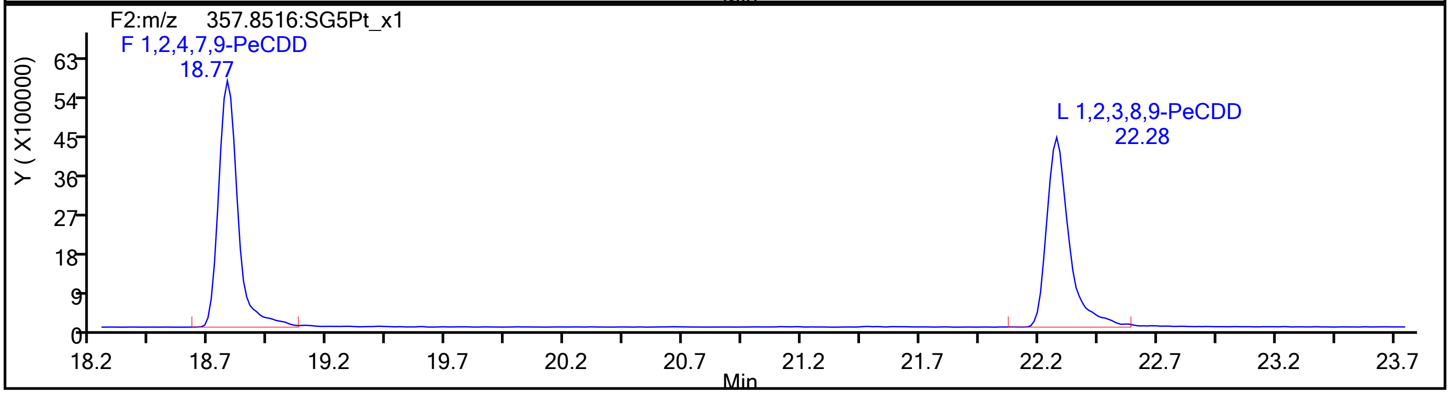

PeCDD Standards

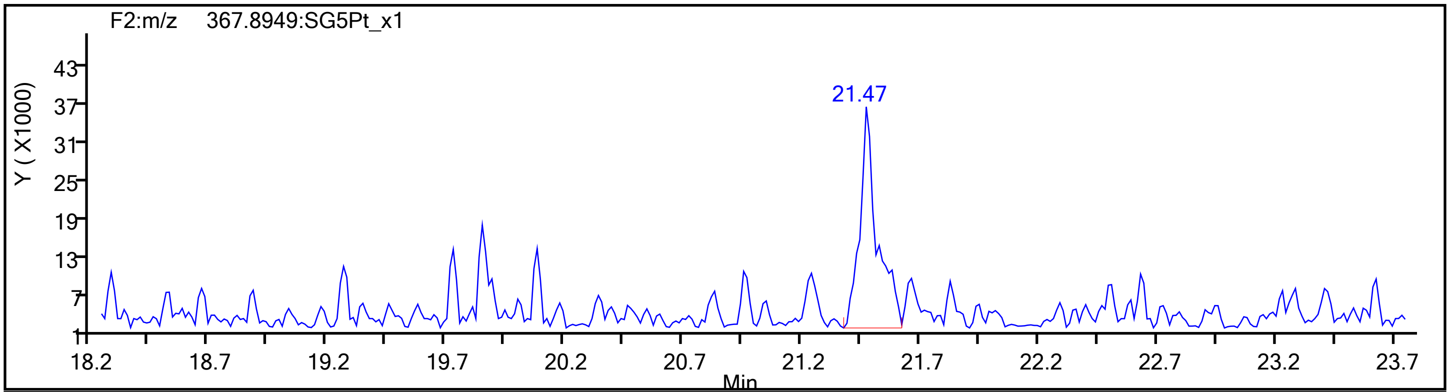

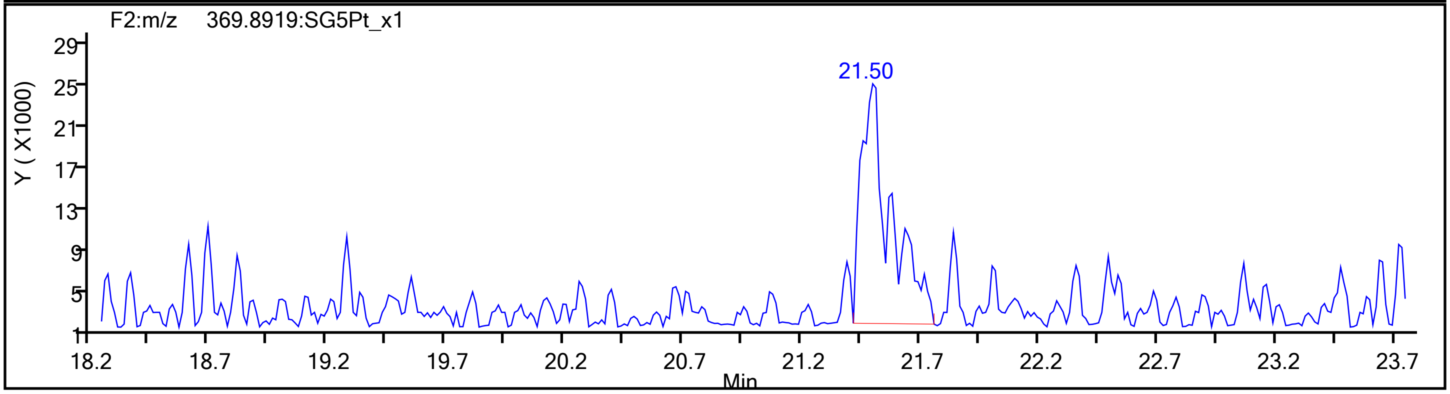

Report Date: 13-Oct-2020 00:29:21
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d
Injection Date: 09-Oct-2020 13:04:43
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420483
Sample Line#: 1
Column Type:
Column Dia:

HxCDF

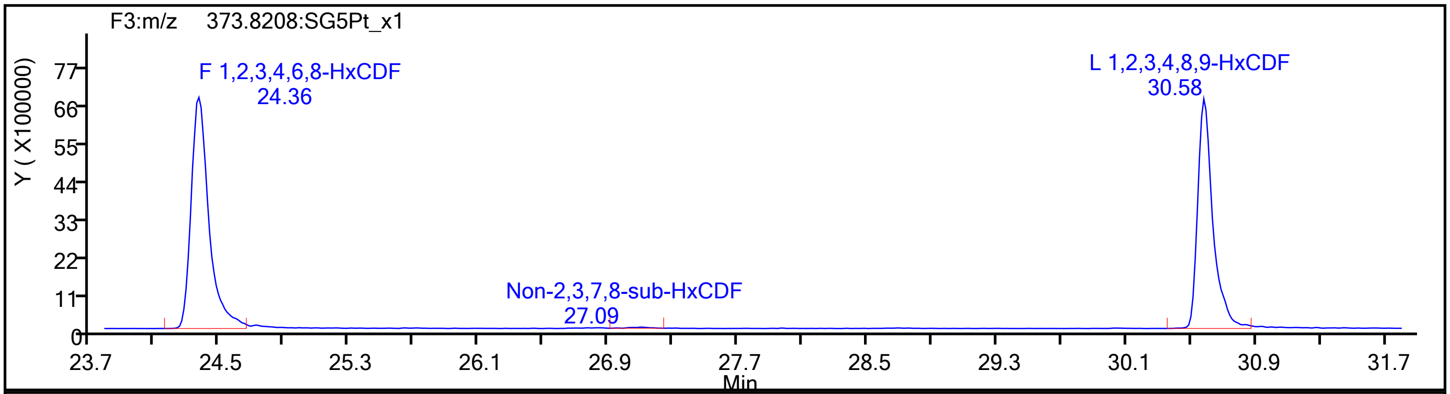

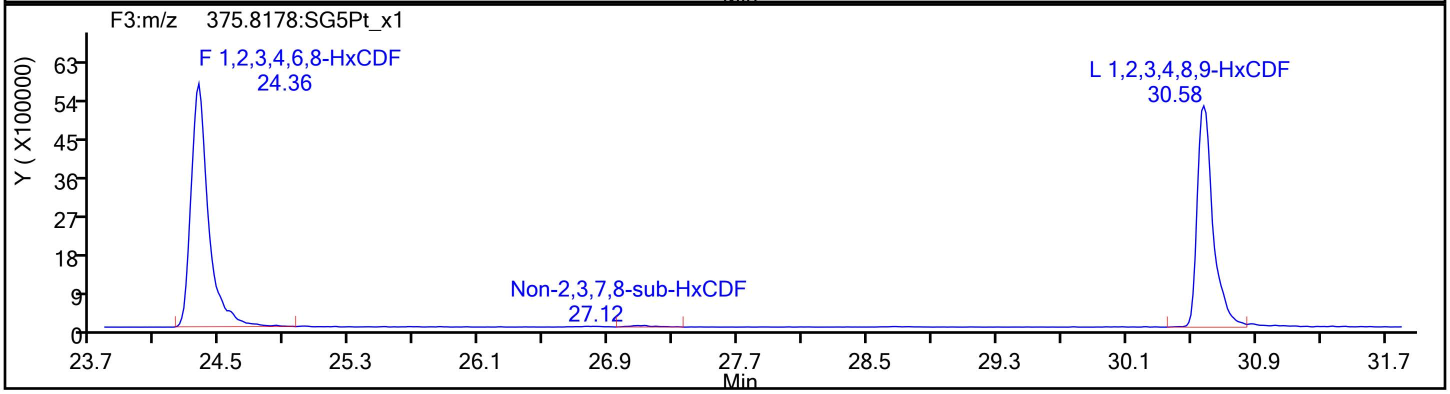

HxCDF Standards

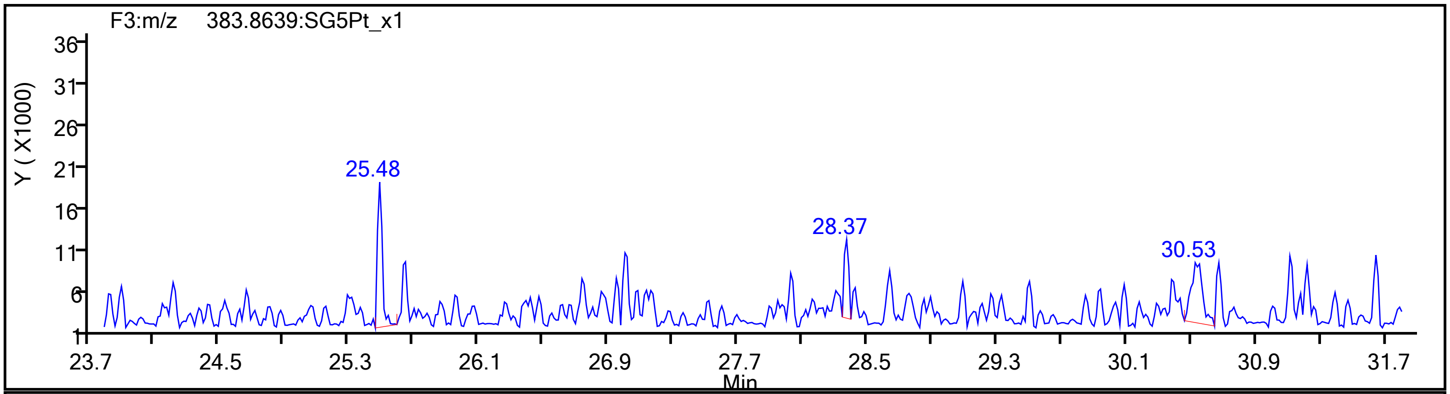

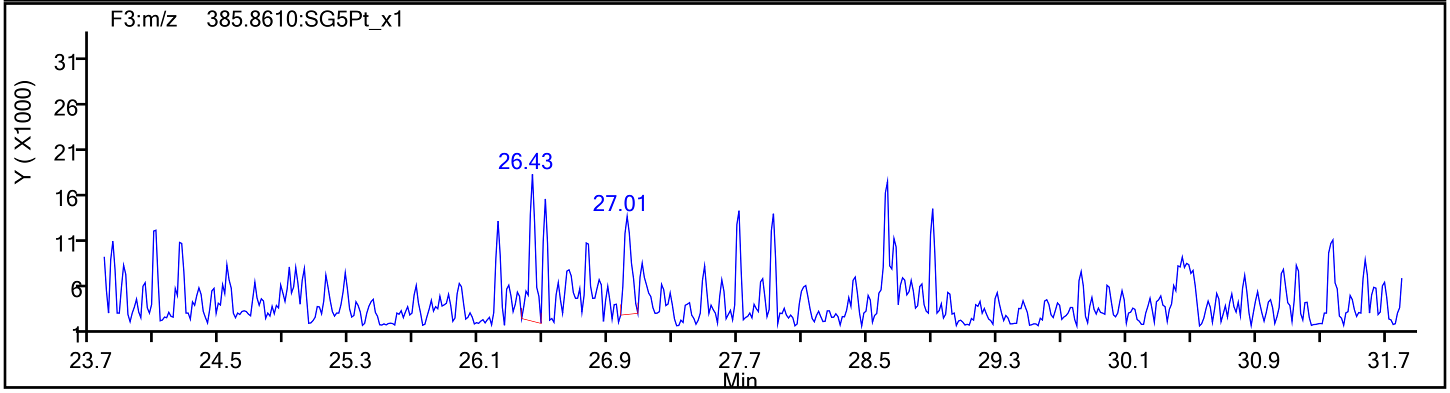

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d

Injection Date: 09-Oct-2020 13:04:43

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420483

Sample Line#: 1

Column Type:

Column Dia:

HxCDF

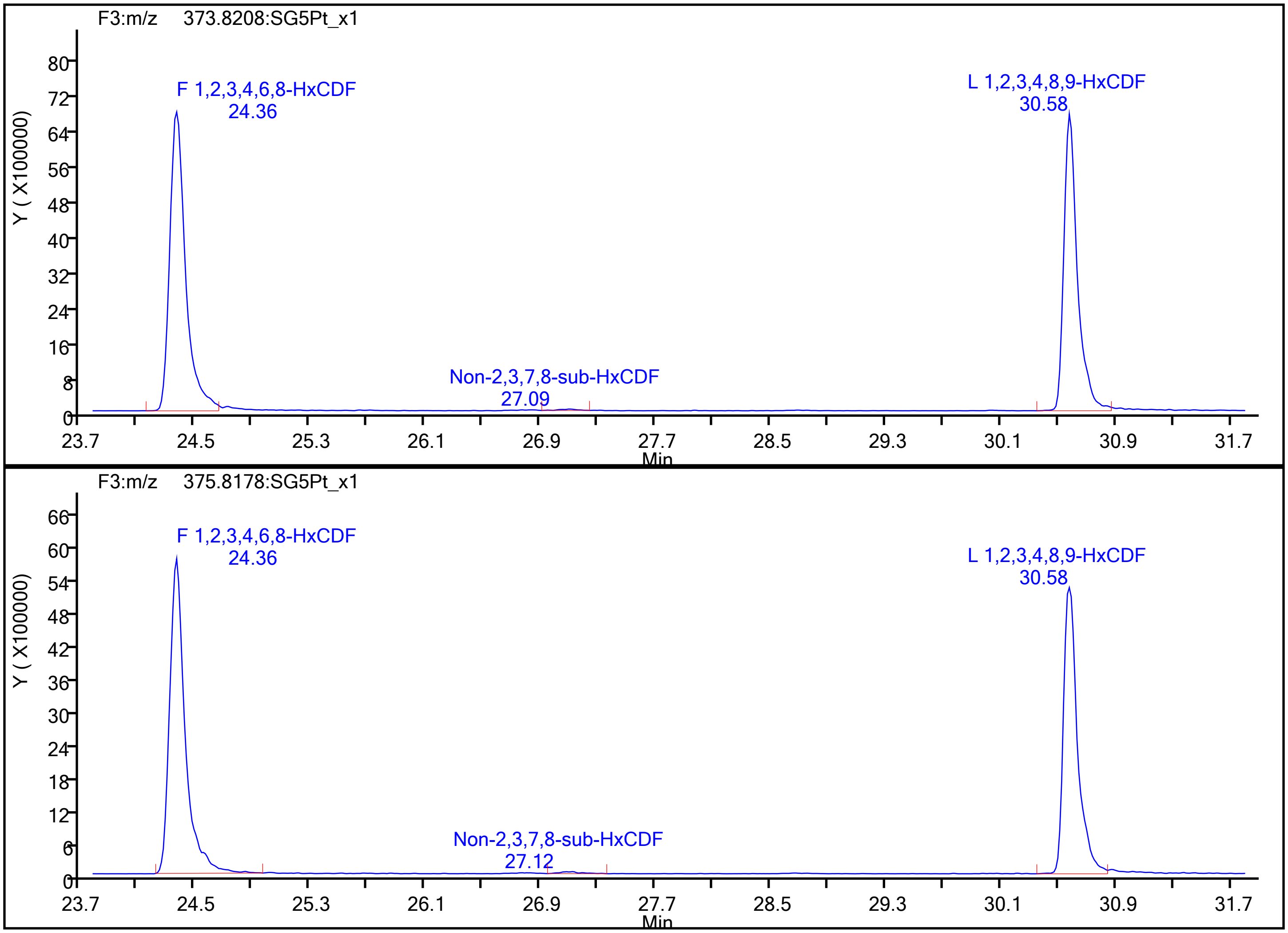

HxCDF Interference Mass

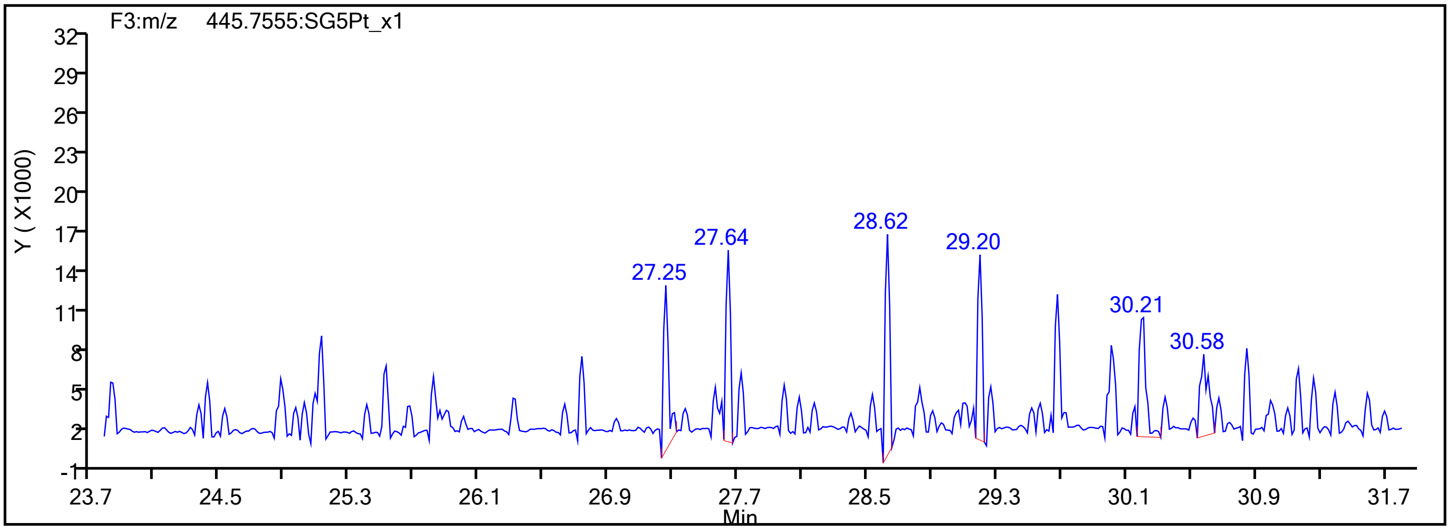

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

HpCDF

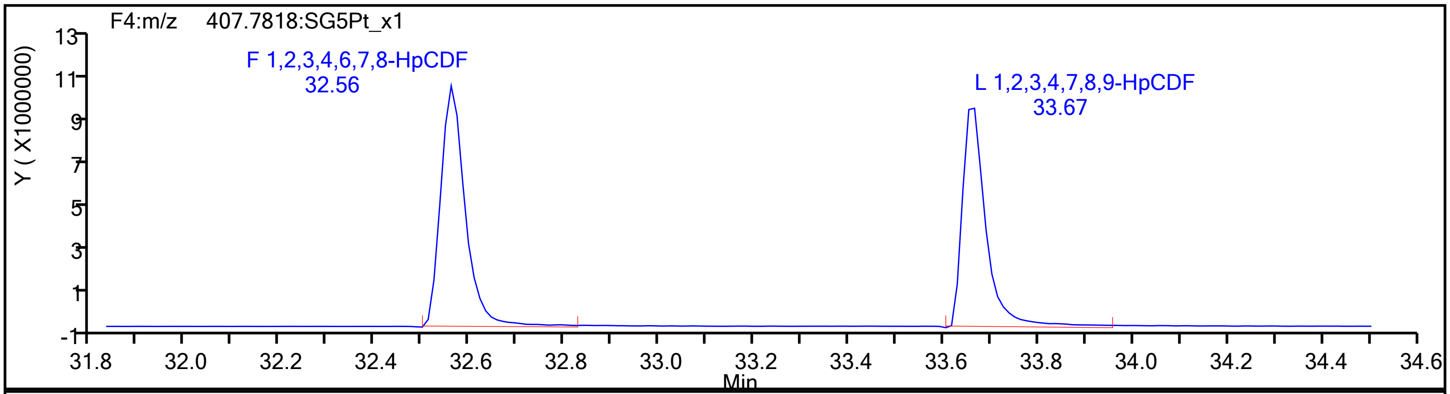

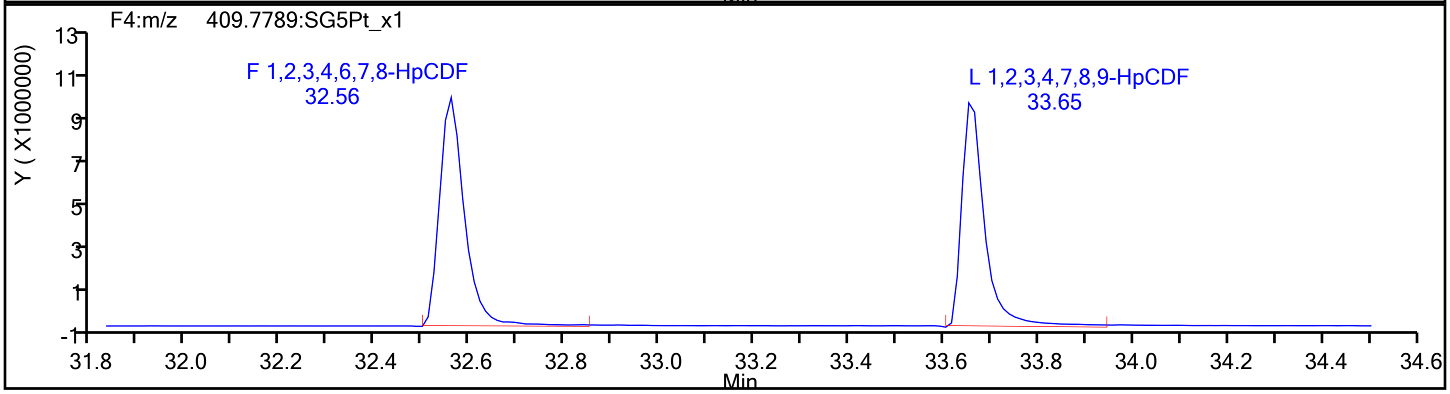

HpCDF Standards

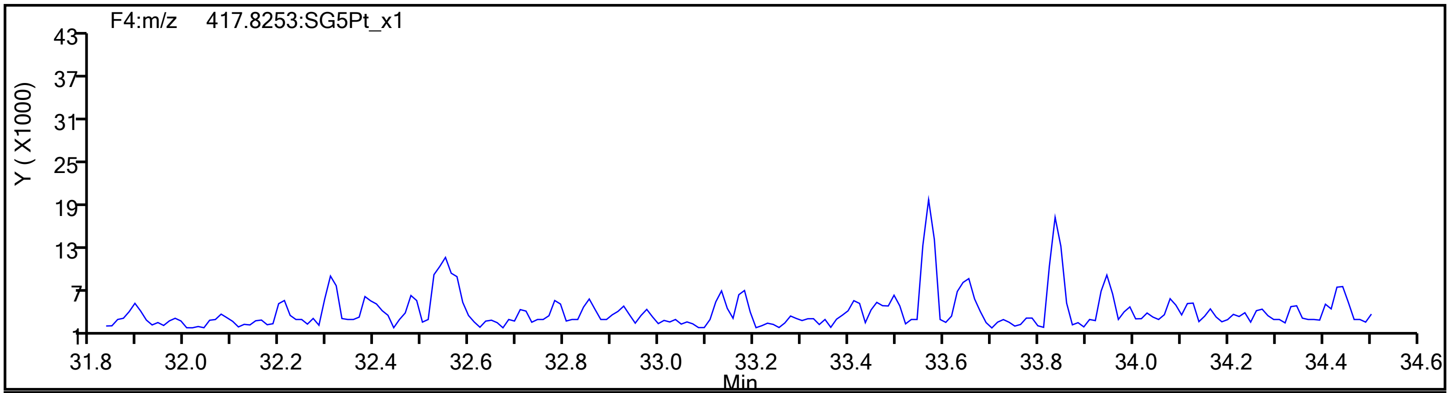

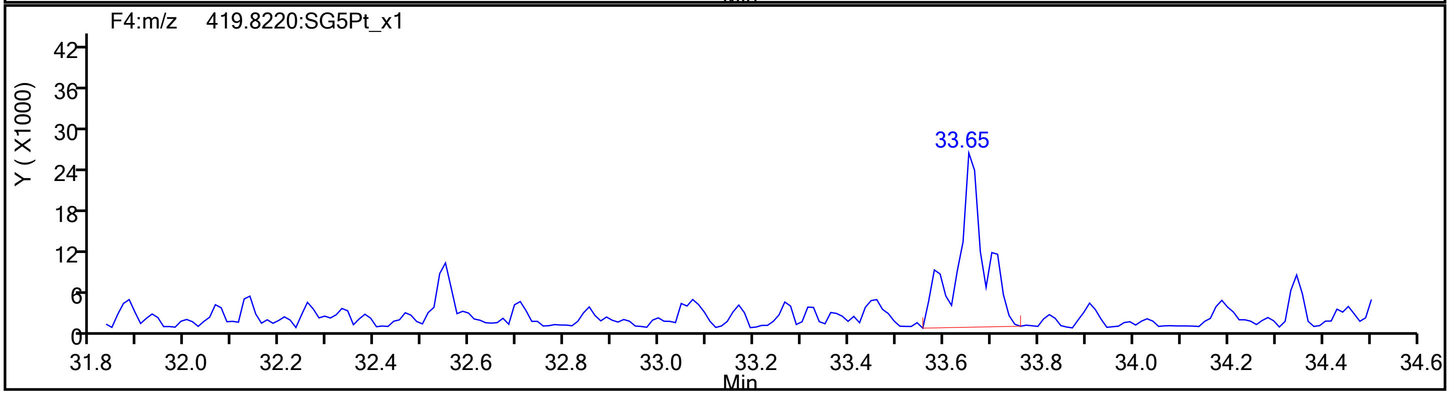

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

HpCDF

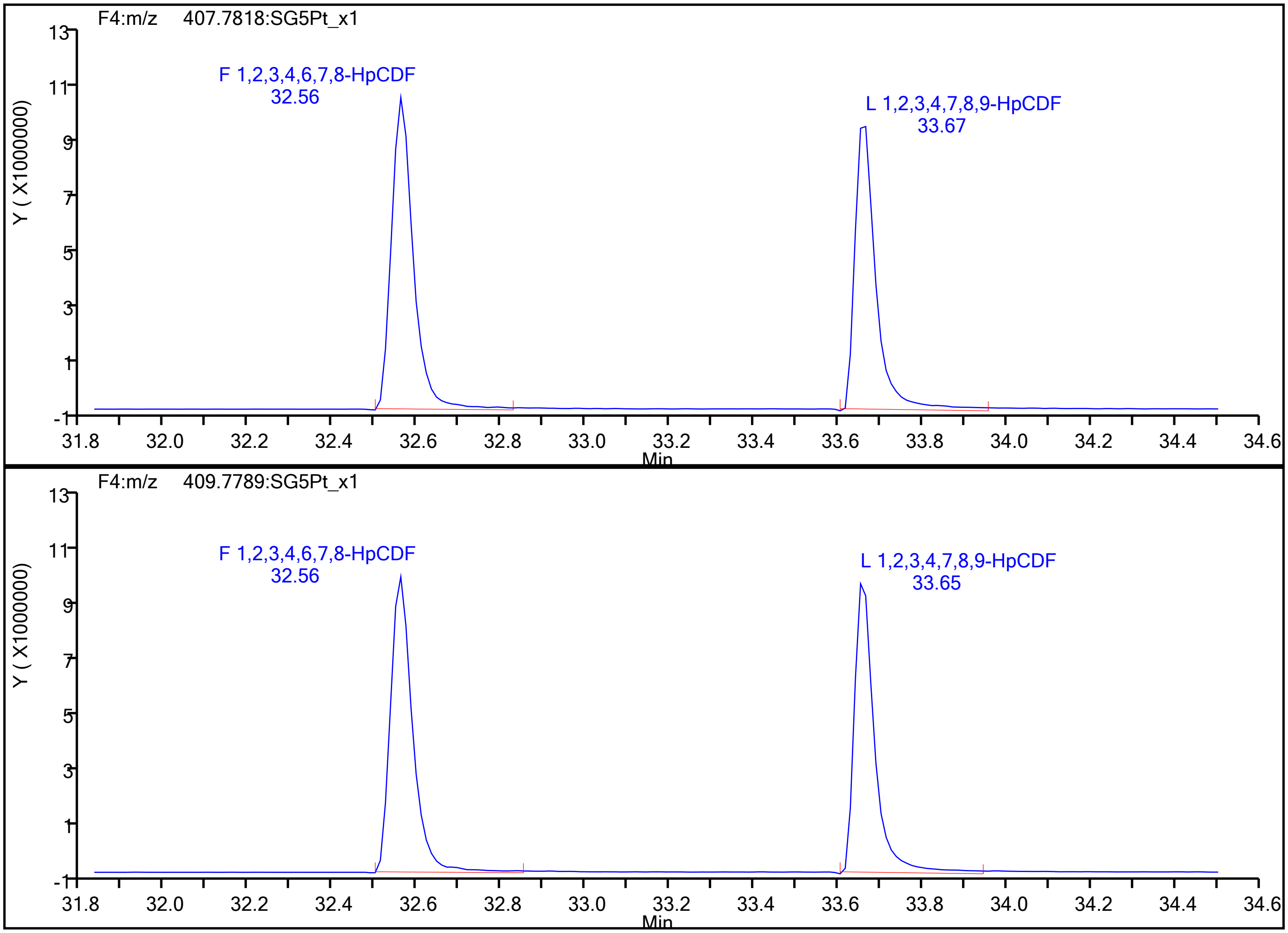

HpCDF Interference Mass

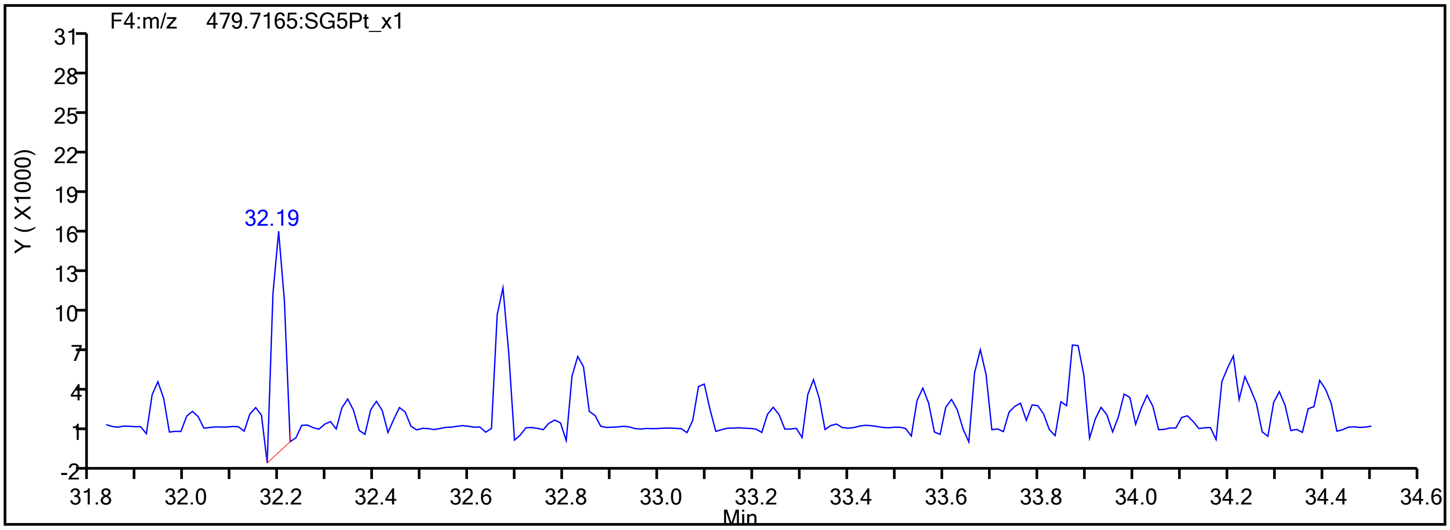

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d

Injection Date: 09-Oct-2020 13:04:43 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

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Column Type: Column Dia:

HpCDD

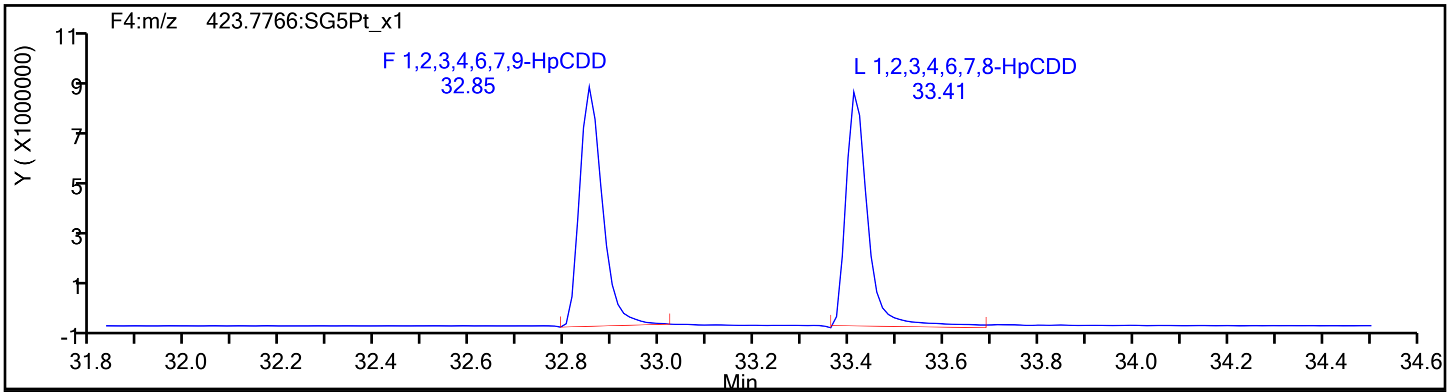

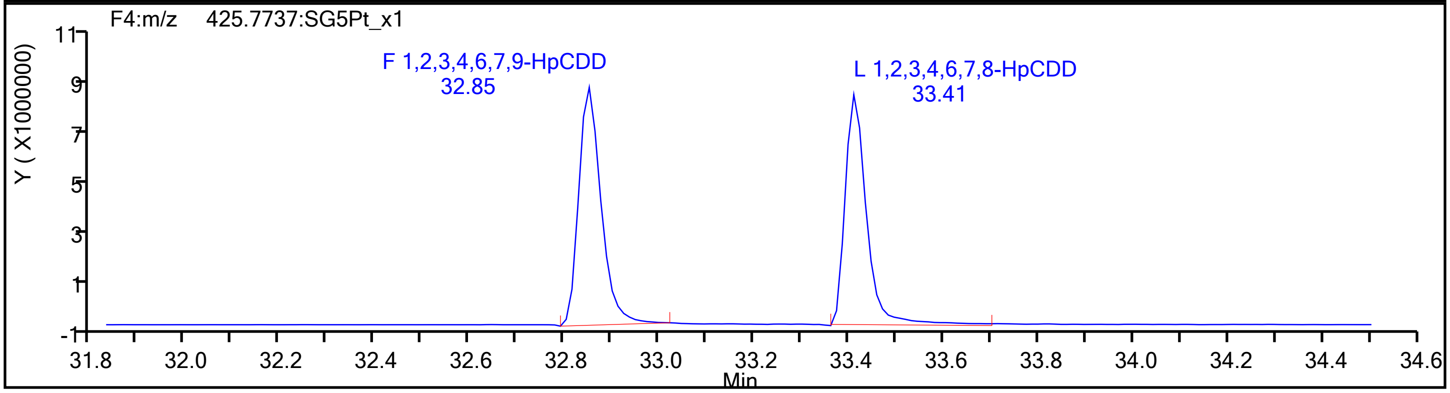

HpCDD Standards

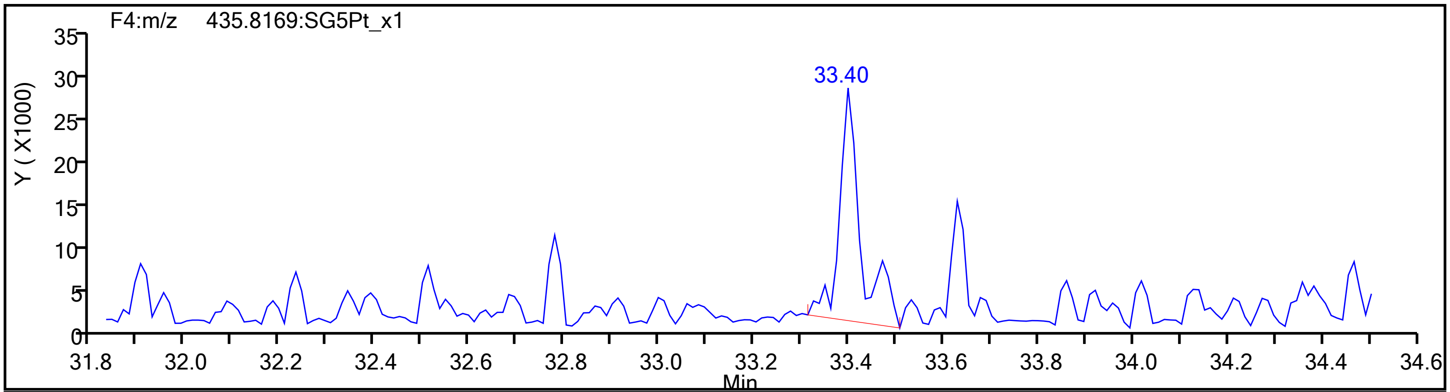

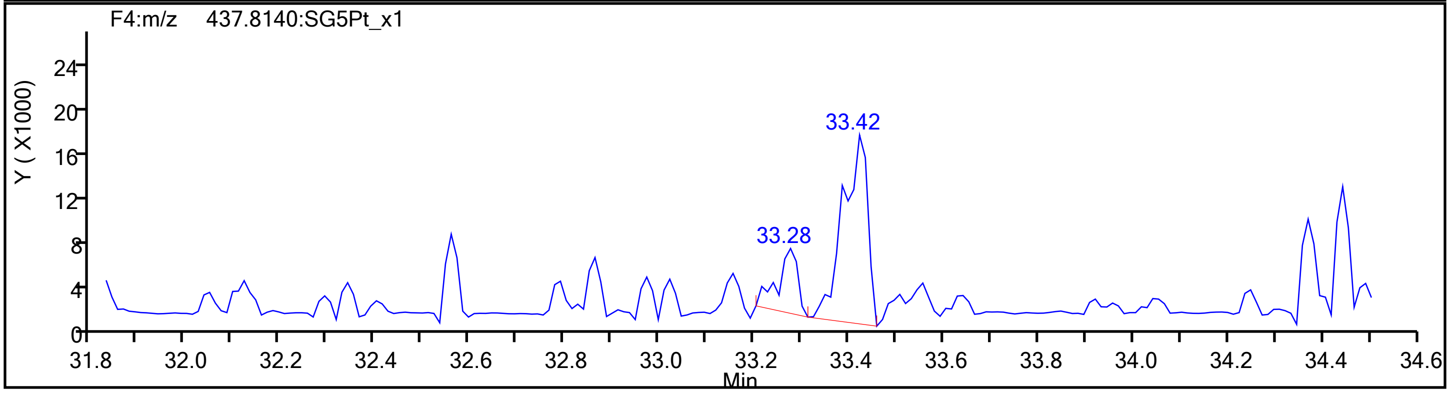

Report Date: 13-Oct-2020 00:29:21 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d

Injection Date: 09-Oct-2020 13:04:43 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420483 Sample Line#: 1

Column Type: Column Dia:

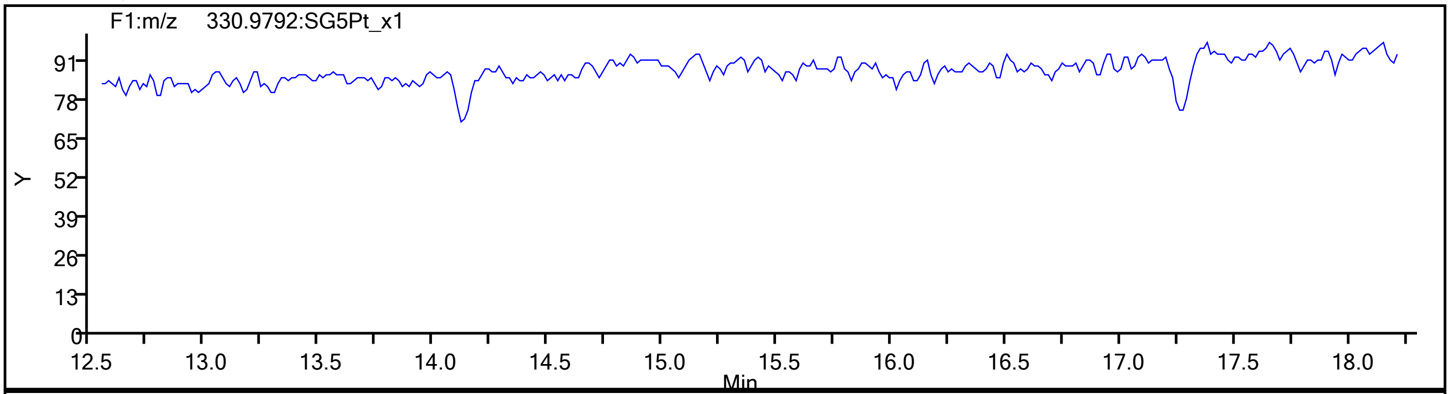

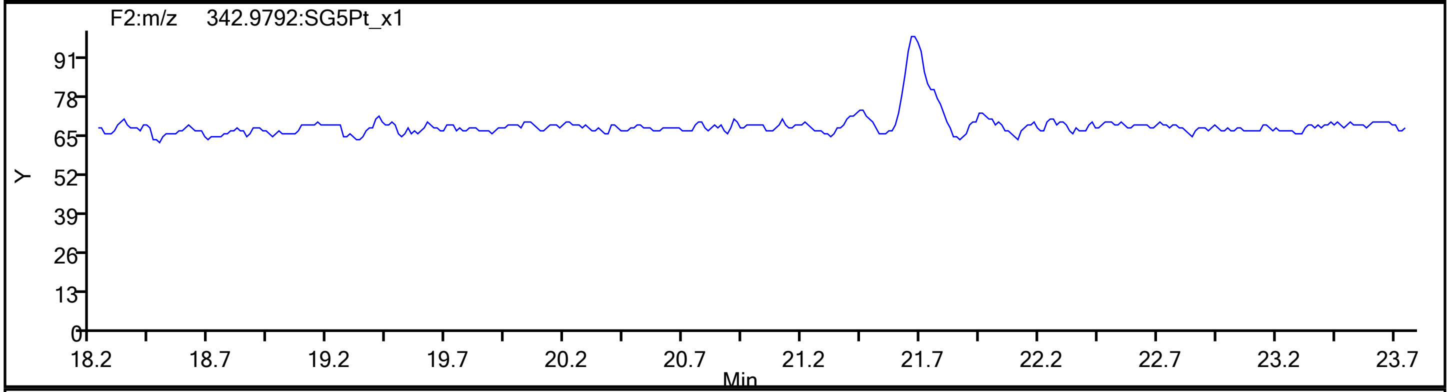

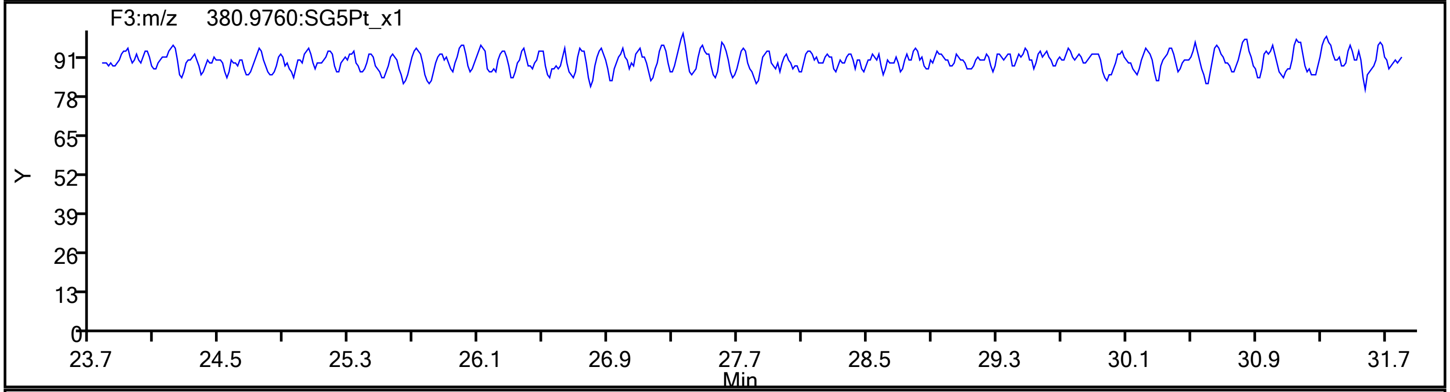

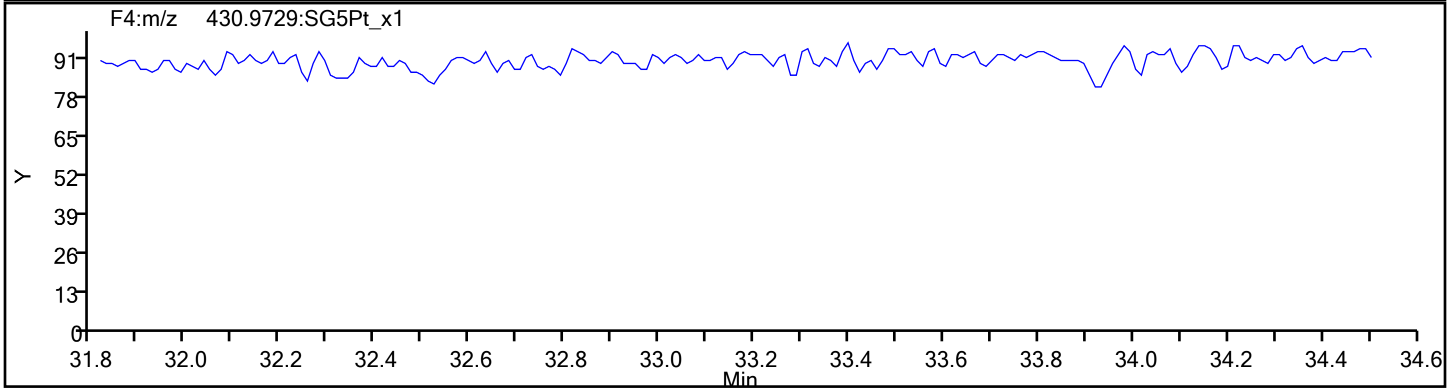

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201010-105092.b\09OC203D5_1.d		
Injection Date:	09-Oct-2020 13:04:43	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420483	Sample Line#:	1
Column Type:		Column Dia:	

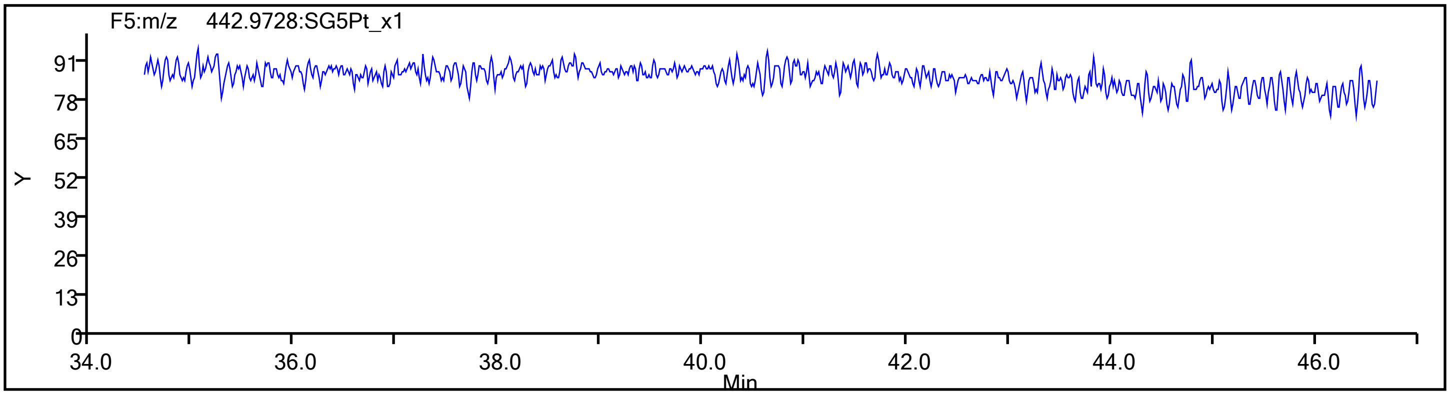

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 11:37:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Sep-2020 18:47:15 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: shardaa Date: 17-Sep-2020 14:06:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.210	2522167	0.79	1.5883					0.00	
2,3,7,8-TCDF	19.253	5383611	0.79	1.0857	78.6	78.6	0.3518	0.3518		
A Non-2,3,7,8-sub-TCDF	18.794						0.3518	0.3518		
S Total TCDF					78.6	78.6	0.3518	0.3518		
D 13C-2,3,7,8-TCDD	20.492	1633403	0.79	1.1194					0.00	
2,3,7,8-TCDD	20.527	1845908	0.80	1.0810	41.8	41.8	0.2782	0.2782		
A Non-2,3,7,8-sub-TCDD	19.607						0.2782	0.2782		
S Total TCDD					41.8	41.8	0.2782	0.2782		
A F1 PeCDFs	23.600	1584	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.993	37278	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	27.362						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	34.213	13529	1.35	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.672	19676	1.14	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.121	2303643	1.03	1.5064						
1,2,3,4,7,8,9-HpCDF	39.417	1981873	1.04	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.769						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.106	1521050	1.04	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.161	2687059	0.79							
1,3,6,8-TCDD	16.699	1788273	0.78							
2,3,4,7-TCDF	19.253	5383611	0.79							
1,2,3,7-TCDD	20.329	1481446	0.79							
1,2,3,9-TCDF	20.716	2355933	0.79							
1,2,3,9-TCDD	20.802	1918140	0.78							
1,2,8,9-TCDF	22.428	2480142	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	22.514	764750								
1,3,4,6,8-PeCDF	23.039	2295594	1.56							
1,2,4,7,9-PeCDD	25.161	1607203	1.56							
1,2,3,8,9-PeCDD	29.564	1522711	1.55							
1,2,3,8,9-PeCDF	29.724	2011691	1.57							
1,2,3,4,6,8-HxCDF	32.099	2347104	1.27							
1,2,4,6,7,9-HxCDD	33.388	1723900	1.25							
1,2,3,4,6,7-HxCDD	35.956	1700403	1.25							
1,2,3,4,8,9-HxCDF	36.326	2258870	1.26							
1,2,3,4,6,7,9-HpCDD	38.441	1661144	1.05							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 11:37:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Sep-2020 18:47:15 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1063

First Level Reviewer: shardaa Date: 17-Sep-2020 14:06:36

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.210	19.210	0	1.000	1116142	177348	719	1797	247		
317.9389	19.210	19.210	0	1.000	1406025	214870	429	1072	501	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.253	19.246	0	1.002	2375027	326449	645	1612	506		
305.8987	19.253	19.246	0	1.002	3008584	413043	853	2132	484	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.794						645	1612			
305.8987	18.794						853	2132			
13C-2,3,7,8-TCDD											
331.9368	20.492	20.492	0	1.000	722717	101060	463	1157	218		
333.9338	20.501	20.492	1	1.000	910686	124375	85	212	1463	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.527	20.532	0	1.002	820013	115777	339	847	342		
321.8936	20.535	20.532	0	1.002	1025895	143922	339	847	425	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.607						339	847			
321.8936	19.607						339	847			
A F1 PeCDFs											RQ
339.8597	16.476	23.600	-427	1.000	963	154	27	67	6		
341.8567	16.476	23.600	-427	1.000	6442	1078	60	150	18	0.15(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.750	26.993	-74	1.000	5534	1015	177	442	6		
341.8567	25.750	26.993	-74	1.000	3903	620	159	397	4	1.42(1.32-1.78)	
339.8597	26.314	26.993	-41	1.000	9689	1347	177	442	8		
341.8567	26.306	26.993	-41	1.000	8696	1066	159	397	7	1.11(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.912	26.993	-5	1.000	7207	1209	177	442	7		
341.8567	26.903	26.993	-5	1.000	4695	664	159	397	4	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.362						267	667			
357.8516	27.362						138	345			
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.373	34.213	10	1.000	7773	1859	350	875	5		
375.8178	34.364	34.213	9	1.000	5756	1218	254	635	5	1.35(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.651	34.672	-1	1.000	10486	2057	215	537	10		
391.8127	34.651	34.672	-1	1.000	9190	1928	189	472	10	1.14(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.121	38.141	-1	1.000	1170853	364198	644	1610	566		
409.7788	38.121	38.141	-1	1.000	1132790	349286	592	1480	590	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.417	39.438	-1	1.000	1012663	324987	644	1610	505		
409.7788	39.409	39.438	-2	1.000	969210	312841	592	1480	528	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.769						644	1610			
409.7788	38.769						592	1480			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.106	39.126	-1	1.000	774532	259279	458	1145	566		
425.7737	39.106	39.126	-1	1.000	746518	246920	413	1032	598	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						458	1145			
425.7737	38.941						413	1032			
1,3,6,8-TCDF											
303.9016	15.161	15.161	0		1186477	240908	645	1612	374		
305.8987	15.161	15.161	0		1500582	305194	853	2132	358	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.699	16.699	0		782156	141561	339	847	418		
321.8936	16.699	16.699	0		1006117	185842	339	847	548	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.253	19.253	0		2375027	326449	645	1612	506		
305.8987	19.253	19.253	0		3008584	413043	853	2132	484	0.79(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.329	20.329	0		654452	99090	339	847	292		
321.8936	20.329	20.329	0		826994	125288	339	847	370	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.716	20.716	0		1039323	142760	645	1612	221		
305.8987	20.707	20.716	-1		1316610	180036	853	2132	211	0.79(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.802	20.802	0		837663	112205	339	847	331		
321.8936	20.802	20.802	0		1080477	143086	339	847	422	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	22.428	22.428	0		1097149	142639	645	1612	221		
305.8987	22.420	22.428	-1		1382993	177064	853	2132	208	0.79(0.65-0.89)	

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	22.514	22.514	0		764750	95778	339	847	283		
1,3,4,6,8-PeCDF											
339.8597	23.039	23.039	0		1398828	192738	27	67	7138		
341.8567	23.039	23.039	0		896766	120618	60	150	2010	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.161	25.161	0		978358	157744	267	667	591		
357.8516	25.152	25.161	-1		628845	103440	138	345	750	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.564	29.564	0		925446	129436	267	667	485		
357.8516	29.555	29.564	-1		597265	83528	138	345	605	1.55(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.724	29.724	0		1227876	167813	177	442	948		
341.8567	29.724	29.724	0		783815	108294	159	397	681	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.099	32.099	0		1311089	172896	350	875	494		
375.8178	32.107	32.099	1		1036015	134835	254	635	531	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.388	33.388	0		959152	166009	215	537	772		
391.8127	33.388	33.388	0		764748	130983	189	472	693	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.956	35.956	0		945535	236040	215	537	1098		
391.8127	35.956	35.956	0		754868	188398	189	472	997	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.326	36.326	0		1257245	321693	350	875	919		
375.8178	36.326	36.326	0		1001625	256249	254	635	1009	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.441	38.441	0		850808	270967	458	1145	592		
425.7737	38.441	38.441	0		810336	256648	413	1032	621	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Sep-2020 11:37:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413255 Lims Sample ID: 1

F1 PeCDFs, RT: 23.600

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.476	963	154	6442	1078		0.15	R
Signal Totals:							
	963	154	6442	1078			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7405	1232				0.15	RQ
	1584	253					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (7405 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (1584 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 11:37:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 26.993

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.750	5534	1015	3903	620		1.42	
26.314	9689	1347	8696	1066		1.11	R
26.912	7207	1209	4695	664		1.54	
Signal Totals:							
	22430	3571	17294	2350			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	39724	5921				1.30	RQ
	37278	5724					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (39724 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (37278 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 11:37:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	413255	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 34.213

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.373	7773	1859	5756	1218		1.35	
Signal Totals:							
	7773	1859	5756	1218			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13529	3077				1.35	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13529 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Sep-2020 11:37:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 413255 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 34.672

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.651	10486	2057	9190	1928		1.14	
Signal Totals:							
	10486	2057	9190	1928			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	19676	3985				1.14	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (19676 * 0.0) / (0 * 0.000)

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

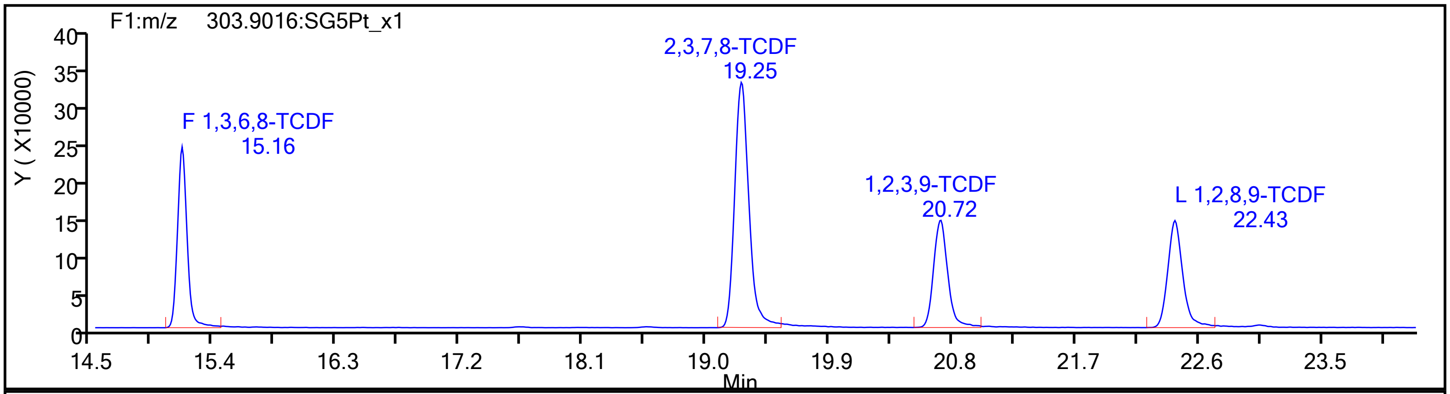

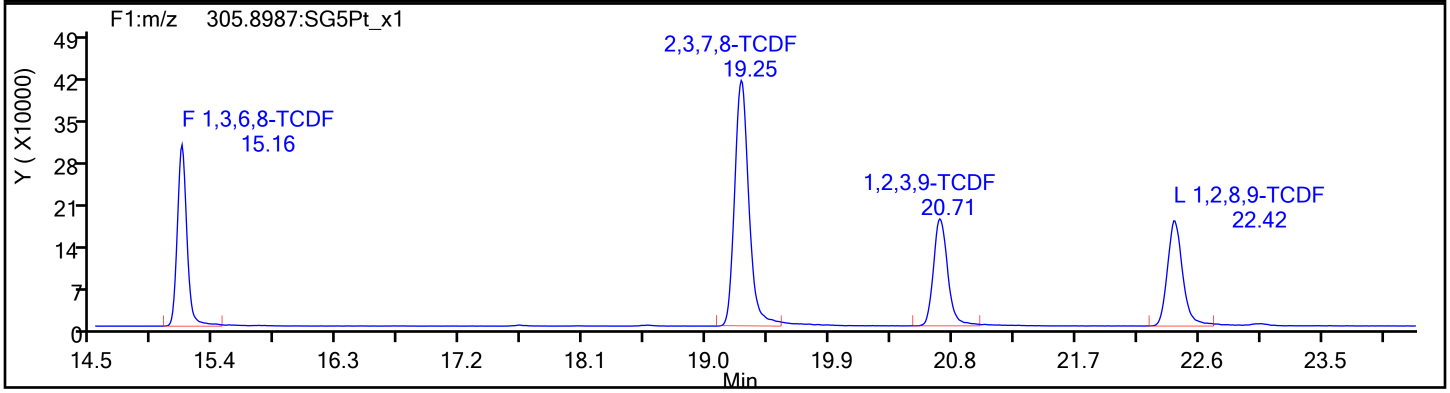

TCDF Standards

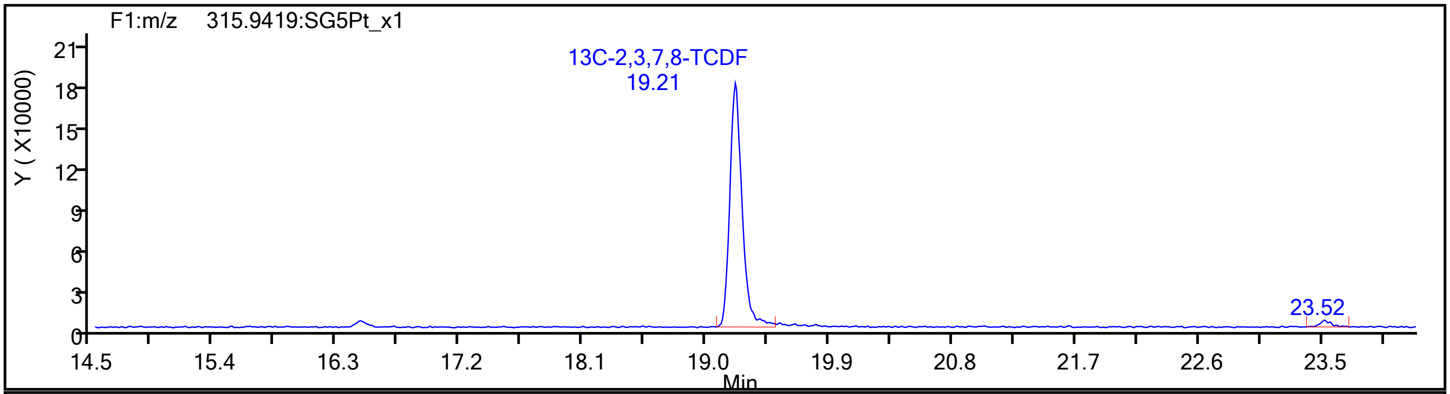

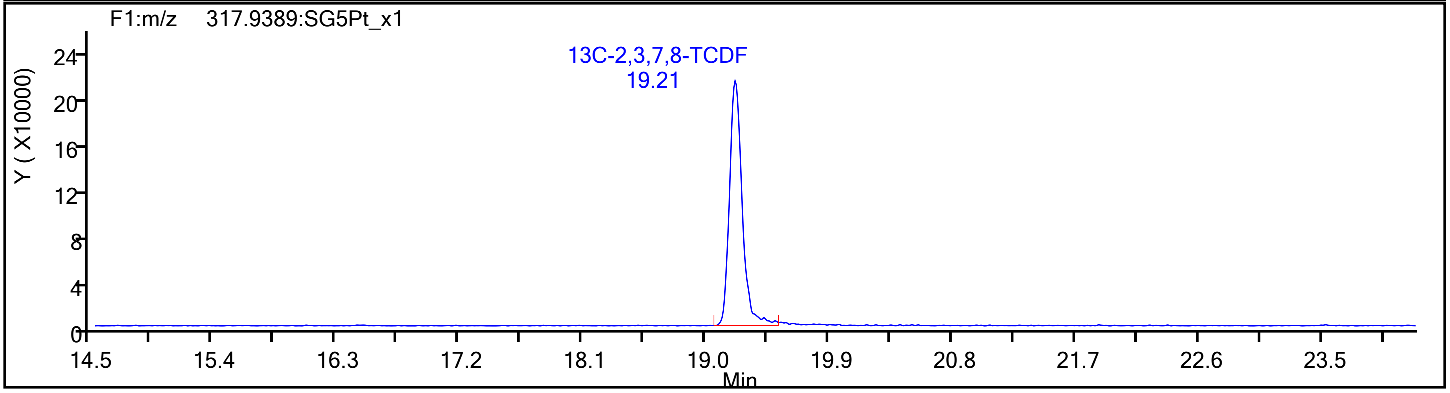

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

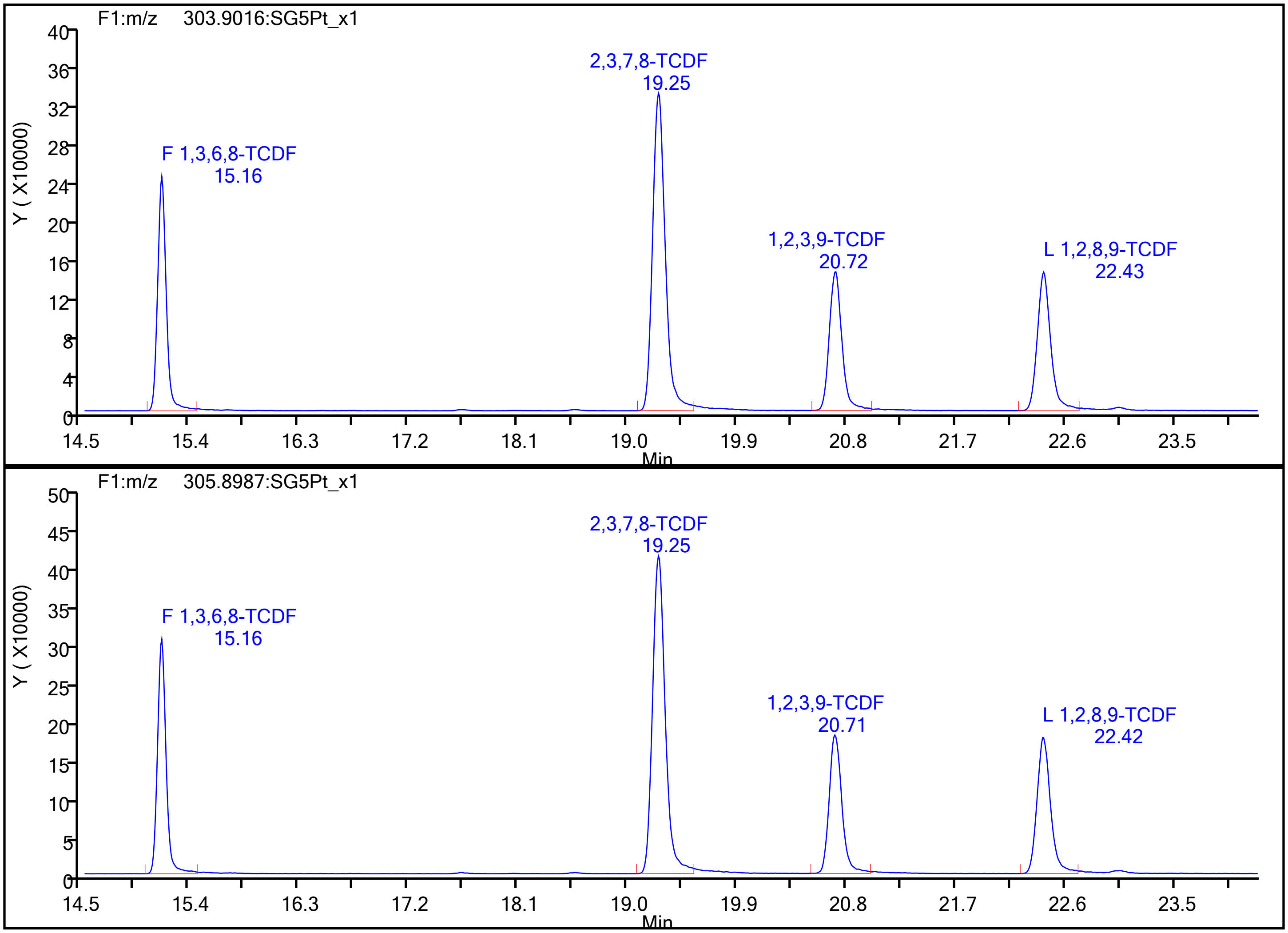

TCDF Interference Mass

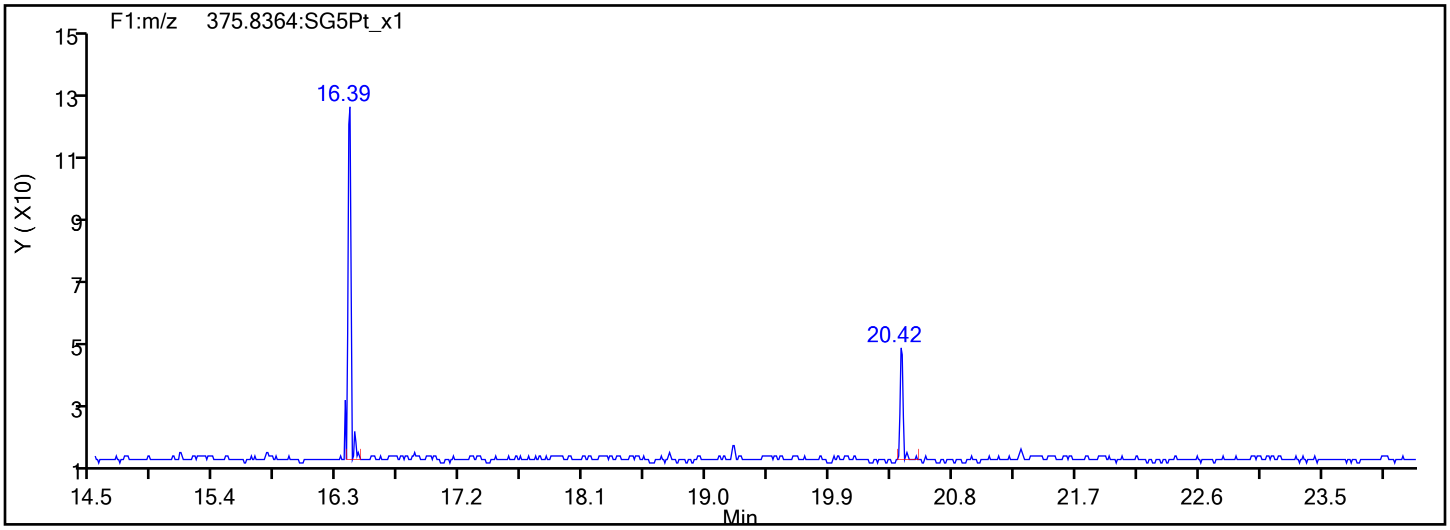

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

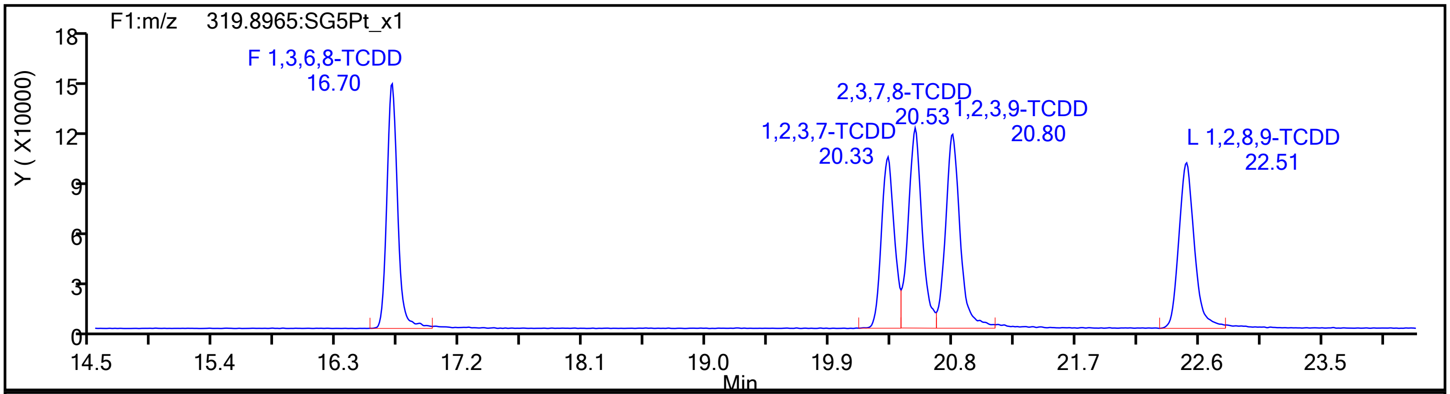

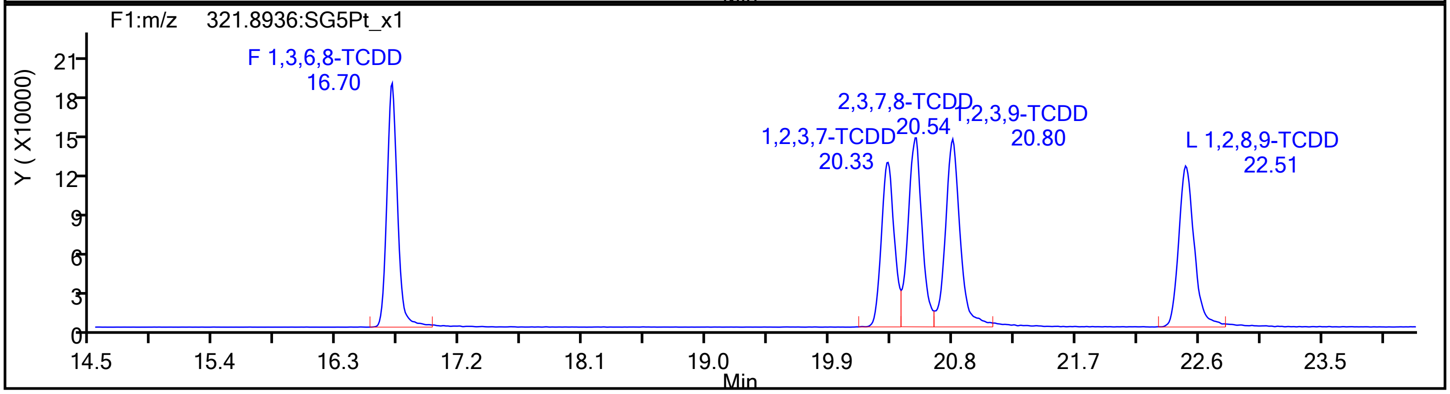

TCDD Standards

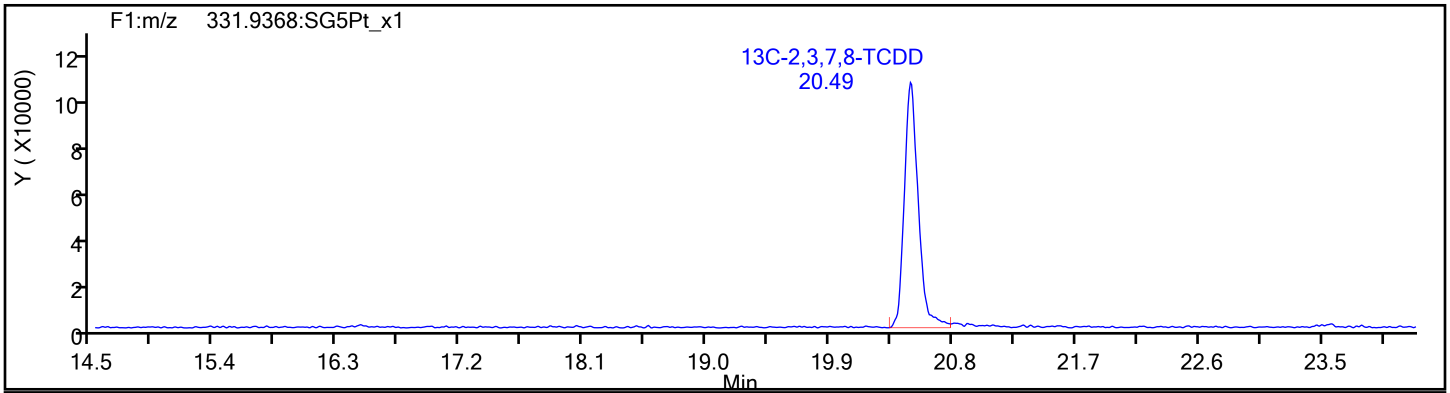

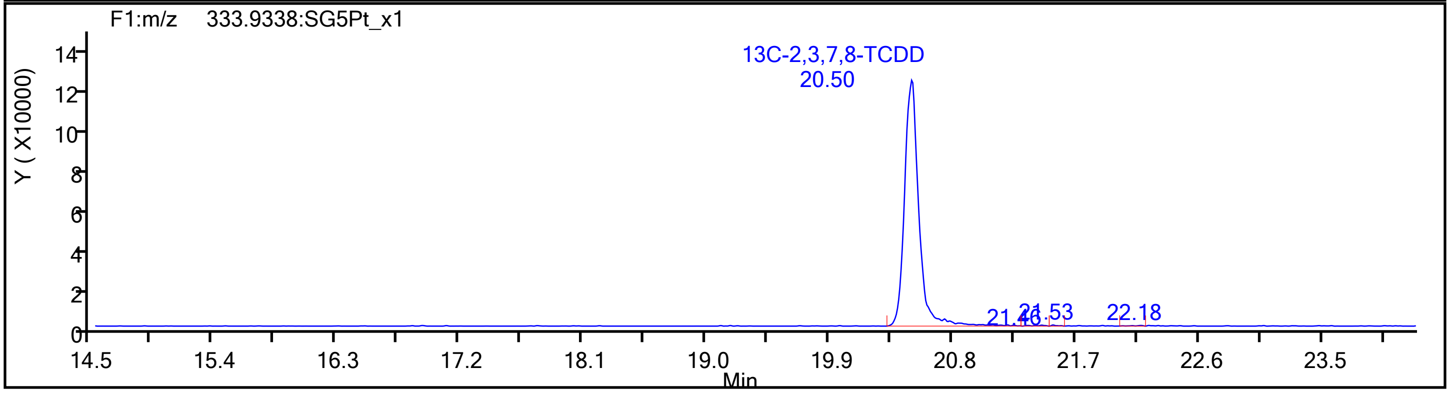

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Injection Date: 17-Sep-2020 11:37:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

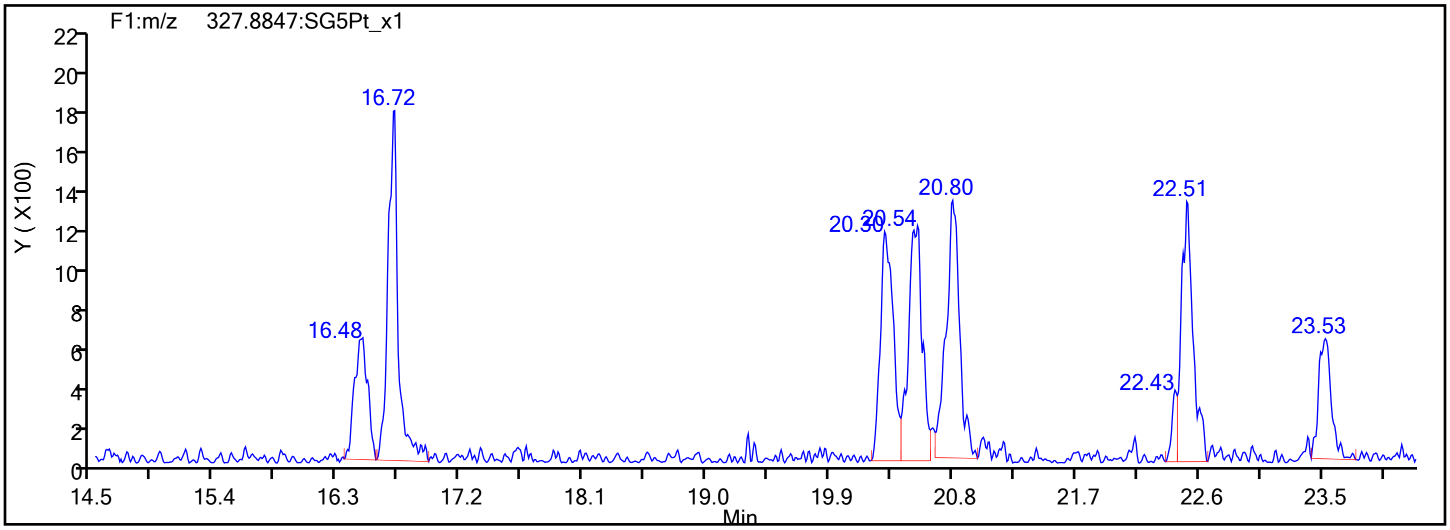

37Cl4-TCDD Standards

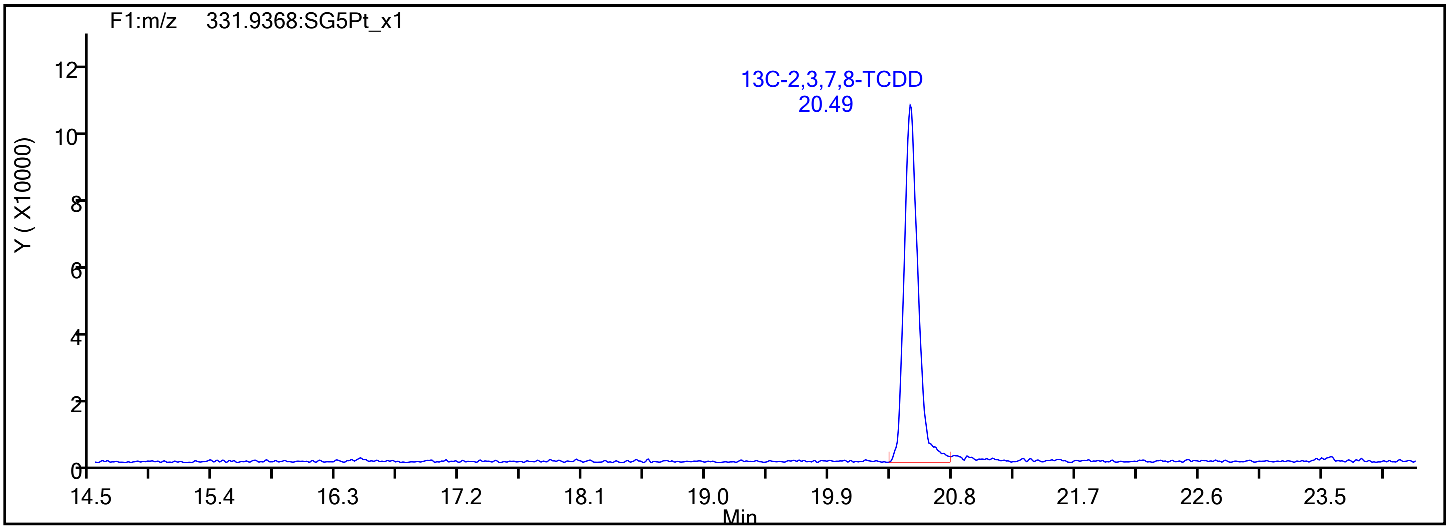

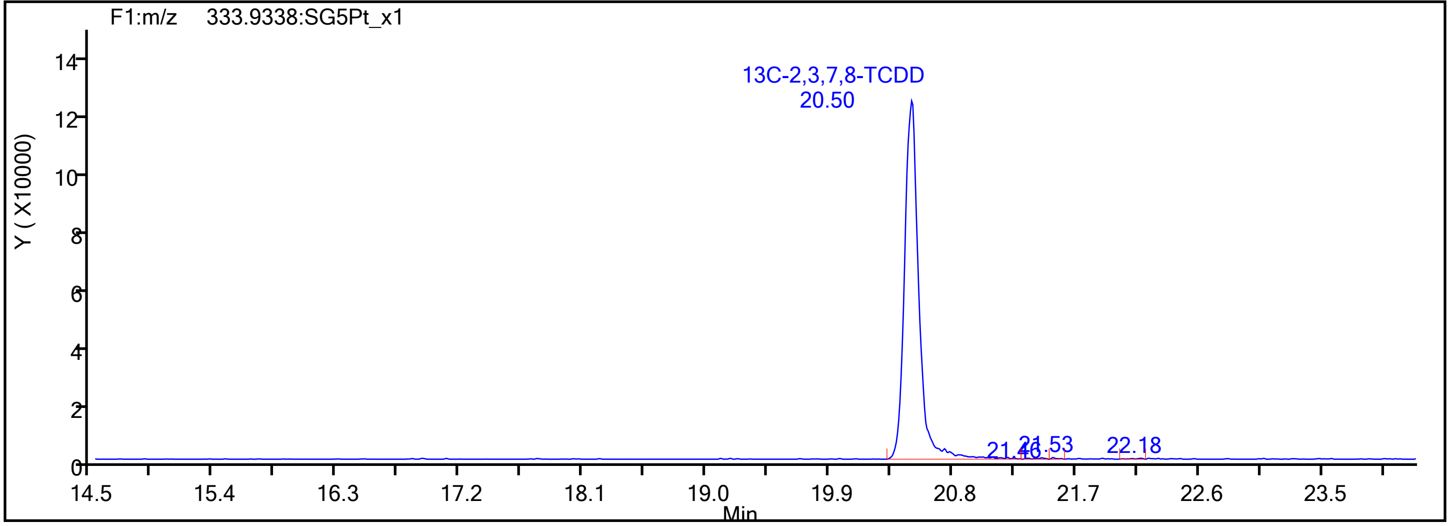

Report Date: 17-Sep-2020 18:47:24 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

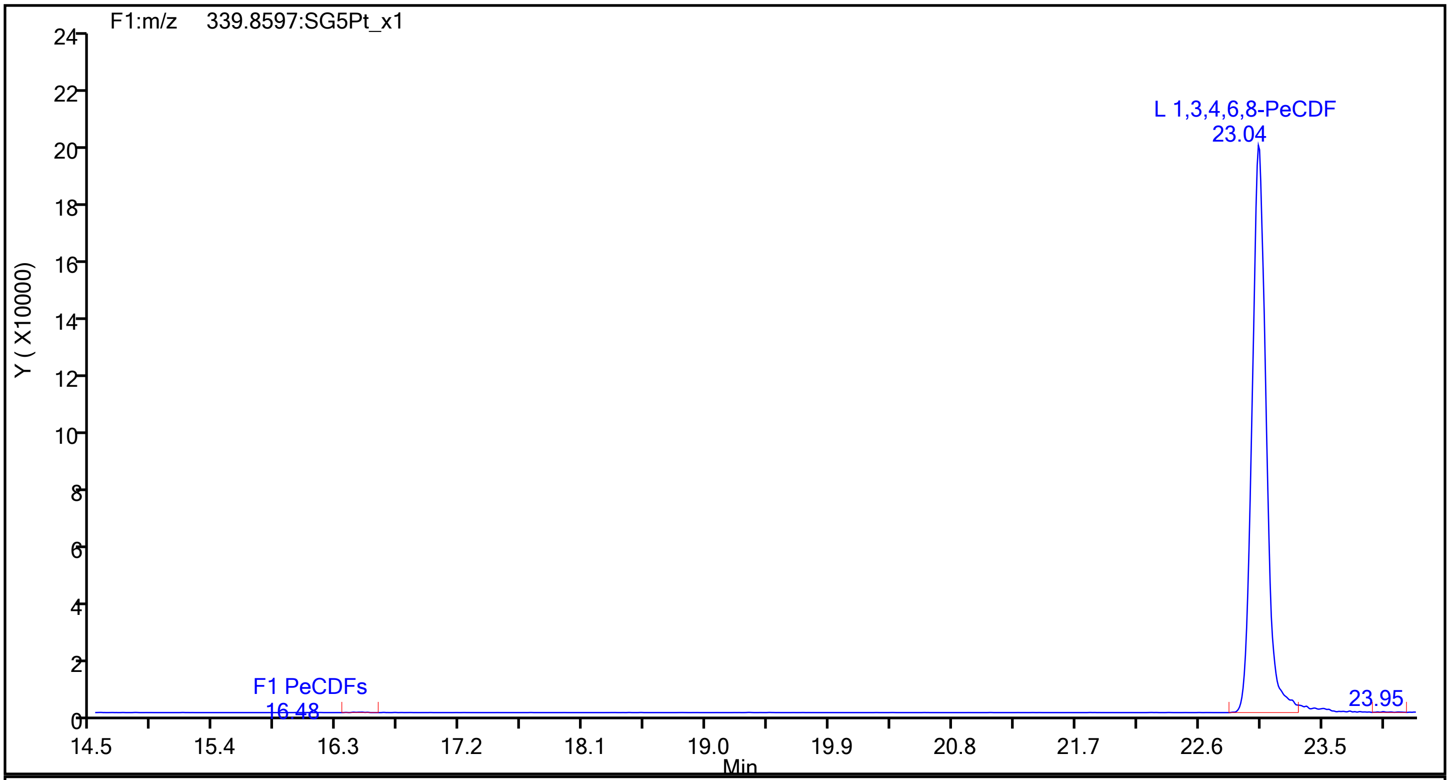

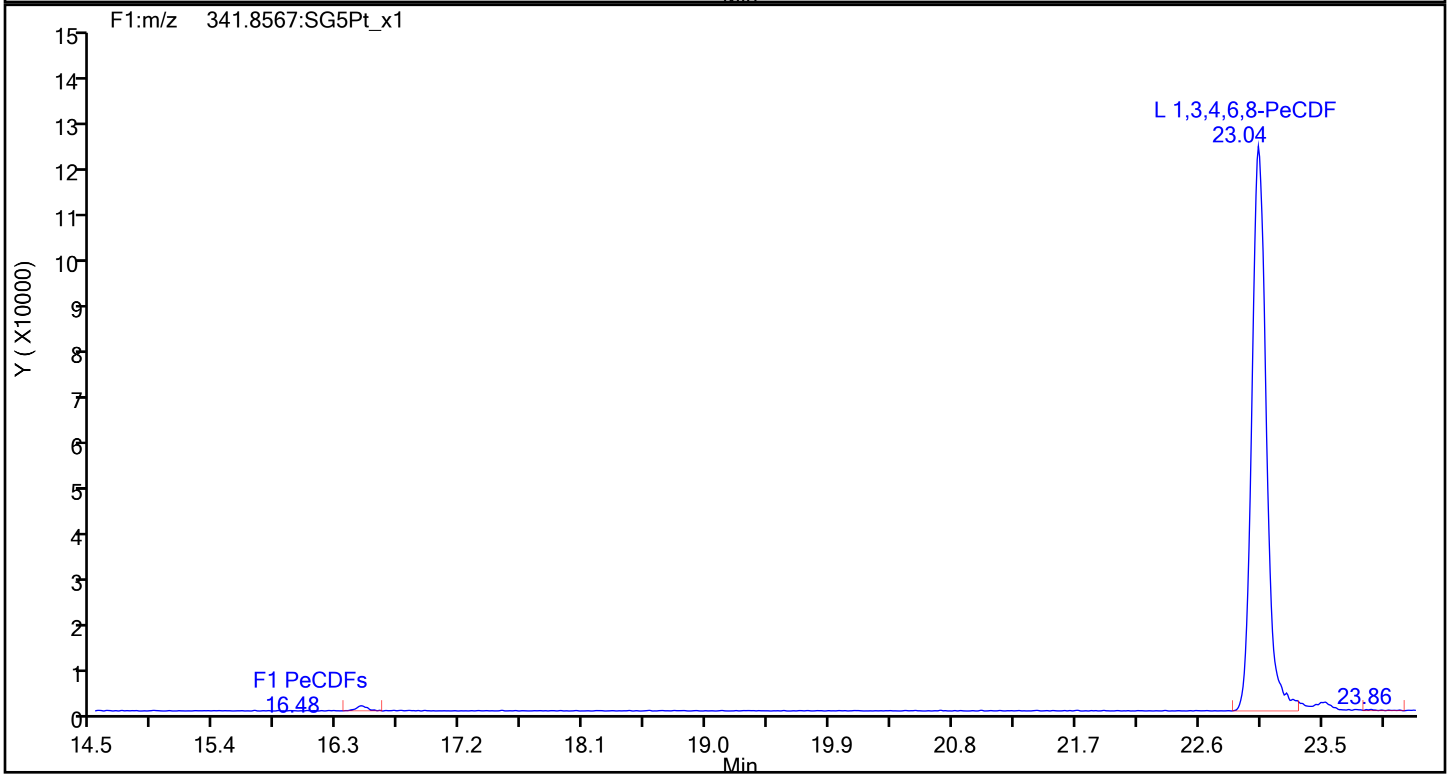

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Injection Date: 17-Sep-2020 11:37:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

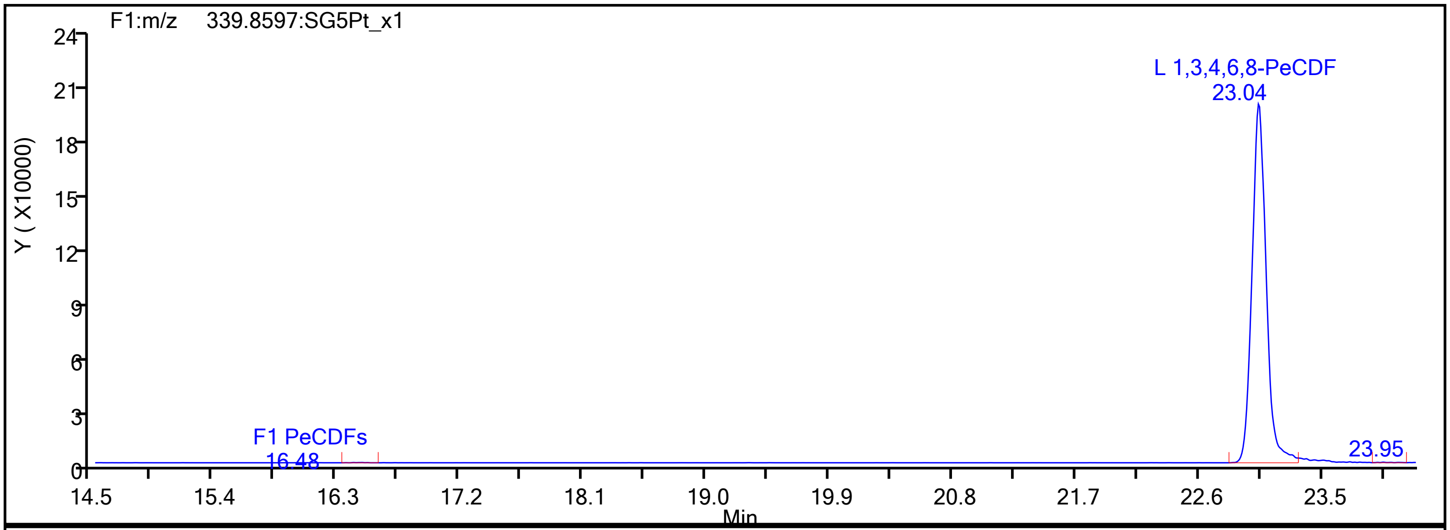

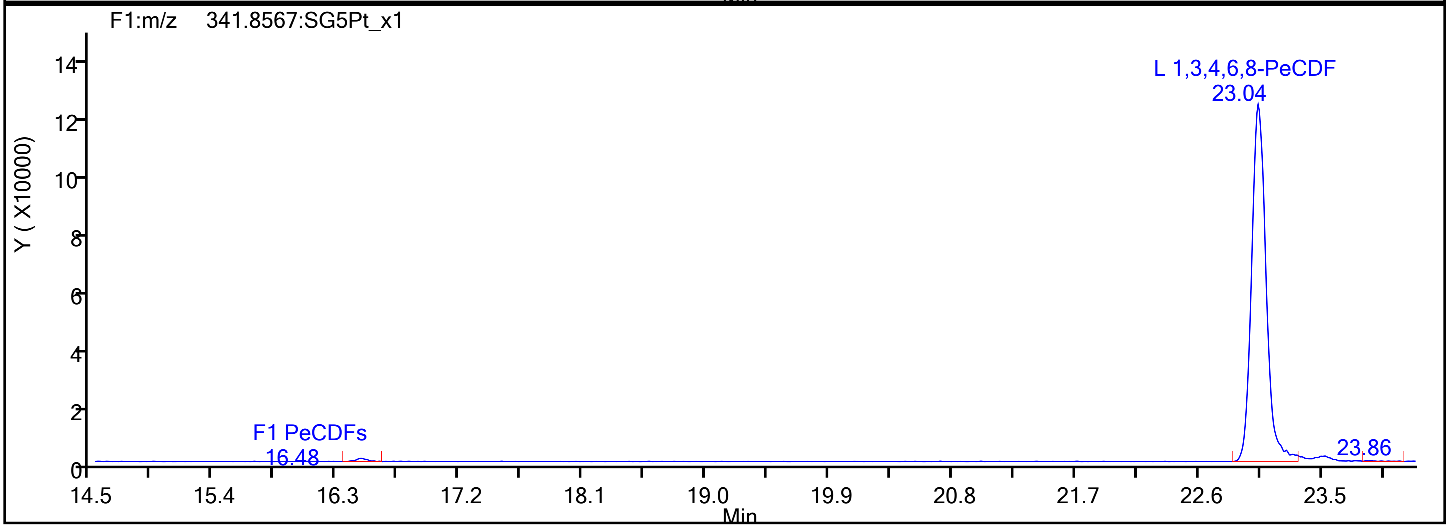

F1 PeCDFs Interference Mass

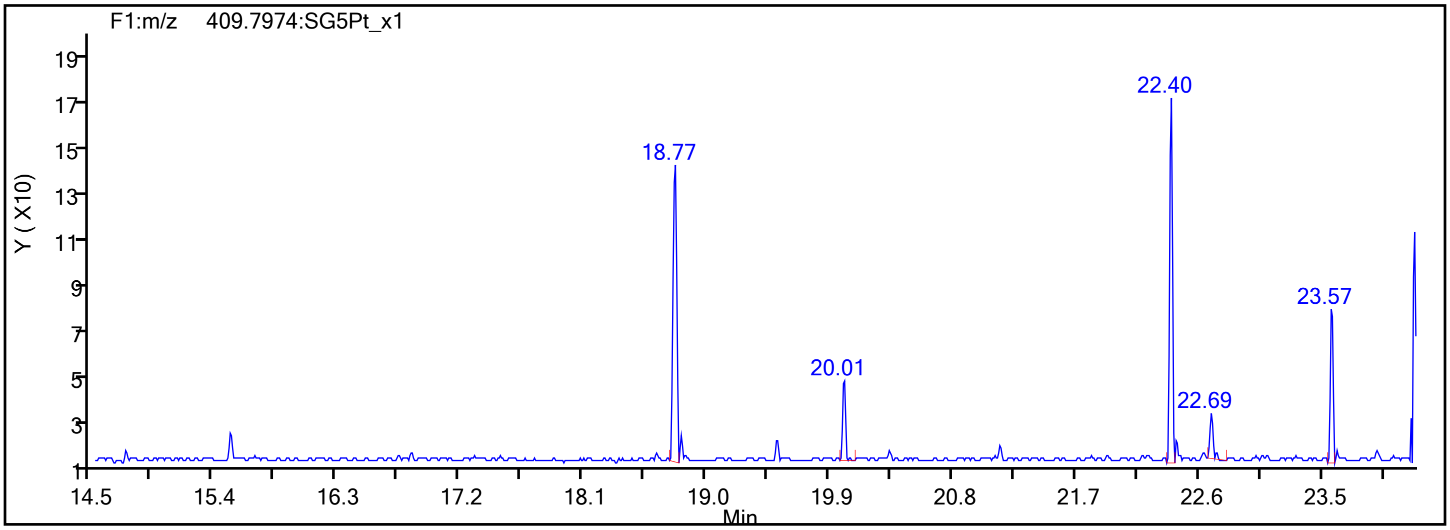

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

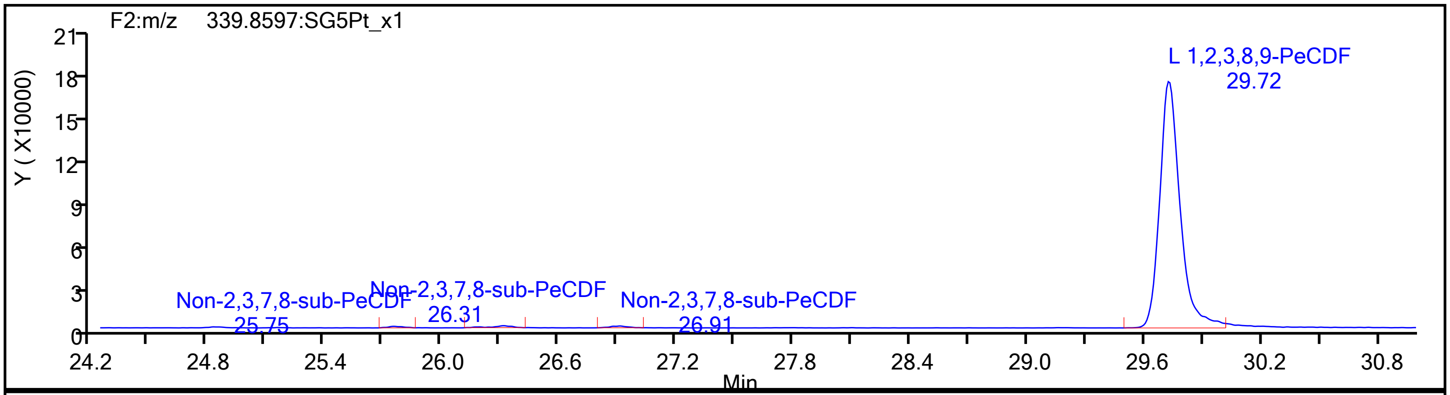

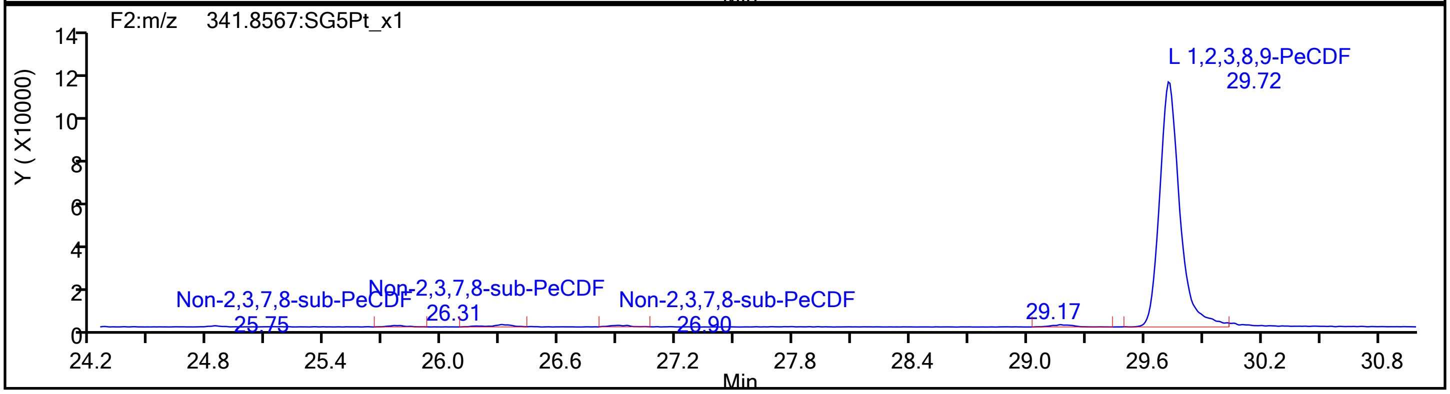

PeCDF Standards

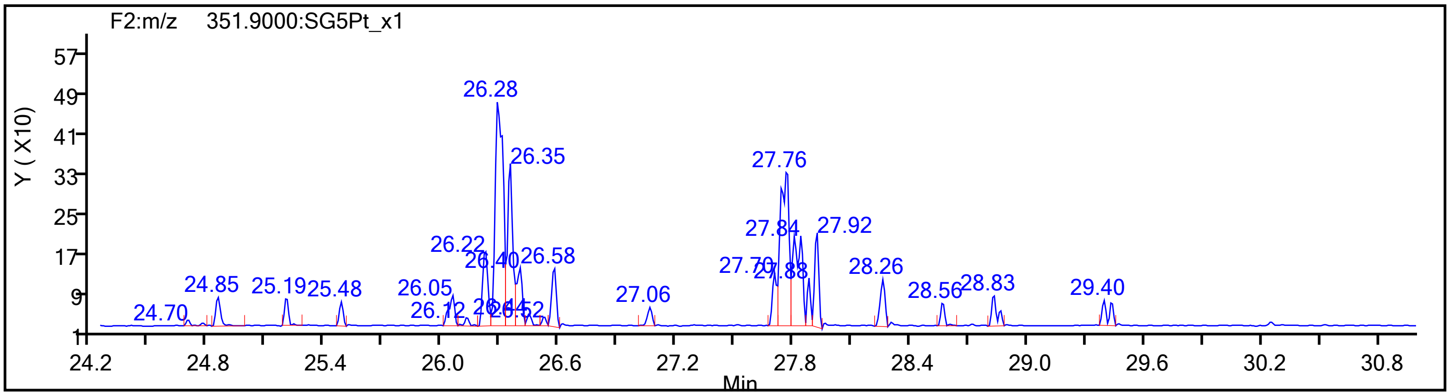

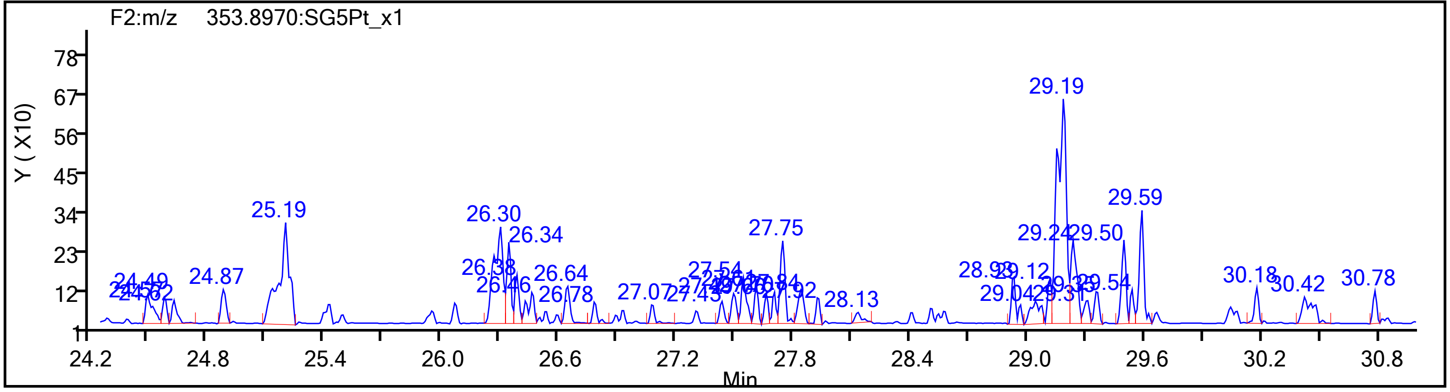

Report Date: 17-Sep-2020 18:47:25　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

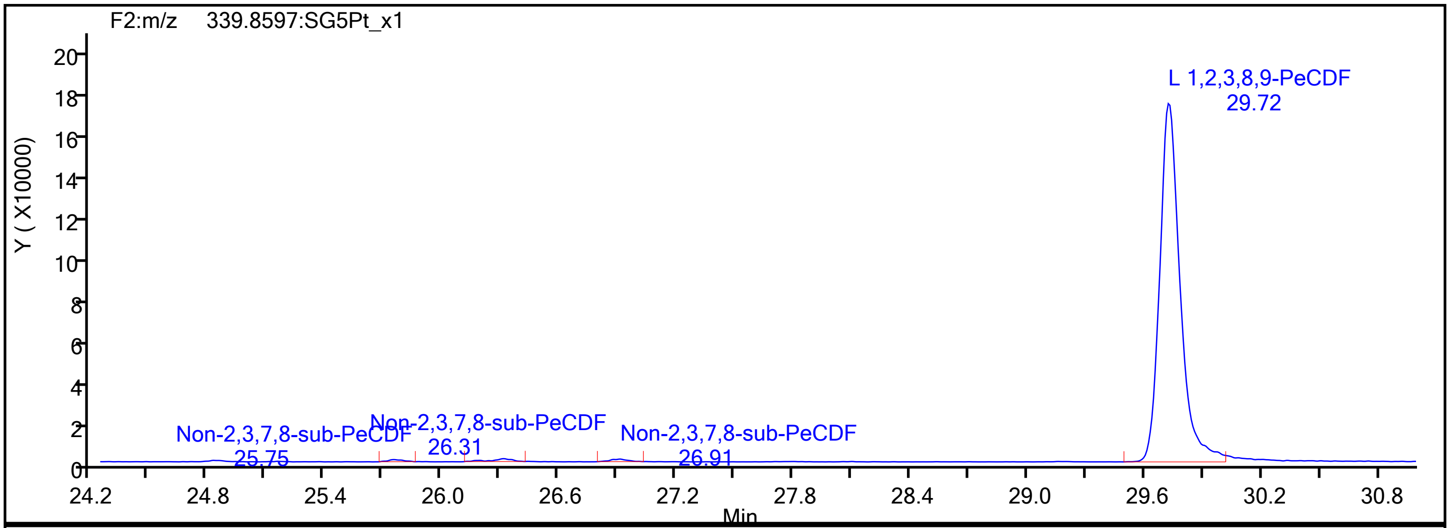

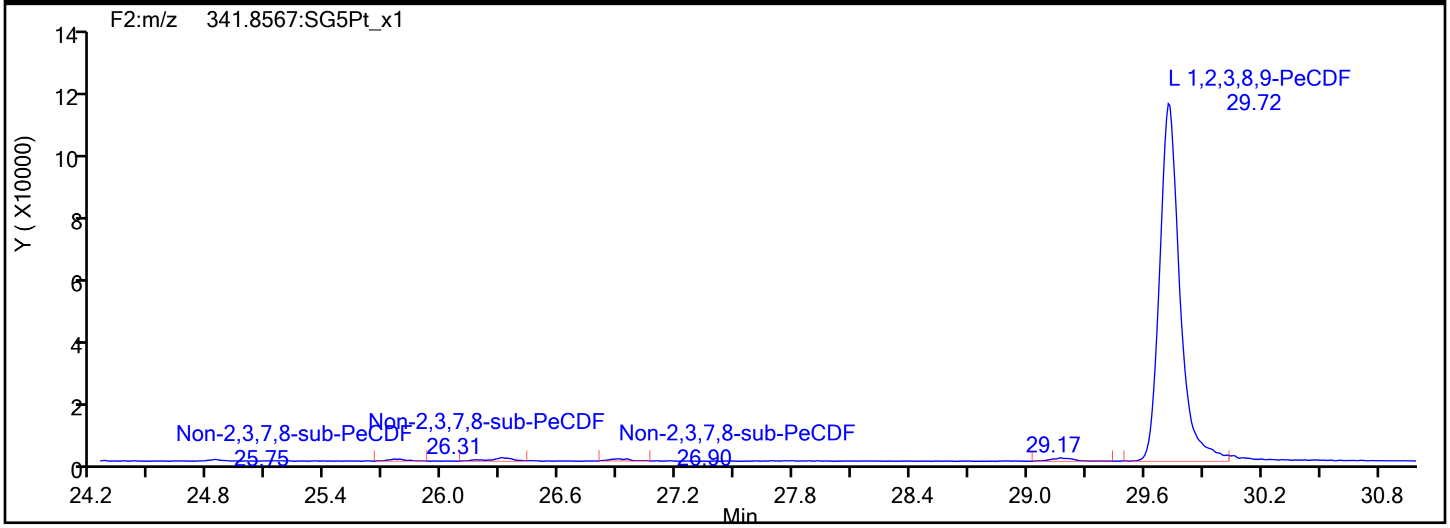

PeCDF Interference Mass

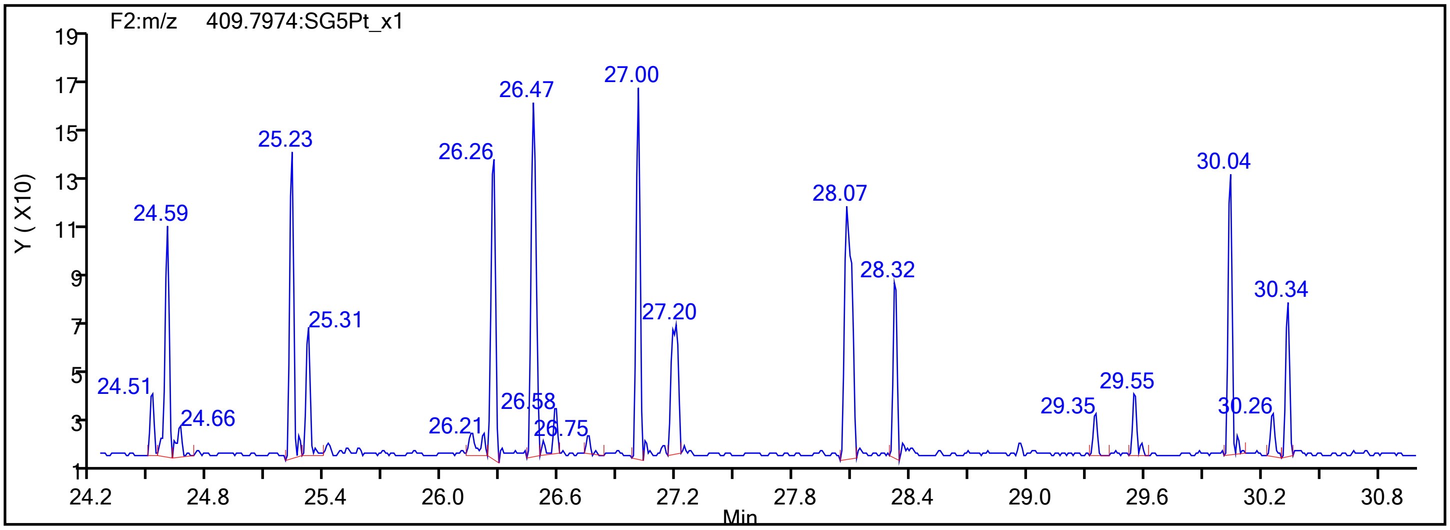

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

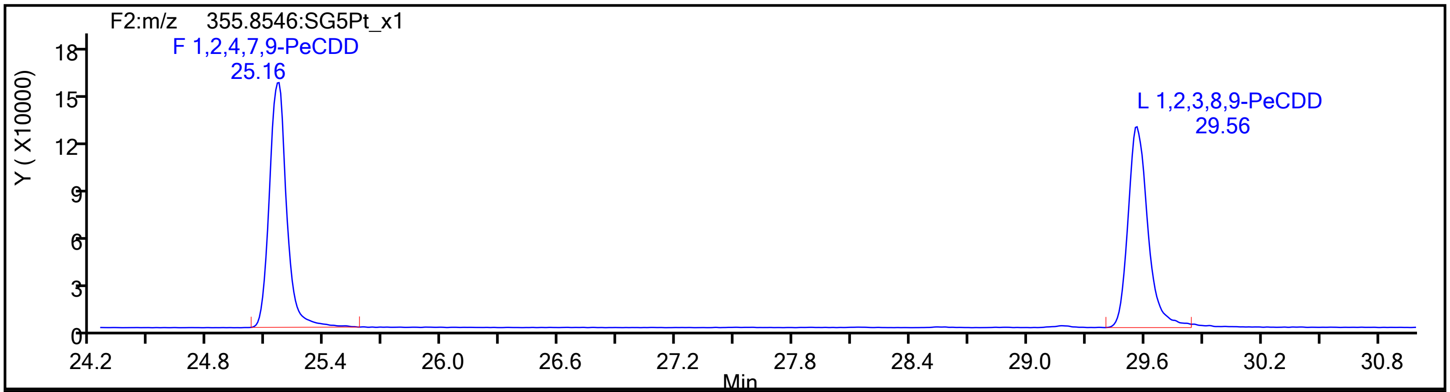

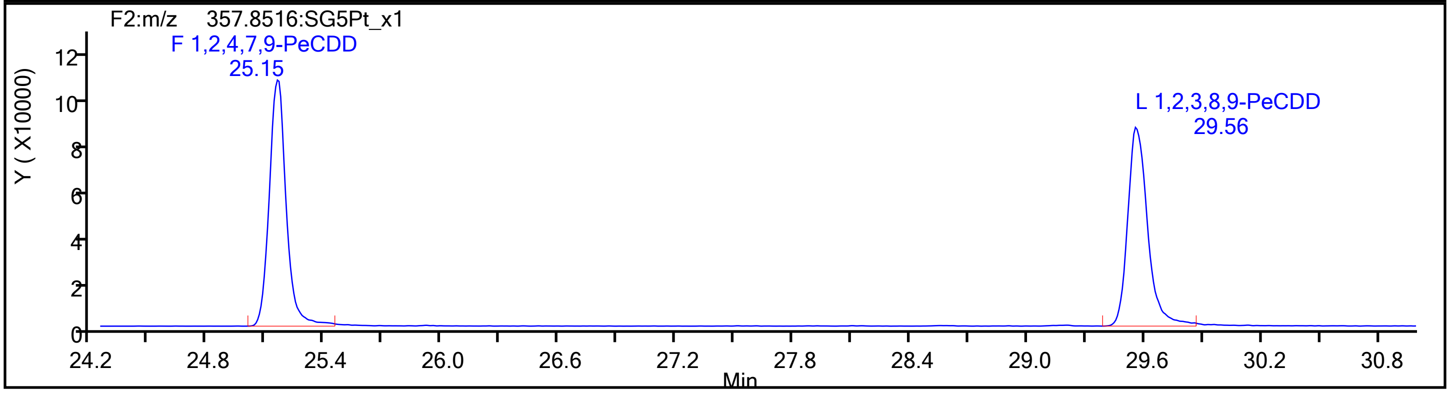

PeCDD Standards

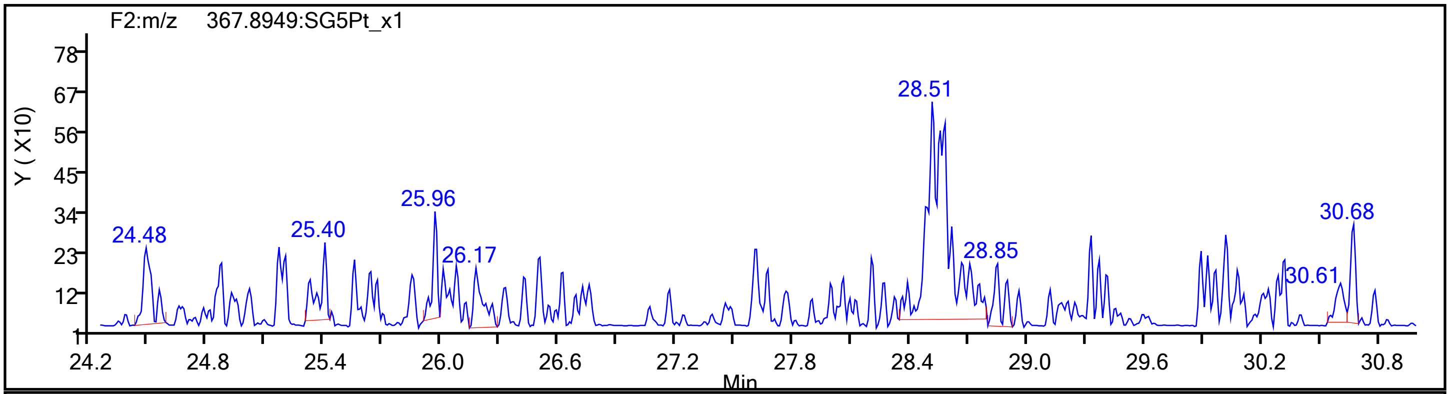

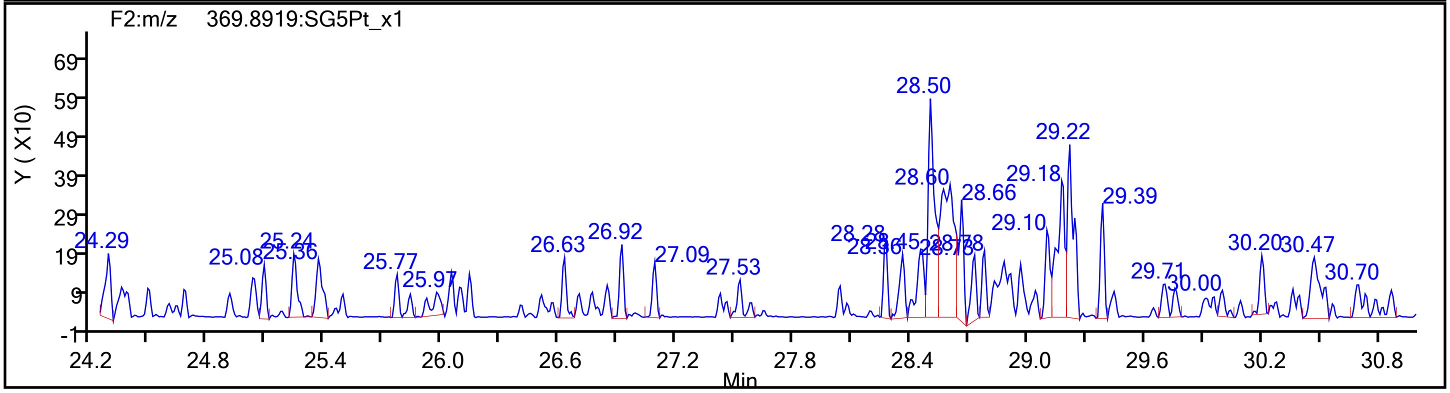

Report Date: 17-Sep-2020 18:47:25		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

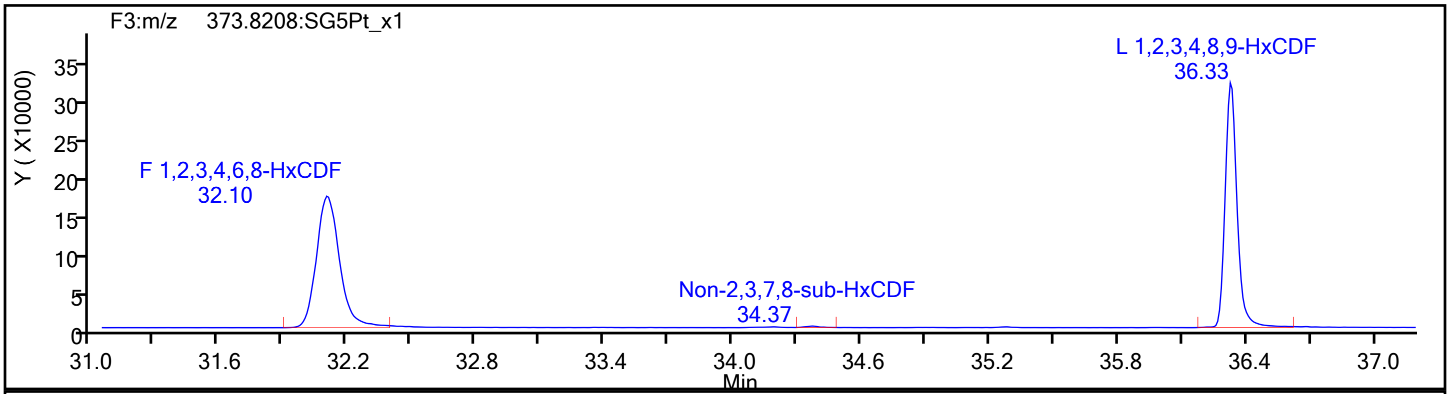

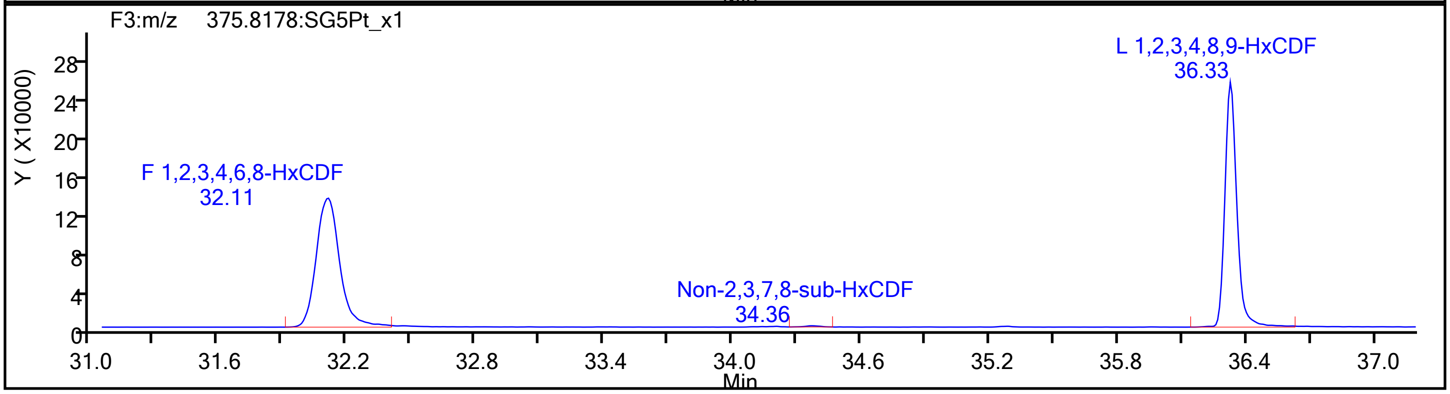

HxCDF Standards

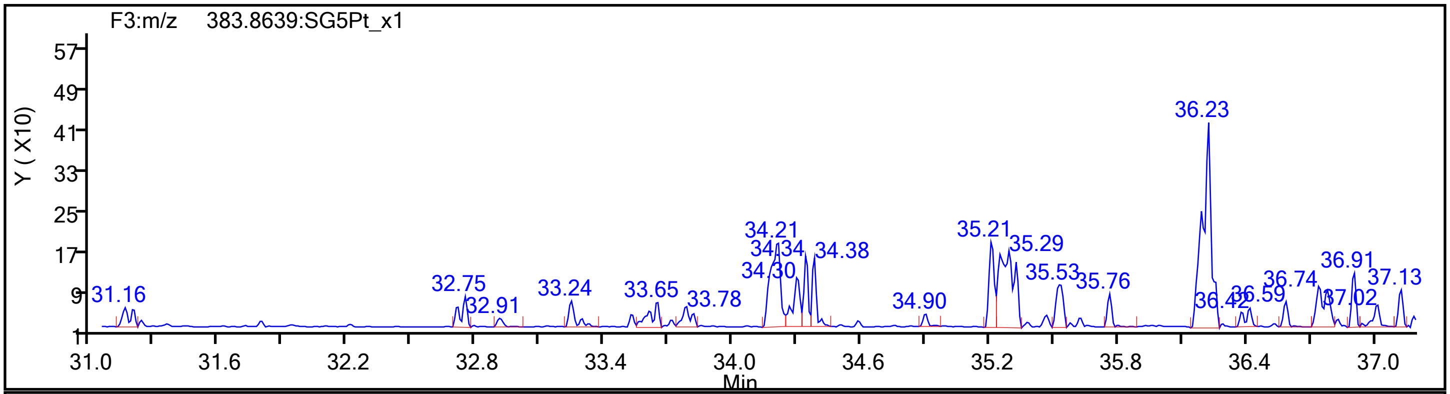

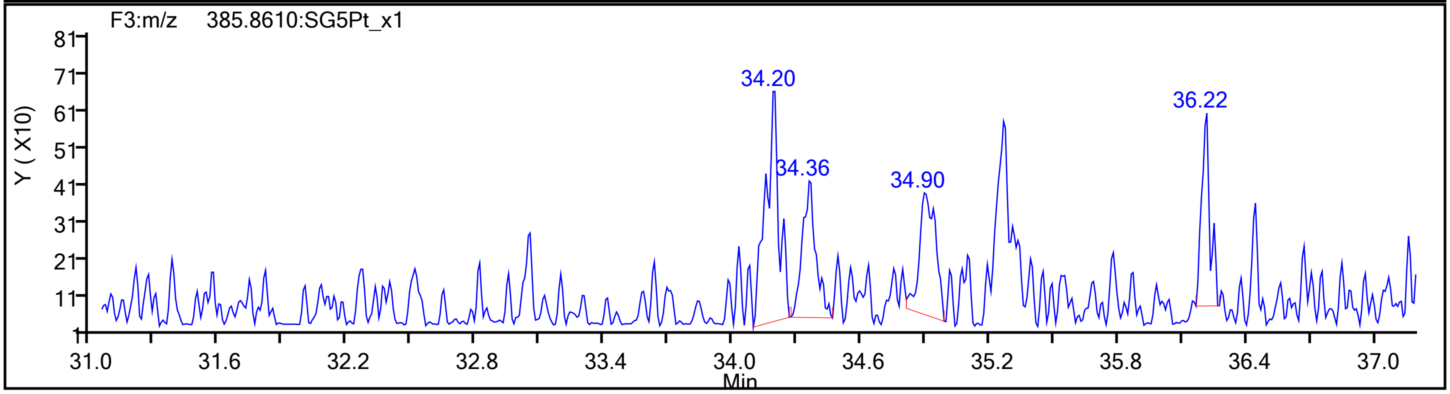

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d
Injection Date: 17-Sep-2020 11:37:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413255
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

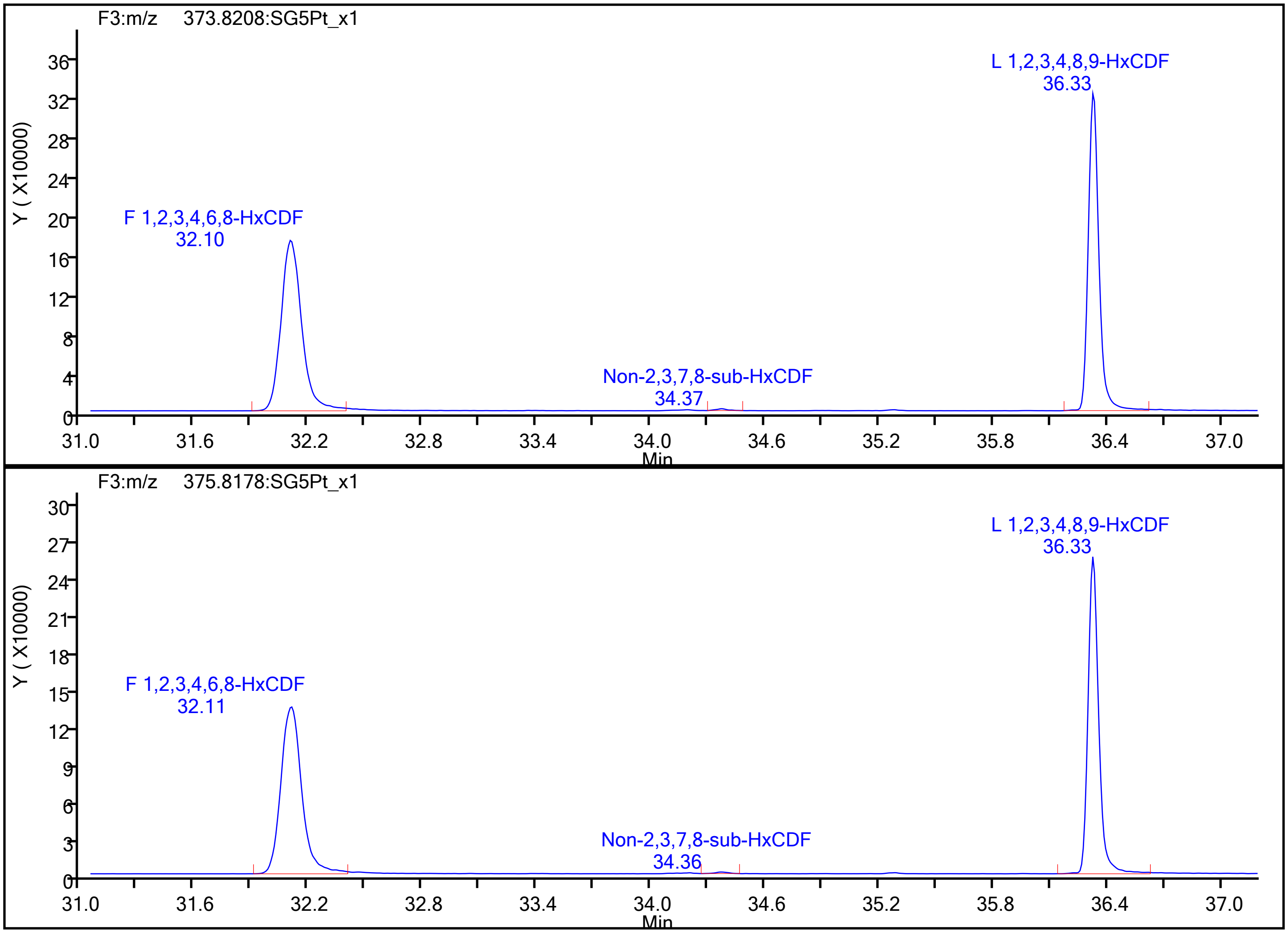

HxCDF Interference Mass

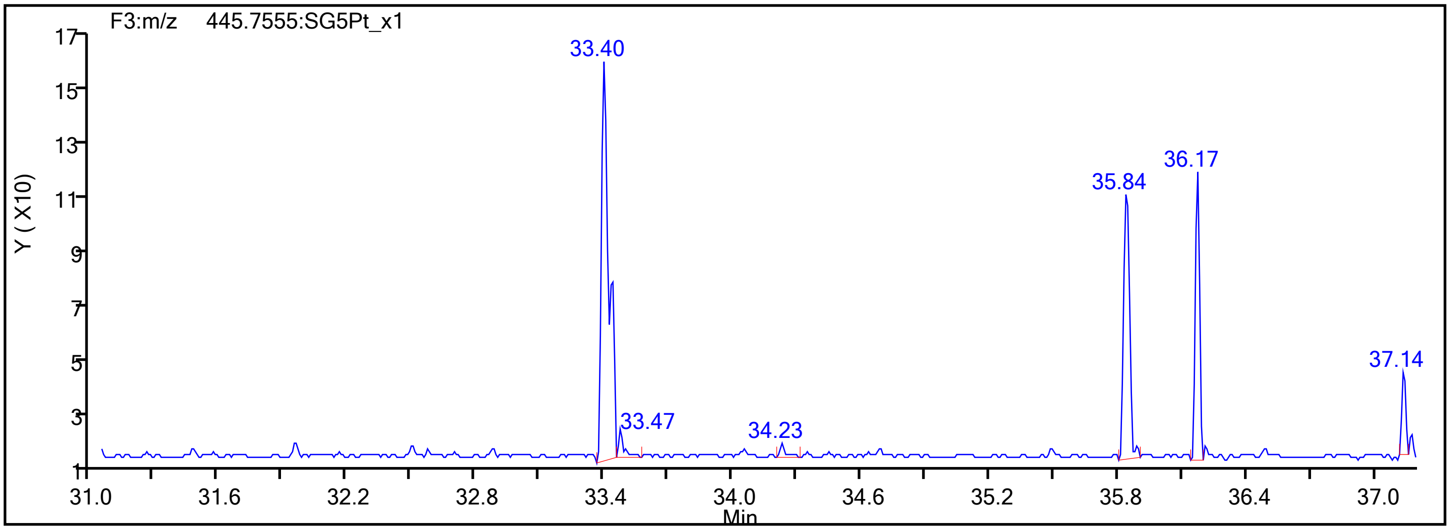

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

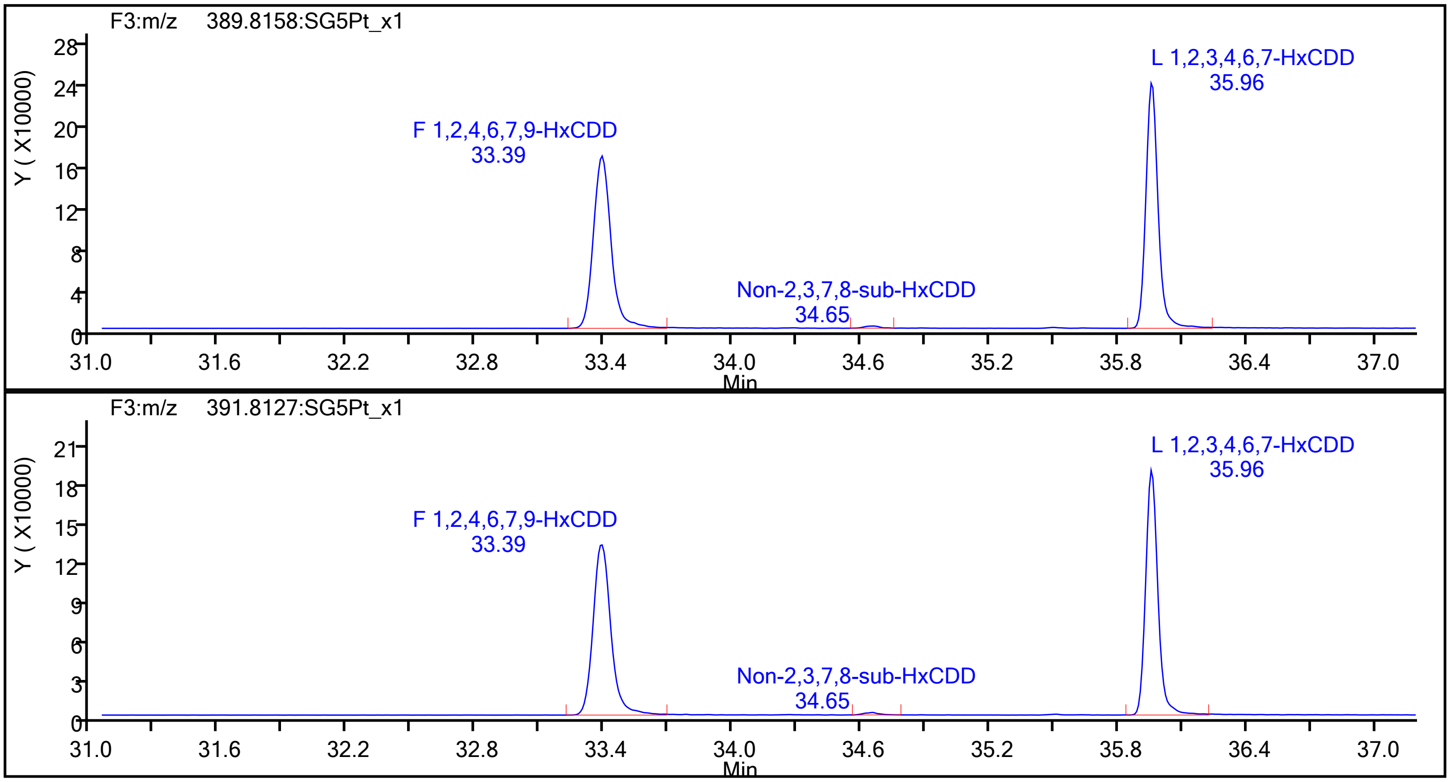

HxCDD Standards

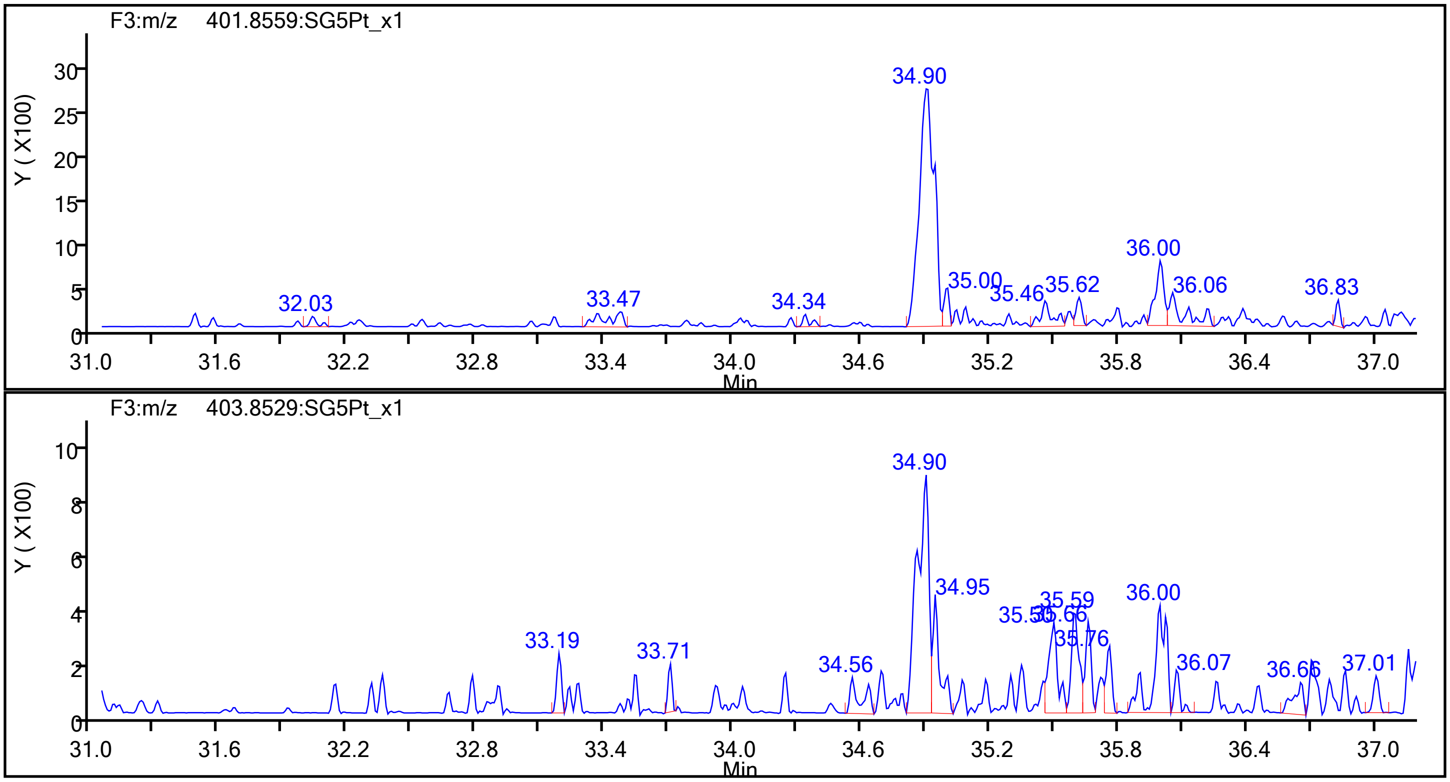

Report Date: 17-Sep-2020 18:47:25		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

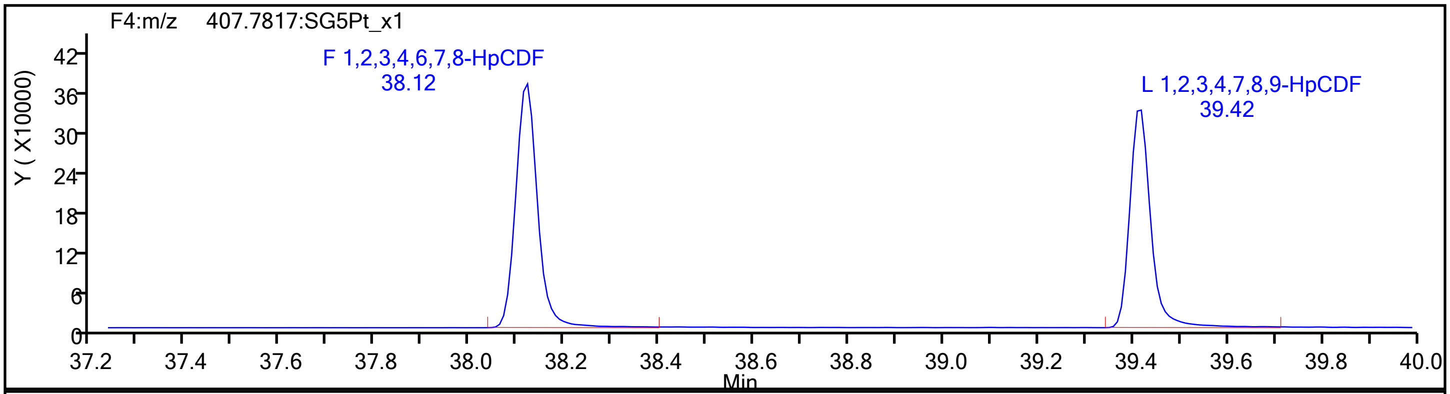

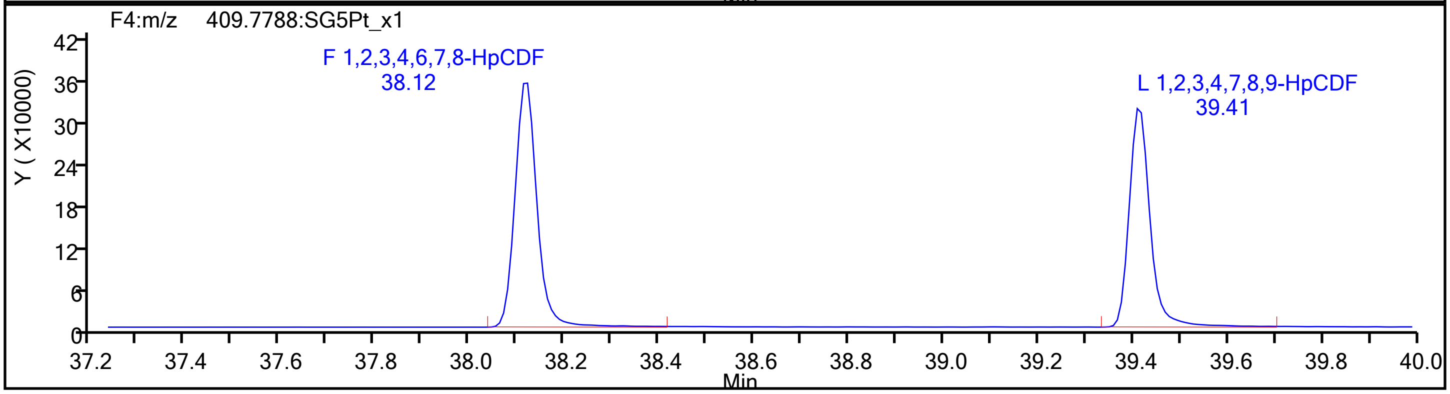

HpCDF Standards

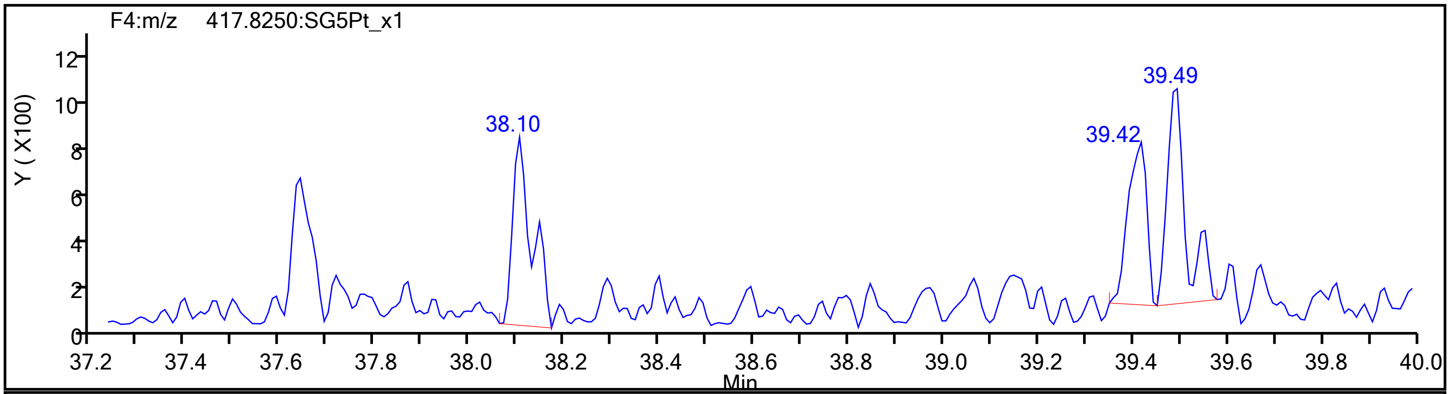

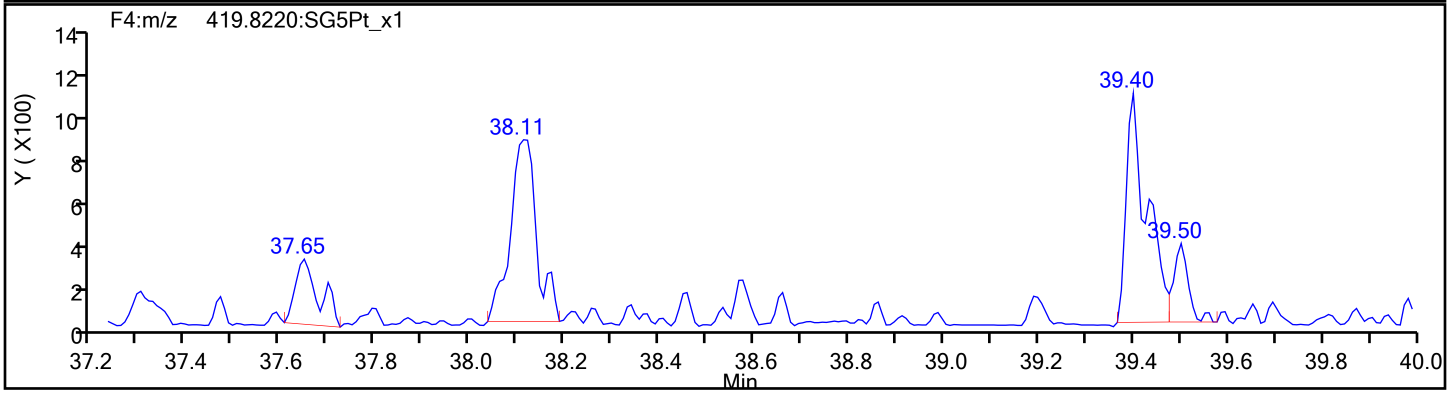

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

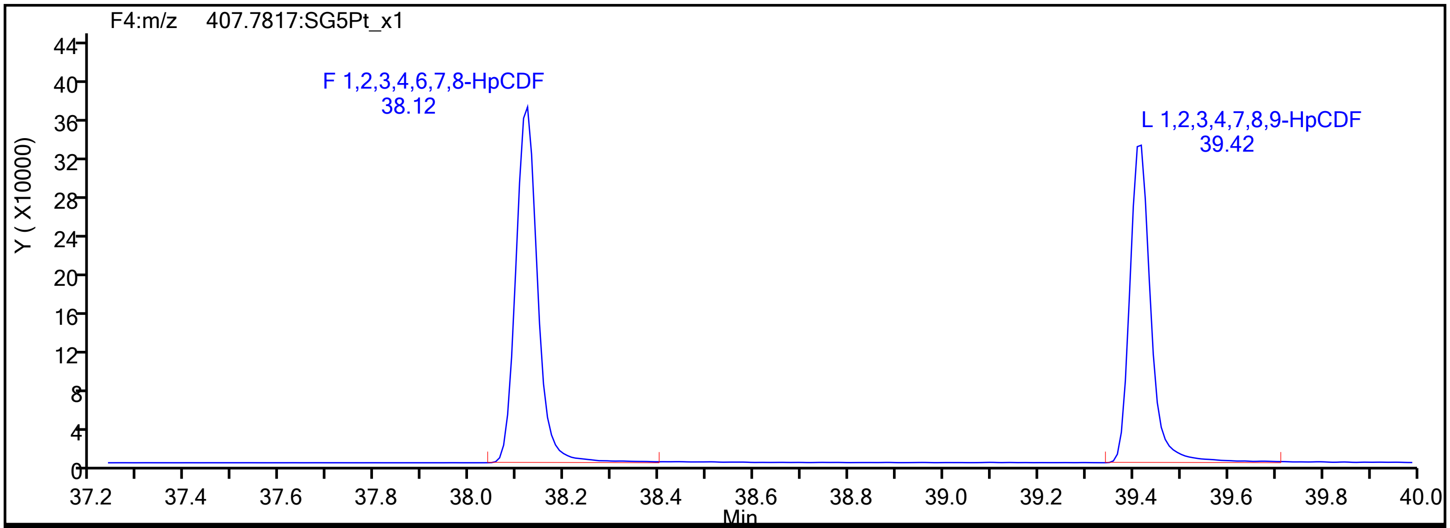

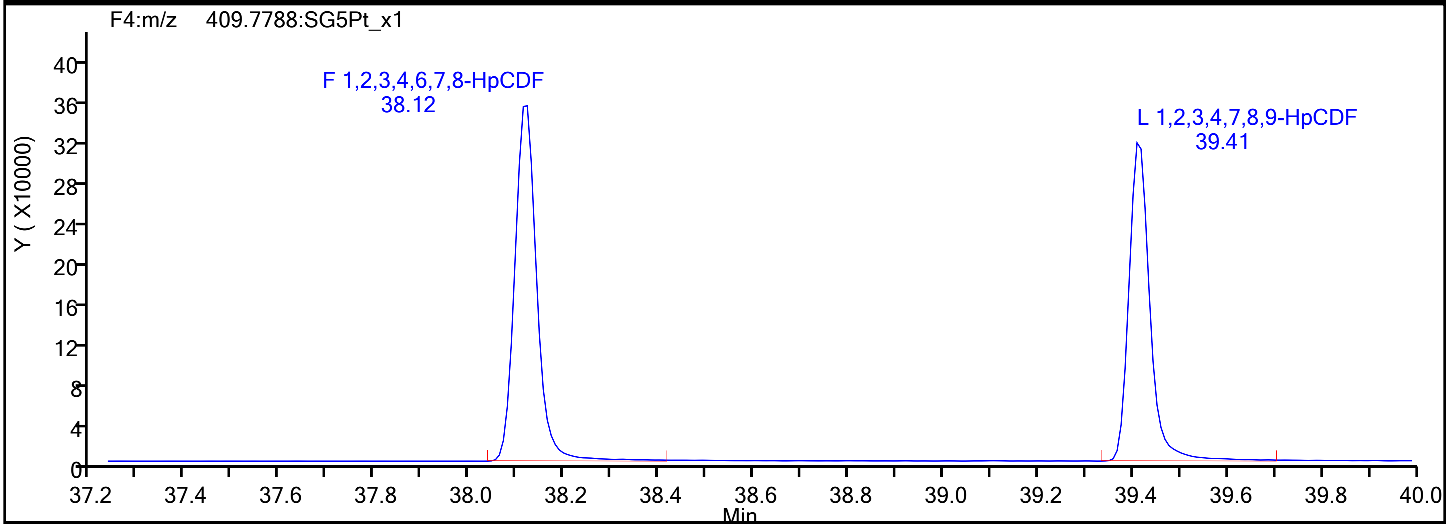

HpCDF Interference Mass

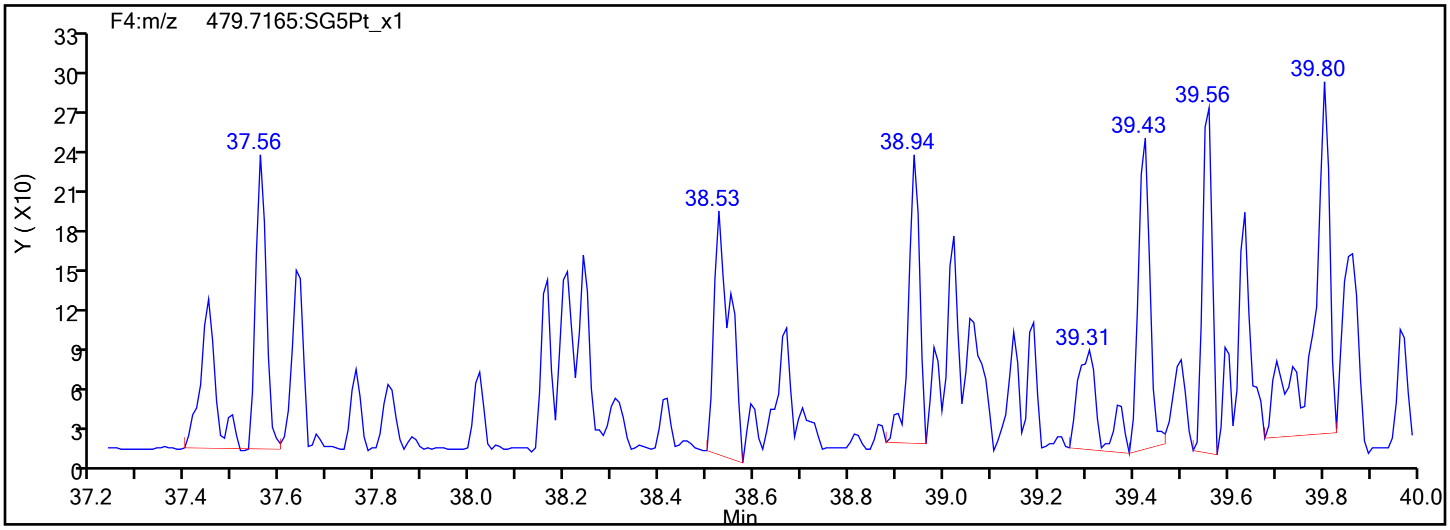

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

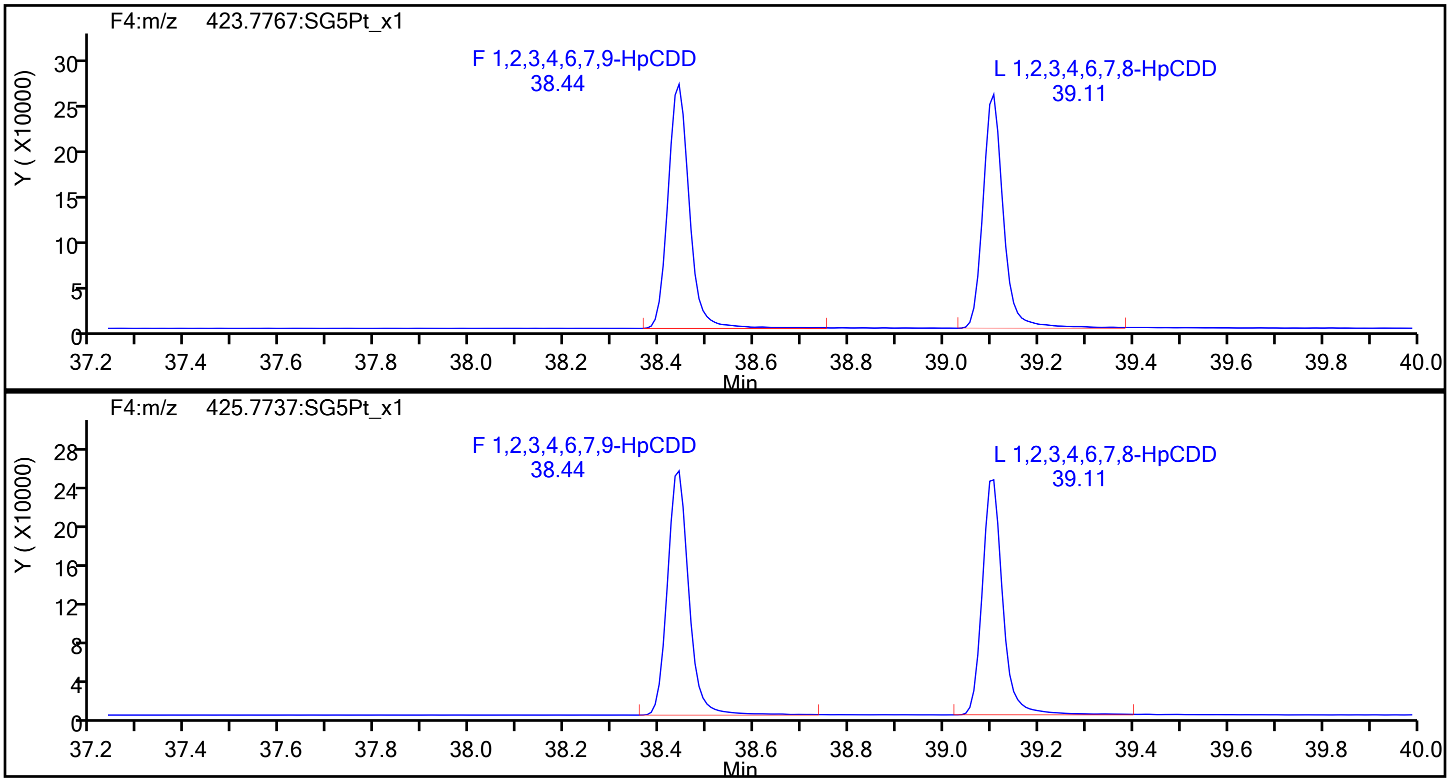

HpCDD Standards

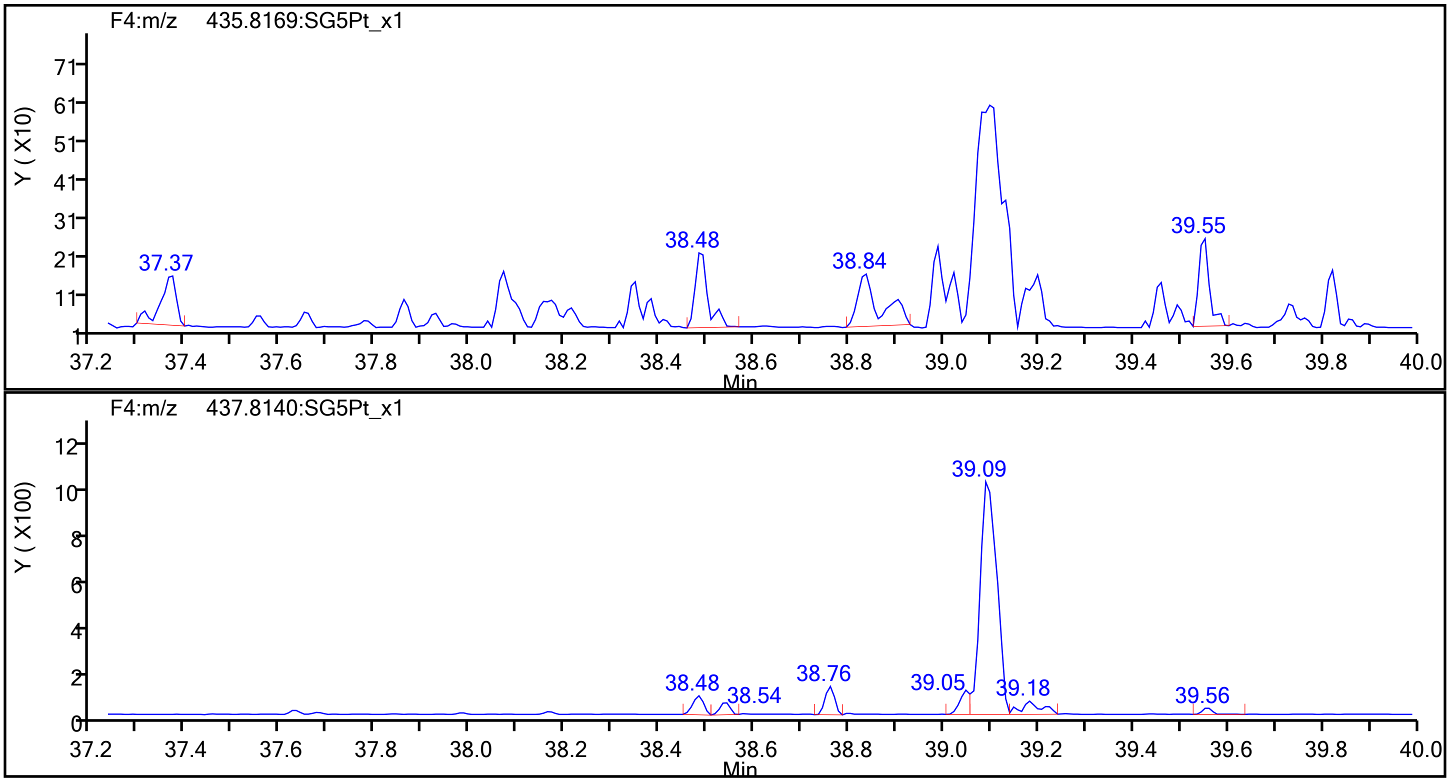

Report Date: 17-Sep-2020 18:47:25 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d

Injection Date: 17-Sep-2020 11:37:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413255 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

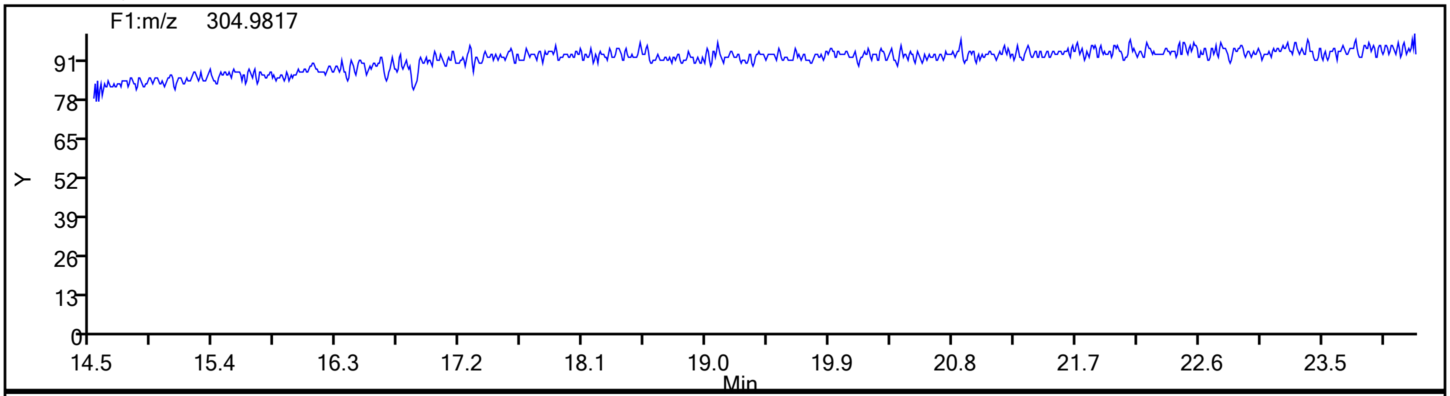

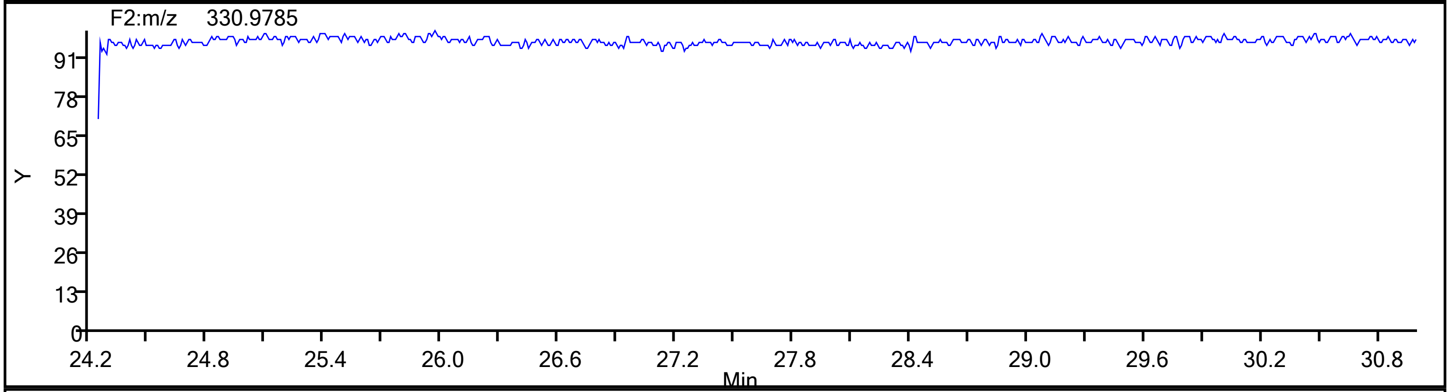

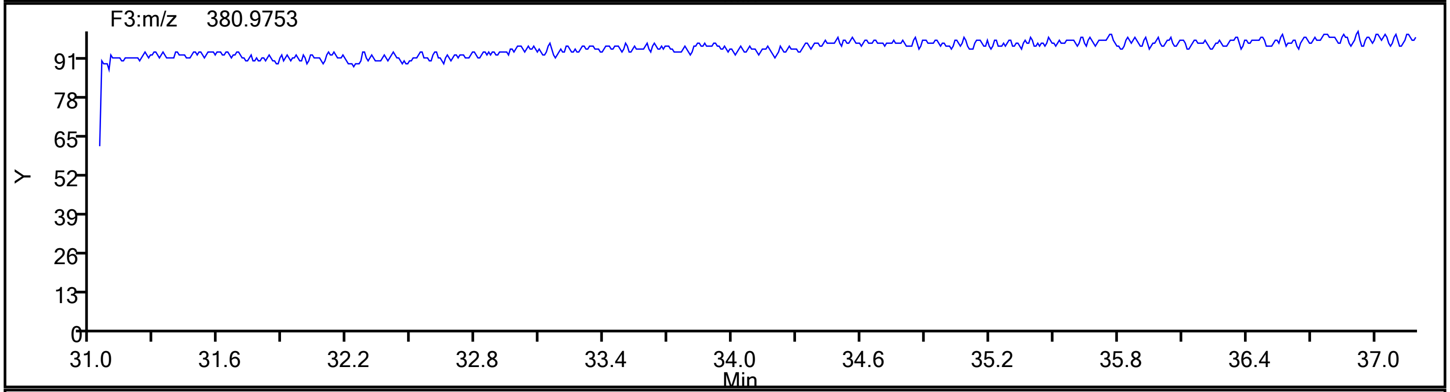

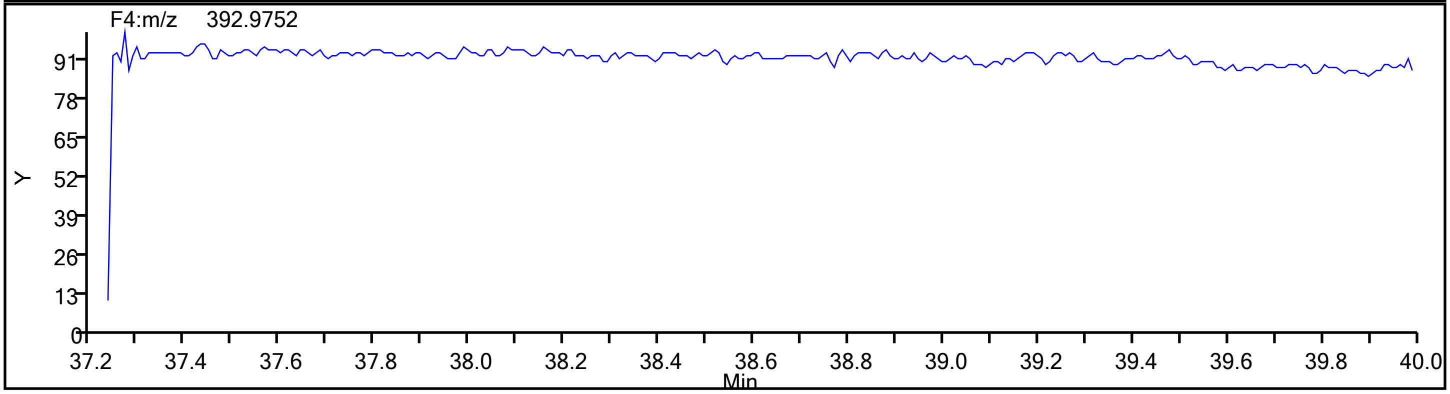

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_2.d		
Injection Date:	17-Sep-2020 11:37:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413255	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

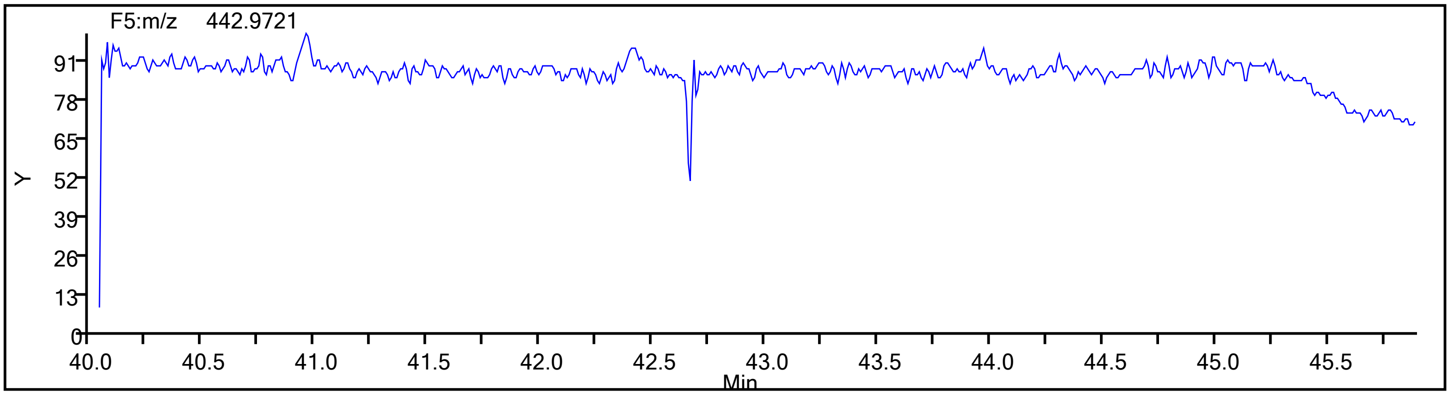

Report Date: 10-Oct-2020 23:29:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 10-Oct-2020 06:10:00 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 10-Oct-2020 23:29:38 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1632

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	18.830	1690197	0.82	1.5883					0.00	
2,3,7,8-TCDF	18.865	3745749	0.81	1.0857	81.7	81.7	0.4818	0.4818		
A Non-2,3,7,8-sub-TCDF	18.413						0.4818	0.4818		
S Total TCDF					81.7	81.7	0.4818	0.4818		
D 13C-2,3,7,8-TCDD	20.067	1095502	0.84	1.1194					0.00	
2,3,7,8-TCDD	20.101	1254614	0.79	1.0810	42.4	42.4	0.3357	0.3357		
A Non-2,3,7,8-sub-TCDD	19.200						0.3357	0.3357		
S Total TCDD					42.4	42.4	0.3357	0.3357		
A F1 PeCDFs	23.059	3869	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.475	19006	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	26.975	18018	1.55	0.0000						RQ
S Total PeCDD										RQ
A Non-2,3,7,8-sub-HxCDF	33.855						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.365	12033	1.36	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	37.935	1393990	1.04	1.5064						
1,2,3,4,7,8,9-HpCDF	39.250	1257179	1.02	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.593						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	38.938	1031113	1.04	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.878	2524292	0.79							
1,3,6,8-TCDD	16.373	1394032	0.79							
2,3,4,7-TCDF	18.865	3745749	0.81							
1,2,3,7-TCDD	19.904	1009427	0.78							
1,2,3,9-TCDF	20.273	1612741	0.81							
1,2,3,9-TCDD	20.359	1361511	0.78							
1,2,8,9-TCDF	21.949	1653682	0.80							
1,2,8,9-TCDD	22.026	505104								
1,3,4,6,8-PeCDF	22.558	1522709	1.58							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	24.823	1074198	1.56							
1,2,3,8,9-PeCDD	29.128	947764	1.53							
1,2,3,8,9-PeCDF	29.288	1174272	1.63							
1,2,3,4,6,8-HxCDF	31.614	1388532	1.27							
1,2,4,6,7,9-HxCDD	33.012	1042390	1.23							
1,2,3,4,6,7-HxCDD	35.717	990862	1.24							
1,2,3,4,8,9-HxCDF	36.096	1265918	1.26							
1,2,3,4,6,7,9-HpCDD	38.264	1103488	1.03							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 10-Oct-2020 23:29:38 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 10-Oct-2020 06:10:00 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00040
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 10-Oct-2020 23:29:38 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1632

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	18.830	18.830	0	1.000	761008	123485	825	2062	150		
317.9389	18.822	18.830	-1	1.000	929189	141654	399	997	355	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.865	18.865	0	1.002	1678534	235000	605	1512	388		
305.8987	18.865	18.865	0	1.002	2067215	286772	782	1955	367	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.413						605	1512			
305.8987	18.413						782	1955			
13C-2,3,7,8-TCDD											
331.9368	20.067	20.067	0	1.000	500062	70533	482	1205	146		
333.9338	20.067	20.067	0	1.000	595440	88976	132	330	674	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.101	20.101	0	1.002	553990	76855	324	810	237		
321.8936	20.101	20.101	0	1.002	700624	100730	255	637	395	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.200						324	810			
321.8936	19.200						255	637			
A F1 PeCDFs											RQ
339.8597	16.149	23.059	-414	1.000	2352	403	48	120	8		
341.8567	16.149	23.059	-414	1.000	13813	2485	96	240	26	0.17(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.977	26.475	-30	1.000	7829	1009	96	240	11		
341.8567	25.960	26.475	-31	1.000	4918	621	125	312	5	1.59(1.32-1.78)	
339.8597	26.507	26.475	2	1.000	3805	661	96	240	7		
341.8567	26.524	26.475	3	1.000	3325	584	125	312	5	1.14(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
355.8546	28.774	26.975	108	1.000	28018	4222	162	405	26		
357.8516	28.766	26.975	107	1.000	7066	1046	94	235	11	3.97(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.855						179	447			
375.8178	33.855						155	387			
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.361	34.365	0	1.000	6924	1384	103	257	13		
391.8127	34.335	34.365	-2	1.000	5109	801	96	240	8	1.36(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.935	37.935	0	1.000	710440	202378	318	795	636		
409.7788	37.927	37.935	-1	1.000	683550	197197	286	715	690	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.250	39.250	0	1.000	635323	205612	318	795	647		
409.7788	39.250	39.250	0	1.000	621856	200031	286	715	699	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.593						318	795			
409.7788	38.593						286	715			
1,2,3,4,6,7,8-HpCDD											
423.7767	38.938	38.938	0	1.000	526723	166394	236	590	705		
425.7737	38.930	38.938	-1	1.000	504390	158100	219	547	722	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						236	590			
425.7737	38.941						219	547			
1,3,6,8-TCDF											
303.9016	14.878	14.878	0		1116999	230669	605	1512	381		
305.8987	14.878	14.878	0		1407293	289025	782	1955	370	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.373	16.373	0		615786	115665	324	810	357		
321.8936	16.373	16.373	0		778246	144864	255	637	568	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	18.865	18.865	0		1678534	235000	605	1512	388		
305.8987	18.865	18.865	0		2067215	286772	782	1955	367	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	19.904	19.904	0		441206	66603	324	810	206		
321.8936	19.904	19.904	0		568221	86292	255	637	338	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.273	20.273	0		719886	98686	605	1512	163		
305.8987	20.282	20.273	1		892855	124229	782	1955	159	0.81(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.359	20.359	0		596033	79224	324	810	245		
321.8936	20.359	20.359	0		765478	100053	255	637	392	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	21.949	21.949	0		737013	92983	605	1512	154		
305.8987	21.949	21.949	0		916669	116649	782	1955	149	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	22.026	22.026	0		505104	61802	324	810	191		

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	22.558	22.558	0		931922	117354	48	120	2445		
341.8567	22.558	22.558	0		590787	76723	96	240	799	1.58(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	24.823	24.823	0		655273	108165	162	405	668		
357.8516	24.823	24.823	0		418925	68183	94	235	725	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.128	29.128	0		573557	75370	162	405	465		
357.8516	29.128	29.128	0		374207	50654	94	235	539	1.53(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.288	29.288	0		728201	93138	96	240	970		
341.8567	29.280	29.288	-1		446071	58449	125	312	468	1.63(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	31.614	31.614	0		776419	91359	179	447	510		
375.8178	31.614	31.614	0		612113	73119	155	387	472	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.012	33.012	0		575494	85641	103	257	831		
391.8127	33.004	33.012	-1		466896	70842	96	240	738	1.23(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.717	35.717	0		548604	125890	103	257	1222		
391.8127	35.717	35.717	0		442258	101469	96	240	1057	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.096	36.096	0		706541	168851	179	447	943		
375.8178	36.096	36.096	0		559377	136043	155	387	878	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.264	38.264	0		558683	166450	236	590	705		
425.7737	38.255	38.264	-1		544805	167034	219	547	763	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Lims ID: WDM
Client ID:
Inject. Date: 10-Oct-2020 06:10:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 15

F1 PeCDFs, RT: 23.059

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.149	2352	403	13813	2485		0.17	R
Signal Totals:							
	2352	403	13813	2485			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16165	2888				0.17	RQ
	3869	663					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (16165 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (3869 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	10-Oct-2020 06:10:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	15

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.977	7829	1009	4918	621		1.59	
26.507	3805	661	3325	584		1.14	R
Signal Totals:							
	11634	1670	8243	1205			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	19877	2875				1.41	RQ
	19006	2717					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (19877 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (19006 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	10-Oct-2020 06:10:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	15

Non-2,3,7,8-sub-PeCDD, RT: 26.975

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
28.774	28018	4222	7066	1046		3.97	R
Signal Totals:							
	28018	4222	7066	1046			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	35084	5268				3.97	RQ
	18018	2667					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (35084 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (18018 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Lims ID: WDM
Client ID:
Inject. Date: 10-Oct-2020 06:10:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 15

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.361	6924	1384	5109	801		1.36	
Signal Totals:							
	6924	1384	5109	801			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12033	2185				1.36	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (12033 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

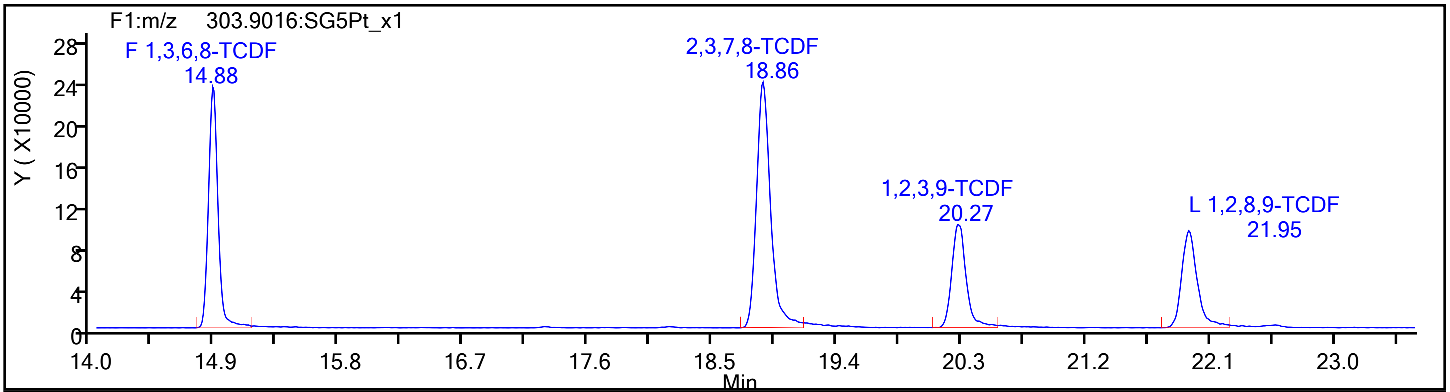

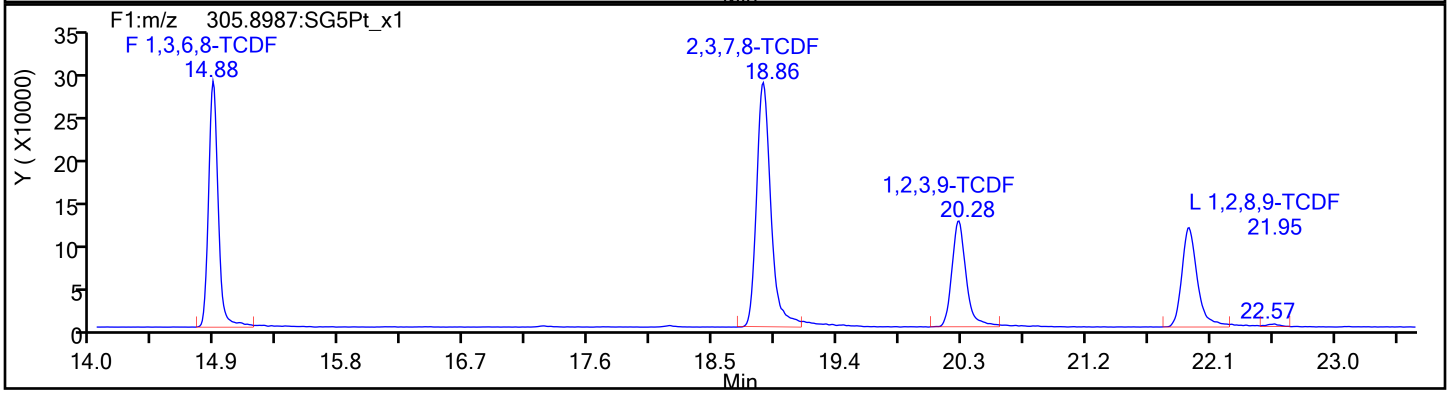

TCDF Standards

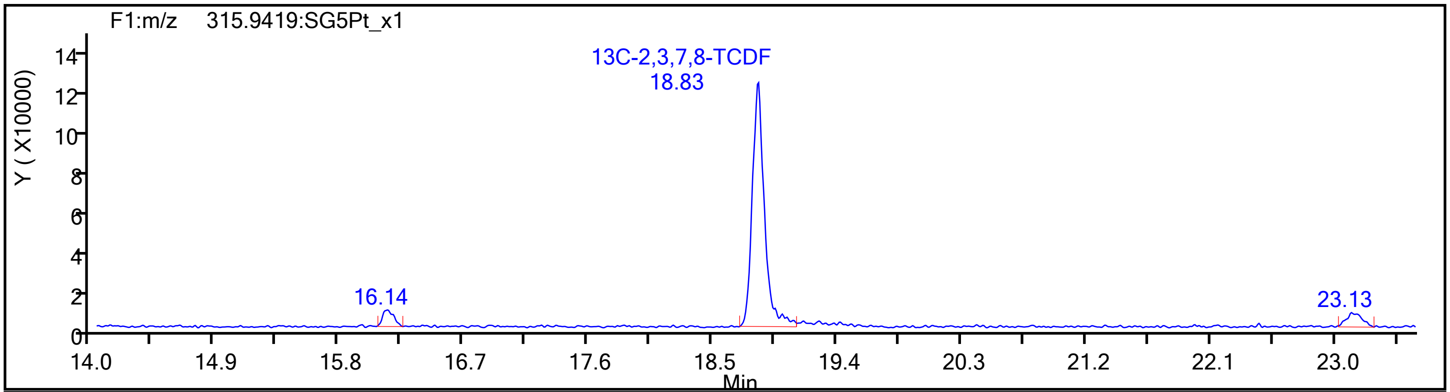

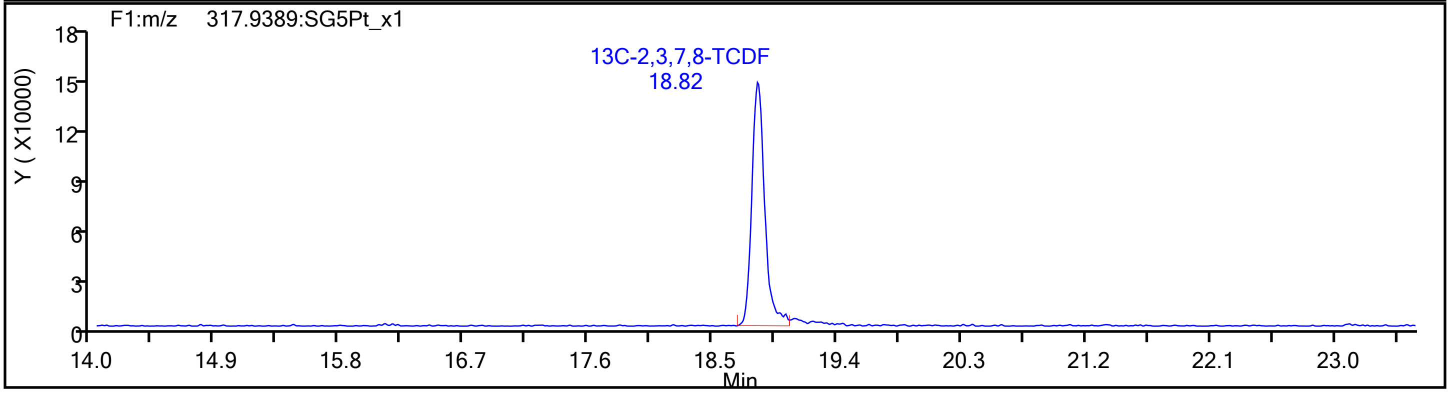

Report Date: 10-Oct-2020 23:29:39　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

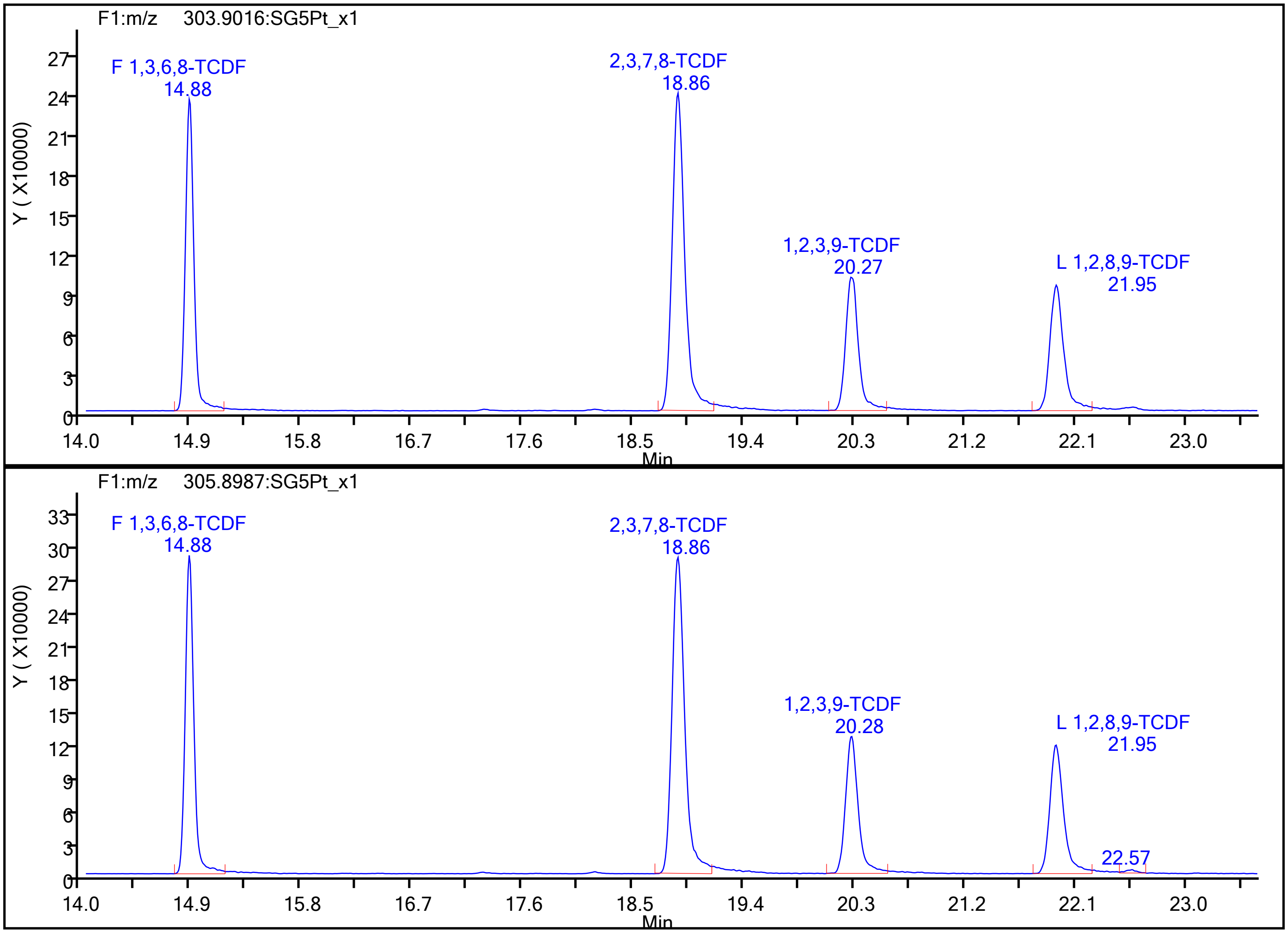

TCDF Interference Mass

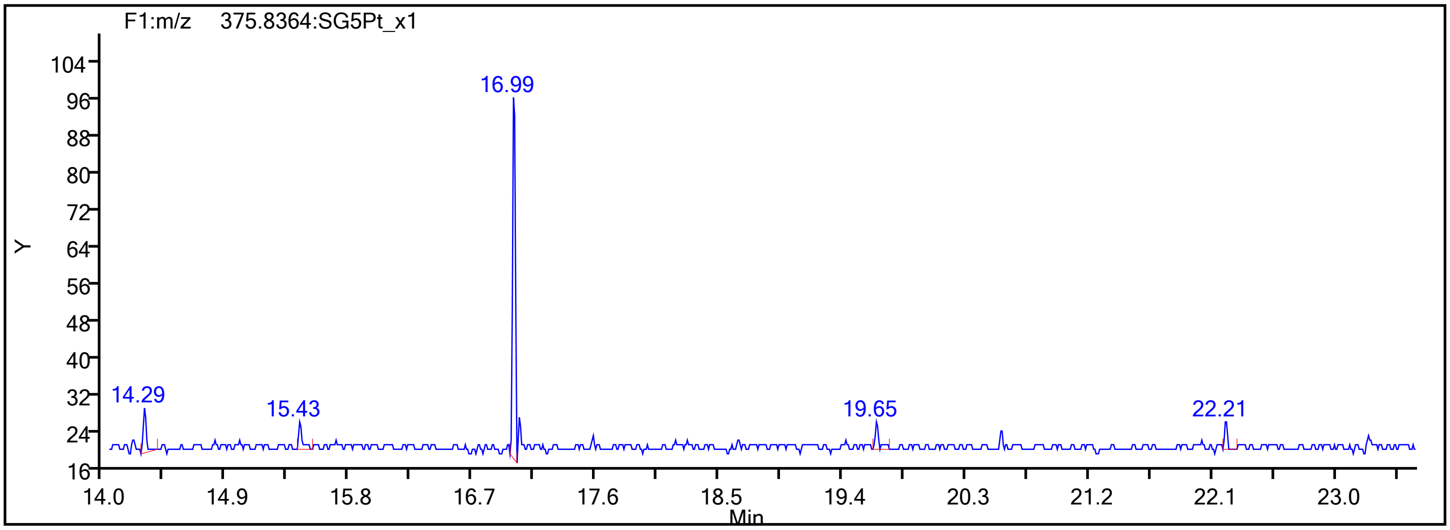

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Injection Date: 10-Oct-2020 06:10:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

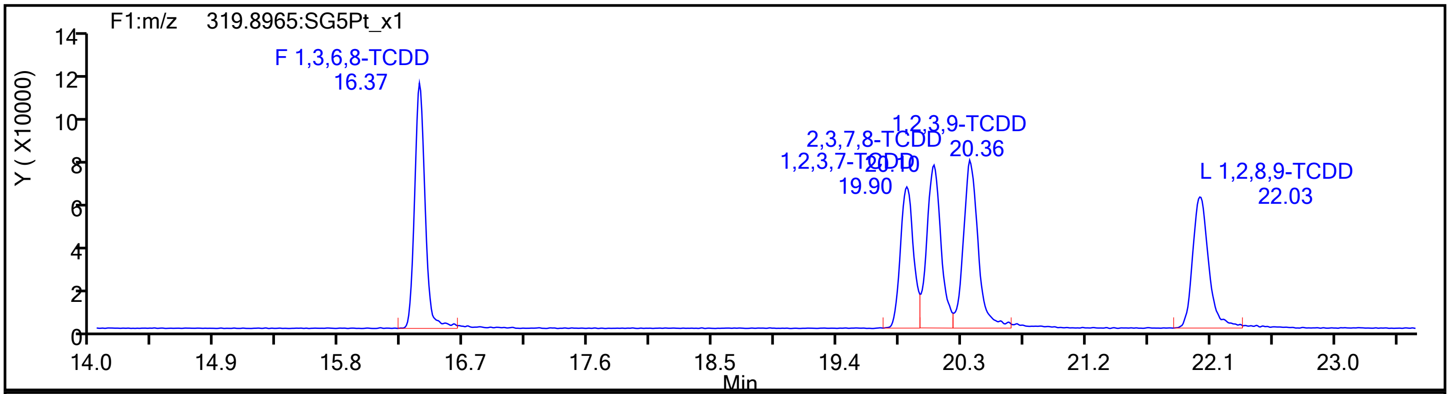

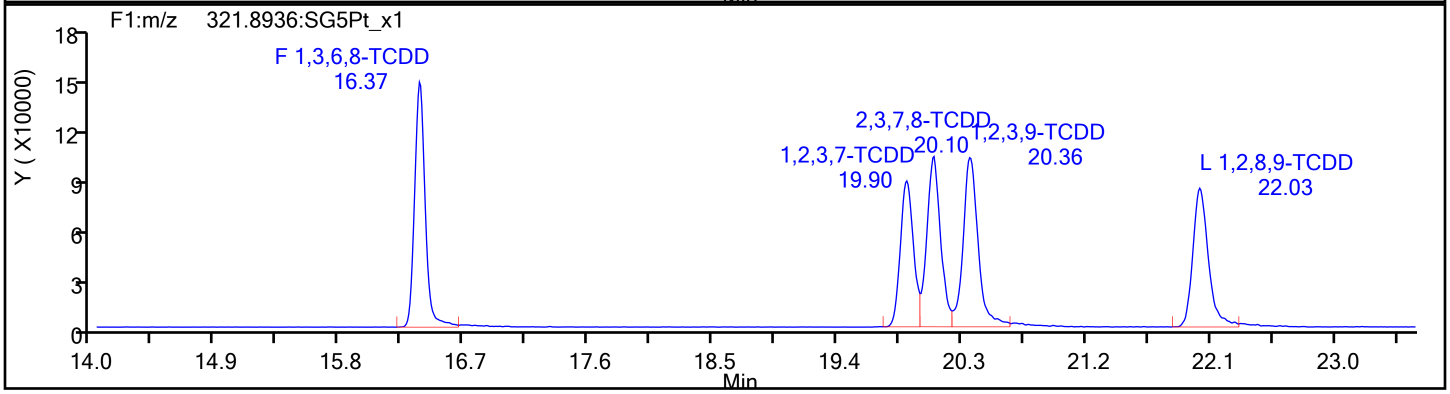

TCDD Standards

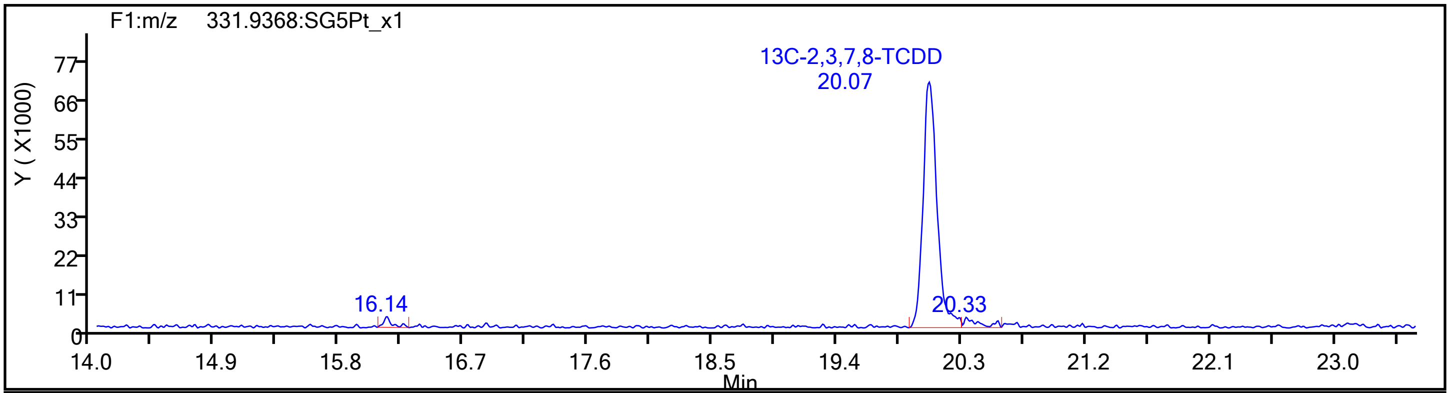

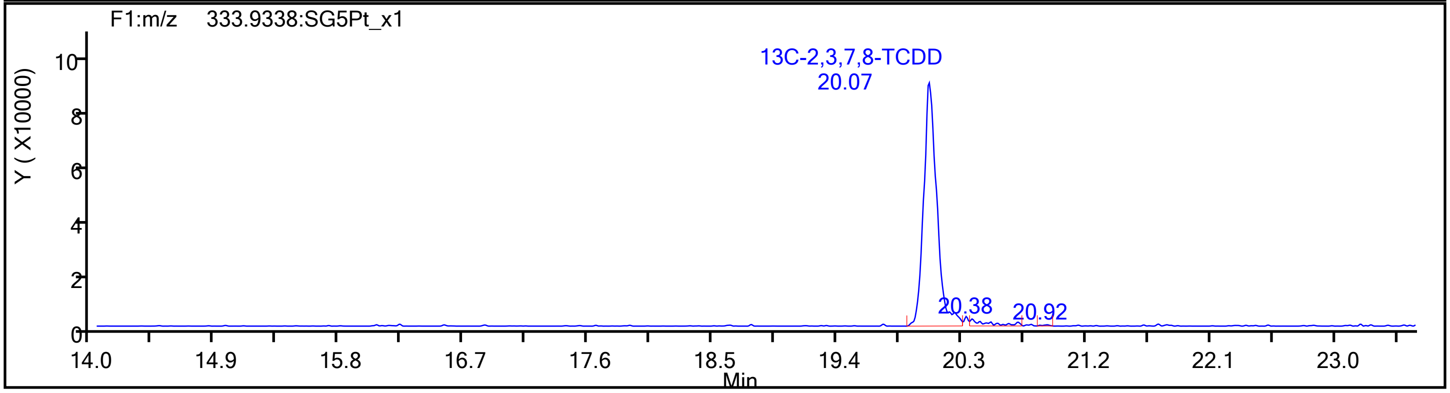

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

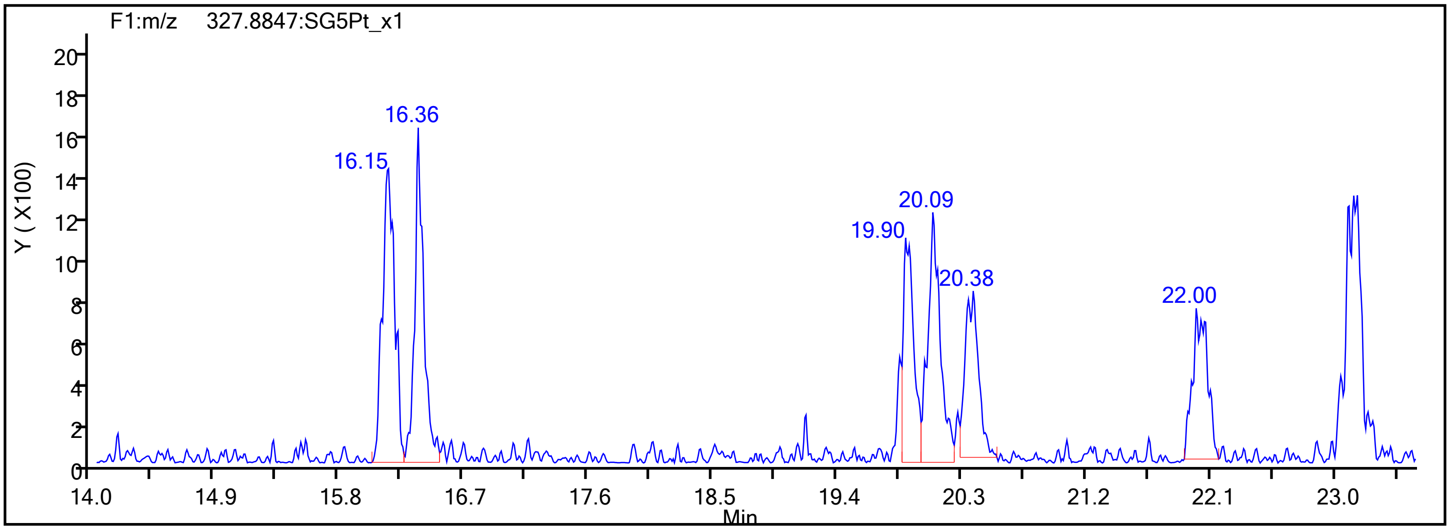

37Cl4-TCDD Standards

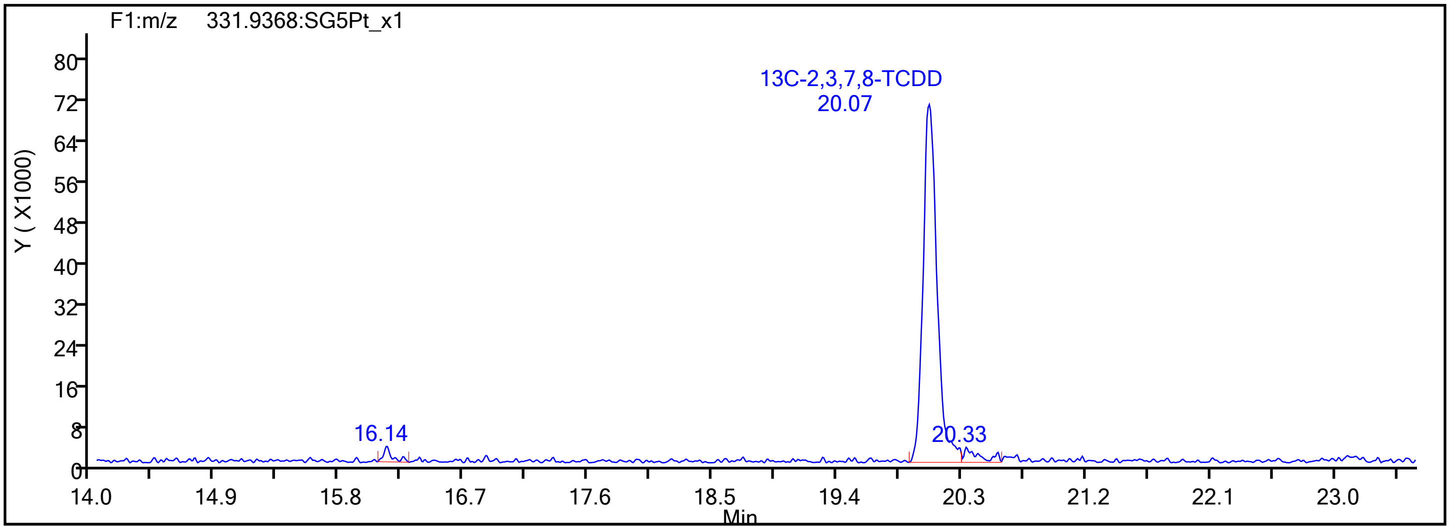

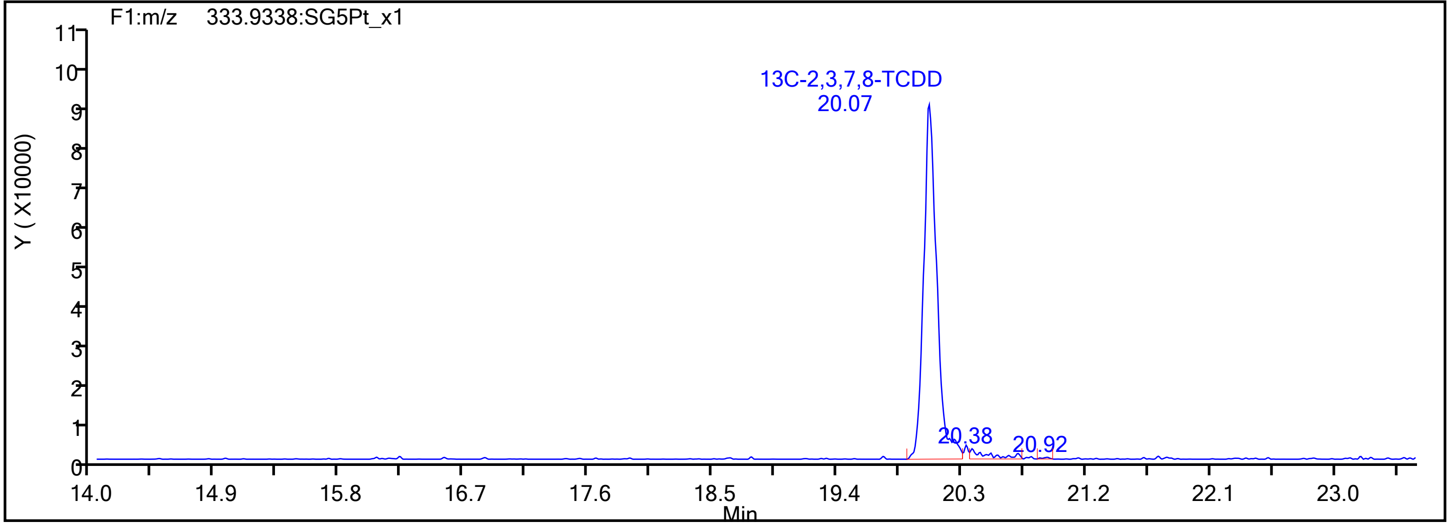

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

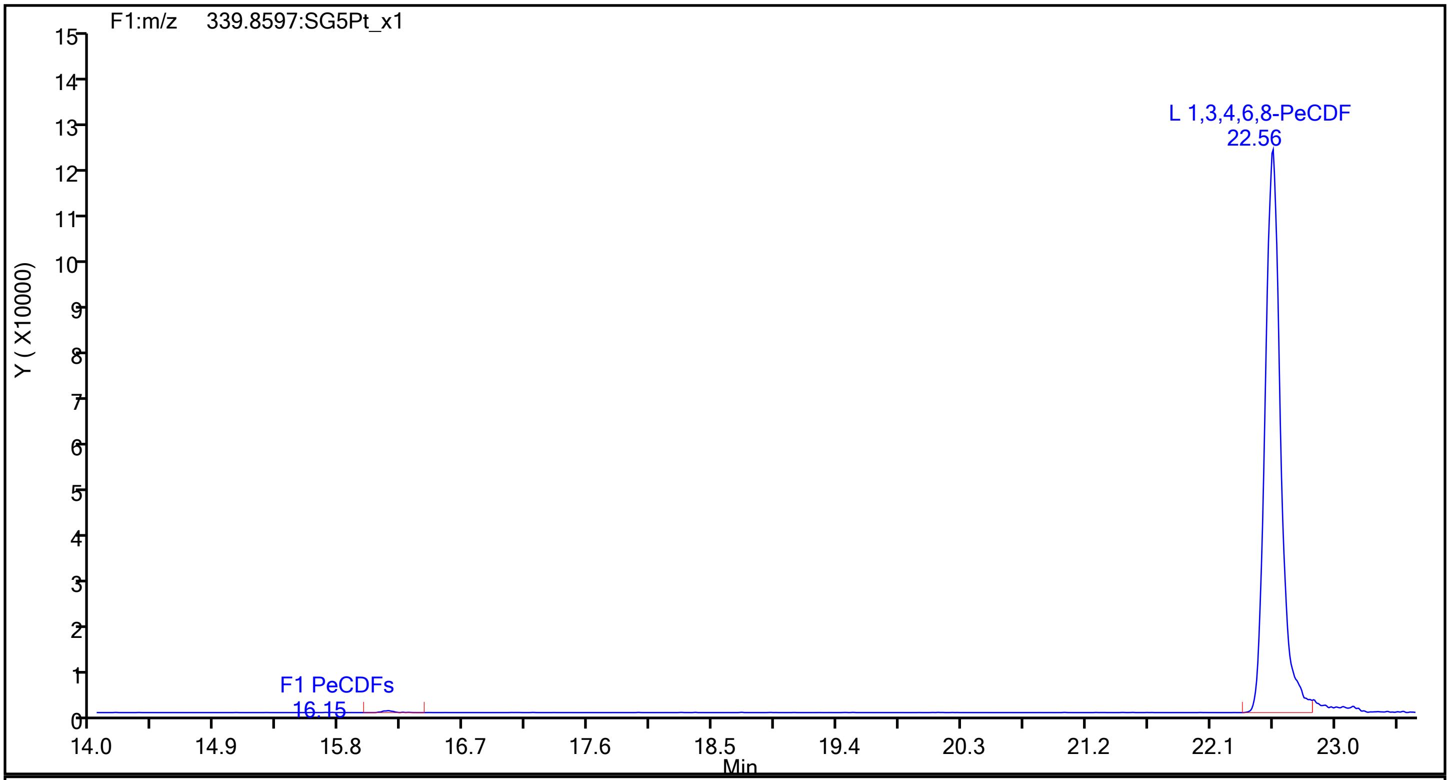

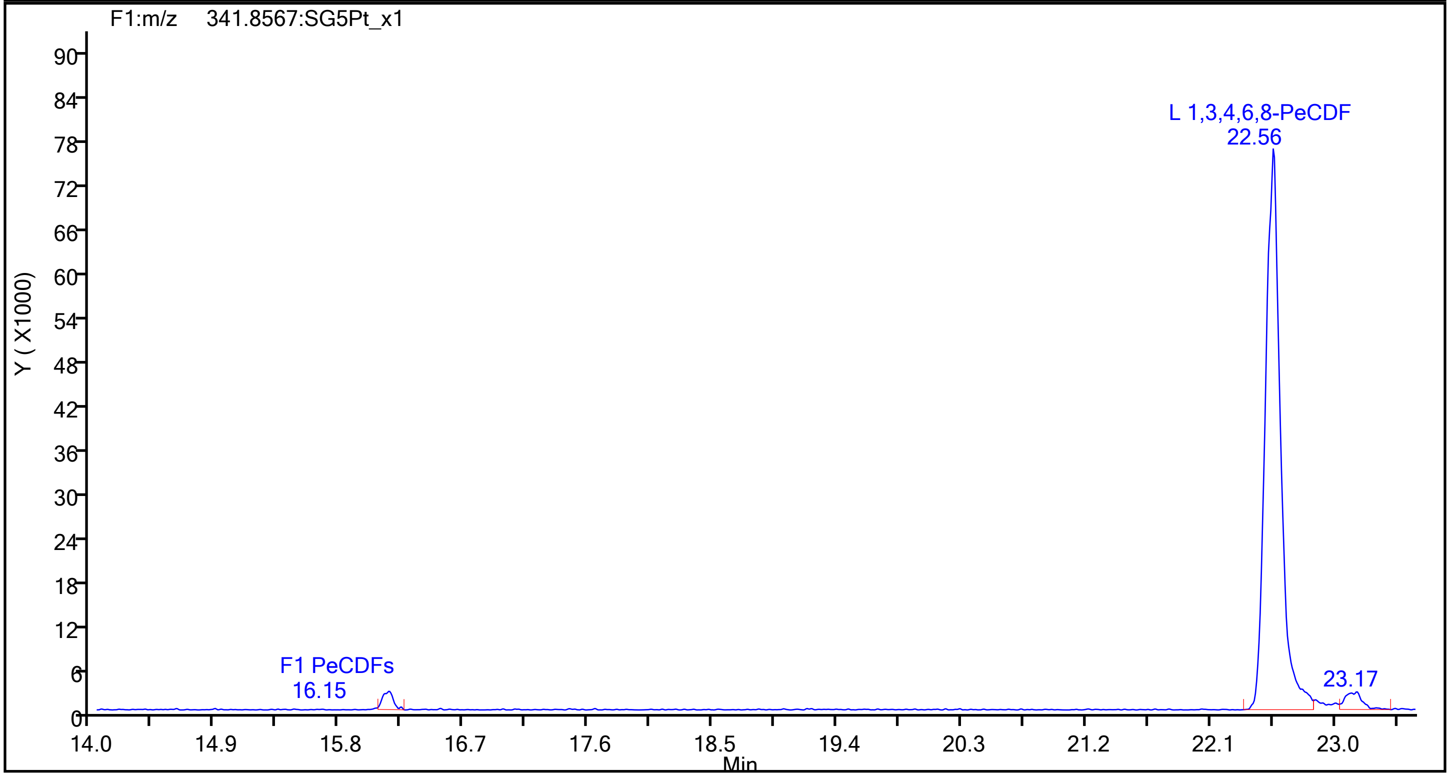

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Injection Date: 10-Oct-2020 06:10:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

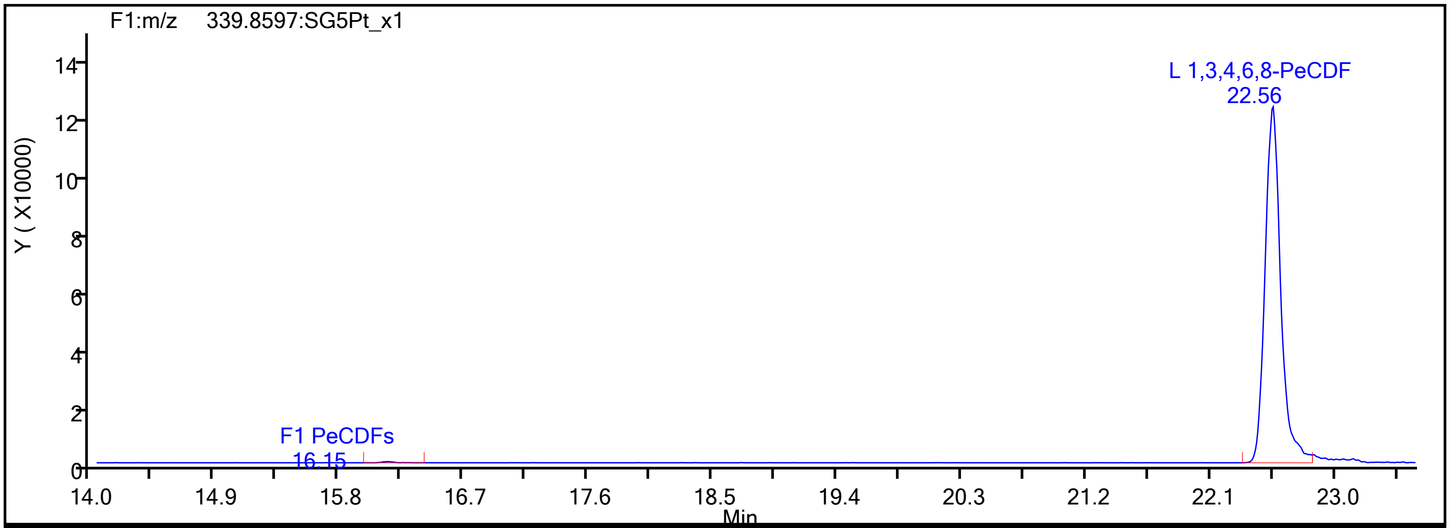

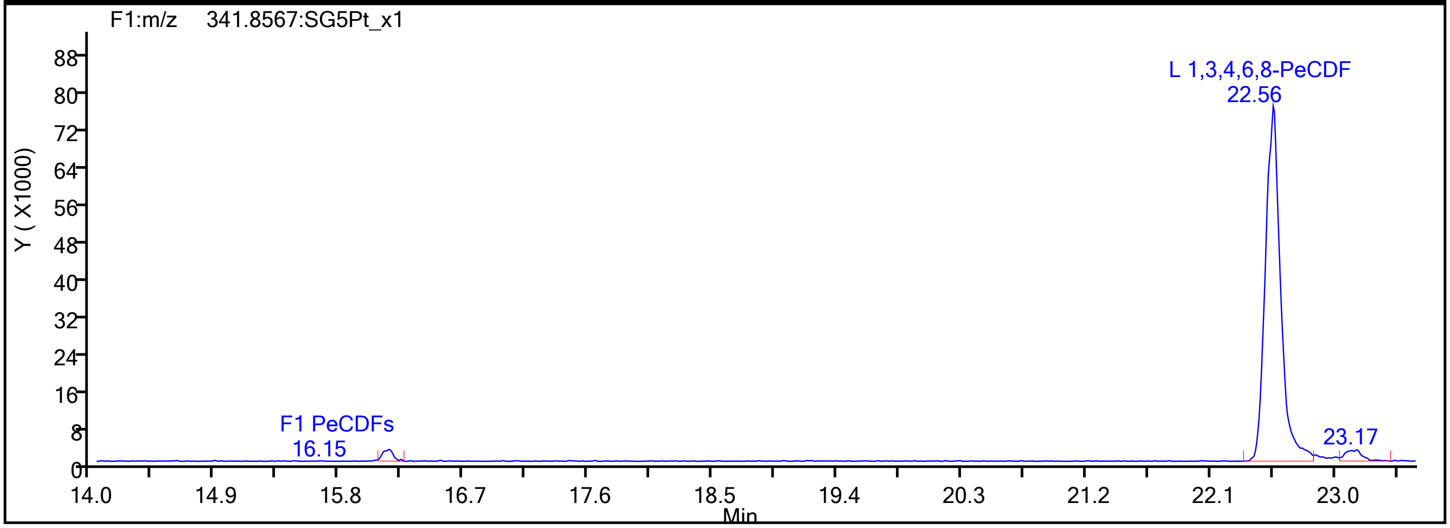

F1 PeCDFs Interference Mass

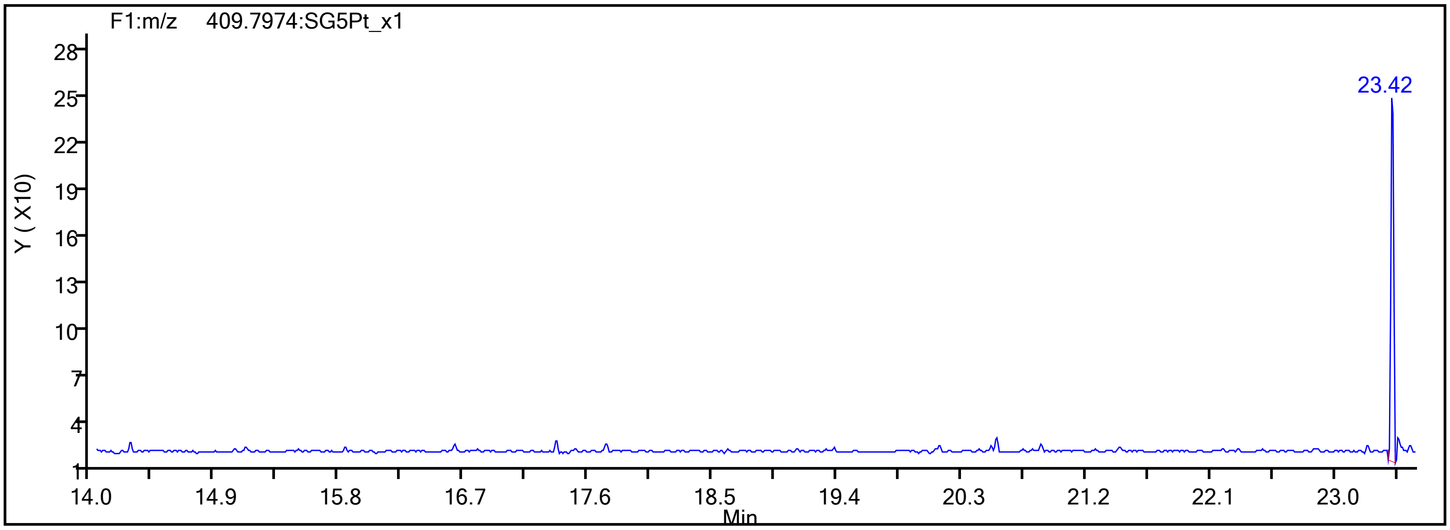

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Injection Date: 10-Oct-2020 06:10:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

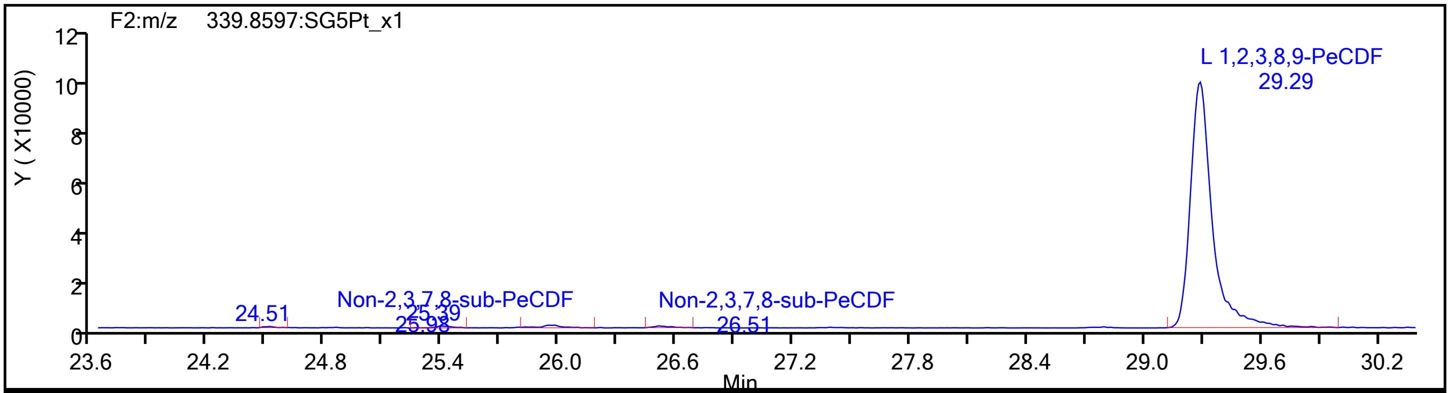

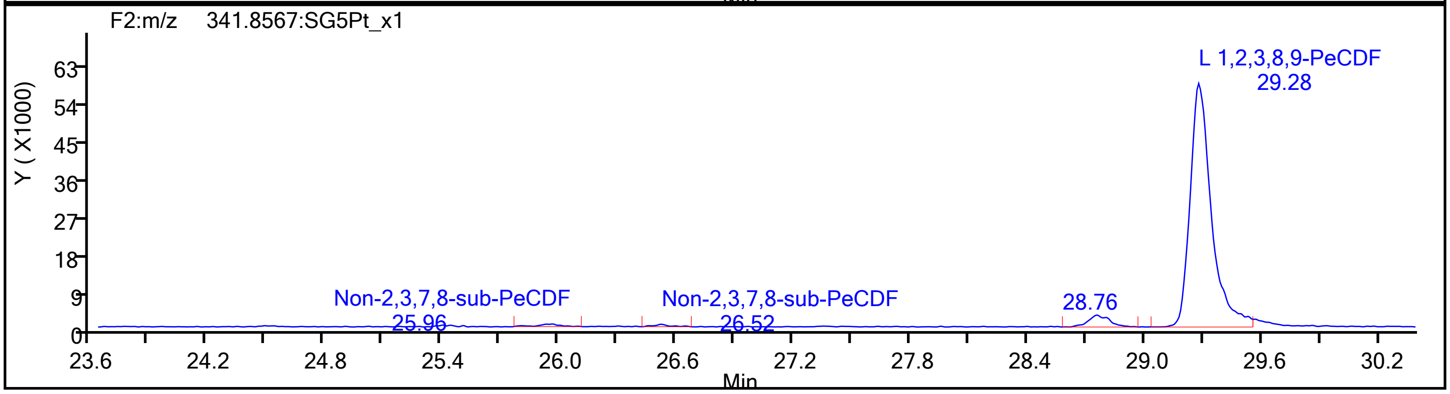

PeCDF Standards

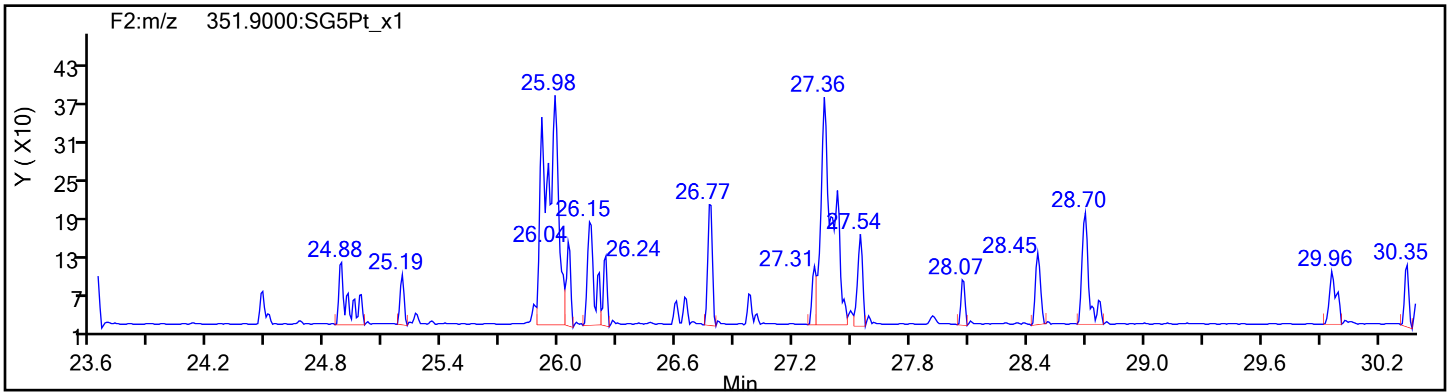

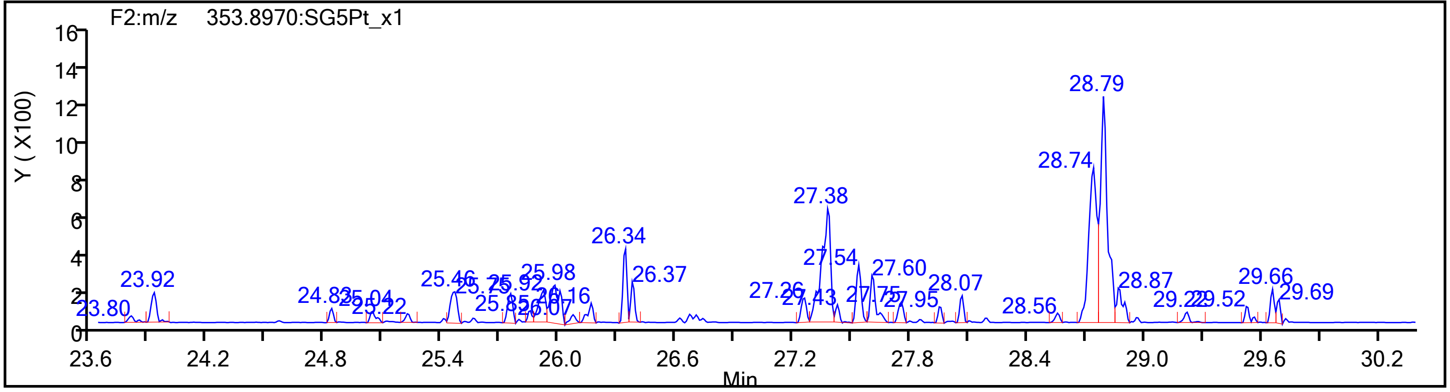

Report Date: 10-Oct-2020 23:29:39
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d
Injection Date: 10-Oct-2020 06:10:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

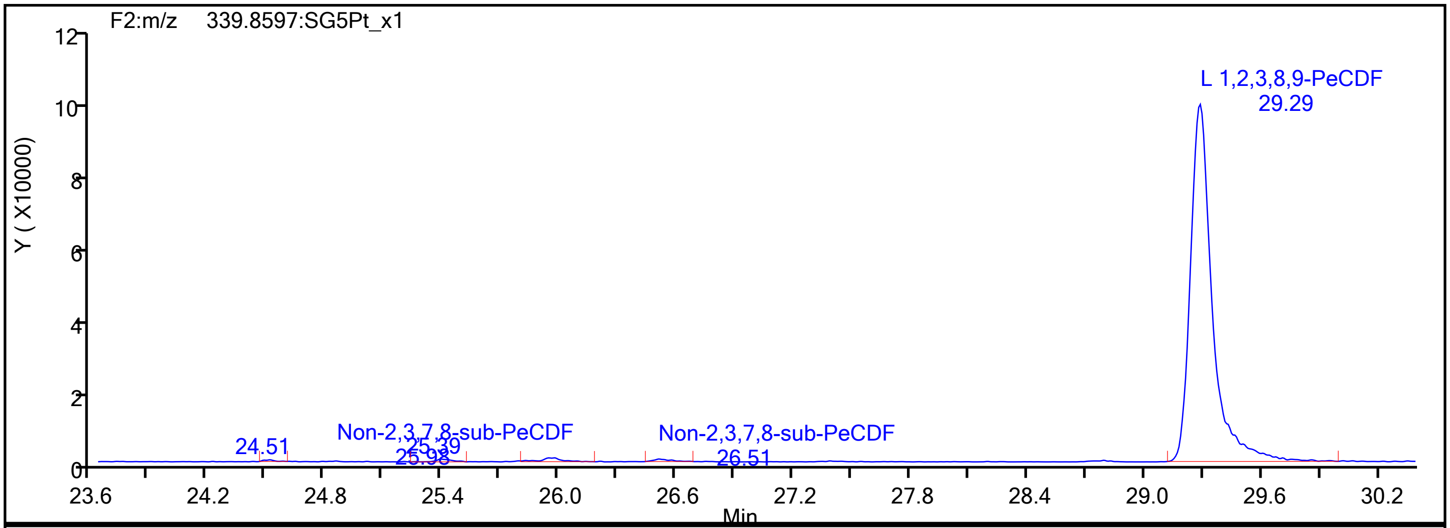

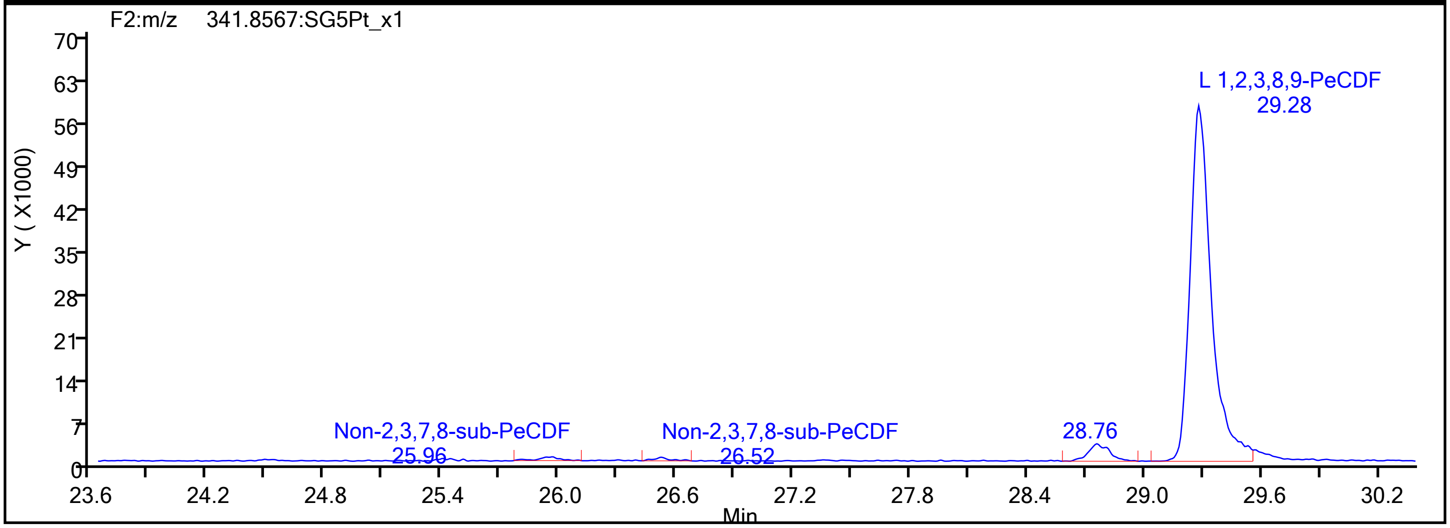

PeCDF Interference Mass

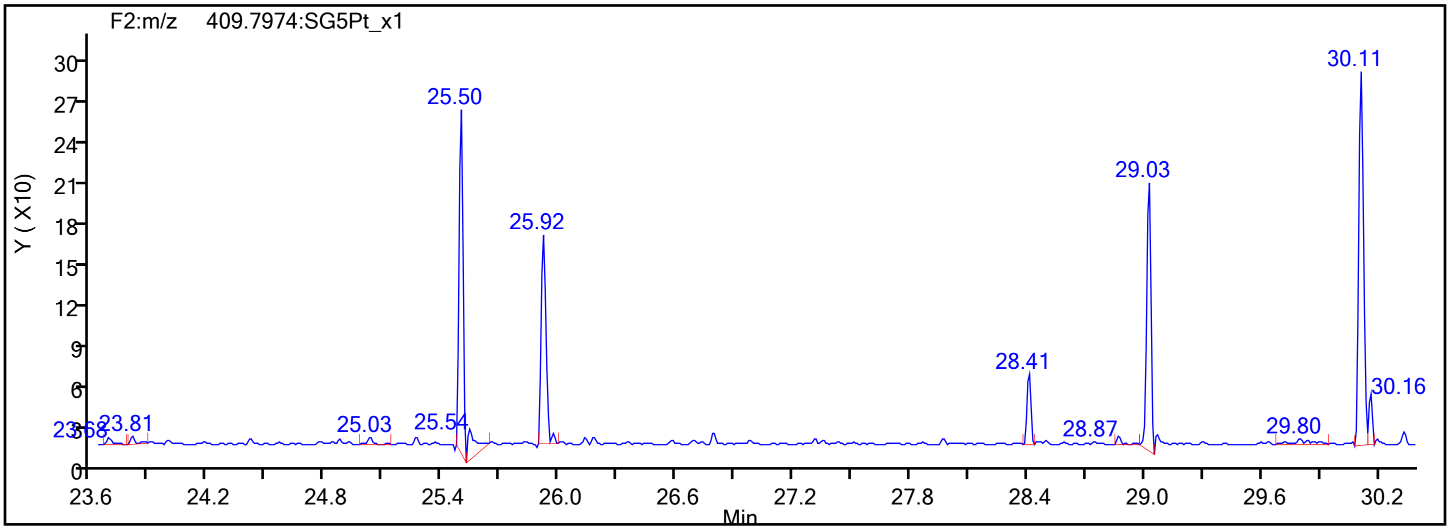

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

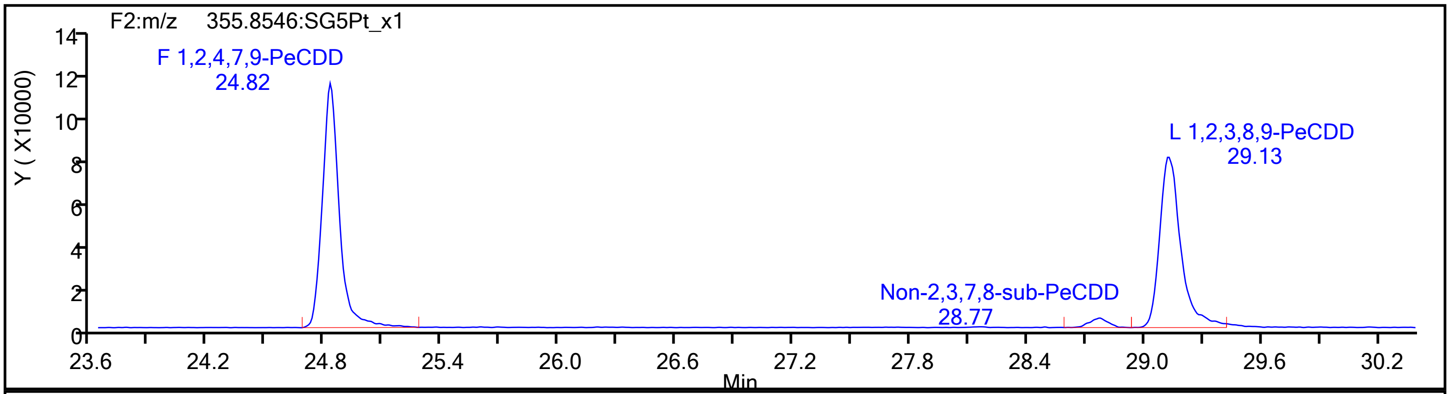

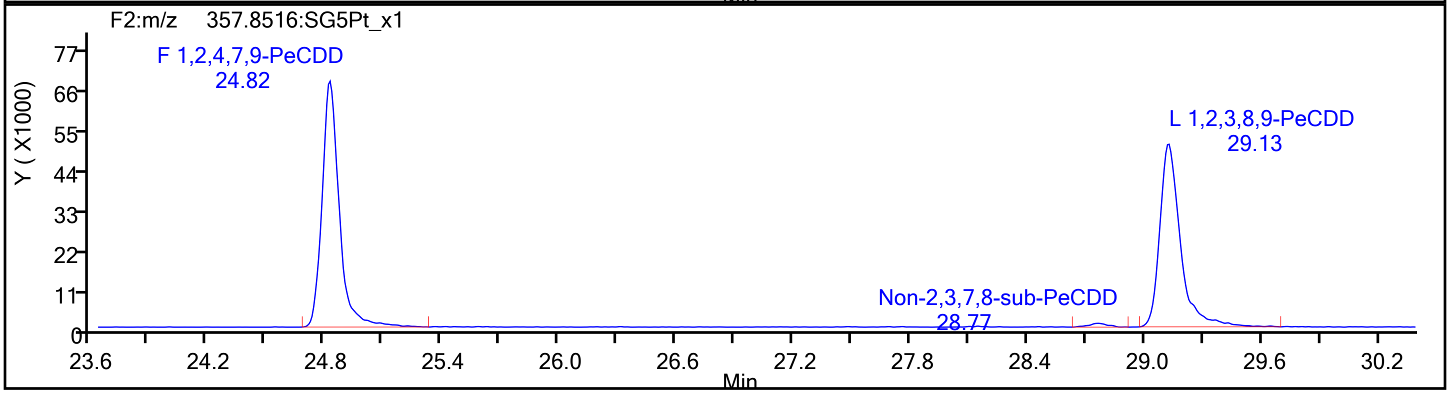

PeCDD Standards

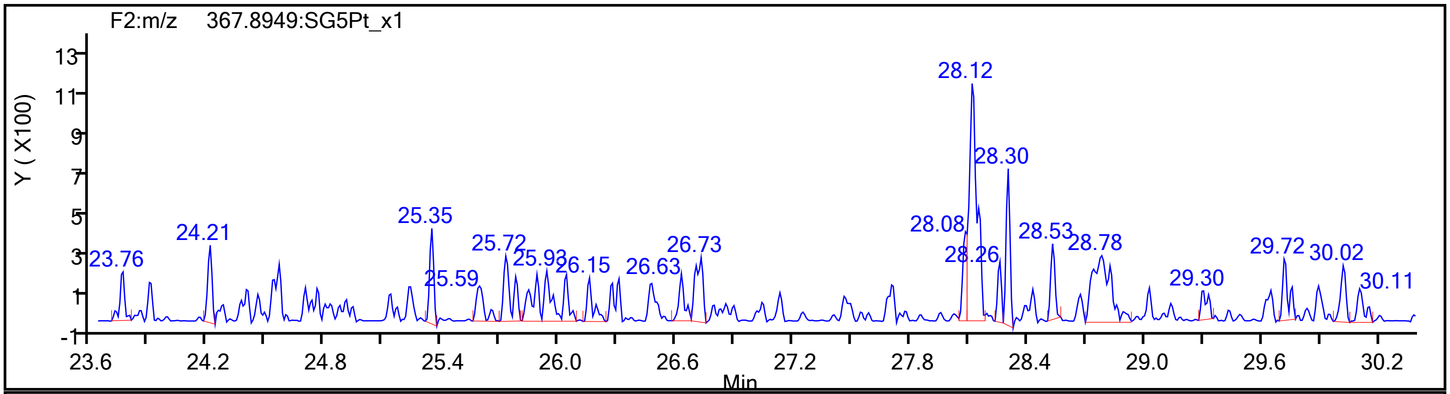

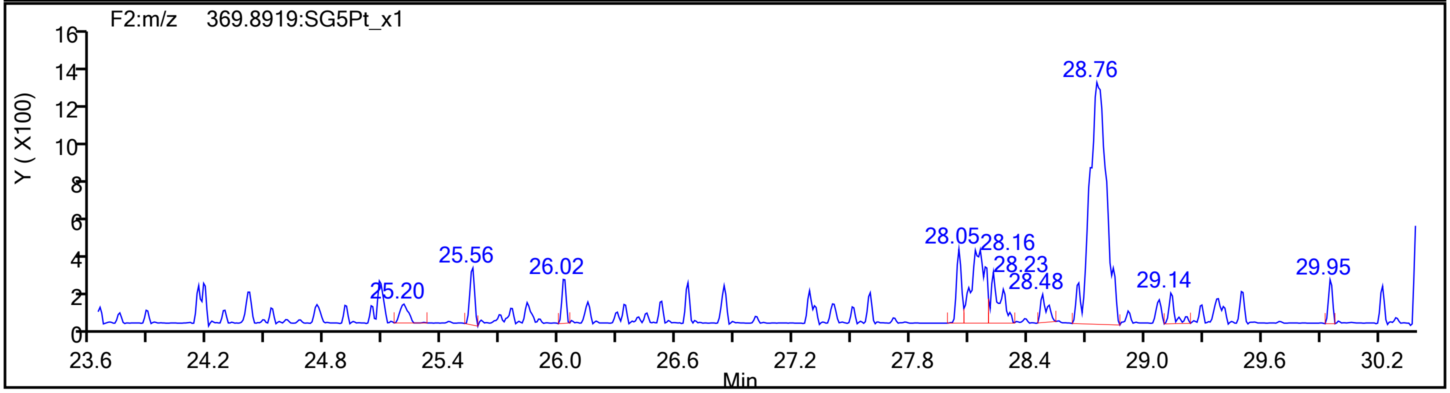

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d

Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

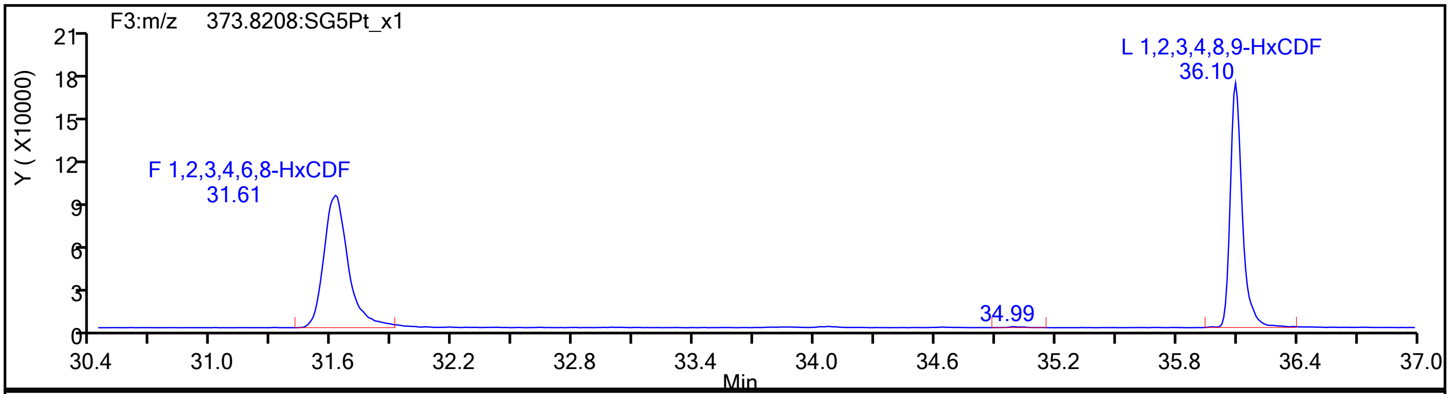

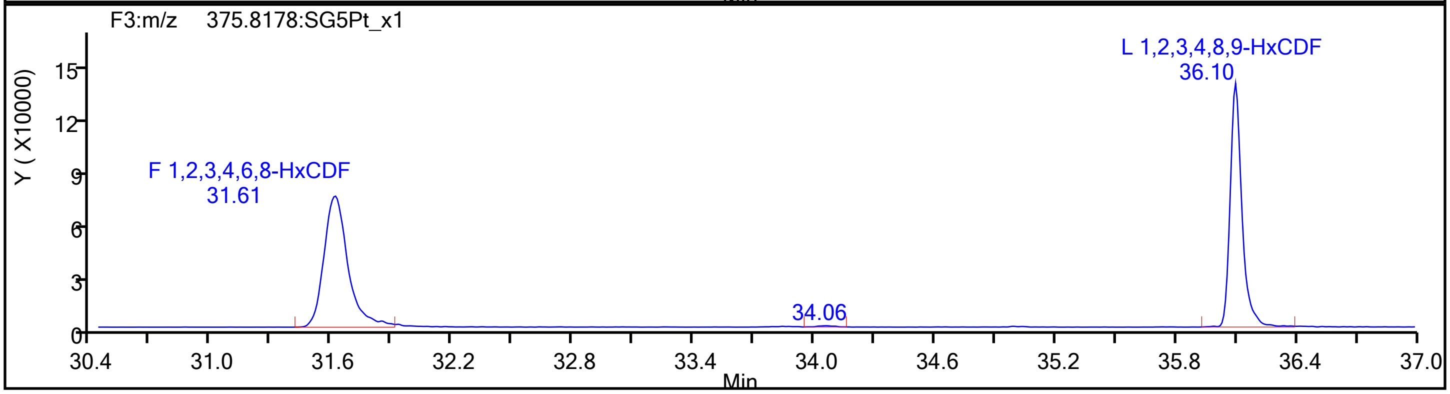

HxCDF Standards

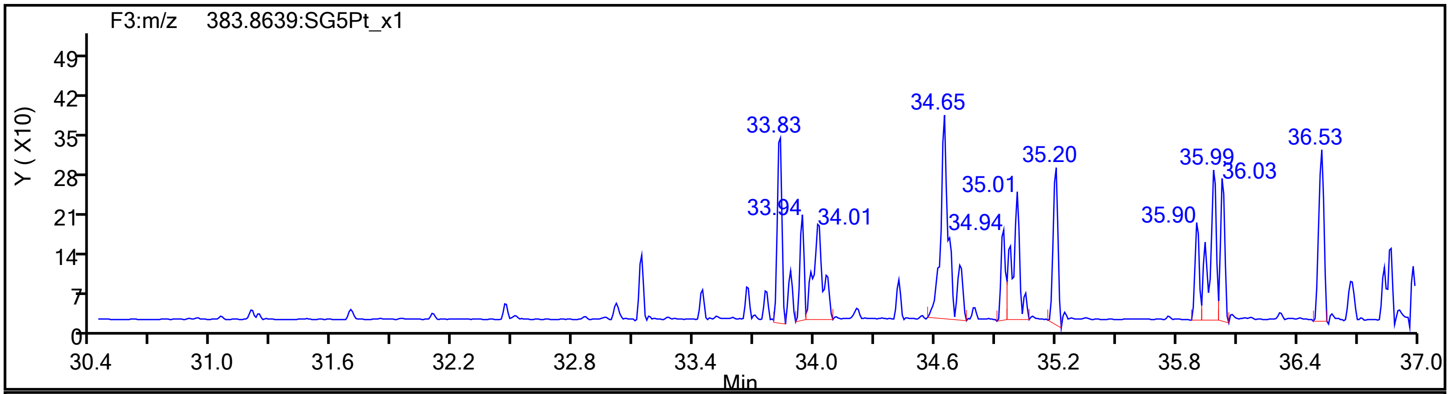

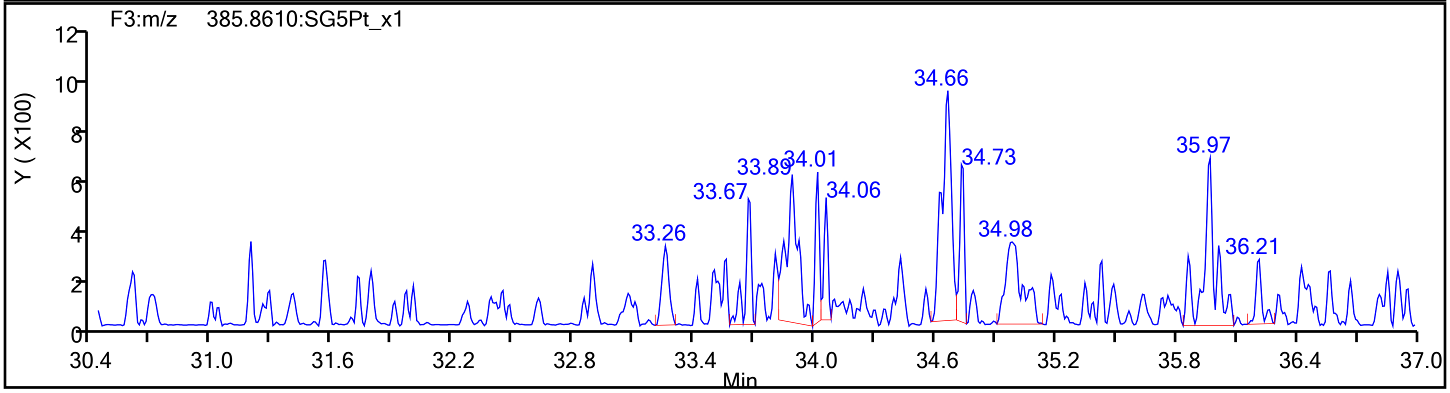

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

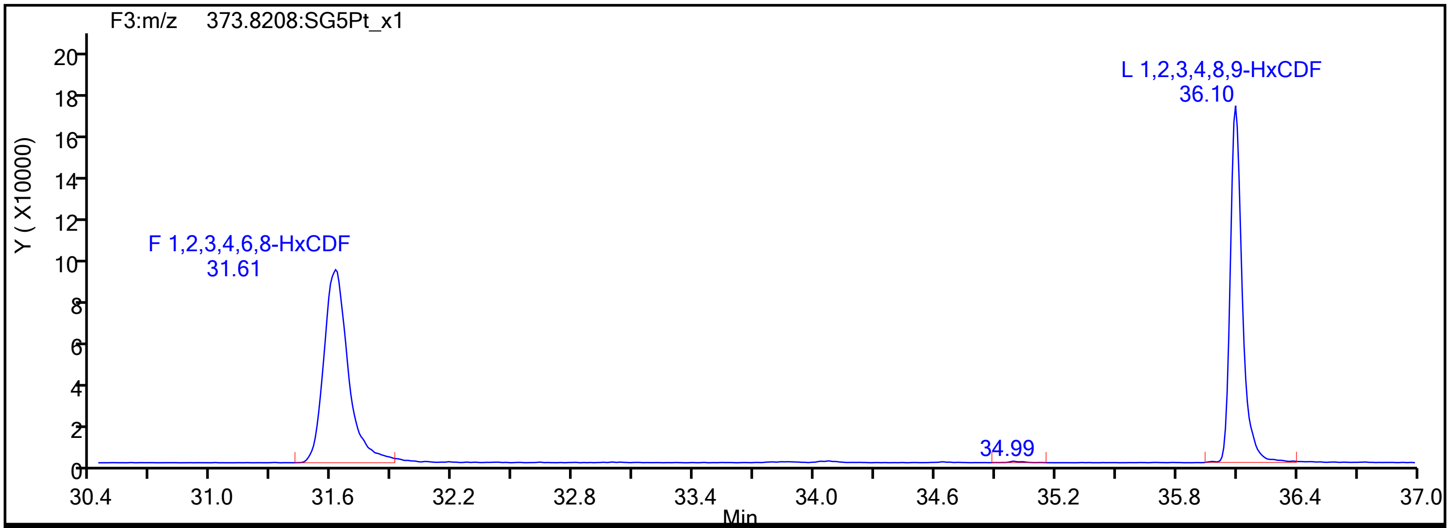

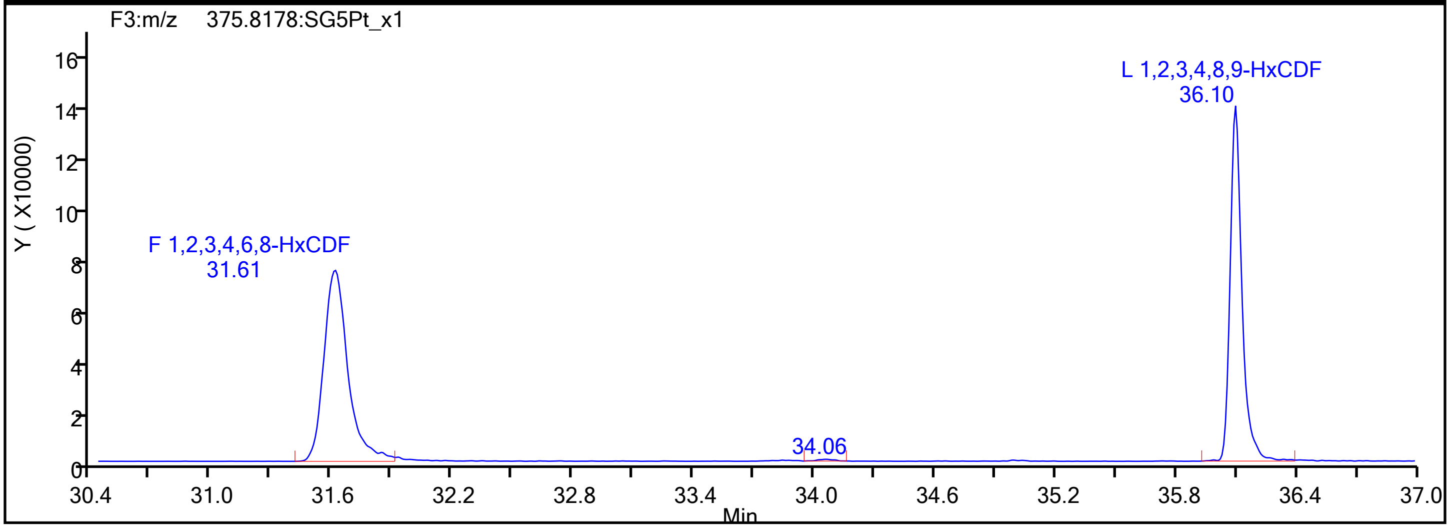

HxCDF Interference Mass

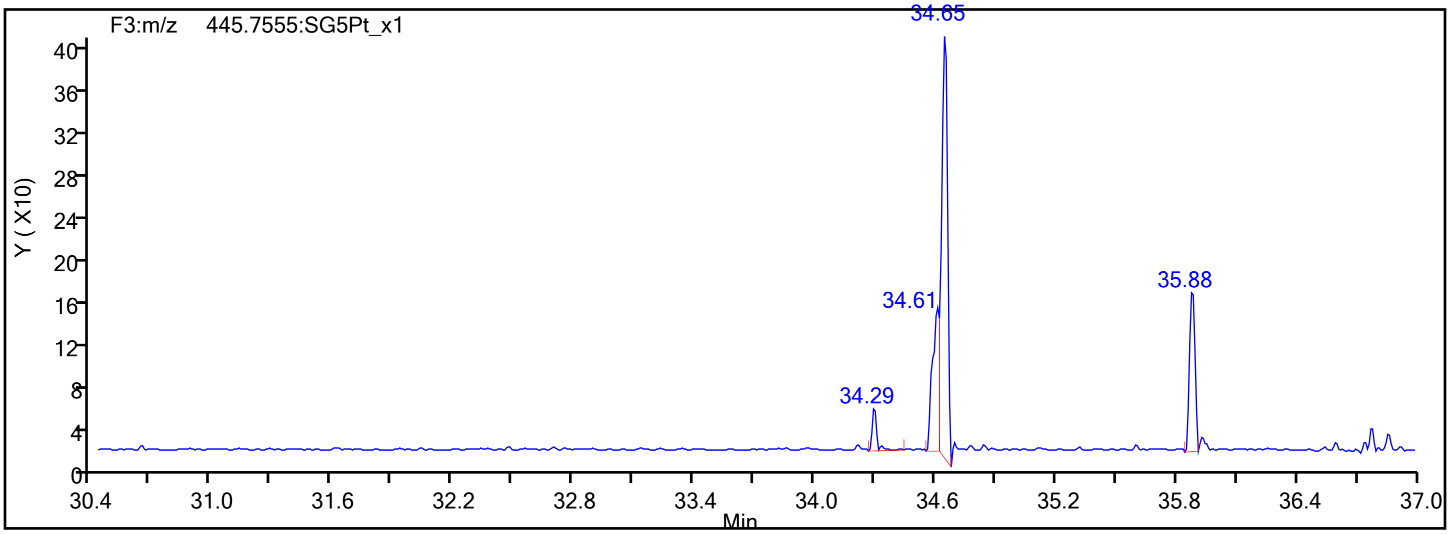

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

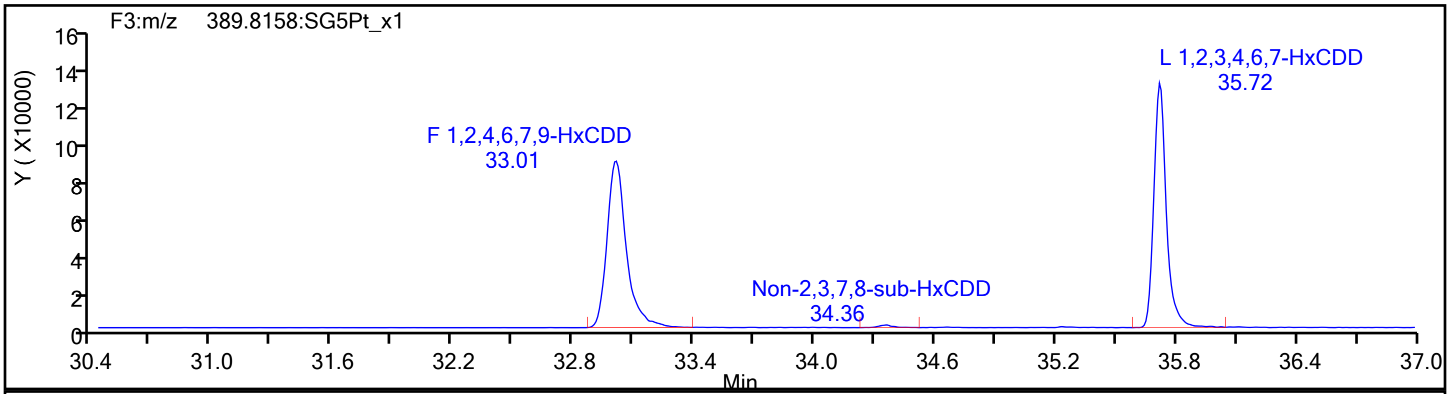

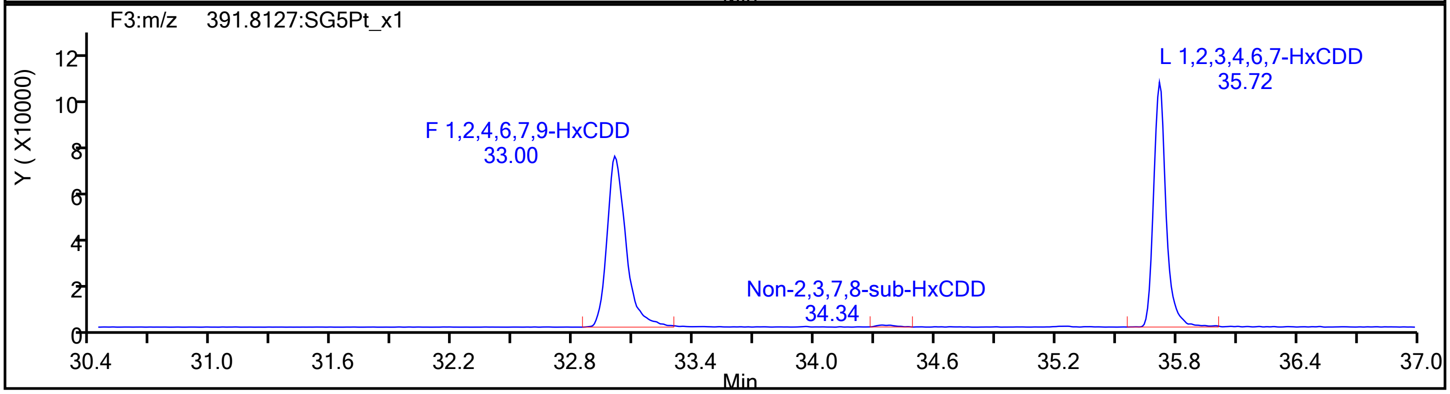

HxCDD Standards

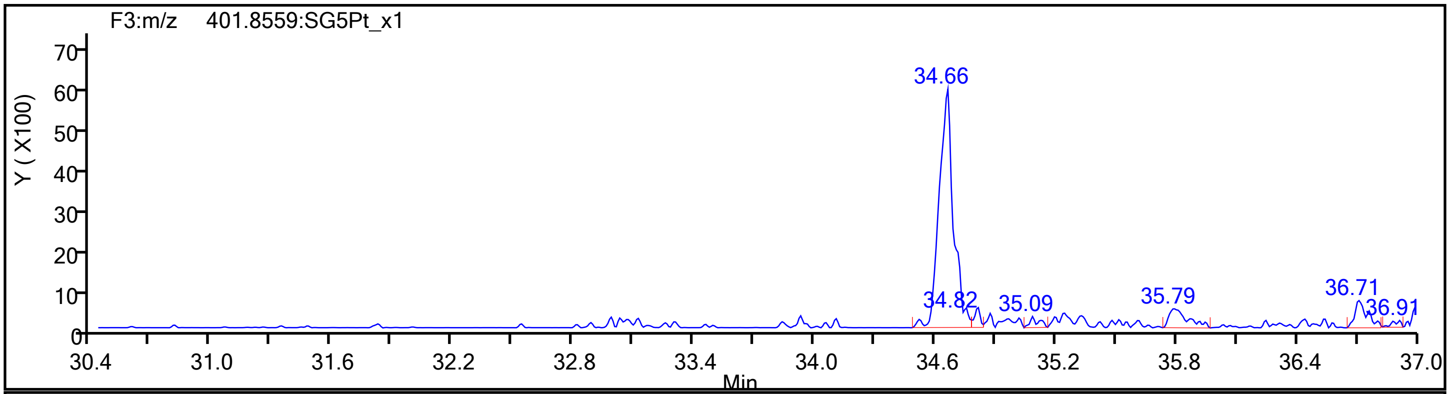

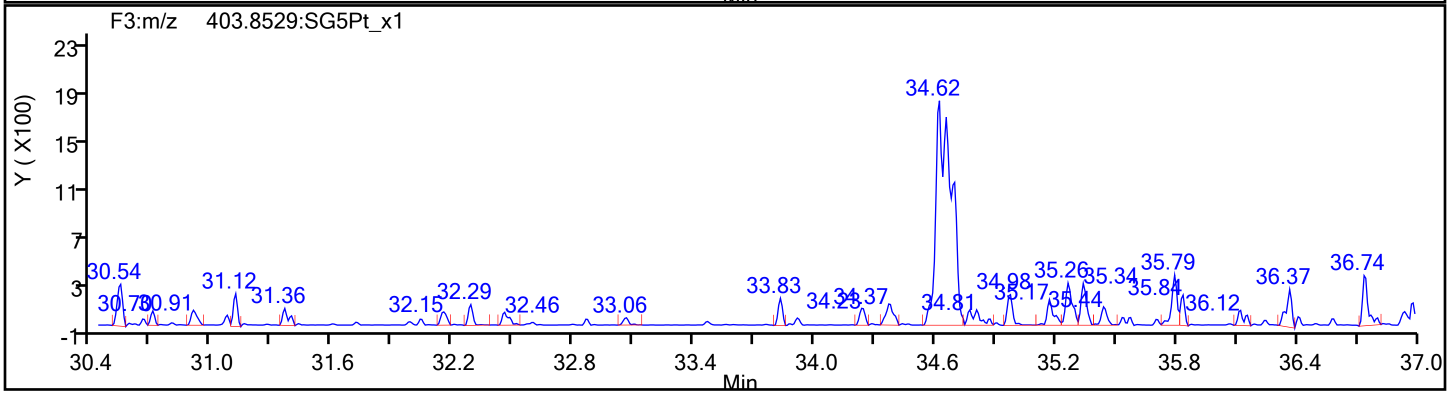

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d

Injection Date: 10-Oct-2020 06:10:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

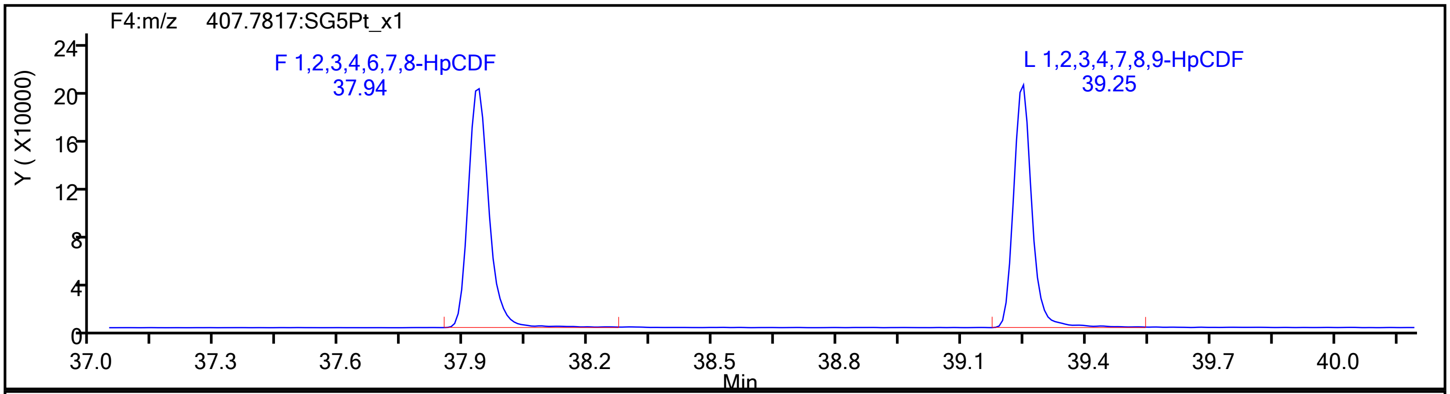

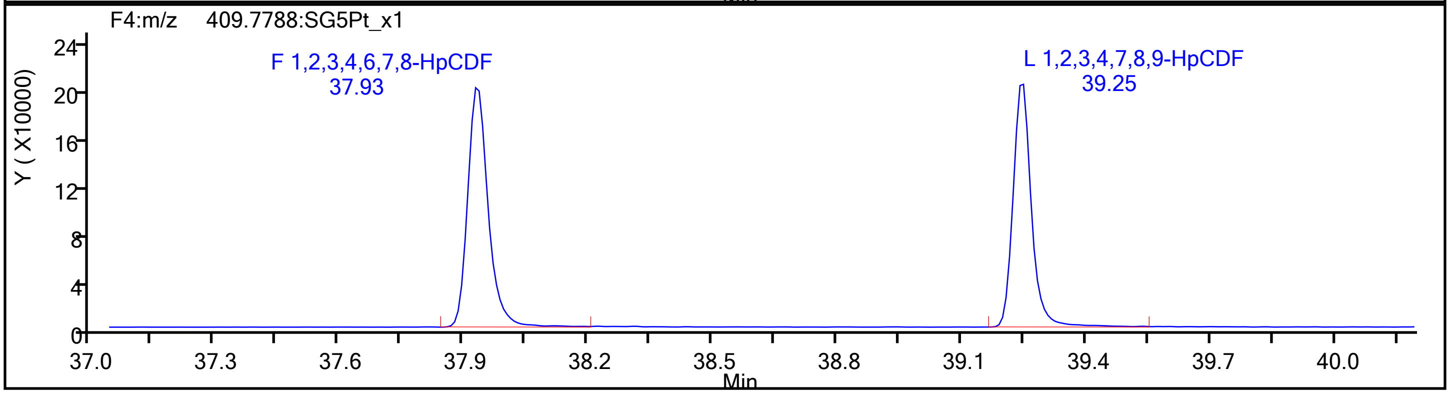

HpCDF Standards

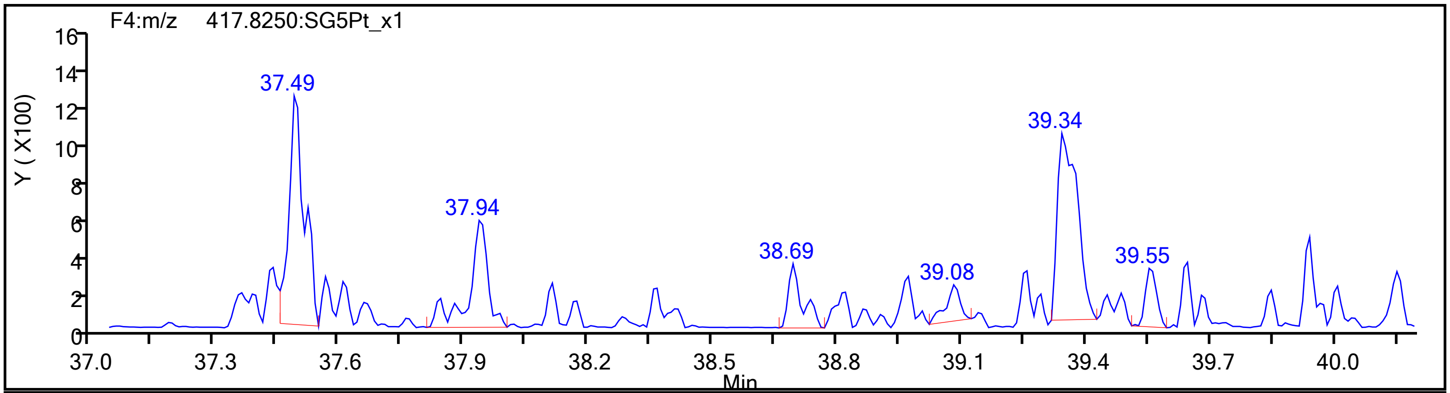

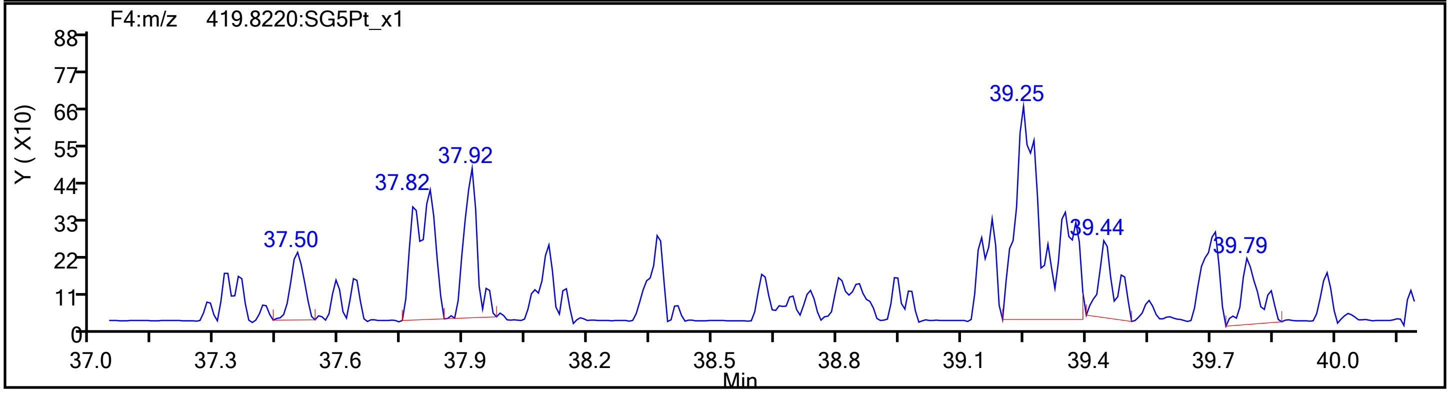

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

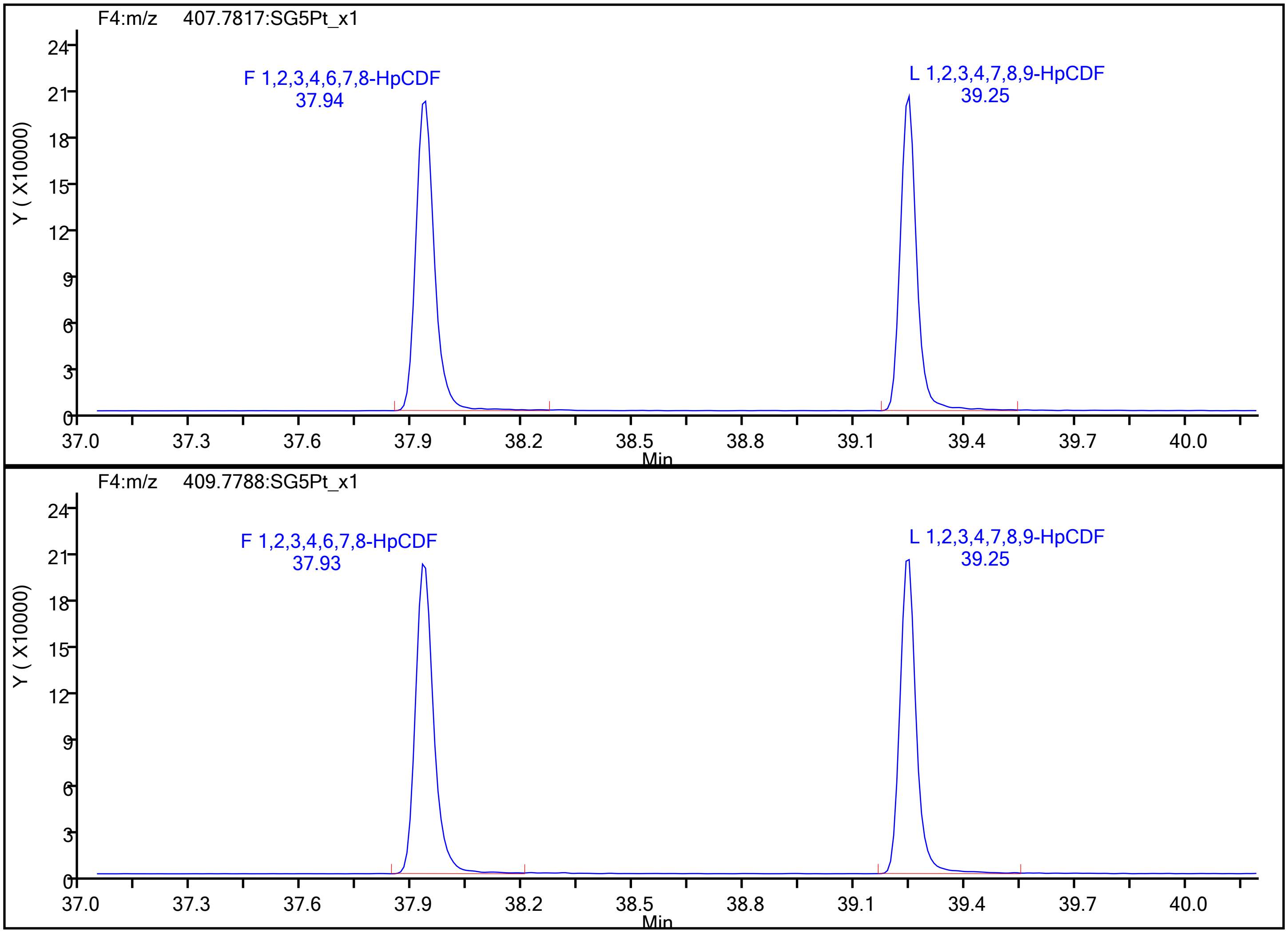

HpCDF Interference Mass

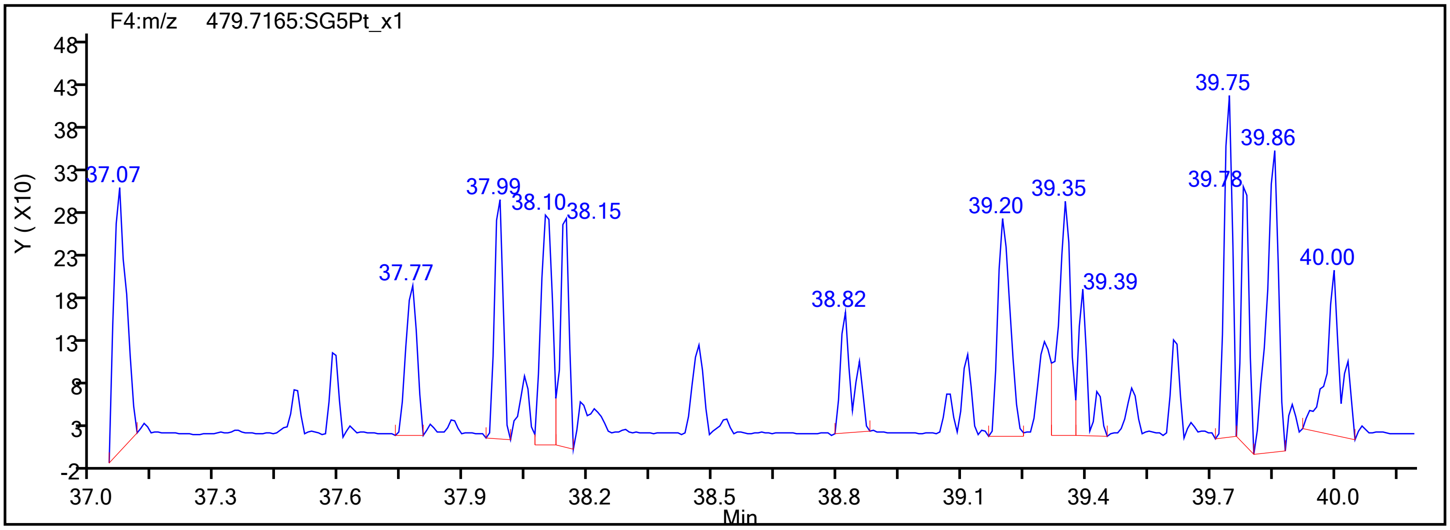

Report Date: 10-Oct-2020 23:29:39 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d

Injection Date: 10-Oct-2020 06:10:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

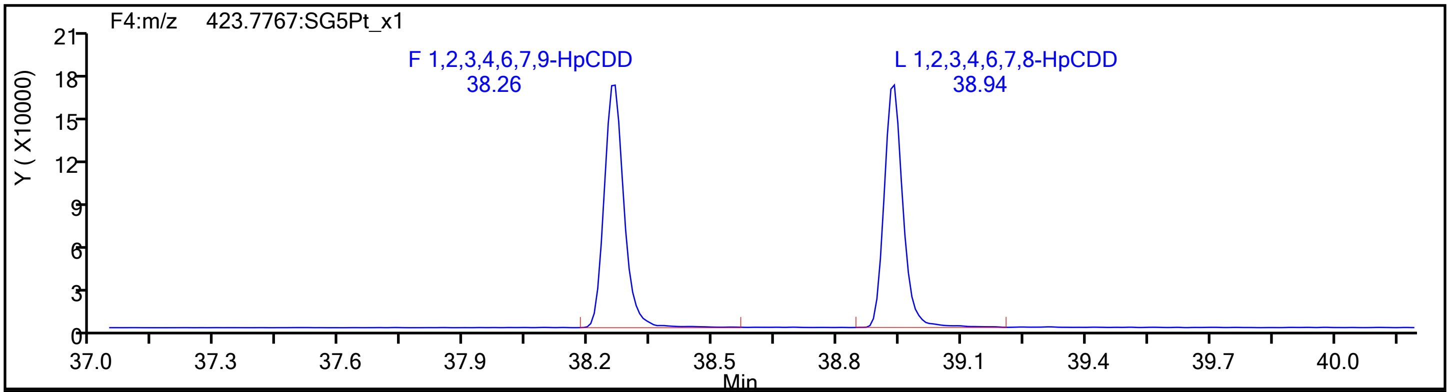

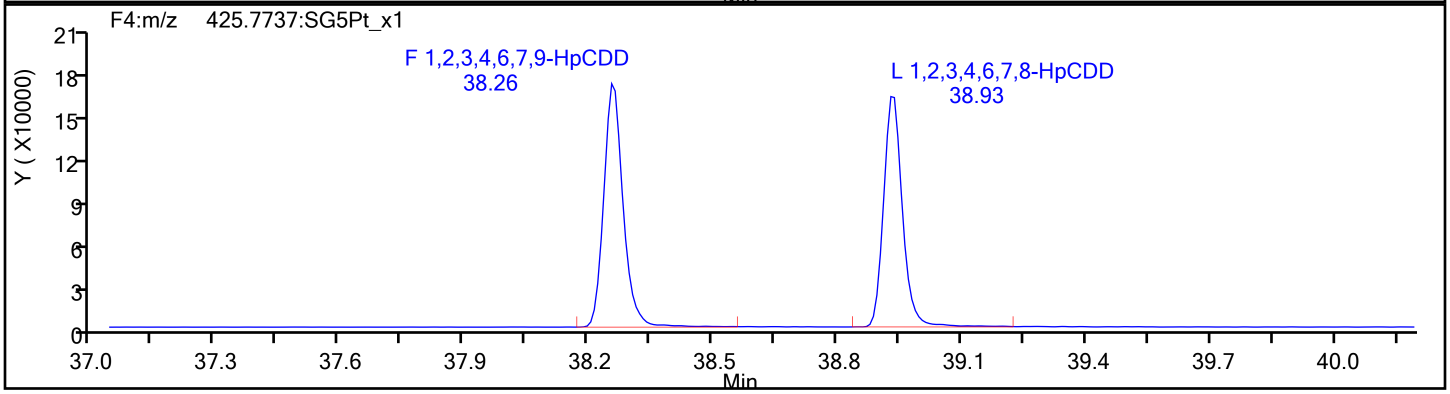

HpCDD Standards

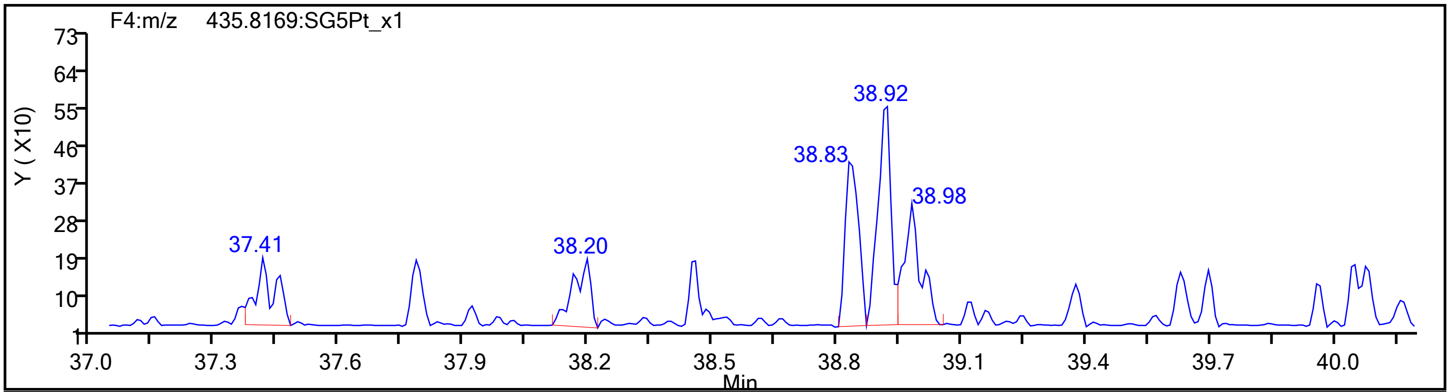

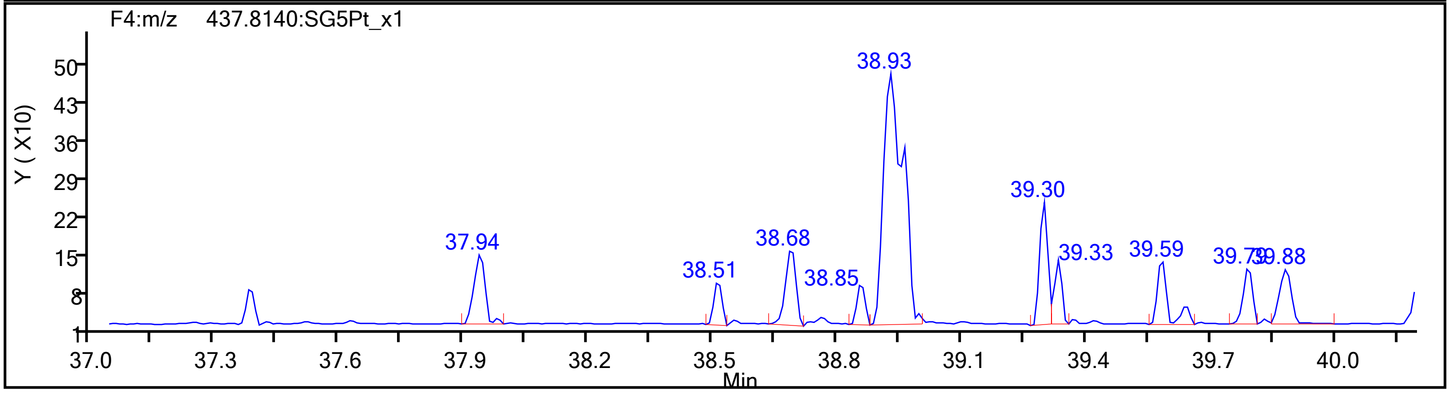

Report Date: 10-Oct-2020 23:29:40 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d		
Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

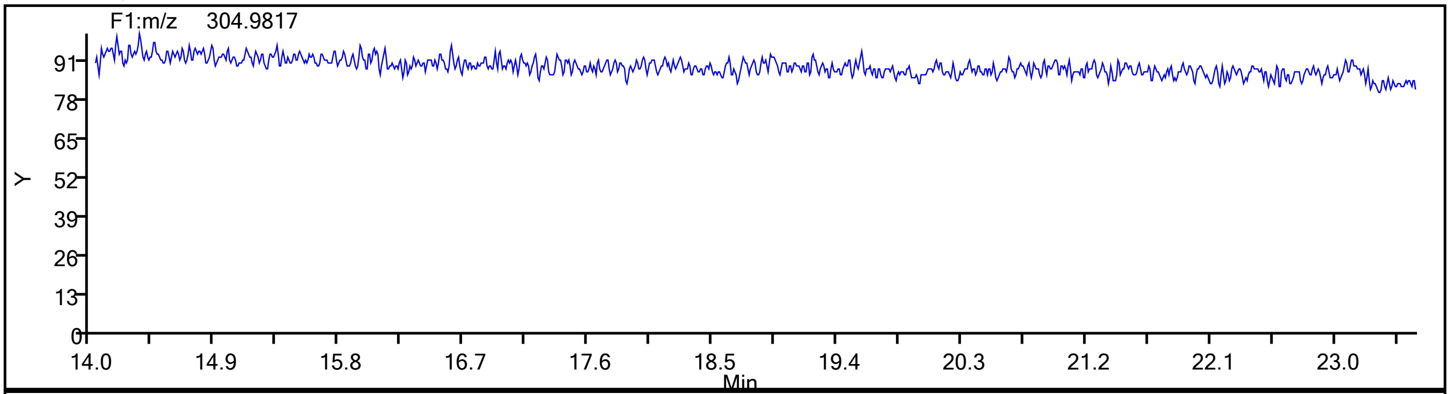

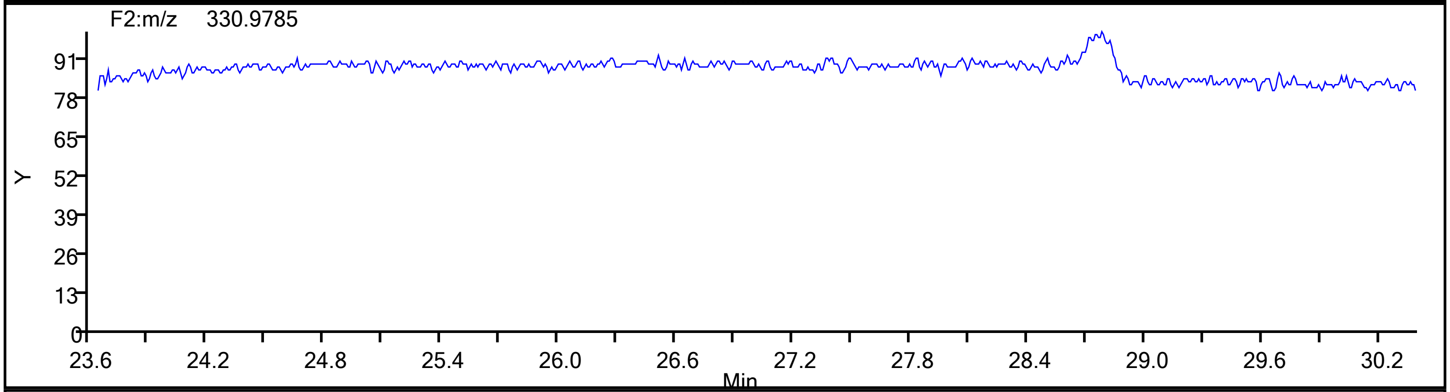

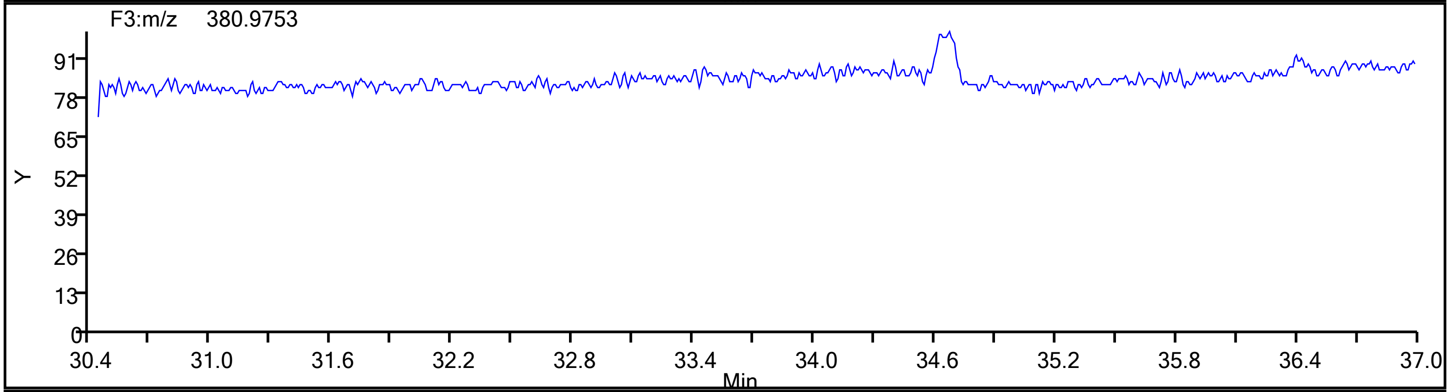

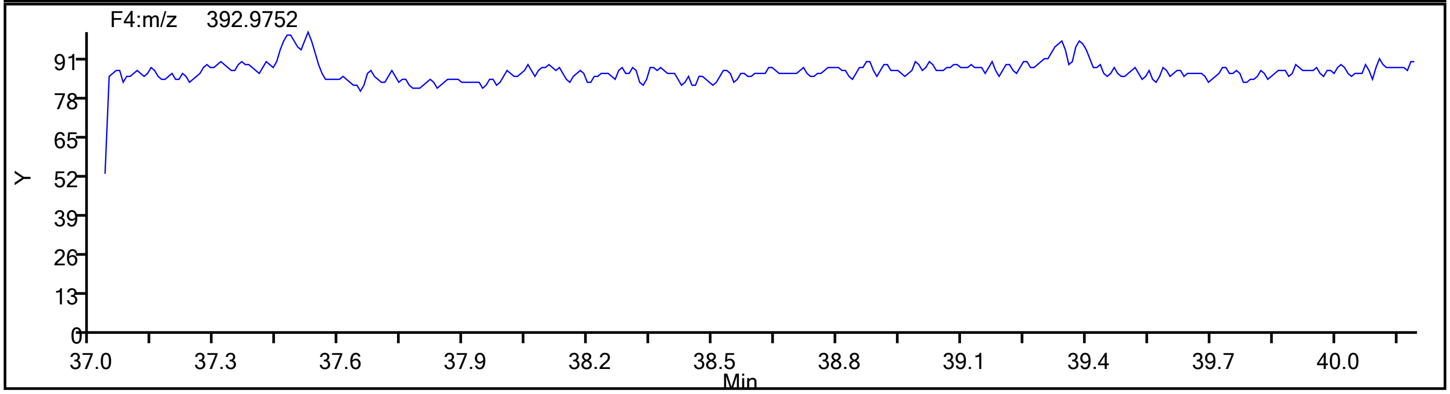

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_18.d

Injection Date:	10-Oct-2020 06:10:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

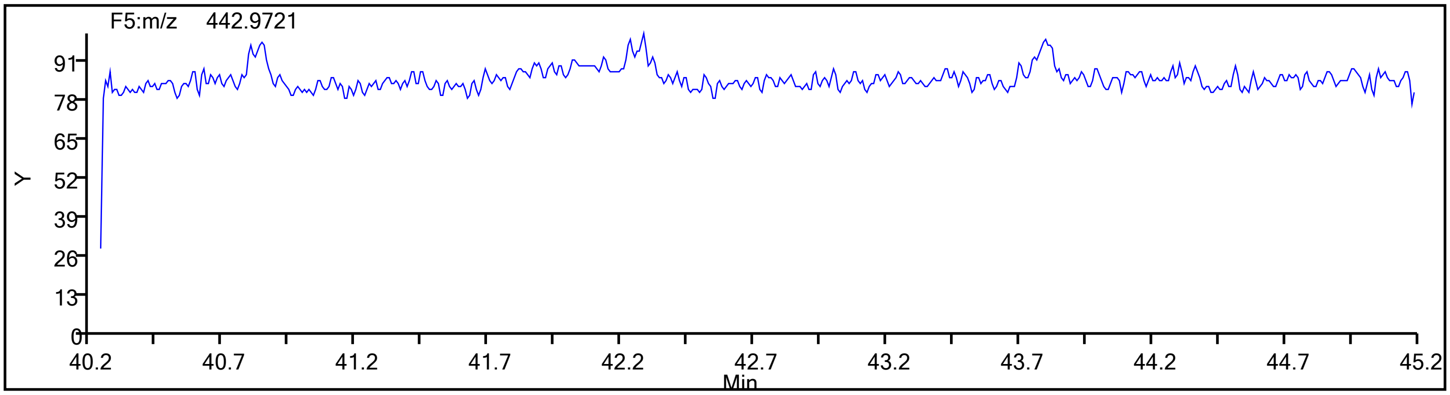

Report Date: 13-Oct-2020 10:45:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 12-Oct-2020 13:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 10:45:50 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 10:37:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	18.772	1120155	0.84	1.5883					0.00	
2,3,7,8-TCDF	18.806	2740054	0.81	1.0857	90.1	90.1	0.4698	0.4698		
A Non-2,3,7,8-sub-TCDF	18.359						0.4698	0.4698		
S Total TCDF					90.1	90.1	0.4698	0.4698		
D 13C-2,3,7,8-TCDD	20.000	694532	0.76	1.1194					0.00	
2,3,7,8-TCDD	20.034	813850	0.80	1.0810	43.4	43.4	0.3421	0.3421		
A Non-2,3,7,8-sub-TCDD	19.141						0.3421	0.3421		
S Total TCDD					43.4	43.4	0.3421	0.3421		
A F1 PeCDFs	23.029	14699	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.465	6207	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	26.926	35072	1.39	0.0000						
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	33.797						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.320	6633	1.20	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	37.902	1051144	1.08	1.5064						
1,2,3,4,7,8,9-HpCDF	39.225	781751	1.06	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.563						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	38.913	747955	1.05	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.838	1698720	0.84							
1,3,6,8-TCDD	16.324	824774	0.76							
2,3,4,7-TCDF	18.806	2740054	0.81							
1,2,3,7-TCDD	19.854	646552	0.79							
1,2,3,9-TCDF	20.214	1214073	0.82							
1,2,3,9-TCDD	20.309	845928	0.80							
1,2,8,9-TCDF	21.881	1229686	0.81							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	21.958	325371								
1,3,4,6,8-PeCDF	22.482	930341	1.54							
1,2,4,7,9-PeCDD	24.782	590637	1.56							
1,2,3,8,9-PeCDD	29.071	554545	1.61							
1,2,3,8,9-PeCDF	29.214	802259	1.63							
1,2,3,4,6,8-HxCDF	31.534	909922	1.27							
1,2,4,6,7,9-HxCDD	32.958	587250	1.26							
1,2,3,4,6,7-HxCDD	35.681	533387	1.32							
1,2,3,4,8,9-HxCDF	36.060	838657	1.28							
1,2,3,4,6,7,9-HpCDD	38.239	524598	1.07							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 12-Oct-2020 13:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 10:45:50 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 10:37:39

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	18.772	18.772	0	1.000	511621	80327	732	1830	110		
317.9389	18.763	18.772	-1	1.000	608534	99814	209	522	478	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.806	18.806	0	1.002	1227827	173689	374	935	464		
305.8987	18.806	18.806	0	1.002	1512227	215558	545	1362	396	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.359						374	935			
305.8987	18.359						545	1362			
13C-2,3,7,8-TCDD											
331.9368	20.000	20.000	0	1.000	299303	45533	329	822	138		
333.9338	20.008	20.000	1	1.000	395229	61006	50	125	1220	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.034	20.034	0	1.002	360699	50127	221	552	227		
321.8936	20.043	20.034	1	1.002	453151	65363	173	432	378	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.141						221	552			
321.8936	19.141						173	432			
A F1 PeCDFs											RQ
339.8597	16.092	23.029	-415	1.000	2569	606	48	120	13		
341.8567	16.100	23.029	-415	1.000	33312	5689	86	215	66	0.08(1.32-1.78)	
339.8597	23.100	23.029	4	1.000	6366	1400	48	120	29		
341.8567	23.109	23.029	5	1.000	42379	4485	86	215	52	0.15(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	28.742	26.465	136	1.000	3773	637	104	260	6		
341.8567	28.708	26.465	134	1.000	38462	5083	115	287	44	0.10(1.32-1.78)	

Report Date: 13-Oct-2020 10:45:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.717	26.926	107	1.000	20370	3402	118	295	29		
357.8516	28.700	26.926	106	1.000	14702	2199	71	177	31	1.39(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.797						158	395			
375.8178	33.797						99	247			
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.307	34.320	-1	1.000	3620	716	91	227	8		
391.8127	34.299	34.320	-1	1.000	3013	652	72	180	9	1.20(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.902	37.902	0	1.000	546204	162782	325	812	501		
409.7788	37.902	37.902	0	1.000	504940	153495	205	512	749	1.08(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.225	39.225	0	1.000	402287	119561	325	812	368		
409.7788	39.225	39.225	0	1.000	379464	112783	205	512	550	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.563						325	812			
409.7788	38.563						205	512			
1,2,3,4,6,7,8-HpCDD											
423.7767	38.913	38.913	0	1.000	383938	114064	163	407	700		
425.7737	38.913	38.913	0	1.000	364017	108579	155	387	701	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						163	407			
425.7737	38.941						155	387			
1,3,6,8-TCDF											
303.9016	14.838	14.838	0		773549	159472	374	935	426		
305.8987	14.838	14.838	0		925171	193975	545	1362	356	0.84(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.324	16.324	0		355536	66358	221	552	300		
321.8936	16.324	16.324	0		469238	87376	173	432	505	0.76(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	18.806	18.806	0		1227827	173689	374	935	464		
305.8987	18.806	18.806	0		1512227	215558	545	1362	396	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	19.854	19.854	0		286032	43728	221	552	198		
321.8936	19.845	19.854	-1		360520	53561	173	432	310	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.214	20.214	0		545310	76309	374	935	204		
305.8987	20.214	20.214	0		668763	94970	545	1362	174	0.82(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.309	20.309	0		375649	51098	221	552	231		
321.8936	20.300	20.309	-1		470279	64393	173	432	372	0.80(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	21.881	21.881	0		549765	70596	374	935	189		
305.8987	21.881	21.881	0		679921	88829	545	1362	163	0.81(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	21.958	21.958	0		325371	42741	221	552	193		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	22.482	22.482	0		563512	72714	48	120	1515		
341.8567	22.482	22.482	0		366829	46357	86	215	539	1.54(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	24.782	24.782	0		359686	60328	118	295	511		
357.8516	24.782	24.782	0		230951	37868	71	177	533	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.071	29.071	0		341777	47454	118	295	402		
357.8516	29.063	29.071	-1		212768	31364	71	177	442	1.61(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.214	29.214	0		496842	69210	104	260	665		
341.8567	29.223	29.214	1		305417	43111	115	287	375	1.63(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	31.534	31.534	0		509839	63867	158	395	404		
375.8178	31.534	31.534	0		400083	49894	99	247	504	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	32.958	32.958	0		327887	52075	91	227	572		
391.8127	32.950	32.958	-1		259363	42048	72	180	584	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.681	35.681	0		303899	68057	91	227	748		
391.8127	35.681	35.681	0		229488	51828	72	180	720	1.32(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.060	36.060	0		471240	113276	158	395	717		
375.8178	36.060	36.060	0		367417	88613	99	247	895	1.28(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.239	38.239	0		271708	77719	163	407	477		
425.7737	38.230	38.239	-1		252890	72960	155	387	471	1.07(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Oct-2020 13:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	1

F1 PeCDFs, RT: 23.029

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
16.092	2569	606	33312	5689		0.08	R
23.100	6366	1400	42379	4485		0.15	R
Signal Totals:							
	8935	2006	75691	10174			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	84626	12180				0.12	RQ
	14699	3299					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (84626 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (14699 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Oct-2020 13:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 26.465

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
28.742	3773	637	38462	5083		0.10	R
Signal Totals:							
	3773	637	38462	5083			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	42235	5720				0.10	RQ
	6207	1047					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (42235 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (6207 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Oct-2020 13:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDD, RT: 26.926

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.068				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
28.717	20370	3402	14702	2199		1.39	
Signal Totals:							
	20370	3402	14702	2199			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	35072	5601				1.39	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (35072 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Oct-2020 13:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	421107	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 34.320

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.307	3620	716	3013	652		1.20	
Signal Totals:							
	3620	716	3013	652			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6633	1368				1.20	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (6633 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d
Injection Date: 12-Oct-2020 13:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

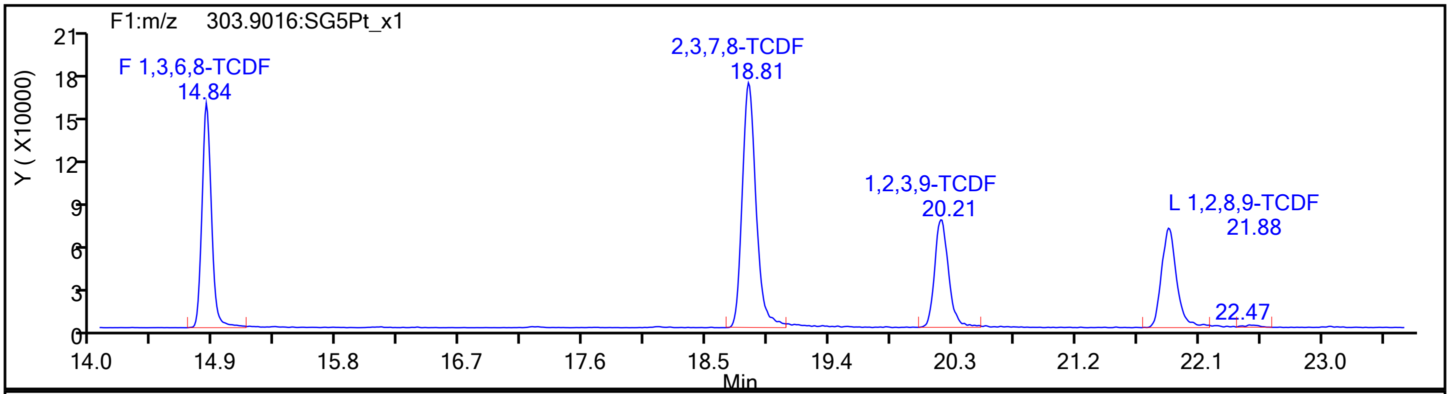

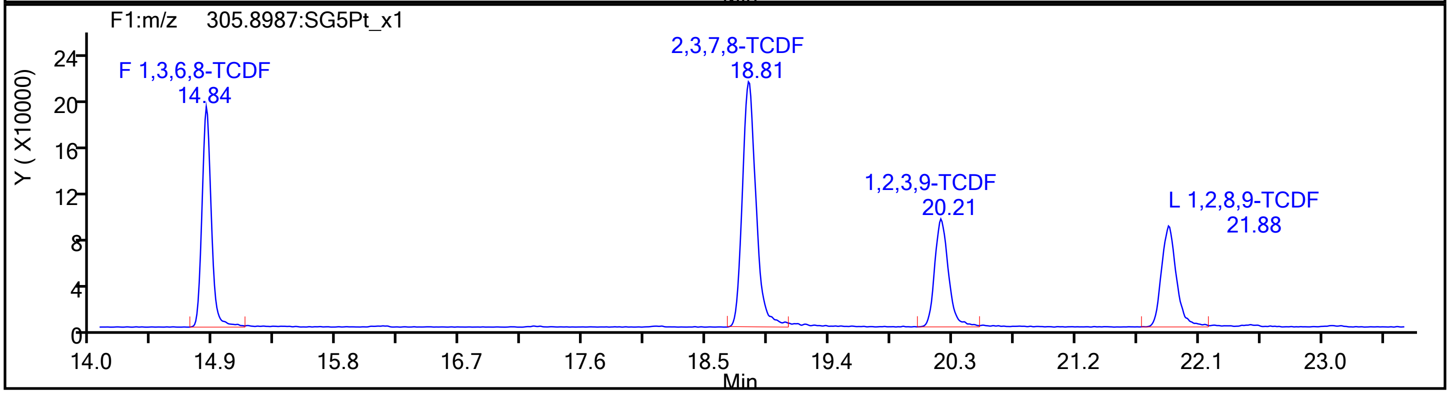

TCDF Standards

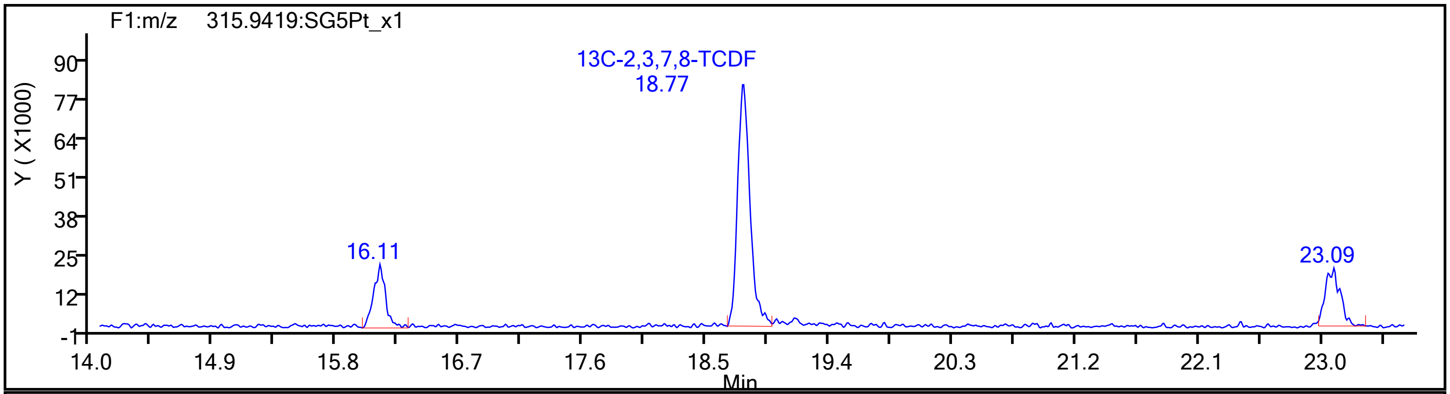

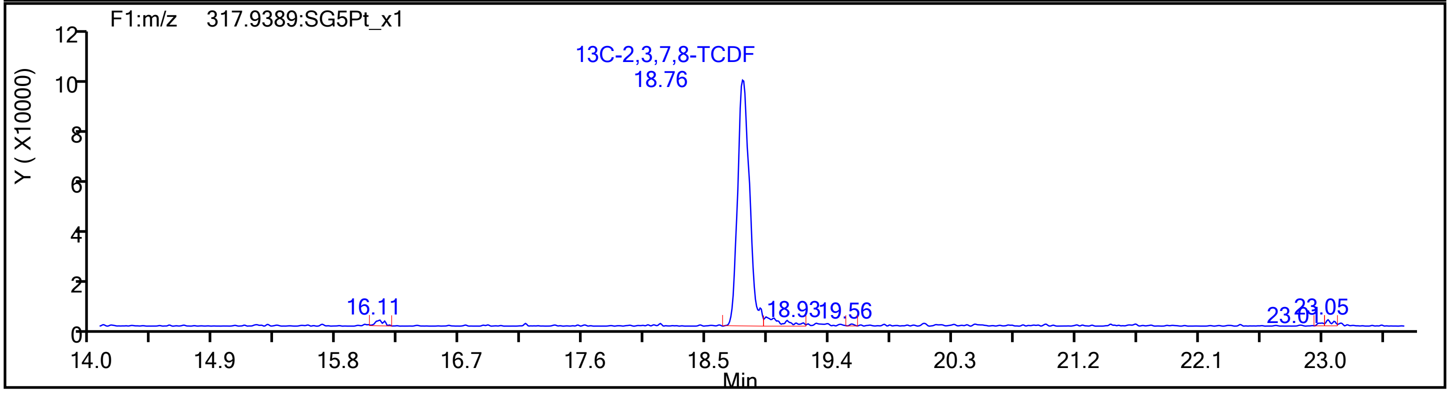

Report Date: 13-Oct-2020 10:45:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

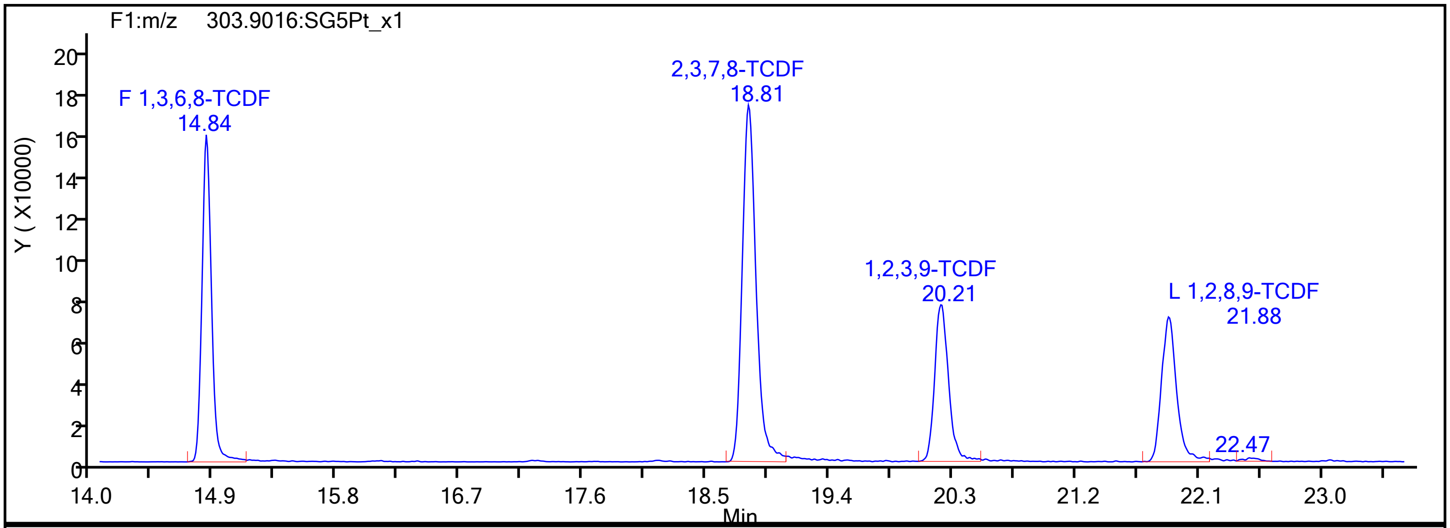

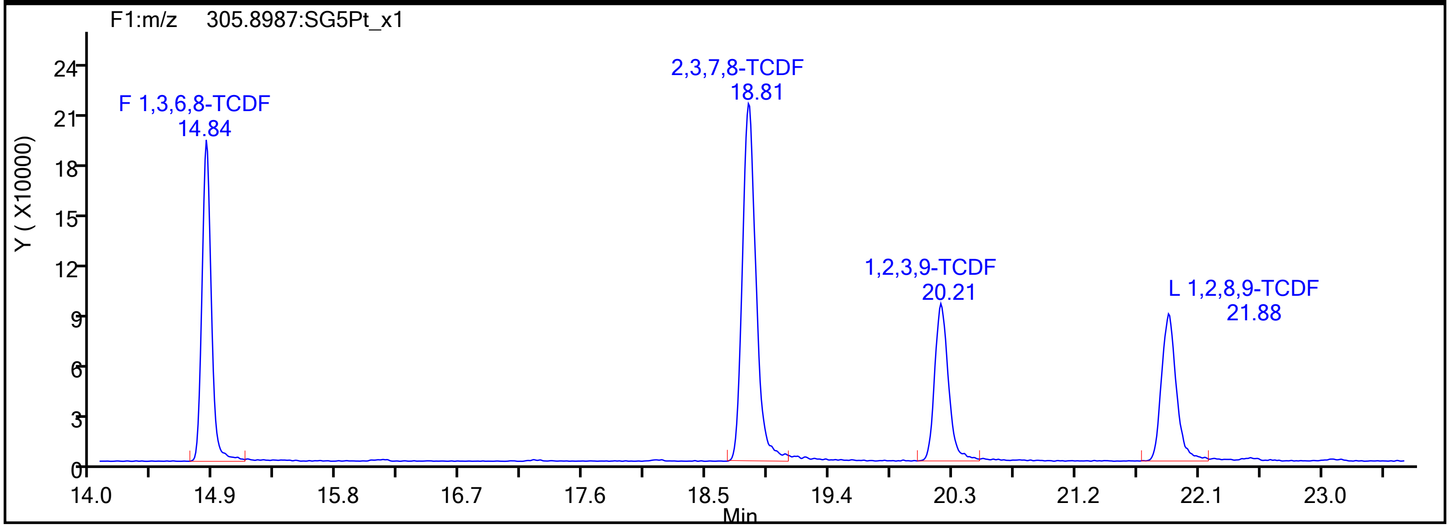

TCDF Interference Mass

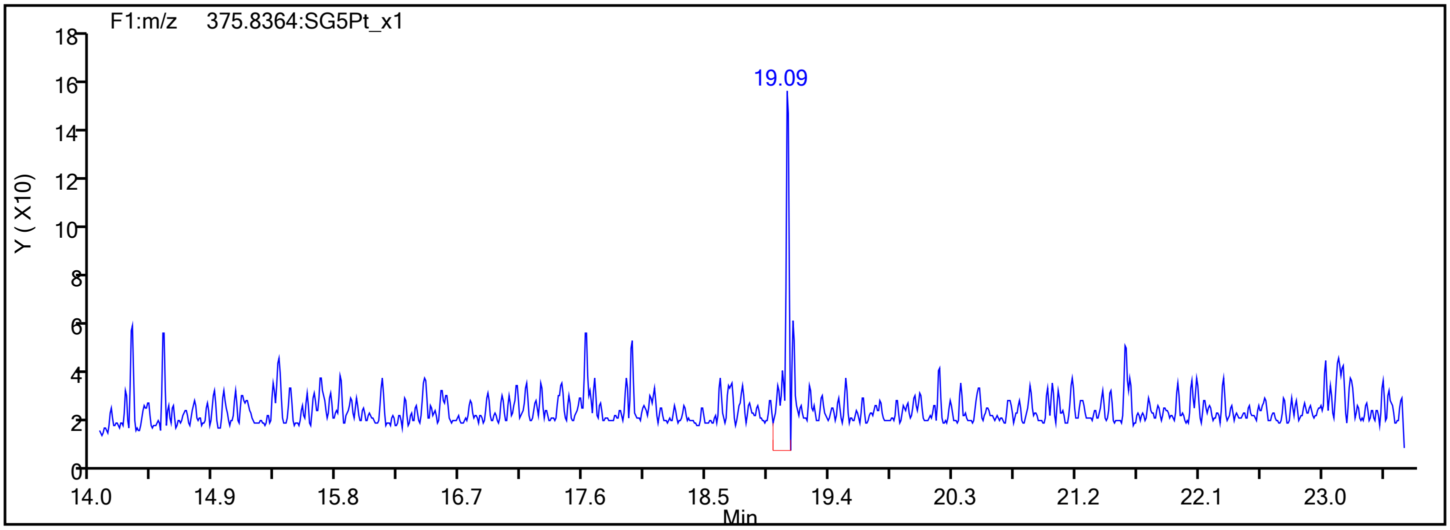

Report Date: 13-Oct-2020 10:45:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d

Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

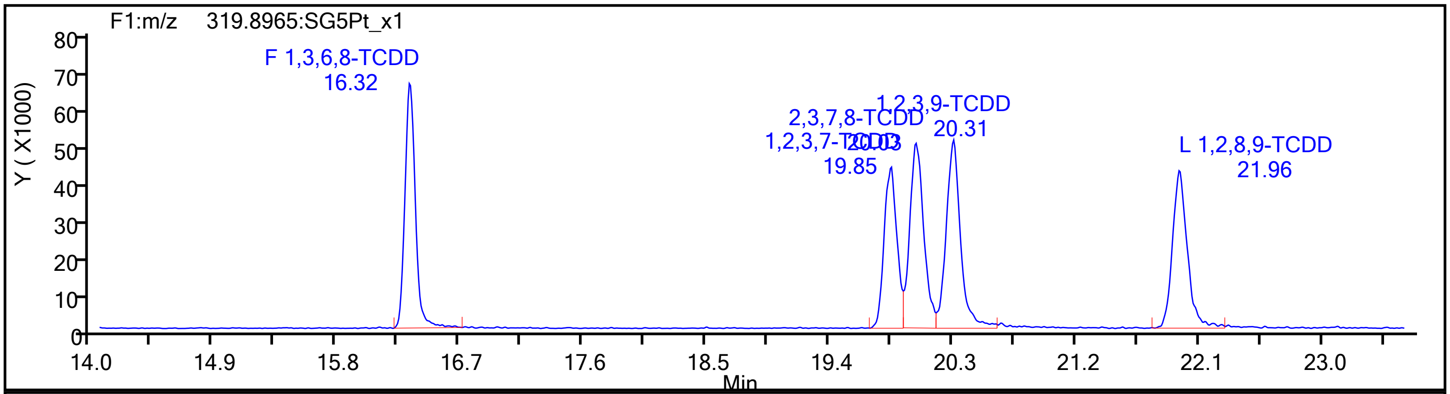

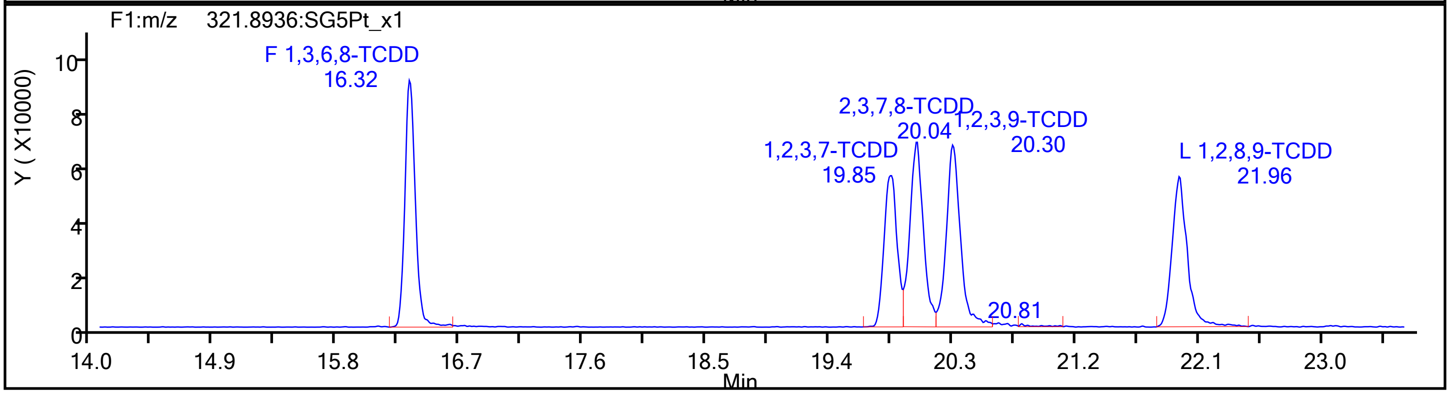

TCDD Standards

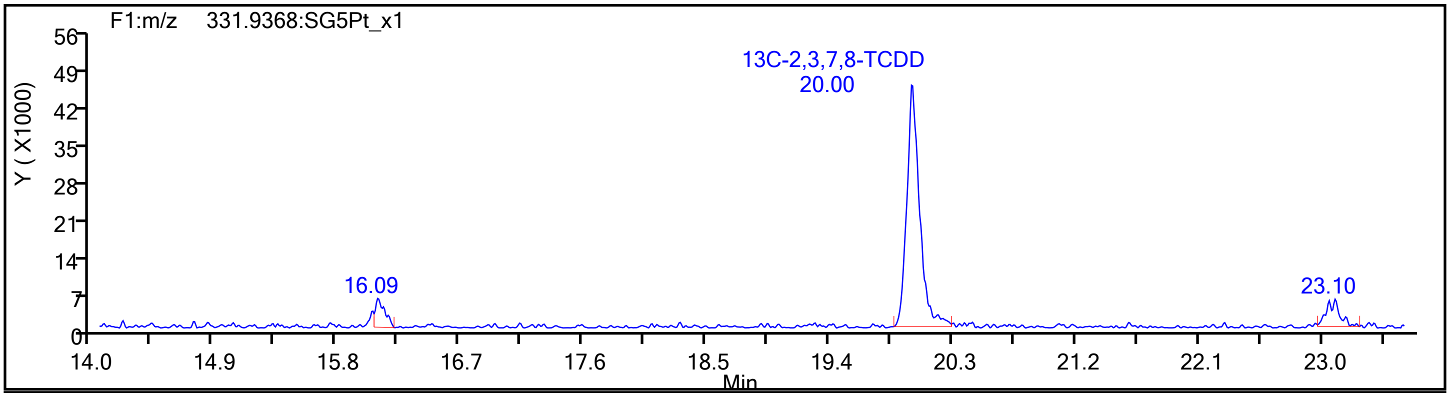

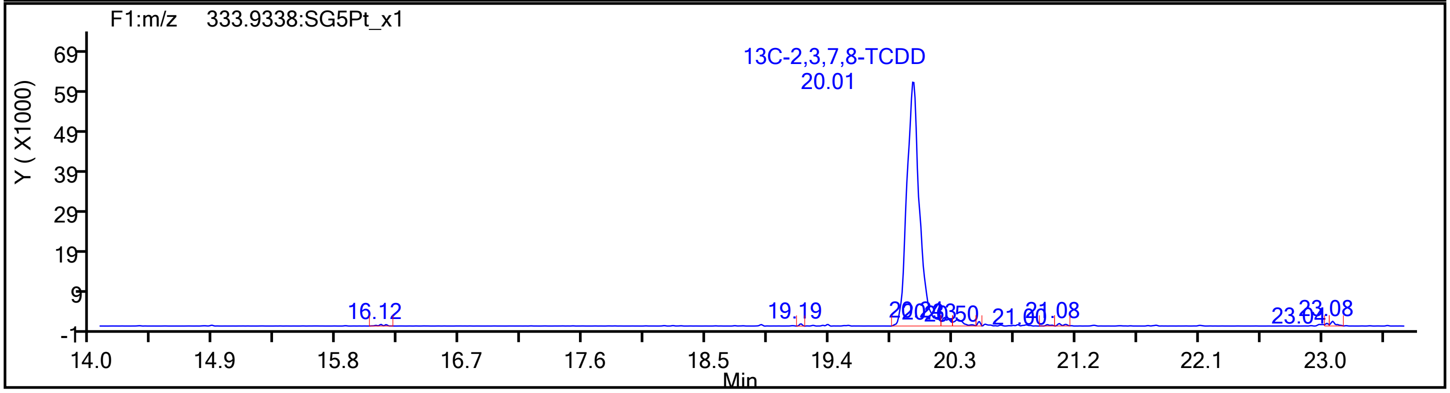

Report Date: 13-Oct-2020 10:45:53
Chrom Revision: 2.3 08-Oct-2020 16:36:14

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d
Injection Date: 12-Oct-2020 13:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

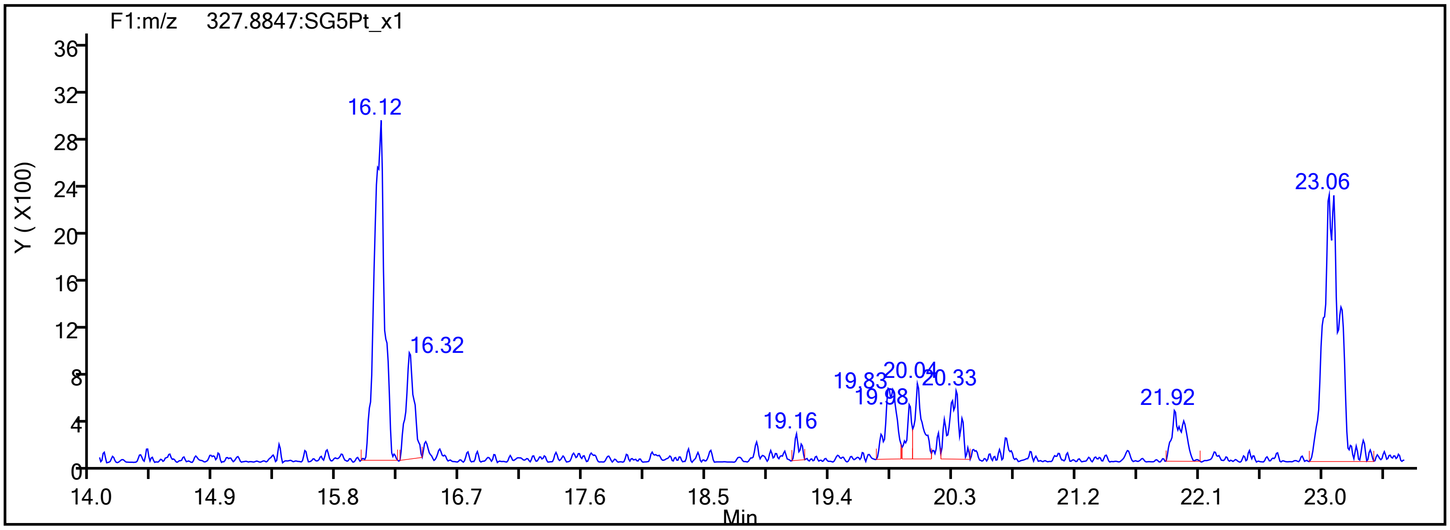

37Cl4-TCDD Standards

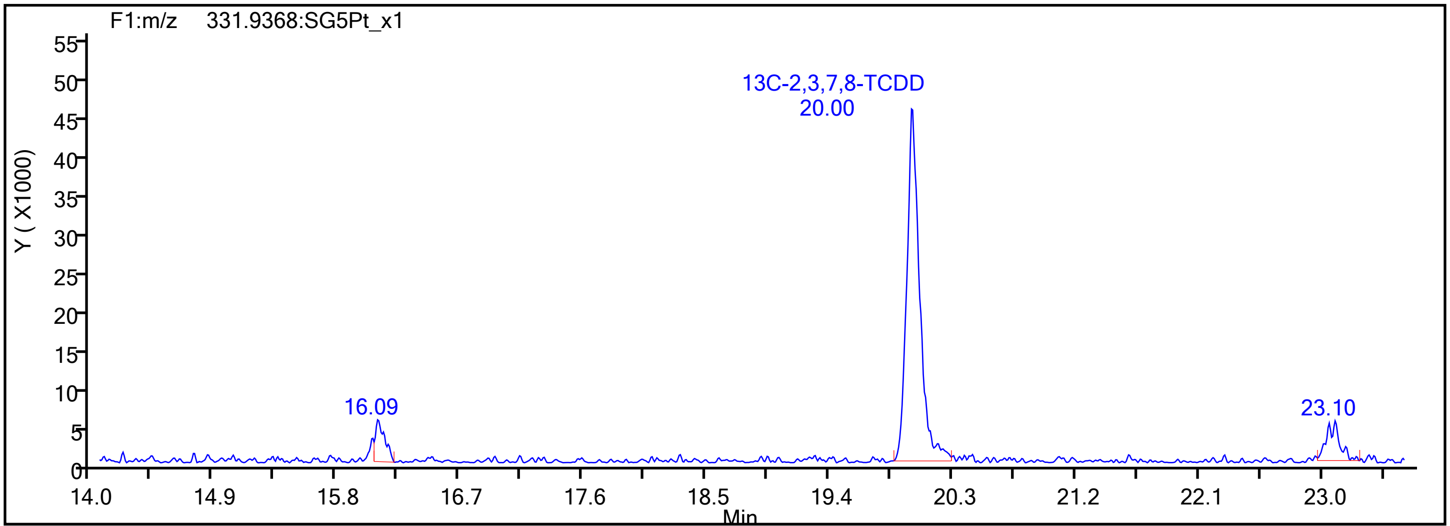

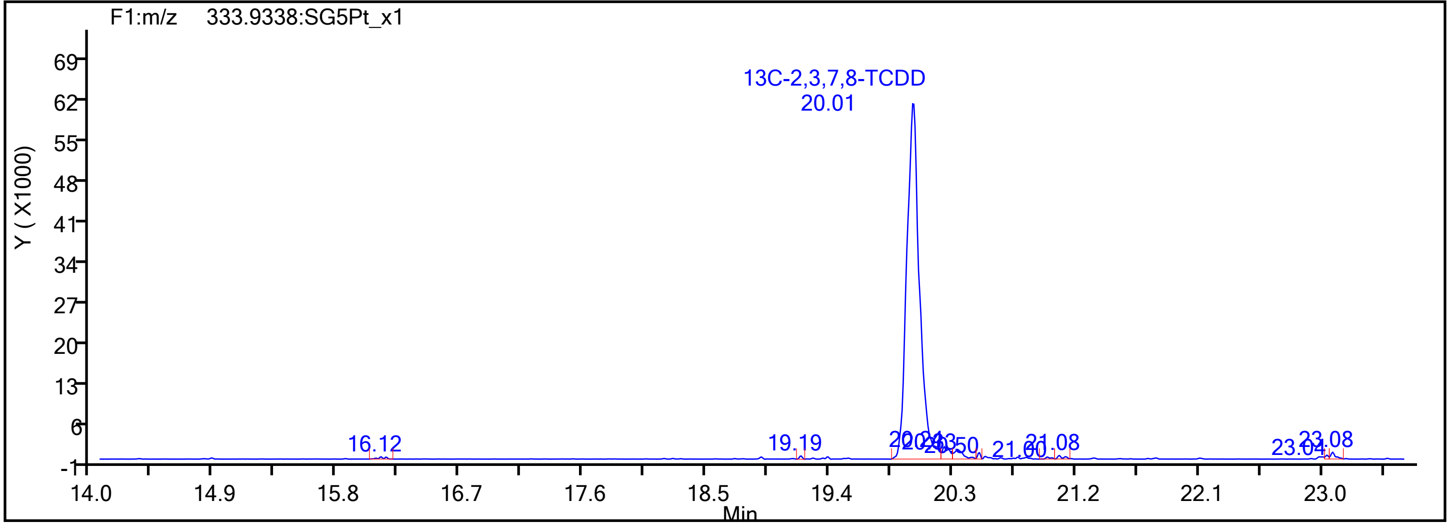

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

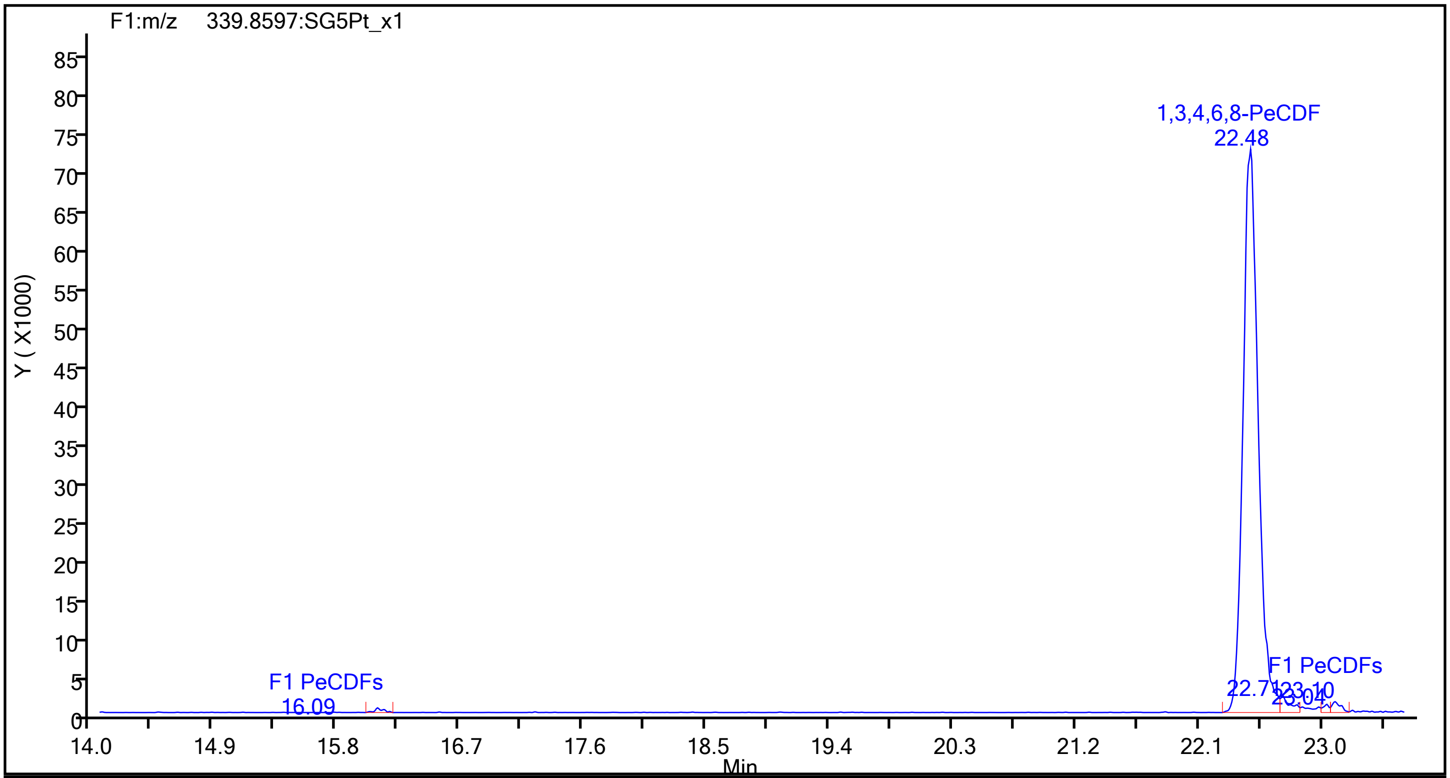

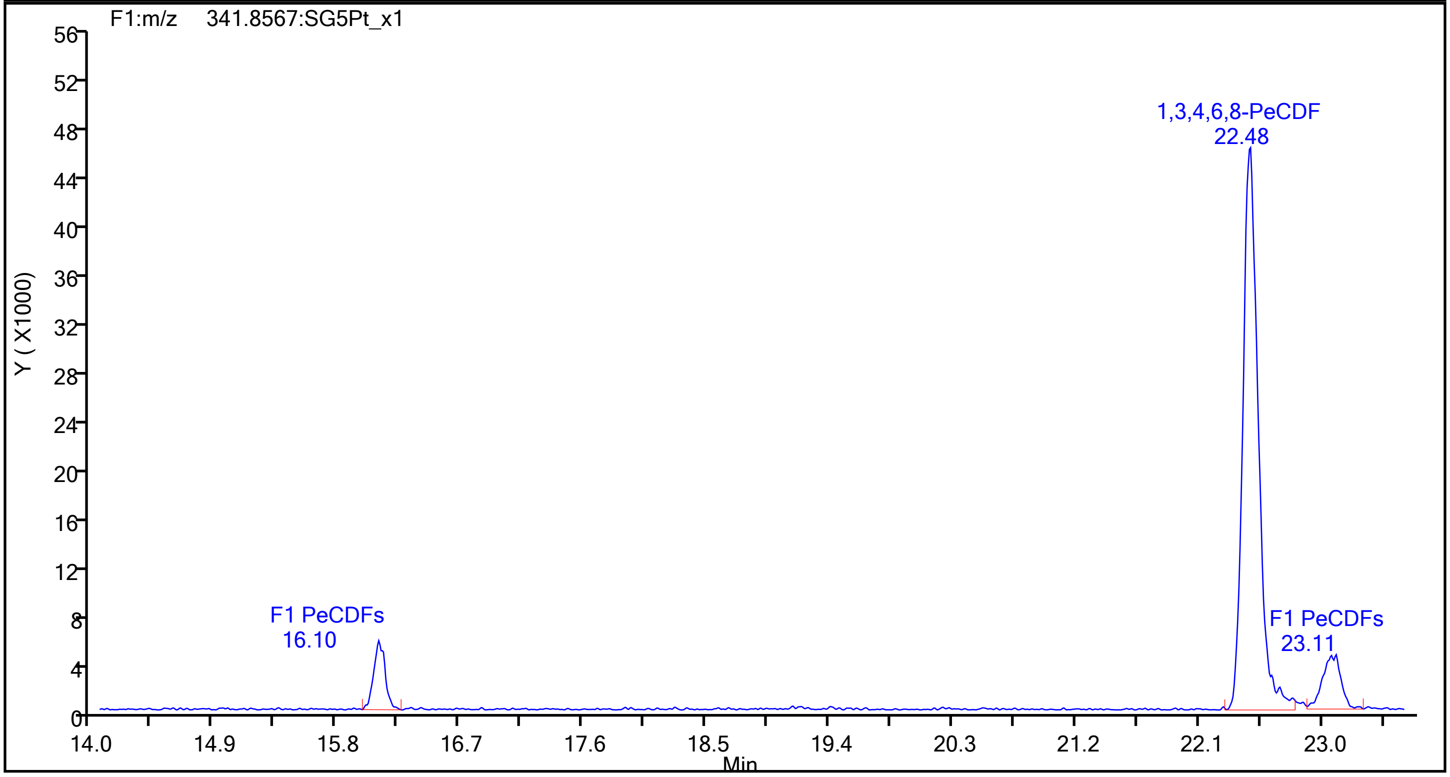

Report Date: 13-Oct-2020 10:45:53
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d
Injection Date: 12-Oct-2020 13:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

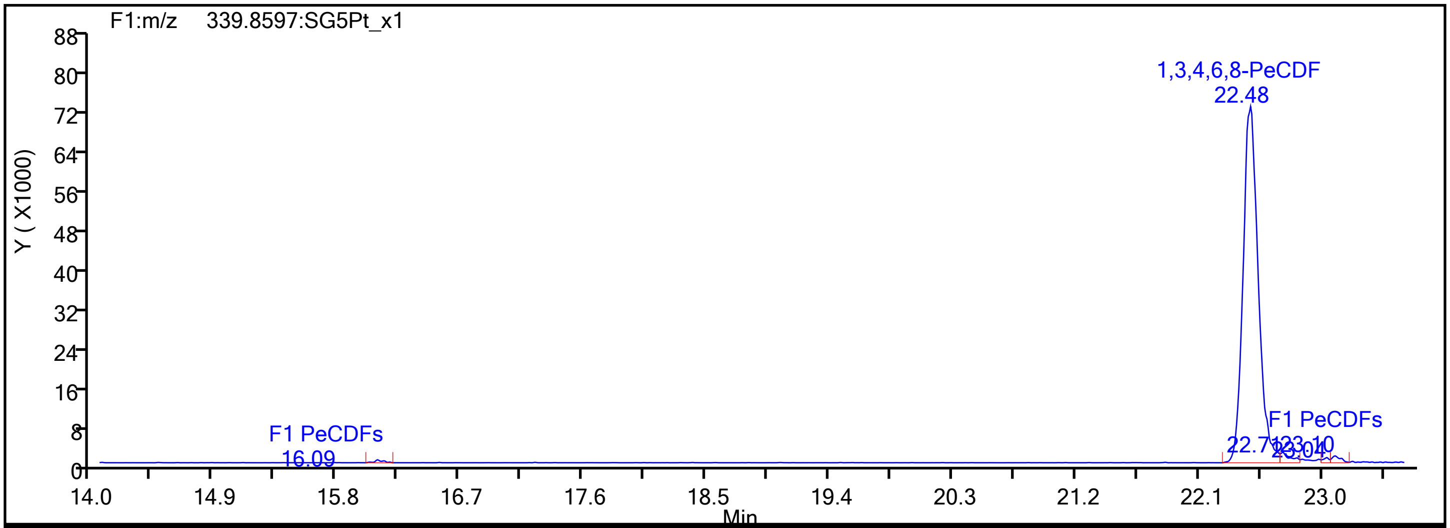

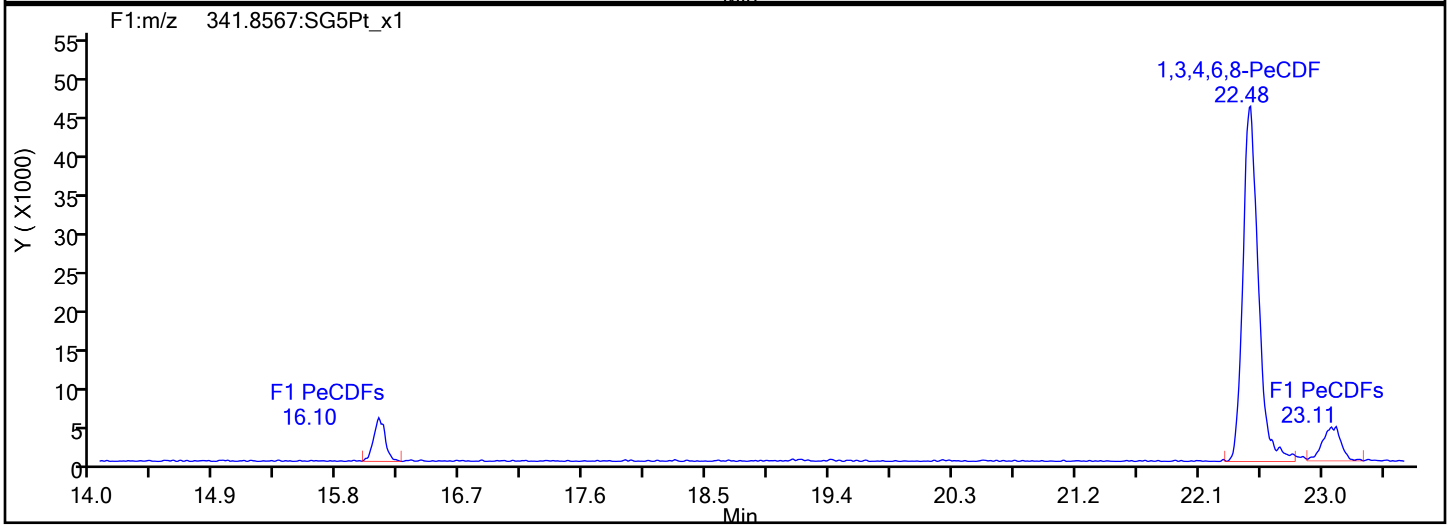

F1 PeCDFs Interference Mass

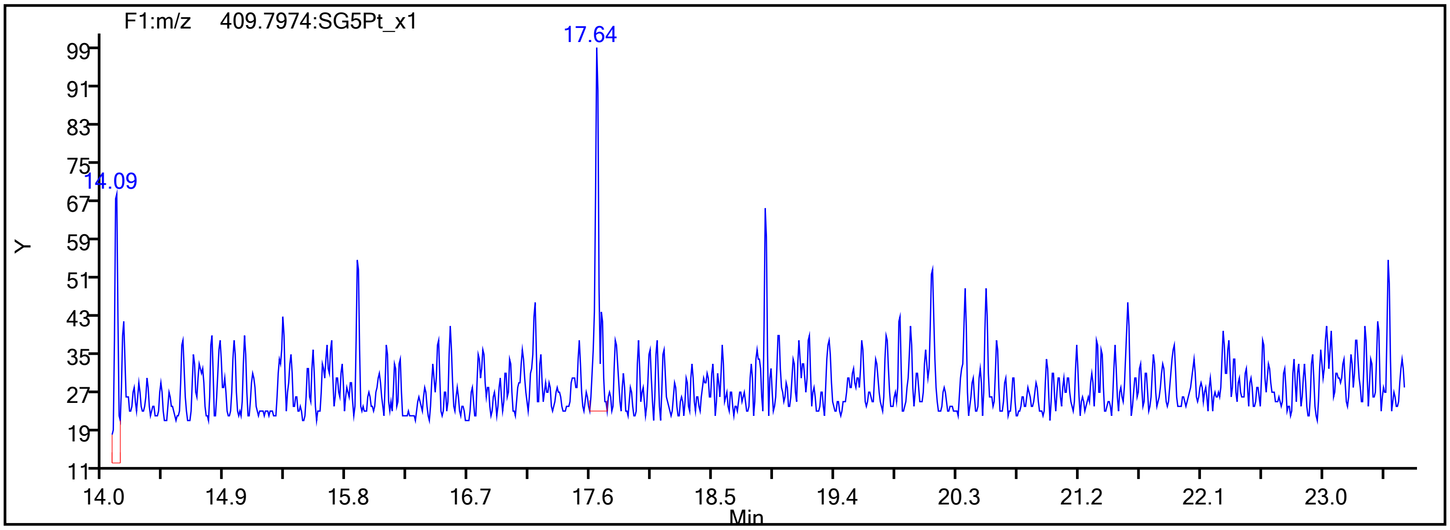

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

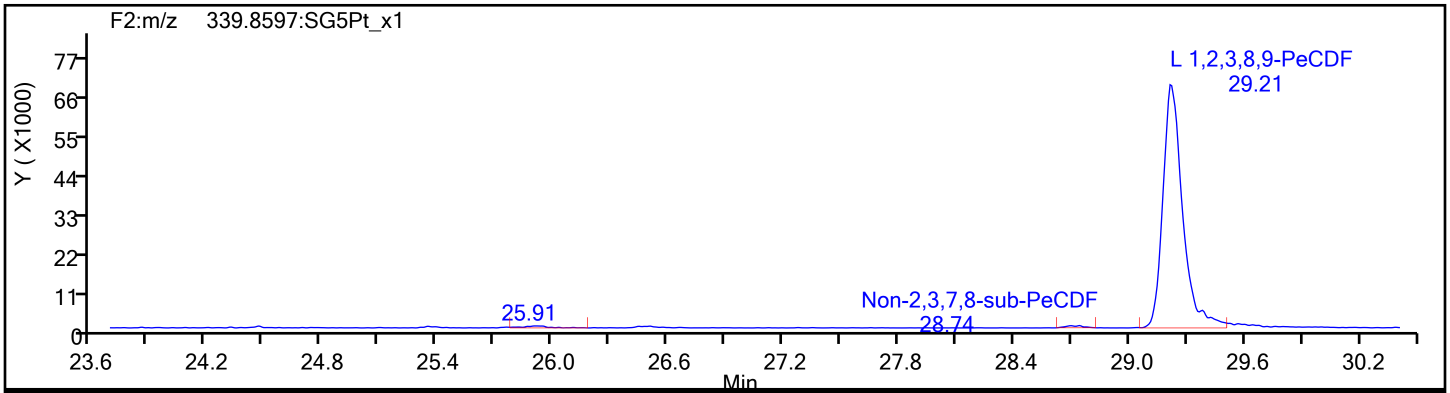

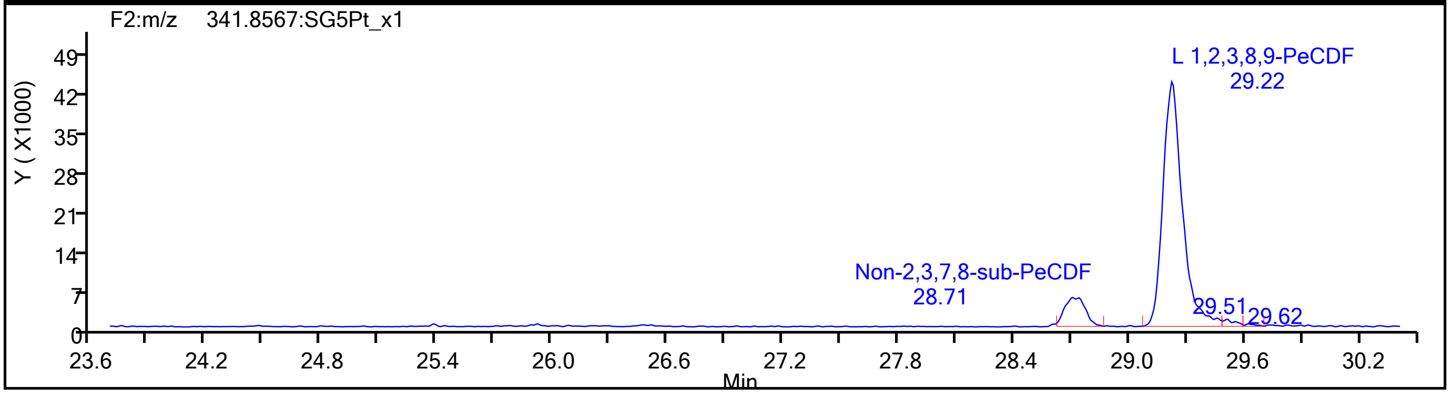

PeCDF Standards

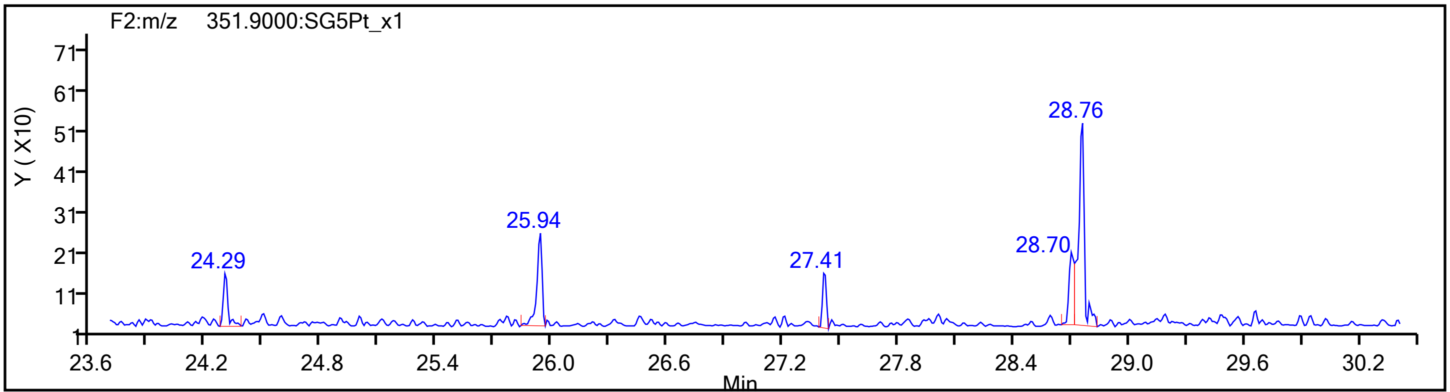

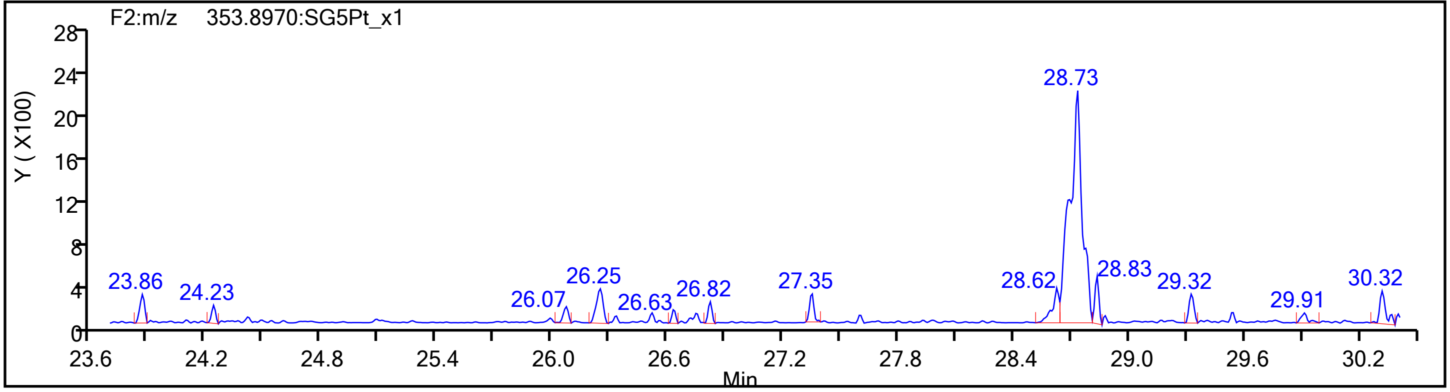

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d

Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

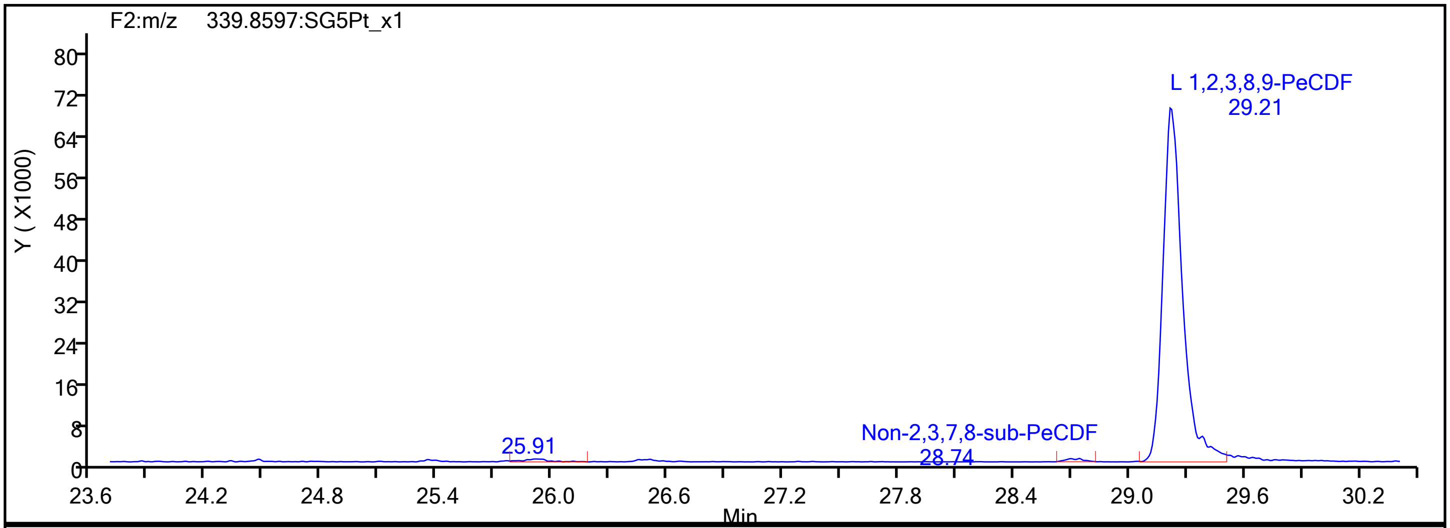

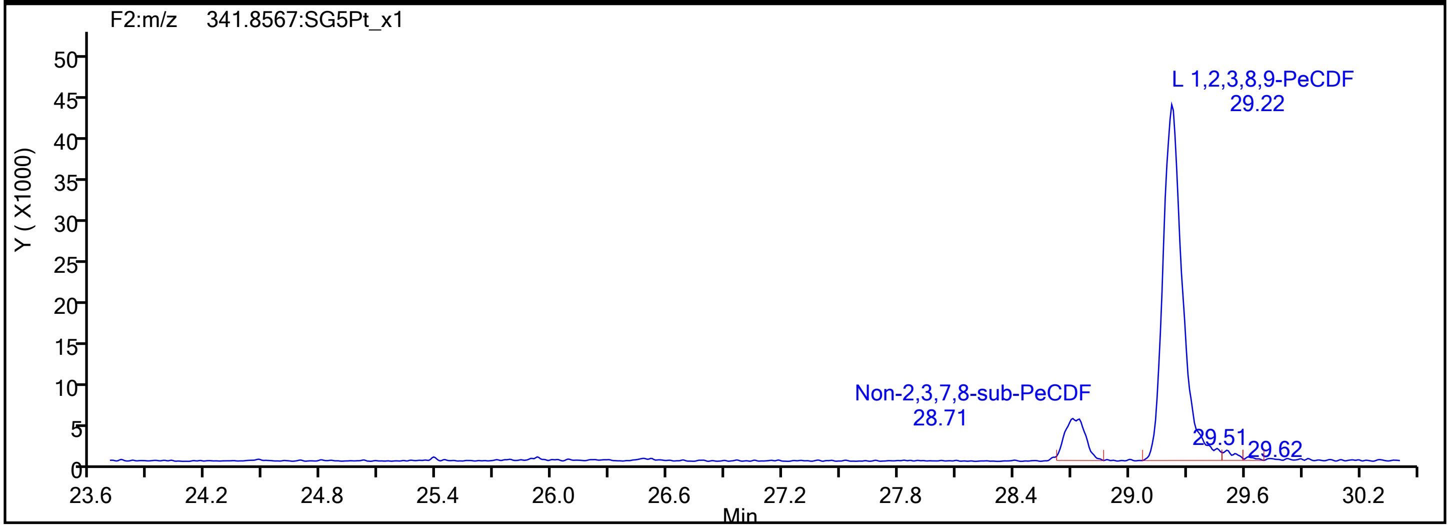

PeCDF Interference Mass

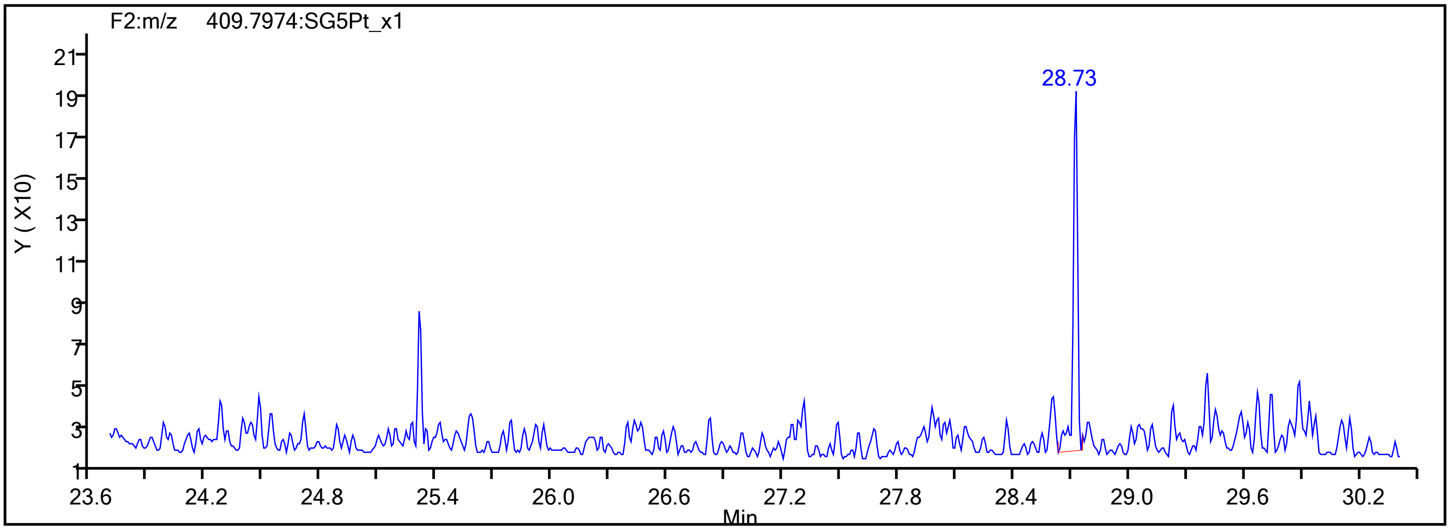

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

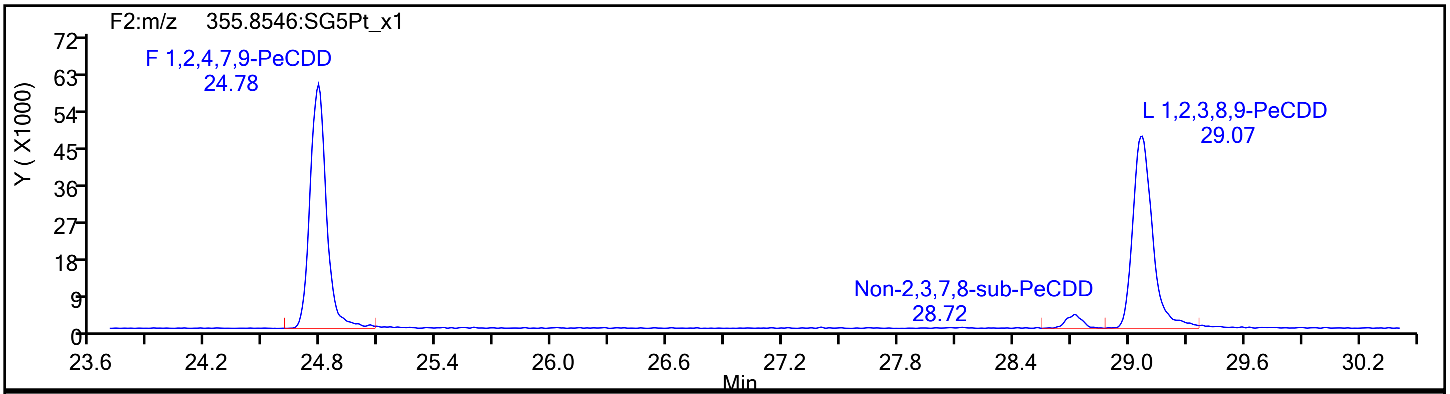

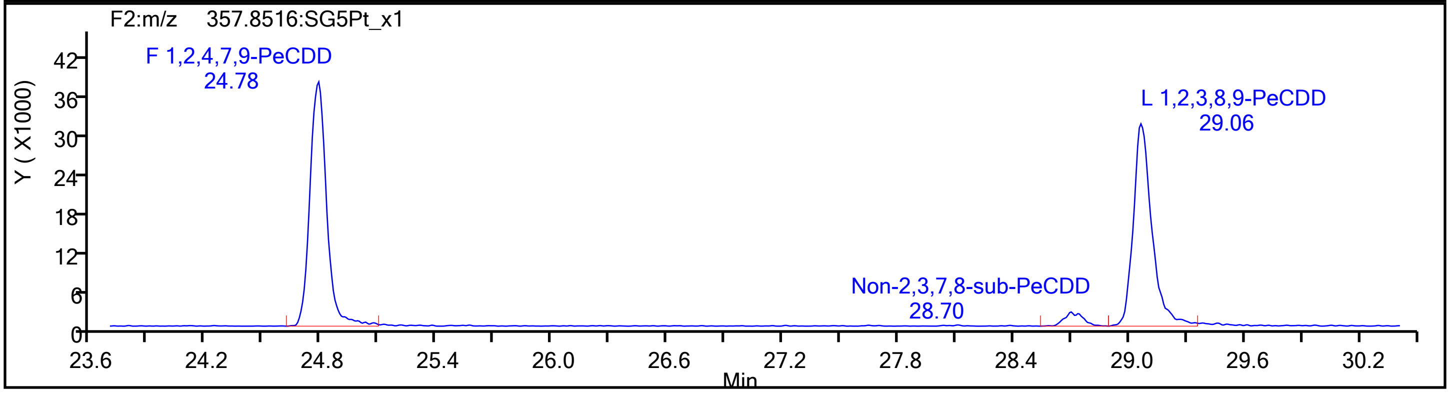

PeCDD Standards

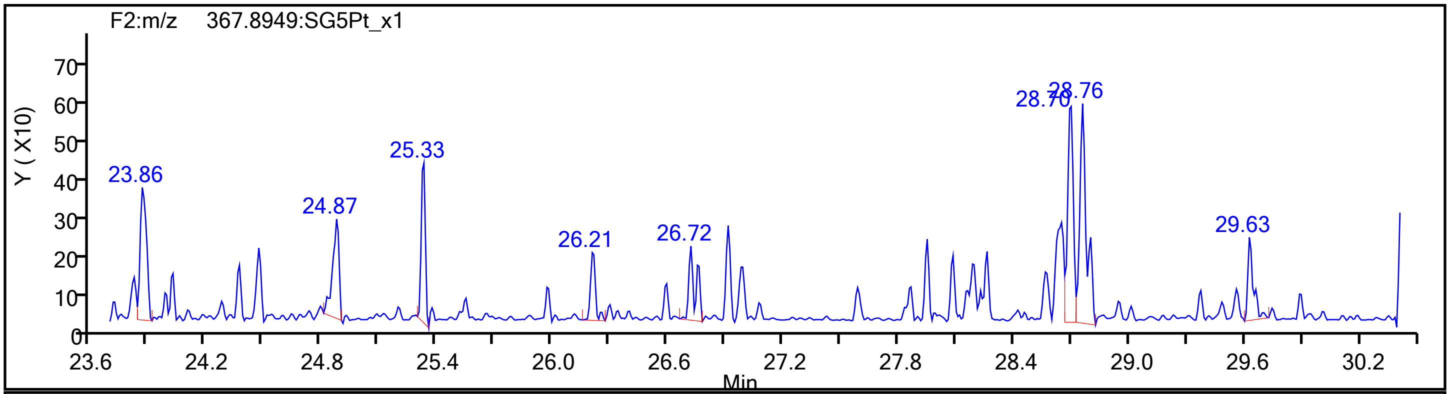

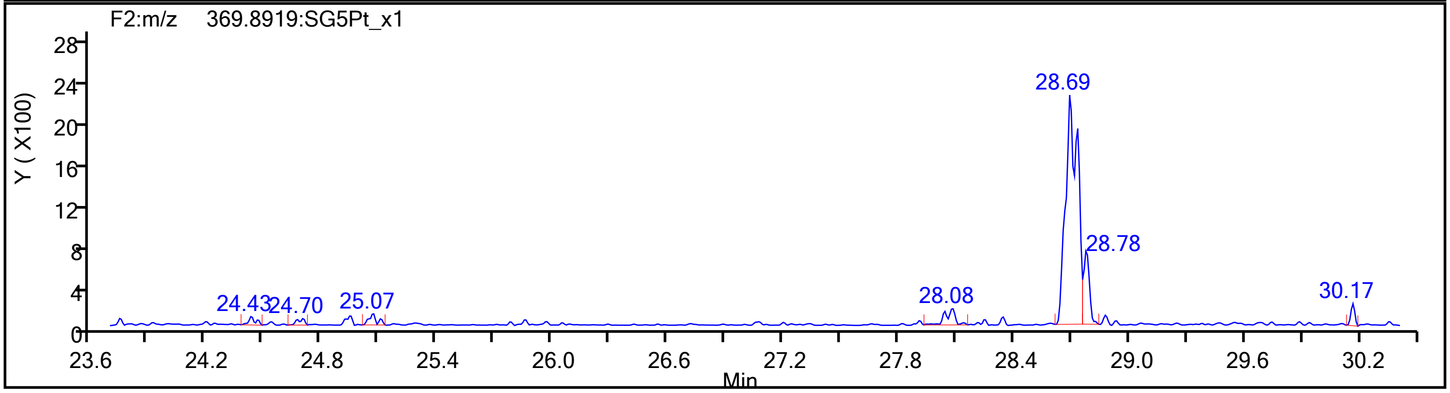

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d
Injection Date: 12-Oct-2020 13:15:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421107 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

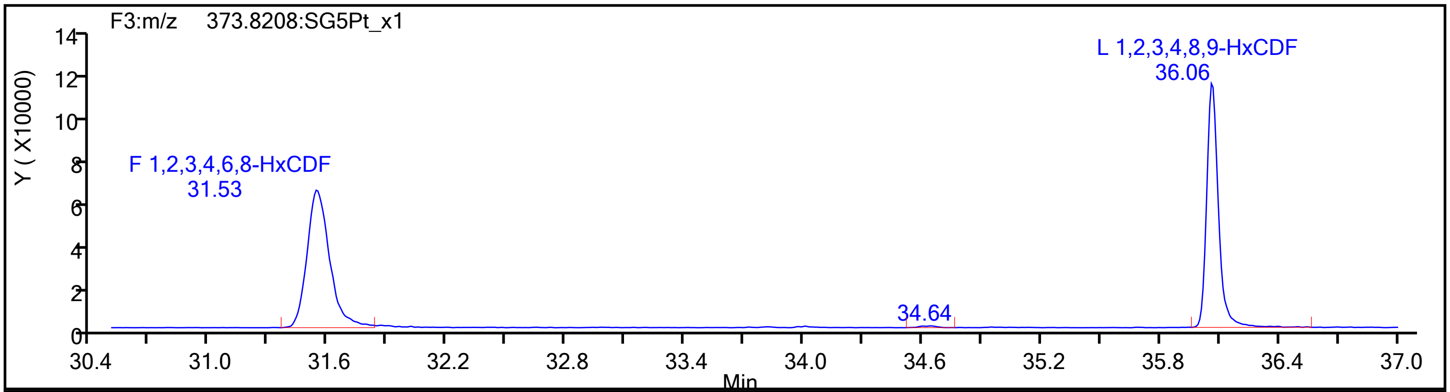

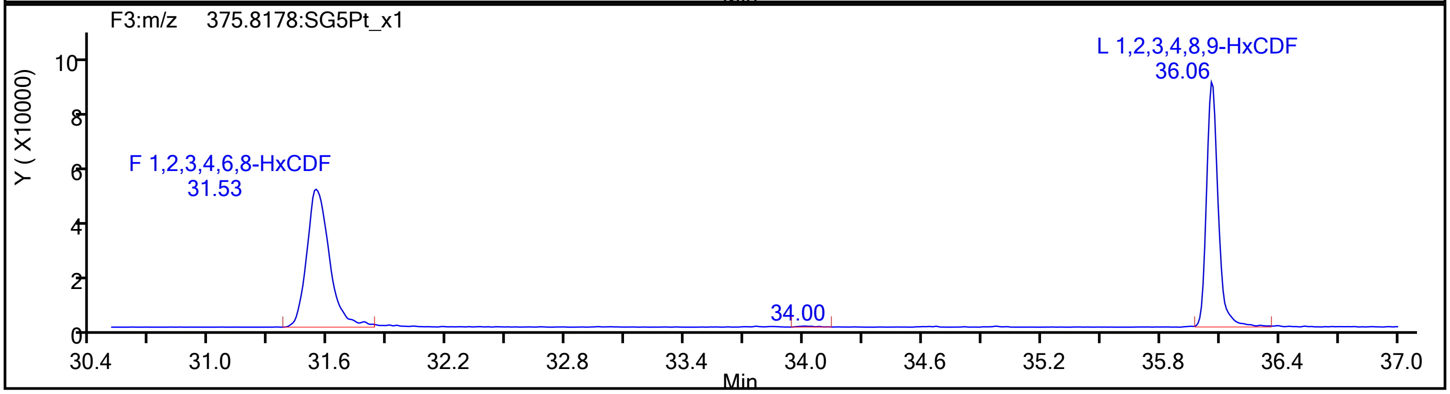

HxCDF Standards

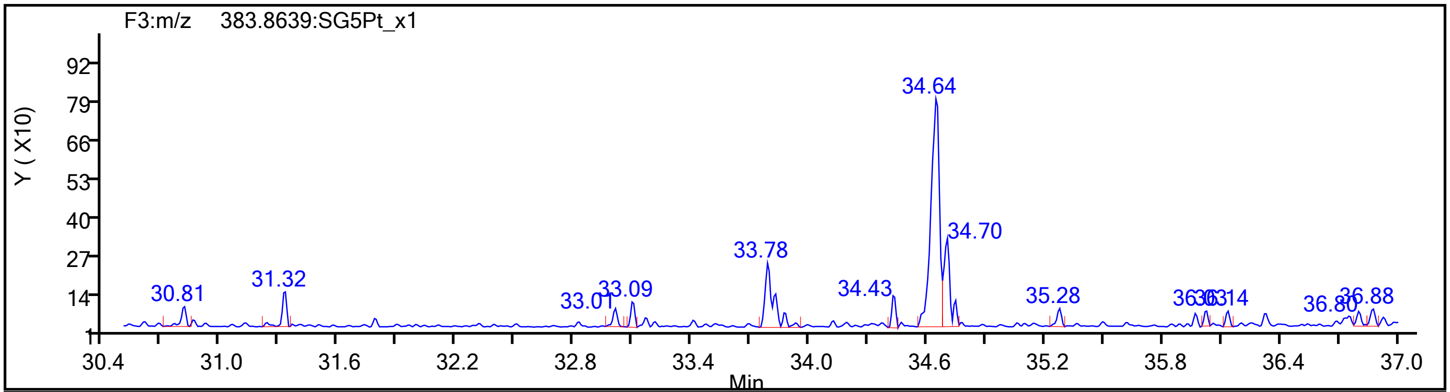

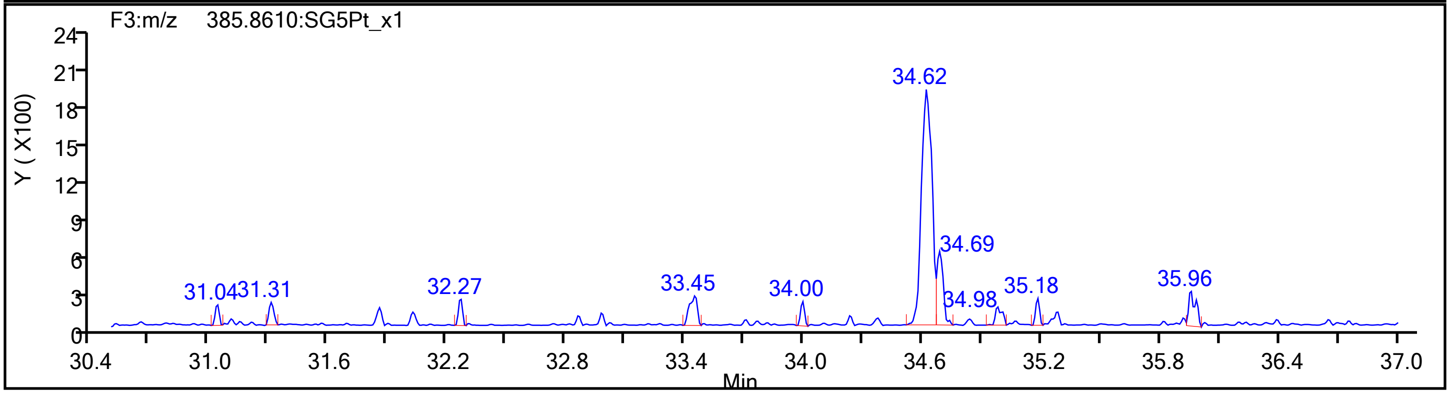

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

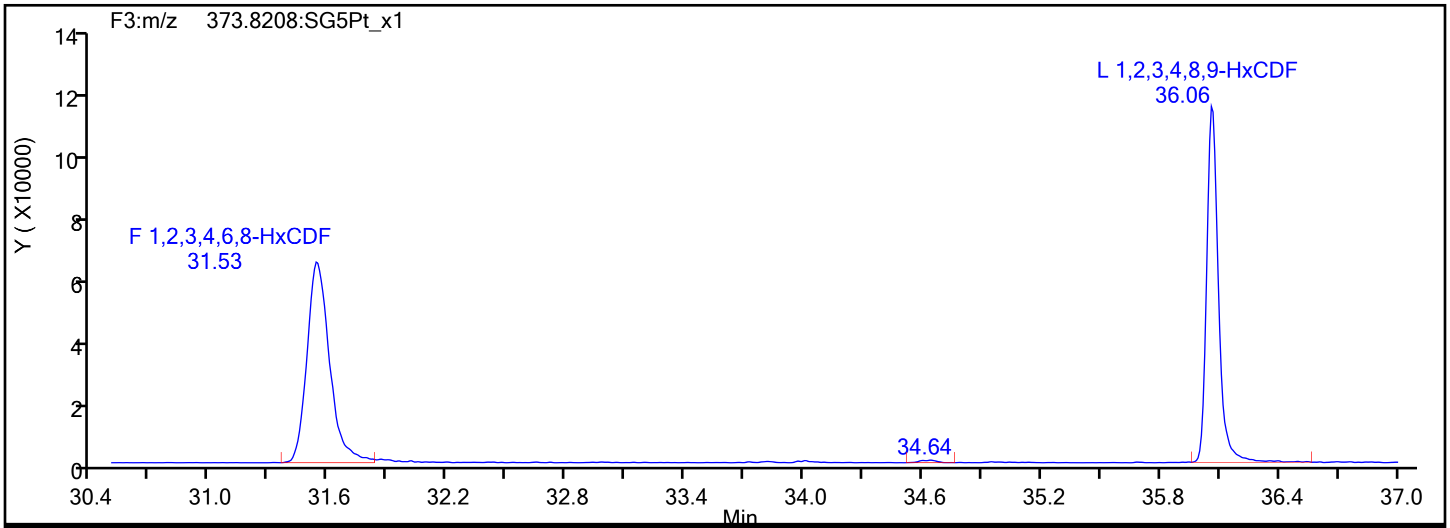

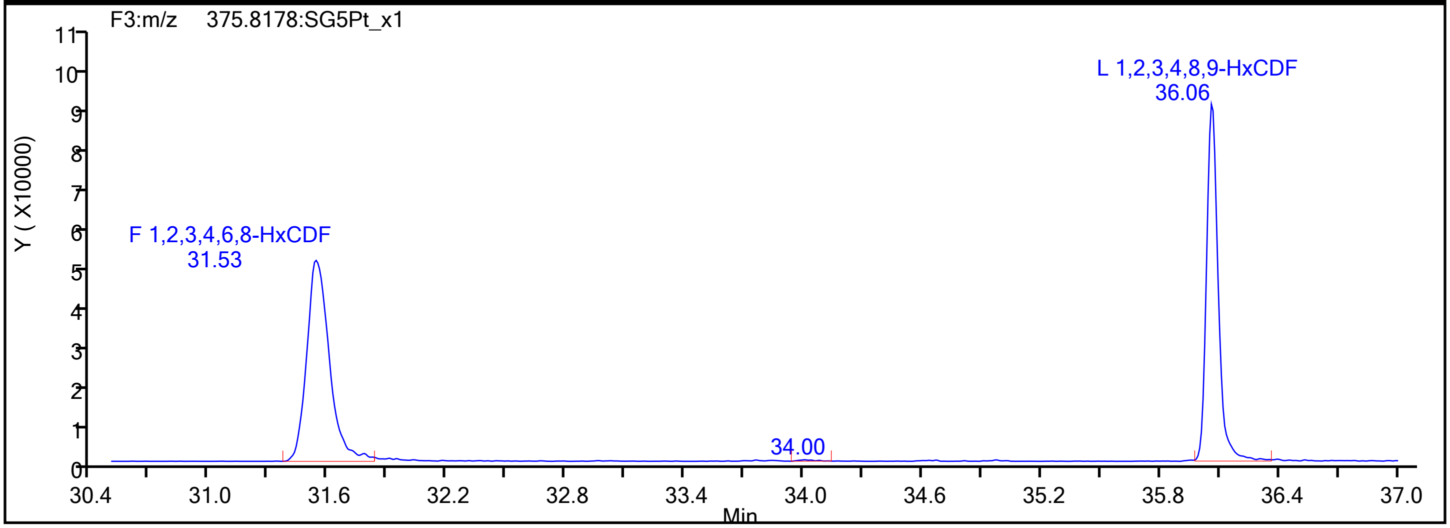

HxCDF Interference Mass

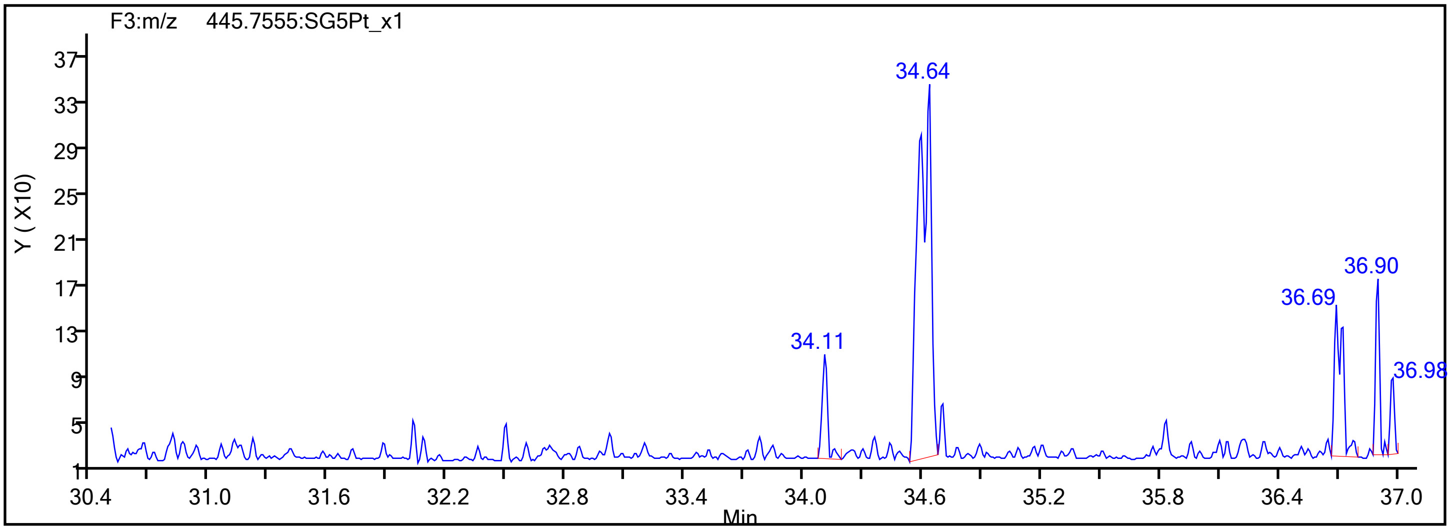

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

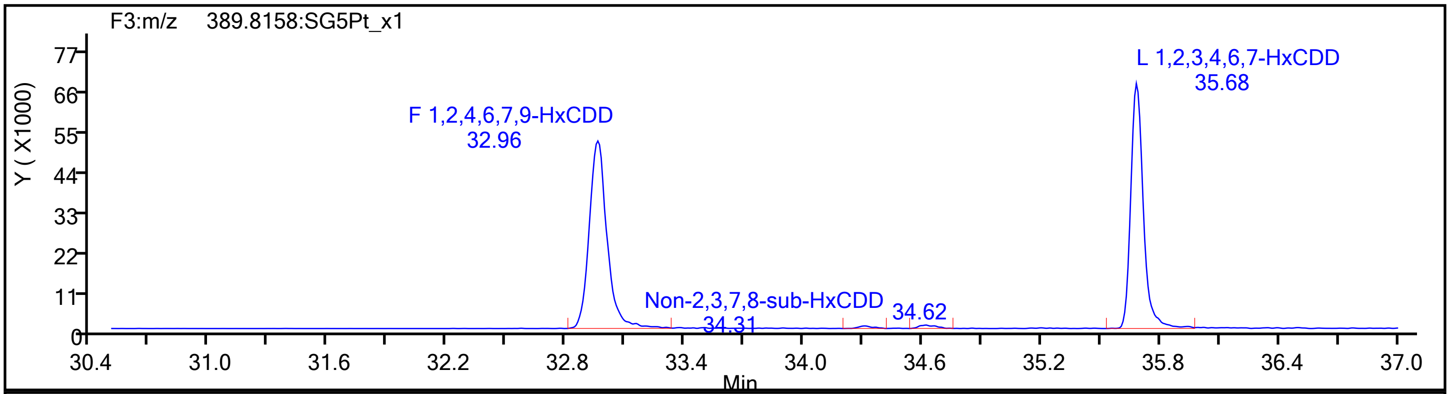

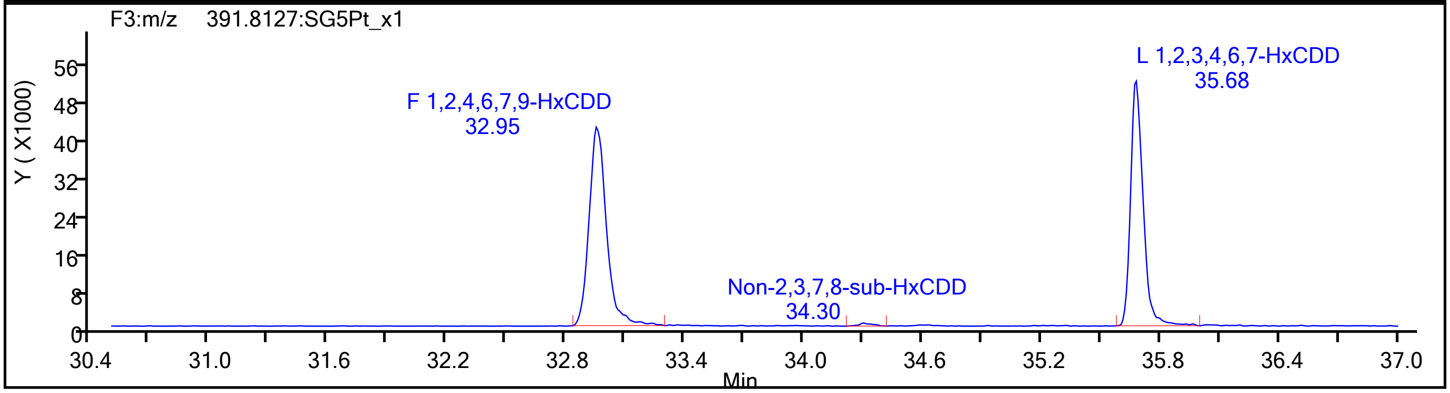

HxCDD Standards

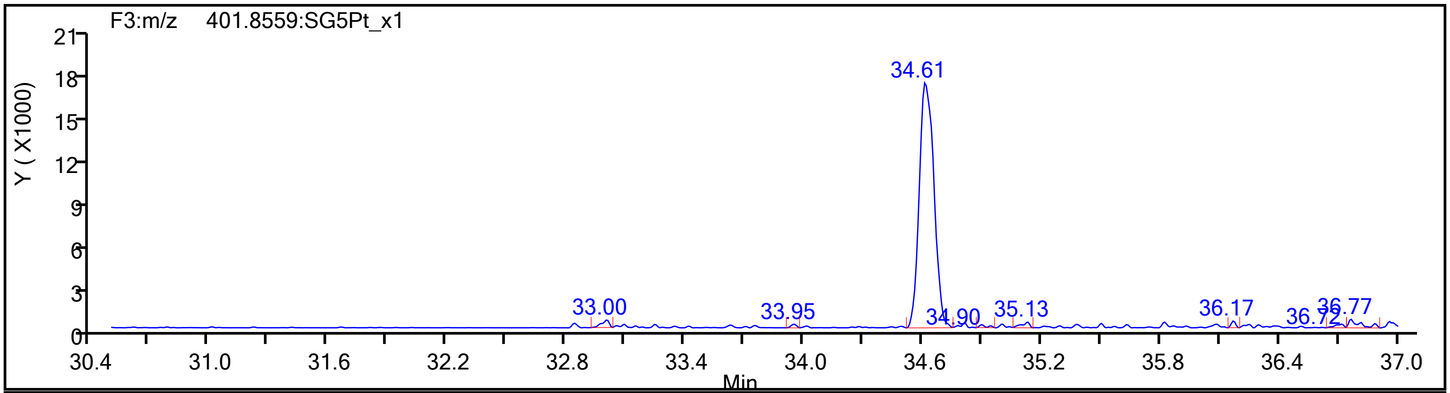

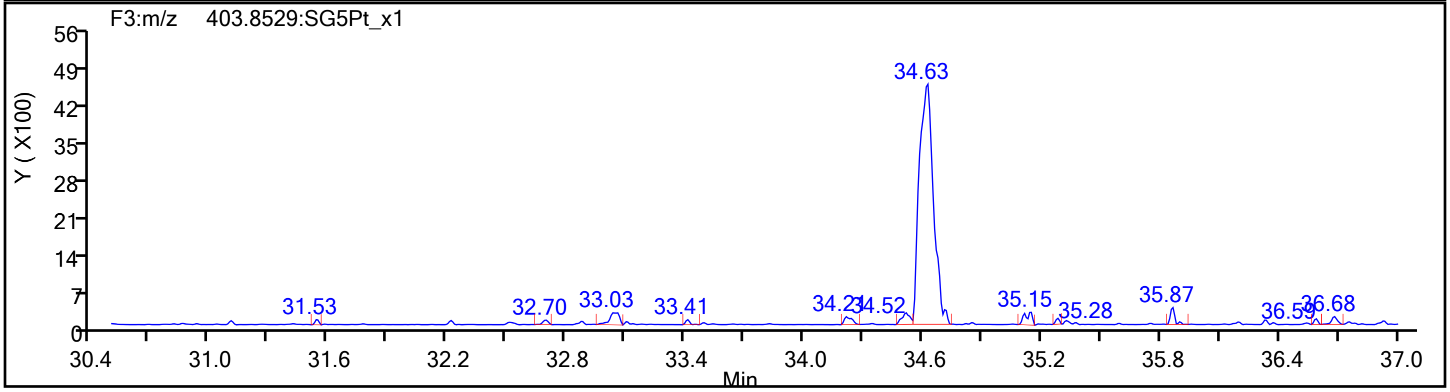

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

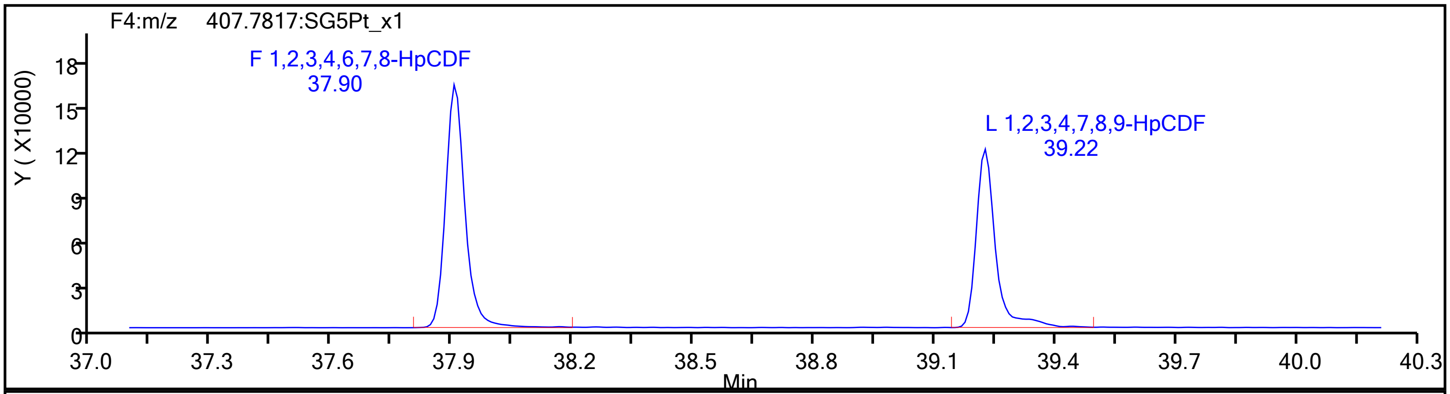

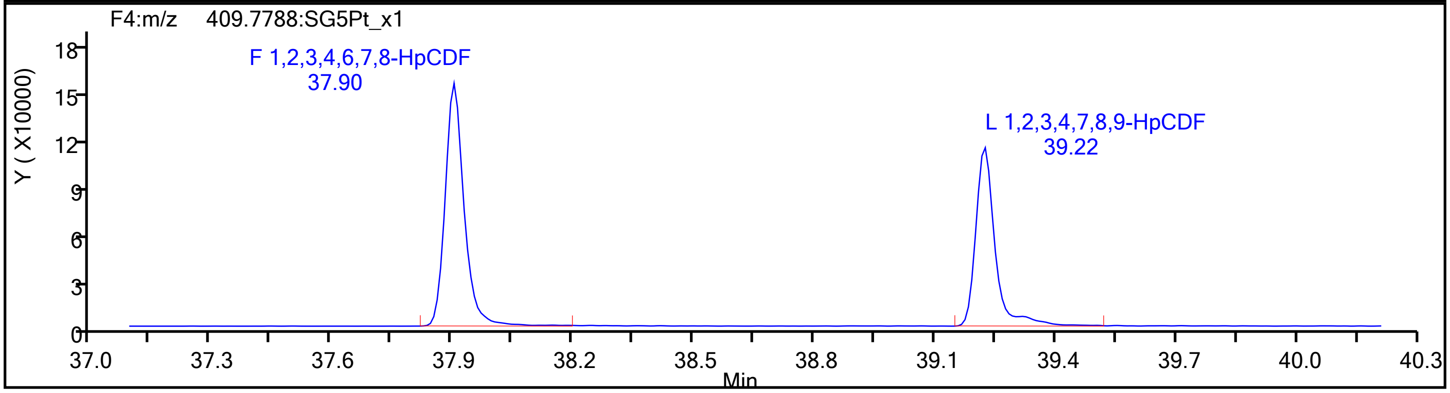

HpCDF Standards

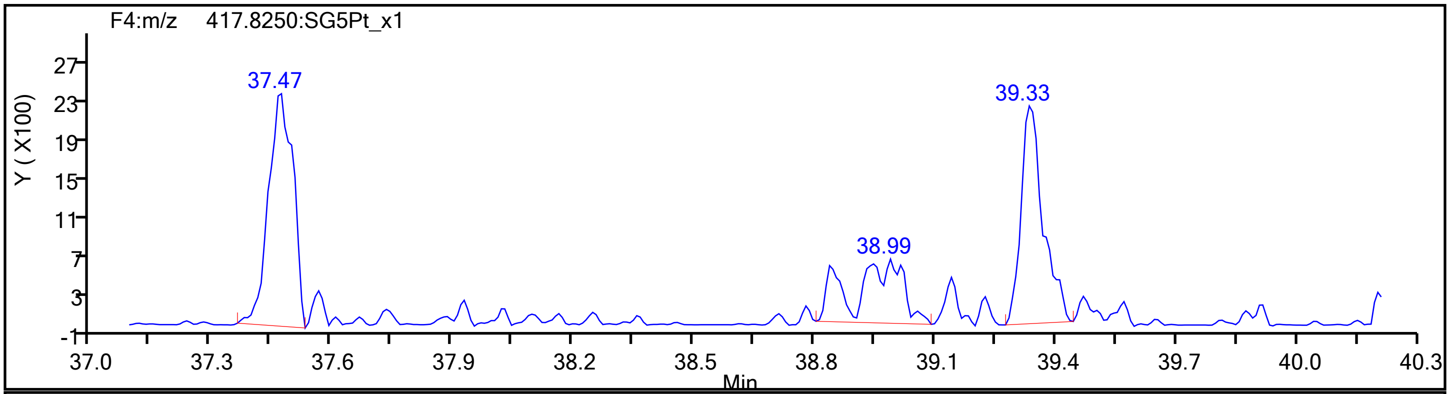

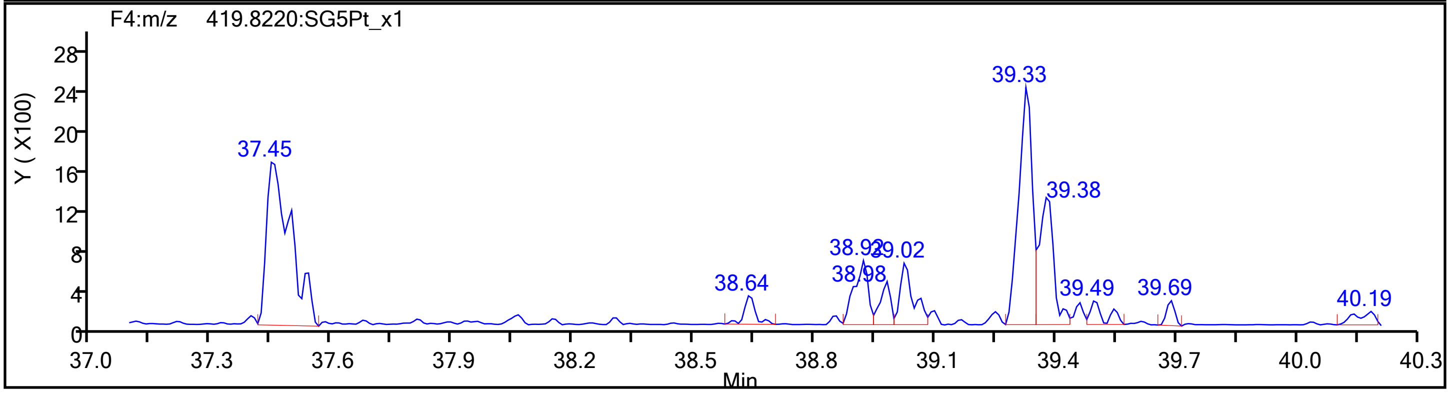

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d

Injection Date: 12-Oct-2020 13:15:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421107

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

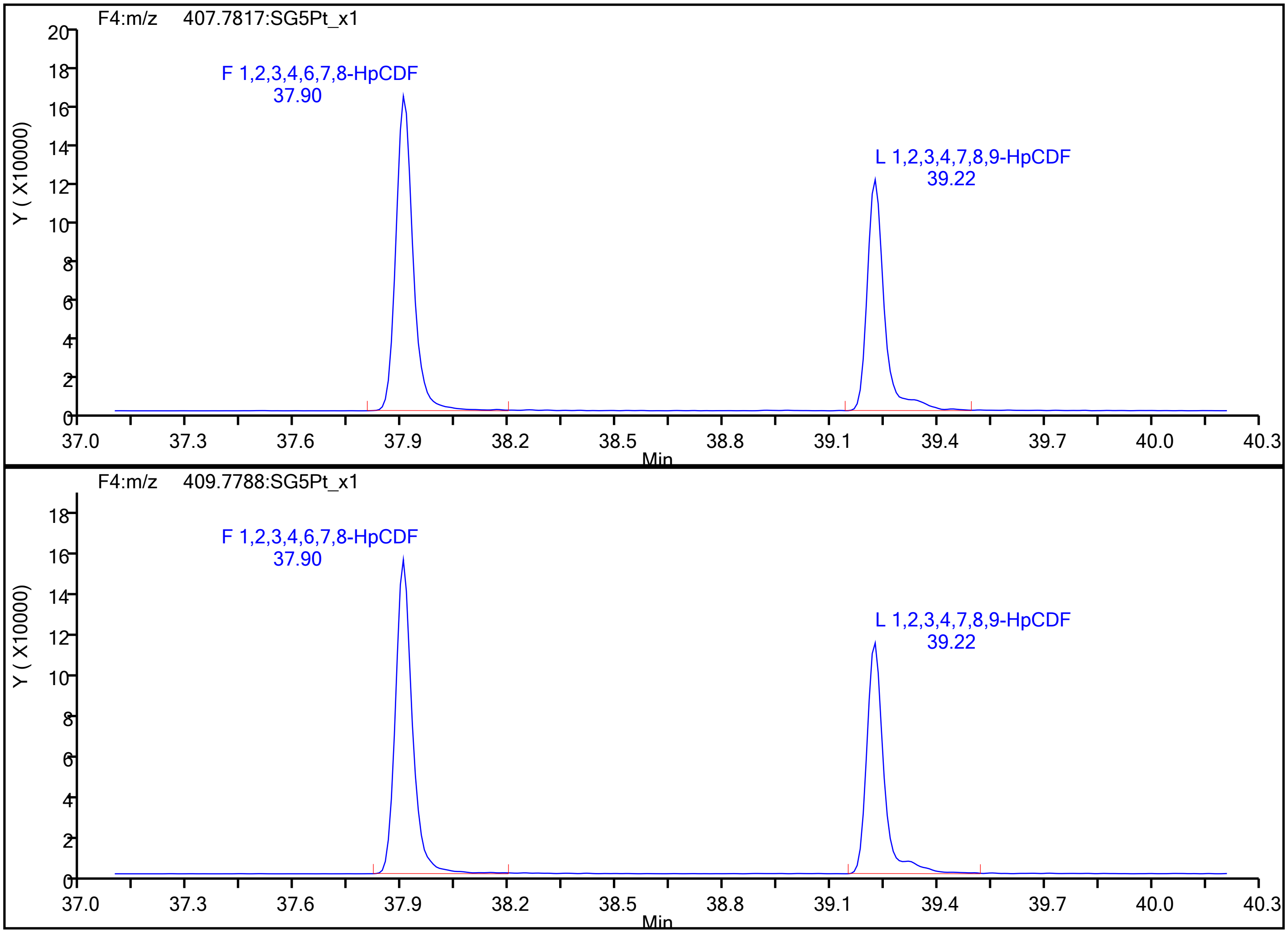

HpCDF Interference Mass

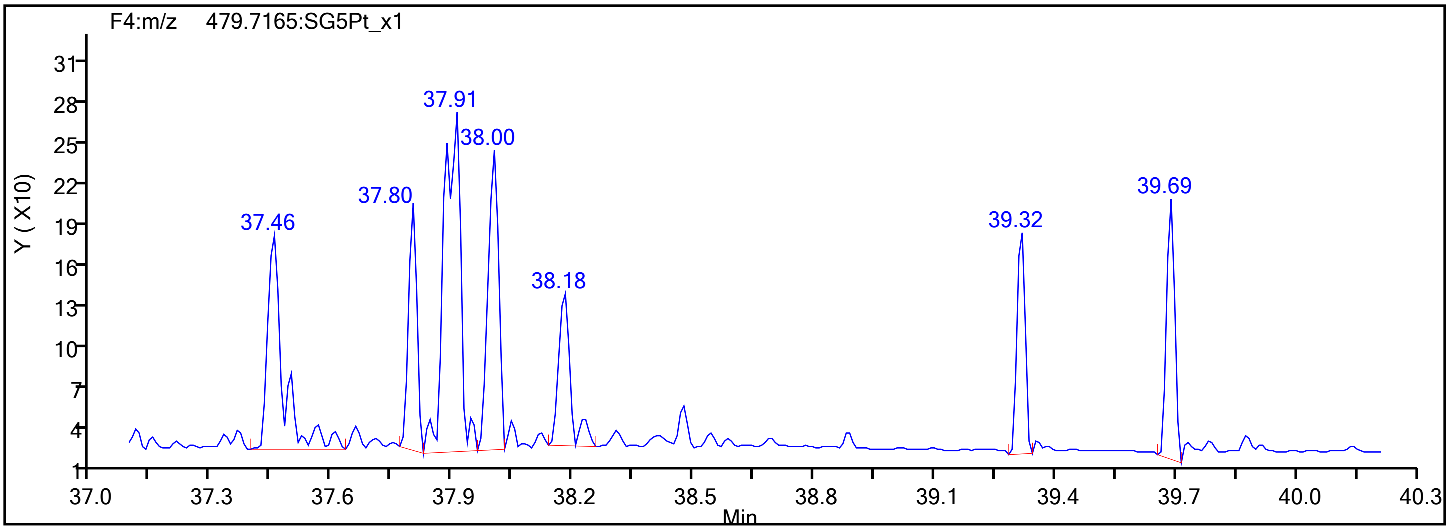

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Injection Date: 12-Oct-2020 13:15:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
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HpCDD

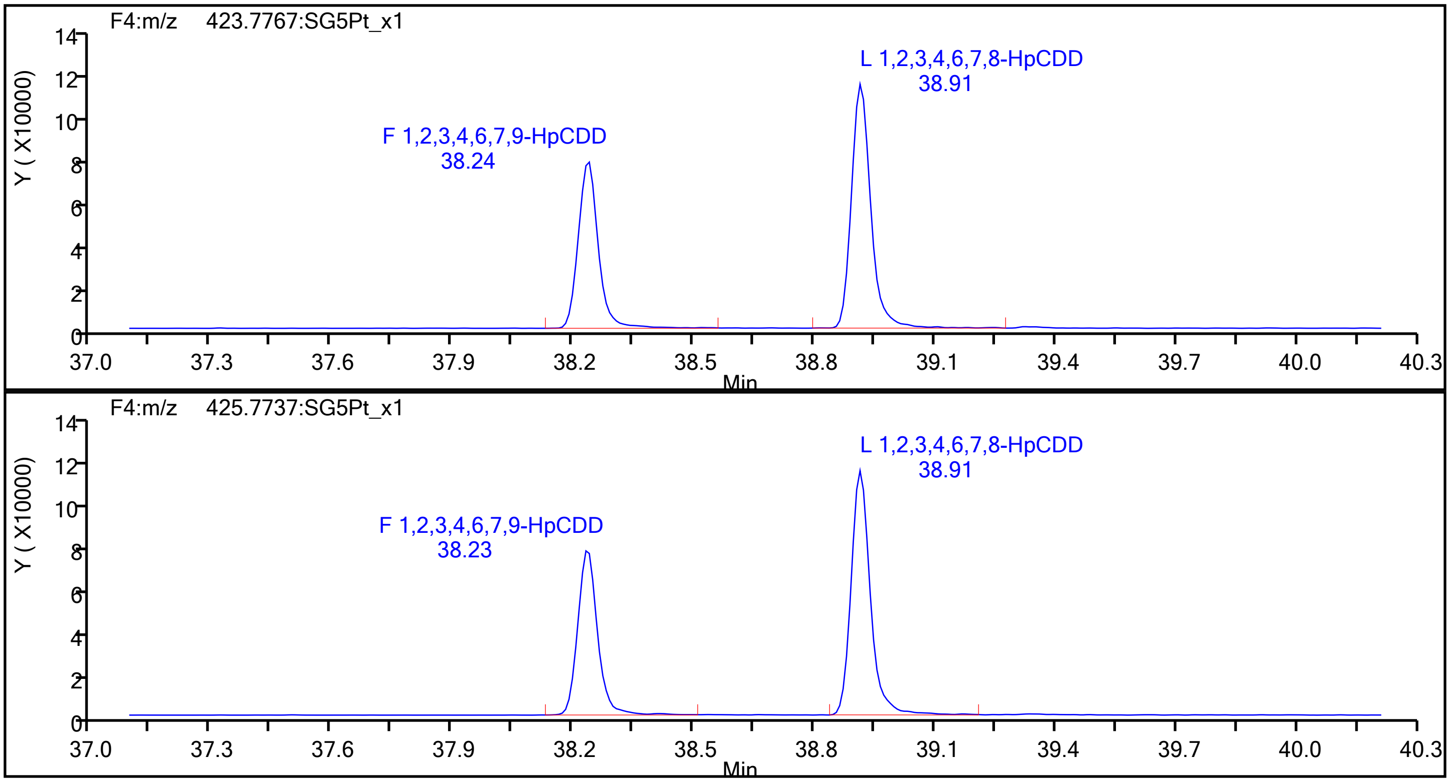

HpCDD Standards

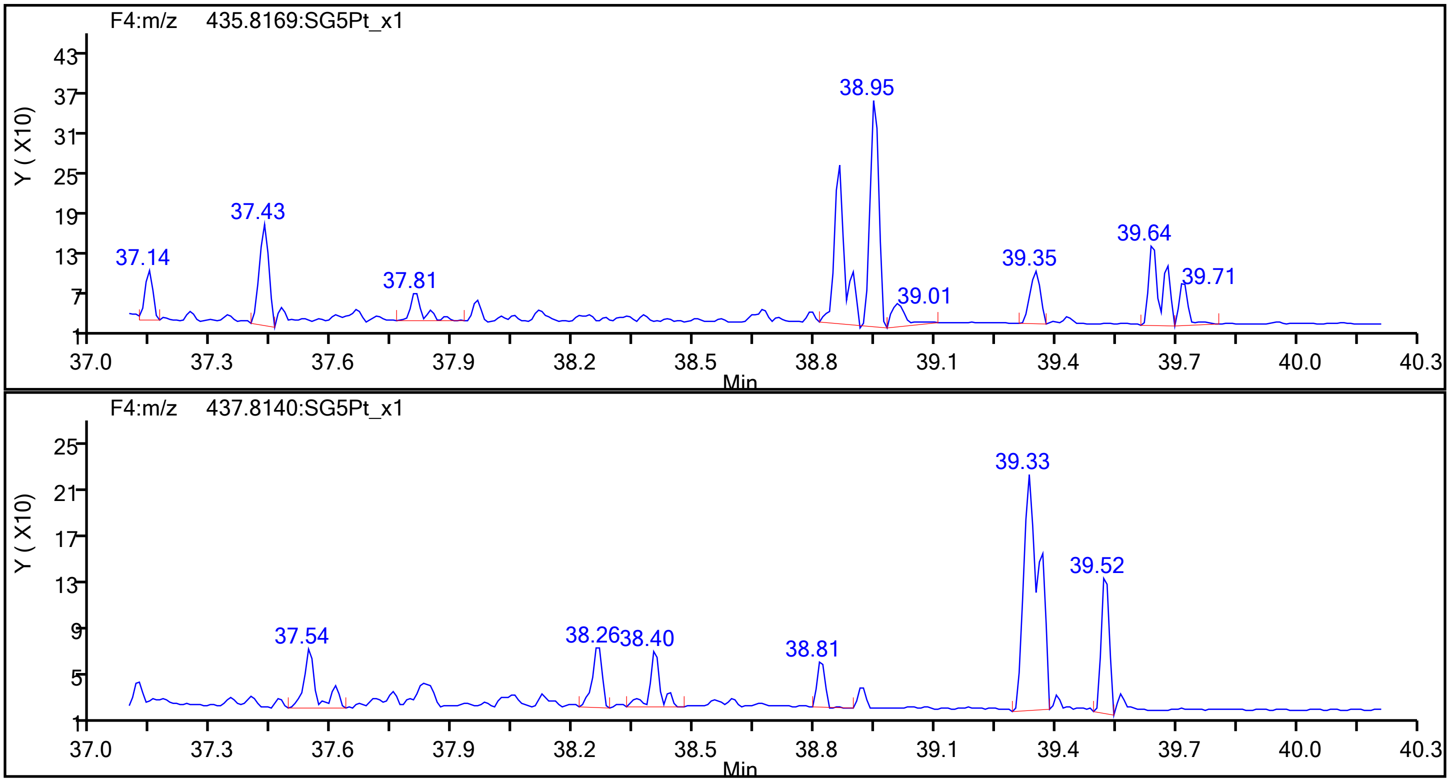

Report Date: 13-Oct-2020 10:45:53 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

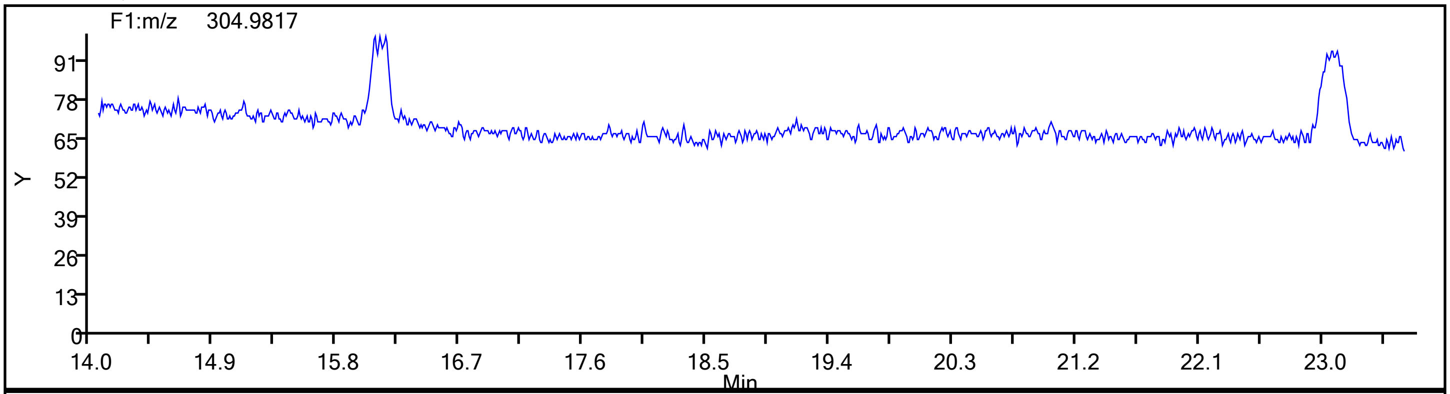

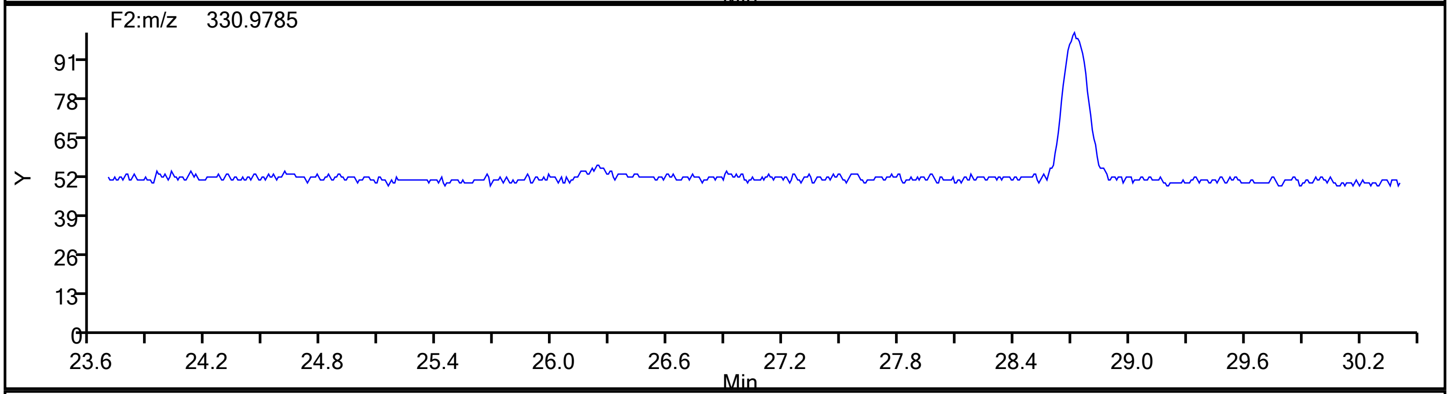

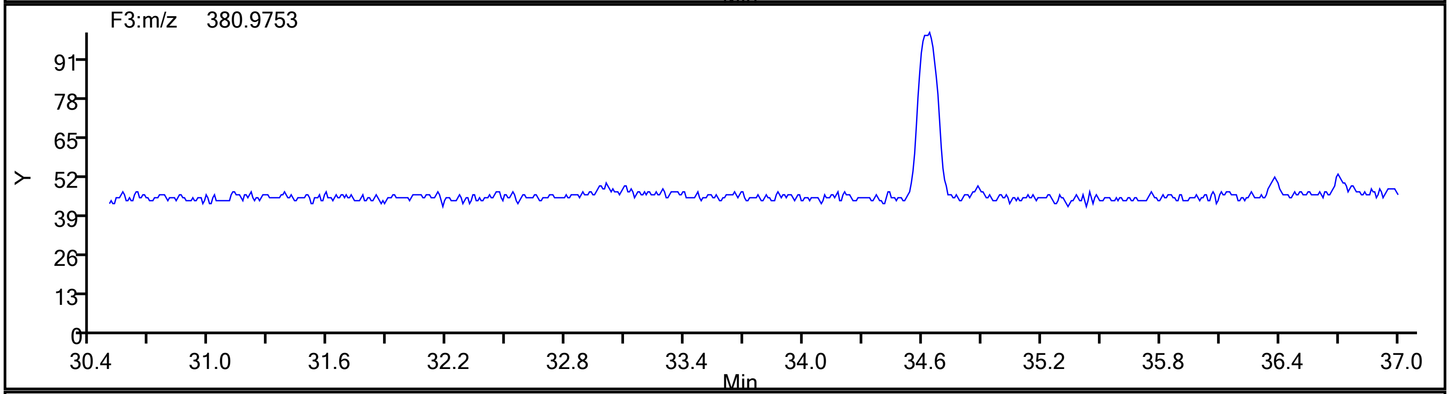

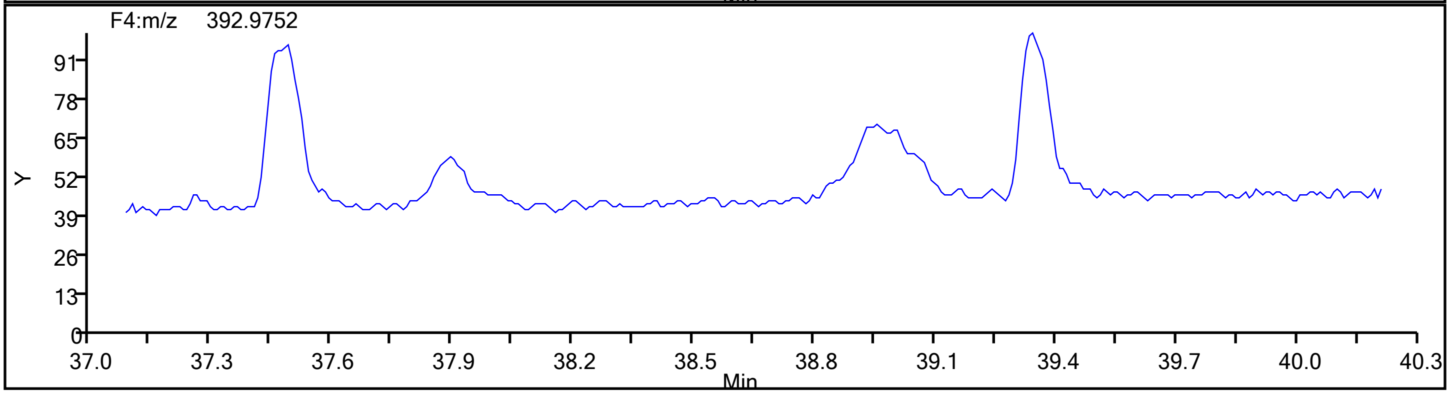

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201012-105247.b\12oc20dfs1_2.d

Injection Date:	12-Oct-2020 13:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421107	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

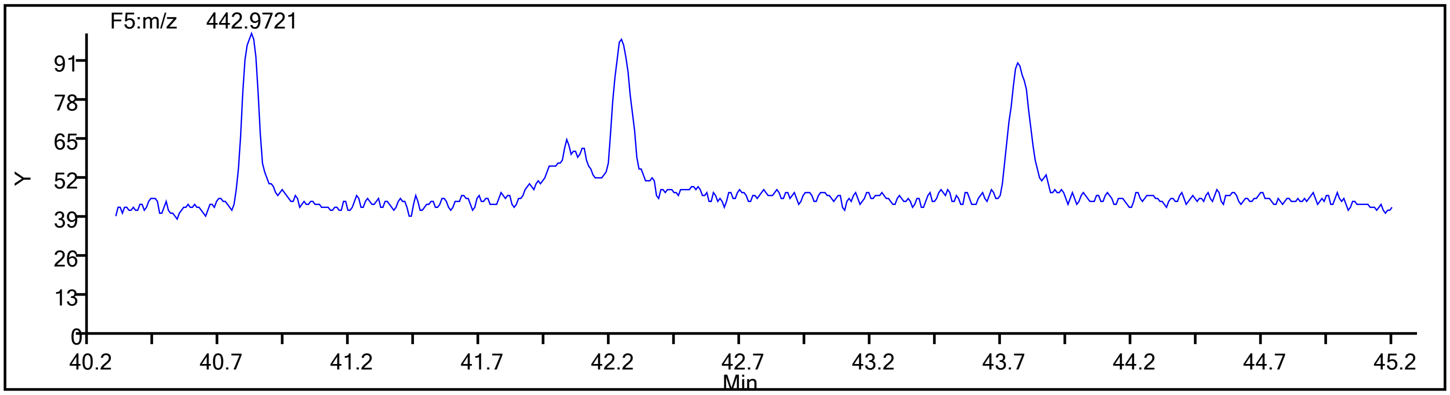

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	15-Oct-2020 12:21:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00042				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	16-Oct-2020 10:28:42	Calib Date:	17-Sep-2020 16:30:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1619				

First Level Reviewer: shardaa Date: 16-Oct-2020 09:49:24

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	18.711	1400894	0.82	1.5883					0.00	
2,3,7,8-TCDF	18.745	3208255	0.81	1.0857	84.4	84.4	0.4020	0.4020		
A Non-2,3,7,8-sub-TCDF	18.294						0.4020	0.4020		
S Total TCDF					84.4	84.4	0.4020	0.4020		
D 13C-2,3,7,8-TCDD	19.948	845391	0.83	1.1194					0.00	
2,3,7,8-TCDD	19.965	990106	0.79	1.0810	43.3	43.3	0.3143	0.3143		
A Non-2,3,7,8-sub-TCDD	19.080						0.3143	0.3143		
S Total TCDD					43.3	43.3	0.3143	0.3143		
A F1 PeCDFs	22.995	2400	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	26.447	20902	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	26.883						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	33.770	6038	1.24	0.0000						RQ
S Total HxCDF										RQ
A Non-2,3,7,8-sub-HxCDD	34.296	11451	1.06	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	37.899	1092303	1.06	1.5064						
1,2,3,4,7,8,9-HpCDF	39.221	911335	1.04	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.560						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	38.909	679656	1.05	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.785	2134645	0.79							
1,3,6,8-TCDD	16.271	1058065	0.80							
2,3,4,7-TCDF	18.745	3208255	0.81							
1,2,3,7-TCDD	19.784	781808	0.76							
1,2,3,9-TCDF	20.145	1349096	0.81							
1,2,3,9-TCDD	20.240	1022333	0.80							
1,2,8,9-TCDF	21.803	1362846	0.80							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	21.889	392393								
1,3,4,6,8-PeCDF	22.413	1167510	1.57							
1,2,4,7,9-PeCDD	24.739	728825	1.55							
1,2,3,8,9-PeCDD	29.026	683183	1.57							
1,2,3,8,9-PeCDF	29.178	941986	1.59							
1,2,3,4,6,8-HxCDF	31.488	1022402	1.29							
1,2,4,6,7,9-HxCDD	32.928	676700	1.25							
1,2,3,4,6,7-HxCDD	35.665	684693	1.26							
1,2,3,4,8,9-HxCDF	36.052	986592	1.28							
1,2,3,4,6,7,9-HpCDD	38.227	739377	1.04							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 15-Oct-2020 12:21:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 10:28:42 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: shardaa Date: 16-Oct-2020 09:49:24

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	18.711	18.711	0	1.000	630152	97347	672	1680	145		
317.9389	18.711	18.711	0	1.000	770742	132434	287	717	461	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.745	18.745	0	1.002	1435338	210275	421	1052	499		
305.8987	18.745	18.745	0	1.002	1772917	253657	582	1455	436	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.294						421	1052			
305.8987	18.294						582	1455			
13C-2,3,7,8-TCDD											
331.9368	19.948	19.948	0	1.000	382428	56954	270	675	211		
333.9338	19.948	19.948	0	1.000	462963	68445	65	162	1053	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.965	19.965	0	1.001	435438	65026	223	557	292		
321.8936	19.965	19.965	0	1.001	554668	78987	203	507	389	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.080						223	557			
321.8936	19.080						203	507			
A F1 PeCDFs											RQ
339.8597	23.083	22.995	5	1.000	1459	305	47	117	6		
341.8567	23.075	22.995	5	1.000	5481	563	48	120	12	0.27(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.884	26.447	-34	1.000	7879	660	107	267	6		
341.8567	25.876	26.447	-34	1.000	4649	639	96	240	7	1.69(1.32-1.78)	
339.8597	26.407	26.447	-2	1.000	6228	916	107	267	9		
341.8567	26.432	26.447	-1	1.000	3284	580	96	240	6	1.90(1.32-1.78)	

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.883						151	377			
357.8516	26.883						61	152			
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	33.989	33.770	13	1.000	3343	708	188	470	4		
375.8178	33.989	33.770	13	1.000	5881	633	126	315	5	0.57(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.283	34.296	-1	1.000	5902	797	95	237	8		
391.8127	34.283	34.296	-1	1.000	5549	803	92	230	9	1.06(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.899	37.899	0	1.000	563182	168714	311	777	542		
409.7788	37.899	37.899	0	1.000	529121	159557	305	762	523	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.221	39.221	0	1.000	463598	151995	311	777	489		
409.7788	39.221	39.221	0	1.000	447737	146242	305	762	479	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.560						311	777			
409.7788	38.560						305	762			
1,2,3,4,6,7,8-HpCDD											
423.7767	38.909	38.909	0	1.000	348288	112371	237	592	474		
425.7737	38.909	38.909	0	1.000	331368	107993	205	512	527	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						237	592			
425.7737	38.941						205	512			
1,3,6,8-TCDF											
303.9016	14.785	14.785	0		944598	197940	421	1052	470		
305.8987	14.785	14.785	0		1190047	248265	582	1455	427	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.271	16.271	0		469295	86862	223	557	390		
321.8936	16.271	16.271	0		588770	112461	203	507	554	0.80(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	18.745	18.745	0		1435338	210275	421	1052	499		
305.8987	18.745	18.745	0		1772917	253657	582	1455	436	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	19.784	19.784	0		338314	52473	223	557	235		
321.8936	19.776	19.784	-1		443494	68083	203	507	335	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.145	20.145	0		602445	87131	421	1052	207		
305.8987	20.145	20.145	0		746651	107265	582	1455	184	0.81(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.240	20.240	0		455078	60642	223	557	272		
321.8936	20.231	20.240	-1		567255	75561	203	507	372	0.80(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	21.803	21.803	0		605991	78094	421	1052	185		
305.8987	21.812	21.803	1		756855	99602	582	1455	171	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	21.889	21.889	0		392393	49747	223	557	223		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	22.413	22.413	0		713524	88922	47	117	1892		
341.8567	22.405	22.413	-1		453986	57941	48	120	1207	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	24.739	24.739	0		442690	74510	151	377	493		
357.8516	24.739	24.739	0		286135	48641	61	152	797	1.55(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.026	29.026	0		416869	62138	151	377	412		
357.8516	29.026	29.026	0		266314	37656	61	152	617	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.178	29.178	0		578777	77756	107	267	727		
341.8567	29.178	29.178	0		363209	49239	96	240	513	1.59(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	31.488	31.488	0		576293	74225	188	470	395		
375.8178	31.488	31.488	0		446109	57019	126	315	453	1.29(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	32.928	32.928	0		376605	59651	95	237	628		
391.8127	32.928	32.928	0		300095	46850	92	230	509	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.665	35.665	0		382226	89918	95	237	947		
391.8127	35.673	35.665	1		302467	70982	92	230	772	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.052	36.052	0		553064	135550	188	470	721		
375.8178	36.044	36.052	-1		433528	102520	126	315	814	1.28(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.227	38.227	0		377307	116053	237	592	490		
425.7737	38.227	38.227	0		362070	113712	205	512	555	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 15-Oct-2020 12:21:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 422239
Lims Sample ID: 1

F1 PeCDFs, RT: 22.995

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.083	1459	305	5481	563		0.27	R
Signal Totals:							
	1459	305	5481	563			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6940	868				0.27	RQ
	2400	501					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (6940 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (2400 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	15-Oct-2020 12:21:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422239	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 26.447

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.884	7879	660	4649	639		1.69	
26.407	6228	916	3284	580		1.90	R
Signal Totals:							
	14107	1576	7933	1219			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22040	2795				1.78	RQ
	20902	2777					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (22040 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (20902 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 15-Oct-2020 12:21:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 422239 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDF, RT: 33.770

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264				
1,2,3,6,7,8-HxCDF	1.223				
2,3,4,6,7,8-HxCDF	1.246				
1,2,3,7,8,9-HxCDF	1.264				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.989	3343	708	5881	633		0.57	R
Signal Totals:							
	3343	708	5881	633			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	9224	1341				0.57	RQ
	6038	1278					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (9224 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (6038 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d
Lims ID:	WDM
Client ID:	
Inject. Date:	15-Oct-2020 12:21:00
Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix
Instrument ID:	DFS 1
Operator:	Xcalibur_System
Lims Batch ID:	422239
Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 34.296

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.283	5902	797	5549	803		1.06	
Signal Totals:							
	5902	797	5549	803			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11451	1600				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11451 * 0.0) / (0 * 0.000)

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

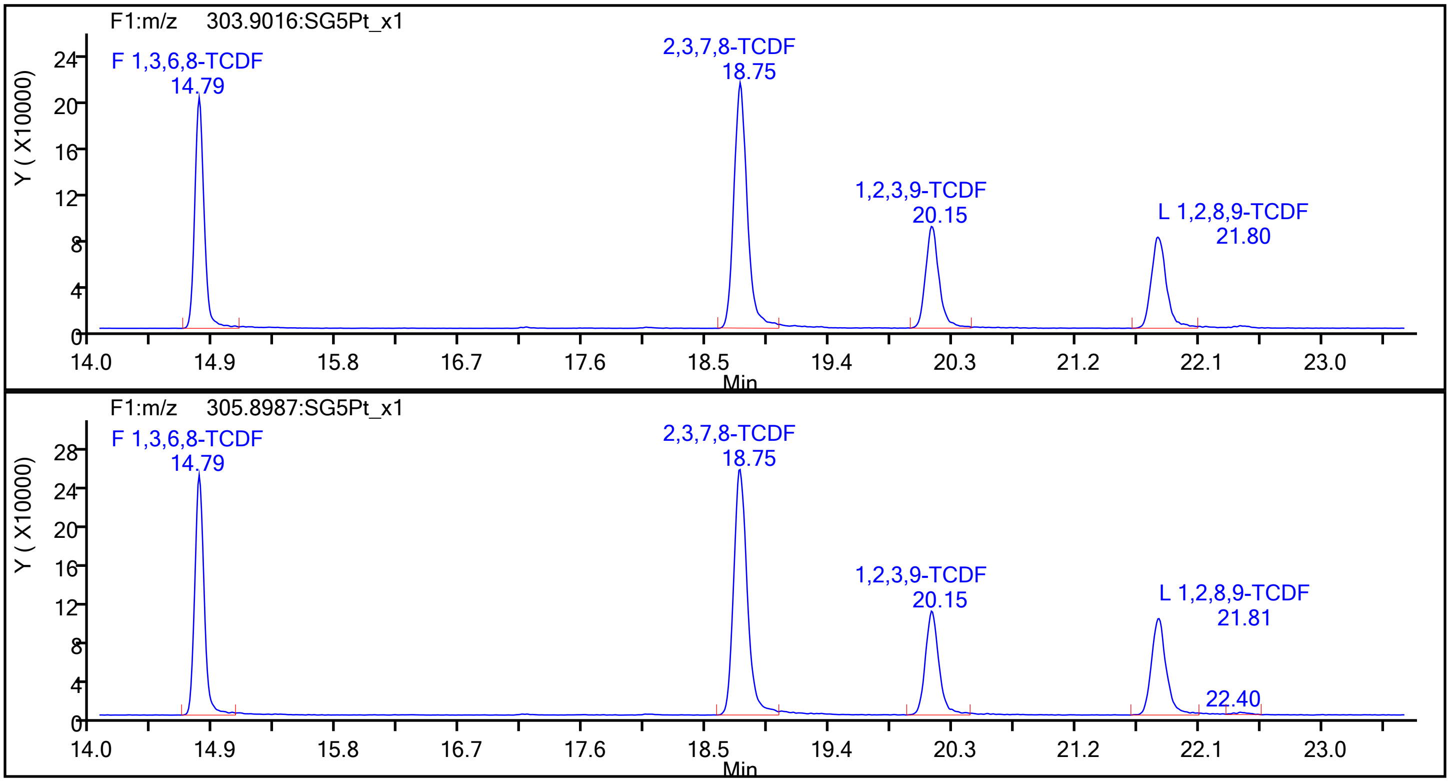

TCDF Standards

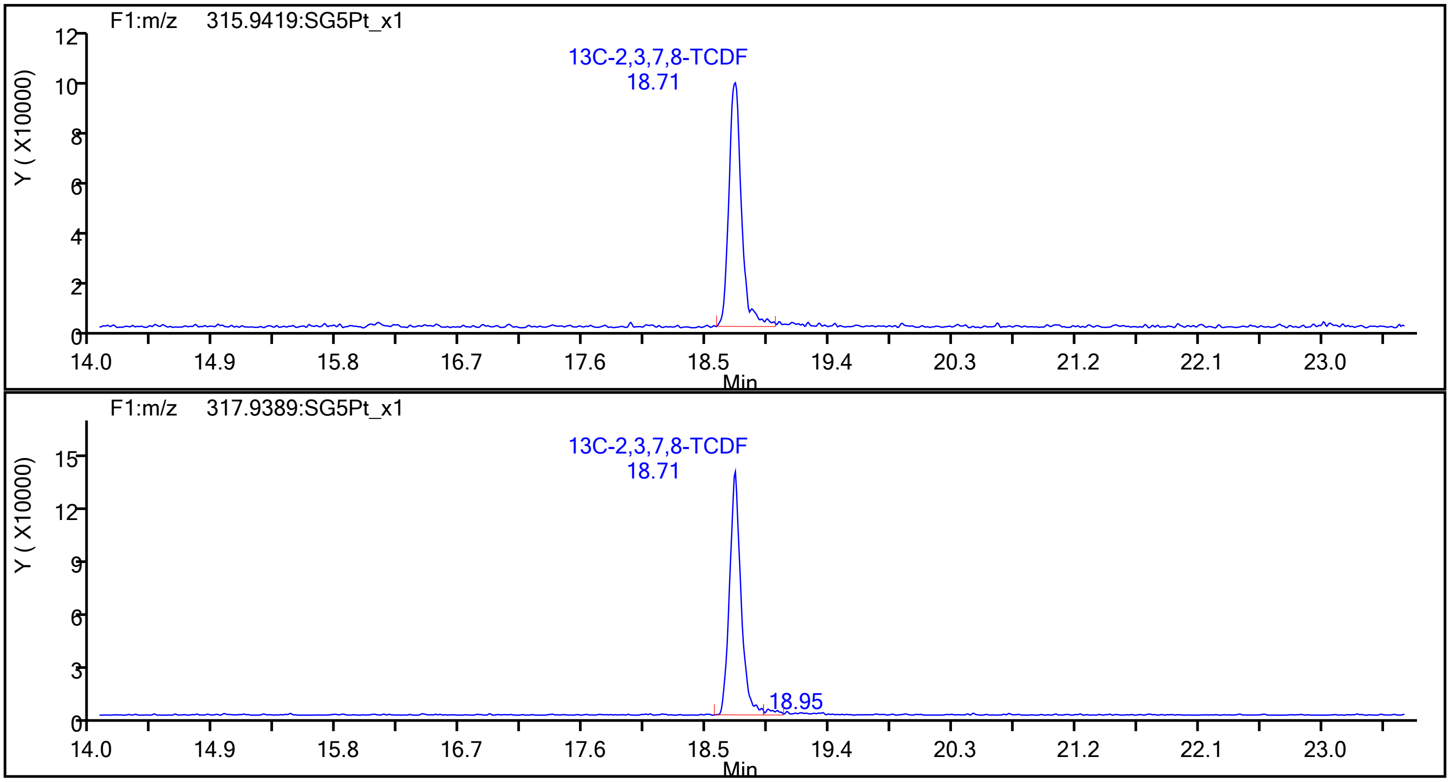

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

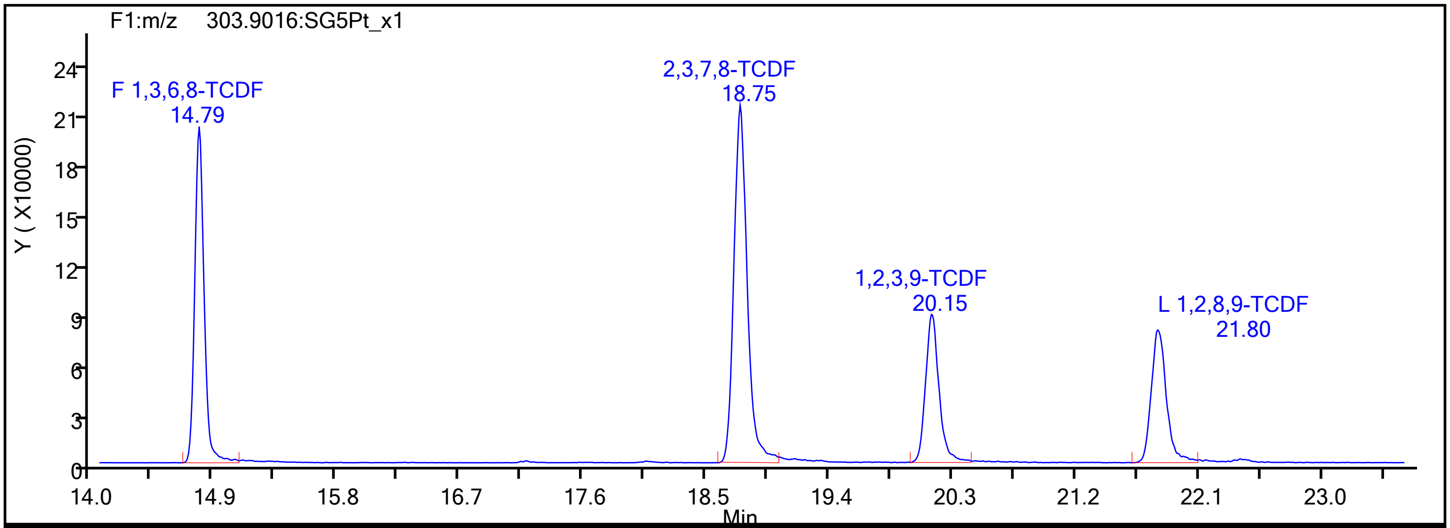

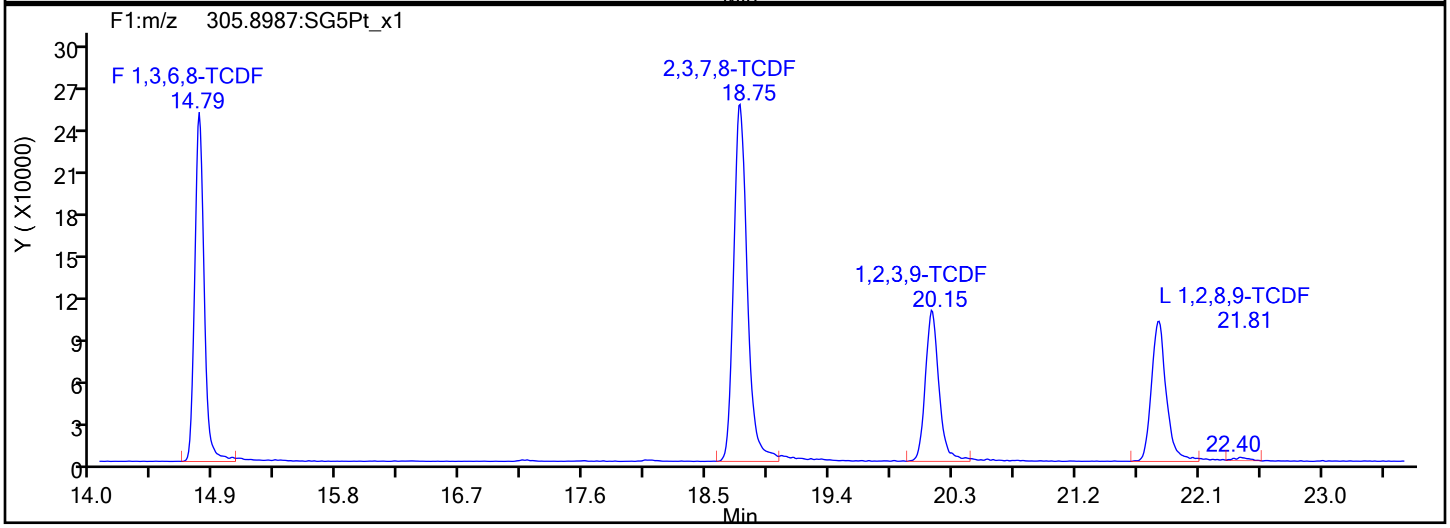

TCDF Interference Mass

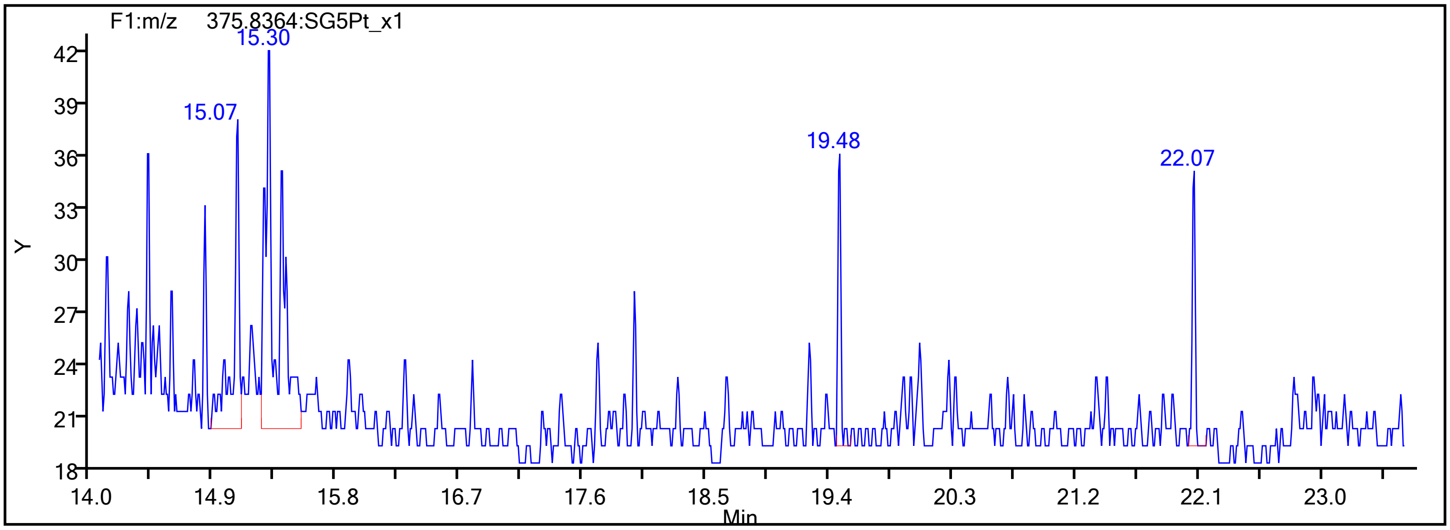

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d
Injection Date: 15-Oct-2020 12:21:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422239
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

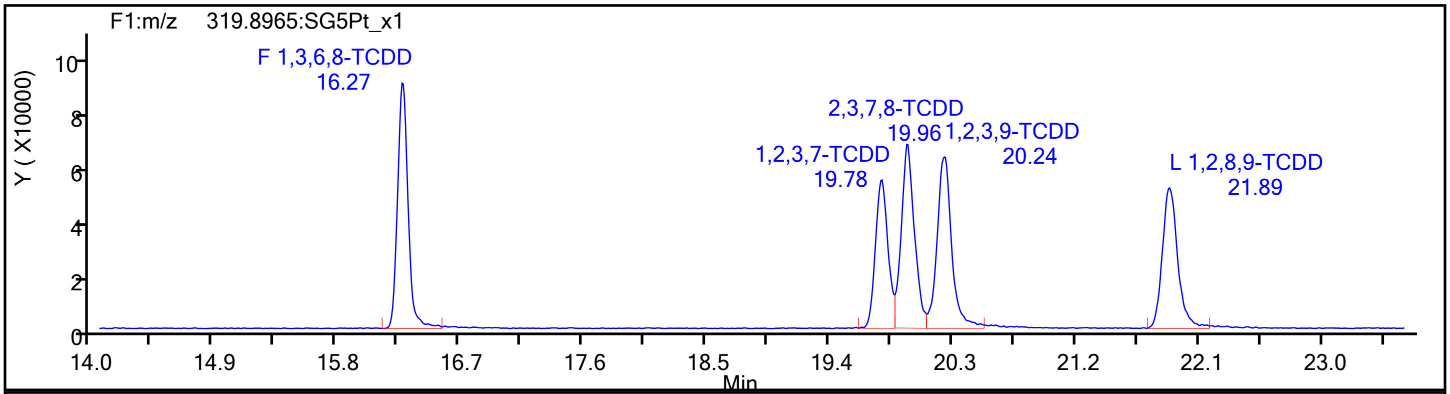

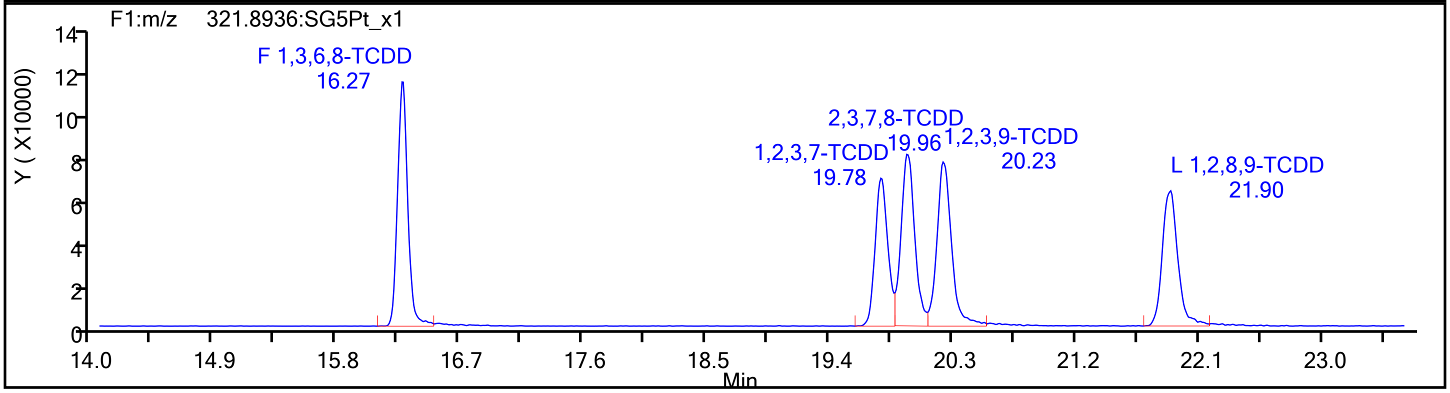

TCDD Standards

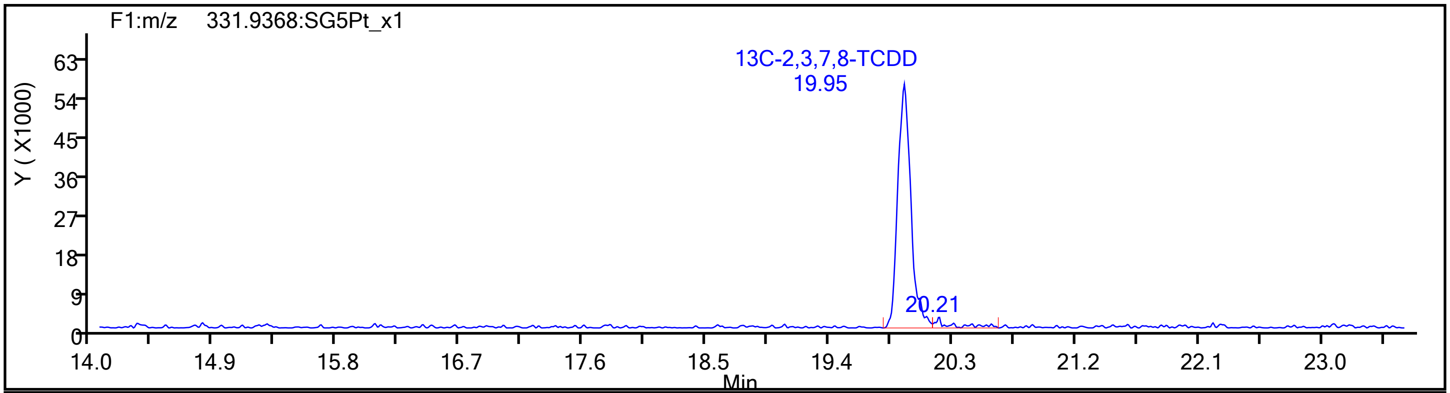

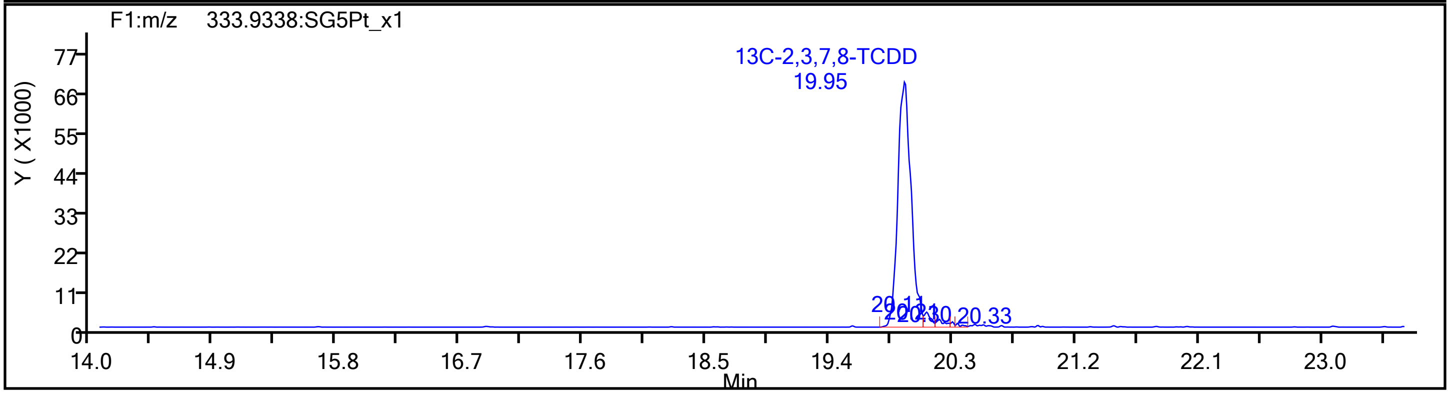

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

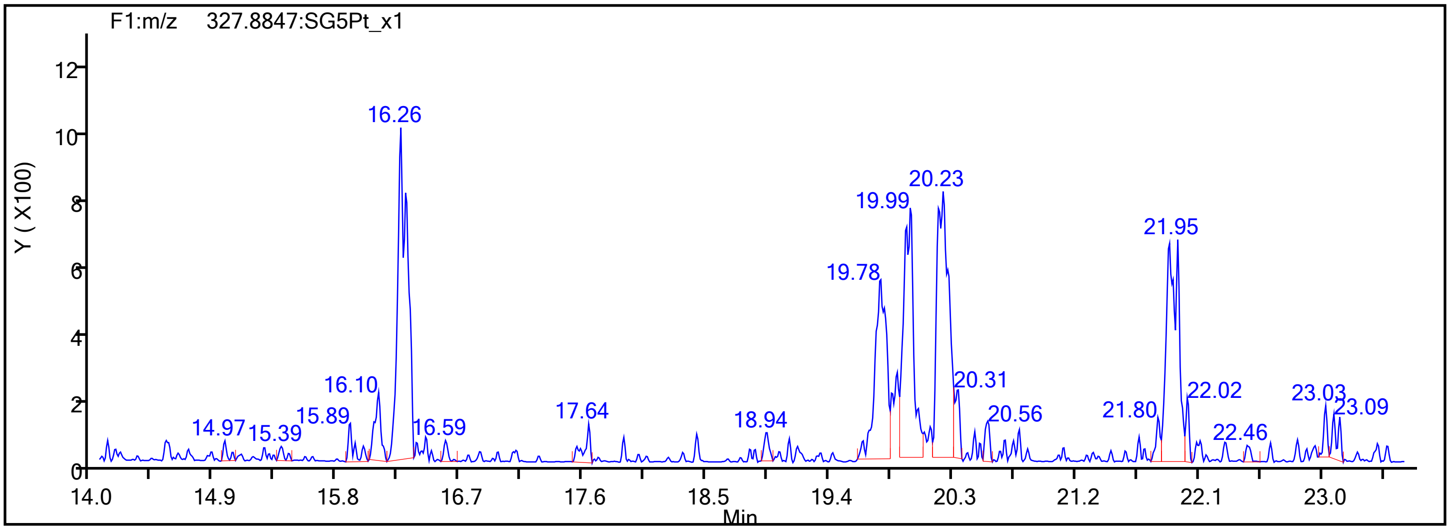

37Cl4-TCDD Standards

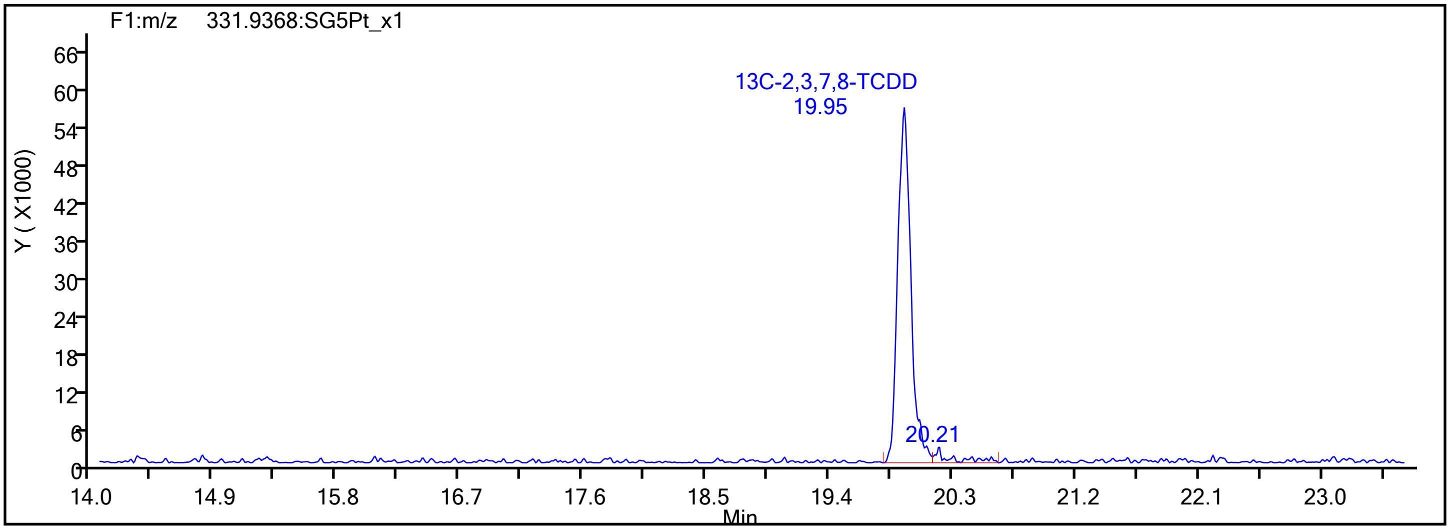

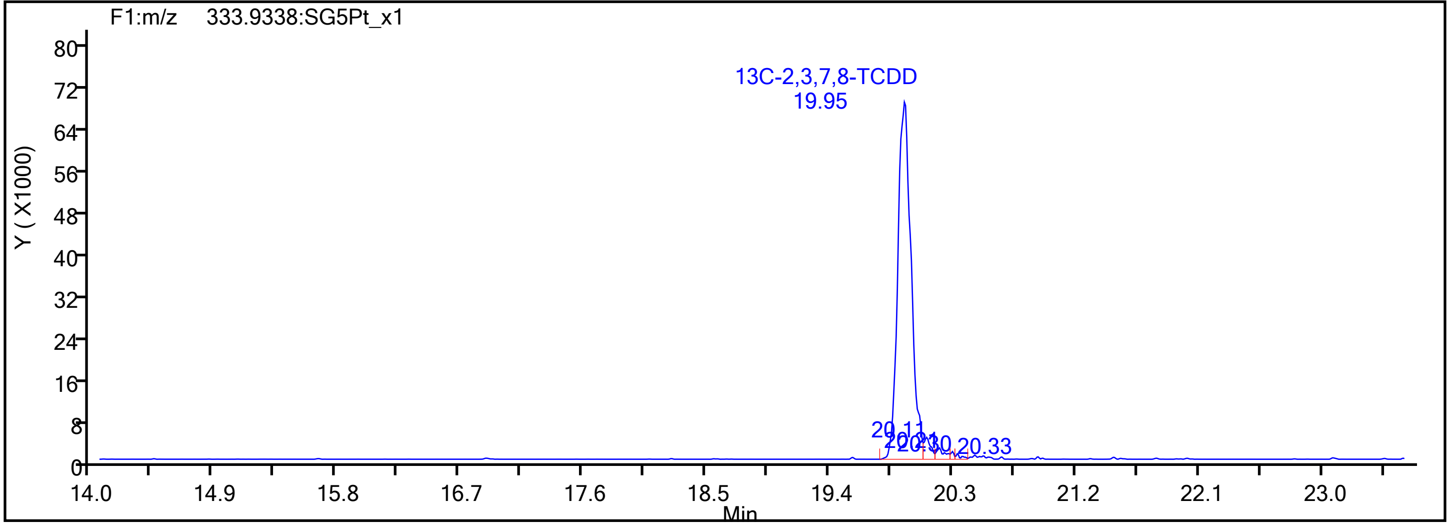

Report Date: 16-Oct-2020 10:28:44 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

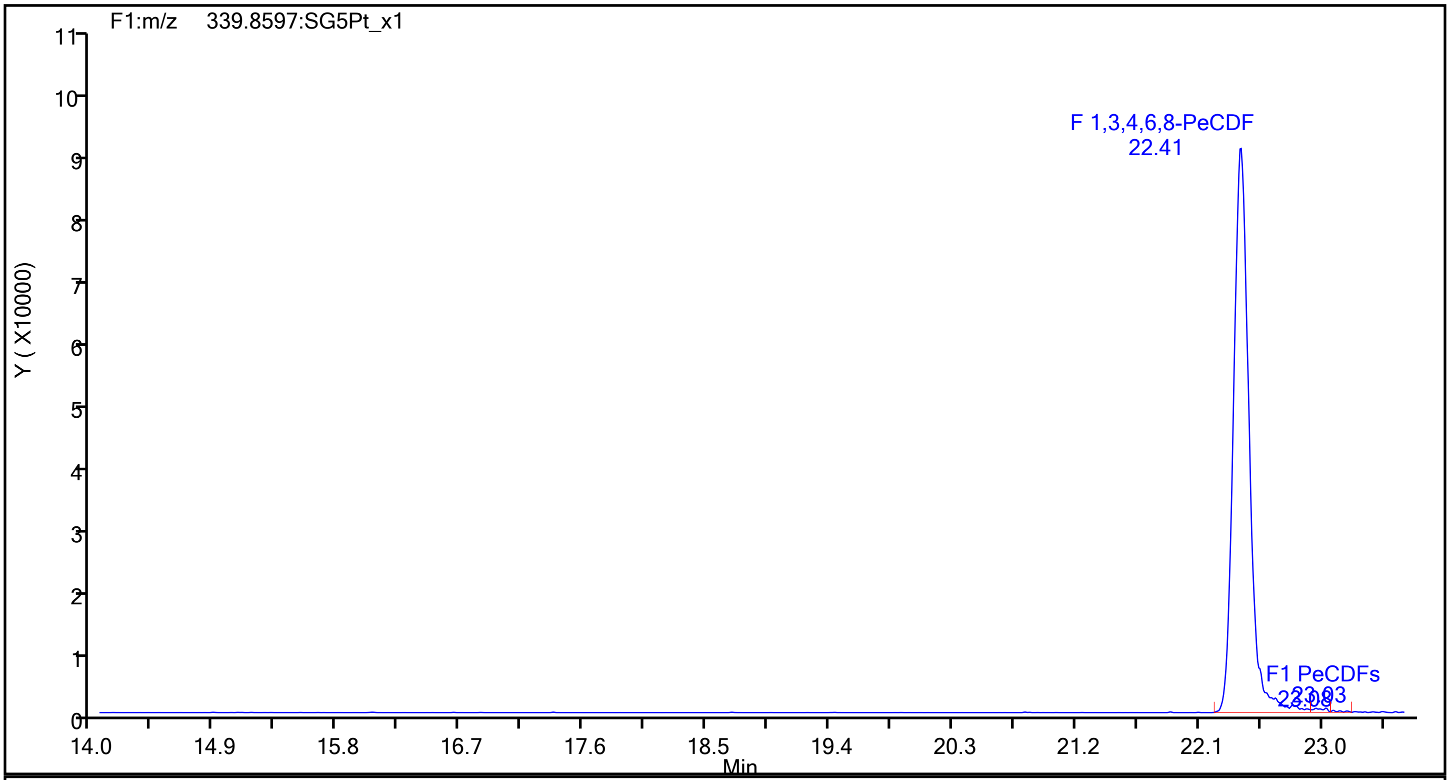

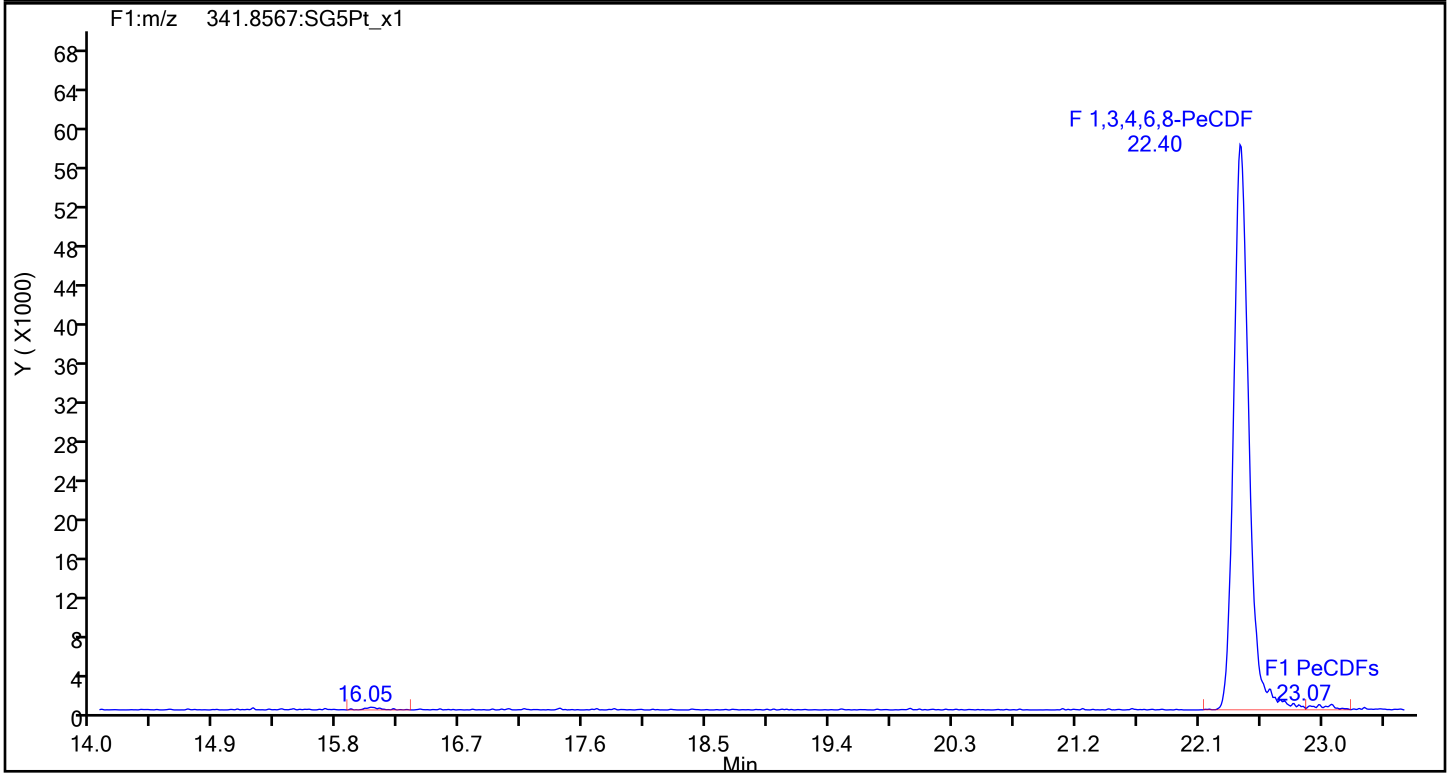

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d

Injection Date: 15-Oct-2020 12:21:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422239

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

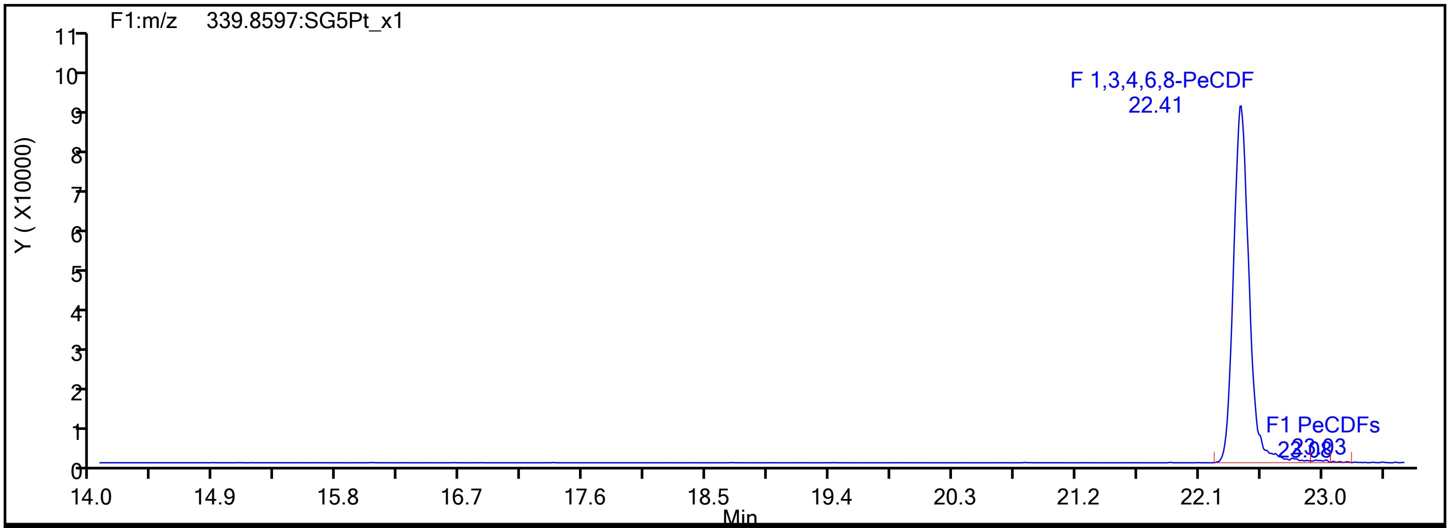

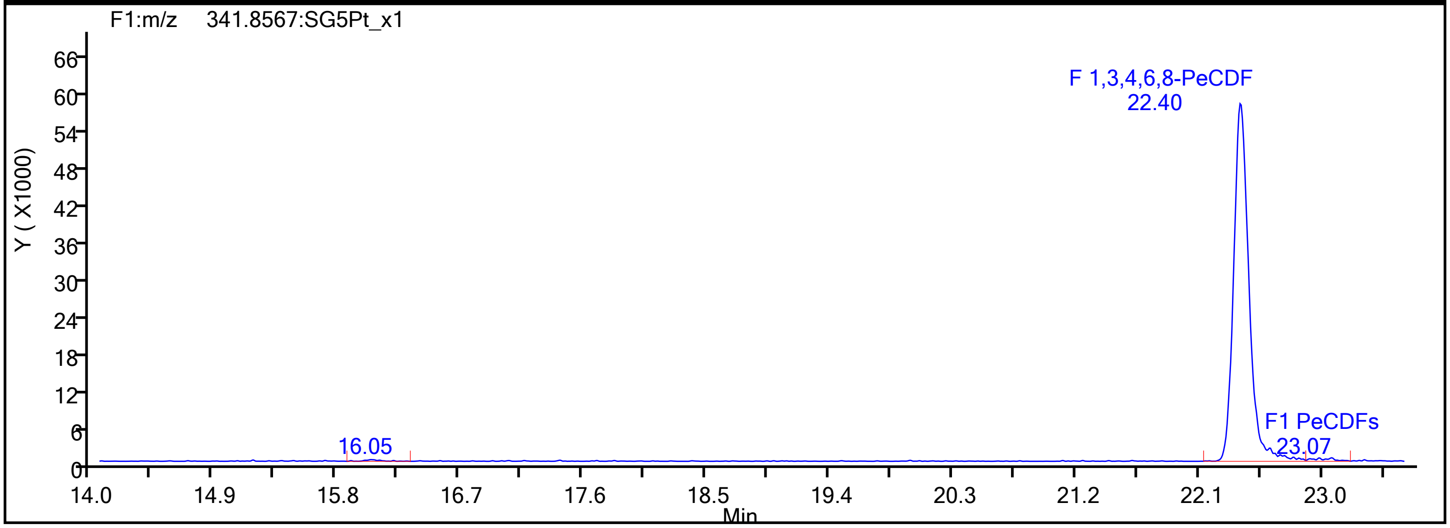

F1 PeCDFs Interference Mass

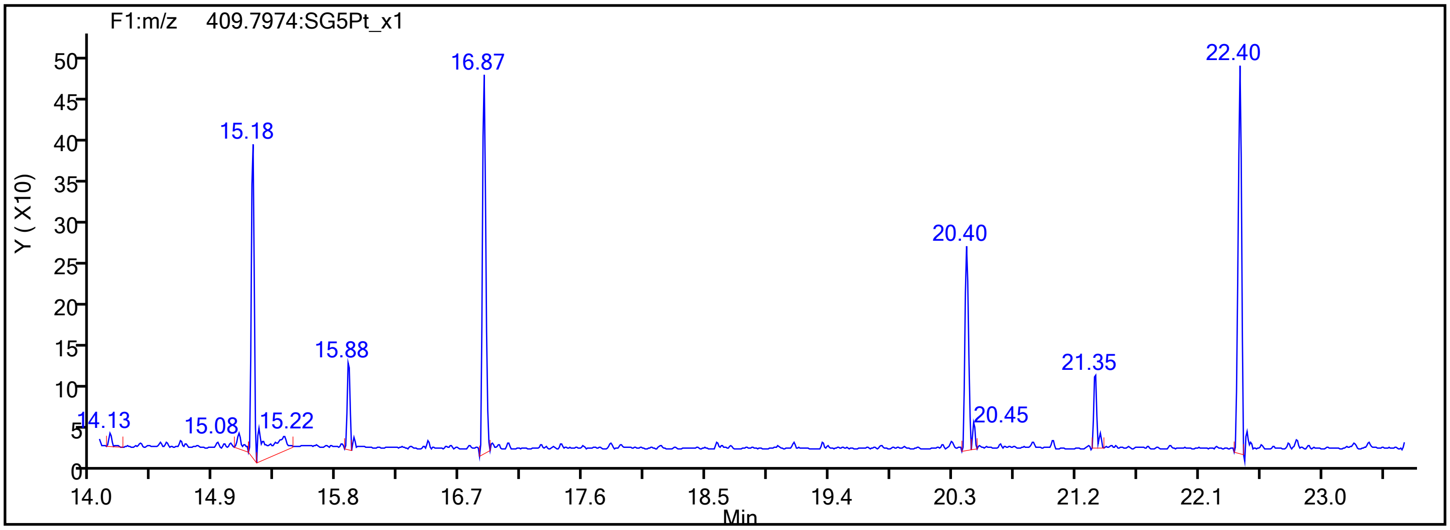

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

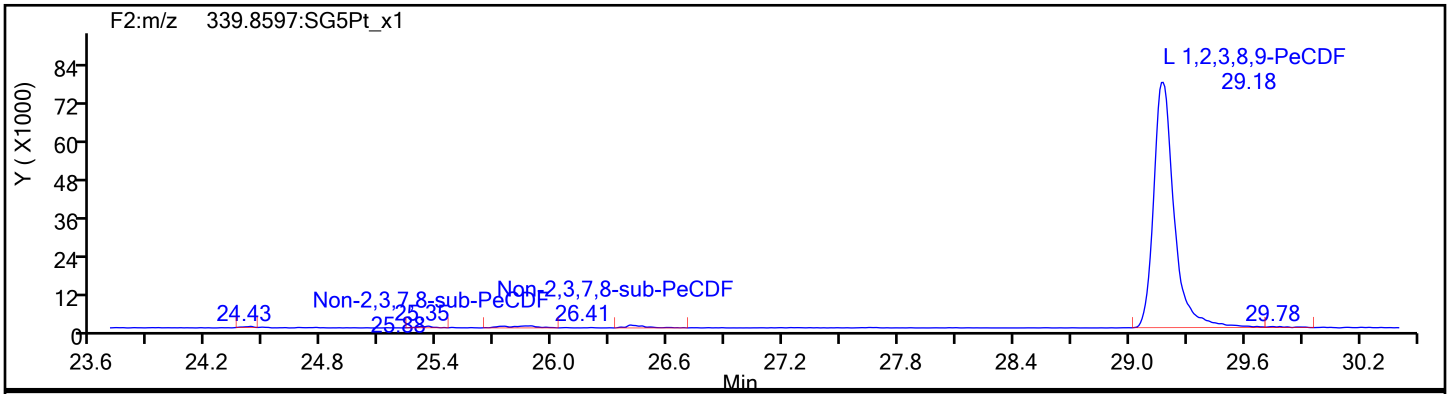

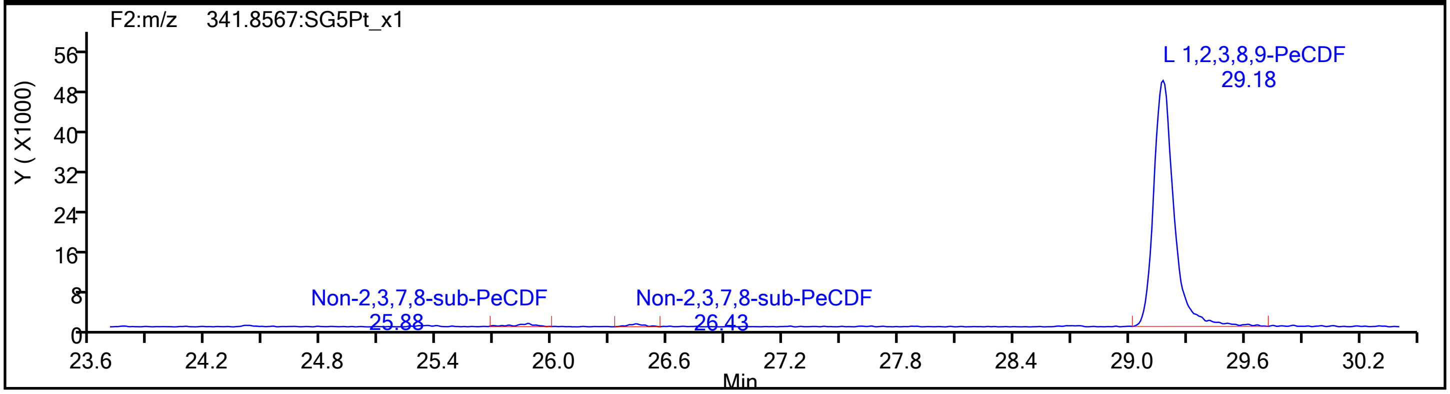

PeCDF Standards

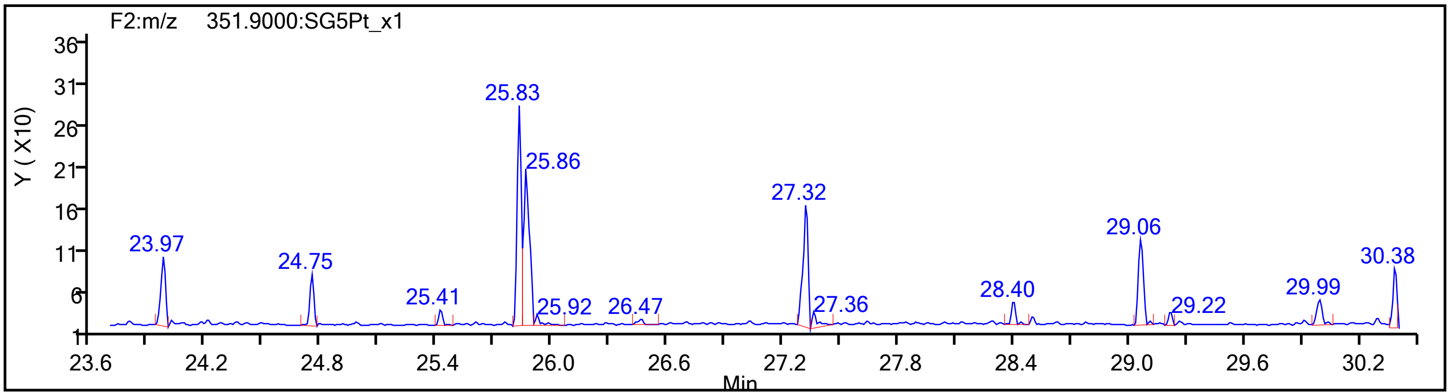

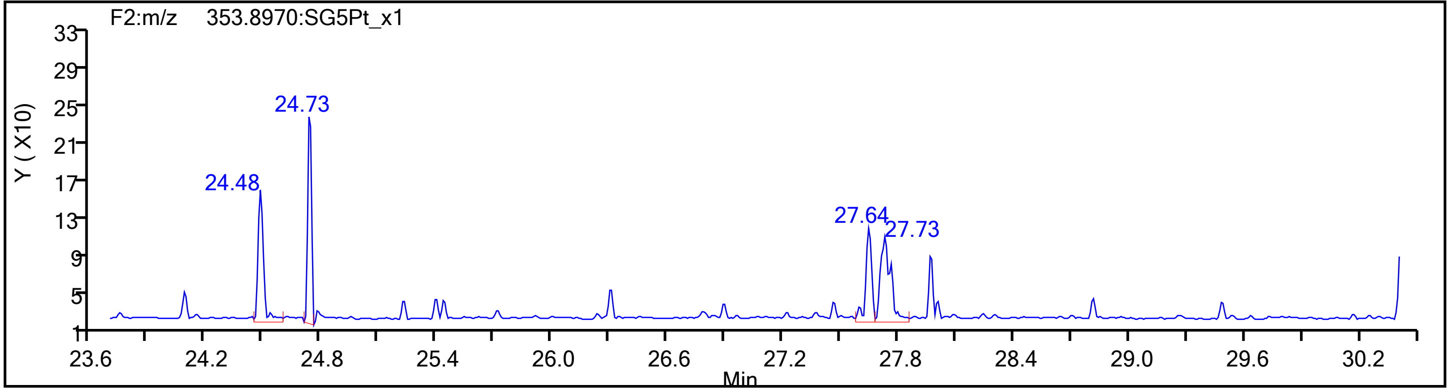

Report Date: 16-Oct-2020 10:28:45   Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d
Injection Date: 15-Oct-2020 12:21:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422239   Sample Line#: 1
Column Type: DB-5   Column Dia: 0.32 mm

PeCDF

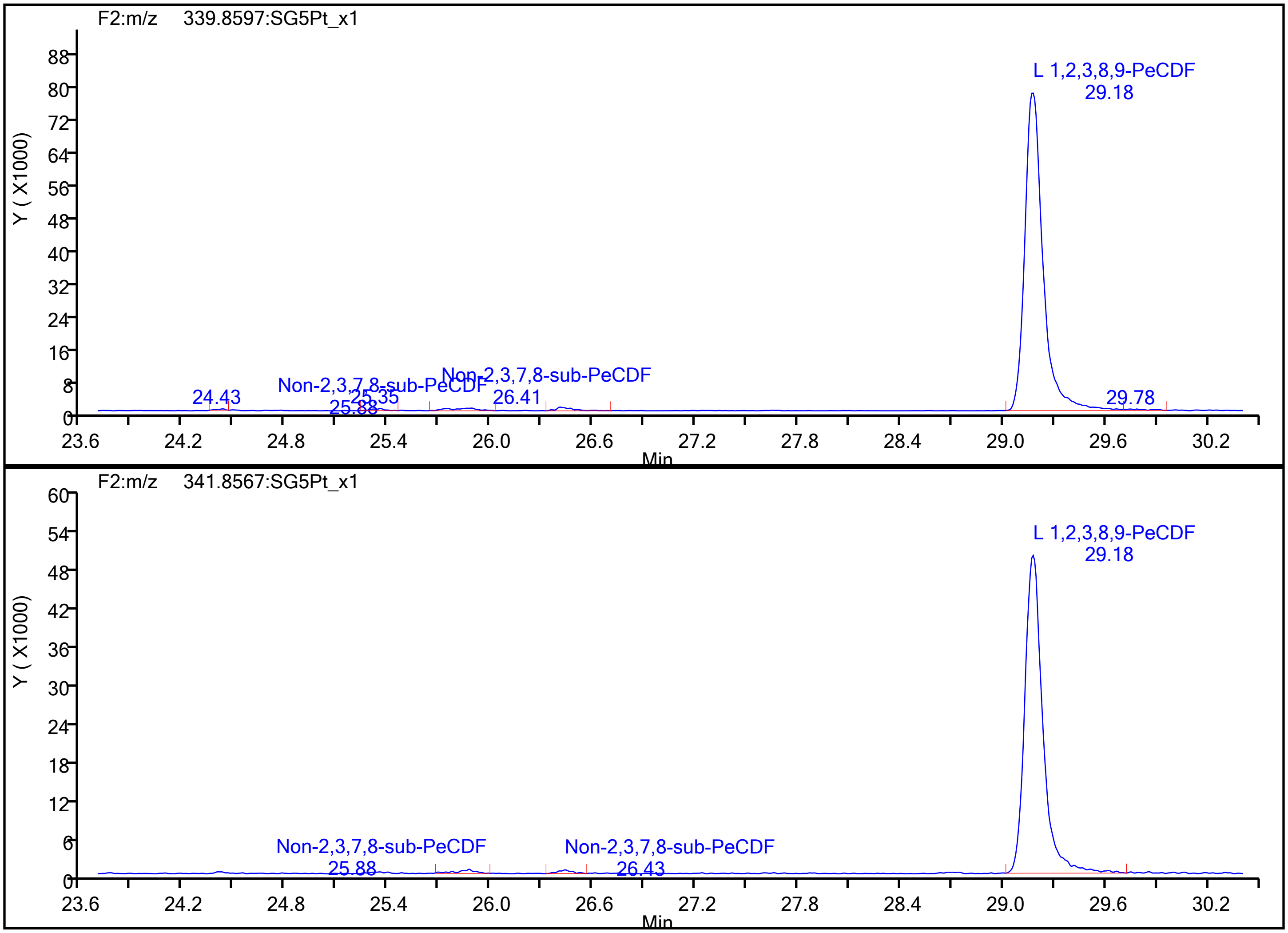

PeCDF Interference Mass

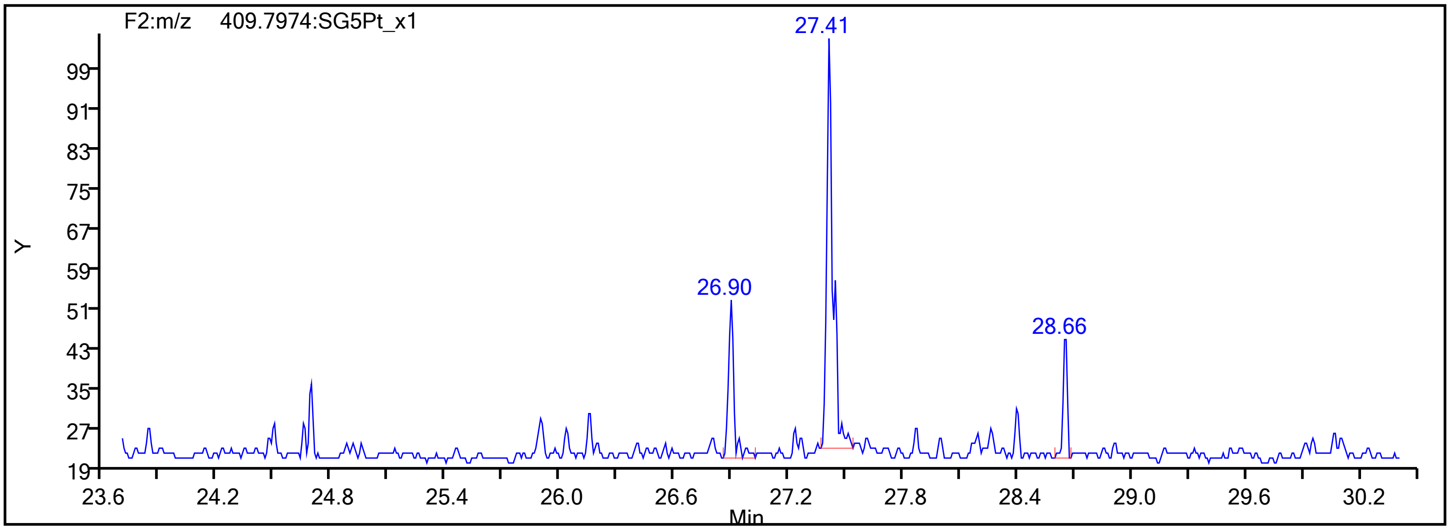

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d

Injection Date: 15-Oct-2020 12:21:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422239

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

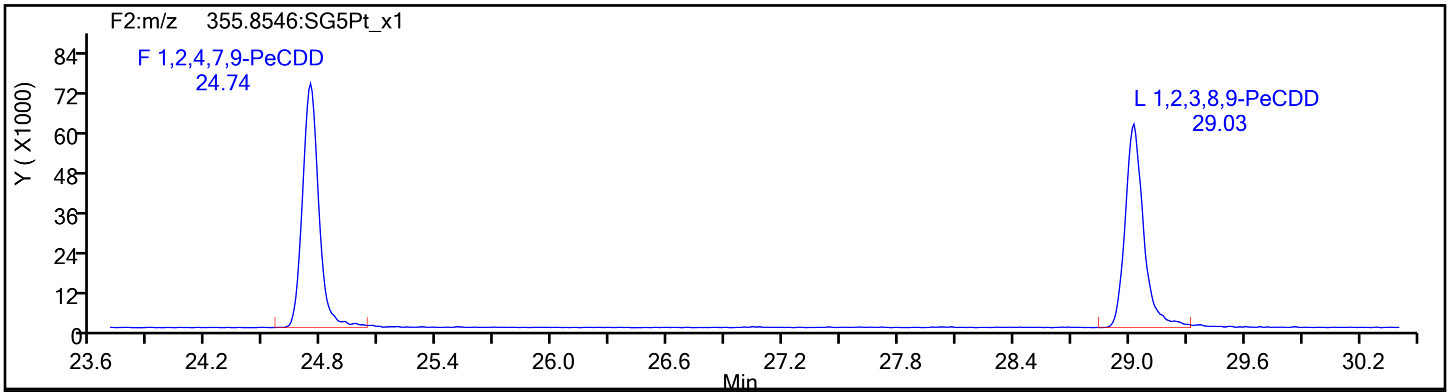

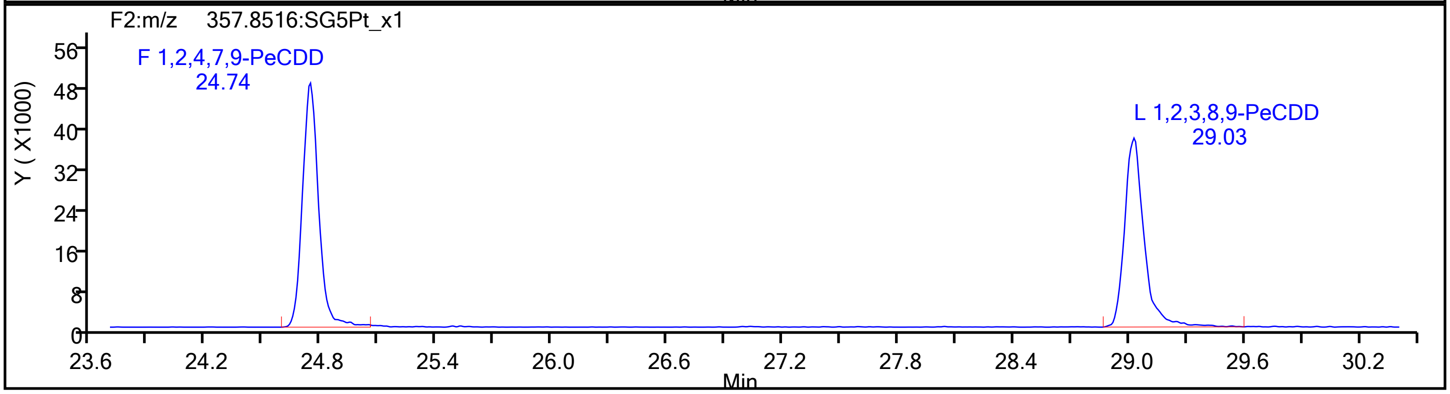

PeCDD Standards

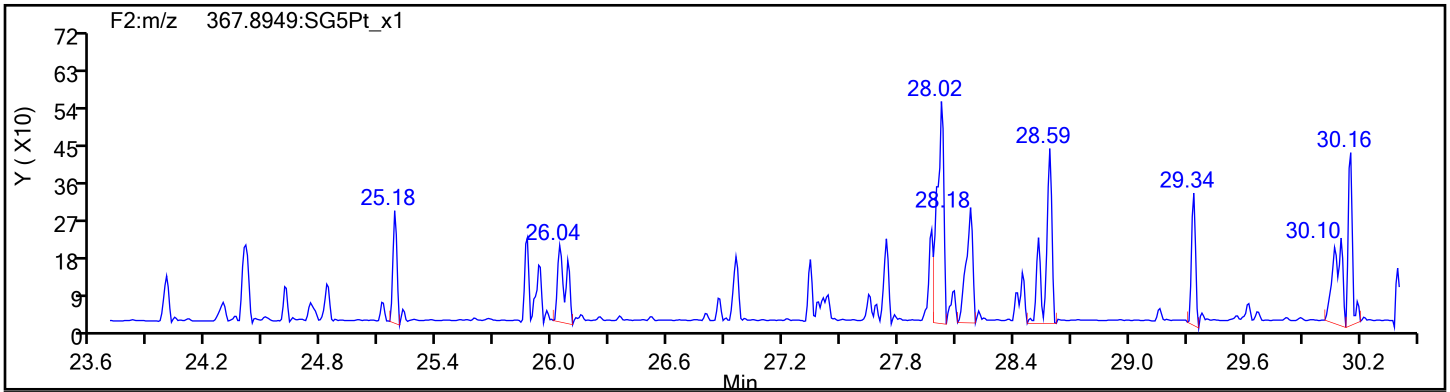

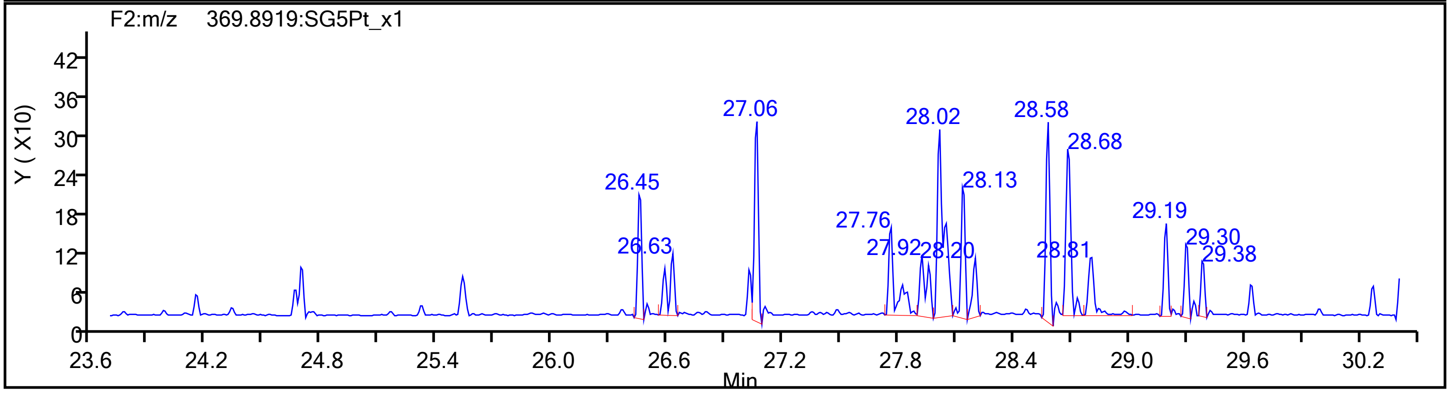

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

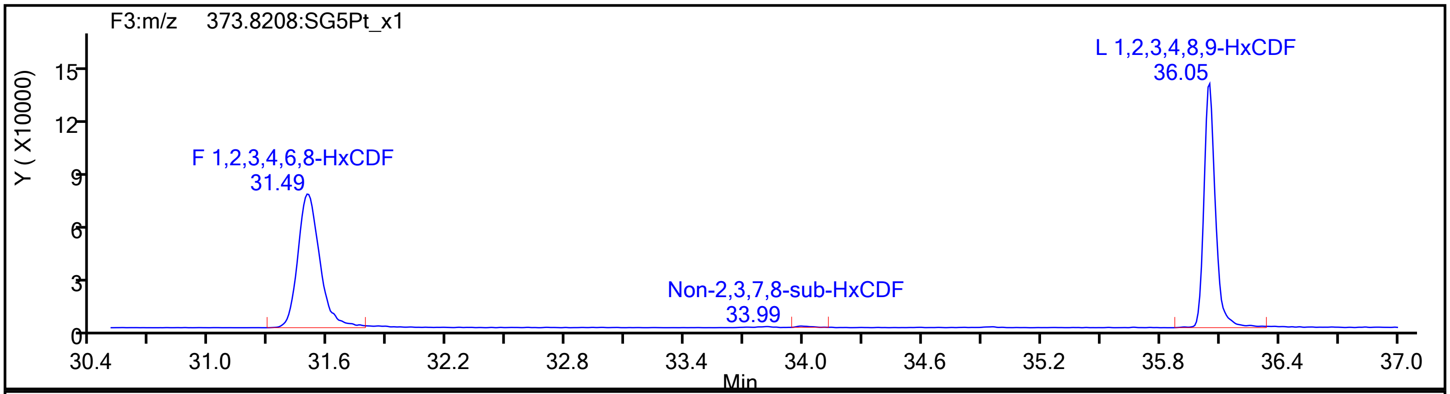

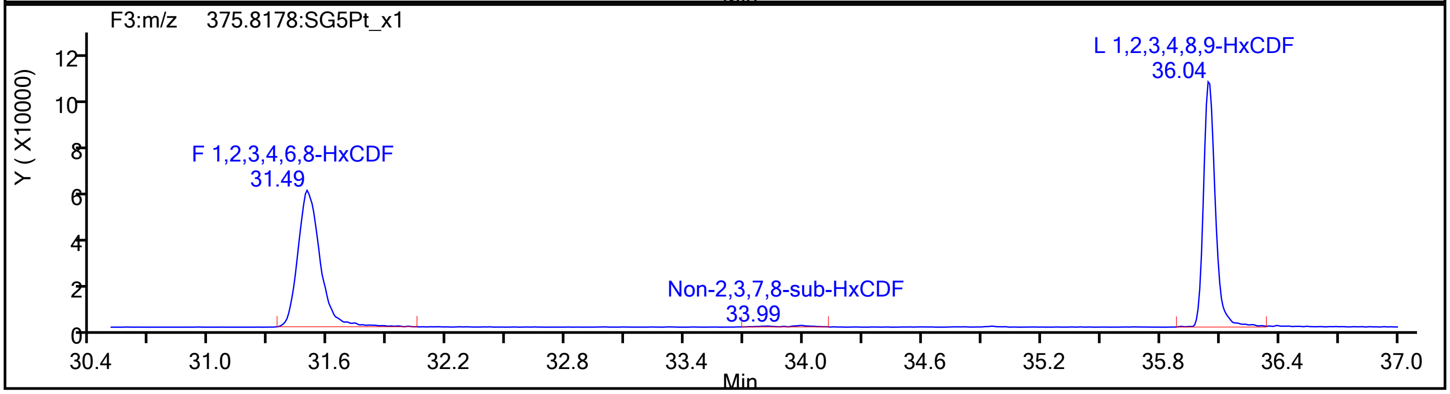

HxCDF Standards

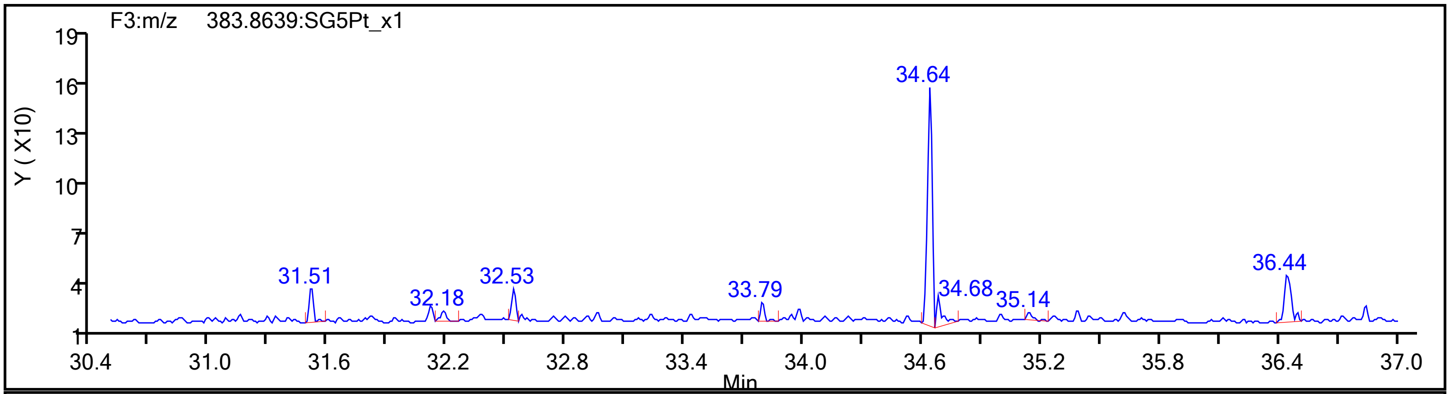

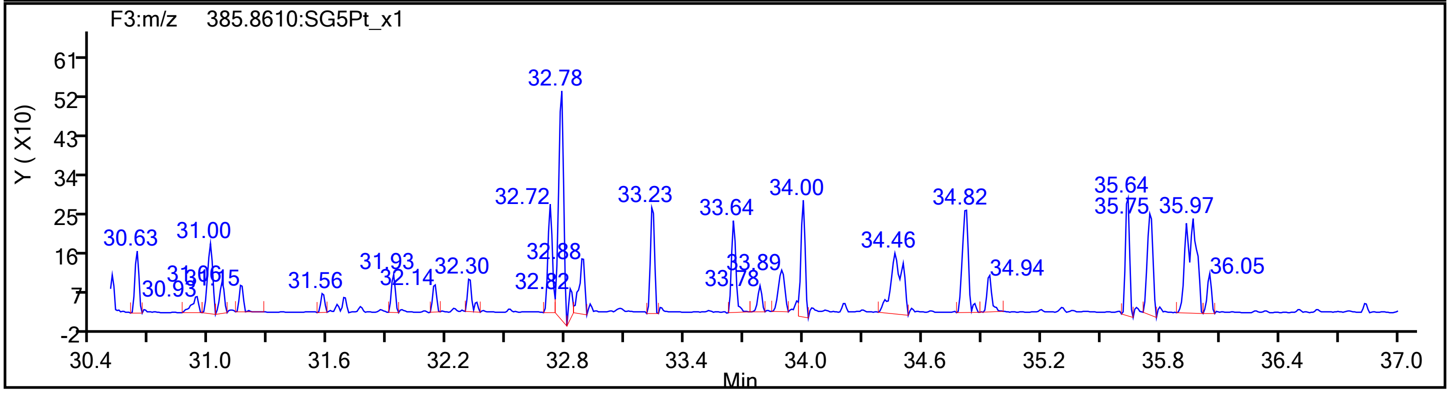

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

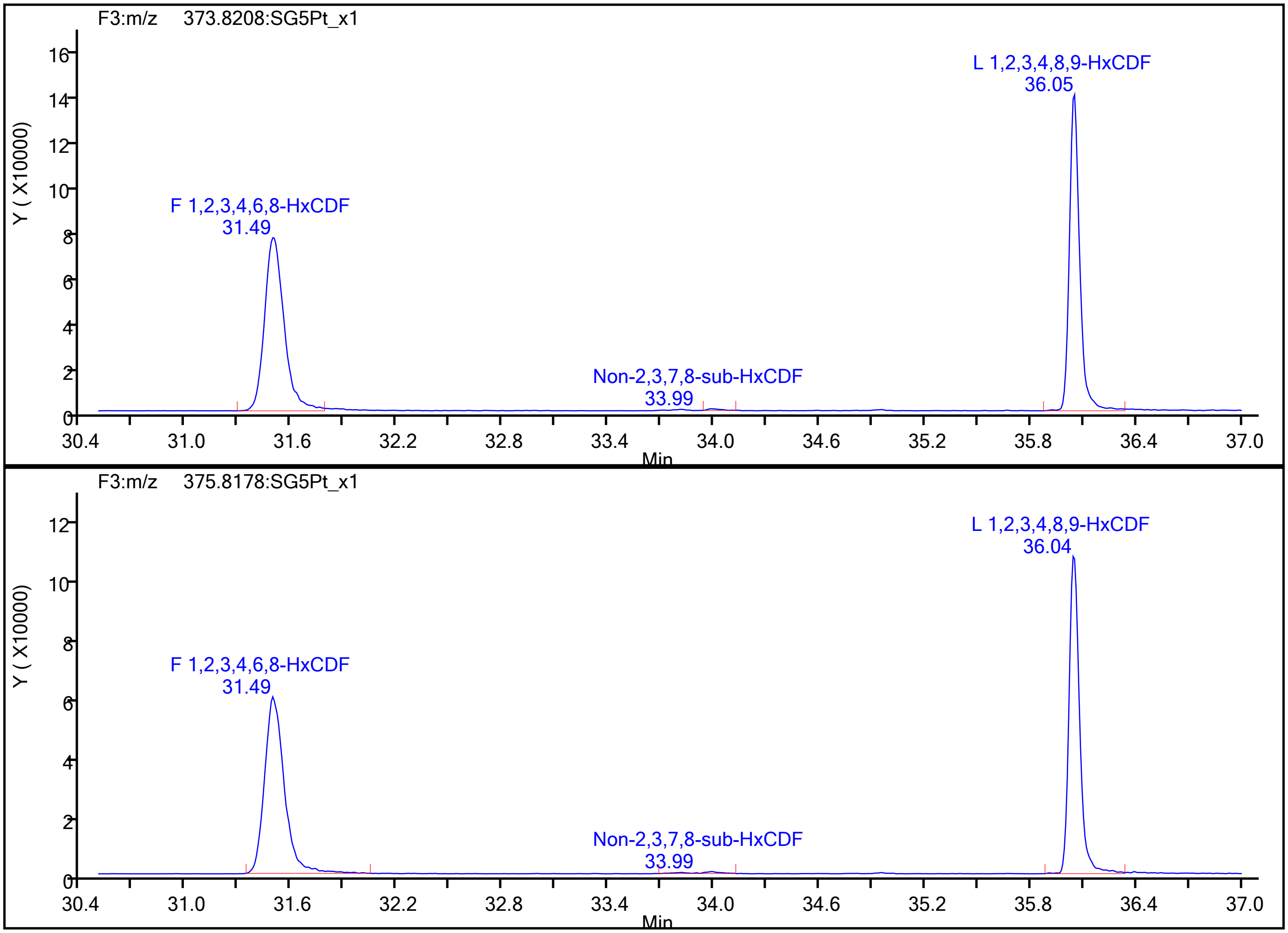

HxCDF Interference Mass

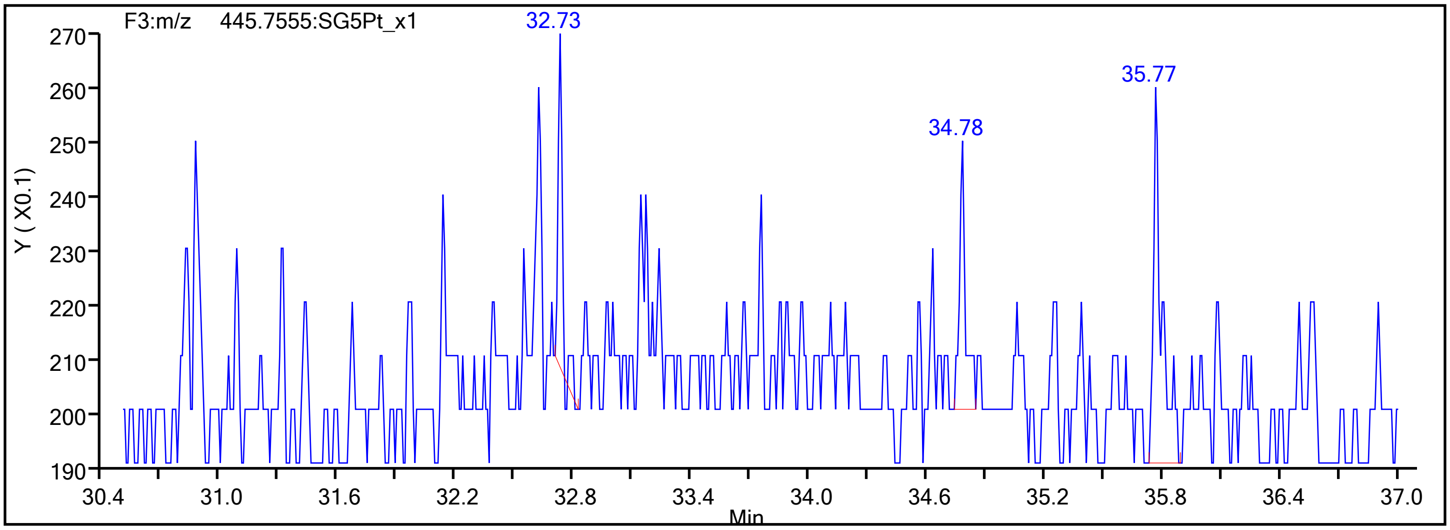

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
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HxCDD

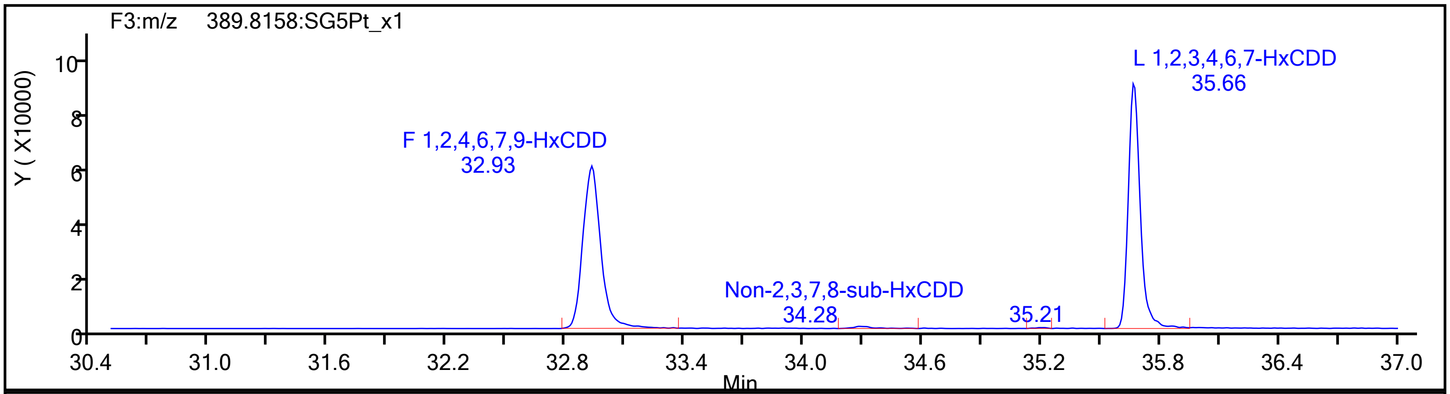

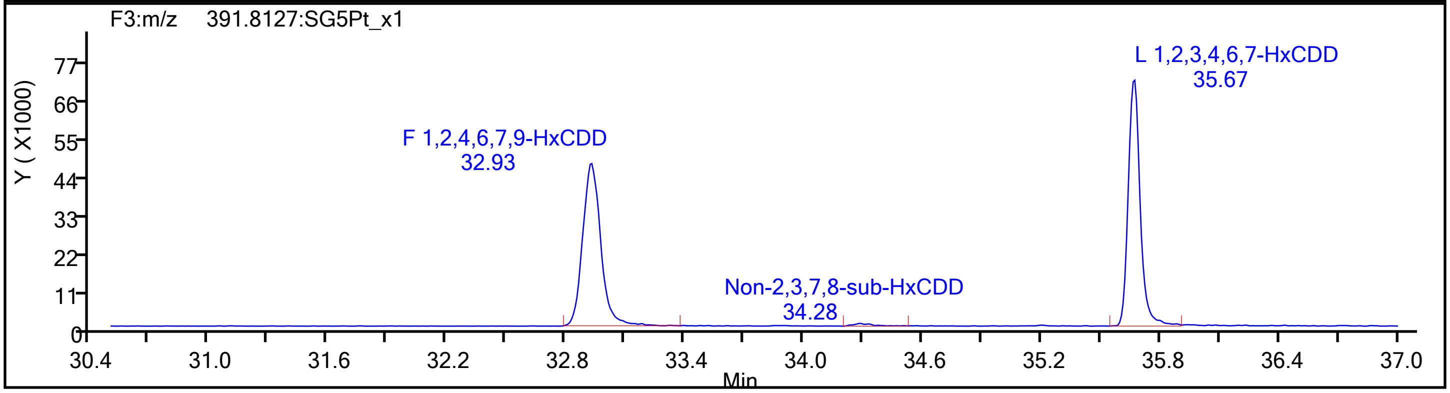

HxCDD Standards

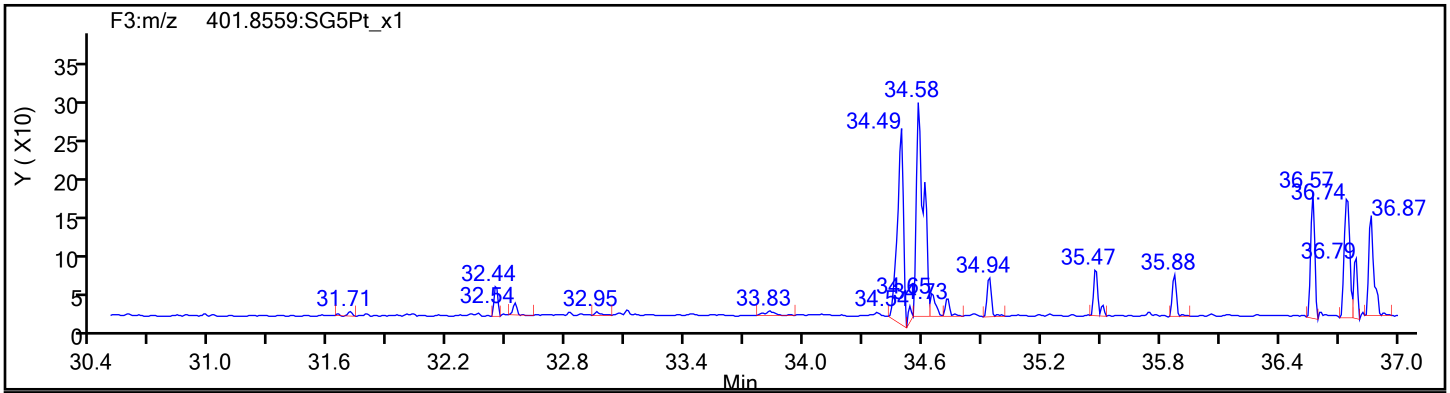

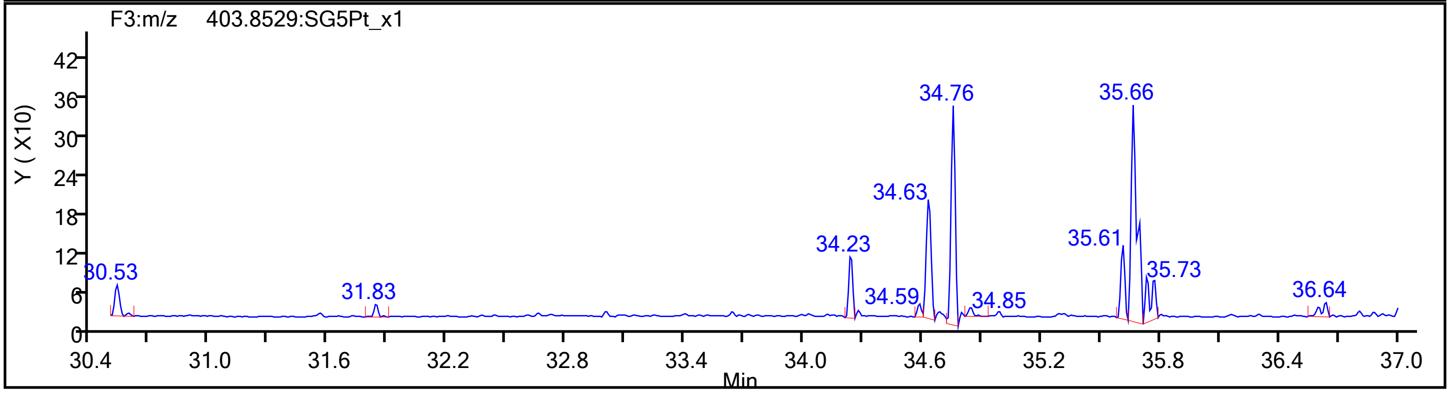

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

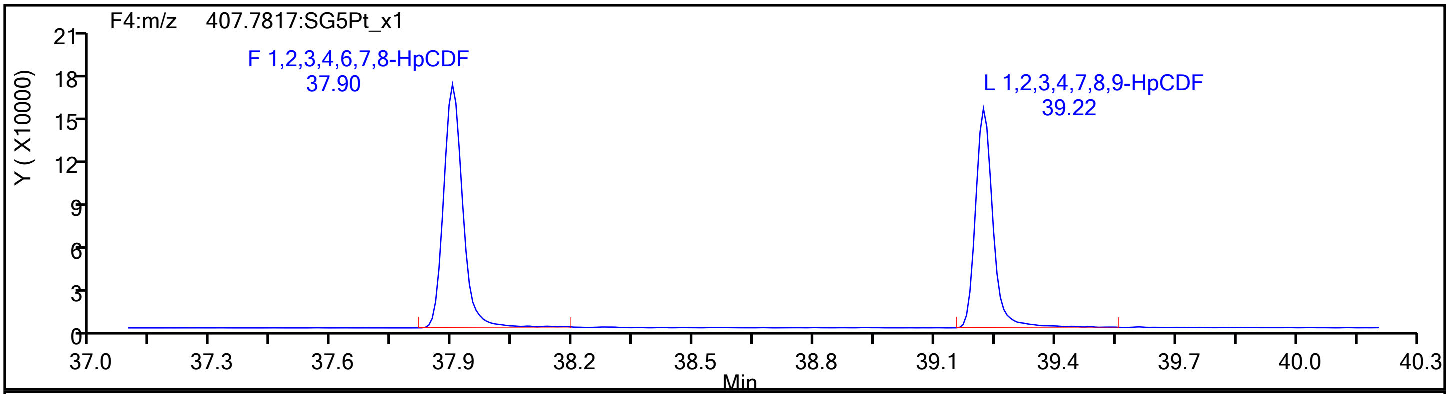

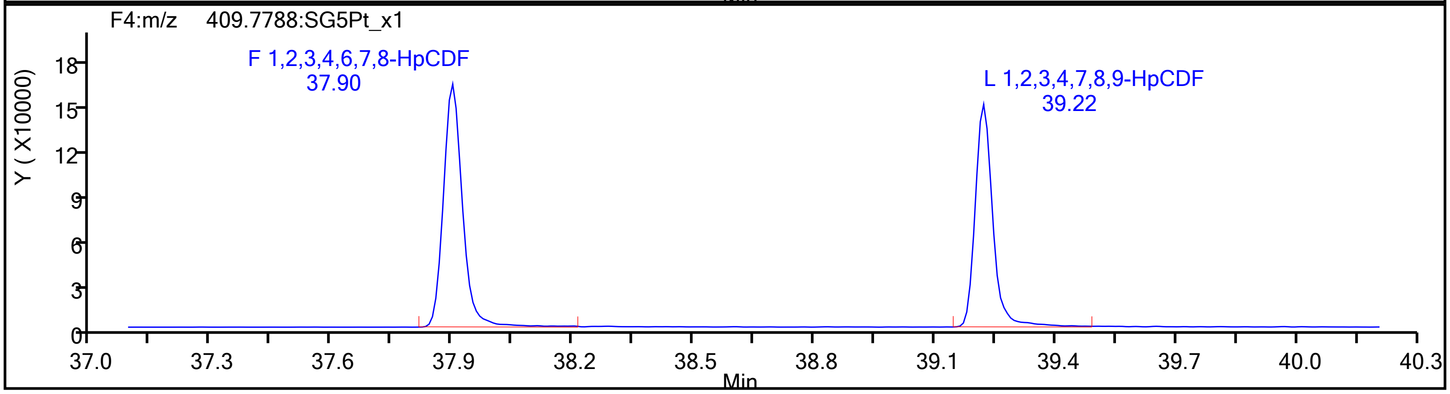

HpCDF Standards

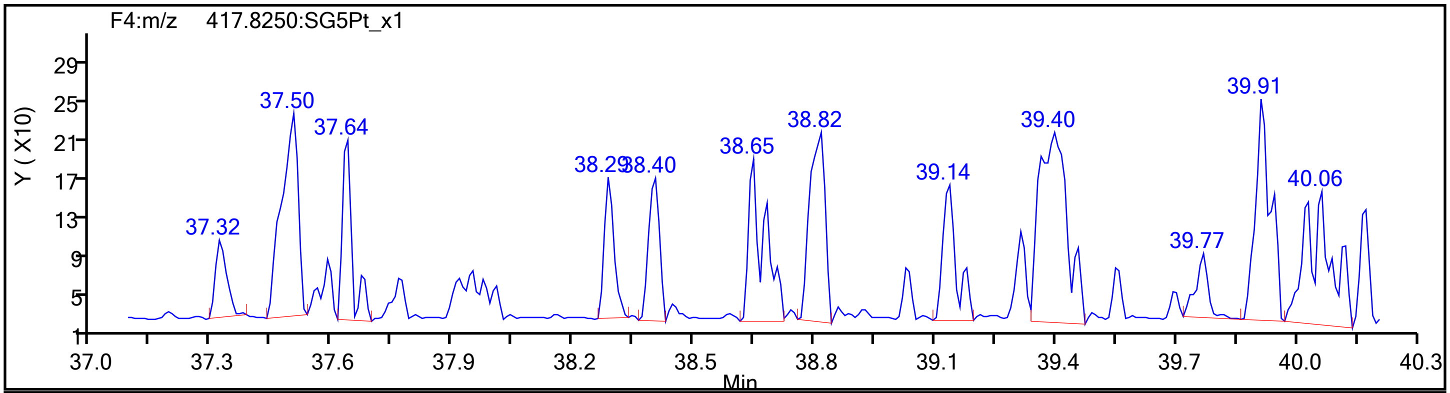

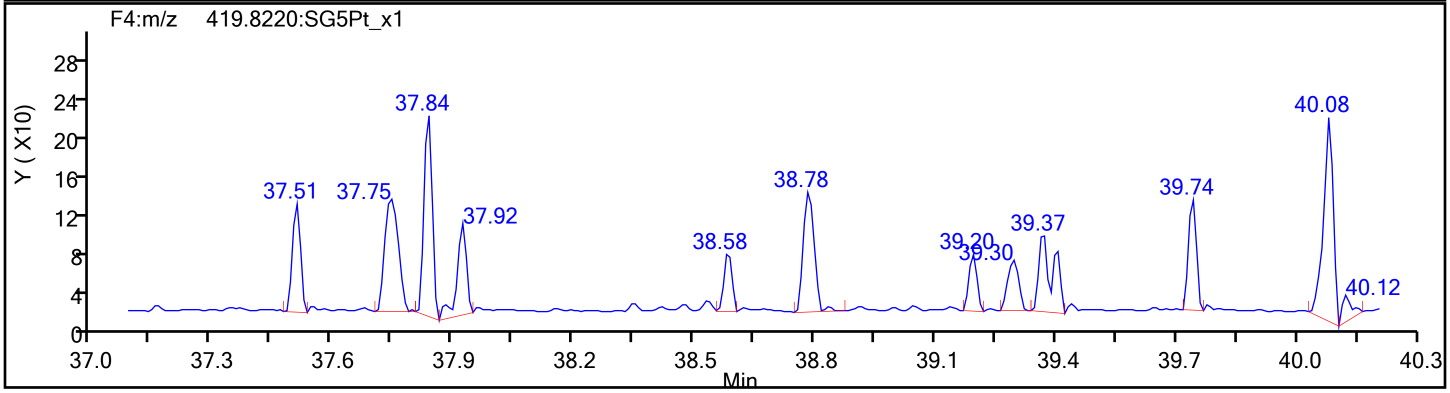

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

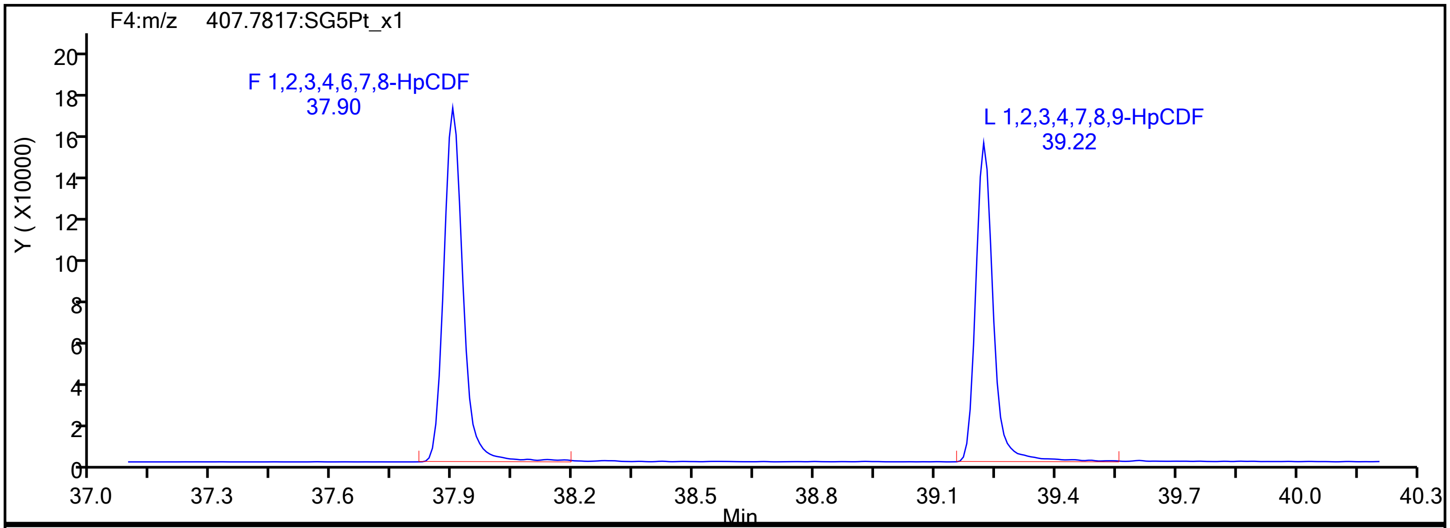

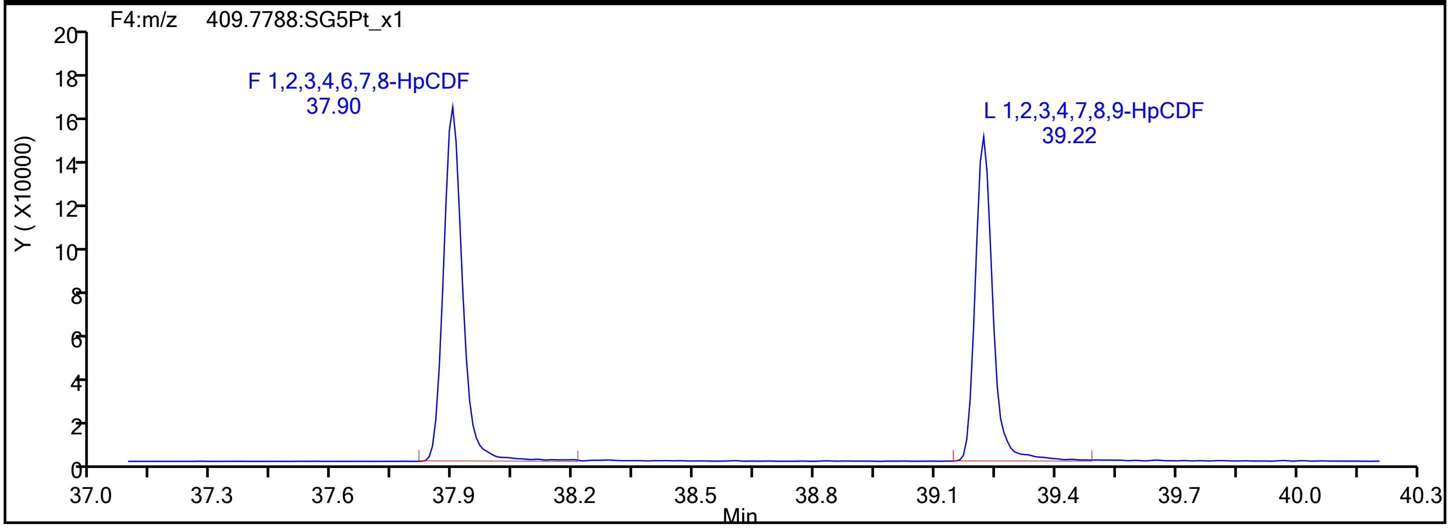

HpCDF Interference Mass

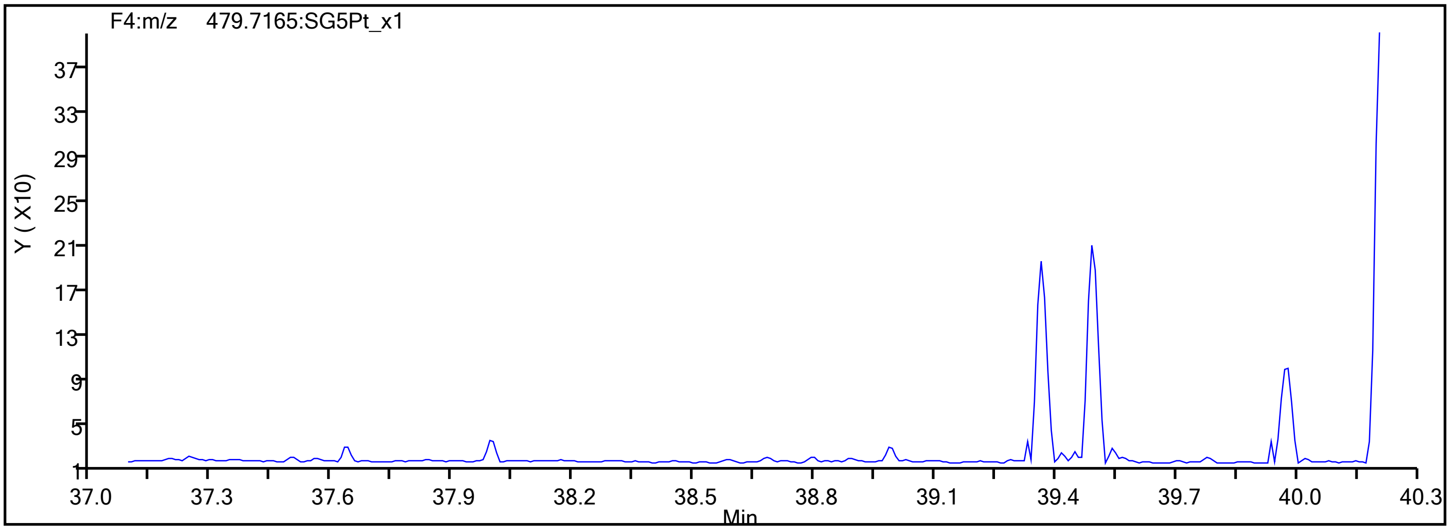

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

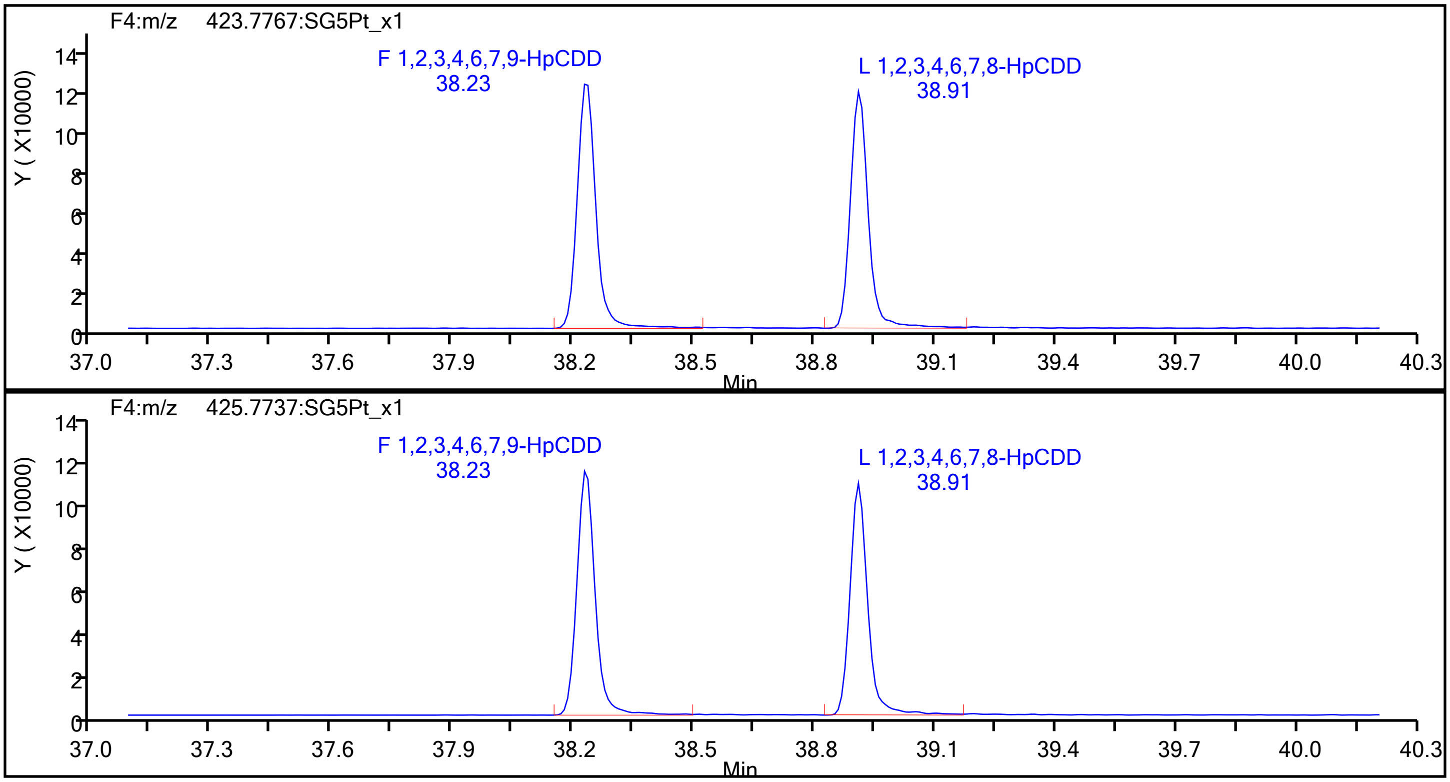

HpCDD Standards

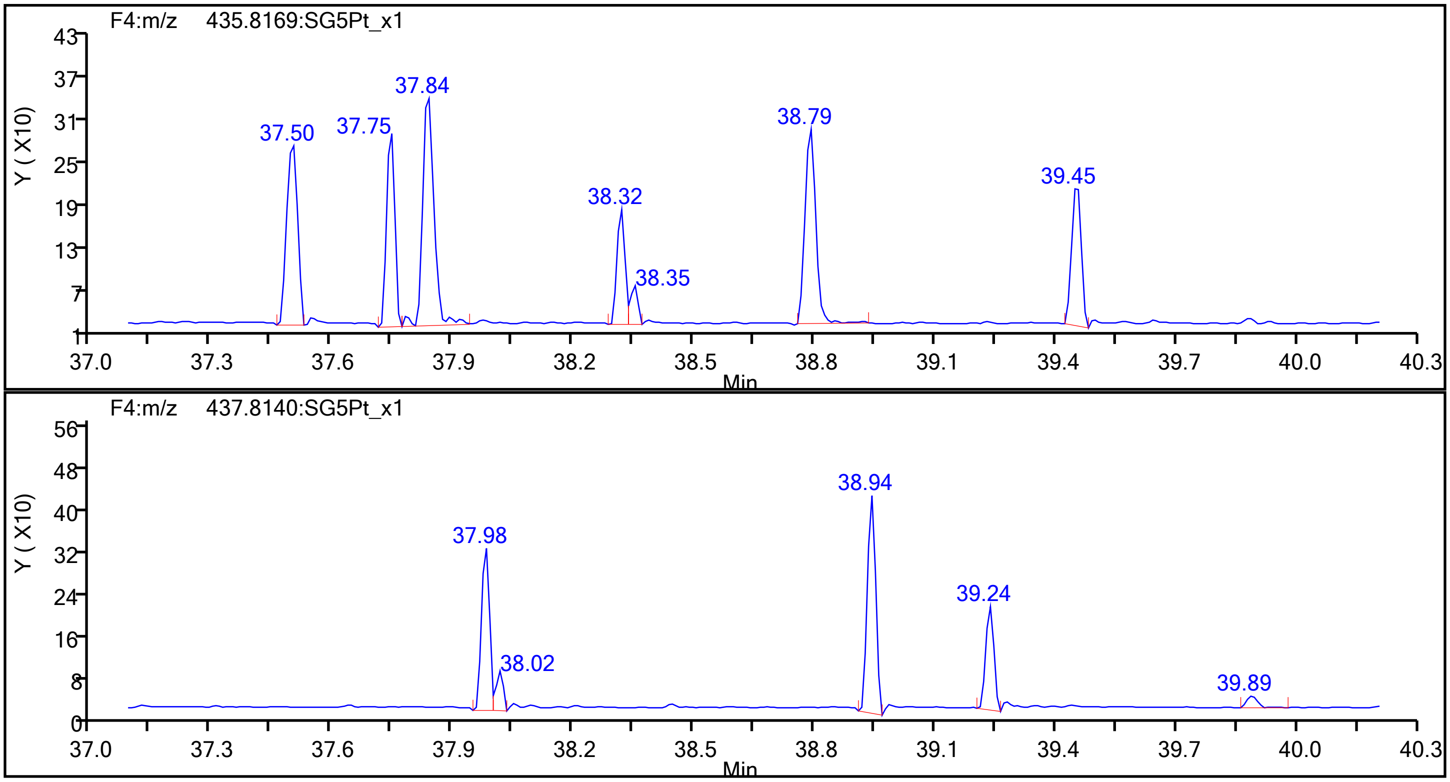

Report Date: 16-Oct-2020 10:28:45 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d		
Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

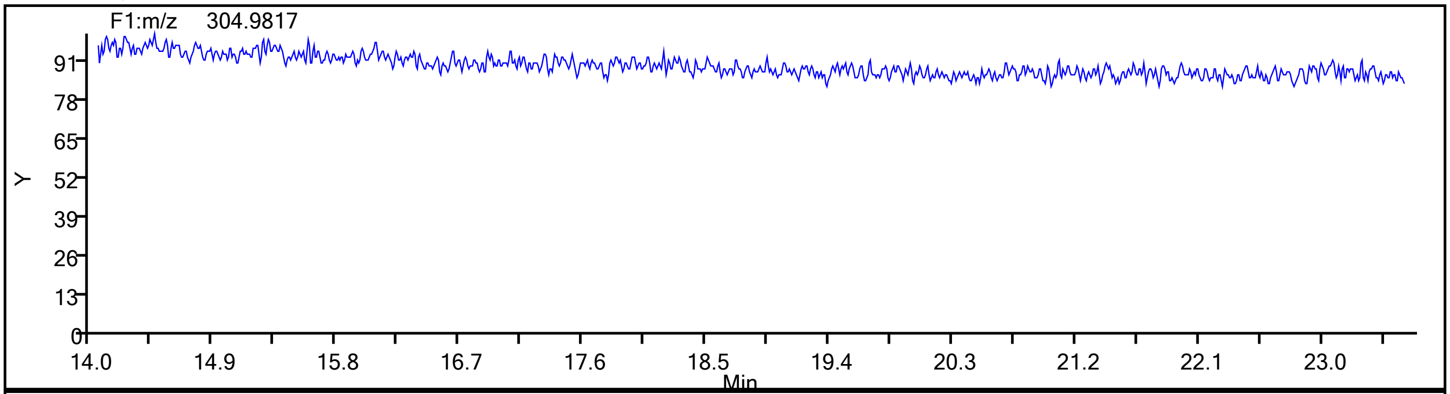

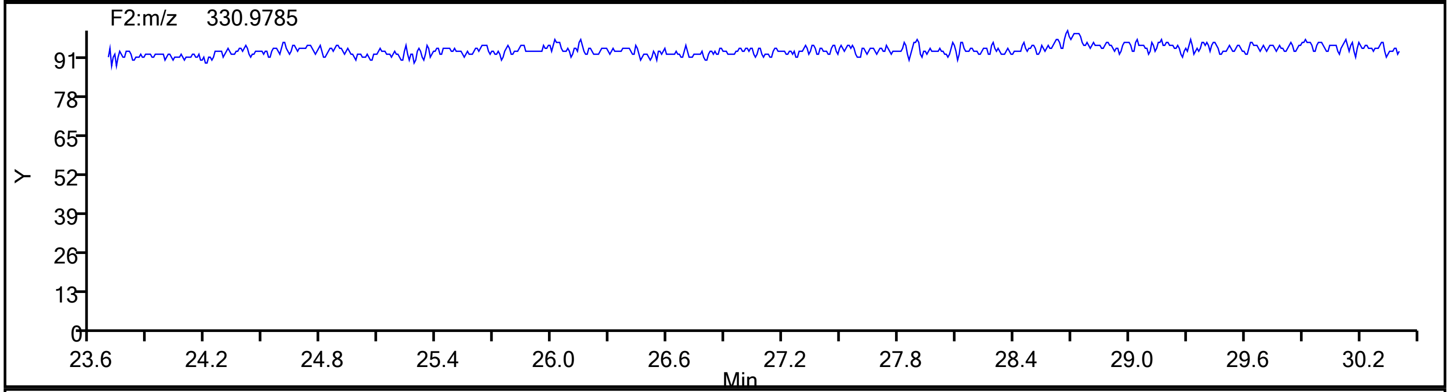

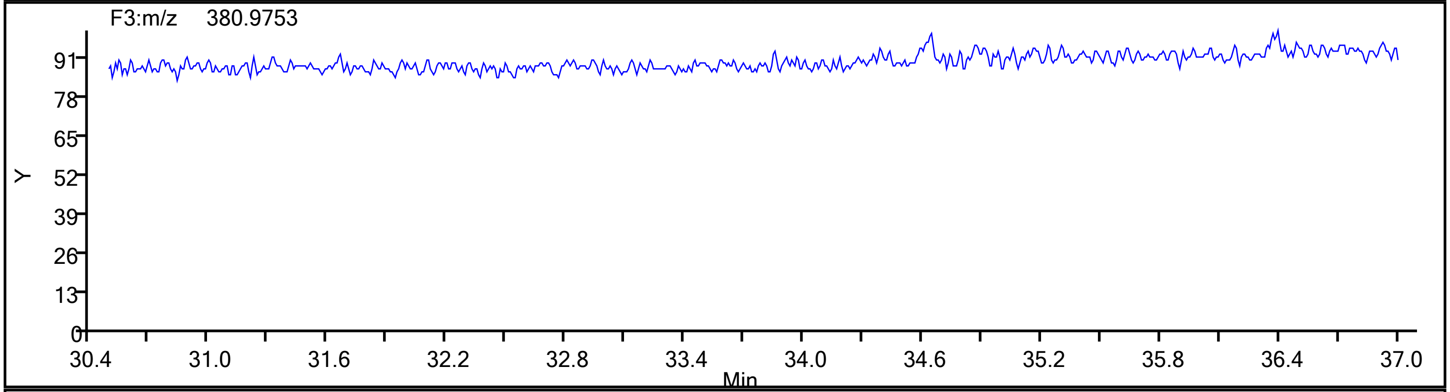

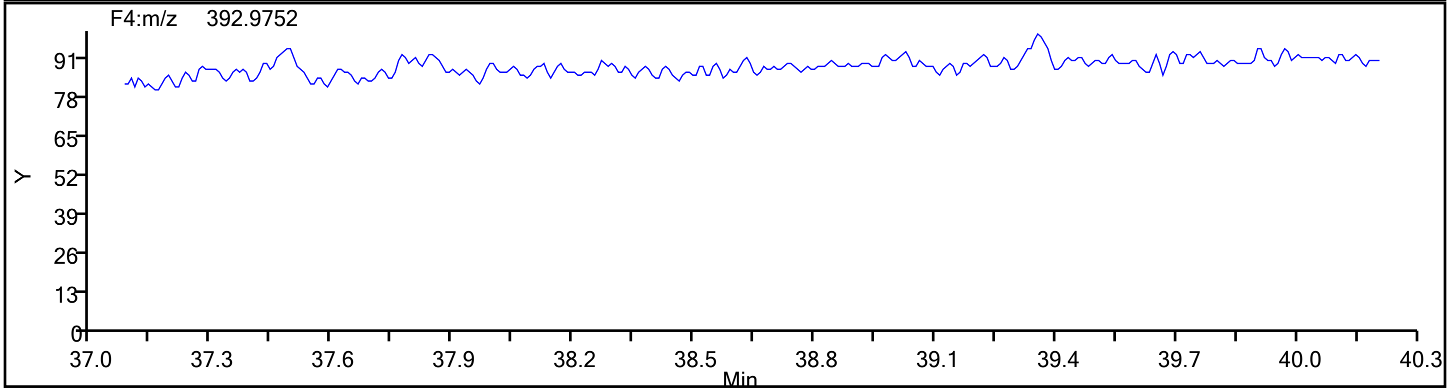

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201015-105493.b\15oc20dfs1_2.d

Injection Date:	15-Oct-2020 12:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422239	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

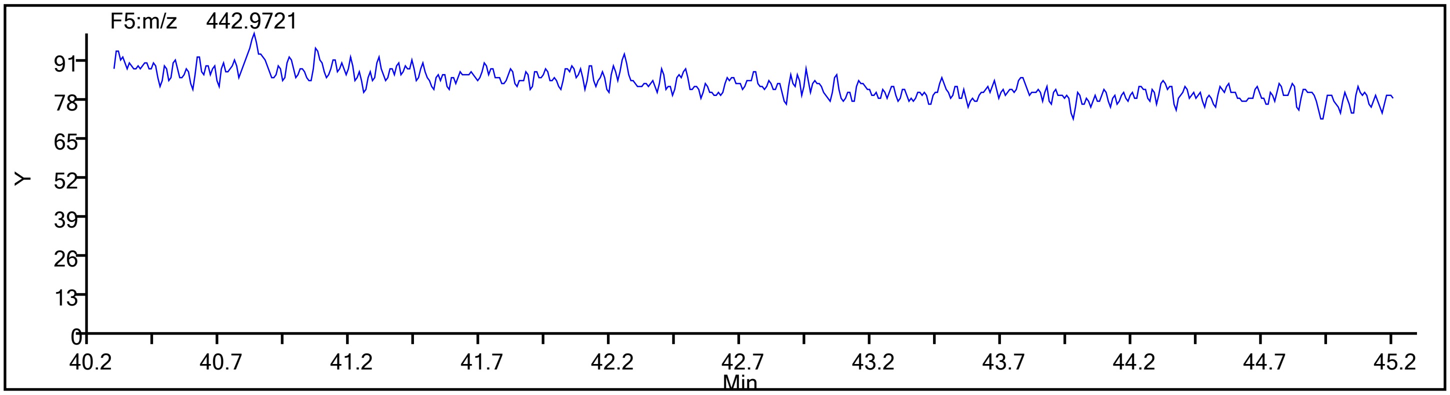

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 16-Oct-2020 17:42:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Oct-2020 12:20:58 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	18.695	1552044	0.78	1.5883					0.00	
2,3,7,8-TCDF	18.738	3446869	0.80	1.0857	81.8	81.8	0.4297	0.4297		
A Non-2,3,7,8-sub-TCDF	18.288						0.4297	0.4297		
S Total TCDF					81.8	81.8	0.4297	0.4297		
D 13C-2,3,7,8-TCDD	19.934	1024717	0.78	1.1194					0.00	
2,3,7,8-TCDD	19.959	1176845	0.78	1.0810	42.5	42.5	0.3661	0.3661		
A Non-2,3,7,8-sub-TCDD	19.075						0.3661	0.3661		
S Total TCDD					42.5	42.5	0.3661	0.3661		
A F1 PeCDFs	22.988						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	26.439	16520	1.39	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	26.870						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	33.756						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.278	11081	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	37.880	1402945	1.04	1.5064						
1,2,3,4,7,8,9-HpCDF	39.202	1206925	1.05	1.4548						
A Non-2,3,7,8-sub-HpCDF	38.541						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	38.890	933031	1.05	1.0640						
A Non-2,3,7,8-sub-HpCDD	38.941						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.777	2098552	0.80							
1,3,6,8-TCDD	16.263	1184747	0.78							
2,3,4,7-TCDF	18.738	3446869	0.80							
1,2,3,7-TCDD	19.771	935593	0.77							
1,2,3,9-TCDF	20.140	1482223	0.80							
1,2,3,9-TCDD	20.226	1224300	0.77							
1,2,8,9-TCDF	21.800	1533136	0.81							
1,2,8,9-TCDD	21.886	469074								
1,3,4,6,8-PeCDF	22.401	1468029	1.57							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	24.728	995961	1.55							
1,2,3,8,9-PeCDD	29.013	960934	1.57							
1,2,3,8,9-PeCDF	29.164	1250956	1.57							
1,2,3,4,6,8-HxCDF	31.482	1474143	1.26							
1,2,4,6,7,9-HxCDD	32.906	1028309	1.25							
1,2,3,4,6,7-HxCDD	35.651	994289	1.26							
1,2,3,4,8,9-HxCDF	36.030	1335337	1.26							
1,2,3,4,6,7,9-HpCDD	38.208	1003819	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 17-Oct-2020 12:20:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 16-Oct-2020 17:42:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Oct-2020 12:20:58 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	18.695	18.695	0	1.000	679811	108064	684	1710	158		
317.9389	18.695	18.695	0	1.000	872233	139451	385	962	362	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.738	18.738	0	1.002	1528059	212377	517	1292	411		
305.8987	18.730	18.738	-1	1.002	1918810	265868	638	1595	417	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.288						517	1292			
305.8987	18.288						638	1595			
13C-2,3,7,8-TCDD											
331.9368	19.934	19.934	0	1.000	448414	61651	434	1085	142		
333.9338	19.934	19.934	0	1.000	576303	83098	88	220	944	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.959	19.959	0	1.001	516998	71902	290	725	248		
321.8936	19.959	19.959	0	1.001	659847	92646	283	707	327	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.075						290	725			
321.8936	19.075						283	707			
A F1 PeCDFs											
339.8597	22.988						27	67			
341.8567	22.988						77	192			
A Non-2,3,7,8-sub-PeCDF											
339.8597	25.856	26.439	-35	1.000	6025	821	127	317	6		
341.8567	25.856	26.439	-35	1.000	4352	537	118	295	5	1.38(1.32-1.78)	
339.8597	26.428	26.439	-1	1.000	3569	639	127	317	5		
341.8567	26.419	26.439	-1	1.000	2574	439	118	295	4	1.39(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.870						173	432			
357.8516	26.870						88	220			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.756						229	572			
375.8178	33.756						173	432			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	34.270	34.278	-1	1.000	8484	1328	122	305	11		
391.8127	34.286	34.278	0	1.000	4947	905	126	315	7	1.71(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.880	37.880	0	1.000	714339	213246	356	890	599		
409.7788	37.880	37.880	0	1.000	688606	207410	342	855	606	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.202	39.202	0	1.000	618496	199309	356	890	560		
409.7788	39.202	39.202	0	1.000	588429	188362	342	855	551	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.541						356	890			
409.7788	38.541						342	855			
1,2,3,4,6,7,8-HpCDD											
423.7767	38.890	38.890	0	1.000	478175	152135	289	722	526		
425.7737	38.890	38.890	0	1.000	454856	147784	247	617	598	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						289	722			
425.7737	38.941						247	617			
1,3,6,8-TCDF											
303.9016	14.777	14.777	0		935367	192117	517	1292	372		
305.8987	14.777	14.777	0		1163185	238264	638	1595	373	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.263	16.263	0		519561	97518	290	725	336		
321.8936	16.263	16.263	0		665186	123162	283	707	435	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	18.738	18.738	0		1528059	212377	517	1292	411		
305.8987	18.730	18.738	-1		1918810	265868	638	1595	417	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	19.771	19.771	0		407405	61798	290	725	213		
321.8936	19.771	19.771	0		528188	79740	283	707	282	0.77(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	20.140	20.140	0		658493	93417	517	1292	181		
305.8987	20.140	20.140	0		823730	115103	638	1595	180	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.226	20.226	0		534521	71460	290	725	246		
321.8936	20.235	20.226	1		689779	91133	283	707	322	0.77(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	21.800	21.800	0		684573	87949	517	1292	170		
305.8987	21.800	21.800	0		848563	108841	638	1595	171	0.81(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	21.886	21.886	0		469074	58638	290	725	202		
1,3,4,6,8-PeCDF											
339.8597	22.401	22.401	0		895851	114582	27	67	4244		
341.8567	22.401	22.401	0		572178	72206	77	192	938	1.57(1.32-1.78)	

Report Date: 17-Oct-2020 12:20:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	24.728	24.728	0		605807	100951	173	432	584		
357.8516	24.728	24.728	0		390154	64949	88	220	738	1.55(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	29.013	29.013	0		587479	83441	173	432	482		
357.8516	29.013	29.013	0		373455	53121	88	220	604	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	29.164	29.164	0		764376	103729	127	317	817		
341.8567	29.164	29.164	0		486580	65470	118	295	555	1.57(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	31.482	31.482	0		823161	104526	229	572	456		
375.8178	31.482	31.482	0		650982	83976	173	432	485	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	32.906	32.906	0		570690	88824	122	305	728		
391.8127	32.906	32.906	0		457619	70935	126	315	563	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.651	35.651	0		555201	131095	122	305	1075		
391.8127	35.651	35.651	0		439088	102844	126	315	816	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.030	36.030	0		744321	180646	229	572	789		
375.8178	36.030	36.030	0		591016	145412	173	432	841	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.208	38.208	0		511525	156019	289	722	540		
425.7737	38.208	38.208	0		492294	151938	247	617	615	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 17-Oct-2020 12:20:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	16-Oct-2020 17:42:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 26.439

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055				
2,3,4,7,8-PeCDF	1.104				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.856	6025	821	4352	537		1.38	
26.428	3569	639	2574	439		1.39	
Signal Totals:							
	9594	1460	6926	976			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16520	2436				1.39	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (16520 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	16-Oct-2020 17:42:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	422778	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 34.278

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.270	8484	1328	4947	905		1.71	R
Signal Totals:							
	8484	1328	4947	905			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13431	2233				1.71	RQ
	11081	2027					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13431 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (11081 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 17-Oct-2020 12:20:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d
Injection Date: 16-Oct-2020 17:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

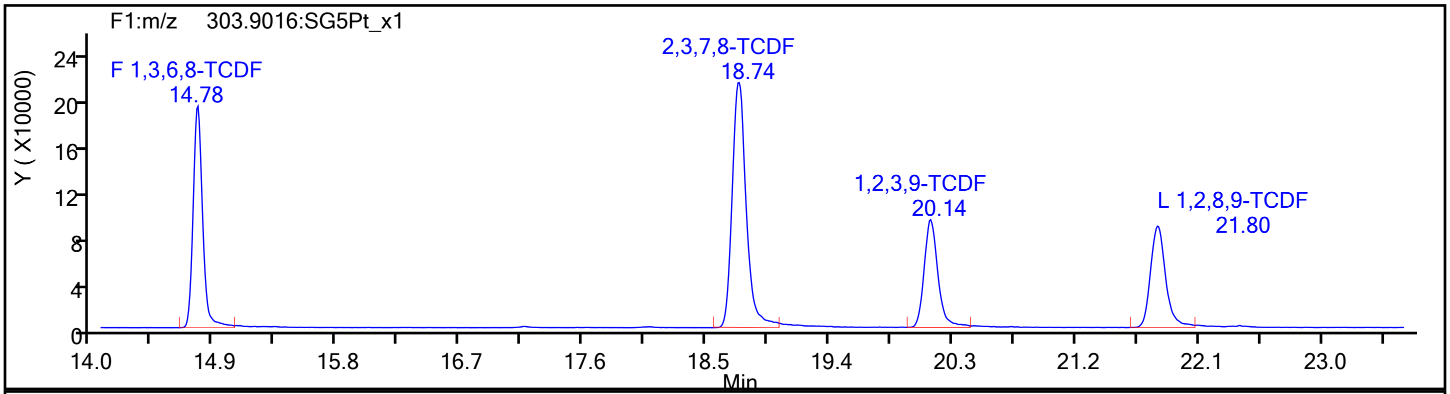

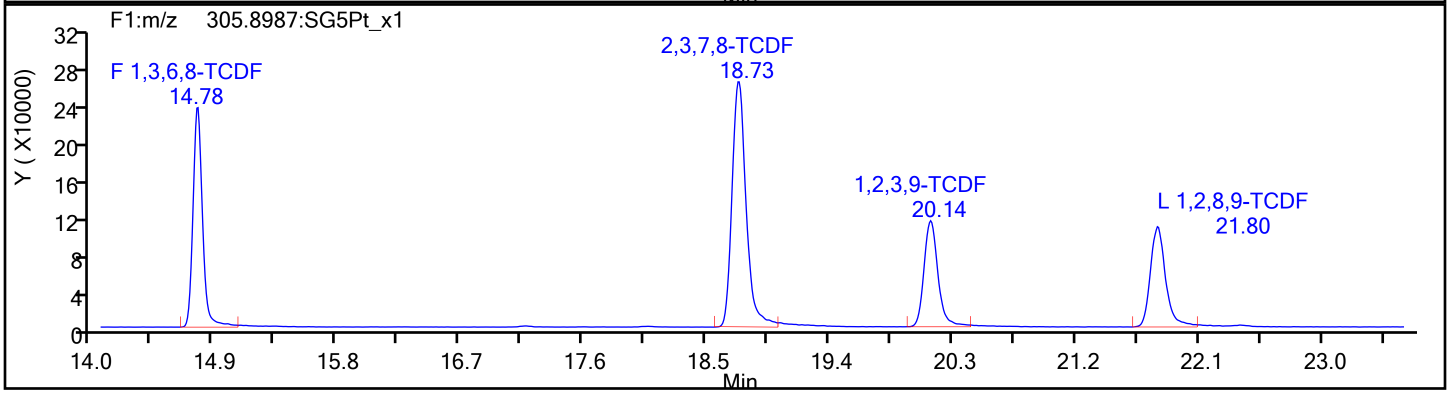

TCDF Standards

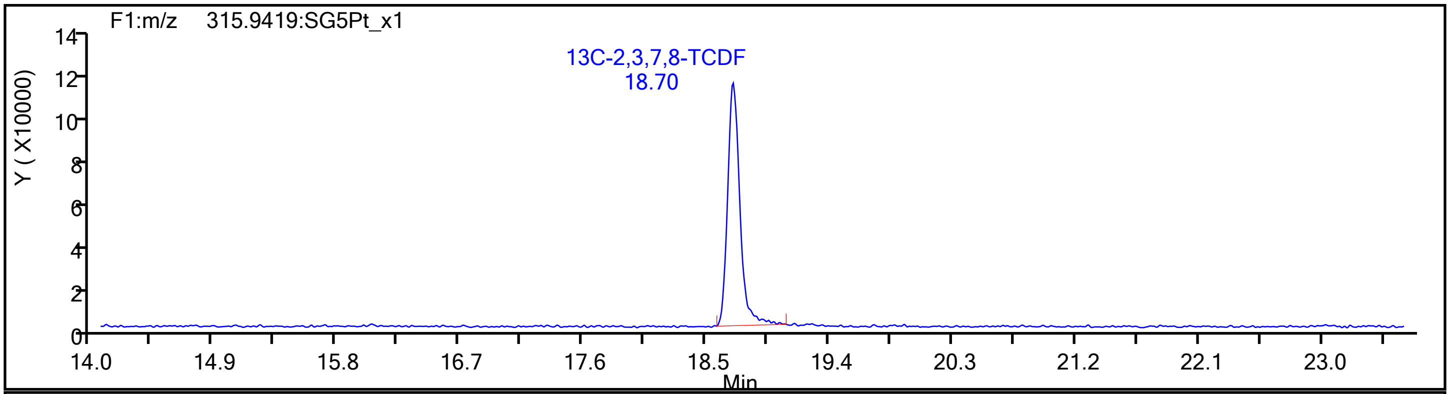

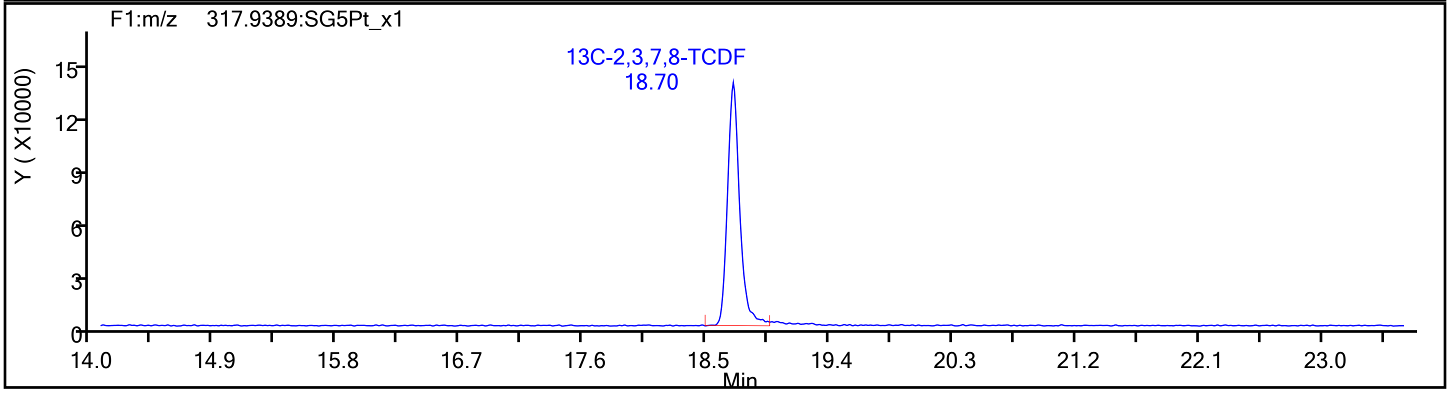

Report Date: 17-Oct-2020 12:20:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d
Injection Date: 16-Oct-2020 17:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

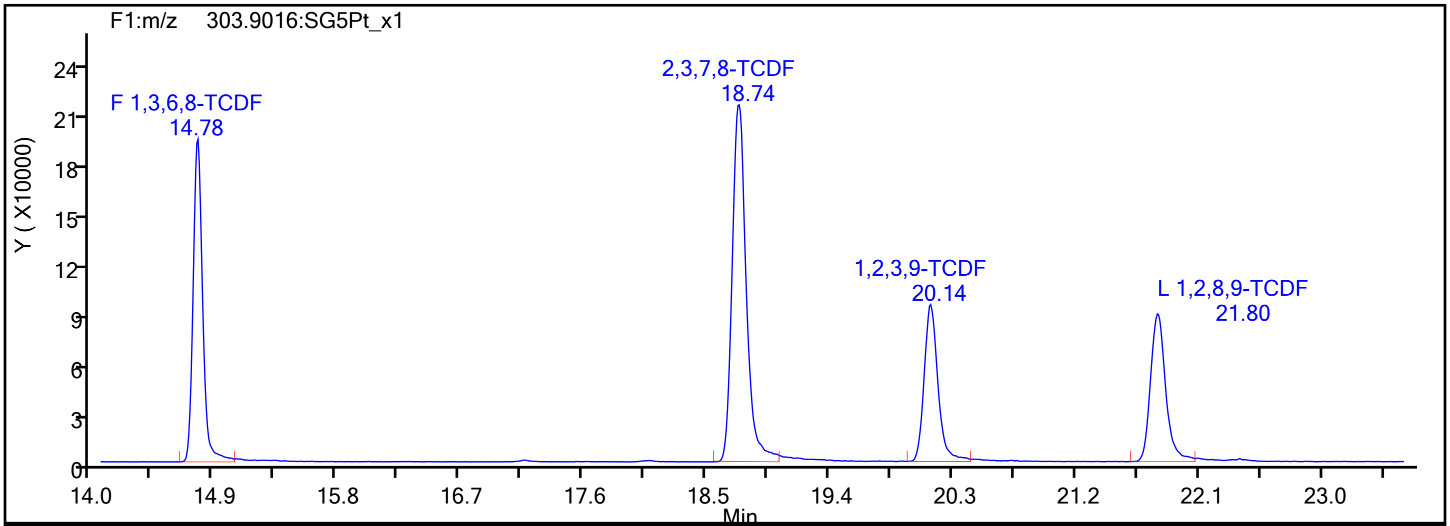

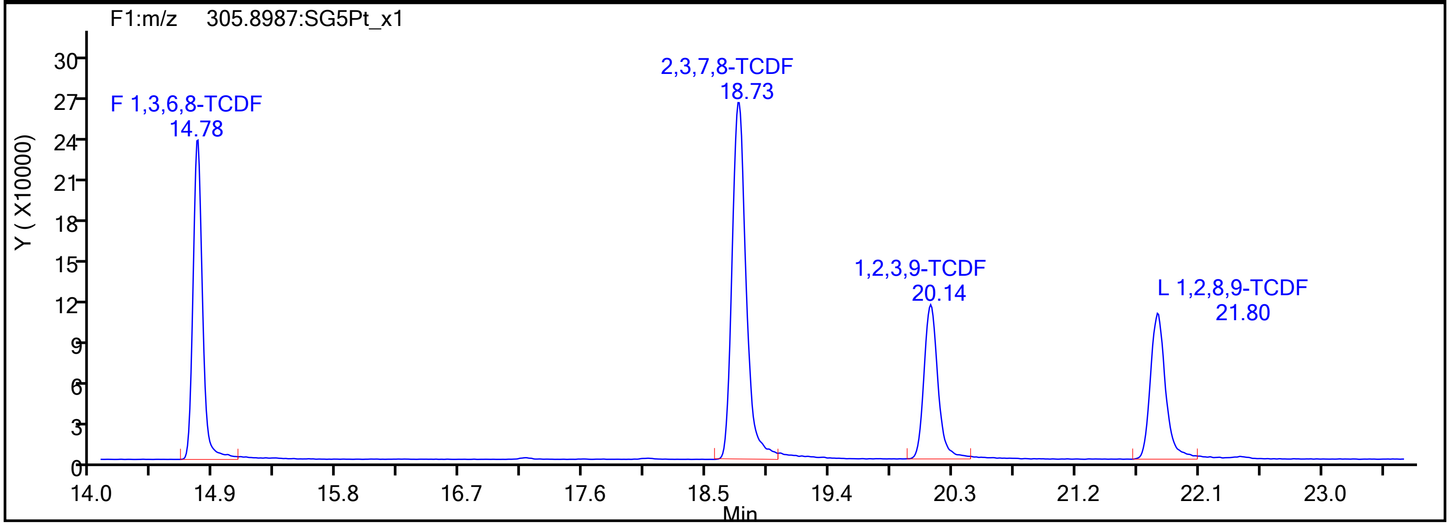

TCDF Interference Mass

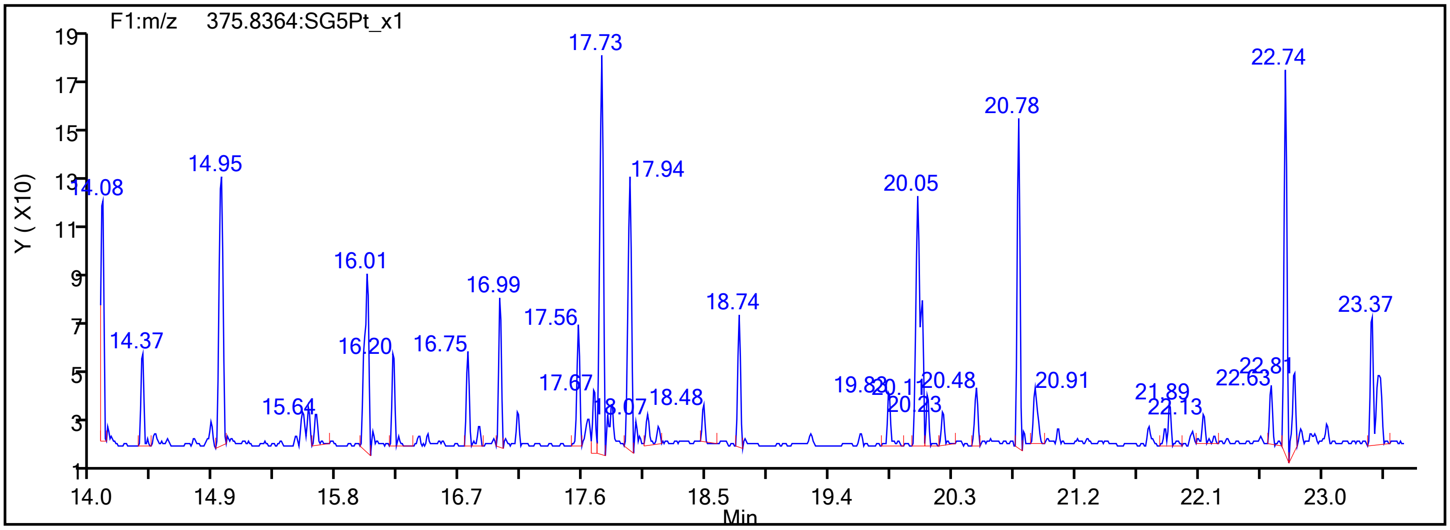

Report Date: 17-Oct-2020 12:20:59 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

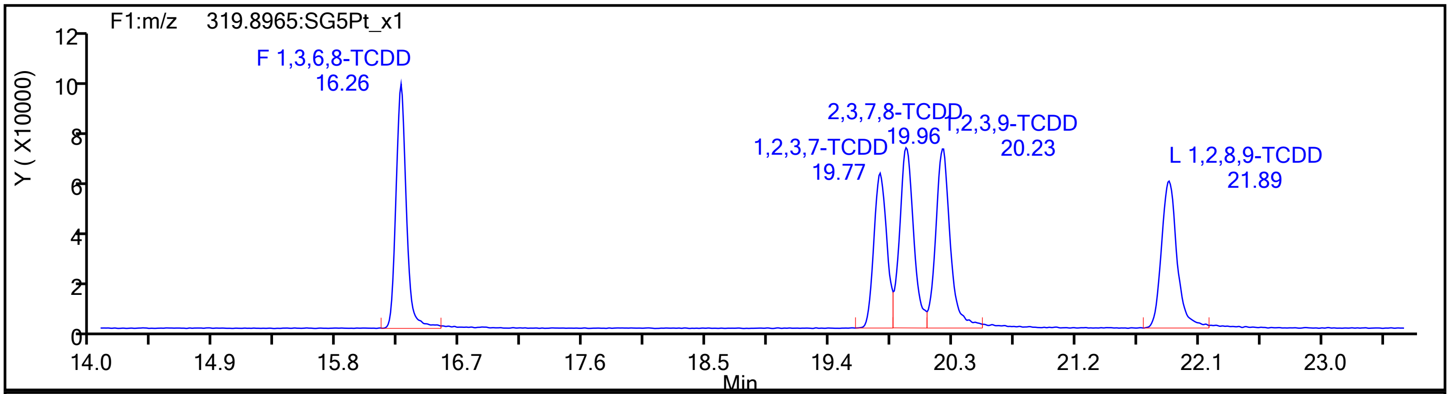

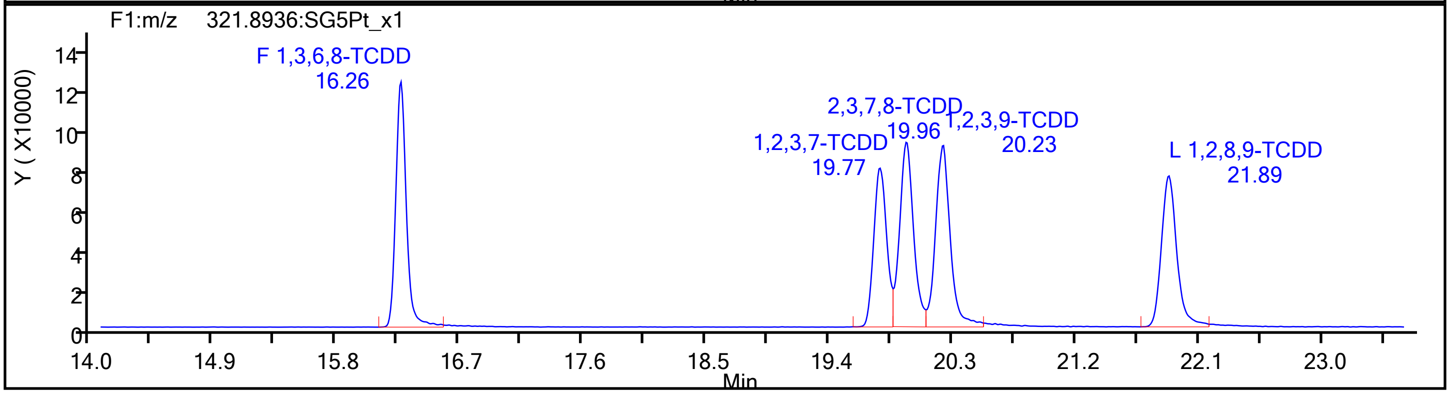

TCDD Standards

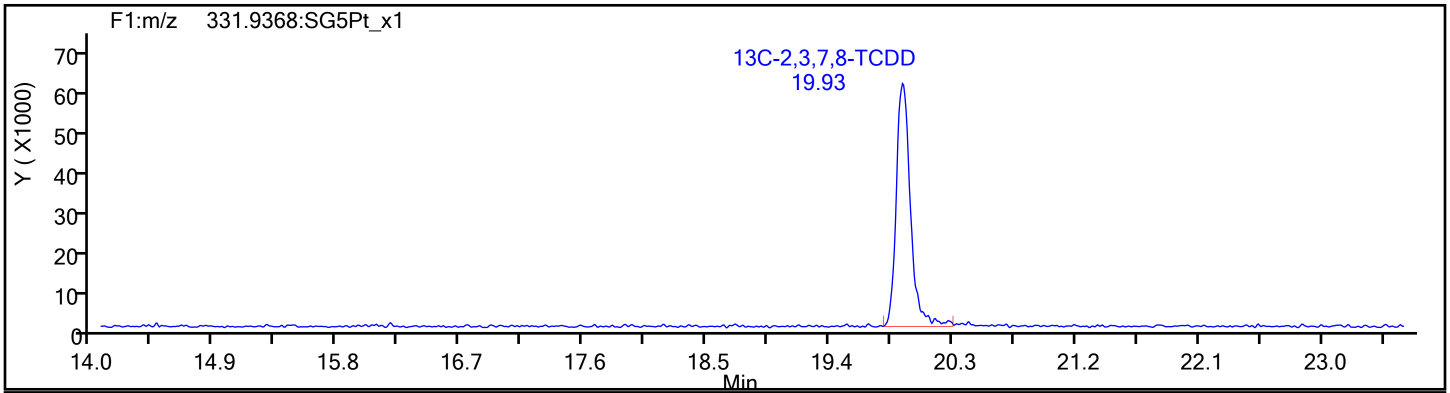

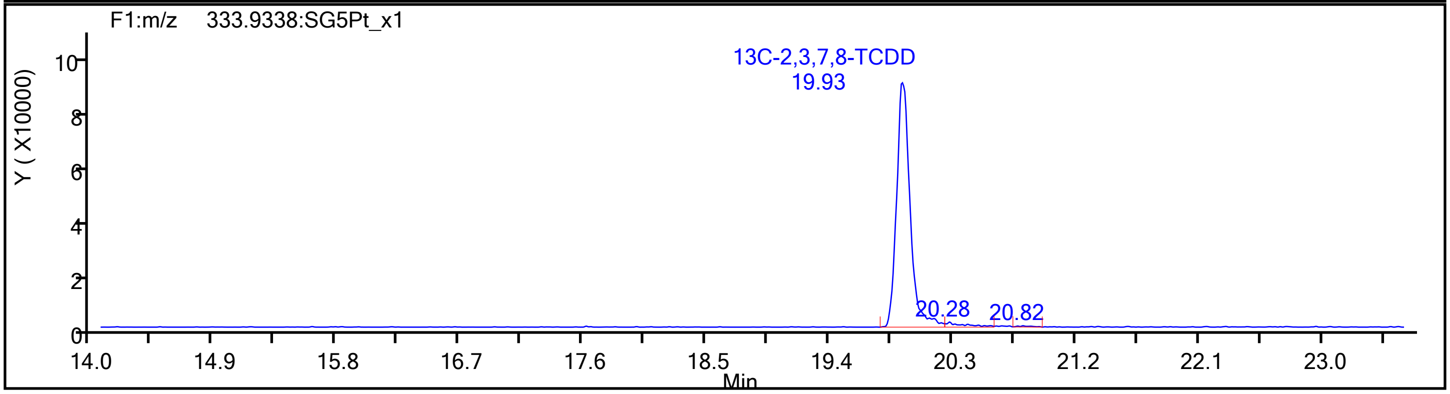

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

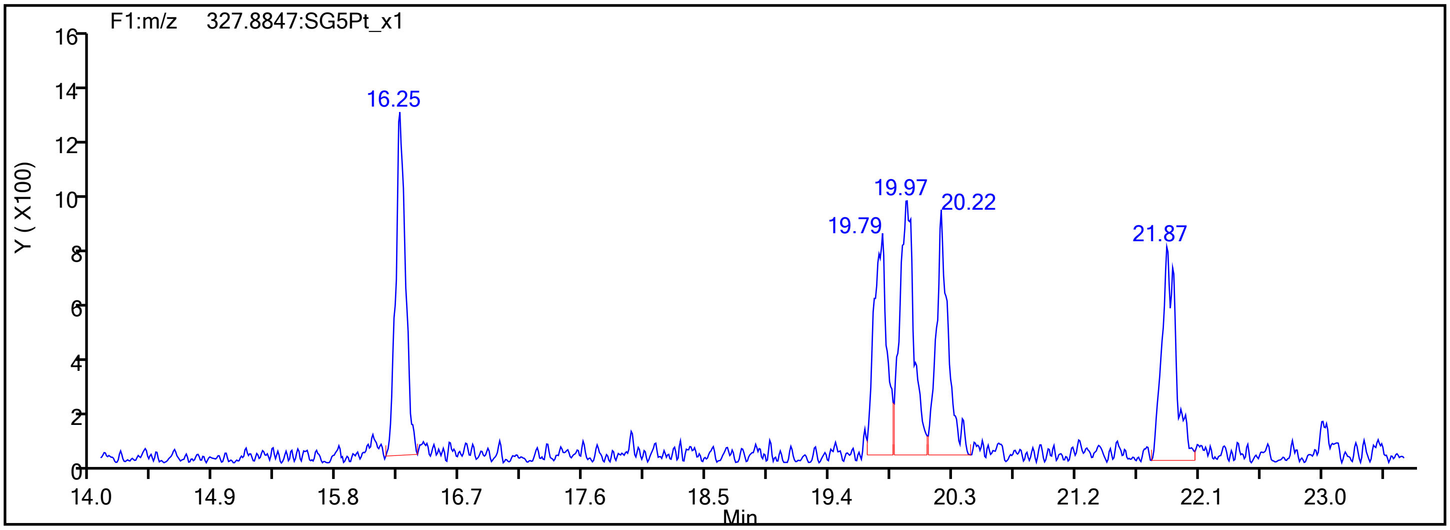

37Cl4-TCDD Standards

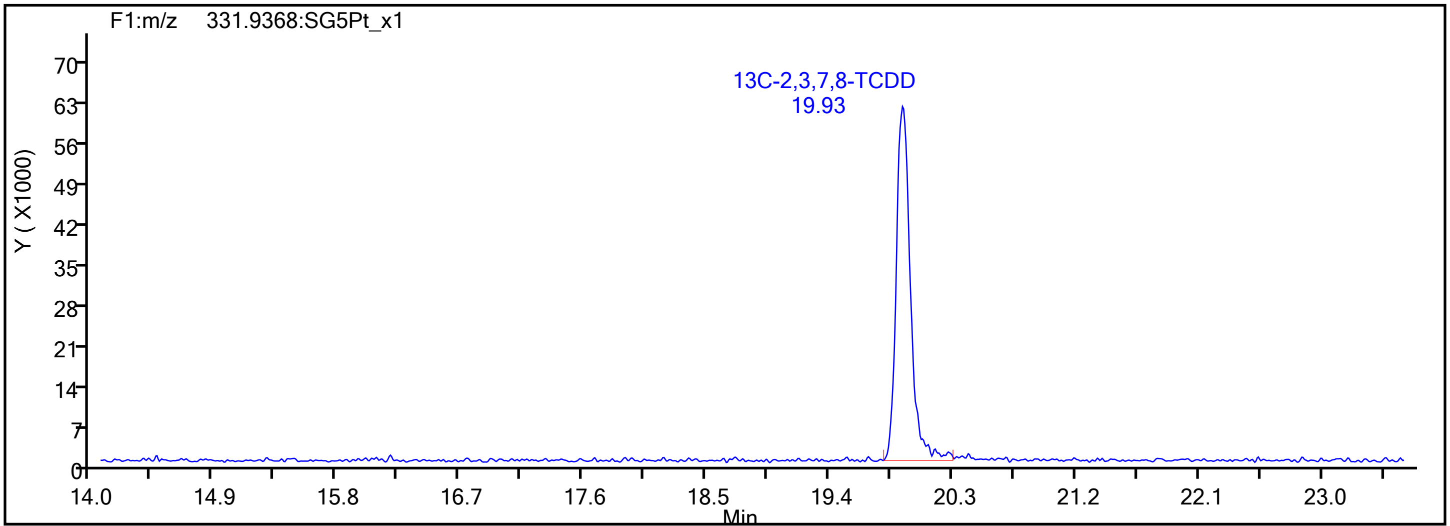

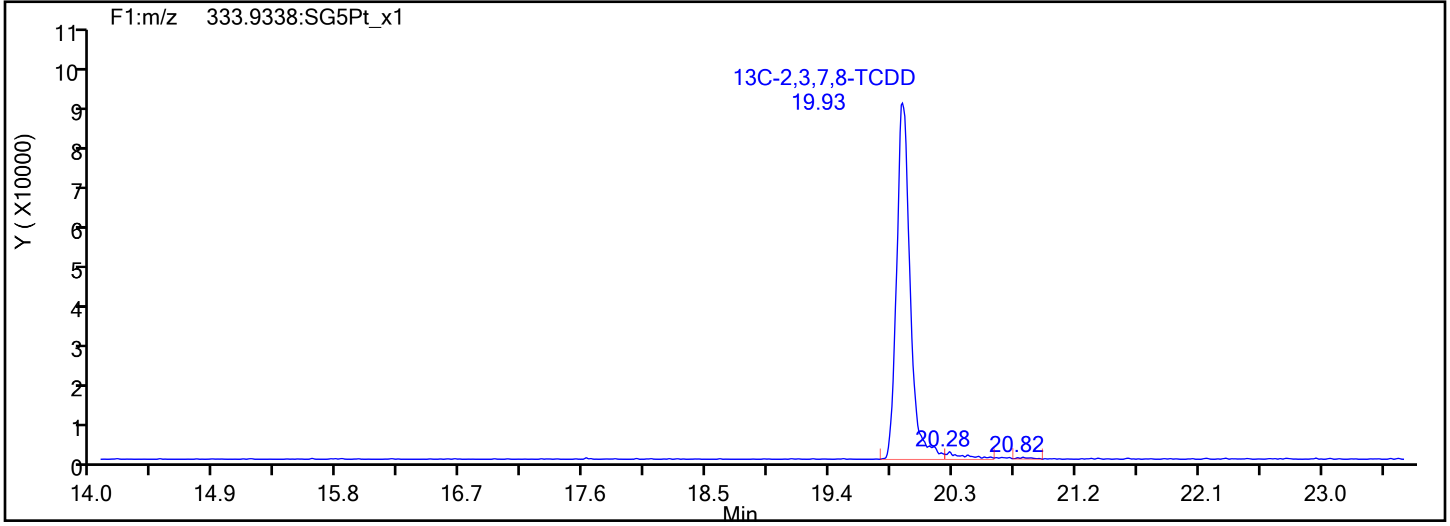

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

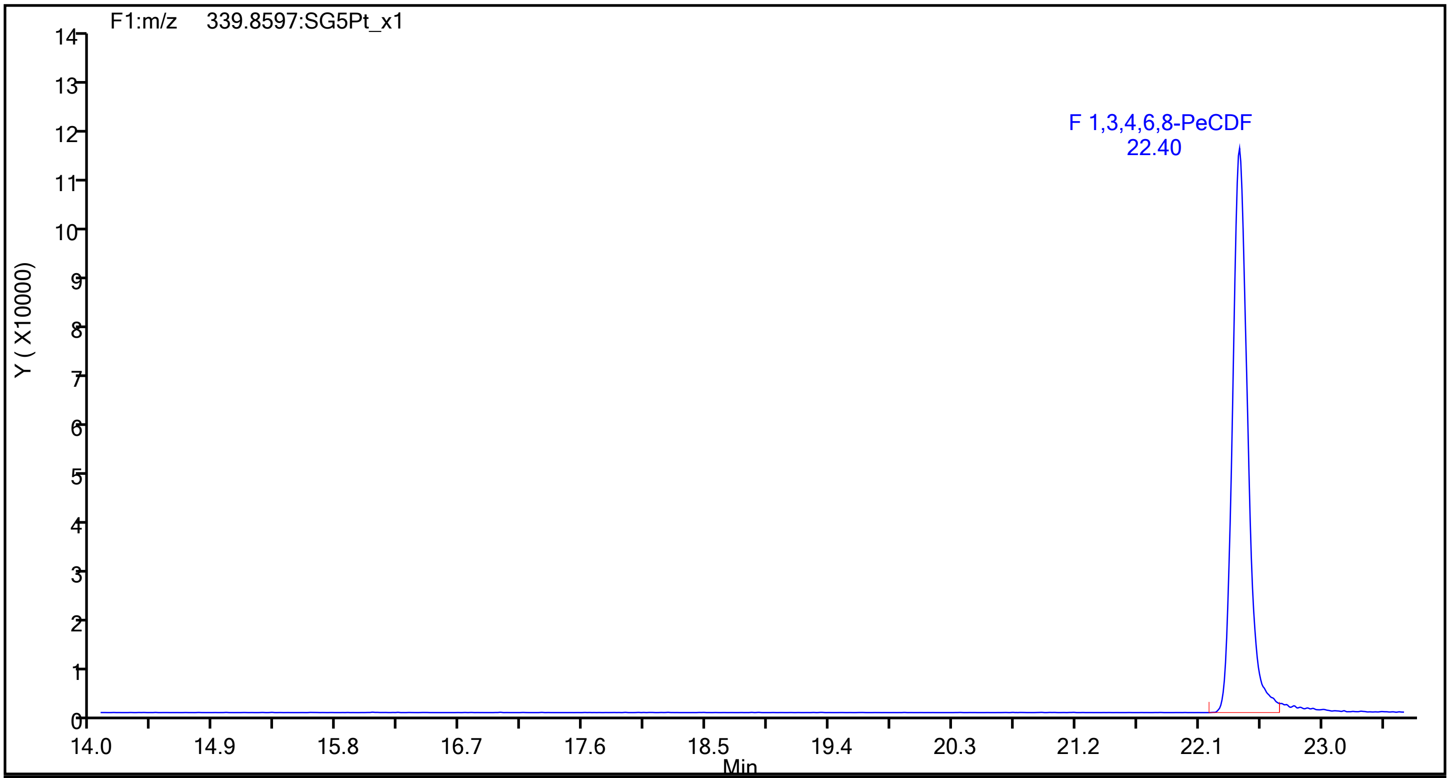

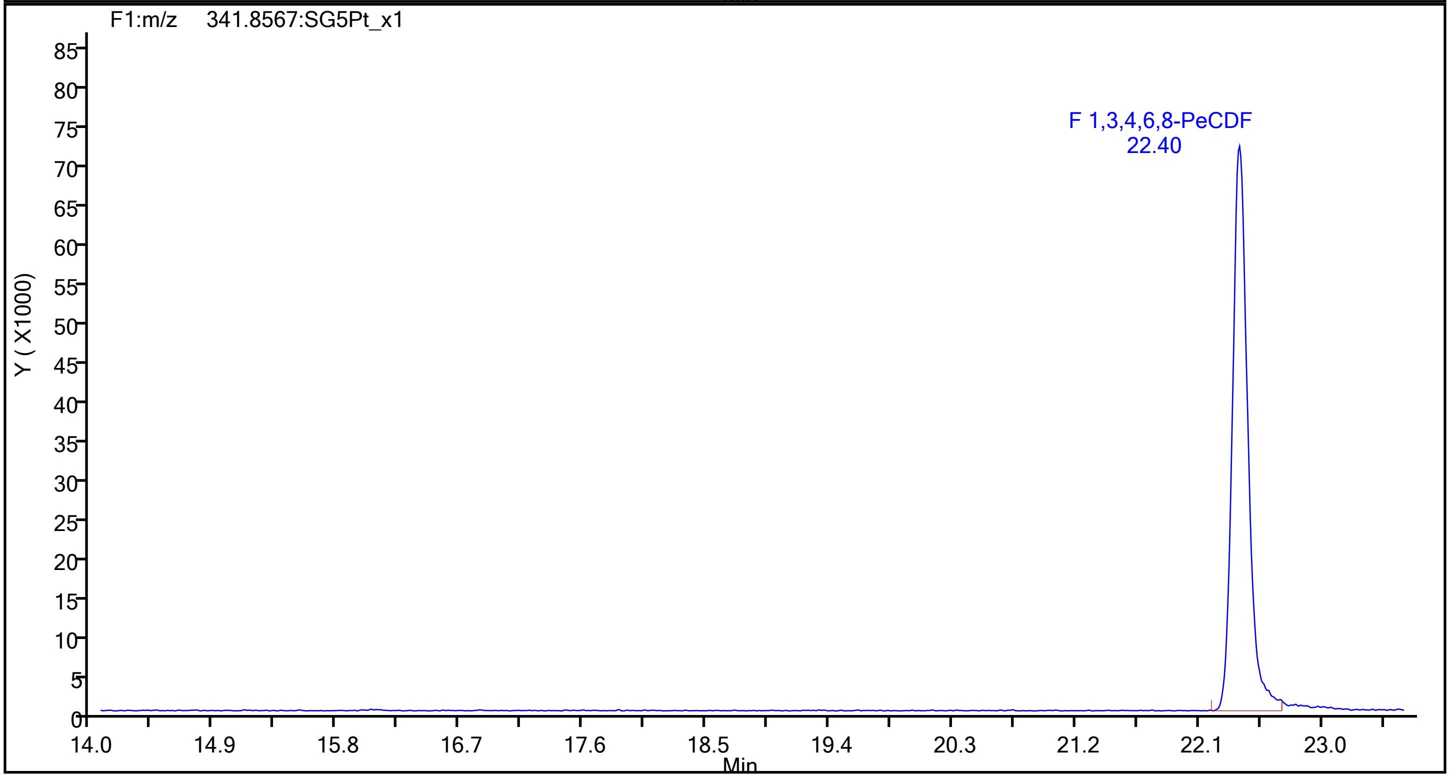

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

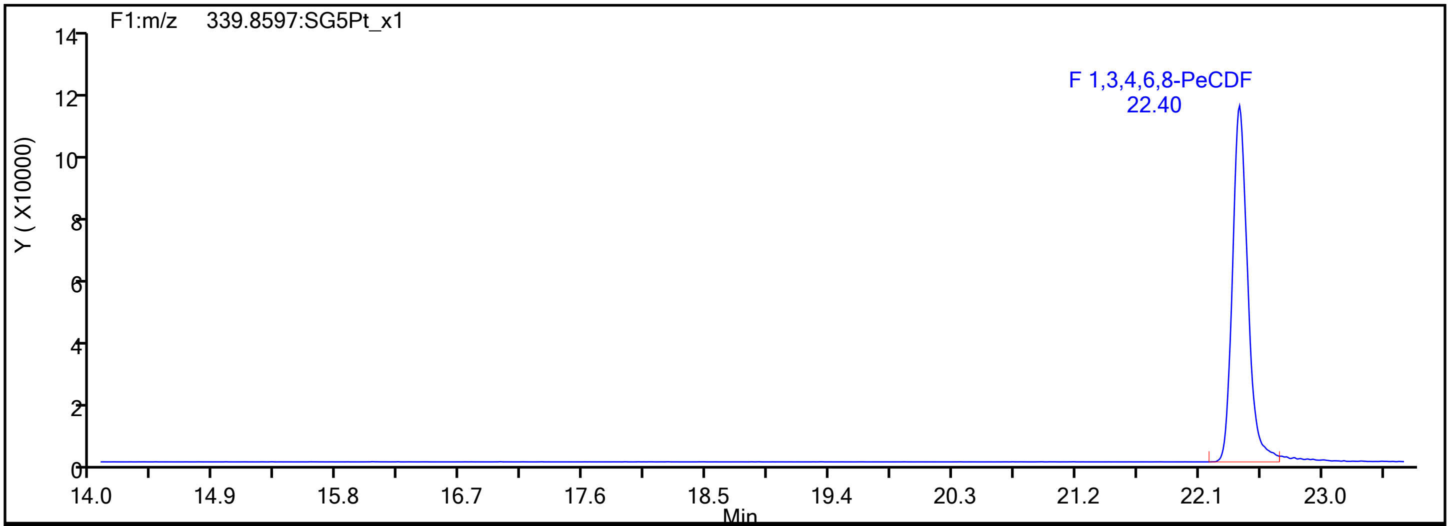

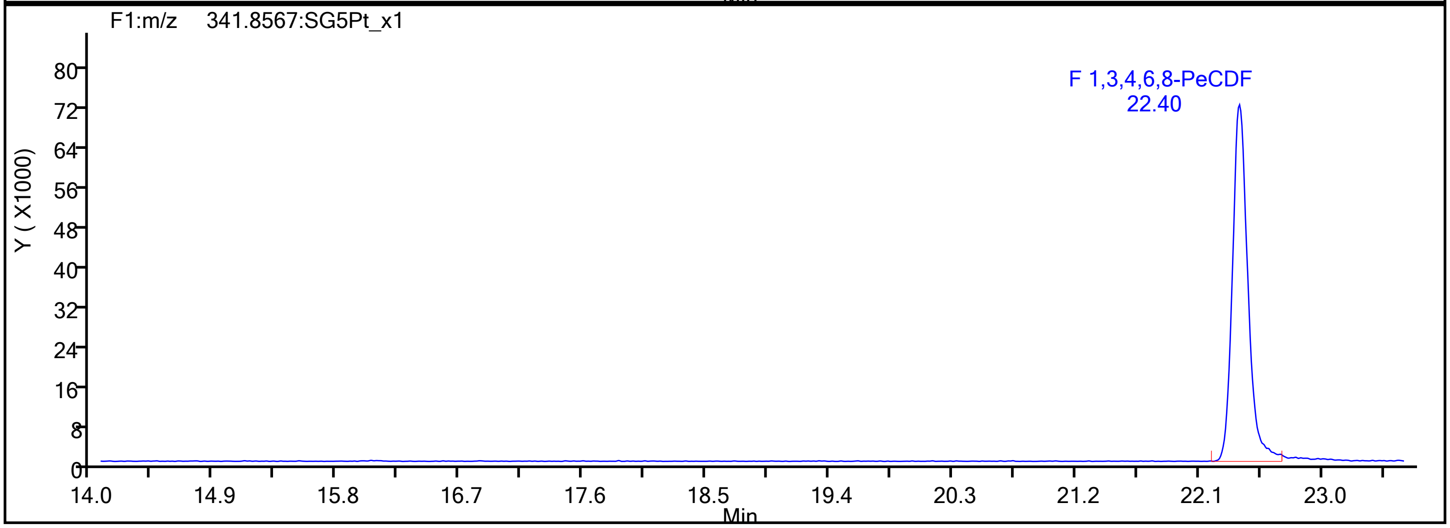

F1 PeCDFs Interference Mass

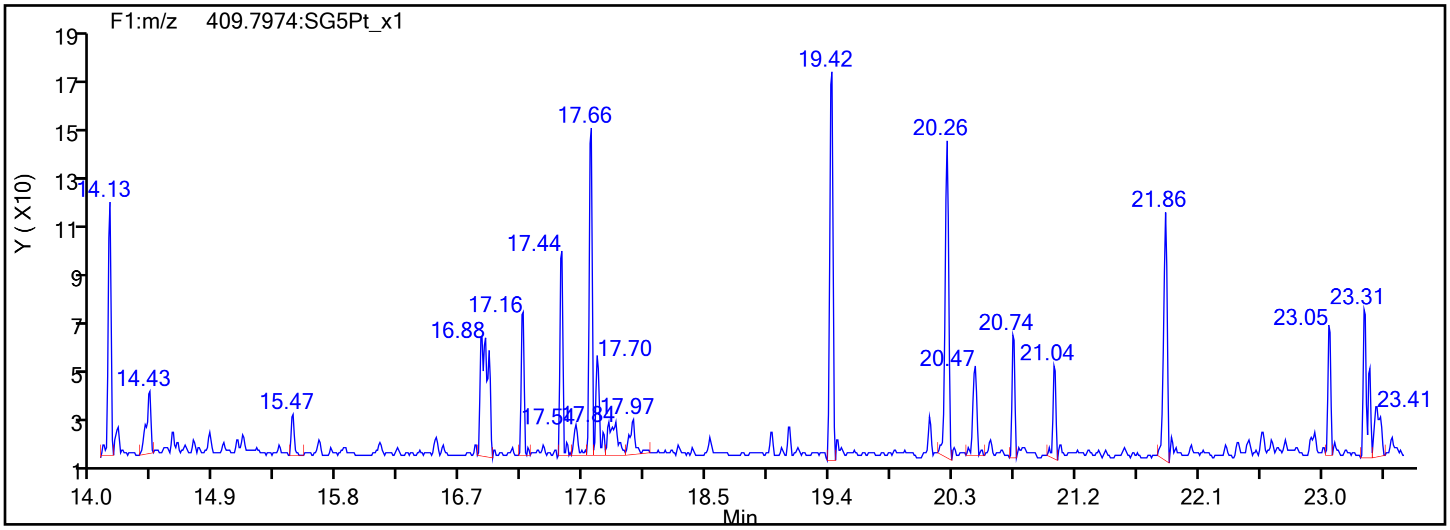

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

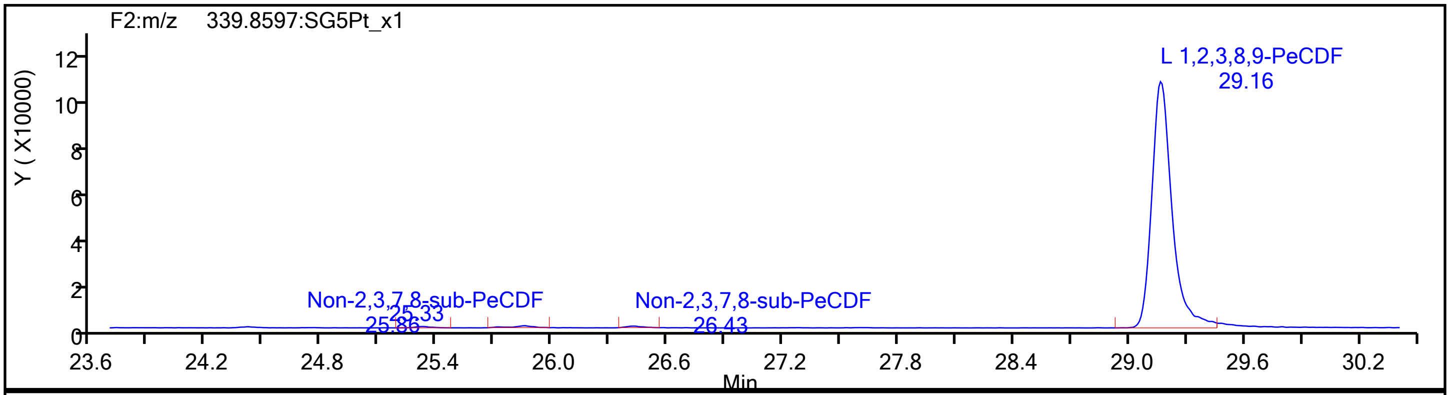

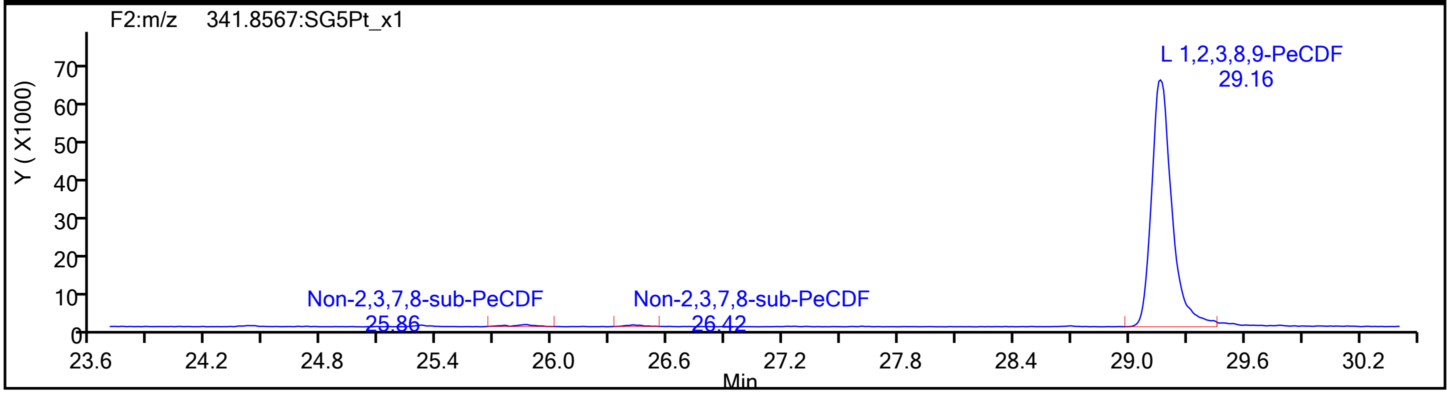

PeCDF Standards

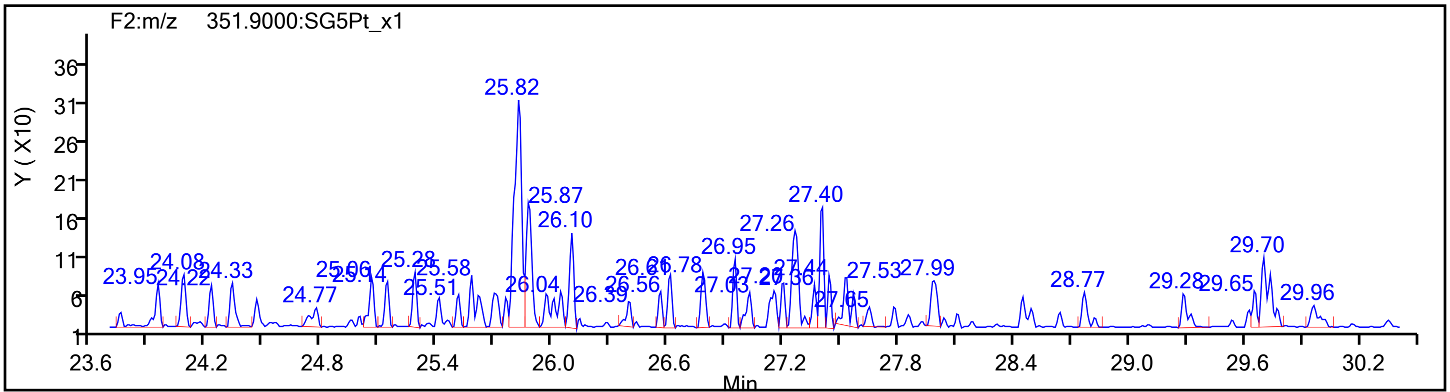

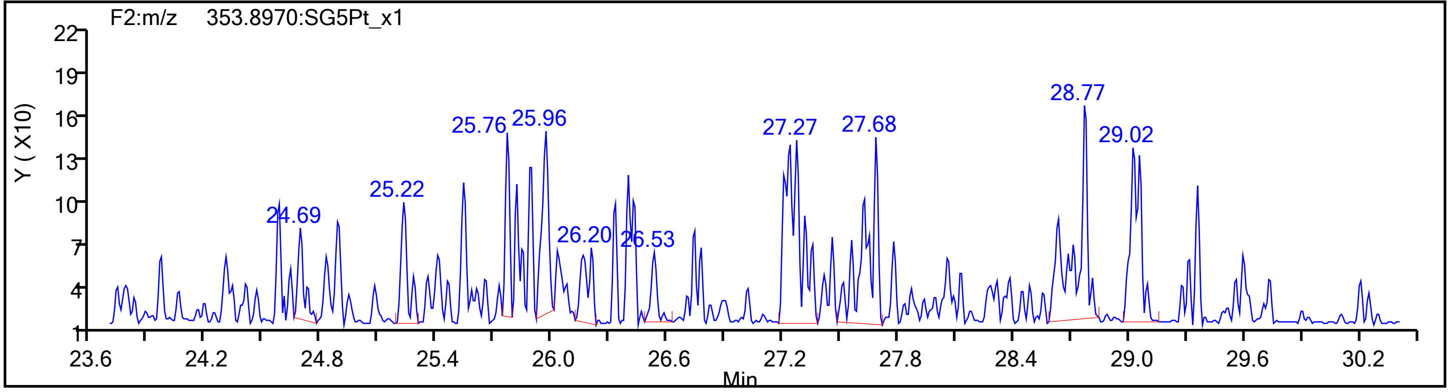

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d

Injection Date: 16-Oct-2020 17:42:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422778

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

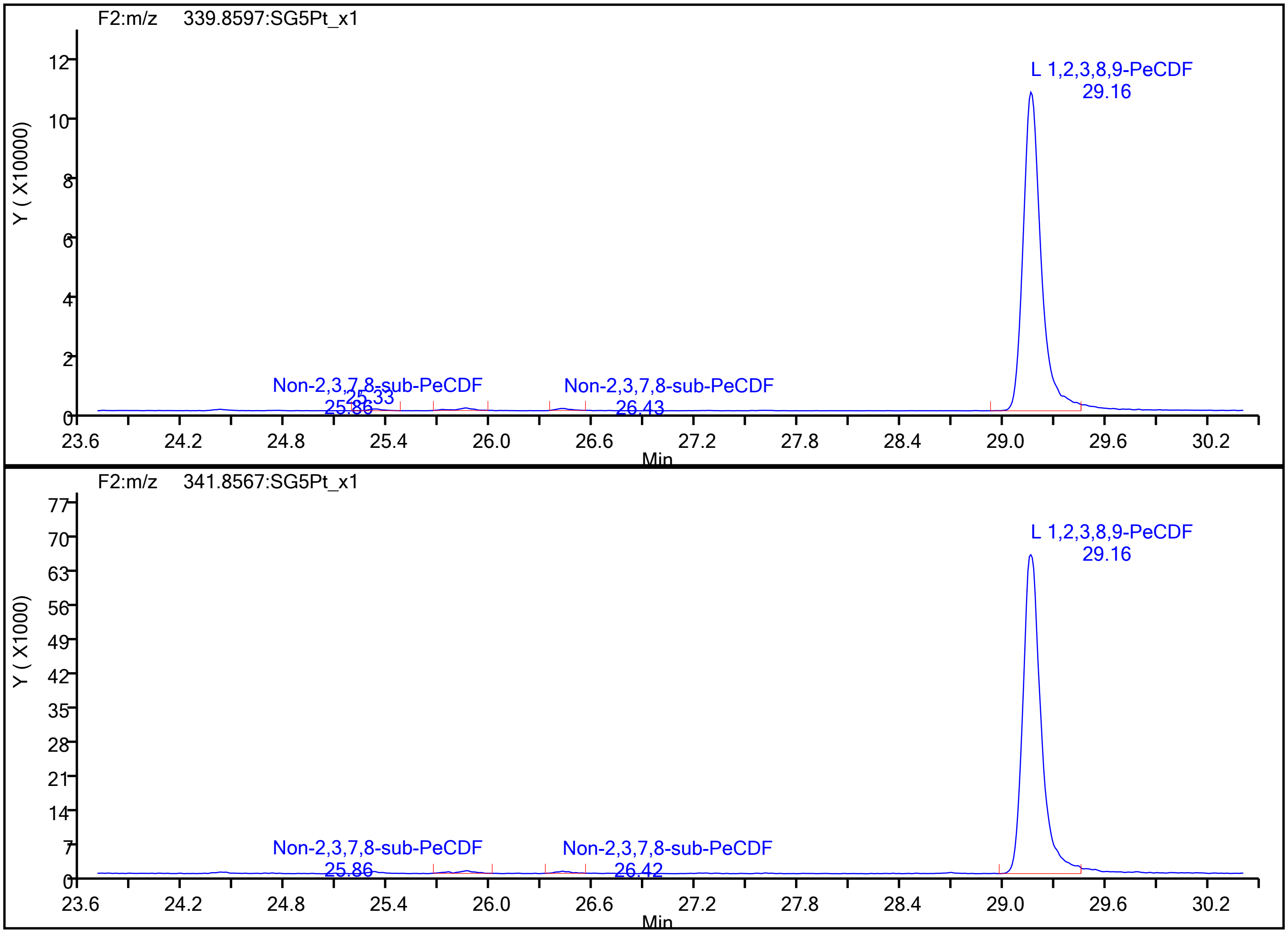

PeCDF Interference Mass

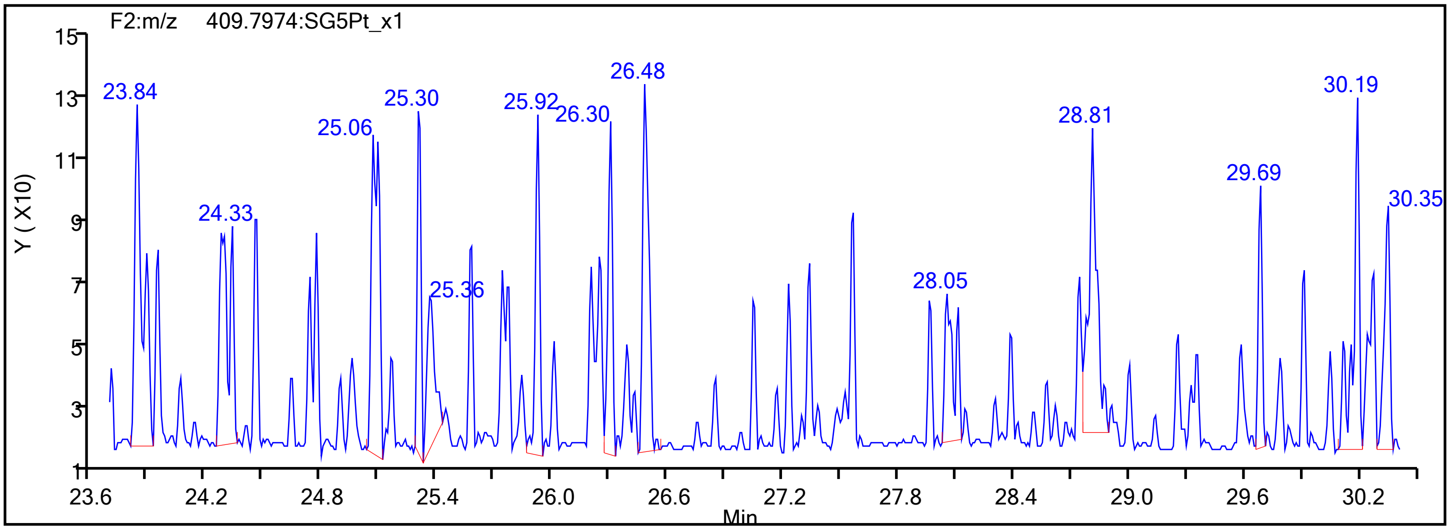

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

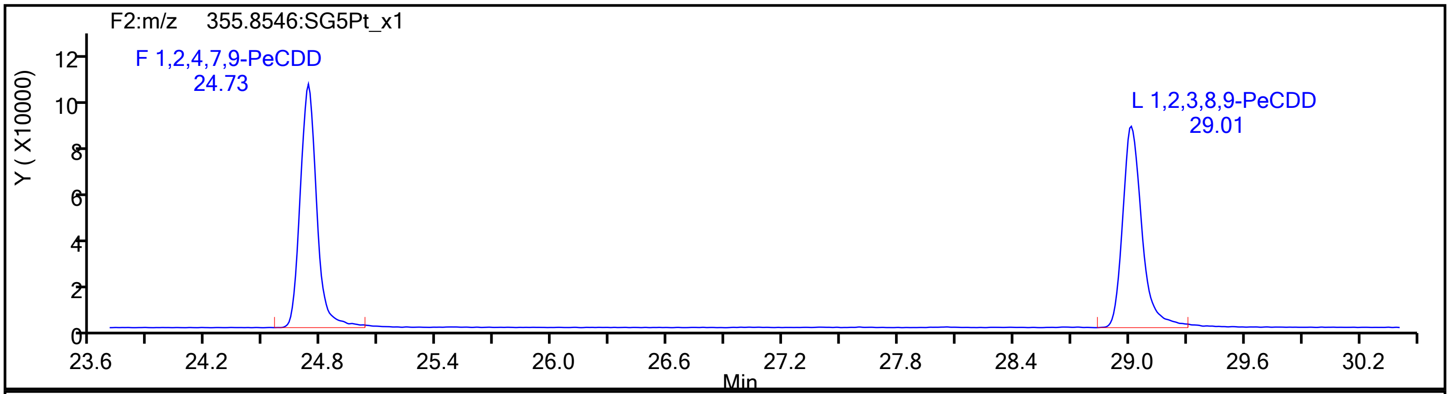

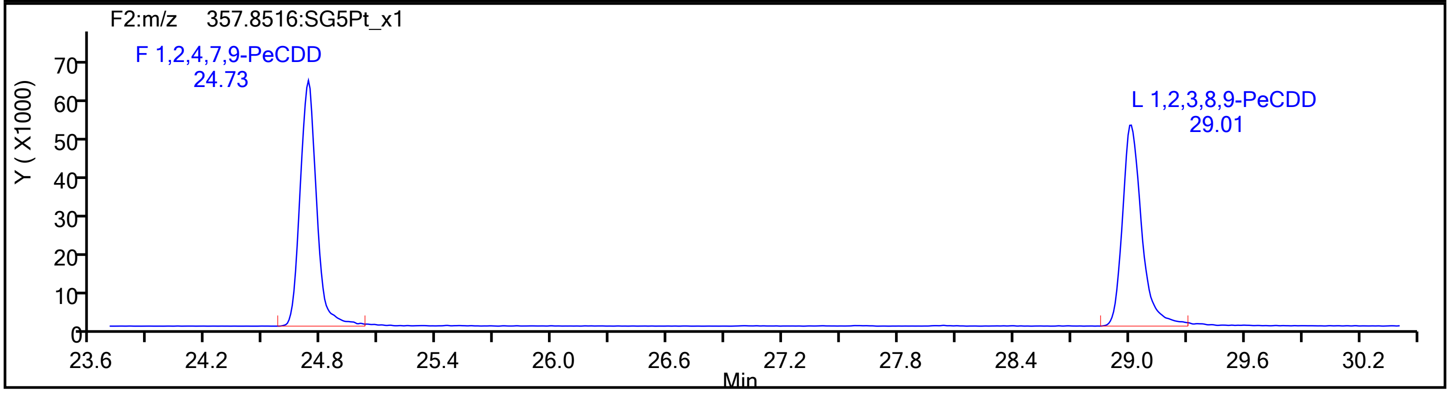

PeCDD Standards

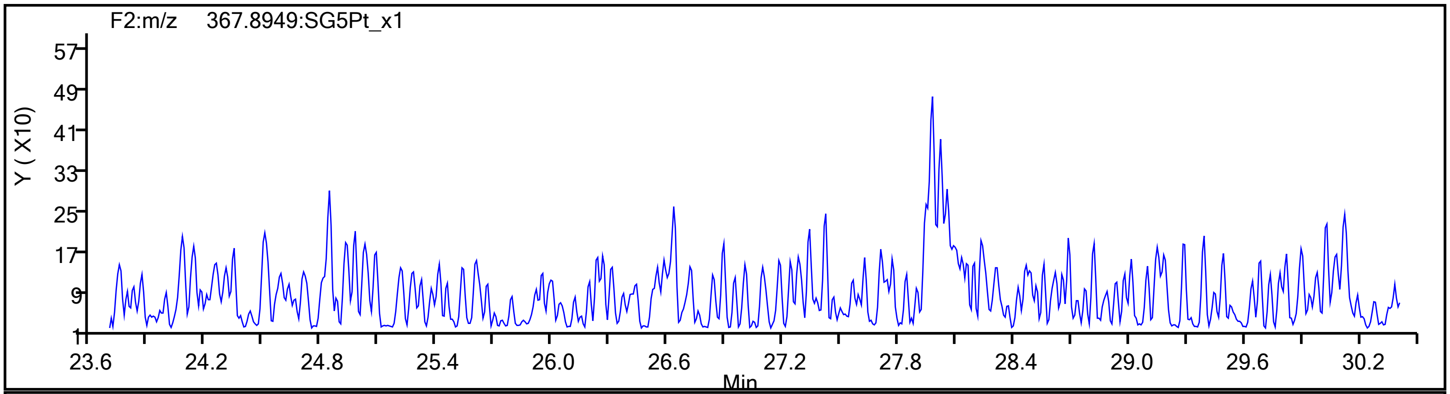

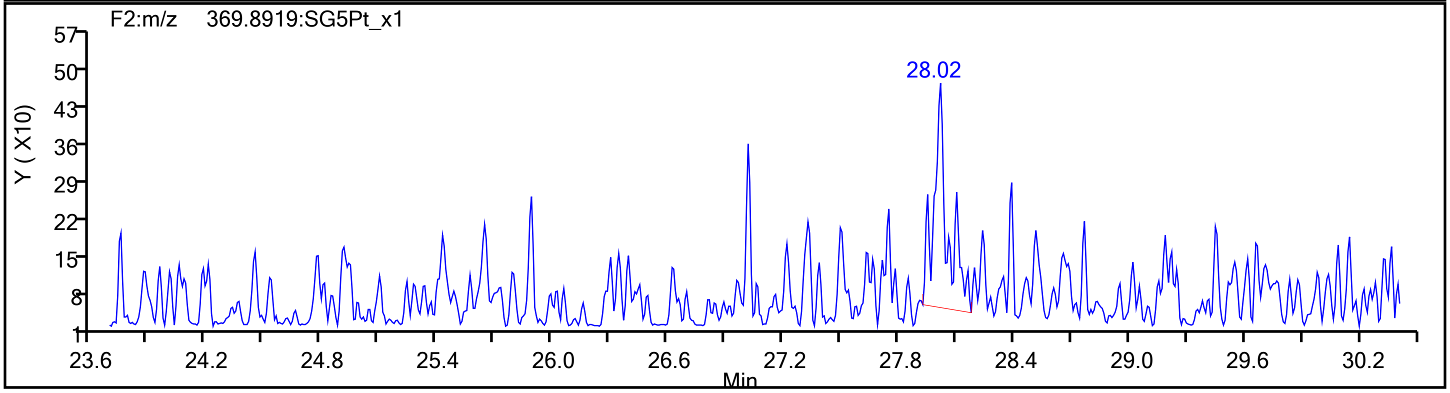

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d
Injection Date: 16-Oct-2020 17:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

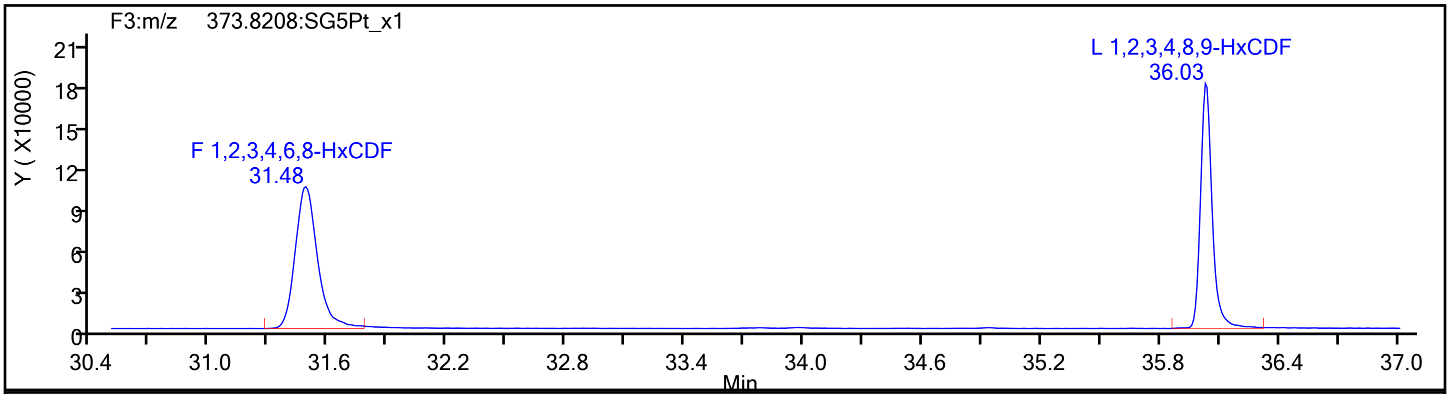

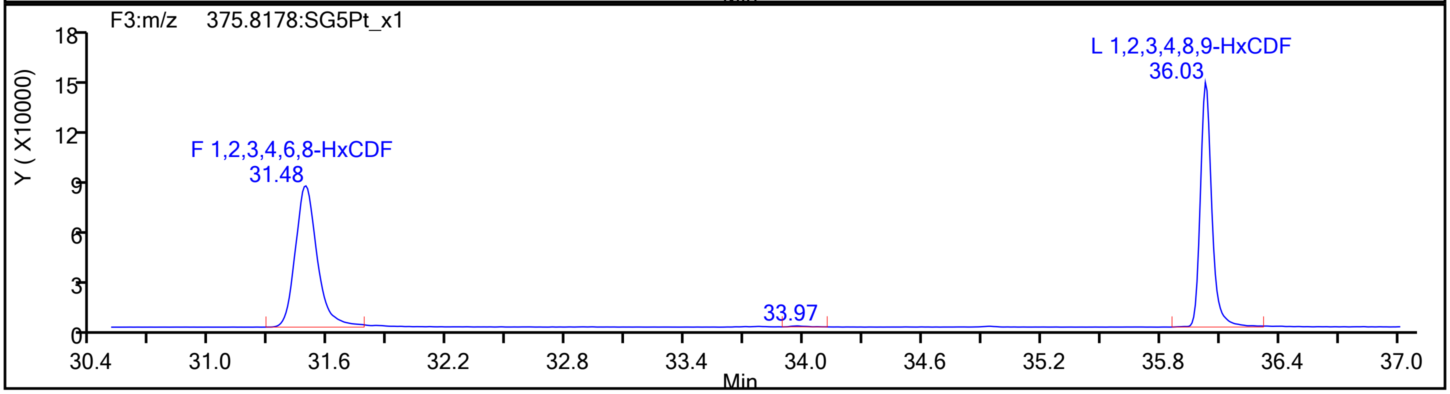

HxCDF Standards

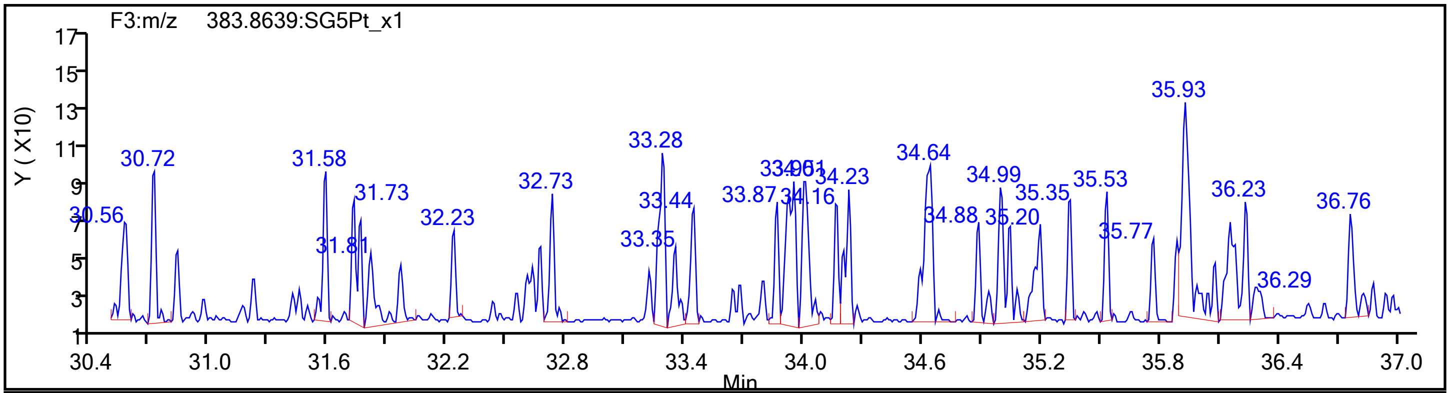

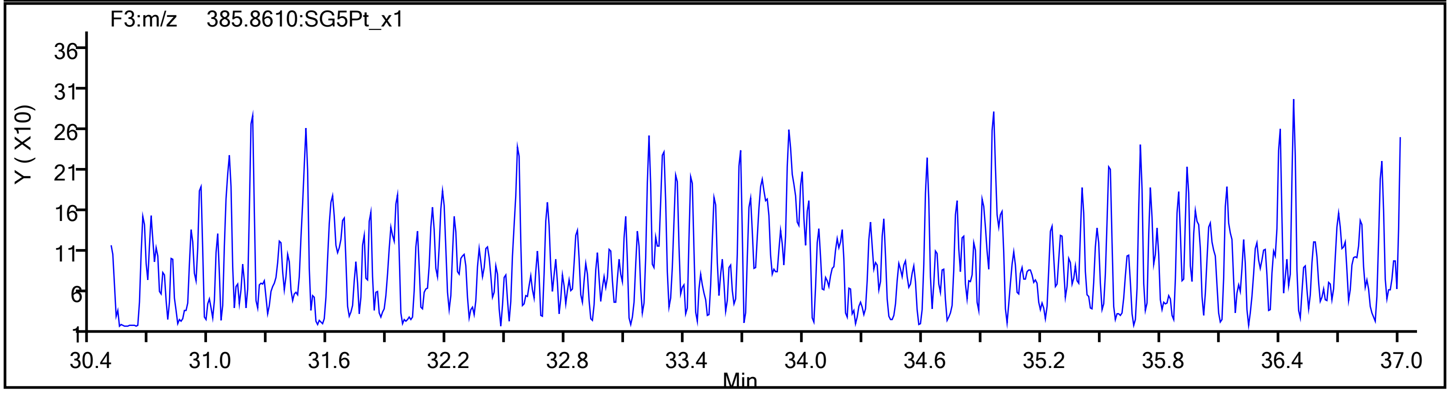

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d

Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

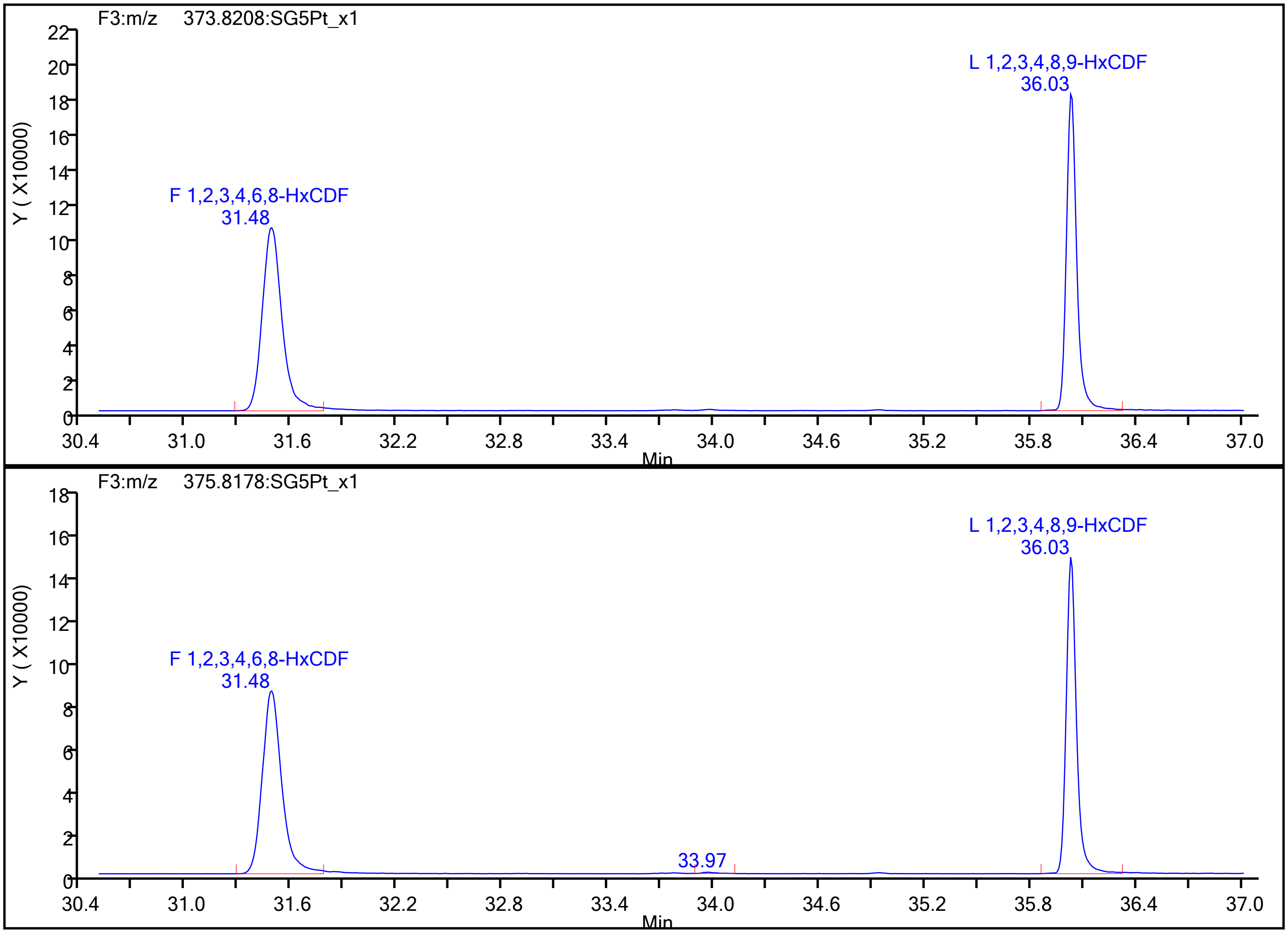

HxCDF Interference Mass

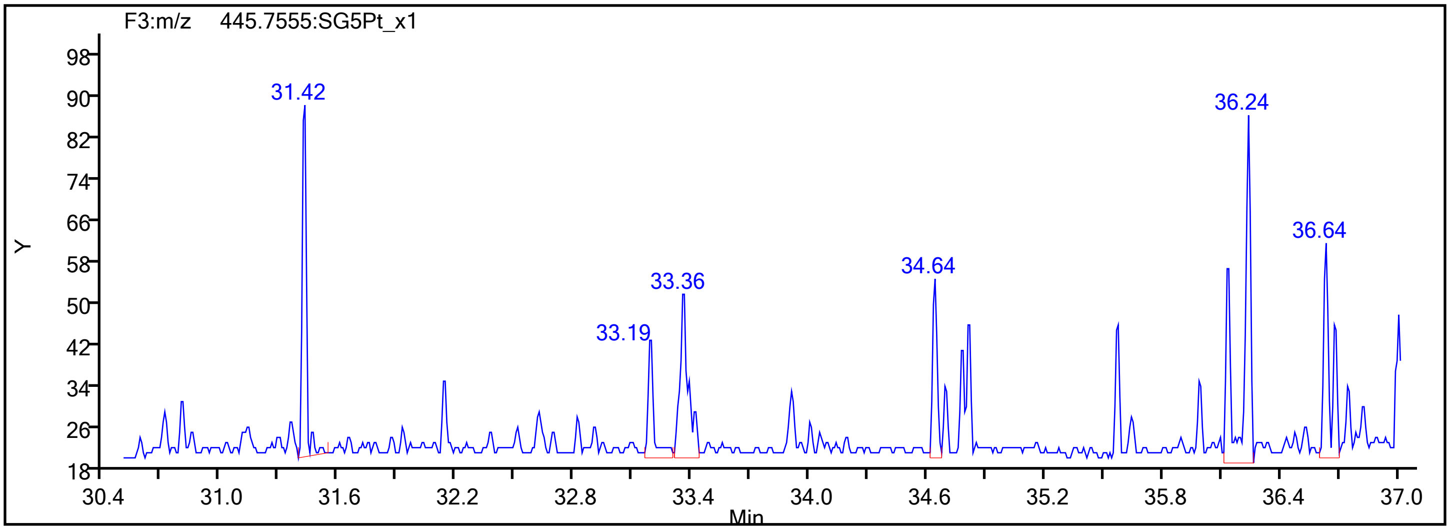

Report Date: 17-Oct-2020 12:21:00
Chrom Revision: 2.3 13-Oct-2020 12:07:44
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d
Injection Date: 16-Oct-2020 17:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 422778
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

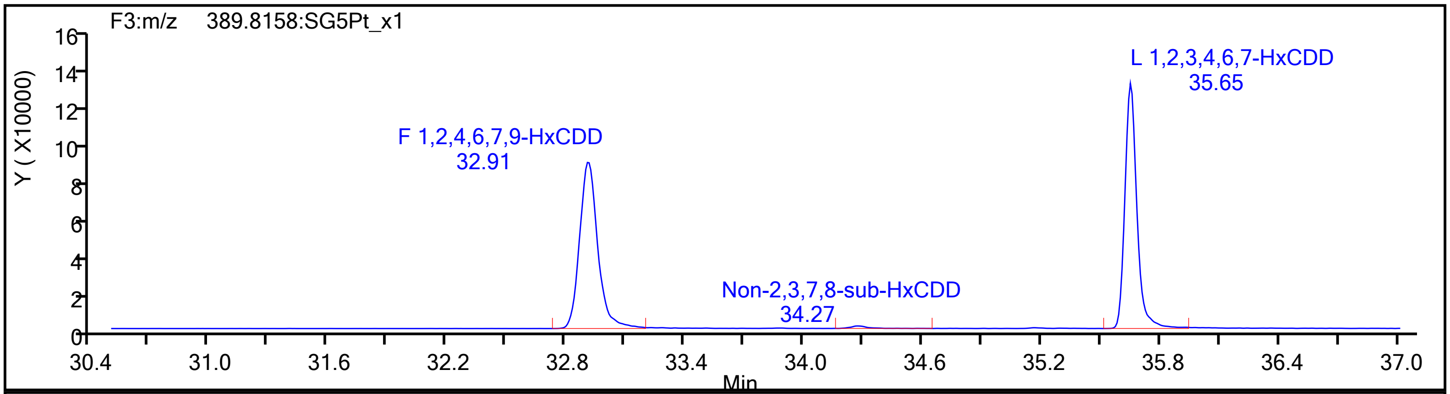

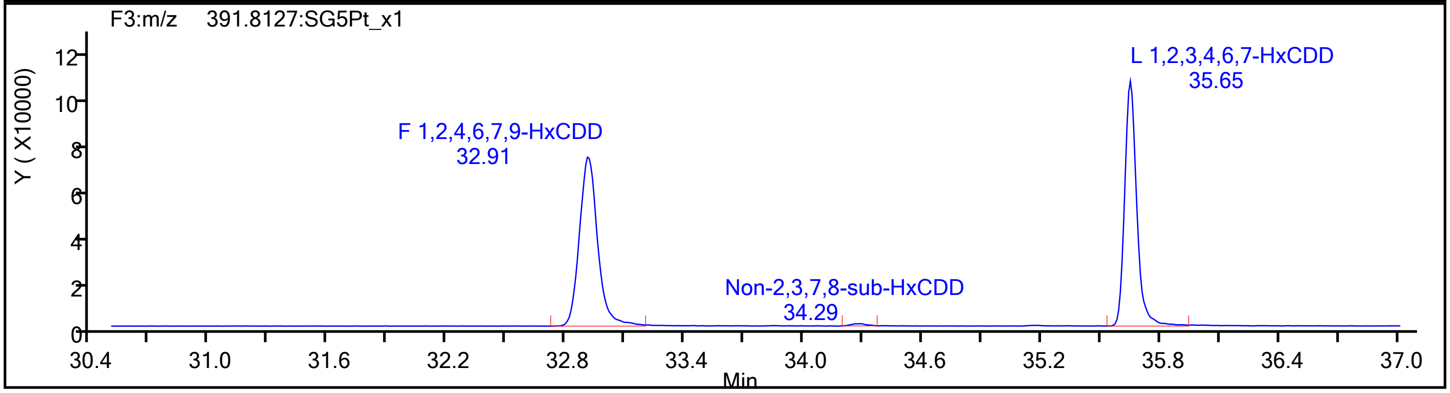

HxCDD Standards

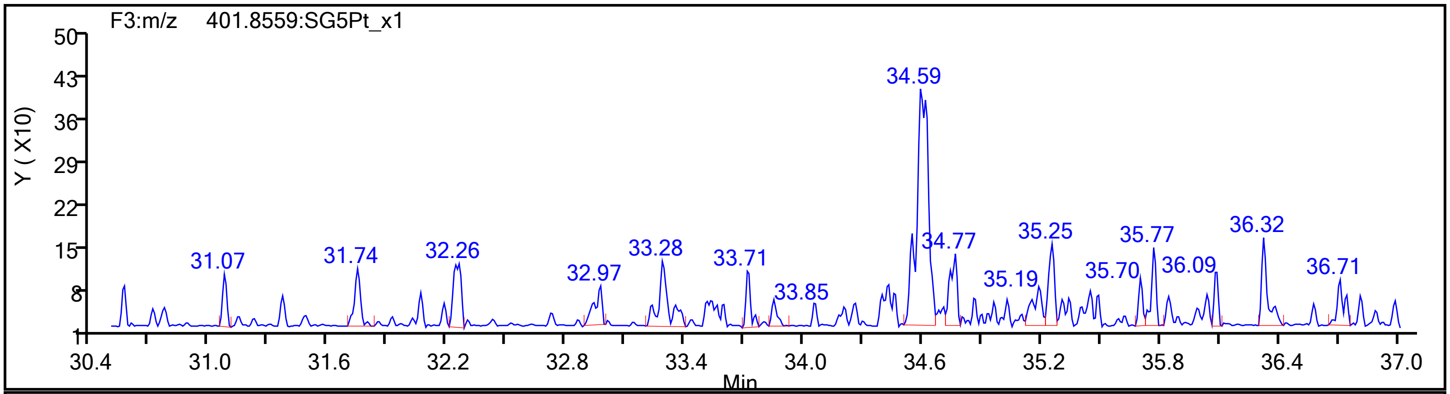

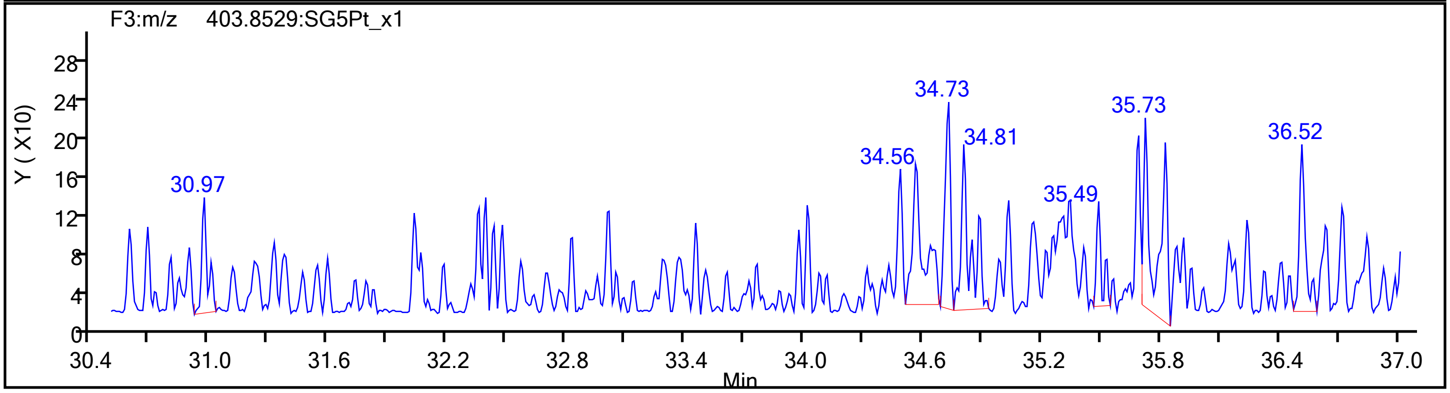

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

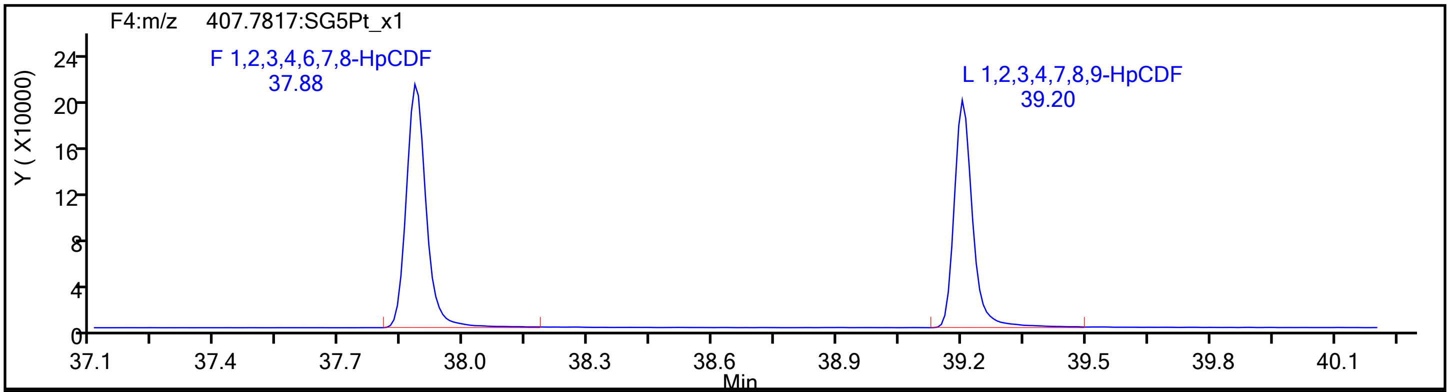

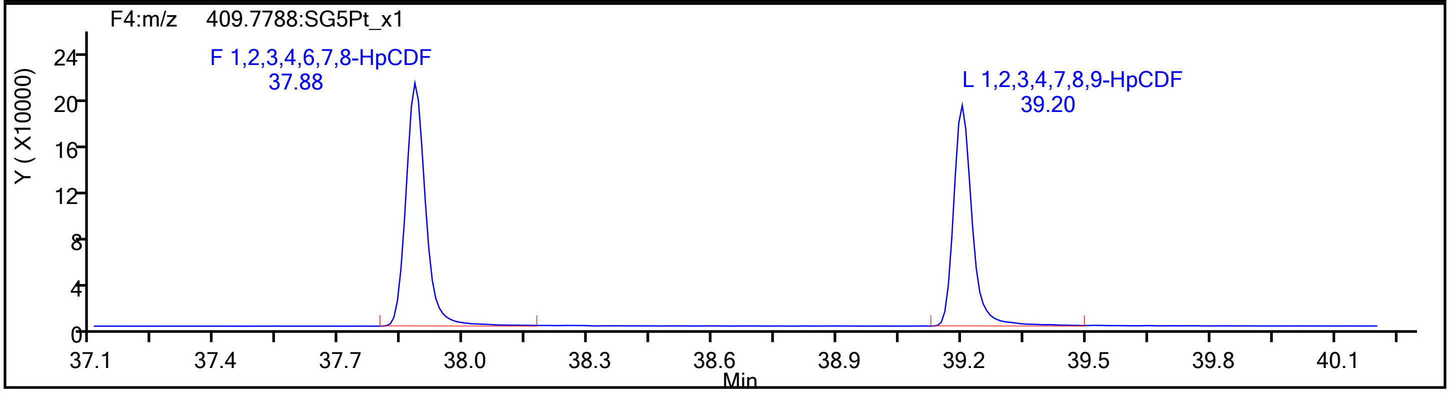

HpCDF Standards

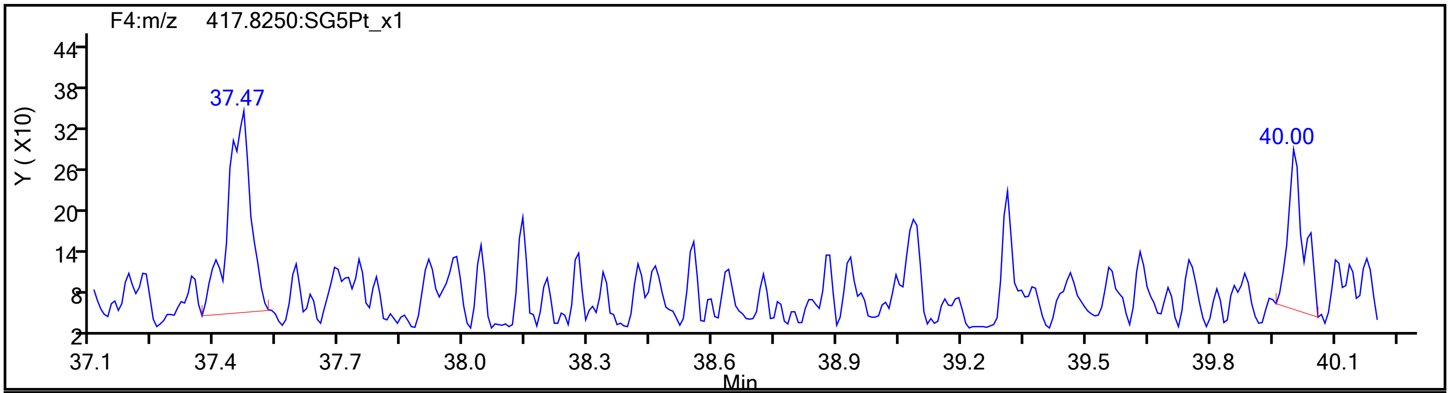

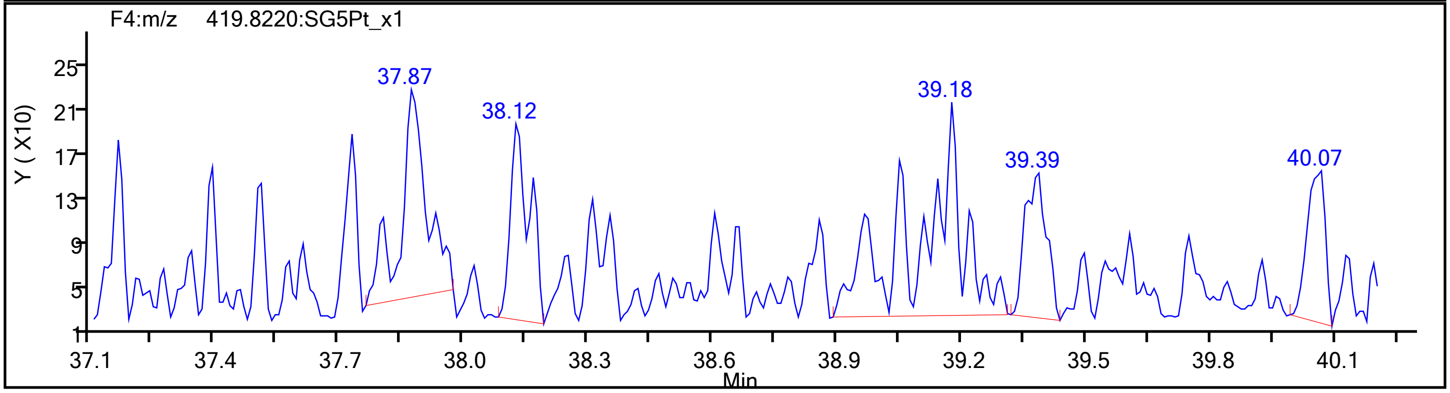

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d

Injection Date: 16-Oct-2020 17:42:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422778 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

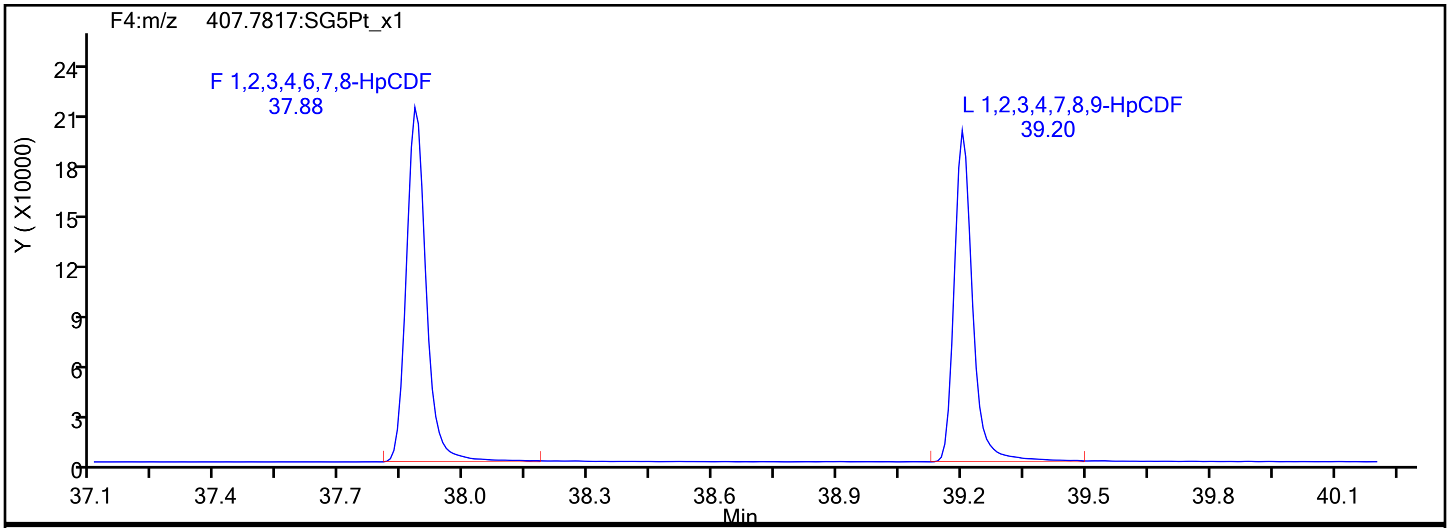

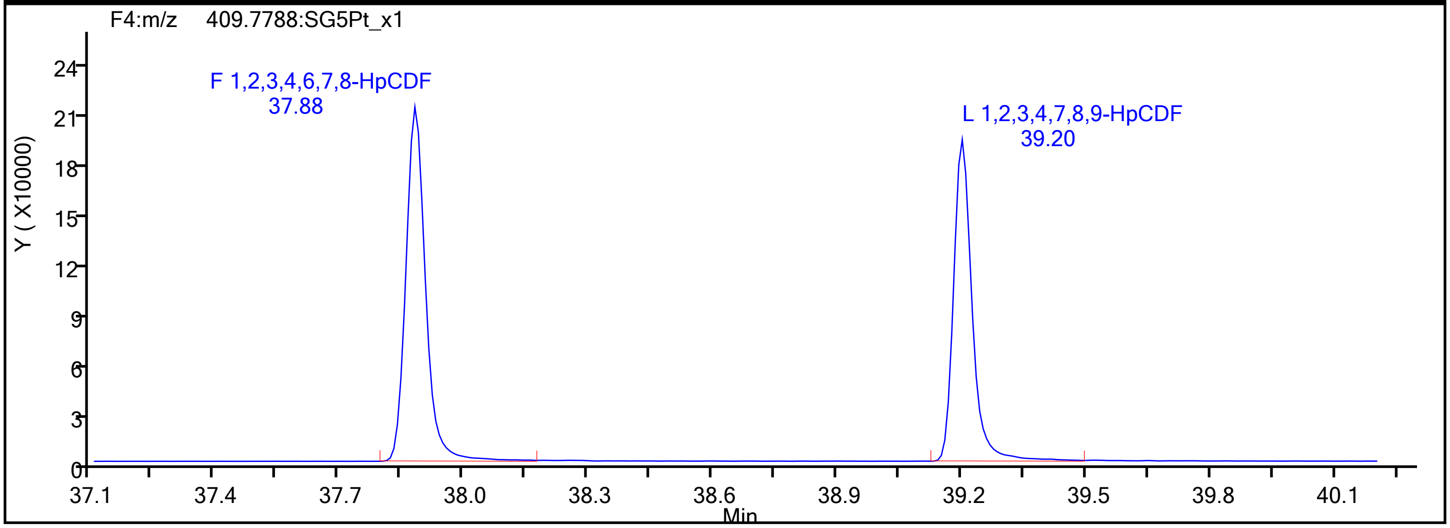

HpCDF Interference Mass

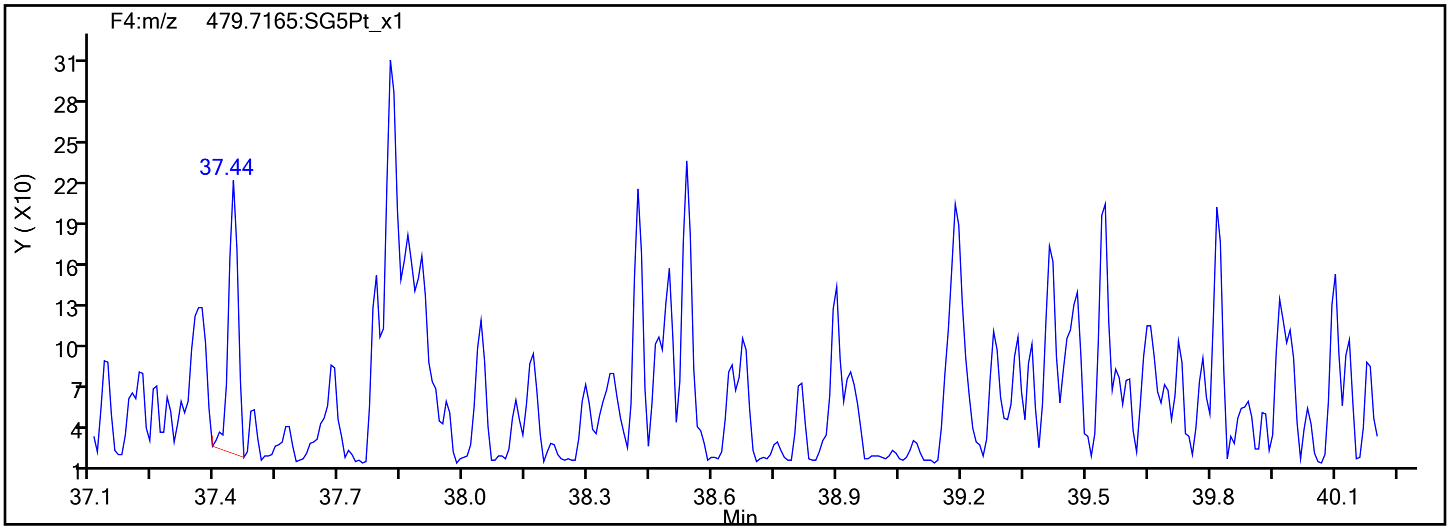

Report Date: 17-Oct-2020 12:21:00 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
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HpCDD

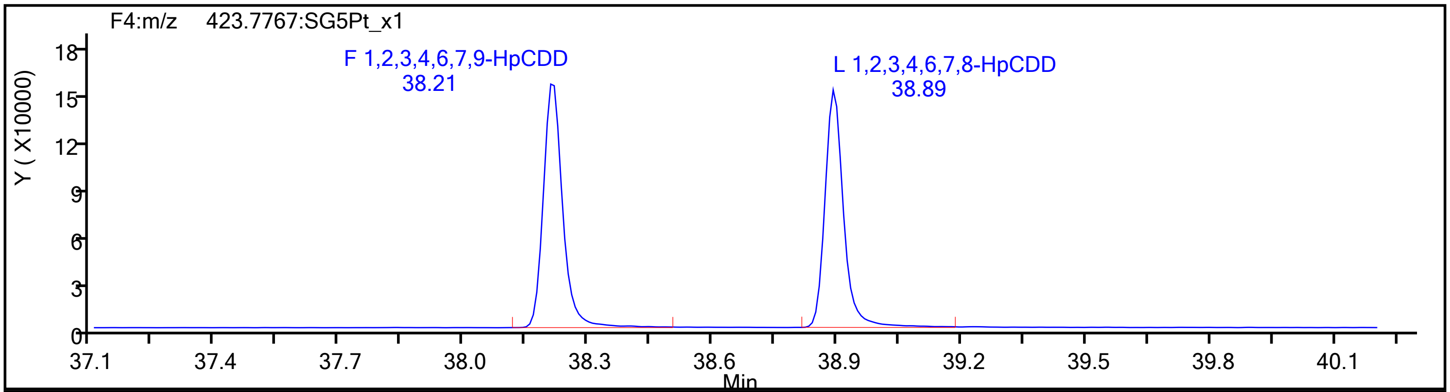

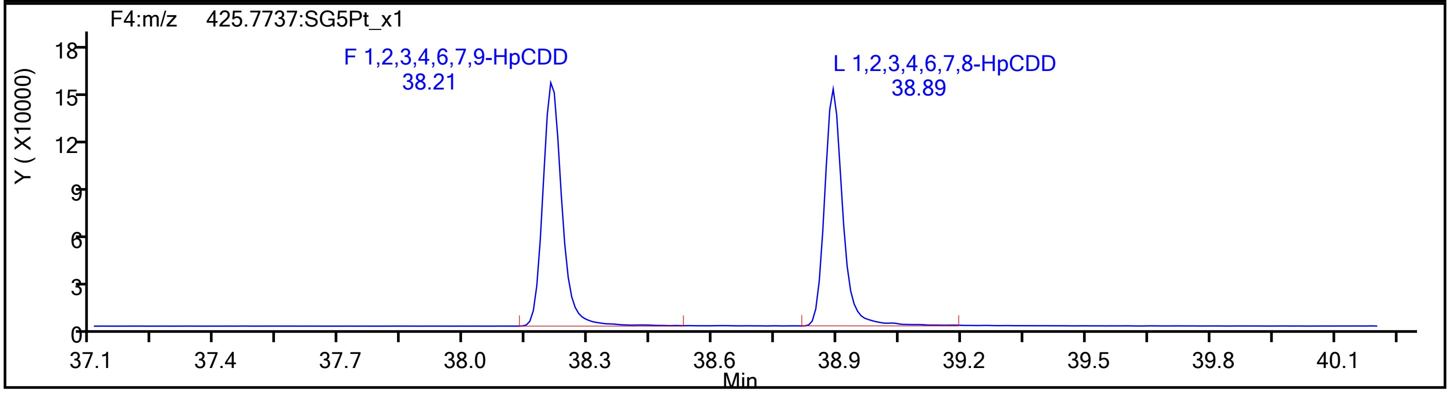

HpCDD Standards

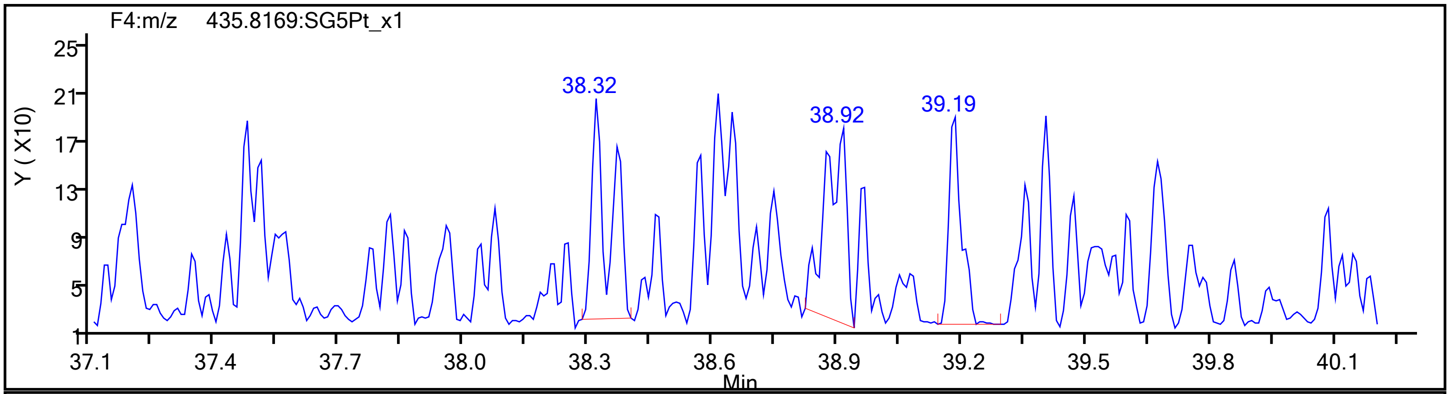

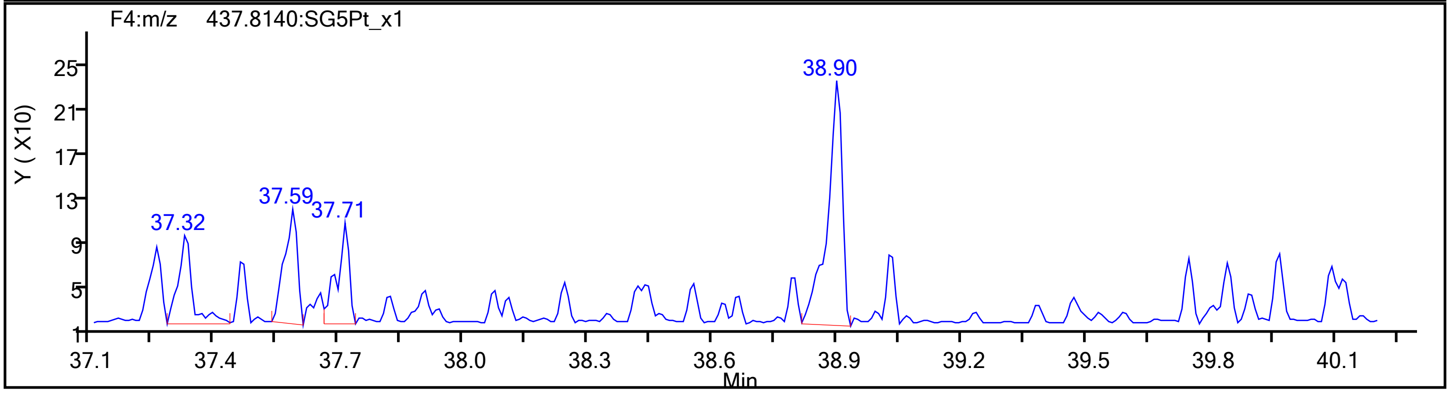

Report Date: 17-Oct-2020 12:21:01 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

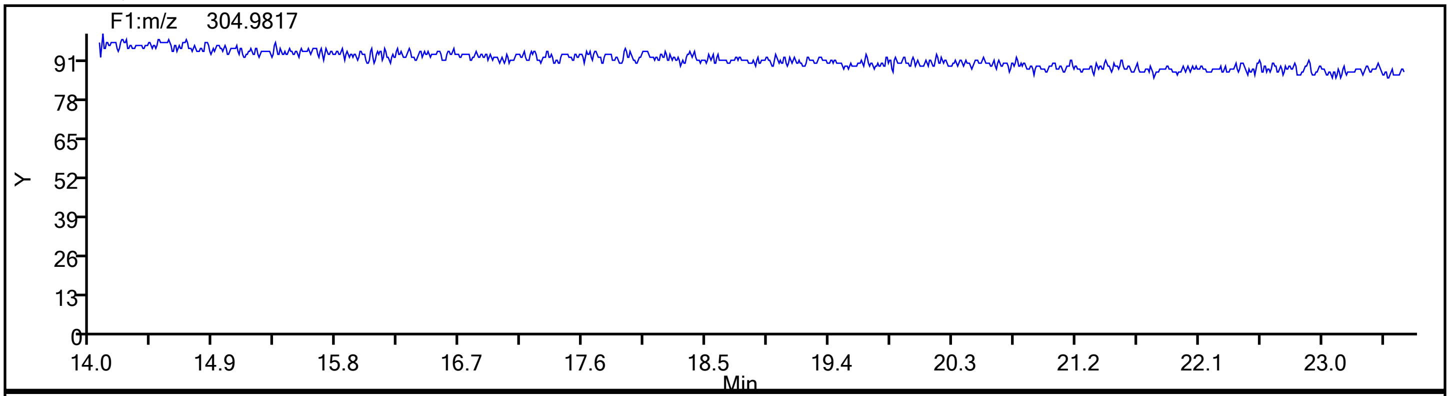

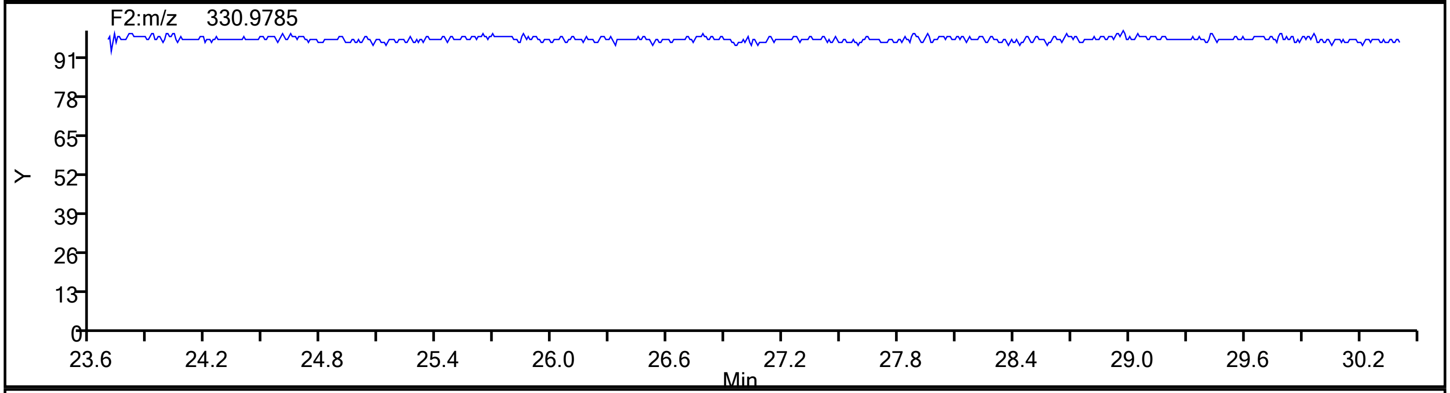

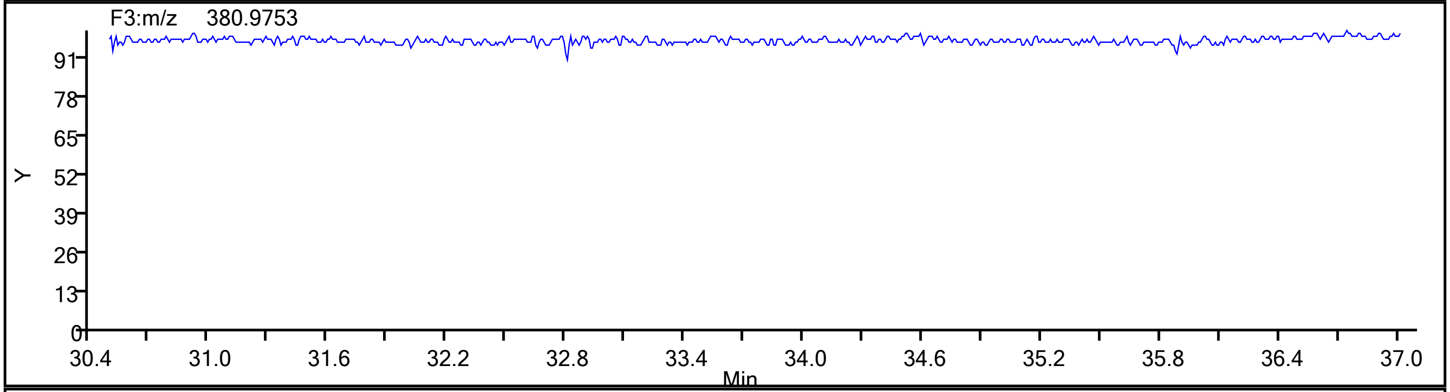

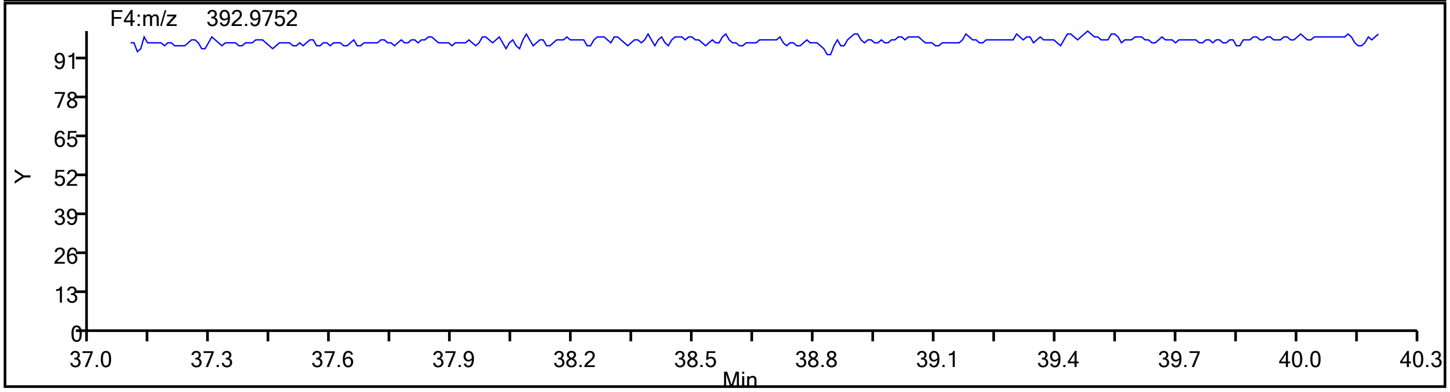

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201017-105604.b\16oc20adfs1_2.d		
Injection Date:	16-Oct-2020 17:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422778	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

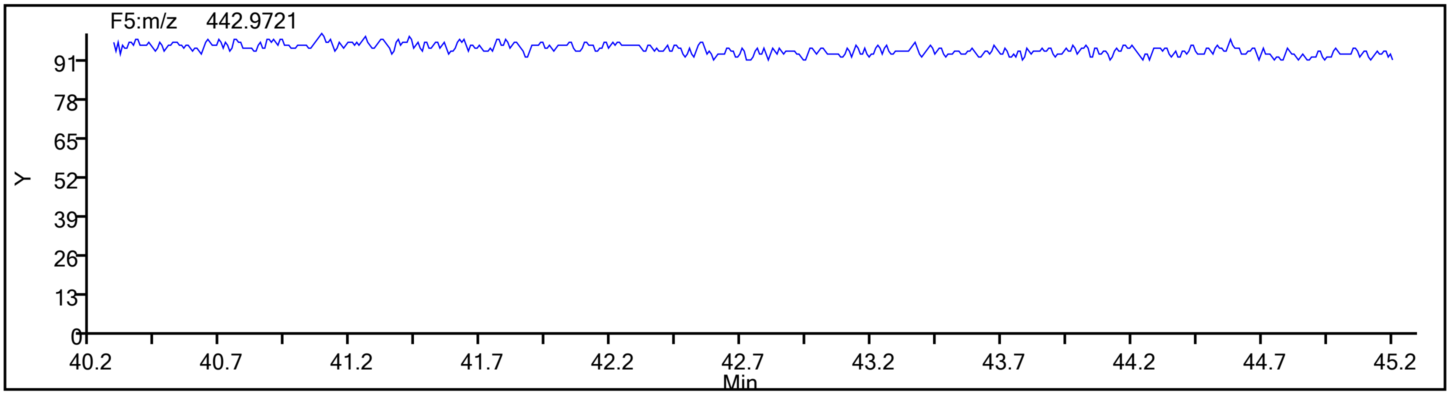

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 320-417490/1-A
Matrix: Water
Lab File ID: 08OC203D5_4.d
Analysis Method: 1613B
Date Collected:
Extract. Method: 1613B
Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1000(mL)
Date Analyzed: 10/08/2020 11:56
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 420113
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.69
51207-31-9	2,3,7,8-TCDF	1.04	J	10	0.43
40321-76-4	1,2,3,7,8-PeCDD	4.60	J	50	1.1
57117-41-6	1,2,3,7,8-PeCDF	3.77	J	50	0.71
57117-31-4	2,3,4,7,8-PeCDF	4.04	J	50	0.79
39227-28-6	1,2,3,4,7,8-HxCDD	8.52	J	50	1.8
57653-85-7	1,2,3,6,7,8-HxCDD	6.23	J	50	1.8
19408-74-3	1,2,3,7,8,9-HxCDD	6.41	J	50	1.6
70648-26-9	1,2,3,4,7,8-HxCDF	6.57	J	50	1.4
57117-44-9	1,2,3,6,7,8-HxCDF	7.55	J	50	1.5
72918-21-9	1,2,3,7,8,9-HxCDF	8.65	J	50	1.1
60851-34-5	2,3,4,6,7,8-HxCDF	6.98	J	50	1.5
35822-46-9	1,2,3,4,6,7,8-HpCDD	9.88	J	50	0.53
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.01	J	50	0.72
55673-89-7	1,2,3,4,7,8,9-HpCDF	10.1	J	50	0.77
3268-87-9	OCDD	27.3	J	100	0.74
39001-02-0	OCDF	21.0	J	100	0.74
41903-57-5	Total TCDD	5.57	J	10	0.69
30402-14-3	Total TCDF	1.04	J	10	0.43
36088-22-9	Total PeCDD	4.60	J	50	1.1
30402-15-4	Total PeCDF	7.81	J	50	0.75
34465-46-8	Total HxCDD	21.2	J	50	1.7
55684-94-1	Total HxCDF	29.8	J	50	1.4
37871-00-4	Total HpCDD	9.88	J	50	0.53
38998-75-3	Total HpCDF	19.1	J	50	0.74

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-417490/1-A
Matrix: Water	Lab File ID: 08OC203D5_4.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1000(mL)	Date Analyzed: 10/08/2020 11:56
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420113	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	91		25-164
89059-46-1	13C-2,3,7,8-TCDF	81		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	79		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	70		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	69		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	87		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	95		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	78		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	74		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	77		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	69		26-138
114423-97-1	13C-OCDD	60		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

FORM I 1613B

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Lims ID: MB 320-417490/1-A
Client ID:
Sample Type: MB
Inject. Date: 08-Oct-2020 11:56:21 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-417490/1-A MB 320-417490/1-A
Misc. Info.: 08OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 08:59:40 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1614

First Level Reviewer: ruangyotsakuld Date: 13-Oct-2020 08:59:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.946	219053199	0.78	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.507	263757491	0.80	1.4844	81.1	81.1	0.2810	0.2810	81.12	a
2,3,7,8-TCDF	15.522	130200	0.67	0.9534	0.0518	0.0518	0.0214	0.0214		M
A Non-2,3,7,8-sub-TCDF	15.250						0.0214	0.0214		
S Total TCDF					0.0518	0.0518	0.0214	0.0214		
D 13C-2,3,7,8-TCDD	16.112	215862077	0.79	1.0875	90.6	90.6	0.3360	0.3360	90.62	
2,3,7,8-TCDD	16.112						0.0346	0.0346		
$ 37Cl4-2,3,7,8-TCDD	16.127	99946153		1.1216	40.7	40.7	0.1444	0.1444	102	
A Non-2,3,7,8-sub-TCDD	15.643	613013	0.73	1.0205	0.2783	0.2783	0.0346	0.1832		M
S Total TCDD					0.2783	0.2783	0.0346	0.0346		
D 13C-1,2,3,7,8-PeCDF	19.754	214244779	1.56	1.3943	70.1	70.1	0.2228	0.2228	70.14	a
1,2,3,7,8-PeCDF	19.754	435993	1.43	1.0794	0.1885	0.1885	0.0353	0.0353		M
D 13C-2,3,4,7,8-PeCDF	20.873	202060092	1.52	1.3370	69.0	69.0	0.2323	0.2323	68.99	a
2,3,4,7,8-PeCDF	20.886	447086	1.76	1.0966	0.2018	0.2018	0.0393	0.0393		
A F1 PeCDFs	17.745						0.0334	0.0334		
A Non-2,3,7,8-sub-PeCDF	20.369						0.0372	0.0372		
S Total PeCDF					0.3903	0.3903	0.0373	0.0373		
D 13C-1,2,3,7,8-PeCDD	21.486	146560087	1.53	0.8475	78.9	78.9	0.1480	0.1480	78.94	a
1,2,3,7,8-PeCDD	21.514	383906	1.55	1.1397	0.2484	0.2298	0.0541	0.0541		RQM
A Non-2,3,7,8-sub-PeCDD	20.552						0.0541	0.0541		
S Total PeCDD					0.2484	0.2298	0.0541	0.0541		RQ
D 13C-1,2,3,4,7,8-HxCDF	26.813	142798460	0.54	1.3065	71.0	71.0	0.5391	0.5391	70.95	Ma
1,2,3,4,7,8-HxCDF	26.879	588953	1.23	1.2552	0.3286	0.3286	0.0712	0.0712		a
D 13C-1,2,3,6,7,8-HxCDF	27.092	170710861	0.54	1.4213	78.0	78.0	0.4955	0.4955	77.97	Ma
1,2,3,6,7,8-HxCDF	27.119	779492	1.08	1.2102	0.3773	0.3773	0.0725	0.0725		M
D 13C-2,3,4,6,7,8-HxCDF	28.663	156108902	0.54	1.3142	77.1	77.1	0.5359	0.5359	77.11	a
2,3,4,6,7,8-HxCDF	28.717	664153	1.05	1.2182	0.3492	0.3492	0.0768	0.0768		
D 13C-1,2,3,7,8,9-HxCDF	30.461	151534424	0.55	1.3204	74.5	74.5	0.5334	0.5334	74.50	a
1,2,3,7,8,9-HxCDF	30.487	807802	1.14	1.2319	0.4327	0.4327	0.0559	0.0559		
A Non-2,3,7,8-sub-HxCDF	27.498						0.0681	0.0681		
S Total HxCDF					1.488	1.488	0.0691	0.0691		

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	30.168	154048651	1.27	2.8E+06	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	29.156	116483756	1.28	0.8660	87.3	87.3	0.4200	0.4200	87.31	a
1,2,3,4,7,8-HxCDD	29.183	621794	1.27	1.2535	0.4258	0.4258	0.0885	0.0885		M
D 13C-1,2,3,6,7,8-HxCDD	29.422	144566757	1.25	0.9827	95.5	95.5	0.3701	0.3701	95.50	a
1,2,3,6,7,8-HxCDD	29.489	500481	1.24	1.1117	0.3472	0.3114	0.0905	0.0905		RQMa
1,2,3,7,8,9-HxCDD	30.168	537582	1.05	1.2852	0.3205	0.3205	0.0821	0.0821		
A Non-2,3,7,8-sub-HxCDD	27.931						0.0868	0.0868		
S Total HxCDD					1.094	1.058	0.0871	0.0871		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	32.571	102132681	0.46	0.9410	70.5	70.5	1.991	1.991	70.45	a
1,2,3,4,6,7,8-HpCDF	32.596	680523	1.04	1.4783	0.4994	0.4507	0.0358	0.0358		RQ
D 13C-1,2,3,4,7,8,9-HpCDF	33.665	93068093	0.47	0.8751	69.0	69.0	2.141	2.141	69.04	a
1,2,3,4,7,8,9-HpCDF	33.677	648152	1.11	1.3784	0.5052	0.5052	0.0386	0.0386		
A Non-2,3,7,8-sub-HpCDF	33.118						0.0371	0.0371		
S Total HpCDF					1.005	0.9560	0.0372	0.0372		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	33.422	99862902	1.04	0.9049	71.6	71.6	0.7699	0.7699	71.64	a
1,2,3,4,6,7,8-HpCDD	33.434	535654	1.01	1.0862	0.4938	0.4938	0.0266	0.0266		M
A Non-2,3,7,8-sub-HpCDD	33.339						0.0266	0.0266		
S Total HpCDD					0.4938	0.4938	0.0266	0.0266		
D 13C-OCDD	35.582	106477667	0.89	0.5783	119.5	119.5	1.205	1.205	59.76	a
OCDF	35.654	963615	0.93	1.7248	1.049	1.049	0.0370	0.0370		M
OCDD	35.582	915342	0.86	1.2576	1.367	1.367	0.0371	0.0371		M
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Lims ID: MB 320-417490/1-A
Client ID:
Sample Type: MB
Inject. Date: 08-Oct-2020 11:56:21 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-417490/1-A MB 320-417490/1-A
Misc. Info.: 08OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 08:59:40 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1614

First Level Reviewer: ruangyotsakuld Date: 13-Oct-2020 08:59:40

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.946	15.930	1		95676303	23946207	46300	115750	517		
333.9339	15.946	15.930	1		123376896	29935726	32449	81122	923	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											a
315.9419	15.507	15.492	1	0.973	117513991	26745882	48699	121747	549		a
317.9389	15.507	15.492	1	0.973	146243500	34710506	41196	102990	843	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	15.522	15.507	1	1.001	52302	10070	2391	5977	4		M
305.8987	15.522	15.507	1	1.001	77898	17156	2630	6575	7	0.67(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.250						2391	5977			
305.8987	15.250						2630	6575			
13C-2,3,7,8-TCDD											
331.9368	16.112	16.097	1	1.010	95450198	19404216	46300	115750	419		
333.9339	16.112	16.097	1	1.010	120411879	24829578	32449	81122	765	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.112						3393	8482			
321.8936	16.112						2852	7130			
37Cl4-2,3,7,8-TCDD											
327.8847	16.127	16.112	1	1.011	99946153	21396769	34900	87250	613		
A Non-2,3,7,8-sub-TCDD											M
319.8965	14.267	15.643	-82	0.886	163199	39973	3393	8482	12		M
321.8936	14.252	15.643	-83	0.885	240249	57691	2852	7130	20	0.68(0.65-0.89)	M
319.8965	14.509	15.643	-68	0.901	94957	20514	3393	8482	6		
321.8936	14.494	15.643	-69	0.900	114608	27280	2852	7130	10	0.83(0.65-0.89)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											a
351.9000	19.754	19.714	2	1.239	130581057	19483662	38920	97300	501		a
353.8970	19.754	19.714	2	1.239	83663722	12349121	28025	70062	441	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	19.754	19.727	2	1.000	256256	37553	2237	5592	17		M
341.8567	19.768	19.727	2	1.001	179737	26538	2616	6540	10	1.43(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											a
351.9000	20.873	20.832	2	1.309	121933873	17060868	38920	97300	438		a
353.8970	20.873	20.832	2	1.309	80126219	11112626	28025	70062	397	1.52(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.886	20.859	2	1.001	284931	38485	2237	5592	17		
341.8567	20.900	20.859	2	1.001	162155	27088	2616	6540	10	1.76(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.745						1693	4232			
341.8567	17.745						2662	6655			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.369						2237	5592			
341.8567	20.369						2616	6540			
13C-1,2,3,7,8-PeCDD											a
367.8949	21.486	21.445	2	1.347	88744362	11359525	16381	40952	693		a
369.8919	21.486	21.445	2	1.347	57815725	7428086	10646	26615	698	1.53(1.32-1.78)	
1,2,3,7,8-PeCDD											RQM
355.8546	21.514	21.473	2	1.001	233355	31661	2774	6935	11		
357.8516	21.514	21.473	2	1.001	181581	21107	1862	4655	11	1.29(1.32-1.78)	M
	Empc Correction				150551	20426	1862	4655	11		
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.552						2774	6935			
357.8516	20.552						1862	4655			
13C-1,2,3,4,7,8-HxCDF											Ma
383.8639	26.813	26.746	4	0.889	50344405	5292449	17517	43792	302		M
385.8610	26.813	26.746	4	0.889	92454055	9930774	31453	78632	316	0.54(0.43-0.59)	M
1,2,3,4,7,8-HxCDF											a
373.8208	26.879	26.772	6	1.002	324449	37017	3246	8115	11		a
375.8178	26.826	26.772	3	1.000	264504	29557	2195	5487	13	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											Ma
383.8639	27.092	27.025	4	0.898	59822697	5378440	17517	43792	307		M
385.8610	27.092	27.025	4	0.898	110888164	10123620	31453	78632	322	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											M
373.8208	27.119	27.052	4	1.001	404906	38284	3246	8115	12		M
375.8178	27.119	27.052	4	1.001	374586	27323	2195	5487	12	1.08(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											a
383.8639	28.663	28.583	5	0.950	54892468	5112249	17517	43792	292		a
385.8610	28.663	28.583	5	0.950	101216434	9419131	31453	78632	299	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.717	28.610	6	1.002	340781	36392	3246	8115	11		
375.8178	28.743	28.610	8	1.003	323372	31940	2195	5487	15	1.05(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											a
383.8639	30.461	30.408	3	1.010	53488616	7019326	17517	43792	401		a
385.8610	30.461	30.408	3	1.010	98045808	12748184	31453	78632	405	0.55(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.487	30.421	4	1.001	430723	57240	3246	8115	18		
375.8178	30.474	30.421	3	1.000	377079	45546	2195	5487	21	1.14(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.498						3246	8115			
375.8178	27.498						2195	5487			
13C-1,2,3,7,8,9-HxCDD											a
401.8559	30.168	30.088	5		86185922	9646640	13354	33385	722		a
403.8529	30.155	30.088	4		67862729	7736258	11934	29835	648	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.156	29.063	6	0.966	65490473	5944857	13354	33385	445		a
403.8529	29.143	29.063	5	0.966	50993283	4606860	11934	29835	386	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	29.183	29.103	5	1.001	347927	37805	2249	5622	17		M
391.8127	29.223	29.103	7	1.002	273867	28528	2436	6090	12	1.27(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.422	29.329	6	0.975	80449487	6524840	13354	33385	489		a
403.8529	29.436	29.329	6	0.976	64117270	5111296	11934	29835	428	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMa
389.8157	29.489	29.369	7	1.002	277052	24637	2249	5622	11		M
391.8127	29.449	29.369	5	1.001	281014	22924	2436	6090	9	0.99(1.05-1.43)	
	Empc Correction				223429	19868	2436	6090	8		
1,2,3,7,8,9-HxCDD											
389.8157	30.168	30.115	3	1.035	275696	35187	2249	5622	16		
391.8127	30.181	30.115	4	1.035	261886	29328	2436	6090	12	1.05(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						2249	5622			
391.8127	27.931						2436	6090			
13C-1,2,3,4,6,7,8-HpCDF											a
417.8253	32.571	32.547	1	1.080	32298943	9155111	36712	91780	249		a
419.8220	32.571	32.547	1	1.080	69833738	19514448	93574	233935	209	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQ
407.7818	32.596	32.559	2	1.001	420424	113106	3090	7725	37		
	Empc Correction				346933	97432	3090	7725	32		
409.7789	32.583	32.559	1	1.000	333590	93685	2981	7452	31	1.26(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8253	33.665	33.641	1	1.116	29563523	9039133	36712	91780	246		a
419.8220	33.665	33.641	1	1.116	63504570	19498479	93574	233935	208	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.677	33.653	1	1.000	341466	99353	3090	7725	32		
409.7789	33.677	33.653	1	1.000	306686	90107	2981	7452	30	1.11(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.118						3090	7725			
409.7789	33.118						2981	7452			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											a
435.8169	33.422	33.398	1	1.108	51015533	17418903	25689	64222	678		a
437.8140	33.422	33.398	1	1.108	48847369	16065112	22753	56882	706	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	33.434	33.410	1	1.000	269239	91248	1995	4987	46		M
425.7737	33.434	33.410	1	1.000	266415	82284	1874	4685	44	1.01(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						1995	4987			
425.7737	33.339						1874	4685			
13C-OCDD											a
469.7779	35.582	35.570	1	1.179	50108824	15213240	23940	59850	635		a
471.7750	35.582	35.570	1	1.179	56368843	17119507	24496	61240	699	0.89(0.76-1.02)	
OCDF											M
441.7428	35.654	35.642	1	1.002	463721	144627	1698	4245	85		M
443.7399	35.654	35.642	1	1.002	499894	143139	2428	6070	59	0.93(0.76-1.02)	M
OCDD											M
457.7377	35.582	35.570	1	1.000	424497	142125	1491	3727	95		M
459.7348	35.582	35.570	1	1.000	490845	142592	1530	3825	93	0.86(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Lims ID:	MB 320-417490/1-A		
Client ID:			
Inject. Date:	08-Oct-2020 11:56:21	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420113	Lims Sample ID:	4

Non-2,3,7,8-sub-TCDD, RT: 15.643

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	215862077	44233794

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	215862077	44233794

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.267	163199	39973	240249	57691	0.1832	0.68	M
14.509	94957	20514	114608	27280	0.0951	0.83	M
Signal Totals:							
	258156	60487	354857	84971			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	613013	145458				0.73	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2783 = (613013 * 100.000) / (215862077 * 1.020)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 1

Processing Integration Results

RT:	15.51
Area:	117513991
Amount:	81.117054
Amount Units:	pg/ul

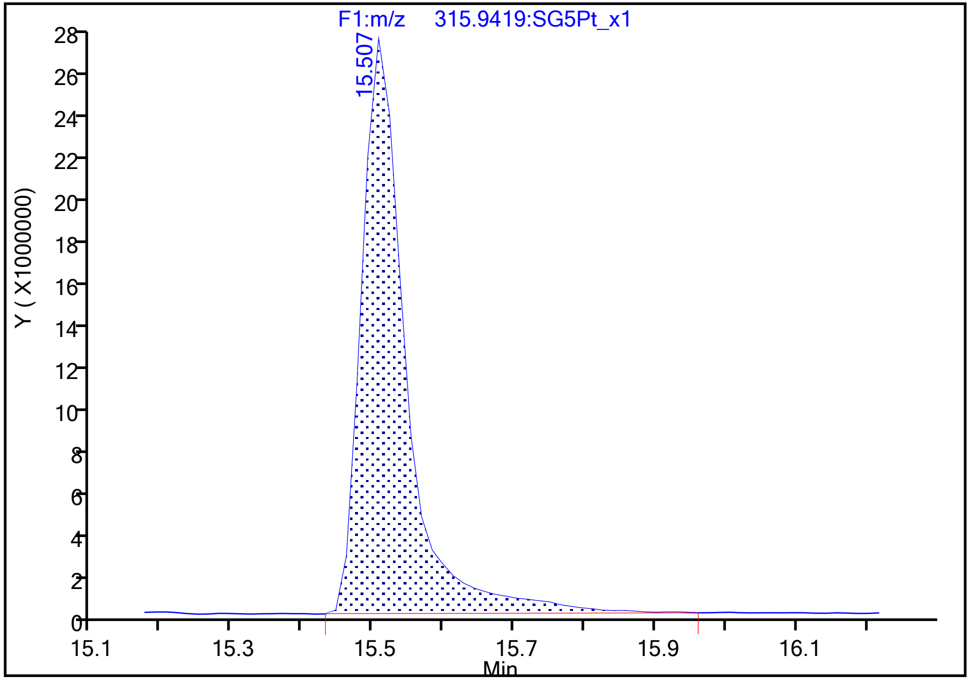

Manual Integration Results

RT:	15.51
Area:	117513991
Amount:	81.117054
Amount Units:	pg/ul

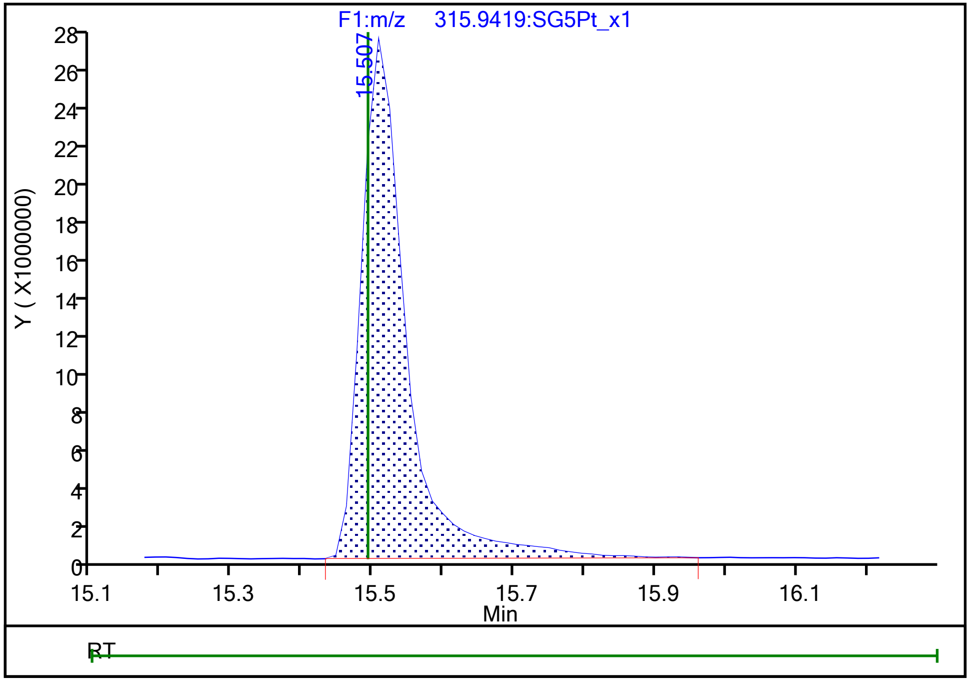

Reviewer: ruangyotsakuld, 13-Oct-2020 08:39:48

Audit Action: Assigned Compound ID

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	15.52
Area:	70266
Amount:	0.058920
Amount Units:	pg/ul

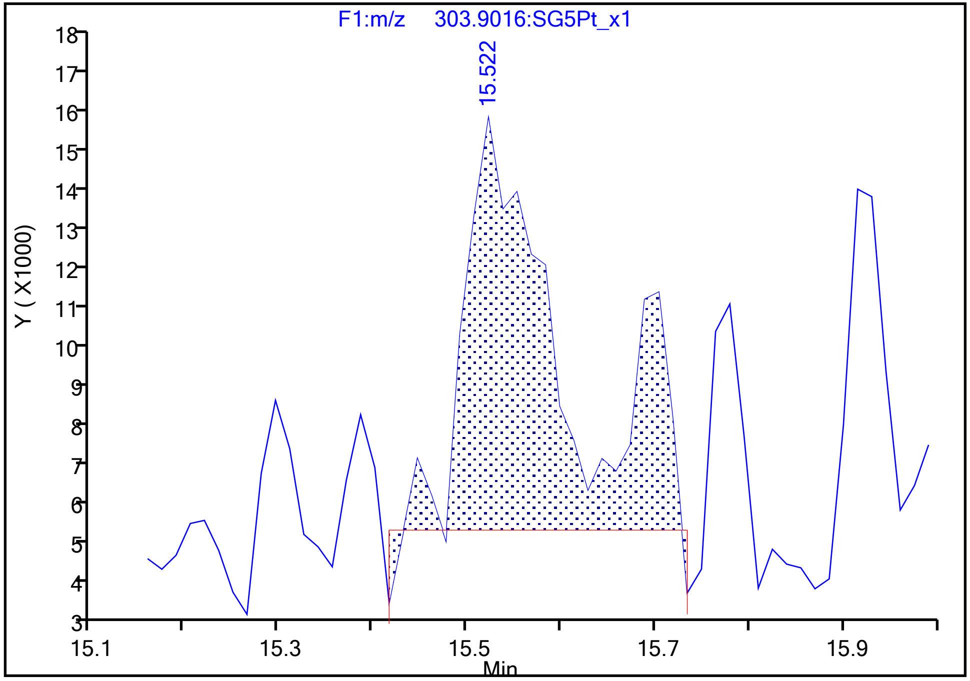

Manual Integration Results

RT:	15.52
Area:	52302
Amount:	0.051777
Amount Units:	pg/ul

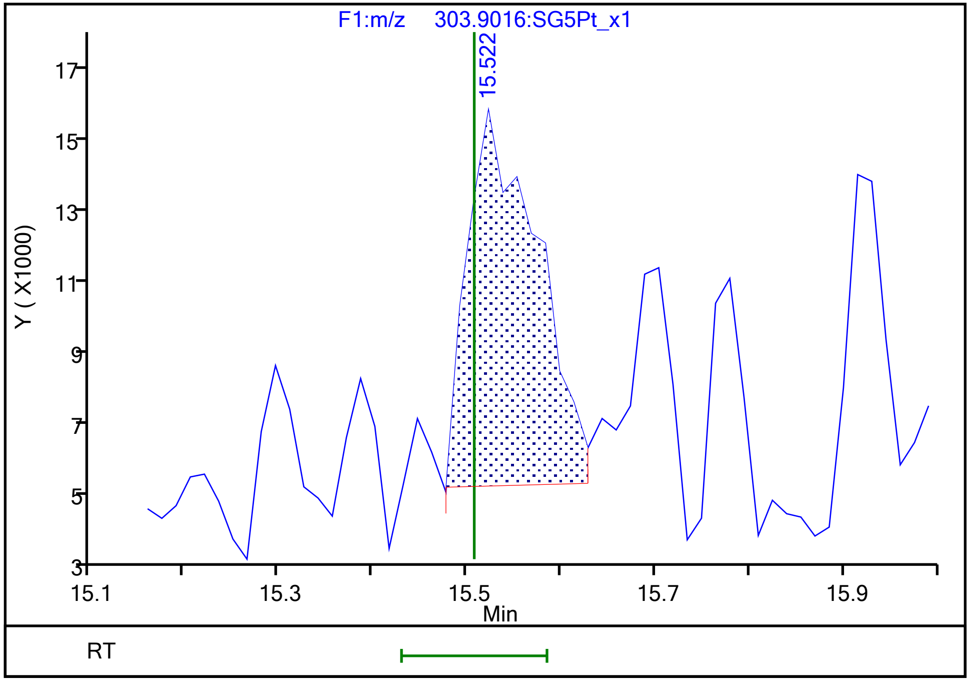

Reviewer: ruangyotsakuld, 13-Oct-2020 08:38:05

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (14.21- 17.08)

Signal: 1

Processing Integration Results

RT = 14.267 Area = 155698

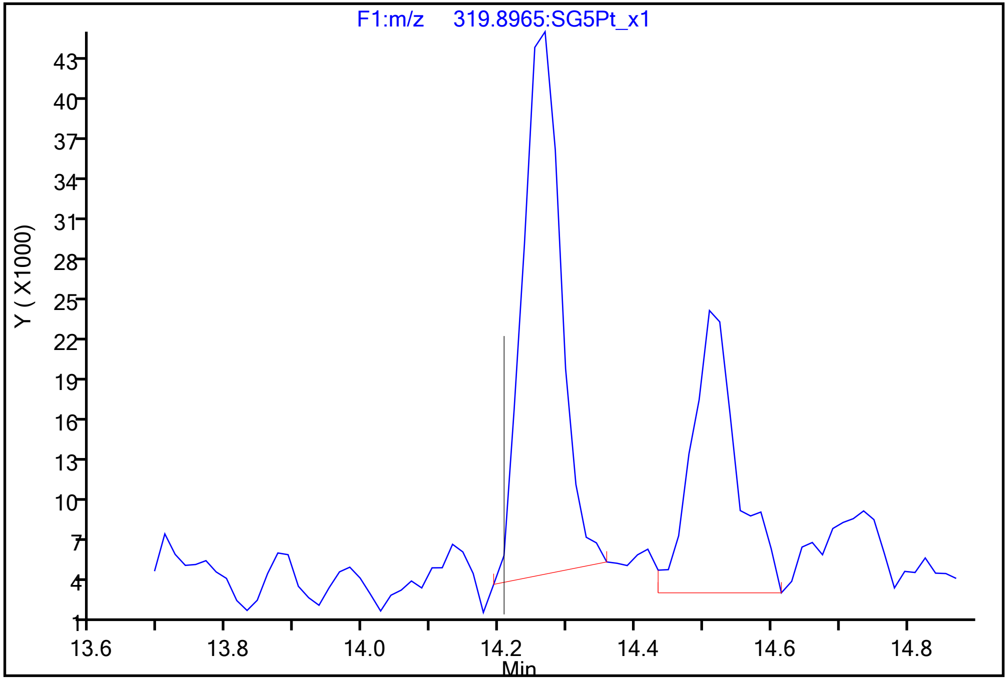

Manual Integration Results

RT = 14.267 Area = 163199 M

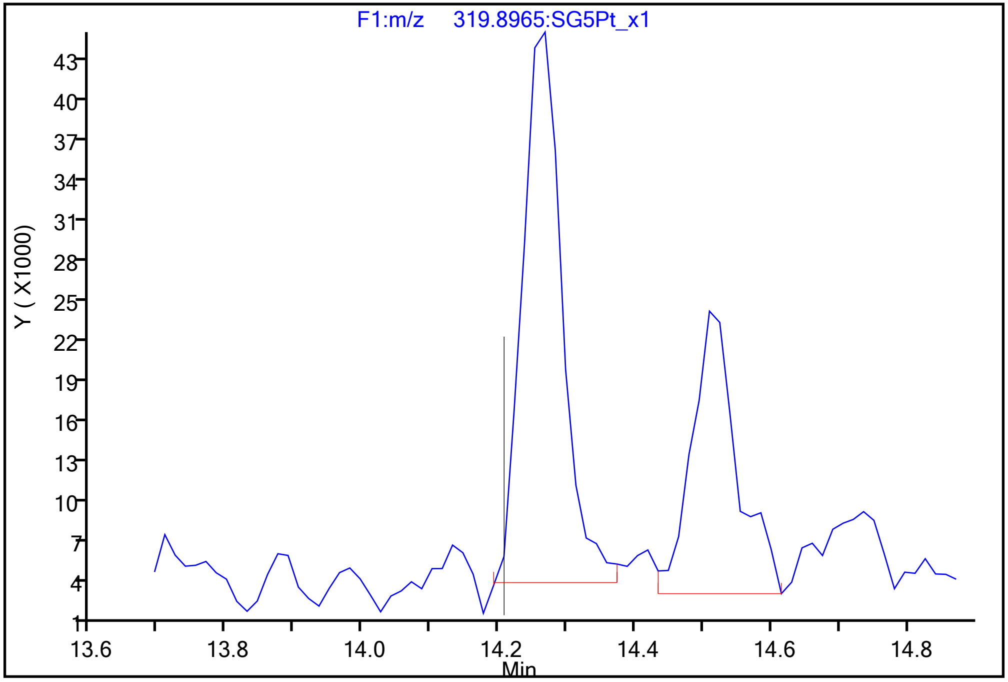

Reviewer: ruangyotsakuld, 13-Oct-2020 08:38:26

Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (14.21- 17.08)

Signal: 2

RT = 14.252 Area = 244996

Processing Integration Results

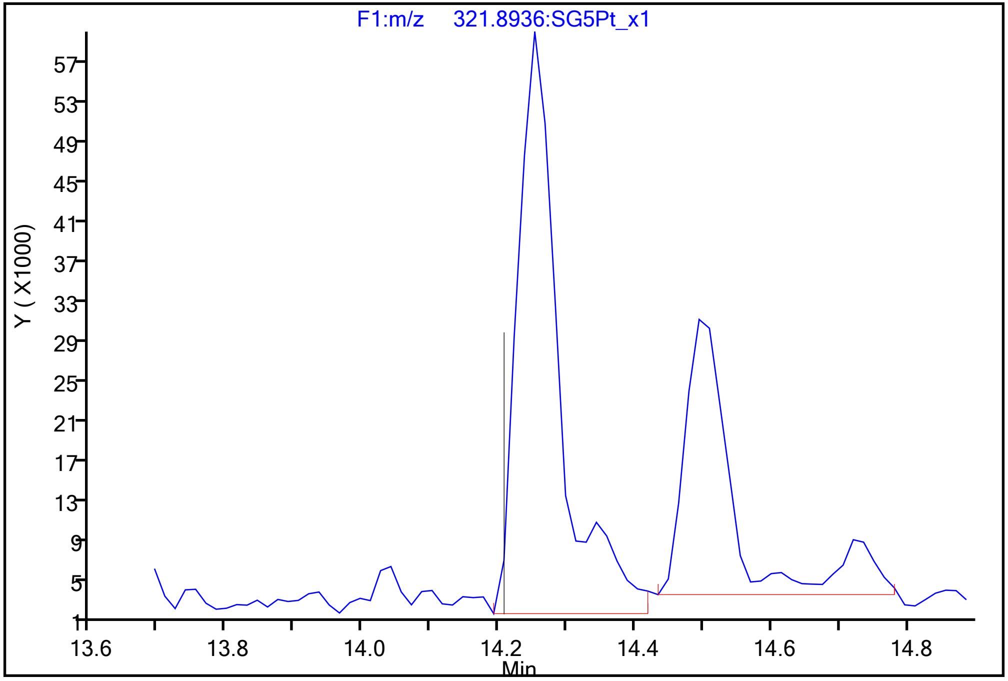

RT = 14.252 Area = 240249 M

Manual Integration Results

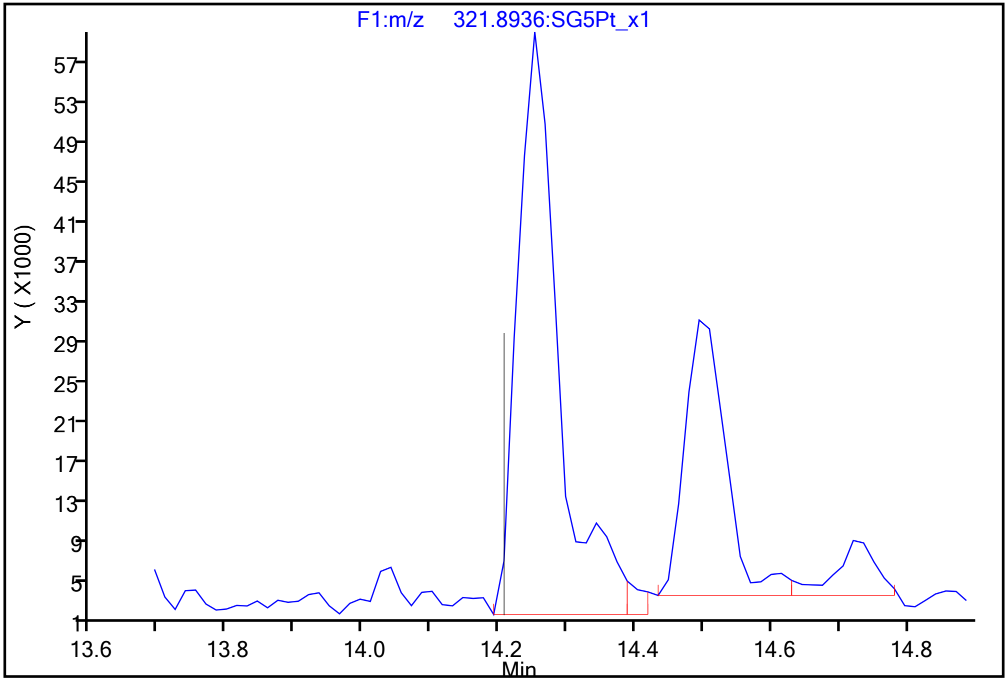

Reviewer: ruangyotsakuld, 13-Oct-2020 08:38:44

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21 Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (14.21- 17.08)

Signal: 2

Processing Integration Results

RT = 14.494 Area = 137153

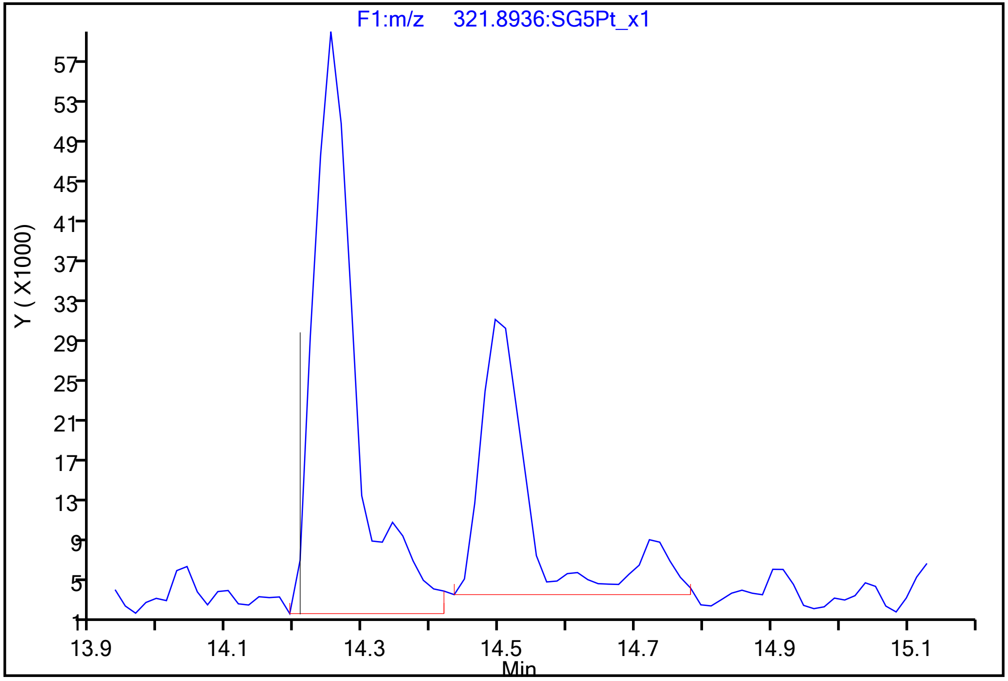

Manual Integration Results

RT = 14.494 Area = 114608 M

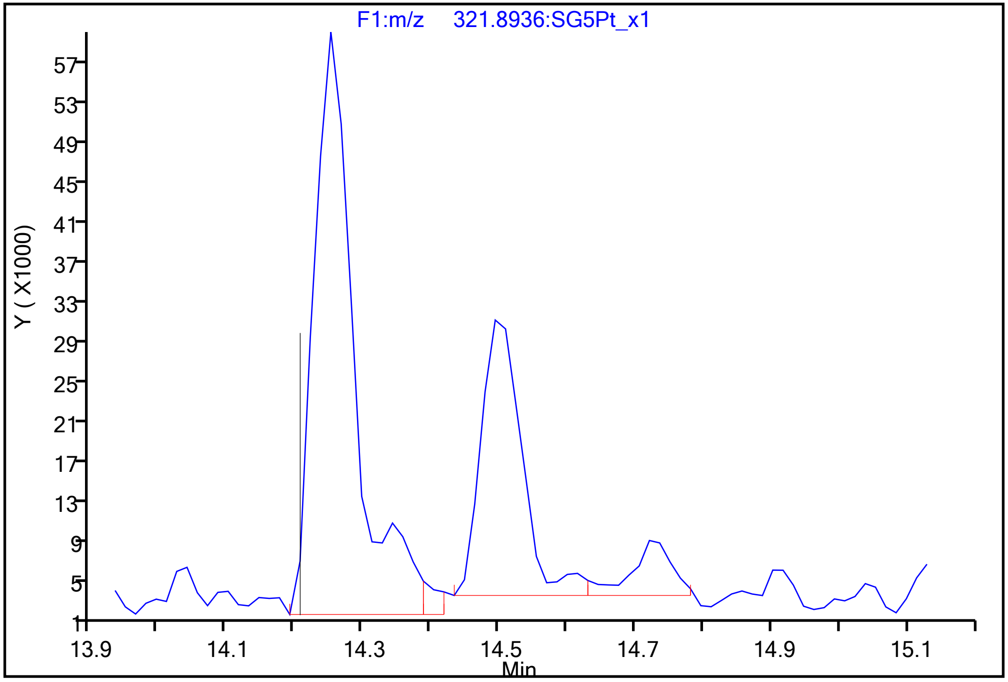

Reviewer: ruangyotsakuld, 13-Oct-2020 08:38:44

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

13C-1,2,3,7,8-PeCDF, CAS: 109719-77-9

Signal: 1

Processing Integration Results

RT: 19.75
Area: 130581057
Amount: 70.144577
Amount Units: pg/ul

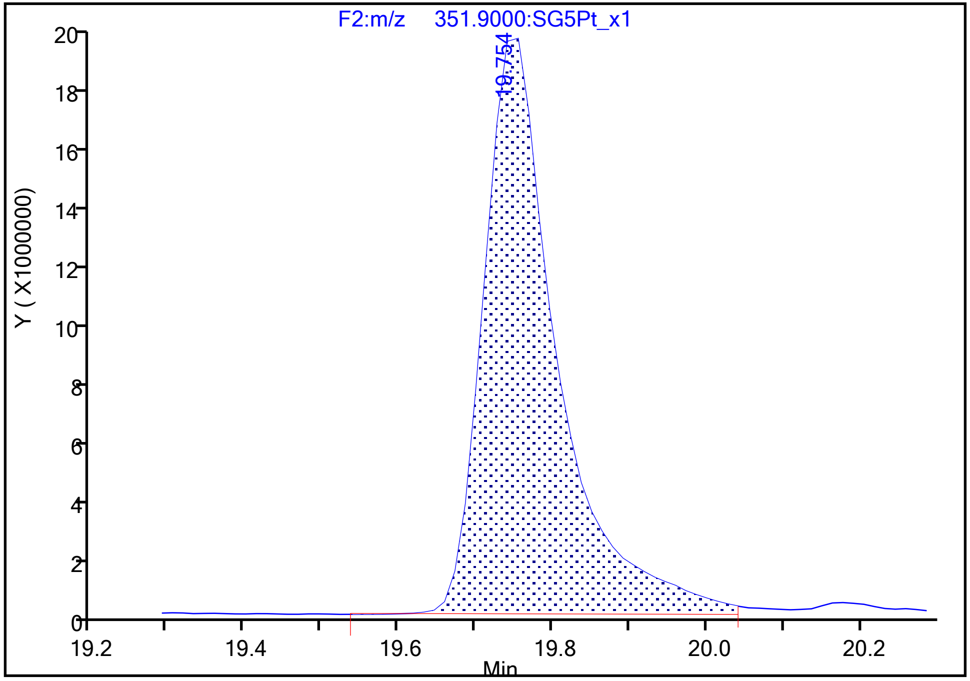

Manual Integration Results

RT: 19.75
Area: 130581057
Amount: 70.144577
Amount Units: pg/ul

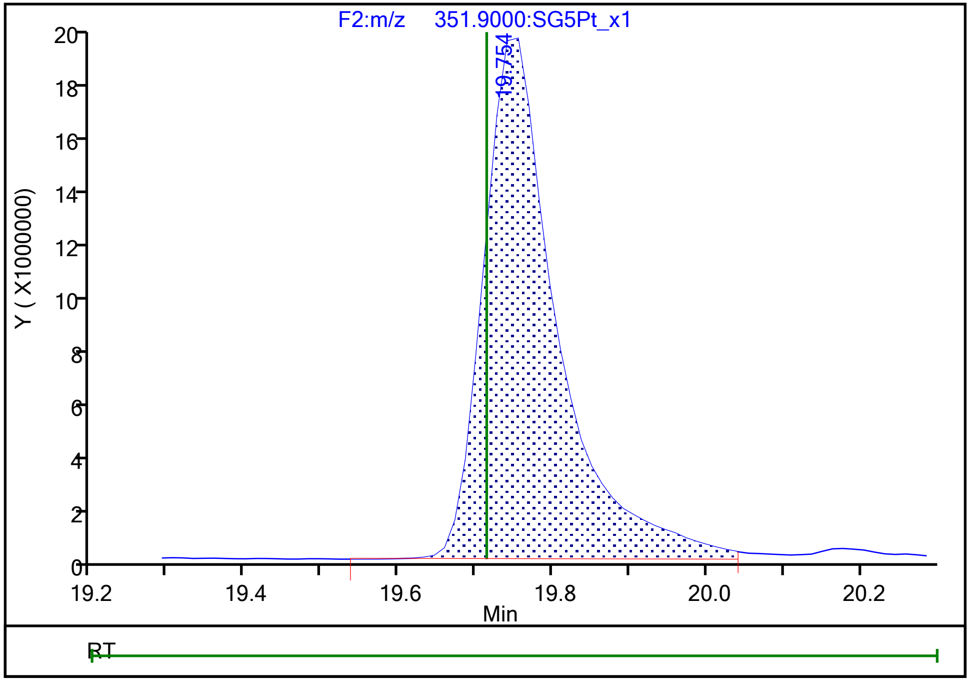

Reviewer: ruangyotsakuld, 13-Oct-2020 08:39:55

Audit Action: Assigned Compound ID

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT: 19.75
Area: 272879
Amount: 0.216680
Amount Units: pg/ul

Processing Integration Results

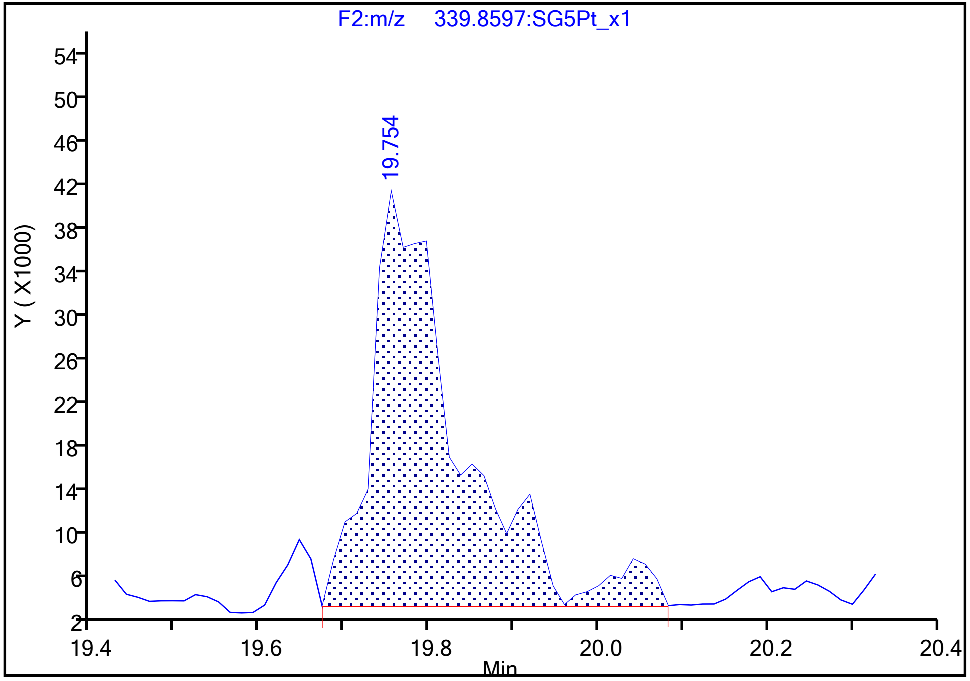

RT: 19.75
Area: 256256
Amount: 0.188539
Amount Units: pg/ul

Manual Integration Results

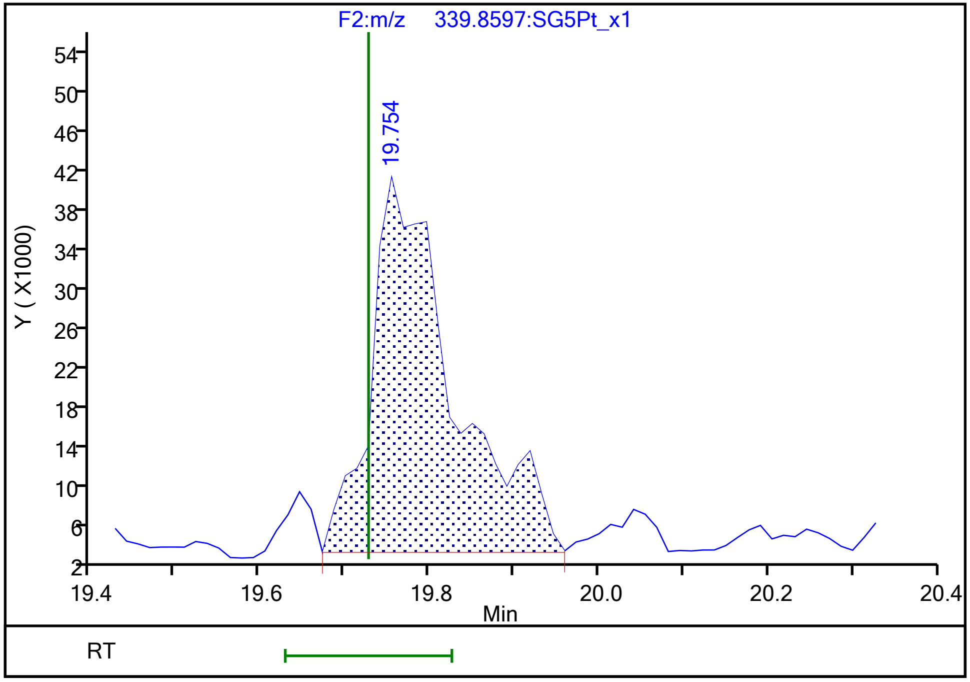

Reviewer: ruangyotsakuld, 13-Oct-2020 08:38:59

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT:	19.77
Area:	228189
Amount:	0.216680
Amount Units:	pg/ul

Processing Integration Results

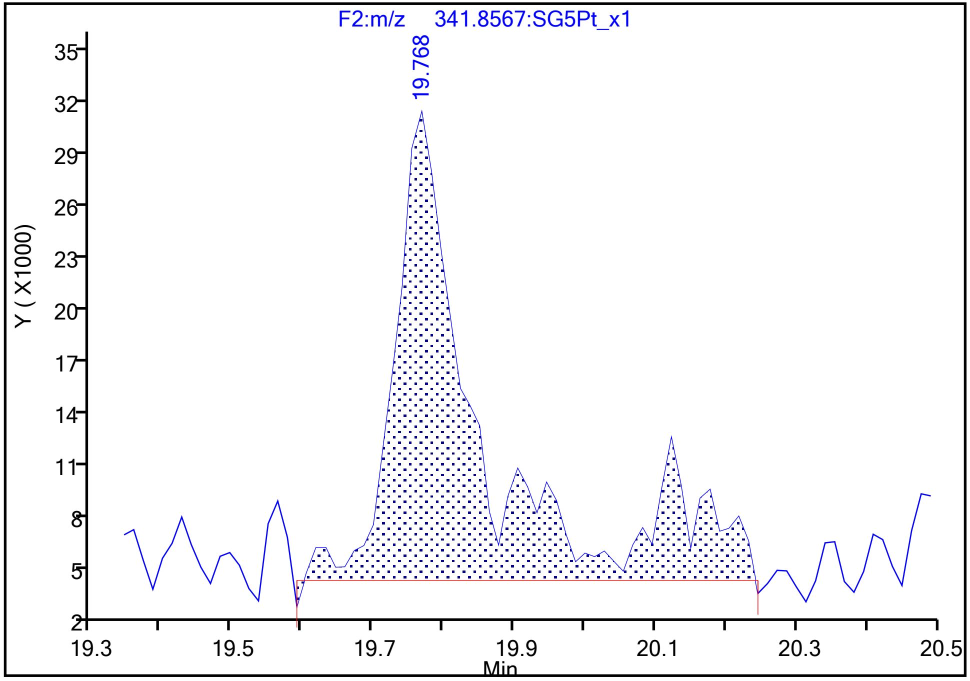

RT:	19.77
Area:	179737
Amount:	0.188539
Amount Units:	pg/ul

Manual Integration Results

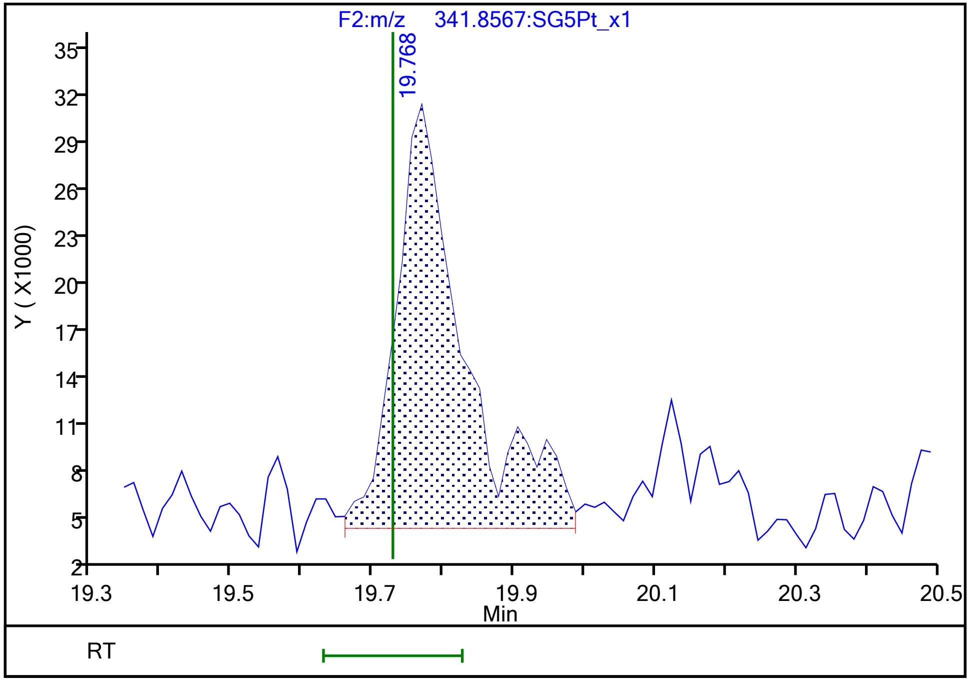

Reviewer: ruangyotsakuld, 13-Oct-2020 08:39:07

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Not Detected

Expected RT: 20.83

Processing Integration Results

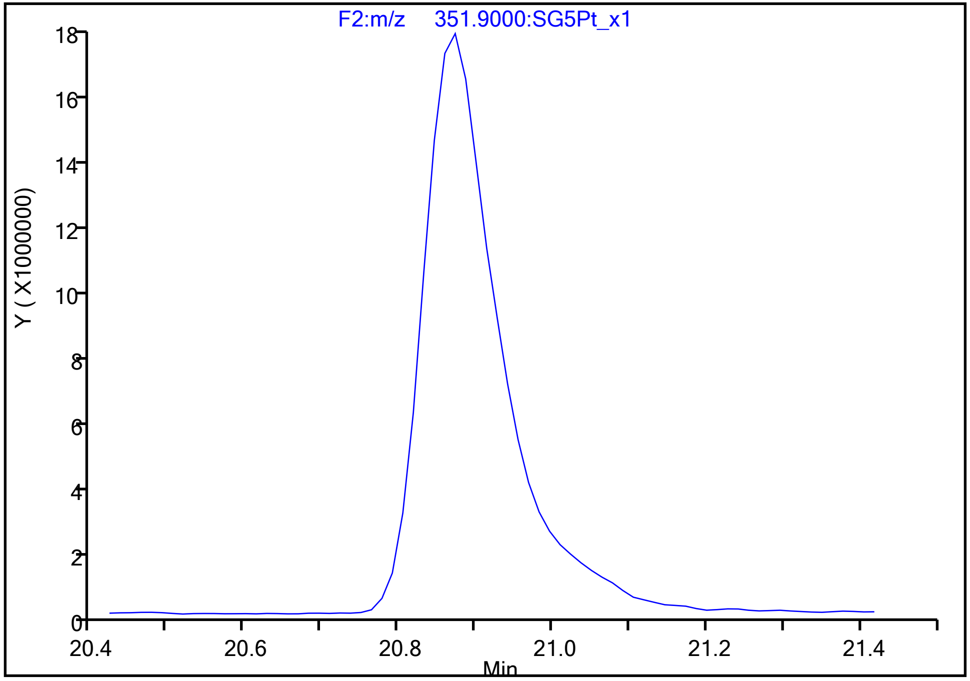

RT: 20.87

Area: 121933873

Amount: 68.994105

Amount Units: pg/ul

Manual Integration Results

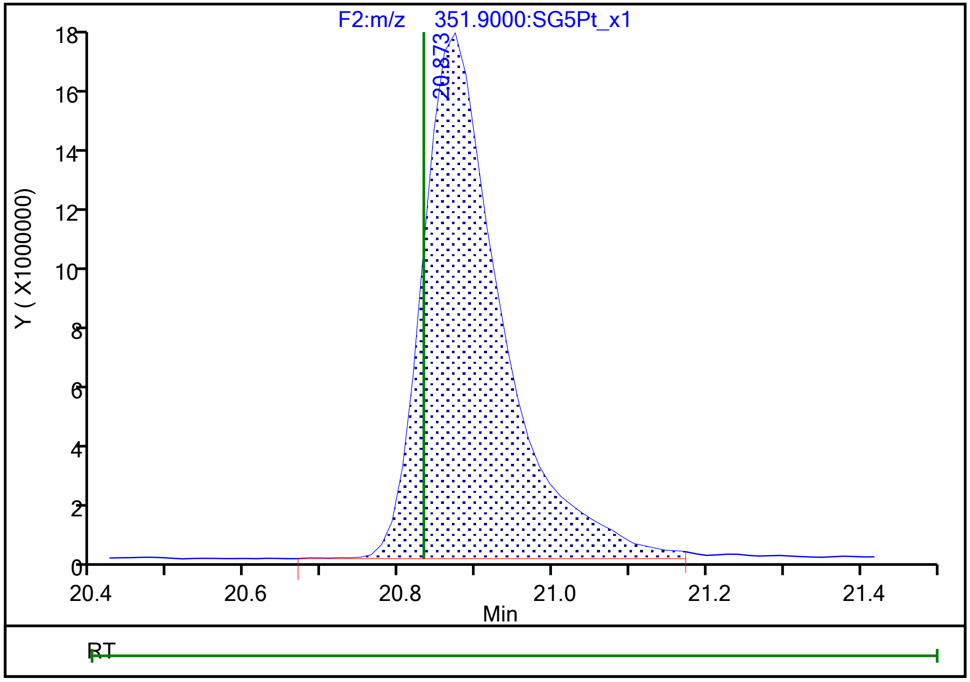

Reviewer: ruangyotsakuld, 13-Oct-2020 08:59:26

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

13C-1,2,3,7,8-PeCDD, CAS: 109719-79-1

Signal: 1

Processing Integration Results

RT:	21.49
Area:	88744362
Amount:	78.942018
Amount Units:	pg/ul

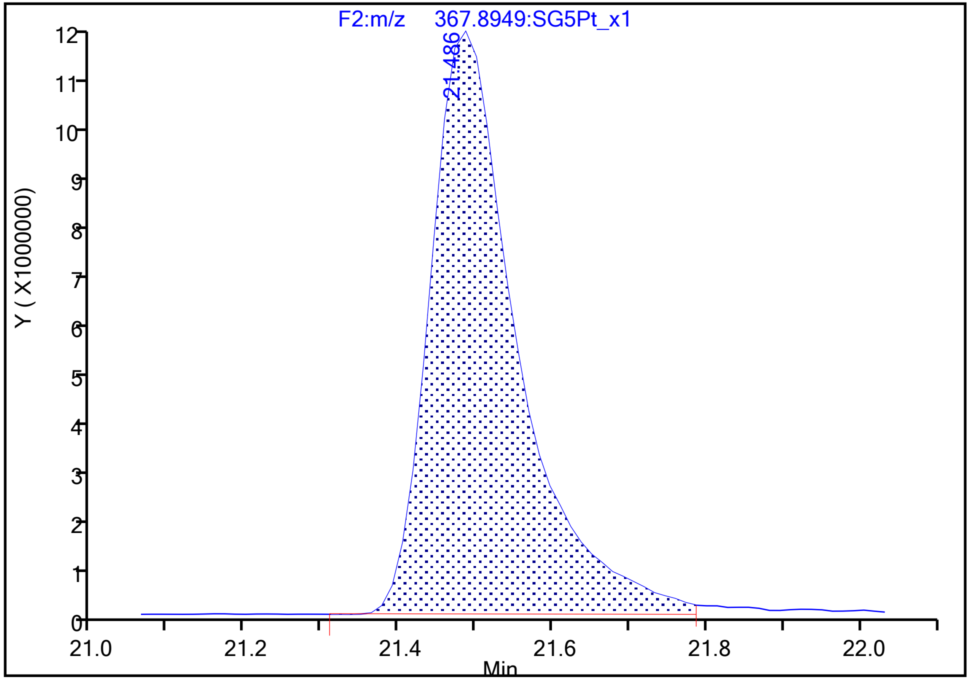

Manual Integration Results

RT:	21.49
Area:	88744362
Amount:	78.942018
Amount Units:	pg/ul

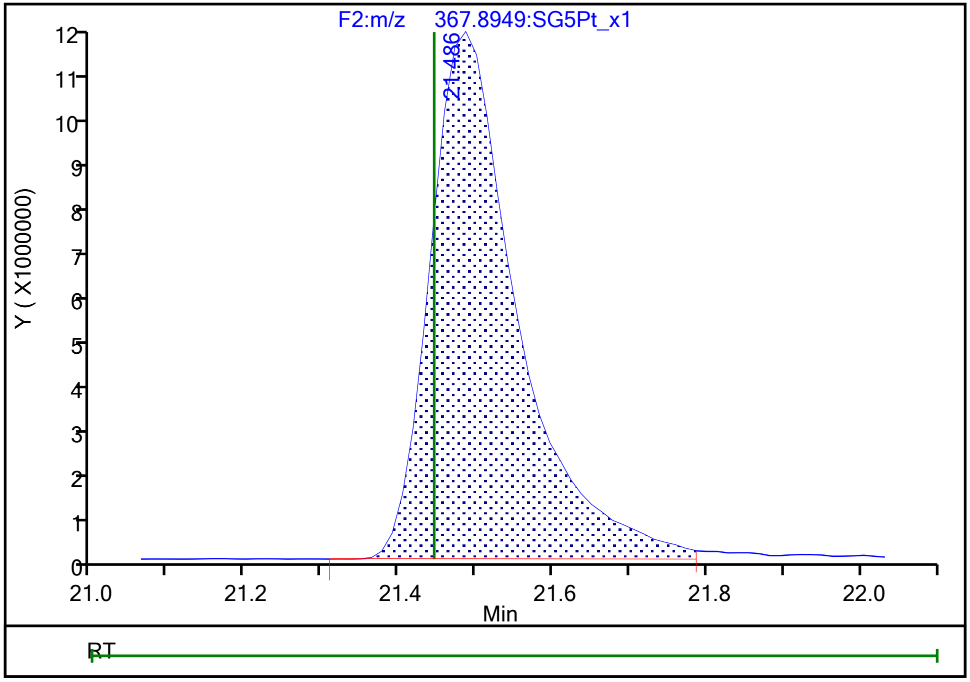

Reviewer: ruangyotsakuld, 13-Oct-2020 08:40:01

Audit Action: Assigned Compound ID Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

RT:	21.51
Area:	156057
Amount:	0.233141
Amount Units:	pg/ul

Processing Integration Results

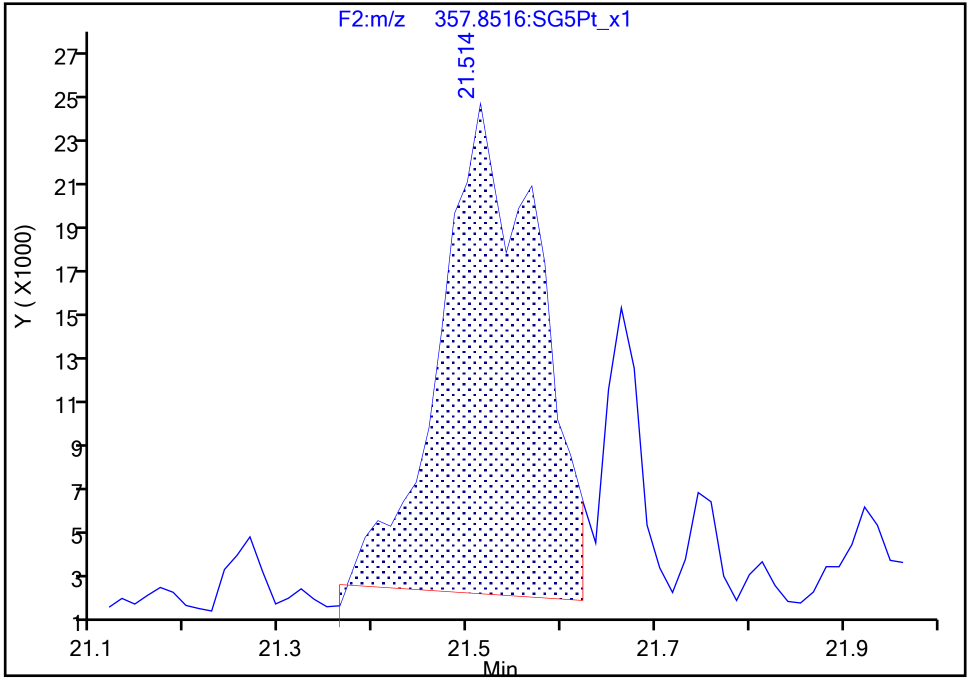

RT:	21.51
Area:	181581
Amount:	0.248422
Amount Units:	pg/ul

Manual Integration Results

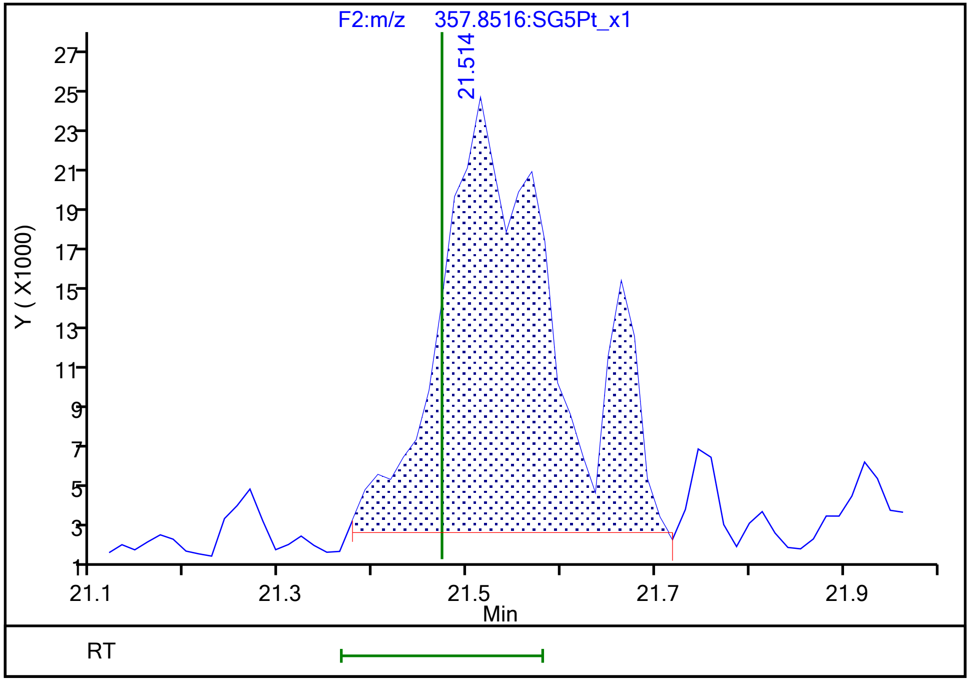

Reviewer: ruangyotsakuld, 13-Oct-2020 08:39:22

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Not Detected

Expected RT: 26.75

Processing Integration Results

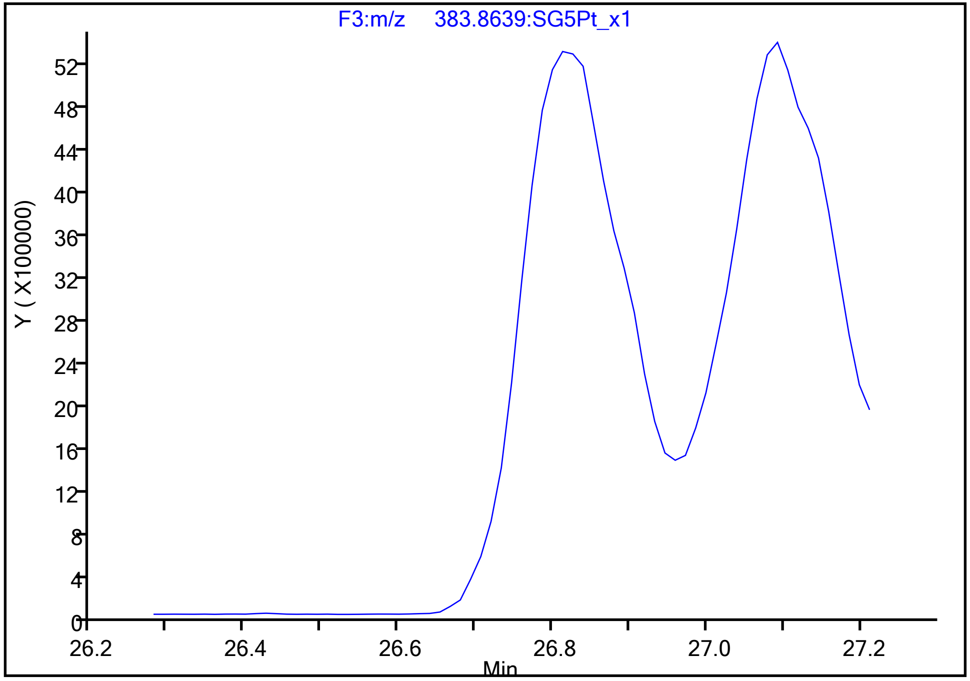

RT: 26.81

Area: 50344405

Amount: 70.951260

Amount Units: pg/ul

Manual Integration Results

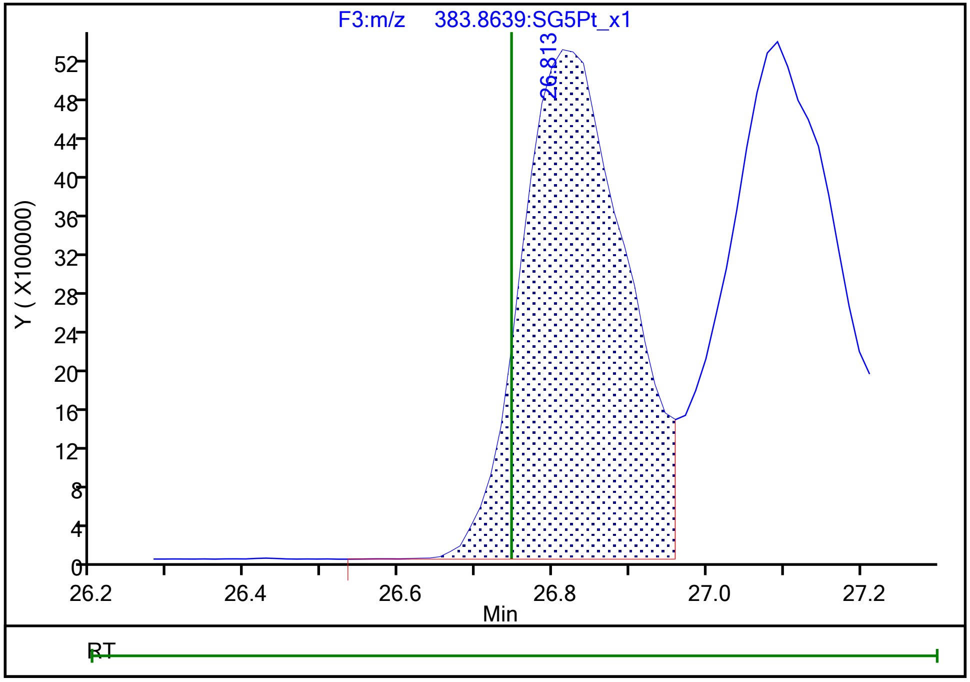

Reviewer: ruangyotsakuld, 13-Oct-2020 08:40:24

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 2

Not Detected

Expected RT: 26.75

Processing Integration Results

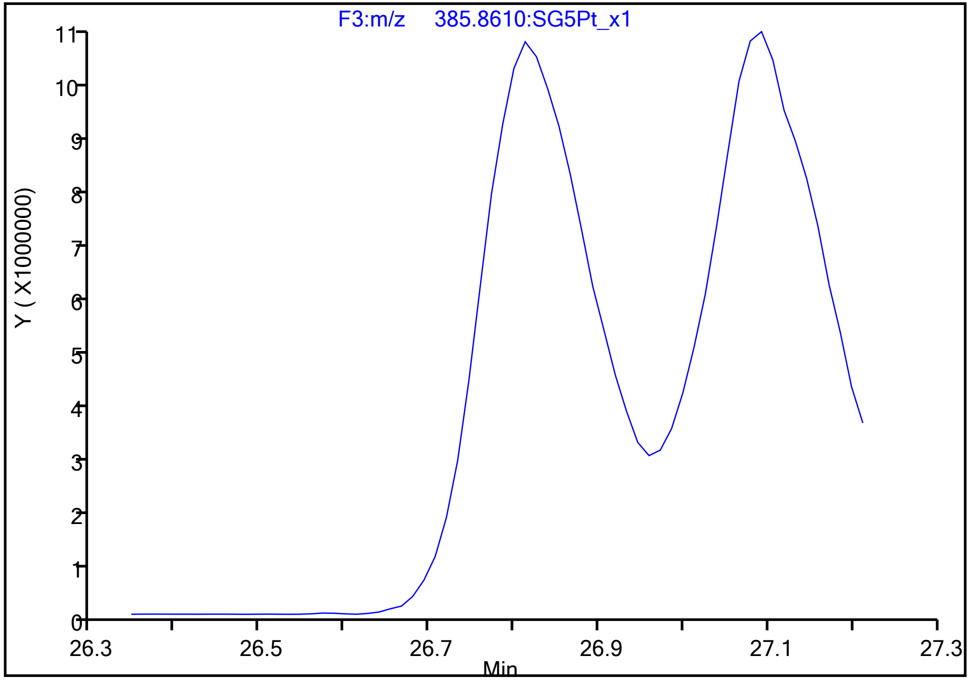

RT:	26.81
Area:	92454055
Amount:	70.951260
Amount Units:	pg/ul

Manual Integration Results

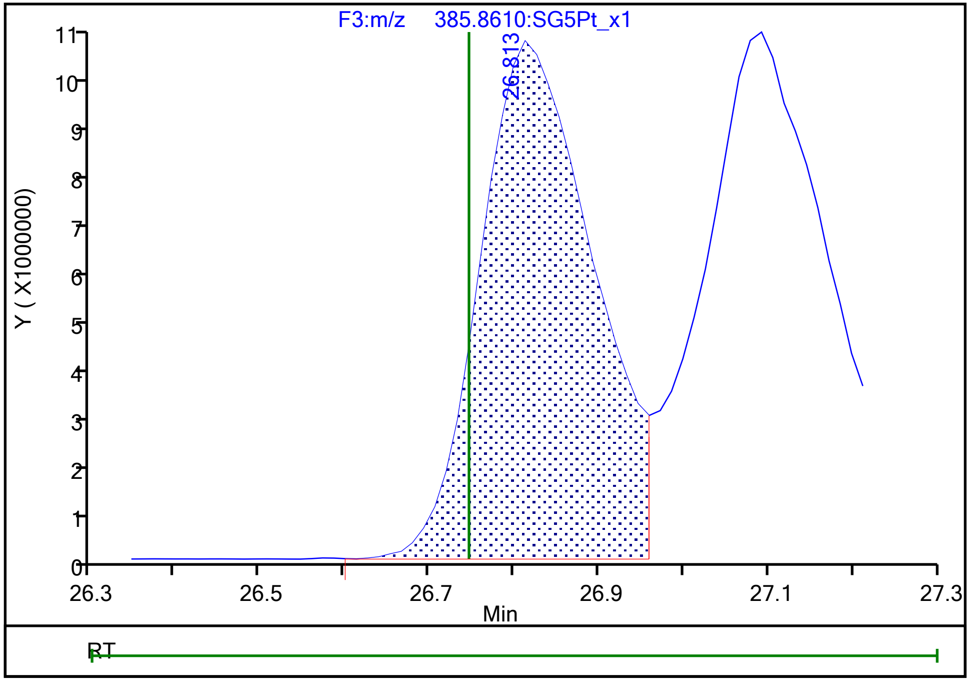

Reviewer: ruangyotsakuld, 13-Oct-2020 08:40:28

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

RT: 26.88
Area: 324449
Amount: 0
Amount Units: pg/ul

Processing Integration Results

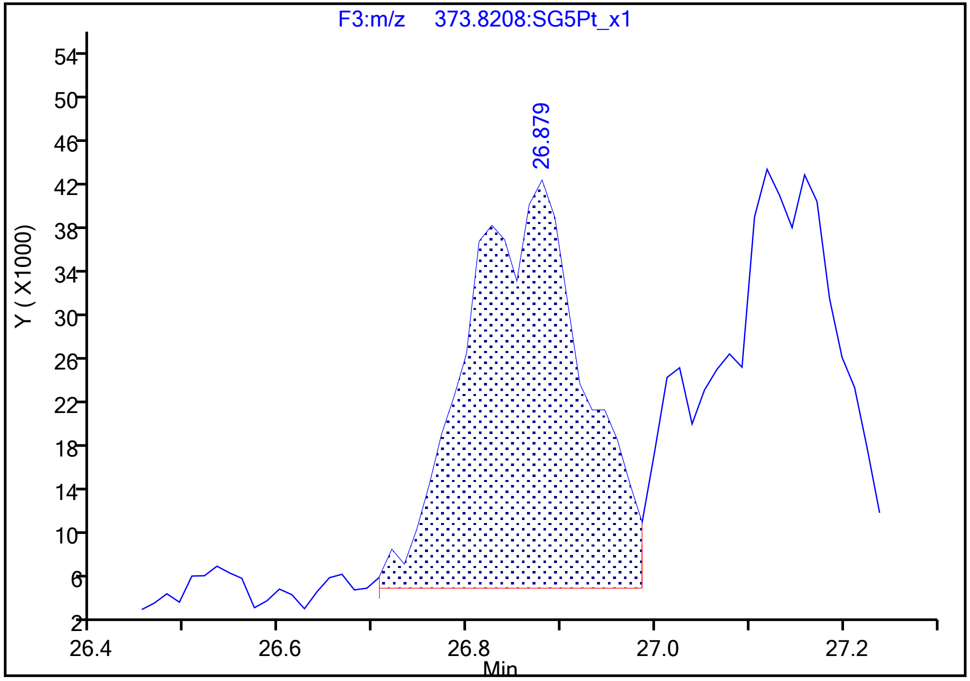

RT: 26.88
Area: 324449
Amount: 0.328574
Amount Units: pg/ul

Manual Integration Results

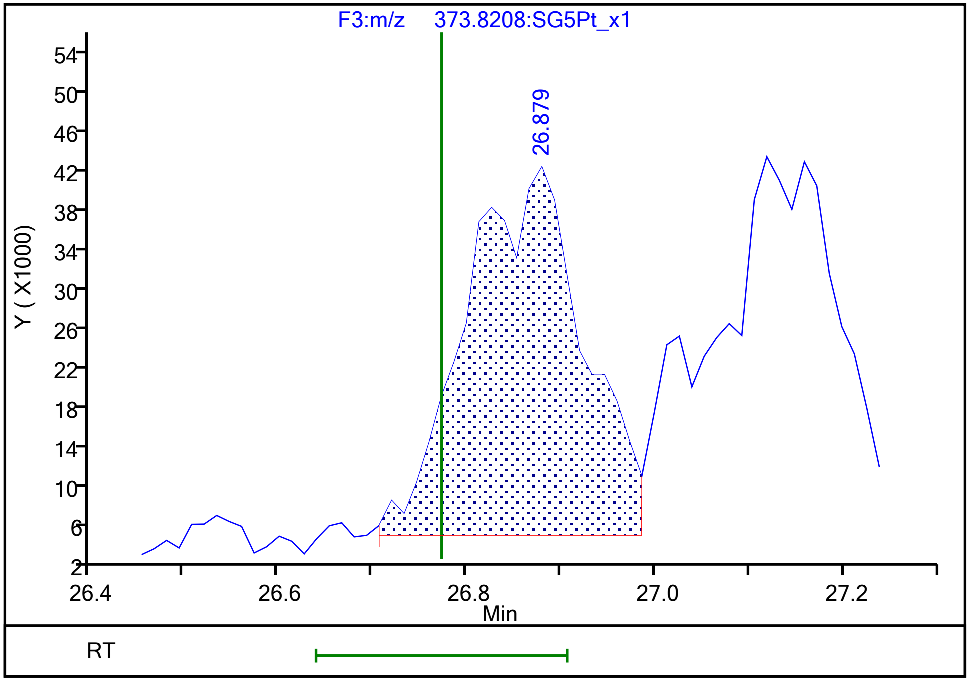

Reviewer: ruangyotsakuld, 13-Oct-2020 08:39:39

Audit Action: Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDF, CAS: 116843-03-9

Signal: 2

RT:	27.09
Area:	203342220
Amount:	0
Amount Units:	pg/ul

Processing Integration Results

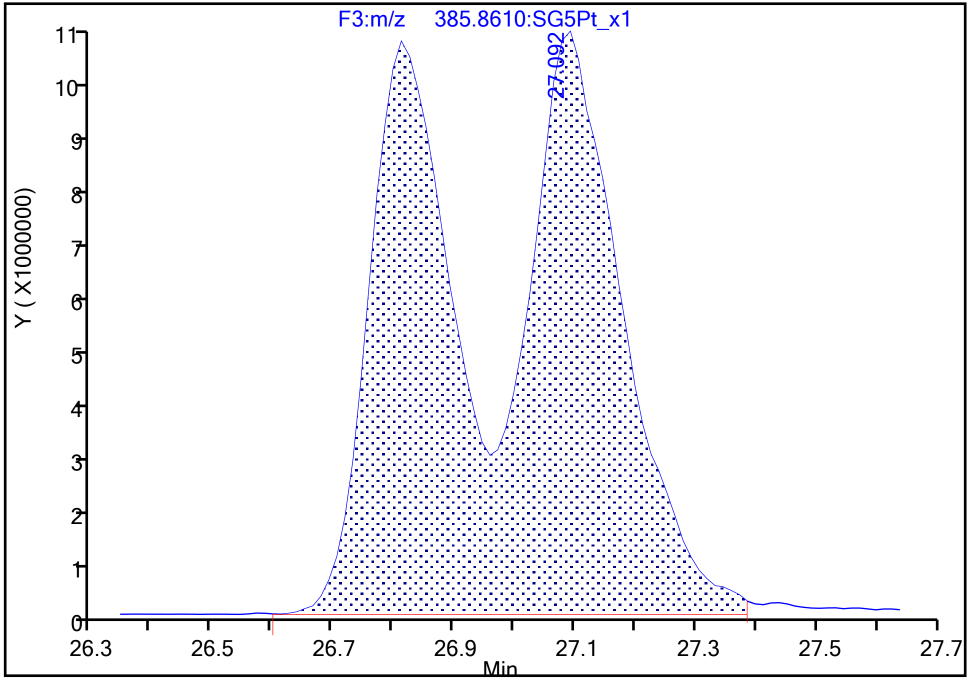

RT:	27.09
Area:	110888164
Amount:	77.970735
Amount Units:	pg/ul

Manual Integration Results

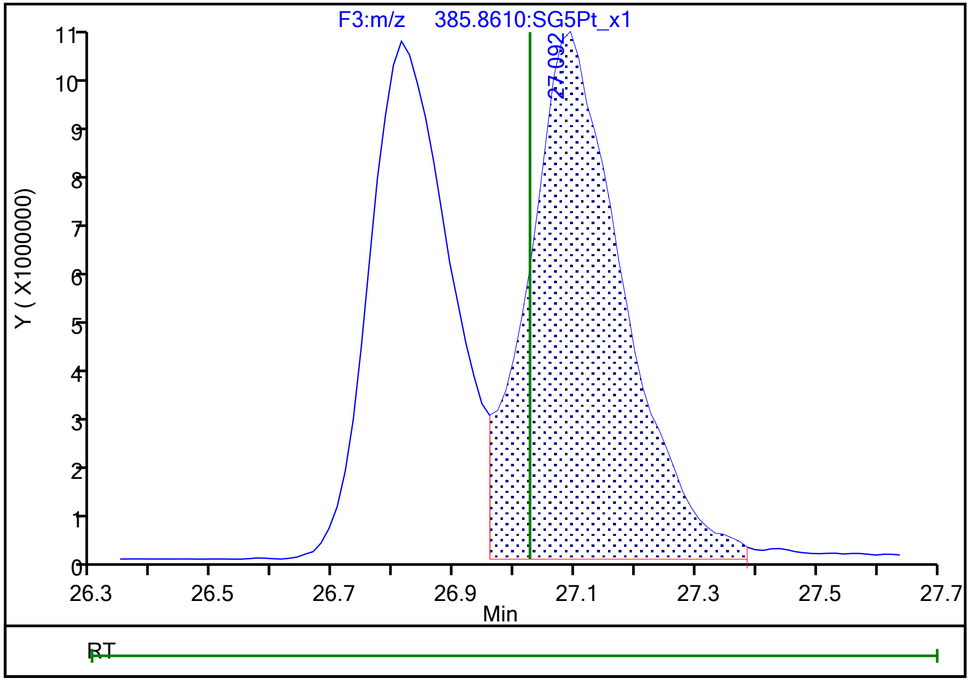

Reviewer: ruangyotsakuld, 13-Oct-2020 08:40:28

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDF, CAS: 116843-03-9

Signal: 1

RT:	27.09
Area:	110167102
Amount:	0
Amount Units:	pg/ul

Processing Integration Results

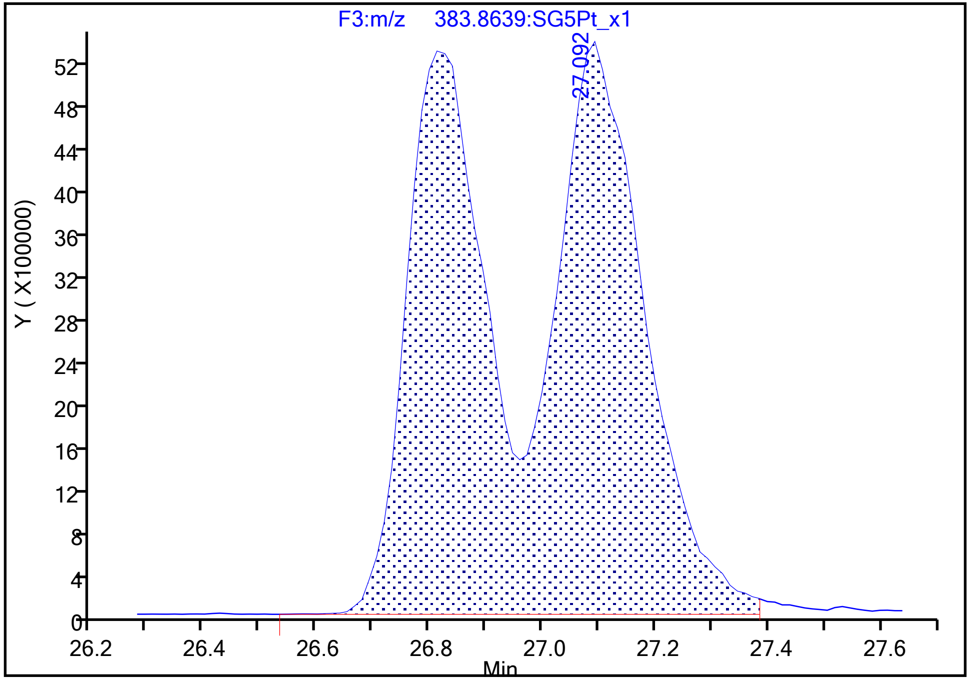

RT:	27.09
Area:	59822697
Amount:	77.970735
Amount Units:	pg/ul

Manual Integration Results

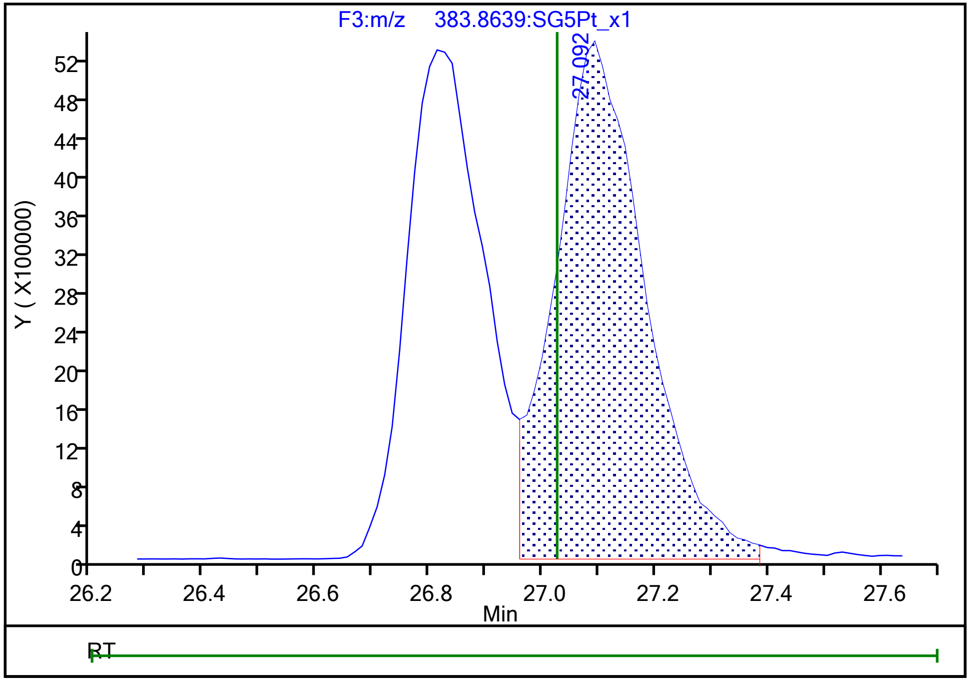

Reviewer: ruangyotsakuld, 13-Oct-2020 08:40:36

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Processing Integration Results

RT:	27.12
Area:	321084
Amount:	0.352430
Amount Units:	pg/ul

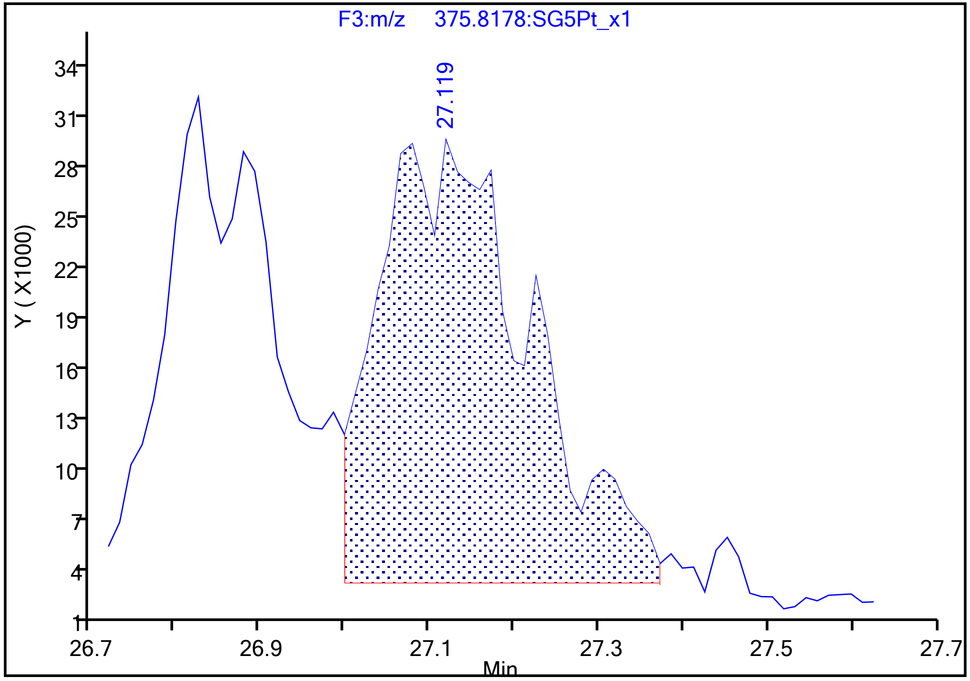

Manual Integration Results

RT:	27.12
Area:	374586
Amount:	0.377306
Amount Units:	pg/ul

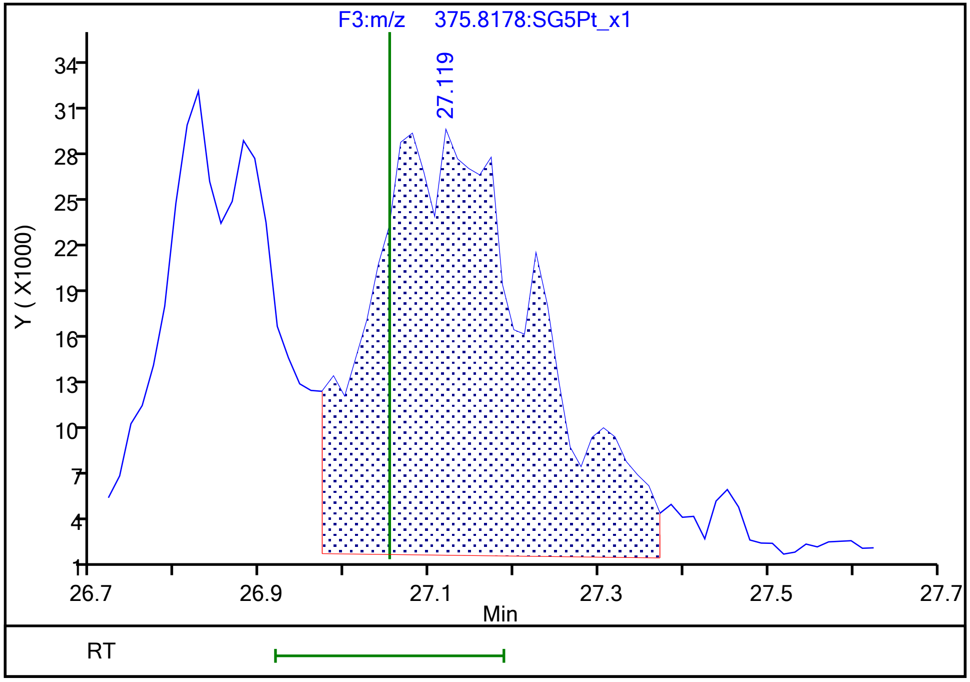

Reviewer: ruangyotsakuld, 13-Oct-2020 08:40:52

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d

Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT: 27.12
Area: 407016
Amount: 0.352430
Amount Units: pg/ul

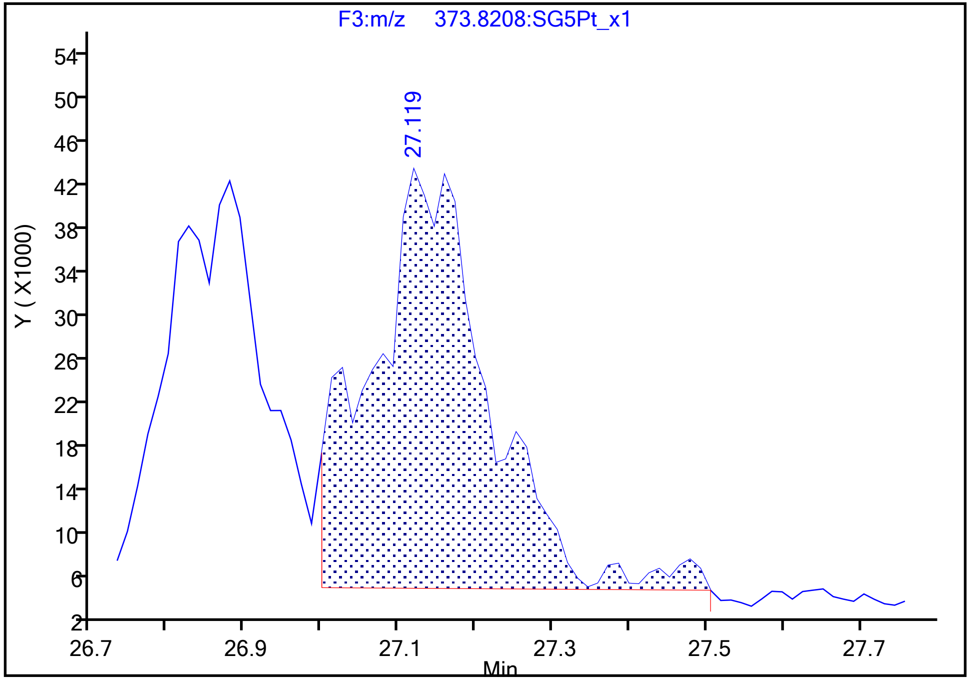

Manual Integration Results

RT: 27.12
Area: 404906
Amount: 0.377306
Amount Units: pg/ul

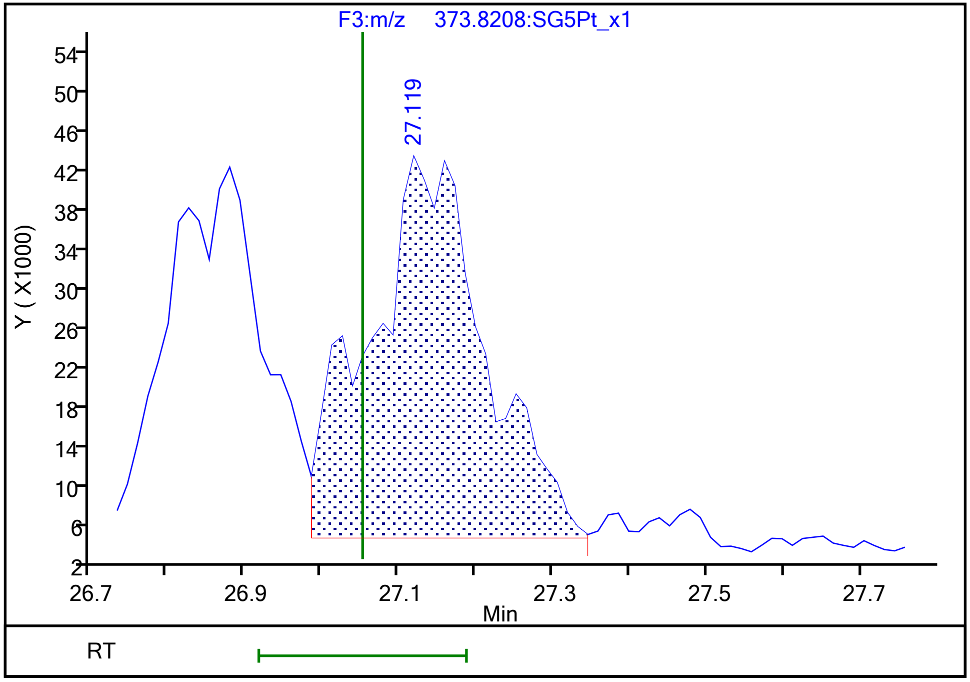

Reviewer: ruangyotsakuld, 13-Oct-2020 08:41:01

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-2,3,4,6,7,8-HxCDF, CAS: 116843-05-1

Signal: 1

Processing Integration Results

RT:	28.66
Area:	54892468
Amount:	0
Amount Units:	pg/ul

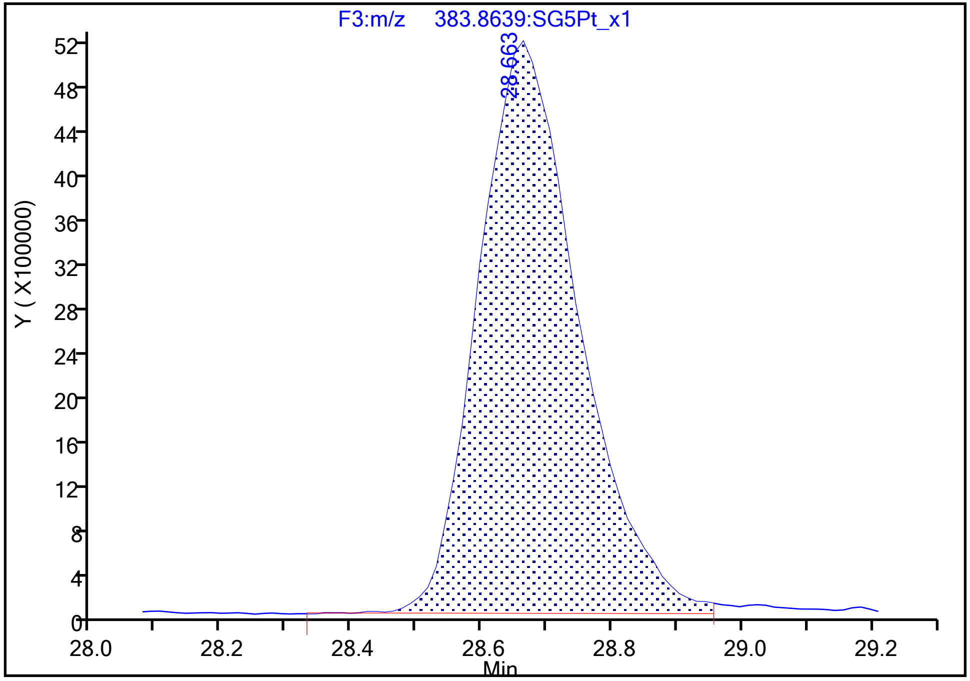

Manual Integration Results

RT:	28.66
Area:	54892468
Amount:	77.108524
Amount Units:	pg/ul

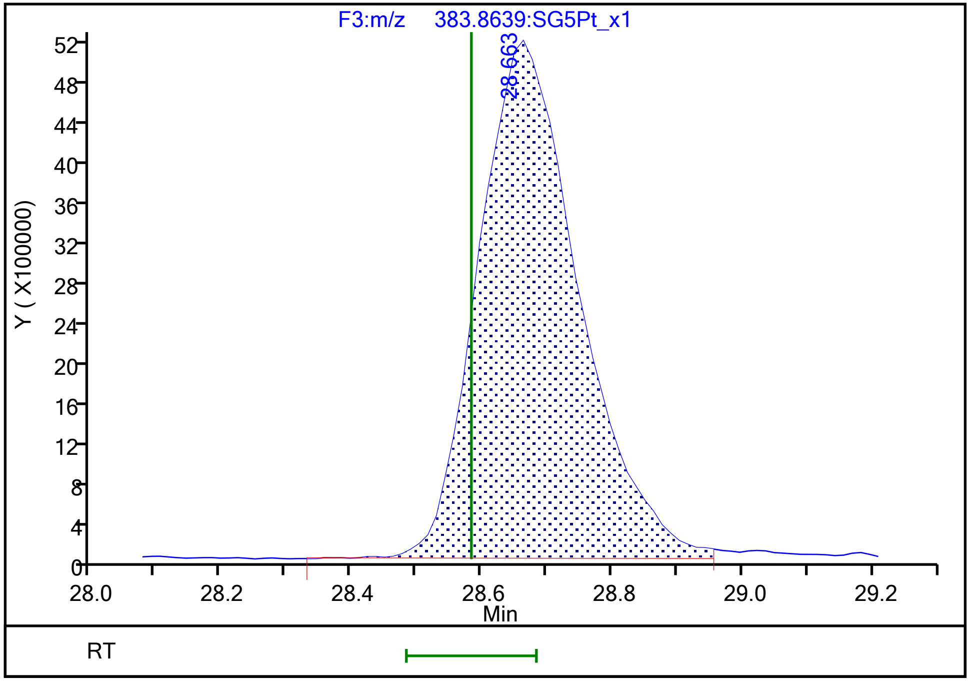

Reviewer: ruangyotsakuld, 13-Oct-2020 08:41:09

Audit Action: Assigned Compound ID Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21 Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F3:HRSIR

13C-1,2,3,7,8,9-HxCDF, CAS: 116843-04-0

Signal: 1

Processing Integration Results

RT: 30.46
Area: 53488616
Amount: 0
Amount Units: pg/ul

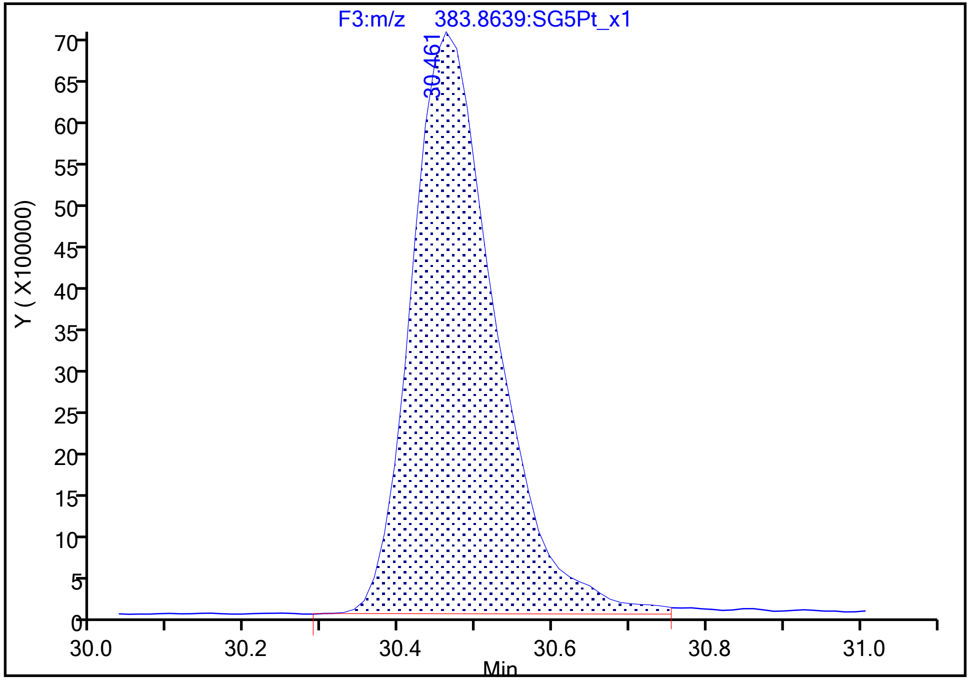

Manual Integration Results

RT: 30.46
Area: 53488616
Amount: 74.495750
Amount Units: pg/ul

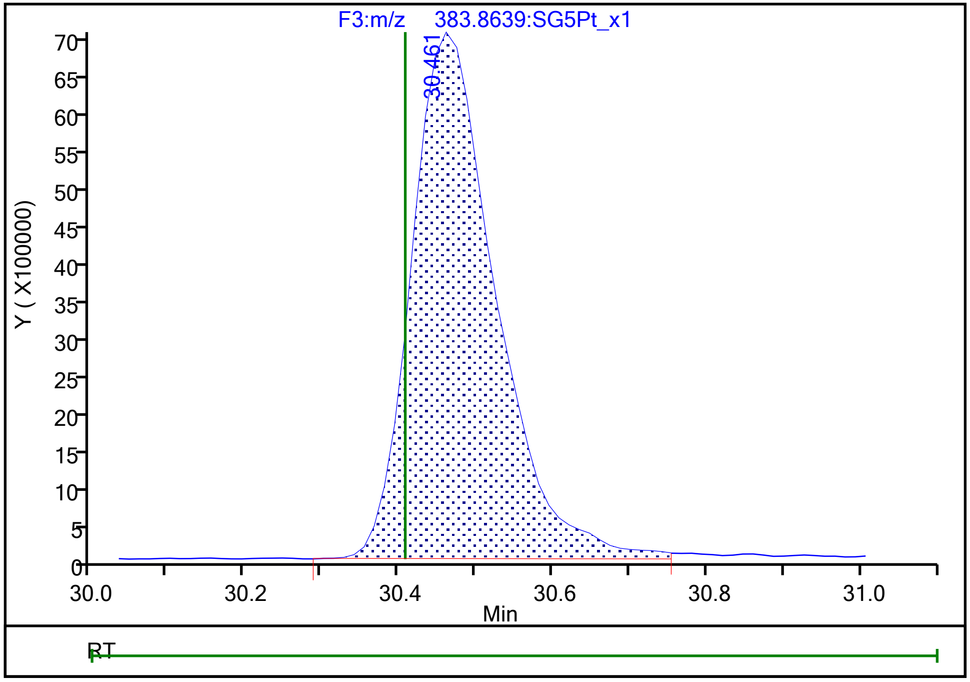

Reviewer: ruangyotsakuld, 13-Oct-2020 08:41:16
Audit Action: Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 29.06

Processing Integration Results

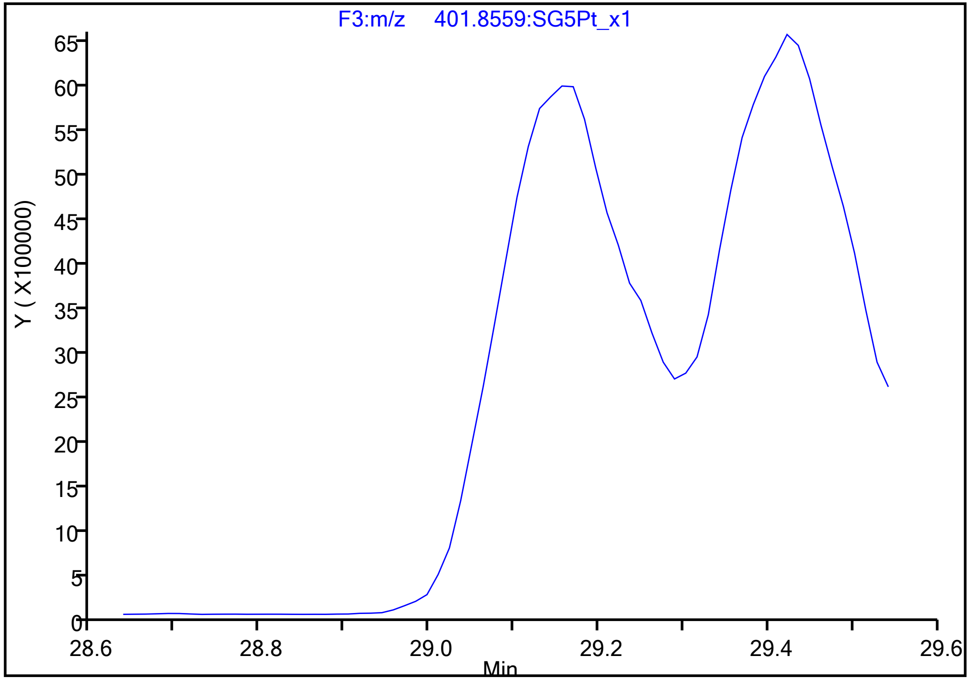

RT: 29.16

Area: 65490473

Amount: 87.312820

Amount Units: pg/ul

Manual Integration Results

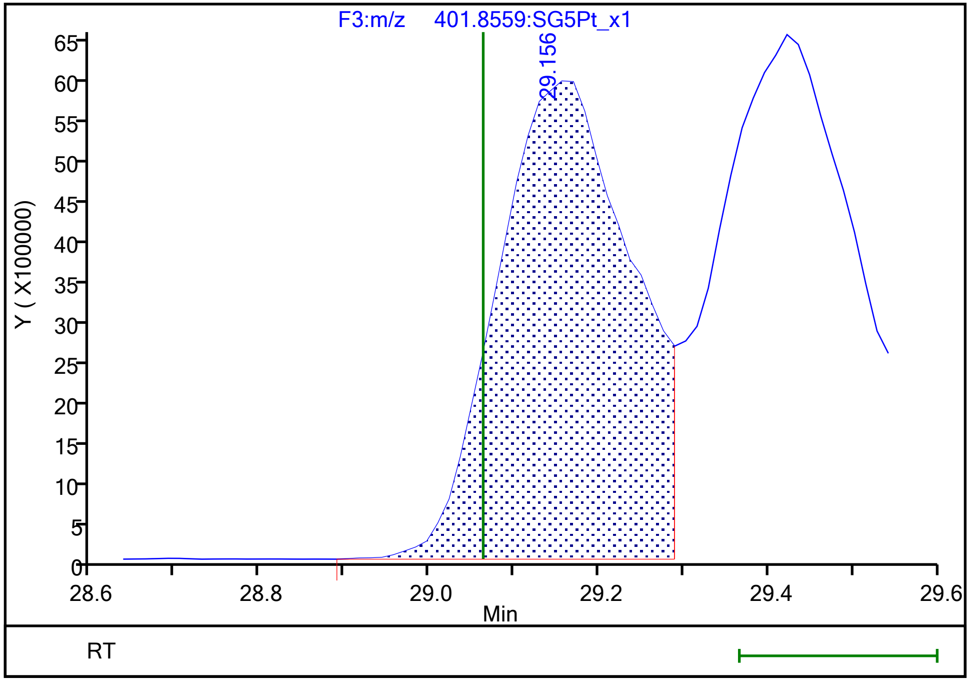

Reviewer: ruangyotsakuld, 13-Oct-2020 08:41:29

Audit Action: Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT: 29.18
Area: 624979
Amount: 0.786097
Amount Units: pg/ul

Processing Integration Results

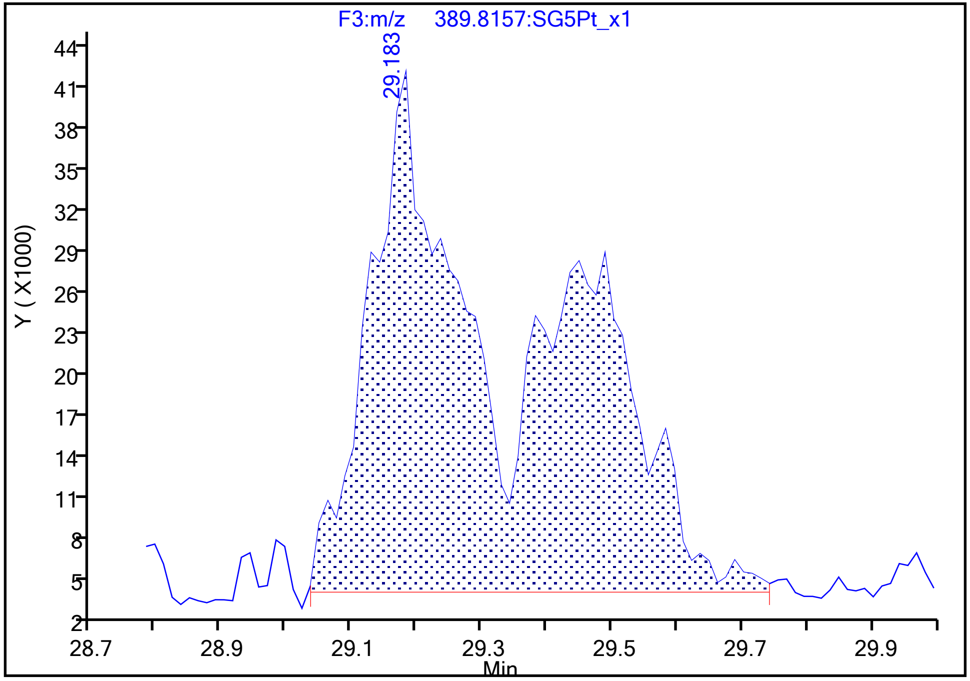

RT: 29.18
Area: 347927
Amount: 0.425845
Amount Units: pg/ul

Manual Integration Results

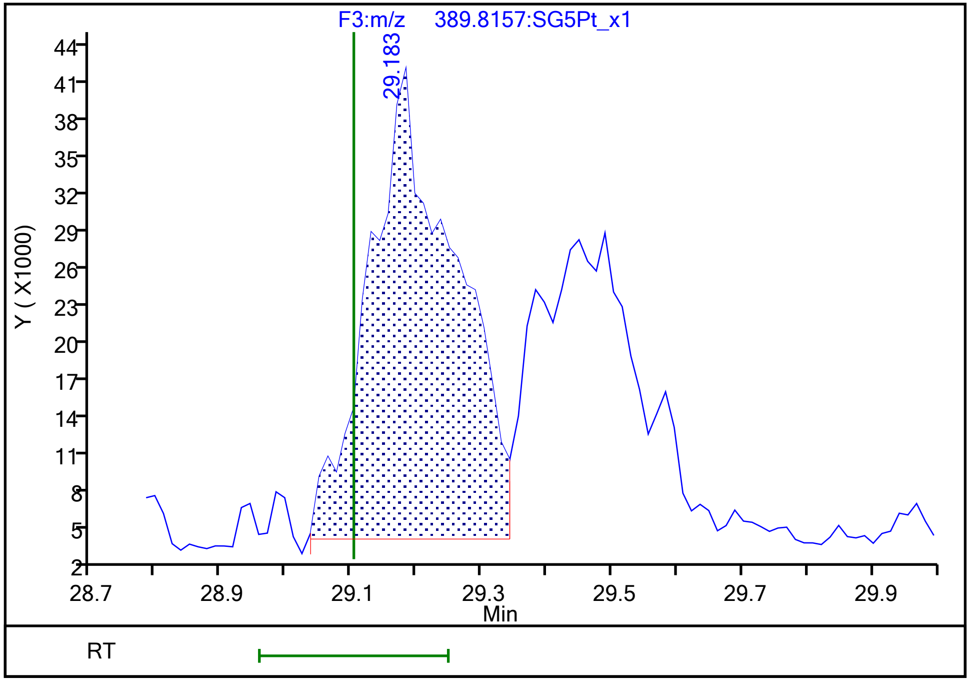

Reviewer: ruangyotsakuld, 13-Oct-2020 08:41:43
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT: 29.22
Area: 522833
Amount: 0.786097
Amount Units: pg/ul

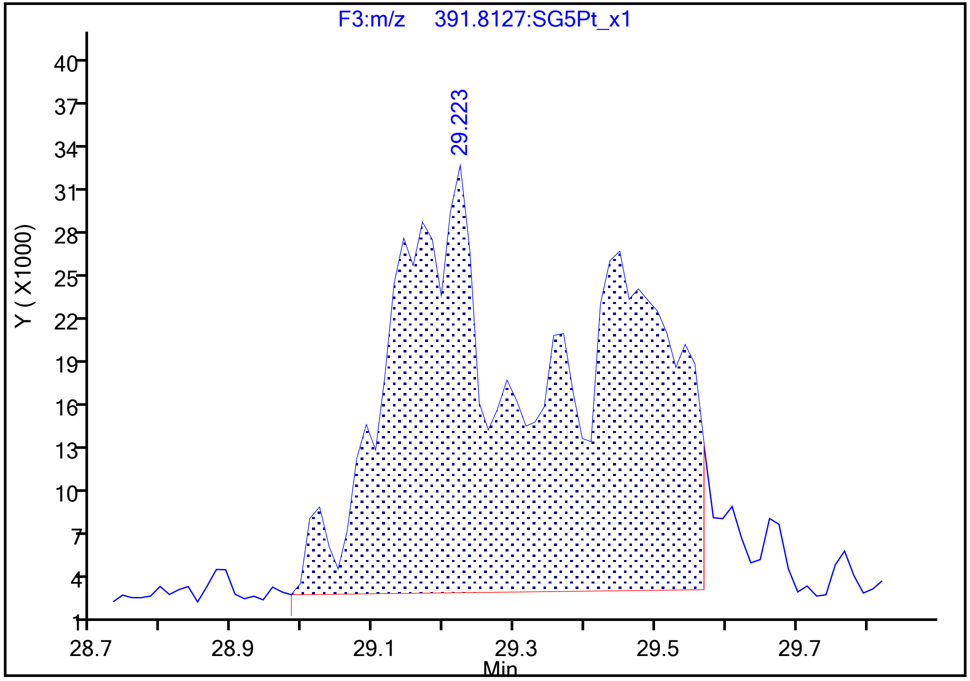

Manual Integration Results

RT: 29.22
Area: 273867
Amount: 0.425845
Amount Units: pg/ul

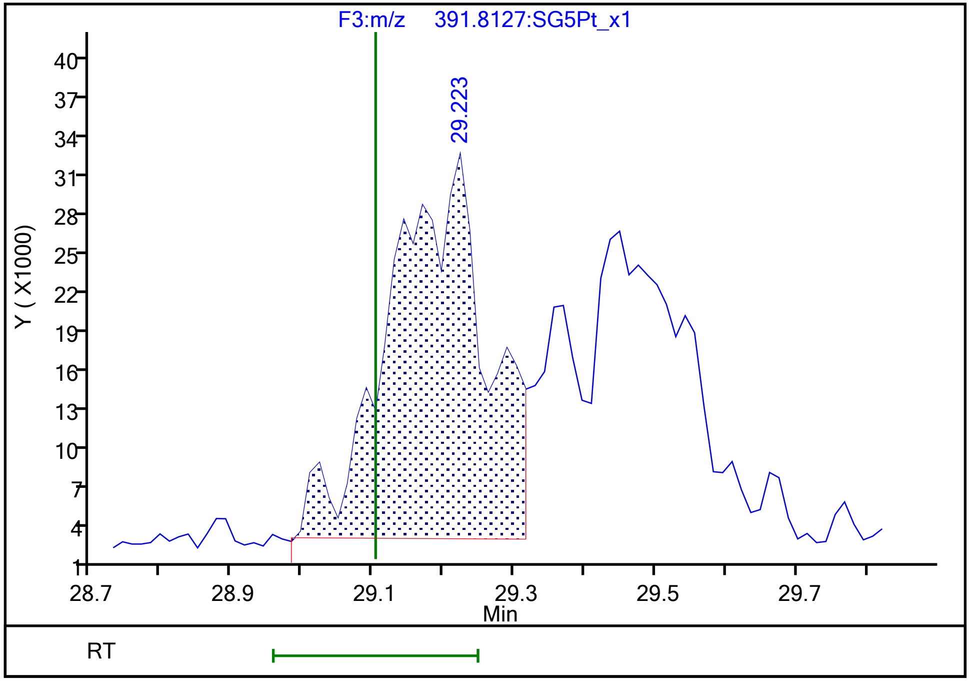

Reviewer: ruangyotsakuld, 13-Oct-2020 08:41:48
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT: 30.17
Area: 86185922
Amount: 0
Amount Units: pg/ul

Processing Integration Results

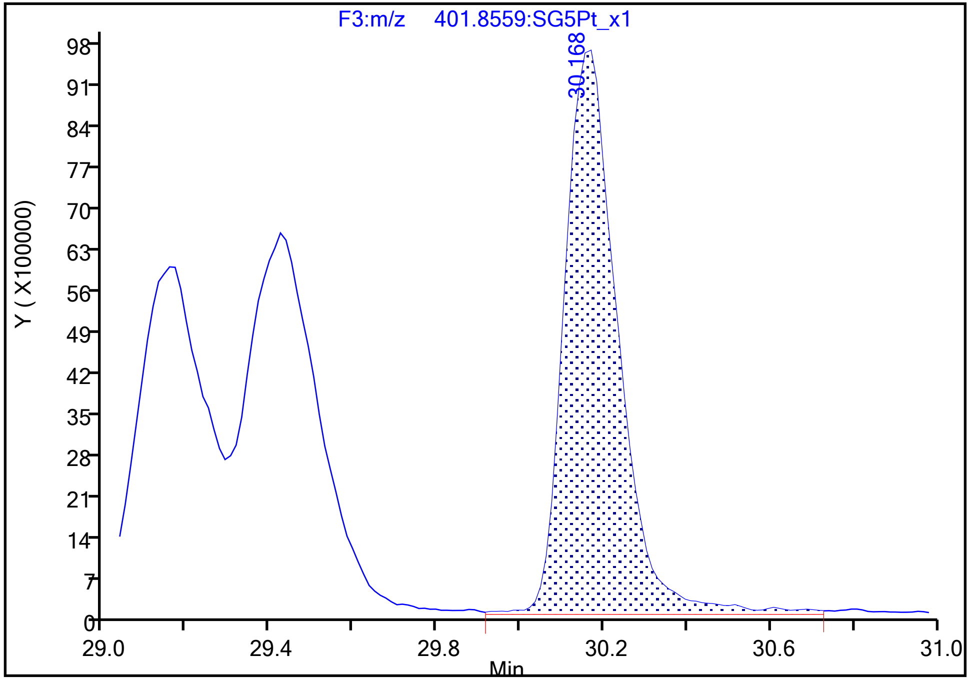

RT: 29.42
Area: 80449487
Amount: 95.497380
Amount Units: pg/ul

Manual Integration Results

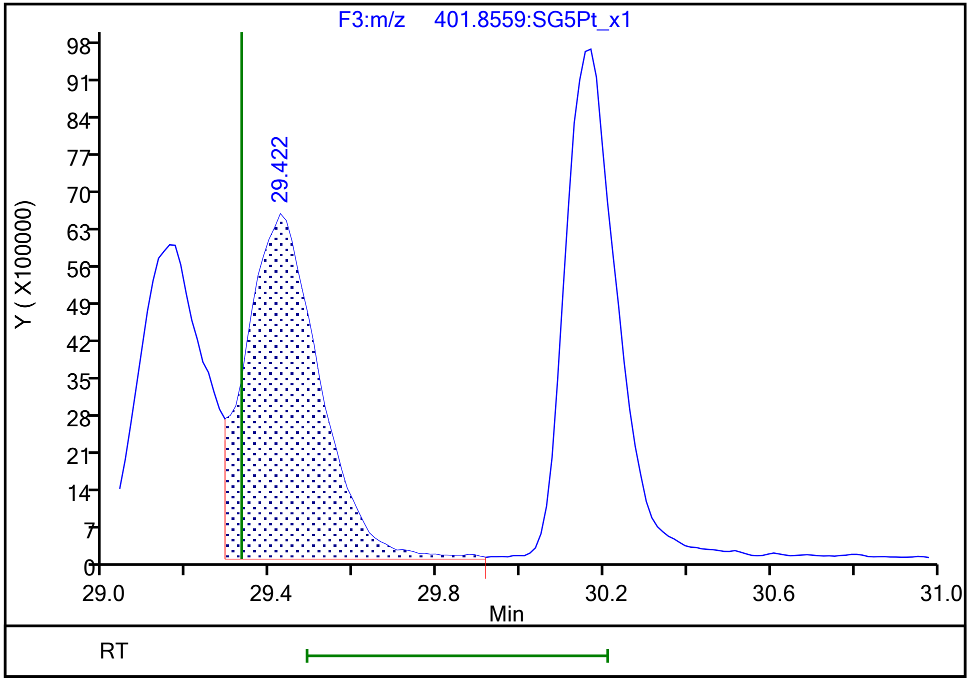

Reviewer: ruangyotsakuld, 13-Oct-2020 08:42:49
Audit Action: Assigned Compound ID
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Not Detected

Expected RT: 29.37

Processing Integration Results

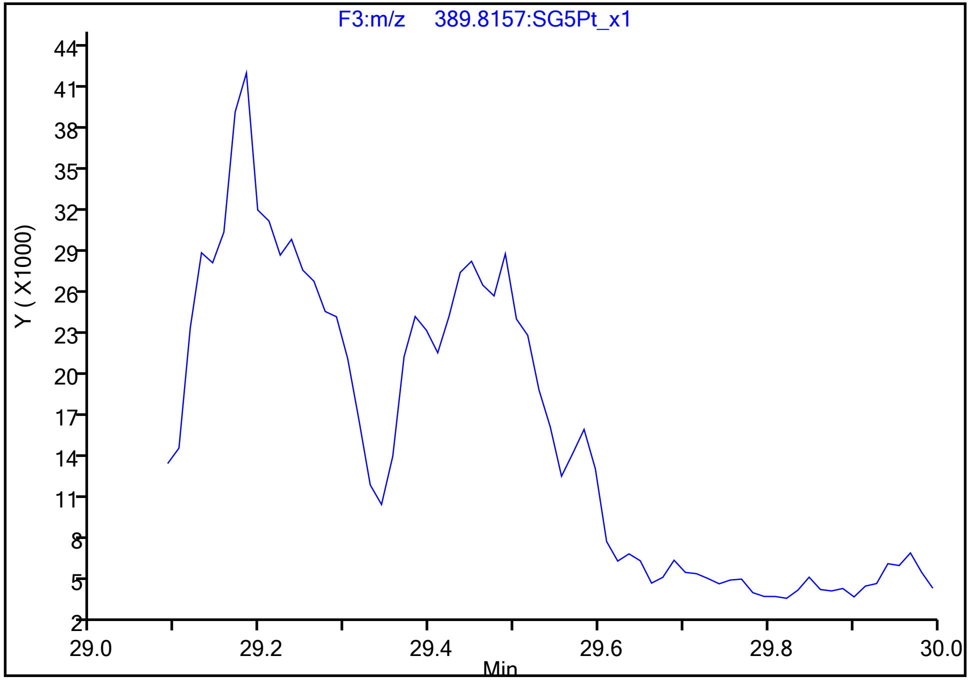

Manual Integration Results

RT: 29.49

Area: 277052

Amount: 0.347237

Amount Units: pg/ul

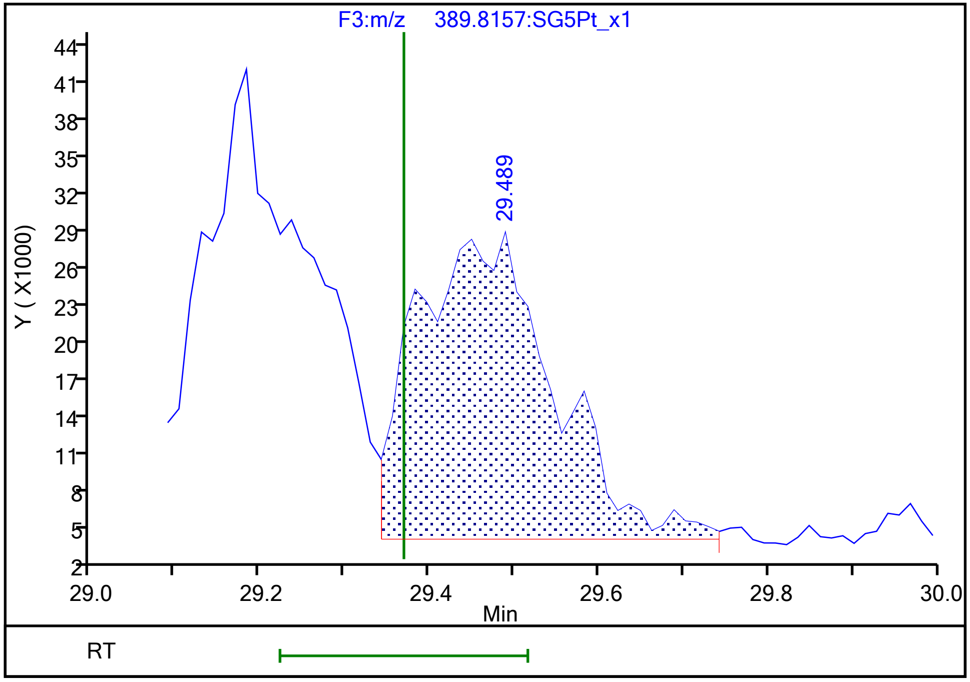

Reviewer: ruangyotsakuld, 13-Oct-2020 08:42:03

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

13C-1,2,3,4,6,7,8-HpCDF, CAS: 109719-84-8

Signal: 1

Processing Integration Results

RT:	32.57
Area:	32298943
Amount:	0
Amount Units:	pg/ul

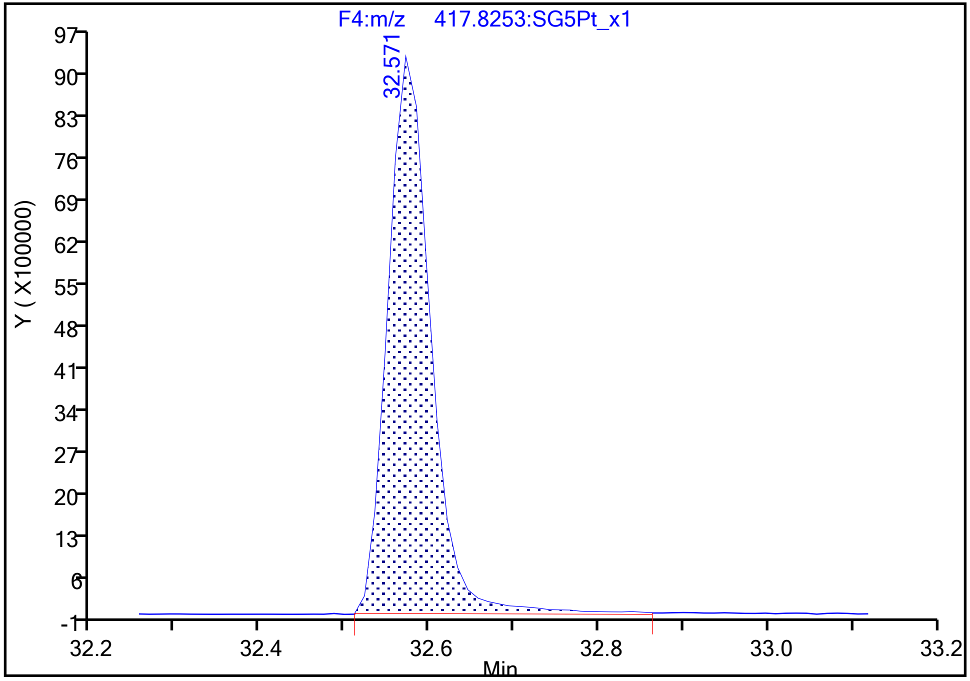

Manual Integration Results

RT:	32.57
Area:	32298943
Amount:	70.452274
Amount Units:	pg/ul

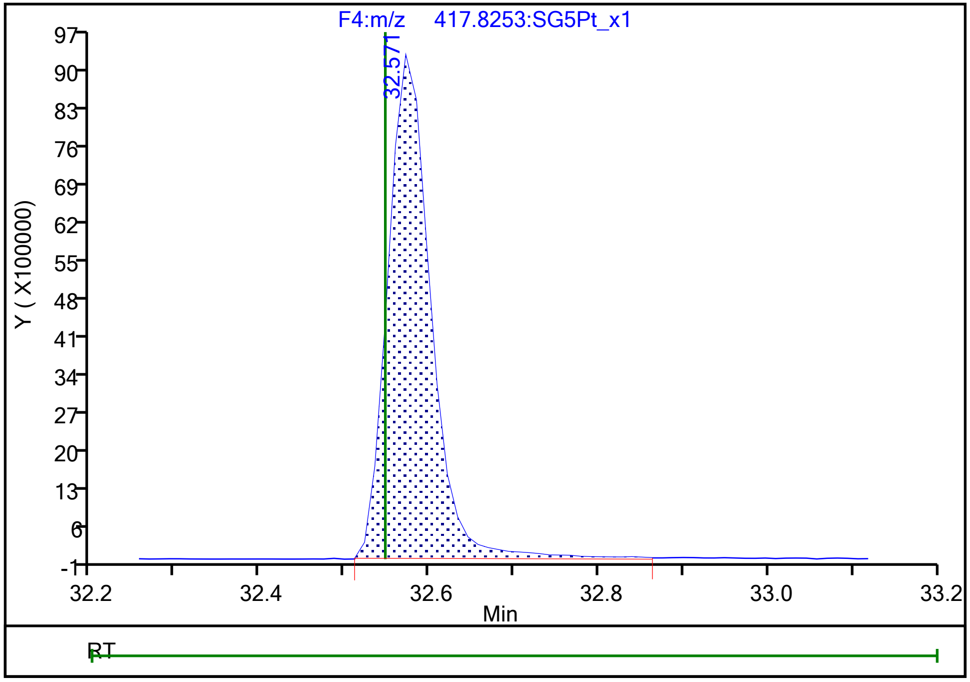

Reviewer: ruangyotsakuld, 13-Oct-2020 08:42:13

Audit Action: Assigned Compound ID Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Processing Integration Results

Not Detected
Expected RT: 33.64

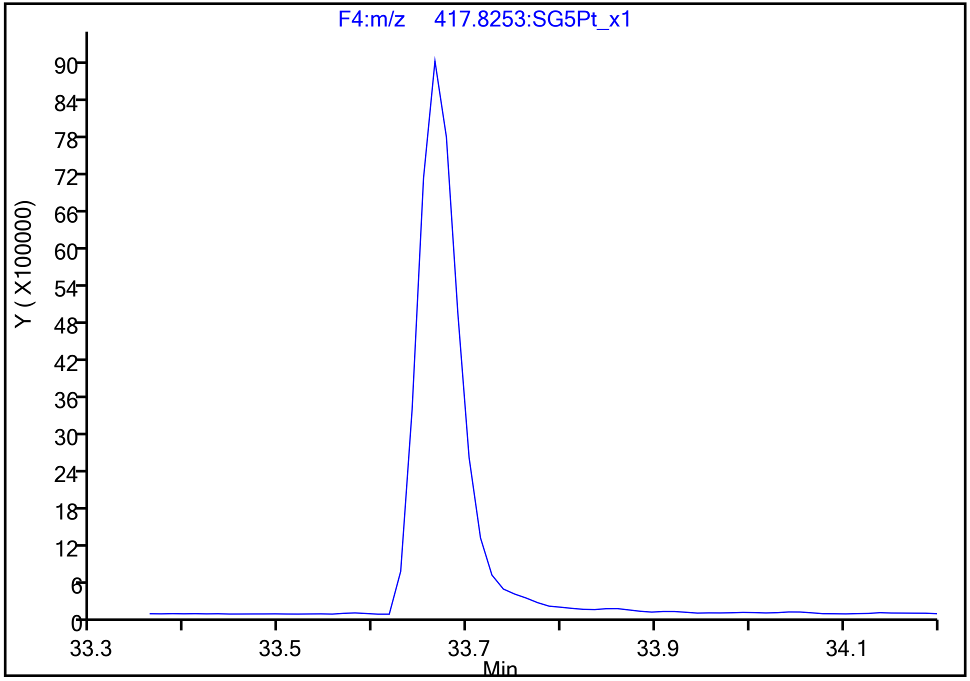

Manual Integration Results

RT: 33.67
Area: 29563523
Amount: 69.038029
Amount Units: pg/ul

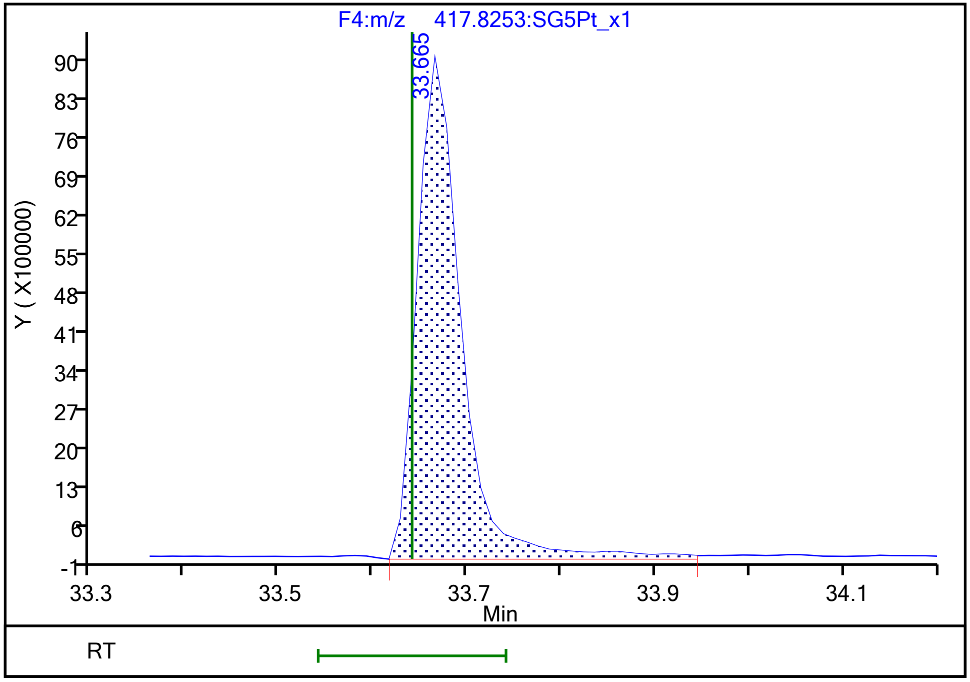

Reviewer: ruangyotsakuld, 13-Oct-2020 08:43:09
Audit Action: Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

13C-1,2,3,4,6,7,8-HpCDD, CAS: 109719-83-7

Signal: 1

Processing Integration Results

RT:	33.42
Area:	51015533
Amount:	71.638219
Amount Units:	pg/ul

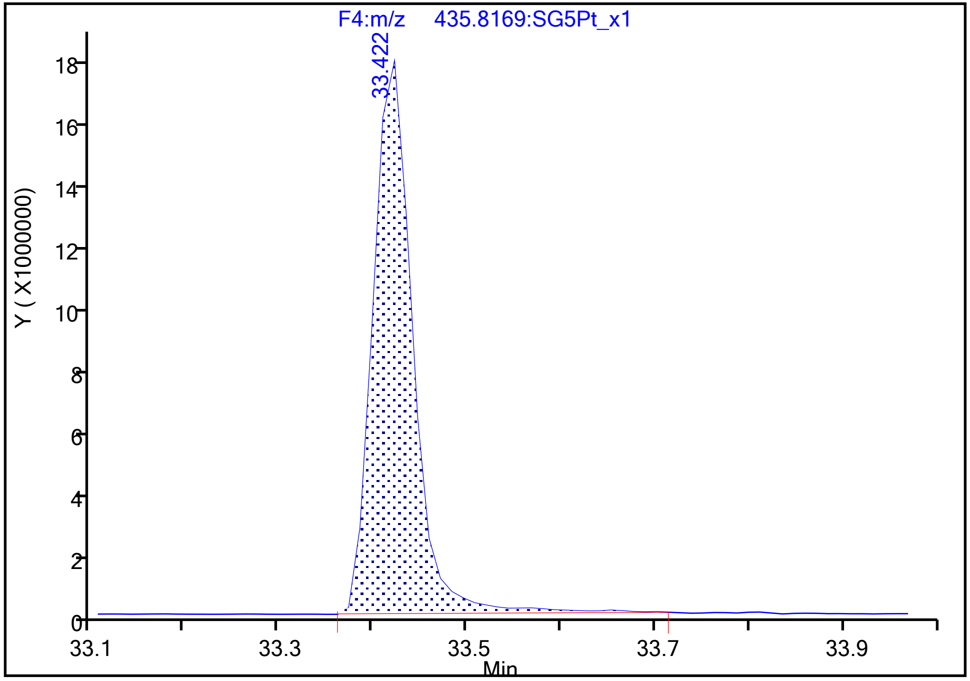

Manual Integration Results

RT:	33.42
Area:	51015533
Amount:	71.638219
Amount Units:	pg/ul

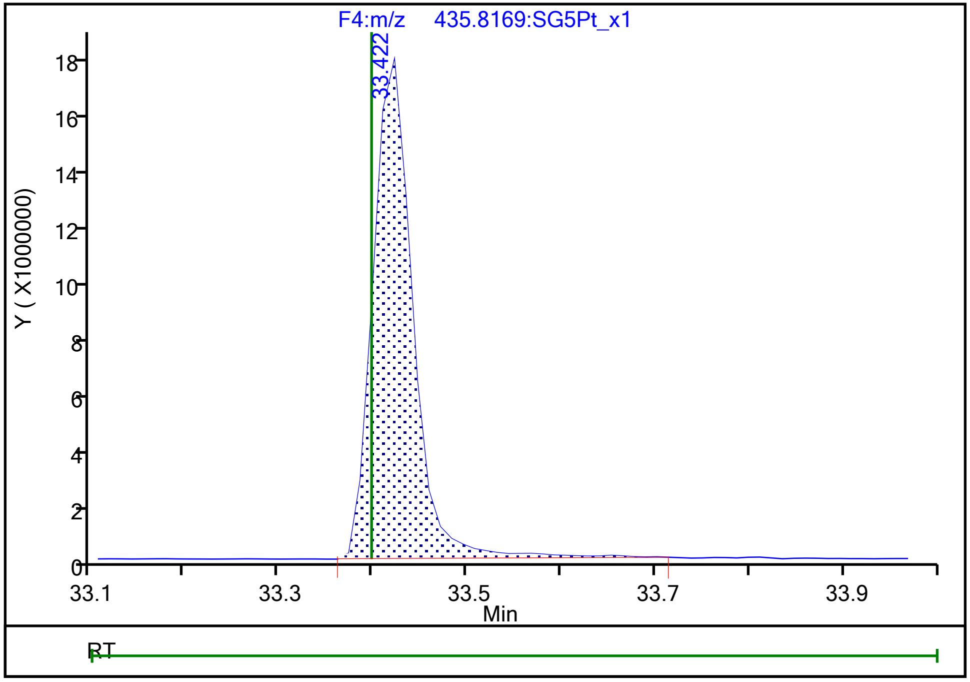

Reviewer: ruangyotsakuld, 13-Oct-2020 08:43:18

Audit Action: Assigned Compound ID Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 33.43
Area: 275758
Amount: 0.509544
Amount Units: pg/ul

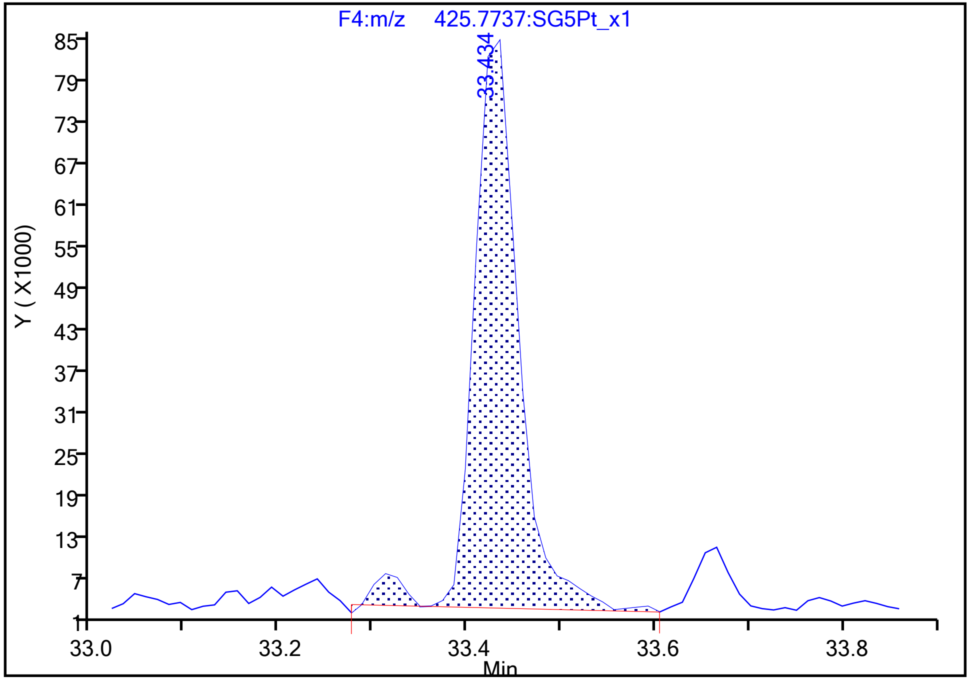

Manual Integration Results

RT: 33.43
Area: 266415
Amount: 0.493811
Amount Units: pg/ul

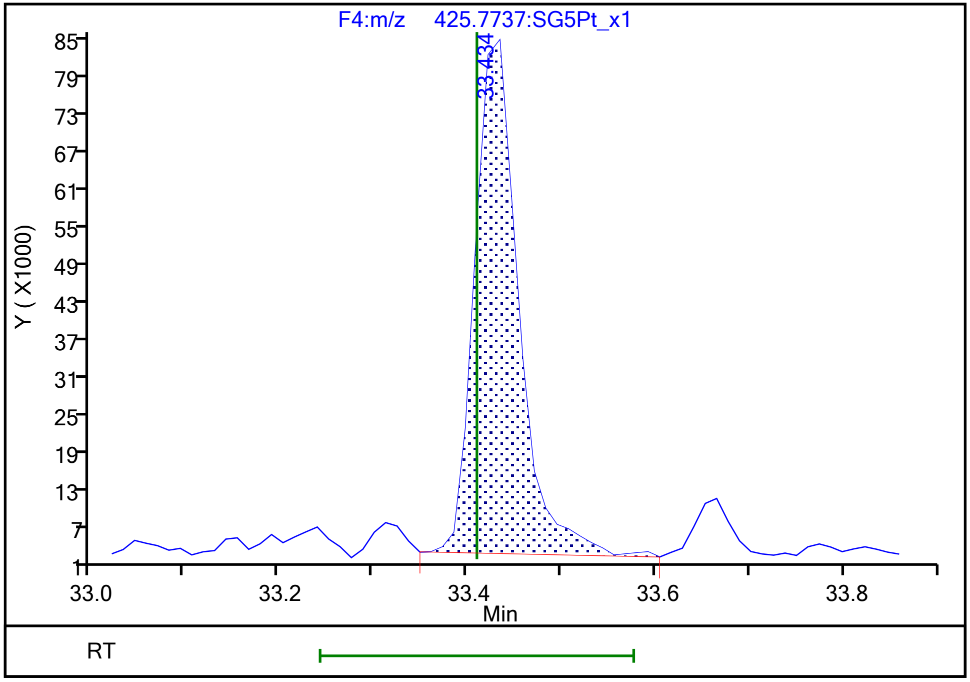

Reviewer: ruangyotsakuld, 13-Oct-2020 08:44:04

Audit Action: Split an Integrated Peak　　Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	33.43
Area:	276962
Amount:	0.509544
Amount Units:	pg/ul

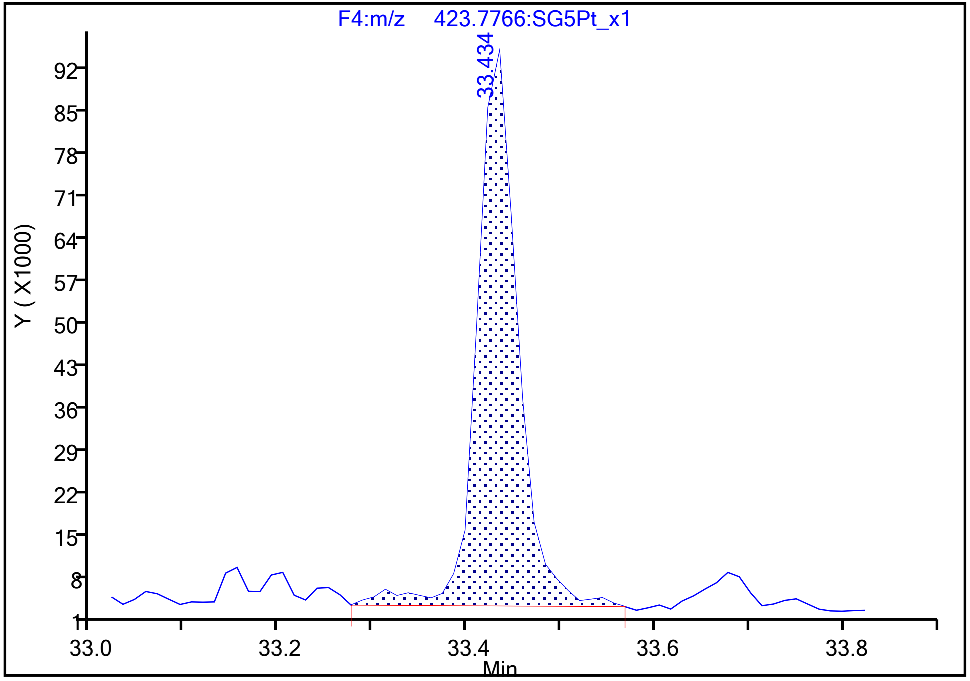

Manual Integration Results

RT:	33.43
Area:	269239
Amount:	0.493811
Amount Units:	pg/ul

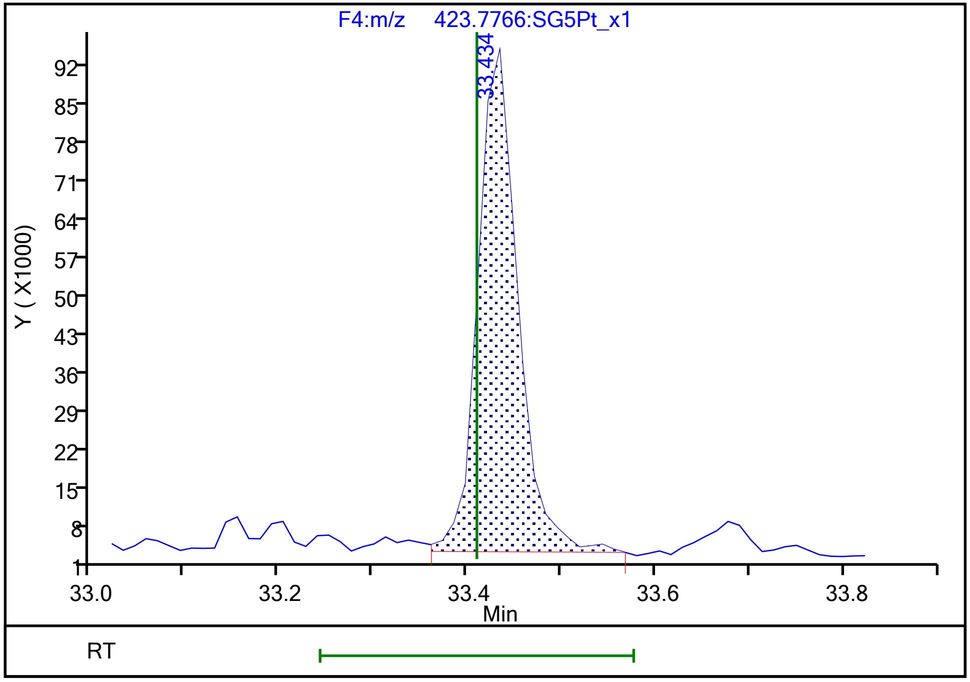

Reviewer: ruangyotsakuld, 13-Oct-2020 08:44:07

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

13C-OCDD, CAS: 114423-97-1

Signal: 1

Processing Integration Results

RT:	35.58
Area:	50108824
Amount:	119.5266
Amount Units:	pg/ul

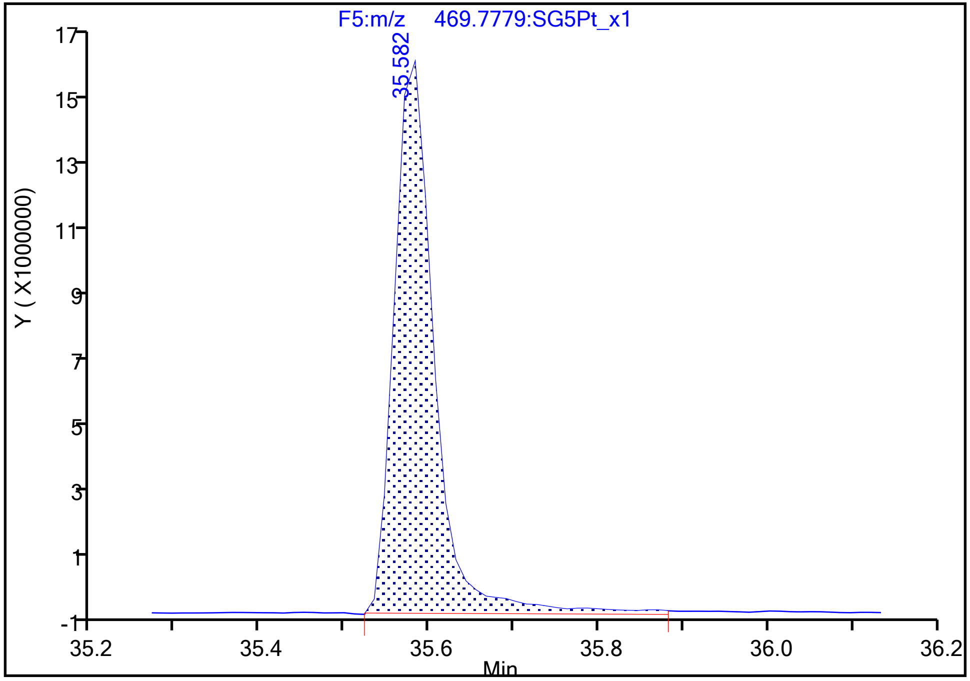

Manual Integration Results

RT:	35.58
Area:	50108824
Amount:	119.5266
Amount Units:	pg/ul

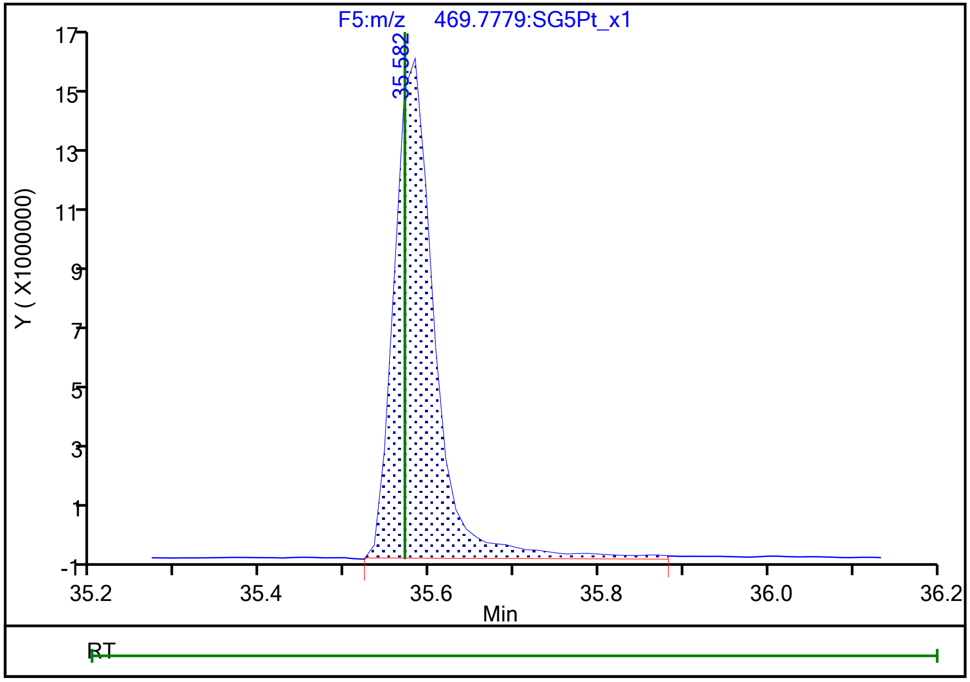

Reviewer: ruangyotsakuld, 13-Oct-2020 08:43:30

Audit Action: Assigned Compound ID

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 1

RT: 35.65
Area: 570370
Amount: 1.317601
Amount Units: pg/ul

Processing Integration Results

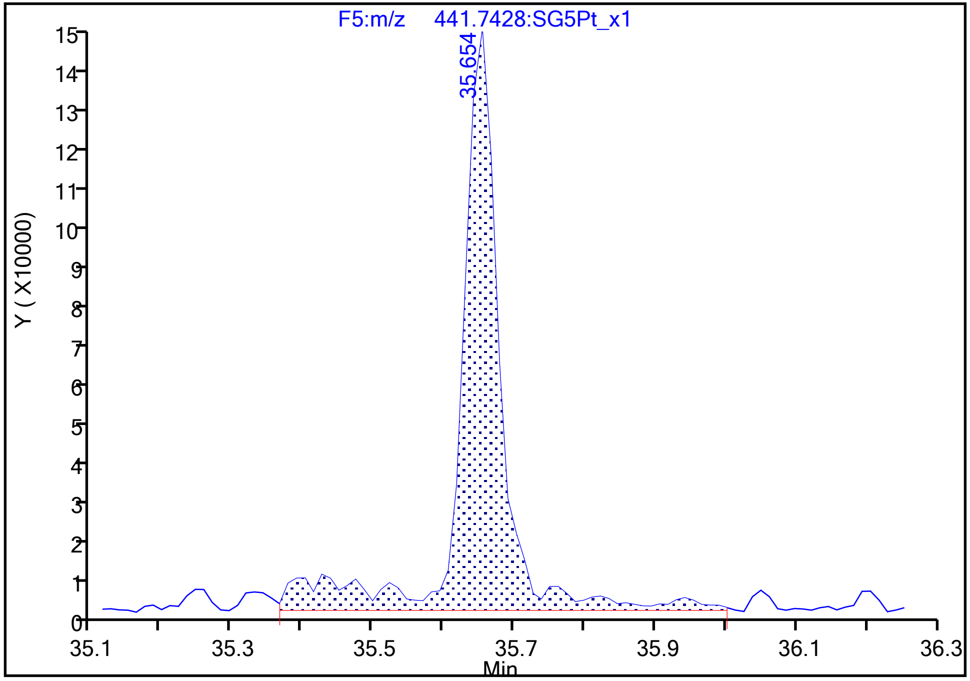

RT: 35.65
Area: 463721
Amount: 1.049387
Amount Units: pg/ul

Manual Integration Results

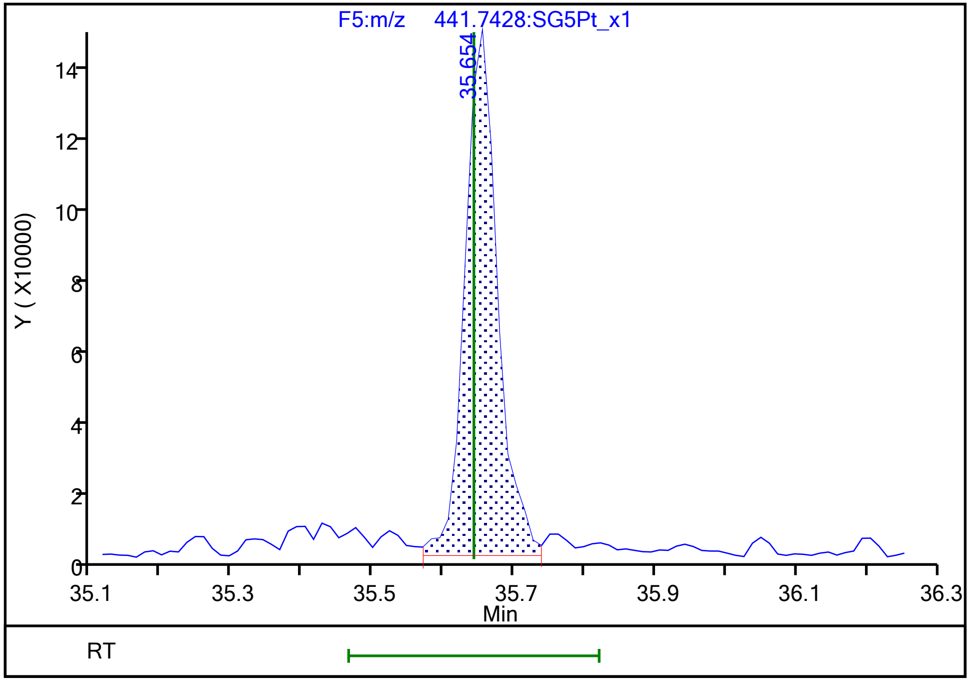

Reviewer: ruangyotsakuld, 13-Oct-2020 08:43:48
Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21 Instrument ID: 3D5
Lims ID: MB 320-417490/1-A
Client ID:
Operator ID: SMA ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Column: Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 2

RT: 35.65
Area: 639537
Amount: 1.317601
Amount Units: pg/ul

Processing Integration Results

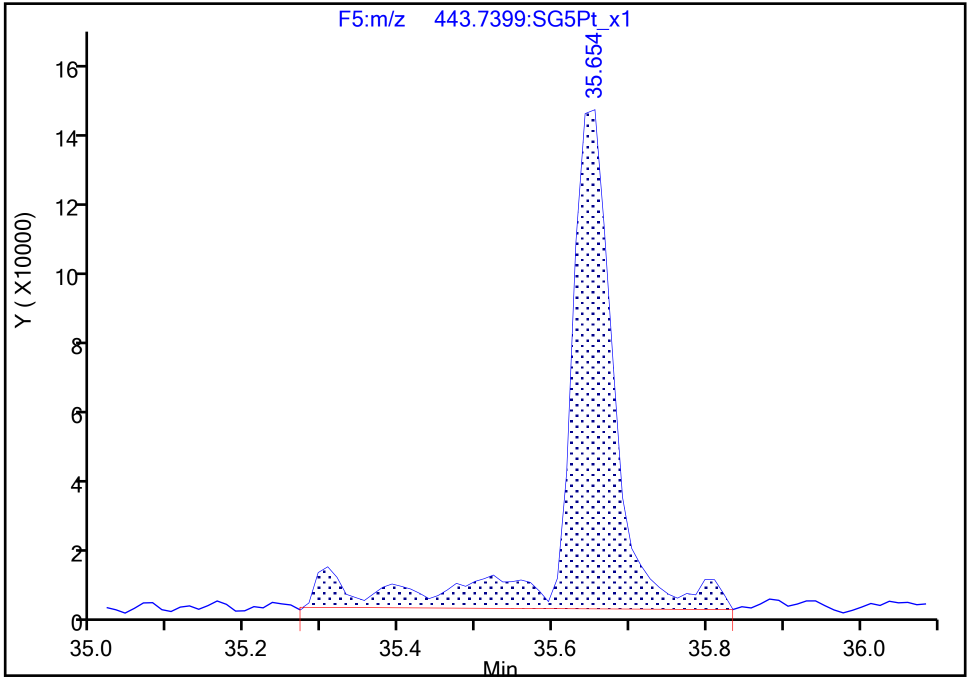

RT: 35.65
Area: 499894
Amount: 1.049387
Amount Units: pg/ul

Manual Integration Results

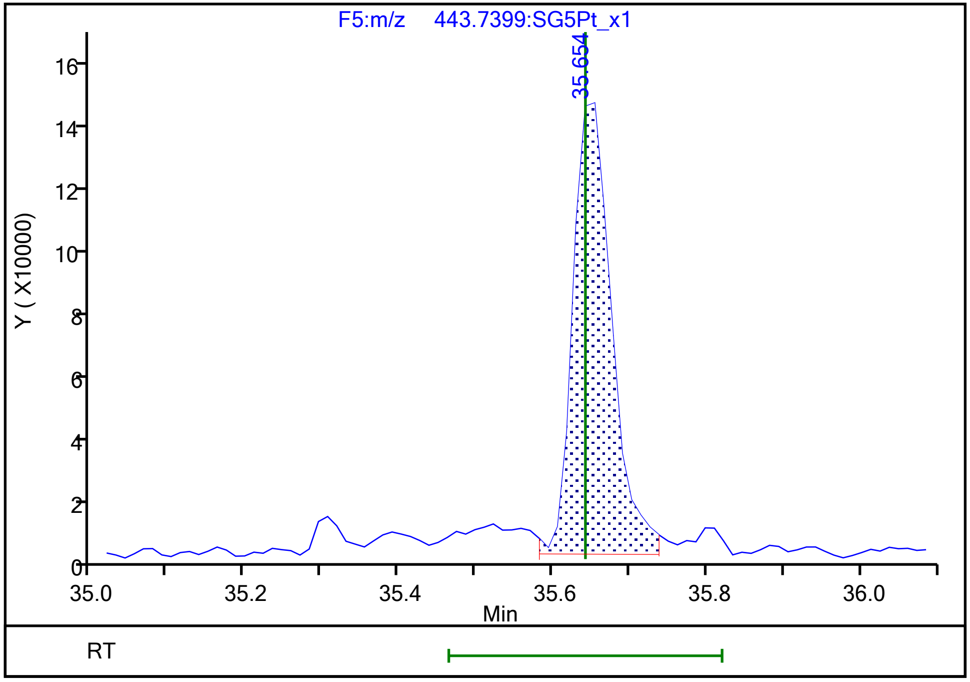

Reviewer: ruangyotsakuld, 13-Oct-2020 08:43:51
Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41

Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d				
Injection Date:	08-Oct-2020 11:56:21	Instrument ID:	3D5		
Lims ID:	MB 320-417490/1-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 1

RT:	35.58
Area:	444647
Amount:	1.397253
Amount Units:	pg/ul

Processing Integration Results

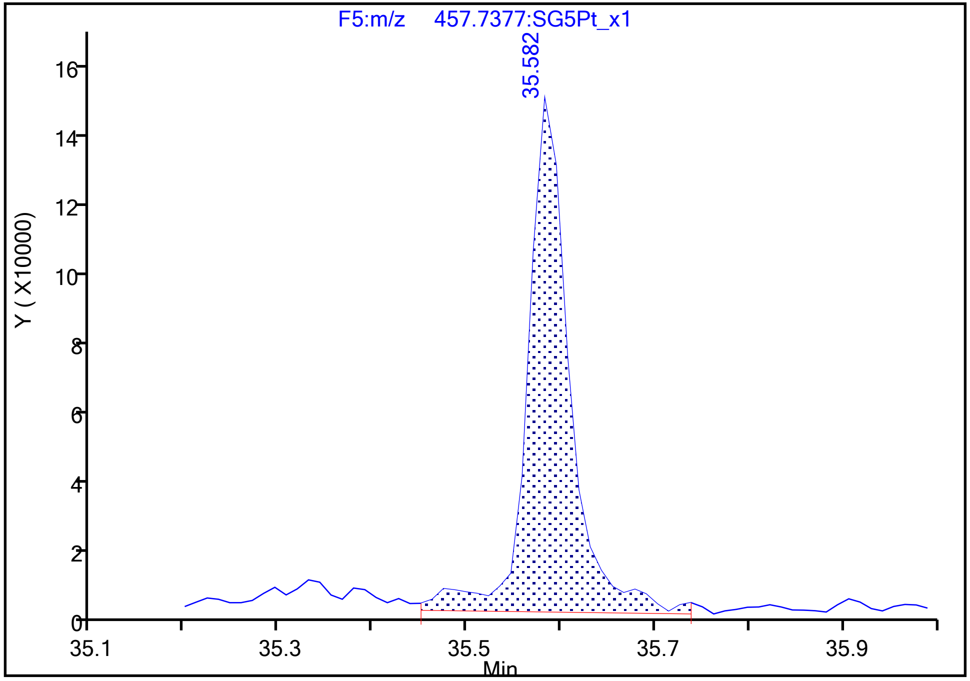

RT:	35.58
Area:	424497
Amount:	1.367157
Amount Units:	pg/ul

Manual Integration Results

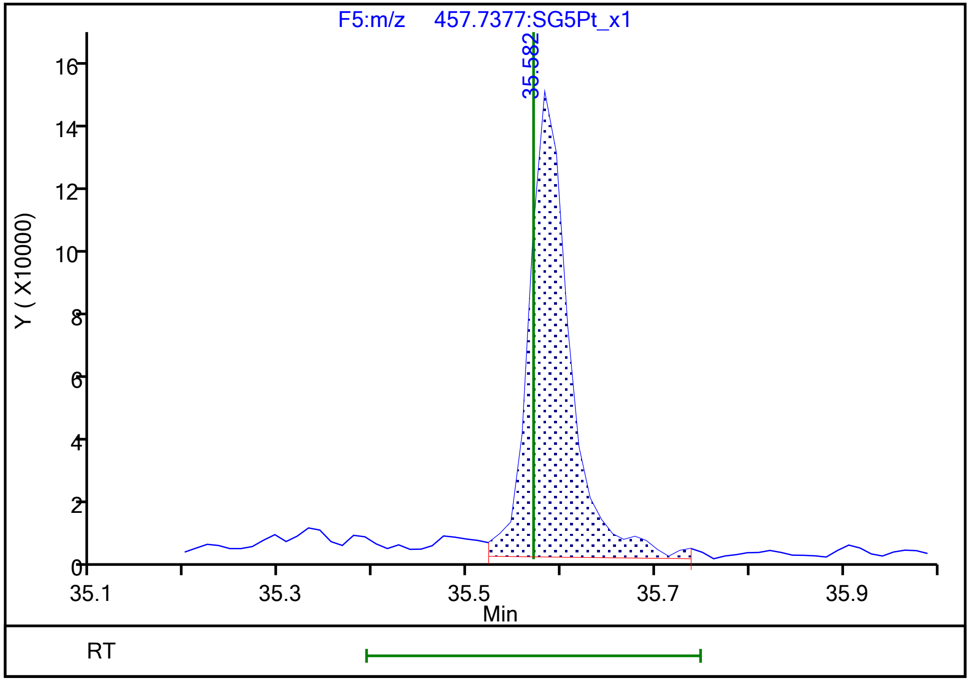

Reviewer: ruangyotsakuld, 13-Oct-2020 08:44:00

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d

Injection Date: 08-Oct-2020 11:56:21

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 4

Column Type:

Column Dia:

TCDF

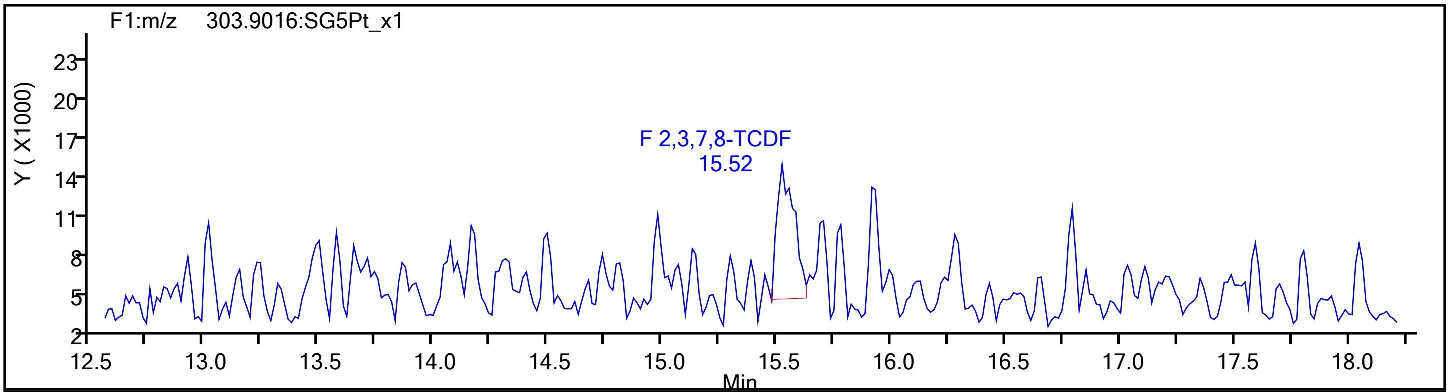

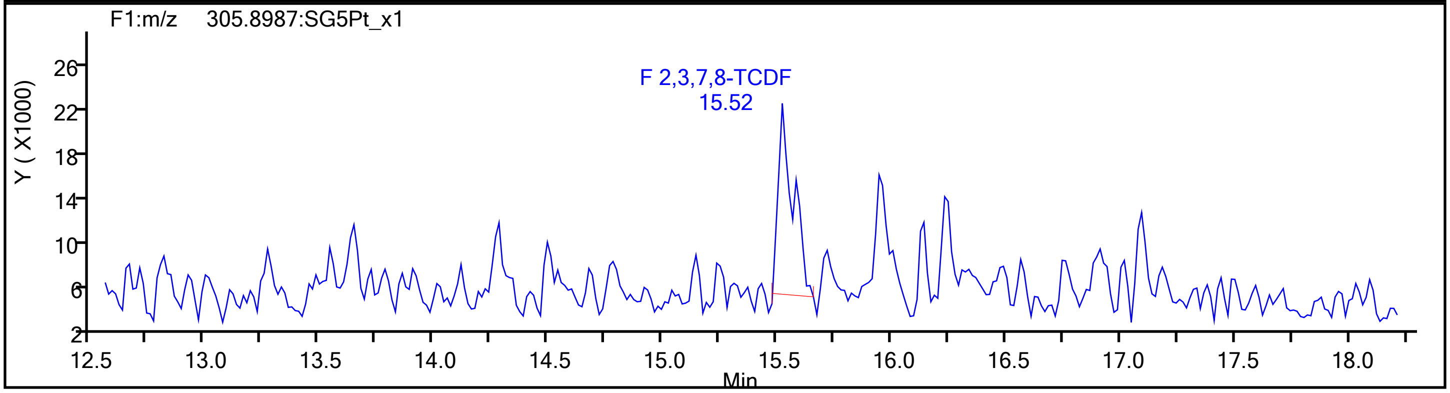

TCDF Standards

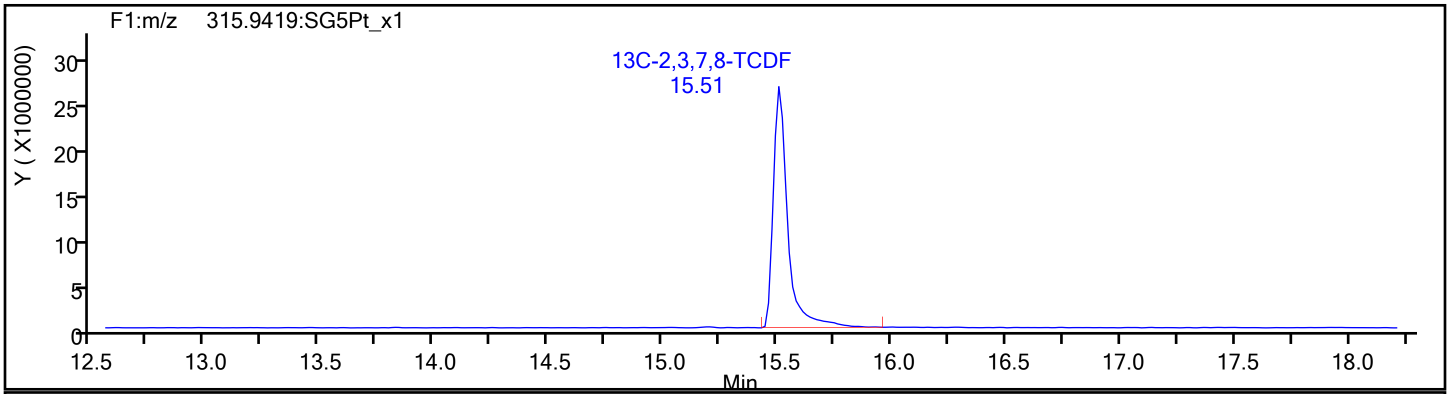

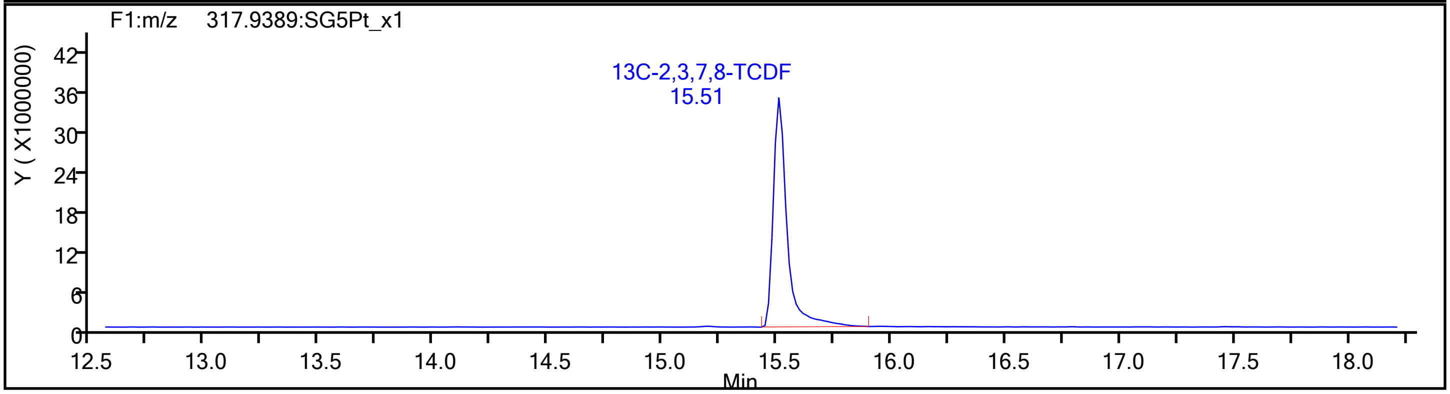

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

TCDF

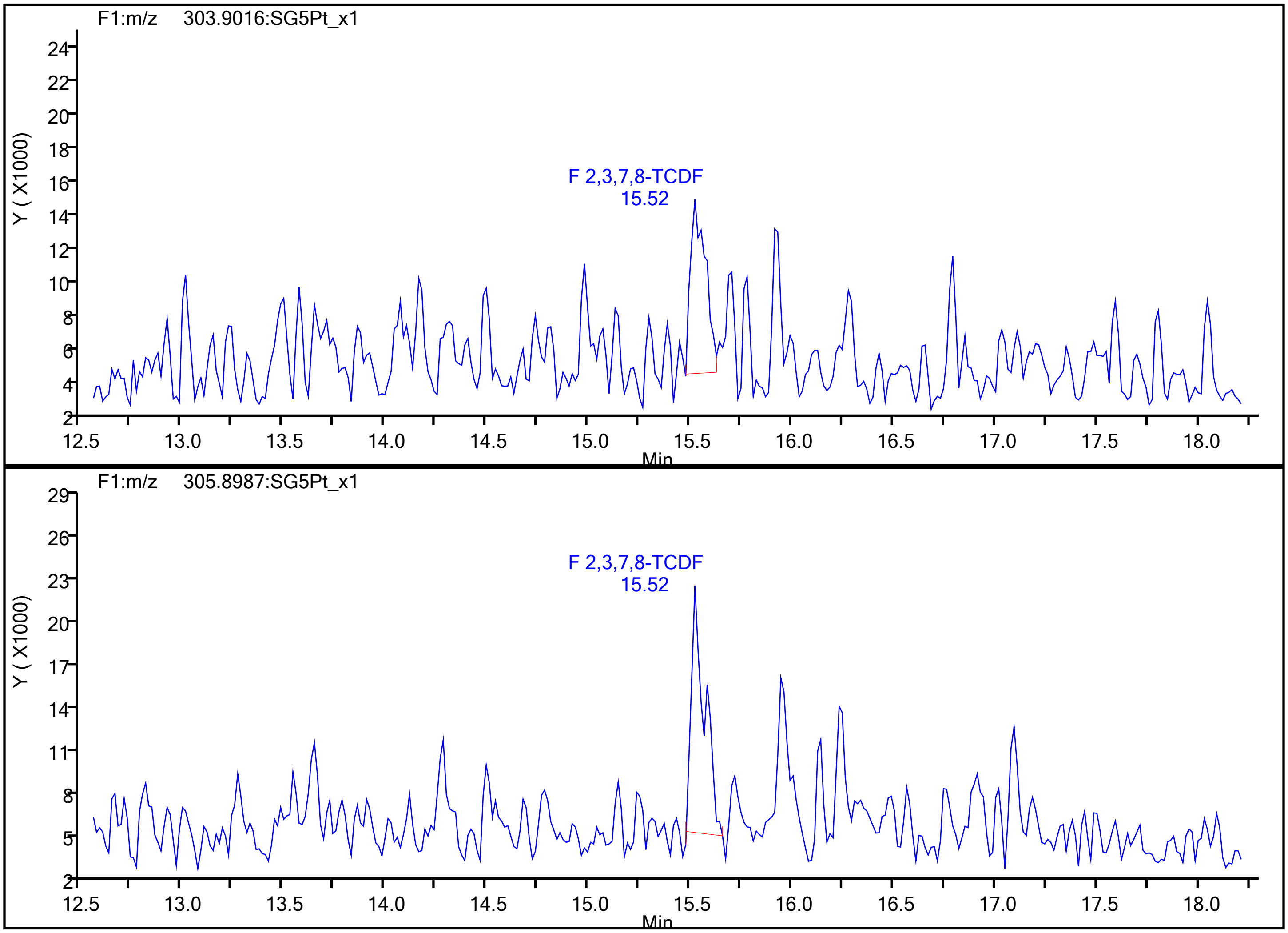

TCDF Interference Mass

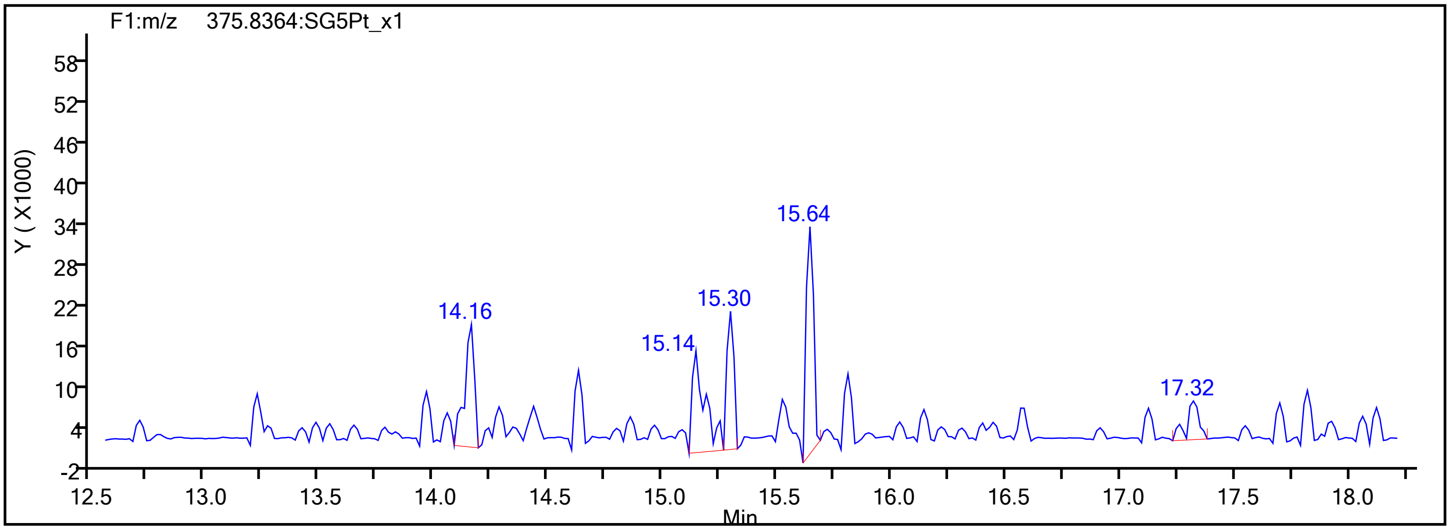

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 4
Column Type:
Column Dia:

TCDD

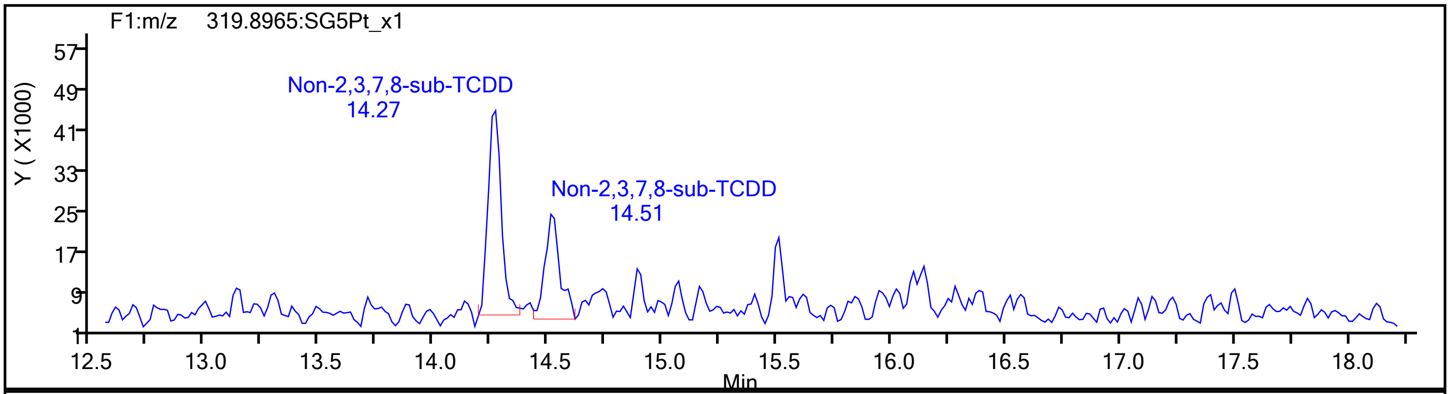

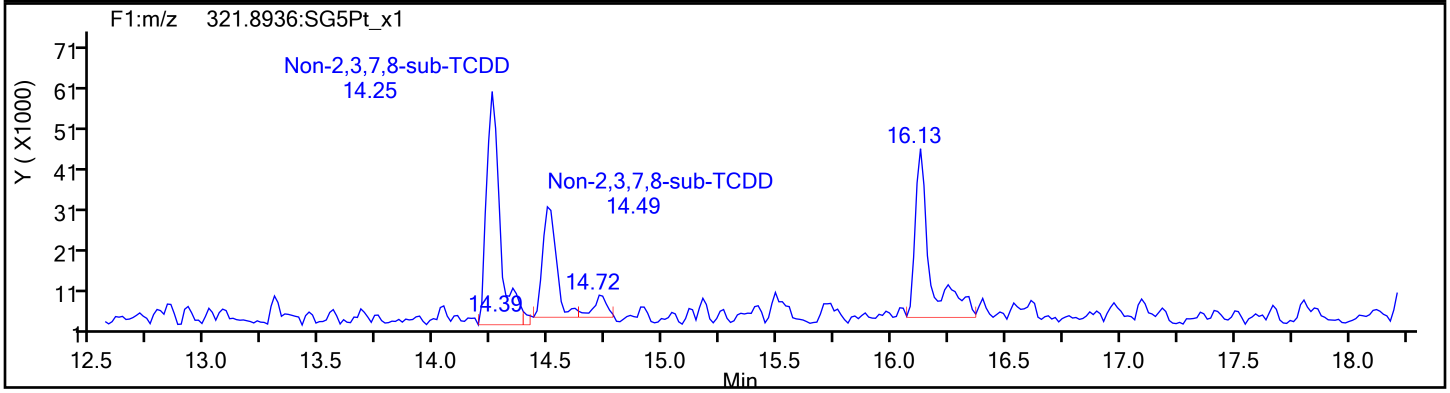

TCDD Standards

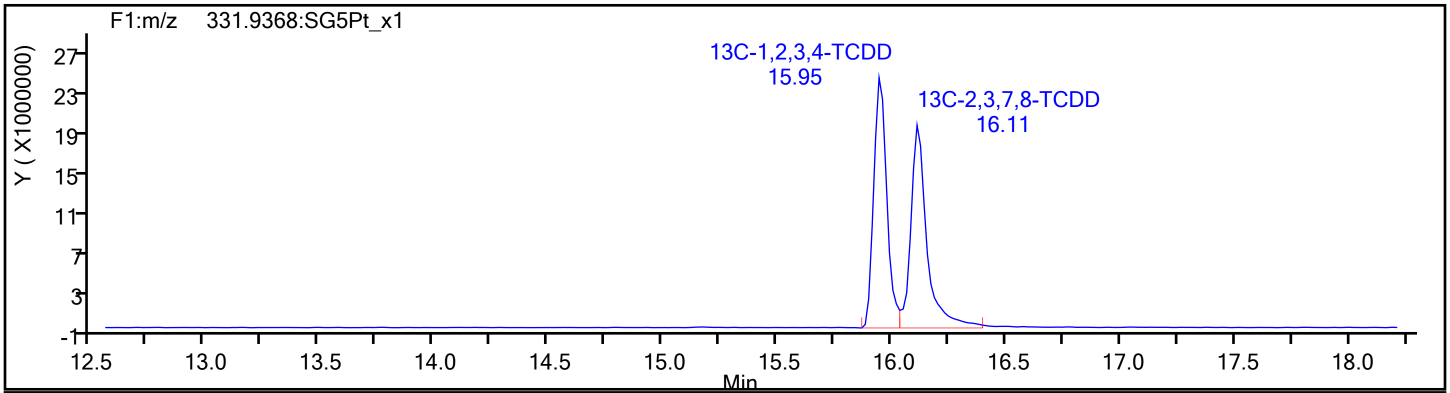

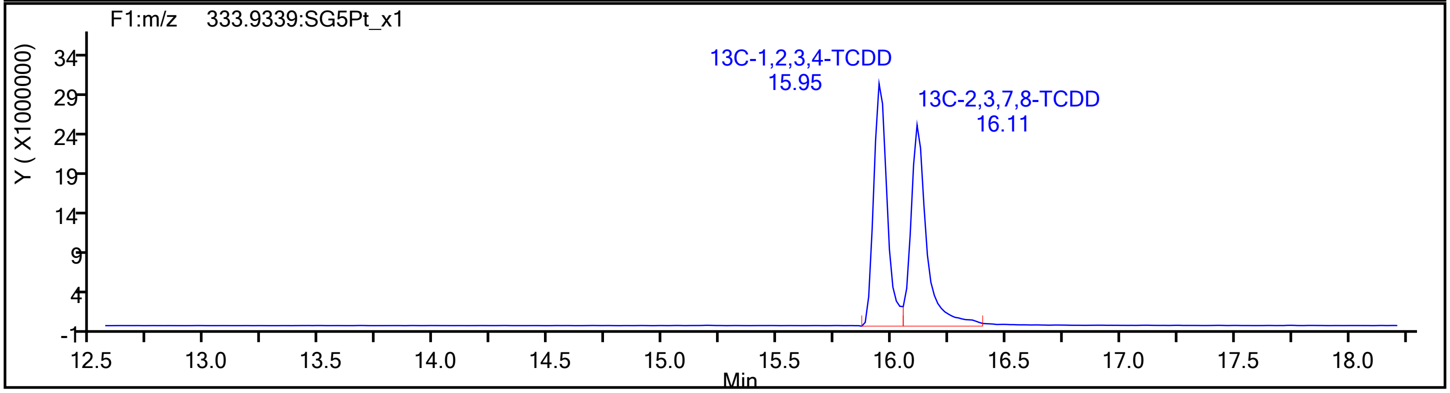

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113 Sample Line#: 4
Column Type: Column Dia:

37Cl4-TCDD

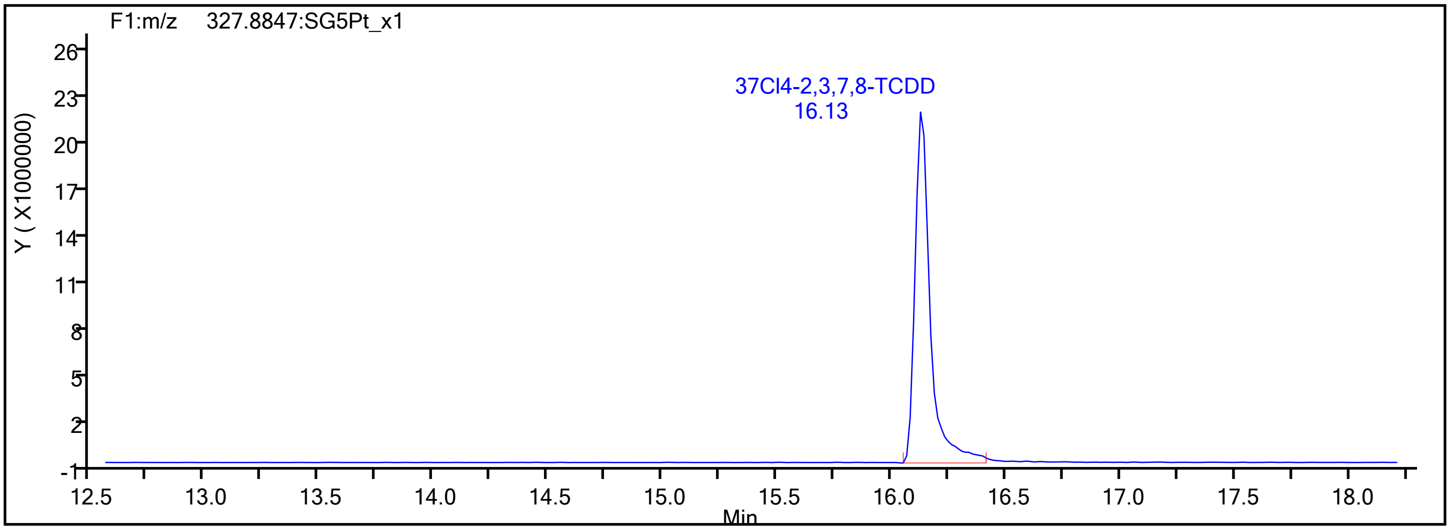

37Cl4-TCDD Standards

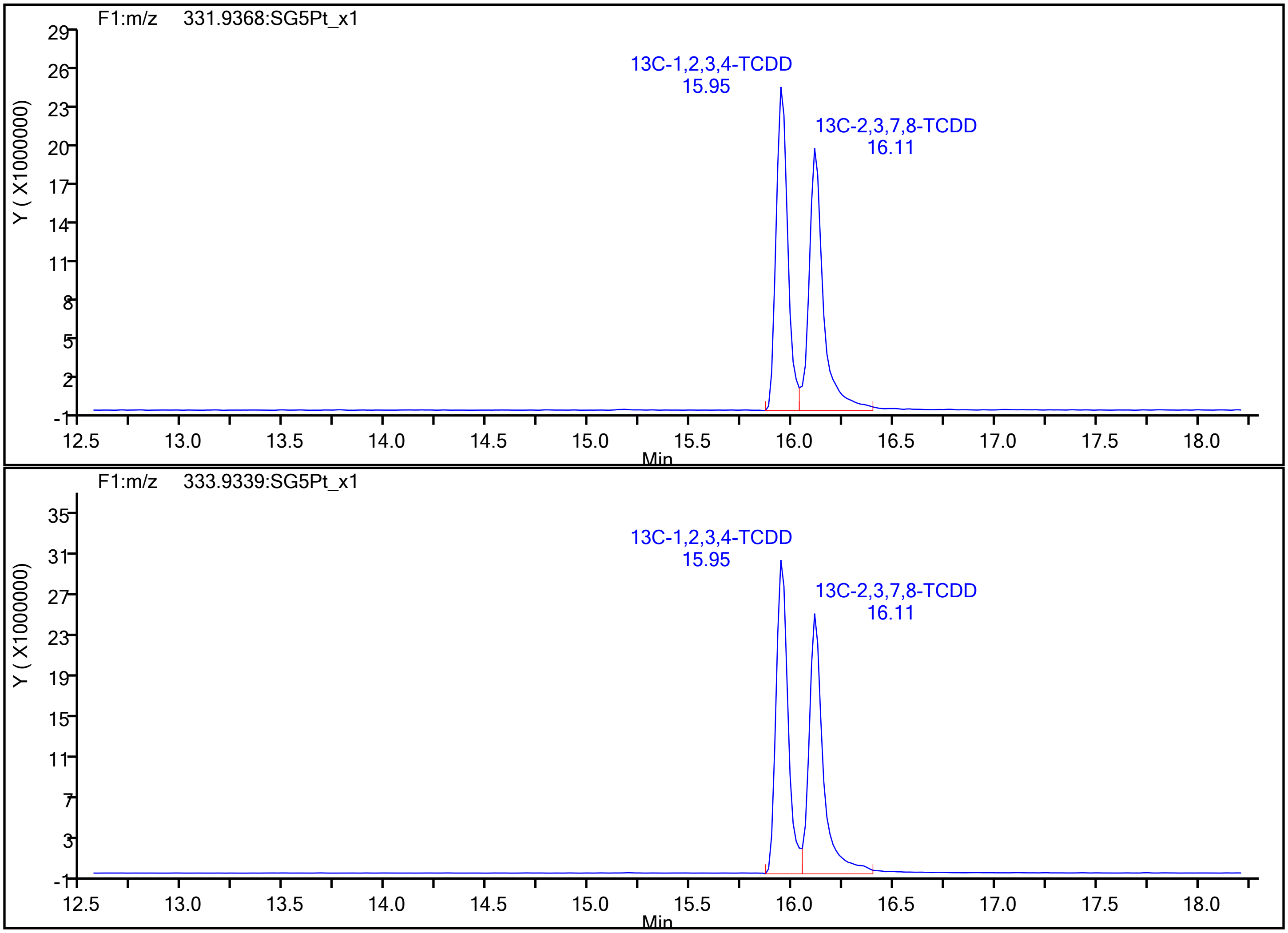

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

PeCDF

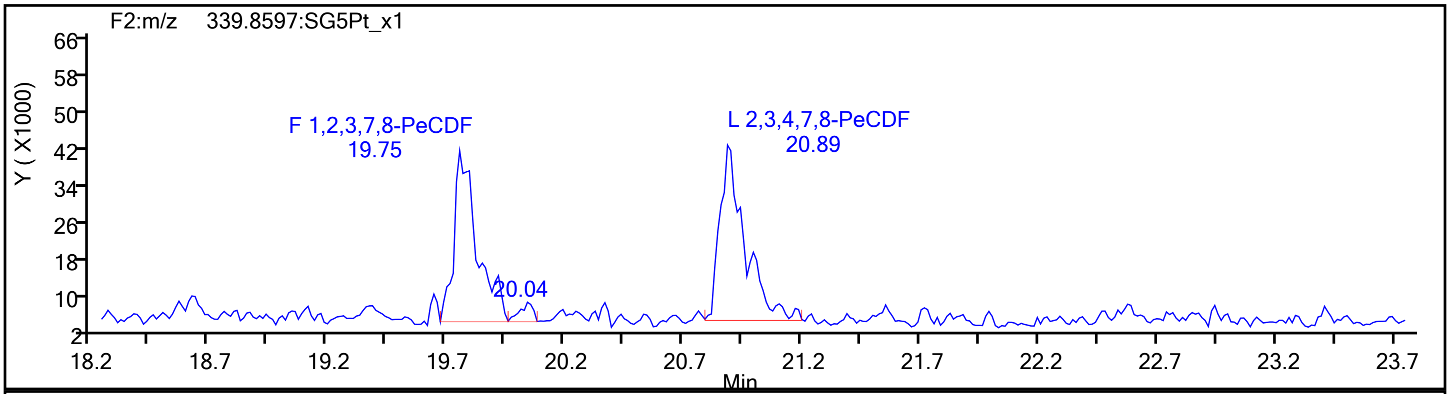

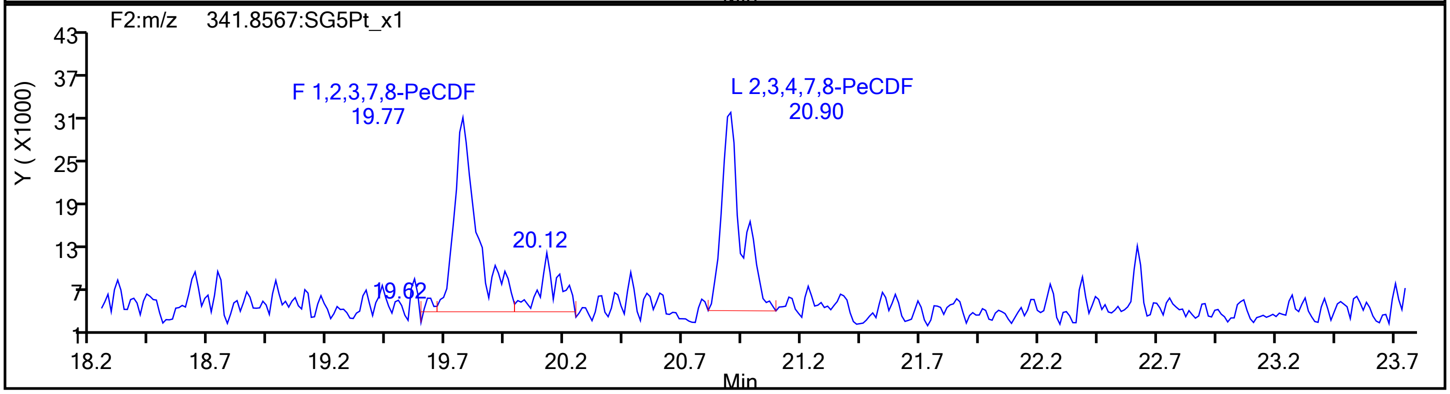

PeCDF Standards

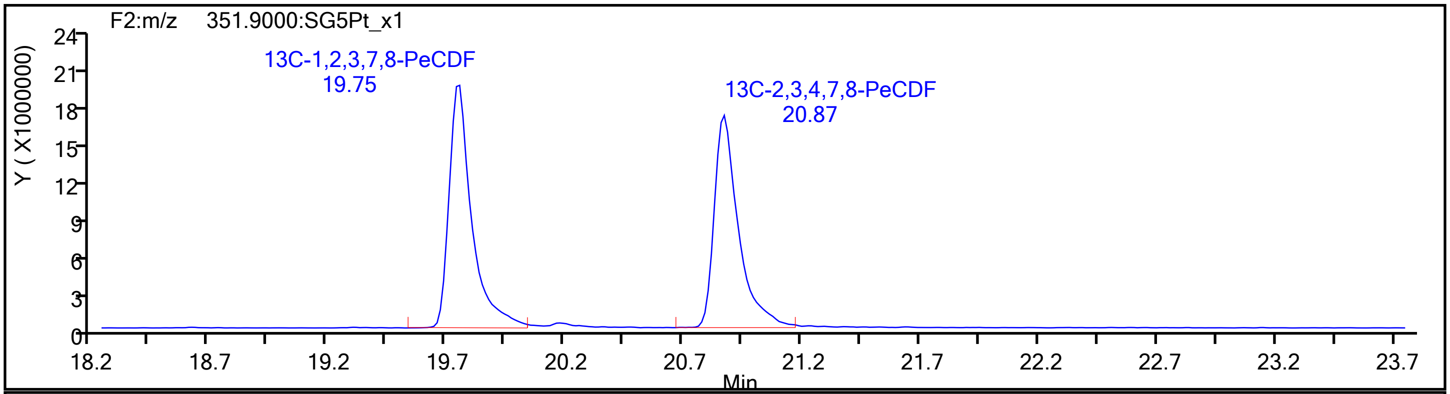

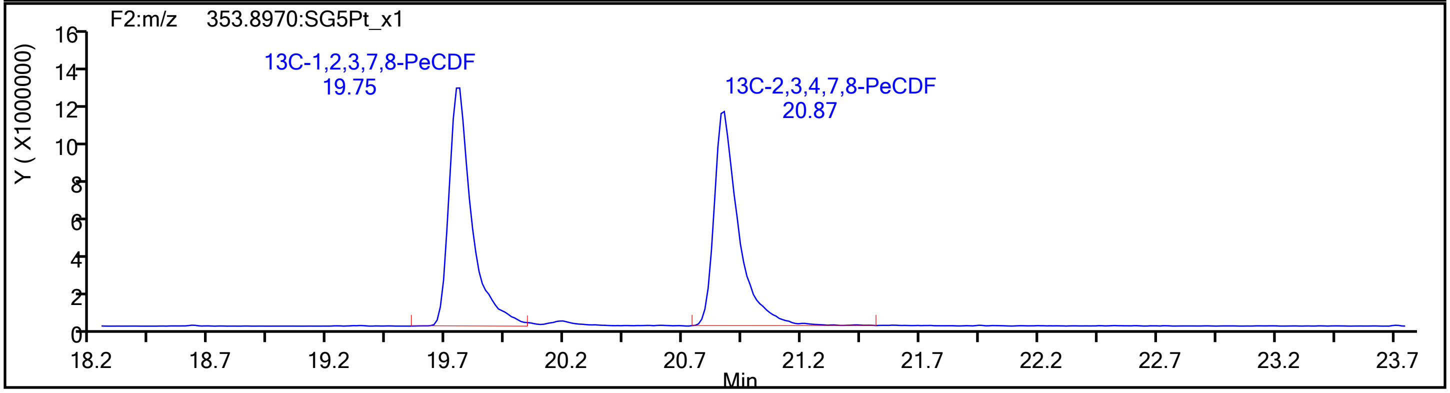

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 4
Column Type:
Column Dia:

PeCDF

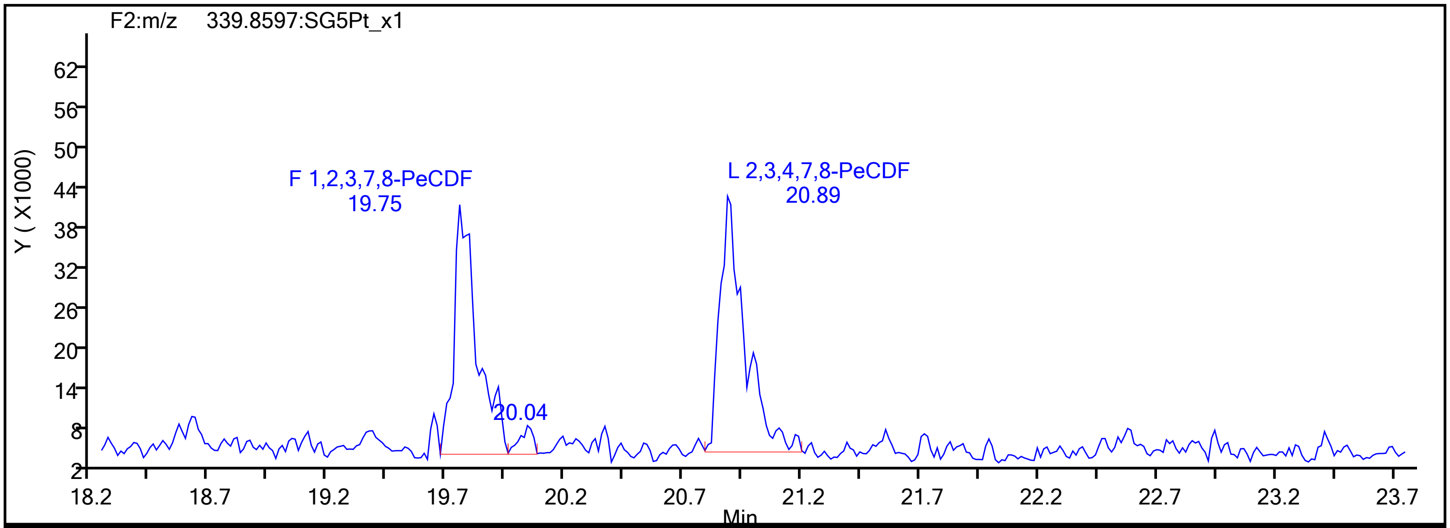

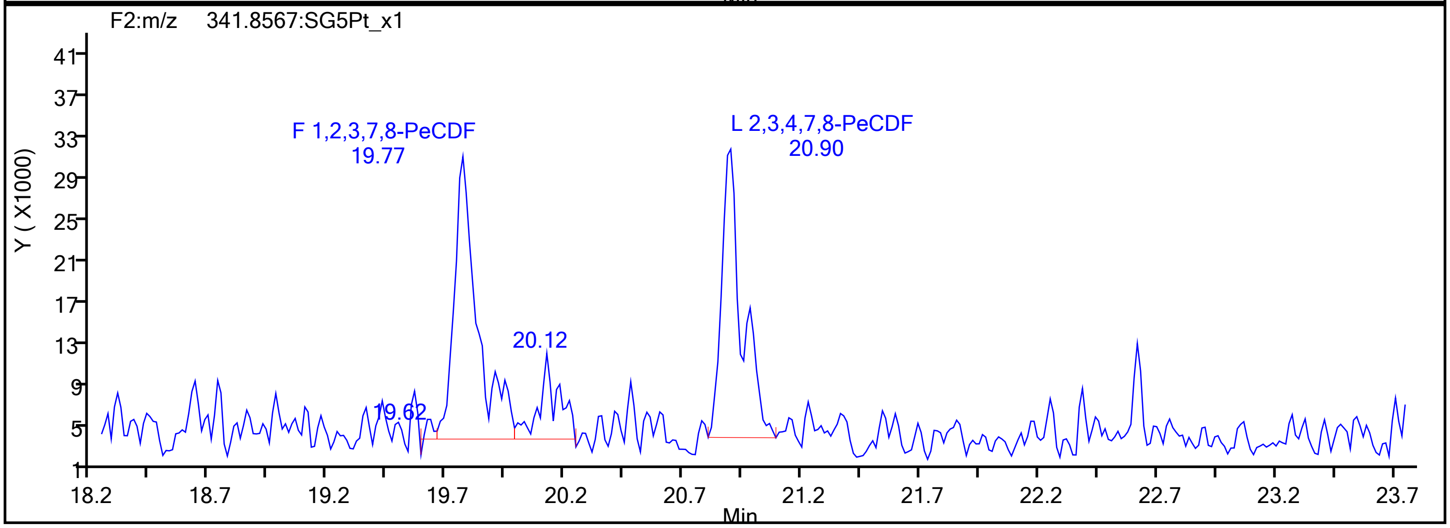

PeCDF Interference Mass

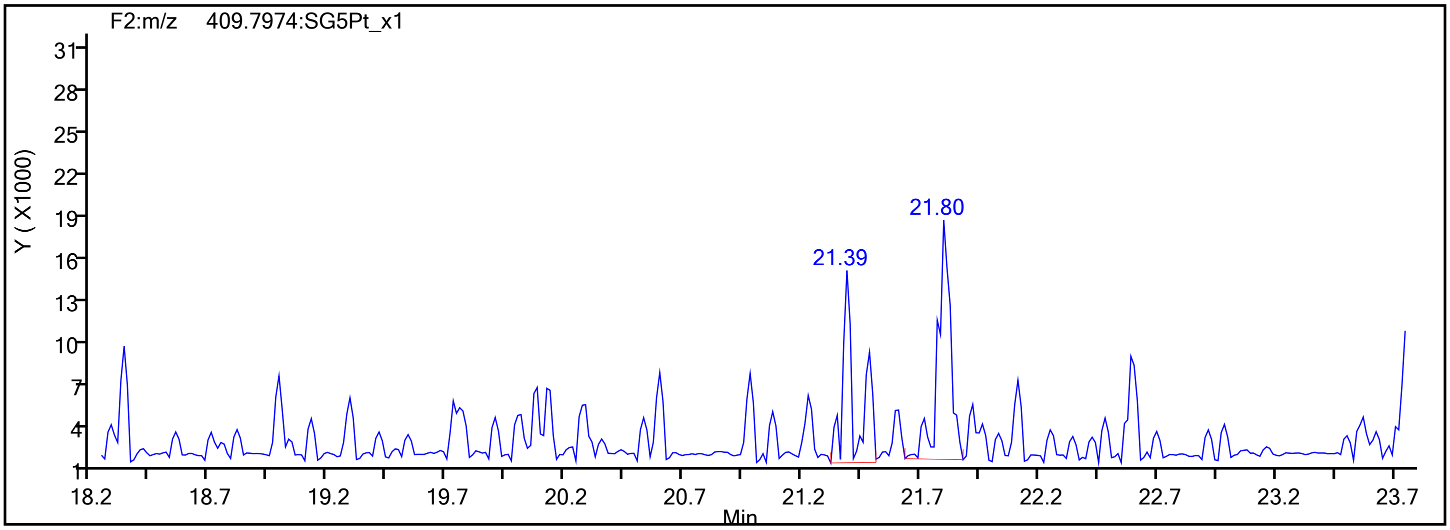

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 4
Column Type:
Column Dia:

PeCDD

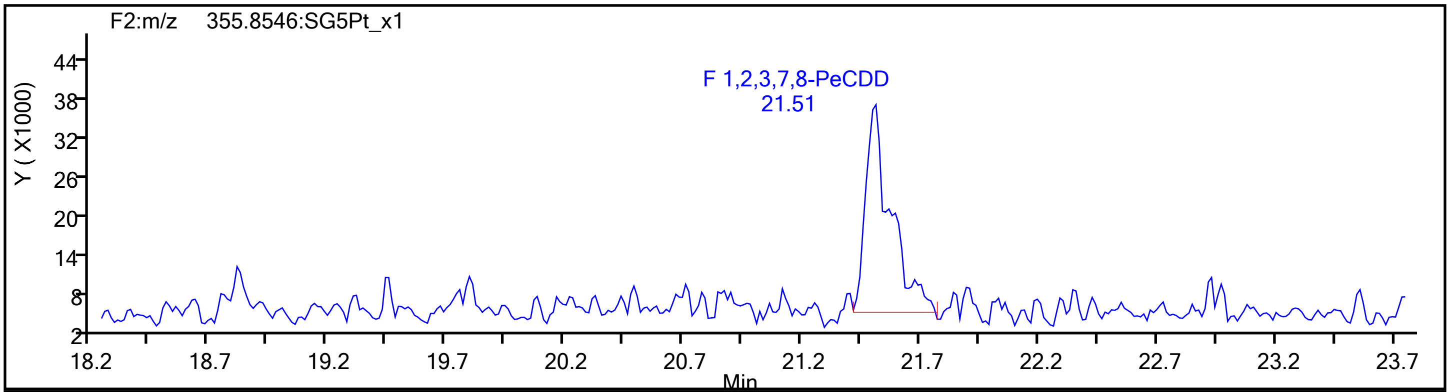

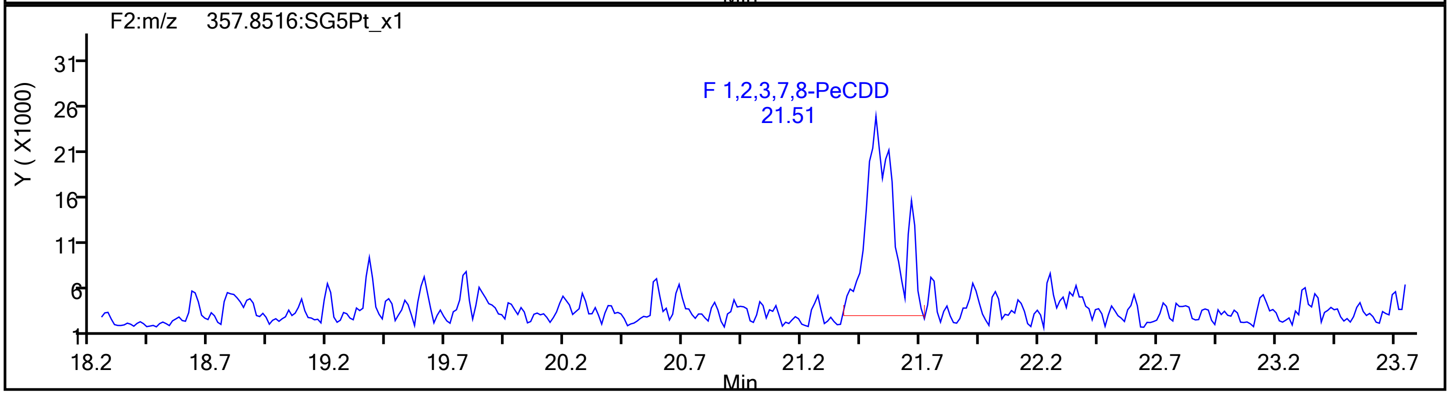

PeCDD Standards

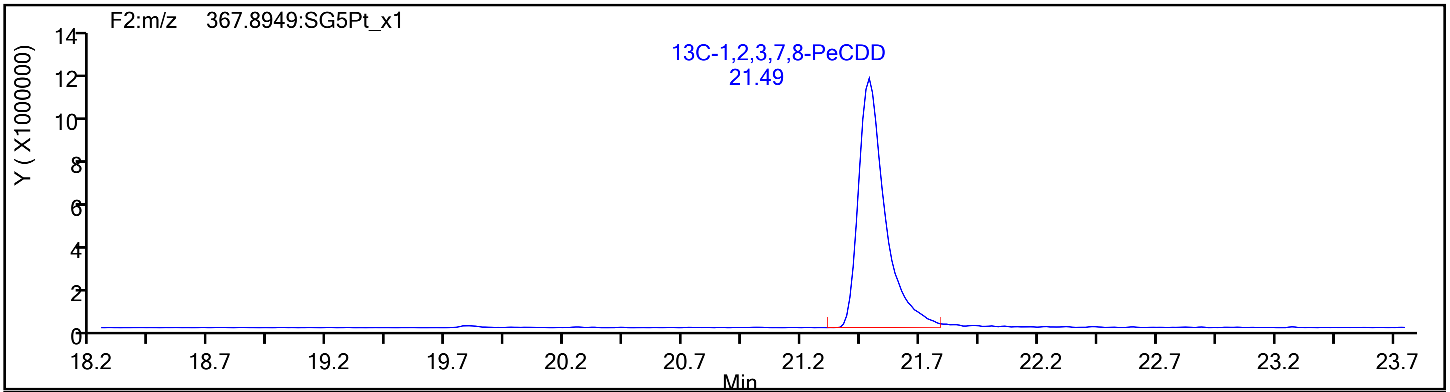

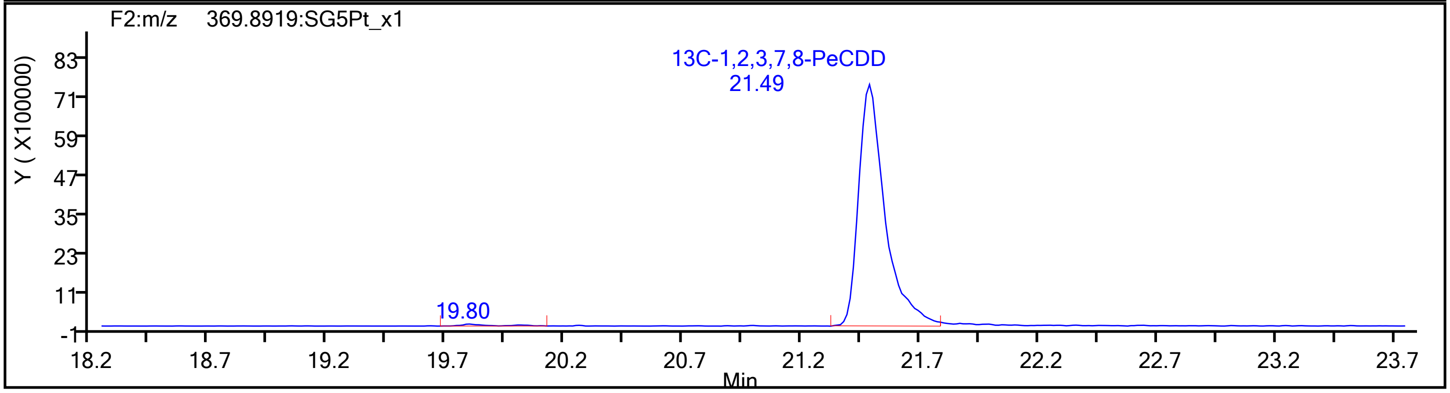

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

HxCDF

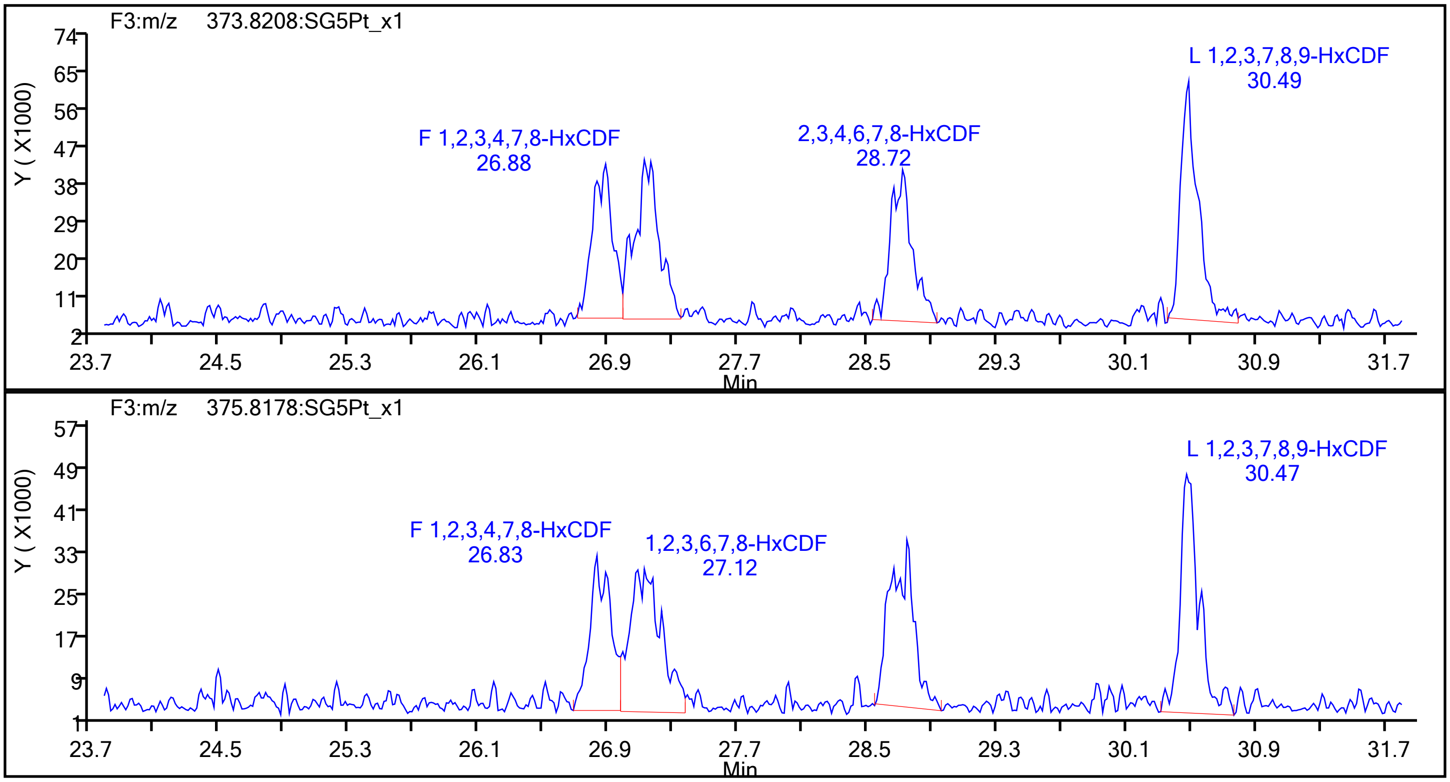

HxCDF Standards

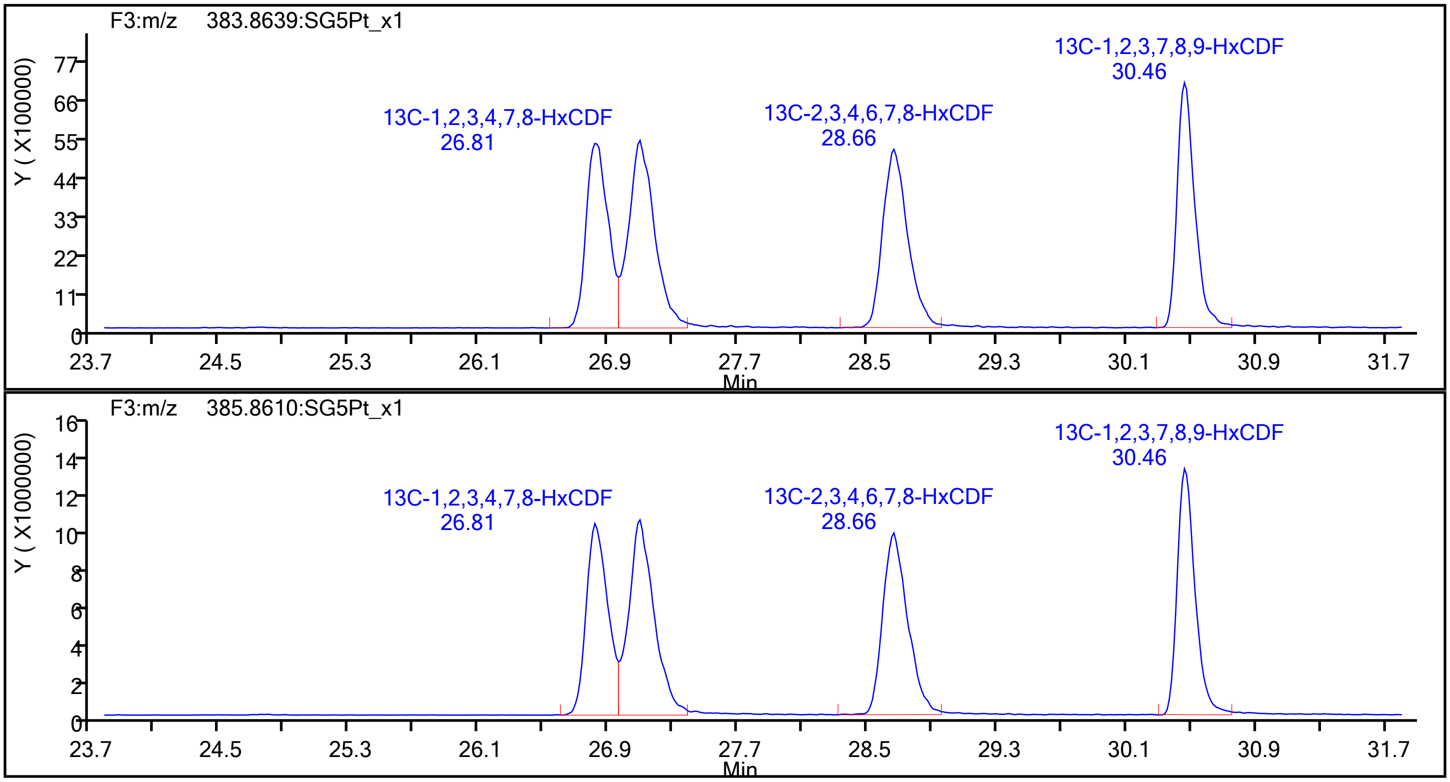

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113 Sample Line#: 4
Column Type: Column Dia:

HxCDF

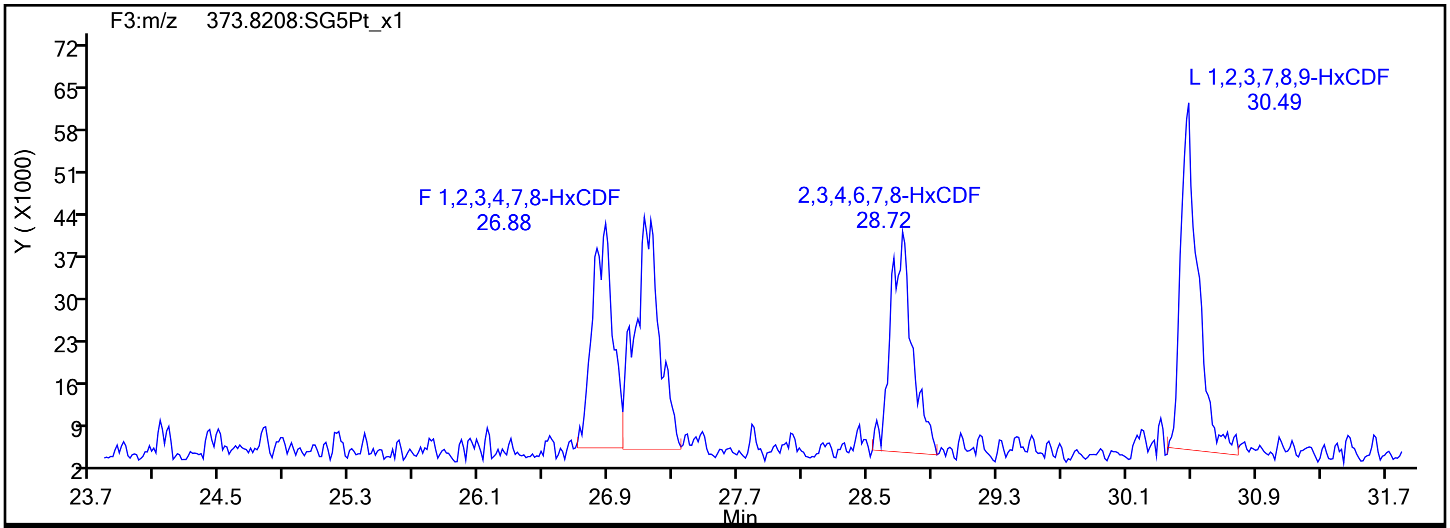

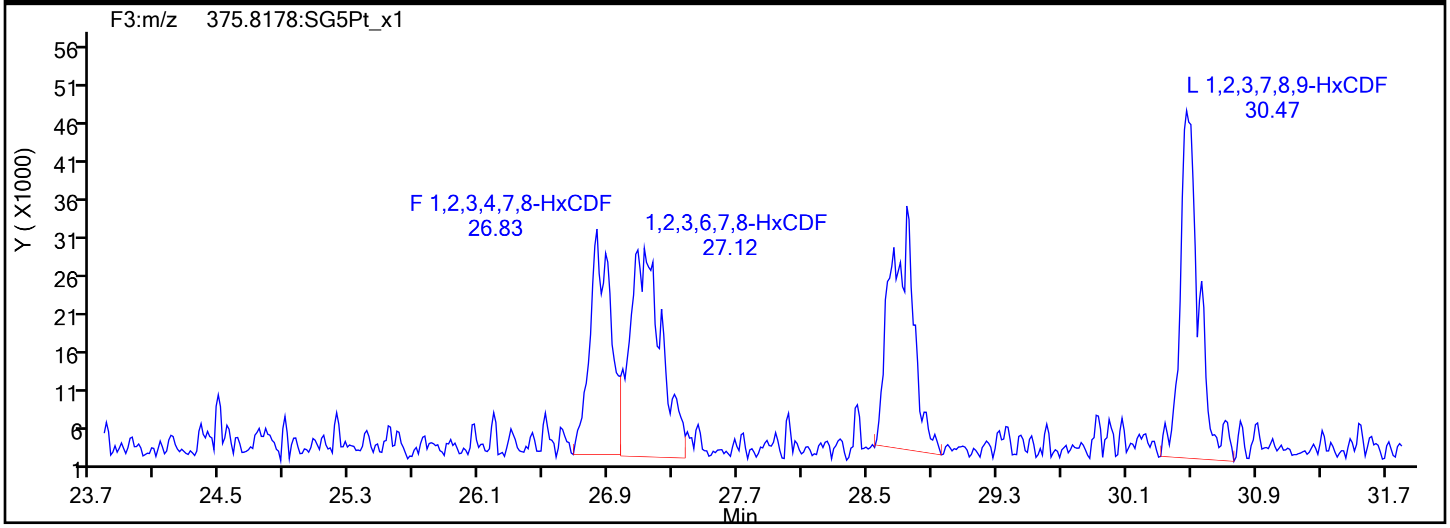

HxCDF Interference Mass

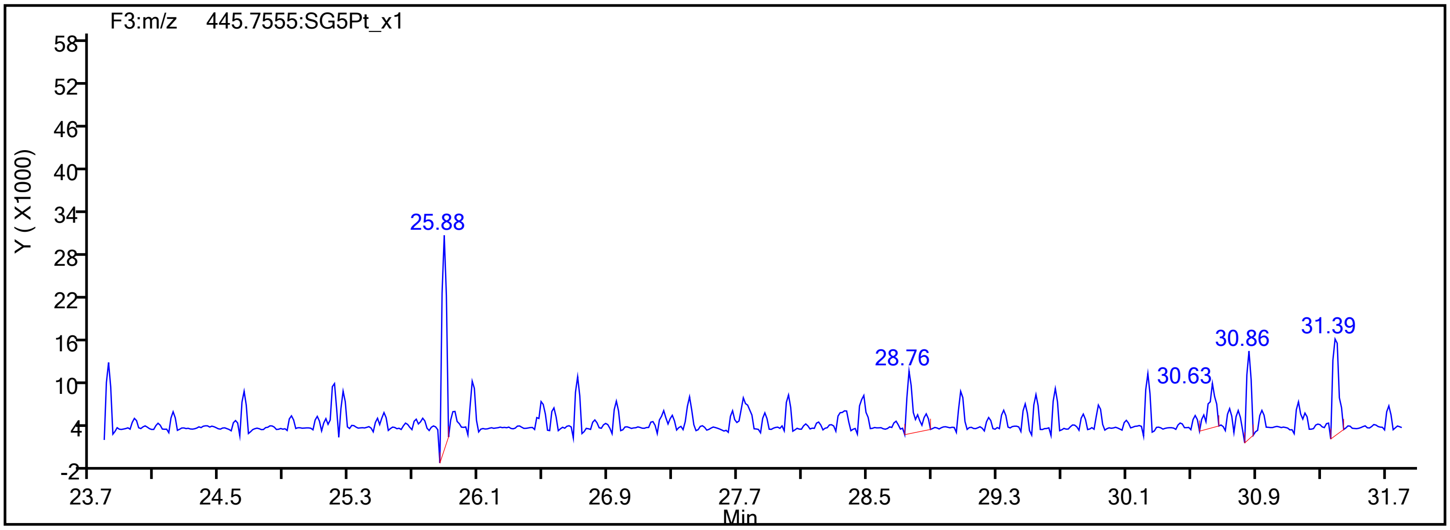

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d

Injection Date: 08-Oct-2020 11:56:21

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 4

Column Type:

Column Dia:

HxCDD

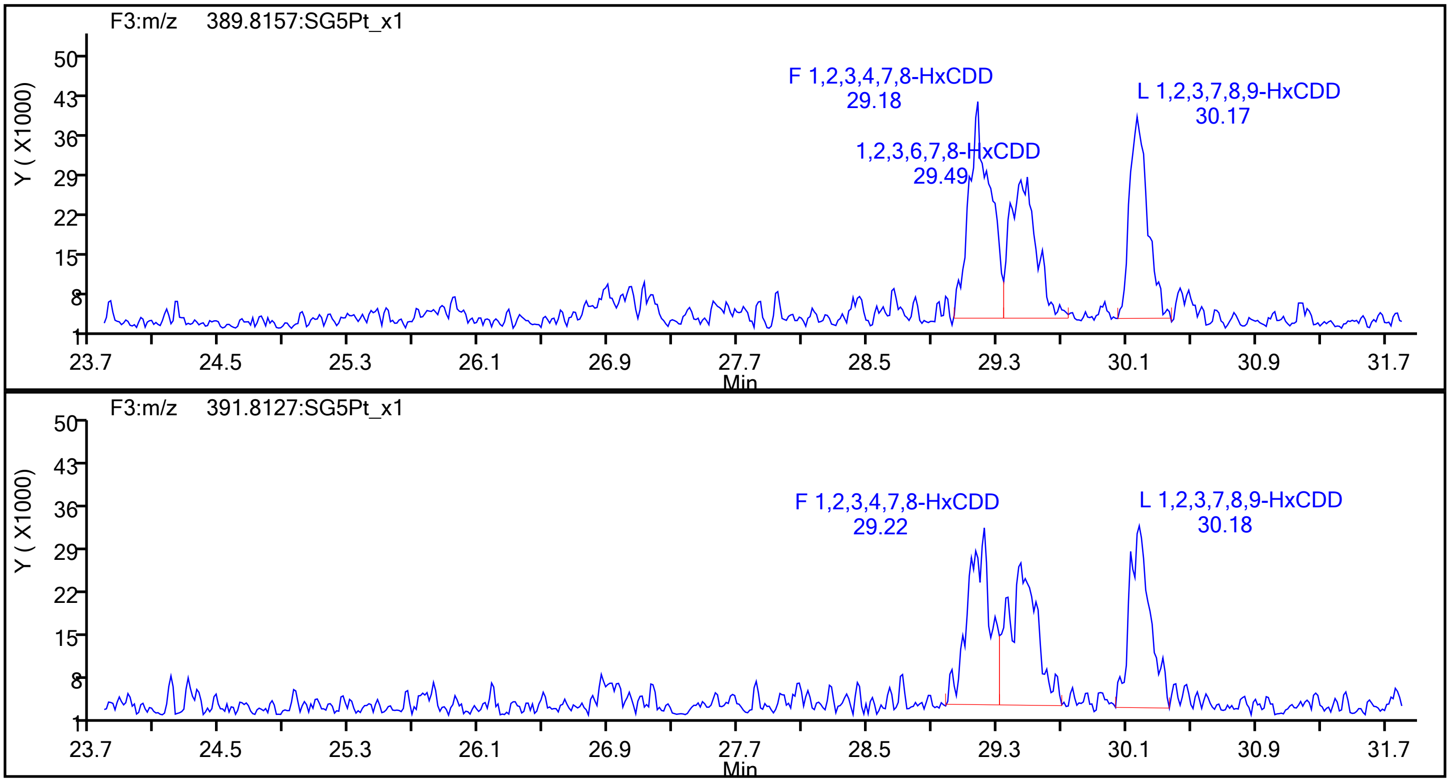

HxCDD Standards

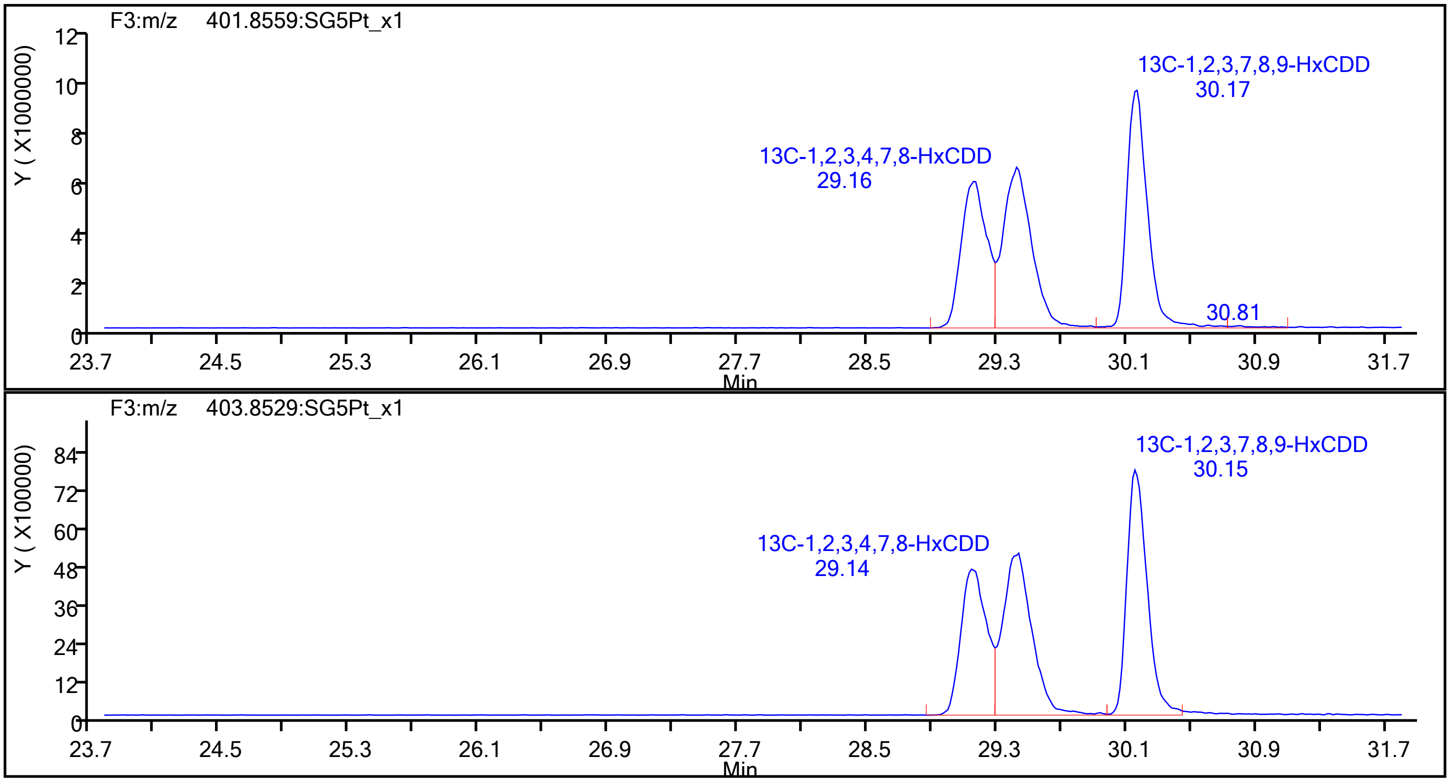

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

HpCDF

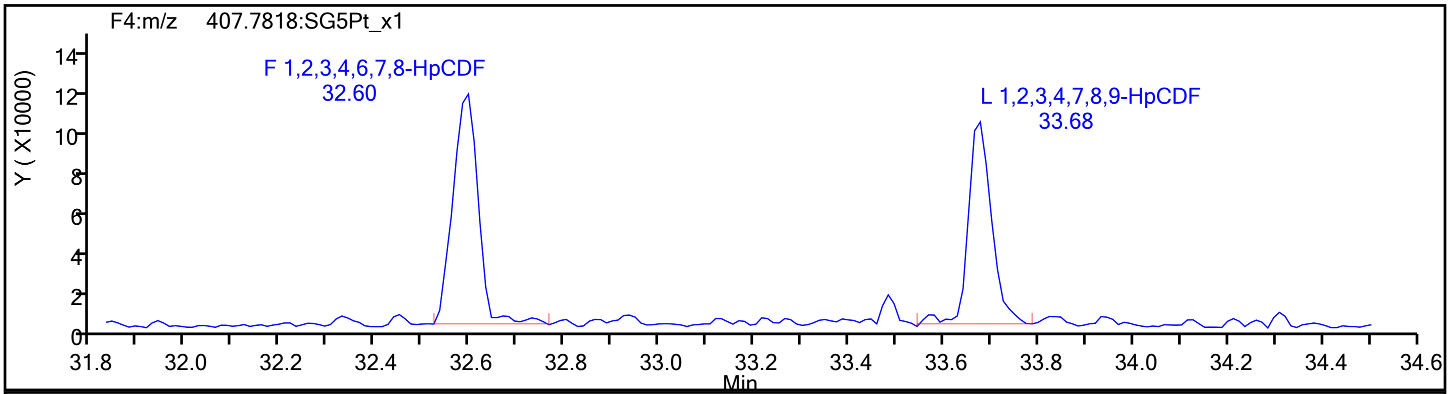

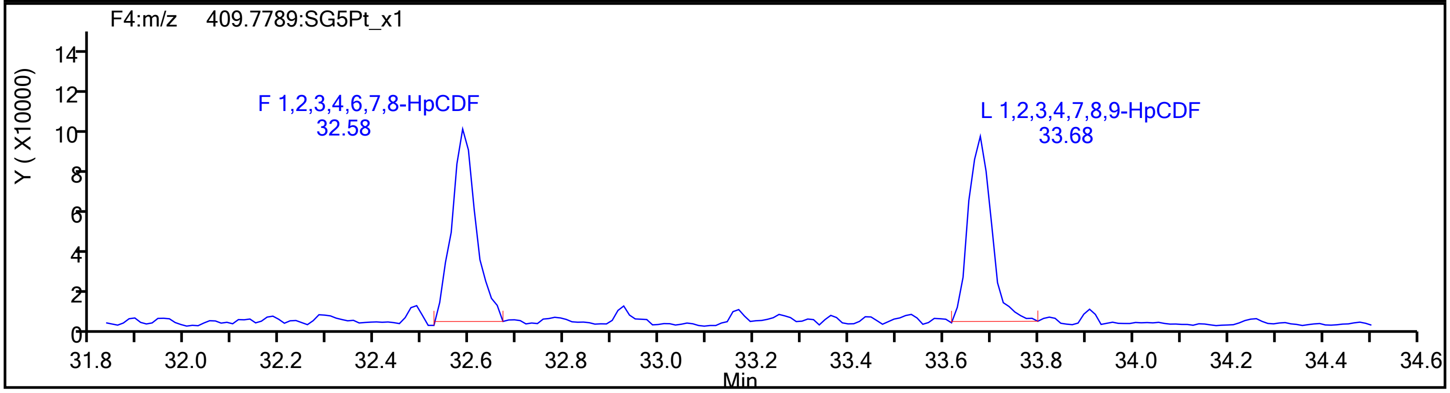

HpCDF Standards

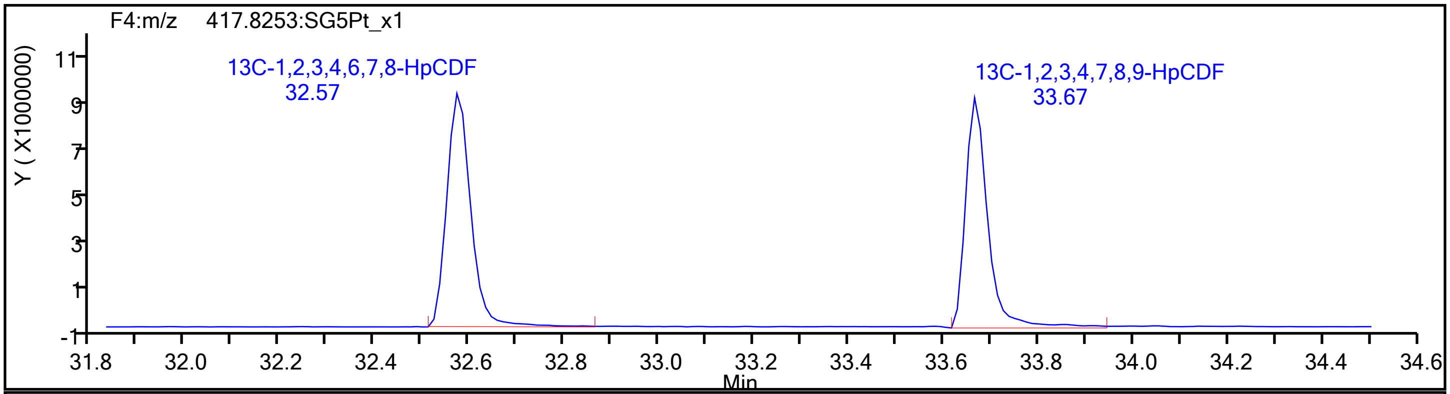

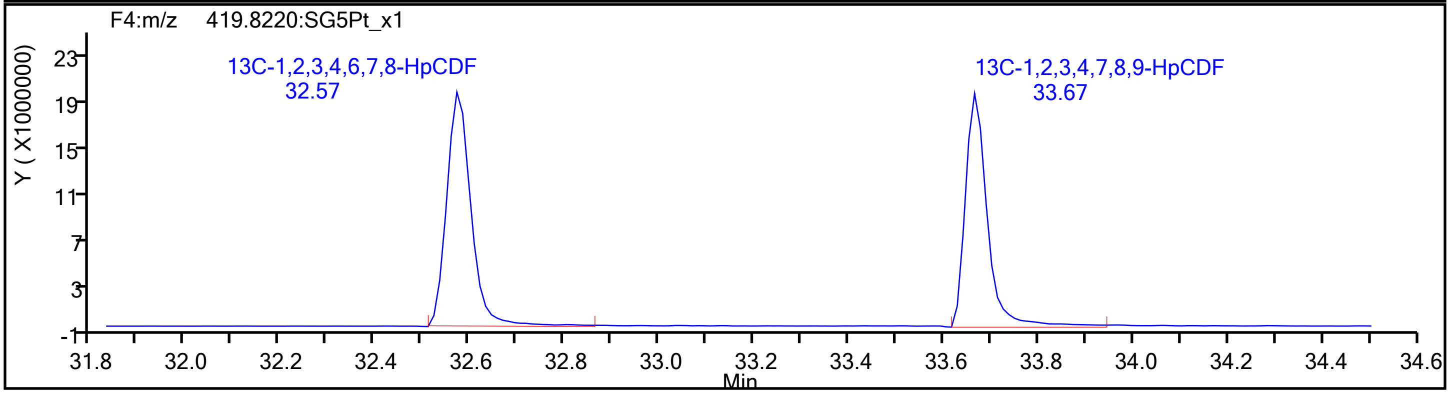

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

HpCDF

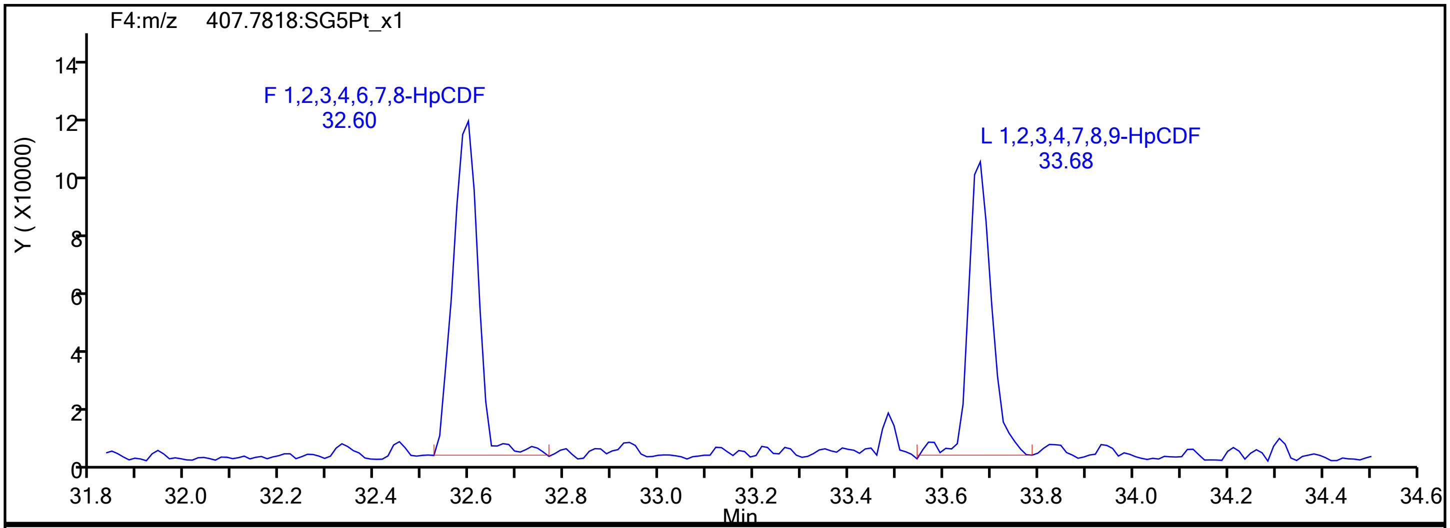

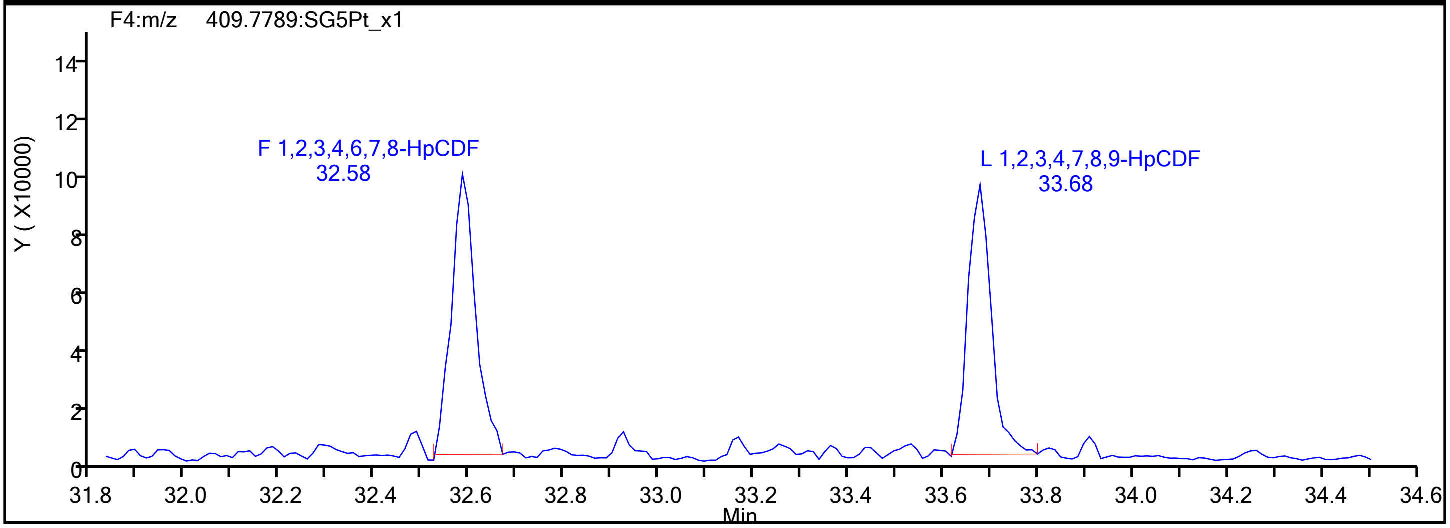

HpCDF Interference Mass

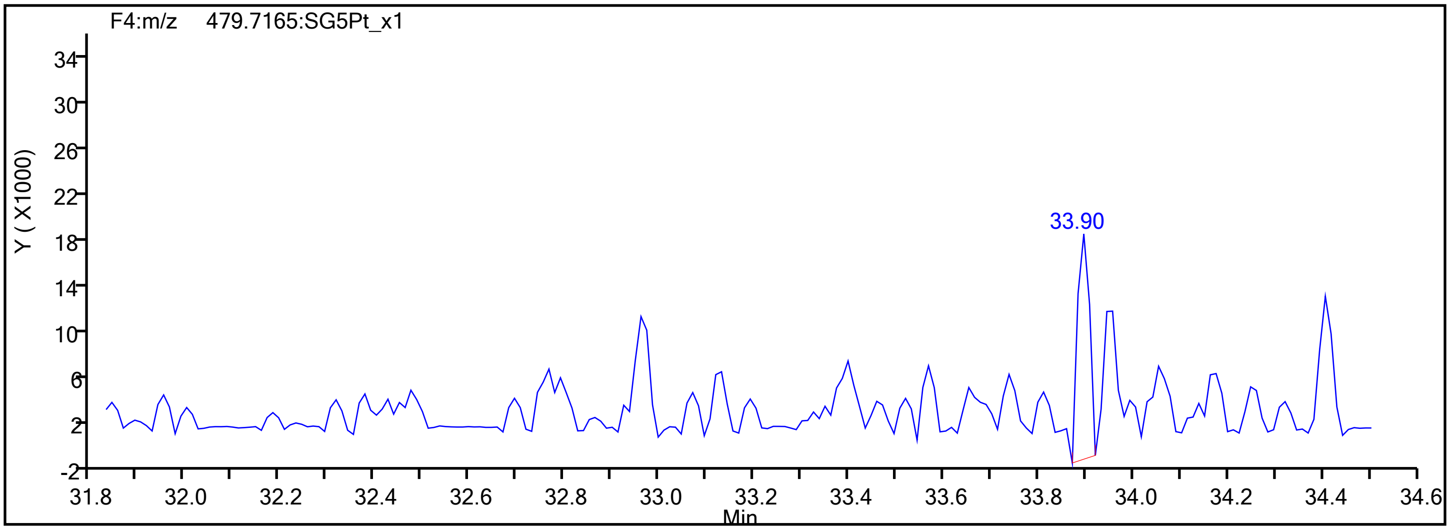

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

HpCDD

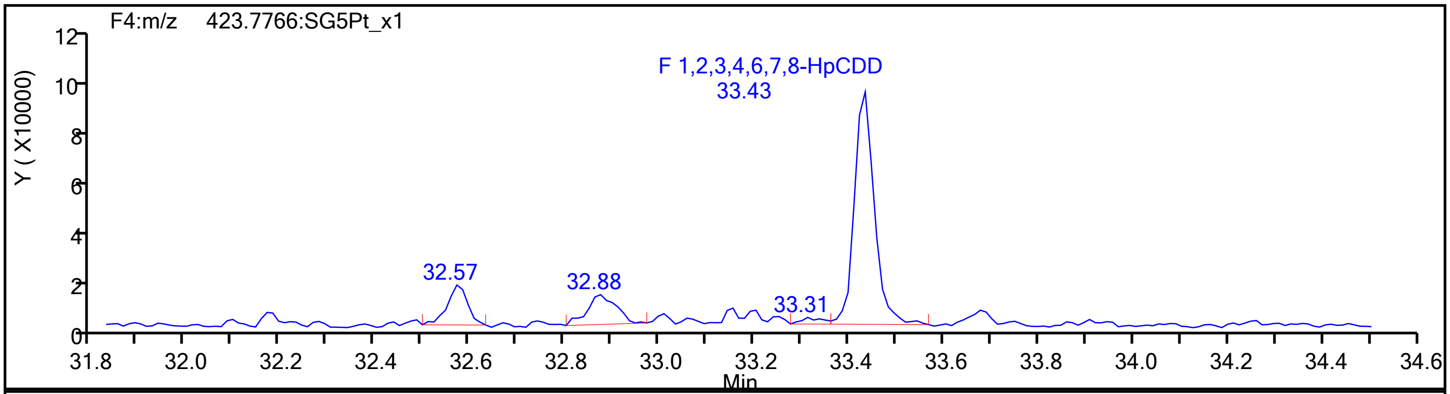

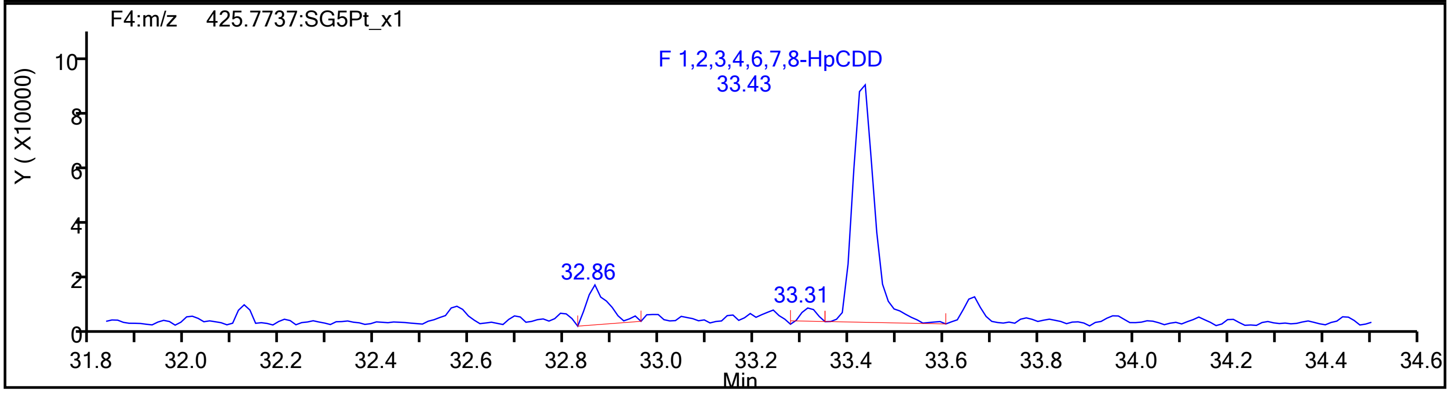

HpCDD Standards

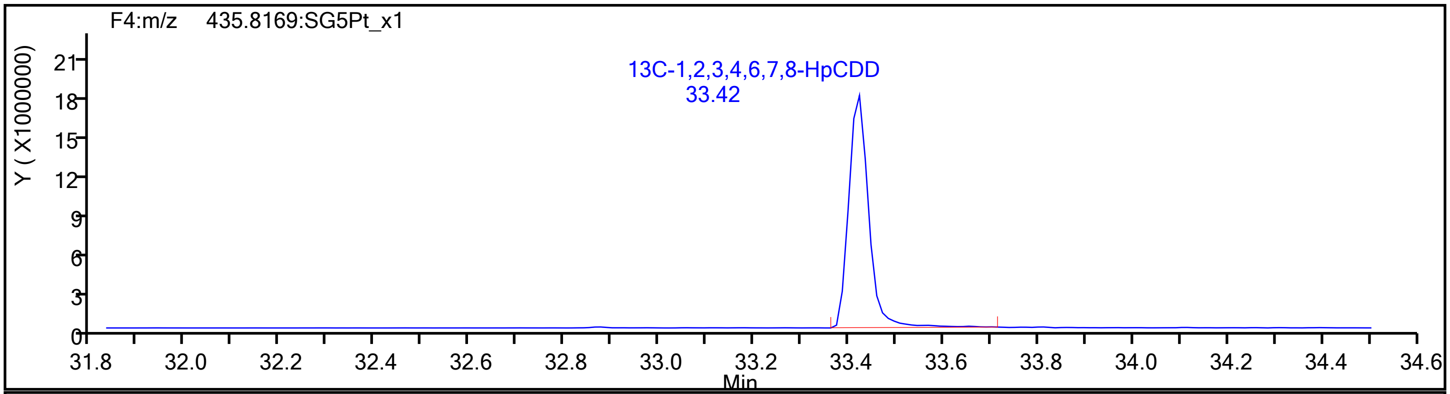

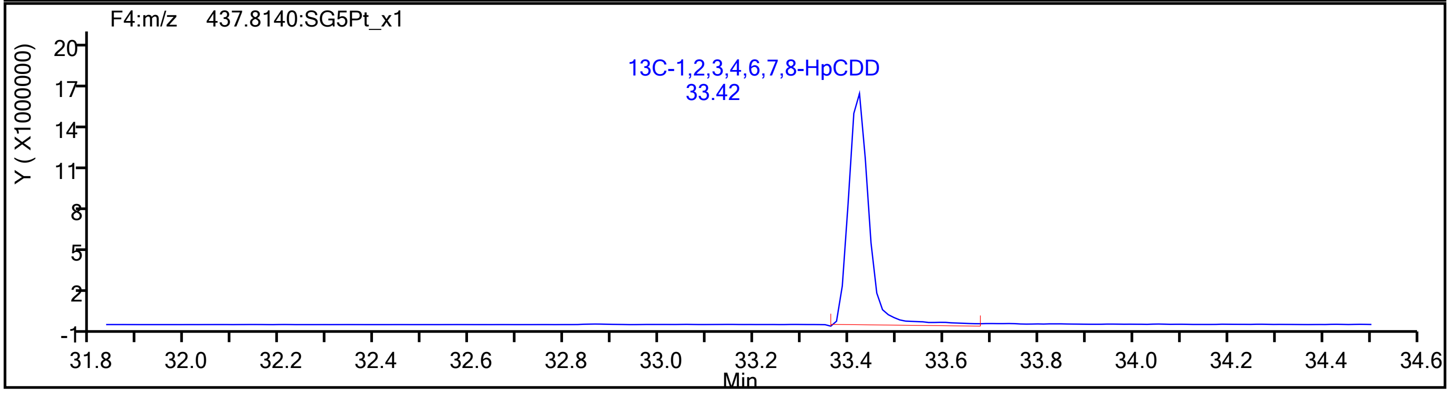

Report Date: 13-Oct-2020 08:59:41 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

OCDF

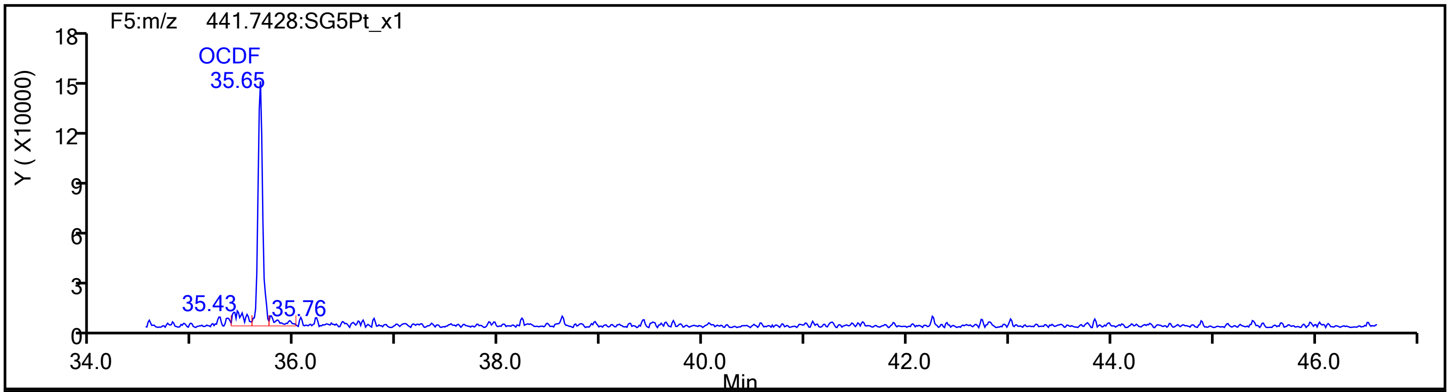

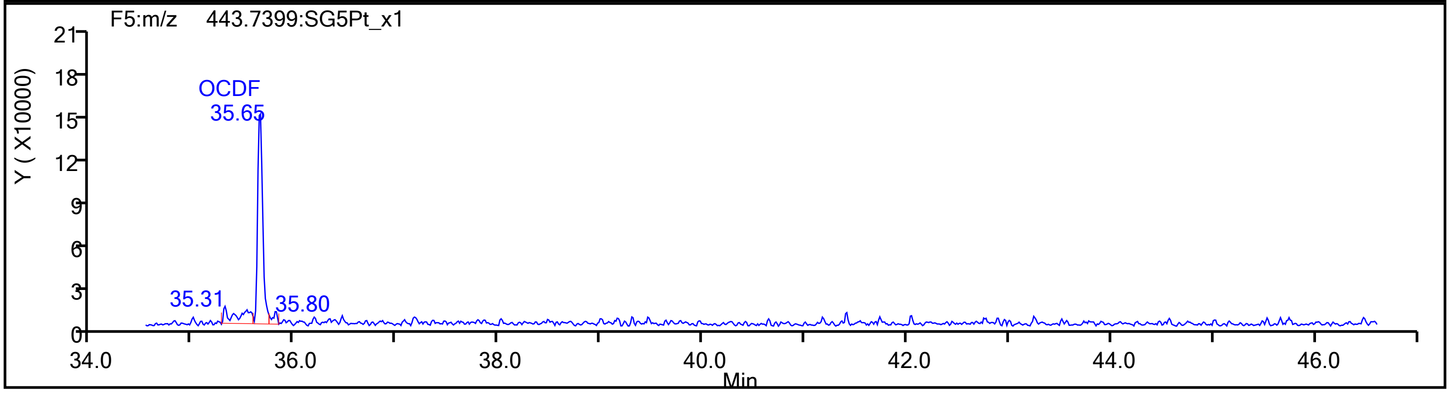

OCDF Standards

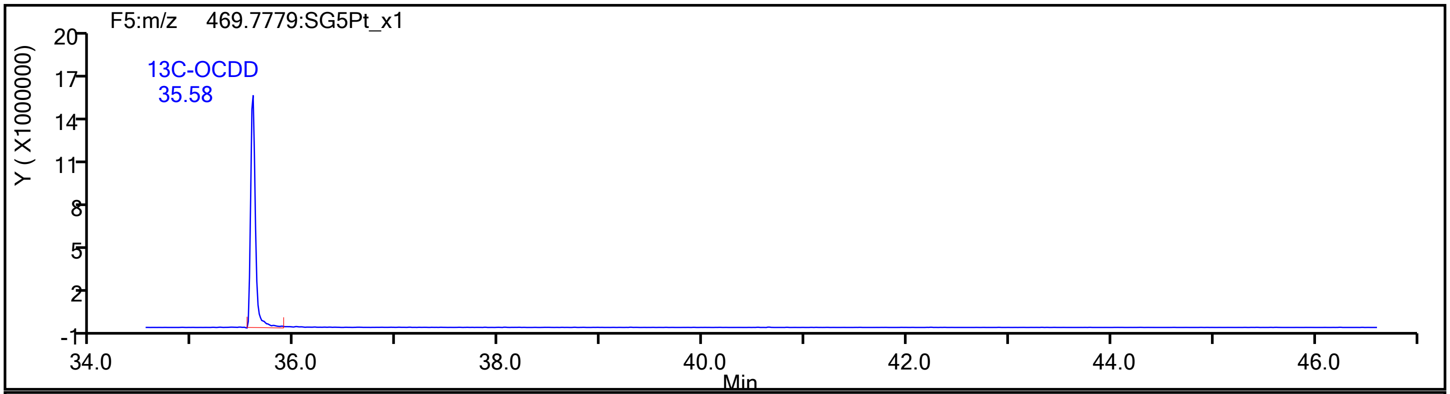

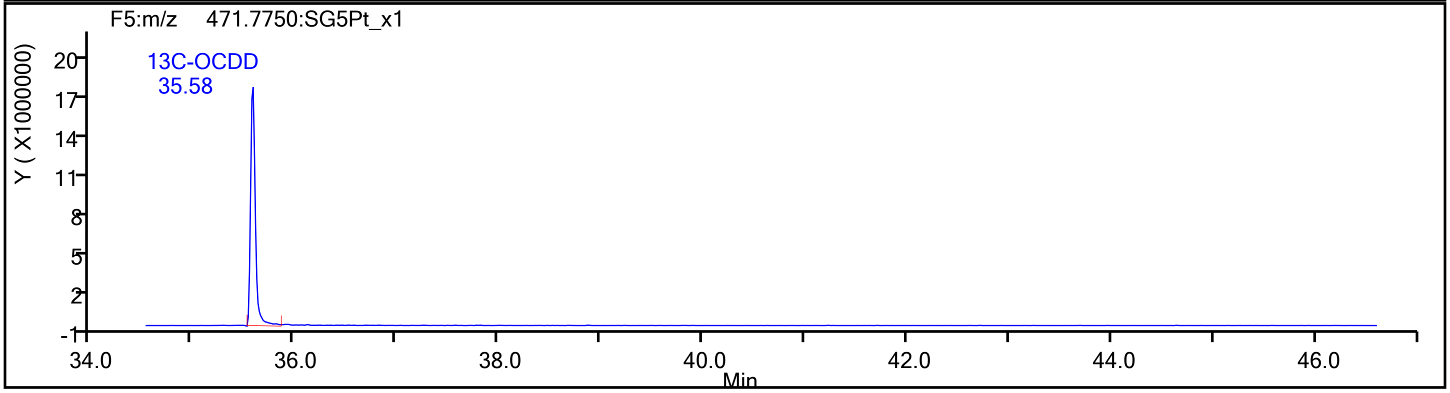

Eurofins TestAmerica, Sacramento

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Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

OCDF

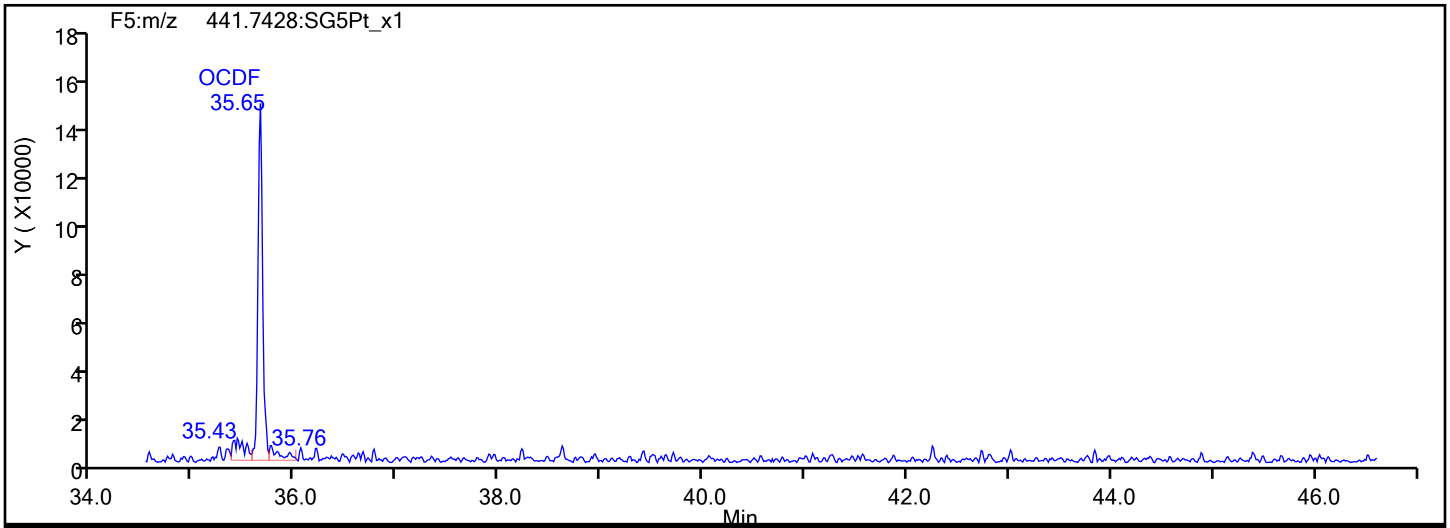

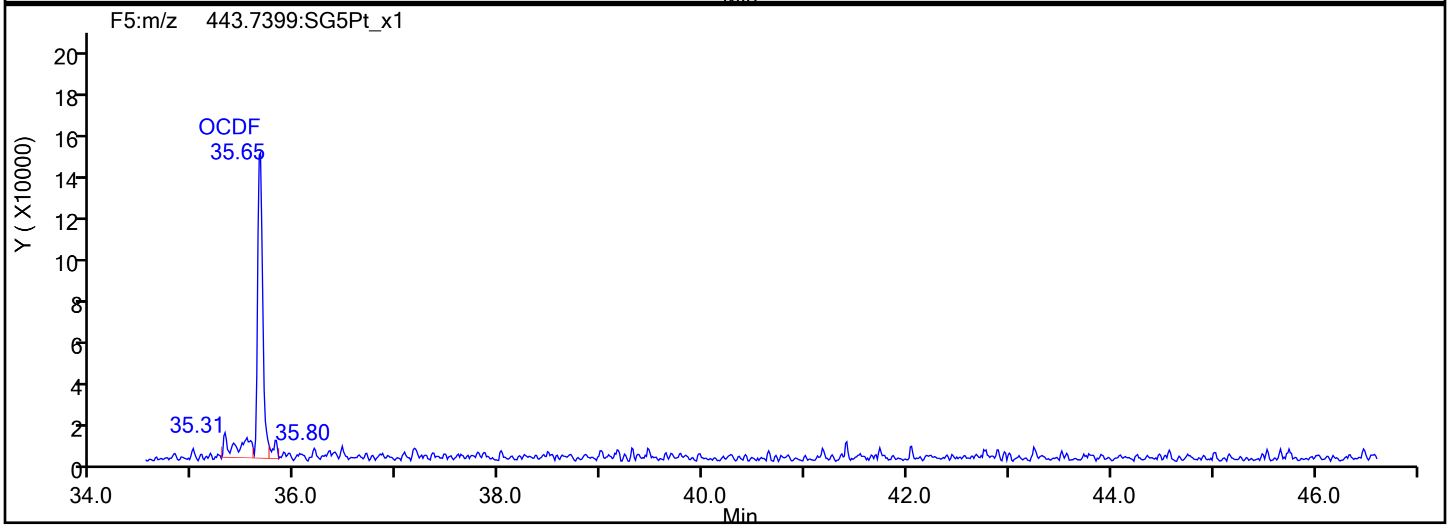

OCDF Interference Mass

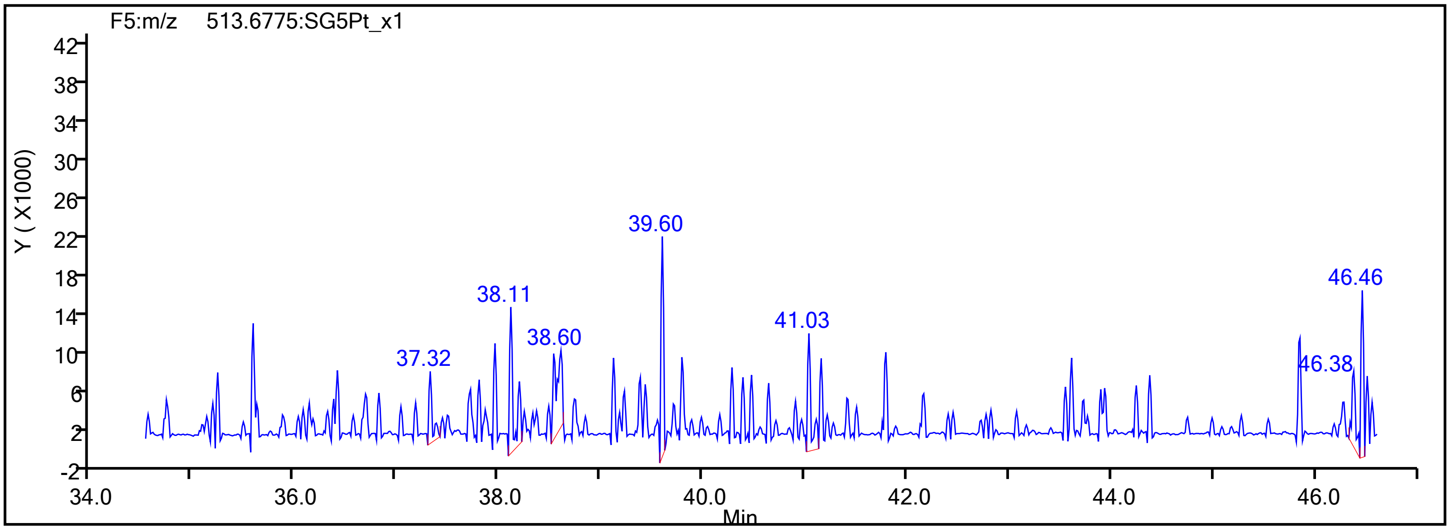

Report Date: 13-Oct-2020 08:59:42 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d		
Injection Date:	08-Oct-2020 11:56:21	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	4
Column Type:		Column Dia:	

OCDD

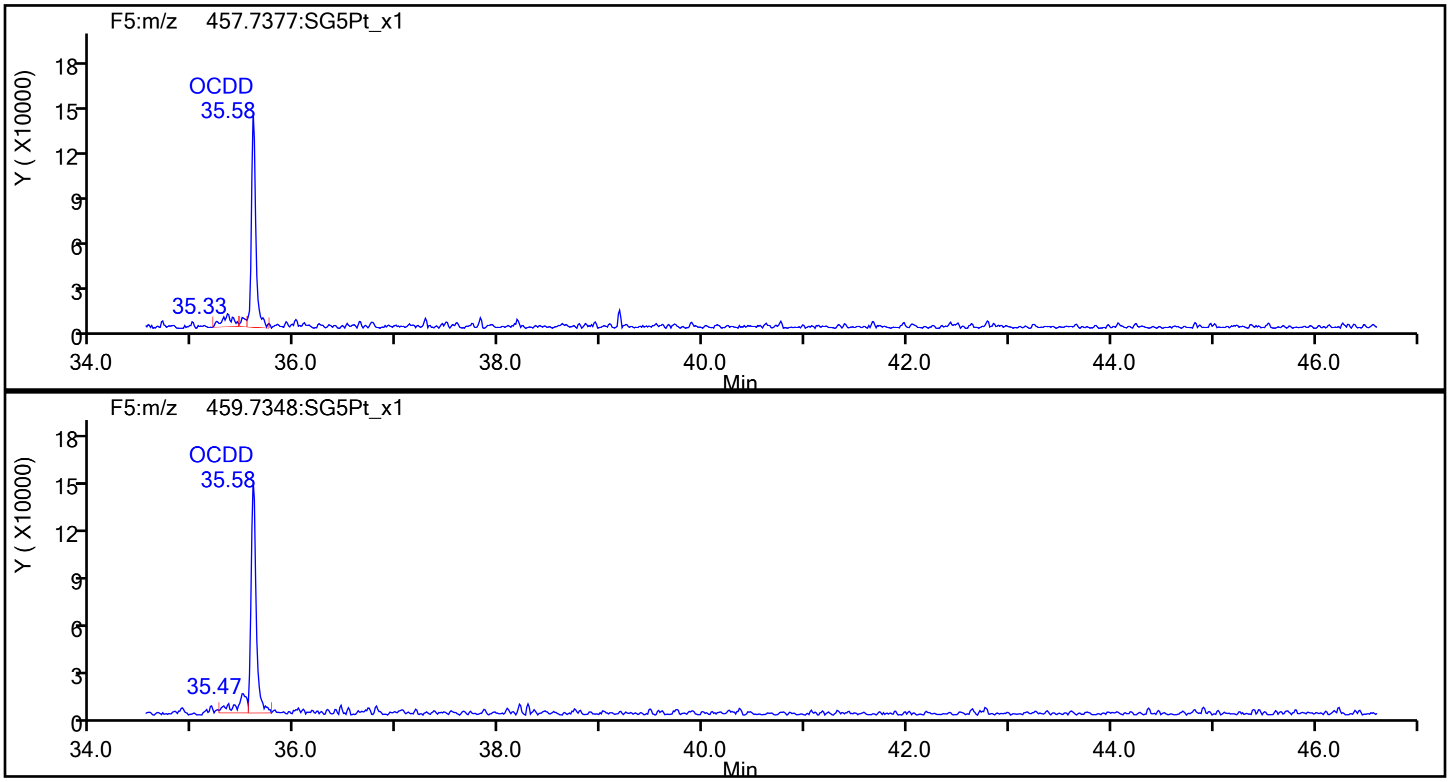

OCDD Standards

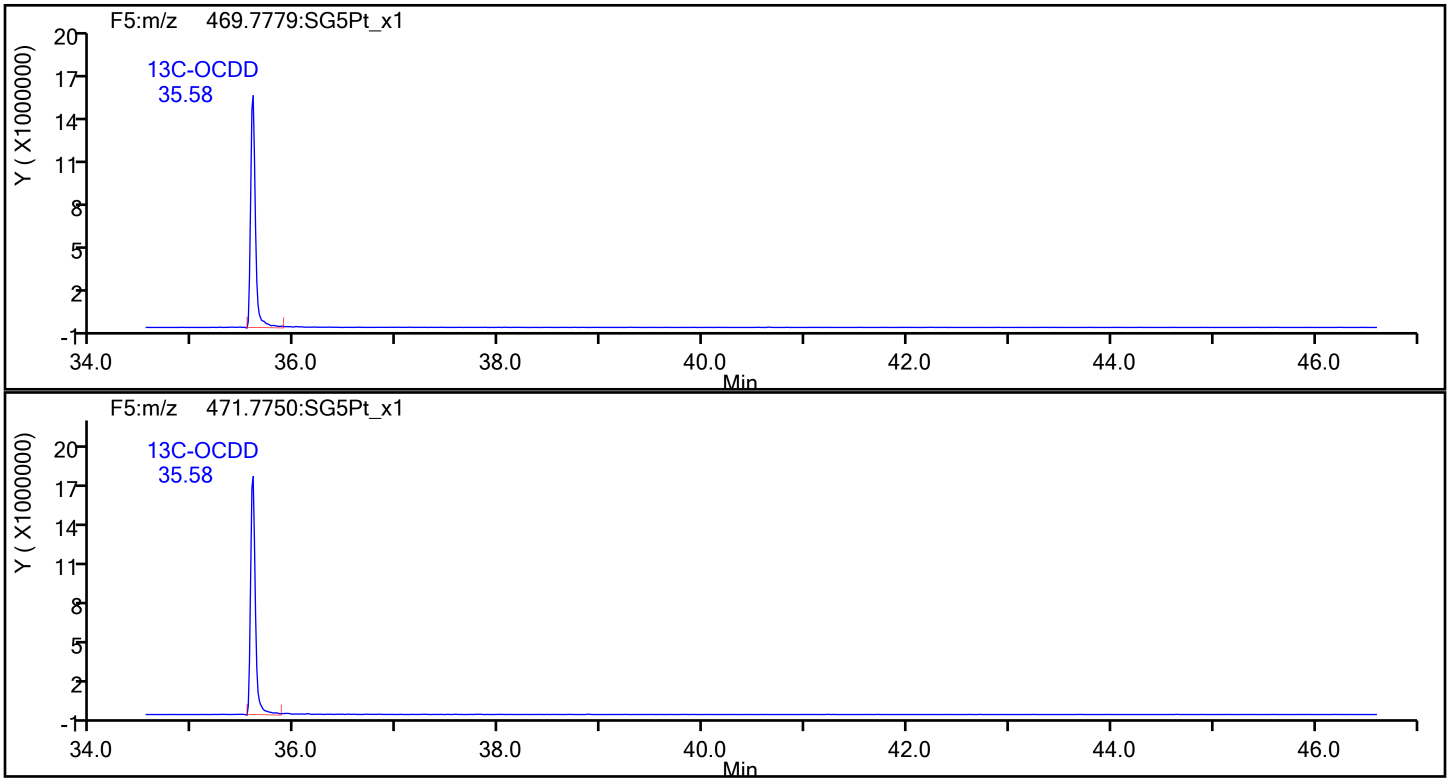

Report Date: 13-Oct-2020 08:59:42 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d

Injection Date: 08-Oct-2020 11:56:21

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 4

Column Type:

Column Dia:

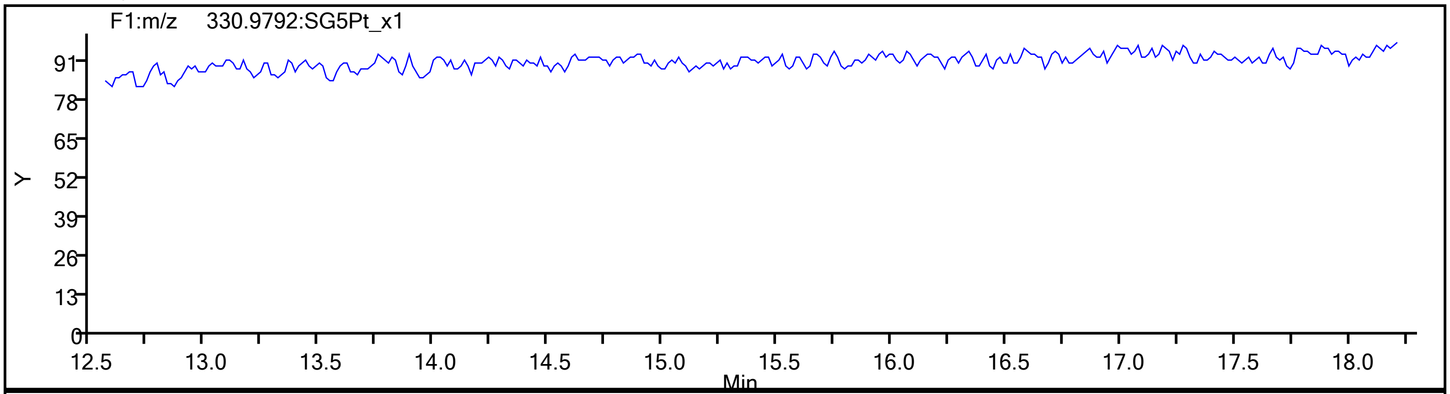

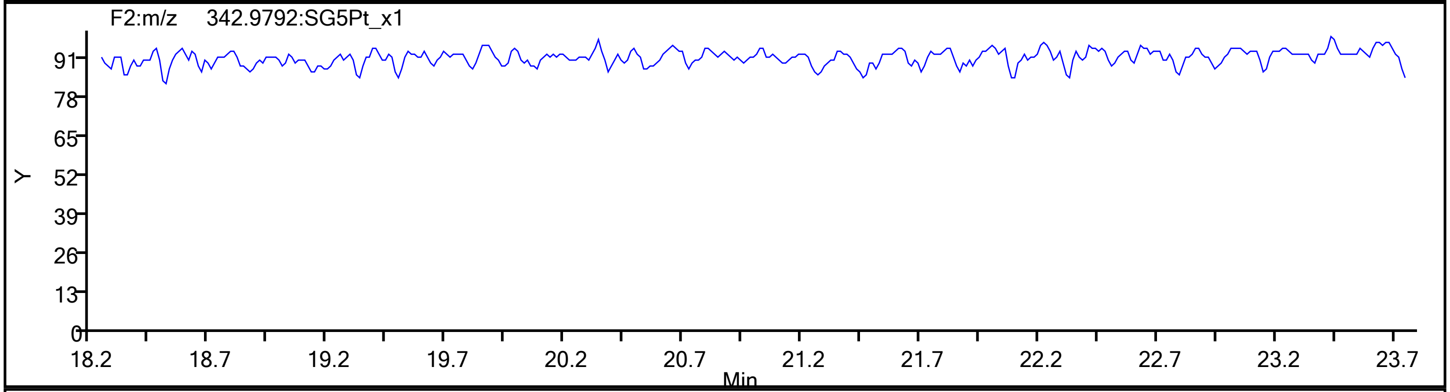

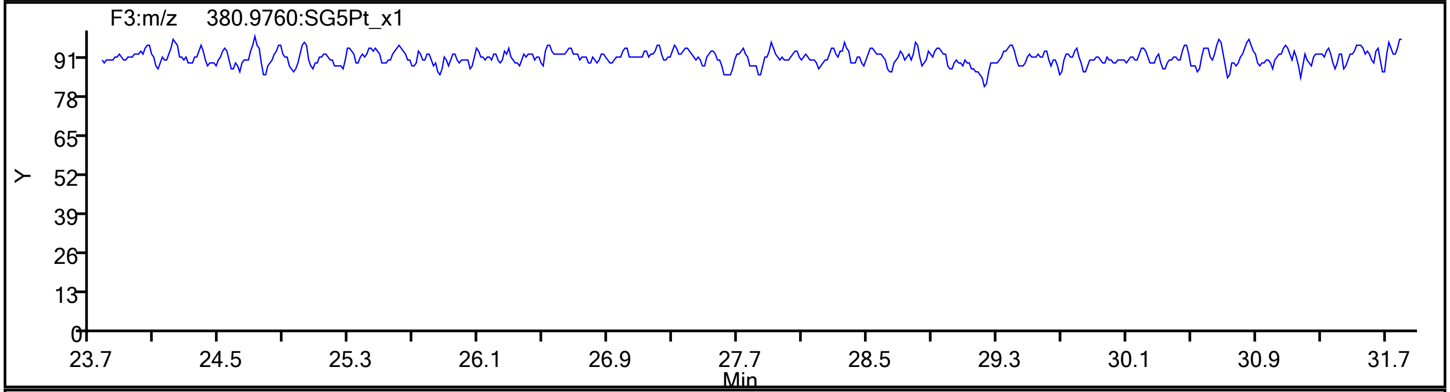

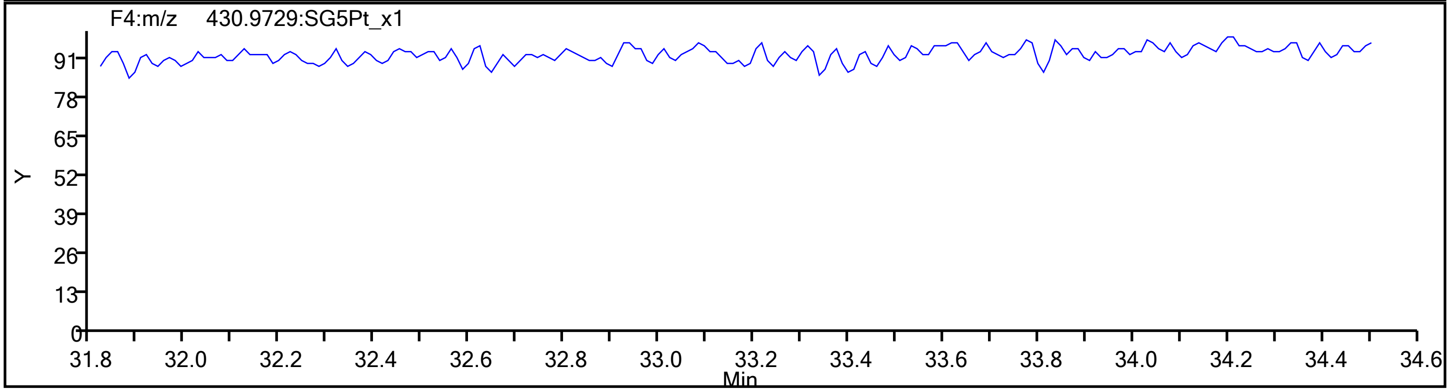

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_4.d
Injection Date: 08-Oct-2020 11:56:21
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 4
Column Type:
Column Dia:

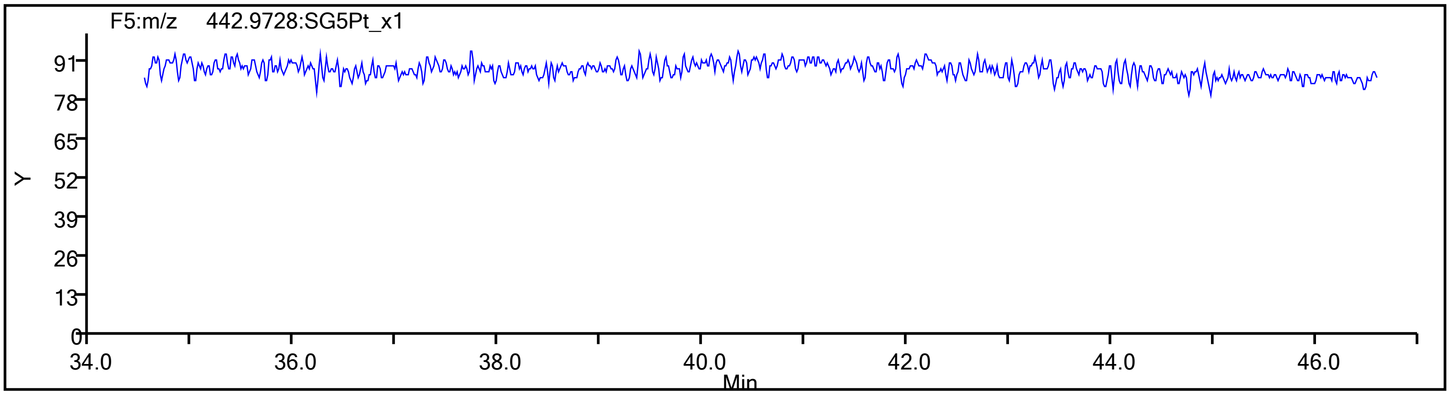

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID:

Lab Sample ID: MB 320-417971/1-A

Matrix: Water

Lab File ID: 09oc20dfs1_20.d

Analysis Method: 1613B

Date Collected:

Extract. Method: 1613B

Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1000(mL)

Date Analyzed: 10/10/2020 07:46

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	1.8
51207-31-9	2,3,7,8-TCDF	5.58	J	10	1.3
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.9
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.72
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.80
39227-28-6	1,2,3,4,7,8-HxCDD	2.15	J	50	0.37
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.42
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.37
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.59
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.50
72918-21-9	1,2,3,7,8,9-HxCDF	0.913	J	50	0.42
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.42
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.51
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.95	J	50	0.23
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.33	J	50	0.25
3268-87-9	OCDD	4.35	J	100	0.41
39001-02-0	OCDF	2.61	J	100	1.0
41903-57-5	Total TCDD	ND		10	1.8
30402-14-3	Total TCDF	5.58	J	10	1.3
36088-22-9	Total PeCDD	ND		50	1.9
30402-15-4	Total PeCDF	ND		50	0.80
34465-46-8	Total HxCDD	2.15	J	50	0.39
55684-94-1	Total HxCDF	0.913	J	50	0.48
37871-00-4	Total HpCDD	ND		50	0.51
38998-75-3	Total HpCDF	3.28	J	50	0.24

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-417971/1-A

Matrix: Water Lab File ID: 09oc20dfs1_20.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1000(mL) Date Analyzed: 10/10/2020 07:46

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	75		25-164
89059-46-1	13C-2,3,7,8-TCDF	71		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	80		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	79		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	78		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	91		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	89		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	74		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	75		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	77		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	76		26-138
114423-97-1	13C-OCDD	76		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	91		35-197

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Lims ID: MB 320-417971/1-A
Client ID:
Sample Type: MB
Inject. Date: 10-Oct-2020 07:46:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-417971/1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:09:24 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:09:24

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.663	2063102	0.80	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.770	2322380	0.79	1.5883	70.9	70.9	0.5640	0.5640	70.87	
2,3,7,8-TCDF	18.804	7031	0.82	1.0857	0.2789	0.2789	0.0641	0.0641		M
A Non-2,3,7,8-sub-TCDF	18.413						0.0641	0.0641		U
S Total TCDF					0.2789	0.2789	0.0641	0.0641		
D 13C-2,3,7,8-TCDD	20.024	1737129	0.80	1.1194	75.2	75.2	0.4470	0.4470	75.22	
2,3,7,8-TCDD	20.101						0.0908	0.0908		
$ 37Cl4-2,3,7,8-TCDD	20.050	860105		1.1468	36.4	36.4	0.0518	0.0518	90.89	
A Non-2,3,7,8-sub-TCDD	19.200						0.0908	0.0908		
S Total TCDD							0.0908	0.0908		
D 13C-1,2,3,7,8-PeCDF	25.894	2418209	1.62	1.4782	79.3	79.3	0.4179	0.4179	79.29	
1,2,3,7,8-PeCDF	25.951						0.0359	0.0359		
D 13C-2,3,4,7,8-PeCDF	27.327	2250610	1.59	1.3912	78.4	78.4	0.4440	0.4440	78.41	
2,3,4,7,8-PeCDF	27.376						0.0400	0.0400		
A F1 PeCDFs	23.059						0.0185	0.0185		
A Non-2,3,7,8-sub-PeCDF	26.475						0.0377	0.0377		
S Total PeCDF							0.0400	0.0400		
D 13C-1,2,3,7,8-PeCDD	28.077	1559100	1.56	0.9415	80.3	80.3	0.1726	0.1726	80.27	
1,2,3,7,8-PeCDD	28.134						0.0945	0.0945		
A Non-2,3,7,8-sub-PeCDD	26.975						0.0945	0.0945		
S Total PeCDD							0.0945	0.0945		
D 13C-1,2,3,4,7,8-HxCDF	33.807	1902381	0.52	1.1378	69.4	69.4	0.2251	0.2251	69.38	
1,2,3,4,7,8-HxCDF	33.815						0.0293	0.0293		U
D 13C-1,2,3,6,7,8-HxCDF	34.001	2347549	0.51	1.3173	74.0	74.0	0.1945	0.1945	73.95	
1,2,3,6,7,8-HxCDF	34.049						0.0251	0.0251		
D 13C-2,3,4,6,7,8-HxCDF	34.953	2317114	0.52	1.2457	77.2	77.2	0.2056	0.2056	77.19	
2,3,4,6,7,8-HxCDF	35.001						0.0212	0.0212		
D 13C-1,2,3,7,8,9-HxCDF	35.948	2128552	0.52	1.1840	74.6	74.6	0.2164	0.2164	74.60	
1,2,3,7,8,9-HxCDF	35.965	1228	1.18	1.2638	0.0457	0.0457	0.0210	0.0210		M
A Non-2,3,7,8-sub-HxCDF	33.855						0.0237	0.0237		U
S Total HxCDF					0.0457	0.0457	0.0242	0.0242		
* 13C-1,2,3,7,8,9-HxCDD	35.737	2409777	1.28	2.9E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.206	1868989	1.27	0.8477	91.5	91.5	0.1917	0.1917	91.49	
1,2,3,4,7,8-HxCDD	35.231	2323	1.23	1.1561	0.1075	0.1075	0.0186	0.0186		M
D 13C-1,2,3,6,7,8-HxCDD	35.332	2130720	1.25	0.9979	88.6	88.6	0.1629	0.1629	88.61	
1,2,3,6,7,8-HxCDD	35.231						0.0210	0.0210		MU
1,2,3,7,8,9-HxCDD	35.768						0.0183	0.0183		
A Non-2,3,7,8-sub-HxCDD	34.365						0.0192	0.0192		U
S Total HxCDD					0.1075	0.1075	0.0193	0.0193		
D 13C-1,2,3,4,6,7,8-HpCDF	37.904	1985444	0.45	0.9884	83.4	83.4	0.3692	0.3692	83.36	
1,2,3,4,6,7,8-HpCDF	37.912	2909	1.08	1.5064	0.0973	0.0973	0.0115	0.0115		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.218	1692558	0.45	0.9203	76.3	76.3	0.3965	0.3965	76.32	
1,2,3,4,7,8,9-HpCDF	39.243	1639	1.04	1.4548	0.0730	0.0666	0.0126	0.0126		RQM
A Non-2,3,7,8-sub-HpCDF	38.593						0.0121	0.0121		U
S Total HpCDF					0.1702	0.1638	0.0121	0.0121		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.906	1861401	1.07	0.9556	80.8	80.8	0.2069	0.2069	80.83	
1,2,3,4,6,7,8-HpCDD	38.938						0.0257	0.0257		
A Non-2,3,7,8-sub-HpCDD	38.941						0.0257	0.0257		
S Total HpCDD							0.0257	0.0257		
D 13C-OCDD	41.353	2727902	0.90	0.7420	152.6	152.6	0.2437	0.2437	76.28	
OCDF	41.445	2541	0.89	1.4296	0.1500	0.1303	0.0499	0.0499		RQM
OCDD	41.361	3352	0.89	1.1293	0.2547	0.2176	0.0203	0.0203		RQM

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Lims ID: MB 320-417971/1-A
Client ID:
Sample Type: MB
Inject. Date: 10-Oct-2020 07:46:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-417971/1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:09:24 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:09:24

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.663	19.716	-3		918477	131138	382	955	343		
333.9338	19.663	19.716	-3		1144625	171610	224	560	766	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.770	18.830	-4	0.955	1026490	145455	720	1800	202		
317.9389	18.778	18.830	-3	0.955	1295890	192413	365	912	527	0.79(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	18.804	18.865	-4	1.002	3174	616	26	65	24		M
305.8987	18.778	18.865	-5	1.000	3857	590	68	170	9	0.82(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.413						26	65			
305.8987	18.413						68	170			
13C-2,3,7,8-TCDD											
331.9368	20.024	20.067	-3	1.018	771856	110314	382	955	289		
333.9338	20.024	20.067	-3	1.018	965273	139181	224	560	621	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.101						81	202			
321.8936	20.101						17	42			
37Cl4-2,3,7,8-TCDD											
327.8847	20.050	20.103	-3	1.020	860105	124548	72	180	1730		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.200						81	202			
321.8936	19.200						17	42			
13C-1,2,3,7,8-PeCDF											
351.9000	25.894	25.934	-2	1.317	1495205	238308	429	1072	555		
353.8970	25.894	25.934	-2	1.317	923004	150374	319	797	471	1.62(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.951						7	17			
341.8567	25.951						52	130			
13C-2,3,4,7,8-PeCDF											
351.9000	27.327	27.359	-2	1.390	1381680	208487	429	1072	486		
353.8970	27.327	27.359	-2	1.390	868930	124879	319	797	391	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.376						7	17			
341.8567	27.376						52	130			
A F1 PeCDFs											
339.8597	23.059						1	2			
341.8567	23.059						28	70			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.475						7	17			
341.8567	26.475						52	130			
13C-1,2,3,7,8-PeCDD											
367.8949	28.077	28.109	-2	1.428	949811	140206	99	247	1416		
369.8919	28.094	28.109	-1	1.429	609289	84633	98	245	864	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.134						79	197			
357.8516	28.134						12	30			
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						79	197			
357.8516	26.975						12	30			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.807	33.838	-2	0.946	654604	114127	186	465	614		
385.8610	33.807	33.838	-2	0.946	1247777	223278	372	930	600	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											U
373.8208	33.855						35	87			
375.8178	33.855						15	37			
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.001	34.024	-1	0.951	797849	140676	186	465	756		
385.8610	34.001	34.024	-1	0.951	1549700	266592	372	930	717	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.049						35	87			
375.8178	34.049						15	37			
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.953	34.976	-1	0.978	794385	161795	186	465	870		
385.8610	34.953	34.976	-1	0.978	1522729	310143	372	930	834	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.001						35	87			
375.8178	35.001						15	37			
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.948	35.962	-1	1.006	727582	160011	186	465	860		
385.8610	35.948	35.962	-1	1.006	1400970	311840	372	930	838	0.52(0.43-0.59)	

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											M
373.8208	35.965	35.979	-1	1.000	664	235	35	87	7		M
375.8178	35.973	35.979	0	1.001	564	195	15	37	13	1.18(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											U
373.8208	33.855						35	87			
375.8178	33.855						15	37			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.737	35.760	-1		1350644	305173	195	487	1565		
403.8529	35.737	35.760	-1		1059133	239410	159	397	1506	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.206	35.220	-1	0.985	1044974	254347	195	487	1304		
403.8529	35.206	35.220	-1	0.985	824015	196180	159	397	1234	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.231	35.237	0	1.001	1280	342	7	17	49		
391.8127	35.214	35.237	-1	1.000	1043	268	32	80	8	1.23(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.332	35.355	-1	0.989	1182832	249317	195	487	1279		
403.8529	35.332	35.355	-1	0.989	947888	199114	159	397	1252	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											MU
389.8158	35.372						7	17			
391.8127	35.372						32	80			
1,2,3,7,8,9-HxCDD											
389.8158	35.768						7	17			
391.8127	35.768						32	80			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	34.365						7	17			
391.8127	34.365						32	80			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.904	37.927	-1	1.061	615594	181396	276	690	657		
419.8220	37.904	37.927	-1	1.061	1369850	405401	519	1297	781	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	37.912	37.935	-1	1.000	1508	569	28	70	20		M
409.7788	37.920	37.935	-1	1.000	1401	424	13	32	33	1.08(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.218	39.233	-1	1.097	522647	169855	276	690	615		
419.8220	39.218	39.233	-1	1.097	1169911	385000	519	1297	742	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQM
407.7817	39.243	39.250	0	1.001	836	270	28	70	10		M
409.7788	39.243	39.250	0	1.001	961	306	13	32	24	0.87(0.88-1.20)	M
	Empc Correction				803	259	13	32	20		
A Non-2,3,7,8-sub-HpCDF											U
407.7817	38.593						28	70			
409.7788	38.593						13	32			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.906	38.921	-1	1.089	962325	311660	220	550	1417		
437.8140	38.906	38.921	-1	1.089	899076	291123	211	527	1380	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.938						48	120			
425.7737	38.938						18	45			
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						48	120			
425.7737	38.941						18	45			
13C-OCDD											
469.7780	41.353	41.373	-1	1.157	1292805	423687	173	432	2449		
471.7750	41.353	41.373	-1	1.157	1435097	465295	221	552	2105	0.90(0.76-1.02)	
OCDF											RQM
441.7428	41.445	41.457	-1	1.002	1197	415	32	80	13		M
443.7399	41.437	41.457	-1	1.002	1727	588	95	237	6	0.69(0.76-1.02)	
	Empc Correction				1344	466	95	237	5		
OCDD											RQM
457.7377	41.361	41.381	-1	1.000	2149	704	19	47	37		M
	Empc Correction				1578	425	19	47	22		
459.7348	41.378	41.381	0	1.001	1774	478	22	55	22	1.21(0.76-1.02)	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Lims ID: MB 320-417971/1-A
Client ID:
Inject. Date: 10-Oct-2020 07:46:00
Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 18

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	2322380	337868

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	2322380	337868

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Lims ID: MB 320-417971/1-A
Client ID:
Inject. Date: 10-Oct-2020 07:46:00 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 18

Non-2,3,7,8-sub-HxCDF, RT: 33.855

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.264	D 13C-1,2,3,4,7,8-HxCDF	100.000	1902381	337405
1,2,3,6,7,8-HxCDF	1.223	D 13C-1,2,3,6,7,8-HxCDF	100.000	2347549	407268
2,3,4,6,7,8-HxCDF	1.246	D 13C-2,3,4,6,7,8-HxCDF	100.000	2317114	471938
1,2,3,7,8,9-HxCDF	1.264	D 13C-1,2,3,7,8,9-HxCDF	100.000	2128552	471851

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.249		100.000	2173899	422115

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d		
Lims ID:	MB 320-417971/1-A		
Client ID:			
Inject. Date:	10-Oct-2020 07:46:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	18

Non-2,3,7,8-sub-HxCDD, RT: 34.365

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.156	D 13C-1,2,3,4,7,8-HxCDD	100.000	1868989	450527
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	2130720	448431
1,2,3,7,8,9-HxCDD	1.179				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.121		100.000	1999854	449479

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Lims ID: MB 320-417971/1-A
Client ID:
Inject. Date: 10-Oct-2020 07:46:00 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 18

Non-2,3,7,8-sub-HpCDF, RT: 38.593

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.506	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1985444	586797
1,2,3,4,7,8,9-HpCDF	1.455	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1692558	554855

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.481		100.000	1839001	570826

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT:	18.78
Area:	4681
Amount:	0.324198
Amount Units:	pg/ul

Processing Integration Results

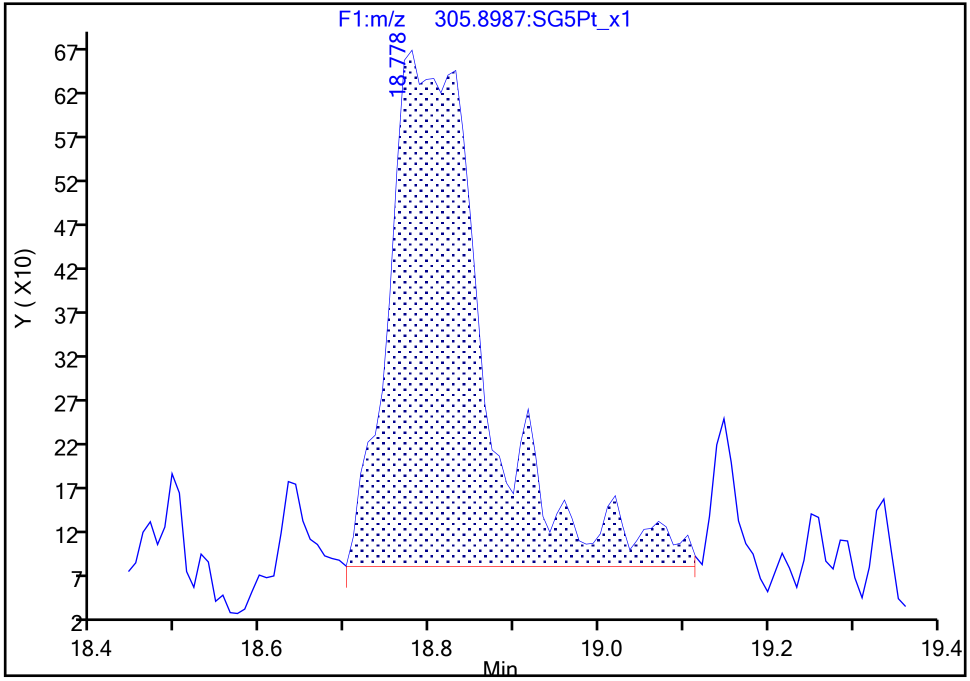

RT:	18.78
Area:	3857
Amount:	0.278865
Amount Units:	pg/ul

Manual Integration Results

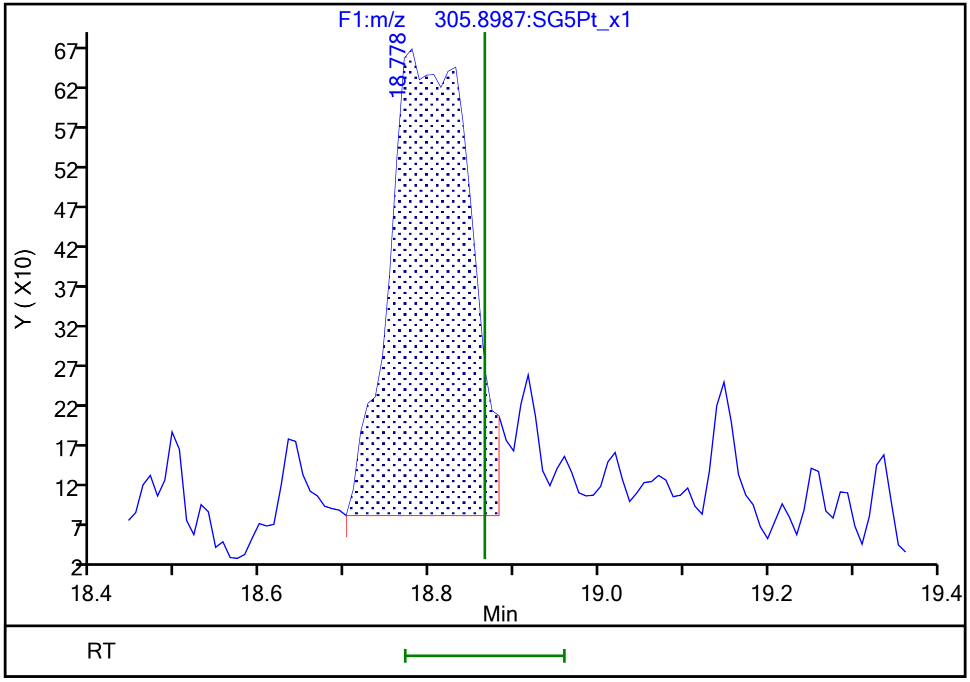

Reviewer: dadunj, 12-Oct-2020 09:06:21

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT: 18.80
Area: 3493
Amount: 0.324198
Amount Units: pg/ul

Processing Integration Results

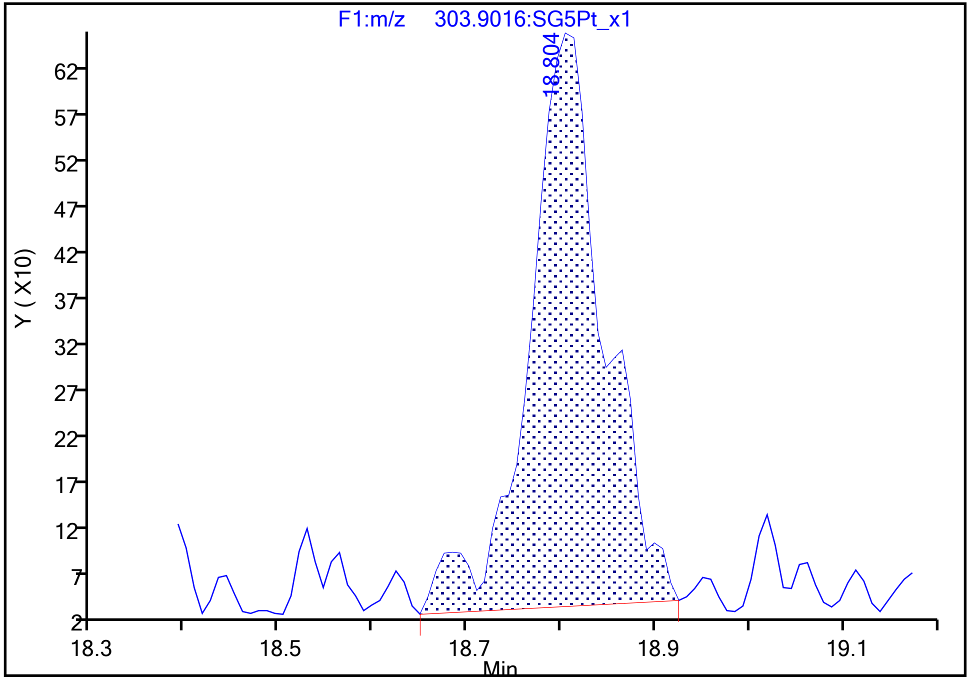

RT: 18.80
Area: 3174
Amount: 0.278865
Amount Units: pg/ul

Manual Integration Results

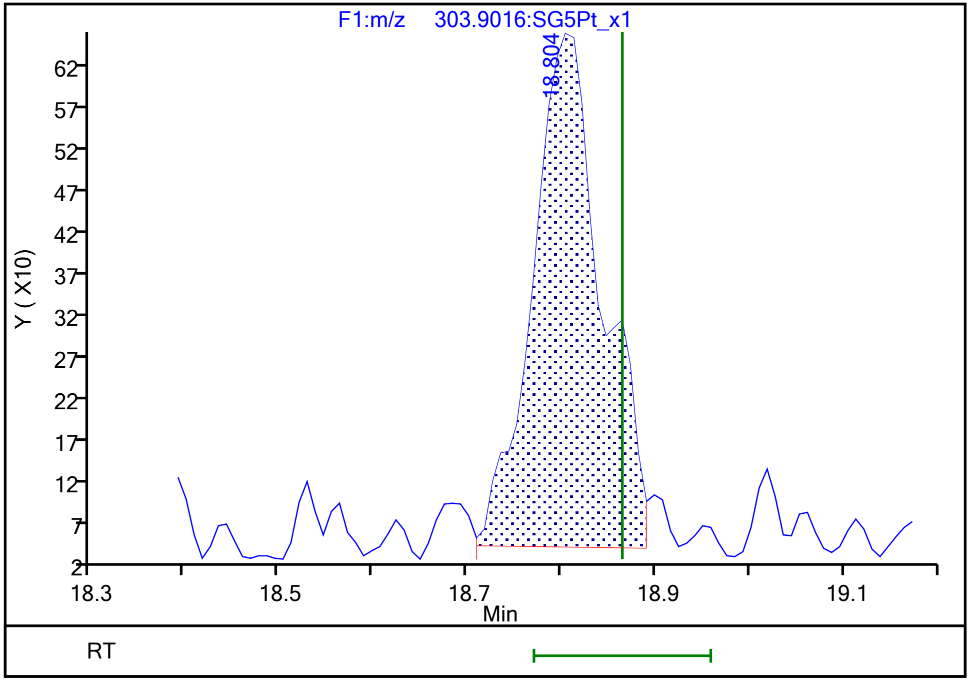

Reviewer: dadunj, 12-Oct-2020 09:06:24

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT: 35.96
Area: 1497
Amount: 0.110299
Amount Units: pg/ul

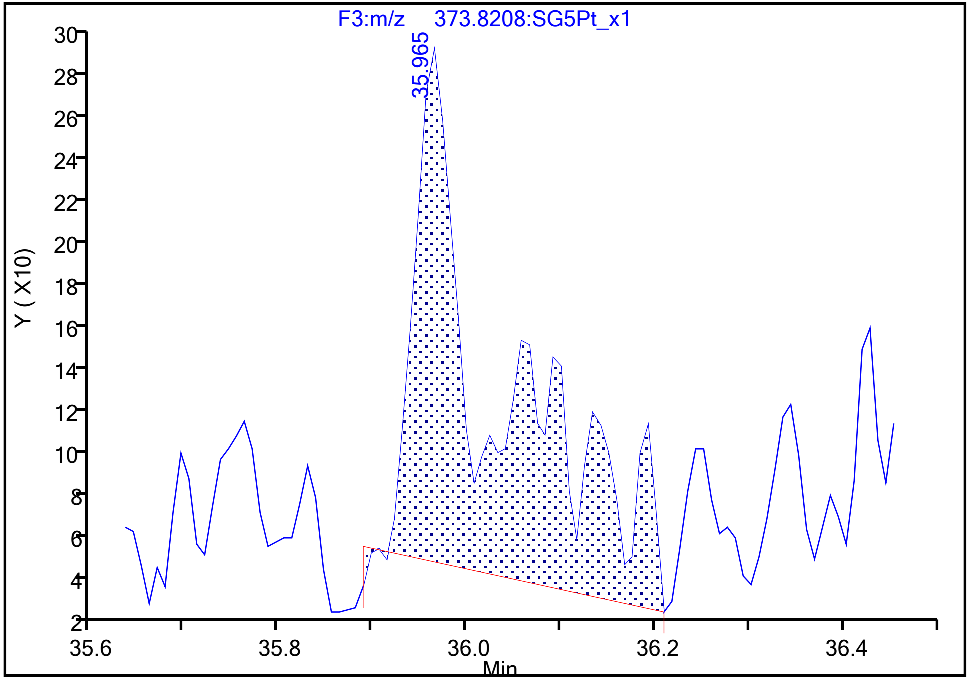

Manual Integration Results

RT: 35.96
Area: 664
Amount: 0.045651
Amount Units: pg/ul

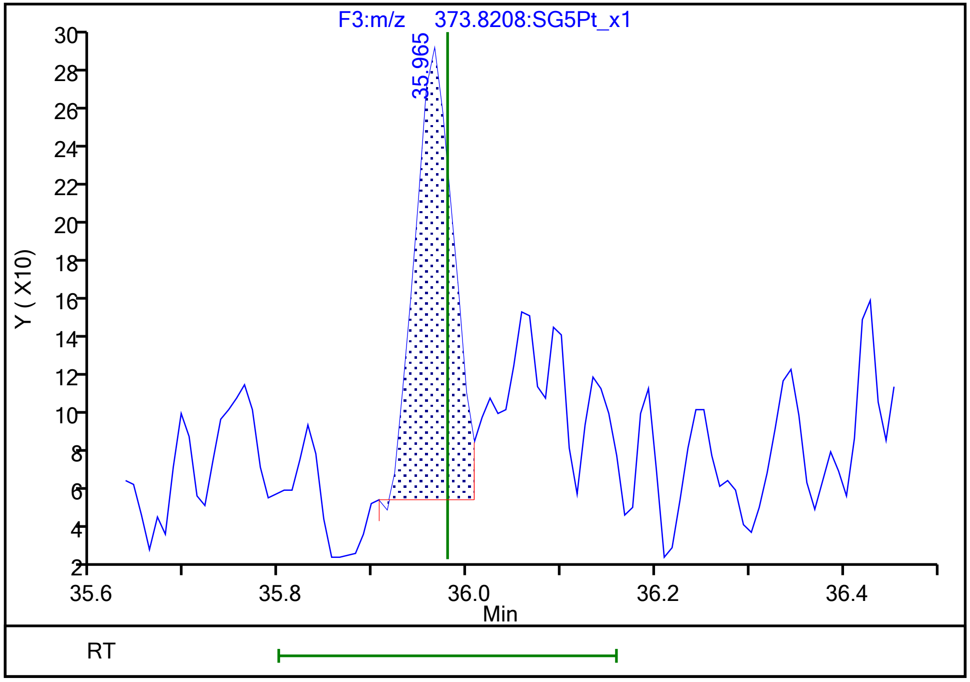

Reviewer: dadunj, 12-Oct-2020 09:07:00
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT: 35.97
Area: 1470
Amount: 0.110299
Amount Units: pg/ul

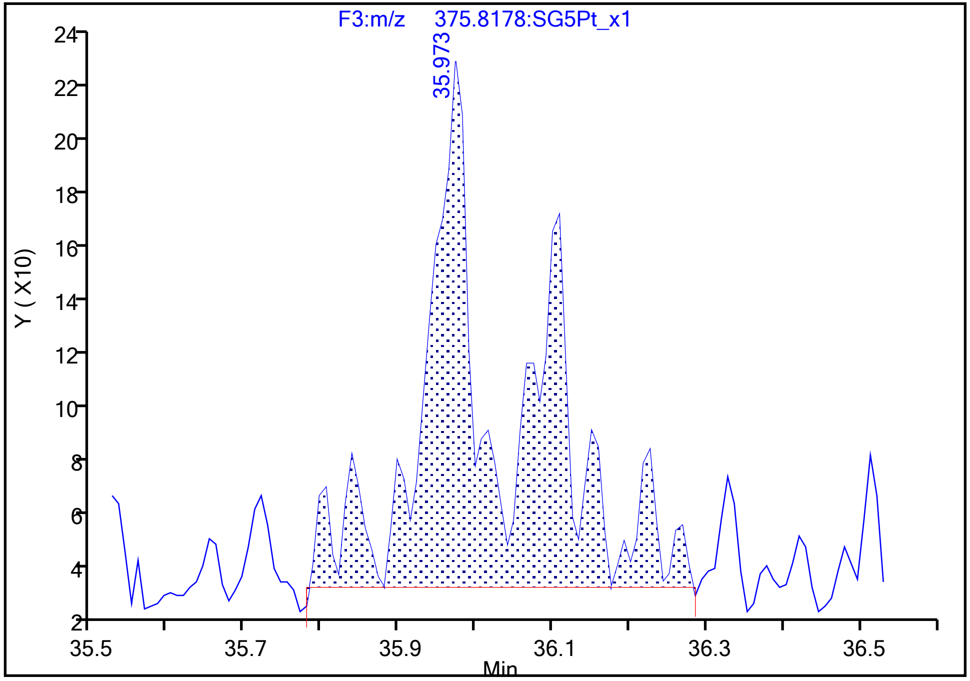

Manual Integration Results

RT: 35.97
Area: 564
Amount: 0.045651
Amount Units: pg/ul

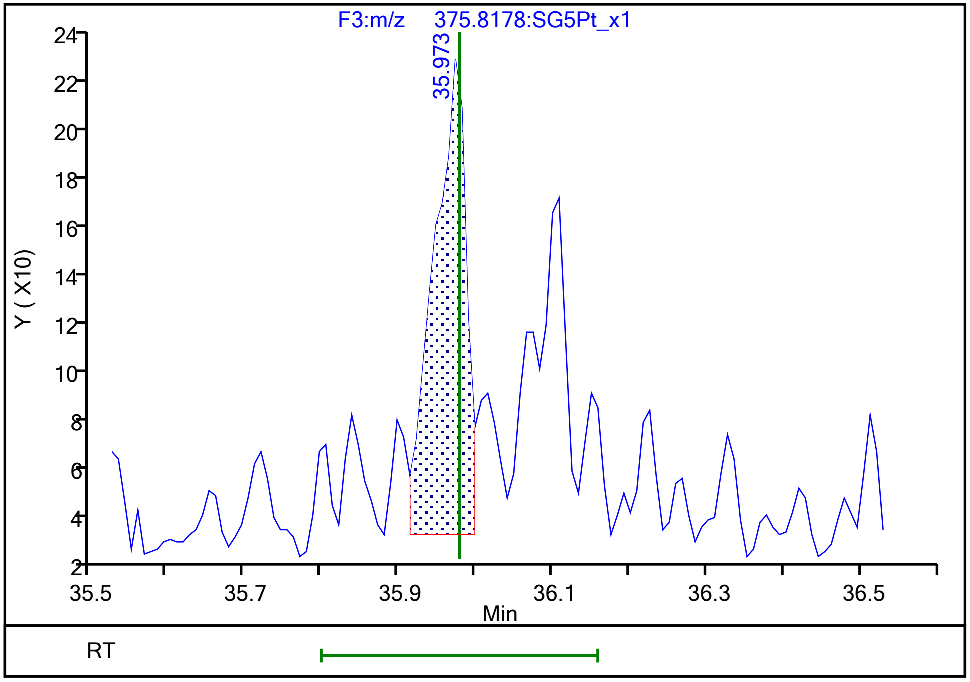

Reviewer: dadunj, 12-Oct-2020 09:07:03

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	35.21
Area:	1737
Amount:	0.139631
Amount Units:	pg/ul

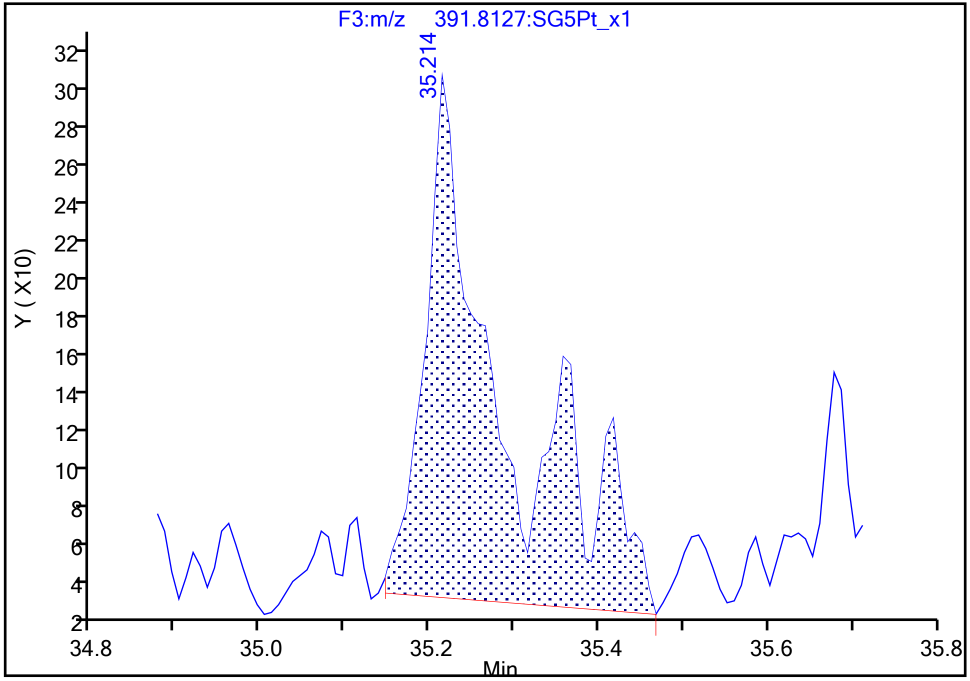

Manual Integration Results

RT:	35.21
Area:	1043
Amount:	0.107511
Amount Units:	pg/ul

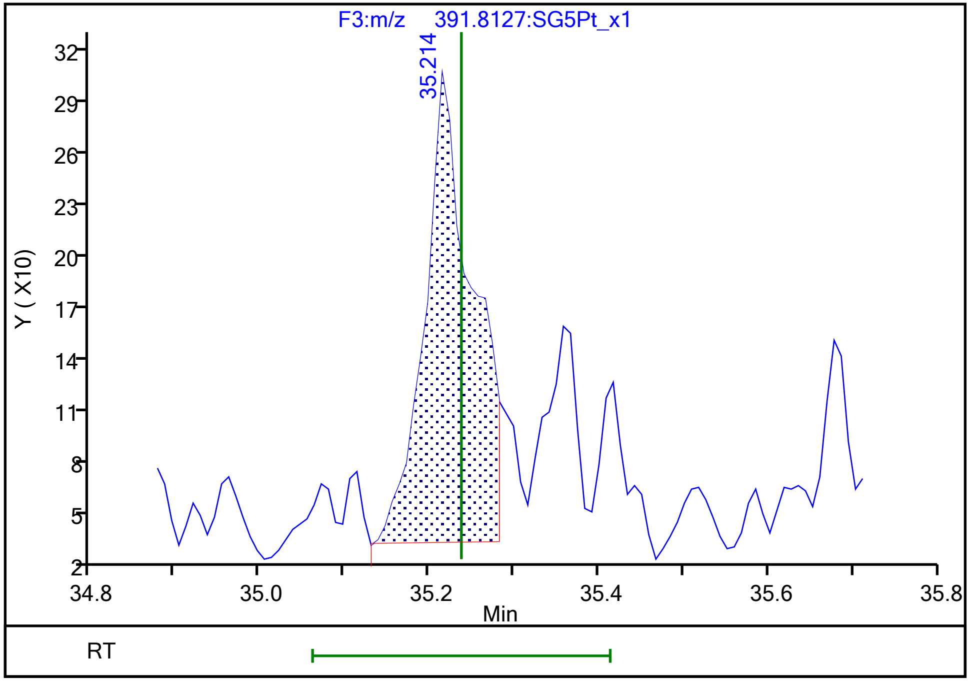

Reviewer: dadunj, 12-Oct-2020 09:07:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT: 37.91
Area: 1723
Amount: 0.105622
Amount Units: pg/ul

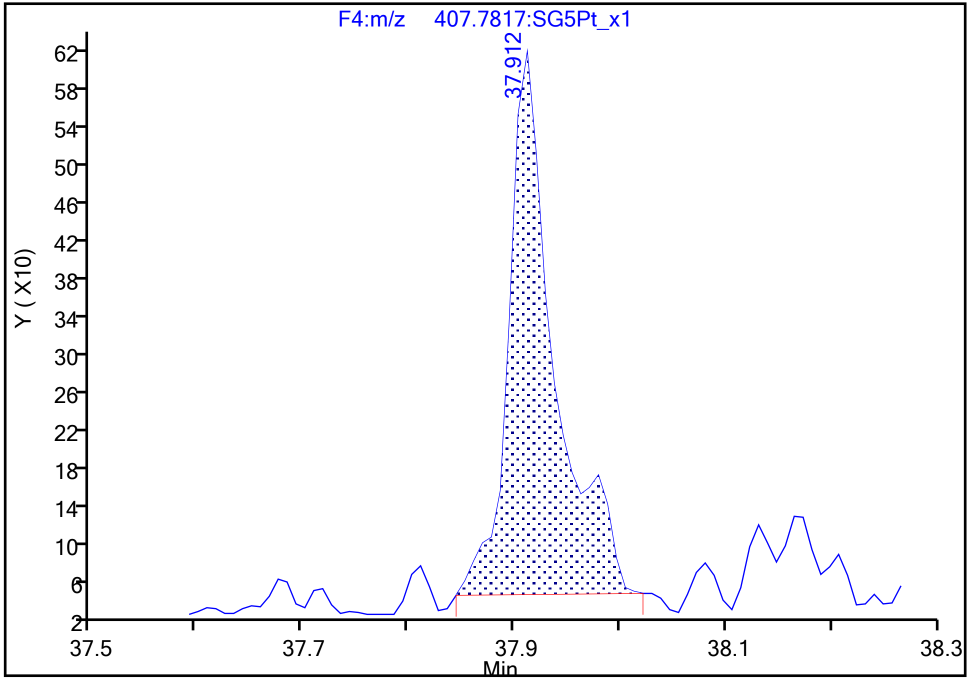

Manual Integration Results

RT: 37.91
Area: 1508
Amount: 0.097263
Amount Units: pg/ul

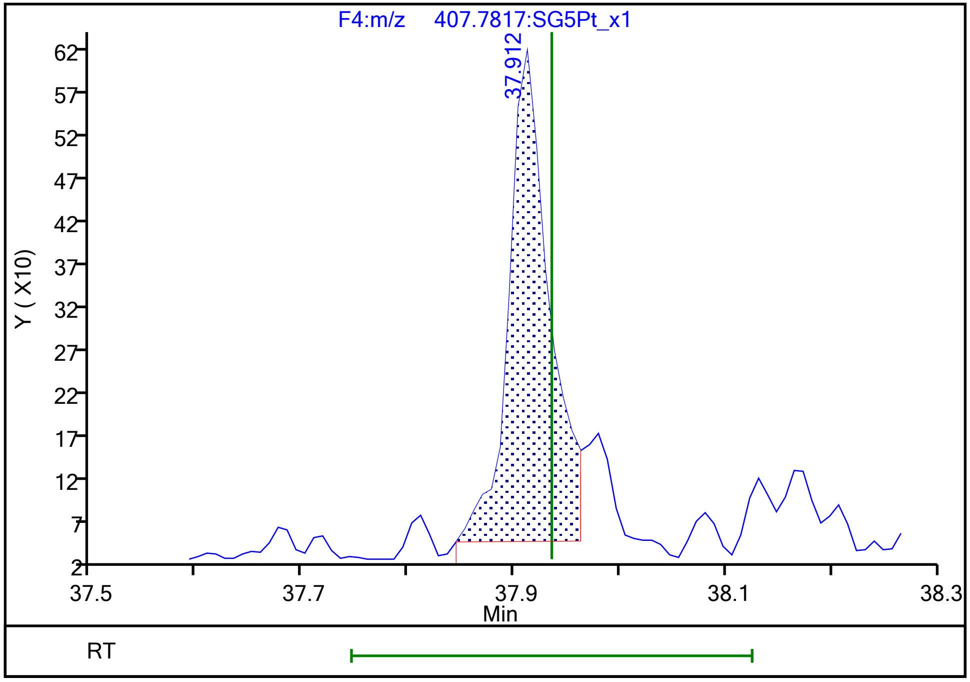

Reviewer: dadunj, 12-Oct-2020 09:07:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Injection Date: 10-Oct-2020 07:46:00
Instrument ID: DFS 1
Lims ID: MB 320-417971/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 18
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 37.92
Area: 1436
Amount: 0.105622
Amount Units: pg/ul

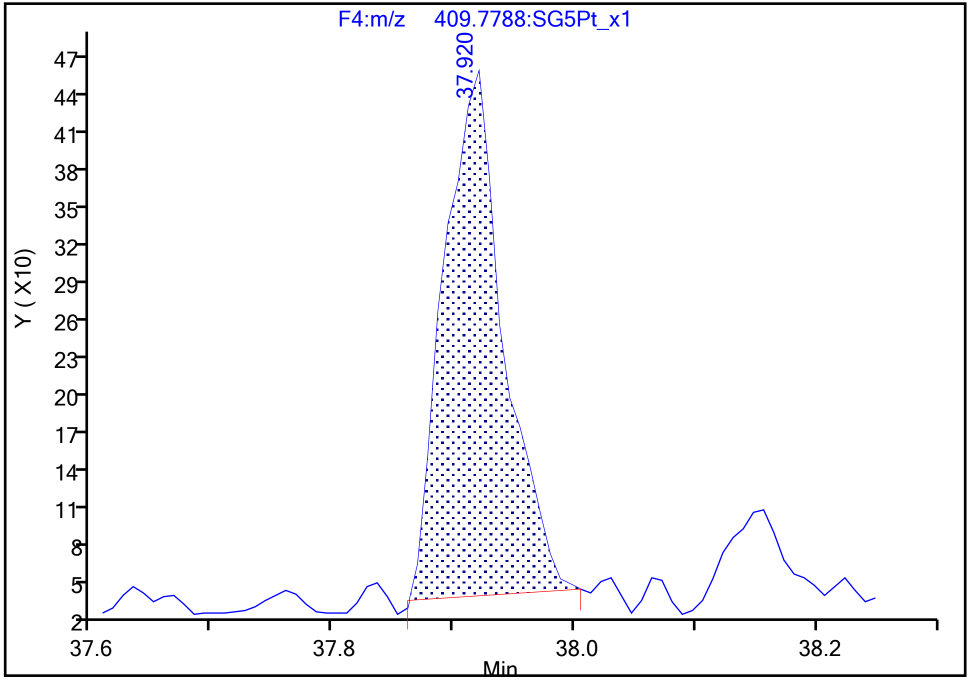

Manual Integration Results

RT: 37.92
Area: 1401
Amount: 0.097263
Amount Units: pg/ul

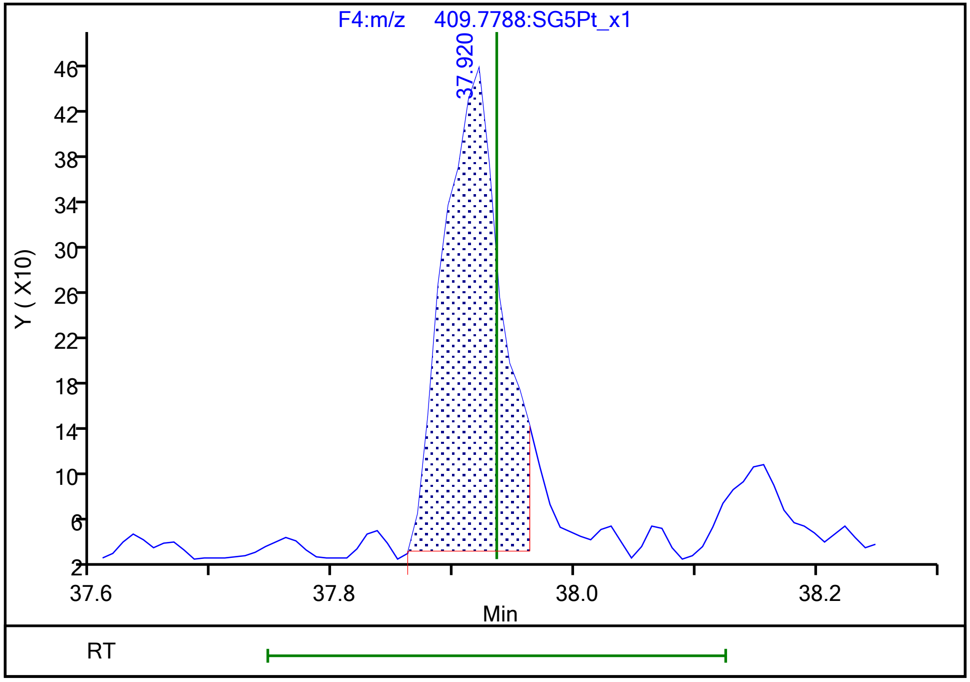

Reviewer: dadunj, 12-Oct-2020 09:07:56

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT: 39.24
Area: 1018
Amount: 0.078016
Amount Units: pg/ul

Processing Integration Results

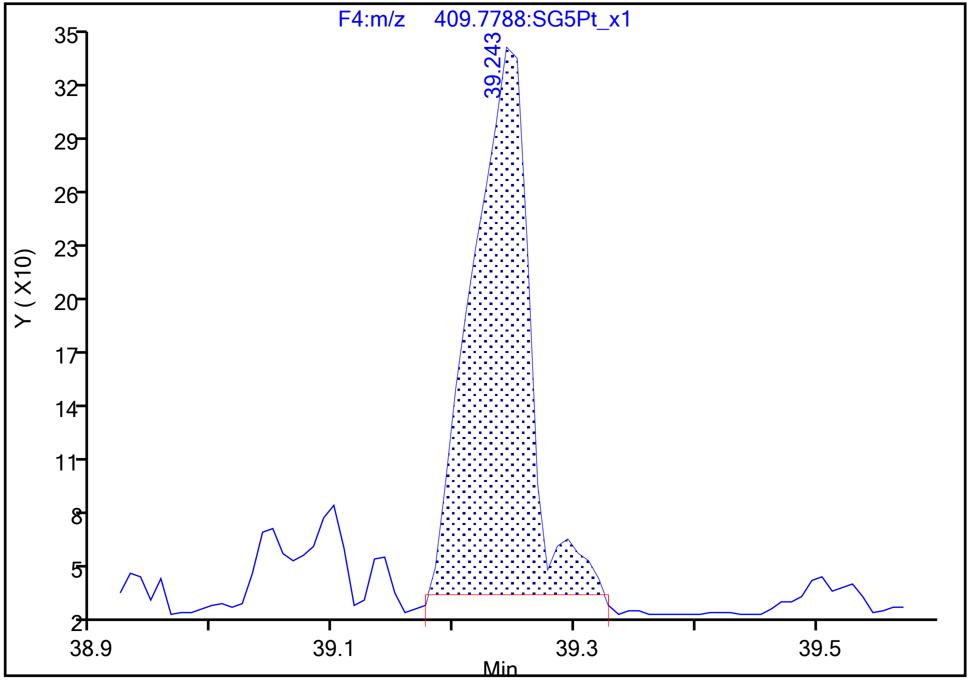

RT: 39.24
Area: 961
Amount: 0.072980
Amount Units: pg/ul

Manual Integration Results

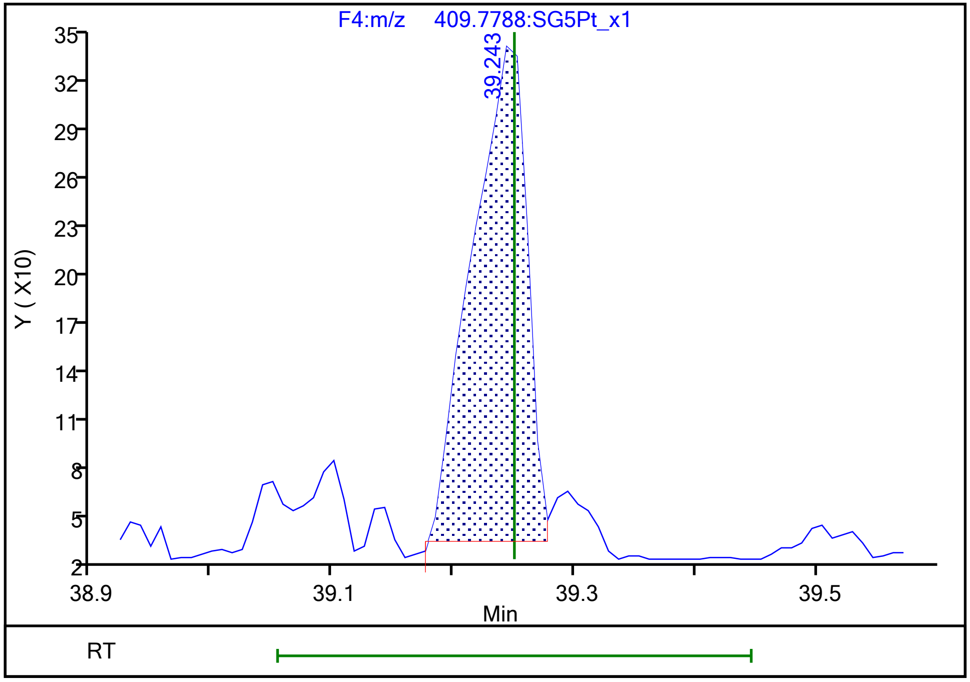

Reviewer: dadunj, 12-Oct-2020 09:08:00

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT: 39.24
Area: 903
Amount: 0.078016
Amount Units: pg/ul

Processing Integration Results

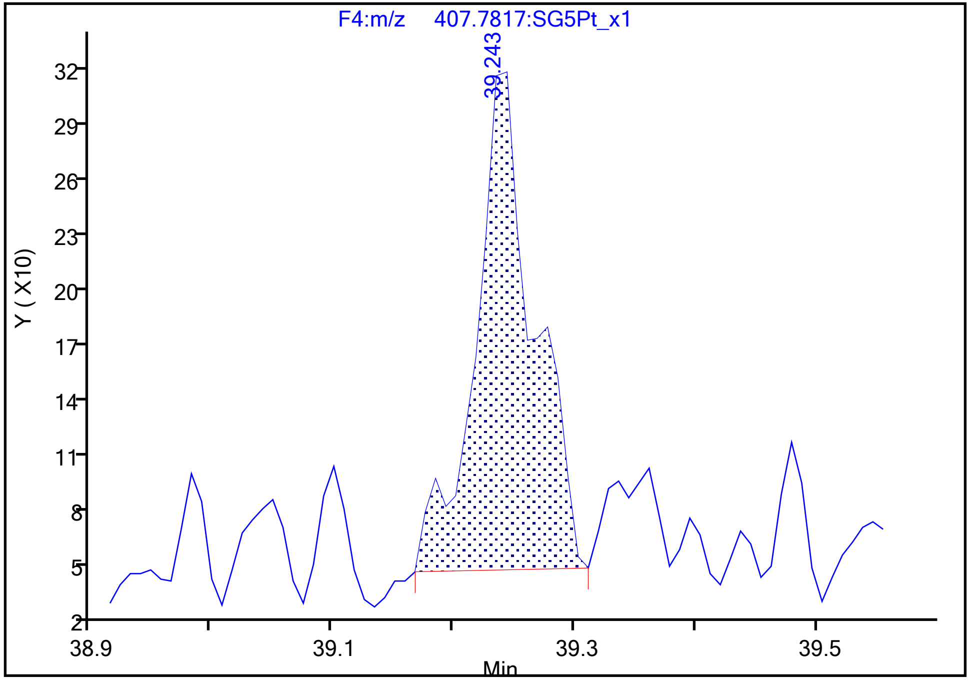

RT: 39.24
Area: 836
Amount: 0.072980
Amount Units: pg/ul

Manual Integration Results

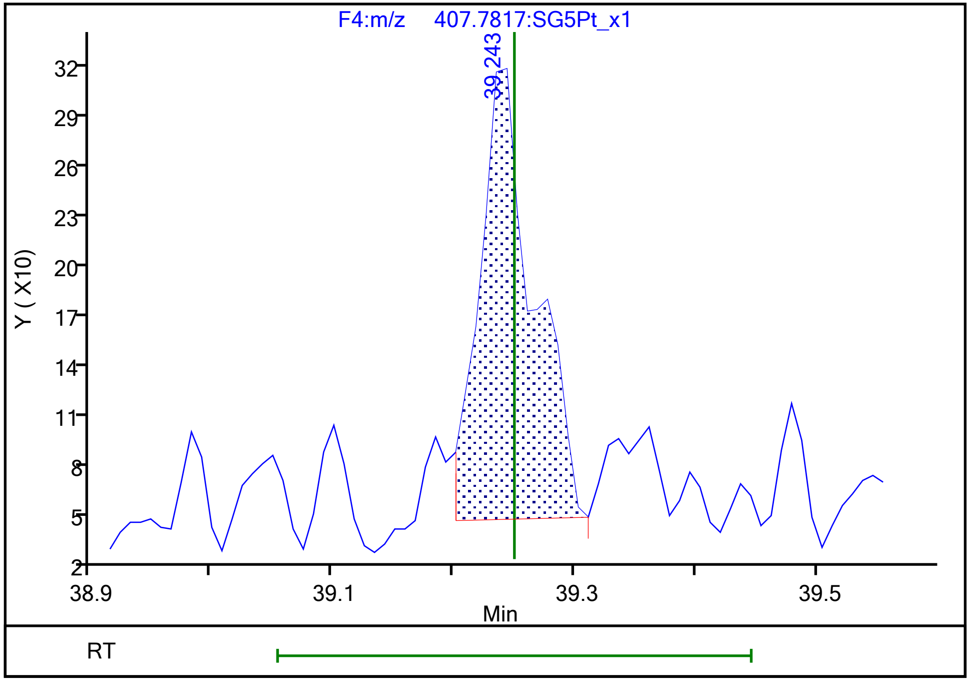

Reviewer: dadunj, 12-Oct-2020 09:08:02
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d
Injection Date: 10-Oct-2020 07:46:00
Instrument ID: DFS 1
Lims ID: MB 320-417971/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 18
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 1

RT: 41.45
Area: 1388
Amount: 0.159749
Amount Units: pg/ul

Processing Integration Results

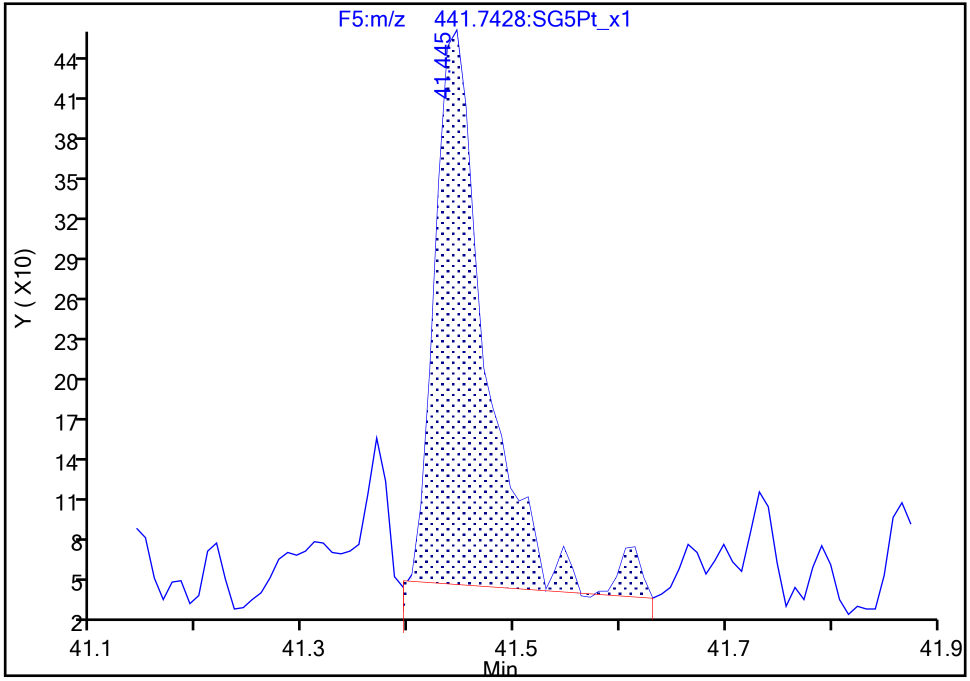

RT: 41.45
Area: 1197
Amount: 0.149954
Amount Units: pg/ul

Manual Integration Results

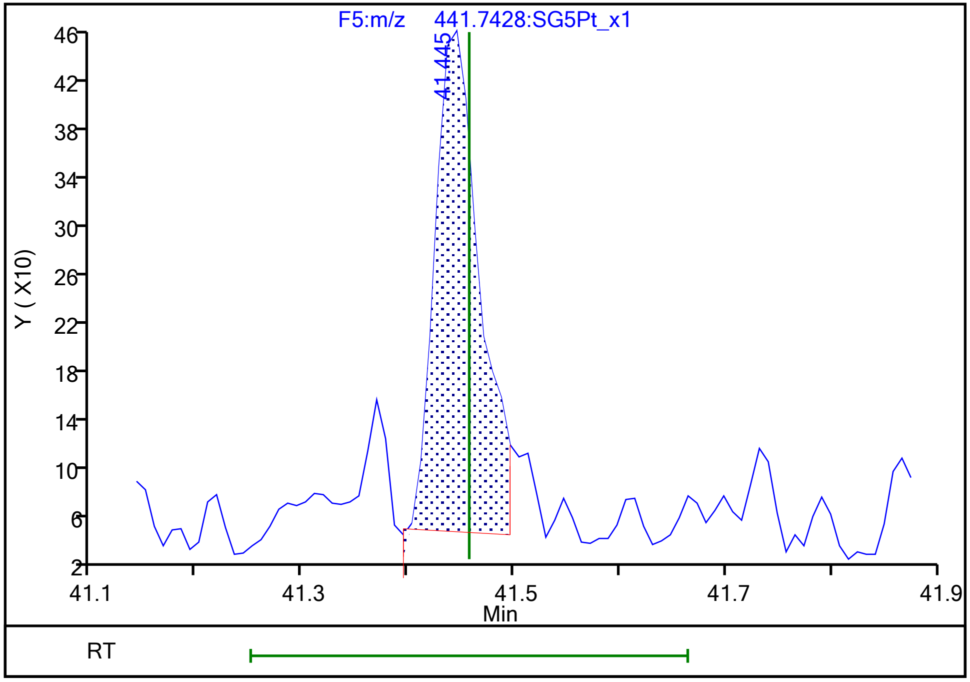

Reviewer: dadunj, 12-Oct-2020 09:08:16

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25
Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT: 41.38
Area: 1922
Amount: 0.266301
Amount Units: pg/ul

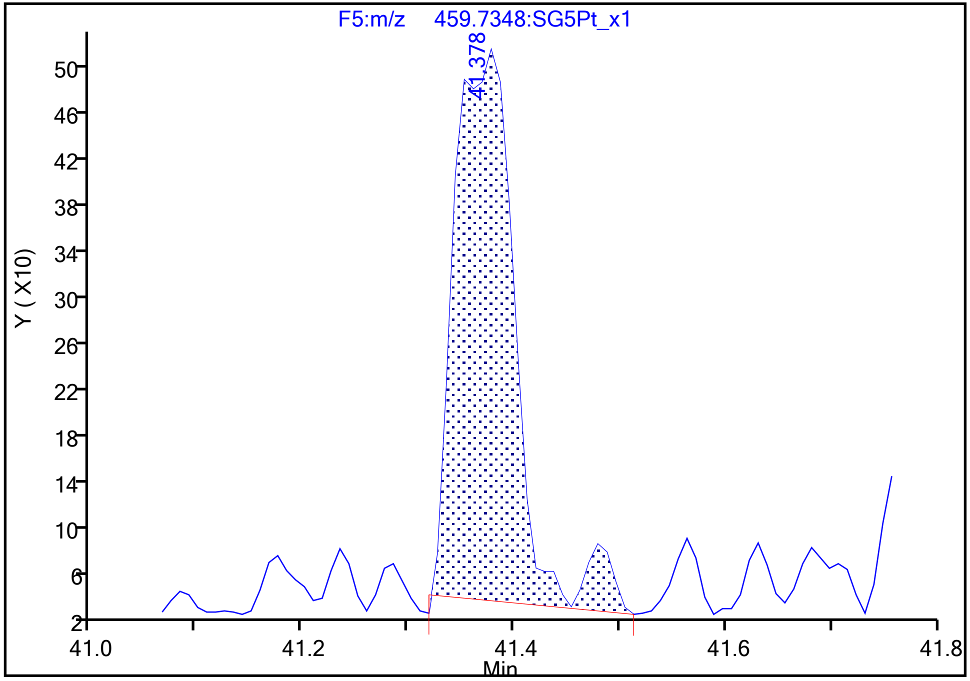

Manual Integration Results

RT: 41.38
Area: 1774
Amount: 0.254681
Amount Units: pg/ul

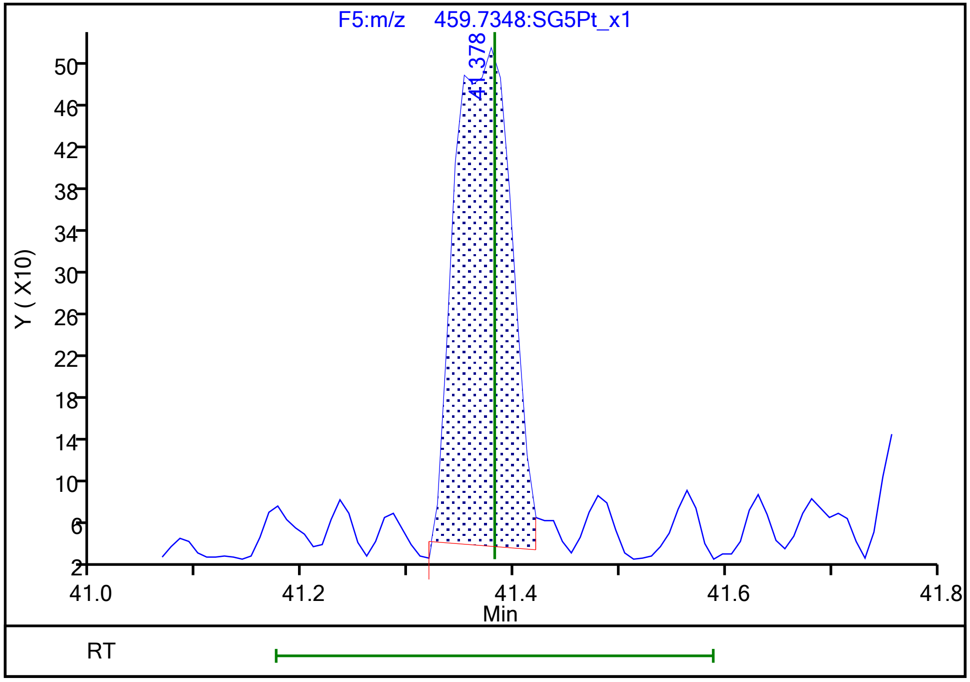

Reviewer: dadunj, 12-Oct-2020 09:08:20
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d				
Injection Date:	10-Oct-2020 07:46:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-417971/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 1

RT: 41.36
Area: 2180
Amount: 0.266301
Amount Units: pg/ul

Processing Integration Results

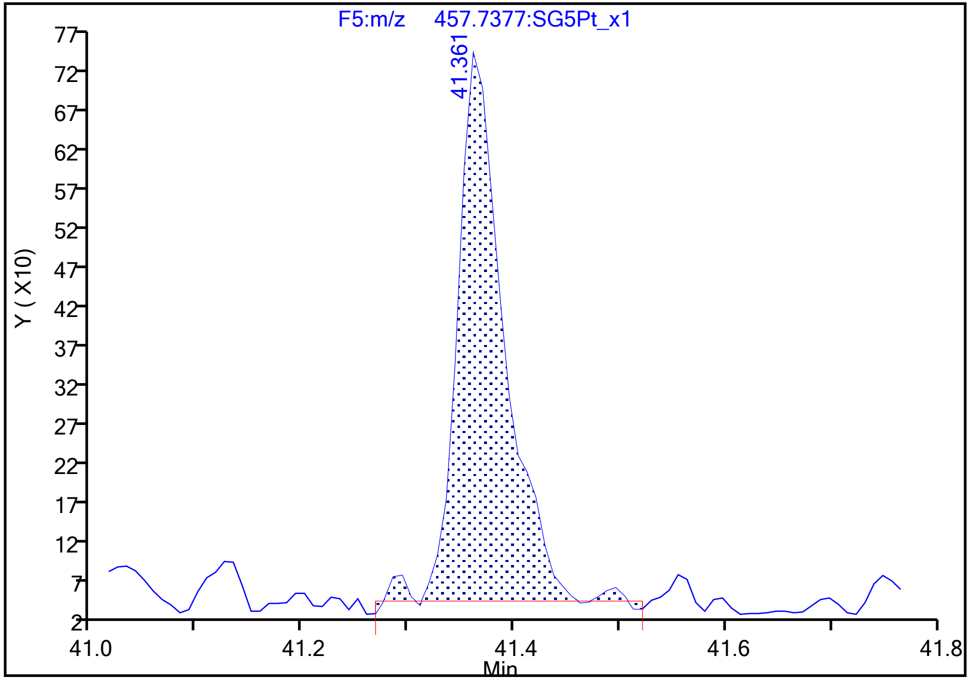

RT: 41.36
Area: 2149
Amount: 0.254681
Amount Units: pg/ul

Manual Integration Results

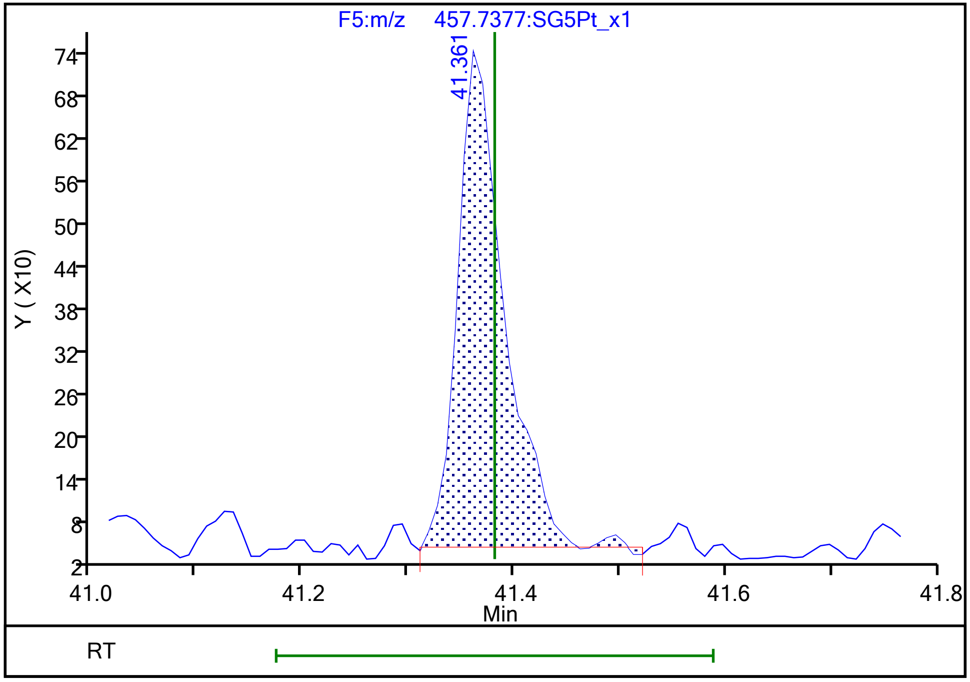

Reviewer: dadunj, 12-Oct-2020 09:08:21

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d		
Injection Date:	10-Oct-2020 07:46:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	18
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

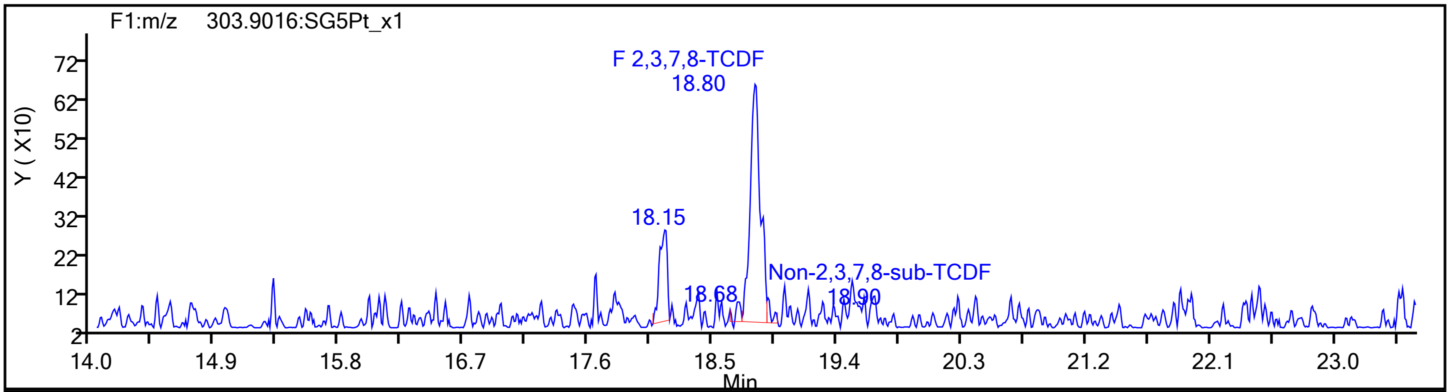

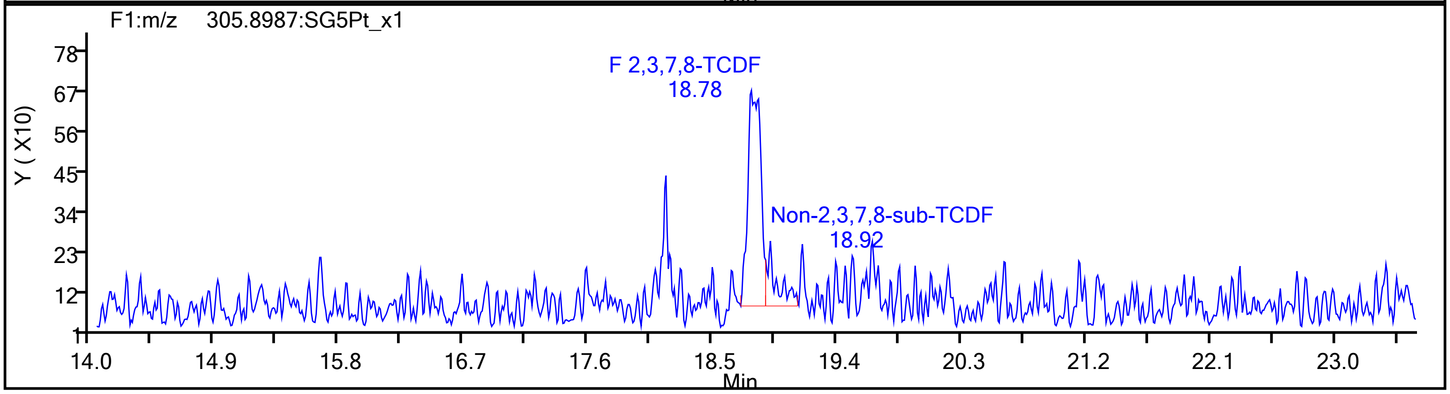

TCDF Standards

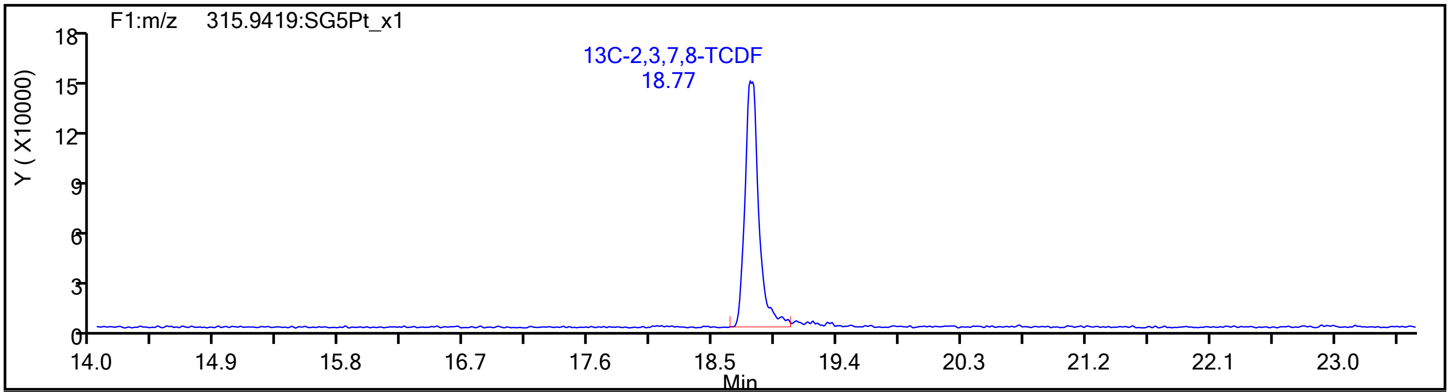

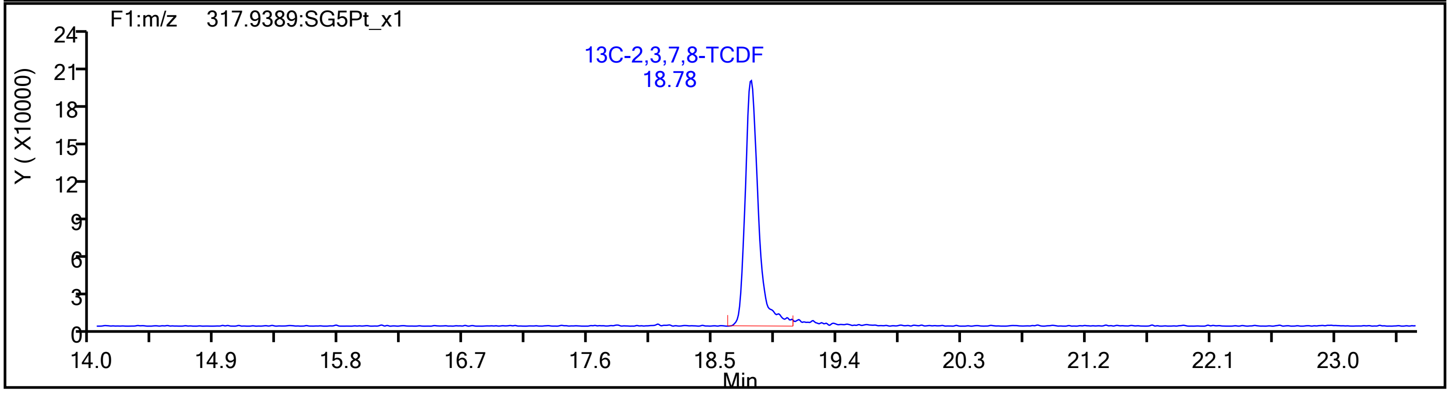

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d

Injection Date: 10-Oct-2020 07:46:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 18

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

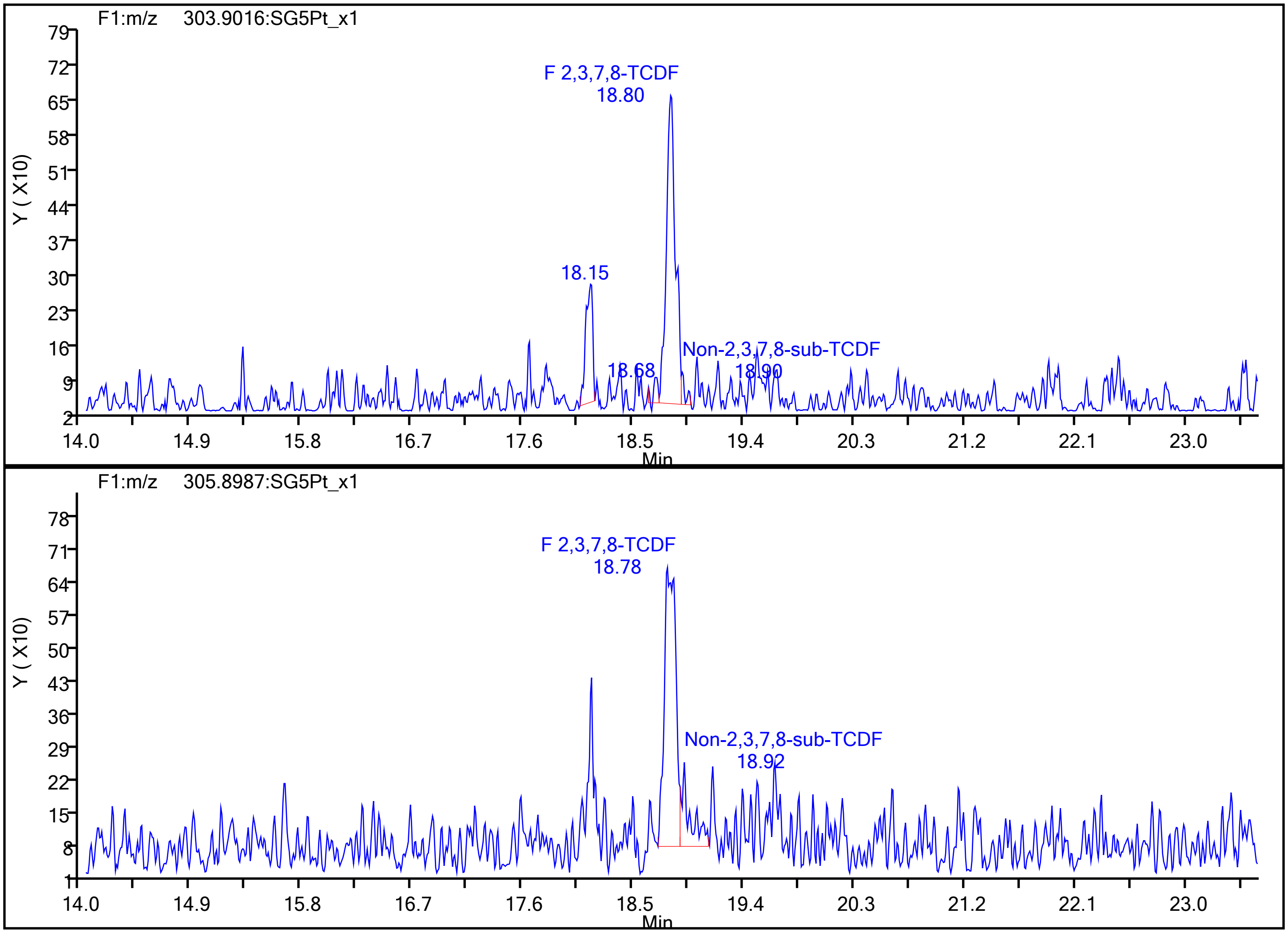

TCDF Interference Mass

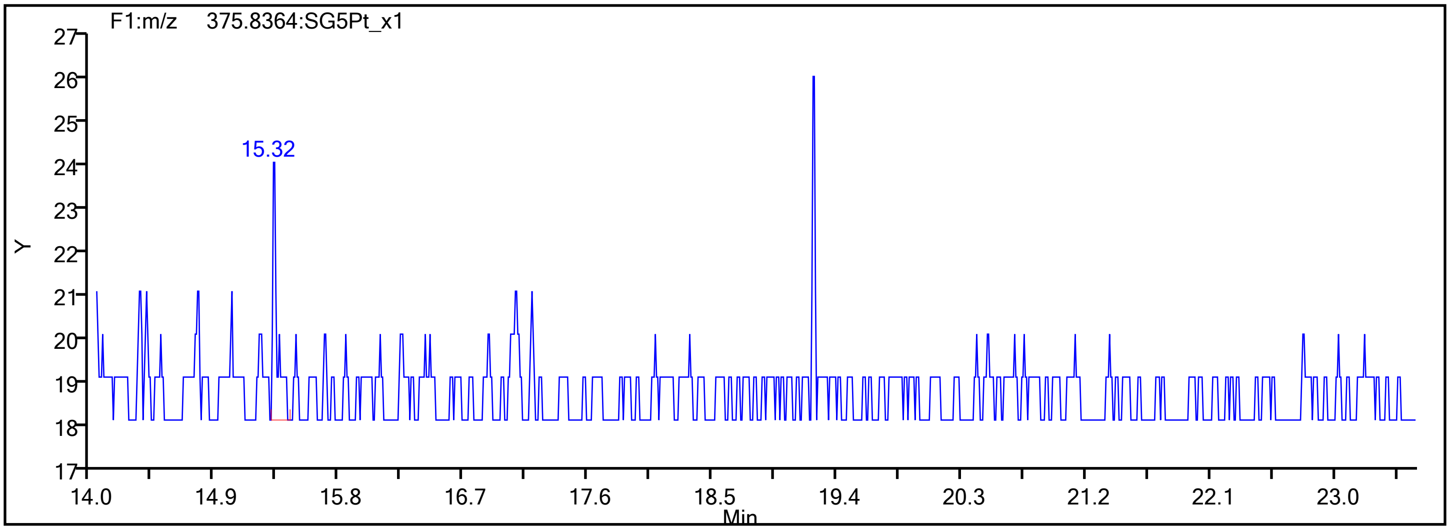

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d

Injection Date: 10-Oct-2020 07:46:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 18

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

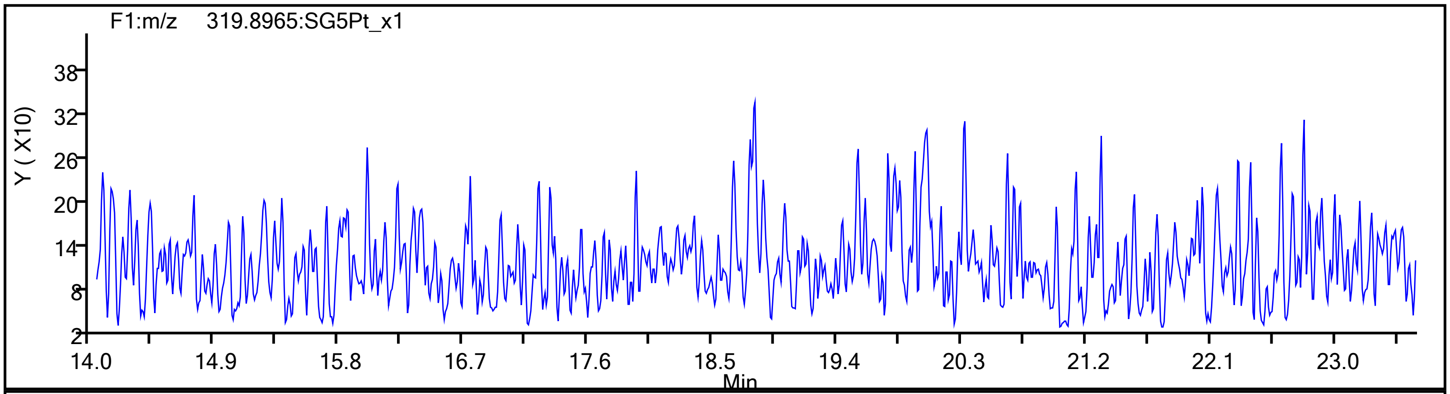

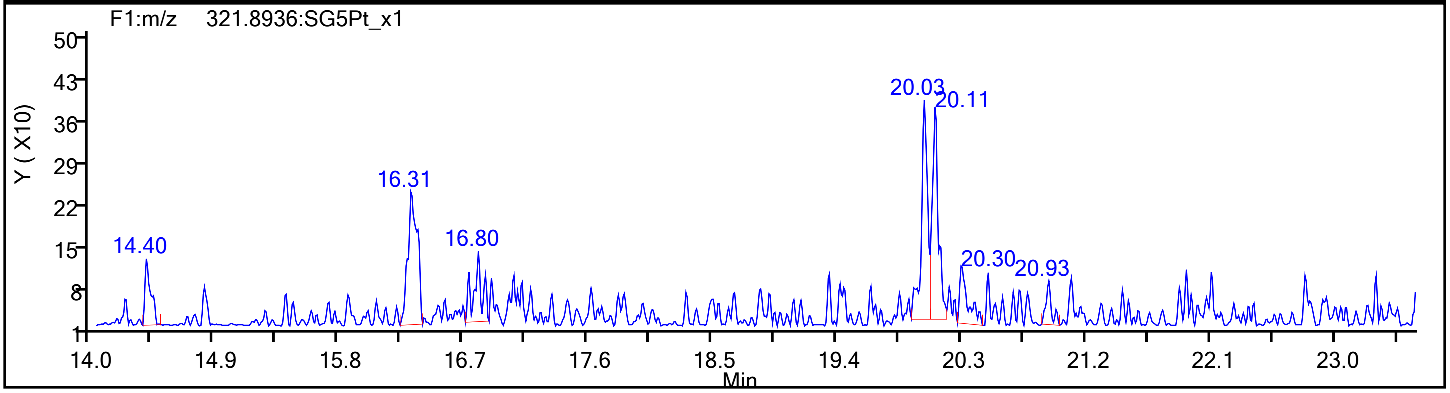

TCDD Standards

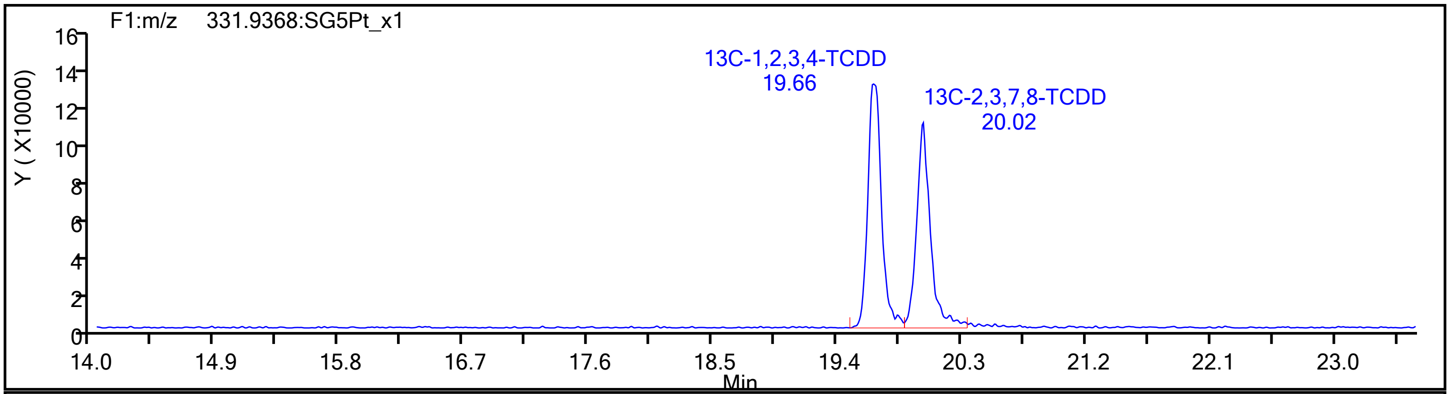

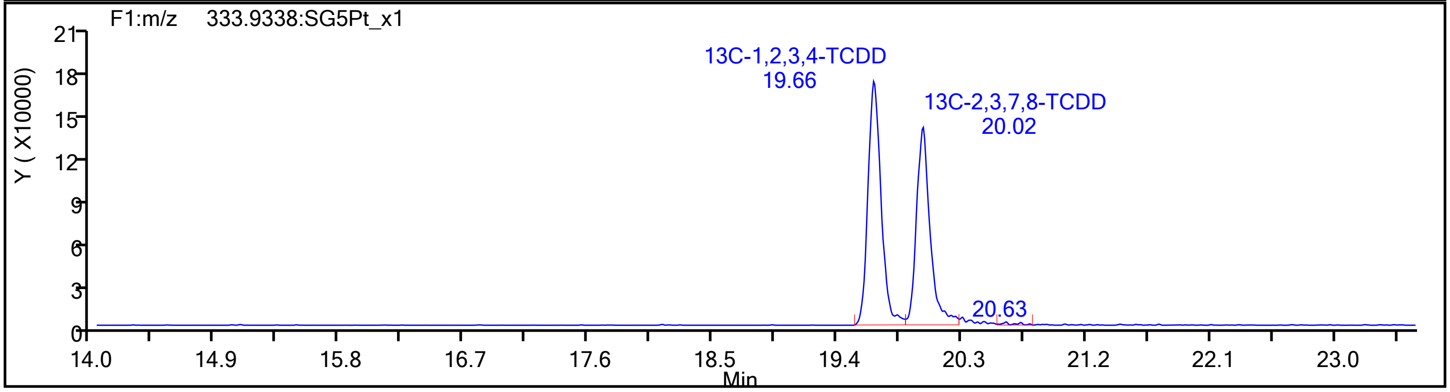

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d		
Injection Date:	10-Oct-2020 07:46:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	18
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

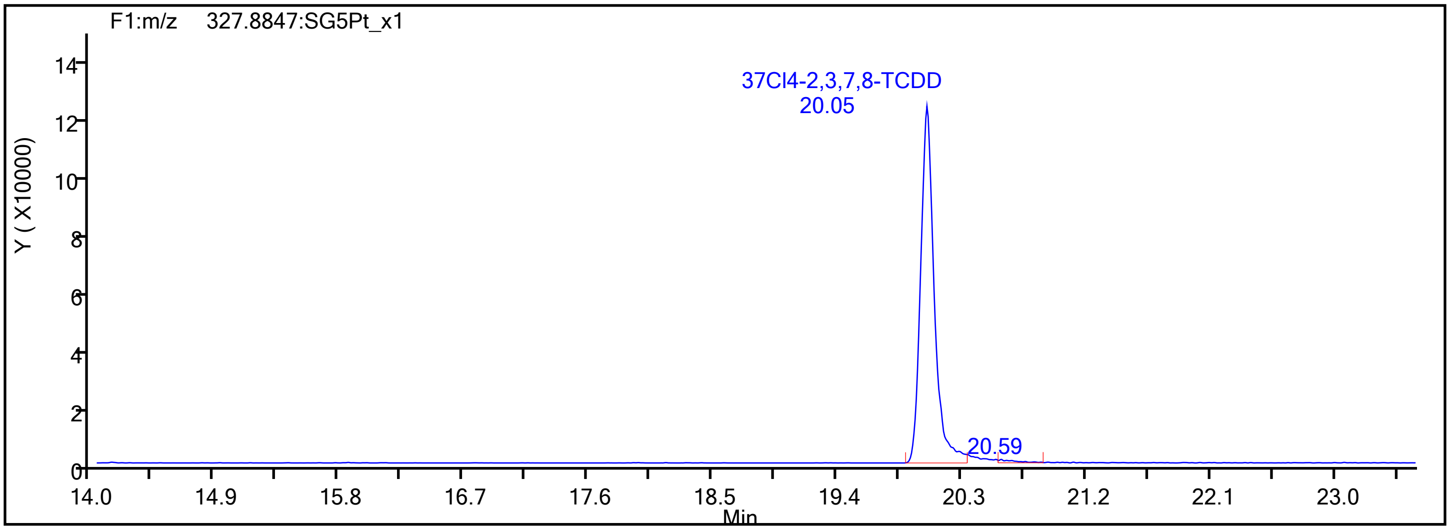

37Cl4-TCDD Standards

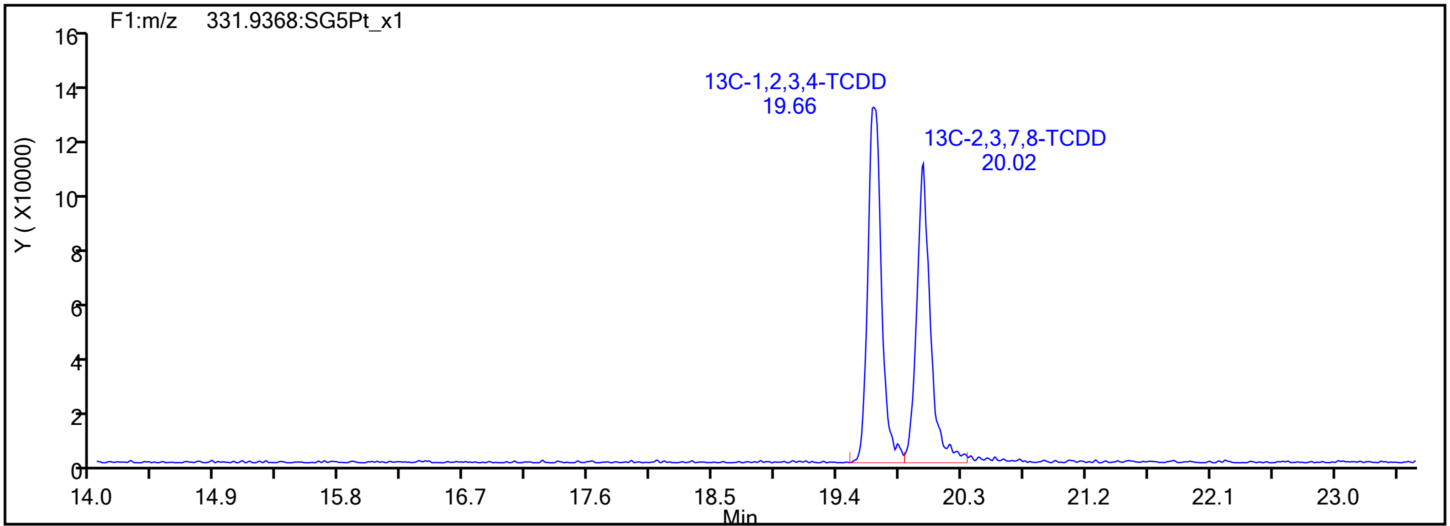

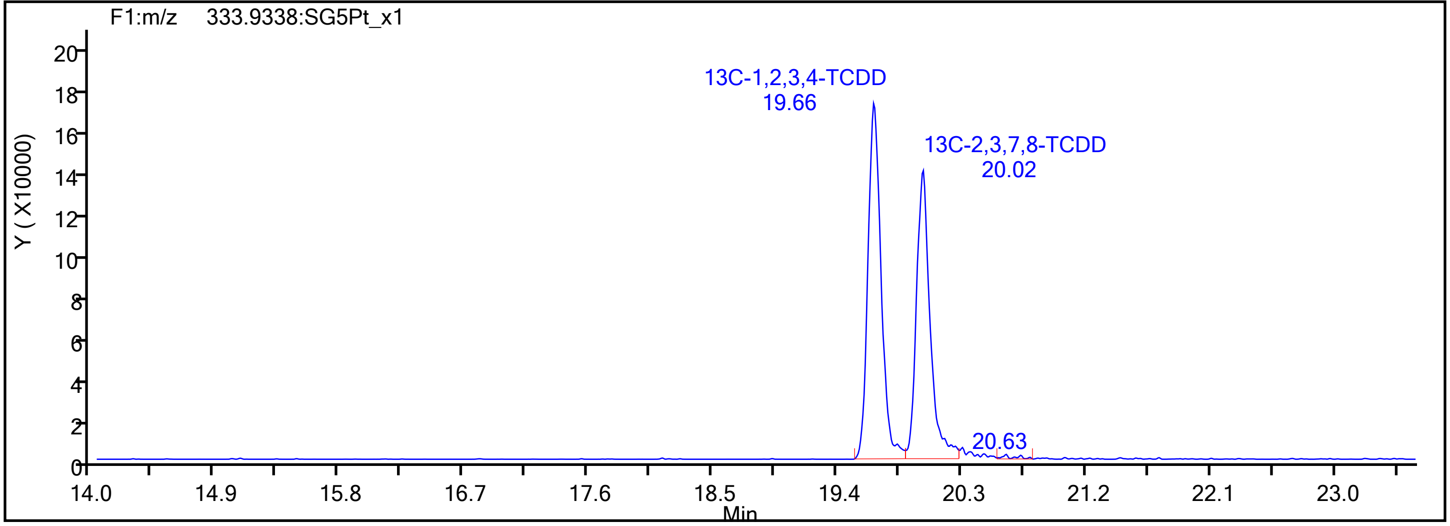

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d		
Injection Date:	10-Oct-2020 07:46:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	18
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

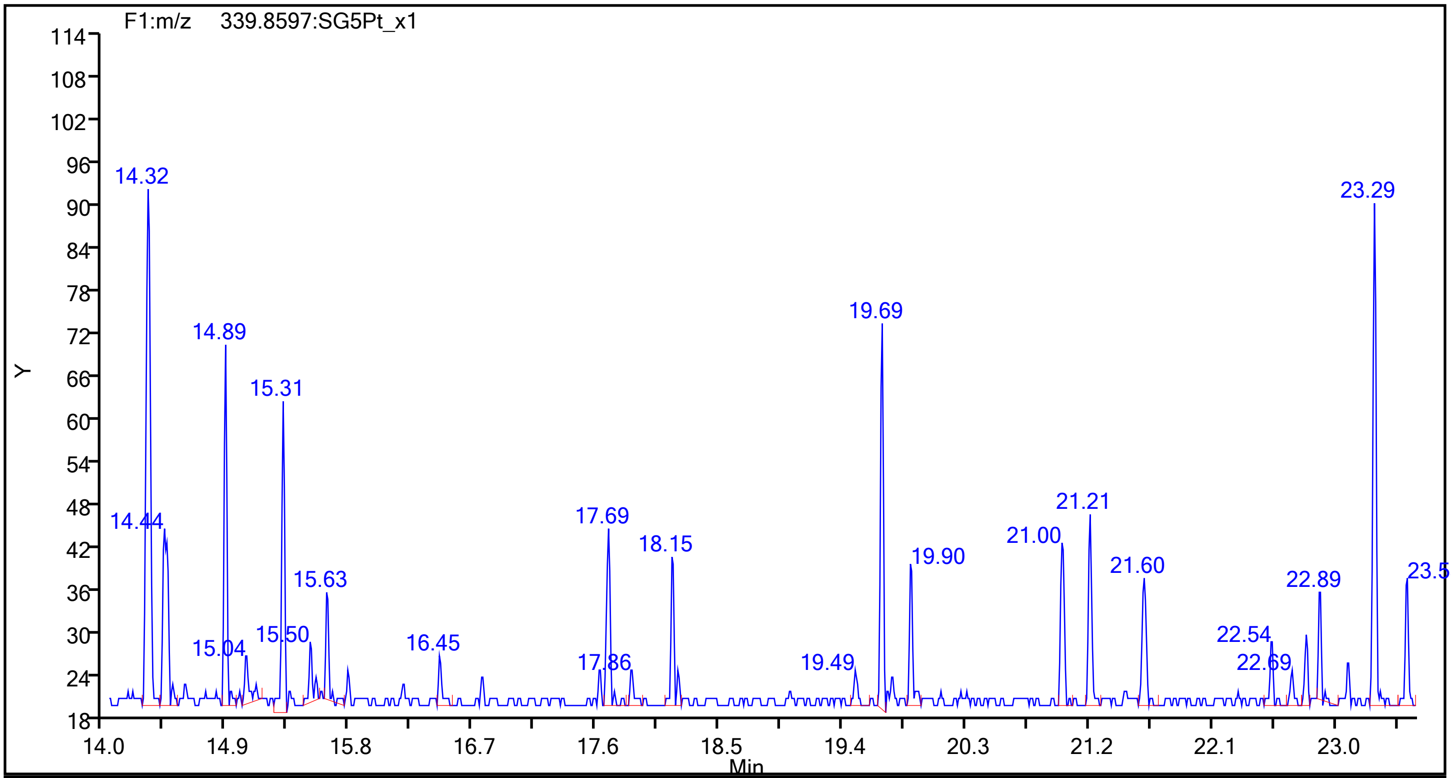

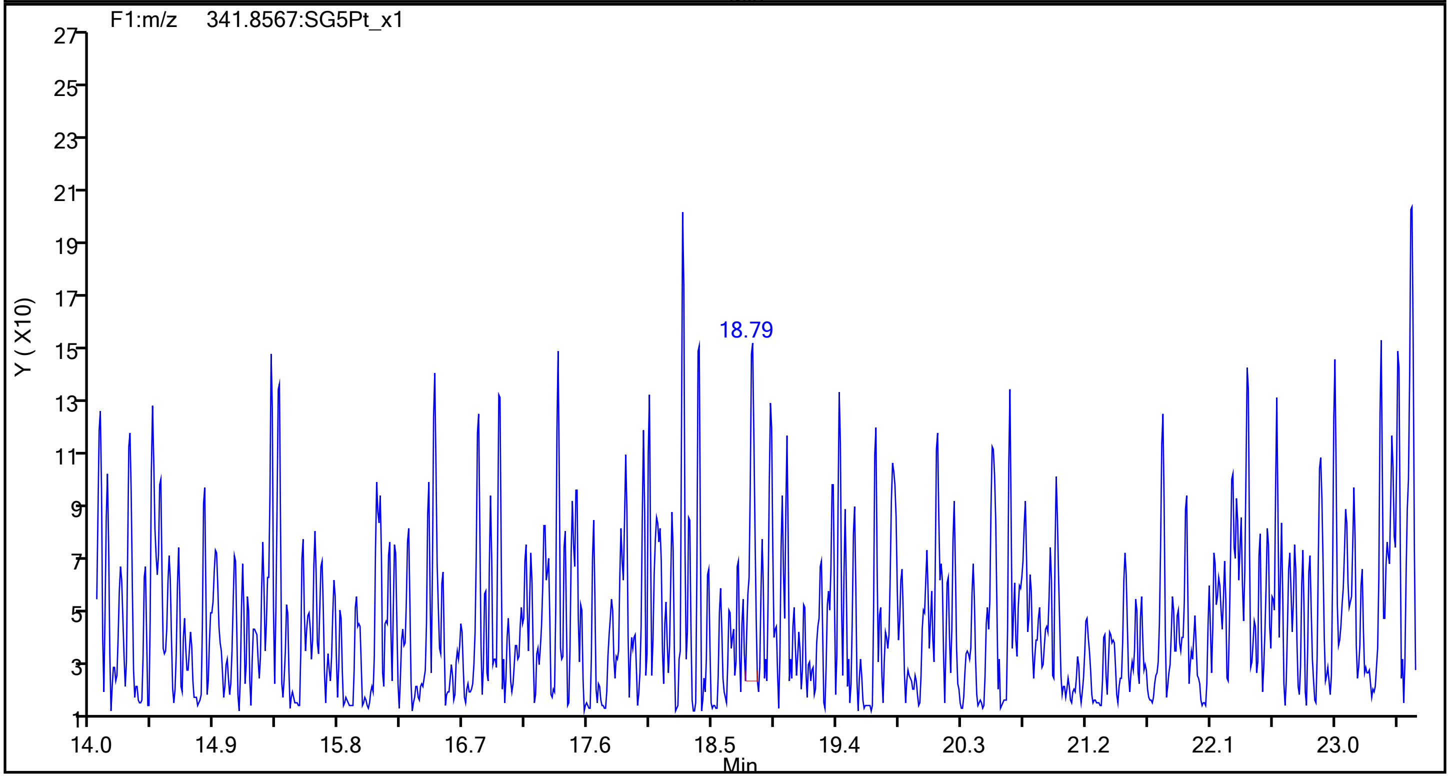

Report Date: 12-Oct-2020 09:09:25　　Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_20.d		
Injection Date:	10-Oct-2020 07:46:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	18
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

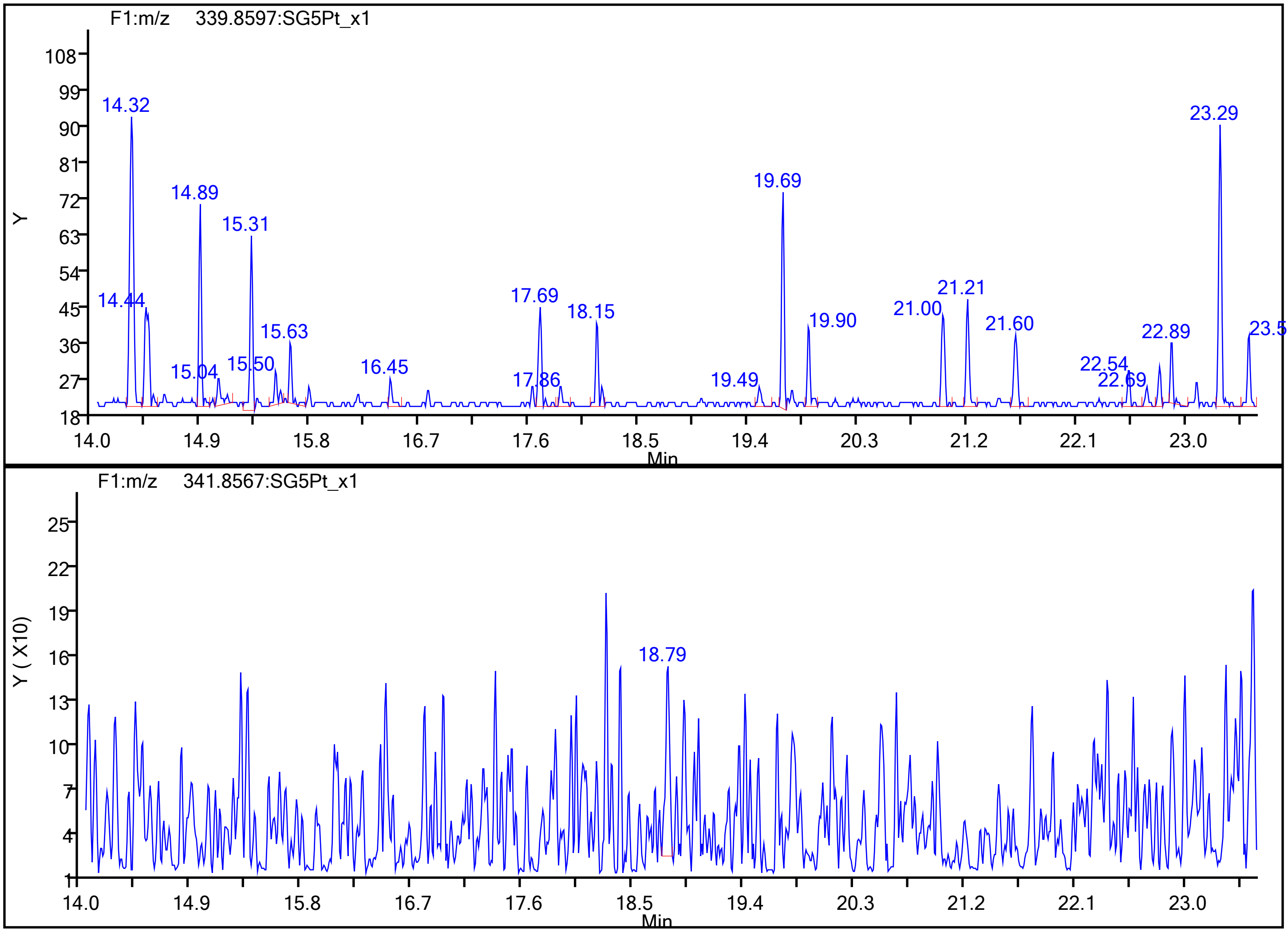

F1 PeCDFs Interference Mass

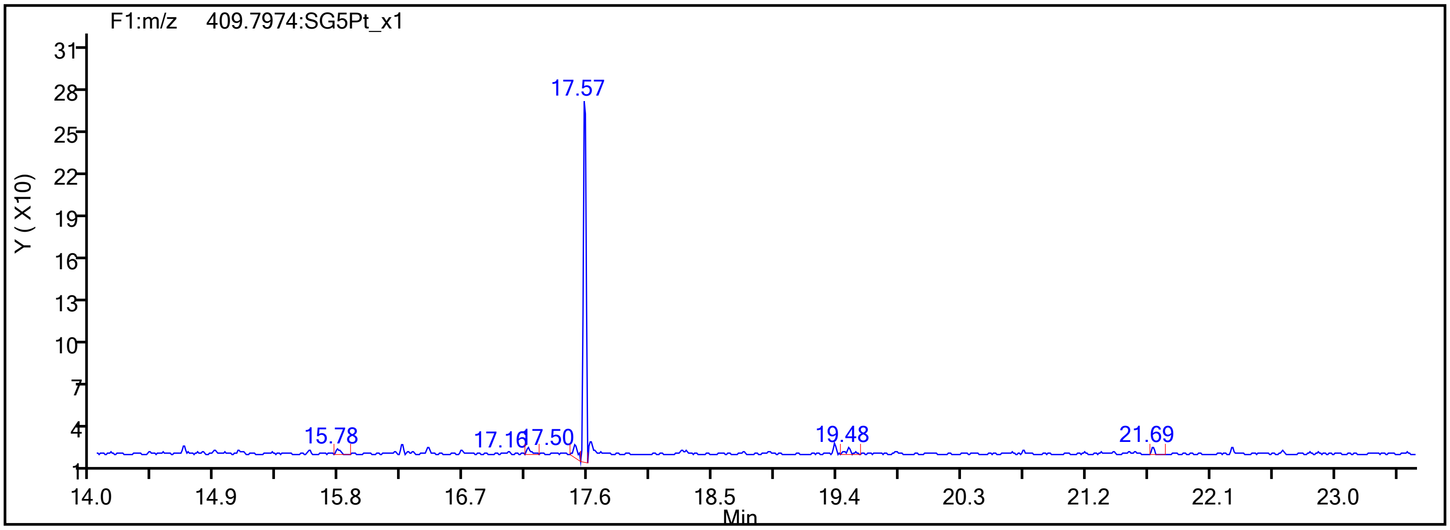

Report Date: 12-Oct-2020 09:09:25 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Sample Line#: 18
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

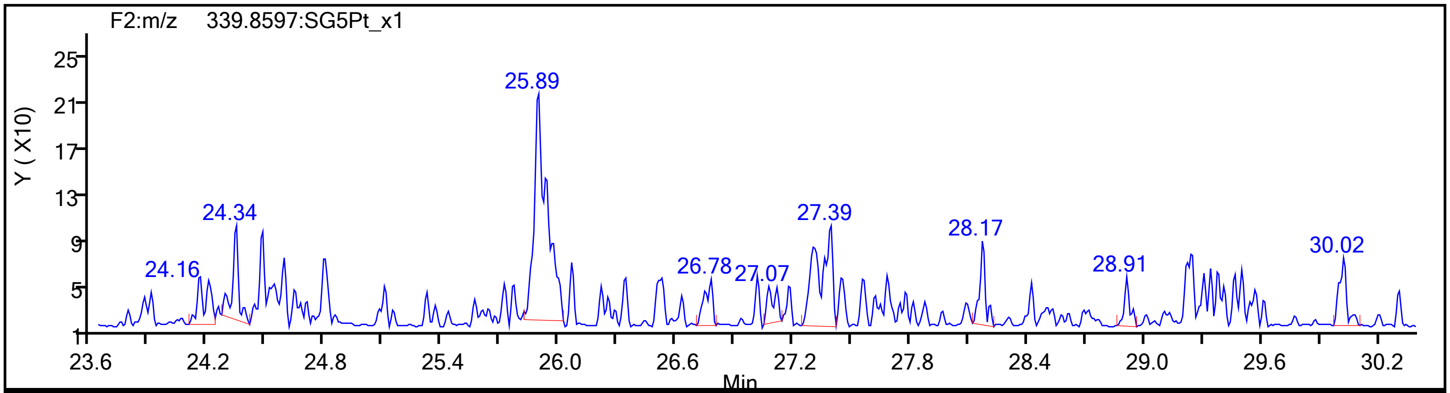

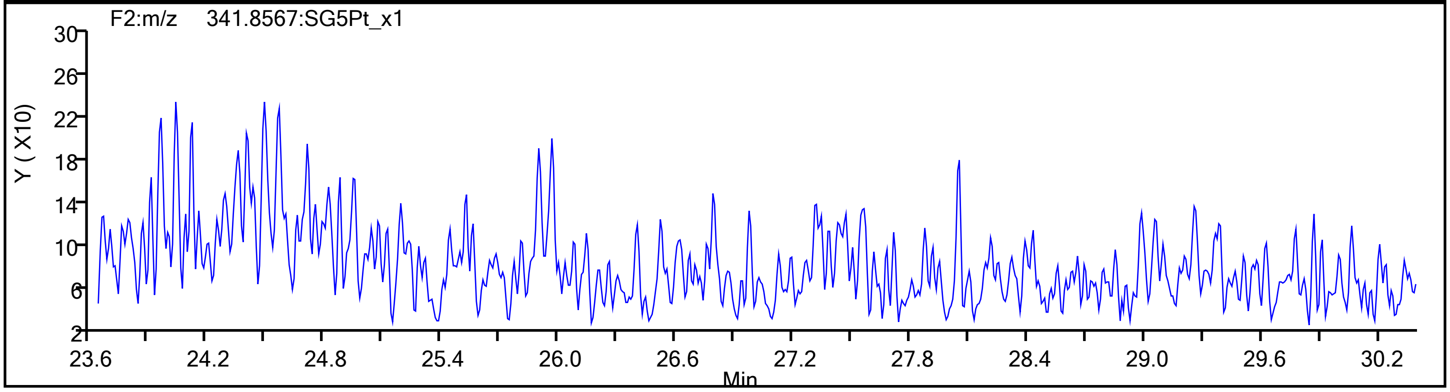

PeCDF Standards

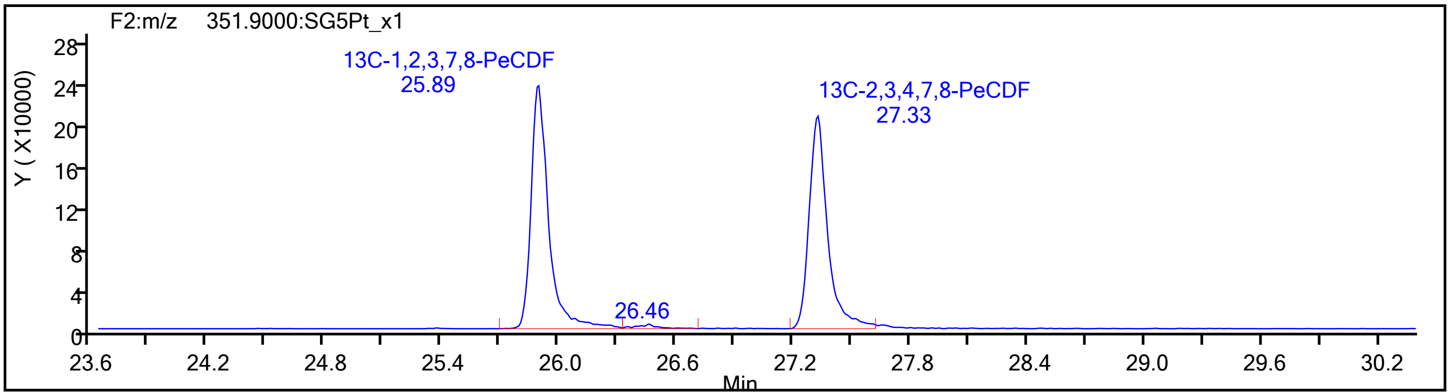

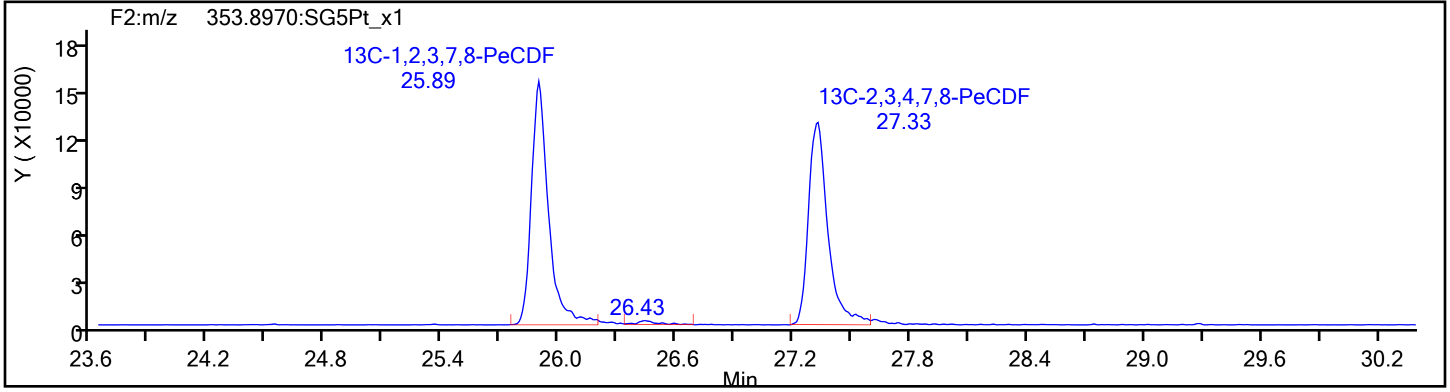

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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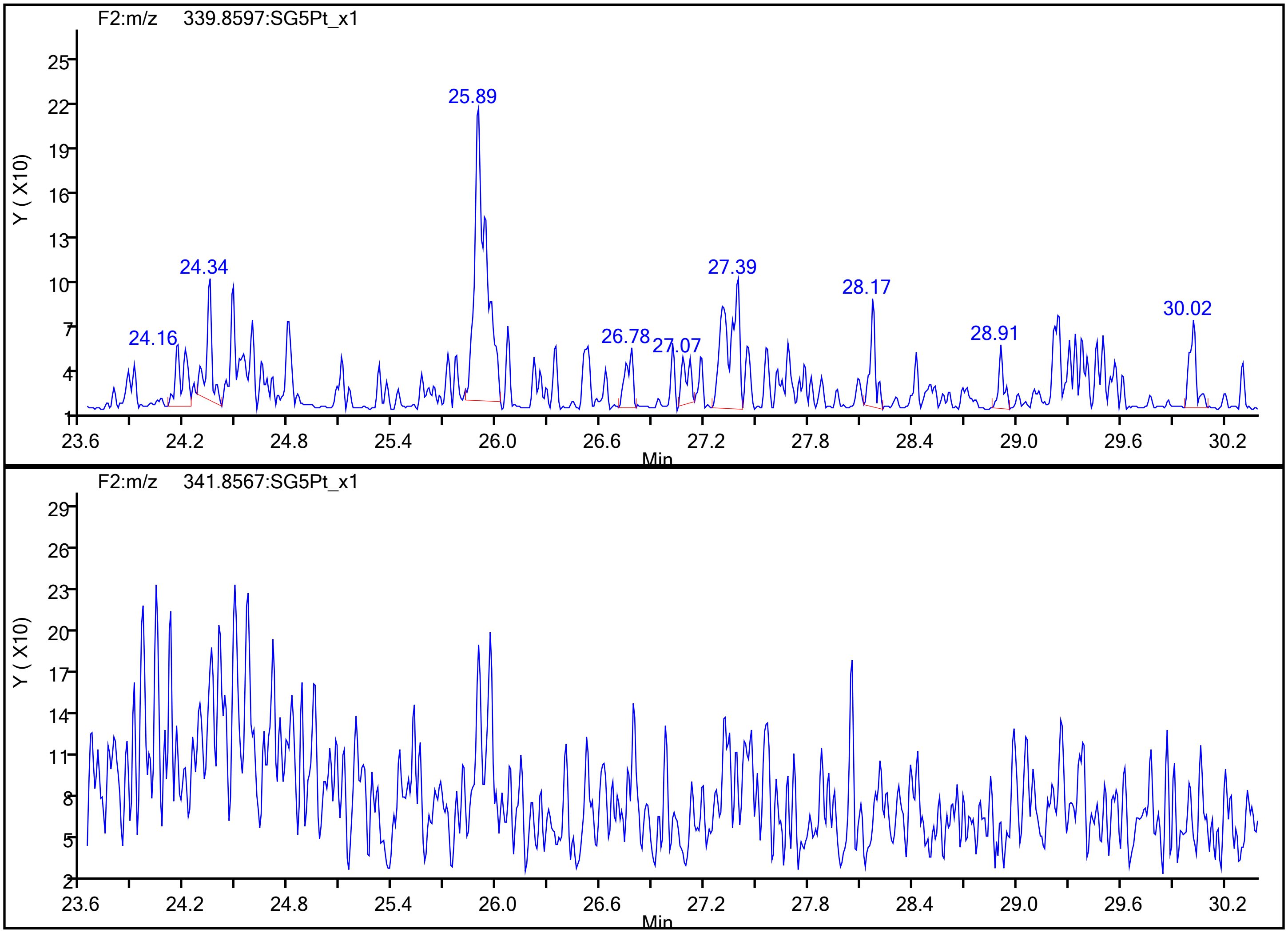

PeCDF Interference Mass

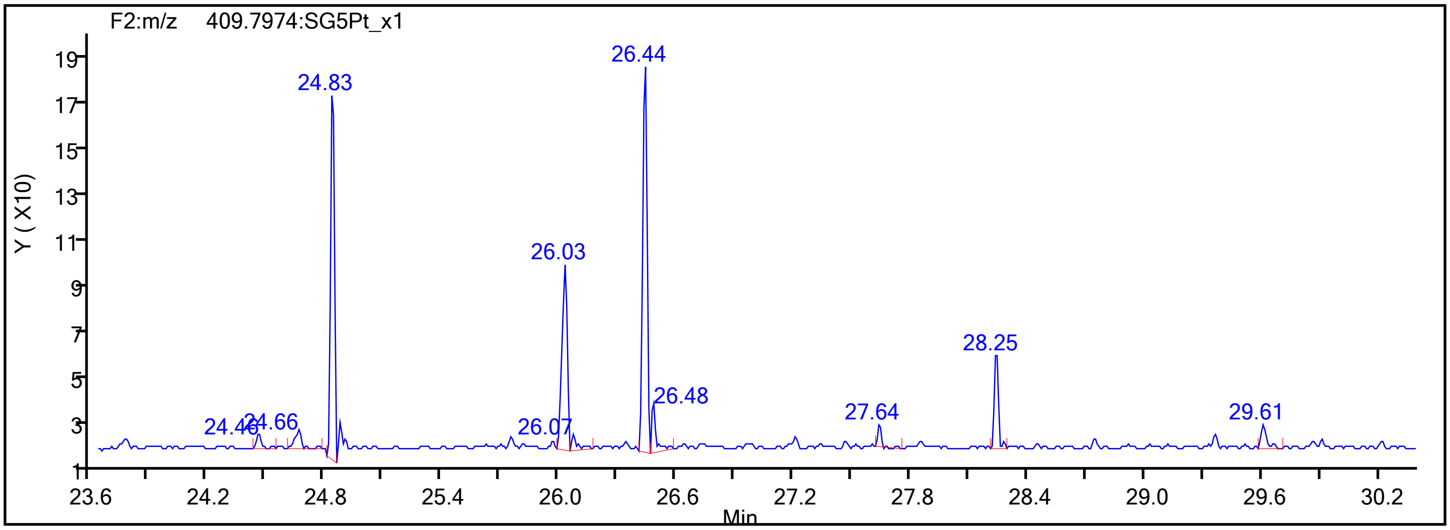

Report Date: 12-Oct-2020 09:09:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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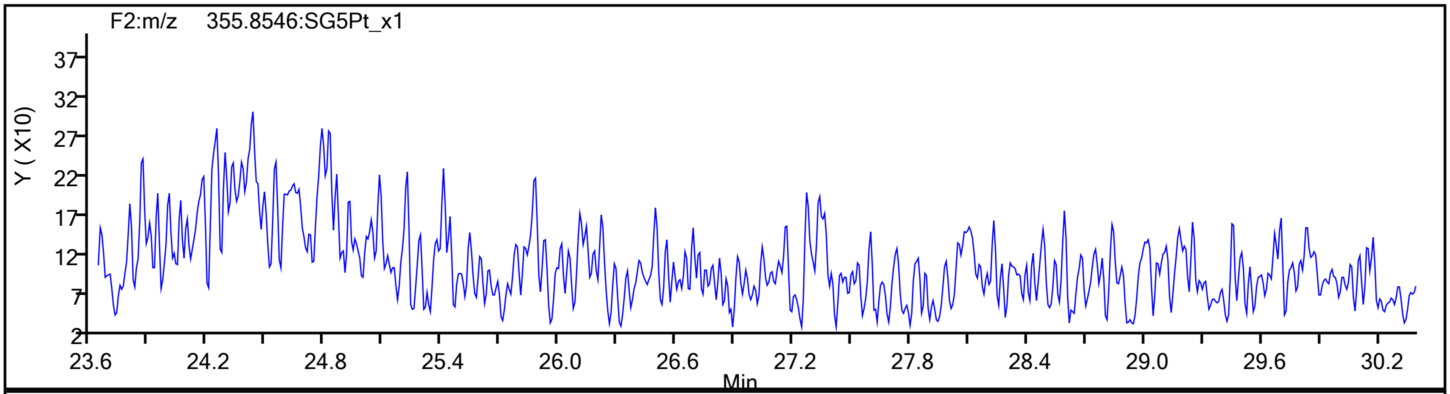

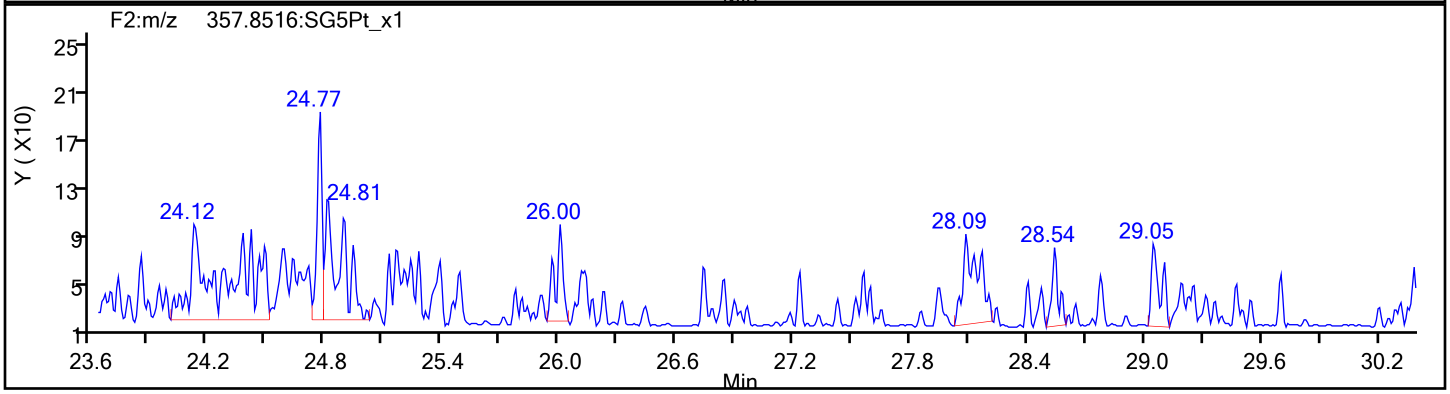

PeCDD Standards

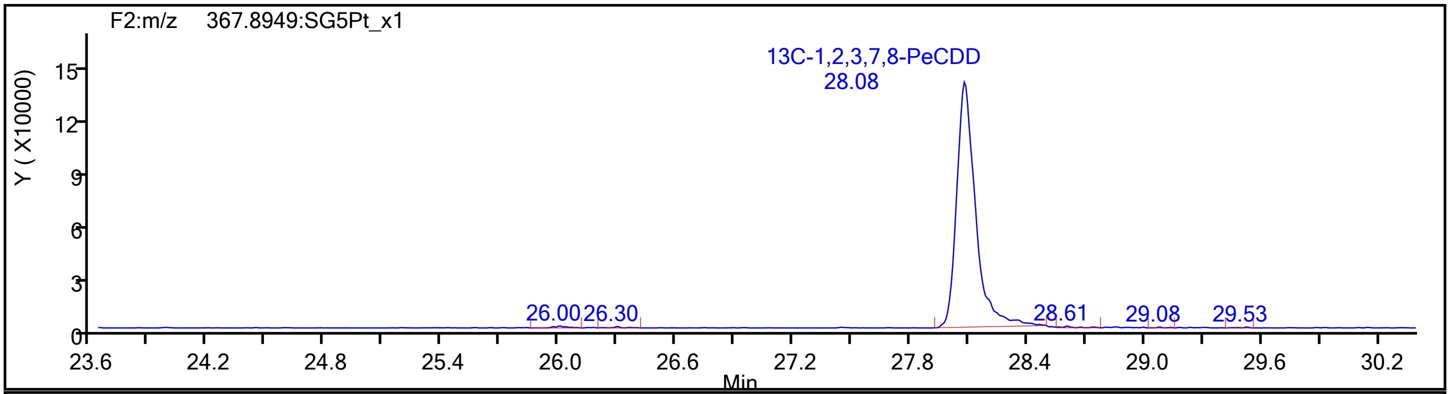

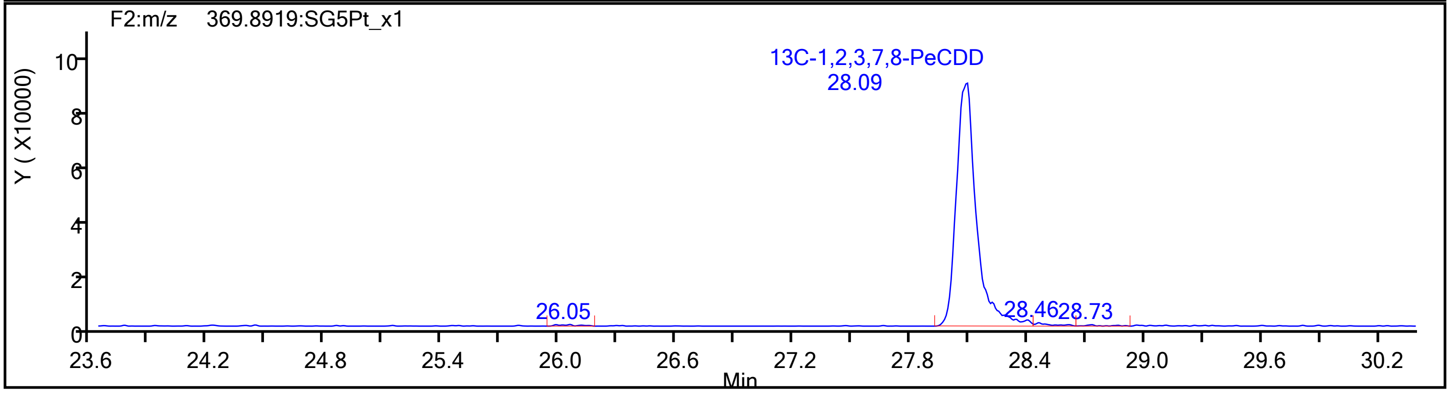

Report Date: 12-Oct-2020 09:09:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HxCDF

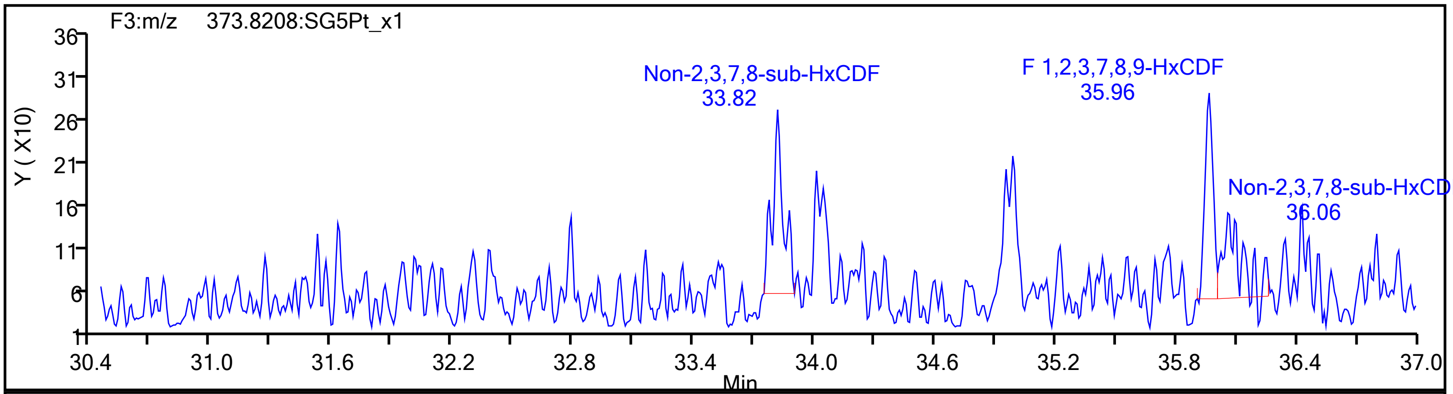

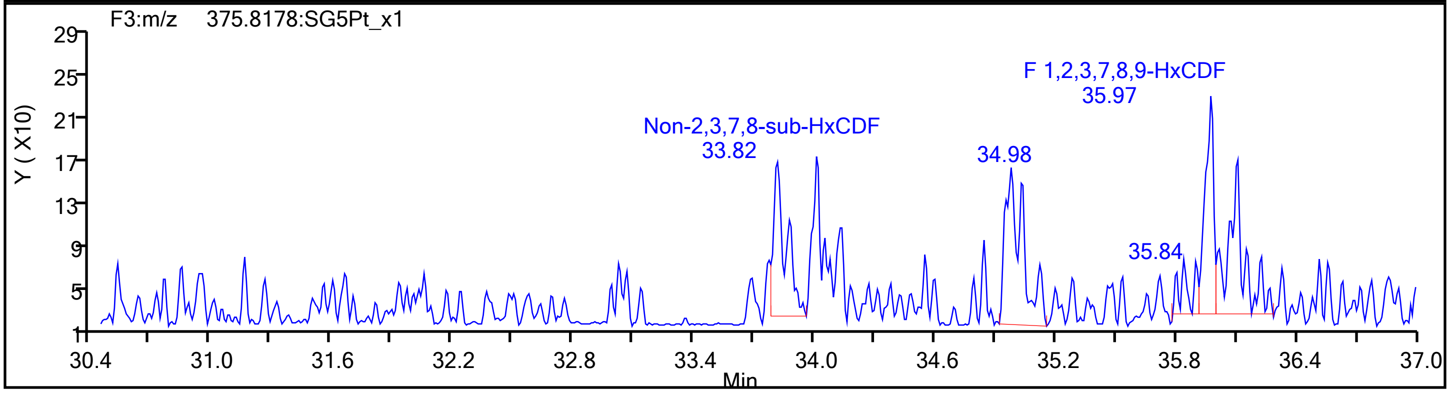

HxCDF Standards

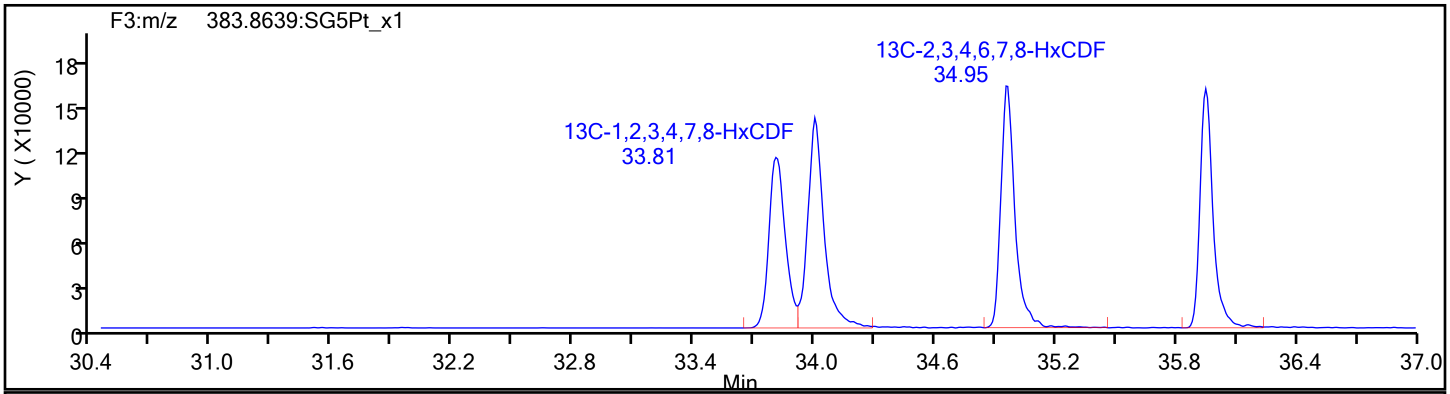

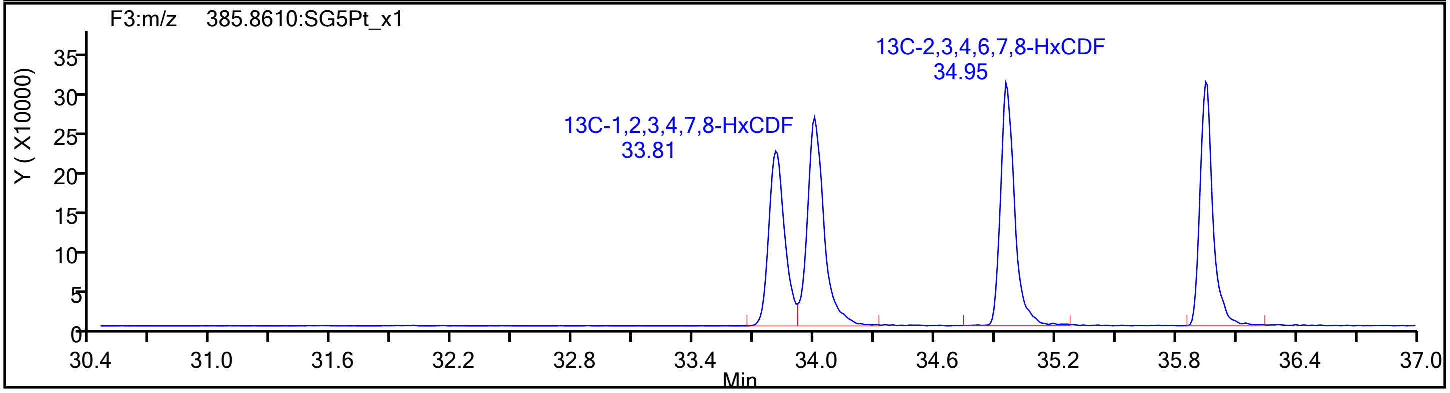

Eurofins TestAmerica, Sacramento

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HxCDF

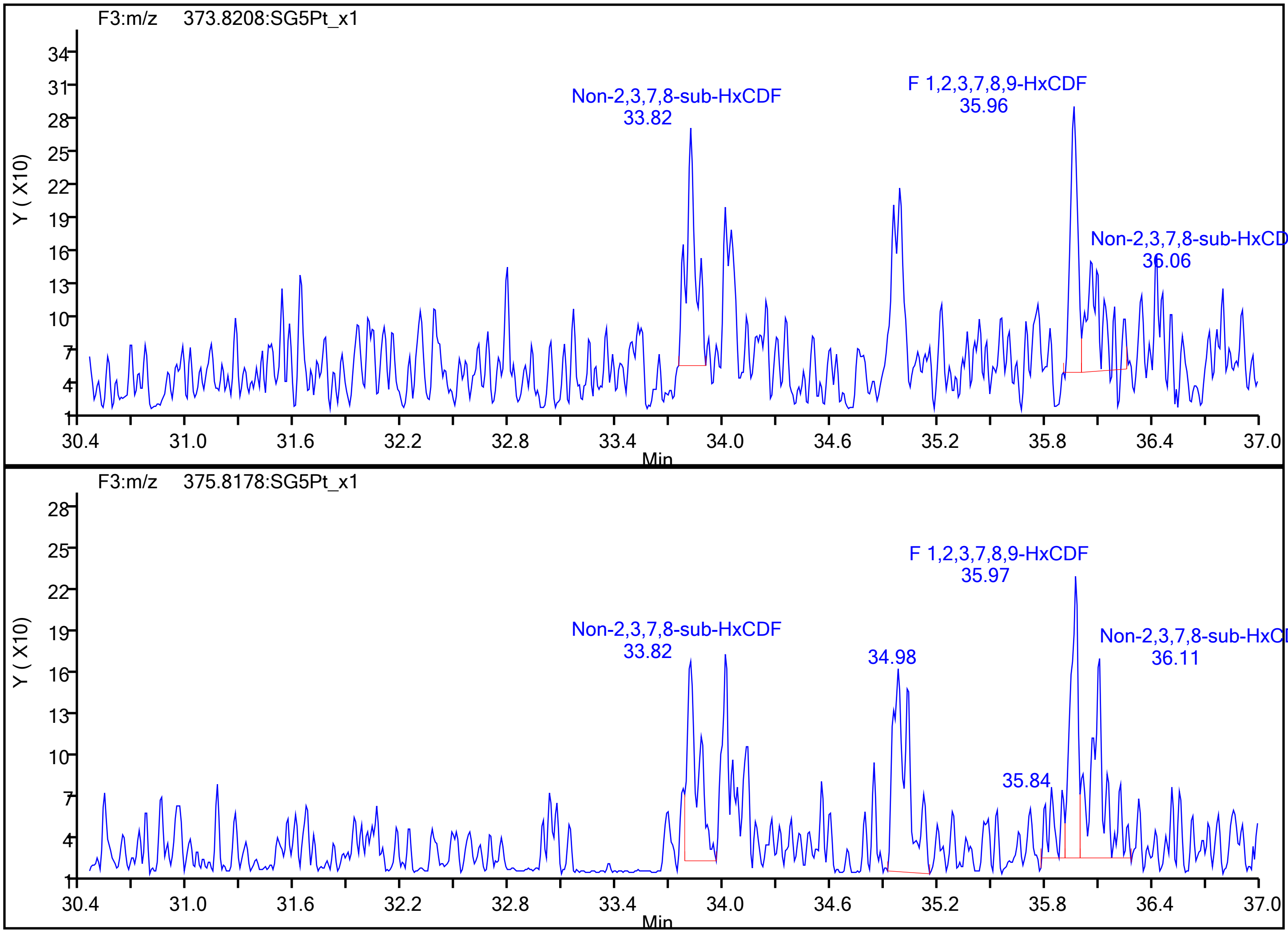

HxCDF Interference Mass

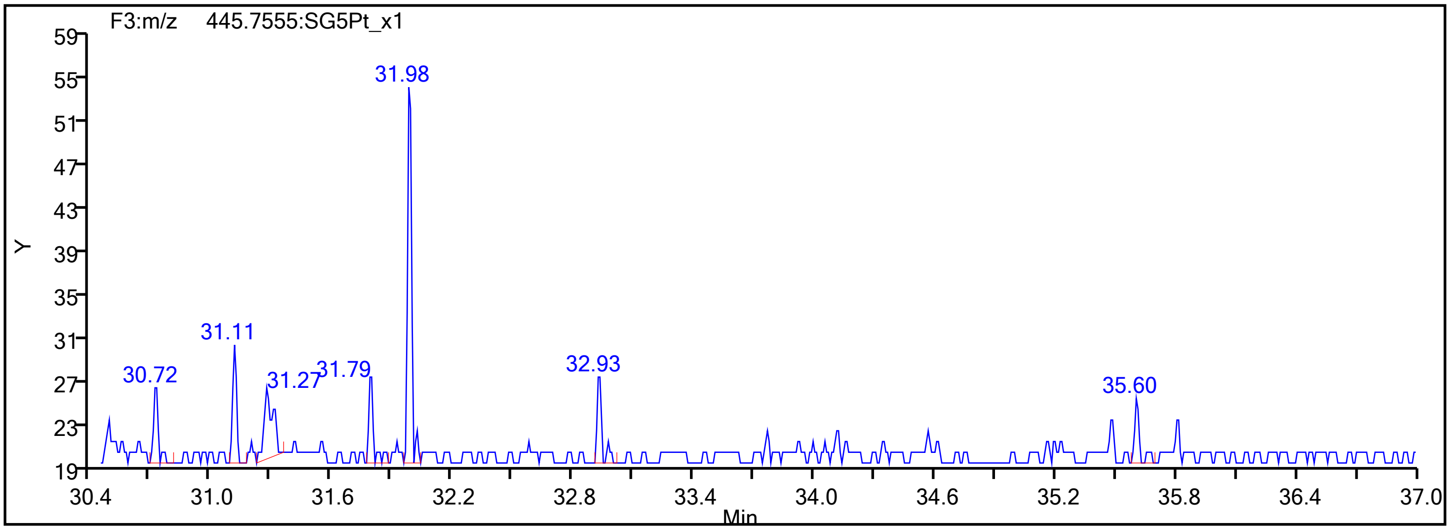

Report Date: 12-Oct-2020 09:09:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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HxCDD

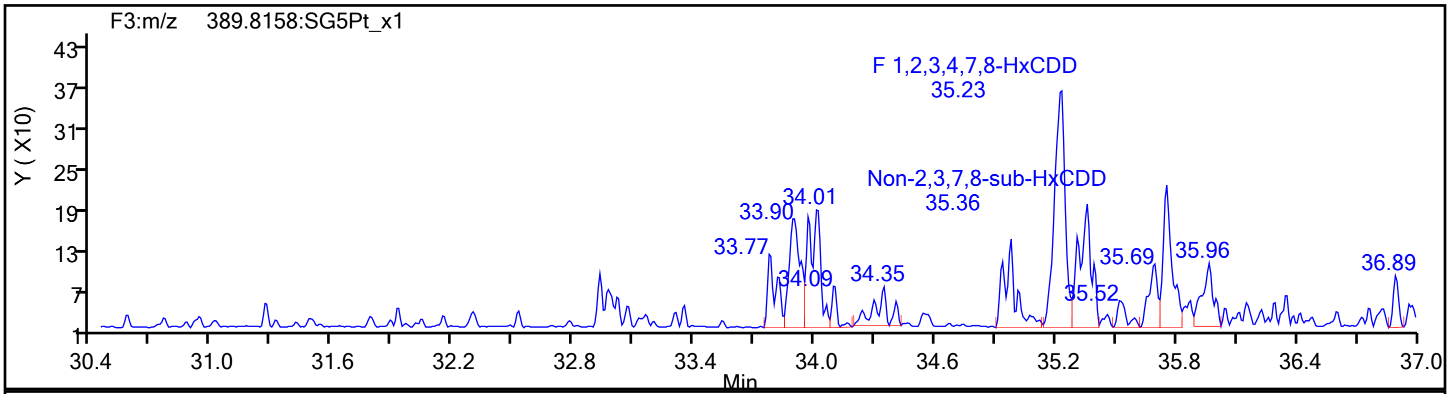

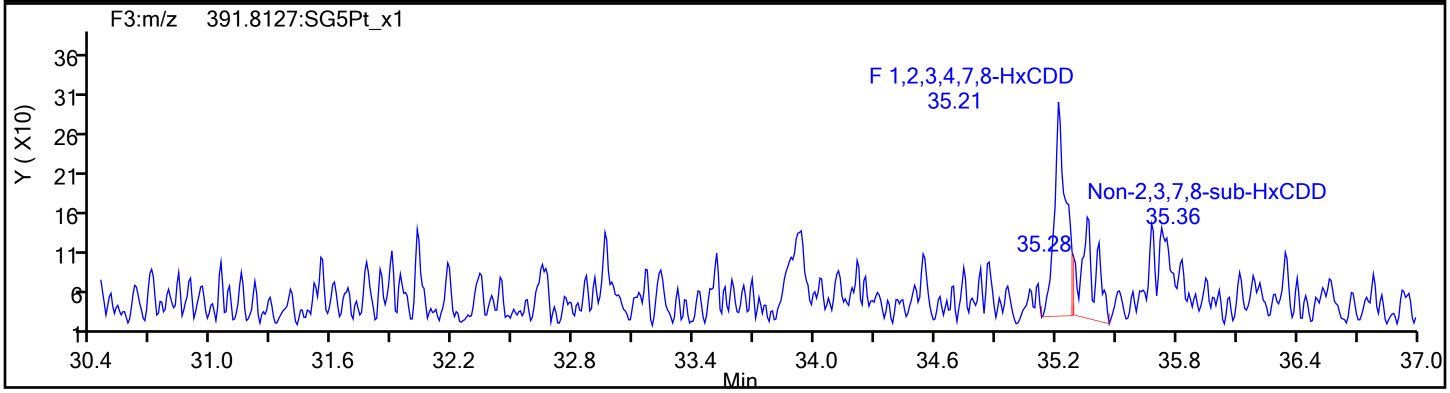

HxCDD Standards

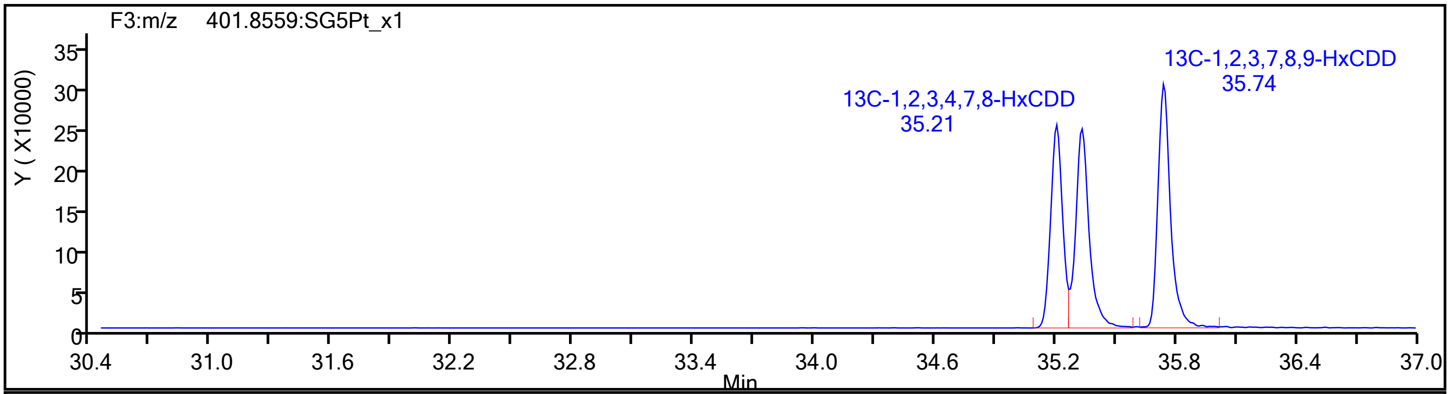

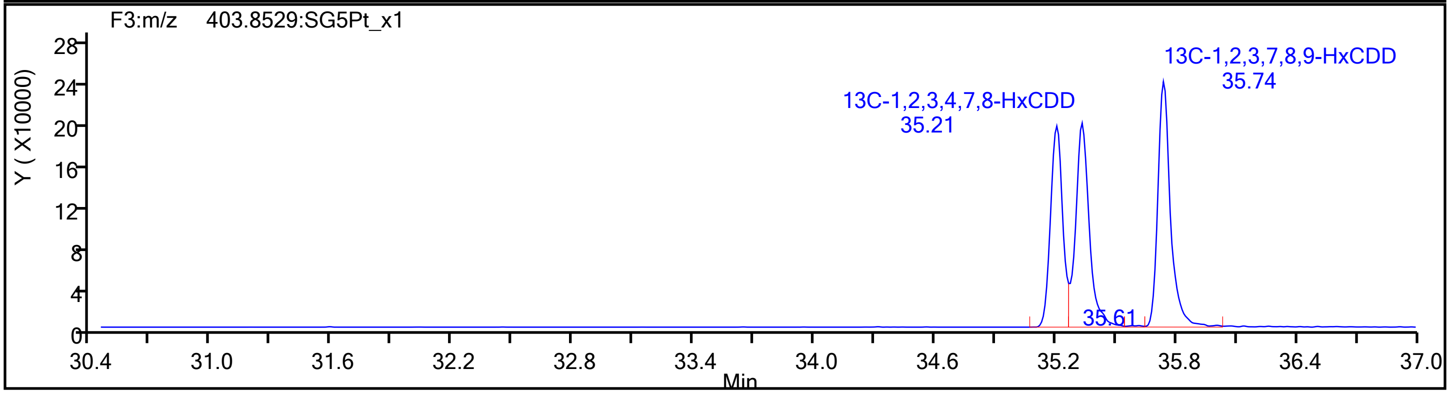

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Eurofins TestAmerica, Sacramento

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HpCDF

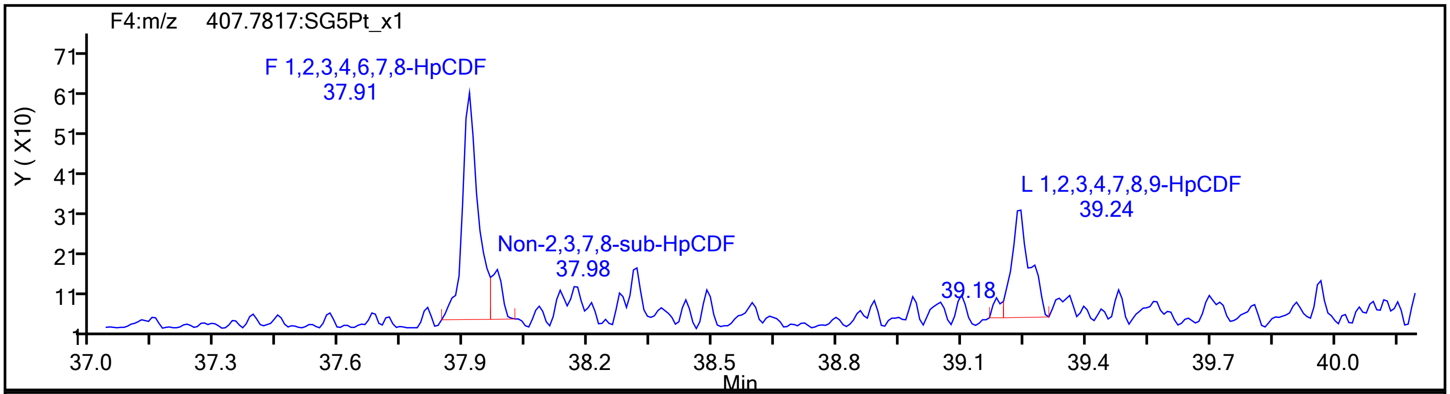

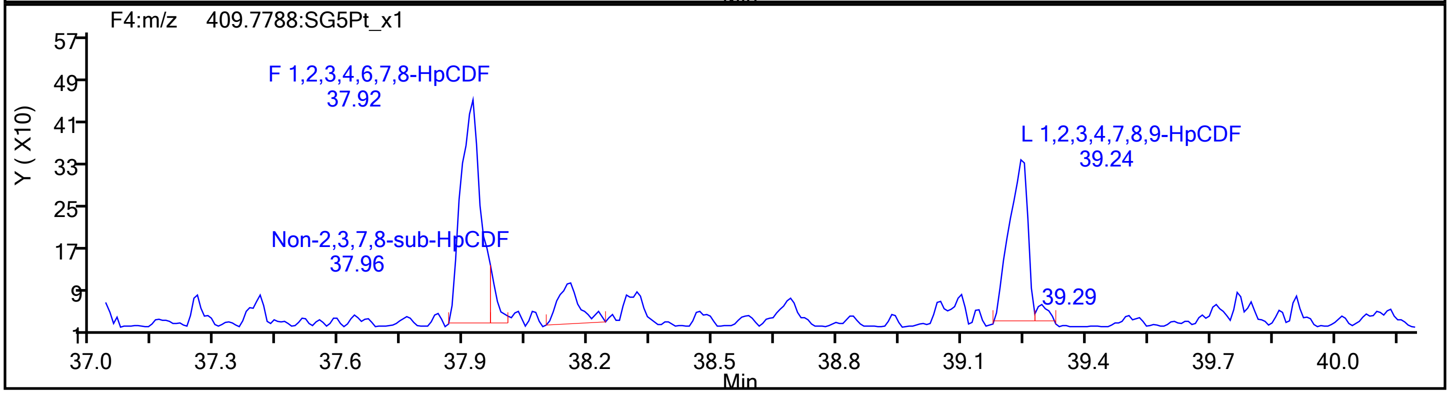

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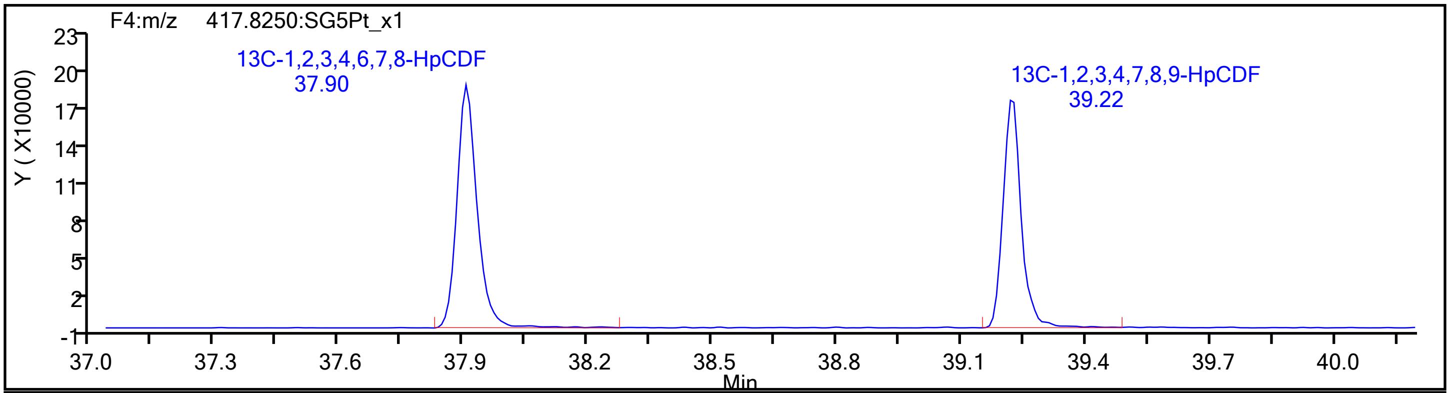

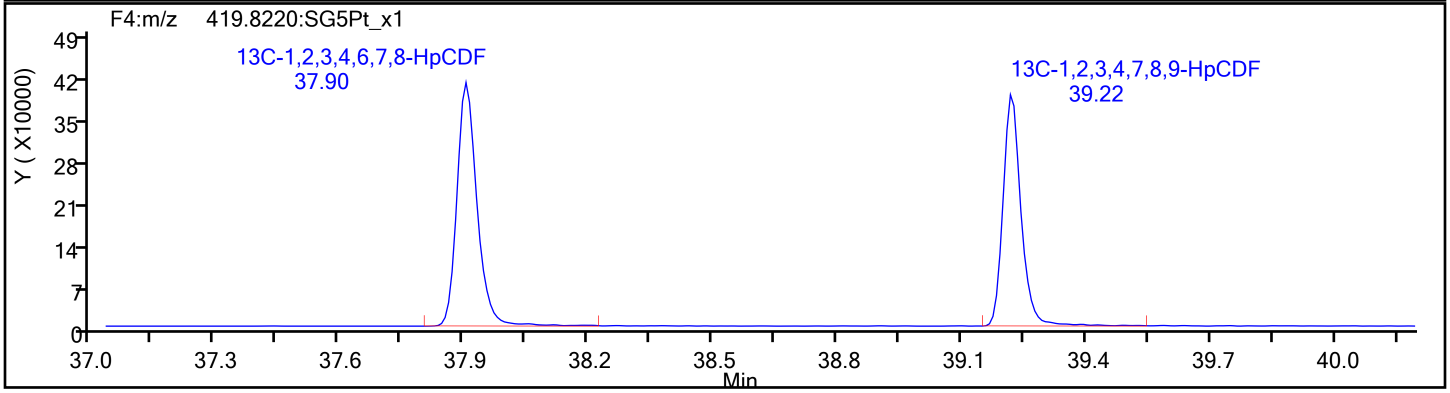

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Eurofins TestAmerica, Sacramento

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HpCDF

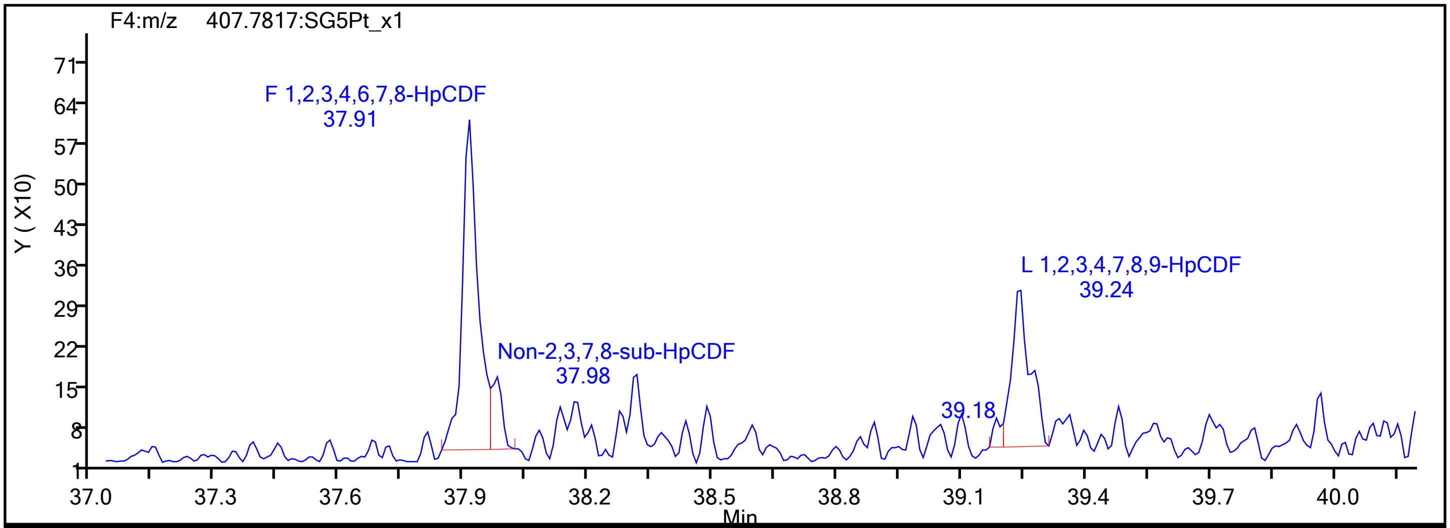

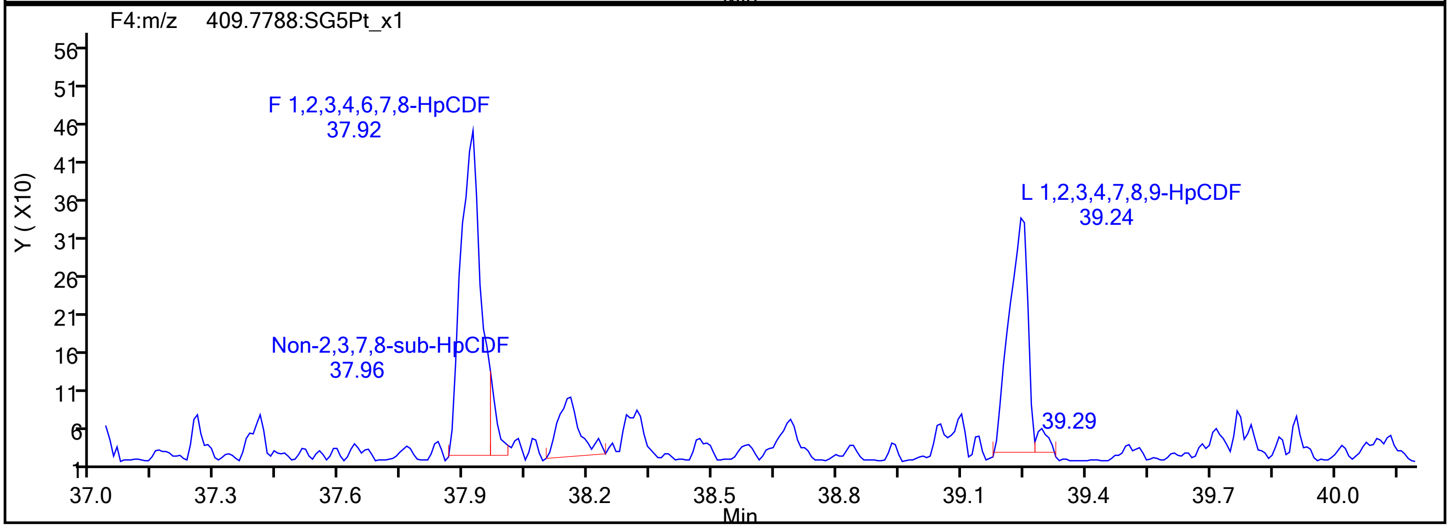

HpCDF Interference Mass

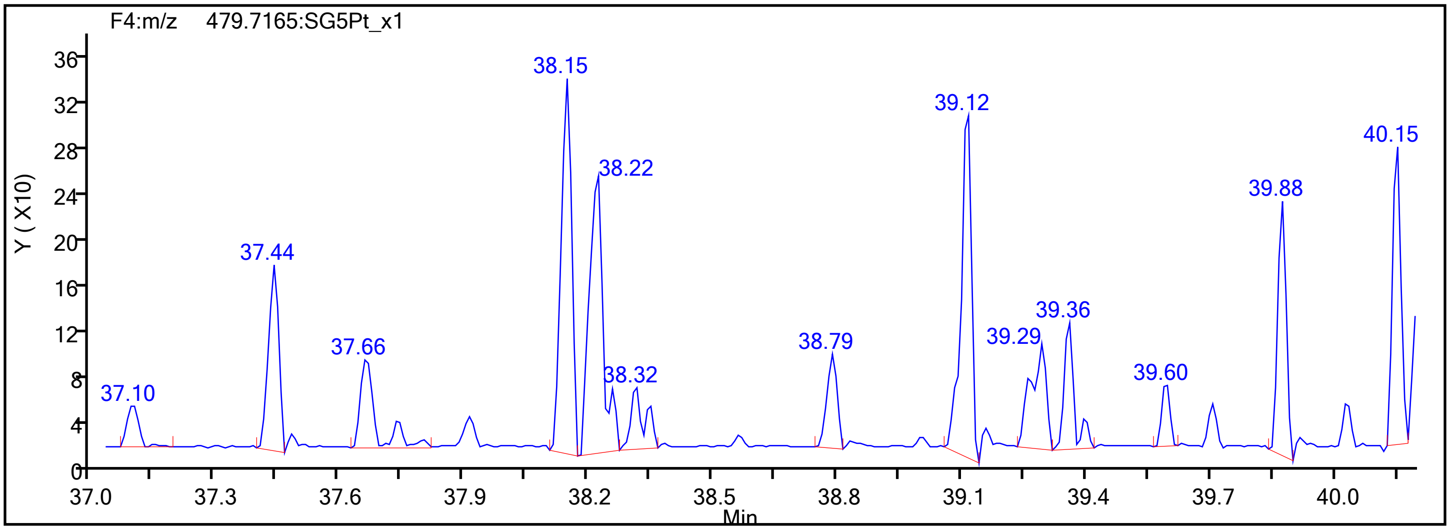

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Eurofins TestAmerica, Sacramento

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HpCDD

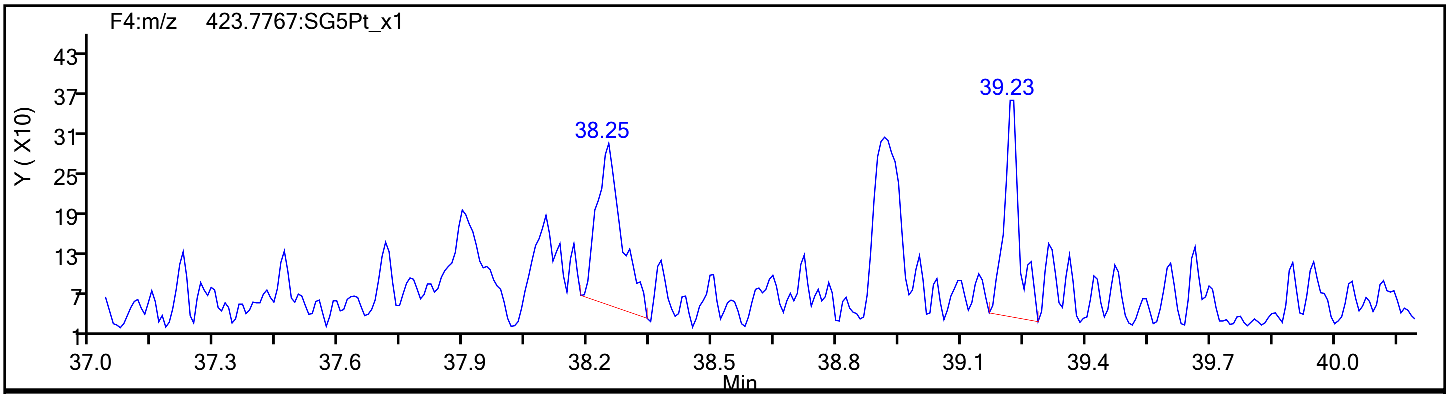

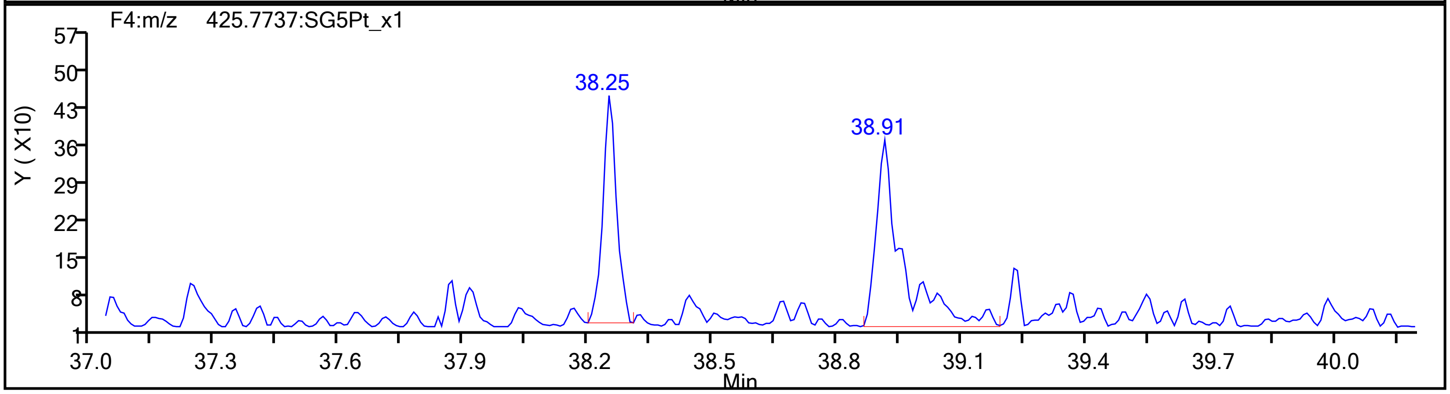

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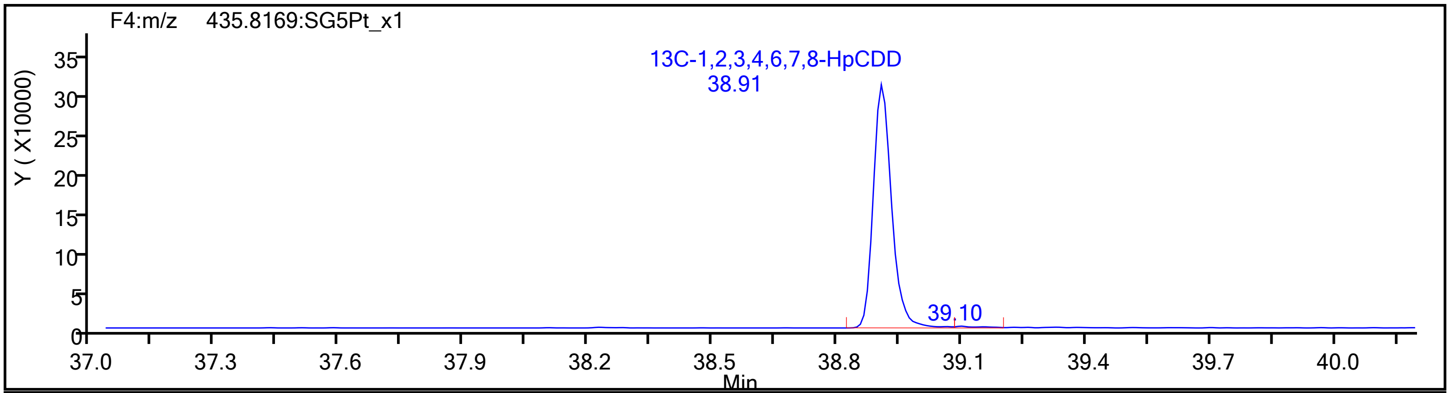

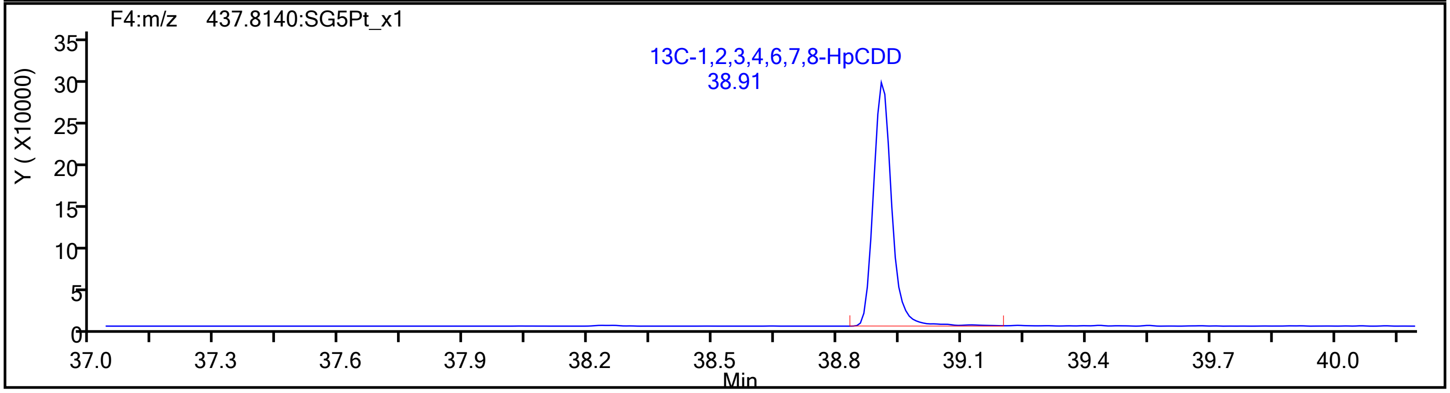

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Eurofins TestAmerica, Sacramento

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OCDF

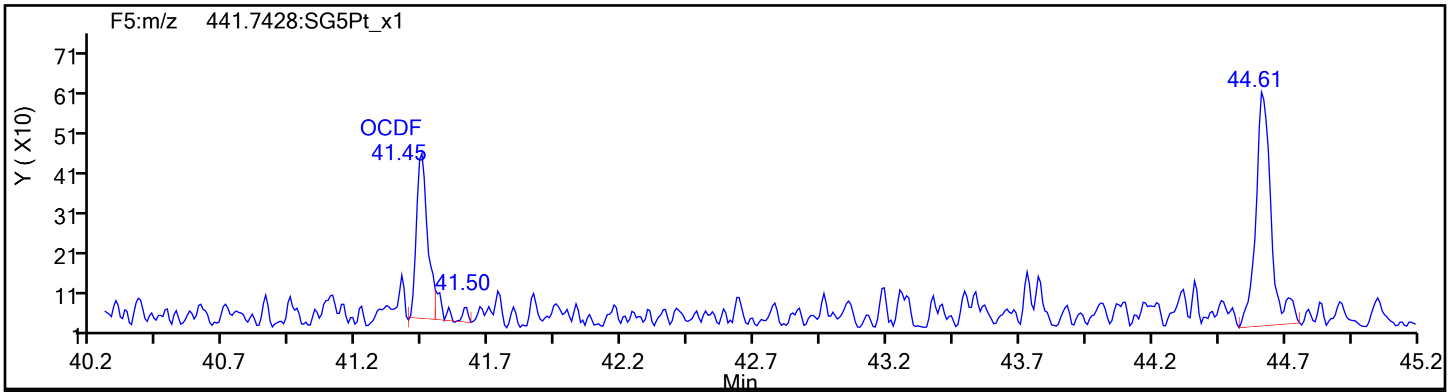

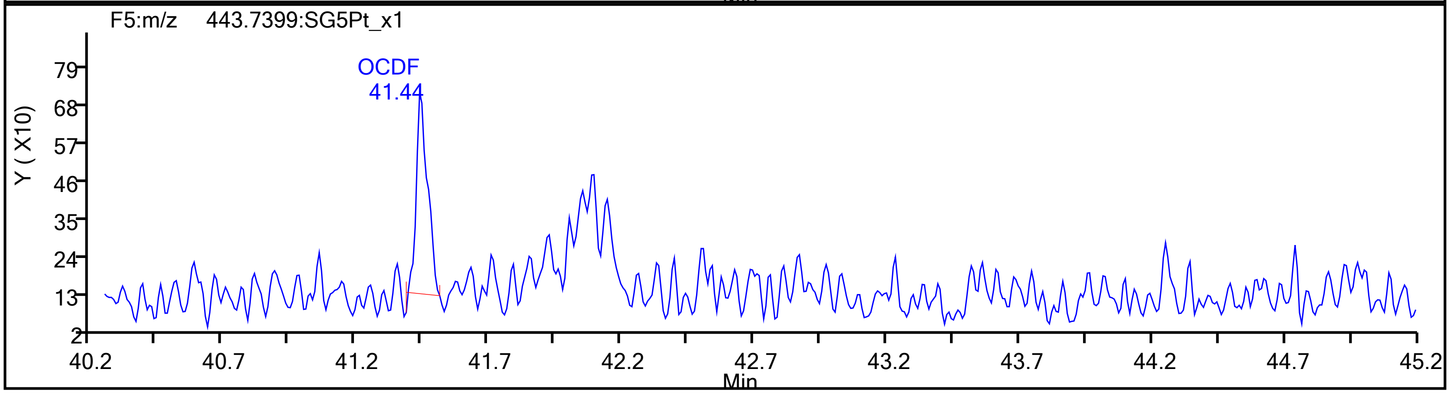

OCDF Standards

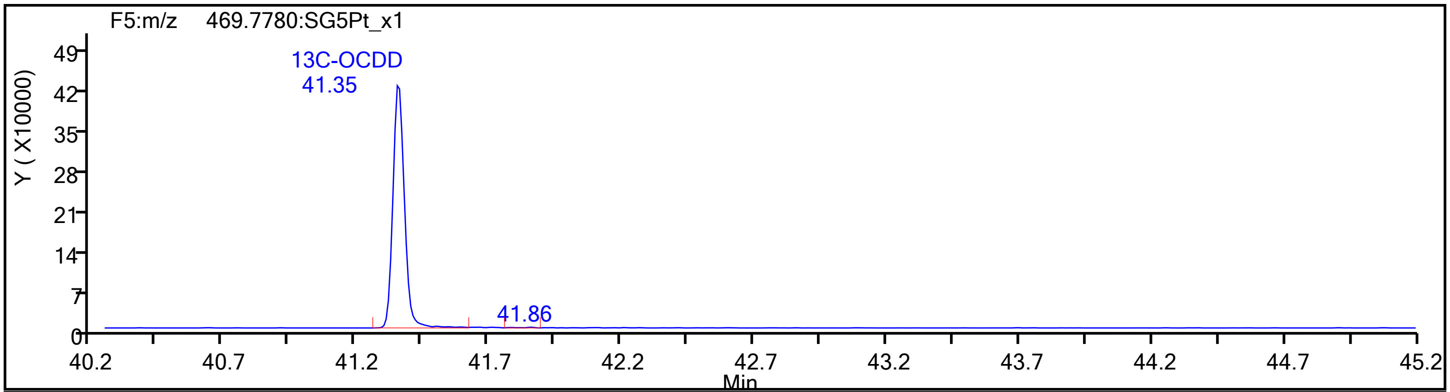

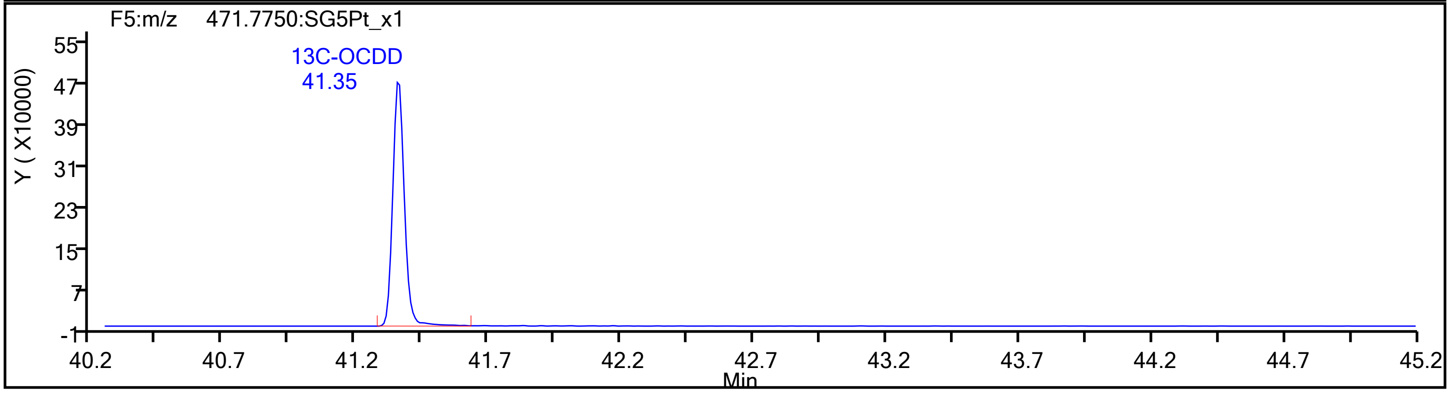

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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OCDF

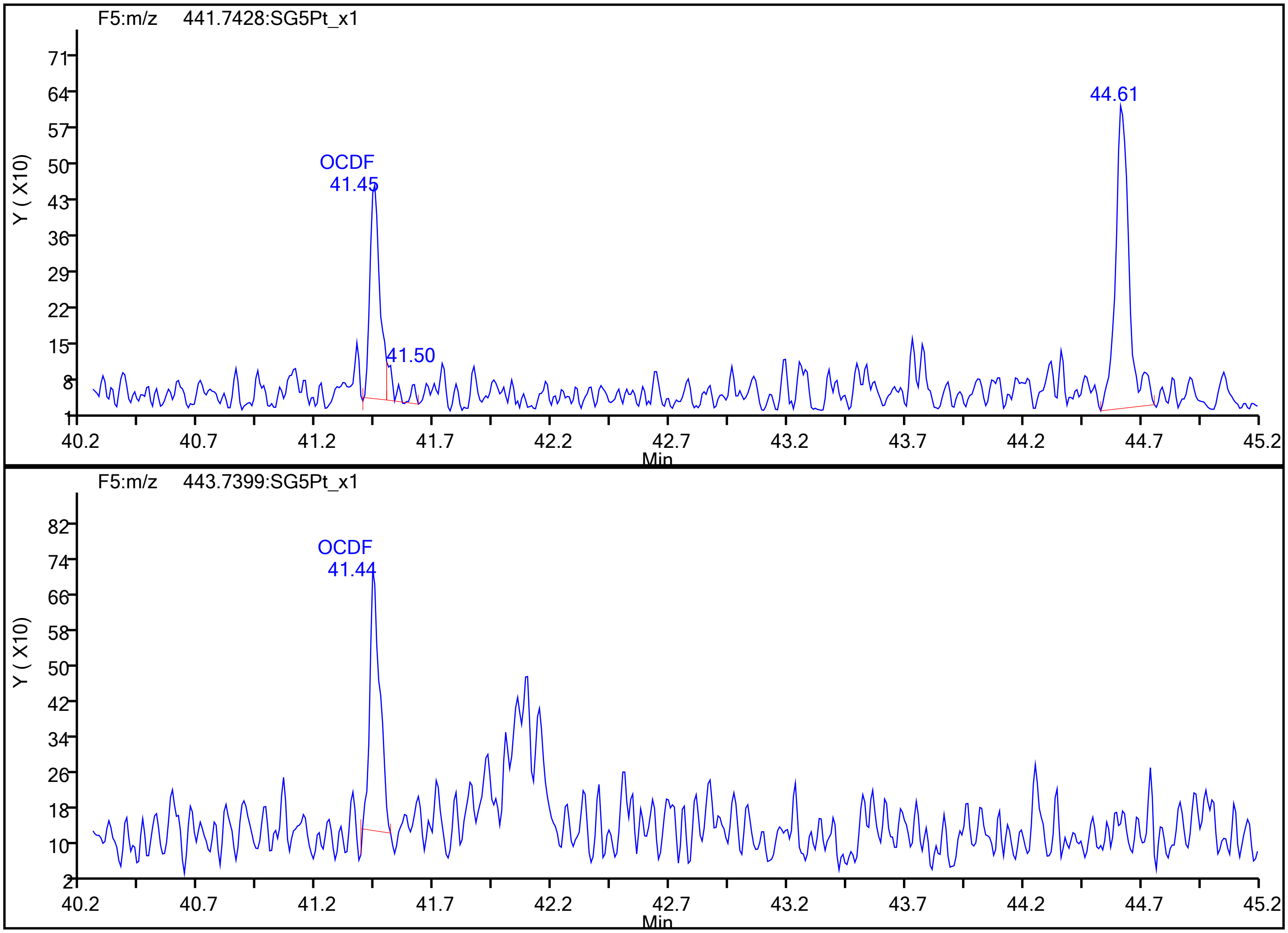

OCDF Interference Mass

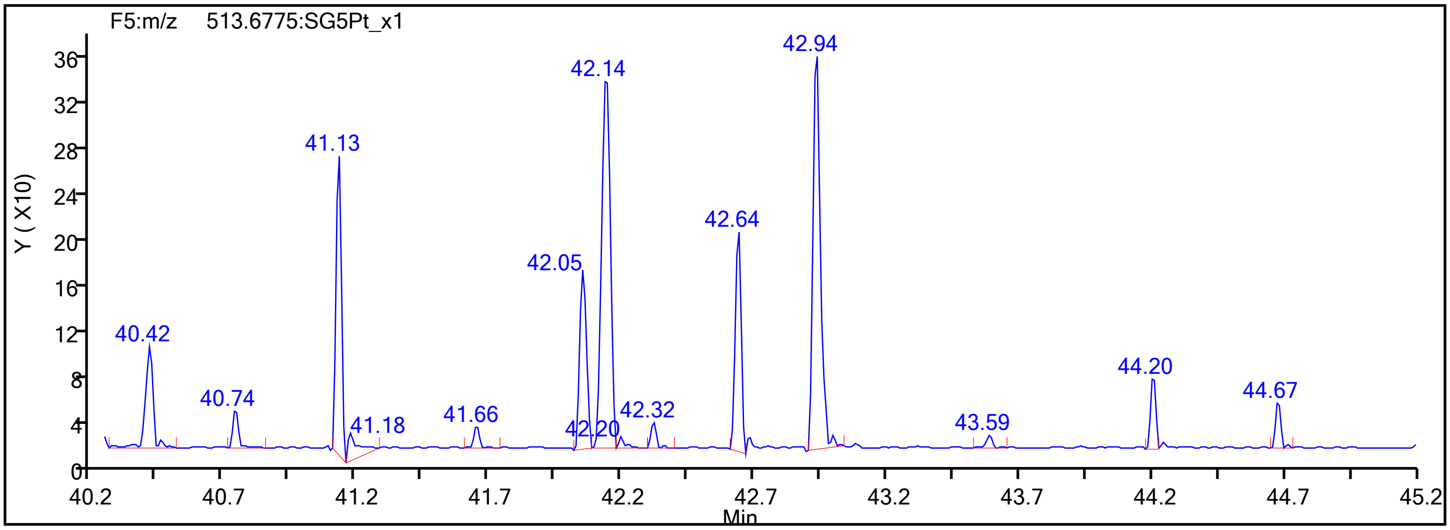

Report Date: 12-Oct-2020 09:09:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Oct-2020 07:46:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

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OCDD

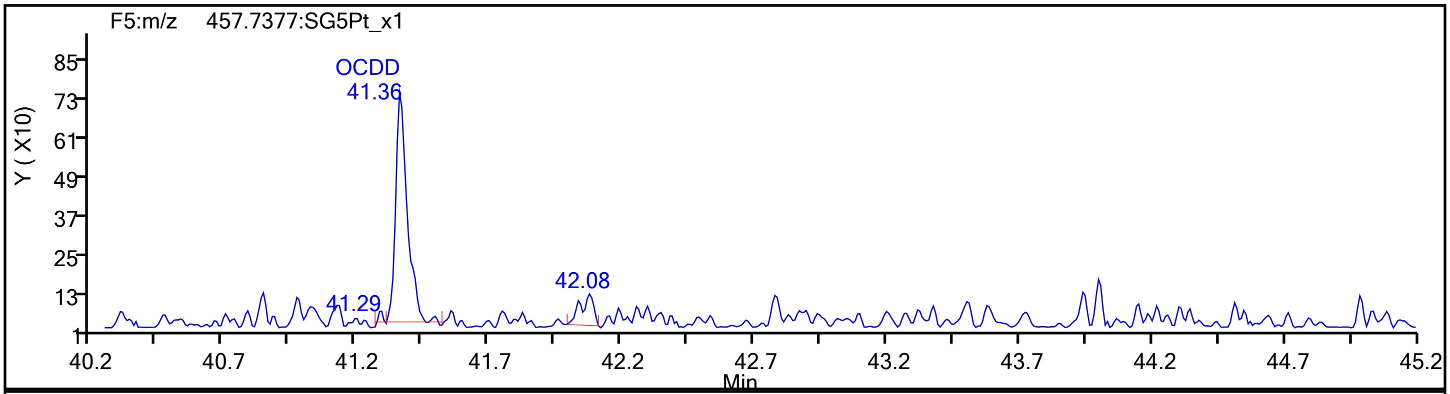

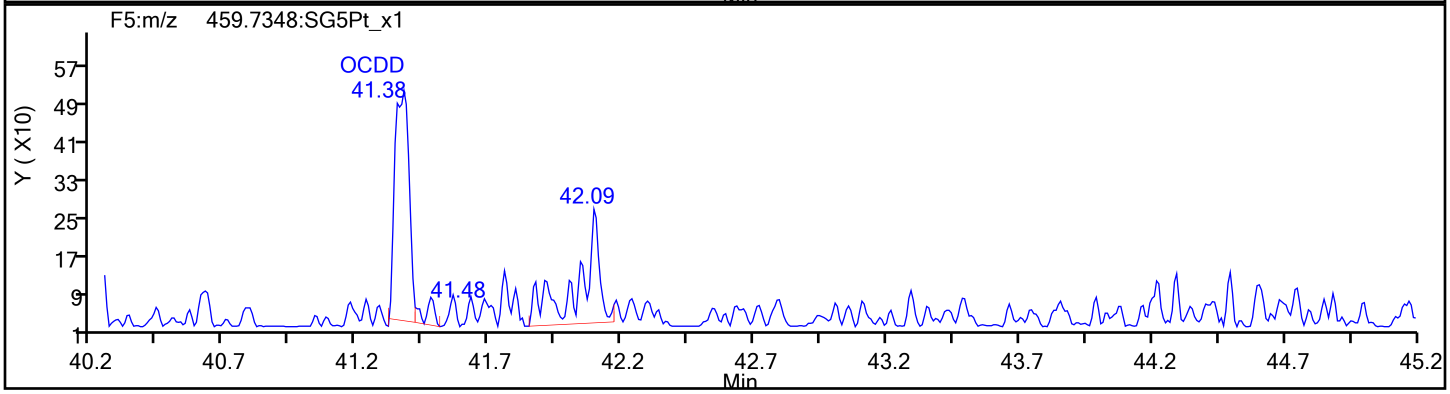

OCDD Standards

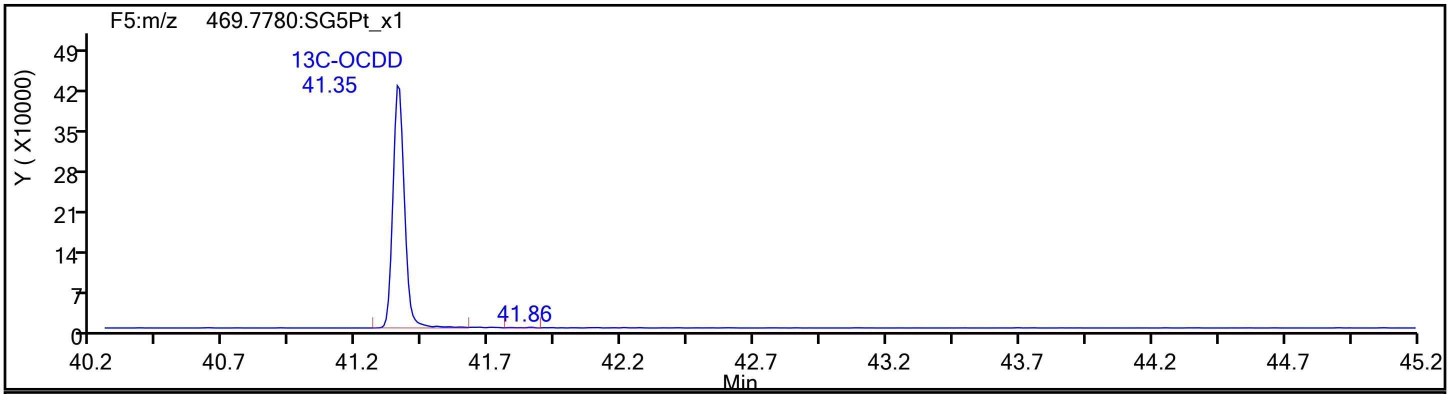

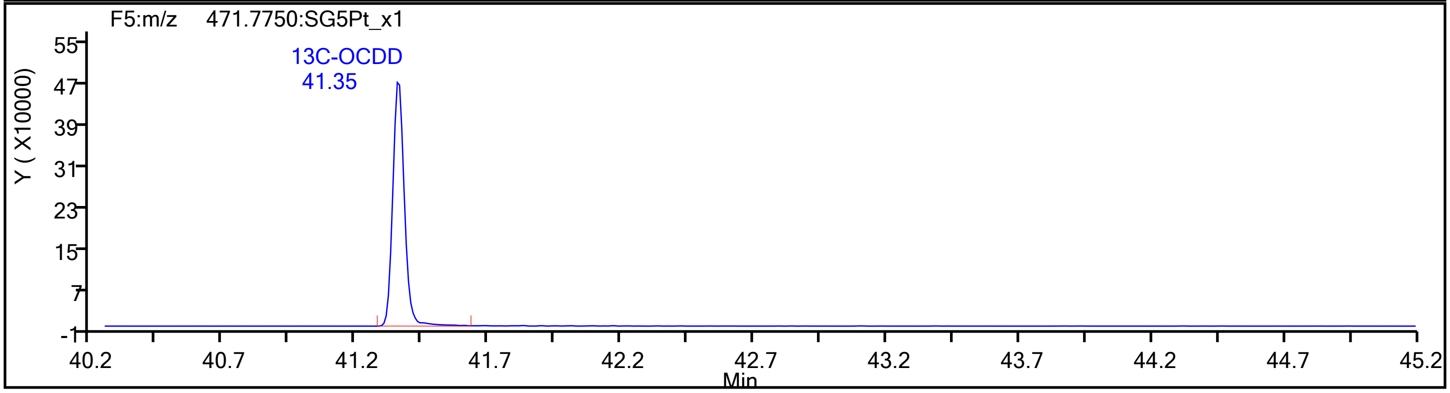

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Eurofins TestAmerica, Sacramento

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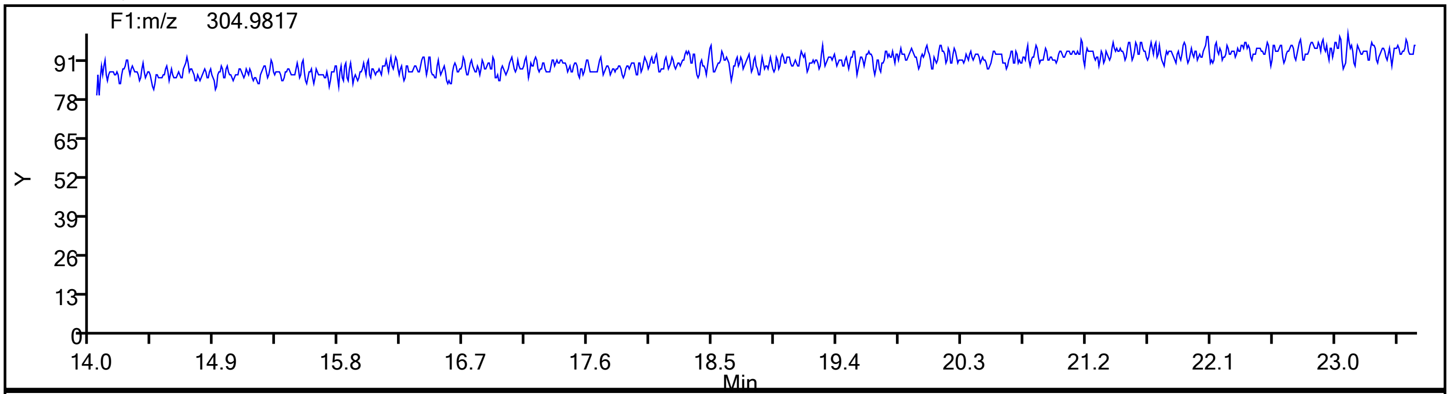

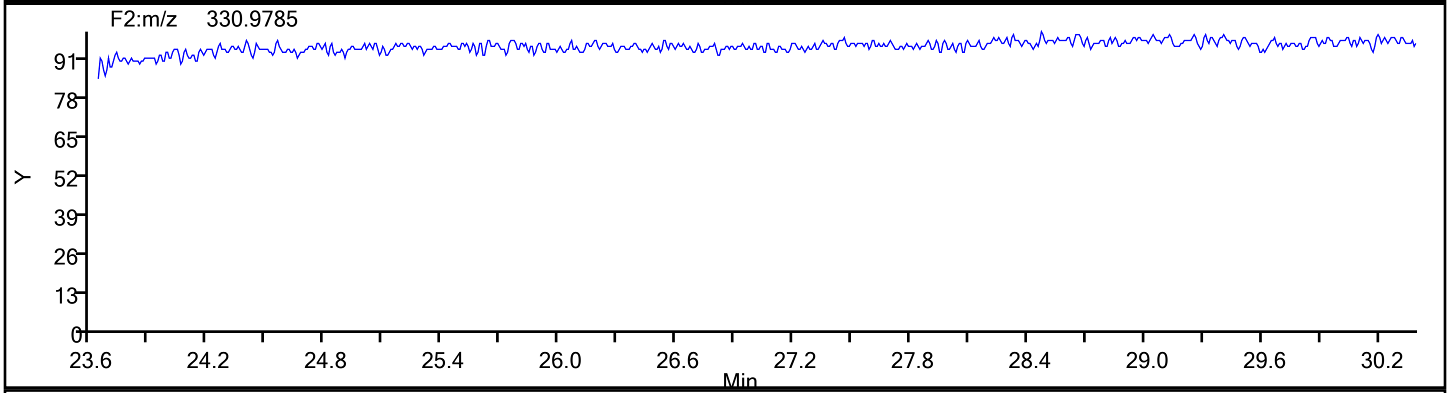

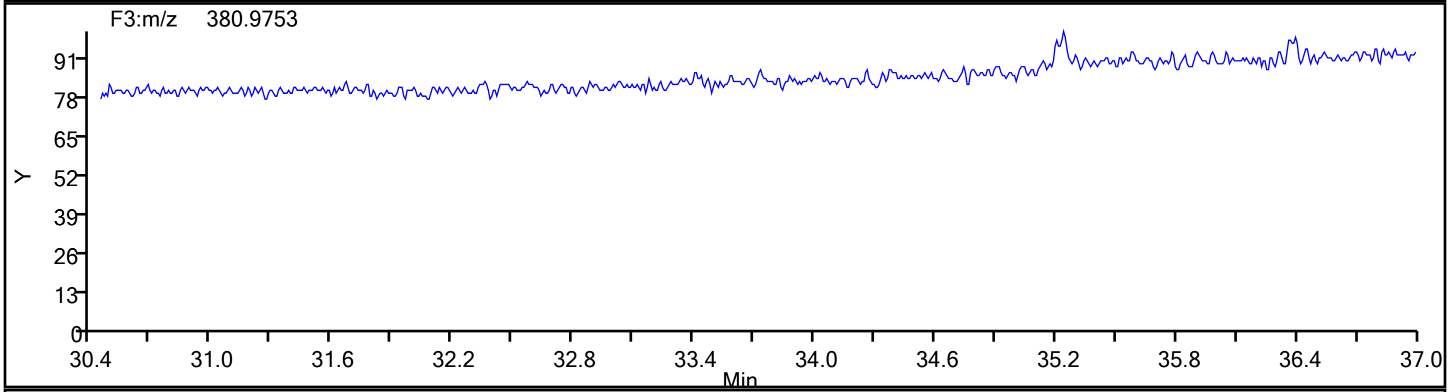

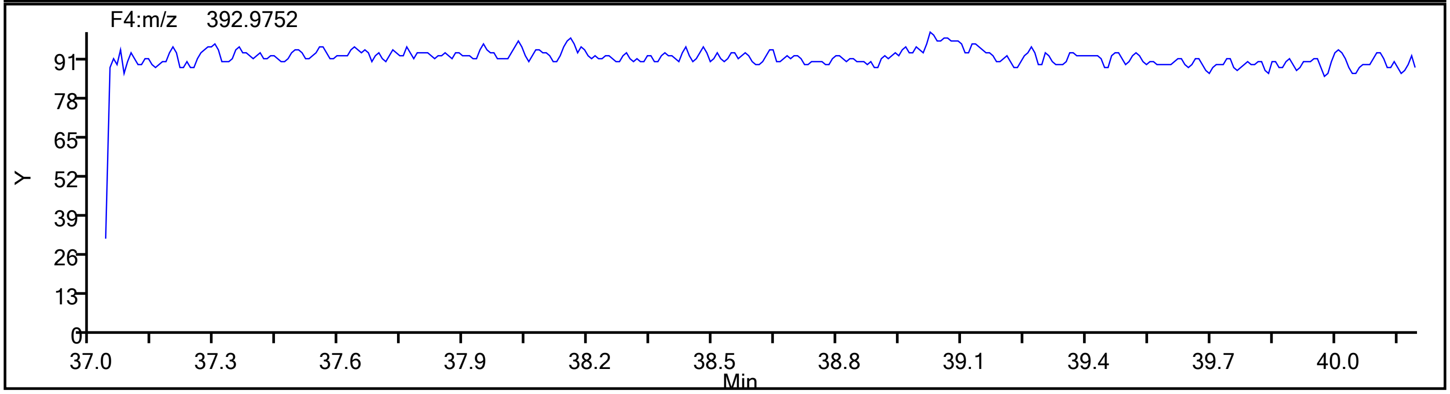

Report Date: 12-Oct-2020 09:09:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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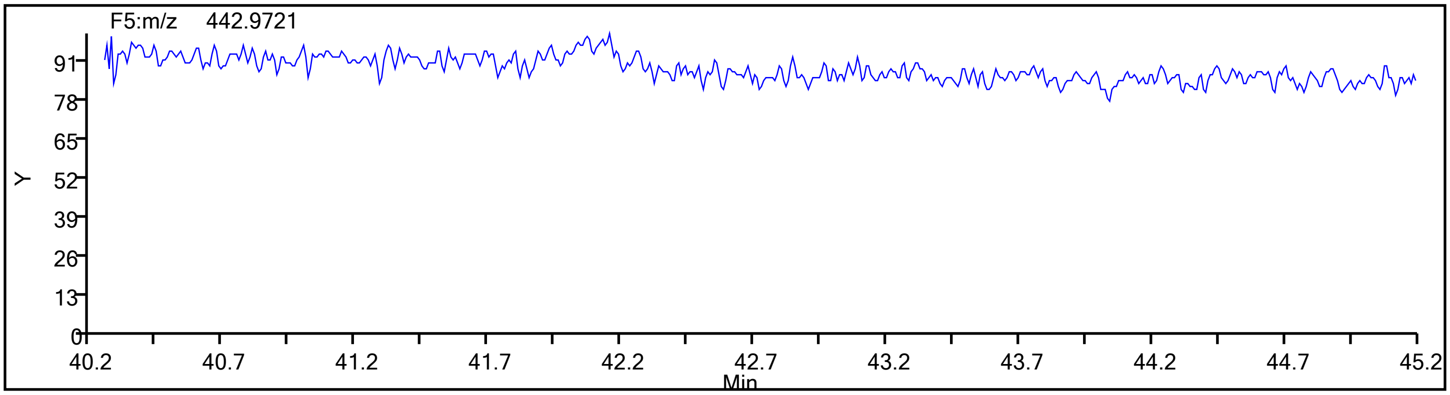

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-417490/2-A
Matrix: Water	Lab File ID: 08OC203D5_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1000(mL)	Date Analyzed: 10/08/2020 12:44
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420113	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	218		10	0.71
51207-31-9	2,3,7,8-TCDF	223		10	0.64
40321-76-4	1,2,3,7,8-PeCDD	969		50	1.8
57117-41-6	1,2,3,7,8-PeCDF	985		50	3.8
57117-31-4	2,3,4,7,8-PeCDF	1010		50	4.1
39227-28-6	1,2,3,4,7,8-HxCDD	958		50	3.4
57653-85-7	1,2,3,6,7,8-HxCDD	955		50	3.9
19408-74-3	1,2,3,7,8,9-HxCDD	847		50	3.3
70648-26-9	1,2,3,4,7,8-HxCDF	998		50	4.8
57117-44-9	1,2,3,6,7,8-HxCDF	1010		50	5.1
72918-21-9	1,2,3,7,8,9-HxCDF	1010		50	3.7
60851-34-5	2,3,4,6,7,8-HxCDF	1010		50	5.5
35822-46-9	1,2,3,4,6,7,8-HpCDD	952		50	7.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	1010		50	10
55673-89-7	1,2,3,4,7,8,9-HpCDF	1020		50	9.8
3268-87-9	OCDD	1850		100	4.3
39001-02-0	OCDF	1780		100	1.8
41903-57-5	Total TCDD	218		10	0.71
30402-14-3	Total TCDF	223		10	0.64
36088-22-9	Total PeCDD	969		50	1.8
30402-15-4	Total PeCDF	2000		50	4.0
34465-46-8	Total HxCDD	2760		50	3.5
55684-94-1	Total HxCDF	4030		50	4.8
37871-00-4	Total HpCDD	952		50	7.1
38998-75-3	Total HpCDF	2030		50	9.9

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1
SDG No.:
Client Sample ID: Lab Sample ID: LCS 320-417490/2-A
Matrix: Water Lab File ID: 08OC203D5_5.d
Analysis Method: 1613B Date Collected:
Extract. Method: 1613B Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1000(mL) Date Analyzed: 10/08/2020 12:44
Con. Extract Vol.: 20(uL) Dilution Factor: 1
Injection Volume: 2(uL) Level: (low/med) Low
% Moisture: GPC Cleanup:(Y/N) N
Analysis Batch No.: 420113 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		20-175
89059-46-1	13C-2,3,7,8-TCDF	79		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	77		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	68		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	69		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	92		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	91		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	76		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	83		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	77		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	84		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	83		20-186
114423-97-1	13C-OCDD	100		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		31-191

Report Date: 13-Oct-2020 08:45:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d
Lims ID: LCS 320-417490/2-A
Client ID:
Sample Type: LCS
Inject. Date: 08-Oct-2020 12:44:04 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-417490/2-A LCS 320-417490/2-A
Misc. Info.: 08OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 08:45:26 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1614

First Level Reviewer: ruangyotsakuld Date: 13-Oct-2020 08:45:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.930	297226087	0.79	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.492	349268071	0.79	1.4844	79.2	79.2	0.2317	0.2317	79.16	
2,3,7,8-TCDF	15.507	37074520	0.84	0.9534	11.1	11.1	0.0319	0.0319	111	
A Non-2,3,7,8-sub-TCDF	15.250						0.0319	0.0661		U
S Total TCDF					11.1	11.1	0.0319	0.0319		
D 13C-2,3,7,8-TCDD	16.097	259941433	0.78	1.0875	80.4	80.4	0.2768	0.2768	80.42	
2,3,7,8-TCDD	16.112	28977299	0.76	1.0205	10.9	10.9	0.0355	0.0355	109	
$ 37Cl4-2,3,7,8-TCDD	16.112	132908608		1.1216	39.9	39.9	0.1530	0.1530	99.67	
A Non-2,3,7,8-sub-TCDD	15.643						0.0355	0.1503		RQU
S Total TCDD					10.9	10.9	0.0355	0.0355		
D 13C-1,2,3,7,8-PeCDF	19.714	281777407	1.59	1.3943	68.0	68.0	0.2016	0.2016	67.99	
1,2,3,7,8-PeCDF	19.727	149728122	1.57	1.0794	49.2	49.2	0.1920	0.1920	98.46	
D 13C-2,3,4,7,8-PeCDF	20.832	274375110	1.58	1.3370	69.0	69.0	0.2103	0.2103	69.05	
2,3,4,7,8-PeCDF	20.846	152278961	1.55	1.0966	50.6	50.6	0.2066	0.2066	101	
A F1 PeCDFs	17.745						0.0178	0.0178		
A Non-2,3,7,8-sub-PeCDF	20.369						0.1989	0.5213		U
S Total PeCDF					99.8	99.8	0.1993	0.1993		
D 13C-1,2,3,7,8-PeCDD	21.432	194198305	1.59	0.8475	77.1	77.1	0.1161	0.1161	77.09	
1,2,3,7,8-PeCDD	21.459	107253434	1.54	1.1397	48.5	48.5	0.0908	0.0908	96.92	
A Non-2,3,7,8-sub-PeCDD	20.552						0.0908	0.0908		
S Total PeCDD					48.5	48.5	0.0908	0.0908		
D 13C-1,2,3,4,7,8-HxCDF	26.733	226564581	0.53	1.3065	76.7	76.7	0.3567	0.3567	76.73	
1,2,3,4,7,8-HxCDF	26.759	141859317	1.20	1.2552	49.9	49.9	0.2421	0.2421	99.76	
D 13C-1,2,3,6,7,8-HxCDF	27.012	244933705	0.54	1.4213	76.2	76.2	0.3279	0.3279	76.25	
1,2,3,6,7,8-HxCDF	27.039	149723319	1.19	1.2102	50.5	50.5	0.2566	0.2566	101	
D 13C-2,3,4,6,7,8-HxCDF	28.570	227513939	0.53	1.3142	76.6	76.6	0.3546	0.3546	76.60	
2,3,4,6,7,8-HxCDF	28.597	140259659	1.18	1.2182	50.6	50.6	0.2748	0.2748	101	
D 13C-1,2,3,7,8,9-HxCDF	30.408	246401710	0.54	1.3204	82.6	82.6	0.3529	0.3529	82.56	
1,2,3,7,8,9-HxCDF	30.421	153142816	1.22	1.2319	50.5	50.5	0.1865	0.1865	101	
A Non-2,3,7,8-sub-HxCDF	27.498						0.2350	0.2350		
S Total HxCDF					201.4	201.4	0.2400	0.2400		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	30.088	226015002	1.27	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.049	180783473	1.27	0.8660	92.4	92.4	0.2928	0.2928	92.36	a
1,2,3,4,7,8-HxCDD	29.090	108604133	1.26	1.2535	47.9	47.9	0.1705	0.1705	95.85	
D 13C-1,2,3,6,7,8-HxCDD	29.343	201464130	1.25	0.9827	90.7	90.7	0.2580	0.2580	90.71	a
1,2,3,6,7,8-HxCDD	29.369	106900277	1.23	1.1117	47.7	47.7	0.1937	0.1937	95.46	
1,2,3,7,8,9-HxCDD	30.115	104012567	1.23	1.2852	42.3	42.3	0.1669	0.1669	84.69	
A Non-2,3,7,8-sub-HxCDD	27.931						0.1763	0.1763		
S Total HxCDD					138.0	138.0	0.1771	0.1771		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	167315092	0.45	0.9410	78.7	78.7	1.221	1.221	78.67	
1,2,3,4,6,7,8-HpCDF	32.559	124304718	1.06	1.4783	50.3	50.3	0.4984	0.4984	101	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	164067328	0.44	0.8751	83.0	83.0	1.313	1.313	82.95	
1,2,3,4,7,8,9-HpCDF	33.653	115364519	1.01	1.3784	51.0	51.0	0.4921	0.4921	102	
A Non-2,3,7,8-sub-HpCDF	33.118						0.4945	0.4945		
S Total HpCDF					101.3	101.3	0.4953	0.4953		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	172278414	1.07	0.9049	84.2	84.2	1.860	1.860	84.23	
1,2,3,4,6,7,8-HpCDD	33.410	89114689	1.03	1.0862	47.6	47.6	0.3540	0.3540	95.24	
A Non-2,3,7,8-sub-HpCDD	33.339						0.3540	0.3540		
S Total HpCDD					47.6	47.6	0.3540	0.3540		
D 13C-OCDD	35.558	261325914	0.89	0.5783	199.9	199.9	0.6518	0.6518	99.97	
OCDF	35.630	201032530	0.94	1.7248	89.2	89.2	0.0876	0.0876	89.20	
OCDD	35.570	151792000	0.90	1.2576	92.4	92.4	0.2132	0.2132	92.38	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Report Date: 13-Oct-2020 08:45:26 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d
Lims ID: LCS 320-417490/2-A
Client ID:
Sample Type: LCS
Inject. Date: 08-Oct-2020 12:44:04 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-417490/2-A LCS 320-417490/2-A
Misc. Info.: 08OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 08:45:26 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1614

First Level Reviewer: ruangyotsakuld Date: 13-Oct-2020 08:45:26

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.930	15.930	0		130959899	37309855	46091	115227	809		
333.9339	15.930	15.930	0		166266188	46823846	55200	138000	848	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.492	15.492	0	0.972	154199915	43294386	49243	123107	879		
317.9389	15.492	15.492	0	0.972	195068156	53721186	66522	166305	808	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.507	15.507	0	1.001	16877622	4625061	5762	14405	803		
305.8987	15.507	15.507	0	1.001	20196898	5440115	6054	15135	899	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	15.205	15.250	-3	0.981	86555	26617	5762	14405	5		
305.8987	15.189	15.250	-4	0.980	133505	38578	6054	15135	6	0.65(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	16.097	16.097	0	1.010	113875273	29914169	46091	115227	649		
333.9339	16.097	16.097	0	1.010	146066160	37844146	55200	138000	686	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.112	16.112	0	1.001	12535641	3362021	4632	11580	726		
321.8936	16.112	16.112	0	1.001	16441658	4396720	5182	12955	848	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.112	16.112	0	1.011	132908608	34675759	57764	144410	600		
A Non-2,3,7,8-sub-TCDD											U
319.8965	14.252	15.643	-83	0.885	232478	56760	4632	11580	12		
	Empc Correction				173465	48714	4632	11580	11		
321.8936	14.252	15.643	-83	0.885	225280	63266	5182	12955	12	1.03(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	19.714	19.714	0	1.237	172848854	35004388	57567	143917	608		
353.8970	19.714	19.714	0	1.237	108928553	21957349	37032	92580	593	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.727	19.727	0	1.001	91547366	18582799	27647	69117	672		
341.8567	19.727	19.727	0	1.001	58180756	11825202	19560	48900	605	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.832	20.832	0	1.308	168010539	32150927	57567	143917	558		
353.8970	20.832	20.832	0	1.308	106364571	19948234	37032	92580	539	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.846	20.859	-1	1.001	92592062	17388224	27647	69117	629		
341.8567	20.846	20.859	-1	1.001	59686899	11142047	19560	48900	570	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.745						1692	4230			
341.8567	17.745						2537	6342			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	20.177	20.369	-12	1.024	950478	135689	27647	69117	5		
341.8567	20.191	20.369	-11	1.024	626645	89801	19560	48900	5	1.52(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	21.432	21.445	-1	1.345	119218480	20992717	20621	51552	1018		
369.8919	21.432	21.445	-1	1.345	74979825	12834734	12505	31262	1026	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.459	21.473	-1	1.001	65004177	11633089	8659	21647	1343		
357.8516	21.459	21.473	-1	1.001	42249257	7518497	5345	13362	1407	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.552						8659	21647			
357.8516	20.552						5345	13362			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.733	26.746	-1	0.888	78061687	11053605	24282	60705	455		
385.8610	26.733	26.746	-1	0.888	148502894	21149765	43276	108190	489	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.759	26.772	-1	1.001	77484074	10736713	21294	53235	504		
375.8178	26.759	26.772	-1	1.001	64375243	8833091	17854	44635	495	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.012	27.025	-1	0.898	85802091	10913591	24282	60705	449		
385.8610	27.012	27.025	-1	0.898	159131614	20607174	43276	108190	476	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.039	27.052	-1	1.001	81491628	10321787	21294	53235	485		
375.8178	27.052	27.052	0	1.001	68231691	8644595	17854	44635	484	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.570	28.583	-1	0.950	79178226	10330560	24282	60705	425		
385.8610	28.570	28.583	-1	0.950	148335713	18905510	43276	108190	437	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.597	28.610	-1	1.001	75907174	9680980	21294	53235	455		
375.8178	28.597	28.610	-1	1.001	64352485	7903135	17854	44635	443	1.18(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.408	0	1.011	86538221	14961135	24282	60705	616		
385.8610	30.394	30.408	-1	1.010	159863489	27647937	43276	108190	639	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.421	30.421	0	1.000	84005590	14843396	21294	53235	697		
375.8178	30.421	30.421	0	1.000	69137226	12309815	17854	44635	689	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.498						21294	53235			
375.8178	27.498						17854	44635			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.088	30.088	0		126558707	20382559	20950	52375	973		
403.8529	30.088	30.088	0		99456295	15863374	15813	39532	1003	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.049	29.063	-1	0.965	101100384	12535086	20950	52375	598		a
403.8529	29.063	29.063	0	0.966	79683089	10052613	15813	39532	636	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.090	29.103	-1	1.001	60498018	7297146	10966	27415	665		
391.8127	29.090	29.103	-1	1.001	48106115	5907881	8349	20872	708	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.343	29.329	1	0.975	112007571	12543270	20950	52375	599		a
403.8529	29.329	29.329	0	0.975	89456559	9879210	15813	39532	625	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.369	29.369	0	1.001	59069754	6766446	10966	27415	617		
391.8127	29.369	29.369	0	1.001	47830523	5363704	8349	20872	642	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.115	30.115	0	1.037	57373519	9043109	10966	27415	825		
391.8127	30.115	30.115	0	1.037	46639048	7477513	8349	20872	896	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						10966	27415			
391.8127	27.931						8349	20872			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.082	52055216	18042455	58813	147032	307		
419.8220	32.547	32.547	0	1.082	115259876	39359493	107738	269345	365	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	64055419	21709788	70699	176747	307		
409.7789	32.547	32.559	-1	1.000	60249299	19914995	98467	246167	202	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.118	50330176	19059466	58813	147032	324		
419.8220	33.641	33.641	0	1.118	113737152	43282820	107738	269345	402	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	58060876	22408450	70699	176747	317		
409.7789	33.653	33.653	0	1.000	57303643	20959787	98467	246167	213	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.118						70699	176747			
409.7789	33.118						98467	246167			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	89044881	34390698	127146	317865	270		
437.8140	33.398	33.398	0	1.110	83233533	32345820	116823	292057	277	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	45162257	17442727	81158	202895	215		
425.7737	33.410	33.410	0	1.000	43952432	16231009	21479	53697	756	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						81158	202895			
425.7737	33.339						21479	53697			
13C-OCDD											
469.7779	35.558	35.570	-1	1.182	123281473	41511106	27844	69610	1491		
471.7750	35.558	35.570	-1	1.182	138044441	46092598	26800	67000	1720	0.89(0.76-1.02)	
OCDF											
441.7428	35.630	35.642	-1	1.002	97274381	31804433	4835	12087	6578		
443.7399	35.630	35.642	-1	1.002	103758149	35389395	21629	54072	1636	0.94(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	71824595	24073537	23695	59237	1016		
459.7348	35.570	35.570	0	1.000	79967405	26666880	23285	58212	1145	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d
Lims ID: LCS 320-417490/2-A
Client ID:
Inject. Date: 08-Oct-2020 12:44:04
Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: 3D5
Operator: SMA
Lims Batch ID: 420113
Lims Sample ID: 5

Non-2,3,7,8-sub-TCDF, RT: 15.250

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.953	D 13C-2,3,7,8-TCDF	100.000	349268071	97015572

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.953		100.000	349268071	97015572

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.205	86555	26617	133505	38578	0.0661	0.65	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Lims ID:	LCS 320-417490/2-A		
Client ID:			
Inject. Date:	08-Oct-2020 12:44:04	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420113	Lims Sample ID:	5

Non-2,3,7,8-sub-TCDD, RT: 15.643

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	259941433	67758315

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	259941433	67758315

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.252	232478	56760	225280	63266	0.1726	1.03	RQ
14.252	173465	48714	225280	63266	0.1503		Empc Correction
14.494	111690	35035	148311	38961	0.0980	0.75	

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Lims ID:	LCS 320-417490/2-A		
Client ID:			
Inject. Date:	08-Oct-2020 12:44:04	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	3D5	Operator:	SMA
Lims Batch ID:	420113	Lims Sample ID:	5

Non-2,3,7,8-sub-PeCDF, RT: 20.369

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.079	D 13C-1,2,3,7,8-PeCDF	100.000	281777407	56961737
2,3,4,7,8-PeCDF	1.097	D 13C-2,3,4,7,8-PeCDF	100.000	274375110	52099161

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.088		100.000	278076258	54530449

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.177	950478	135689	626645	89801	0.5213	1.52	

Compound is Marked ND

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d				
Injection Date:	08-Oct-2020 12:44:04	Instrument ID:	3D5		
Lims ID:	LCS 320-417490/2-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.06

Processing Integration Results

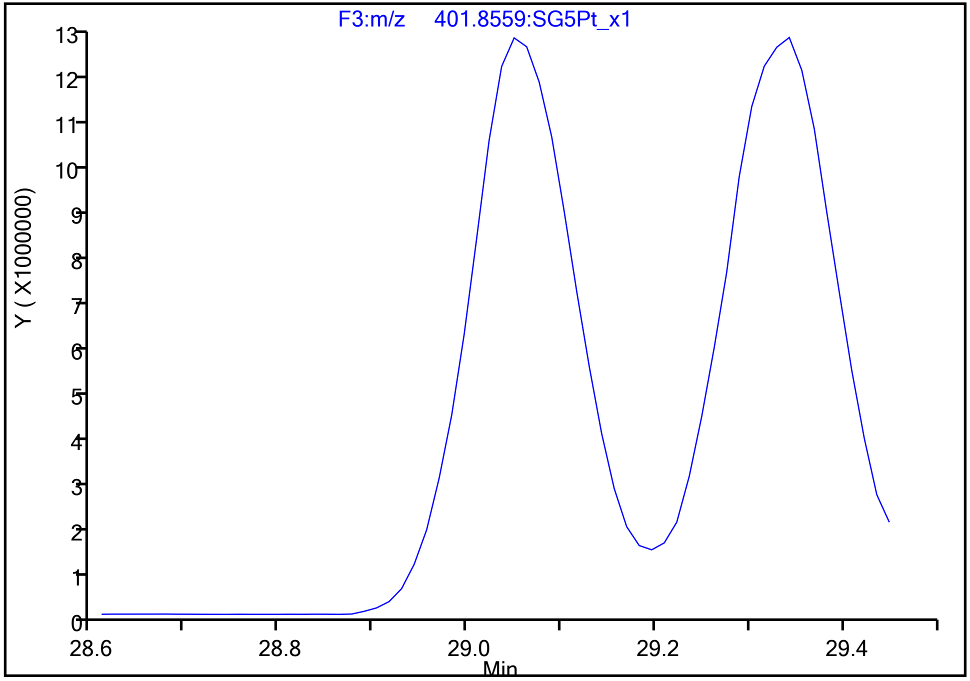

RT: 29.05
Area: 101100384
Amount: 92.361719
Amount Units: pg/ul

Manual Integration Results

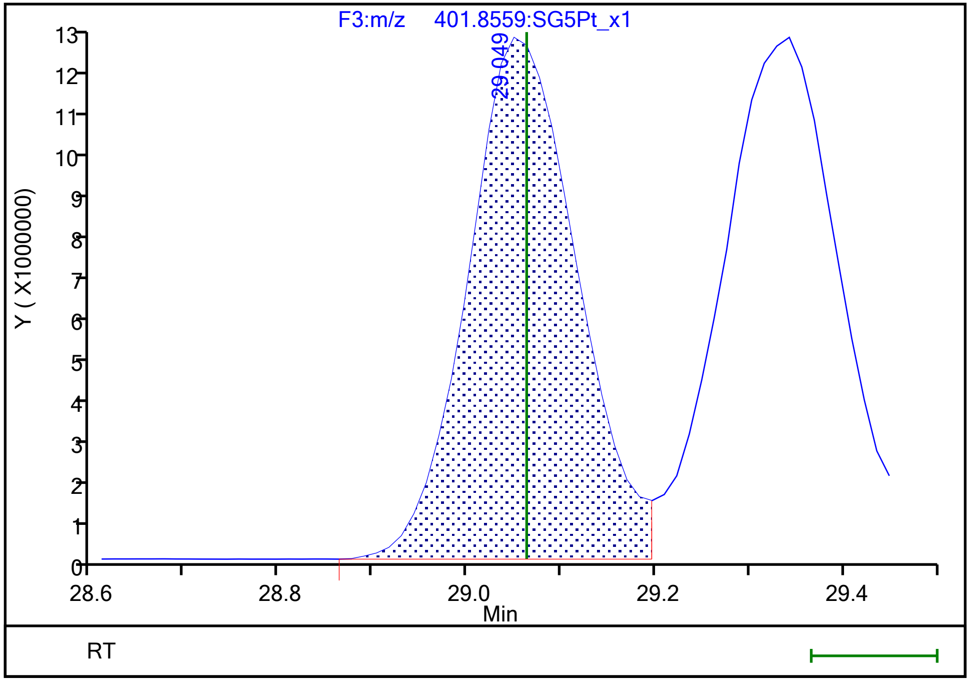

Reviewer: ruangyotsakuld, 13-Oct-2020 08:45:03
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d				
Injection Date:	08-Oct-2020 12:44:04	Instrument ID:	3D5		
Lims ID:	LCS 320-417490/2-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT:	30.09
Area:	126558707
Amount:	101.7609
Amount Units:	pg/ul

Processing Integration Results

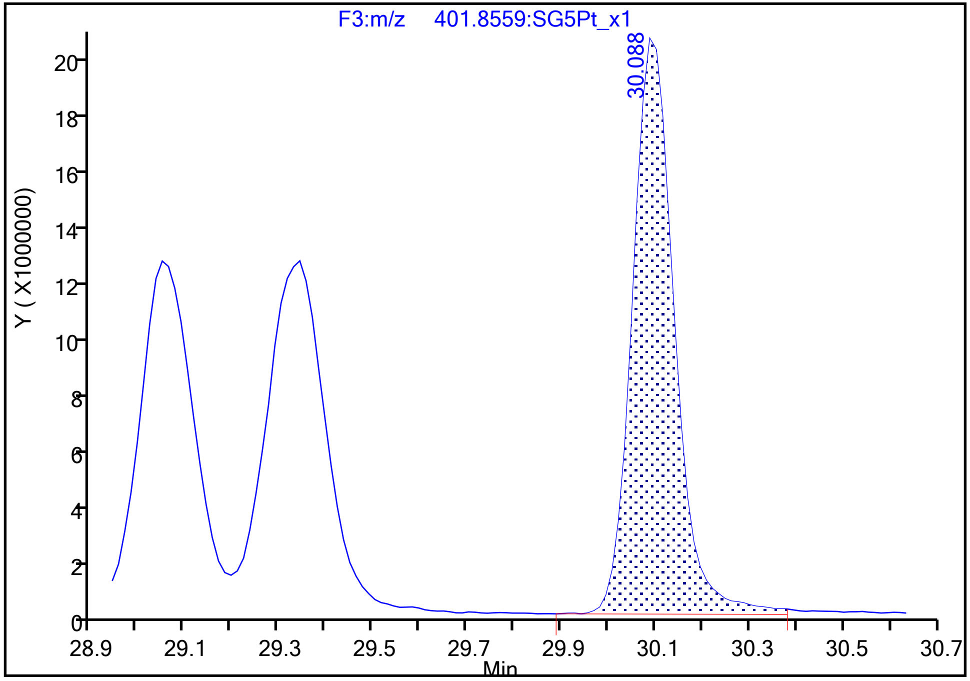

RT:	29.34
Area:	112007571
Amount:	90.707121
Amount Units:	pg/ul

Manual Integration Results

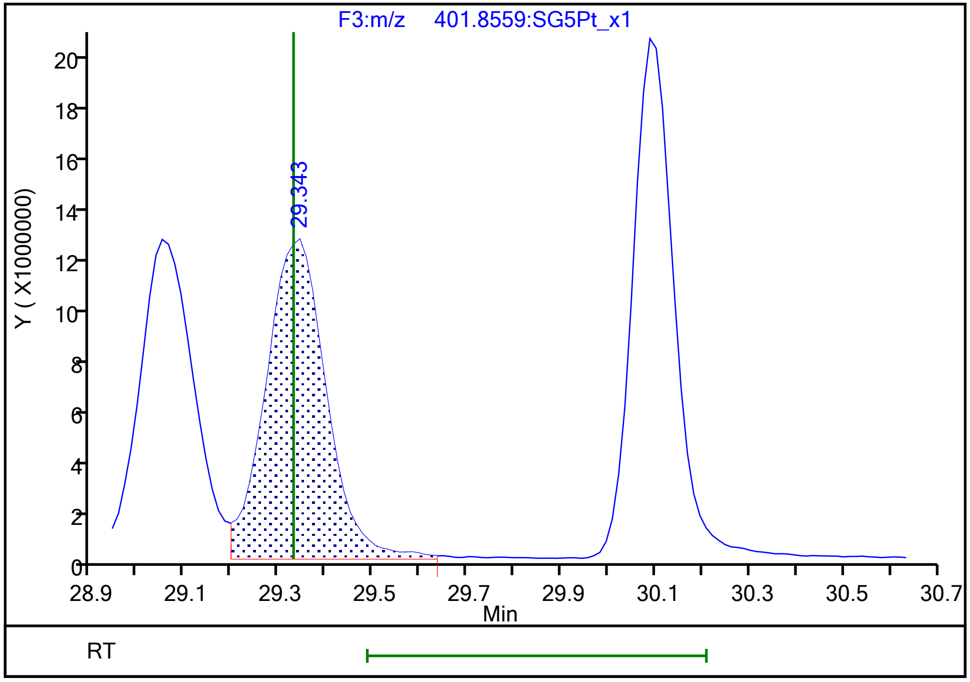

Reviewer: ruangyotsakuld, 13-Oct-2020 08:45:10

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d

Injection Date: 08-Oct-2020 12:44:04 Injection Vol: 2.0 ul

Instrument ID: 3D5 Operator ID: SMA

Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113 Sample Line#: 5

Column Type: Column Dia:

TCDF

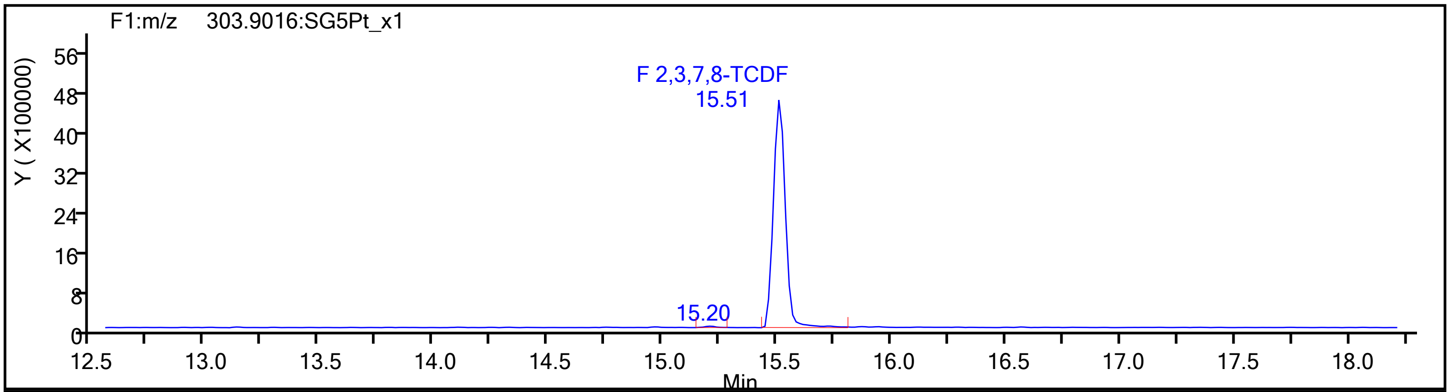

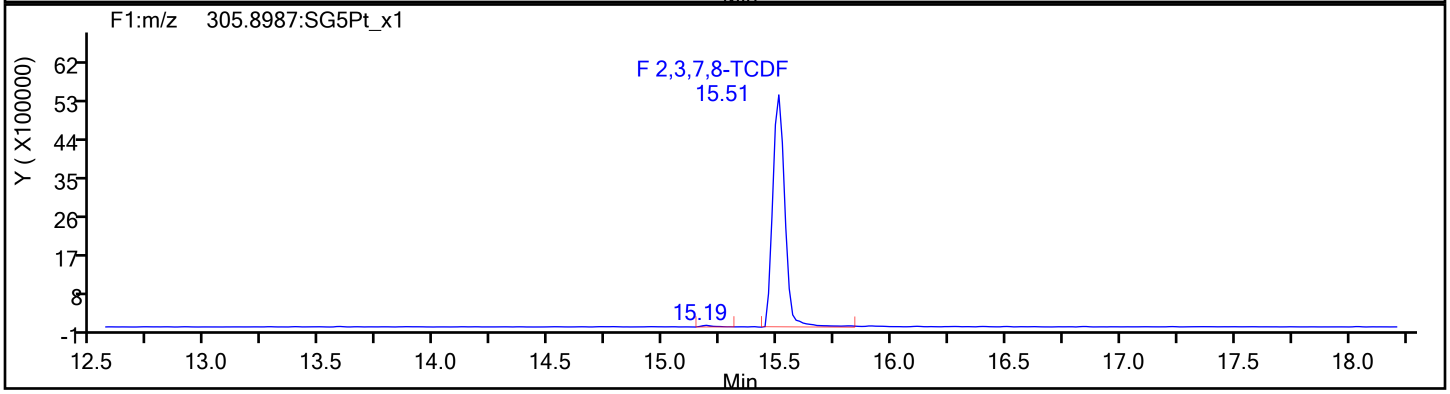

TCDF Standards

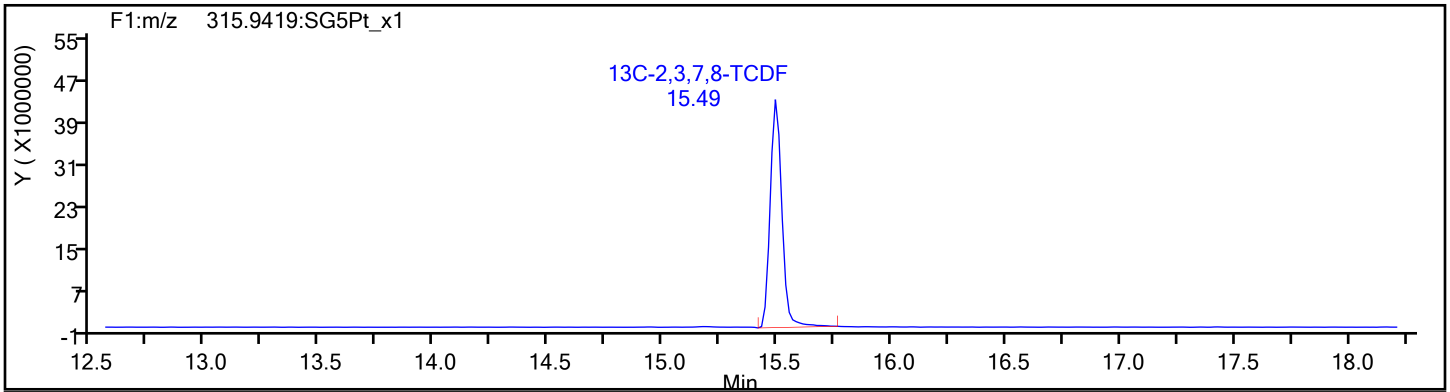

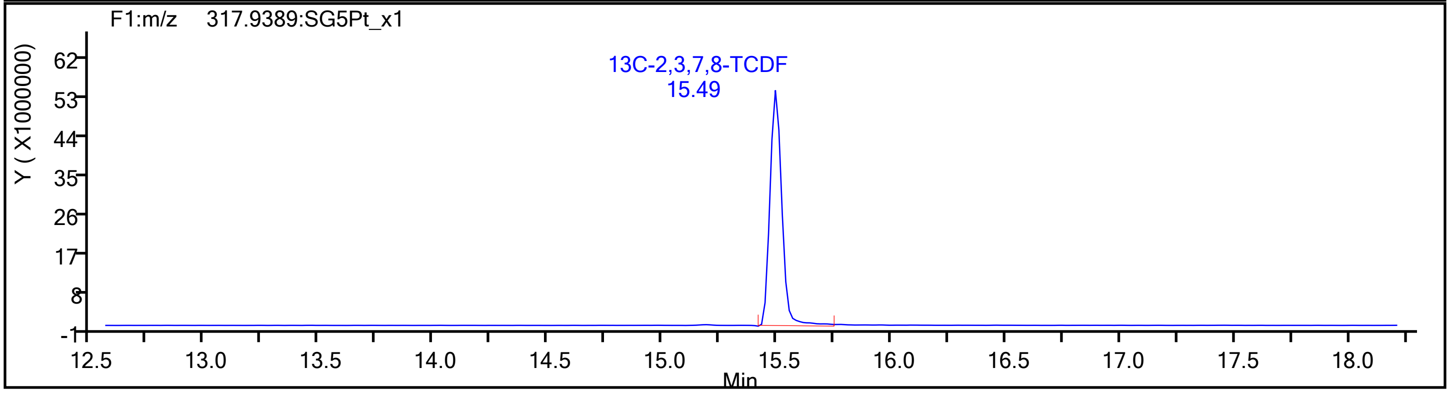

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

TCDF

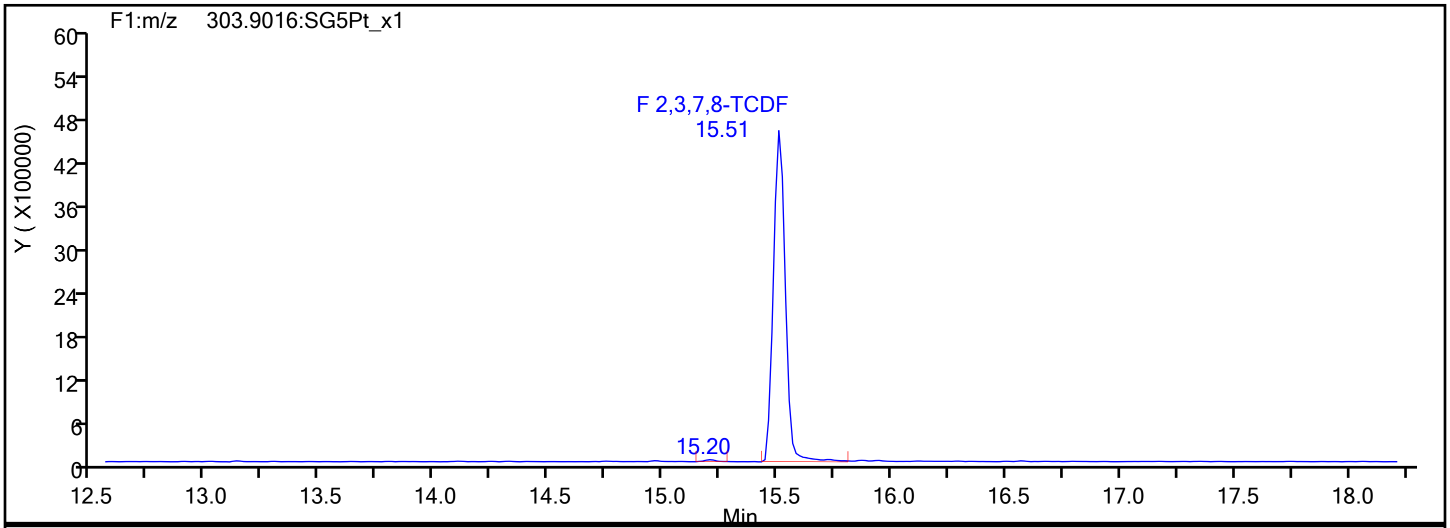

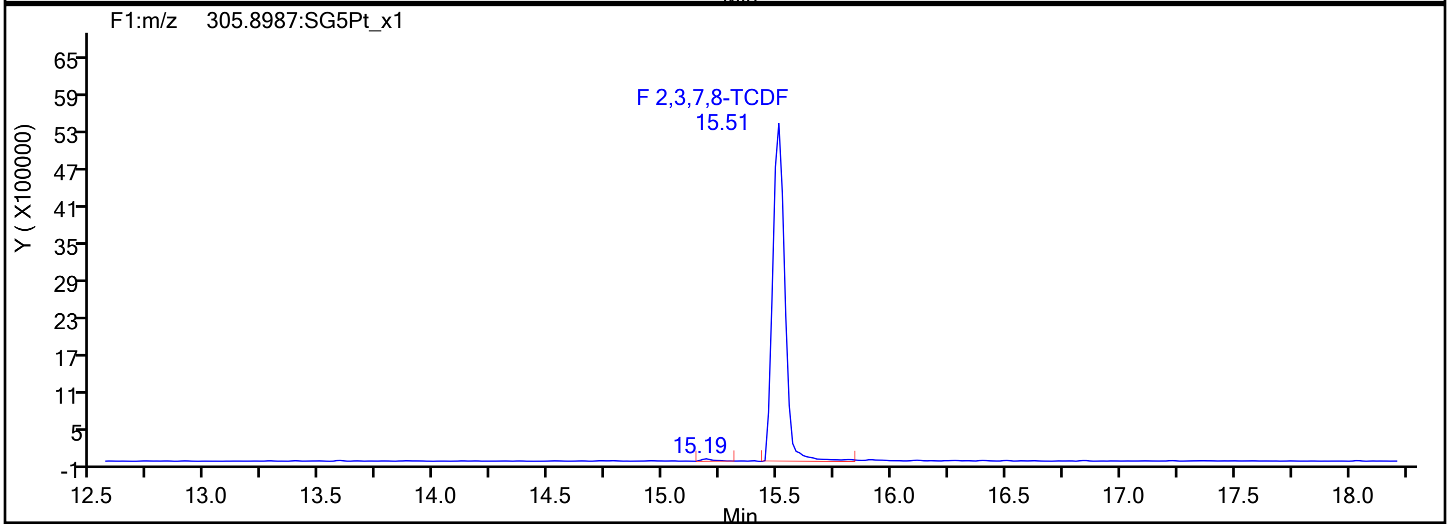

TCDF Interference Mass

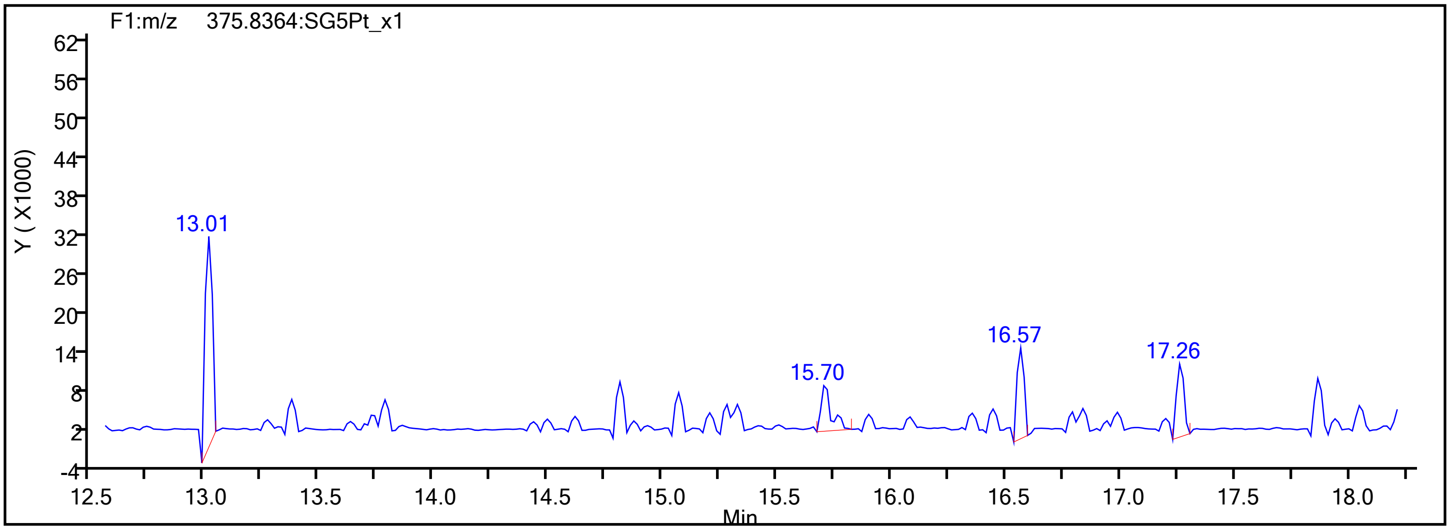

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

TCDD

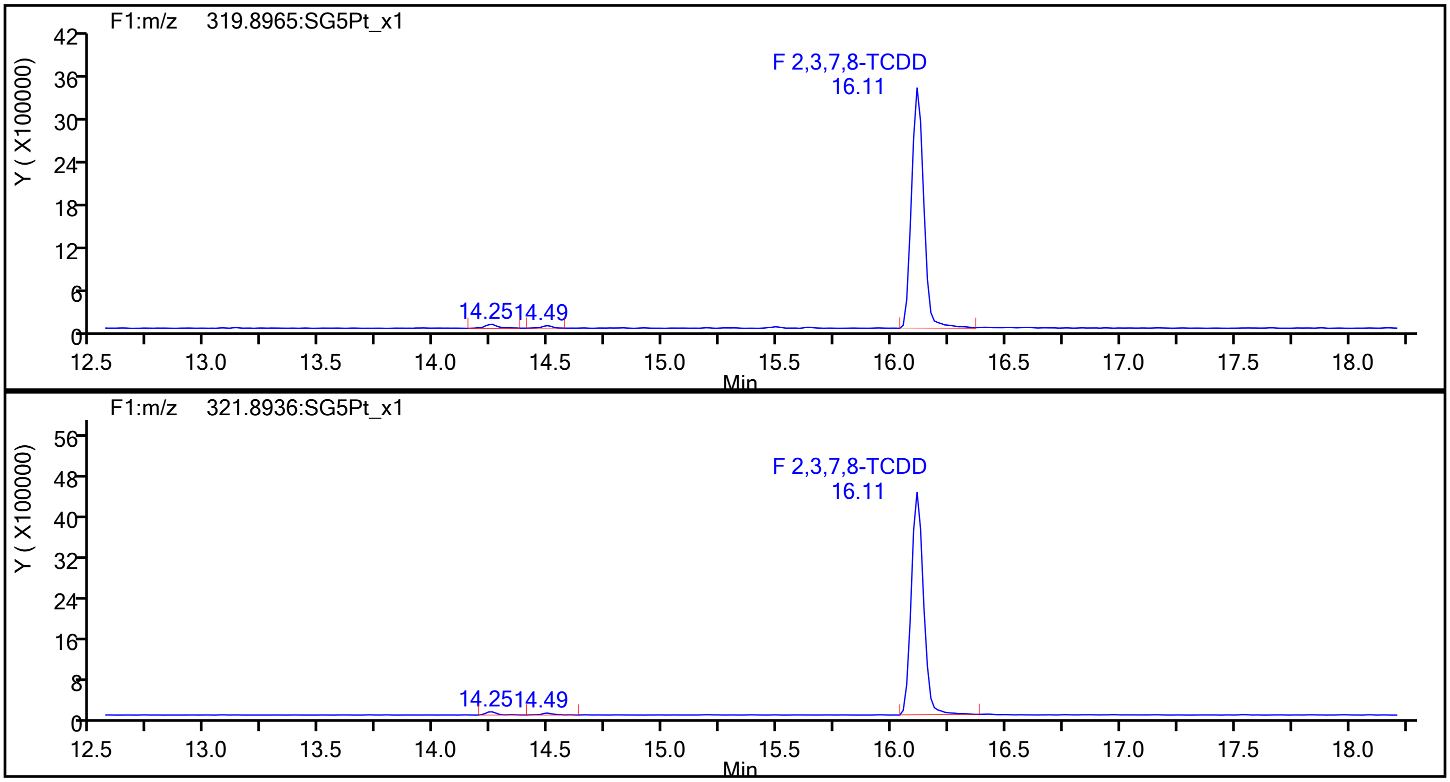

TCDD Standards

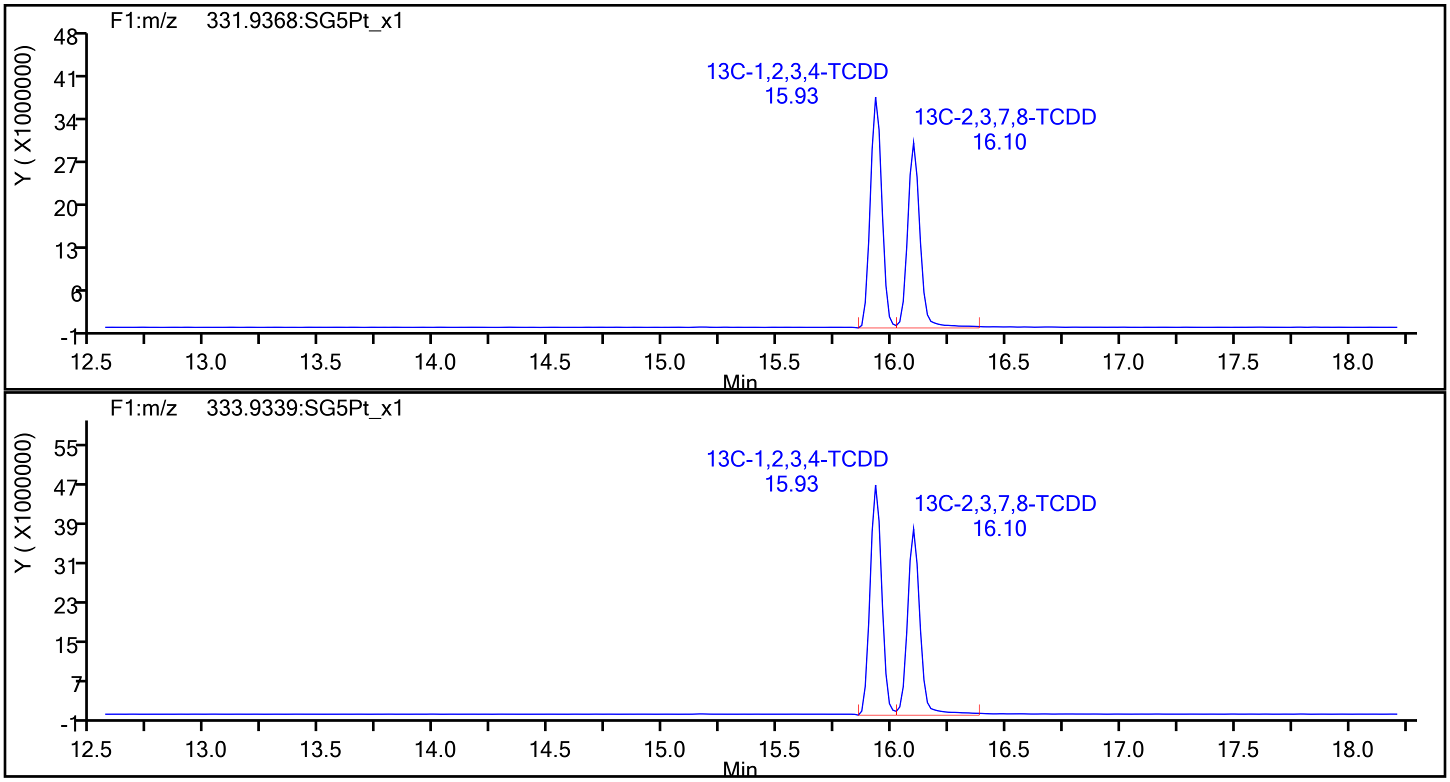

Report Date: 13-Oct-2020 08:45:27
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

37Cl4-TCDD

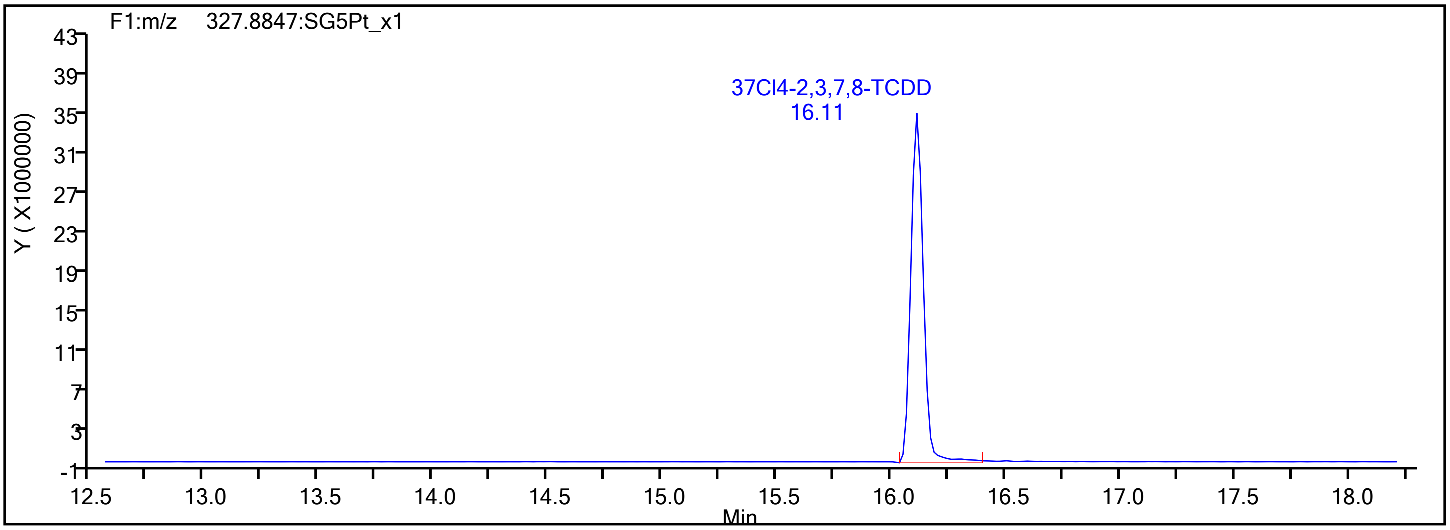

37Cl4-TCDD Standards

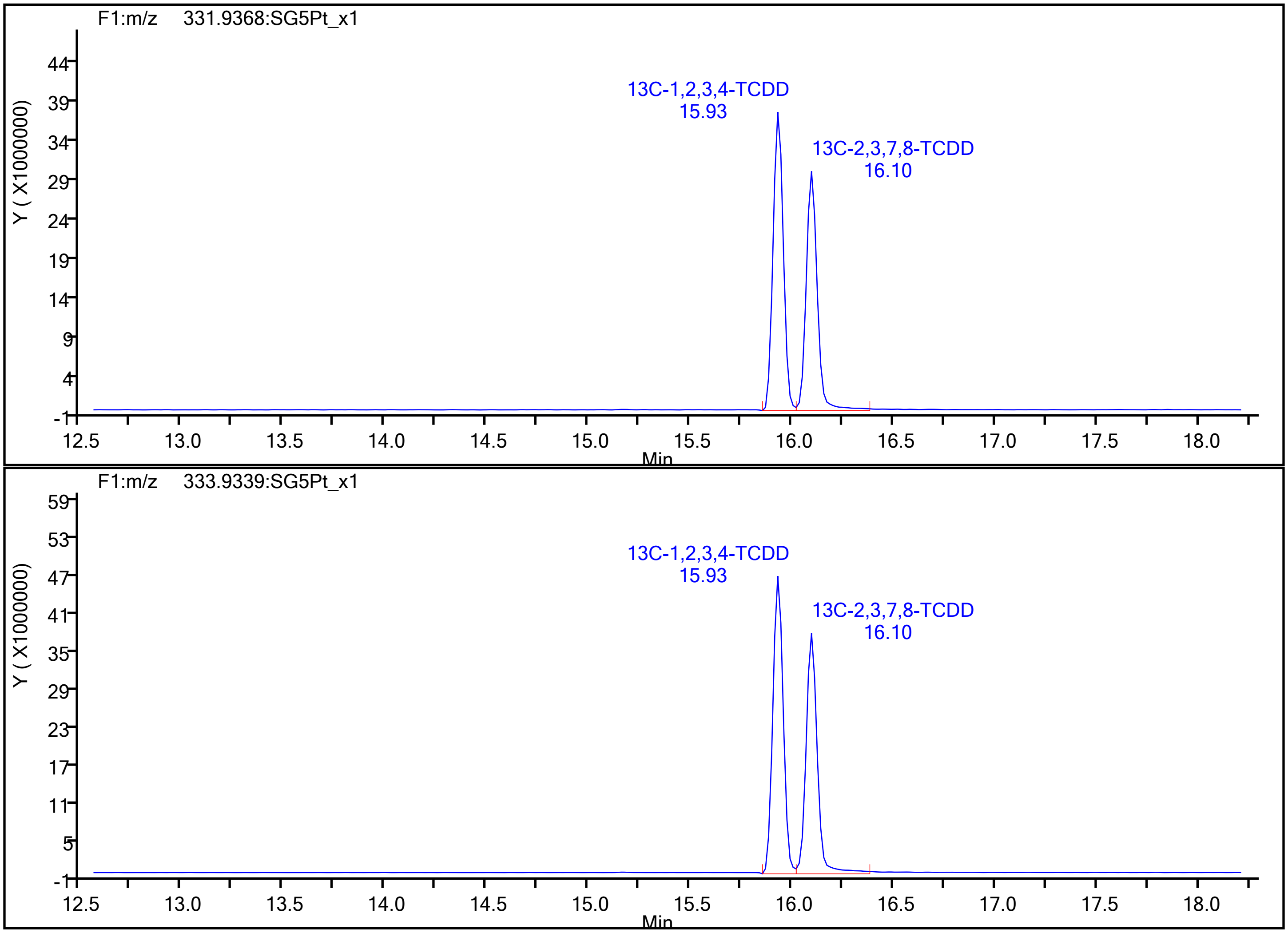

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

PeCDF

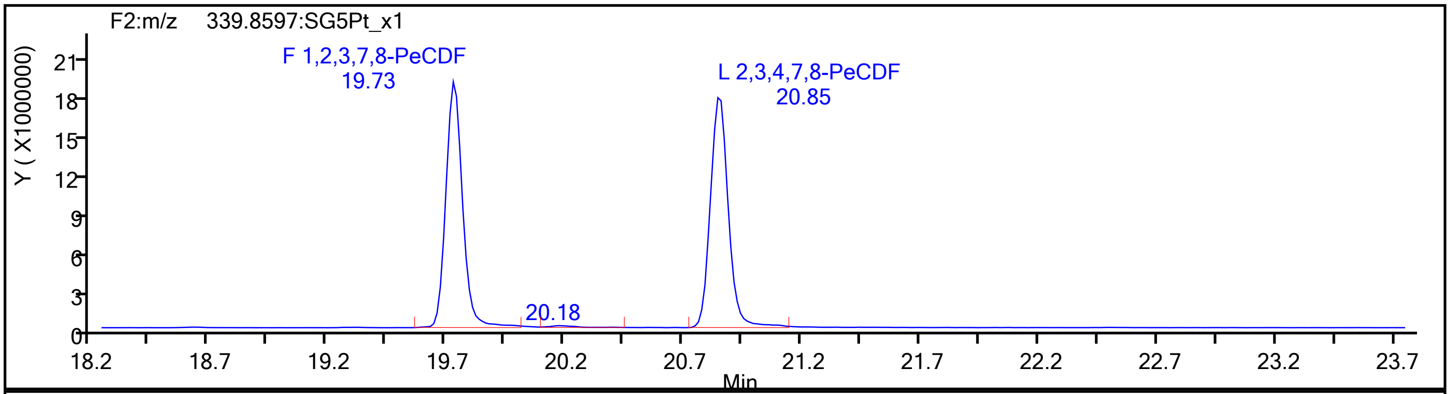

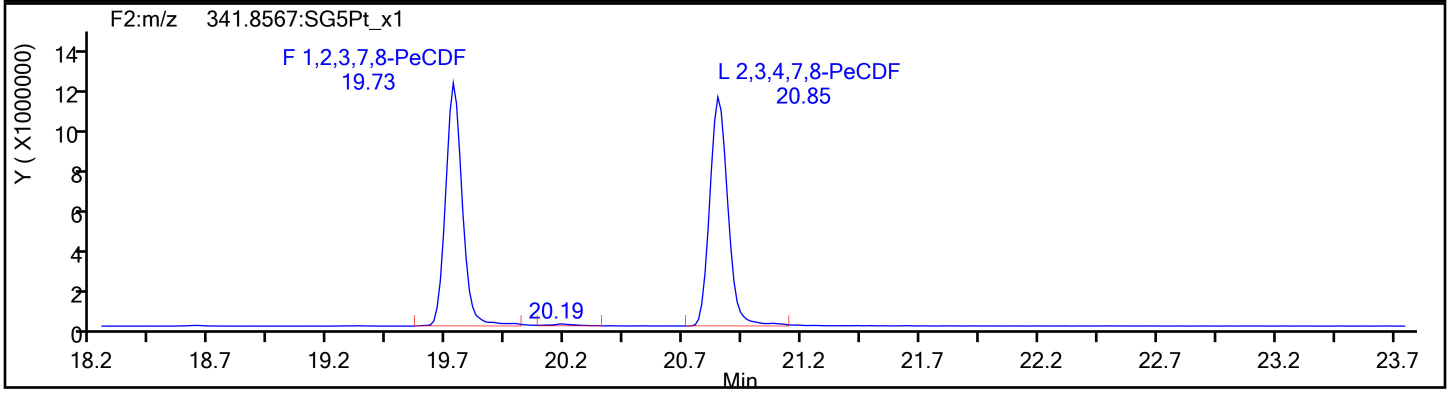

PeCDF Standards

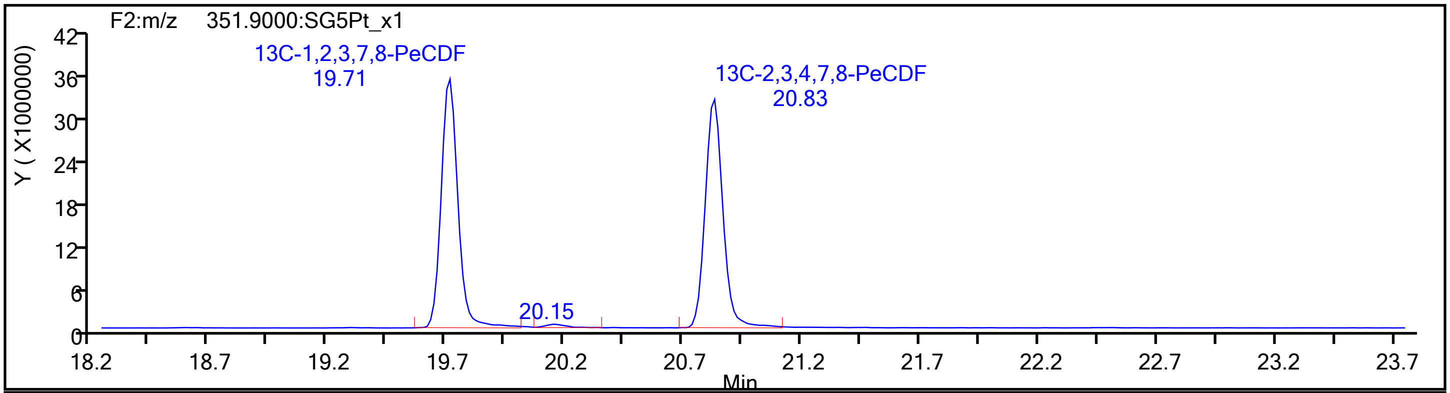

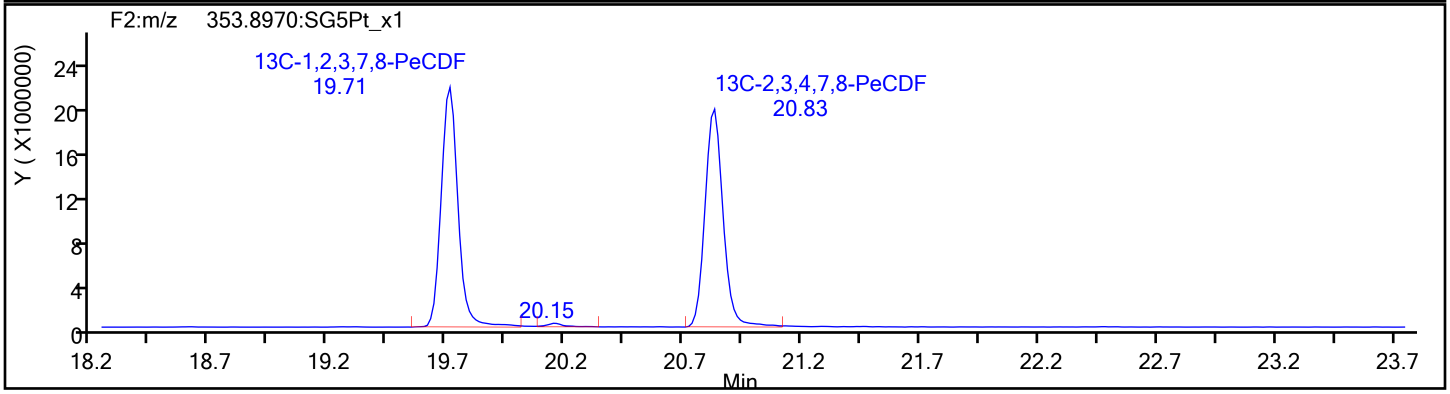

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d
Injection Date: 08-Oct-2020 12:44:04
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 5
Column Type:
Column Dia:

PeCDF

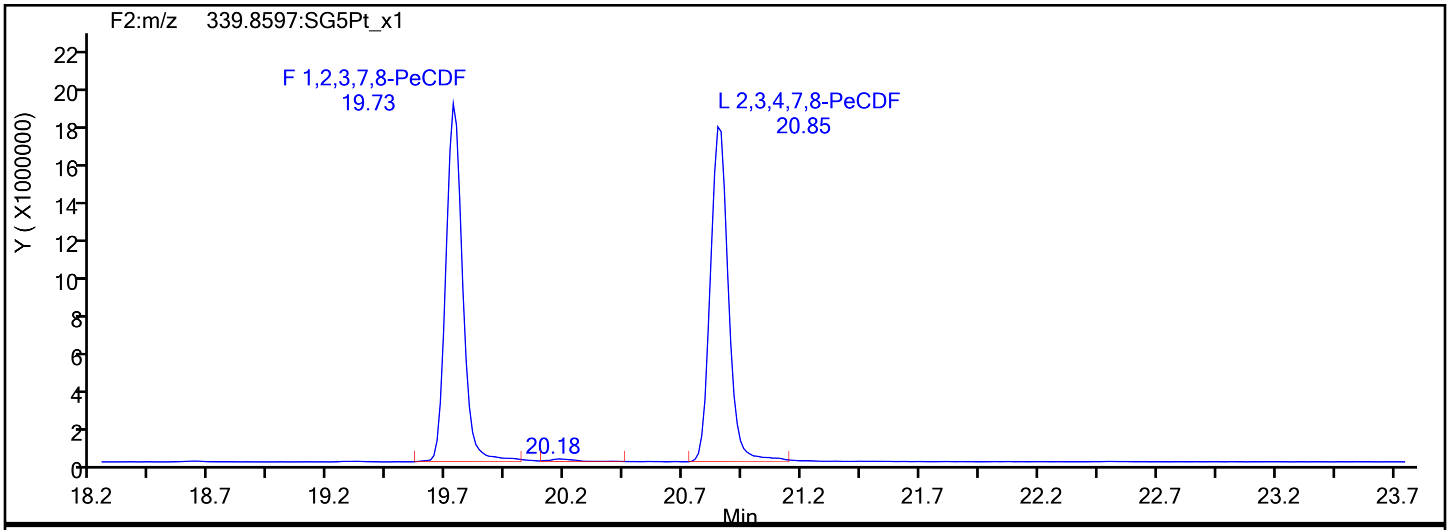

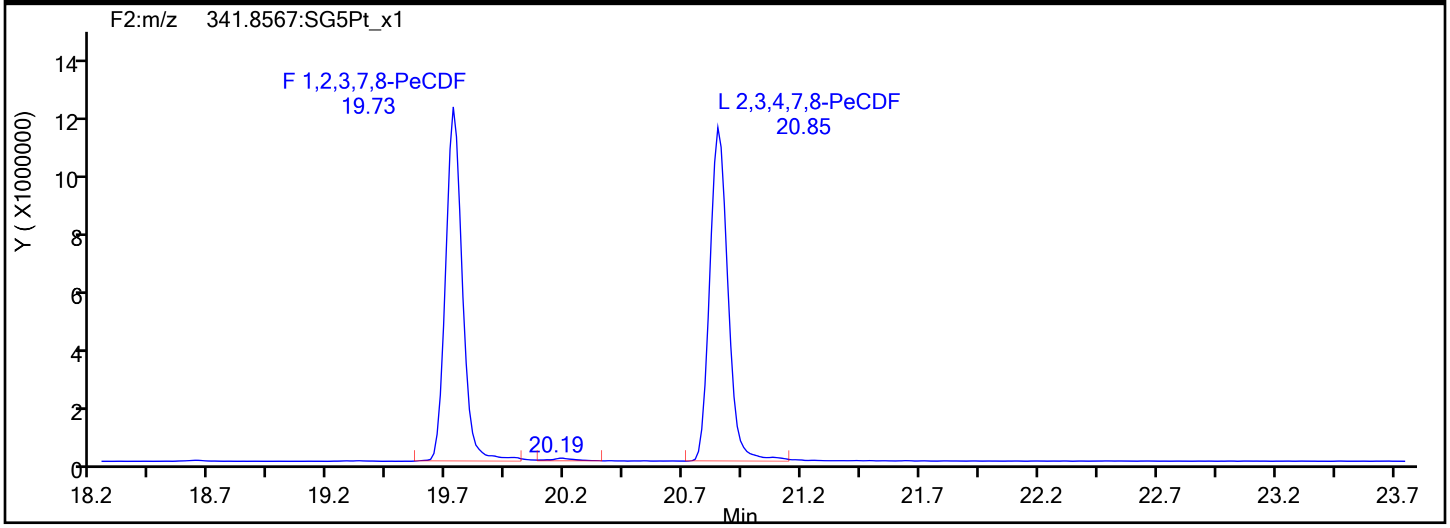

PeCDF Interference Mass

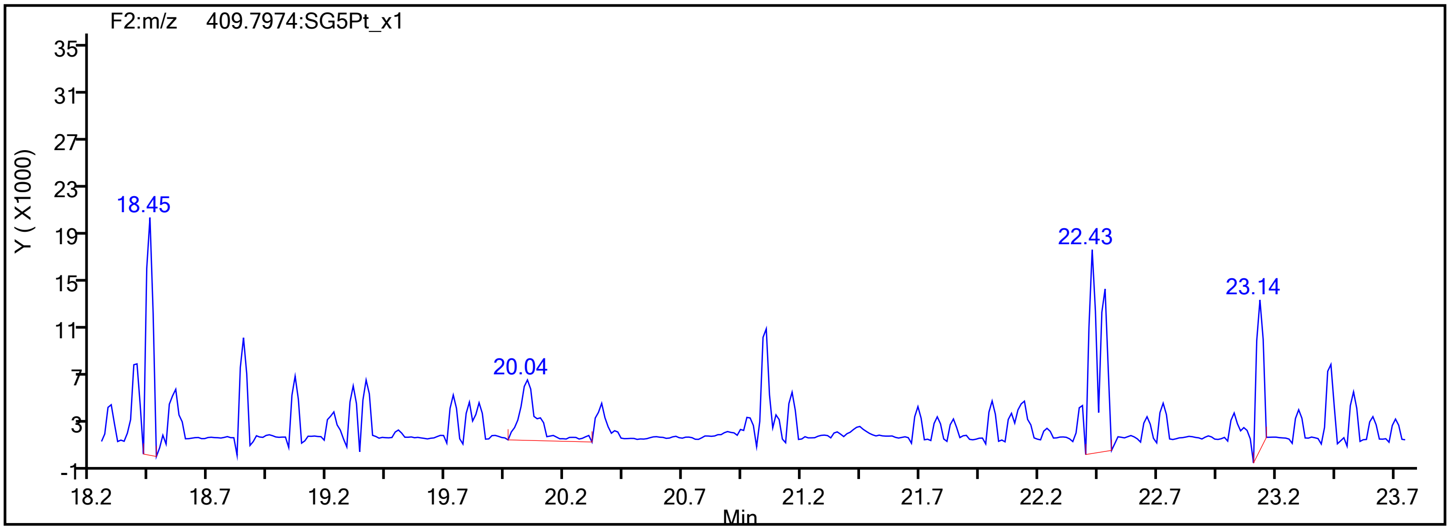

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

PeCDD

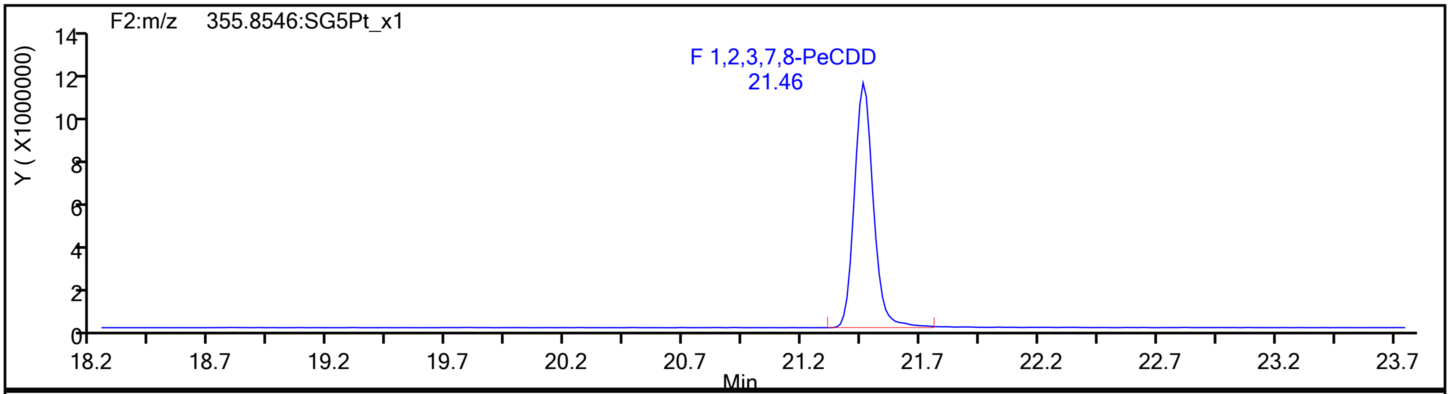

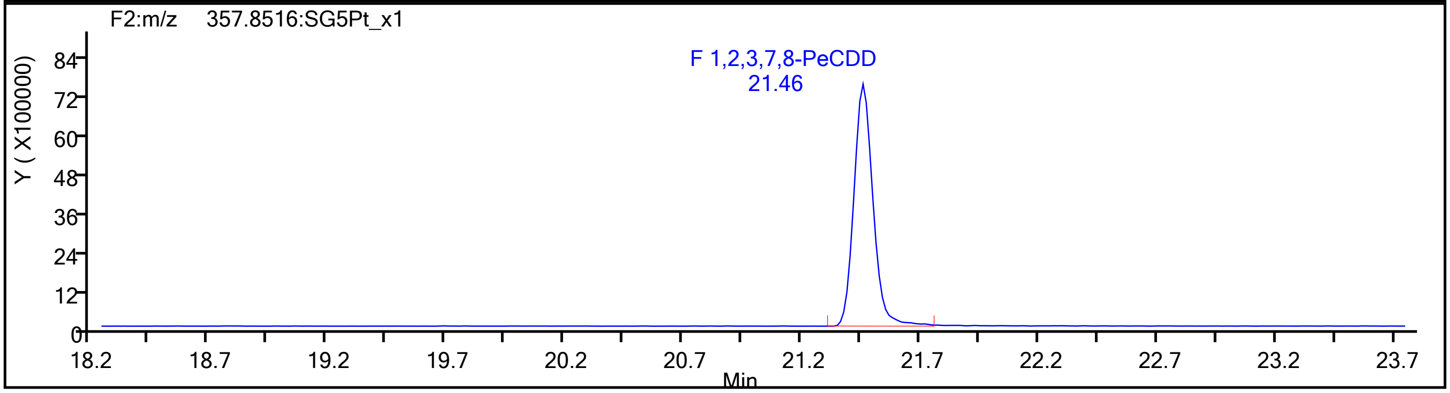

PeCDD Standards

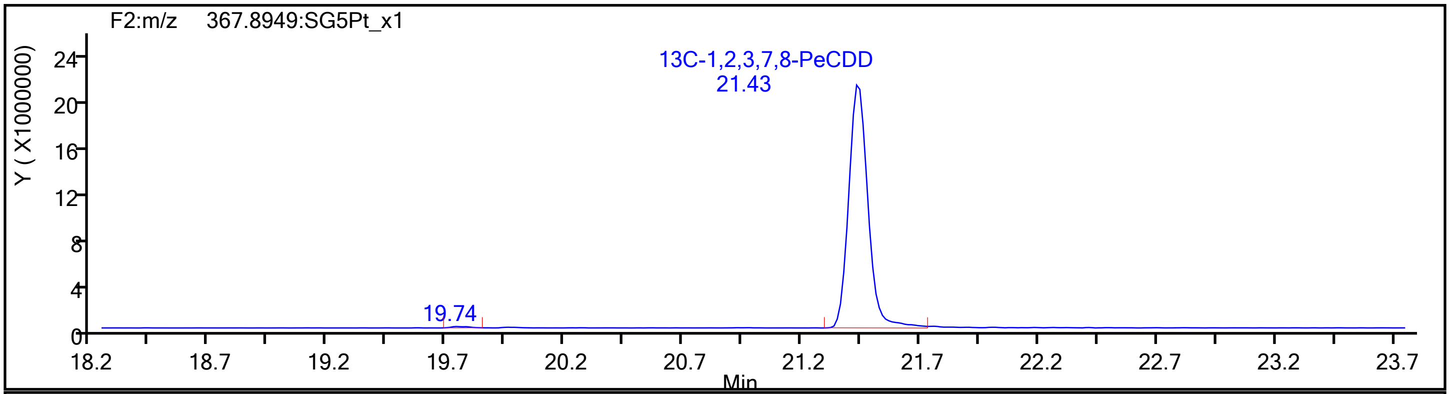

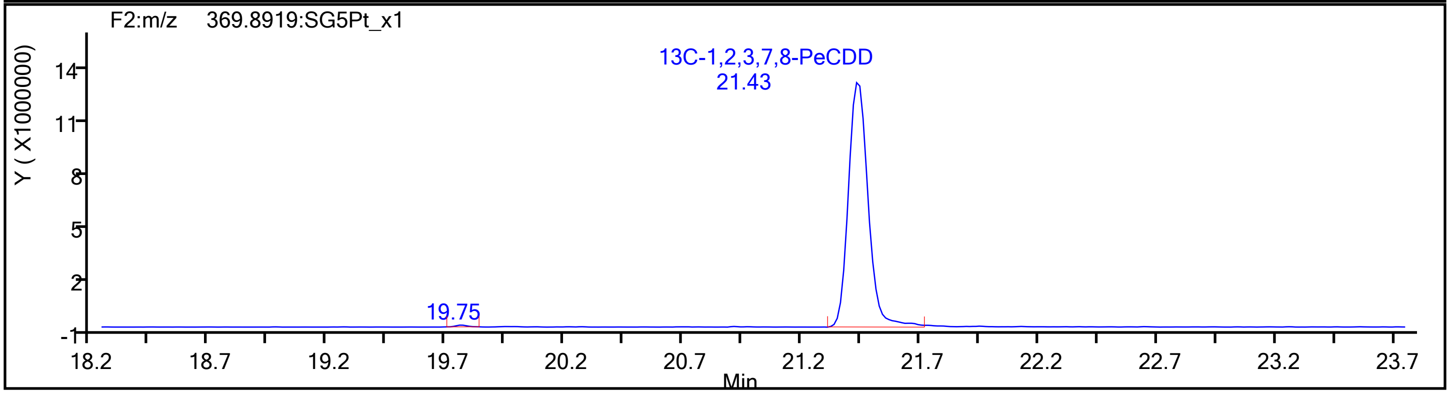

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

HxCDF

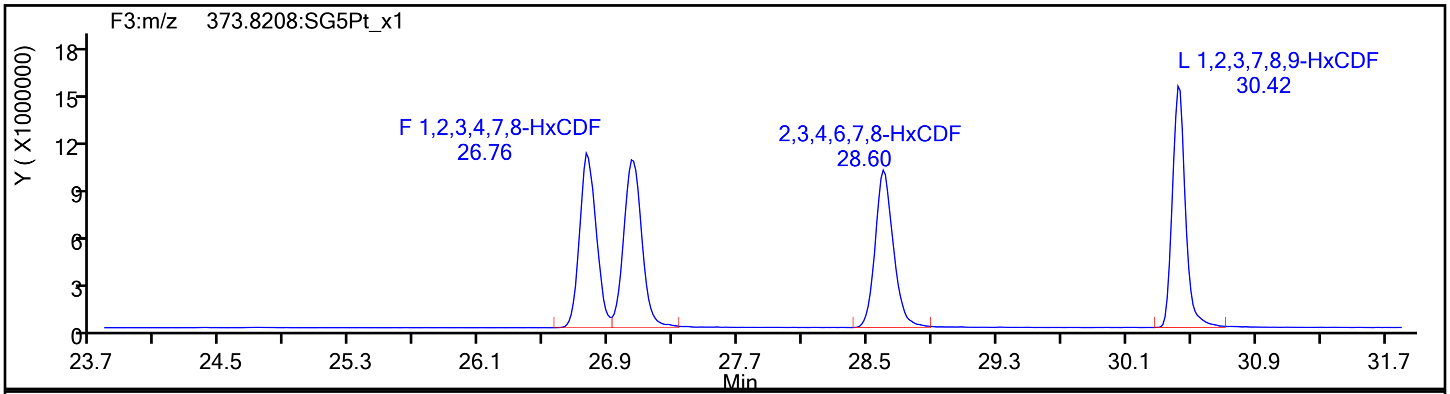

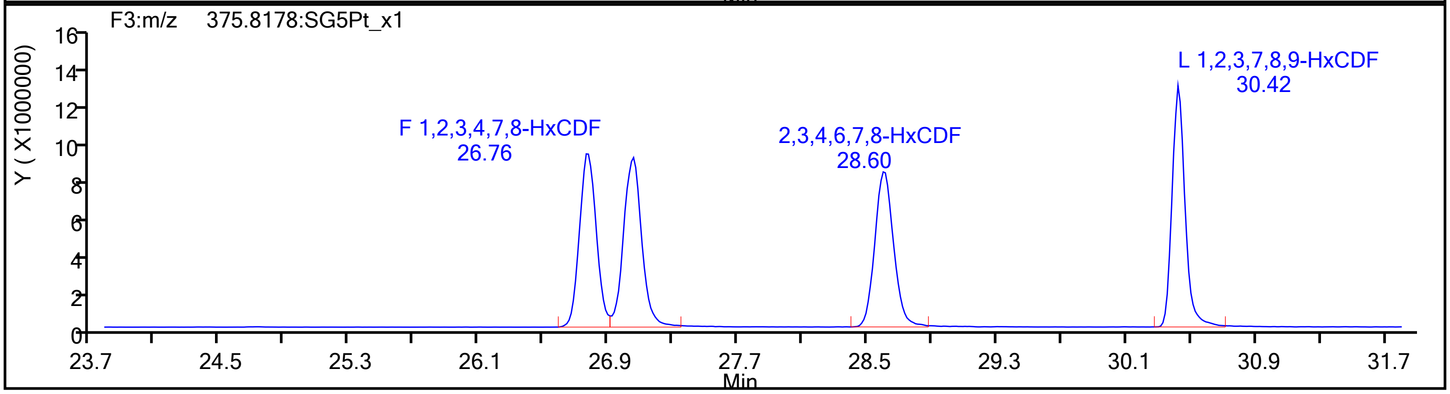

HxCDF Standards

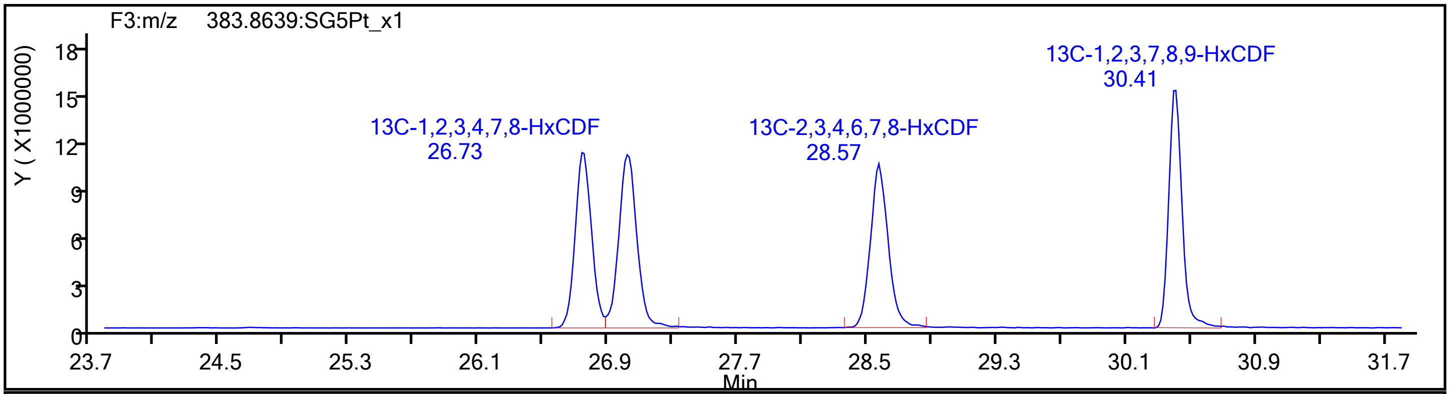

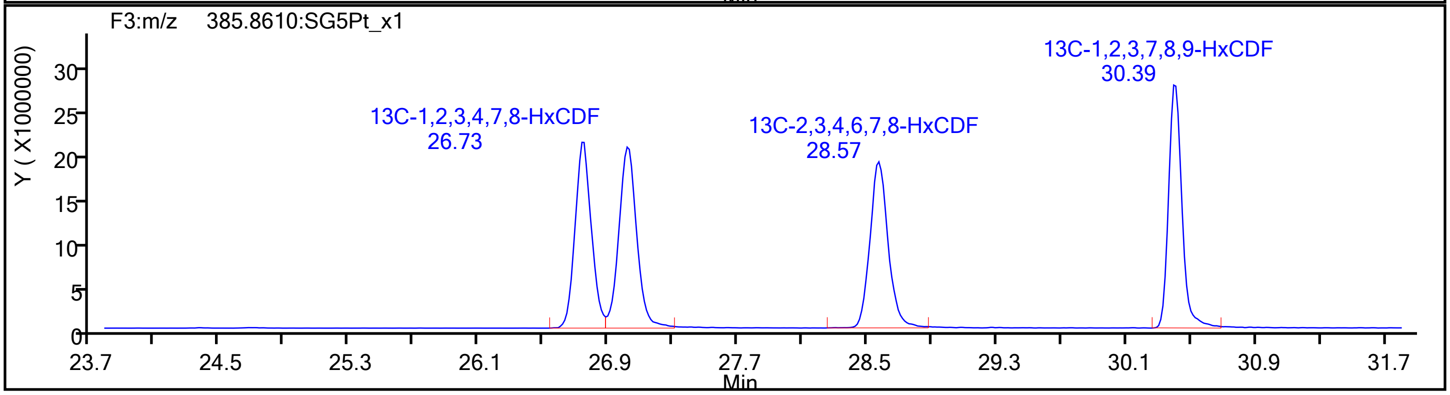

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

HxCDF

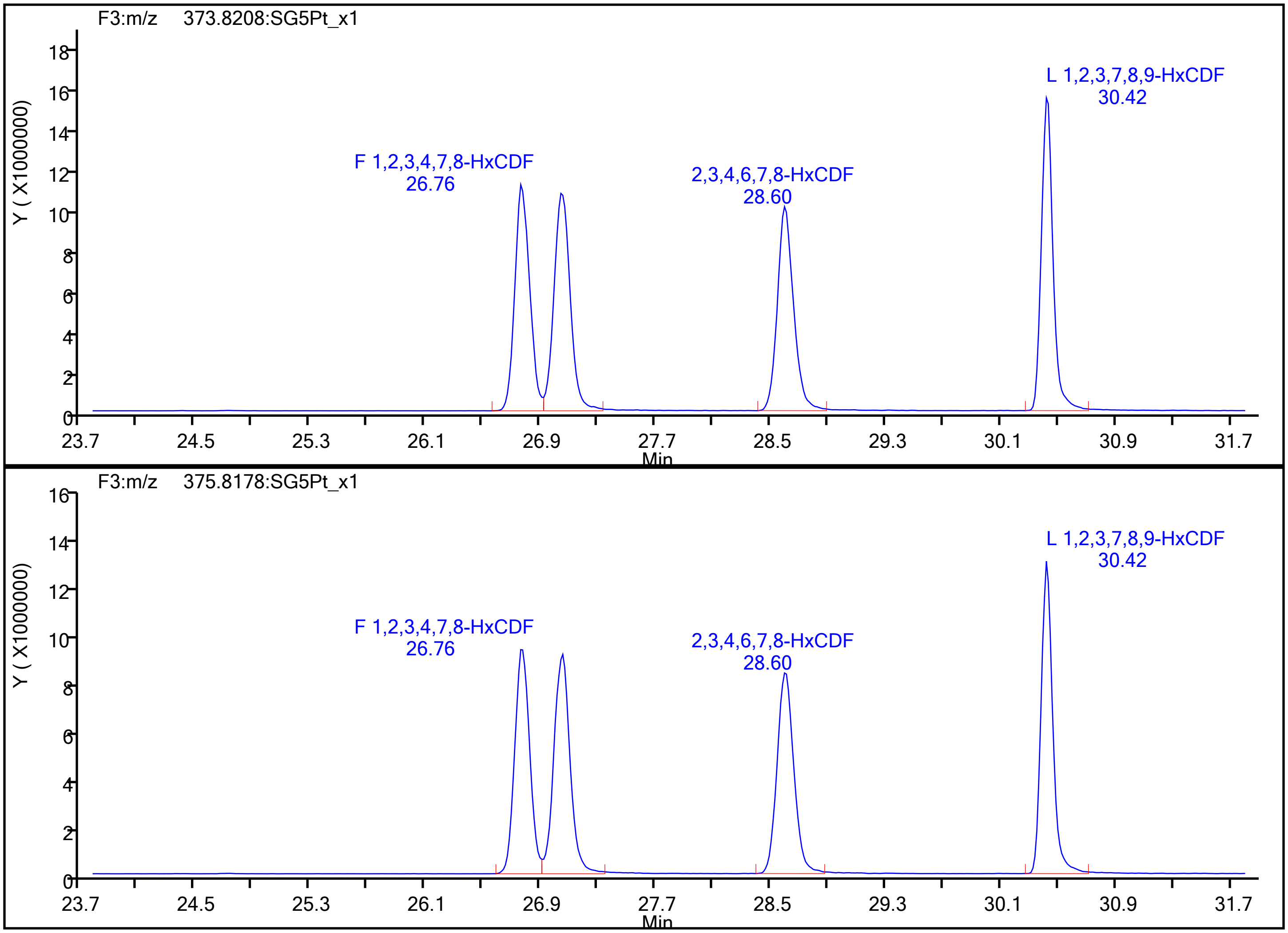

HxCDF Interference Mass

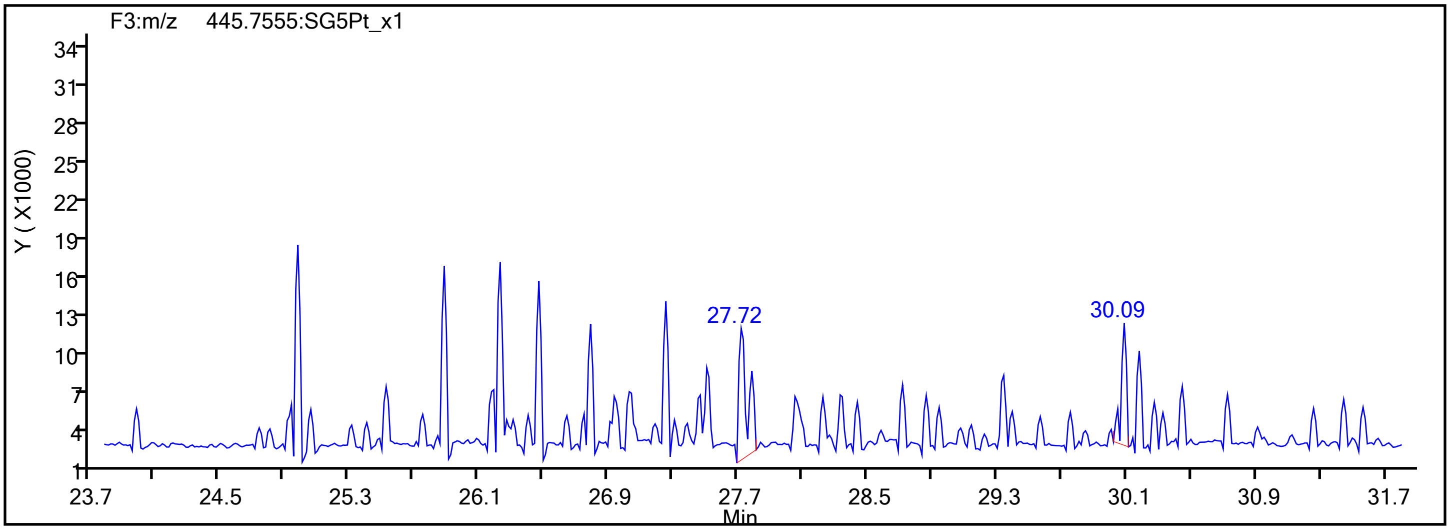

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d

Injection Date: 08-Oct-2020 12:44:04
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 5
Column Type:
Column Dia:

HxCDD

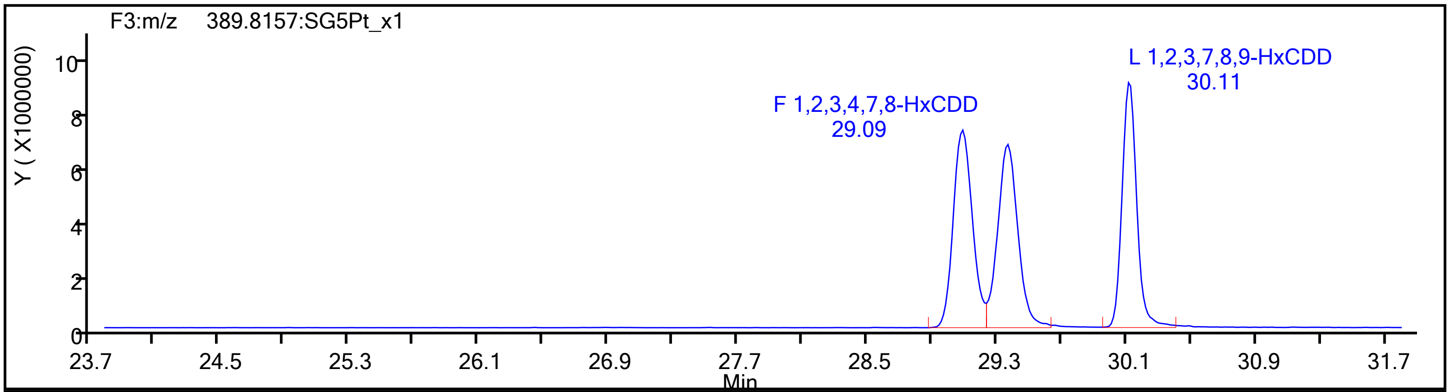

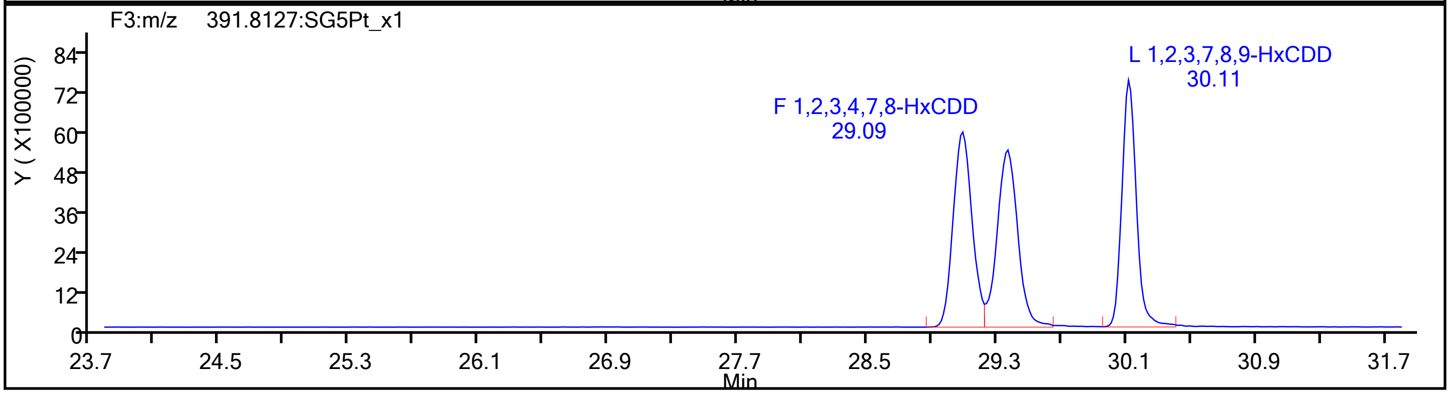

HxCDD Standards

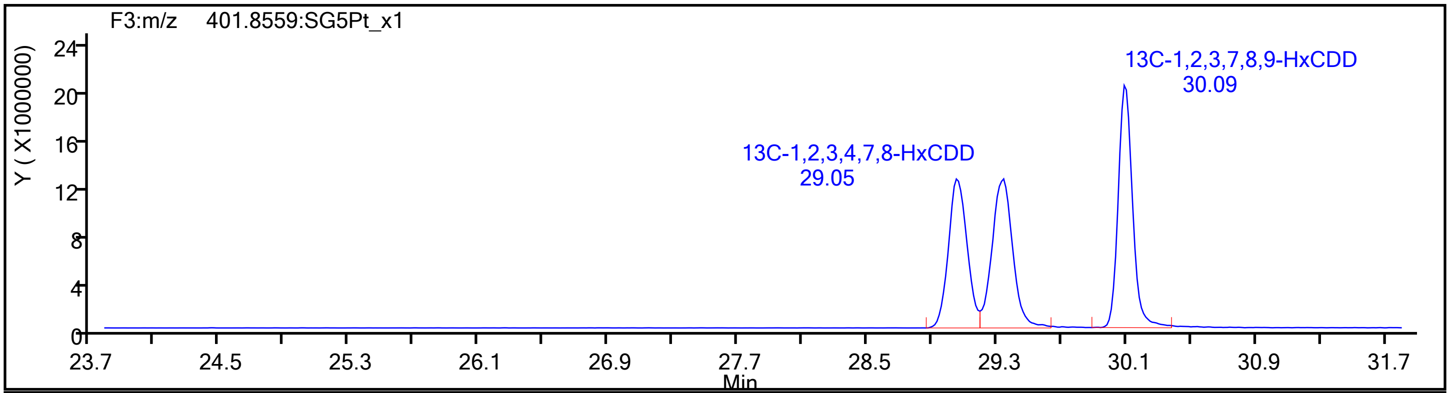

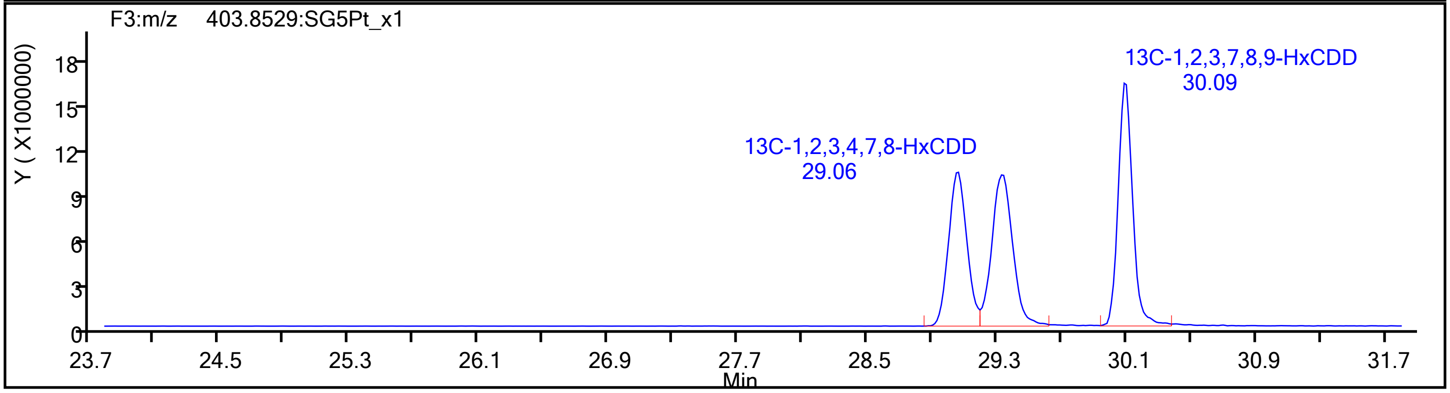

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

HpCDF

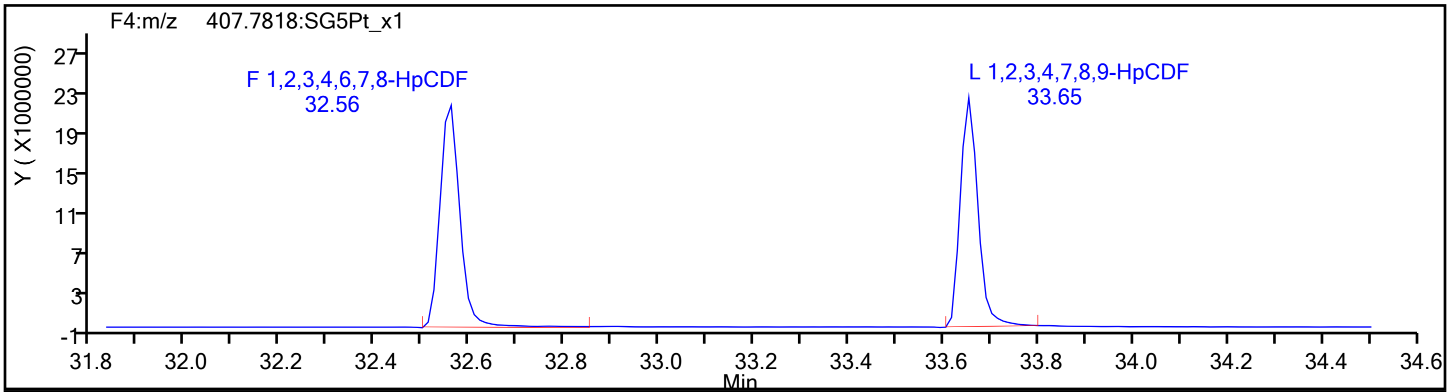

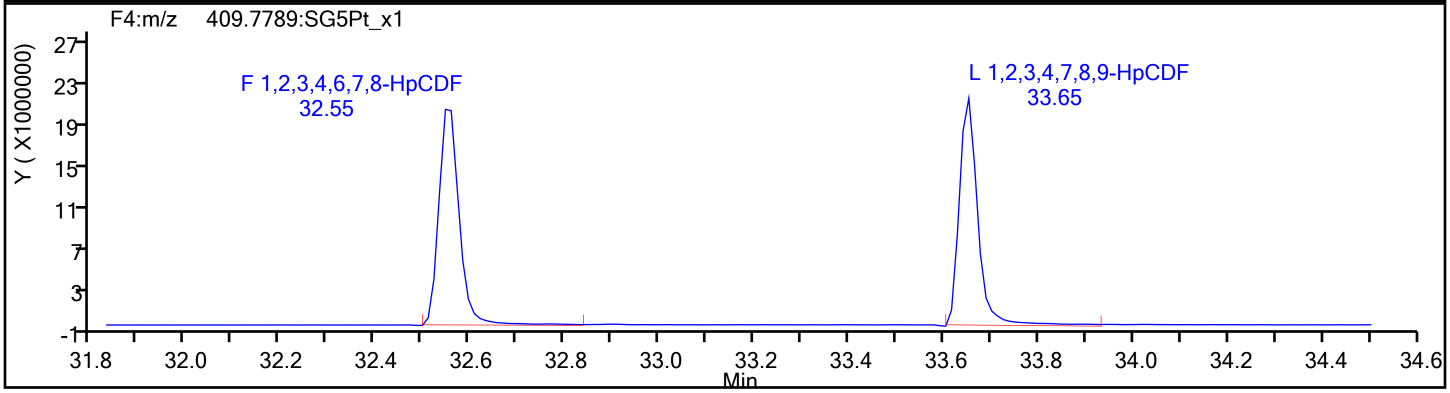

HpCDF Standards

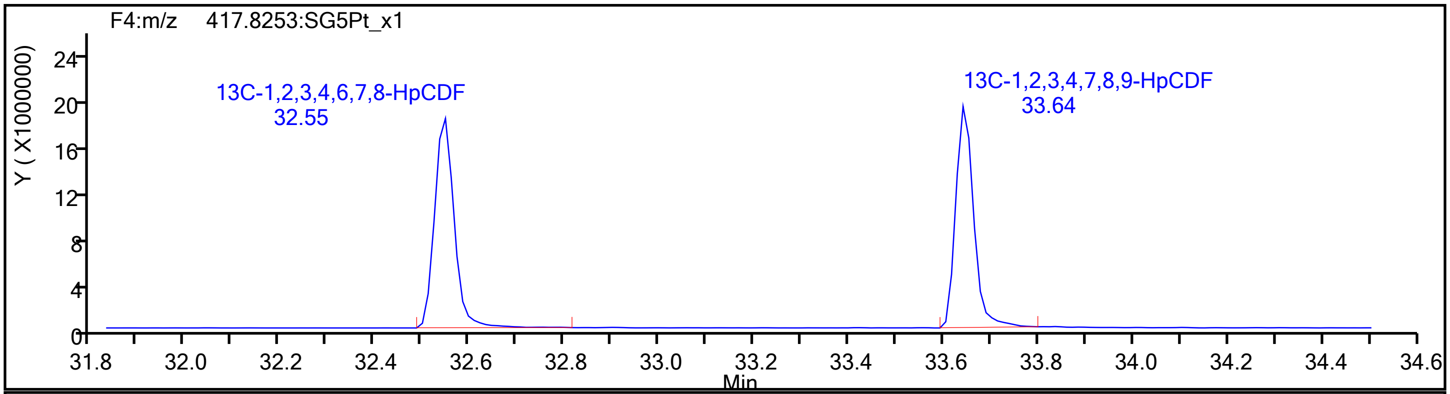

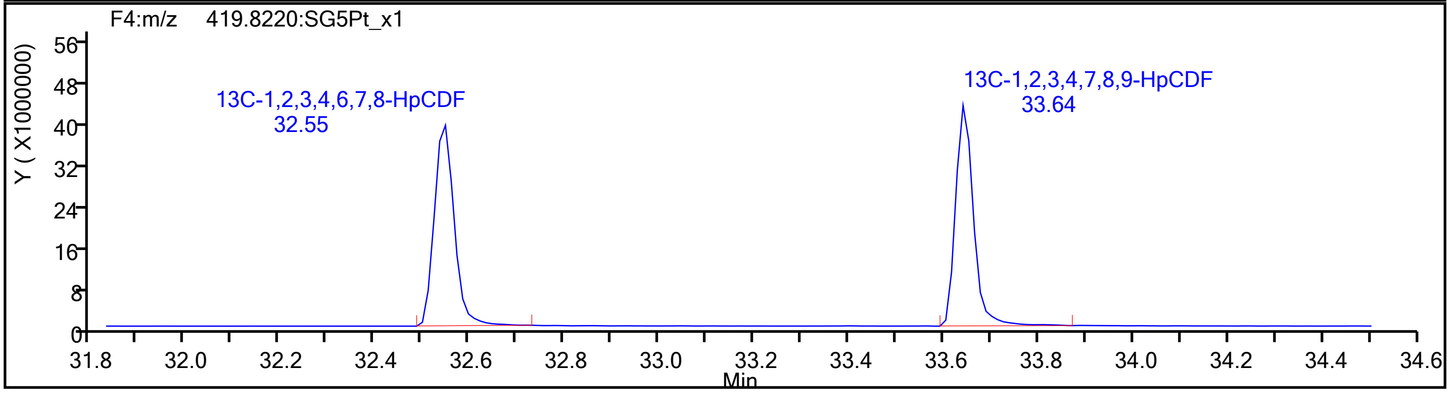

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d
Injection Date: 08-Oct-2020 12:44:04
Injection Vol: 2.0 ul
Instrument ID: 3D5
Operator ID: SMA
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113
Sample Line#: 5
Column Type:
Column Dia:

HpCDF

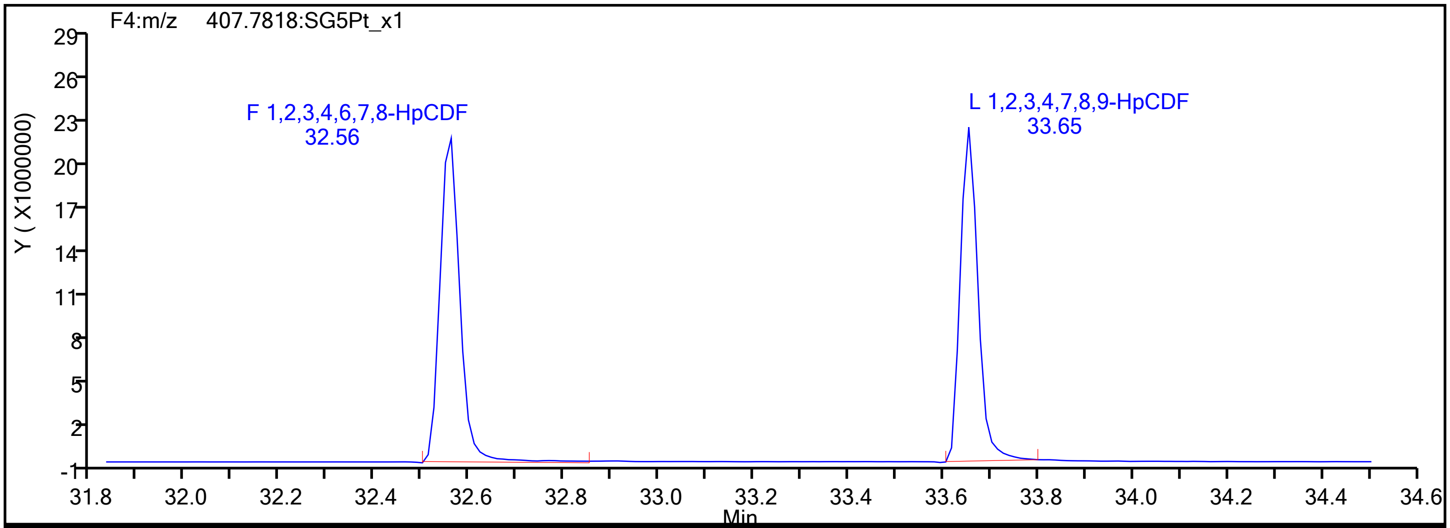

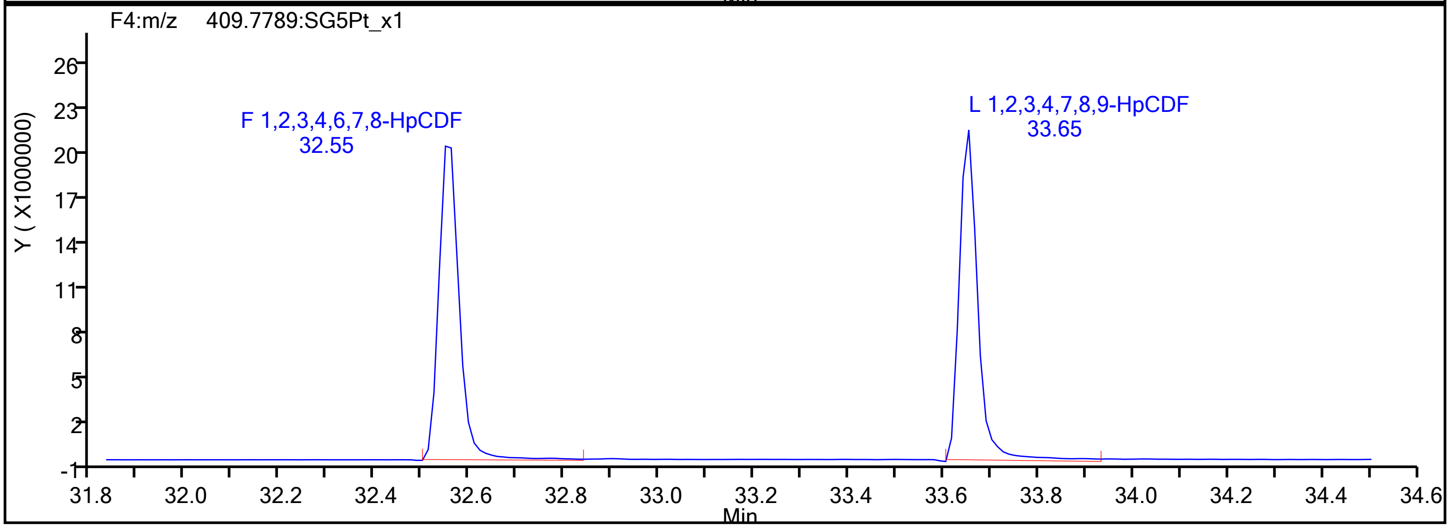

HpCDF Interference Mass

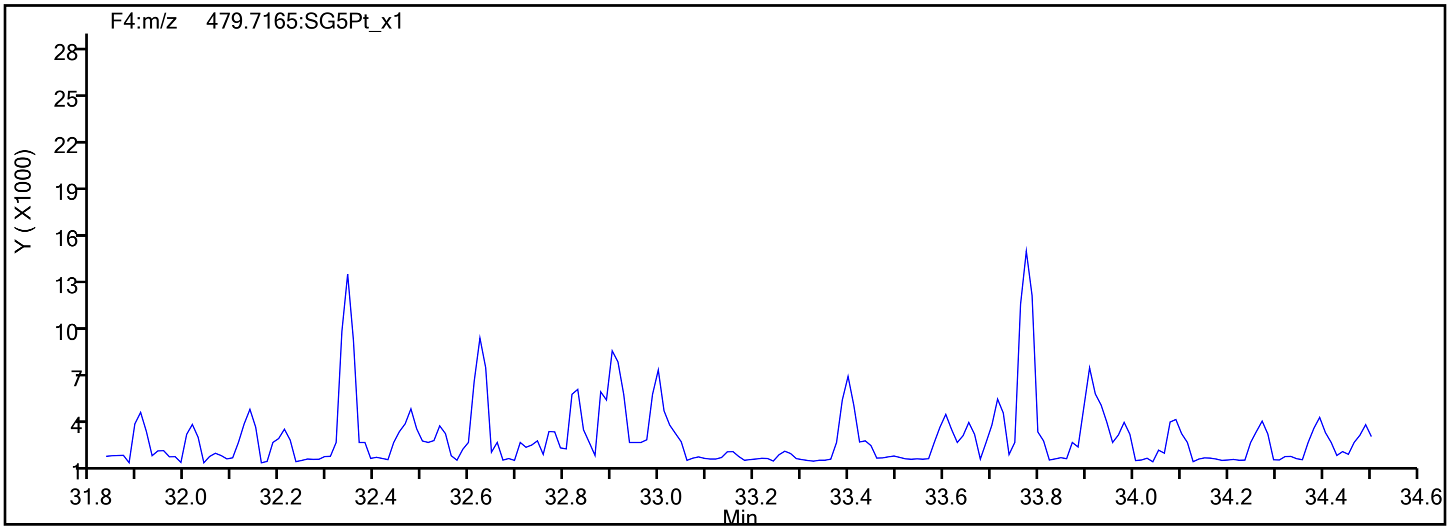

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

HpCDD

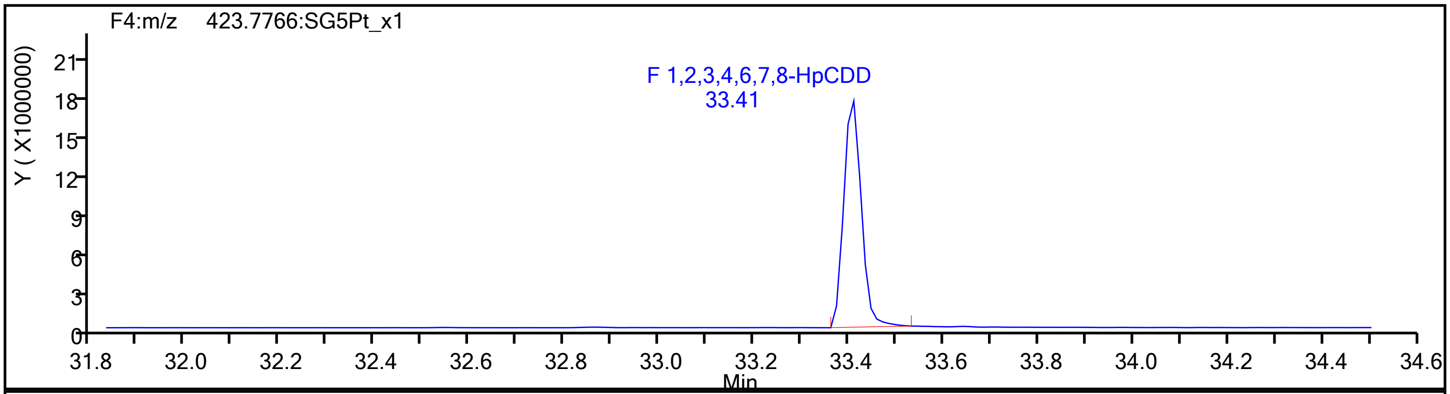

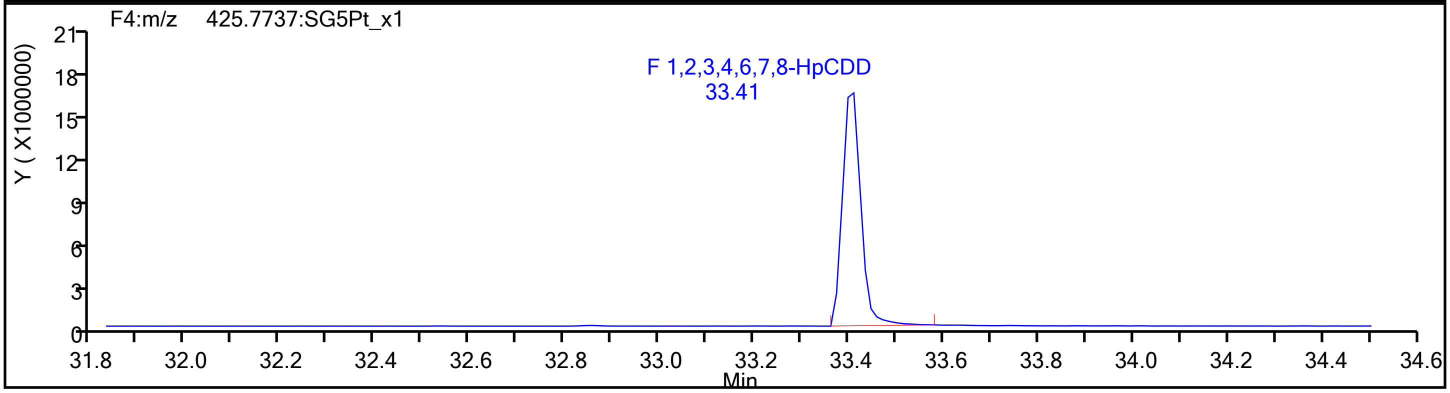

HpCDD Standards

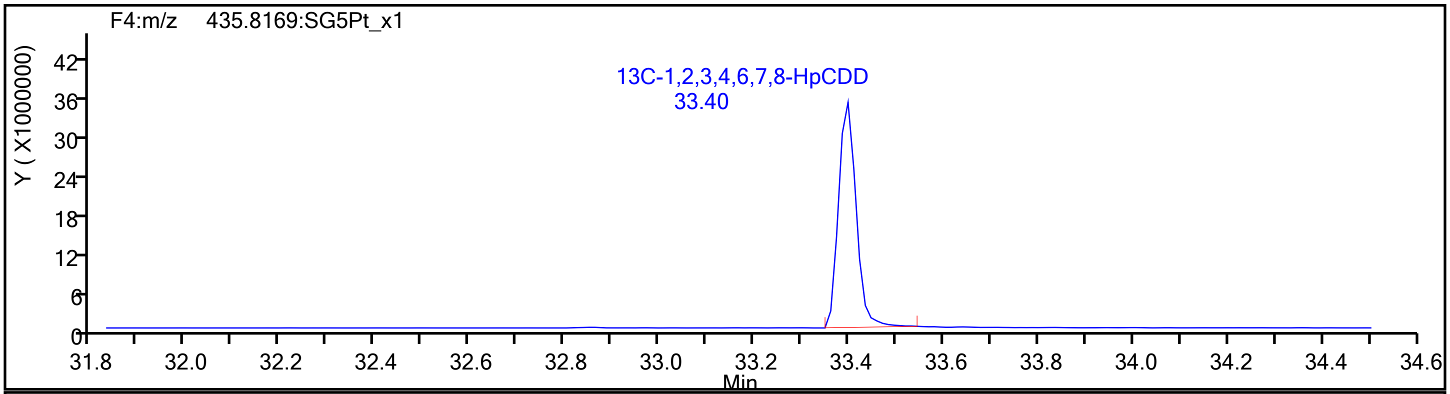

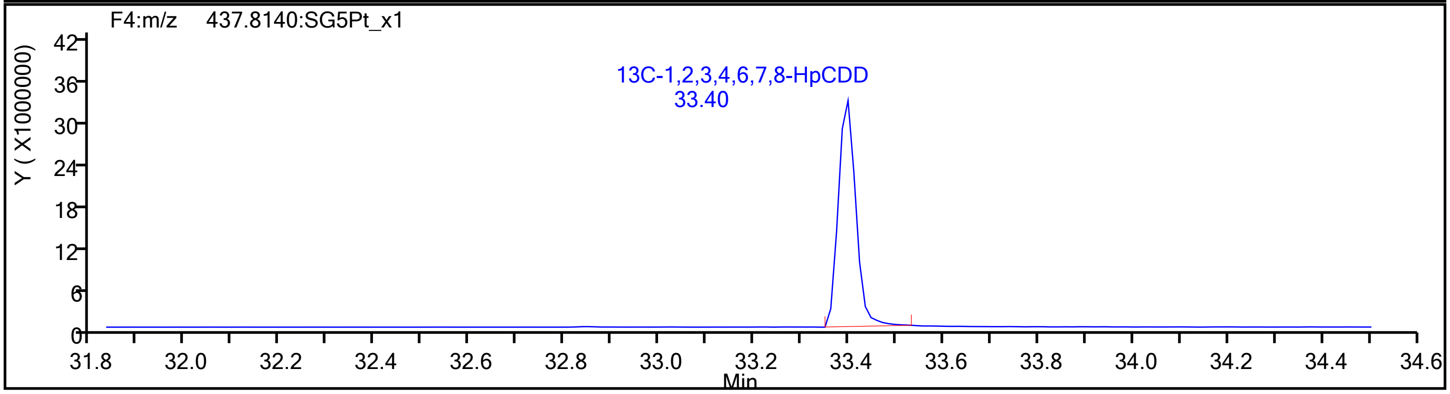

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d

Injection Date: 08-Oct-2020 12:44:04

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 5

Column Type:

Column Dia:

OCDF

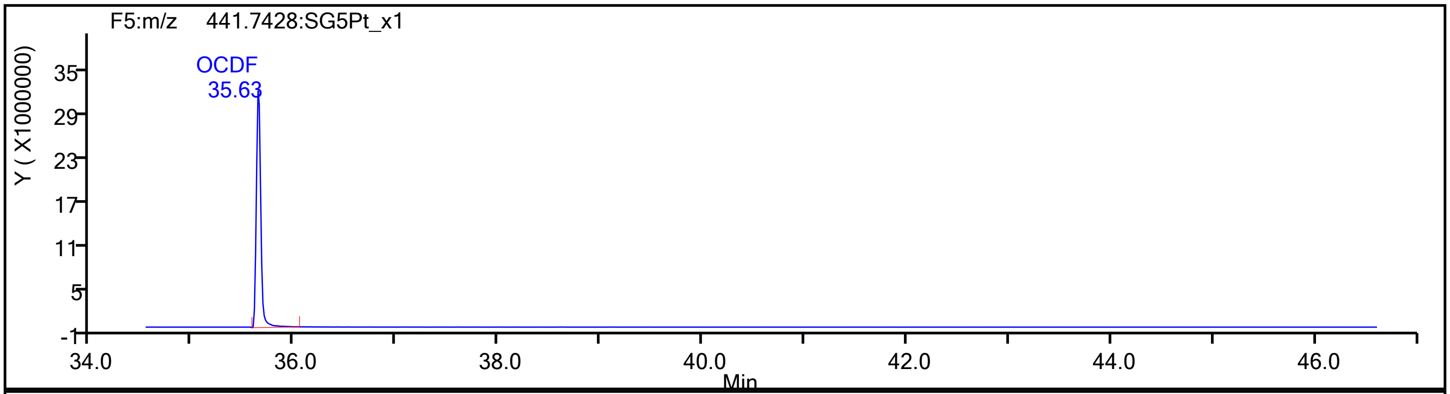

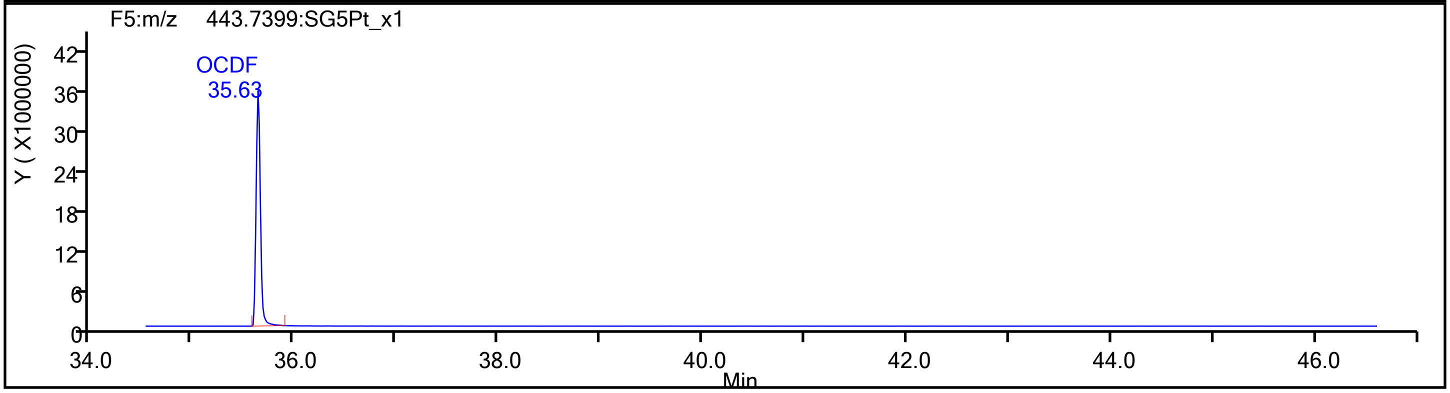

OCDF Standards

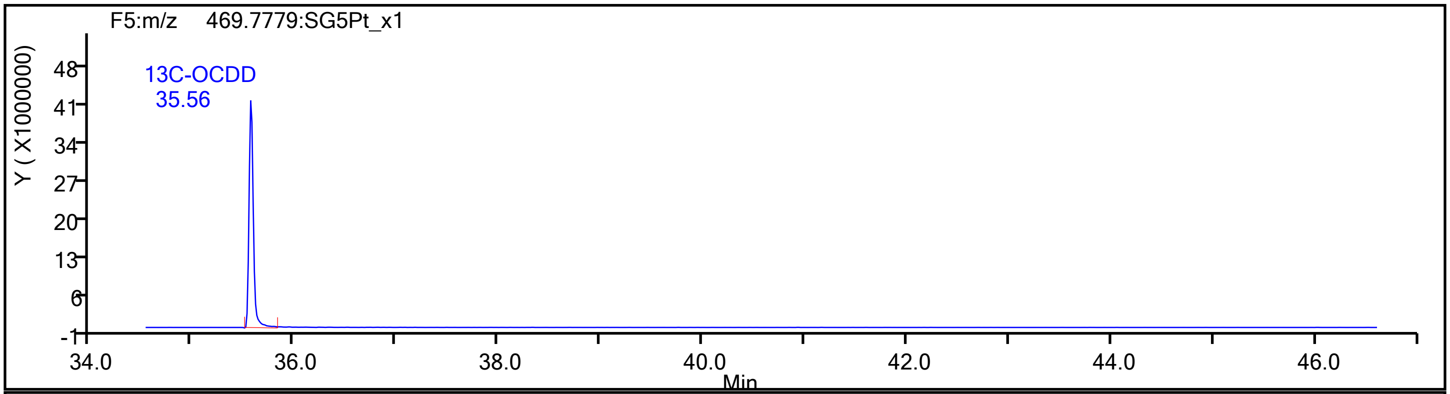

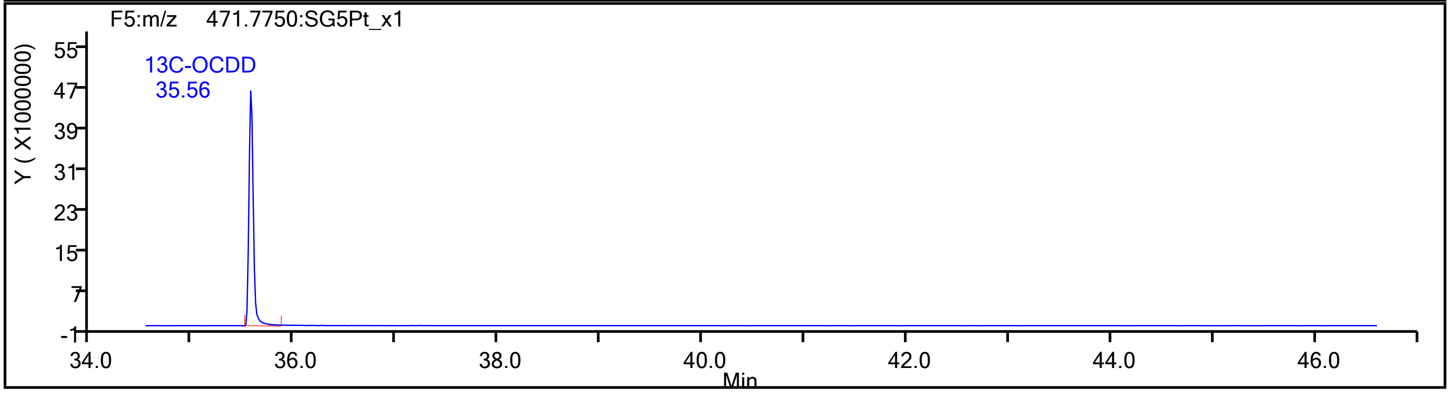

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

OCDF

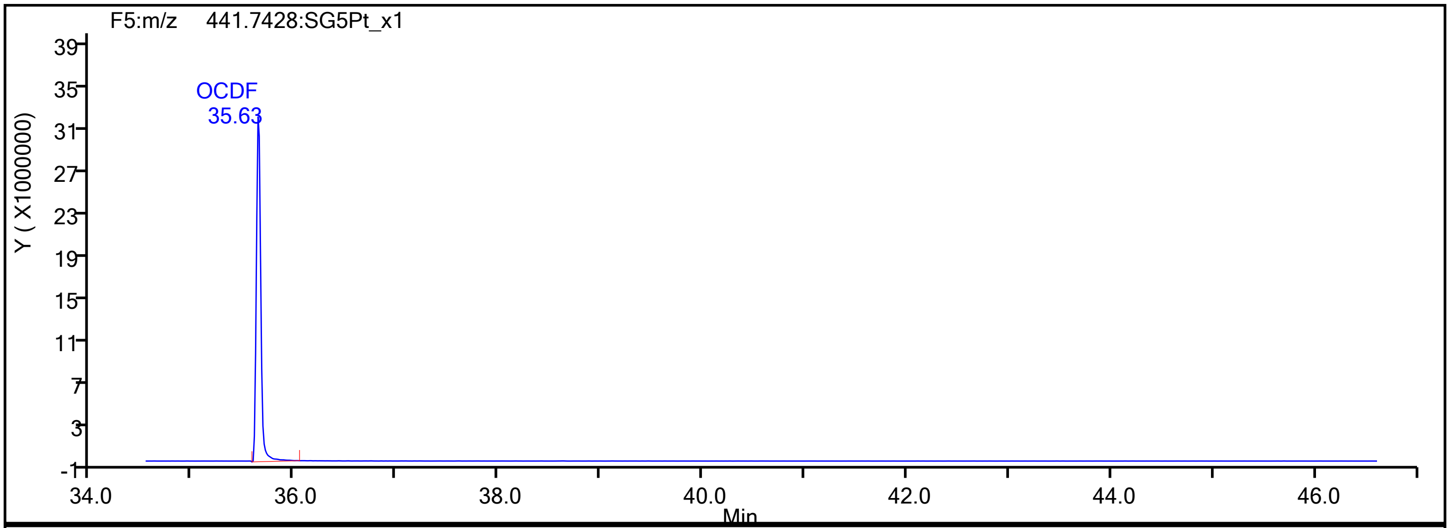

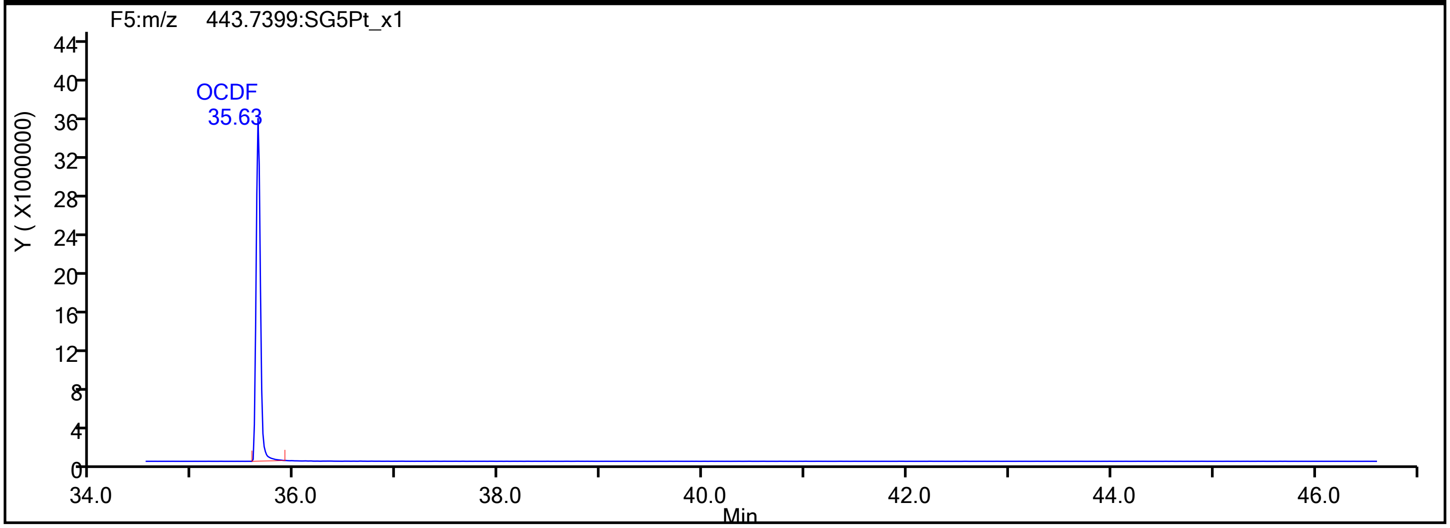

OCDF Interference Mass

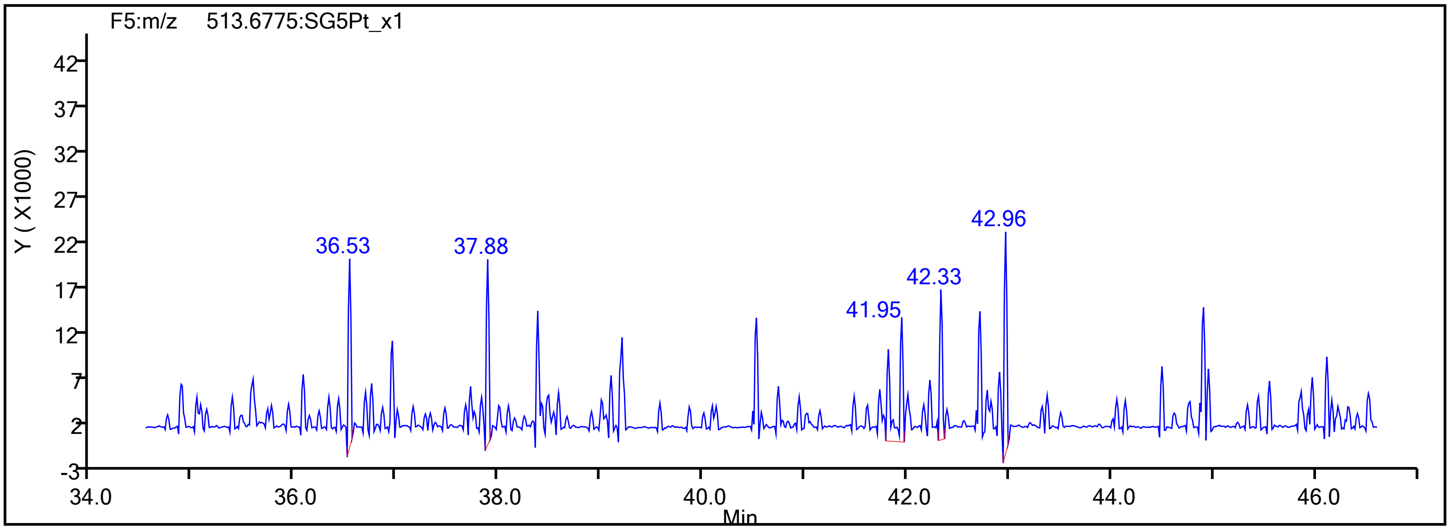

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d		
Injection Date:	08-Oct-2020 12:44:04	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	5
Column Type:		Column Dia:	

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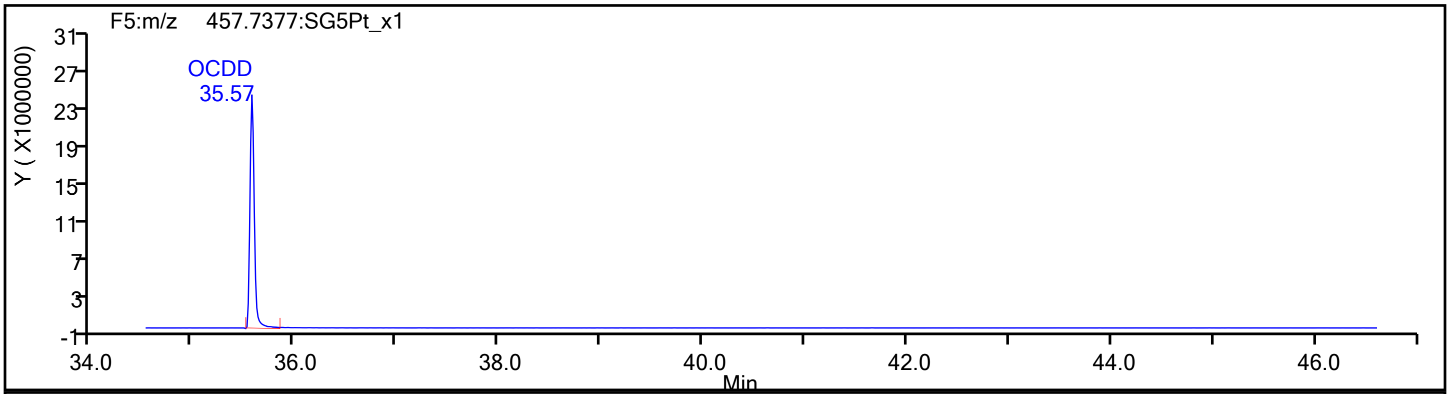

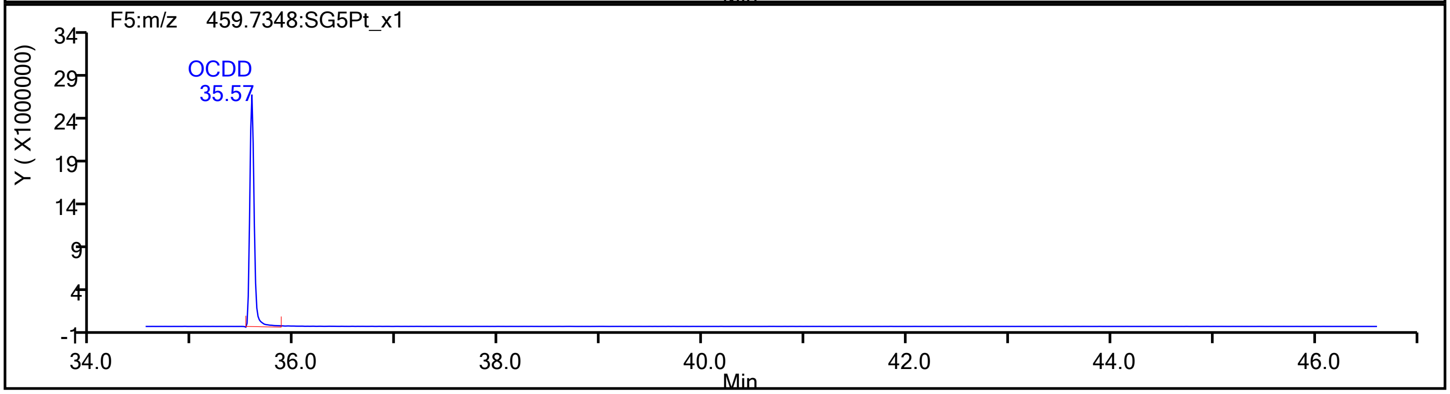

OCDD Standards

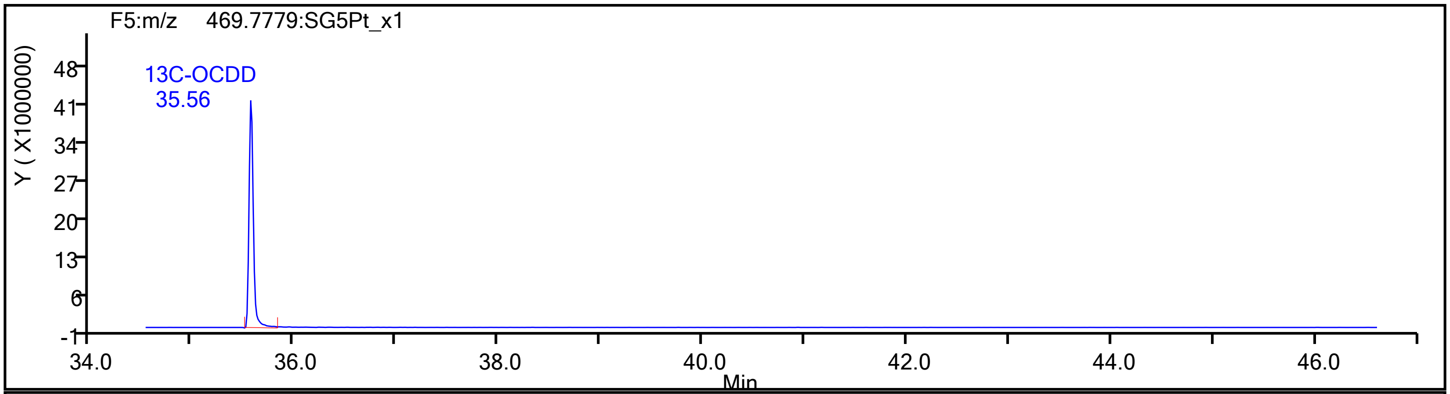

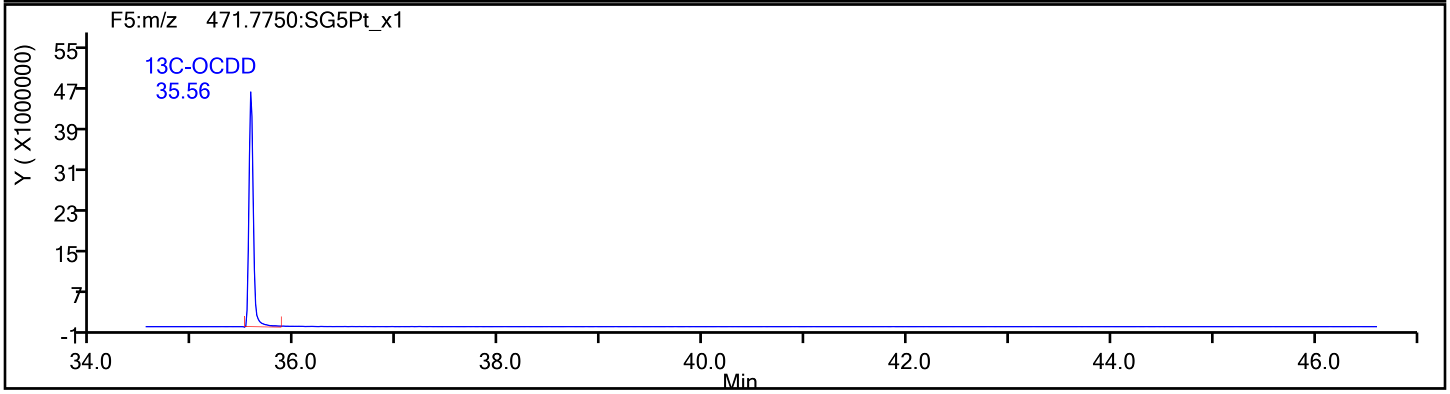

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d

Injection Date: 08-Oct-2020 12:44:04

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 5

Column Type:

Column Dia:

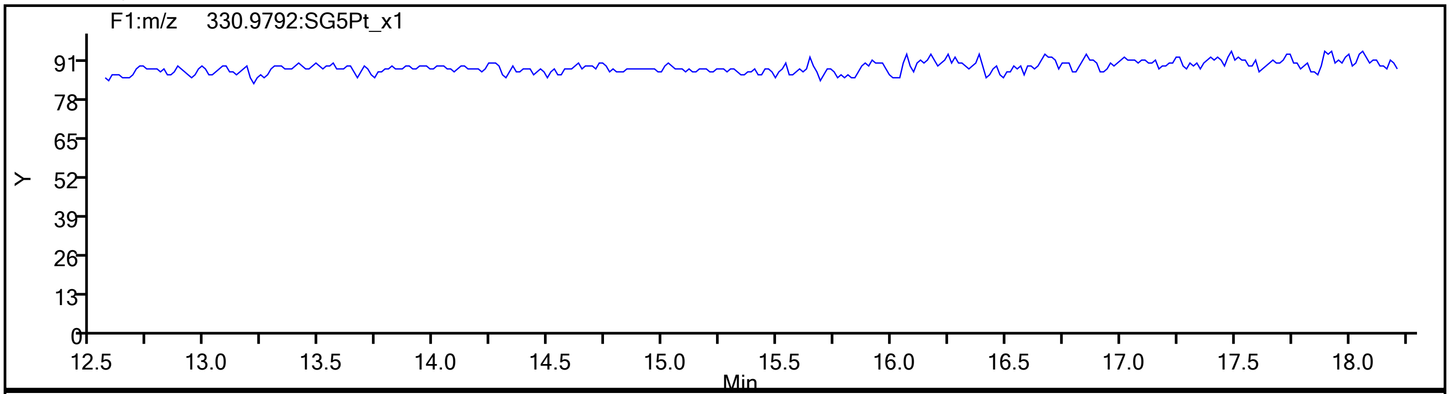

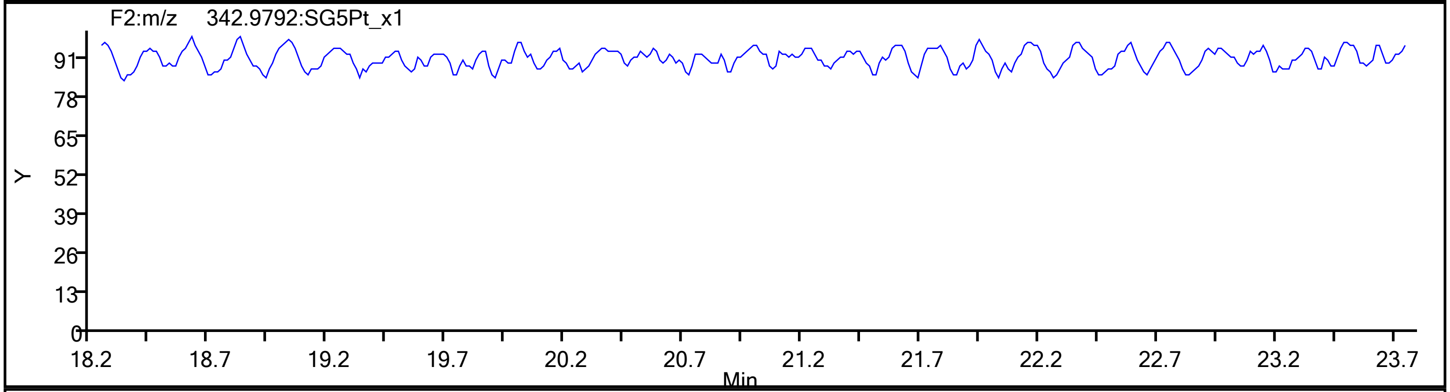

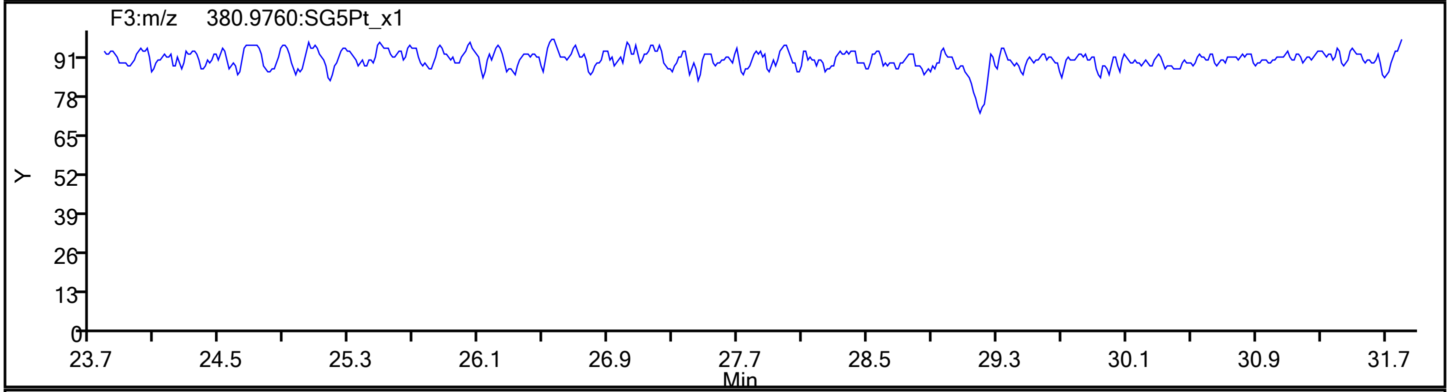

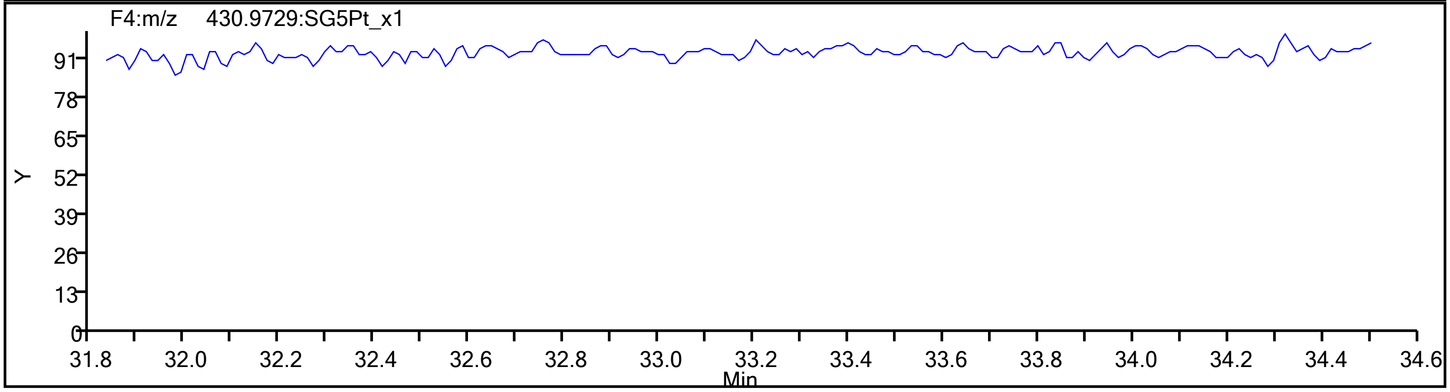

Report Date: 13-Oct-2020 08:45:27 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_5.d

Injection Date: 08-Oct-2020 12:44:04

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 5

Column Type:

Column Dia:

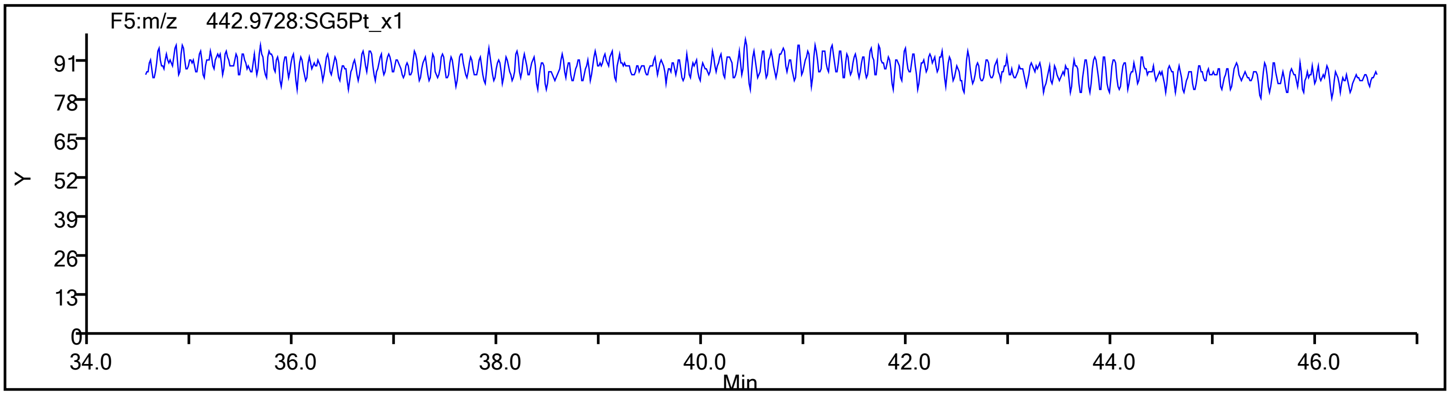

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-417971/2-A

Matrix: Water   Lab File ID: 09oc20dfs1_21.d

Analysis Method: 1613B   Date Collected:

Extract. Method: 1613B   Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1000(mL)   Date Analyzed: 10/10/2020 08:34

Con. Extract Vol.: 20(uL)   Dilution Factor: 1

Injection Volume: 1(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640   Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	216		10	2.4
51207-31-9	2,3,7,8-TCDF	218		10	1.5
40321-76-4	1,2,3,7,8-PeCDD	1070		50	2.0
57117-41-6	1,2,3,7,8-PeCDF	1010		50	4.0
57117-31-4	2,3,4,7,8-PeCDF	1040		50	4.3
39227-28-6	1,2,3,4,7,8-HxCDD	1050		50	1.7
57653-85-7	1,2,3,6,7,8-HxCDD	998		50	2.0
19408-74-3	1,2,3,7,8,9-HxCDD	860		50	1.7
70648-26-9	1,2,3,4,7,8-HxCDF	1030		50	5.2
57117-44-9	1,2,3,6,7,8-HxCDF	1050		50	4.8
72918-21-9	1,2,3,7,8,9-HxCDF	1020		50	3.8
60851-34-5	2,3,4,6,7,8-HxCDF	1030		50	3.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	1010		50	1.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	971		50	3.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	993		50	3.0
3268-87-9	OCDD	1880		100	1.8
39001-02-0	OCDF	1800		100	2.1
41903-57-5	Total TCDD	216		10	2.4
30402-14-3	Total TCDF	218		10	1.5
36088-22-9	Total PeCDD	1070		50	2.0
30402-15-4	Total PeCDF	2050		50	4.2
34465-46-8	Total HxCDD	2910		50	1.8
55684-94-1	Total HxCDF	4130		50	4.4
37871-00-4	Total HpCDD	1010		50	1.9
38998-75-3	Total HpCDF	1960		50	3.0

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-417971/2-A
Matrix: Water	Lab File ID: 09oc20dfs1_21.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/02/2020 08:26
Sample wt/vol: 1000(mL)	Date Analyzed: 10/10/2020 08:34
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420640	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		20-175
89059-46-1	13C-2,3,7,8-TCDF	65		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	74		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	73		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	73		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	89		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	80		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	62		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	63		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	69		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	68		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	71		20-186
114423-97-1	13C-OCDD	74		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		31-191

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Lims ID: LCS 320-417971/2-A
Client ID:
Sample Type: LCS
Inject. Date: 10-Oct-2020 08:34:00 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-417971/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:11:51 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:11:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.662	2121223	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.769	2178005	0.80	1.5883	64.6	64.6	0.5101	0.5101	64.64	
2,3,7,8-TCDF	18.786	257183	0.80	1.0857	10.9	10.9	0.0768	0.0768	109	
A Non-2,3,7,8-sub-TCDF	18.413						0.0768	0.0768		
S Total TCDF					10.9	10.9	0.0768	0.0768		
D 13C-2,3,7,8-TCDD	20.006	1580142	0.81	1.1194	66.5	66.5	0.3207	0.3207	66.54	
2,3,7,8-TCDD	20.032	184708	0.79	1.0810	10.8	10.8	0.1202	0.1202	108	
$ 37Cl4-2,3,7,8-TCDD	20.040	908441		1.1468	37.3	37.3	0.0365	0.0365	93.36	
A Non-2,3,7,8-sub-TCDD	19.200						0.1202	0.1202		
S Total TCDD					10.8	10.8	0.1202	0.1202		
D 13C-1,2,3,7,8-PeCDF	25.884	2292356	1.59	1.4782	73.1	73.1	0.2887	0.2887	73.11	
1,2,3,7,8-PeCDF	25.901	1217468	1.56	1.0547	50.4	50.4	0.2022	0.2022	101	
D 13C-2,3,4,7,8-PeCDF	27.308	2141205	1.57	1.3912	72.6	72.6	0.3068	0.3068	72.56	
2,3,4,7,8-PeCDF	27.333	1225351	1.54	1.1035	51.9	51.9	0.2156	0.2156	104	
A F1 PeCDFs	23.059						0.0151	0.0151		RQU
A Non-2,3,7,8-sub-PeCDF	26.475	9566	1.45	1.0791	0.3999	0.3999	0.2084	0.3999	0.00	
S Total PeCDF					102.6	102.6	0.2089	0.2089		
D 13C-1,2,3,7,8-PeCDD	28.074	1469636	1.56	0.9415	73.6	73.6	0.2125	0.2125	73.59	
1,2,3,7,8-PeCDD	28.099	841143	1.50	1.0680	53.6	53.6	0.1001	0.1001	107	
A Non-2,3,7,8-sub-PeCDD	26.975						0.1001	0.1001		
S Total PeCDD					53.6	53.6	0.1001	0.1001		
D 13C-1,2,3,4,7,8-HxCDF	33.804	1944098	0.52	1.1378	61.9	61.9	0.2601	0.2601	61.90	
1,2,3,4,7,8-HxCDF	33.821	1268219	1.27	1.2643	51.6	51.6	0.2618	0.2618	103	
D 13C-1,2,3,6,7,8-HxCDF	33.998	2277985	0.53	1.3173	62.6	62.6	0.2246	0.2246	62.65	
1,2,3,6,7,8-HxCDF	34.015	1462739	1.27	1.2230	52.5	52.5	0.2391	0.2391	105	
D 13C-2,3,4,6,7,8-HxCDF	34.950	2328096	0.54	1.2457	67.7	67.7	0.2376	0.2376	67.71	
2,3,4,6,7,8-HxCDF	34.967	1488315	1.27	1.2464	51.3	51.3	0.1942	0.1942	103	
D 13C-1,2,3,7,8,9-HxCDF	35.945	2247929	0.54	1.1840	68.8	68.8	0.2499	0.2499	68.78	
1,2,3,7,8,9-HxCDF	35.962	1451195	1.26	1.2638	51.1	51.1	0.1918	0.1918	102	
A Non-2,3,7,8-sub-HxCDF	33.855						0.2178	0.2178		
S Total HxCDF					206.5	206.5	0.2217	0.2217		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.734	2760407	1.25	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.195	2088924	1.31	0.8477	89.3	89.3	0.1616	0.1616	89.27	
1,2,3,4,7,8-HxCDD	35.212	1270767	1.25	1.1561	52.6	52.6	0.0863	0.0863	105	
D 13C-1,2,3,6,7,8-HxCDD	35.321	2214291	1.24	0.9979	80.4	80.4	0.1373	0.1373	80.39	
1,2,3,6,7,8-HxCDD	35.346	1136568	1.24	1.0284	49.9	49.9	0.0991	0.0991	99.82	
1,2,3,7,8,9-HxCDD	35.751	1091015	1.25	1.1789	43.0	43.0	0.0855	0.0855	86.02	
A Non-2,3,7,8-sub-HxCDD	34.365						0.0900	0.0900		
S Total HxCDD					145.5	145.5	0.0903	0.0903		
D 13C-1,2,3,4,6,7,8-HpCDF	37.893	1996383	0.46	0.9884	73.2	73.2	0.2882	0.2882	73.17	
1,2,3,4,6,7,8-HpCDF	37.910	1459863	1.03	1.5064	48.5	48.5	0.1488	0.1488	97.09	
D 13C-1,2,3,4,7,8,9-HpCDF	39.216	1816127	0.45	0.9203	71.5	71.5	0.3095	0.3095	71.49	
1,2,3,4,7,8,9-HpCDF	39.225	1312336	1.03	1.4548	49.7	49.7	0.1504	0.1504	99.34	
A Non-2,3,7,8-sub-HpCDF	38.593						0.1496	0.1496		
S Total HpCDF					98.2	98.2	0.1496	0.1496		
D 13C-1,2,3,4,6,7,8-HpCDD	38.904	1933523	1.05	0.9556	73.3	73.3	0.1706	0.1706	73.30	
1,2,3,4,6,7,8-HpCDD	38.913	1038950	1.03	1.0640	50.5	50.5	0.0937	0.0937	101	
A Non-2,3,7,8-sub-HpCDD	38.941						0.0937	0.0937		
S Total HpCDD					50.5	50.5	0.0937	0.0937		
D 13C-OCDD	41.350	3016720	0.89	0.7420	147.3	147.3	0.2244	0.2244	73.64	
OCDF	41.443	1936507	0.90	1.4296	89.8	89.8	0.1065	0.1065	89.80	
OCDD	41.359	1601305	0.90	1.1293	94.0	94.0	0.0891	0.0891	94.00	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Lims ID: LCS 320-417971/2-A
Client ID:
Sample Type: LCS
Inject. Date: 10-Oct-2020 08:34:00 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-417971/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:11:51 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:11:51

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.662	19.716	-3		949683	141330	327	817	432		
333.9338	19.662	19.716	-3		1171540	186007	143	357	1301	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.769	18.830	-4	0.955	966006	145061	740	1850	196		
317.9389	18.769	18.830	-4	0.955	1211999	190942	321	802	595	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.786	18.865	-5	1.001	113983	17821	34	85	524		
305.8987	18.786	18.865	-5	1.001	143200	21595	78	195	277	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.413						34	85			
305.8987	18.413						78	195			
13C-2,3,7,8-TCDD											
331.9368	20.006	20.067	-4	1.017	707485	98710	327	817	302		
333.9338	20.006	20.067	-4	1.017	872657	132165	143	357	924	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	20.032	20.101	-4	1.001	81261	11963	92	230	130		
321.8936	20.040	20.101	-4	1.002	103447	15189	28	70	542	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	20.040	20.103	-4	1.019	908441	124450	55	137	2263		
A Non-2,3,7,8-sub-TCDD											
319.8965	19.200						92	230			
321.8936	19.200						28	70			
13C-1,2,3,7,8-PeCDF											
351.9000	25.884	25.934	-3	1.316	1408901	237385	383	957	620		
353.8970	25.884	25.934	-3	1.316	883455	151781	176	440	862	1.59(1.32-1.78)	

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.901	25.951	-3	1.001	741647	124039	182	455	682		
341.8567	25.901	25.951	-3	1.001	475821	79409	150	375	529	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.308	27.359	-3	1.389	1308414	215909	383	957	564		
353.8970	27.308	27.359	-3	1.389	832791	132978	176	440	756	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.333	27.376	-3	1.001	743660	115674	182	455	636		
341.8567	27.333	27.376	-3	1.001	481691	74809	150	375	499	1.54(1.32-1.78)	
A F1 PeCDFs											U
339.8597	22.515	23.059	-33	0.870	89	42	1	2	42		
341.8567	22.523	23.059	-32	0.870	329	95	23	57	4	0.27(1.32-1.78)	
	Empc Correction				57	27	23	57	1		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.465	26.475	-1	1.022	5669	1005	182	455	6		
341.8567	26.465	26.475	-1	1.022	3897	583	150	375	4	1.45(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.074	28.109	-2	1.428	894574	134291	149	372	901		
369.8919	28.074	28.109	-2	1.428	575062	85600	113	282	758	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.099	28.134	-2	1.001	505250	73423	72	180	1020		
357.8516	28.091	28.134	-3	1.001	335893	48860	22	55	2221	1.50(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						72	180			
357.8516	26.975						22	55			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.804	33.838	-2	0.946	668201	131034	261	652	502		
385.8610	33.796	33.838	-3	0.946	1275897	250309	521	1302	480	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.821	33.855	-2	1.000	708959	135371	285	712	475		
375.8178	33.821	33.855	-2	1.000	559260	106155	220	550	483	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.998	34.024	-2	0.951	785409	148027	261	652	567		
385.8610	33.990	34.024	-2	0.951	1492576	283448	521	1302	544	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.015	34.049	-2	1.000	819411	154538	285	712	542		
375.8178	34.015	34.049	-2	1.000	643328	121578	220	550	553	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.950	34.976	-2	0.978	814394	181849	261	652	697		
385.8610	34.950	34.976	-2	0.978	1513702	339597	521	1302	652	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.967	35.001	-2	1.000	833294	184378	285	712	647		
375.8178	34.967	35.001	-2	1.000	655021	144062	220	550	655	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.945	35.962	-1	1.006	787900	184796	261	652	708		
385.8610	35.945	35.962	-1	1.006	1460029	335937	521	1302	645	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.962	35.979	-1	1.000	809032	183626	285	712	644		
375.8178	35.962	35.979	-1	1.000	642163	146413	220	550	666	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.855						285	712			
375.8178	33.855						220	550			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.734	35.760	-2		1536061	364160	206	515	1768		
403.8529	35.725	35.760	-2		1224346	296495	156	390	1901	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.195	35.220	-2	0.985	1184466	294824	206	515	1431		
403.8529	35.195	35.220	-2	0.985	904458	223425	156	390	1432	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.212	35.237	-2	1.000	706590	178637	103	257	1734		
391.8127	35.212	35.237	-2	1.000	564177	140592	104	260	1352	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.321	35.355	-2	0.988	1227235	278596	206	515	1352		
403.8529	35.321	35.355	-2	0.988	987056	228483	156	390	1465	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.346	35.372	-2	1.001	629024	138181	103	257	1342		
391.8127	35.338	35.372	-2	1.000	507544	110625	104	260	1064	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.751	35.768	-1	1.016	607043	143892	103	257	1397		
391.8127	35.751	35.768	-1	1.016	483972	114087	104	260	1097	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.365						103	257			
391.8127	34.365						104	260			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.893	37.927	-2	1.060	628476	195416	294	735	665		
419.8220	37.902	37.927	-2	1.061	1367907	427830	459	1147	932	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.910	37.935	-1	1.000	742126	232572	279	697	834		
409.7788	37.910	37.935	-1	1.000	717737	221614	280	700	791	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.216	39.233	-1	1.097	566737	197692	294	735	672		
419.8220	39.216	39.233	-1	1.097	1249390	440791	459	1147	960	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.225	39.250	-2	1.000	665494	230823	279	697	827		
409.7788	39.225	39.250	-2	1.000	646842	224432	280	700	802	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.593						279	697			
409.7788	38.593						280	700			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.904	38.921	-1	1.089	990990	342606	223	557	1536		
437.8140	38.904	38.921	-1	1.089	942533	326191	208	520	1568	1.05(0.88-1.20)	

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.913	38.938	-2	1.000	525980	178681	149	372	1199		
425.7737	38.913	38.938	-2	1.000	512970	174374	118	295	1478	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						149	372			
425.7737	38.941						118	295			
13C-OCDD											
469.7780	41.350	41.373	-1	1.157	1423439	489485	199	497	2460		
471.7750	41.350	41.373	-1	1.157	1593281	563891	241	602	2340	0.89(0.76-1.02)	
OCDF											
441.7428	41.443	41.457	-1	1.002	919658	310820	125	312	2487		
443.7399	41.435	41.457	-1	1.002	1016849	342894	196	490	1749	0.90(0.76-1.02)	
OCDD											
457.7377	41.359	41.381	-1	1.000	757726	259353	99	247	2620		
459.7348	41.359	41.381	-1	1.000	843579	291031	113	282	2575	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d		
Lims ID:	LCS 320-417971/2-A		
Client ID:			
Inject. Date:	10-Oct-2020 08:34:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	420640	Lims Sample ID:	19

F1 PeCDFs, RT: 23.059

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2292356	389166
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2141205	348887

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2216780	369026

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.515	89	42	329	95	0.0175	0.27	RQ
22.515	89	42	57	27	0.006103		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Lims ID: LCS 320-417971/2-A
Client ID:
Inject. Date: 10-Oct-2020 08:34:00
Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 420640
Lims Sample ID: 19

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2292356	389166
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	2141205	348887

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2216780	369026

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.465	5669	1005	3897	583	0.3999	1.45	
Signal Totals:							
	5669	1005	3897	583			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	9566	1588				1.45	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3999 = (9566 * 100.000) / (2216780 * 1.079)

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d

Injection Date:	10-Oct-2020 08:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	19
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

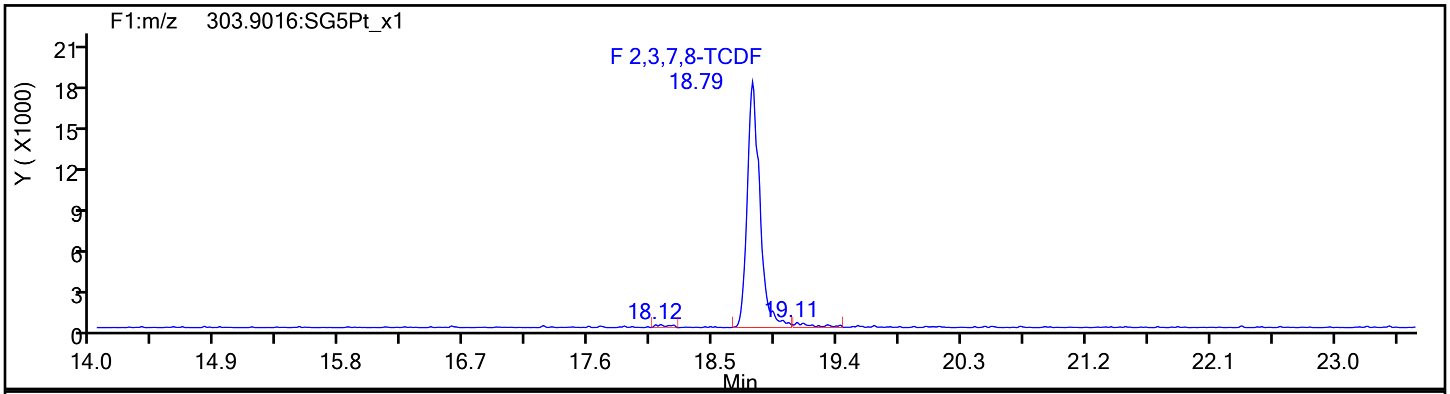

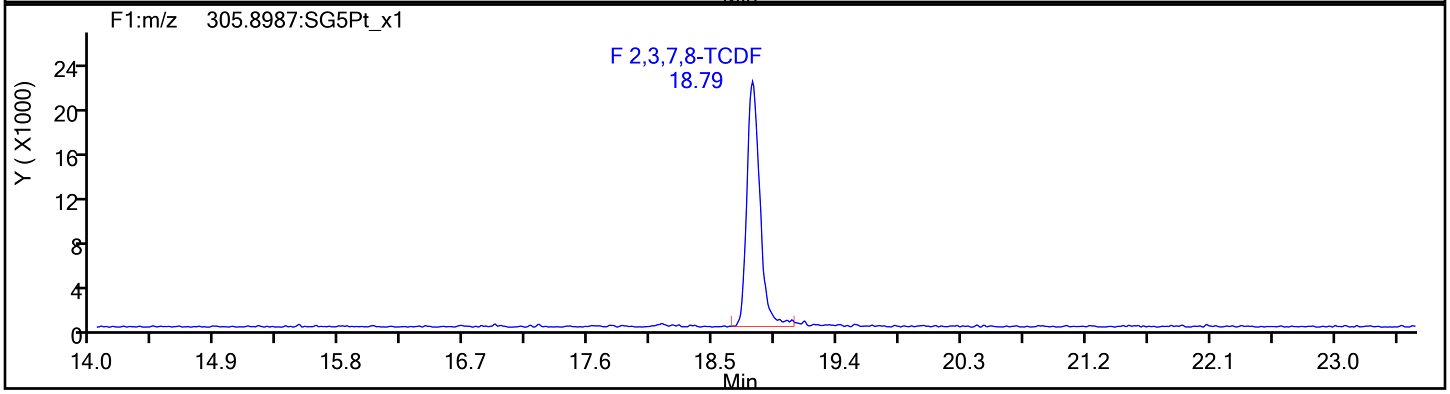

TCDF Standards

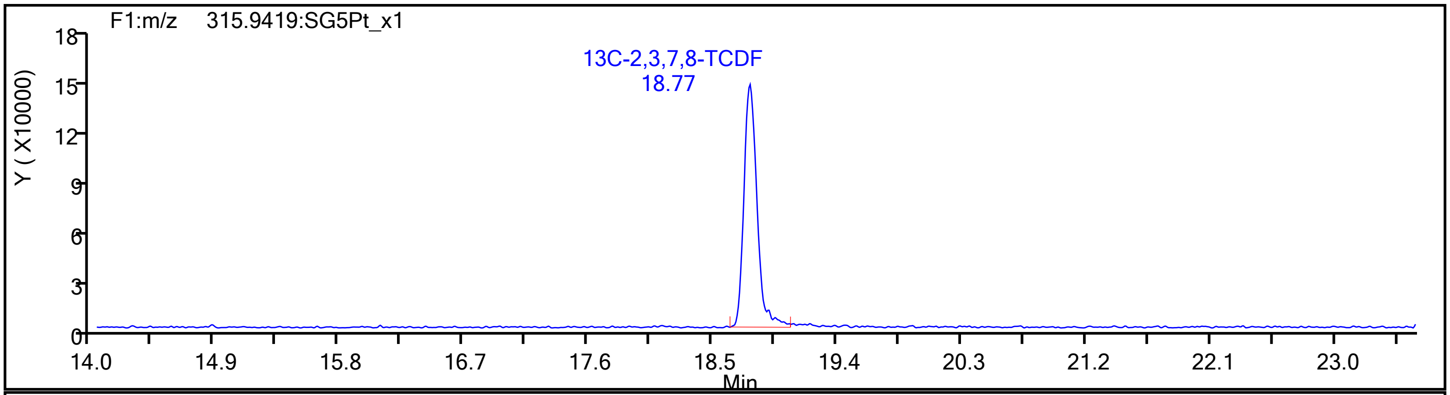

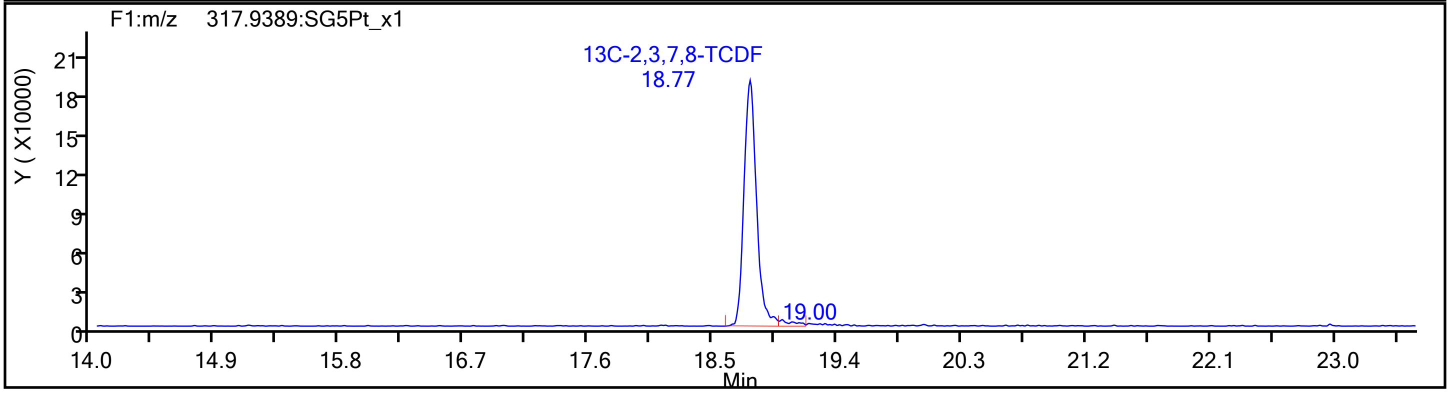

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Injection Date: 10-Oct-2020 08:34:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 19
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

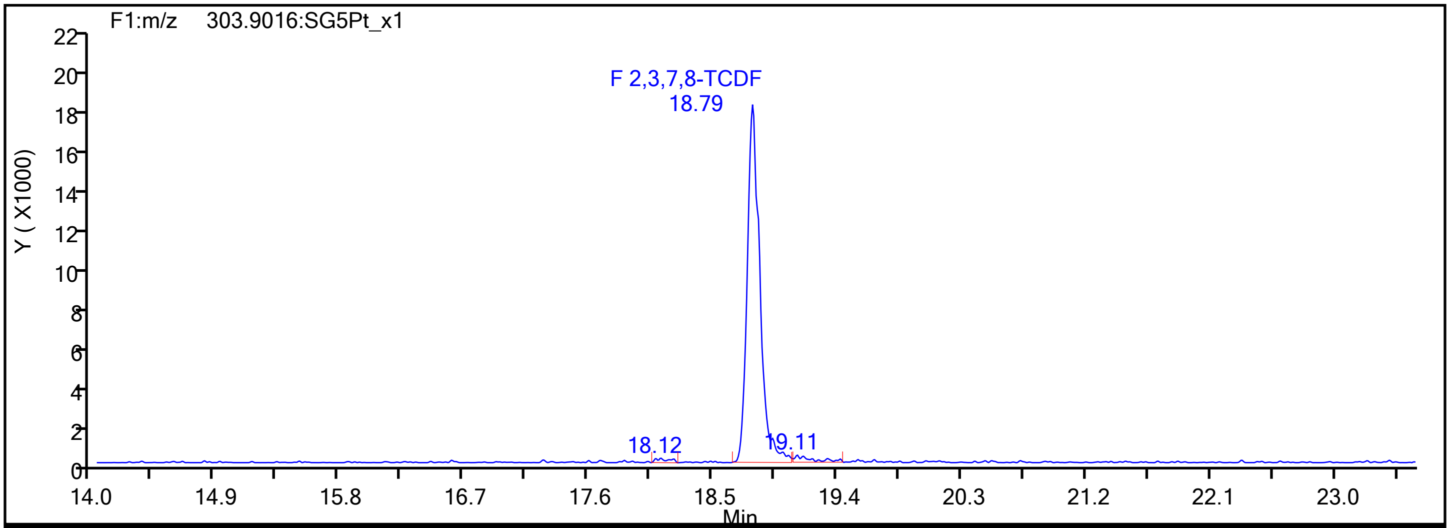

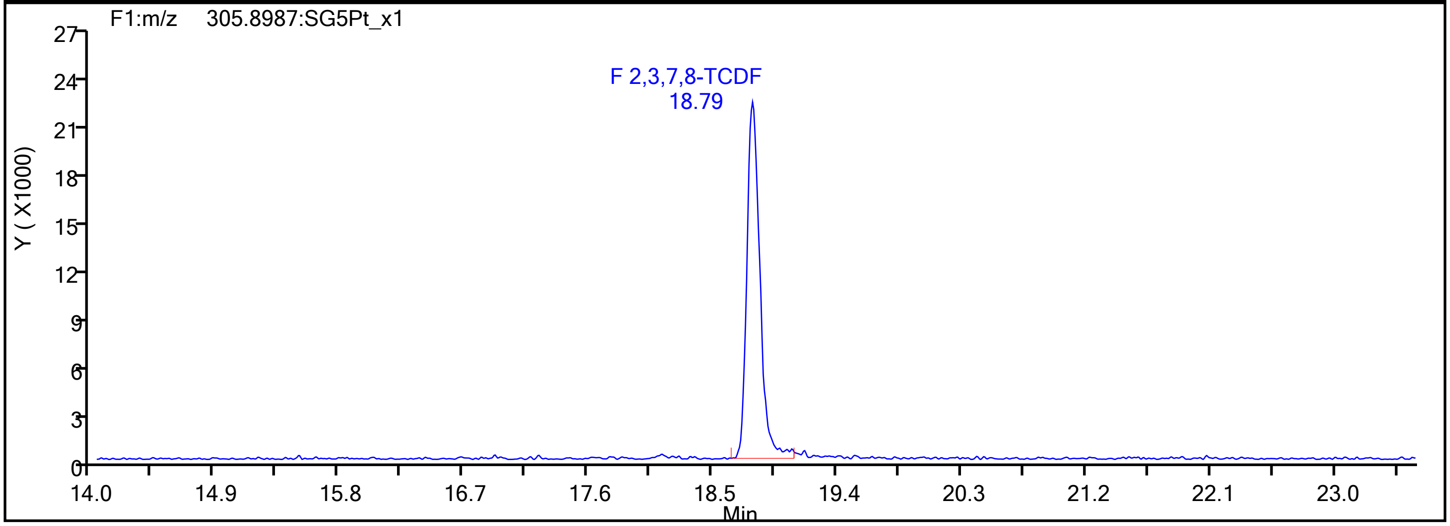

TCDF Interference Mass

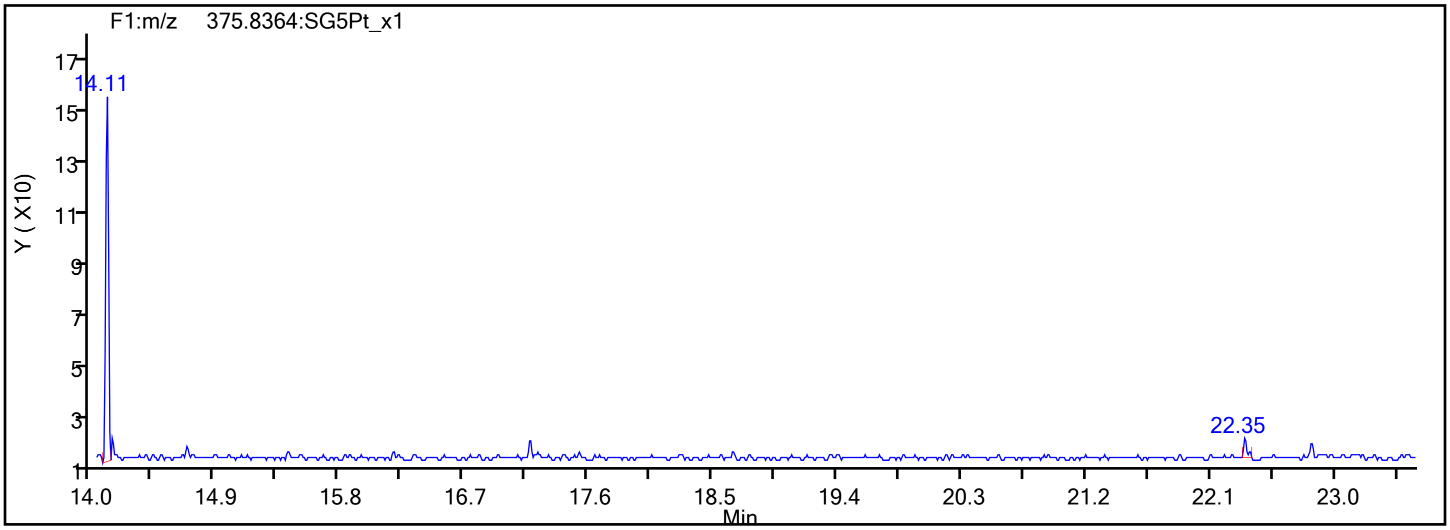

Report Date: 12-Oct-2020 09:11:51 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

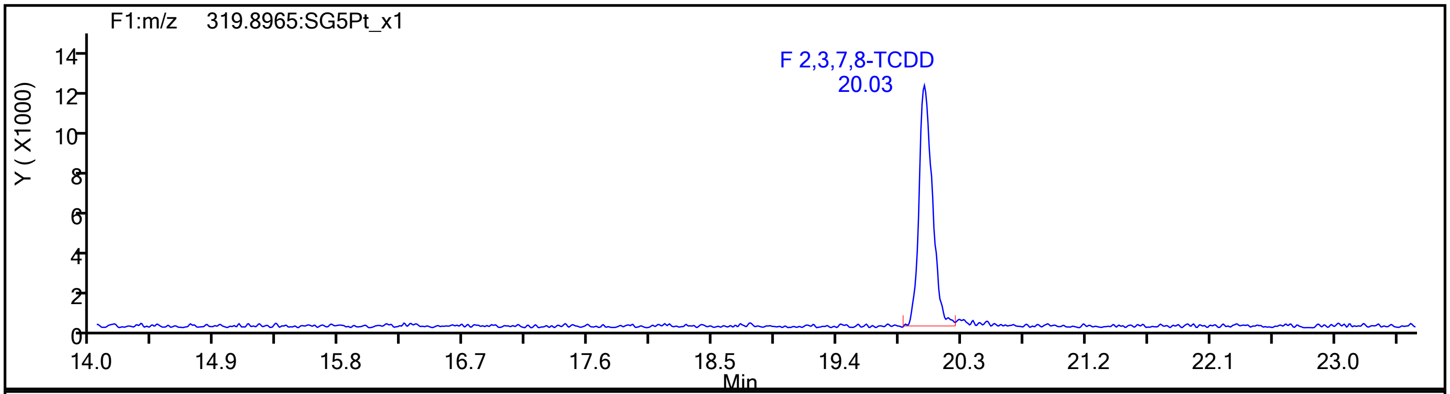

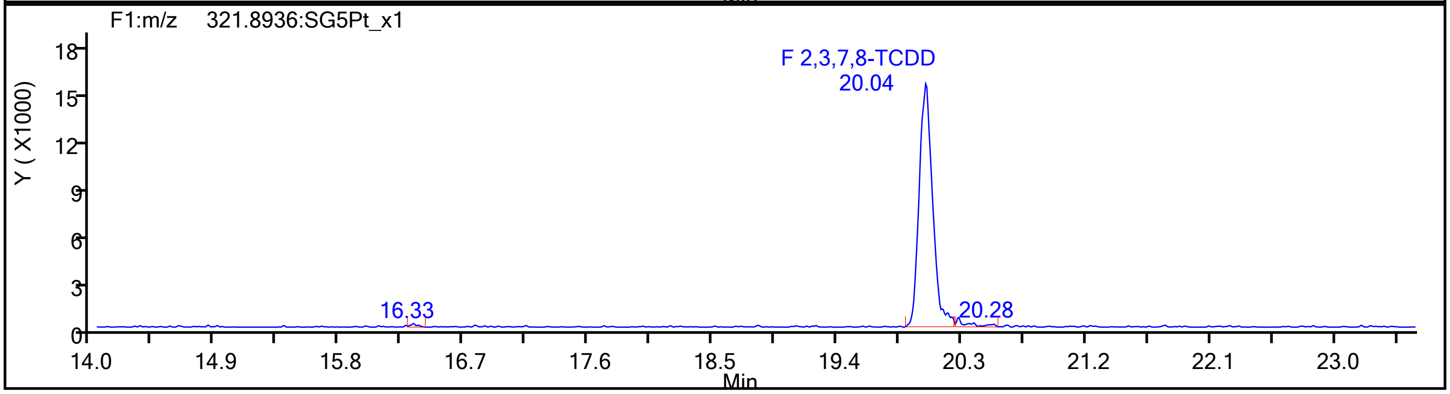

TCDD Standards

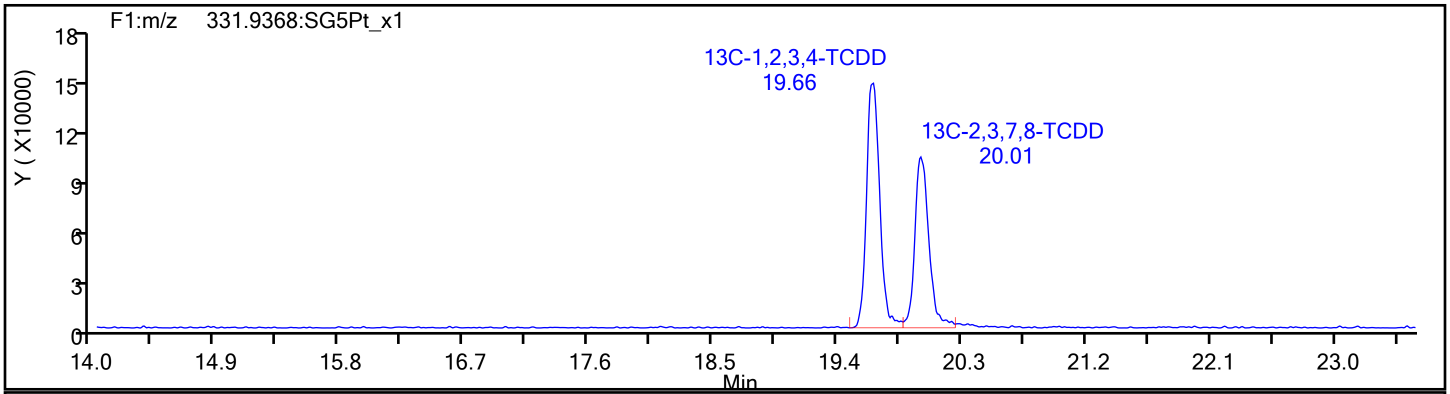

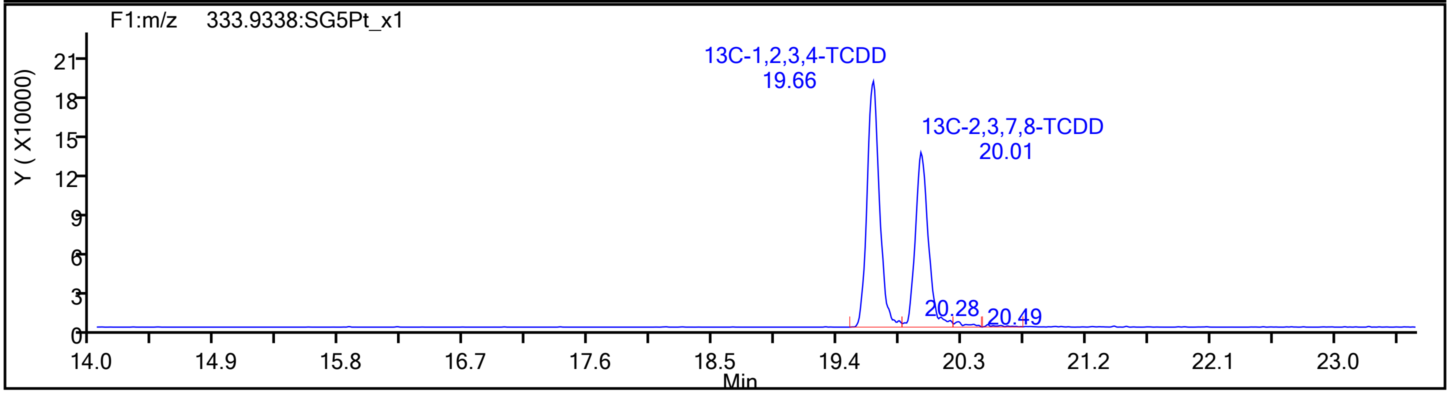

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

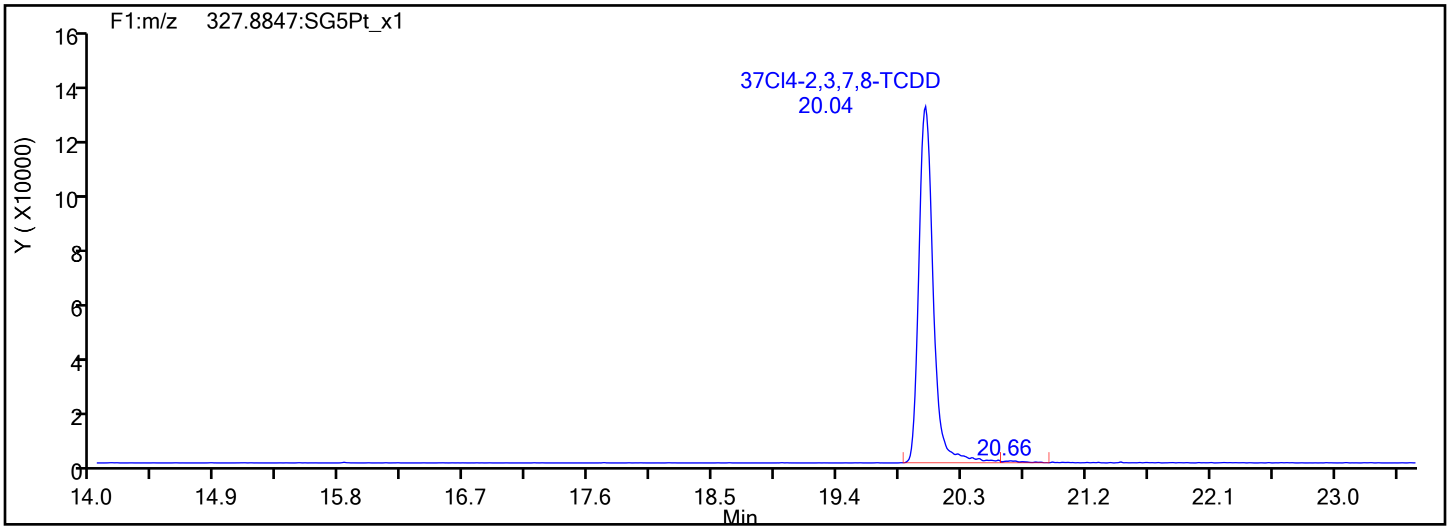

37Cl4-TCDD Standards

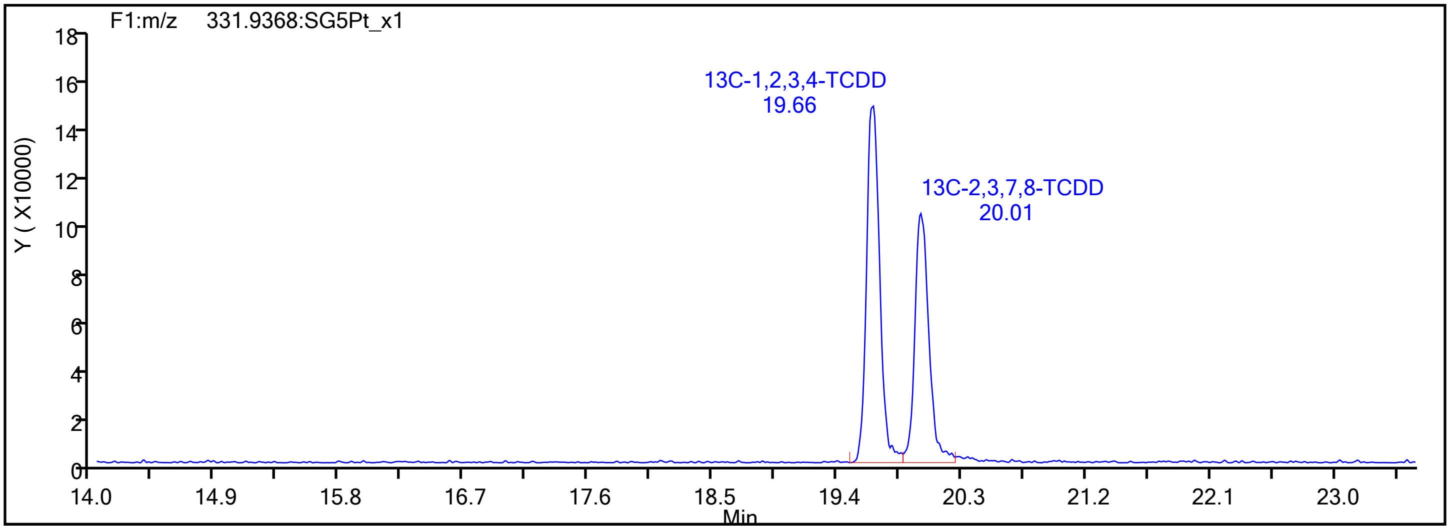

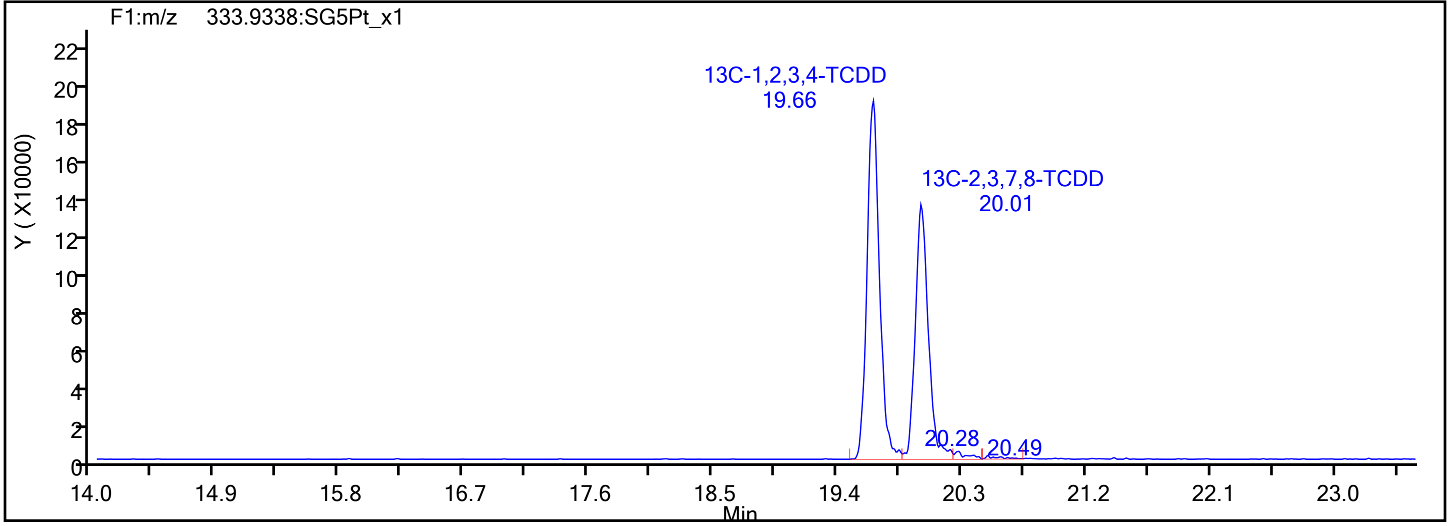

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

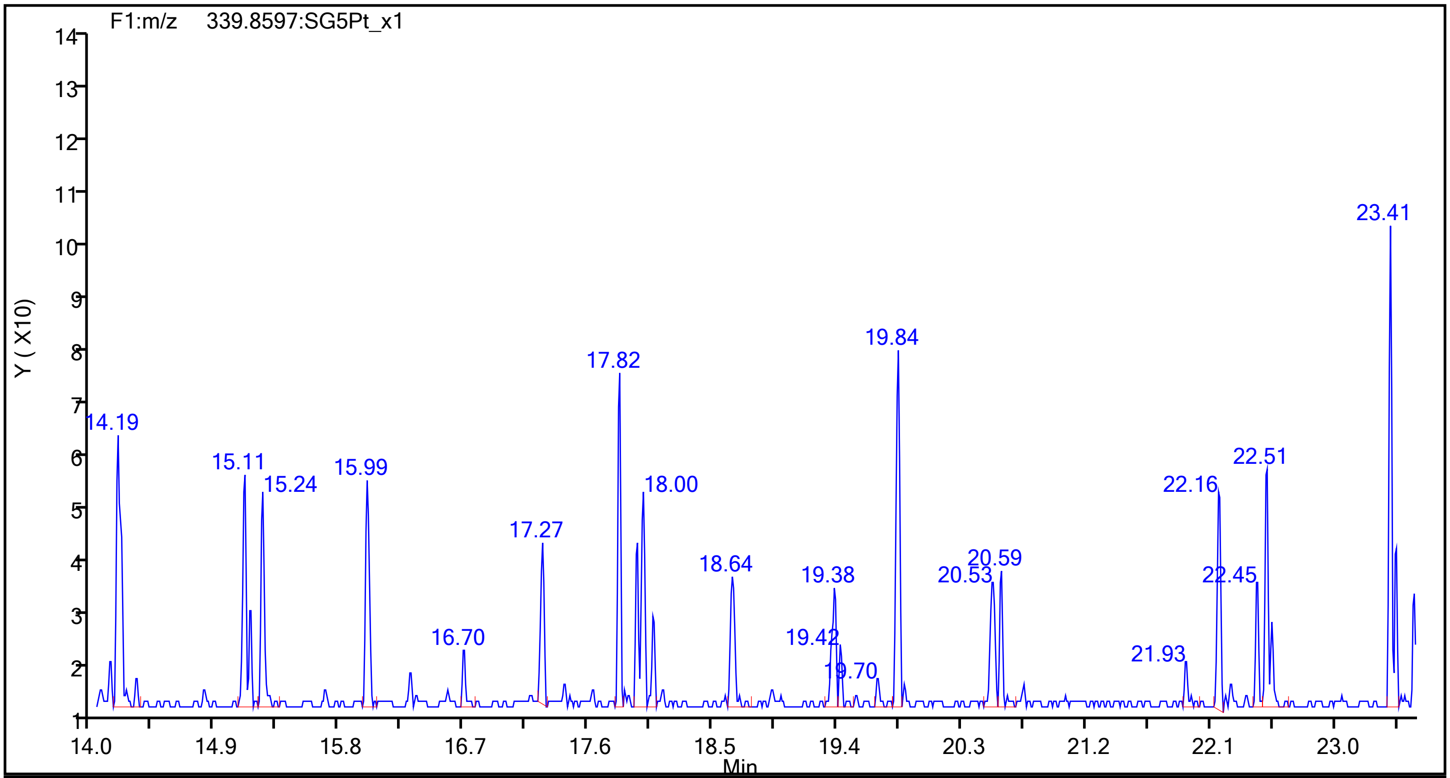

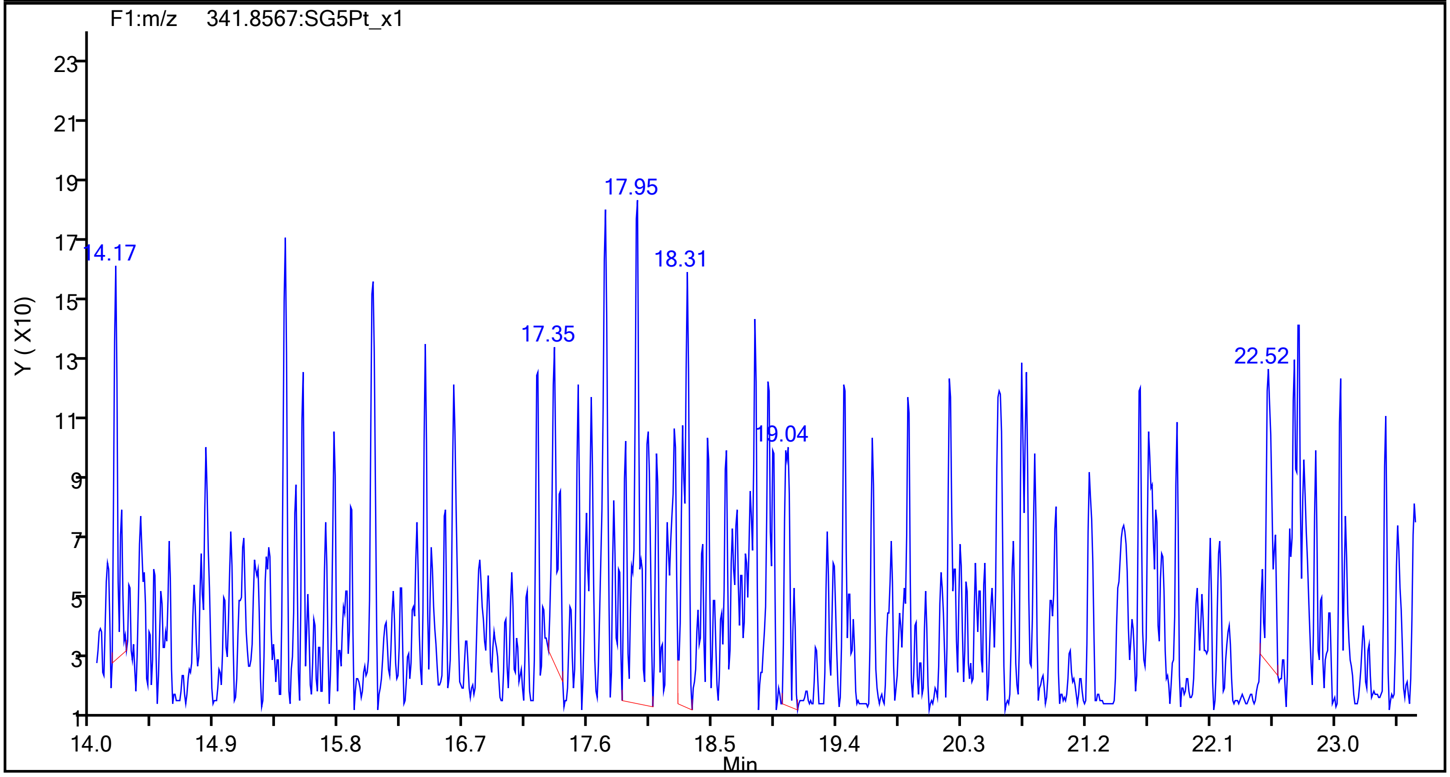

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

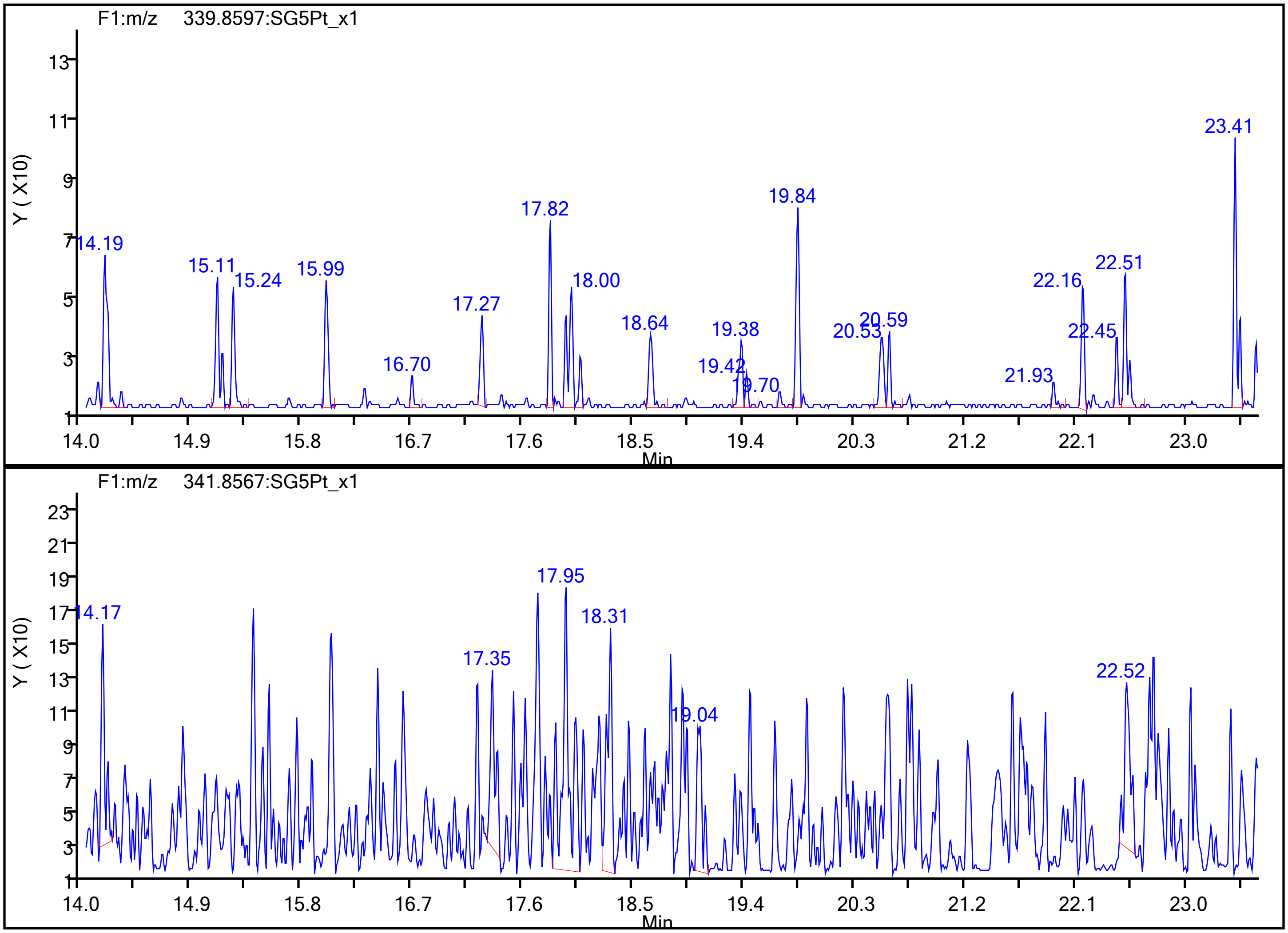

F1 PeCDFs Interference Mass

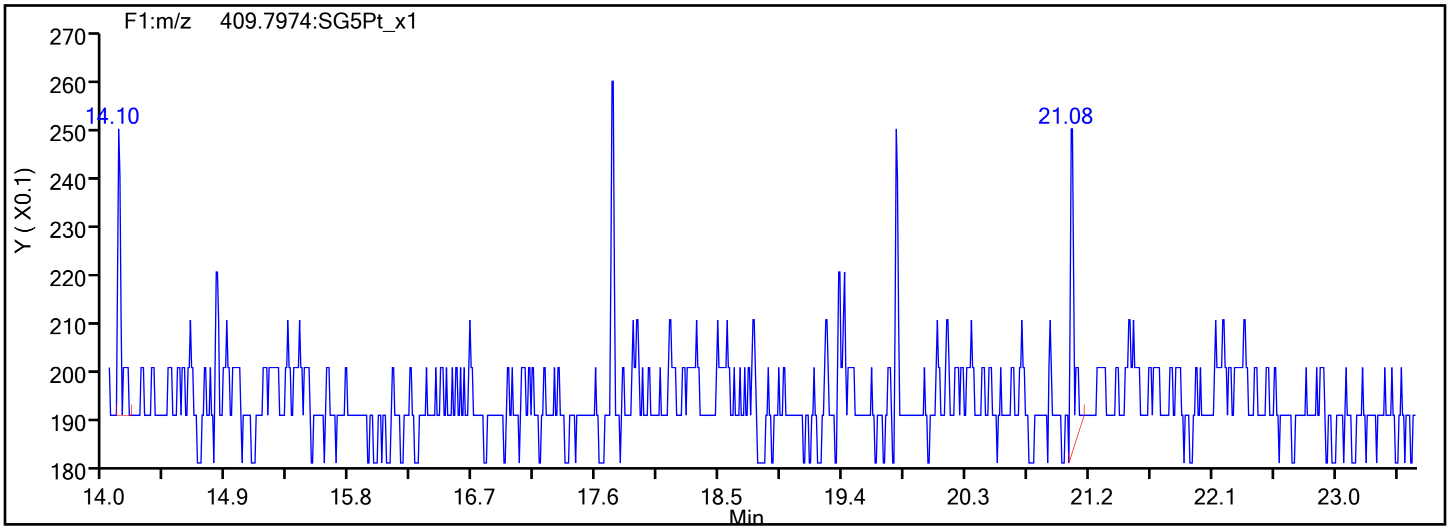

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

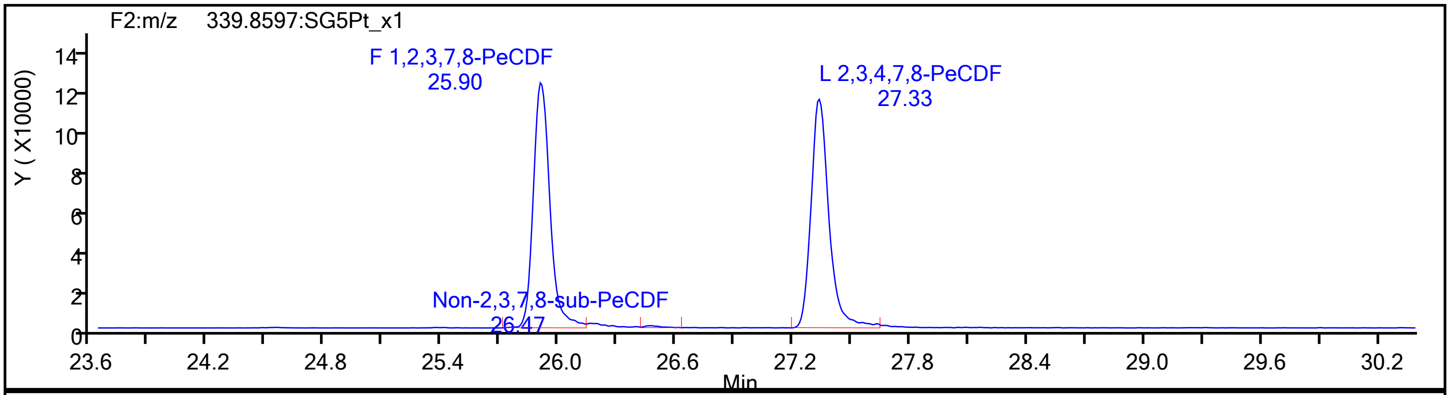

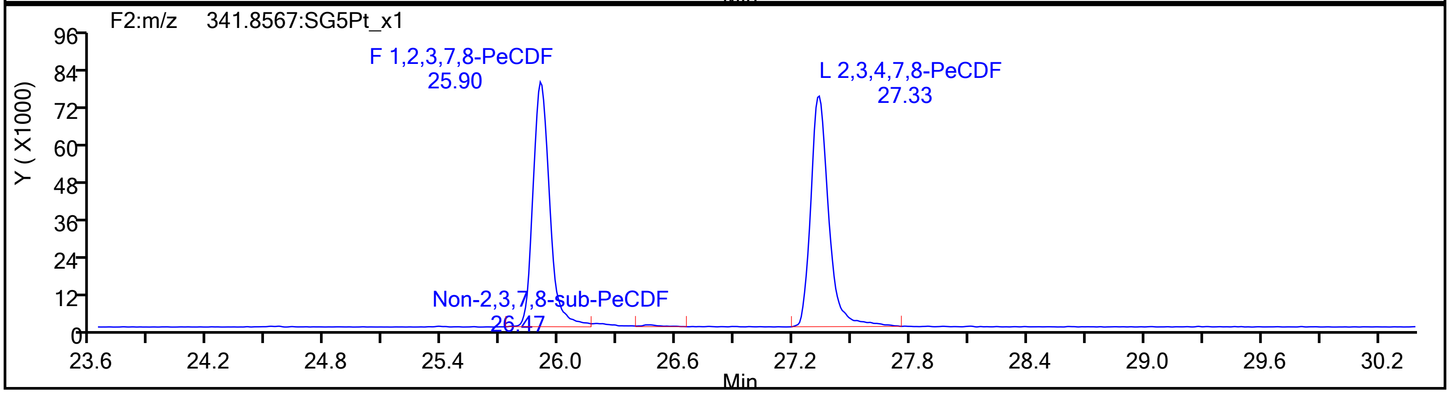

PeCDF Standards

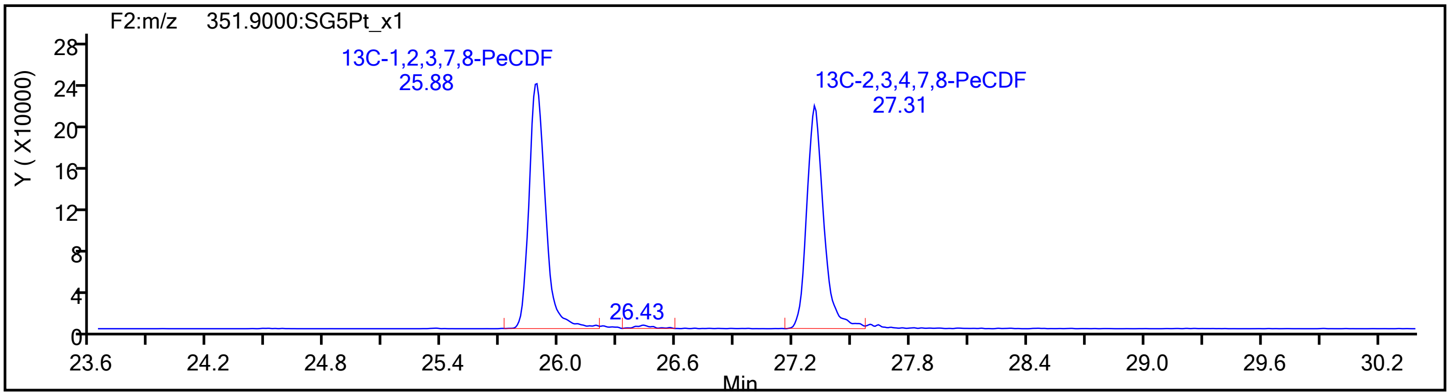

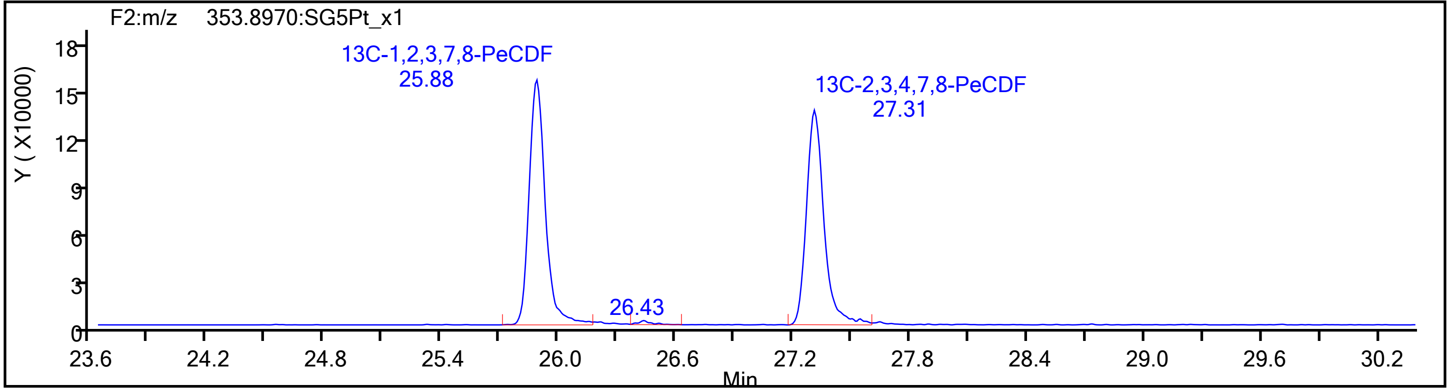

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d

Injection Date:	10-Oct-2020 08:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDF

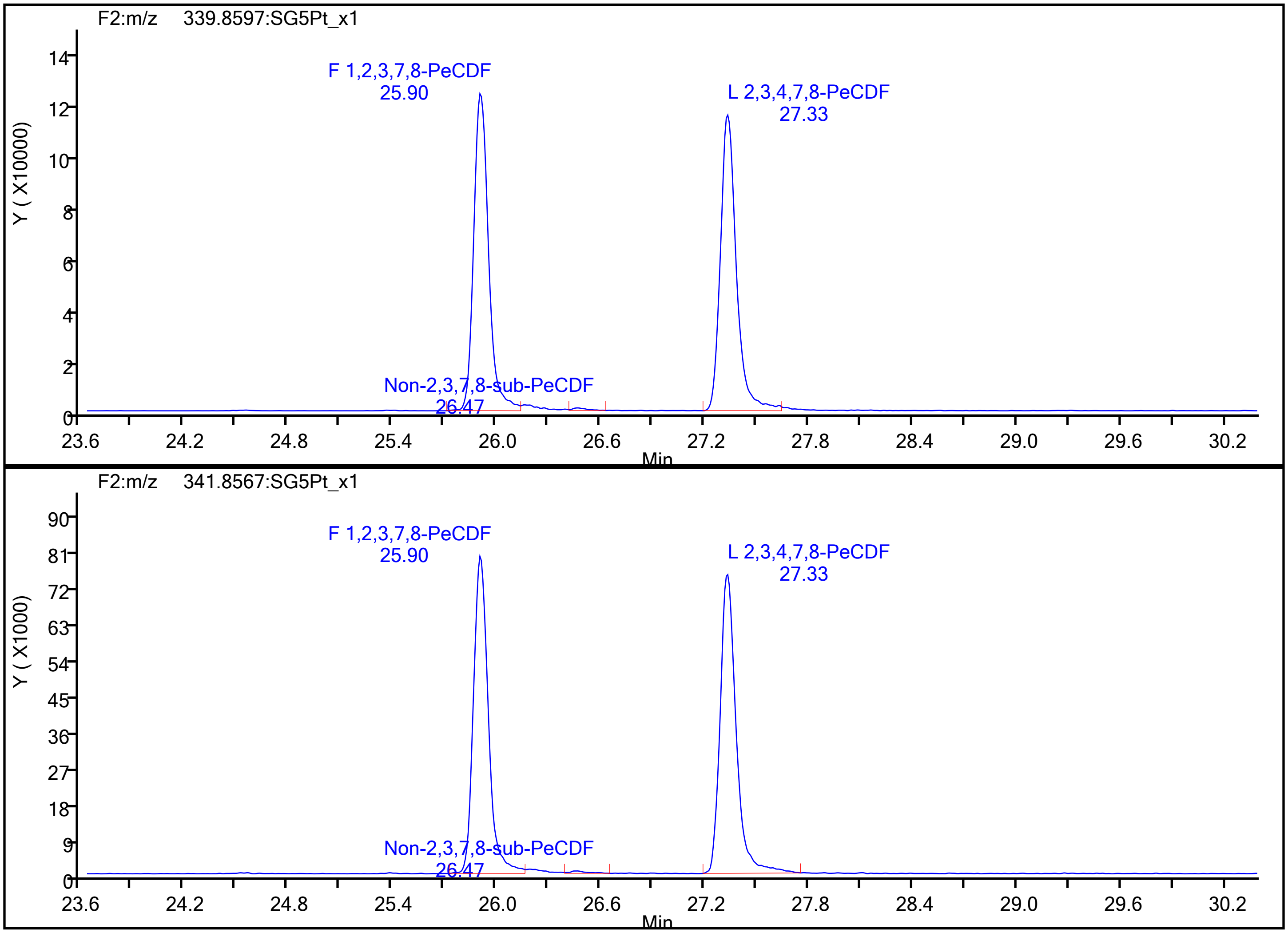

PeCDF Interference Mass

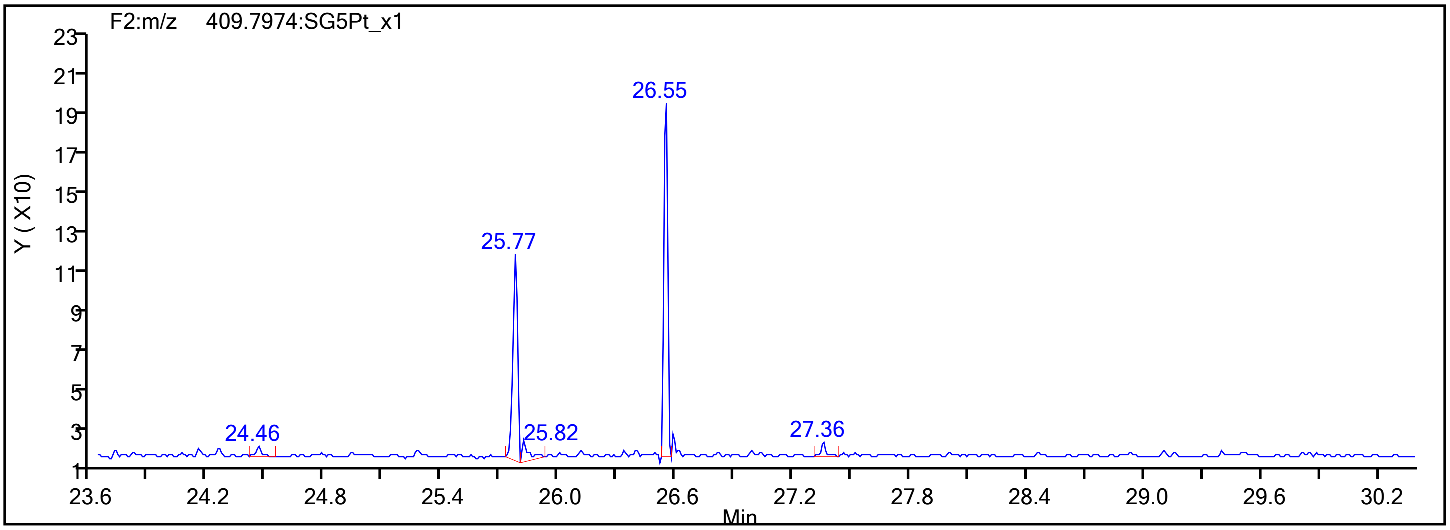

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d		
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PeCDD

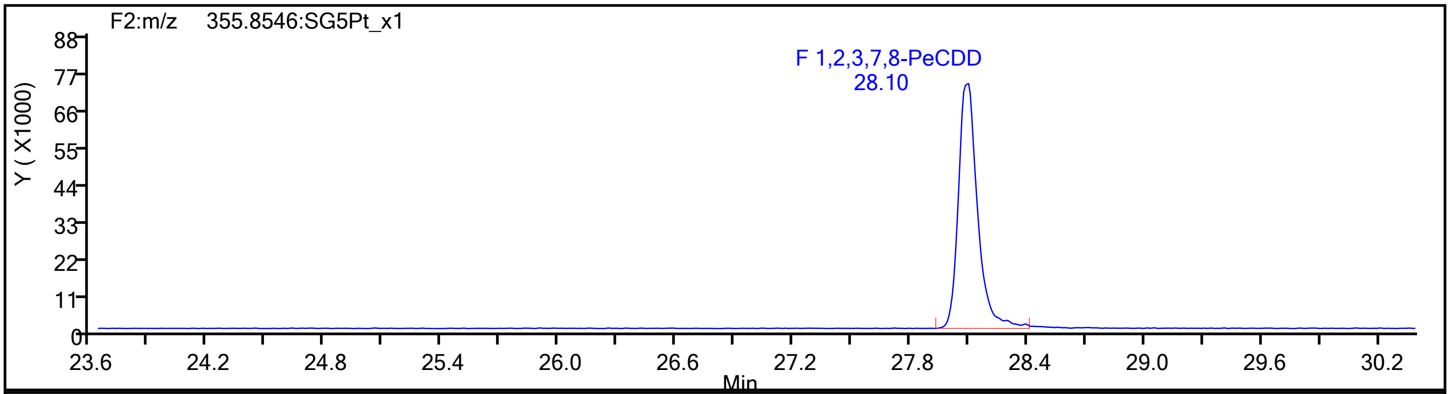

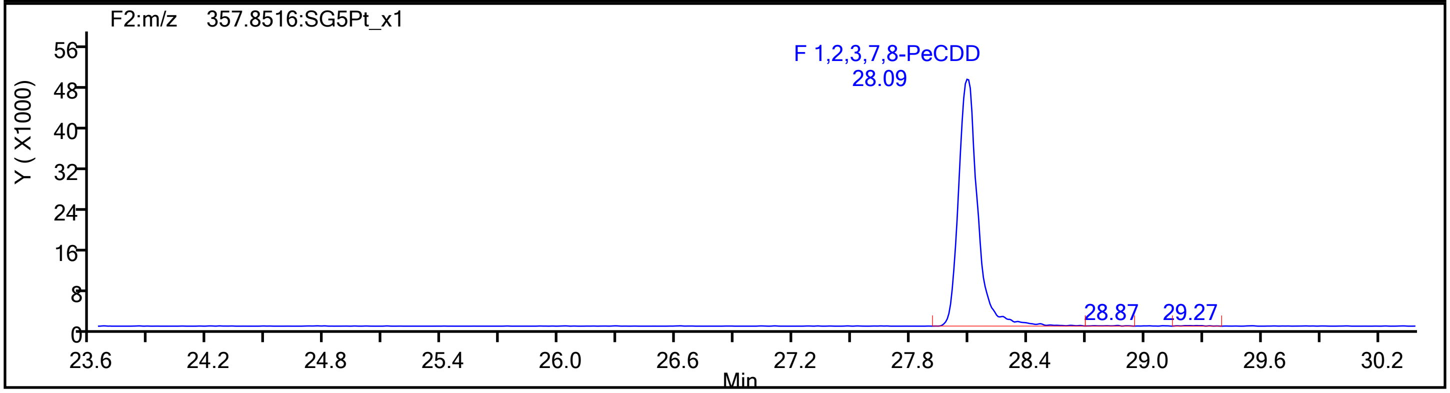

PeCDD Standards

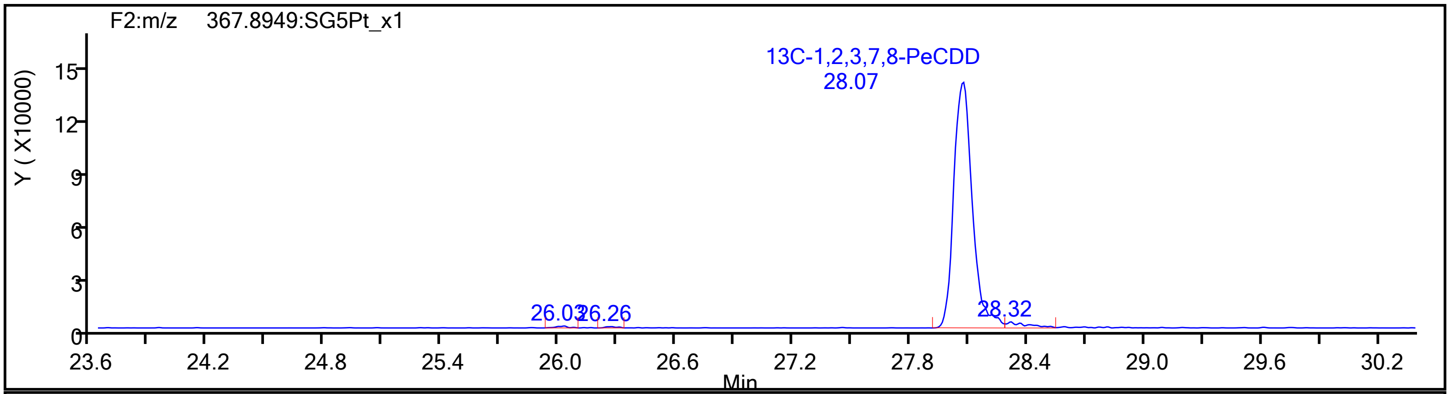

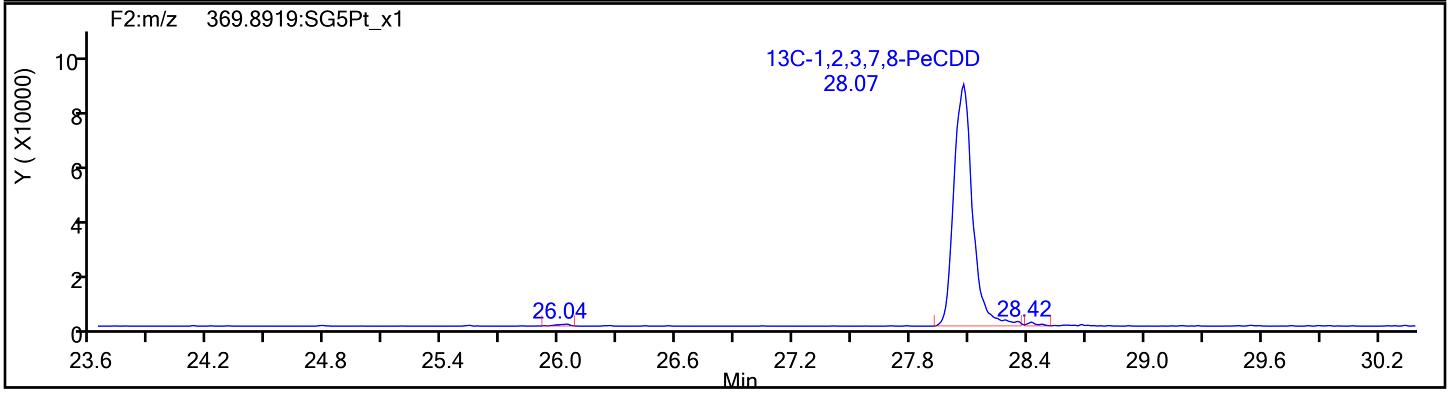

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	19
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

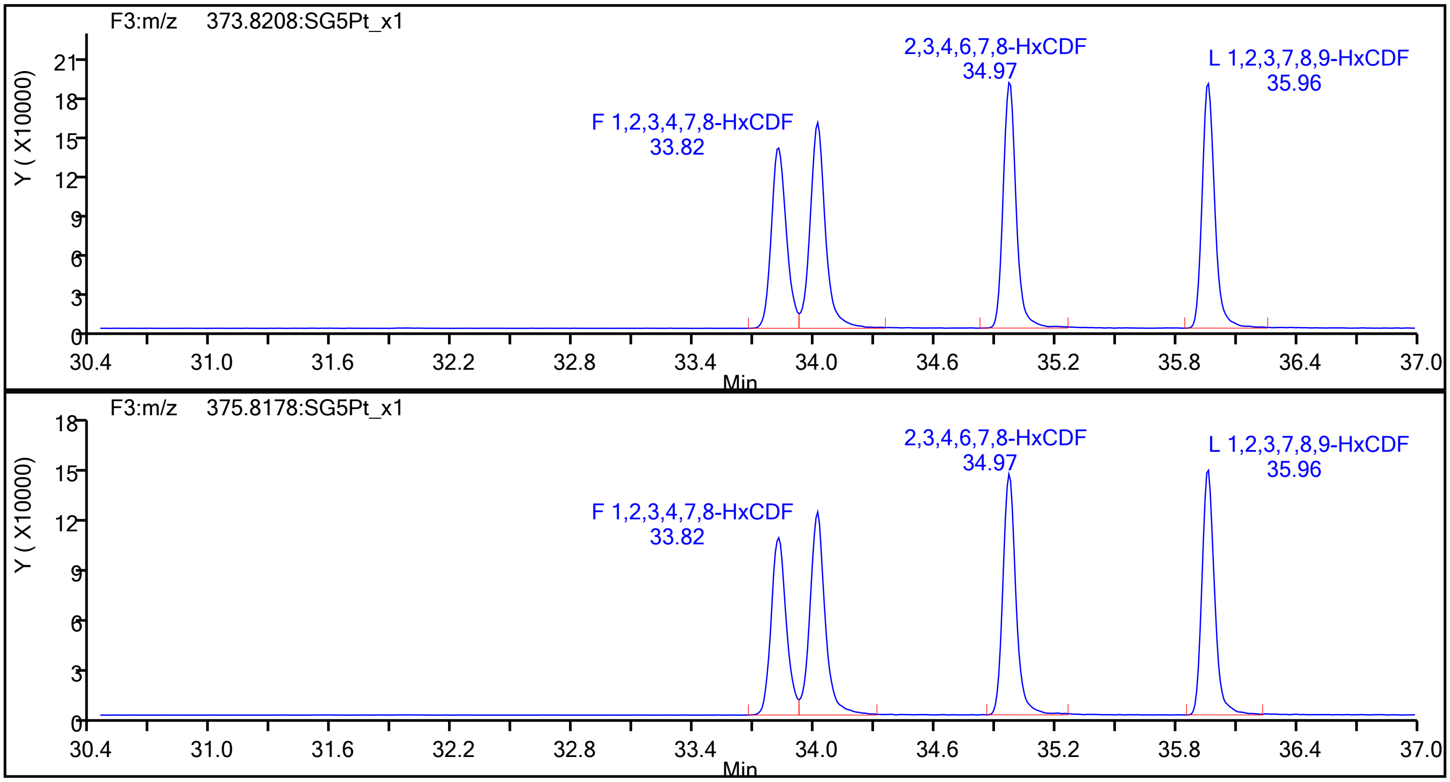

HxCDF Standards

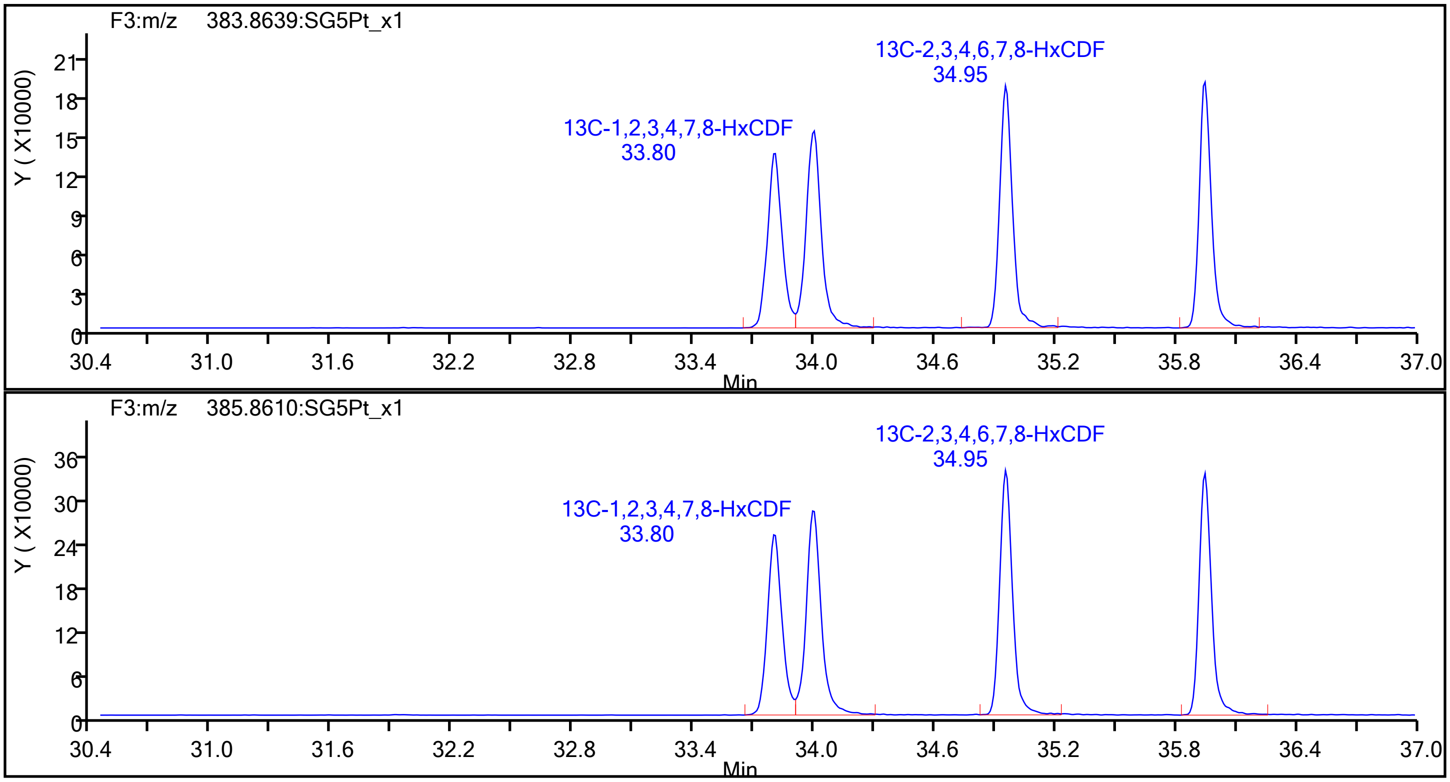

Report Date: 12-Oct-2020 09:11:52
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Injection Date: 10-Oct-2020 08:34:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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HxCDF

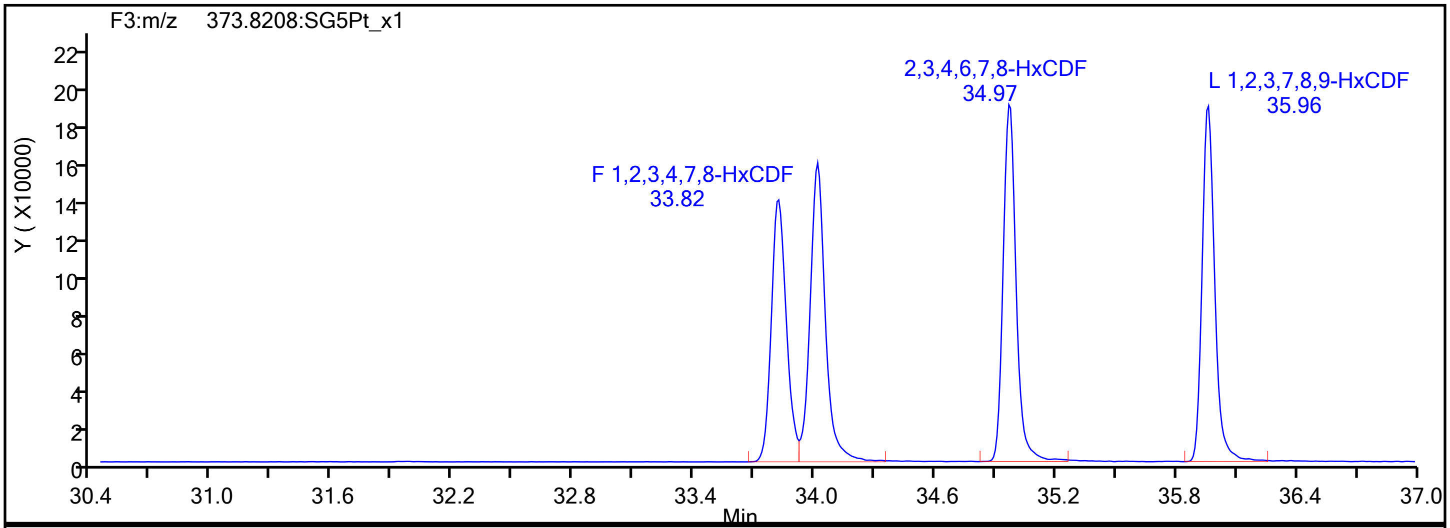

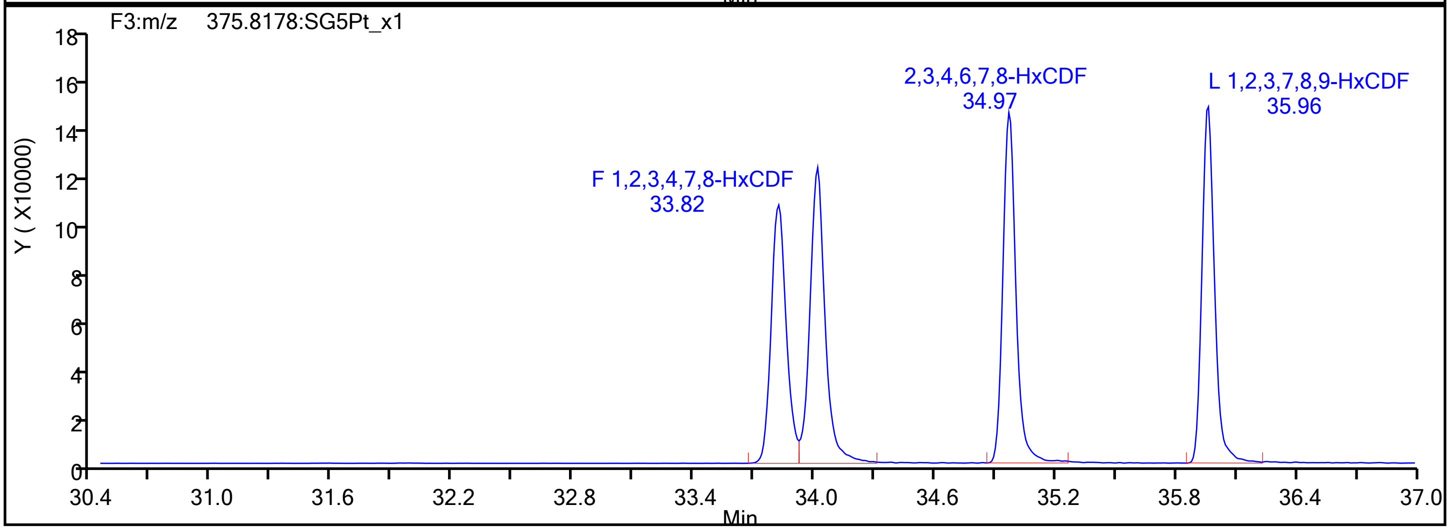

HxCDF Interference Mass

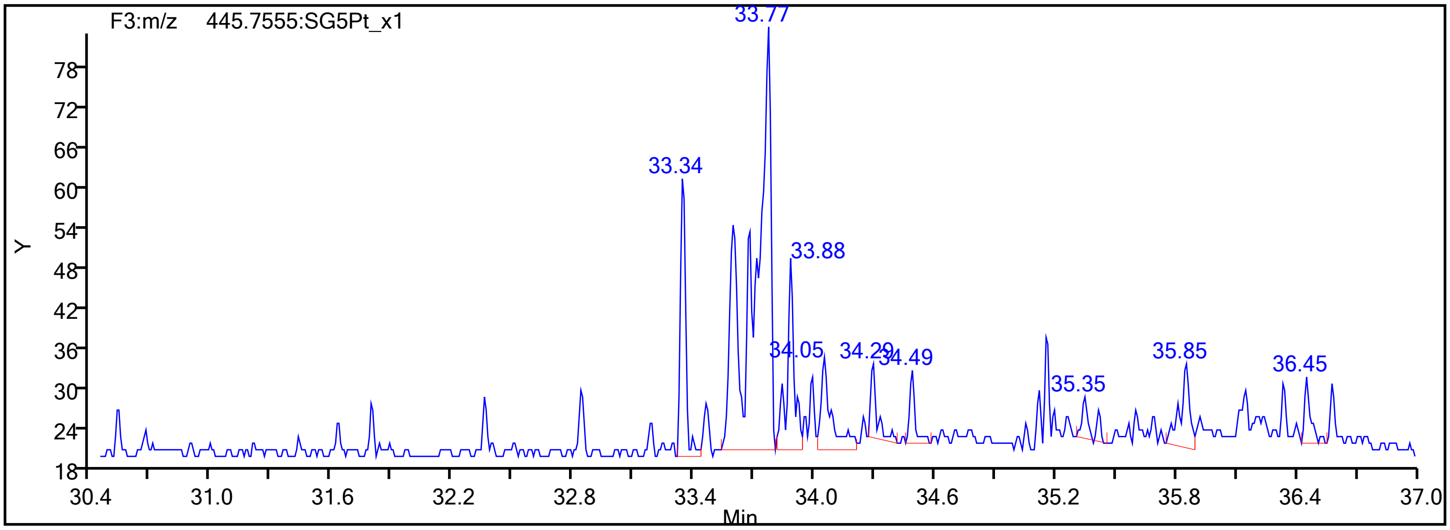

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d

Injection Date: 10-Oct-2020 08:34:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 19

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

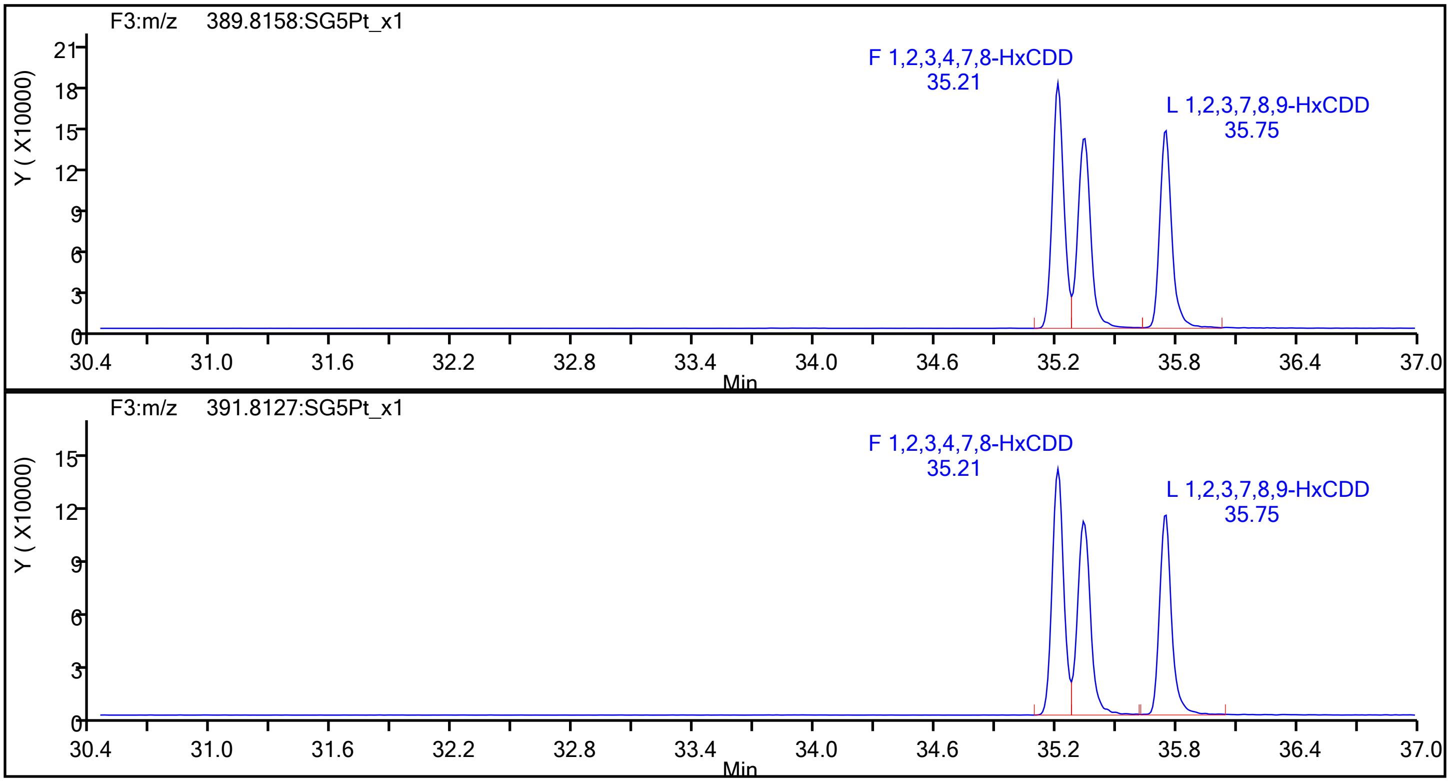

HxCDD Standards

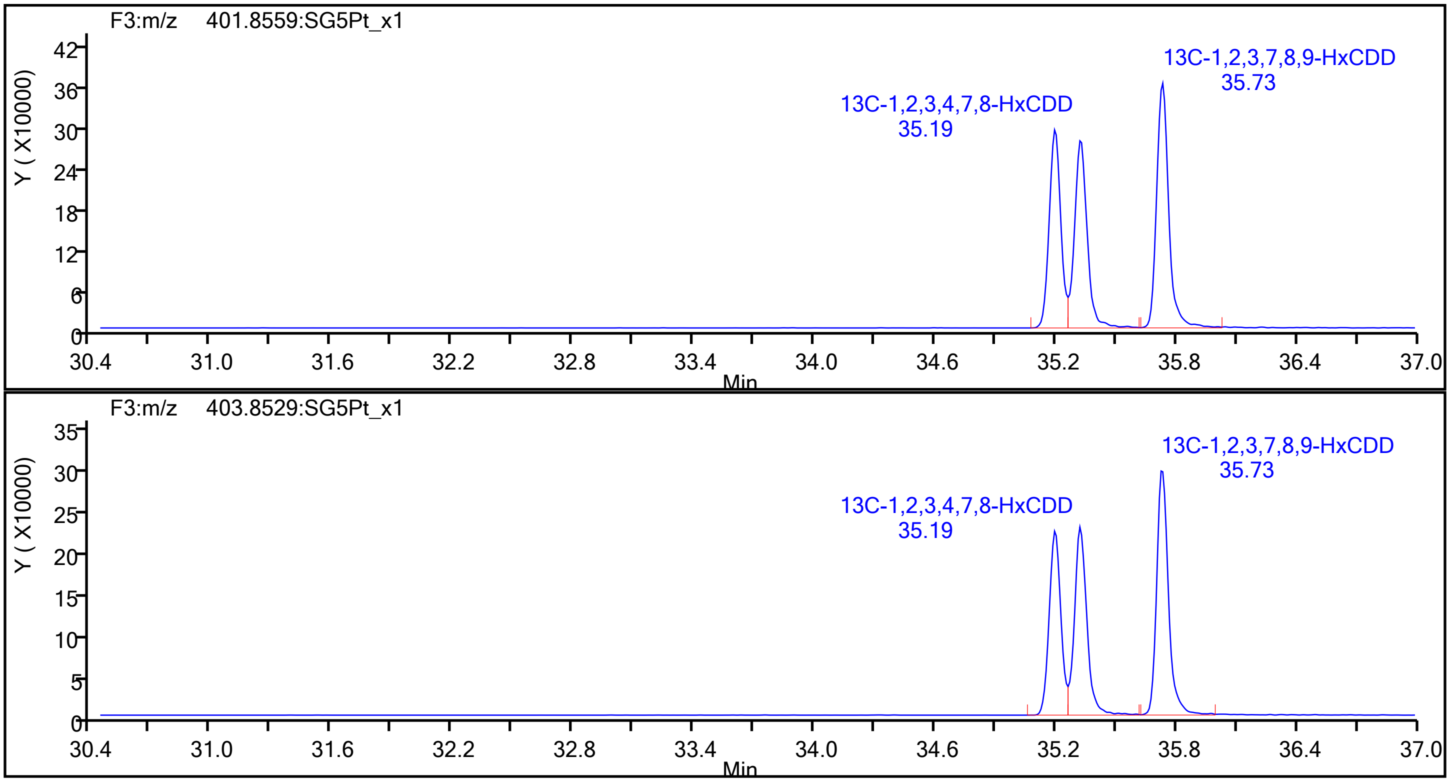

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Injection Date: 10-Oct-2020 08:34:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
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HpCDF

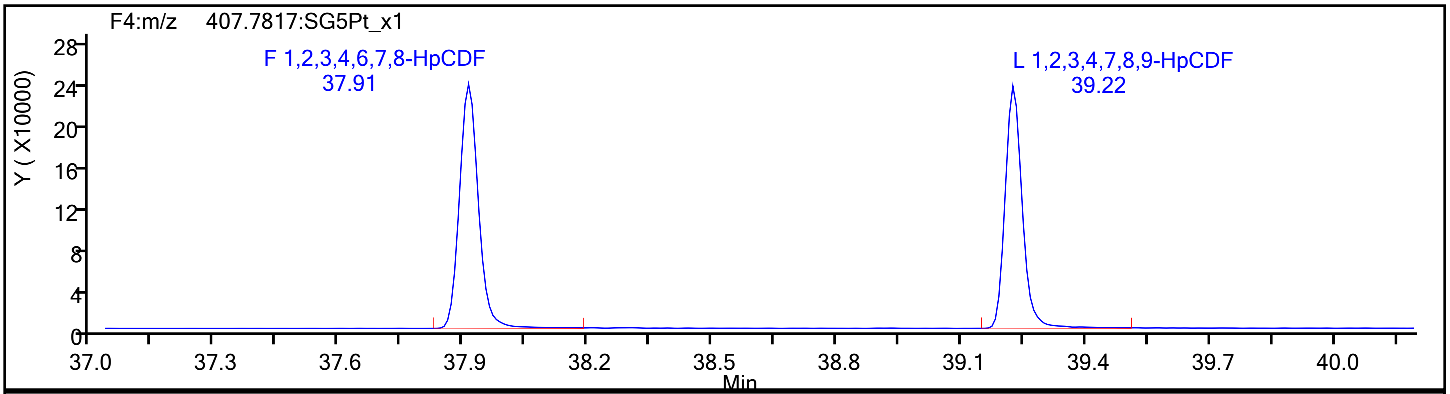

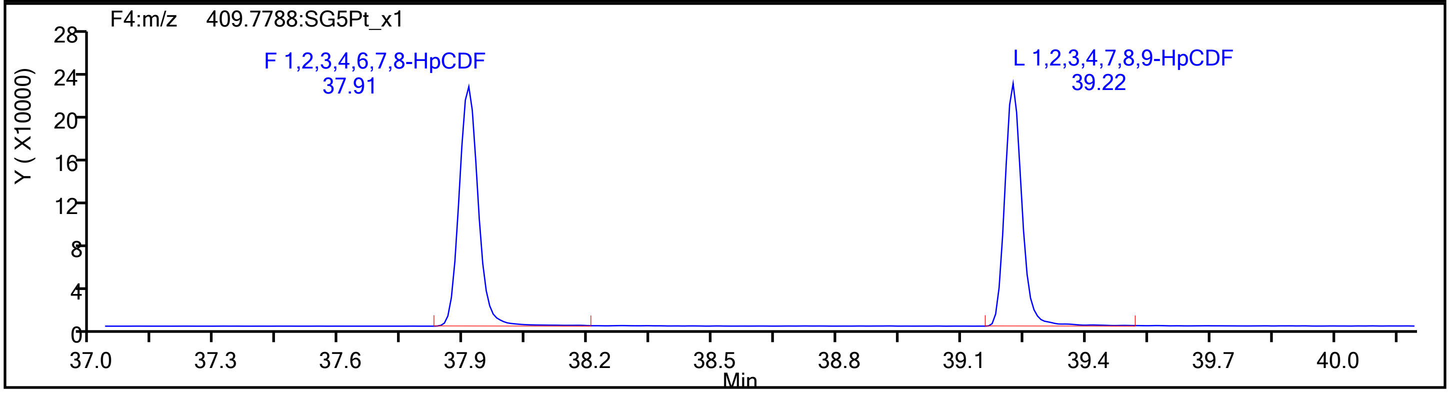

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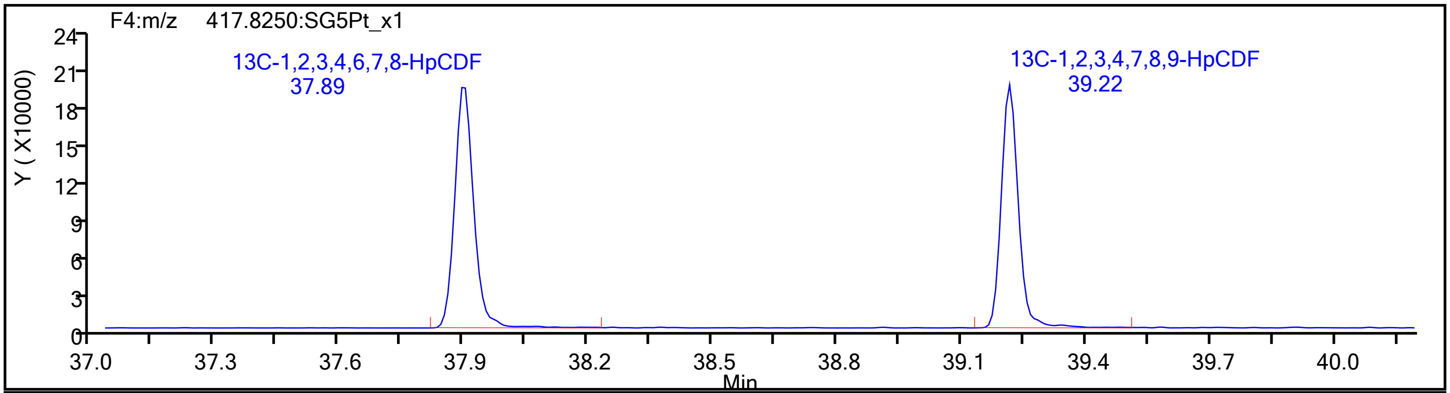

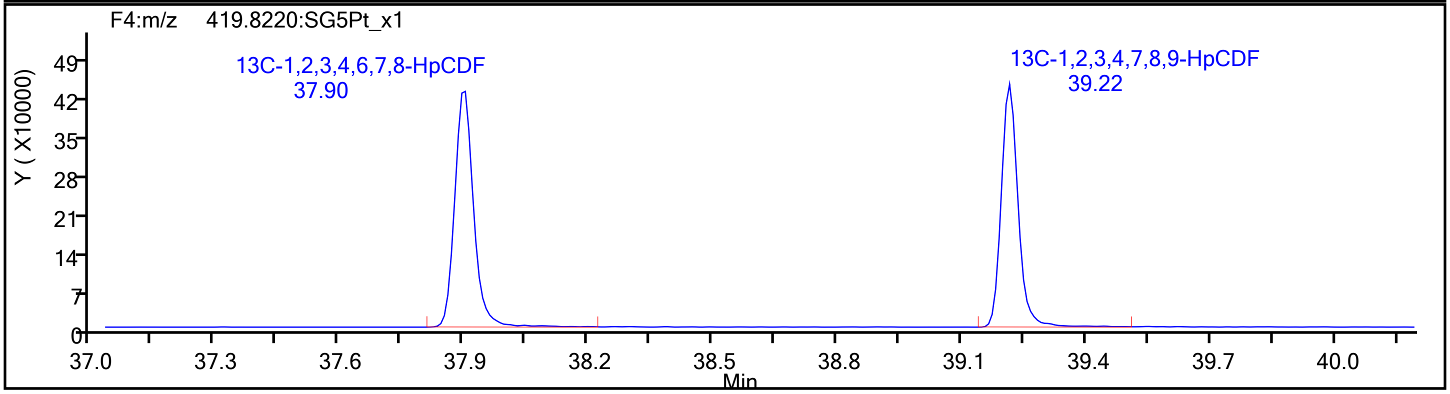

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Eurofins TestAmerica, Sacramento

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Injection Date:	10-Oct-2020 08:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

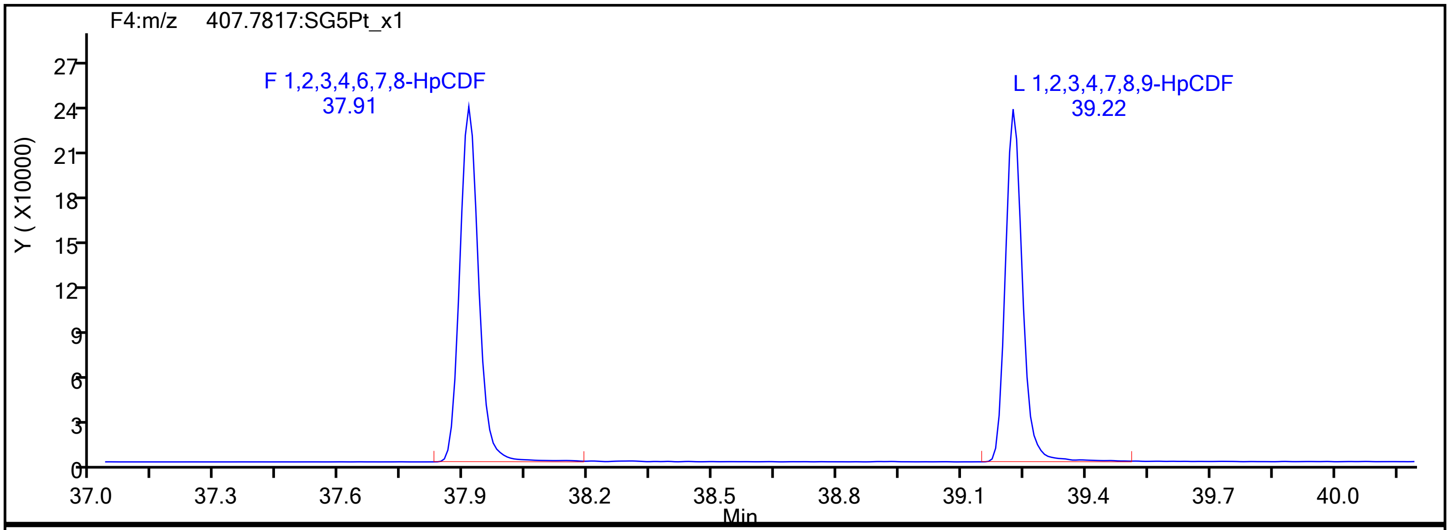

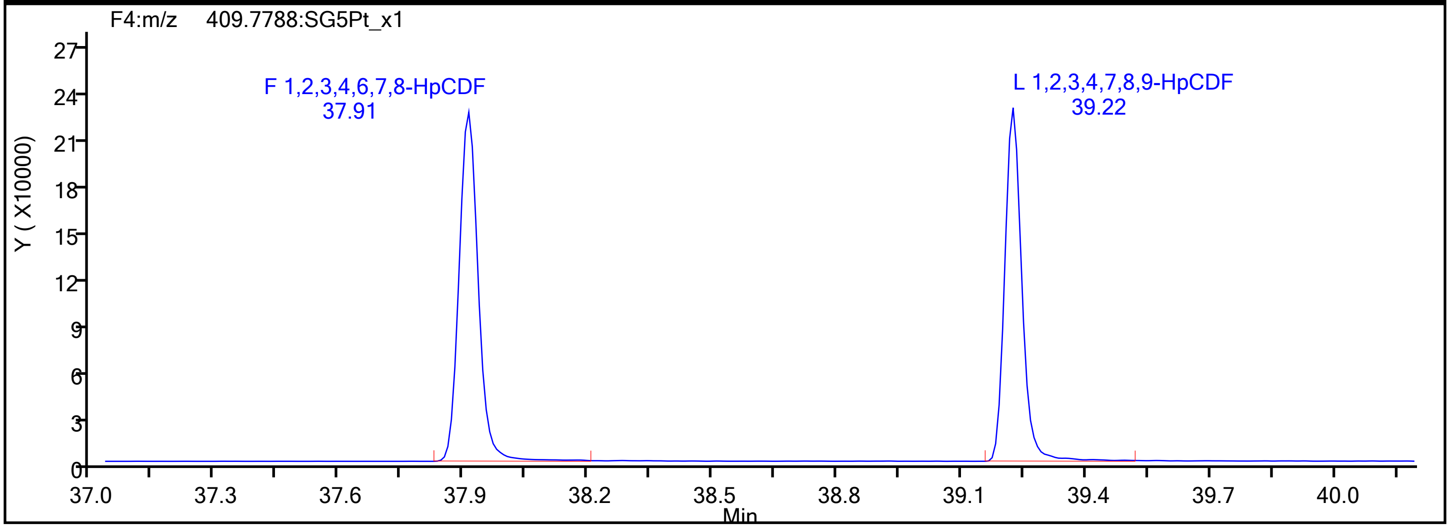

HpCDF Interference Mass

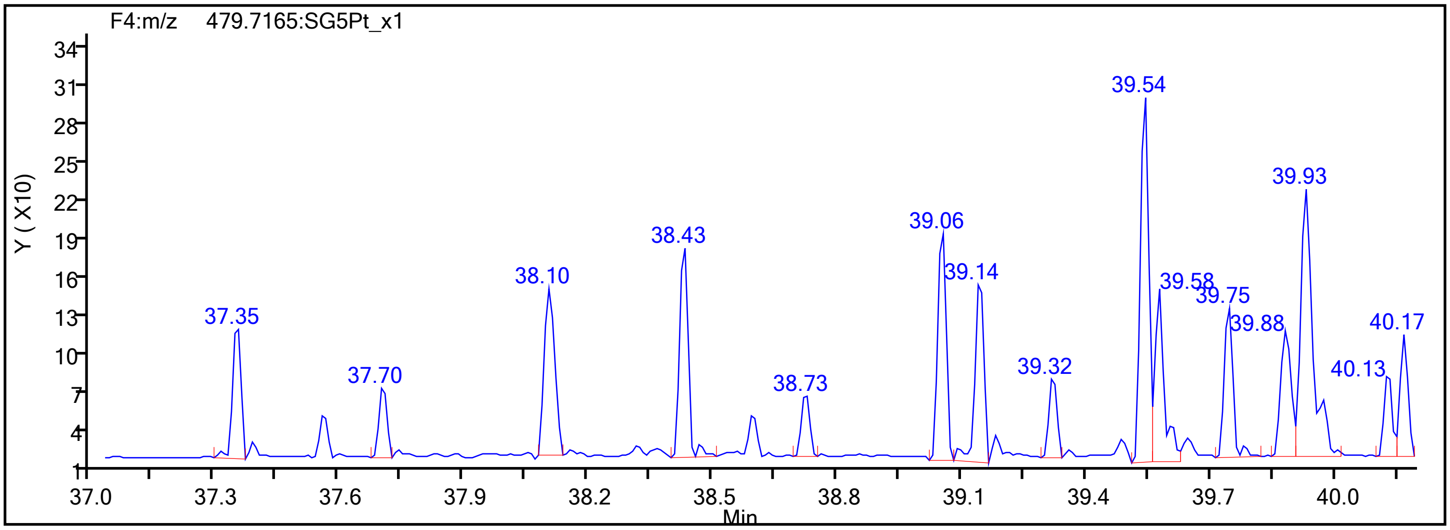

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDD

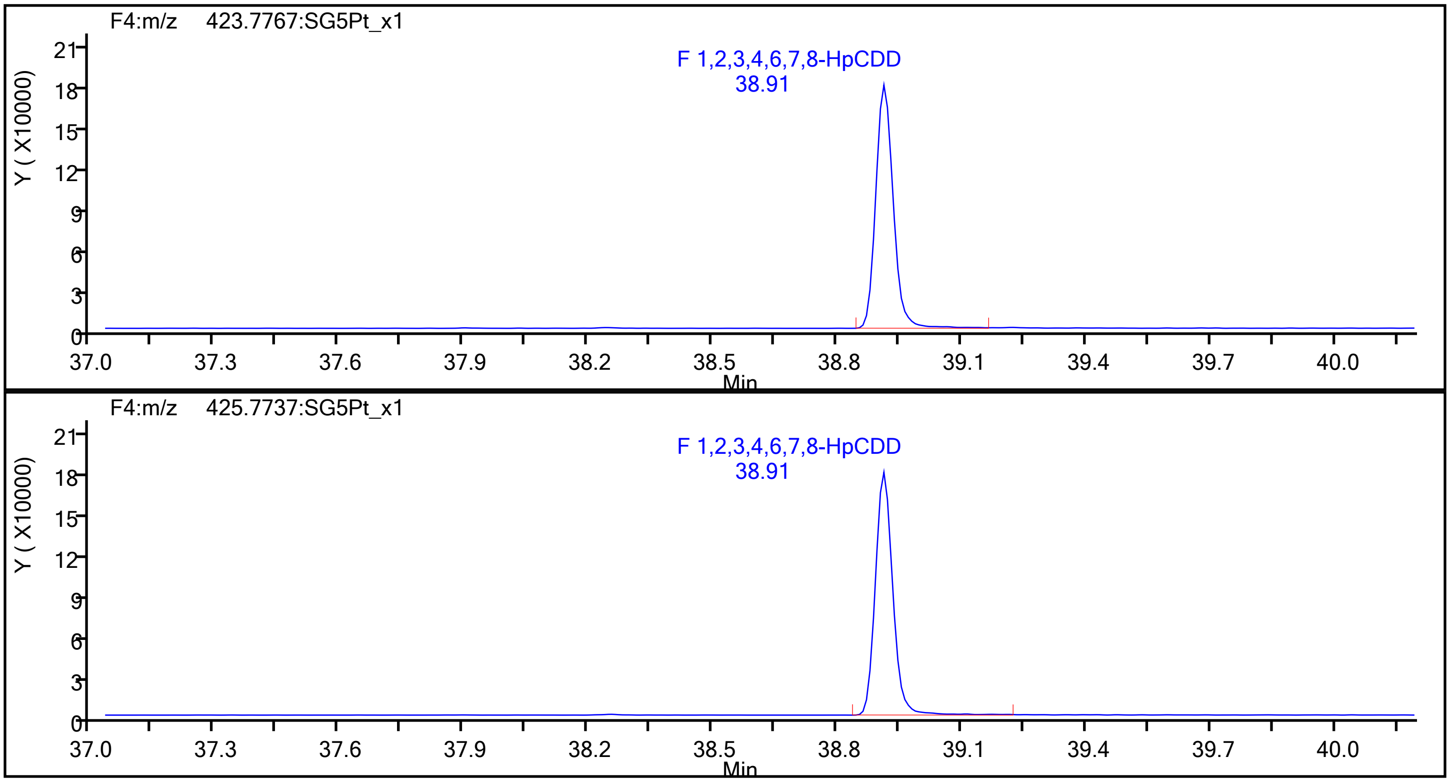

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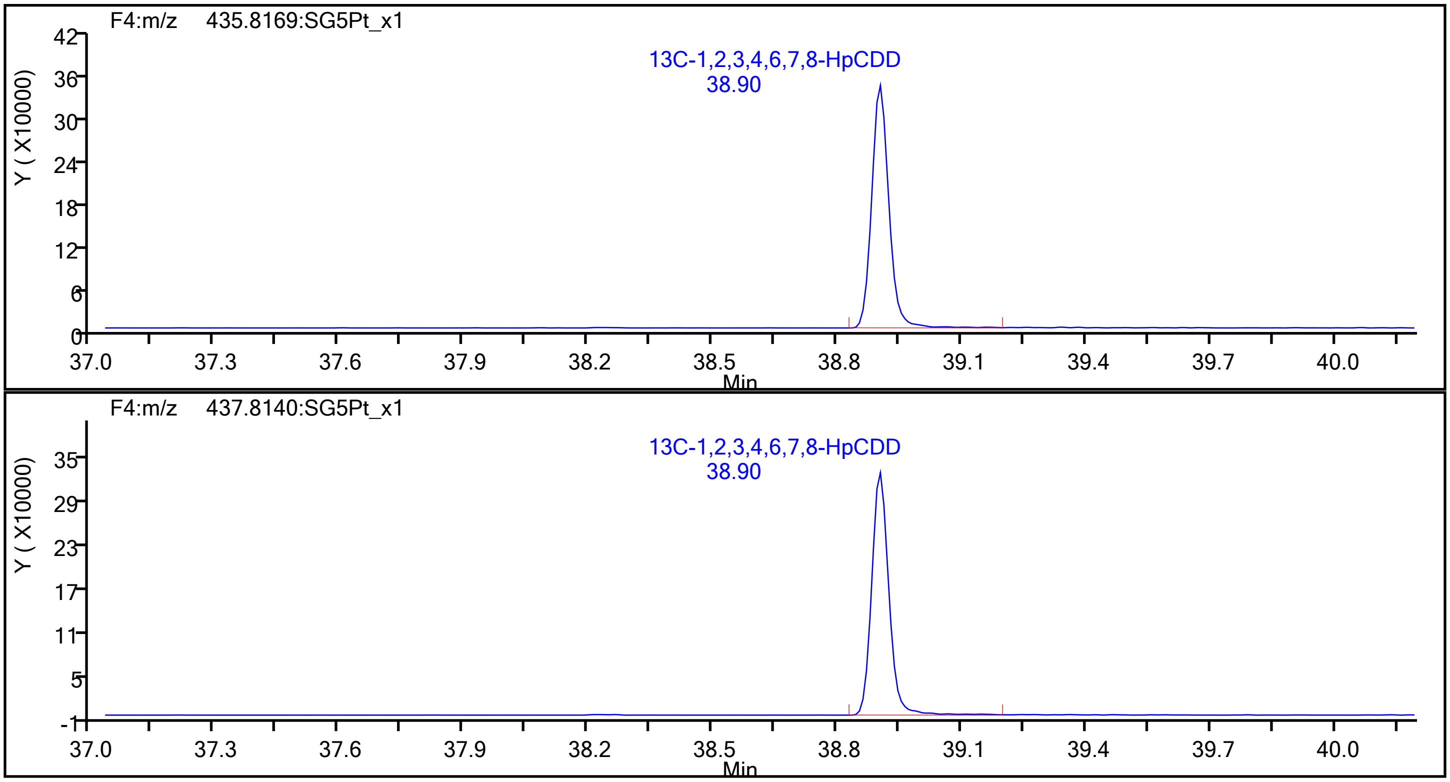

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

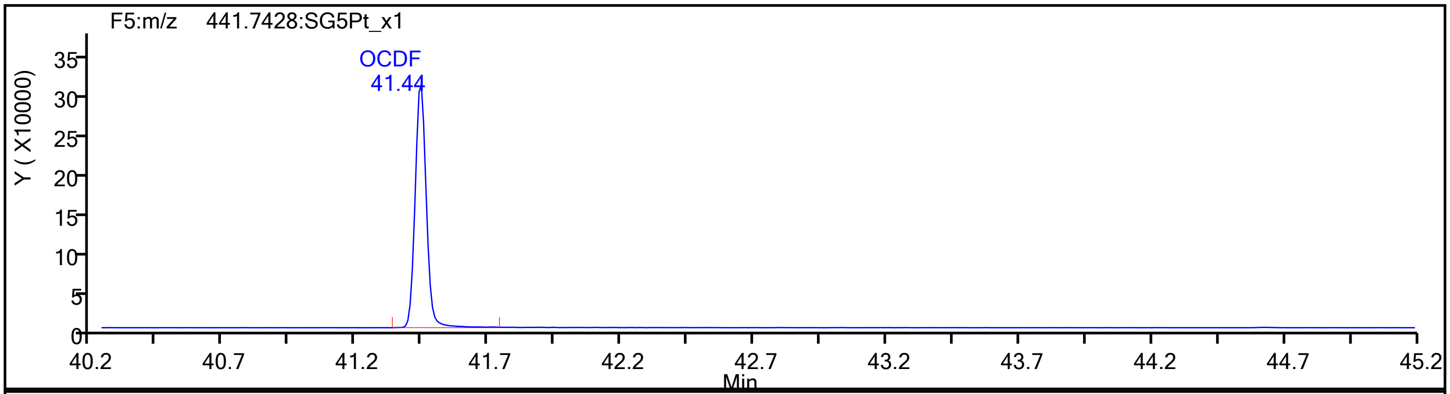

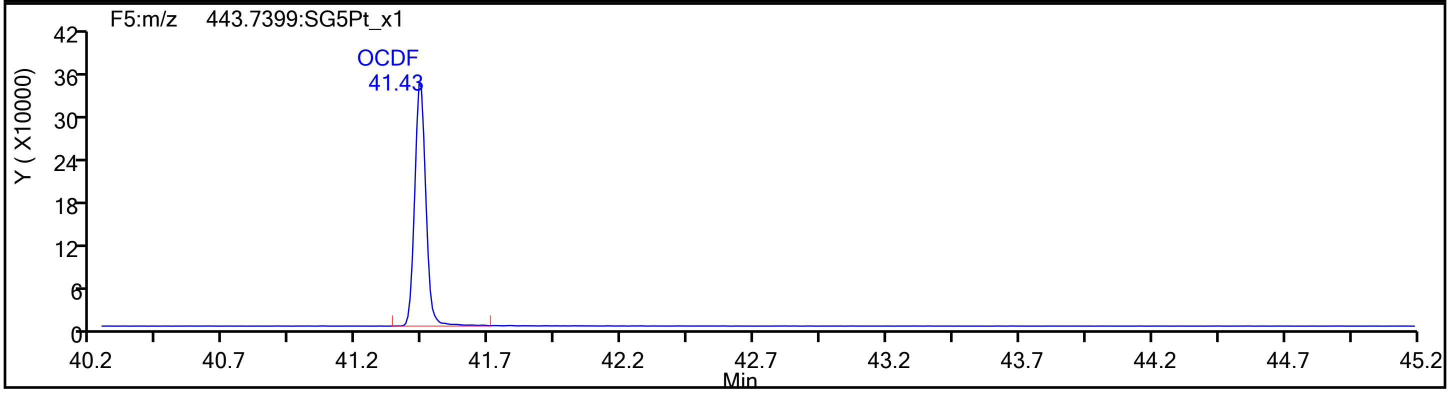

OCDF Standards

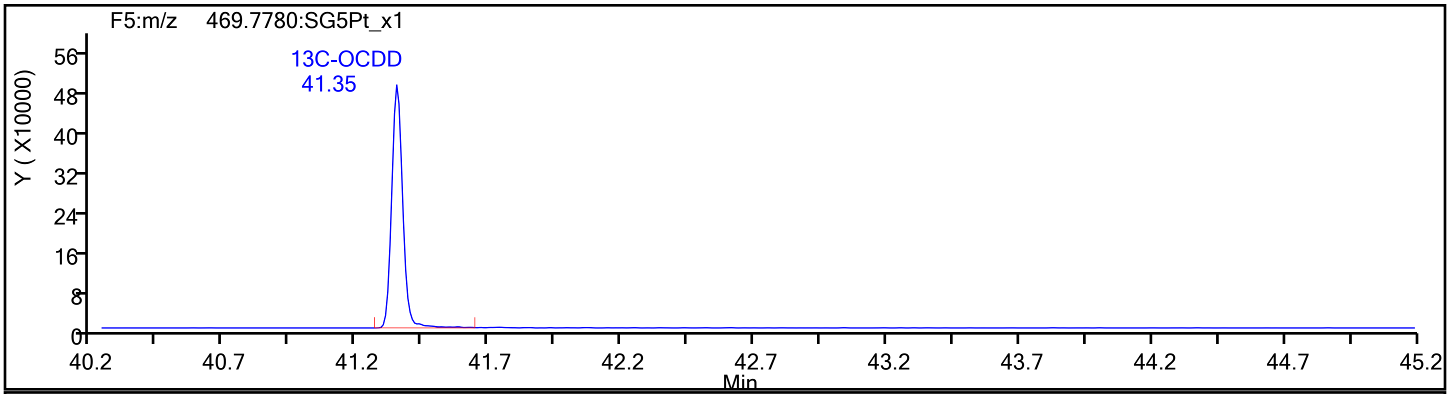

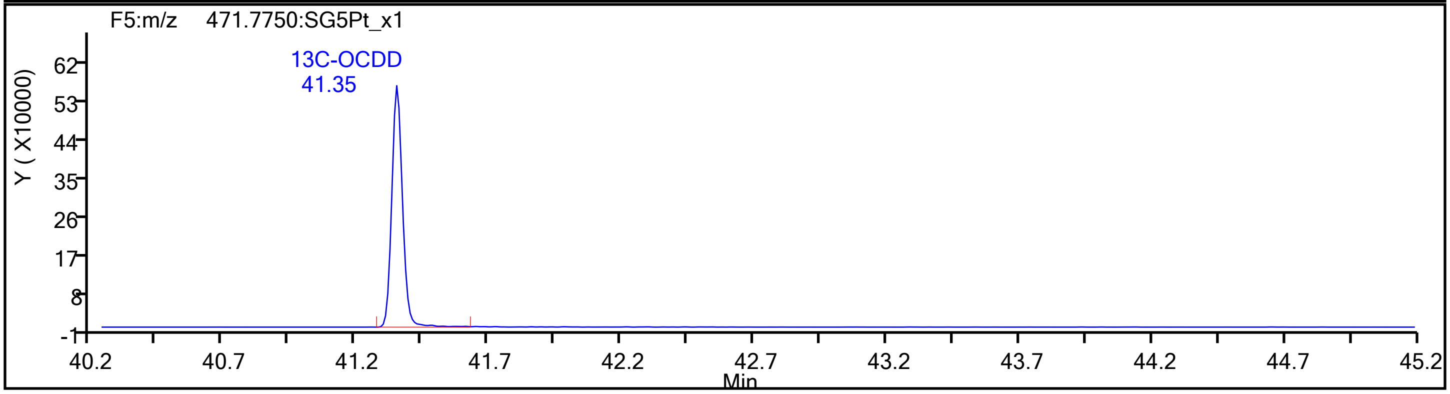

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Injection Date: 10-Oct-2020 08:34:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 19
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

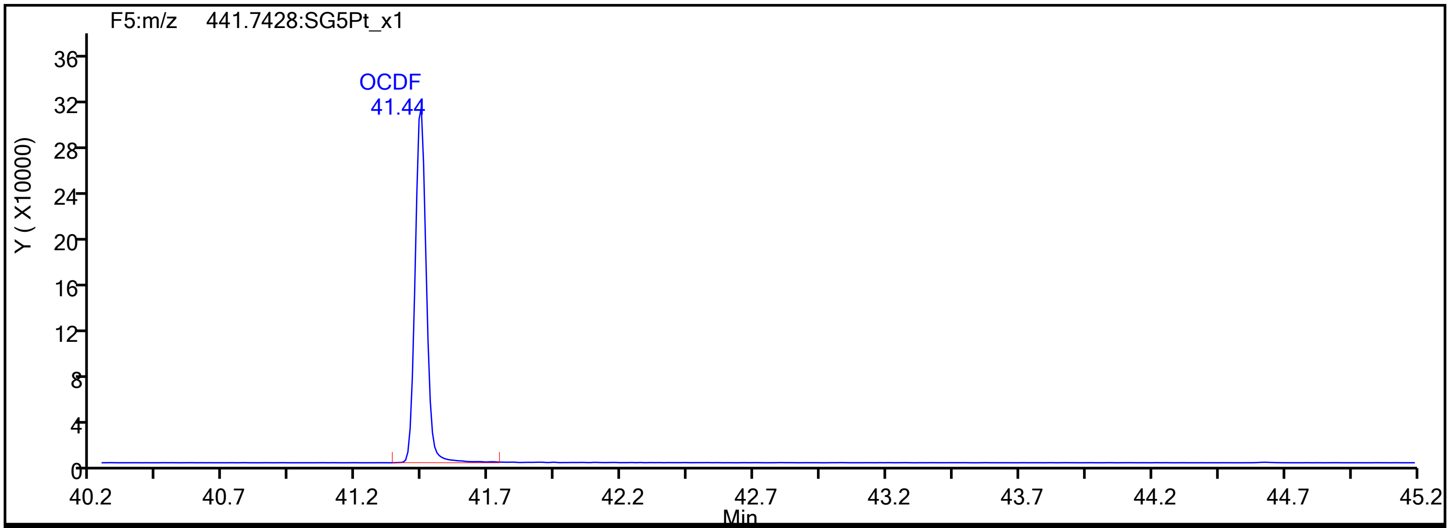

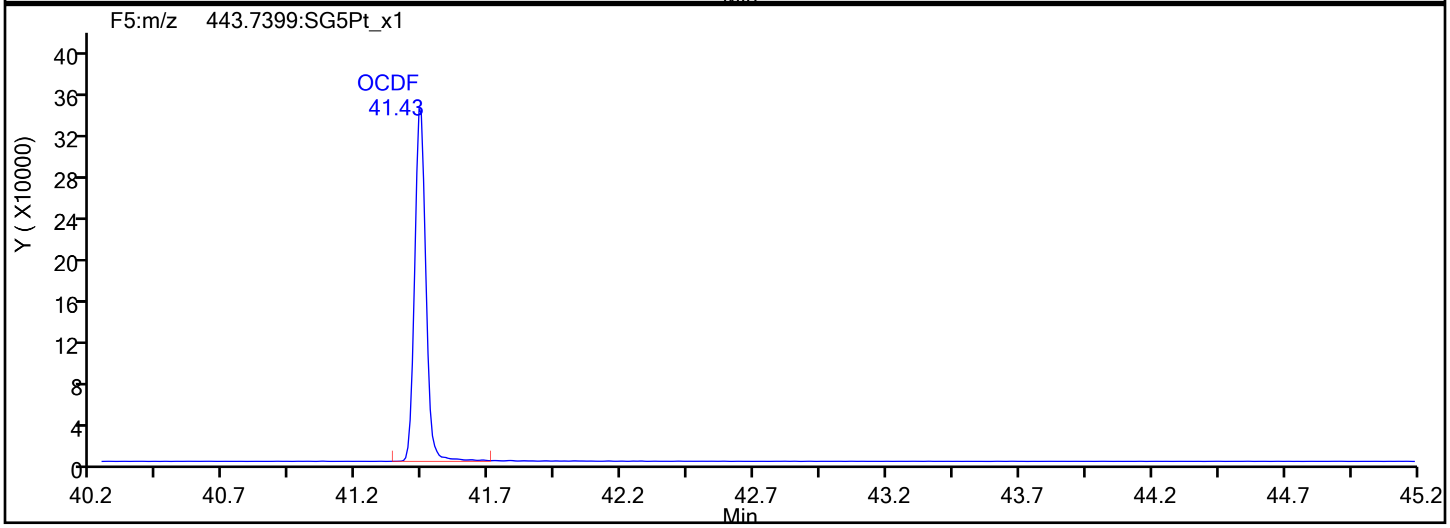

OCDF Interference Mass

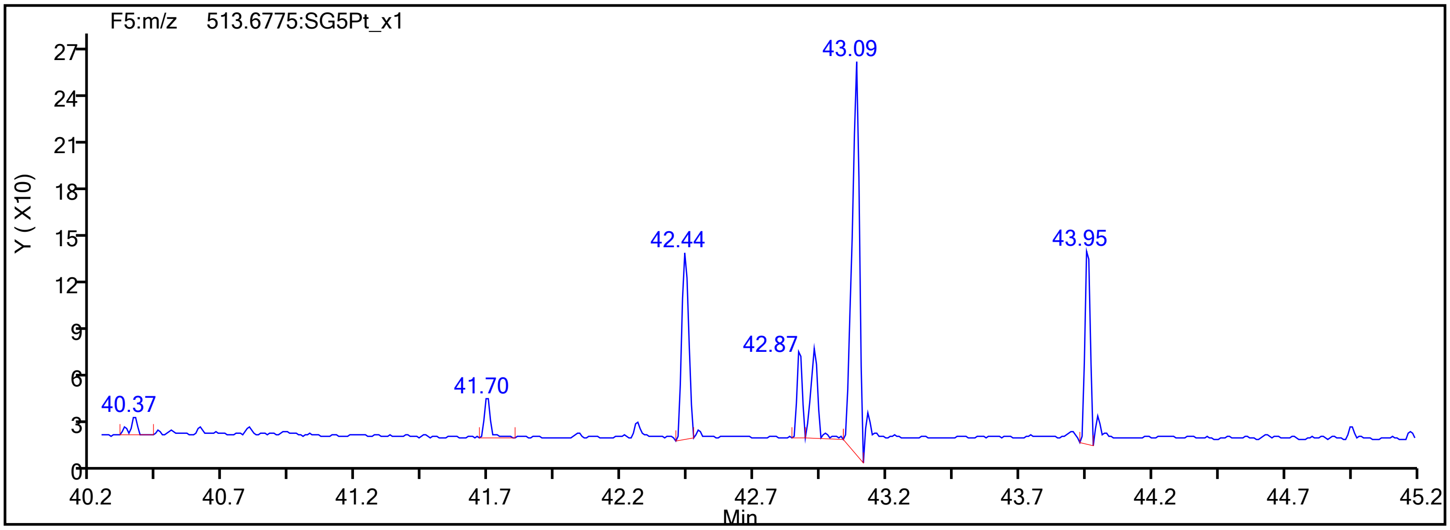

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Injection Date: 10-Oct-2020 08:34:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640 Sample Line#: 19
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

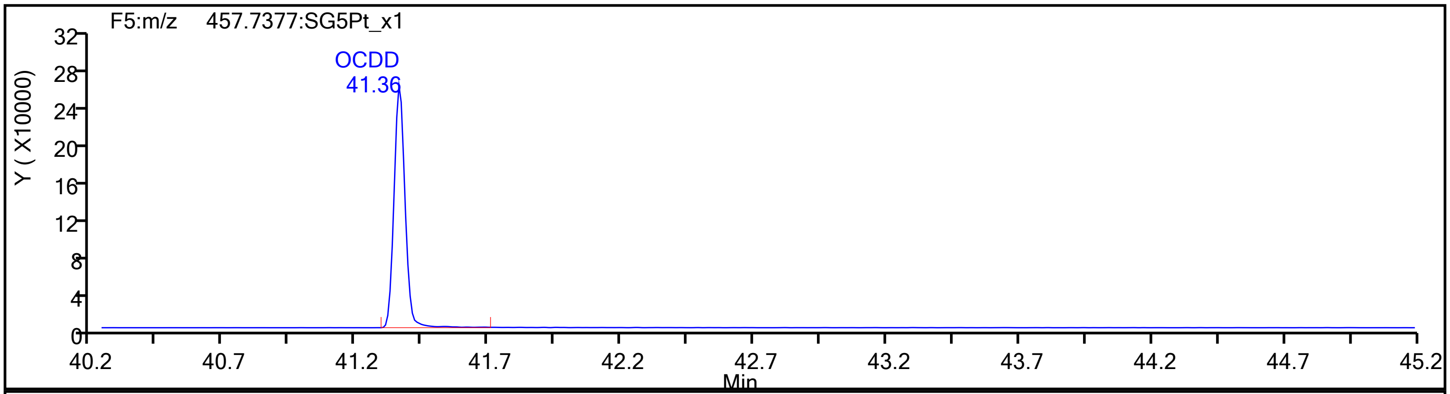

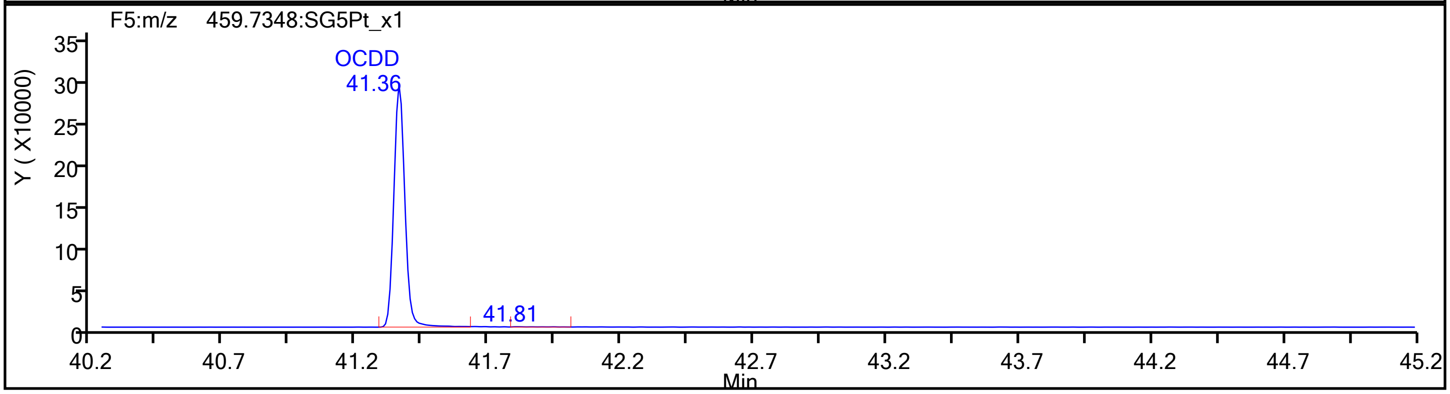

OCDD Standards

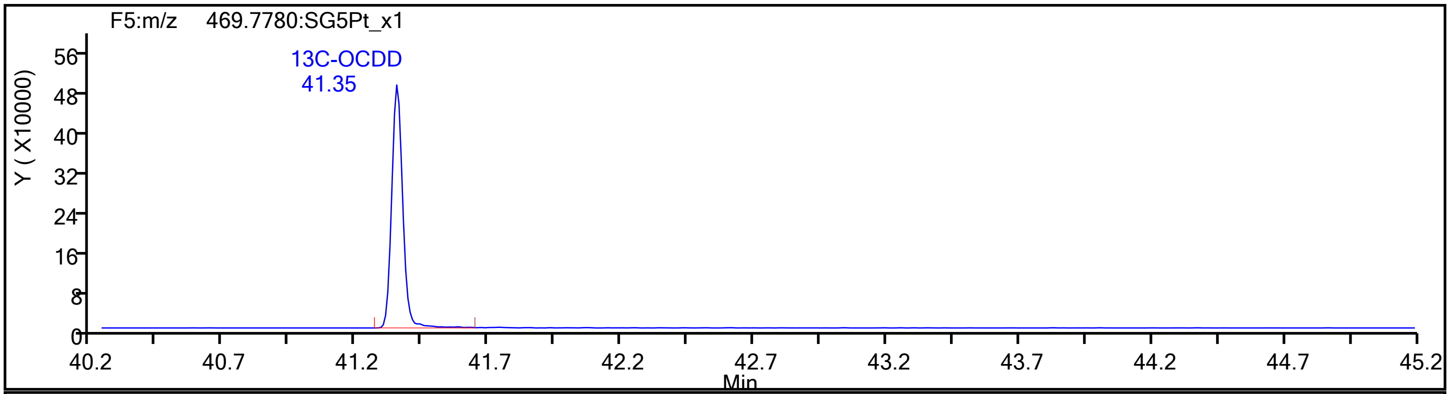

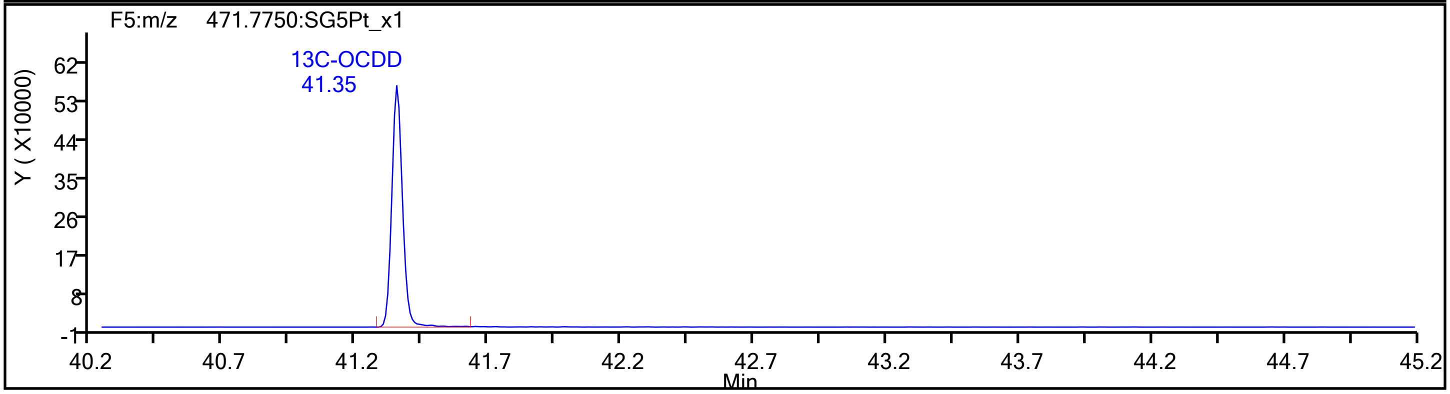

Report Date: 12-Oct-2020 09:11:52 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d
Injection Date: 10-Oct-2020 08:34:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 19
Column Type: DB-5
Column Dia: 0.32 mm

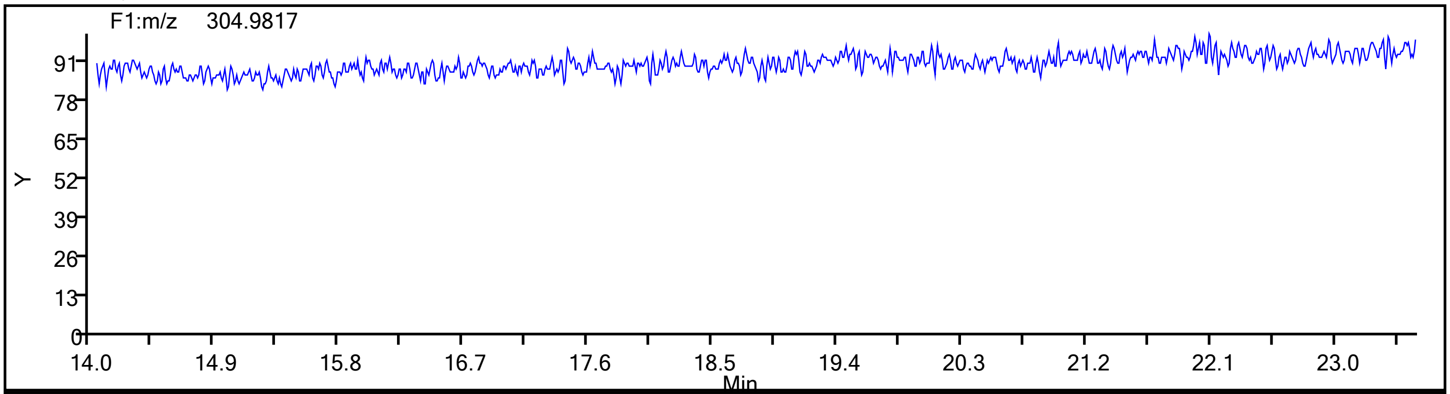

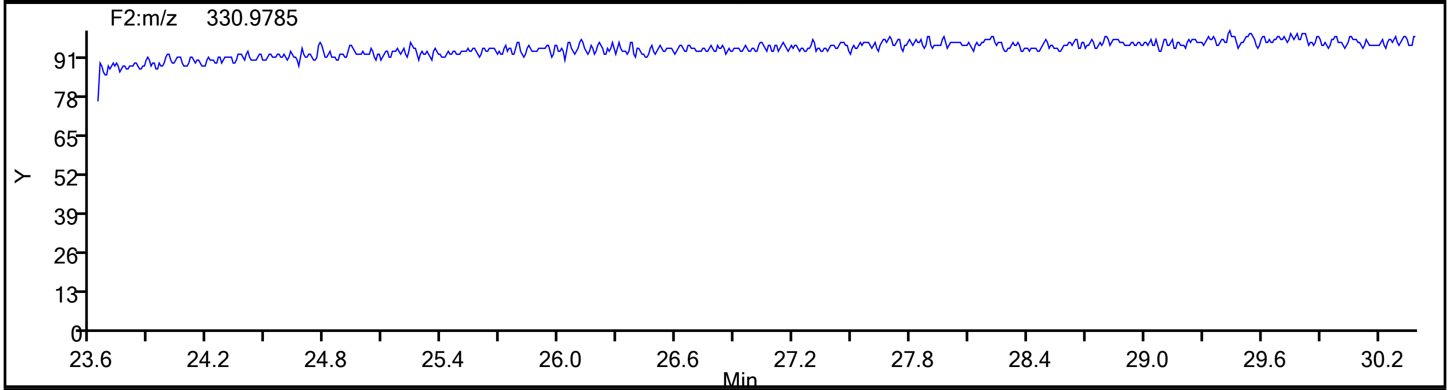

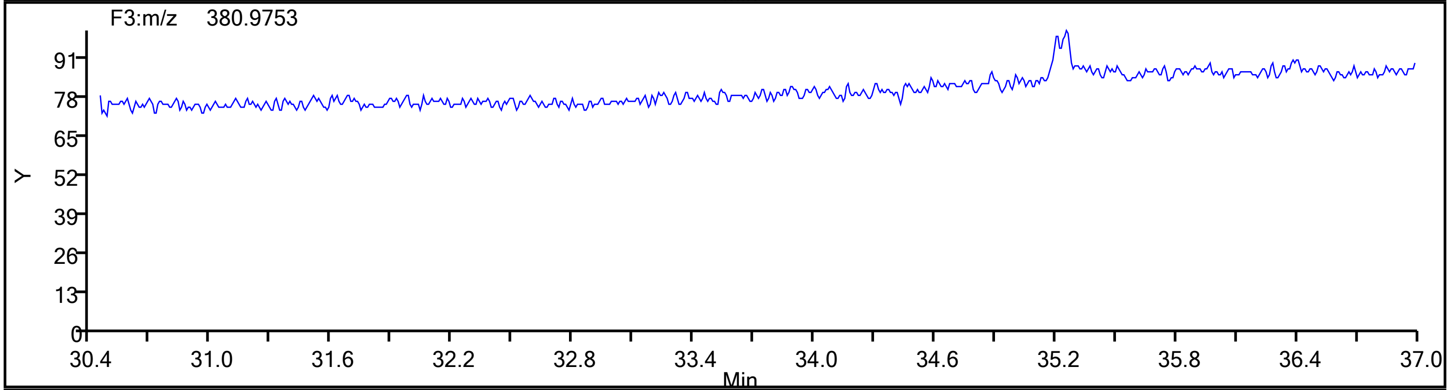

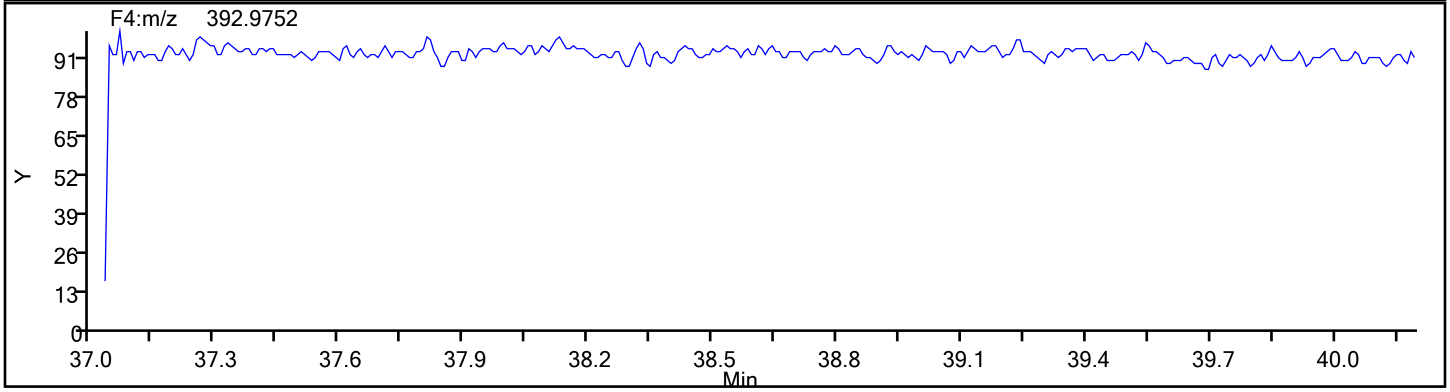

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_21.d		
Injection Date:	10-Oct-2020 08:34:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	19
Column Type:	DB-5	Column Dia:	0.32 mm

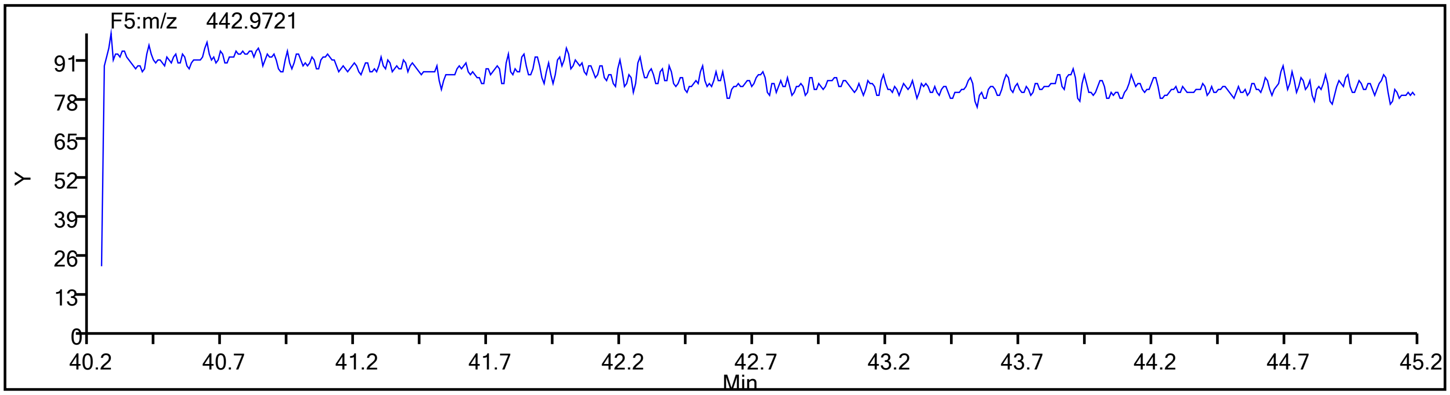

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-417490/3-A
Matrix: Water	Lab File ID: 08OC203D5_6.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1000(mL)	Date Analyzed: 10/08/2020 13:31
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420113	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	214		10	1.3
51207-31-9	2,3,7,8-TCDF	214		10	0.98
40321-76-4	1,2,3,7,8-PeCDD	968		50	1.8
57117-41-6	1,2,3,7,8-PeCDF	994		50	4.2
57117-31-4	2,3,4,7,8-PeCDF	989		50	4.4
39227-28-6	1,2,3,4,7,8-HxCDD	956		50	3.5
57653-85-7	1,2,3,6,7,8-HxCDD	938		50	3.9
19408-74-3	1,2,3,7,8,9-HxCDD	877		50	3.4
70648-26-9	1,2,3,4,7,8-HxCDF	988		50	5.1
57117-44-9	1,2,3,6,7,8-HxCDF	999		50	5.2
72918-21-9	1,2,3,7,8,9-HxCDF	993		50	3.7
60851-34-5	2,3,4,6,7,8-HxCDF	996		50	5.7
35822-46-9	1,2,3,4,6,7,8-HpCDD	930		50	9.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	970		50	8.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	1020		50	8.7
3268-87-9	OCDD	1880		100	3.6
39001-02-0	OCDF	1820		100	4.5
41903-57-5	Total TCDD	214		10	1.3
30402-14-3	Total TCDF	214		10	0.98
36088-22-9	Total PeCDD	968		50	1.8
30402-15-4	Total PeCDF	1980		50	4.3
34465-46-8	Total HxCDD	2770		50	3.6
55684-94-1	Total HxCDF	3980		50	4.9
37871-00-4	Total HpCDD	930		50	9.0
38998-75-3	Total HpCDF	1990		50	8.4

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65130-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-417490/3-A
Matrix: Water	Lab File ID: 08OC203D5_6.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/01/2020 08:42
Sample wt/vol: 1000(mL)	Date Analyzed: 10/08/2020 13:31
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 420113	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	96		20-175
89059-46-1	13C-2,3,7,8-TCDF	94		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	92		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	81		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	85		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	104		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	101		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	88		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	86		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	94		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	90		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	96		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	91		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	90		20-186
114423-97-1	13C-OCDD	112		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	109		31-191

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d
Lims ID: LCSD 320-417490/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 08-Oct-2020 13:31:42 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-417490/3-A LCSD 320-417490/3-A
Misc. Info.: 08OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 08:46:16 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1614

First Level Reviewer: ruangyotsakuld Date: 13-Oct-2020 08:46:16

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.930	284992743	0.79	3.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.492	397396820	0.82	1.4844	93.9	93.9	0.3124	0.3124	93.94	
2,3,7,8-TCDF	15.507	40521348	0.77	0.9534	10.7	10.7	0.0492	0.0492	107	
A Non-2,3,7,8-sub-TCDF	15.250						0.0492	0.0492		
S Total TCDF					10.7	10.7	0.0492	0.0492		
D 13C-2,3,7,8-TCDD	16.097	298448125	0.79	1.0875	96.3	96.3	0.3418	0.3418	96.30	
2,3,7,8-TCDD	16.112	32595629	0.78	1.0205	10.7	10.7	0.0655	0.0655	107	
$ 37Cl4-2,3,7,8-TCDD	16.112	139393478		1.1216	43.6	43.6	0.0540	0.0540	109	
A Non-2,3,7,8-sub-TCDD	15.643						0.0655	0.1531		RQU
S Total TCDD					10.7	10.7	0.0655	0.0655		
D 13C-1,2,3,7,8-PeCDF	19.714	321843813	1.56	1.3943	81.0	81.0	0.2662	0.2662	80.99	
1,2,3,7,8-PeCDF	19.727	172683876	1.58	1.0794	49.7	49.7	0.2106	0.2106	99.42	
D 13C-2,3,4,7,8-PeCDF	20.818	323613432	1.58	1.3370	84.9	84.9	0.2776	0.2776	84.93	
2,3,4,7,8-PeCDF	20.845	175542743	1.51	1.0966	49.5	49.5	0.2203	0.2203	98.93	
A F1 PeCDFs	17.745						0.0154	0.0154		
A Non-2,3,7,8-sub-PeCDF	20.369						0.2153	0.2153		
S Total PeCDF					99.2	99.2	0.2155	0.2155		
D 13C-1,2,3,7,8-PeCDD	21.432	221888824	1.53	0.8475	91.9	91.9	0.1473	0.1473	91.86	
1,2,3,7,8-PeCDD	21.459	122336782	1.54	1.1397	48.4	48.4	0.0900	0.0900	96.76	
A Non-2,3,7,8-sub-PeCDD	20.552						0.0900	0.0900		
S Total PeCDD					48.4	48.4	0.0900	0.0900		
D 13C-1,2,3,4,7,8-HxCDF	26.746	257936294	0.53	1.3065	87.9	87.9	0.4433	0.4433	87.87	
1,2,3,4,7,8-HxCDF	26.772	159961148	1.22	1.2552	49.4	49.4	0.2571	0.2571	98.81	
D 13C-1,2,3,6,7,8-HxCDF	27.012	275320720	0.53	1.4213	86.2	86.2	0.4075	0.4075	86.22	
1,2,3,6,7,8-HxCDF	27.039	166512573	1.19	1.2102	50.0	50.0	0.2592	0.2592	99.95	
D 13C-2,3,4,6,7,8-HxCDF	28.570	265418036	0.53	1.3142	89.9	89.9	0.4407	0.4407	89.89	
2,3,4,6,7,8-HxCDF	28.597	161059991	1.22	1.2182	49.8	49.8	0.2853	0.2853	99.62	
D 13C-1,2,3,7,8,9-HxCDF	30.408	280026026	0.53	1.3204	94.4	94.4	0.4386	0.4386	94.39	
1,2,3,7,8,9-HxCDF	30.421	171224356	1.24	1.2319	49.6	49.6	0.1864	0.1864	99.27	
A Non-2,3,7,8-sub-HxCDF	27.498						0.2408	0.2408		
S Total HxCDF					198.8	198.8	0.2470	0.2470		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	30.088	224676527	1.25	2.8E+06	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	29.049	203119172	1.27	0.8660	104.4	104.4	0.3508	0.3508	104	a
1,2,3,4,7,8-HxCDD	29.090	121721369	1.25	1.2535	47.8	47.8	0.1727	0.1727	95.61	
D 13C-1,2,3,6,7,8-HxCDD	29.329	223360535	1.26	0.9827	101.2	101.2	0.3092	0.3092	101	a
1,2,3,6,7,8-HxCDD	29.369	116447718	1.26	1.1117	46.9	46.9	0.1941	0.1941	93.79	
1,2,3,7,8,9-HxCDD	30.115	120223669	1.22	1.2852	43.9	43.9	0.1682	0.1682	87.74	
A Non-2,3,7,8-sub-HxCDD	27.931						0.1777	0.1777		
S Total HxCDD					138.6	138.6	0.1784	0.1784		
D 13C-1,2,3,4,6,7,8-HpCDF	32.547	193295158	0.46	0.9410	91.4	91.4	1.303	1.303	91.42	
1,2,3,4,6,7,8-HpCDF	32.559	138574223	1.00	1.4783	48.5	48.5	0.4020	0.4020	96.99	
D 13C-1,2,3,4,7,8,9-HpCDF	33.641	177776558	0.46	0.8751	90.4	90.4	1.401	1.401	90.42	
1,2,3,4,7,8,9-HpCDF	33.653	124936741	1.03	1.3784	51.0	51.0	0.4331	0.4331	102	
A Non-2,3,7,8-sub-HpCDF	33.118						0.4170	0.4170		
S Total HpCDF					99.5	99.5	0.4176	0.4176		
D 13C-1,2,3,4,6,7,8-HpCDD	33.398	195073948	1.12	0.9049	95.9	95.9	1.916	1.916	95.95	
1,2,3,4,6,7,8-HpCDD	33.410	98542360	1.02	1.0862	46.5	46.5	0.4502	0.4502	93.01	
A Non-2,3,7,8-sub-HpCDD	33.339						0.4502	0.4502		
S Total HpCDD					46.5	46.5	0.4502	0.4502		
D 13C-OCDD	35.558	290104198	0.88	0.5783	223.3	223.3	0.6313	0.6313	112	
OCDF	35.630	228108487	0.93	1.7248	91.2	91.2	0.2243	0.2243	91.18	
OCDD	35.570	171223338	0.90	1.2576	93.9	93.9	0.1795	0.1795	93.86	
S Total Dioxins & Furans							0.000100	0.000100		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d
Lims ID: LCSD 320-417490/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 08-Oct-2020 13:31:42 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-417490/3-A LCSD 320-417490/3-A
Misc. Info.: 08OC203D5
Operator ID: SMA Instrument ID: 3D5

Method: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\Dioxin_3D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 08:46:16 Calib Date: 05-Oct-2020 20:45:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\3D5\20201006-104756.b\05OC203D5_8.d

Column 1 : Det: F1:HRSIR
Process Host: CTX1614

First Level Reviewer: ruangyotsakuld Date: 13-Oct-2020 08:46:16

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.930	15.930	0		125773544	35648797	34129	85322	1045		
333.9339	15.930	15.930	0		159219199	44858933	85562	213905	524	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.492	15.492	0	0.972	179316089	49423953	56995	142487	867		
317.9389	15.492	15.492	0	0.972	218080731	59463784	92354	230885	644	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	15.507	15.507	0	1.001	17600187	4858123	9811	24527	495		
305.8987	15.507	15.507	0	1.001	22921161	6231576	10617	26542	587	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.250						9811	24527			
305.8987	15.250						10617	26542			
13C-2,3,7,8-TCDD											
331.9368	16.097	16.097	0	1.010	131760357	33964559	34129	85322	995		
333.9339	16.097	16.097	0	1.010	166687768	42800791	85562	213905	500	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.112	16.112	0	1.001	14256740	3782469	12484	31210	303		
321.8936	16.112	16.112	0	1.001	18338889	4826122	8034	20085	601	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	16.112	16.112	0	1.011	139393478	36834109	19497	48742	1889		
A Non-2,3,7,8-sub-TCDD											U
319.8965	14.237	15.643	-84	0.884	202810	55276	12484	31210	4		
321.8936	14.237	15.643	-84	0.884	316041	82469	8034	20085	10	0.64(0.65-0.89)	
	Empc Correction				263389	71787	8034	20085	9		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	19.714	19.714	0	1.237	196272208	39181314	72013	180032	544		
353.8970	19.700	19.714	-1	1.237	125571605	24945214	47504	118760	525	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	19.727	19.727	0	1.001	105632881	21002434	34773	86932	604		
341.8567	19.727	19.727	0	1.001	67050995	13371159	23544	58860	568	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	20.818	20.832	-1	1.307	197966830	37038280	72013	180032	514		
353.8970	20.818	20.832	-1	1.307	125646602	23310425	47504	118760	491	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	20.845	20.859	-1	1.001	105568904	19813260	34773	86932	570		
341.8567	20.845	20.859	-1	1.001	69973839	12873048	23544	58860	547	1.51(1.32-1.78)	
A F1 PeCDFs											
339.8597	17.745						1697	4242			
341.8567	17.745						2461	6152			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.369						34773	86932			
341.8567	20.369						23544	58860			
13C-1,2,3,7,8-PeCDD											
367.8949	21.432	21.445	-1	1.345	134058551	24509755	24462	61155	1002		
369.8919	21.432	21.445	-1	1.345	87830273	15837052	15748	39370	1006	1.53(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	21.459	21.473	-1	1.001	74164363	13255711	10053	25132	1319		
357.8516	21.459	21.473	-1	1.001	48172419	8500235	6507	16267	1306	1.54(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	20.552						10053	25132			
357.8516	20.552						6507	16267			
13C-1,2,3,4,7,8-HxCDF											
383.8639	26.746	26.746	0	0.889	89553680	12430398	29310	73275	424		
385.8610	26.733	26.746	-1	0.888	168382614	23234524	54298	135745	428	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	26.772	26.772	0	1.001	87759183	12468047	25009	62522	499		
375.8178	26.772	26.772	0	1.001	72201965	10158466	21025	52562	483	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	27.012	27.025	-1	0.898	95592054	12517503	29310	73275	427		
385.8610	27.012	27.025	-1	0.898	179728666	24167930	54298	135745	445	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	27.039	27.052	-1	1.001	90598766	12055285	25009	62522	482		
375.8178	27.039	27.052	-1	1.001	75913807	10101938	21025	52562	480	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	28.570	28.583	-1	0.950	92078153	11447109	29310	73275	391		
385.8610	28.570	28.583	-1	0.950	173339883	21665793	54298	135745	399	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	28.597	28.610	-1	1.001	88476353	11023740	25009	62522	441		
375.8178	28.597	28.610	-1	1.001	72583638	9374166	21025	52562	446	1.22(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	30.408	30.408	0	1.011	96571086	17332677	29310	73275	591		
385.8610	30.408	30.408	0	1.011	183454940	32784111	54298	135745	604	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	30.421	30.421	0	1.000	94830131	17304807	25009	62522	692		
375.8178	30.421	30.421	0	1.000	76394225	13769069	21025	52562	655	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.498						25009	62522			
375.8178	27.498						21025	52562			
13C-1,2,3,7,8,9-HxCDD											
401.8559	30.088	30.088	0		124666399	19903748	24651	61627	807		
403.8529	30.088	30.088	0		100010128	16183020	19204	48010	843	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	29.049	29.063	-1	0.965	113824170	14144125	24651	61627	574		a
403.8529	29.049	29.063	-1	0.965	89295002	11015492	19204	48010	574	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	29.090	29.103	-1	1.001	67697625	8382605	11821	29552	709		
391.8127	29.090	29.103	-1	1.001	54023744	6568219	9969	24922	659	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											a
401.8559	29.329	29.329	0	0.975	124628140	13943548	24651	61627	566		a
403.8529	29.329	29.329	0	0.975	98732395	11295692	19204	48010	588	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	29.369	29.369	0	1.001	64821155	7251065	11821	29552	613		
391.8127	29.369	29.369	0	1.001	51626563	5667480	9969	24922	569	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	30.115	30.115	0	1.037	66176080	10506747	11821	29552	889		
391.8127	30.115	30.115	0	1.037	54047589	8643753	9969	24922	867	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	27.931						11821	29552			
391.8127	27.931						9969	24922			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	32.547	32.547	0	1.082	60668252	21112348	54205	135512	389		
419.8220	32.547	32.547	0	1.082	132626906	47026811	122727	306817	383	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	32.559	32.559	0	1.000	69191985	23423984	69826	174565	335		
409.7789	32.559	32.559	0	1.000	69382238	22527674	92151	230377	244	1.00(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	33.641	33.641	0	1.118	56168069	21072361	54205	135512	389		
419.8220	33.641	33.641	0	1.118	121608489	46754372	122727	306817	381	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	33.653	33.653	0	1.000	63525415	24839505	69826	174565	356		
409.7789	33.653	33.653	0	1.000	61411326	23731912	92151	230377	258	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.118						69826	174565			
409.7789	33.118						92151	230377			

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	33.398	33.398	0	1.110	103264107	39599683	130084	325210	304		
437.8140	33.398	33.398	0	1.110	91809841	36741533	120199	300497	306	1.12(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	33.410	33.410	0	1.000	49659918	19821668	74579	186447	266		
425.7737	33.410	33.410	0	1.000	48882442	18983915	74750	186875	254	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.339						74579	186447			
425.7737	33.339						74750	186875			
13C-OCDD											
469.7779	35.558	35.570	-1	1.182	135932806	45151962	27695	69237	1630		
471.7750	35.558	35.570	-1	1.182	154171392	50640456	25005	62512	2025	0.88(0.76-1.02)	
OCDF											
441.7428	35.630	35.642	-1	1.002	109804788	36178382	67354	168385	537		
443.7399	35.630	35.642	-1	1.002	118303699	41132103	6768	16920	6077	0.93(0.76-1.02)	
OCDD											
457.7377	35.570	35.570	0	1.000	80958350	27795594	16838	42095	1651		
459.7348	35.570	35.570	0	1.000	90264988	30598452	26418	66045	1158	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d
Lims ID: LCSD 320-417490/3-A
Client ID:
Inject. Date: 08-Oct-2020 13:31:42 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: 3D5 Operator: SMA
Lims Batch ID: 420113 Lims Sample ID: 6

Non-2,3,7,8-sub-TCDD, RT: 15.643

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.020	D 13C-2,3,7,8-TCDD	100.000	298448125	76765350

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.020		100.000	298448125	76765350

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
14.237	202810	55276	316041	82469	0.1704	0.64	RQ
14.237	202810	55276	263389	71787	0.1531		Empc Correction

Compound is Marked ND

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d				
Injection Date:	08-Oct-2020 13:31:42	Instrument ID:	3D5		
Lims ID:	LCSD 320-417490/3-A				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL		
Column:		Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 29.06

Processing Integration Results

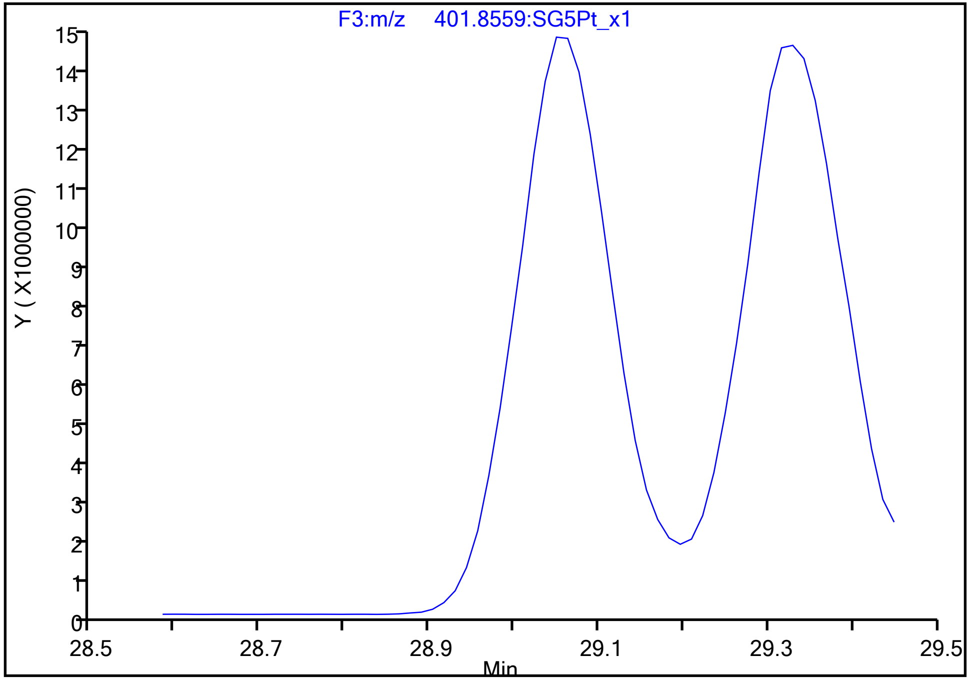

Manual Integration Results

RT: 29.05
Area: 113824170
Amount: 104.3912
Amount Units: pg/ul

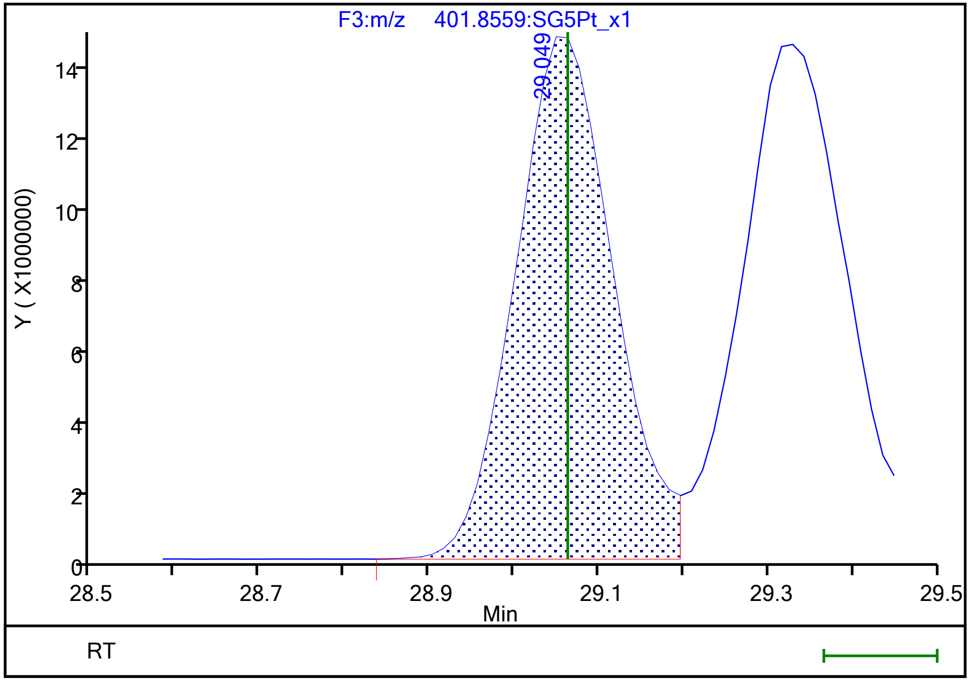

Reviewer: ruangyotsakuld, 13-Oct-2020 08:45:51
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d
Injection Date: 08-Oct-2020 13:31:42
Instrument ID: 3D5
Lims ID: LCSD 320-417490/3-A
Client ID:
Operator ID: SMA
ALS Bottle#: 6
Worklist Smp#: 6
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_3D5
Limit Group: HR - 1613B - ICAL
Column:
Detector F3:HRSIR

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

RT: 30.09
Area: 124666399
Amount: 101.7609
Amount Units: pg/ul

Processing Integration Results

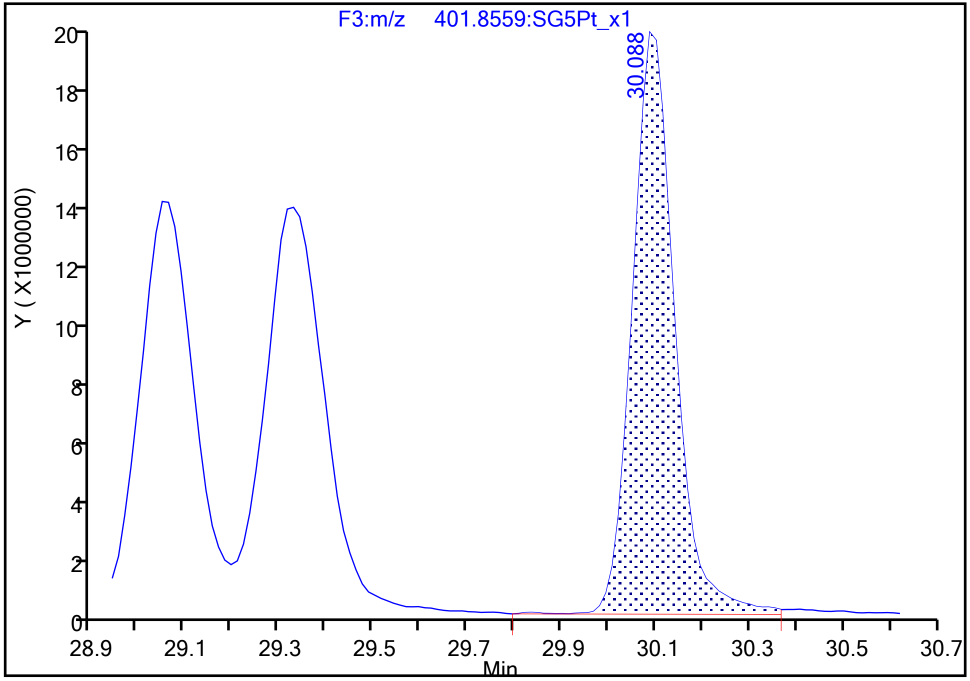

RT: 29.33
Area: 124628140
Amount: 101.1649
Amount Units: pg/ul

Manual Integration Results

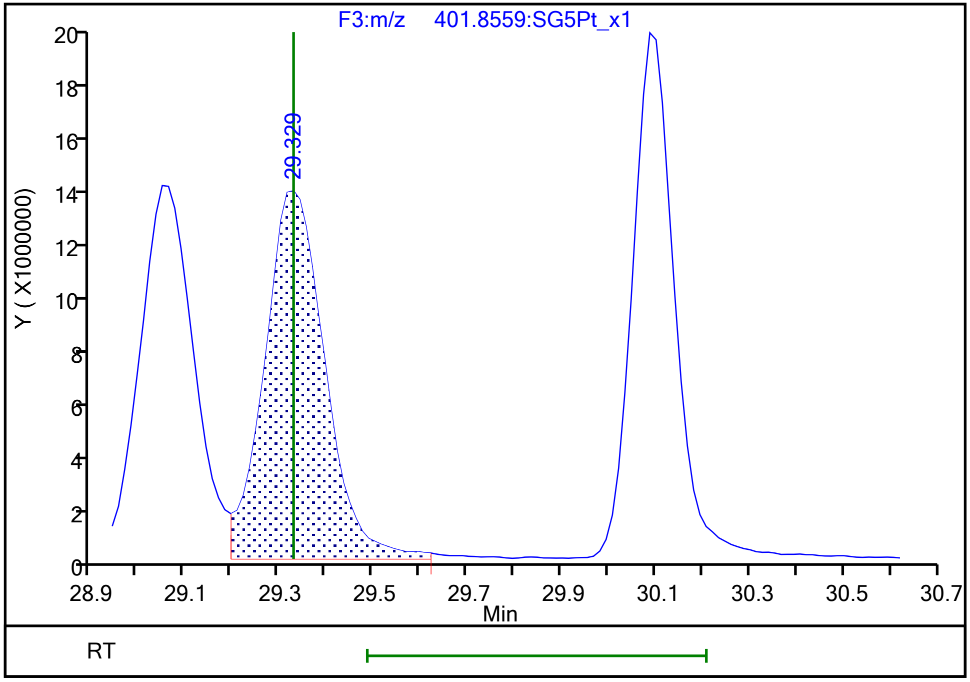

Reviewer: ruangyotsakuld, 13-Oct-2020 08:45:58

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d

Injection Date: 08-Oct-2020 13:31:42

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 6

Column Type:

Column Dia:

TCDF

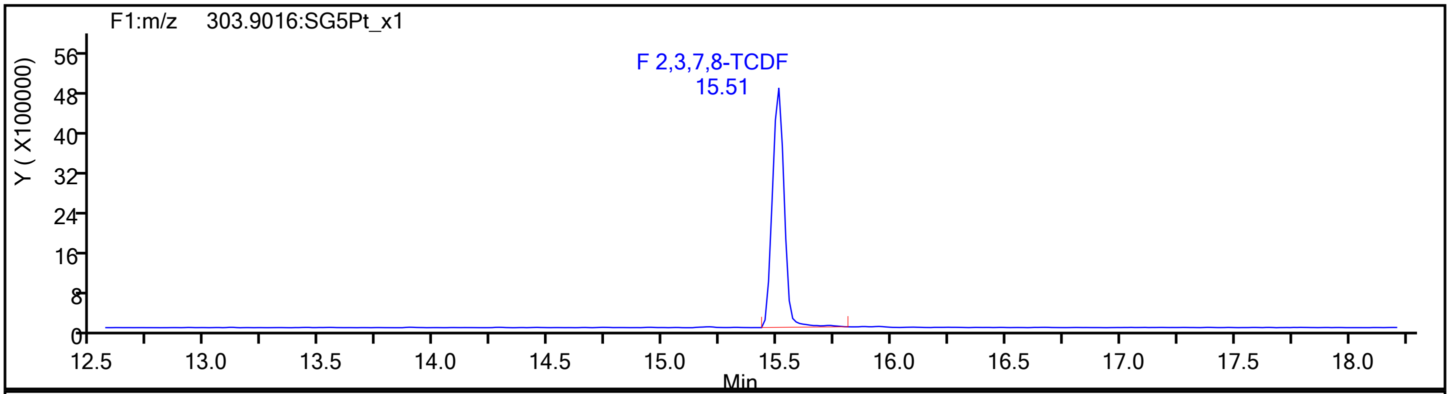

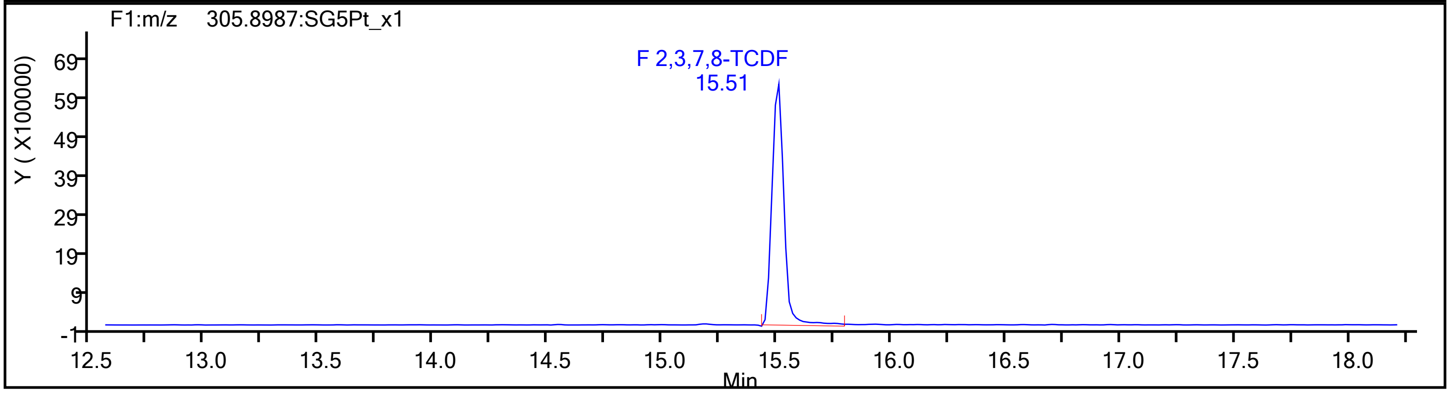

TCDF Standards

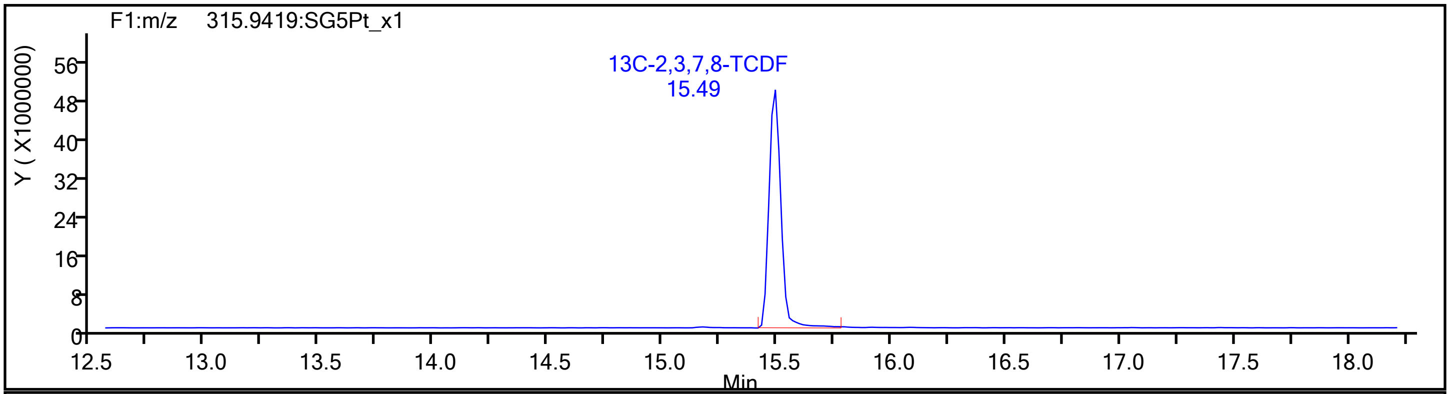

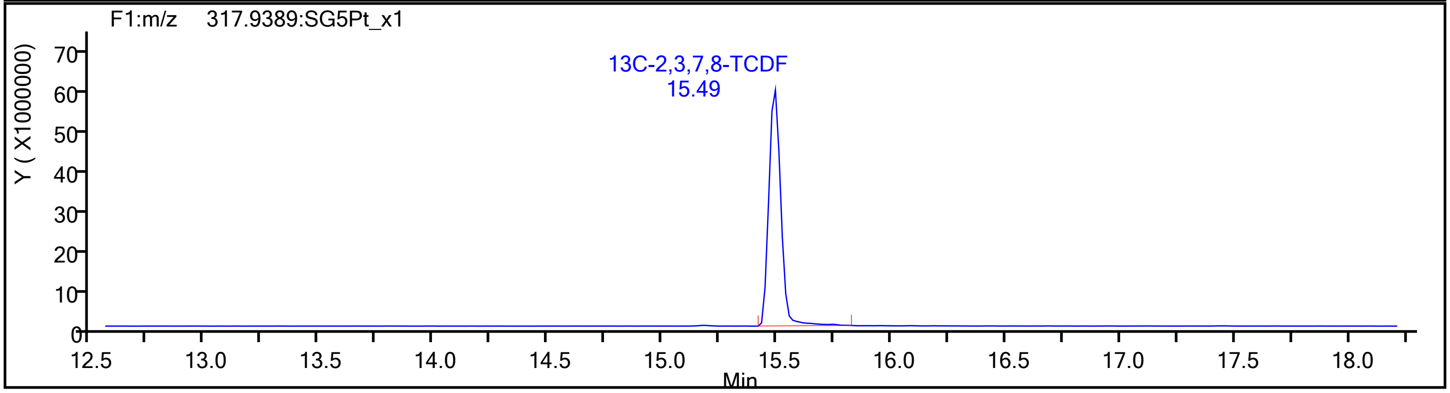

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d		
Injection Date:	08-Oct-2020 13:31:42	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	6
Column Type:		Column Dia:	

TCDF

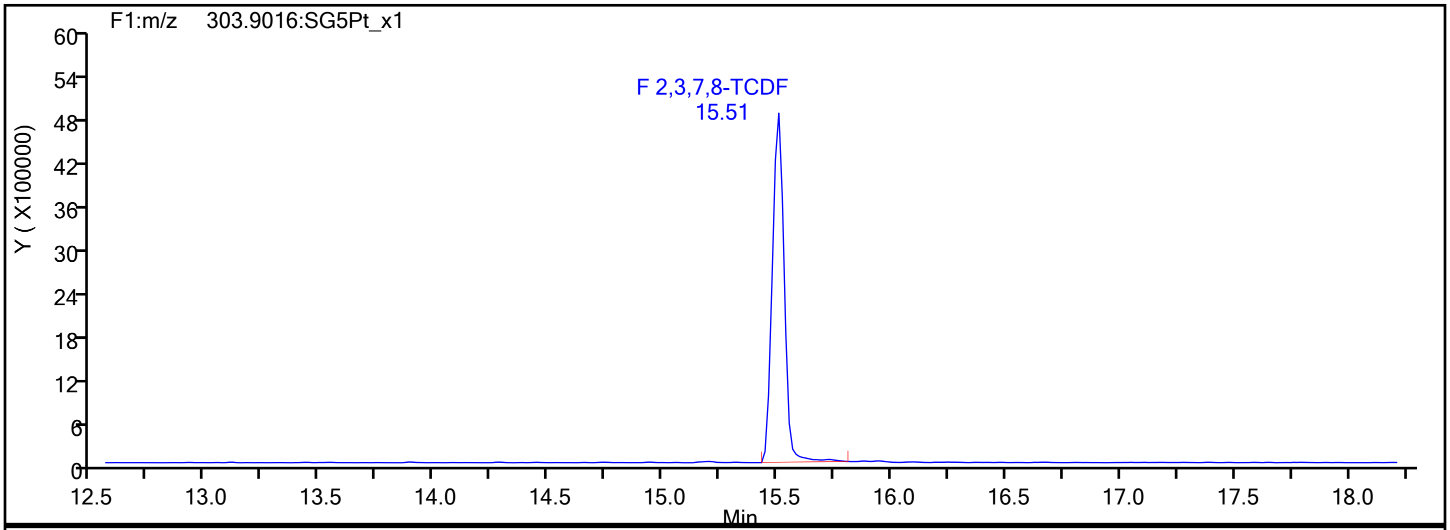

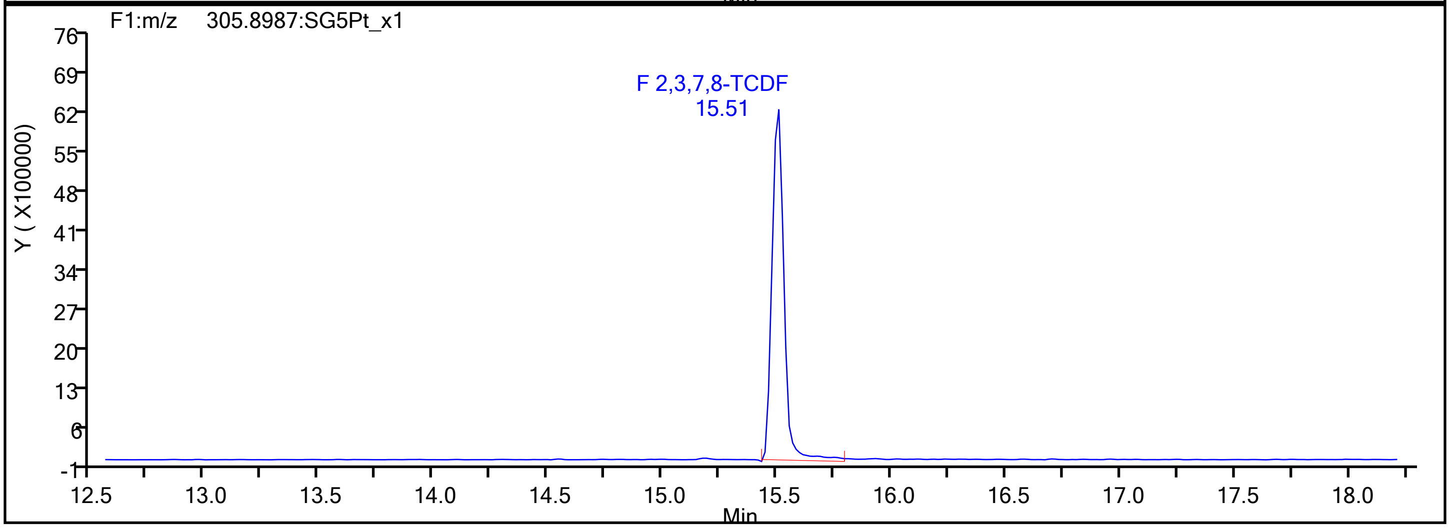

TCDF Interference Mass

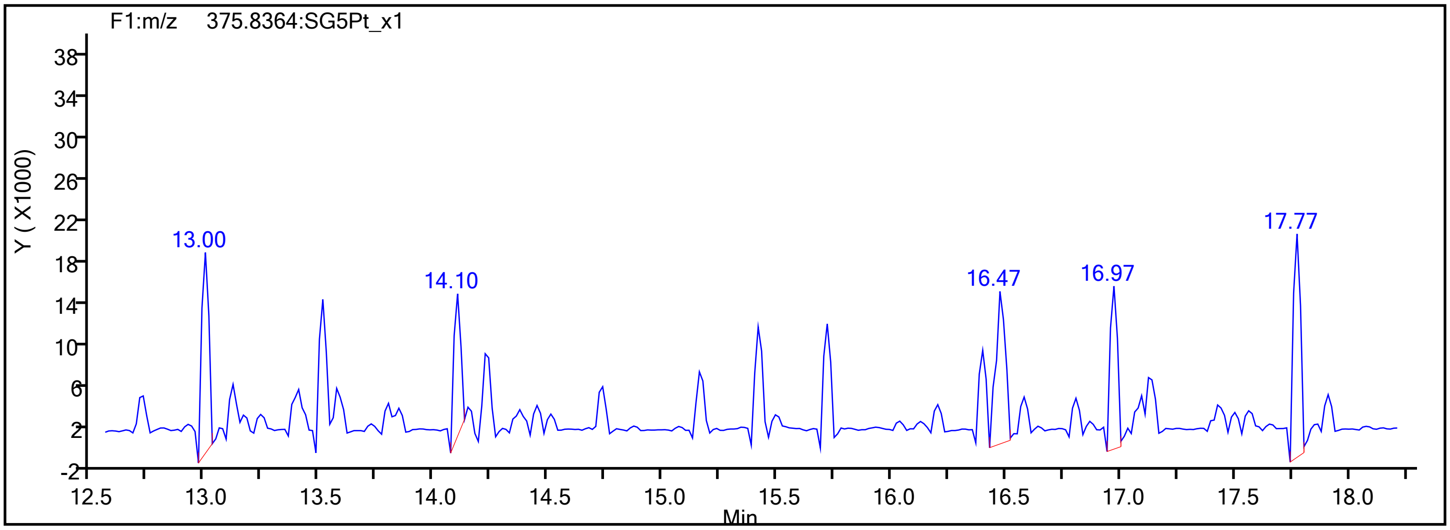

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d

Injection Date: 08-Oct-2020 13:31:42

Injection Vol: 2.0 ul

Instrument ID: 3D5

Operator ID: SMA

Method: Dioxin_3D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420113

Sample Line#: 6

Column Type:

Column Dia:

TCDD

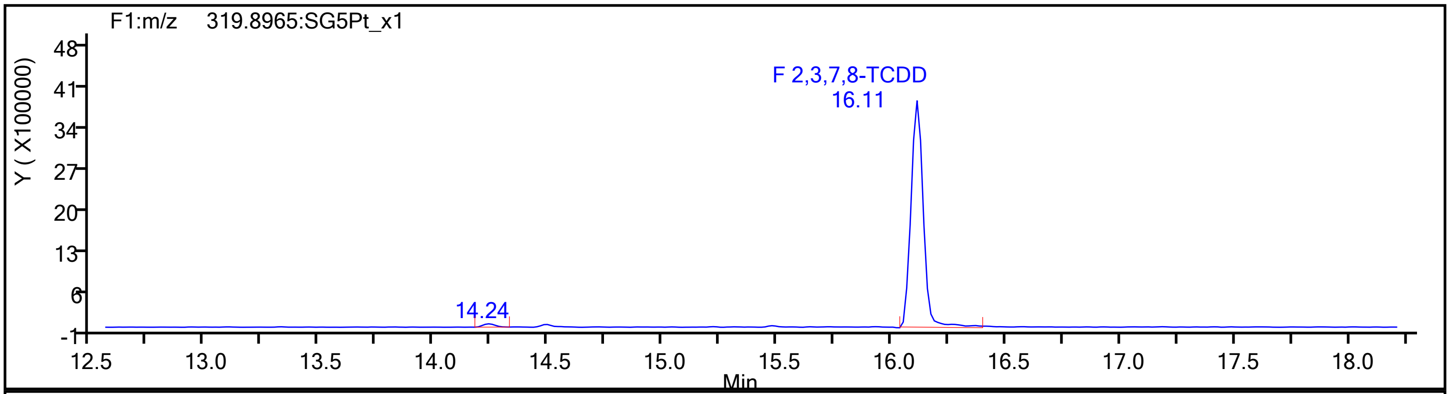

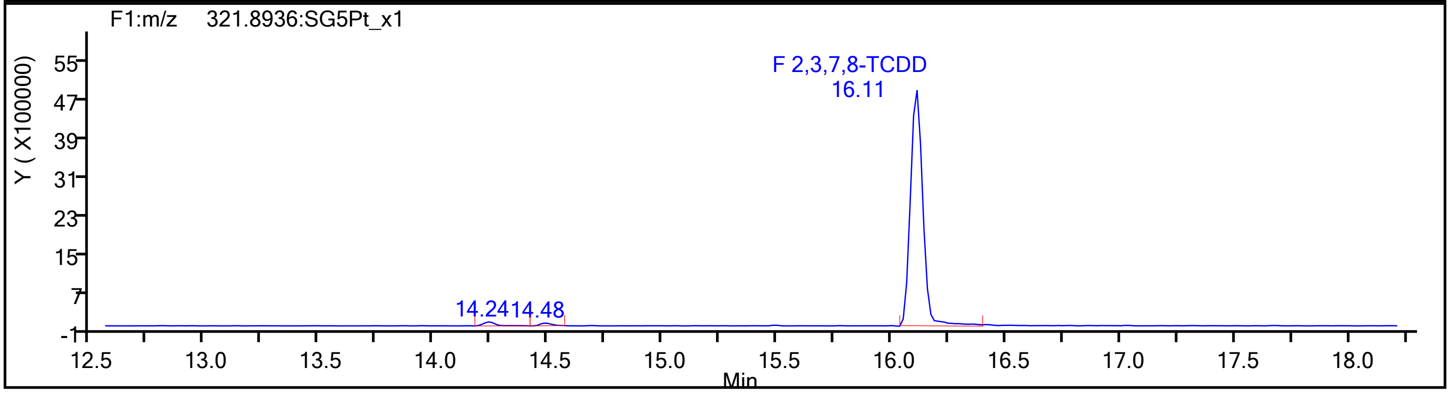

TCDD Standards

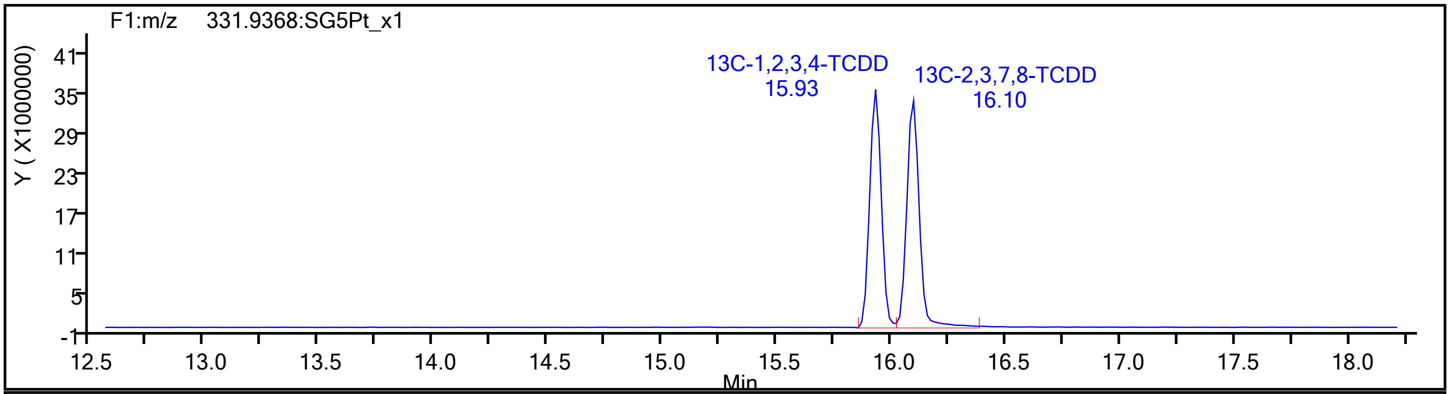

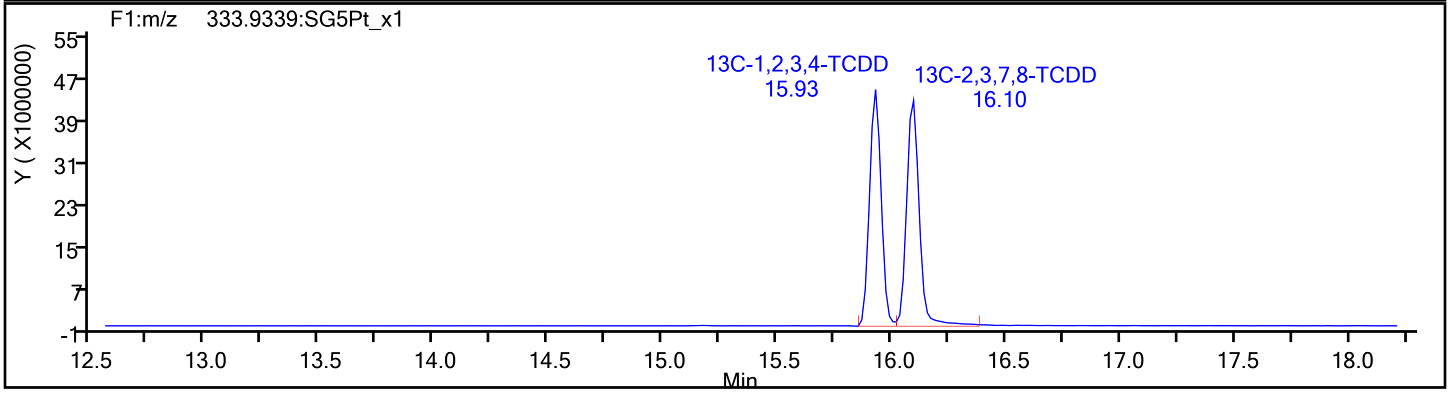

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d		
Injection Date:	08-Oct-2020 13:31:42	Injection Vol:	2.0 ul
Instrument ID:	3D5	Operator ID:	SMA
Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	6
Column Type:		Column Dia:	

37Cl4-TCDD

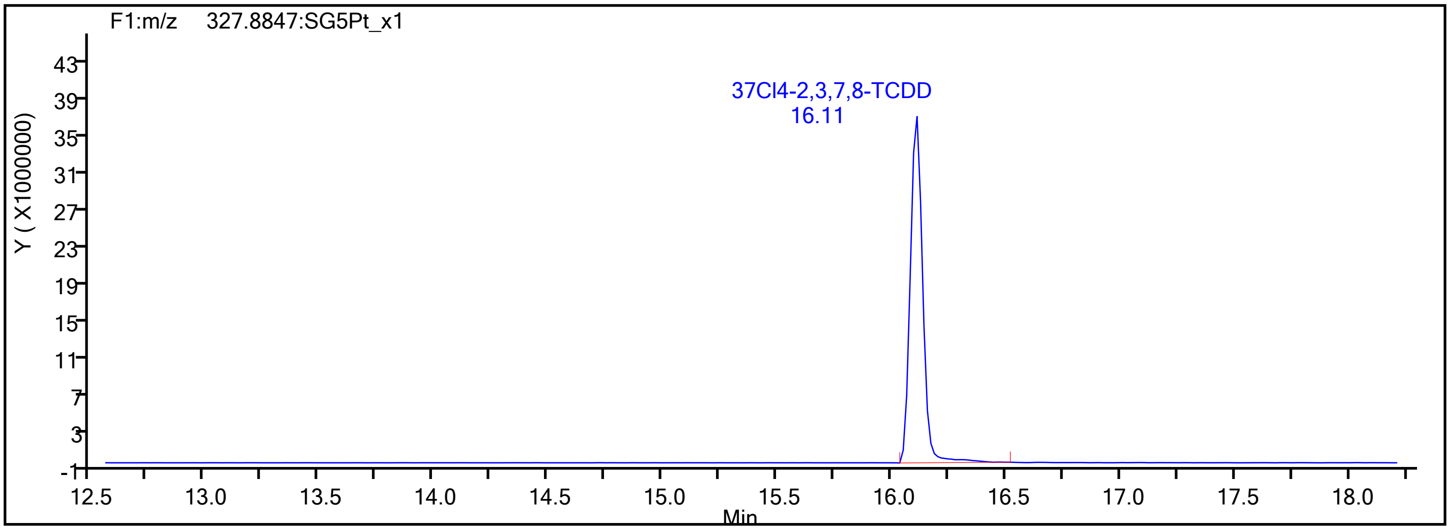

37Cl4-TCDD Standards

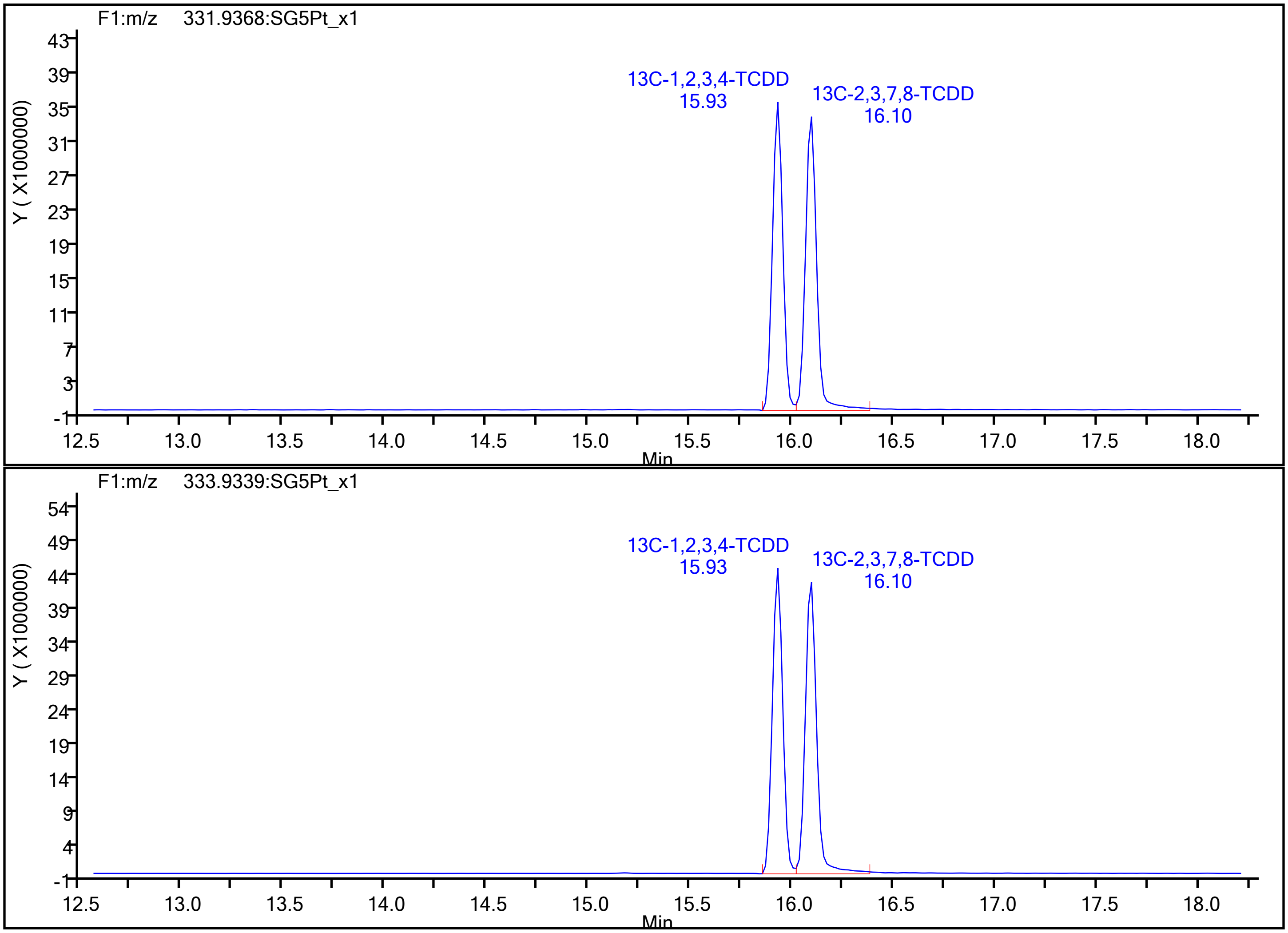

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\3D5\20201008-105004.b\08OC203D5_6.d
Injection Date: 08-Oct-2020 13:31:42 Injection Vol: 2.0 ul
Instrument ID: 3D5 Operator ID: SMA
Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420113 Sample Line#: 6
Column Type: Column Dia:

PeCDF

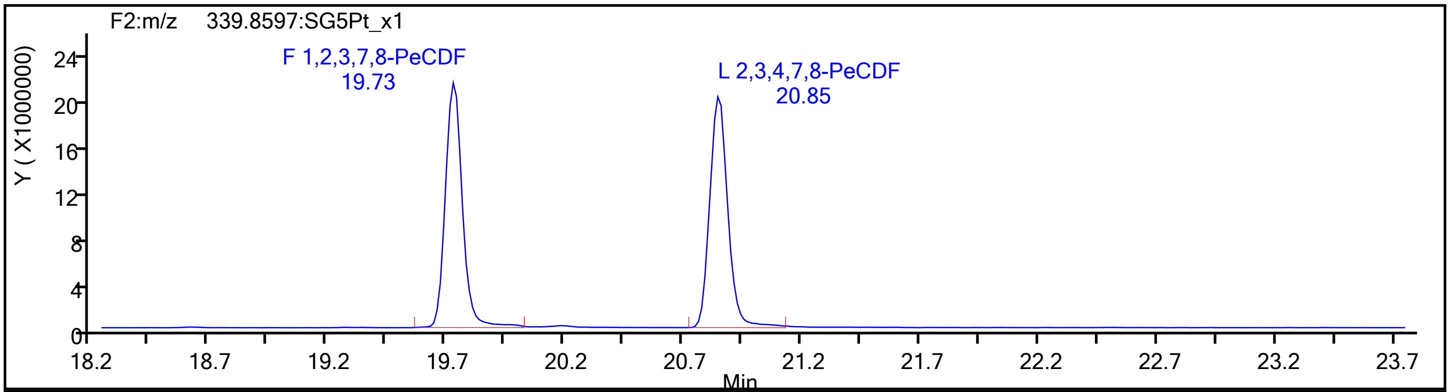

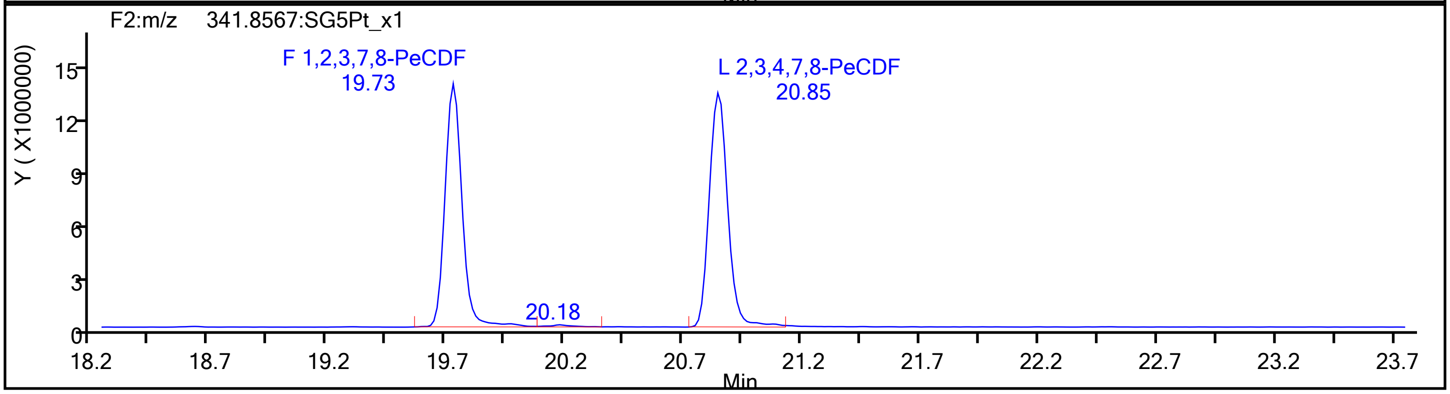

PeCDF Standards

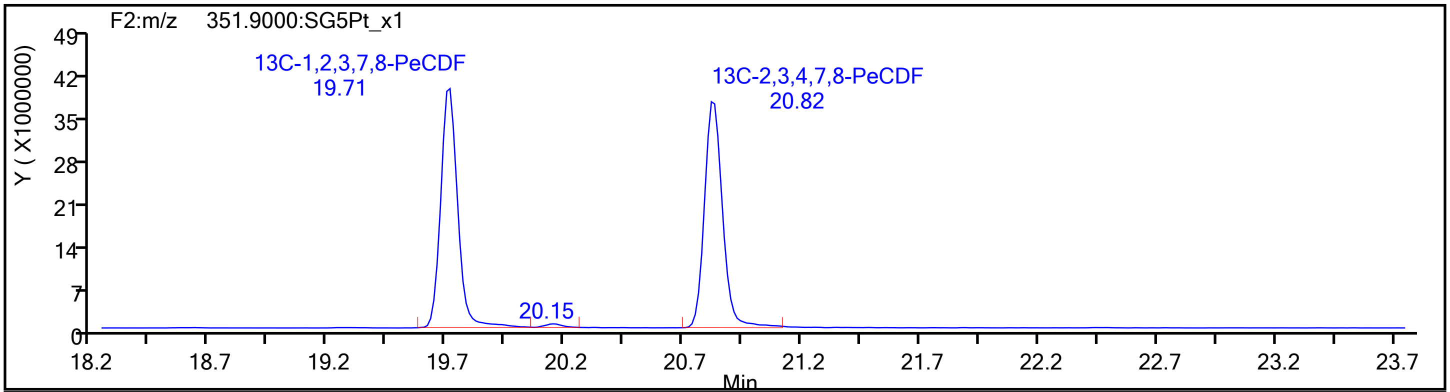

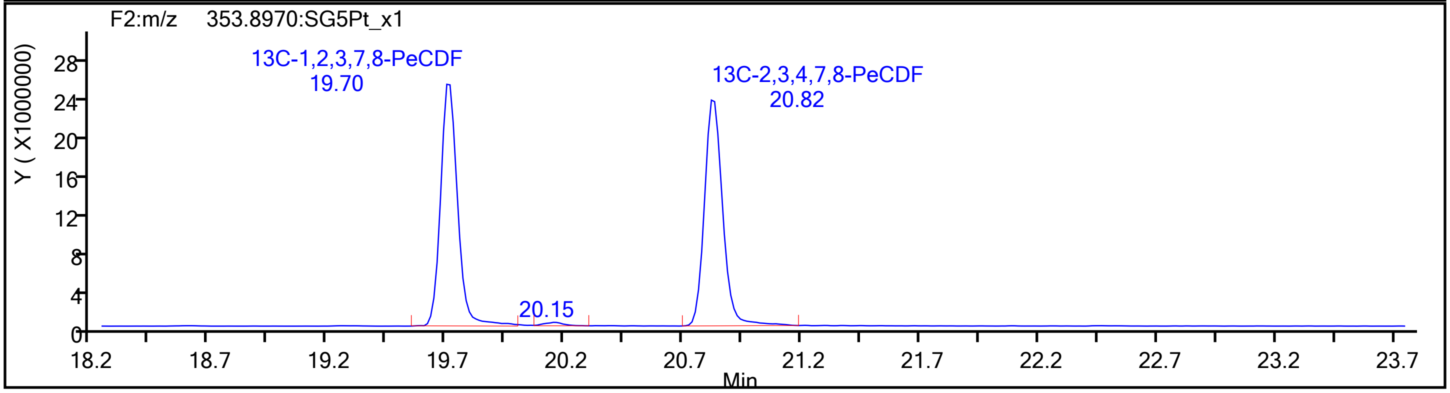

Report Date: 13-Oct-2020 08:46:16 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420113	Sample Line#:	6
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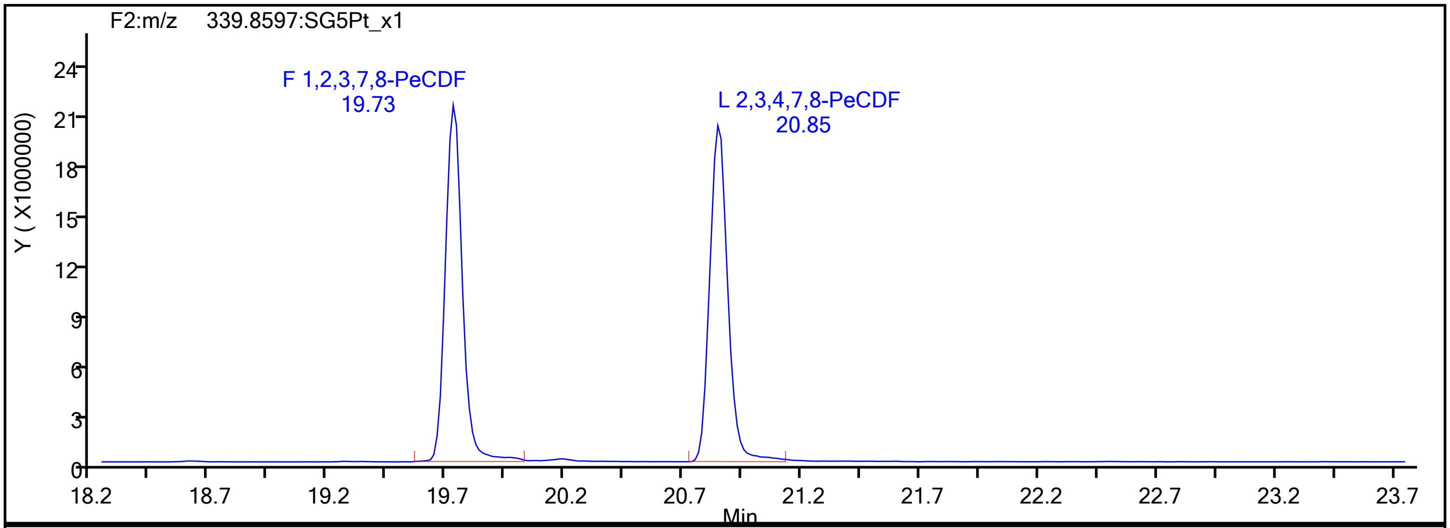

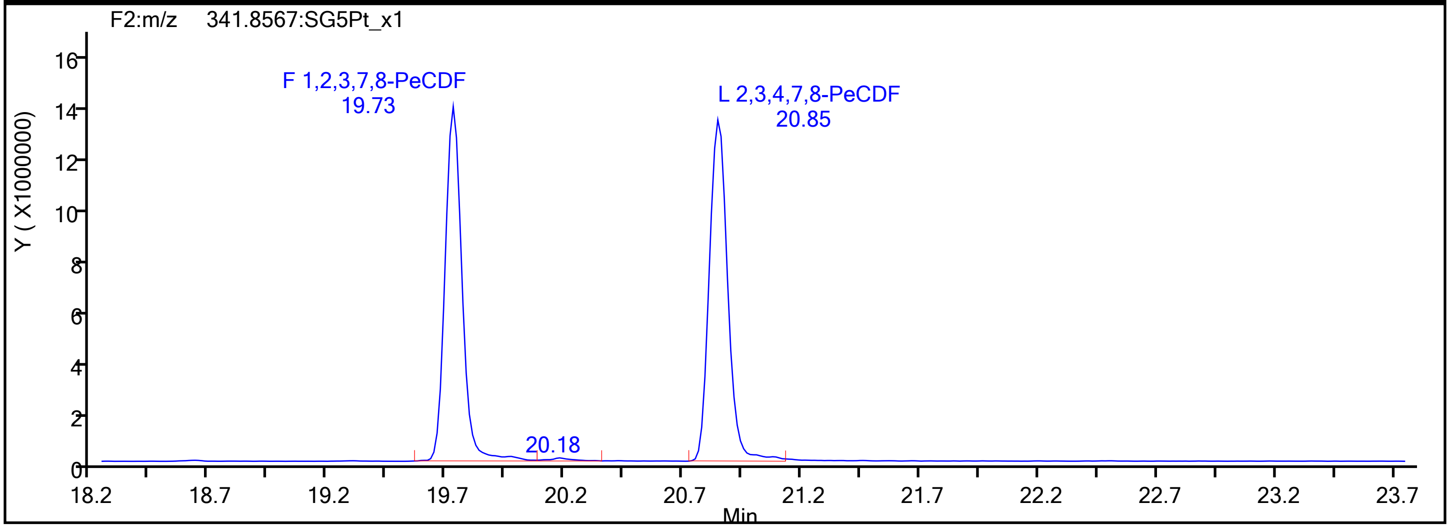

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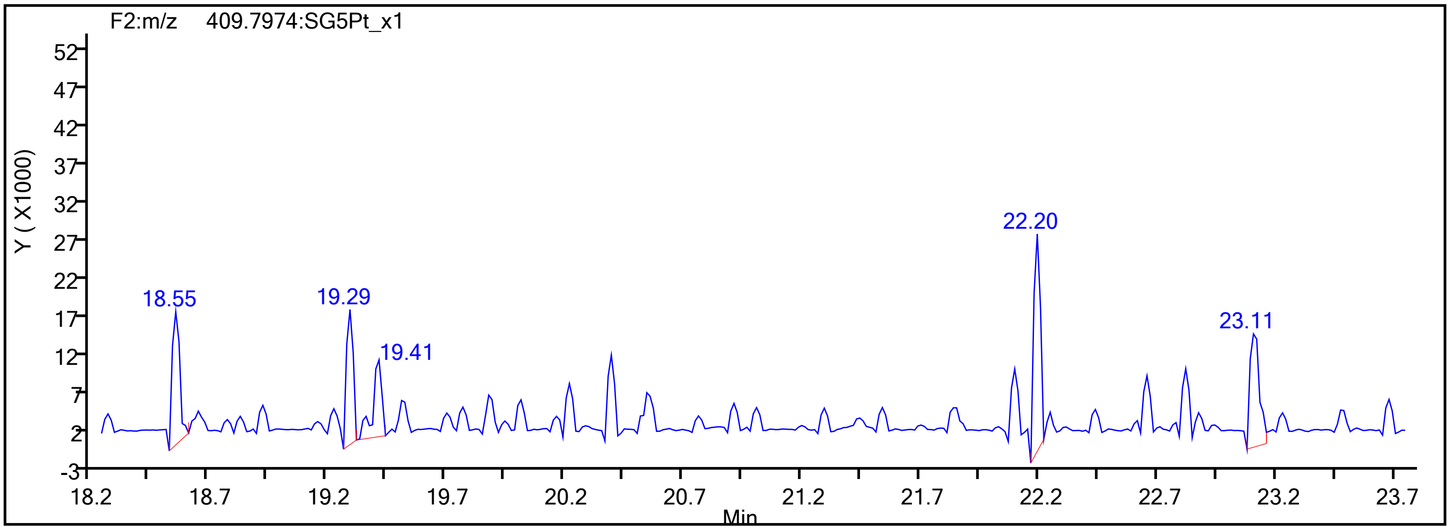

Eurofins TestAmerica, Sacramento

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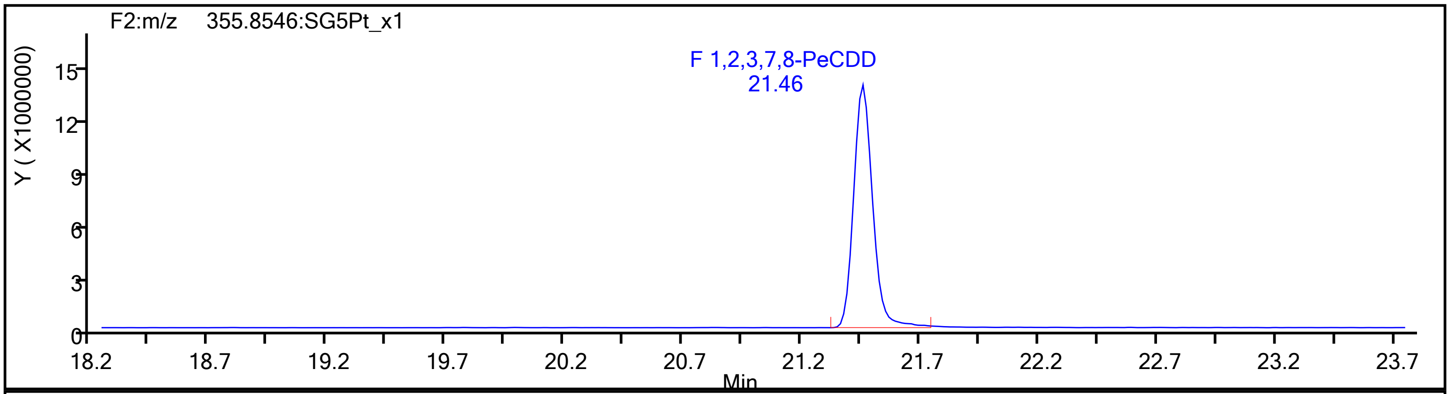

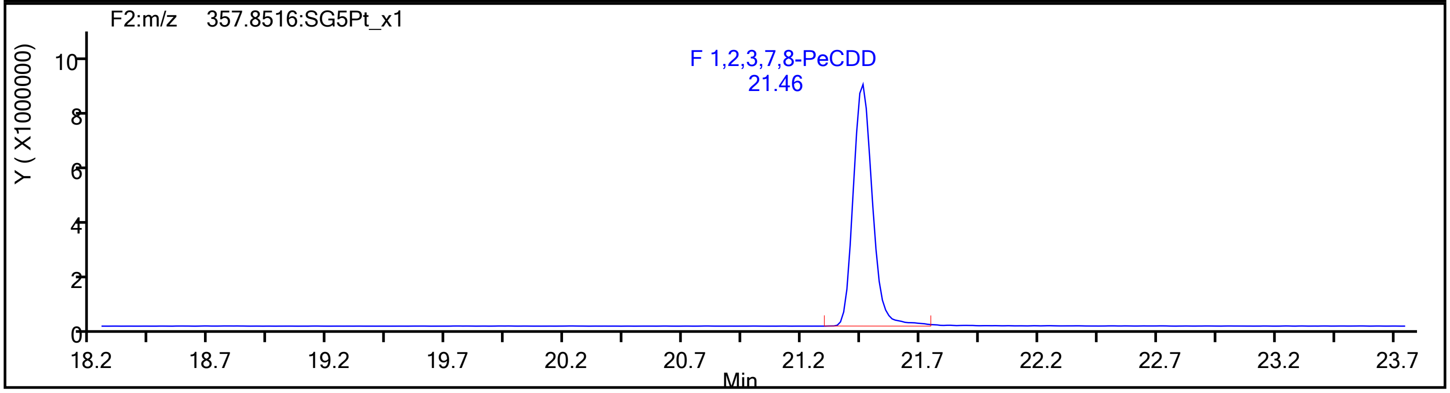

PeCDD Standards

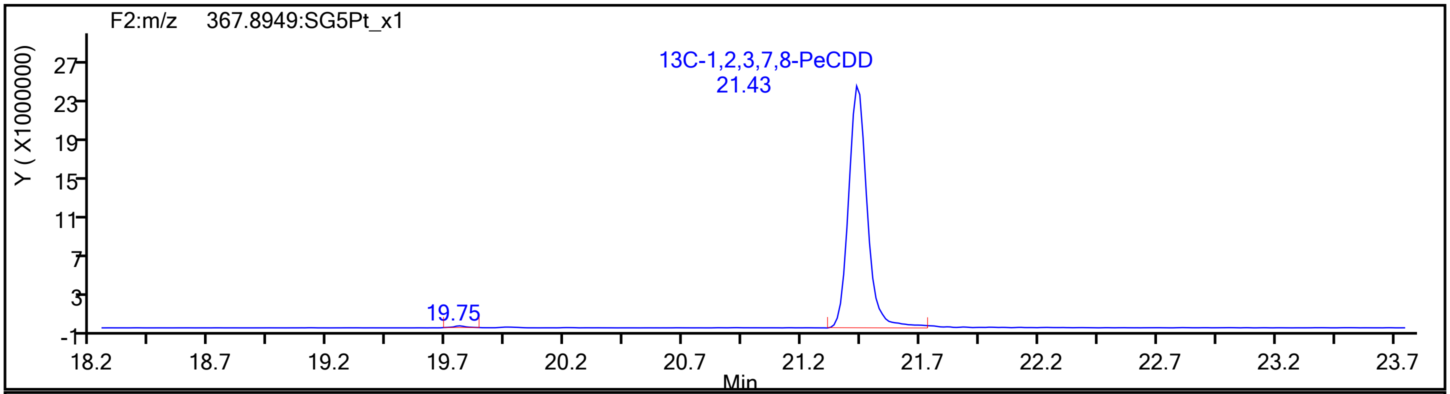

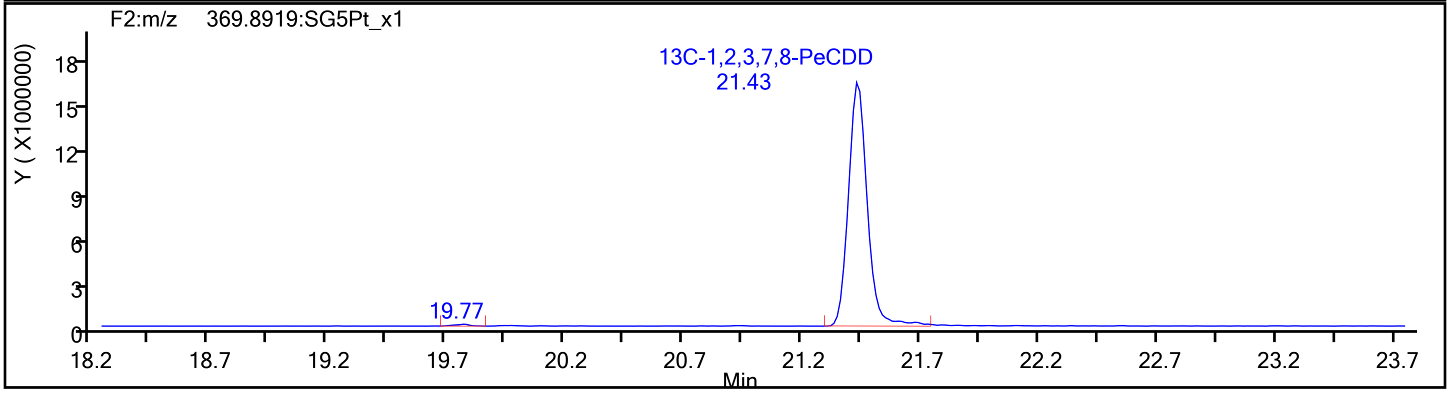

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Eurofins TestAmerica, Sacramento

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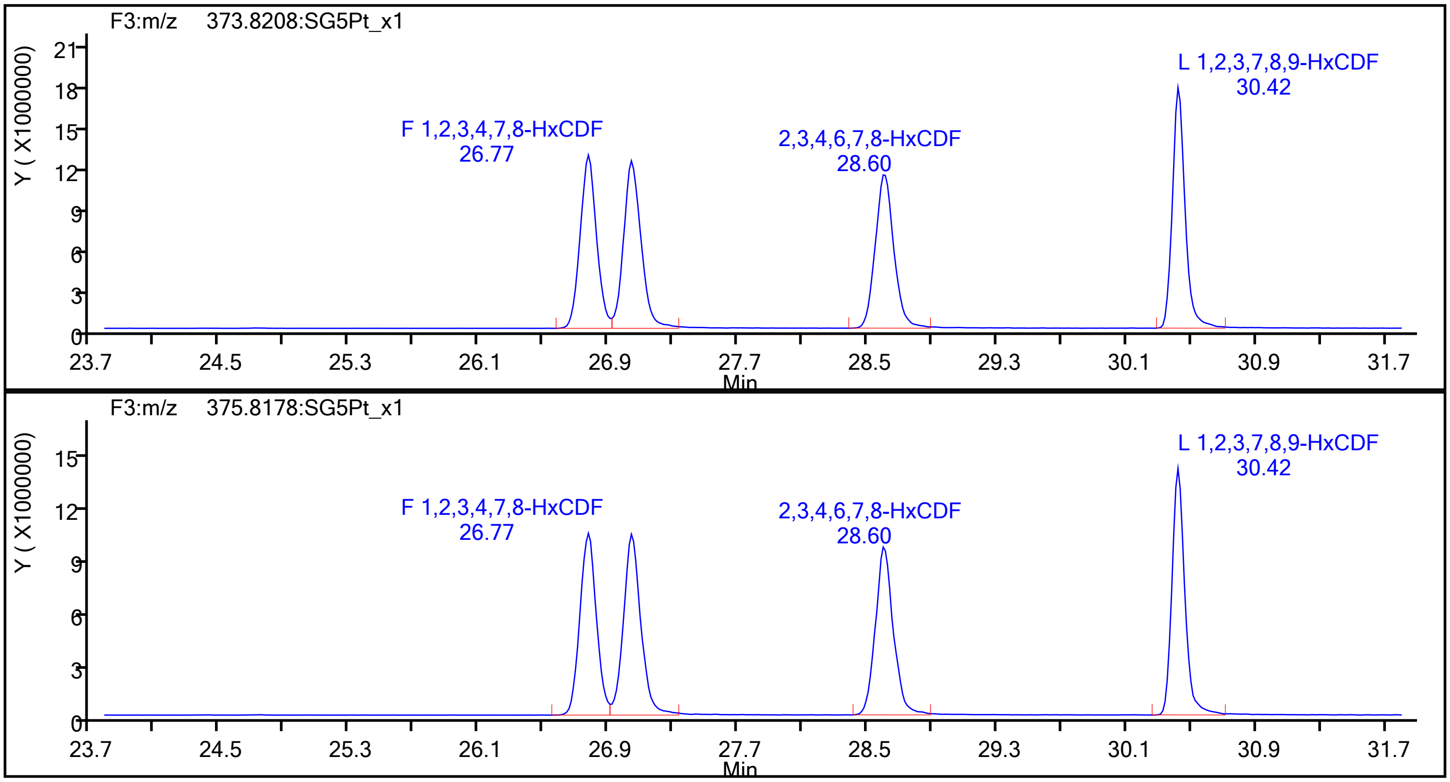

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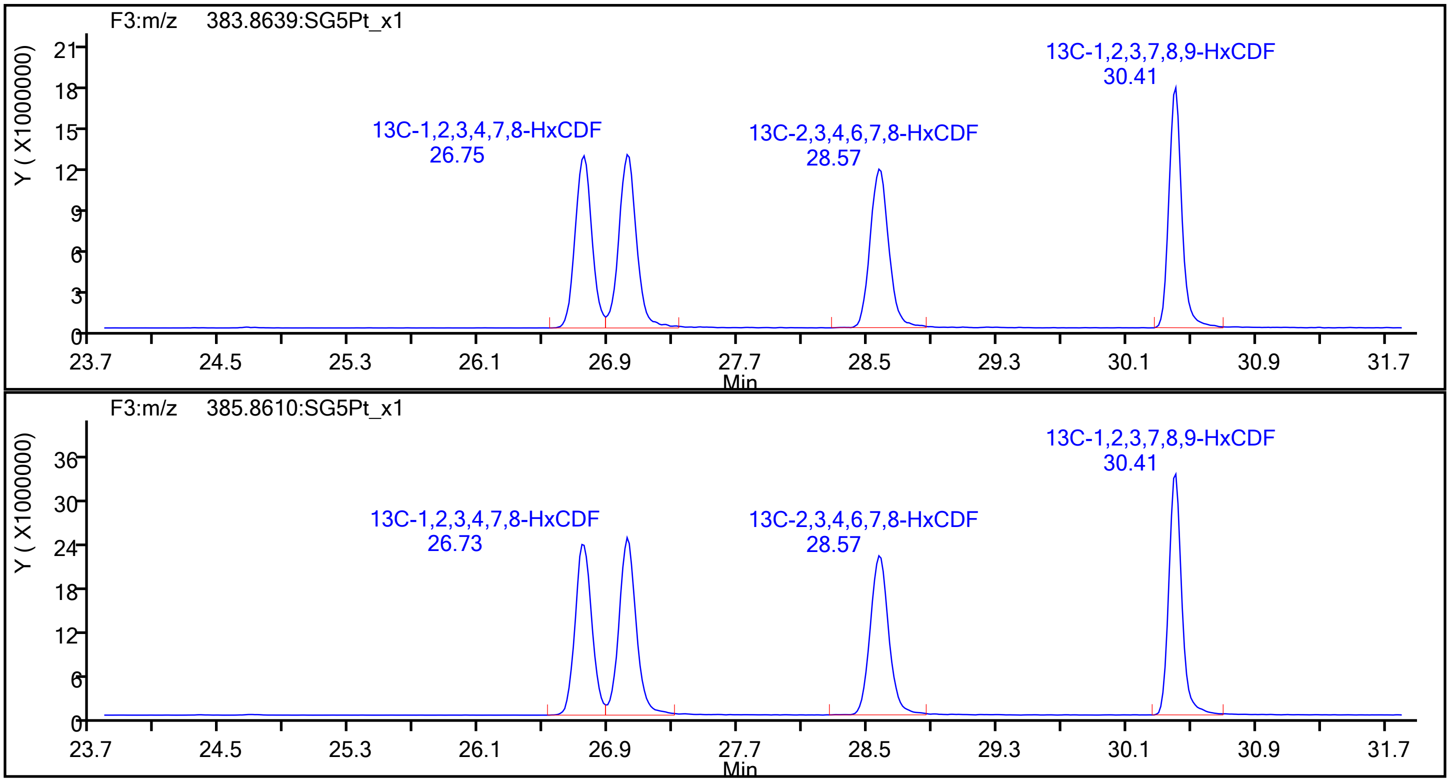

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Eurofins TestAmerica, Sacramento

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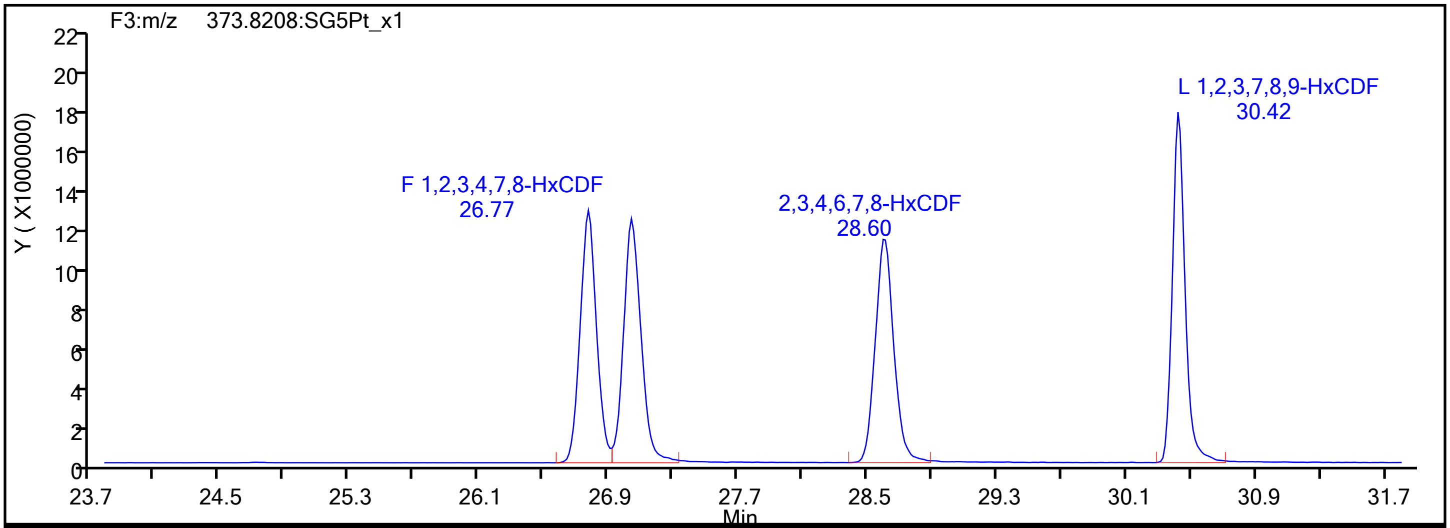

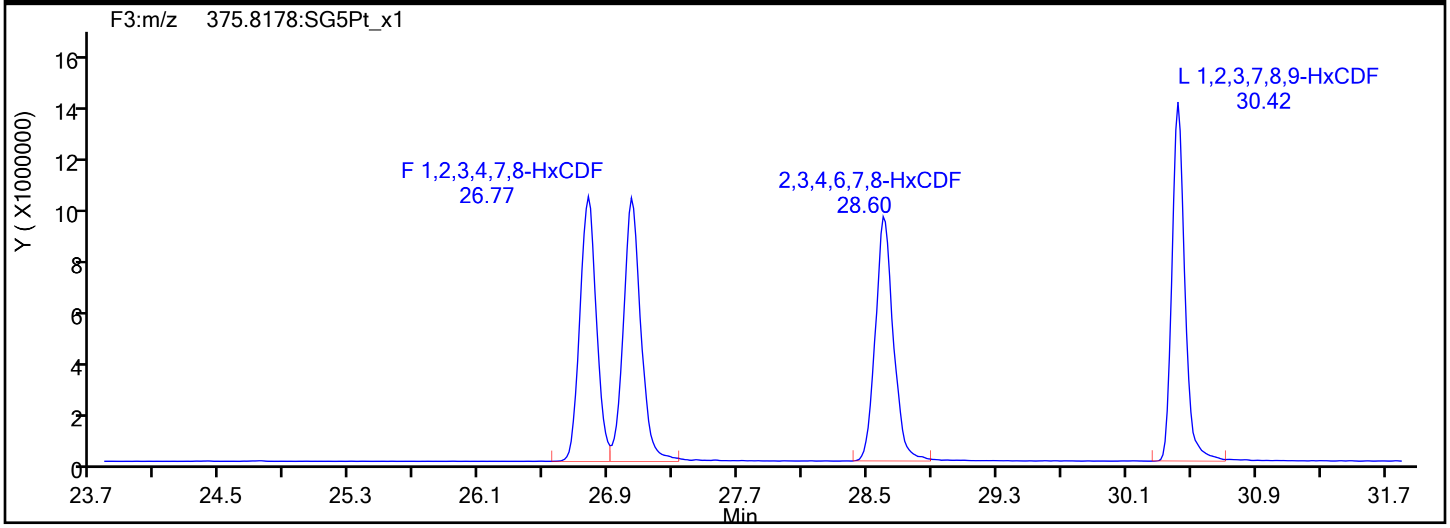

HxCDF Interference Mass

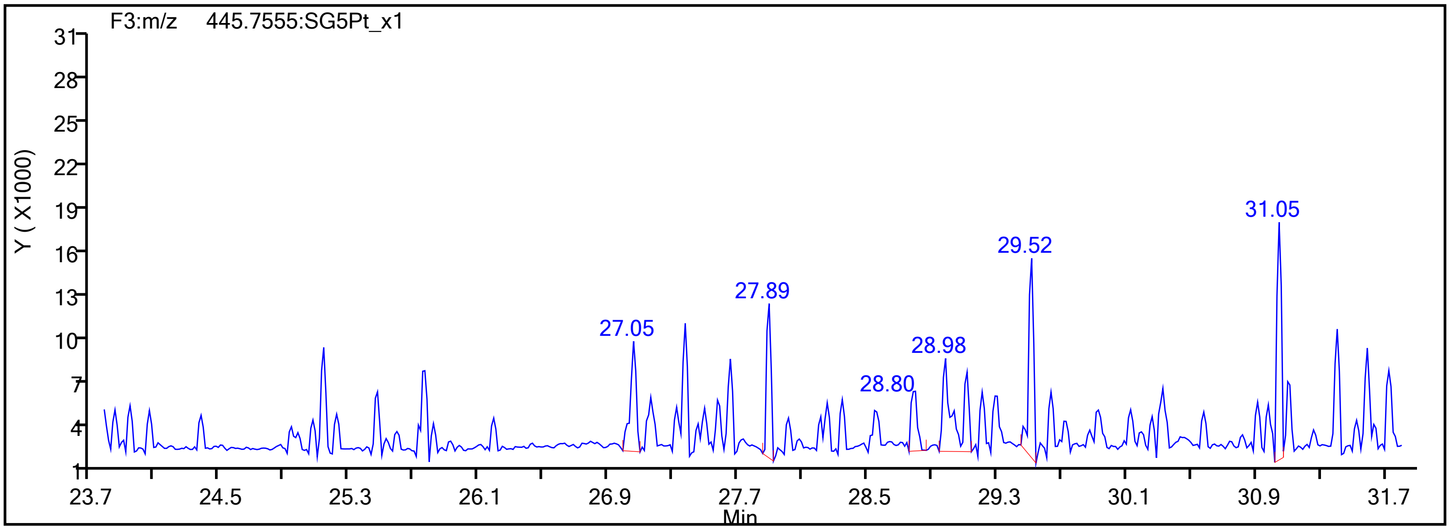

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Eurofins TestAmerica, Sacramento

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Sample Line#: 6
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Column Dia:

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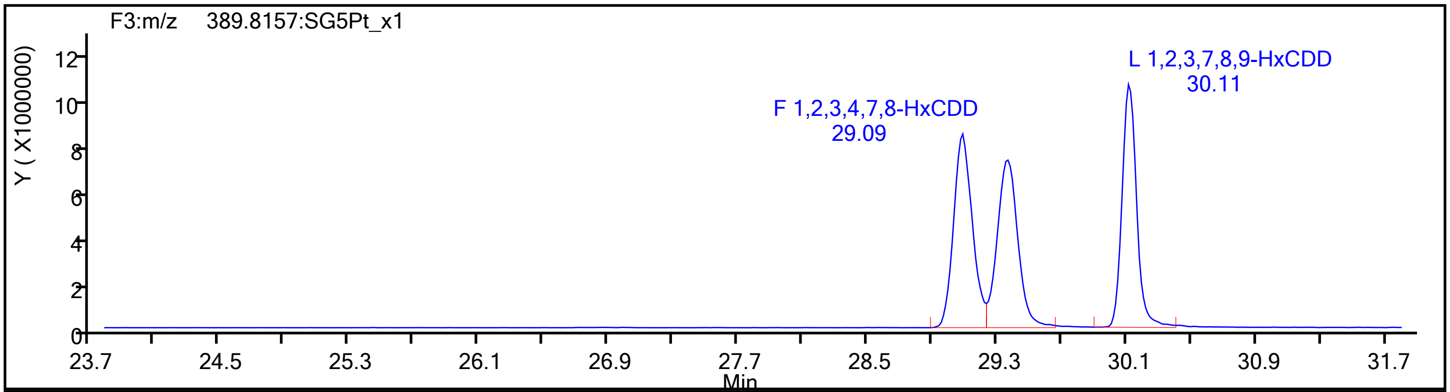

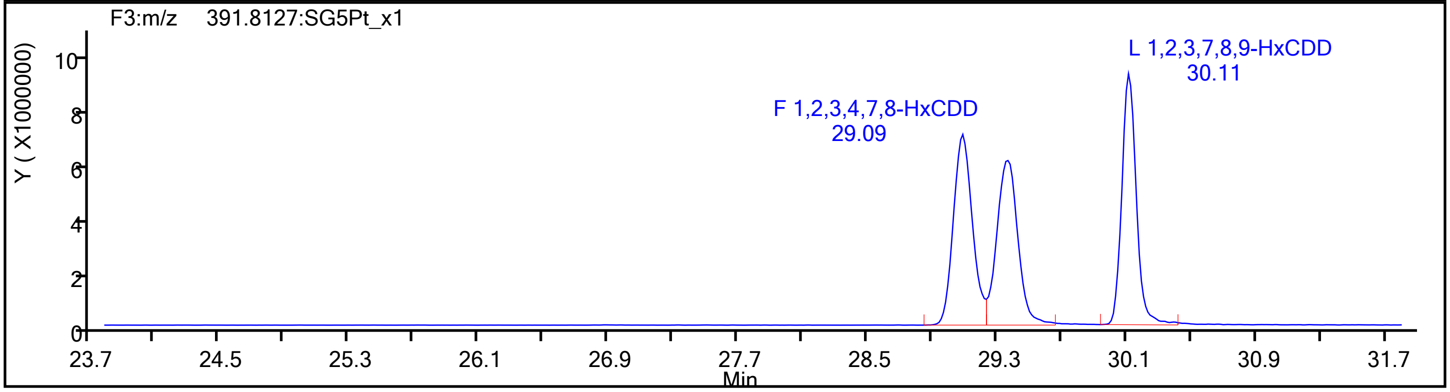

HxCDD Standards

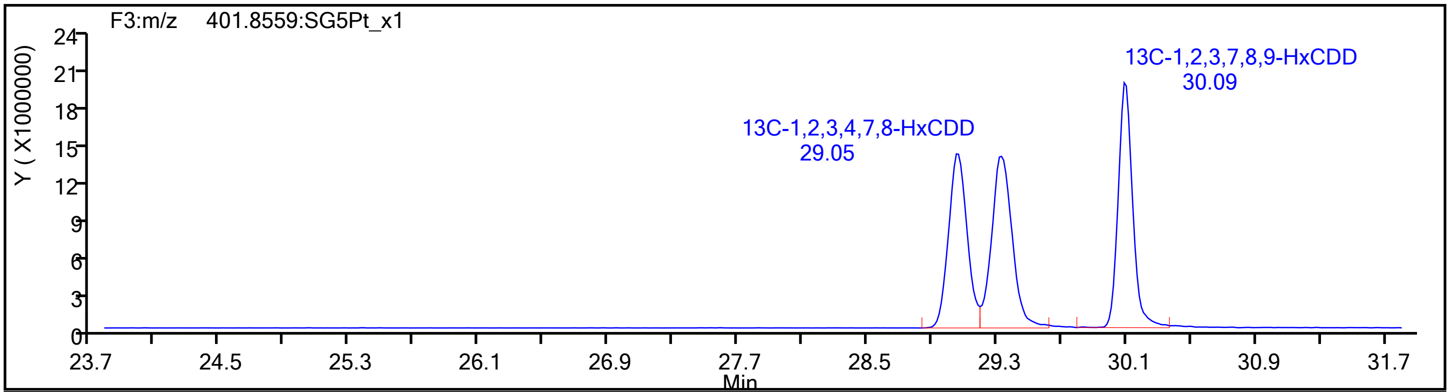

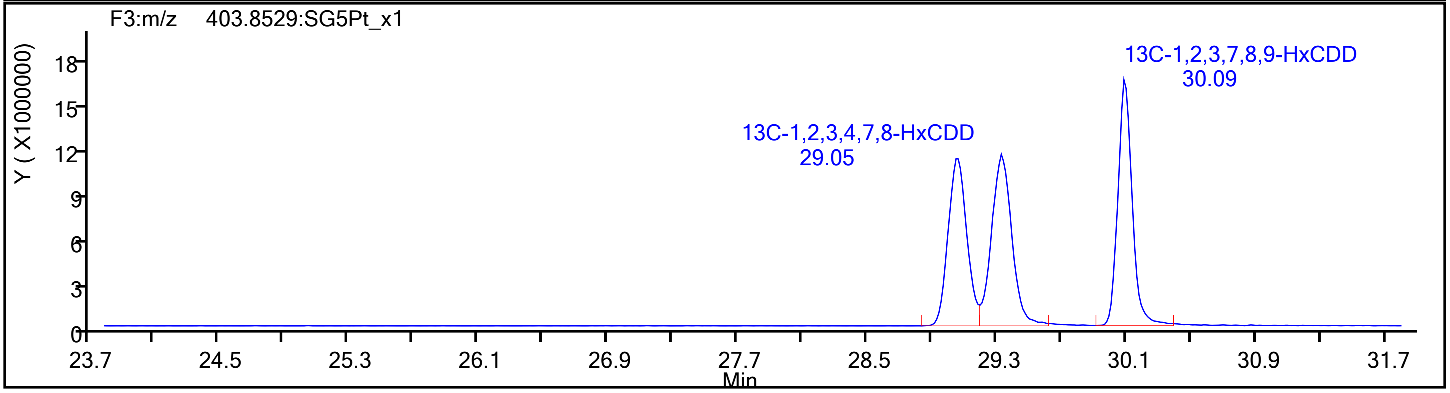

Eurofins TestAmerica, Sacramento

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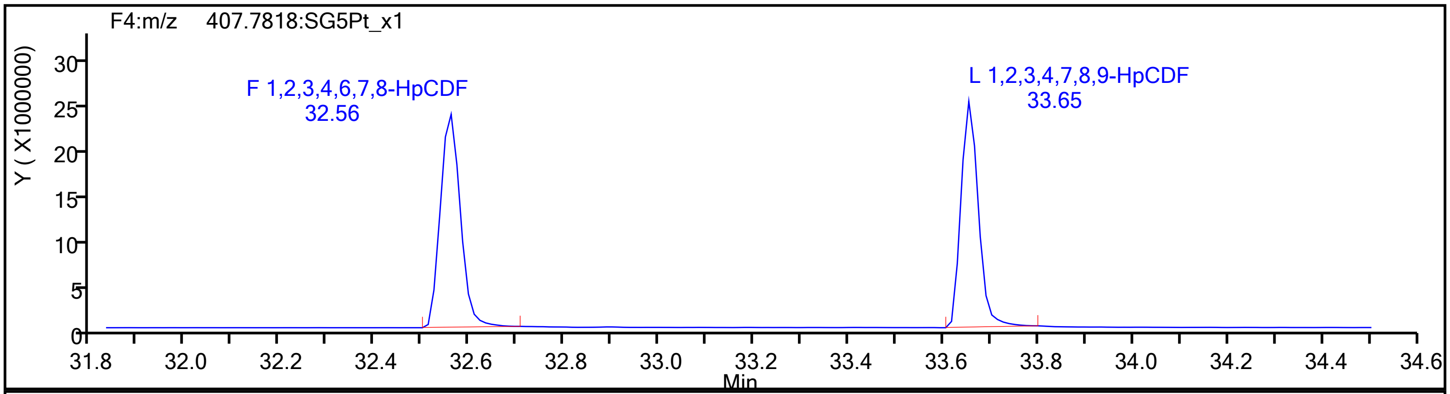

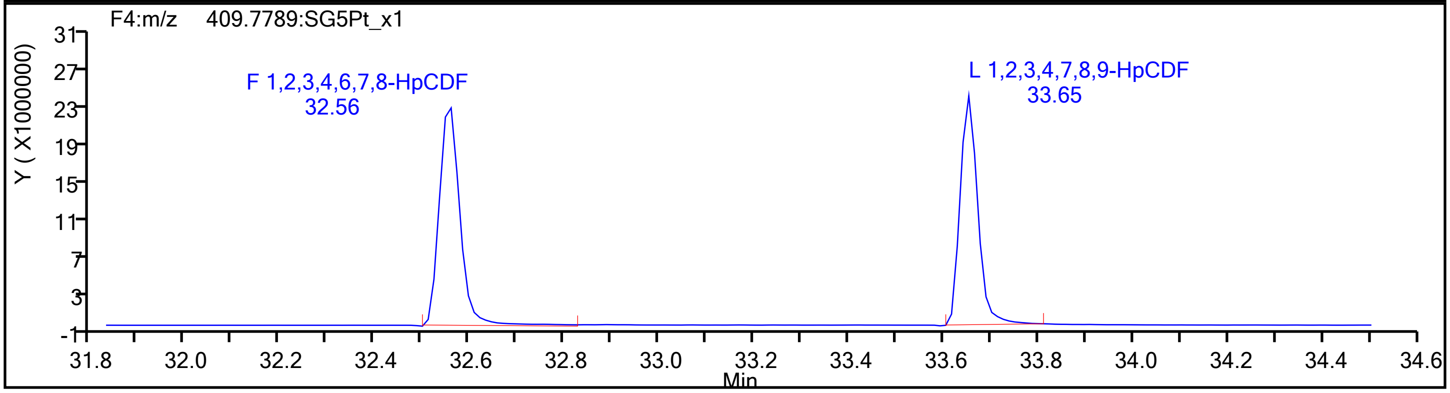

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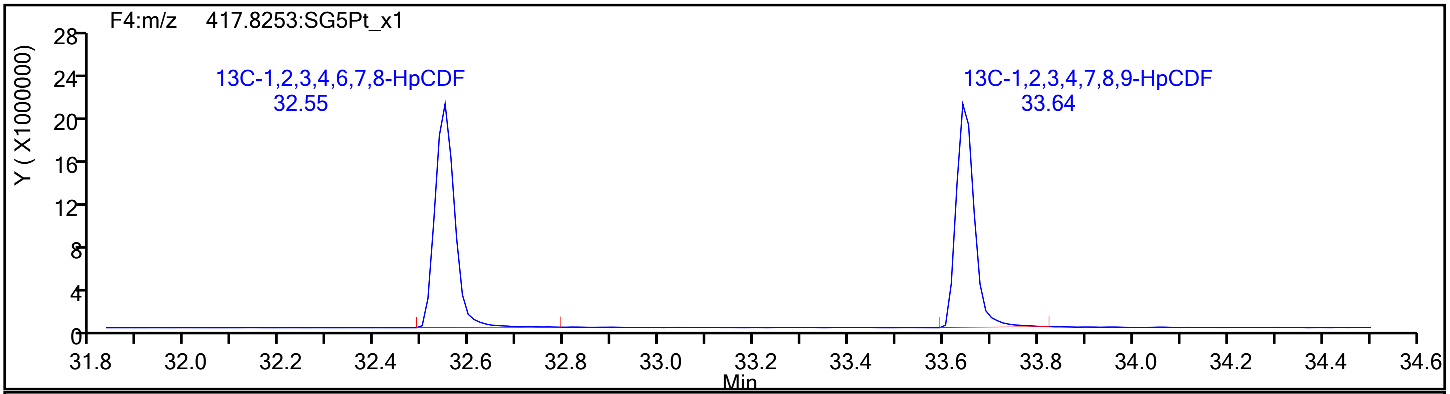

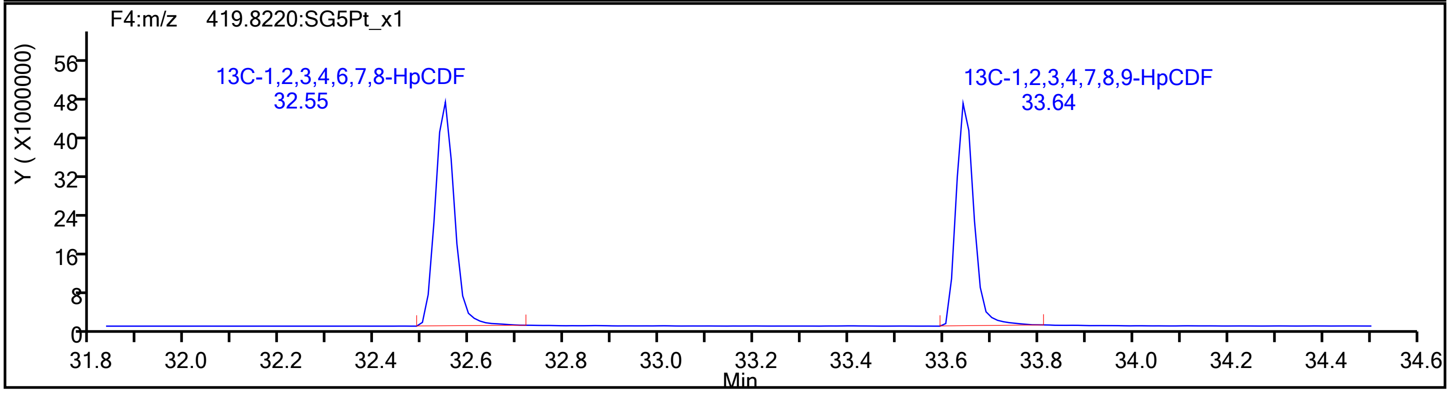

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_3D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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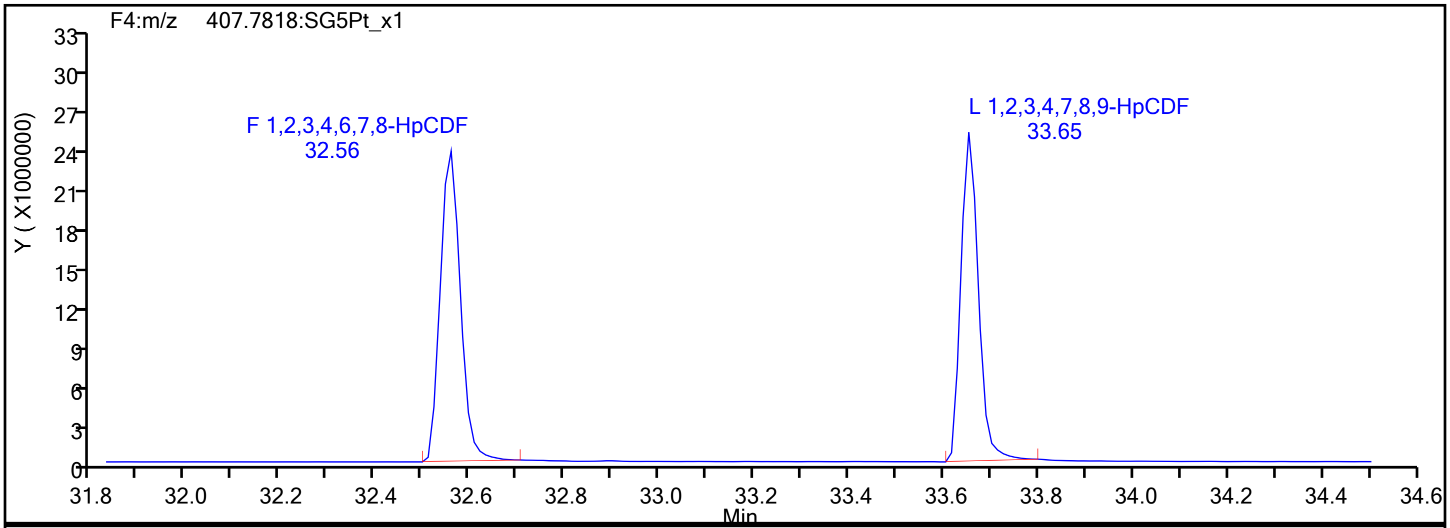

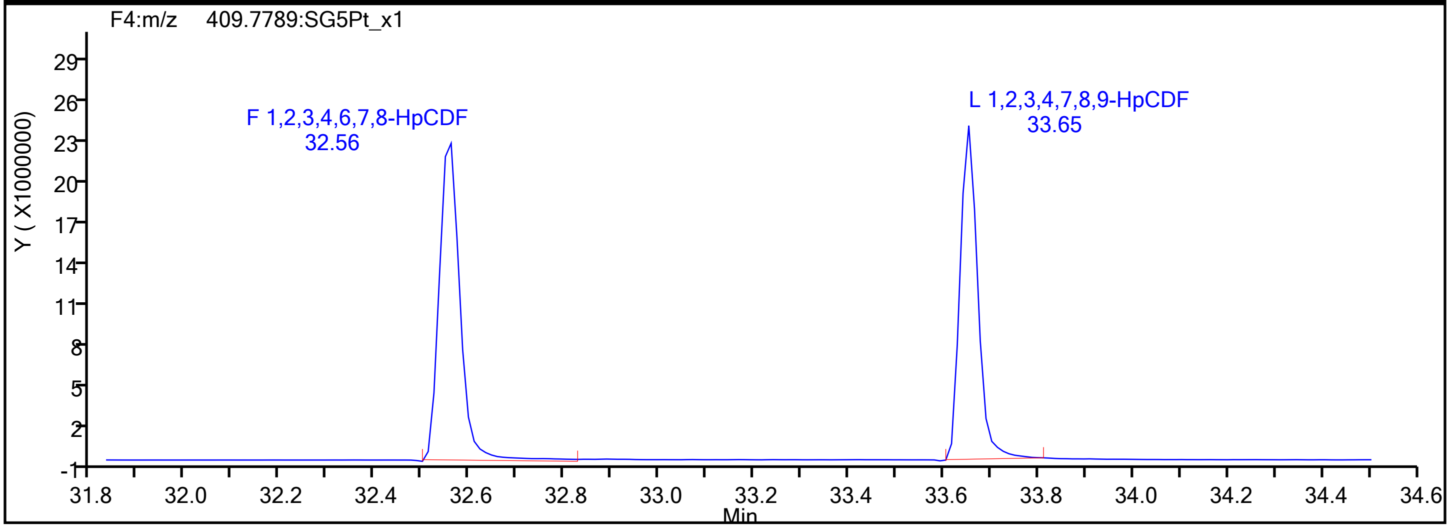

HpCDF Interference Mass

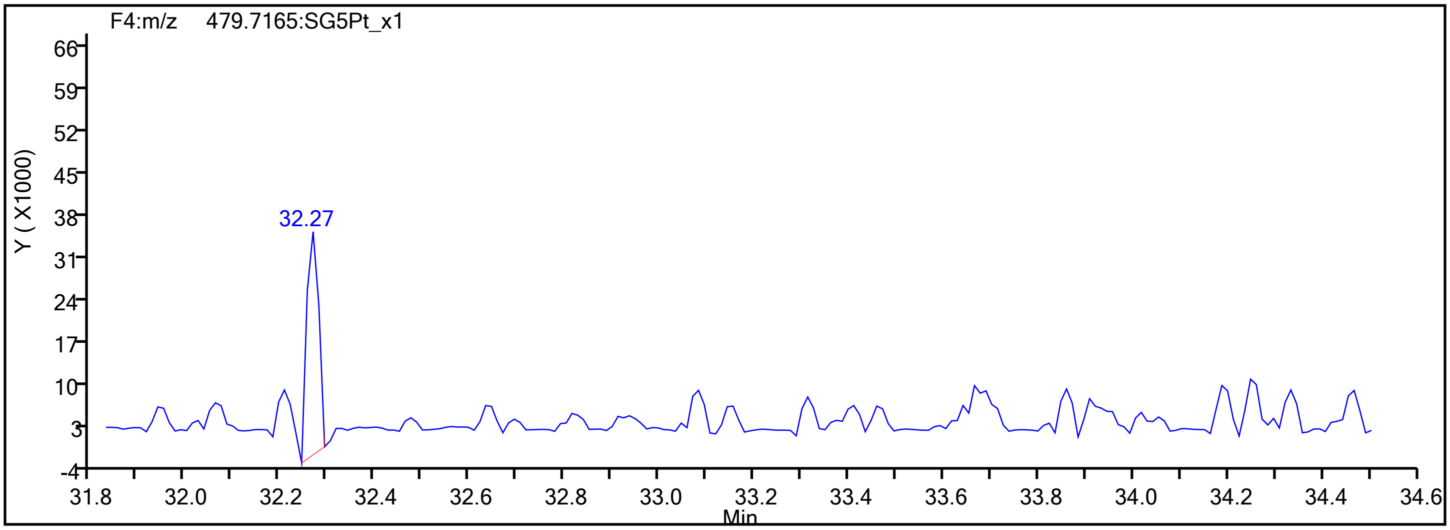

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Eurofins TestAmerica, Sacramento

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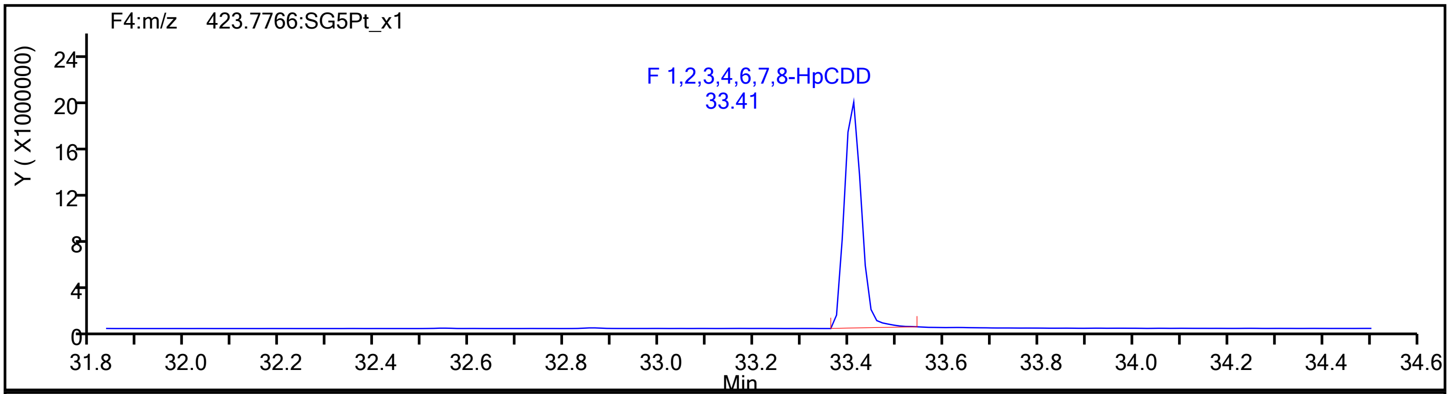

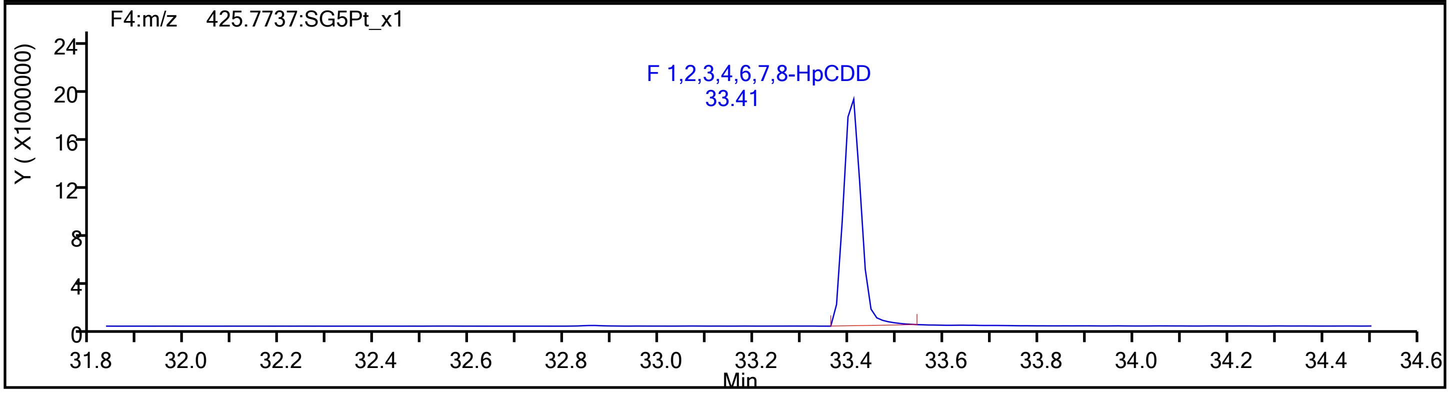

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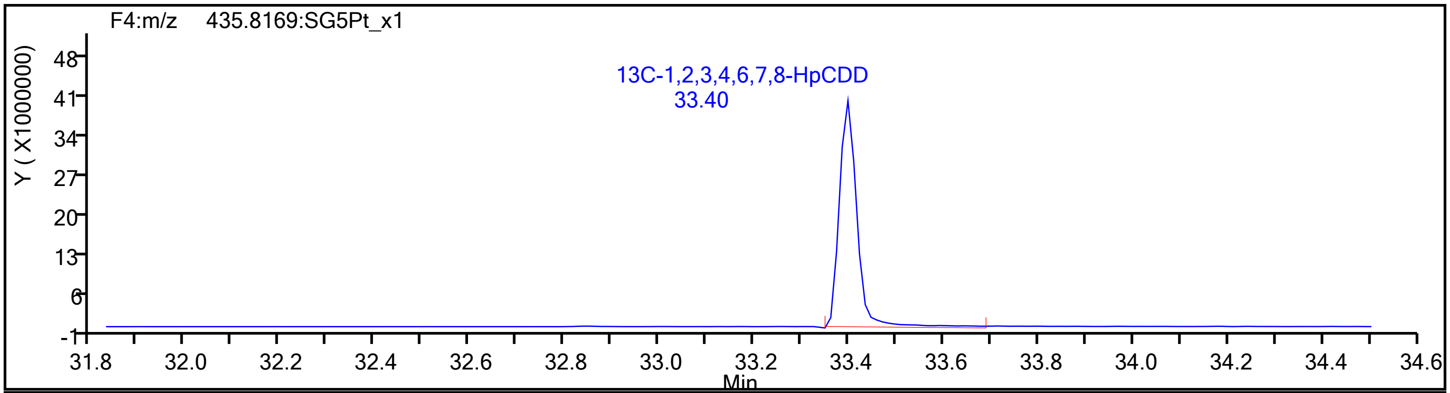

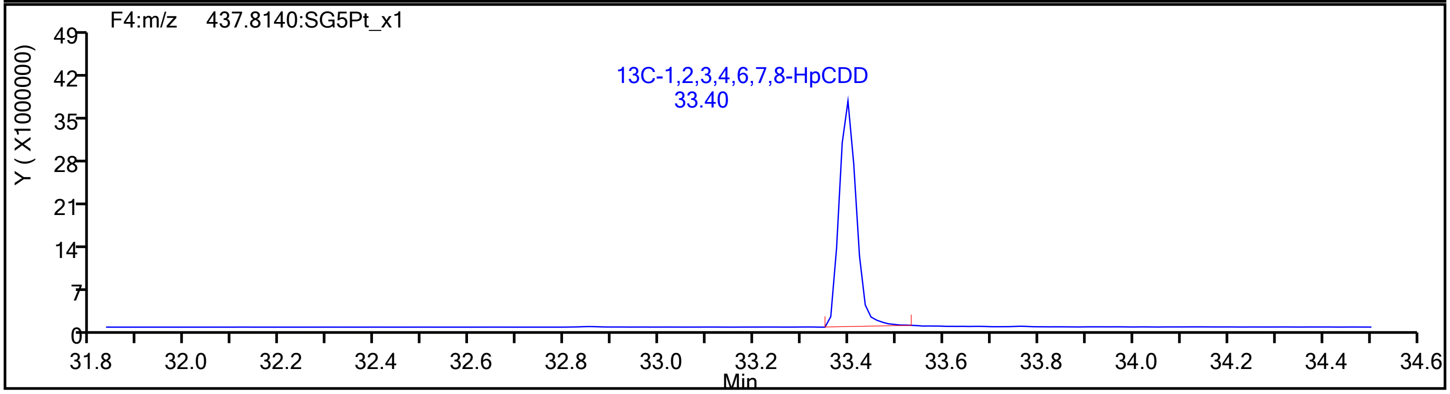

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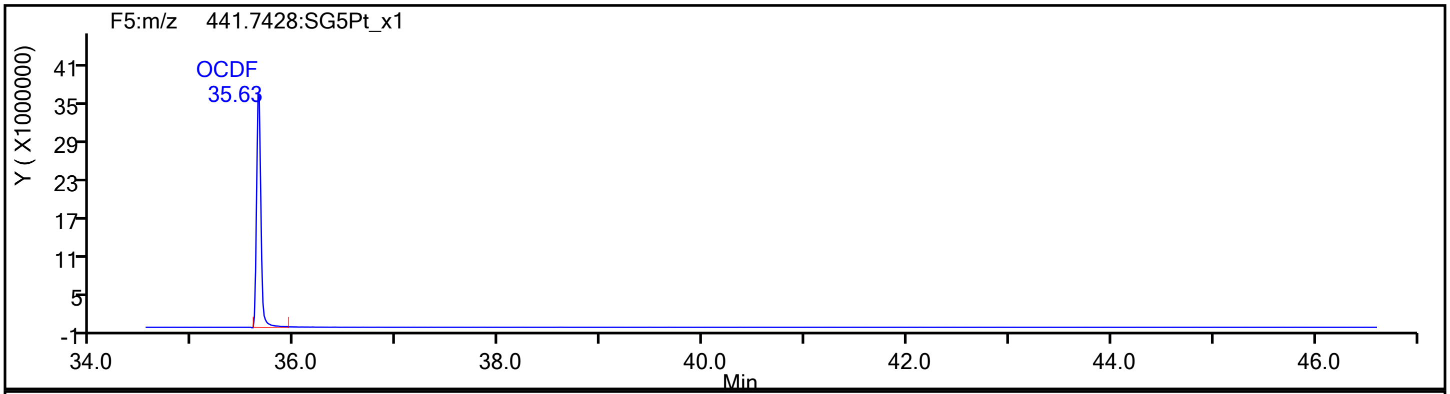

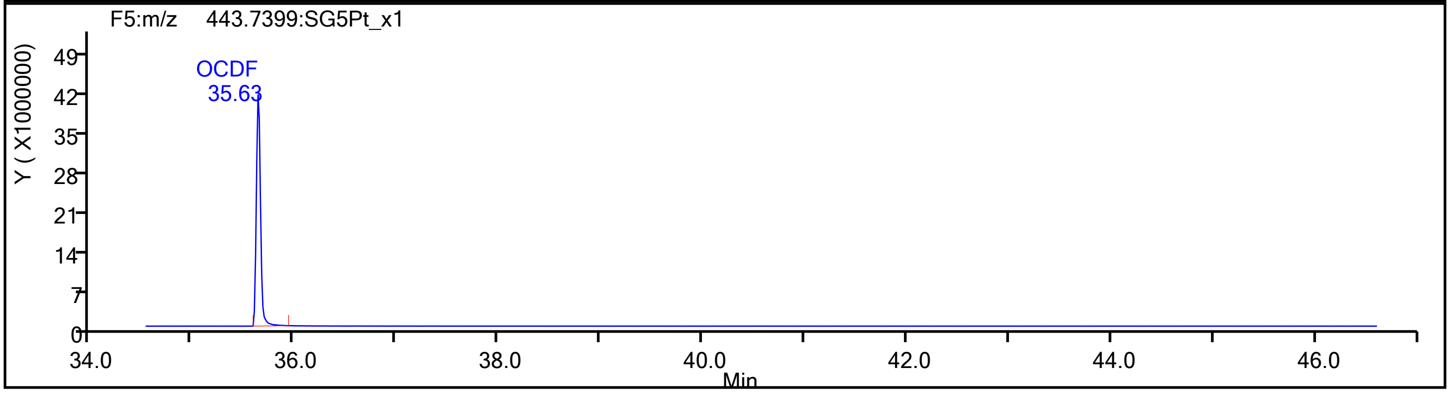

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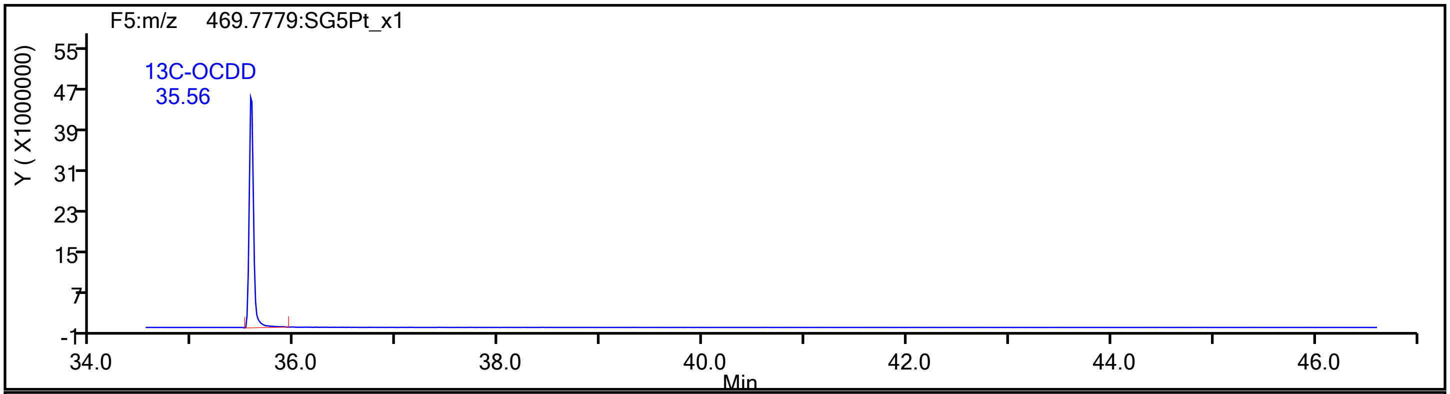

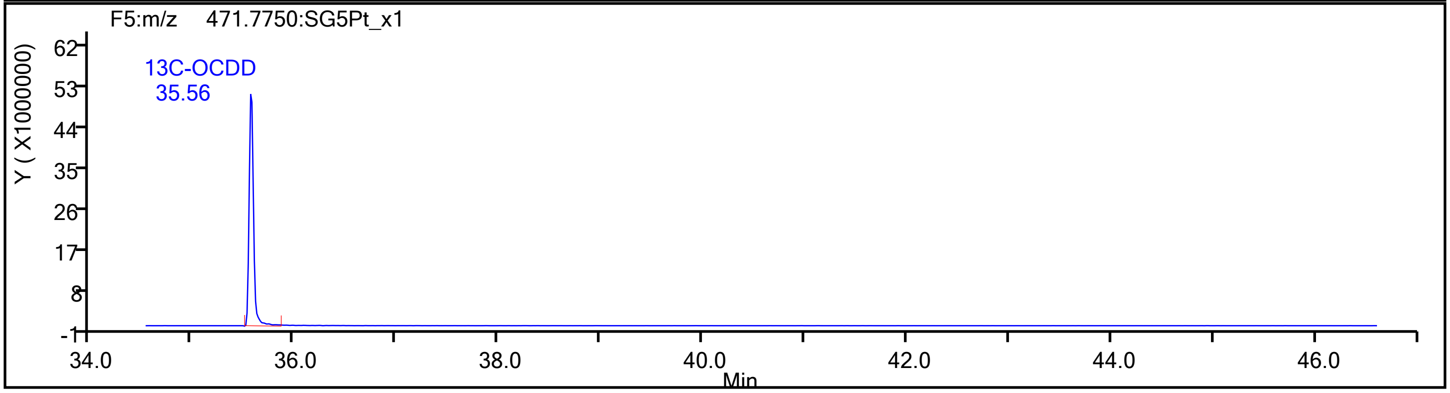

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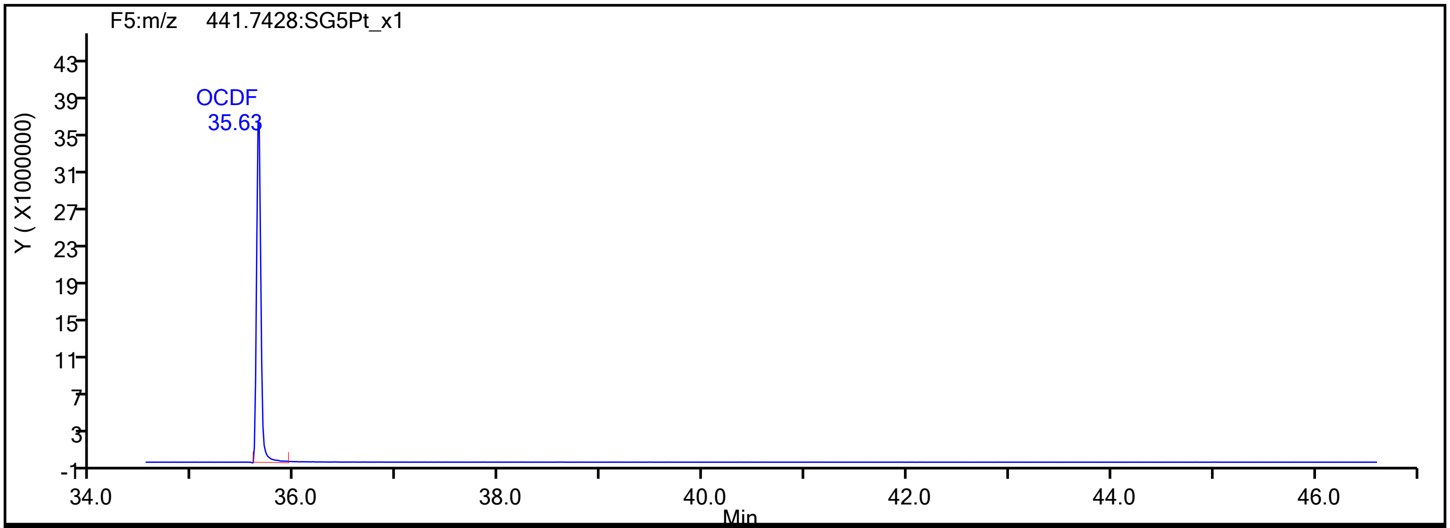

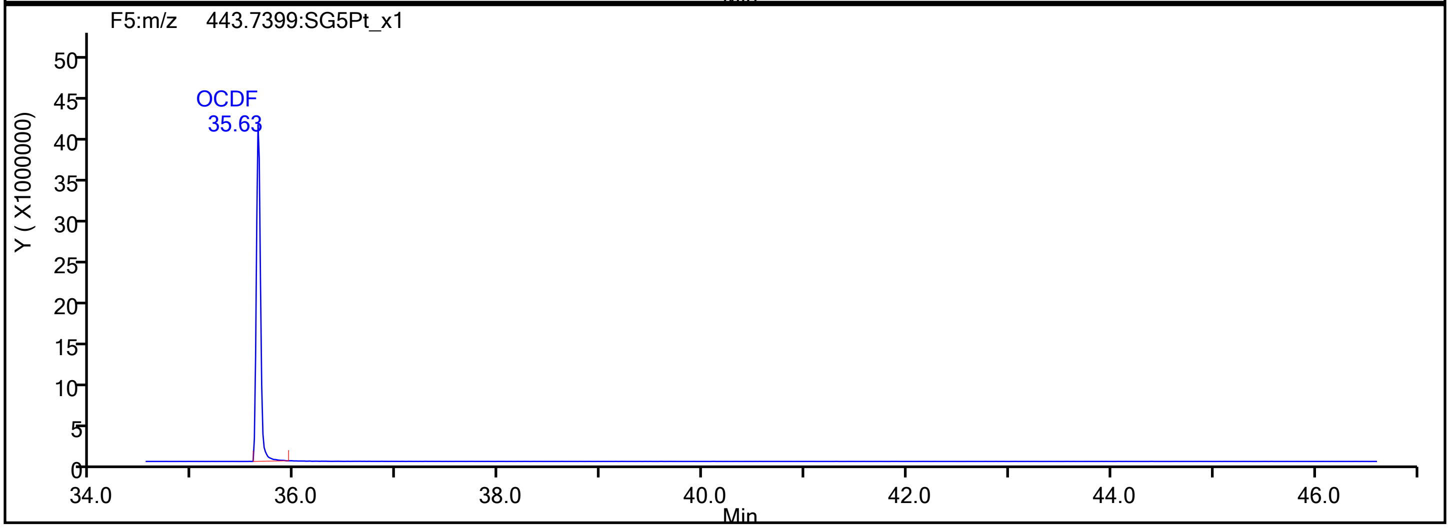

OCDF Interference Mass

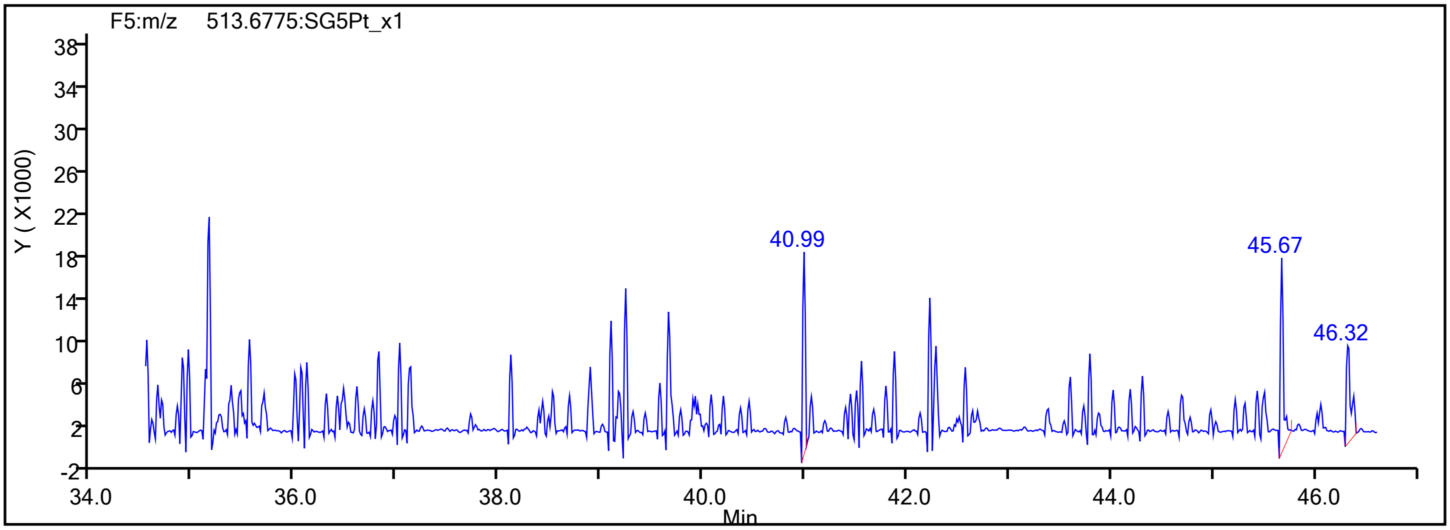

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Eurofins TestAmerica, Sacramento

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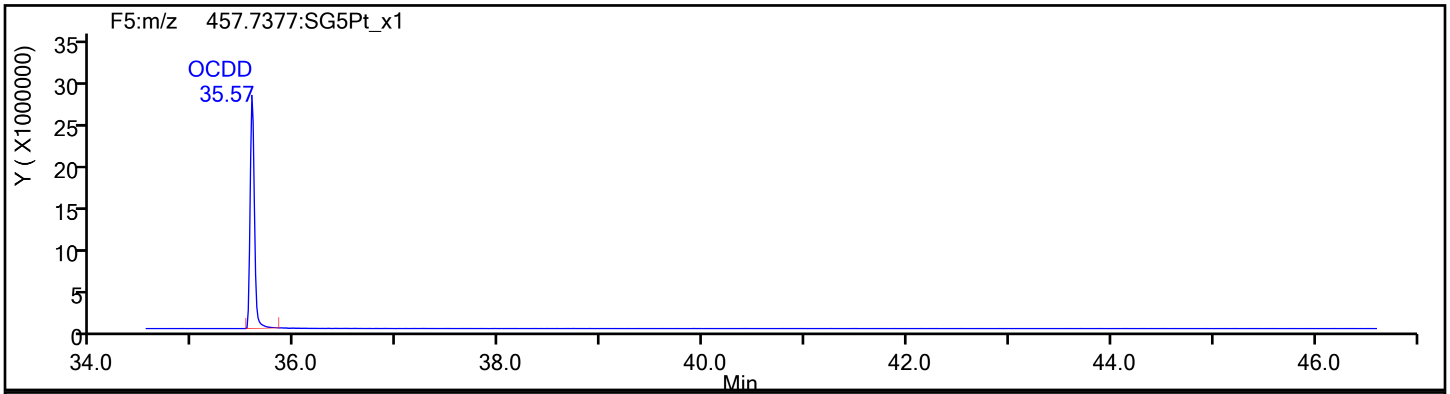

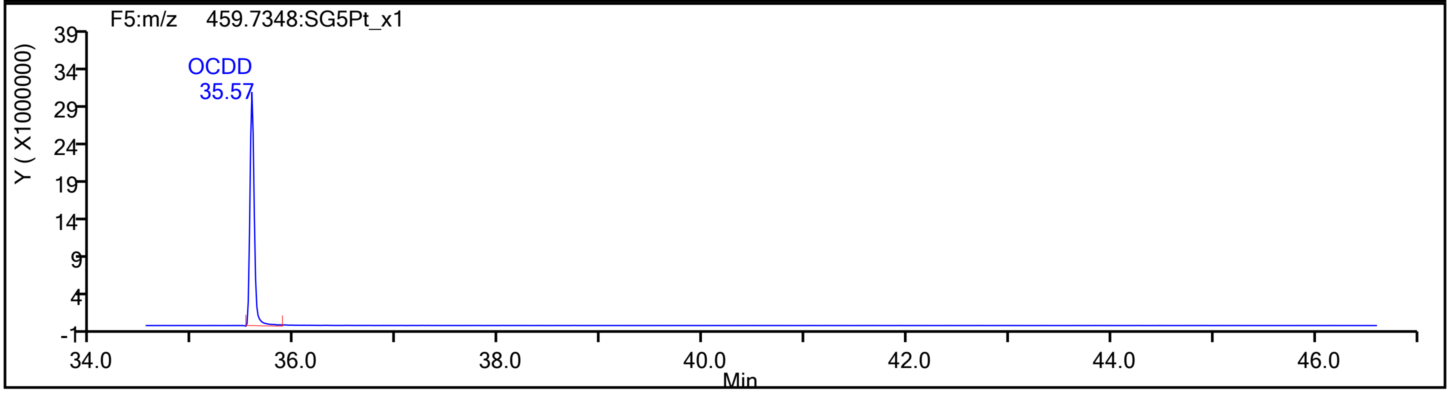

OCDD Standards

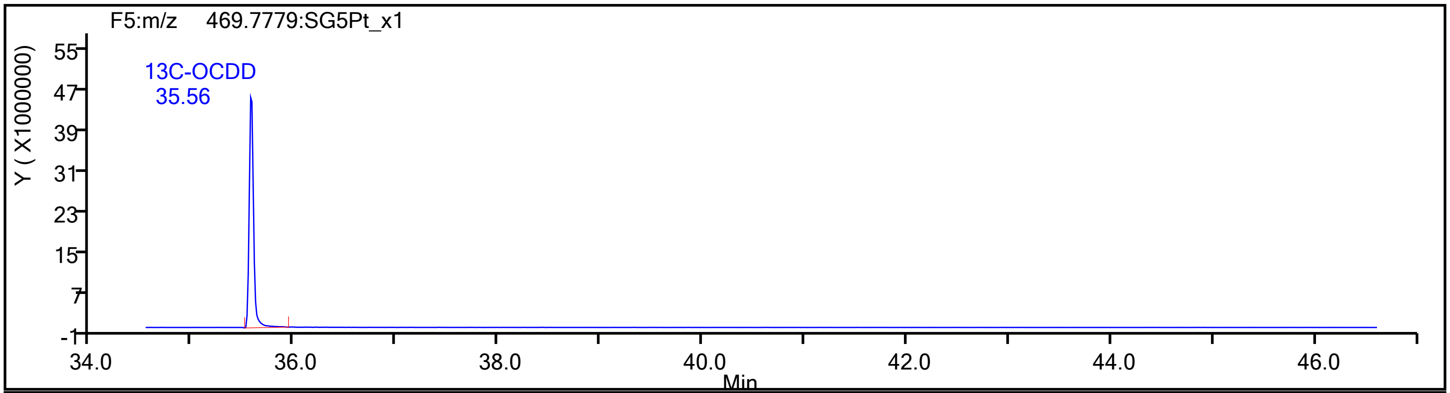

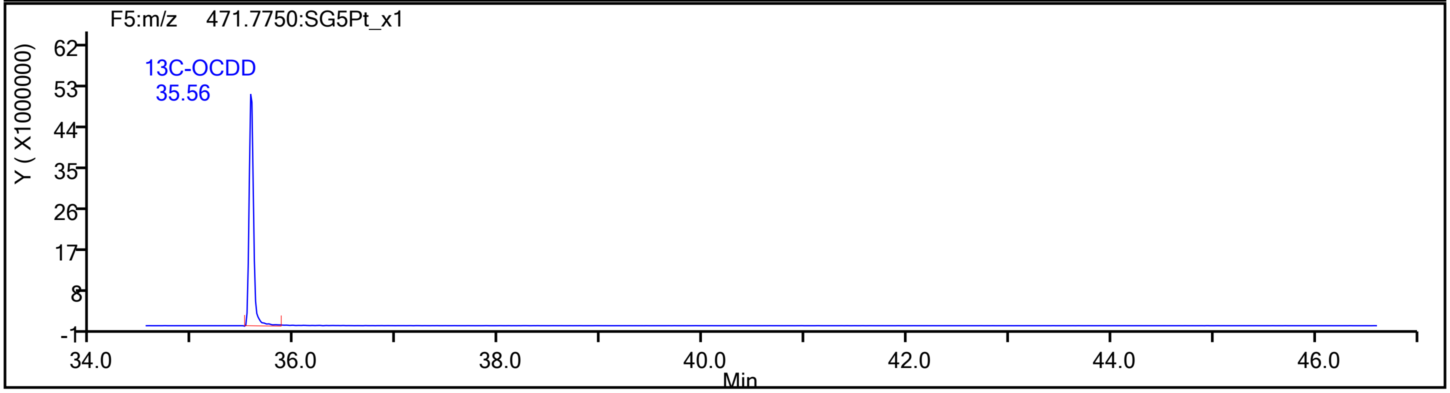

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Eurofins TestAmerica, Sacramento

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Injection Date: 08-Oct-2020 13:31:42 Injection Vol: 2.0 ul

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Method: Dioxin_3D5 Limit Group: HR - 1613B - ICAL

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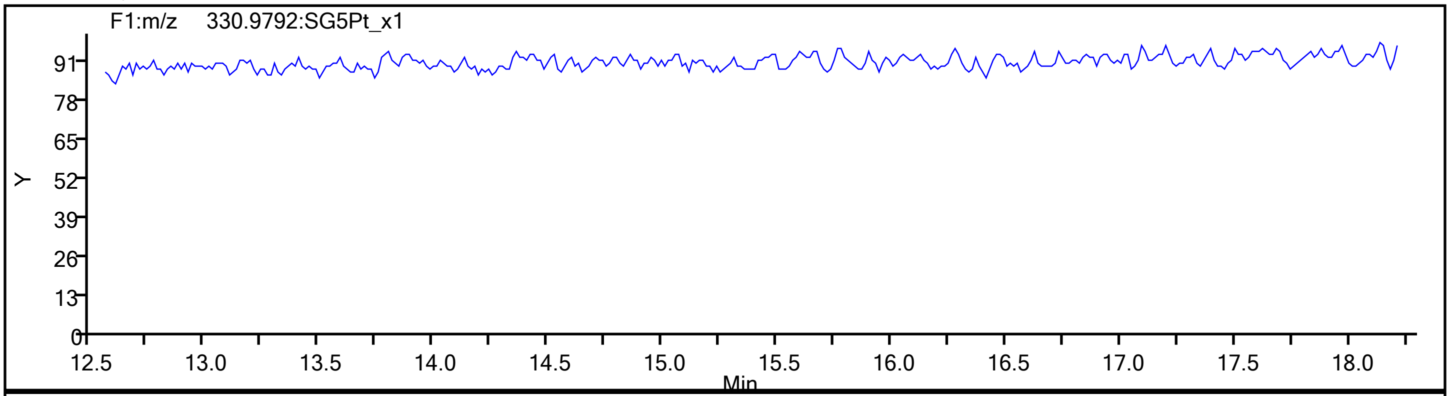

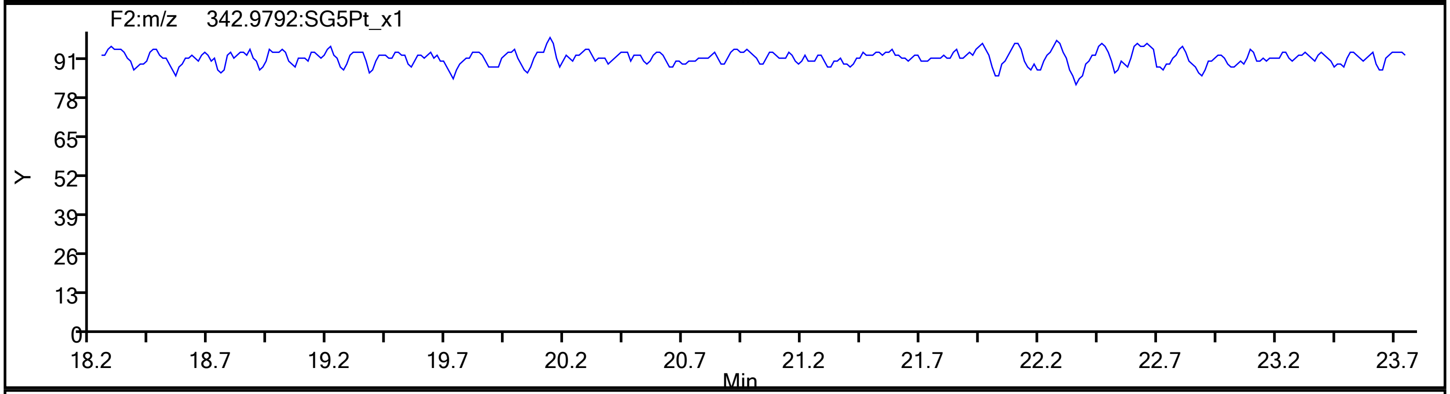

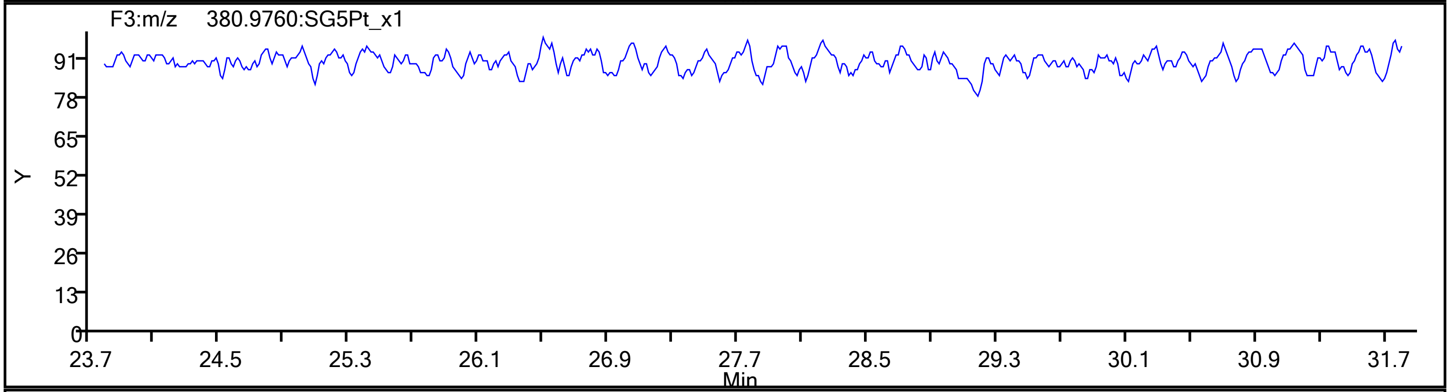

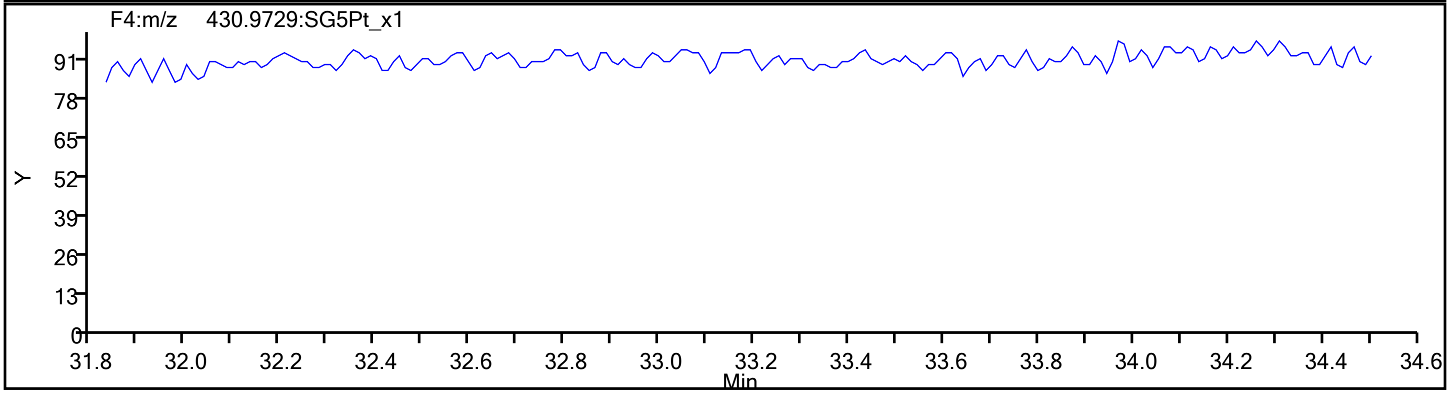

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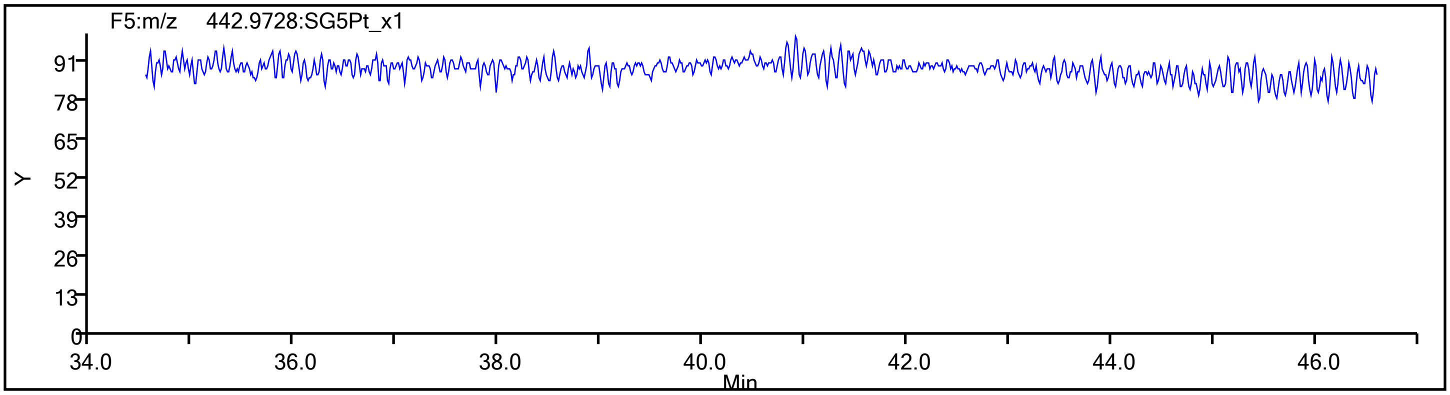

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65130-1

SDG No.:

Client Sample ID:

Lab Sample ID: LCSD 320-417971/3-A

Matrix: Water

Lab File ID: 09oc20dfs1_22.d

Analysis Method: 1613B

Date Collected:

Extract. Method: 1613B

Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1000(mL)

Date Analyzed: 10/10/2020 09:21

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	207		10	2.5
51207-31-9	2,3,7,8-TCDF	211		10	1.7
40321-76-4	1,2,3,7,8-PeCDD	1050		50	2.1
57117-41-6	1,2,3,7,8-PeCDF	1030		50	4.1
57117-31-4	2,3,4,7,8-PeCDF	1020		50	4.4
39227-28-6	1,2,3,4,7,8-HxCDD	1060		50	1.4
57653-85-7	1,2,3,6,7,8-HxCDD	993		50	1.7
19408-74-3	1,2,3,7,8,9-HxCDD	846		50	1.4
70648-26-9	1,2,3,4,7,8-HxCDF	1030		50	3.8
57117-44-9	1,2,3,6,7,8-HxCDF	1040		50	3.4
72918-21-9	1,2,3,7,8,9-HxCDF	1010		50	2.8
60851-34-5	2,3,4,6,7,8-HxCDF	1030		50	2.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	1020		50	1.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	978		50	3.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	976		50	3.2
3268-87-9	OCDD	1900		100	1.8
39001-02-0	OCDF	1810		100	2.3
41903-57-5	Total TCDD	207		10	2.5
30402-14-3	Total TCDF	211		10	1.7
36088-22-9	Total PeCDD	1050		50	2.1
30402-15-4	Total PeCDF	2060		50	4.3
34465-46-8	Total HxCDD	2900		50	1.5
55684-94-1	Total HxCDF	4110		50	3.2
37871-00-4	Total HpCDD	1020		50	1.9
38998-75-3	Total HpCDF	1950		50	3.1

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-417971/3-A

Matrix: Water Lab File ID: 09oc20dfs1_22.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/02/2020 08:26

Sample wt/vol: 1000(mL) Date Analyzed: 10/10/2020 09:21

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420640 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		20-175
89059-46-1	13C-2,3,7,8-TCDF	63		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	72		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	71		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	71		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	93		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	62		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	65		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	67		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	69		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	74		20-186
114423-97-1	13C-OCDD	71		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	89		31-191

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Lims ID: LCSD 320-417971/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 10-Oct-2020 09:21:00 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-417971/3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:13:00 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:13:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.673	1976097	0.81	2.7E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.780	1974652	0.80	1.5883	62.9	62.9	0.5095	0.5095	62.91	
2,3,7,8-TCDF	18.797	225846	0.81	1.0857	10.5	10.5	0.0853	0.0853	105	M
A Non-2,3,7,8-sub-TCDF	18.413						0.0853	0.3061		U
S Total TCDF					10.5	10.5	0.0853	0.0853		
D 13C-2,3,7,8-TCDD	20.026	1468502	0.79	1.1194	66.4	66.4	0.3286	0.3286	66.39	
2,3,7,8-TCDD	20.052	164146	0.80	1.0810	10.3	10.3	0.1274	0.1274	103	M
$ 37Cl4-2,3,7,8-TCDD	20.052	802241		1.1468	35.4	35.4	0.0459	0.0459	88.50	
A Non-2,3,7,8-sub-TCDD	19.200						0.1274	0.1274		U
S Total TCDD					10.3	10.3	0.1274	0.1274		
D 13C-1,2,3,7,8-PeCDF	25.894	2059874	1.54	1.4782	70.5	70.5	0.2730	0.2730	70.52	
1,2,3,7,8-PeCDF	25.920	1120291	1.57	1.0547	51.6	51.6	0.2059	0.2059	103	
D 13C-2,3,4,7,8-PeCDF	27.319	1947841	1.51	1.3912	70.9	70.9	0.2901	0.2901	70.85	
2,3,4,7,8-PeCDF	27.344	1099773	1.57	1.1035	51.2	51.2	0.2204	0.2204	102	
A F1 PeCDFs	23.059						0.0172	0.0172		
A Non-2,3,7,8-sub-PeCDF	26.475	8323	1.55	1.0791	0.4470	0.3849	0.2126	0.3849	0.00	RQ
S Total PeCDF					103.2	103.1	0.2132	0.2132		RQ
D 13C-1,2,3,7,8-PeCDD	28.078	1345204	1.49	0.9415	72.3	72.3	0.1957	0.1957	72.31	
1,2,3,7,8-PeCDD	28.103	756186	1.56	1.0680	52.6	52.6	0.1060	0.1060	105	
A Non-2,3,7,8-sub-PeCDD	26.975						0.1060	0.1060		
S Total PeCDD					52.6	52.6	0.1060	0.1060		
D 13C-1,2,3,4,7,8-HxCDF	33.809	1721800	0.54	1.1378	62.4	62.4	0.2357	0.2357	62.43	
1,2,3,4,7,8-HxCDF	33.834	1122529	1.28	1.2643	51.6	51.6	0.1924	0.1924	103	
D 13C-1,2,3,6,7,8-HxCDF	34.003	2089244	0.53	1.3173	65.4	65.4	0.2036	0.2036	65.43	
1,2,3,6,7,8-HxCDF	34.028	1328574	1.27	1.2230	52.0	52.0	0.1703	0.1703	104	
D 13C-2,3,4,6,7,8-HxCDF	34.963	2075667	0.53	1.2457	68.7	68.7	0.2153	0.2153	68.74	
2,3,4,6,7,8-HxCDF	34.980	1334475	1.27	1.2464	51.6	51.6	0.1421	0.1421	103	
D 13C-1,2,3,7,8,9-HxCDF	35.950	1934685	0.52	1.1840	67.4	67.4	0.2265	0.2265	67.41	
1,2,3,7,8,9-HxCDF	35.966	1235953	1.28	1.2638	50.6	50.6	0.1408	0.1408	101	
A Non-2,3,7,8-sub-HxCDF	33.855						0.1587	0.1587		
S Total HxCDF					205.7	205.7	0.1614	0.1614		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.739	2424008	1.28	2.9E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.208	1901164	1.24	0.8477	92.5	92.5	0.1771	0.1771	92.52	
1,2,3,4,7,8-HxCDD	35.224	1166668	1.23	1.1561	53.1	53.1	0.0685	0.0685	106	
D 13C-1,2,3,6,7,8-HxCDD	35.334	1964380	1.24	0.9979	81.2	81.2	0.1505	0.1505	81.21	
1,2,3,6,7,8-HxCDD	35.351	1003461	1.24	1.0284	49.7	49.7	0.0839	0.0839	99.34	
1,2,3,7,8,9-HxCDD	35.756	963400	1.27	1.1789	42.3	42.3	0.0700	0.0700	84.56	
A Non-2,3,7,8-sub-HxCDD	34.365						0.0737	0.0737		
S Total HxCDD					145.0	145.0	0.0741	0.0741		
D 13C-1,2,3,4,6,7,8-HpCDF	37.907	1801654	0.44	0.9884	75.2	75.2	0.3205	0.3205	75.20	
1,2,3,4,6,7,8-HpCDF	37.916	1327034	1.05	1.5064	48.9	48.9	0.1572	0.1572	97.79	
D 13C-1,2,3,4,7,8,9-HpCDF	39.222	1655981	0.46	0.9203	74.2	74.2	0.3443	0.3443	74.23	
1,2,3,4,7,8,9-HpCDF	39.239	1175735	1.04	1.4548	48.8	48.8	0.1576	0.1576	97.61	
A Non-2,3,7,8-sub-HpCDF	38.593						0.1573	0.1573		
S Total HpCDF					97.7	97.7	0.1574	0.1574		
D 13C-1,2,3,4,6,7,8-HpCDD	38.910	1752431	1.11	0.9556	75.7	75.7	0.1982	0.1982	75.65	
1,2,3,4,6,7,8-HpCDD	38.919	947371	1.03	1.0640	50.8	50.8	0.0972	0.0972	102	
A Non-2,3,7,8-sub-HpCDD	38.941						0.0972	0.0972		
S Total HpCDD					50.8	50.8	0.0972	0.0972		
D 13C-OCDD	41.364	2563655	0.90	0.7420	142.5	142.5	0.2472	0.2472	71.26	
OCDF	41.448	1658372	0.90	1.4296	90.5	90.5	0.1138	0.1138	90.50	
OCDD	41.373	1374148	0.89	1.1293	94.9	94.9	0.0897	0.0897	94.92	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Lims ID: LCSD 320-417971/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 10-Oct-2020 09:21:00 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-417971/3-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Oct-2020 09:13:00 Calib Date: 17-Sep-2020 16:30:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20200917-103494.b\17se20dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1605

First Level Reviewer: dadunj Date: 12-Oct-2020 09:13:00

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.673	19.716	-3		884139	138615	312	780	444		
333.9338	19.665	19.716	-3		1091958	169101	141	352	1199	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.780	18.830	-3	0.955	878339	131194	641	1602	205		
317.9389	18.780	18.830	-3	0.955	1096313	165647	355	887	467	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	18.797	18.865	-4	1.001	101283	15747	29	72	543		
305.8987	18.797	18.865	-4	1.001	124563	20011	81	202	247	0.81(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.413	18.413	0	0.980	2982	621	29	72			
305.8987	18.413	18.413	0	0.980	3581	554	81	202		0.83(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	20.026	20.067	-2	1.018	648204	91861	312	780	294		
333.9338	20.017	20.067	-3	1.017	820298	115133	141	352	817	0.79(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	20.052	20.101	-3	1.001	73052	10750	83	207	130		M
321.8936	20.052	20.101	-3	1.001	91094	13770	31	77	444	0.80(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	20.052	20.103	-3	1.019	802241	110817	65	162	1705		
A Non-2,3,7,8-sub-TCDD											U
319.8965	19.200						83	207			
321.8936	19.200						31	77			
13C-1,2,3,7,8-PeCDF											
351.9000	25.894	25.934	-2	1.316	1250279	205683	283	707	727		
353.8970	25.894	25.934	-2	1.316	809595	135089	214	535	631	1.54(1.32-1.78)	

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.920	25.951	-2	1.001	683739	109998	165	412	667		
341.8567	25.911	25.951	-2	1.001	436552	70730	131	327	540	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.319	27.359	-2	1.389	1172740	184862	283	707	653		
353.8970	27.319	27.359	-2	1.389	775101	119352	214	535	558	1.51(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.344	27.376	-2	1.001	671559	101523	165	412	615		
341.8567	27.344	27.376	-2	1.001	428214	64650	131	327	494	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.059						2	5			
341.8567	23.059						22	55			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.476	26.475	0	1.022	6401	950	165	412	6		
	Empc Correction				5059	677	165	412	4		
341.8567	26.476	26.475	0	1.022	3264	437	131	327	3	1.96(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	28.078	28.109	-2	1.427	805033	124040	151	377	821		
369.8919	28.086	28.109	-1	1.428	540171	79058	76	190	1040	1.49(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	28.103	28.134	-2	1.001	460260	67518	69	172	979		
357.8516	28.103	28.134	-2	1.001	295926	45106	23	57	1961	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.975						69	172			
357.8516	26.975						23	57			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.809	33.838	-2	0.946	604782	112166	144	360	779		
385.8610	33.809	33.838	-2	0.946	1117018	209277	485	1212	431	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.834	33.855	-1	1.001	631002	117047	179	447	654		
375.8178	33.826	33.855	-2	1.000	491527	89871	134	335	671	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.003	34.024	-1	0.951	727084	130166	144	360	904		
385.8610	34.003	34.024	-1	0.951	1362160	245376	485	1212	506	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.028	34.049	-1	1.001	743286	133835	179	447	748		
375.8178	34.020	34.049	-2	1.000	585288	105855	134	335	790	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.963	34.976	-1	0.978	719840	152546	144	360	1059		
385.8610	34.963	34.976	-1	0.978	1355827	289084	485	1212	596	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.980	35.001	-1	1.000	745661	156490	179	447	874		
375.8178	34.980	35.001	-1	1.000	588814	126021	134	335	940	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.950	35.962	-1	1.006	661179	148426	144	360	1031		
385.8610	35.950	35.962	-1	1.006	1273506	290990	485	1212	600	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.966	35.979	-1	1.000	693267	152955	179	447	854		
375.8178	35.966	35.979	-1	1.000	542686	120866	134	335	902	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.855						179	447			
375.8178	33.855						134	335			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.739	35.760	-1		1361775	328984	184	460	1788		
403.8529	35.739	35.760	-1		1062233	257165	168	420	1531	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.208	35.220	-1	0.985	1054170	257837	184	460	1401		
403.8529	35.208	35.220	-1	0.985	846994	209632	168	420	1248	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.224	35.237	-1	1.000	642832	159301	81	202	1967		
391.8127	35.216	35.237	-1	1.000	523836	125986	67	167	1880	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.334	35.355	-1	0.989	1087705	237237	184	460	1289		
403.8529	35.334	35.355	-1	0.989	876675	191440	168	420	1140	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.351	35.372	-1	1.000	555007	121998	81	202	1506		
391.8127	35.351	35.372	-1	1.000	448454	98915	67	167	1476	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.756	35.768	-1	1.016	538258	123211	81	202	1521		
391.8127	35.756	35.768	-1	1.016	425142	98046	67	167	1463	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.365						81	202			
391.8127	34.365						67	167			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.907	37.927	-1	1.061	551554	161738	248	620	652		
419.8220	37.907	37.927	-1	1.061	1250100	380857	495	1237	769	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.916	37.935	-1	1.000	679279	205005	268	670	765		
409.7788	37.916	37.935	-1	1.000	647755	199579	246	615	811	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.222	39.233	-1	1.097	518558	173188	248	620	698		
419.8220	39.222	39.233	-1	1.097	1137423	387384	495	1237	783	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.239	39.250	-1	1.000	600239	200589	268	670	748		
409.7788	39.239	39.250	-1	1.000	575496	192614	246	615	783	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.593						268	670			
409.7788	38.593						246	615			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.910	38.921	-1	1.089	920122	311252	257	642	1211		
437.8140	38.910	38.921	-1	1.089	832309	275956	187	467	1476	1.11(0.88-1.20)	

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.919	38.938	-1	1.000	481726	158526	135	337	1174		
425.7737	38.919	38.938	-1	1.000	465645	153551	108	270	1422	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.941						135	337			
425.7737	38.941						108	270			
13C-OCDD											
469.7780	41.364	41.373	-1	1.157	1216887	415355	155	387	2680		
471.7750	41.364	41.373	-1	1.157	1346768	453641	275	687	1650	0.90(0.76-1.02)	
OCDF											
441.7428	41.448	41.457	-1	1.002	785191	261742	108	270	2424		
443.7399	41.448	41.457	-1	1.002	873181	292774	175	437	1673	0.90(0.76-1.02)	
OCDD											
457.7377	41.373	41.381	-1	1.000	648387	219970	85	212	2588		
459.7348	41.373	41.381	-1	1.000	725761	245184	91	227	2694	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Lims ID: LCSD 320-417971/3-A
Client ID:
Inject. Date: 10-Oct-2020 09:21:00 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 20

Non-2,3,7,8-sub-TCDF, RT: 18.413

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.086	D 13C-2,3,7,8-TCDF	100.000	1974652	296841

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.086		100.000	1974652	296841

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.003	2982	621	3581	554	0.3061	0.83	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Lims ID:	LCSD 320-417971/3-A
Client ID:	
Inject. Date:	10-Oct-2020 09:21:00
Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate
Instrument ID:	DFS 1
Operator:	Xcalibur_System
Lims Batch ID:	420640
Lims Sample ID:	20

Non-2,3,7,8-sub-TCDD, RT: 19.200

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.081	D 13C-2,3,7,8-TCDD	100.000	1468502	206994

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.081		100.000	1468502	206994

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Lims ID: LCSD 320-417971/3-A
Client ID:
Inject. Date: 10-Oct-2020 09:21:00 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 420640 Lims Sample ID: 20

Non-2,3,7,8-sub-PeCDF, RT: 26.475

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.055	D 13C-1,2,3,7,8-PeCDF	100.000	2059874	340772
2,3,4,7,8-PeCDF	1.104	D 13C-2,3,4,7,8-PeCDF	100.000	1947841	304214

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.079		100.000	2003857	322493

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.476	6401	950	3264	437	0.4470	1.96	RQ
26.476	5059	677	3264	437	0.3849		Empc Correction
Signal Totals:							
	5059	677	3264	437			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	9665	1387				1.96	RQ
	8323	1114					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4470 = (9665 * 100.000) / (2003857 * 1.079)
Empc Amount: 0.3849 = (8323 * 100.000) / (2003857 * 1.079)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 12-Oct-2020 09:13:00

Chrom Revision: 2.3 08-Oct-2020 16:36:14
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d				
Injection Date:	10-Oct-2020 09:21:00	Instrument ID:	DFS 1		
Lims ID:	LCSD 320-417971/3-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	18.80
Area:	121155
Amount:	10.375950
Amount Units:	pg/ul

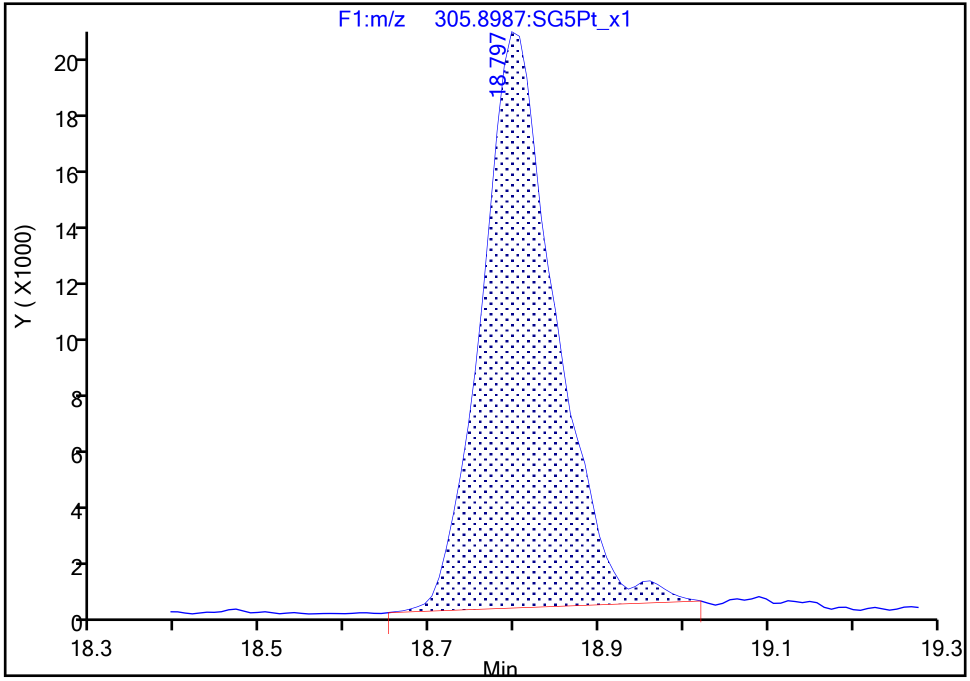

Manual Integration Results

RT:	18.80
Area:	124563
Amount:	10.534921
Amount Units:	pg/ul

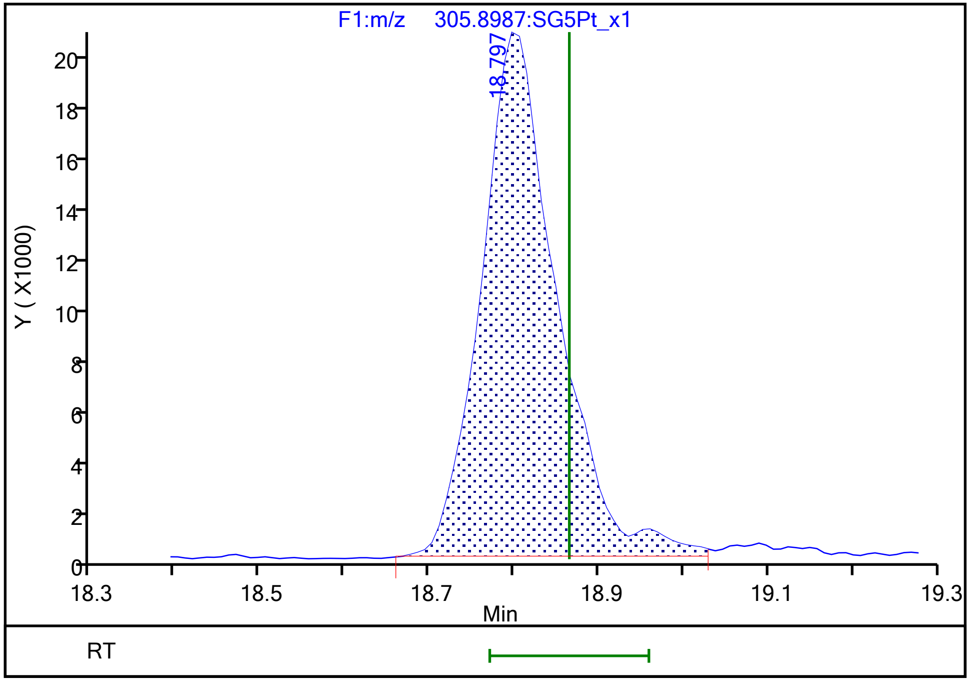

Reviewer: dadunj, 12-Oct-2020 09:12:09

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d				
Injection Date:	10-Oct-2020 09:21:00	Instrument ID:	DFS 1		
Lims ID:	LCSD 320-417971/3-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 20.05
Area: 76650
Amount: 10.654203
Amount Units: pg/ul

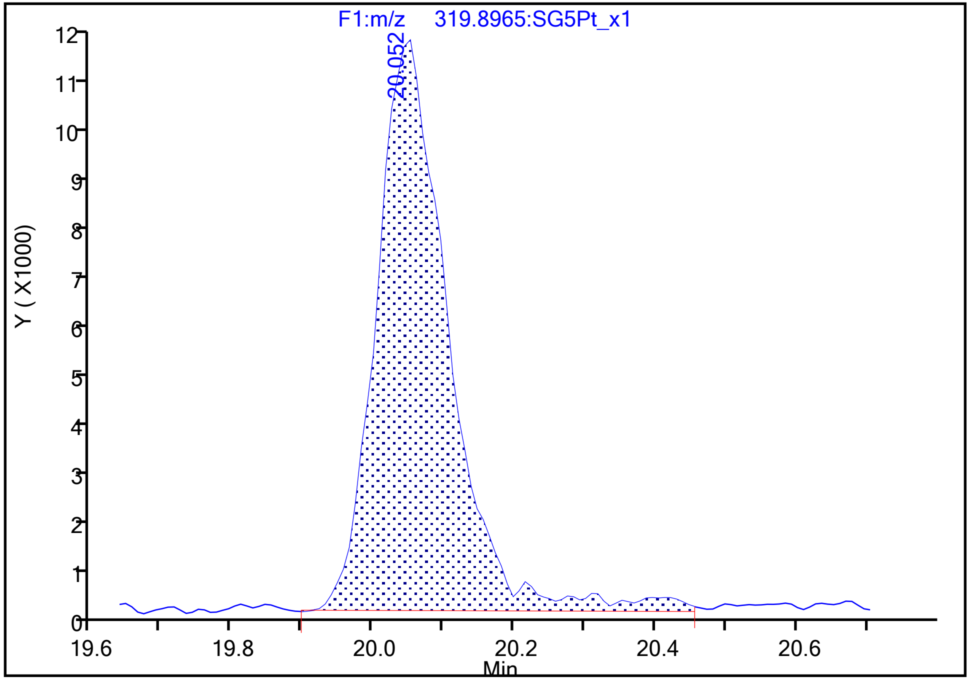

Manual Integration Results

RT: 20.05
Area: 73052
Amount: 10.340485
Amount Units: pg/ul

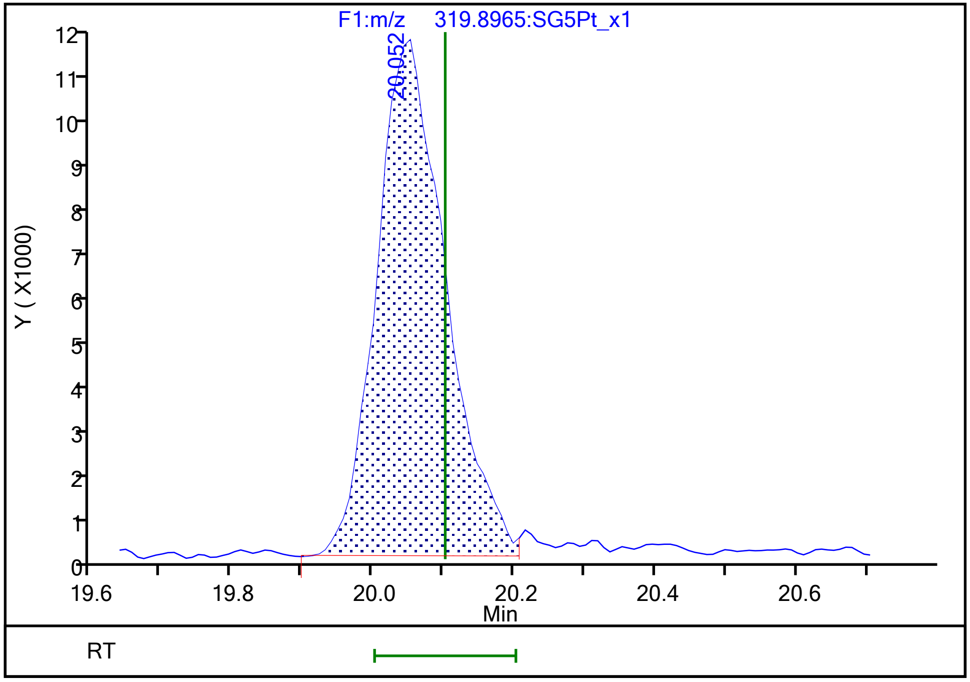

Reviewer: dadunj, 12-Oct-2020 09:12:28

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d				
Injection Date:	10-Oct-2020 09:21:00	Instrument ID:	DFS 1		
Lims ID:	LCSD 320-417971/3-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT: 20.05
Area: 92476
Amount: 10.654203
Amount Units: pg/ul

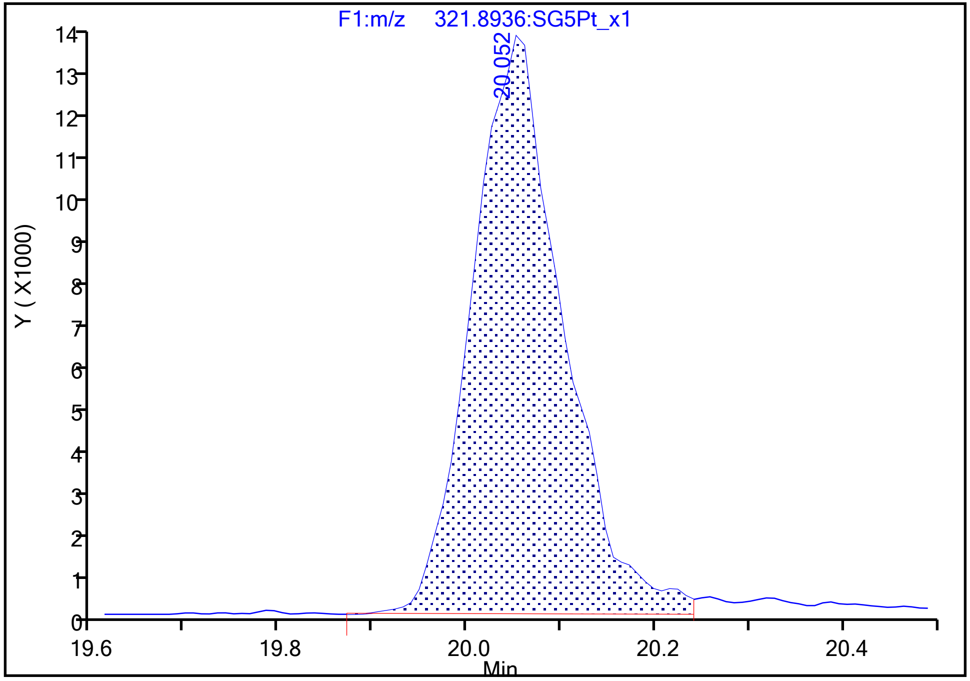

Manual Integration Results

RT: 20.05
Area: 91094
Amount: 10.340485
Amount Units: pg/ul

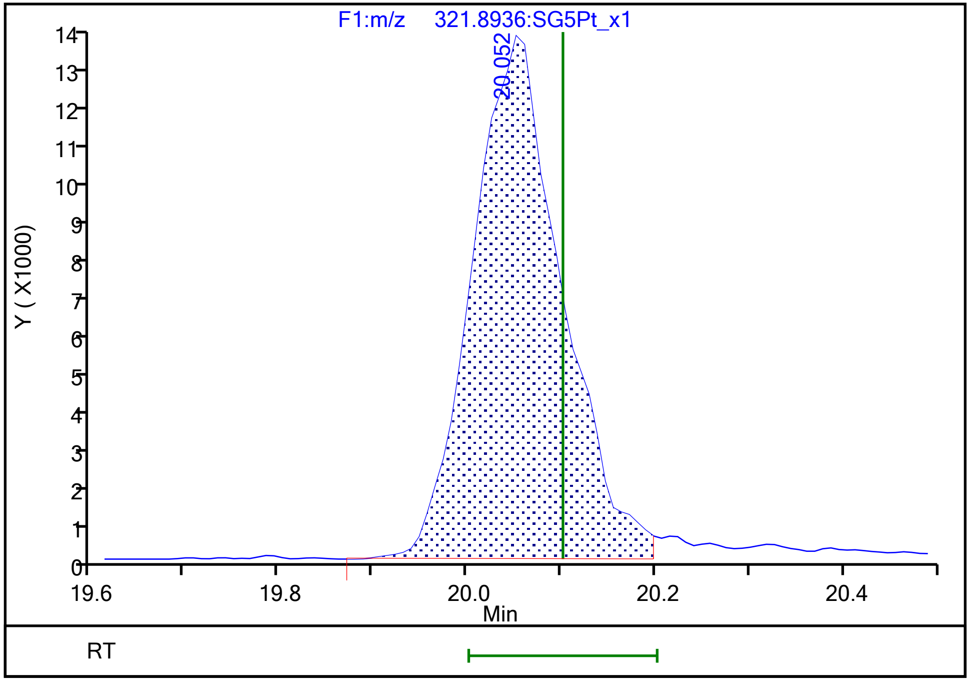

Reviewer: dadunj, 12-Oct-2020 09:12:30

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Oct-2020 09:13:00 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

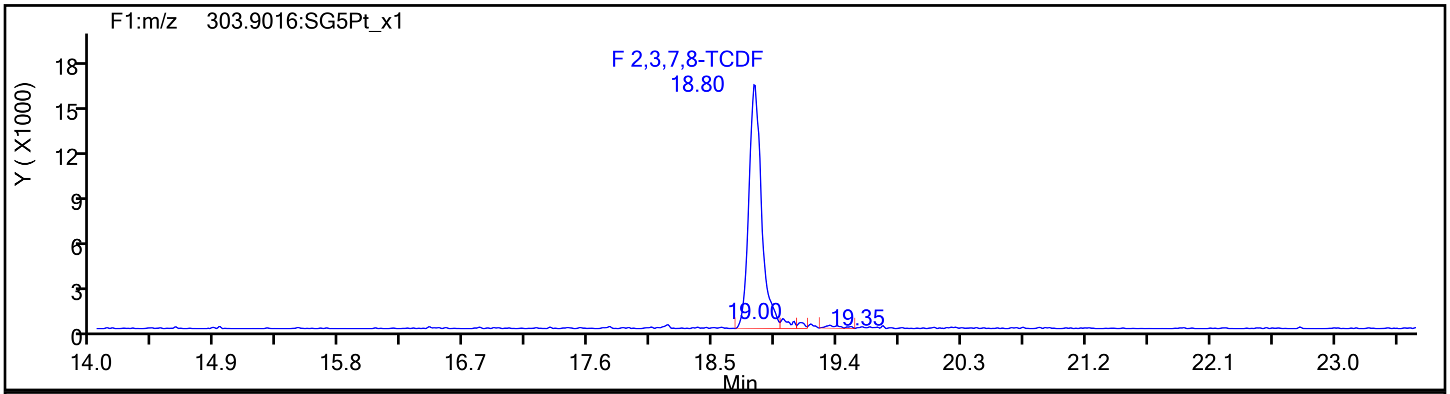

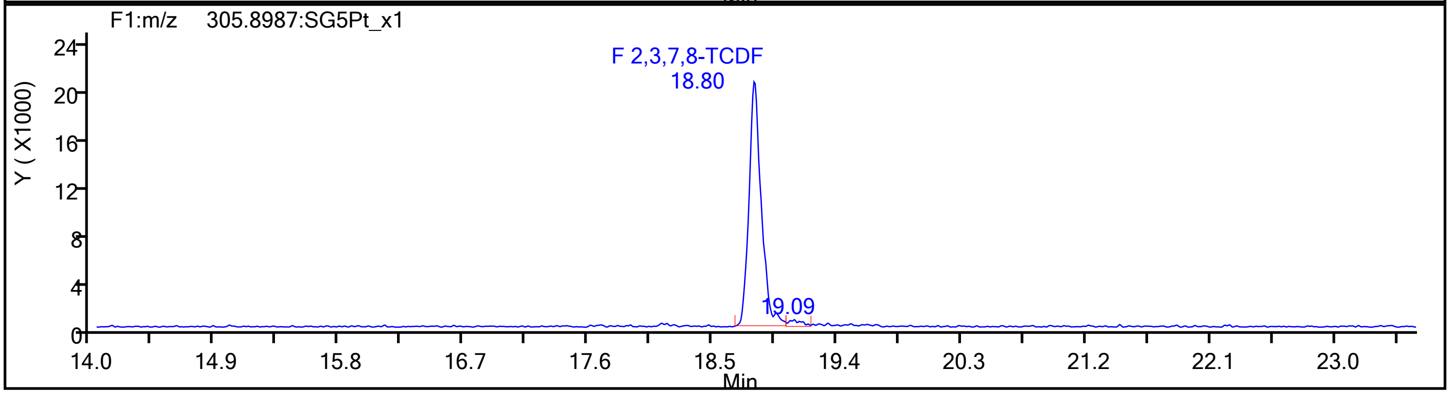

TCDF Standards

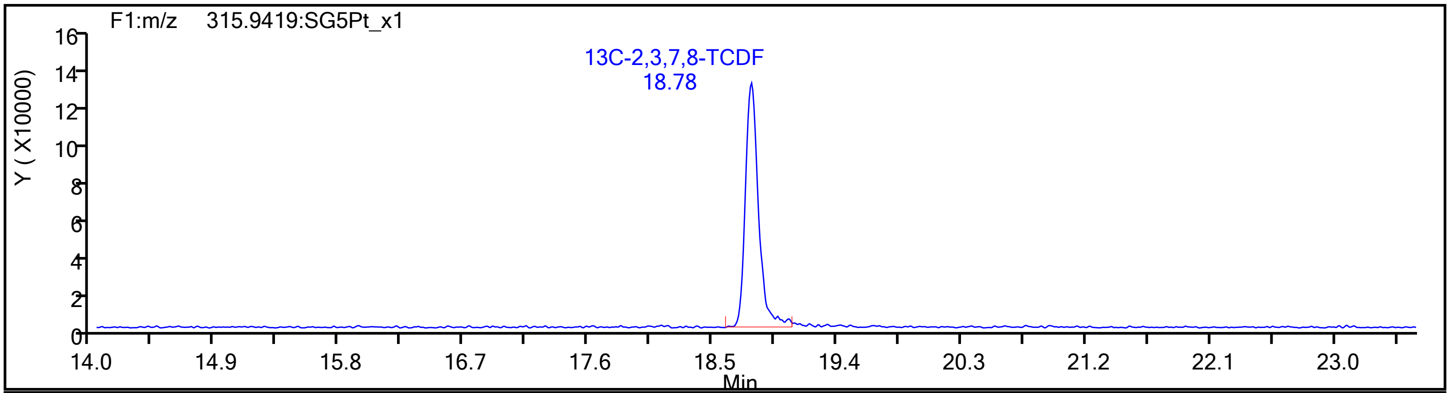

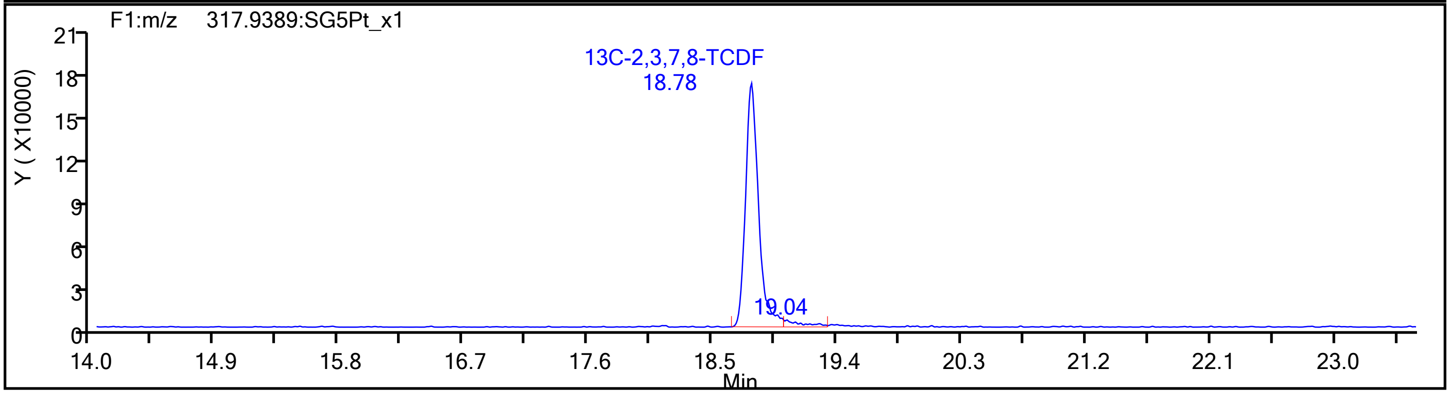

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

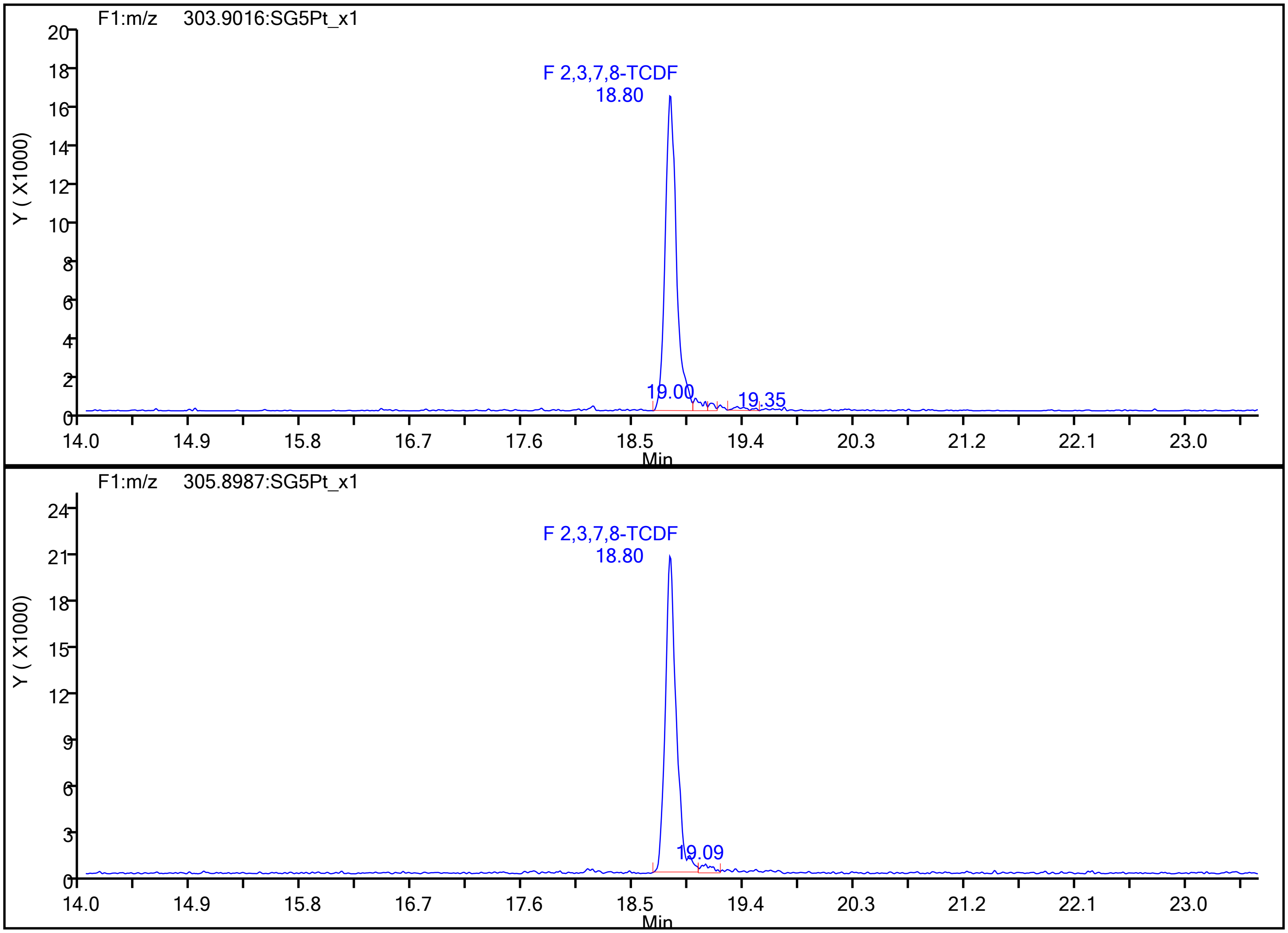

TCDF Interference Mass

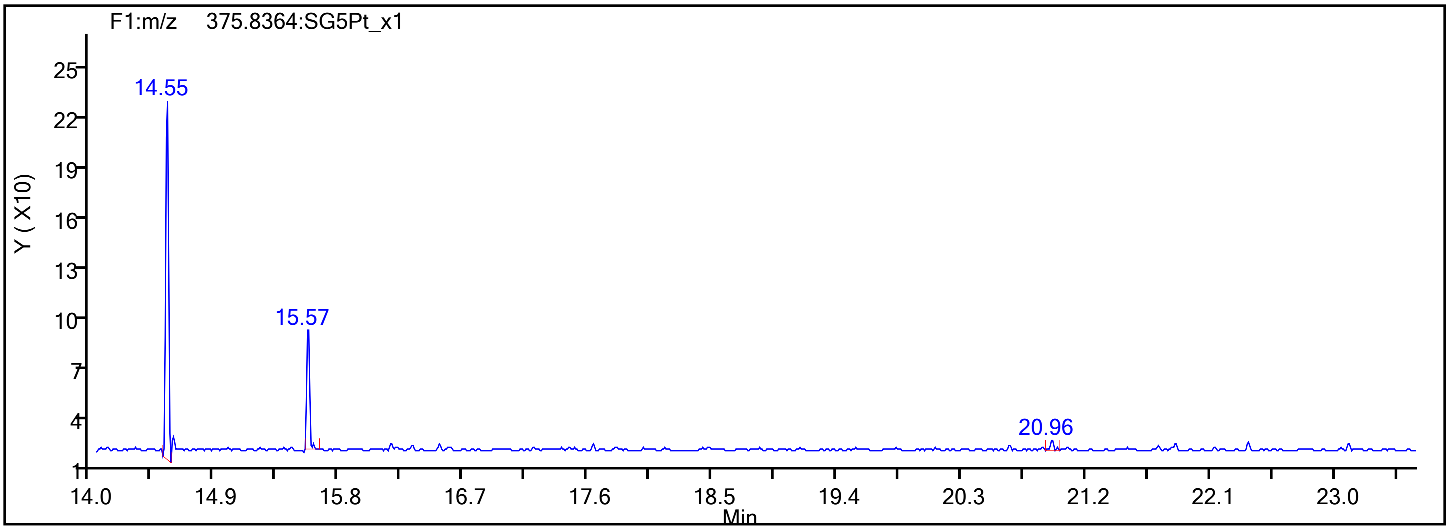

Report Date: 12-Oct-2020 09:13:01
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Injection Date: 10-Oct-2020 09:21:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640
Sample Line#: 20
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

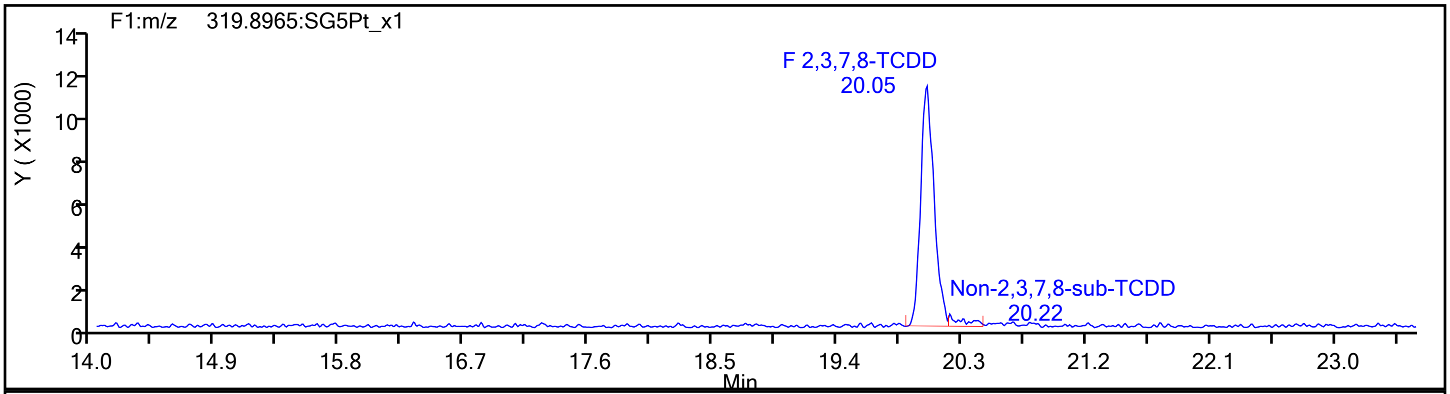

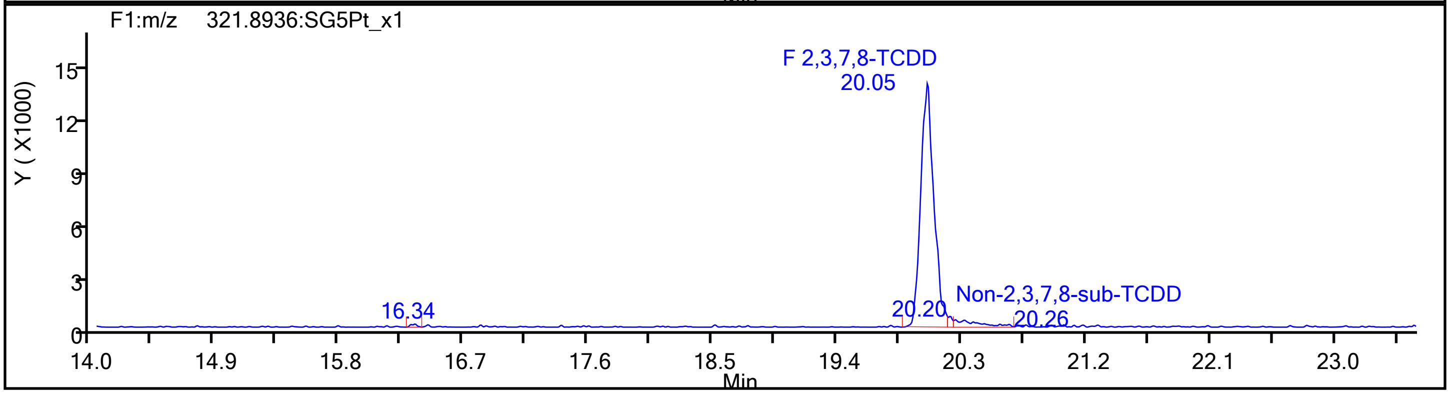

TCDD Standards

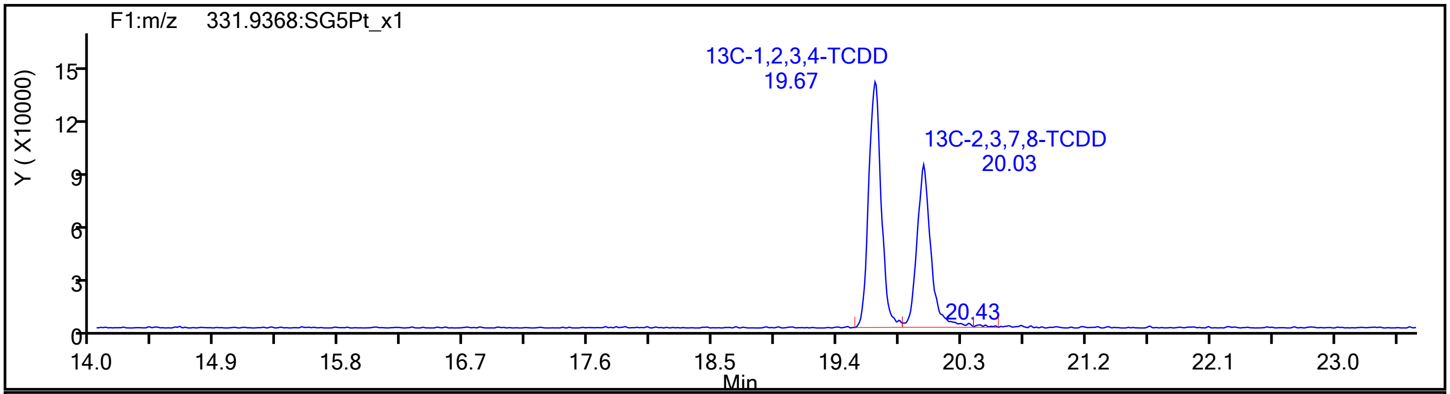

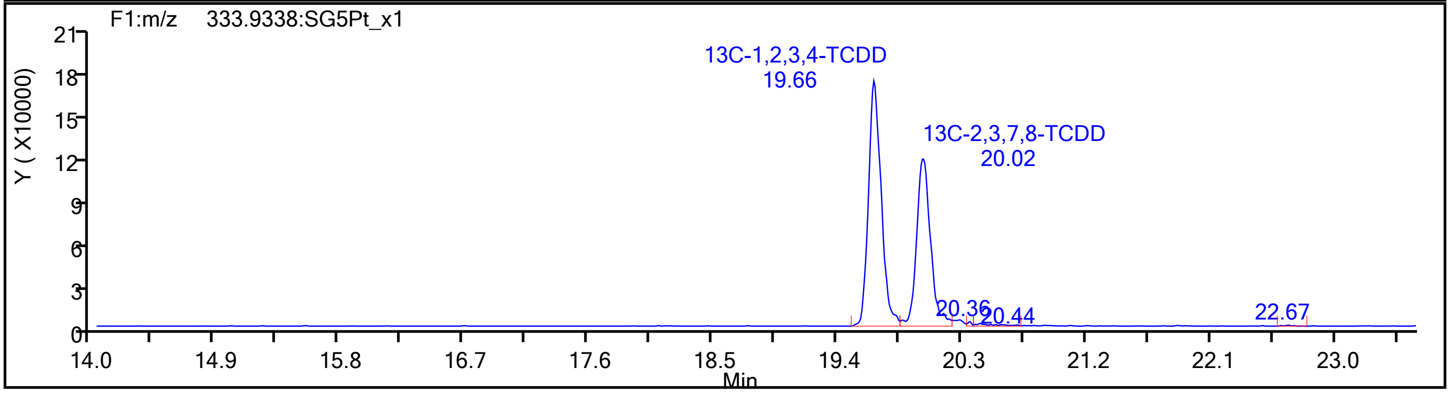

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

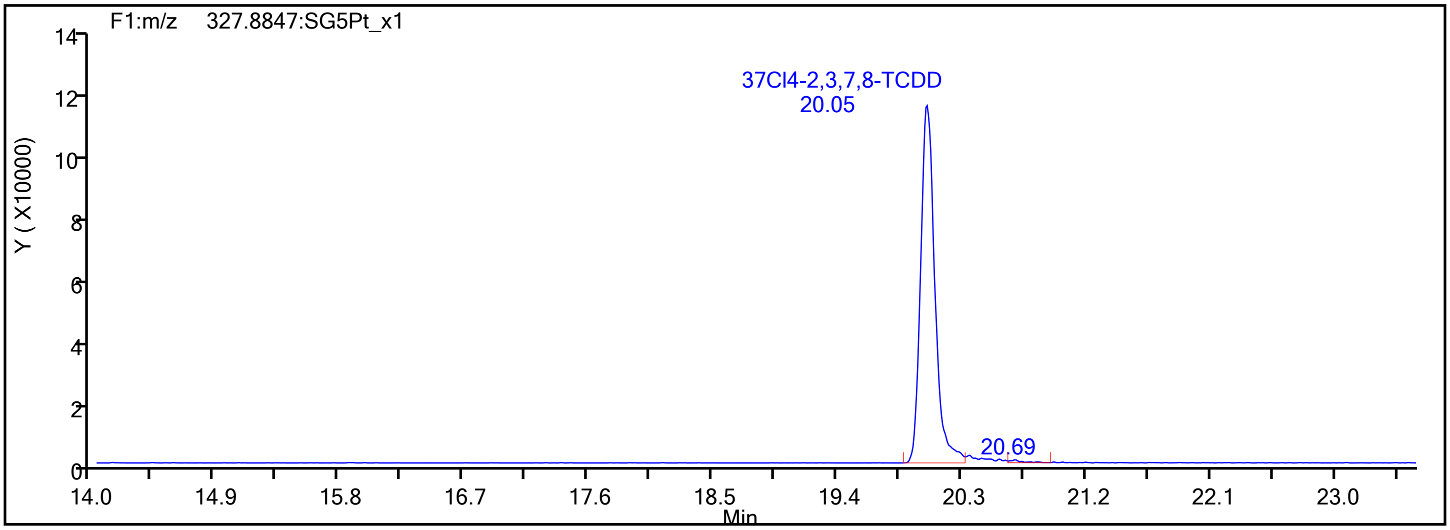

37Cl4-TCDD Standards

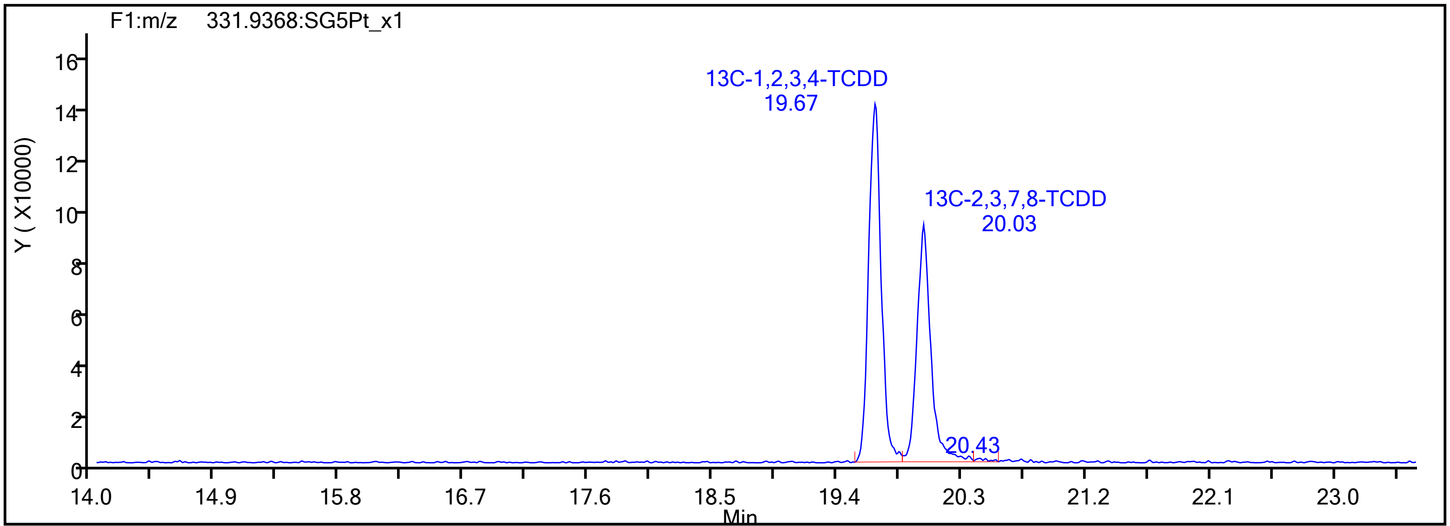

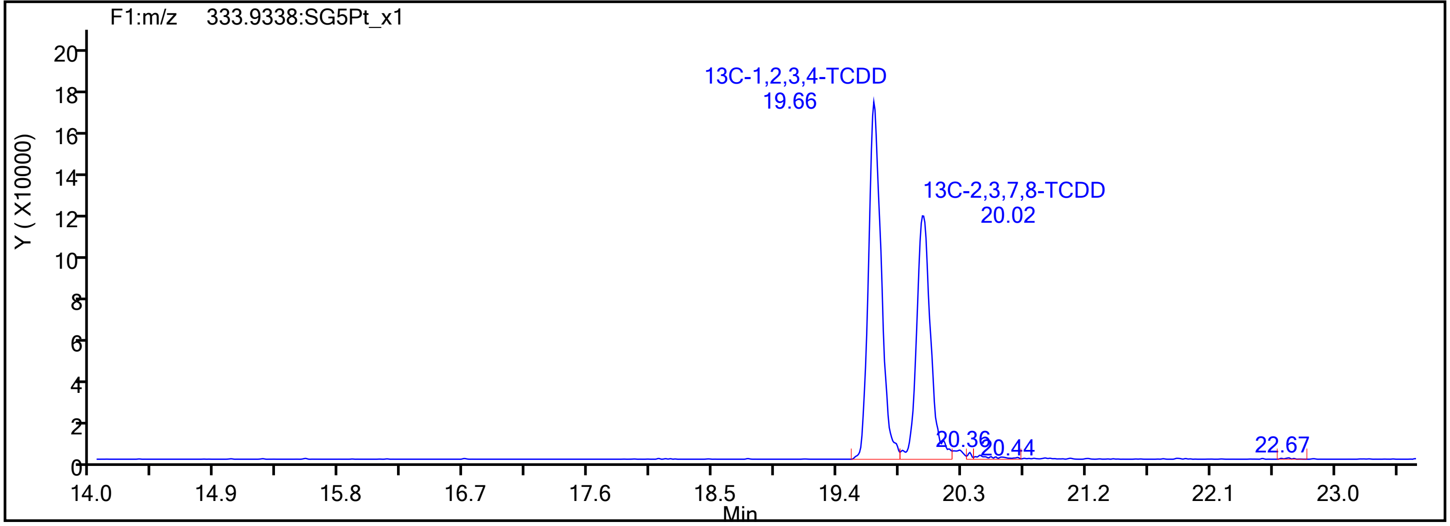

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

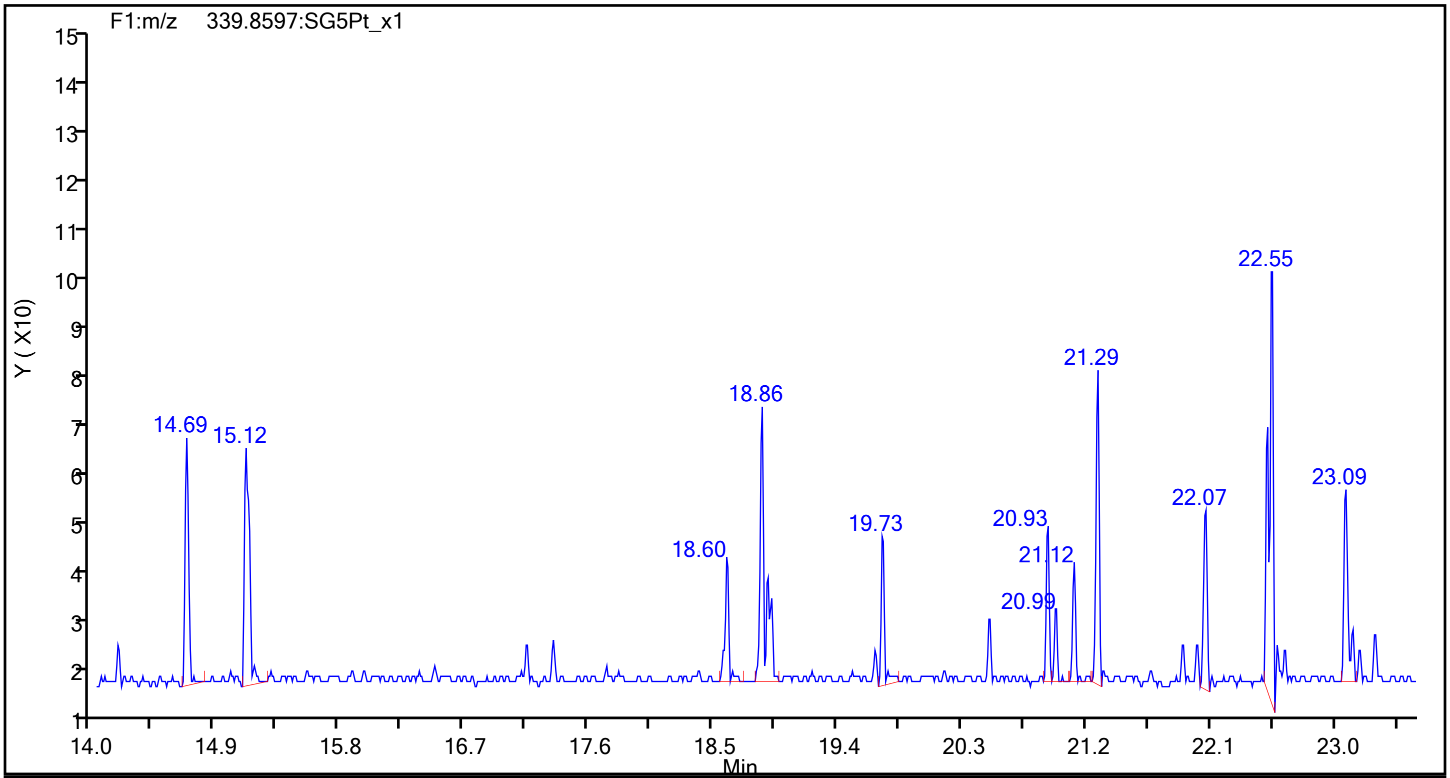

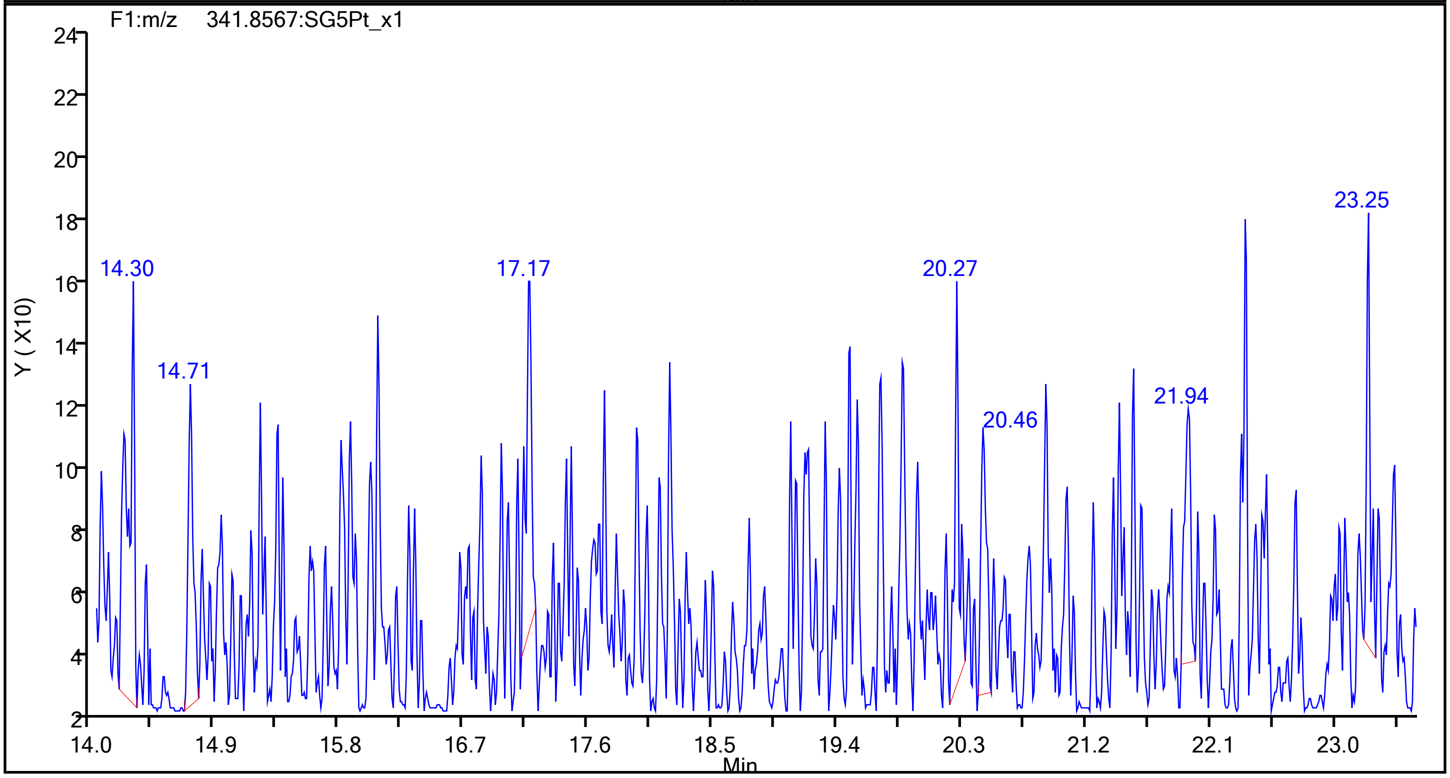

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

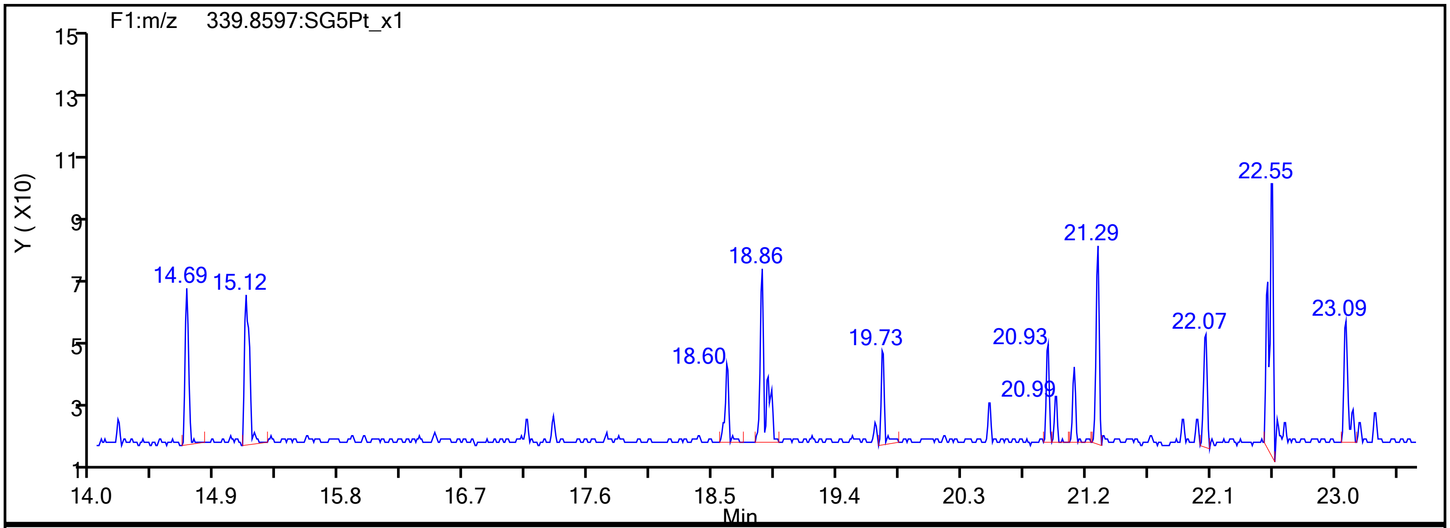

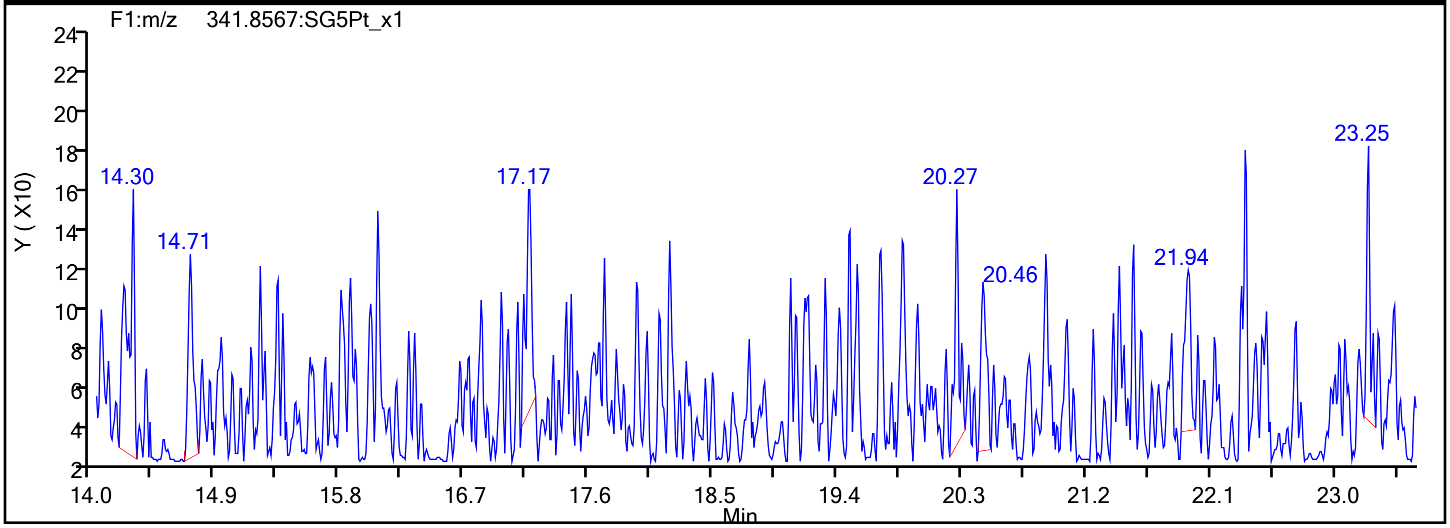

F1 PeCDFs Interference Mass

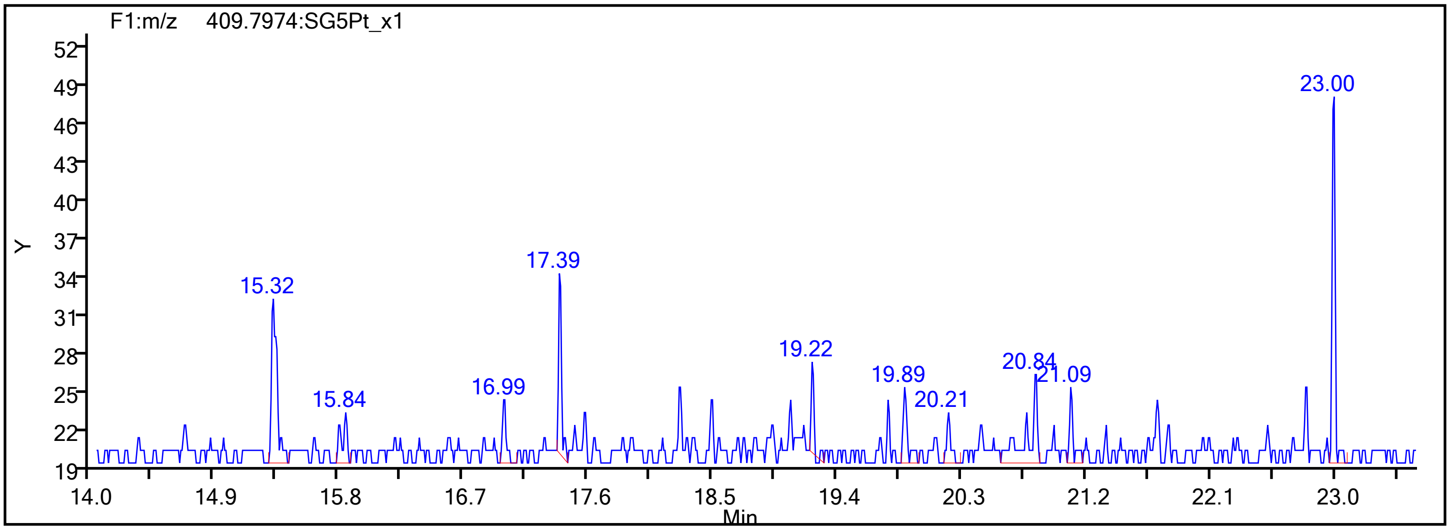

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

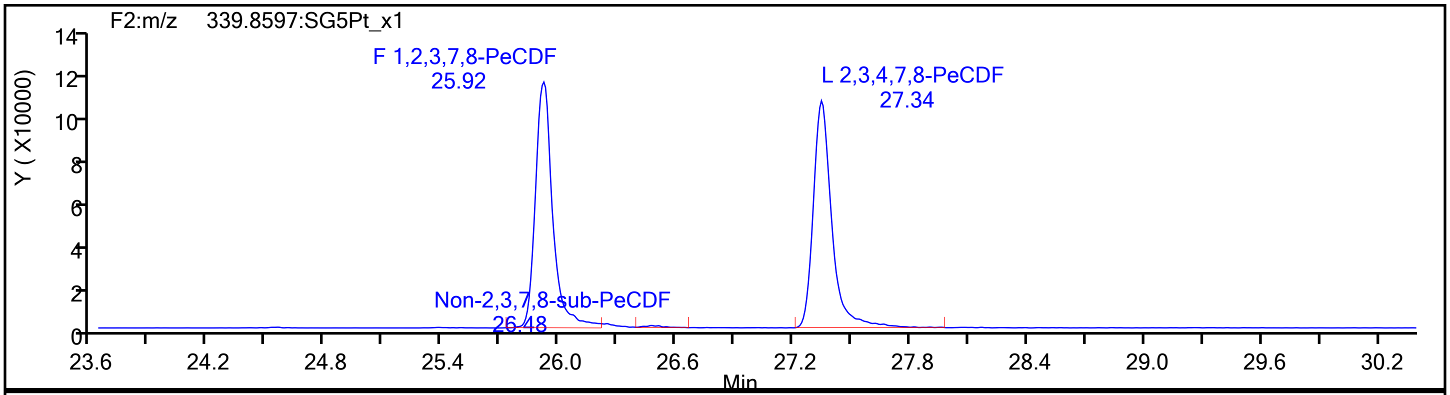

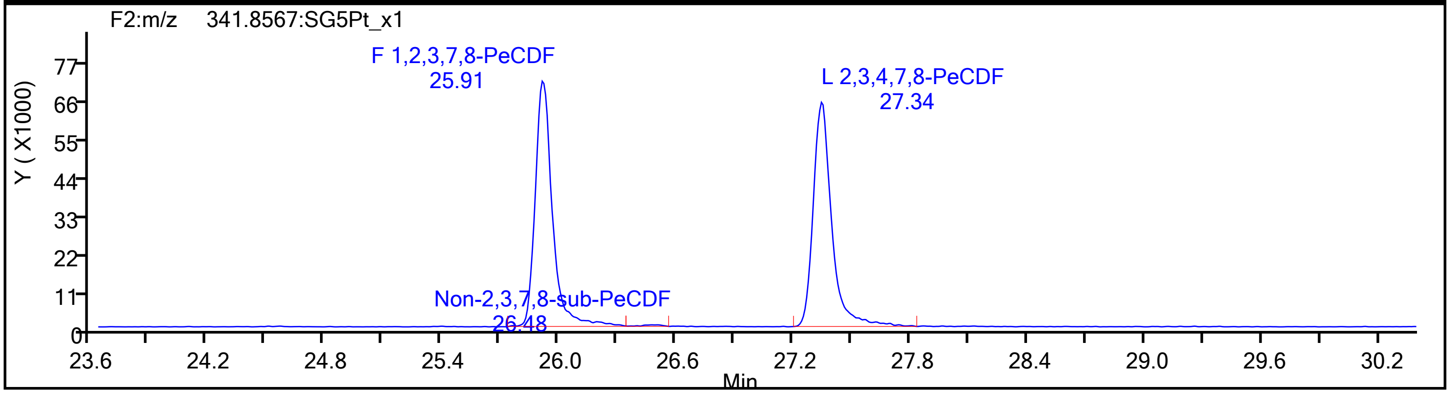

PeCDF Standards

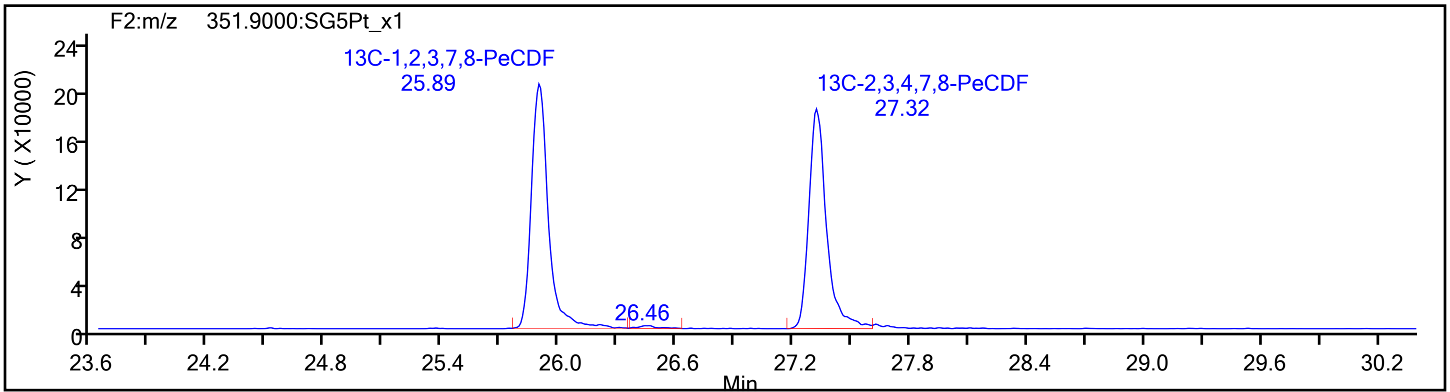

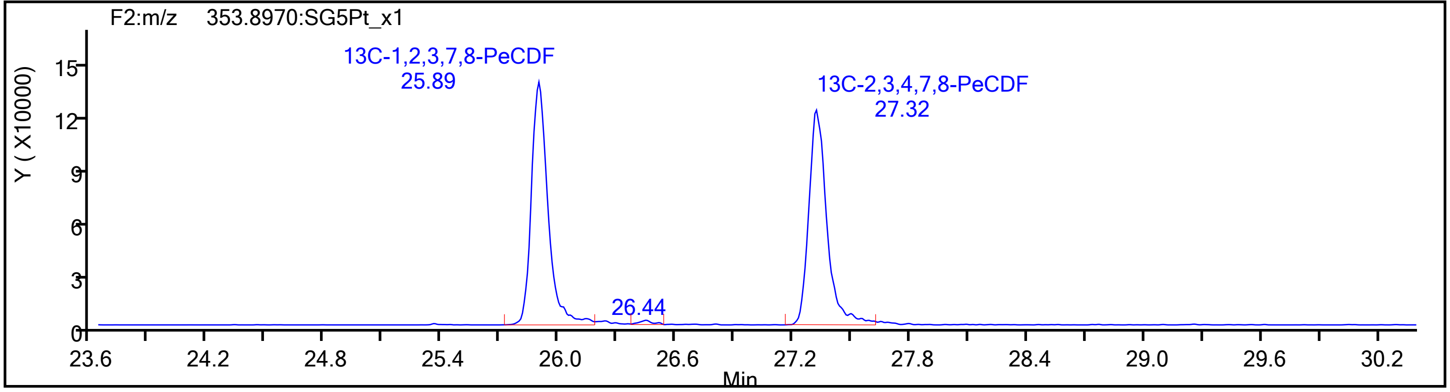

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

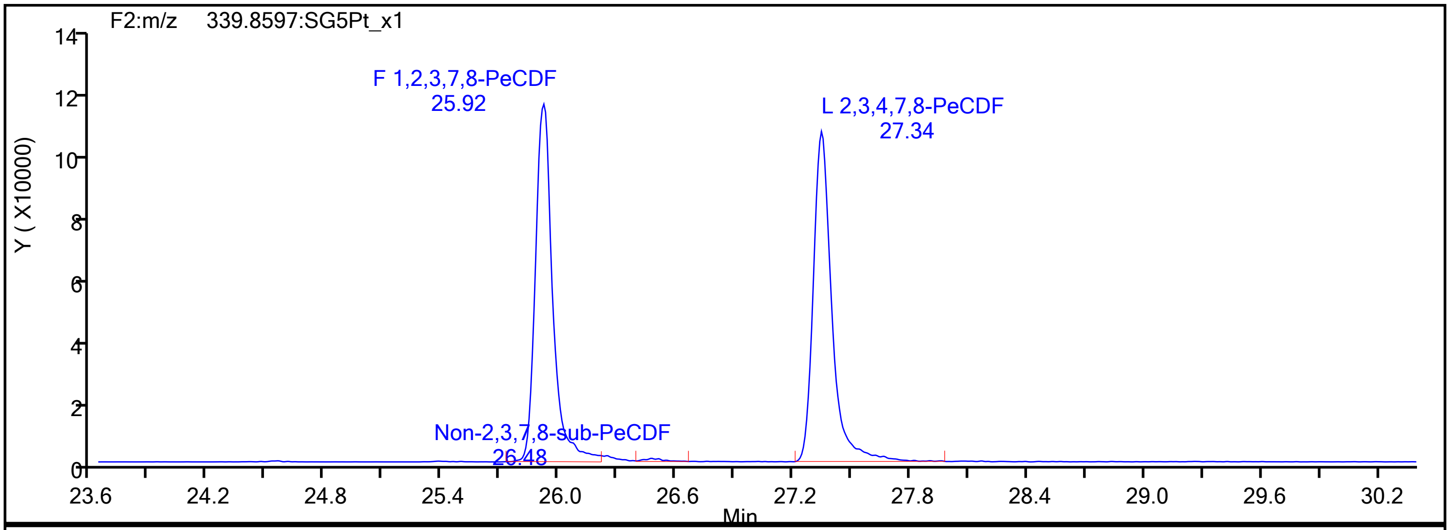

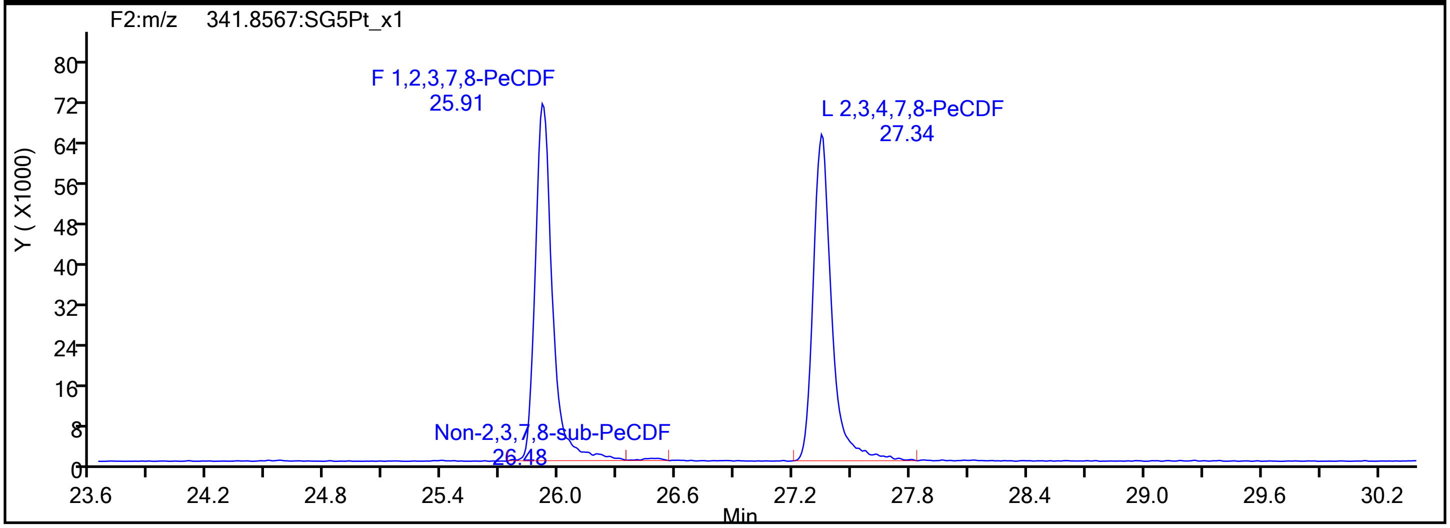

PeCDF Interference Mass

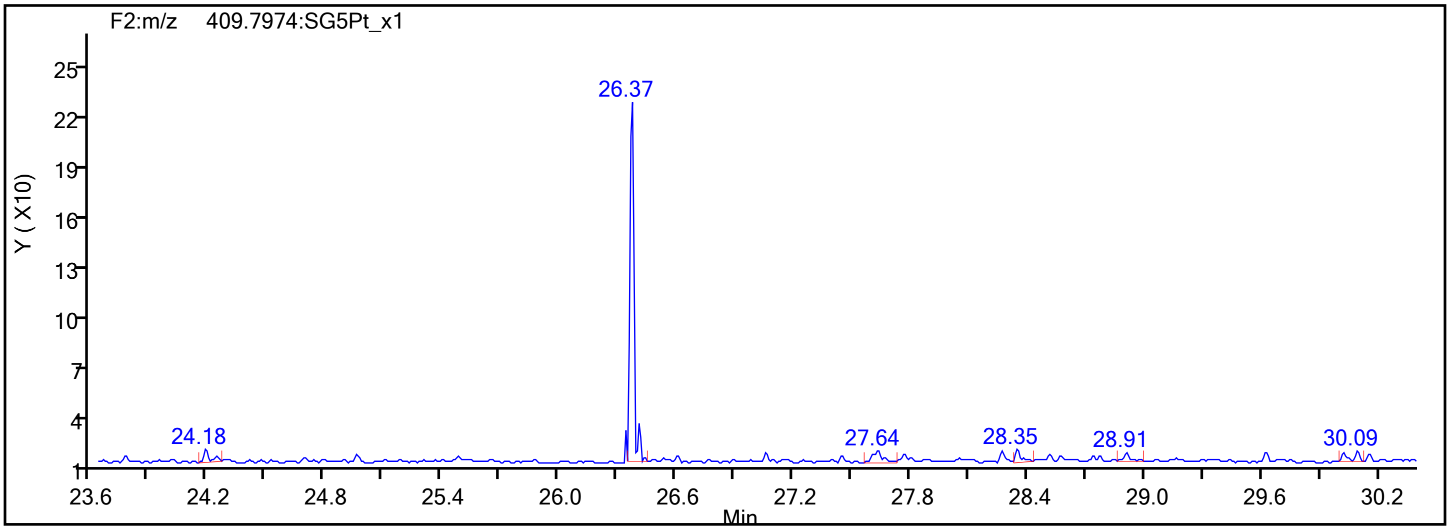

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d
Injection Date: 10-Oct-2020 09:21:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 420640 Sample Line#: 20
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

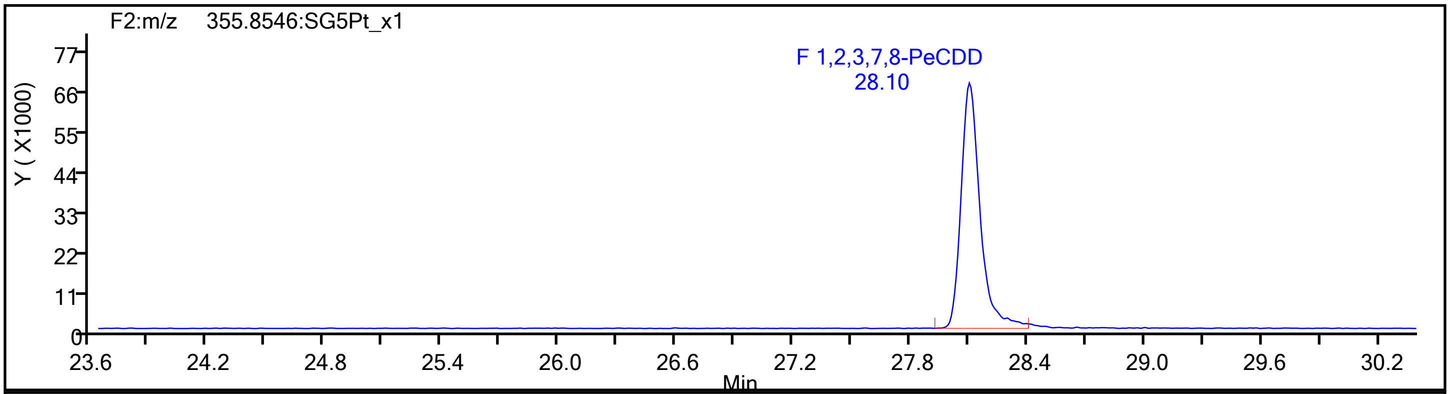

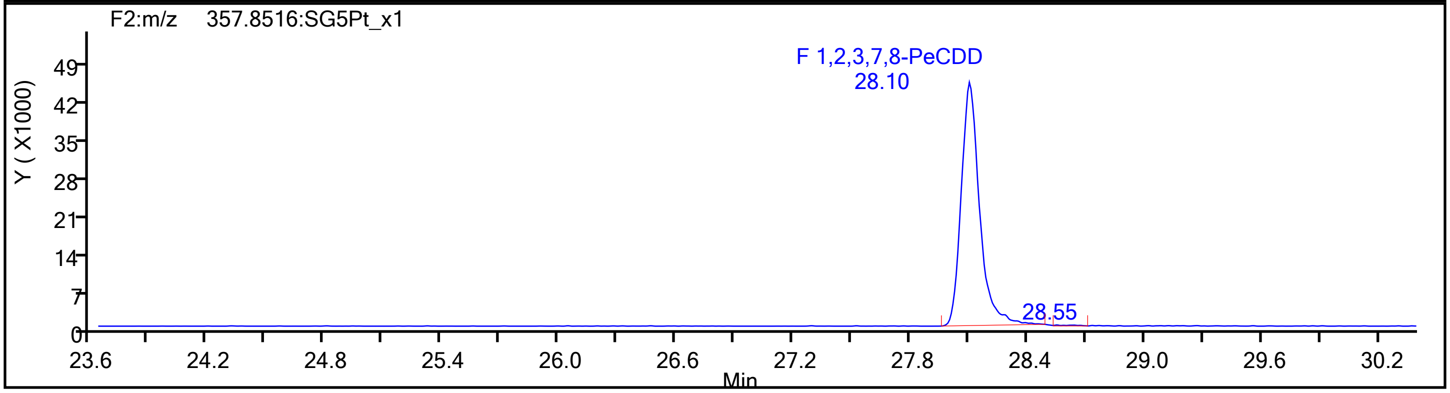

PeCDD Standards

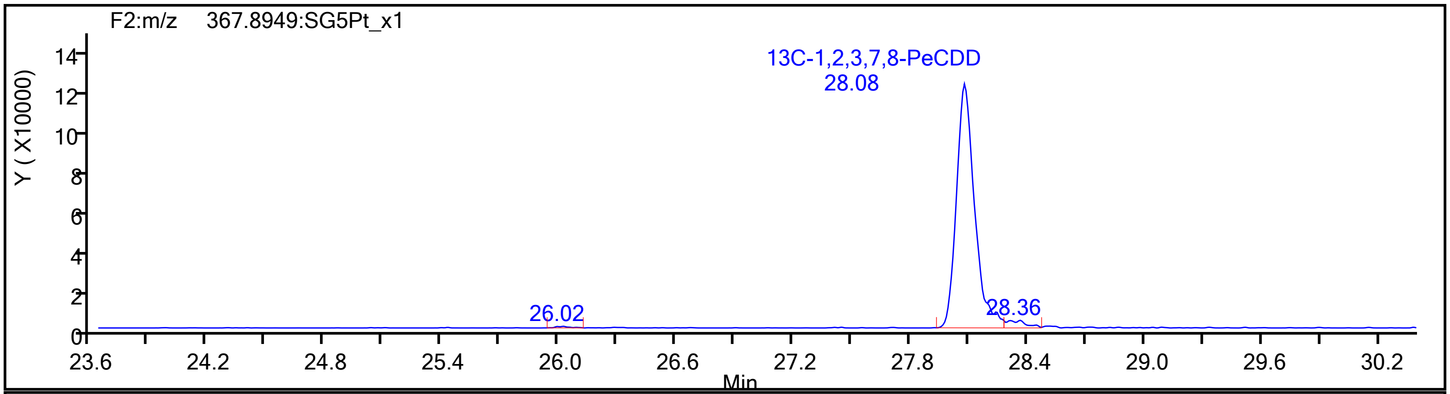

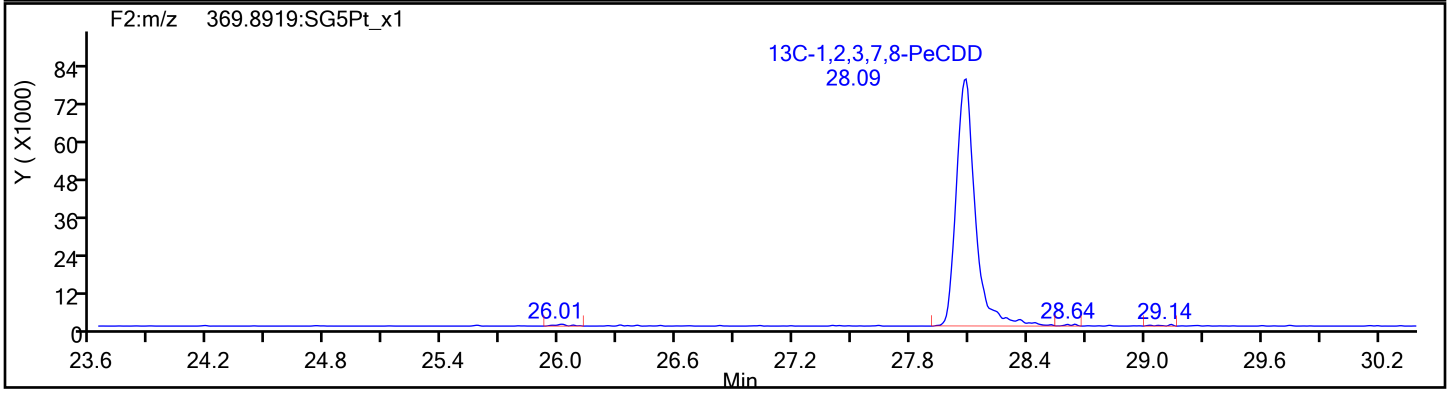

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

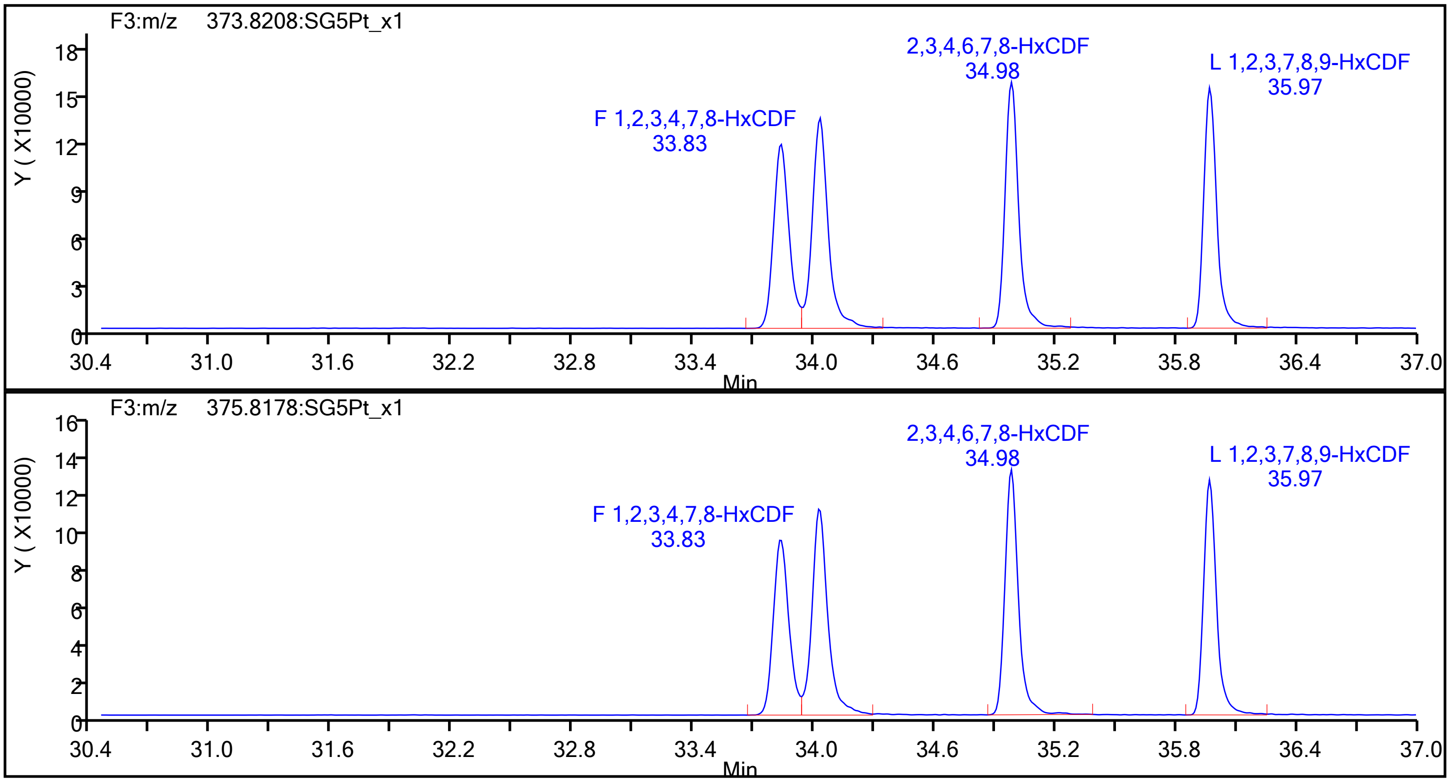

HxCDF Standards

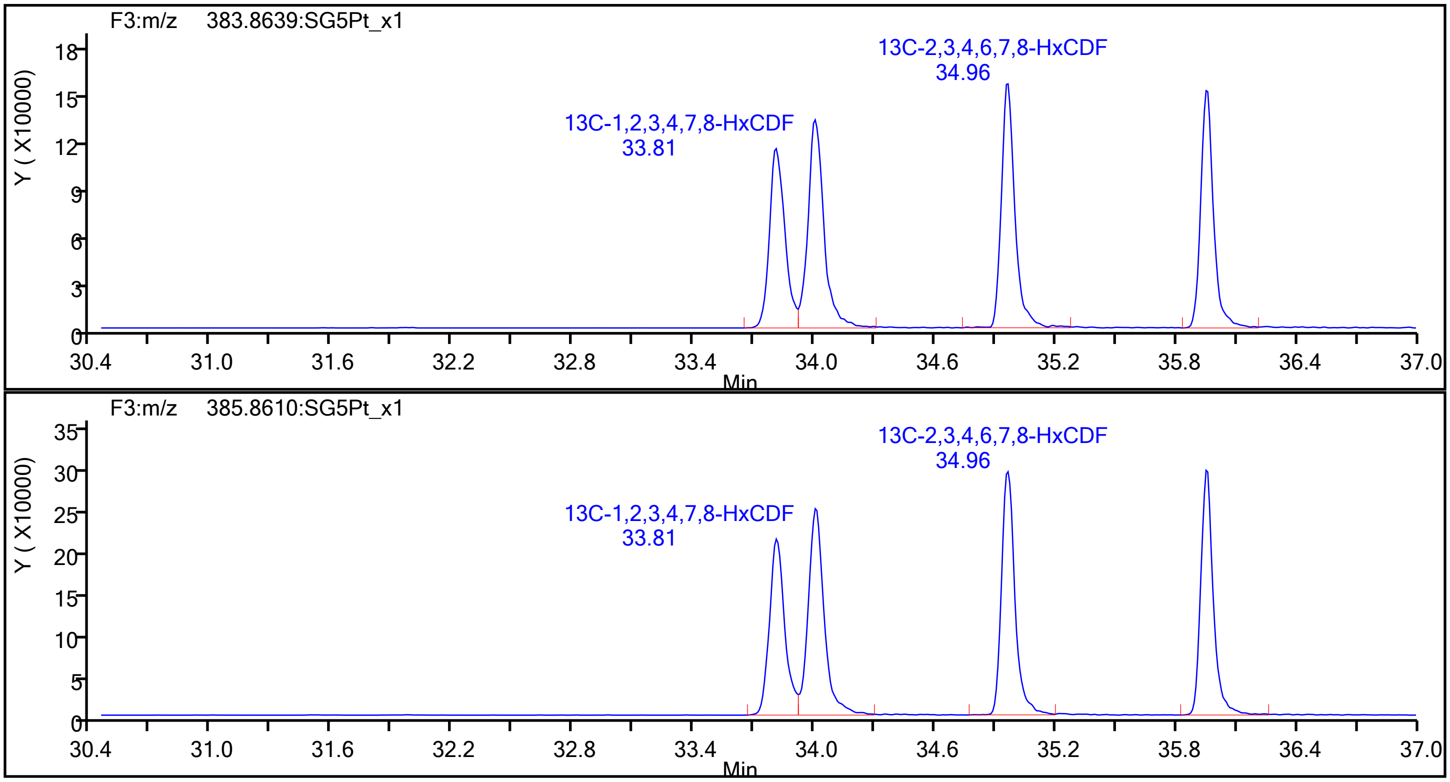

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d

Injection Date: 10-Oct-2020 09:21:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 20

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

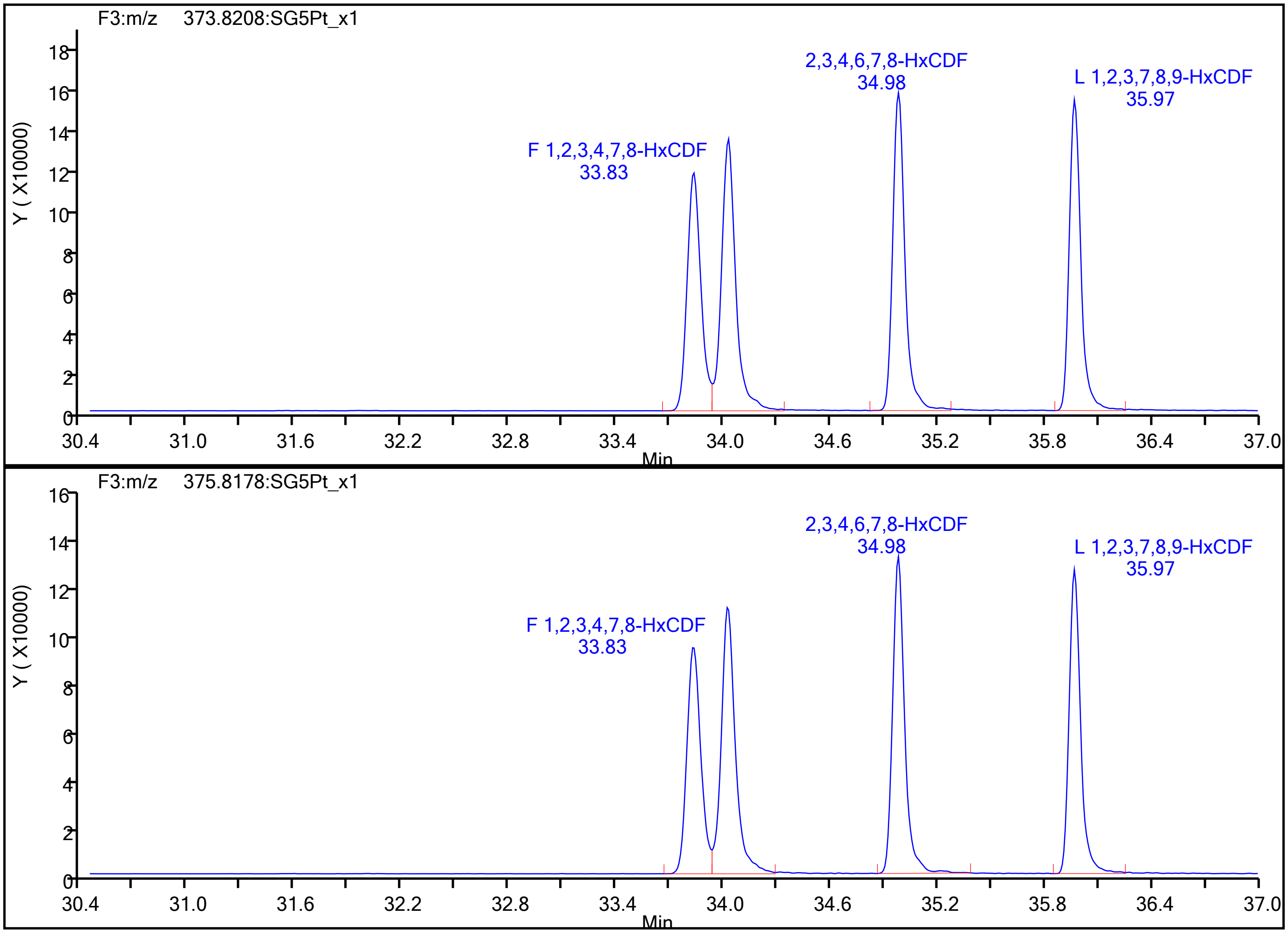

HxCDF Interference Mass

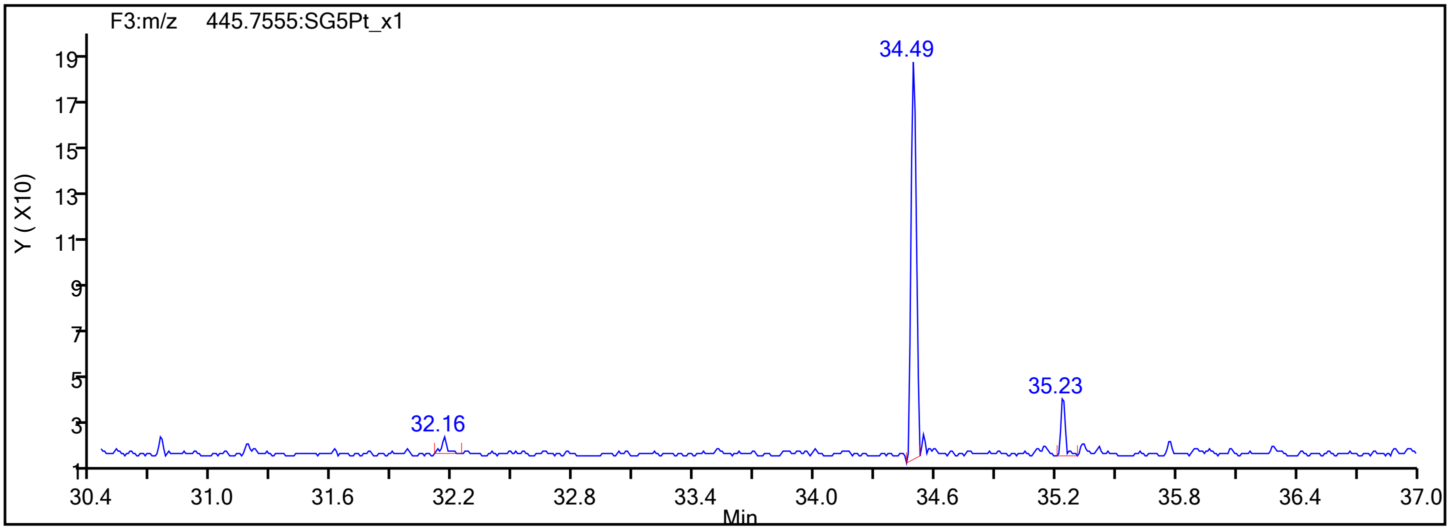

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d

Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

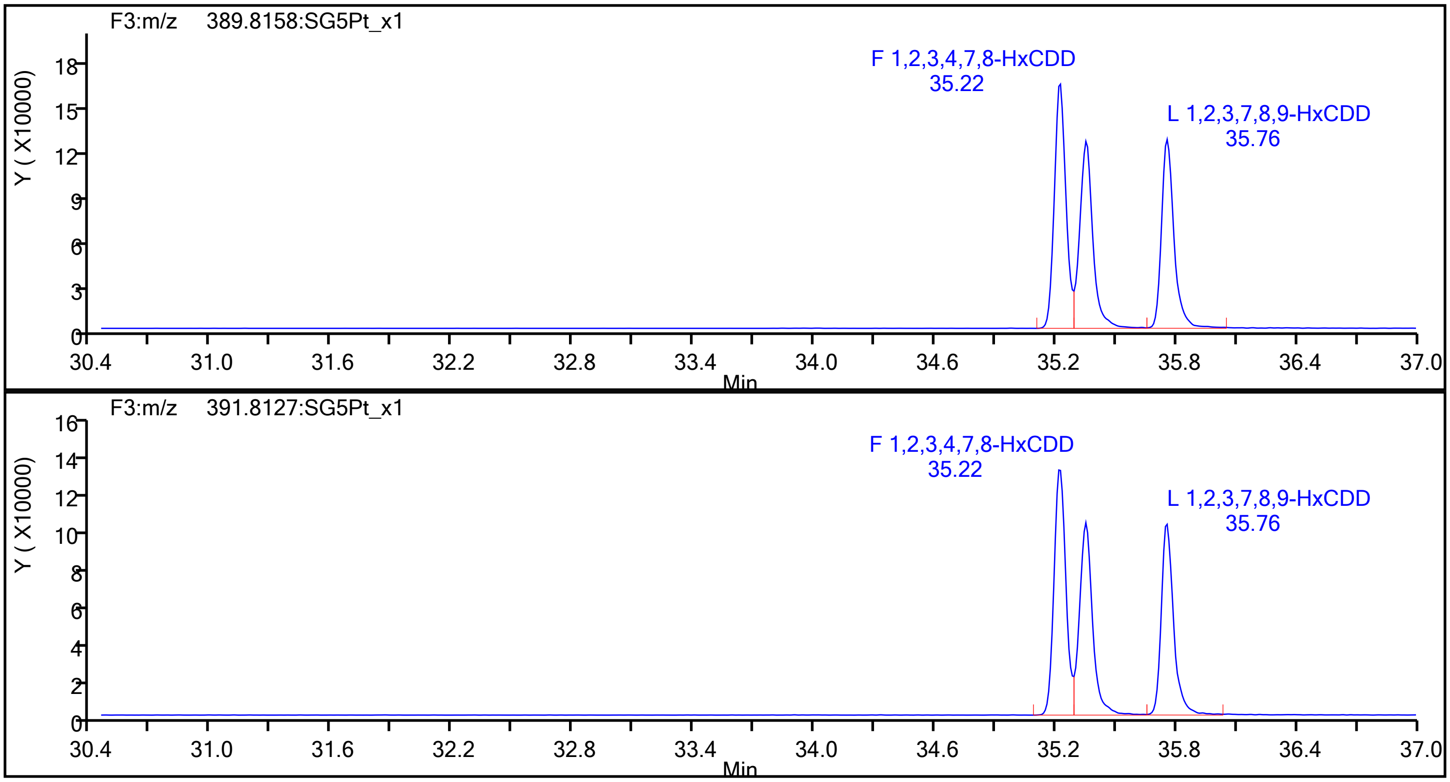

HxCDD Standards

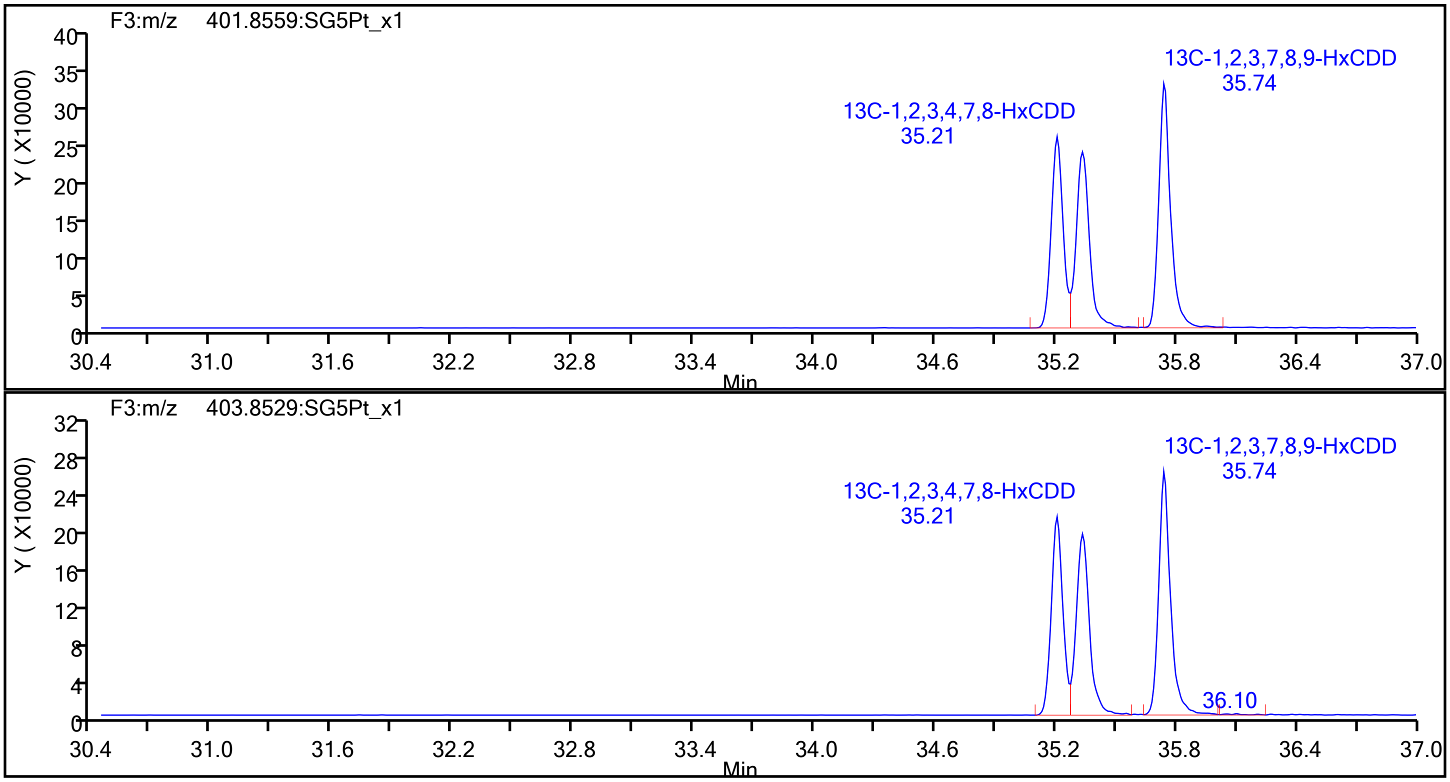

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

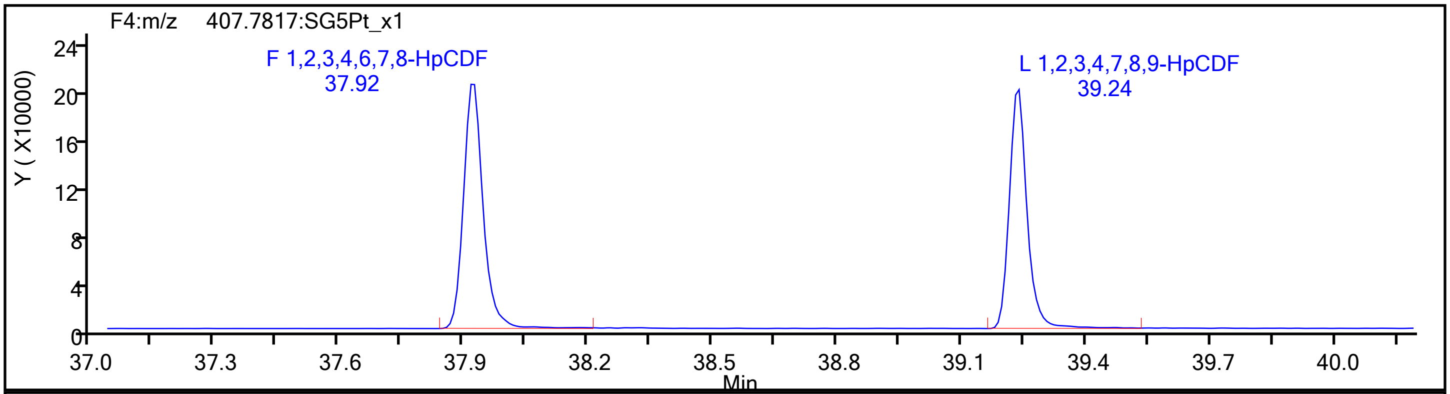

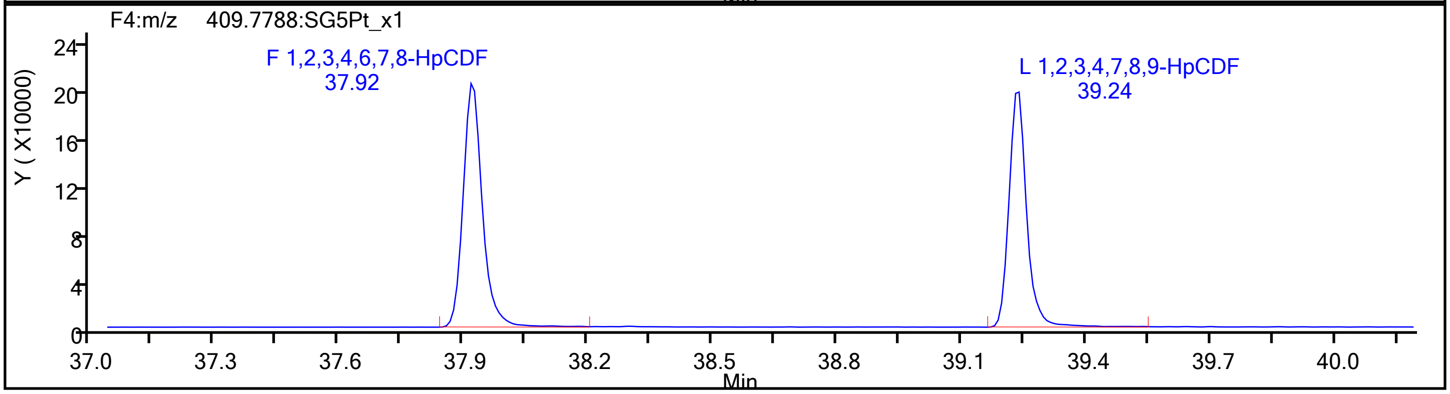

HpCDF Standards

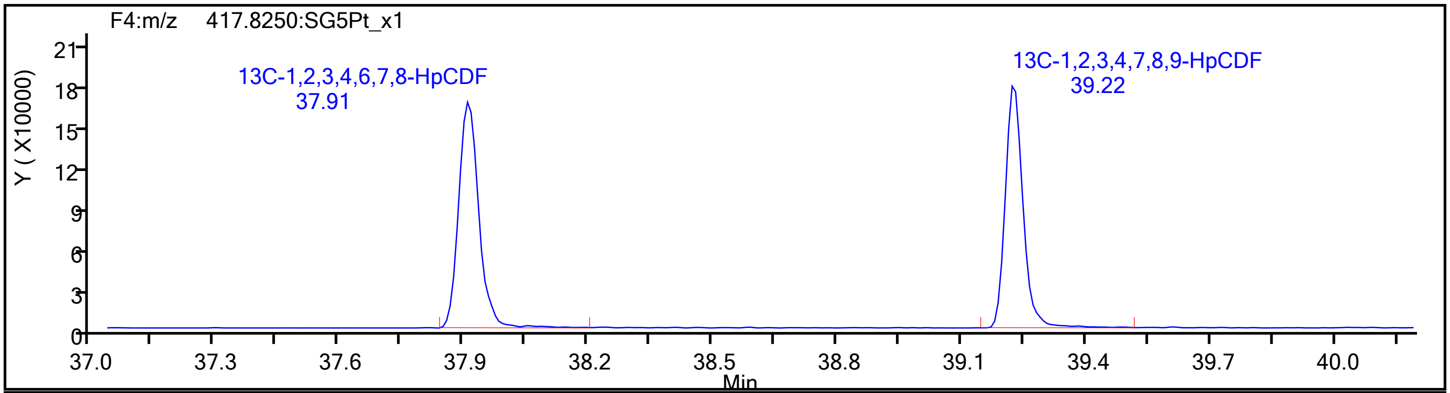

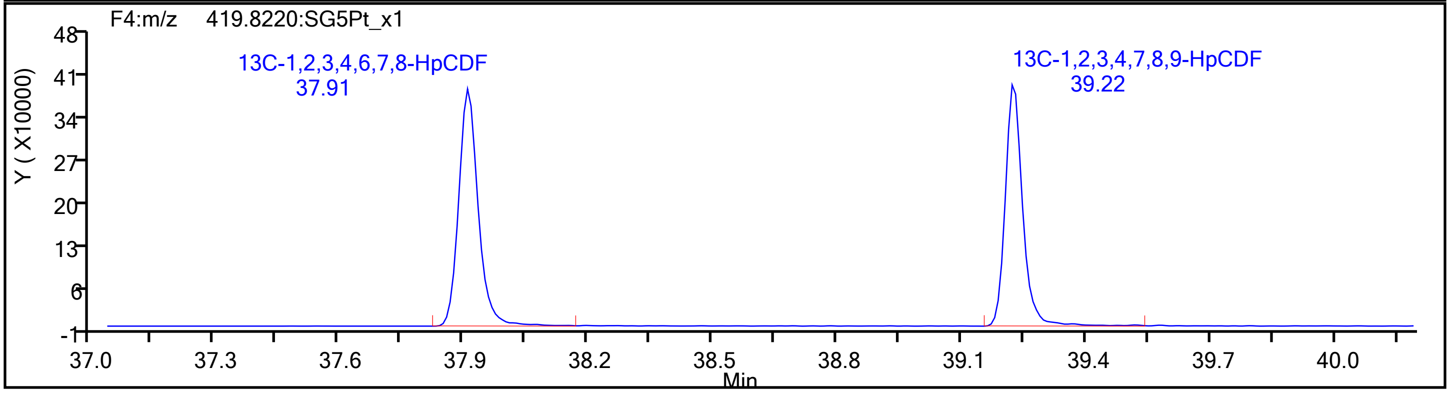

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d

Injection Date: 10-Oct-2020 09:21:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 20

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

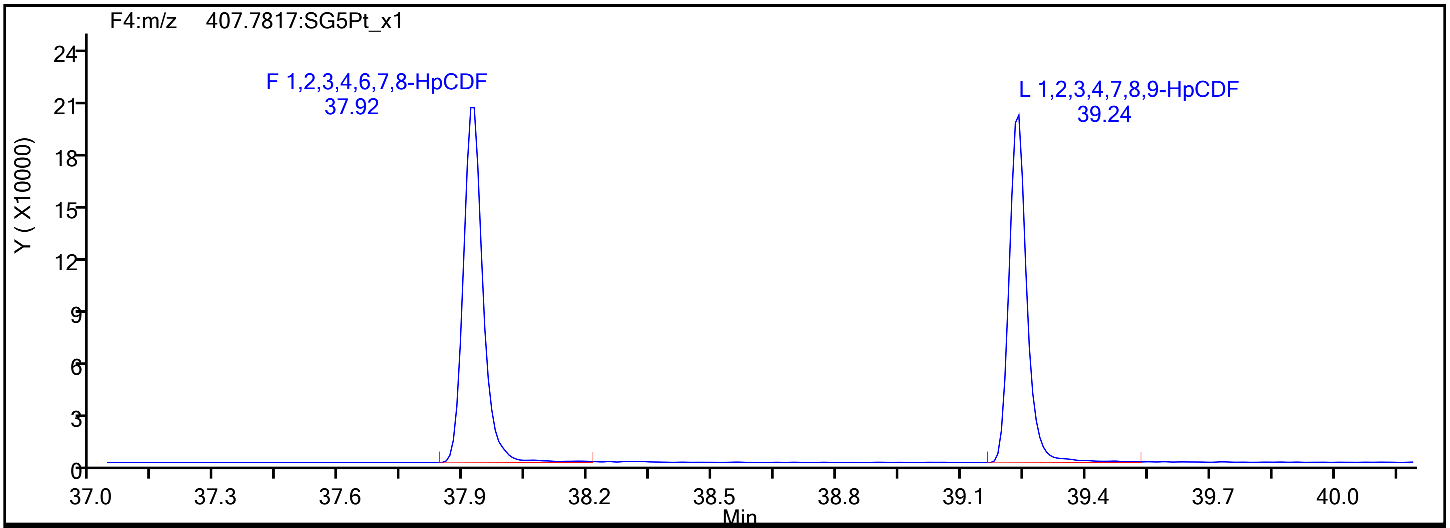

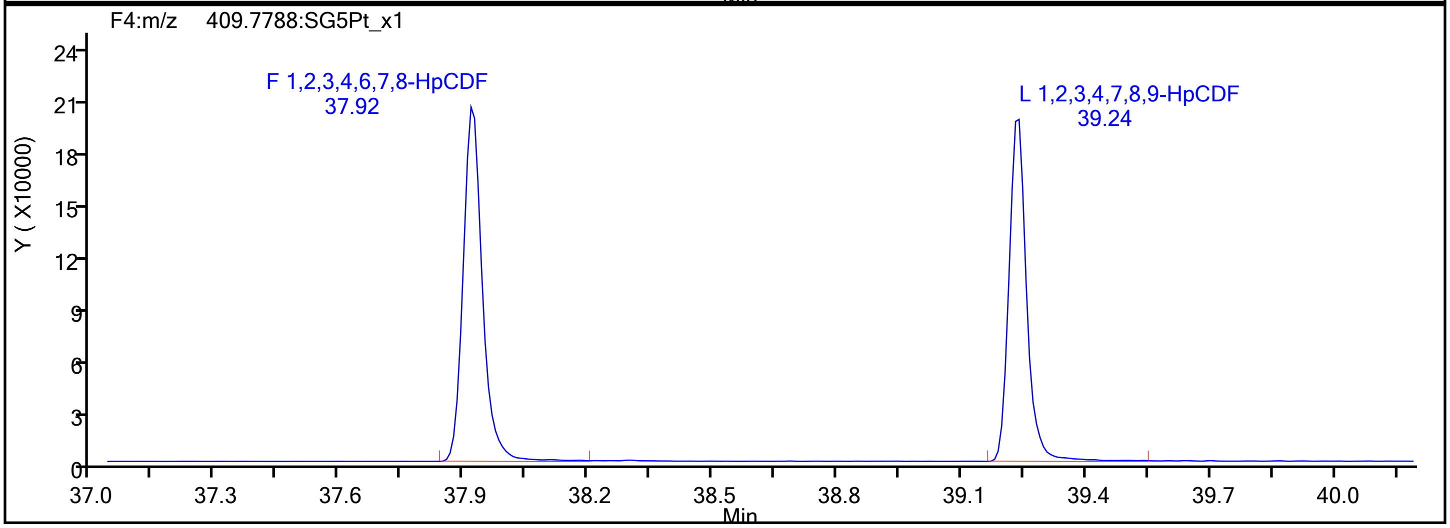

HpCDF Interference Mass

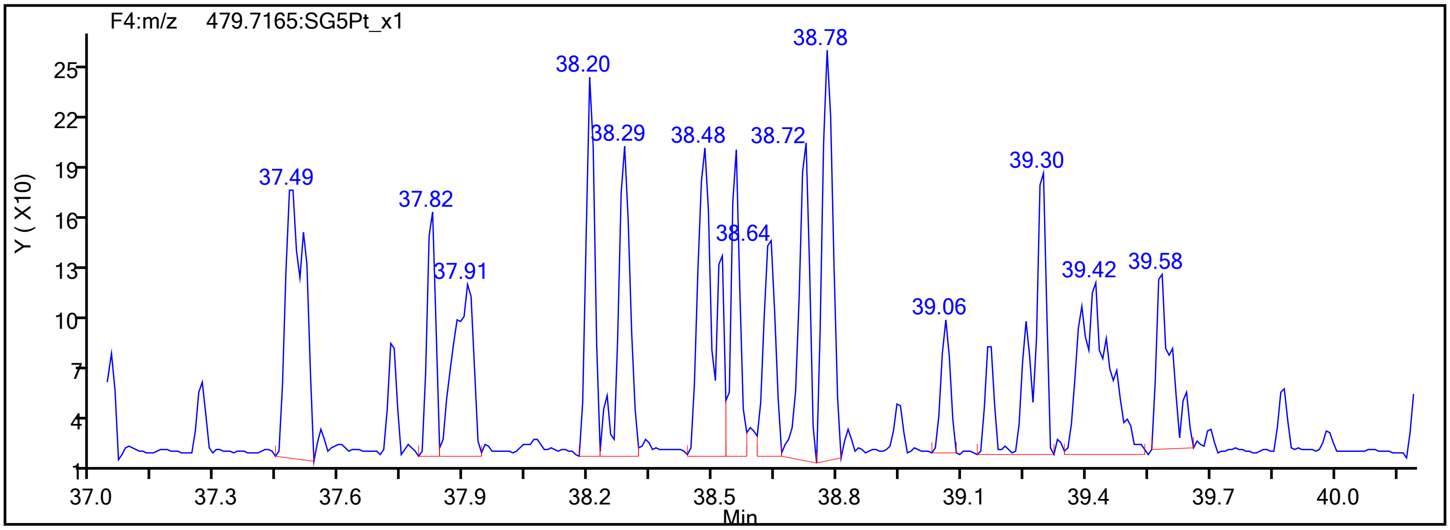

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

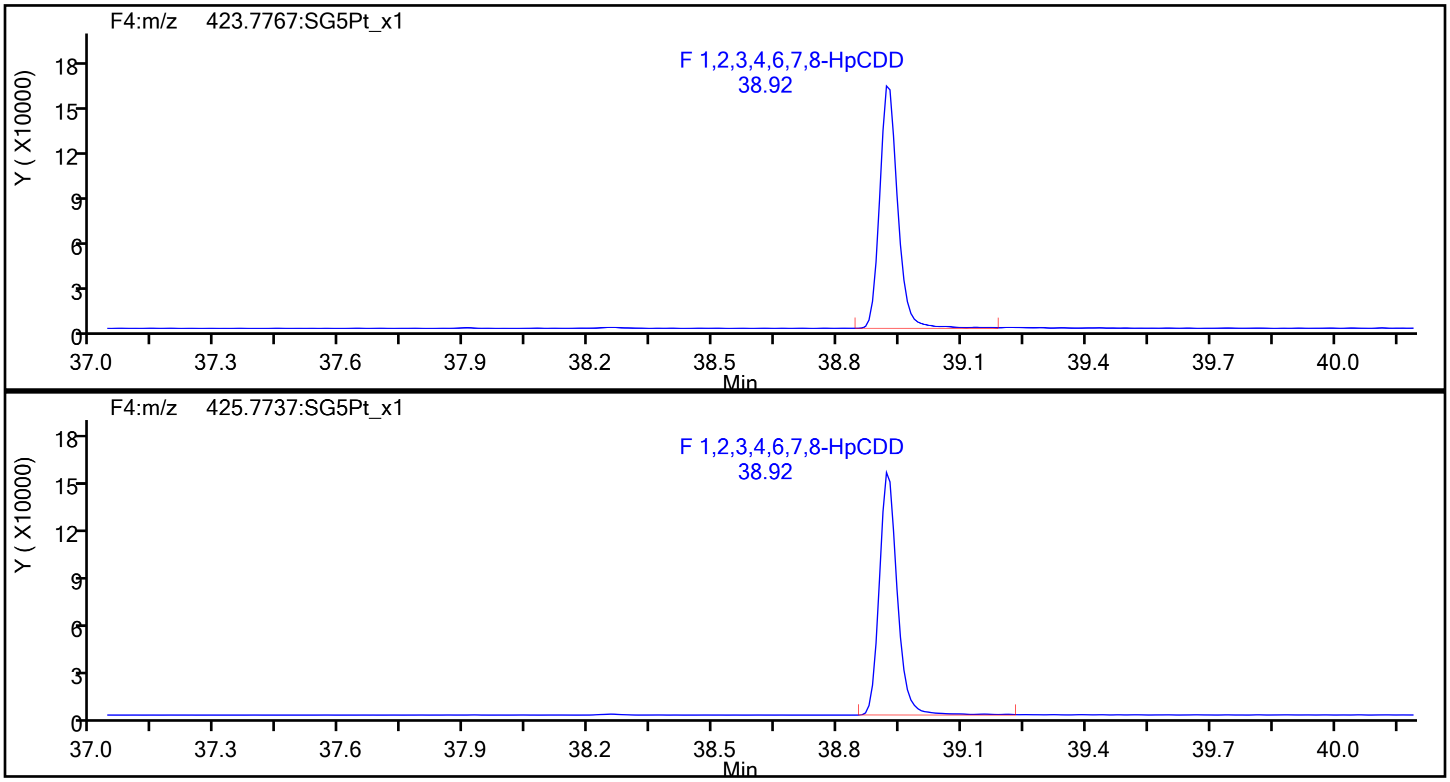

HpCDD Standards

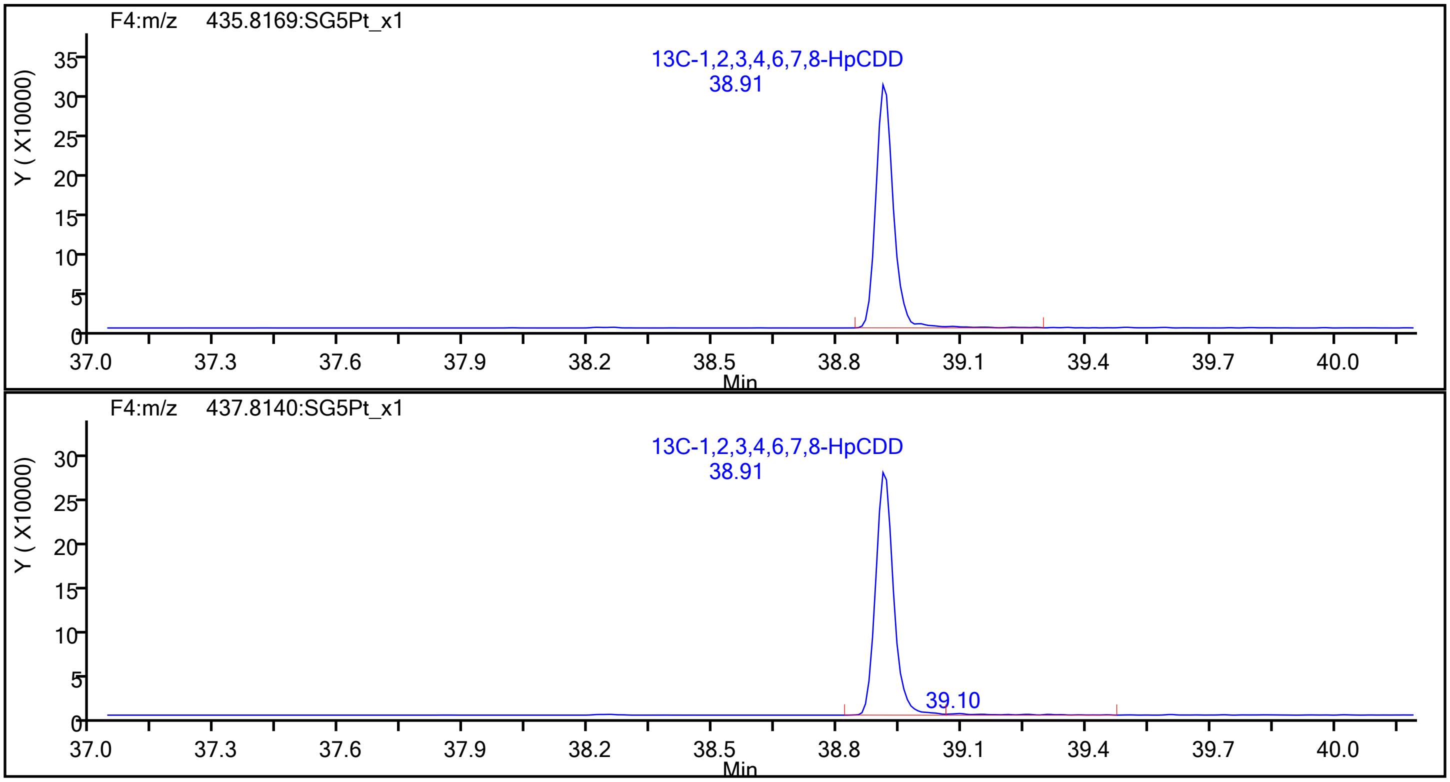

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

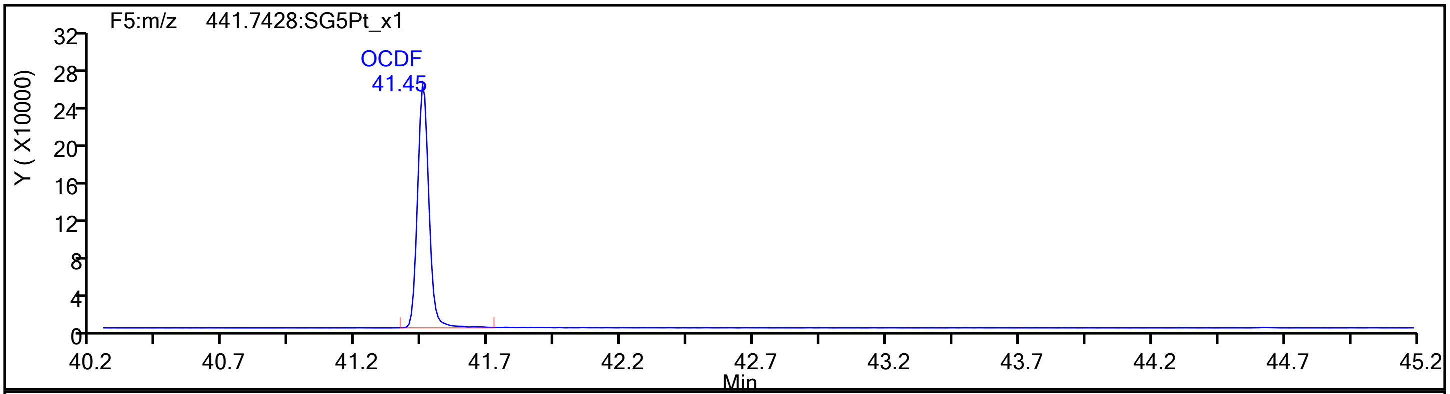

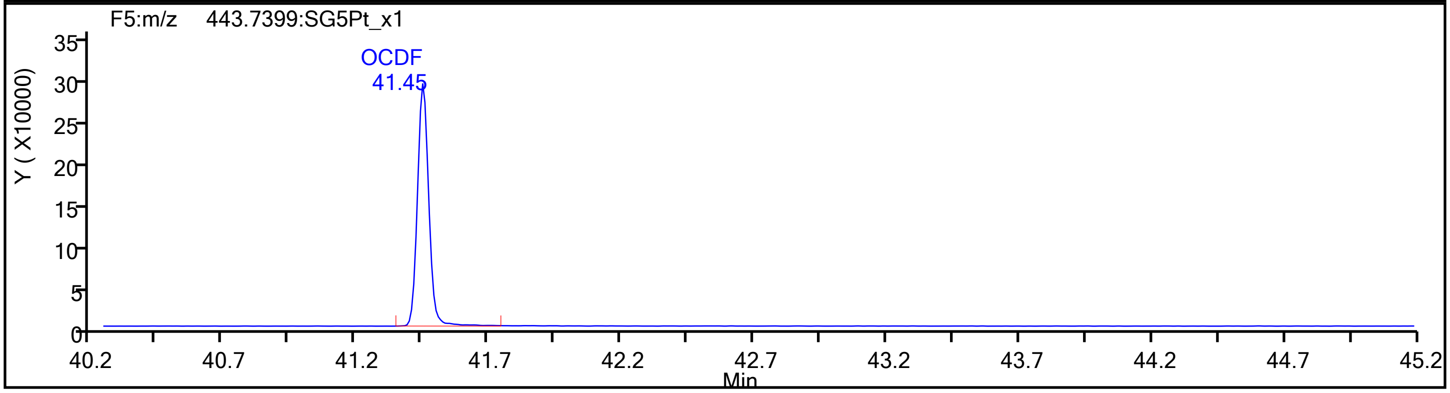

OCDF Standards

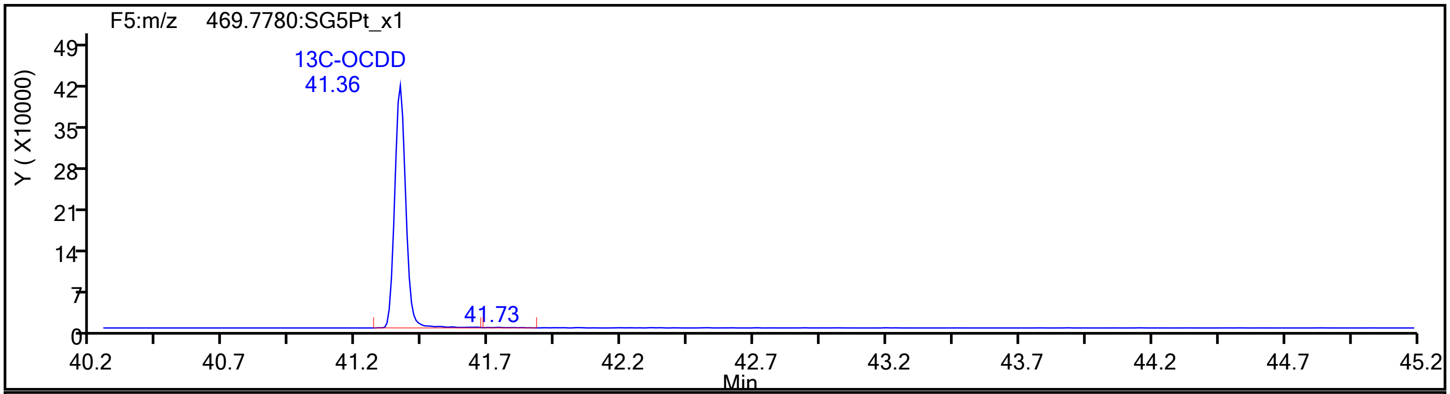

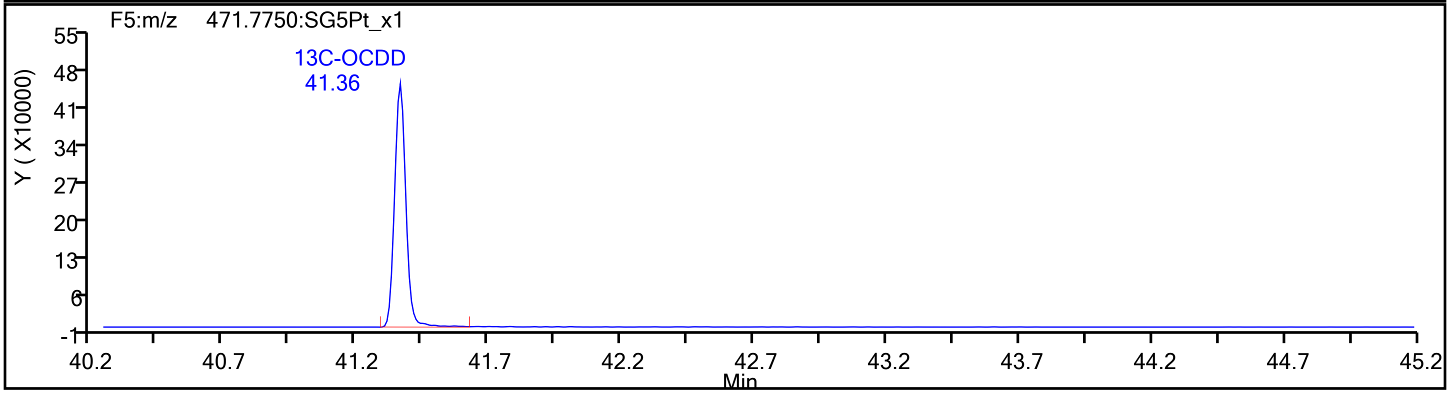

Report Date: 12-Oct-2020 09:13:01 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

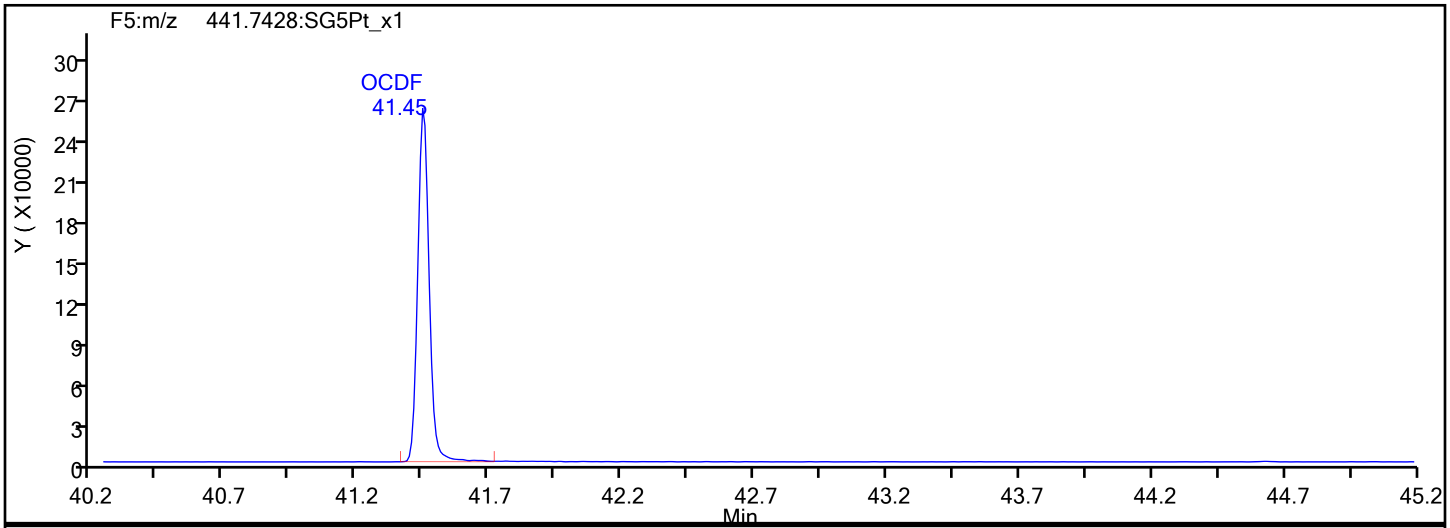

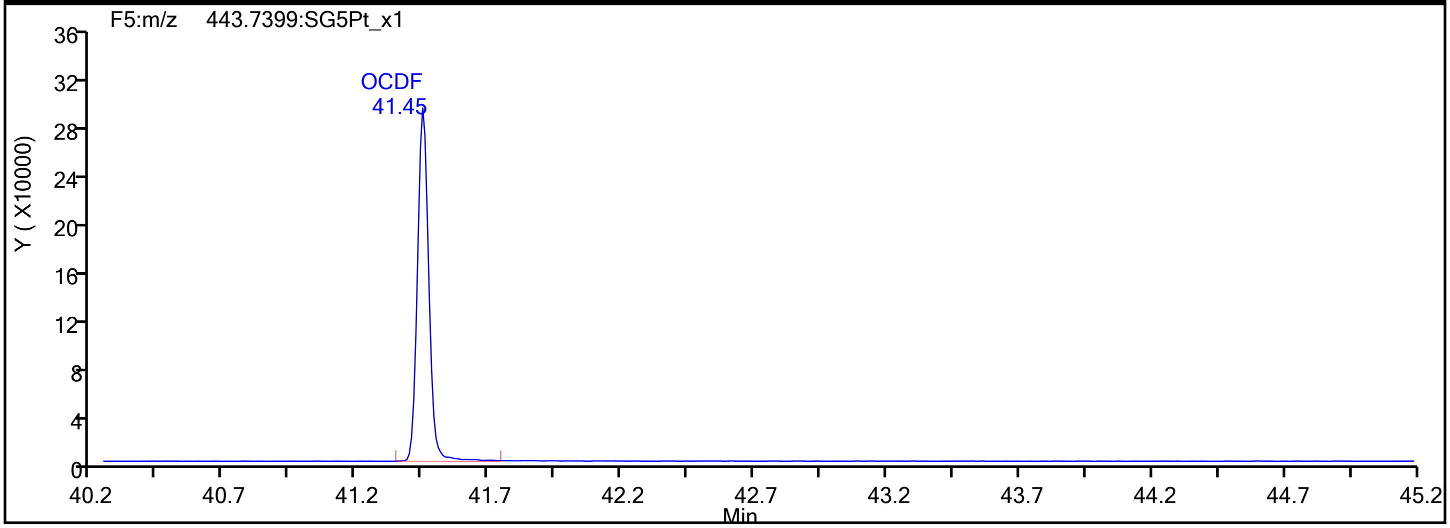

OCDF Interference Mass

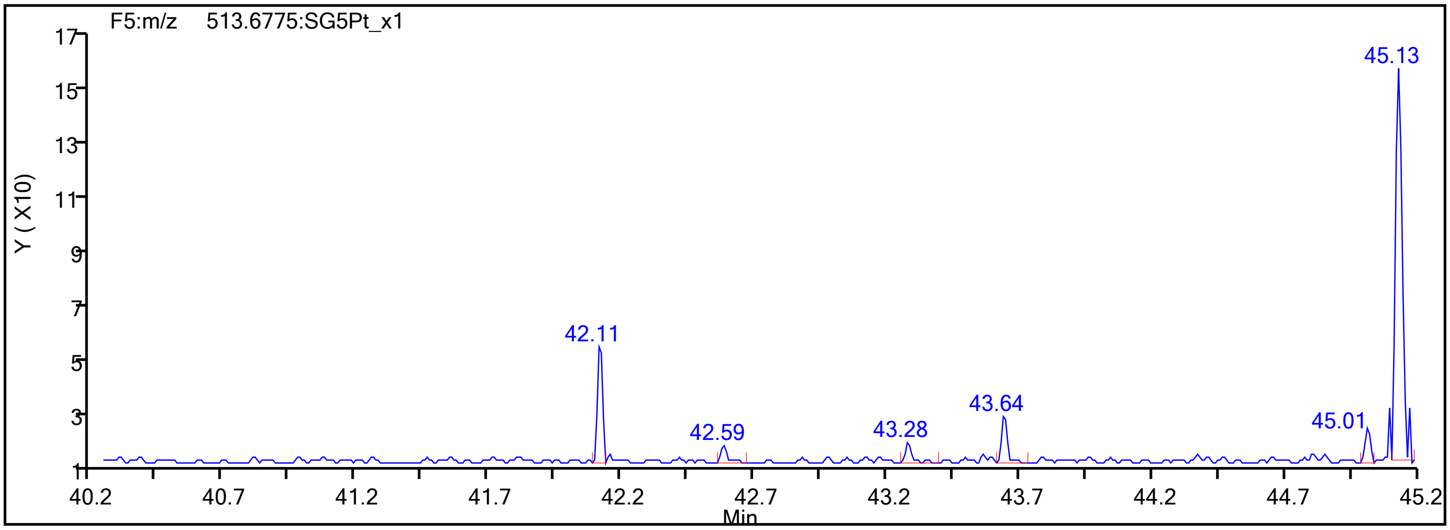

Report Date: 12-Oct-2020 09:13:02 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
Injection Date:	10-Oct-2020 09:21:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	420640	Sample Line#:	20
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

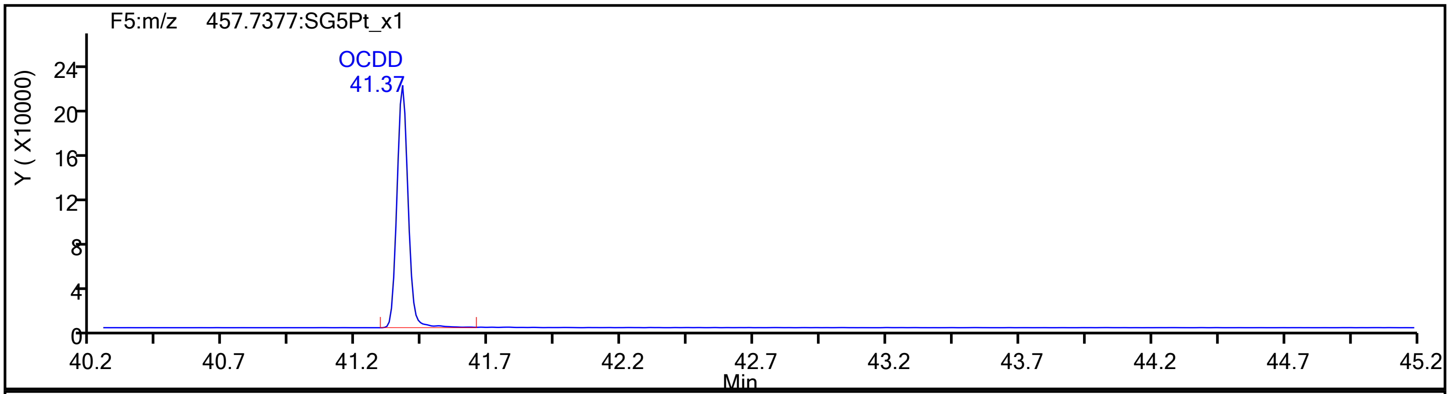

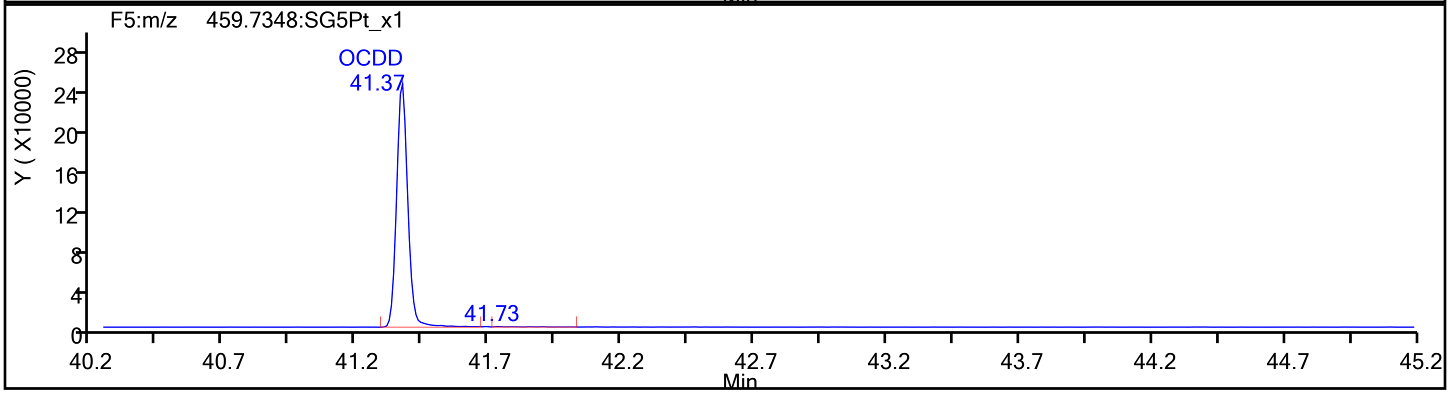

OCDD Standards

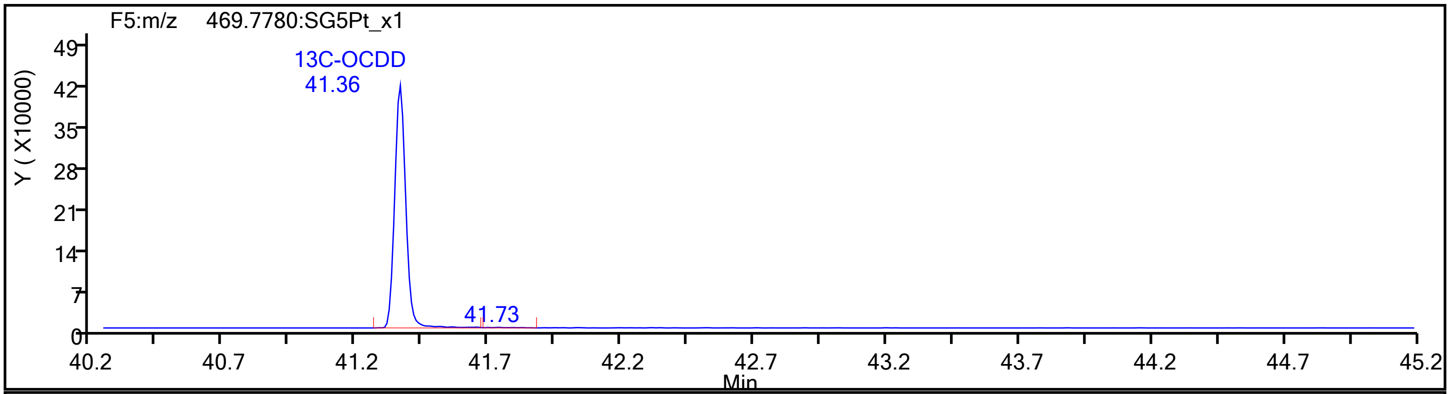

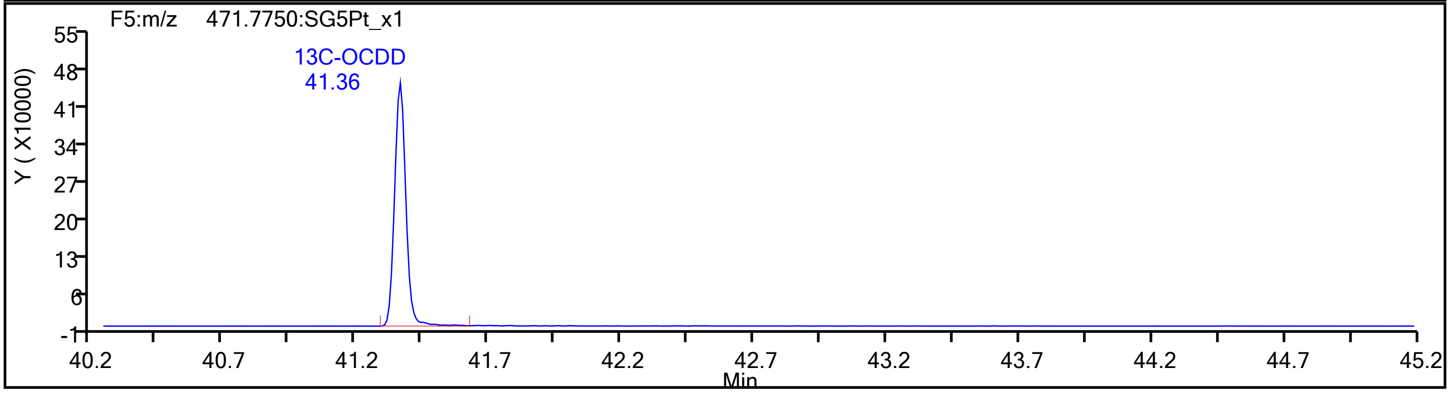

Report Date: 12-Oct-2020 09:13:02 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d

Injection Date: 10-Oct-2020 09:21:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 420640

Sample Line#: 20

Column Type: DB-5

Column Dia: 0.32 mm

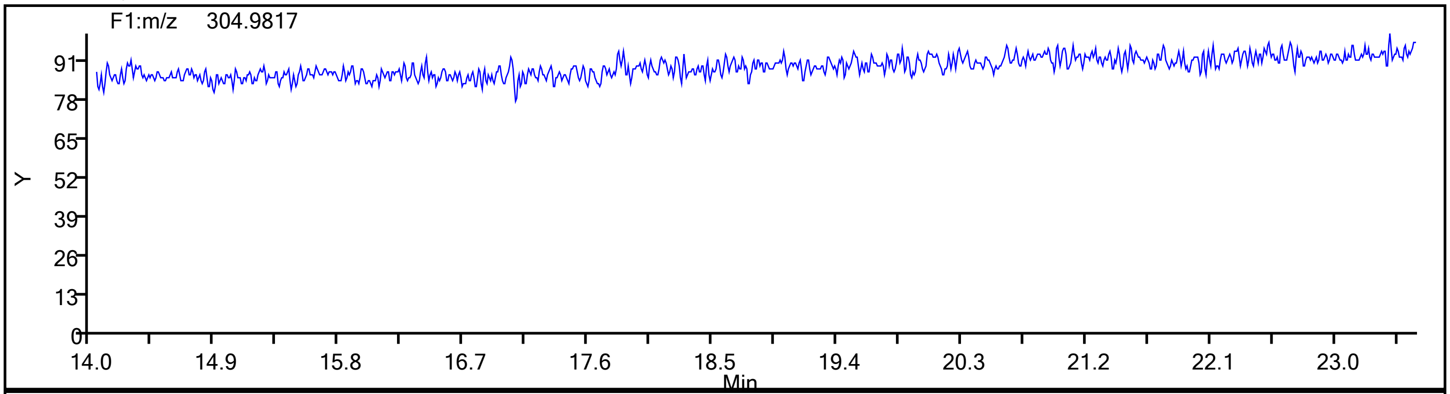

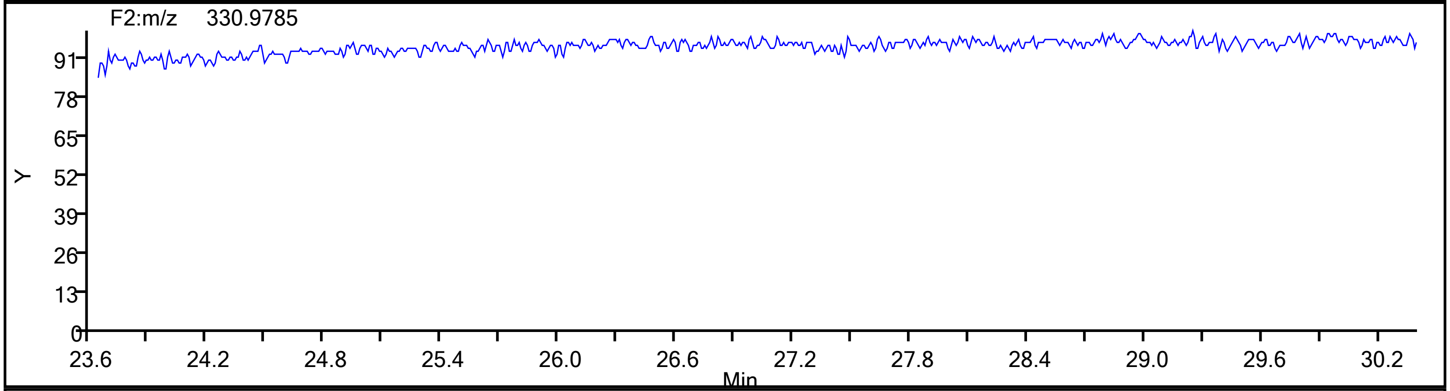

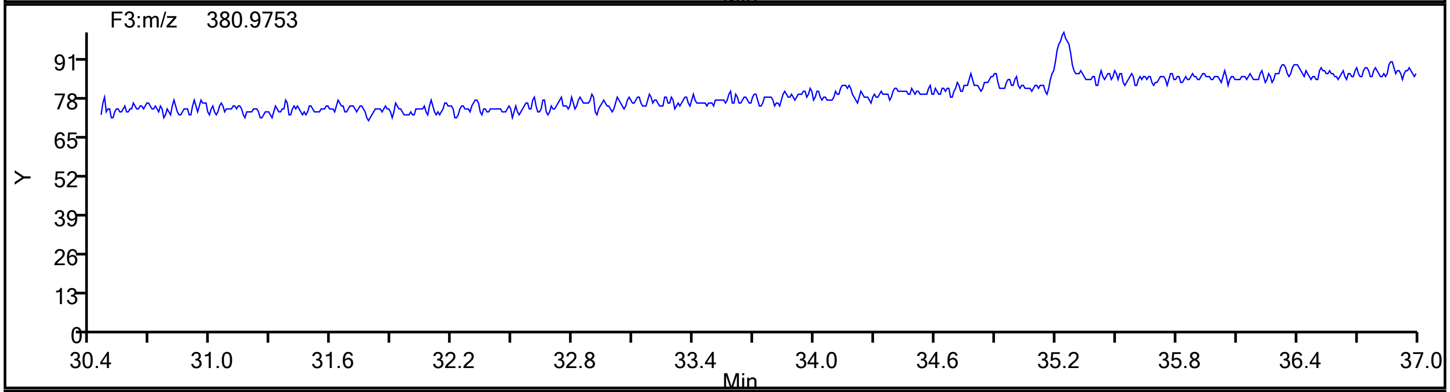

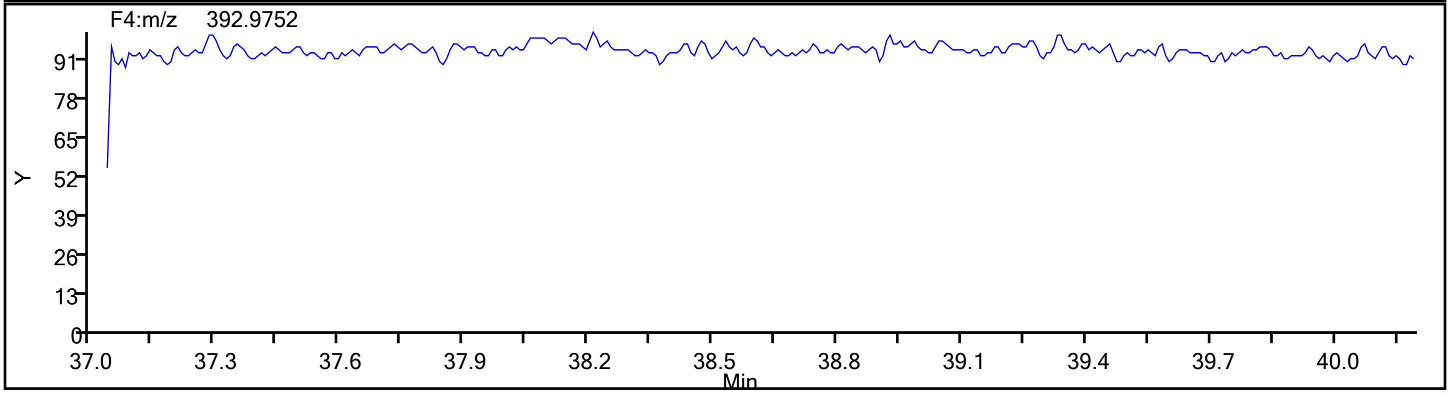

Report Date: 12-Oct-2020 09:13:02 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201010-105135.b\09oc20dfs1_22.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

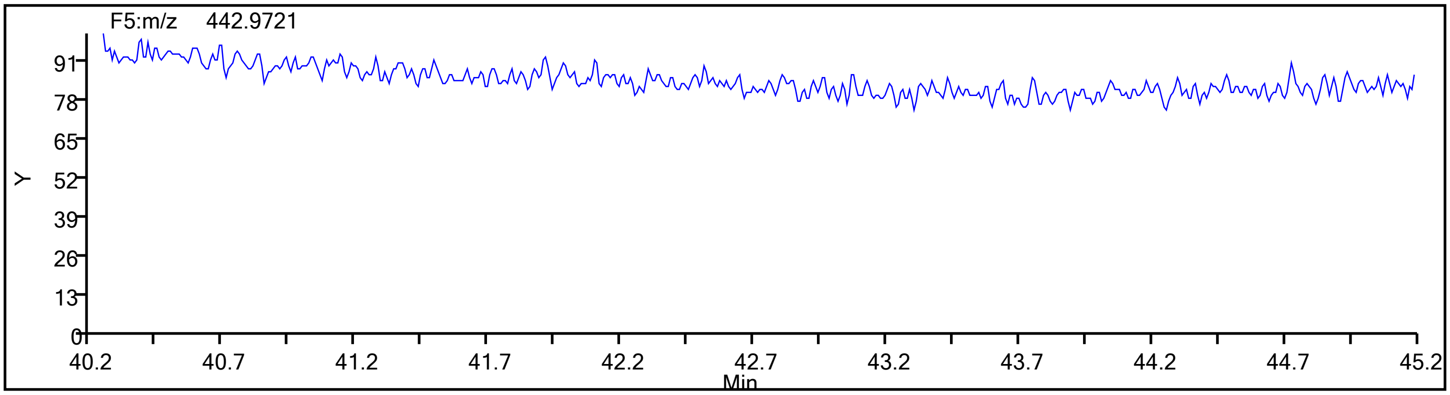

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Start Date: 09/17/2020 11:37

Analysis Batch Number: 413255 End Date: 09/17/2020 18:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-413255/1		09/17/2020 11:37	1	17se20dfs1_2.d	DB-5 0.32(mm)
IC 320-413255/3		09/17/2020 13:16	1	17se20dfs1_4.d	DB-5 0.32(mm)
IC 320-413255/4		09/17/2020 14:04	1	17se20dfs1_5.d	DB-5 0.32(mm)
IC 320-413255/5		09/17/2020 14:53	1	17se20dfs1_6.d	DB-5 0.32(mm)
IC 320-413255/6		09/17/2020 15:41	1	17se20dfs1_7.d	DB-5 0.32(mm)
IC 320-413255/7		09/17/2020 16:30	1	17se20dfs1_8.d	DB-5 0.32(mm)
ICV 320-413255/9		09/17/2020 18:07	1	17se20dfs1_10.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Start Date: 09/23/2020 09:18

Analysis Batch Number: 419031 End Date: 10/05/2020 22:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-419031/1		09/23/2020 09:18	1	23SE203D5_2.d	DB-5 0.32(mm)
IC 320-419031/3		10/05/2020 17:35	1	05OC203D5_4.d	DB-5 0.32(mm)
IC 320-419031/4		10/05/2020 18:22	1	05OC203D5_5.d	DB-5 0.32(mm)
IC 320-419031/5		10/05/2020 19:10	1	05OC203D5_6.d	DB-5 0.32(mm)
IC 320-419031/6		10/05/2020 19:57	1	05OC203D5_7.d	DB-5 0.32(mm)
IC 320-419031/7		10/05/2020 20:45	1	05OC203D5_8.d	DB-5 0.32(mm)
ICV 320-419031/9		10/05/2020 22:30	1	05OC203D5_10.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Start Date: 10/08/2020 08:53

Analysis Batch Number: 420113 End Date: 10/08/2020 15:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-420113/1		10/08/2020 08:53	1	08OC203D5_1.d	DB-5 0.32(mm)
CCV 320-420113/2		10/08/2020 09:51	1	08OC203D5_2.d	DB-5 0.32(mm)
MB 320-417490/1-A		10/08/2020 11:56	1	08OC203D5_4.d	DB-5 0.32(mm)
LCS 320-417490/2-A		10/08/2020 12:44	1	08OC203D5_5.d	DB-5 0.32(mm)
LCSD 320-417490/3-A		10/08/2020 13:31	1	08OC203D5_6.d	DB-5 0.32(mm)
ZZZZZ		10/08/2020 14:19	1		DB-5 0.32(mm)
ZZZZZ		10/08/2020 15:06	1		DB-5 0.32(mm)
ZZZZZ		10/08/2020 15:54	1		DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Start Date: 10/09/2020 01:04

Analysis Batch Number: 420482 End Date: 10/09/2020 09:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-420482/8		10/09/2020 01:04	1	08OC20A3D5_8.d	DB-5 0.32(mm)
CCV 320-420482/9		10/09/2020 01:52	1	08OC20A3D5_9.d	DB-5 0.32(mm)
320-65130-1	11215702-Tank#1-valve-2-1	10/09/2020 03:28	1	08OC20A3D5_11.d	DB-5 0.32(mm)
320-65130-2	11215702-Tank#1-valve-3-1	10/09/2020 04:15	1	08OC20A3D5_12.d	DB-5 0.32(mm)
320-65130-3	11215702-Tank#1-valve-4-1	10/09/2020 05:03	1	08OC20A3D5_13.d	DB-5 0.32(mm)
320-65130-4	11215702-Tank#1-valve-5-1	10/09/2020 05:51	1	08OC20A3D5_14.d	DB-5 0.32(mm)
320-65130-5	11215702-Tank#1-valve-2-2	10/09/2020 06:38	1	08OC20A3D5_15.d	DB-5 0.32(mm)
320-65130-7	11215702-Tank#1-valve-4-2	10/09/2020 07:26	1	08OC20A3D5_16.d	DB-5 0.32(mm)
320-65130-8	11215702-Tank#1-valve-5-2	10/09/2020 08:13	1	08OC20A3D5_17.d	DB-5 0.32(mm)
320-65130-9	11215702-Tank#1-valve-2-3	10/09/2020 09:01	1	08OC20A3D5_18.d	DB-5 0.32(mm)
320-65130-10	11215702-Tank#1-valve-3-3	10/09/2020 09:49	1	08OC20A3D5_19.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 3D5 Start Date: 10/09/2020 13:04

Analysis Batch Number: 420483 End Date: 10/09/2020 21:01

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-420483/1		10/09/2020 13:04	1	09OC203D5_1.d	DB-5 0.32(mm)
CCV 320-420483/2		10/09/2020 13:52	1	09OC203D5_2.d	DB-5 0.32(mm)
320-65130-11	11215702-Tank#1-valve-4-3	10/09/2020 15:27	1	09OC203D5_4.d	DB-5 0.32(mm)
320-65130-12	11215702-Tank#1-valve-5-3	10/09/2020 16:15	1	09OC203D5_5.d	DB-5 0.32(mm)
320-65130-13	11215702-Tank#1-T=0	10/09/2020 17:03	1	09OC203D5_6.d	DB-5 0.32(mm)
ZZZZZ		10/09/2020 17:50	1		DB-5 0.32(mm)
ZZZZZ		10/09/2020 18:38	1		DB-5 0.32(mm)
ZZZZZ		10/09/2020 19:25	1		DB-5 0.32(mm)
ZZZZZ		10/09/2020 20:13	1		DB-5 0.32(mm)
ZZZZZ		10/09/2020 21:01	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Start Date: 10/10/2020 05:03

Analysis Batch Number: 420640 End Date: 10/10/2020 14:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-420640/14		10/10/2020 05:03	1	09oc20dfs1_16.d	DB-5 0.32(mm)
WDM 320-420640/15		10/10/2020 06:10	1	09oc20dfs1_18.d	DB-5 0.32(mm)
MB 320-417971/1-A		10/10/2020 07:46	1	09oc20dfs1_20.d	DB-5 0.32(mm)
LCS 320-417971/2-A		10/10/2020 08:34	1	09oc20dfs1_21.d	DB-5 0.32(mm)
LCSD 320-417971/3-A		10/10/2020 09:21	1	09oc20dfs1_22.d	DB-5 0.32(mm)
320-65130-16	11215702-Tank#2-valve-3-1	10/10/2020 10:09	1	09oc20dfs1_23.d	DB-5 0.32(mm)
320-65130-17	11215702-Tank#2-valve-4-1	10/10/2020 10:57	1	09oc20dfs1_24.d	DB-5 0.32(mm)
320-65130-18	11215702-Tank#2-valve-5-1	10/10/2020 11:45	1	09oc20dfs1_25.d	DB-5 0.32(mm)
320-65130-19	11215702-Tank#2-valve-2-2	10/10/2020 12:33	1	09oc20dfs1_26.d	DB-5 0.32(mm)
320-65130-20	11215702-Tank#2-valve-3-2	10/10/2020 13:20	1	09oc20dfs1_27.d	DB-5 0.32(mm)
320-65130-21	11215702-Tank#2-valve-4-2	10/10/2020 14:08	1	09oc20dfs1_28.d	DB-5 0.32(mm)
320-65130-22	11215702-Tank#2-valve-5-2	10/10/2020 14:56	1	09oc20dfs1_29.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65130-1
SDG No.:
Instrument ID: DFS 1
Start Date: 10/12/2020 13:15
Analysis Batch Number: 421107
End Date: 10/12/2020 22:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-421107/1		10/12/2020 13:15	1	12oc20dfs1_2.d	DB-5 0.32(mm)
CCV 320-421107/2		10/12/2020 14:03	1	12oc20dfs1_3.d	DB-5 0.32(mm)
320-65130-15	11215702-Tank#2-valve-2-1	10/12/2020 16:34	1	12oc20dfs1_6.d	DB-5 0.32(mm)
320-65130-14	11215702-Tank#2-T=0	10/12/2020 17:22	10	12oc20dfs1_7.d	DB-5 0.32(mm)
ZZZZZ		10/12/2020 22:09	1		DB-5 0.32(mm)
ZZZZZ		10/12/2020 22:56	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 11D2 Start Date: 10/12/2020 15:20

Analysis Batch Number: 421482 End Date: 10/12/2020 23:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-421482/1		10/12/2020 15:20	1	12OC20A11D2_001.d	DB-225 0.32(mm)
CCV 320-421482/2		10/12/2020 15:58	1	12OC20A11D2_002.d	DB-225 0.32(mm)
ZZZZZ		10/12/2020 17:15	1		DB-225 0.32(mm)
ZZZZZ		10/12/2020 17:53	1		DB-225 0.32(mm)
320-65130-19 RA	11215702-Tank#2-valve-2-2 RA	10/12/2020 18:31	1	12OC20A11D2_006.d	DB-225 0.32(mm)
320-65130-17 RA	11215702-Tank#2-valve-4-1 RA	10/12/2020 19:10	1	12OC20A11D2_007.d	DB-225 0.32(mm)
320-65130-21 RA	11215702-Tank#2-valve-4-2 RA	10/12/2020 20:26	1	12OC20A11D2_009.d	DB-225 0.32(mm)
320-65130-15 RA	11215702-Tank#2-valve-2-1 RA	10/12/2020 21:05	1	12OC20A11D2_010.d	DB-225 0.32(mm)
320-65130-16 RA	11215702-Tank#2-valve-3-1 RA	10/12/2020 21:43	1	12OC20A11D2_011.d	DB-225 0.32(mm)
320-65130-22 RA	11215702-Tank#2-valve-5-2 RA	10/12/2020 23:00	1	12OC20A11D2_013.d	DB-225 0.32(mm)
320-65130-14 RA	11215702-Tank#2-T=0 RA	10/12/2020 23:38	10	12OC20A11D2_014.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 11D2 Start Date: 10/13/2020 19:42

Analysis Batch Number: 421876 End Date: 10/14/2020 04:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-421876/1		10/13/2020 19:42	1	13OC20A11D2_001.d	DB-225 0.32(mm)
CCV 320-421876/2		10/13/2020 20:20	1	13OC20A11D2_002.d	DB-225 0.32(mm)
ZZZZZ		10/13/2020 20:59	1		DB-225 0.32(mm)
320-65130-3 RA	11215702-Tank#1-valve-4-1 RA	10/13/2020 21:37	1	13OC20A11D2_004.d	DB-225 0.32(mm)
320-65130-5 RA	11215702-Tank#1-valve-2-2 RA	10/13/2020 22:15	1	13OC20A11D2_005.d	DB-225 0.32(mm)
320-65130-9 RA	11215702-Tank#1-valve-2-3 RA	10/13/2020 22:54	1	13OC20A11D2_006.d	DB-225 0.32(mm)
320-65130-1 RA	11215702-Tank#1-valve-2-1 RA	10/13/2020 23:32	1	13OC20A11D2_007.d	DB-225 0.32(mm)
320-65130-2 RA	11215702-Tank#1-valve-3-1 RA	10/14/2020 00:10	1	13OC20A11D2_008.d	DB-225 0.32(mm)
320-65130-11 RA	11215702-Tank#1-valve-4-3 RA	10/14/2020 00:48	1	13OC20A11D2_009.d	DB-225 0.32(mm)
320-65130-7 RA	11215702-Tank#1-valve-4-2 RA	10/14/2020 01:27	1	13OC20A11D2_010.d	DB-225 0.32(mm)
320-65130-8 RA	11215702-Tank#1-valve-5-2 RA	10/14/2020 02:05	1	13OC20A11D2_011.d	DB-225 0.32(mm)
320-65130-12 RA	11215702-Tank#1-valve-5-3 RA	10/14/2020 02:43	1	13OC20A11D2_012.d	DB-225 0.32(mm)
320-65130-4 RA	11215702-Tank#1-valve-5-1 RA	10/14/2020 03:22	1	13OC20A11D2_013.d	DB-225 0.32(mm)
320-65130-10 RA	11215702-Tank#1-valve-3-3 RA	10/14/2020 04:00	5	13OC20A11D2_014.d	DB-225 0.32(mm)
320-65130-13 RA	11215702-Tank#1-T=0 RA	10/14/2020 04:38	100	13OC20A11D2_015.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: 11D2 Start Date: 10/14/2020 11:21

Analysis Batch Number: 422080 End Date: 10/14/2020 17:45

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-422080/1		10/14/2020 11:21	1	14OC2011D2_001.d	DB-225 0.32(mm)
CCV 320-422080/2		10/14/2020 12:00	1	14OC2011D2_002.d	DB-225 0.32(mm)
ZZZZZ		10/14/2020 12:38	1		DB-225 0.32(mm)
ZZZZZ		10/14/2020 13:16	1		DB-225 0.32(mm)
ZZZZZ		10/14/2020 13:55	1		DB-225 0.32(mm)
ZZZZZ		10/14/2020 14:33	1		DB-225 0.32(mm)
ZZZZZ		10/14/2020 15:11	1		DB-225 0.32(mm)
ZZZZZ		10/14/2020 15:50	1		DB-225 0.32(mm)
320-65130-20 RA	11215702-Tank#2-valve-3-2 RA	10/14/2020 16:28	5	14OC2011D2_009.d	DB-225 0.32(mm)
320-65130-18 RA	11215702-Tank#2-valve-5-1 RA	10/14/2020 17:07	10	14OC2011D2_010.d	DB-225 0.32(mm)
ZZZZZ		10/14/2020 17:45	25		DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1   Start Date: 10/15/2020 12:21

Analysis Batch Number: 422239   End Date: 10/15/2020 21:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-422239/1		10/15/2020 12:21	1	15oc20dfs1_2.d	DB-5 0.32(mm)
CCV 320-422239/2		10/15/2020 13:08	1	15oc20dfs1_3.d	DB-5 0.32(mm)
320-65130-14 DL	11215702-Tank#2-T=0 DL	10/15/2020 20:21	70	15oc20dfs1_12.d	DB-5 0.32(mm)
320-65130-18 DL	11215702-Tank#2-valve -5-1 DL	10/15/2020 21:09	10	15oc20dfs1_13.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65130-1

SDG No.:

Instrument ID: DFS 1 Start Date: 10/16/2020 17:42

Analysis Batch Number: 422778 End Date: 10/17/2020 02:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-422778/1		10/16/2020 17:42	1	16oc20adfs1_2.d	DB-5 0.32(mm)
CCV 320-422778/2		10/16/2020 18:29	1	16oc20adfs1_3.d	DB-5 0.32(mm)
320-65130-13 DL	11215702-Tank#1-T=0 DL	10/17/2020 02:29	40	16oc20adfs1_13.d	DB-5 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65130-1

SDG No.:

Batch Number: 417490 Batch Start Date: 10/01/20 08:42 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 10/02/20 08:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-417490/1		1613B, 1613B				1000 mL	20 uL	SS1-1	4
LCS 320-417490/2		1613B, 1613B				1000 mL	20 uL	SS1-2	6
LCSD 320-417490/3		1613B, 1613B				1000 mL	20 uL	SS1-3	4
320-65130-A-1	11215702-Tank#1-valve-2-1	1613B, 1613B	T	1547.8 g	505.01 g	1042.8 mL	20 uL	SS2-1	4
320-65130-A-2	11215702-Tank#1-valve-3-1	1613B, 1613B	T	1552.7 g	504.83 g	1047.9 mL	20 uL	SS2-2	6
320-65130-A-3	11215702-Tank#1-valve-4-1	1613B, 1613B	T	1554.6 g	505.55 g	1049.1 mL	20 uL	SS2-3	4
320-65130-A-4	11215702-Tank#1-valve-5-1	1613B, 1613B	T	1561.0 g	516.69 g	1044.3 mL	20 uL	SS2-4	6
320-65130-A-5	11215702-Tank#1-valve-2-2	1613B, 1613B	T	1452.2 g	476.63 g	975.6 mL	20 uL	SS2-5	4
320-65130-A-7	11215702-Tank#1-valve-4-2	1613B, 1613B	T	1447.4 g	466.56 g	980.8 mL	20 uL	SS2-6	6
320-65130-A-8	11215702-Tank#1-valve-5-2	1613B, 1613B	T	1449.1 g	477.28 g	971.8 mL	20 uL	A-1	4
320-65130-A-9	11215702-Tank#1-valve-2-3	1613B, 1613B	T	1461.0 g	481.17 g	979.8 mL	20 uL	A-2	6
320-65130-A-10	11215702-Tank#1-valve-3-3	1613B, 1613B	T	1451.9 g	477.06 g	974.8 mL	20 uL	A-3	4
320-65130-A-11	11215702-Tank#1-valve-4-3	1613B, 1613B	T	1451.3 g	478.07 g	973.2 mL	20 uL	A-4	6
320-65130-A-12	11215702-Tank#1-valve-5-3	1613B, 1613B	T	1453.6 g	470.85 g	982.8 mL	20 uL	A-5	4
320-65130-A-13	11215702-Tank#1-T=0	1613B, 1613B	T	1548.2 g	507.90 g	1040.3 mL	20 uL	A-6	6

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00438	HRDXNIS 00129	HRDXNSU 00242	HRDXNTA 00122		
MB 320-417490/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-417490/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-417490/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-65130-A-1	11215702-Tank#1-valve-2-1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-2	11215702-Tank#1-valve-3-1	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65130-1

SDG No.:

Batch Number: 417490 Batch Start Date: 10/01/20 08:42 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 10/02/20 08:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00438	HRDXNIS 00129	HRDXNSU 00242	HRDXNTA 00122		
320-65130-A-3	11215702-Tank#1-valve-4-1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-4	11215702-Tank#1-valve-5-1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-5	11215702-Tank#1-valve-2-2	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-7	11215702-Tank#1-valve-4-2	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-8	11215702-Tank#1-valve-5-2	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-9	11215702-Tank#1-valve-2-3	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-10	11215702-Tank#1-valve-3-3	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-11	11215702-Tank#1-valve-4-3	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-12	11215702-Tank#1-valve-5-3	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-13	11215702-Tank#1-T=0	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65130-1

SDG No.:

Batch Number: 417490 Batch Start Date: 10/01/20 08:42 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 10/02/20 08:00

Batch Notes	
20% DCM:Hexane ID	DH28_00176 mL
65% DCM:Hexane ID	DH6535_00490 mL
Acid Silica Gel ID	SA5644_00665
Acid Alumina ID	Acid_Alumina_00007
Balance ID	QA - 070
C14 ID	tetradecane_00009
Hexane ID	Hexane_00223 mL
IFB Clean Up	SR 10/01/20
MeCL2 ID	DCM_00333 mL
Na2SO4 ID	Na2SO4_00120
Analyst ID - IDA Reagent Drop	RDR 10/01/20 HRDXNIDA_00438 B4/4 HD05018 1.00 mL
Analyst ID - IDA Reagent Drop Witness	GLB 10/01/20
Analyst ID - IS Reagent Drop	TGL 10/02/20 HRDXNIS_00129 B 2/4 DB15271 20.0 uL
Analyst ID - IS Reagent Drop Witness	FC 10/02/20
Analyst ID - SU Reagent Drop	SR 10/01/20 HRDXNSU_00242 B 3/4 HD05018 1.0 mL
Analyst ID - SU Reagent Drop Witness	NR 10/01/20
Analyst ID - TA Reagent Drop	RDR 10/01/20 HRDXNTA_00122 B5/10 DB15270 50 uL
Analyst ID - TA Reagent Drop Witness	GLB 10/01/20
Silica Gel ID	SilicaGel_00340
Soxhlet/Soxtherm End	RDR 10/01/20 13:30
Soxhlet/Soxtherm Start	RDR 10/01/20 10:30
Storage Box ID	DXN-185
Toluene ID	Toluene_00074 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65130-1

SDG No.:

Batch Number: 417971 Batch Start Date: 10/02/20 08:26 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 10/03/20 18:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-417971/1		1613B, 1613B				1000 mL	20 uL	A1	4
LCS 320-417971/2		1613B, 1613B				1000 mL	20 uL	A2	6
LCSD 320-417971/3		1613B, 1613B				1000 mL	20 uL	A3	4
320-65130-A-14	11215702-Tank#2-T=0	1613B, 1613B	T	1560.9 g	516.31 g	1044.6 mL	20 uL	A5	4
320-65130-A-15	11215702-Tank#2-valve-2-1	1613B, 1613B	T	1547.0 g	504.54 g	1042.5 mL	20 uL	A6	6
320-65130-A-16	11215702-Tank#2-valve-3-1	1613B, 1613B	T	1546.5 g	504.36 g	1042.1 mL	20 uL	B1	4
320-65130-A-17	11215702-Tank#2-valve-4-1	1613B, 1613B	T	1539.0 g	504.87 g	1034.1 mL	20 uL	B2	6
320-65130-A-18	11215702-Tank#2-valve-5-1	1613B, 1613B	T	1546.2 g	506.37 g	1039.8 mL	20 uL	B3	4
320-65130-A-19	11215702-Tank#2-valve-2-2	1613B, 1613B	T	1552.8 g	506.91 g	1045.9 mL	20 uL	B4	6
320-65130-A-20	11215702-Tank#2-valve-3-2	1613B, 1613B	T	1549.7 g	504.39 g	1045.3 mL	20 uL	B5	4
320-65130-A-21	11215702-Tank#2-valve-4-2	1613B, 1613B	T	1553.1 g	505.46 g	1047.6 mL	20 uL	B6	6
320-65130-A-22	11215702-Tank#2-valve-5-2	1613B, 1613B	T	1552.5 g	505.35 g	1047.2 mL	20 uL	G1	4

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00438	HRDXNIS 00129	HRDXNSU 00242	HRDXNTA 00122		
MB 320-417971/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-417971/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-417971/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-65130-A-14	11215702-Tank#2-T=0	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-15	11215702-Tank#2-valve-2-1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-16	11215702-Tank#2-valve-3-1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-17	11215702-Tank#2-valve-4-1	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-18	11215702-Tank#2-valve-5-1	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65130-1

SDG No.:

Batch Number: 417971 Batch Start Date: 10/02/20 08:26 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 10/03/20 18:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00438	HRDXNIS 00129	HRDXNSU 00242	HRDXNTA 00122		
320-65130-A-19	11215702-Tank#2-valve-2-2	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-20	11215702-Tank#2-valve-3-2	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-21	11215702-Tank#2-valve-4-2	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-65130-A-22	11215702-Tank#2-valve-5-2	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65130-1

SDG No.:

Batch Number: 417971 Batch Start Date: 10/02/20 08:26 Batch Analyst: Royce, Robert D

Batch Method: 1613B Batch End Date: 10/03/20 18:00

Batch Notes	
20% DCM:Hexane ID	DH28_00176 mL
65% DCM:Hexane ID	DH6535_00492 mL
Acid Silica Gel ID	SA5644_00655
Acid Alumina ID	Acid_Alumina_00007
Balance ID	QA - 070
C14 ID	tetradecane_00009
Hexane ID	Hexane_00221 mL
IFB Clean Up	SR 10/03/2020
MeCL2 ID	DCM_00333 mL
Na2SO4 ID	Na2SO4_00120
Analyst ID - IDA Reagent Drop	RDR 10/02/20 HRDXNIDA_00438 B4/4 HD05018 1.00 mL
Analyst ID - IDA Reagent Drop Witness	FC 10/02/20
Analyst ID - IS Reagent Drop	SR 10/03/20 DB15270 B-3/4 HRDXNIS_00129 20.0 uL
Analyst ID - IS Reagent Drop Witness	RDR 10/03/20
Analyst ID - SU Reagent Drop	SR 10/03/20 HD05018 B-3/4 HRDXNSU_00242 1.0 mL
Analyst ID - SU Reagent Drop Witness	IP 10/03/20
Analyst ID - TA Reagent Drop	RDR 10/02/20 HRDXNTA_00122 B5/10 DB15270 50 uL
Analyst ID - TA Reagent Drop Witness	FC 10/02/20
Silica Gel ID	SilicaGel_00340
Soxhlet/Soxtherm End	RDR 10/02/20 13:45
Soxhlet/Soxtherm Start	RDR 10/02/20 10:45
Storage Box ID	DXN - 186
Toluene ID	Toluene_00074 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

CHAIN OF CUSTODY RECORD

COC NO.: 59859

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702-NI0411

Laboratory Name: Eurofins/TestAmerica

Lab Location: Sacramento

SSOW ID:

Project Name: SanJacinto

Lab Contact: Carrie Gamber / Beth Hitt

Cooler No:

Project Location: Texas

Carrier:

GHD Chemistry Contact: Debbie Brennan

Airbill No:

Sampler(s): Don Pope

Total # of Containers: 12

320-65130 Chain of Custody

PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins and Furans	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	11215702-Tank#1-valve-2-1	9/11/20	12:30	WG			X	1		Attn to: Carrie Gamber
	11215702-Tank#1-valve-3-1	9/11/20	12:30	WG			X	1		412-963-2428
	11215702-Tank#1-Valve-4-1	9/11/20	12:30	WG			X	1		
	11215702-Tank#1-Valve-5-1	9/11/20	12:30	WG			X	1		
	11215702-Tank#1-Valve-2-2	9/11/20	13:30	WG			X	1		
6	11215702-Tank#1-Valve-3-2	9/11/20	13:30	WG			X	1		
7	11215702-Tank#1-Valve-4-2	9/11/20	13:30	WG			X	1		
8	11215702-Tank#1-Valve-5-2	9/11/20	13:30	WG			X	1		
9	11215702-Tank#1-Valve-2-3	9/11/20	14:30	WG			X	1		
10	11215702-Tank#1-valve-3-3	9/11/20	14:30	WG			X	1		
11	11215702-Tank#1-valve-4-3	9/11/20	14:30	WG			X	1		
12	11215702-Tank#1-valve-5-3	9/11/20	14:30	WG			X	1		

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☒2Week Other:

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME		RECEIVED BY	COMPANY	DATE	TIME
1.	Don Pope	GHD	9/28/20	15:00	1.		ETASac	9/29/20	~~1010~~ 1015 ST 9/29/20
2.					2.				
3.					3.				

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

2.6 cor 3.0 5.2 cor 5.6

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

GHD

CHAIN OF CUSTODY RECORD

COC NO.: 59858

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702-NI0411	Laboratory Name: Eurofins / Test America	Lab Location: Sacramento	SSOW ID: 11187072-2019-002
Project Name: San Jacinto	Lab Contact: Carrie Gamber / Beth Hitt		Cooler No:
Project Location: Texas			Carrier:
GHD Chemistry Contact: Debbie Brennan			Airbill No:
Sampler(s): Don Pope			Total # of Containers: 10

ANALYSIS REQUESTED (See Back of COC for Definitions)

PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	SAMPLE TYPE: Matrix Code (see back of COC)	SAMPLE TYPE: Grab (G) or Comp (C)	SAMPLE TYPE: Filtered (Y/N)	Dioxins and Furans	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	11215702-Tank#1-T=0	9/11/20	11:30	WG			X	1		Attn to: Carrie Gamber
2	11215702-Tank#2-T=0	9/9/20	09:30	WG			X	1		412-963-2428
3	11215702-Tank#2-Valve-2-1	9/10/20	09:30	WG			X	1		
4	11215702-Tank#2-Valve-3-1	9/10/20	09:30	WG			X	1		
5	11215702-Tank#2-Valve-4-1	9/10/20	09:30	WG			X	1		
6	11215702-Tank#2-Valve-5-1	9/10/20	09:30	WG			X	1		
7	11215702-Tank#2-Valve-2-2	9/11/20	09:30	WG			X	1		
8	11215702-Tank#2-Valve-3-2	9/11/20	09:30	WG			X	1		
9	11215702-Tank#2-Valve-4-2	9/11/20	09:30	WG			X	1		
10	11215702-Tank#2-Valve-5-2	9/11/20	09:30	WG			X	1		
11										
12										

TAT Required in business days (use separate COCs for different TATs):

☐ ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☑ 2 Week Other:

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME		RECEIVED BY	COMPANY	DATE	TIME
1.	Don Pope	GHD	9/28/20	15:00	1.		ETASac	9/29/20	1015
2.					2.				
3.					3.				

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

2.6 cor 3.0 5.2 cor 5.6

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

eurofins | Environment Testing
TestAmerica

Sacramento
Sample Receiving Notes

320-65130 Field Sheet

Job:

Tracking #: 4576 5886 9371

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: AC 13 Corr. Factor: ([✓ +] / -) 0.4 °C

Ice ✓ Wet ✓ Gel Other

Cooler Custody Seal: –

Cooler ID: 1 of 2

Temp Observed: 5.2 °C Corrected: 5.6 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐

Initials: 57 Date: 9/29/20

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal? 57 9/29/20	☒	☐	☑
Containers are not broken or leaking?	☐	☑	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☒ 57 9/29/20
Sample preservatives verified?	☒	☐	☐
Samples w/o discrepancies? 57 9/29/20	☐	☐	☑
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

**Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")*

Initials: 61 Date: 9/29/20

Notes:

Trizma Lot #(s):

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☑	☐	☐
Log Release checked in TALS?	☑	☐	☐

Initials: 57 Date: 9/29/20

eurofins | **Environment Testing**
TestAmerica

Sacramento
Sample Receiving Notes

Place Field Sheet Label Here

Job:

Tracking #: 4576 5886 9382

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Therm. ID: AL13 Corr. Factor: ([✓ +] / -) 0.4 °C

Ice ✓ Wet ✓ Gel Other

Cooler Custody Seal: —

Cooler ID: 2 of 2

Temp Observed: 2.6 °C Corrected: 3.0 °C

From: Temp Blank ☐ Sample ☒

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☒	☐
Cooler Temperature is acceptable?	☒	☐	☐

Initials: 57 Date: 9/24/20

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☒	☐	☐
Samples compromised/tampered with?	☐	☒	☐
Sample containers have legible labels?	☒	☐	☐
Sample custody seal?	☐	☐	☒
Containers are not broken or leaking?	☐	☒	☐
Sample date/times are provided?	☒	☐	☐
Appropriate containers are used?	☒	☐	☐
Sample bottles are completely filled?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒
Samples w/o discrepancies?	☒	☐	☐
Zero headspace?*	☐	☐	☒
Alkalinity has no headspace?	☐	☐	☒
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☒
Multiphasic samples are not present?	☒	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: 57 Date: 9/24/20

Notes:

Trizma Lot #(s):

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☒	☐	☐
Samples received within hold time?	☒	☐	☐
NCM Filed?	☒	☐	☐
Log Release checked in TALS?	☒	☐	☐

Initials: 57 Date: 9/24/20

(916) 373-5600
REF: 11215702 – NI0411 GEB (POPE)

FedEx
Express

E

J191219082001uy

1 of 2
TRK# 0201 4576 5886 9371
MASTER

XH BLUA

TUE – 29 SEP 10:30A
PRIORITY OVERNIGHT

95605
CA–US SMF

Part # 154254-354 RIT EXP 10/2

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 28SEP20
ACTWGT: 55.00 LB MAN
CAD: 68417/CAFE3313

BILL SENDER

TO **SAMPLE RECEIVING**
EUROFINS/TEST AMERICA
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215702 - NI0411 GEB (POPE)

FedEx
Express
E

2 of 2
MPS# 0263 **4576 5886 9382**
Mstr# 4576 5886 9371 0201

TUE - 29 SEP 10:30A
PRIORITY OVERNIGHT

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/2

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-65130-1

Login Number: 65130

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Thompson, Sarah W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Containers received broken. No volume could be salvaged for analysis.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 320-65247-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
10/20/2020 10:50 AM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
10/20/2020

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

Table of Contents

Table of Contents

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-65247-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 10/02/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 11.4 C. The client was contacted and the laboratory was instructed to proceed with the analyses.

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS

Elevated reporting limits are provided for the following sample due to limited sample volume provided for 1613B_Sox_Sep_ preparation/analysis: 11215702-Tank#1-Valve-3-2-Repl (320-65247-1).

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and/or 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 10D5 exceeded this criteria: 11215702-Tank#1-Valve-3-2-Repl (320-65247-1), (CCV 320-421347/2), (LCS 320-418764/2-A), (LCSD 320-418764/3-A) and (MB 320-418764/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Tank#1-Valve-3-2-Repl (320-65247-1) and (CCV 320-422408/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Several analytes were detected in method blank MB 320-418764/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Detection Summary

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-65247-1

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl

Lab Sample ID: 320-65247-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	210	B	20	1.6	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	2.7	J B	98	1.2	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	22	J B	98	1.1	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	12	J B	98	1.4	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.5	J B q	98	0.93	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	34	J B	98	1.8	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	7.8	J B	98	1.6	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	6.8	J B q	98	0.70	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	9.3	J B	98	0.45	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	3.7	J B	98	0.66	pg/L	1		1613B	Total/NA
OCDD	87	J B	200	1.7	pg/L	1		1613B	Total/NA
OCDF	4.7	J B	200	1.3	pg/L	1		1613B	Total/NA
Total TCDD	240	B q	20	1.6	pg/L	1		1613B	Total/NA
Total TCDF	1300	B q	20	4.0	pg/L	1		1613B	Total/NA
Total PeCDD	2.7	J B	98	1.2	pg/L	1		1613B	Total/NA
Total PeCDF	48	J B	98	1.2	pg/L	1		1613B	Total/NA
Total HxCDD	3.5	J B q	98	0.89	pg/L	1		1613B	Total/NA
Total HxCDF	41	J B	98	1.3	pg/L	1		1613B	Total/NA
Total HpCDD	13	J B q	98	0.70	pg/L	1		1613B	Total/NA
Total HpCDF	16	J B	98	0.56	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	570	B	20	3.2	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl

Lab Sample ID: 320-65247-1

Date Collected: 09/11/20 13:30
Matrix: Water
Date Received: 10/02/20 09:45

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**210**	**B**	20	1.6	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,7,8-PeCDD	**2.7**	**J B**	98	1.2	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,7,8-PeCDF	**22**	**J B**	98	1.1	pg/L		10/05/20 11:15	10/13/20 04:24	1
2,3,4,7,8-PeCDF	**12**	**J B**	98	1.4	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,4,7,8-HxCDD	**3.5**	**J B q**	98	0.93	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,6,7,8-HxCDD	ND		98	0.93	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,7,8,9-HxCDD	ND		98	0.83	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,4,7,8-HxCDF	**34**	**J B**	98	1.8	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,6,7,8-HxCDF	**7.8**	**J B**	98	1.6	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,7,8,9-HxCDF	ND		98	0.87	pg/L		10/05/20 11:15	10/13/20 04:24	1
2,3,4,6,7,8-HxCDF	ND		98	1.0	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,4,6,7,8-HpCDD	**6.8**	**J B q**	98	0.70	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,4,6,7,8-HpCDF	**9.3**	**J B**	98	0.45	pg/L		10/05/20 11:15	10/13/20 04:24	1
1,2,3,4,7,8,9-HpCDF	**3.7**	**J B**	98	0.66	pg/L		10/05/20 11:15	10/13/20 04:24	1
OCDD	**87**	**J B**	200	1.7	pg/L		10/05/20 11:15	10/13/20 04:24	1
OCDF	**4.7**	**J B**	200	1.3	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total TCDD	**240**	**B q**	20	1.6	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total TCDF	**1300**	**B q**	20	4.0	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total PeCDD	**2.7**	**J B**	98	1.2	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total PeCDF	**48**	**J B**	98	1.2	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total HxCDD	**3.5**	**J B q**	98	0.89	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total HxCDF	**41**	**J B**	98	1.3	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total HpCDD	**13**	**J B q**	98	0.70	pg/L		10/05/20 11:15	10/13/20 04:24	1
Total HpCDF	**16**	**J B**	98	0.56	pg/L		10/05/20 11:15	10/13/20 04:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,4,7,8-HxCDD	*73*		*32 - 141*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*28 - 130*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,4,7,8-HxCDF	*90*		*26 - 152*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,6,7,8-HxCDF	*90*		*26 - 123*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,7,8,9-HxCDF	*95*		*29 - 147*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-2,3,4,6,7,8-HxCDF	*93*		*28 - 136*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*23 - 140*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*110*		*28 - 143*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*94*		*26 - 138*	*10/05/20 11:15*	*10/13/20 04:24*	*1*
13C-OCDD	*92*		*17 - 157*	*10/05/20 11:15*	*10/13/20 04:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*10/05/20 11:15*	*10/13/20 04:24*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**570**	**B**	20	3.2	pg/L		10/05/20 11:15	10/15/20 03:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*10/05/20 11:15*	*10/15/20 03:55*	*1*

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl

Lab Sample ID: 320-65247-1

Date Collected: 09/11/20 13:30
Matrix: Water
Date Received: 10/02/20 09:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*114*		*35 - 197*	*10/05/20 11:15*	*10/15/20 03:55*	*1*

Toxicity Summary

Client: GHD Services Inc. Job ID: 320-65247-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl Lab Sample ID: 320-65247-1

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**210**	**B**	20	1.6	pg/L	1	**210**	1613B
1,2,3,7,8-PeCDD	**2.7**	**J B**	98	1.2	pg/L	1	**2.7**	1613B
1,2,3,7,8-PeCDF	**22**	**J B**	98	1.1	pg/L	0.03	**0.66**	1613B
2,3,4,7,8-PeCDF	**12**	**J B**	98	1.4	pg/L	0.3	**3.6**	1613B
1,2,3,4,7,8-HxCDD	**3.5**	**J B q**	98	0.93	pg/L	0.1	**0.35**	1613B
1,2,3,6,7,8-HxCDD	ND		98	0.93	pg/L	0.1	0.047	1613B
1,2,3,7,8,9-HxCDD	ND		98	0.83	pg/L	0.1	0.042	1613B
1,2,3,4,7,8-HxCDF	**34**	**J B**	98	1.8	pg/L	0.1	**3.4**	1613B
1,2,3,6,7,8-HxCDF	**7.8**	**J B**	98	1.6	pg/L	0.1	**0.78**	1613B
1,2,3,7,8,9-HxCDF	ND		98	0.87	pg/L	0.1	0.044	1613B
2,3,4,6,7,8-HxCDF	ND		98	1.0	pg/L	0.1	0.050	1613B
1,2,3,4,6,7,8-HpCDD	**6.8**	**J B q**	98	0.70	pg/L	0.01	**0.068**	1613B
1,2,3,4,6,7,8-HpCDF	**9.3**	**J B**	98	0.45	pg/L	0.01	**0.093**	1613B
1,2,3,4,7,8,9-HpCDF	**3.7**	**J B**	98	0.66	pg/L	0.01	**0.037**	1613B
OCDD	**87**	**J B**	200	1.7	pg/L	0.0003	**0.026**	1613B
OCDF	**4.7**	**J B**	200	1.3	pg/L	0.0003	**0.0014**	1613B
2,3,7,8-TCDF - RA	**570**	**B**	20	3.2	pg/L	0.1	**57**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		280	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc.
Job ID: 320-65247-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Surrogate Summary

Client: GHD Services Inc.	Job ID: 320-65247-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
320-65247-1	11215702-Tank#1-Valve-3-2-Re	111
320-65247-1 - RA	11215702-Tank#1-Valve-3-2-Repl	114
MB 320-418764/1-A	Method Blank	110

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-418764/2-A	Lab Control Sample	114
LCSD 320-418764/3-A	Lab Control Sample Dup	118

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (25-164)**	**TCDF (24-169)**	**PeCDD (25-181)**	**PeCDF (24-185)**	**PeCF (21-178)**	**HxCDD (32-141)**	**HxDD (28-130)**	**HxCDF (26-152)**
320-65247-1	11215702-Tank#1-Valve-3-2-Re	62	68	60	71	66	73	75	90
320-65247-1 - RA	11215702-Tank#1-Valve-3-2-Repl		64						
MB 320-418764/1-A	Method Blank	83	98	76	88	88	81	87	105

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HxDF (26-123)**	**HxCF (29-147)**	**13CHxCF (28-136)**	**HpCDD (23-140)**	**HpCDF (28-143)**	**HpCDF2 (26-138)**	**OCDD (17-157)**
320-65247-1	11215702-Tank#1-Valve-3-2-Re	90	95	93	86	110	94	92
320-65247-1 - RA	11215702-Tank#1-Valve-3-2-Repl							
MB 320-418764/1-A	Method Blank	100	104	107	79	97	88	75

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (20-175)**	**TCDF (22-152)**	**PeCDD (21-227)**	**PeCDF (21-192)**	**PeCF (13-328)**	**HxCDD (21-193)**	**HxDD (25-163)**	**HxCDF (19-202)**
LCS 320-418764/2-A	Lab Control Sample	93	107	88	101	99	101	99	124
LCSD 320-418764/3-A	Lab Control Sample Dup	83	96	73	84	86	74	79	95

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HxDF (21-159)**	**HxCF (17-205)**	**13CHxCF (22-176)**	**HpCDD (26-166)**	**HpCDF (21-158)**	**HpCDF2 (20-186)**	**OCDD (13-199)**
LCS 320-418764/2-A	Lab Control Sample	126	122	134	101	126	113	100
LCSD 320-418764/3-A	Lab Control Sample Dup	98	96	98	72	90	82	73

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD

HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

QC Sample Results

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-418764/1-A
Matrix: Water
Analysis Batch: 421347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418764

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	2.43	J q	10	0.38	pg/L		10/05/20 11:15	10/12/20 23:54	1
2,3,7,8-TCDF	4.60	J	10	0.28	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,7,8-PeCDD	4.54	J	50	0.40	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,7,8-PeCDF	4.80	J	50	0.33	pg/L		10/05/20 11:15	10/12/20 23:54	1
2,3,4,7,8-PeCDF	4.90	J	50	0.37	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,4,7,8-HxCDD	6.45	J q	50	0.46	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,6,7,8-HxCDD	5.69	J	50	0.43	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,7,8,9-HxCDD	4.89	J	50	0.39	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,4,7,8-HxCDF	5.46	J	50	0.71	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,6,7,8-HxCDF	5.26	J	50	0.67	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,7,8,9-HxCDF	5.15	J	50	0.39	pg/L		10/05/20 11:15	10/12/20 23:54	1
2,3,4,6,7,8-HxCDF	5.44	J	50	0.40	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,4,6,7,8-HpCDD	5.73	J	50	0.24	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,4,6,7,8-HpCDF	5.13	J	50	0.22	pg/L		10/05/20 11:15	10/12/20 23:54	1
1,2,3,4,7,8,9-HpCDF	4.23	J	50	0.31	pg/L		10/05/20 11:15	10/12/20 23:54	1
OCDD	9.43	J	100	0.45	pg/L		10/05/20 11:15	10/12/20 23:54	1
OCDF	9.39	J	100	0.64	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total TCDD	6.17	J q	10	0.38	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total TCDF	8.09	J q	10	0.28	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total PeCDD	4.54	J	50	0.40	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total PeCDF	9.70	J	50	0.35	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total HxCDD	17.0	J q	50	0.42	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total HxCDF	21.3	J	50	0.54	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total HpCDD	6.99	J	50	0.24	pg/L		10/05/20 11:15	10/12/20 23:54	1
Total HpCDF	9.36	J	50	0.26	pg/L		10/05/20 11:15	10/12/20 23:54	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*25 - 164*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-2,3,7,8-TCDF	*98*		*24 - 169*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,7,8-PeCDF	*88*		*24 - 185*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-2,3,4,7,8-PeCDF	*88*		*21 - 178*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,6,7,8-HxCDD	*87*		*28 - 130*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,4,7,8-HxCDF	*105*		*26 - 152*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,6,7,8-HxCDF	*100*		*26 - 123*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,7,8,9-HxCDF	*104*		*29 - 147*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-2,3,4,6,7,8-HxCDF	*107*		*28 - 136*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*79*		*23 - 140*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*97*		*28 - 143*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*88*		*26 - 138*	*10/05/20 11:15*	*10/12/20 23:54*	*1*
13C-OCDD	*75*		*17 - 157*	*10/05/20 11:15*	*10/12/20 23:54*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*110*		*35 - 197*	*10/05/20 11:15*	*10/12/20 23:54*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-418764/2-A
Matrix: Water
Analysis Batch: 421347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418764

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	217		pg/L		109	67 - 158
2,3,7,8-TCDF	200	226		pg/L		113	75 - 158
1,2,3,7,8-PeCDD	1000	1080		pg/L		108	70 - 142
1,2,3,7,8-PeCDF	1000	1110		pg/L		111	80 - 134
2,3,4,7,8-PeCDF	1000	1120		pg/L		112	68 - 160
1,2,3,4,7,8-HxCDD	1000	1110		pg/L		111	70 - 164
1,2,3,6,7,8-HxCDD	1000	1160		pg/L		116	76 - 134
1,2,3,7,8,9-HxCDD	1000	1070		pg/L		107	64 - 162
1,2,3,4,7,8-HxCDF	1000	1140		pg/L		114	72 - 134
1,2,3,6,7,8-HxCDF	1000	1110		pg/L		111	84 - 130
1,2,3,7,8,9-HxCDF	1000	1120		pg/L		112	78 - 130
2,3,4,6,7,8-HxCDF	1000	1130		pg/L		113	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	1110		pg/L		111	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	1070		pg/L		107	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	1080		pg/L		108	78 - 138
OCDD	2000	1960		pg/L		98	78 - 144
OCDF	2000	2060		pg/L		103	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*93*		*20 - 175*
13C-2,3,7,8-TCDF	*107*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*88*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*101*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*99*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*101*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*99*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*124*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*126*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*122*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*134*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*101*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*126*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*113*		*20 - 186*
13C-OCDD	*100*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*114*		*31 - 191*

Lab Sample ID: LCSD 320-418764/3-A
Matrix: Water
Analysis Batch: 421347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 418764

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	210		pg/L		105	67 - 158	3	50
2,3,7,8-TCDF	200	220		pg/L		110	75 - 158	2	50
1,2,3,7,8-PeCDD	1000	1040		pg/L		104	70 - 142	4	50
1,2,3,7,8-PeCDF	1000	1090		pg/L		109	80 - 134	2	50
2,3,4,7,8-PeCDF	1000	1100		pg/L		110	68 - 160	2	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-418764/3-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Water **Prep Type: Total/NA**

Analysis Batch: 421347 **Prep Batch: 418764**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	1110		pg/L		111	70 - 164	1	50
1,2,3,6,7,8-HxCDD	1000	1130		pg/L		113	76 - 134	3	50
1,2,3,7,8,9-HxCDD	1000	1080		pg/L		108	64 - 162	1	50
1,2,3,4,7,8-HxCDF	1000	1100		pg/L		110	72 - 134	4	50
1,2,3,6,7,8-HxCDF	1000	1100		pg/L		110	84 - 130	1	50
1,2,3,7,8,9-HxCDF	1000	1090		pg/L		109	78 - 130	2	50
2,3,4,6,7,8-HxCDF	1000	1100		pg/L		110	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD	1000	1060		pg/L		106	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF	1000	1040		pg/L		104	82 - 122	3	50
1,2,3,4,7,8,9-HpCDF	1000	1060		pg/L		106	78 - 138	2	50
OCDD	2000	1990		pg/L		99	78 - 144	2	50
OCDF	2000	2090		pg/L		105	63 - 170	1	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*83*		*20 - 175*
13C-2,3,7,8-TCDF	*96*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*73*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*84*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*86*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*74*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*79*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*95*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*98*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*96*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*98*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*72*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*90*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*82*		*20 - 186*
13C-OCDD	*73*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*118*		*31 - 191*

QC Association Summary

Specialty Organics

Prep Batch: 418764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65247-1	11215702-Tank#1-Valve-3-2-Repl	Total/NA	Water	1613B	
320-65247-1 - RA	11215702-Tank#1-Valve-3-2-Repl	Total/NA	Water	1613B	
MB 320-418764/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-418764/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-418764/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 421347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65247-1	11215702-Tank#1-Valve-3-2-Repl	Total/NA	Water	1613B	418764
MB 320-418764/1-A	Method Blank	Total/NA	Water	1613B	418764
LCS 320-418764/2-A	Lab Control Sample	Total/NA	Water	1613B	418764
LCSD 320-418764/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	418764

Analysis Batch: 422408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65247-1 - RA	11215702-Tank#1-Valve-3-2-Repl	Total/NA	Water	1613B	418764

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl
Lab Sample ID: 320-65247-1
Date Collected: 09/11/20 13:30
Matrix: Water
Date Received: 10/02/20 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			418764	10/05/20 11:15	NR	TAL SAC
Total/NA	Analysis	1613B		1	421347	10/13/20 04:24	AS	TAL SAC
Total/NA	Prep	1613B	RA		418764	10/05/20 11:15	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	422408	10/15/20 03:55	KSS	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc.　Job ID: 320-65247-1
Project/Site: San Jacinto River Waste Pits Superfund

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-65247-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65247-1	11215702-Tank#1-Valve-3-2-Repl	Water	09/11/20 13:30	10/02/20 09:45	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65247-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 413246

Lab Sample ID: IC 320-413246/3 Client Sample ID:

Date Analyzed: 09/17/20 16:09 Lab File ID: 17SE2010D5_3.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	17.91	Poor chromatography	shardaa	09/17/20 17:16

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65247-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 421347

Lab Sample ID: MB 320-418764/1-A Client Sample ID:

Date Analyzed: 10/12/20 23:54 Lab File ID: 12OC20B10D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	17.32	Split Peak	dadunj	10/14/20 13:09
1,2,3,7,8-PeCDF	21.40	Split Peak	dadunj	10/14/20 13:09
1,2,3,7,8-PeCDD	23.35	Split Peak	dadunj	10/14/20 13:10
1,2,3,6,7,8-HxCDF	29.77	Split Peak	dadunj	10/14/20 13:10
2,3,4,6,7,8-HxCDF	30.86	Split Peak	dadunj	10/14/20 13:10
1,2,3,6,7,8-HxCDD	31.23	Split Peak	dadunj	10/14/20 13:11
1,2,3,7,8,9-HxCDD	31.61	Split Peak	dadunj	10/14/20 13:11
1,2,3,7,8,9-HxCDF	31.82	Split Peak	dadunj	10/14/20 13:10
1,2,3,4,6,7,8-HpCDF	33.37	Split Peak	dadunj	10/14/20 13:11
1,2,3,4,6,7,8-HpCDD	34.13	Split Peak	dadunj	10/14/20 13:11
1,2,3,4,7,8,9-HpCDF	34.41	Split Peak	dadunj	10/14/20 13:11
OCDD	36.40	Split Peak	dadunj	10/14/20 13:11
OCDF	36.47	Split Peak	dadunj	10/14/20 13:11

Lab Sample ID: 320-65247-1 Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl

Date Analyzed: 10/13/20 04:24 Lab File ID: 12OC20B10D5_10.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	10/14/20 13:23
1,2,3,7,8,9-HxCDF		Invalid Compound ID	dadunj	10/14/20 13:23
1,2,3,7,8-PeCDF	21.40	Split Peak	dadunj	10/14/20 13:22
2,3,4,7,8-PeCDF	22.67	Baseline	dadunj	10/14/20 13:24
1,2,3,7,8-PeCDD	23.36	Baseline	dadunj	10/14/20 13:23
1,2,3,4,7,8-HxCDD	31.11	Split Peak	dadunj	10/14/20 13:23
1,2,3,4,6,7,8-HpCDF	33.38	Split Peak	dadunj	10/14/20 13:23
1,2,3,4,6,7,8-HpCDD	34.14	Split Peak	dadunj	10/14/20 13:24
1,2,3,4,7,8,9-HpCDF	34.42	Split Peak	dadunj	10/14/20 13:23
OCDD	36.40	Split Peak	dadunj	10/14/20 13:24
OCDF	36.50	Split Peak	dadunj	10/14/20 13:24

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-65247-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 422408

Lab Sample ID: 320-65247-1 RA Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl RA

Date Analyzed: 10/15/20 03:55 Lab File ID: 15OC2011D2_005.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.01	Shouldering	stephensk	10/16/20 12:24

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
HRDXNIC_00046	01/31/21	09/11/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00439	01/31/21	09/28/20	Acetone, Lot 0000242180	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL2_00030	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00122	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL3_00028	01/31/21	09/11/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00122	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00095	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

				Reagent	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL5_00031	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL6_00027	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00242	09/18/21	09/18/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 KSS

(pg 1/6)

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

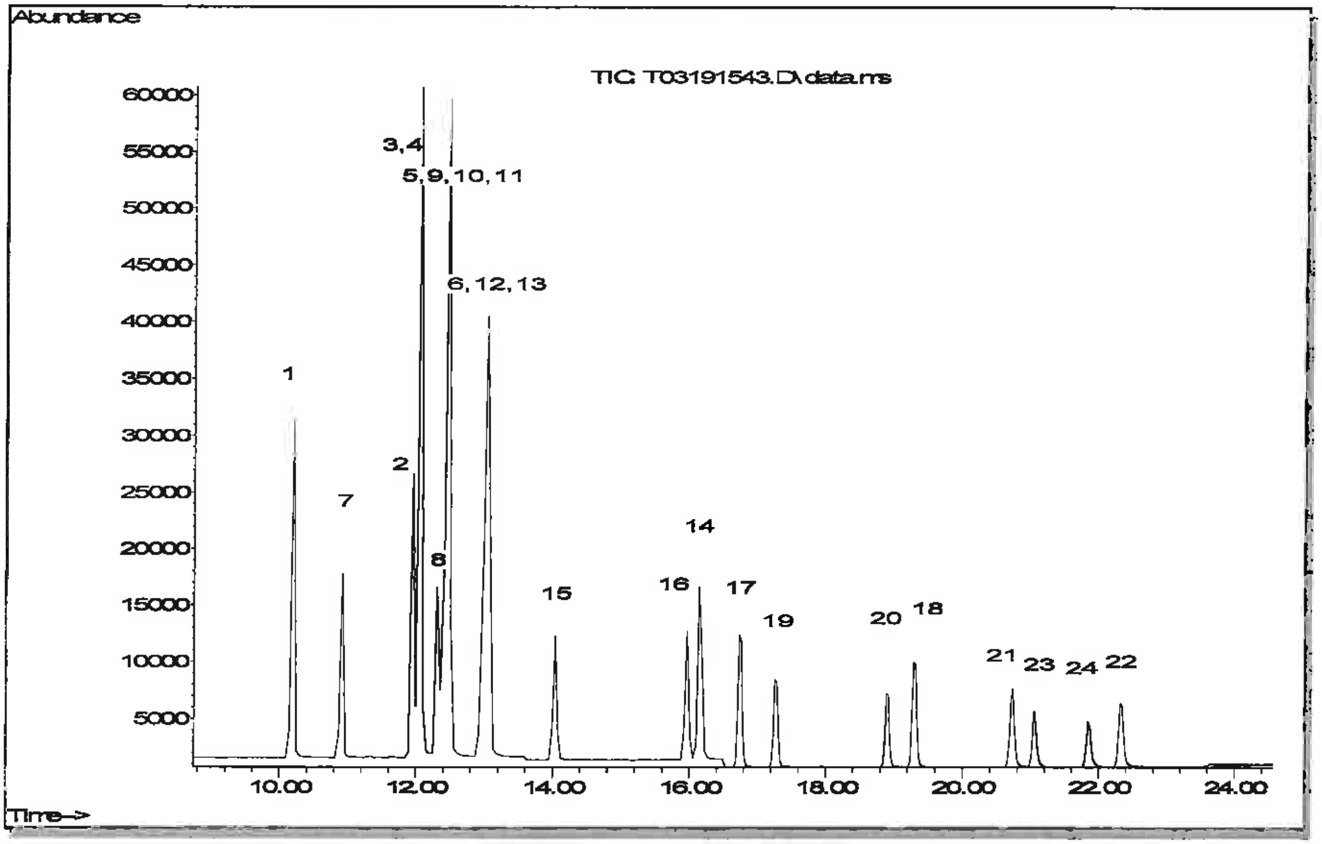

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNCP_00041

rec 7/29/20 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

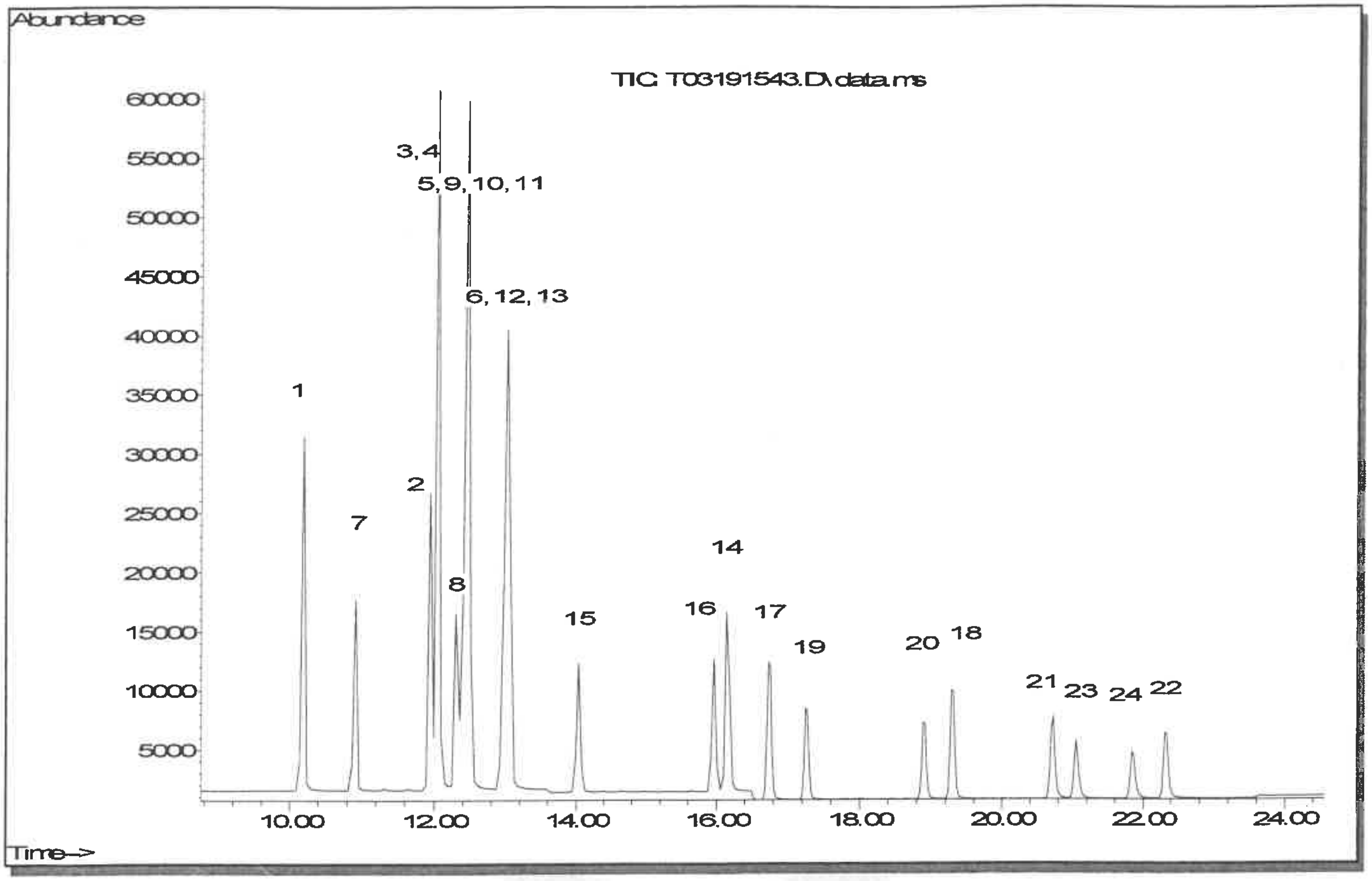

1	1,3,6,8-Tetrachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5	1,2,3,9-Tetrachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin
13	1,3,4,6,8-Pentachlorodibenzofuran
14	1,2,3,8,9-Pentachlorodibenzofuran
15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17	1,2,3,4,6,8-Hexachlorodibenzofuran
18	1,2,3,4,8,9-Hexachlorodibenzofuran
19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00398

9280 I#34
Received 11-14-19
GLJ

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Revision 00
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Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

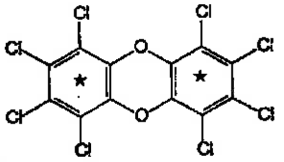

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

[illegible]

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 70°C to 200°C at 40°C/min
200°C to 280°C at 10°C/min hold 15 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 3
Linearity (r): 0.997

Neat Material Data

Compound Name: Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER04041601

Chemical Formula: $^{13}C_{12}Cl_8O_2$
CAS Number: 114423-97-1
Molecular Weight: 471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

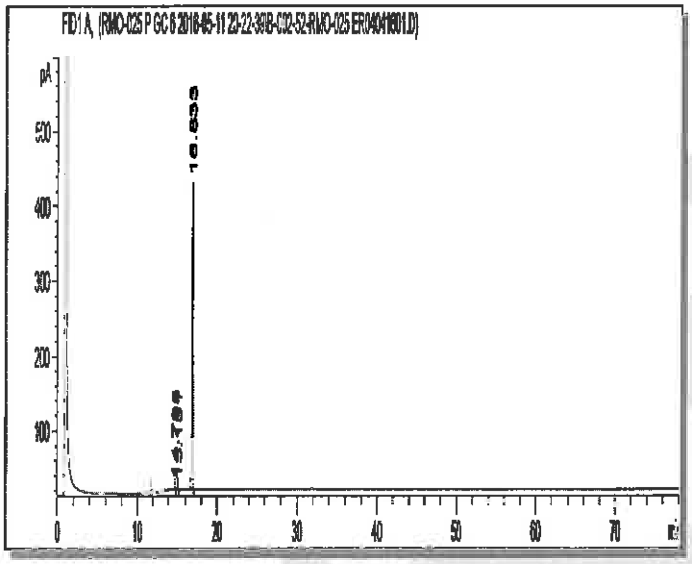

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.80	12.12	3.62	0.61
2	15.15	4.72	1.32	0.24
3	16.83	1980.56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

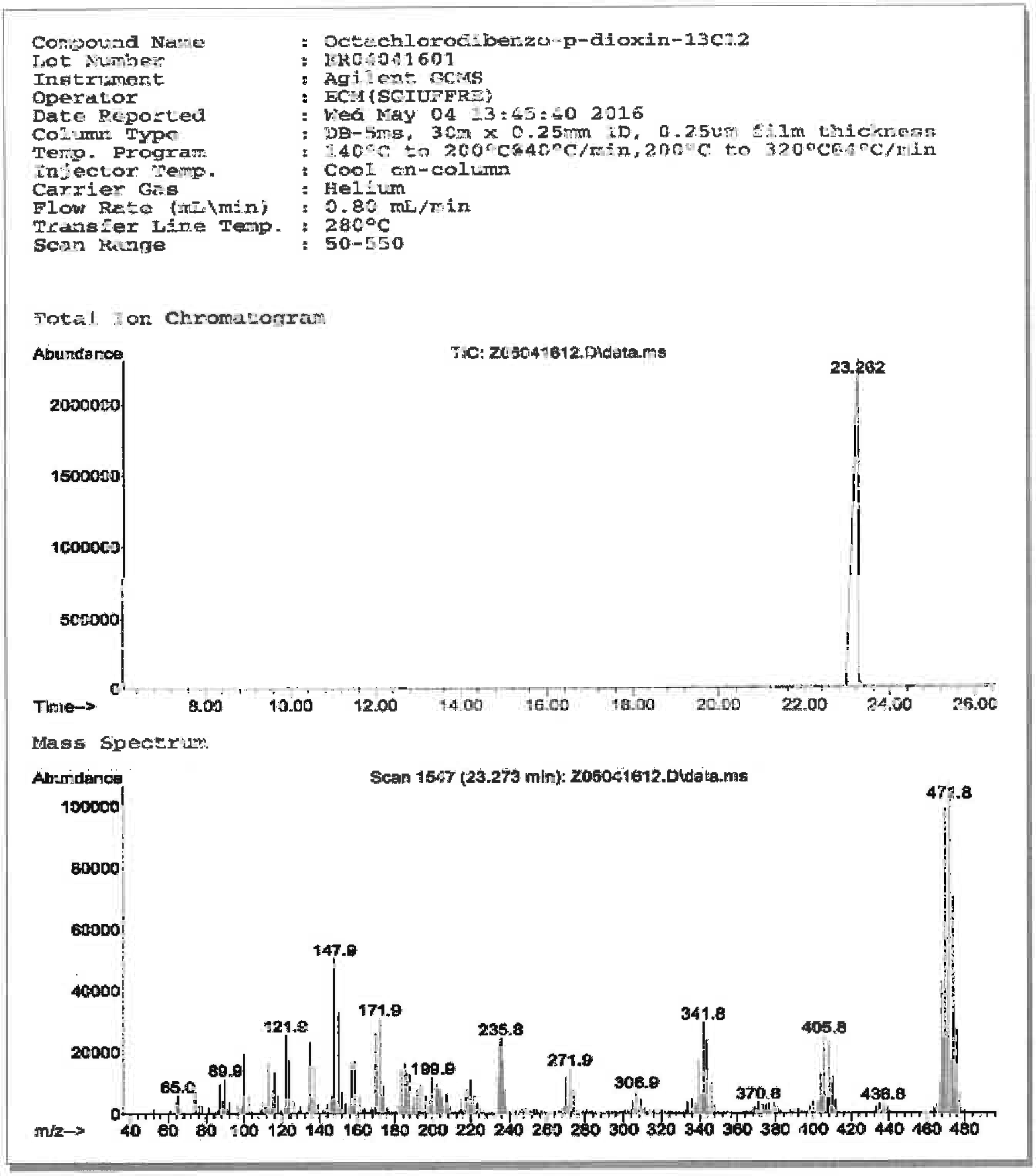

Compound Name : Octachlorodibenzo-p-dioxin-13C12
Lot Number : ER04041601
Instrument : Agilent GCMS
Operator : ECM(SCIUFFRE)
Date Reported : Wed May 04 13:45:40 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00407

Received 11-21-19

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Revision 00
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

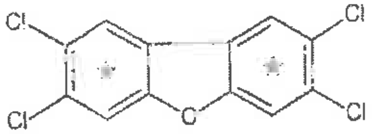

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401
Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

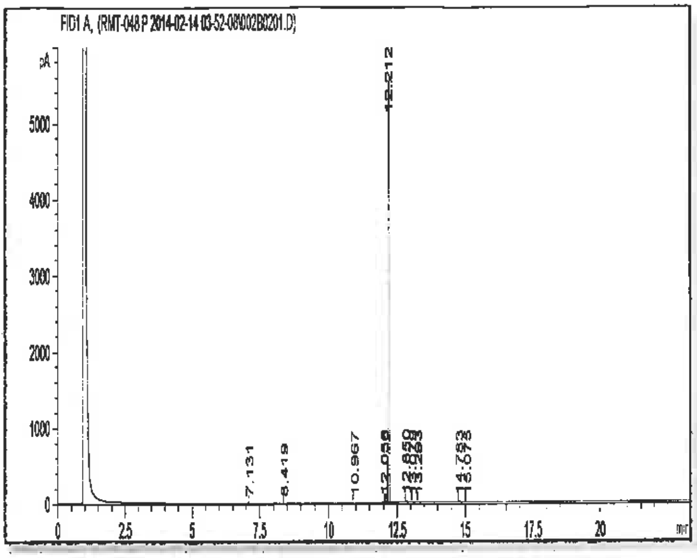

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument:	GC#10
Sample Name:	ER01161401
Acquired:	February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

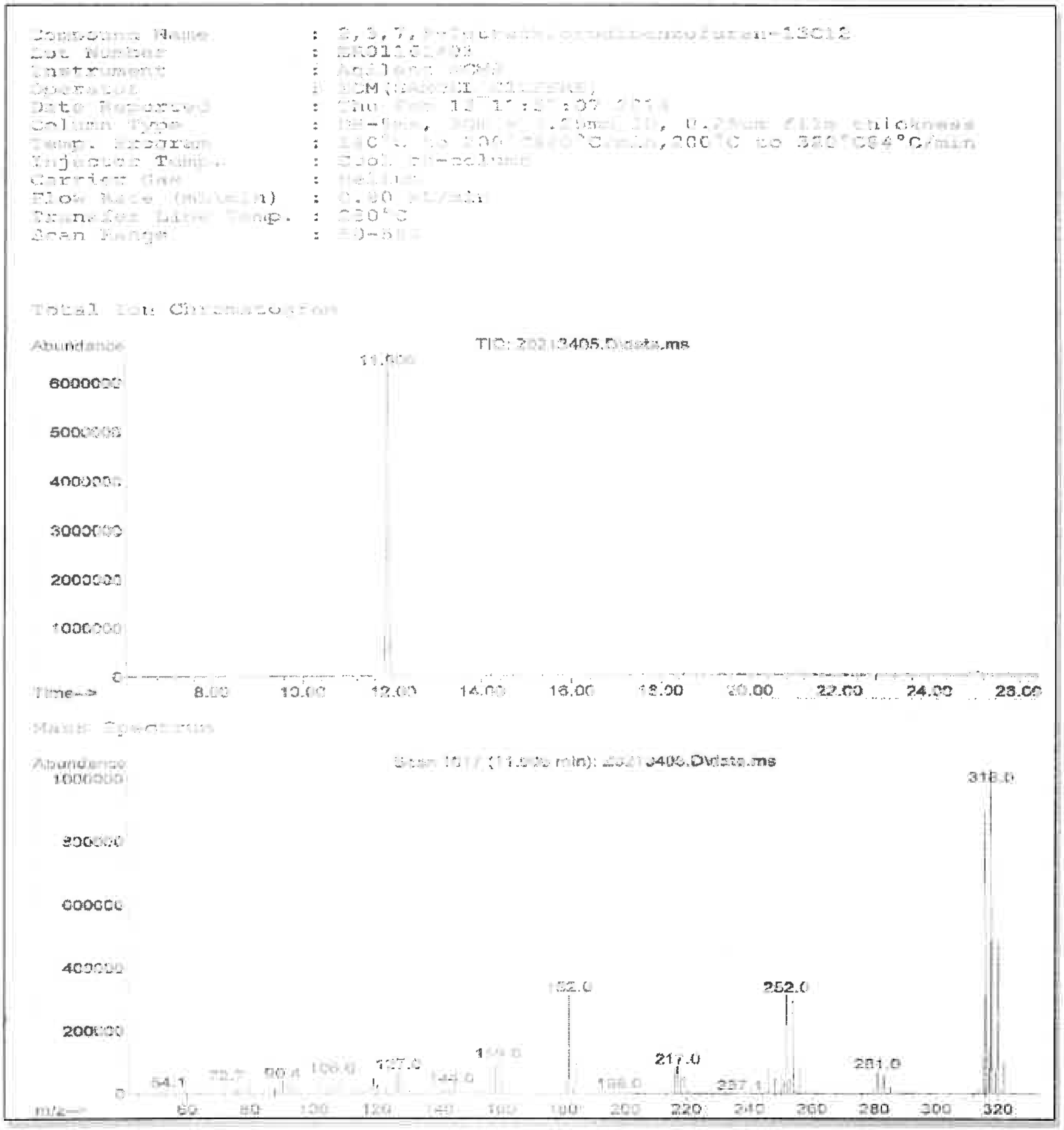

```
Compound Name           : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number              : ER01131-03
Instrument              : Agilent GCMS
Operator                : DCM([illegible])
Date Reported           : Thu Feb 13 17:57:07 2014
Column Type             : DB-5ms, 30M X 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL/min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-18

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Revision 01
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

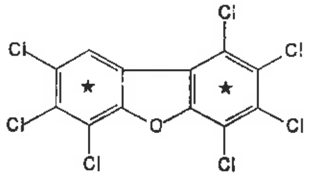

Catalog Number: EF-974
Solution Lot: ER08101404
Expiration Date: November 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

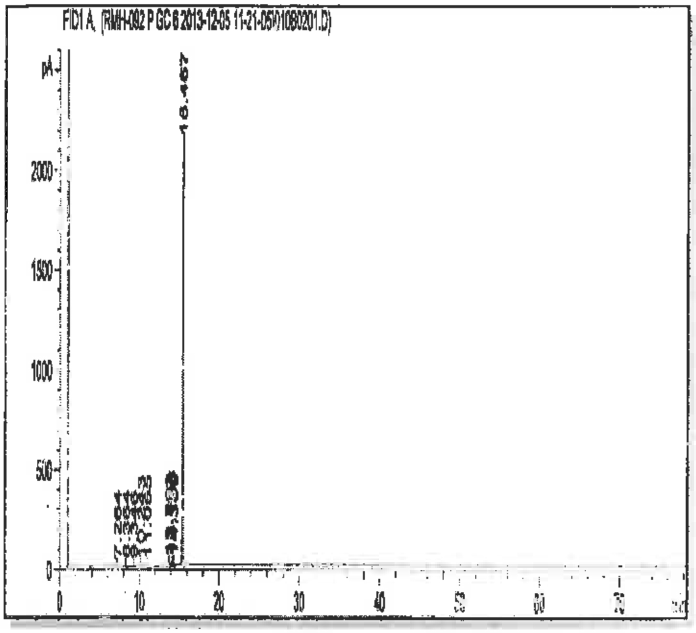

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

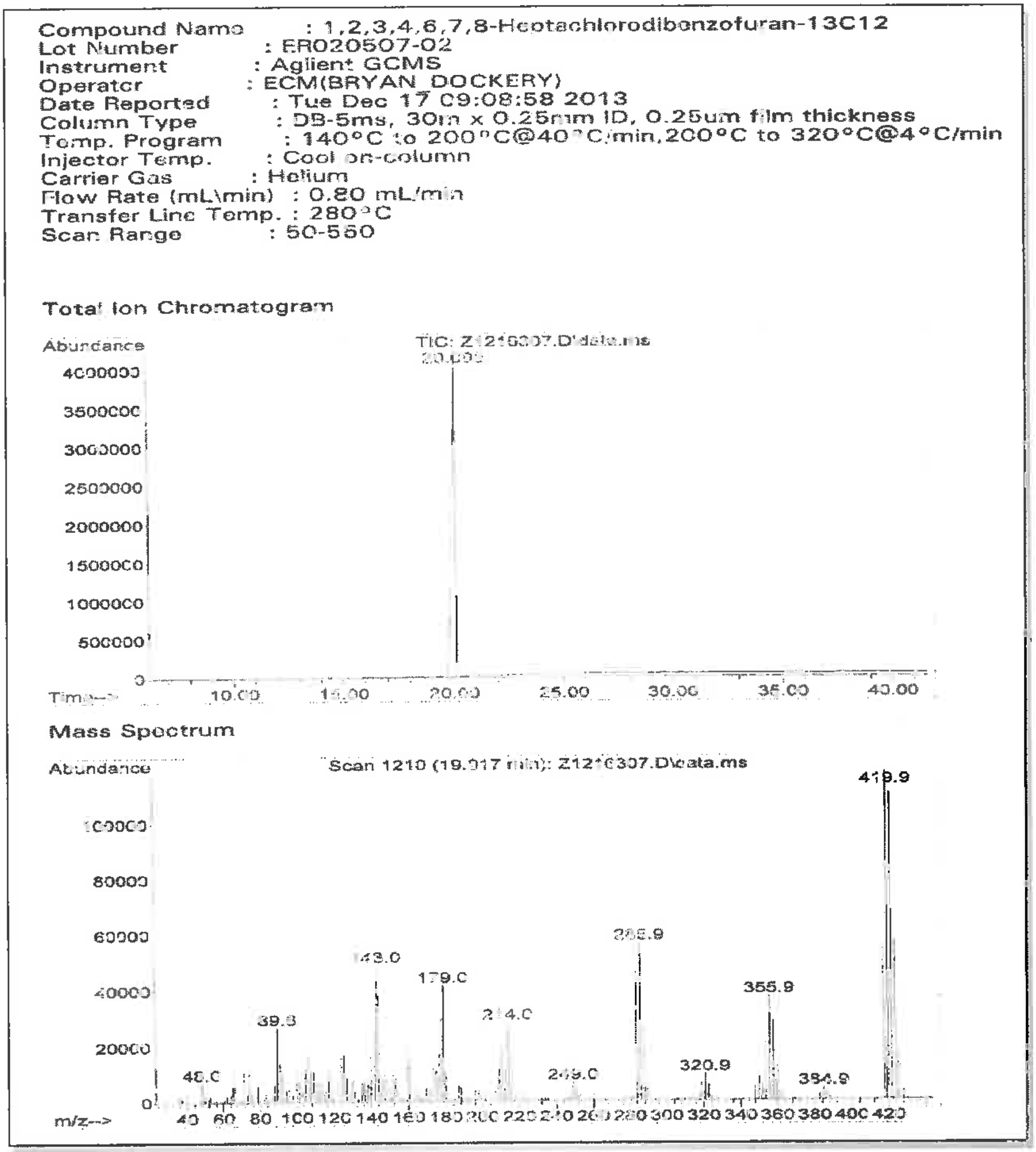

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-2[illegible]

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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

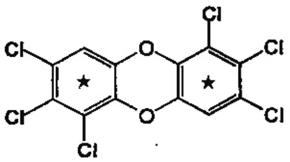

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (μg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	**Chemical Formula:**	$^{13}C_{12}H_2Cl_6O_2$
Compound Lot:	FN01151802	**CAS Number:**	109719-81-5
		Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

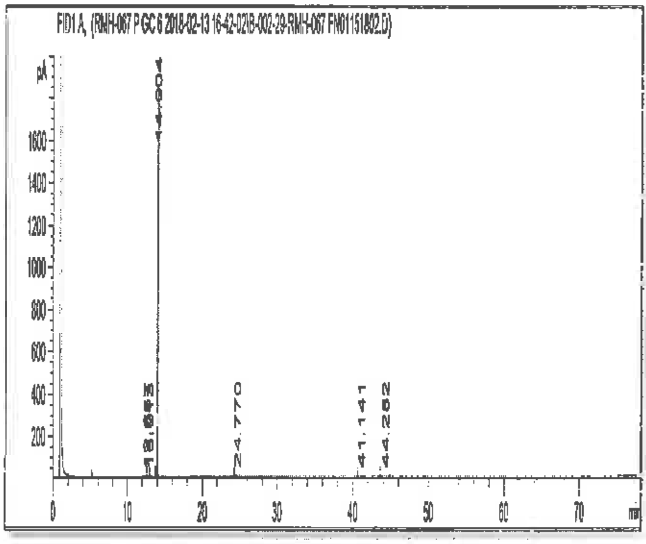

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

GC/MS

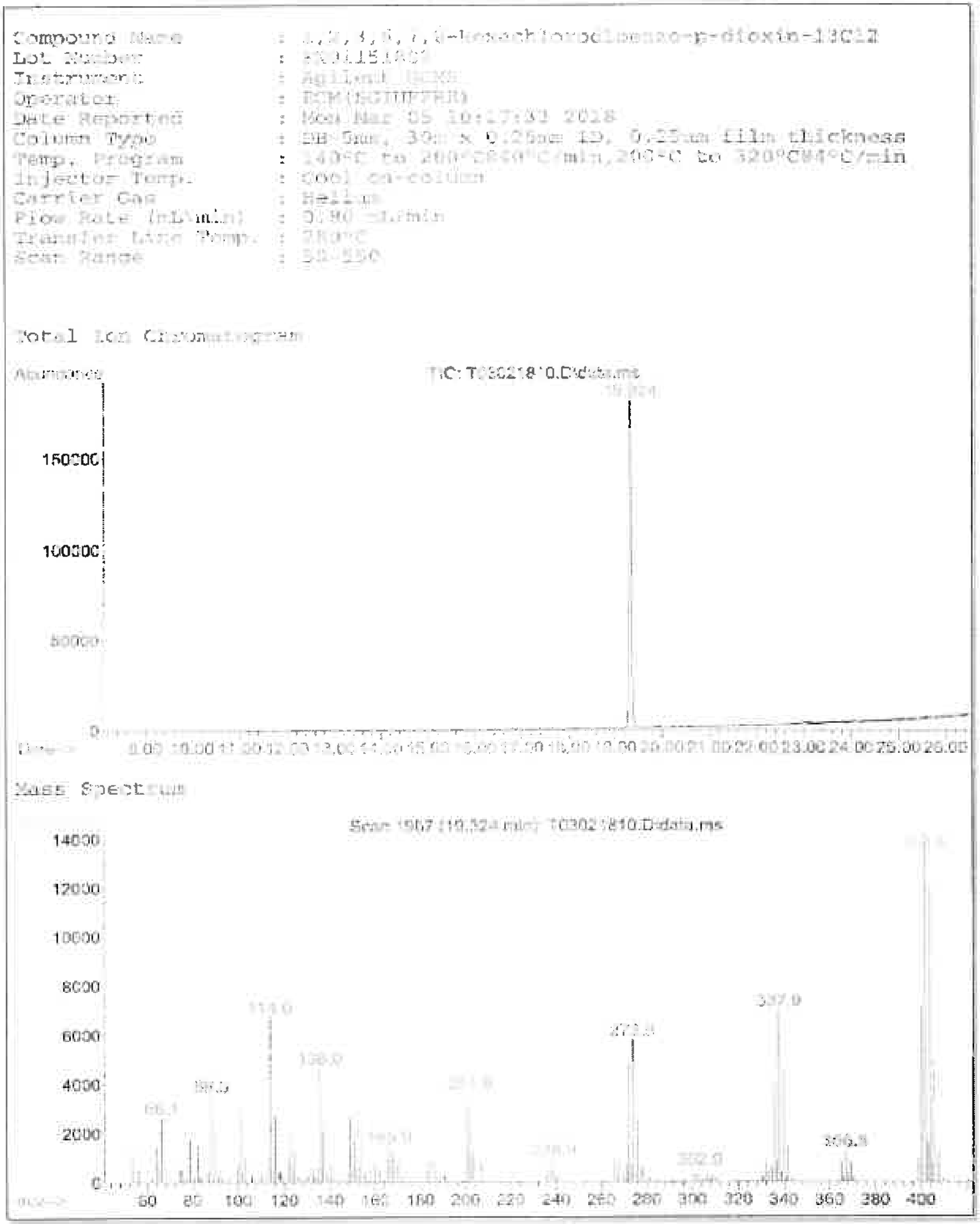

Compound Name : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent GCMS
Operator : ECM(SCHAFFER)
Date Reported : Mon Mar 05 10:17:33 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.90 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00410

Rec'd 11-21-16

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Revision 0
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

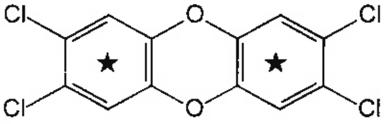

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

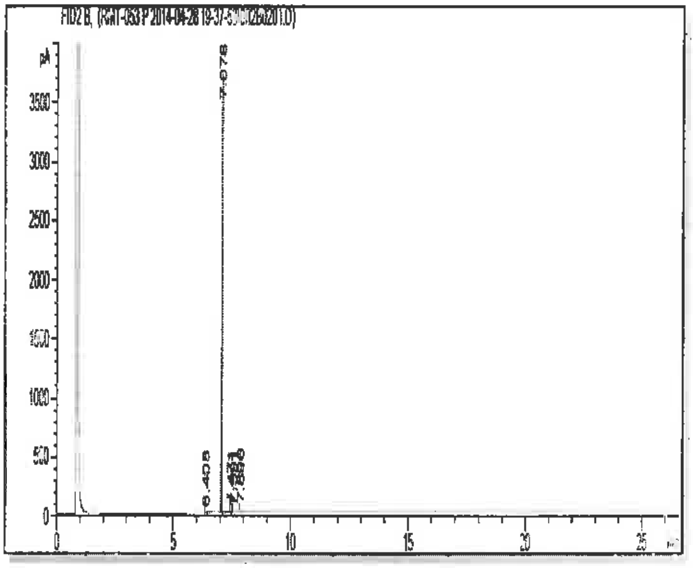

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

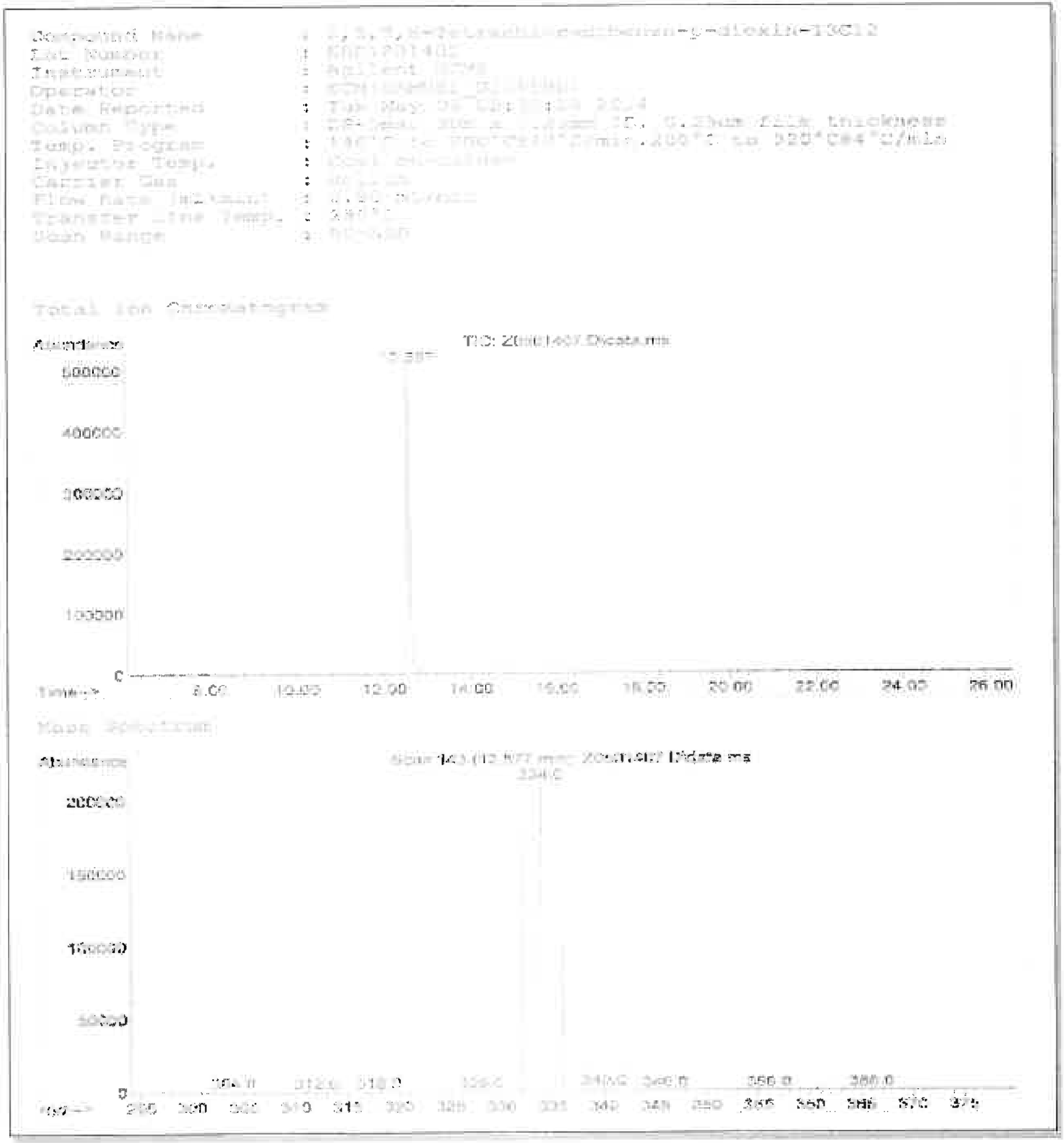

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent GCMS
Operator : [illegible]
Date Reported : Tue May 06 [illegible] 2014
Column Type : [illegible] x 0.25mm ID, 0.25um film thickness
Temp. Program : [illegible] °C/min,200°C to 320°C@4°C/min
Injector Temp. : [illegible]
Carrier Gas : [illegible]
Flow Rate (Constant) : [illegible]
Transfer Line Temp. : [illegible]
Scan Range : [illegible]

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00417

r: 3|30|20

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

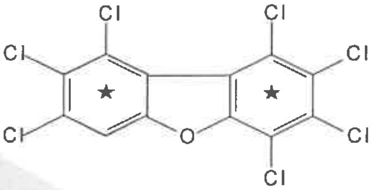

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER04041602

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-94-0
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

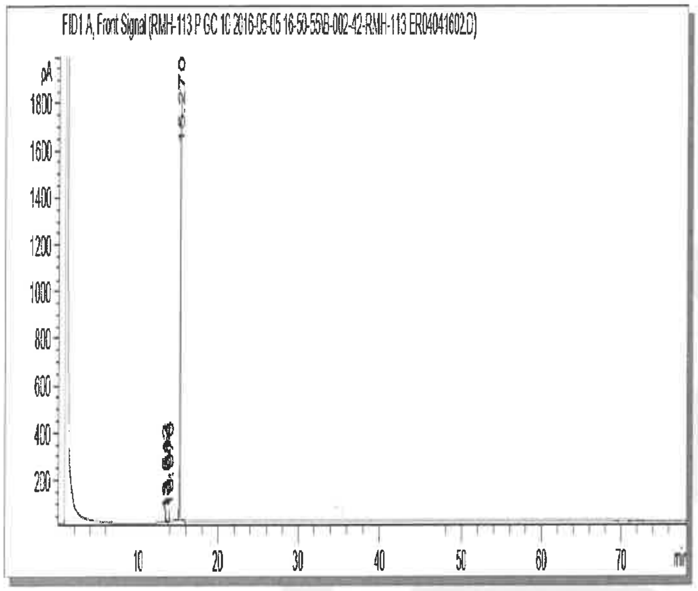

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

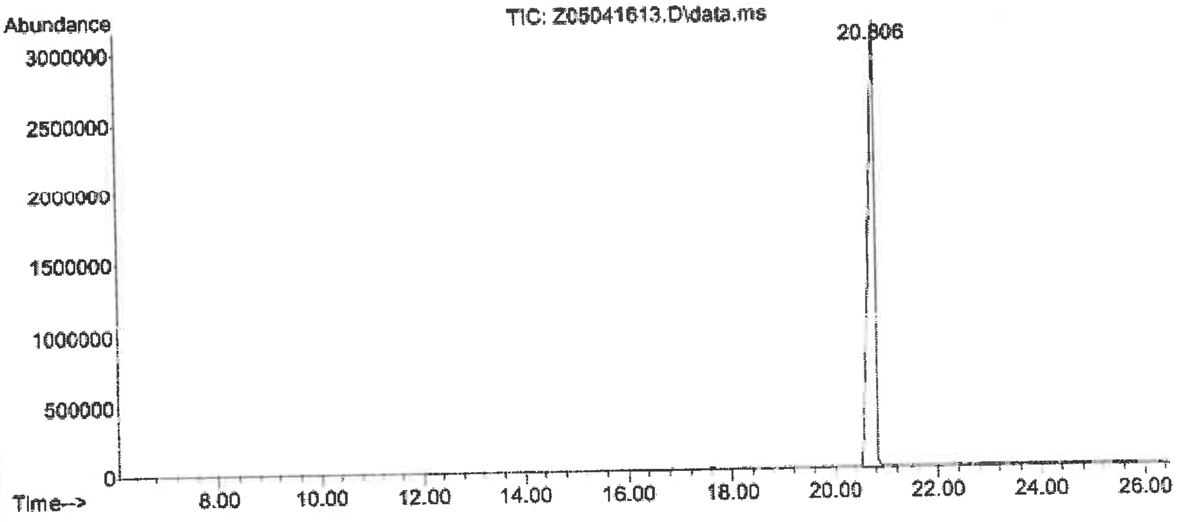

Mass Spectrum

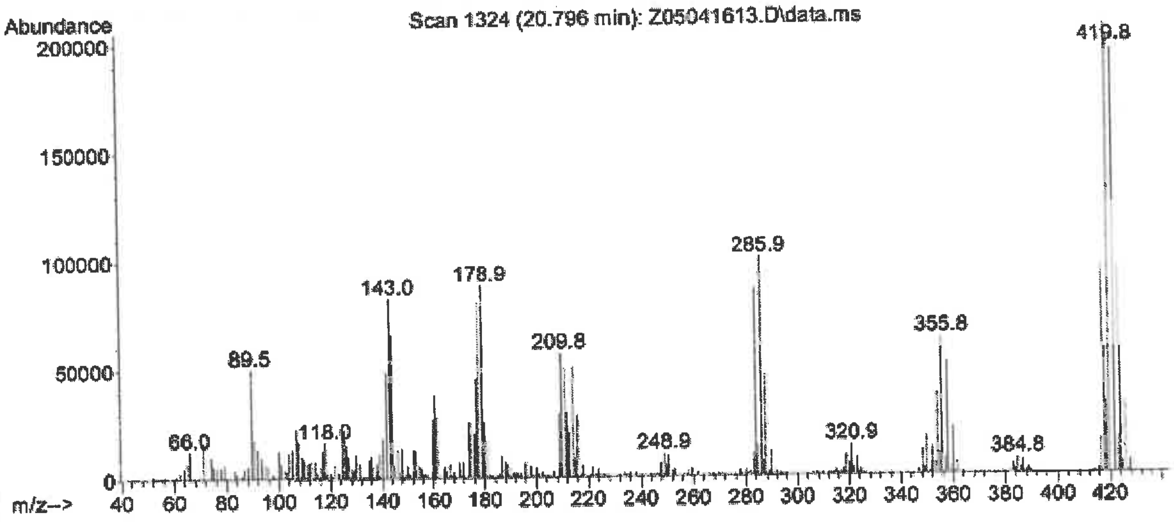

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/20/20 sad

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

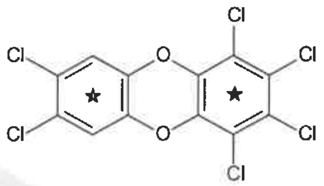

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER011008-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-80-4
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

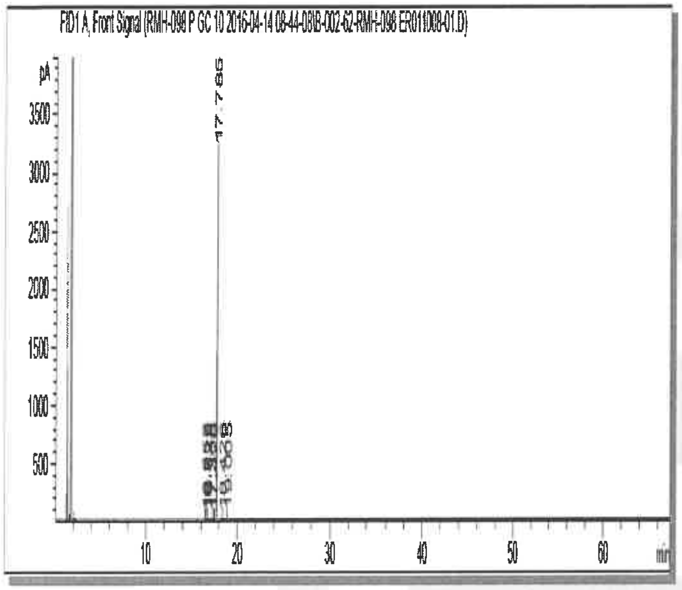

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

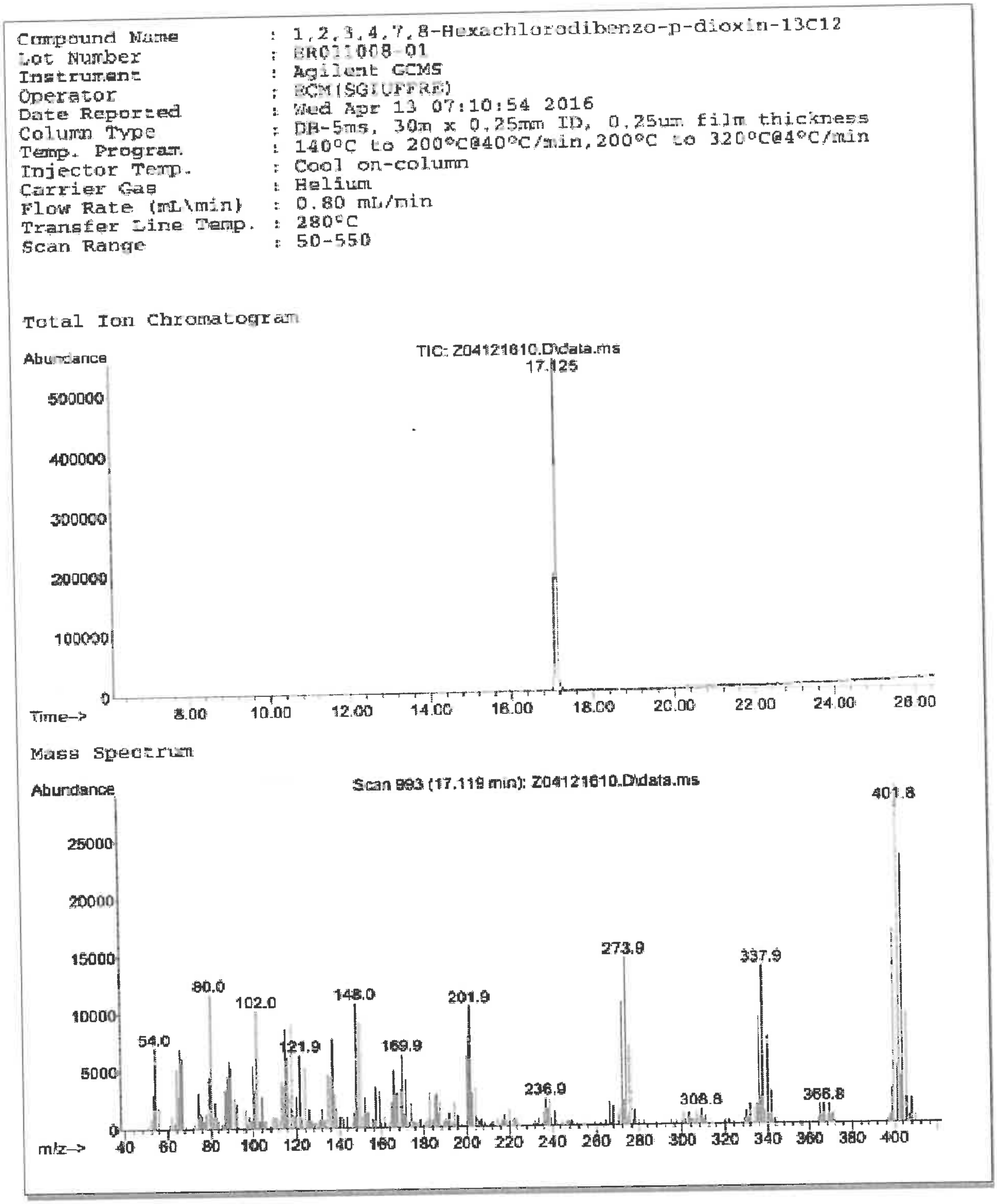

```
Compound Name              : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number                 : ER011008-01
Instrument                 : Agilent GCMS
Operator                   : RCM(SGIUFFRE)
Date Reported              : Wed Apr 13 07:10:54 2016
Column Type                : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program              : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.             : Cool on-column
Carrier Gas                : Helium
Flow Rate (mL\min)         : 0.80 mL/min
Transfer Line Temp.        : 280°C
Scan Range                 : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SKV

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Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

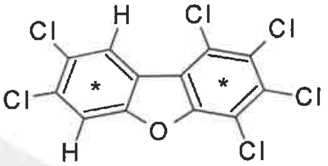

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601
Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

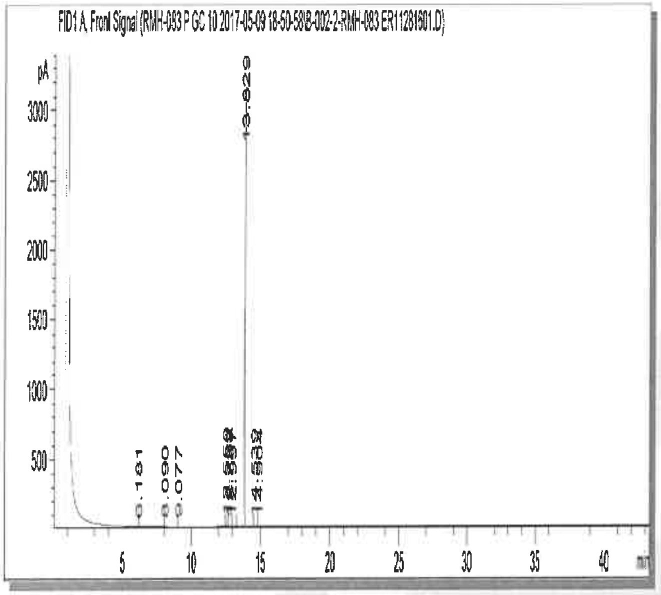

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

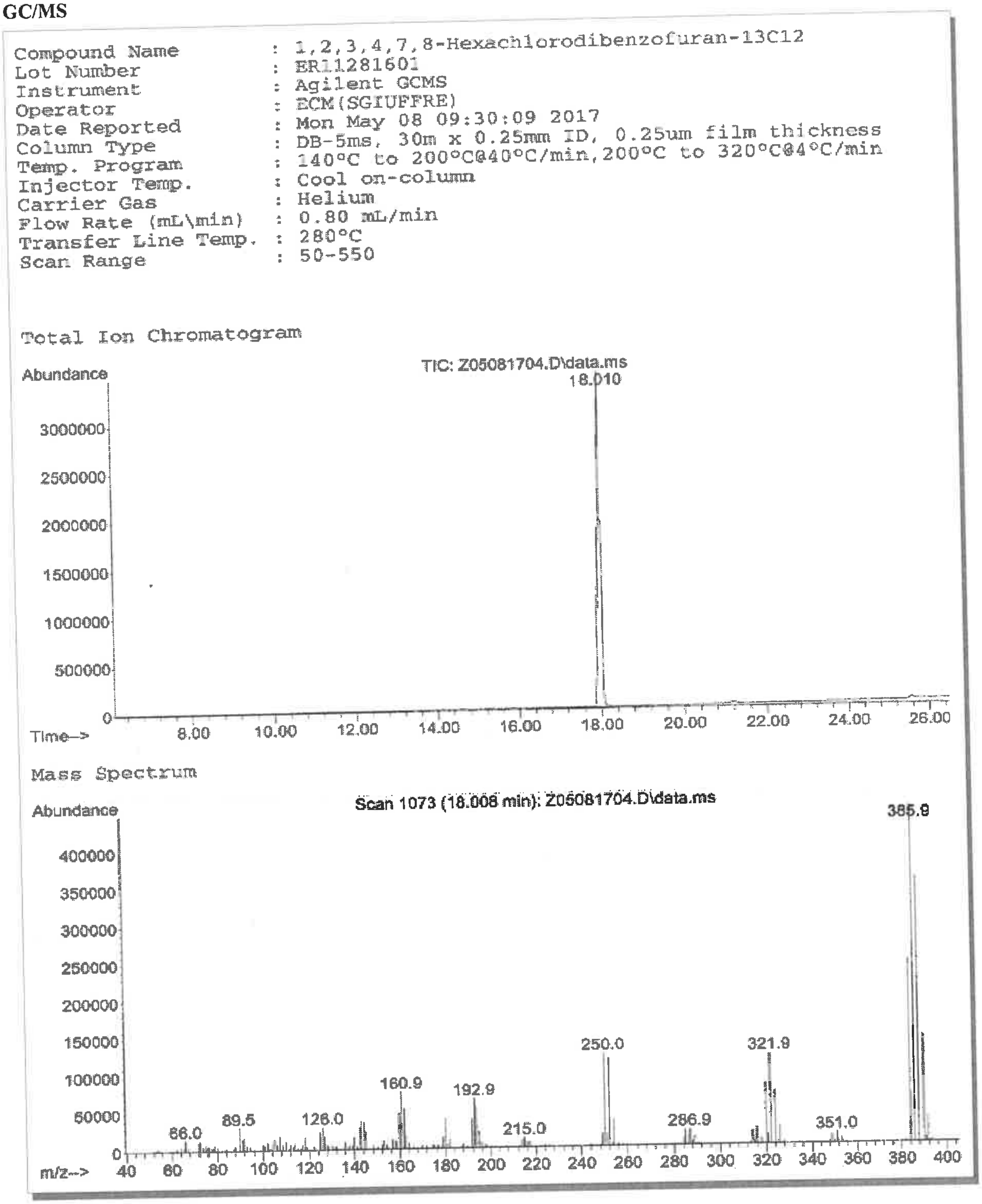

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

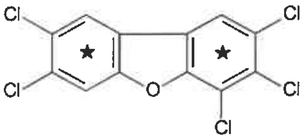

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11101601

Chemical Formula: $^{13}C_{12}H_3Cl_5O$
CAS Number: 116843-02-8
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

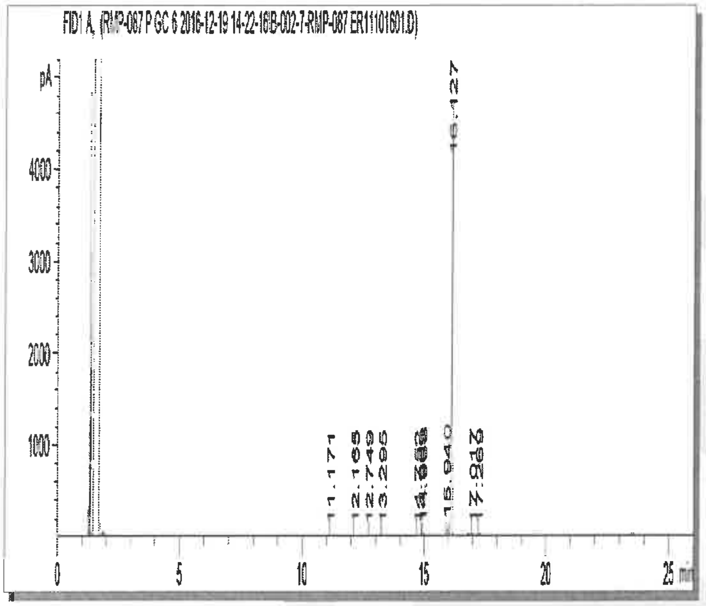

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

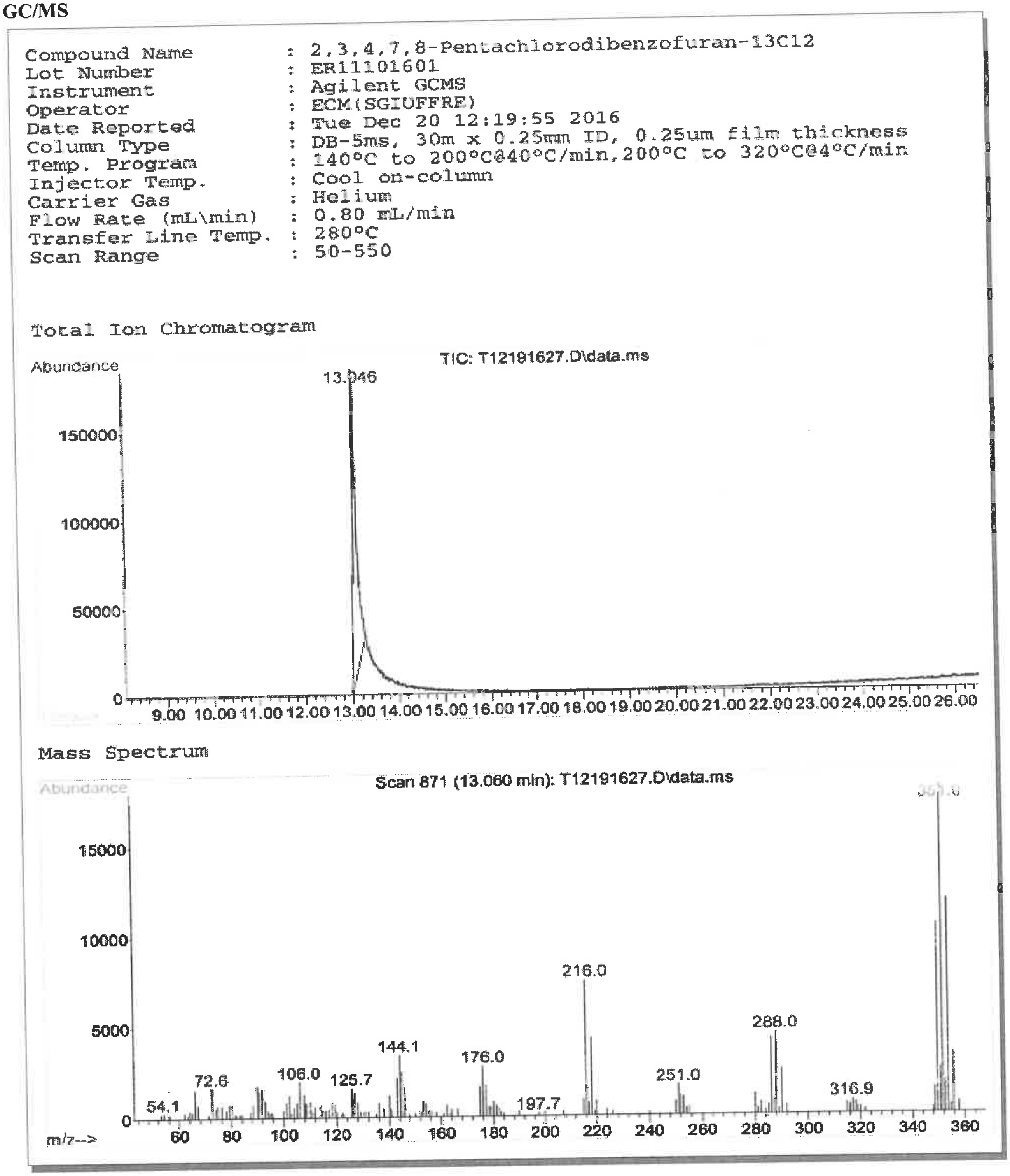

```
Compound Name           : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number              : ER11101601
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Tue Dec 20 12:19:55 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

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Revision 02
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Cerilliant Quality
ISO GUIDE 34 CERTIFICATE AR1353
ISO/IEC 17025 CERTIFICATE AT1352
ISO 9001:2008 CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

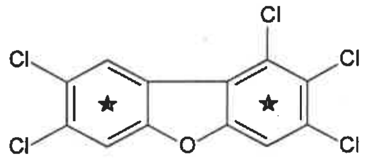

Catalog Number:	EF-952
Solution Lot:	ER012111-01
Expiration Date:	January 2021
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3OCl_5$
CAS Number: 109719-77-9
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

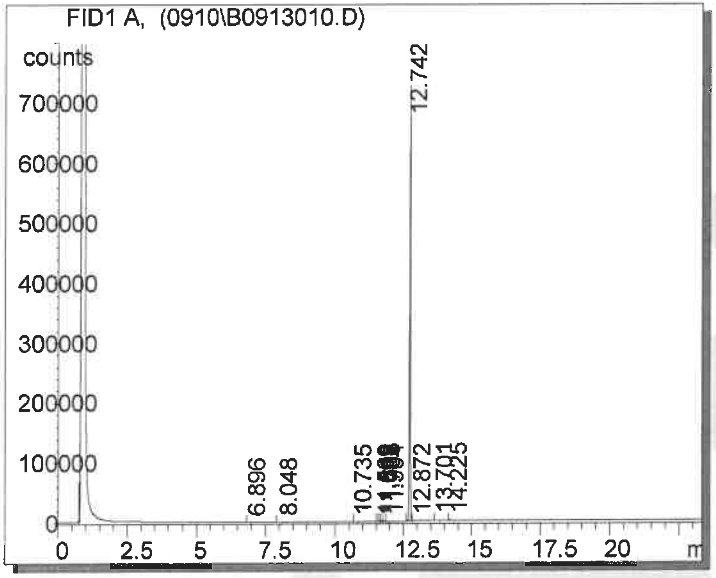

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

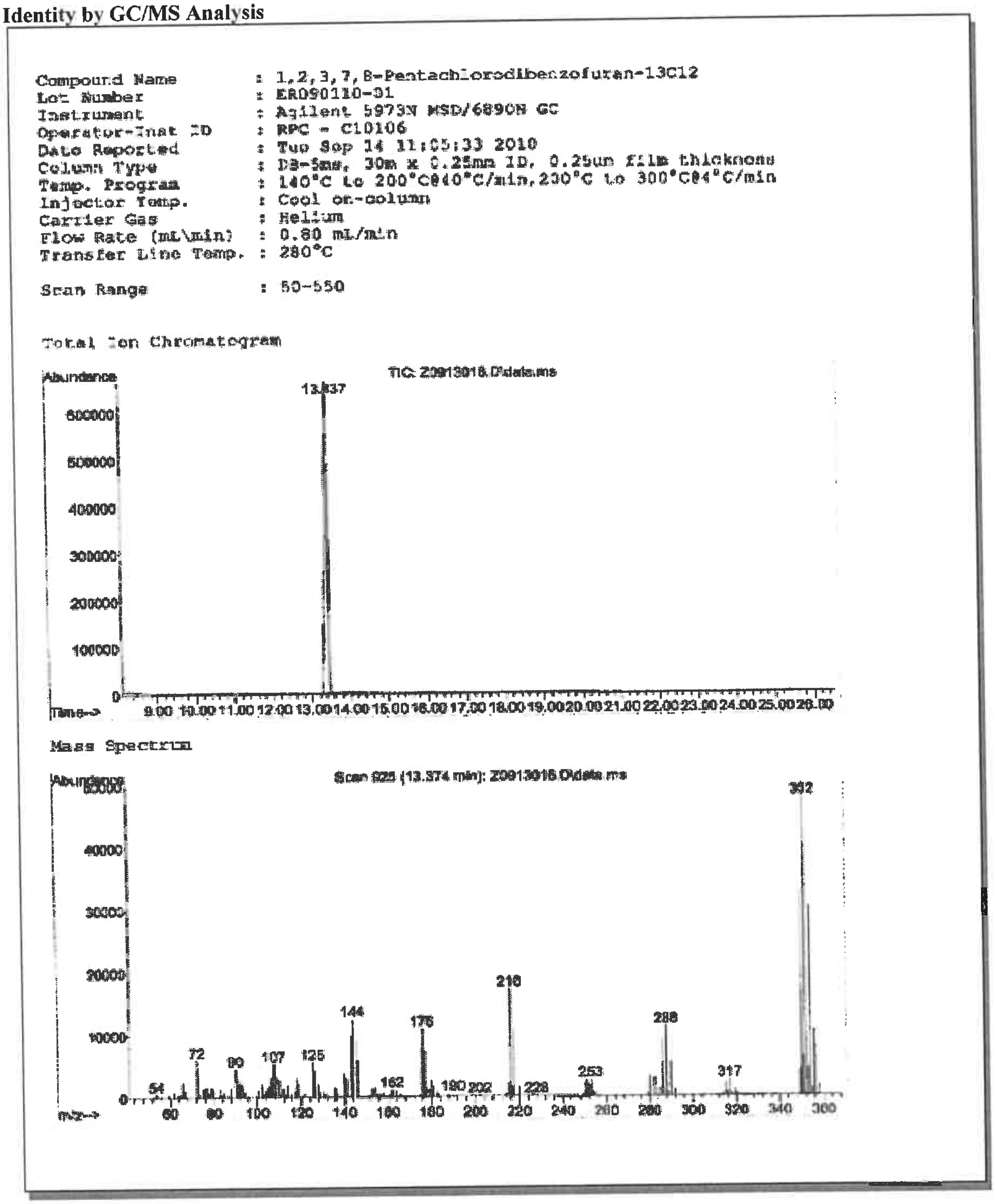

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number             : ER090110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Tue Sep 14 11:05:33 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

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Revision 01
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

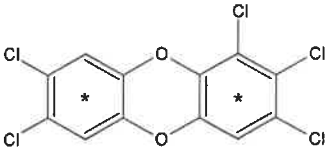

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER06241403

Chemical Formula: $^{13}C_{12}H_3Cl_5O_2$
CAS Number: 109719-79-1
Molecular Weight: 368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

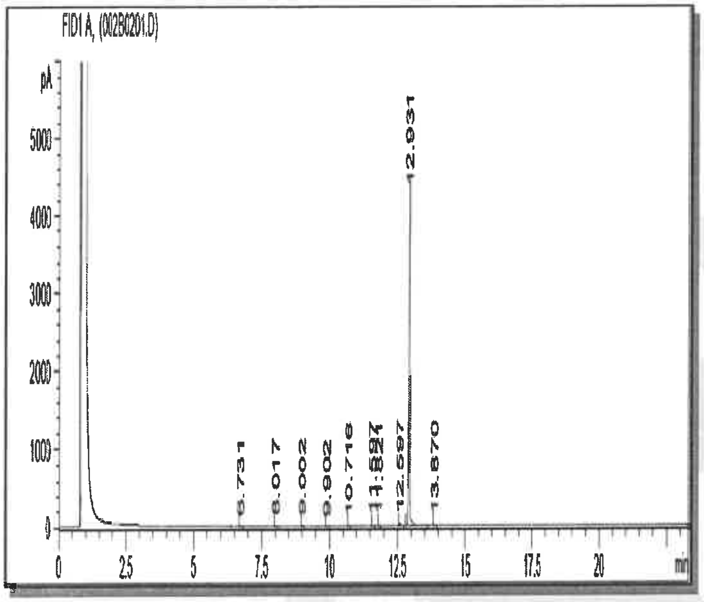

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

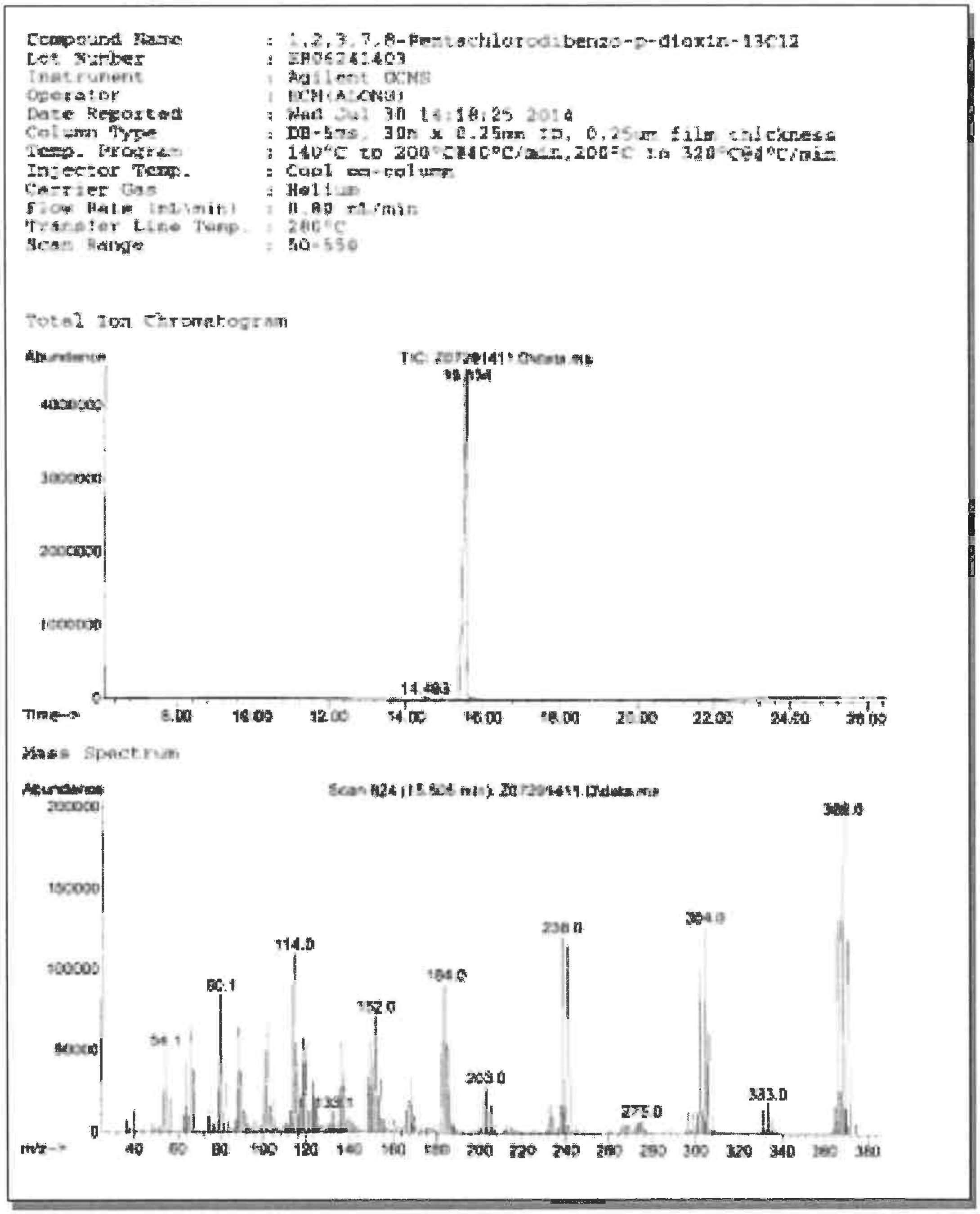

```
Compound Name           : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number              : ER06241403
Instrument              : Agilent GCMS
Operator                : HCM(ALONG)
Date Reported           : Wed Jul 30 14:18:25 2014
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL/min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

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Analytical Reference Standards
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

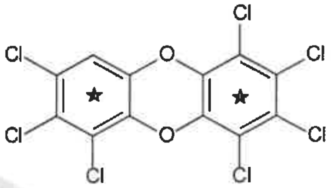

Catalog Number:	ED-972
Solution Lot:	ER09271601
Expiration Date:	October 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

October 26, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 0.999

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER100110-01

Chemical Formula: $^{13}C_{12}HCl_7O_2$
CAS Number: 109719-83-7
Molecular Weight: 437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

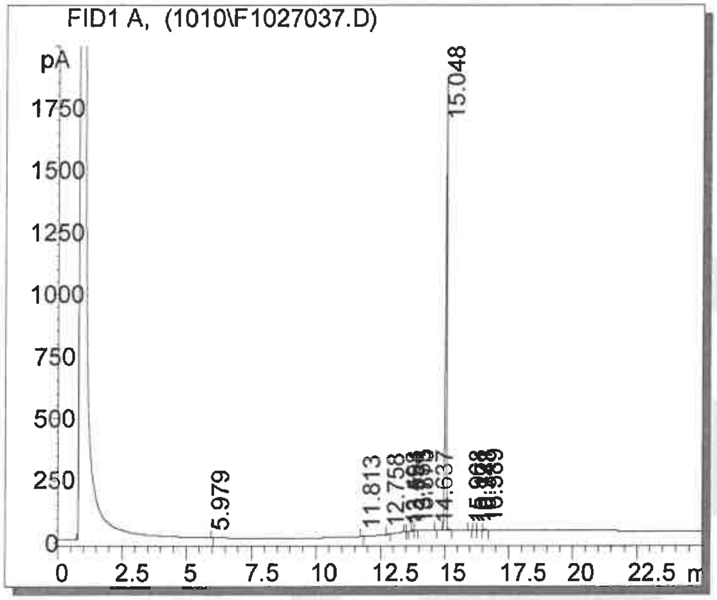

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

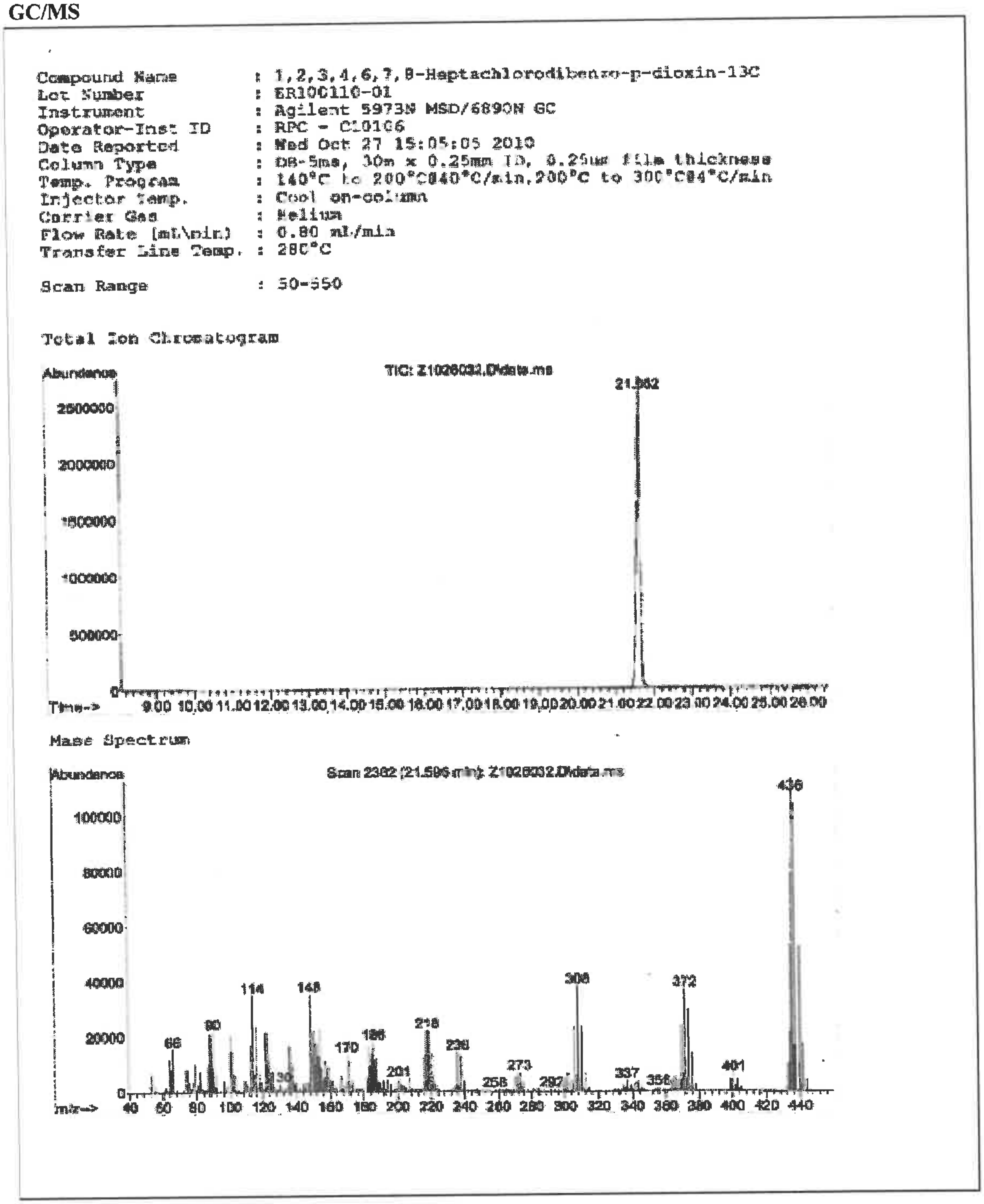

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number : ER10C110-01
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst ID : RPC - C10106
Date Reported : Wed Oct 27 15:05:05 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C

Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

R: 4/21/20 SW

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Revision 0
Page 1 of 5

Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

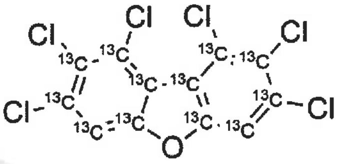

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

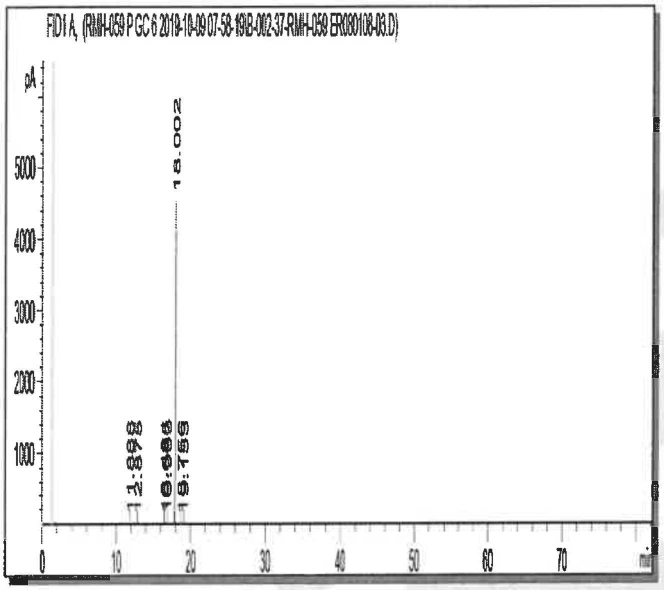

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Sample Name:	ER080108-03
Acquired:	October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name           : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number              : ER080108-03
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Tue Oct 08 10:54:22 2019
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

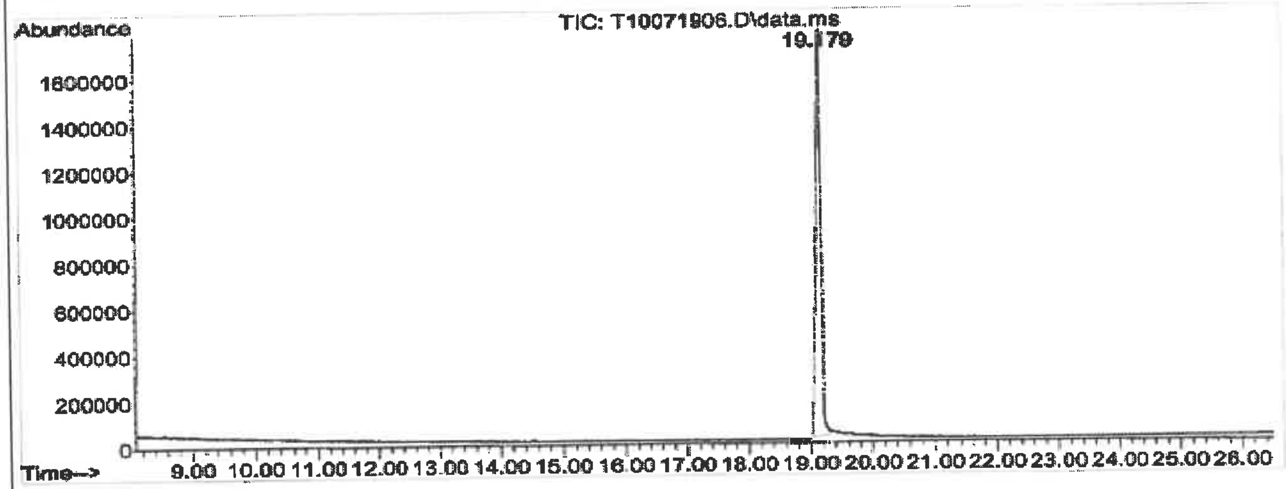

Mass Spectrum

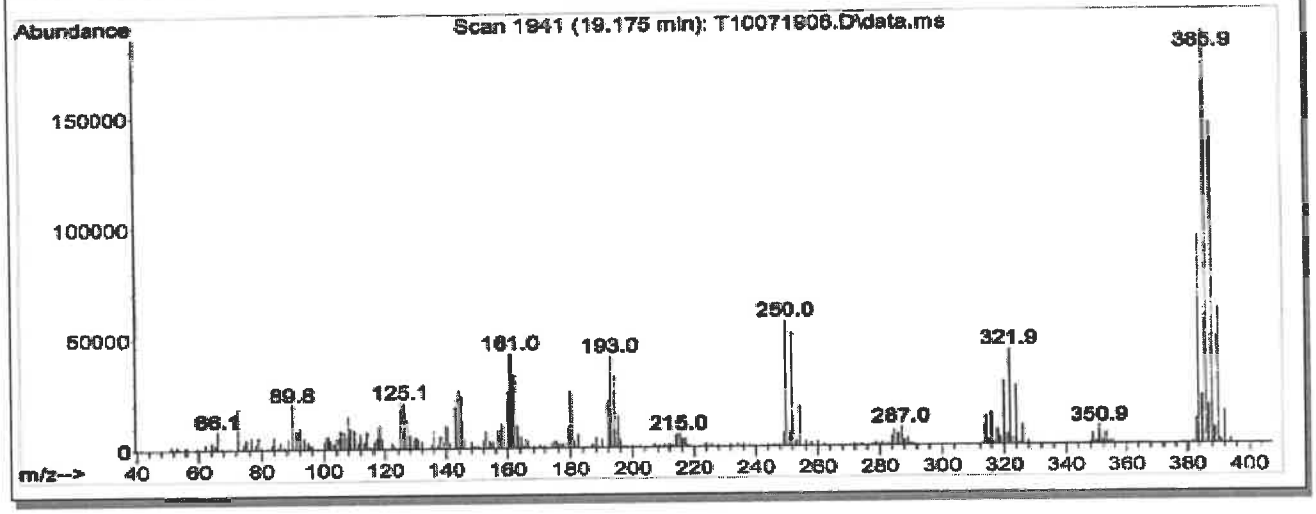

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skw

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

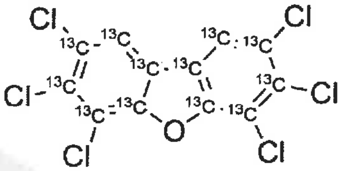

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

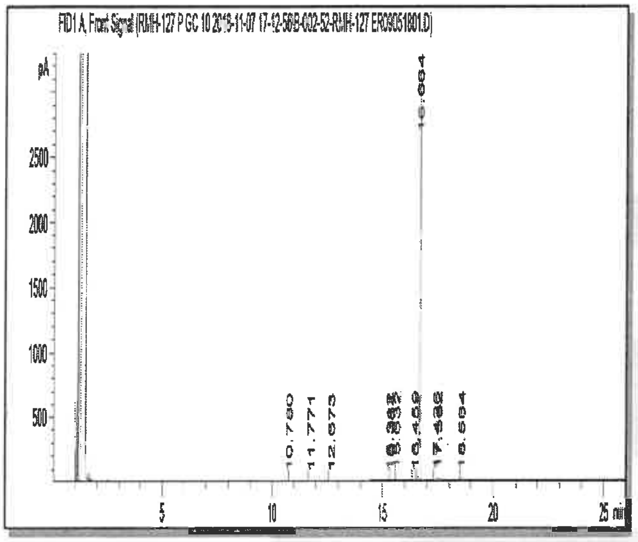

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER09051801
Acquired:	February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

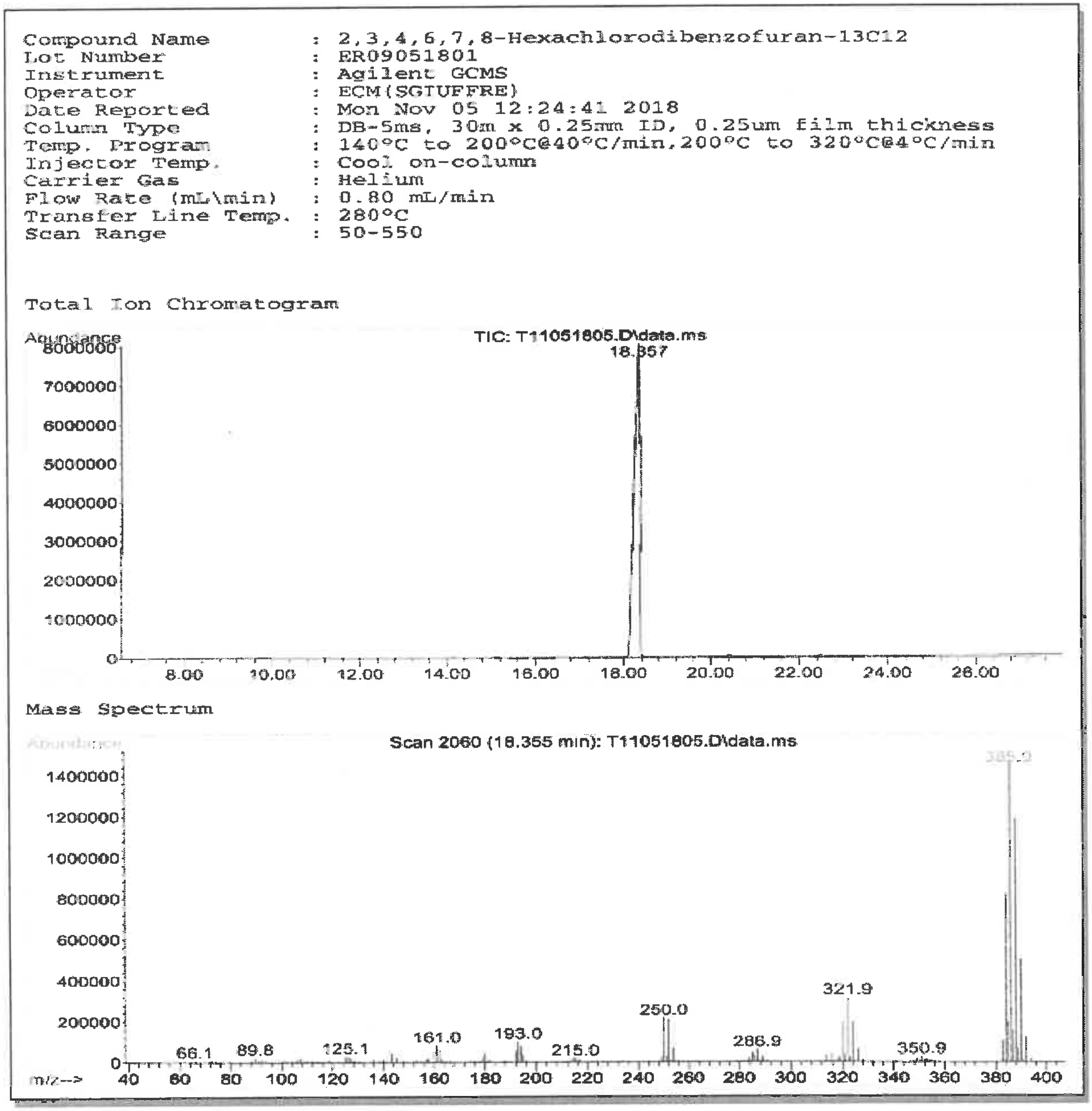

```
Compound Name          : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER09051801
Instrument             : Agilent GCMS
Operator               : ECM(SGTUFFRE)
Date Reported          : Mon Nov 05 12:24:41 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20

Cerilliant
Analytical Reference Standards
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Revision 0
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

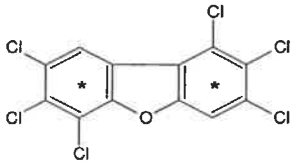

Catalog Number: EF-985
Solution Lot: ER02241603
Expiration Date: April 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (μg/mL) Actual Results	Verified Concentration (μg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

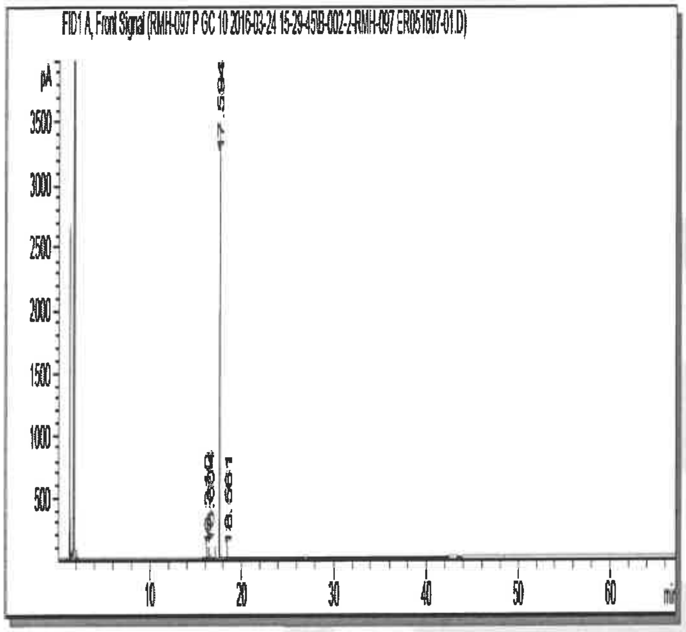

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 50 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument:	GC#10
Sample Name:	ER051607-01
Acquired:	March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER051607-01
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Fri Mar 18 07:08:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

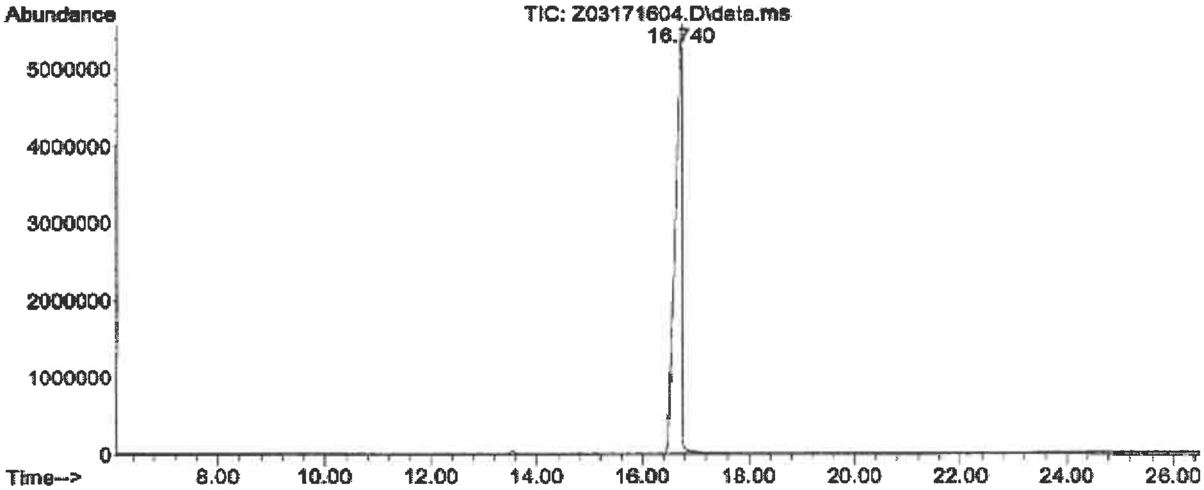

Mass Spectrum

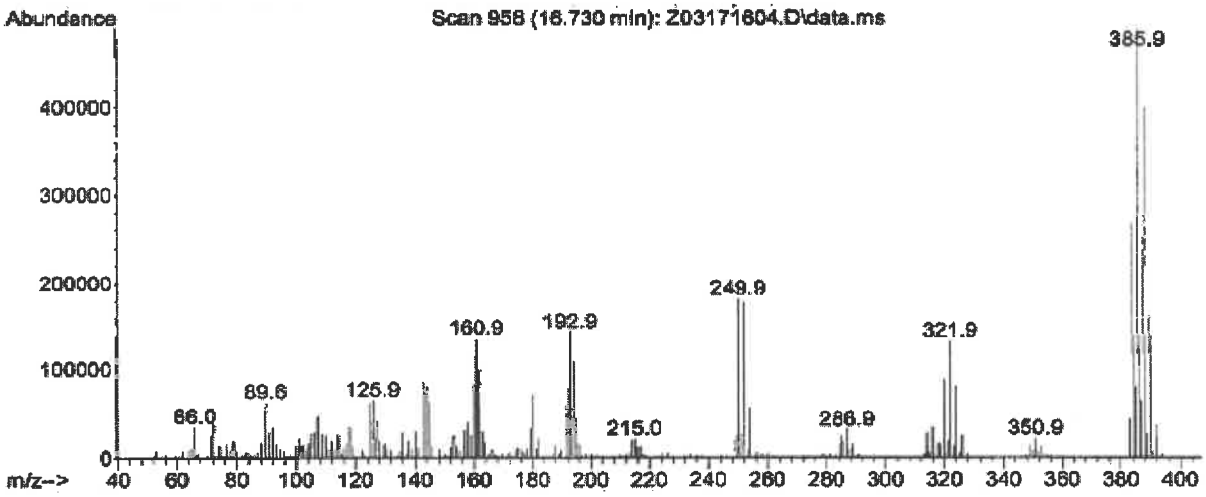

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

Rec'd. 3/26/20 SKW

Cerilliant
Analytical Reference Standards
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Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

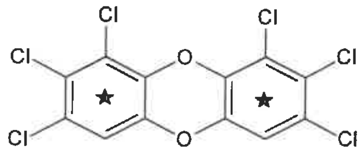

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	**Chemical Formula:**	$^{13}C_{12}H_2Cl_6O_2$
Compound Lot:	ER110510-01	**CAS Number:**	109719-82-6
		Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

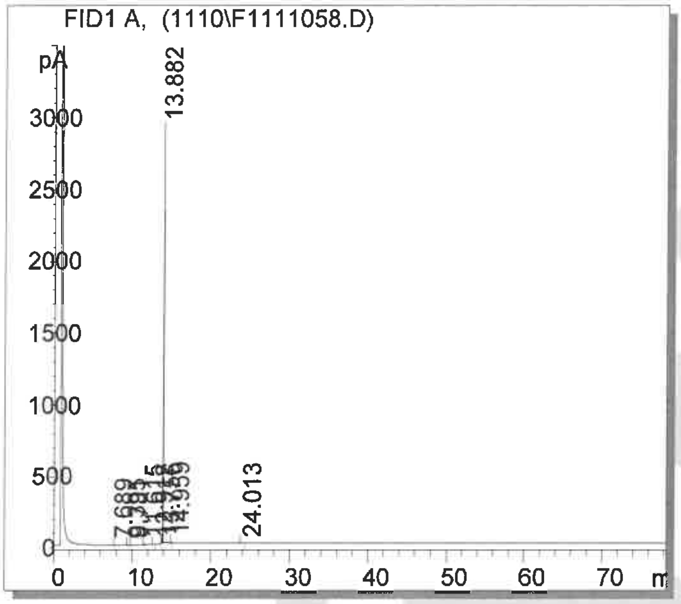

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

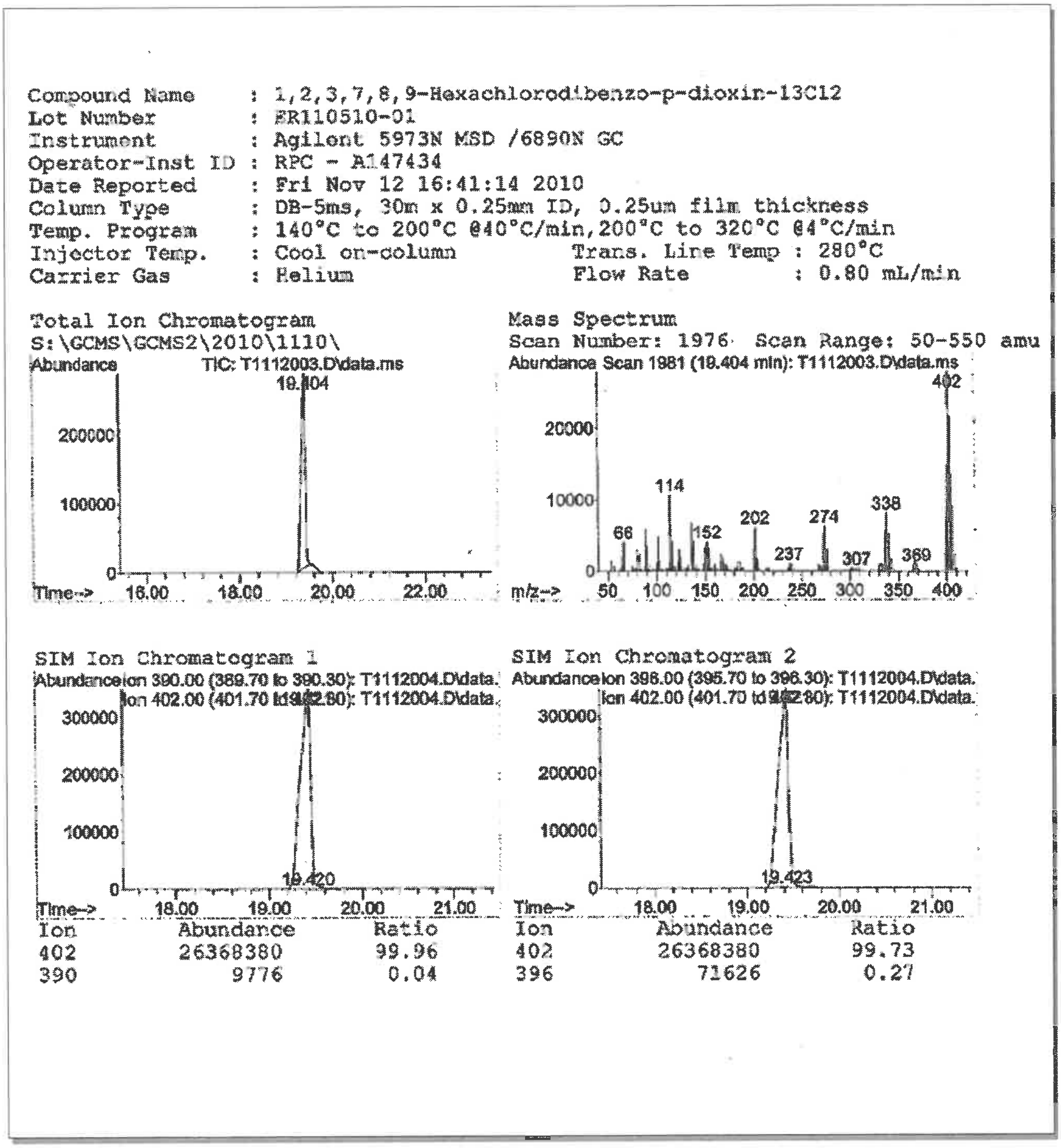

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER110510-01
Instrument : Agilent 5973N MSD /6890N GC
Operator-Inst ID : RPC - A147434
Date Reported : Fri Nov 12 16:41:14 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp. : Cool on-column Trans. Line Temp : 280°C
Carrier Gas : Helium Flow Rate : 0.80 mL/min

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SRV

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

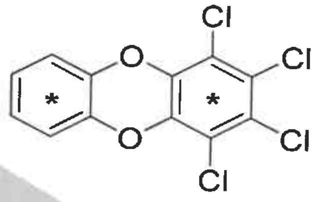

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (μg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602
Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

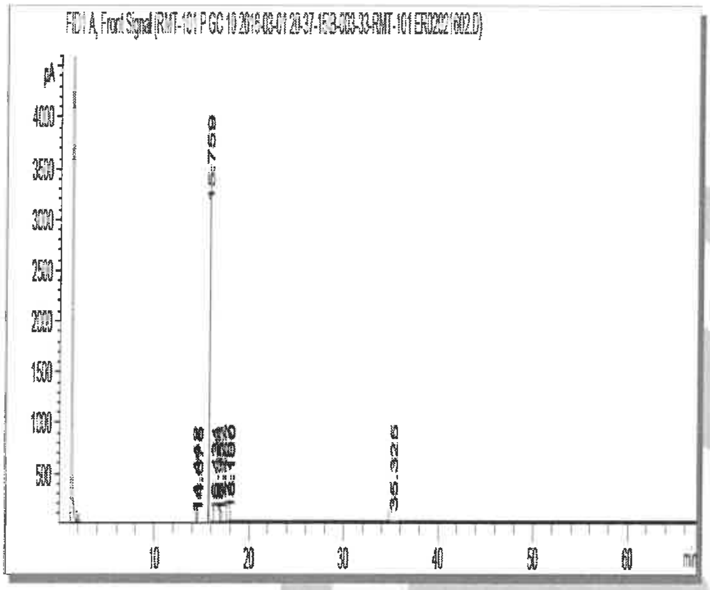

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

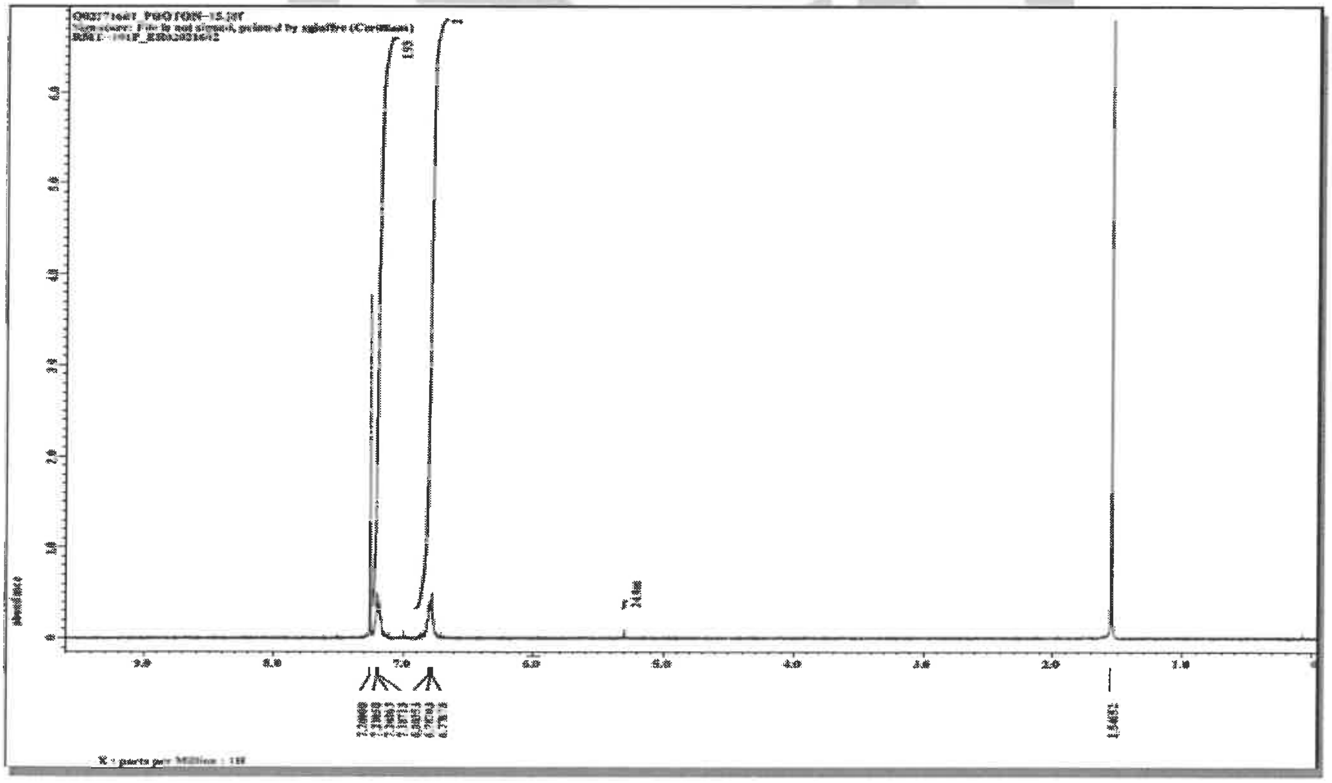

Spectral and Physical Data (cont.)

GC/MS

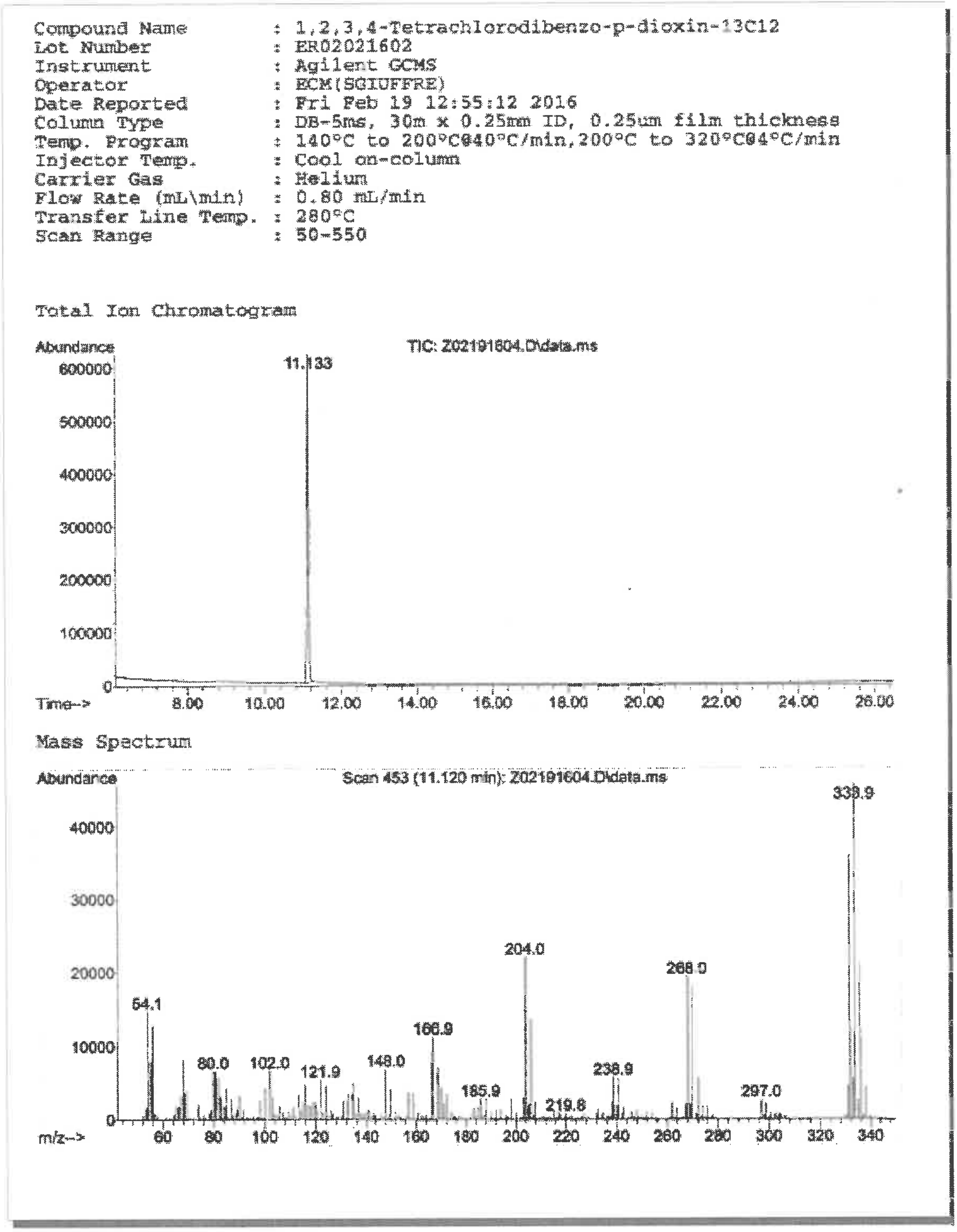

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

⑦

P: 4/20/19 SKJ

WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF
Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \dots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \dots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

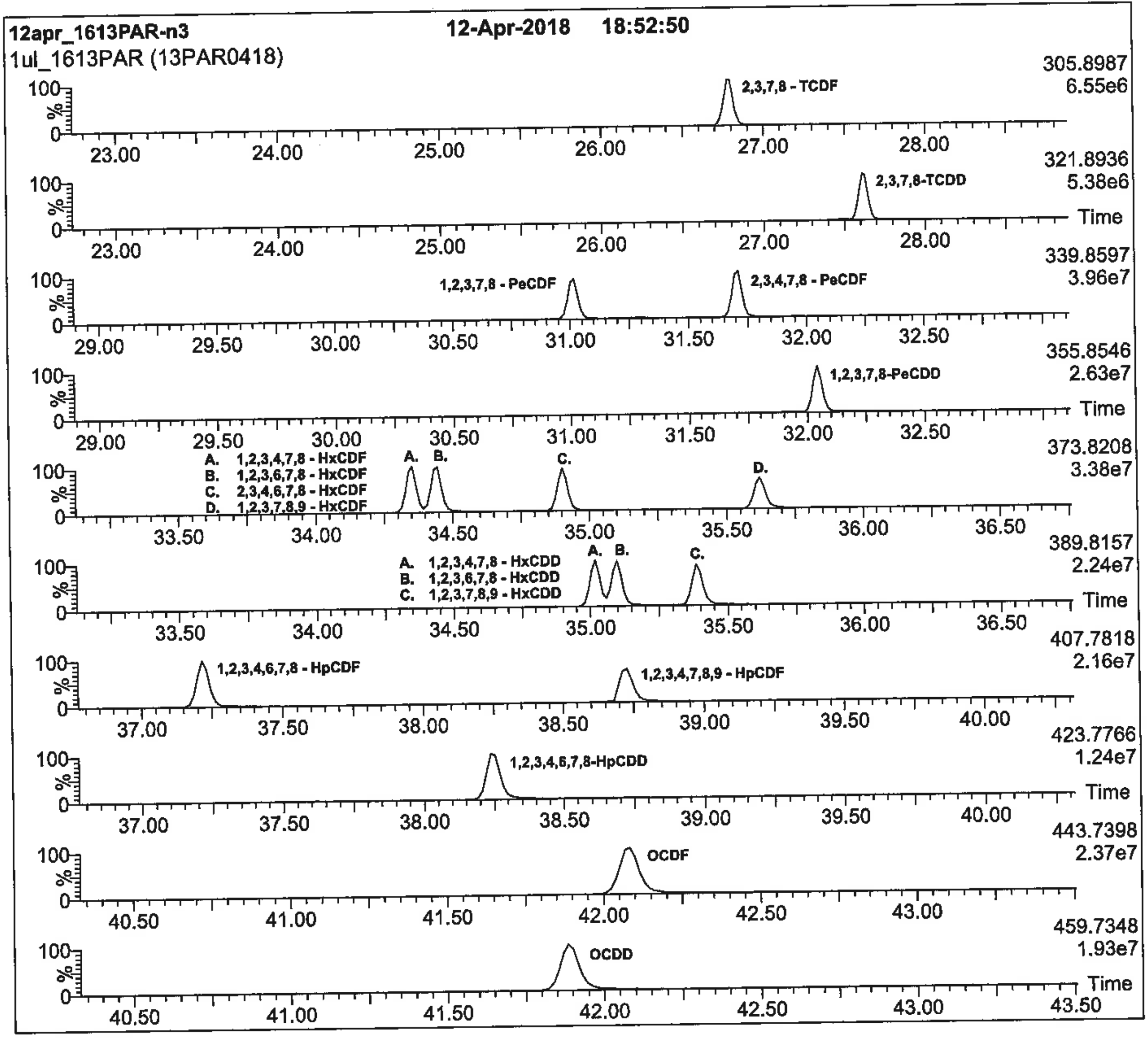

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min
Injector: 280 °C (Splitless Injection)
Ionization: EI+
Detector: 280 °C
SIR at 10,000 mass resolving power

Oven:
150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00110

③

R: 4/30/16 SKV

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Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min, 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

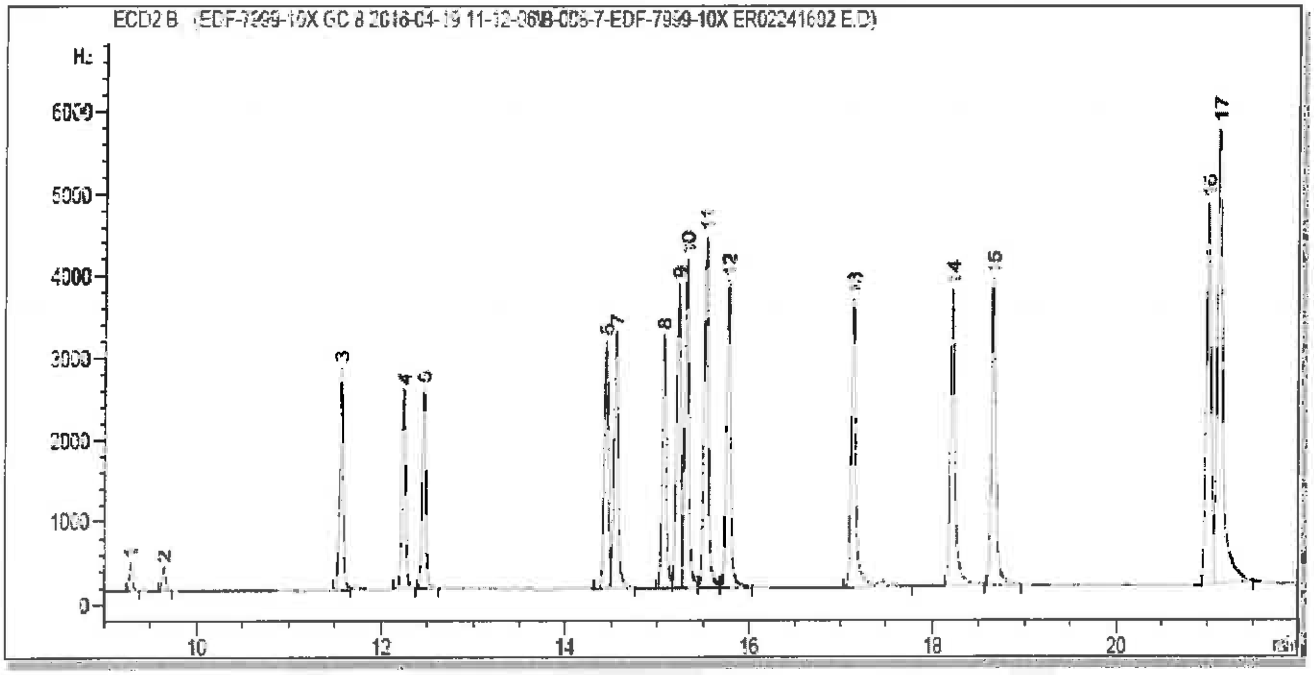

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

r: 4/30/16 SKV

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Revision 01
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Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
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1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
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1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
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1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
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OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min, 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
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1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
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1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

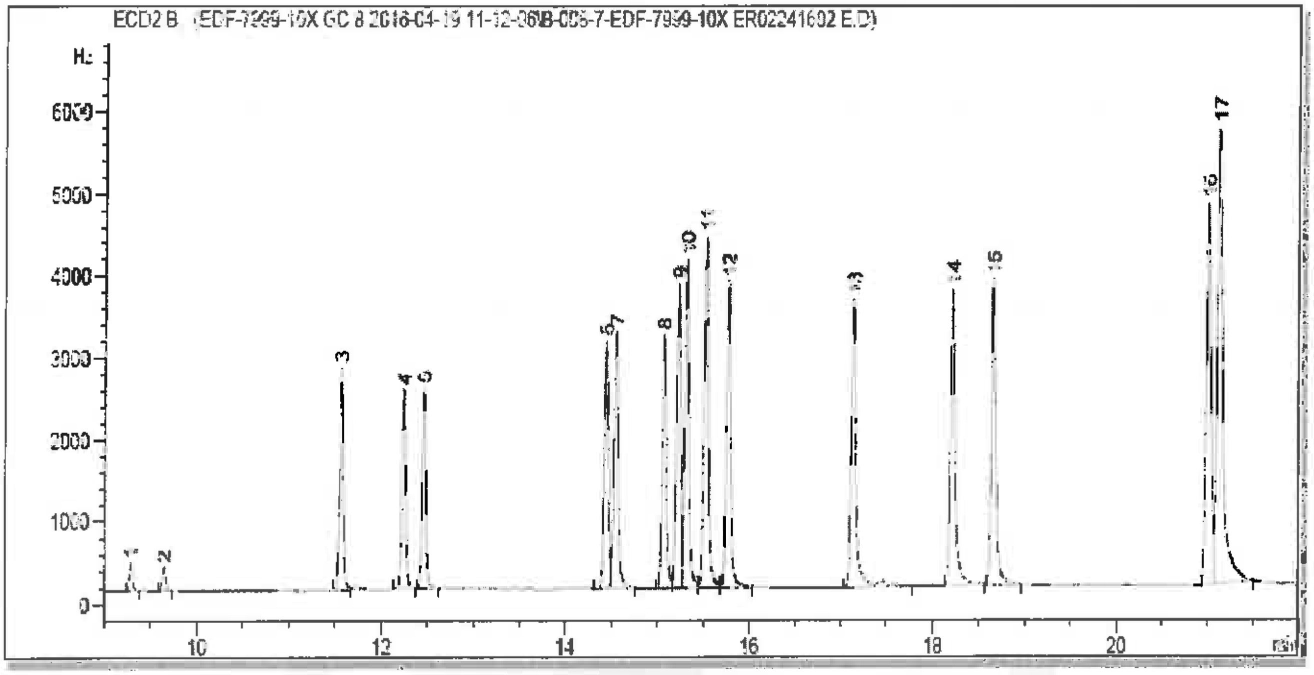

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
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15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-418764/2-A	107	93	114	101	99	88	124	126
	LCSD 320-418764/3-A	96	83	118	84	86	73	95	98

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65247-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-418764/2-A	134	101	99	122	126	101	113	100
	LCSD 320-418764/3-A	98	74	79	96	90	72	82	73

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Tank#1-Valve-3-2-Repl RA	320-65247-1 RA	64	114

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-65247-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Tank#1-Valve-3-2-Repl	320-65247-1	68	62	111	71	66	60	90	90
	MB 320-418764/1-A	98	83	110	88	88	76	105	100

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank#1-Valve-3-2-Repl	320-65247-1	93	73	75	95	110	86	94	92
	MB 320-418764/1-A	107	81	87	104	97	79	88	75

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 12OC20B10D5_5.d

Lab ID: LCS 320-418764/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	217	109	67-158	
2,3,7,8-TCDF	200	226	113	75-158	
1,2,3,7,8-PeCDD	1000	1080	108	70-142	
1,2,3,7,8-PeCDF	1000	1110	111	80-134	
2,3,4,7,8-PeCDF	1000	1120	112	68-160	
1,2,3,4,7,8-HxCDD	1000	1110	111	70-164	
1,2,3,6,7,8-HxCDD	1000	1160	116	76-134	
1,2,3,7,8,9-HxCDD	1000	1070	107	64-162	
1,2,3,4,7,8-HxCDF	1000	1140	114	72-134	
1,2,3,6,7,8-HxCDF	1000	1110	111	84-130	
1,2,3,7,8,9-HxCDF	1000	1120	112	78-130	
2,3,4,6,7,8-HxCDF	1000	1130	113	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1110	111	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1070	107	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1080	108	78-138	
OCDD	2000	1960	98	78-144	
OCDF	2000	2060	103	63-170	
13C-2,3,7,8-TCDD	2000	1860	93	20-175	
13C-2,3,7,8-TCDF	2000	2130	107	22-152	
13C-1,2,3,7,8-PeCDD	2000	1770	88	21-227	
13C-1,2,3,7,8-PeCDF	2000	2020	101	21-192	
13C-2,3,4,7,8-PeCDF	2000	1980	99	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	2020	101	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1990	99	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	2480	124	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	2530	126	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	2430	122	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	2680	134	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	2010	101	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	2520	126	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	2260	113	20-186	
13C-OCDD	4000	4020	100	13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 12OC20B10D5_6.d

Lab ID: LCSD 320-418764/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	210	105	3	50	67-158	
2,3,7,8-TCDF	200	220	110	2	50	75-158	
1,2,3,7,8-PeCDD	1000	1040	104	4	50	70-142	
1,2,3,7,8-PeCDF	1000	1090	109	2	50	80-134	
2,3,4,7,8-PeCDF	1000	1100	110	2	50	68-160	
1,2,3,4,7,8-HxCDD	1000	1110	111	1	50	70-164	
1,2,3,6,7,8-HxCDD	1000	1130	113	3	50	76-134	
1,2,3,7,8,9-HxCDD	1000	1080	108	1	50	64-162	
1,2,3,4,7,8-HxCDF	1000	1100	110	4	50	72-134	
1,2,3,6,7,8-HxCDF	1000	1100	110	1	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1090	109	2	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1100	110	3	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1060	106	4	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1040	104	3	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1060	106	2	50	78-138	
OCDD	2000	1990	99	2	50	78-144	
OCDF	2000	2090	105	1	50	63-170	
13C-2,3,7,8-TCDD	2000	1670	83			20-175	
13C-2,3,7,8-TCDF	2000	1920	96			22-152	
13C-1,2,3,7,8-PeCDD	2000	1460	73			21-227	
13C-1,2,3,7,8-PeCDF	2000	1690	84			21-192	
13C-2,3,4,7,8-PeCDF	2000	1730	86			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1470	74			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1580	79			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1900	95			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1950	98			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1920	96			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1960	98			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1430	72			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1790	90			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1650	82			20-186	
13C-OCDD	4000	2930	73			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab File ID: 12OC20B10D5_4.d Lab Sample ID: MB 320-418764/1-A

Matrix: Water Date Extracted: 10/05/2020 11:15

Instrument ID: 10D5 Date Analyzed: 10/12/2020 23:54

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-418764/2-A	12OC20B10D5_5.d	10/13/2020 00:39
	LCSD 320-418764/3-A	12OC20B10D5_6.d	10/13/2020 01:24
11215702-Tank#1-Valve-3-2-Repl	320-65247-1	12OC20B10D5_10.d	10/13/2020 04:24
11215702-Tank#1-Valve-3-2-Repl RA	320-65247-1 RA	15OC2011D2_005.d	10/15/2020 03:55

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-65247-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl	Lab Sample ID: 320-65247-1
Matrix: Water	Lab File ID: 12OC20B10D5_10.d
Analysis Method: 1613B	Date Collected: 09/11/2020 13:30
Extract. Method: 1613B	Date Extracted: 10/05/2020 11:15
Sample wt/vol: 508.4(mL)	Date Analyzed: 10/13/2020 04:24
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 421347	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	210	B	20	1.6
40321-76-4	1,2,3,7,8-PeCDD	2.7	J B	98	1.2
57117-41-6	1,2,3,7,8-PeCDF	22	J B	98	1.1
57117-31-4	2,3,4,7,8-PeCDF	12	J B	98	1.4
39227-28-6	1,2,3,4,7,8-HxCDD	3.5	J B q	98	0.93
57653-85-7	1,2,3,6,7,8-HxCDD	ND		98	0.93
19408-74-3	1,2,3,7,8,9-HxCDD	ND		98	0.83
70648-26-9	1,2,3,4,7,8-HxCDF	34	J B	98	1.8
57117-44-9	1,2,3,6,7,8-HxCDF	7.8	J B	98	1.6
72918-21-9	1,2,3,7,8,9-HxCDF	ND		98	0.87
60851-34-5	2,3,4,6,7,8-HxCDF	ND		98	1.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	6.8	J B q	98	0.70
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.3	J B	98	0.45
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.7	J B	98	0.66
3268-87-9	OCDD	87	J B	200	1.7
39001-02-0	OCDF	4.7	J B	200	1.3
41903-57-5	Total TCDD	240	B q	20	1.6
30402-14-3	Total TCDF	1300	B q	20	4.0
36088-22-9	Total PeCDD	2.7	J B	98	1.2
30402-15-4	Total PeCDF	48	J B	98	1.2
34465-46-8	Total HxCDD	3.5	J B q	98	0.89
55684-94-1	Total HxCDF	41	J B	98	1.3
37871-00-4	Total HpCDD	13	J B q	98	0.70
38998-75-3	Total HpCDF	16	J B	98	0.56

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl Lab Sample ID: 320-65247-1

Matrix: Water Lab File ID: 12OC20B10D5_10.d

Analysis Method: 1613B Date Collected: 09/11/2020 13:30

Extract. Method: 1613B Date Extracted: 10/05/2020 11:15

Sample wt/vol: 508.4(mL) Date Analyzed: 10/13/2020 04:24

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421347 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		25-164
89059-46-1	13C-2,3,7,8-TCDF	68		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	60		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	71		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	66		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	73		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	90		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	90		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	95		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	93		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	110		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	94		26-138
114423-97-1	13C-OCDD	92		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	111		35-197

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Lims ID: 320-65247-A-1-A
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Sample Type: Client
Inject. Date: 13-Oct-2020 04:24:23 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65247-A-1-A 320-65247-A-1-A
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 13:25:40 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: shardaa Date: 13-Oct-2020 14:00:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.106	45640303	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.622	42270519	0.78	1.3598	68.1	68.1	0.1189	0.1189	68.11	
2,3,7,8-TCDF	16.652	7189250	0.80	0.9077	18.7	18.7	0.1026	0.1026		
A Non-2,3,7,8-sub-TCDF	16.342	5495256	0.77	0.9077	14.4	14.3	0.1026	8.141		RQMa
S Total TCDF					33.1	33.1	0.1026	0.1026		RQ
D 13C-2,3,7,8-TCDD	17.302	29906688	0.78	1.0536	62.2	62.2	0.1452	0.1452	62.20	
2,3,7,8-TCDD	17.317	1628315	0.73	1.0061	5.411	5.411	0.0406	0.0406		
$ 37Cl4-2,3,7,8-TCDD	17.317	21335253		1.0488	44.6	44.6	0.0508	0.0508	111	
A Non-2,3,7,8-sub-TCDD	16.781	204803	0.77	1.0061	0.7362	0.6806	0.0406	0.4208		RQ
S Total TCDD					6.148	6.092	0.0406	0.0406		RQ
D 13C-1,2,3,7,8-PeCDF	21.370	36404672	1.63	1.1306	70.6	70.6	0.1909	0.1909	70.55	
1,2,3,7,8-PeCDF	21.397	184165	1.59	0.9147	0.5530	0.5530	0.0288	0.0288		M
D 13C-2,3,4,7,8-PeCDF	22.652	31691876	1.57	1.0539	65.9	65.9	0.2048	0.2048	65.89	
2,3,4,7,8-PeCDF	22.665	92207	1.50	0.9508	0.3060	0.3060	0.0345	0.0345		M
A F1 PeCDFs	19.147						0.0194	0.0194		
A Non-2,3,7,8-sub-PeCDF	22.128	114440	1.62	0.9328	0.3603	0.3603	0.0313	0.2117		M
S Total PeCDF					1.219	1.219	0.0316	0.0316		
D 13C-1,2,3,7,8-PeCDD	23.320	22251742	1.63	0.8084	60.3	60.3	0.0863	0.0863	60.31	
1,2,3,7,8-PeCDD	23.361	15019	1.50	0.9955	0.0678	0.0678	0.0308	0.0308		M
A Non-2,3,7,8-sub-PeCDD	22.290						0.0308	0.0308		
S Total PeCDD					0.0678	0.0678	0.0308	0.0308		
D 13C-1,2,3,4,7,8-HxCDF	29.396	25506038	0.51	0.9225	90.1	90.1	0.6265	0.6265	90.11	
1,2,3,4,7,8-HxCDF	29.422	241814	1.19	1.1090	0.8549	0.8549	0.0449	0.0449		
D 13C-1,2,3,6,7,8-HxCDF	29.702	28661451	0.52	1.0336	90.4	90.4	0.5591	0.5591	90.38	
1,2,3,6,7,8-HxCDF	29.755	61240	1.30	1.0721	0.1993	0.1993	0.0406	0.0406		
D 13C-2,3,4,6,7,8-HxCDF	30.860	27961887	0.52	0.9773	93.2	93.2	0.5913	0.5913	93.24	
2,3,4,6,7,8-HxCDF	30.873						0.0254	0.0254		
D 13C-1,2,3,7,8,9-HxCDF	31.805	26627447	0.52	0.9153	94.8	94.8	0.6314	0.6314	94.81	
1,2,3,7,8,9-HxCDF	31.911						0.0222	0.0222		U
A Non-2,3,7,8-sub-HxCDF	29.283						0.0305	0.0591		RQU

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					1.054	1.054	0.0333	0.0333		
* 13C-1,2,3,7,8,9-HxCDD	31.592	30682974	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.086	17982042	1.25	0.7977	73.5	73.5	0.3706	0.3706	73.47	
1,2,3,4,7,8-HxCDD	31.113	16231	1.24	1.0014	0.0980	0.0901	0.0236	0.0236		RQM
D 13C-1,2,3,6,7,8-HxCDD	31.206	23128274	1.27	1.0010	75.3	75.3	0.2953	0.2953	75.30	
1,2,3,6,7,8-HxCDD	31.113						0.0236	0.0236		RQMU
1,2,3,7,8,9-HxCDD	31.605						0.0210	0.0210		
A Non-2,3,7,8-sub-HxCDD	29.888						0.0226	0.0226		
S Total HxCDD					0.0980	0.0901	0.0227	0.0227		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.354	28770398	0.45	0.8506	110.2	110.2	1.451	1.451	110	
1,2,3,4,6,7,8-HpCDF	33.378	92382	0.91	1.3603	0.2360	0.2360	0.0113	0.0113		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.411	22064256	0.44	0.7618	94.4	94.4	1.620	1.620	94.40	
1,2,3,4,7,8,9-HpCDF	34.423	27329	1.13	1.3207	0.0938	0.0938	0.0169	0.0169		M
A Non-2,3,7,8-sub-HpCDF	33.889	22783	0.89	1.3405	0.0669	0.0669	0.0136	0.0669		M
S Total HpCDF					0.3967	0.3967	0.0141	0.0141		
D 13C-1,2,3,4,6,7,8-HpCDD	34.132	23432066	1.06	0.8873	86.1	86.1	0.6315	0.6315	86.07	
1,2,3,4,6,7,8-HpCDD	34.144	40579	1.04	0.9988	0.1971	0.1734	0.0177	0.0177		RQM
A Non-2,3,7,8-sub-HpCDD	33.870	35010	1.04	0.9988	0.1742	0.1496	0.0177	0.1496		RQM
S Total HpCDD					0.3713	0.3230	0.0177	0.0177		RQ
D 13C-OCDD	36.390	35334505	0.91	0.6287	183.2	183.2	0.3534	0.3534	91.58	
OCDF	36.498	29617	0.97	1.4136	0.1186	0.1186	0.0318	0.0318		M
OCDD	36.402	440984	0.88	1.1290	2.211	2.211	0.0429	0.0429		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Lims ID: 320-65247-A-1-A
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Sample Type: Client
Inject. Date: 13-Oct-2020 04:24:23 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65247-A-1-A 320-65247-A-1-A
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 13:25:40 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: shardaa Date: 13-Oct-2020 14:00:42

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.106	17.106	0		19957905	5132612	3071	7677	1671		
333.9339	17.106	17.106	0		25682398	6568628	4088	10220	1607	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.622	16.622	0	0.972	18462661	4610588	4361	10902	1057		
317.9389	16.622	16.622	0	0.972	23807858	5817723	3207	8017	1814	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.652	16.637	1	1.002	3186590	737608	1741	4352	424		
305.8987	16.637	16.637	0	1.001	4002660	938603	2144	5360	438	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	15.307	16.342	-62	0.921	95129	27825	1741	4352	16		
305.8987	15.307	16.342	-62	0.921	111713	30415	2144	5360	14	0.85(0.65-0.89)	
303.9016	15.564	16.342	-47	0.936	128165	26173	1741	4352	15		M
305.8987	15.564	16.342	-47	0.936	191992	37429	2144	5360	17	0.67(0.65-0.89)	
303.9016	15.790	16.342	-33	0.950	103340	27162	1741	4352	16		
305.8987	15.790	16.342	-33	0.950	129429	33857	2144	5360	16	0.80(0.65-0.89)	M
303.9016	16.017	16.342	-19	0.964	144420	32518	1741	4352	19		
305.8987	16.017	16.342	-19	0.964	188410	40942	2144	5360	19	0.77(0.65-0.89)	
303.9016	16.274	16.342	-4	0.979	1378705	342598	1741	4352	197		
305.8987	16.274	16.342	-4	0.979	1745135	444857	2144	5360	207	0.79(0.65-0.89)	
303.9016	16.486	16.342	9	0.992	70459	17564	1741	4352	10		
305.8987	16.501	16.342	10	0.993	90010	24157	2144	5360	11	0.78(0.65-0.89)	
303.9016	17.045	16.342	42	1.025	233943	46950	1741	4352	27		
305.8987	17.060	16.342	43	1.026	267658	62151	2144	5360	29	0.87(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.272	16.342	56	1.039	59480	12407	1741	4352	7		
	Empc Correction				43217	9400	1741	4352	5		
305.8987	17.287	16.342	57	1.040	56126	12208	2144	5360	6	1.06(0.65-0.89)	
303.9016	18.376	16.342	122	1.106	223990	53398	1741	4352	31		
305.8987	18.376	16.342	122	1.106	293415	65071	2144	5360	30	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.302	17.287	1	1.011	13138350	3010975	3071	7677	980		
333.9339	17.302	17.287	1	1.011	16768338	3858810	4088	10220	944	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.317	17.302	1	1.001	686781	160824	641	1602	251		
321.8936	17.317	17.302	1	1.001	941534	222224	481	1202	462	0.73(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.317	17.302	1	1.012	21335253	5132528	2495	6237	2057		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	15.201	16.781	-95	0.879	25638	6420	641	1602	10		
	Empc Correction				19664	6172	641	1602	10		
321.8936	15.201	16.781	-95	0.879	25538	8016	481	1202	17	1.00(0.65-0.89)	
319.8965	15.488	16.781	-77	0.895	12932	3343	641	1602	5		
321.8936	15.488	16.781	-77	0.895	20045	5357	481	1202	11	0.65(0.65-0.89)	
319.8965	17.650	16.781	52	1.020	65840	12242	641	1602	19		
	Empc Correction				55085	12535	641	1602	20		
321.8936	17.665	16.781	53	1.021	71539	16280	481	1202	34	0.92(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.370	21.370	0	1.249	22568623	4065700	5831	14577	697		
353.8970	21.370	21.370	0	1.249	13836049	2534900	4269	10672	594	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.397	21.383	1	1.001	112934	19309	338	845	57		
341.8567	21.397	21.383	1	1.001	71231	12569	358	895	35	1.59(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	22.652	22.638	1	1.324	19365998	3233048	5831	14577	554		
353.8970	22.652	22.638	1	1.324	12325878	2077052	4269	10672	487	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	22.665	22.665	0	1.001	55254	9794	338	845	29		M
341.8567	22.665	22.665	0	1.001	36953	6922	358	895	19	1.50(1.32-1.78)	M
A F1 PeCDFs											
339.8597	19.147						172	430			
341.8567	19.147						258	645			
A Non-2,3,7,8-sub-PeCDF											M
339.8597	20.129	22.128	-120	0.942	40923	7607	338	845	23		
341.8567	20.129	22.128	-120	0.942	26322	5214	358	895	15	1.55(1.32-1.78)	M
339.8597	21.875	22.128	-15	1.024	29801	5140	338	845	15		
341.8567	21.902	22.128	-14	1.025	17394	3837	358	895	11	1.71(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.320	23.320	0	1.363	13778804	2218612	1964	4910	1130		
369.8919	23.320	23.320	0	1.363	8472938	1352593	1302	3255	1039	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	23.361	23.347	1	1.002	9008	1877	265	662	7		M
357.8516	23.334	23.347	-1	1.001	6011	1364	173	432	8	1.50(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.290						265	662			
357.8516	22.290						173	432			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.396	29.409	-1	0.930	8648817	998016	5299	13247	188		
385.8610	29.396	29.409	-1	0.930	16857221	1952220	10084	25210	194	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.422	29.435	-1	1.001	131254	14364	298	745	48		
375.8178	29.436	29.435	0	1.001	110560	14425	290	725	50	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	29.702	29.702	0	0.940	9799292	1131083	5299	13247	213		
385.8610	29.702	29.702	0	0.940	18862159	2242149	10084	25210	222	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	29.755	29.728	2	1.002	34588	4734	298	745	16		
375.8178	29.755	29.728	2	1.002	26652	4172	290	725	14	1.30(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	30.860	30.847	1	0.977	9512614	1837032	5299	13247	347		
385.8610	30.860	30.847	1	0.977	18449273	3504702	10084	25210	348	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	30.873						298	745			
375.8178	30.873						290	725			
13C-1,2,3,7,8,9-HxCDF											
383.8639	31.805	31.792	1	1.007	9156419	2114872	5299	13247	399		
385.8610	31.805	31.792	1	1.007	17471028	3943757	10084	25210	391	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											U
373.8208	31.805						298	745			
375.8178	31.805						290	725			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	27.027	29.283	-135	0.919	11846	1637	298	745	5		
	Empc Correction				9684	2078	298	745	7		
375.8178	27.053	29.283	-133	0.920	7810	1676	290	725	6	1.52(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.592	31.592	0		17061684	3749487	3617	9042	1037		
403.8529	31.605	31.592	1		13621290	2905107	4251	10627	683	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.086	31.073	1	0.984	9995572	2353260	3617	9042	651		
403.8529	31.086	31.073	1	0.984	7986470	1827742	4251	10627	430	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8157	31.113	31.099	1	1.001	10406	2145	178	445	12		M
	Empc Correction				8985	1752	178	445	10		
391.8127	31.113	31.099	1	1.001	7246	1413	217	542	7	1.44(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.206	31.206	0	0.988	12922803	2614054	3617	9042	723		
403.8529	31.206	31.206	0	0.988	10205471	2078274	4251	10627	489	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											RQMU
389.8157	31.219						178	445			
391.8127	31.219						217	542			
1,2,3,7,8,9-HxCDD											
389.8157	31.605						178	445			
391.8127	31.605						217	542			
A Non-2,3,7,8-sub-HxCDD											
389.8157	29.888						178	445			
391.8127	29.888						217	542			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.354	33.354	0	1.056	8866094	2724788	9681	24202	281		
419.8220	33.354	33.354	0	1.056	19904304	6153969	23166	57915	266	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.378	33.366	1	1.001	44121	14819	252	630	59		M
409.7789	33.366	33.366	0	1.000	48261	15876	296	740	54	0.91(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.411	34.399	1	1.089	6774453	1892615	9681	24202	195		
419.8220	34.411	34.399	1	1.089	15289803	4246683	23166	57915	183	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	34.423	34.411	1	1.000	14501	4844	252	630	19		M
409.7789	34.423	34.411	1	1.000	12828	3845	296	740	13	1.13(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7818	33.670	33.889	-13	1.009	10758	3331	252	630	13		M
409.7789	33.658	33.889	-14	1.009	12025	4693	296	740	16	0.89(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.132	34.119	1	1.080	12082123	3537539	7949	19872	445		
437.8140	34.132	34.119	1	1.080	11349943	3354949	6966	17415	482	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											RQM
423.7766	34.144	34.144	0	1.000	26234	9240	241	602	38		M
	Empc Correction				20687	6909	241	602	29		
425.7737	34.132	34.144	-1	1.000	19892	6644	246	615	27	1.32(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											RQM
423.7766	33.609	33.870	-16	0.985	23609	6766	241	602	28		M
	Empc Correction				17848	7646	241	602	32		
425.7737	33.609	33.870	-16	0.985	17162	7352	246	615	30	1.38(0.88-1.20)	M
13C-OCDD											
469.7779	36.390	36.390	0	1.152	16820315	4268106	2617	6542	1631		
471.7750	36.390	36.390	0	1.152	18514190	4659173	3298	8245	1413	0.91(0.76-1.02)	
OCDF											M
441.7428	36.498	36.474	1	1.003	14583	3426	370	925	9		M
443.7399	36.486	36.474	1	1.003	15034	4825	432	1080	11	0.97(0.76-1.02)	M
OCDD											M
457.7377	36.402	36.390	1	1.000	206385	57656	451	1127	128		M
459.7348	36.402	36.390	1	1.000	234599	63606	413	1032	154	0.88(0.76-1.02)	M

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Lims ID:	320-65247-A-1-A		
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Inject. Date:	13-Oct-2020 04:24:23	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDF, RT: 16.342

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	42270519	10428311

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	42270519	10428311

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.307	95129	27825	111713	30415	0.5391	0.85	
15.564	128165	26173	191992	37429	0.8344	0.67	Ma
15.790	103340	27162	129429	33857	0.6066	0.80	M
16.017	144420	32518	188410	40942	0.8674	0.77	
16.274	1378705	342598	1745135	444857	8.14	0.79	
16.486	70459	17564	90010	24157	0.4182	0.78	
17.045	233943	46950	267658	62151	1.31	0.87	
17.272	59480	12407	56126	12208	0.3013	1.06	RQ
17.272	43217	9400	56126	12208	0.2589		Empc Correction
18.376	223990	53398	293415	65071	1.35	0.76	
Signal Totals:							
	2421368	583588	3073888	751087			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5511519	1337682				0.79	RQMa
	5495256	1334675					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 14.364 = (5511519 * 100.000) / (42270519 * 0.908)
Empc Amount: 14.322 = (5495256 * 100.000) / (42270519 * 0.908)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Lims ID: 320-65247-A-1-A
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Inject. Date: 13-Oct-2020 04:24:23 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 10

Non-2,3,7,8-sub-TCDD, RT: 16.781

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.006	D 13C-2,3,7,8-TCDD	100.000	29906688	6869785

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	29906688	6869785

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.201	25638	6420	25538	8016	0.1701	1.00	RQ
15.201	19664	6172	25538	8016	0.1502		Empc Correction
15.488	12932	3343	20045	5357	0.1096	0.65	
17.650	65840	12242	71539	16280	0.4566	0.92	RQ
17.650	55085	12535	71539	16280	0.4208		Empc Correction
Signal Totals:							
	87681	22050	117122	29653			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	221532	51658				0.89	RQ
	204803	51703					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7362 = (221532 * 100.000) / (29906688 * 1.006)
Empc Amount: 0.6806 = (204803 * 100.000) / (29906688 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Lims ID:	320-65247-A-1-A		
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Inject. Date:	13-Oct-2020 04:24:23	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	10

Non-2,3,7,8-sub-PeCDF, RT: 22.128

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	36404672	6600600
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	31691876	5310100

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	34048274	5955350

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.129	40923	7607	26322	5214	0.2117	1.55	M
21.875	29801	5140	17394	3837	0.1486	1.71	
Signal Totals:							
	70724	12747	43716	9051			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	114440	21798				1.62	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3603 = (114440 * 100.000) / (34048274 * 0.933)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Lims ID:	320-65247-A-1-A		
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Inject. Date:	13-Oct-2020 04:24:23	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDF, RT: 29.283

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.109	D 13C-1,2,3,4,7,8-HxCDF	100.000	25506038	2950236
1,2,3,6,7,8-HxCDF	1.072	D 13C-1,2,3,6,7,8-HxCDF	100.000	28661451	3373232
2,3,4,6,7,8-HxCDF	1.084	D 13C-2,3,4,6,7,8-HxCDF	100.000	27961887	5341734
1,2,3,7,8,9-HxCDF	1.093	D 13C-1,2,3,7,8,9-HxCDF	100.000	26627447	6058629

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.089		100.000	27189205	4430957

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.027	11846	1637	7810	1676	0.0664	1.52	RQ
27.027	9684	2078	7810	1676	0.0591		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Lims ID: 320-65247-A-1-A
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Inject. Date: 13-Oct-2020 04:24:23
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: ALM
Lims Batch ID: 421347
Lims Sample ID: 10

Non-2,3,7,8-sub-HpCDF, RT: 33.889

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.360	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	28770398	8878757
1,2,3,4,7,8,9-HpCDF	1.321	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	22064256	6139298

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.340		100.000	25417327	7509027

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.670	10758	3331	12025	4693	0.0669	0.89	M
Signal Totals:							
	10758	3331	12025	4693			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22783	8024				0.89	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0669 = (22783 * 100.000) / (25417327 * 1.340)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Lims ID:	320-65247-A-1-A		
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Inject. Date:	13-Oct-2020 04:24:23	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	10

Non-2,3,7,8-sub-HpCDD, RT: 33.870

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	0.999	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	23432066	6892488

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.999		100.000	23432066	6892488

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.609	23609	6766	17162	7352	0.1742	1.38	RQM
33.609	17848	7646	17162	7352	0.1496		Empc Correction
Signal Totals:							
	17848	7646	17162	7352			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	40771	14118				1.38	RQM
	35010	14998					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1742 = (40771 * 100.000) / (23432066 * 0.999)
Empc Amount: 0.1496 = (35010 * 100.000) / (23432066 * 0.999)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.29- 18.39)

Signal: 1

Processing Integration Results

RT = 15.564 Area = 128165

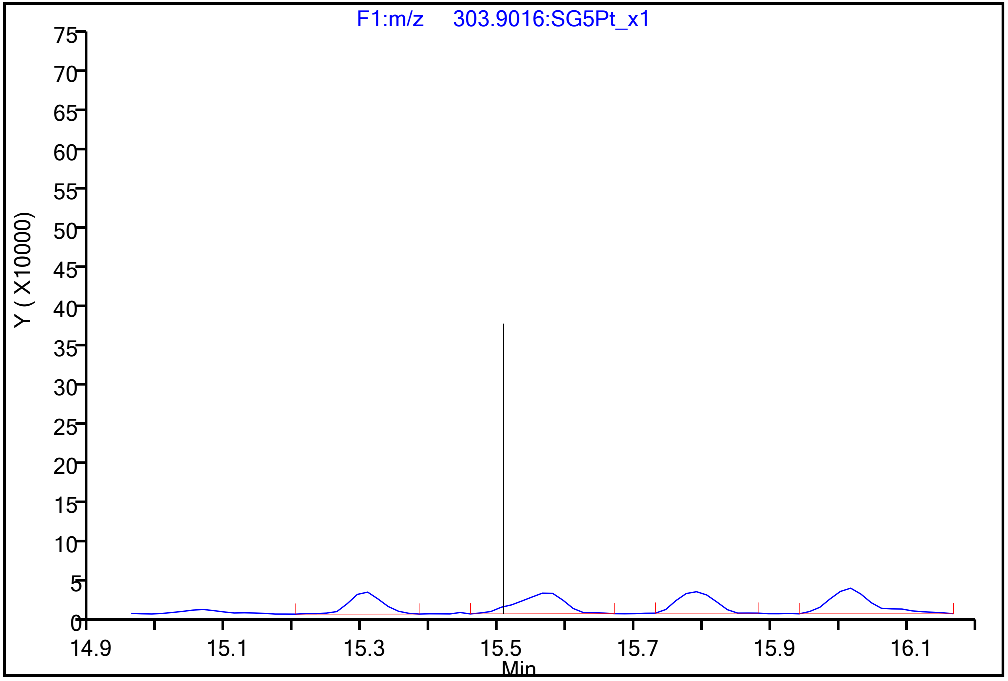

Manual Integration Results

RT = 15.564 Area = 128165

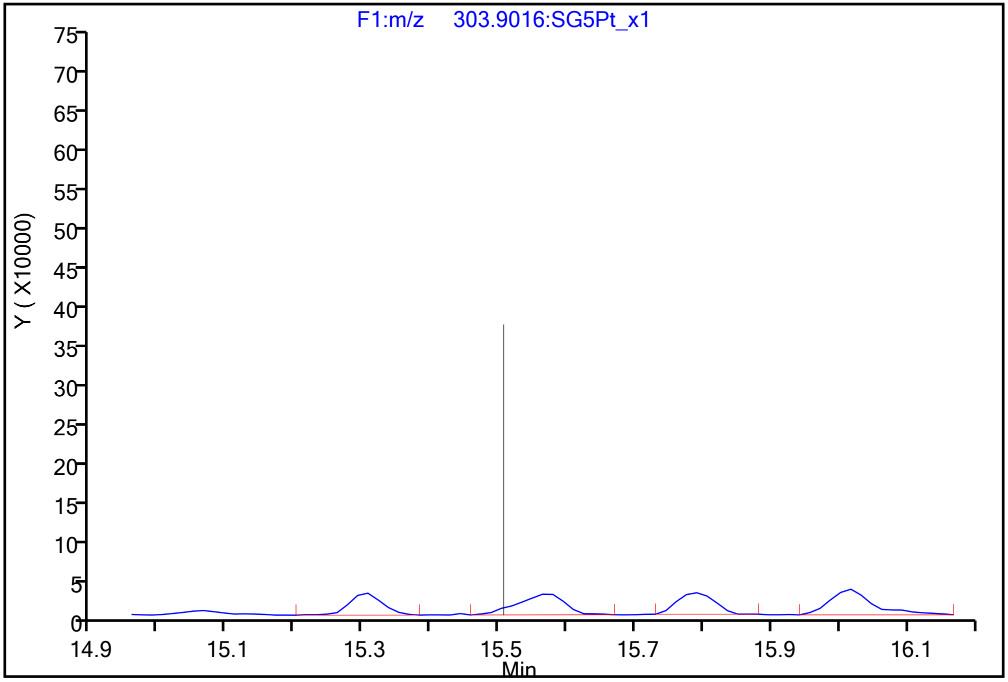

Reviewer: dadunj, 14-Oct-2020 13:22:04

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (14.29- 18.39)

Signal: 2

RT = 15.775 Area = 72757

Processing Integration Results

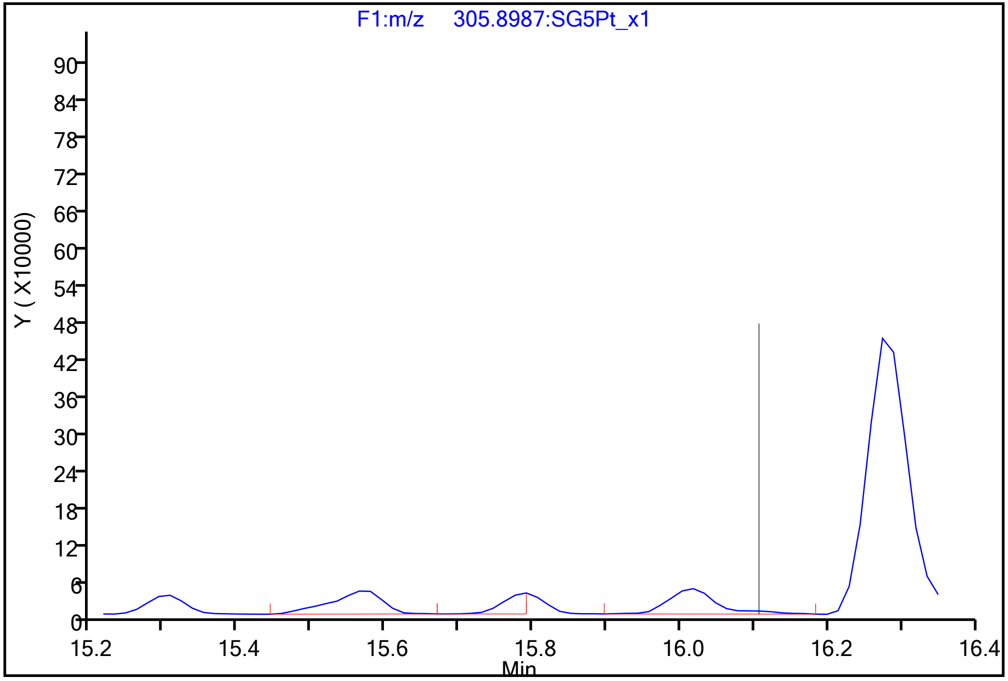

RT = 15.790 Area = 129429 M

Manual Integration Results

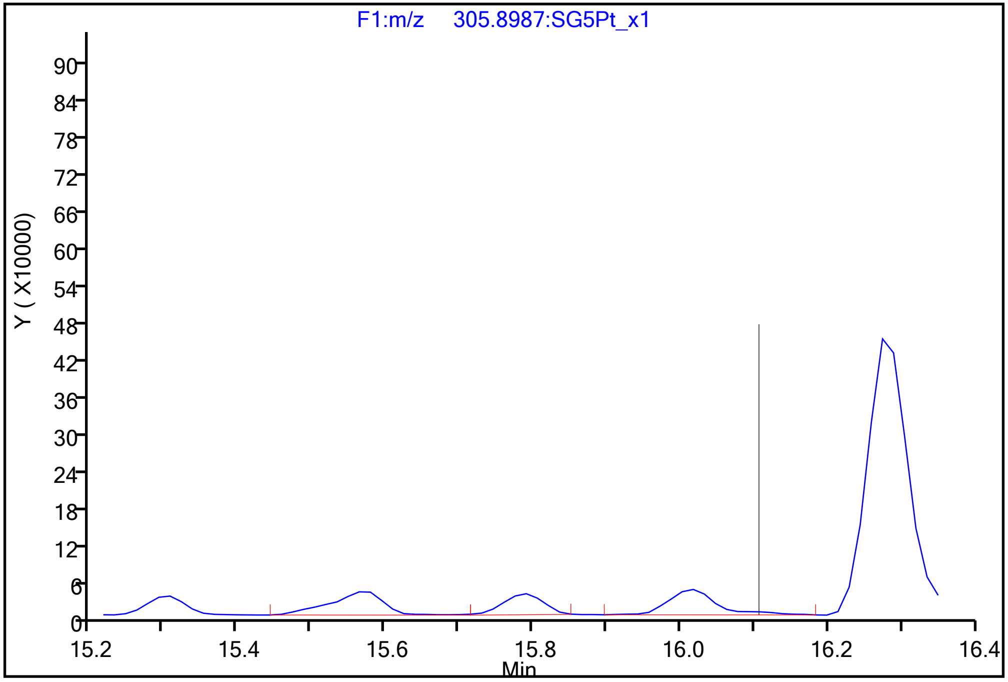

Reviewer: dadunj, 14-Oct-2020 13:21:49

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 14-Oct-2020 13:25:40

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date: 13-Oct-2020 04:24:23

Instrument ID: 10D5

Lims ID: 320-65247-A-1-A

Lab Sample ID: 320-65247-1

Client ID: 11215702-Tank#1-Valve-3-2-Repl

Operator ID: ALM

ALS Bottle#: 10

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT: 21.40

Area: 76808

Amount: 0.569779

Amount Units: pg/ul

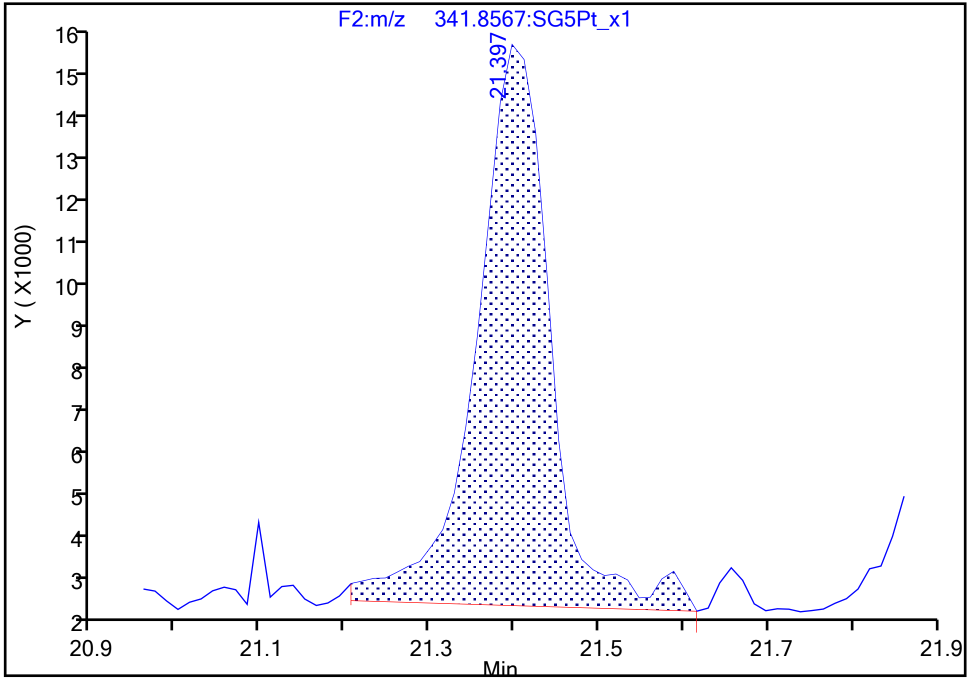

Manual Integration Results

RT: 21.40

Area: 71231

Amount: 0.553032

Amount Units: pg/ul

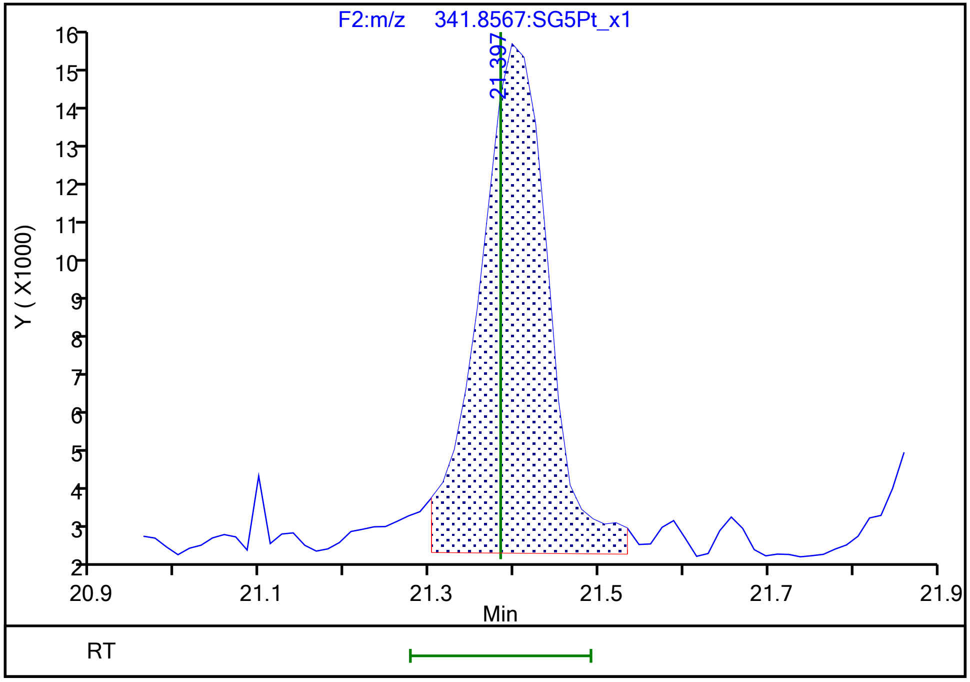

Reviewer: dadunj, 14-Oct-2020 13:22:36

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

RT:	22.67
Area:	60314
Amount:	0.332565
Amount Units:	pg/ul

Processing Integration Results

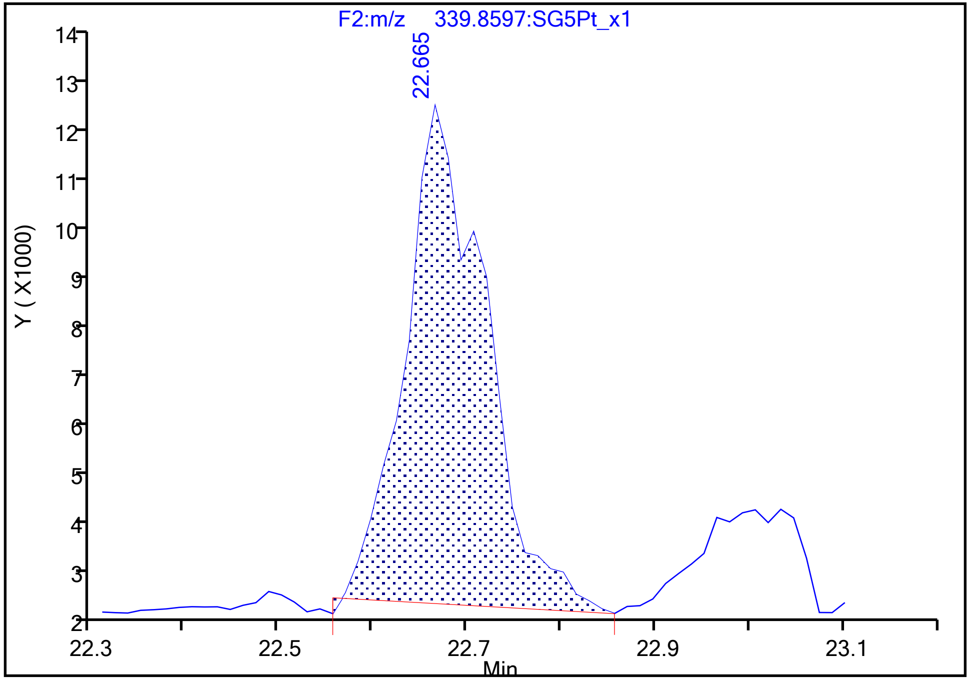

RT:	22.67
Area:	55254
Amount:	0.305996
Amount Units:	pg/ul

Manual Integration Results

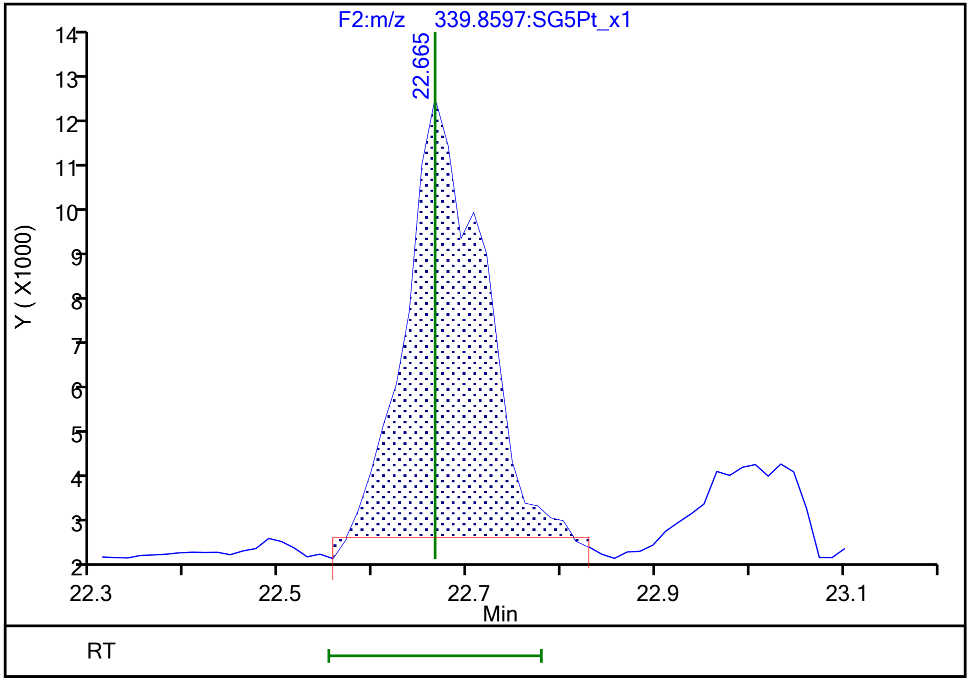

Reviewer: dadunj, 14-Oct-2020 13:24:58

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 2

Processing Integration Results

RT: 22.67

Area: 39899

Amount: 0.332565

Amount Units: pg/ul

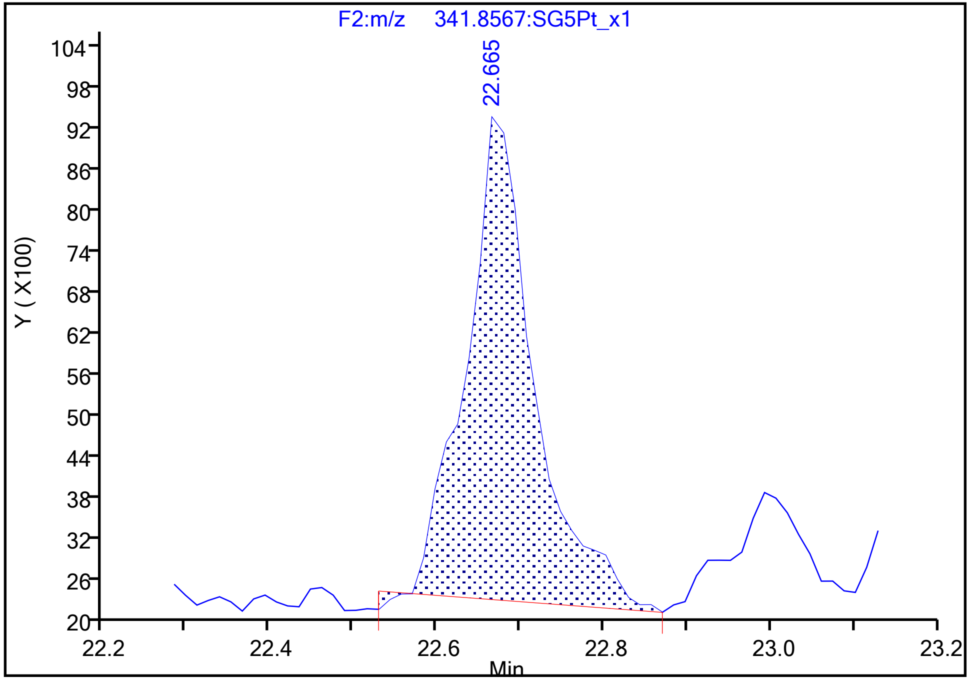

Manual Integration Results

RT: 22.67

Area: 36953

Amount: 0.305996

Amount Units: pg/ul

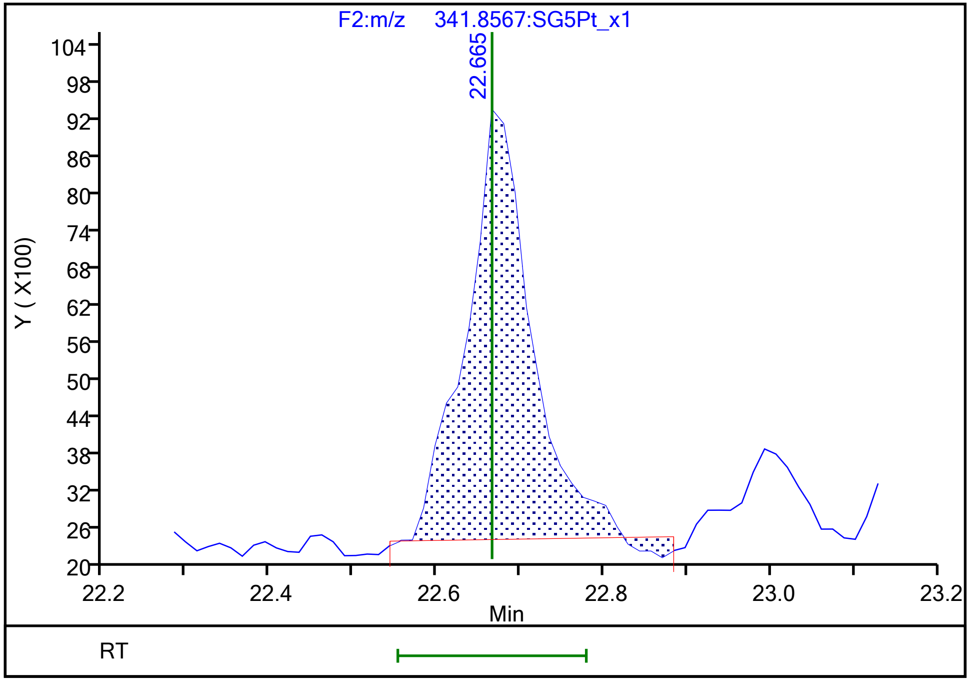

Reviewer: dadunj, 14-Oct-2020 13:25:03

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (19.72- 24.54)

Signal: 2

Processing Integration Results

RT = 20.129 Area = 30168

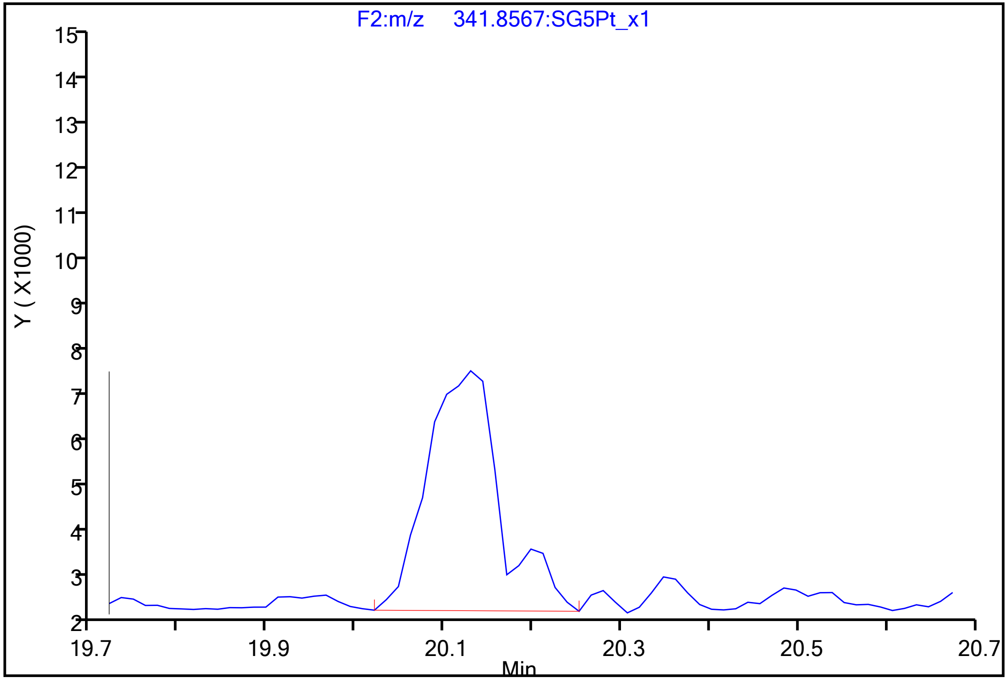

Manual Integration Results

RT = 20.129 Area = 26322 M

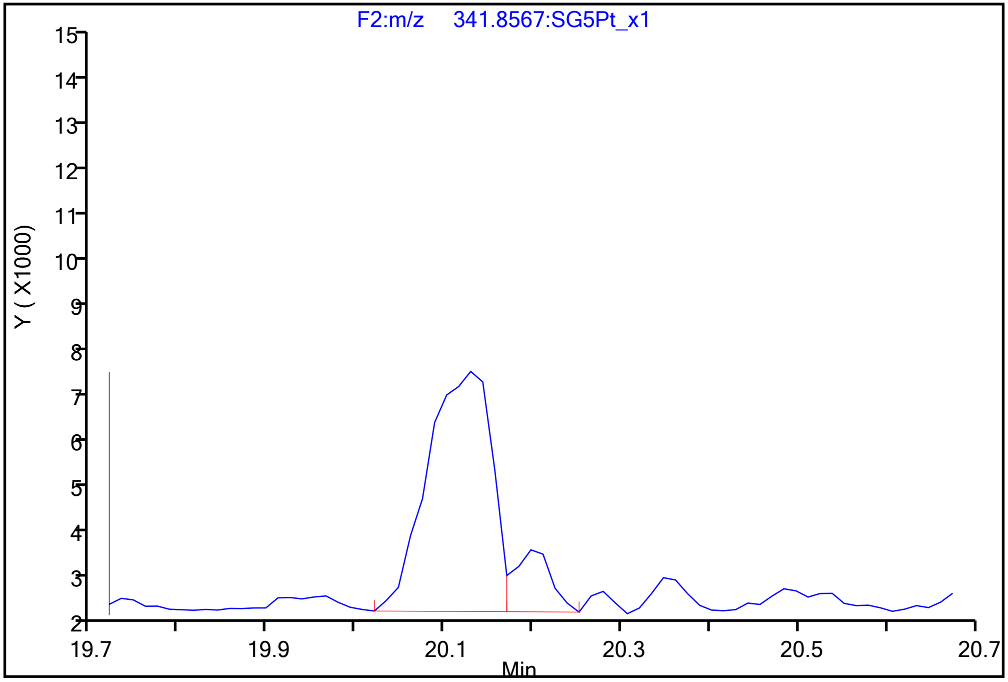

Reviewer: dadunj, 14-Oct-2020 13:22:49

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT: 23.36
Area: 7946
Amount: 0.062833
Amount Units: pg/ul

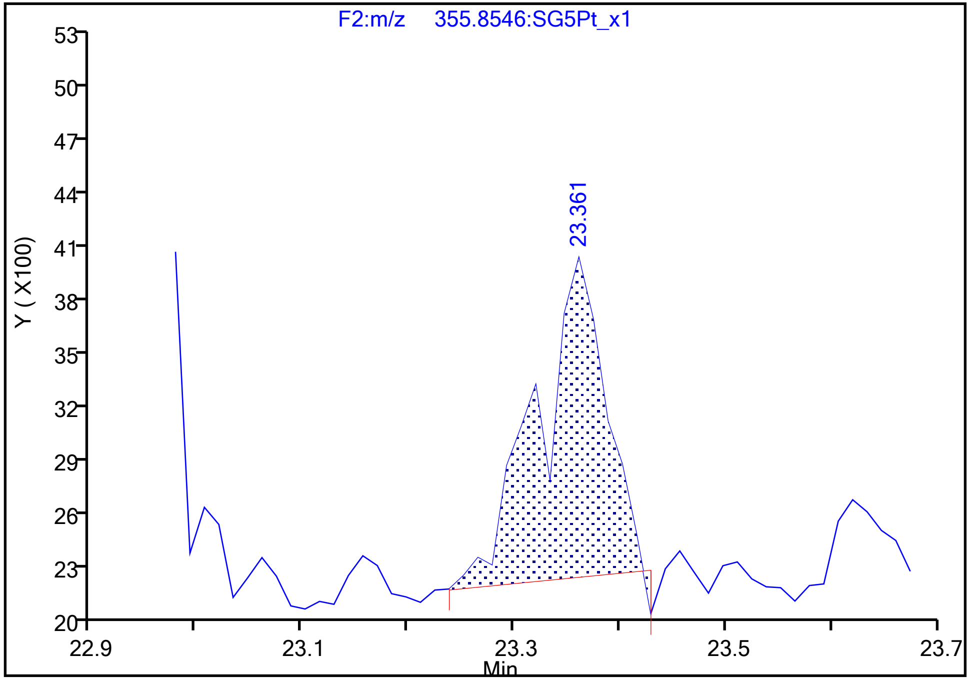

Manual Integration Results

RT: 23.36
Area: 9008
Amount: 0.067803
Amount Units: pg/ul

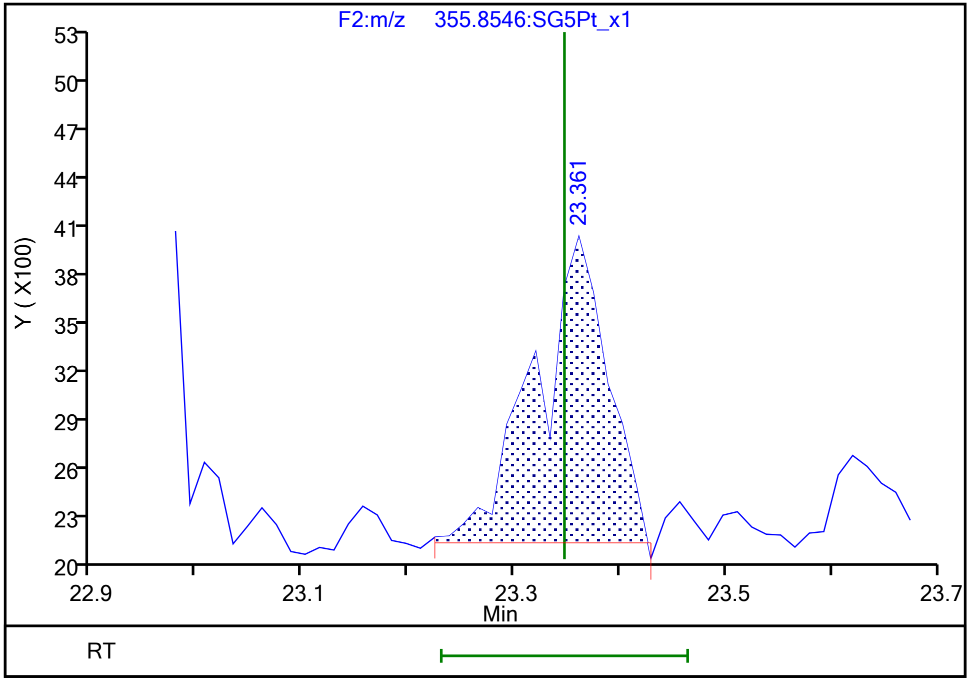

Reviewer: dadunj, 14-Oct-2020 13:23:05

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 14-Oct-2020 13:25:40

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23
Instrument ID: 10D5
Lims ID: 320-65247-A-1-A
Lab Sample ID: 320-65247-1
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Operator ID: ALM
ALS Bottle#: 10
Worklist Smp#: 10
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2:HRSIR

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

RT: 23.33
Area: 5972
Amount: 0.062833
Amount Units: pg/ul

Processing Integration Results

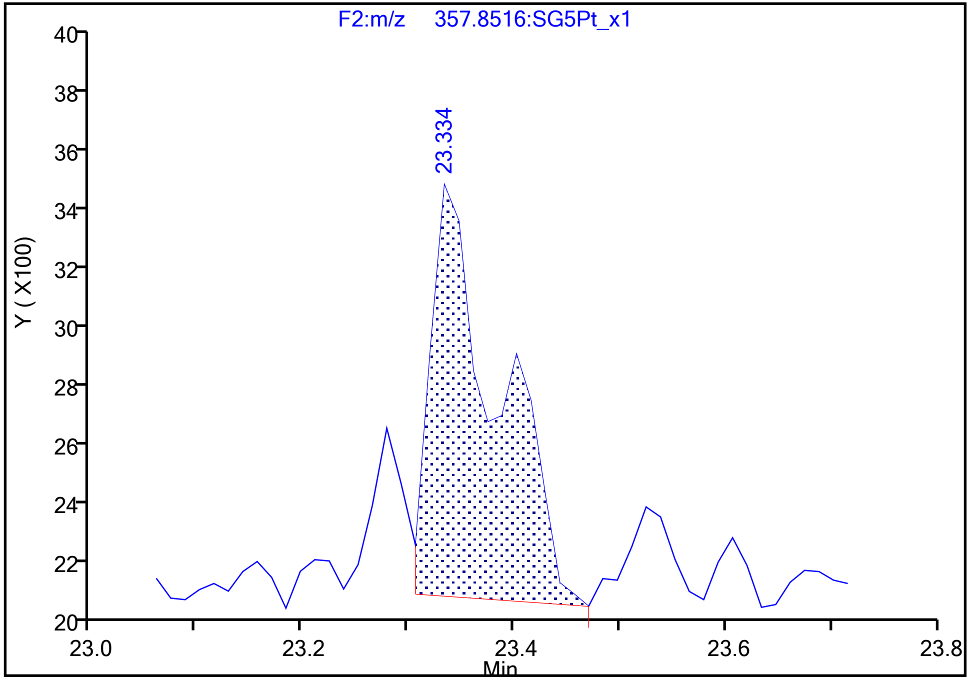

RT: 23.33
Area: 6011
Amount: 0.067803
Amount Units: pg/ul

Manual Integration Results

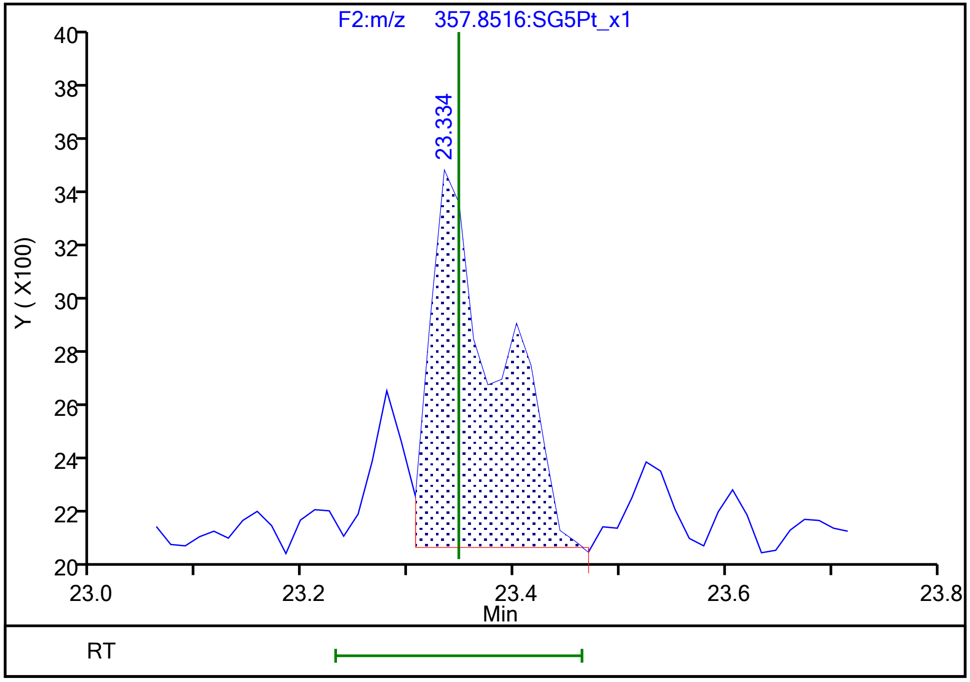

Reviewer: dadunj, 14-Oct-2020 13:23:09

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 31.11
Area: 12492
Amount: 0.109606
Amount Units: pg/ul

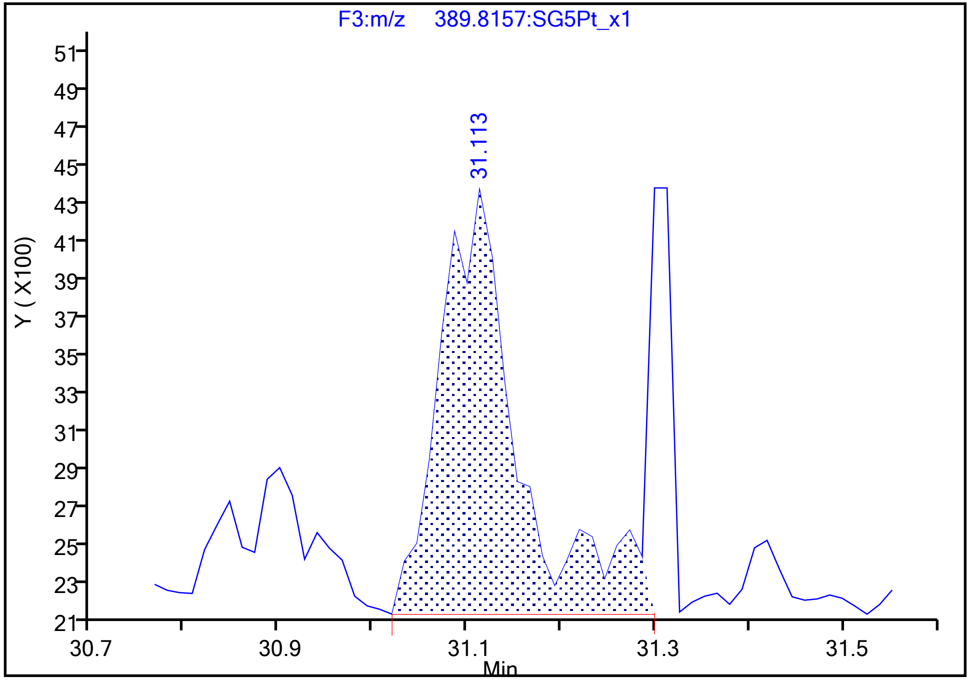

Manual Integration Results

RT: 31.11
Area: 10406
Amount: 0.098022
Amount Units: pg/ul

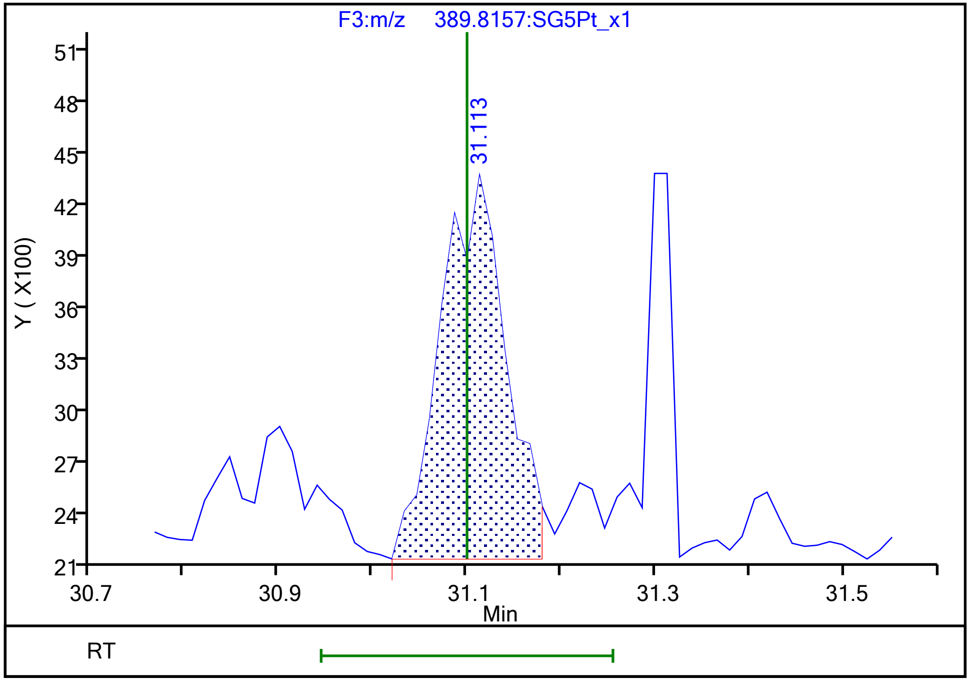

Reviewer: dadunj, 14-Oct-2020 13:23:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40

Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT: 33.37
Area: 50514
Amount: 0.250201
Amount Units: pg/ul

Processing Integration Results

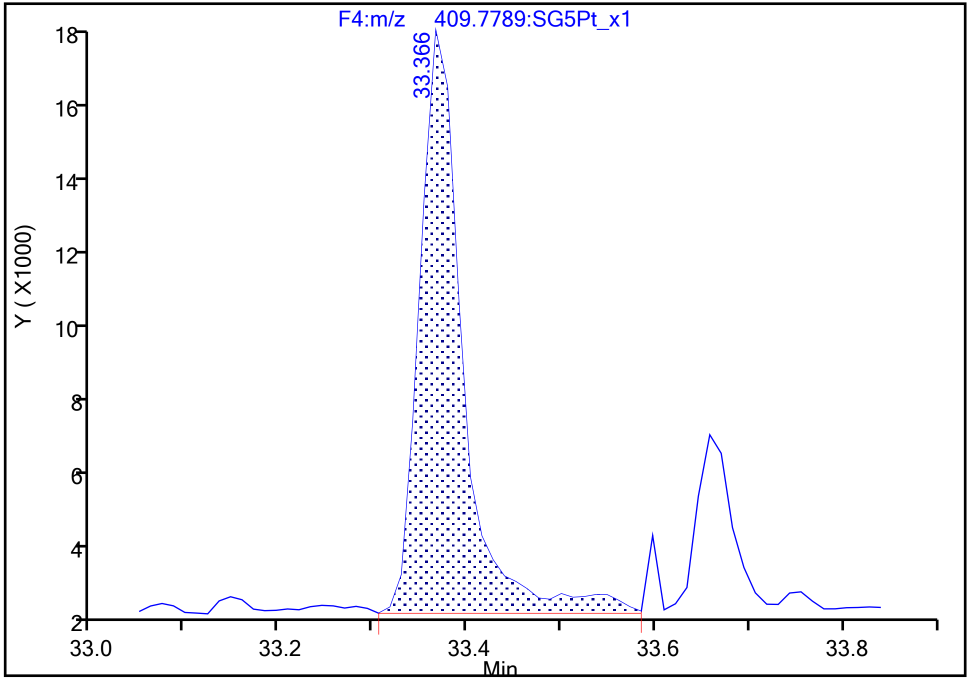

RT: 33.37
Area: 48261
Amount: 0.236048
Amount Units: pg/ul

Manual Integration Results

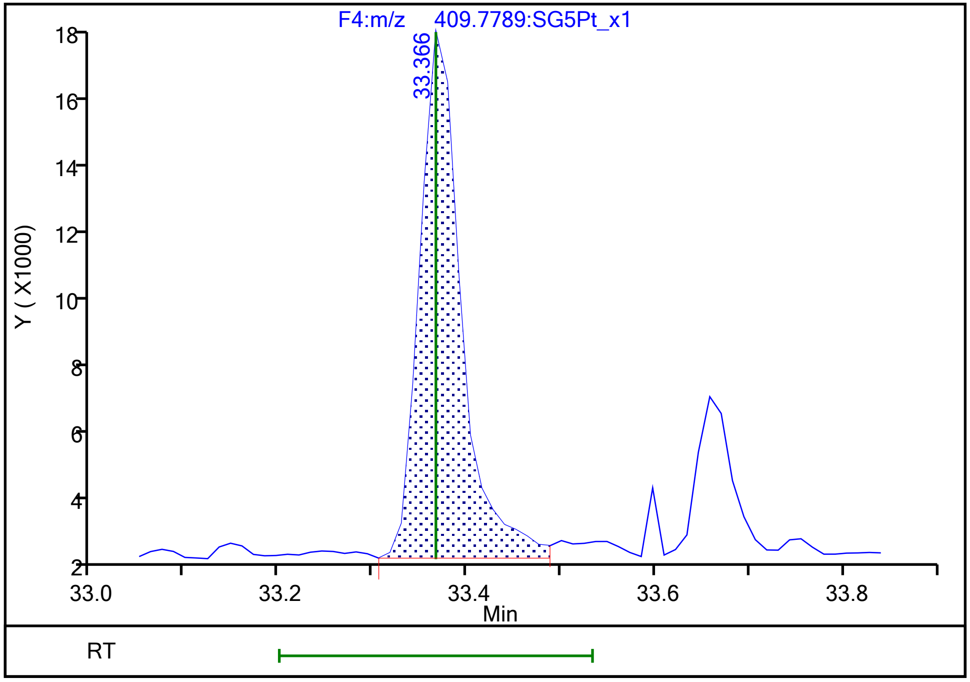

Reviewer: dadunj, 14-Oct-2020 13:23:44

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT:	33.38
Area:	47407
Amount:	0.250201
Amount Units:	pg/ul

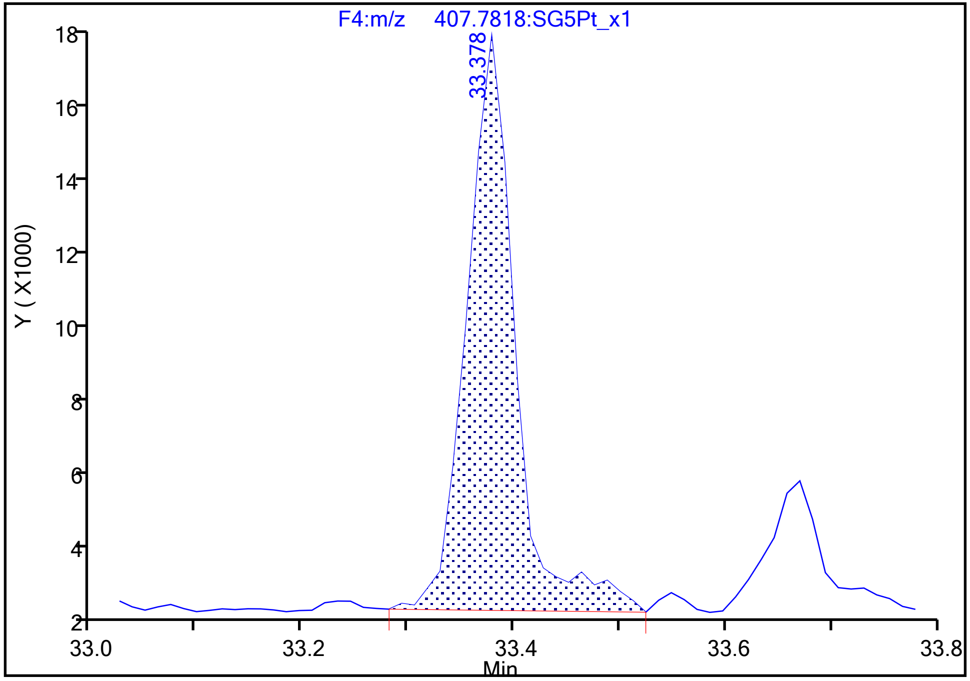

Manual Integration Results

RT:	33.38
Area:	44121
Amount:	0.236048
Amount Units:	pg/ul

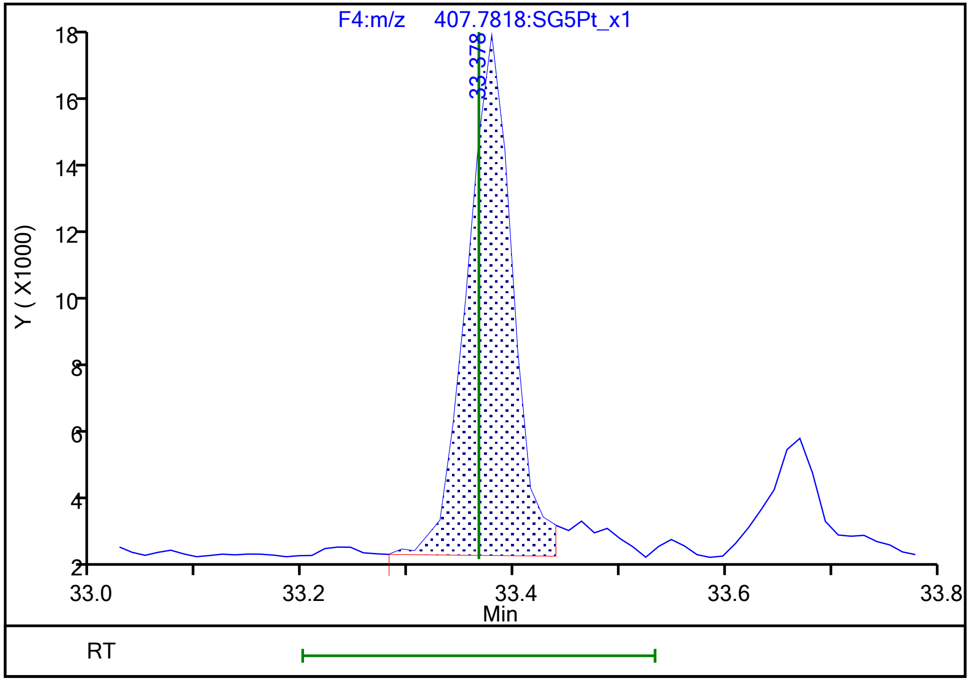

Reviewer: dadunj, 14-Oct-2020 13:23:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT:	34.42
Area:	16120
Amount:	0.106979
Amount Units:	pg/ul

Processing Integration Results

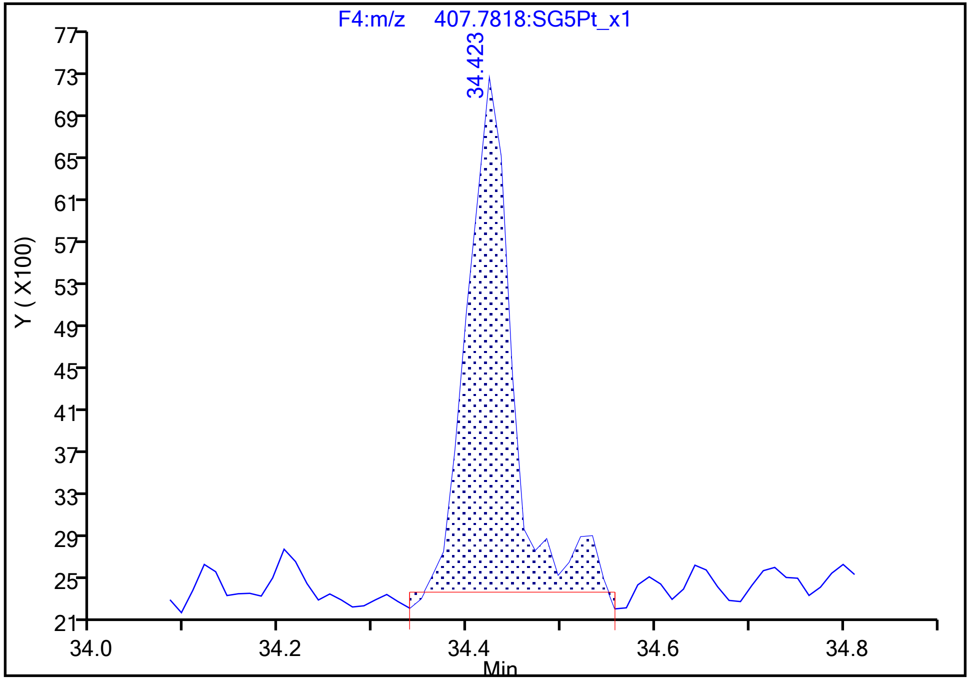

RT:	34.42
Area:	14501
Amount:	0.093787
Amount Units:	pg/ul

Manual Integration Results

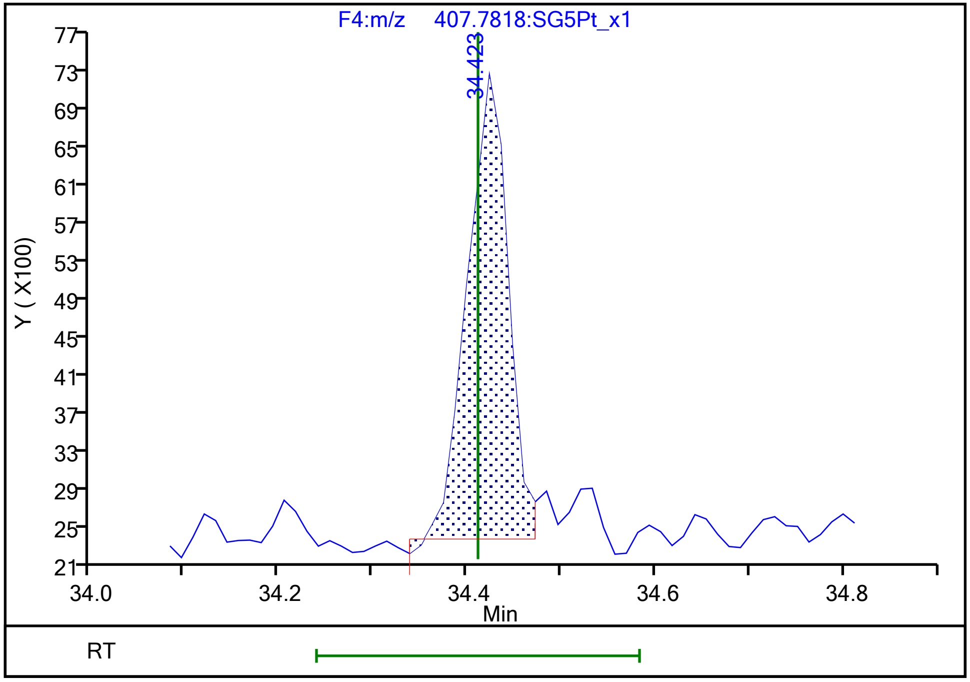

Reviewer: dadunj, 14-Oct-2020 13:23:51

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT: 34.42
Area: 15053
Amount: 0.106979
Amount Units: pg/ul

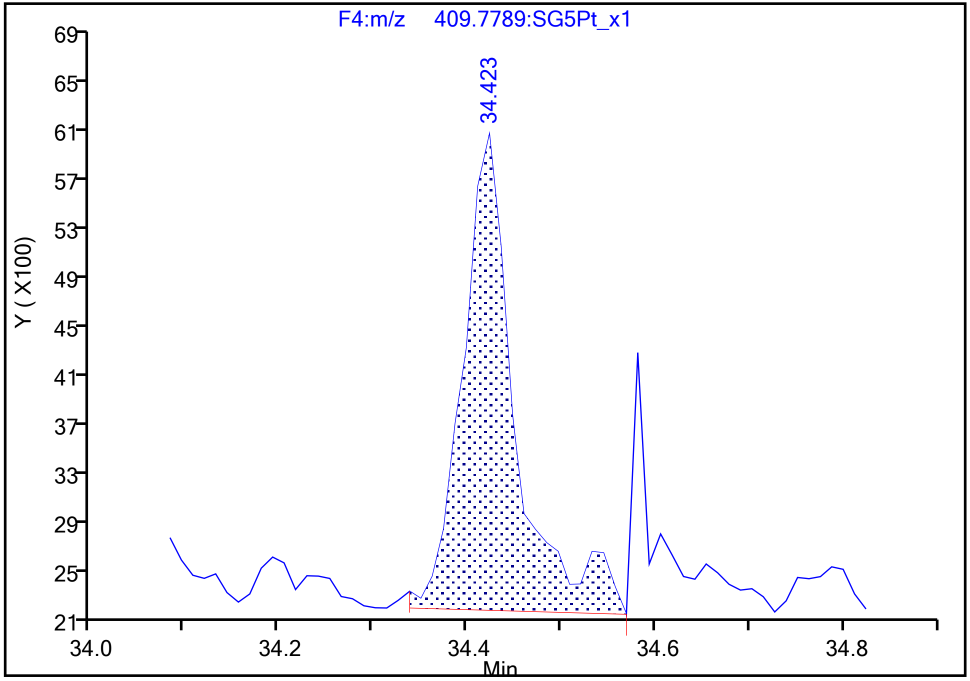

Manual Integration Results

RT: 34.42
Area: 12828
Amount: 0.093787
Amount Units: pg/ul

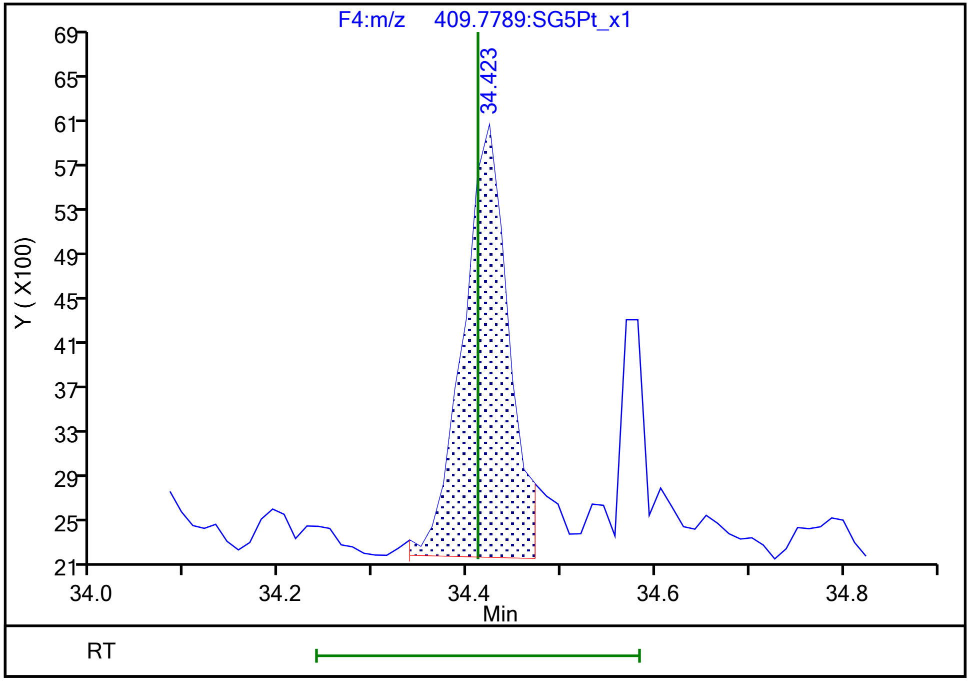

Reviewer: dadunj, 14-Oct-2020 13:23:52

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7818, RT: (33.34- 34.44)

Signal: 1

Processing Integration Results

RT = 33.670 Area = 11748

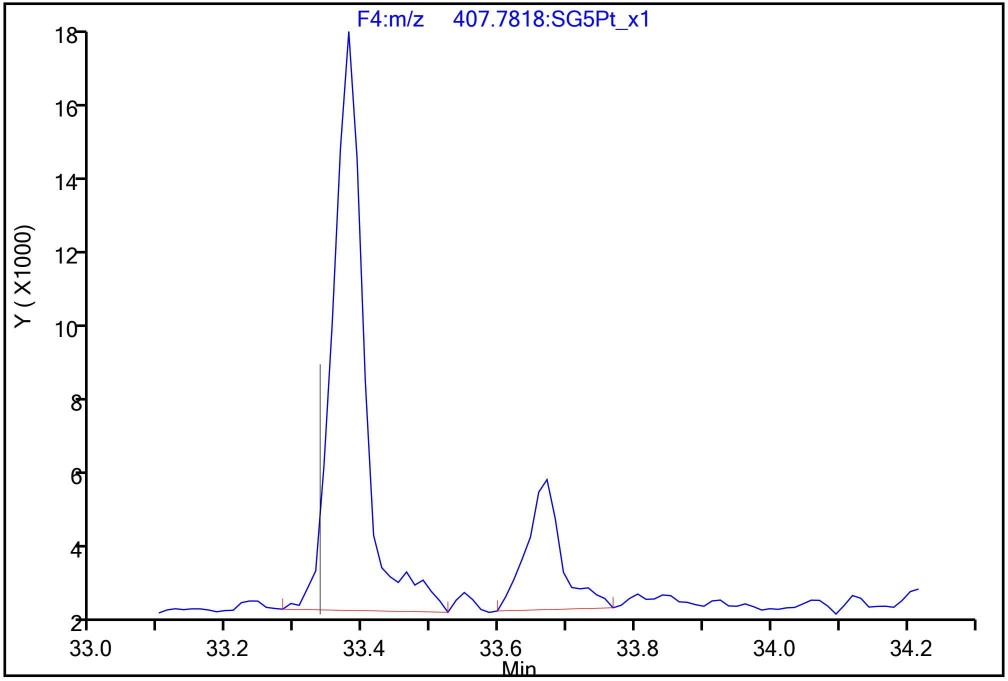

Manual Integration Results

RT = 33.670 Area = 10758 M

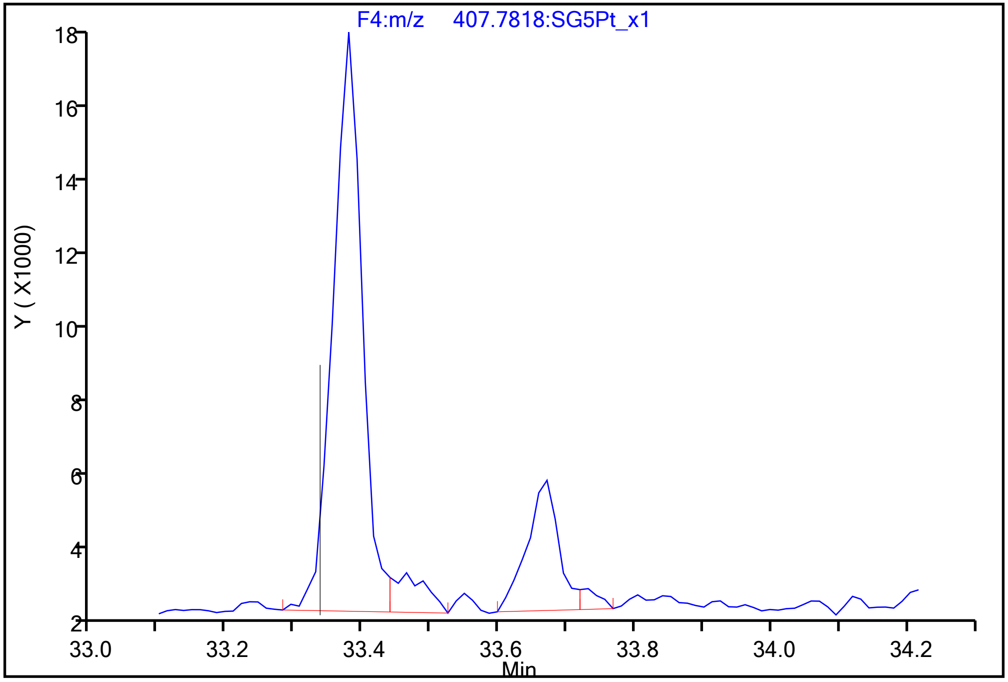

Reviewer: dadunj, 14-Oct-2020 13:23:56

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Operator ID:	ALM	ALS Bottle#:	10 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7789, RT: (33.34- 34.44)

Signal: 2

Processing Integration Results

RT = 33.658 Area = 12971

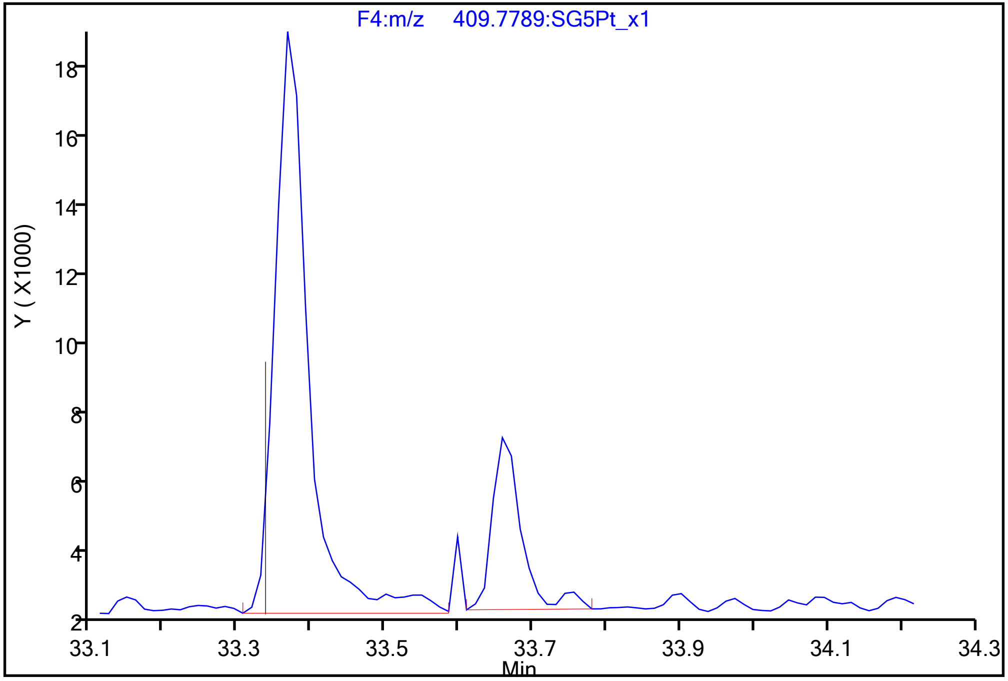

Manual Integration Results

RT = 33.658 Area = 12025 M

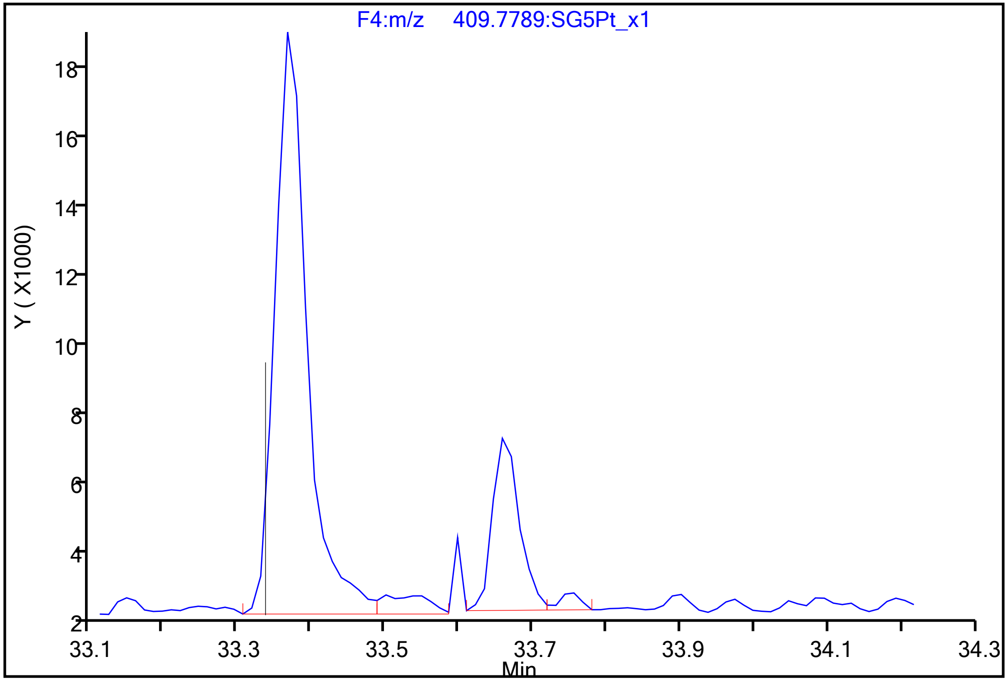

Reviewer: dadunj, 14-Oct-2020 13:23:55

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT:	34.13
Area:	22464
Amount:	0.216998
Amount Units:	pg/ul

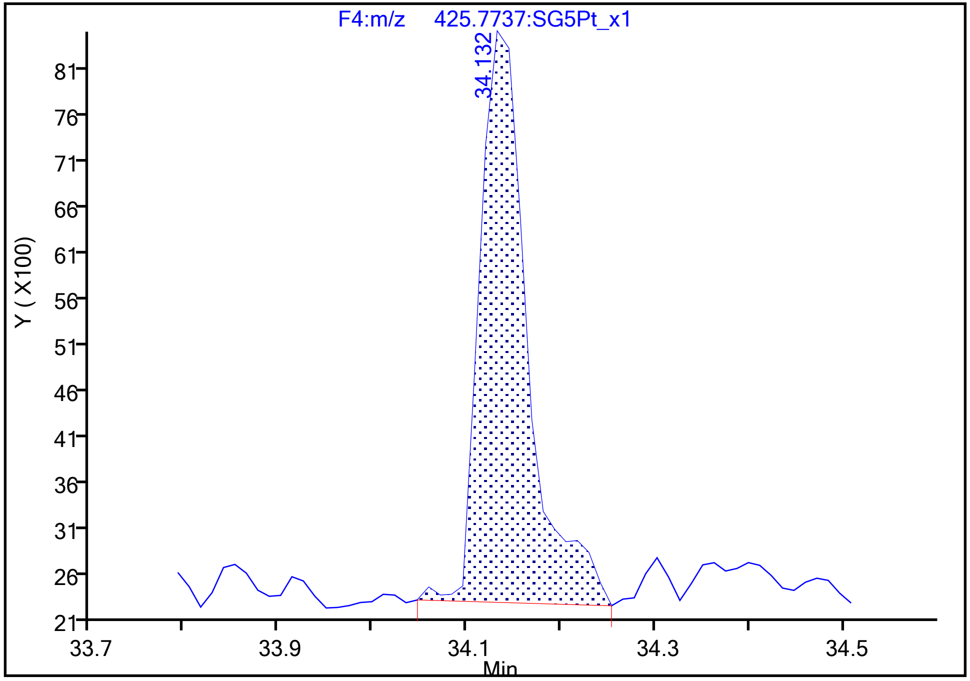

Manual Integration Results

RT:	34.13
Area:	19892
Amount:	0.197094
Amount Units:	pg/ul

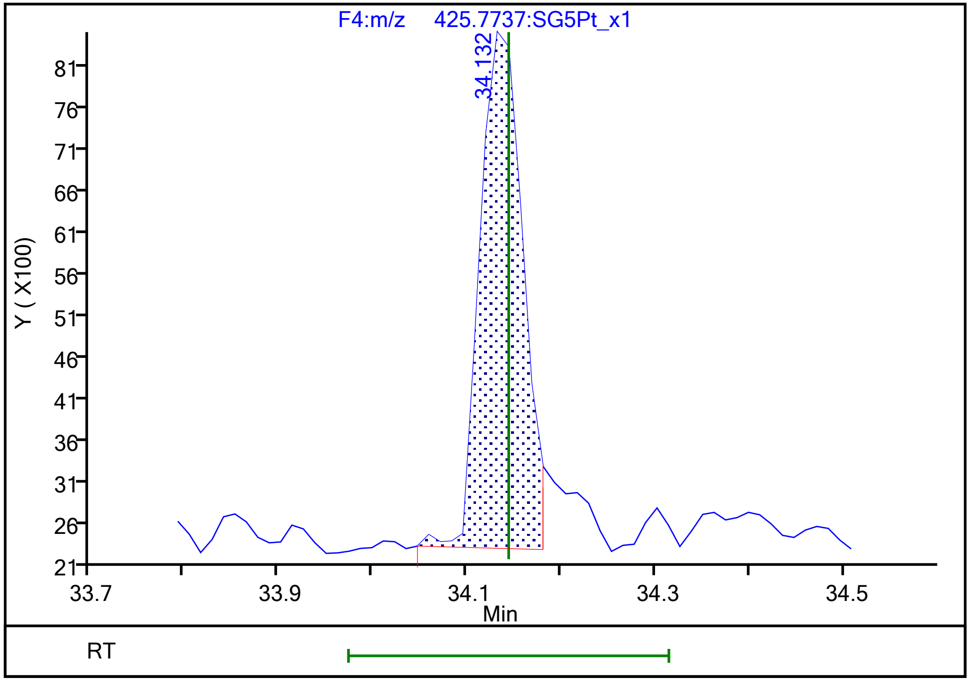

Reviewer: dadunj, 14-Oct-2020 13:24:01

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23
Instrument ID: 10D5
Lims ID: 320-65247-A-1-A
Lab Sample ID: 320-65247-1
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Operator ID: ALM
ALS Bottle#: 10
Worklist Smp#: 10
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 34.14
Area: 28320
Amount: 0.216998
Amount Units: pg/ul

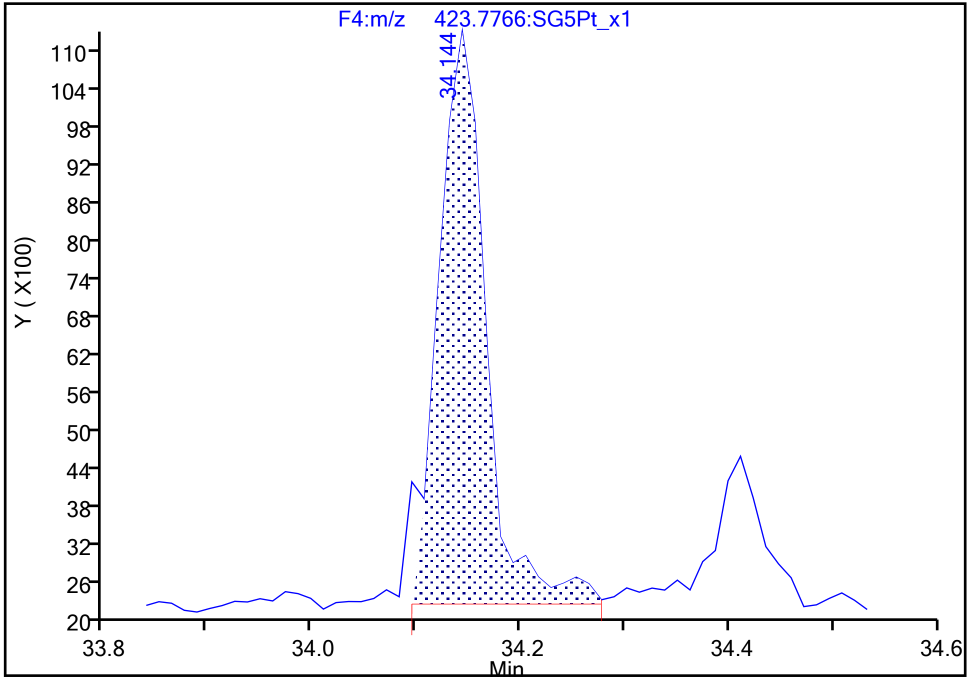

Manual Integration Results

RT: 34.14
Area: 26234
Amount: 0.197094
Amount Units: pg/ul

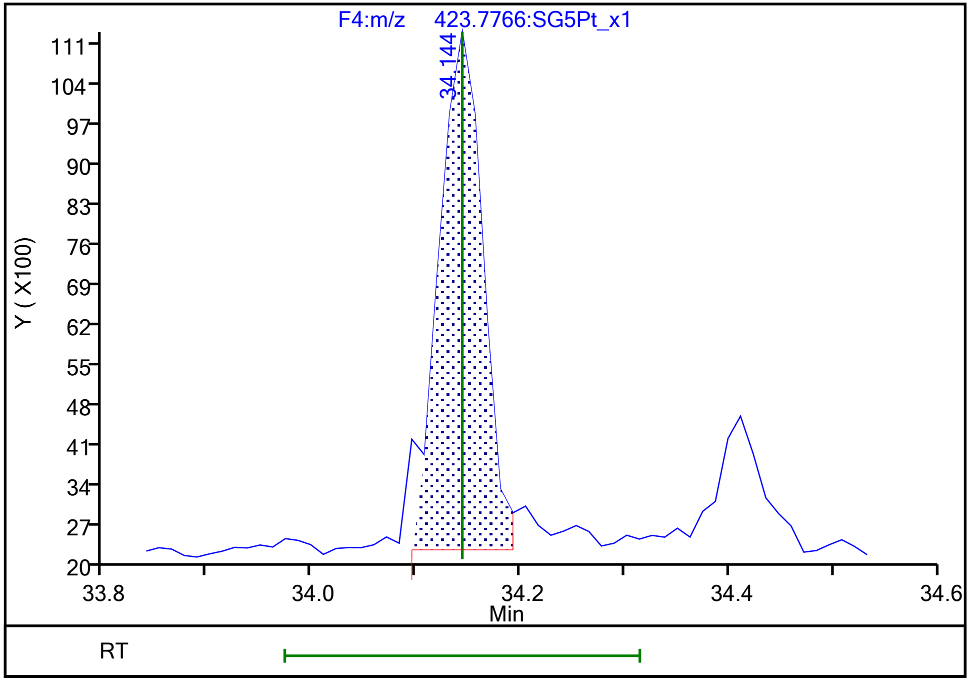

Reviewer: dadunj, 14-Oct-2020 13:24:02

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (33.57- 34.17)

Signal: 1

Processing Integration Results

RT = 33.609 Area = 26781

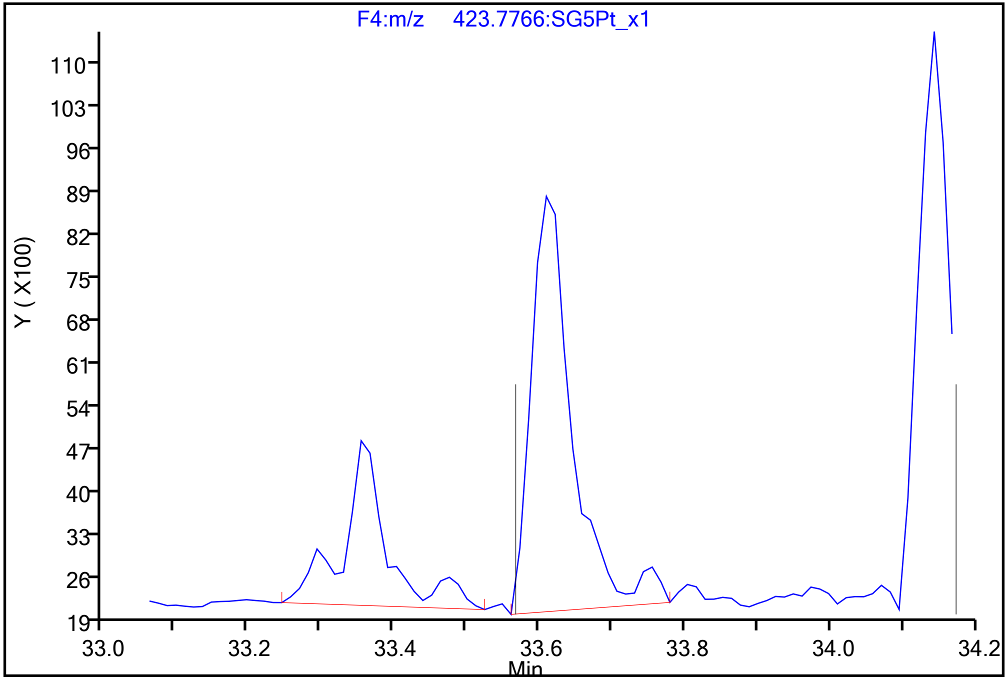

Manual Integration Results

RT = 33.609 Area = 23609 M

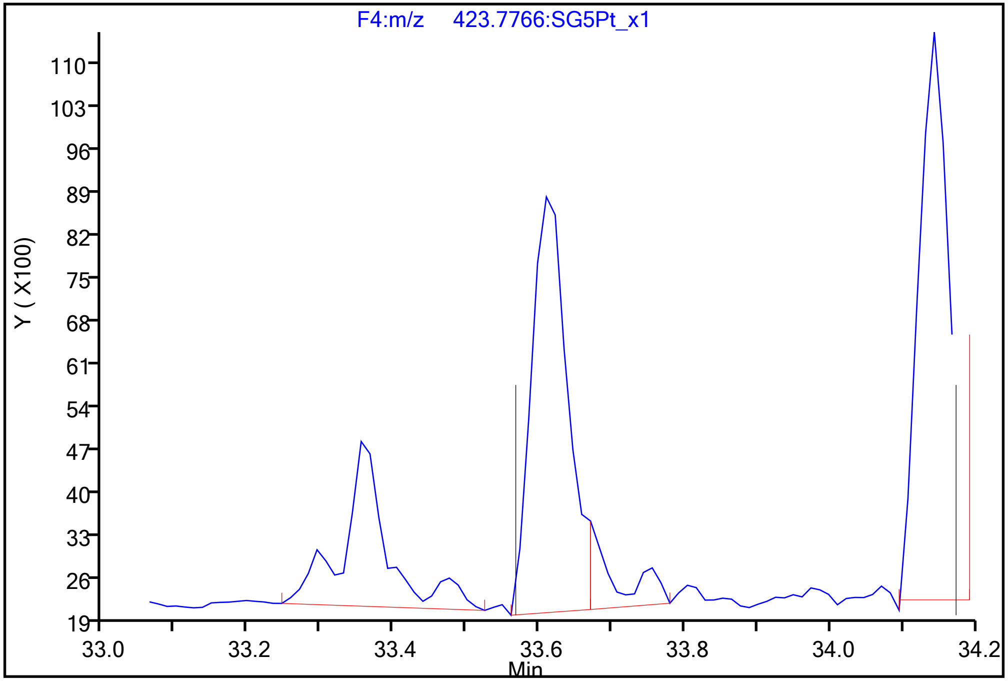

Reviewer: dadunj, 14-Oct-2020 13:24:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23 Instrument ID: 10D5
Lims ID: 320-65247-A-1-A Lab Sample ID: 320-65247-1
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Operator ID: ALM ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F4:HRSIR

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (33.57- 34.17)

Signal: 2

RT = 33.609 Area = 18020

Processing Integration Results

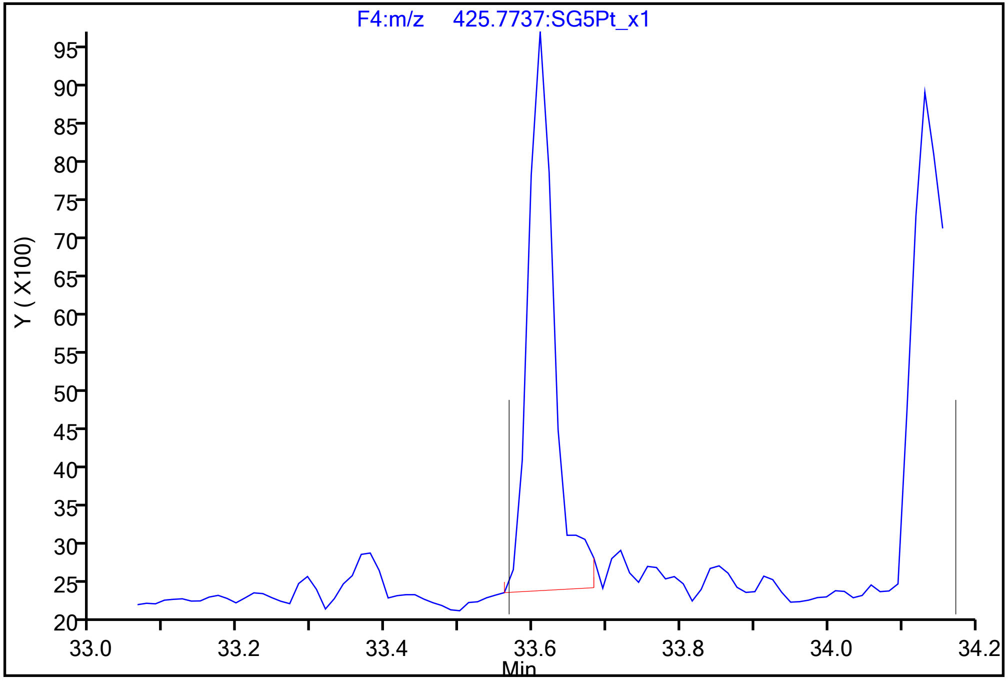

RT = 33.609 Area = 17162 M

Manual Integration Results

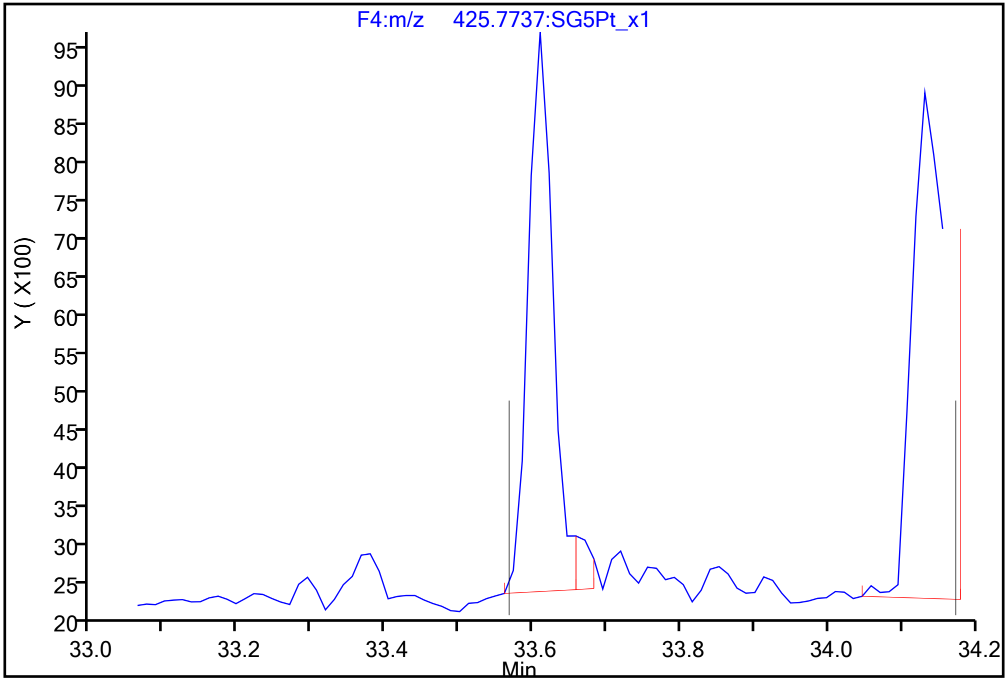

Reviewer: dadunj, 14-Oct-2020 13:24:07
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

RT: 36.49
Area: 17470
Amount: 0.131191
Amount Units: pg/ul

Processing Integration Results

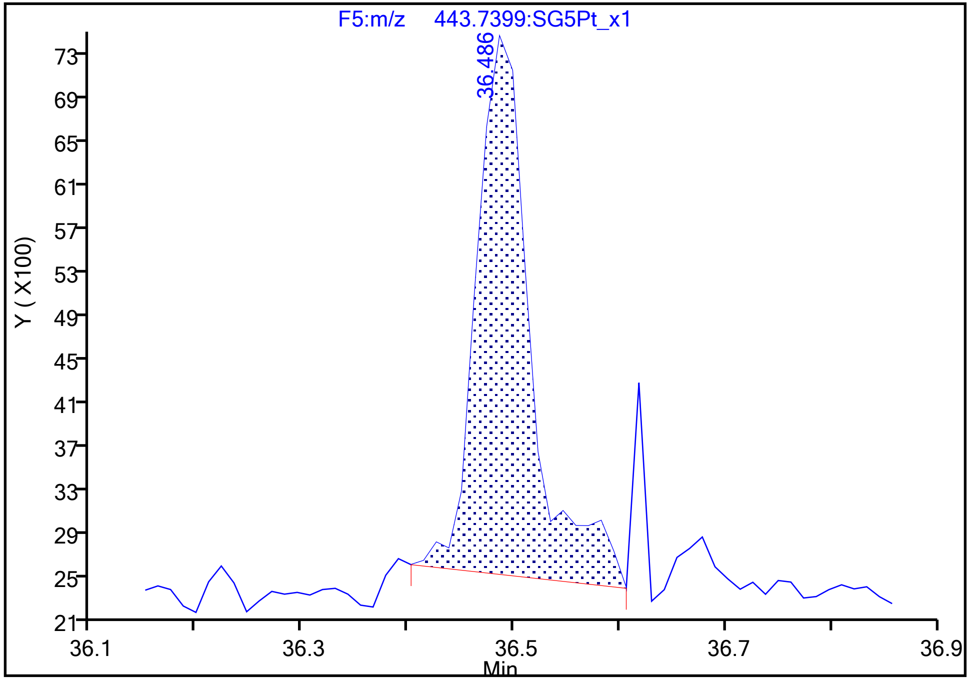

RT: 36.49
Area: 15034
Amount: 0.118590
Amount Units: pg/ul

Manual Integration Results

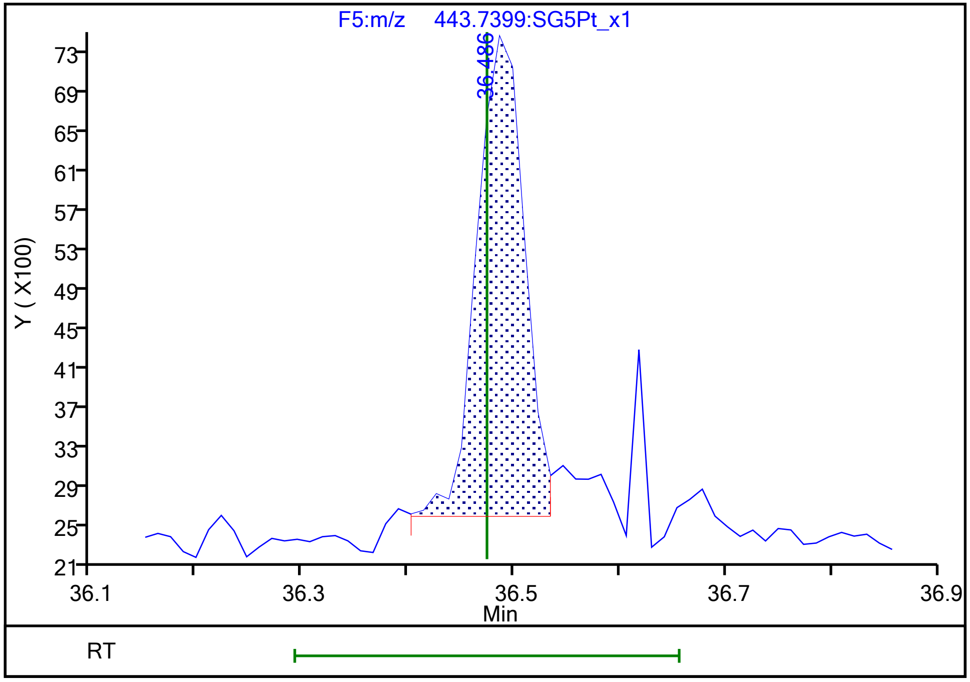

Reviewer: dadunj, 14-Oct-2020 13:24:19

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT:	36.50
Area:	15294
Amount:	0.131191
Amount Units:	pg/ul

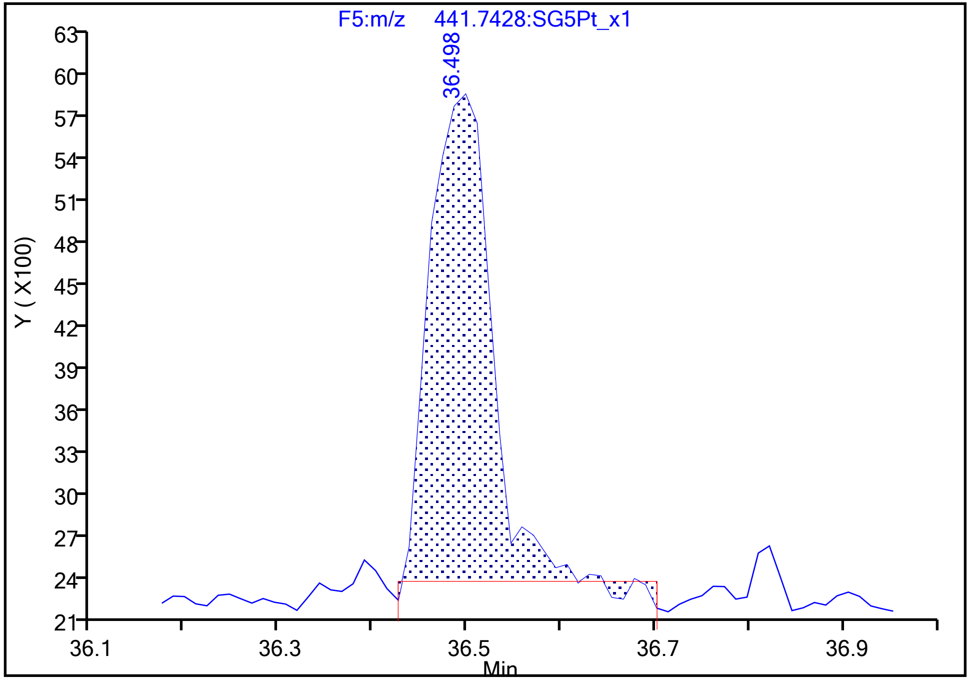

Manual Integration Results

RT:	36.50
Area:	14583
Amount:	0.118590
Amount Units:	pg/ul

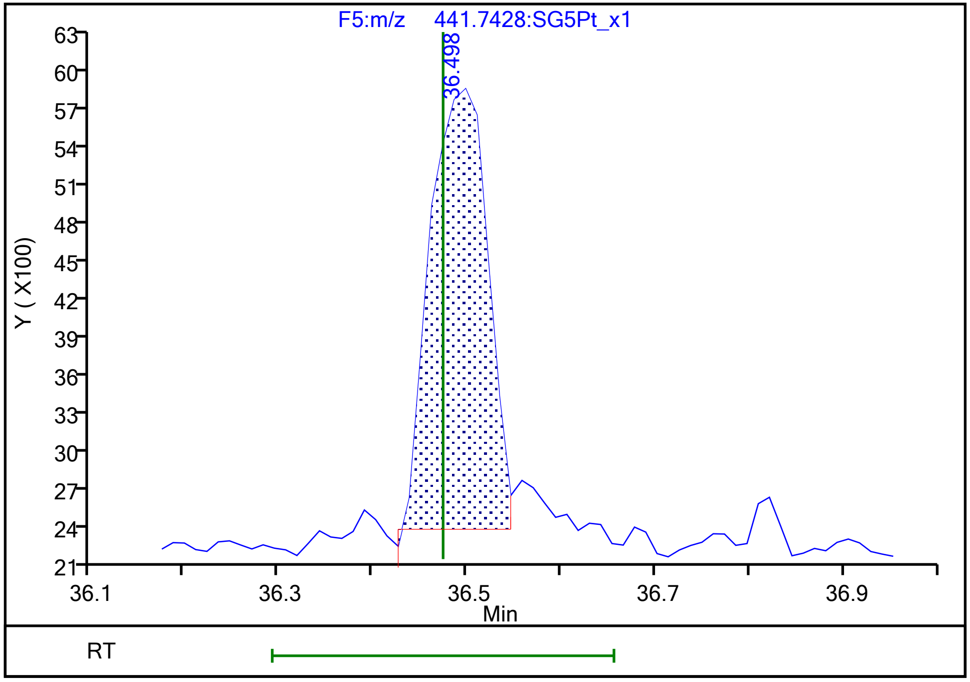

Reviewer: dadunj, 14-Oct-2020 13:24:20

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT: 36.40
Area: 263298
Amount: 2.479094
Amount Units: pg/ul

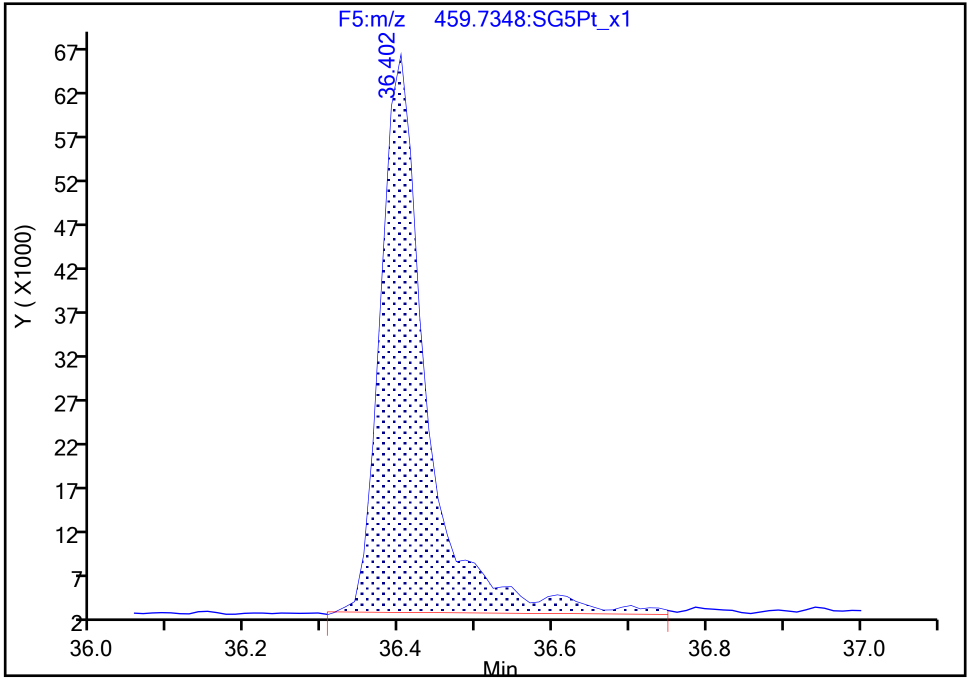

Manual Integration Results

RT: 36.40
Area: 234599
Amount: 2.210939
Amount Units: pg/ul

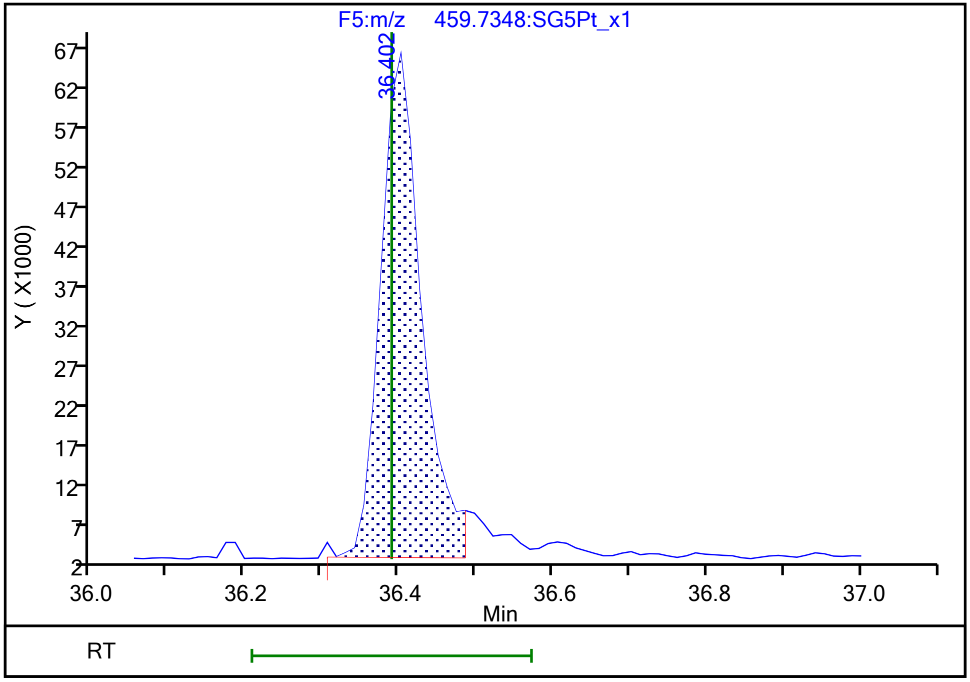

Reviewer: dadunj, 14-Oct-2020 13:24:24

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40　　Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d				
Injection Date:	13-Oct-2020 04:24:23	Instrument ID:	10D5		
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1		
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Operator ID:	ALM	ALS Bottle#:	10	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 1

RT:	36.40
Area:	231171
Amount:	2.479094
Amount Units:	pg/ul

Processing Integration Results

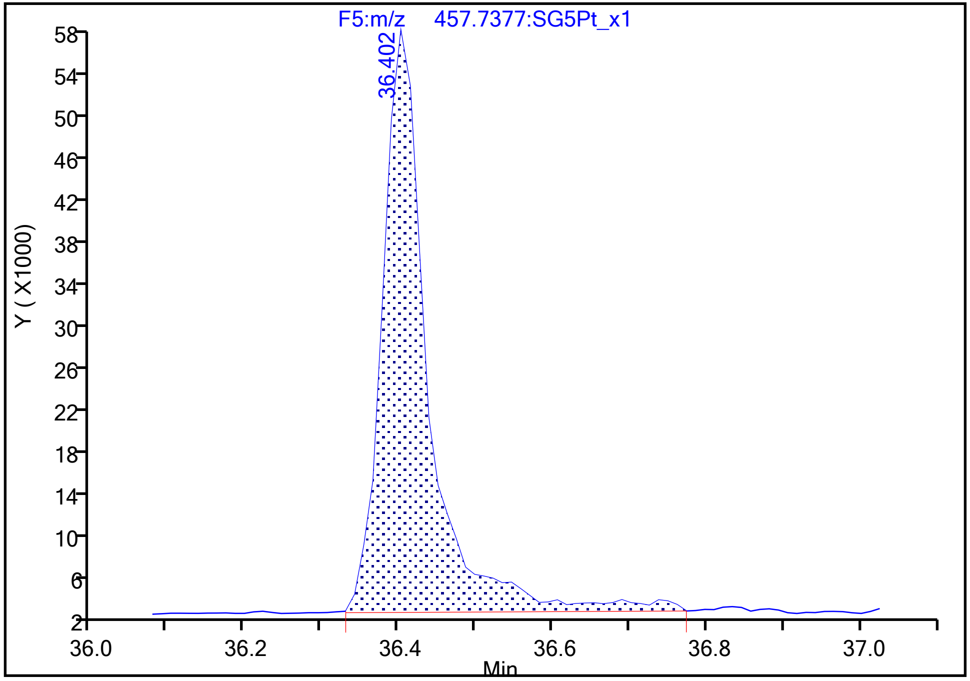

RT:	36.40
Area:	206385
Amount:	2.210939
Amount Units:	pg/ul

Manual Integration Results

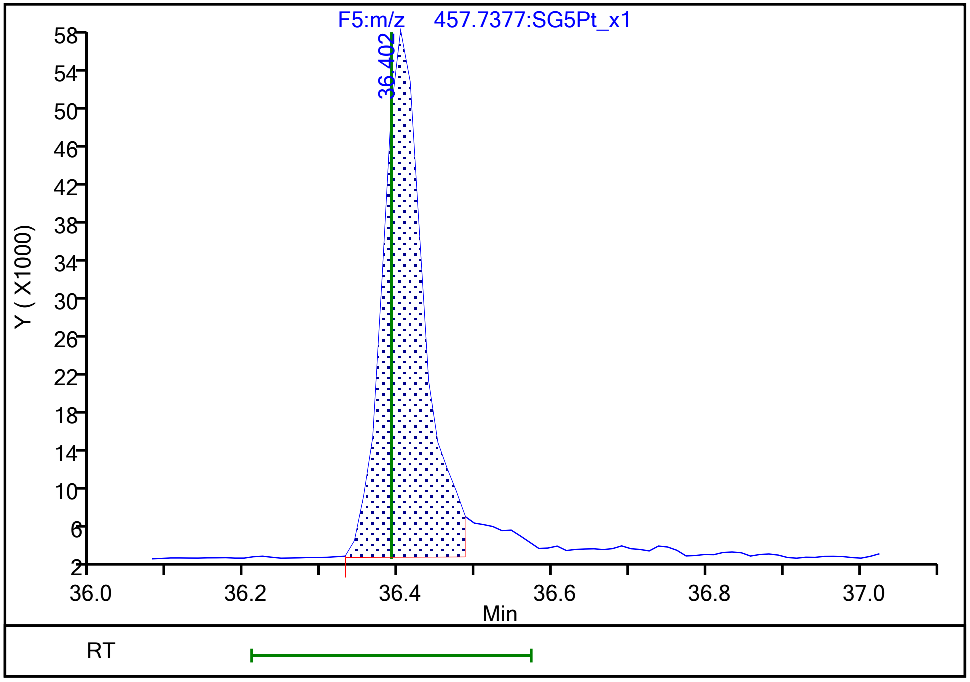

Reviewer: dadunj, 14-Oct-2020 13:24:26

Audit Action: Split an Integrated Peak　　Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date: 13-Oct-2020 04:24:23 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-Valve-3-2-Repl

Worklist#: 421347 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

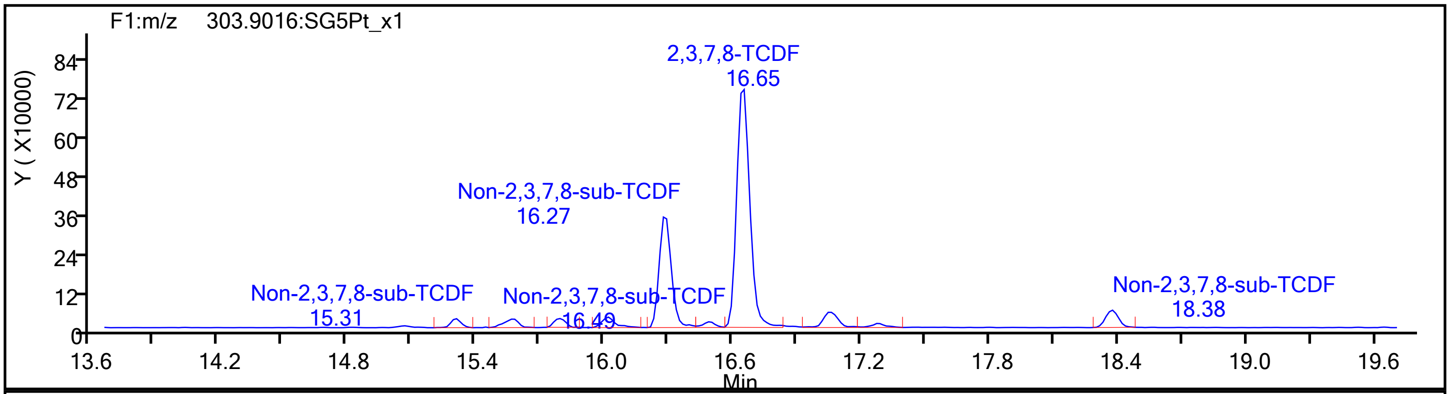

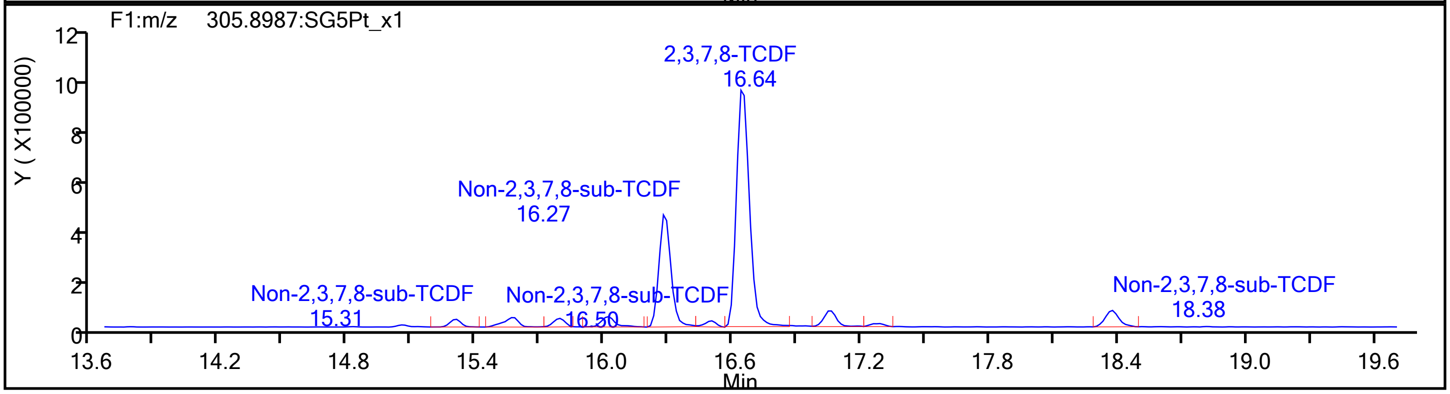

TCDF Standards

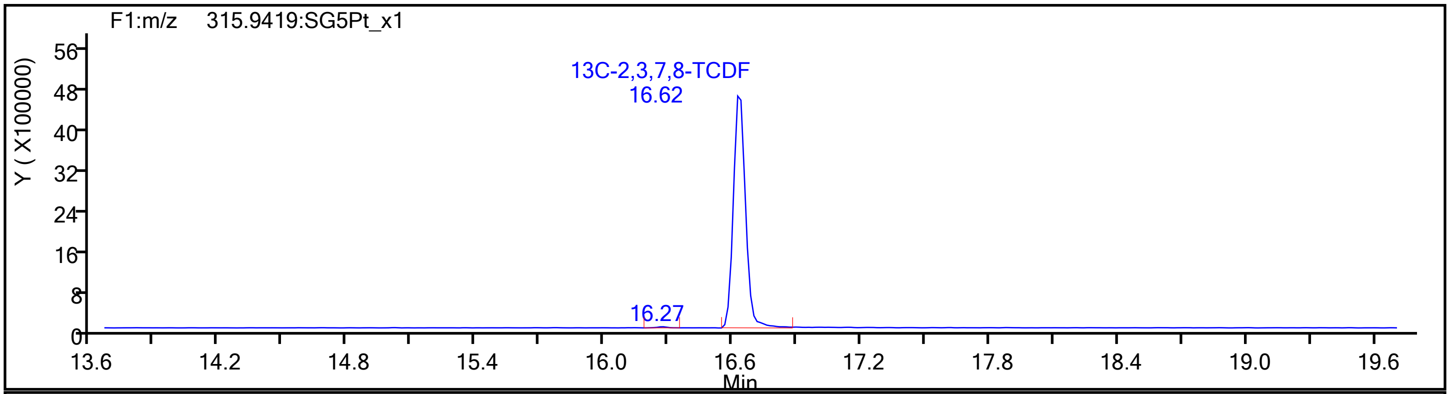

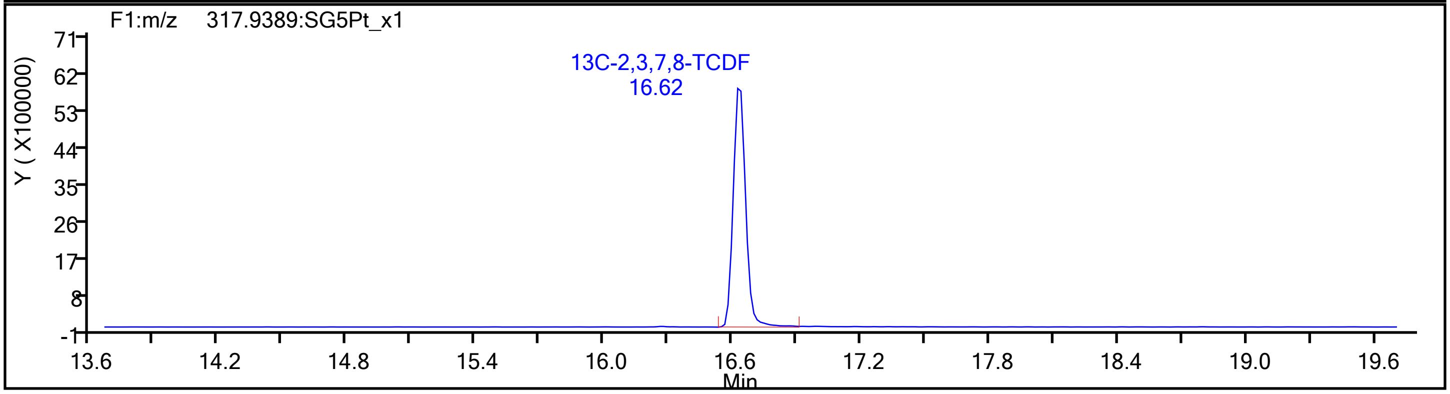

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

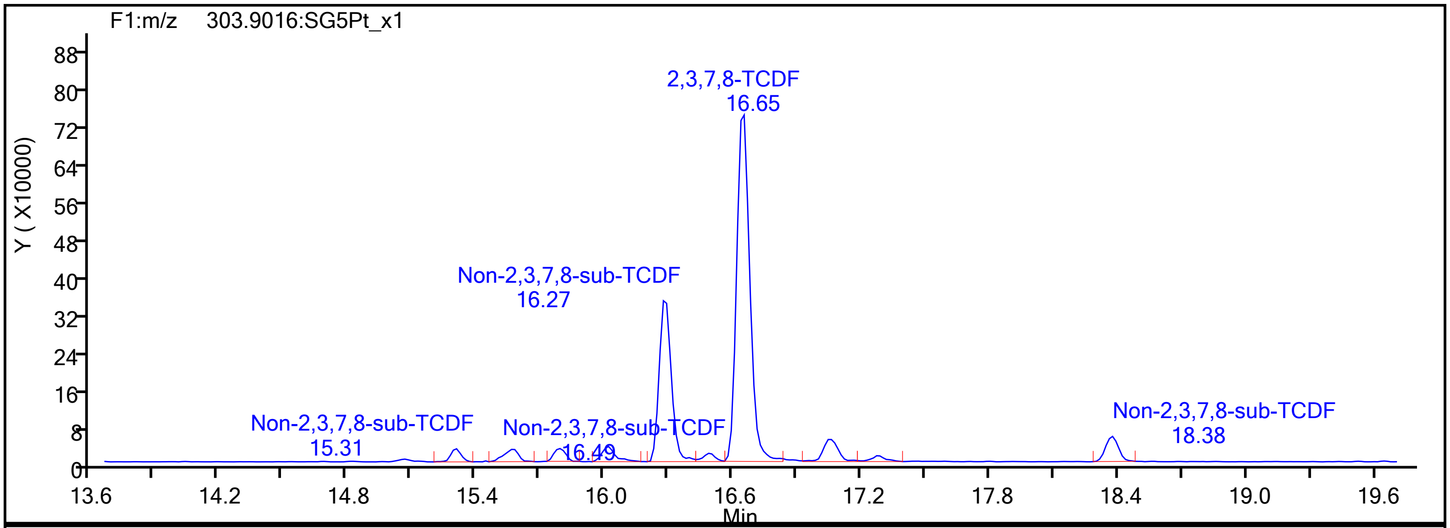

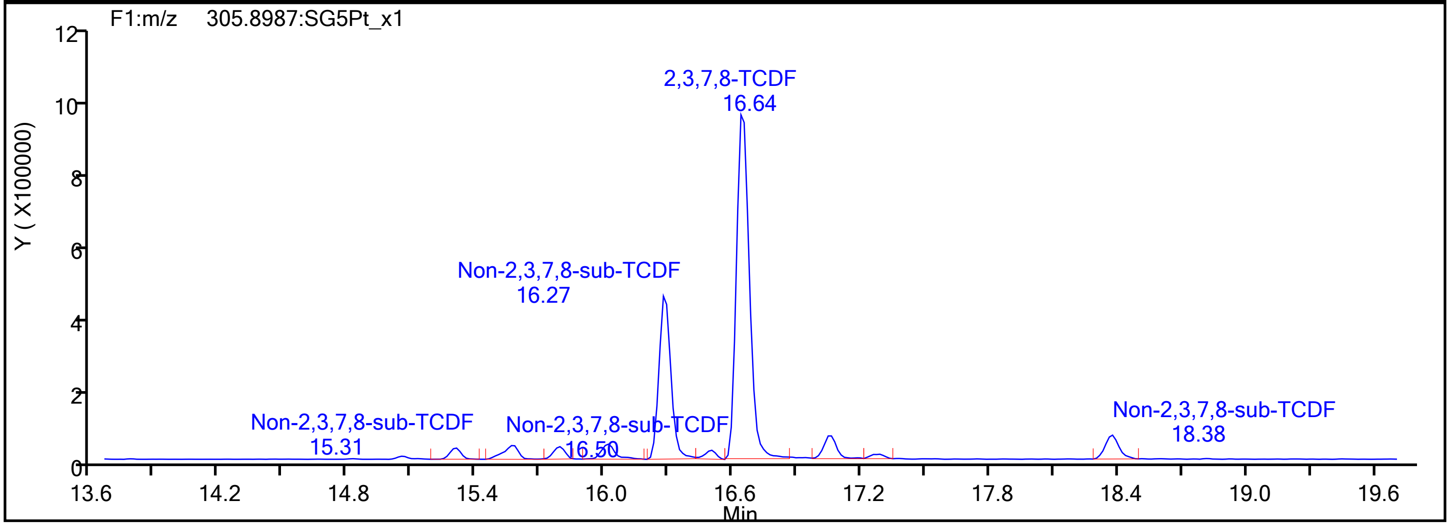

TCDF Interference Mass

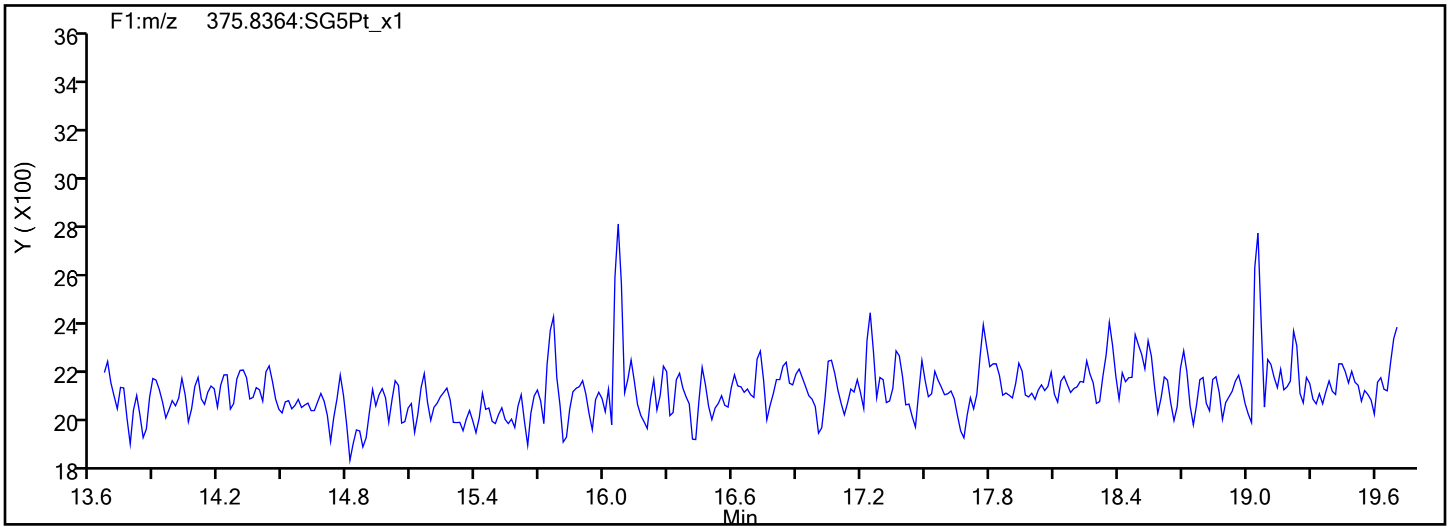

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 421347
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

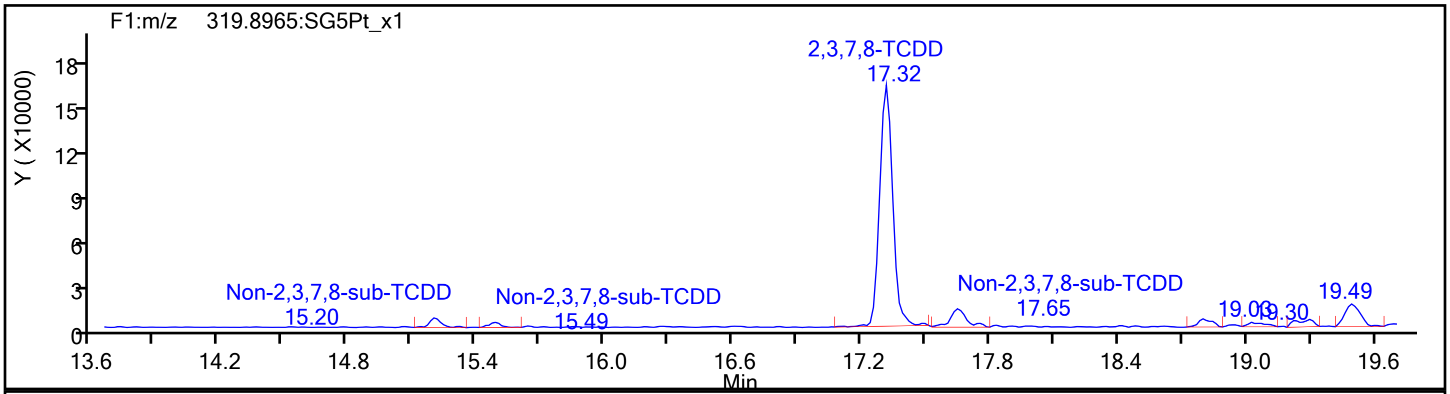

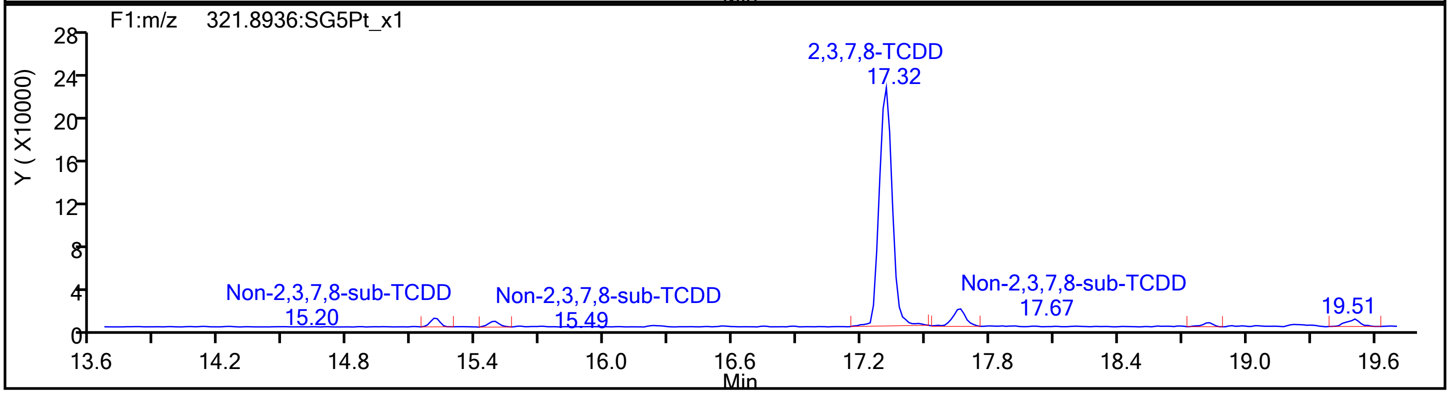

TCDD Standards

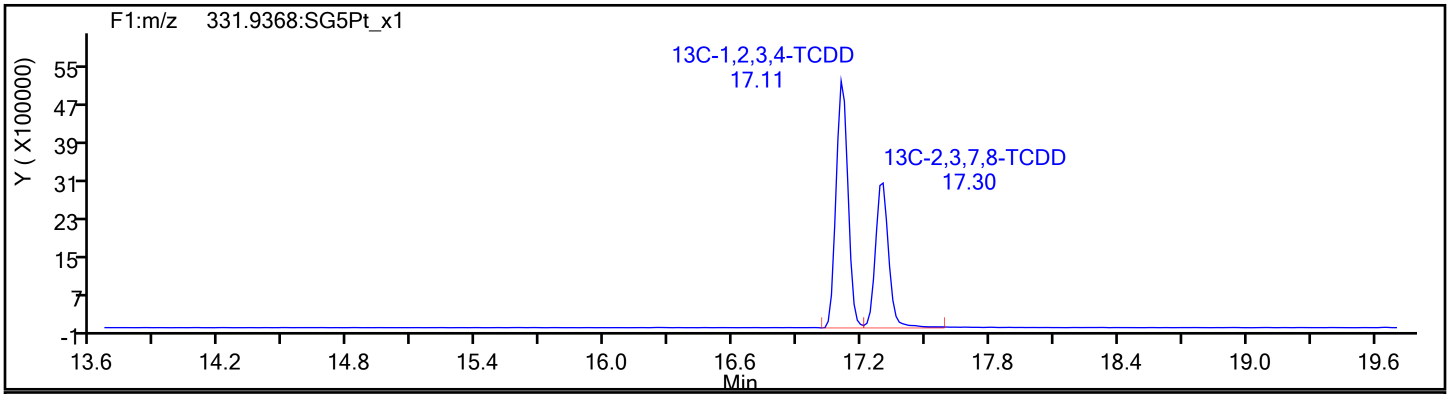

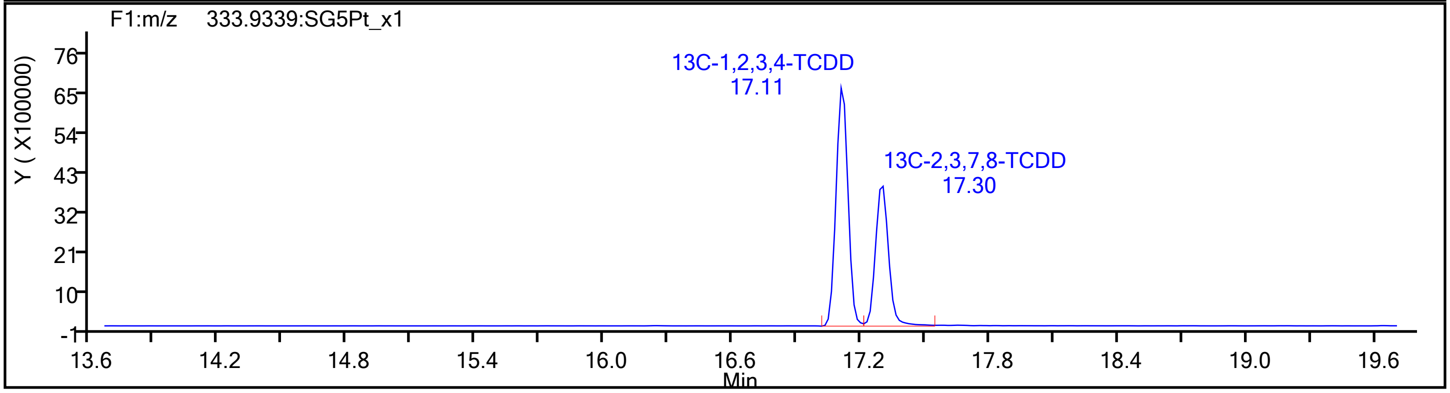

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

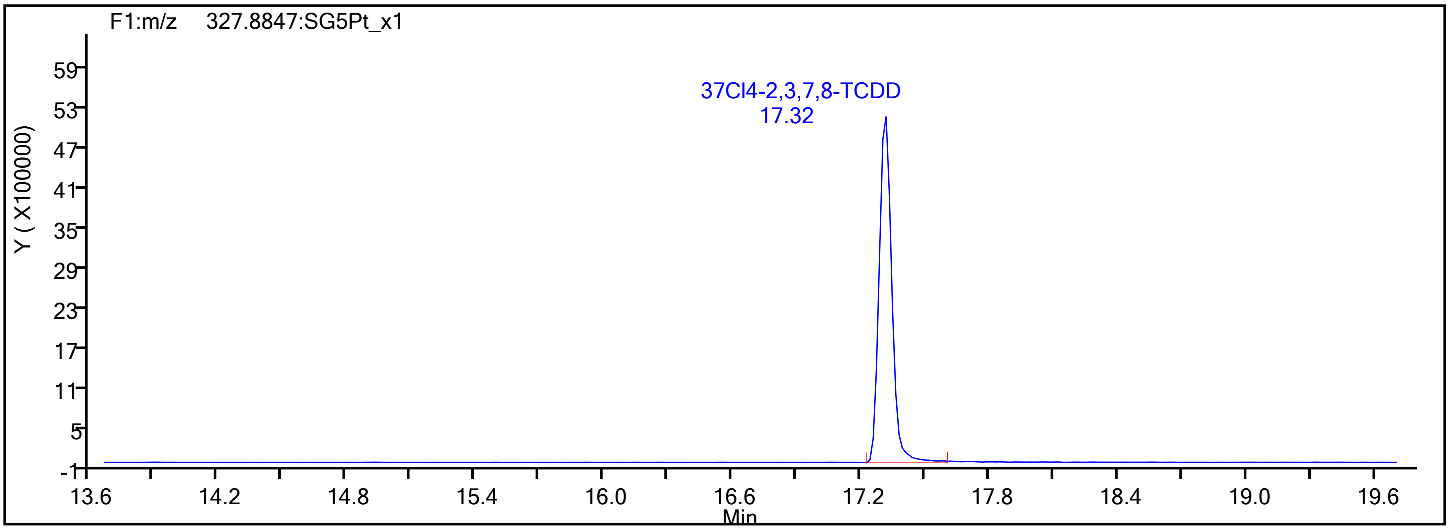

37Cl4-TCDD Standards

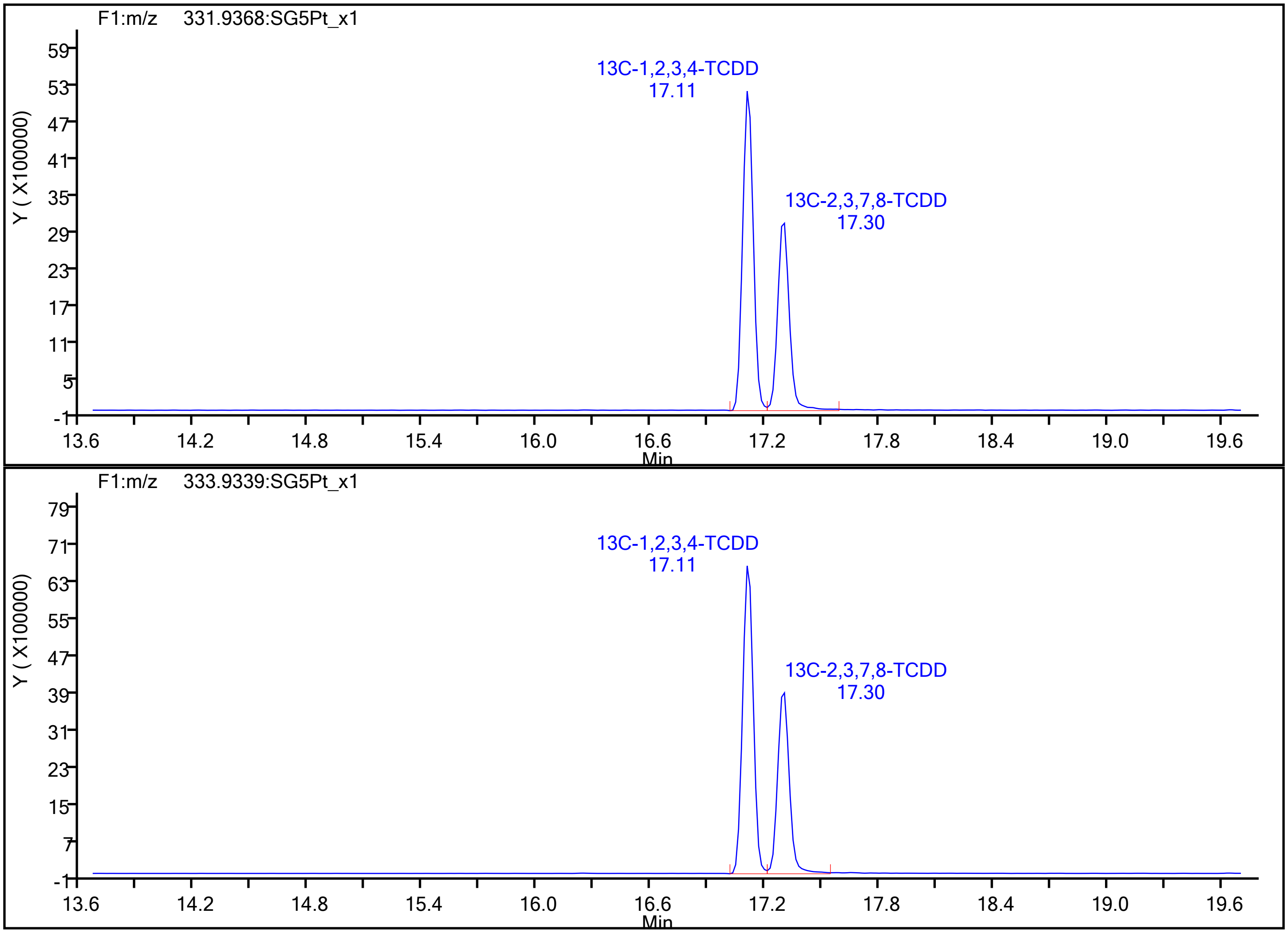

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date: 13-Oct-2020 04:24:23 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-Valve-3-2-Repl

Worklist#: 421347 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

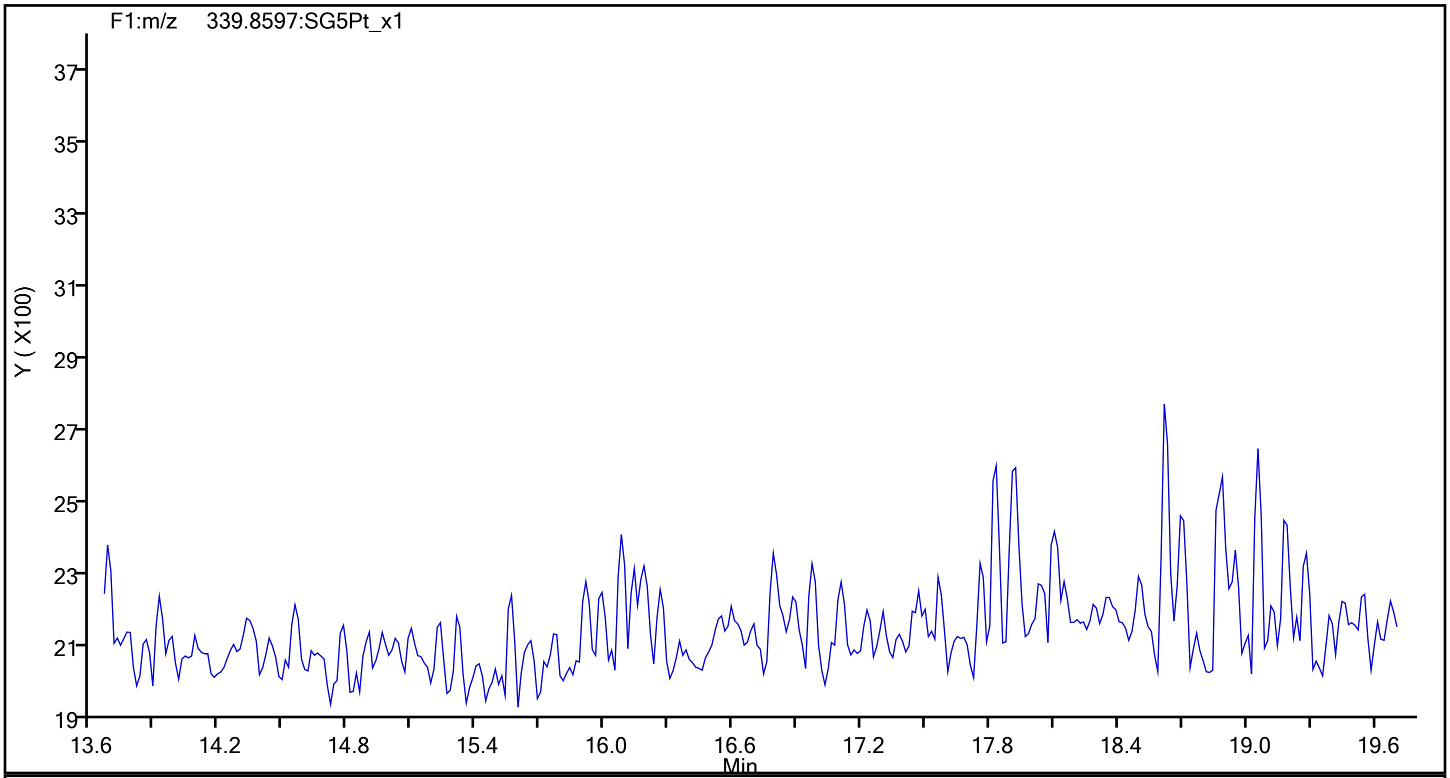

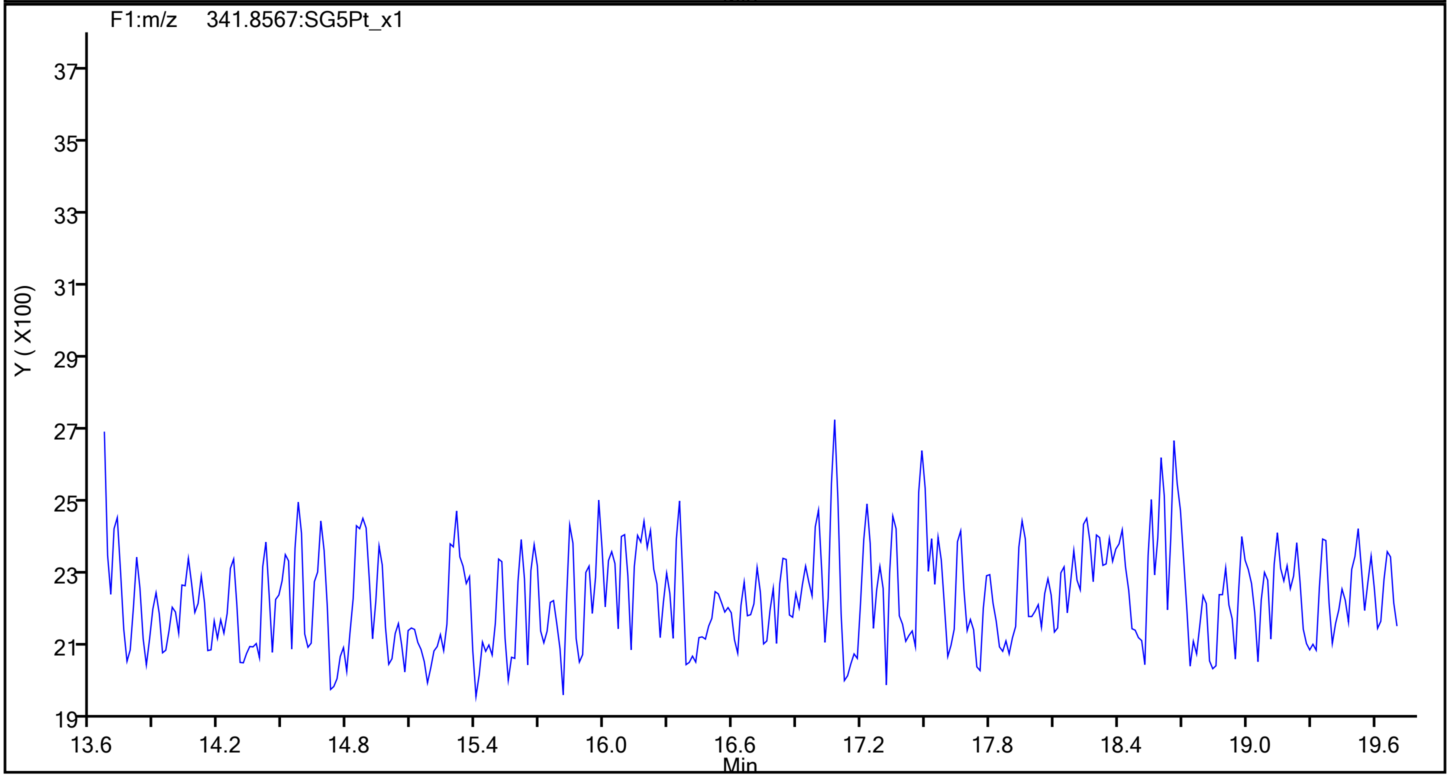

Eurofins TestAmerica, Sacramento

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Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

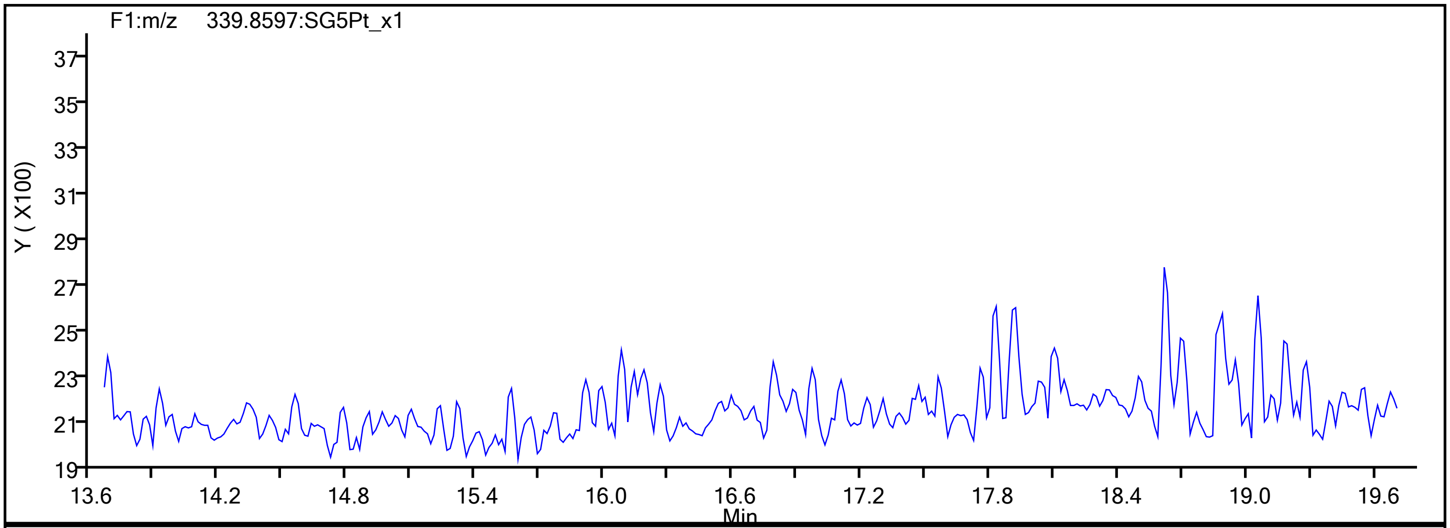

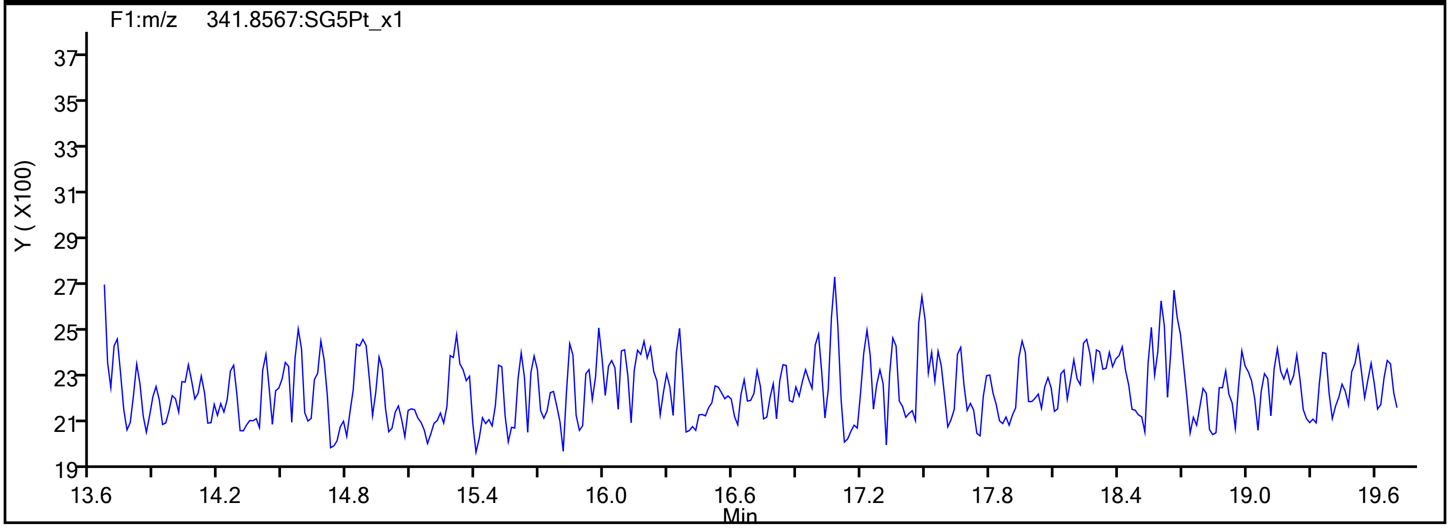

F1 PeCDFs Interference Mass

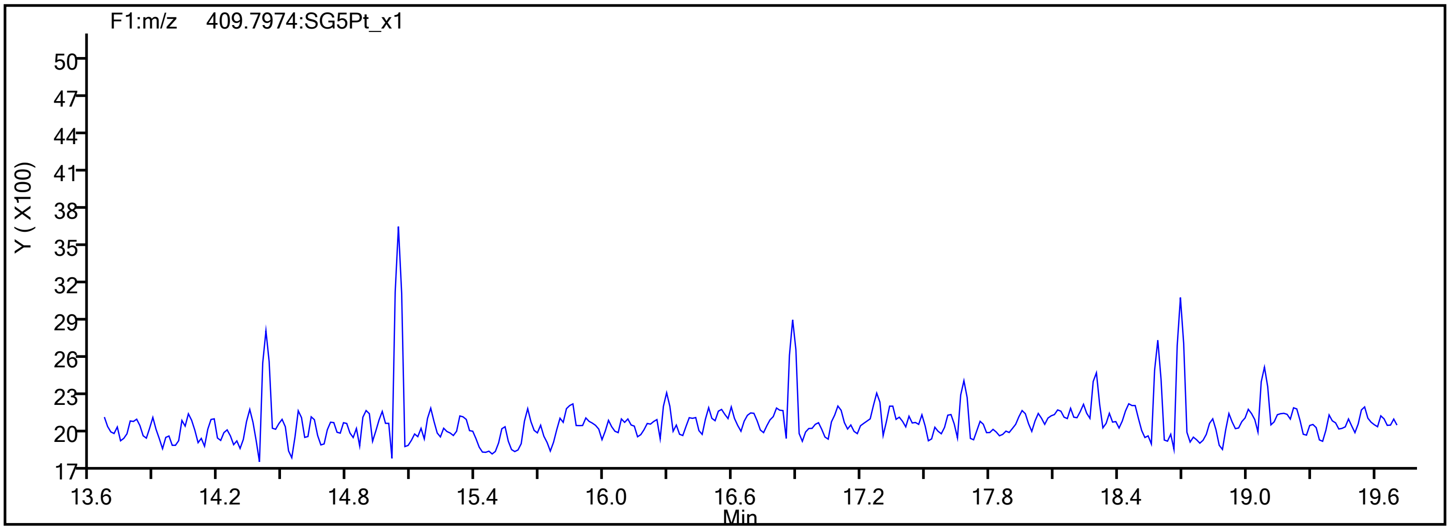

Report Date: 14-Oct-2020 13:25:40
Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 421347
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

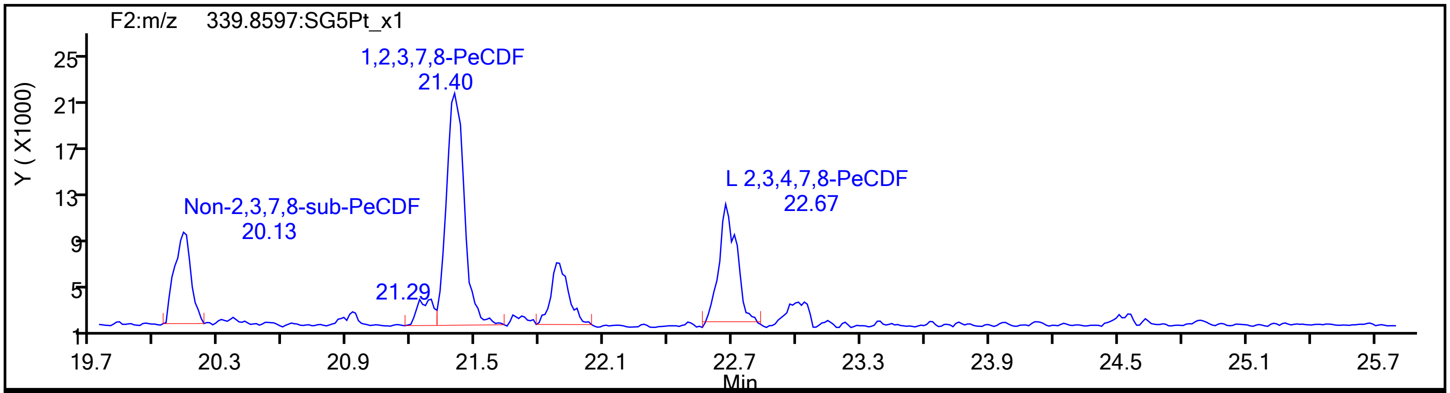

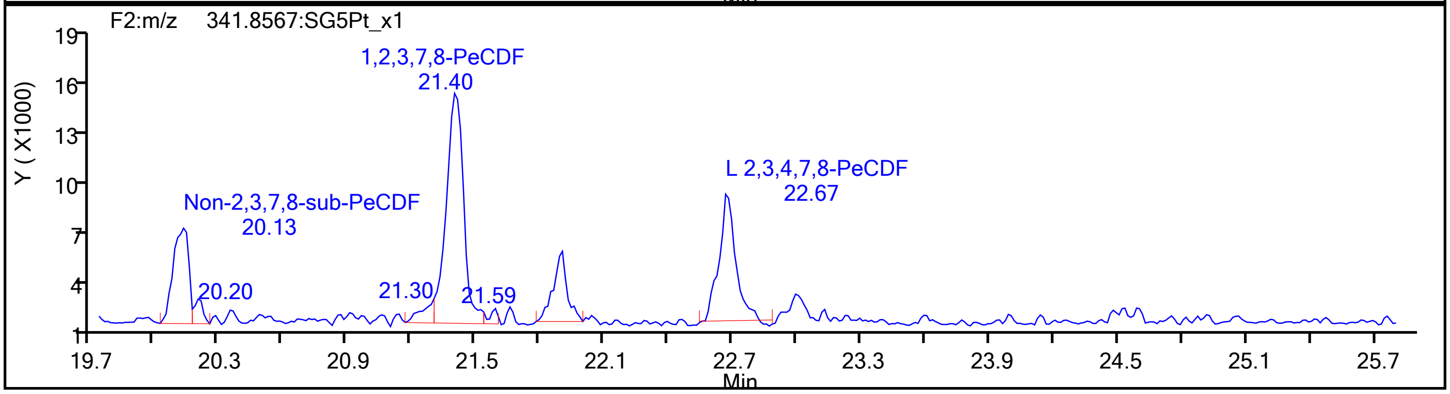

PeCDF Standards

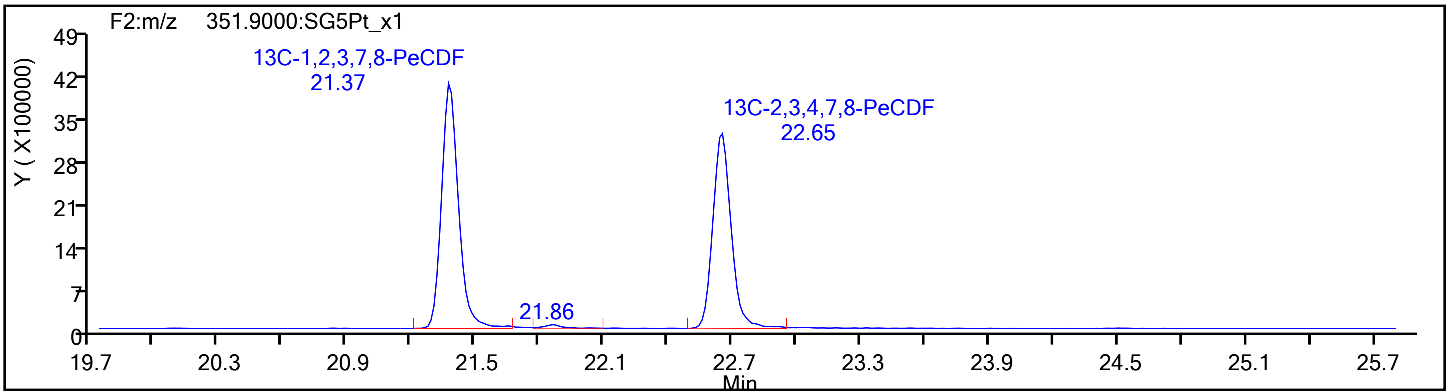

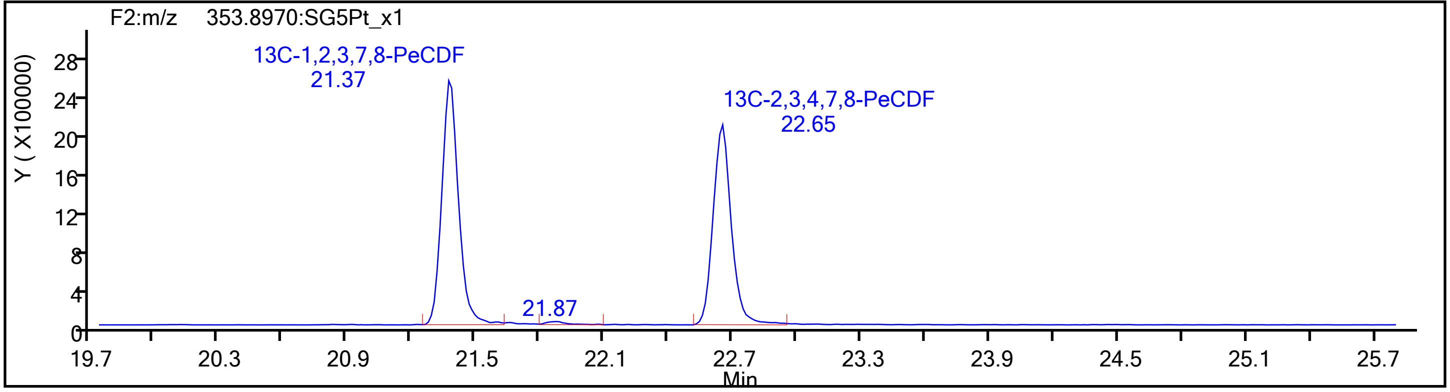

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

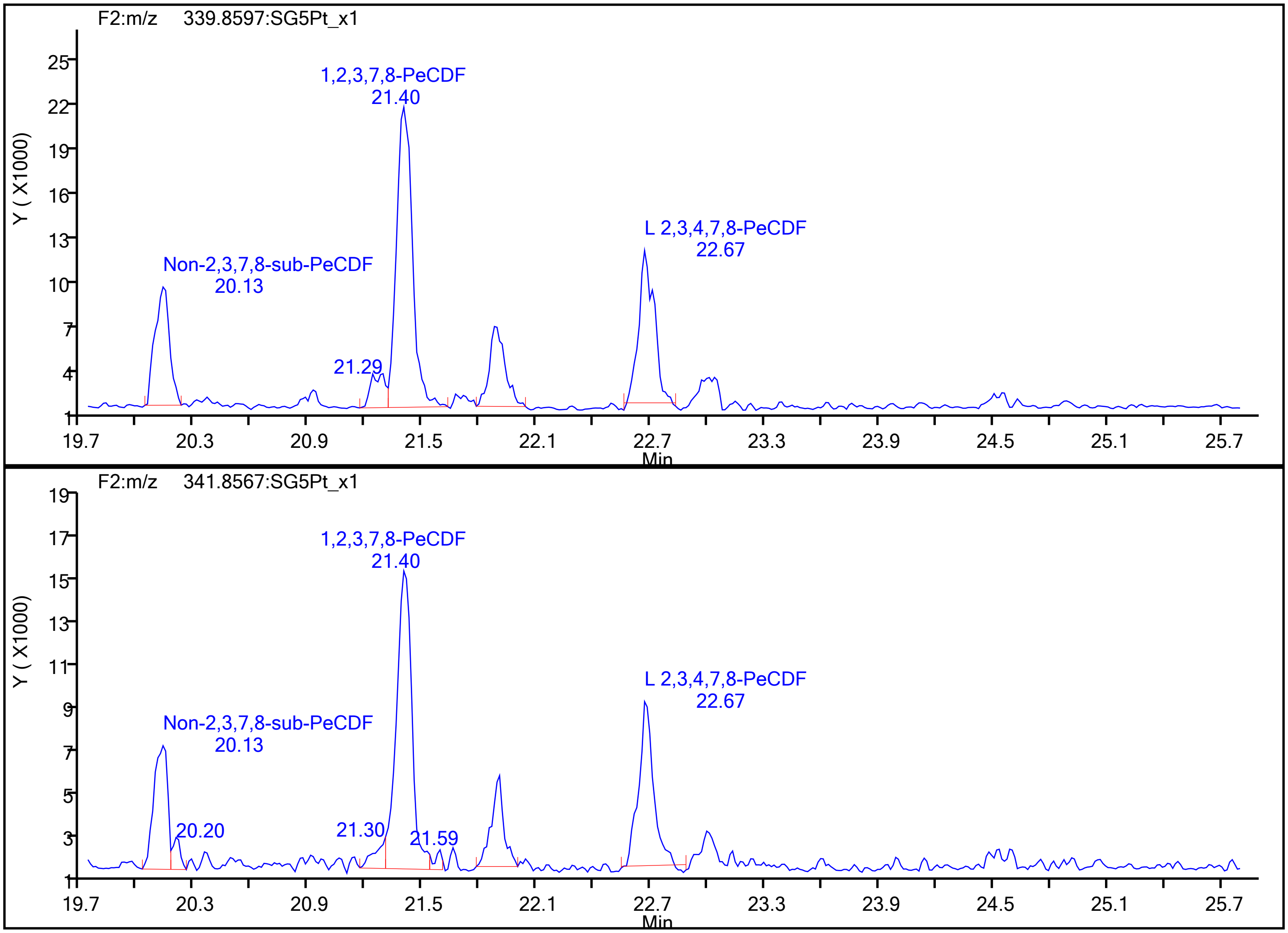

PeCDF Interference Mass

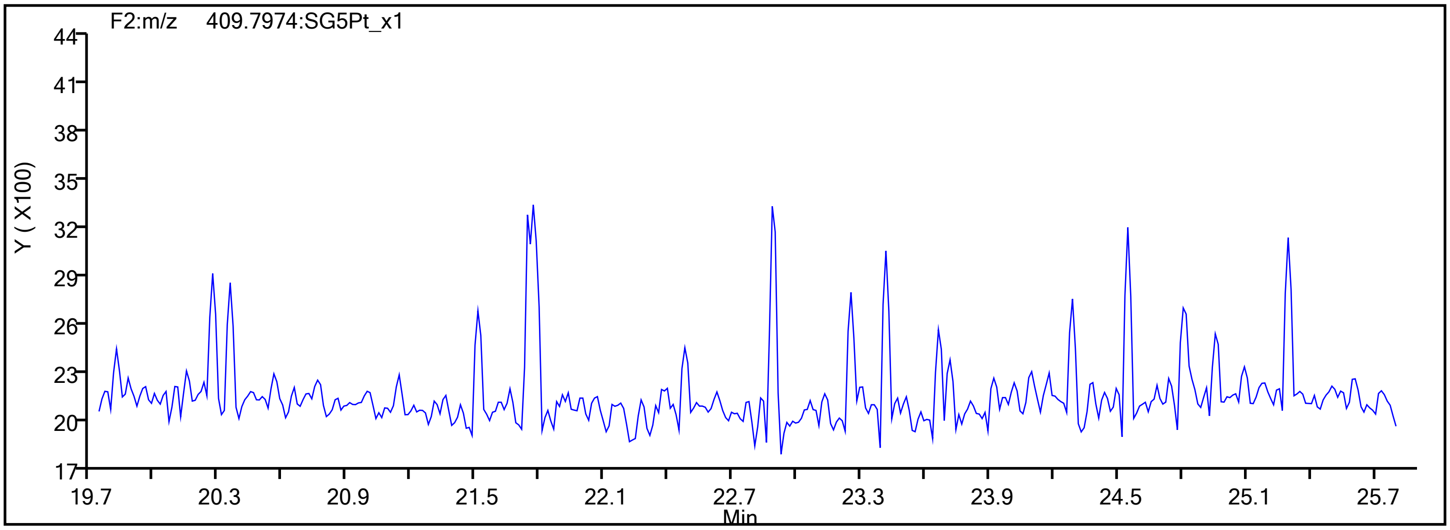

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date: 13-Oct-2020 04:24:23 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-Valve-3-2-Repl

Worklist#: 421347 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

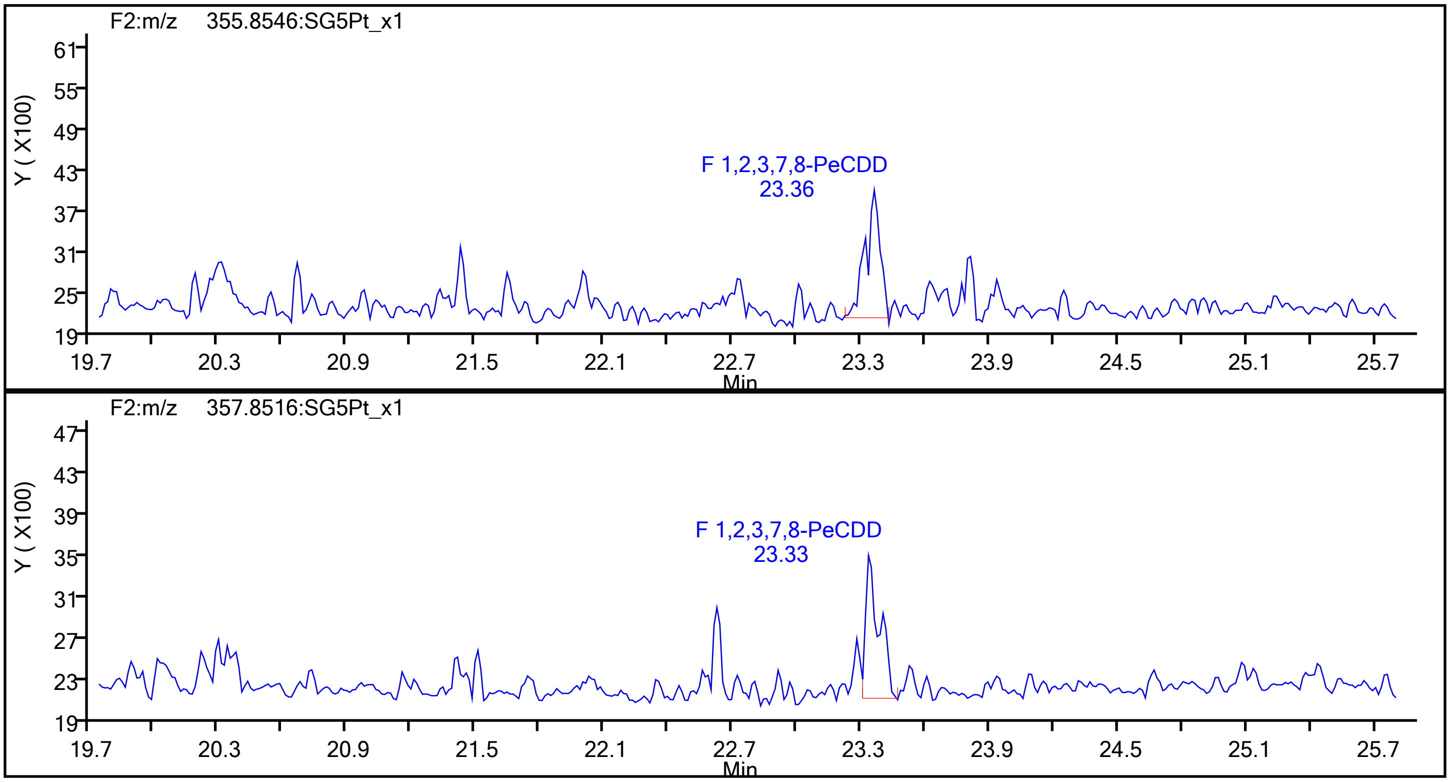

PeCDD Standards

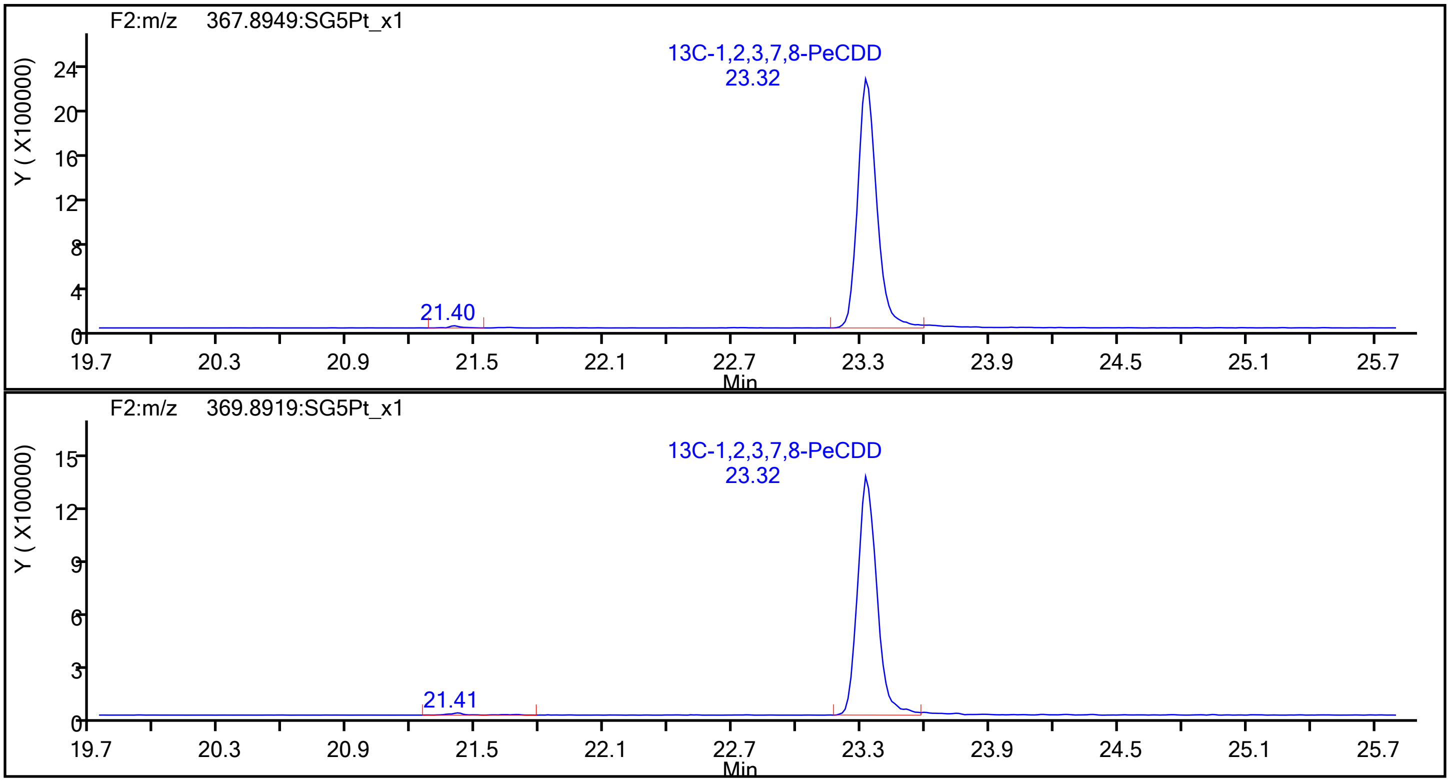

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

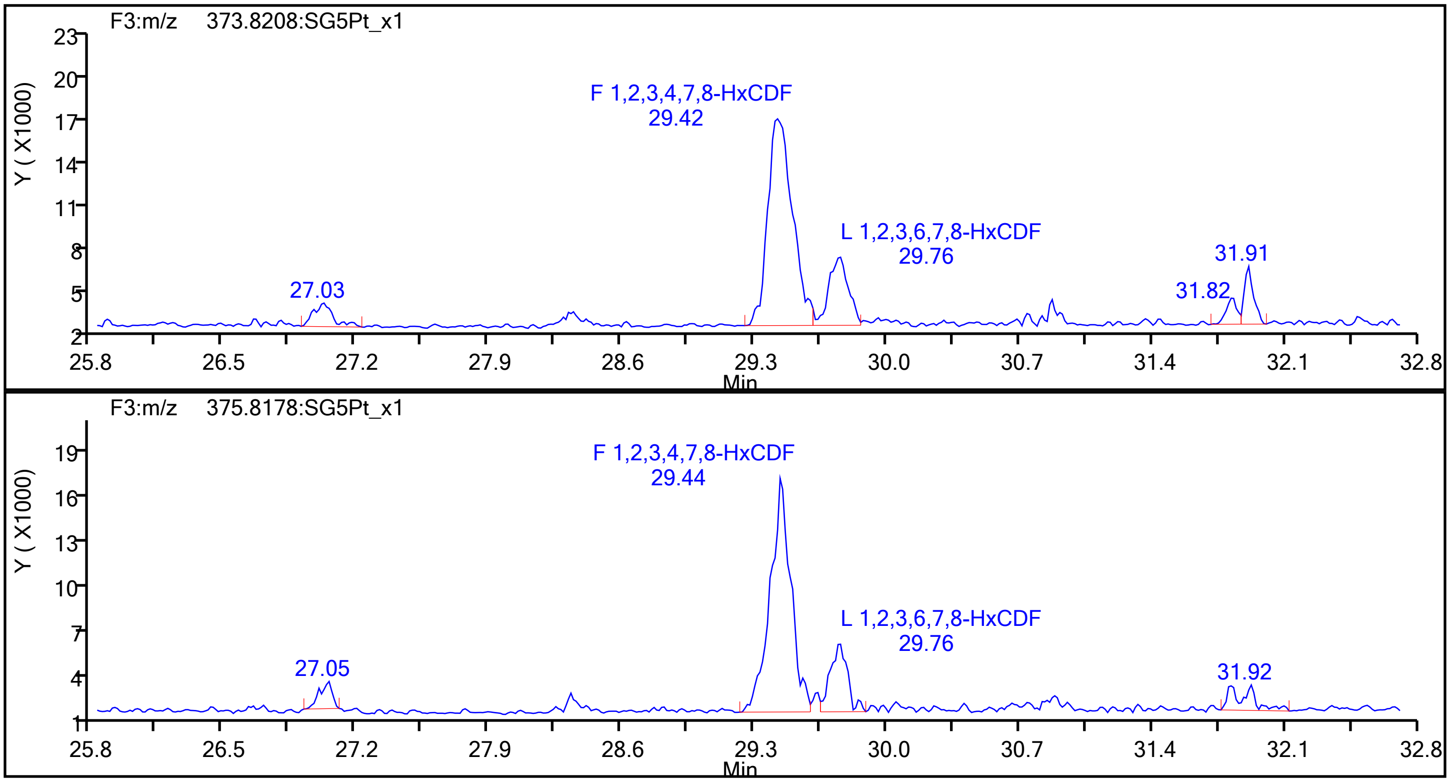

HxCDF Standards

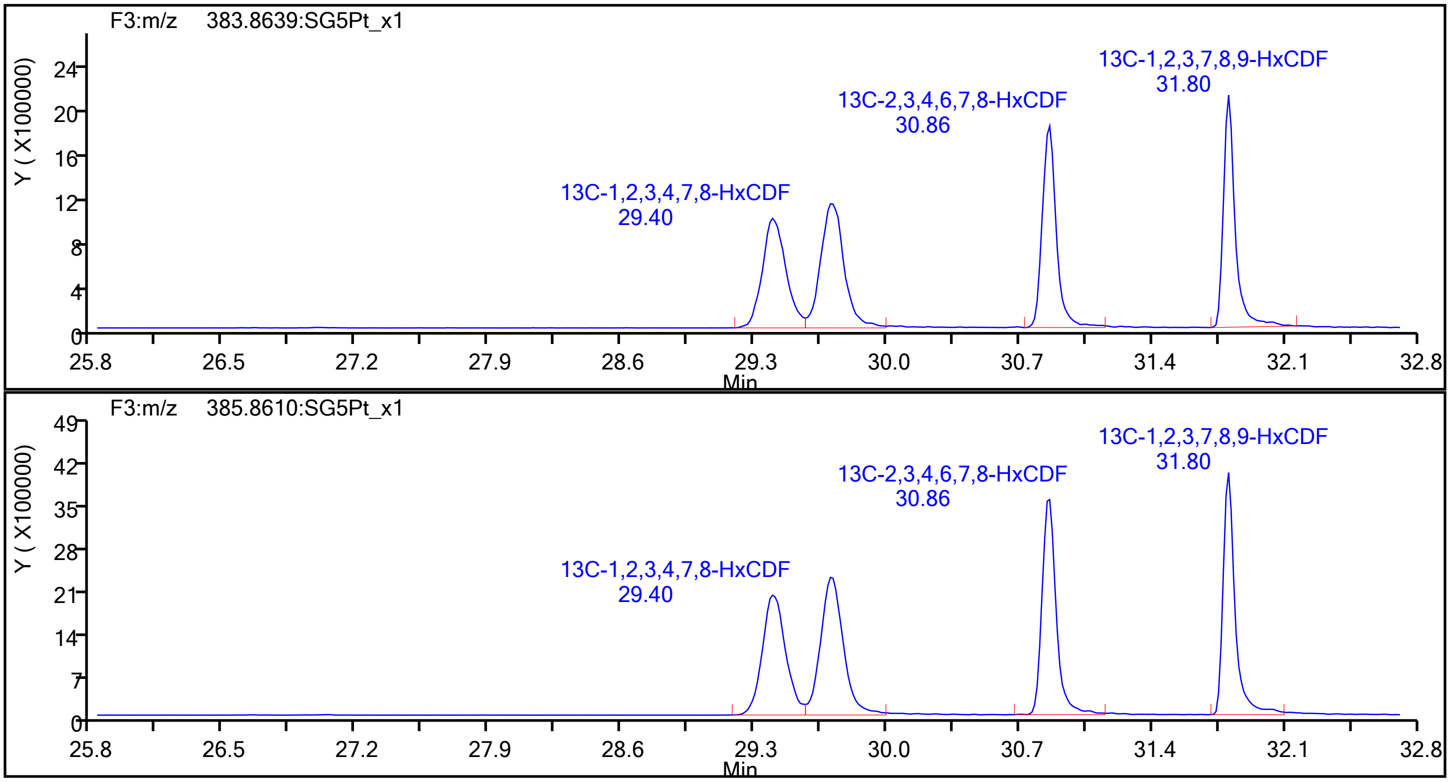

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

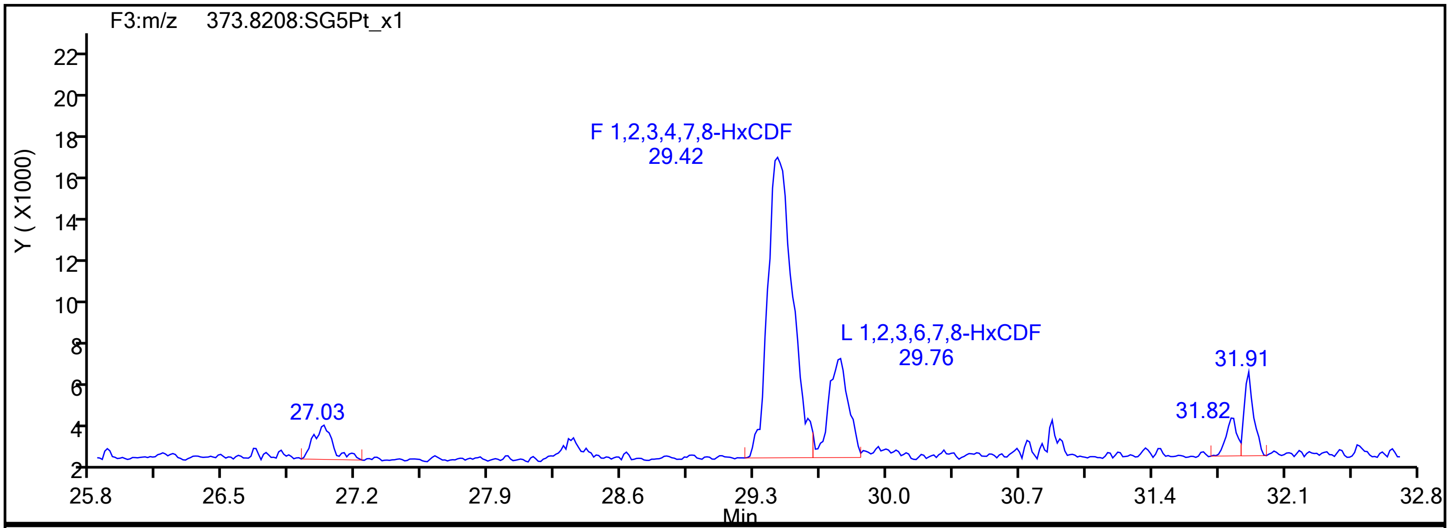

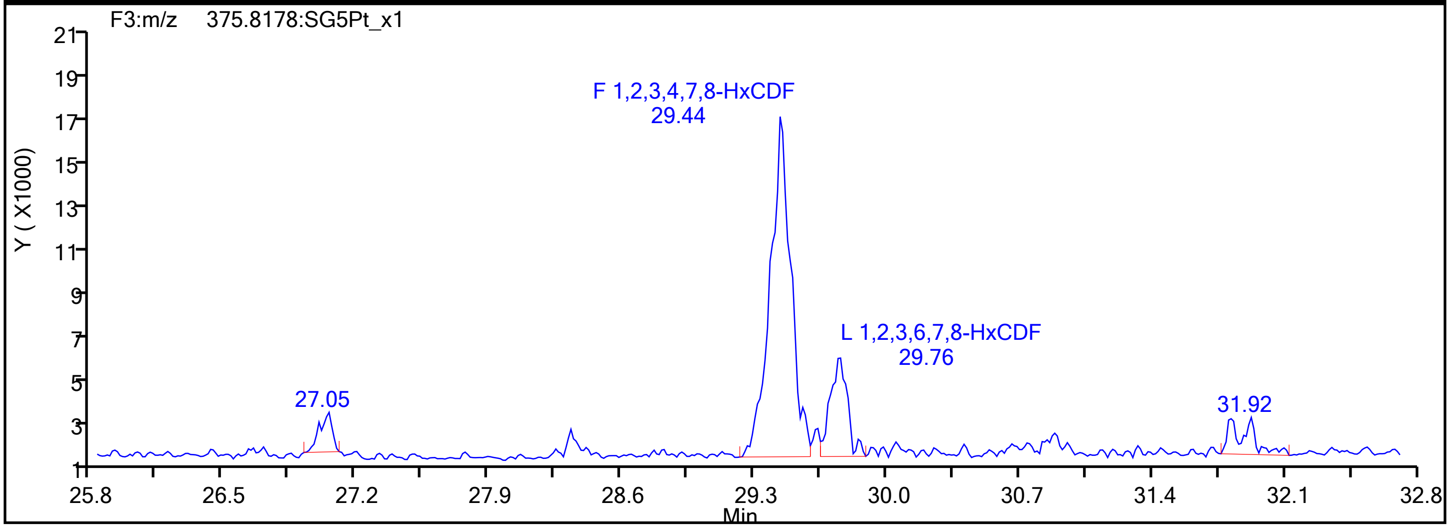

HxCDF Interference Mass

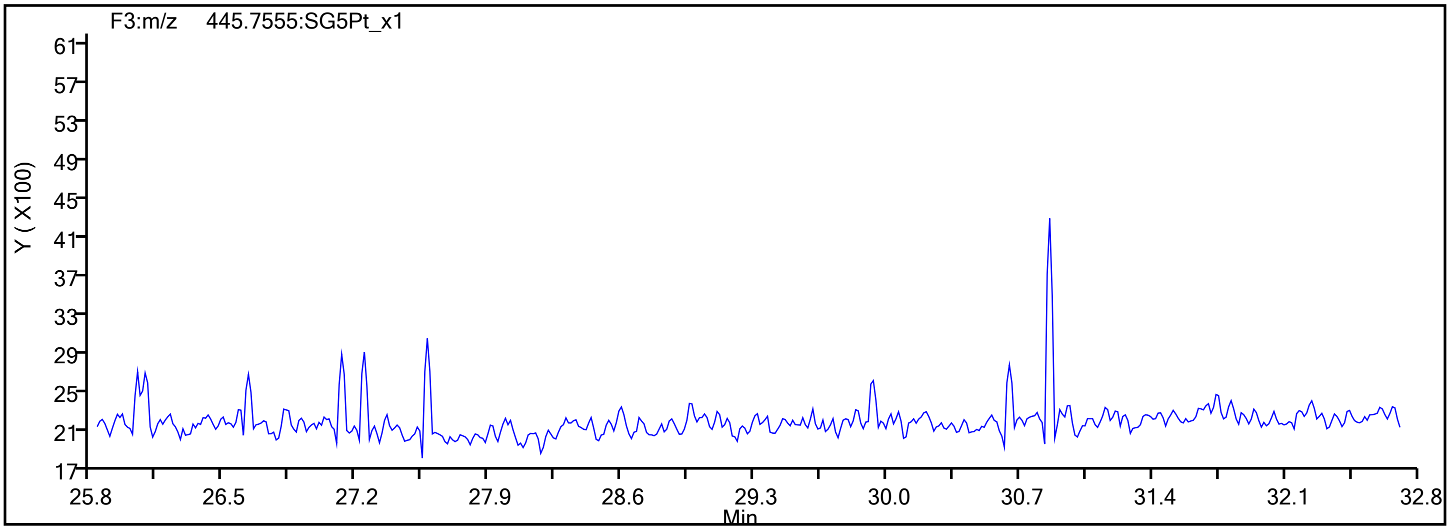

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

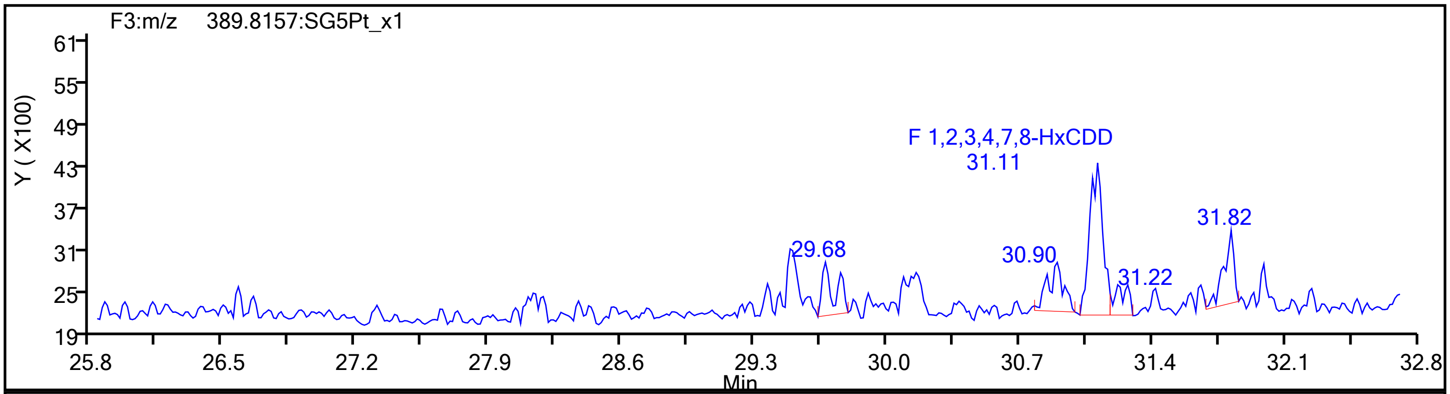

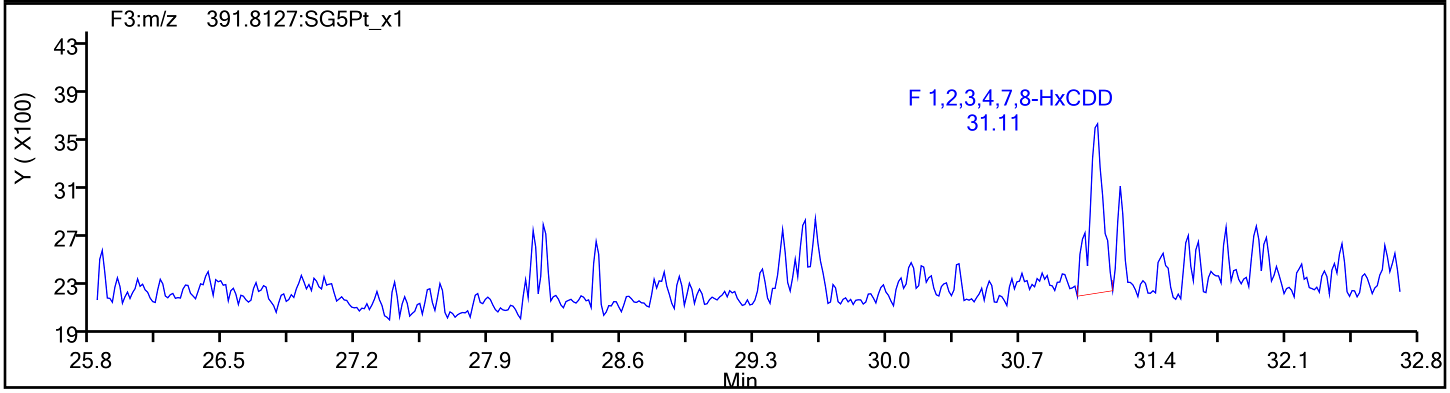

HxCDD Standards

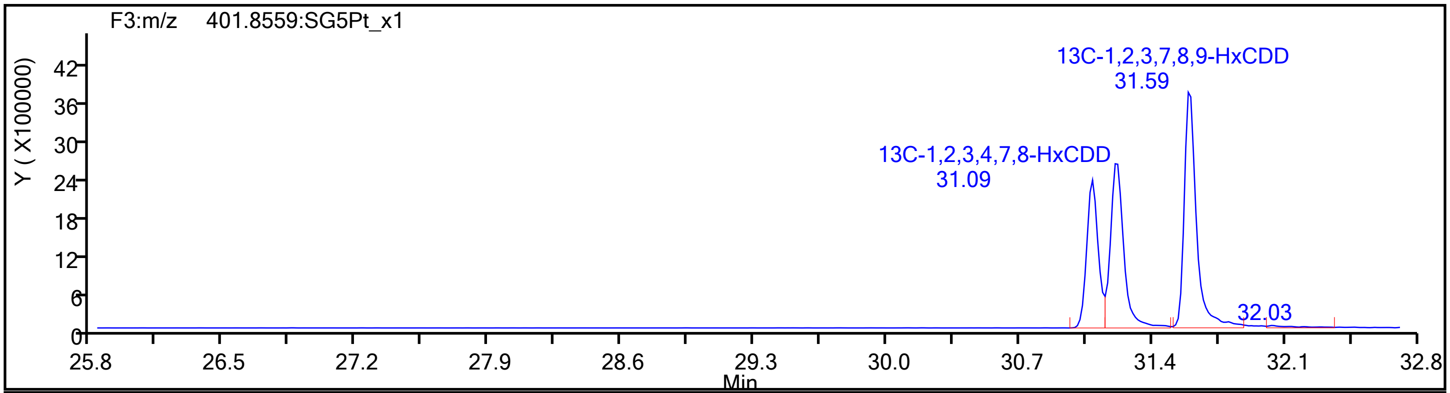

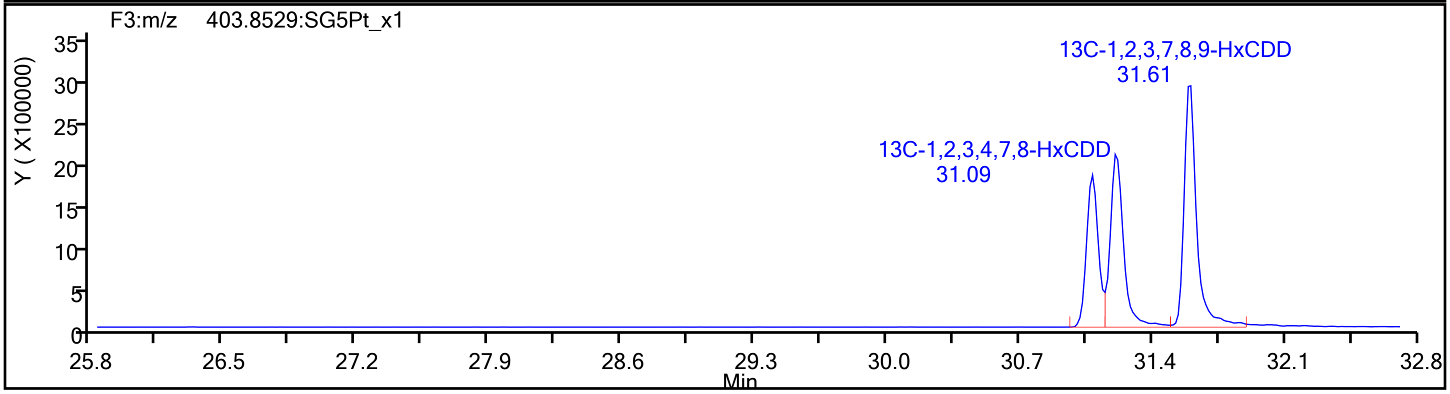

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

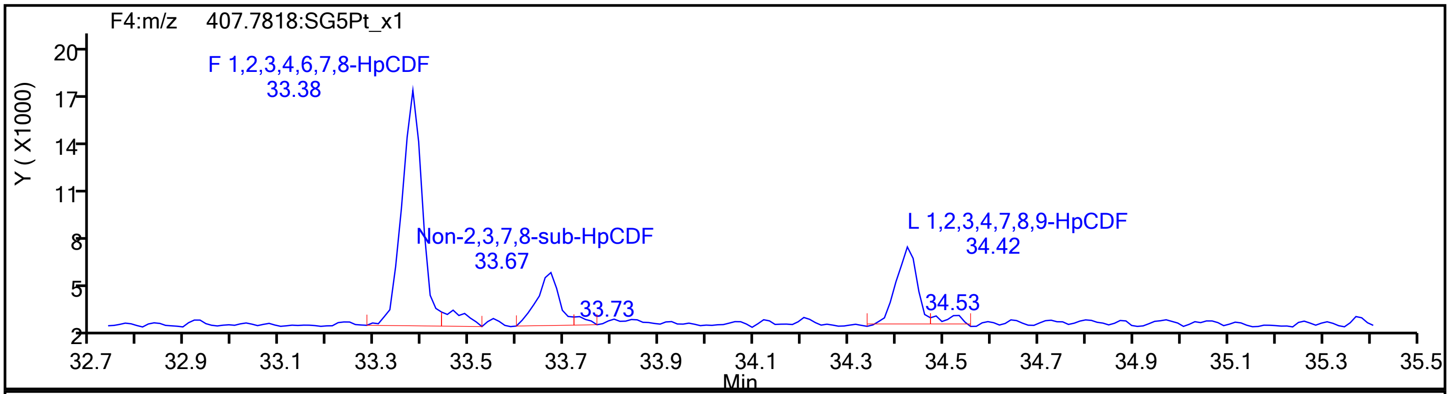

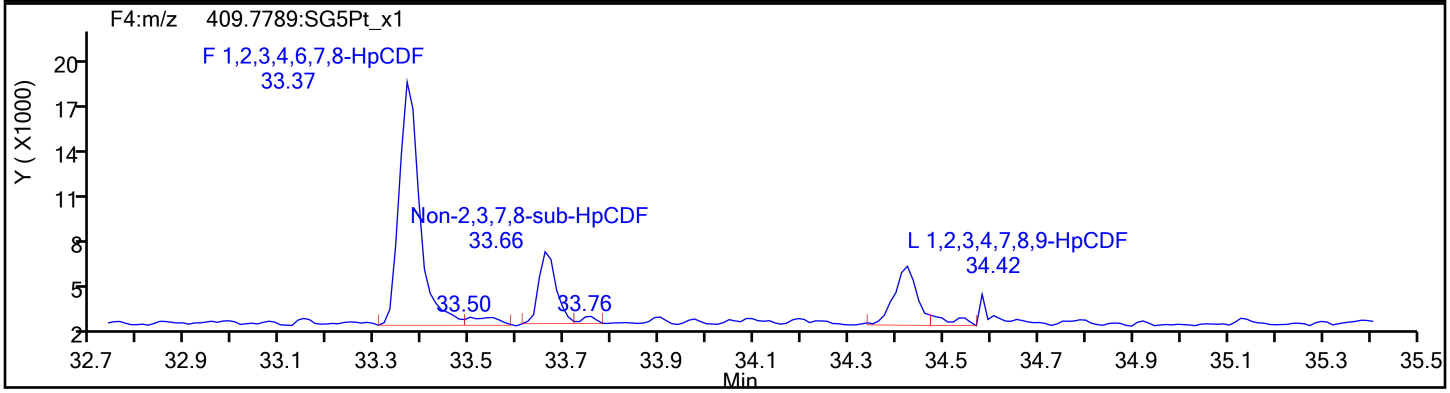

HpCDF Standards

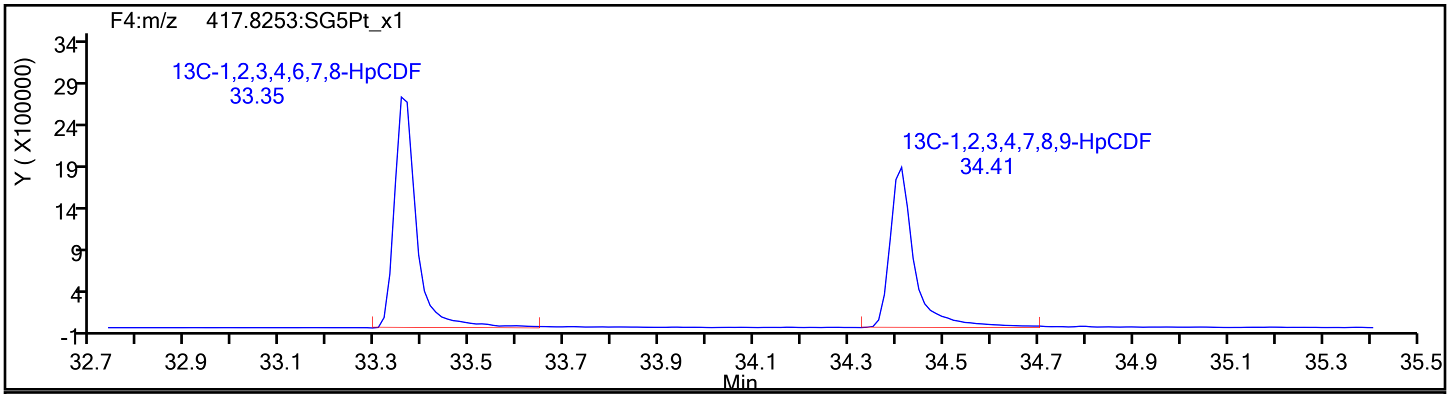

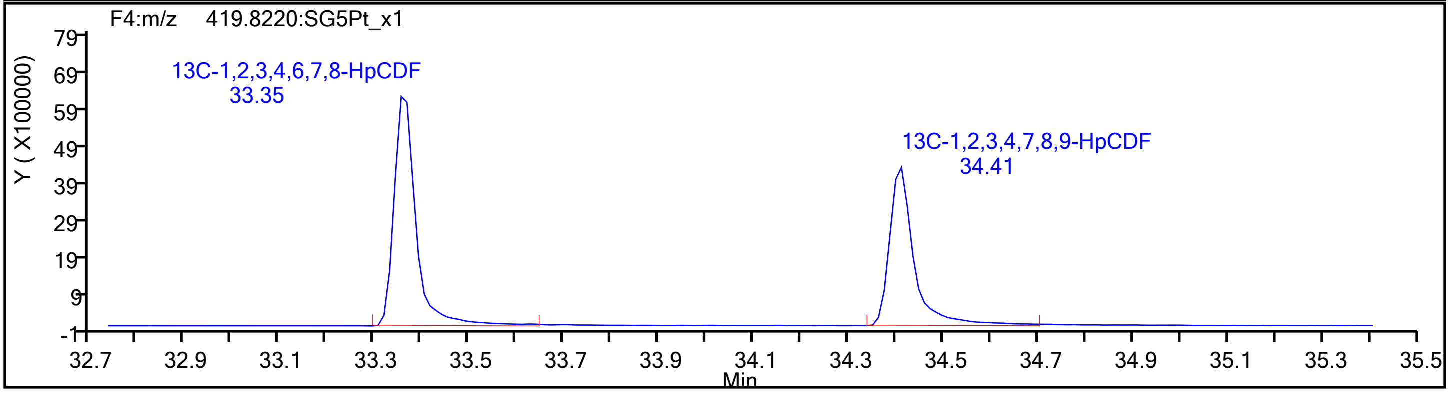

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 421347
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

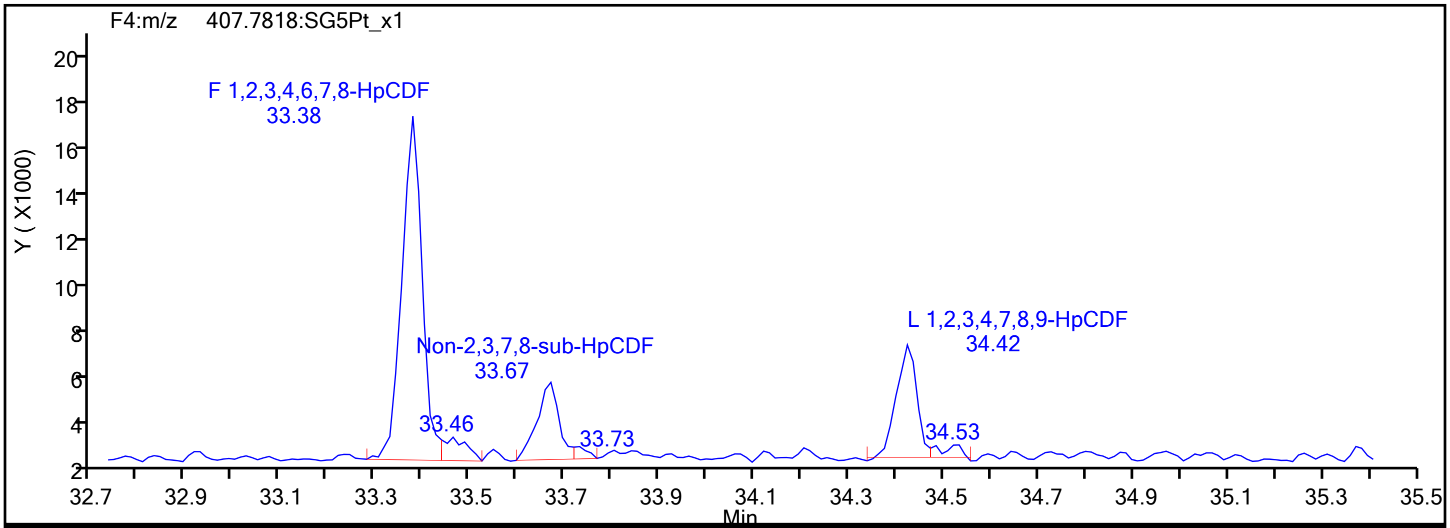

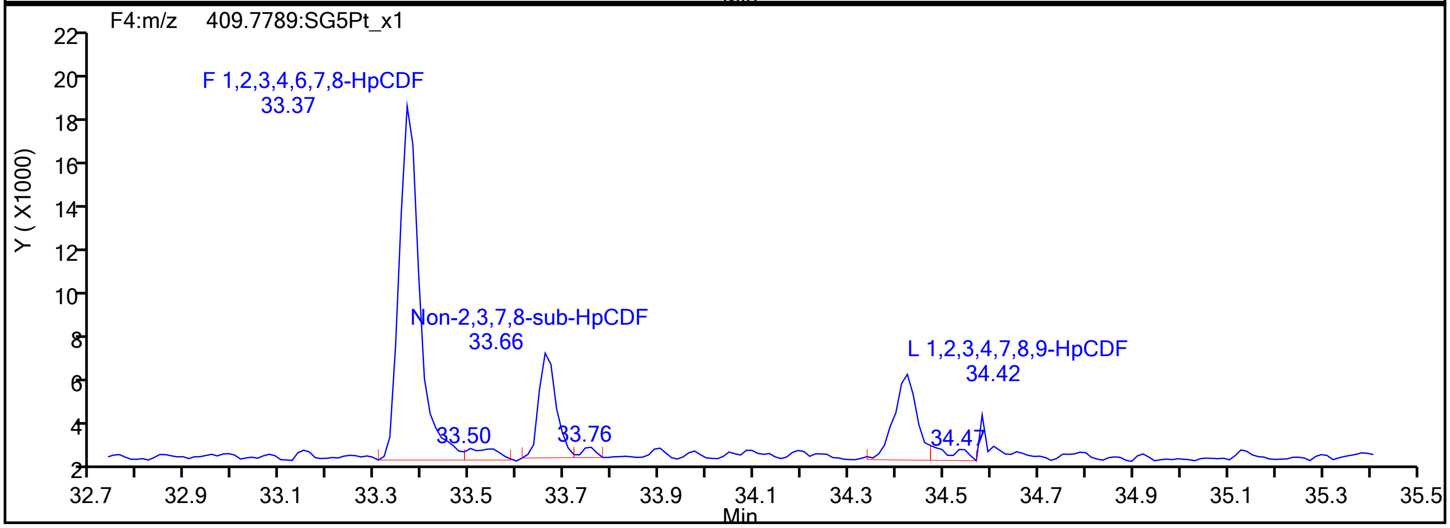

HpCDF Interference Mass

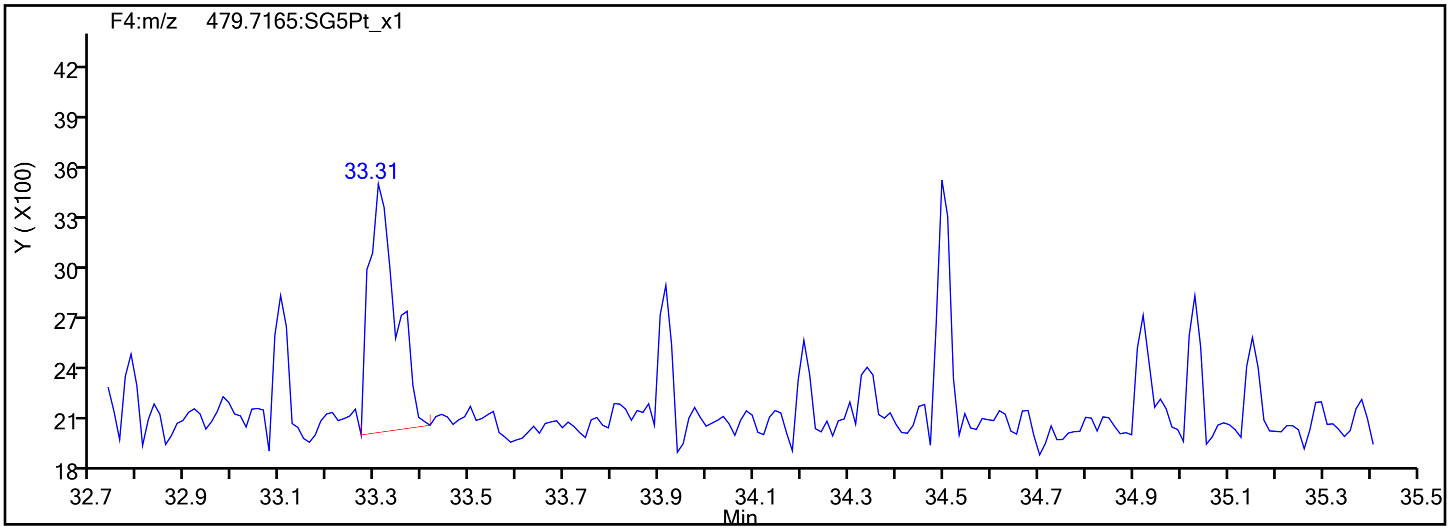

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d
Injection Date: 13-Oct-2020 04:24:23
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 421347
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

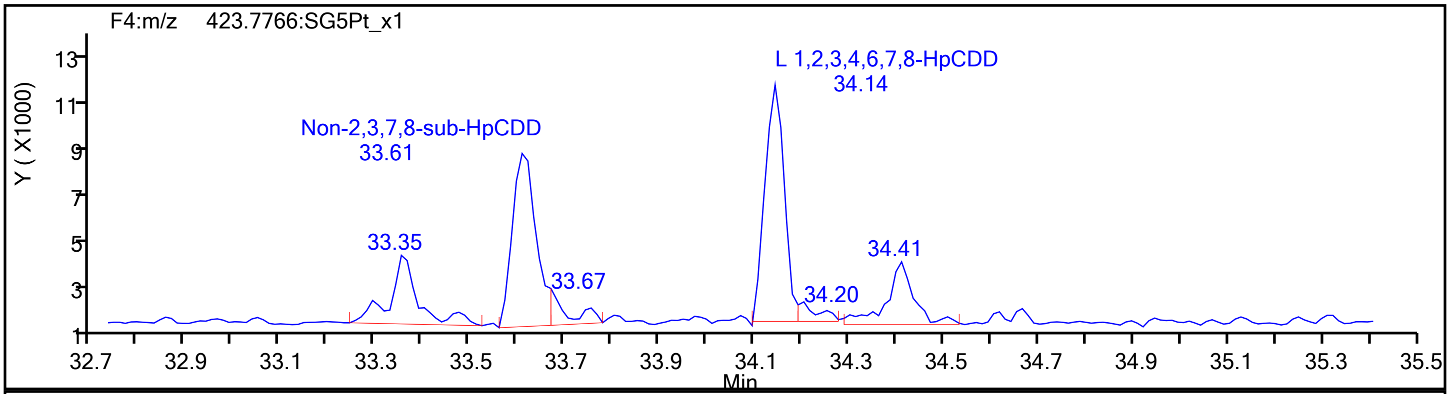

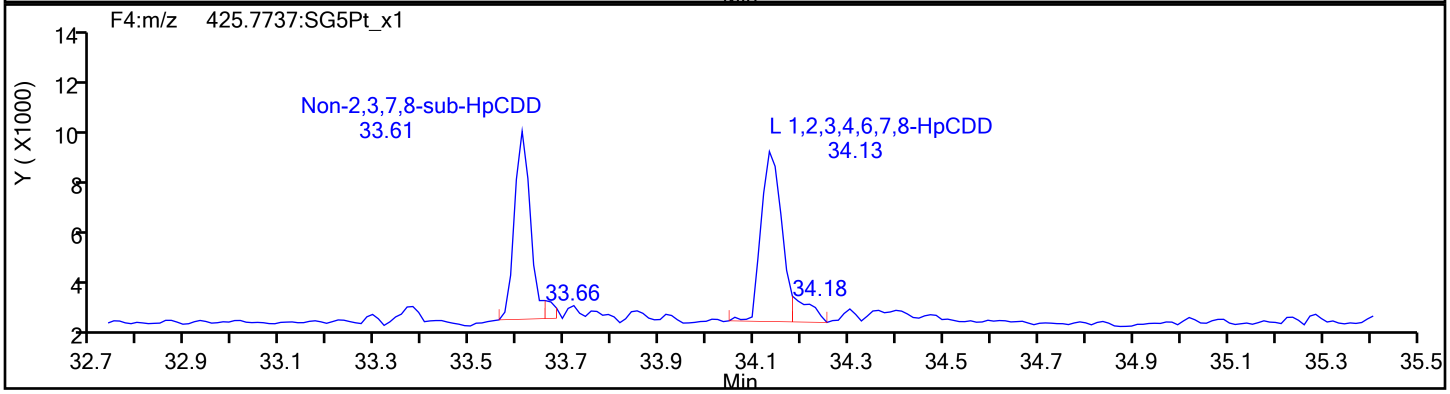

HpCDD Standards

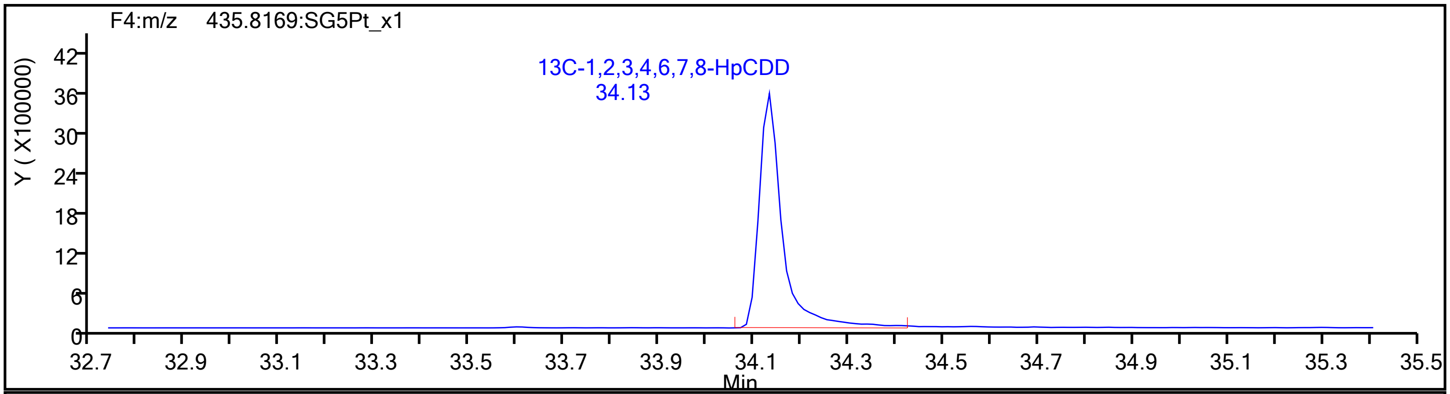

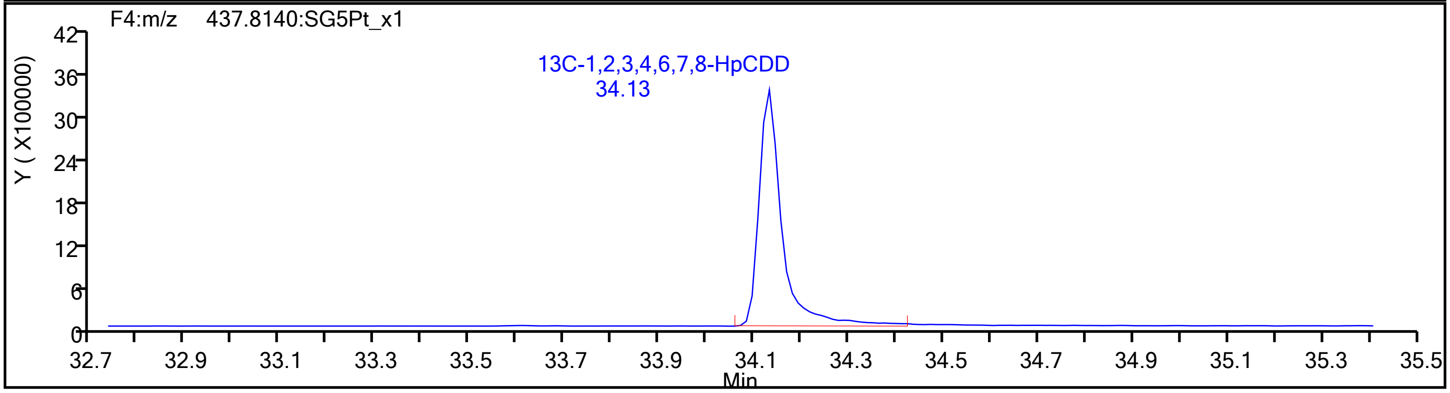

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

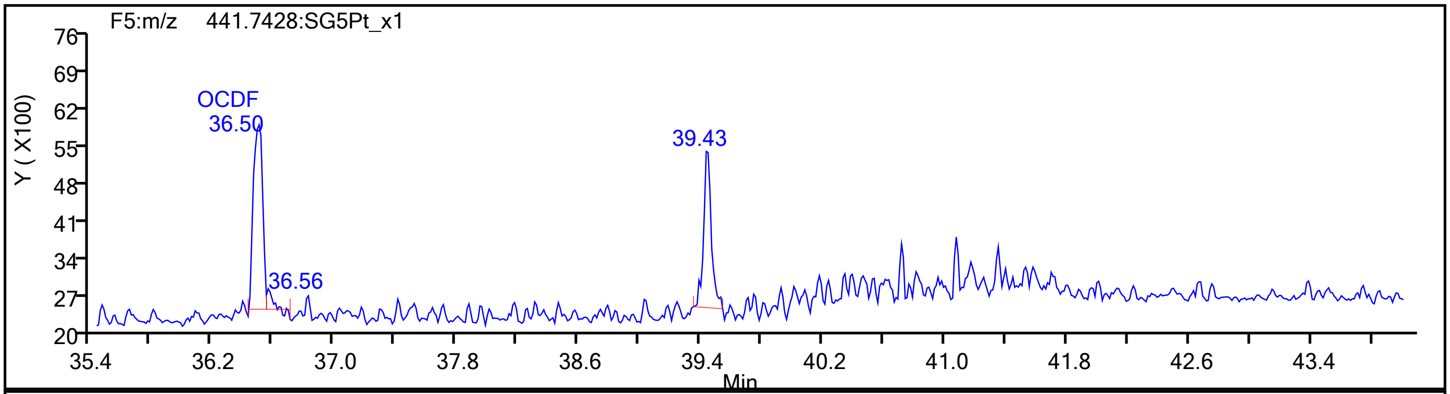

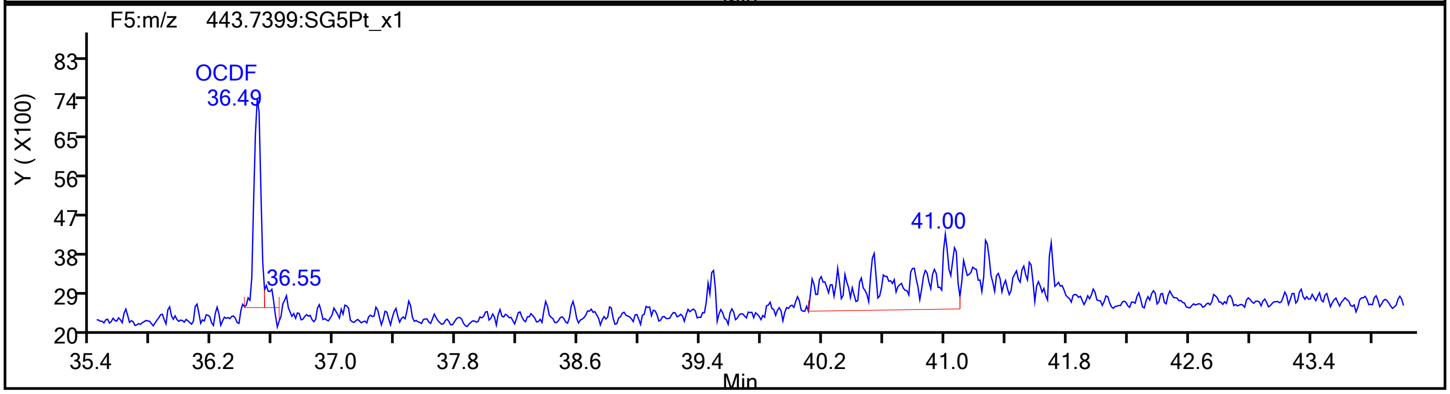

OCDF Standards

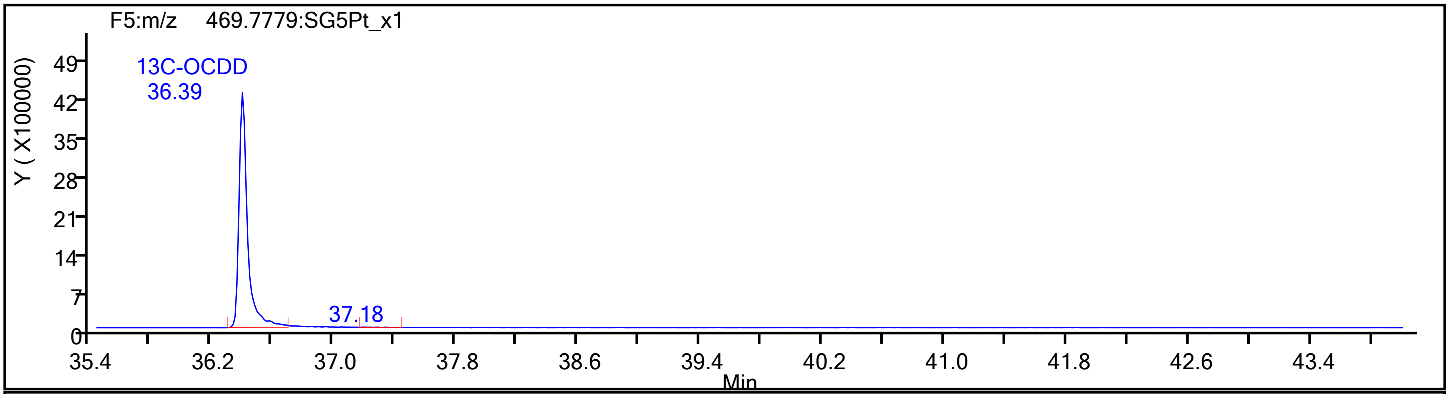

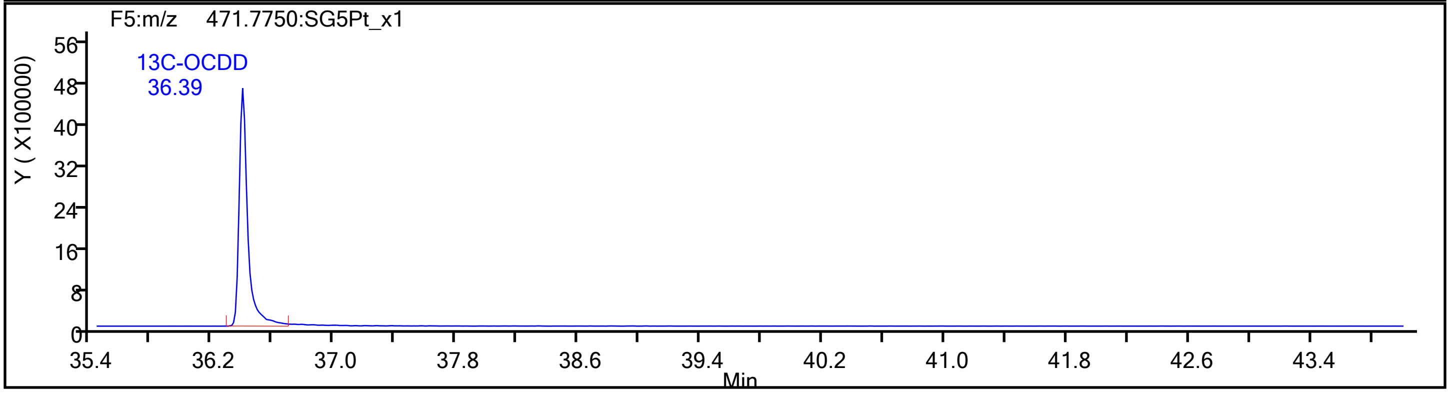

Report Date: 14-Oct-2020 13:25:40 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date: 13-Oct-2020 04:24:23
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 421347
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

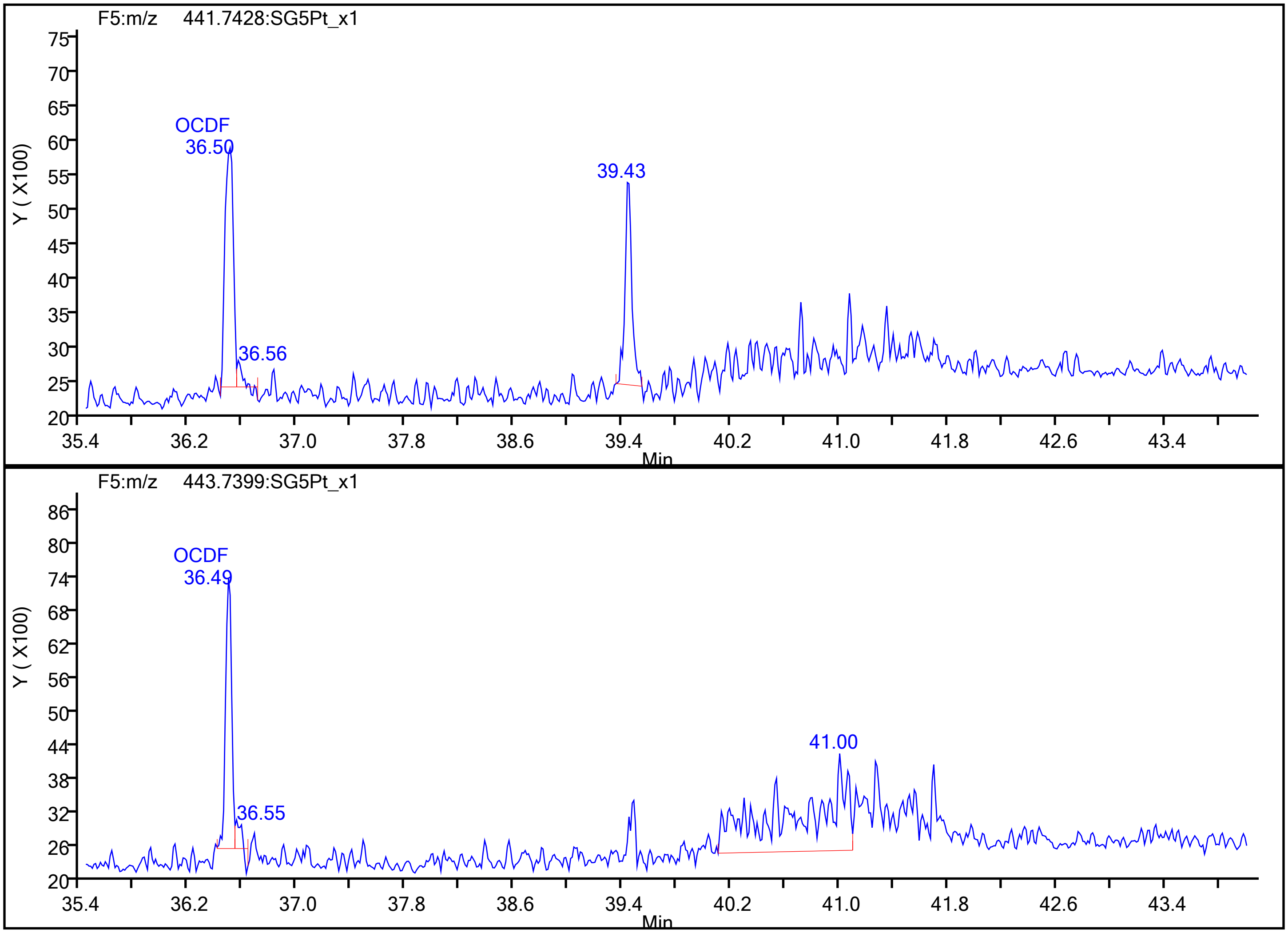

OCDF Interference Mass

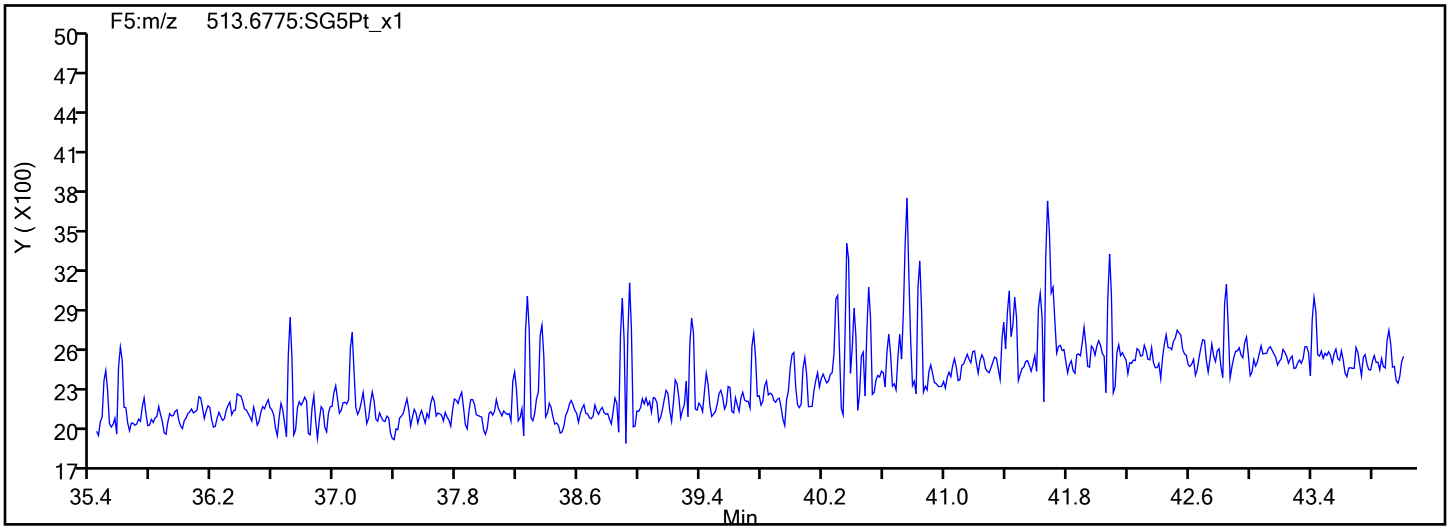

Report Date: 14-Oct-2020 13:25:41 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date: 13-Oct-2020 04:24:23
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: ALM

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-Valve-3-2-Repl

Worklist#: 421347
Sample Line#: 10

Column Type: DB-5
Column Dia: 0.32 mm

OCDD

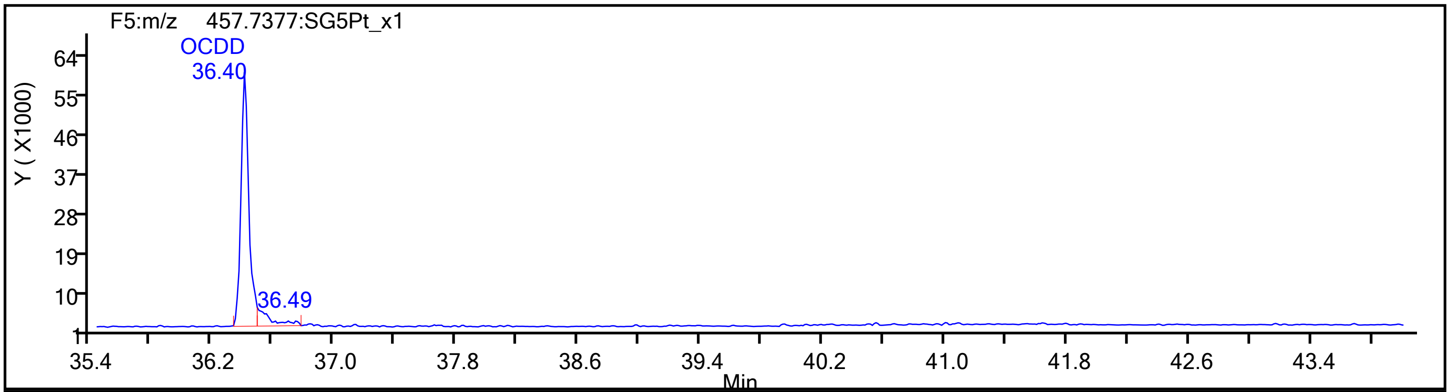

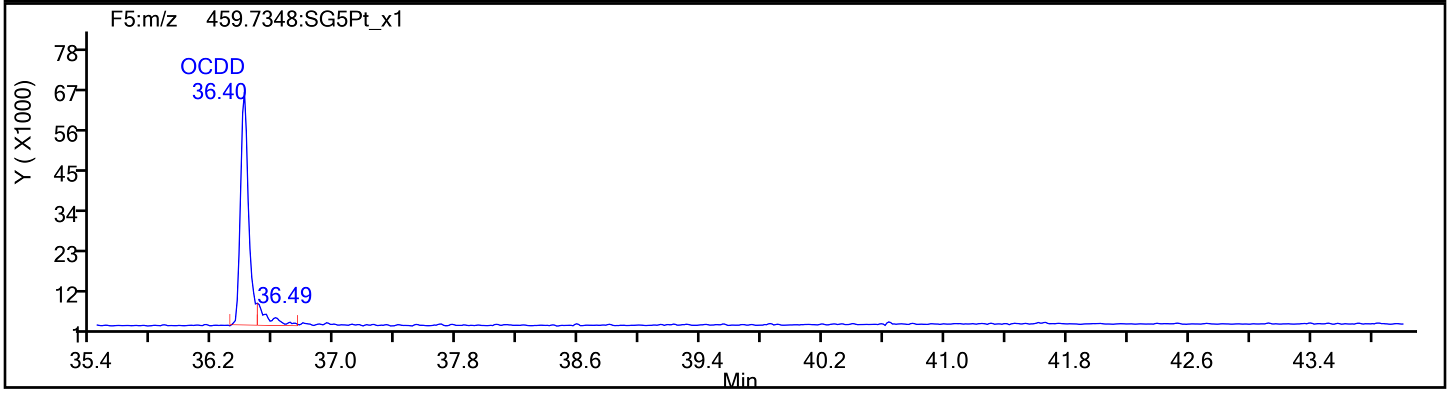

OCDD Standards

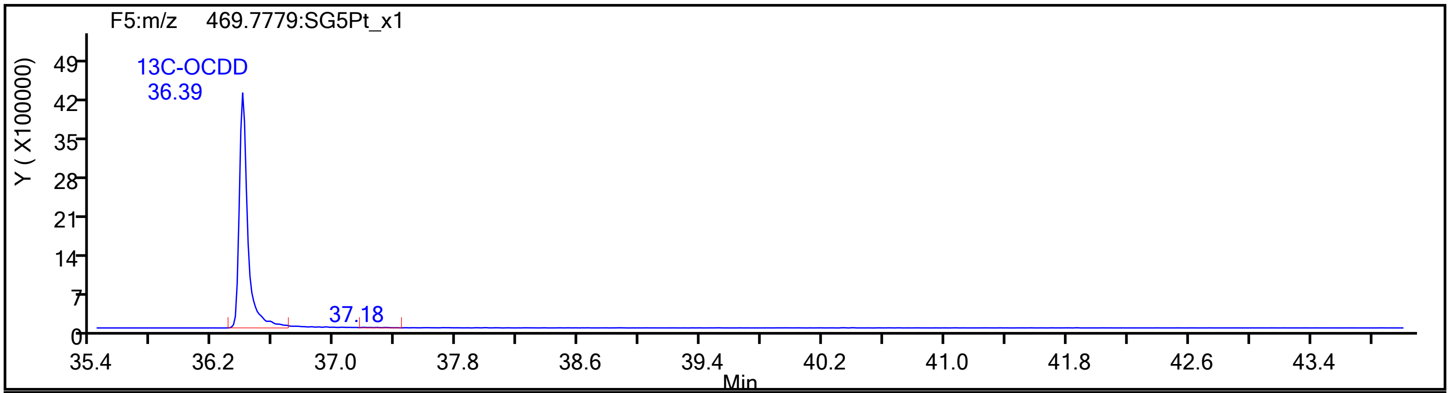

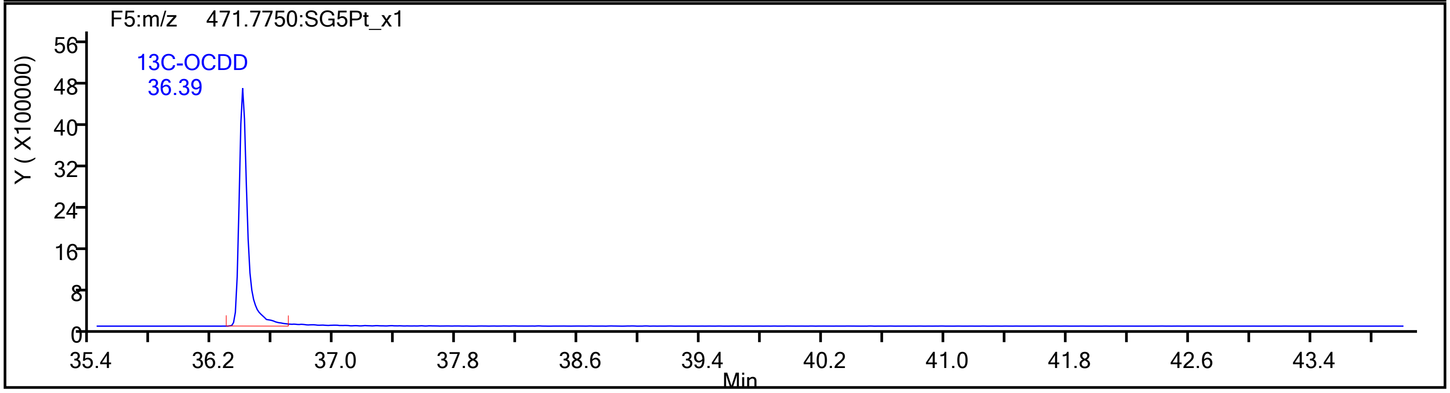

Report Date: 14-Oct-2020 13:25:41 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d		
Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

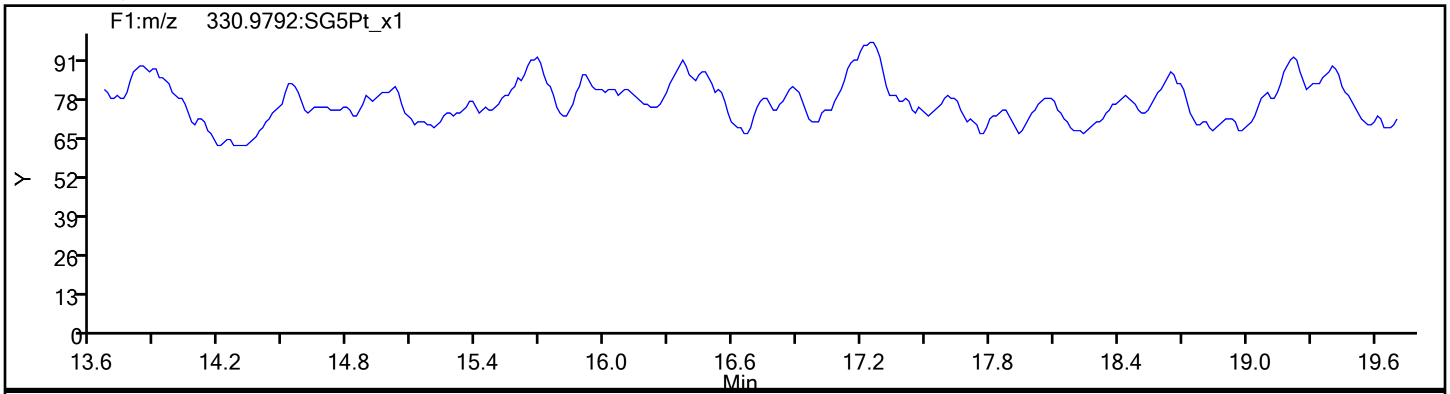

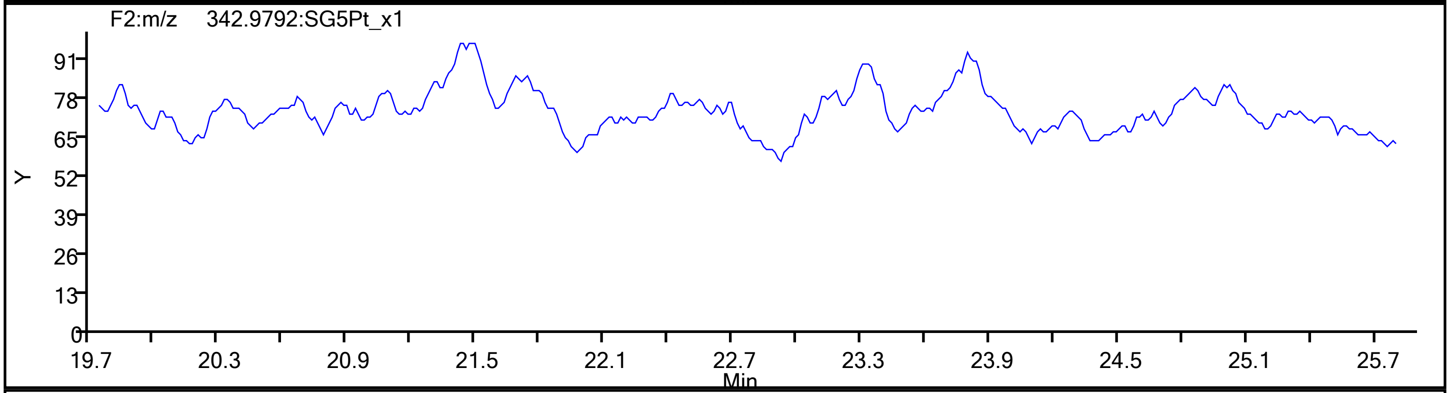

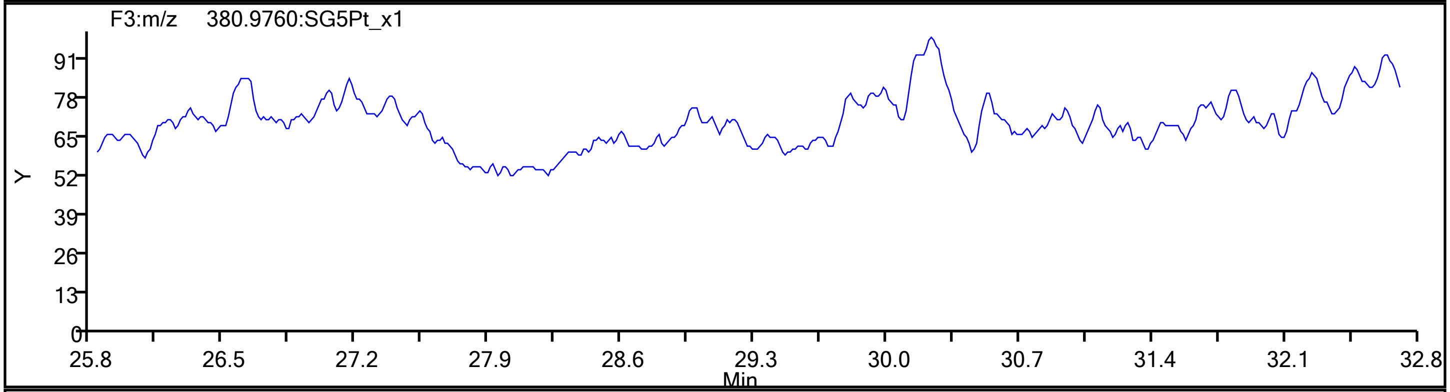

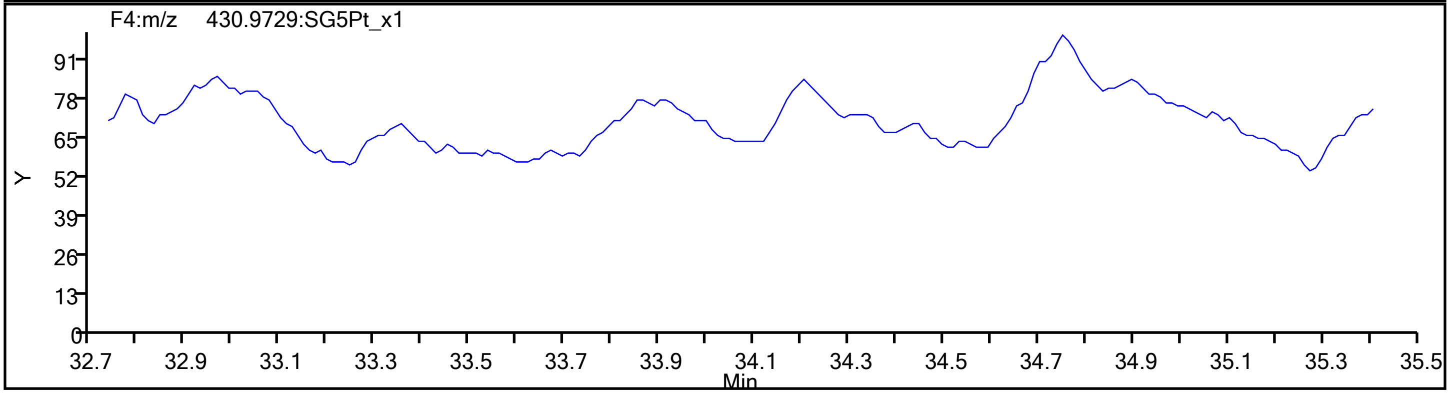

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_10.d

Injection Date:	13-Oct-2020 04:24:23	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	421347	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

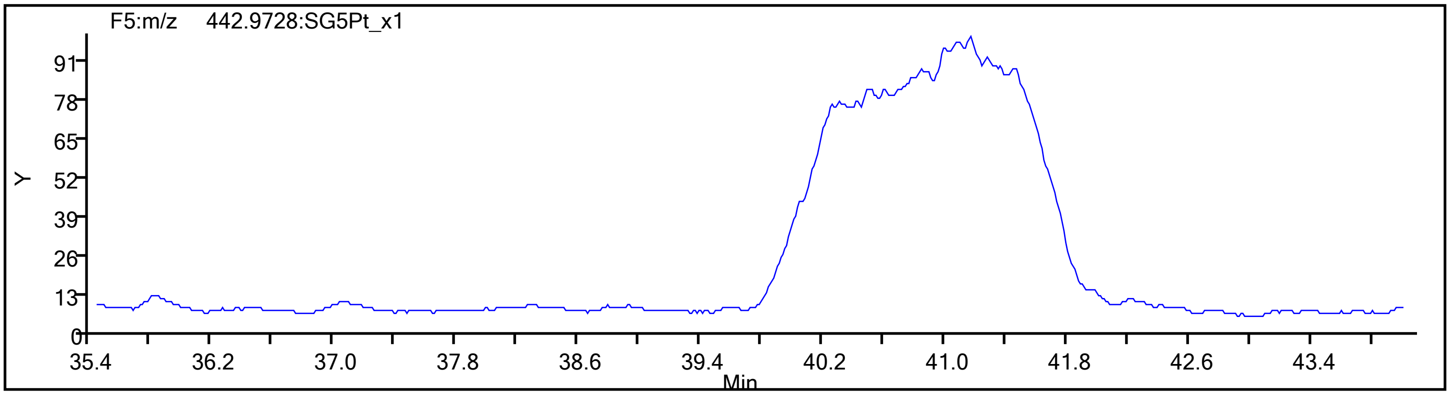

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-65247-1

SDG No.:

Client Sample ID: 11215702-Tank#1-Valve-3-2-Repl RA

Lab Sample ID: 320-65247-1 RA

Matrix: Water

Lab File ID: 15OC2011D2_005.d

Analysis Method: 1613B

Date Collected: 09/11/2020 13:30

Extract. Method: 1613B

Date Extracted: 10/05/2020 11:15

Sample wt/vol: 508.4(mL)

Date Analyzed: 10/15/2020 03:55

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 422408

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	570	B	20	3.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	64		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	114		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d
Lims ID: 320-65247-A-1-A
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Sample Type: Client
Inject. Date: 15-Oct-2020 03:55:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-65247-A-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 12:25:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: stephensk Date: 16-Oct-2020 12:24:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.860	71112363	0.80	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.985	71029831	0.80	1.5708	63.6	63.6	0.3406	0.3406	63.59	
2,3,7,8-TCDF	16.013	10185869	0.75	0.9943	14.4	14.4	0.0803	0.0803		M
D 13C-2,3,7,8-TCDD	14.613	42833741	0.81	0.9834	61.3	61.3	0.6075	0.6075	61.25	
2,3,7,8-TCDD	14.641	2507251	0.78	1.2822	4.565	4.565	0.1449	0.1449		
$ 37Cl4-2,3,7,8-TCDD	14.641	32145643		0.9945	45.5	45.5	0.1043	0.1043	114	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Report Date: 16-Oct-2020 12:25:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d				
Lims ID:	320-65247-A-1-A				
Client ID:	11215702-Tank#1-Valve-3-2-Repl				
Sample Type:	Client				
Inject. Date:	15-Oct-2020 03:55:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-65247-A-1-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	16-Oct-2020 12:25:51	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1679				

First Level Reviewer: stephensk Date: 16-Oct-2020 12:24:19

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.860	14.860	0		31707918	8089664	21582	53955	375		
333.9339	14.860	14.860	0		39404445	9890208	21383	53457	463	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.985	15.999	-1	1.076	31598214	7248727	25977	64942	279		
317.9389	15.985	15.999	-1	1.076	39431617	9393323	12497	31242	752	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.013	16.012	0	1.002	4379909	1026666	2434	6085	422		M
305.8987	16.013	16.012	0	1.002	5805960	1340405	2884	7210	465	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.613	14.627	-1	0.983	19131554	4887942	21582	53955	226		
333.9339	14.613	14.627	-1	0.983	23702187	6040415	21383	53457	282	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.641	14.640	0	1.002	1102318	295549	4490	11225	66		
321.8936	14.641	14.640	0	1.002	1404933	353630	3633	9082	97	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.641	14.640	0	0.985	32145643	8059574	7462	18655	1080		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 16-Oct-2020 12:25:55

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d		
Injection Date:	15-Oct-2020 03:55:00	Instrument ID:	11D2
Lims ID:	320-65247-A-1-A	Lab Sample ID:	320-65247-1
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 16.01
Area: 4421498
Amount: 14.481753
Amount Units: pg/ul

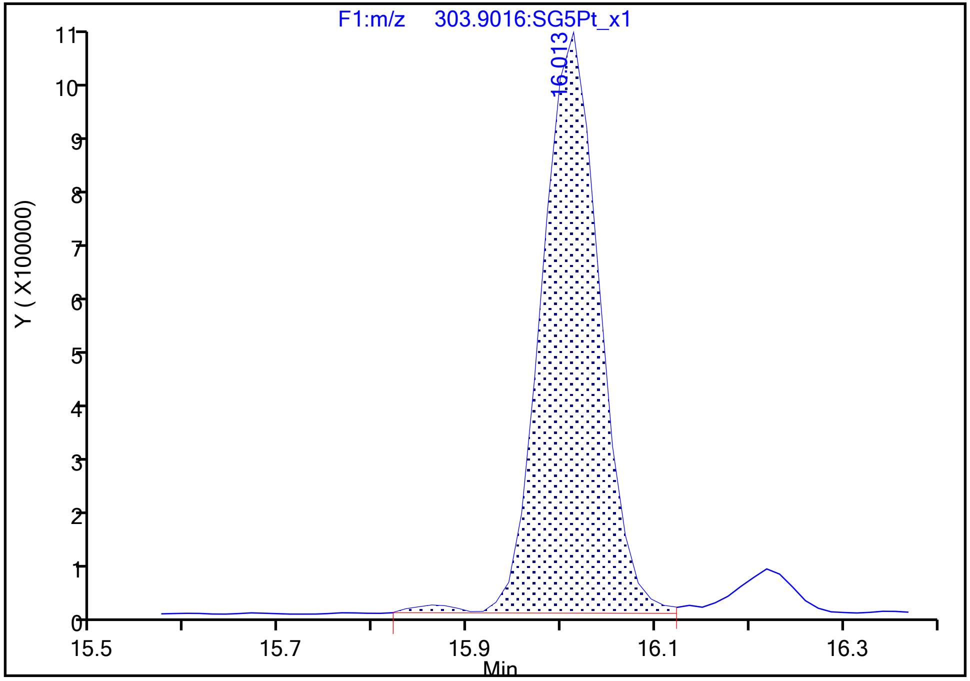

Manual Integration Results

RT: 16.01
Area: 4379909
Amount: 14.422864
Amount Units: pg/ul

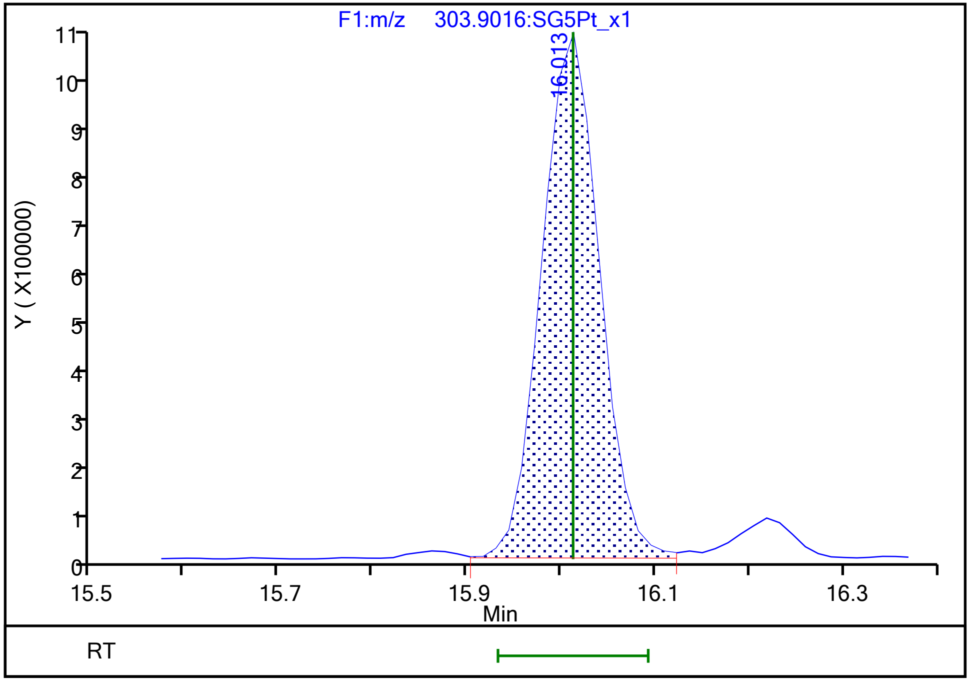

Reviewer: stephensk, 16-Oct-2020 12:24:07

Audit Action: Split an Integrated Peak

Audit Reason: Shouldering

Report Date: 16-Oct-2020 12:25:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d
Injection Date: 15-Oct-2020 03:55:00 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 422408 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

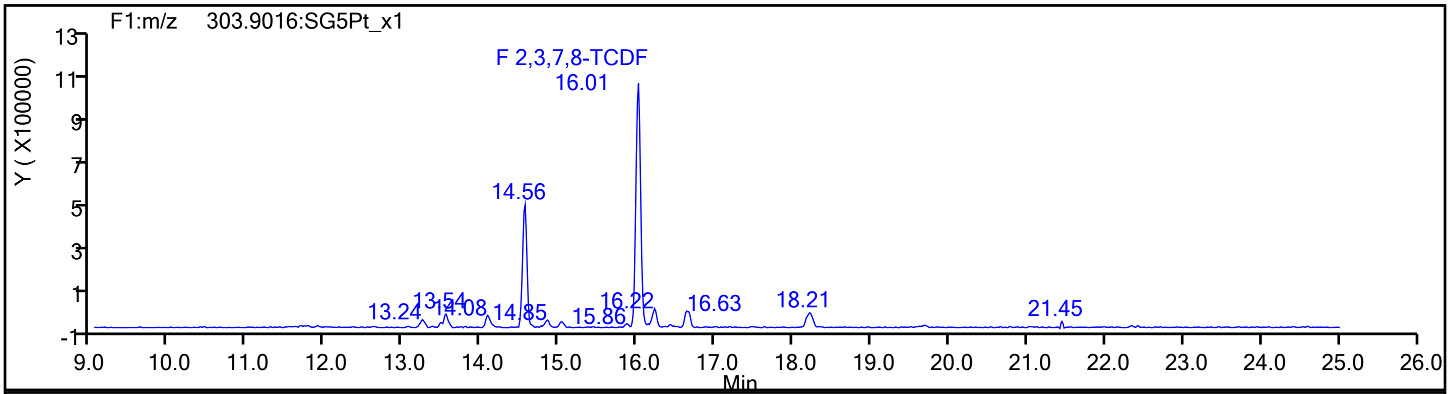

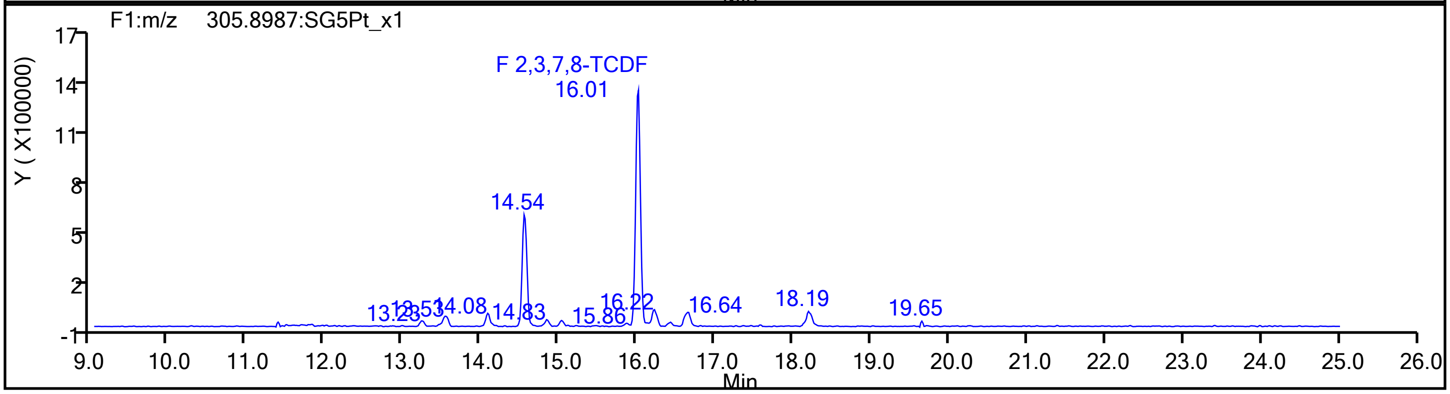

TCDF Standards

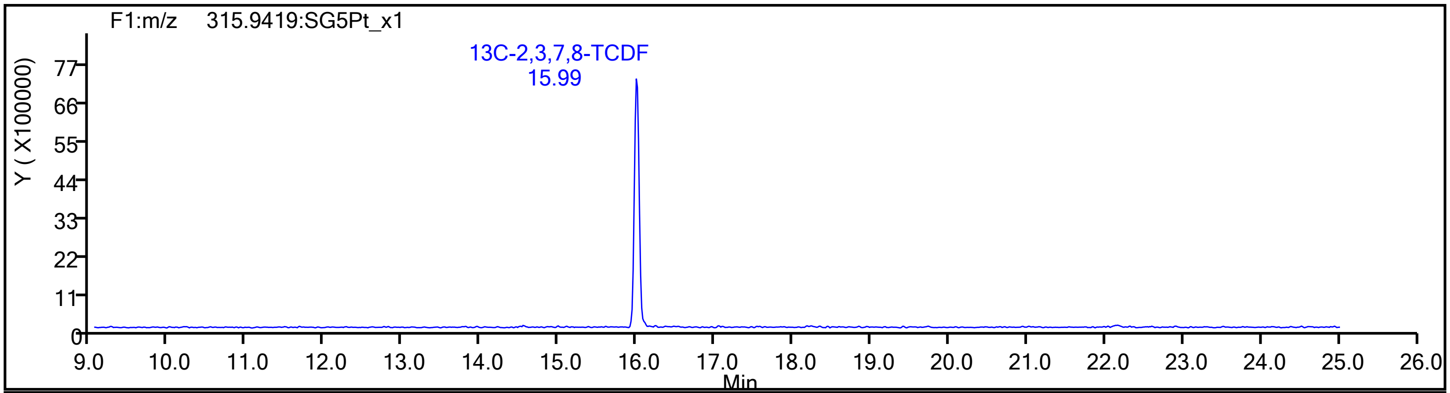

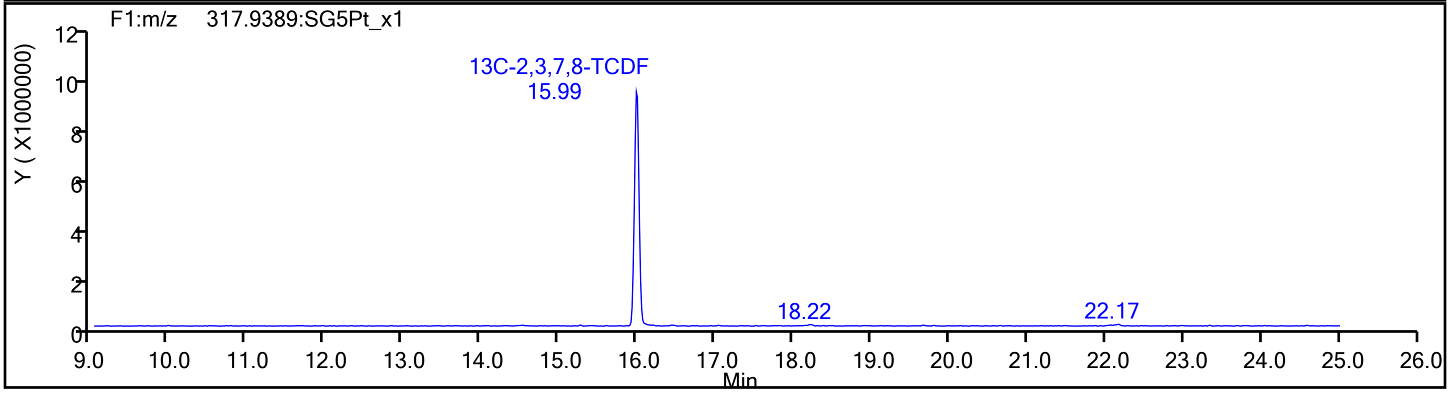

Report Date: 16-Oct-2020 12:25:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d		
Injection Date:	15-Oct-2020 03:55:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-Valve-3-2-Repl		
Worklist#:	422408	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

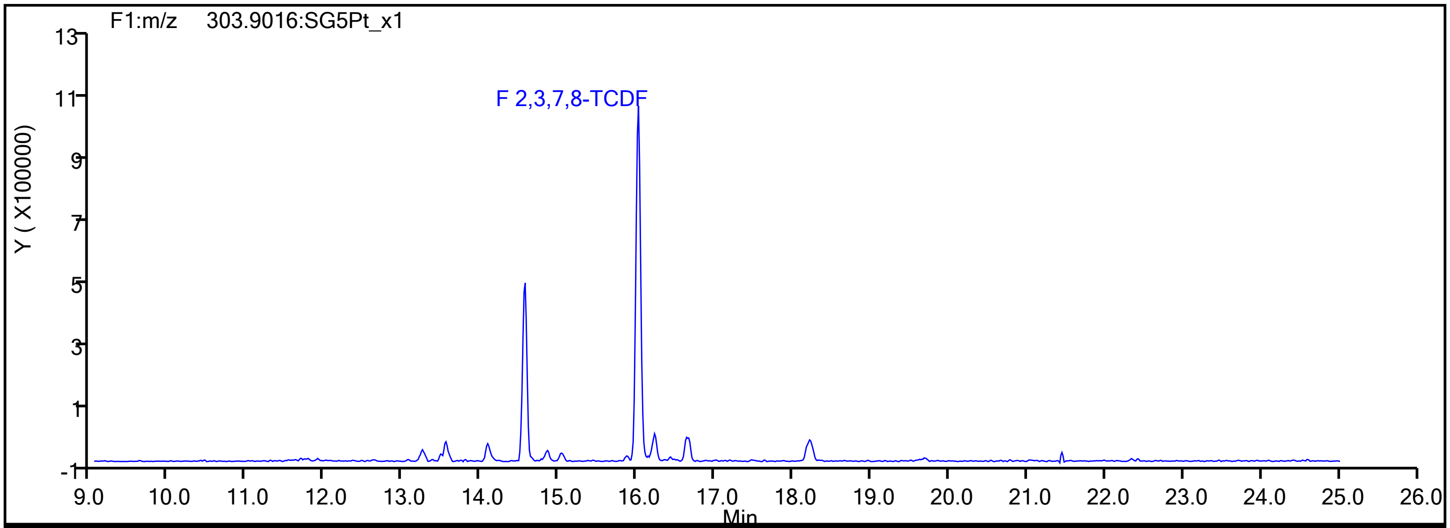

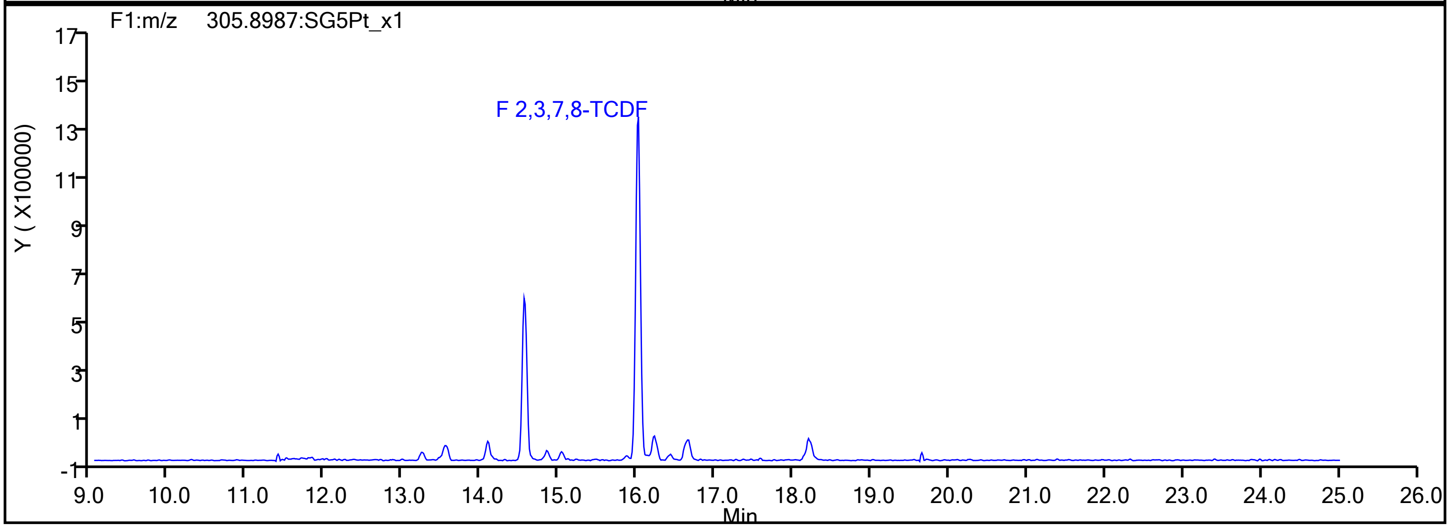

TCDF Interference Mass

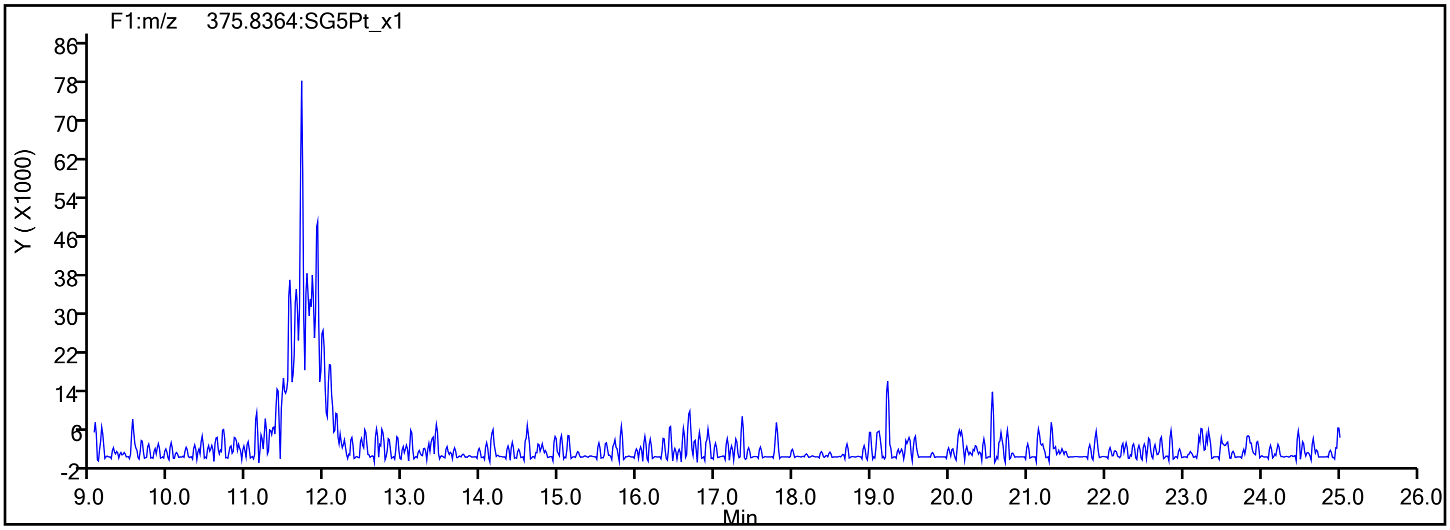

Report Date: 16-Oct-2020 12:25:55 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d

Injection Date: 15-Oct-2020 03:55:00

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-Valve-3-2-Repl

Worklist#: 422408

Sample Line#: 5

Column Type: DB-225

Column Dia: 0.32 mm

37Cl4-TCDD

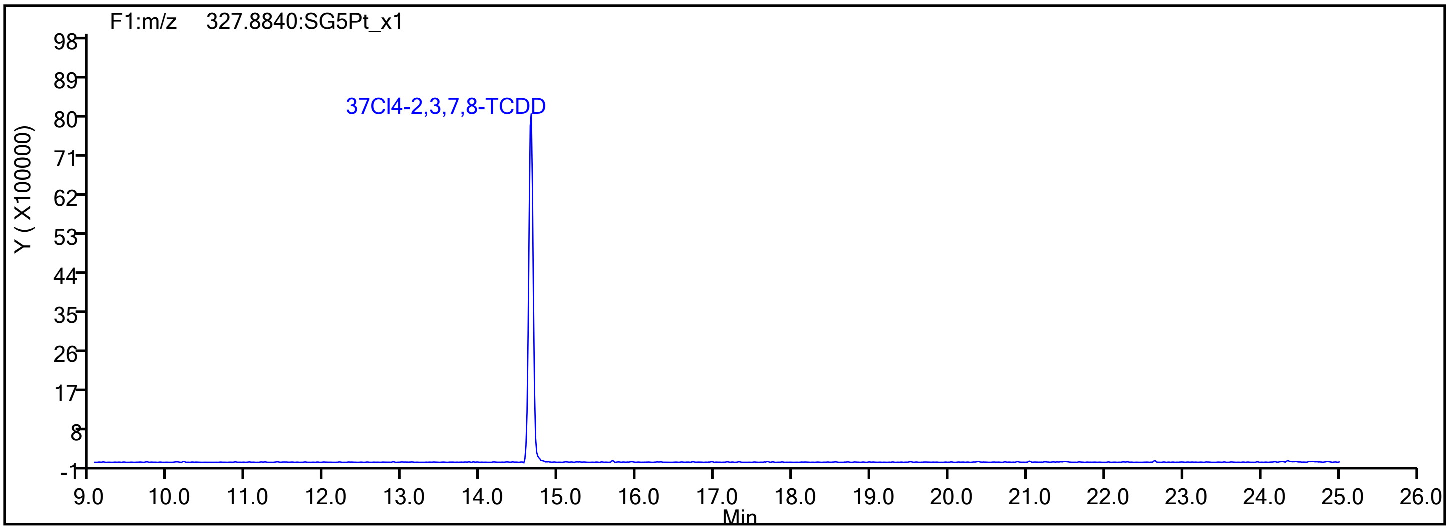

37Cl4-TCDD Standards

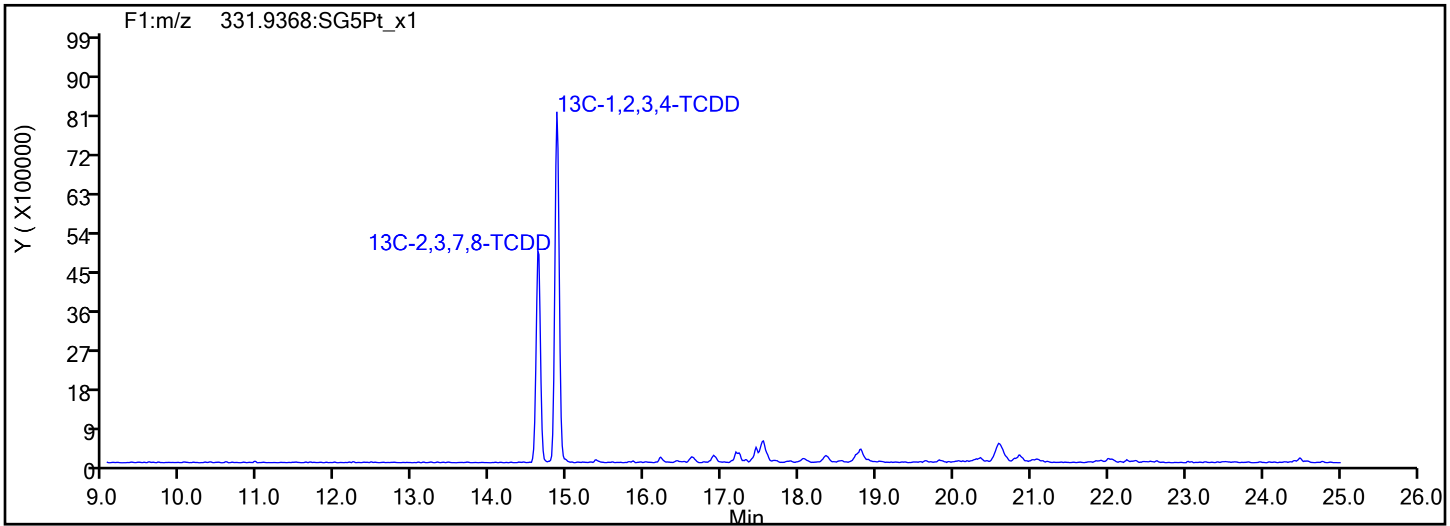

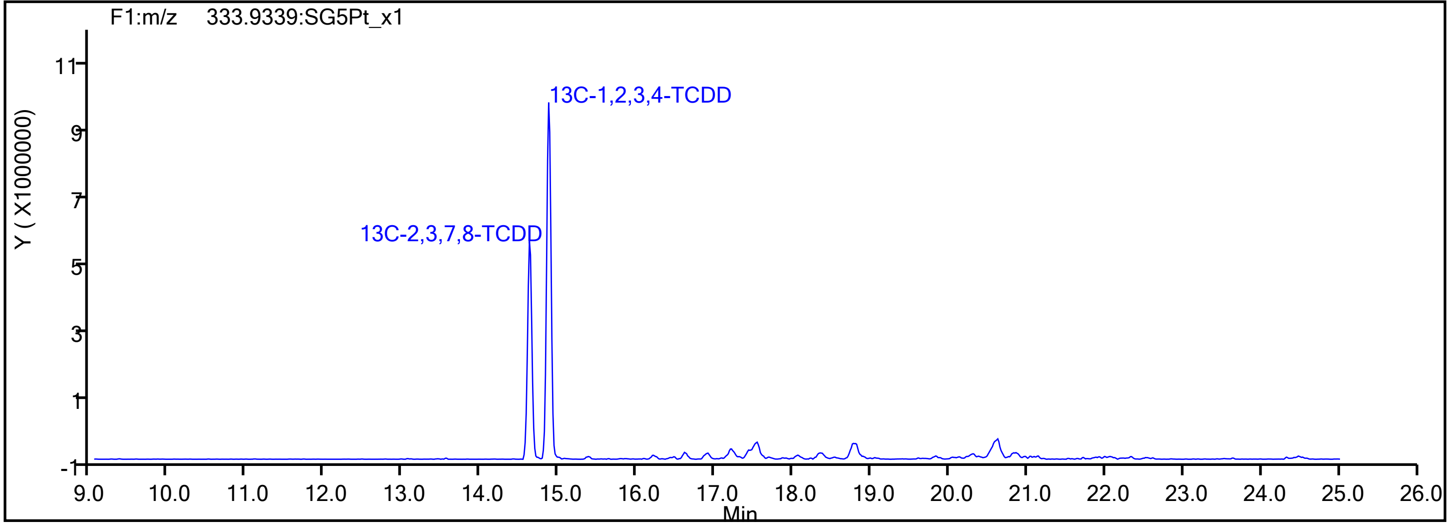

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_005.d
Injection Date: 15-Oct-2020 03:55:00
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-Valve-3-2-Repl
Worklist#: 422408
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

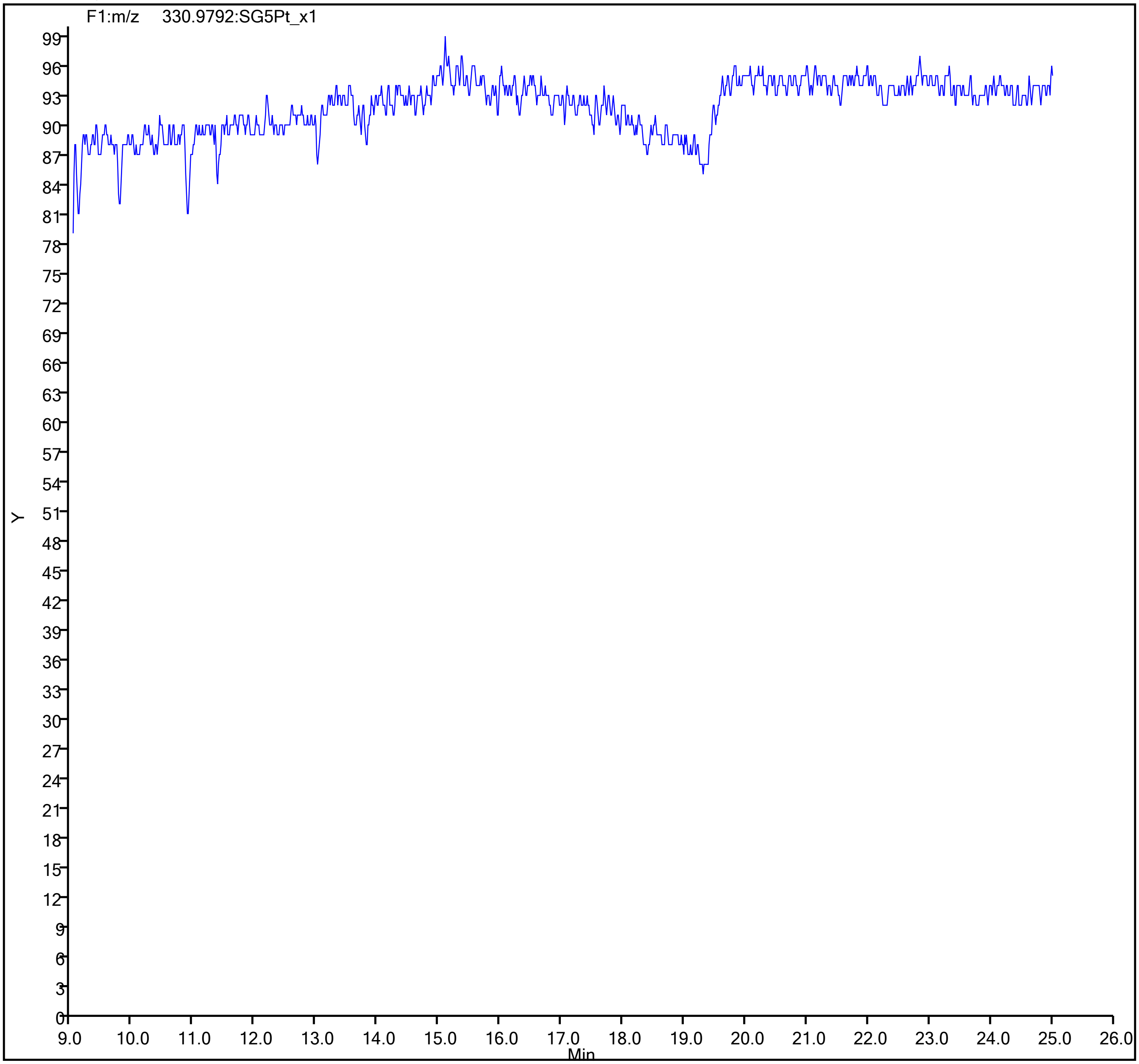

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413246/3	17SE2010D5_3.d
Level 2	IC 320-413246/4	17SE2010D5_4.d
Level 3	IC 320-413246/5	17SE2010D5_5.d
Level 4	IC 320-413246/6	17SE2010D5_6.d
Level 5	IC 320-413246/7	17SE2010D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9215	0.9157	0.8702	0.9028	0.9285	AveID		0.9077				2.5		20.0			
2,3,7,8-TCDD	1.0304	1.0156	0.9803	0.9998	1.0048	AveID		1.0061				1.9		20.0			
1,2,3,7,8-PeCDF	0.9425	0.9098	0.9005	0.9094	0.9115	AveID		0.9147				1.8		20.0			
2,3,4,7,8-PeCDF	1.0017	0.9125	0.9443	0.9536	0.9420	AveID		0.9508				3.4		20.0			
1,2,3,7,8-PeCDD	1.0735	0.9769	0.9618	0.9846	0.9805	AveID		0.9955				4.5		20.0			
1,2,3,4,7,8-HxCDF	1.1432	1.0765	1.0960	1.1207	1.1086	AveID		1.1090				2.3		20.0			
1,2,3,6,7,8-HxCDF	1.1160	1.0662	1.0537	1.0660	1.0588	AveID		1.0721				2.3		20.0			
2,3,4,6,7,8-HxCDF	1.1336	1.0735	1.0607	1.0765	1.0747	AveID		1.0838				2.6		20.0			
1,2,3,4,7,8-HxCDD	1.0496	0.9283	1.0423	1.0084	0.9788	AveID		1.0014				5.0		20.0			
1,2,3,6,7,8-HxCDD	0.9504	0.8671	0.8363	0.8998	0.8972	AveID		0.8902				4.8		20.0			
1,2,3,7,8,9-HxCDD	1.1027	1.0520	1.0426	1.0576	1.0346	AveID		1.0579				2.5		20.0			
1,2,3,7,8,9-HxCDF	1.1588	1.0659	1.0664	1.1010	1.0732	AveID		1.0931				3.6		20.0			
1,2,3,4,6,7,8-HpCDF	1.4212	1.3501	1.3425	1.3603	1.3276	AveID		1.3603				2.6		20.0			
1,2,3,4,6,7,8-HpCDD	1.0332	0.9625	0.9911	1.0116	0.9954	AveID		0.9988				2.6		20.0			
1,2,3,4,7,8,9-HpCDF	1.3865	1.2937	1.3119	1.3185	1.2928	AveID		1.3207				2.9		20.0			
OCDD	1.1948	1.1232	1.1051	1.1253	1.0965	AveID		1.1290				3.4		20.0			
OCDF	1.4223	1.3889	1.3942	1.4424	1.4201	AveID		1.4136				1.6		20.0			
13C-2,3,7,8-TCDF	1.3615	1.3523	1.3350	1.3918	1.3585	Ave		1.3598				1.5		35.0			
13C-2,3,7,8-TCDD	1.0423	1.0161	1.0367	1.0800	1.0927	Ave		1.0536				3.0		35.0			
13C-1,2,3,7,8-PeCDF	1.1189	1.0762	1.1110	1.1519	1.1947	Ave		1.1306				4.0		35.0			
13C-2,3,4,7,8-PeCDF	1.0269	1.0416	1.0237	1.0477	1.1296	Ave		1.0539				4.1		35.0			
13C-1,2,3,7,8-PeCDD	0.8028	0.7562	0.7970	0.8255	0.8607	Ave		0.8084				4.8		35.0			
13C-1,2,3,4,7,8-HxCDF	0.8906	0.9258	0.9204	0.9429	0.9327	Ave		0.9225				2.1		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0270	1.0141	1.0262	1.0567	1.0438	Ave		1.0336				1.6		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9589	0.9509	0.9792	1.0084	0.9894	Ave		0.9773				2.4		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7818	0.8165	0.7577	0.7974	0.8350	Ave		0.7977				3.8		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9690	0.9720	1.0222	1.0401	1.0019	Ave		1.0010				3.1		35.0			
13C-1,2,3,7,8,9-HxCDF	0.8903	0.9031	0.9138	0.9282	0.9412	Ave		0.9153				2.2		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8344	0.8296	0.8494	0.8655	0.8742	Ave		0.8506				2.3		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8770	0.8586	0.8797	0.9047	0.9163	Ave		0.8873				2.6		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7298	0.7458	0.7430	0.7948	0.7956	Ave		0.7618				4.1		35.0			
13C-OCDD	0.6076	0.5869	0.6272	0.6389	0.6831	Ave		0.6287				5.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	0.9314	0.9786	1.0629	1.1339	1.1371	Ave		1.0488				8.8					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413246/3	17SE2010D5_3.d
Level 2	IC 320-413246/4	17SE2010D5_4.d
Level 3	IC 320-413246/5	17SE2010D5_5.d
Level 4	IC 320-413246/6	17SE2010D5_6.d
Level 5	IC 320-413246/7	17SE2010D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	435861	1708632	8215614	34873455	208980759	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	373087	1423835	7186766	29967613	181906530	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1831854	6755406	35377066	145371529	902066653	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1786782	6557191	34181205	138637753	881532861	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1497052	5096638	27105714	112792500	699080341	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	1347531	5051863	26528941	112104497	708040990	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	1516975	5480754	28435765	119502715	756804000	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	1438567	5174349	27314505	115165865	728098205	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1086110	3841879	20769529	85297387	559642002	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1218876	4272300	22482418	99286402	615512540	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1277610	4768543	24401221	103076569	650702045	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	1365563	4879551	25630034	108414785	691727822	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1569431	5677563	29988985	124894209	794756968	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1199192	4188952	22930767	97091283	624600336	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	1339219	4890701	25636290	111173202	704300587	2.50	10.0	50.0	200	1000
OCDD		AveID	1921704	6682705	36458371	152532525	1025752146	5.00	20.0	100	400	2000
OCDF		AveID	2287654	8263927	45999109	195516483	1328467600	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	94597447	93295703	94412734	96572003	112538942	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	72418737	70100427	73314161	74937692	90520287	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	77742057	74247718	78572668	79929046	98967595	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	71348405	71861705	72394702	72693510	93576375	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	55779906	52169753	56361860	57281119	71300628	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	47151495	46927290	48411968	50016942	63870758	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	54372821	51405634	53975320	56052859	71480069	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	50763245	48201659	51503814	53491599	67749621	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	41391638	41387059	39854770	42294958	57179178	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	51300838	49272149	53764731	55171129	68606469	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	47135979	45779728	48067141	49233772	64454067	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	44172724	42054304	44675630	45908363	59864107	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	46427849	43522391	46274068	47987052	62747060	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	38635465	37805388	39083845	42158862	54480485	100	100	100	100	100
13C-OCDD	13CHx	Ave	64335649	59498409	65984325	67776385	93549216	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	323571	1350233	7516852	31470753	188393047	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\17SE2010D5.SPL Page 1 of 3
Last Modified: Thursday, September 17, 2020 12:52:57 Pacific Daylight Time
Printed: Thursday, September 17, 2020 14:13:36 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User	Sample Size
1	17SE2010D5_1	WDM HRDXNCP_00042	WDM 091720	Tray01:1	Dioxin		AJS	1.000000
2	17SE2010D5_2	Solvent Blank C-14	SB 091720	Tray01:3	---		AJS	1.000000
3	17SE2010D5_3	CS-2 HRDXNL2_00030	IC 091720	Tray01:4	Dioxin		AJS	1.000000
4	17SE2010D5_4	CS-3 HRDXNL3_00028	IC 091720A	Tray01:5	Dioxin		AJS	1.000000
5	17SE2010D5_5	CS-4 HRDXNL4_00095	IC 091720B	Tray01:2	Dioxin		AJS	1.000000
6	17SE2010D5_6	CS-5 HRDXNL5_00031	IC 091720C	Tray01:6	Dioxin		AJS	1.000000
7	17SE2010D5_7	CS-6 HRDXNL6_00027	IC 091720D	Tray01:7	Dioxin		AJS	1.000000
8	17SE2010D5_8	Solvent Blank C-14	SB 091720A	Tray01:3	---		AJS	1.000000
9	17SE2010D5_9	ICV HRDXNIC_00046	ICV 091720	Tray01:8	Dioxin		AJS	1.000000

logfile checked
9-17-20 ALM

Units	MS File	Inlet File	Inject Volume	Process
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck

Process Options	**Action On Error**	**s5**
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:09:06 Pacific Daylight Time

M 292.9824 R 11902

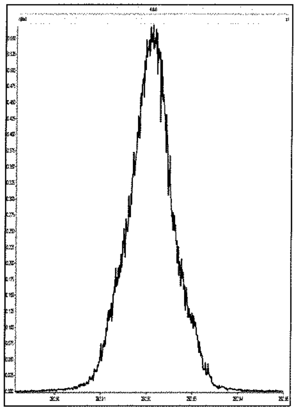

M 304.9824 R 12073

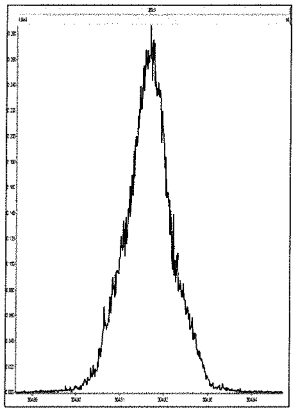

M 318.9792 R 12254

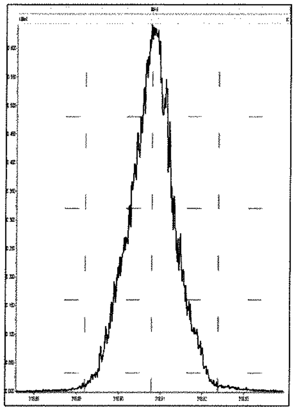

M 330.9792 R 11959

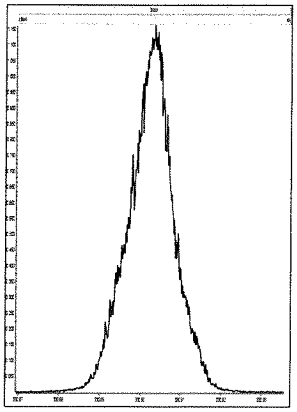

M 342.9792 R 11962

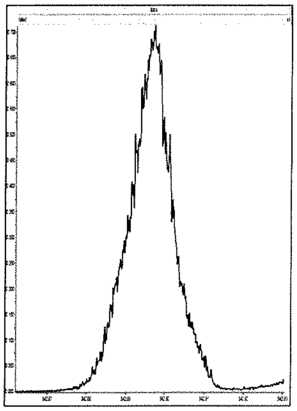

M 354.9792 R 11736

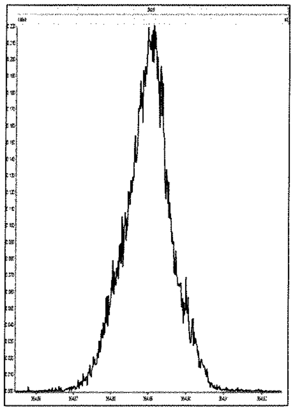

M 366.9792 R 11417

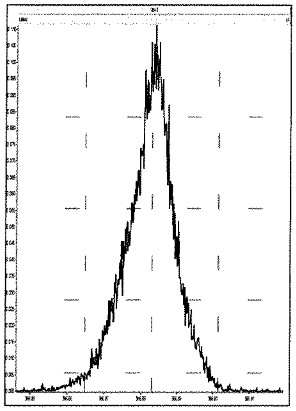

M 380.9760 R 11261

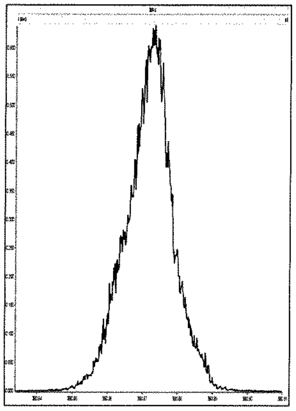

M 392.9760 R 11466

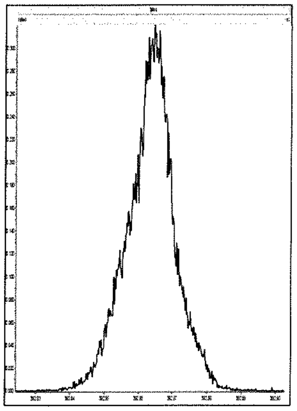

M 404.9760 R 11521

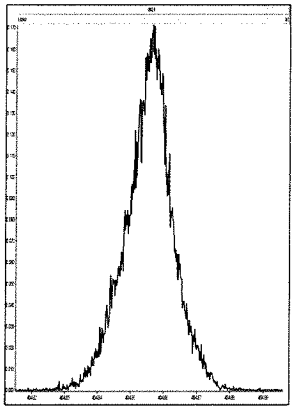

M 416.9760 R 11467

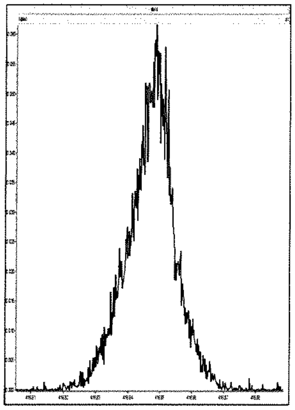

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:09:26 Pacific Daylight Time

M 318.9792 R 12371

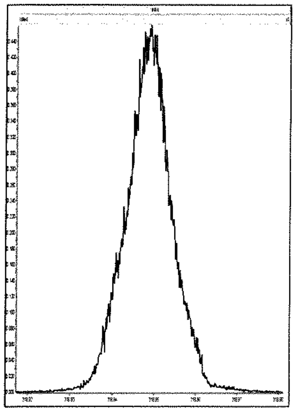

M 330.9792 R 11961

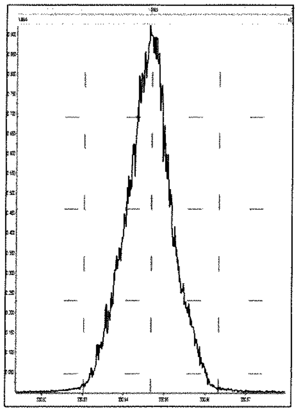

M 342.9792 R 11734

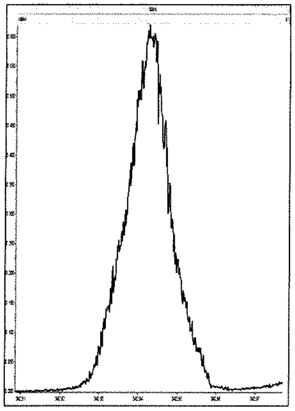

M 354.9792 R 12077

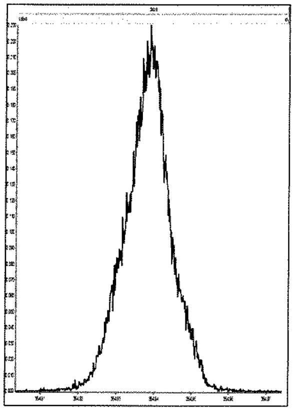

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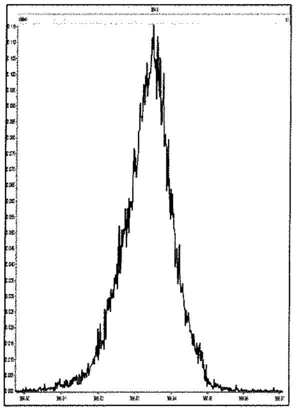

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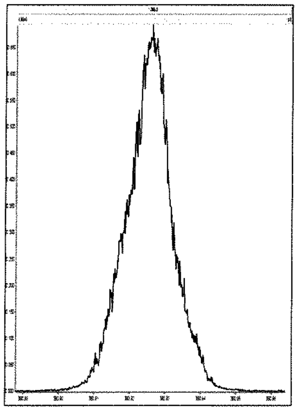

M 392.9760 R 11682

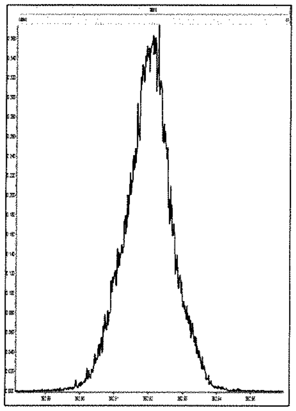

M 404.9760 R 11846

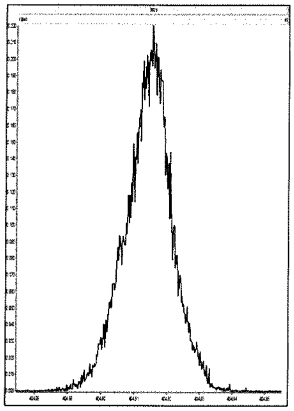

M 416.9760 R 12196

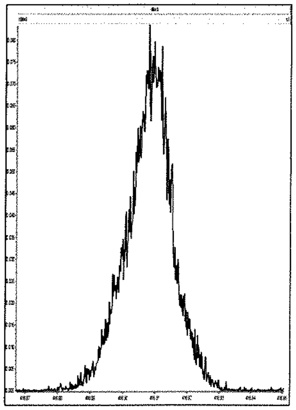

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:10:05 Pacific Daylight Time

M 366.9792 R 11631

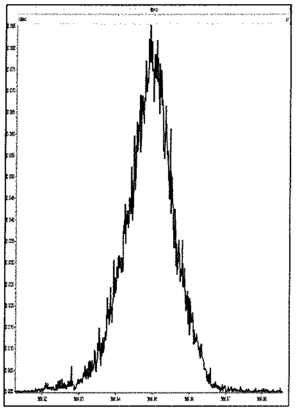

M 380.9760 R 11907

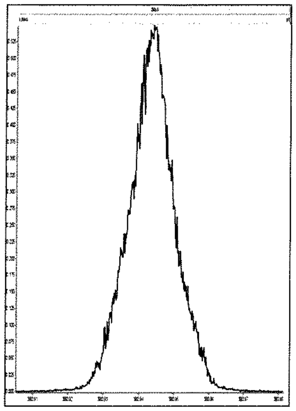

M 392.9760 R 12015

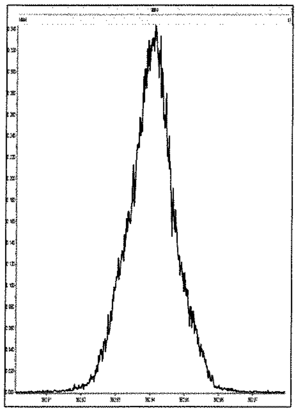

M 404.9760 R 11847

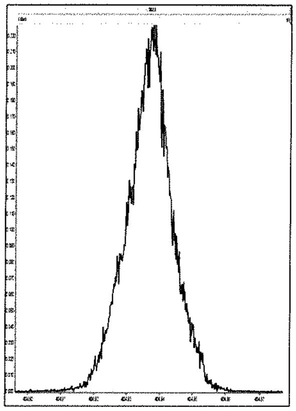

M 416.9760 R 12079

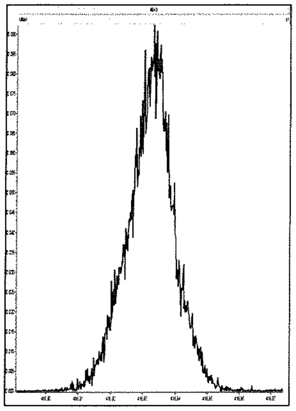

M 430.9728 R 11574

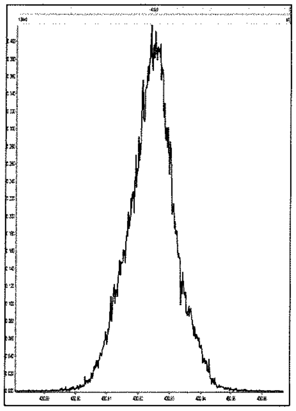

M 442.9728 R 11847

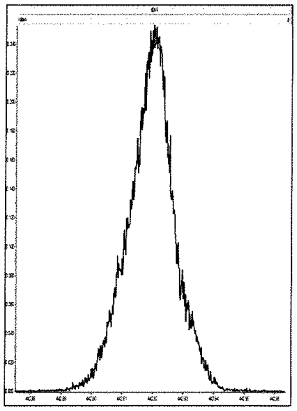

M 454.9728 R 11789

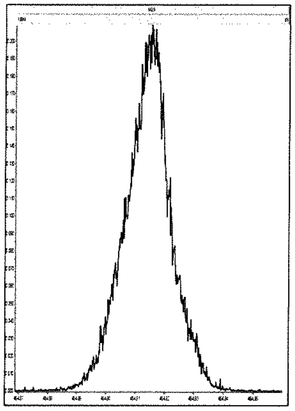

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:10:33 Pacific Daylight Time

M 380.9760 R 11904

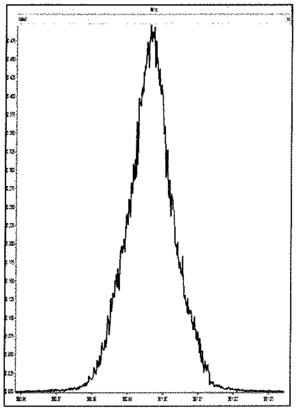

M 392.9760 R 12079

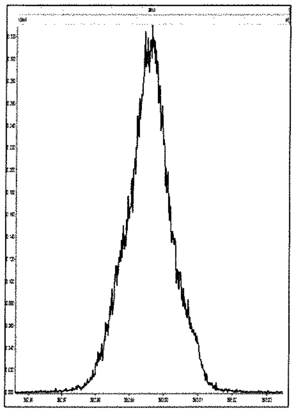

M 404.9760 R 11962

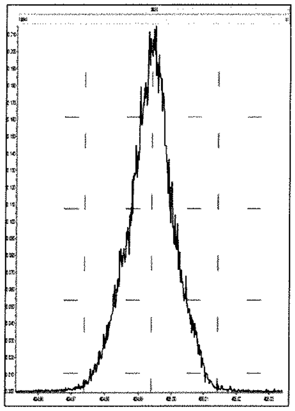

M 416.9760 R 12253

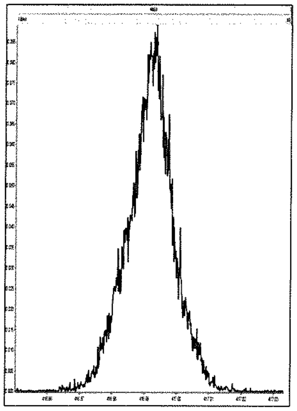

M 430.9728 R 12197

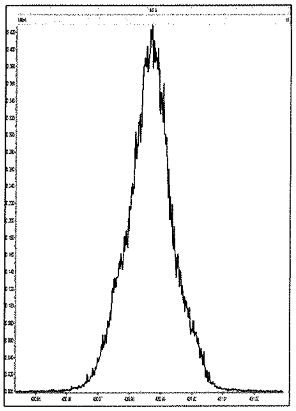

M 442.9728 R 11468

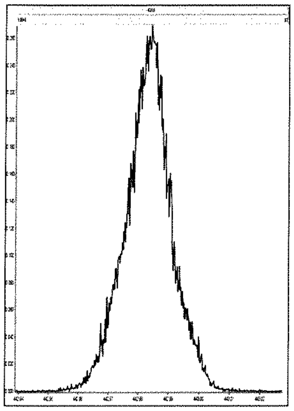

M 454.9728 R 12022

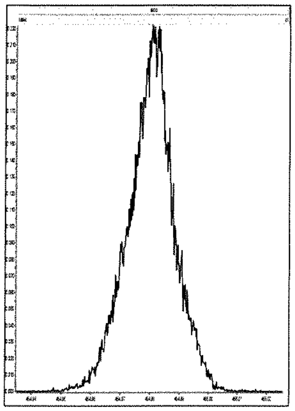

M 466.9728 R 12316

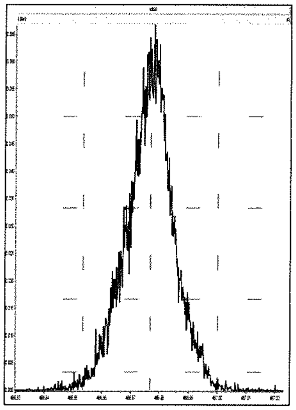

M 480.9696 R 11308

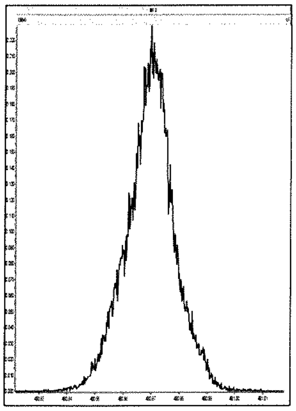

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:11:09 Pacific Daylight Time

M 380.9760 R 12018

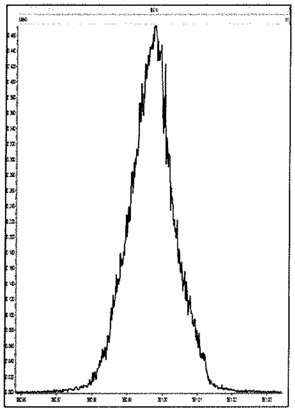

M 392.9760 R 11907

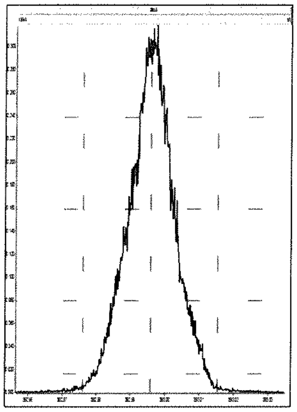

M 404.9760 R 12255

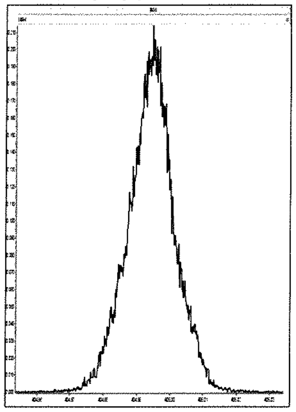

M 416.9760 R 12076

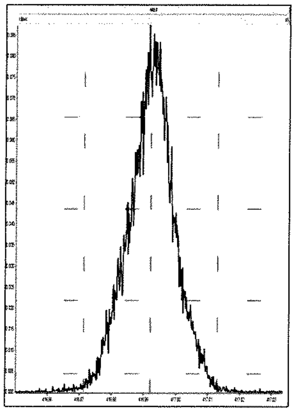

M 430.9728 R 11959

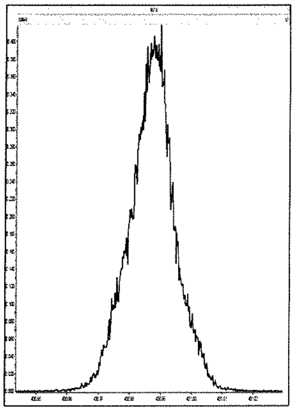

M 442.9728 R 12255

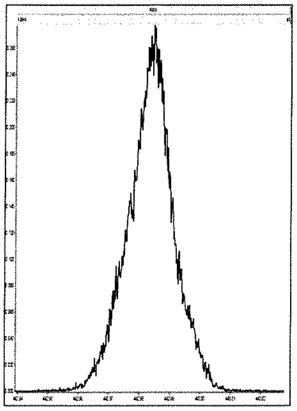

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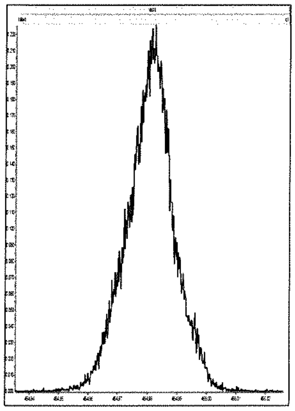

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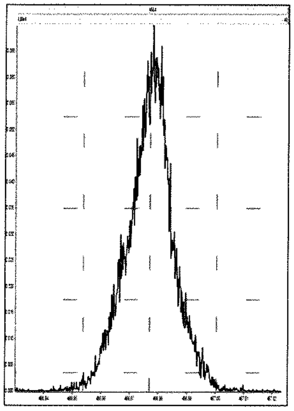

M 480.9696 R 11792

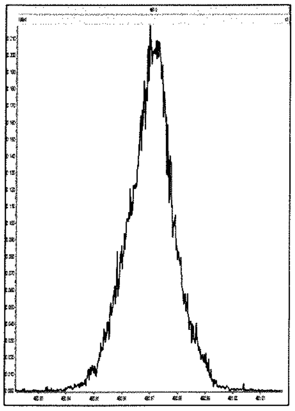

M 492.9696 R 11960

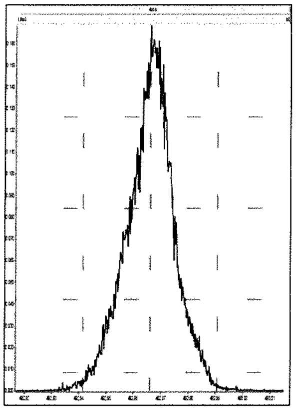

M 504.9696 R 11364

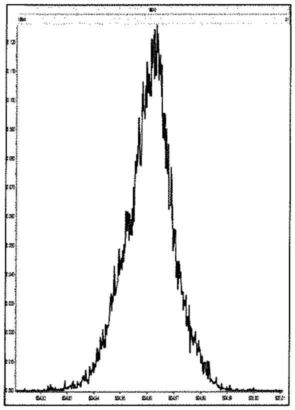

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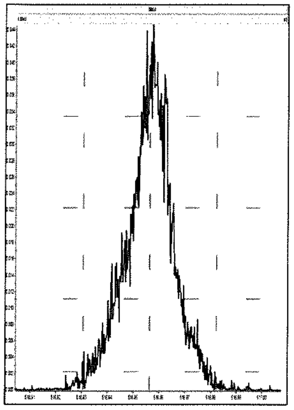

Resolution Check Report **MassLynx 4.1** Page 1 of 4

Printed: Thursday, September 17, 2020 21:37:04 Pacific Daylight Time

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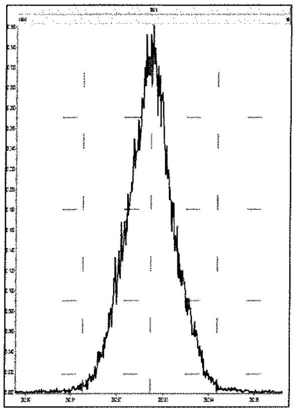

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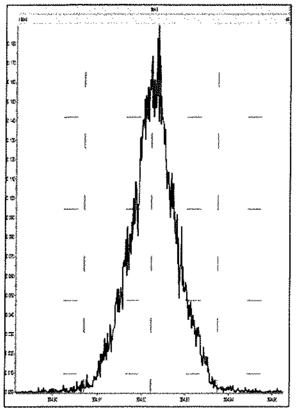

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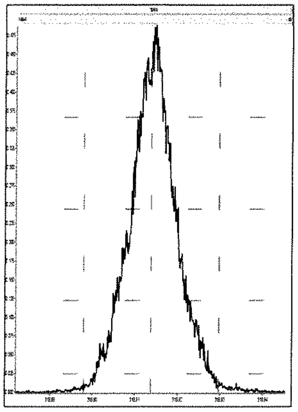

M 330.9792 R 11850

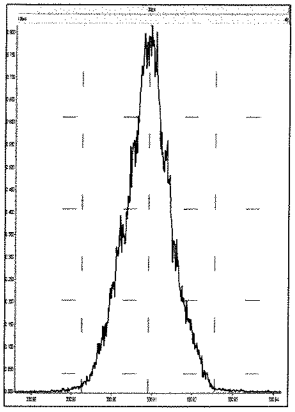

M 342.9792 R 11961

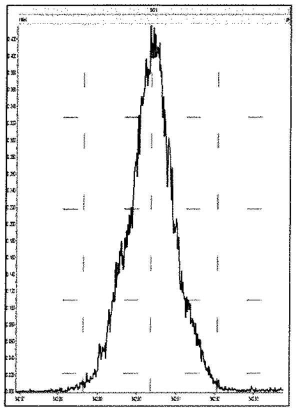

M 354.9792 R 12079

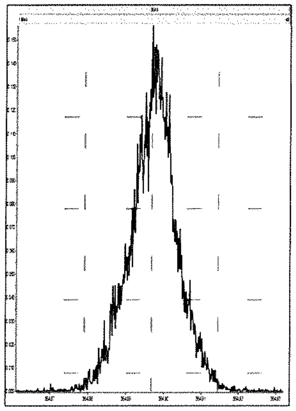

M 366.9792 R 11672

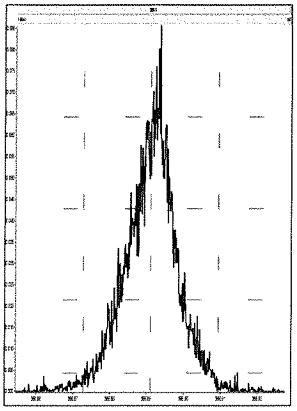

M 380.9760 R 11441

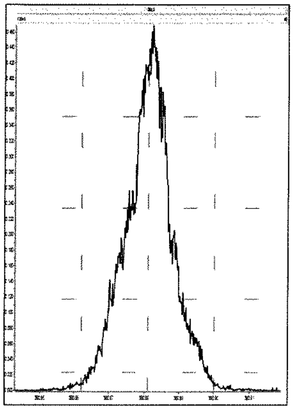

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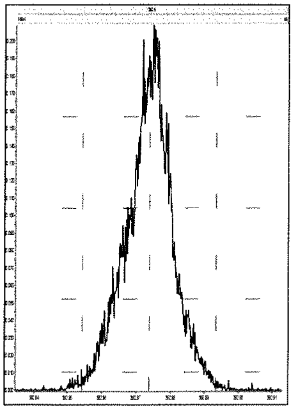

M 404.9760 R 11849

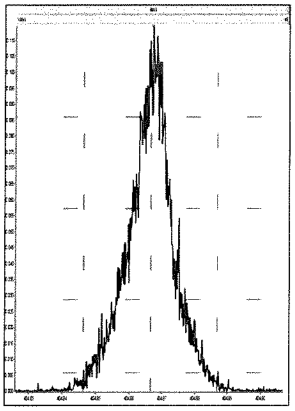

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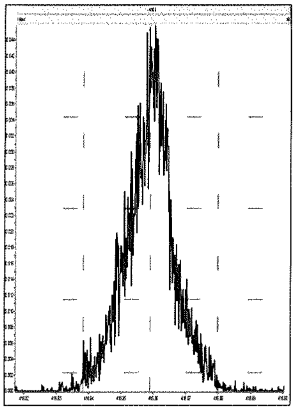

M 318.9792 R 11904

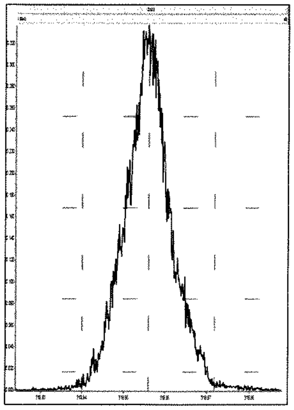

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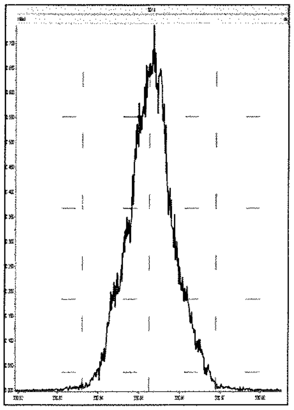

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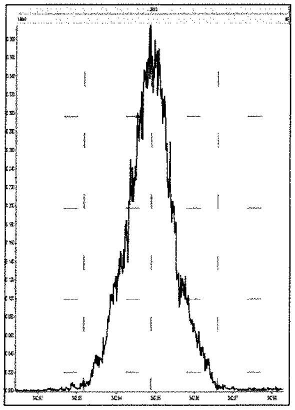

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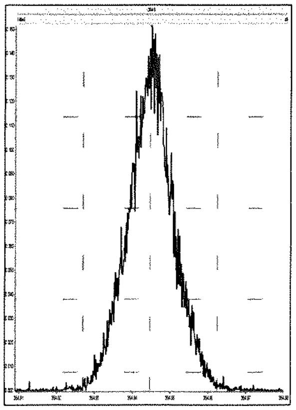

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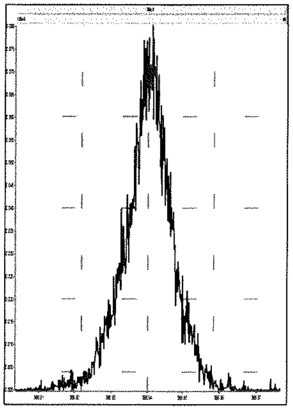

M 380.9760 R 11737

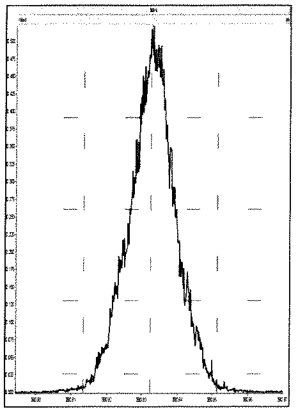

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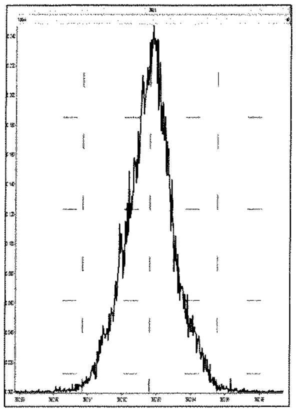

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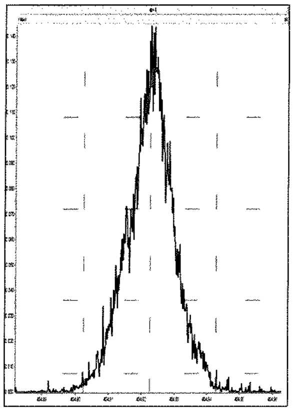

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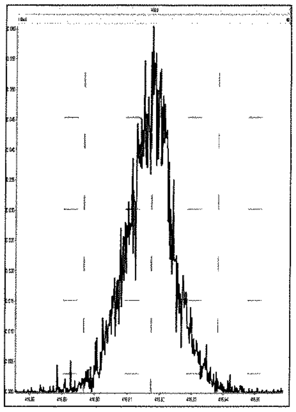

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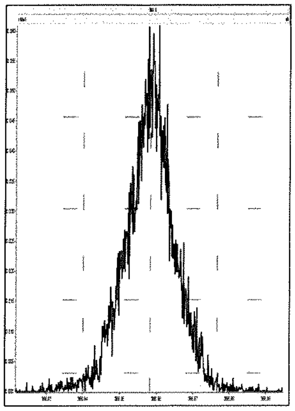

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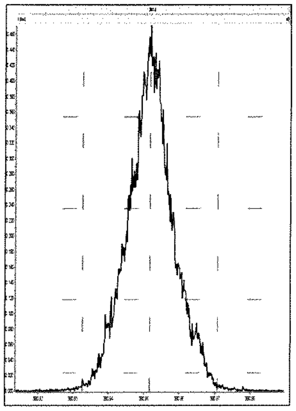

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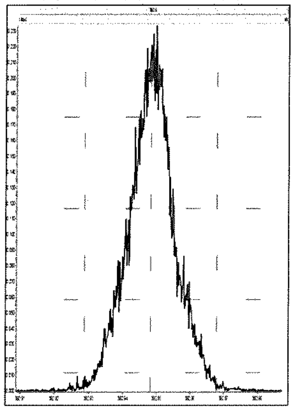

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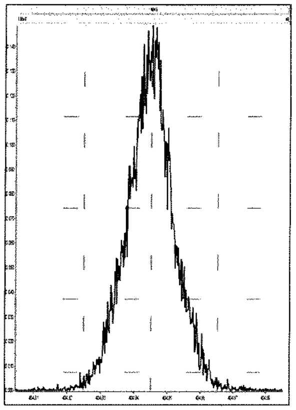

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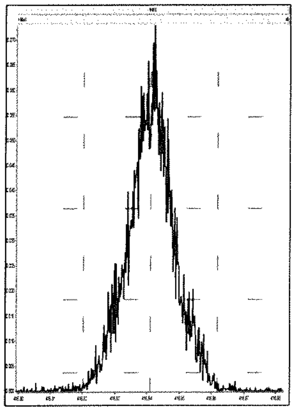

M 430.9728 R 11737

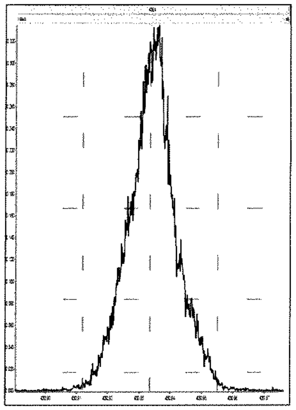

M 442.9728 R 11961

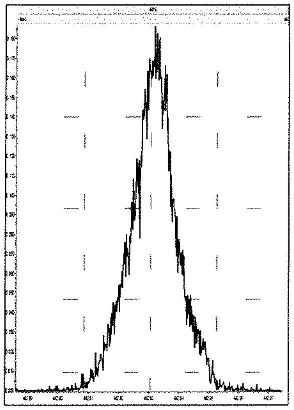

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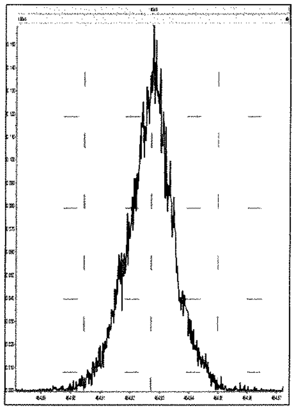

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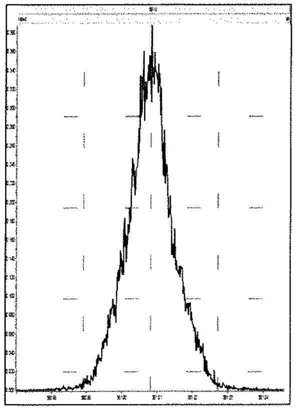

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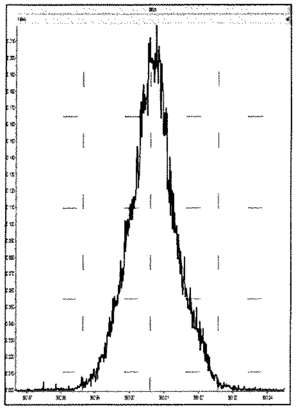

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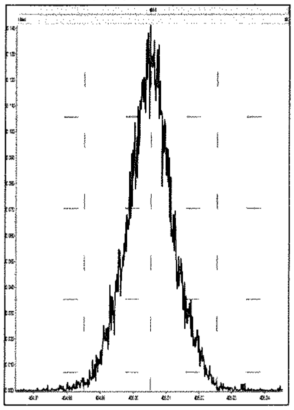

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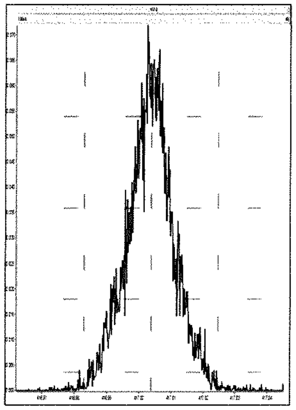

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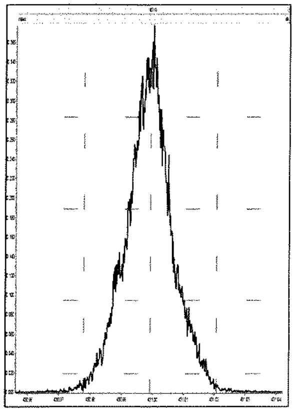

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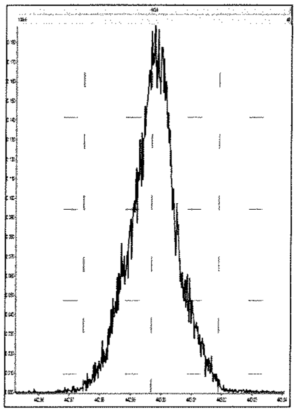

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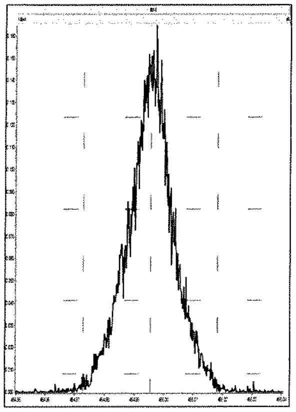

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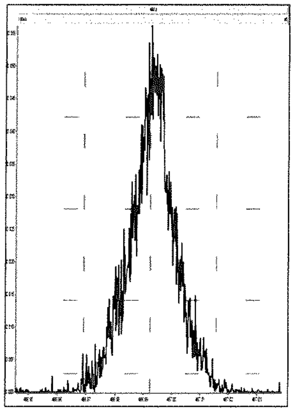

M 480.9696 R 11712
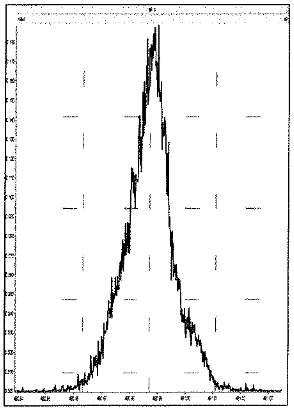

M 380.9760 R 12348
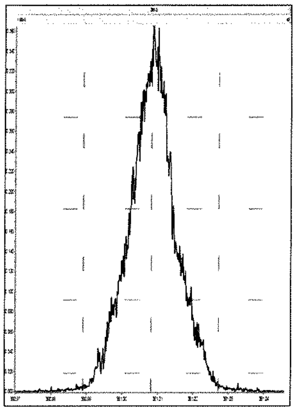

M 392.9760 R 12077
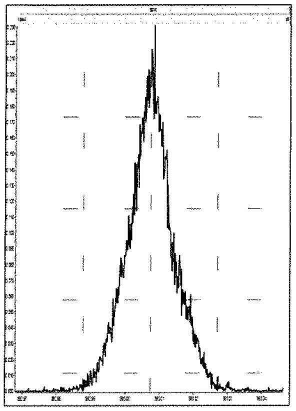

M 404.9760 R 12628
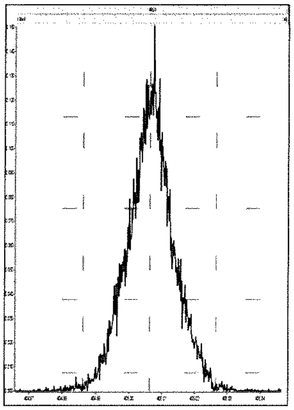

M 416.9760 R 12698
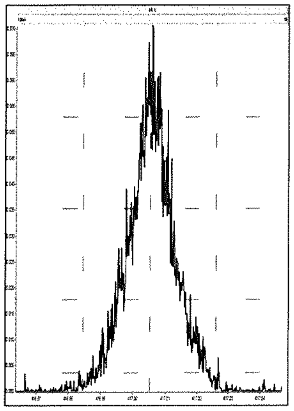

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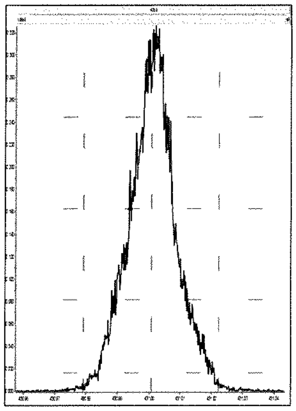

M 442.9728 R 11769
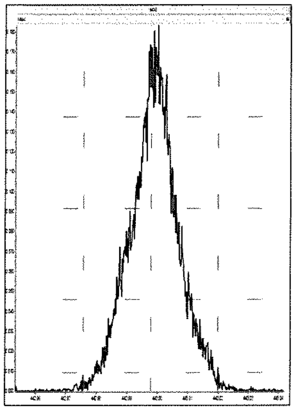

M 454.9728 R 11820
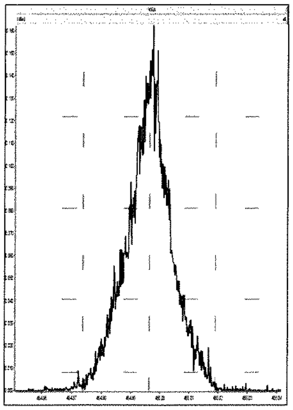

M 466.9728 R 11849
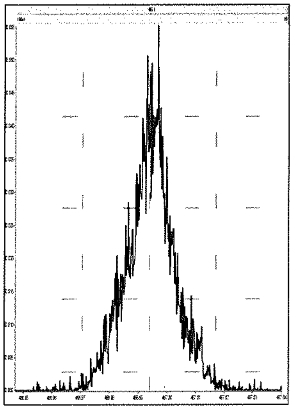

M 480.9696 R 11263
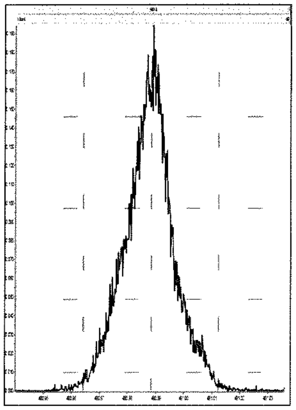

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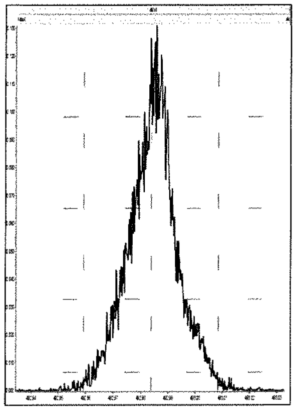

M 504.9696 R 11908
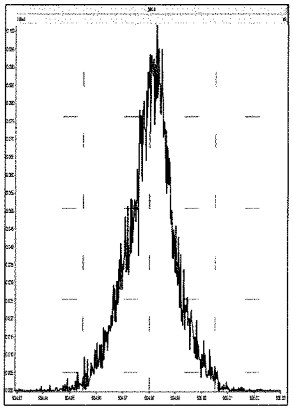

Printed: Thursday, September 17, 2020 21:37:04 Pacific Daylight Time

M 516.9697 R 12789

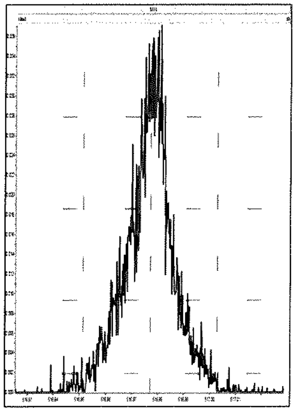

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 16:09:46 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720 CS-2 HRDXNL2_00030
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:36 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 17:19:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.717	69479316	0.77	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	94597447	0.78	1.3598	100.1	100.1	0.1646	0.1646	100	
2,3,7,8-TCDF	17.219	435861	0.70	0.9077	0.5076	0.5076	0.0130	0.0130	102	
S Total TCDF					0.5076	0.5076	0.0130	0.0130		
D 13C-2,3,7,8-TCDD	17.899	72418737	0.77	1.0536	98.9	98.9	0.1503	0.1503	98.93	
2,3,7,8-TCDD	17.914	373087	0.68	1.0061	0.5120	0.5120	0.0182	0.0182	102	M
$ 37Cl4-2,3,7,8-TCDD	17.929	323571		1.0488	0.4441	0.4441	0.009651	0.009651	88.81	
S Total TCDD					0.5120	0.5120	0.0182	0.0182		
D 13C-1,2,3,7,8-PeCDF	22.198	77742057	1.57	1.1306	99.0	99.0	0.2250	0.2250	98.97	
1,2,3,7,8-PeCDF	22.212	1831854	1.53	0.9147	2.576	2.576	0.0264	0.0264	103	
D 13C-2,3,4,7,8-PeCDF	23.535	71348405	1.53	1.0539	97.4	97.4	0.2414	0.2414	97.44	
2,3,4,7,8-PeCDF	23.562	1786782	1.53	0.9508	2.634	2.634	0.0300	0.0300	105	
S Total PeCDF					5.210	5.210	0.0282	0.0282		
D 13C-1,2,3,7,8-PeCDD	24.257	55779906	1.62	0.8084	99.3	99.3	0.1303	0.1303	99.31	
1,2,3,7,8-PeCDD	24.285	1497052	1.52	0.9955	2.696	2.696	0.0246	0.0246	108	
S Total PeCDD					2.696	2.696	0.0246	0.0246		
D 13C-1,2,3,4,7,8-HxCDF	30.393	47151495	0.51	0.9225	96.5	96.5	0.5646	0.5646	96.55	
1,2,3,4,7,8-HxCDF	30.406	1347531	1.16	1.1090	2.577	2.577	0.0330	0.0330	103	
D 13C-1,2,3,6,7,8-HxCDF	30.579	54372821	0.50	1.0336	99.4	99.4	0.5039	0.5039	99.37	
1,2,3,6,7,8-HxCDF	30.593	1516975	1.27	1.0721	2.602	2.602	0.0297	0.0297	104	
D 13C-2,3,4,6,7,8-HxCDF	31.431	50763245	0.51	0.9773	98.1	98.1	0.5329	0.5329	98.11	
2,3,4,6,7,8-HxCDF	31.458	1438567	1.29	1.0838	2.615	2.615	0.0247	0.0247	105	
D 13C-1,2,3,7,8,9-HxCDF	32.256	47135979	0.51	0.9153	97.3	97.3	0.5690	0.5690	97.27	
1,2,3,7,8,9-HxCDF	32.270	1365563	1.23	1.0931	2.650	2.650	0.0245	0.0245	106	
S Total HxCDF					10.4	10.4	0.0280	0.0280		
* 13C-1,2,3,7,8,9-HxCDD	32.070	52941411	1.21	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	41391638	1.24	0.7977	98.0	98.0	0.4078	0.4078	98.02	
1,2,3,4,7,8-HxCDD	31.644	1086110	1.27	1.0014	2.620	2.620	0.0316	0.0316	105	
D 13C-1,2,3,6,7,8-HxCDD	31.737	51300838	1.26	1.0010	96.8	96.8	0.3249	0.3249	96.80	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	1218876	1.25	0.8902	2.669	2.669	0.0297	0.0297	107	
1,2,3,7,8,9-HxCDD	32.083	1277610	1.20	1.0579	2.606	2.606	0.0272	0.0272	104	
S Total HxCDD					7.895	7.895	0.0295	0.0295		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	44172724	0.42	0.8506	98.1	98.1	1.306	1.306	98.09	
1,2,3,4,6,7,8-HpCDF	33.691	1569431	1.05	1.3603	2.612	2.612	0.0343	0.0343	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.749	38635465	0.44	0.7618	95.8	95.8	1.458	1.458	95.80	
1,2,3,4,7,8,9-HpCDF	34.761	1339219	1.04	1.3207	2.625	2.625	0.0454	0.0454	105	
S Total HpCDF					5.237	5.237	0.0399	0.0399		
D 13C-1,2,3,4,6,7,8-HpCDD	34.457	46427849	1.05	0.8873	98.8	98.8	0.6222	0.6222	98.84	
1,2,3,4,6,7,8-HpCDD	34.469	1199192	1.01	0.9988	2.586	2.586	0.0322	0.0322	103	
S Total HpCDD					2.586	2.586	0.0322	0.0322		
D 13C-OCDD	36.779	64335649	0.90	0.6287	193.3	193.3	0.3370	0.3370	96.64	
OCDF	36.875	2287654	0.88	1.4136	5.031	5.031	0.0347	0.0347	101	
OCDD	36.791	1921704	0.89	1.1290	5.292	5.292	0.0254	0.0254	106	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	17-Sep-2020 16:09:46	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 091720 CS-2 HRDXNL2_00030				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:35:36	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: shardaa		Date:	17-Sep-2020 17:19:26		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.717	17.711	0		30177552	7479139	6207	15517	1205		
333.9339	17.717	17.711	0		39301764	9633030	4631	11577	2080	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.971	41352489	10455241	7584	18960	1379		
317.9389	17.203	17.203	0	0.971	53244958	13402215	7733	19332	1733	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	179767	45403	406	1015	112		
305.8987	17.219	17.218	0	1.001	256094	65363	718	1795	91	0.70(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.010	31528479	7573809	6207	15517	1220		
333.9339	17.899	17.905	0	1.010	40890258	9620747	4631	11577	2077	0.77(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	17.914	17.920	0	1.001	150442	34466	820	2050	42		M
321.8936	17.914	17.920	0	1.001	222645	52312	437	1092	120	0.68(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	323571	77695	693	1732	112		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.253	47523565	8332657	10134	25335	822		
353.8970	22.198	22.204	0	1.253	30218492	5332333	7281	18202	732	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.220	0	1.001	1108293	183113	533	1332	344		
341.8567	22.226	22.220	0	1.001	723561	128260	787	1967	163	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.328	43182296	6970287	10134	25335	688		
353.8970	23.535	23.540	0	1.328	28166109	4598648	7281	18202	632	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	1080869	170226	533	1332	319		
341.8567	23.562	23.567	0	1.001	705913	114123	787	1967	145	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.369	34452671	5322945	4183	10457	1273		
369.8919	24.257	24.263	0	1.369	21327235	3275530	3030	7575	1081	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	902673	137221	561	1402	245		
357.8516	24.285	24.290	0	1.001	594379	94491	282	705	335	1.52(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	15907677	2787175	8771	21927	318		
385.8610	30.393	30.398	0	0.948	31243818	5538607	17428	43570	318	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.414	0	1.000	724407	124761	657	1642	190		
375.8178	30.406	30.414	0	1.000	623124	108921	562	1405	194	1.16(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.587	0	0.954	18219024	3190920	8771	21927	364		
385.8610	30.579	30.587	0	0.954	36153797	6377045	17428	43570	366	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.593	30.608	-1	1.000	847853	146794	657	1642	223		
375.8178	30.606	30.608	0	1.001	669122	114984	562	1405	205	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.431	31.439	0	0.980	17206437	3856341	8771	21927	440		
385.8610	31.431	31.439	0	0.980	33556808	7542406	17428	43570	433	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.001	810783	196014	657	1642	298		
375.8178	31.458	31.458	0	1.001	627784	140674	562	1405	250	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	15820168	3819576	8771	21927	435		
385.8610	32.243	32.254	-1	1.005	31315811	7580727	17428	43570	435	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	753629	188592	657	1642	287		
375.8178	32.270	32.267	0	1.000	611934	139615	562	1405	248	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		29016794	6898053	7532	18830	916		
403.8529	32.070	32.067	0		23924617	5677861	8830	22075	643	1.21(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	22935871	5591026	7532	18830	742		
403.8529	31.631	31.631	0	0.986	18455767	4566751	8830	22075	517	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	606908	163932	725	1812	226		
391.8127	31.644	31.647	0	1.000	479202	120418	561	1402	215	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	28568934	6776183	7532	18830	900		
403.8529	31.737	31.740	0	0.990	22731904	5391682	8830	22075	611	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	678278	161129	725	1812	222		
391.8127	31.750	31.756	0	1.000	540598	129703	561	1402	231	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	698192	166908	725	1812	230		
391.8127	32.083	32.081	0	1.014	579418	129354	561	1402	231	1.20(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.050	13076522	4036860	17282	43205	234		
419.8220	33.679	33.684	0	1.050	31096202	9610968	38605	96512	249	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	803164	241501	1368	3420	177		
409.7789	33.691	33.694	0	1.000	766267	228291	1181	2952	193	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.749	34.751	0	1.084	11792323	3269167	17282	43205	189		
419.8220	34.749	34.751	0	1.084	26843142	7361380	38605	96512	191	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	684290	181563	1368	3420	133		
409.7789	34.761	34.763	0	1.000	654929	178452	1181	2952	151	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.457	34.464	0	1.074	23767396	6568207	14181	35452	463		
437.8140	34.457	34.464	0	1.074	22660453	6275329	13587	33967	462	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	603635	174404	958	2395	182		
425.7737	34.469	34.474	0	1.000	595557	174022	692	1730	251	1.01(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	30510995	7267643	4698	11745	1547		
471.7750	36.779	36.784	0	1.147	33824654	7894909	5961	14902	1324	0.90(0.76-1.02)	
OCDF											
441.7428	36.875	36.882	0	1.003	1073527	253448	666	1665	381		
443.7399	36.875	36.882	0	1.003	1214127	284662	820	2050	347	0.88(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	905814	204726	430	1075	476		
459.7348	36.791	36.791	0	1.000	1015890	236753	439	1097	539	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d				
Injection Date:	17-Sep-2020 16:09:46	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	17.91
Area:	145499
Amount:	0.500000
Amount Units:	pg/ul

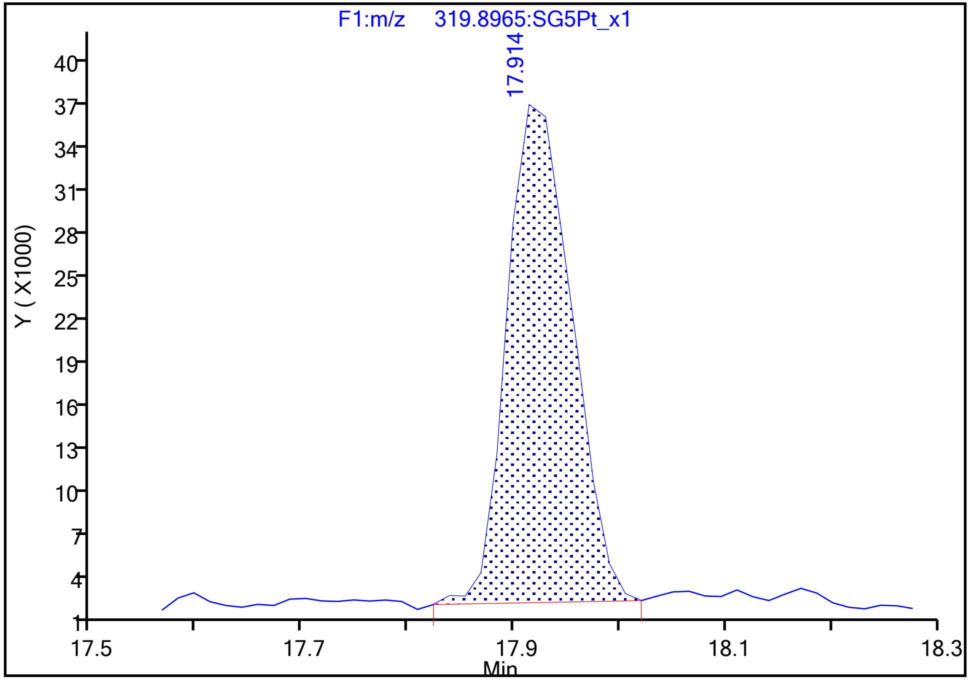

Manual Integration Results

RT:	17.91
Area:	150442
Amount:	0.512033
Amount Units:	pg/ul

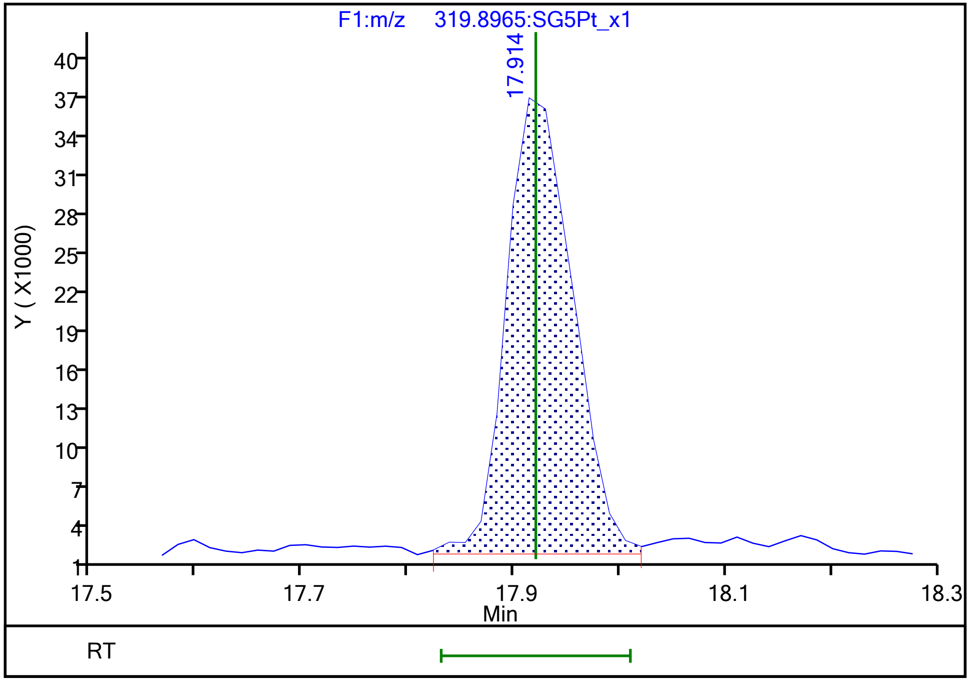

Reviewer: shardaa, 17-Sep-2020 17:16:26

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d				
Injection Date:	17-Sep-2020 16:09:46	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT:	17.91
Area:	227601
Amount:	0.500000
Amount Units:	pg/ul

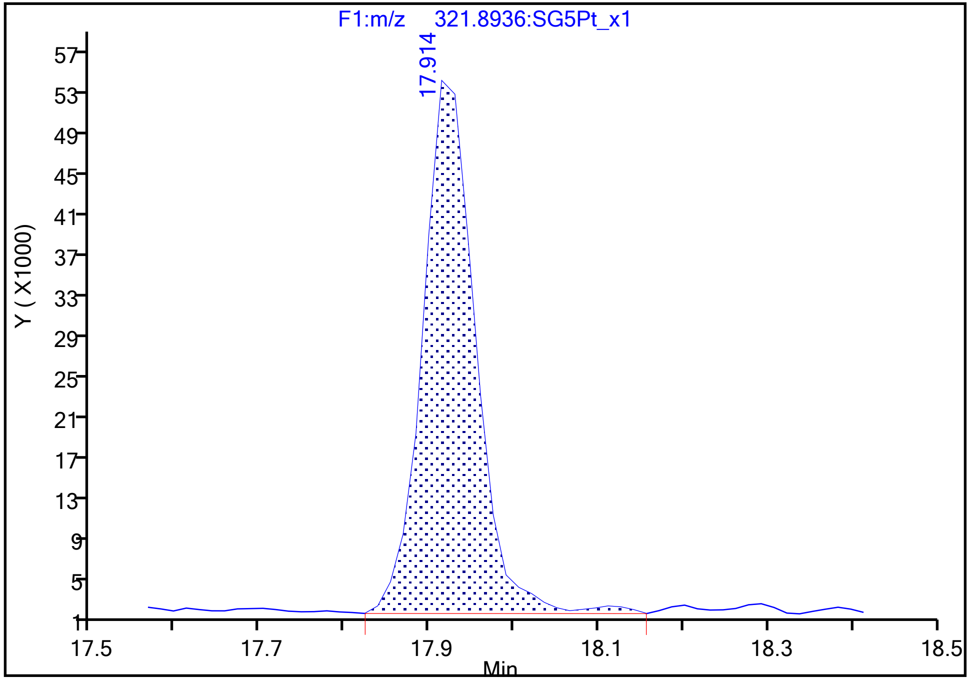

Manual Integration Results

RT:	17.91
Area:	222645
Amount:	0.512033
Amount Units:	pg/ul

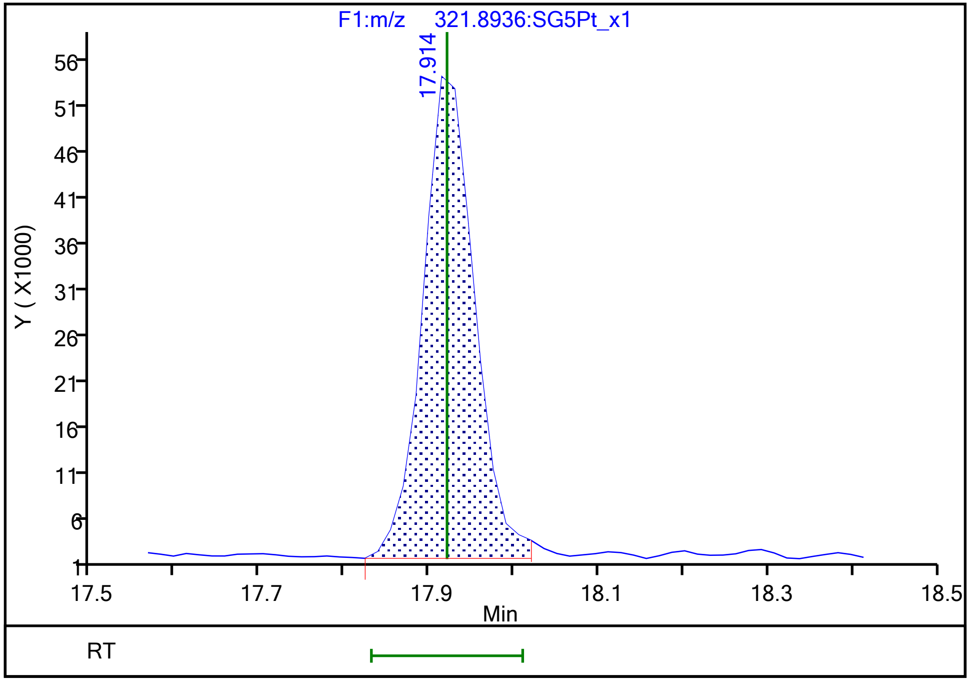

Reviewer: shardaa, 17-Sep-2020 17:16:37

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

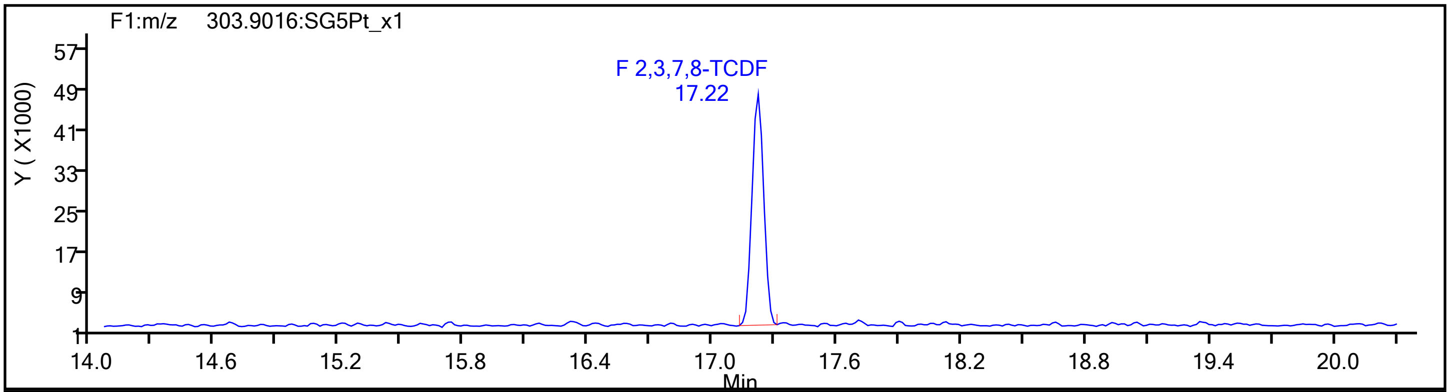

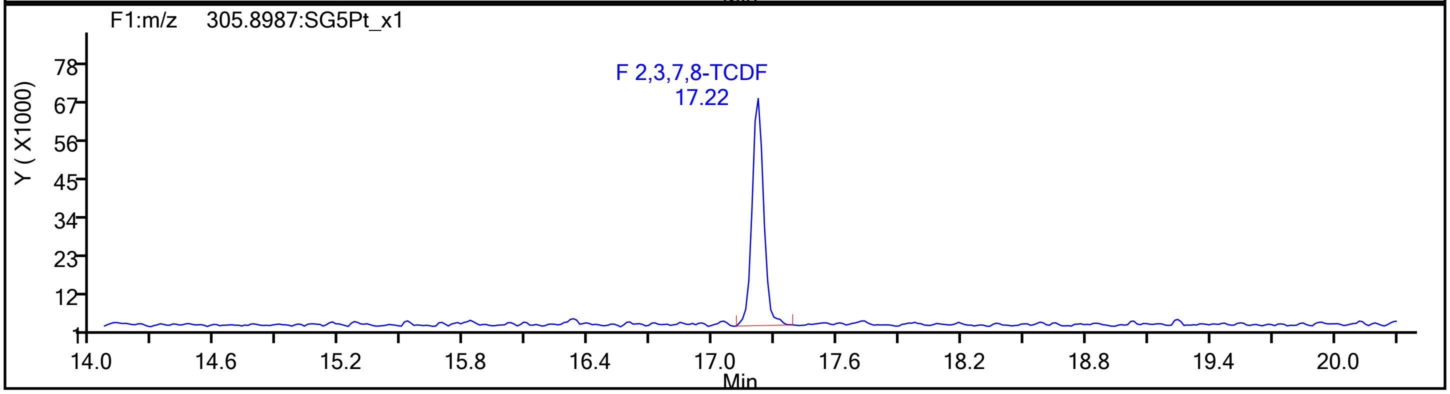

TCDF Standards

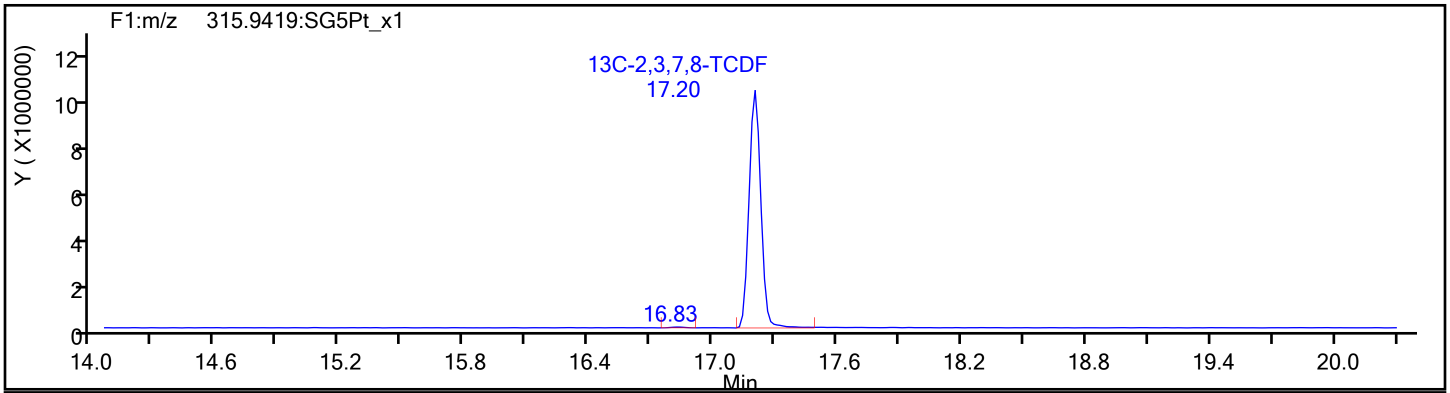

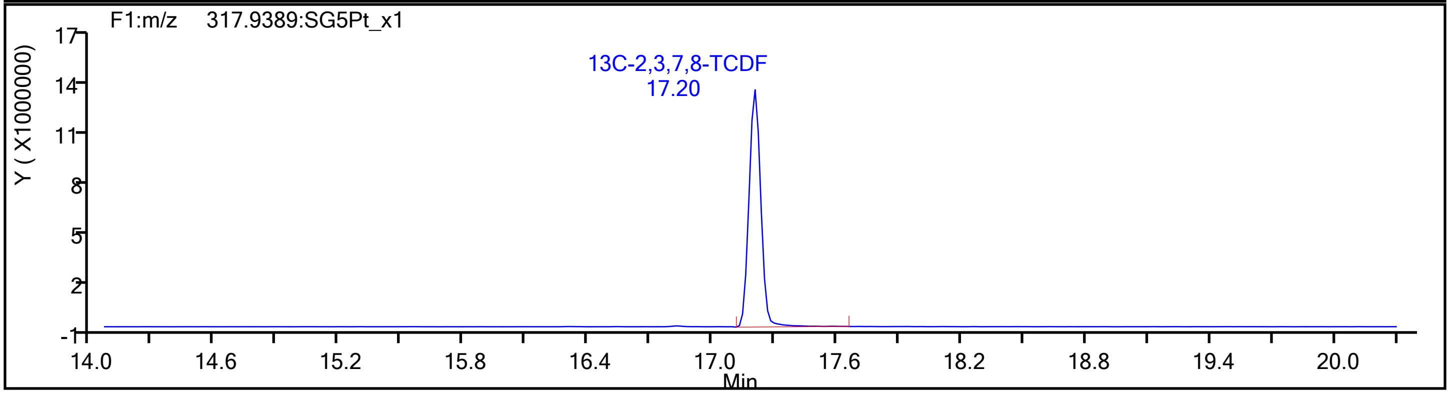

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

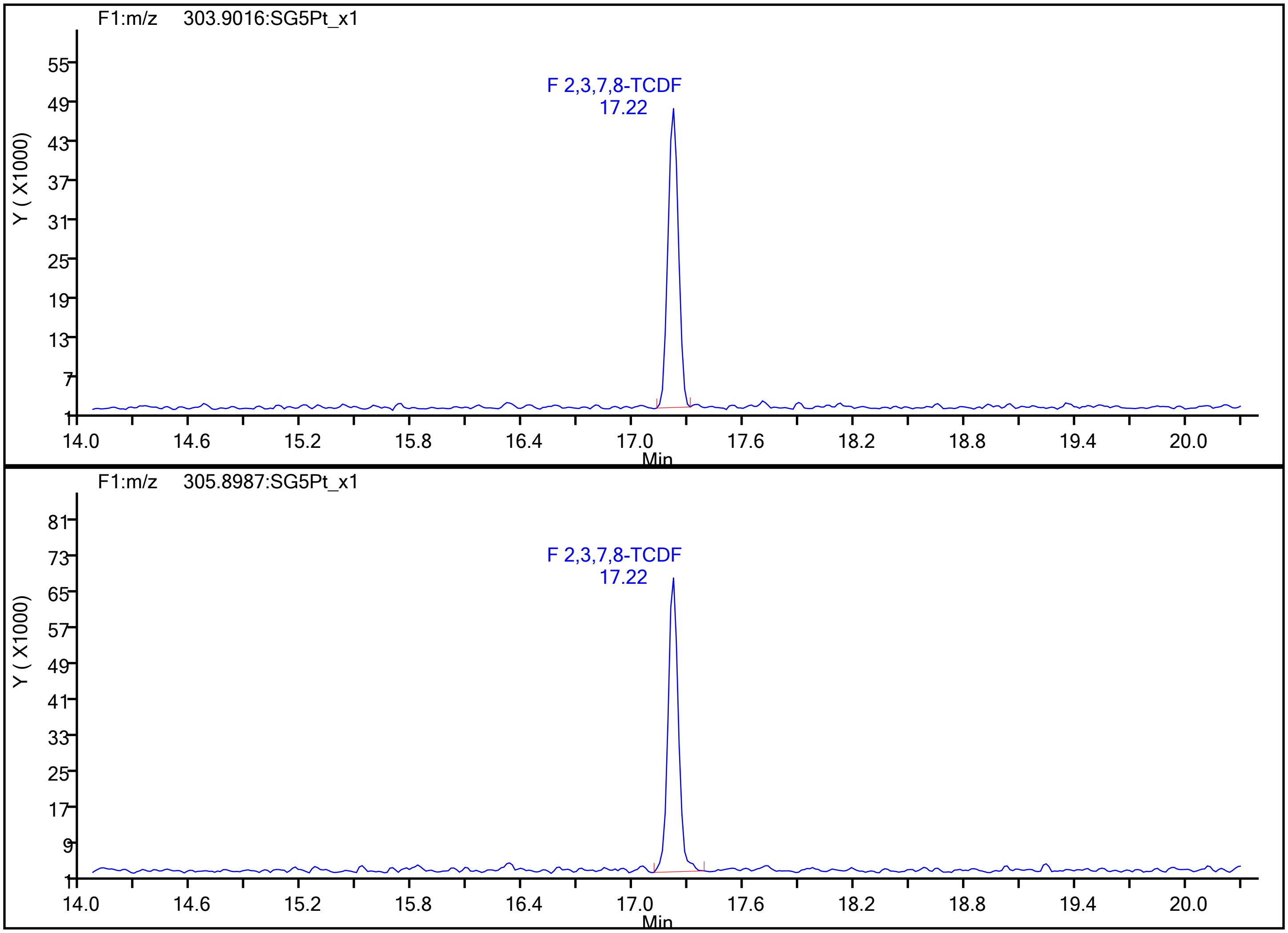

TCDF Interference Mass

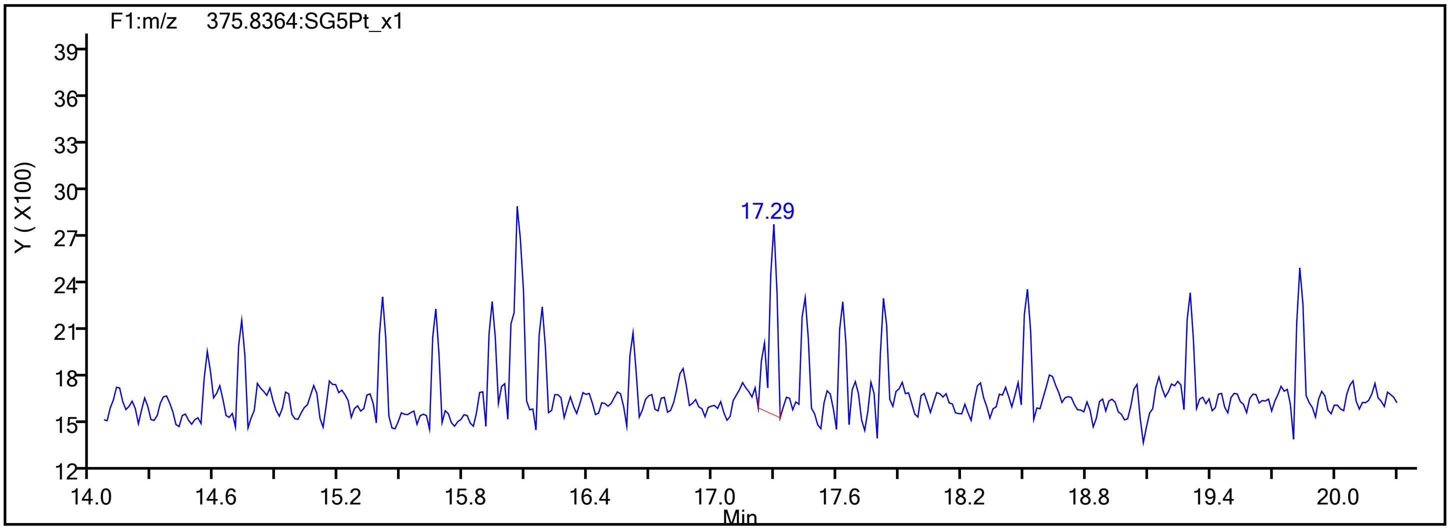

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

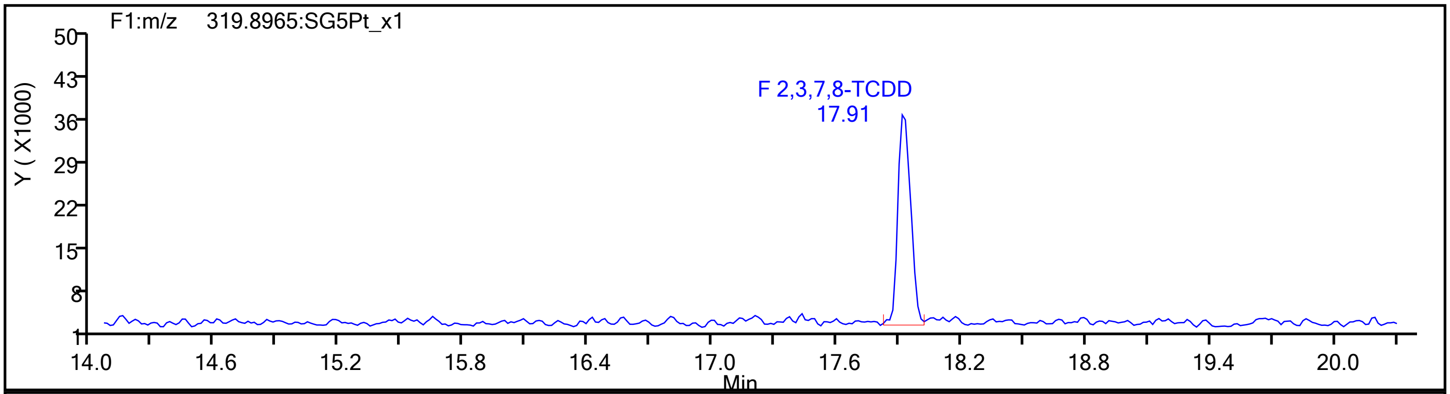

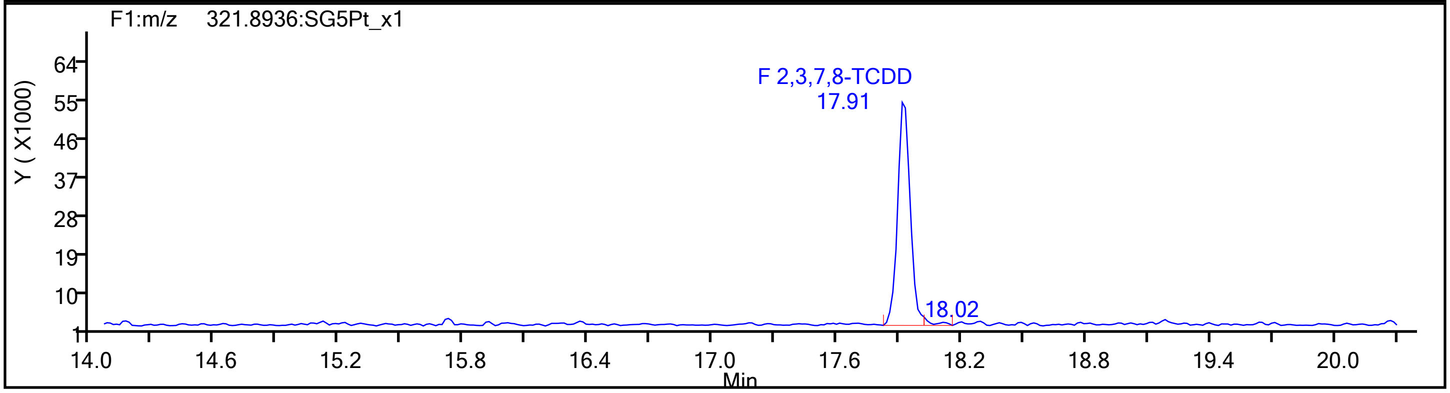

TCDD Standards

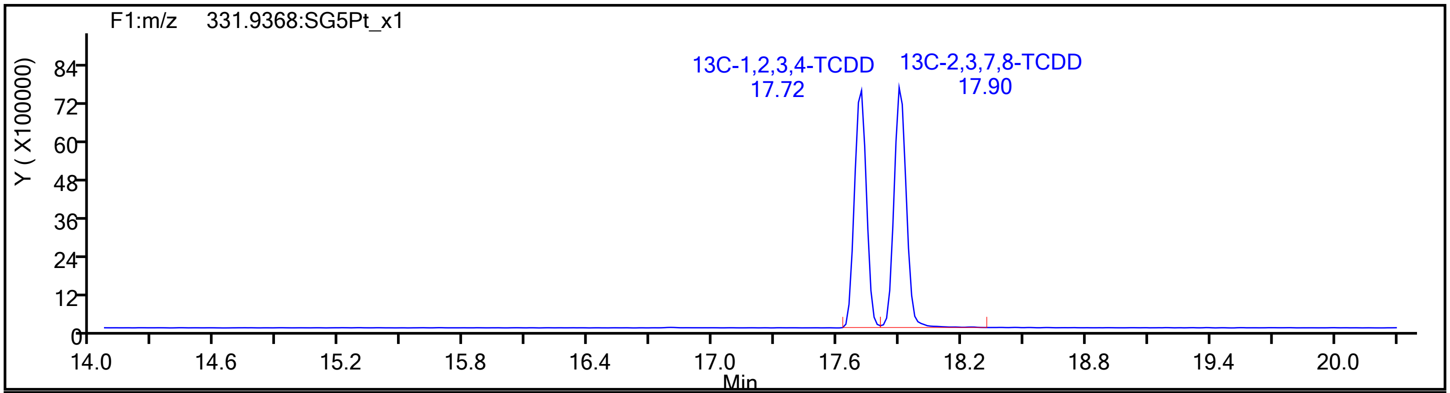

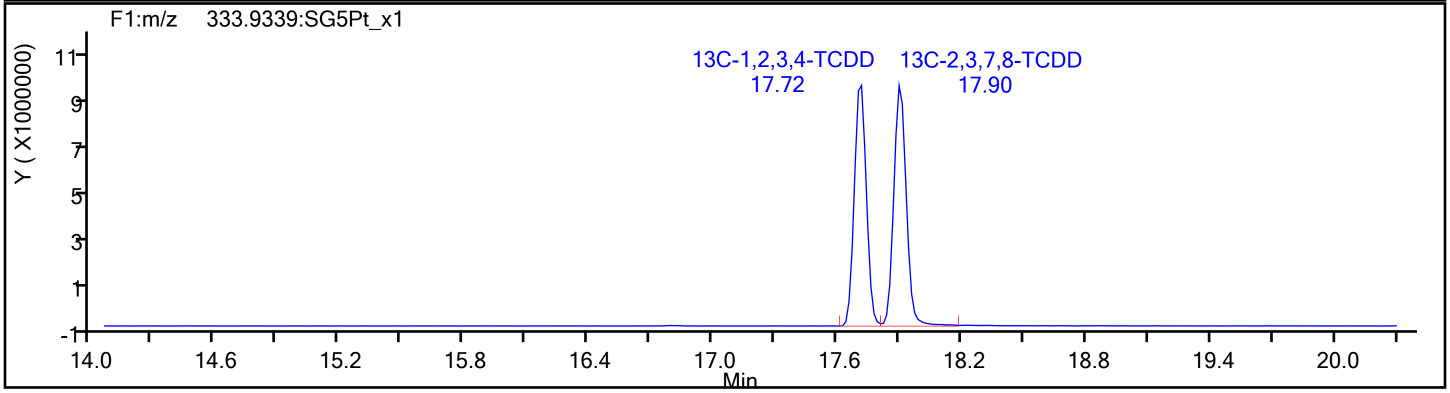

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

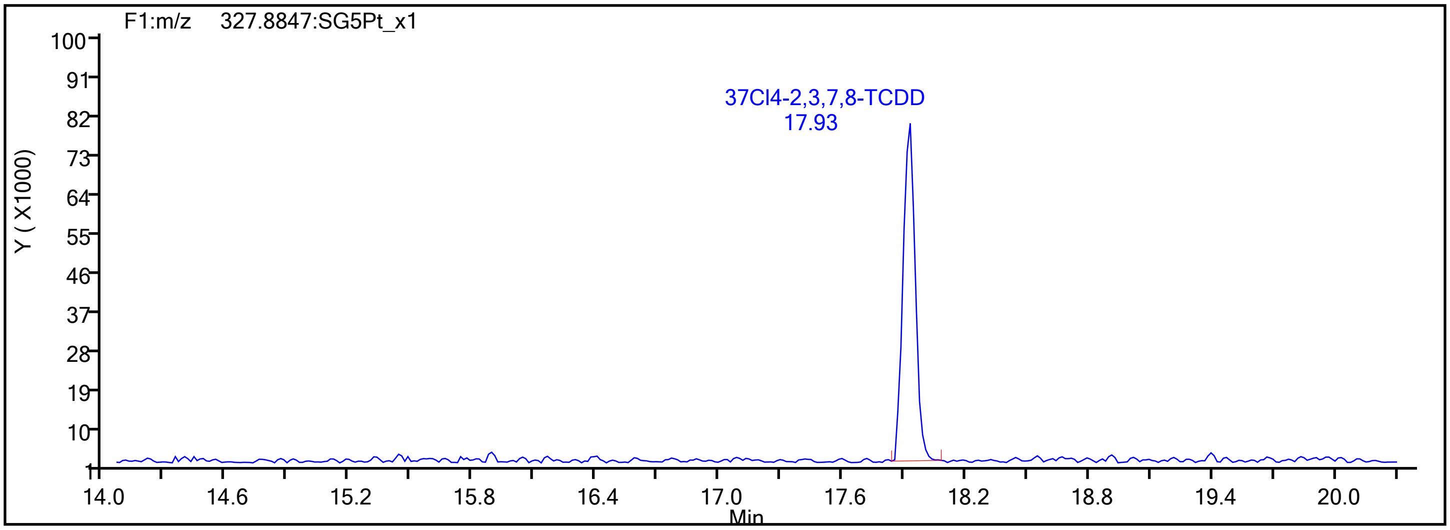

37Cl4-TCDD Standards

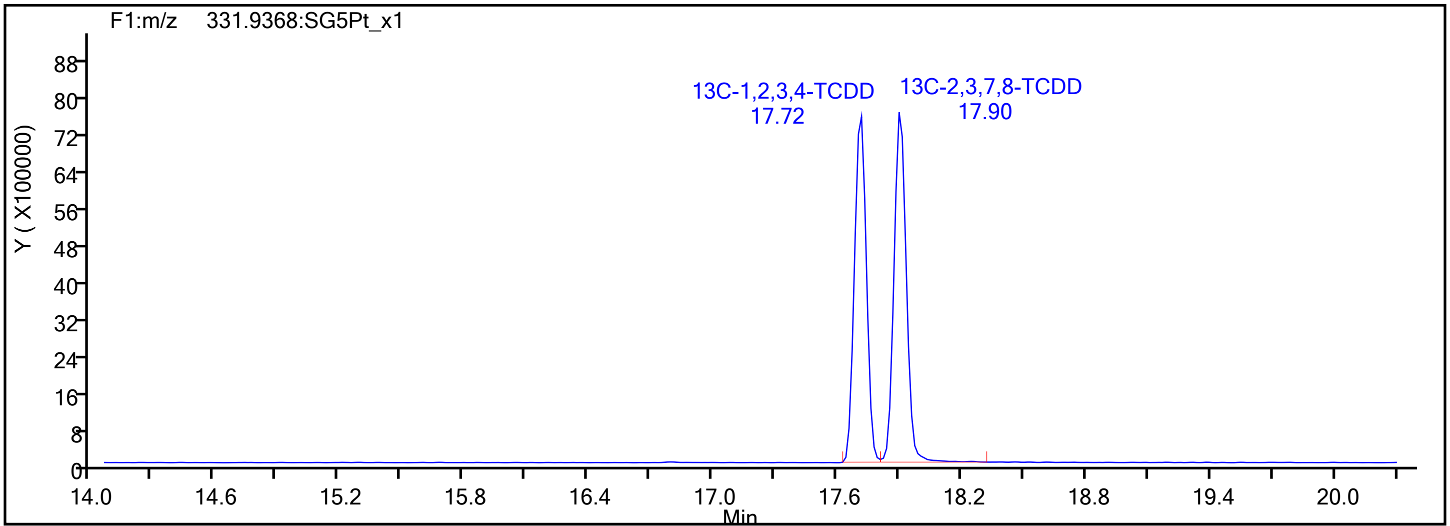

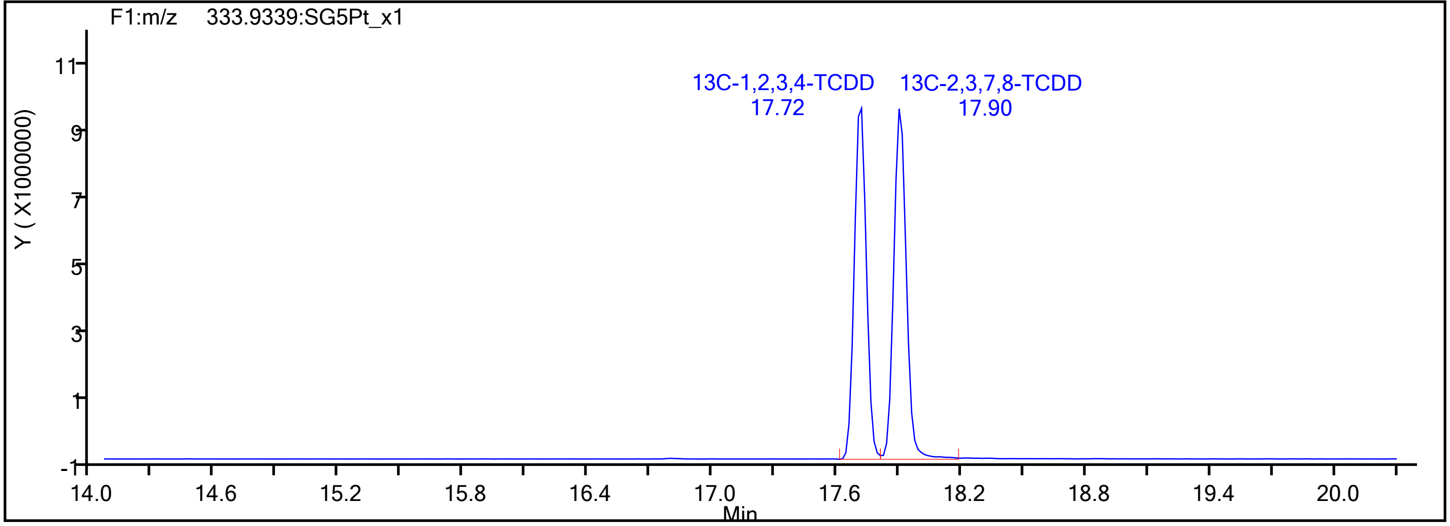

Report Date: 18-Sep-2020 10:35:40　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

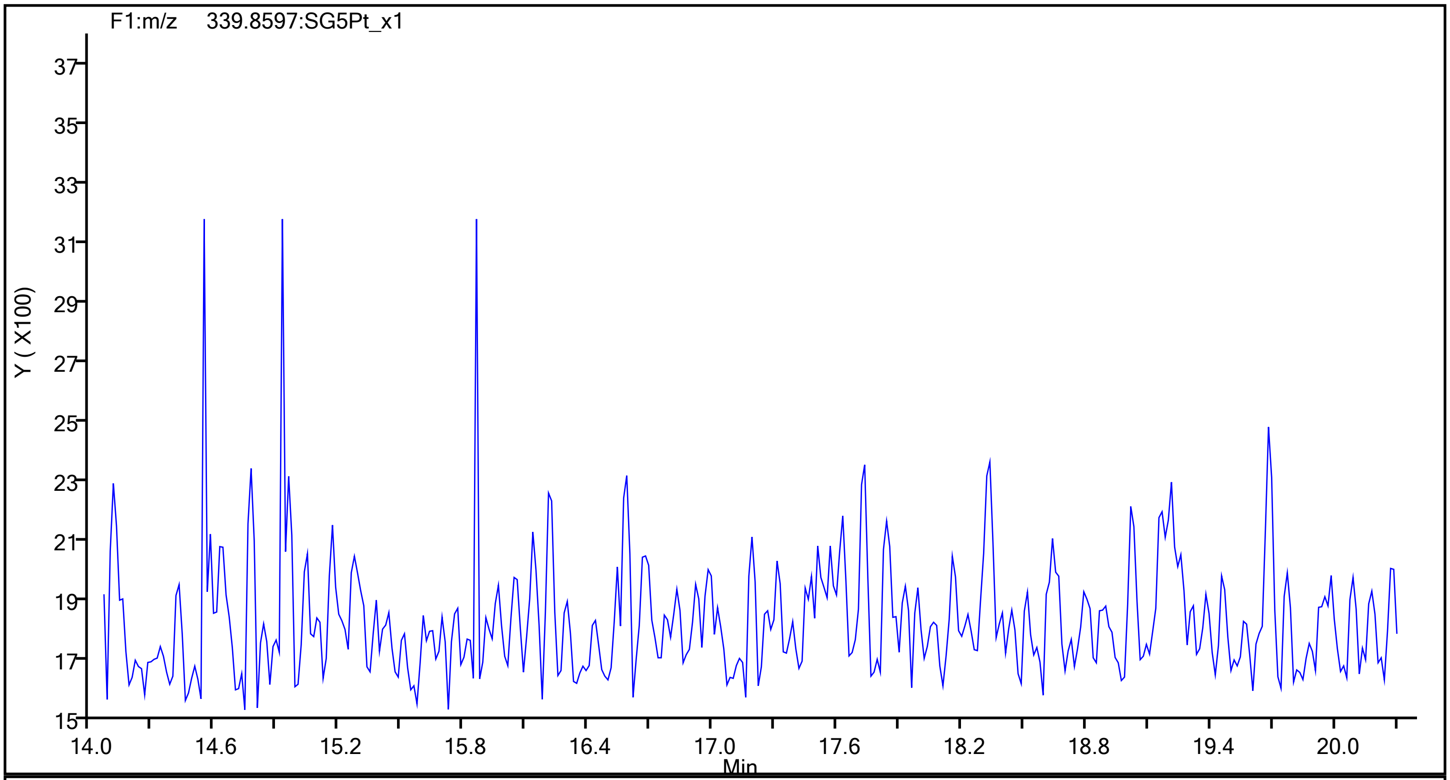

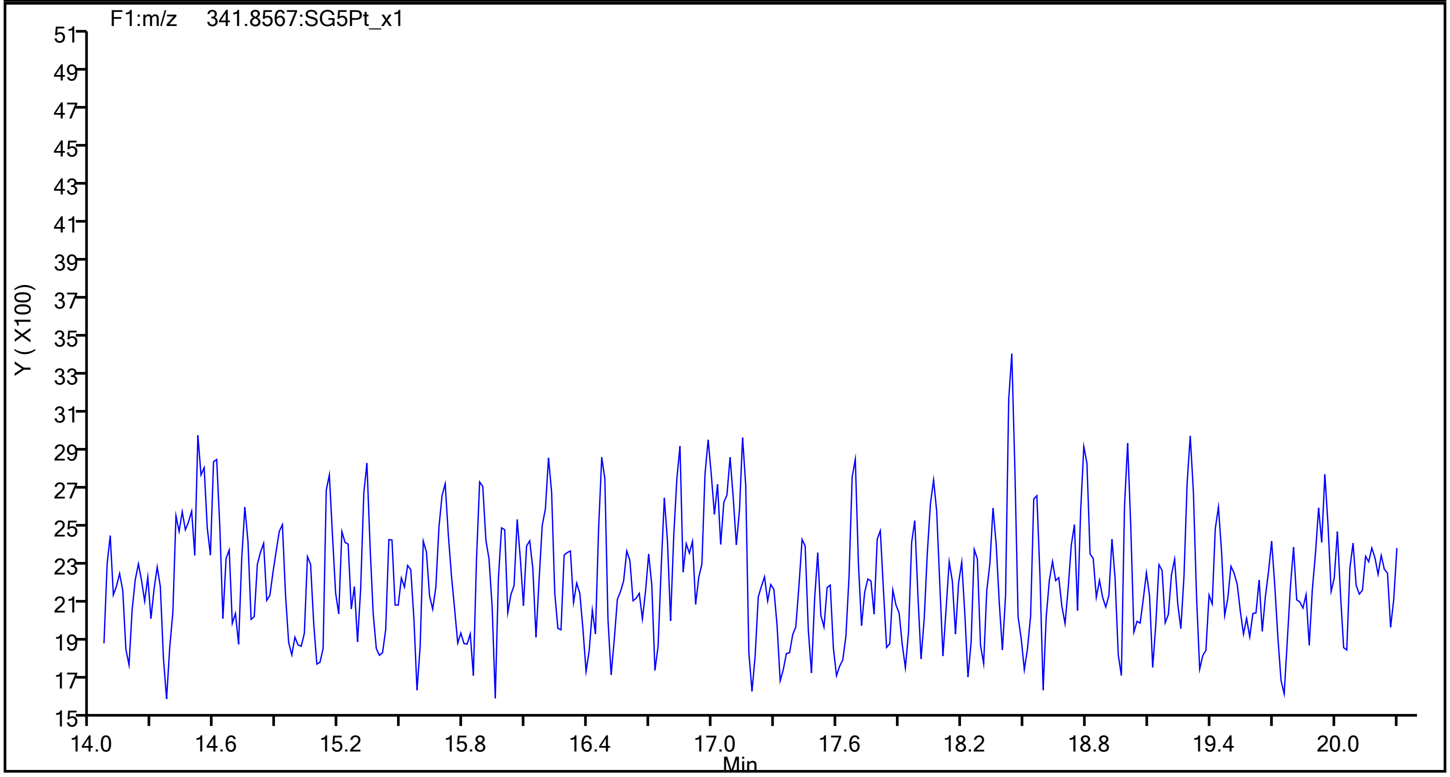

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

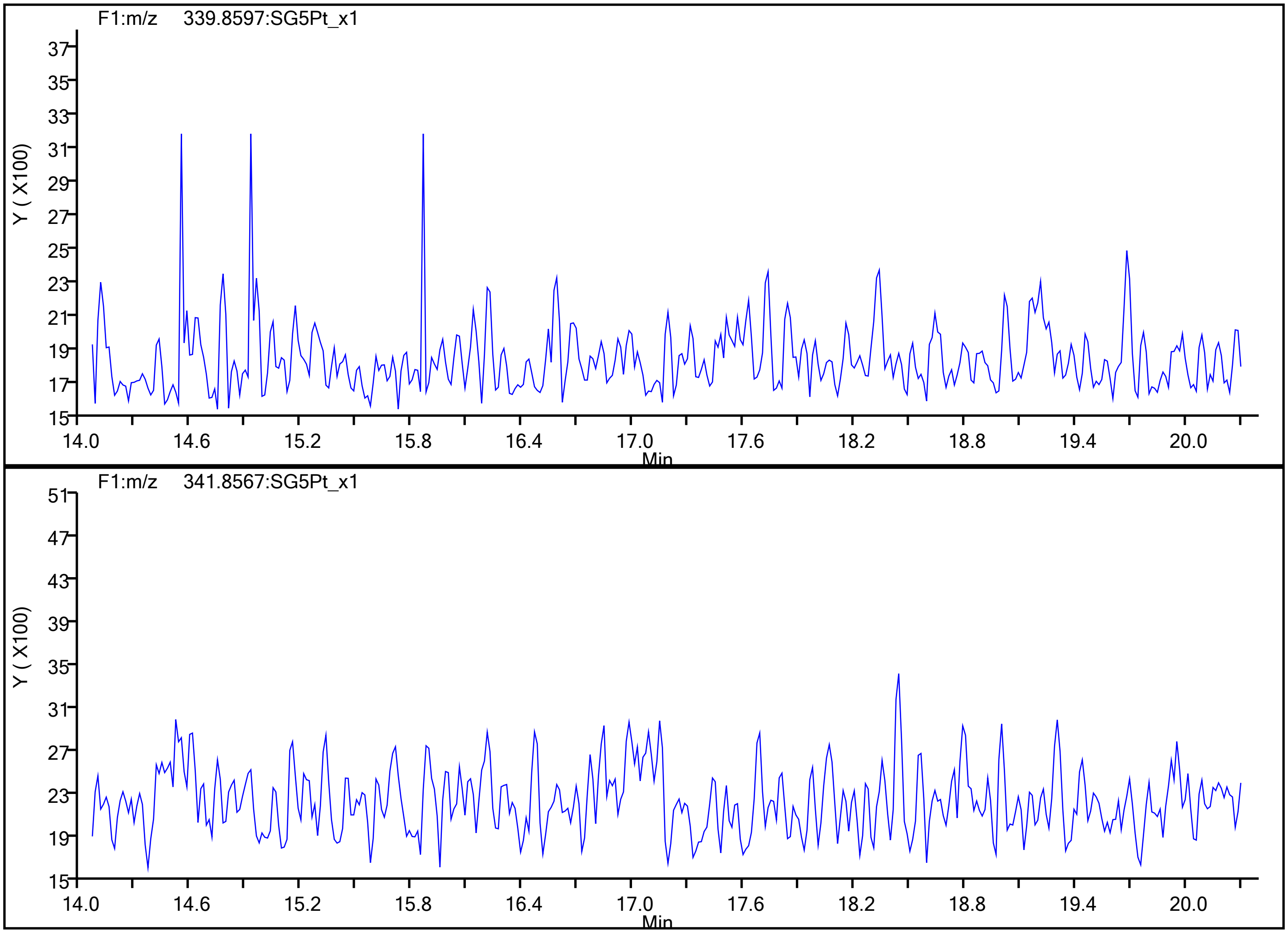

F1 PeCDFs Interference Mass

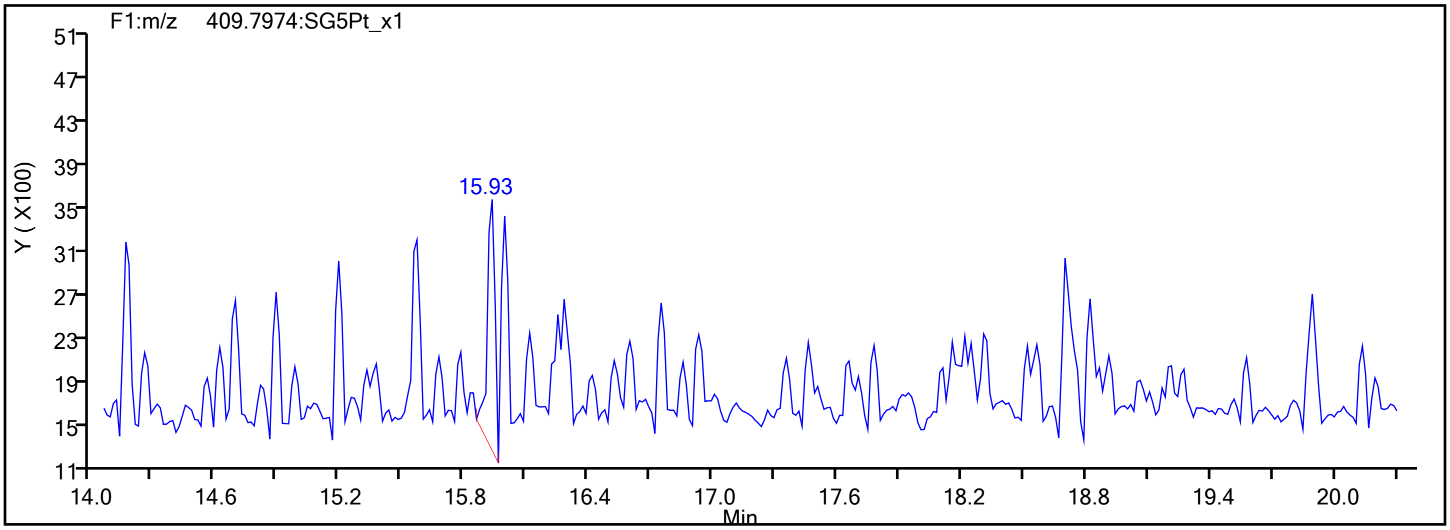

Report Date: 18-Sep-2020 10:35:40

Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
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Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

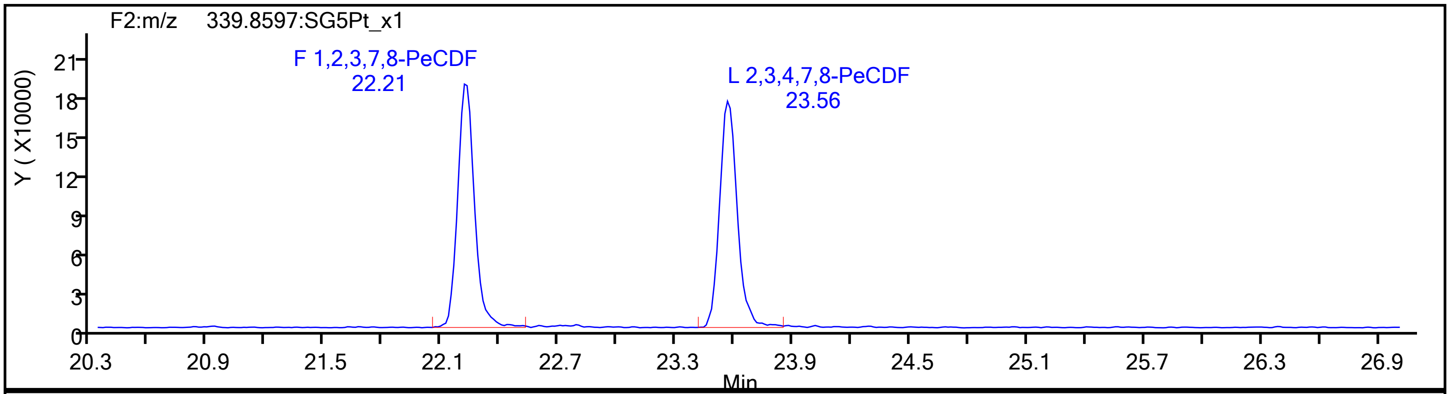

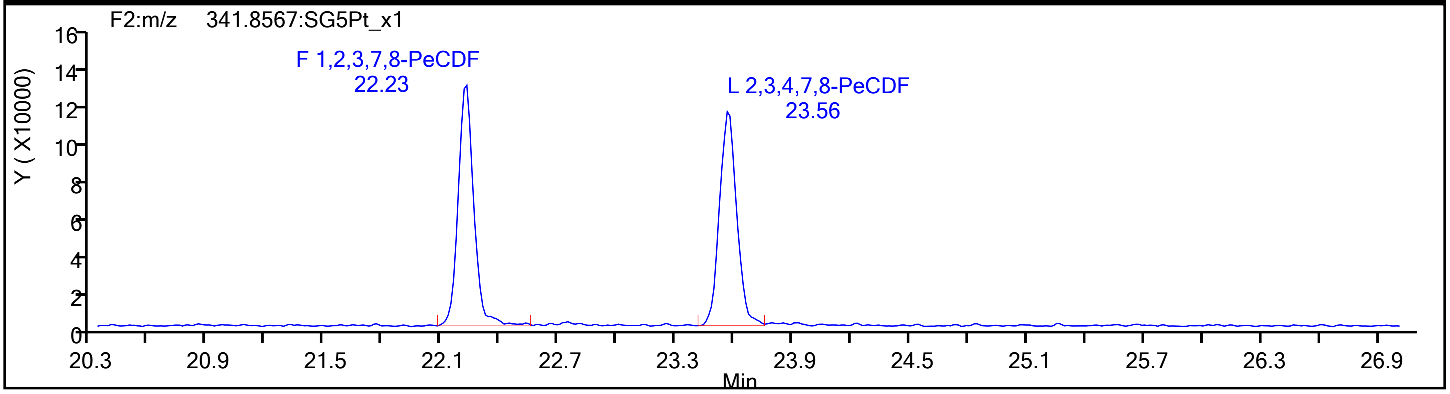

PeCDF Standards

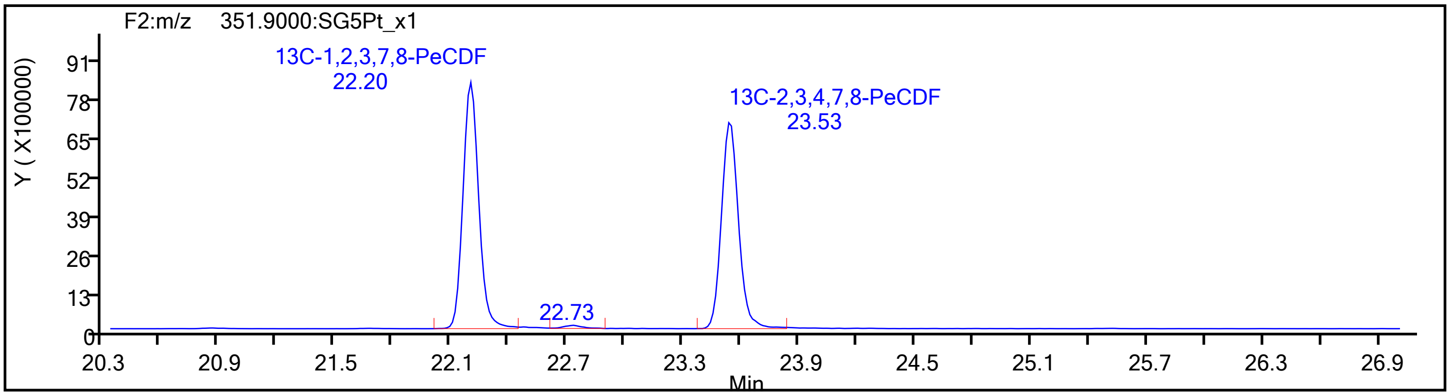

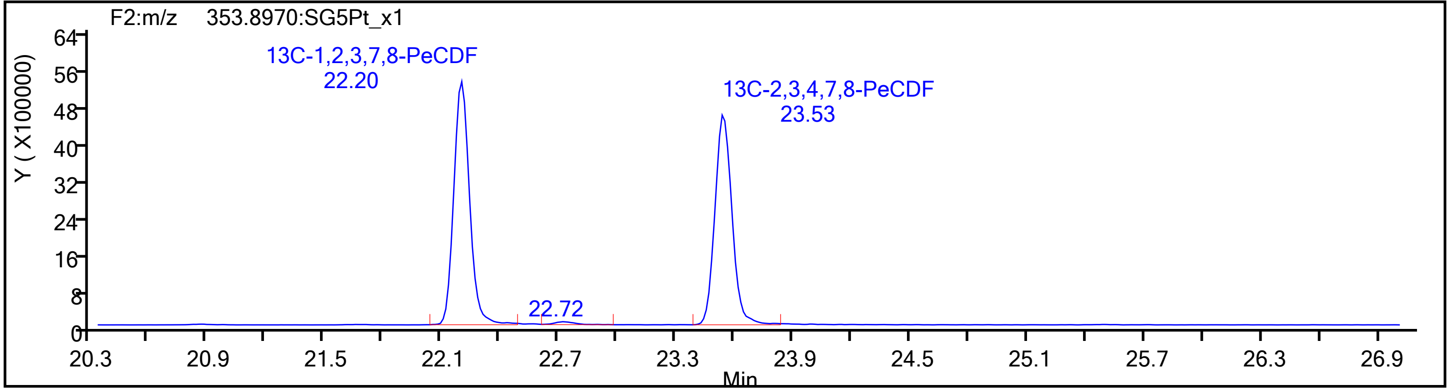

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

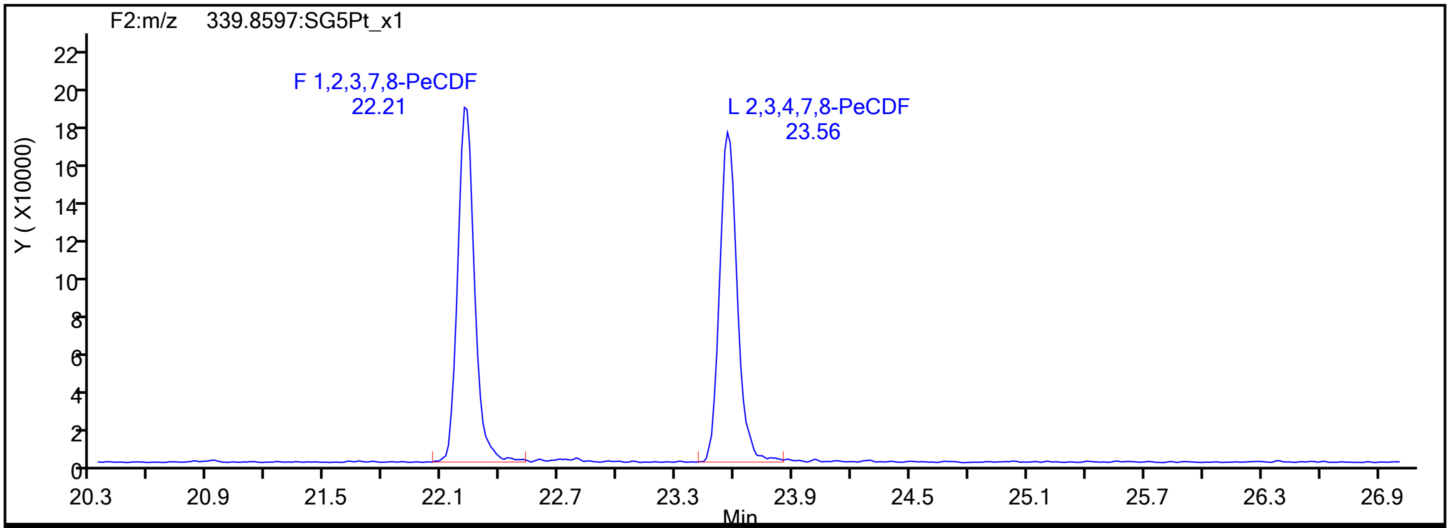

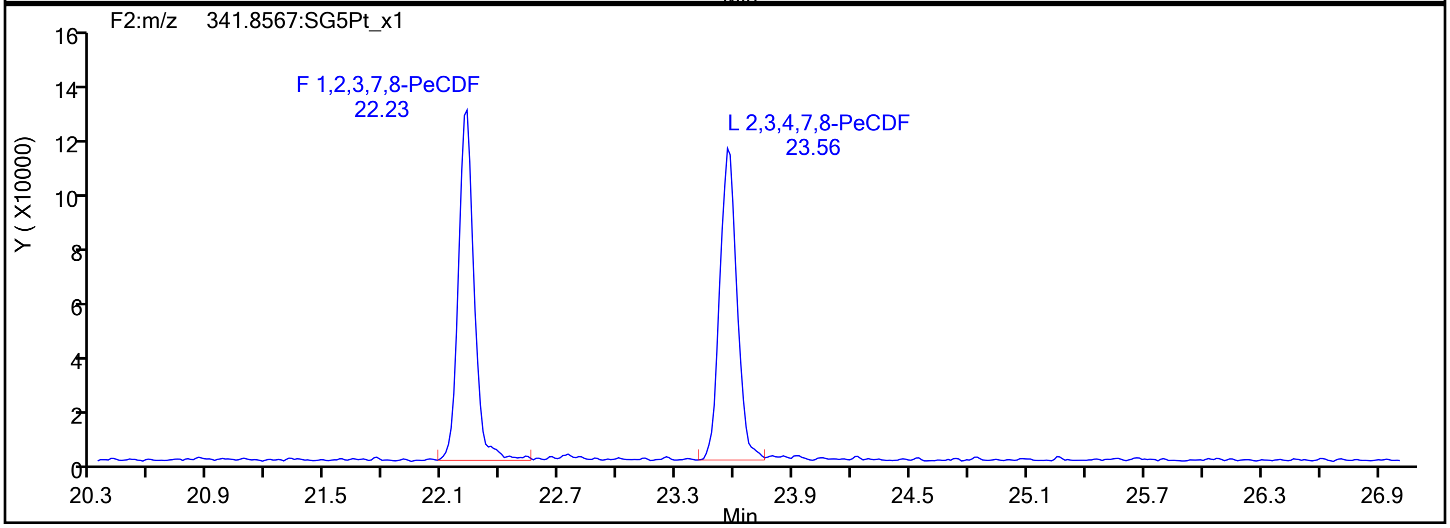

PeCDF Interference Mass

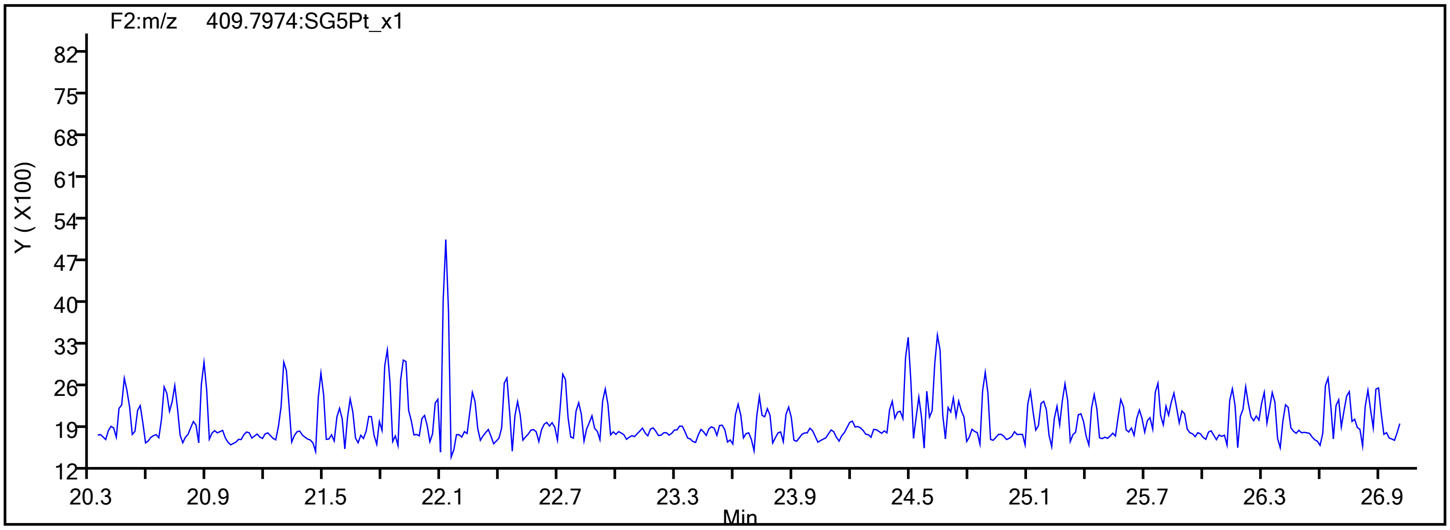

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

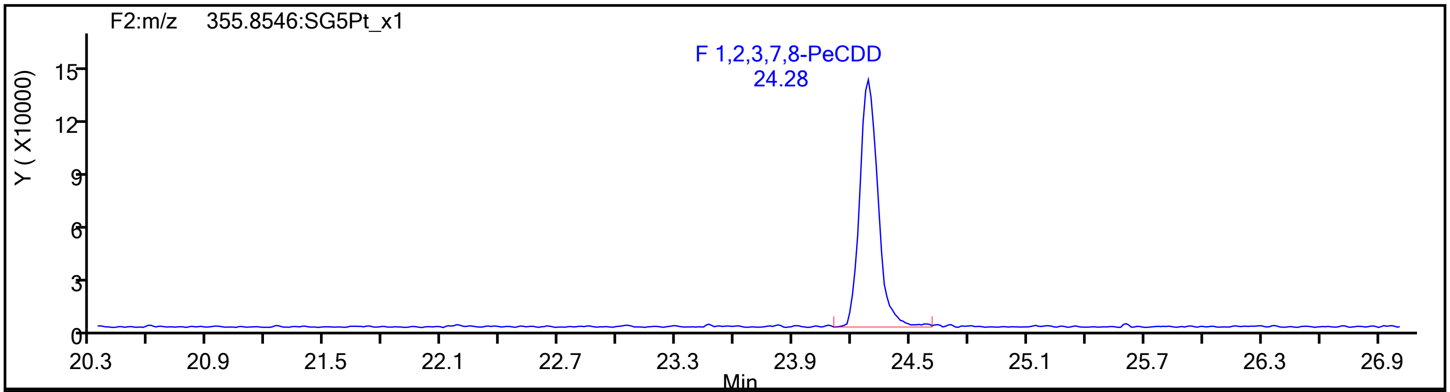

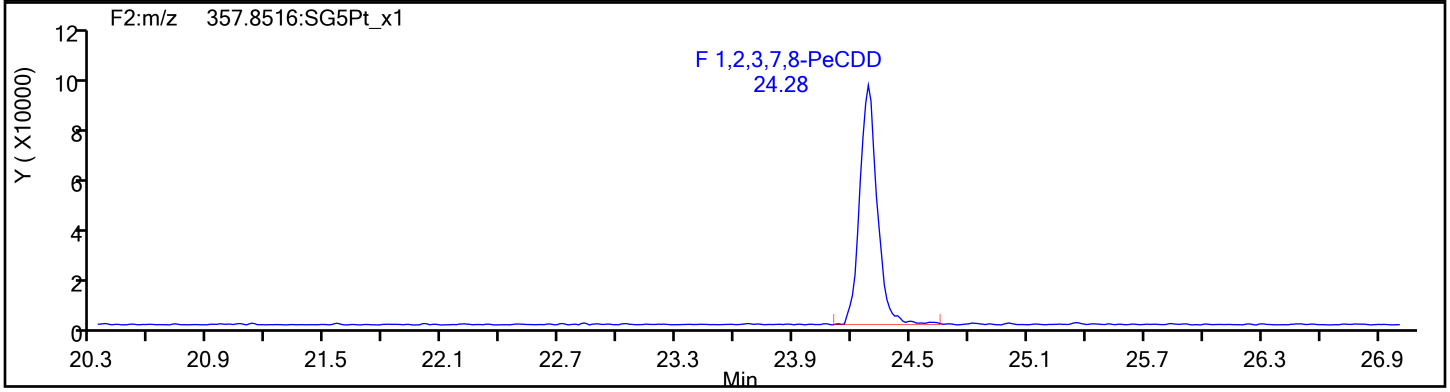

PeCDD Standards

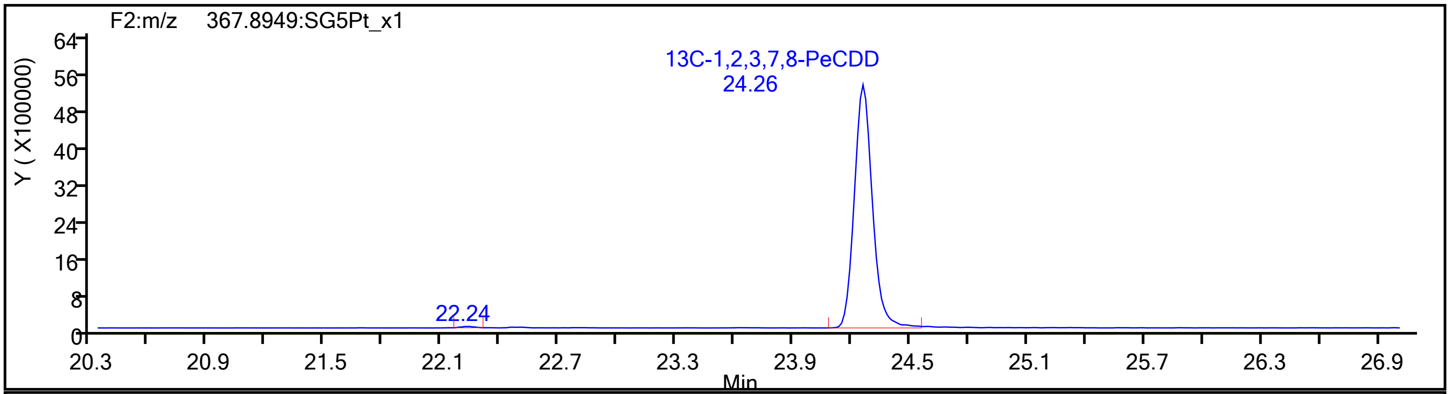

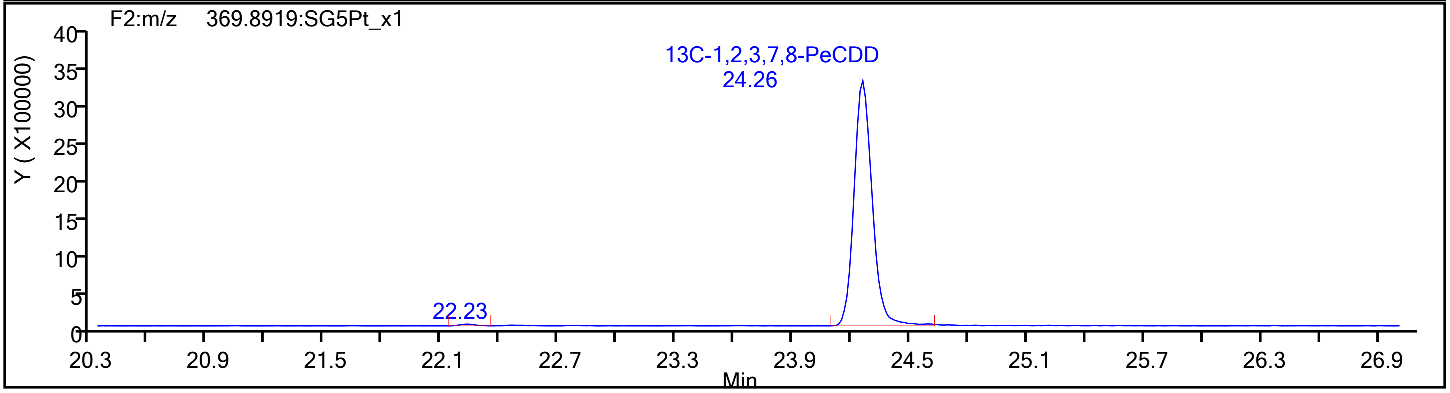

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

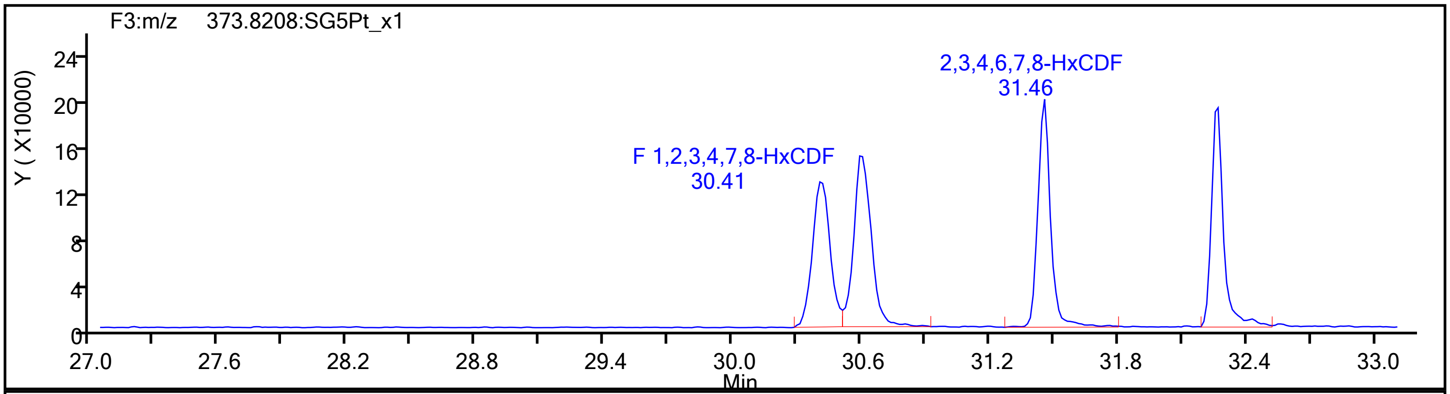

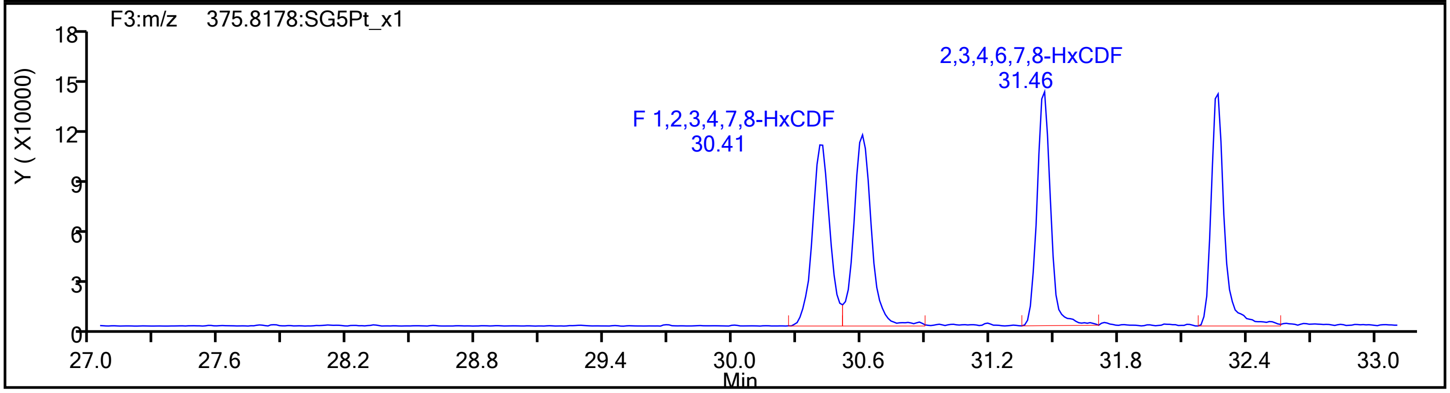

HxCDF Standards

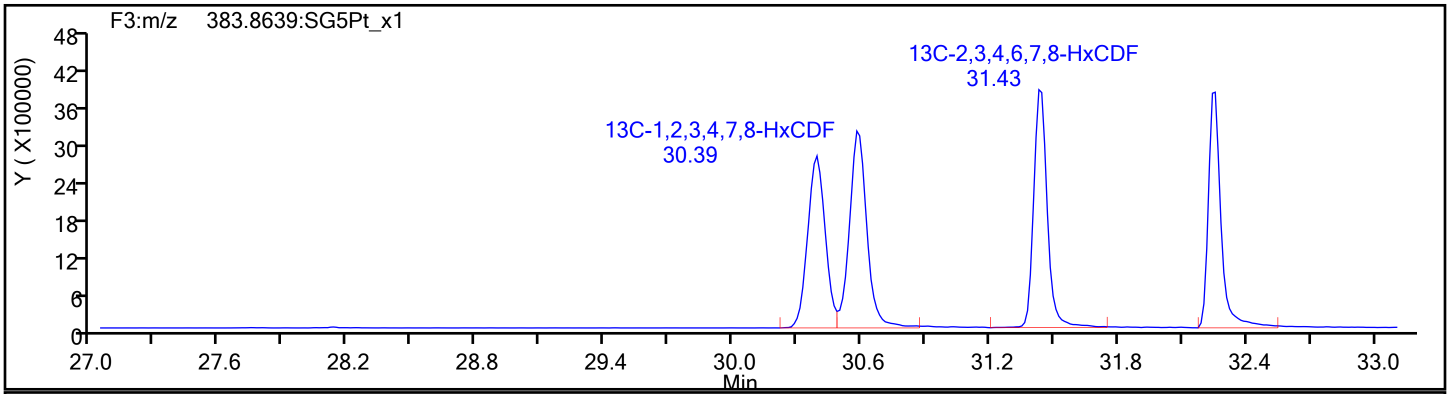

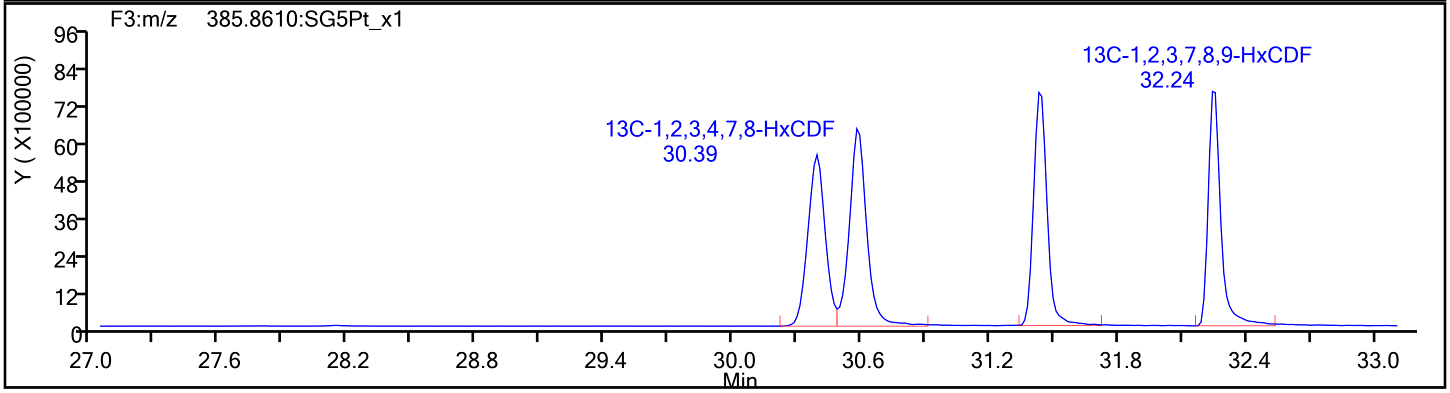

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

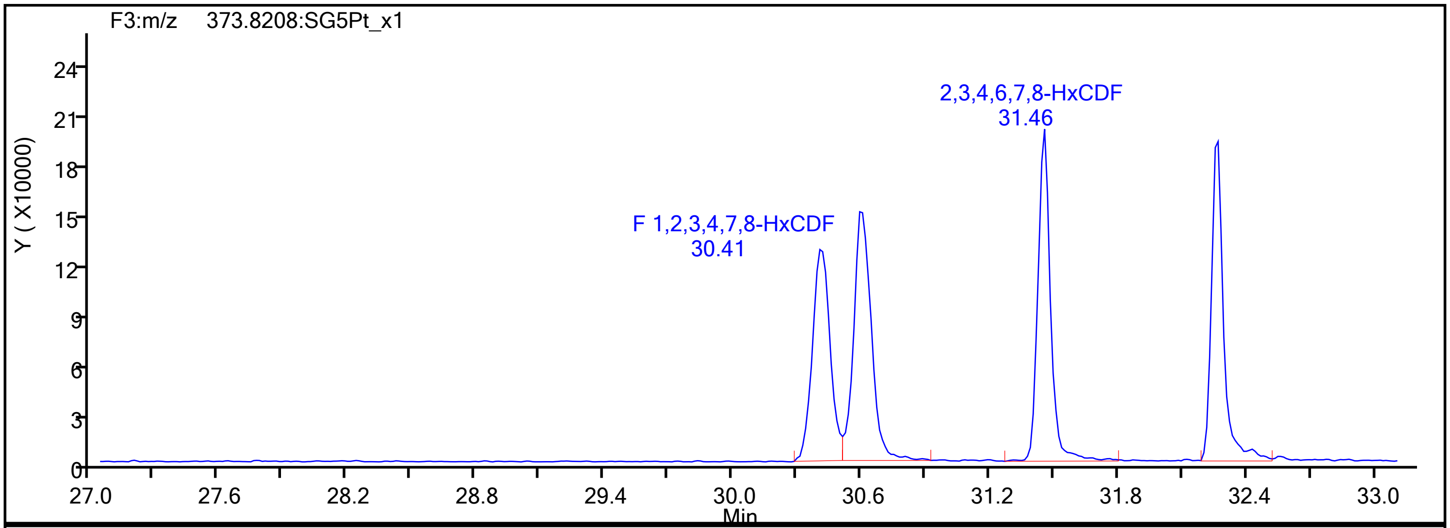

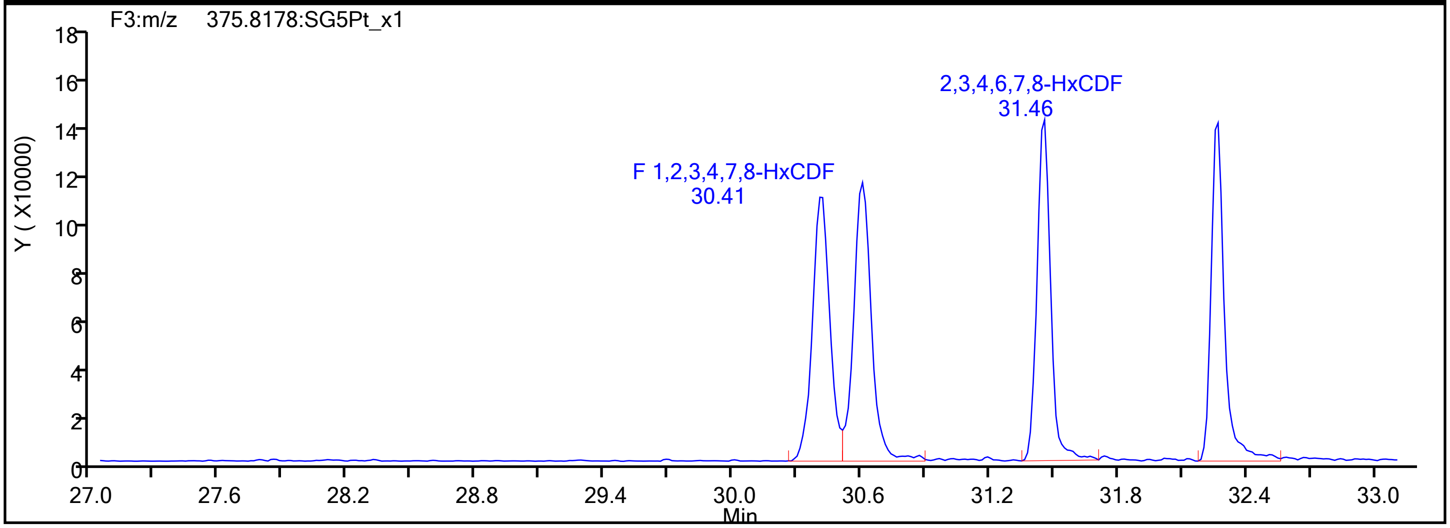

HxCDF Interference Mass

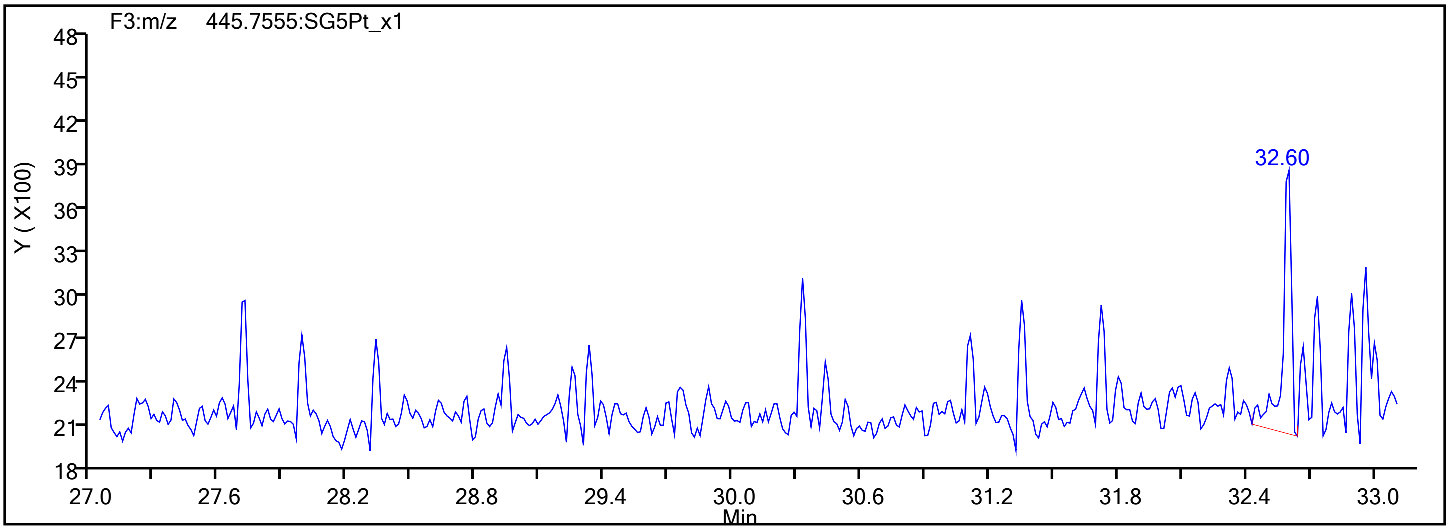

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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HxCDD

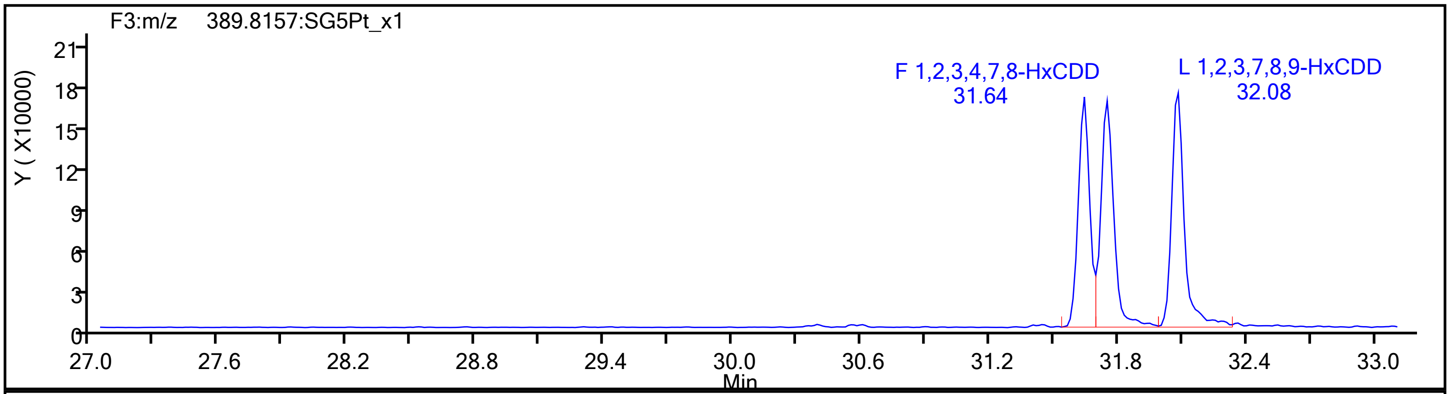

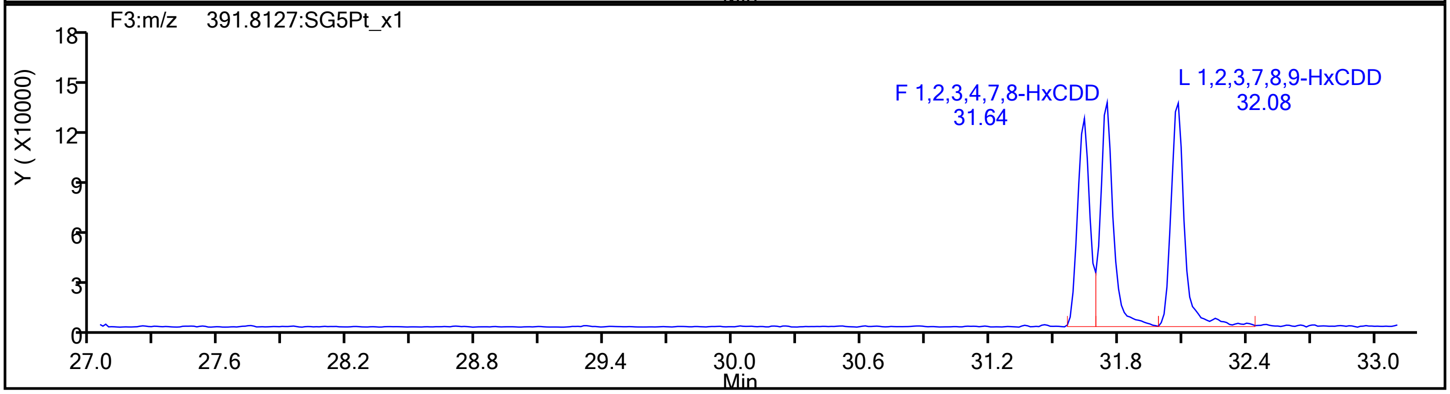

HxCDD Standards

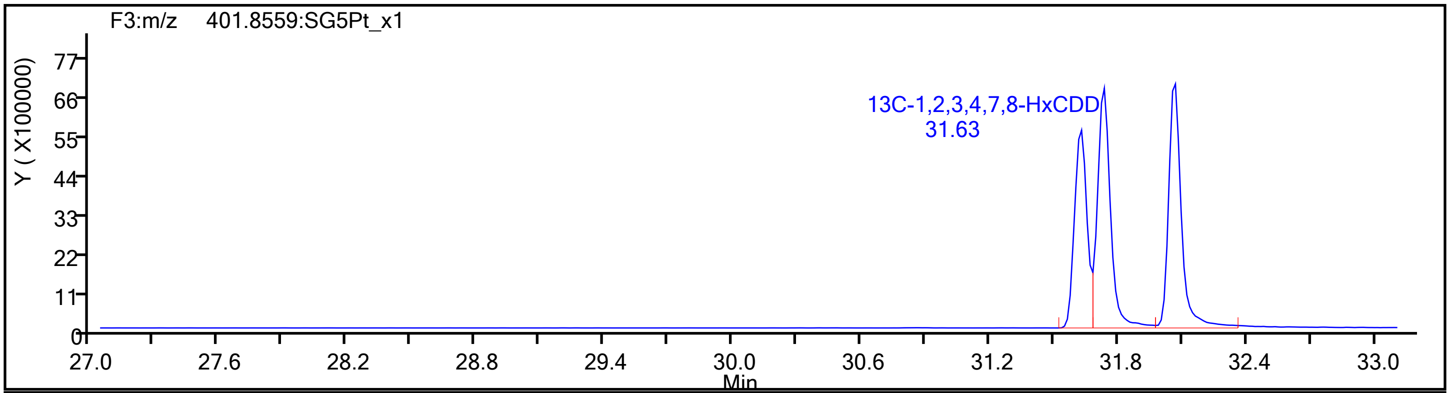

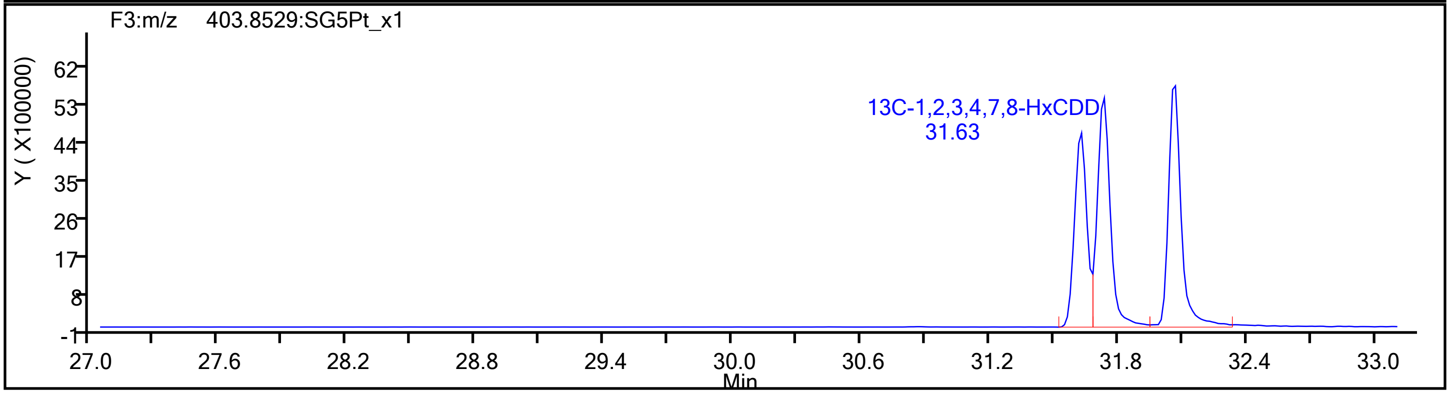

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

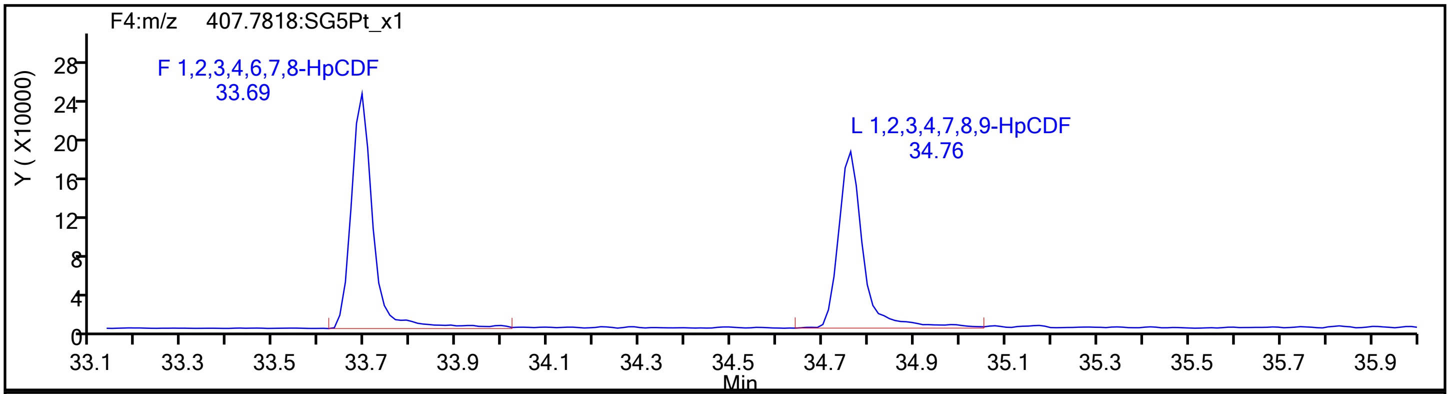

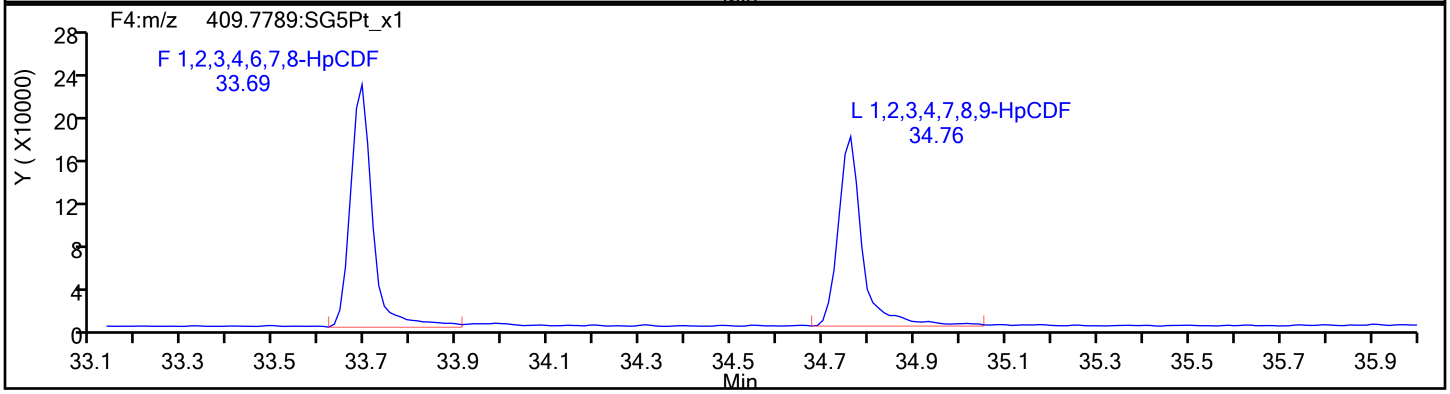

HpCDF Standards

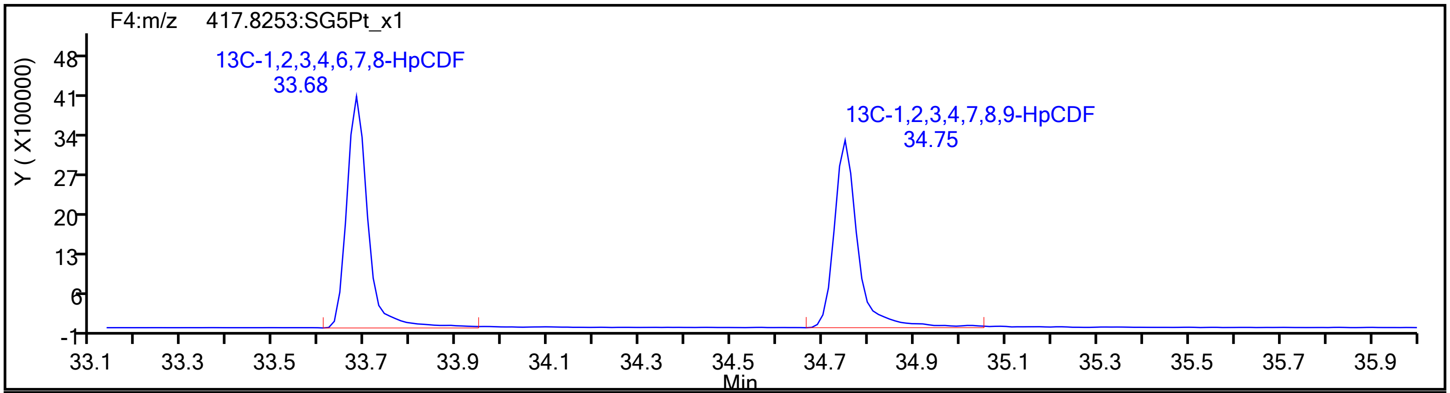

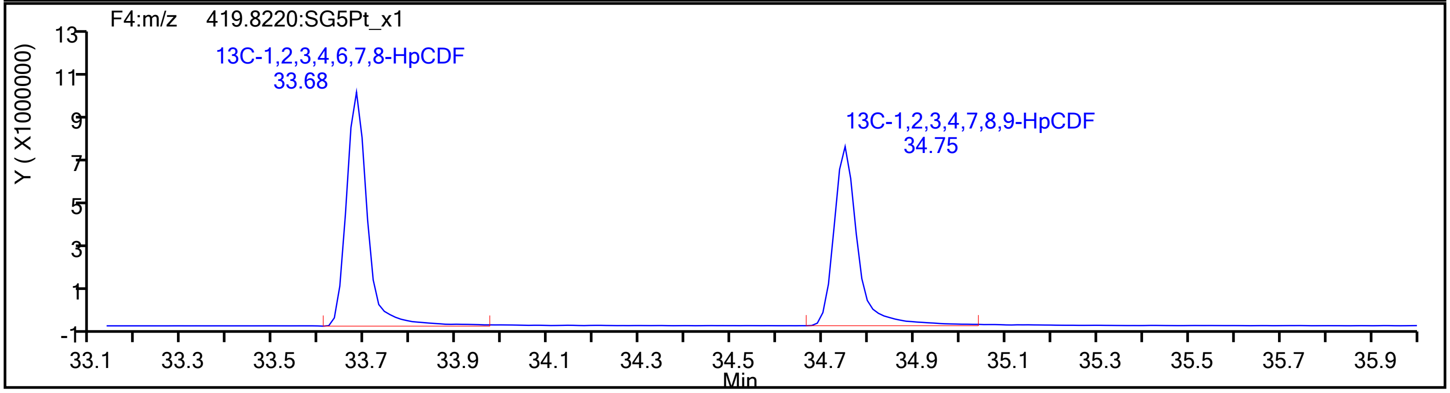

Report Date: 18-Sep-2020 10:35:40		Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

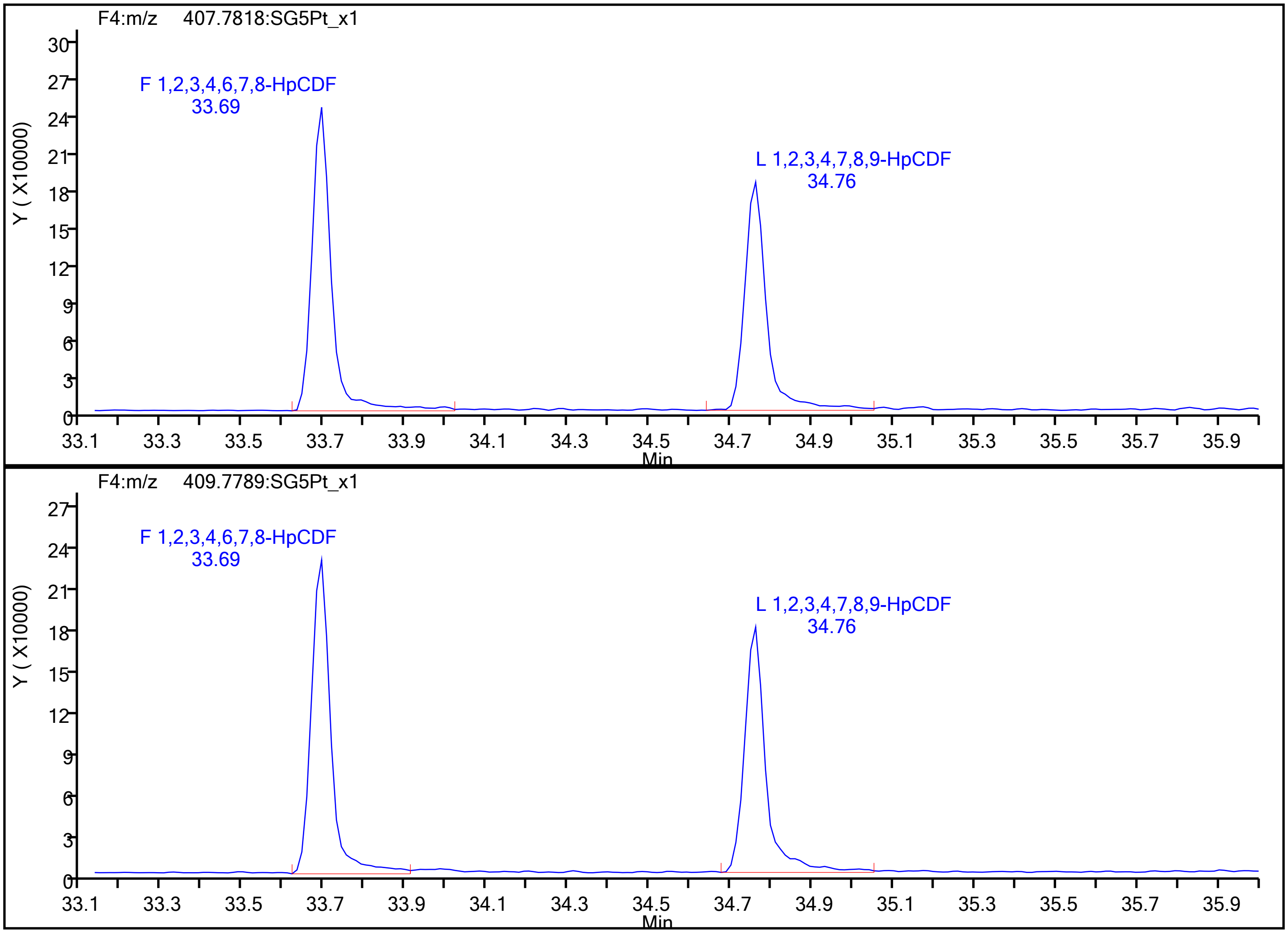

HpCDF Interference Mass

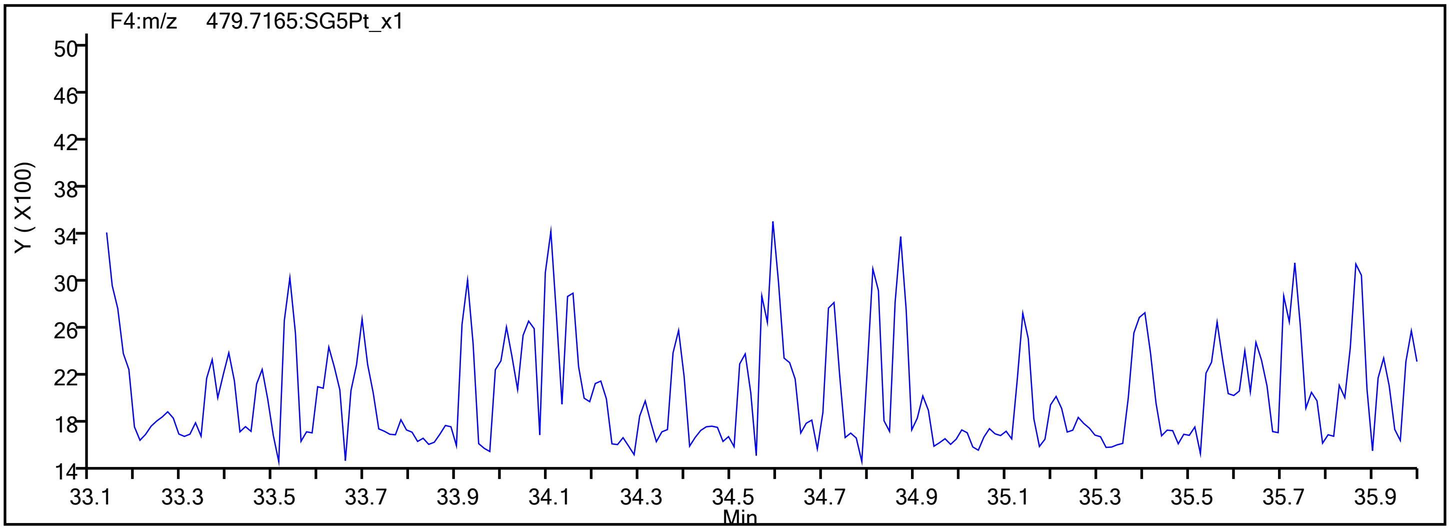

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

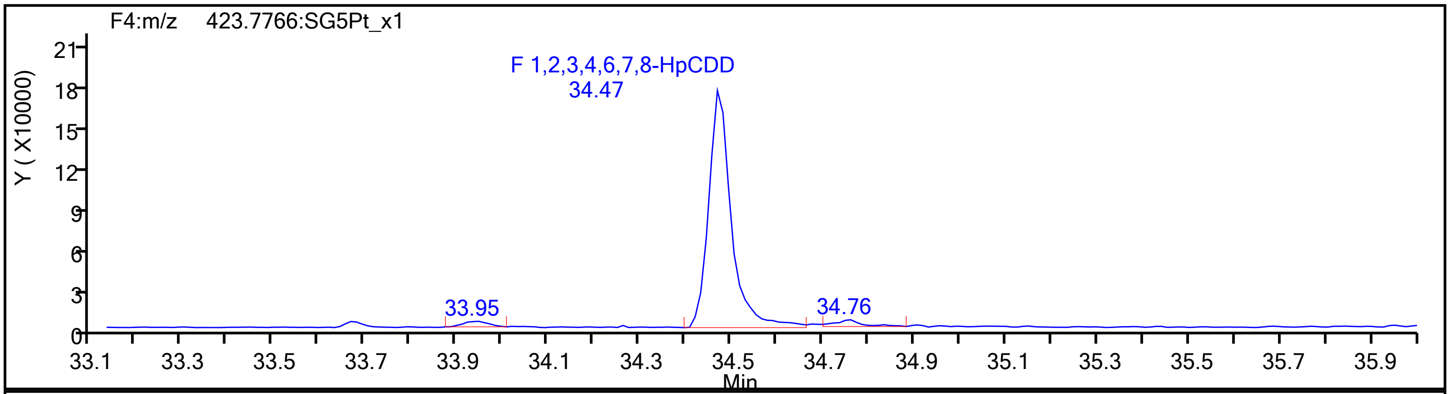

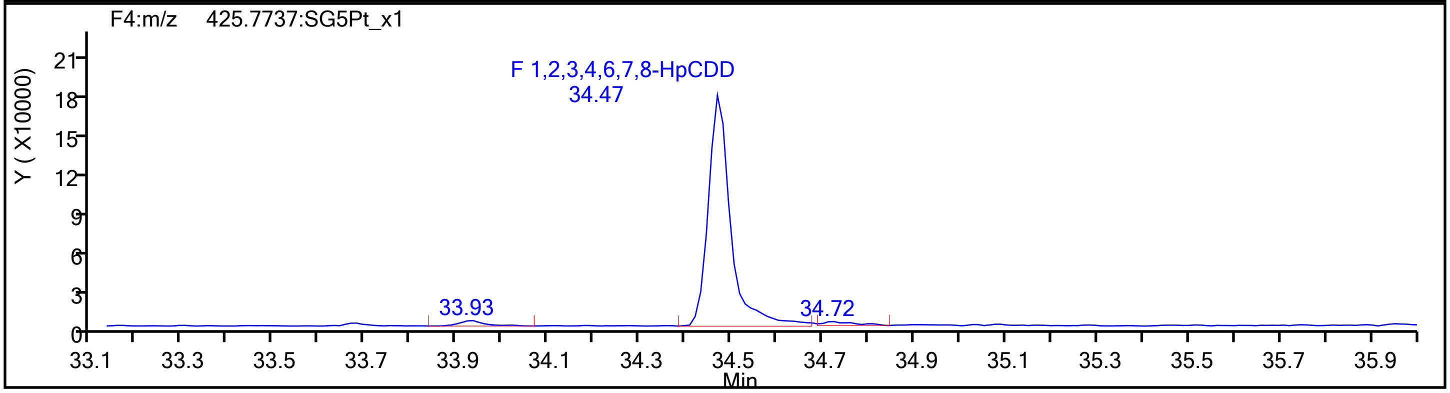

HpCDD Standards

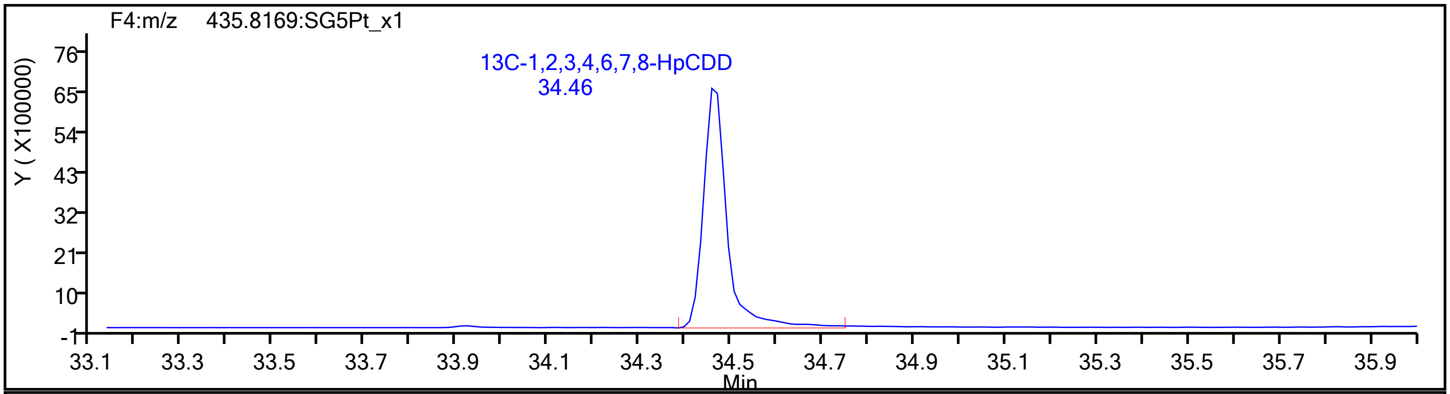

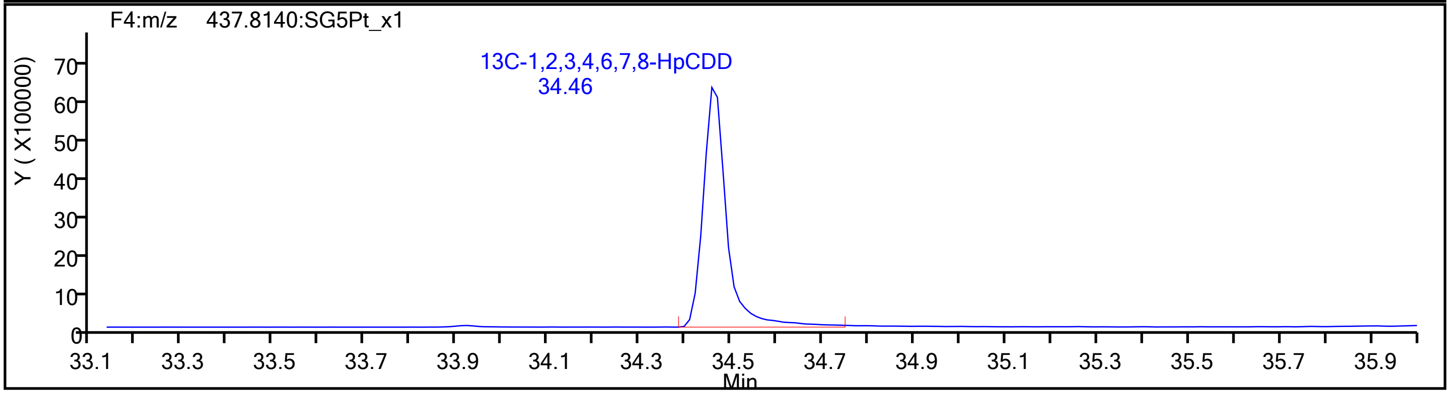

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

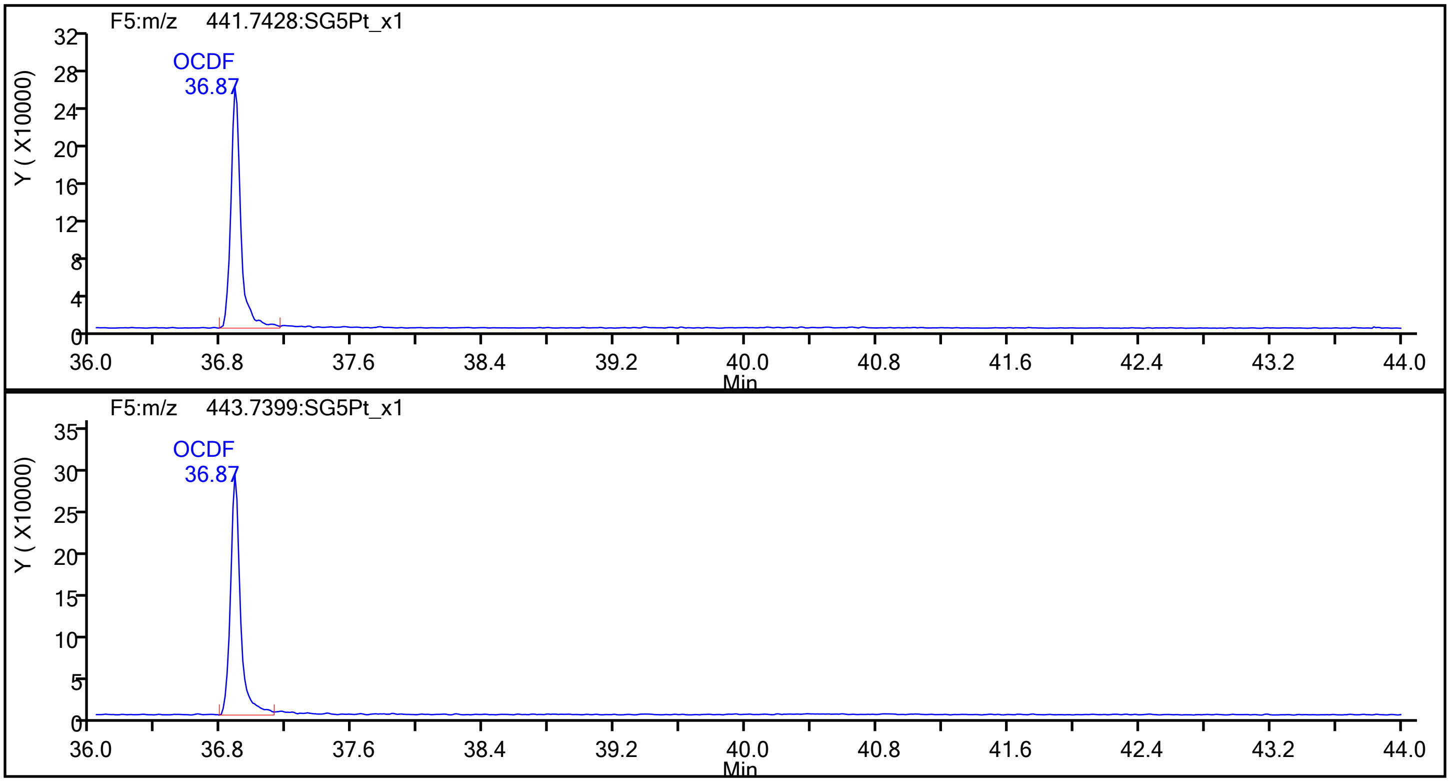

OCDF Standards

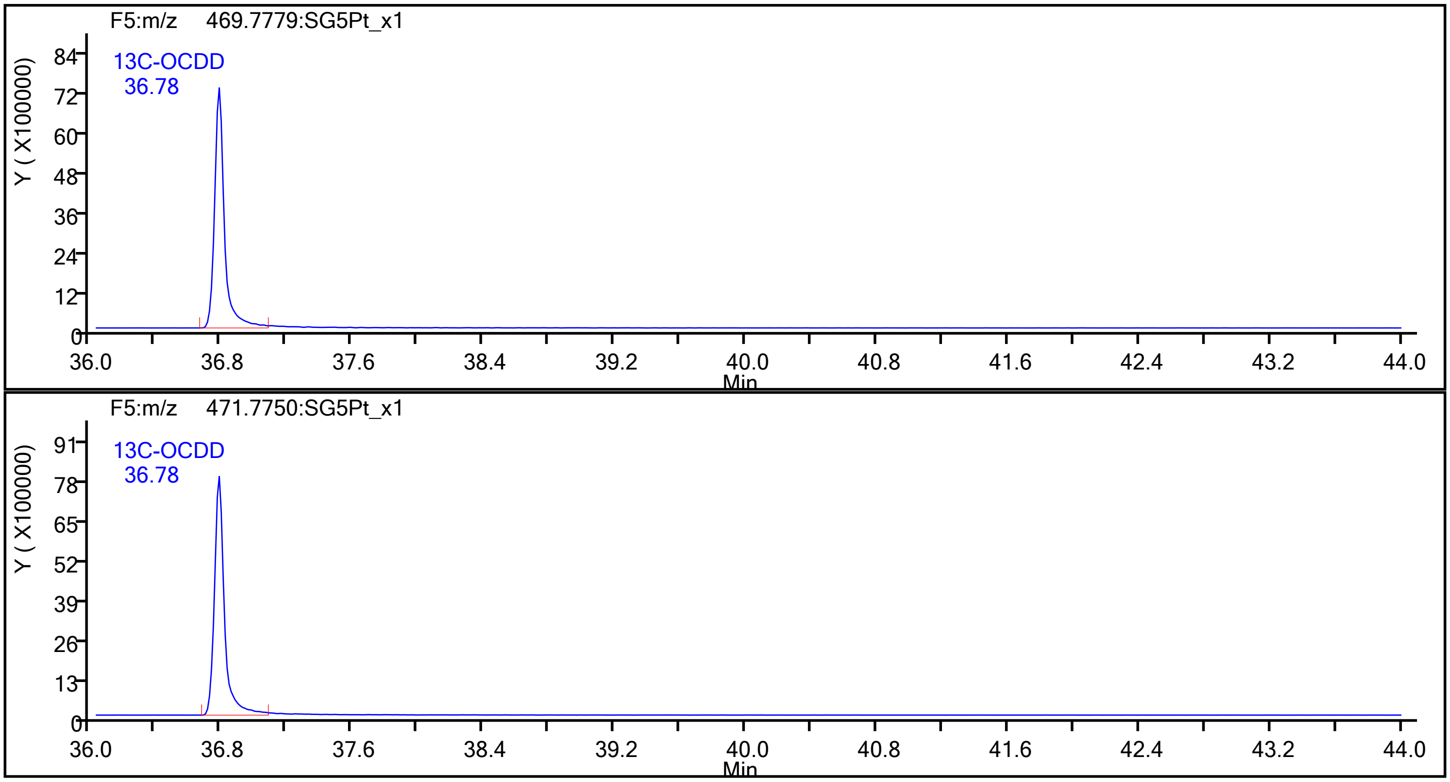

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

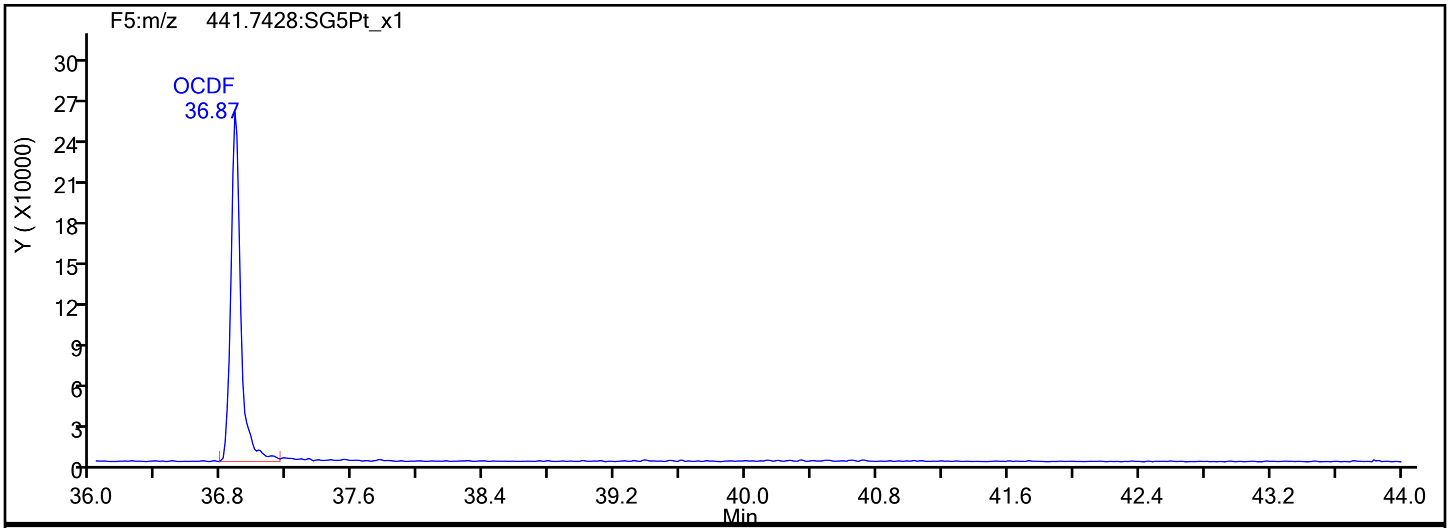

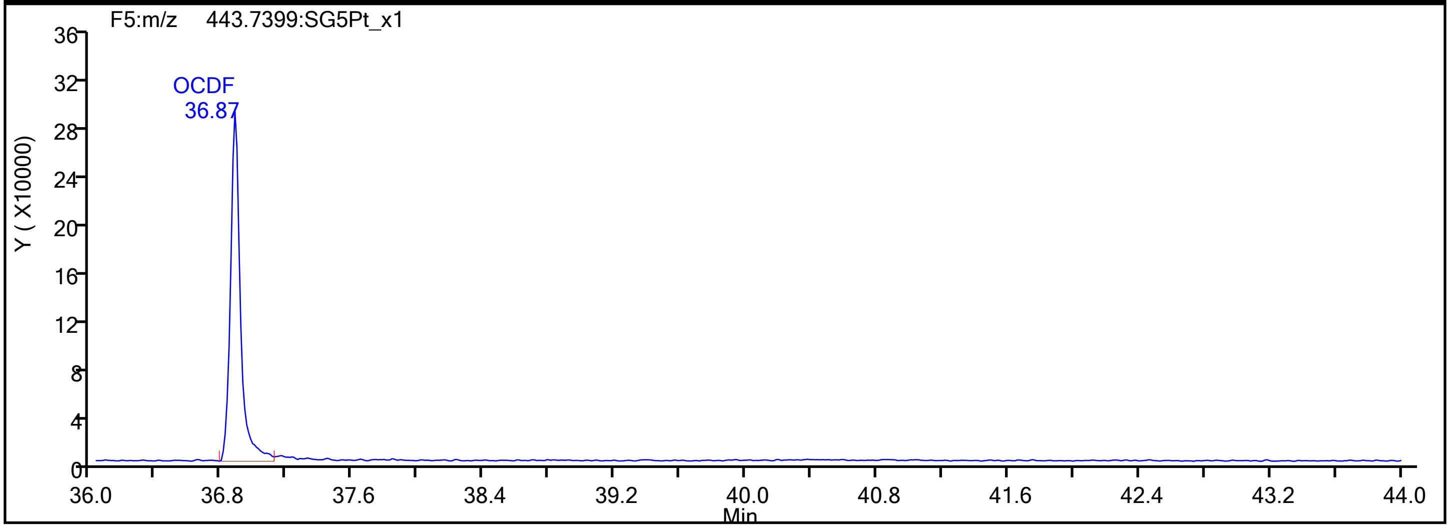

OCDF Interference Mass

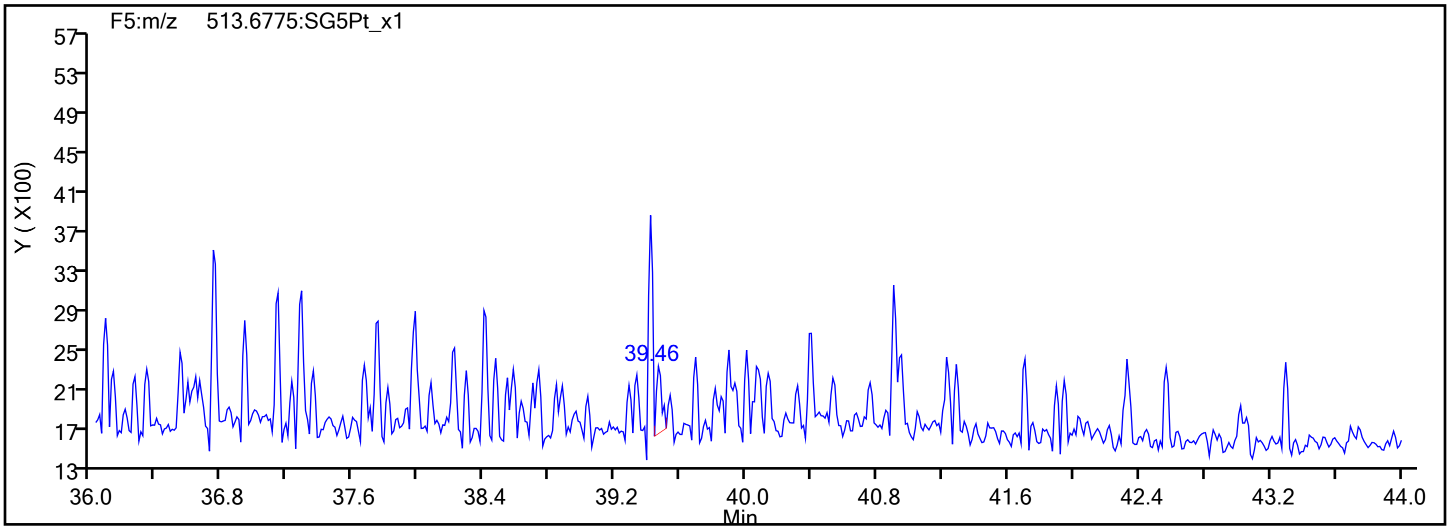

Report Date: 18-Sep-2020 10:35:40	Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

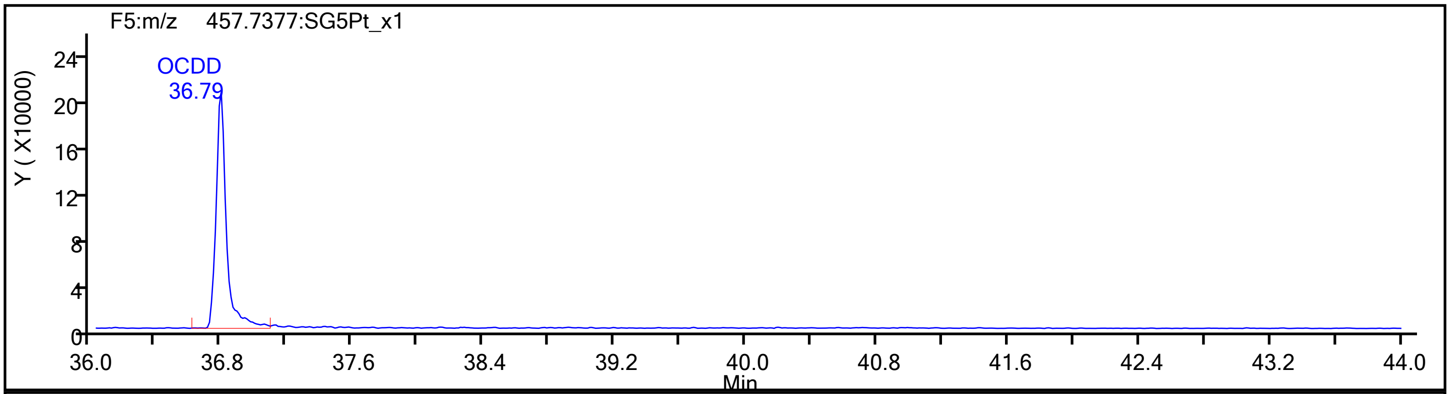

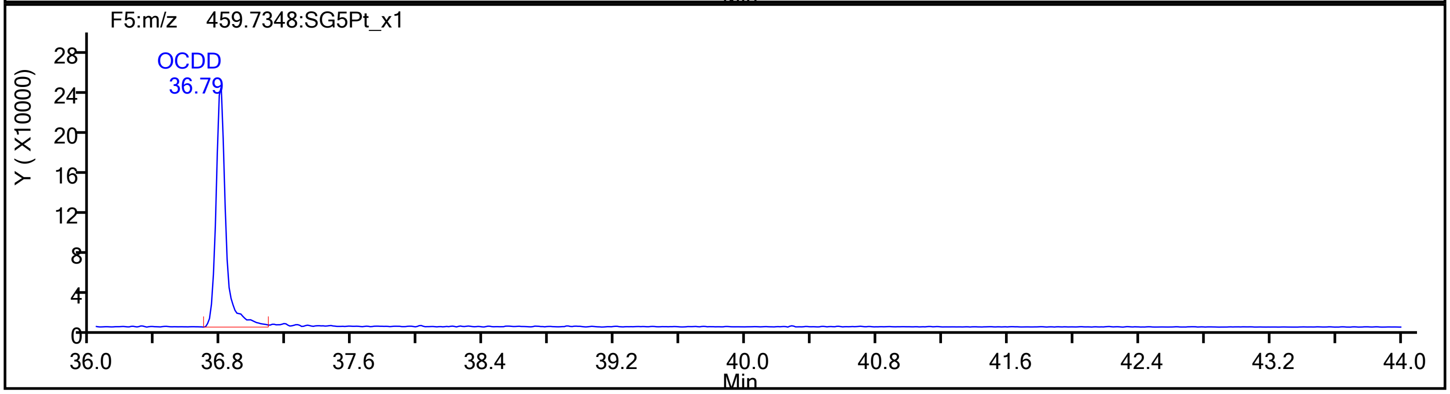

OCDD Standards

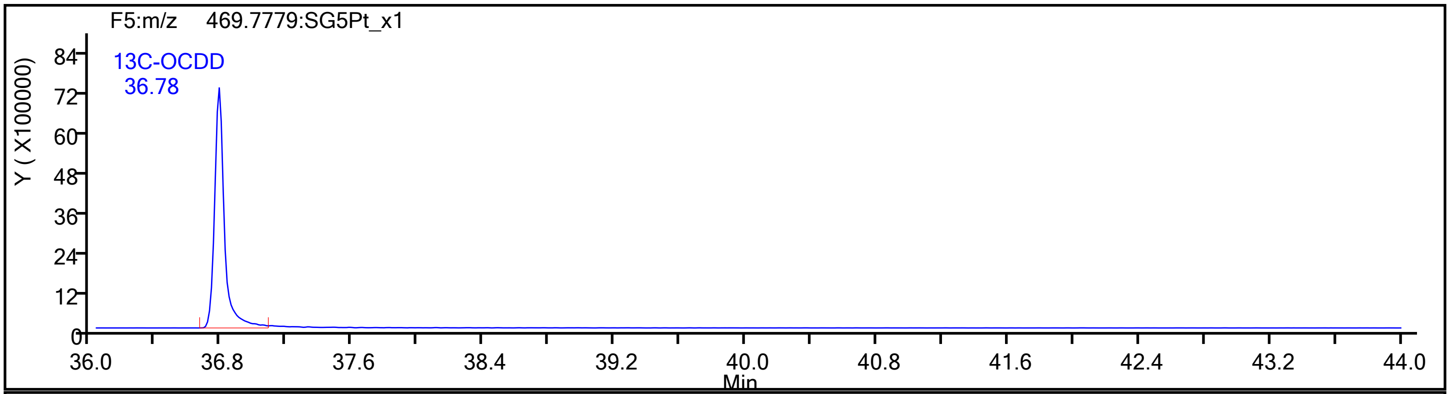

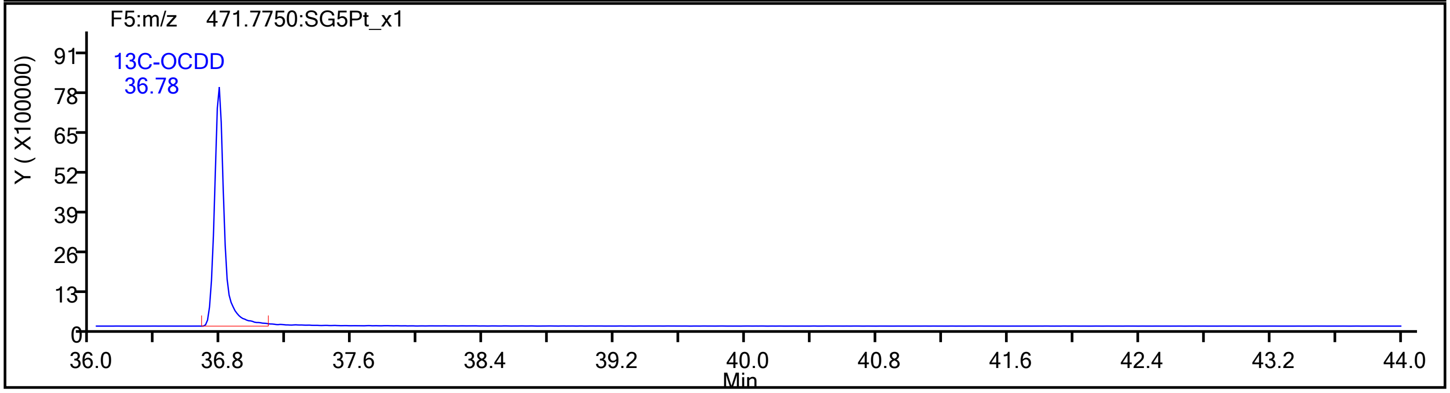

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

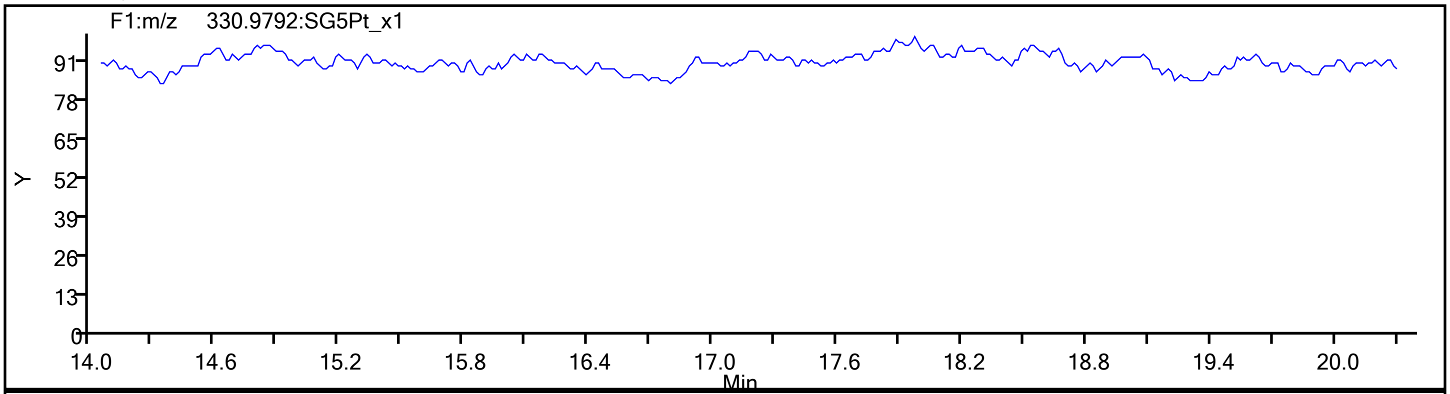

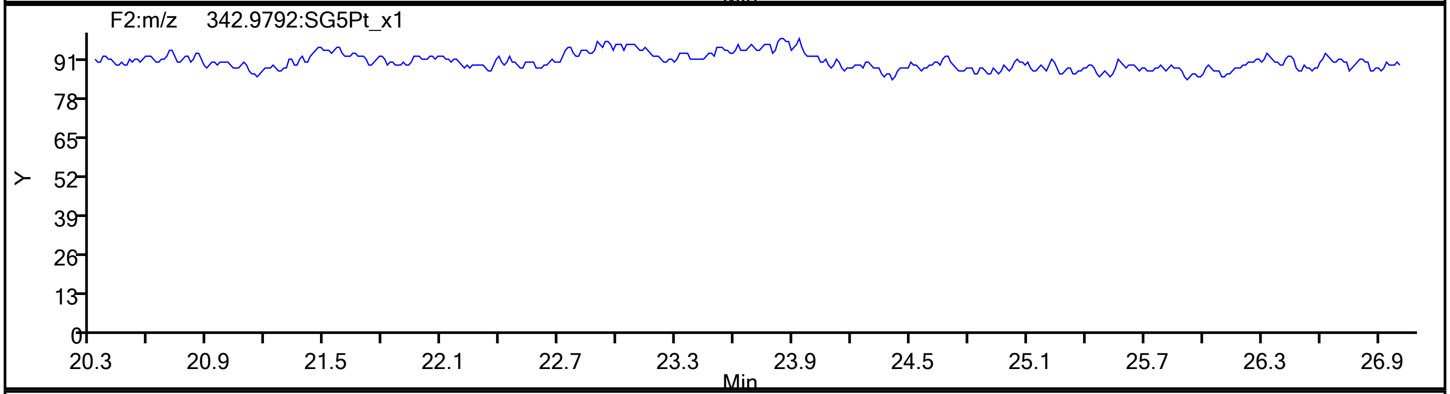

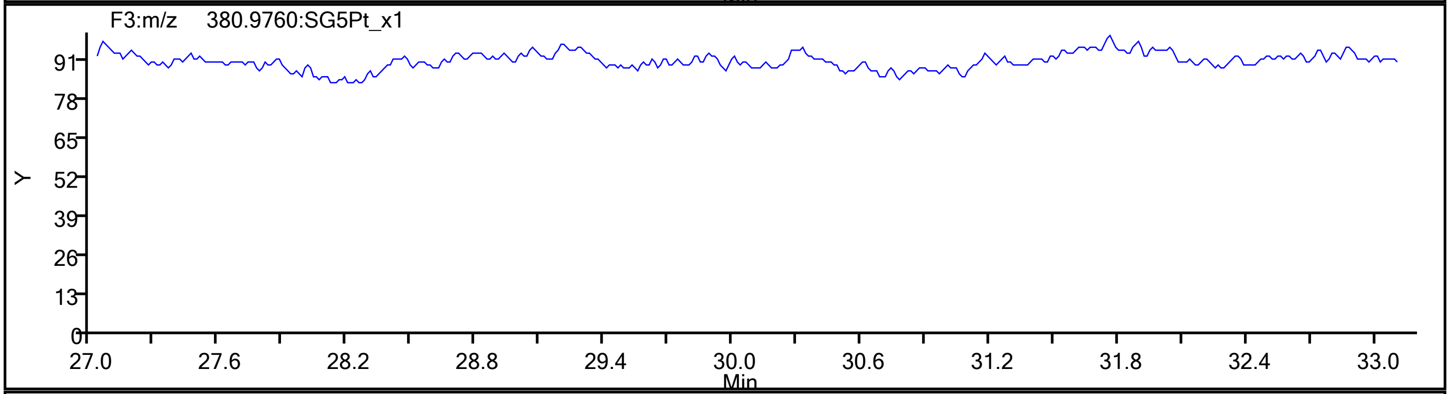

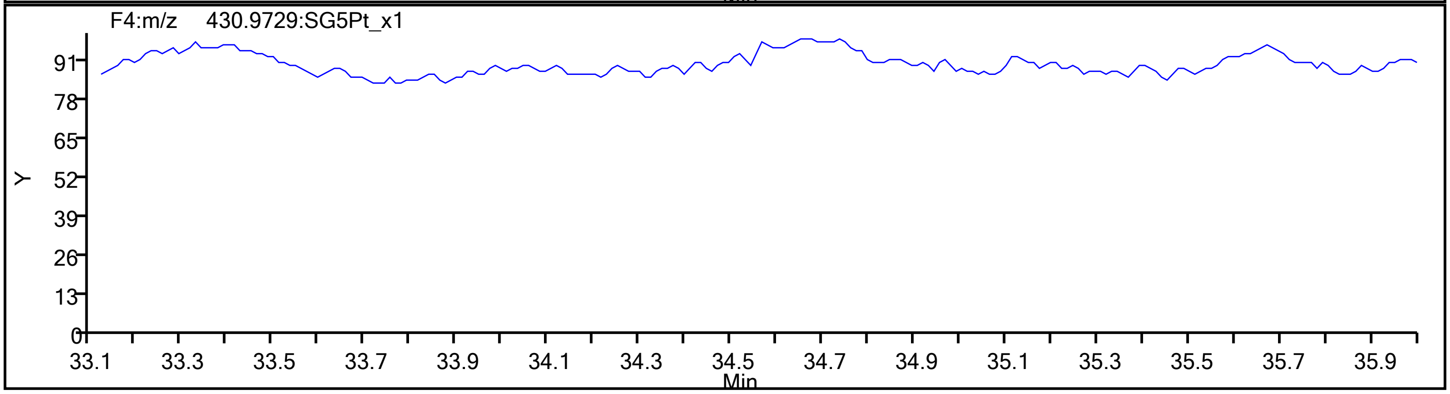

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

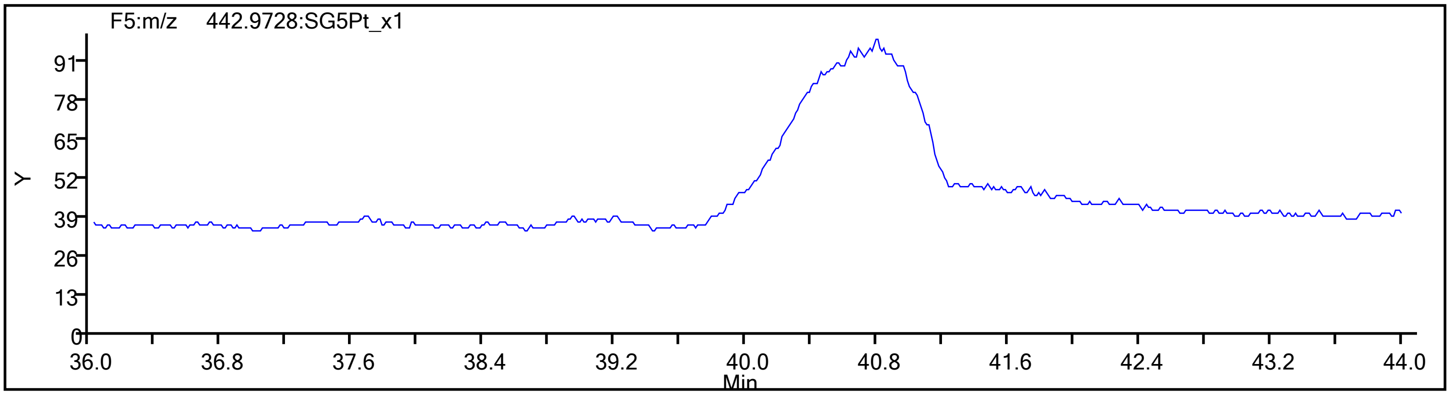

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	17-Sep-2020 16:54:45	ALS Bottle#:	5	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 091720A CS-3 HRDXNL3_00028				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:35:45	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: arghestanis		Date:	18-Sep-2020 10:16:40		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.717	68990527	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.219	93295703	0.75	1.3598	99.4	99.4	0.1693	0.1693	99.45	
2,3,7,8-TCDF	17.233	1708632	0.76	0.9077	2.018	2.018	0.0137	0.0137	101	
S Total TCDF					2.018	2.018	0.0137	0.0137		
D 13C-2,3,7,8-TCDD	17.914	70100427	0.78	1.0536	96.4	96.4	0.1596	0.1596	96.44	
2,3,7,8-TCDD	17.929	1423835	0.77	1.0061	2.019	2.019	0.0244	0.0244	101	
$ 37Cl4-2,3,7,8-TCDD	17.929	1350233		1.0488	1.866	1.866	0.009519	0.009519	93.31	
S Total TCDD					2.019	2.019	0.0244	0.0244		
D 13C-1,2,3,7,8-PeCDF	22.212	74247718	1.57	1.1306	95.2	95.2	0.2302	0.2302	95.19	
1,2,3,7,8-PeCDF	22.226	6755406	1.55	0.9147	9.946	9.946	0.0471	0.0471	99.46	
D 13C-2,3,4,7,8-PeCDF	23.548	71861705	1.55	1.0539	98.8	98.8	0.2470	0.2470	98.84	
2,3,4,7,8-PeCDF	23.576	6557191	1.58	0.9508	9.597	9.597	0.0491	0.0491	95.97	
S Total PeCDF					19.5	19.5	0.0481	0.0481		
D 13C-1,2,3,7,8-PeCDD	24.271	52169753	1.60	0.8084	93.5	93.5	0.1193	0.1193	93.54	
1,2,3,7,8-PeCDD	24.298	5096638	1.58	0.9955	9.814	9.814	0.0330	0.0330	98.14	
S Total PeCDD					9.814	9.814	0.0330	0.0330		
D 13C-1,2,3,4,7,8-HxCDF	30.406	46927290	0.51	0.9225	100.4	100.4	0.5382	0.5382	100	
1,2,3,4,7,8-HxCDF	30.419	5051863	1.24	1.1090	9.707	9.707	0.0959	0.0959	97.07	
D 13C-1,2,3,6,7,8-HxCDF	30.592	51405634	0.51	1.0336	98.1	98.1	0.4803	0.4803	98.12	
1,2,3,6,7,8-HxCDF	30.619	5480754	1.24	1.0721	9.945	9.945	0.0909	0.0909	99.45	
D 13C-2,3,4,6,7,8-HxCDF	31.444	48201659	0.51	0.9773	97.3	97.3	0.5080	0.5080	97.29	
2,3,4,6,7,8-HxCDF	31.471	5174349	1.21	1.0838	9.905	9.905	0.0711	0.0711	99.05	
D 13C-1,2,3,7,8,9-HxCDF	32.256	45779728	0.51	0.9153	98.7	98.7	0.5424	0.5424	98.66	
1,2,3,7,8,9-HxCDF	32.269	4879551	1.26	1.0931	9.751	9.751	0.0713	0.0713	97.51	
S Total HxCDF					39.3	39.3	0.0823	0.0823		
* 13C-1,2,3,7,8,9-HxCDD	32.070	50690907	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.644	41387059	1.24	0.7977	102.4	102.4	0.3954	0.3954	102	
1,2,3,4,7,8-HxCDD	31.657	3841879	1.28	1.0014	9.269	9.269	0.0485	0.0485	92.69	
D 13C-1,2,3,6,7,8-HxCDD	31.750	49272149	1.24	1.0010	97.1	97.1	0.3151	0.3151	97.10	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.764	4272300	1.24	0.8902	9.741	9.741	0.0464	0.0464	97.41	
1,2,3,7,8,9-HxCDD	32.083	4768543	1.26	1.0579	9.944	9.944	0.0422	0.0422	99.44	
S Total HxCDD					29.0	29.0	0.0457	0.0457		
D 13C-1,2,3,4,6,7,8-HpCDF	33.691	42054304	0.43	0.8506	97.5	97.5	1.042	1.042	97.53	
1,2,3,4,6,7,8-HpCDF	33.703	5677563	0.97	1.3603	9.925	9.925	0.1057	0.1057	99.25	
D 13C-1,2,3,4,7,8,9-HpCDF	34.760	37805388	0.43	0.7618	97.9	97.9	1.164	1.164	97.90	
1,2,3,4,7,8,9-HpCDF	34.772	4890701	1.03	1.3207	9.796	9.796	0.1339	0.1339	97.96	
S Total HpCDF					19.7	19.7	0.1198	0.1198		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	43522391	1.07	0.8873	96.8	96.8	0.6526	0.6526	96.77	
1,2,3,4,6,7,8-HpCDD	34.481	4188952	1.03	0.9988	9.637	9.637	0.0752	0.0752	96.37	
S Total HpCDD					9.637	9.637	0.0752	0.0752		
D 13C-OCDD	36.791	59498409	0.88	0.6287	186.7	186.7	0.3244	0.3244	93.34	
OCDF	36.887	8263927	0.92	1.4136	19.7	19.7	0.0507	0.0507	98.26	
OCDD	36.803	6682705	0.89	1.1290	19.9	19.9	0.0499	0.0499	99.49	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 16:54:45 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720A CS-3 HRDXNL3_00028
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:16:40

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.717	17.711	0		30271867	7391555	5698	14245	1297		
333.9339	17.717	17.711	0		38718660	9456382	5635	14087	1678	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.219	17.203	1	0.972	39965916	9954863	7261	18152	1371		
317.9389	17.219	17.203	1	0.972	53329787	13099748	8258	20645	1586	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.233	17.218	1	1.001	736716	185710	484	1210	384		
305.8987	17.233	17.218	1	1.001	971916	239970	666	1665	360	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.011	30806430	7295166	5698	14245	1280		
333.9339	17.914	17.905	1	1.011	39293997	9240658	5635	14087	1640	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	620615	143049	1087	2717	132		
321.8936	17.929	17.920	1	1.001	803220	187057	537	1342	348	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	1350233	319770	673	1682	475		
13C-1,2,3,7,8-PeCDF											
351.9000	22.212	22.204	0	1.254	45338036	7837437	10489	26222	747		
353.8970	22.212	22.204	0	1.254	28909682	5088739	7051	17627	722	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	4106763	692324	1176	2940	589		
341.8567	22.226	22.220	0	1.001	2648643	443559	1050	2625	422	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.548	23.540	0	1.329	43677378	7227444	10489	26222	689		
353.8970	23.548	23.540	0	1.329	28184327	4693729	7051	17627	666	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.576	23.567	0	1.001	4019655	644235	1176	2940	548		
341.8567	23.576	23.567	0	1.001	2537536	409798	1050	2625	390	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.271	24.263	0	1.370	32084051	4948303	3931	9827	1259		
369.8919	24.271	24.263	0	1.370	20085702	3074322	2571	6427	1196	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.298	24.290	0	1.001	3120498	479916	664	1660	723		
357.8516	24.298	24.290	0	1.001	1976140	296292	390	975	760	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.406	30.398	0	0.948	15862738	2738964	8063	20157	340		
385.8610	30.406	30.398	0	0.948	31064552	5354365	15450	38625	347	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.419	30.414	0	1.000	2797700	487863	1850	4625	264		
375.8178	30.419	30.414	0	1.000	2254163	396525	1594	3985	249	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.592	30.587	0	0.954	17471478	3040203	8063	20157	377		
385.8610	30.592	30.587	0	0.954	33934156	5790019	15450	38625	375	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.619	30.608	1	1.001	3037205	542821	1850	4625	293		
375.8178	30.619	30.608	1	1.001	2443549	421125	1594	3985	264	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	16300349	3763985	8063	20157	467		
385.8610	31.444	31.439	0	0.980	31901310	7412832	15450	38625	480	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.471	31.458	1	1.001	2835641	630077	1850	4625	341		
375.8178	31.458	31.458	0	1.000	2338708	540139	1594	3985	339	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	15449991	3673540	8063	20157	456		
385.8610	32.256	32.254	0	1.006	30329737	7376877	15450	38625	477	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.269	32.267	0	1.000	2716071	637876	1850	4625	345		
375.8178	32.269	32.267	0	1.000	2163480	533593	1594	3985	335	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		28150092	6518580	8160	20400	799		
403.8529	32.070	32.067	0		22540815	5321978	6779	16947	785	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.644	31.631	1	0.987	22922425	5554603	8160	20400	681		
403.8529	31.631	31.631	0	0.986	18464634	4491856	6779	16947	663	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.657	31.647	1	1.000	2158558	540045	1123	2807	481		
391.8127	31.657	31.647	1	1.000	1683321	419033	830	2075	505	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.750	31.740	1	0.990	27299257	6605372	8160	20400	809		
403.8529	31.750	31.740	1	0.990	21972892	5219049	6779	16947	770	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.764	31.756	0	1.000	2360992	557234	1123	2807	496		
391.8127	31.764	31.756	0	1.000	1911308	451570	830	2075	544	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	2659612	628709	1123	2807	560		
391.8127	32.083	32.081	0	1.014	2108931	495604	830	2075	597	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.691	33.684	0	1.051	12556838	3909769	12847	32117	304		
419.8220	33.691	33.684	0	1.051	29497466	9034077	29146	72865	310	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.703	33.694	1	1.000	2797163	852978	4040	10100	211		
409.7789	33.703	33.694	1	1.000	2880400	868985	3407	8517	255	0.97(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.760	34.751	1	1.084	11322959	3174646	12847	32117	247		
419.8220	34.760	34.751	1	1.084	26482429	7353625	29146	72865	252	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.772	34.763	1	1.000	2482073	658836	4040	10100	163		
409.7789	34.772	34.763	1	1.000	2408628	635338	3407	8517	186	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	22520525	6337080	13670	34175	464		
437.8140	34.469	34.464	0	1.075	21001866	5882126	13754	34385	428	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	2124201	612915	1929	4822	318		
425.7737	34.481	34.474	0	1.000	2064751	594538	1742	4355	341	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.791	36.784	0	1.147	27863400	6692110	4873	12182	1373		
471.7750	36.791	36.784	0	1.147	31635009	7478443	4787	11967	1562	0.88(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	3963678	938447	902	2255	1040		
443.7399	36.887	36.882	0	1.003	4300249	1047583	1129	2822	928	0.92(0.76-1.02)	
OCDD											
457.7377	36.803	36.791	1	1.000	3139043	744024	661	1652	1126		
459.7348	36.791	36.791	0	1.000	3543662	826318	935	2337	884	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

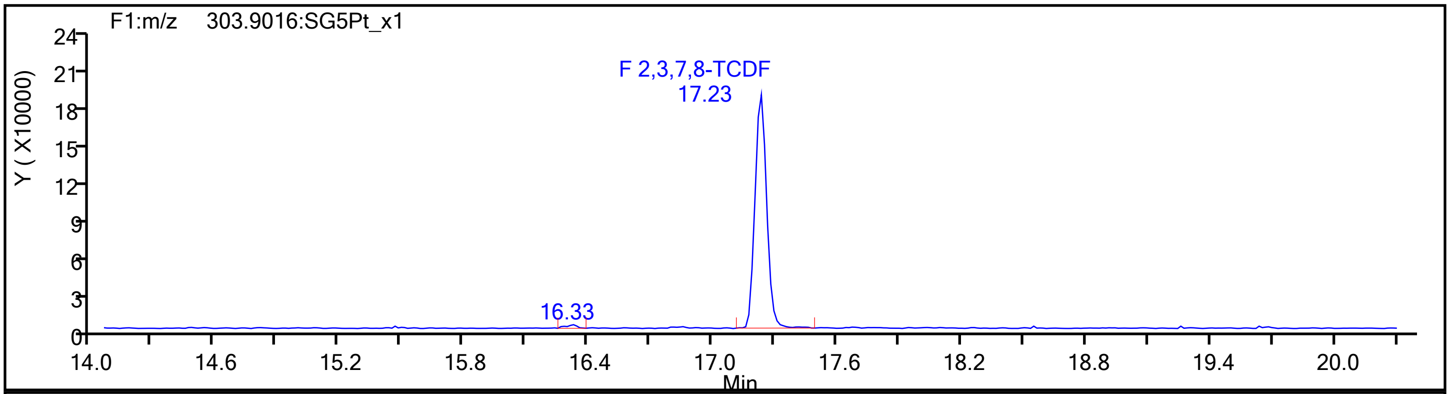

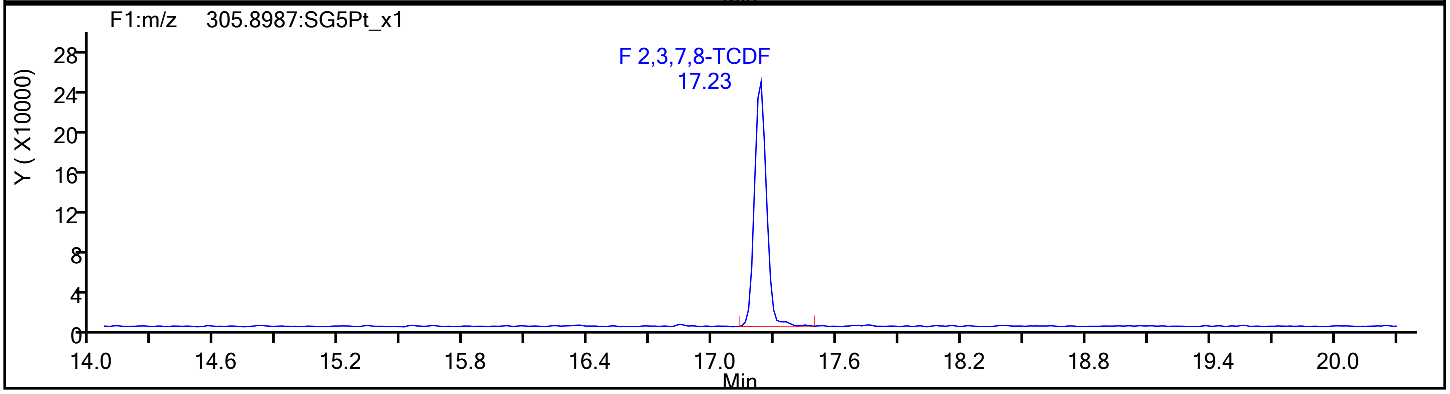

TCDF Standards

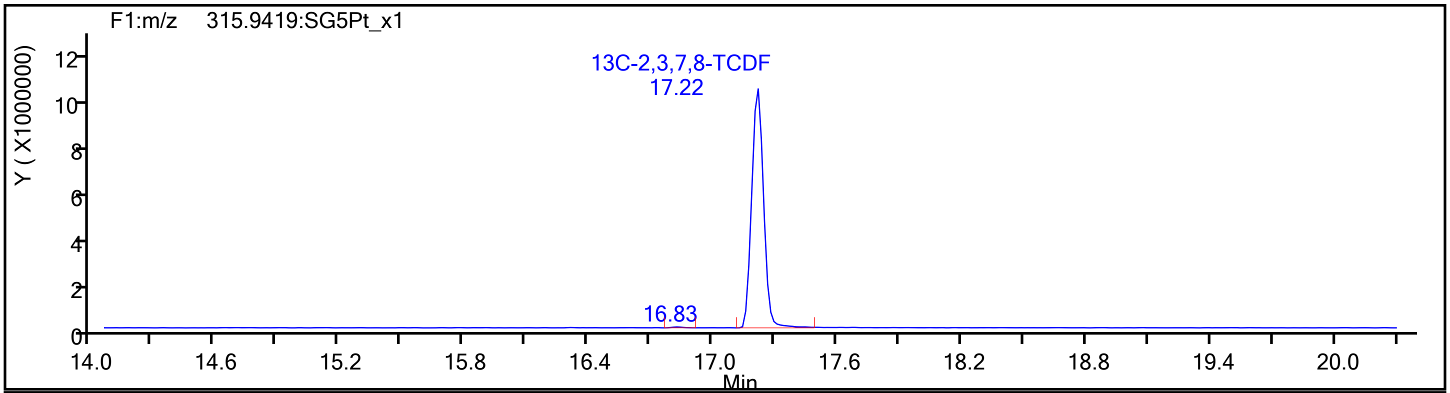

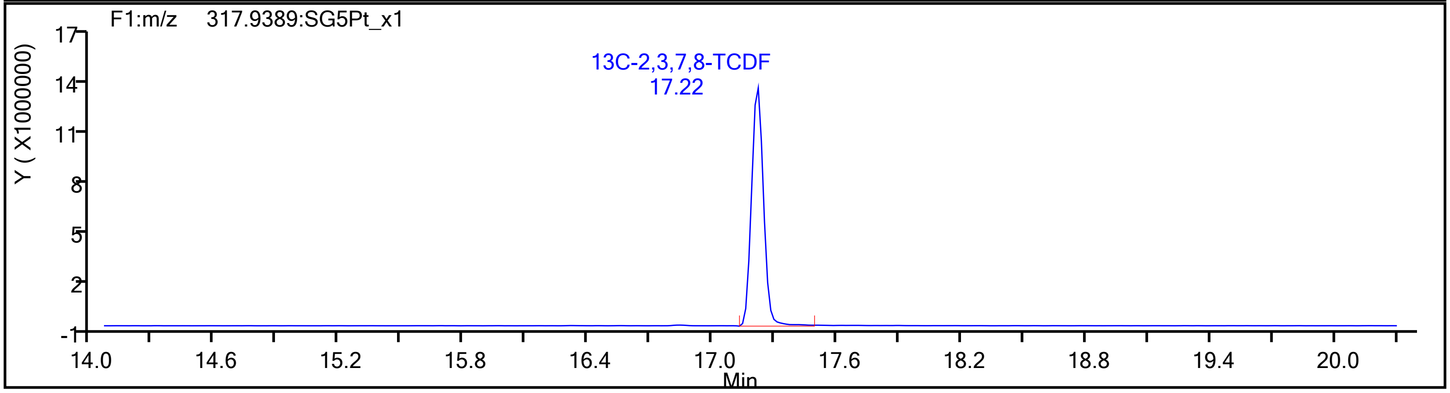

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

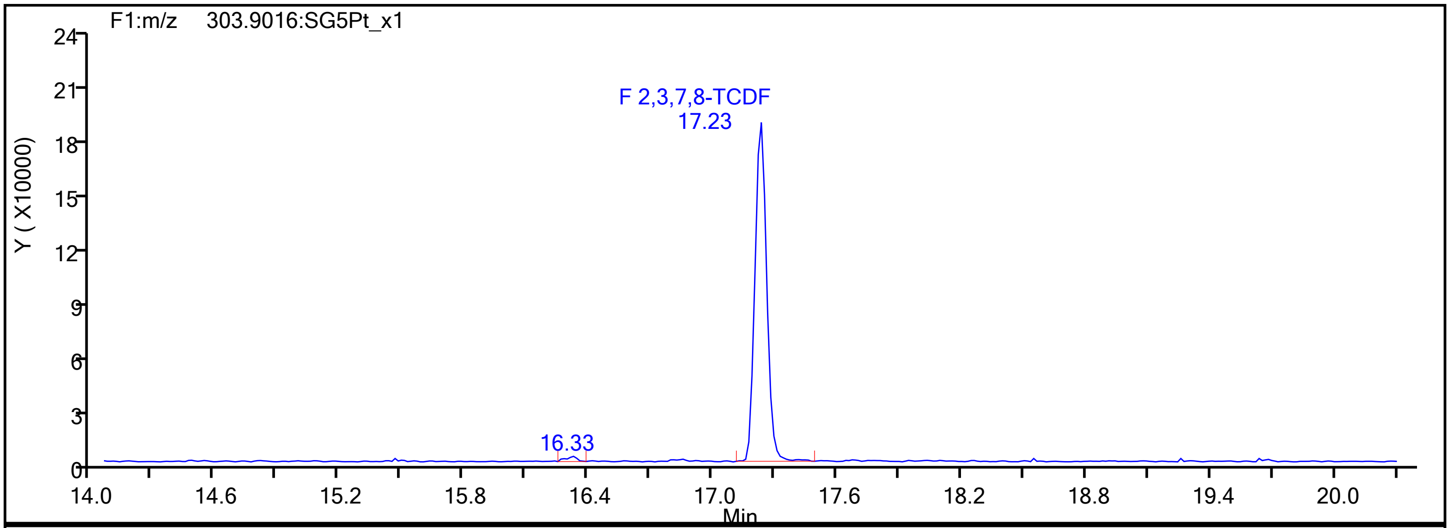

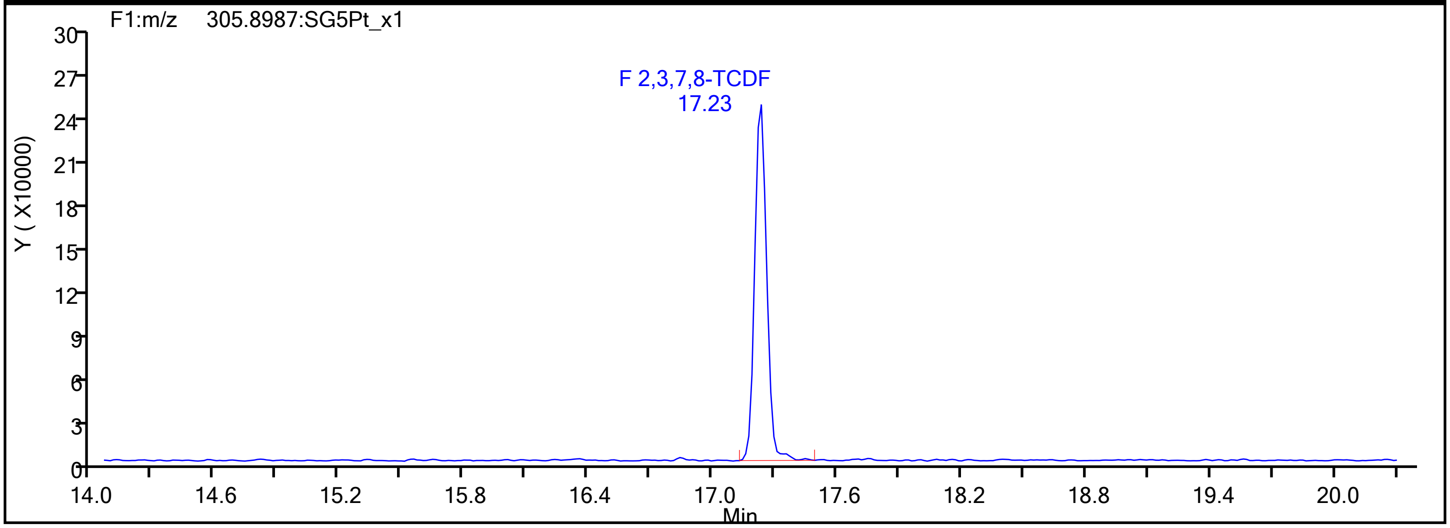

TCDF Interference Mass

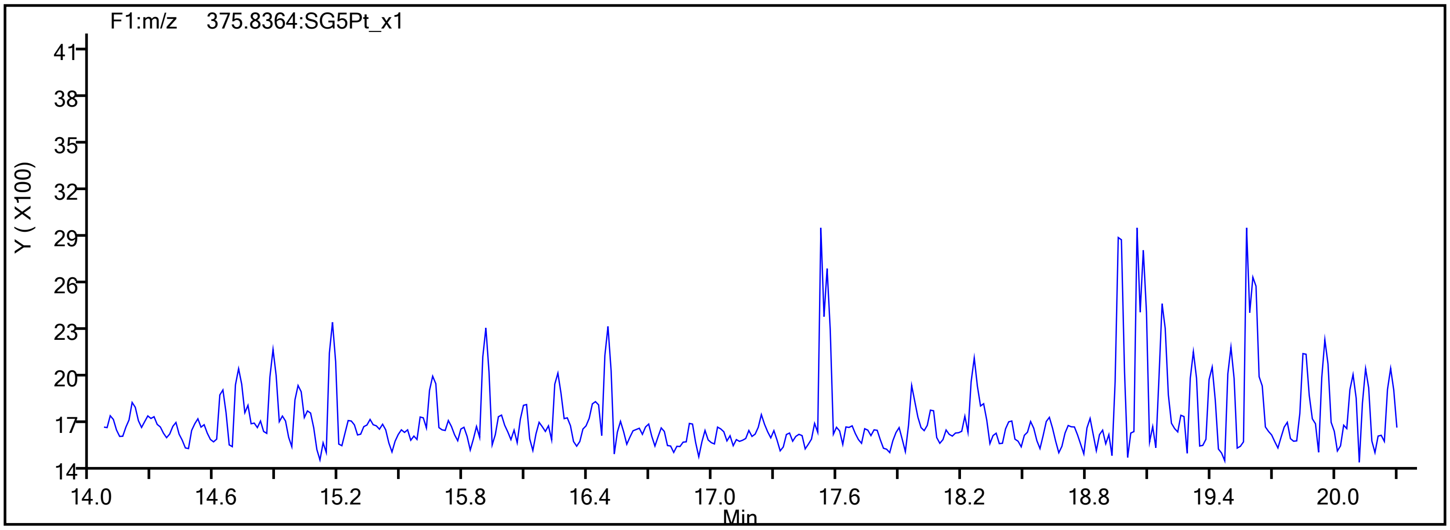

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

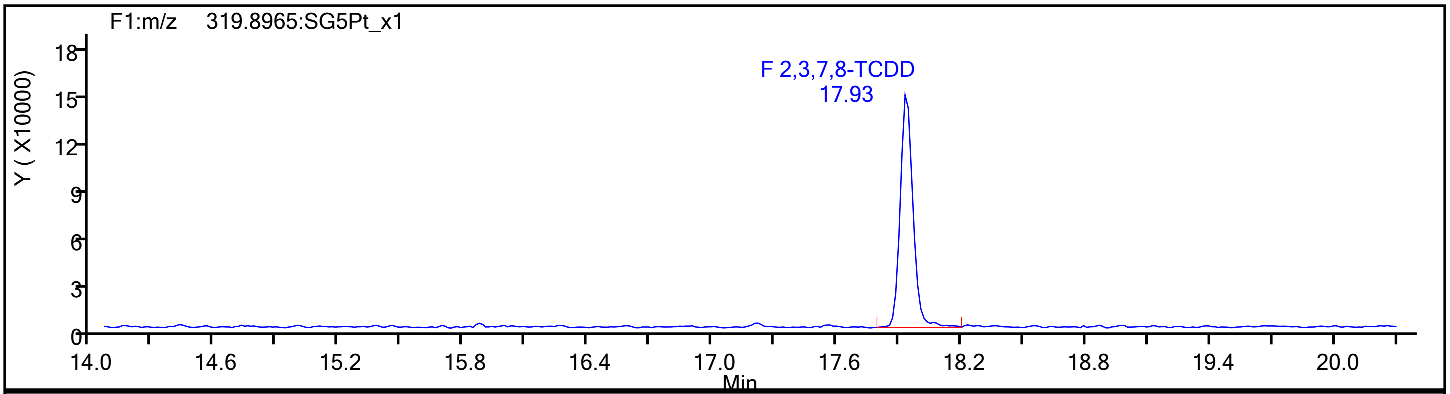

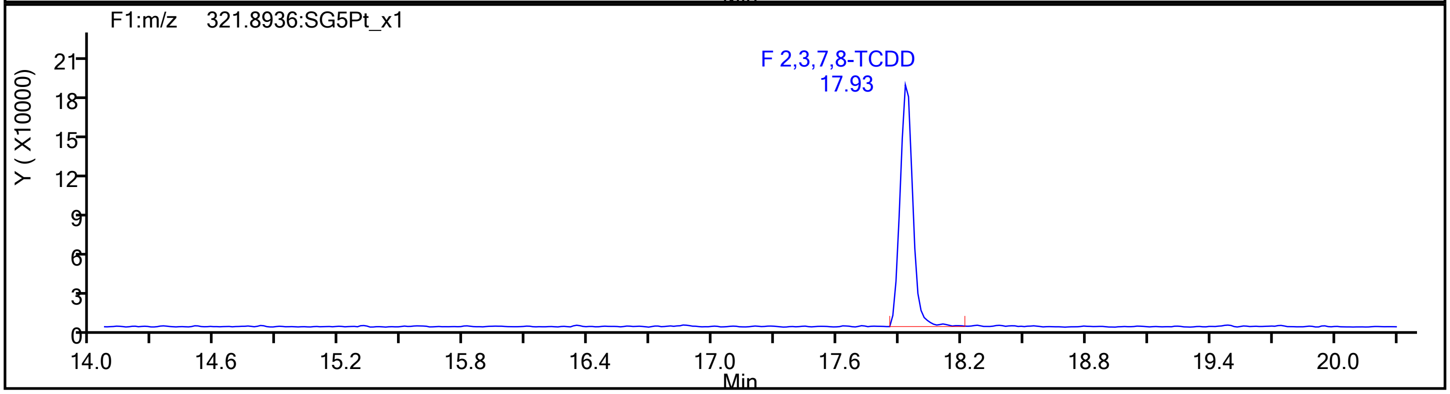

TCDD Standards

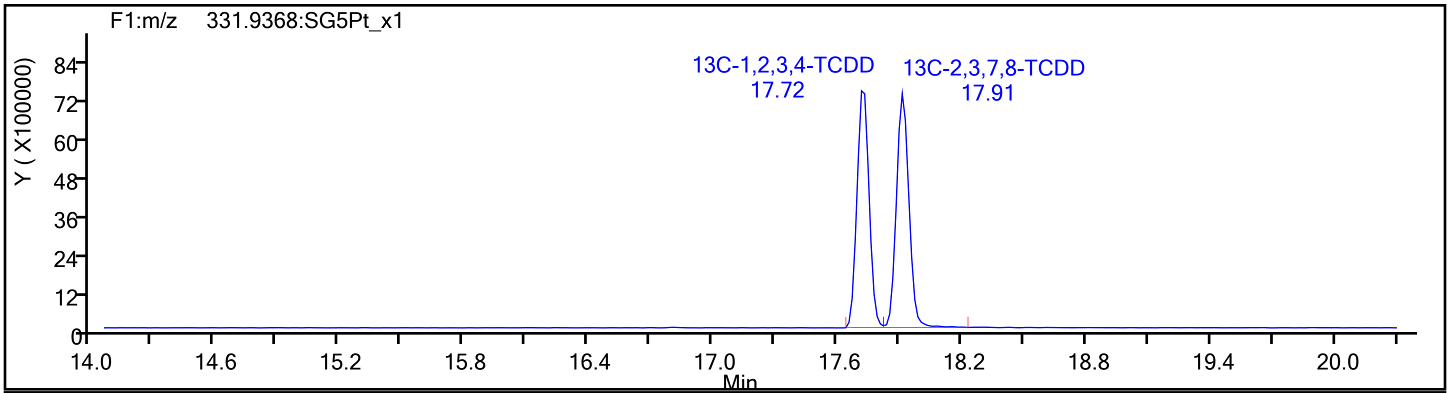

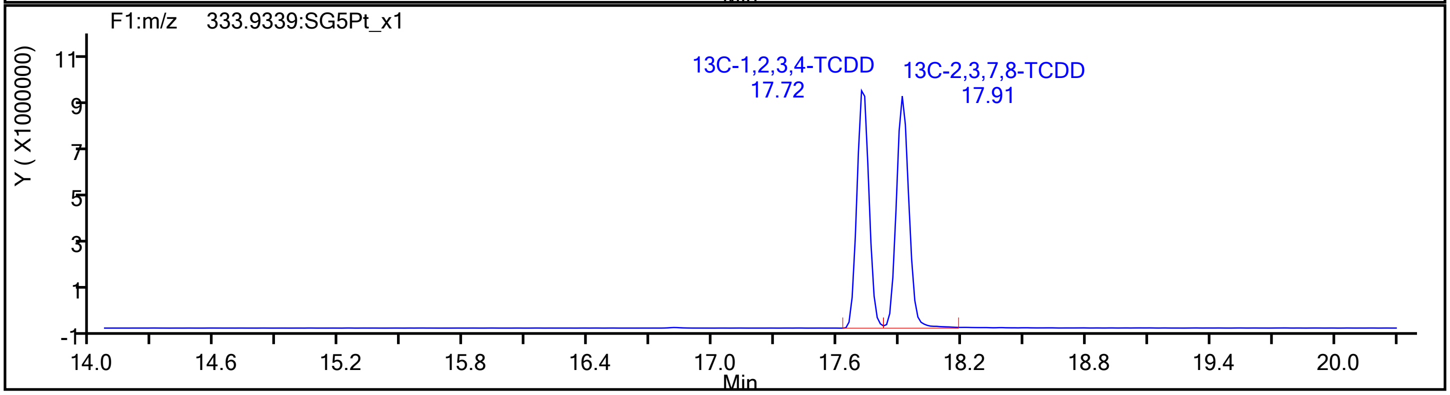

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

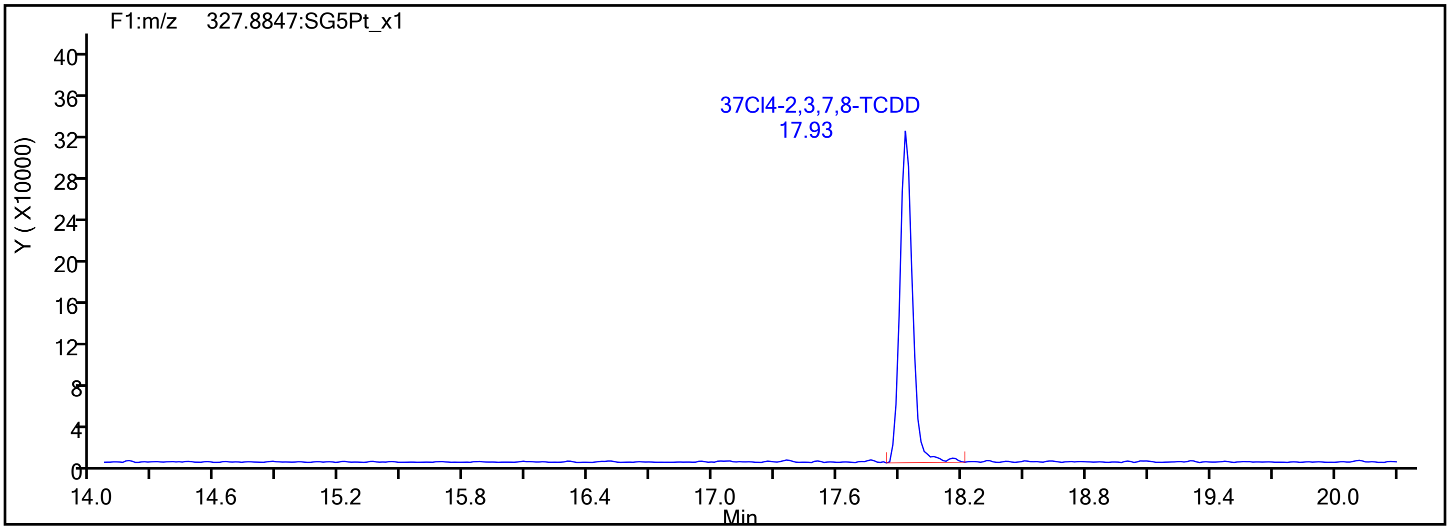

37Cl4-TCDD Standards

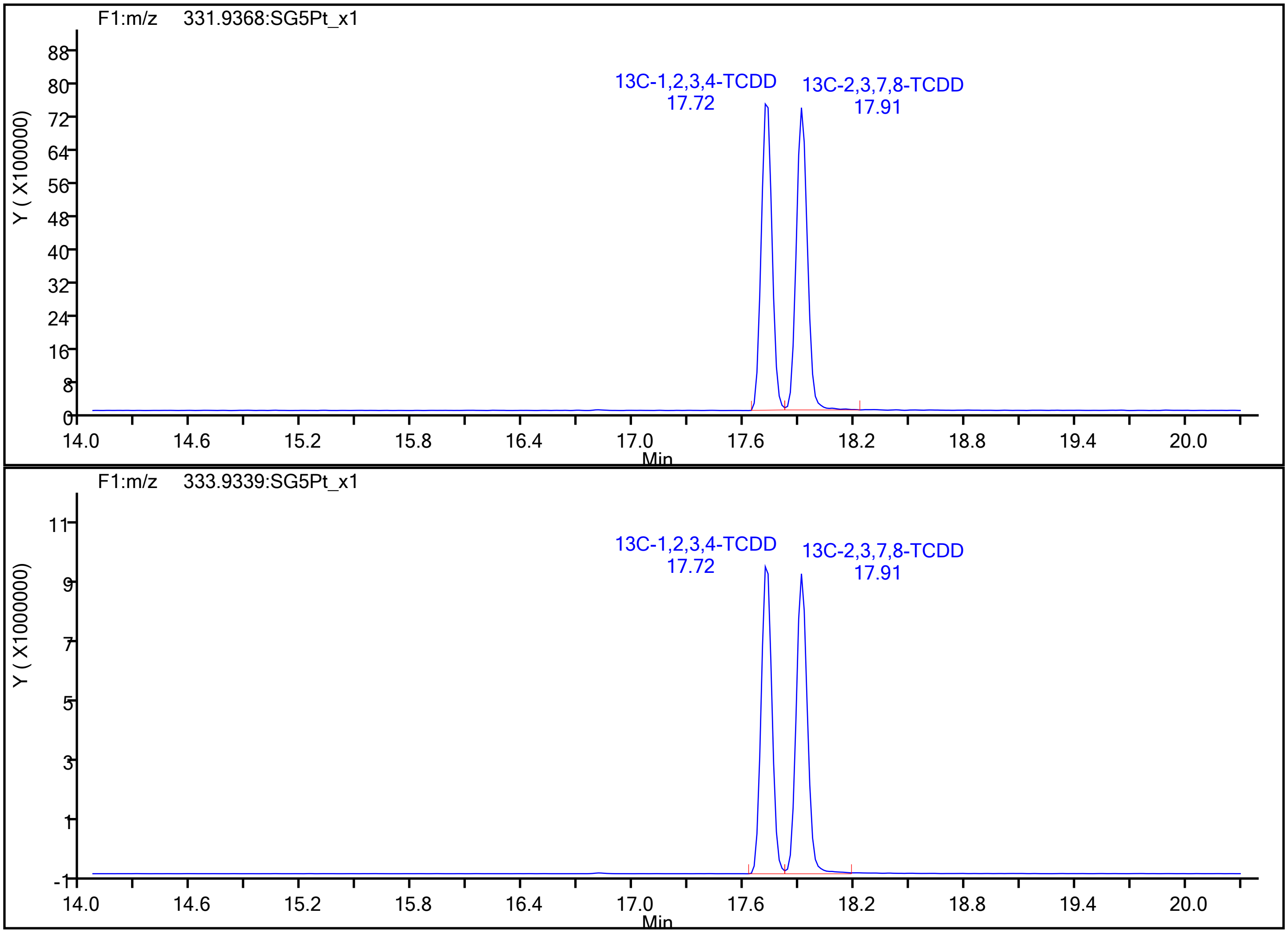

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

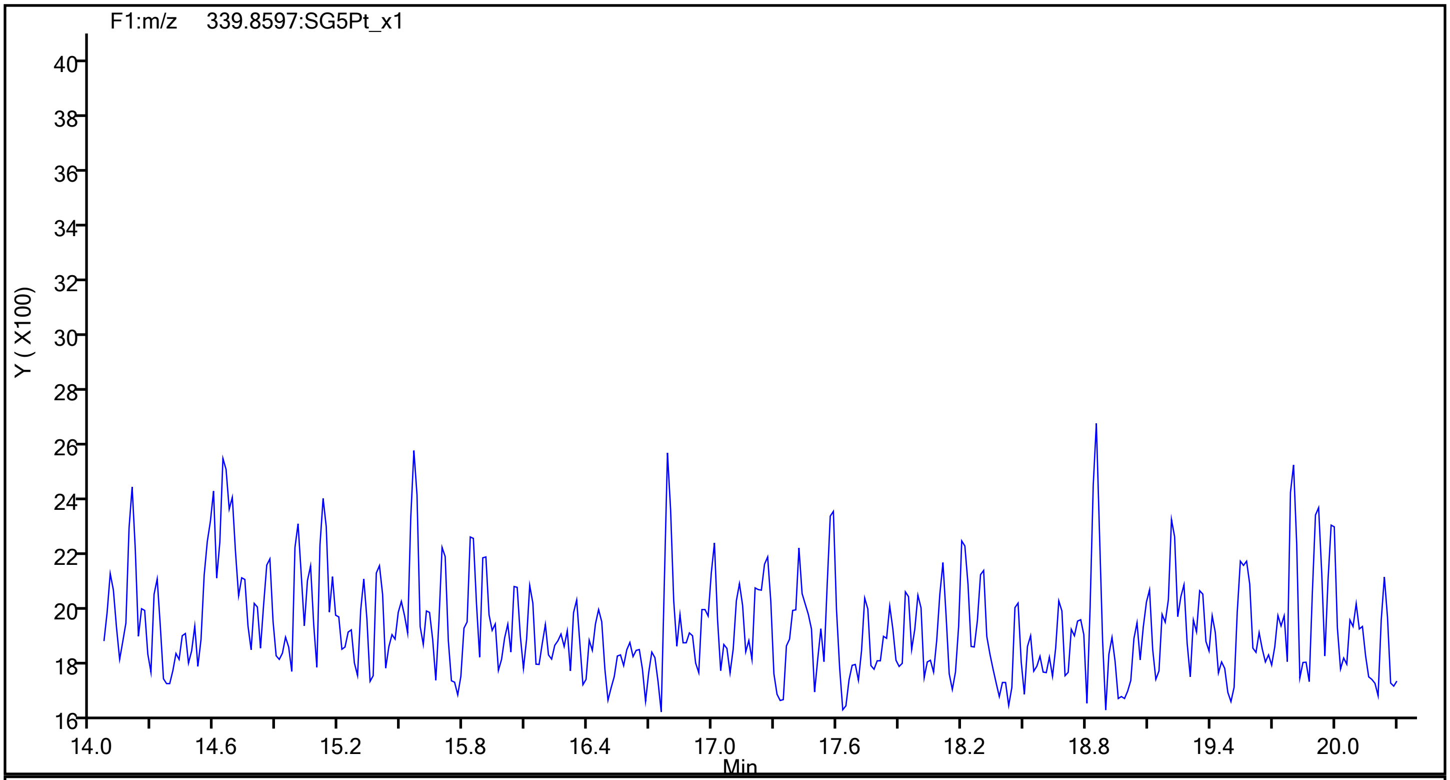

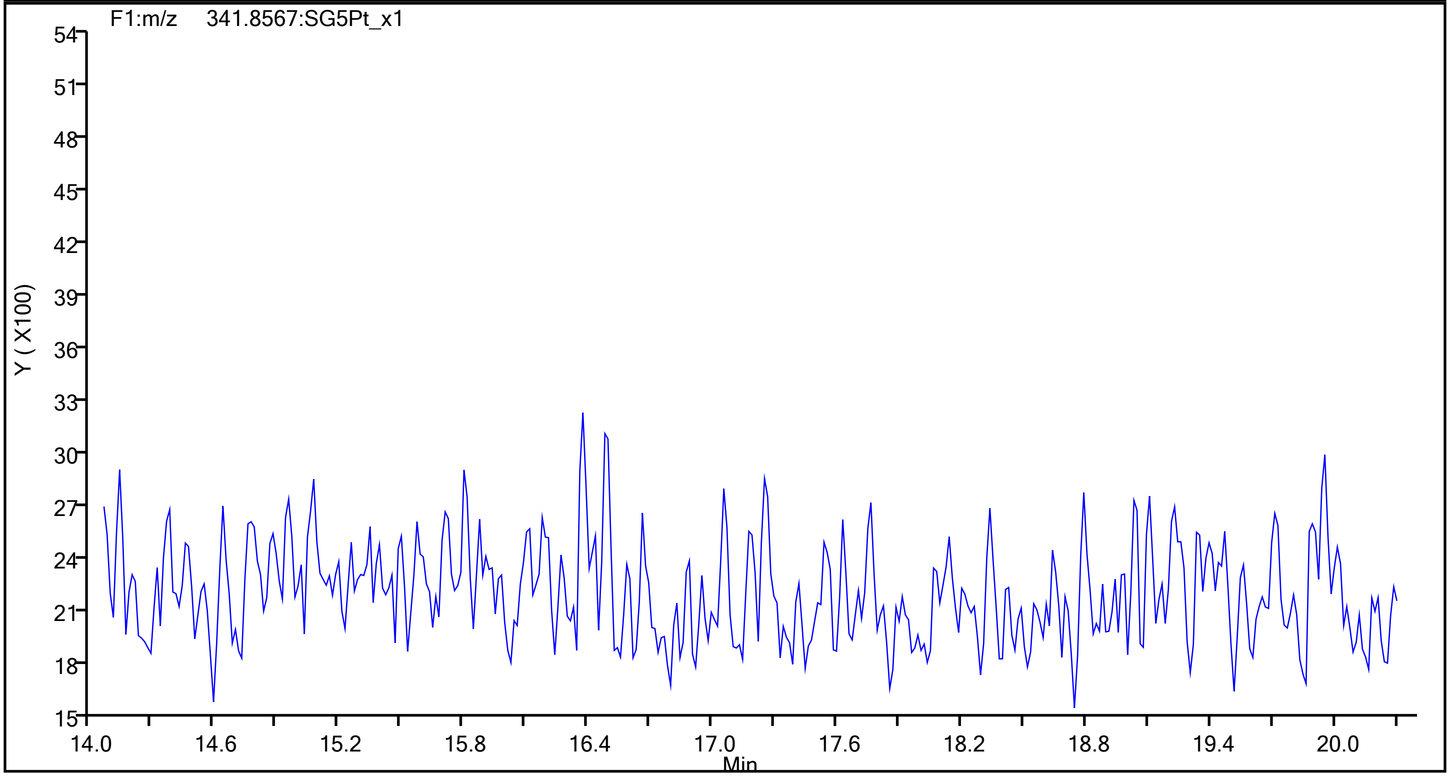

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

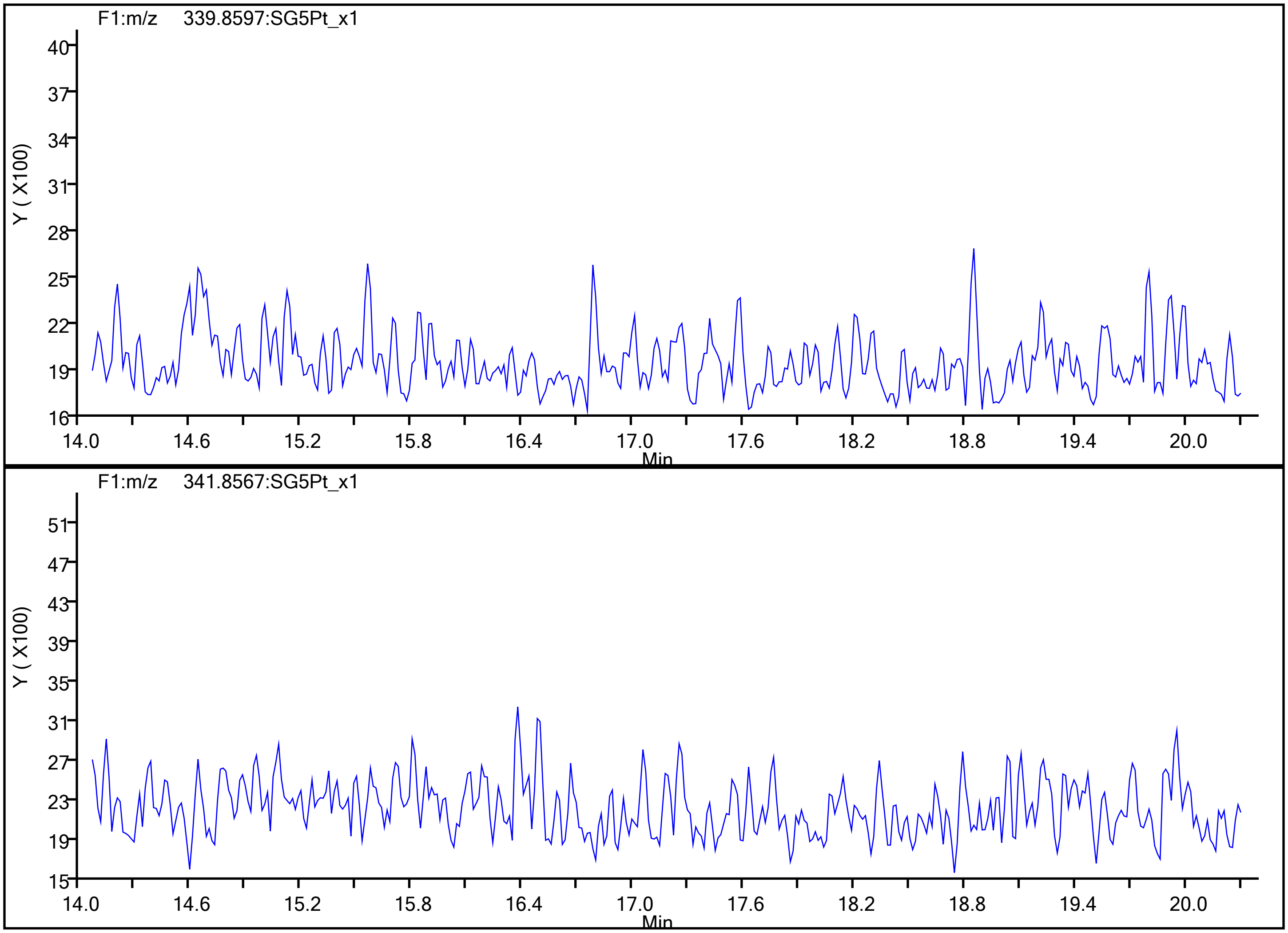

F1 PeCDFs Interference Mass

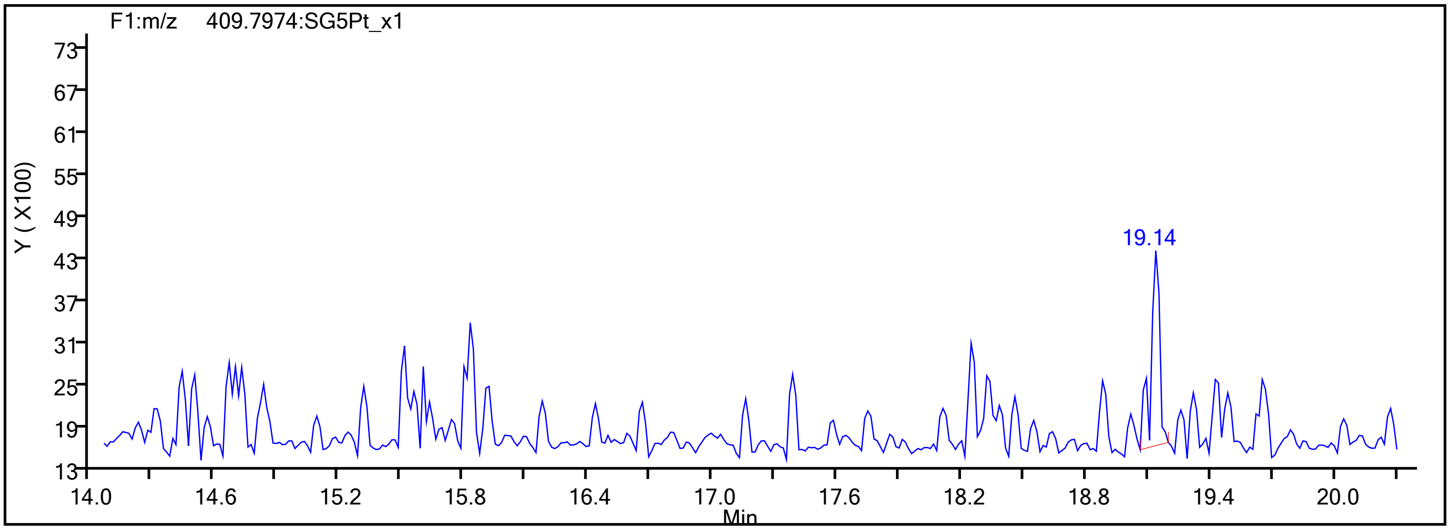

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: AJS

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246
Sample Line#: 4

Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

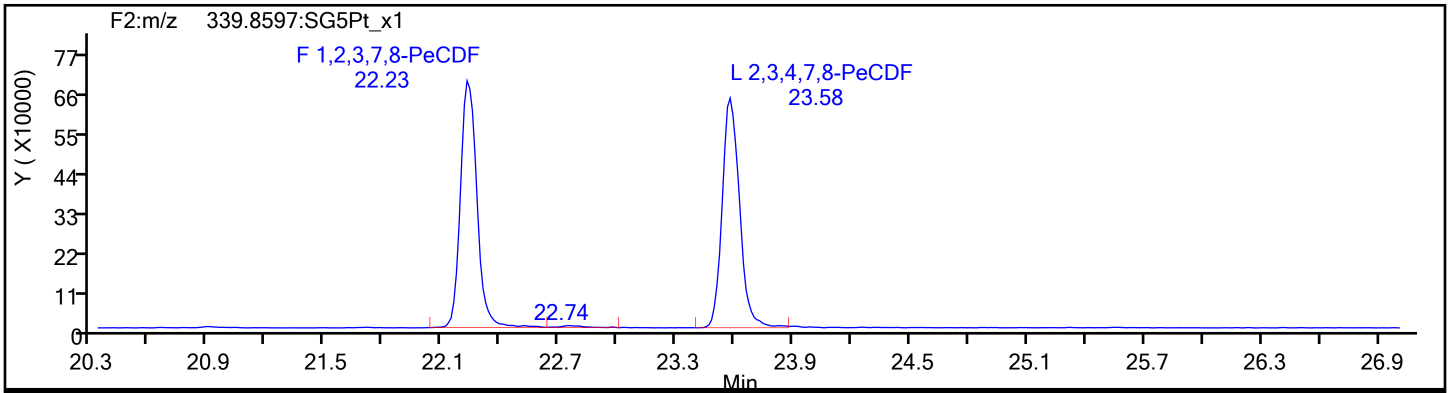

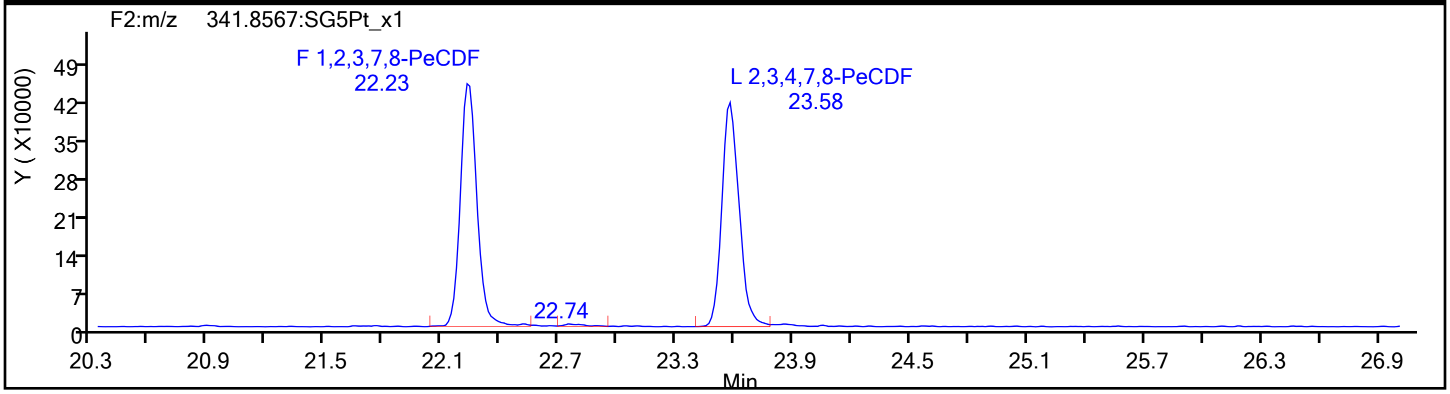

PeCDF Standards

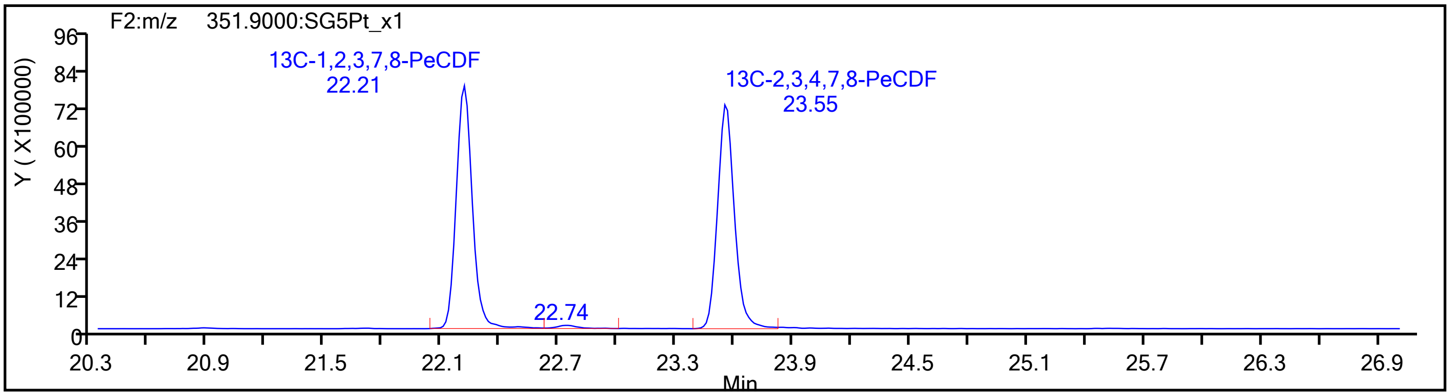

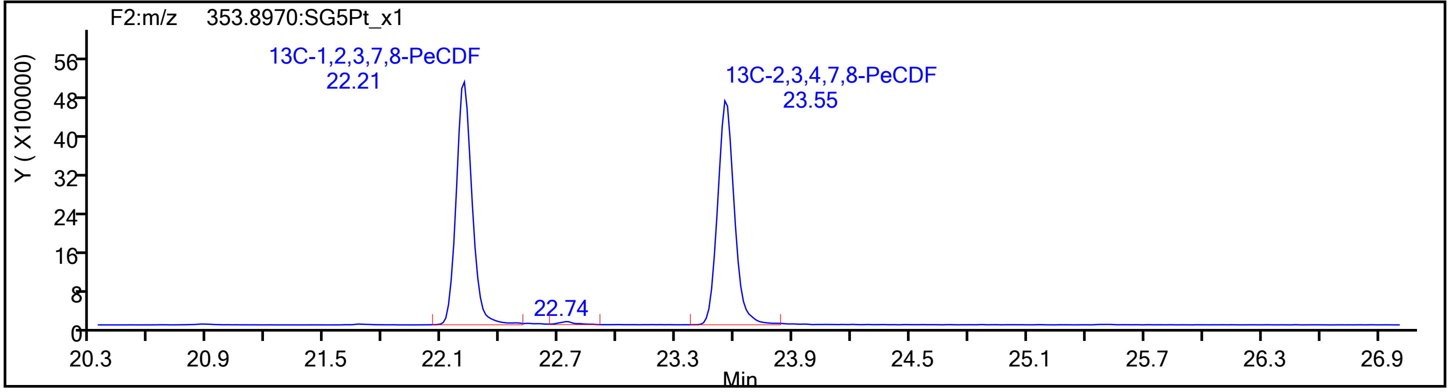

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

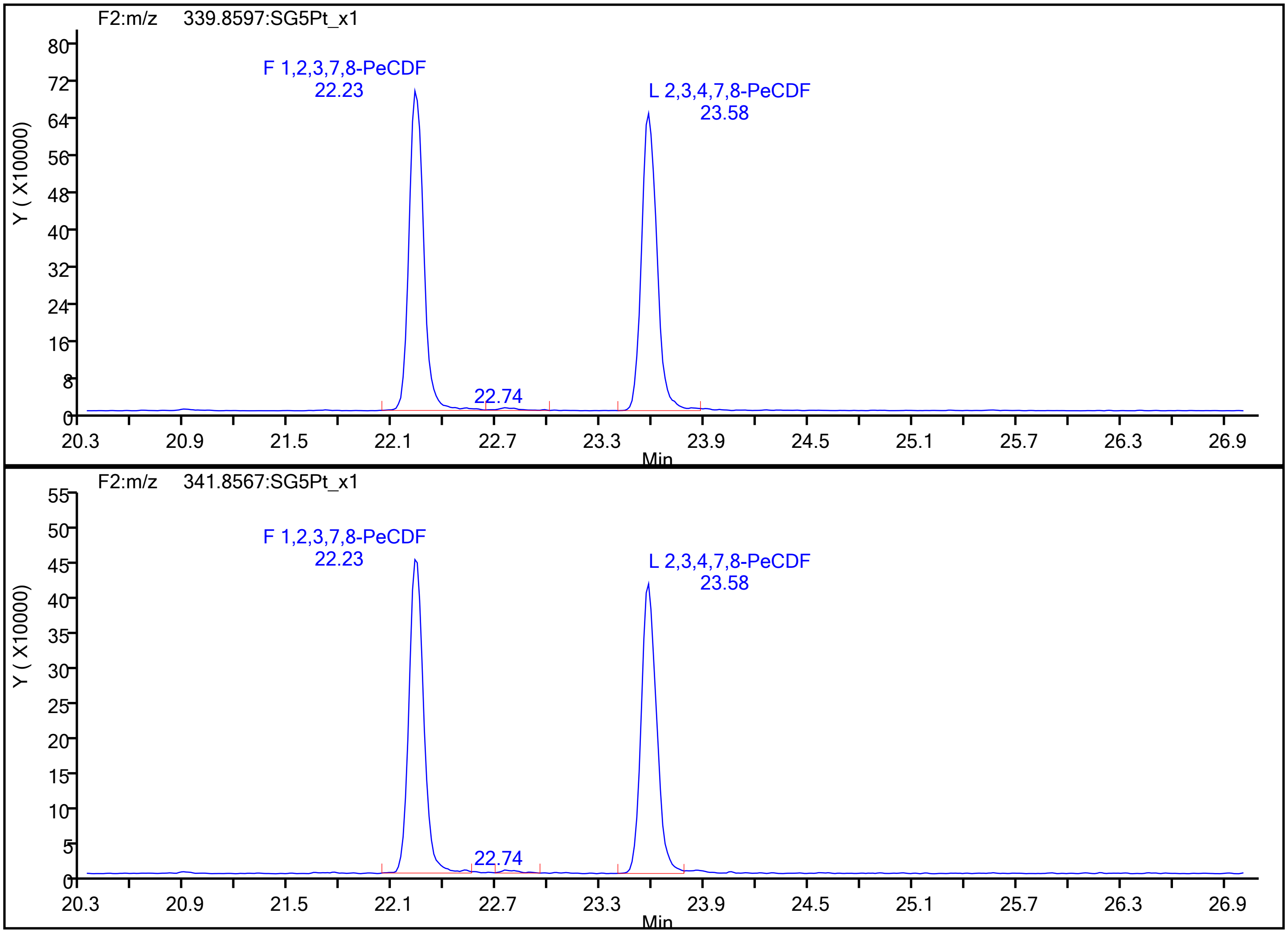

PeCDF Interference Mass

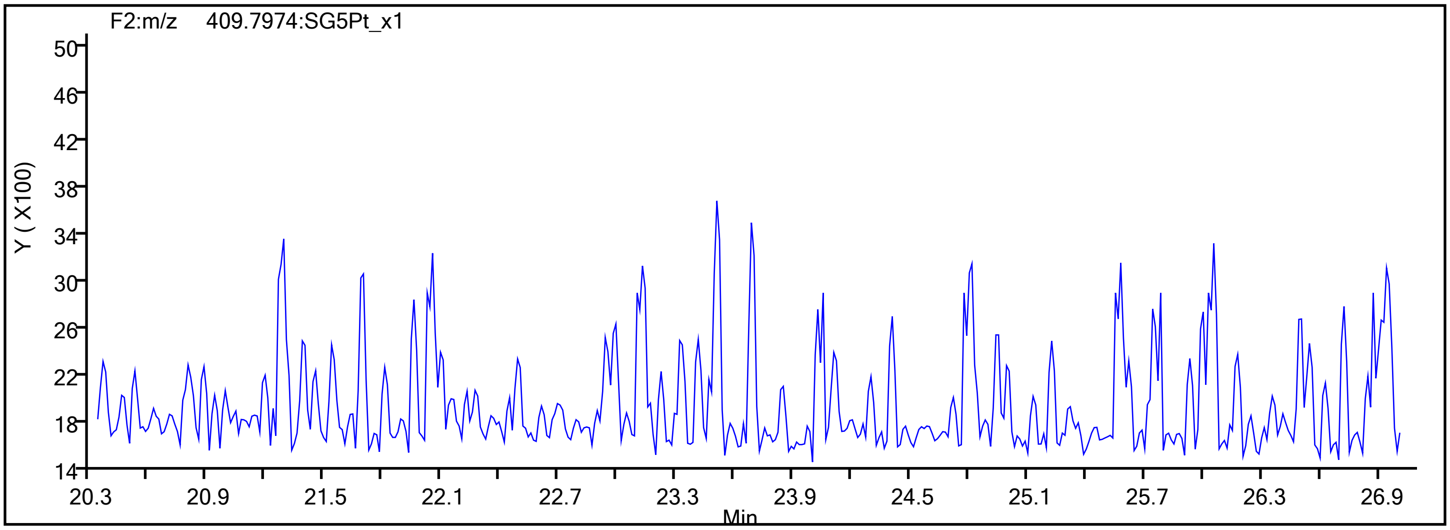

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

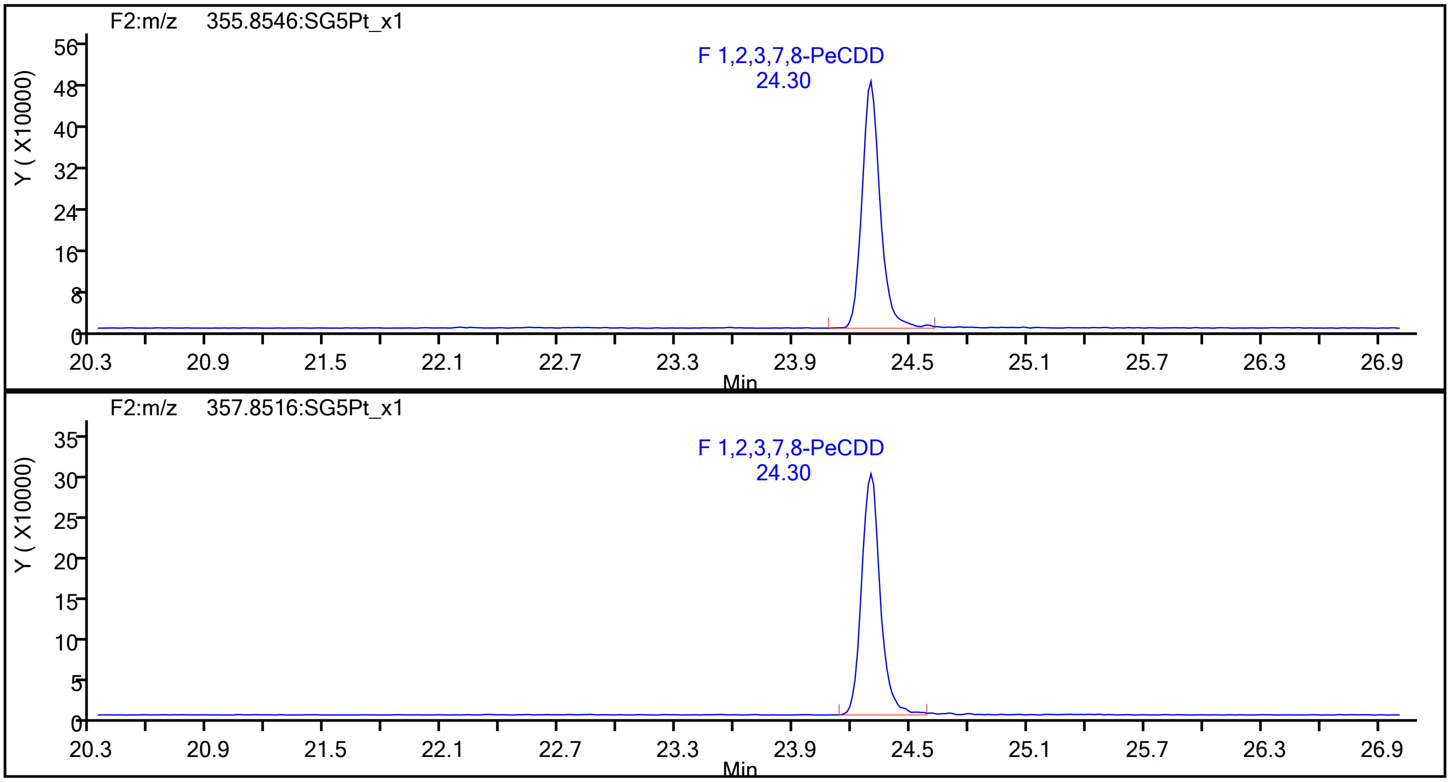

PeCDD Standards

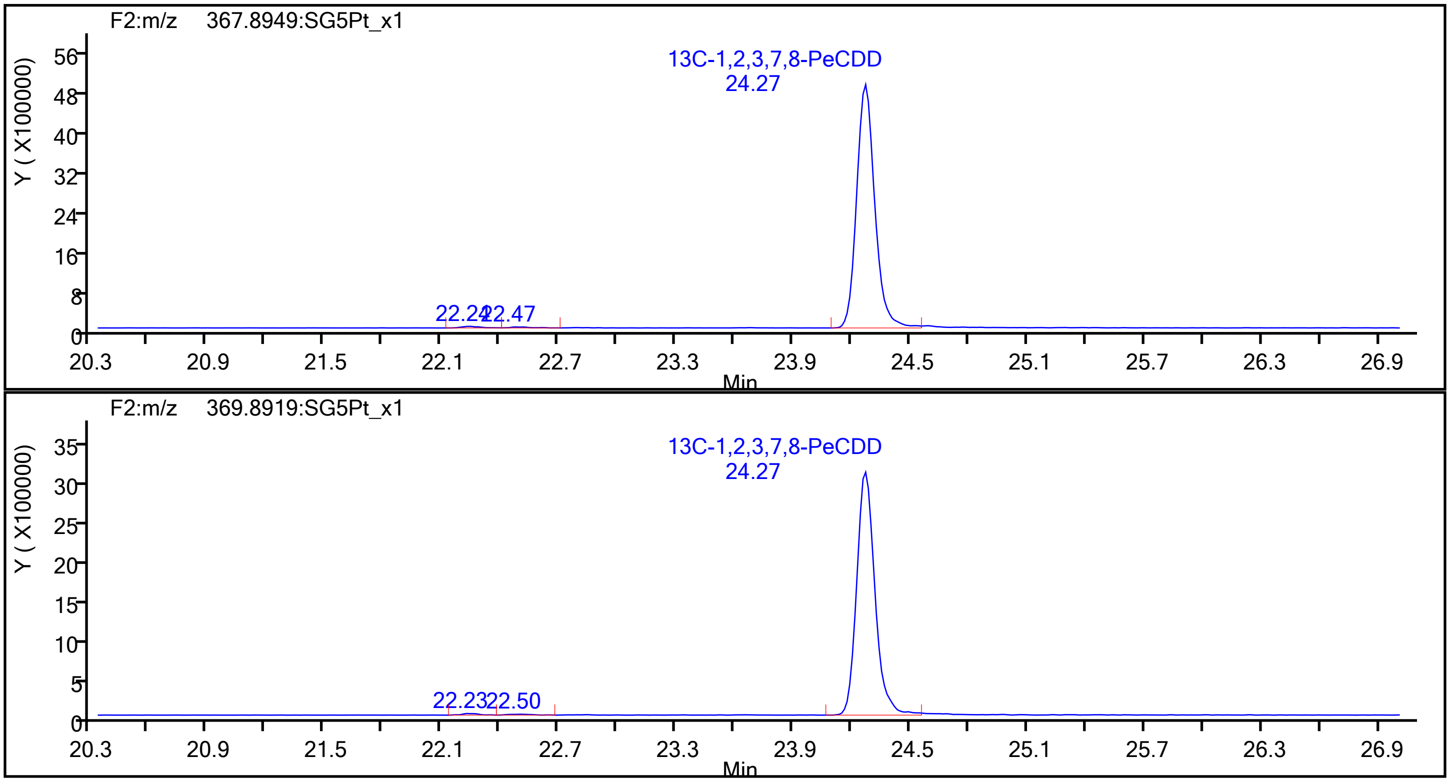

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

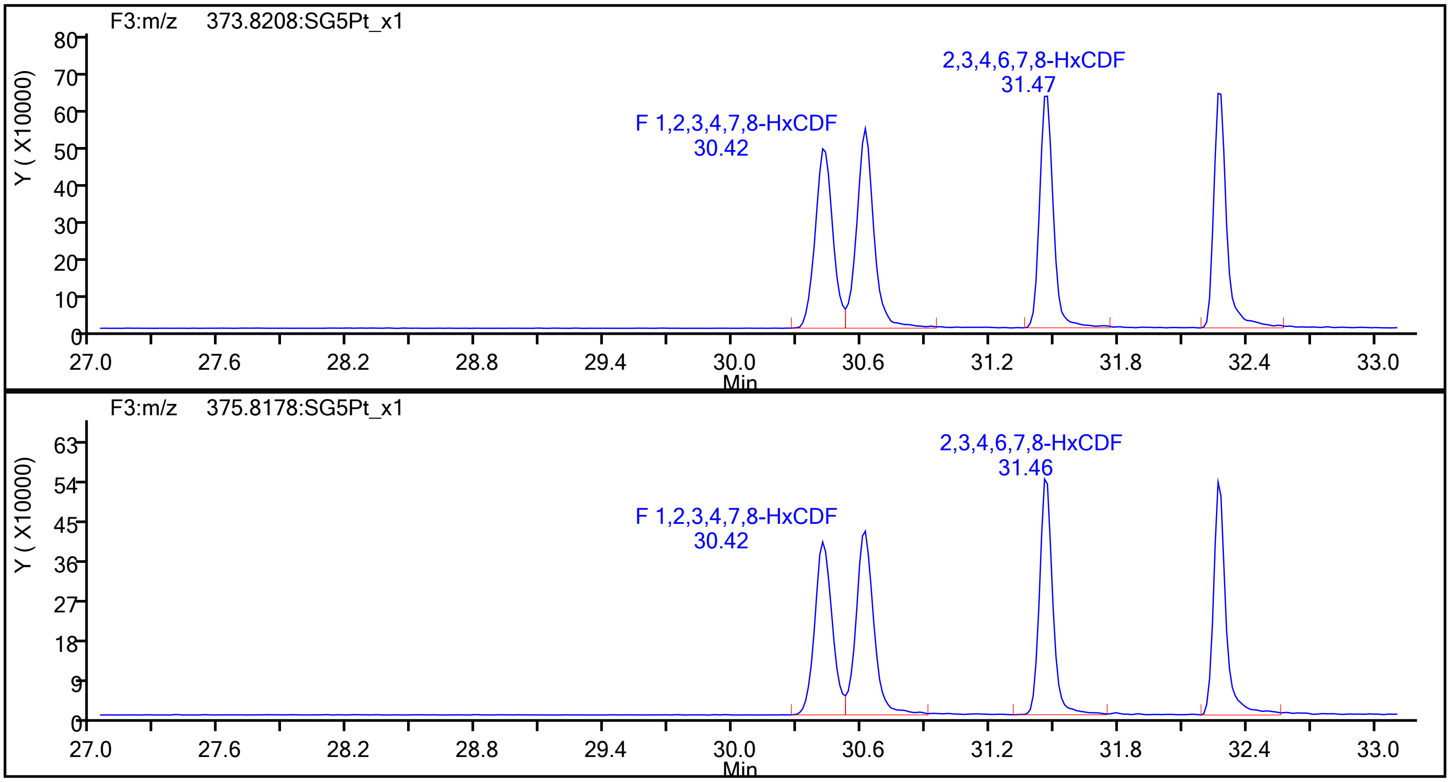

HxCDF Standards

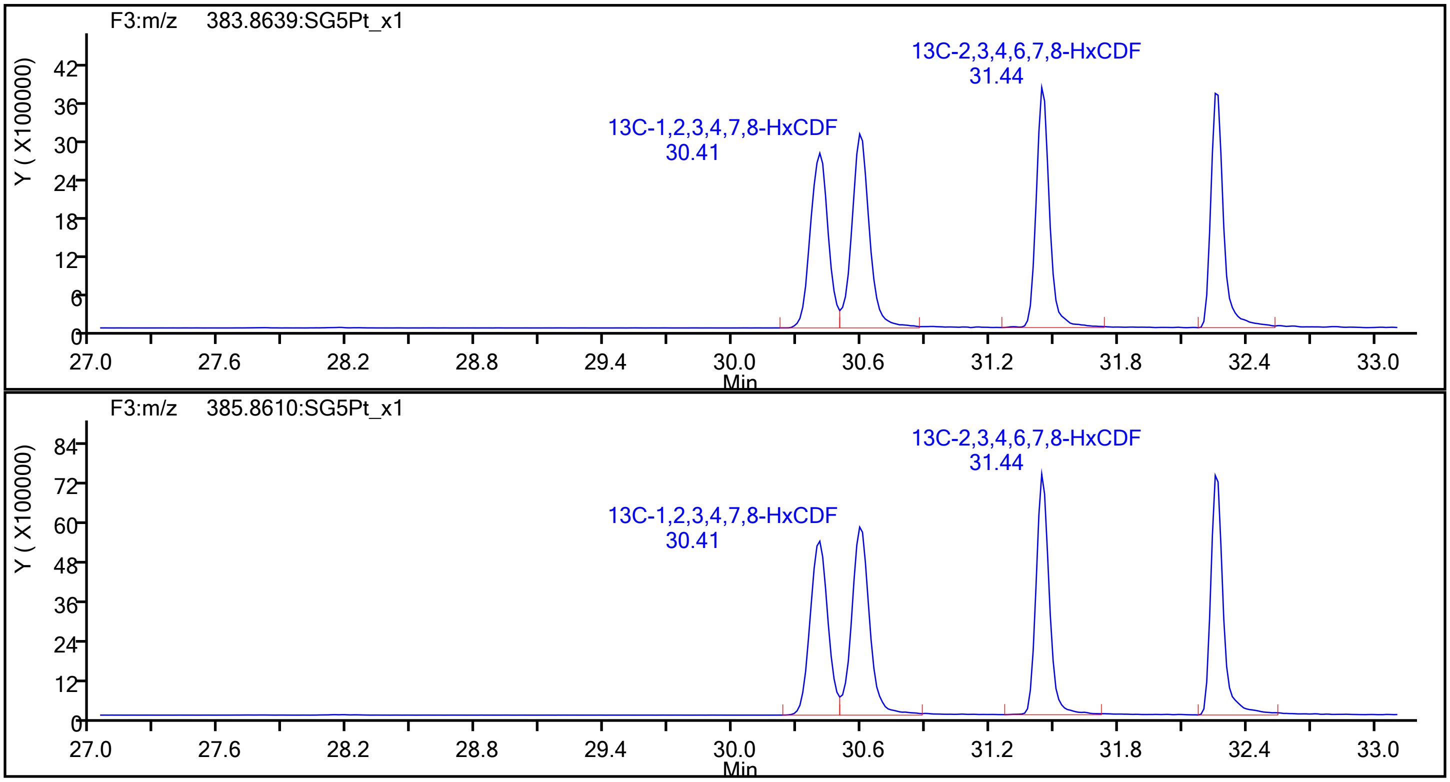

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

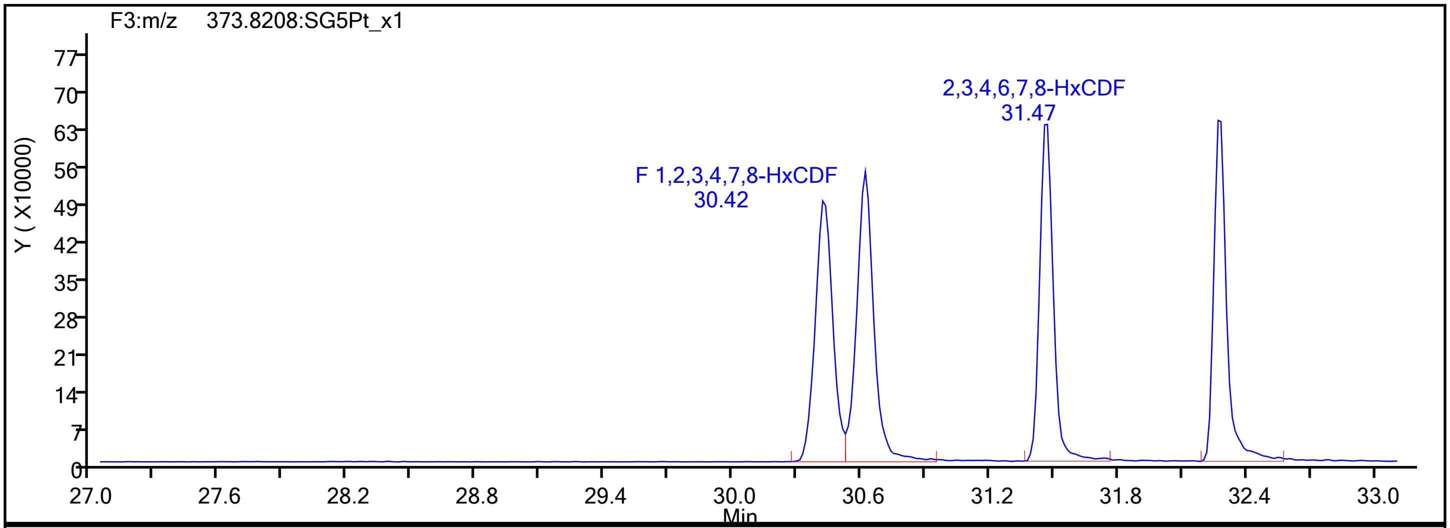

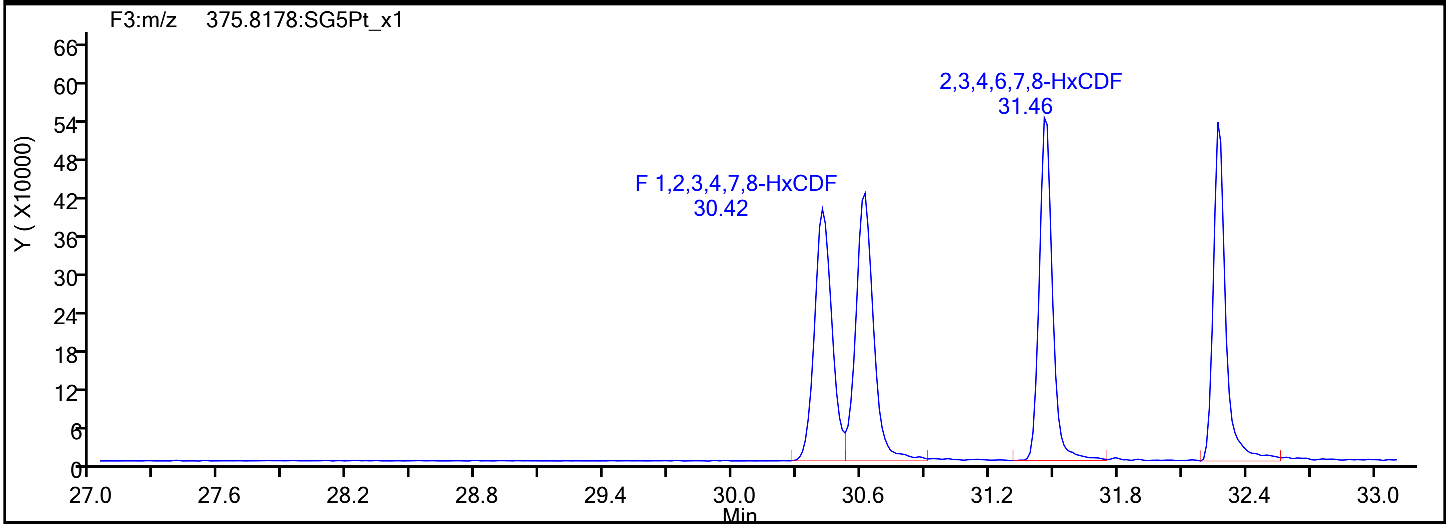

HxCDF Interference Mass

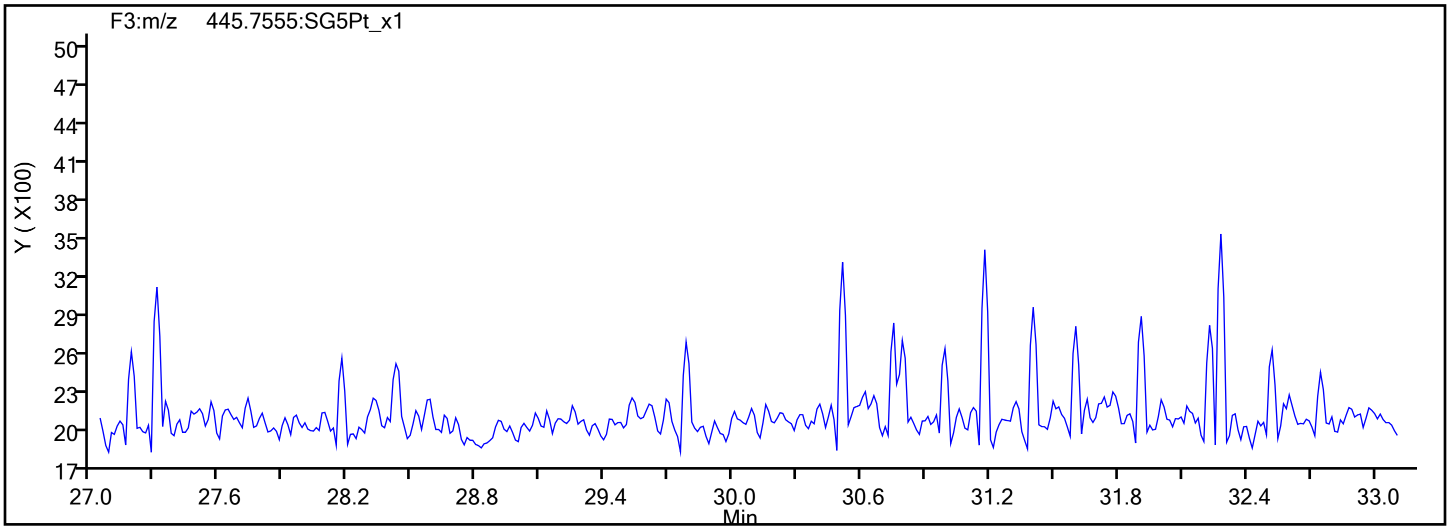

Report Date: 18-Sep-2020 10:35:49
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

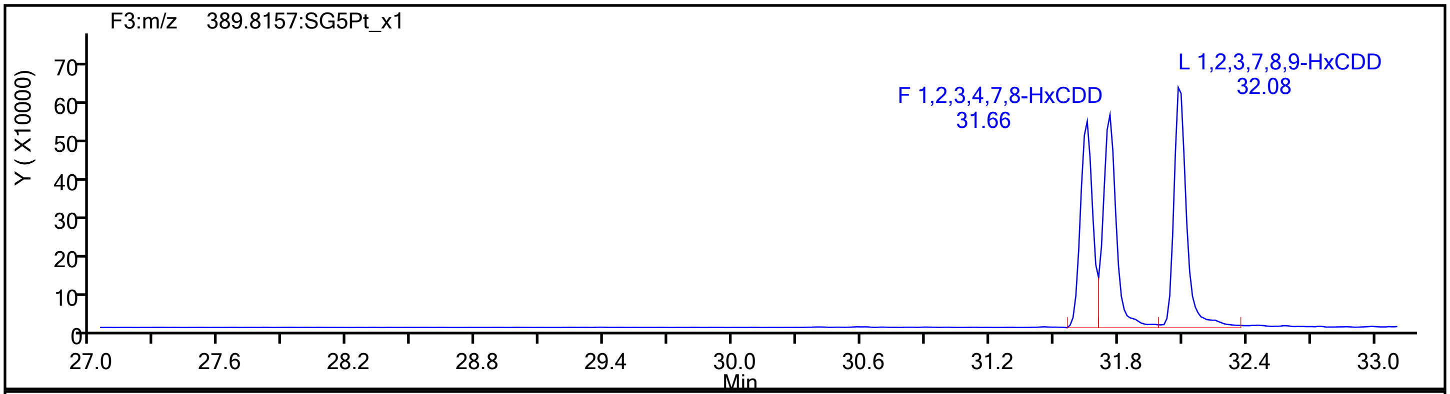

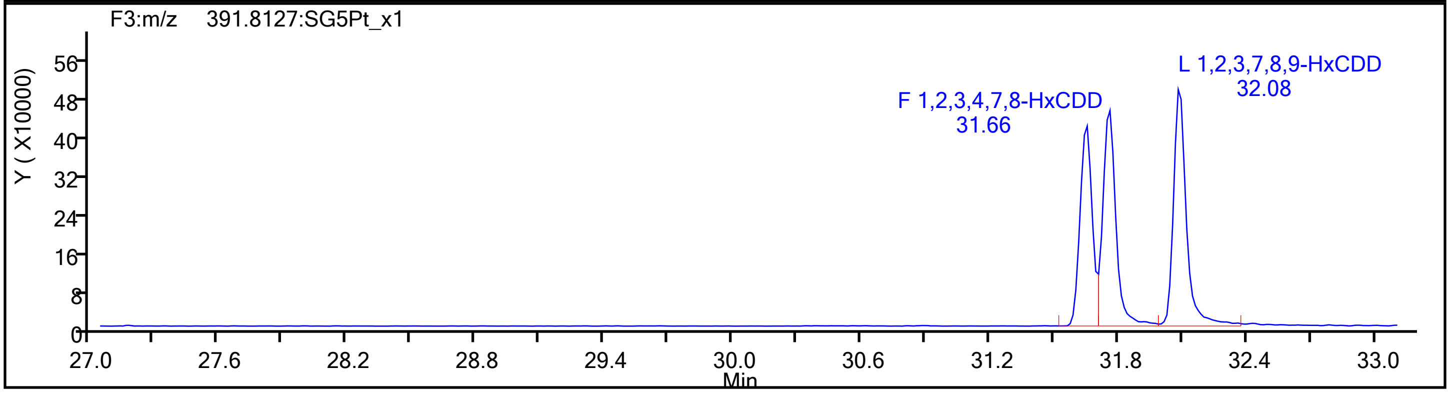

HxCDD Standards

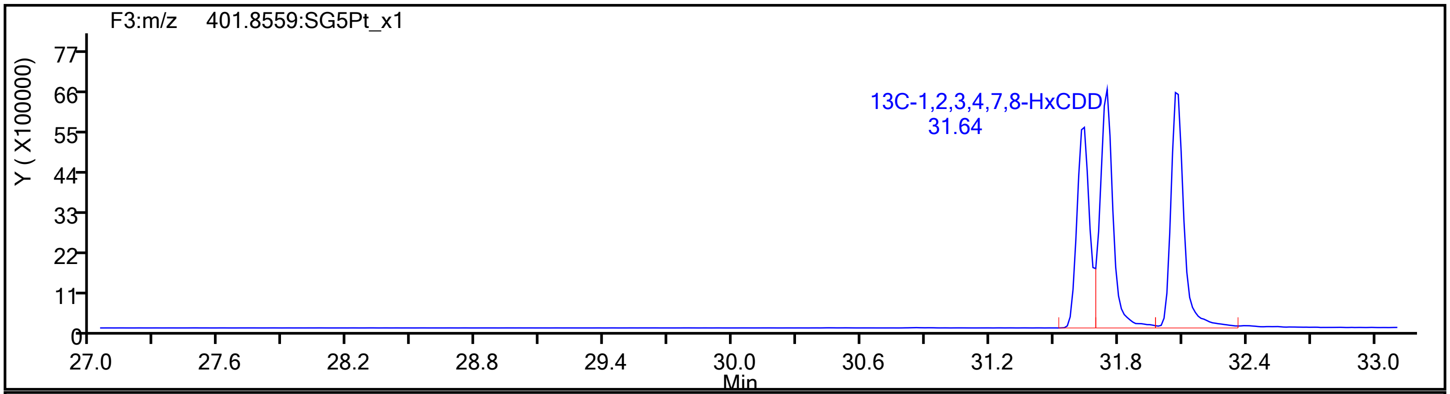

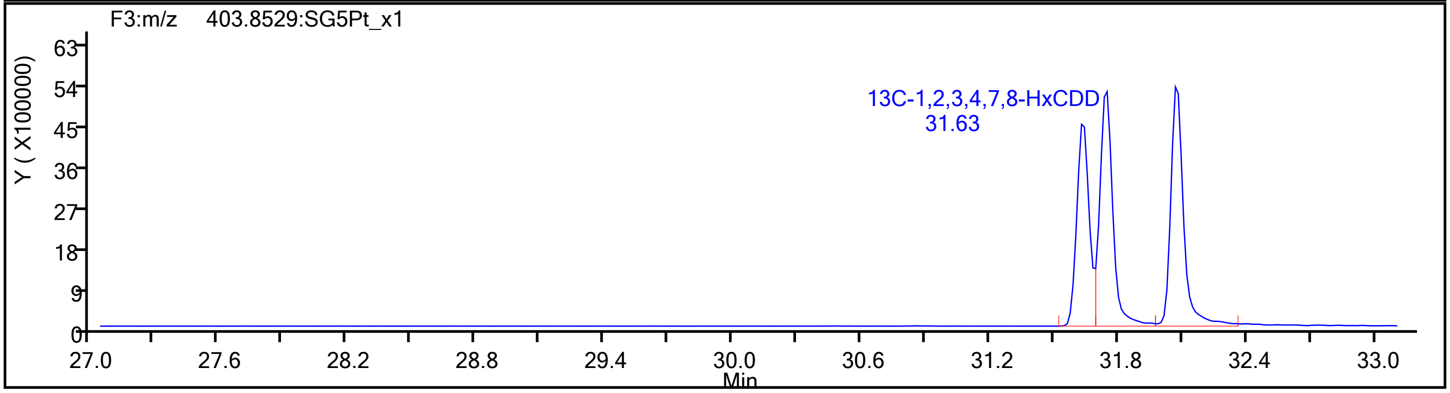

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 4
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HpCDF

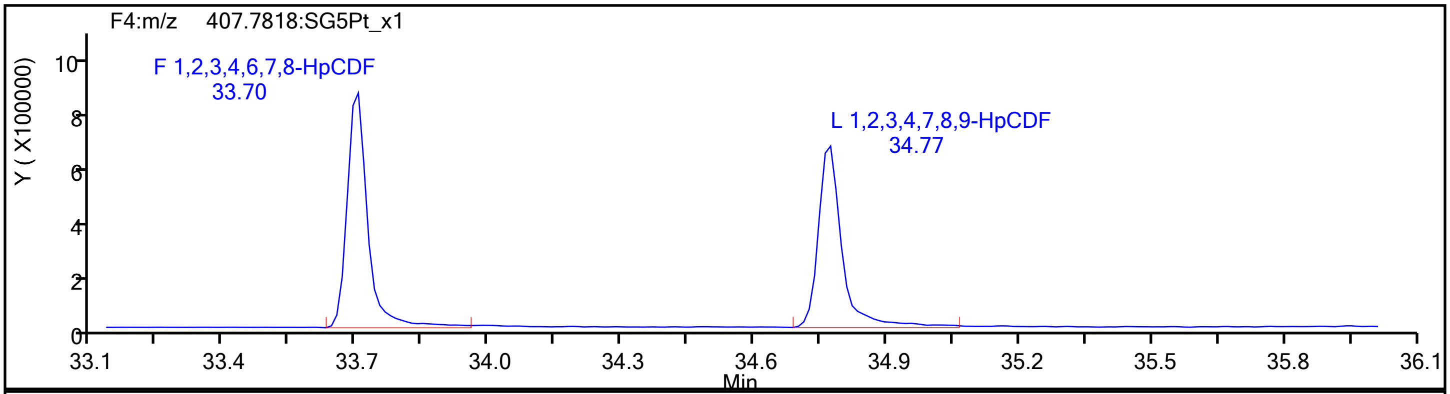

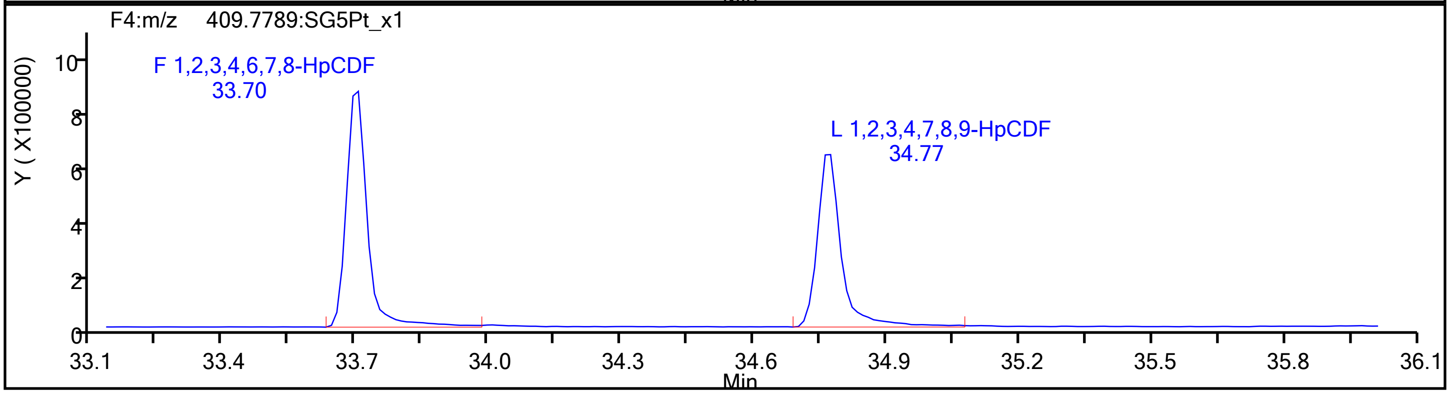

HpCDF Standards

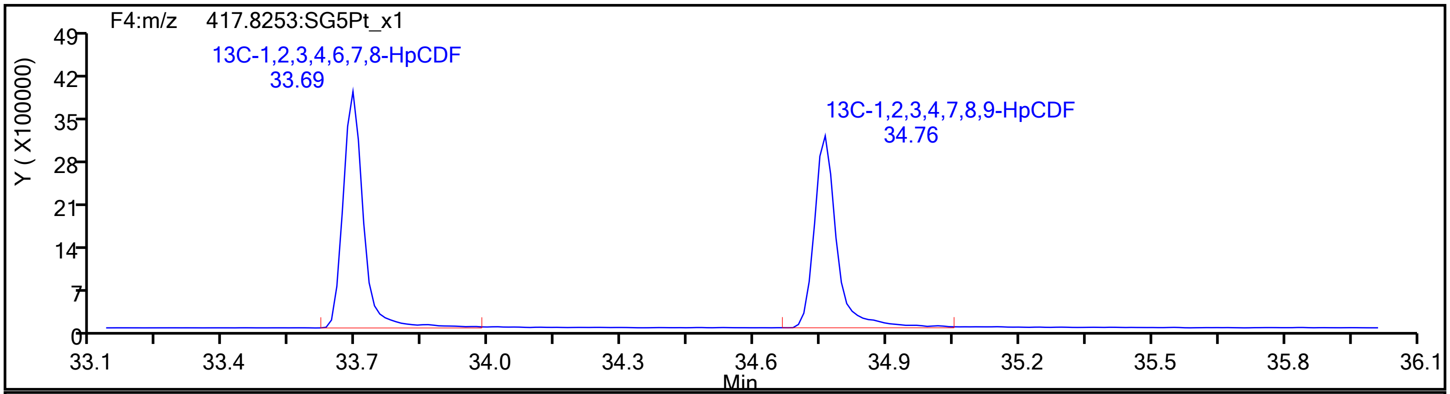

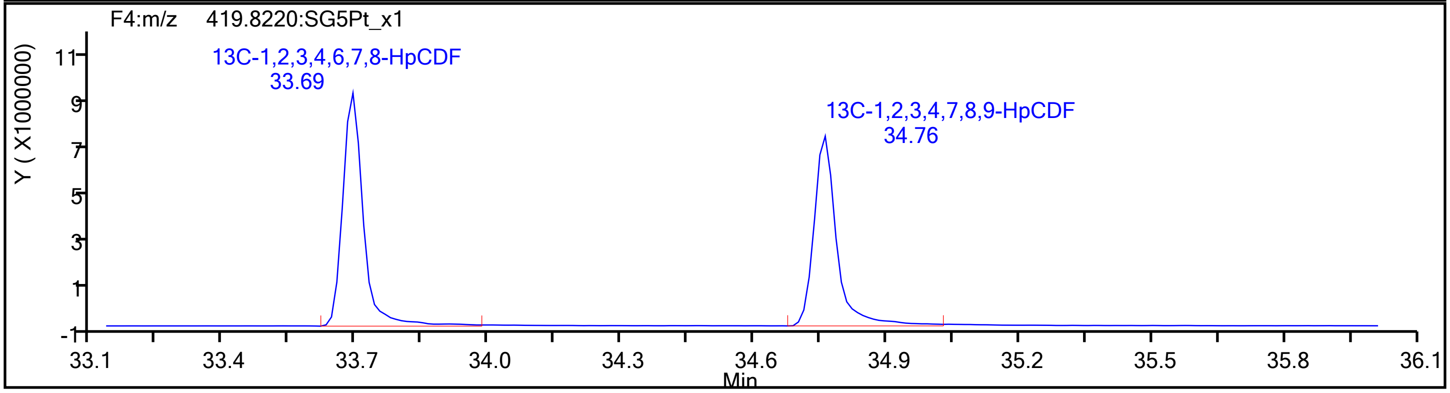

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

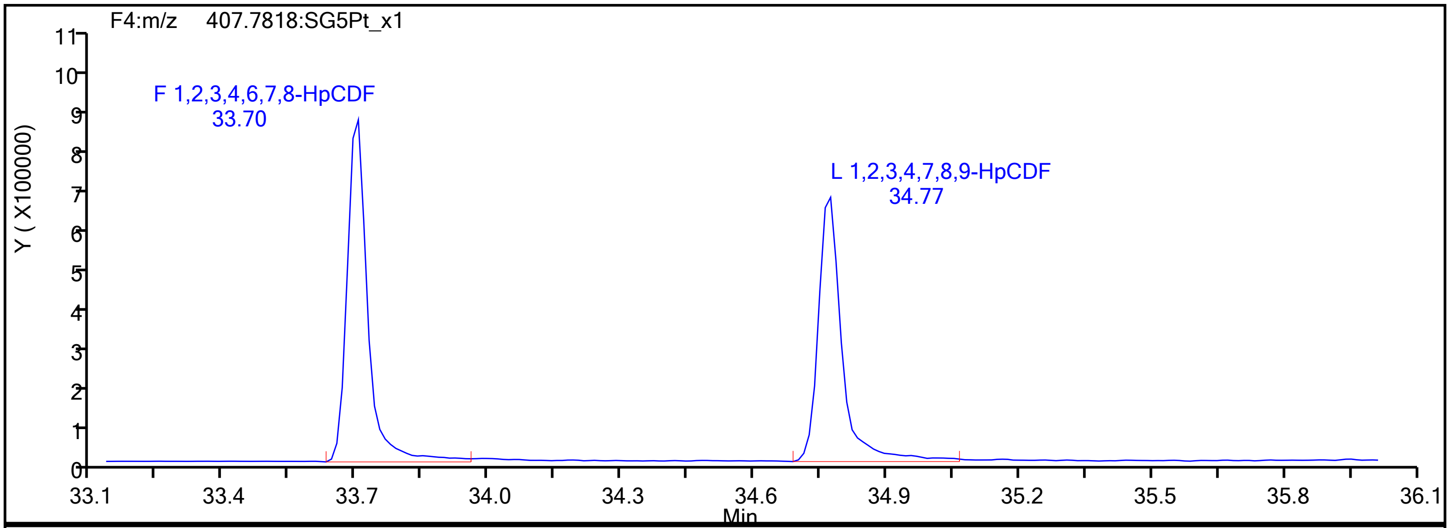

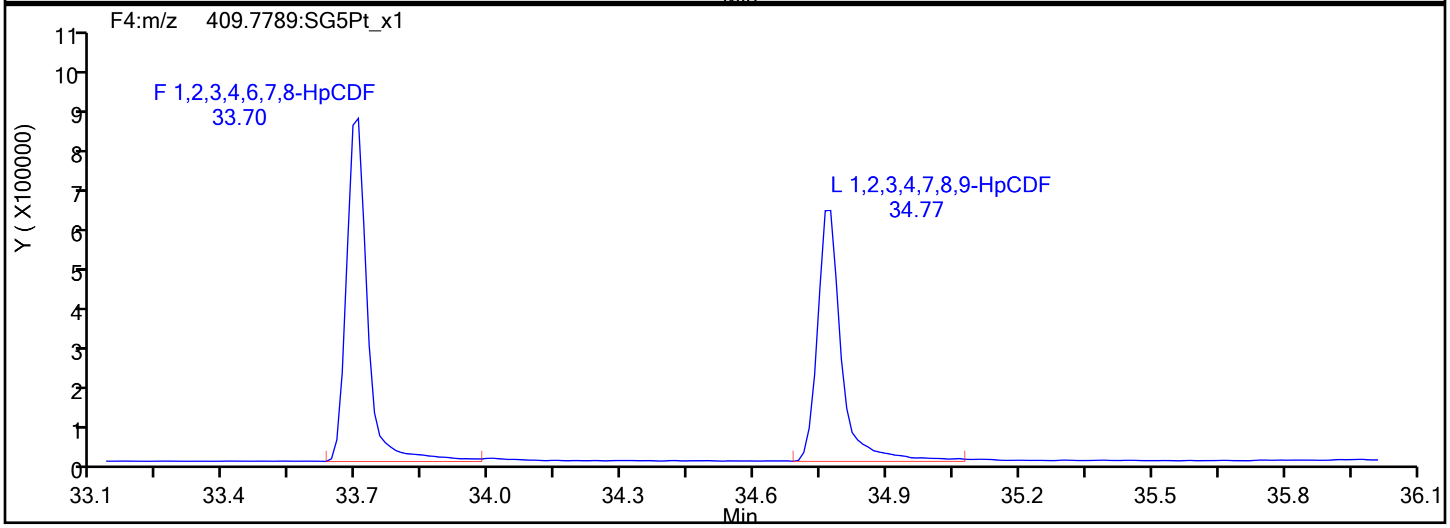

HpCDF Interference Mass

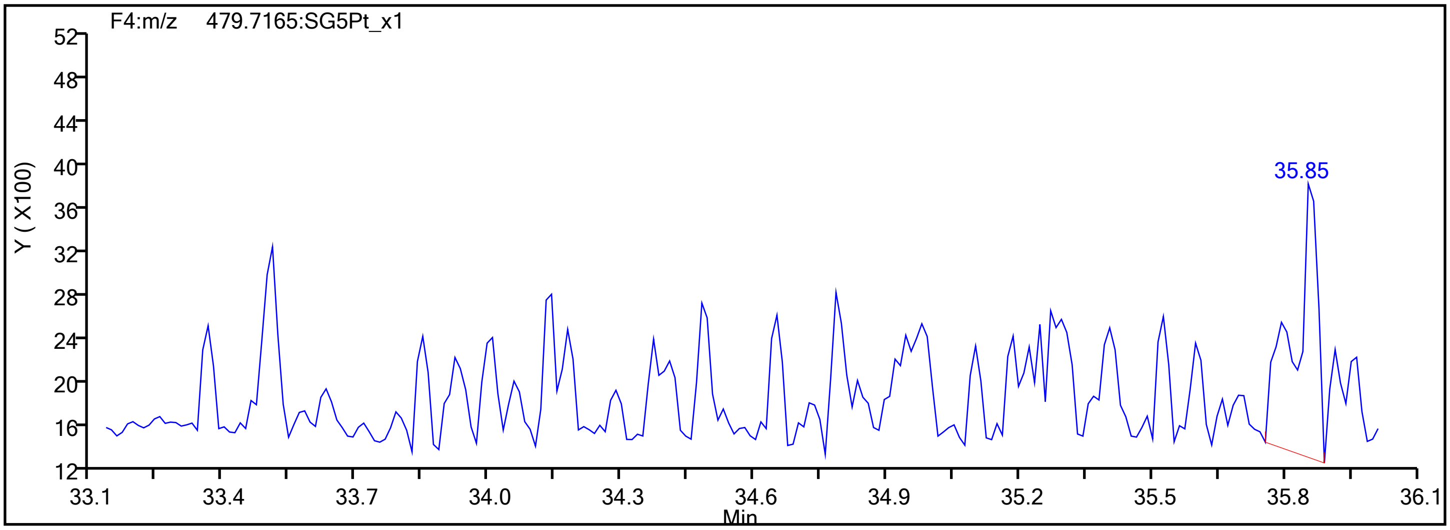

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

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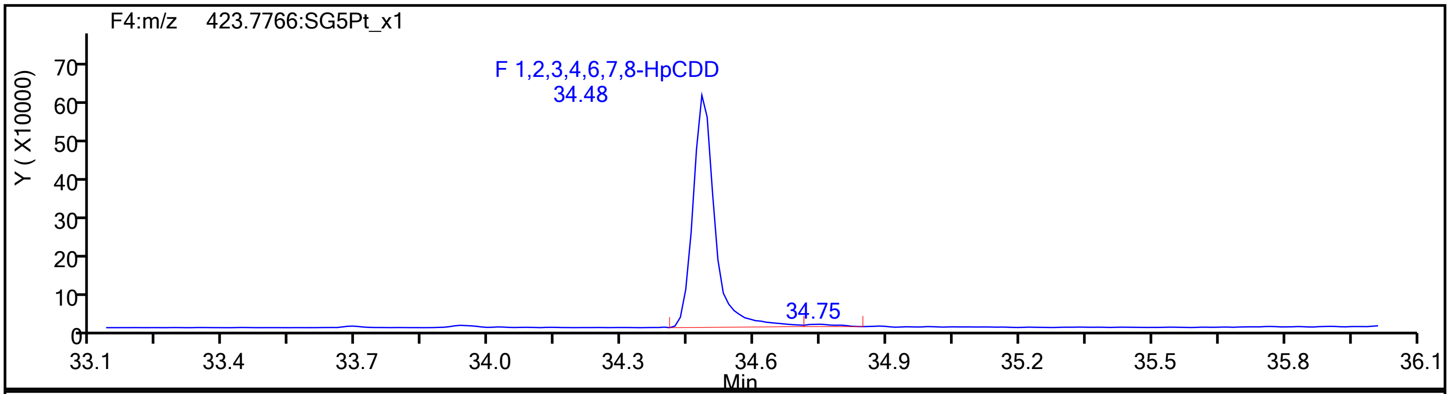

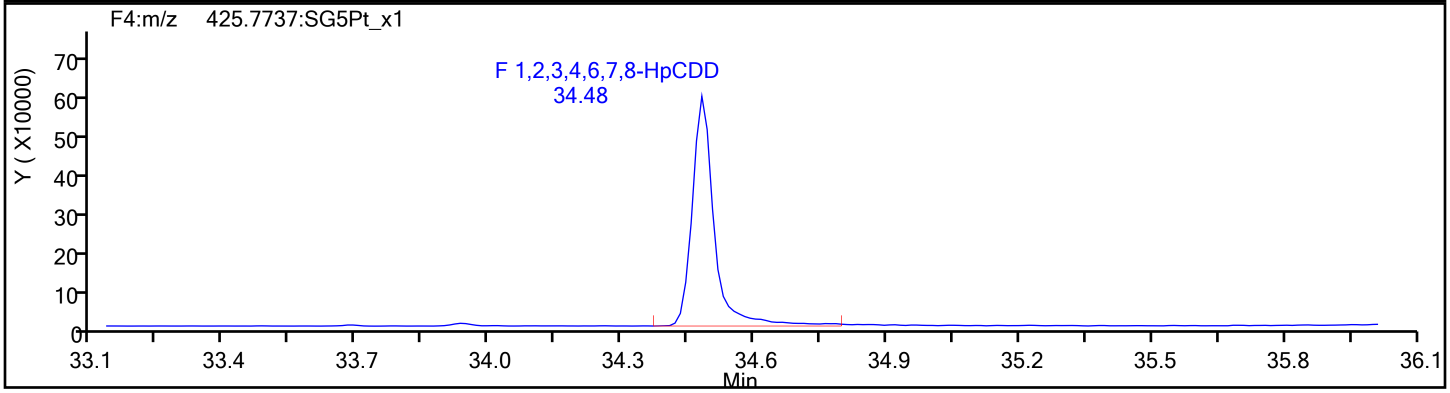

HpCDD Standards

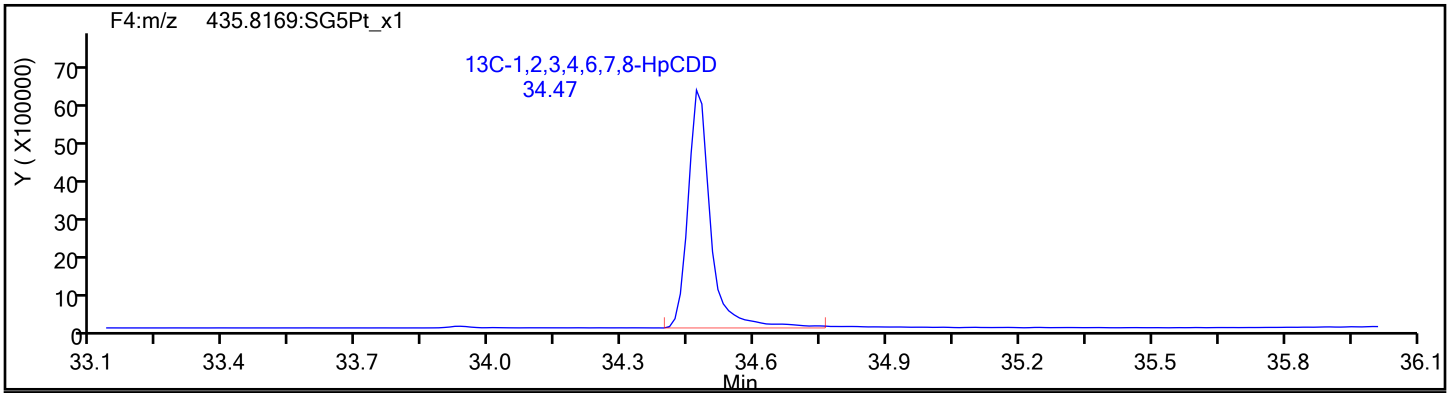

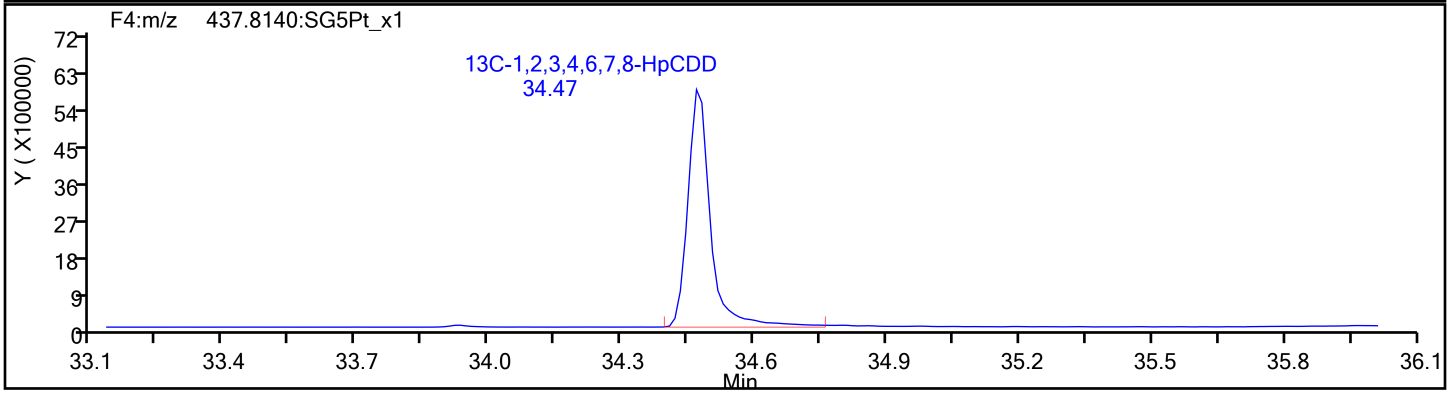

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

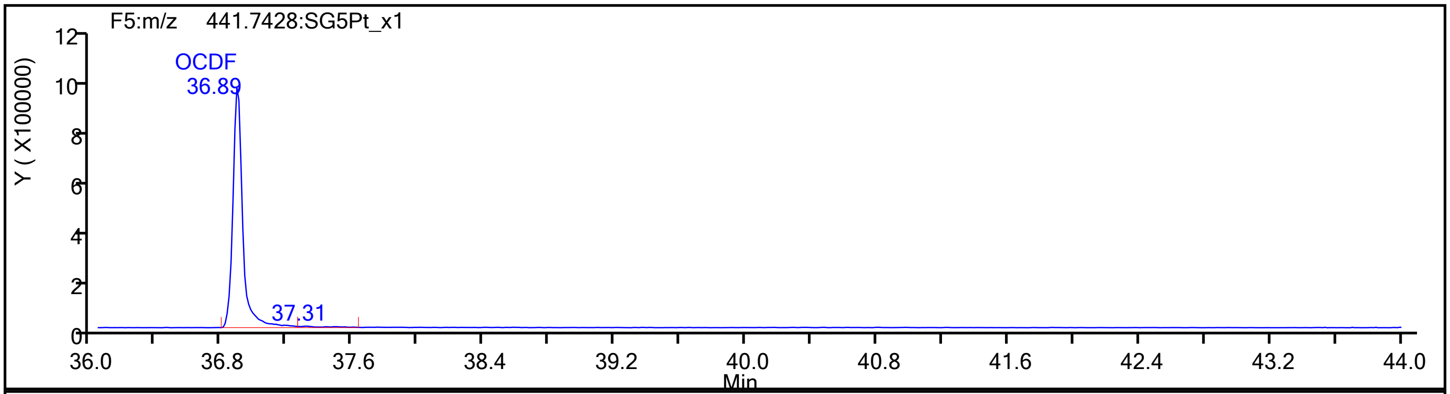

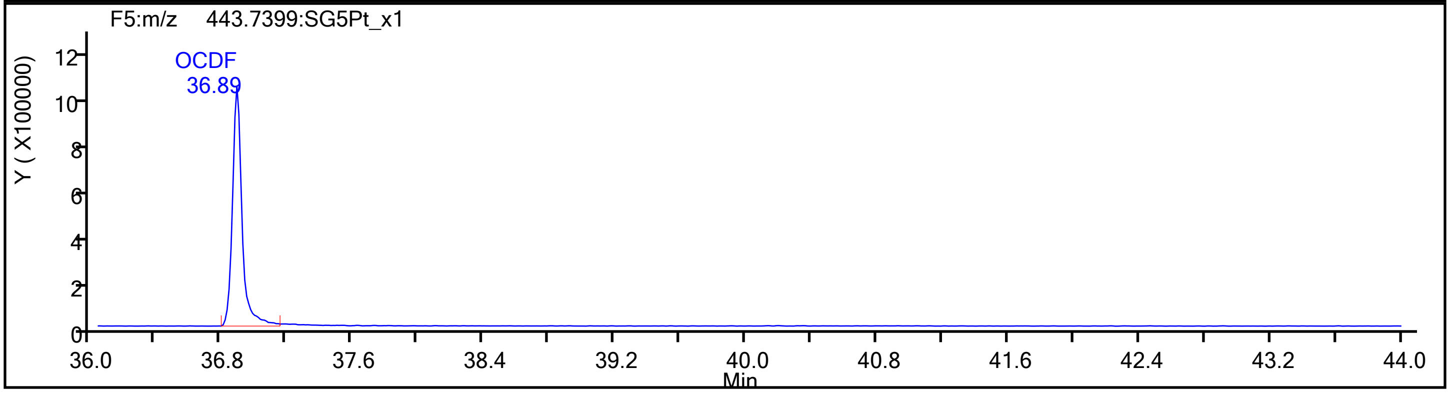

OCDF Standards

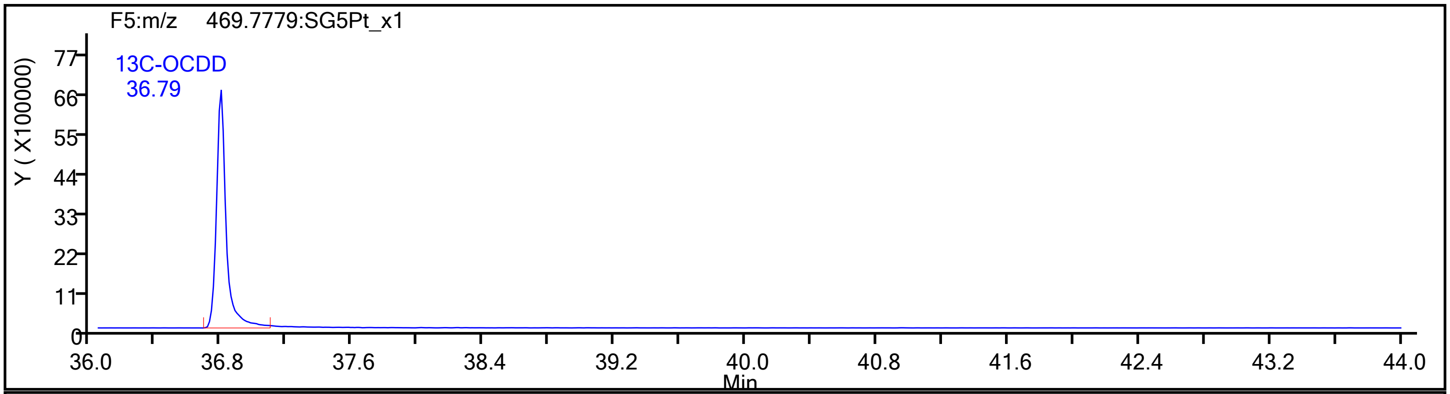

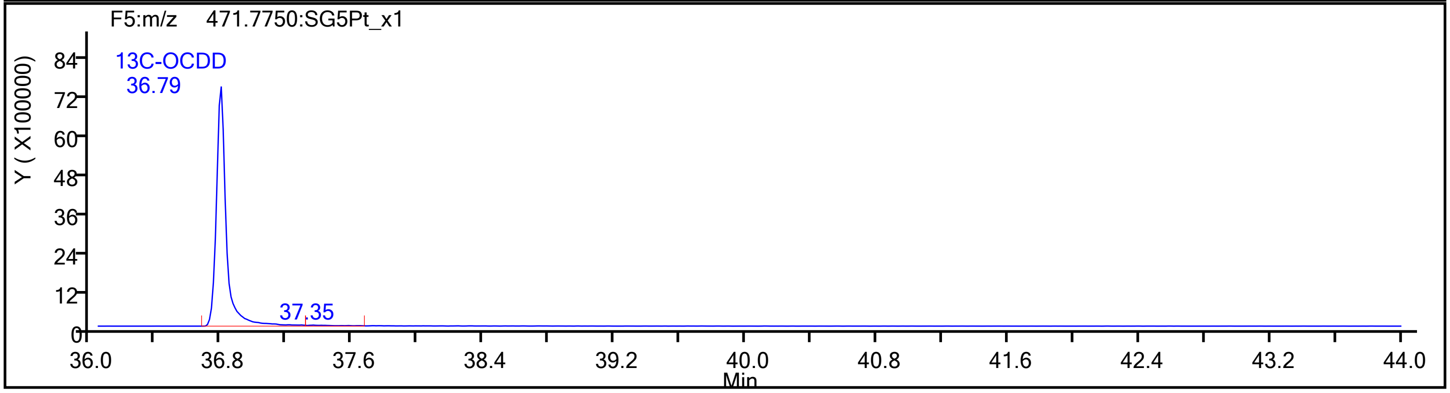

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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OCDF

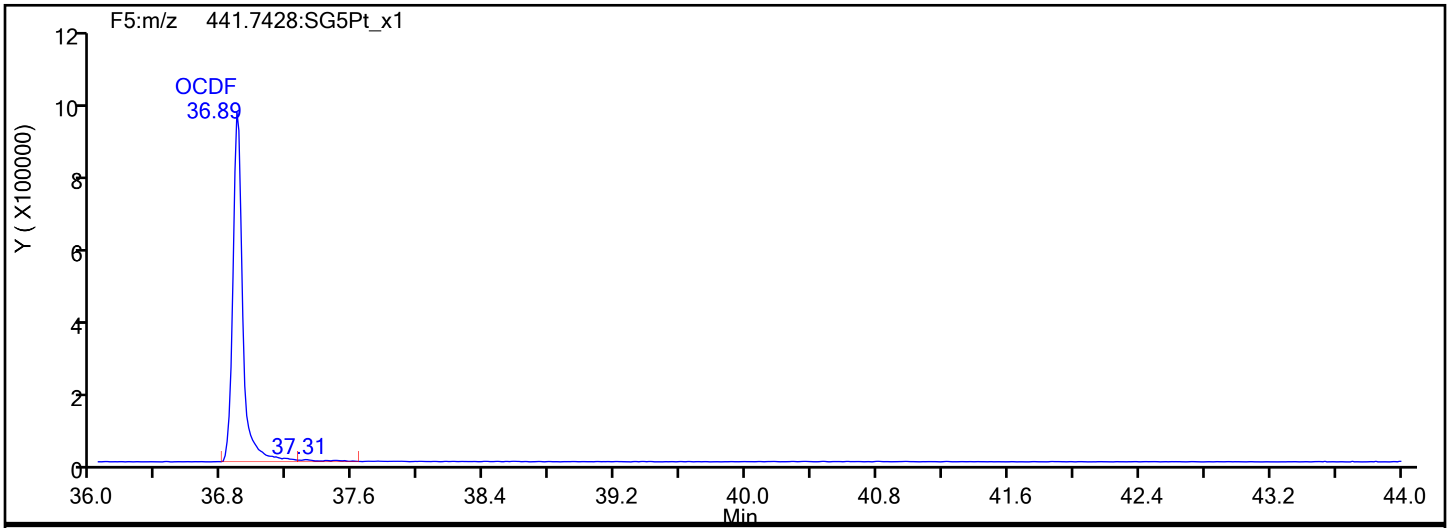

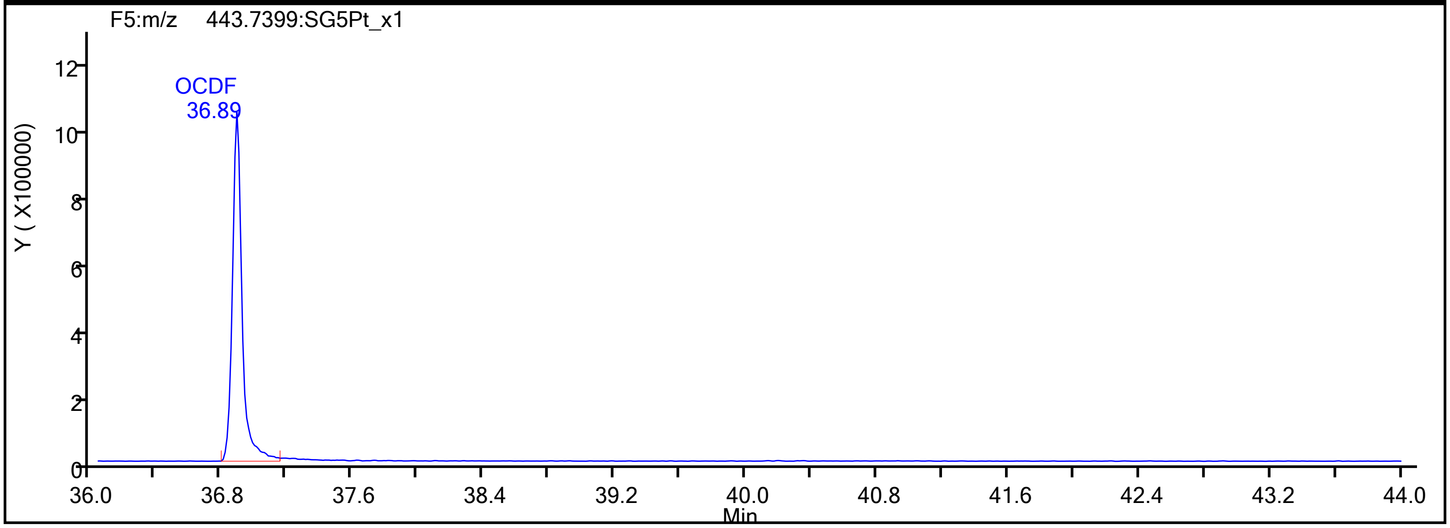

OCDF Interference Mass

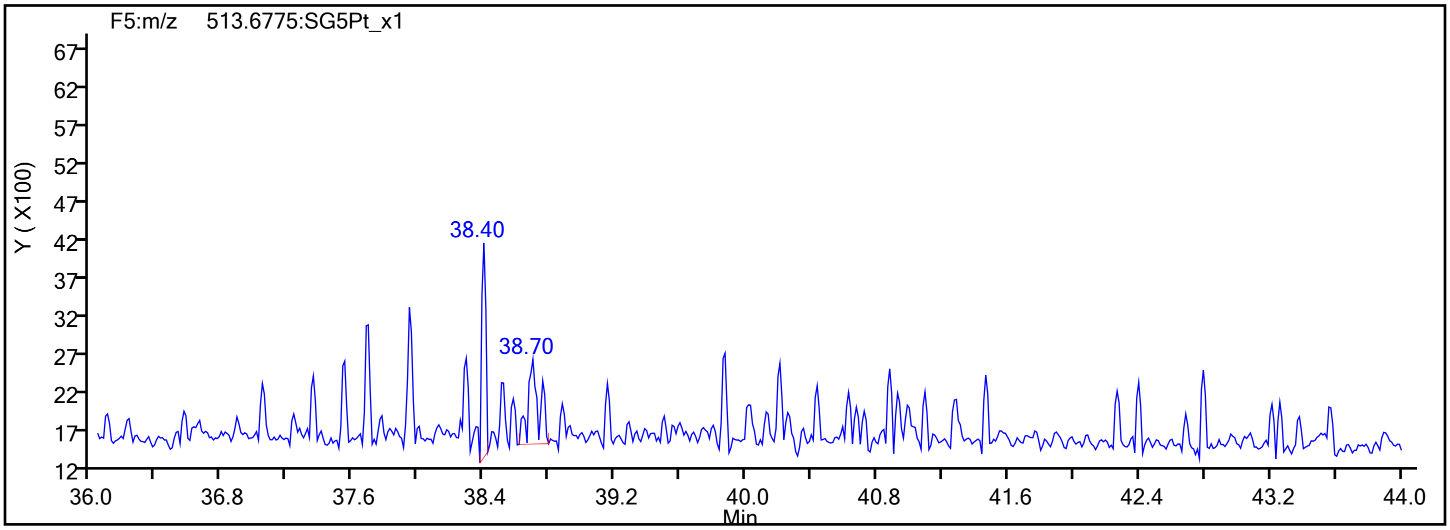

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

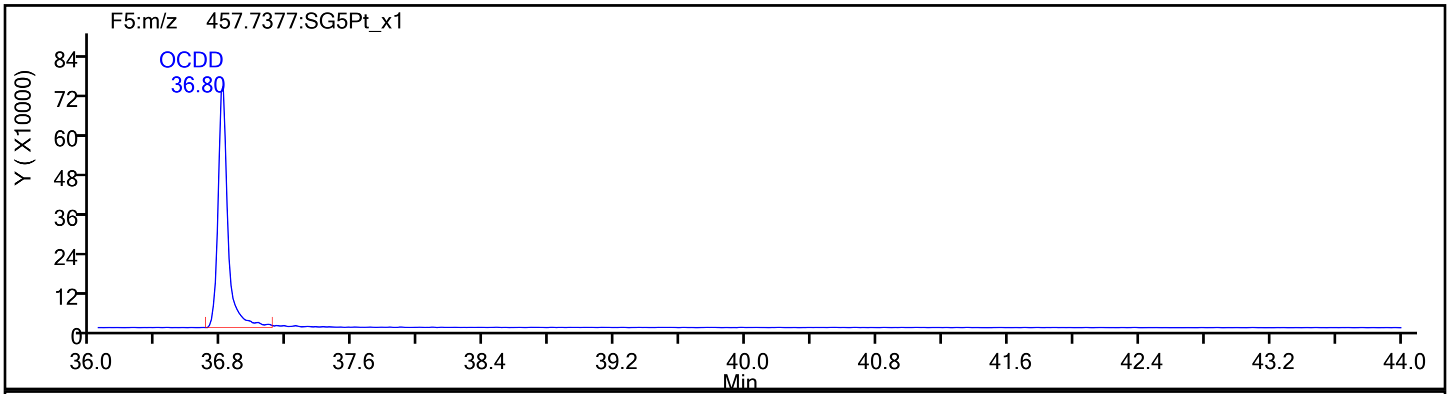

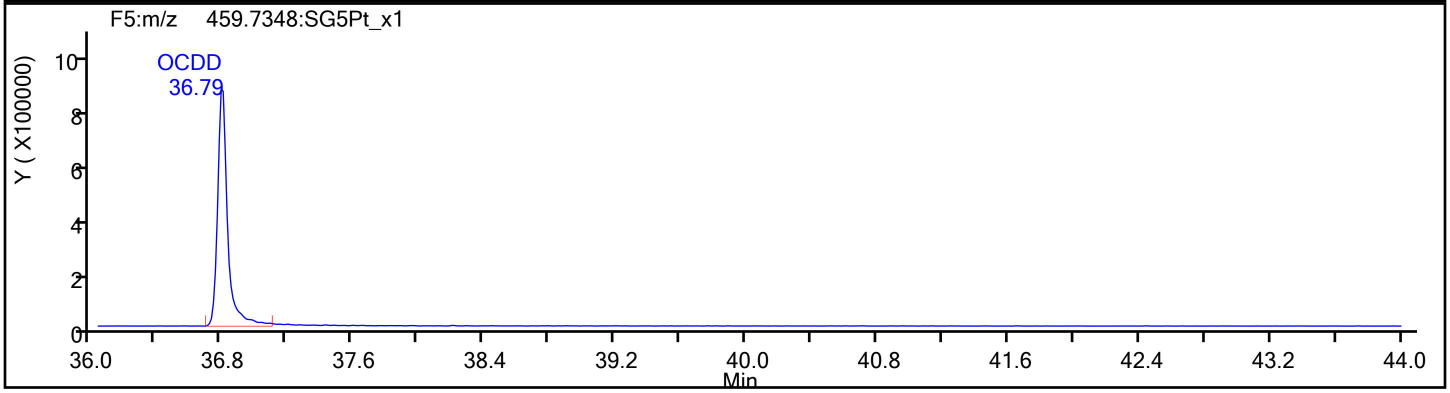

OCDD Standards

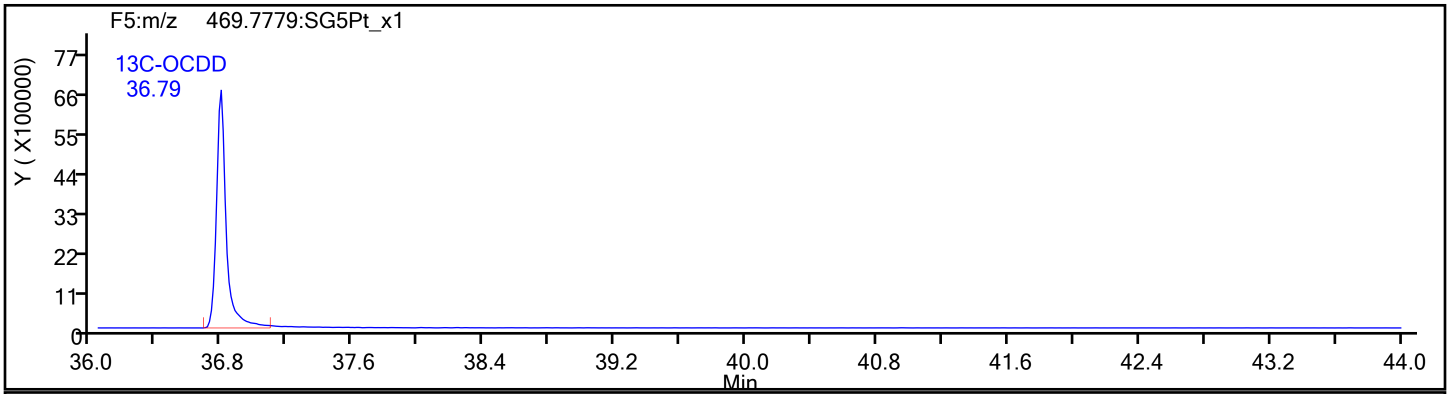

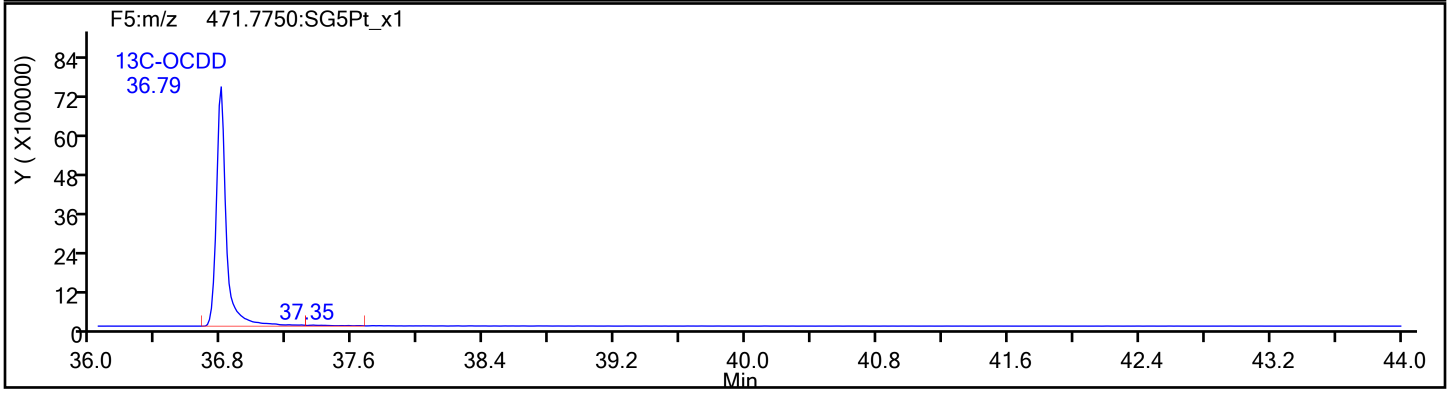

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 4
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Column Dia: 0.32 mm

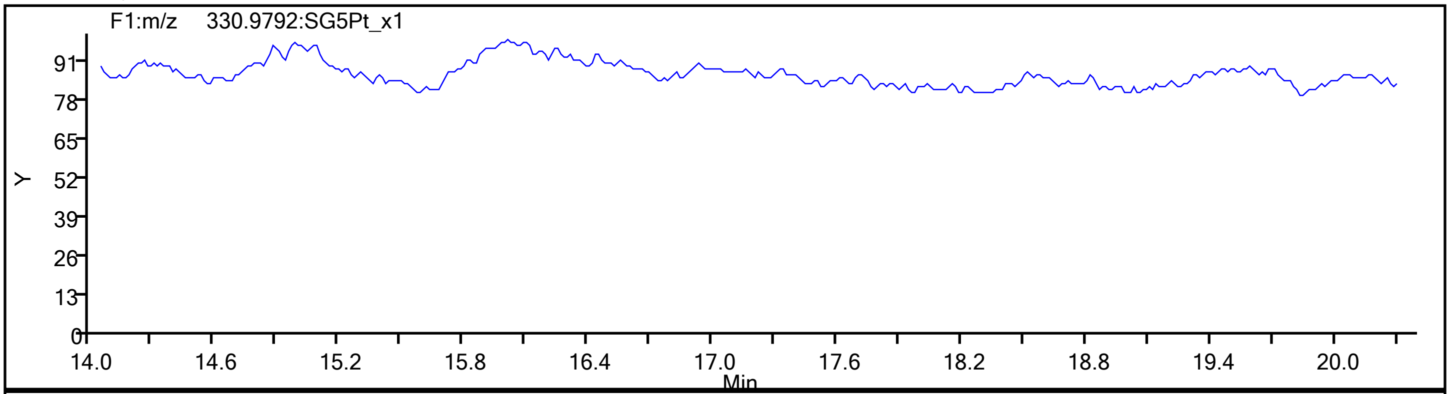

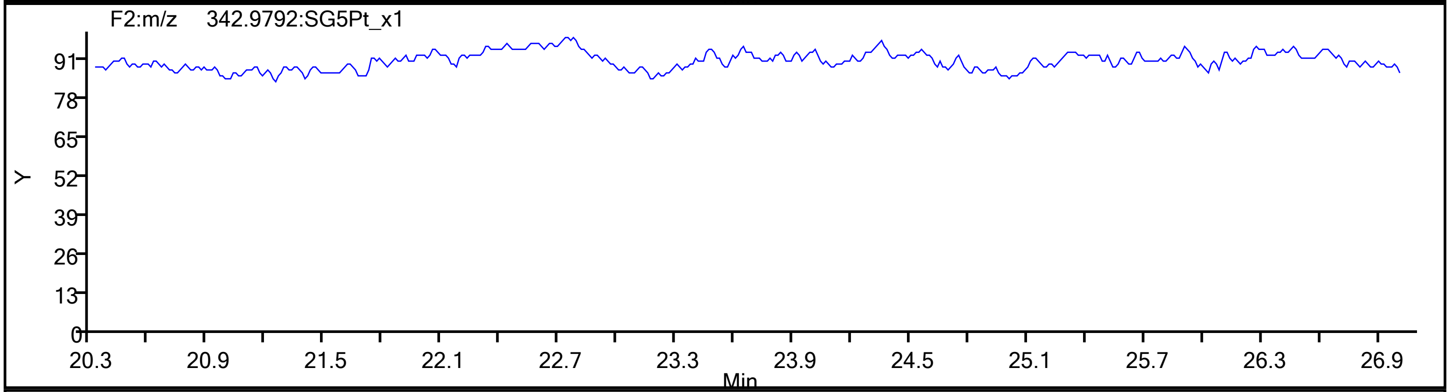

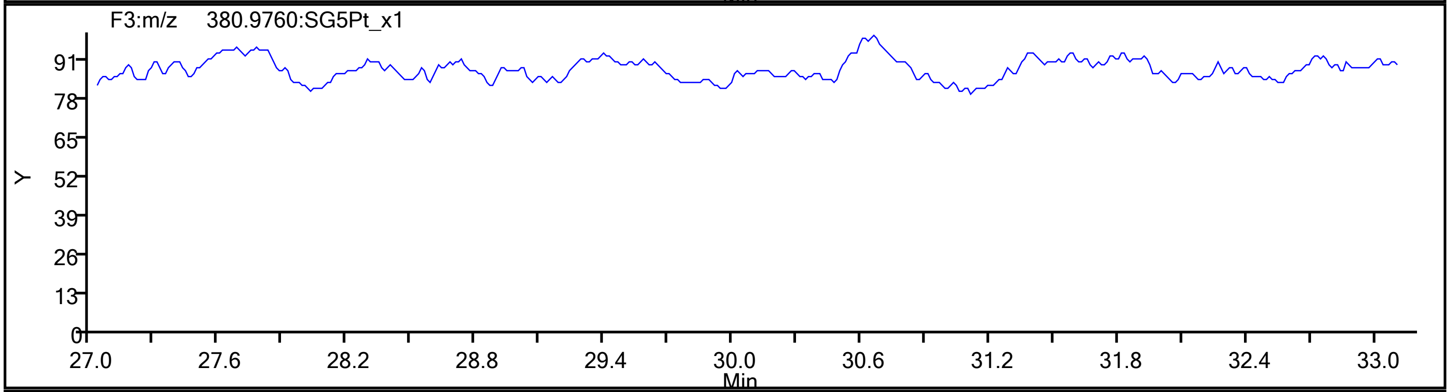

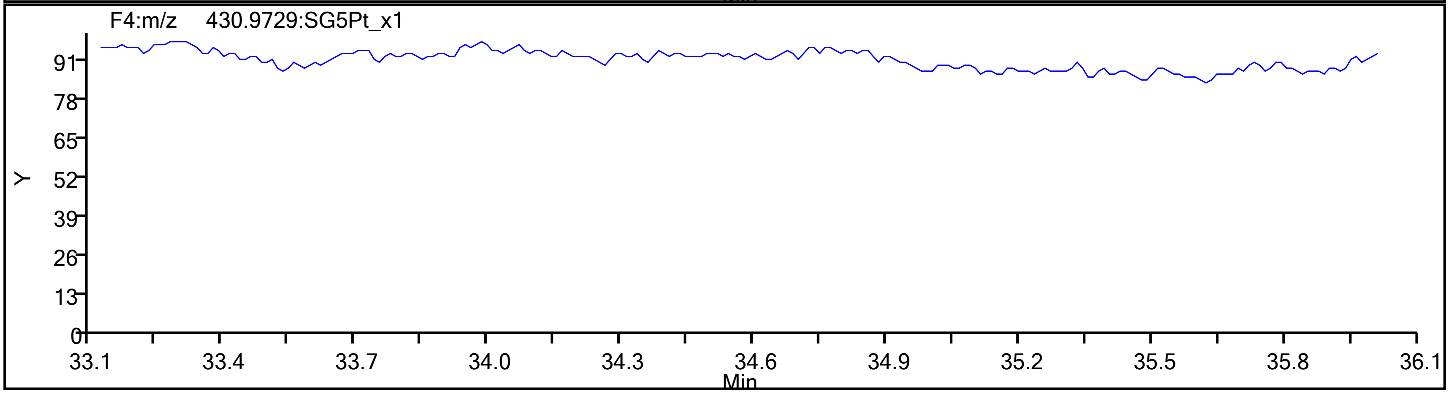

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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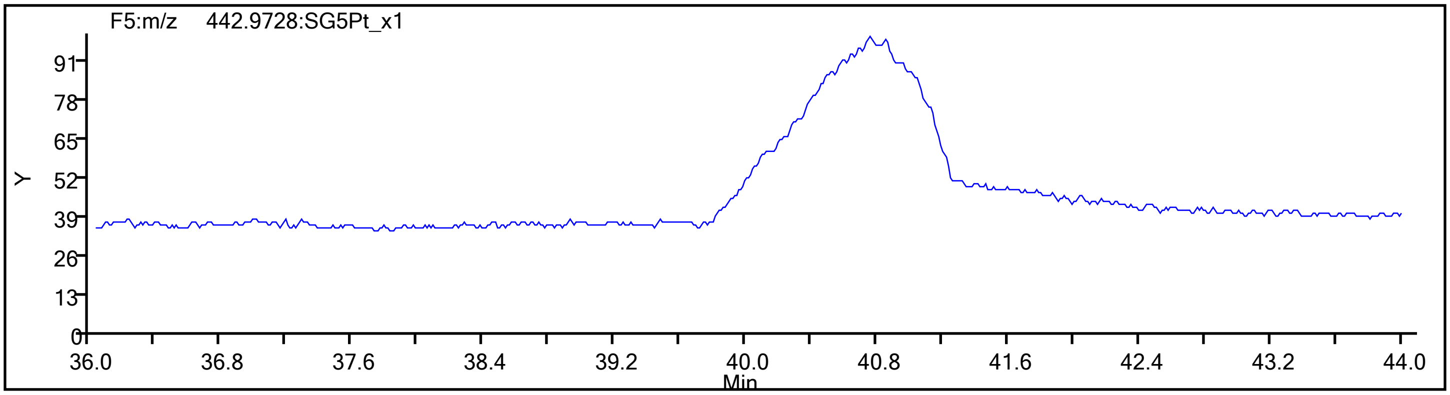

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	17-Sep-2020 17:39:44	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 091720B CS-4 HRDXNL4_00095				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:35:52	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: arghestanis		Date:	18-Sep-2020 10:17:23		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	70720595	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	94412734	0.77	1.3598	98.2	98.2	0.1474	0.1474	98.17	
2,3,7,8-TCDF	17.219	8215614	0.77	0.9077	9.586	9.586	0.0248	0.0248	95.86	
S Total TCDF					9.586	9.586	0.0248	0.0248		
D 13C-2,3,7,8-TCDD	17.899	73314161	0.77	1.0536	98.4	98.4	0.1717	0.1717	98.40	
2,3,7,8-TCDD	17.914	7186766	0.79	1.0061	9.743	9.743	0.0278	0.0278	97.43	
$ 37Cl4-2,3,7,8-TCDD	17.914	7516852		1.0488	10.1	10.1	0.0107	0.0107	101	
S Total TCDD					9.743	9.743	0.0278	0.0278		
D 13C-1,2,3,7,8-PeCDF	22.198	78572668	1.53	1.1306	98.3	98.3	0.2168	0.2168	98.27	
1,2,3,7,8-PeCDF	22.212	35377066	1.53	0.9147	49.2	49.2	0.1606	0.1606	98.44	
D 13C-2,3,4,7,8-PeCDF	23.535	72394702	1.55	1.0539	97.1	97.1	0.2325	0.2325	97.13	
2,3,4,7,8-PeCDF	23.562	34181205	1.57	0.9508	49.7	49.7	0.1780	0.1780	99.31	
S Total PeCDF					98.9	98.9	0.1693	0.1693		
D 13C-1,2,3,7,8-PeCDD	24.257	56361860	1.58	0.8084	98.6	98.6	0.1209	0.1209	98.58	
1,2,3,7,8-PeCDD	24.285	27105714	1.55	0.9955	48.3	48.3	0.0763	0.0763	96.62	
S Total PeCDD					48.3	48.3	0.0763	0.0763		
D 13C-1,2,3,4,7,8-HxCDF	30.393	48411968	0.51	0.9225	99.8	99.8	0.5508	0.5508	99.77	
1,2,3,4,7,8-HxCDF	30.406	26528941	1.24	1.1090	49.4	49.4	0.3476	0.3476	98.83	
D 13C-1,2,3,6,7,8-HxCDF	30.579	53975320	0.50	1.0336	99.3	99.3	0.4916	0.4916	99.28	
1,2,3,6,7,8-HxCDF	30.605	28435765	1.22	1.0721	49.1	49.1	0.3230	0.3230	98.28	
D 13C-2,3,4,6,7,8-HxCDF	31.431	51503814	0.51	0.9773	100.2	100.2	0.5199	0.5199	100	
2,3,4,6,7,8-HxCDF	31.444	27314505	1.24	1.0838	48.9	48.9	0.2532	0.2532	97.87	
D 13C-1,2,3,7,8,9-HxCDF	32.243	48067141	0.51	0.9153	99.8	99.8	0.5551	0.5551	99.84	
1,2,3,7,8,9-HxCDF	32.256	25630034	1.24	1.0931	48.8	48.8	0.2530	0.2530	97.56	
S Total HxCDF					196.3	196.3	0.2942	0.2942		
* 13C-1,2,3,7,8,9-HxCDD	32.056	52599435	1.22	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.617	39854770	1.22	0.7977	95.0	95.0	0.3444	0.3444	94.99	
1,2,3,4,7,8-HxCDD	31.644	20769529	1.23	1.0014	52.0	52.0	0.1645	0.1645	104	
D 13C-1,2,3,6,7,8-HxCDD	31.737	53764731	1.23	1.0010	102.1	102.1	0.2744	0.2744	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	22482418	1.27	0.8902	47.0	47.0	0.1521	0.1521	93.95	
1,2,3,7,8,9-HxCDD	32.070	24401221	1.25	1.0579	49.3	49.3	0.1405	0.1405	98.55	
S Total HxCDD					148.3	148.3	0.1524	0.1524		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	44675630	0.43	0.8506	99.9	99.9	0.9835	0.9835	99.85	
1,2,3,4,6,7,8-HpCDF	33.691	29988985	1.04	1.3603	49.3	49.3	0.4595	0.4595	98.69	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	39083845	0.43	0.7618	97.5	97.5	1.098	1.098	97.54	
1,2,3,4,7,8,9-HpCDF	34.761	25636290	1.03	1.3207	49.7	49.7	0.6020	0.6020	99.33	
S Total HpCDF					99.0	99.0	0.5308	0.5308		
D 13C-1,2,3,4,6,7,8-HpCDD	34.457	46274068	1.03	0.8873	99.2	99.2	0.5830	0.5830	99.15	
1,2,3,4,6,7,8-HpCDD	34.469	22930767	1.04	0.9988	49.6	49.6	0.2747	0.2747	99.23	
S Total HpCDD					49.6	49.6	0.2747	0.2747		
D 13C-OCDD	36.779	65984325	0.90	0.6287	199.5	199.5	0.2284	0.2284	99.76	
OCDF	36.875	45999109	0.91	1.4136	98.6	98.6	0.1285	0.1285	98.63	
OCDD	36.779	36458371	0.89	1.1290	97.9	97.9	0.1218	0.1218	97.88	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 17:39:44 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720B CS-4 HRDXNL4_00095
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:52 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:23

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.711	-1		31112804	7733116	6224	15560	1242		
333.9339	17.702	17.711	-1		39607791	9816368	6478	16195	1515	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.972	41030020	10154846	7855	19637	1293		
317.9389	17.203	17.203	0	0.972	53382714	13133900	6218	15545	2112	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	3561888	894232	983	2457	910		
305.8987	17.219	17.218	0	1.001	4653726	1157857	1112	2780	1041	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	31968779	7718913	6224	15560	1240		
333.9339	17.899	17.905	0	1.011	41345382	9900999	6478	16195	1528	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.920	0	1.001	3174976	757094	1105	2762	685		
321.8936	17.914	17.920	0	1.001	4011790	981191	870	2175	1128	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	7516852	1794624	791	1977	2269		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.254	47497432	8216899	10419	26047	789		
353.8970	22.198	22.204	0	1.254	31075236	5302735	6785	16962	782	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.220	0	1.001	21398670	3762258	4666	11665	806		
341.8567	22.212	22.220	0	1.001	13978396	2405130	3277	8192	734	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.329	44029183	7101834	10419	26047	682		
353.8970	23.535	23.540	0	1.329	28365519	4629716	6785	16962	682	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	20877521	3397982	4666	11665	728		
341.8567	23.562	23.567	0	1.001	13303684	2199628	3277	8192	671	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.370	34503673	5302158	4255	10637	1246		
369.8919	24.257	24.263	0	1.370	21858187	3302460	2605	6512	1268	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	16467085	2528070	1607	4017	1573		
357.8516	24.285	24.290	0	1.001	10638629	1635439	1007	2517	1624	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	16384882	2900679	8887	22217	326		
385.8610	30.393	30.398	0	0.948	32027086	5699628	17116	42790	333	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.414	0	1.000	14665484	2592019	7313	18282	354		
375.8178	30.406	30.414	0	1.000	11863457	2111122	5948	14870	355	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.587	0	0.954	17889731	3184718	8887	22217	358		
385.8610	30.579	30.587	0	0.954	36085589	6387733	17116	42790	373	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.605	30.608	0	1.001	15646365	2747883	7313	18282	376		
375.8178	30.605	30.608	0	1.001	12789400	2231277	5948	14870	375	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.431	31.439	0	0.980	17351960	4081309	8887	22217	459		
385.8610	31.431	31.439	0	0.980	34151854	7997923	17116	42790	467	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.444	31.458	-1	1.000	15135925	3506180	7313	18282	479		
375.8178	31.444	31.458	-1	1.000	12178580	2839003	5948	14870	477	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.243	32.254	-1	1.006	16215735	4033898	8887	22217	454		
385.8610	32.243	32.254	-1	1.006	31851406	7952589	17116	42790	465	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.256	32.267	-1	1.000	14177856	3484841	7313	18282	477		
375.8178	32.256	32.267	-1	1.000	11452178	2906201	5948	14870	489	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.056	32.067	-1		28868385	7036881	7771	19427	906		
403.8529	32.056	32.067	-1		23731050	5756704	6286	15715	916	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.617	31.631	-1	0.986	21933952	5608002	7771	19427	722		
403.8529	31.617	31.631	-1	0.986	17920818	4605232	6286	15715	733	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.001	11456611	2920731	3765	9412	776		
391.8127	31.644	31.647	0	1.001	9312918	2314083	2966	7415	780	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	29688232	6940958	7771	19427	893		
403.8529	31.737	31.740	0	0.990	24076499	5485435	6286	15715	873	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	12569862	3058042	3765	9412	812		
391.8127	31.750	31.756	0	1.000	9912556	2352065	2966	7415	793	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.070	32.081	-1	1.014	13561068	3292948	3765	9412	875		
391.8127	32.070	32.081	-1	1.014	10840153	2666284	2966	7415	899	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.051	13393731	4211850	13505	33762	312		
419.8220	33.679	33.684	0	1.051	31281899	9685953	29305	73262	331	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	15279832	4726569	17863	44657	265		
409.7789	33.679	33.694	-1	1.000	14709153	4492869	16886	42215	266	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.751	0	1.084	11797708	3362255	13505	33762	249		
419.8220	34.748	34.751	0	1.084	27286137	7564178	29305	73262	258	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	13006303	3556686	17863	44657	199		
409.7789	34.748	34.763	-1	1.000	12629987	3473252	16886	42215	206	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.457	34.464	0	1.075	23465448	6729742	13575	33937	496		
437.8140	34.457	34.464	0	1.075	22808620	6552009	12896	32240	508	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	11701156	3397612	7315	18287	464		
425.7737	34.469	34.474	0	1.000	11229611	3229876	7260	18150	445	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	31180213	7357720	3942	9855	1866		
471.7750	36.779	36.784	0	1.147	34804112	8192437	3407	8517	2405	0.90(0.76-1.02)	
OCDF											
441.7428	36.875	36.882	0	1.003	21919771	5421255	2520	6300	2151		
443.7399	36.875	36.882	0	1.003	24079338	5903685	3129	7822	1887	0.91(0.76-1.02)	
OCDD											
457.7377	36.779	36.791	-1	1.000	17204055	4070324	1648	4120	2470		
459.7348	36.779	36.791	-1	1.000	19254316	4623817	2627	6567	1760	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

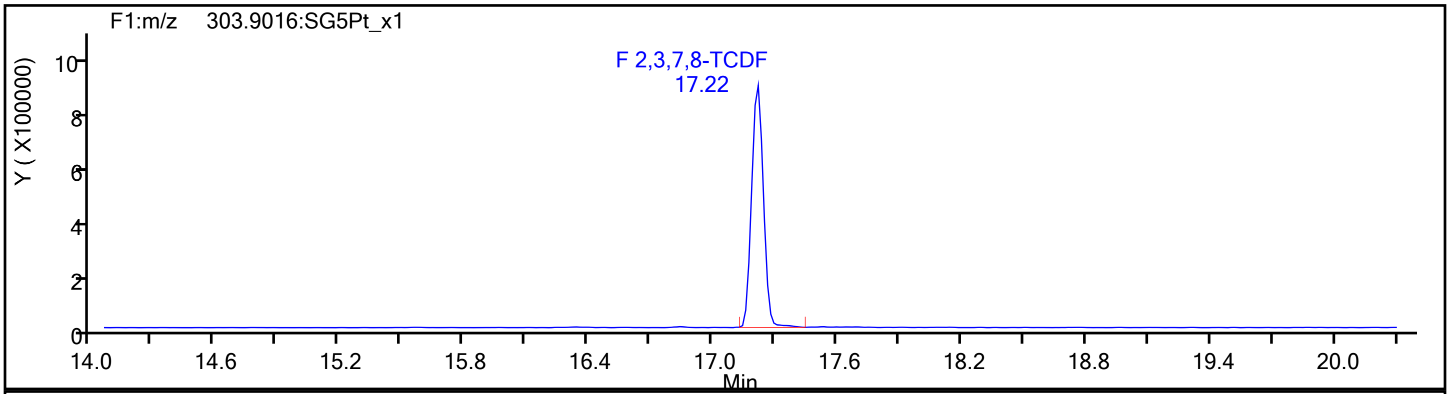

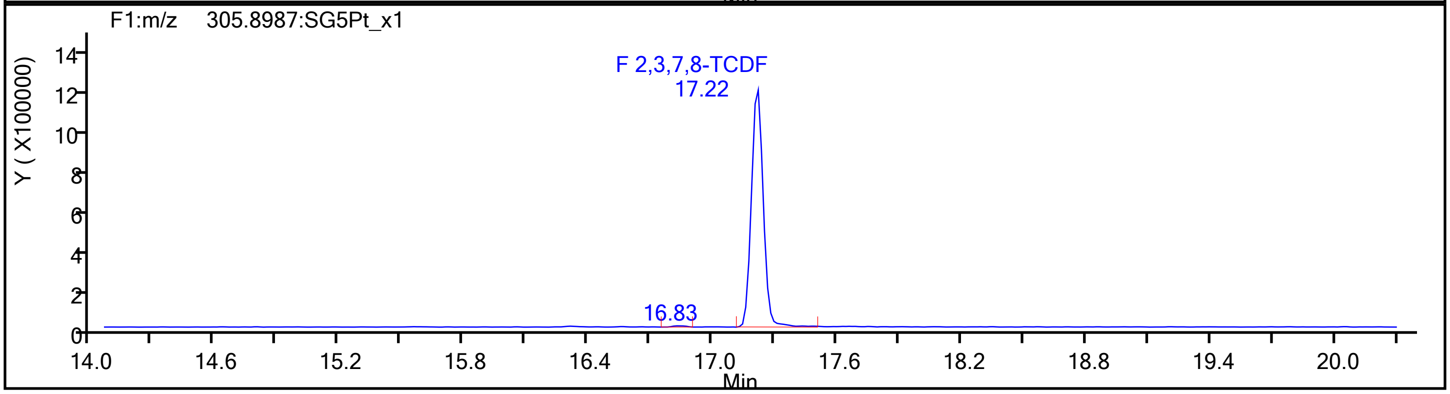

TCDF Standards

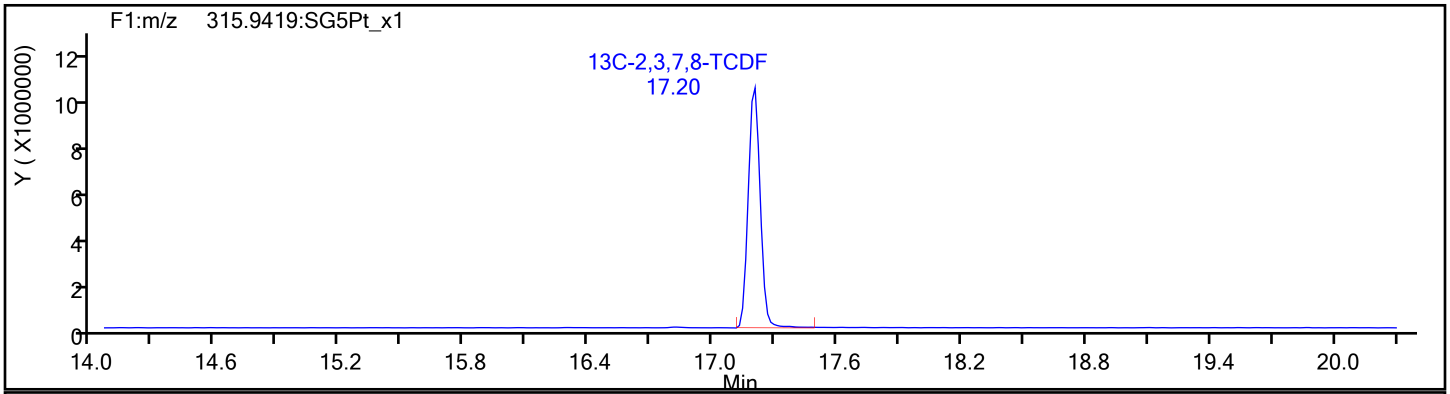

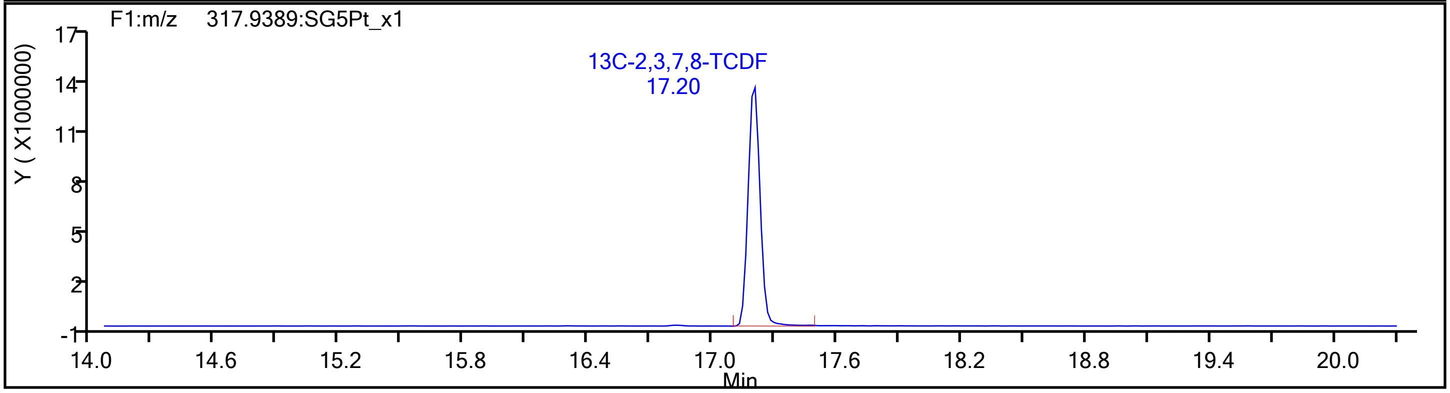

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Injection Date: 17-Sep-2020 17:39:44
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

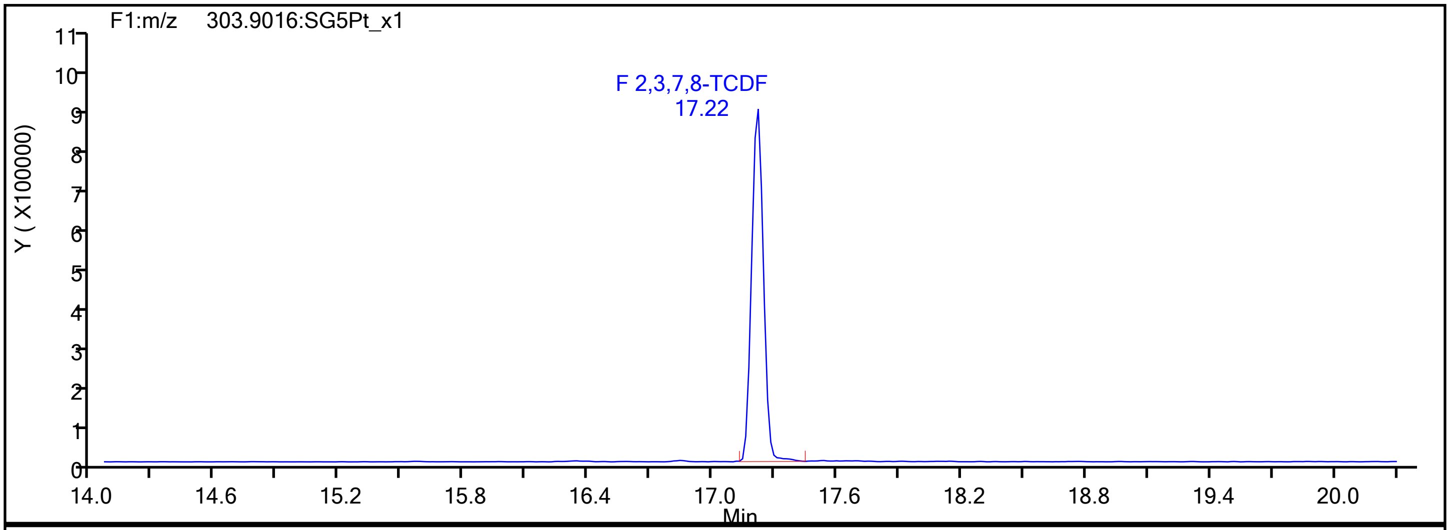

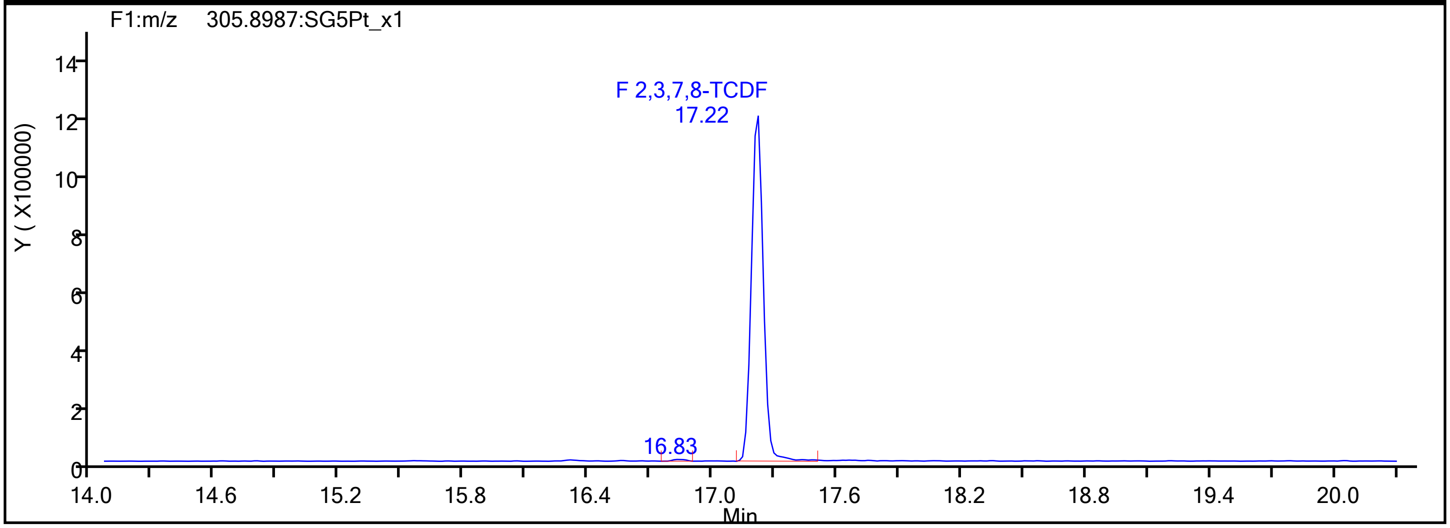

TCDF Interference Mass

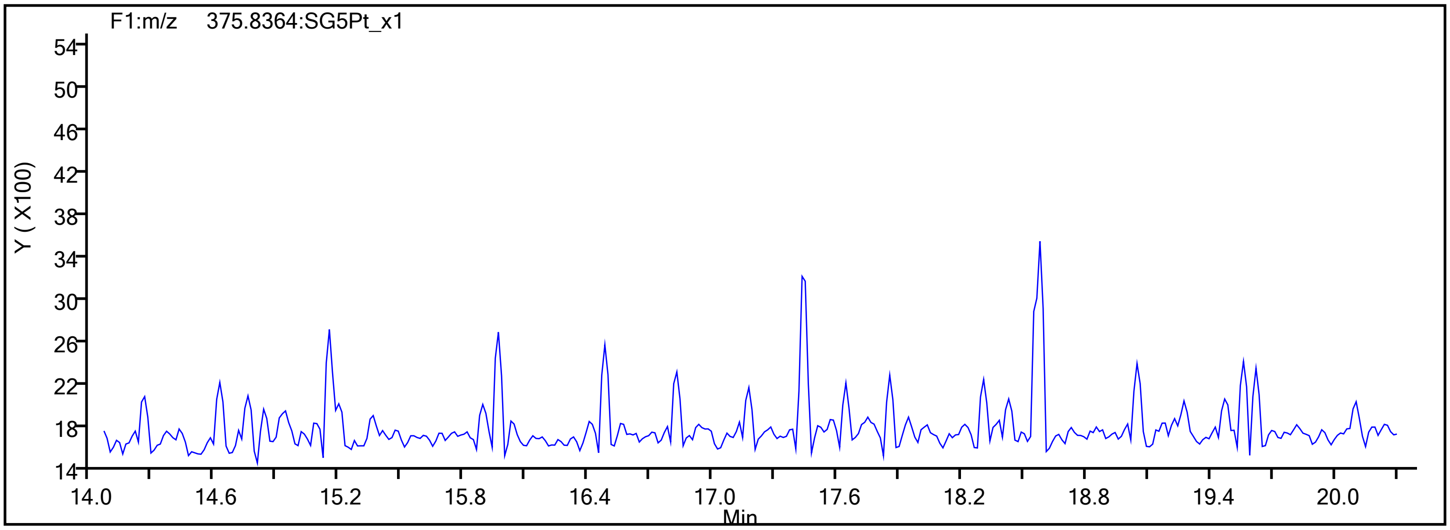

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

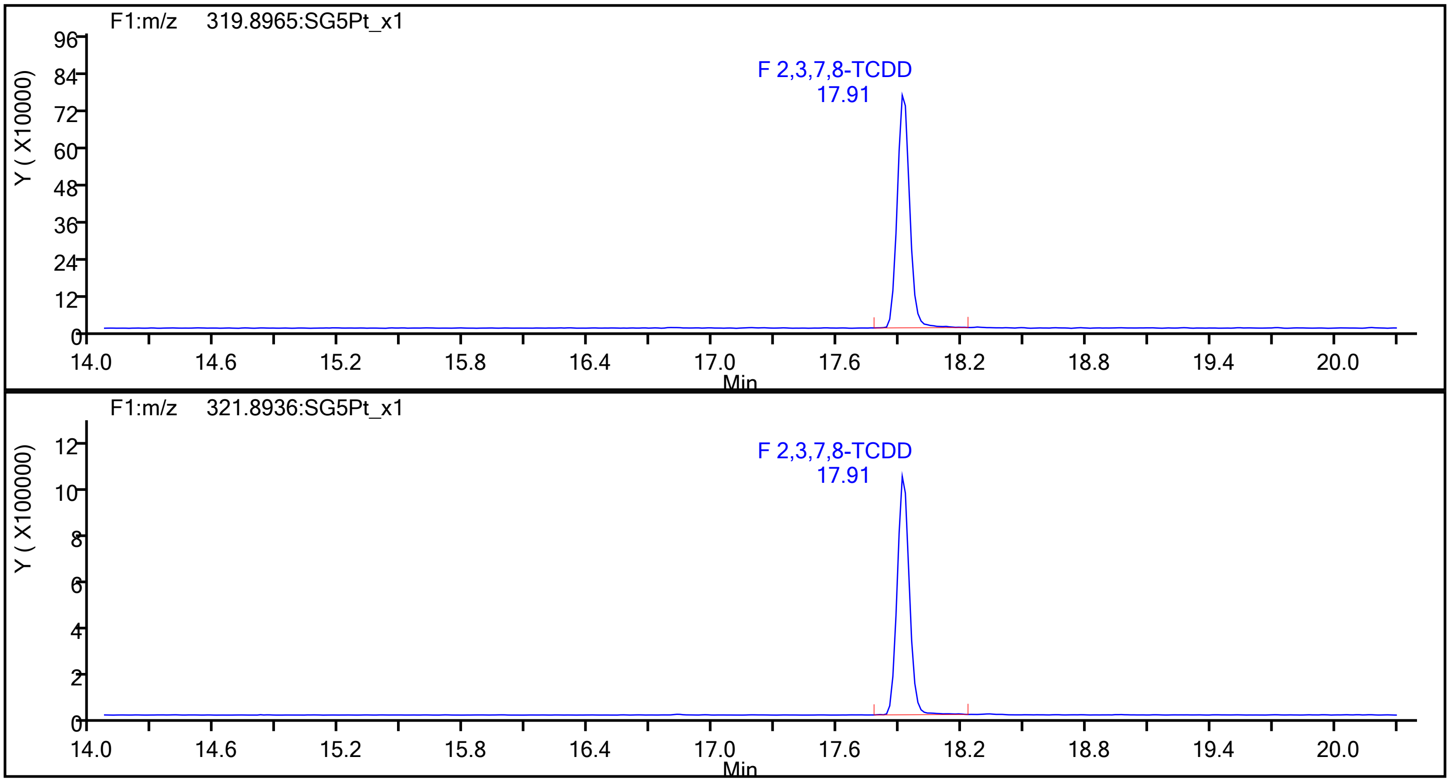

TCDD Standards

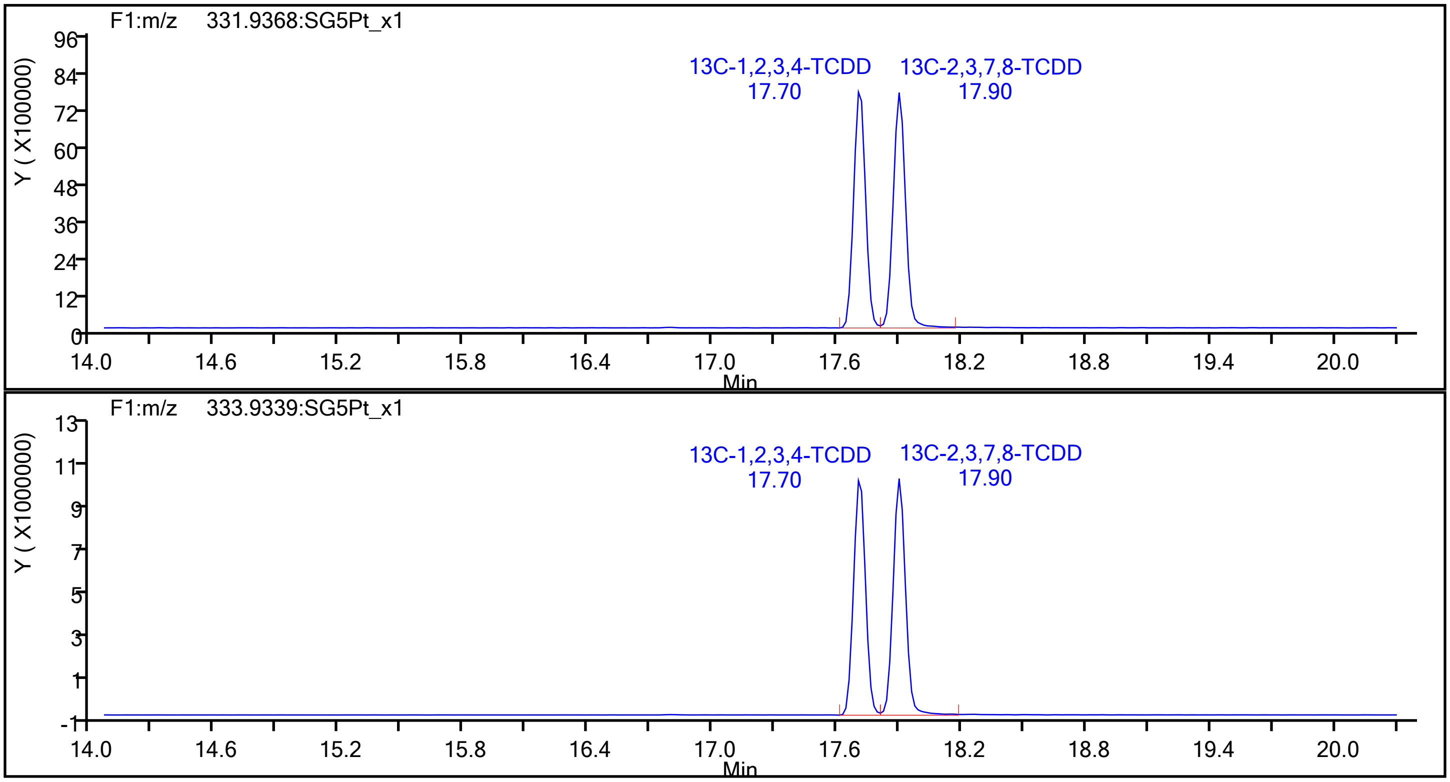

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

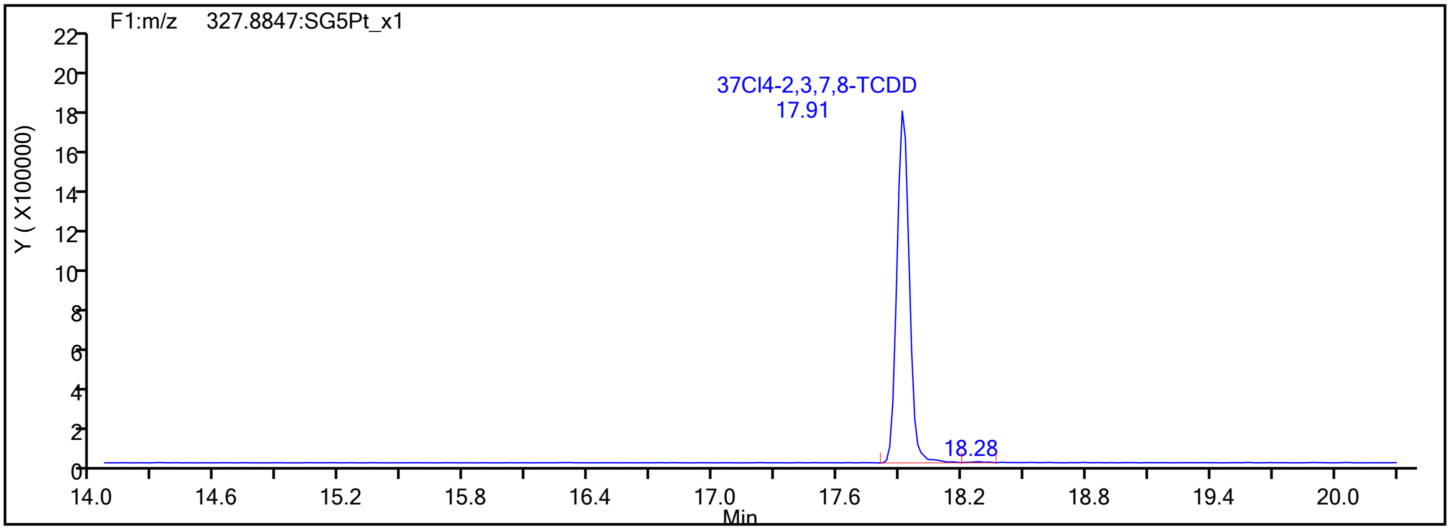

37Cl4-TCDD Standards

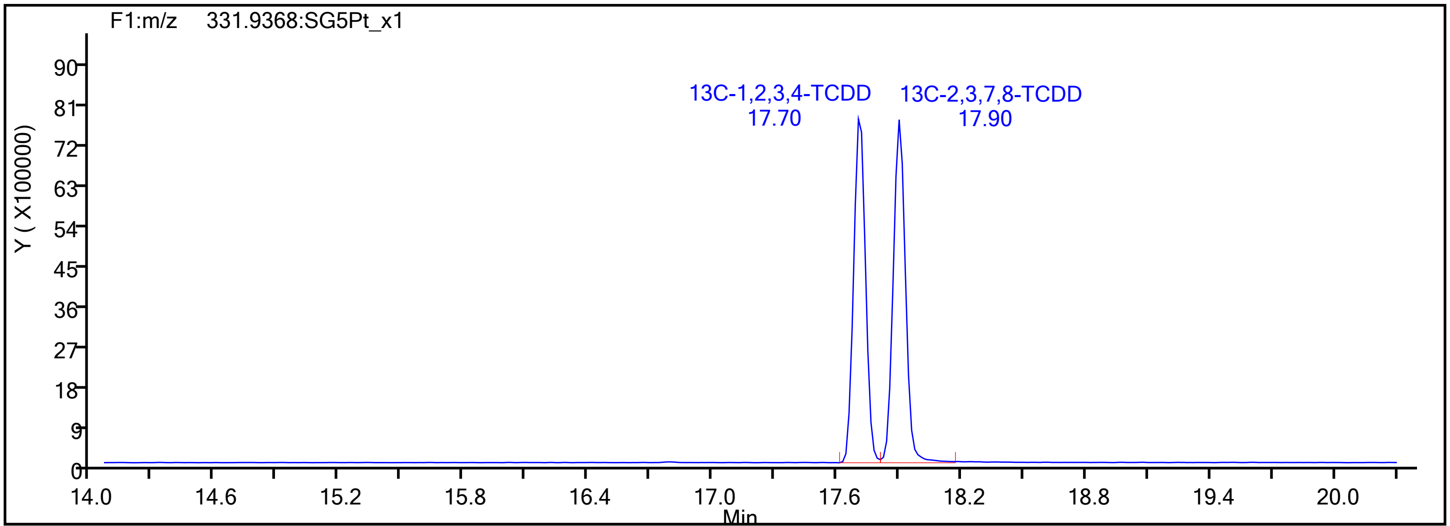

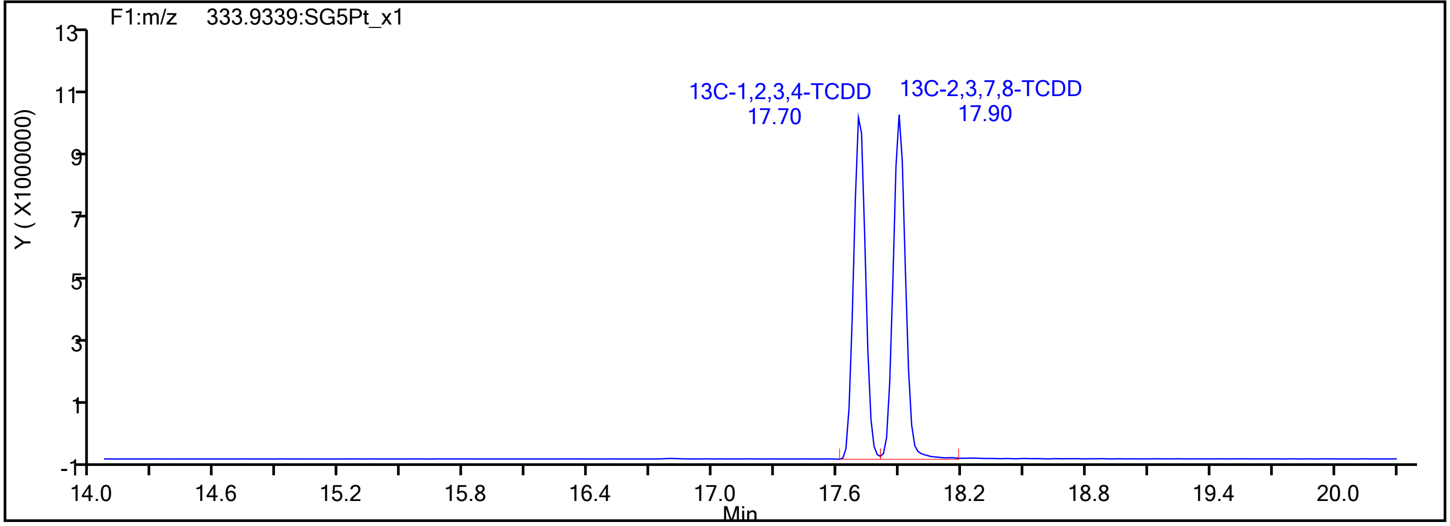

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

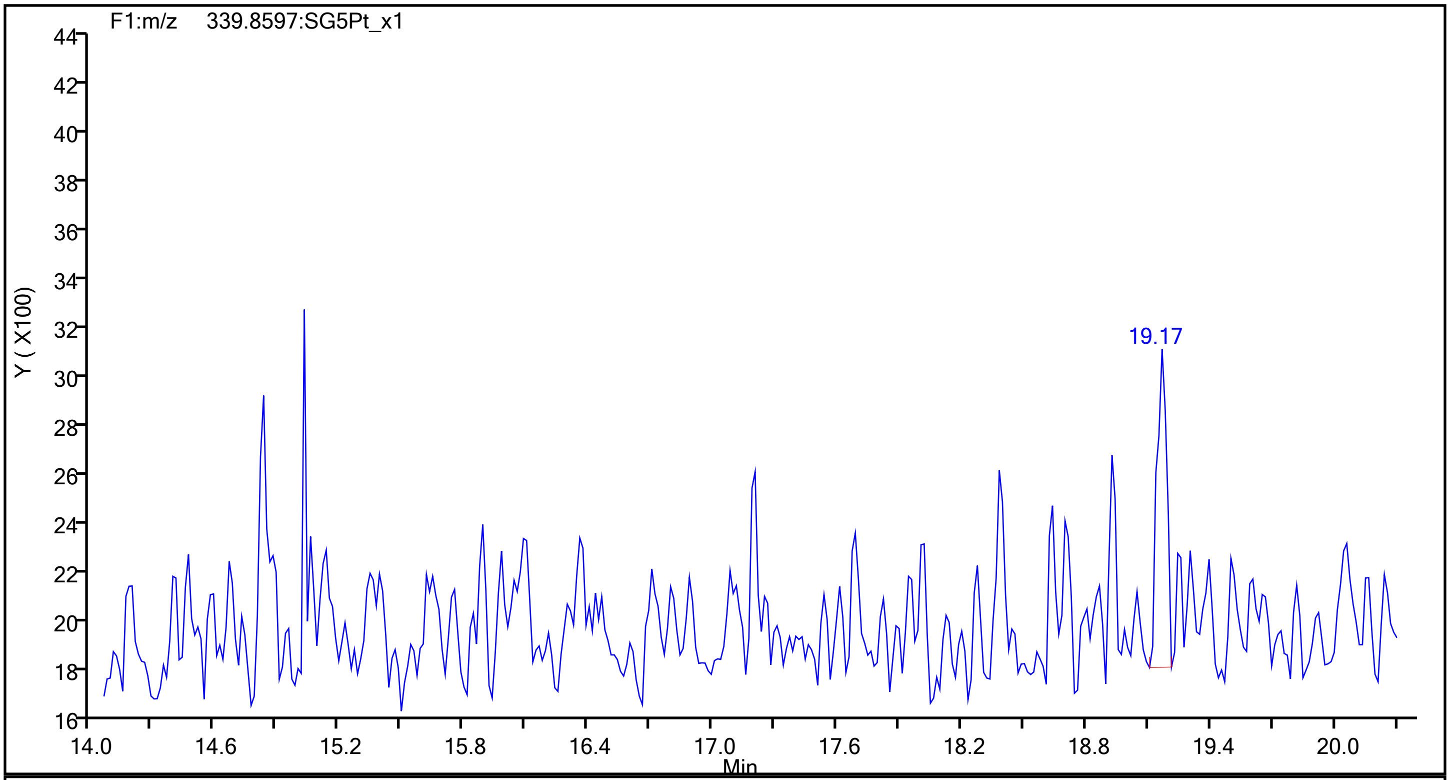

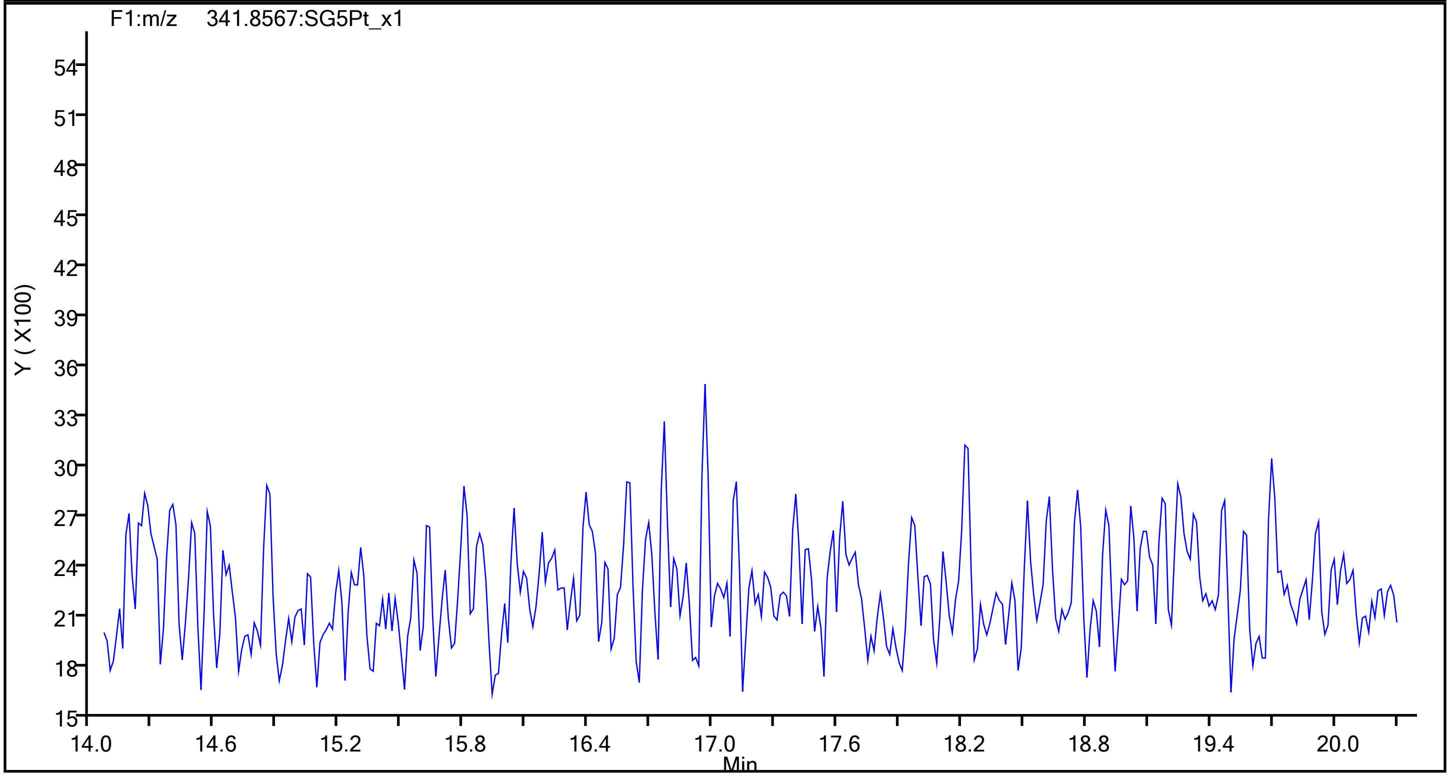

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

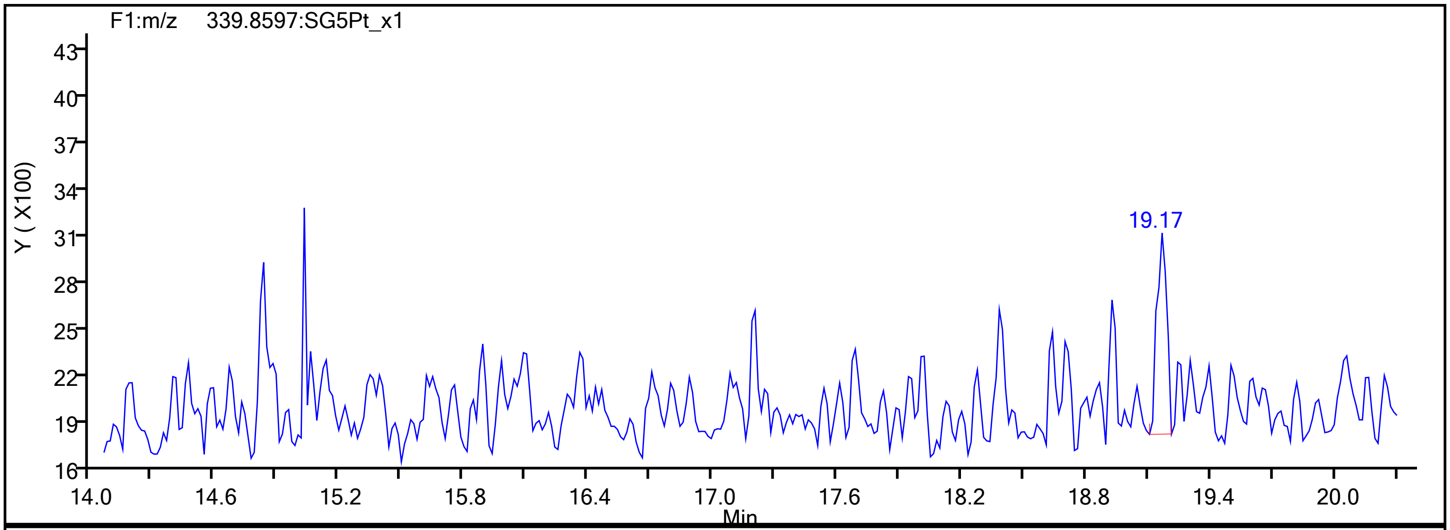

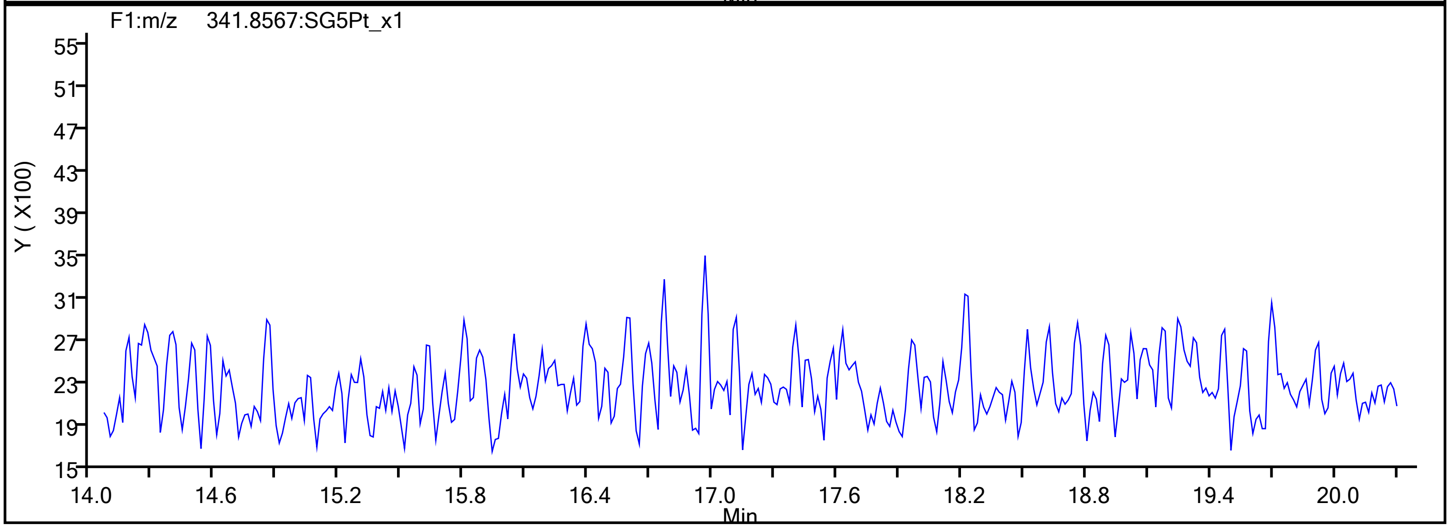

F1 PeCDFs Interference Mass

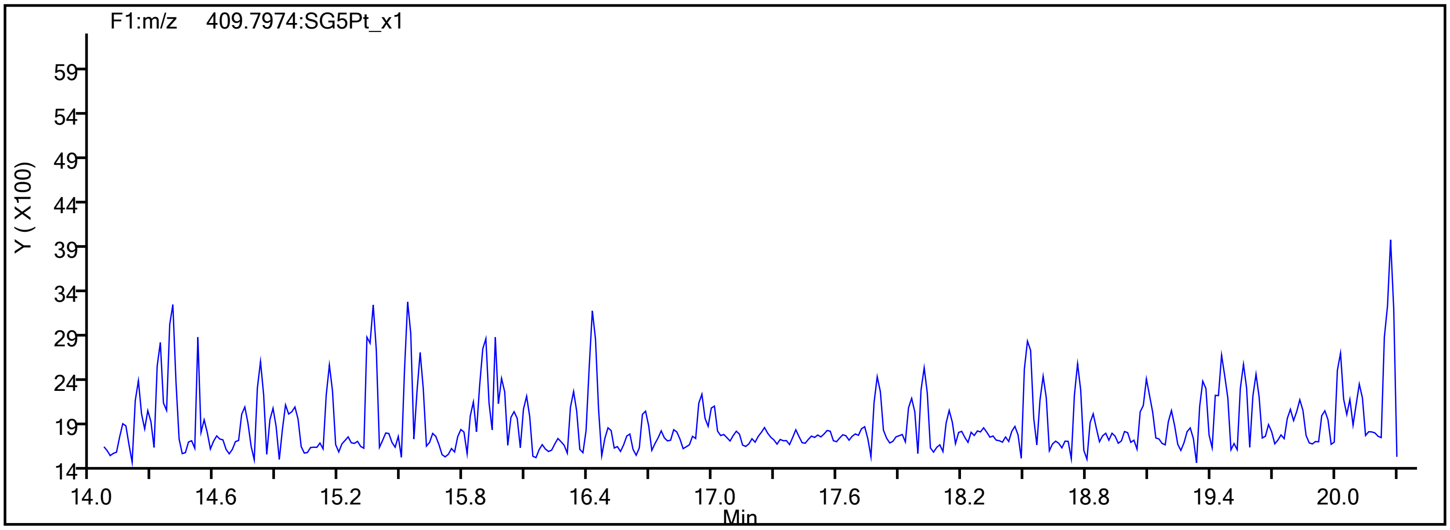

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Injection Date: 17-Sep-2020 17:39:44
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

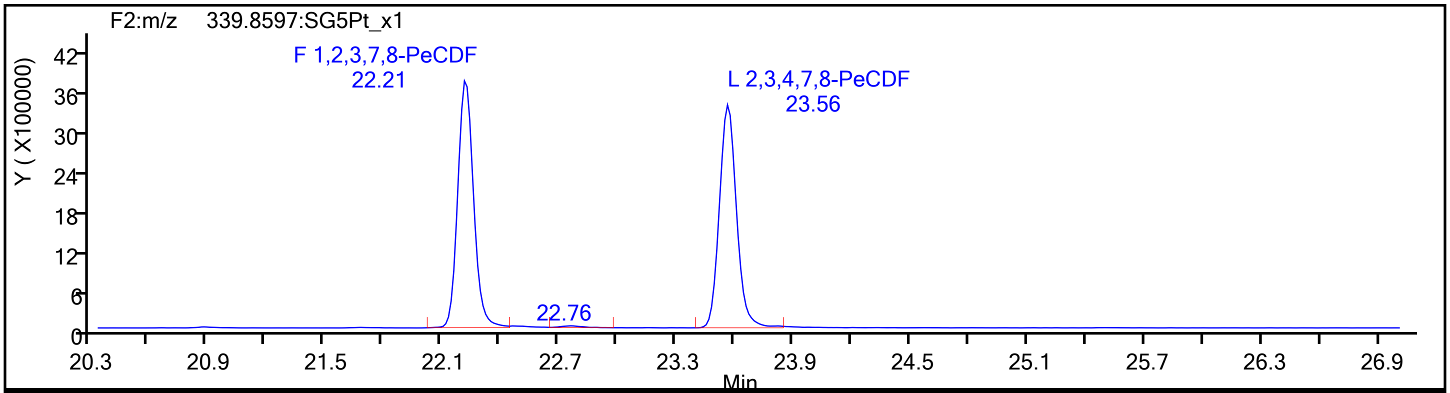

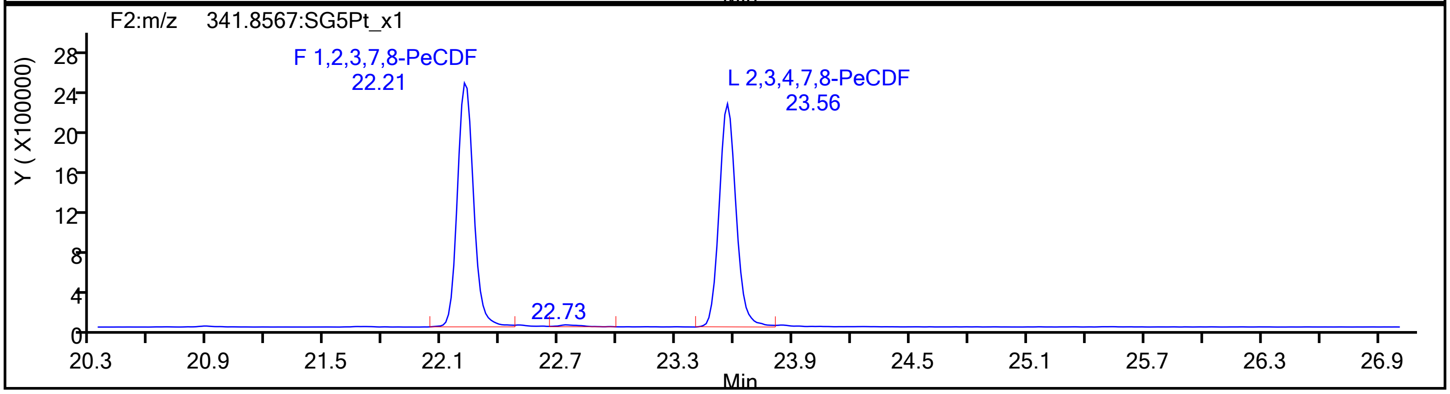

PeCDF Standards

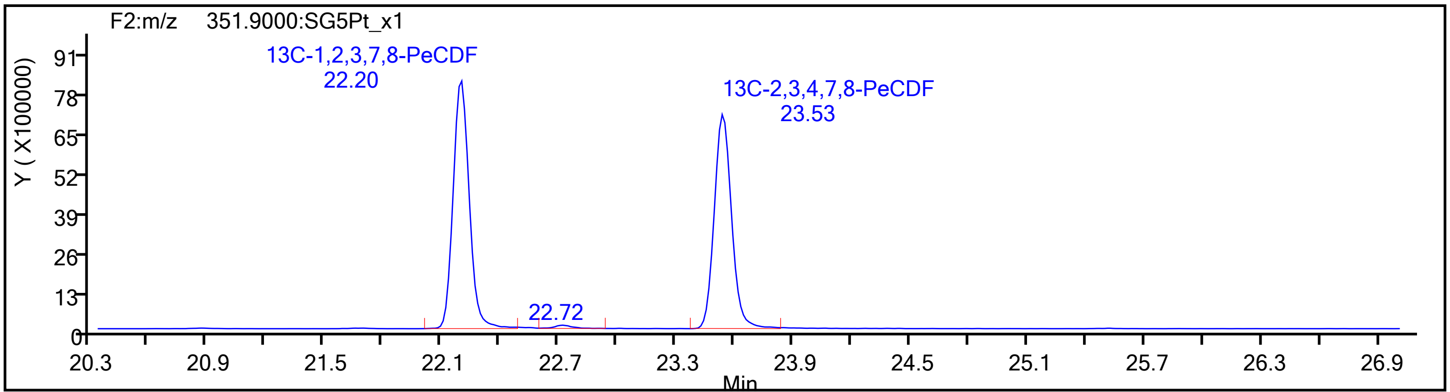

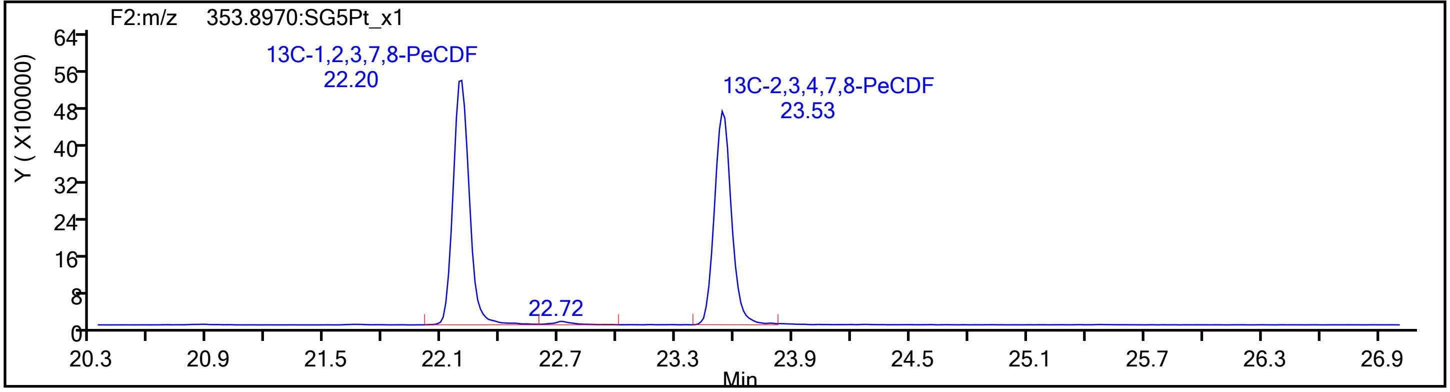

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

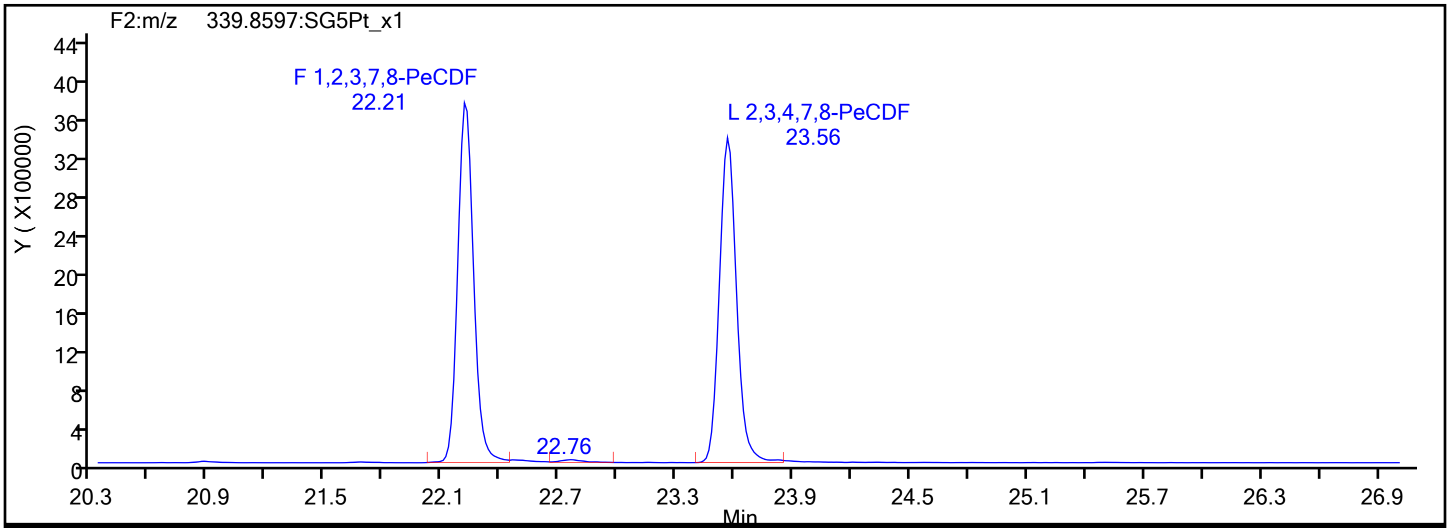

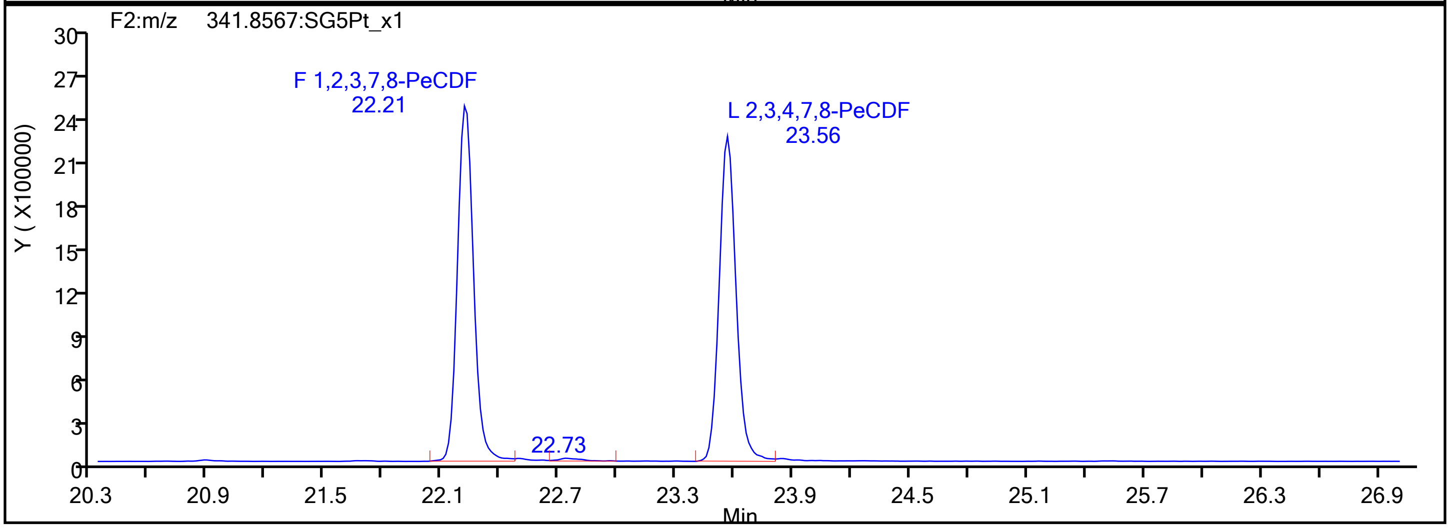

PeCDF Interference Mass

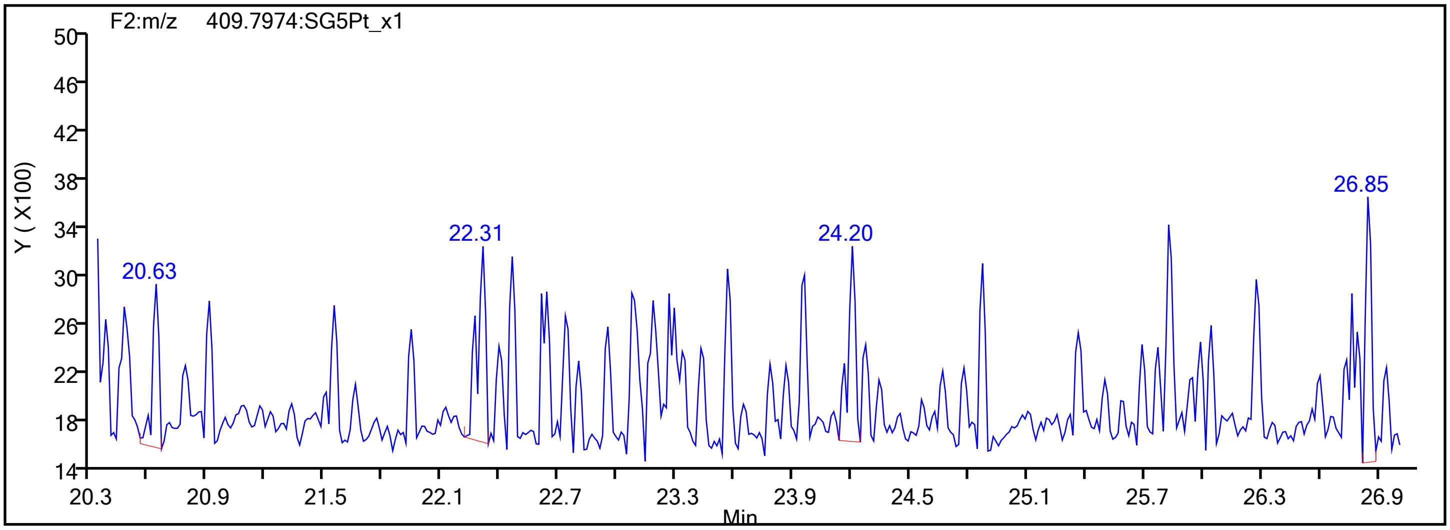

Report Date: 18-Sep-2020 10:35:58
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 5
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Column Dia: 0.32 mm

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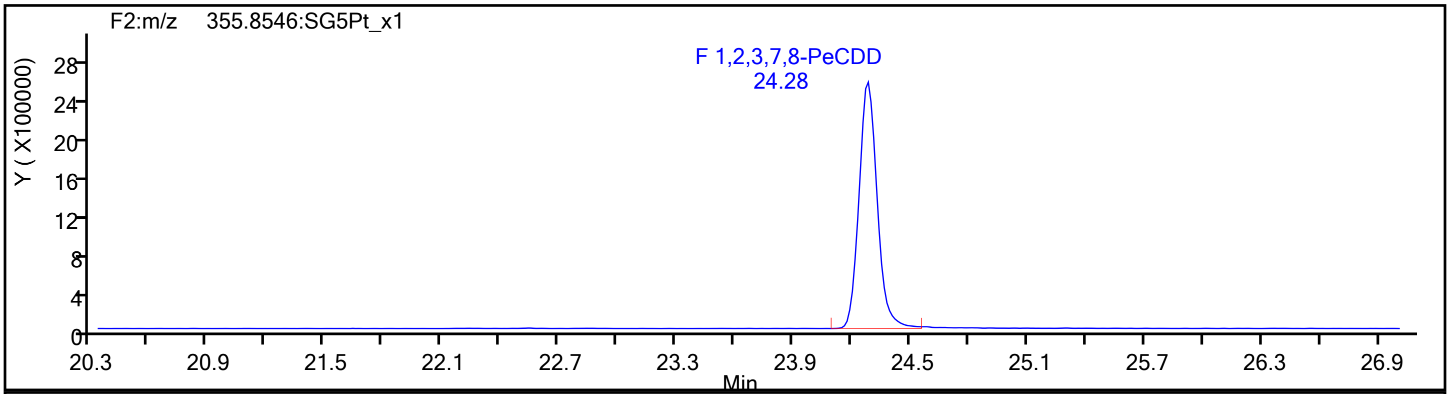

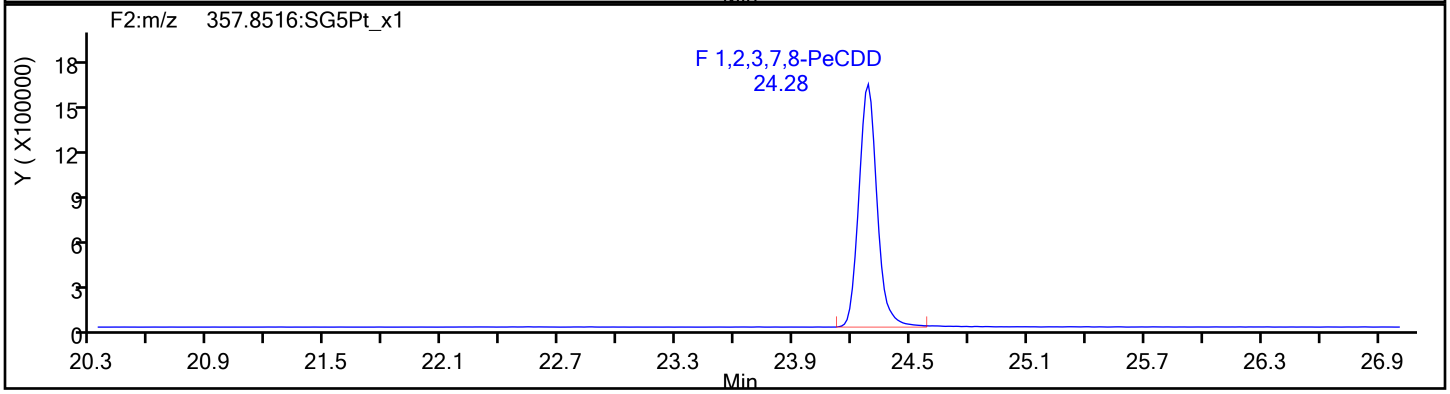

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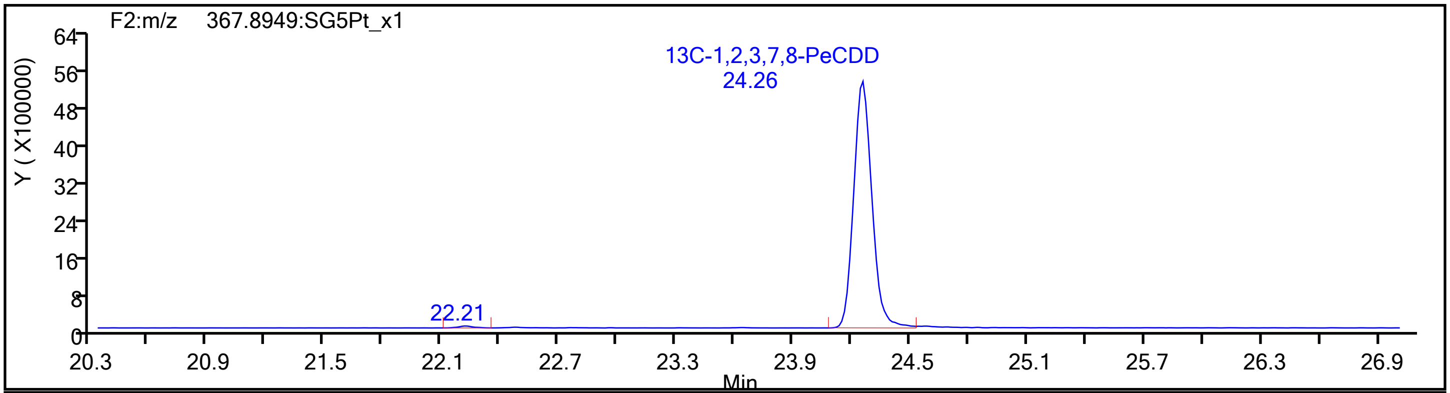

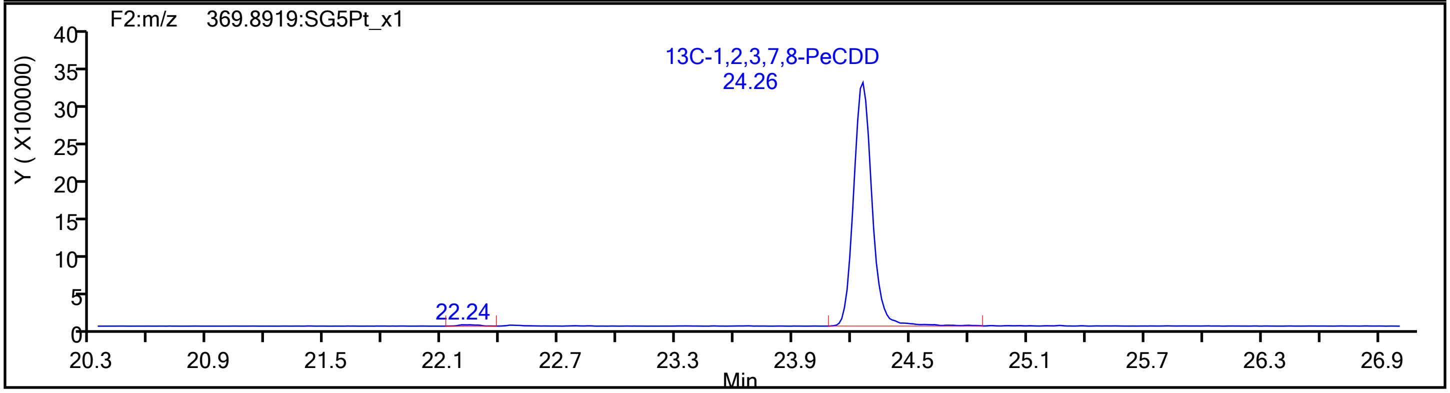

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

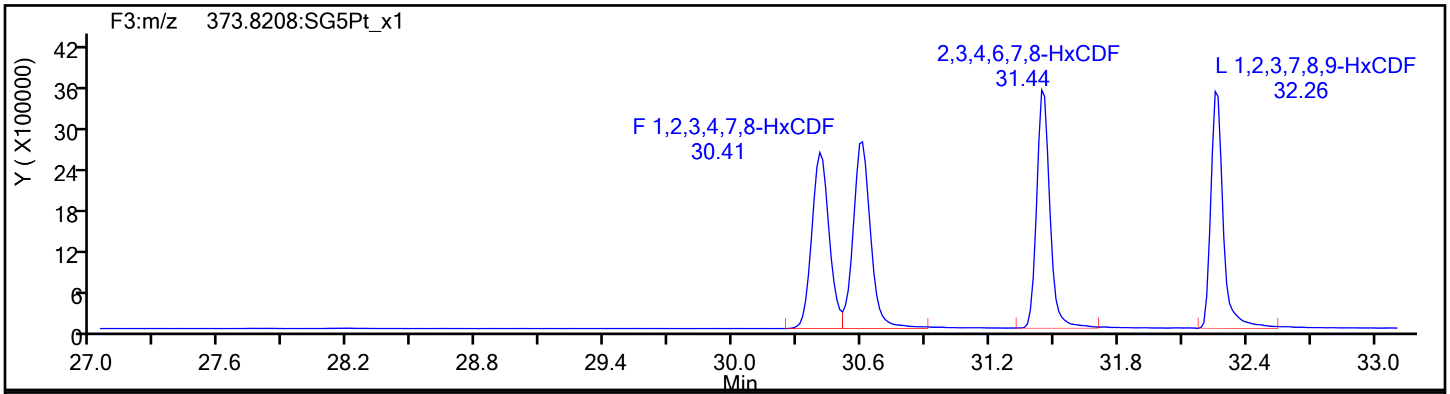

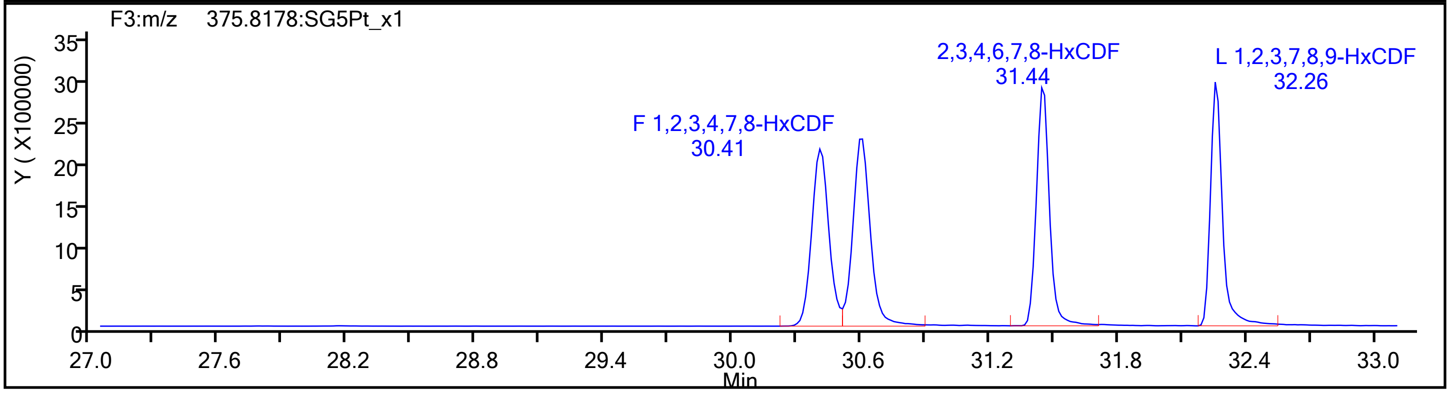

HxCDF Standards

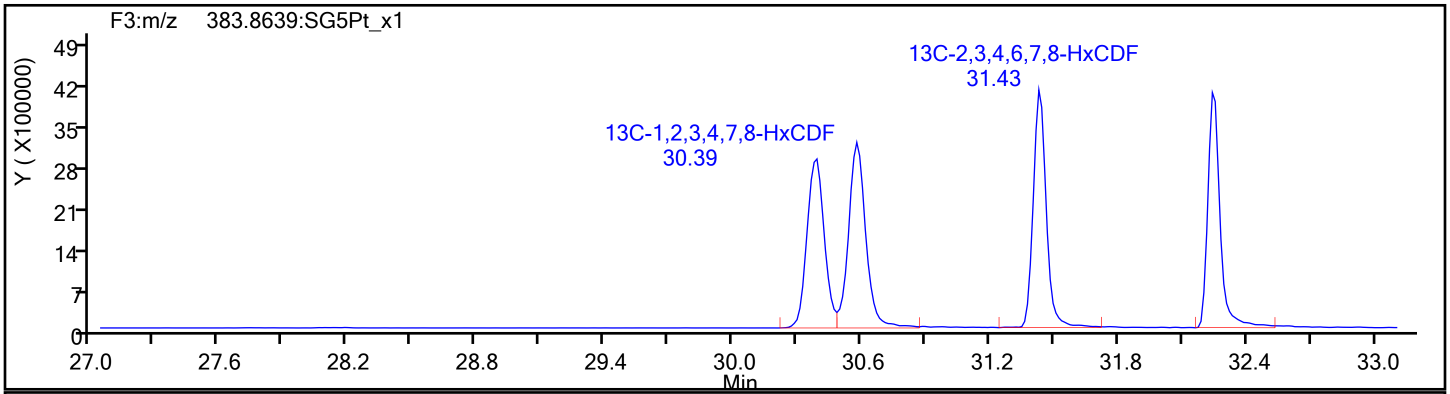

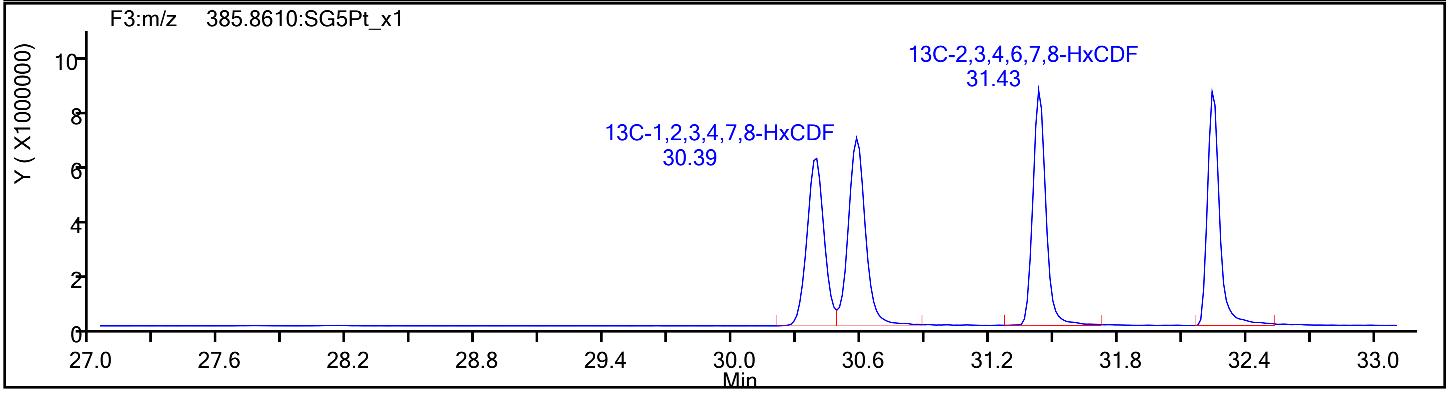

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

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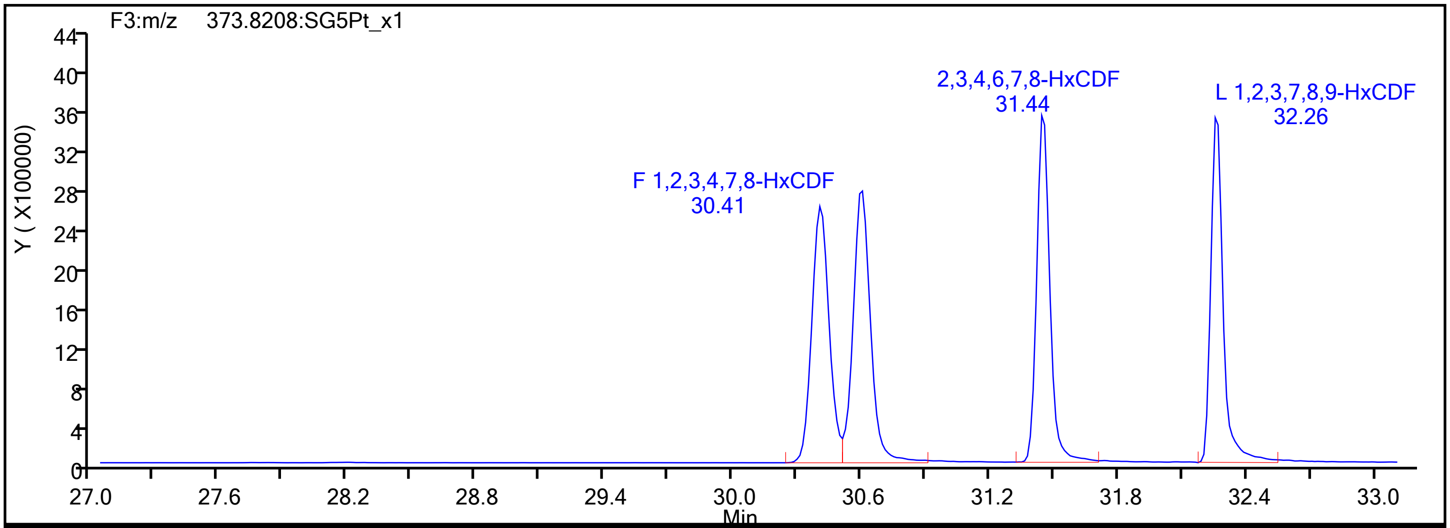

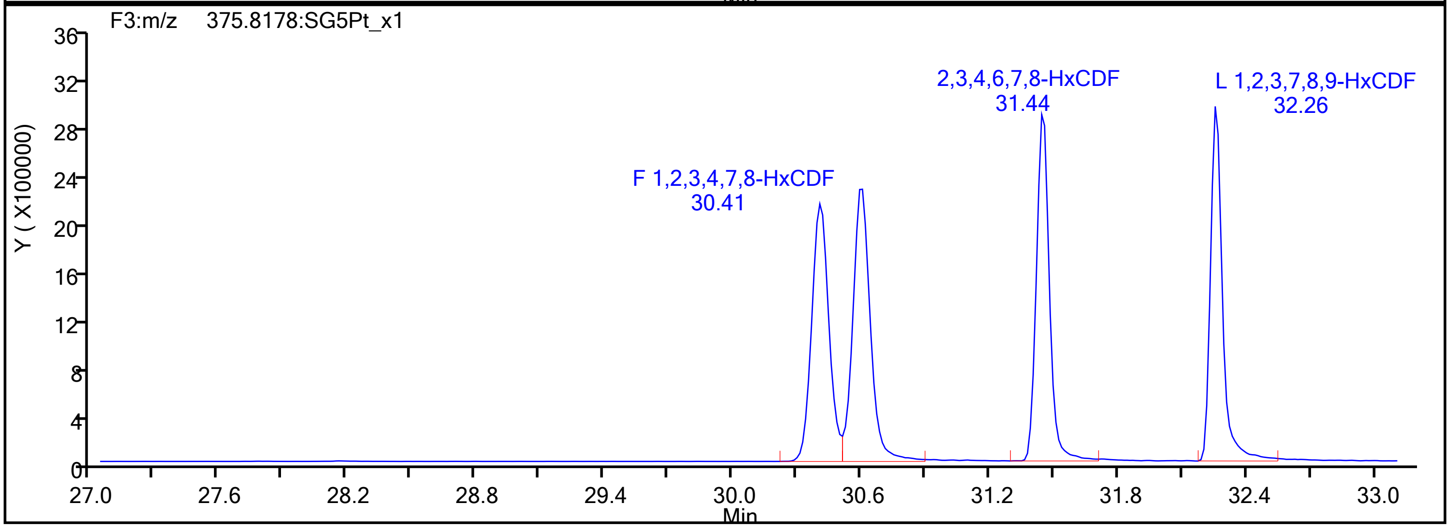

HxCDF Interference Mass

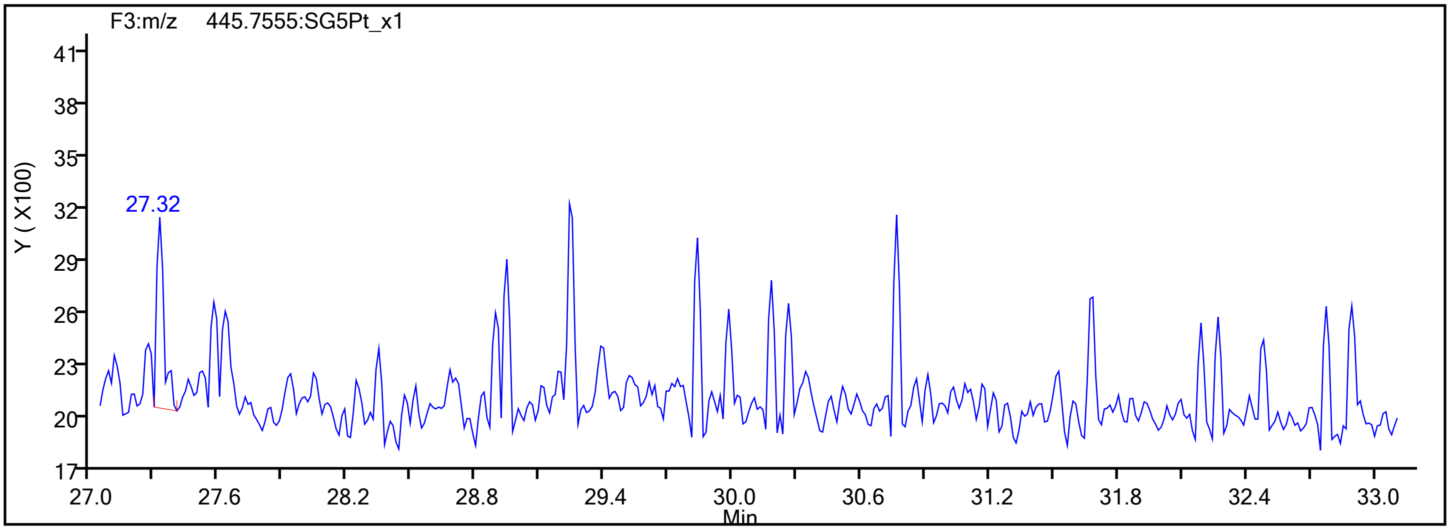

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

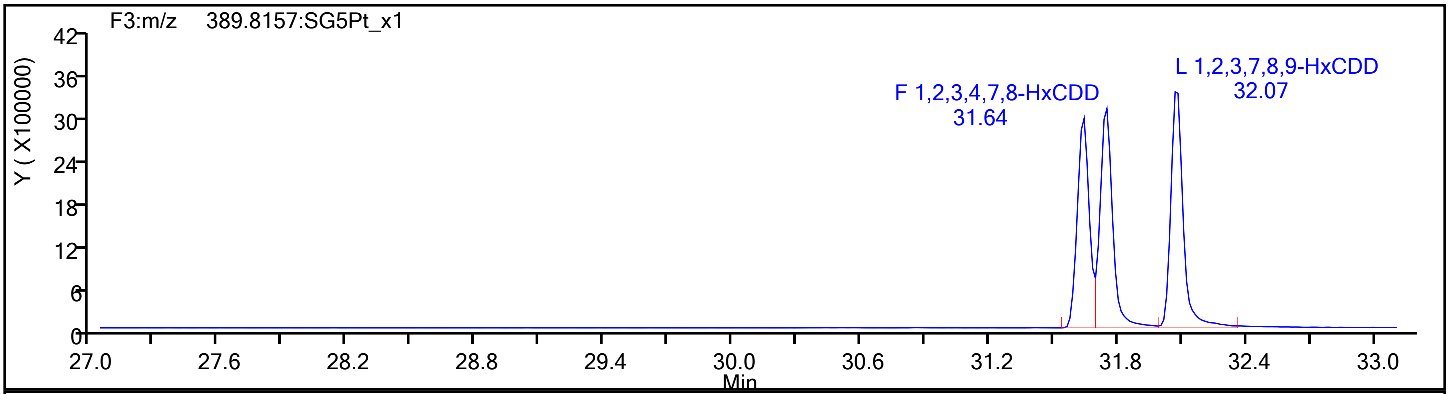

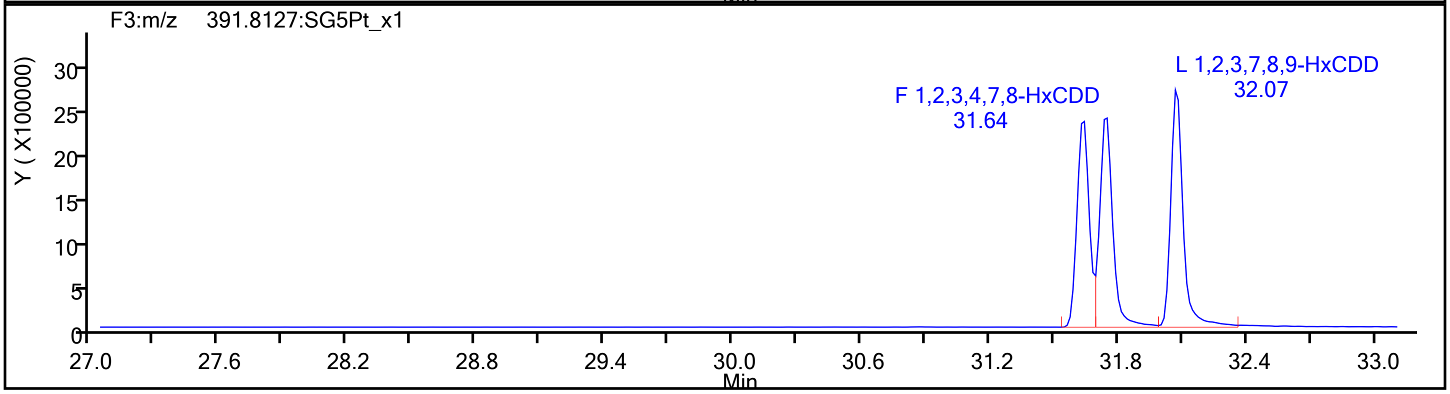

HxCDD Standards

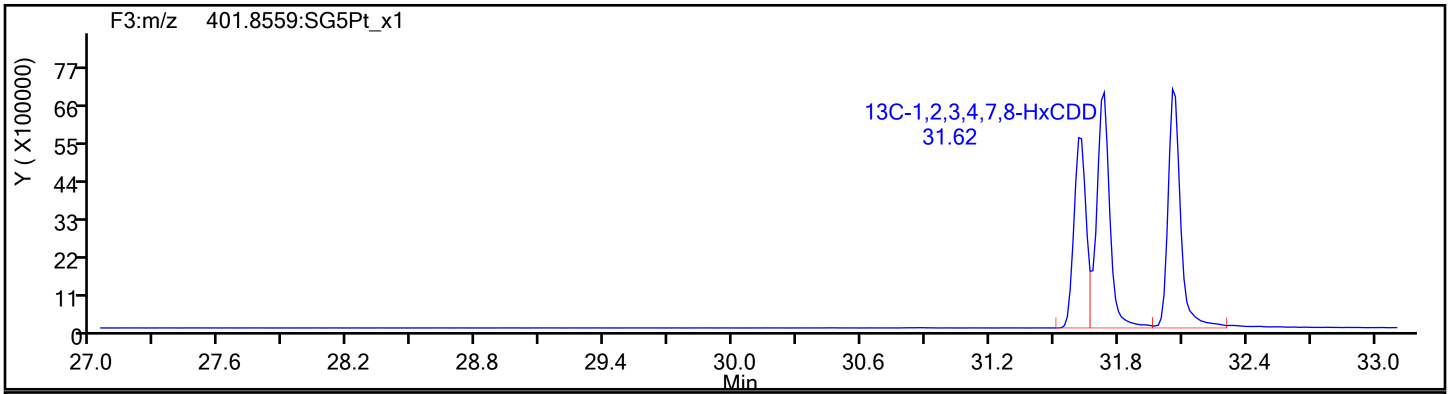

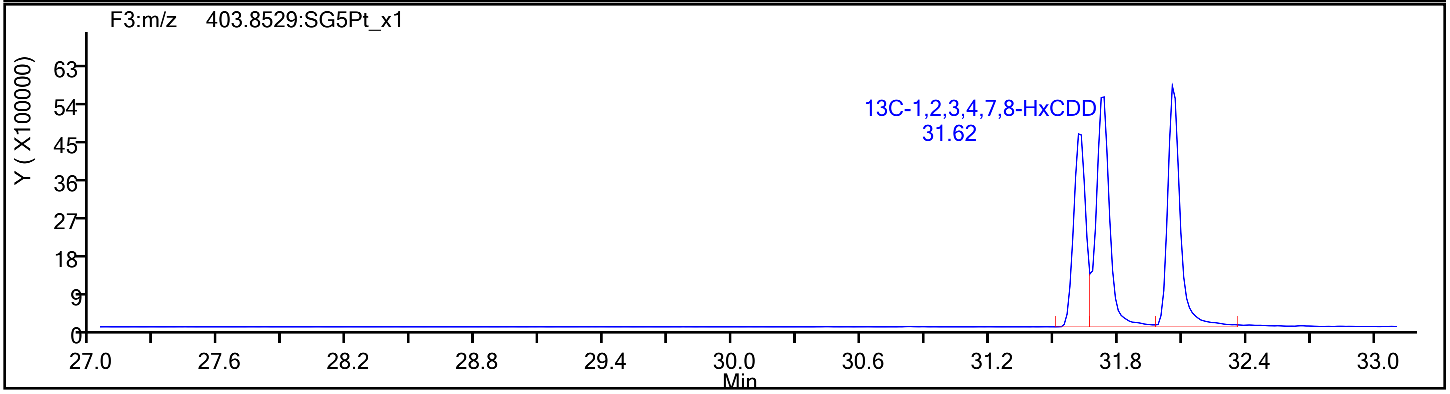

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

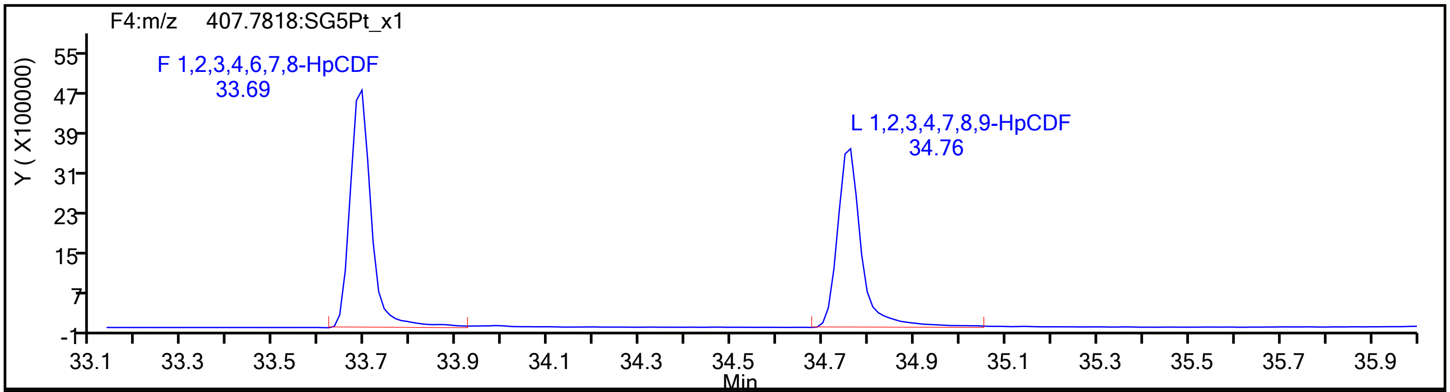

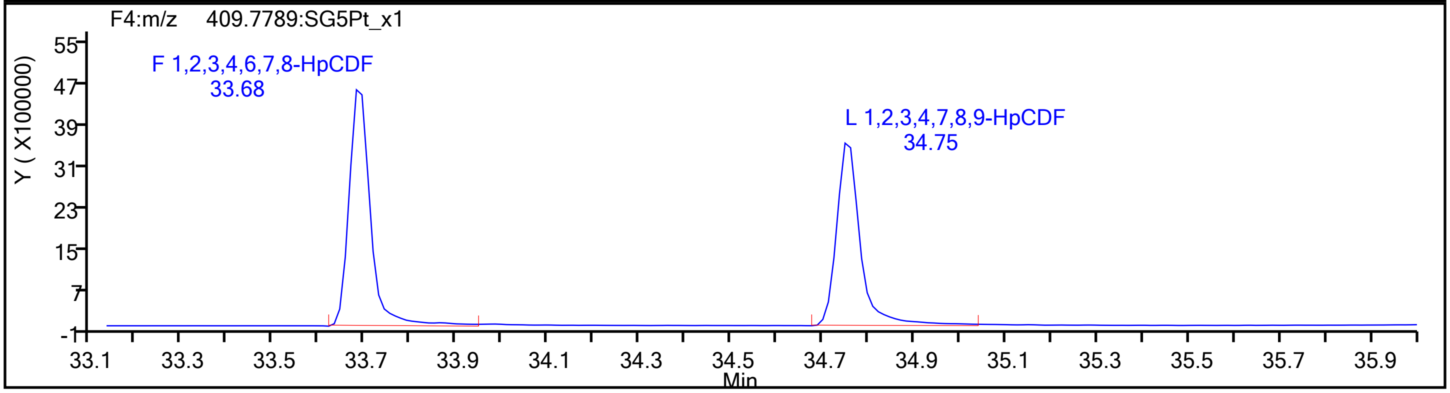

HpCDF Standards

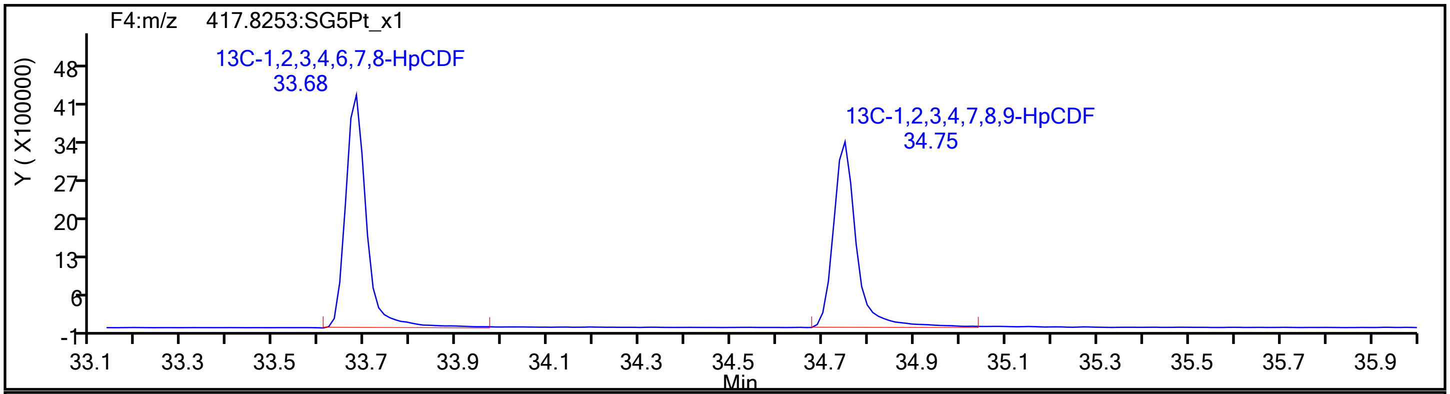

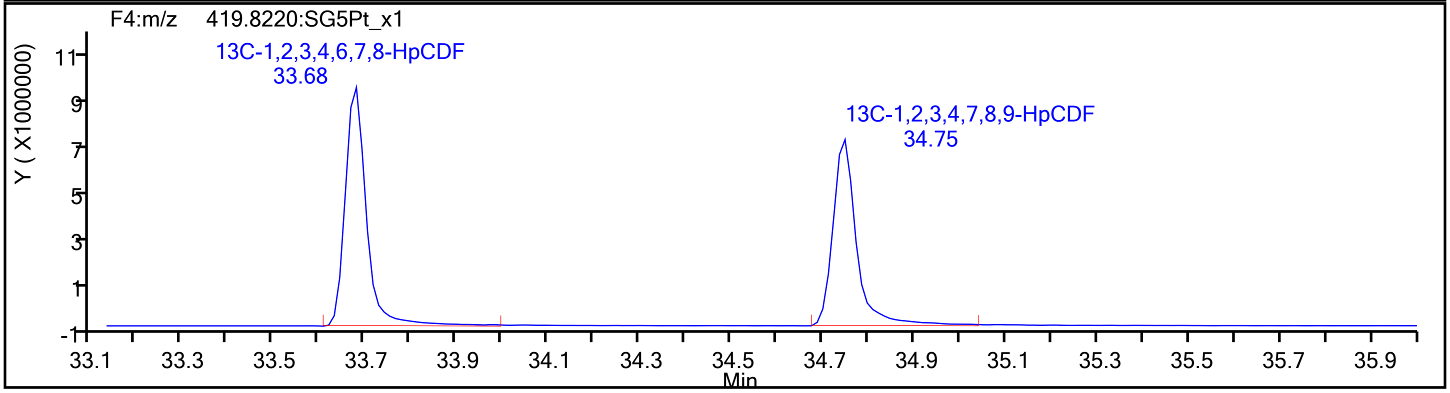

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDF

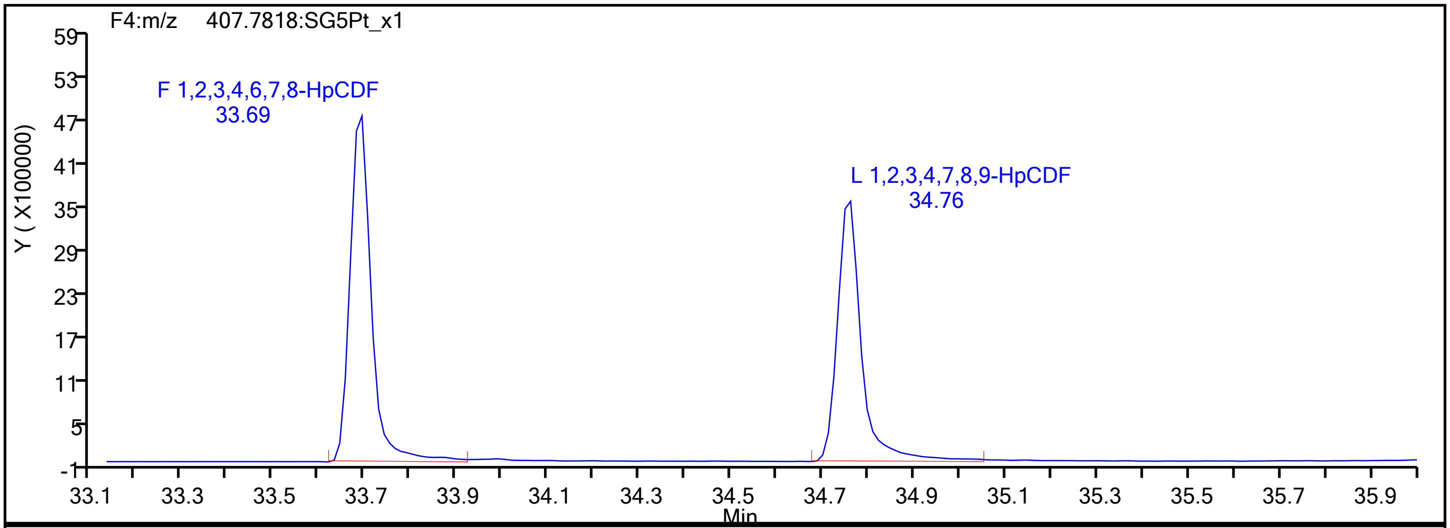

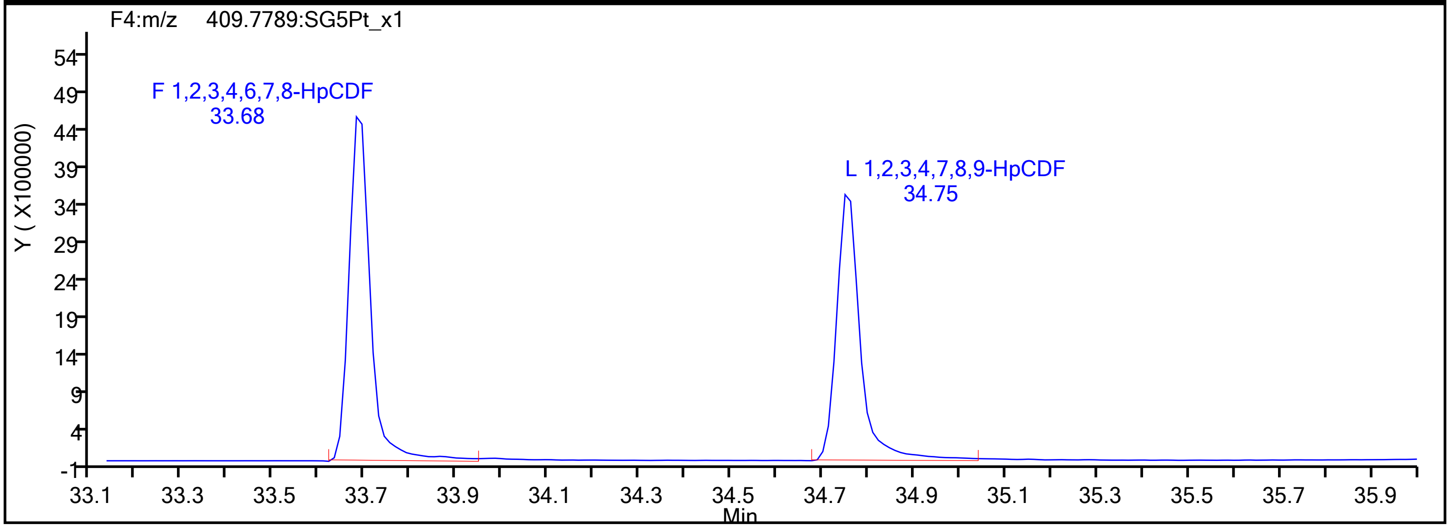

HpCDF Interference Mass

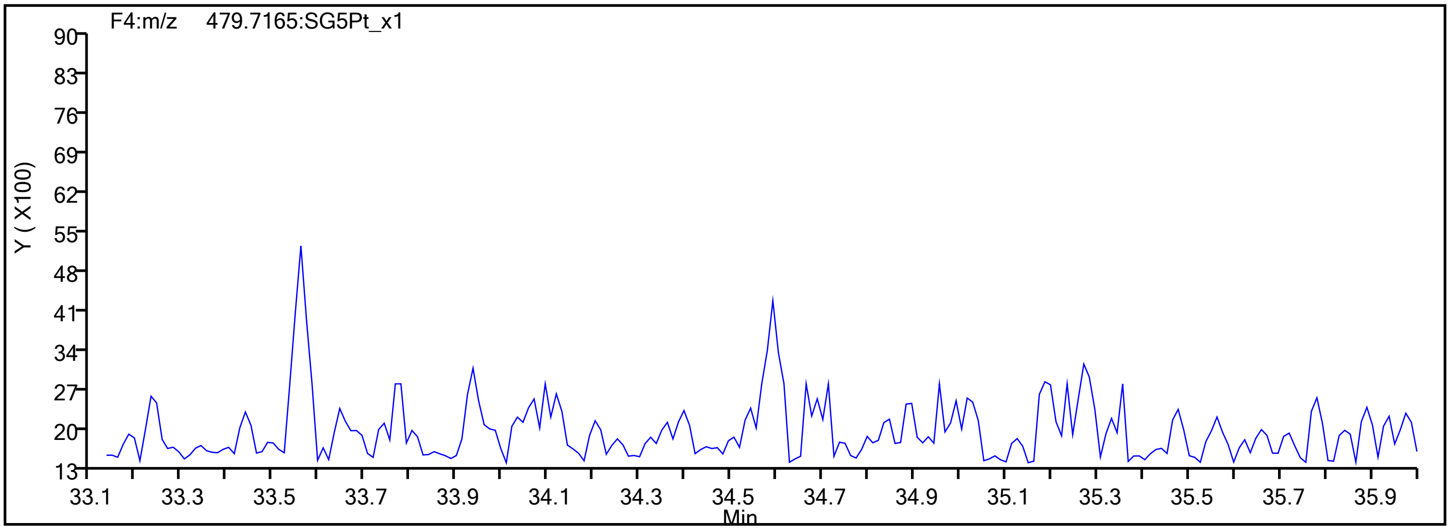

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
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HpCDD

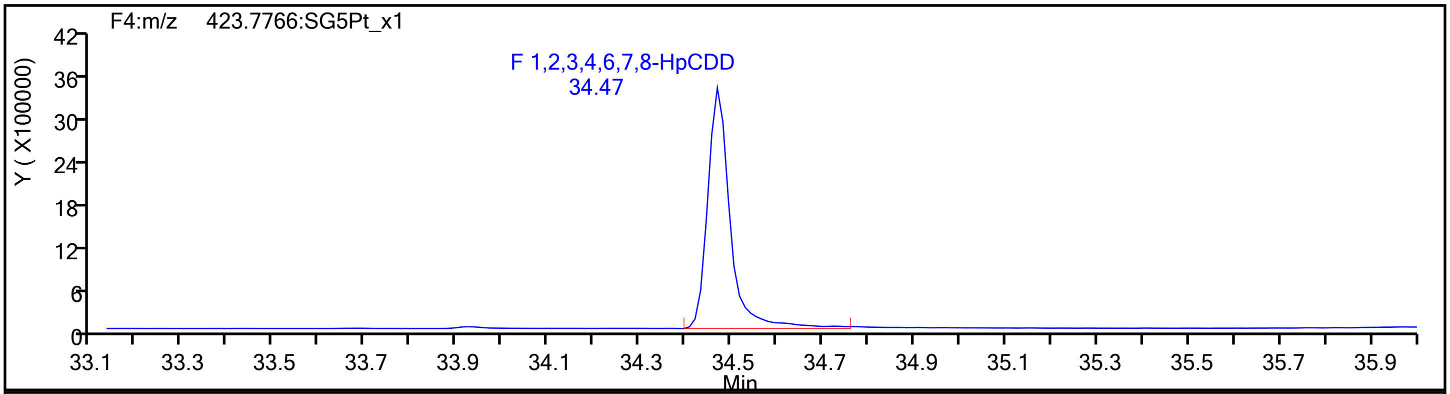

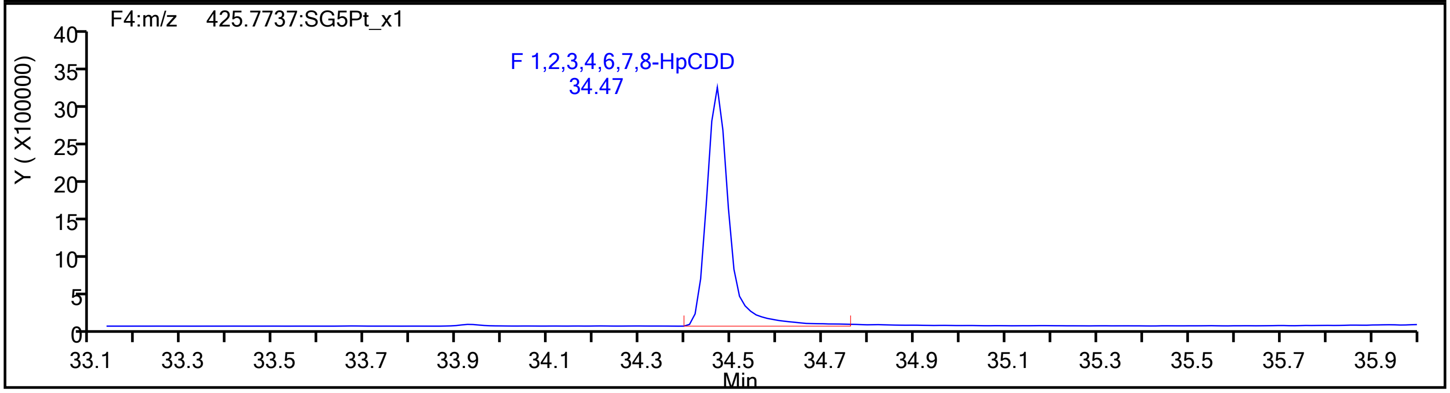

HpCDD Standards

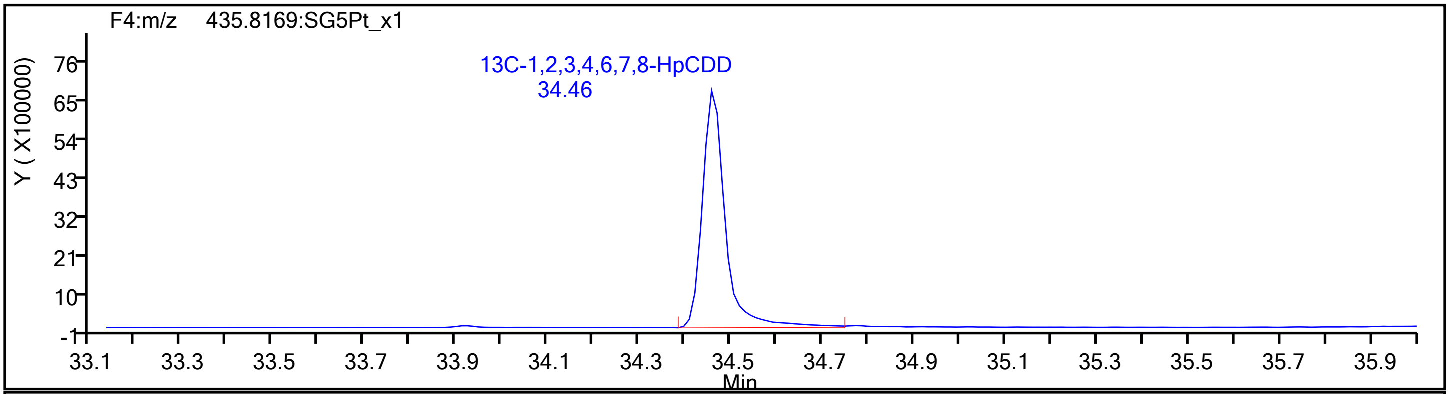

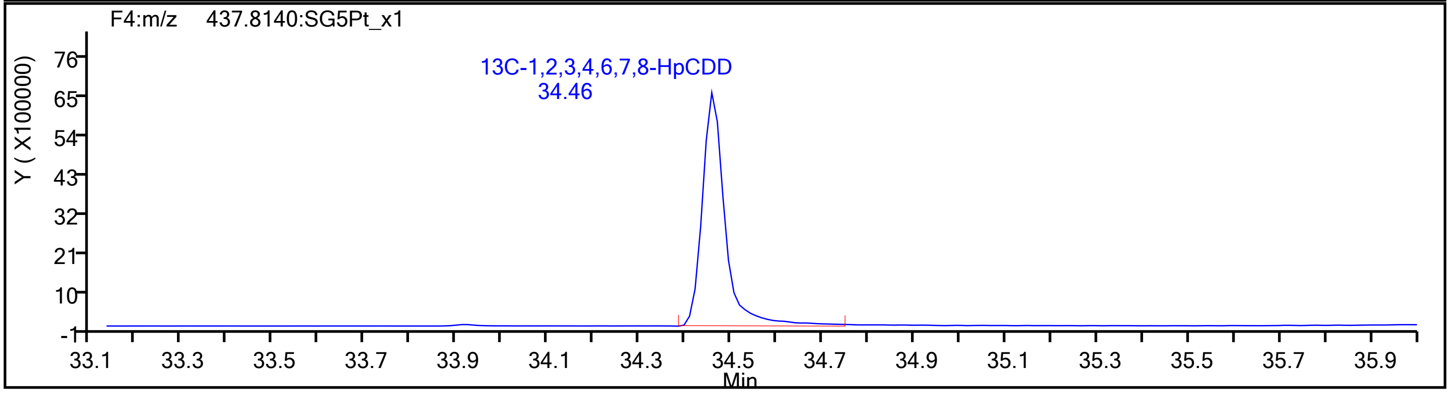

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Eurofins TestAmerica, Sacramento

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OCDF

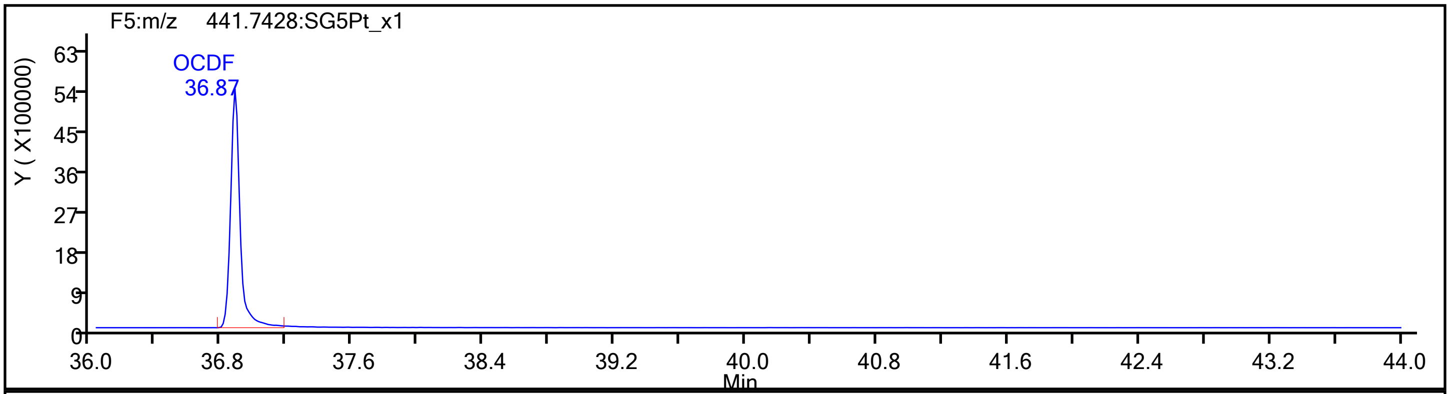

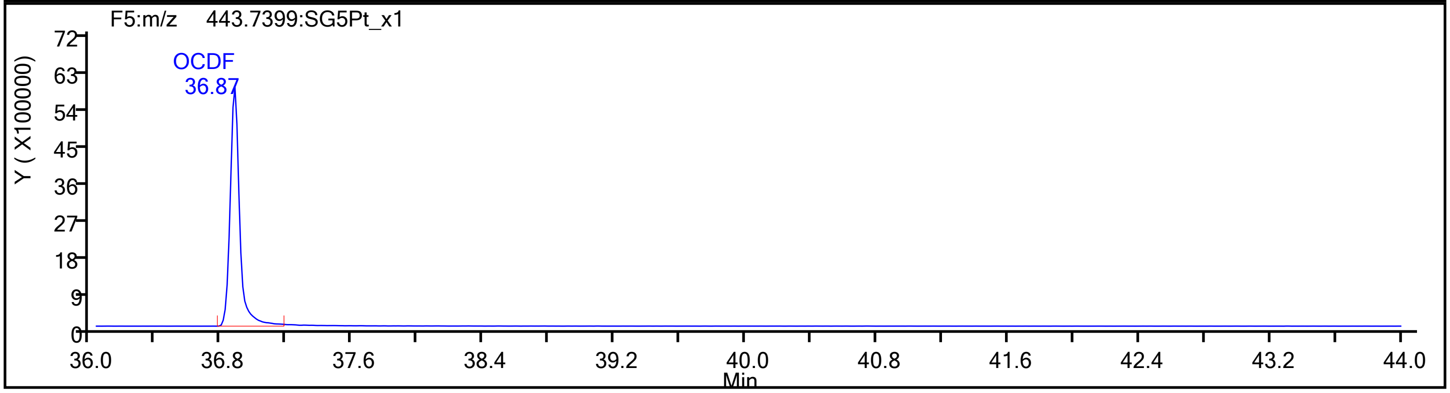

OCDF Standards

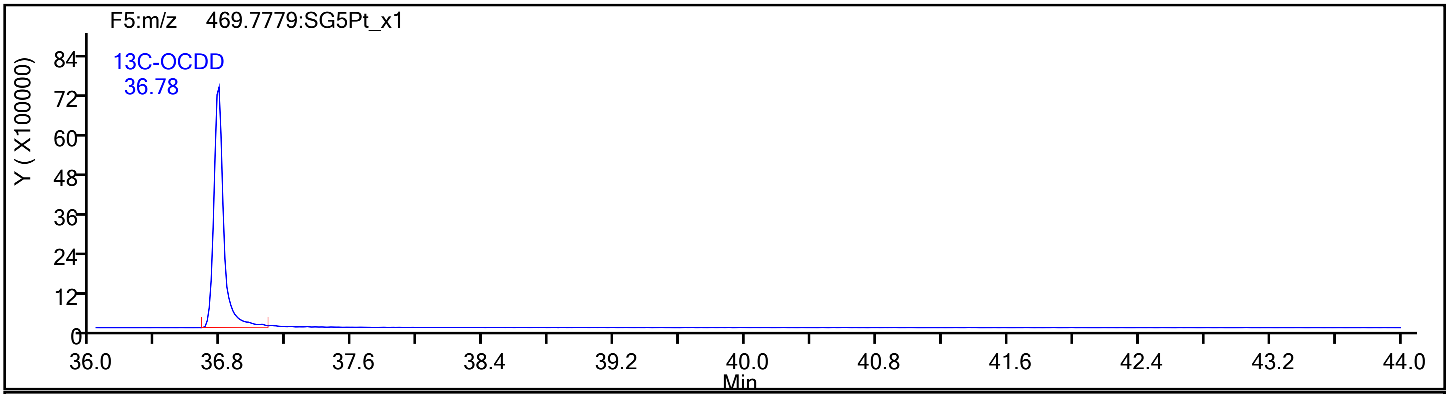

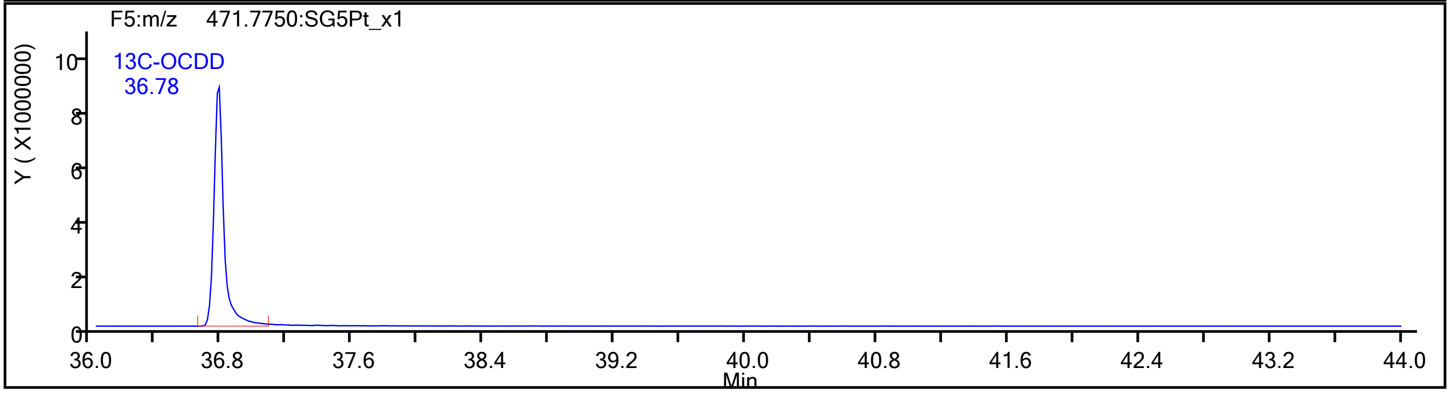

Eurofins TestAmerica, Sacramento

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OCDF

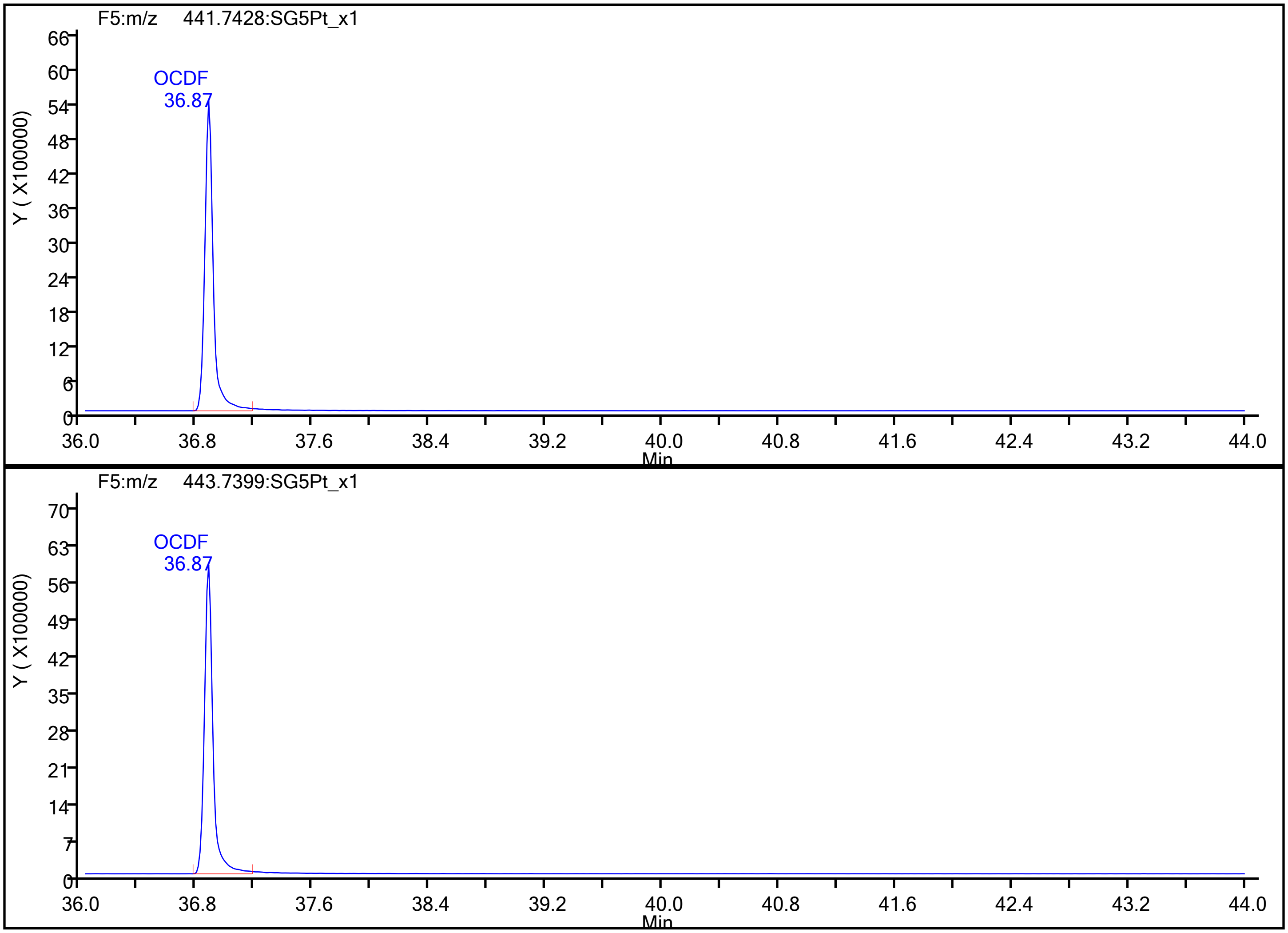

OCDF Interference Mass

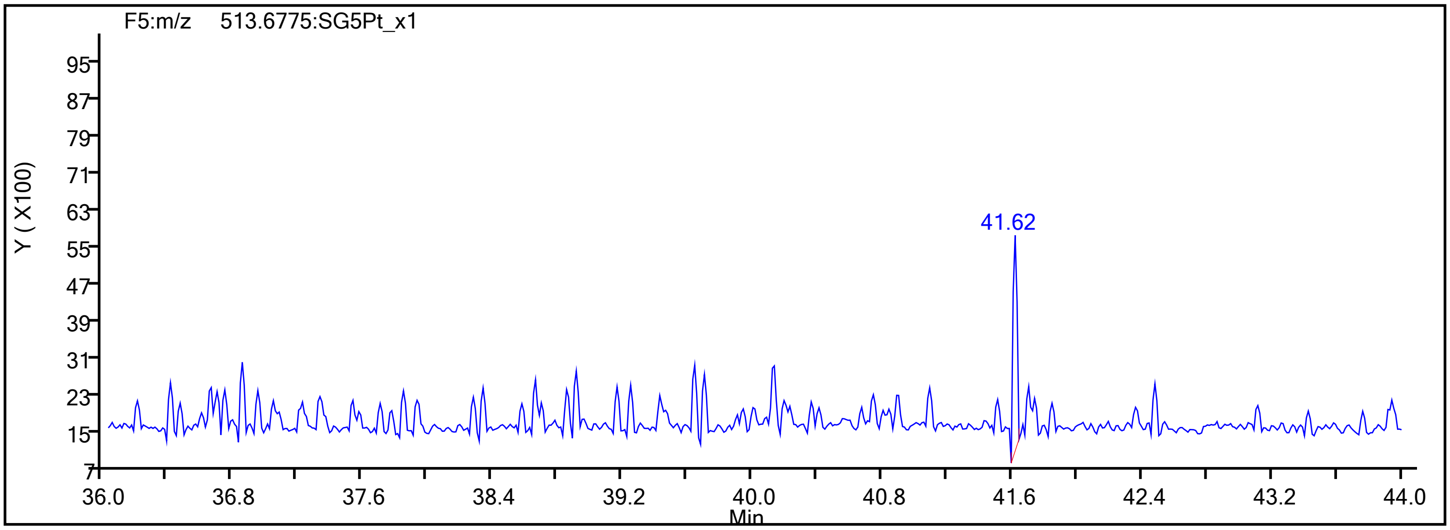

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Eurofins TestAmerica, Sacramento

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OCDD

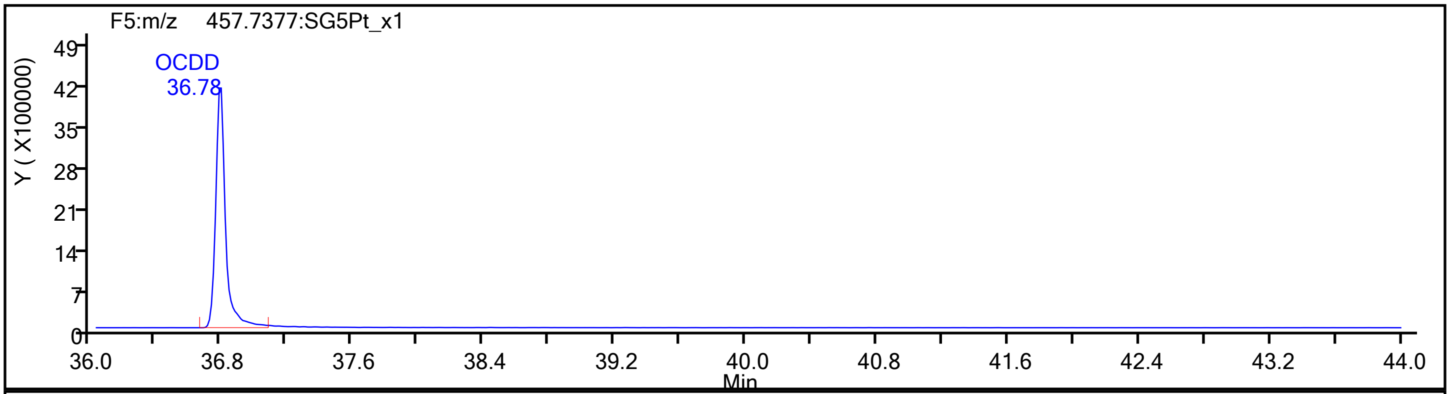

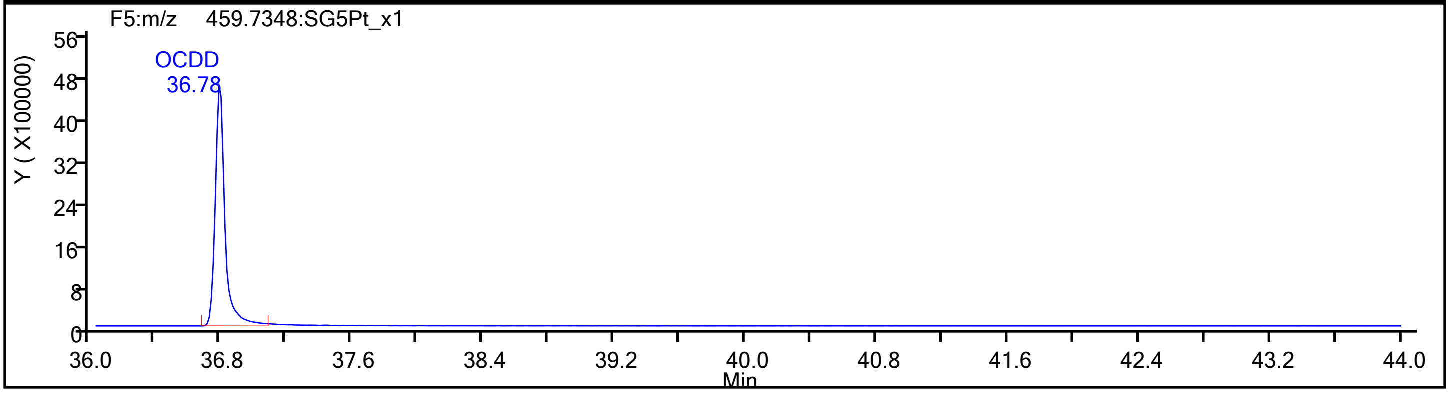

OCDD Standards

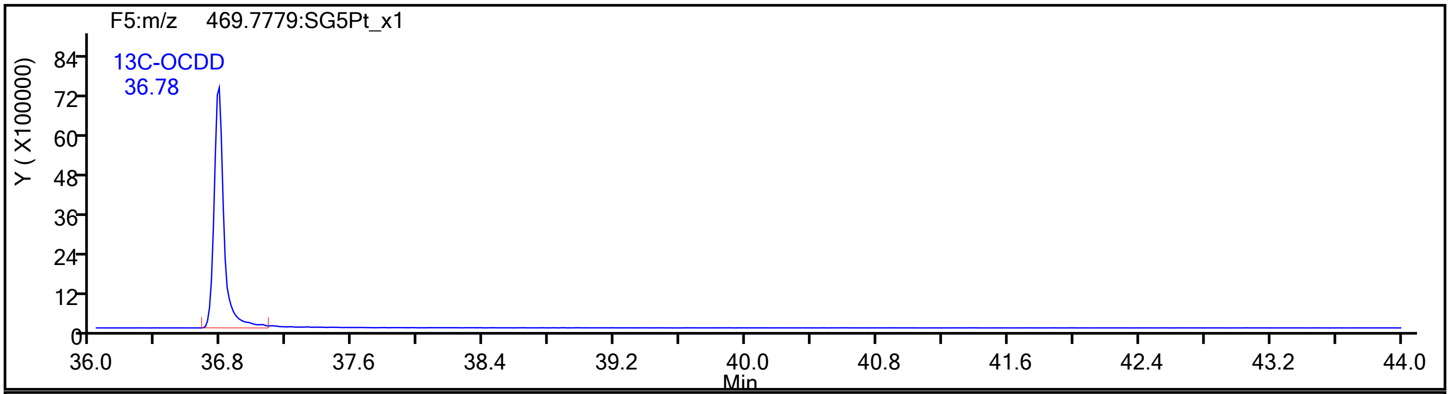

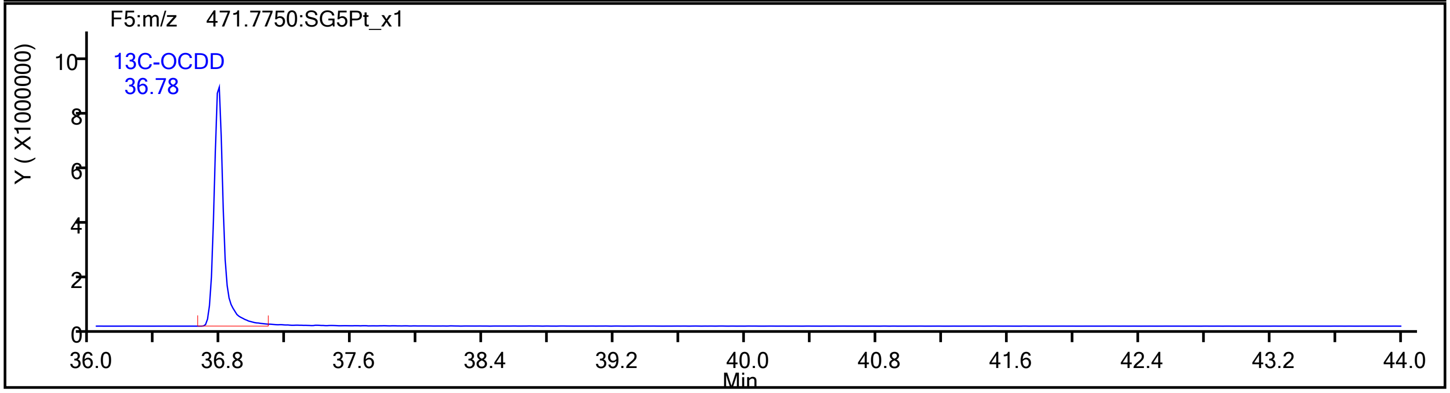

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Eurofins TestAmerica, Sacramento

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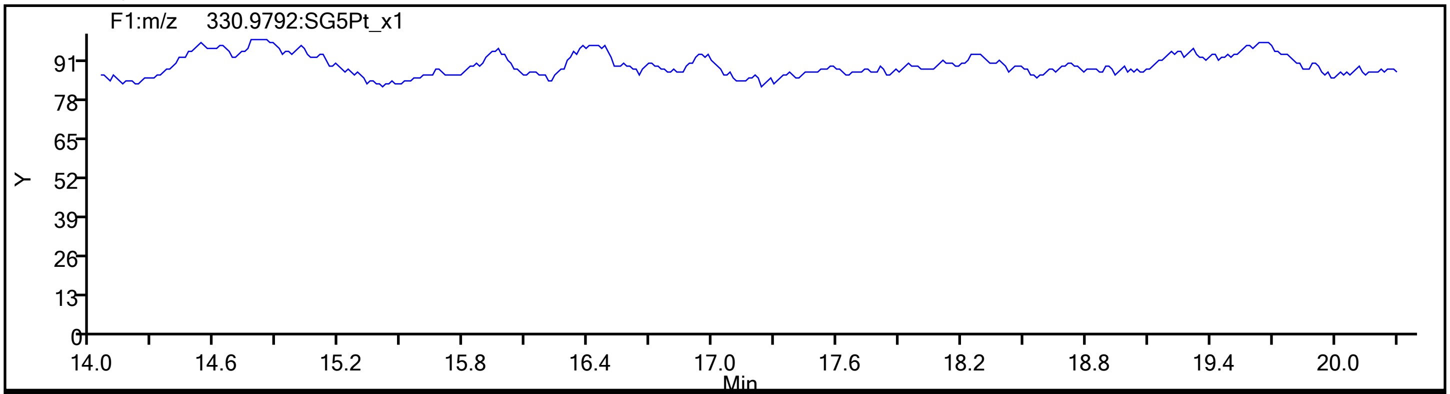

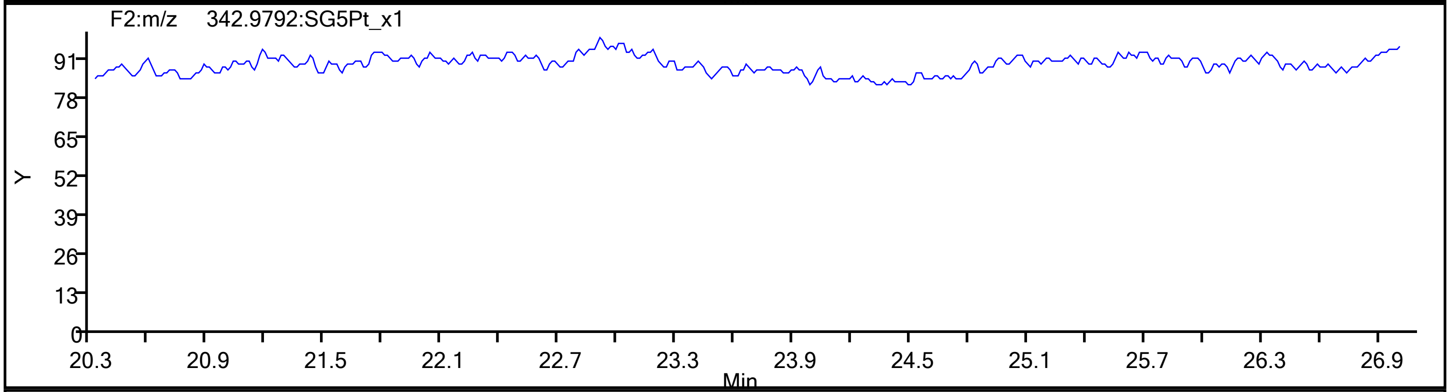

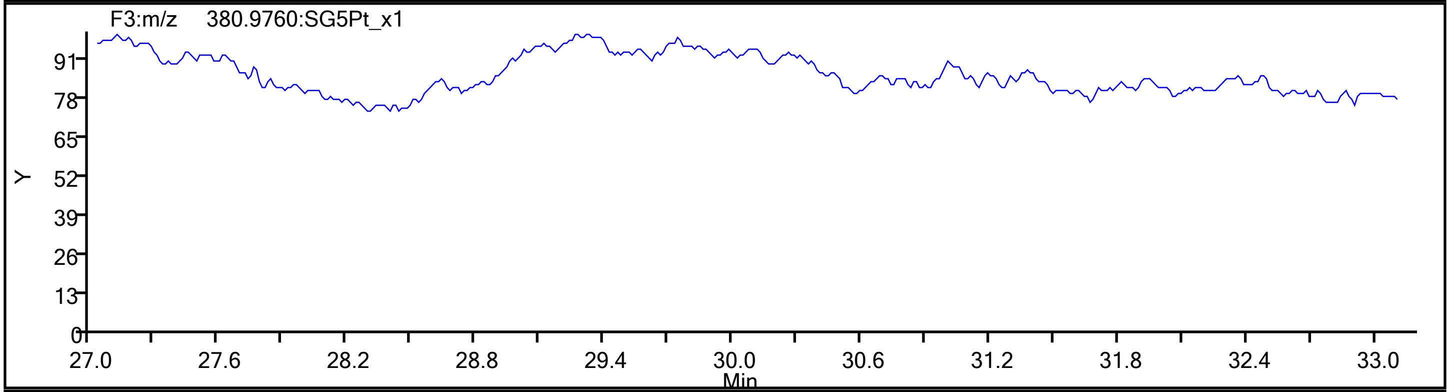

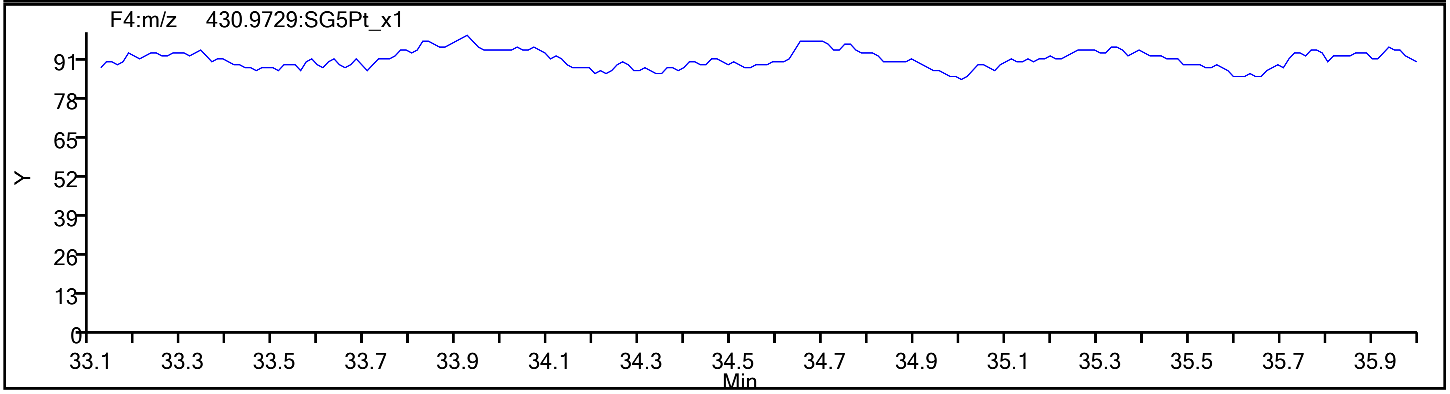

Eurofins TestAmerica, Sacramento

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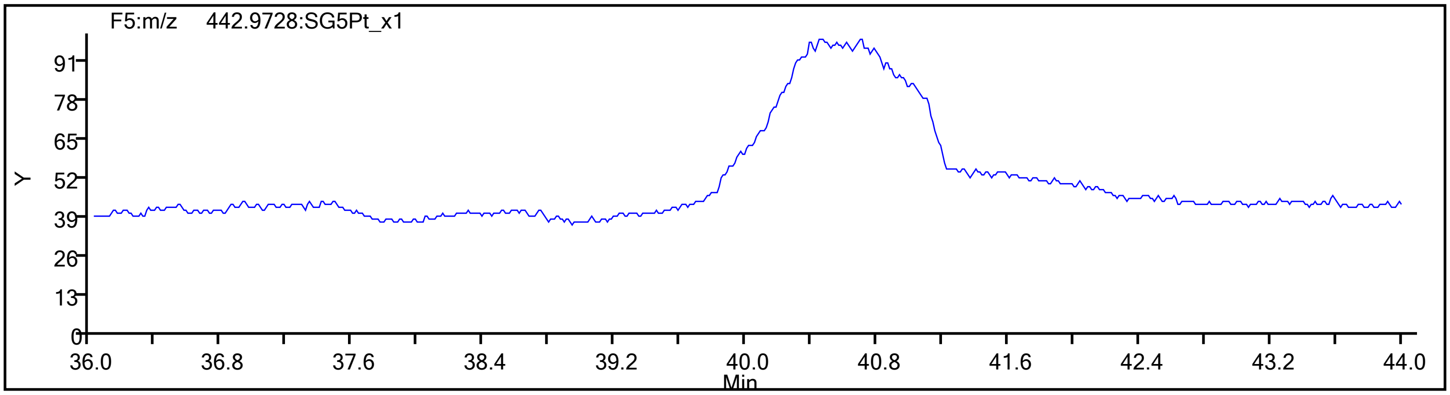

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Sep-2020 18:24:43 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720C CS-5 HRDXNL5_00031
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:02 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.718	69385886	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	96572003	0.77	1.3598	102.4	102.4	0.1609	0.1609	102	
2,3,7,8-TCDF	17.219	34873455	0.75	0.9077	39.8	39.8	0.0638	0.0638	99.45	
S Total TCDF					39.8	39.8	0.0638	0.0638		
D 13C-2,3,7,8-TCDD	17.914	74937692	0.76	1.0536	102.5	102.5	0.1762	0.1762	103	
2,3,7,8-TCDD	17.929	29967613	0.77	1.0061	39.7	39.7	0.0451	0.0451	99.36	
$ 37Cl4-2,3,7,8-TCDD	17.929	31470753		1.0488	43.2	43.2	0.0397	0.0397	108	
S Total TCDD					39.7	39.7	0.0451	0.0451		
D 13C-1,2,3,7,8-PeCDF	22.212	79929046	1.56	1.1306	101.9	101.9	0.2060	0.2060	102	
1,2,3,7,8-PeCDF	22.226	145371529	1.52	0.9147	198.8	198.8	0.5356	0.5356	99.41	
D 13C-2,3,4,7,8-PeCDF	23.548	72693510	1.55	1.0539	99.4	99.4	0.2210	0.2210	99.41	
2,3,4,7,8-PeCDF	23.576	138637753	1.54	0.9508	200.6	200.6	0.6044	0.6044	100	
S Total PeCDF					399.4	399.4	0.5700	0.5700		
D 13C-1,2,3,7,8-PeCDD	24.271	57281119	1.57	0.8084	102.1	102.1	0.1244	0.1244	102	
1,2,3,7,8-PeCDD	24.298	112792500	1.57	0.9955	197.8	197.8	0.2179	0.2179	98.90	
S Total PeCDD					197.8	197.8	0.2179	0.2179		
D 13C-1,2,3,4,7,8-HxCDF	30.406	50016942	0.51	0.9225	102.2	102.2	0.5034	0.5034	102	
1,2,3,4,7,8-HxCDF	30.420	112104497	1.24	1.1090	202.1	202.1	1.246	1.246	101	
D 13C-1,2,3,6,7,8-HxCDF	30.593	56052859	0.50	1.0336	102.2	102.2	0.4493	0.4493	102	
1,2,3,6,7,8-HxCDF	30.619	119502715	1.25	1.0721	198.9	198.9	1.138	1.138	99.43	
D 13C-2,3,4,6,7,8-HxCDF	31.444	53491599	0.51	0.9773	103.2	103.2	0.4751	0.4751	103	
2,3,4,6,7,8-HxCDF	31.458	115165865	1.24	1.0838	198.7	198.7	0.8770	0.8770	99.33	
D 13C-1,2,3,7,8,9-HxCDF	32.257	49233772	0.51	0.9153	101.4	101.4	0.5073	0.5073	101	
1,2,3,7,8,9-HxCDF	32.270	108414785	1.24	1.0931	201.5	201.5	0.8756	0.8756	101	
S Total HxCDF					801.1	801.1	1.034	1.034		
* 13C-1,2,3,7,8,9-HxCDD	32.070	53044339	1.24	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	42294958	1.24	0.7977	100.0	100.0	0.3382	0.3382	99.96	
1,2,3,4,7,8-HxCDD	31.644	85297387	1.23	1.0014	201.4	201.4	0.6505	0.6505	101	
D 13C-1,2,3,6,7,8-HxCDD	31.737	55171129	1.25	1.0010	103.9	103.9	0.2695	0.2695	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.764	99286402	1.23	0.8902	202.2	202.2	0.6268	0.6268	101	
1,2,3,7,8,9-HxCDD	32.083	103076569	1.24	1.0579	199.9	199.9	0.5682	0.5682	99.97	
S Total HxCDD					603.5	603.5	0.6151	0.6151		
D 13C-1,2,3,4,6,7,8-HpCDF	33.692	45908363	0.43	0.8506	101.7	101.7	0.9584	0.9584	102	
1,2,3,4,6,7,8-HpCDF	33.692	124894209	1.03	1.3603	200.0	200.0	1.822	1.822	100	
D 13C-1,2,3,4,7,8,9-HpCDF	34.749	42158862	0.43	0.7618	104.3	104.3	1.070	1.070	104	
1,2,3,4,7,8,9-HpCDF	34.761	111173202	1.03	1.3207	199.7	199.7	2.239	2.239	99.84	
S Total HpCDF					399.7	399.7	2.030	2.030		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	47987052	1.05	0.8873	102.0	102.0	0.5622	0.5622	102	
1,2,3,4,6,7,8-HpCDD	34.481	97091283	1.05	0.9988	202.6	202.6	0.9652	0.9652	101	
S Total HpCDD					202.6	202.6	0.9652	0.9652		
D 13C-OCDD	36.791	67776385	0.89	0.6287	203.2	203.2	0.2176	0.2176	102	
OCDF	36.887	195516483	0.92	1.4136	408.1	408.1	0.4076	0.4076	102	
OCDD	36.791	152532525	0.90	1.1290	398.7	398.7	0.4762	0.4762	99.67	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	17-Sep-2020 18:24:43	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 091720C CS-5 HRDXNL5_00031				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:36:02	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:55

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.718	17.711	0		30594649	7615613	5357	13392	1422		
333.9339	17.718	17.711	0		38791237	9634885	7452	18630	1293	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.971	42088557	10712904	7778	19445	1377		
317.9389	17.203	17.203	0	0.971	54483446	13775198	7322	18305	1881	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	14988137	3834769	2179	5447	1760		
305.8987	17.219	17.218	0	1.001	19885318	5073329	3490	8725	1454	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.011	32475298	7514063	5357	13392	1403		
333.9339	17.914	17.905	1	1.011	42462394	9735287	7452	18630	1306	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	13023923	3137911	1586	3965	1979		
321.8936	17.929	17.920	1	1.001	16943690	4053189	1542	3855	2629	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	31470753	7536773	2874	7185	2622		
13C-1,2,3,7,8-PeCDF											
351.9000	22.212	22.204	0	1.254	48735874	8487133	9442	23605	899		
353.8970	22.212	22.204	0	1.254	31193172	5478294	6628	16570	827	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	87680093	15315046	16350	40875	937		
341.8567	22.226	22.220	0	1.001	57691436	10049417	11018	27545	912	1.52(1.32-1.78)	

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.548	23.540	0	1.329	44169998	7215550	9442	23605	764		
353.8970	23.548	23.540	0	1.329	28523512	4690652	6628	16570	708	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.576	23.567	0	1.001	84161718	13445088	16350	40875	822		
341.8567	23.576	23.567	0	1.001	54476035	8800004	11018	27545	799	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.271	24.263	0	1.370	35025877	5428276	4136	10340	1312		
369.8919	24.271	24.263	0	1.370	22255242	3412885	2802	7005	1218	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.298	24.290	0	1.001	68895744	10787859	4993	12482	2161		
357.8516	24.298	24.290	0	1.001	43896756	6792774	2679	6697	2536	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.406	30.398	0	0.948	16907006	3041251	8598	21495	354		
385.8610	30.406	30.398	0	0.948	33109936	5874433	16570	41425	355	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.420	30.414	0	1.000	62032242	11250500	27684	69210	406		
375.8178	30.420	30.414	0	1.000	50072255	9165427	21597	53992	424	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.593	30.587	0	0.954	18696062	3370533	8598	21495	392		
385.8610	30.593	30.587	0	0.954	37356797	6724539	16570	41425	406	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.619	30.608	1	1.001	66272566	12017984	27684	69210	434		
375.8178	30.619	30.608	1	1.001	53230149	9732786	21597	53992	451	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	17949694	4342395	8598	21495	505		
385.8610	31.444	31.439	0	0.980	35541905	8619284	16570	41425	520	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	63742674	15178042	27684	69210	548		
375.8178	31.458	31.458	0	1.000	51423191	12352167	21597	53992	572	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.257	32.254	0	1.006	16524564	4298019	8598	21495	500		
385.8610	32.257	32.254	0	1.006	32709208	8575005	16570	41425	518	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	60052822	15631621	27684	69210	565		
375.8178	32.270	32.267	0	1.000	48361963	12559390	21597	53992	582	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		29372372	7522788	7772	19430	968		
403.8529	32.070	32.067	0		23671967	6026631	6849	17122	880	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	23417365	6210189	7772	19430	799		
403.8529	31.631	31.631	0	0.986	18877593	5111540	6849	17122	746	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	47067080	12706631	17058	42645	745		
391.8127	31.644	31.647	0	1.000	38230307	10405760	12442	31105	836	1.23(1.05-1.43)	

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	30670919	7242217	7772	19430	932		
403.8529	31.737	31.740	0	0.990	24500210	5975738	6849	17122	872	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.764	31.756	0	1.001	54790140	12827485	17058	42645	752		
391.8127	31.751	31.756	0	1.000	44496262	10591613	12442	31105	851	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	57027257	14698359	17058	42645	862		
391.8127	32.083	32.081	0	1.014	46049312	11880470	12442	31105	955	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.692	33.684	0	1.051	13795751	4370624	13699	34247	319		
419.8220	33.680	33.684	0	1.050	32112612	10081277	30486	76215	331	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.692	33.694	0	1.000	63263736	20559612	71281	178202	288		
409.7789	33.692	33.694	0	1.000	61630473	20287990	71983	179957	282	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.749	34.751	0	1.084	12683797	3685698	13699	34247	269		
419.8220	34.749	34.751	0	1.084	29475065	8429189	30486	76215	276	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	56512355	16491490	71281	178202	231		
409.7789	34.761	34.763	0	1.000	54660847	16222332	71983	179957	225	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	24611998	7479570	14817	37042	505		
437.8140	34.469	34.464	0	1.075	23375054	7114259	12218	30545	582	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	49621378	14929353	28416	71040	525		
425.7737	34.481	34.474	0	1.000	47469905	14098323	27857	69642	506	1.05(0.88-1.20)	
13C-OCDD											
469.7779	36.791	36.784	0	1.147	31885312	7968197	3222	8055	2473		
471.7750	36.779	36.784	0	1.147	35891073	9011207	4194	10485	2149	0.89(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	93607627	24454795	9427	23567	2594		
443.7399	36.887	36.882	0	1.003	101908856	26336292	10137	25342	2598	0.92(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	72170058	18527867	8405	21012	2204		
459.7348	36.791	36.791	0	1.000	80362467	20814258	9853	24632	2112	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:06   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Injection Date: 17-Sep-2020 18:24:43   Injection Vol: 2.0 ul
Instrument ID: 10D5   Operator ID: AJS
Method: Dioxin_10D5   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246   Sample Line#: 6
Column Type: DB-5   Column Dia: 0.32 mm

TCDF

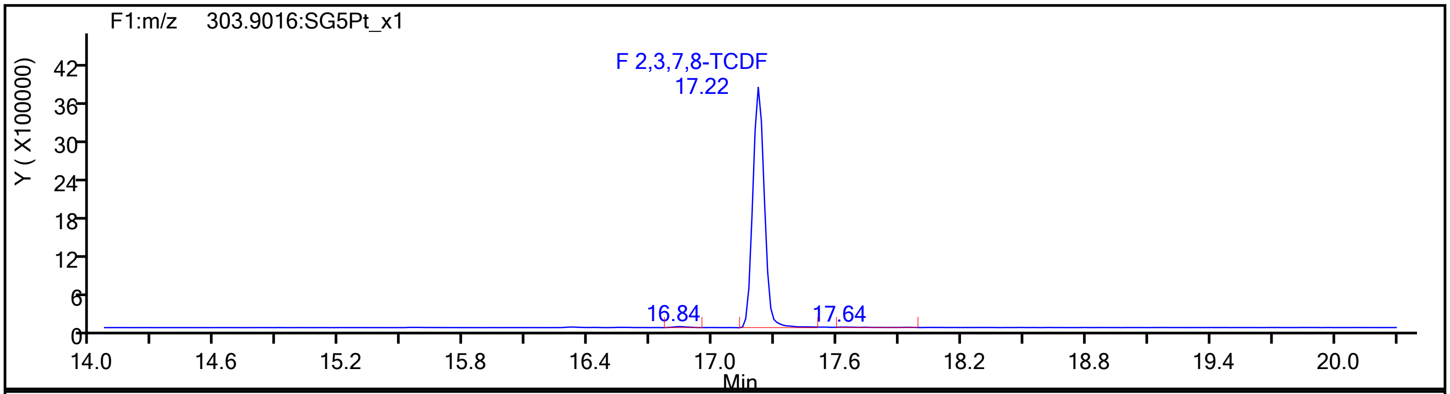

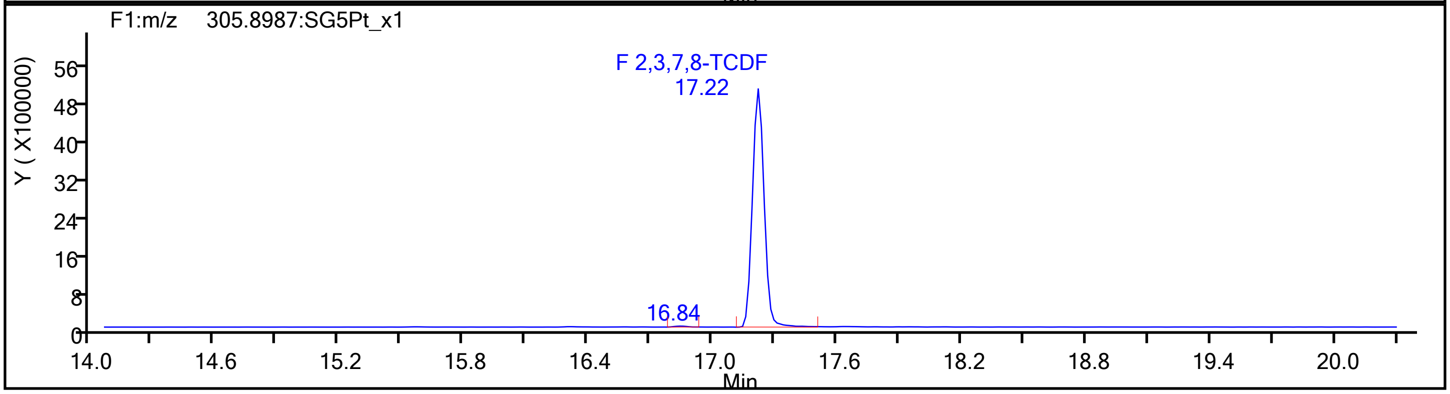

TCDF Standards

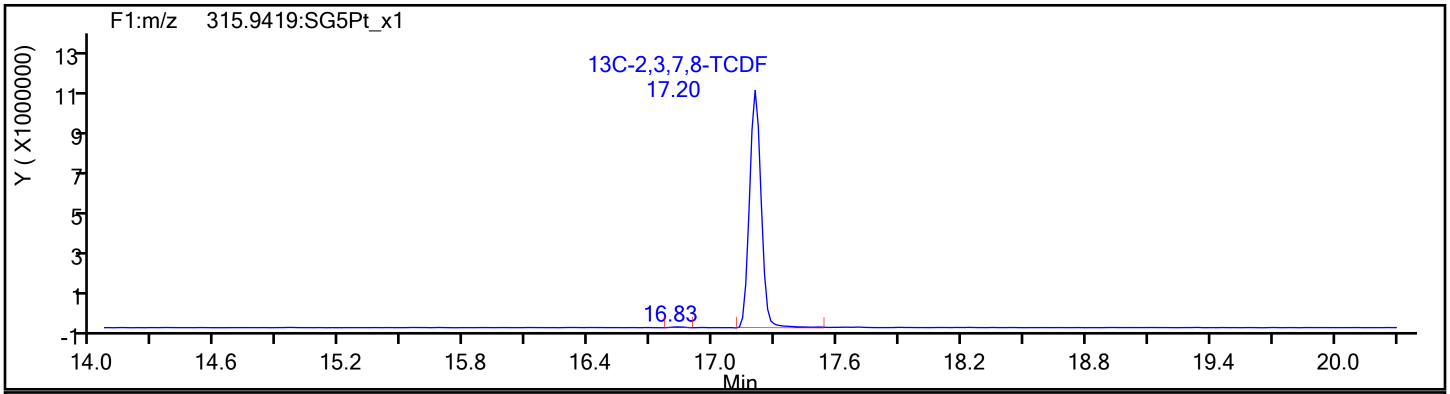

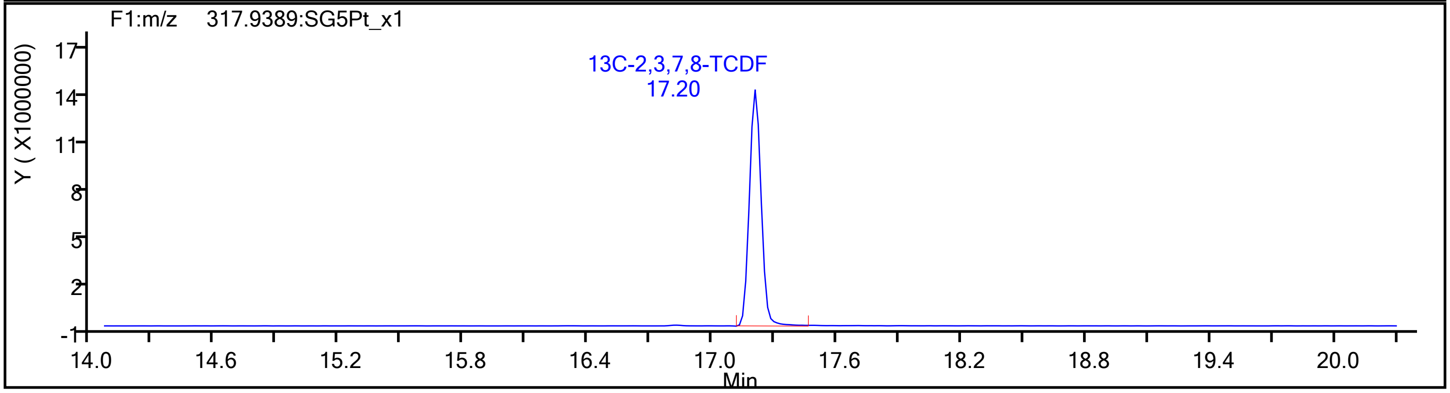

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Injection Date: 17-Sep-2020 18:24:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

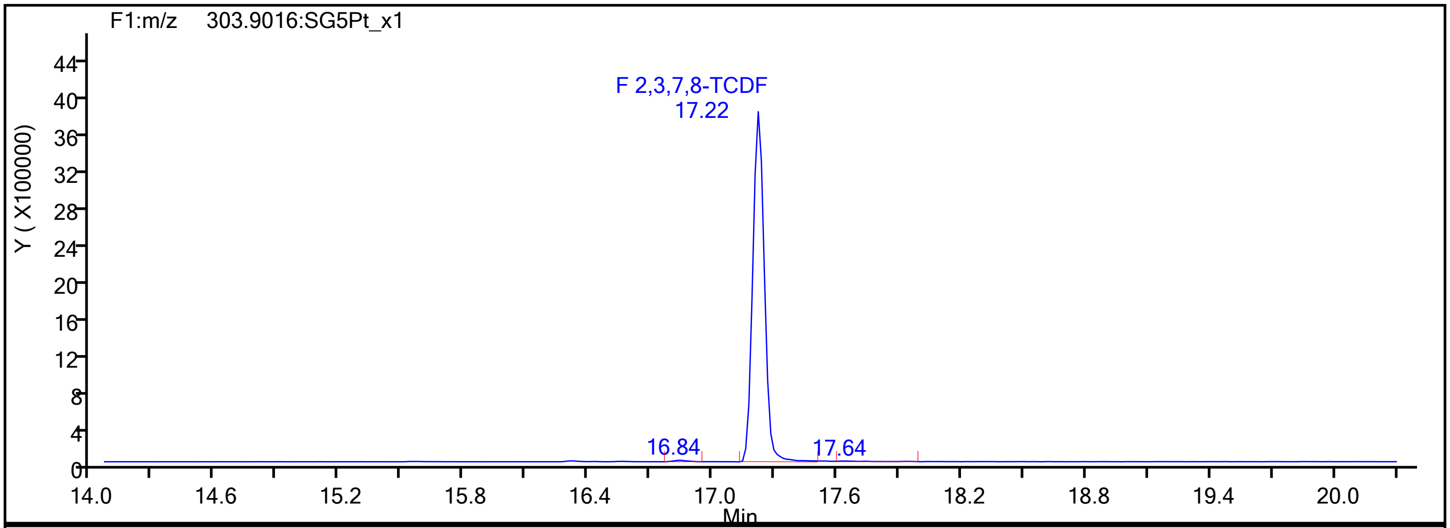

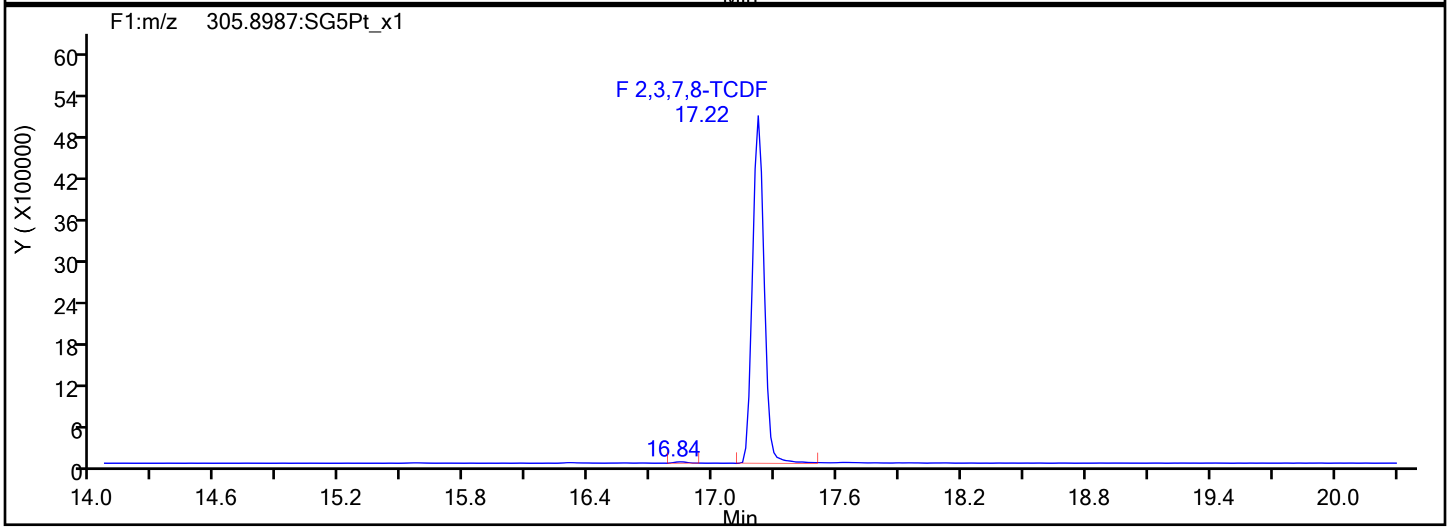

TCDF Interference Mass

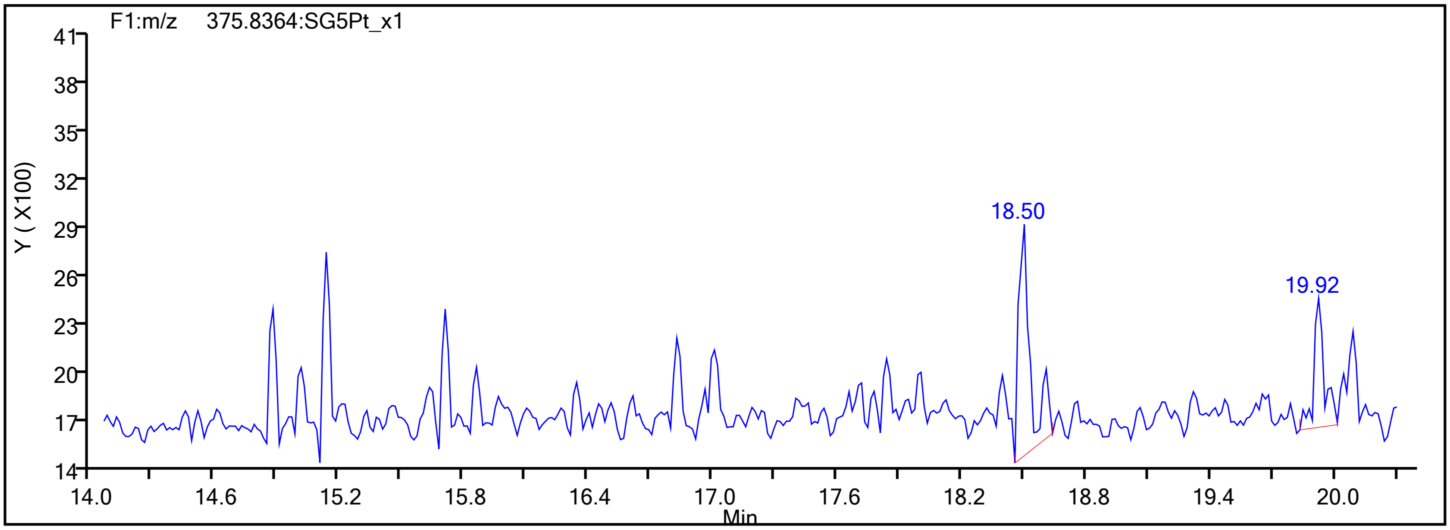

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Injection Date: 17-Sep-2020 18:24:43 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

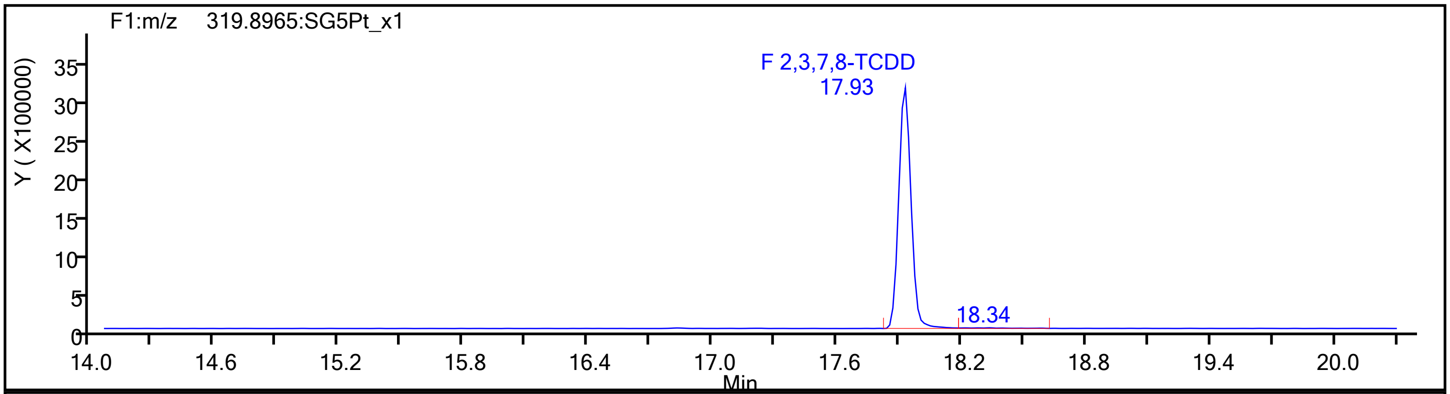

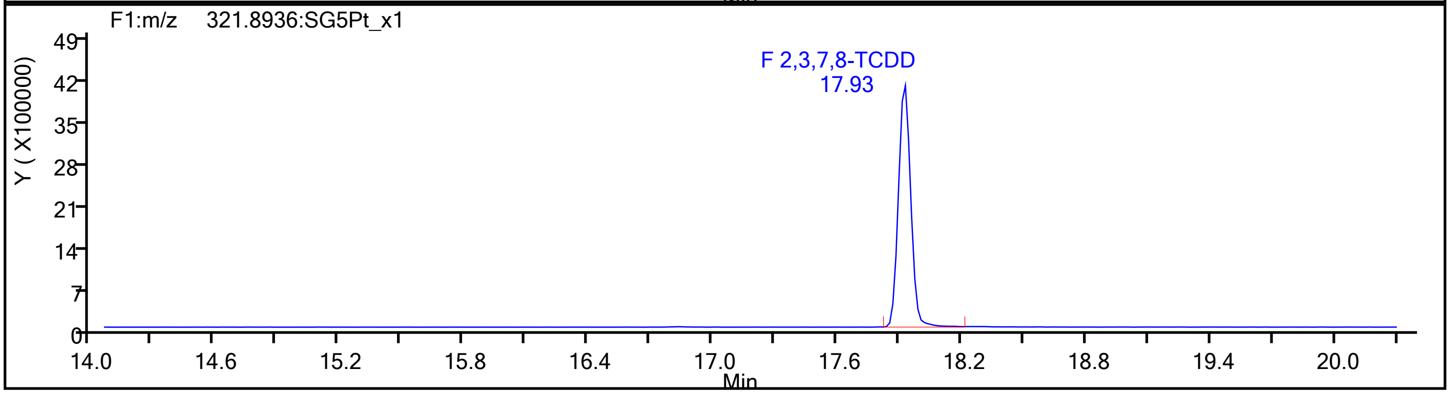

TCDD Standards

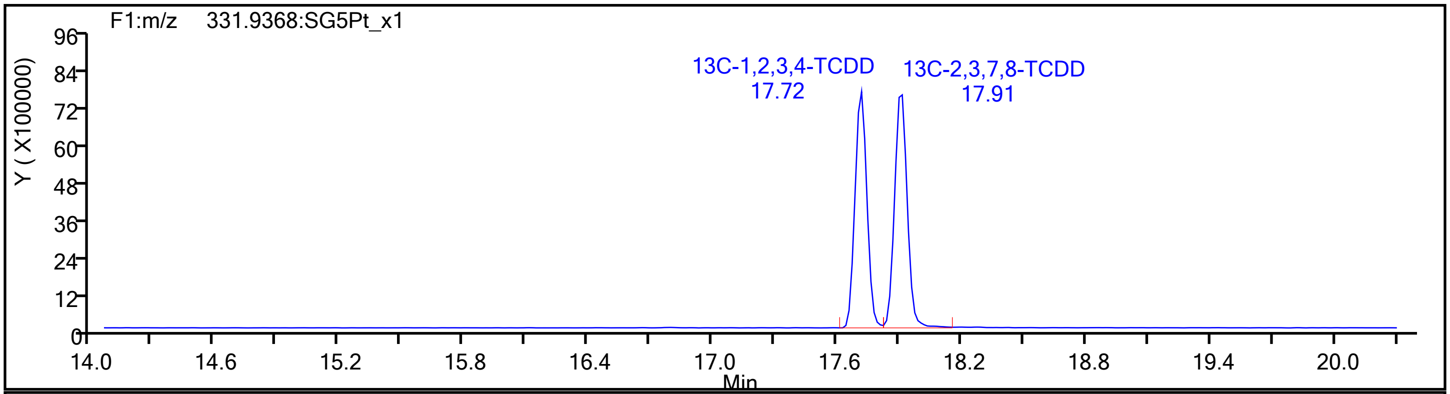

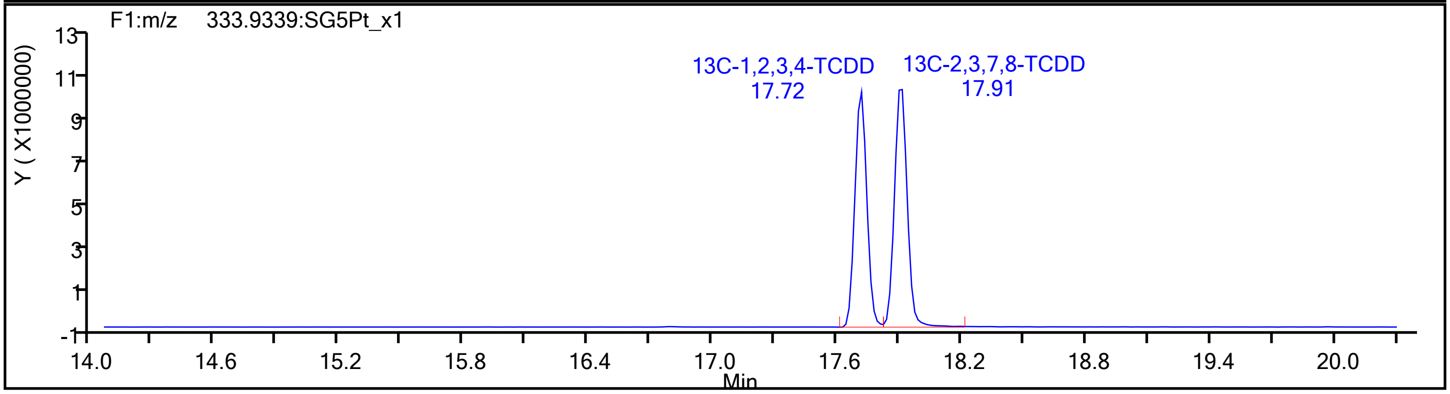

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

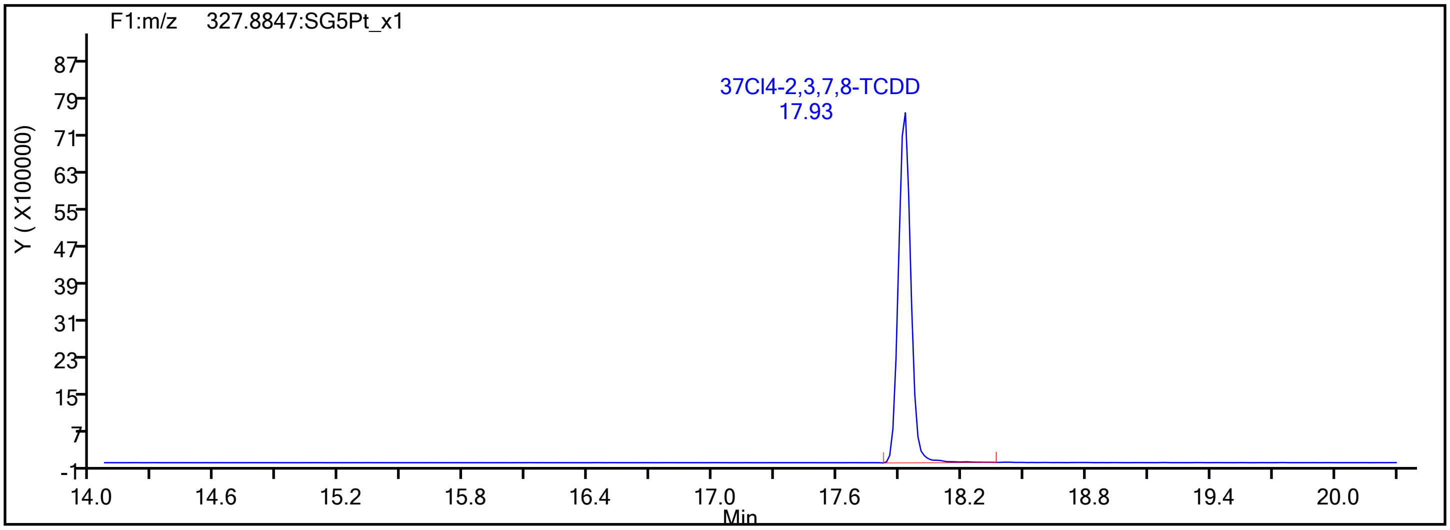

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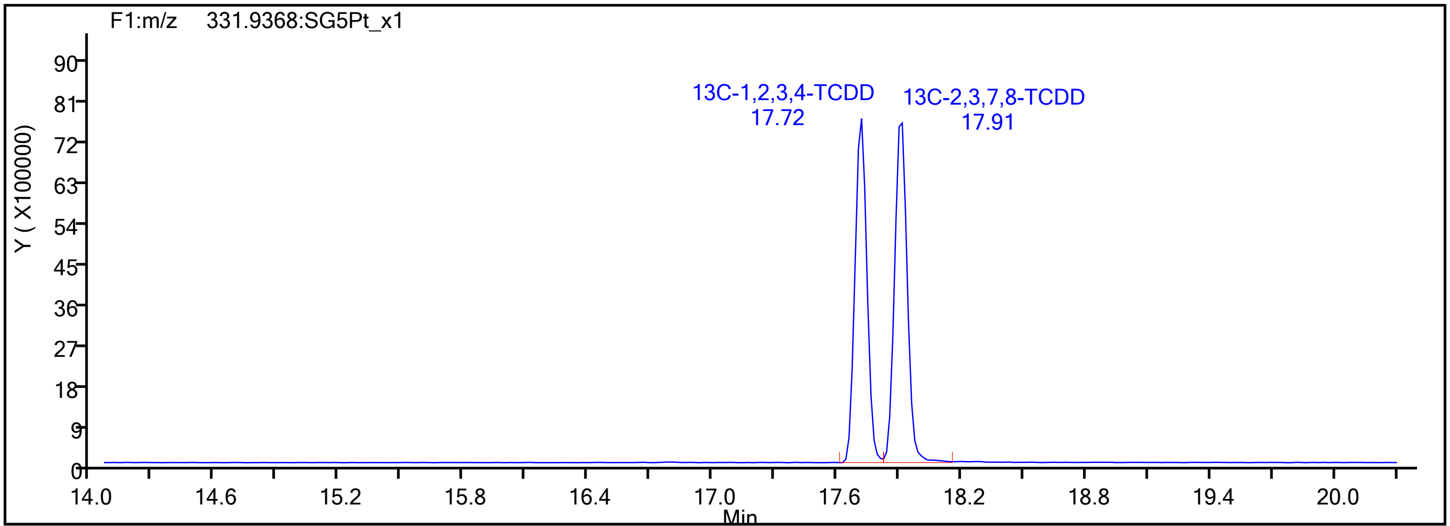

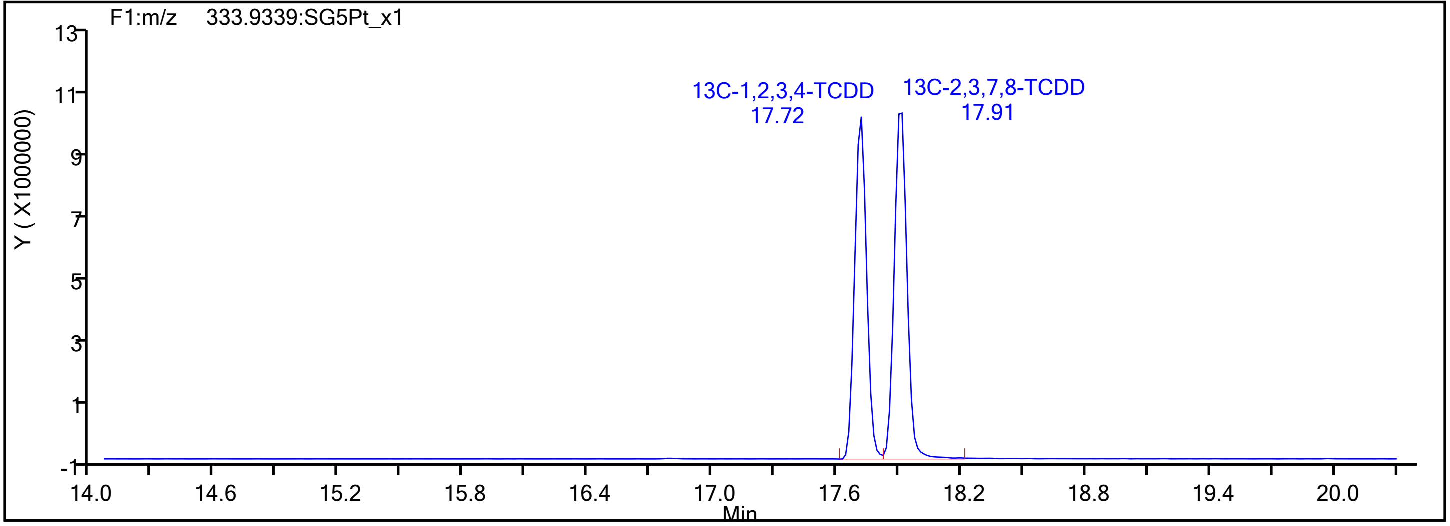

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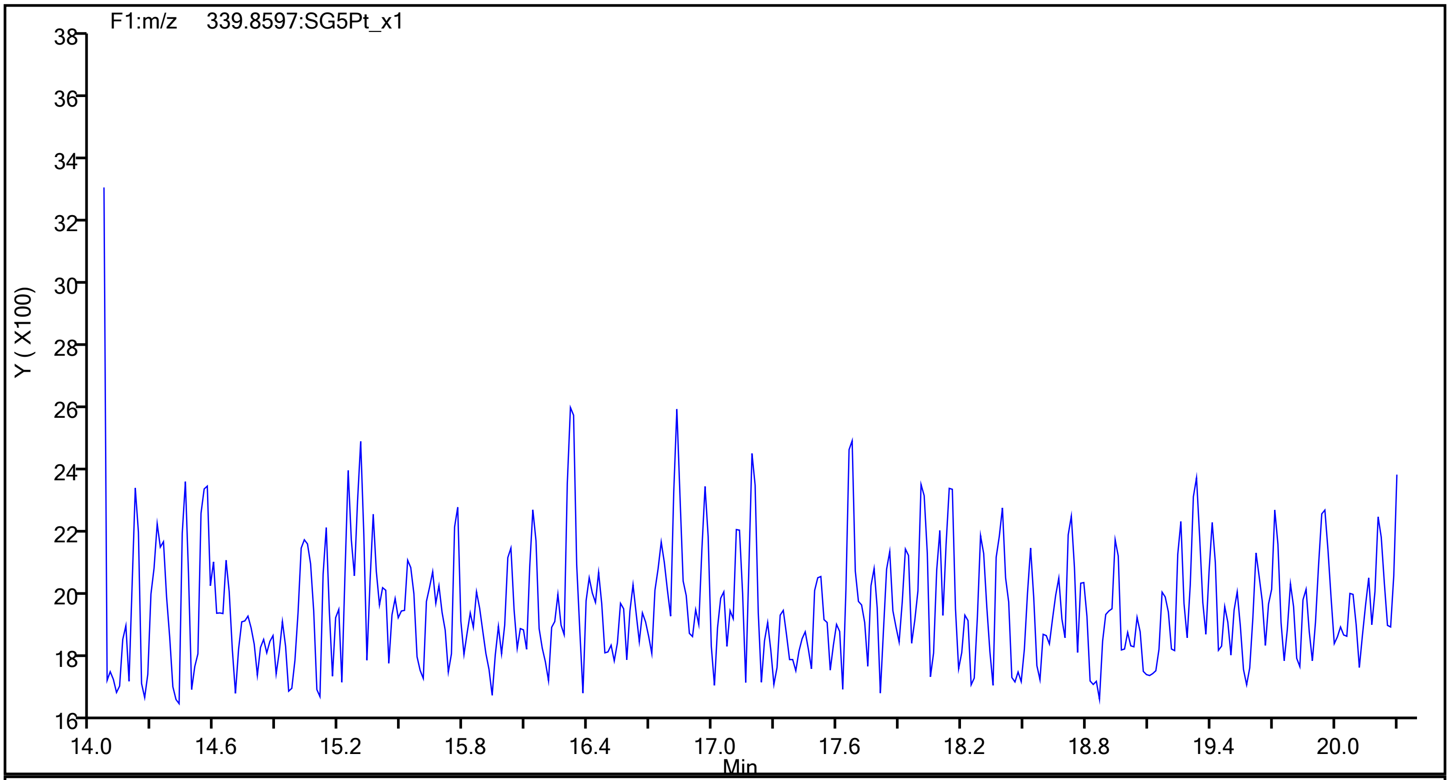

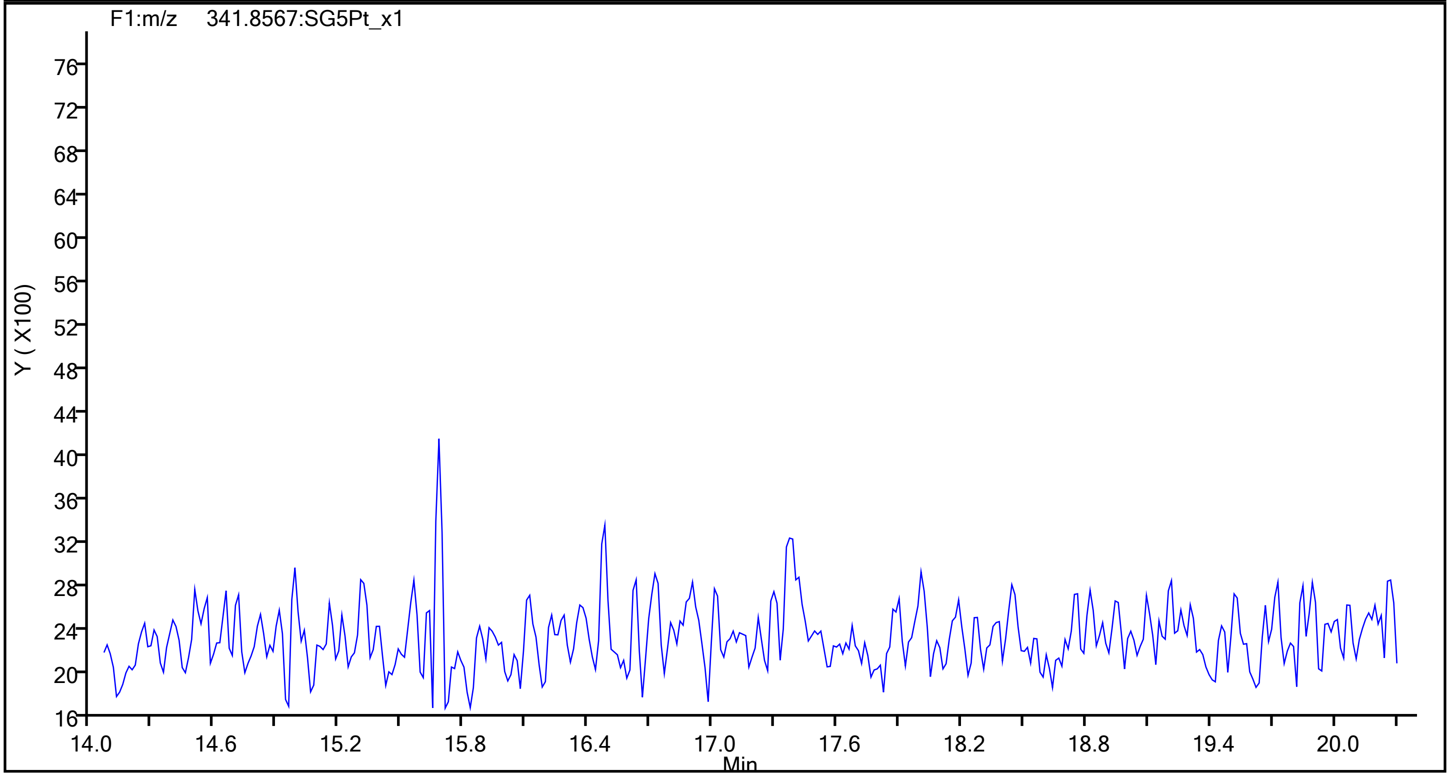

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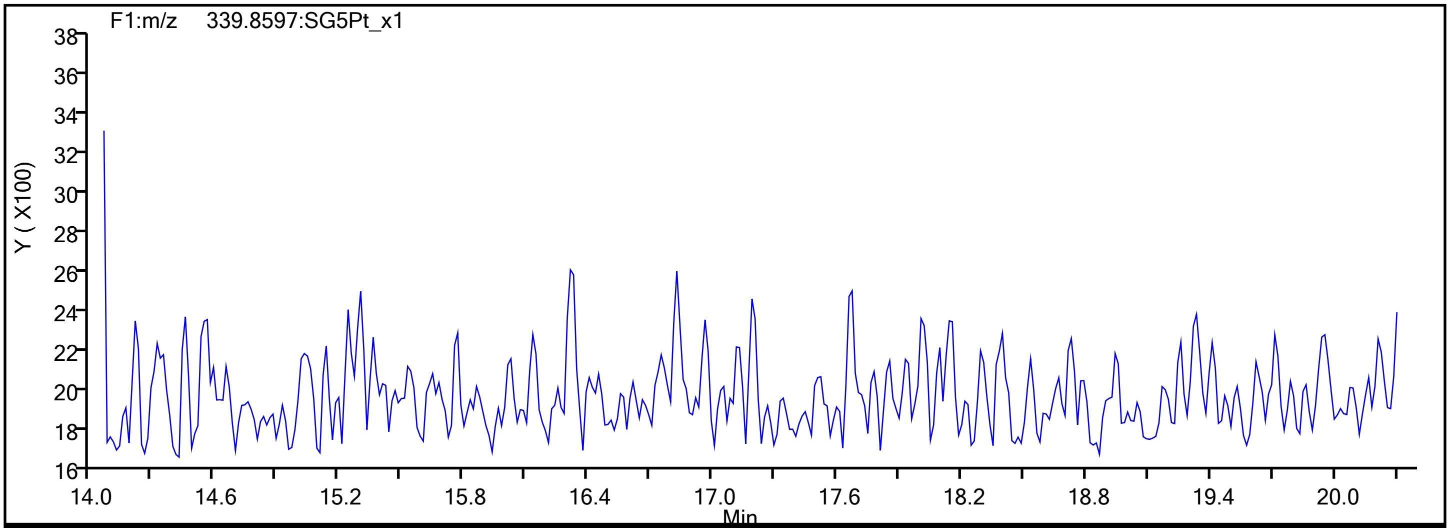

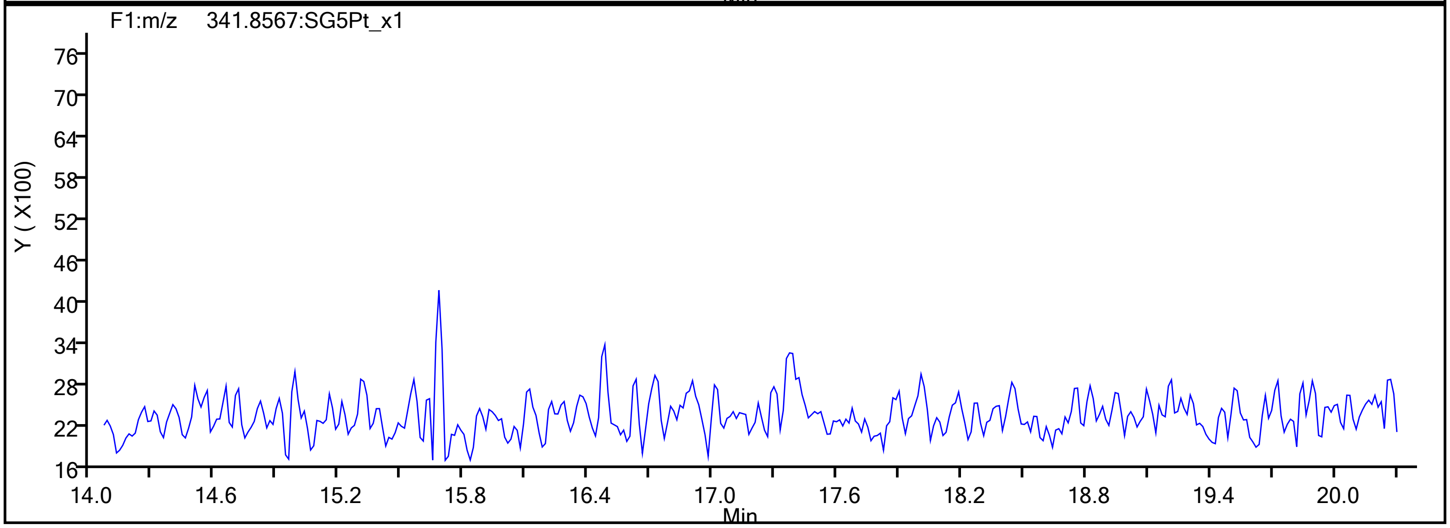

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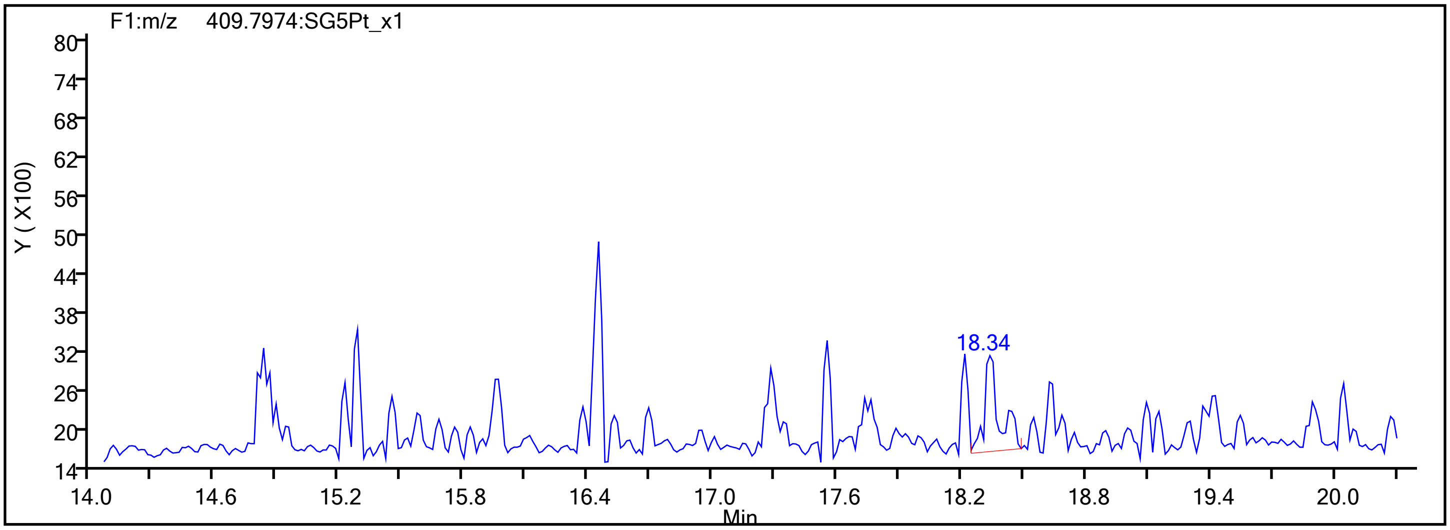

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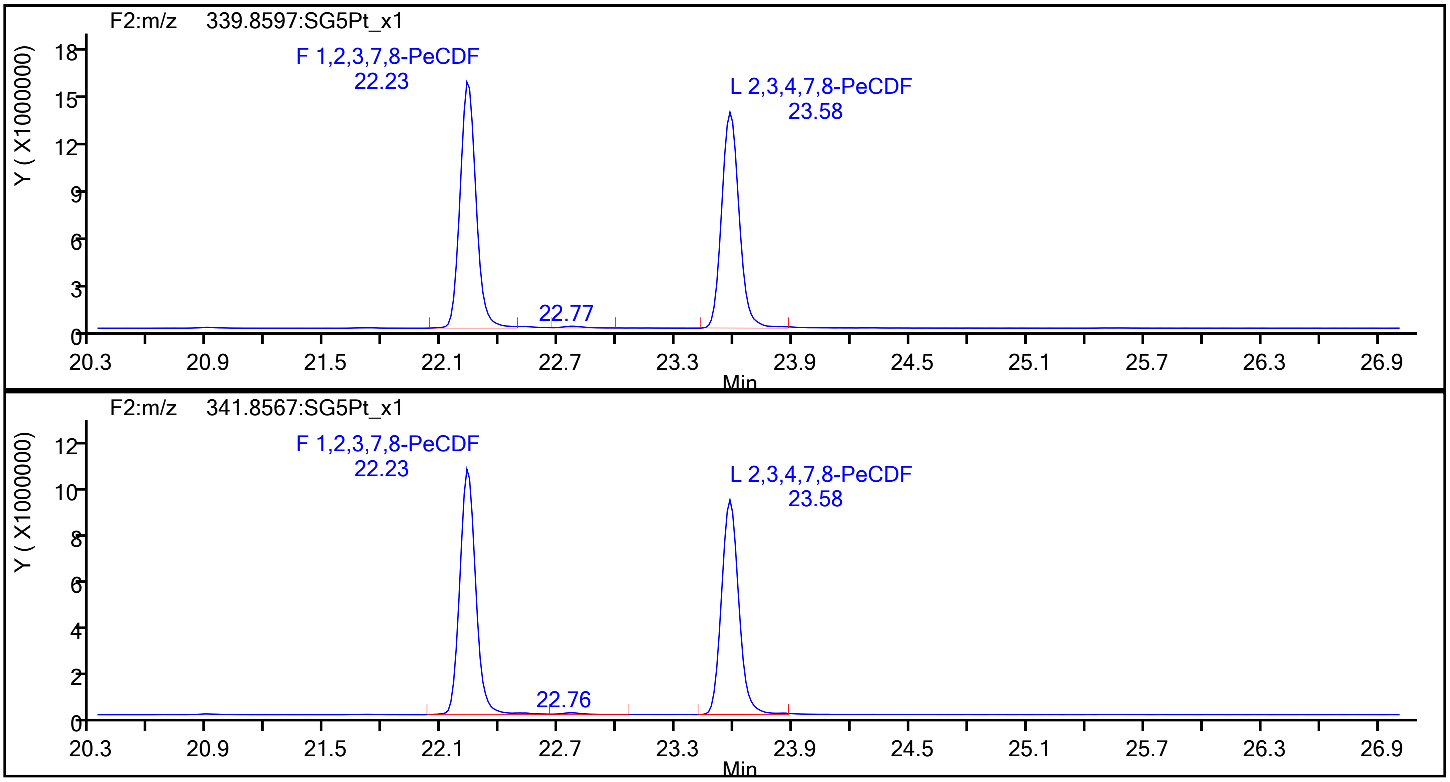

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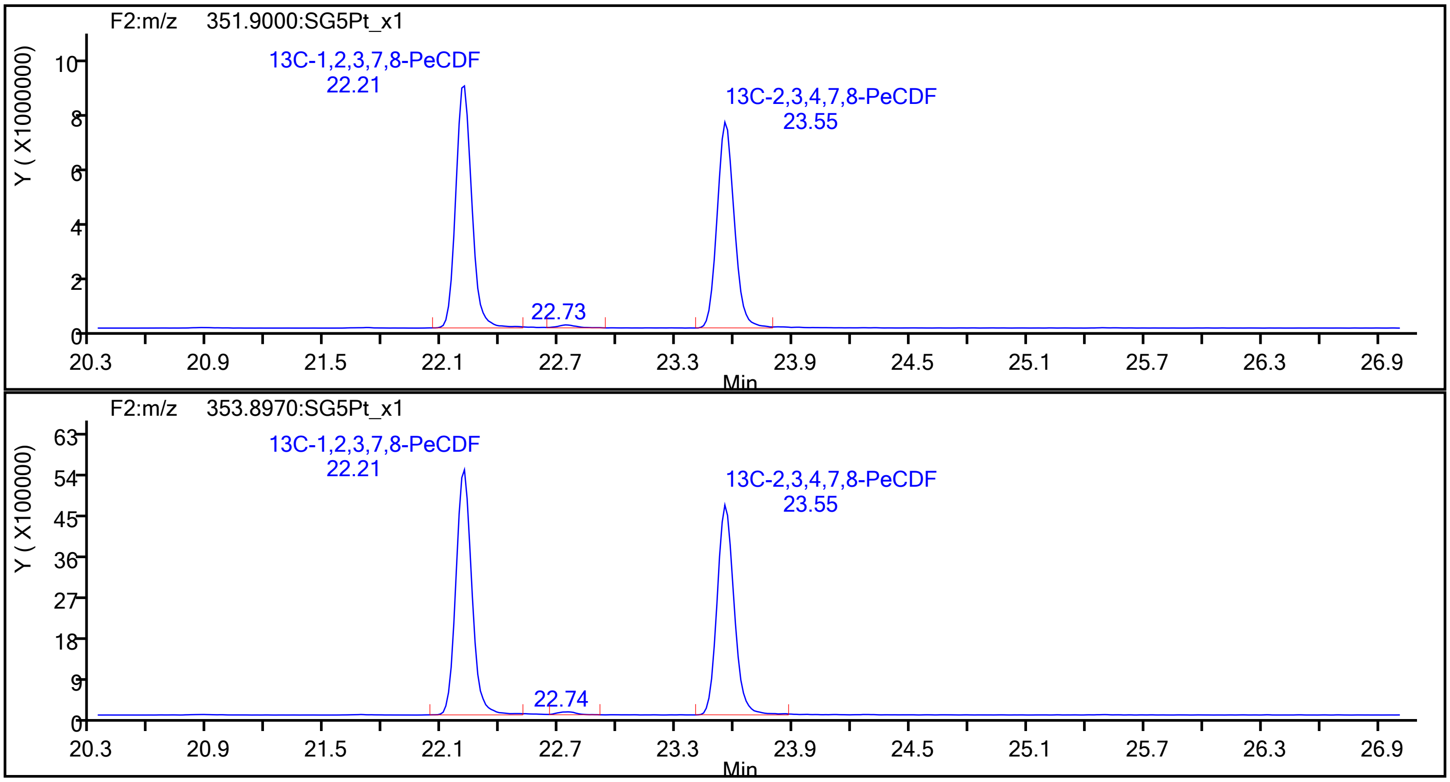

Eurofins TestAmerica, Sacramento

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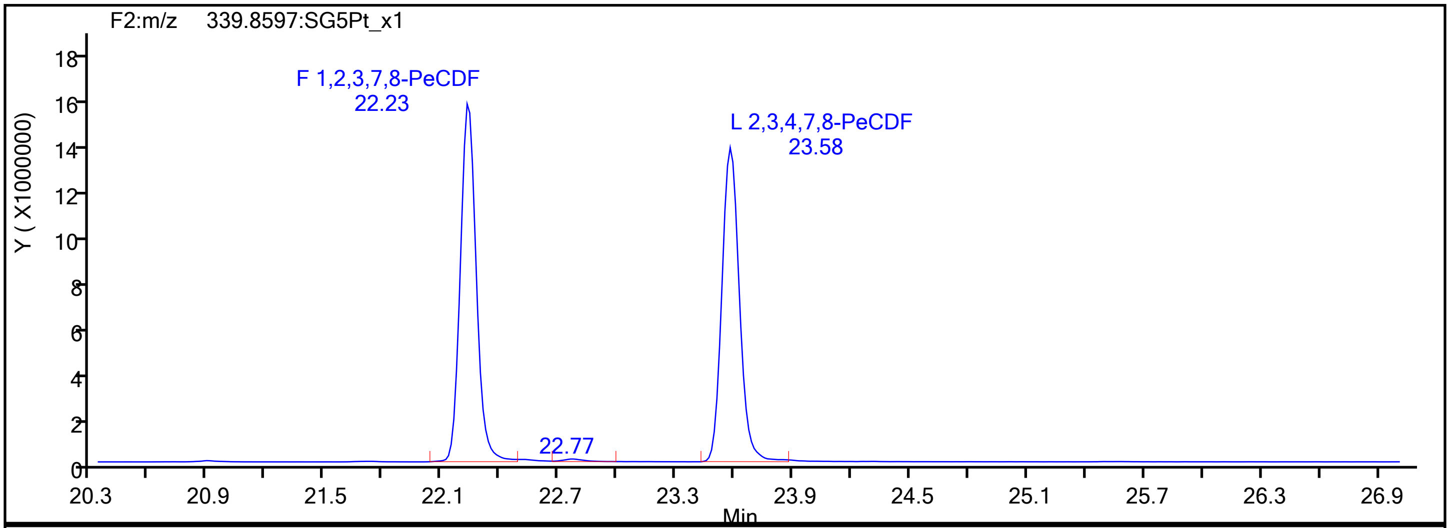

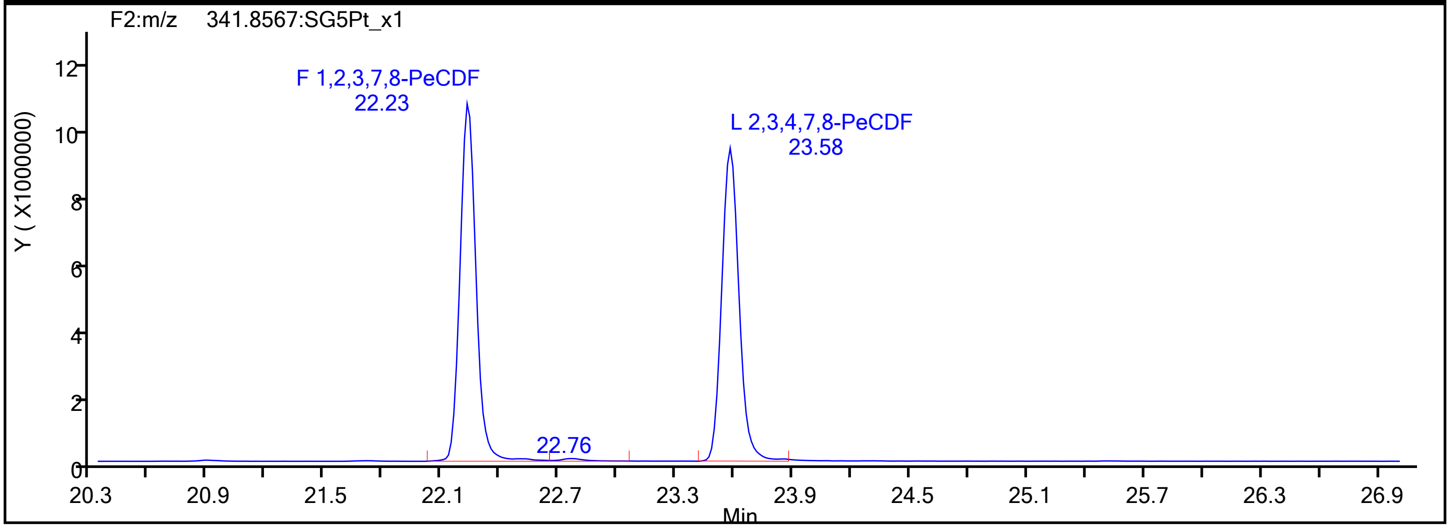

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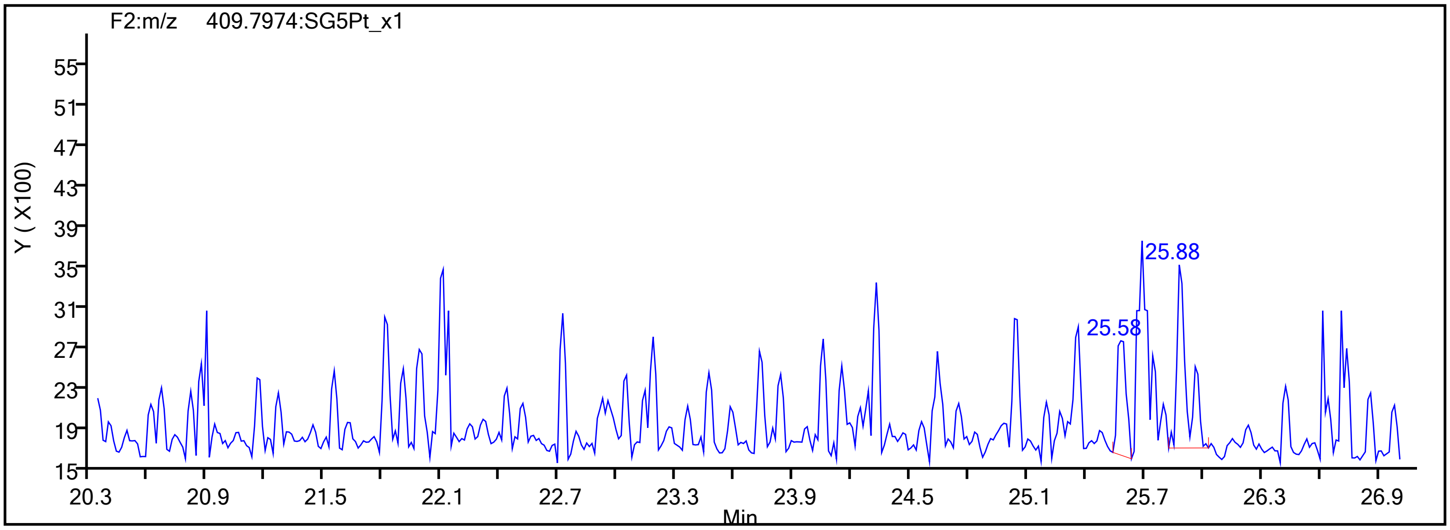

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Eurofins TestAmerica, Sacramento

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PeCDD

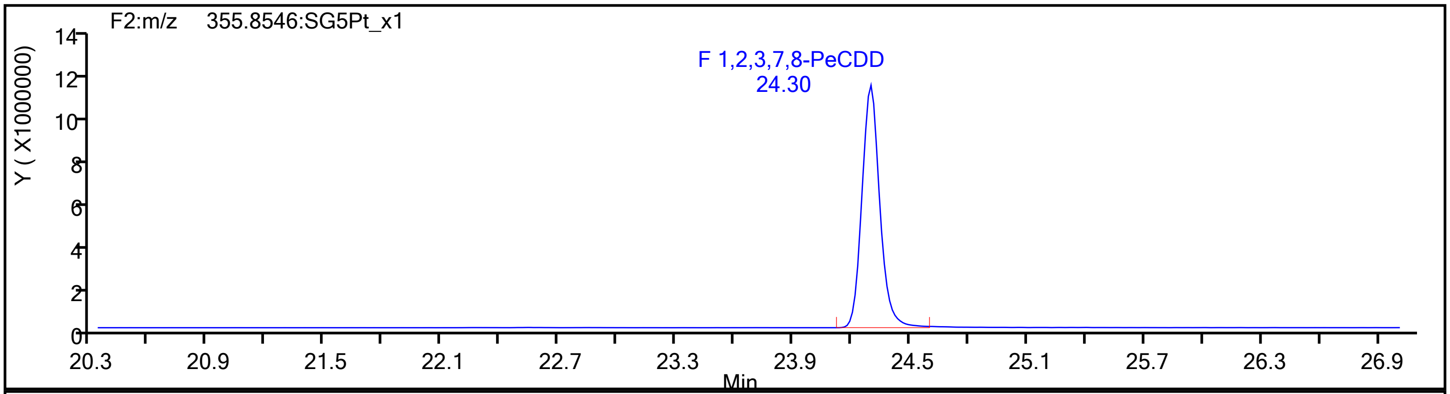

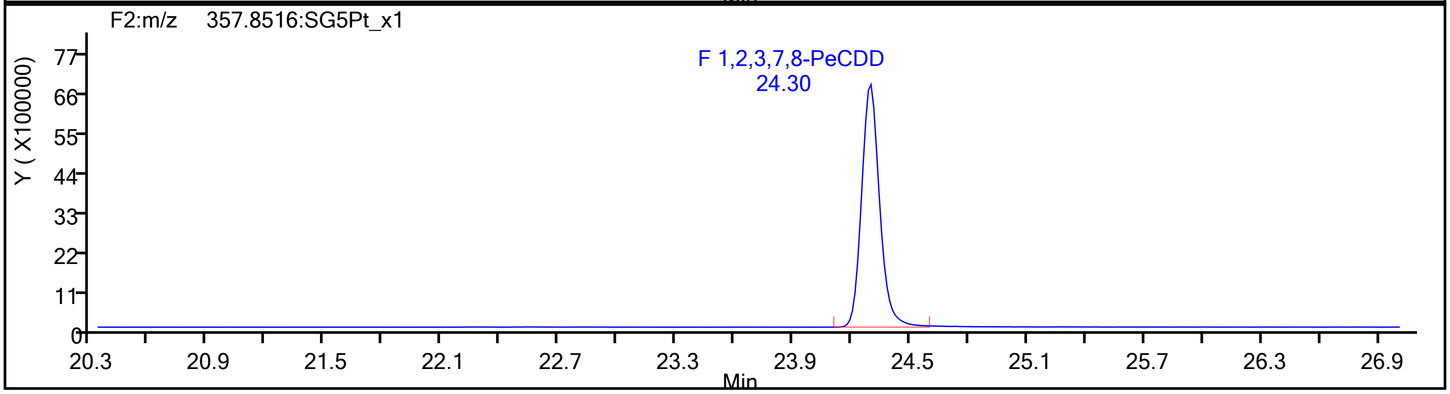

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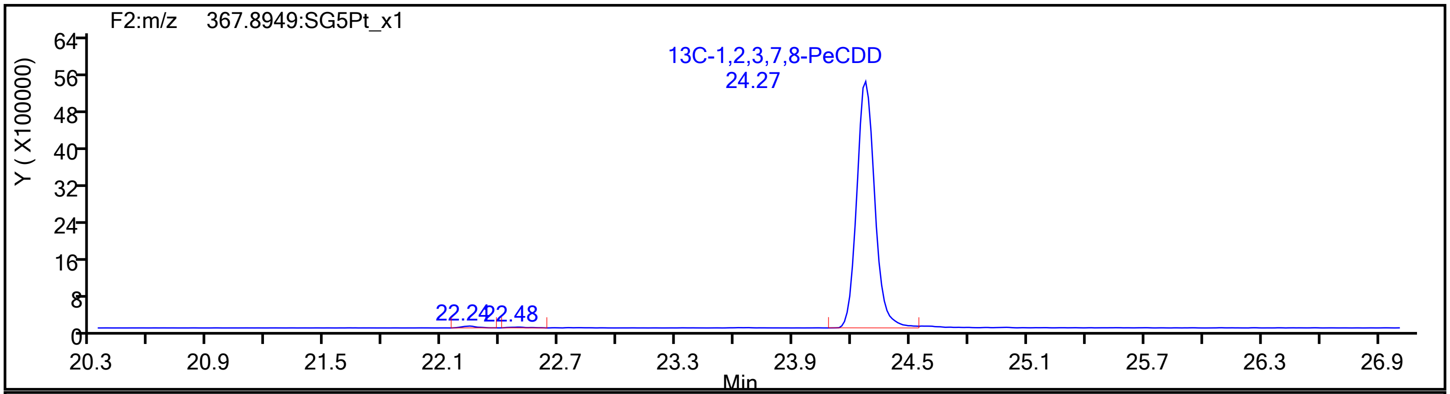

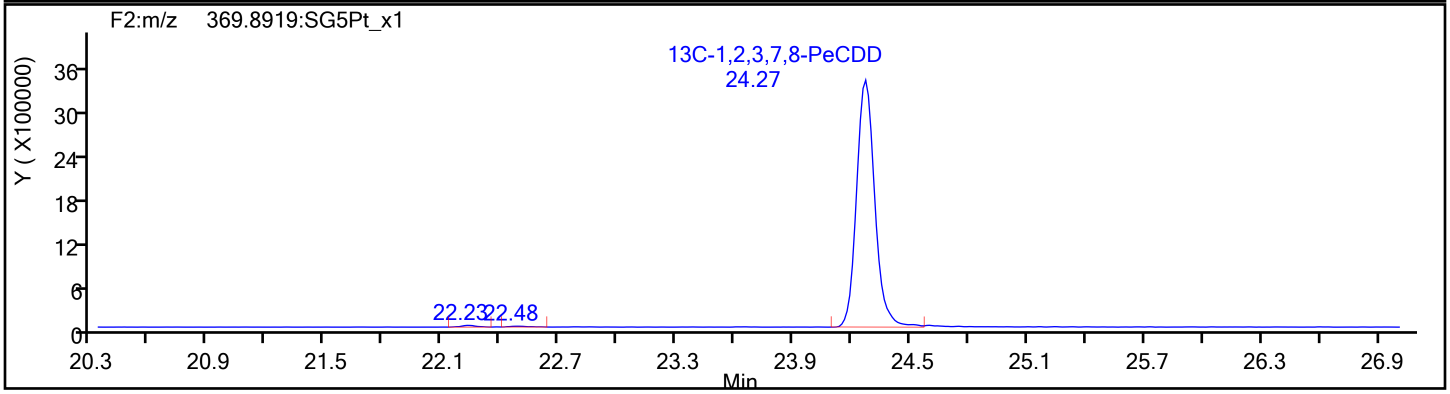

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HxCDF

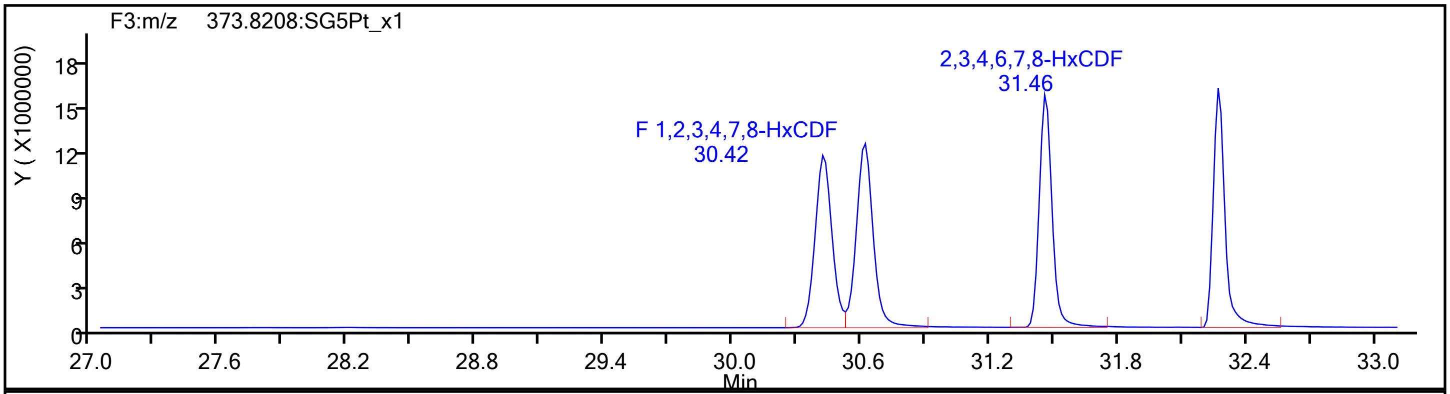

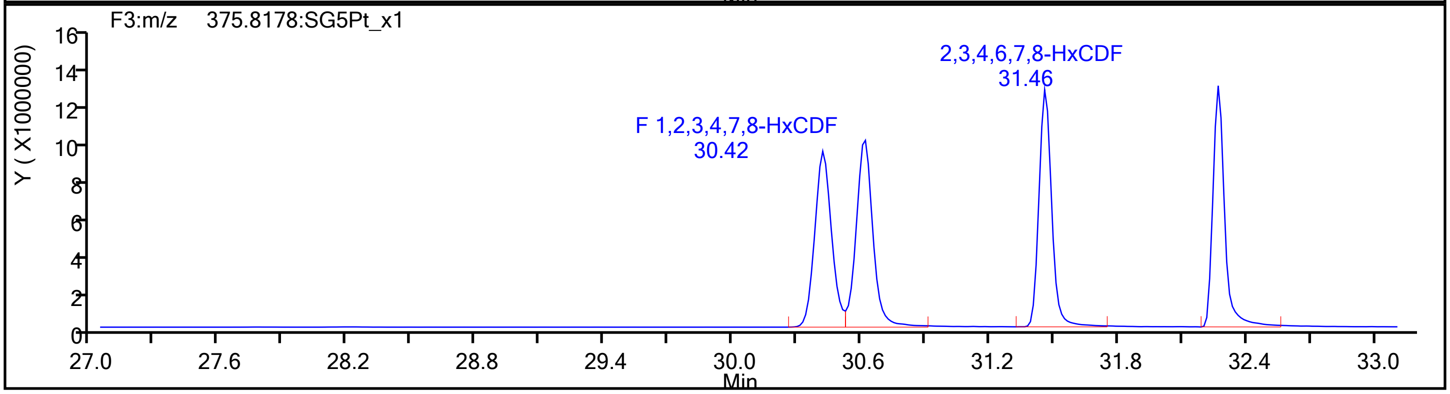

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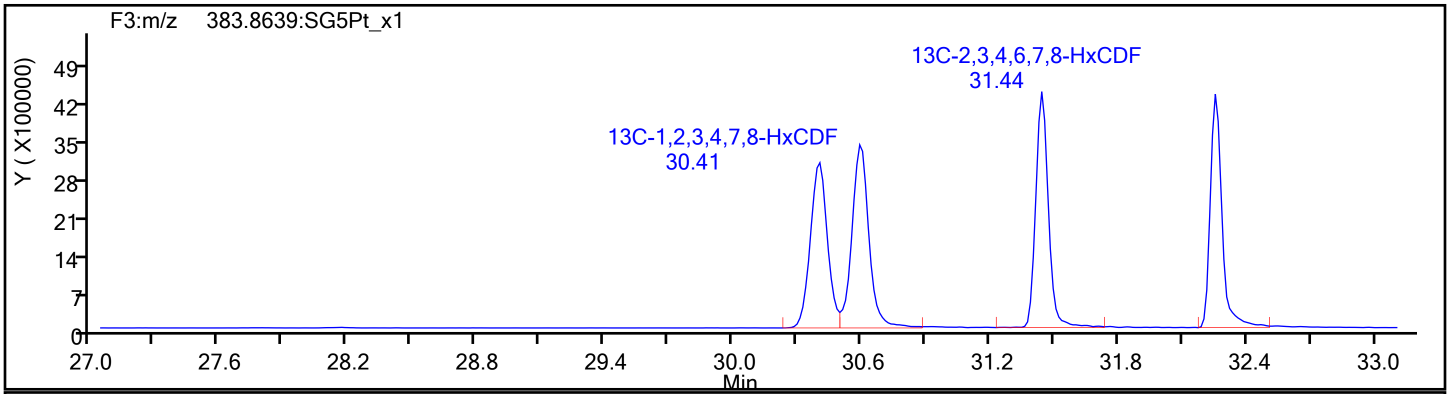

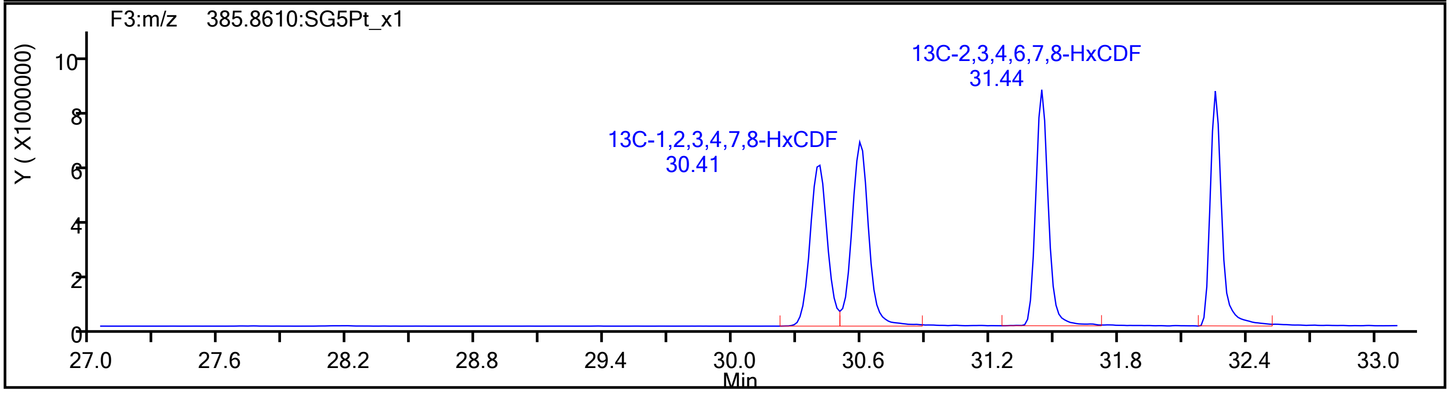

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Eurofins TestAmerica, Sacramento

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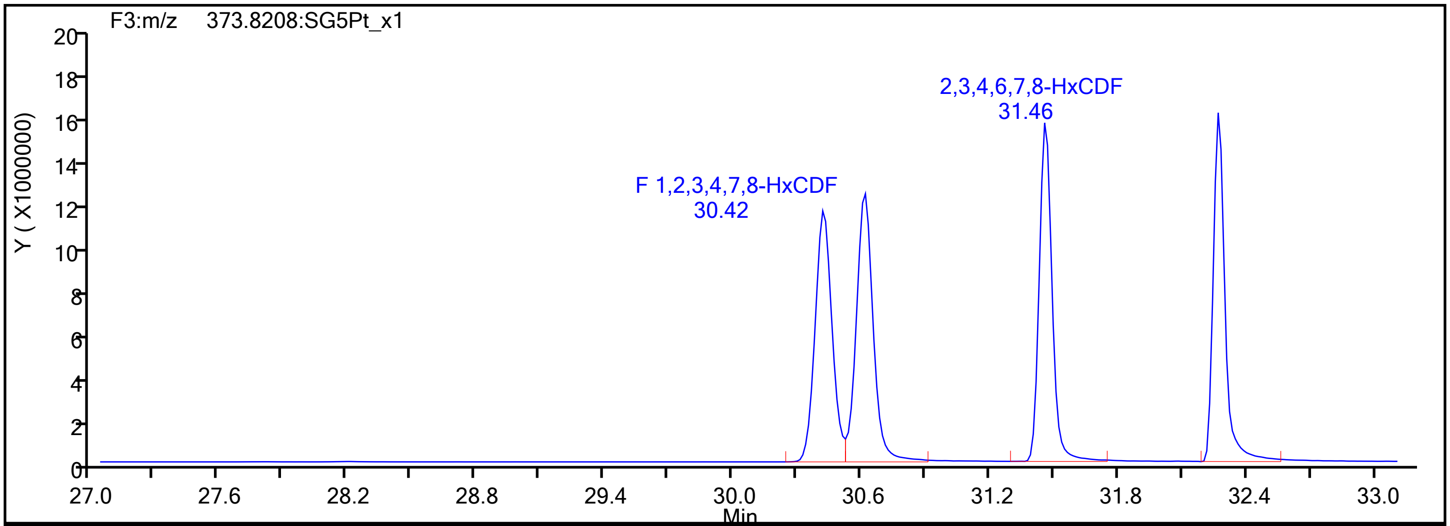

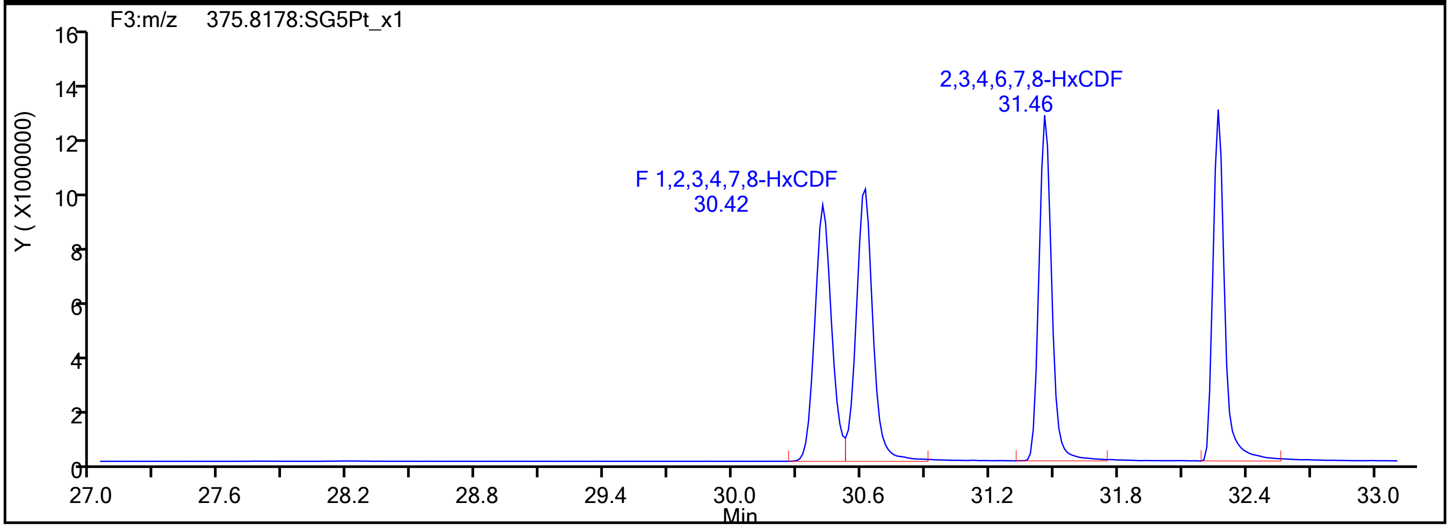

HxCDF Interference Mass

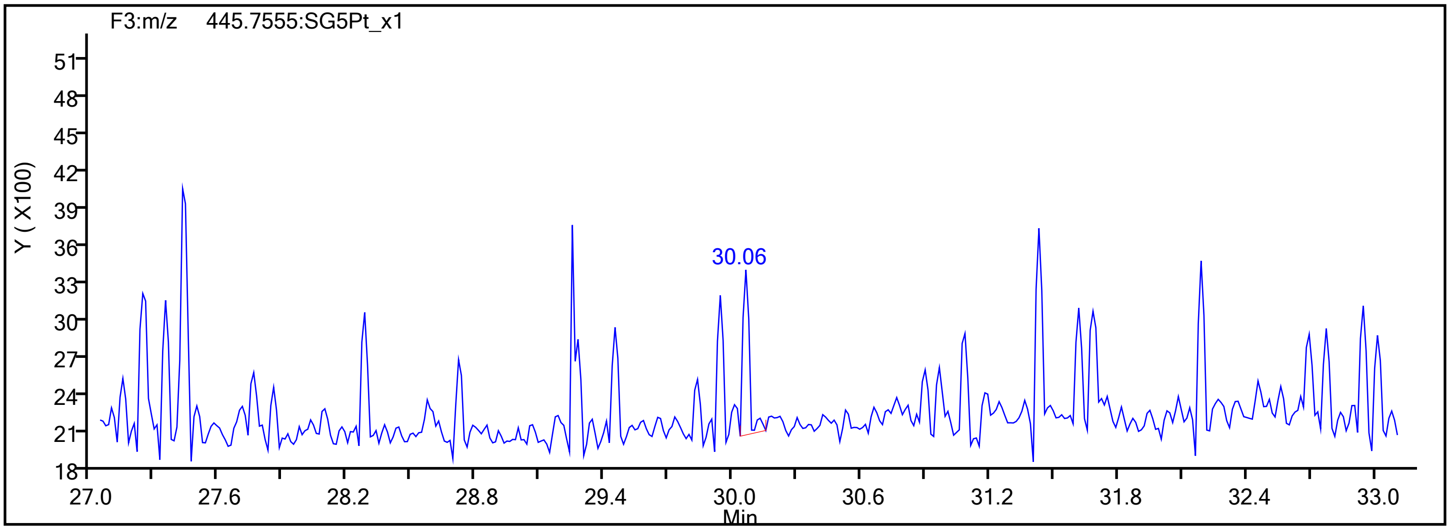

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HxCDD

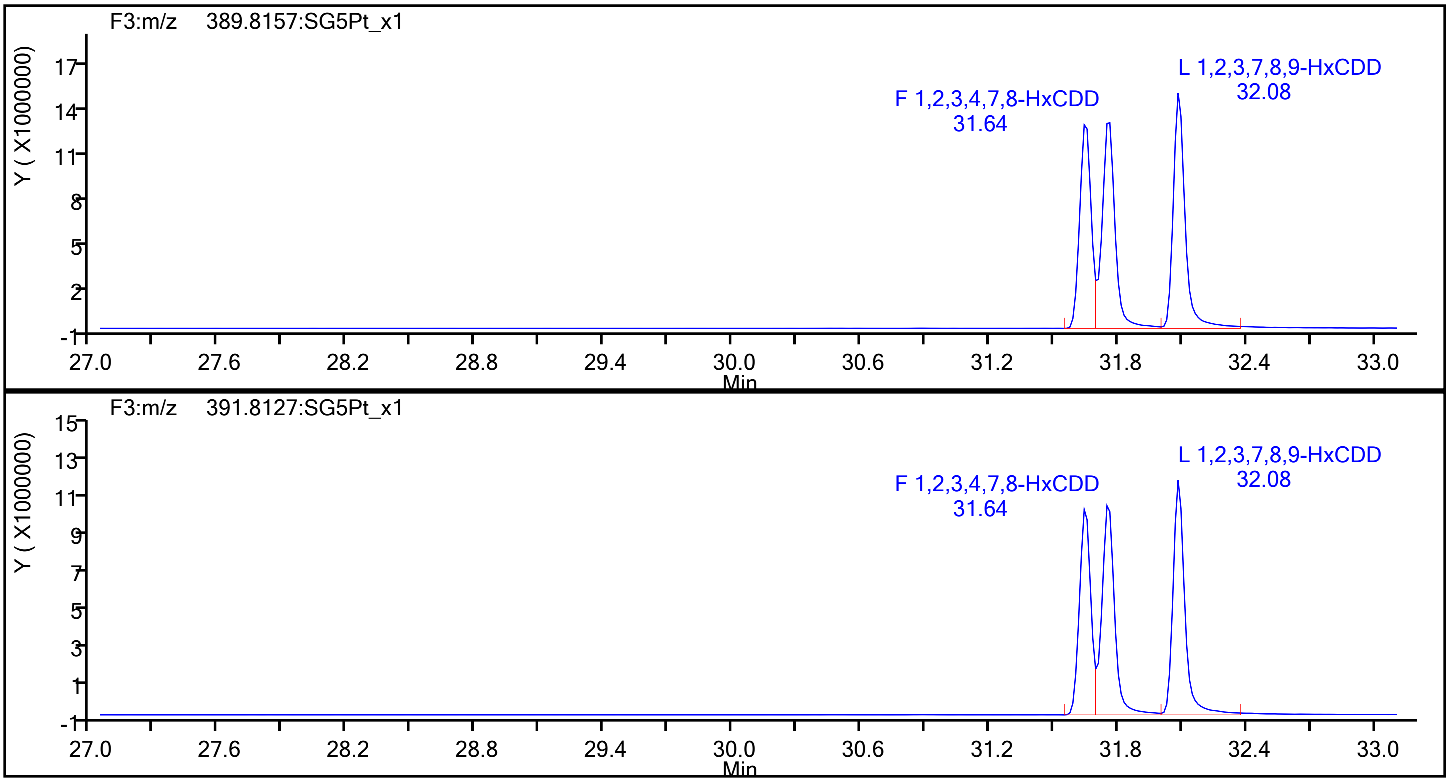

HxCDD Standards

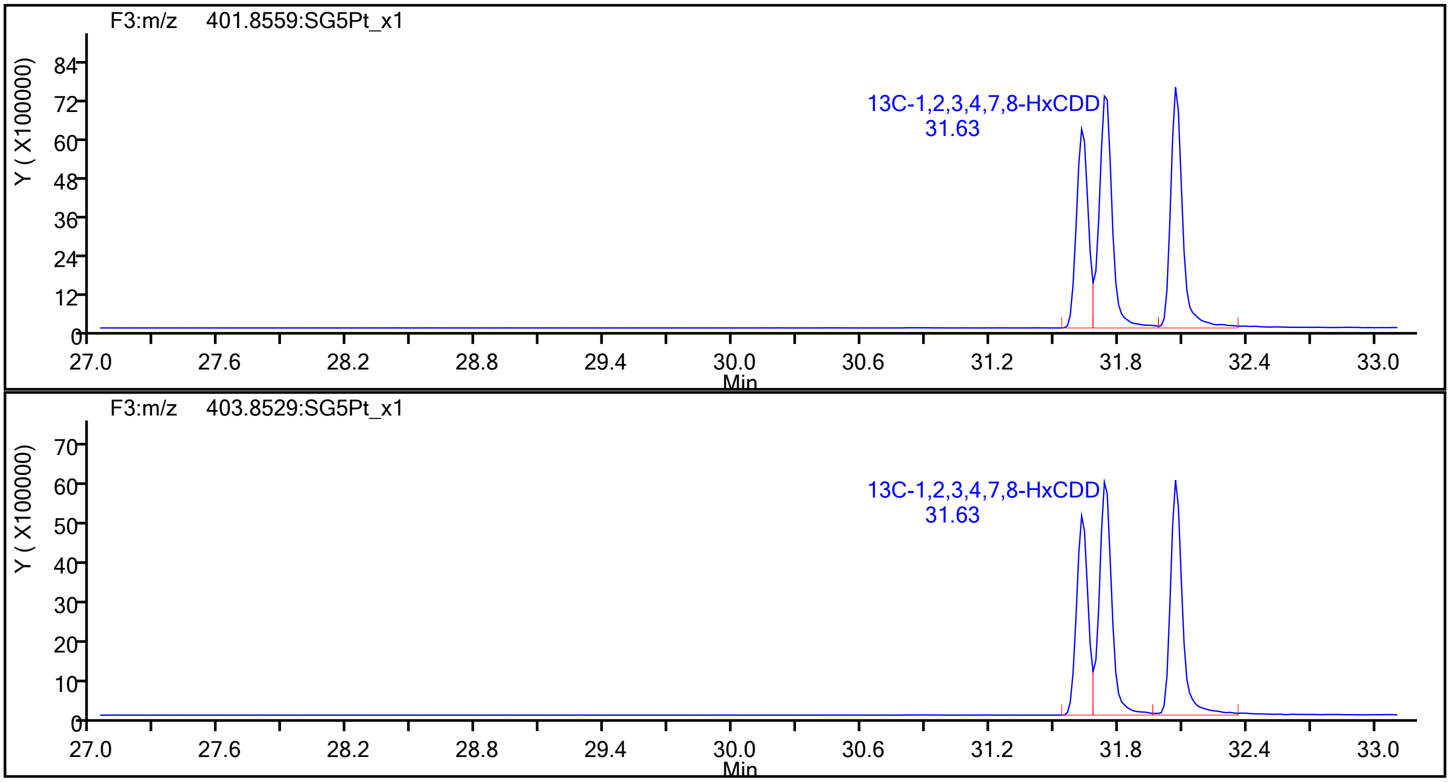

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Eurofins TestAmerica, Sacramento

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HpCDF

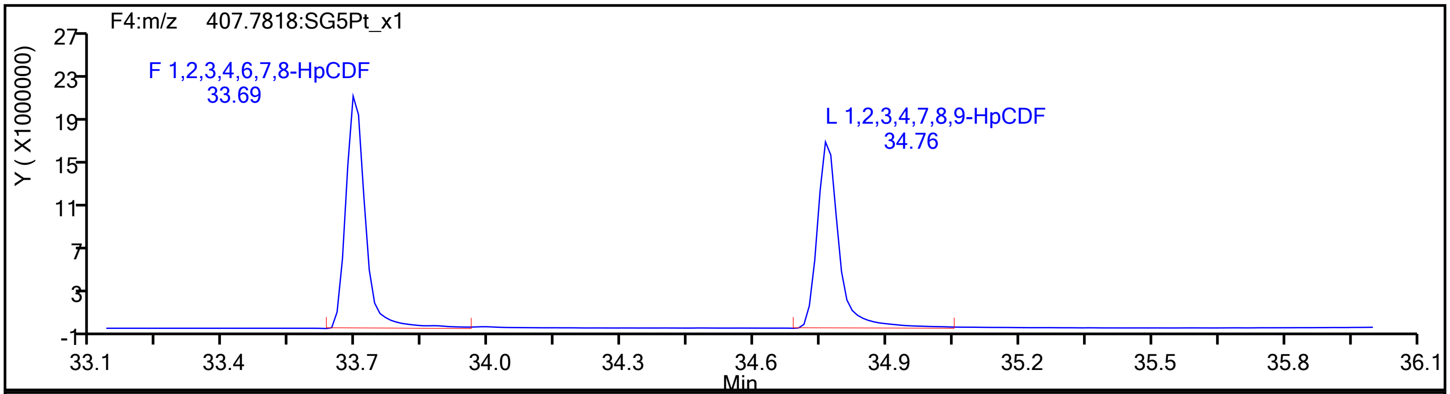

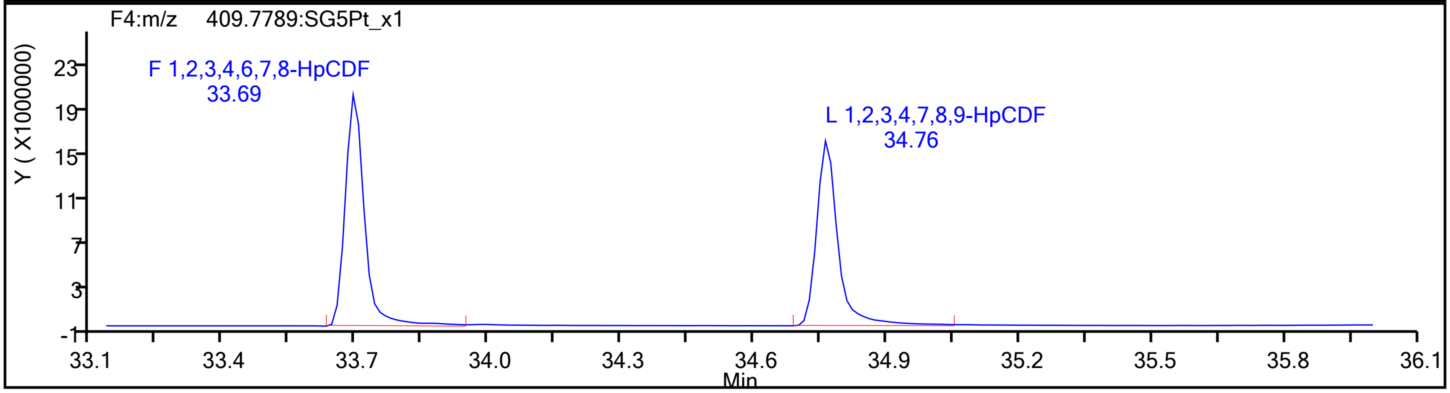

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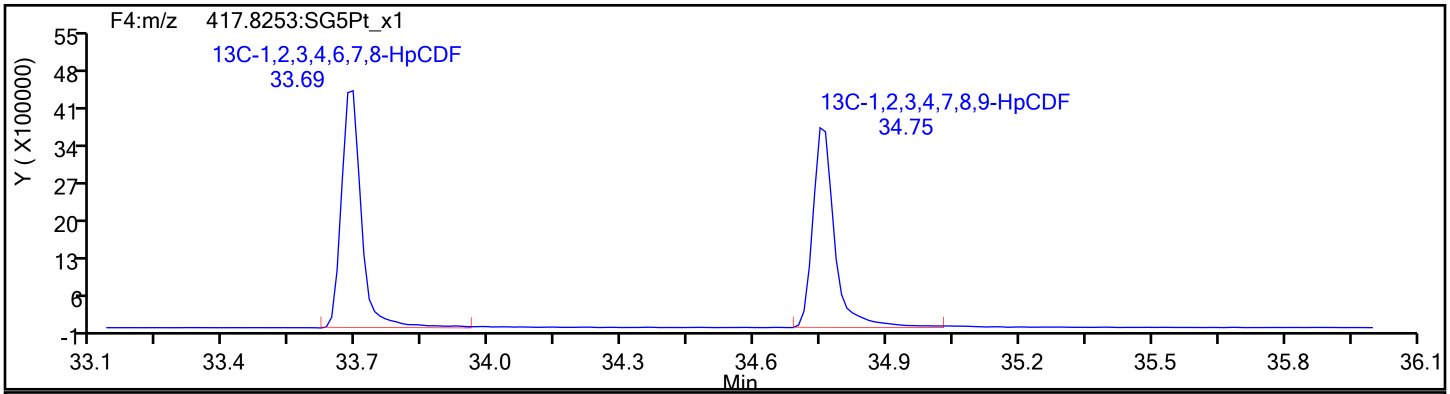

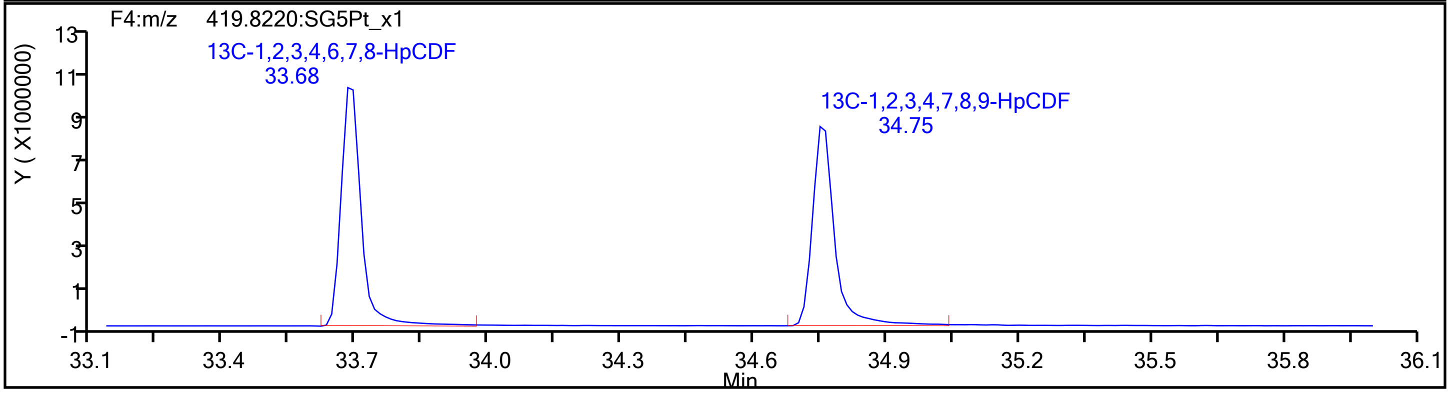

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Eurofins TestAmerica, Sacramento

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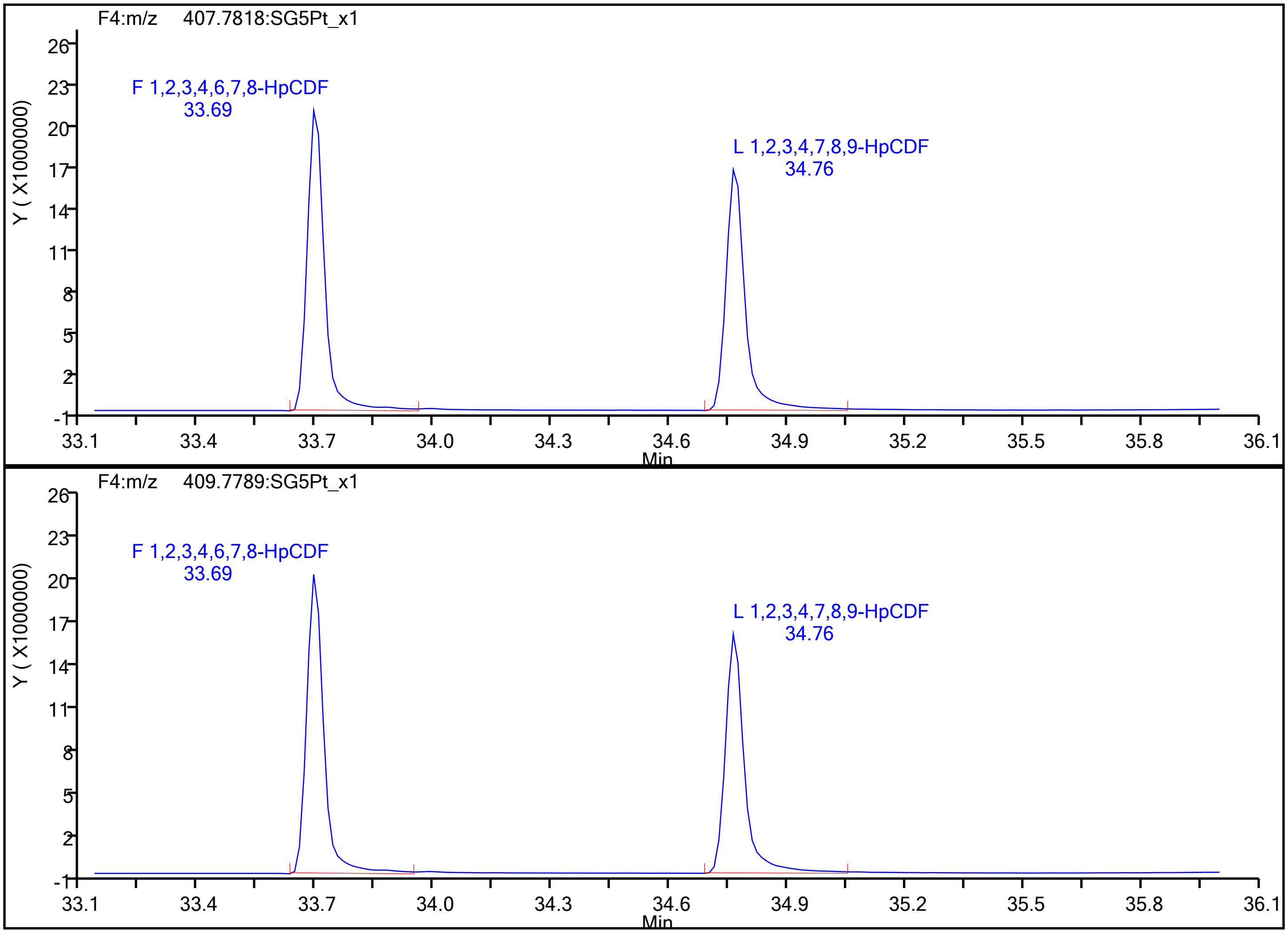

HpCDF Interference Mass

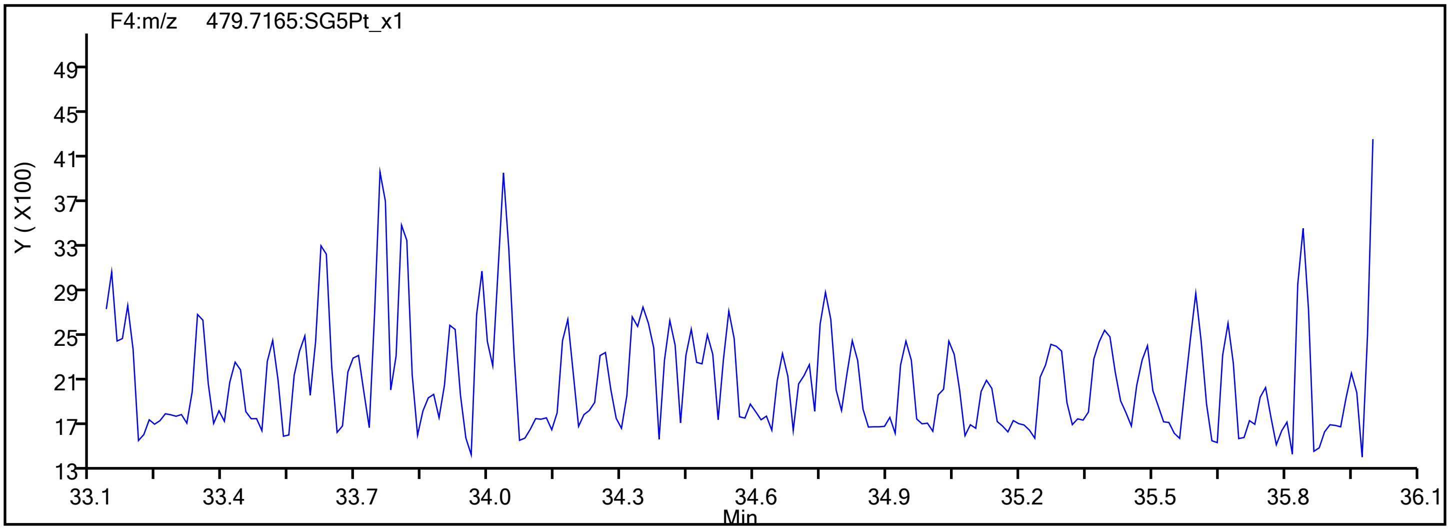

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HpCDD

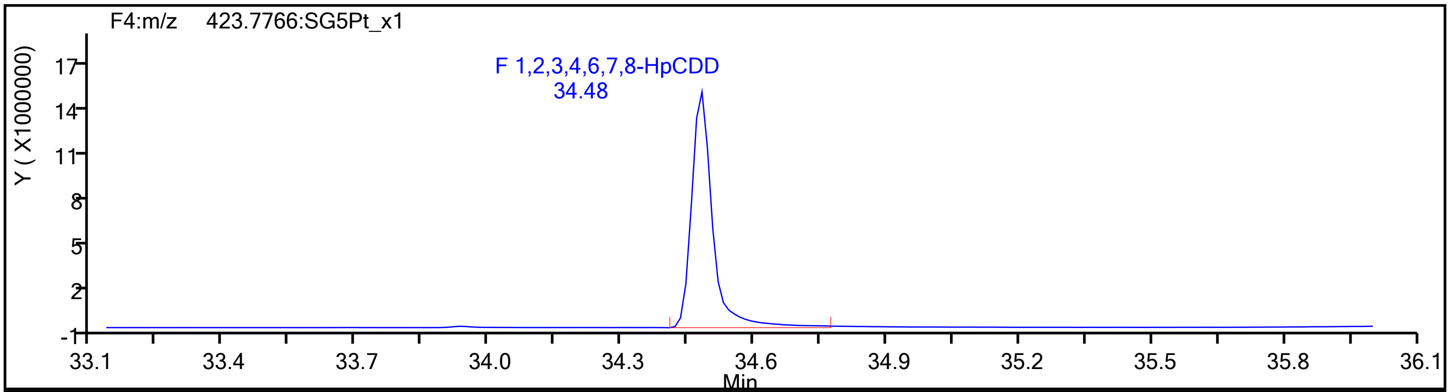
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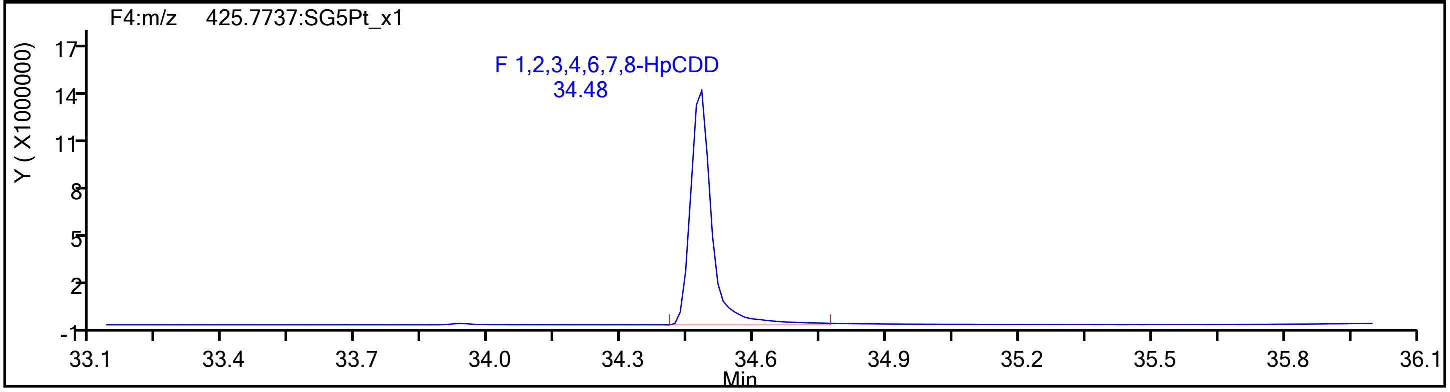
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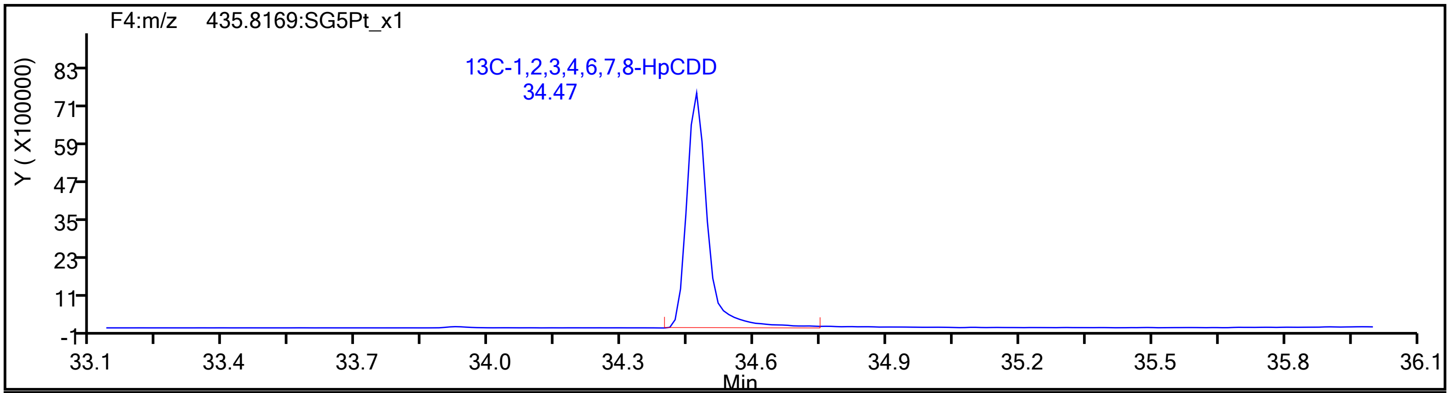
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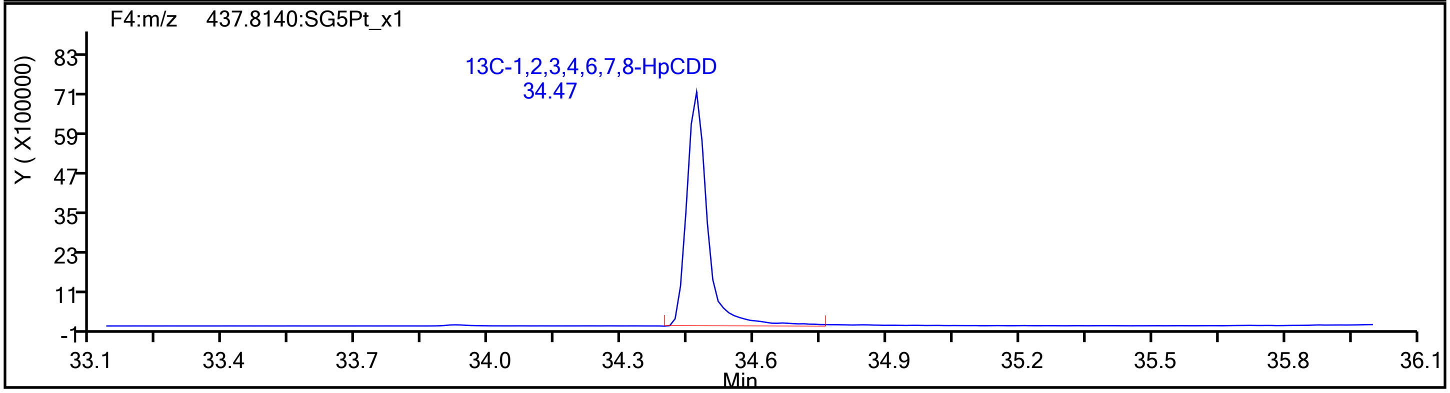
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Eurofins TestAmerica, Sacramento

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OCDF

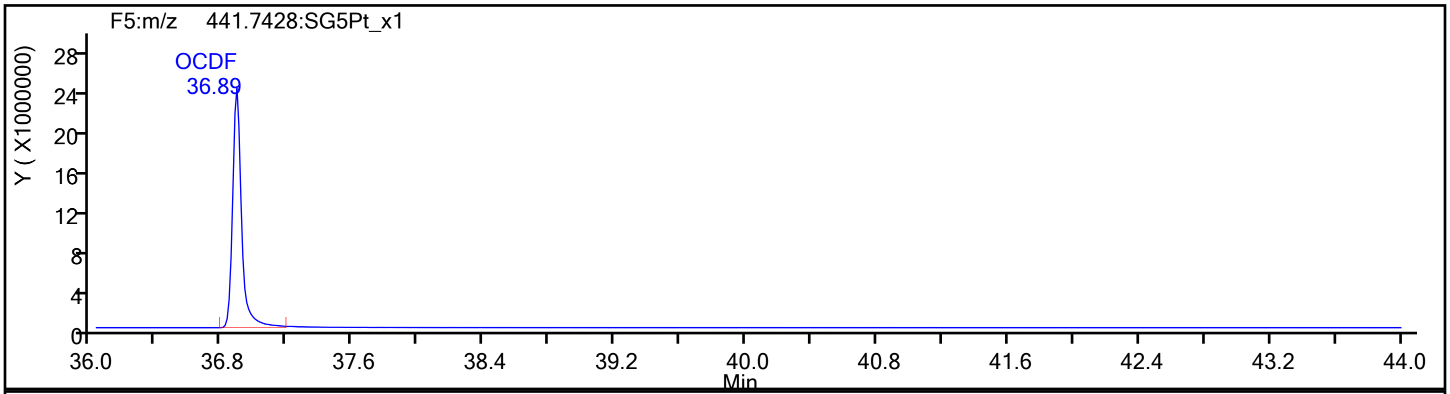

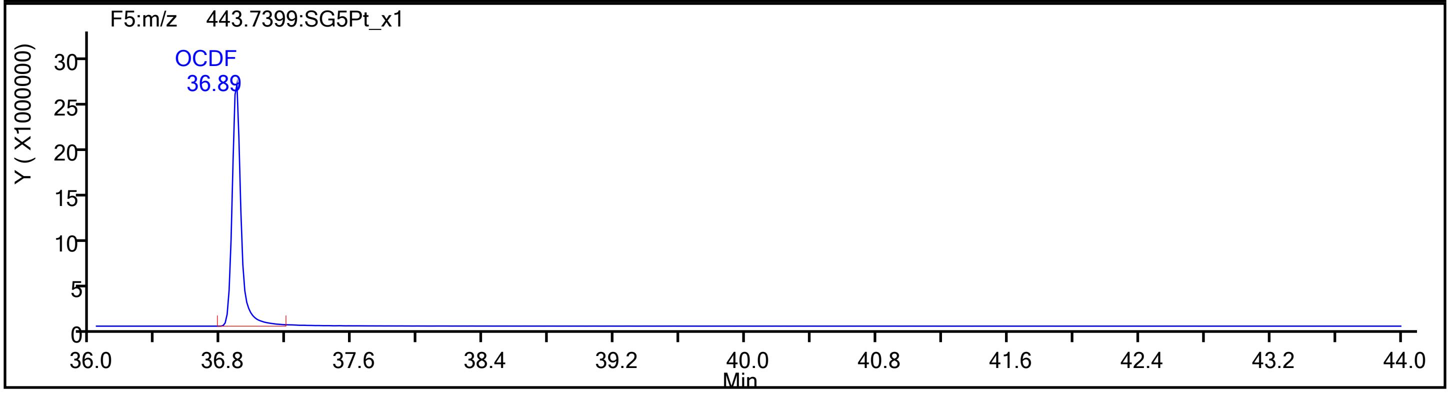

OCDF Standards

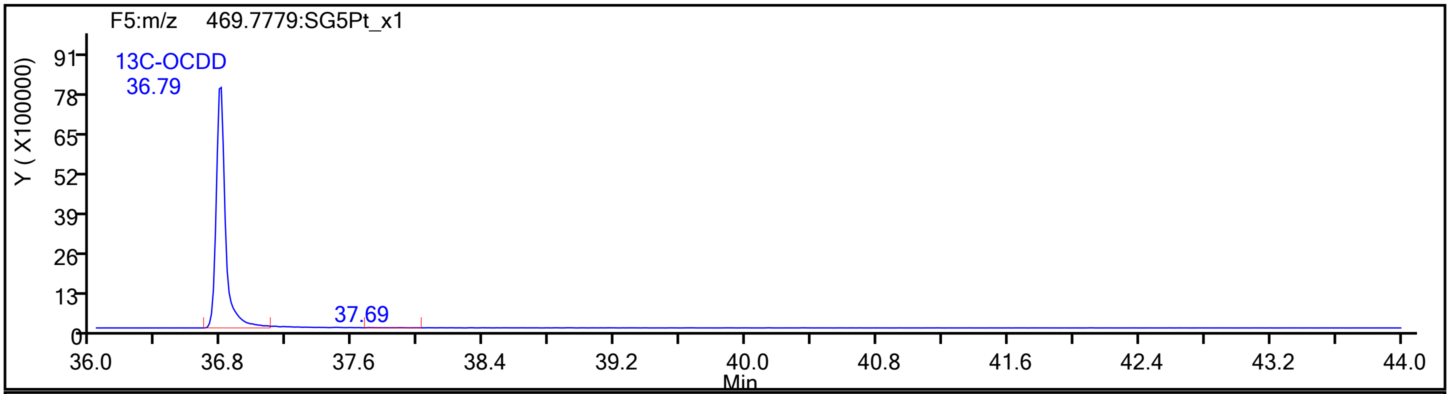

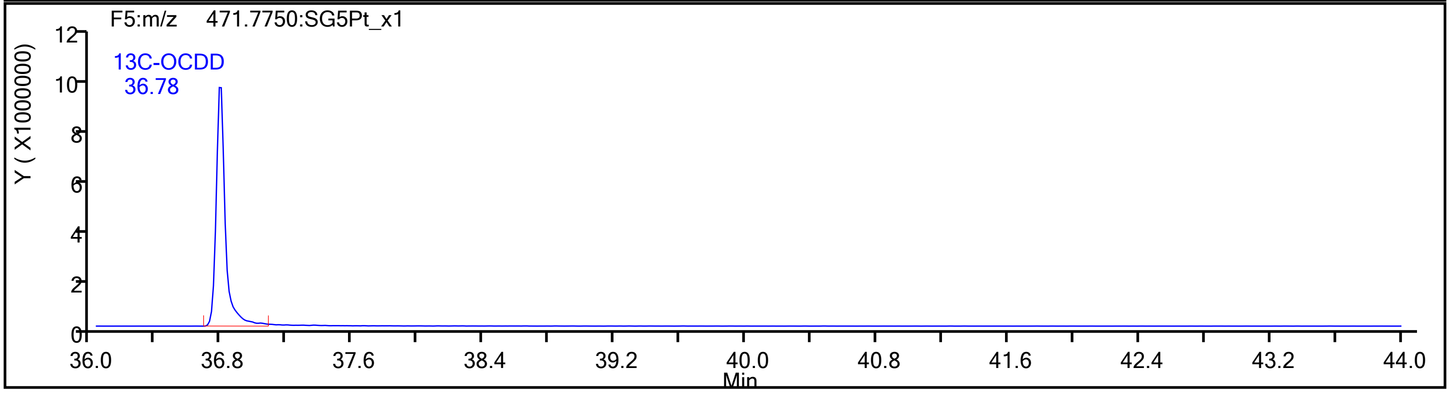

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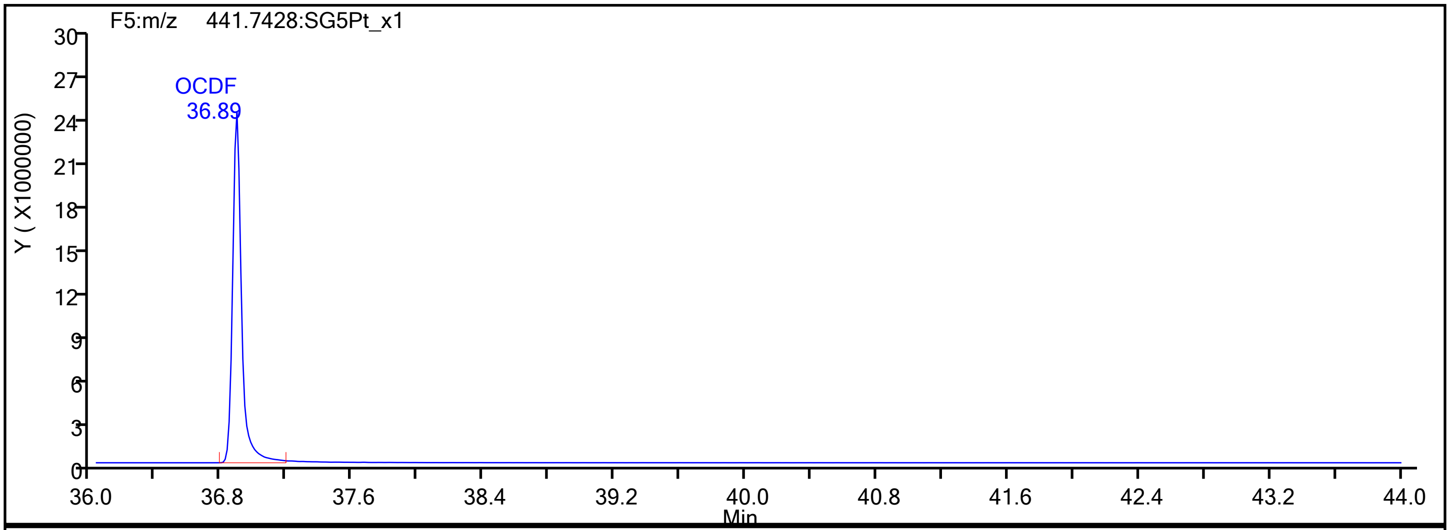

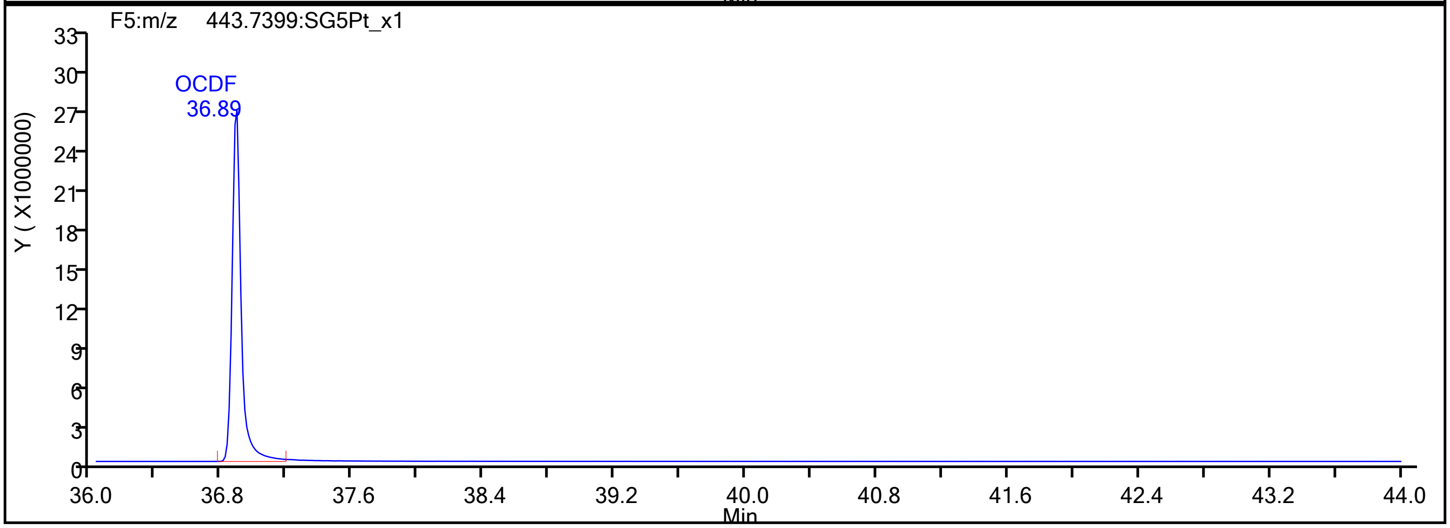

OCDF Interference Mass

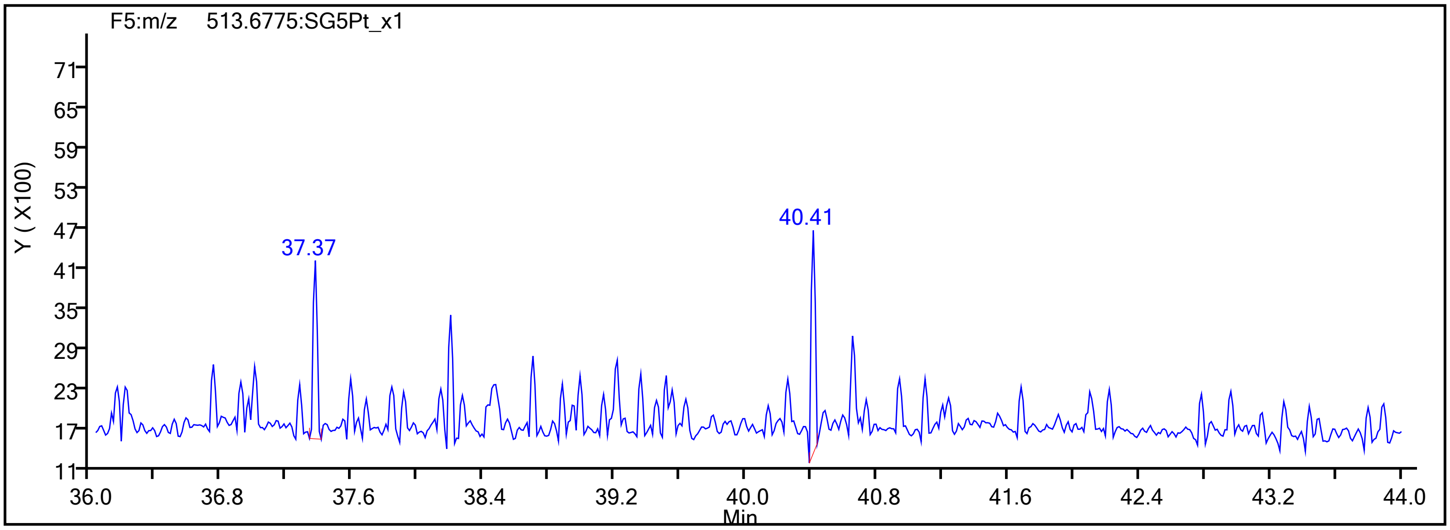

Eurofins TestAmerica, Sacramento

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OCDD

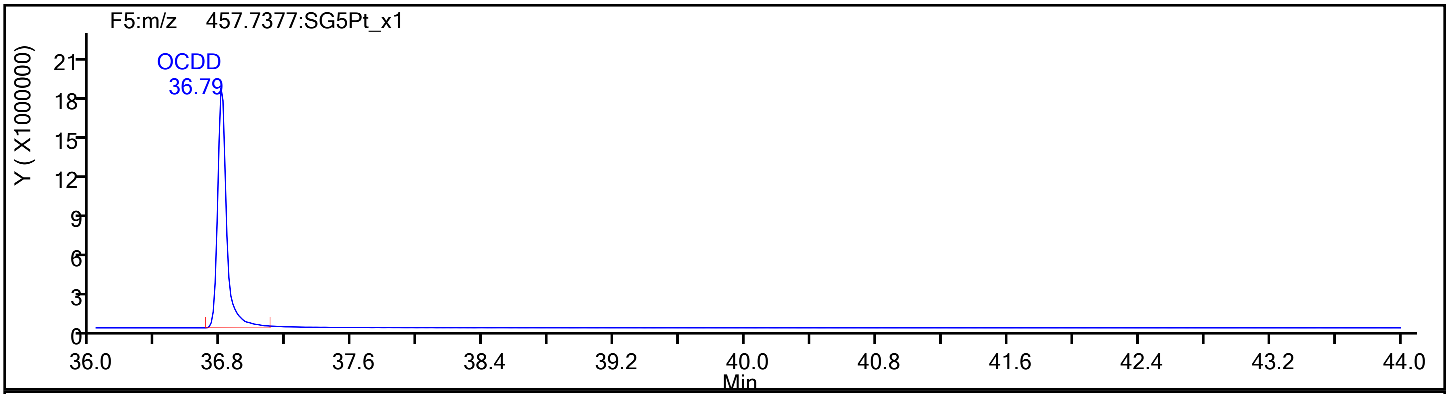

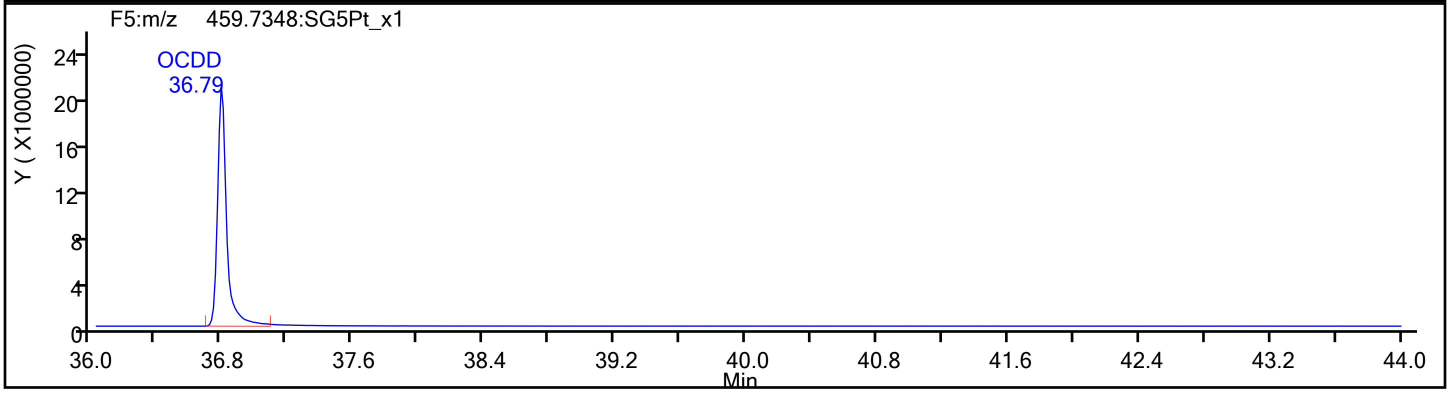

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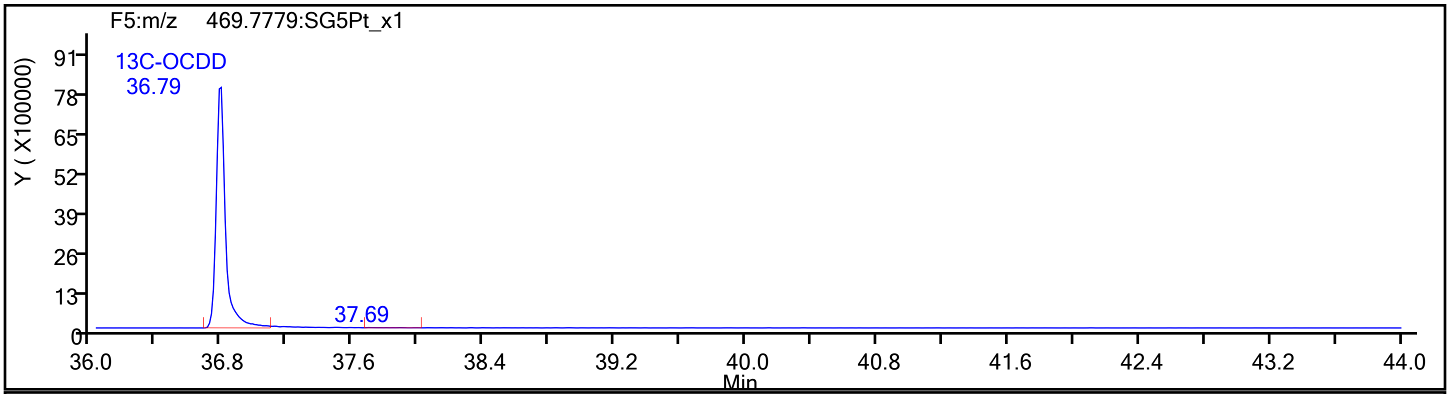

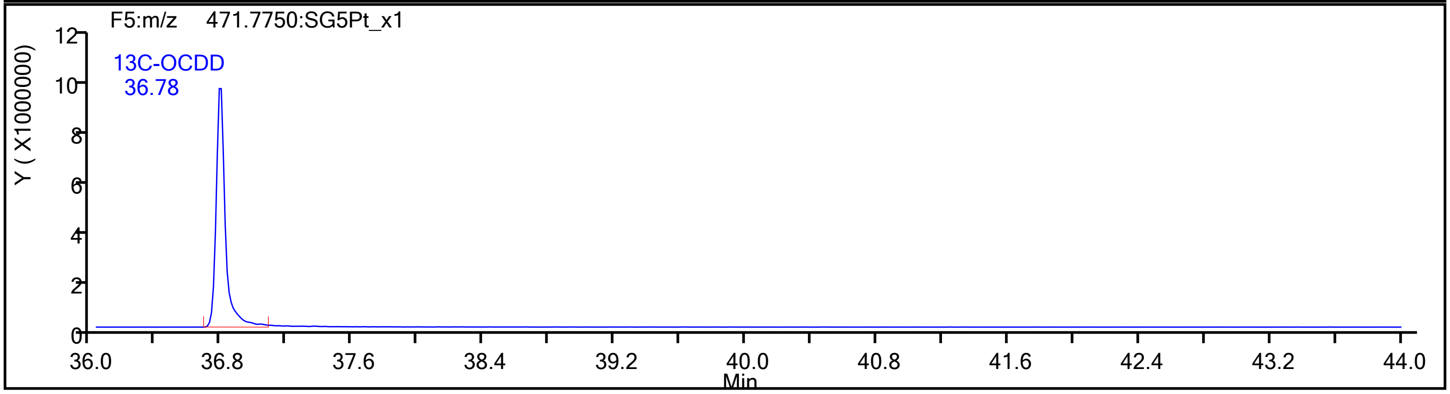

Report Date: 18-Sep-2020 10:36:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Injection Date: 17-Sep-2020 18:24:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

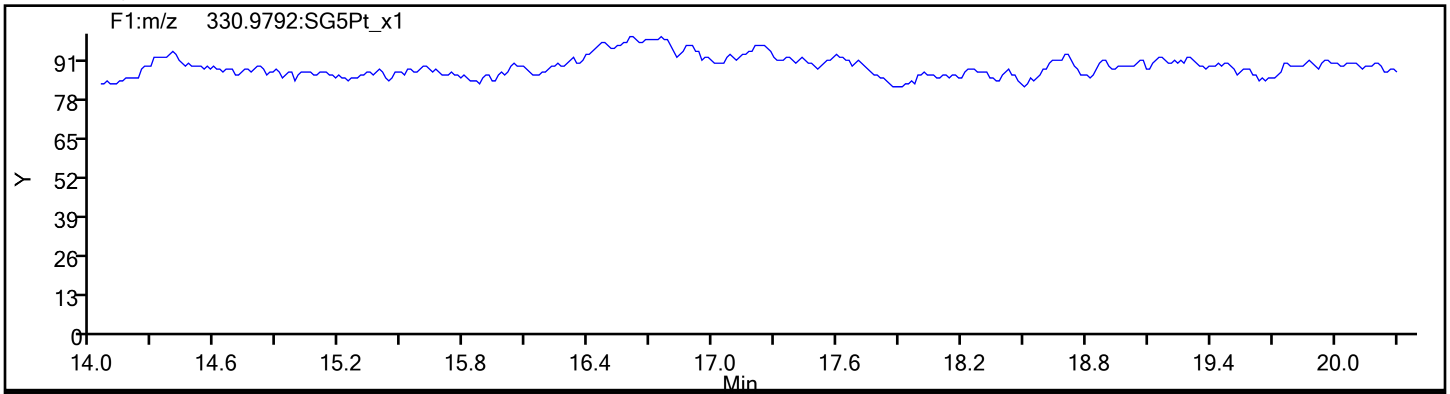

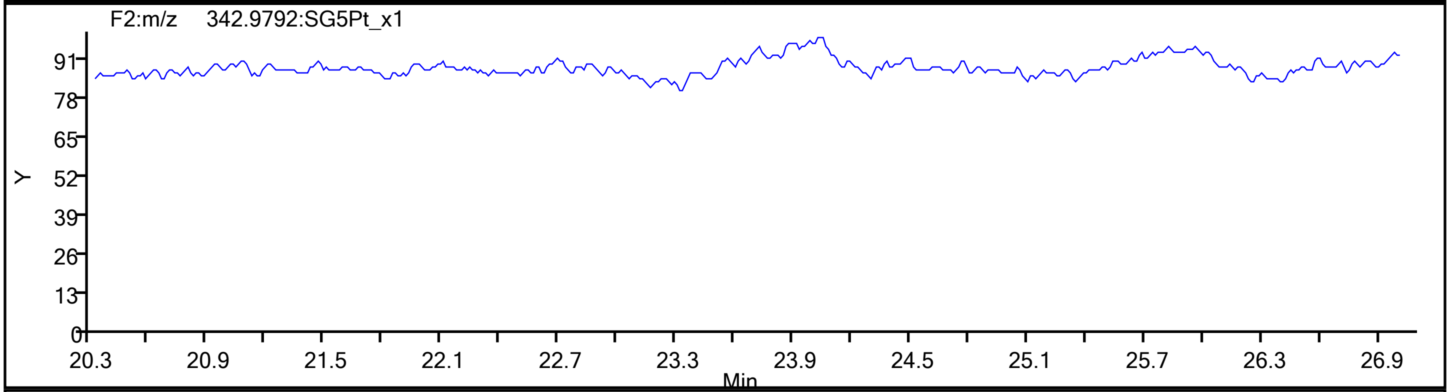

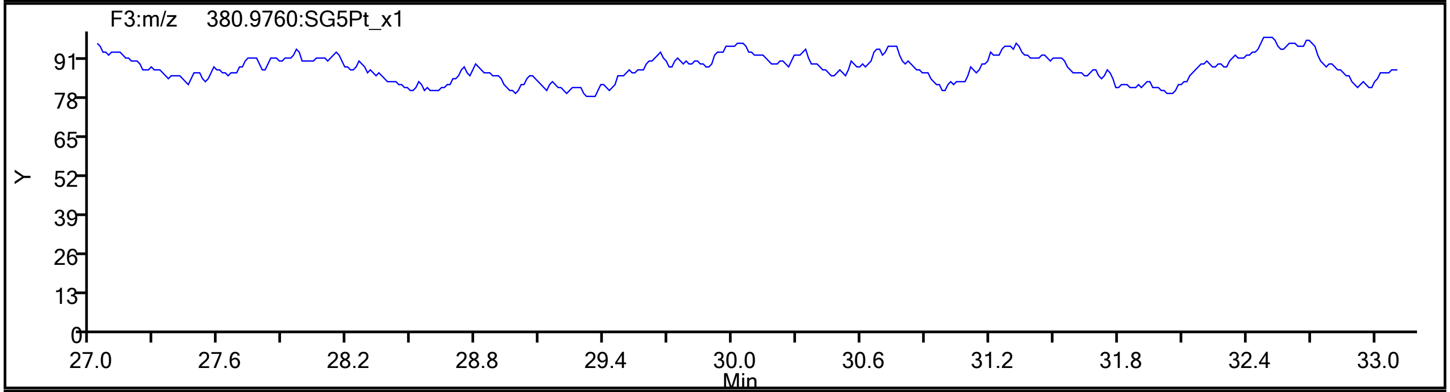

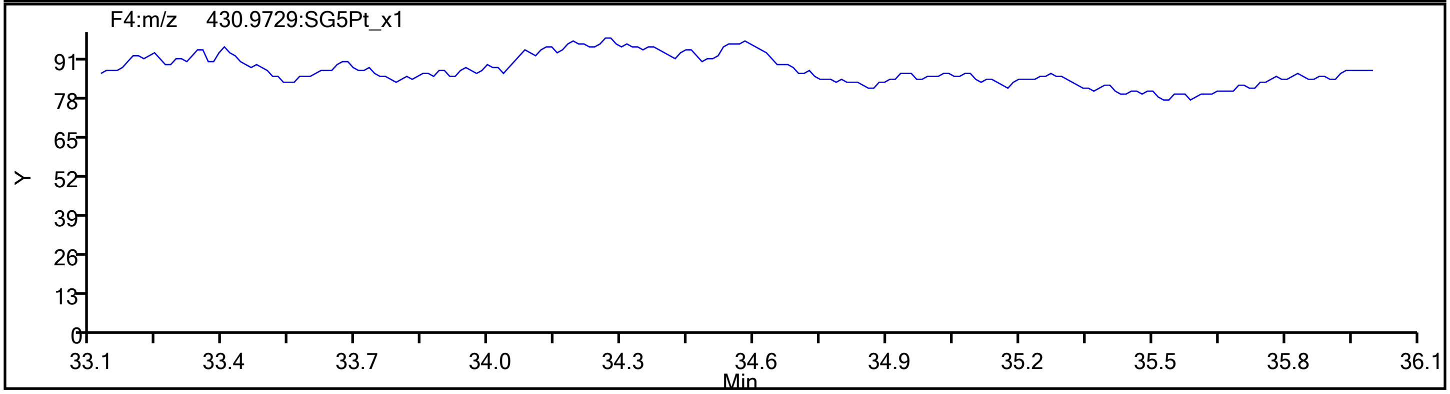

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

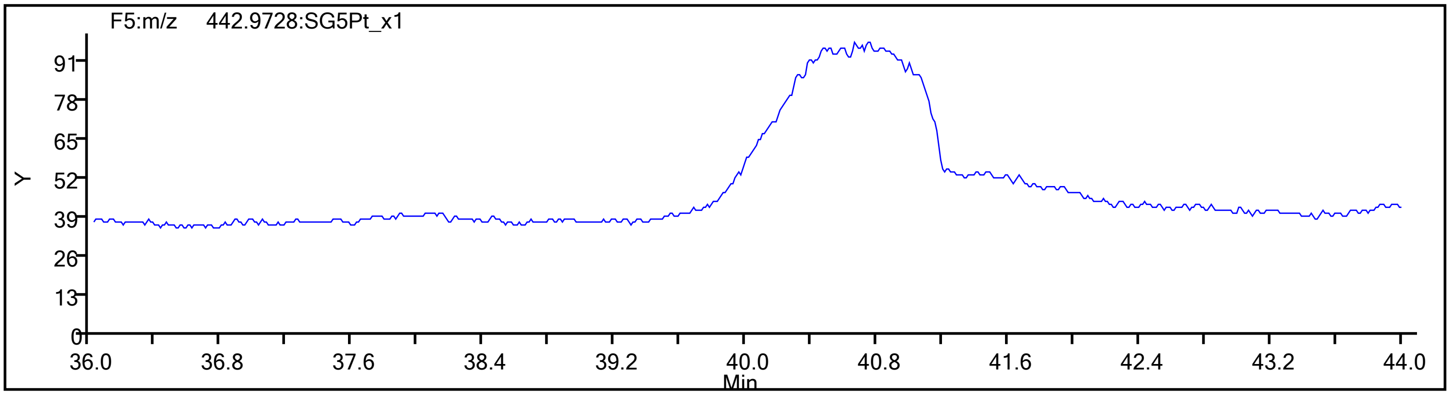

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 19:09:42 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720D CS-6 HRDXNL6_00027
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:12 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:18:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	82839664	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	112538942	0.77	1.3598	99.9	99.9	0.1328	0.1328	99.90	
2,3,7,8-TCDF	17.203	208980759	0.77	0.9077	204.6	204.6	0.2542	0.2542	102	
S Total TCDF					204.6	204.6	0.2542	0.2542		
D 13C-2,3,7,8-TCDD	17.899	90520287	0.78	1.0536	103.7	103.7	0.2060	0.2060	104	
2,3,7,8-TCDD	17.914	181906530	0.77	1.0061	199.7	199.7	0.1321	0.1321	99.86	
$ 37Cl4-2,3,7,8-TCDD	17.914	188393047		1.0488	216.8	216.8	0.2418	0.2418	108	
S Total TCDD					199.7	199.7	0.1321	0.1321		
D 13C-1,2,3,7,8-PeCDF	22.198	98967595	1.55	1.1306	105.7	105.7	0.1952	0.1952	106	
1,2,3,7,8-PeCDF	22.226	902066653	1.54	0.9147	996.4	996.4	2.315	2.315	99.64	
D 13C-2,3,4,7,8-PeCDF	23.535	93576375	1.56	1.0539	107.2	107.2	0.2094	0.2094	107	
2,3,4,7,8-PeCDF	23.562	881532861	1.55	0.9508	990.8	990.8	2.631	2.631	99.08	
S Total PeCDF					1987.2	1987.2	2.473	2.473		
D 13C-1,2,3,7,8-PeCDD	24.257	71300628	1.62	0.8084	106.5	106.5	0.1098	0.1098	106	
1,2,3,7,8-PeCDD	24.285	699080341	1.55	0.9955	984.9	984.9	0.8577	0.8577	98.49	
S Total PeCDD					984.9	984.9	0.8577	0.8577		
D 13C-1,2,3,4,7,8-HxCDF	30.393	63870758	0.50	0.9225	101.1	101.1	0.4103	0.4103	101	
1,2,3,4,7,8-HxCDF	30.419	708040990	1.23	1.1090	999.6	999.6	5.172	5.172	99.96	
D 13C-1,2,3,6,7,8-HxCDF	30.592	71480069	0.50	1.0336	101.0	101.0	0.3662	0.3662	101	
1,2,3,6,7,8-HxCDF	30.606	756804000	1.23	1.0721	987.5	987.5	4.711	4.711	98.75	
D 13C-2,3,4,6,7,8-HxCDF	31.444	67749621	0.51	0.9773	101.2	101.2	0.3873	0.3873	101	
2,3,4,6,7,8-HxCDF	31.458	728098205	1.23	1.0838	991.6	991.6	3.753	3.753	99.16	
D 13C-1,2,3,7,8,9-HxCDF	32.256	64454067	0.51	0.9153	102.8	102.8	0.4135	0.4135	103	
1,2,3,7,8,9-HxCDF	32.270	691727822	1.24	1.0931	981.8	981.8	3.441	3.441	98.18	
S Total HxCDF					3960.6	3960.6	4.269	4.269		
* 13C-1,2,3,7,8,9-HxCDD	32.070	68477434	1.23	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	57179178	1.26	0.7977	104.7	104.7	0.2996	0.2996	105	
1,2,3,4,7,8-HxCDD	31.644	559642002	1.23	1.0014	977.3	977.3	2.479	2.479	97.73	
D 13C-1,2,3,6,7,8-HxCDD	31.737	68606469	1.24	1.0010	100.1	100.1	0.2387	0.2387	100	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	615512540	1.24	0.8902	1007.9	1007.9	2.381	2.381	101	
1,2,3,7,8,9-HxCDD	32.083	650702045	1.24	1.0579	978.0	978.0	2.162	2.162	97.80	
S Total HxCDD					2963.2	2963.2	2.341	2.341		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	59864107	0.43	0.8506	102.8	102.8	1.056	1.056	103	
1,2,3,4,6,7,8-HpCDF	33.691	794756968	1.03	1.3603	975.9	975.9	9.265	9.265	97.59	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	54480485	0.44	0.7618	104.4	104.4	1.179	1.179	104	
1,2,3,4,7,8,9-HpCDF	34.761	704300587	1.03	1.3207	978.9	978.9	11.8	11.8	97.89	
S Total HpCDF					1954.8	1954.8	10.5	10.5		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	62747060	1.05	0.8873	103.3	103.3	0.6046	0.6046	103	
1,2,3,4,6,7,8-HpCDD	34.469	624600336	1.04	0.9988	996.7	996.7	3.834	3.834	99.67	
S Total HpCDD					996.7	996.7	3.834	3.834		
D 13C-OCDD	36.779	93549216	0.91	0.6287	217.3	217.3	0.2539	0.2539	109	
OCDF	36.887	1328467600	0.91	1.4136	2009.2	2009.2	1.470	1.470	100	
OCDD	36.791	1025752146	0.90	1.1290	1942.5	1942.5	2.538	2.538	97.12	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 19:09:42 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720D CS-6 HRDXNL6_00027
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:12 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:18:30

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.711	-1		36265705	8998511	8935	22337	1007		
333.9339	17.702	17.711	-1		46573959	11572929	8924	22310	1297	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.971	48777539	12497008	7712	19280	1620		
317.9389	17.188	17.203	-1	0.971	63761403	16180769	7143	17857	2265	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.218	-1	1.001	90736146	23113639	9914	24785	2331		
305.8987	17.203	17.218	-1	1.001	118244613	30212266	16560	41400	1824	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	39757194	9381443	8935	22337	1050		
333.9339	17.899	17.905	0	1.011	50763093	11985425	8924	22310	1343	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.920	0	1.001	79337957	19089008	5189	12972	3679		
321.8936	17.914	17.920	0	1.001	102568573	24753380	6170	15425	4012	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	188393047	45007588	20867	52167	2157		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.254	60181059	10820105	10516	26290	1029		
353.8970	22.198	22.204	0	1.254	38786536	7030773	7646	19115	920	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	547147193	96829975	91320	228300	1060		
341.8567	22.212	22.220	0	1.001	354919460	62761523	59870	149675	1048	1.54(1.32-1.78)	

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.329	57068694	9204299	10516	26290	875		
353.8970	23.535	23.540	0	1.329	36507681	5907507	7646	19115	773	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	535474925	87654759	91320	228300	960		
341.8567	23.562	23.567	0	1.001	346057936	56952234	59870	149675	951	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.370	44042244	6991886	4343	10857	1610		
369.8919	24.257	24.263	0	1.370	27258384	4340482	2964	7410	1464	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	425216588	66893677	23507	58767	2846		
357.8516	24.285	24.290	0	1.001	273863753	43014297	15196	37990	2831	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	21353346	3735596	9504	23760	393		
385.8610	30.393	30.398	0	0.948	42517412	7541415	17334	43335	435	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.419	30.414	0	1.001	390623698	69210360	144699	361747	478		
375.8178	30.419	30.414	0	1.001	317417292	55842354	114030	285075	490	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.592	30.587	0	0.954	23831741	4284718	9504	23760	451		
385.8610	30.592	30.587	0	0.954	47648328	8520496	17334	43335	492	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.606	30.608	0	1.000	417477301	76471193	144699	361747	528		
375.8178	30.606	30.608	0	1.000	339326699	62317195	114030	285075	546	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	22867854	5367919	9504	23760	565		
385.8610	31.444	31.439	0	0.980	44881767	10535673	17334	43335	608	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	401761842	96152976	144699	361747	665		
375.8178	31.458	31.458	0	1.000	326336363	77698323	114030	285075	681	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	21707742	5888250	9504	23760	620		
385.8610	32.256	32.254	0	1.006	42746325	11309936	17334	43335	652	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	382964510	103123325	144699	361747	713		
375.8178	32.270	32.267	0	1.000	308763312	82432457	114030	285075	723	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		37715128	9806077	9513	23782	1031		
403.8529	32.070	32.067	0		30762306	7919228	7430	18575	1066	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	31831270	8312743	9513	23782	874		
403.8529	31.631	31.631	0	0.986	25347908	6557876	7430	18575	883	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	309092416	82861363	82628	206570	1003		
391.8127	31.644	31.647	0	1.000	250549586	66798770	65041	162602	1027	1.23(1.05-1.43)	

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	37988346	9644110	9513	23782	1014		
403.8529	31.737	31.740	0	0.990	30618123	7772384	7430	18575	1046	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	340937209	84715031	82628	206570	1025		
391.8127	31.750	31.756	0	1.000	274575331	68578489	65041	162602	1054	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	360109538	93726788	82628	206570	1134		
391.8127	32.083	32.081	0	1.014	290592507	74938635	65041	162602	1152	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.050	18070930	5942919	16854	42135	353		
419.8220	33.679	33.684	0	1.050	41793177	13661866	46806	117015	292	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	402533640	132249546	496016	1240040	267		
409.7789	33.691	33.694	0	1.000	392223328	128744831	492357	1230892	261	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.751	0	1.084	16669269	4937793	16854	42135	293		
419.8220	34.748	34.751	0	1.084	37811216	10942649	46806	117015	234	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	357604024	103225889	496016	1240040	208		
409.7789	34.761	34.763	0	1.000	346696563	99564112	492357	1230892	202	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	32145048	9496257	16712	41780	568		
437.8140	34.469	34.464	0	1.075	30602012	9099651	21325	53312	427	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	317811790	91651803	141262	353155	649		
425.7737	34.469	34.474	0	1.000	306788546	89877662	143540	358850	626	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	44483628	10712295	4504	11260	2378		
471.7750	36.779	36.784	0	1.147	49065588	11867172	6814	17035	1742	0.91(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	633744193	156394749	46138	115345	3390		
443.7399	36.887	36.882	0	1.003	694723407	167173603	47678	119195	3506	0.91(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	485602206	117161035	57581	143952	2035		
459.7348	36.791	36.791	0	1.000	540149940	130532603	71827	179567	1817	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

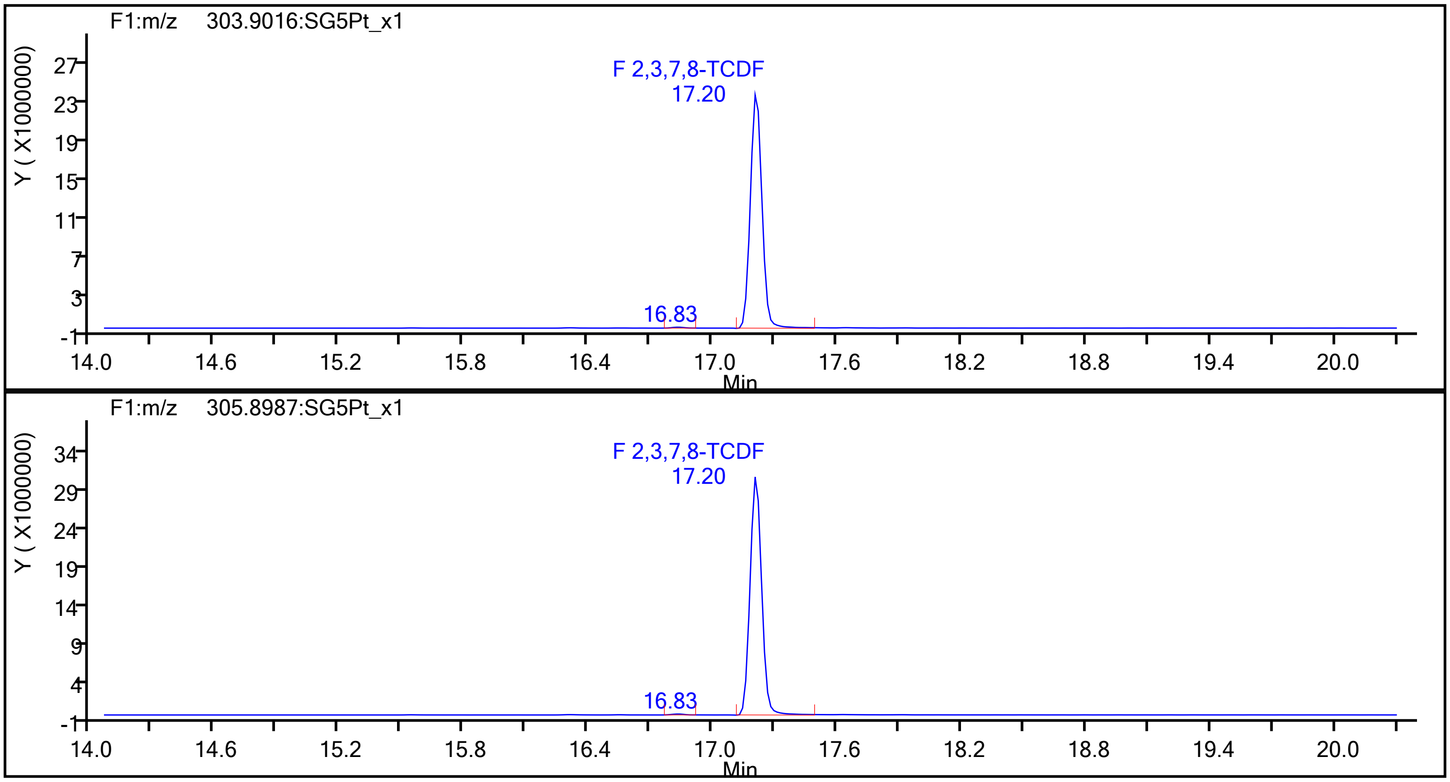

TCDF Standards

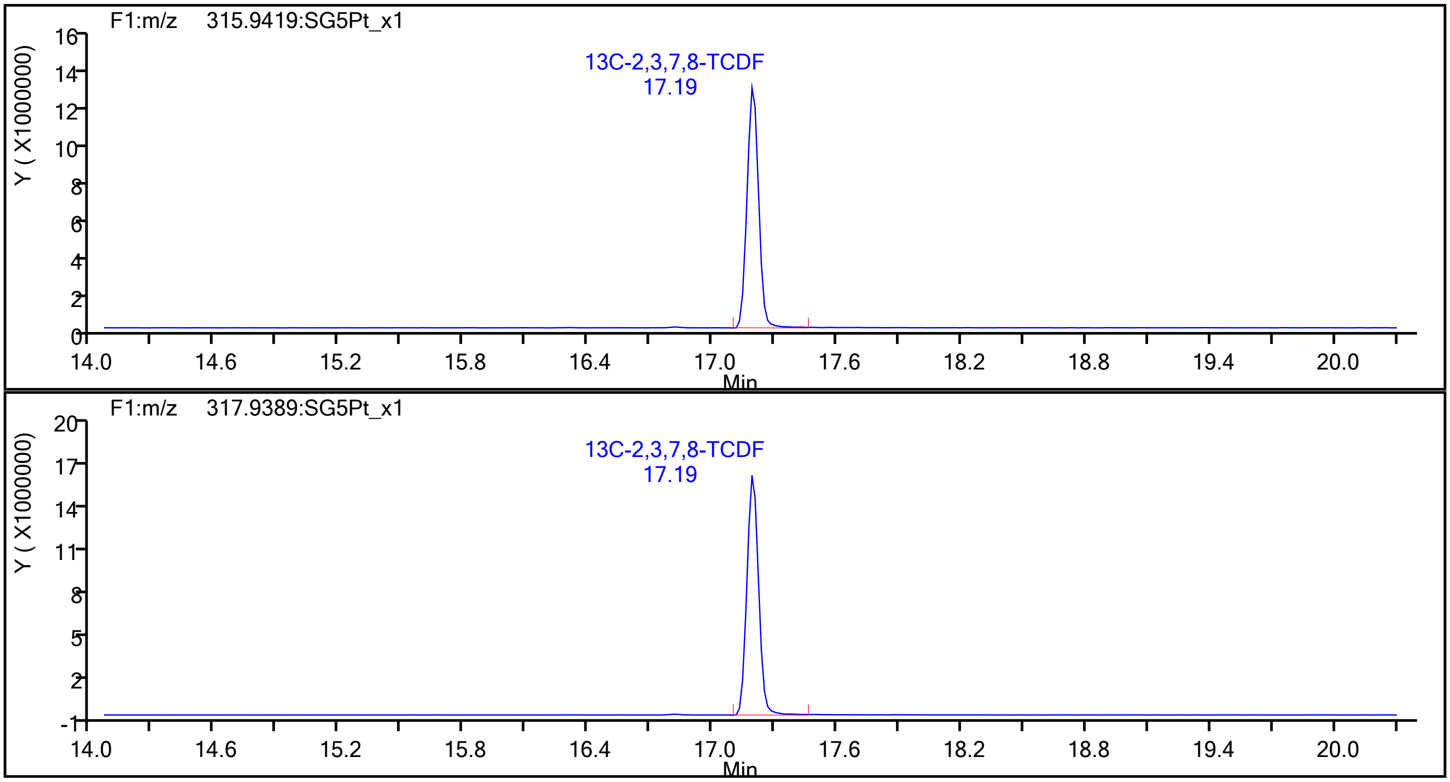

Eurofins TestAmerica, Sacramento

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Client ID:
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TCDF

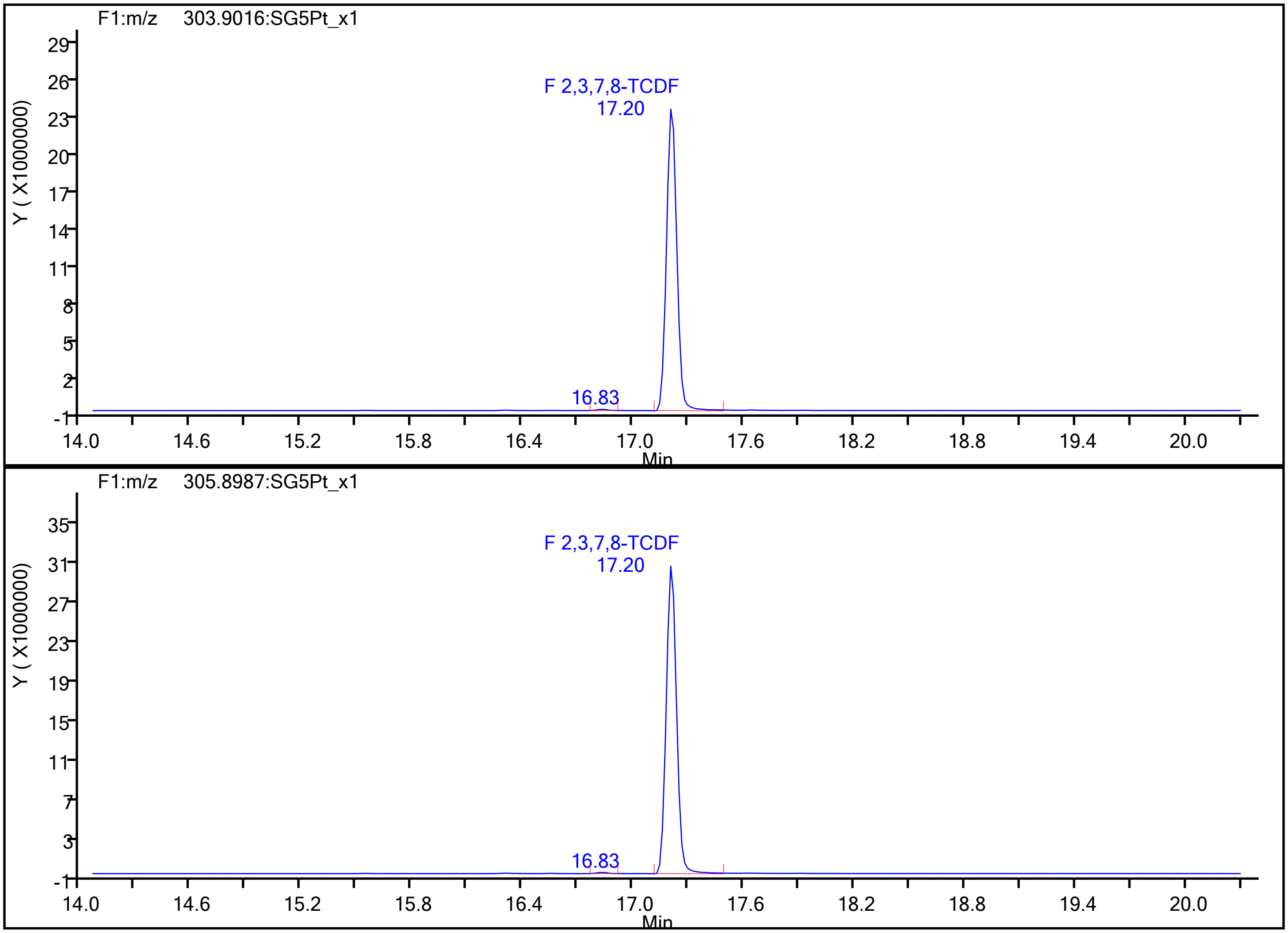

TCDF Interference Mass

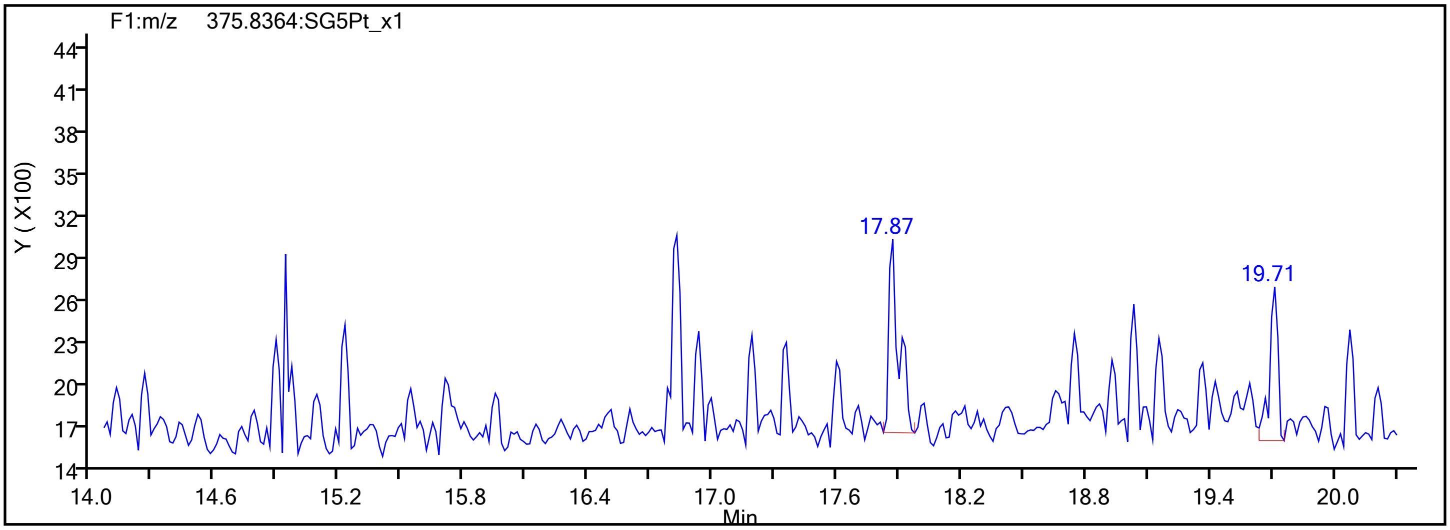

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Column Dia: 0.32 mm

TCDD

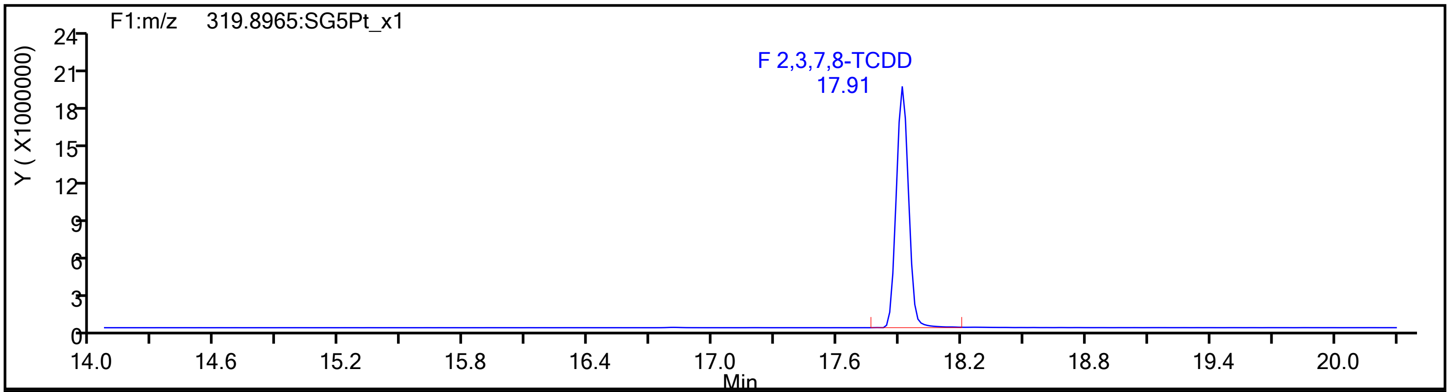

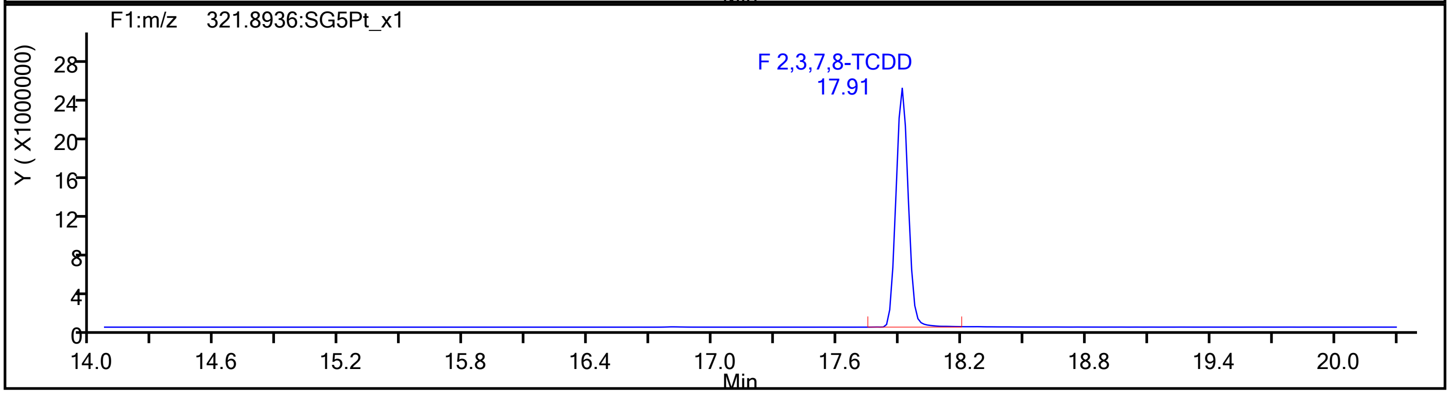

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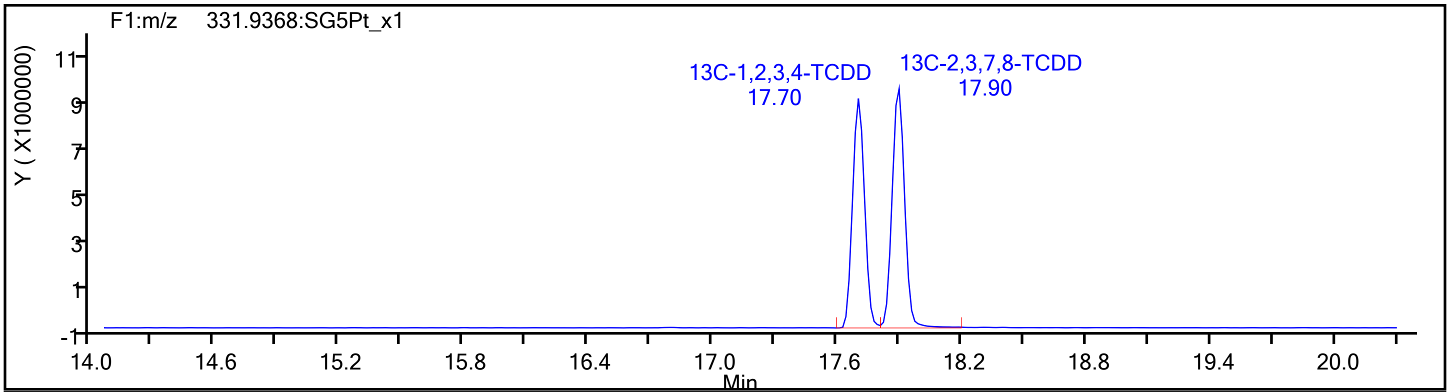

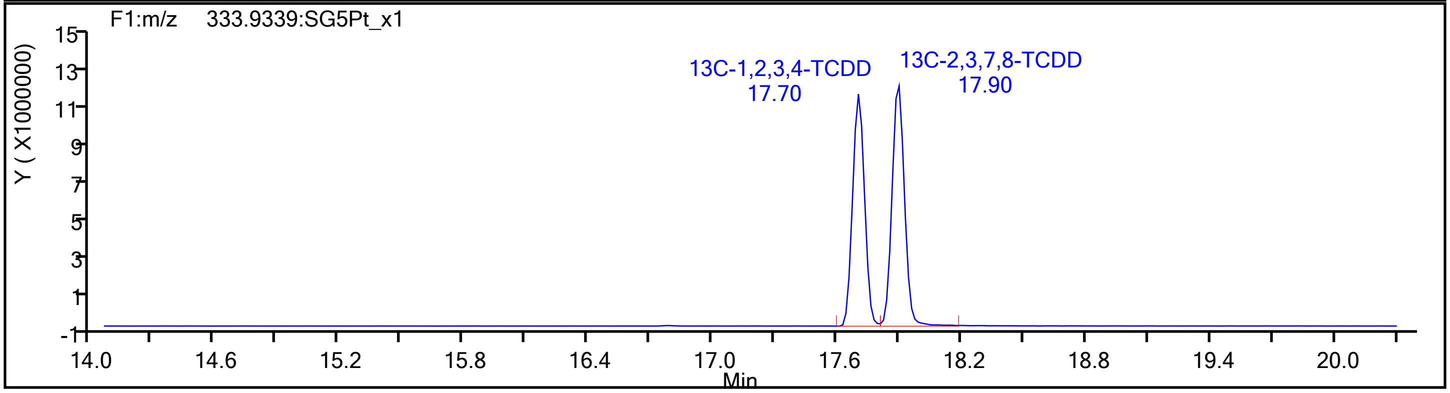

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

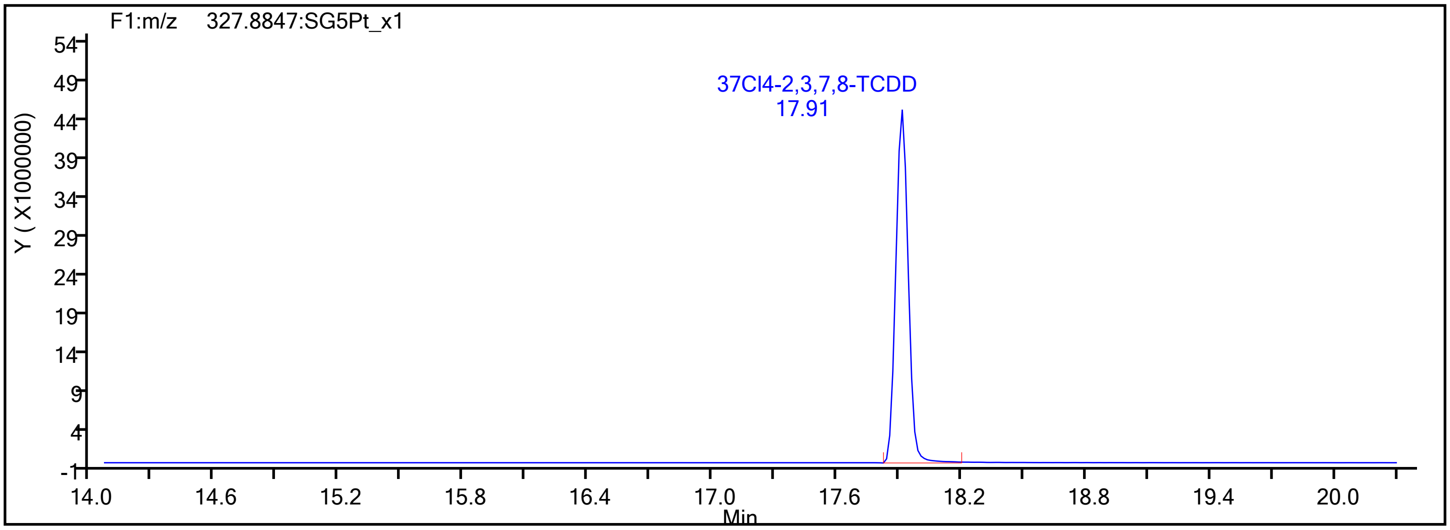

37Cl4-TCDD Standards

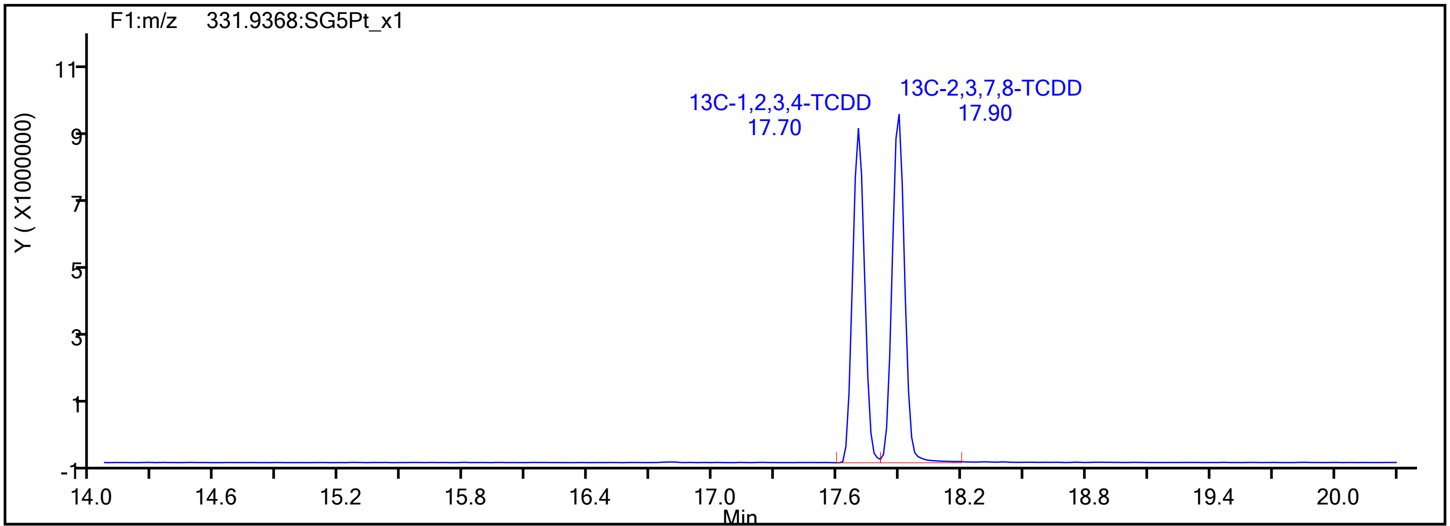

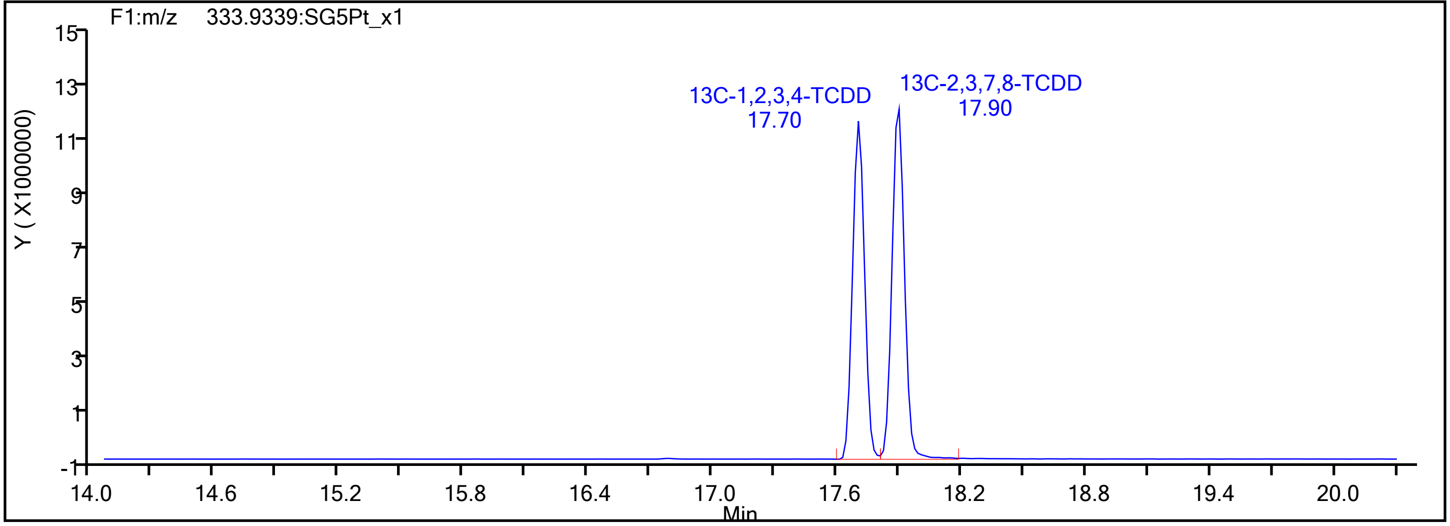

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

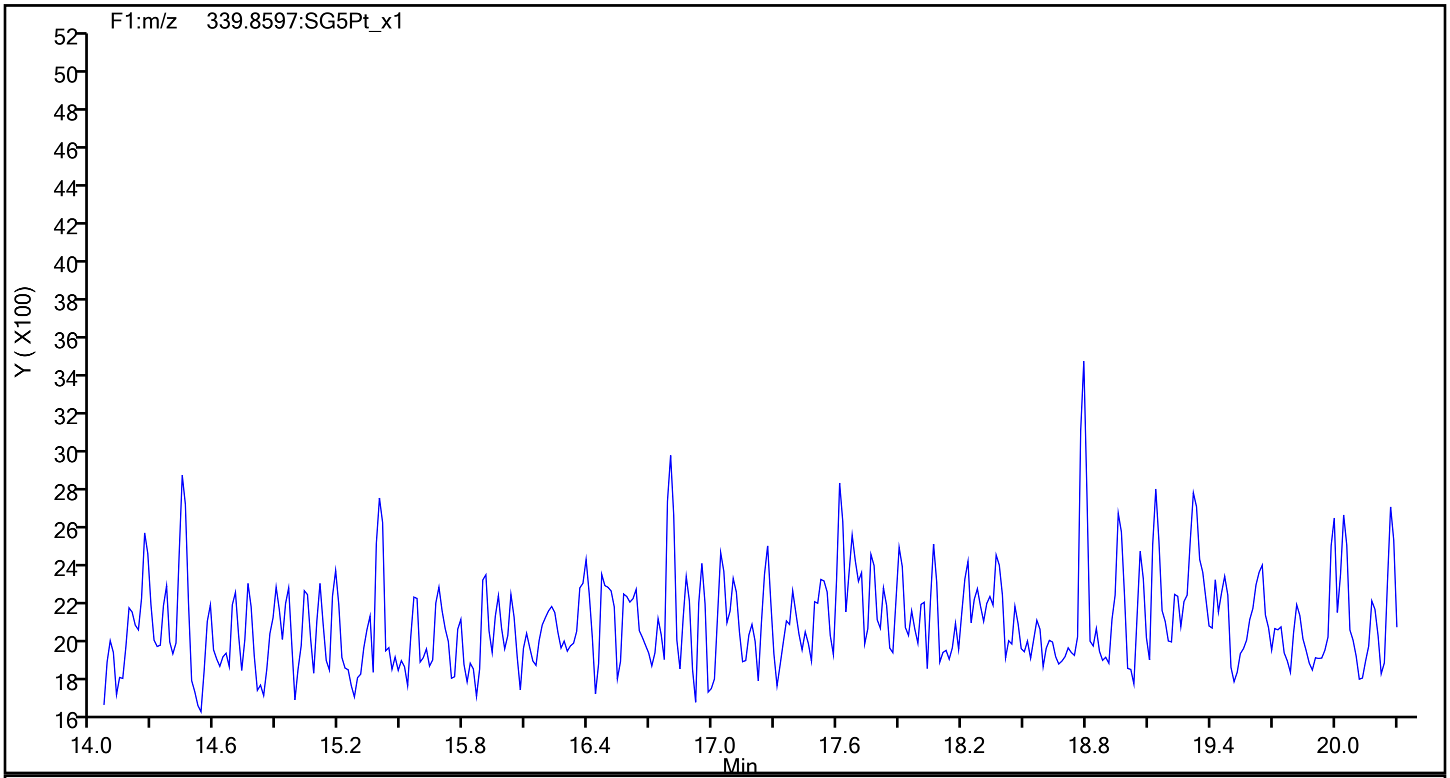

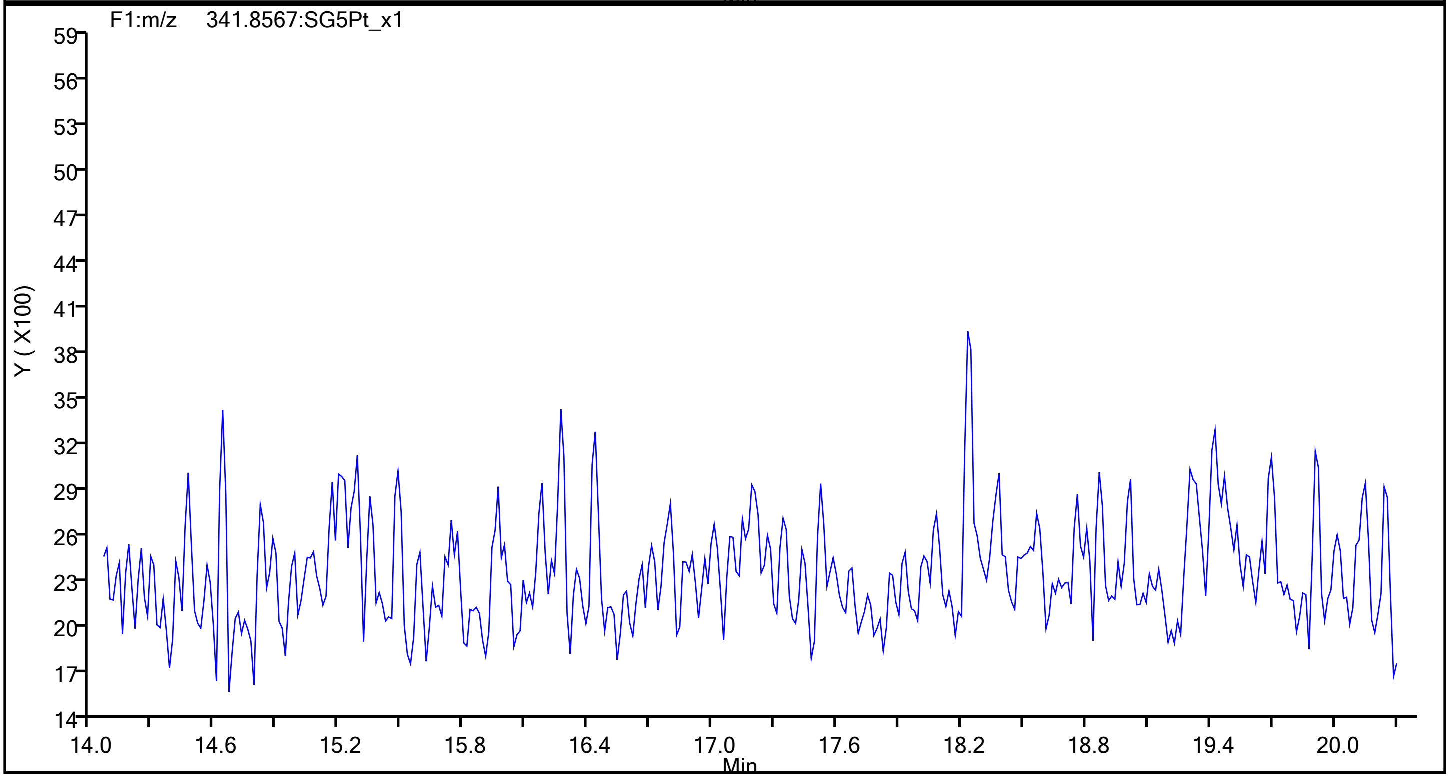

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

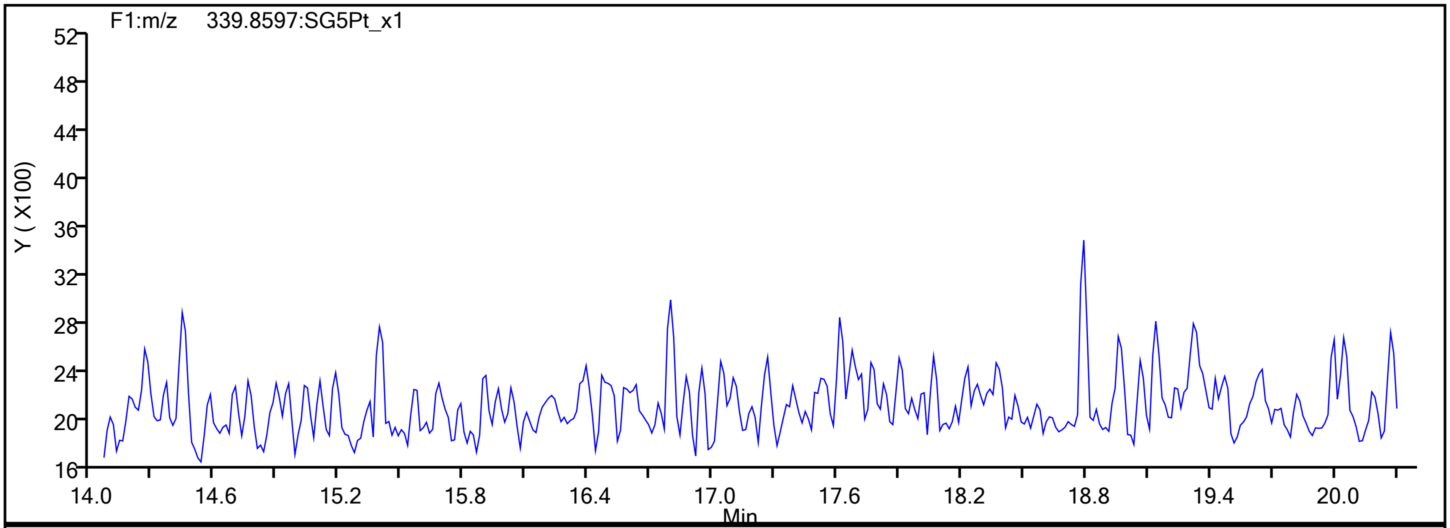

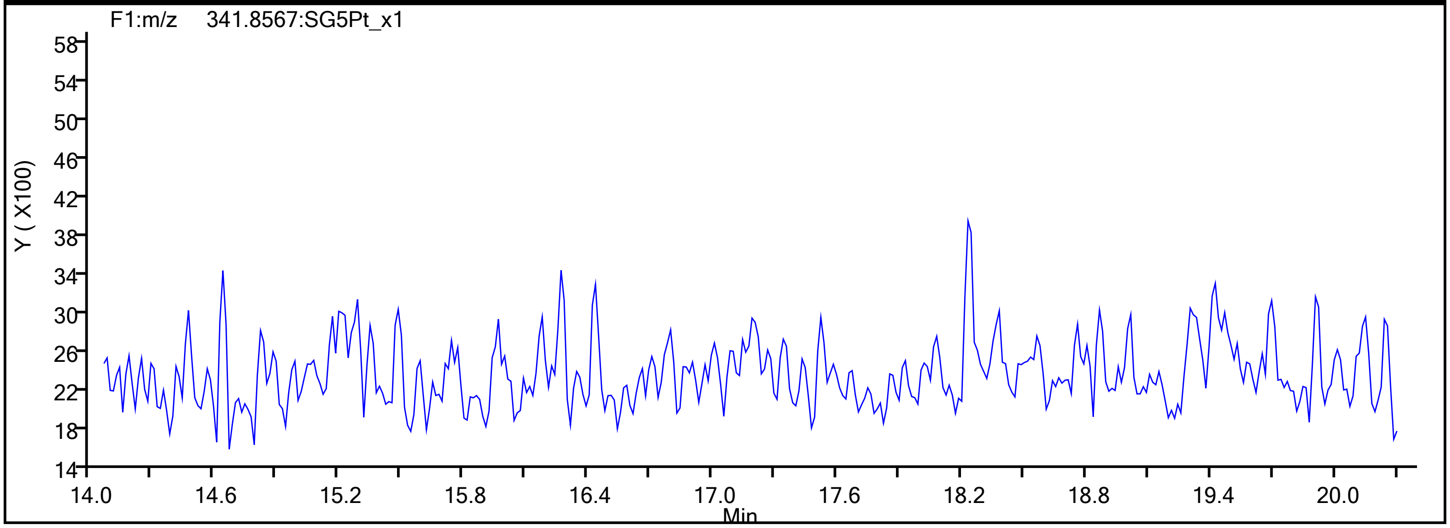

F1 PeCDFs Interference Mass

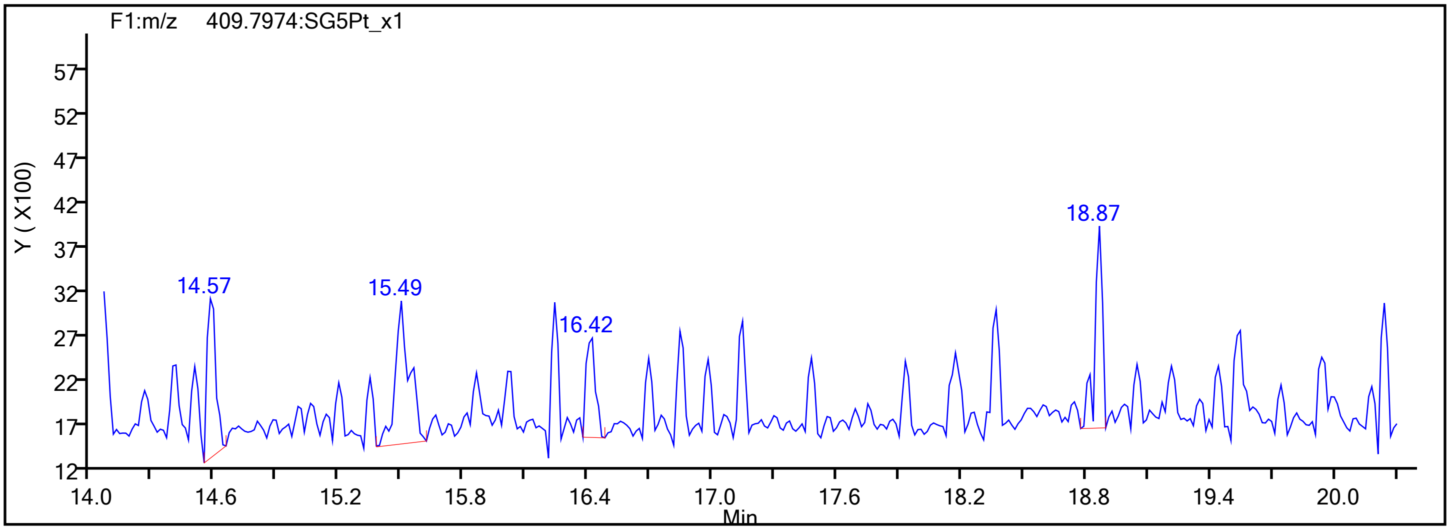

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

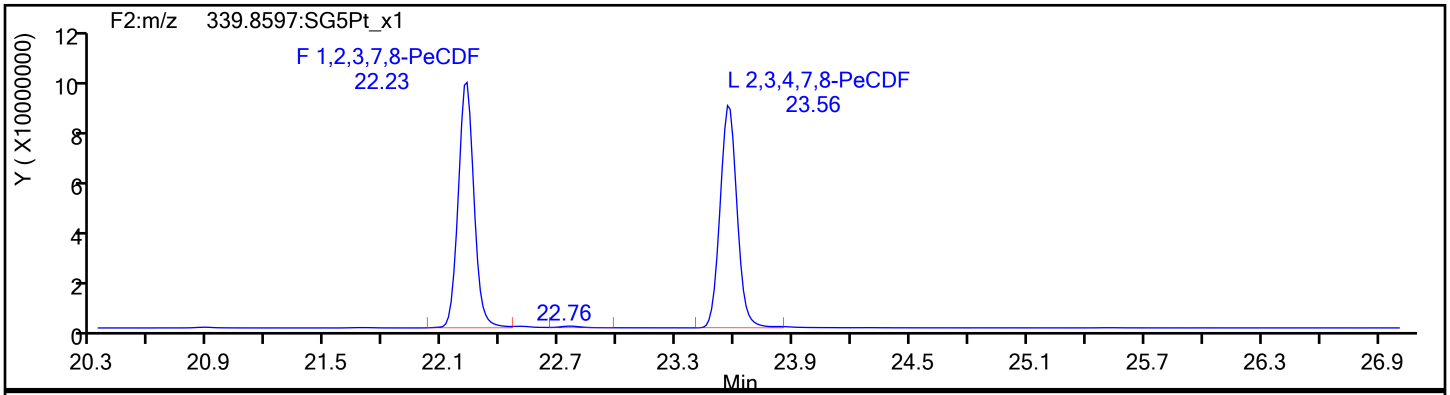

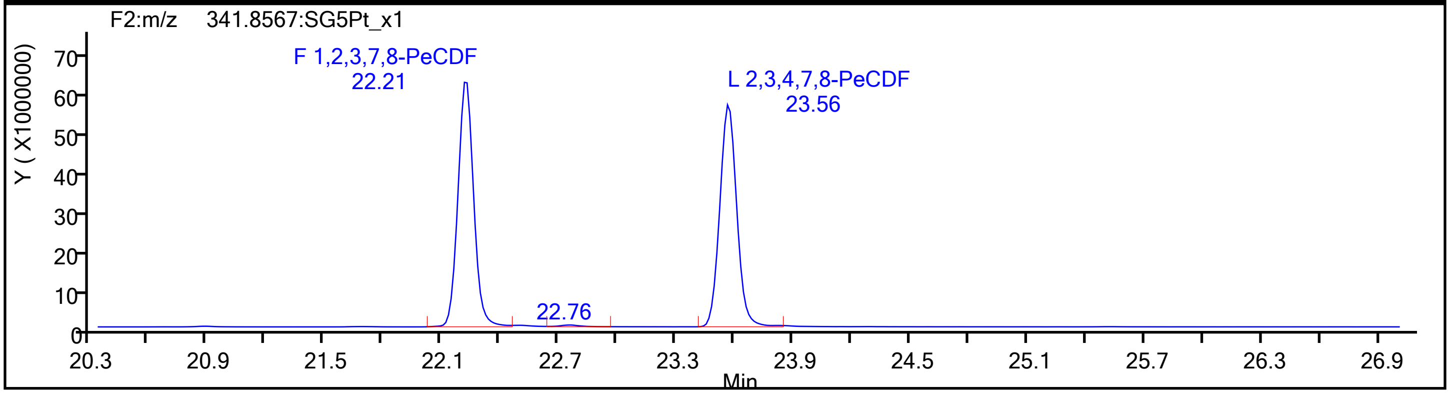

PeCDF Standards

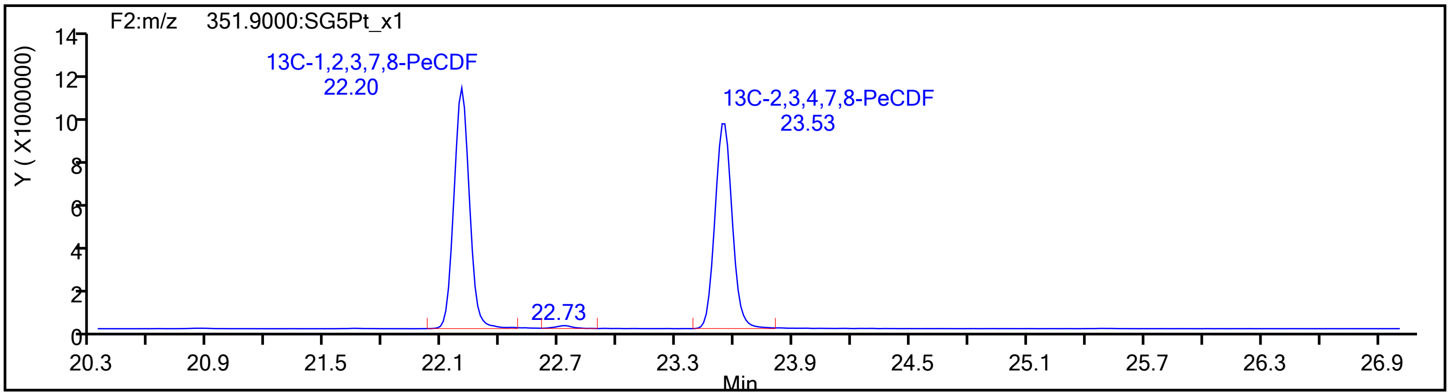

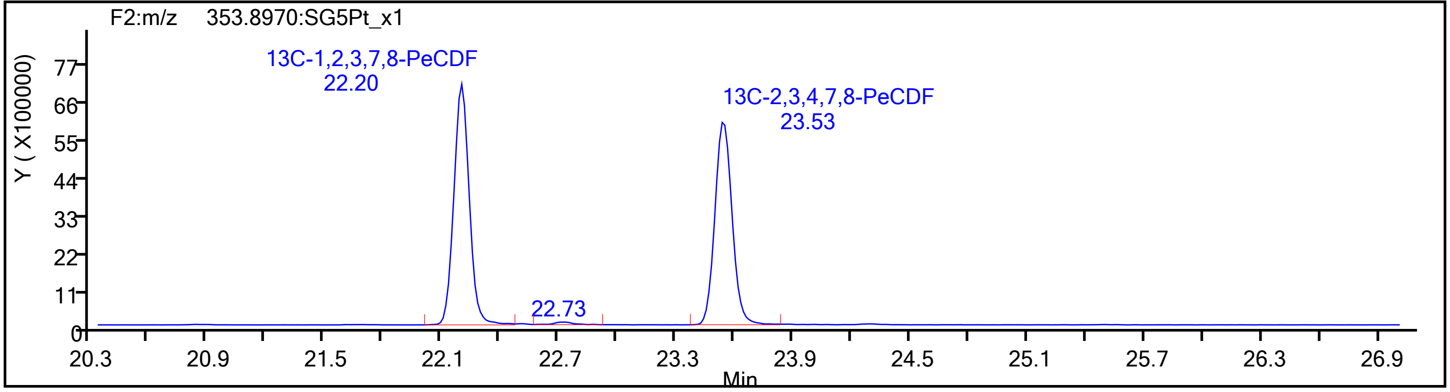

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Eurofins TestAmerica, Sacramento

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Client ID:			
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PeCDF

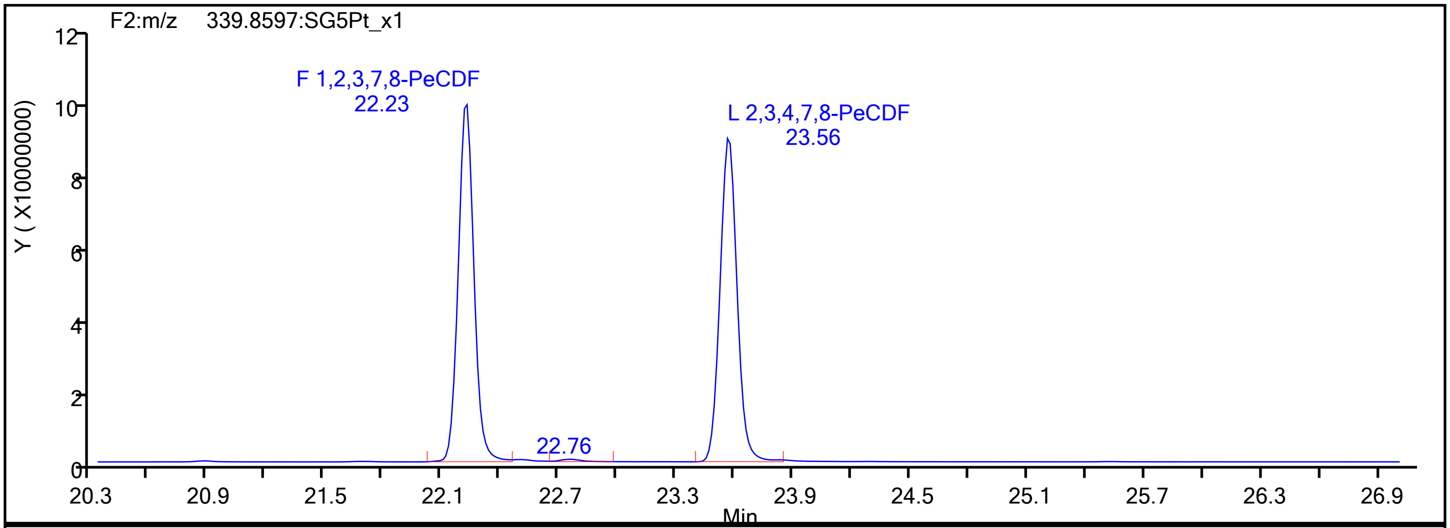

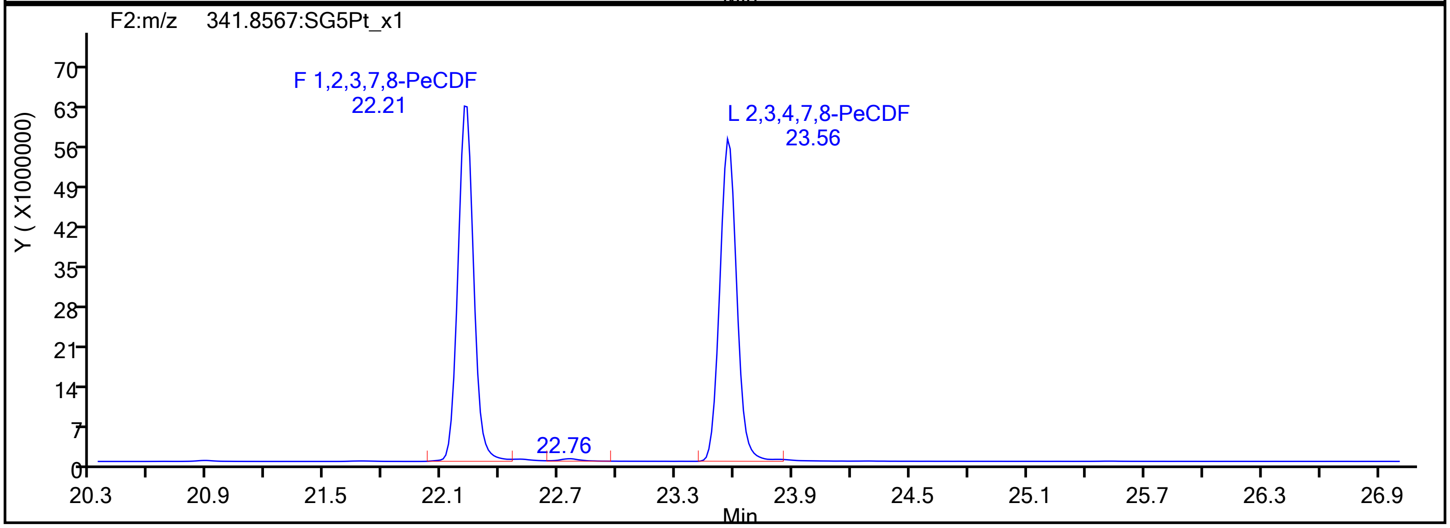

PeCDF Interference Mass

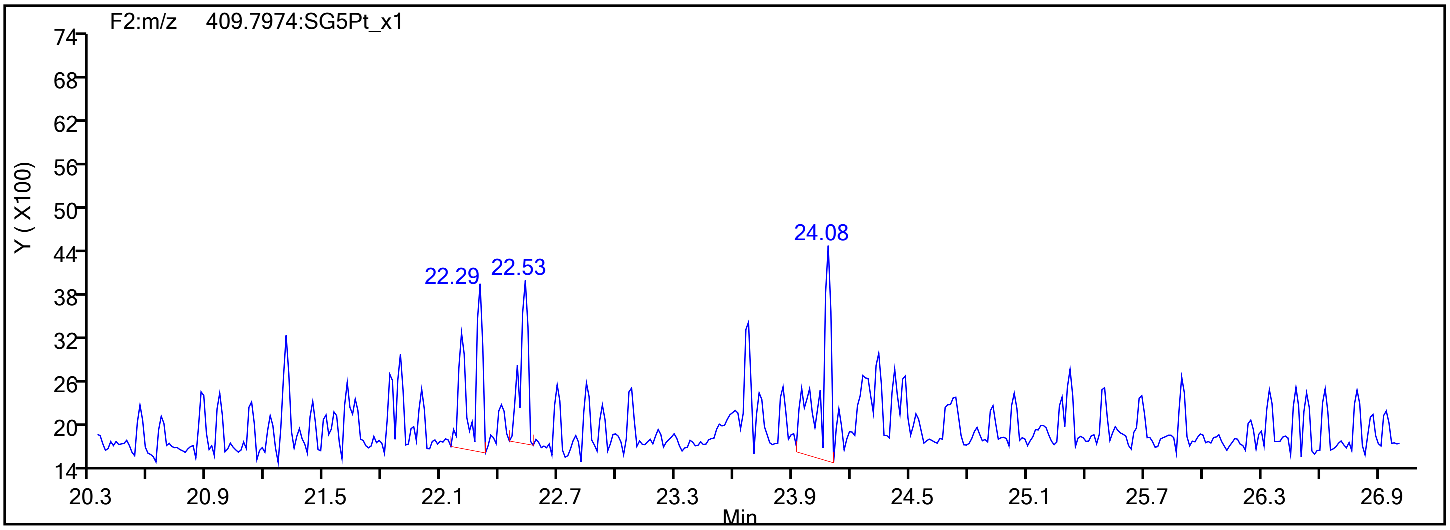

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Eurofins TestAmerica, Sacramento

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PeCDD

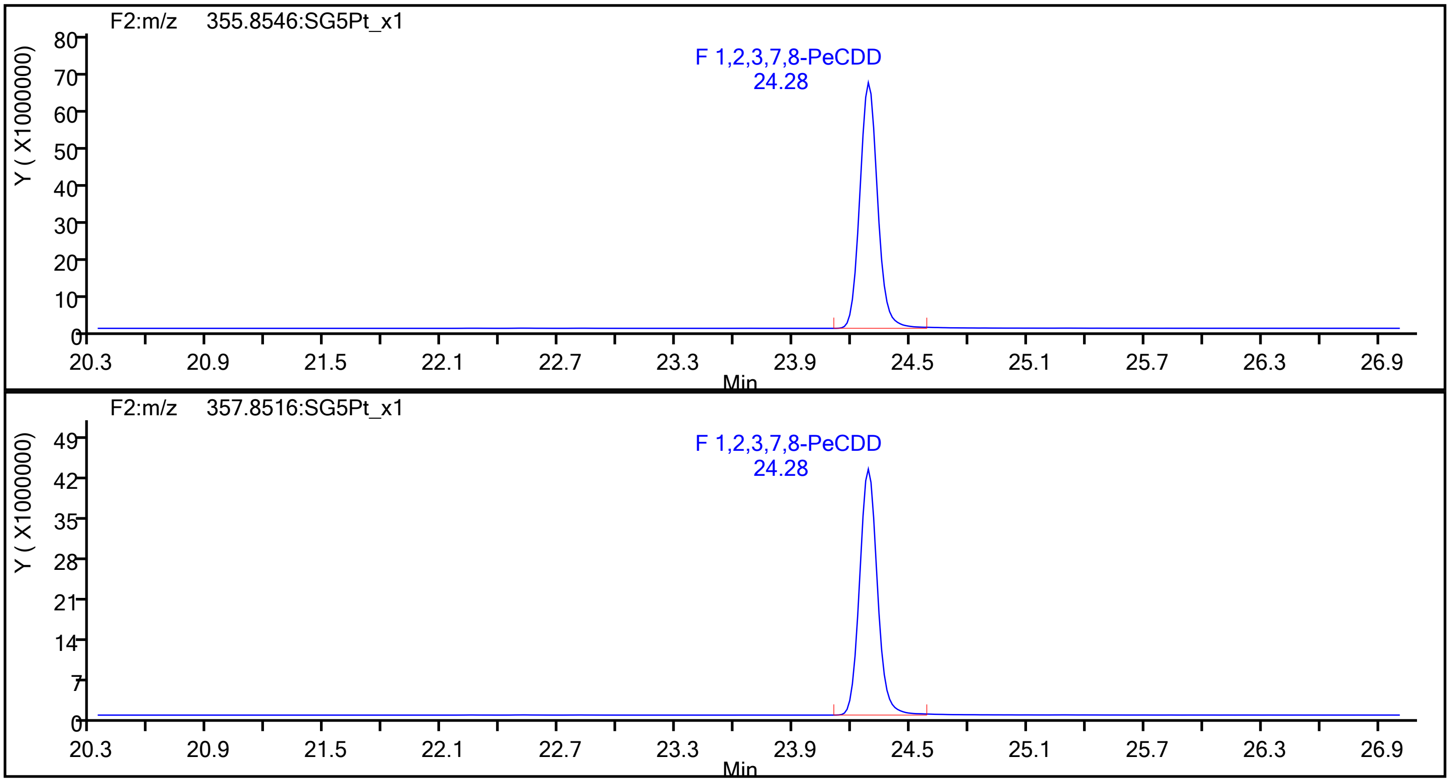

PeCDD Standards

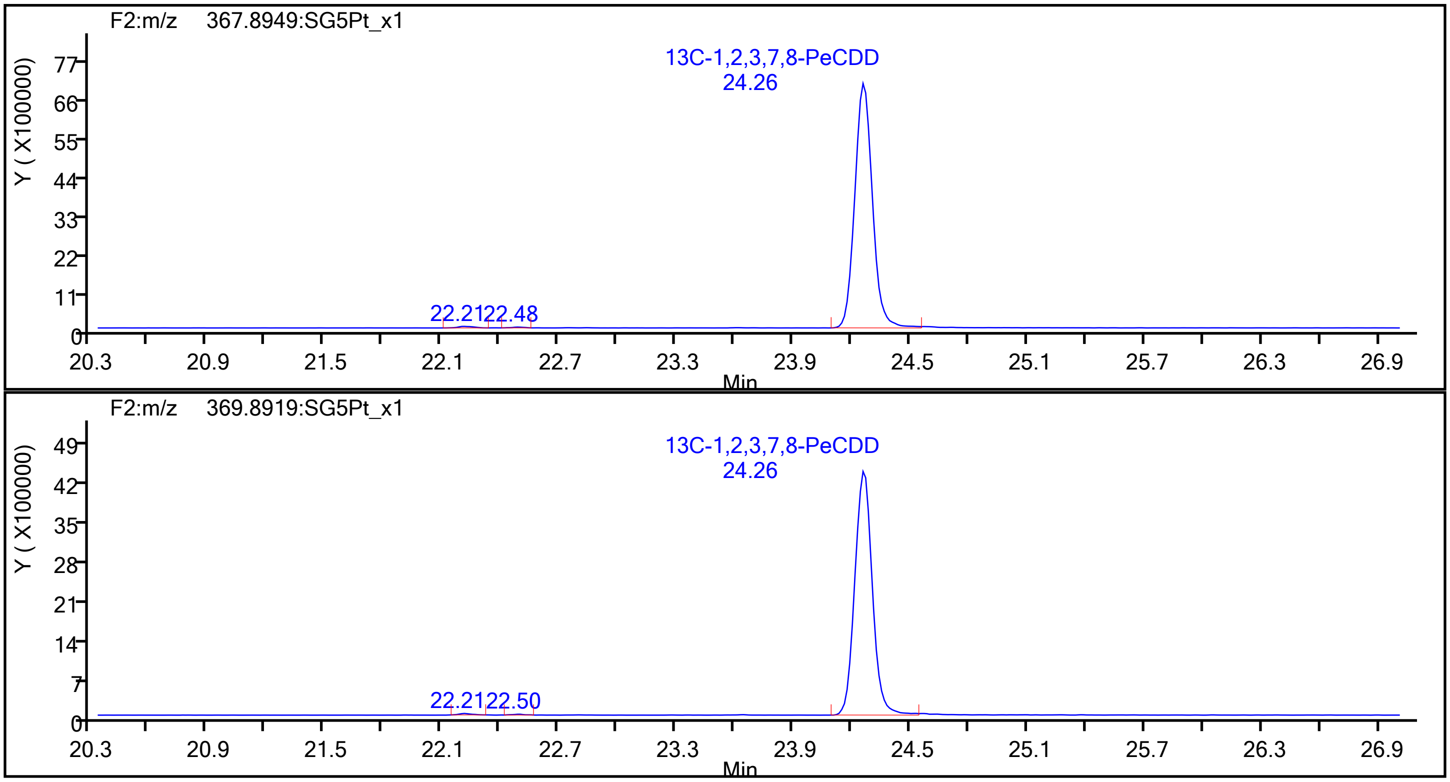

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Eurofins TestAmerica, Sacramento

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Client ID:
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HxCDF

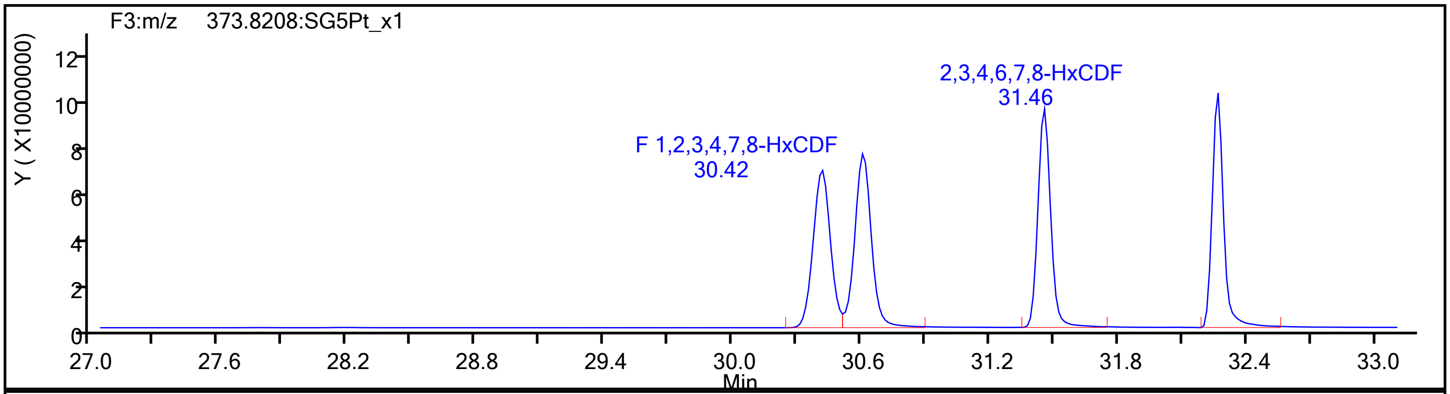

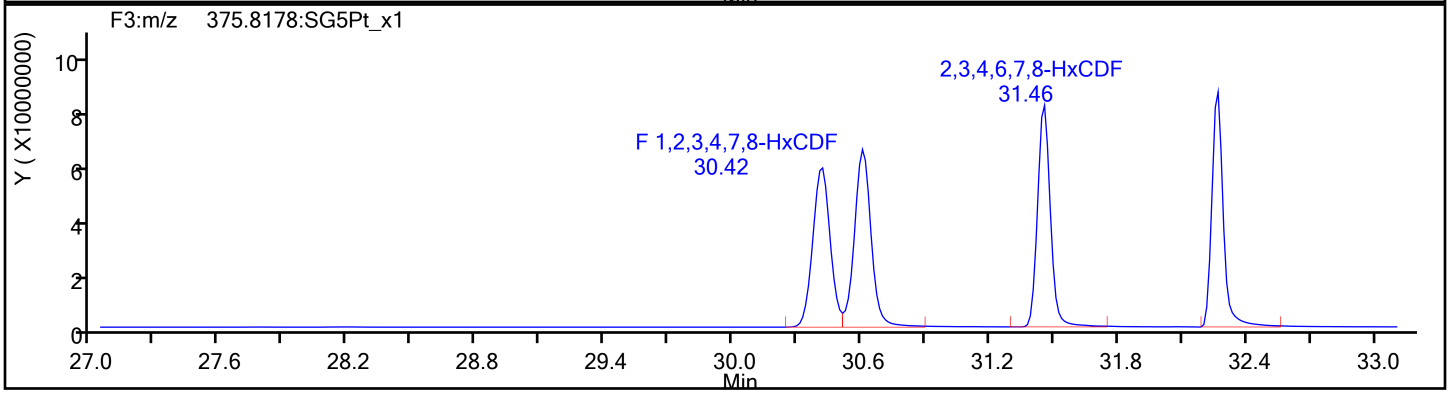

HxCDF Standards

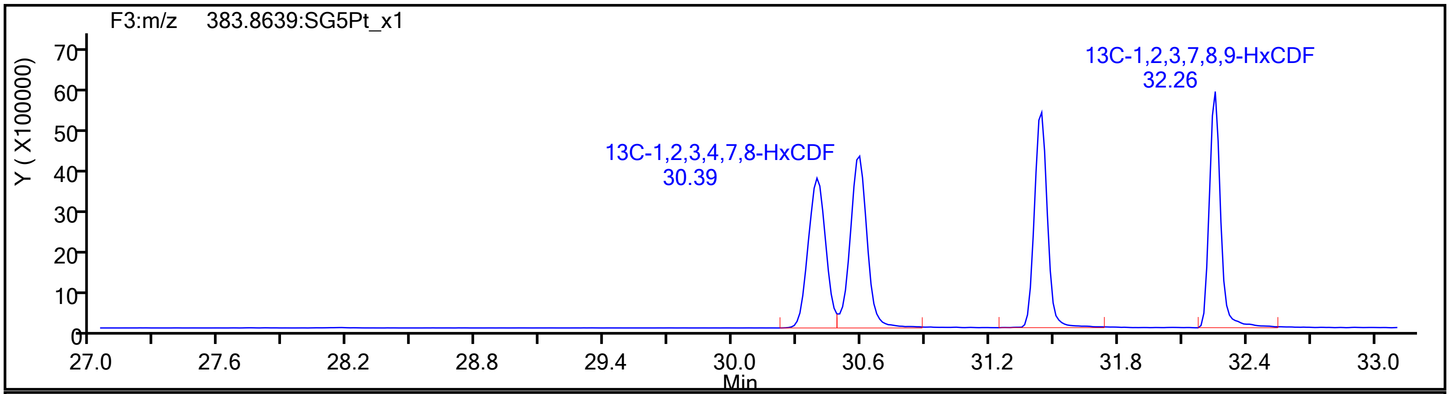

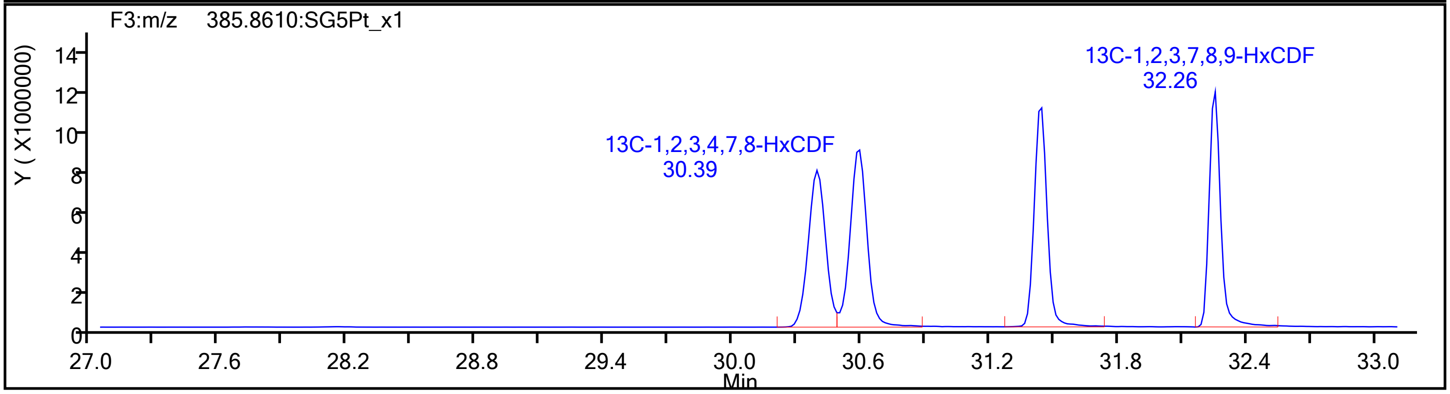

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Eurofins TestAmerica, Sacramento

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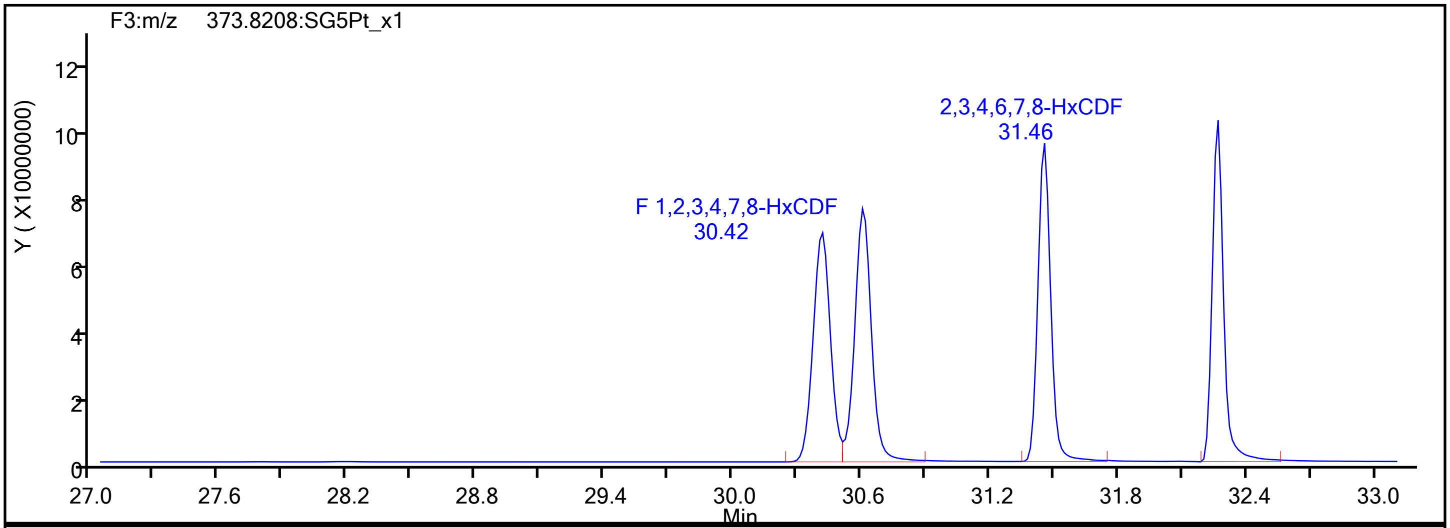

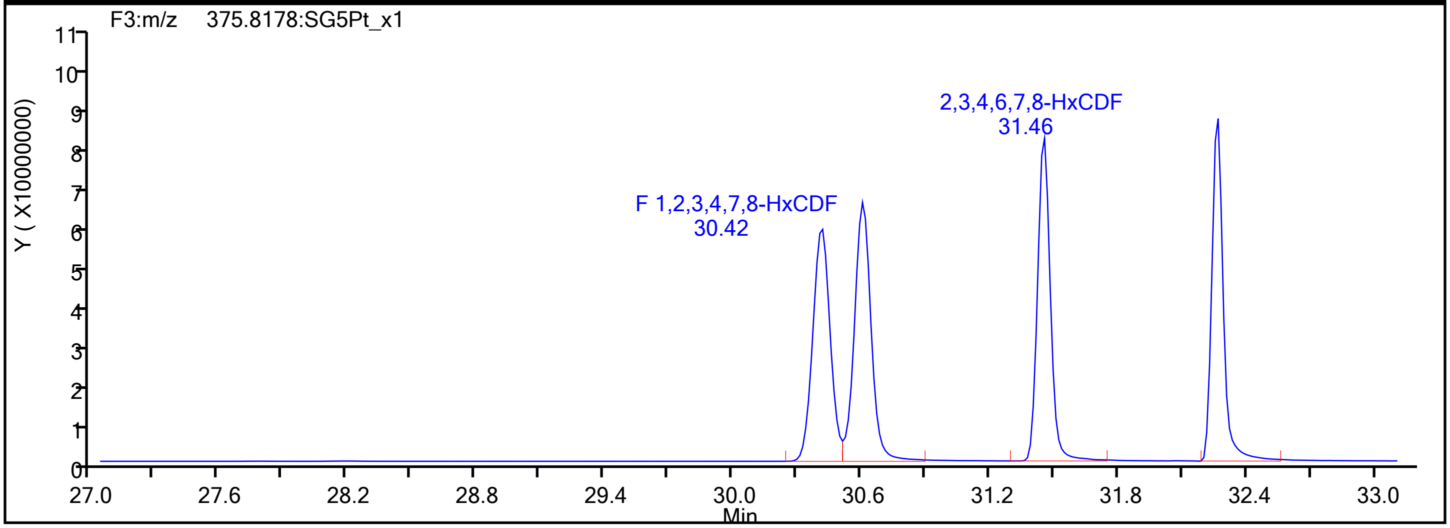

HxCDF Interference Mass

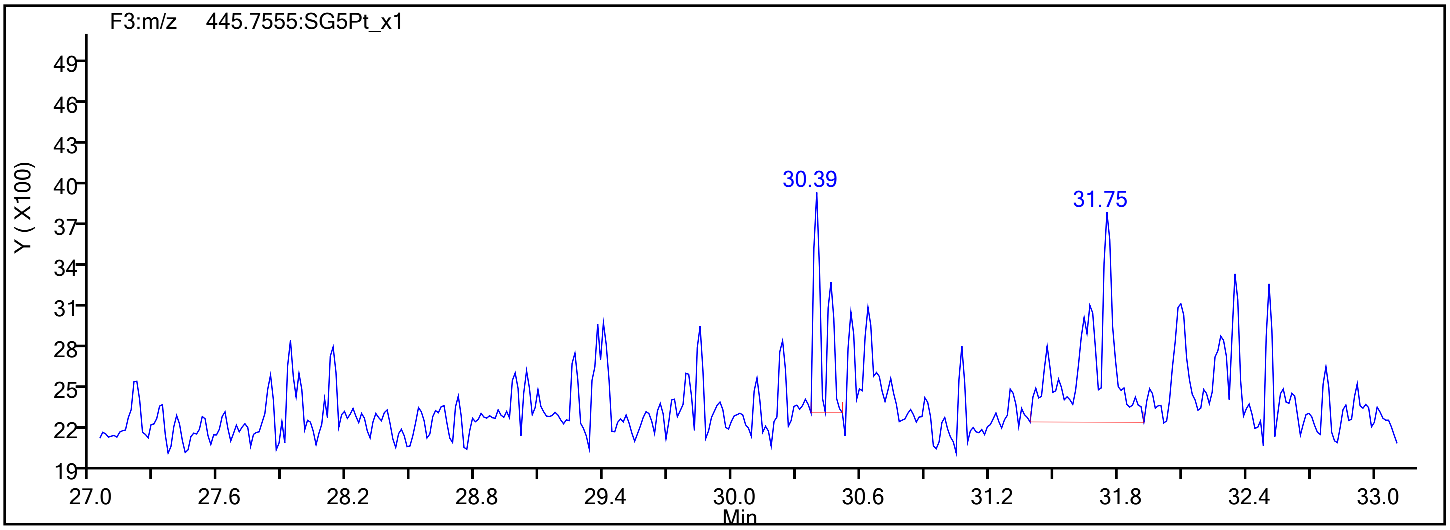

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Eurofins TestAmerica, Sacramento

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HxCDD

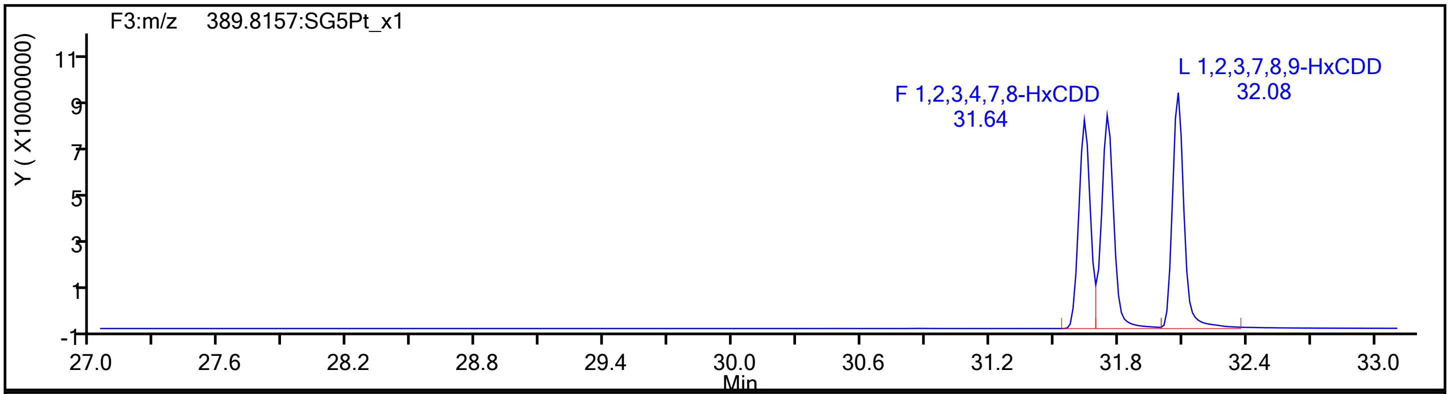

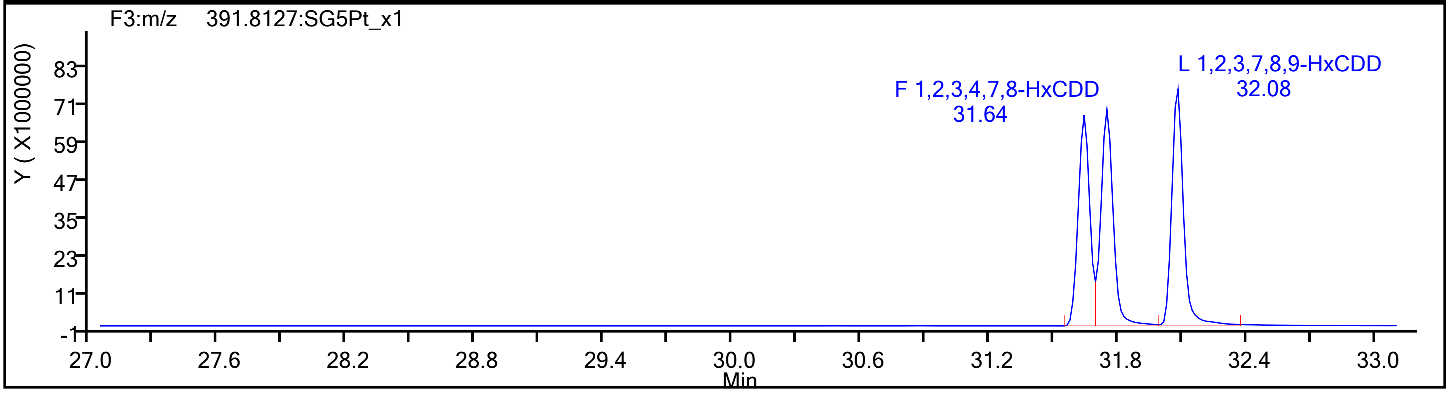

HxCDD Standards

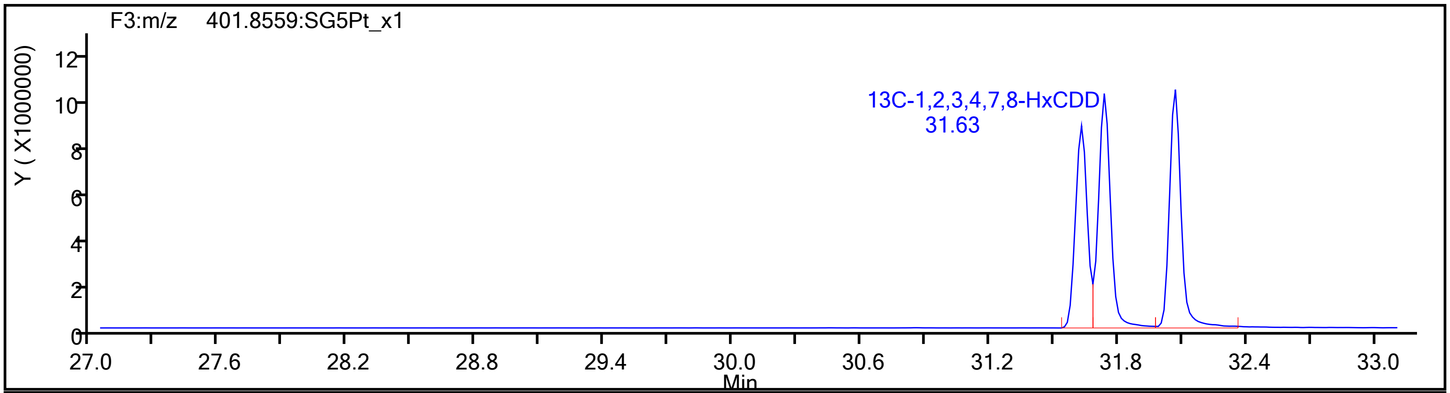

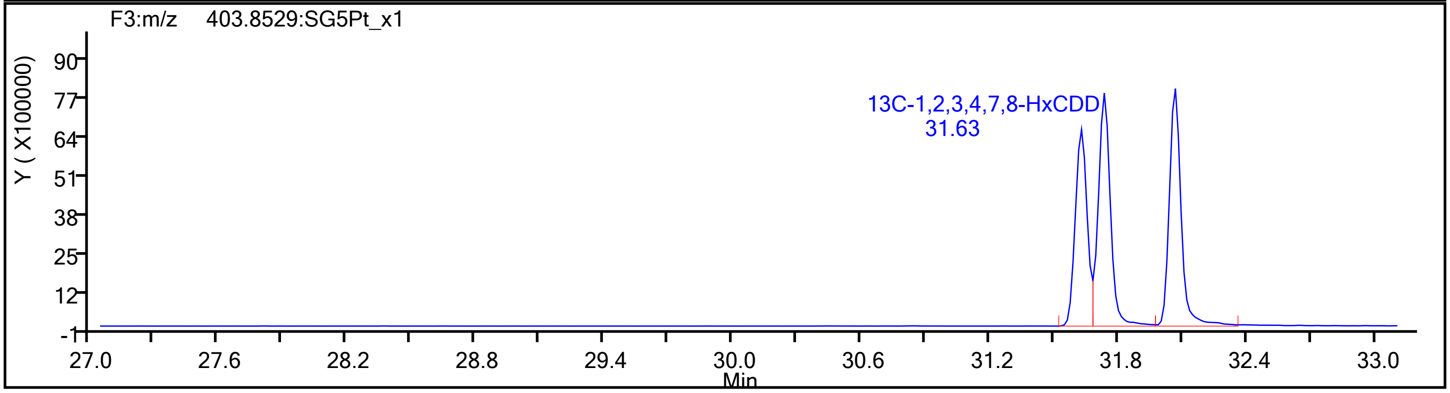

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Eurofins TestAmerica, Sacramento

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HpCDF

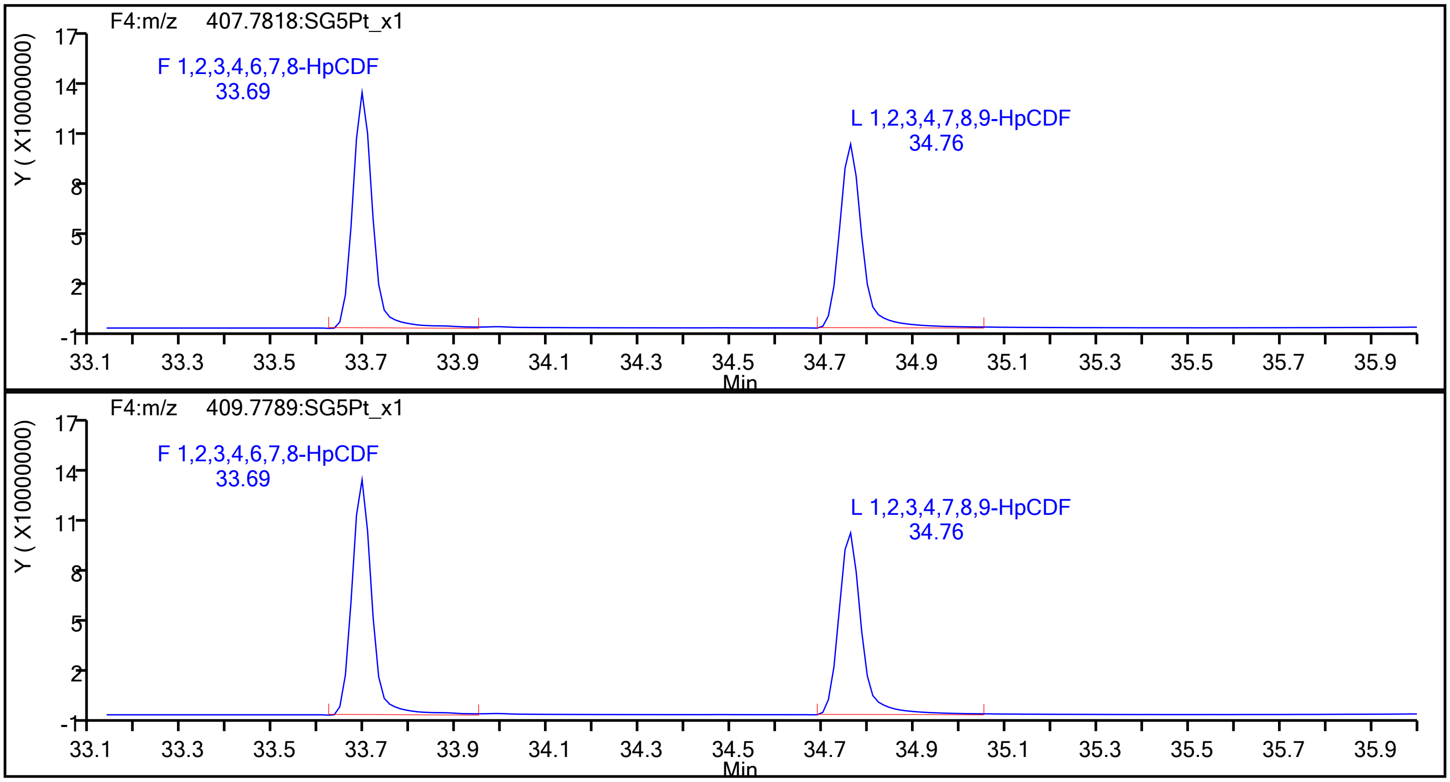

HpCDF Standards

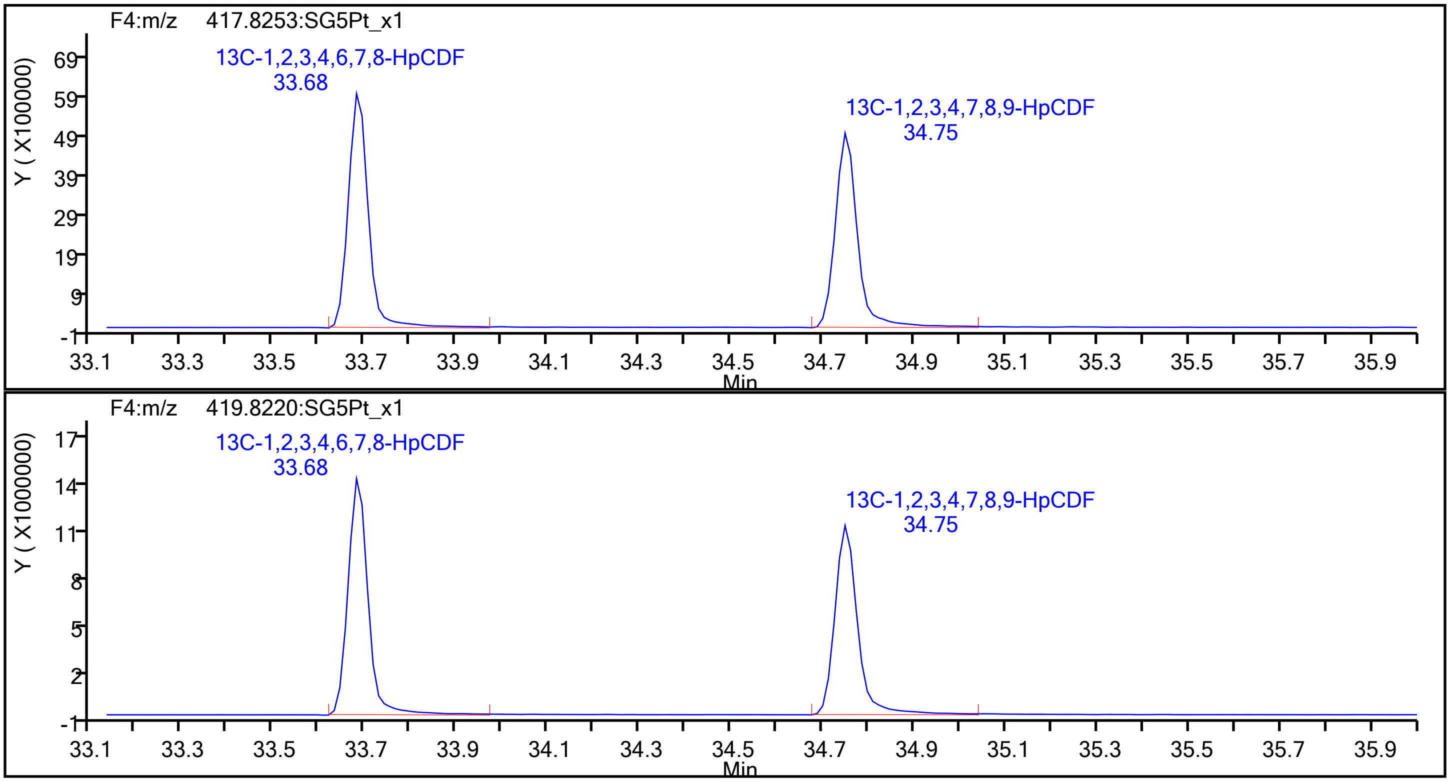

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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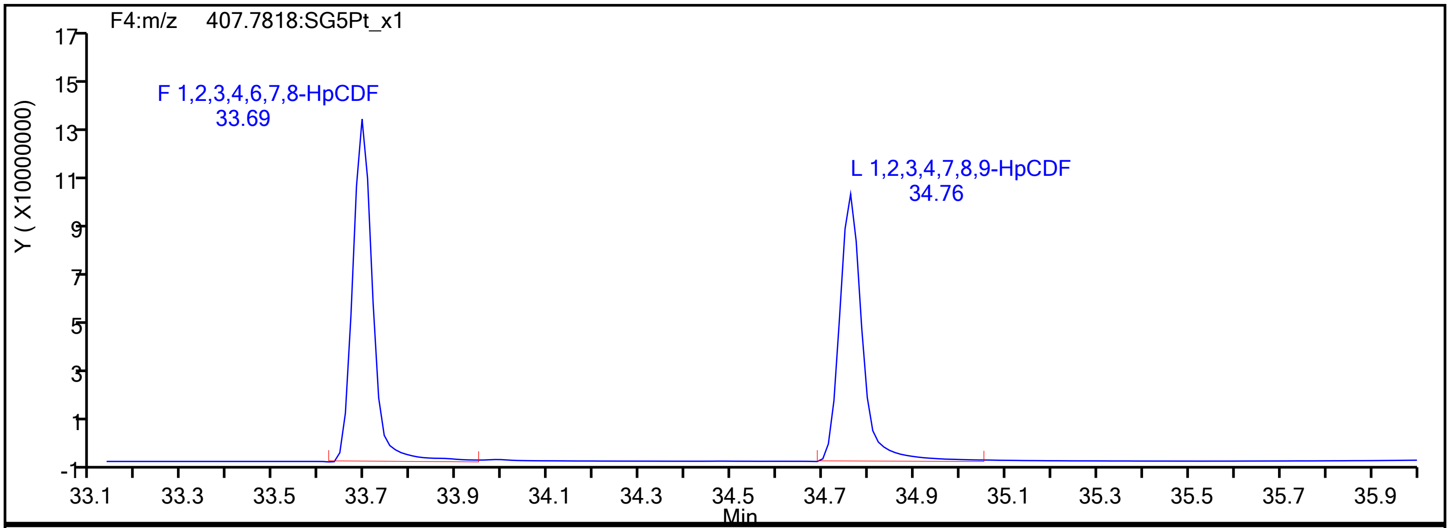

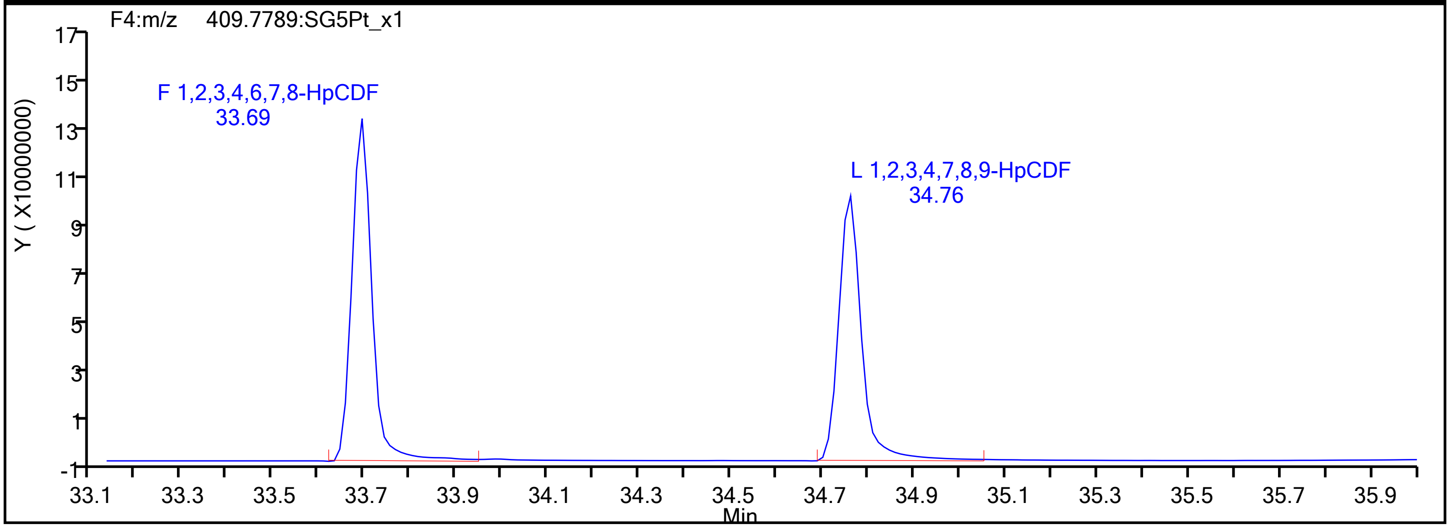

HpCDF Interference Mass

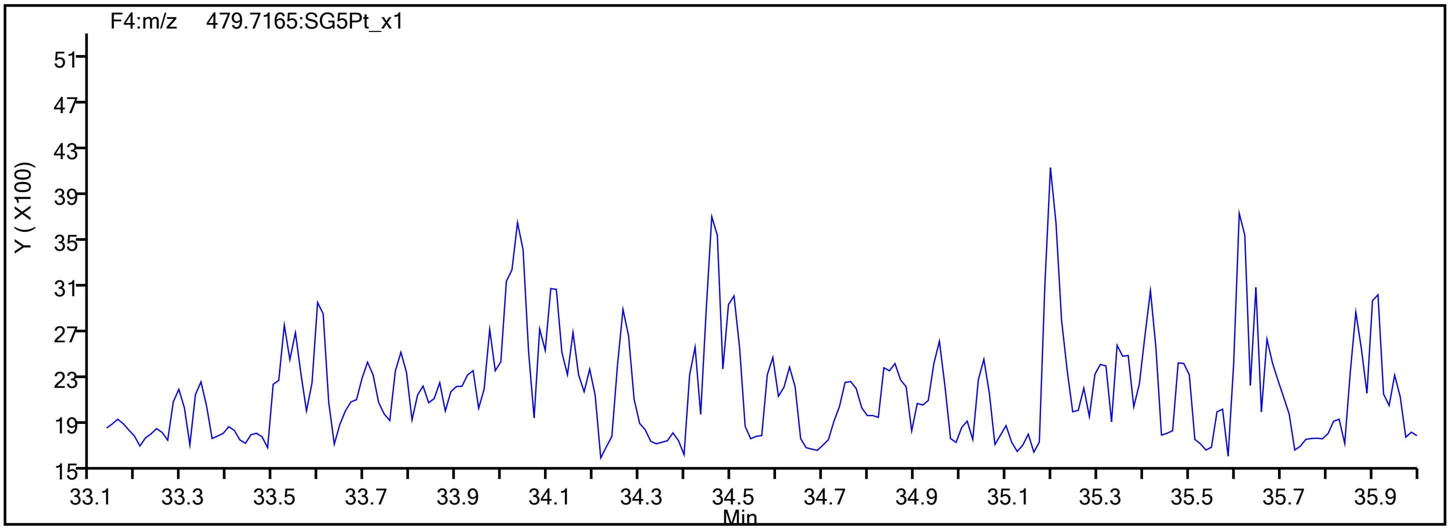

Report Date: 18-Sep-2020 10:36:16　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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HpCDD

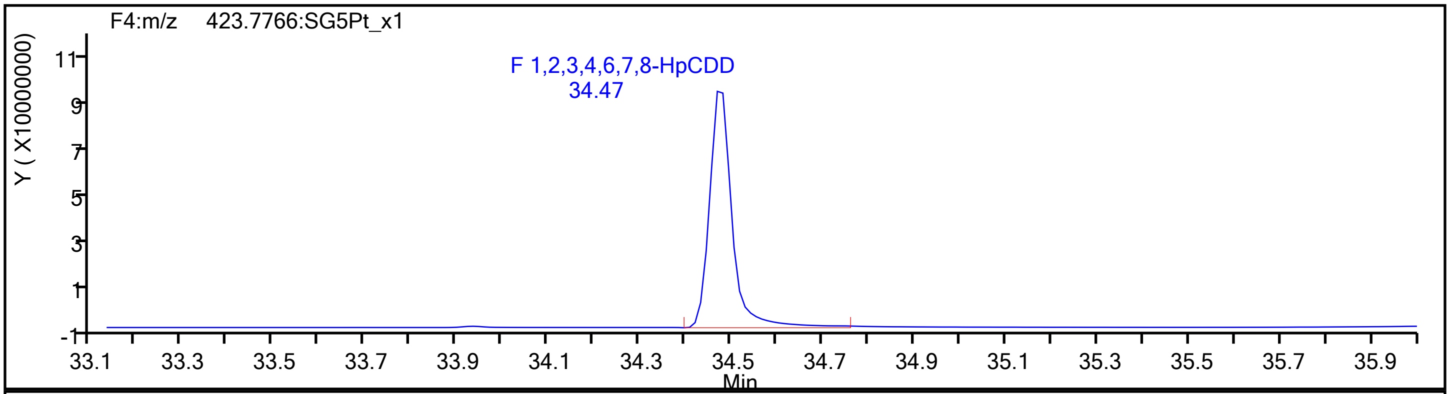

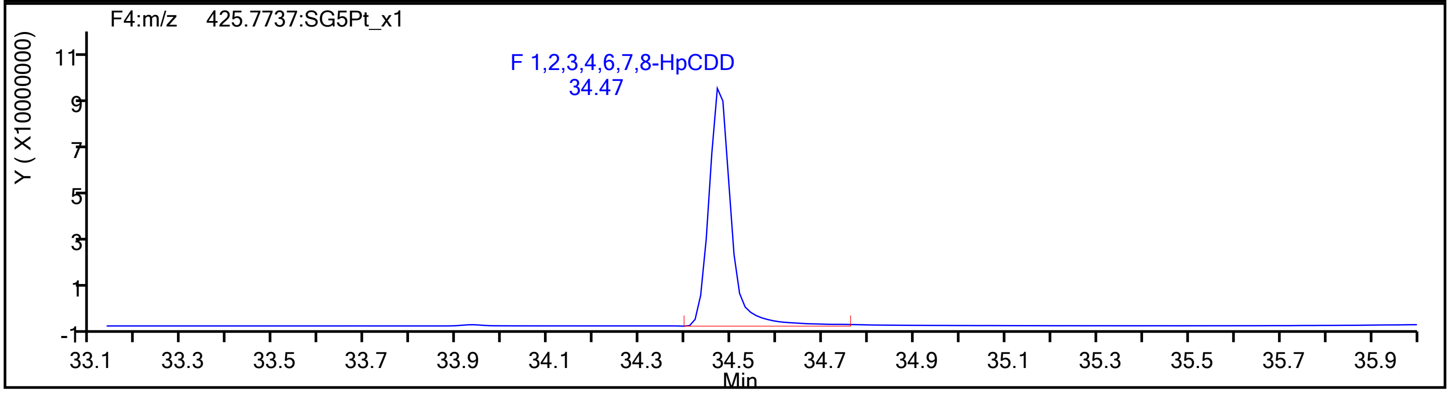

HpCDD Standards

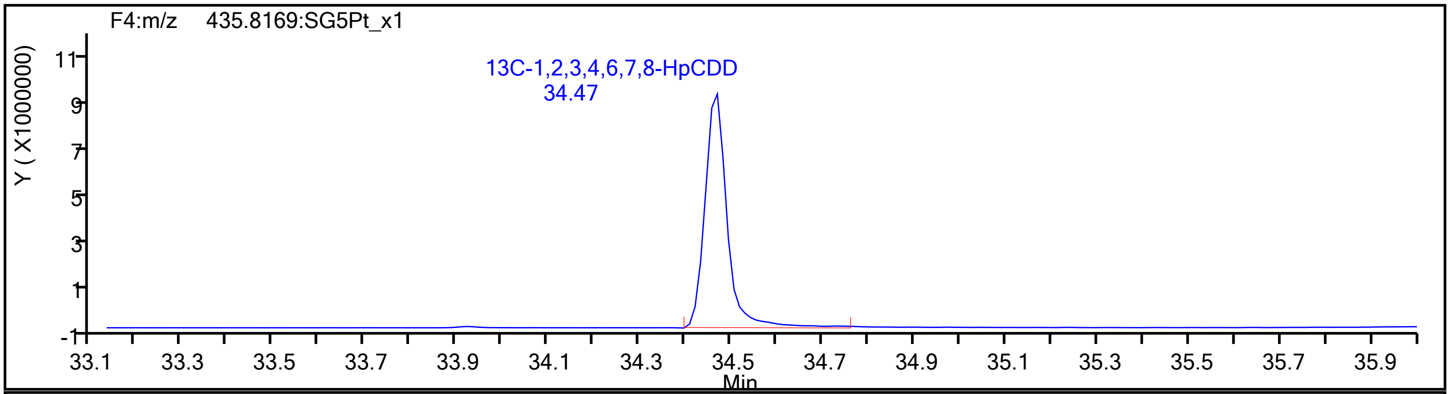

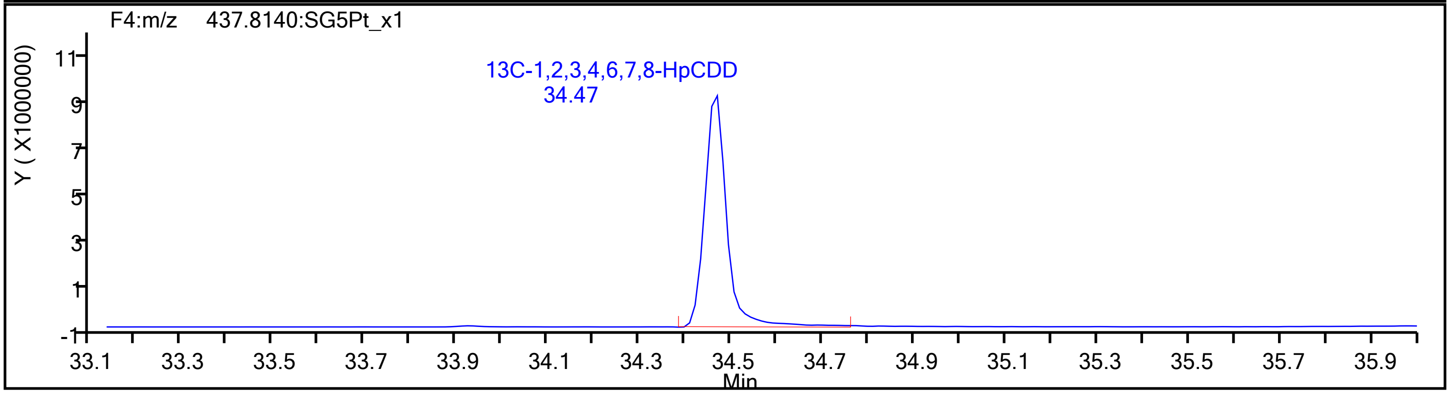

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

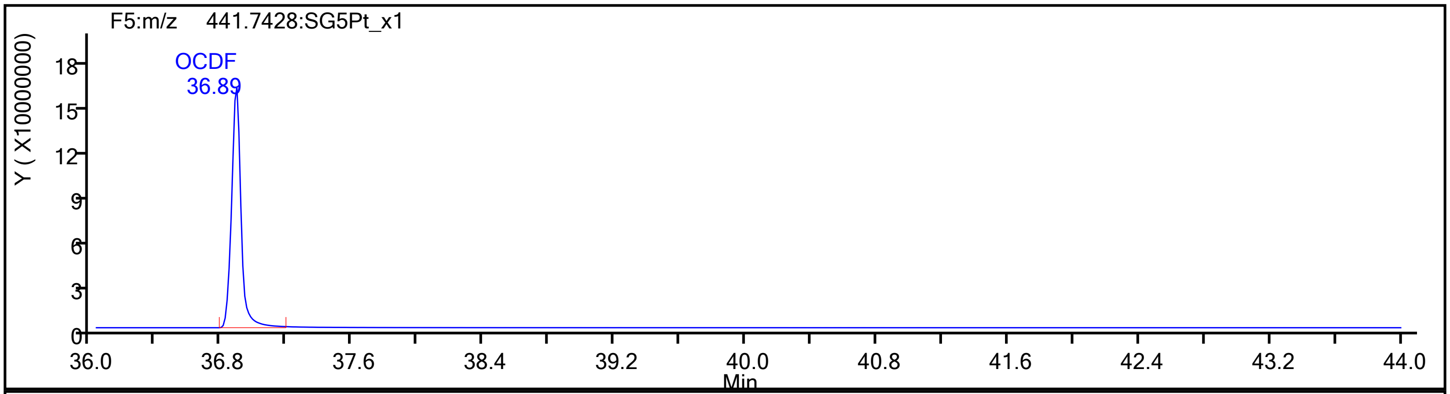

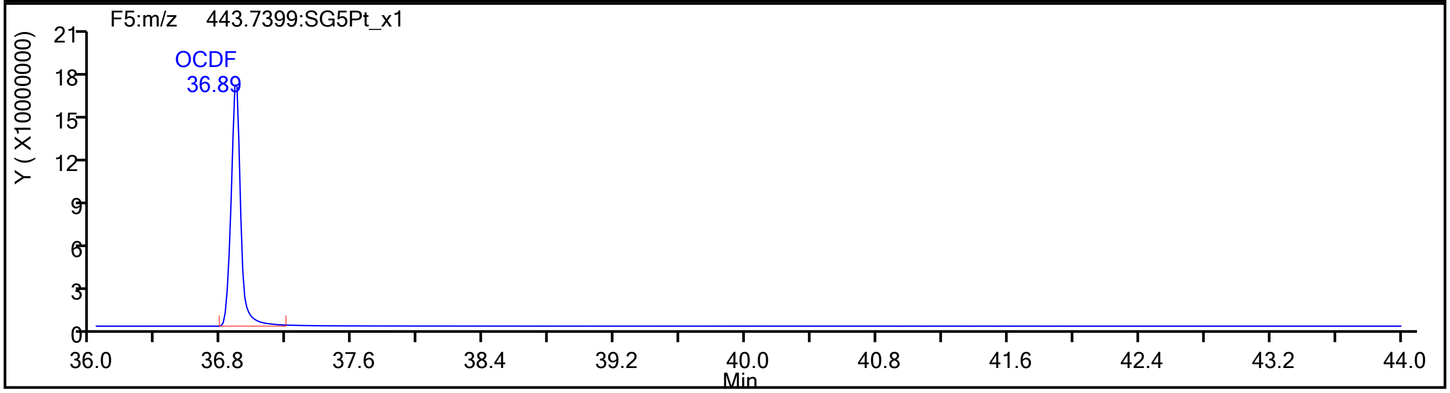

OCDF Standards

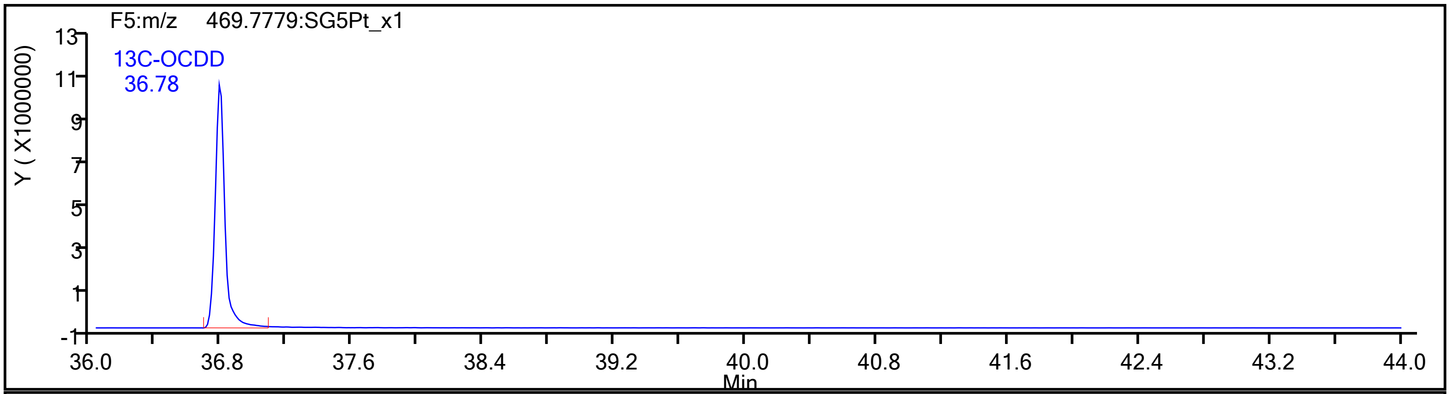

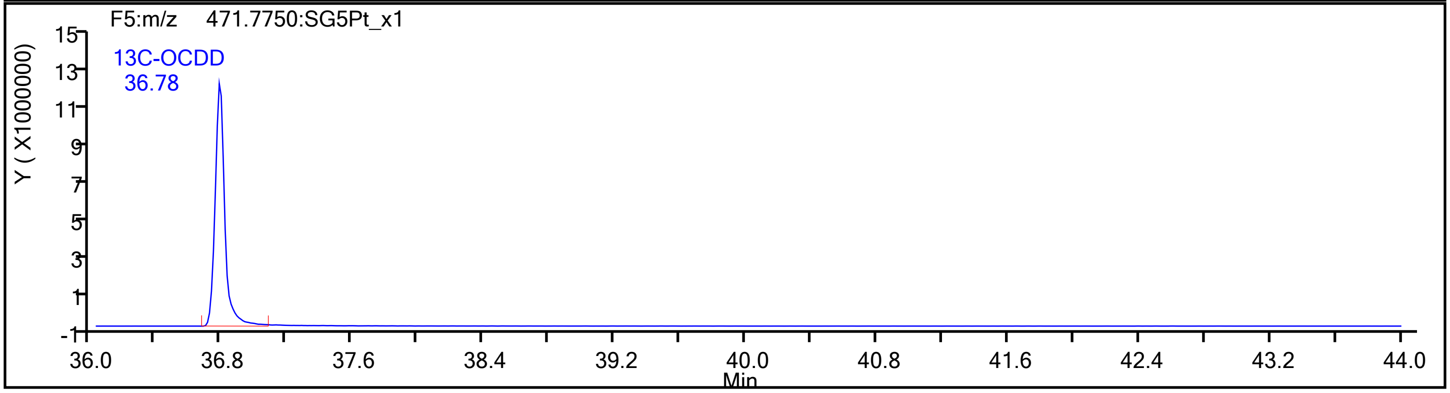

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

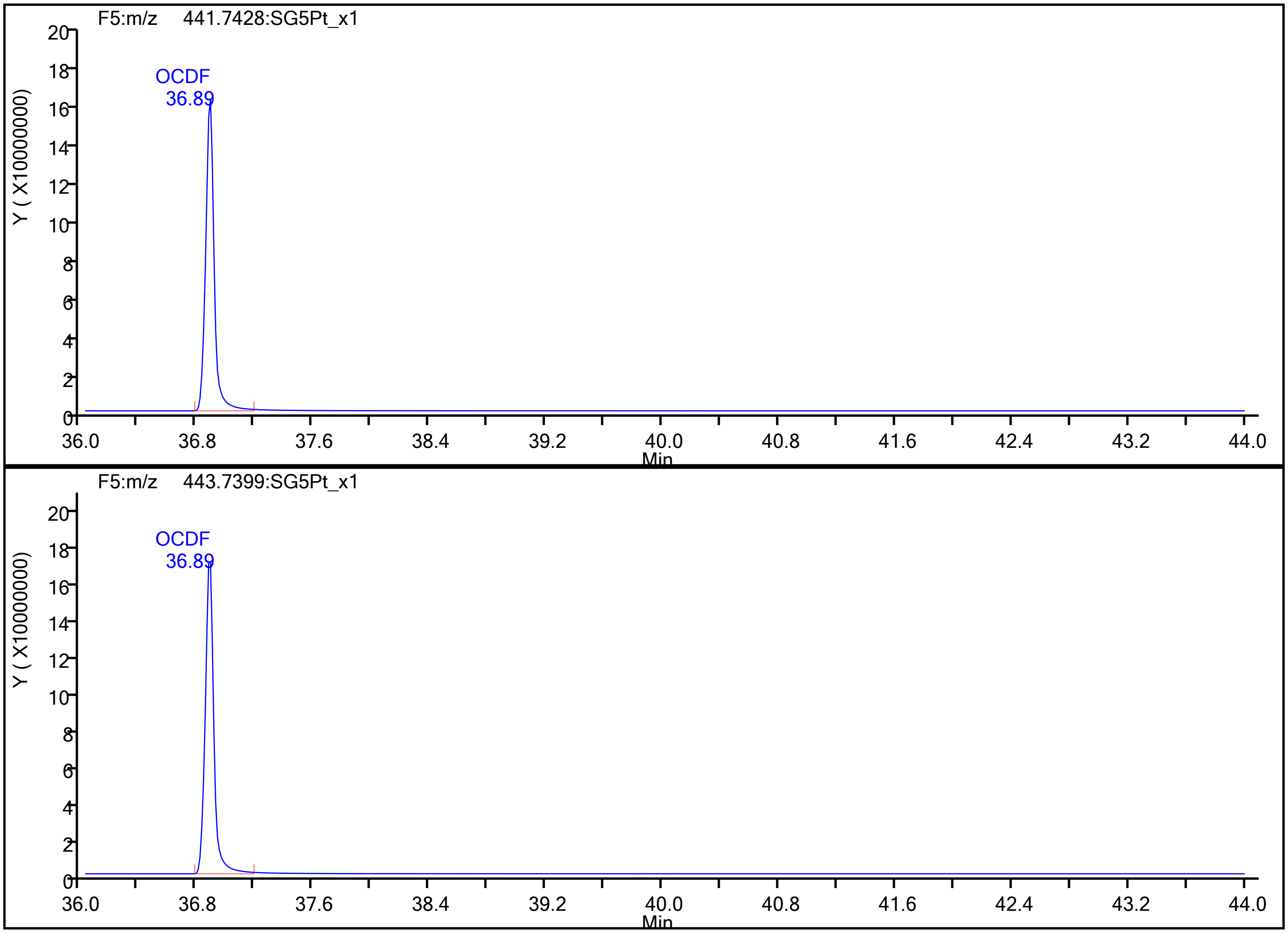

OCDF Interference Mass

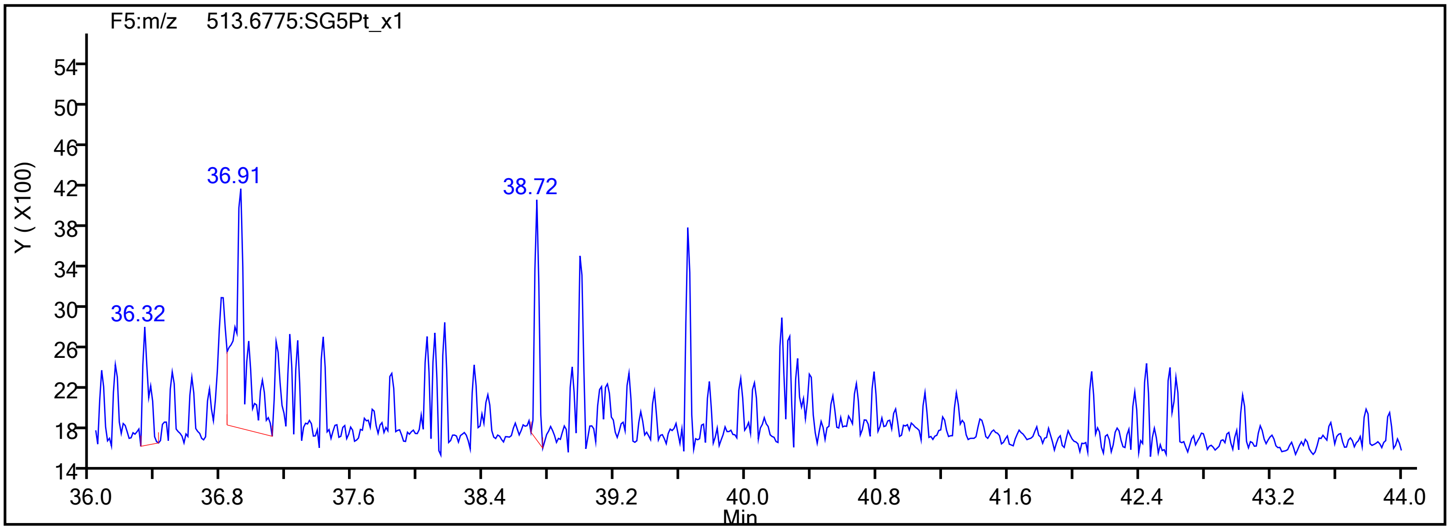

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

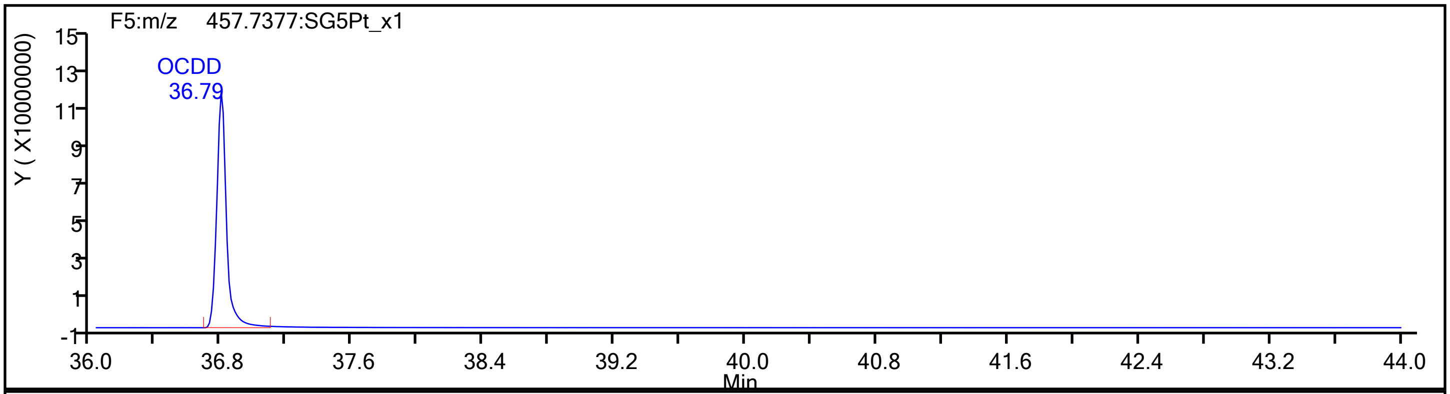

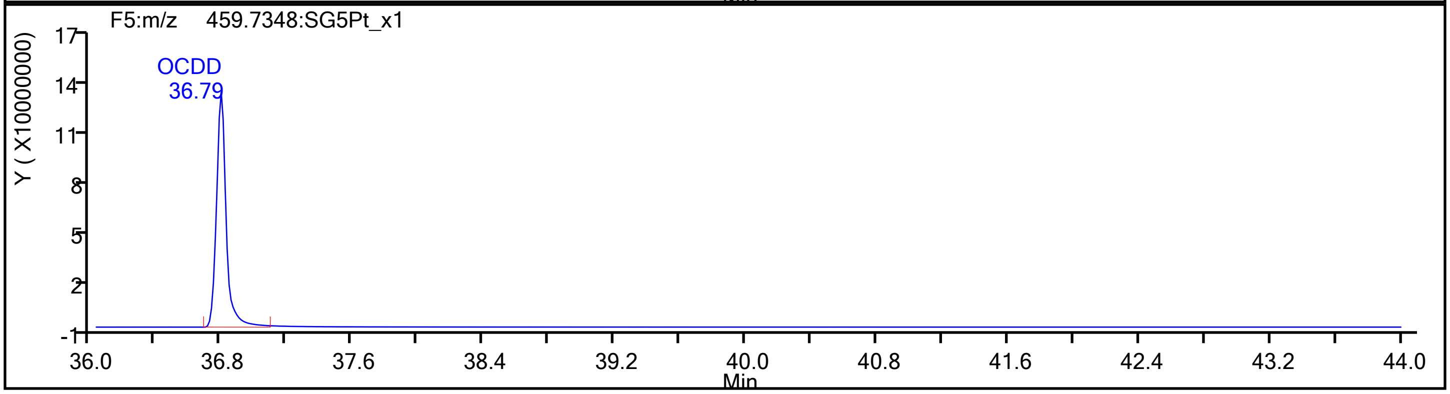

OCDD Standards

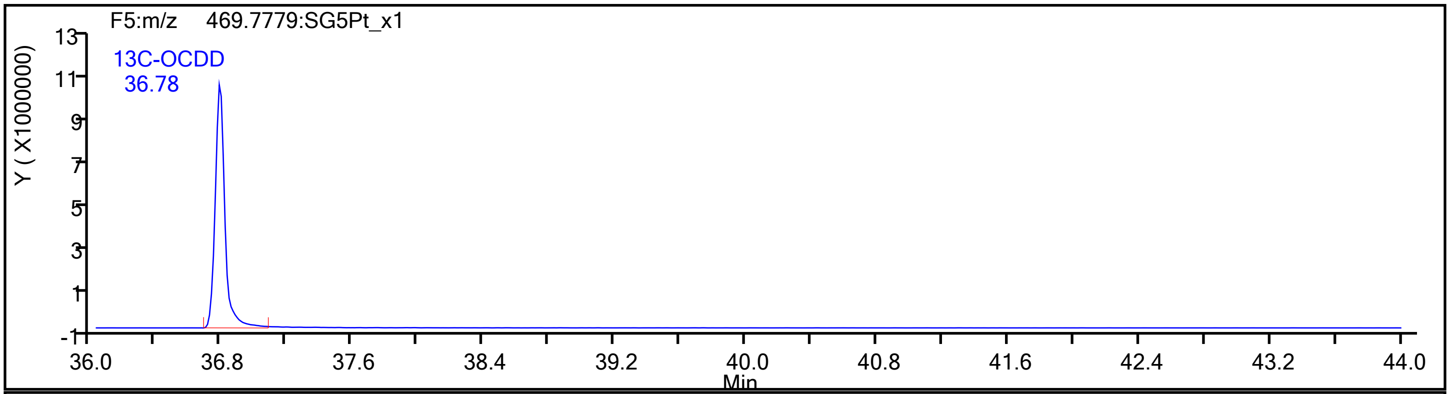

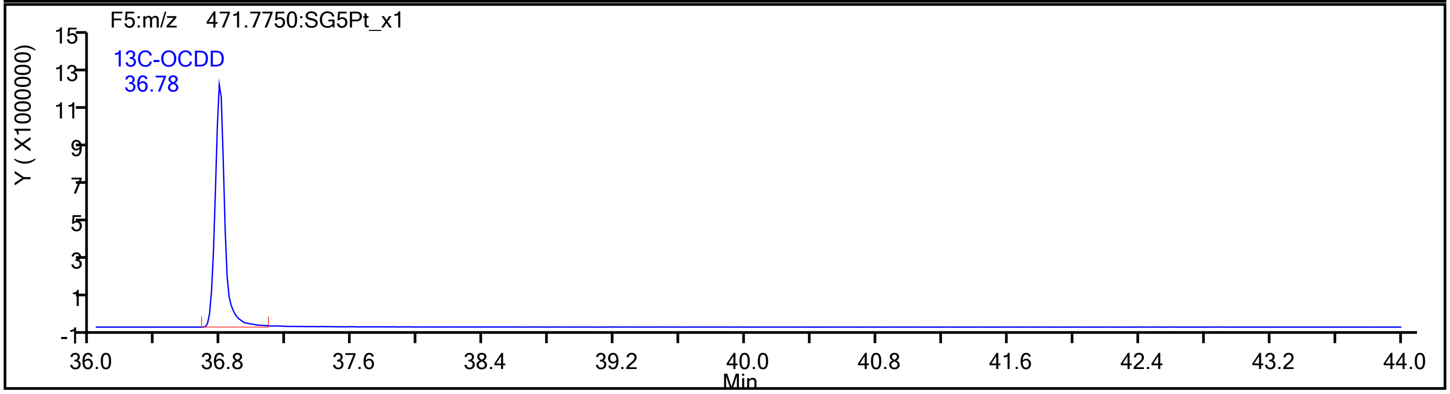

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Injection Date: 17-Sep-2020 19:09:42 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

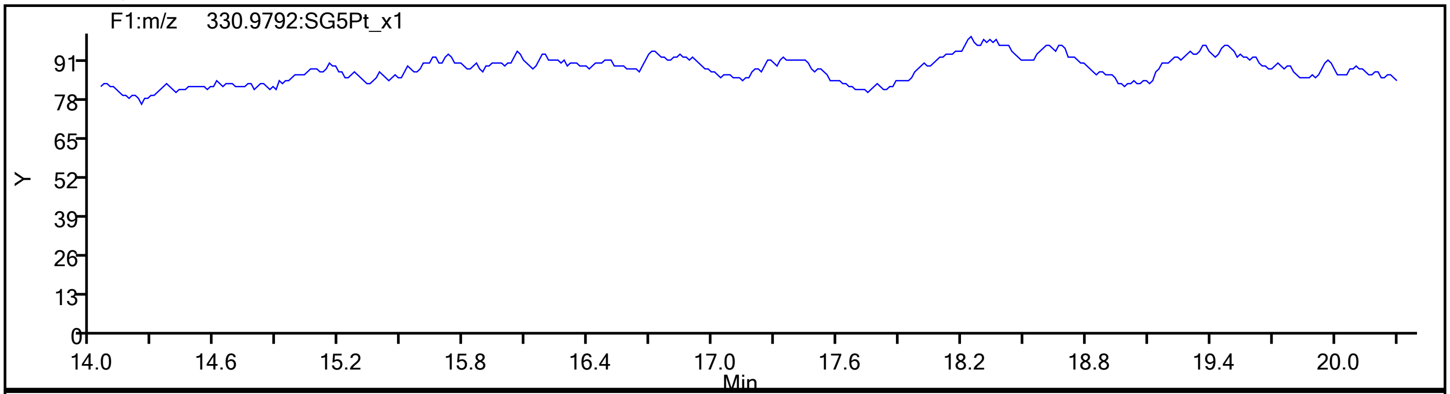

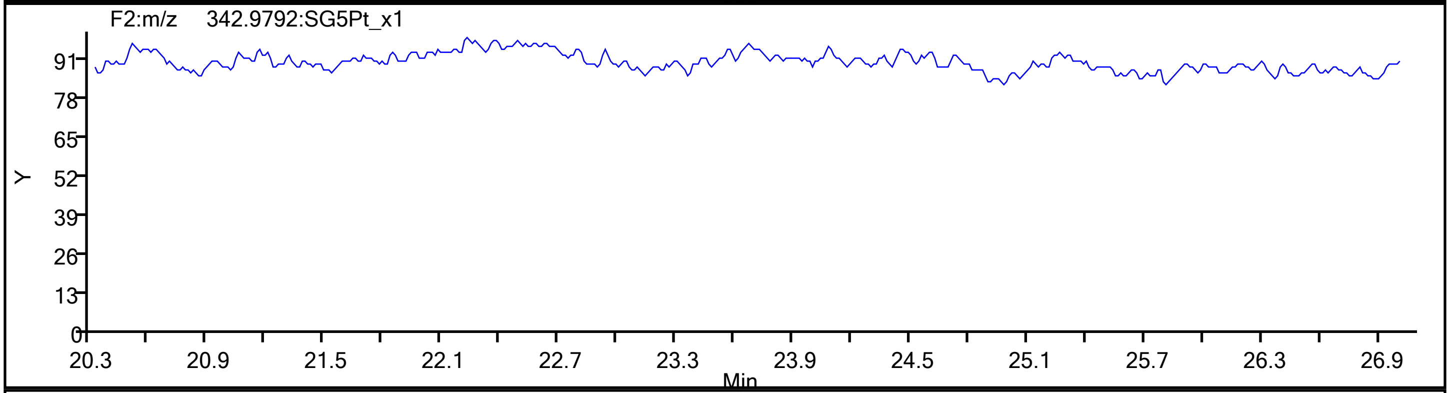

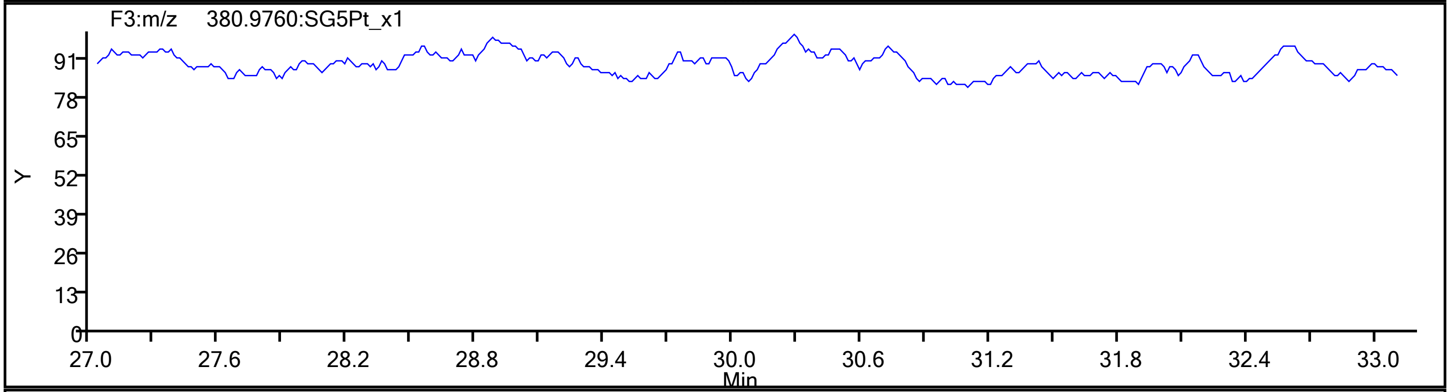

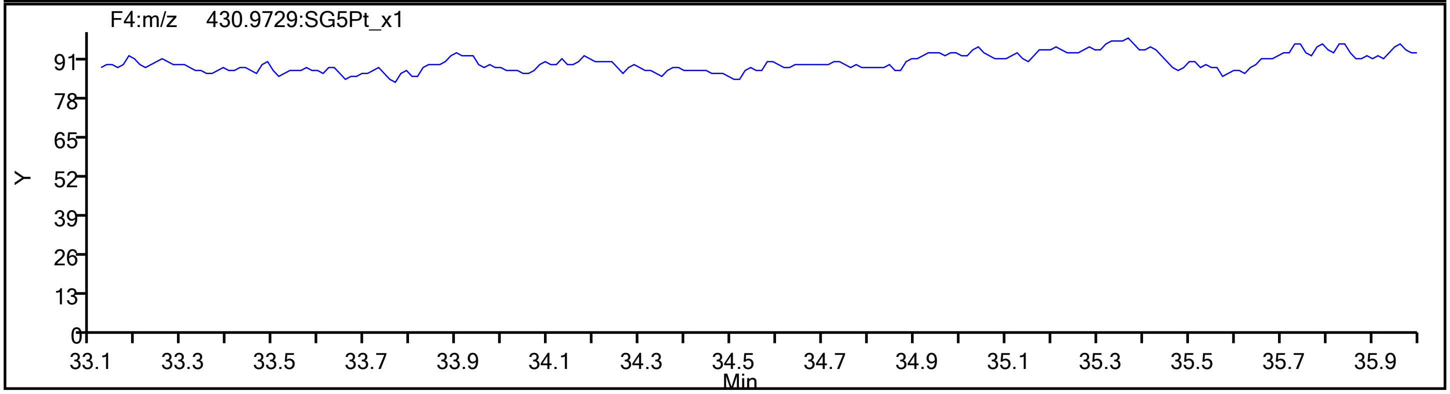

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

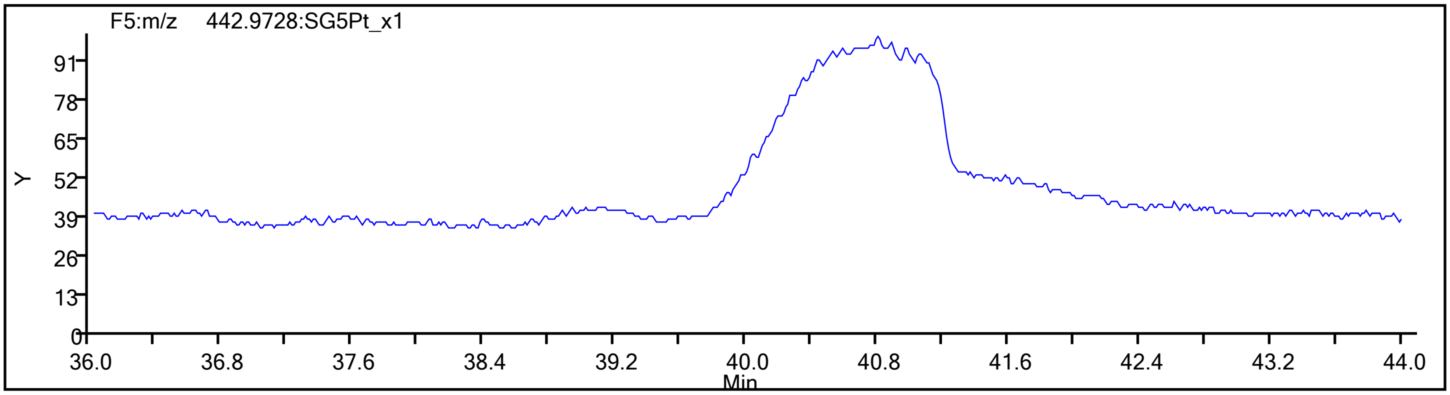

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTC	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTC	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTC	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
24JL2011D2	1	CPS 072420	CPS HRDXNCP_00040		Dioxin		1.00000	
24JL2011D2	2	SB 072420	SB Solvent Blank C-14				1.00000	
24JL2011D2	3	IC 072420	CS-2 HRDXNL2_00029		Dioxin	ICAL	1.00000	
24JL2011D2	4	IC 072420A	CS-3 HRDXNL3_00027		Dioxin		1.00000	
24JL2011D2	5	IC 072420B	CS-4 HRDXNL4_00094		Dioxin		1.00000	
24JL2011D2	6	IC 072420C	CS-5 HRDXNL5_00030		Dioxin		1.00000	
24JL2011D2	7	IC 072420D	CS-6 HRDXNL6_00026		Dioxin		1.00000	
24JL2011D2	8	SB 072420C	SB Solvent Blank C-14				1.00000	
24JL2011D2	9	ICV 072420	ICV HRDXNIC_00045		Dioxin		1.00000	
24JL2011D2	10						1.00000	
24JL2011D2	11						1.00000	
24JL2011D2	12						1.00000	
24JL2011D2	13						1.00000	
24JL2011D2	14						1.00000	
24JL2011D2	15						1.00000	
24JL2011D2	16						1.00000	
24JL2011D2	17						1.00000	
24JL2011D2	18		ALM 07-24-20				1.00000	
24JL2011D2	19						1.00000	

Logfile ✓ id
7/27/20 KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

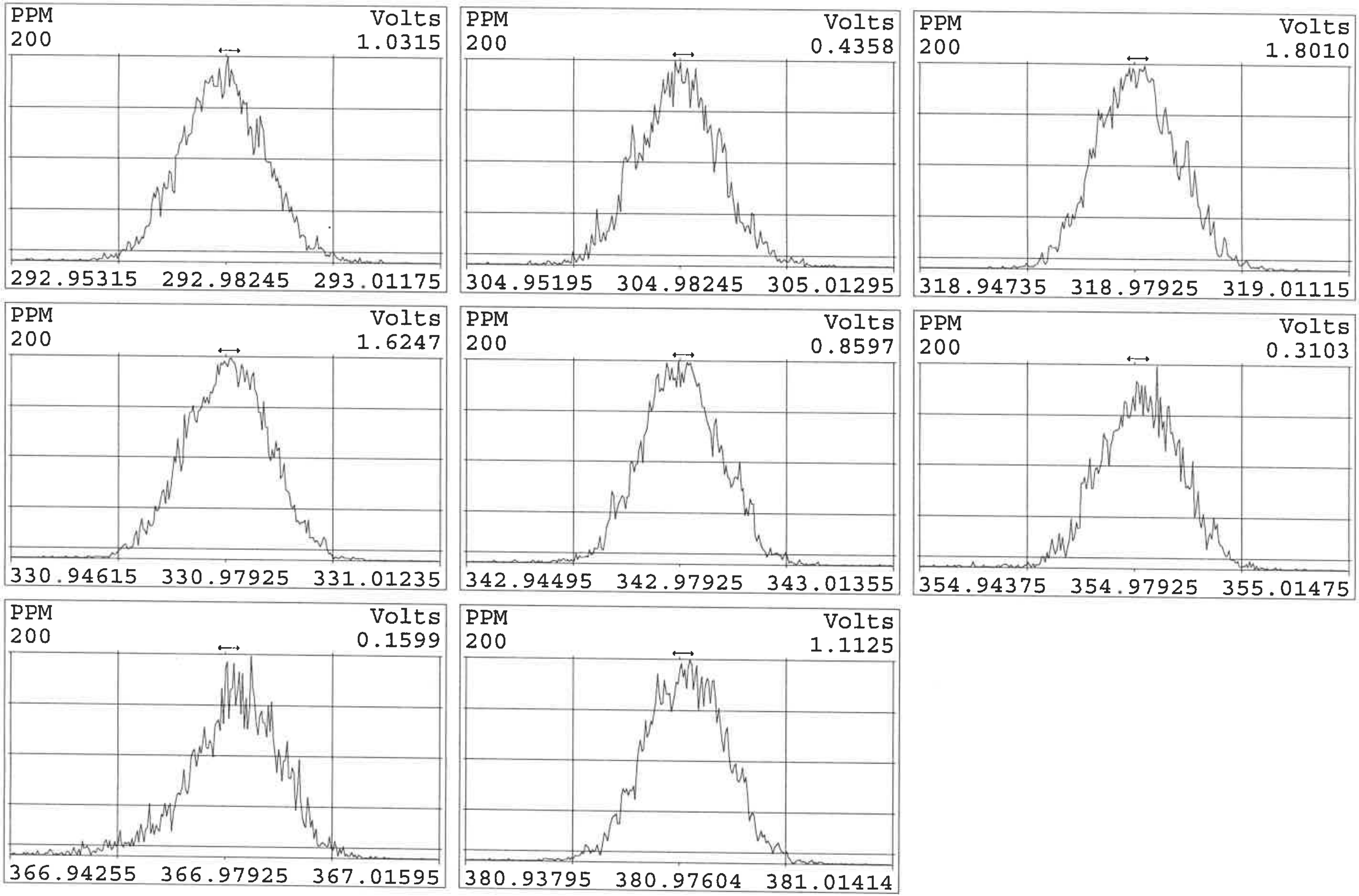

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

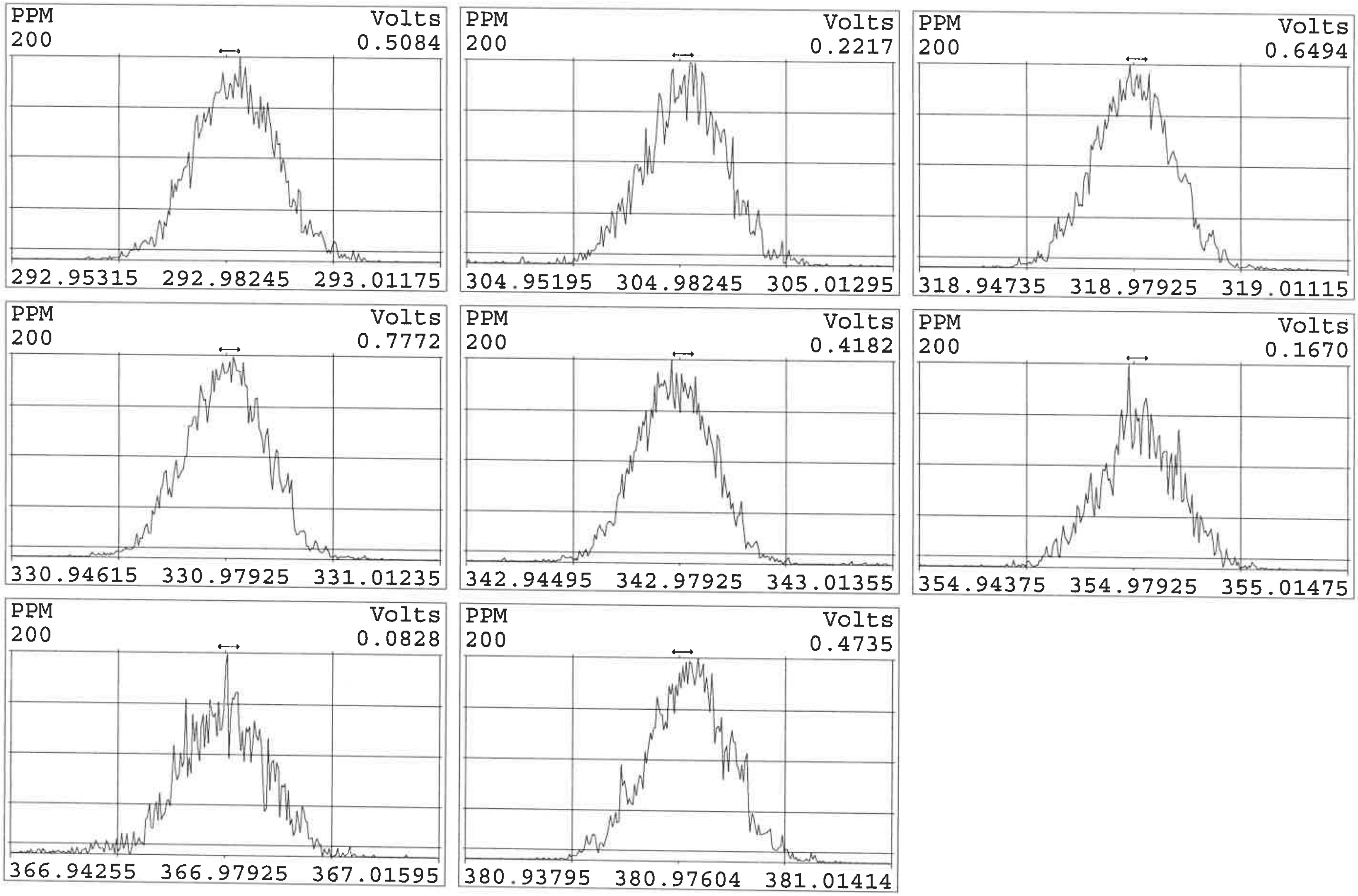

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d				
Lims ID:	IC 2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	24-Jul-2020 23:50:17	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:49	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:37		

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

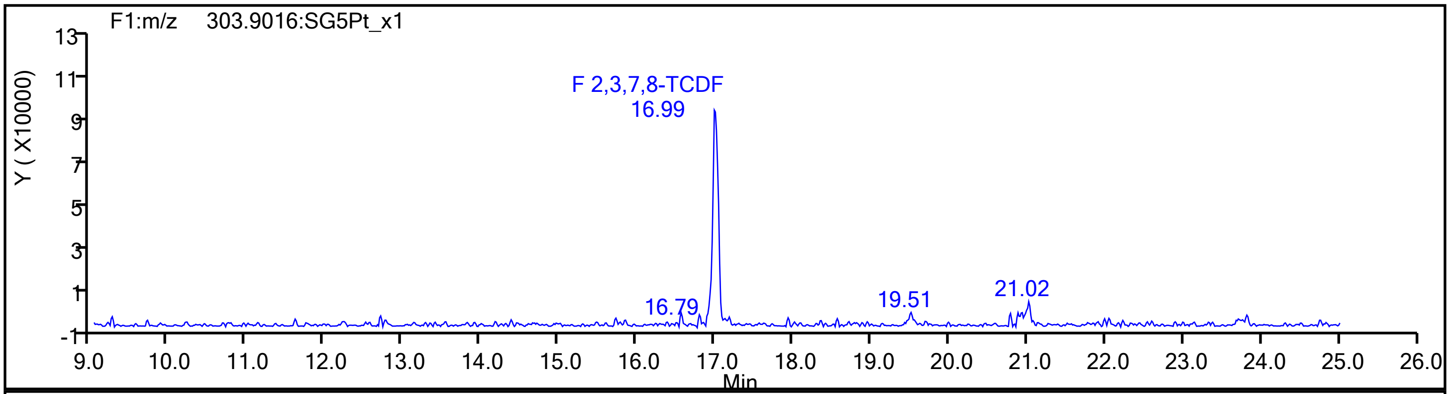

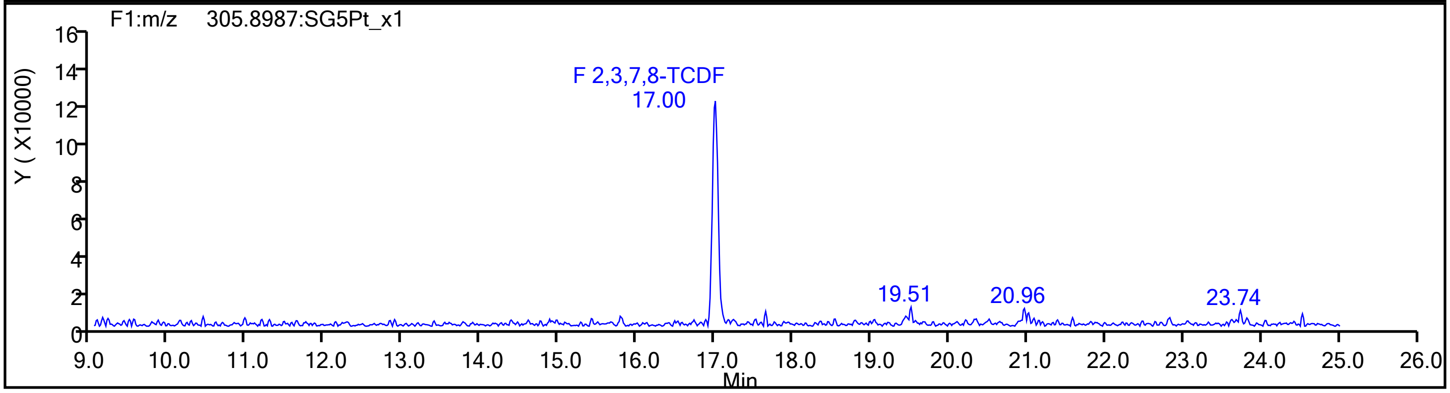

TCDF Standards

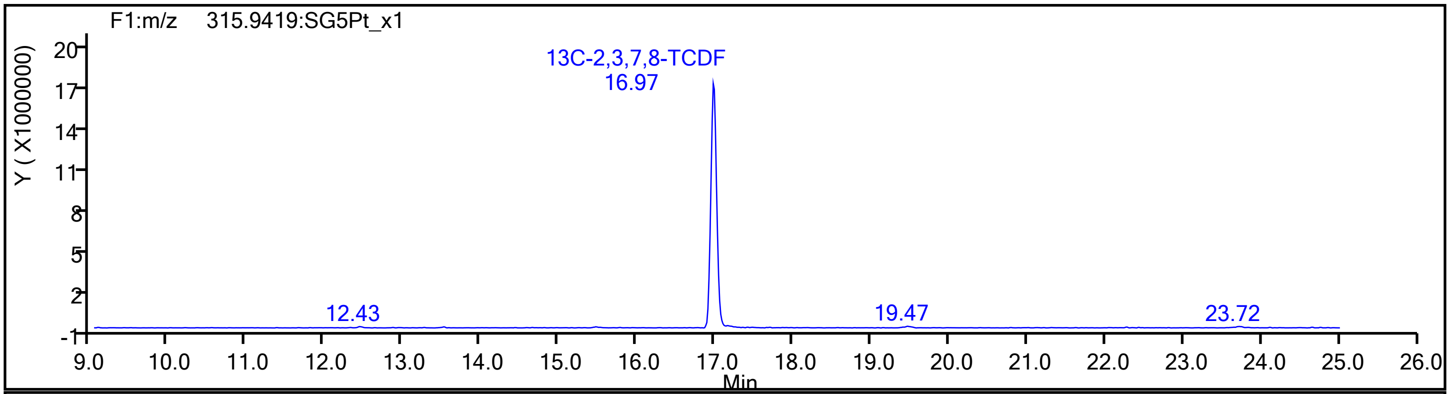

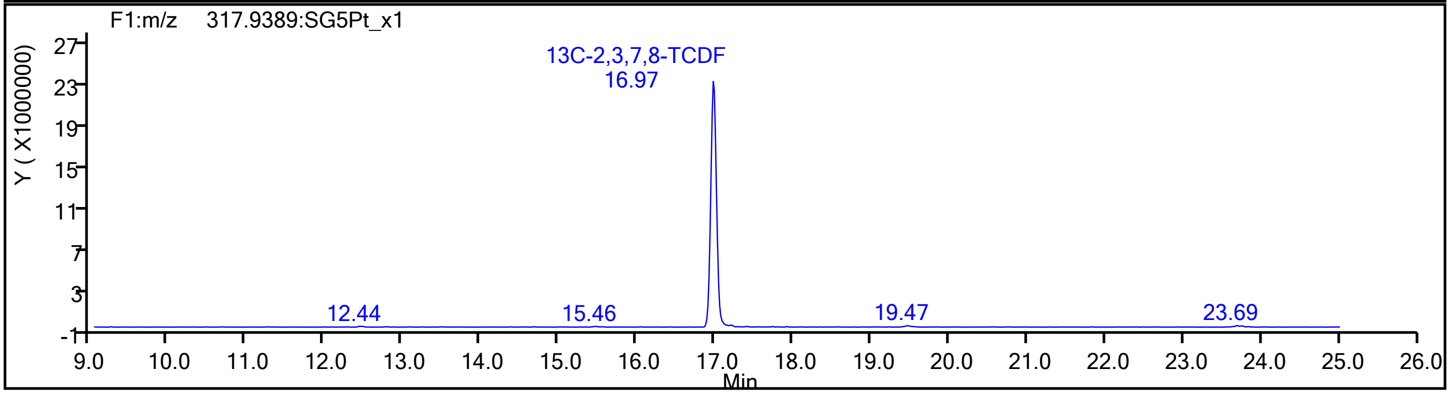

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

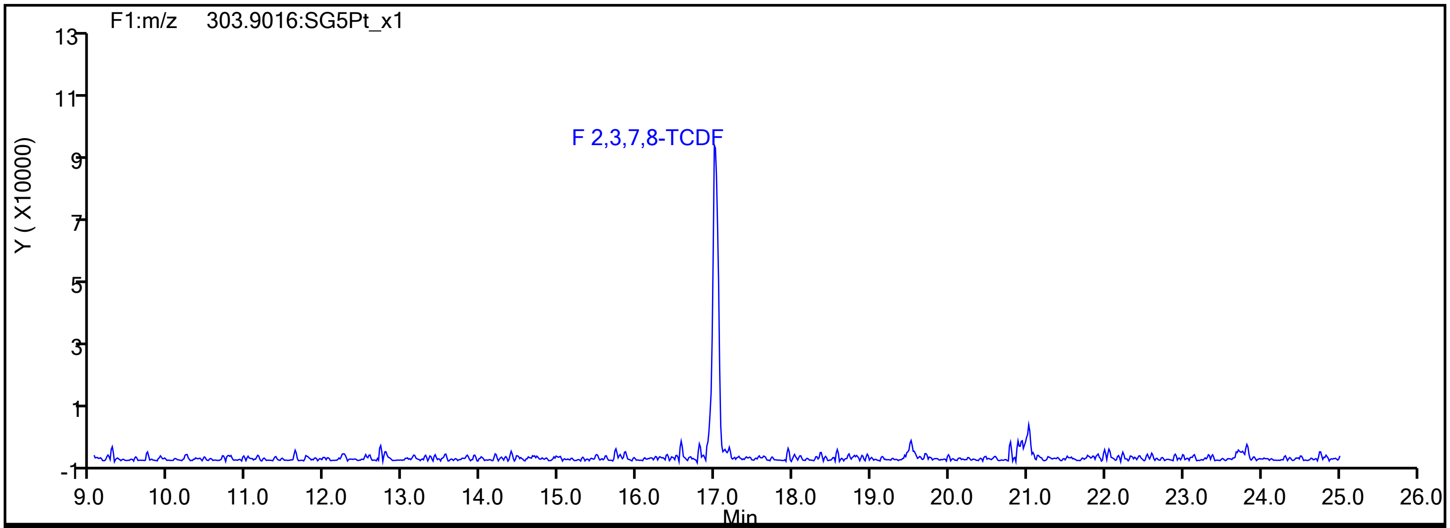

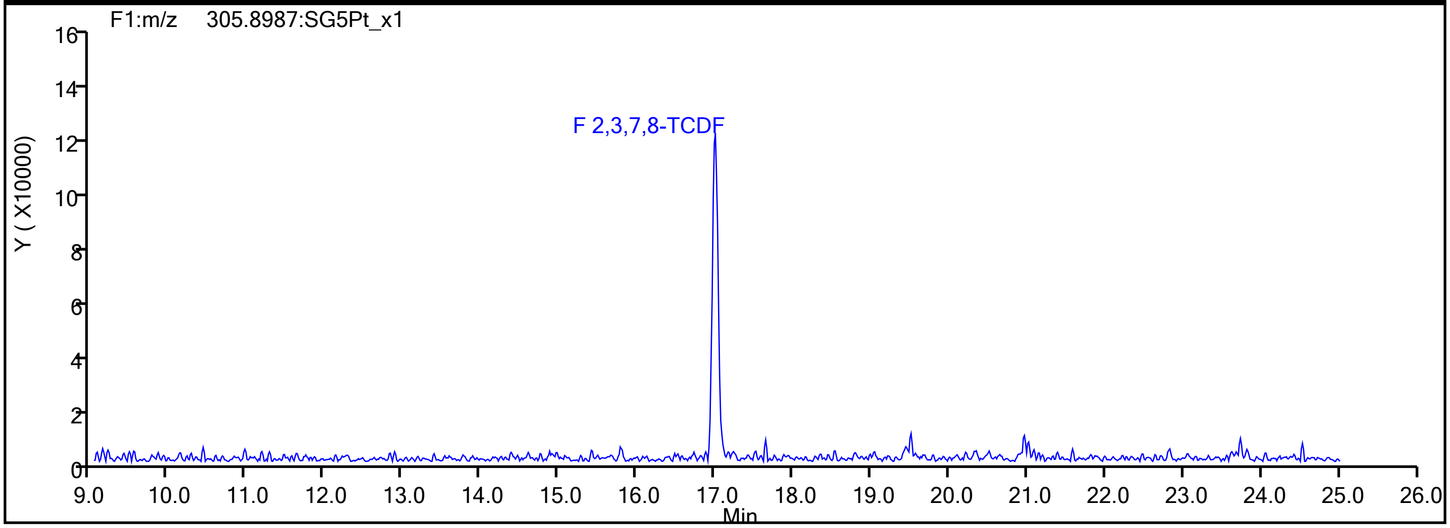

TCDF Interference Mass

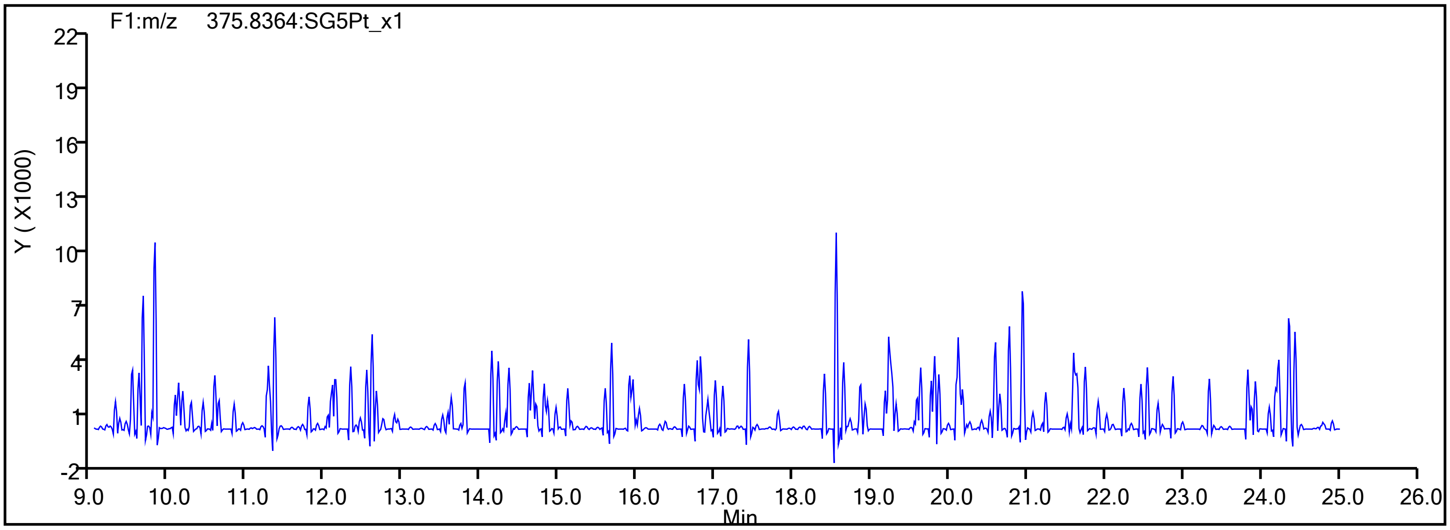

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

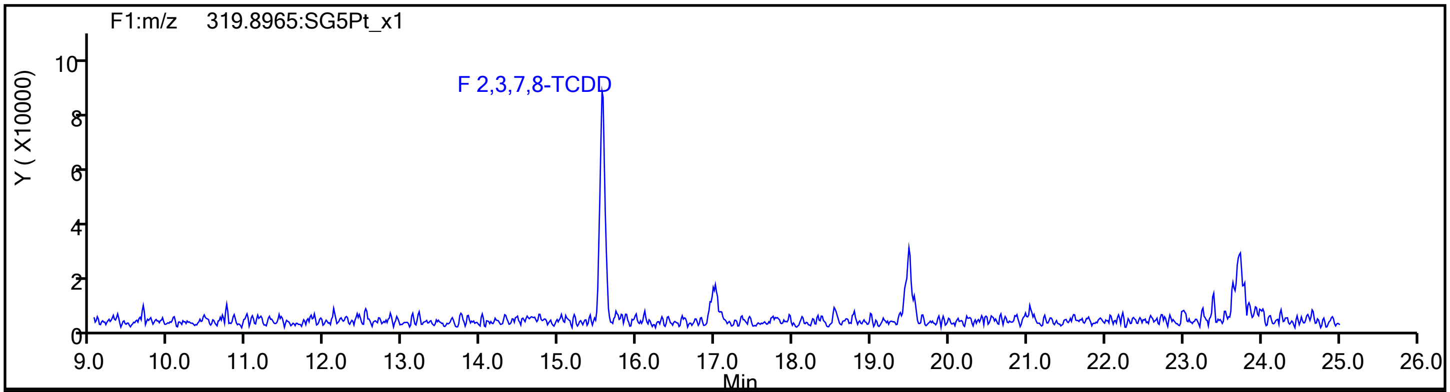

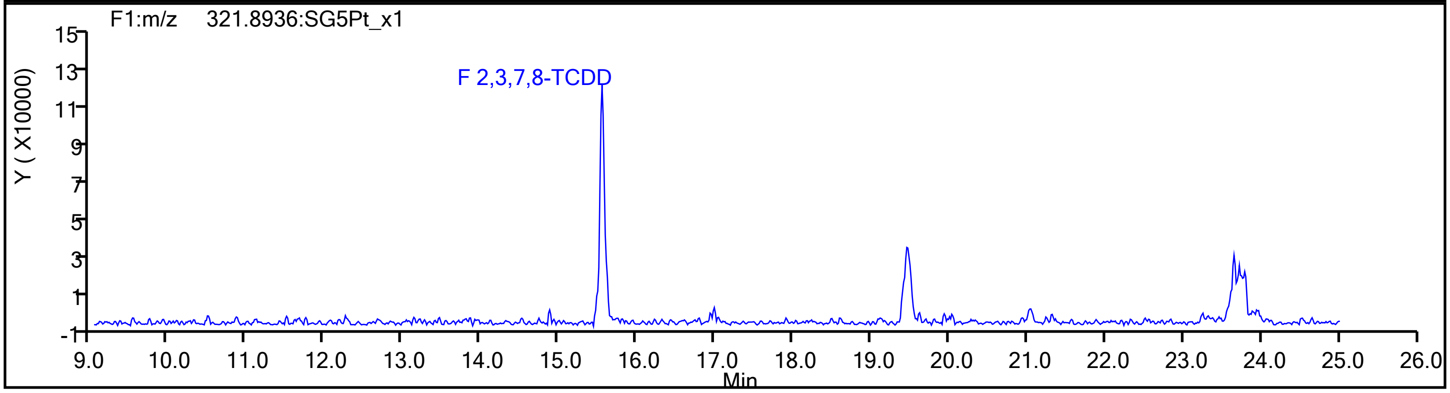

TCDD Standards

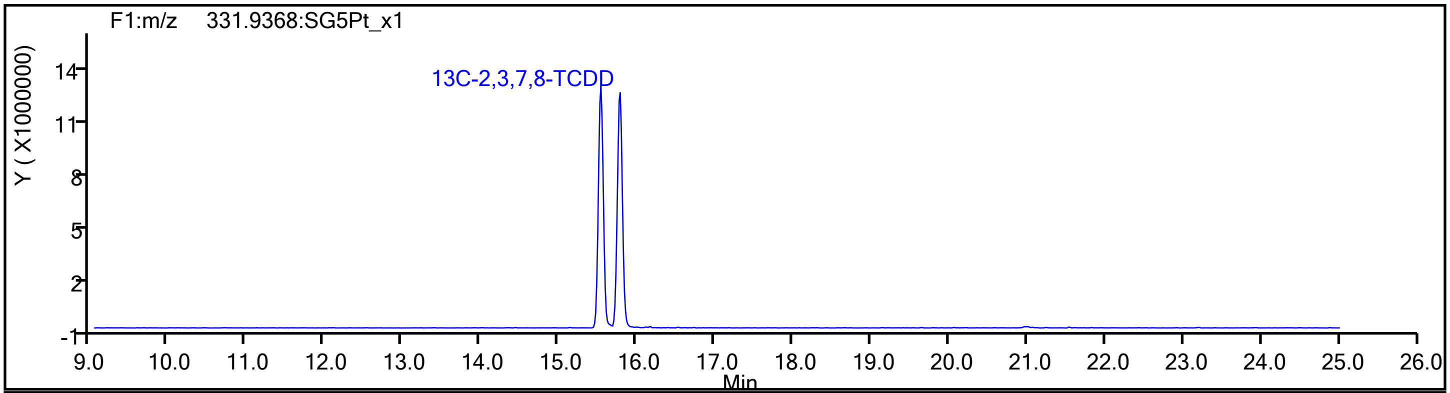

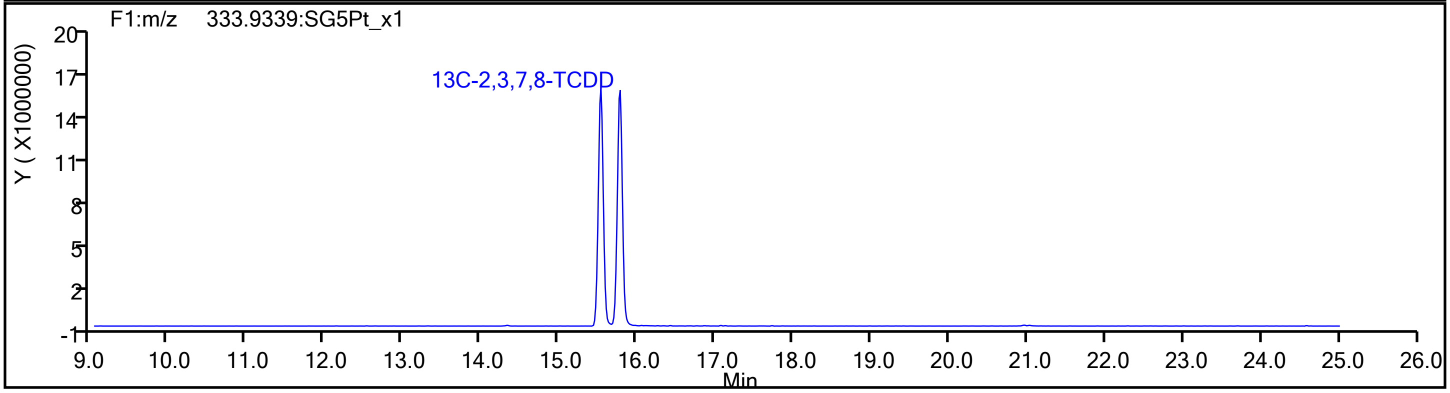

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

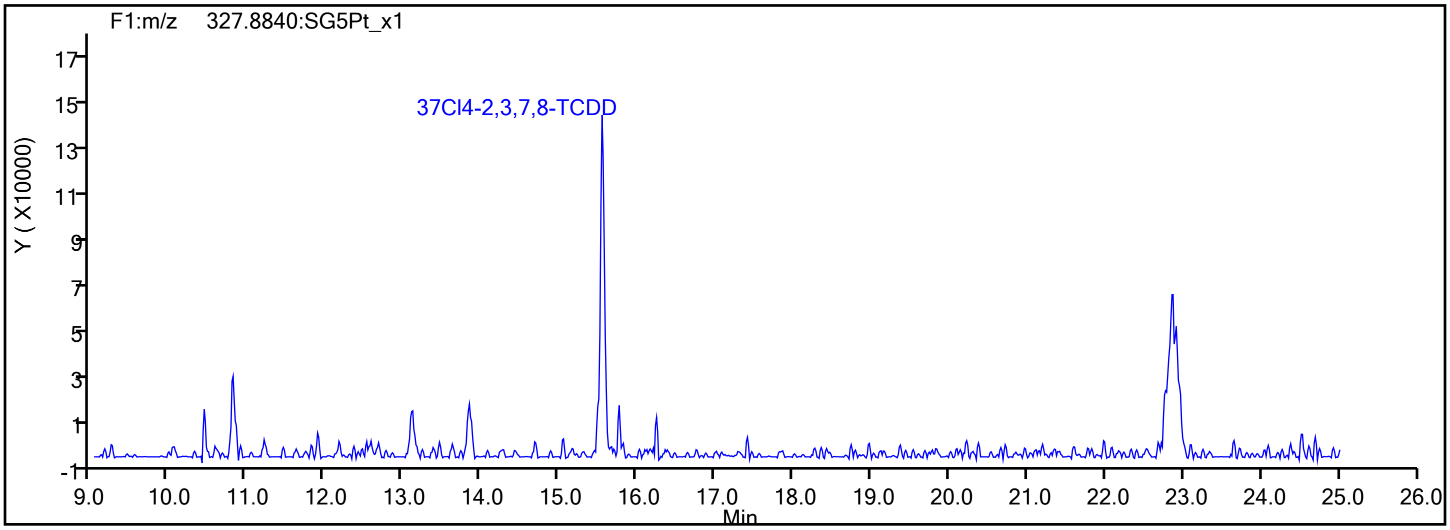

37Cl4-TCDD Standards

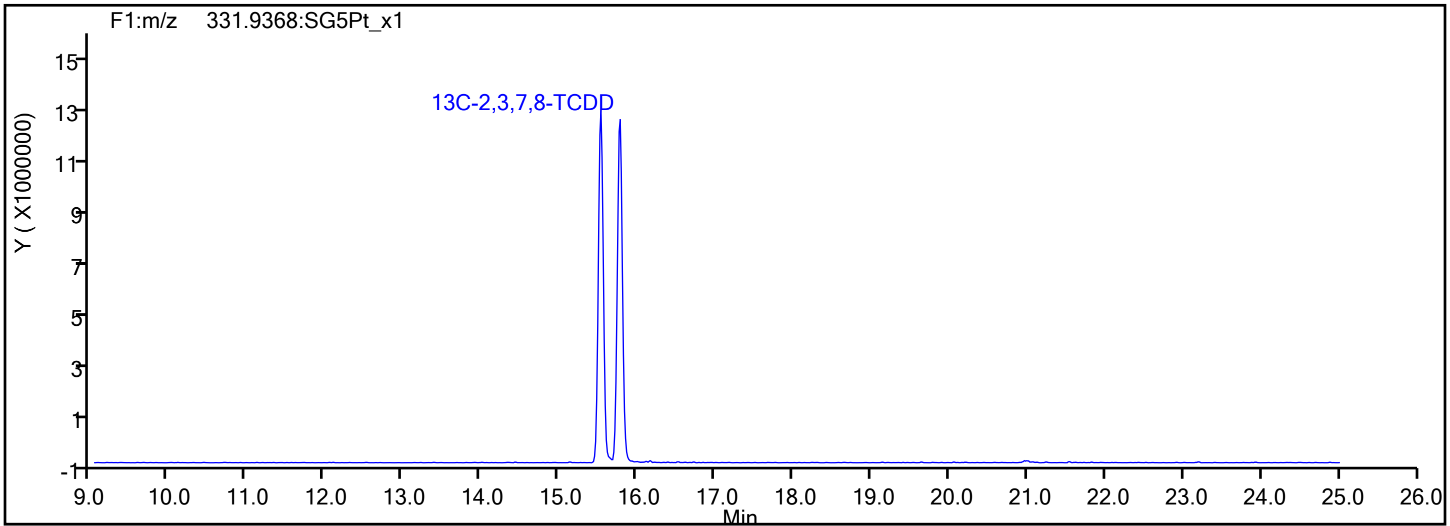

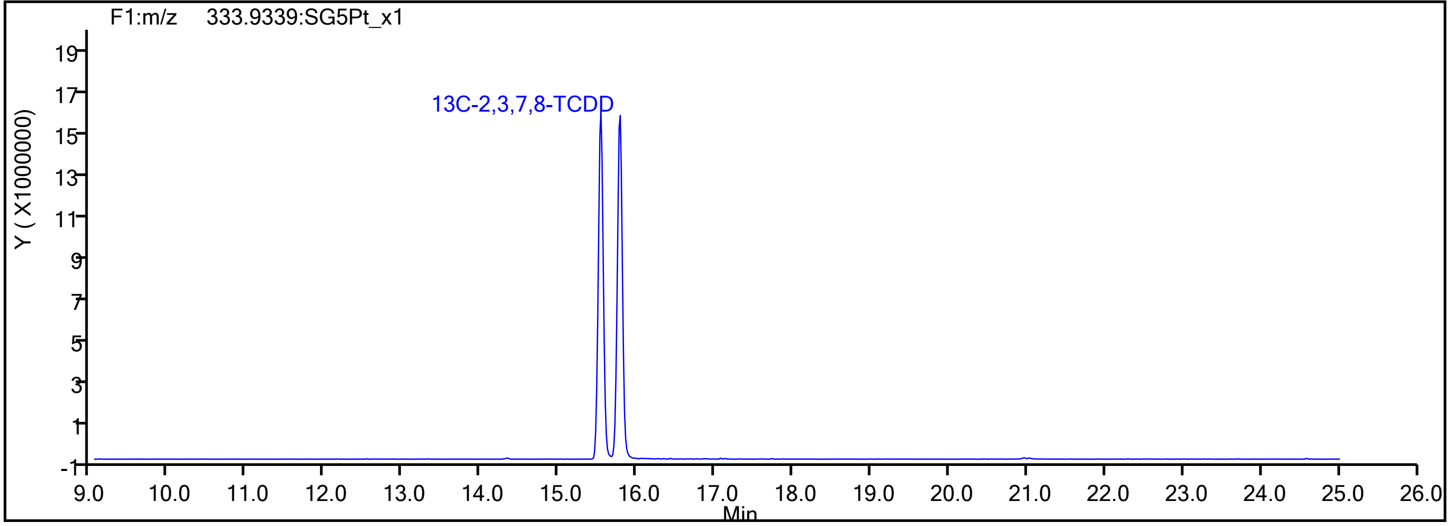

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

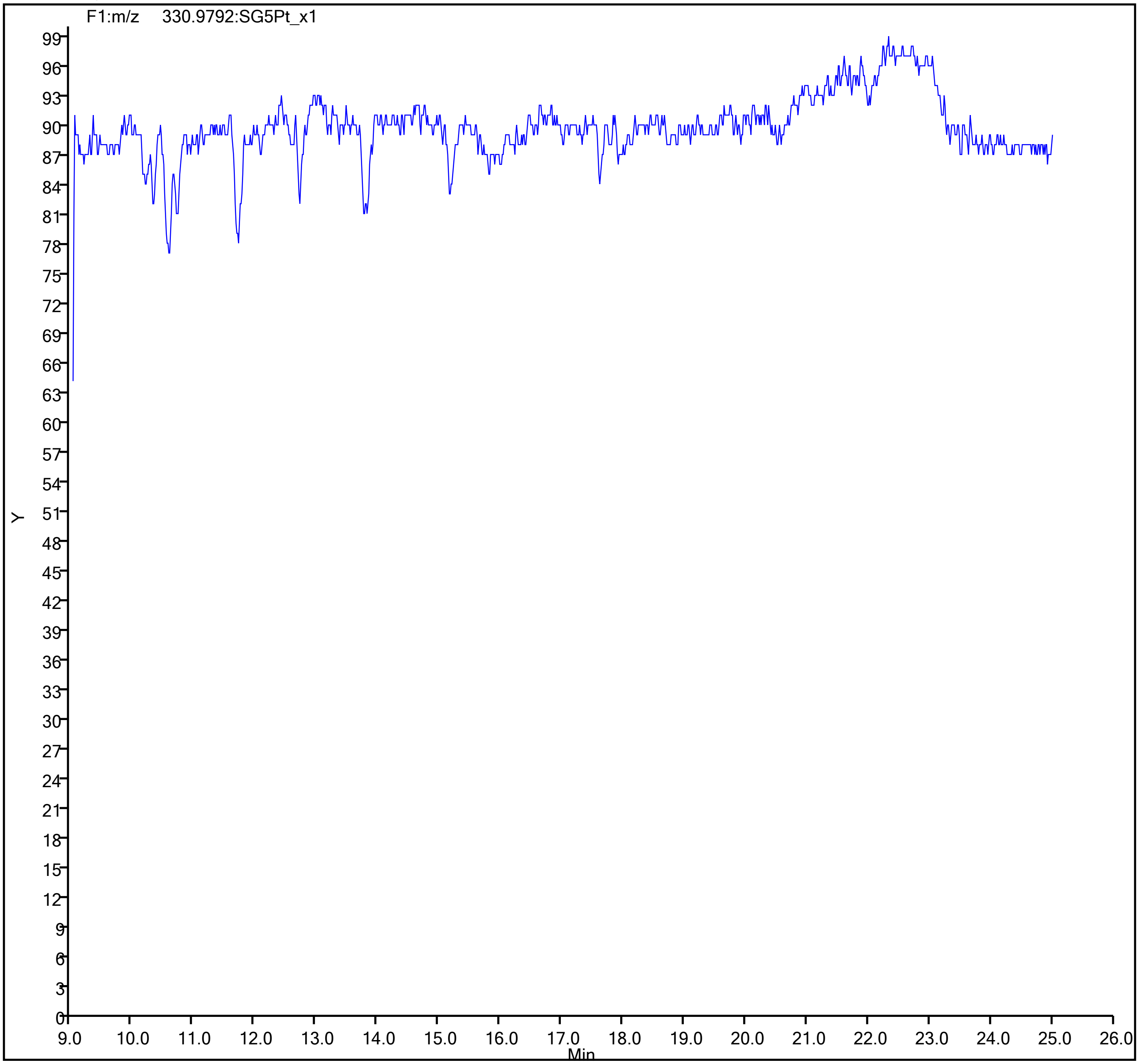

Report Date: 27-Jul-2020 12:42:55　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Lims ID: IC 3
Client ID:
Sample Type: IC　　Calib Level: 3
Inject. Date: 25-Jul-2020 00:28:40　　ALS Bottle#: 0　　Worklist Smp#: 4
Injection Vol: 2.0 ul　　Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID:　　Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:53　　Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution　　Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)　　Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa　　Date: 27-Jul-2020 12:33:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027　　Amount Added: 2.00　　Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 25-Jul-2020 00:28:40 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:53 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

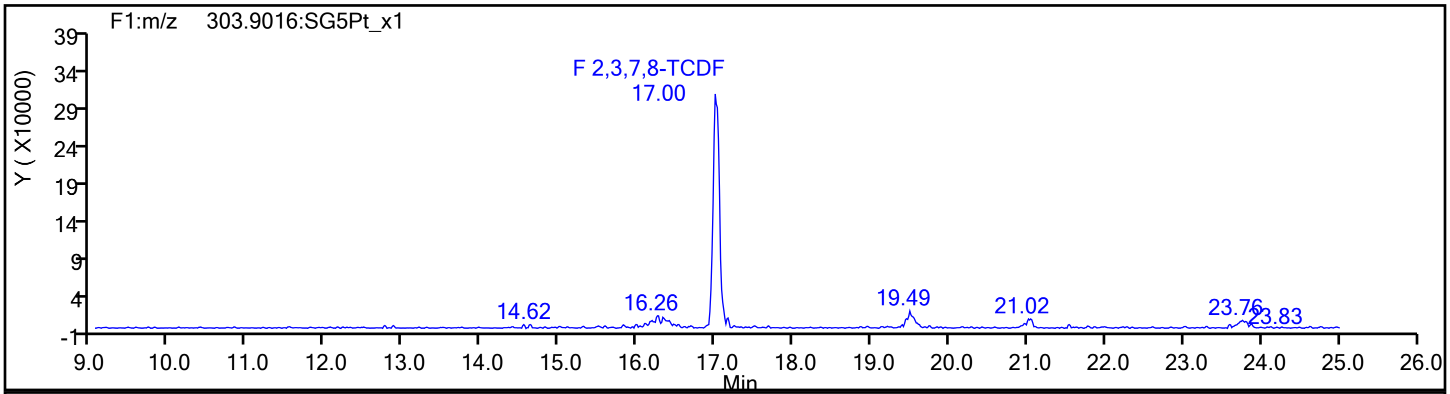

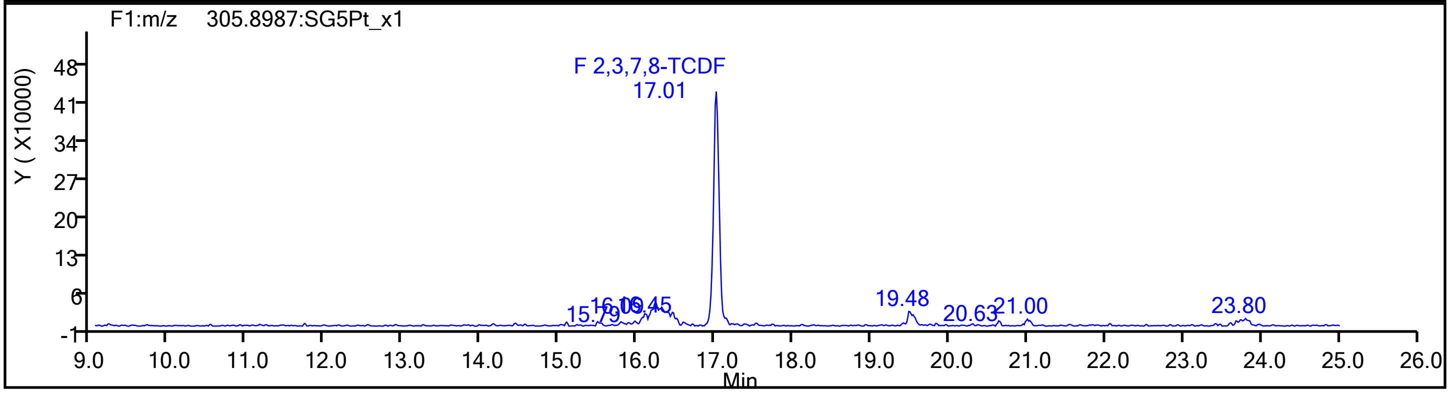

TCDF Standards

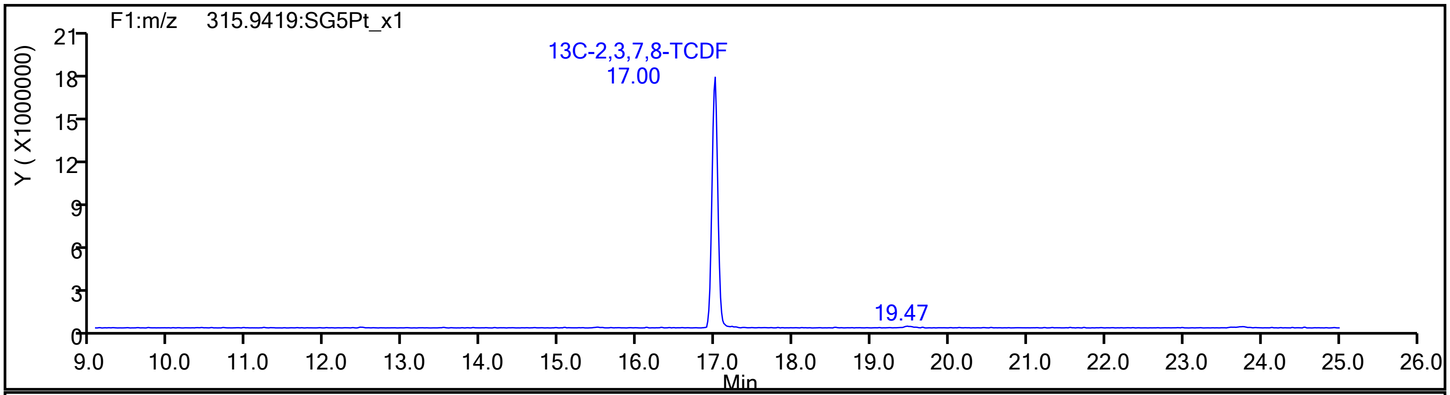

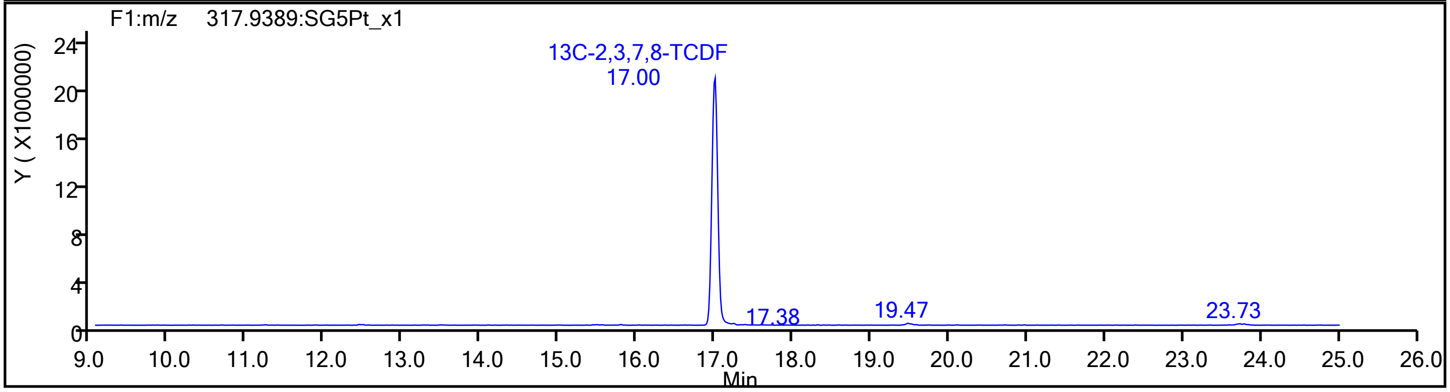

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

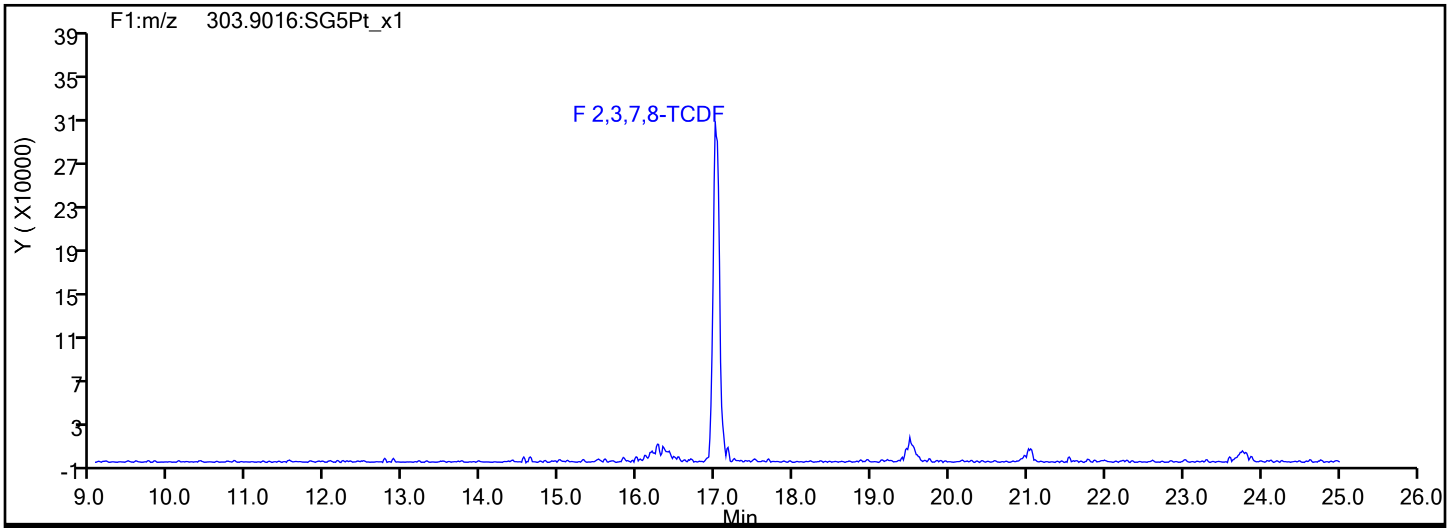

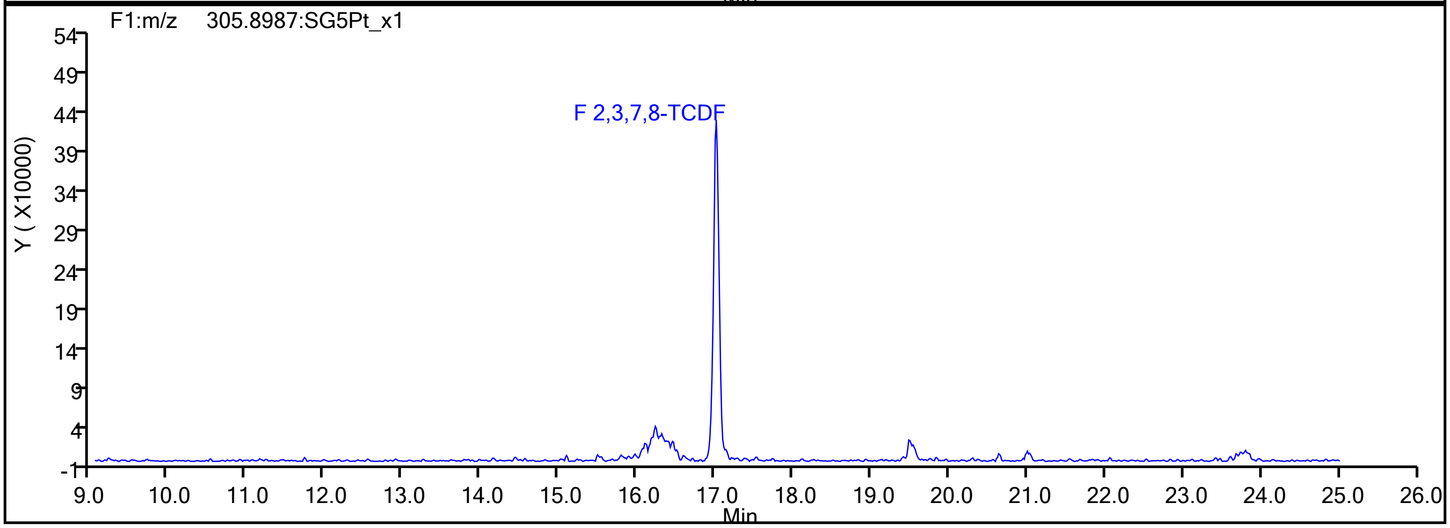

TCDF Interference Mass

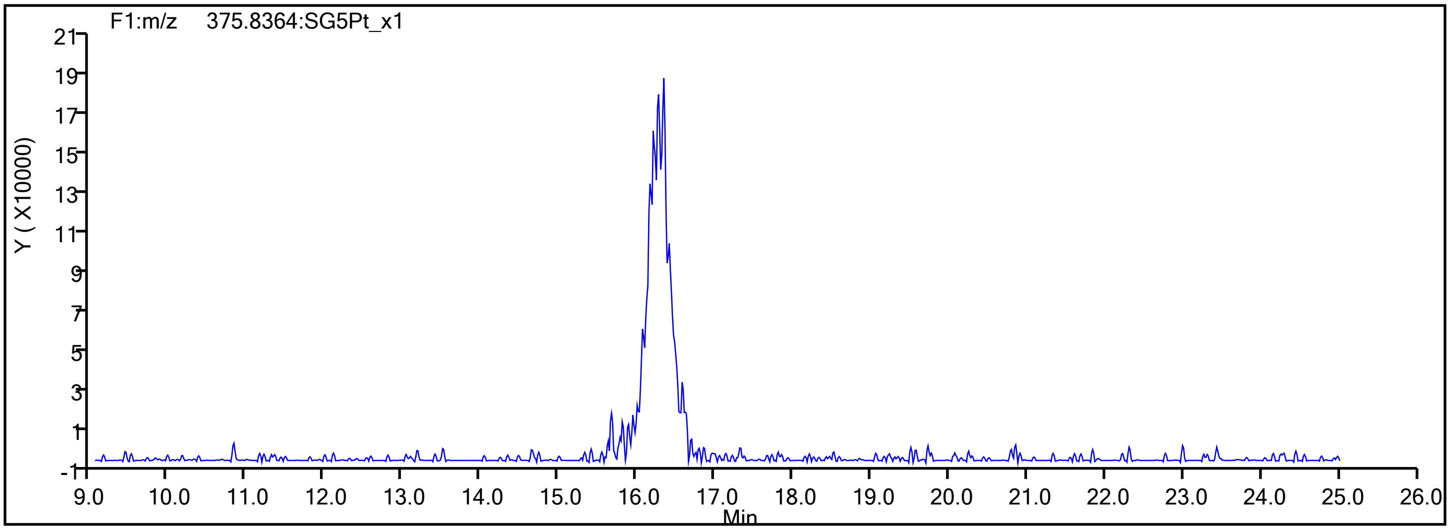

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

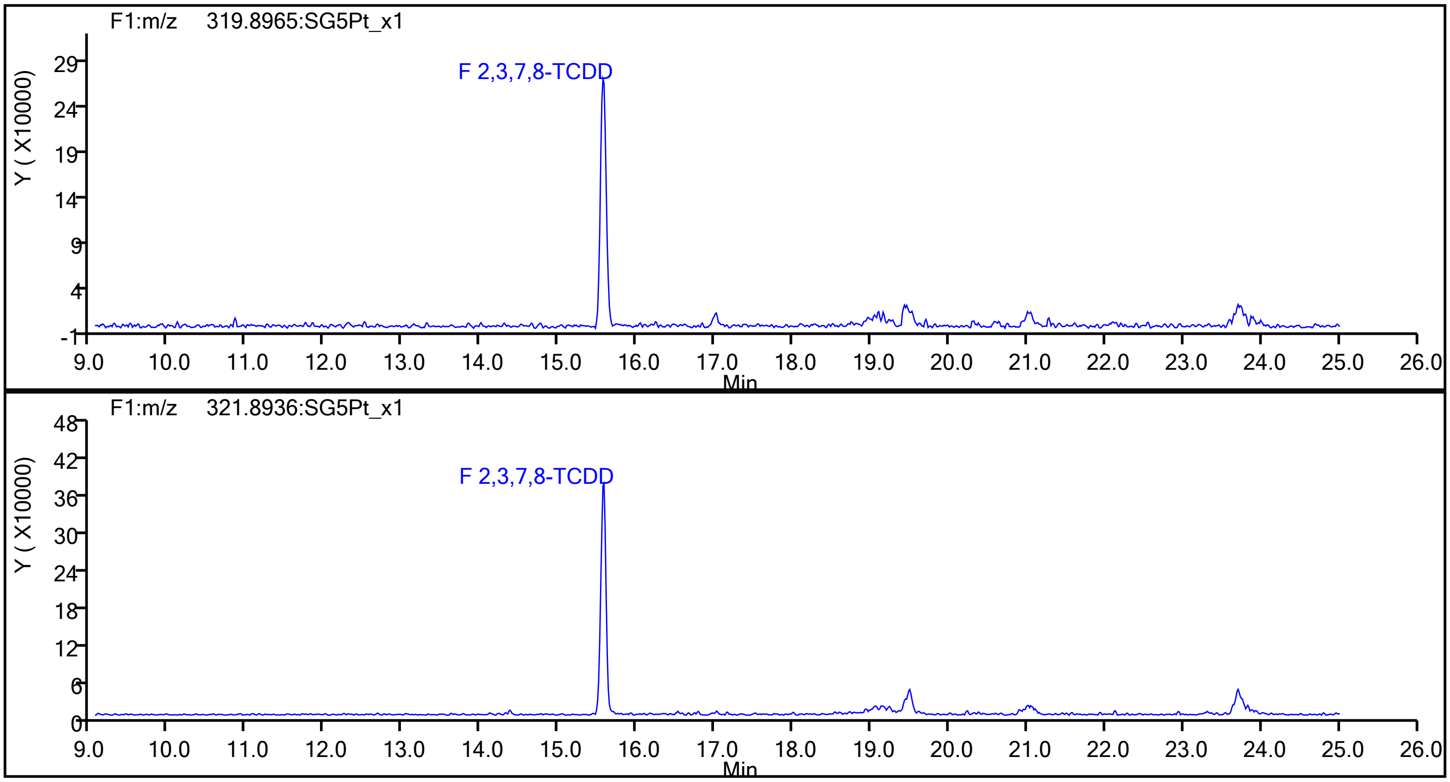

TCDD Standards

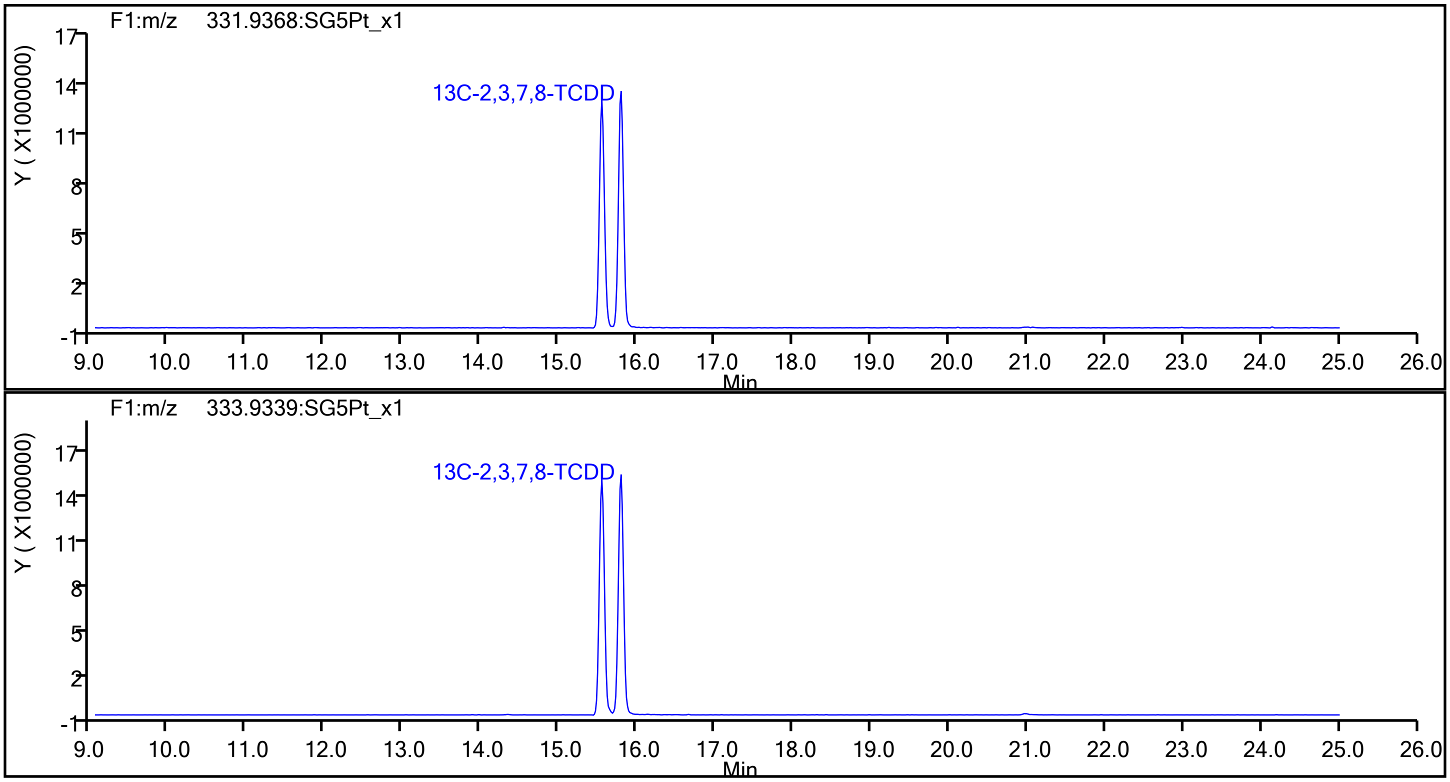

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d

Injection Date: 25-Jul-2020 00:28:40

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641

Sample Line#: 4

Column Type: DB-225

Column Dia: 0.32 mm

37Cl4-TCDD

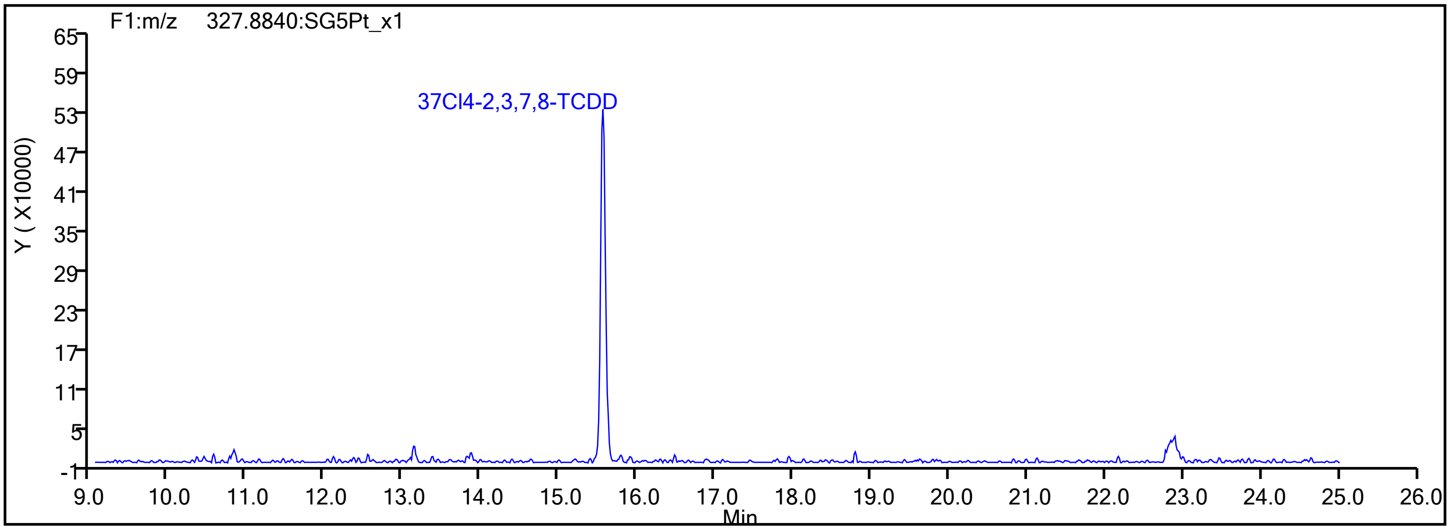

37Cl4-TCDD Standards

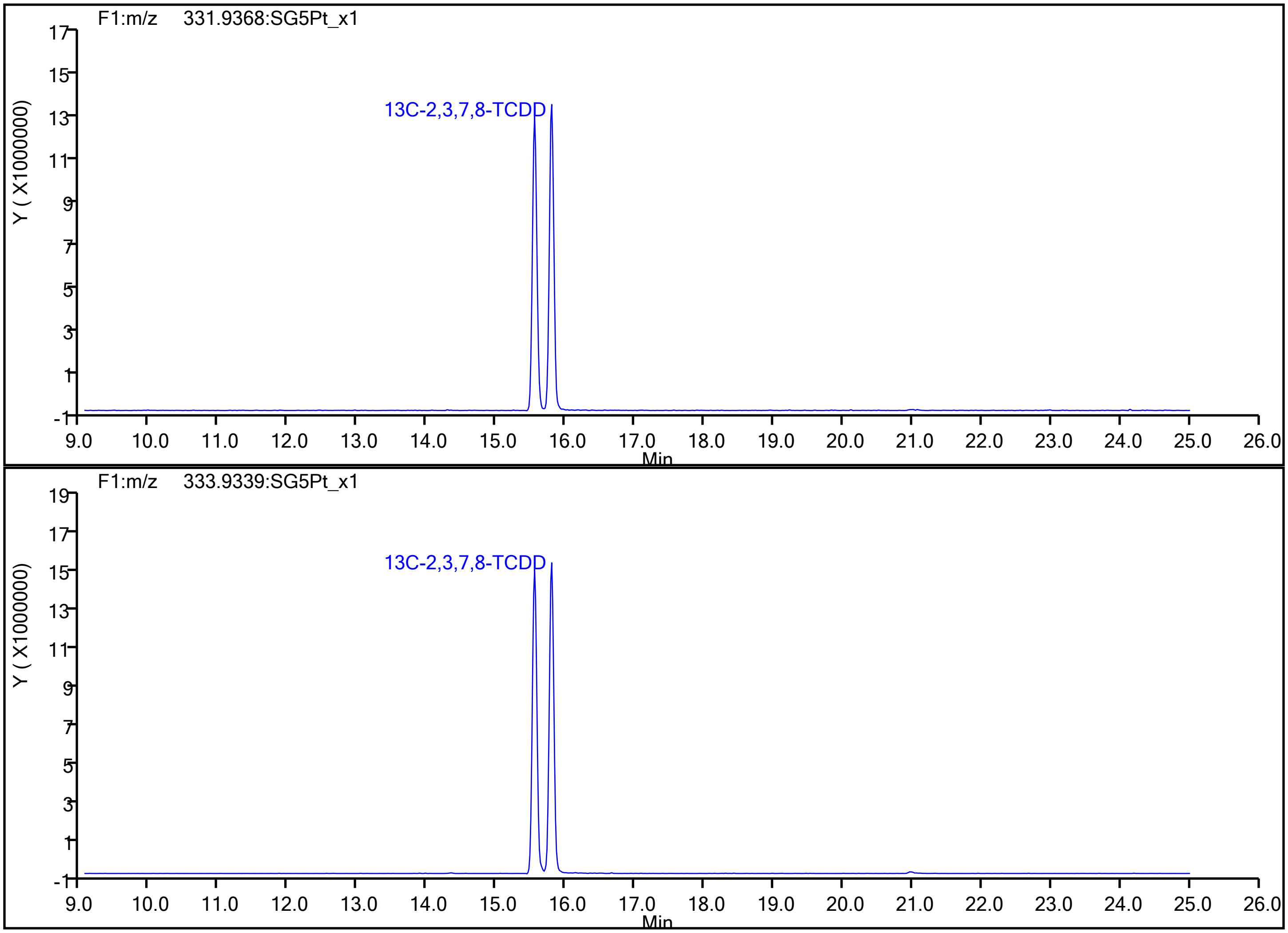

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

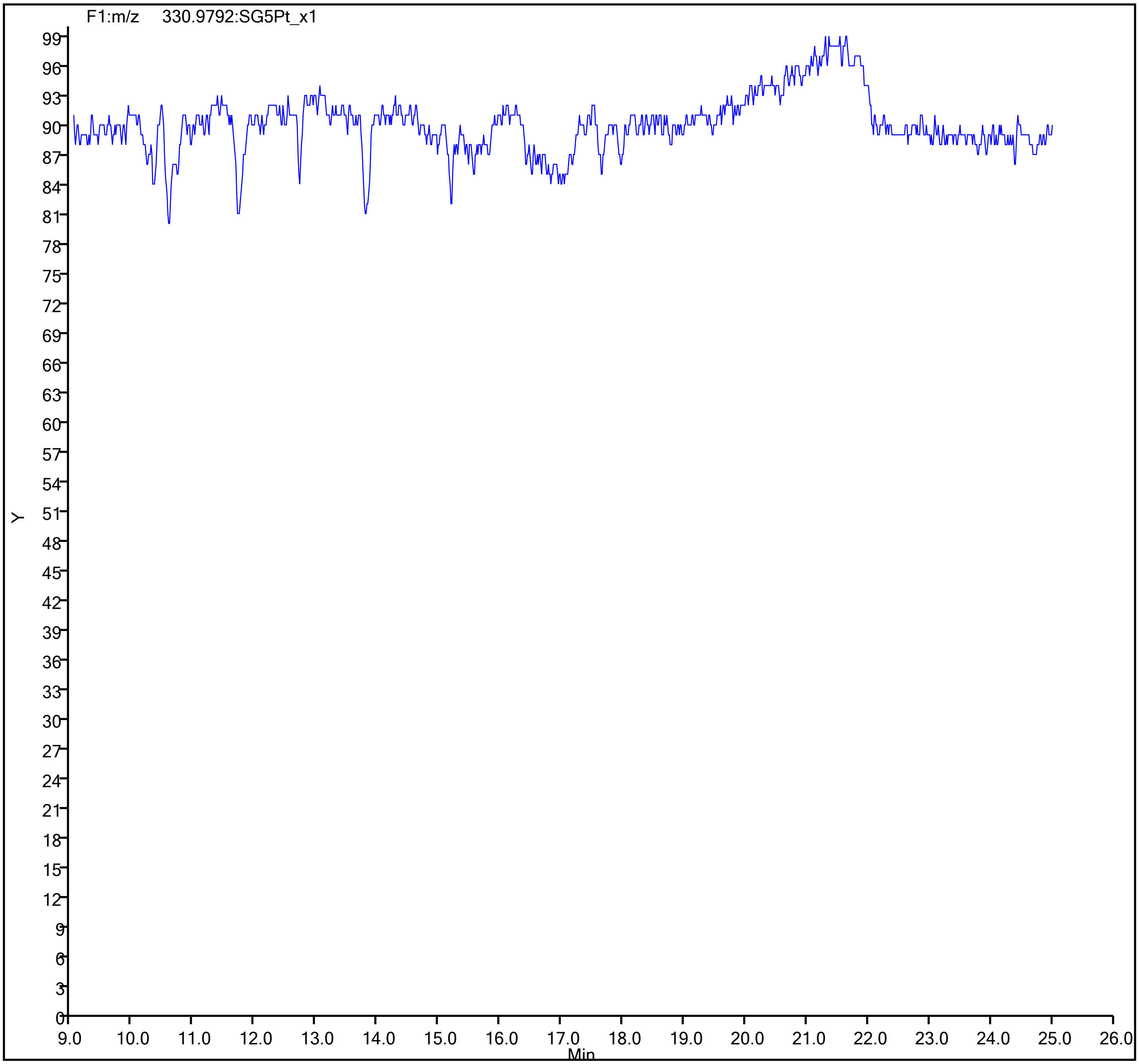

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

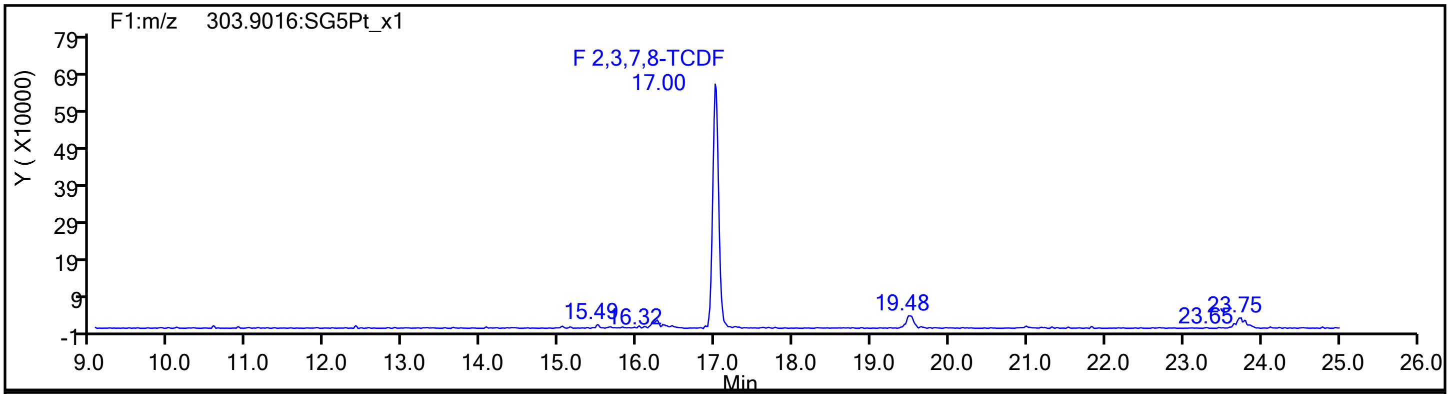

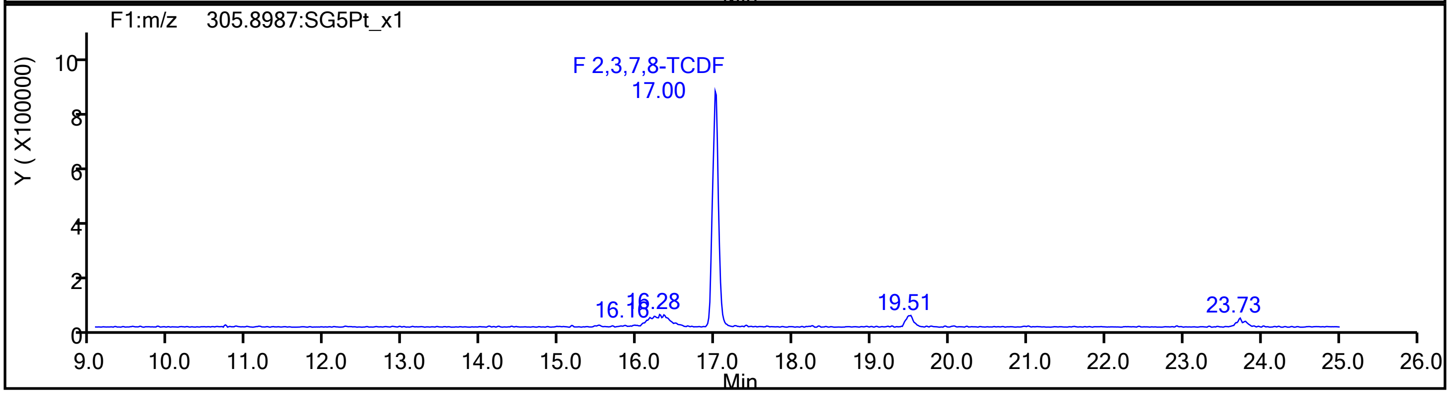

TCDF Standards

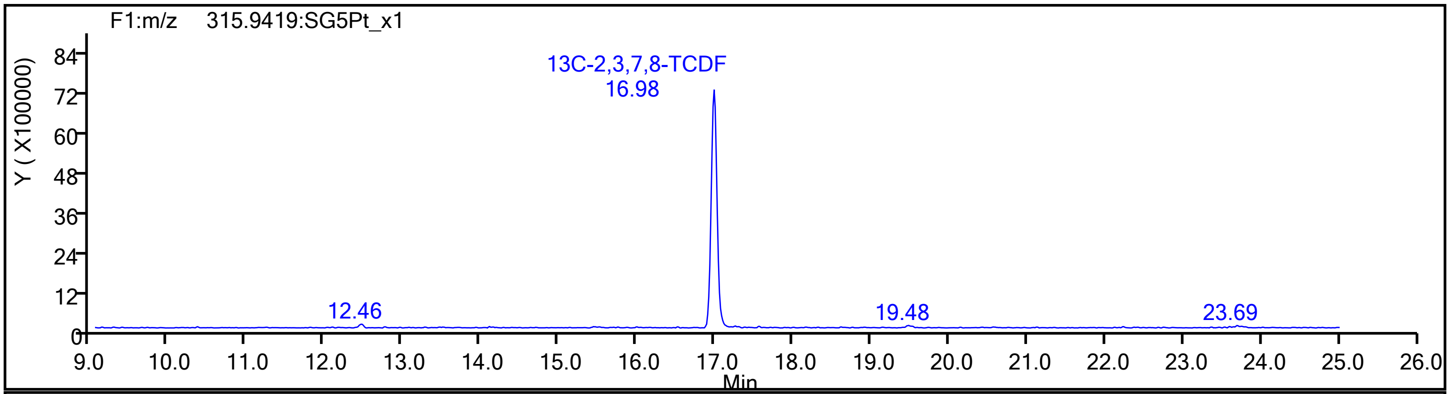

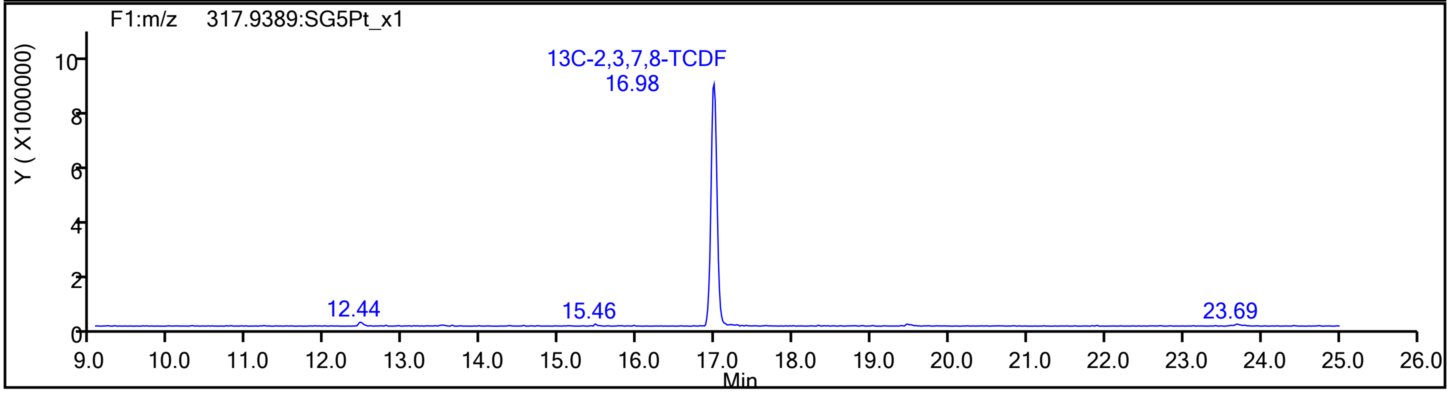

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

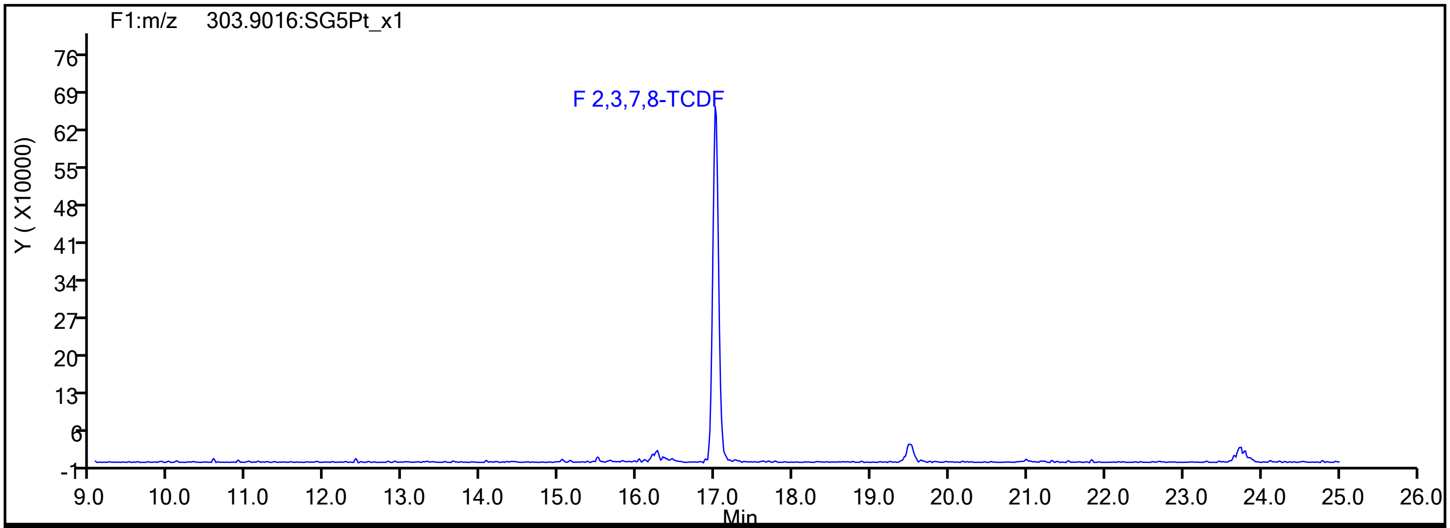

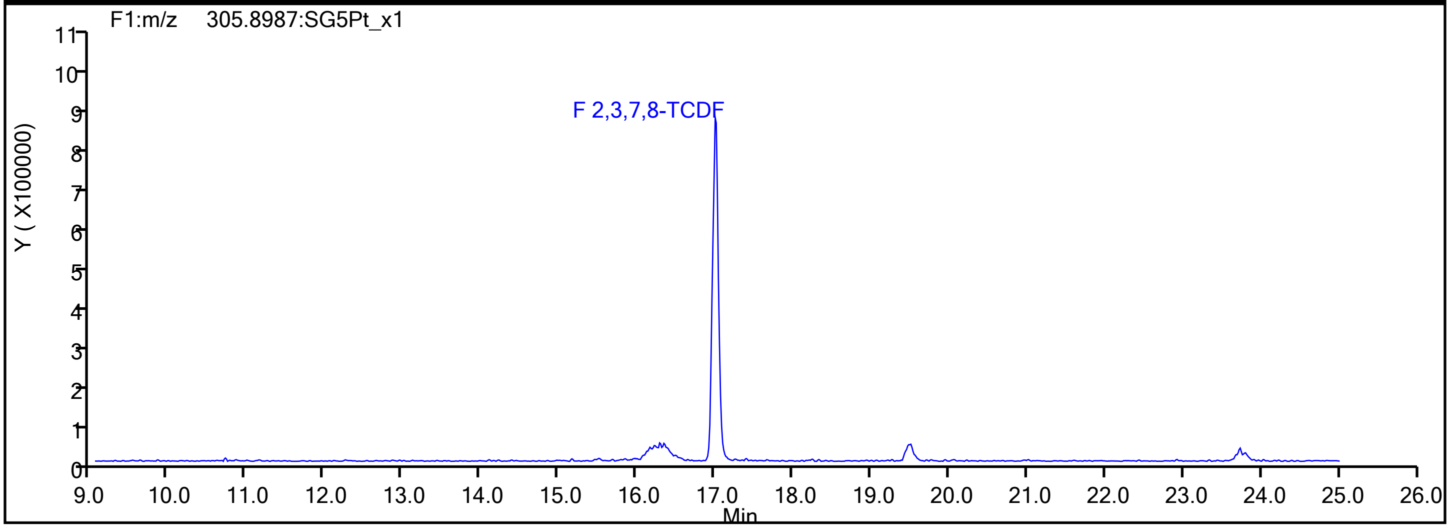

TCDF Interference Mass

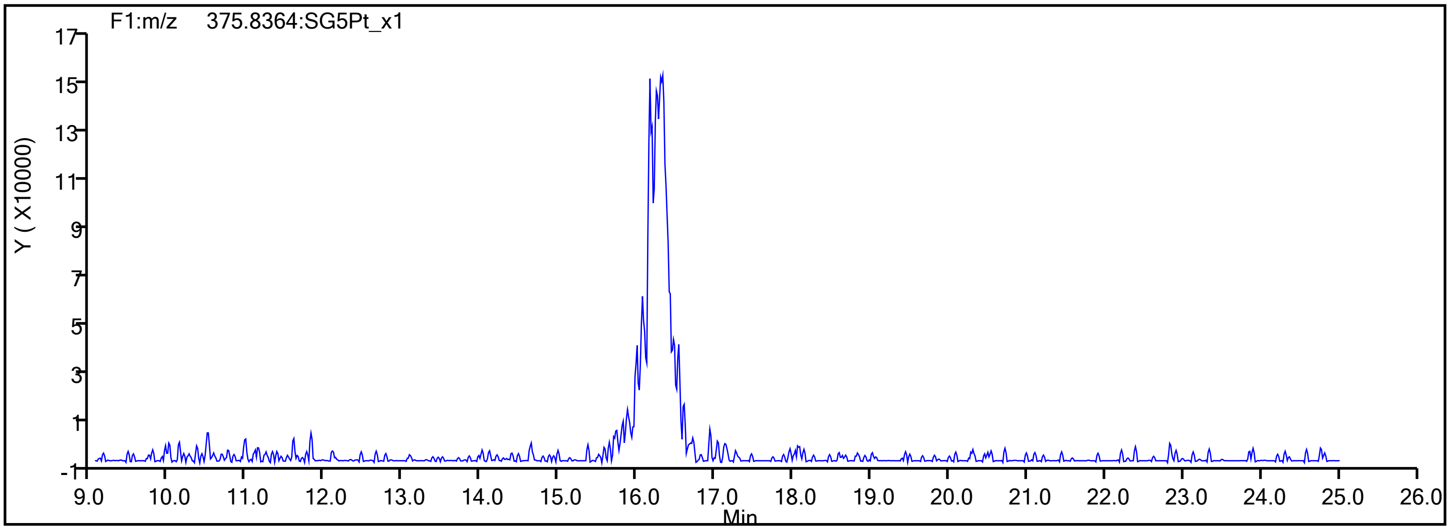

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d

Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

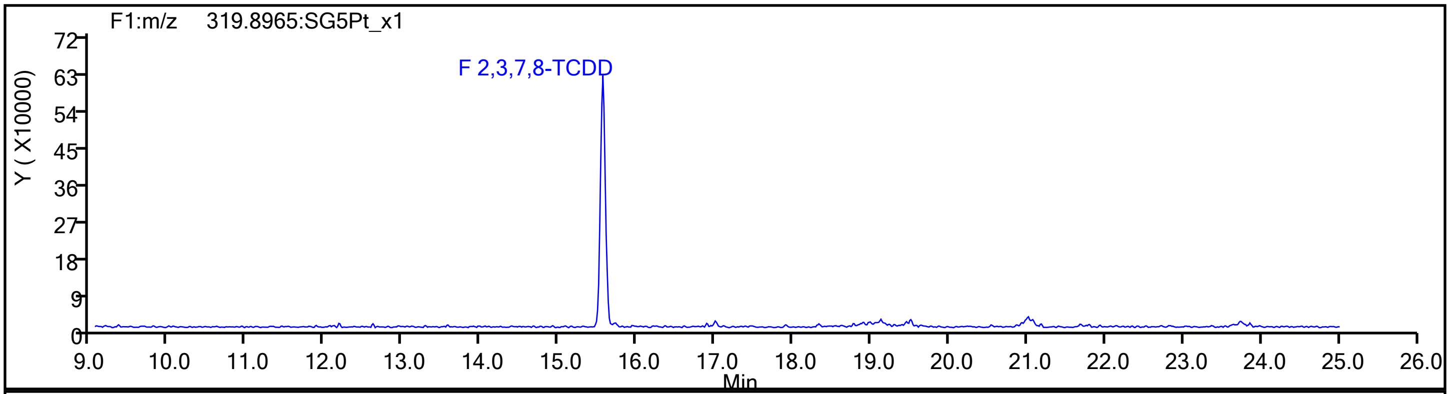

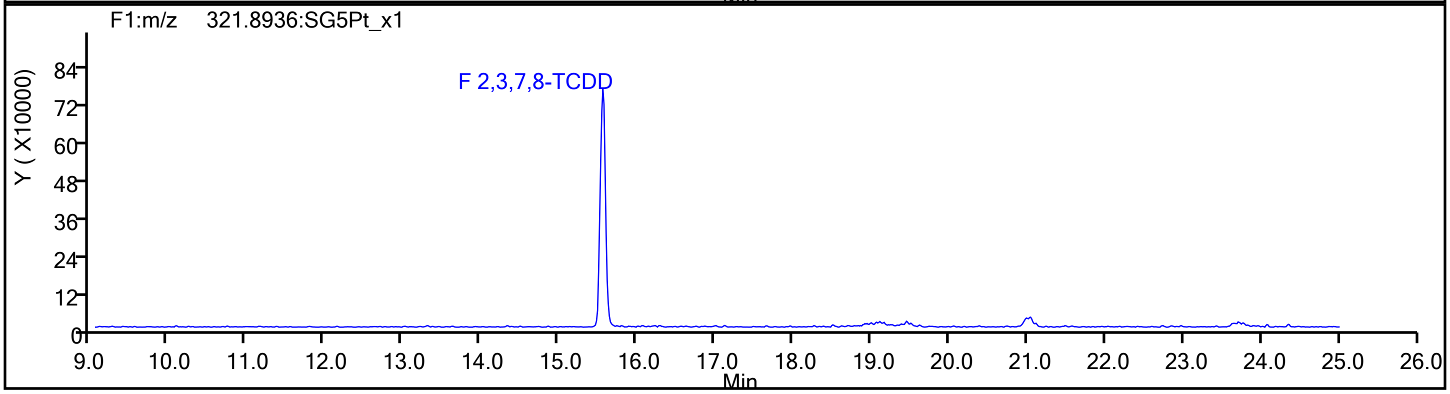

TCDD Standards

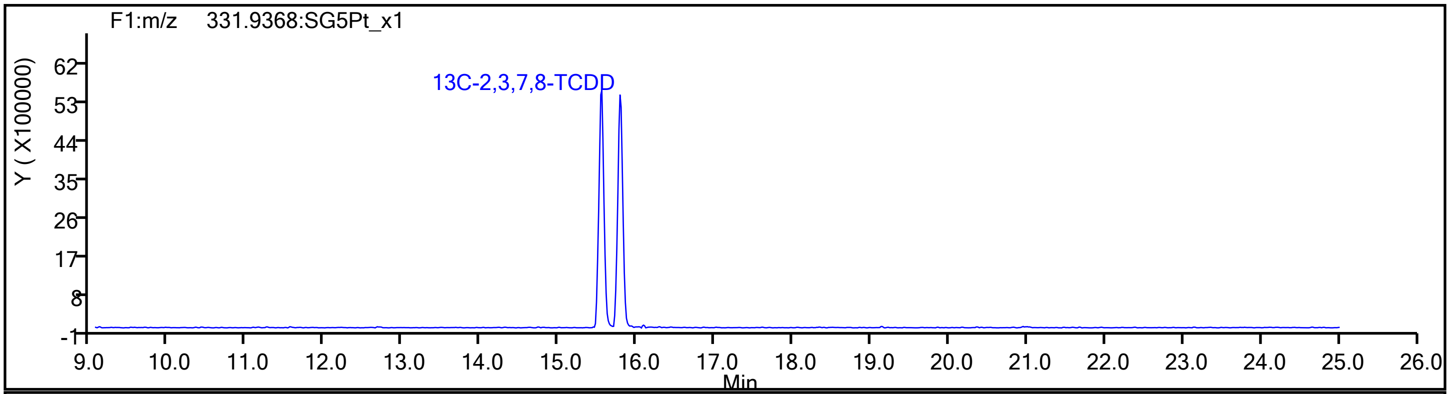

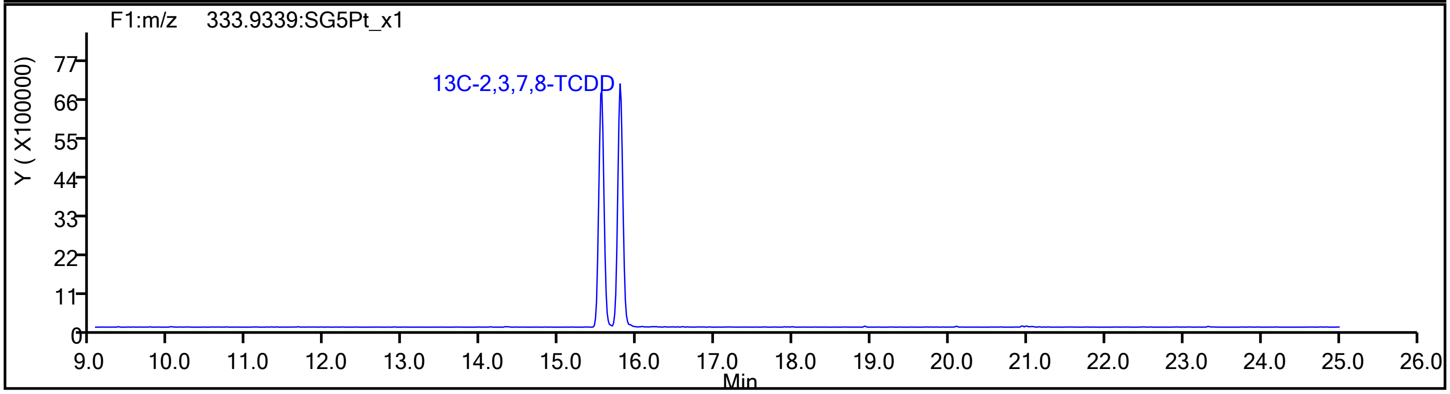

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

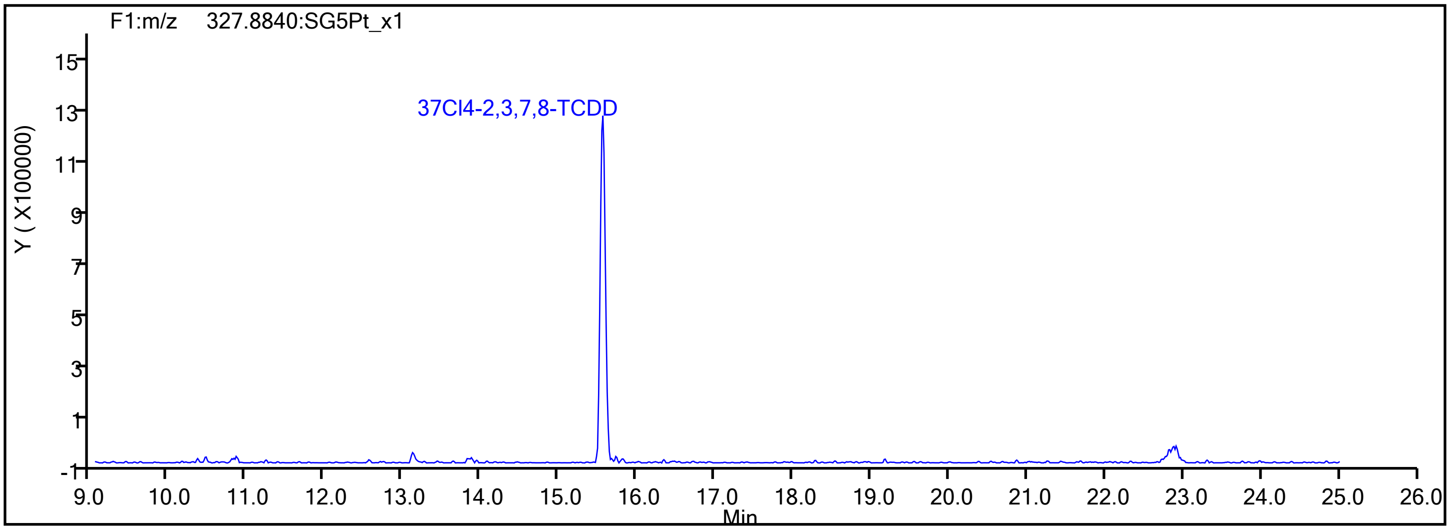

37Cl4-TCDD Standards

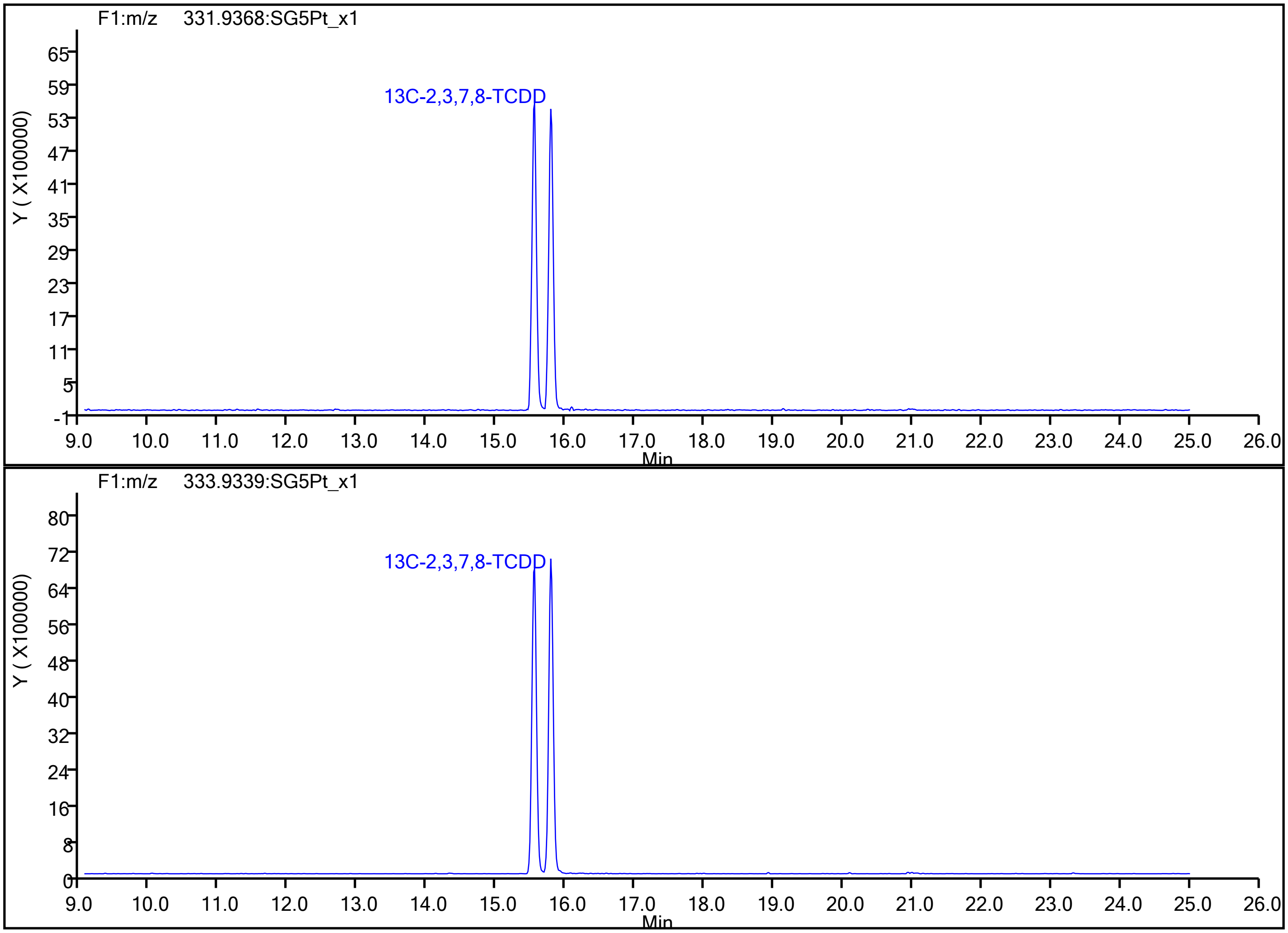

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d

Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

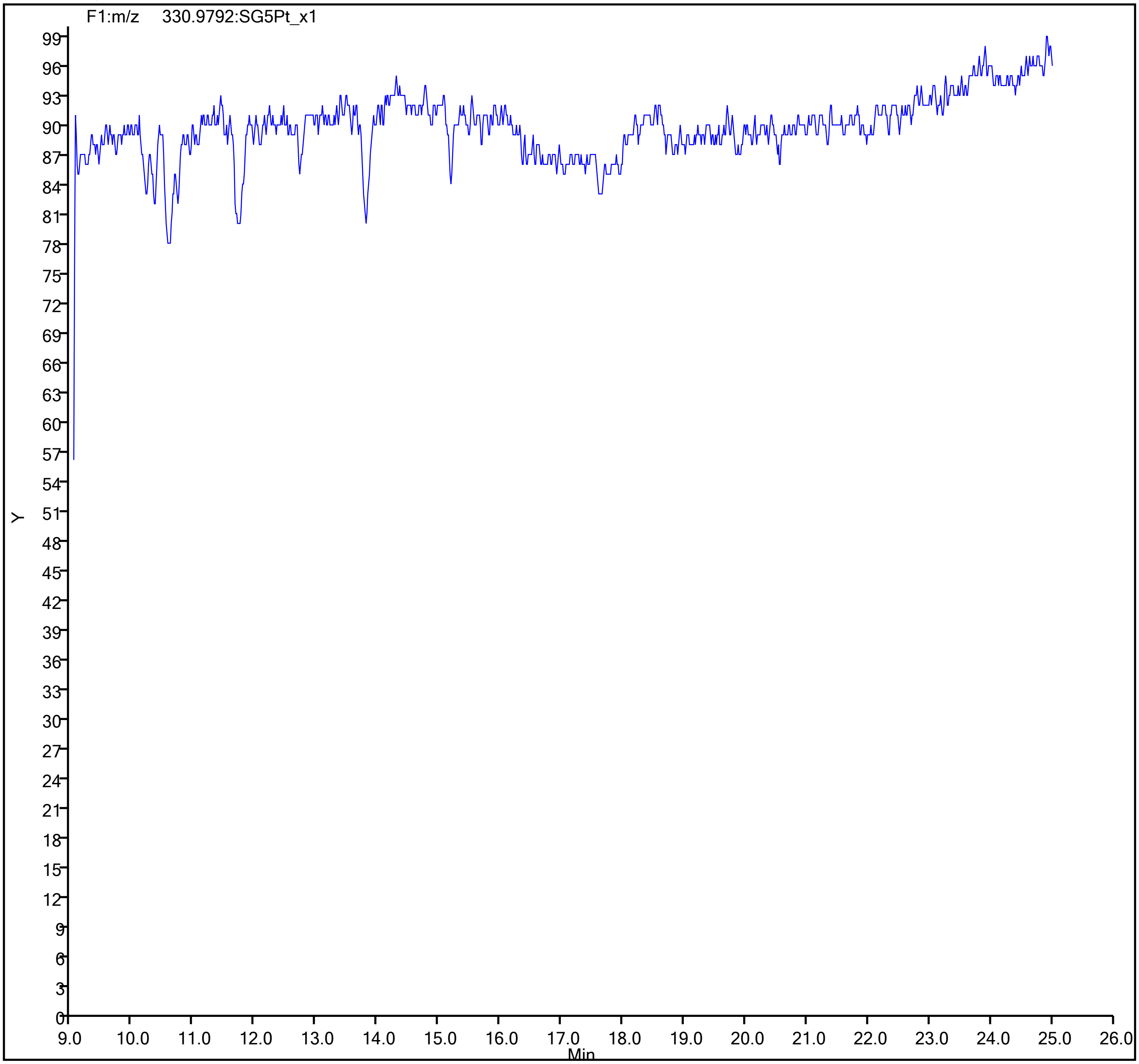

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:34:06		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

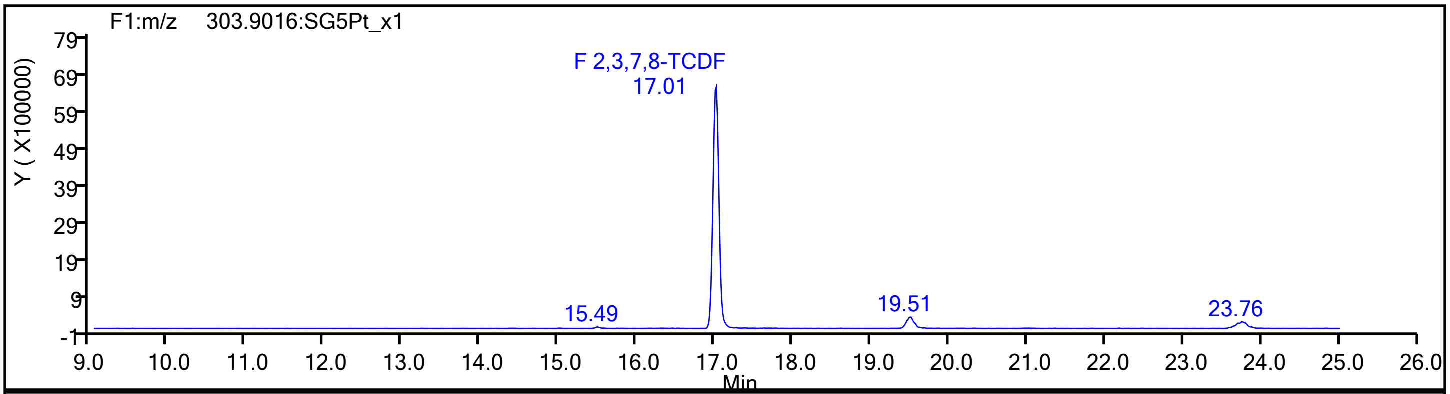

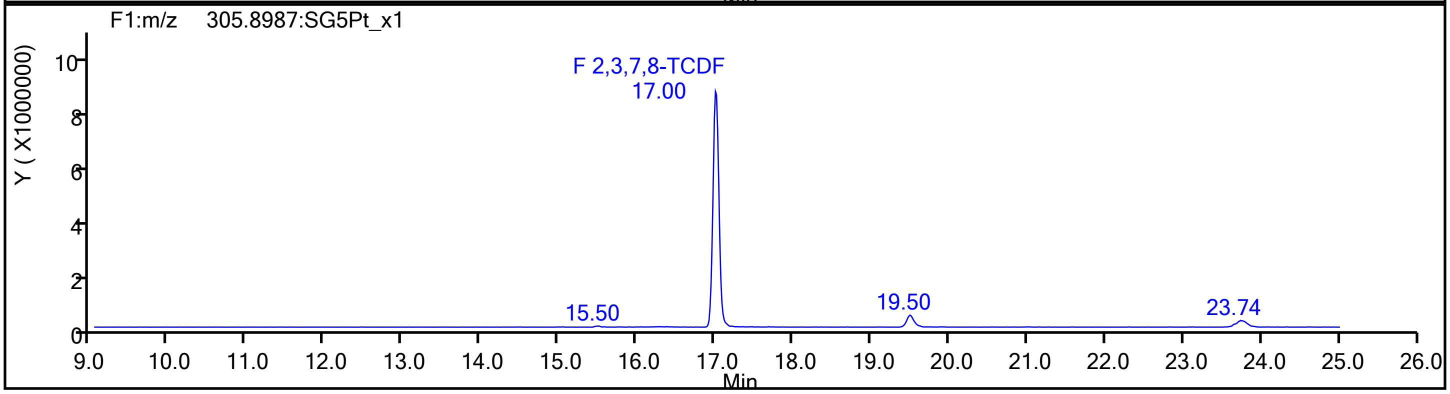

TCDF Standards

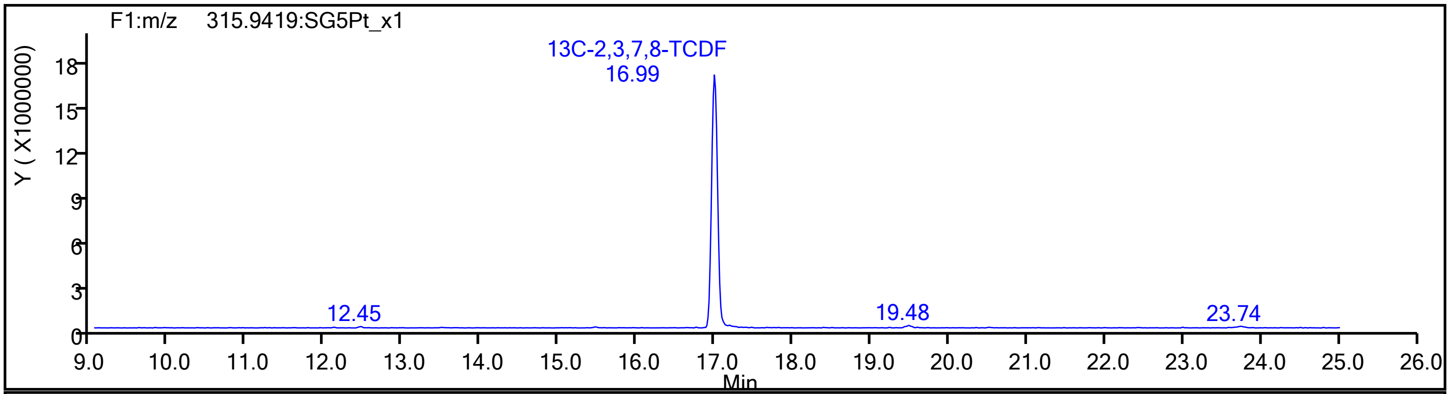

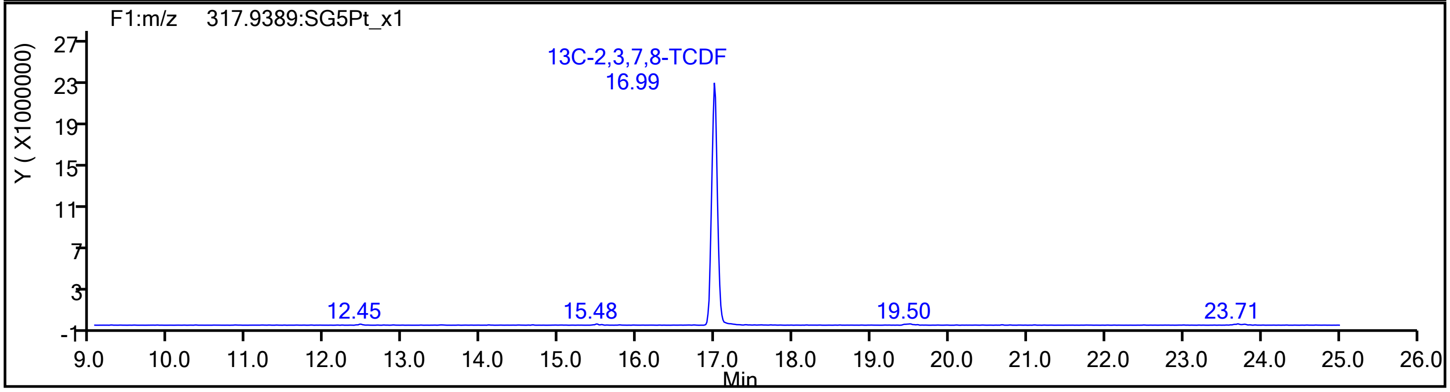

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

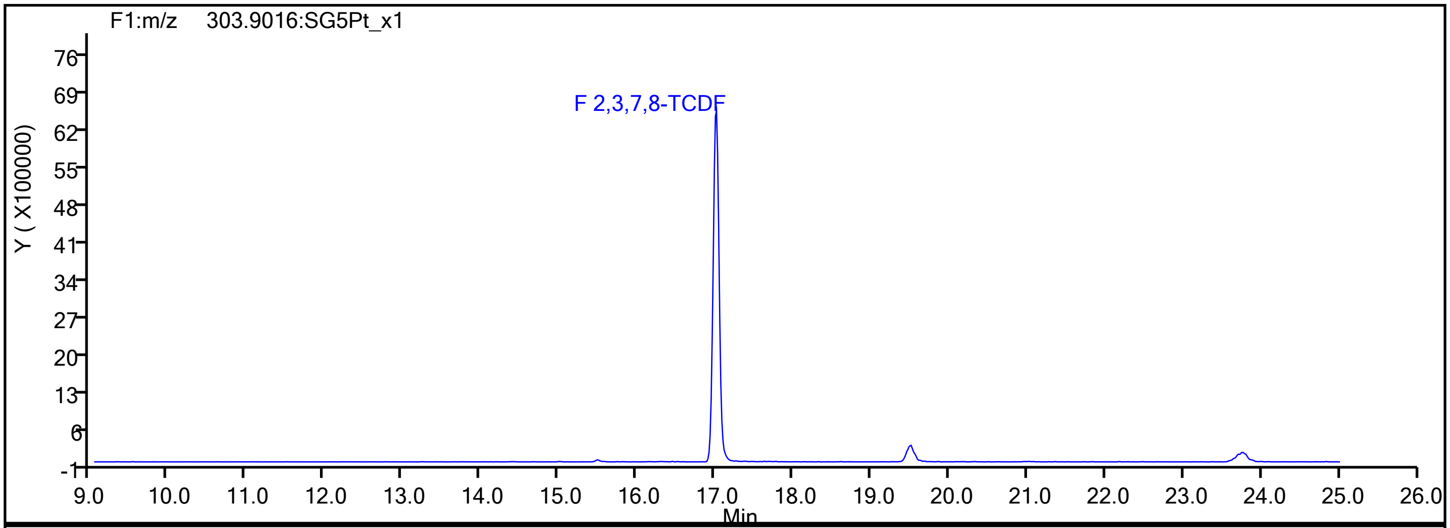

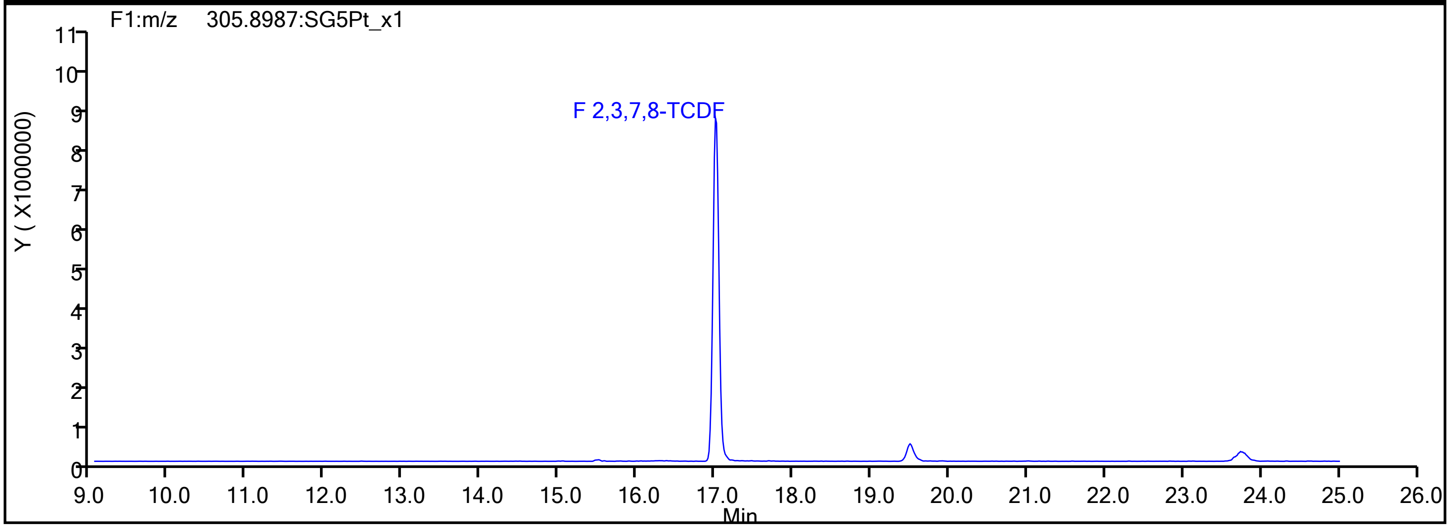

TCDF Interference Mass

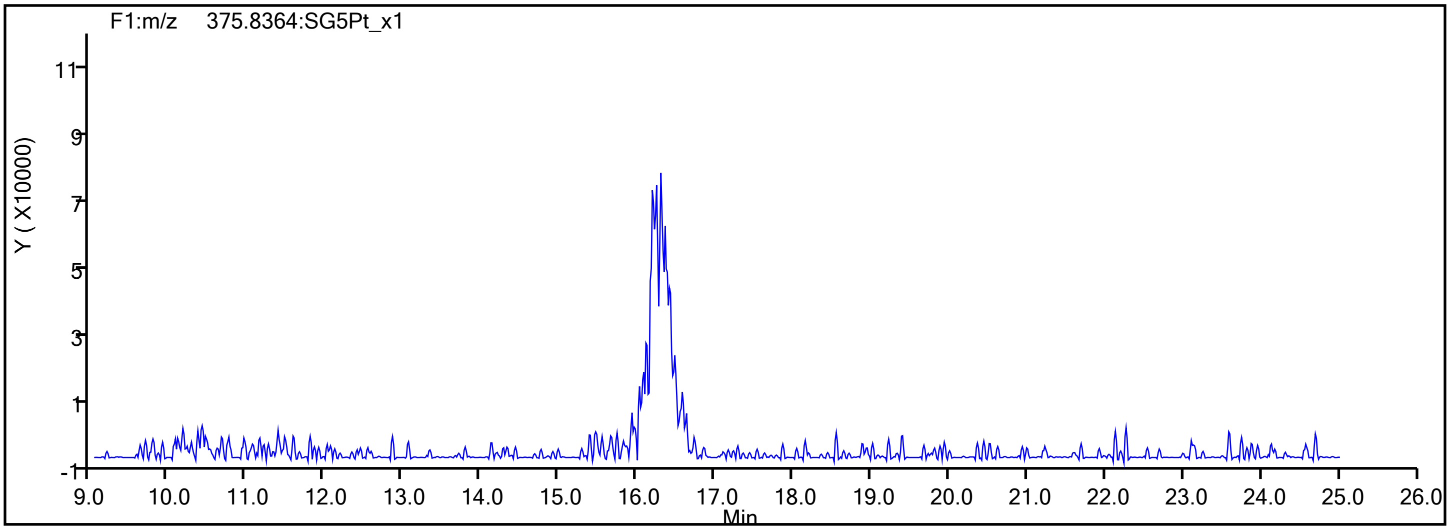

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

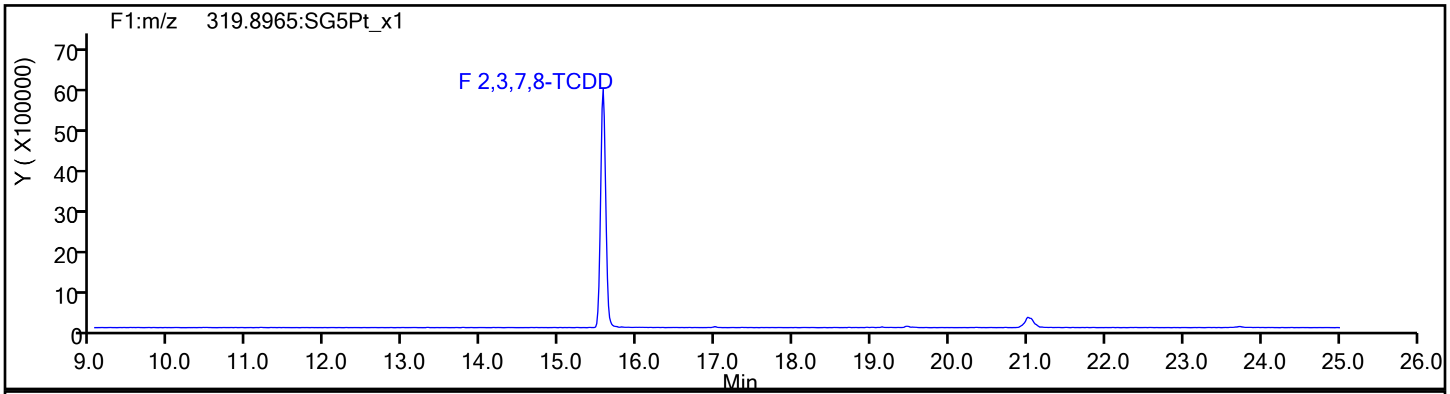

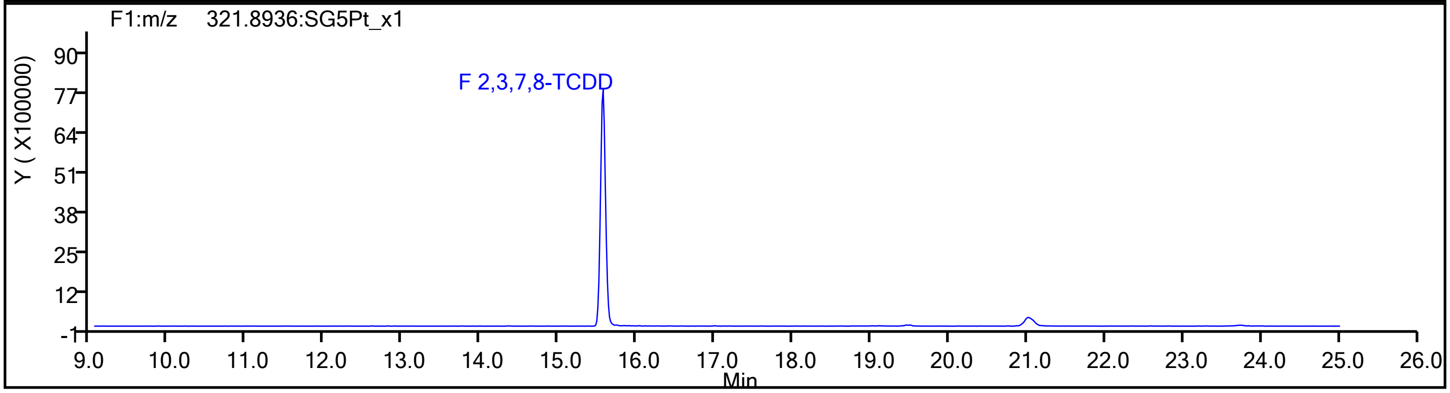

TCDD Standards

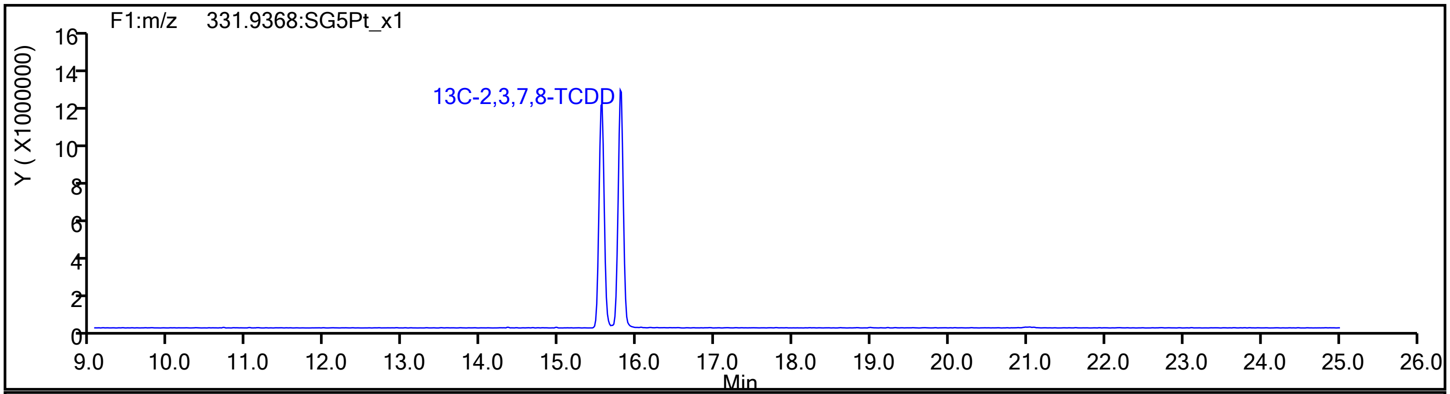

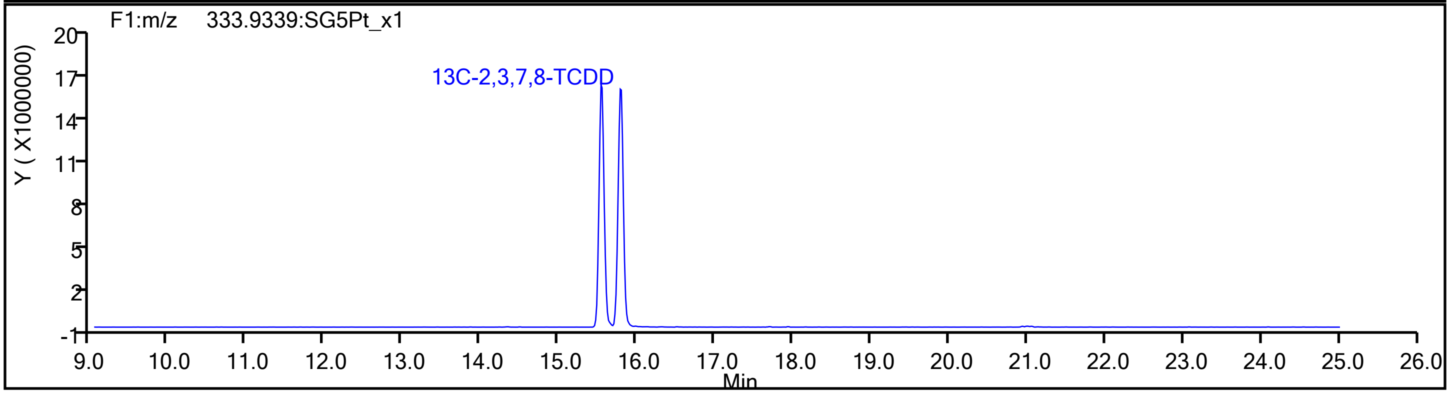

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

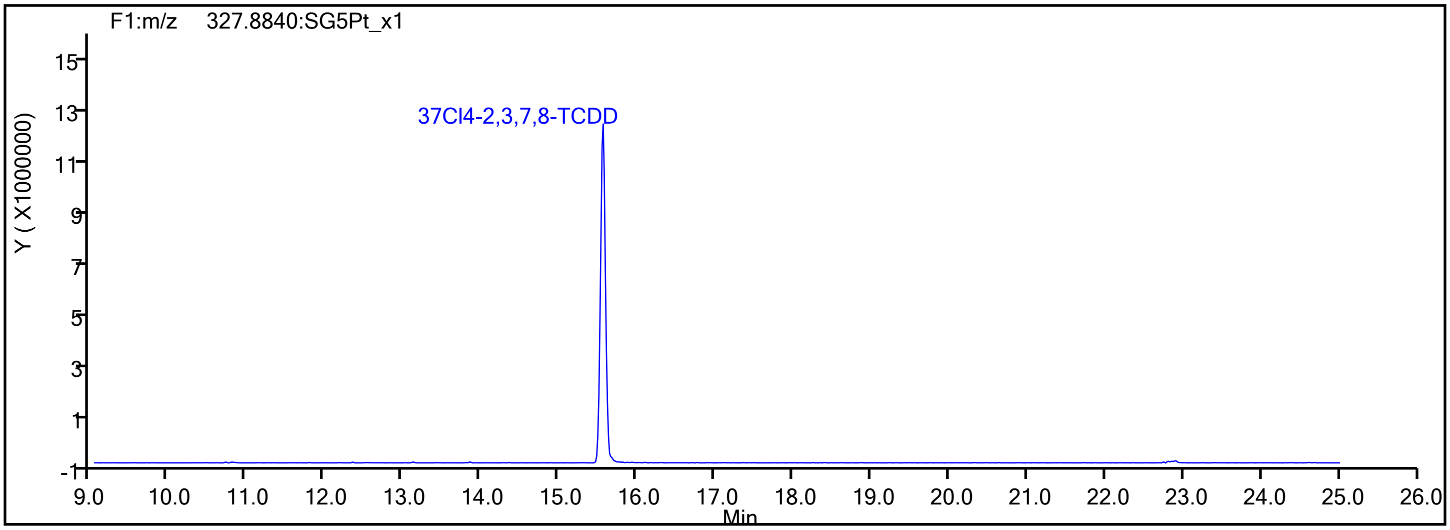

37Cl4-TCDD Standards

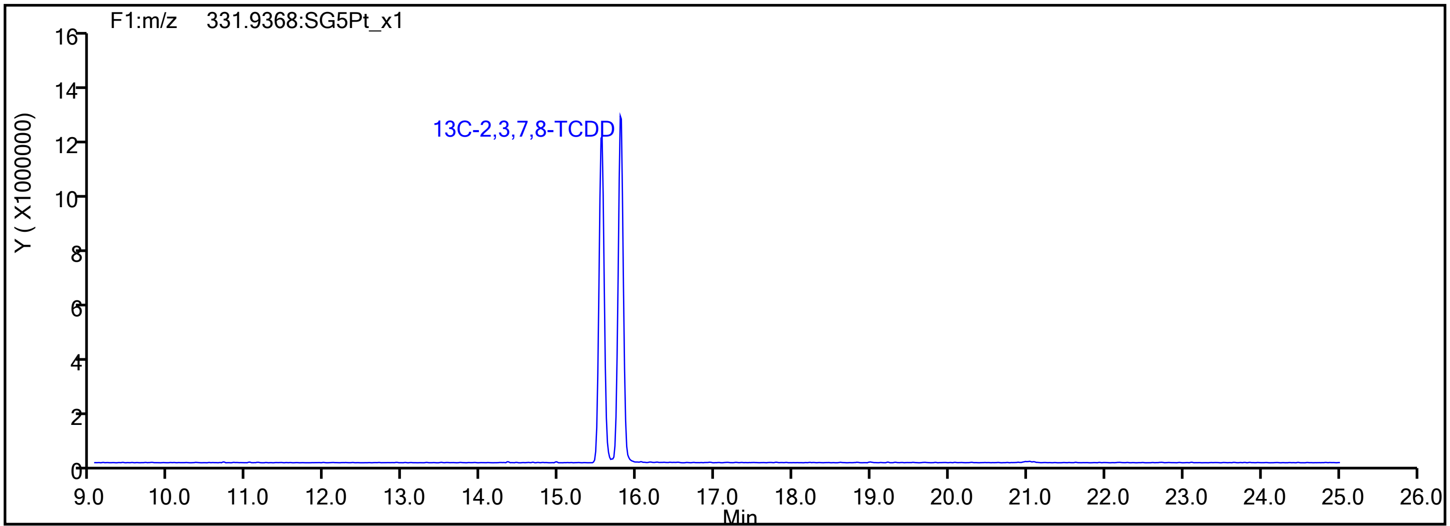

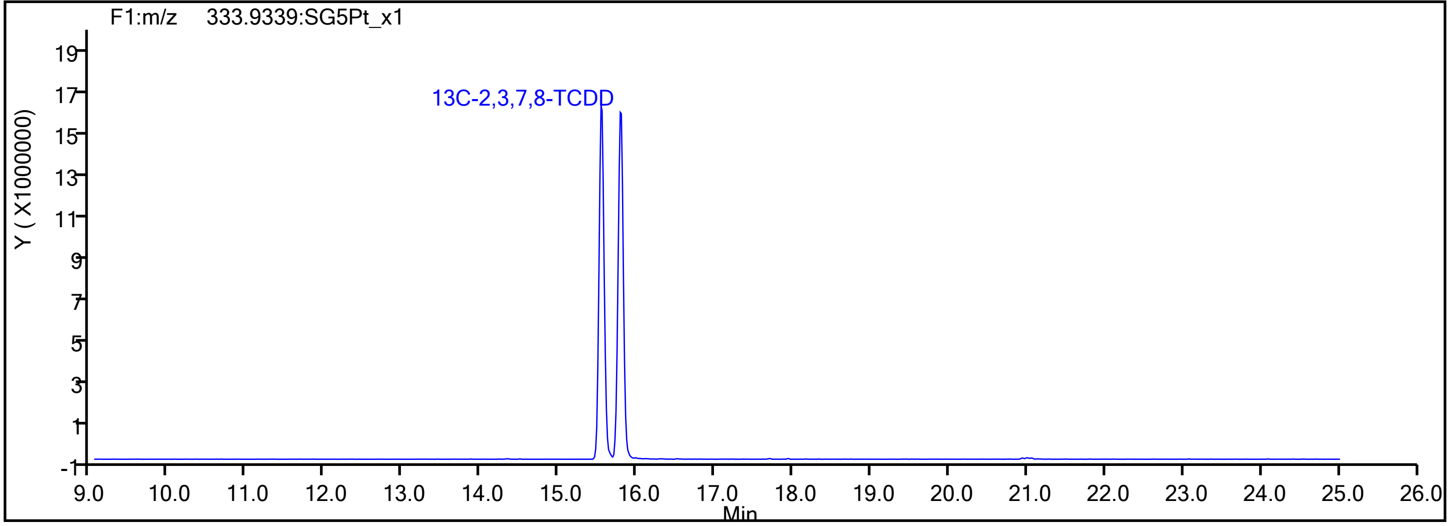

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

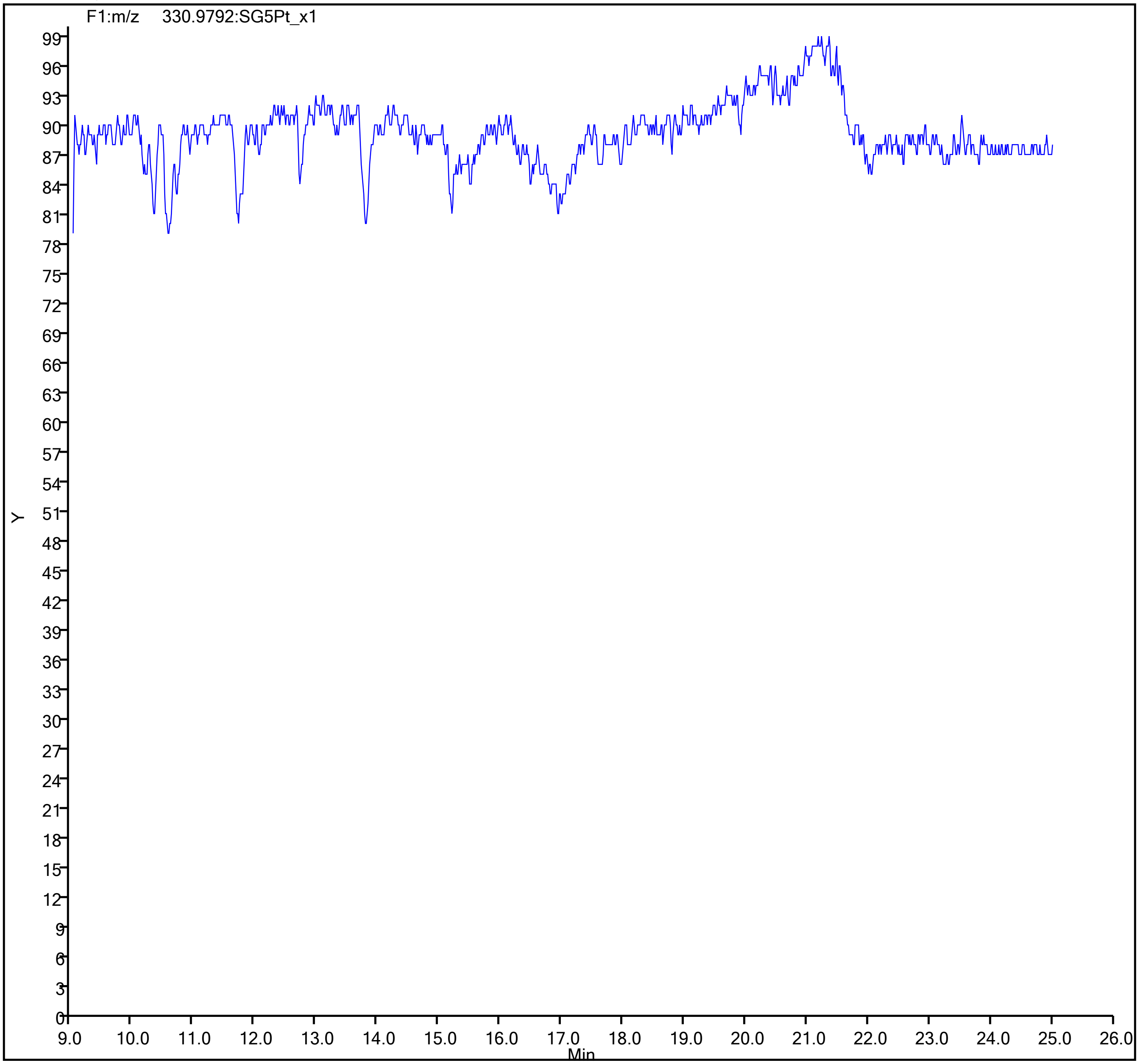

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:39:57		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

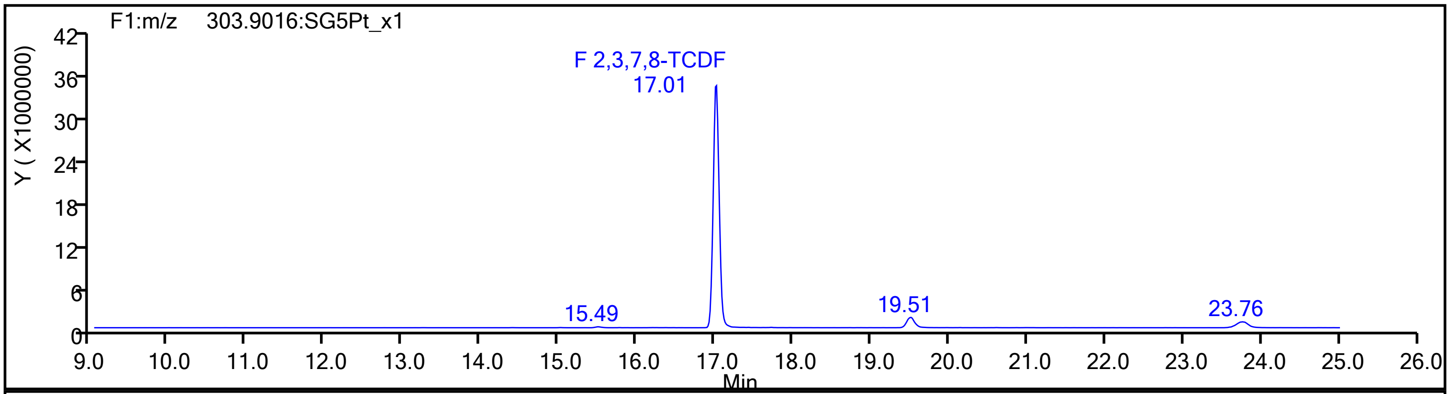

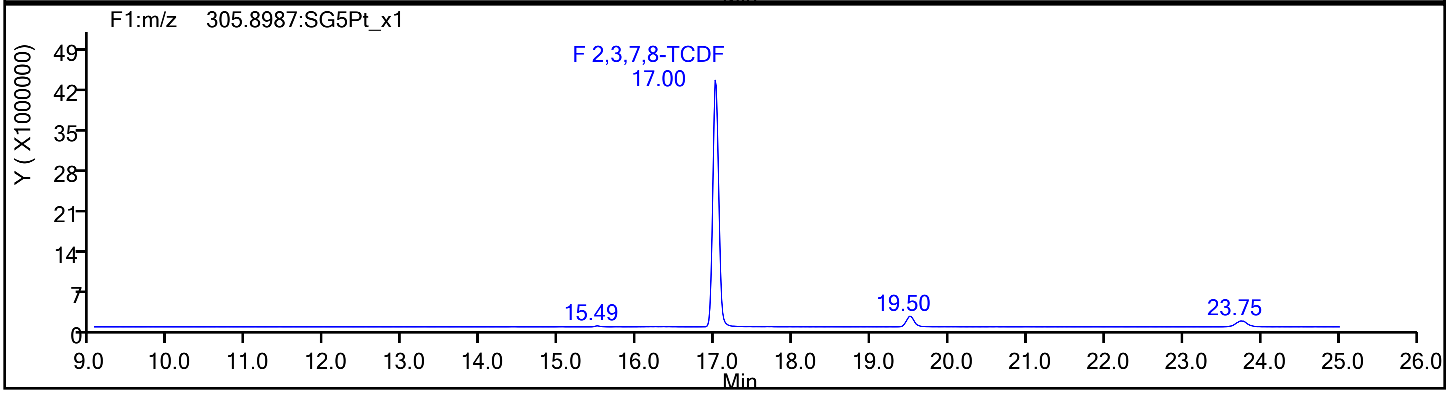

TCDF Standards

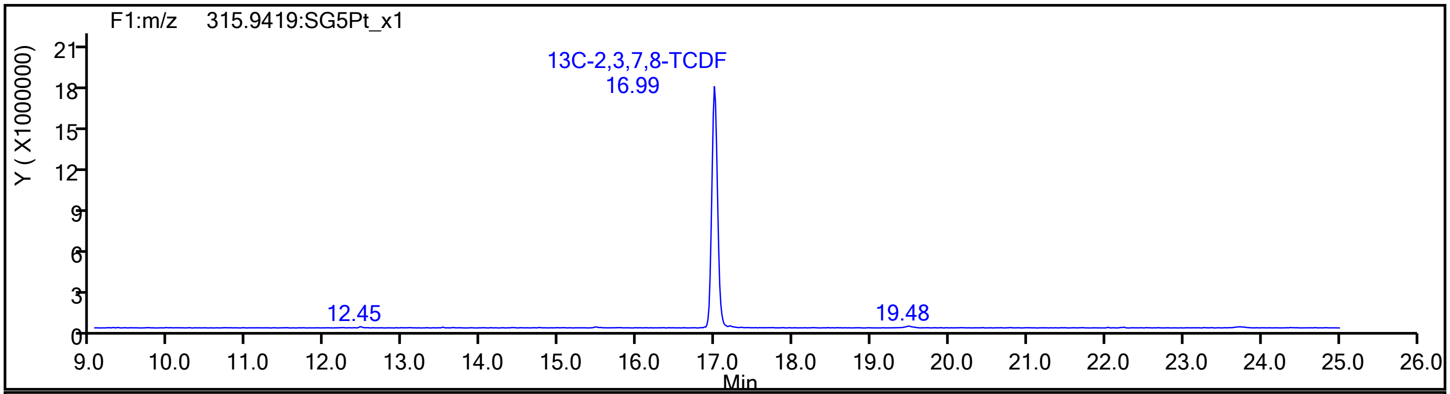

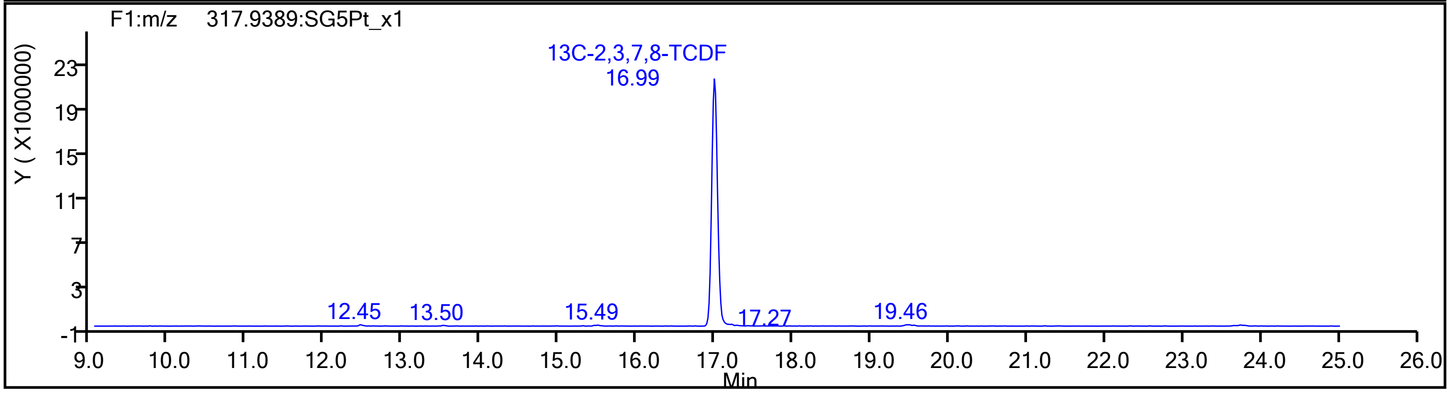

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

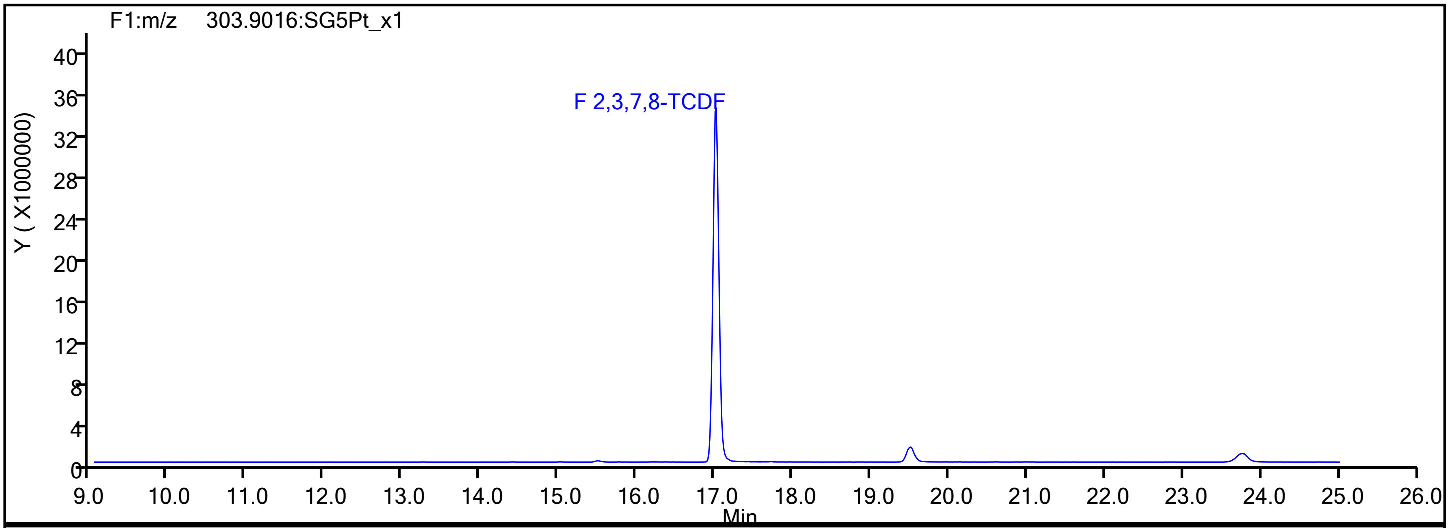

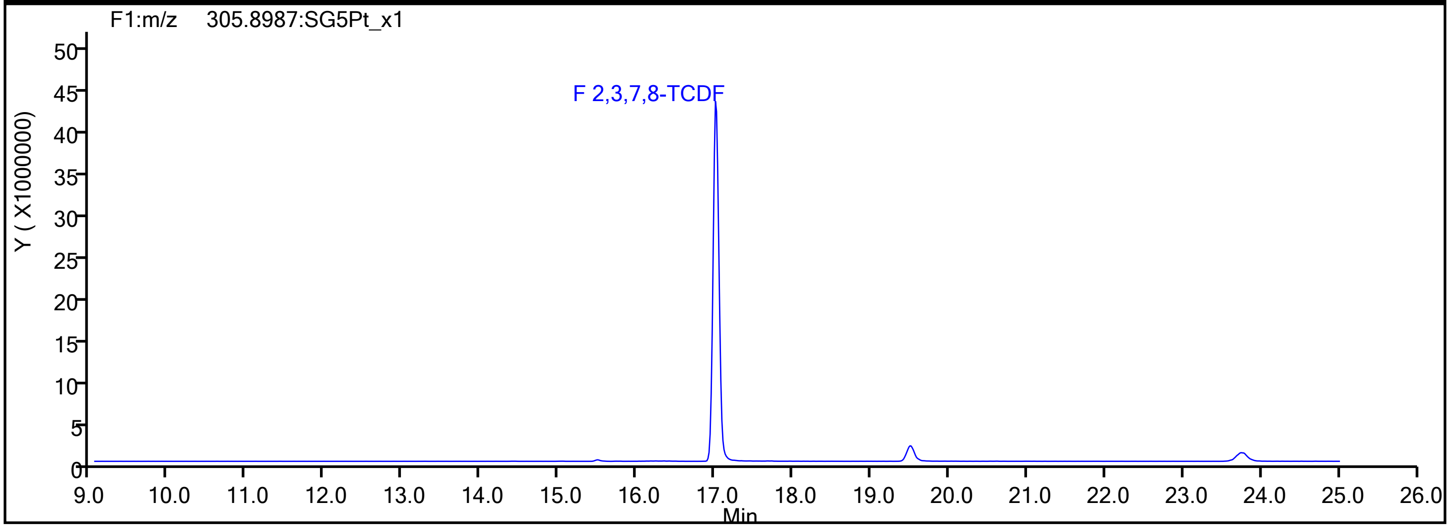

TCDF Interference Mass

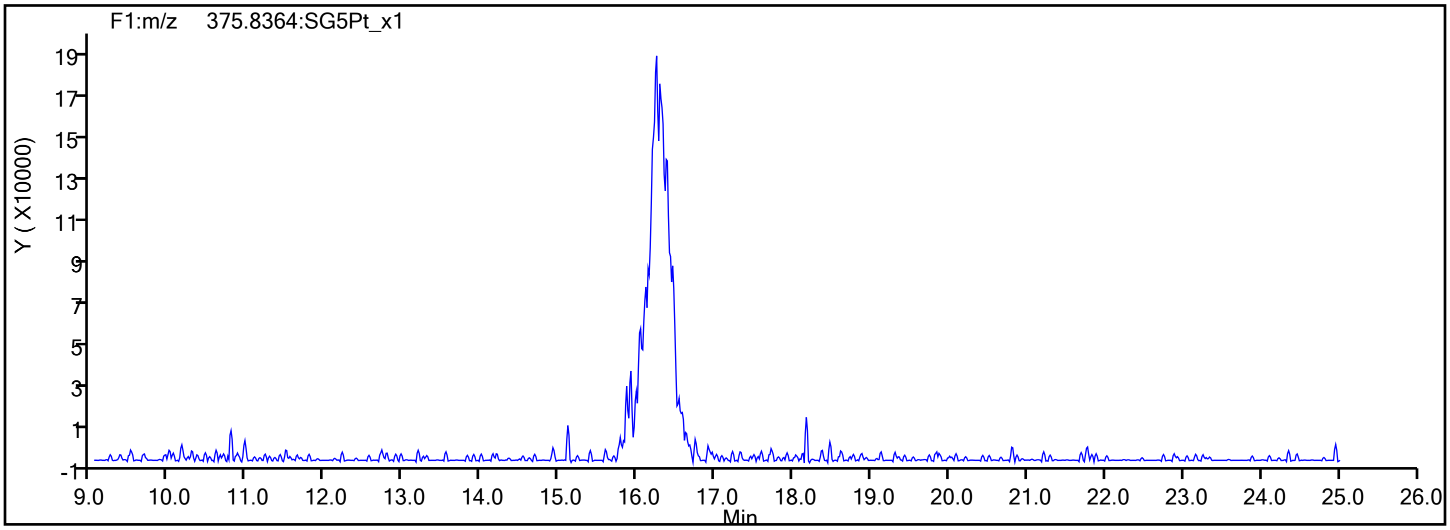

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

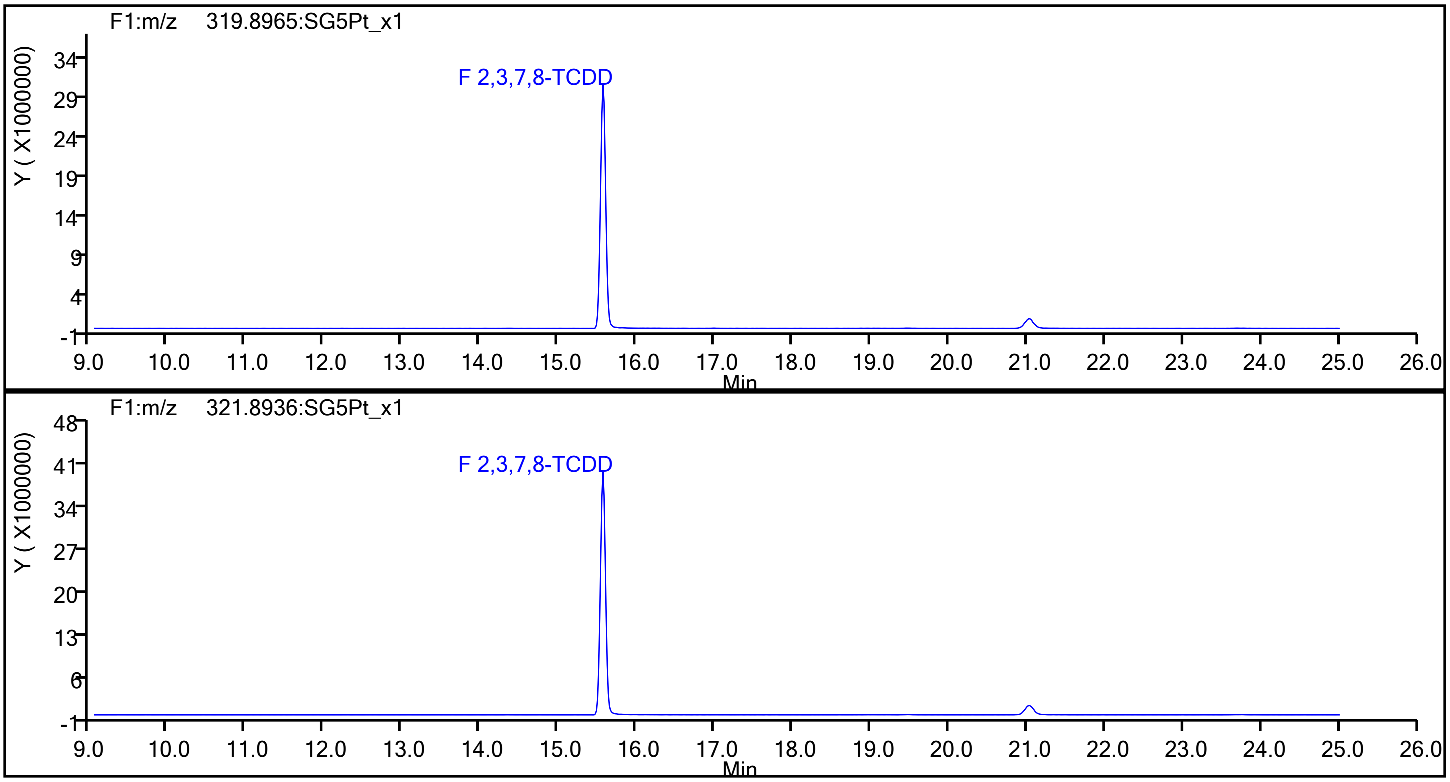

TCDD Standards

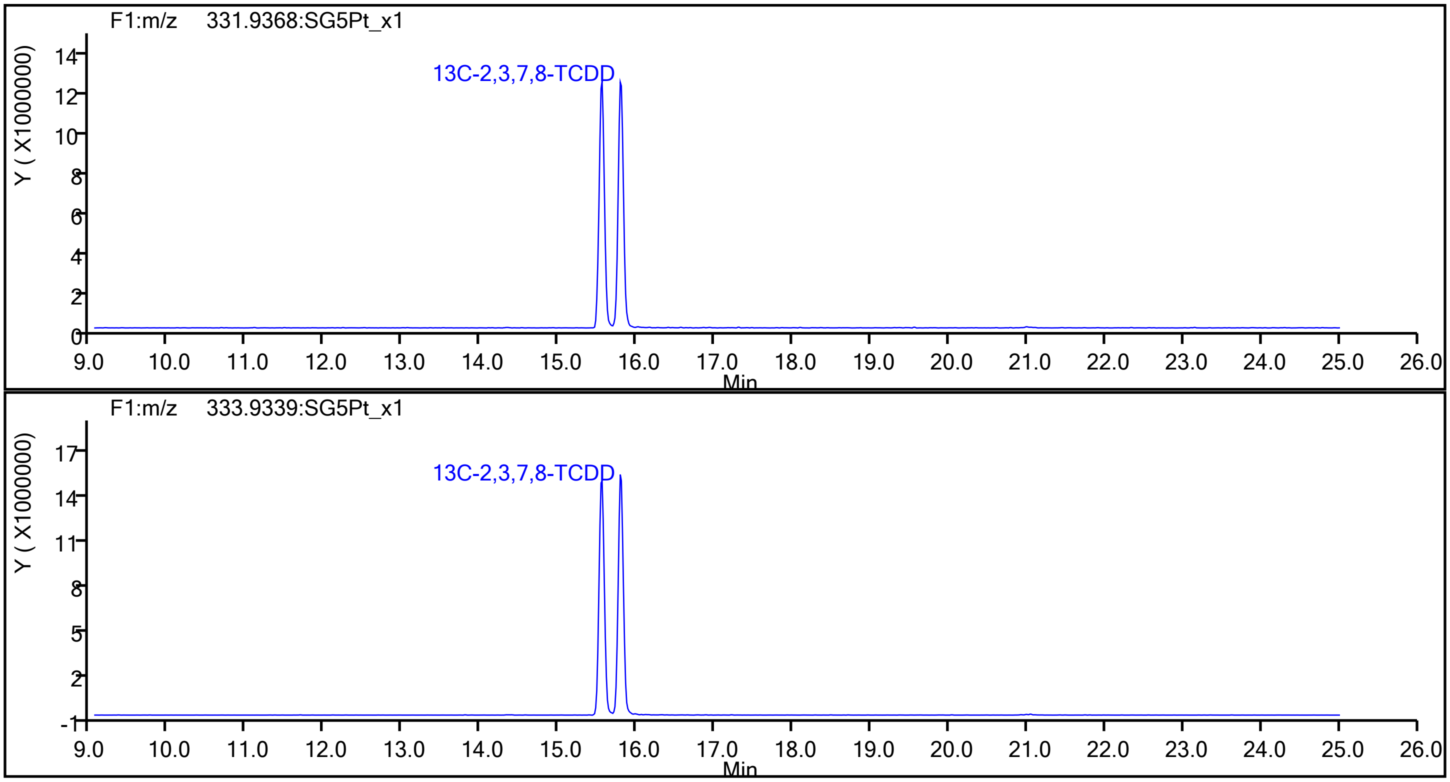

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

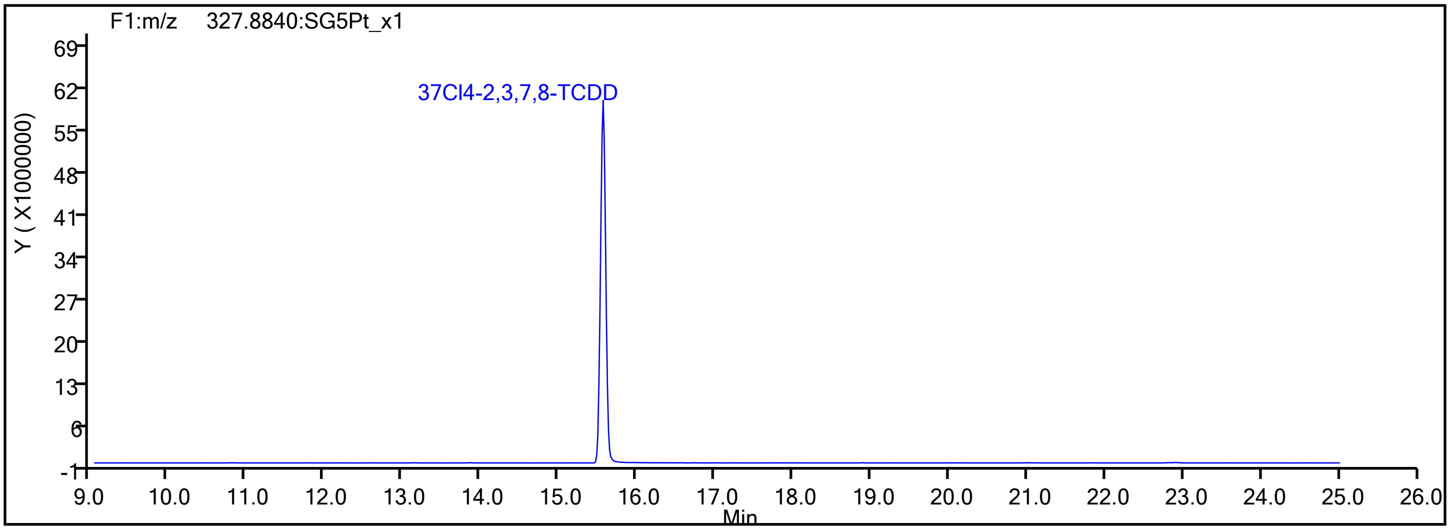

37Cl4-TCDD Standards

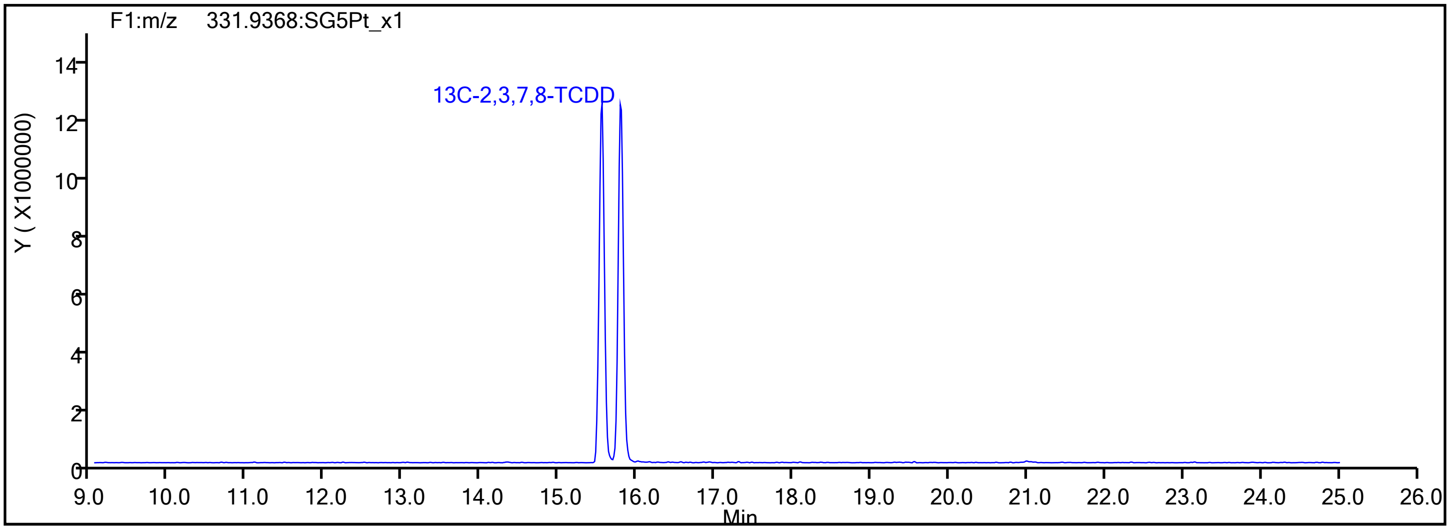

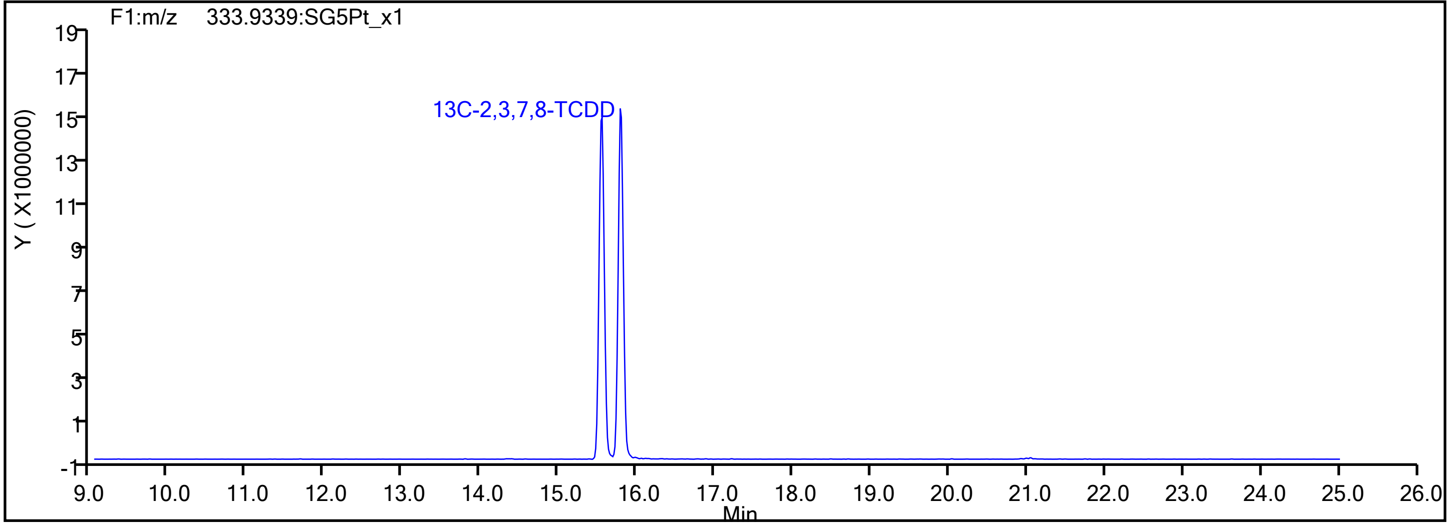

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

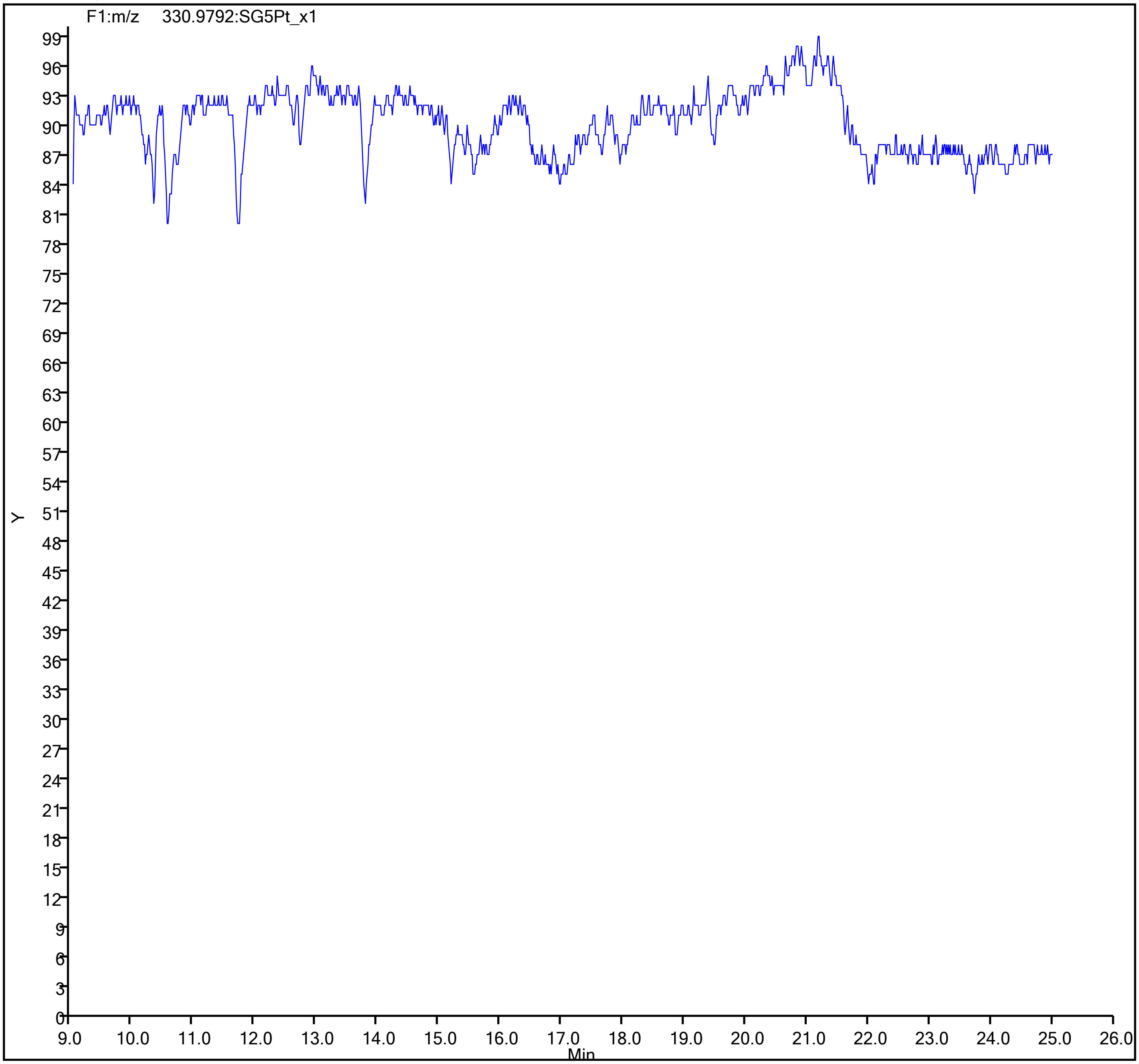

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID (1): CPS 320-398641/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324
H (Peak Height) = 10494443

%R = 16 <= 25
Passed

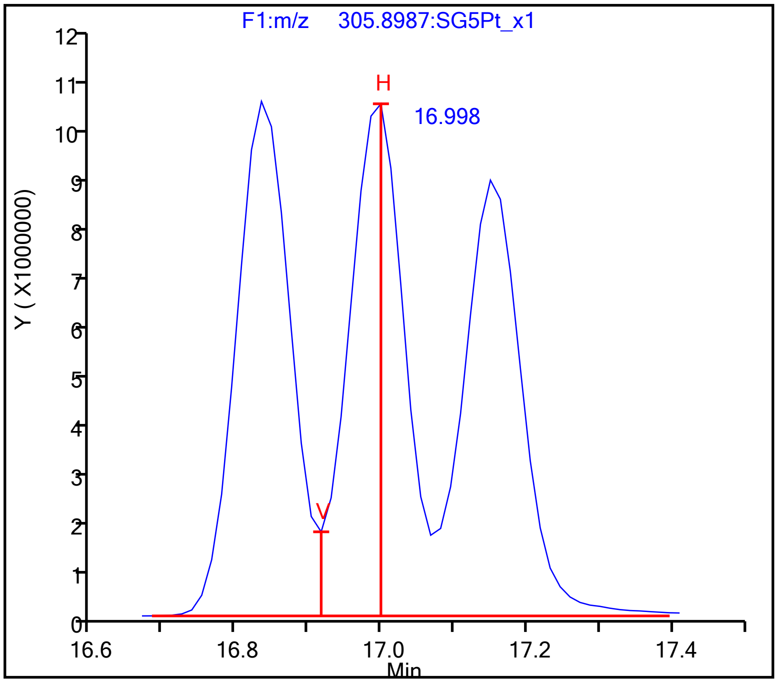

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID (1): WDM 320-413246/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/17/2020 14:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.93	20

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d				
Injection Date:	17-Sep-2020 14:12:48	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1048512
H (Peak Height) = 5269614

%R = 20 <= 25
Passed

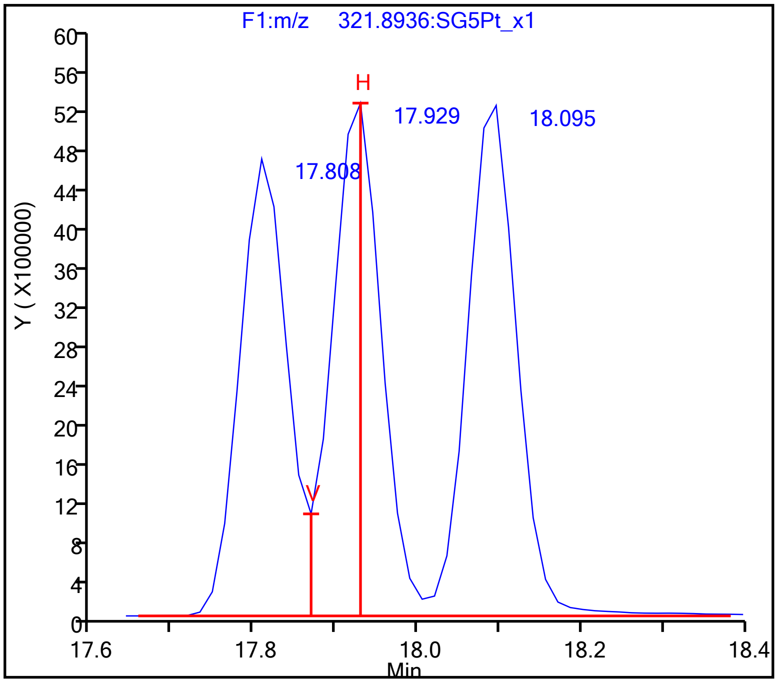

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID (1): WDM 320-421347/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/12/2020 21:15

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.30	25

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d				
Injection Date:	12-Oct-2020 21:15:36	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1004217
H (Peak Height) = 3992126

%R = 25 <= 25
Passed

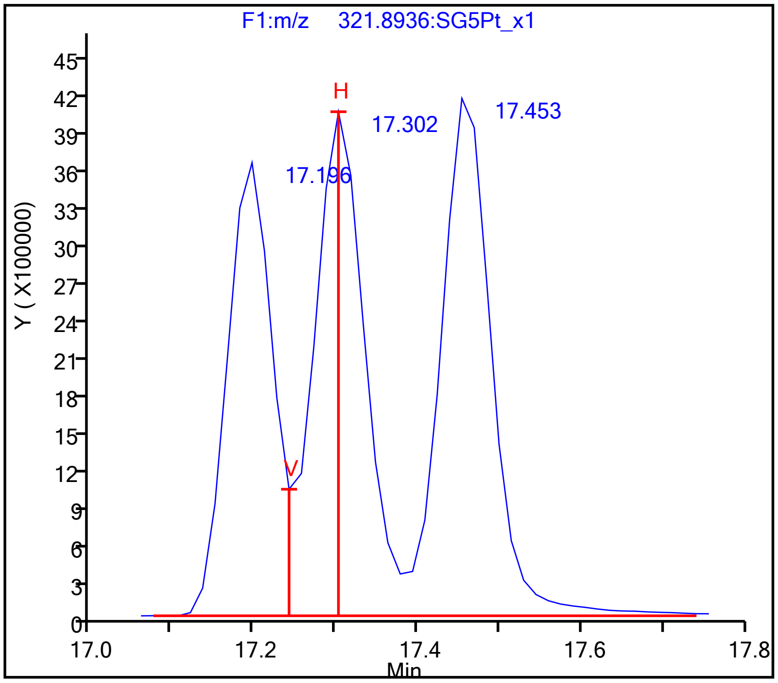

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID (1): CPS 320-422408/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 10/15/2020 01:21

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.03	21

FORM VI 1613B

Report Date: 16-Oct-2020 12:25:50 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d				
Injection Date:	15-Oct-2020 01:21:48	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1590504

H (Peak Height) = 7762021

%R = 21 <= 25

Passed

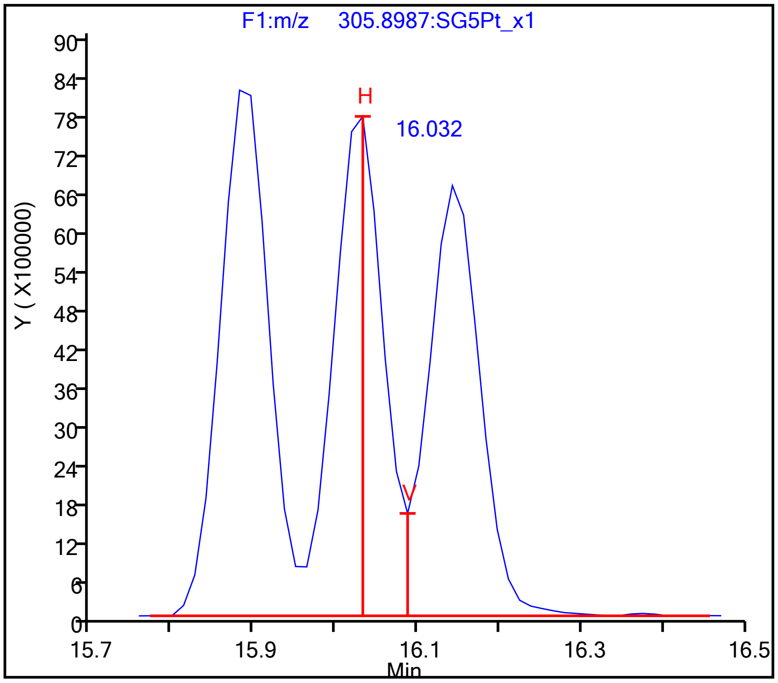

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d				
Injection Date:	15-Oct-2020 01:21:48	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID: ICV 320-413246/9 Calibration Date: 09/17/2020 20:42

Instrument ID: 10D5 Calib Start Date: 09/17/2020 16:09

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 19:09

Lab File ID: 17SE2010D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9077	0.9204		40.6	40.0	101	70-130
2,3,7,8-TCDD	AveID	1.006	1.031		41.0	40.0	102	70-130
1,2,3,7,8-PeCDF	AveID	0.9147	0.8942		196	200	98	70-130
2,3,4,7,8-PeCDF	AveID	0.9508	0.999		210	200	105	70-130
1,2,3,7,8-PeCDD	AveID	0.995	0.9269		186	200	93	70-130
1,2,3,4,7,8-HxCDF	AveID	1.109	1.057		191	200	95	70-130
1,2,3,6,7,8-HxCDF	AveID	1.072	1.099		205	200	102	70-130
2,3,4,6,7,8-HxCDF	AveID	1.084	1.130		209	200	104	70-130
1,2,3,4,7,8-HxCDD	AveID	1.001	0.9597		192	200	96	70-130
1,2,3,6,7,8-HxCDD	AveID	0.8902	0.9213		207	200	104	70-130
1,2,3,7,8,9-HxCDD	AveID	1.058	1.008		191	200	95	70-130
1,2,3,7,8,9-HxCDF	AveID	1.093	1.062		194	200	97	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.360	1.393		205	200	102	70-130
1,2,3,4,6,7,8-HpCDD	AveID	0.999	1.016		203	200	102	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.321	1.243		188	200	94	70-130
OCDD	AveID	1.129	1.154		409	400	102	70-130
OCDF	AveID	1.414	1.422		402	400	101	70-130
13C-2,3,7,8-TCDF	Ave	1.360	1.344		98.8	100	99	71-140
13C-2,3,7,8-TCDD	Ave	1.054	1.059		100	100	100	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.131	1.145		101	100	101	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.054	1.128		107	100	107	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8084	0.8415		104	100	104	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9225	0.9711		105	100	105	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.034	1.010		97.7	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9773	0.9650		98.7	100	99	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7977	0.8453		106	100	106	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.001	1.002		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9153	0.9192		100	100	100	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8506	0.8661		102	100	102	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8873	0.9091		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7618	0.8178		107	100	107	77-129
13C-OCDD	Ave	0.6287	0.6727		214	200	107	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.049	1.083		41.3	40.0	103	79-127

Report Date: 18-Sep-2020 10:38:14 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 20:42:06 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 091720 ICV HRDXNIC_00046
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:20:09

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.687	70813521	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	95171212	0.77	1.3598	98.8	98.8	0.1338	0.1338	98.83	
2,3,7,8-TCDF	17.203	35038898	0.74	0.9077	40.6	40.6	0.0800	0.0800	101	
A Non-2,3,7,8-sub-TCDF	16.924	270555	0.80	0.9077	0.3132	0.3132	0.0800	0.3132		
S Total TCDF					40.9	40.9	0.0800	0.0800		
D 13C-2,3,7,8-TCDD	17.884	74962580	0.78	1.0536	100.5	100.5	0.1339	0.1339	100	
$ 37Cl4-2,3,7,8-TCDD	17.899	30678698		1.0488	41.3	41.3	0.0266	0.0266	103	
2,3,7,8-TCDD	17.899	30913194	0.77	1.0061	41.0	41.0	0.0402	0.0402	102	
A Non-2,3,7,8-sub-TCDD	17.370	540486	0.71	1.0061	0.7166	0.7166	0.0402	0.7166		
S Total TCDD					41.7	41.7	0.0402	0.0402		
D 13C-1,2,3,7,8-PeCDF	22.198	81095265	1.56	1.1306	101.3	101.3	0.2000	0.2000	101	
1,2,3,7,8-PeCDF	22.212	145038273	1.56	0.9147	195.5	195.5	0.6709	0.6709	97.76	
D 13C-2,3,4,7,8-PeCDF	23.535	79912267	1.54	1.0539	107.1	107.1	0.2145	0.2145	107	
2,3,4,7,8-PeCDF	23.562	159694882	1.54	0.9508	210.2	210.2	0.6971	0.6971	105	
A F1 PeCDFs	19.789						0.0224	0.0224		
A Non-2,3,7,8-sub-PeCDF	22.936	3337810	1.57	0.9328	4.445	4.445	0.6832	4.445		
S Total PeCDF					410.1	410.1	0.6840	0.6840		
D 13C-1,2,3,7,8-PeCDD	24.257	59587891	1.59	0.8084	104.1	104.1	0.1077	0.1077	104	
1,2,3,7,8-PeCDD	24.285	110469696	1.55	0.9955	186.2	186.2	0.1846	0.1846	93.12	
A Non-2,3,7,8-sub-PeCDD	23.187						0.1846	0.1846		
S Total PeCDD					186.2	186.2	0.1846	0.1846		
D 13C-1,2,3,4,7,8-HxCDF	30.393	55574520	0.50	0.9225	105.3	105.3	0.4673	0.4673	105	
1,2,3,4,7,8-HxCDF	30.406	117452791	1.23	1.1090	190.6	190.6	1.119	1.119	95.29	
D 13C-1,2,3,6,7,8-HxCDF	30.579	57775623	0.51	1.0336	97.7	97.7	0.4170	0.4170	97.68	
1,2,3,6,7,8-HxCDF	30.606	126977499	1.23	1.0721	205.0	205.0	1.100	1.100	102	
D 13C-2,3,4,6,7,8-HxCDF	31.444	55227270	0.51	0.9773	98.7	98.7	0.4410	0.4410	98.74	
2,3,4,6,7,8-HxCDF	31.458	124808049	1.23	1.0838	208.5	208.5	0.8662	0.8662	104	
D 13C-1,2,3,7,8,9-HxCDF	32.256	52606327	0.51	0.9153	100.4	100.4	0.4709	0.4709	100	
1,2,3,7,8,9-HxCDF	32.270	111782395	1.24	1.0931	194.4	194.4	0.8173	0.8173	97.20	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	30.073						0.9565	0.9565		
S Total HxCDF					798.5	798.5	0.9756	0.9756		
* 13C-1,2,3,7,8,9-HxCDD	32.070	57229550	1.23	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	48373444	1.24	0.7977	106.0	106.0	0.3458	0.3458	106	
1,2,3,4,7,8-HxCDD	31.644	92846754	1.23	1.0014	191.7	191.7	0.6173	0.6173	95.83	
D 13C-1,2,3,6,7,8-HxCDD	31.737	57321536	1.22	1.0010	100.1	100.1	0.2755	0.2755	100	
1,2,3,6,7,8-HxCDD	31.750	105623177	1.22	0.8902	207.0	207.0	0.6074	0.6074	104	
1,2,3,7,8,9-HxCDD	32.083	106579071	1.22	1.0579	190.6	190.6	0.5453	0.5453	95.32	
A Non-2,3,7,8-sub-HxCDD	30.739						0.5867	0.5867		
S Total HxCDD					589.3	589.3	0.5900	0.5900		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	49567572	0.42	0.8506	101.8	101.8	0.9395	0.9395	102	
1,2,3,4,6,7,8-HpCDF	33.691	138105265	1.03	1.3603	204.8	204.8	1.786	1.786	102	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	46800223	0.44	0.7618	107.3	107.3	1.049	1.049	107	
1,2,3,4,7,8,9-HpCDF	34.761	116328721	1.03	1.3207	188.2	188.2	2.169	2.169	94.11	
A Non-2,3,7,8-sub-HpCDF	34.232						1.961	1.961		
S Total HpCDF					393.0	393.0	1.978	1.978		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	52029389	1.05	0.8873	102.5	102.5	0.6043	0.6043	102	
1,2,3,4,6,7,8-HpCDD	34.481	105745635	1.05	0.9988	203.5	203.5	1.049	1.049	102	
A Non-2,3,7,8-sub-HpCDD	34.208						1.049	1.049		
S Total HpCDD					203.5	203.5	1.049	1.049		
D 13C-OCDD	36.779	76996627	0.90	0.6287	214.0	214.0	0.3391	0.3391	107	
OCDF	36.887	218936724	0.90	1.4136	402.3	402.3	0.4055	0.4055	101	
OCDD	36.791	177685171	0.89	1.1290	408.8	408.8	0.5837	0.5837	102	

QC Flag Legend

Processing Flags

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:38:14 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 20:42:06 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 091720 ICV HRDXNIC_00046
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:20:09

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.687	17.702	-1		31056152	7545346	5603	14007	1347		
333.9339	17.687	17.702	-1		39757369	9625734	4090	10225	2353	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.972	41252497	10124118	7380	18450	1372		
317.9389	17.188	17.203	-1	0.972	53918715	13281949	5117	12792	2596	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.234	-2	1.001	14945095	3755102	3383	8457	1110		
305.8987	17.203	17.234	-2	1.001	20093803	5020050	3417	8542	1469	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.538	16.924	-23	0.962	120192	31996	3383	8457	9		
305.8987	16.538	16.924	-23	0.962	150363	35792	3417	8542	10	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.914	-2	1.011	32795221	7790825	5603	14007	1390		
333.9339	17.884	17.914	-2	1.011	42167359	9954850	4090	10225	2434	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.899	17.914	-1	1.012	30678698	7149088	1918	4795	3727		
2,3,7,8-TCDD											
319.8965	17.899	17.929	-2	1.001	13420623	3096512	1556	3890	1990		
321.8936	17.899	17.929	-2	1.001	17492571	4045616	1312	3280	3084	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.793	17.370	25	0.995	223510	61586	1556	3890	40		
321.8936	17.793	17.370	25	0.995	316976	90101	1312	3280	69	0.71(0.65-0.89)	

Report Date: 18-Sep-2020 10:38:14 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.198	0	1.255	49395326	8782235	9260	23150	948		
353.8970	22.185	22.198	-1	1.254	31699939	5590468	6268	15670	892	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.226	-1	1.001	88302790	15725278	21396	53490	735		
341.8567	22.212	22.226	-1	1.001	56735483	10054887	13886	34715	724	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.535	0	1.331	48486367	8111877	9260	23150	876		
353.8970	23.535	23.535	0	1.331	31425900	5196410	6268	15670	829	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.562	0	1.001	96748270	16146164	21396	53490	755		
341.8567	23.562	23.562	0	1.001	62946612	10513563	13886	34715	757	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.789						451	1127			
341.8567	19.789						704	1760			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.744	22.936	-12	1.025	2036794	338358	21396	53490	16		
341.8567	22.744	22.936	-12	1.025	1301016	215952	13886	34715	16	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.257	0	1.371	36585683	5766251	3659	9147	1576		
369.8919	24.257	24.257	0	1.371	23002208	3611161	2321	5802	1556	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.285	0	1.001	67206423	10604790	4199	10497	2526		
357.8516	24.285	24.285	0	1.001	43263273	6873635	2693	6732	2552	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.187						4199	10497			
357.8516	23.187						2693	6732			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.393	0	0.948	18603781	3356313	8739	21847	384		
385.8610	30.393	30.393	0	0.948	36970739	6597696	16728	41820	394	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.419	-1	1.000	64723276	11612171	27684	69210	419		
375.8178	30.406	30.419	-1	1.000	52729515	9541987	21735	54337	439	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.592	-1	0.954	19468539	3564701	8739	21847	408		
385.8610	30.579	30.592	-1	0.954	38307084	6914958	16728	41820	413	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.606	30.606	0	1.001	70139846	12960316	27684	69210	468		
375.8178	30.606	30.606	0	1.001	56837653	10424115	21735	54337	480	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.444	0	0.980	18592979	4462323	8739	21847	511		
385.8610	31.444	31.444	0	0.980	36634291	8698712	16728	41820	520	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	68722182	16644655	27684	69210	601		
375.8178	31.458	31.458	0	1.000	56085867	13550656	21735	54337	623	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.256	0	1.006	17757554	4720457	8739	21847	540		
385.8610	32.256	32.256	0	1.006	34848773	9108161	16728	41820	544	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.270	0	1.000	61960655	16131546	27684	69210	583		
375.8178	32.270	32.270	0	1.000	49821740	12758785	21735	54337	587	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.073						27684	69210			
375.8178	30.073						21735	54337			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.070	0		31617919	8159791	9513	23782	858		
403.8529	32.070	32.070	0		25611631	6610729	6783	16957	975	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	26770897	7007533	9513	23782	737		
403.8529	31.631	31.631	0	0.986	21602547	5619172	6783	16957	828	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.644	0	1.000	51214844	13655449	18151	45377	752		
391.8127	31.644	31.644	0	1.000	41631910	11121784	13073	32682	851	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.737	0	0.990	31521917	7962363	9513	23782	837		
403.8529	31.737	31.737	0	0.990	25799619	6475648	6783	16957	955	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.750	0	1.000	58049066	14313234	18151	45377	789		
391.8127	31.750	31.750	0	1.000	47574111	11874308	13073	32682	908	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.083	0	1.014	58491693	14960613	18151	45377	824		
391.8127	32.083	32.083	0	1.014	48087378	12267095	13073	32682	938	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.739						18151	45377			
391.8127	30.739						13073	32682			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.679	0	1.050	14666185	4781275	13313	33282	359		
419.8220	33.679	33.679	0	1.050	34901387	11152388	33904	84760	329	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.703	-1	1.000	70213618	22812042	77236	193090	295		
409.7789	33.691	33.703	-1	1.000	67891647	22147695	77604	194010	285	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.748	0	1.084	14215835	4174817	13313	33282	314		
419.8220	34.748	34.748	0	1.084	32584388	9335826	33904	84760	275	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.761	0	1.000	59144894	17089390	77236	193090	221		
409.7789	34.761	34.761	0	1.000	57183827	16577392	77604	194010	214	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.232						77236	193090			
409.7789	34.232						77604	194010			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.469	0	1.075	26640350	7863762	16812	42030	468		
437.8140	34.469	34.469	0	1.075	25389039	7410105	14867	37167	498	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.481	0	1.000	54139156	15544707	33488	83720	464		
425.7737	34.469	34.481	-1	1.000	51606479	14519786	30533	76332	476	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.208						33488	83720			
425.7737	34.208						30533	76332			
13C-OCDD											
469.7779	36.779	36.779	0	1.147	36471611	8922255	6815	17037	1309		
471.7750	36.779	36.779	0	1.147	40525016	9855753	5782	14455	1705	0.90(0.76-1.02)	
OCDF											
441.7428	36.887	36.887	0	1.003	103846841	25209045	10225	25562	2465		
443.7399	36.875	36.887	-1	1.003	115089883	27702868	11303	28257	2451	0.90(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	83911792	20519960	13321	33302	1540		
459.7348	36.791	36.791	0	1.000	93773379	22817429	11426	28565	1997	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

n - Failed Sig-To-Noise Test

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID:	ICV
Client ID:	
Inject. Date:	17-Sep-2020 20:42:06
Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification
Instrument ID:	10D5
Operator:	AJS
Lims Batch ID:	413246
Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-TCDF, RT: 16.924

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	95171212	23406067

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	95171212	23406067

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.538	120192	31996	150363	35792	0.3132	0.80	n
Signal Totals:							
	120192	31996	150363	35792			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	270555	67788				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3132 = (270555 * 100.000) / (95171212 * 0.908)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 20:42:06	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDD, RT: 17.370

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.006	D 13C-2,3,7,8-TCDD	100.000	74962580	17745675

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	74962580	17745675

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.793	223510	61586	316976	90101	0.7166	0.71	
Signal Totals:							
	223510	61586	316976	90101			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	540486	151687				0.71	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7166 = (540486 * 100.000) / (74962580 * 1.006)

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Sep-2020 20:42:06
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 413246
Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-PeCDF, RT: 22.936

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	81095265	14372703
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	79912267	13308287

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	80503766	13840495

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.744	2036794	338358	1301016	215952	4.44	1.57	
Signal Totals:							
	2036794	338358	1301016	215952			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3337810	554310				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.445 = (3337810 * 100.000) / (80503766 * 0.933)

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

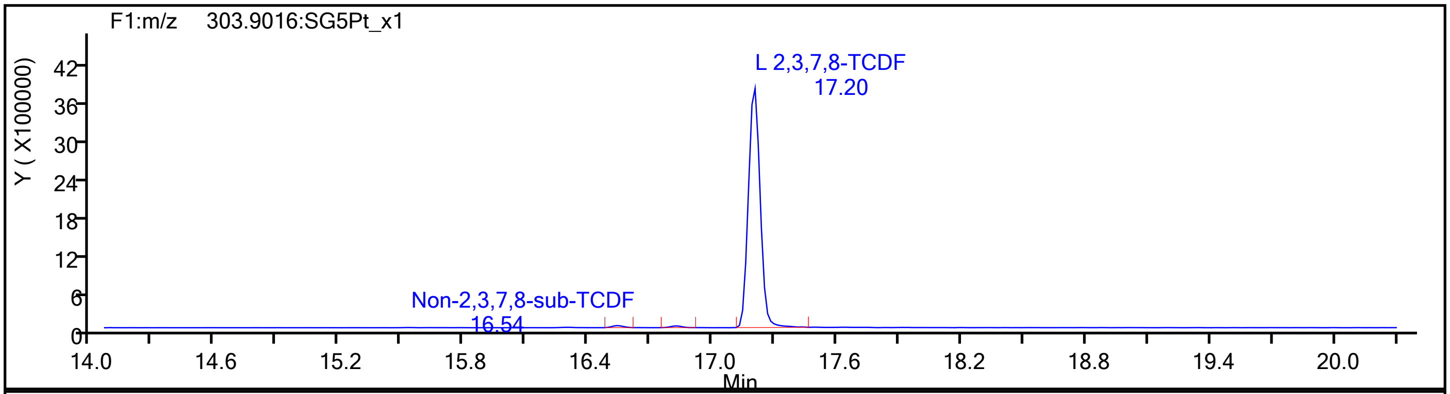

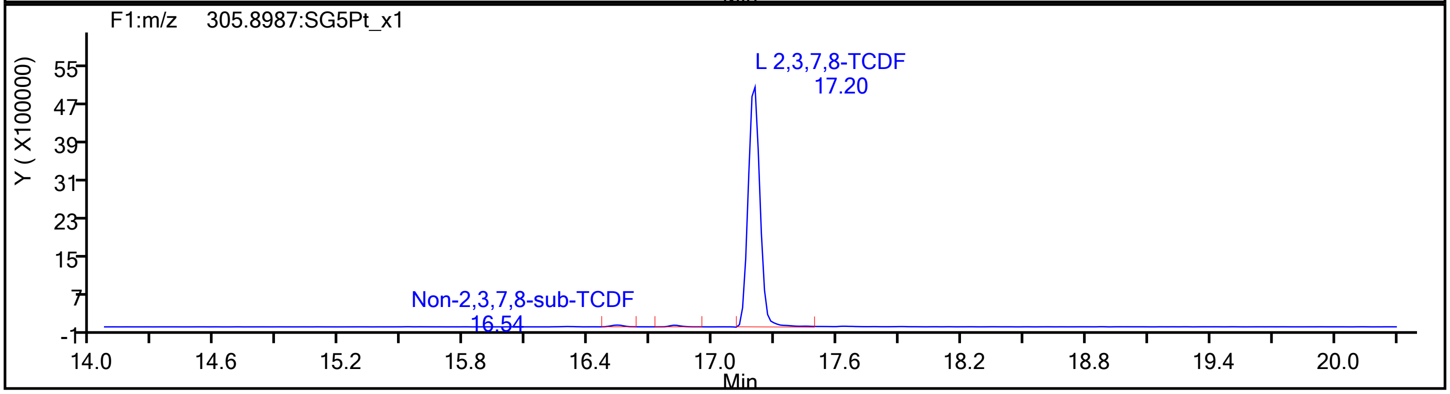

TCDF Standards

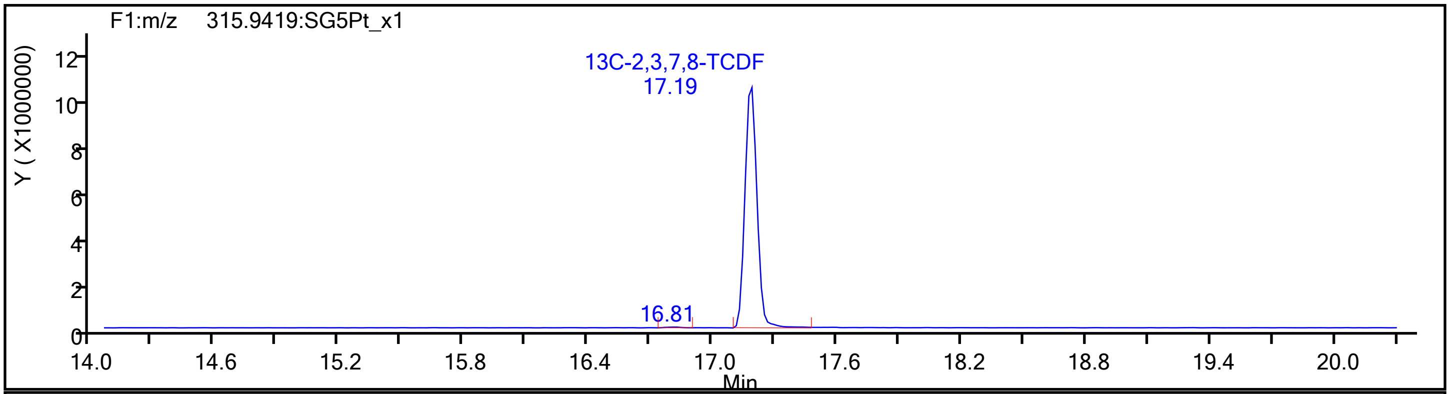

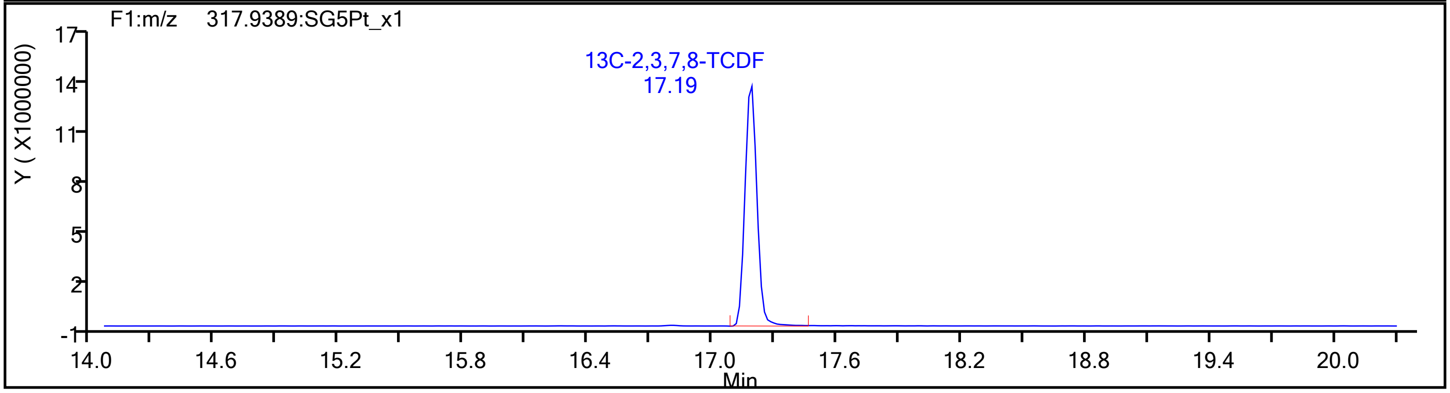

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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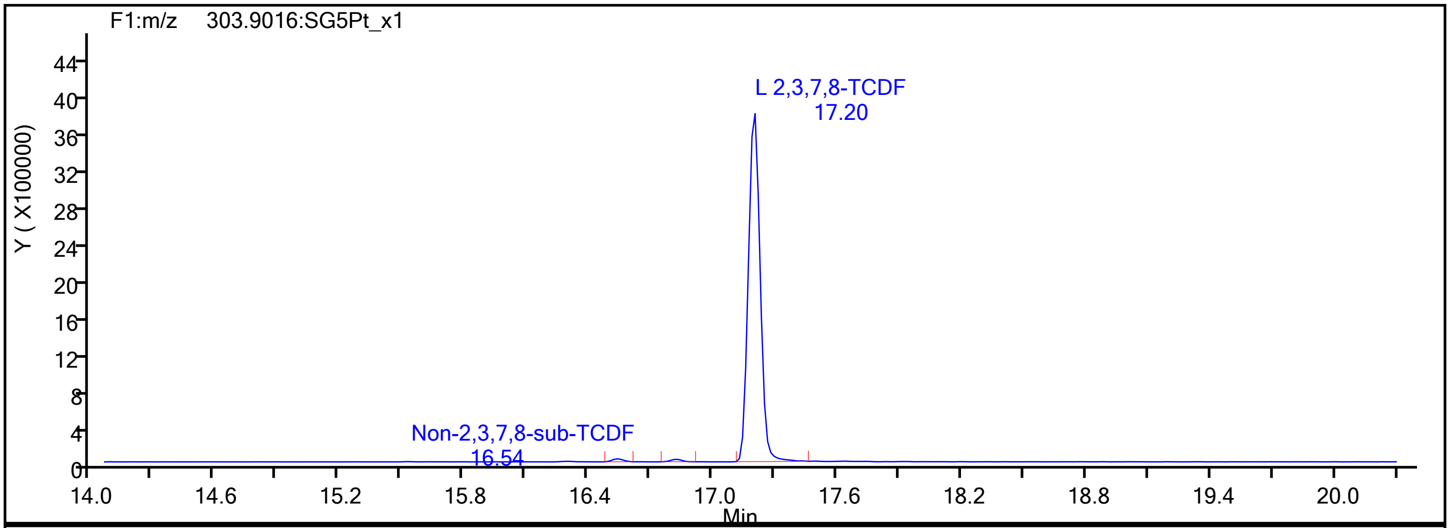

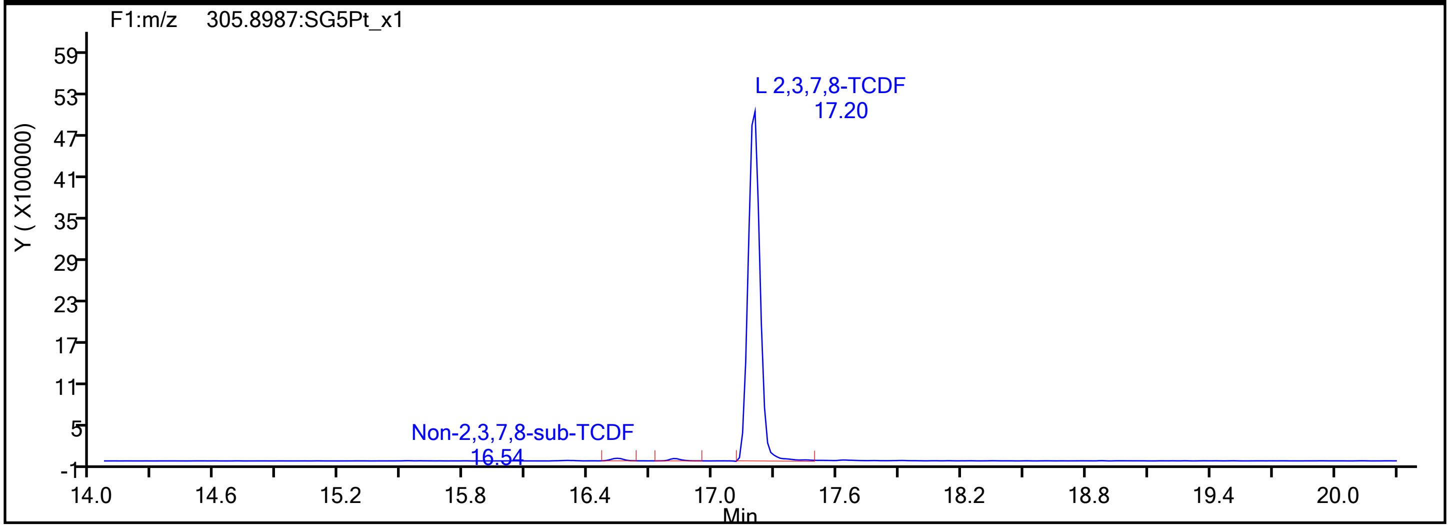

TCDF Interference Mass

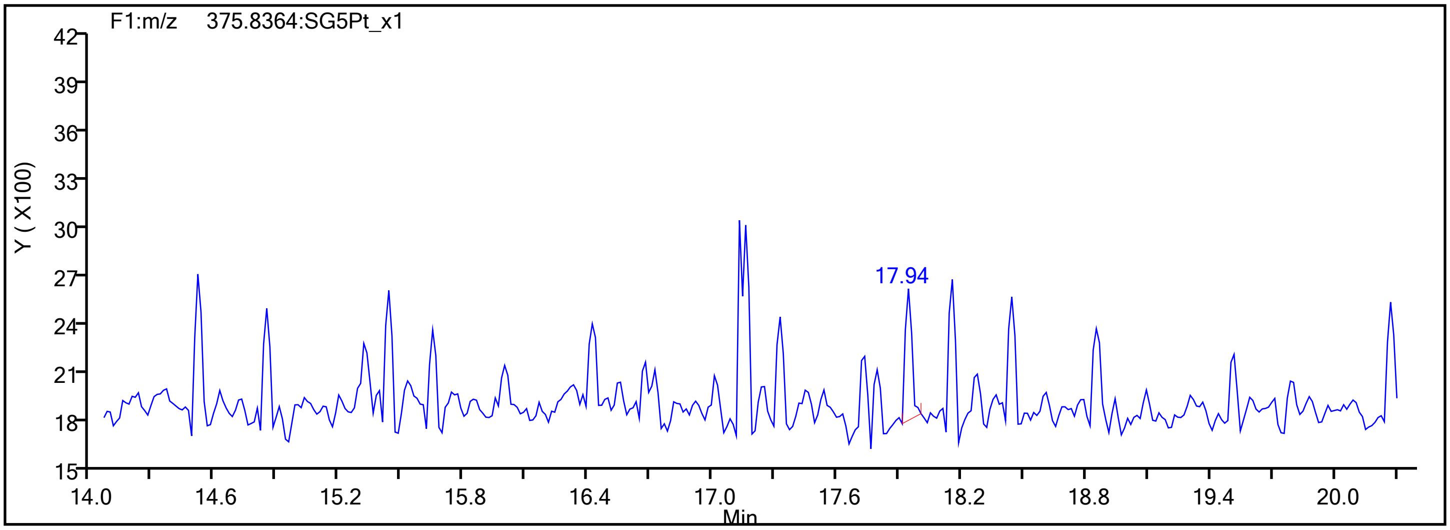

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Eurofins TestAmerica, Sacramento

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TCDD

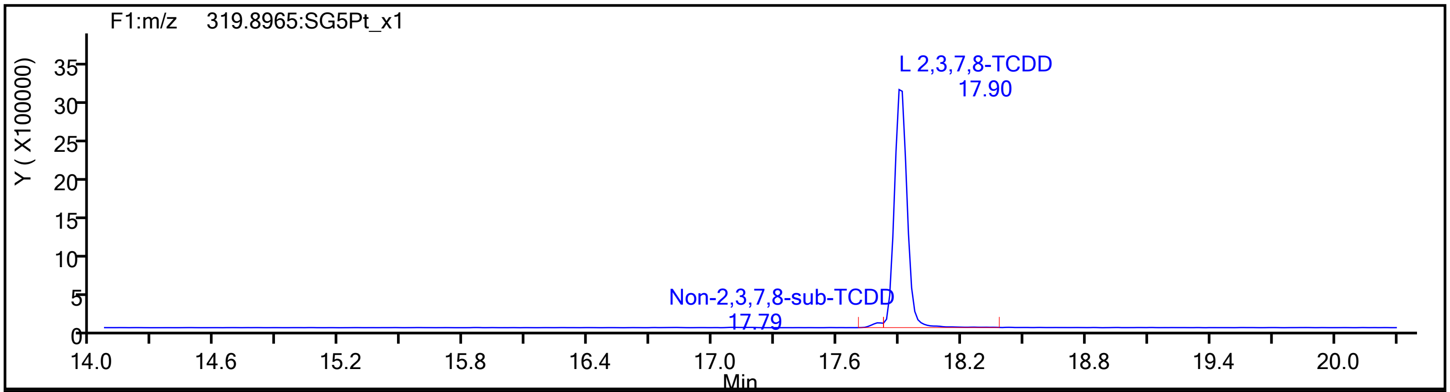

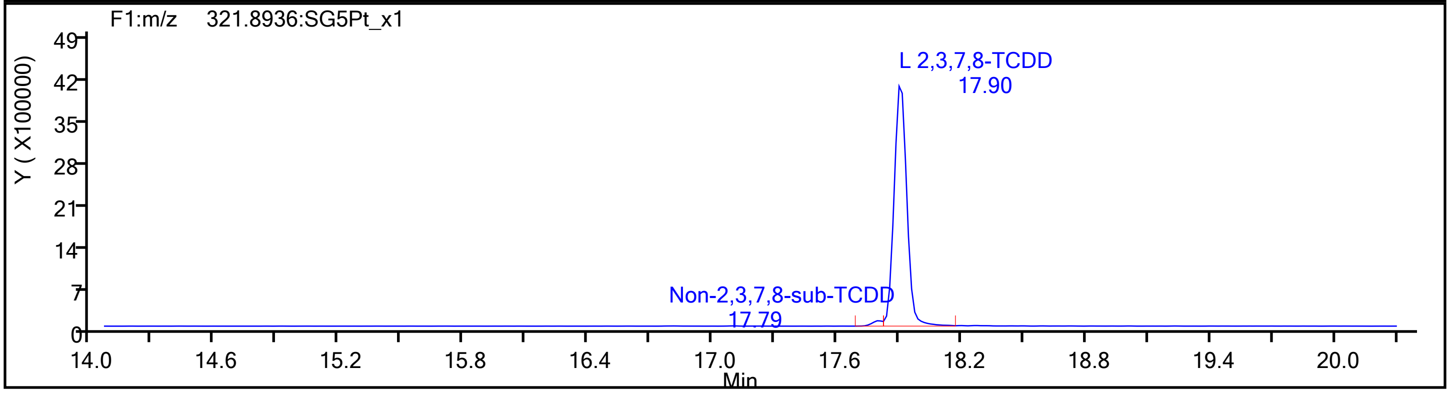

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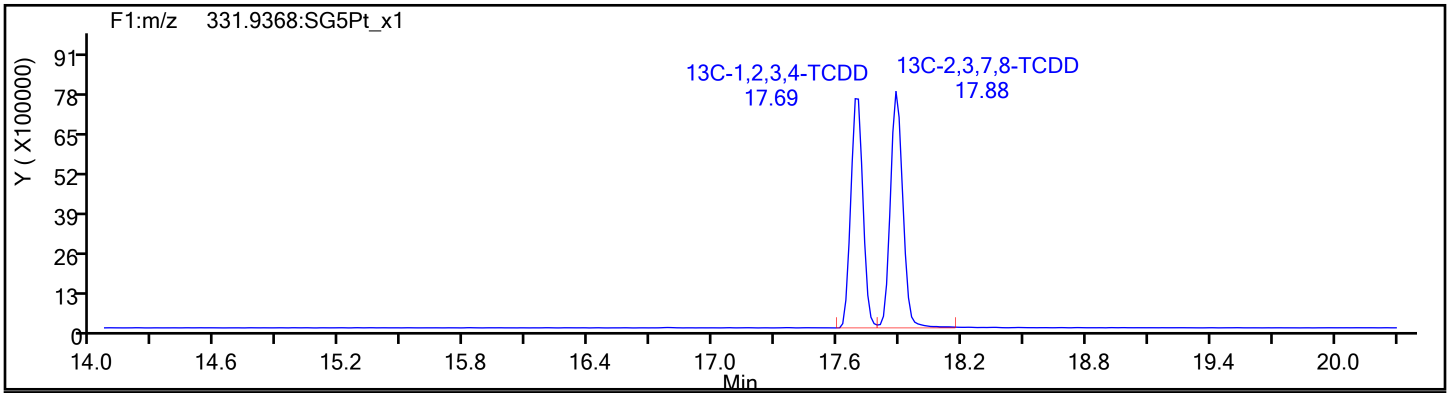

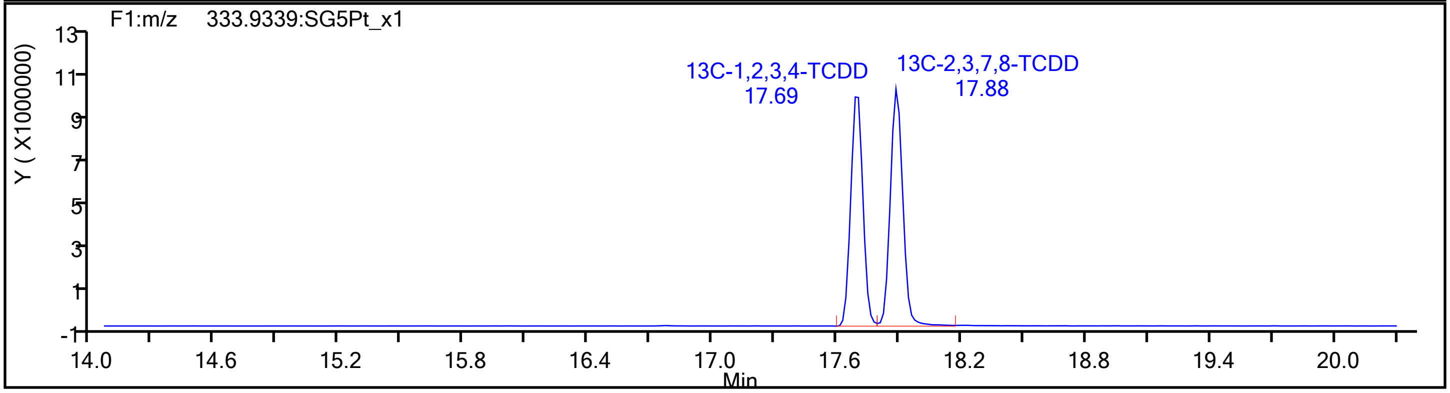

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

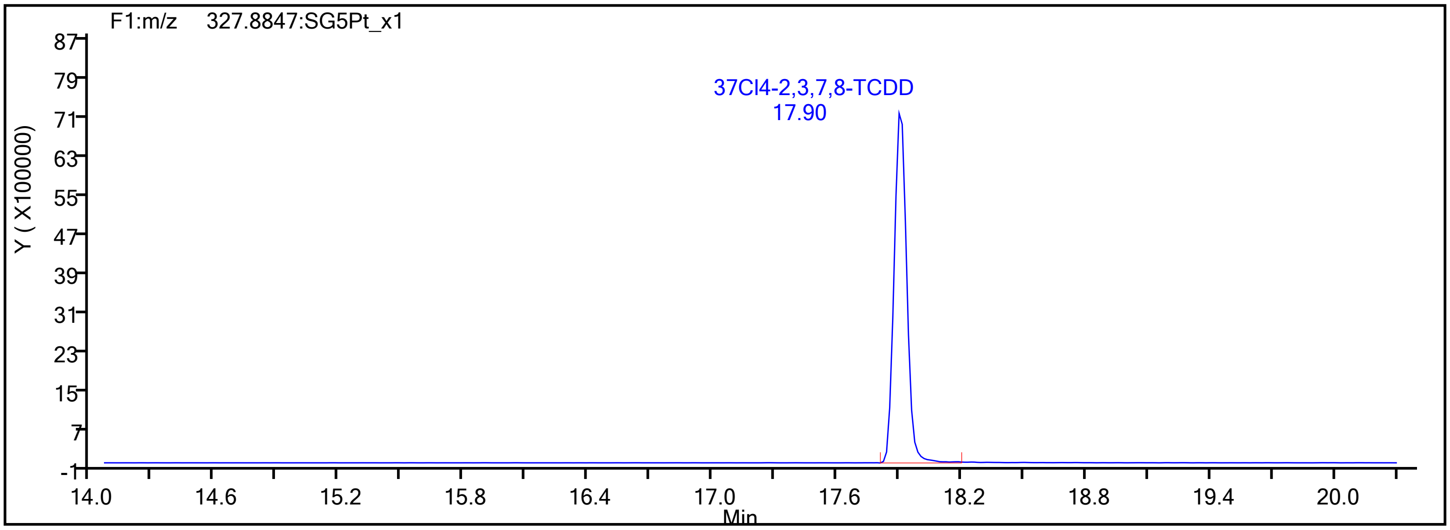

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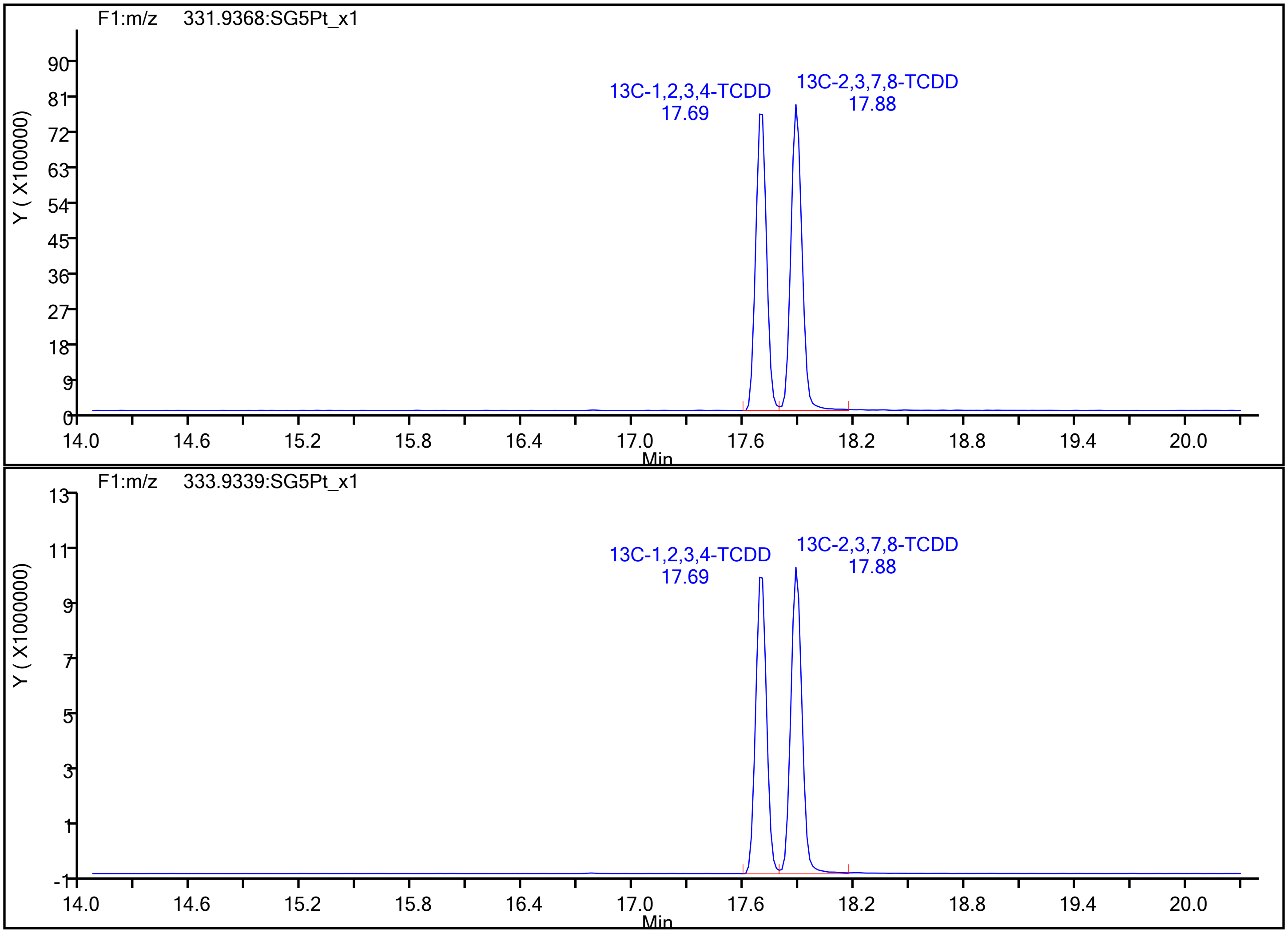

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F1 PeCDFs

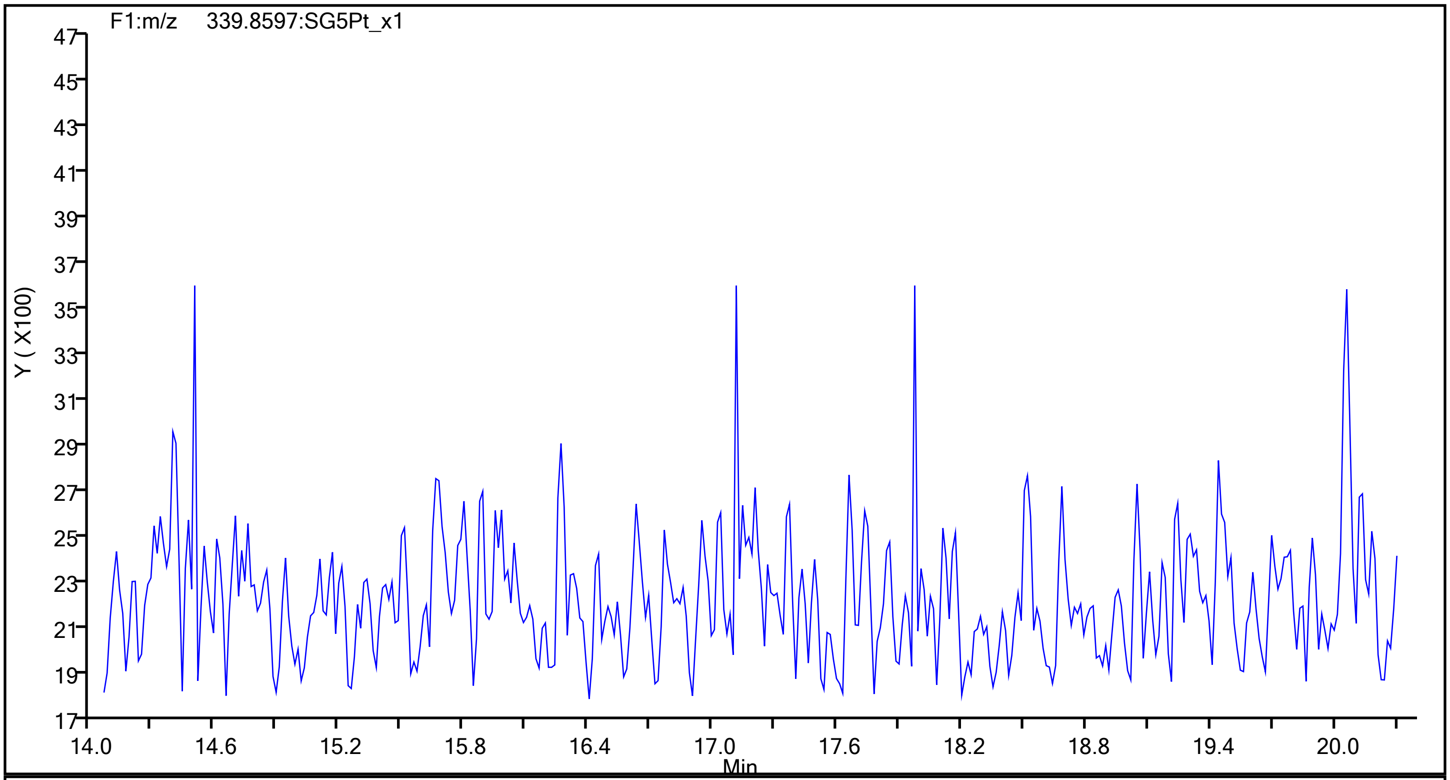

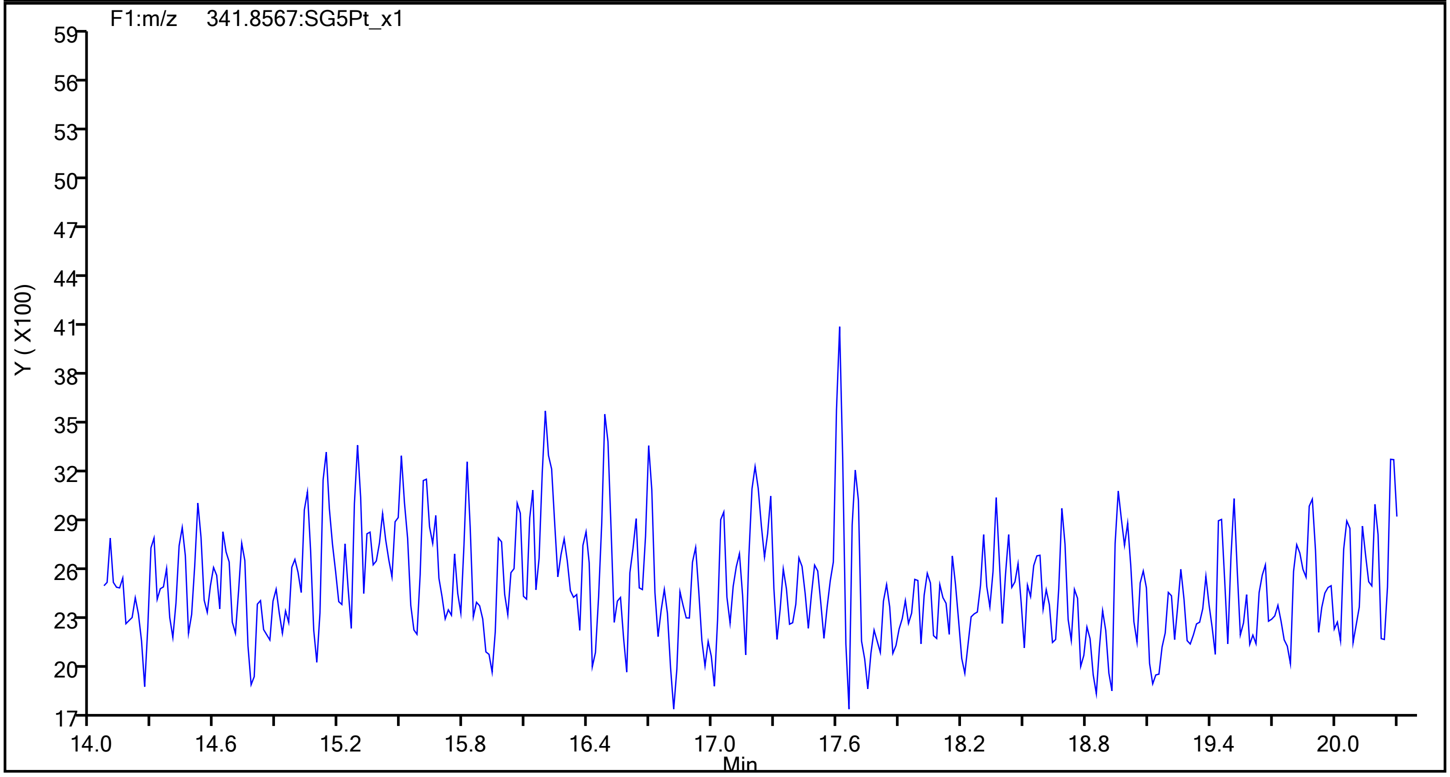

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F1 PeCDFs

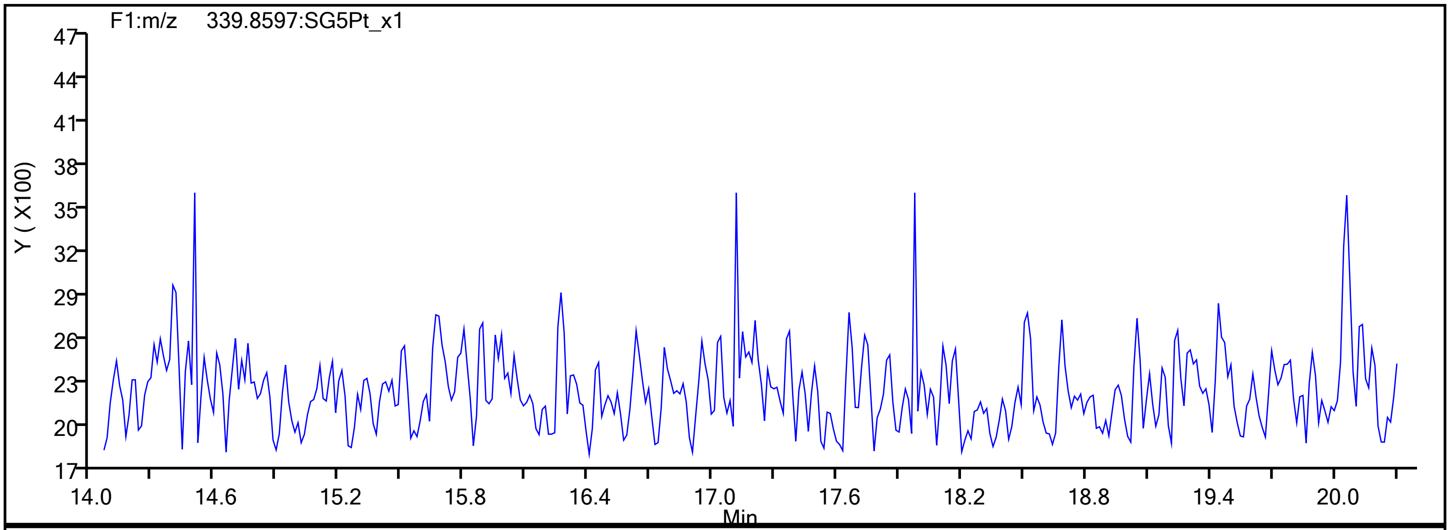

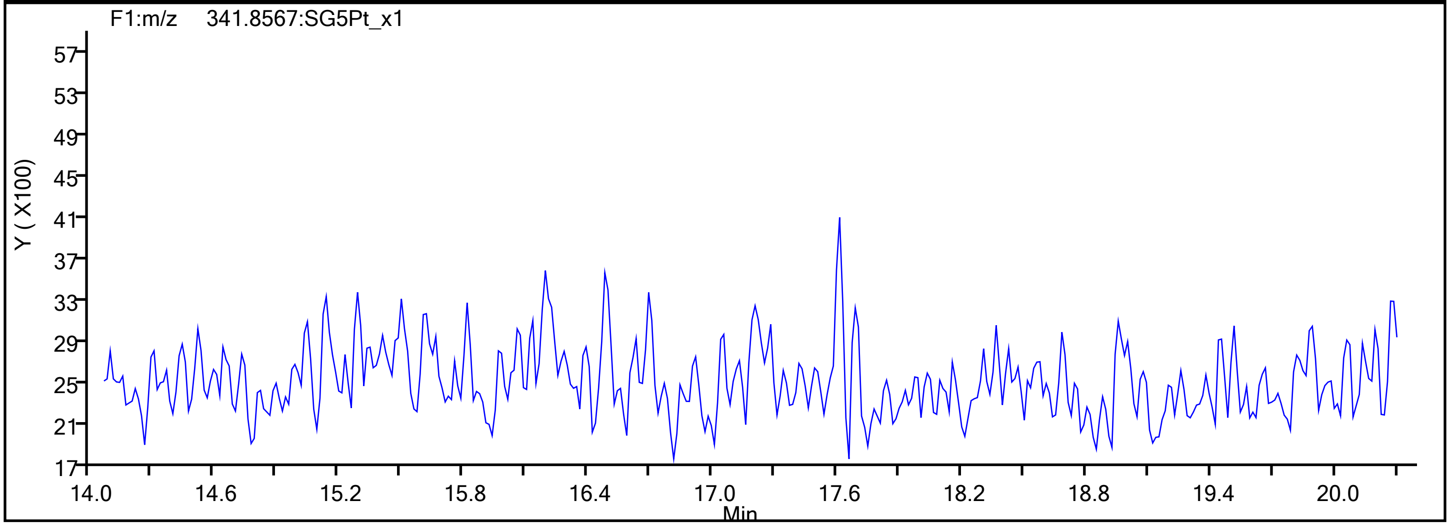

F1 PeCDFs Interference Mass

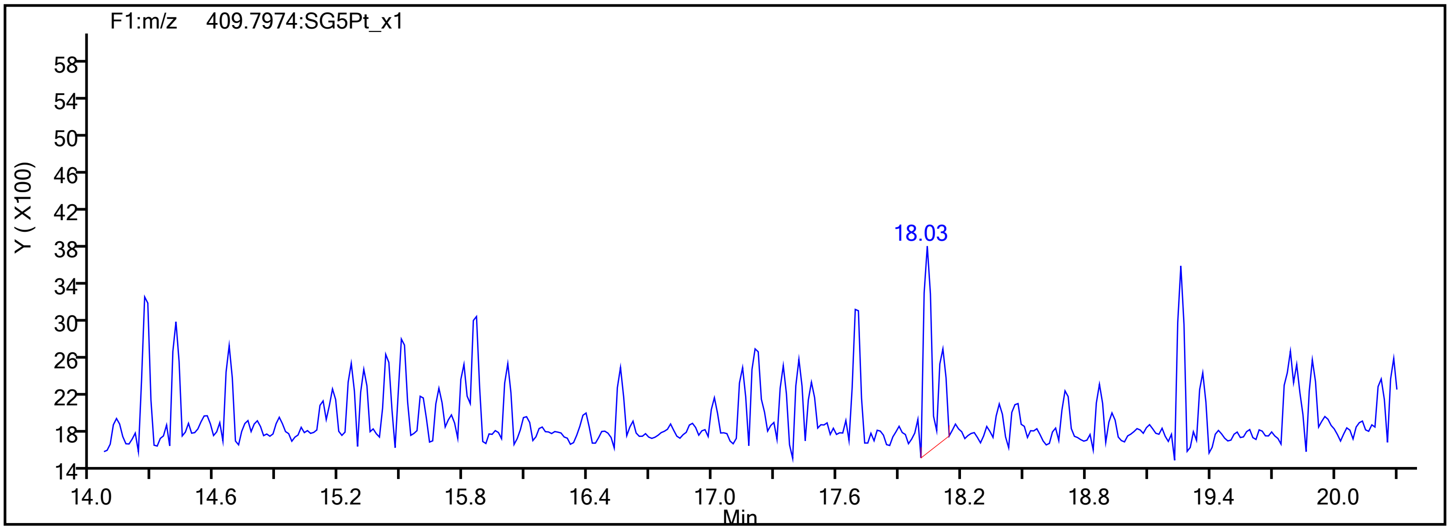

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Eurofins TestAmerica, Sacramento

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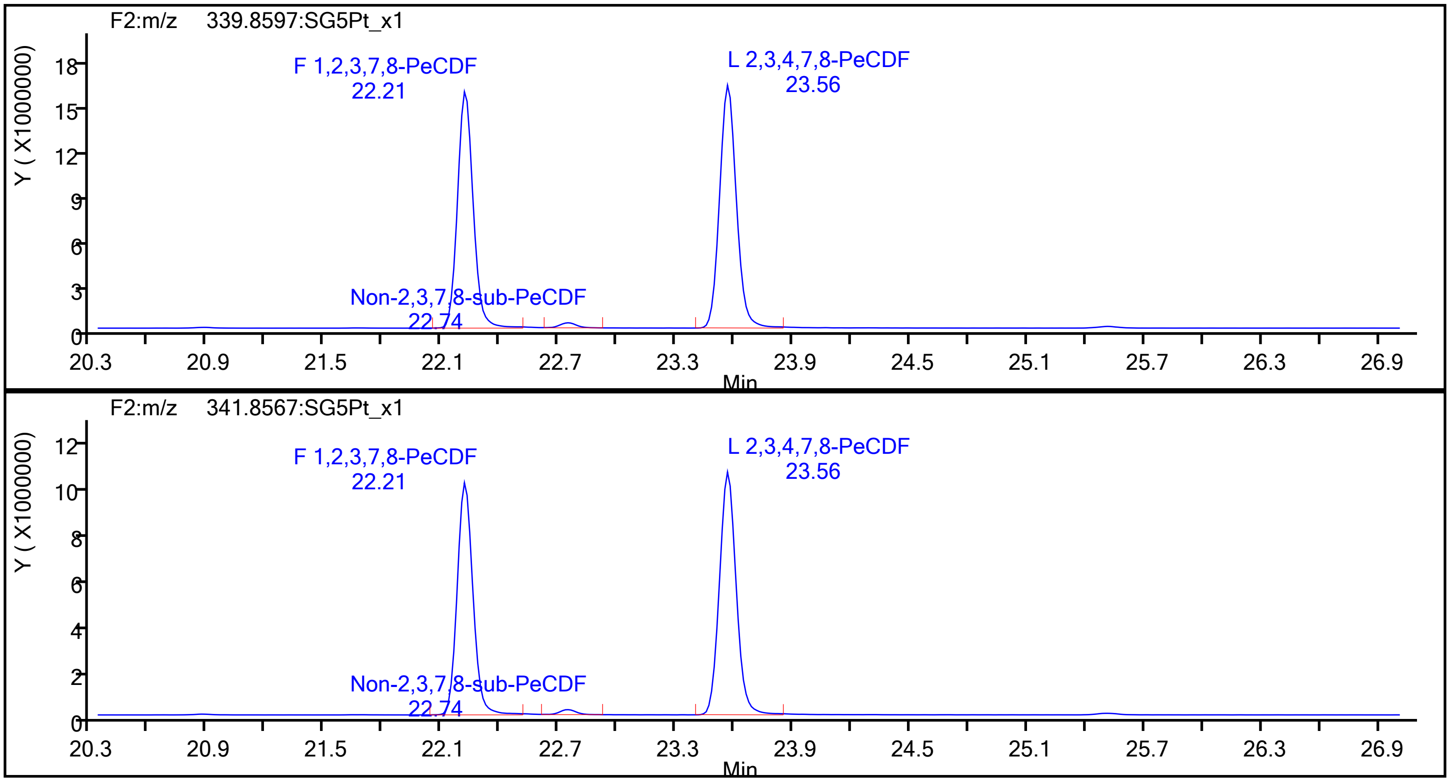

PeCDF Standards

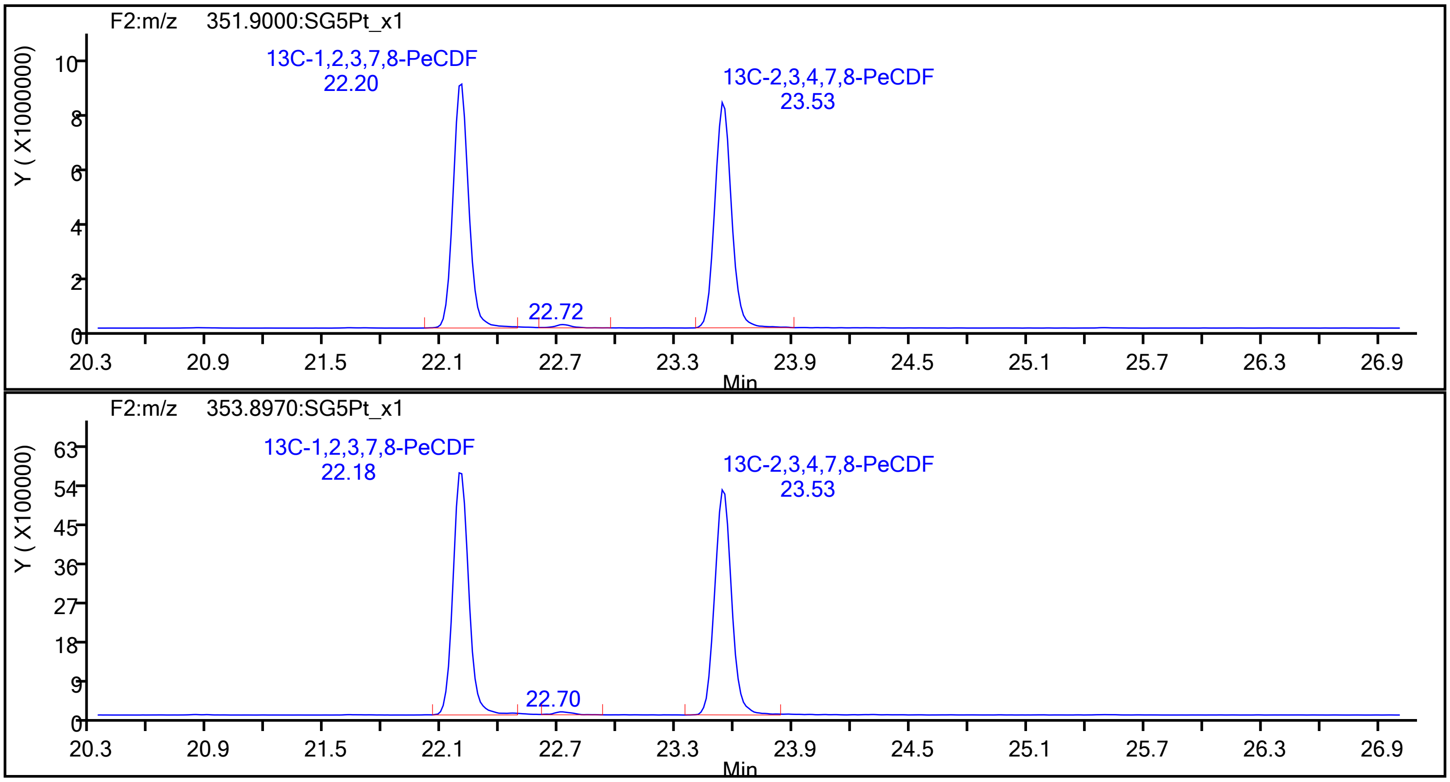

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Eurofins TestAmerica, Sacramento

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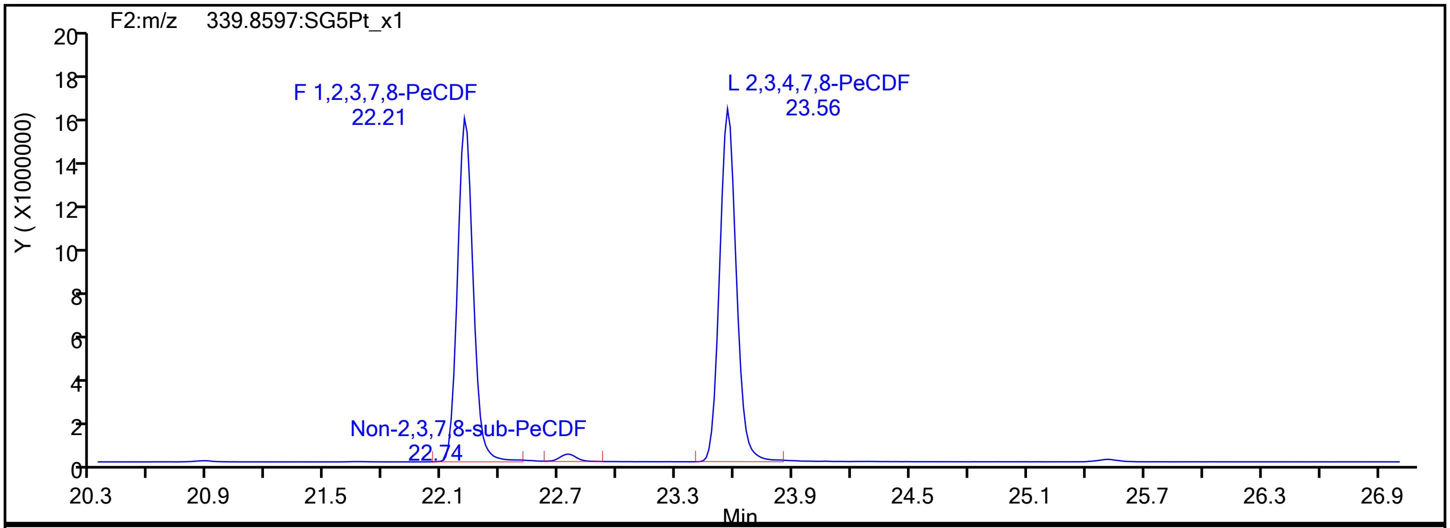

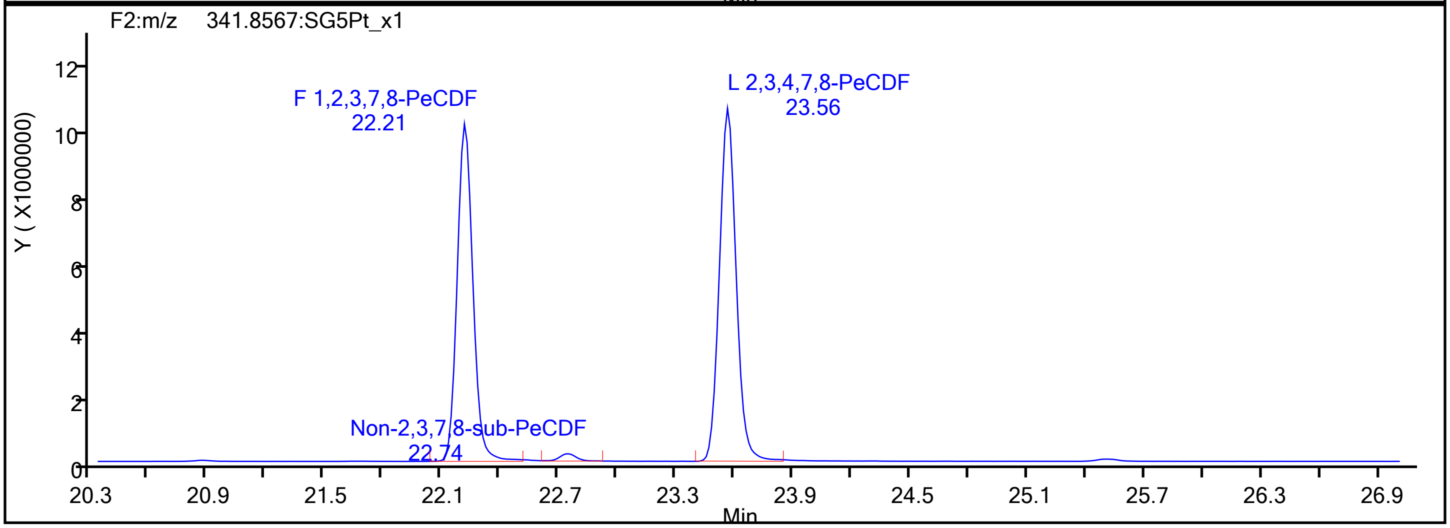

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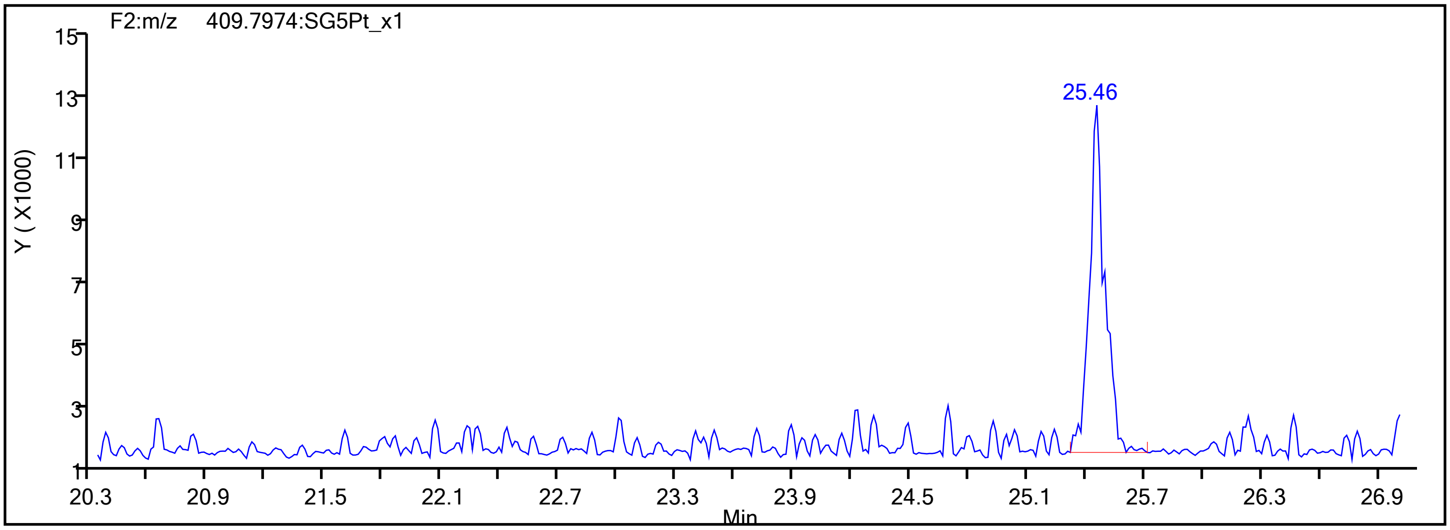

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PeCDD

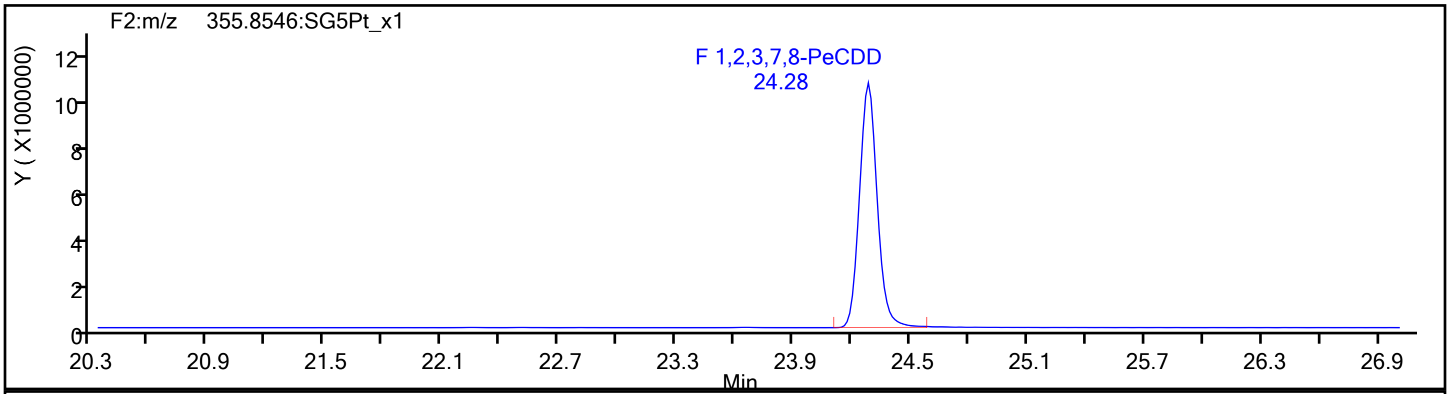

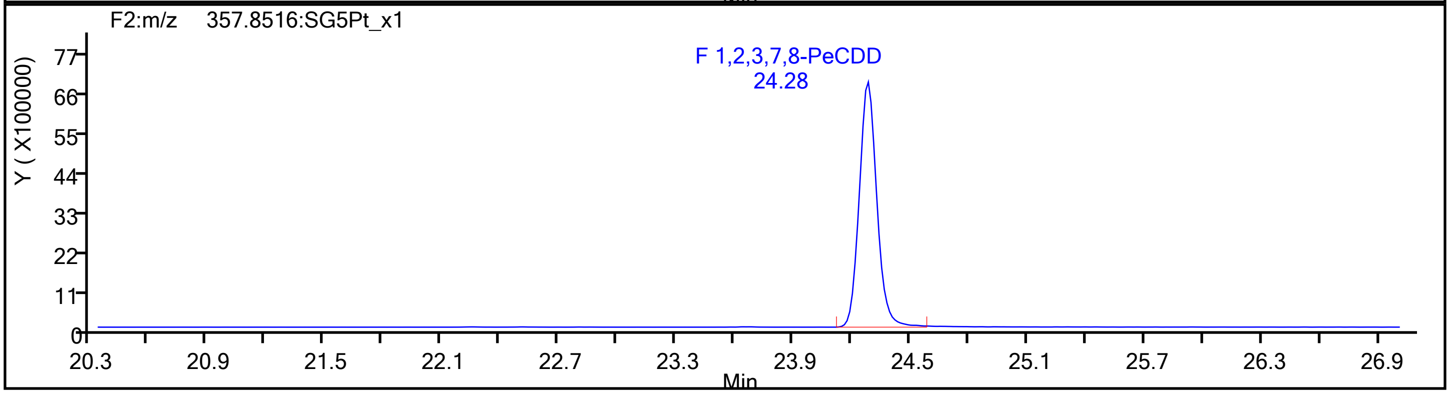

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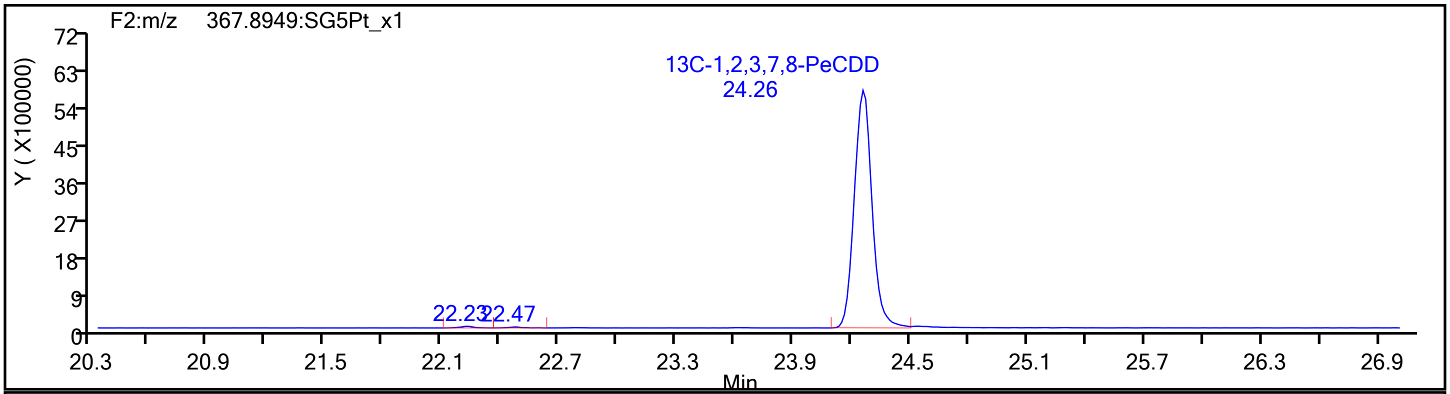

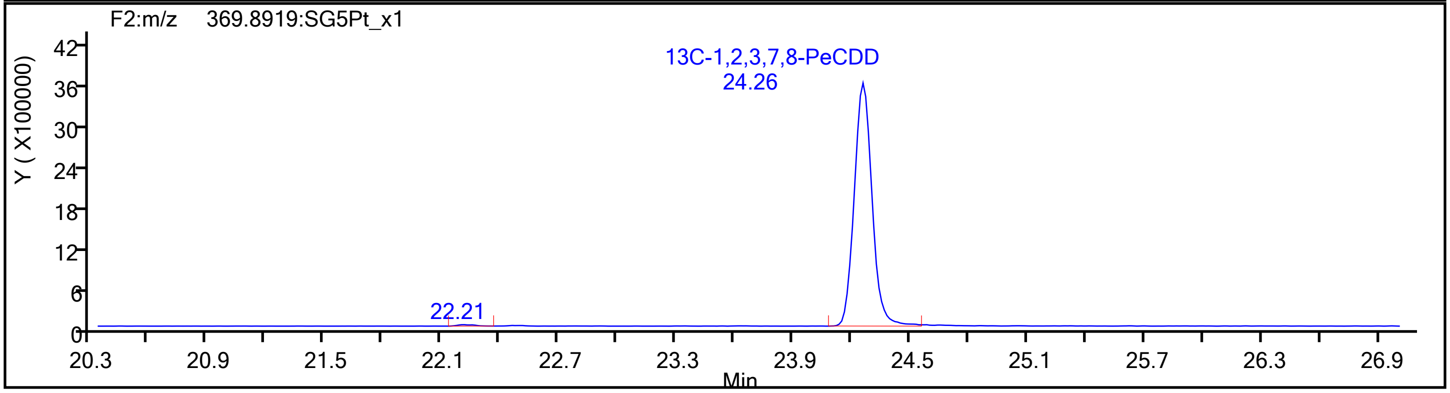

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Eurofins TestAmerica, Sacramento

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HxCDF

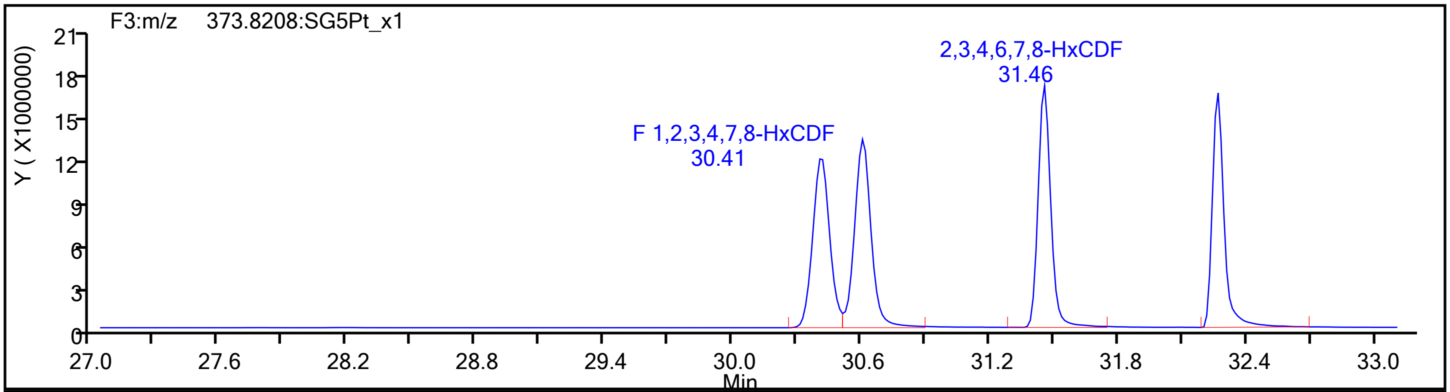

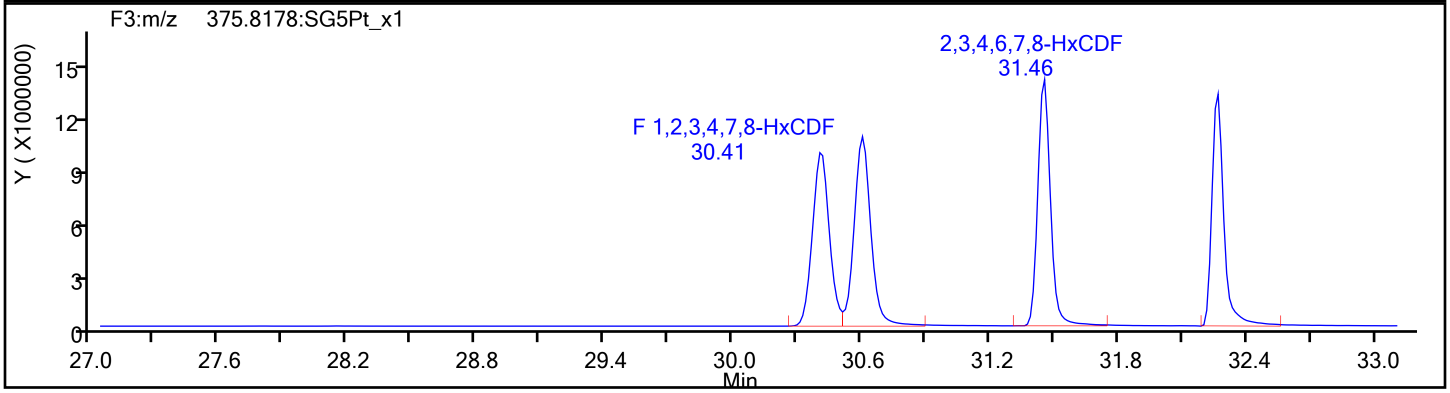

HxCDF Standards

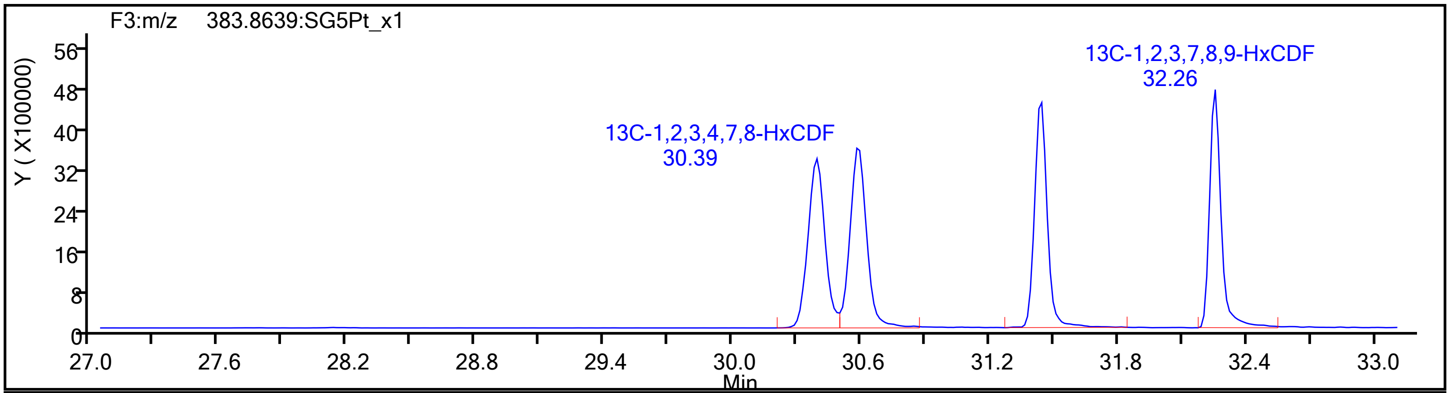

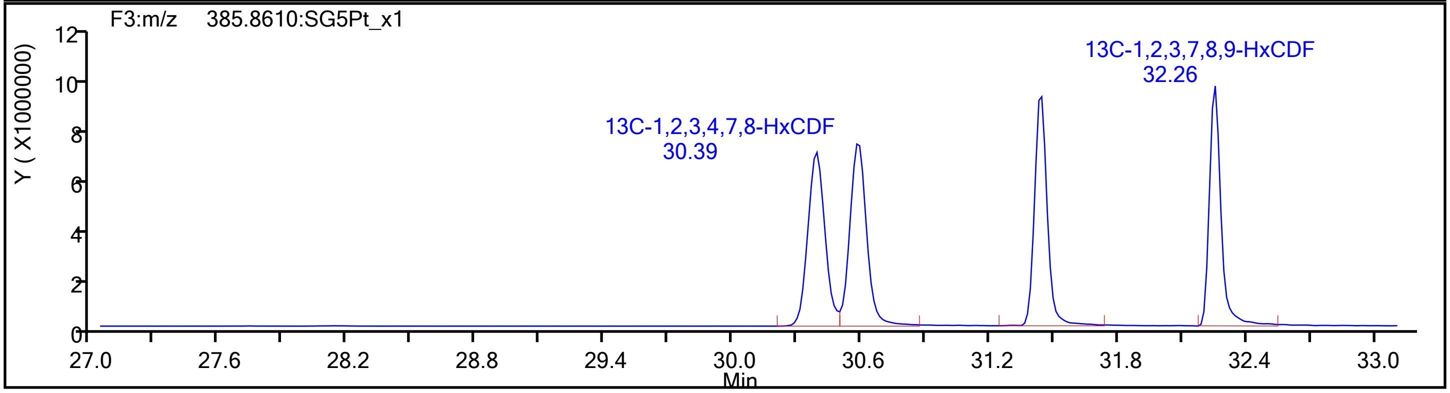

Eurofins TestAmerica, Sacramento

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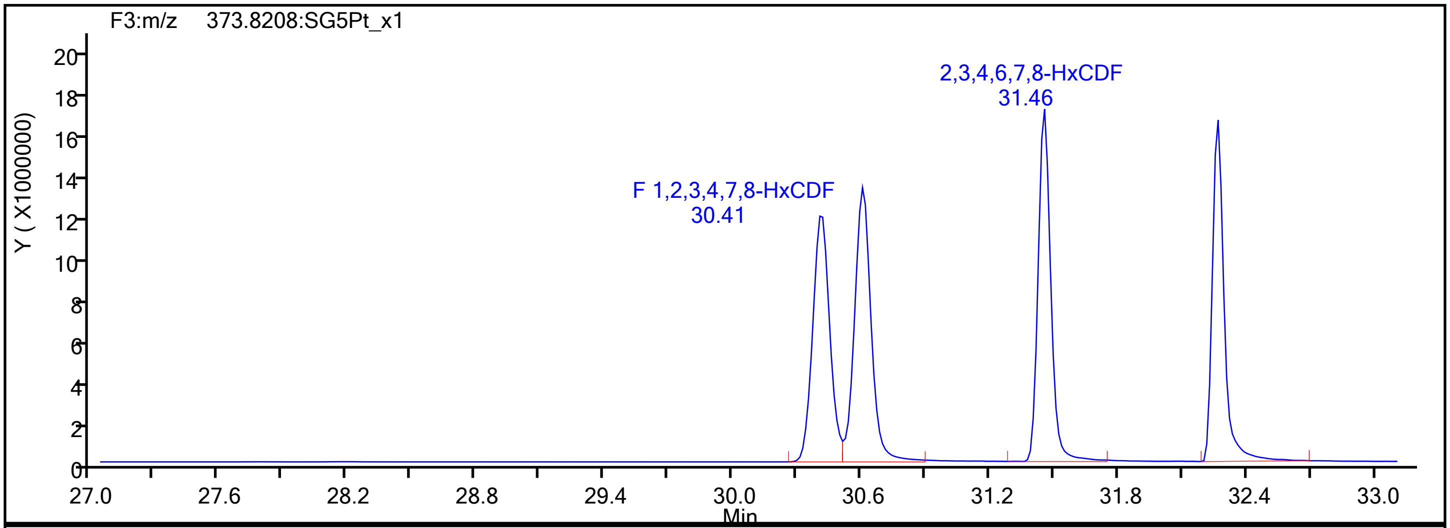

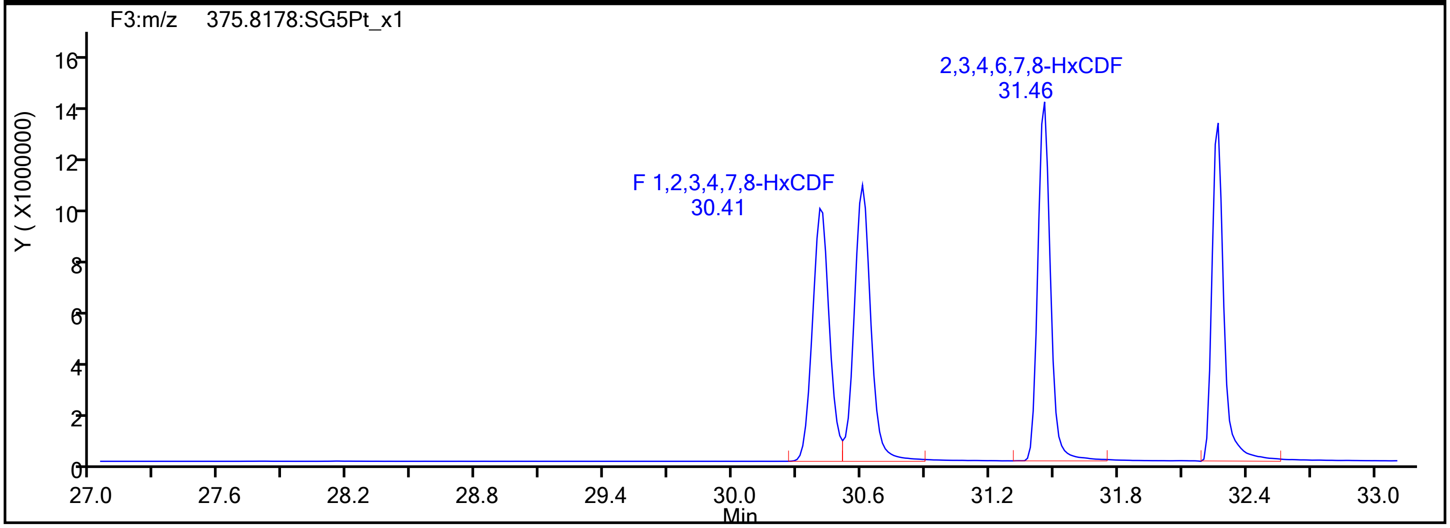

HxCDF Interference Mass

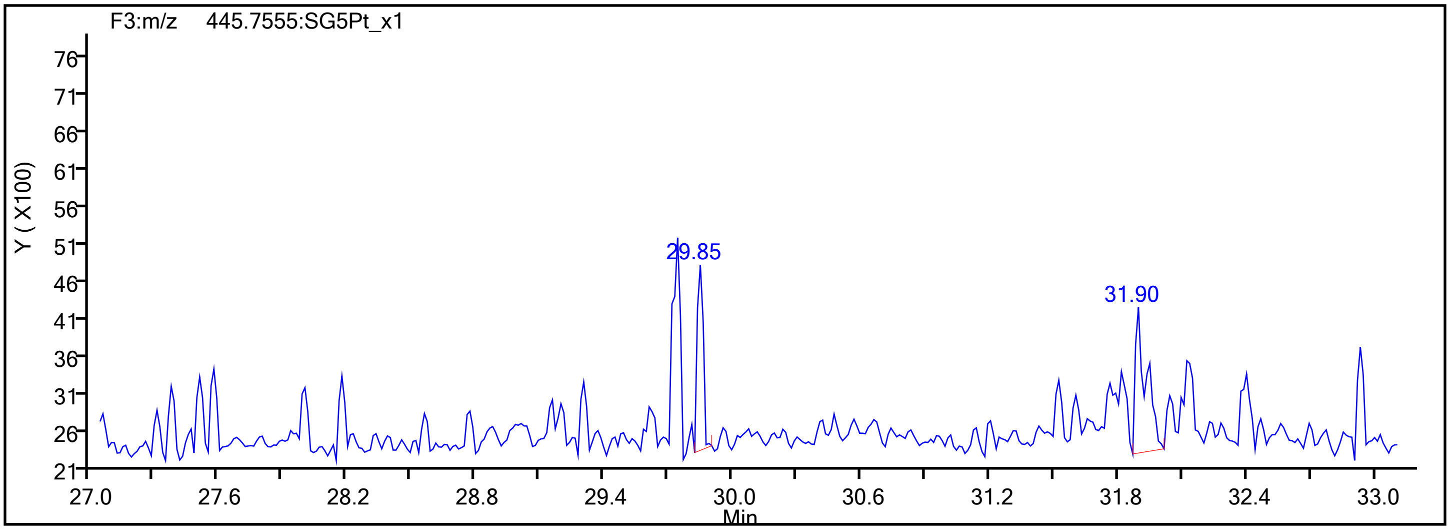

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

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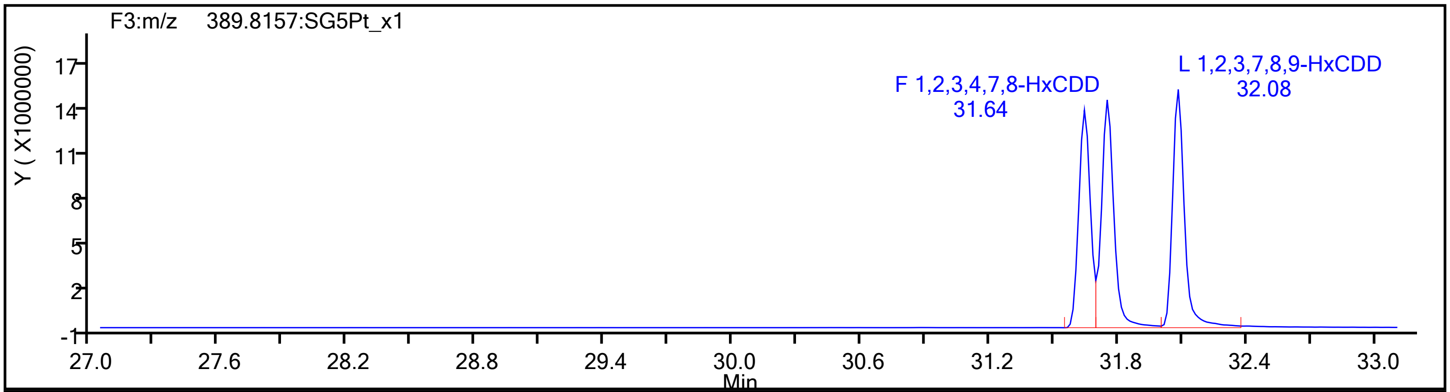

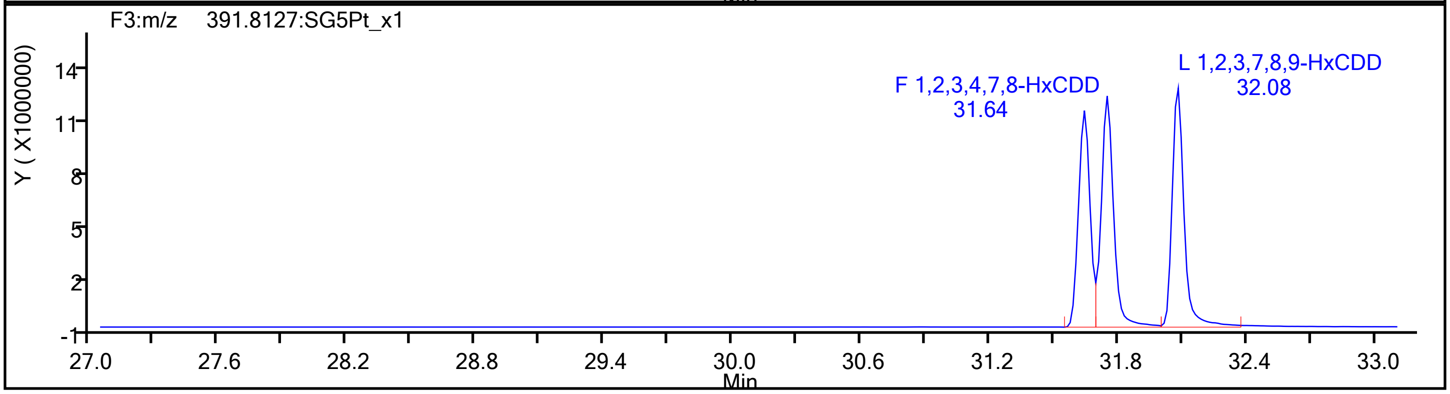

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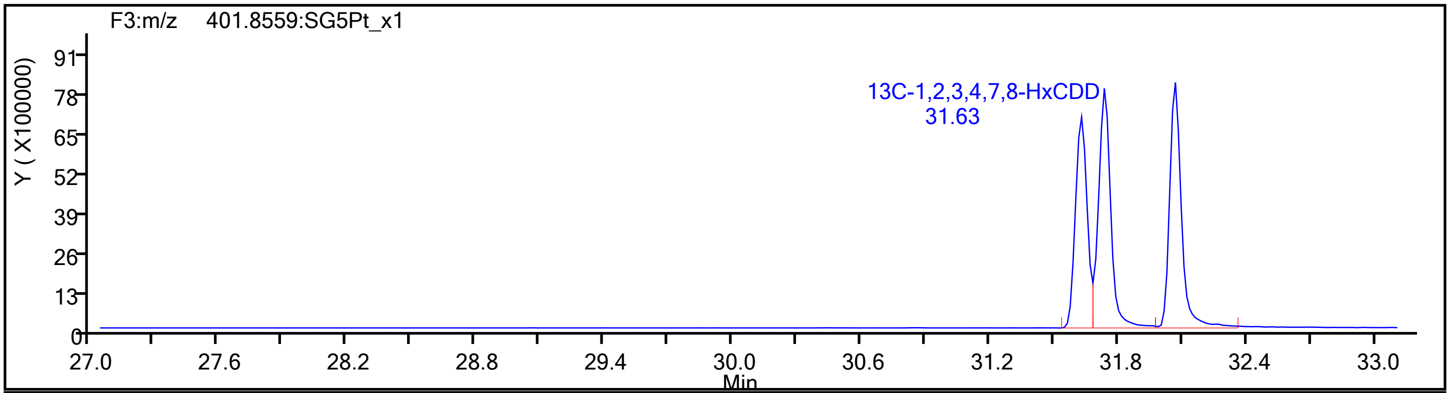

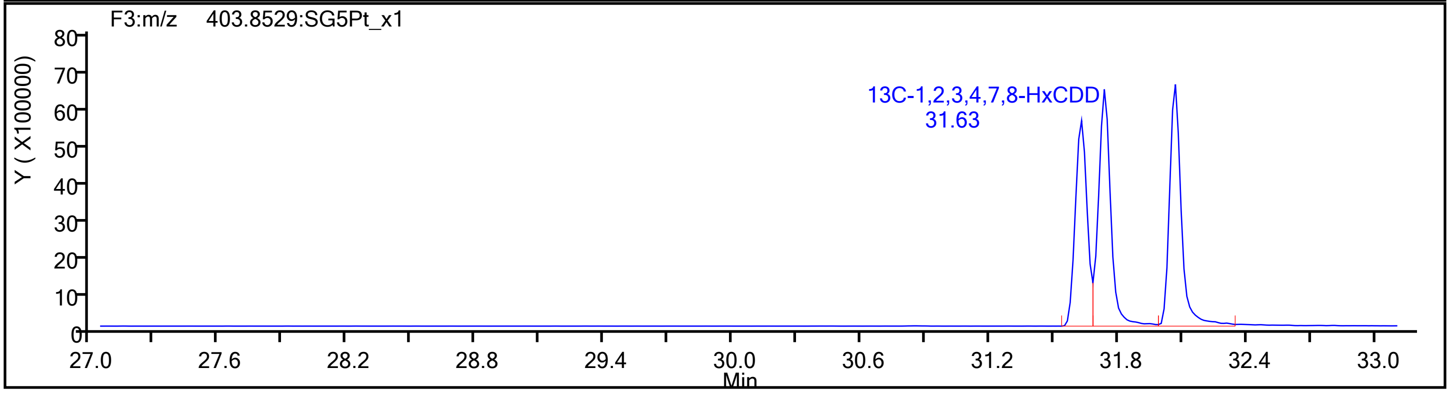

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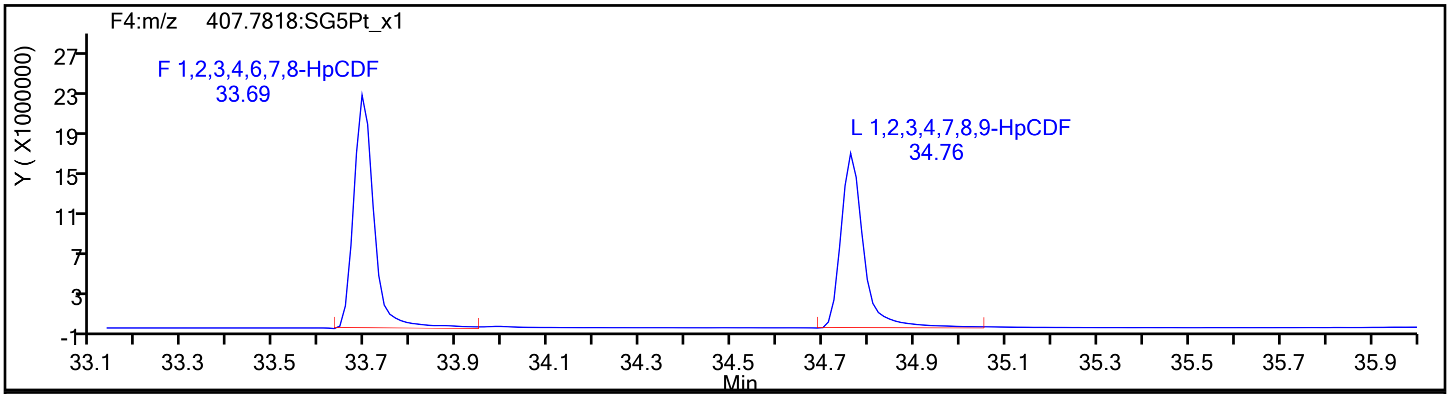

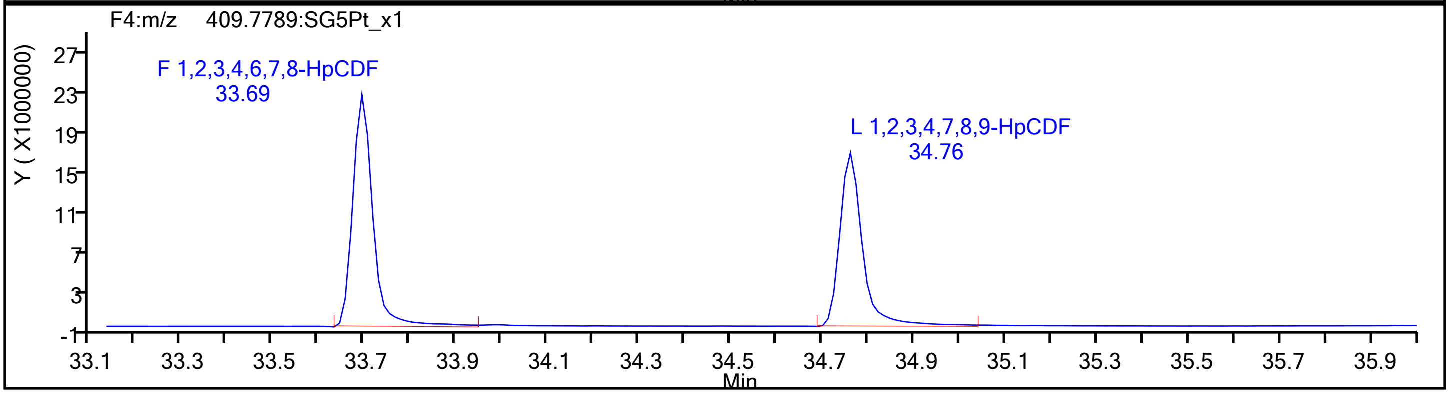

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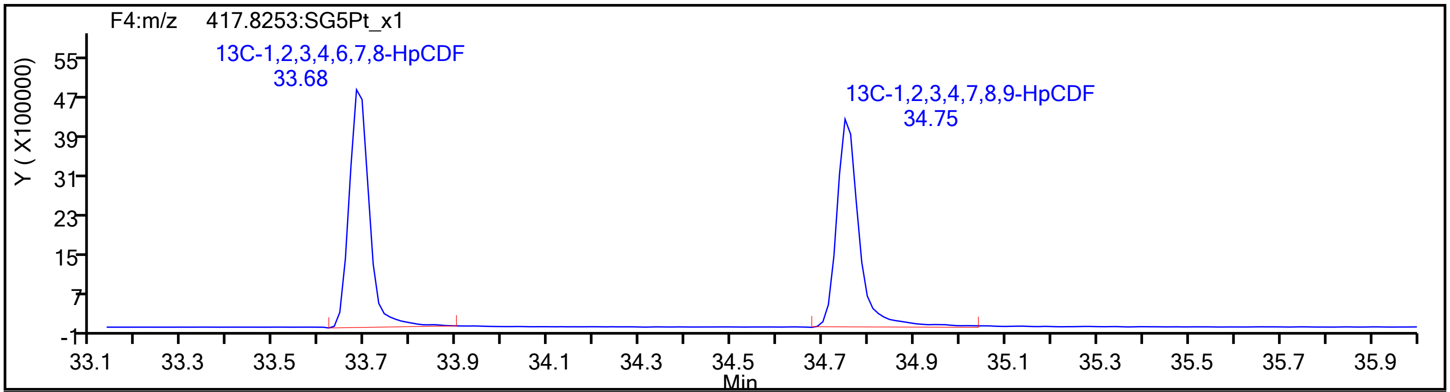

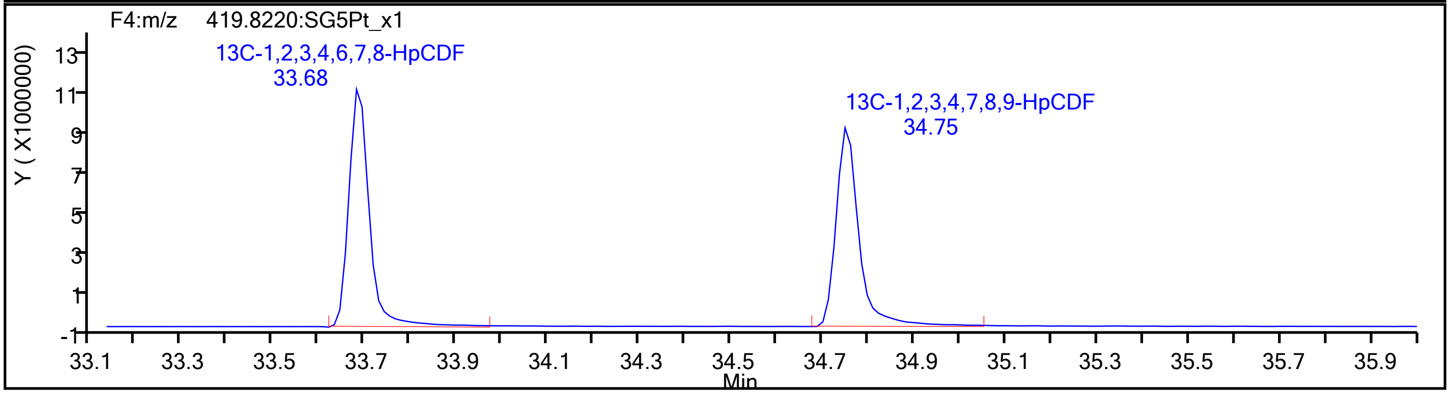

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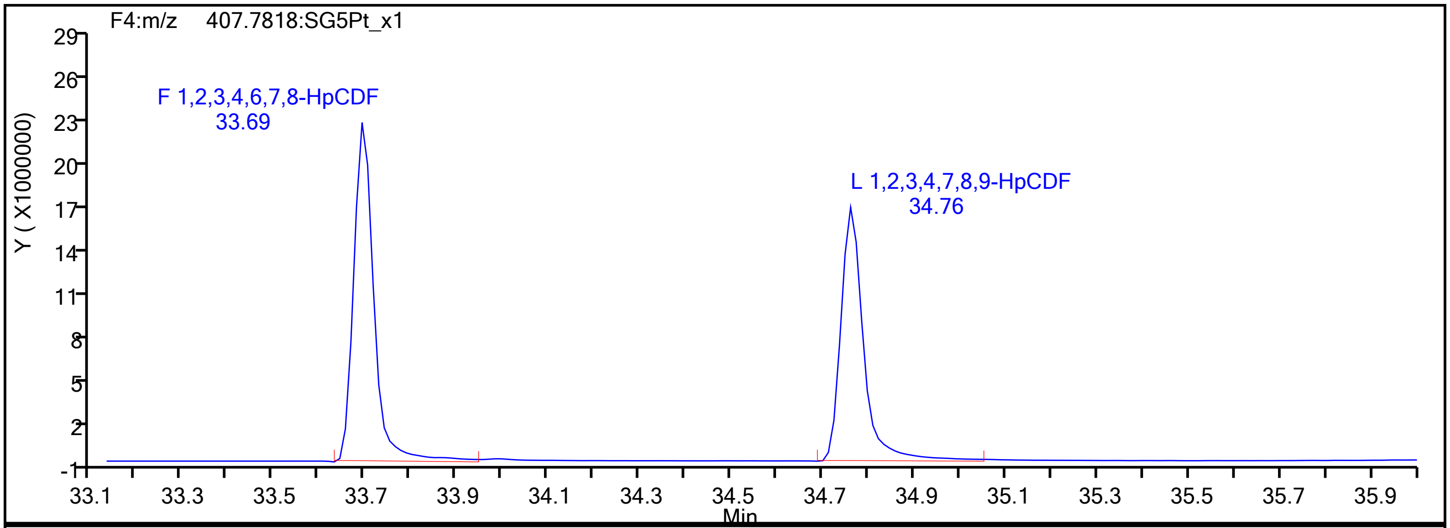

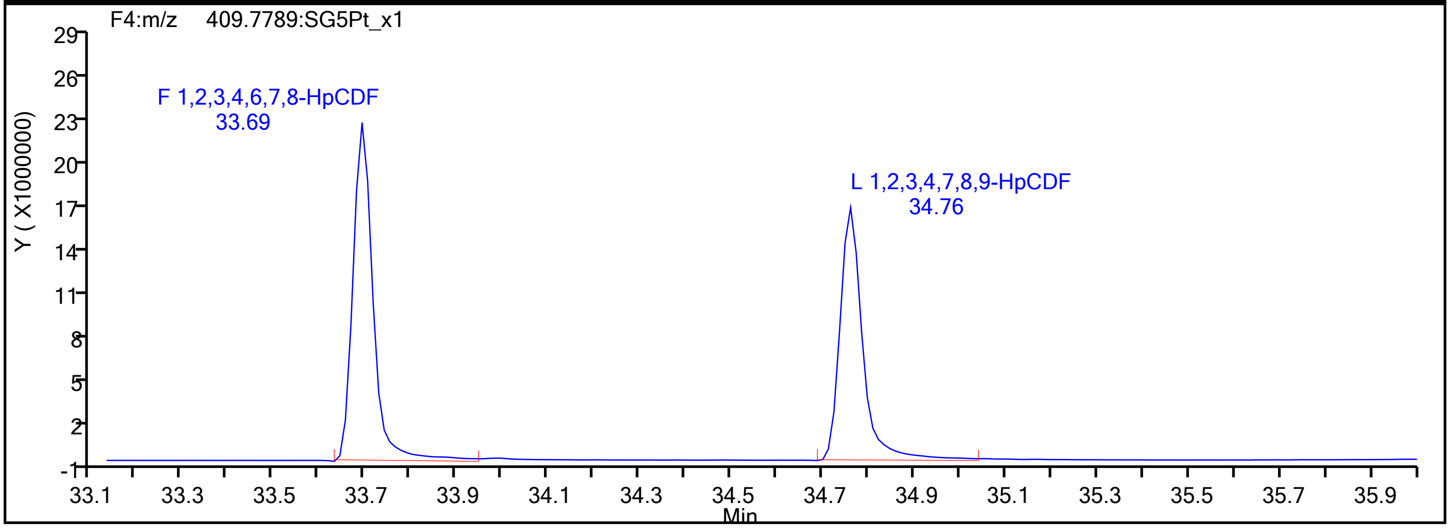

HpCDF Interference Mass

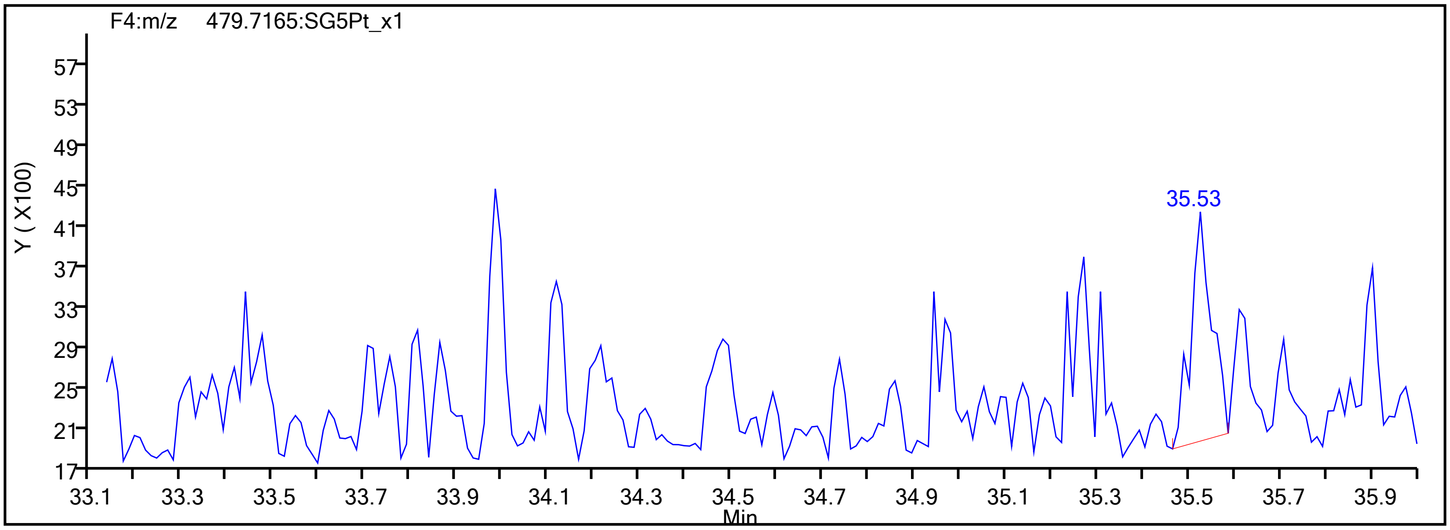

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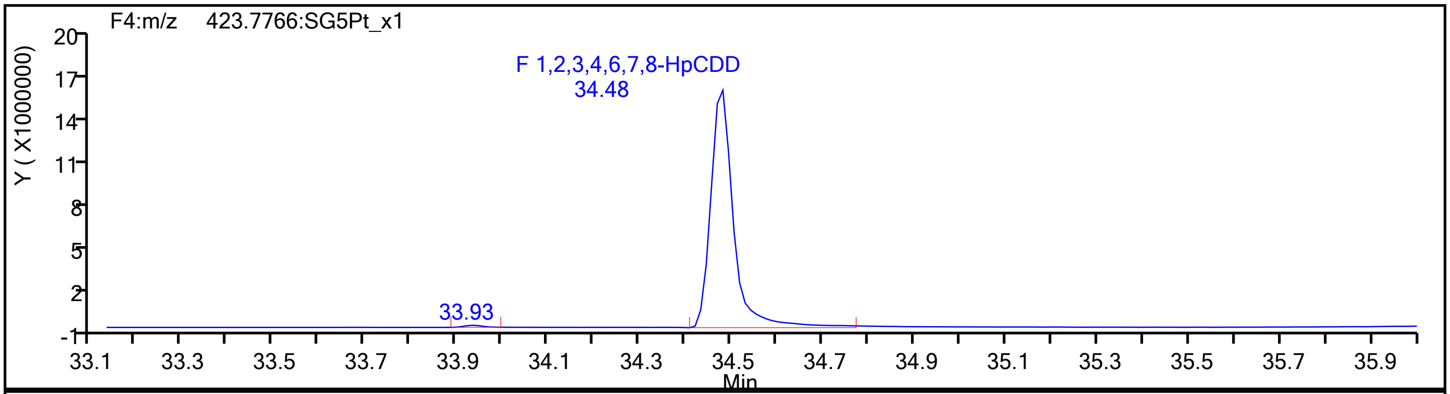

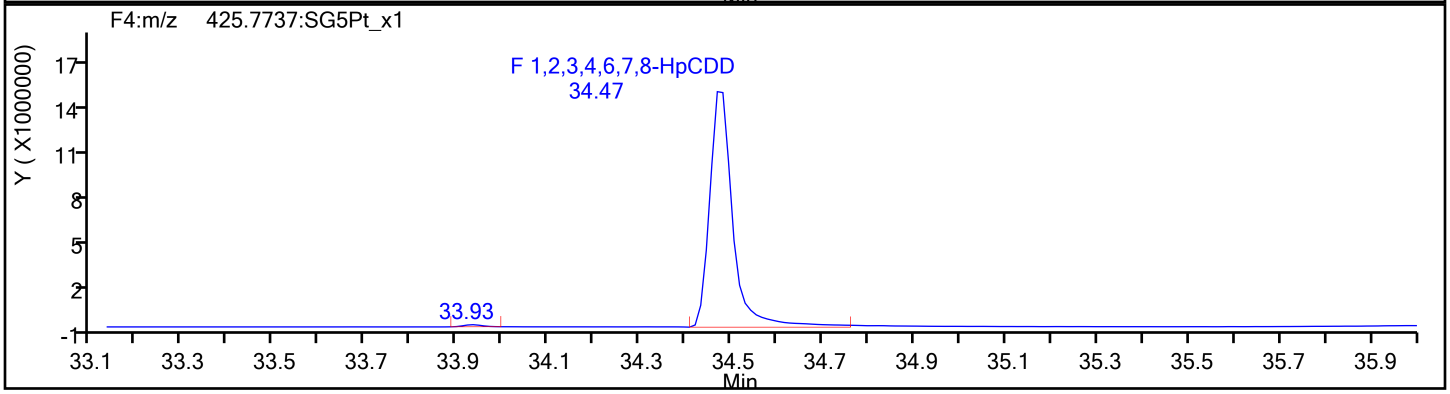

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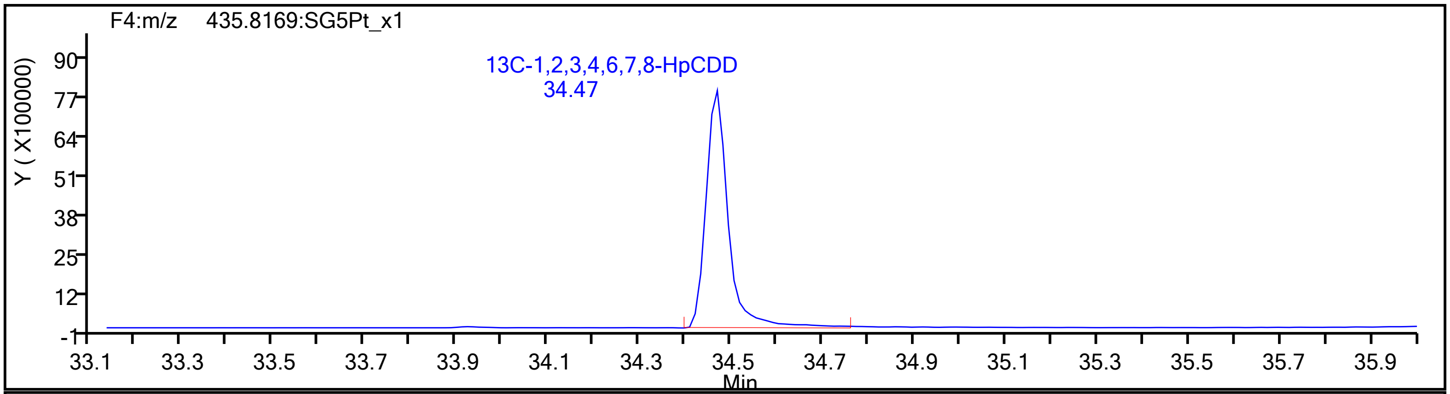

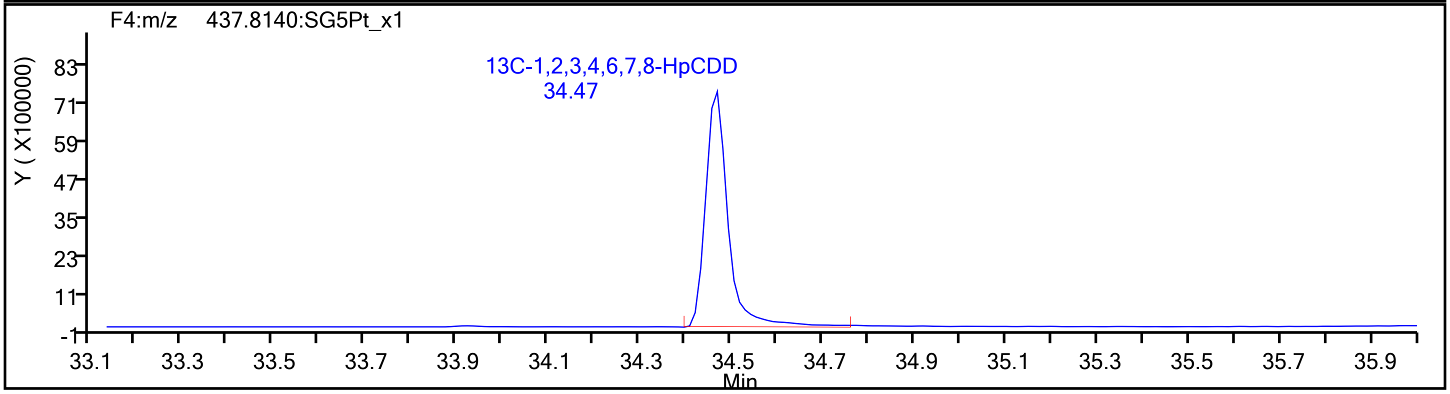

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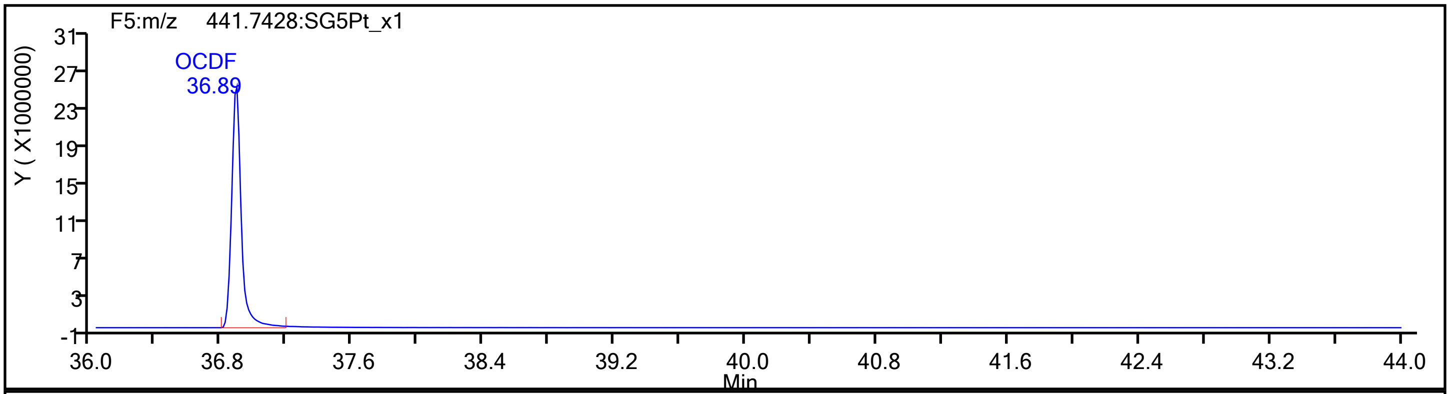

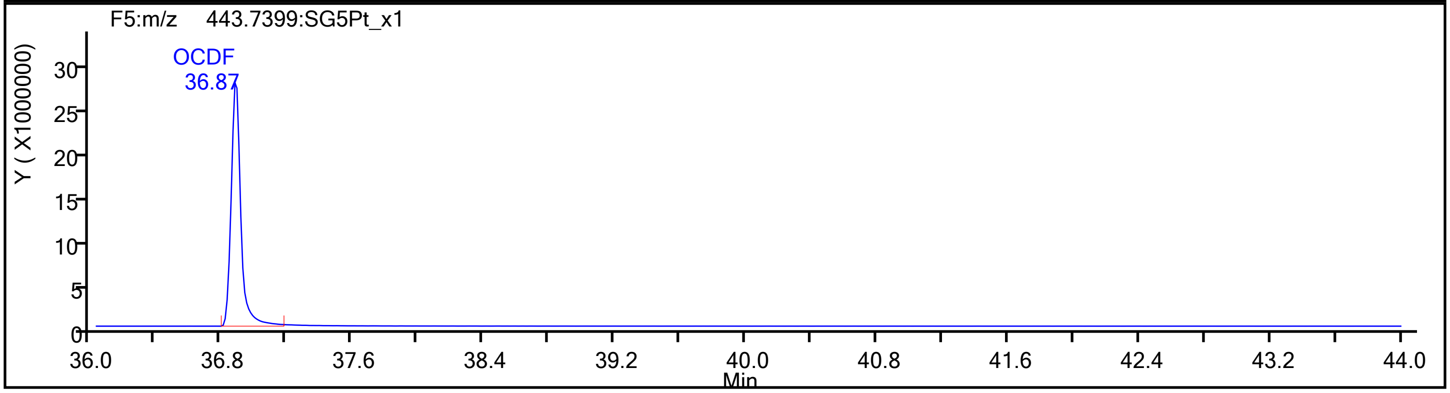

OCDF Standards

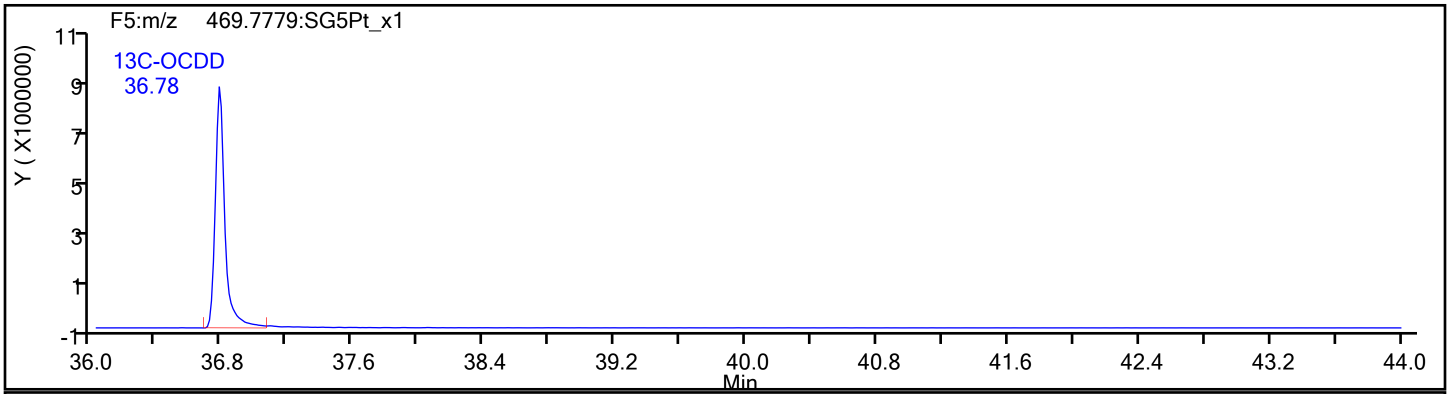

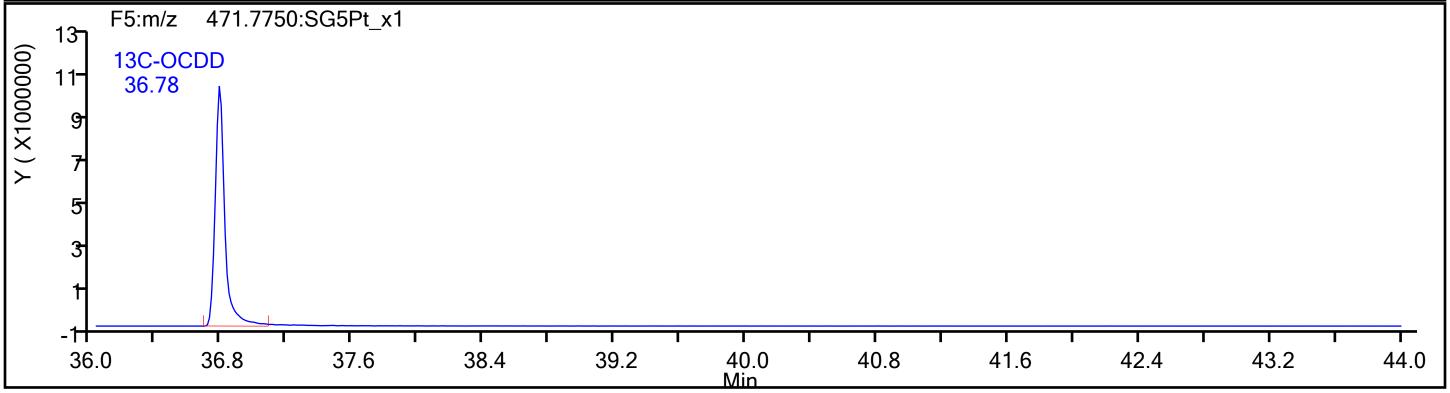

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

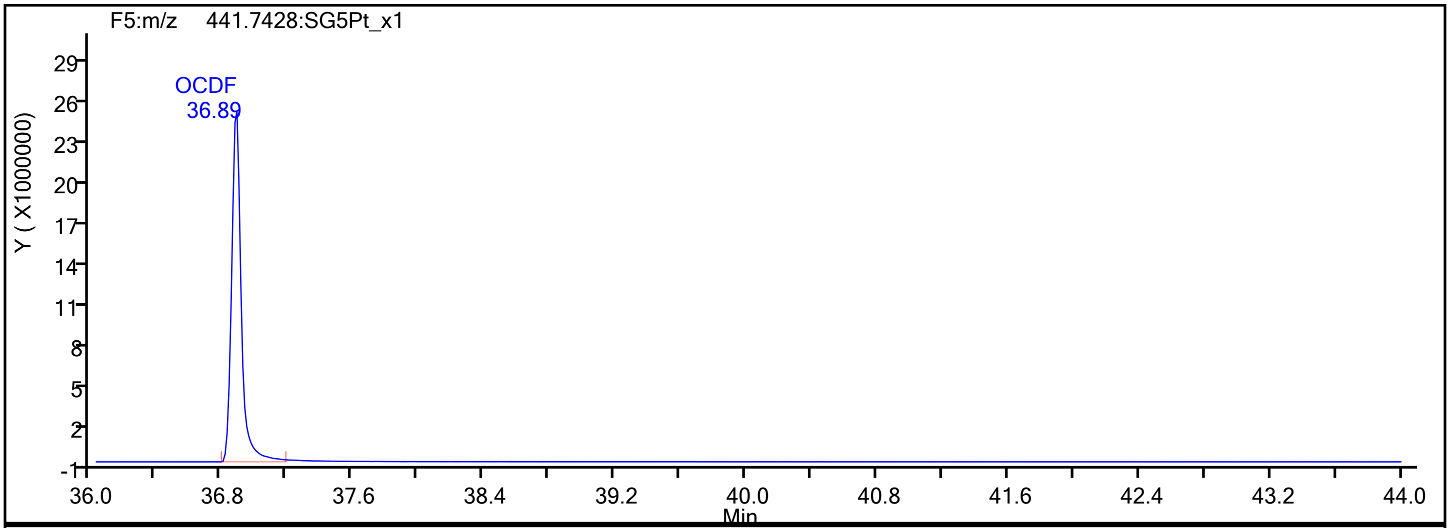

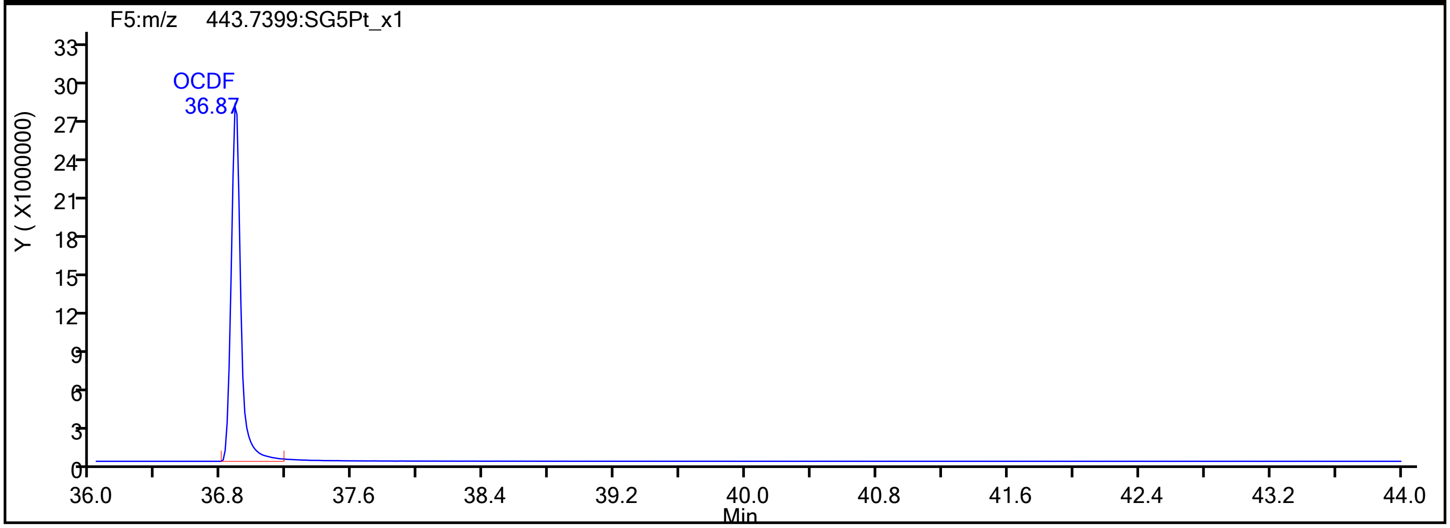

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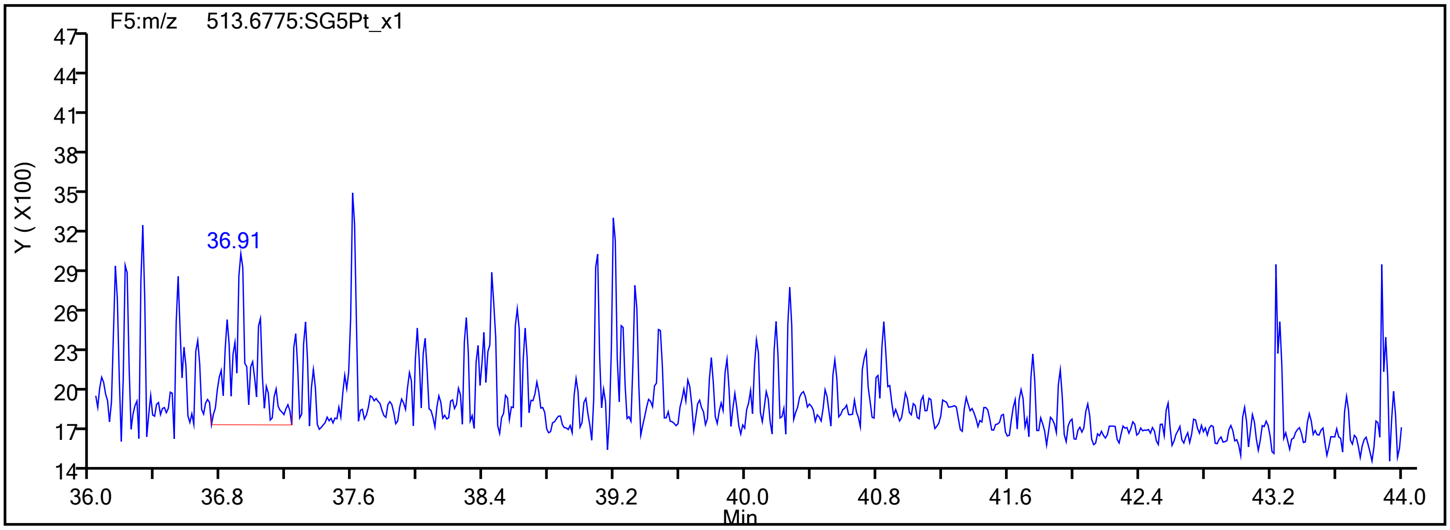

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

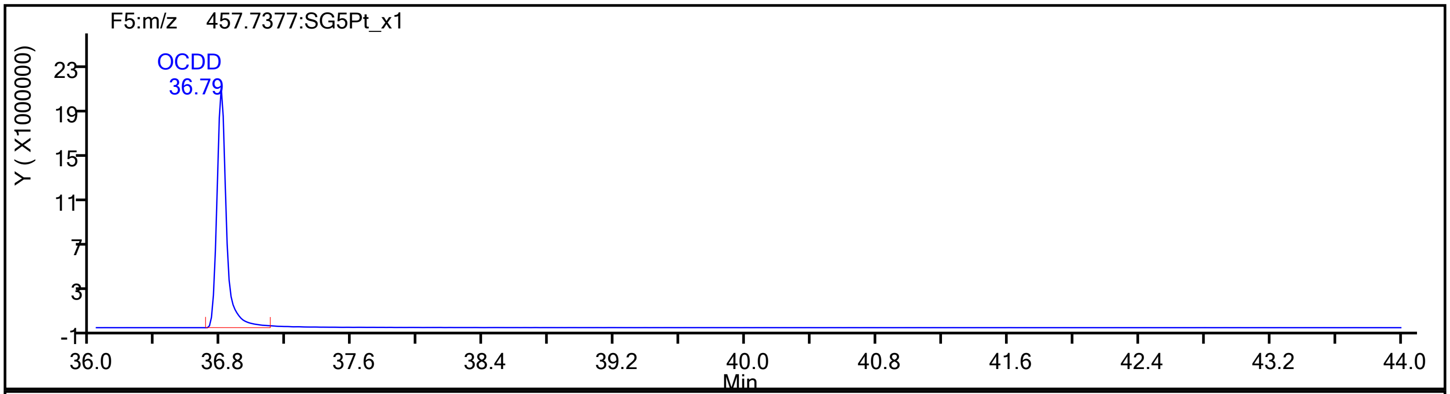

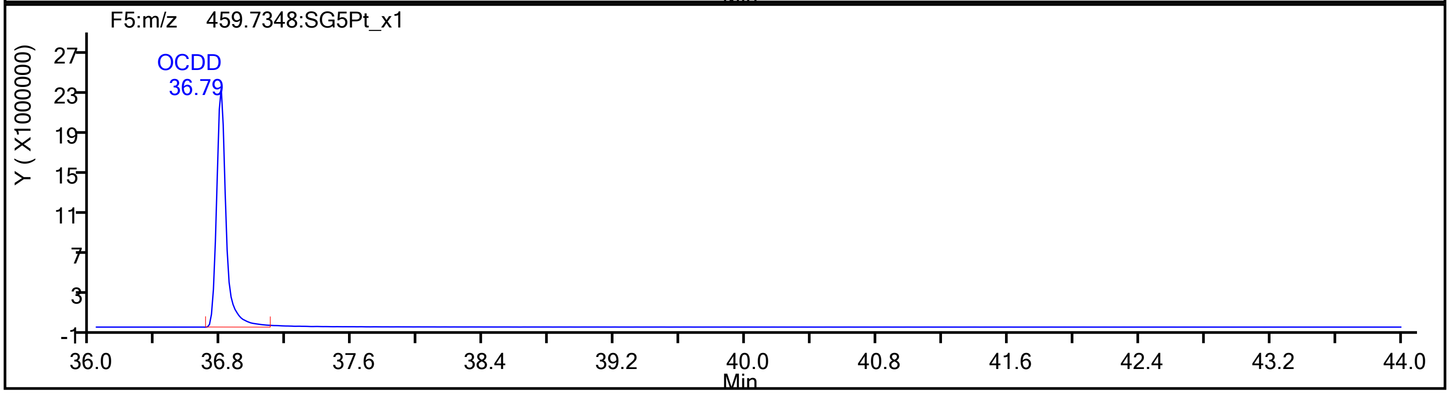

OCDD Standards

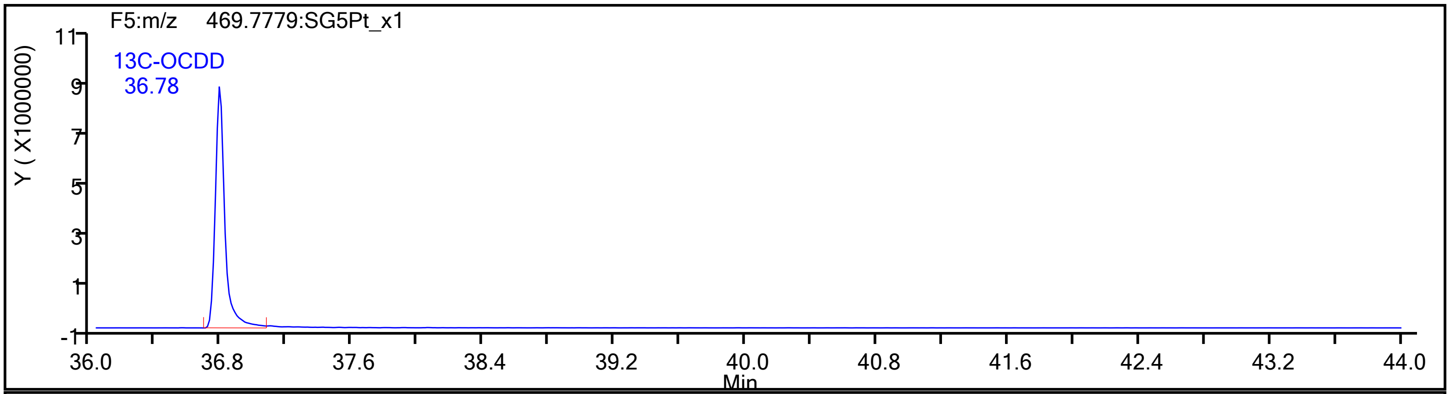

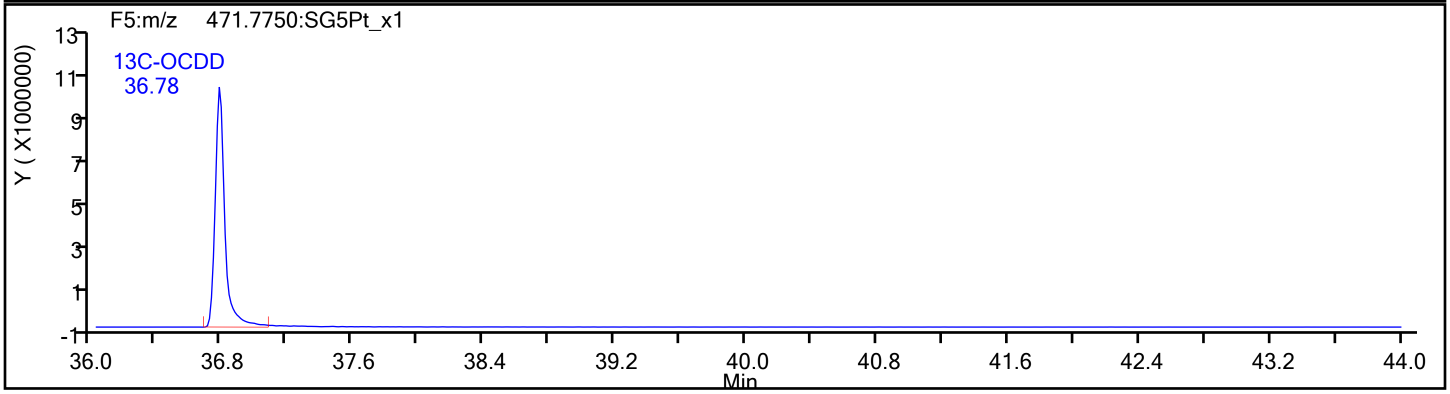

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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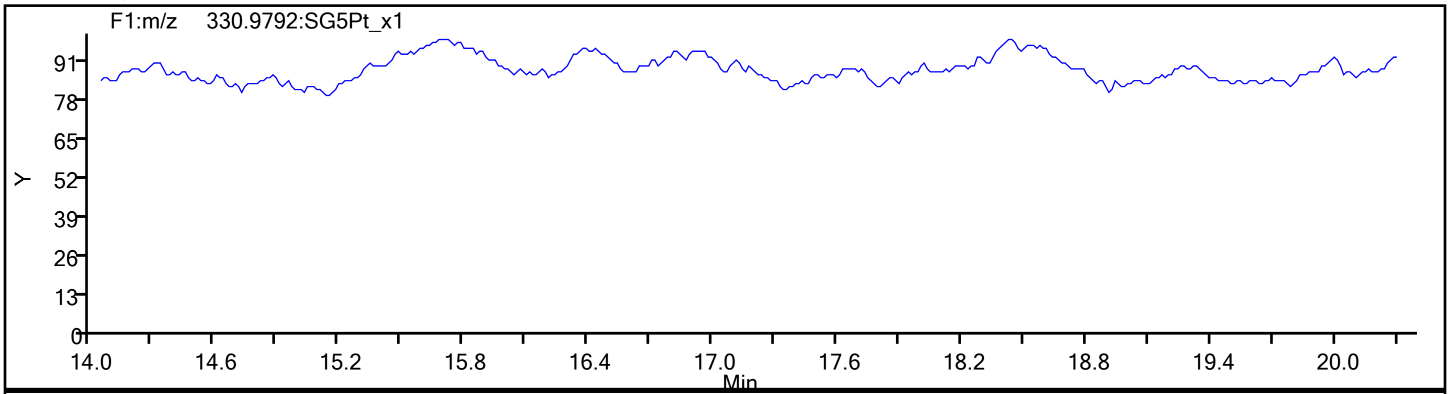

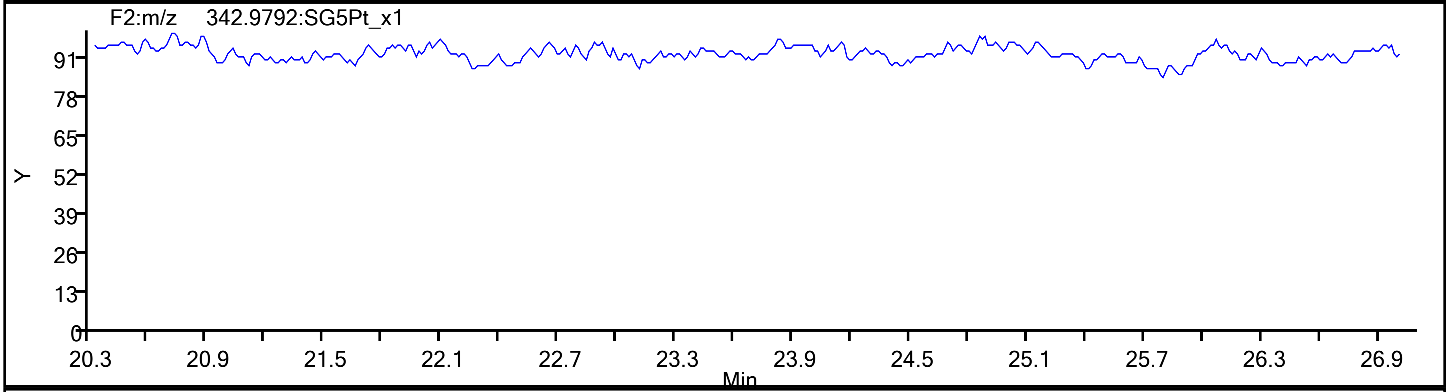

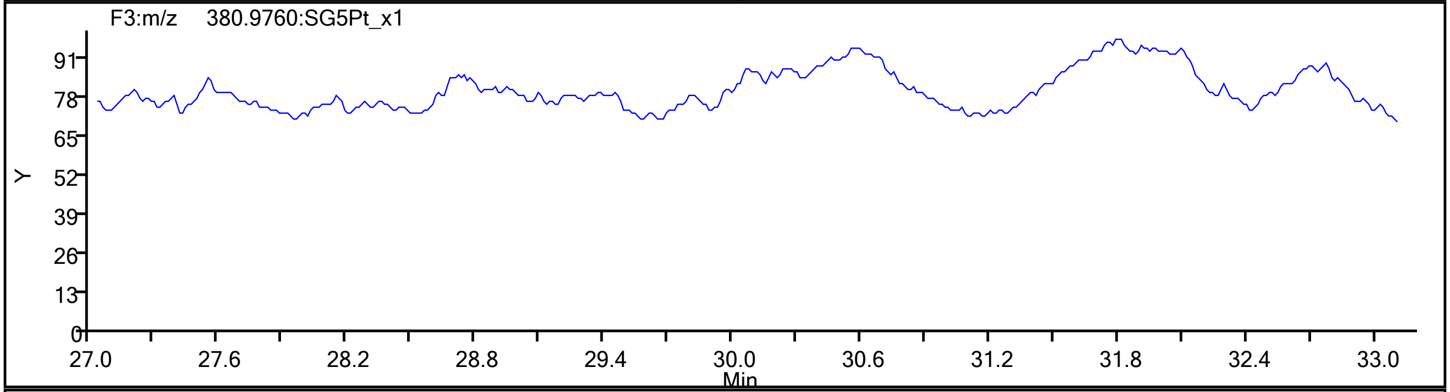

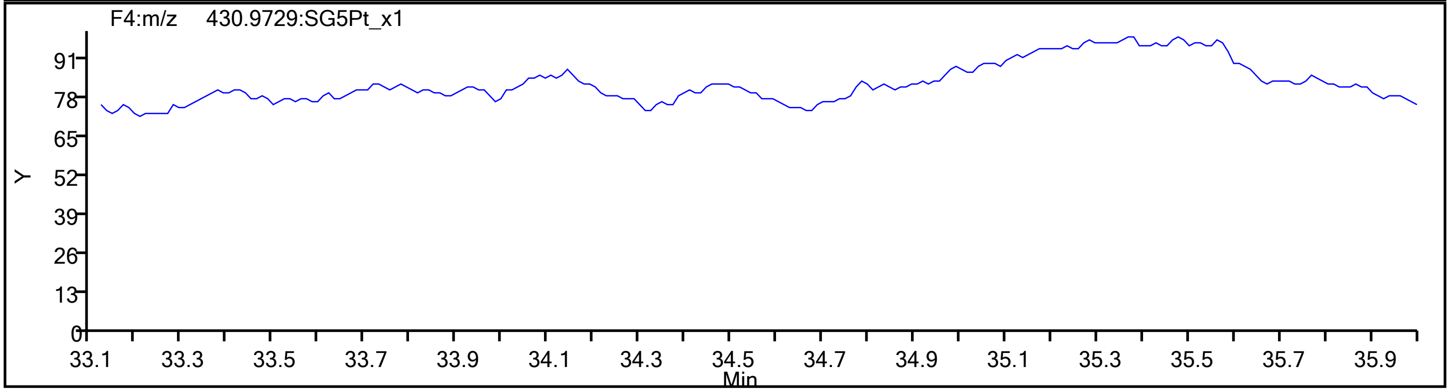

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

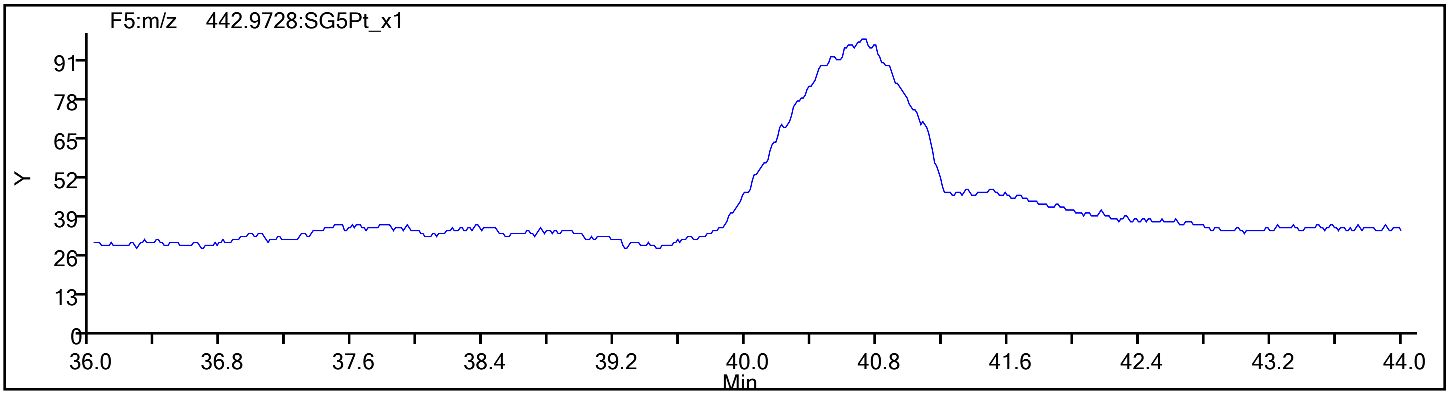

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID: CCV 320-421347/2 Calibration Date: 10/12/2020 22:14

Instrument ID: 10D5 Calib Start Date: 09/17/2020 16:09

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 19:09

Lab File ID: 12OC20B10D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9077	0.999		11.0	10.0	110	84-120
2,3,7,8-TCDD	AveID	1.006	1.051		10.4	10.0	104	78-129
1,2,3,7,8-PeCDF	AveID	0.9147	1.014		55.4	50.0	111	82-120
2,3,4,7,8-PeCDF	AveID	0.9508	1.068		56.2	50.0	112	82-122
1,2,3,7,8-PeCDD	AveID	0.995	1.039		52.2	50.0	104	78-130
1,2,3,4,7,8-HxCDF	AveID	1.109	1.240		55.9	50.0	112	90-112
1,2,3,6,7,8-HxCDF	AveID	1.072	1.196		55.8	50.0	112	88-114
2,3,4,6,7,8-HxCDF	AveID	1.084	1.198		55.3	50.0	111	88-114
1,2,3,4,7,8-HxCDD	AveID	1.001	1.161		58.0	50.0	116	78-128
1,2,3,6,7,8-HxCDD	AveID	0.8902	0.9808		55.1	50.0	110	78-128
1,2,3,7,8,9-HxCDD	AveID	1.058	1.206		57.0	50.0	114	82-122
1,2,3,7,8,9-HxCDF	AveID	1.093	1.206		55.1	50.0	110	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.360	1.451		53.3	50.0	107	90-110
1,2,3,4,6,7,8-HpCDD	AveID	0.999	1.054		52.8	50.0	106	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.321	1.424		53.9	50.0	108	86-116
OCDD	AveID	1.129	1.114		98.7	100	99	79-126
OCDF	AveID	1.414	1.453		103	100	103	63-159
13C-2,3,7,8-TCDF	Ave	1.360	1.576		116	100	116	71-140
13C-2,3,7,8-TCDD	Ave	1.054	1.042		98.9	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.131	1.184		105	100	105	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.054	1.095		104	100	104	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8084	0.7541		93.3	100	93	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9225	1.121		122	100	122	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.034	1.244		120	100	120	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9773	1.186		121	100	121	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7977	0.7452		93.4	100	93	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.001	1.012		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9153	1.089		119	100	119	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8506	0.9244		109	100	109	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8873	0.8289		93.4	100	93	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7618	0.7739		102	100	102	77-129
13C-OCDD	Ave	0.6287	0.5937		189	200	94	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.049	1.110		10.6	10.0	106	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\12OC20B10D5.SPL Page 1 of 3
Last Modified: Monday, October 12, 2020 21:15:23 Pacific Daylight Time
Printed: Monday, October 12, 2020 23:10:55 Pacific Daylight Time Page Position (1, 1)

	File Name	**File Text**	**Sample ID**	**Bottle**	**Method/Matrix**	**Box #**	**User**
1	12OC20B10D5_1	WDM HRDXNCP_00042	WDM 101220	Tray01:1	Dioxin		ALM
2	12OC20B10D5_2	CS-4 HRDXNL4_00095	CCV 101220	Tray01:2	Dioxin		ALM
3	12OC20B10D5_3	Solvent Blank C-14	SB 101220	Tray01:3	---		ALM
4	12OC20B10D5_4	MB 320-418764/1-A	MB 320-418764/1-A	Tray01:4	1613B(T)/Water	D186	ALM
5	12OC20B10D5_5	LCS 320-418764/2-A	LCS 320-418764/2-A	Tray01:5	1613B(T)/Water		ALM
6	12OC20B10D5_6	LCSD 320-418764/3-A	LCSD 320-418764/3-A	Tray01:6	1613B(T)/Water		ALM
7	12OC20B10D5_7	500-188700-T-7-A	500-188700-T-7-A	Tray01:7	1613B/Water		ALM
8	12OC20B10D5_8	580-97881-E-1-A	580-97881-E-1-A	Tray01:8	1613B_T/Water		ALM
9	12OC20B10D5_9	440-272587-A-1-A	440-272587-A-1-A	Tray01:9	1613B/Water		ALM
10	12OC20B10D5_10	320-65247-A-1-A	320-65247-A-1-A	Tray01:10	1613B/Water		ALM
11	12OC20B10D5_11	500-188700-E-1-A	500-188700-E-1-A	Tray01:11	1613B/Solid	D186	ALM
12	12OC20B10D5_12	500-188700-E-2-A	500-188700-E-2-A	Tray01:12	1613B/Solid		ALM
13	12OC20B10D5_13	Solvent Blank C-14	SB 101220A	Tray01:3	---		ALM
~~14~~	~~12OC20B10D5_14~~	~~CS-4 HRDXNL4_00095~~	~~CCV 101220A~~	~~Tray01:2~~	~~Dioxin~~		~~ALM~~
15	12OC20B10D5_15	WDM HRDXNCP_00042	WDM 101220A	Tray01:1	Dioxin		ALM stopped acq.
16	12OC20B10D5_16	Solvent Blank C-14	SB 101220B	Tray01:3	---		ALM
17	12OC20B10D5_17	MB 320-417046/1-A	MB 320-417046/1-A	Tray01:15	1613B_DW	D185	ALM
18	12OC20B10D5_18	LCS 320-417046/2-A	LCS 320-417046/2-A	Tray01:16	1613B_DW		ALM
19	12OC20B10D5_19	LCSD 320-417046/3-A	LCSD 320-417046/3-A	Tray01:17	1613B_DW		ALM
20	12OC20B10D5_20	680-189142-B-1-A	680-189142-B-1-A	Tray01:18	1613B_DW		ALM
21	12OC20B10D5_21	680-189142-B-2-A	680-189142-B-2-A	Tray01:19	1613B_DW		ALM
22	12OC20B10D5_22	680-189007-H-1-A	680-189007-H-1-A	Tray01:20	1613B_DW		ALM
23	12OC20B10D5_23	MB 320-418650/1-A	MB 320-418650/1-A	Tray01:21	1613B/Solid	D186	ALM
24	12OC20B10D5_24	LCS 320-418650/2-A	LCS 320-418650/2-A	Tray01:22	1613B/Solid		ALM
25	12OC20B10D5_25	LCSD 320-418650/3-A	LCSD 320-418650/3-A	Tray01:23	1613B/Solid		ALM
26	12OC20B10D5_26	Solvent Blank C-14	SB 101220C	Tray01:3	---		ALM
27	12OC20B10D5_27	WDM HRDXNCP_00042	WDM 101220B	Tray01:1	Dioxin		ALM
28	12OC20B10D5_28	CS-4 HRDXNL4_00095	CCV 101220B	Tray01:2	Dioxin		ALM
29	12OC20B10D5_29	Solvent Blank C-14	SB 101220D	Tray01:3	---		ALM

Logfile checked
10/13/20 SMA

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, October 12, 2020 21:08:08 Pacific Daylight Time

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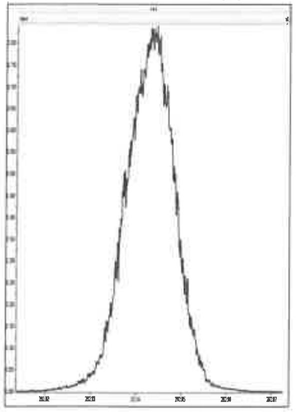

M 304.9824 R 11958

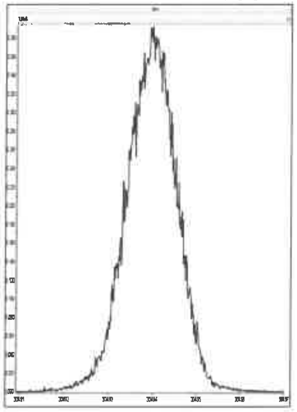

M 318.9792 R 11956

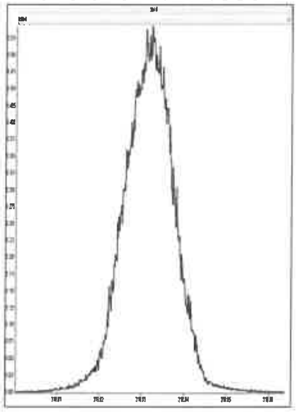

M 330.9792 R 12253

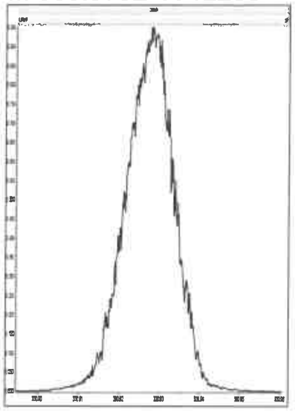

M 342.9792 R 11469

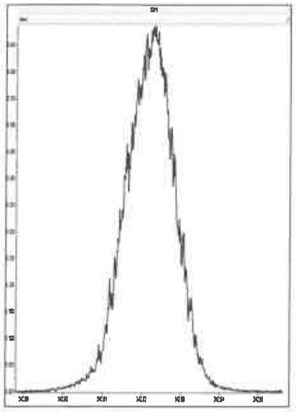

M 354.9792 R 12194

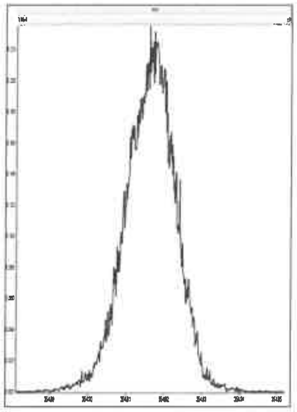

M 366.9792 R 11314

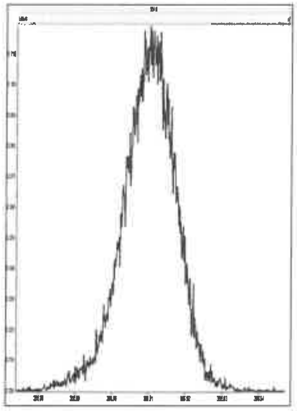

M 380.9760 R 11575

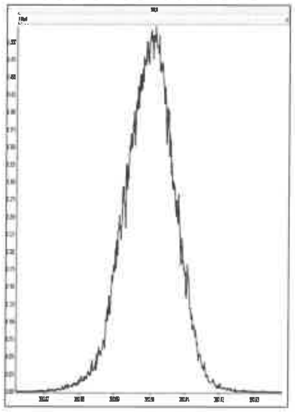

M 392.9760 R 11467

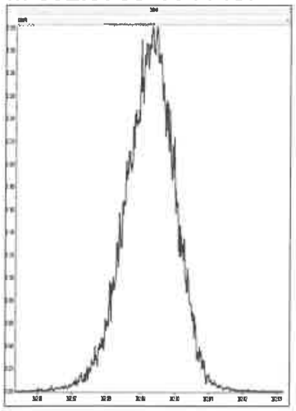

M 404.9760 R 11465

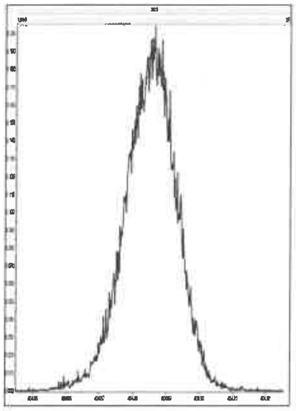

M 416.9760 R 11415

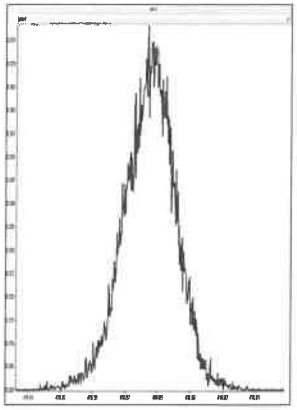

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Monday, October 12, 2020 21:09:05 Pacific Daylight Time

M 318.9792 R 12692

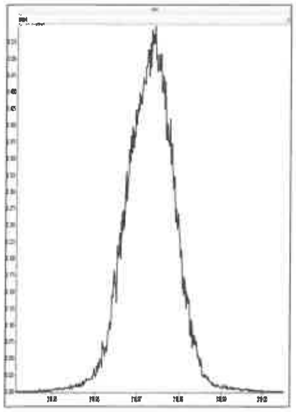

M 330.9792 R 12077

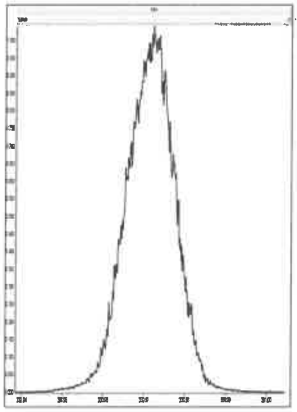

M 342.9792 R 11790

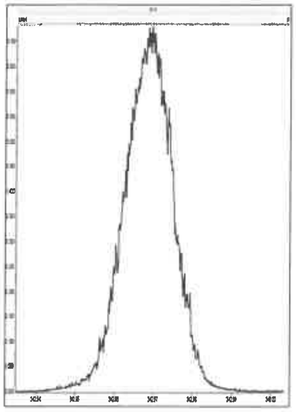

M 354.9792 R 11464

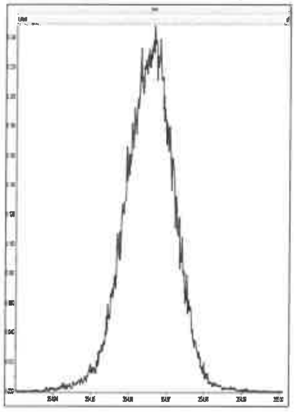

M 366.9792 R 11415

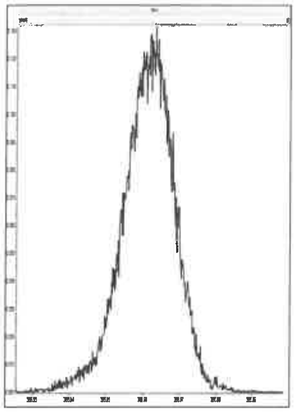

M 380.9760 R 12022

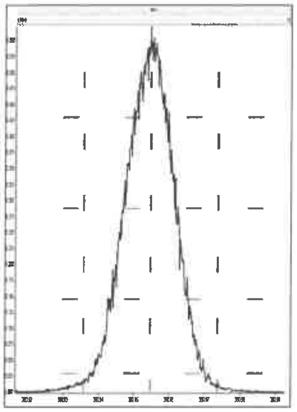

M 392.9760 R 12316

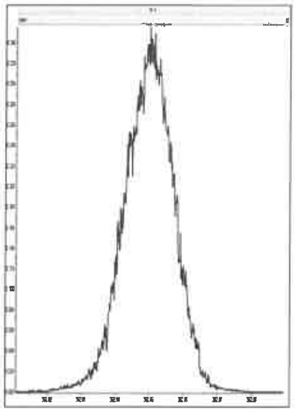

M 404.9760 R 11685

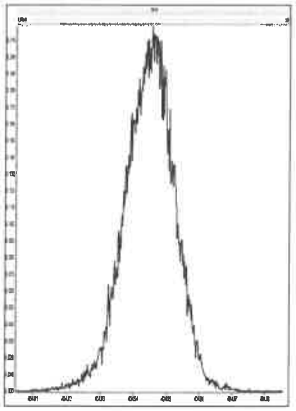

M 416.9760 R 11522

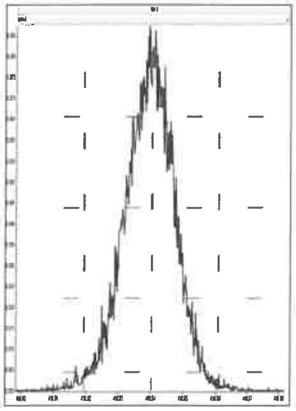

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Monday, October 12, 2020 21:10:47 Pacific Daylight Time

M 366.9792 R 12136

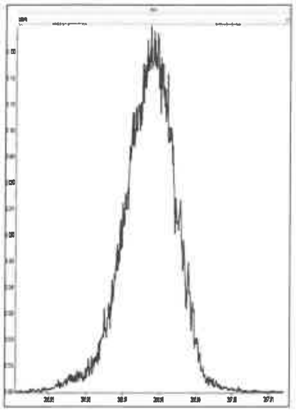

M 380.9760 R 12253

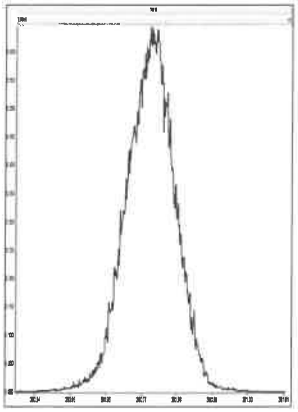

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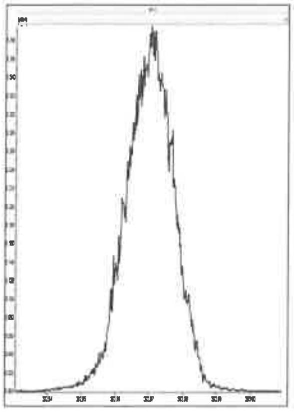

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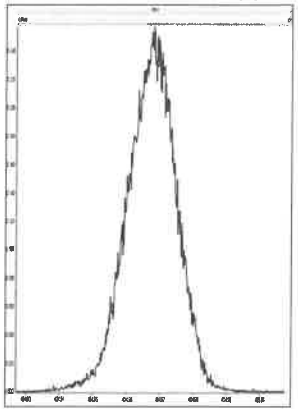

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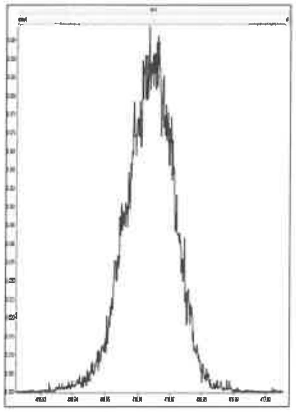

M 430.9728 R 12078

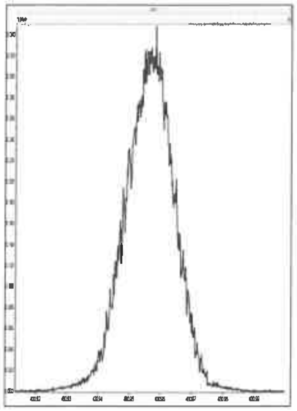

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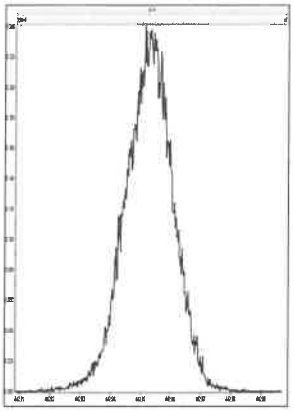

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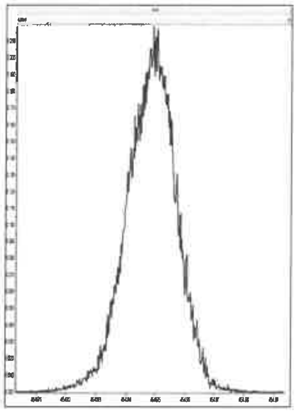

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Monday, October 12, 2020 21:12:04 Pacific Daylight Time

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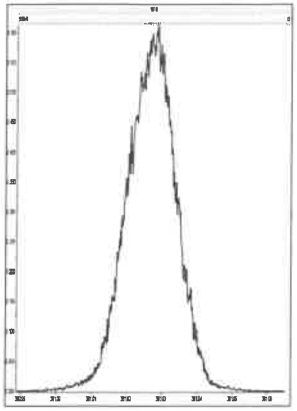

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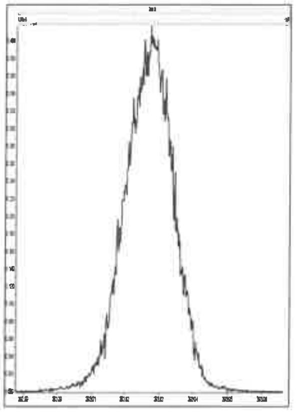

M 404.9760 R 11625

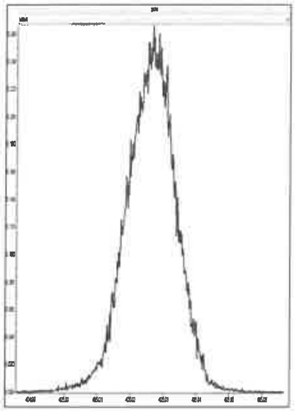

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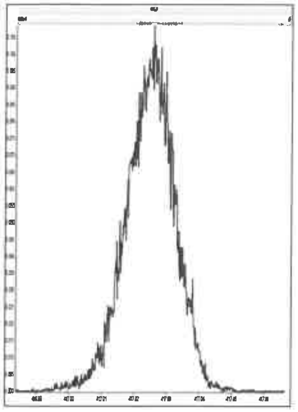

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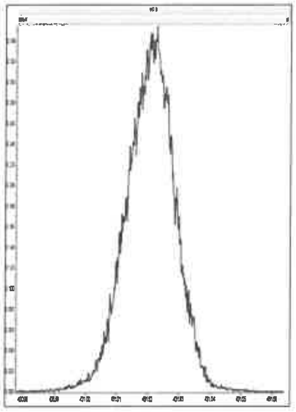

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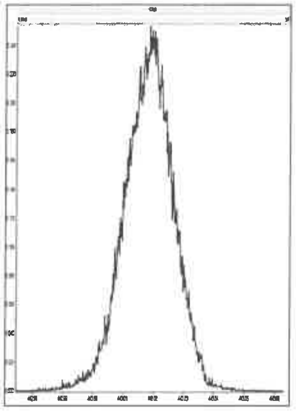

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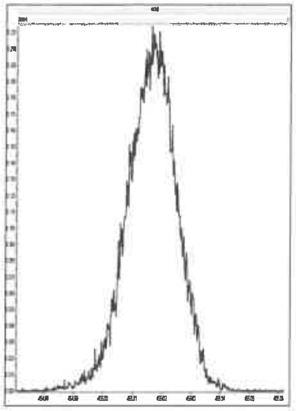

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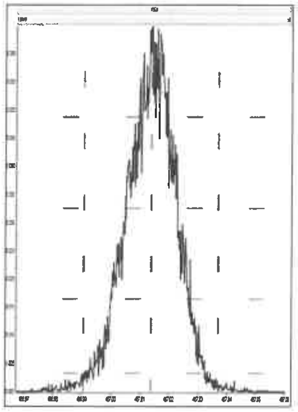

M 480.9696 R 12316

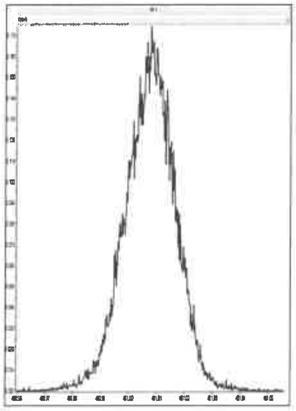

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Monday, October 12, 2020 21:13:18 Pacific Daylight Time

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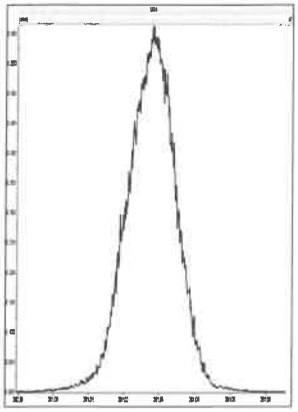

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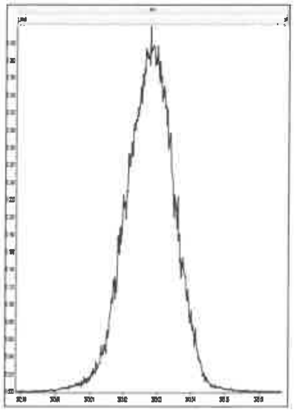

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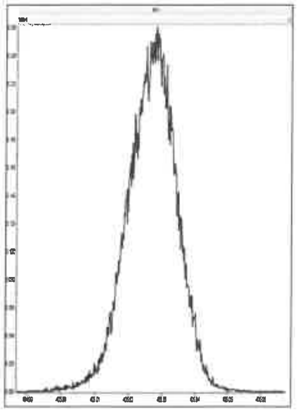

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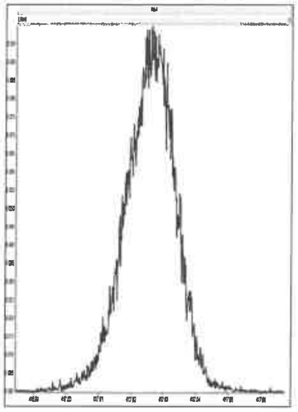

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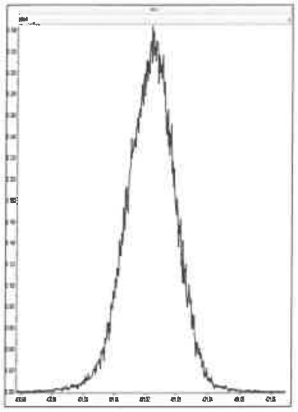

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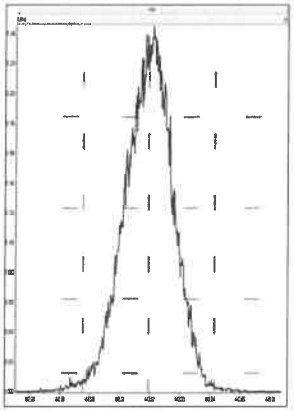

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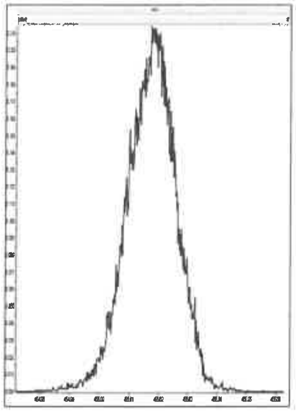

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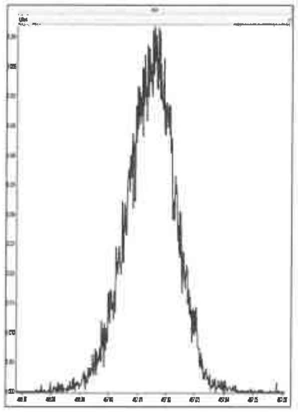

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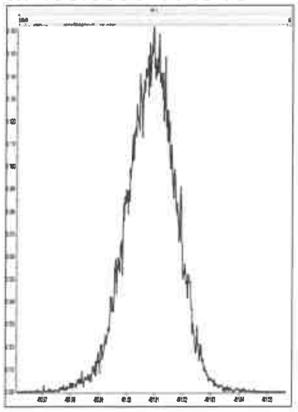

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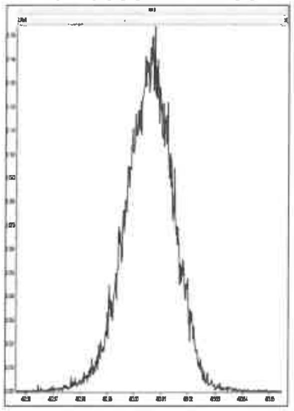

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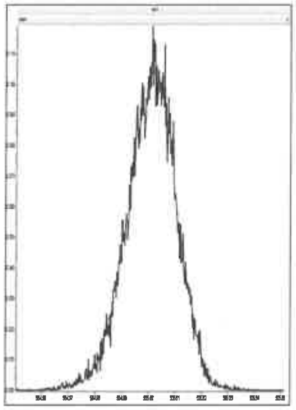

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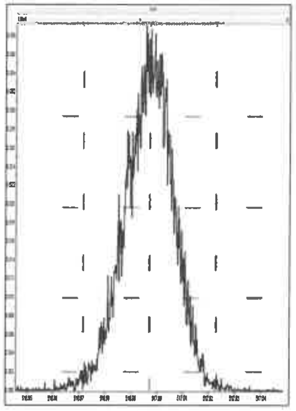

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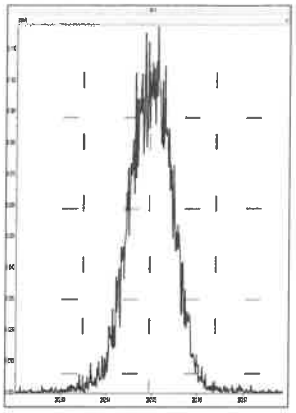

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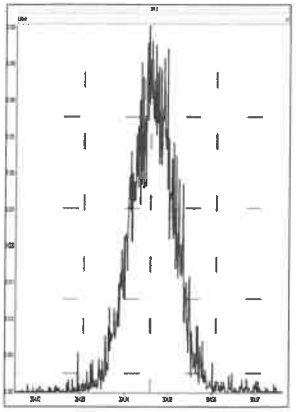

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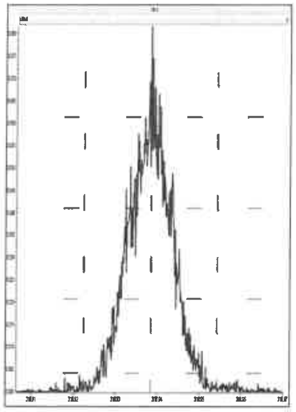

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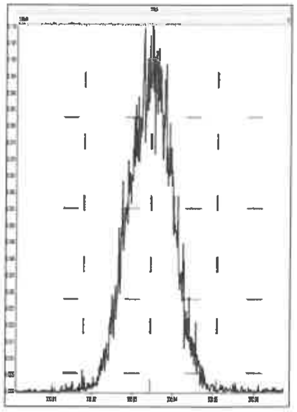

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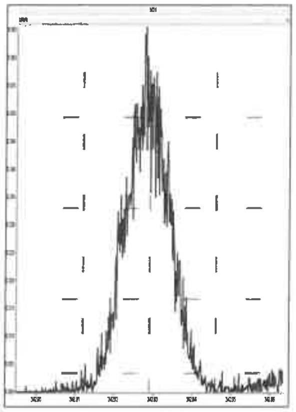

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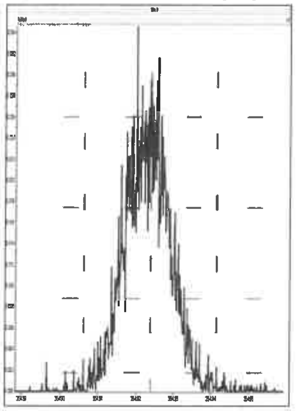

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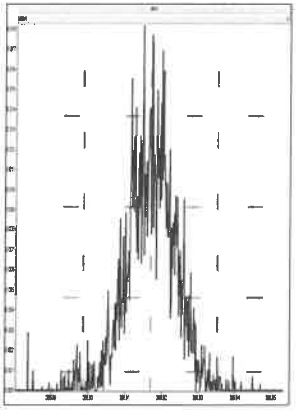

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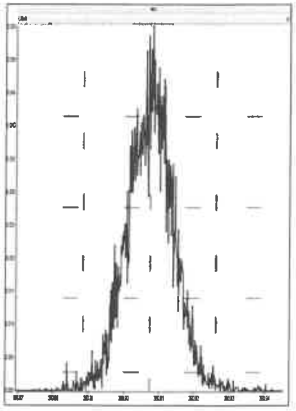

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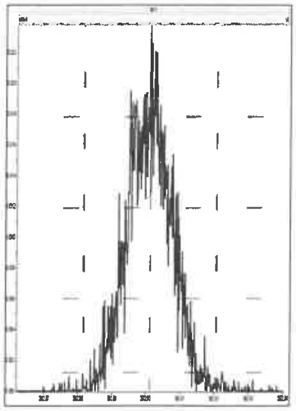

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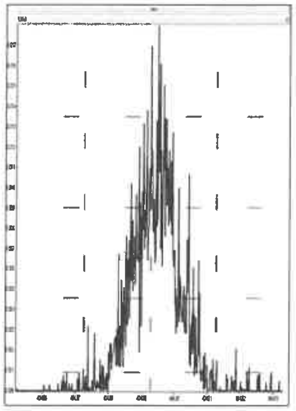

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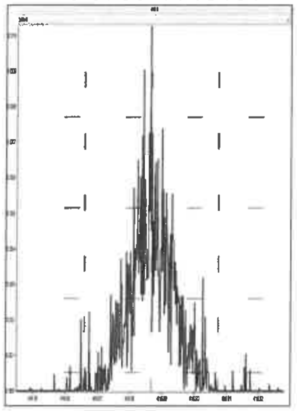

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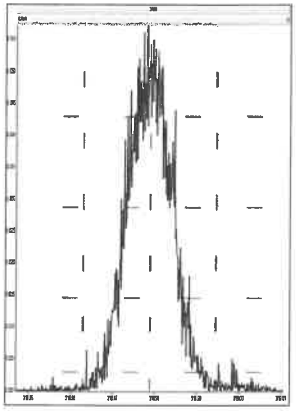

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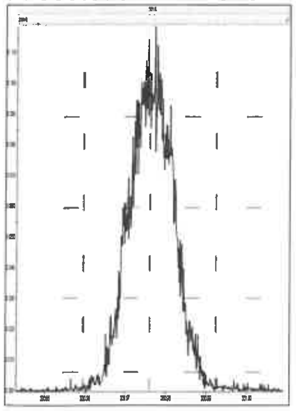

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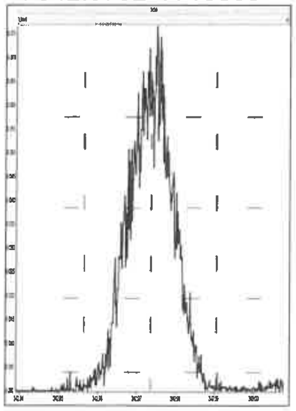

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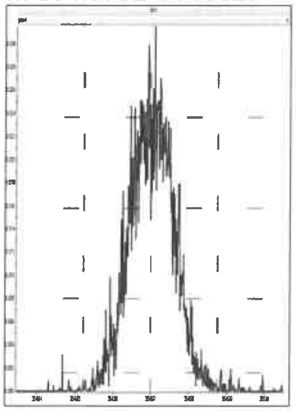

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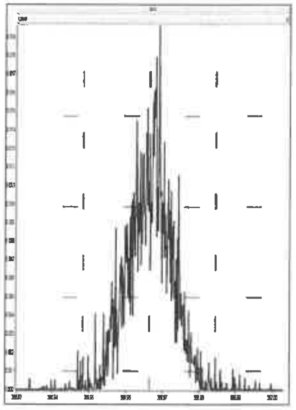

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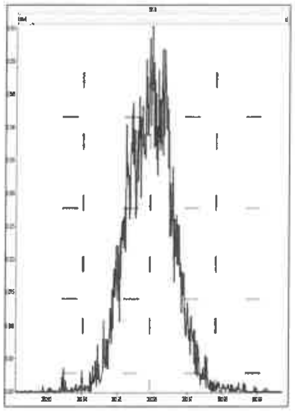

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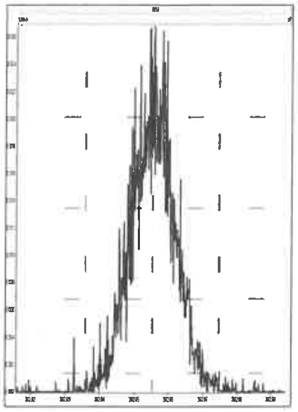

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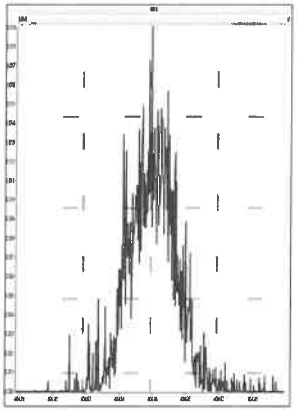

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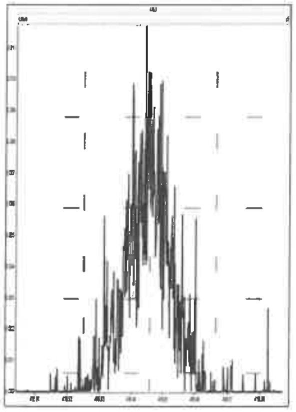

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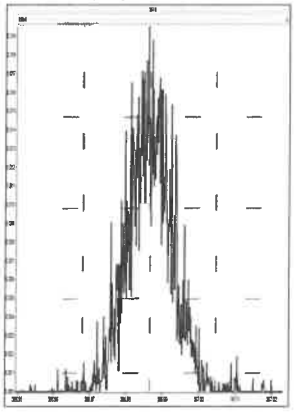

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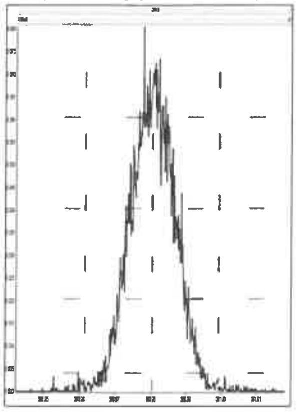

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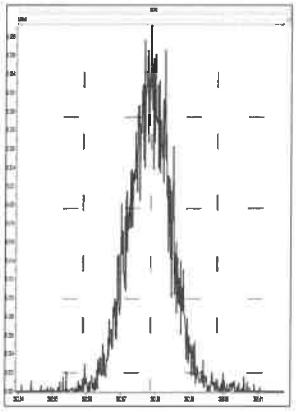

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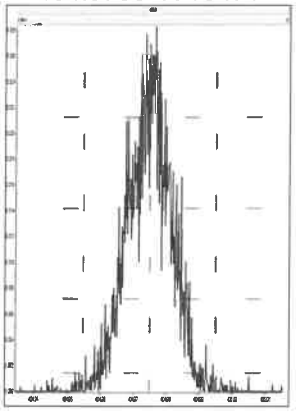

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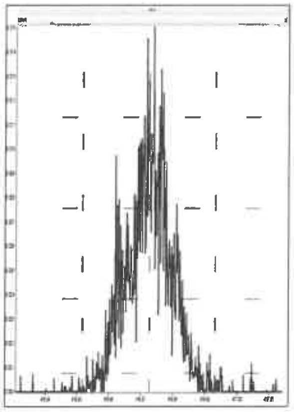

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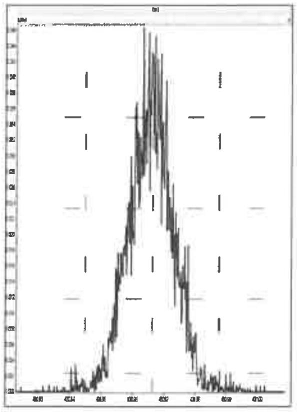

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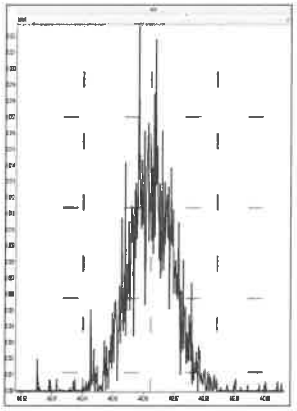

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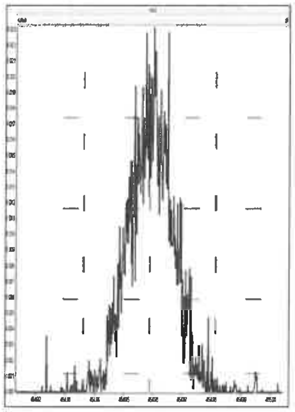

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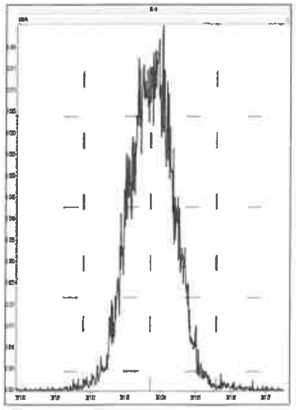

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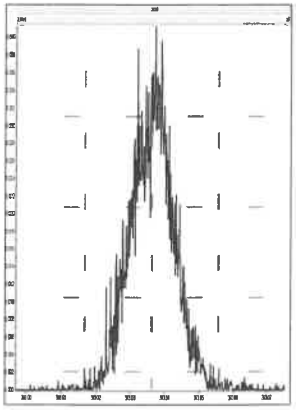

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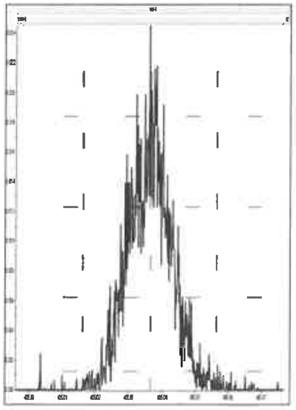

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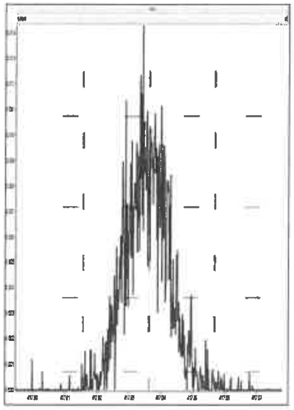

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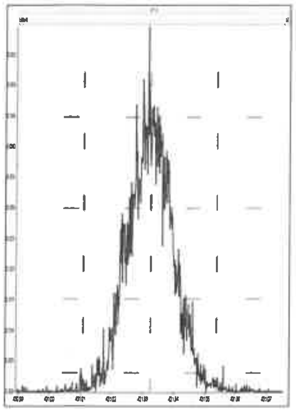

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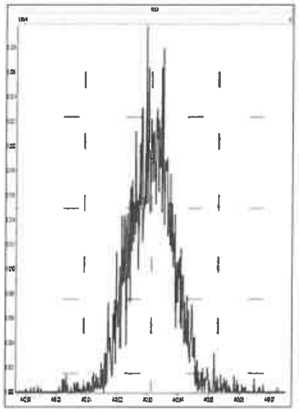

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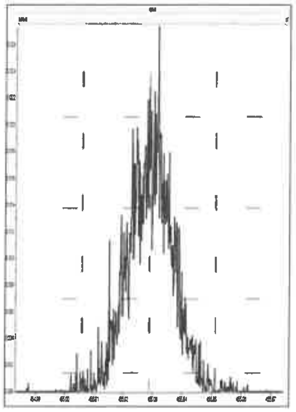

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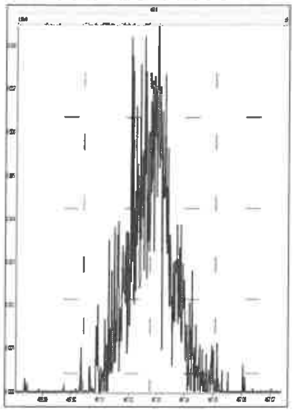

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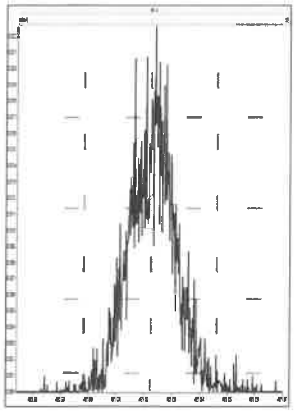

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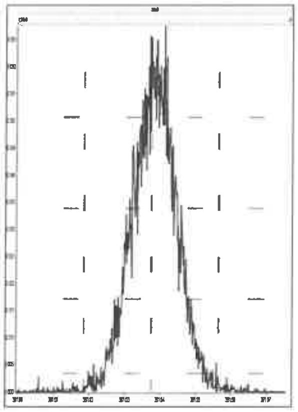

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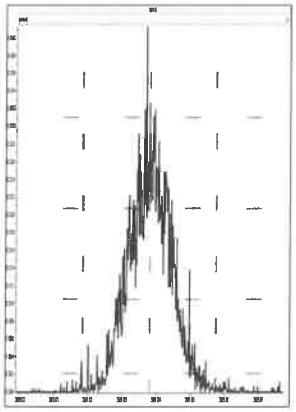

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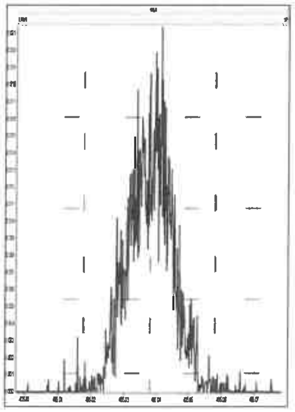

M 416.9760 R 15619

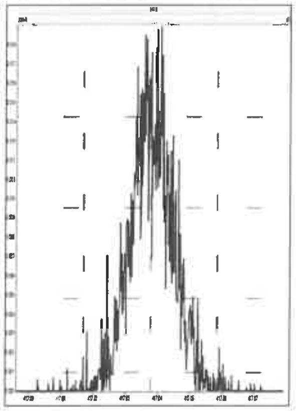

M 430.9728 R 13909

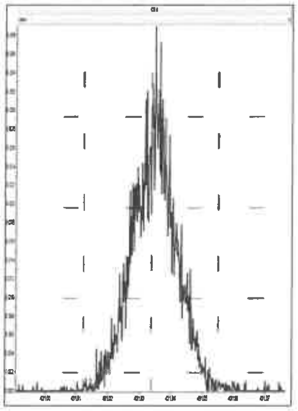

M 442.9728 R 14651

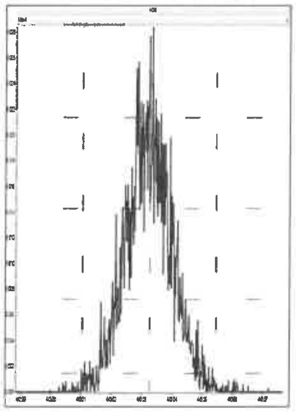

M 454.9728 R 15246

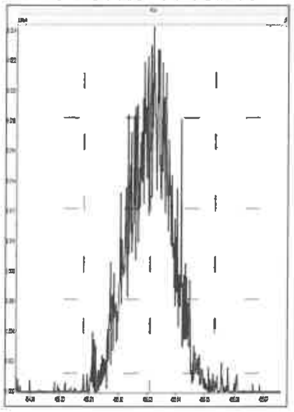

M 466.9728 R 21190

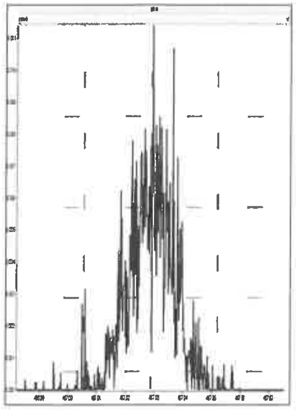

M 480.9696 R 14852

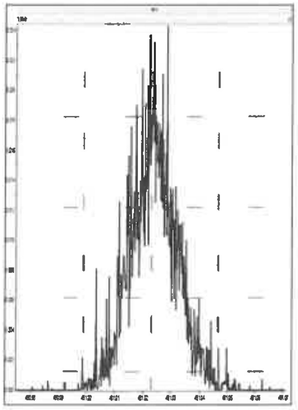

M 492.9696 R 17861

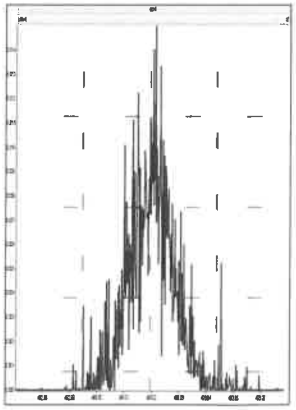

M 504.9696 R 16958

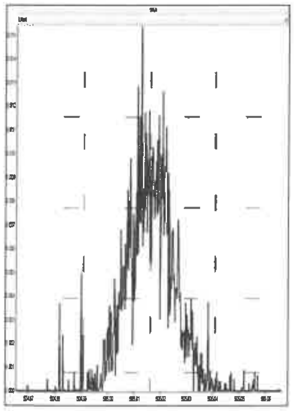

M 516.9697 R 19504

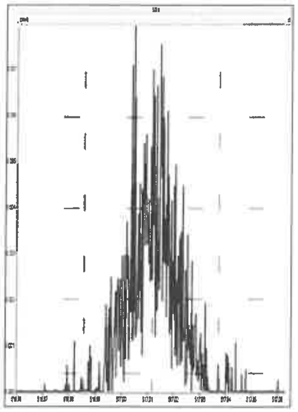

Report Date: 13-Oct-2020 14:05:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Oct-2020 22:14:24 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 101220 CS-4 HRDXNL4_00095
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 14:05:09 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 13:48:22

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.106	61571597	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.622	97062890	0.79	1.3598	115.9	115.9	0.2571	0.2571	116	
2,3,7,8-TCDF	16.637	9698391	0.78	0.9077	11.0	11.0	0.0236	0.0236	110	
A Non-2,3,7,8-sub-TCDF	16.342						0.0236	0.0236		n
S Total TCDF					11.0	11.0	0.0236	0.0236		
D 13C-2,3,7,8-TCDD	17.287	64170479	0.78	1.0536	98.9	98.9	0.2540	0.2540	98.92	
2,3,7,8-TCDD	17.302	6742167	0.81	1.0061	10.4	10.4	0.0271	0.0271	104	
$ 37Cl4-2,3,7,8-TCDD	17.302	6836939		1.0488	10.6	10.6	0.0155	0.0155	106	
A Non-2,3,7,8-sub-TCDD	16.781						0.0271	0.0271		
S Total TCDD					10.4	10.4	0.0271	0.0271		
D 13C-1,2,3,7,8-PeCDF	21.370	72912724	1.59	1.1306	104.7	104.7	0.2987	0.2987	105	
1,2,3,7,8-PeCDF	21.383	36963016	1.59	0.9147	55.4	55.4	0.2208	0.2208	111	
D 13C-2,3,4,7,8-PeCDF	22.638	67406856	1.59	1.0539	103.9	103.9	0.3204	0.3204	104	
2,3,4,7,8-PeCDF	22.665	35990273	1.62	0.9508	56.2	56.2	0.2429	0.2429	112	
A F1 PeCDFs	19.147						0.0122	0.0122		
A Non-2,3,7,8-sub-PeCDF	22.128						0.2310	0.2310		
S Total PeCDF					111.6	111.6	0.2319	0.2319		
D 13C-1,2,3,7,8-PeCDD	23.320	46429820	1.62	0.8084	93.3	93.3	0.1469	0.1469	93.28	
1,2,3,7,8-PeCDD	23.347	24111204	1.58	0.9955	52.2	52.2	0.0830	0.0830	104	
A Non-2,3,7,8-sub-PeCDD	22.290						0.0830	0.0830		
S Total PeCDD					52.2	52.2	0.0830	0.0830		
D 13C-1,2,3,4,7,8-HxCDF	29.409	52092806	0.52	0.9225	121.6	121.6	0.7921	0.7921	122	
1,2,3,4,7,8-HxCDF	29.435	32284640	1.27	1.1090	55.9	55.9	0.6494	0.6494	112	
D 13C-1,2,3,6,7,8-HxCDF	29.702	57783520	0.51	1.0336	120.4	120.4	0.7069	0.7069	120	
1,2,3,6,7,8-HxCDF	29.728	34564701	1.27	1.0721	55.8	55.8	0.5828	0.5828	112	
D 13C-2,3,4,6,7,8-HxCDF	30.847	55104624	0.52	0.9773	121.4	121.4	0.7476	0.7476	121	
2,3,4,6,7,8-HxCDF	30.873	33004371	1.27	1.0838	55.3	55.3	0.3630	0.3630	111	
D 13C-1,2,3,7,8,9-HxCDF	31.792	50574242	0.53	0.9153	118.9	118.9	0.7982	0.7982	119	
1,2,3,7,8,9-HxCDF	31.805	30485998	1.27	1.0931	55.1	55.1	0.3417	0.3417	110	
A Non-2,3,7,8-sub-HxCDF	29.283						0.4473	0.4473		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					222.1	222.1	0.4842	0.4842		
* 13C-1,2,3,7,8,9-HxCDD	31.592	46450605	1.27	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.073	34615707	1.27	0.7977	93.4	93.4	0.4588	0.4588	93.42	
1,2,3,4,7,8-HxCDD	31.099	20088925	1.28	1.0014	58.0	58.0	0.2465	0.2465	116	
D 13C-1,2,3,6,7,8-HxCDD	31.206	47005187	1.26	1.0010	101.1	101.1	0.3656	0.3656	101	
1,2,3,6,7,8-HxCDD	31.219	23051867	1.27	0.8902	55.1	55.1	0.2264	0.2264	110	
1,2,3,7,8,9-HxCDD	31.605	24607984	1.26	1.0579	57.0	57.0	0.2098	0.2098	114	
A Non-2,3,7,8-sub-HxCDD	29.888						0.2257	0.2257		
S Total HxCDD					170.0	170.0	0.2276	0.2276		
D 13C-1,2,3,4,6,7,8-HpCDF	33.354	42937734	0.44	0.8506	108.7	108.7	1.668	1.668	109	
1,2,3,4,6,7,8-HpCDF	33.366	31154661	1.06	1.3603	53.3	53.3	0.6000	0.6000	107	
D 13C-1,2,3,4,7,8,9-HpCDF	34.399	35949306	0.44	0.7618	101.6	101.6	1.863	1.863	102	
1,2,3,4,7,8,9-HpCDF	34.411	25604774	1.06	1.3207	53.9	53.9	0.8156	0.8156	108	
A Non-2,3,7,8-sub-HpCDF	33.889						0.6928	0.6928		
S Total HpCDF					107.3	107.3	0.7078	0.7078		
D 13C-1,2,3,4,6,7,8-HpCDD	34.119	38504922	1.08	0.8873	93.4	93.4	0.6090	0.6090	93.43	
1,2,3,4,6,7,8-HpCDD	34.132	20289415	1.04	0.9988	52.8	52.8	0.2746	0.2746	106	
A Non-2,3,7,8-sub-HpCDD	33.870						0.2746	0.2746		
S Total HpCDD					52.8	52.8	0.2746	0.2746		
D 13C-OCDD	36.390	55154657	0.90	0.6287	188.9	188.9	0.3160	0.3160	94.43	
OCDF	36.474	40065300	0.90	1.4136	102.8	102.8	0.0987	0.0987	103	
OCDD	36.390	30716178	0.89	1.1290	98.7	98.7	0.1287	0.1287	98.66	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 14:05:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Oct-2020 22:14:24 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 101220 CS-4 HRDXNL4_00095
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 14:05:09 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 13:48:22

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.106	17.106	0		27128724	6867856	8045	20112	854		
333.9339	17.106	17.106	0		34442873	8733480	8654	21635	1009	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.622	16.622	0	0.972	42789197	10763523	8457	21142	1273		
317.9389	16.622	16.622	0	0.972	54273693	13597471	13360	33400	1018	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.637	16.637	0	1.001	4244360	1079721	928	2320	1163		
305.8987	16.637	16.637	0	1.001	5454031	1380066	1162	2905	1188	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.274	16.342	-4	0.979	19531	5048	928	2320	5		
305.8987	16.259	16.342	-5	0.978	27228	5578	1162	2905	5	0.72(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.287	17.287	0	1.011	28213130	6751805	8045	20112	839		
333.9339	17.287	17.287	0	1.011	35957349	8535307	8654	21635	986	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.302	17.302	0	1.001	3009346	722618	910	2275	794		
321.8936	17.302	17.302	0	1.001	3732821	877179	755	1887	1162	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.302	17.302	0	1.011	6836939	1639484	1016	2540	1614		
A Non-2,3,7,8-sub-TCDD											
319.8965	16.781						910	2275			
321.8936	16.781						755	1887			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	21.370	21.370	0	1.249	44737909	7899410	13261	33152	596		
353.8970	21.370	21.370	0	1.249	28174815	5013134	7811	19527	642	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.383	21.383	0	1.001	22709117	4028563	6228	15570	647		
341.8567	21.383	21.383	0	1.001	14253899	2557150	4206	10515	608	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	22.638	22.638	0	1.323	41405933	6889861	13261	33152	520		
353.8970	22.638	22.638	0	1.323	26000923	4404356	7811	19527	564	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	22.665	22.665	0	1.001	22259677	3709290	6228	15570	596		
341.8567	22.665	22.665	0	1.001	13730596	2300255	4206	10515	547	1.62(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.147						179	447			
341.8567	19.147						372	930			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.128						6228	15570			
341.8567	22.128						4206	10515			
13C-1,2,3,7,8-PeCDD											
367.8949	23.320	23.320	0	1.363	28689482	4535604	4708	11770	963		
369.8919	23.320	23.320	0	1.363	17740338	2812998	2705	6762	1040	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.347	23.347	0	1.001	14752329	2303014	1686	4215	1366		
357.8516	23.347	23.347	0	1.001	9358875	1432244	743	1857	1928	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.290						1686	4215			
357.8516	22.290						743	1857			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.409	29.409	0	0.931	17788282	2065188	10369	25922	199		
385.8610	29.396	29.409	-1	0.930	34304524	3980403	19242	48105	207	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.435	29.435	0	1.001	18037509	2120777	9817	24542	216		
375.8178	29.422	29.435	-1	1.000	14247131	1662577	7599	18997	219	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	29.702	29.702	0	0.940	19538999	2371341	10369	25922	229		
385.8610	29.702	29.702	0	0.940	38244521	4597224	19242	48105	239	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	29.728	29.728	0	1.001	19336677	2314321	9817	24542	236		
375.8178	29.728	29.728	0	1.001	15228024	1875600	7599	18997	247	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	30.847	30.847	0	0.976	18818210	3778968	10369	25922	364		
385.8610	30.847	30.847	0	0.976	36286414	7289627	19242	48105	379	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	30.873	30.873	0	1.001	18480027	3691119	9817	24542	376		
375.8178	30.860	30.873	-1	1.000	14524344	2901979	7599	18997	382	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	31.792	31.792	0	1.006	17426813	4037667	10369	25922	389		
385.8610	31.792	31.792	0	1.006	33147429	7620629	19242	48105	396	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	31.805	31.805	0	1.000	17033655	3834613	9817	24542	391		
375.8178	31.805	31.805	0	1.000	13452343	3064597	7599	18997	403	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.283						9817	24542			
375.8178	29.283						7599	18997			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.592	31.592	0		25948112	5690286	8218	20545	692		
403.8529	31.592	31.592	0		20502493	4441157	6612	16530	672	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.073	31.073	0	0.984	19398302	4485326	8218	20545	546		
403.8529	31.073	31.073	0	0.984	15217405	3486162	6612	16530	527	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.099	31.099	0	1.001	11274855	2616307	4306	10765	608		
391.8127	31.099	31.099	0	1.001	8814070	2034198	3567	8917	570	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.206	31.206	0	0.988	26162674	5465663	8218	20545	665		
403.8529	31.206	31.206	0	0.988	20842513	4301706	6612	16530	651	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.219	31.219	0	1.000	12911920	2664229	4306	10765	619		
391.8127	31.219	31.219	0	1.000	10139947	2173337	3567	8917	609	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.605	31.605	0	1.017	13739015	3036404	4306	10765	705		
391.8127	31.605	31.605	0	1.017	10868969	2393455	3567	8917	671	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	29.888						4306	10765			
391.8127	29.888						3567	8917			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.354	33.354	0	1.056	13215126	4216604	18334	45835	230		
419.8220	33.354	33.354	0	1.056	29722608	9439411	39176	97940	241	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.366	33.366	0	1.000	15999266	5157340	22539	56347	229		
409.7789	33.366	33.366	0	1.000	15155395	4793906	22047	55117	217	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.399	34.399	0	1.089	10899377	3075806	18334	45835	168		
419.8220	34.399	34.399	0	1.089	25049929	7272074	39176	97940	186	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.411	34.411	0	1.000	13152293	3868760	22539	56347	172		
409.7789	34.411	34.411	0	1.000	12452481	3640973	22047	55117	165	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.889						22539	56347			
409.7789	33.889						22047	55117			

Report Date: 13-Oct-2020 14:05:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.119	34.119	0	1.080	19969645	5825801	10706	26765	544		
437.8140	34.119	34.119	0	1.080	18535277	5448215	11193	27982	487	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.132	34.132	0	1.000	10350498	3063643	6584	16460	465		
425.7737	34.132	34.132	0	1.000	9938917	2933783	5783	14457	507	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.870						6584	16460			
425.7737	33.870						5783	14457			
13C-OCDD											
469.7779	36.390	36.390	0	1.152	26145528	6792094	3948	9870	1720		
471.7750	36.390	36.390	0	1.152	29009129	7473771	4103	10257	1822	0.90(0.76-1.02)	
OCDF											
441.7428	36.474	36.474	0	1.002	19023489	4812114	1893	4732	2542		
443.7399	36.474	36.474	0	1.002	21041811	5405642	2086	5215	2591	0.90(0.76-1.02)	
OCDD											
457.7377	36.390	36.390	0	1.000	14483588	3694600	2227	5567	1659		
459.7348	36.390	36.390	0	1.000	16232590	4227686	1917	4792	2205	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 14:05:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d
Injection Date: 12-Oct-2020 22:14:24
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

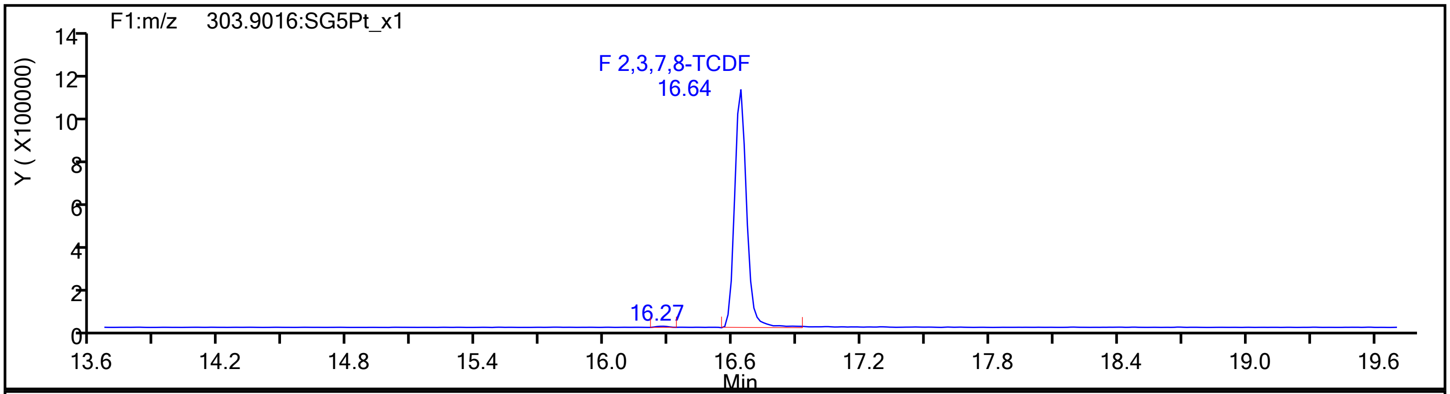

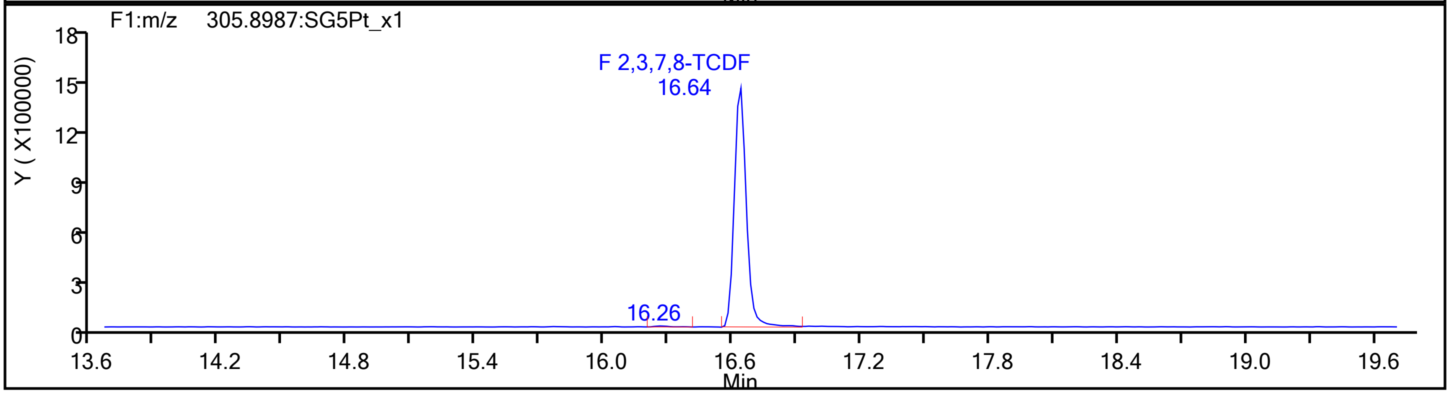

TCDF Standards

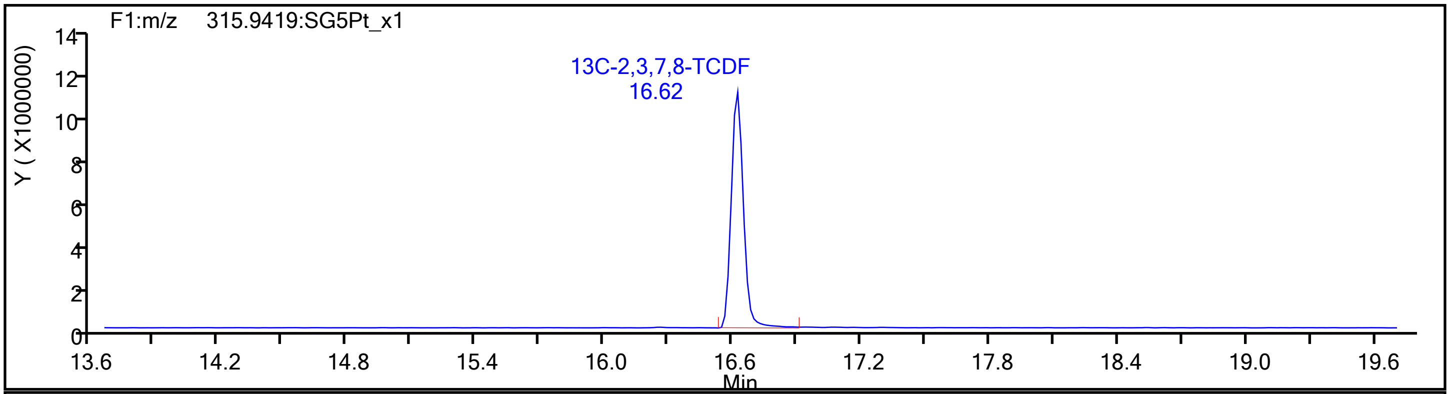

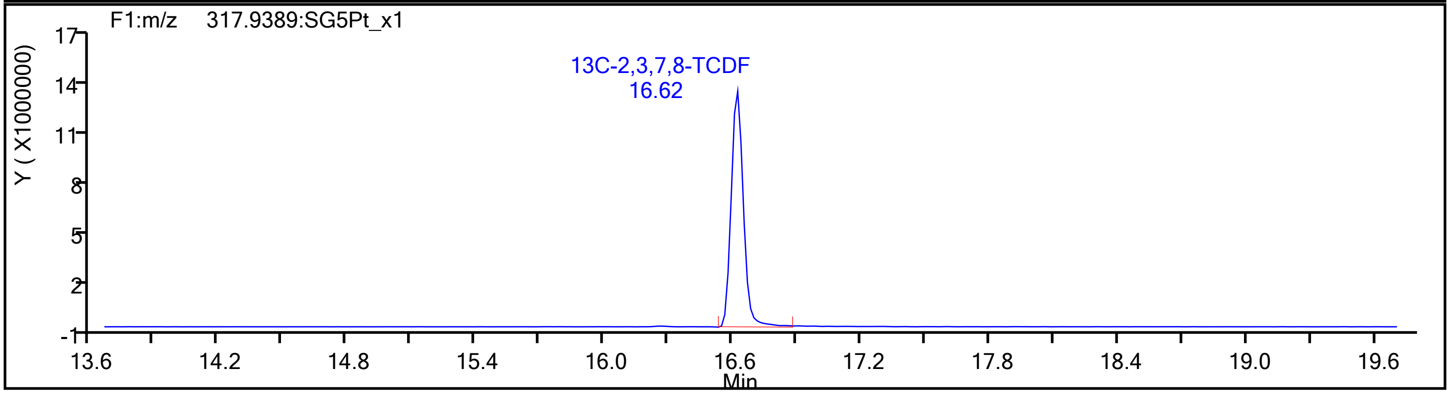

Eurofins TestAmerica, Sacramento

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Operator ID: ALM
Method: Dioxin_10D5
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Client ID:
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Column Type: DB-5
Column Dia: 0.32 mm

TCDF

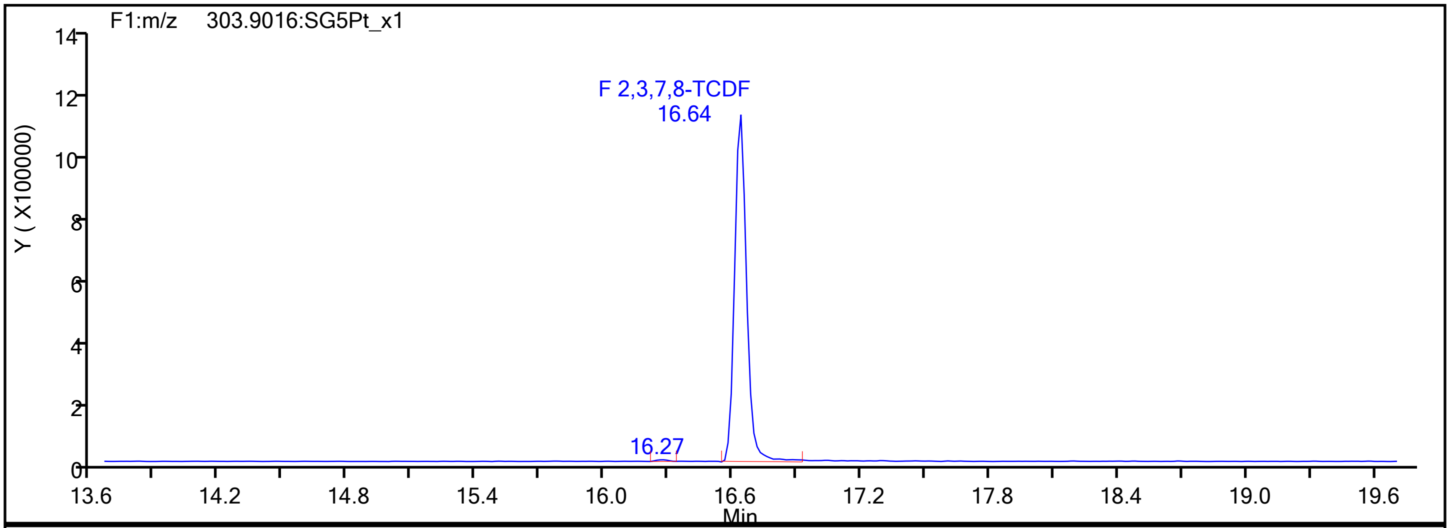

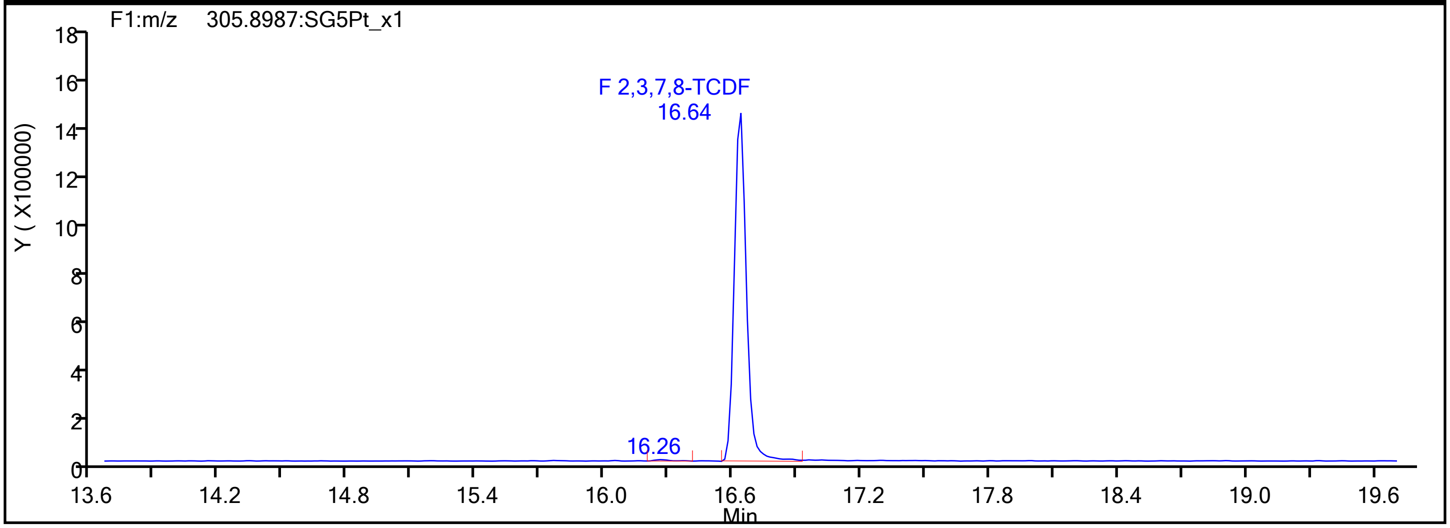

TCDF Interference Mass

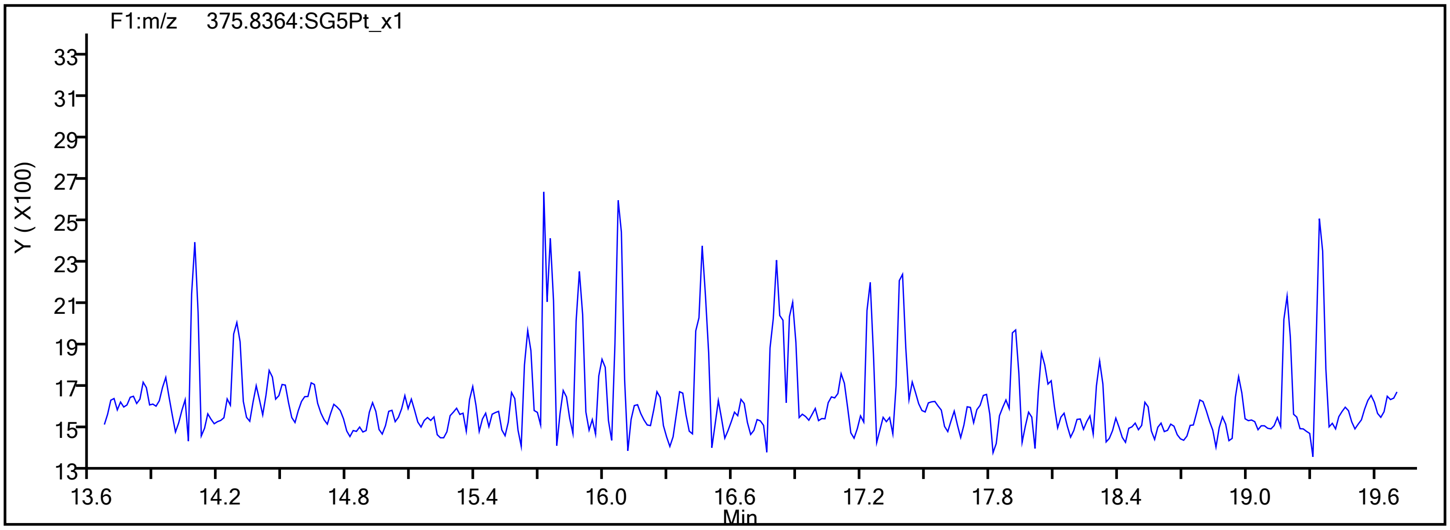

Report Date: 13-Oct-2020 14:05:09 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

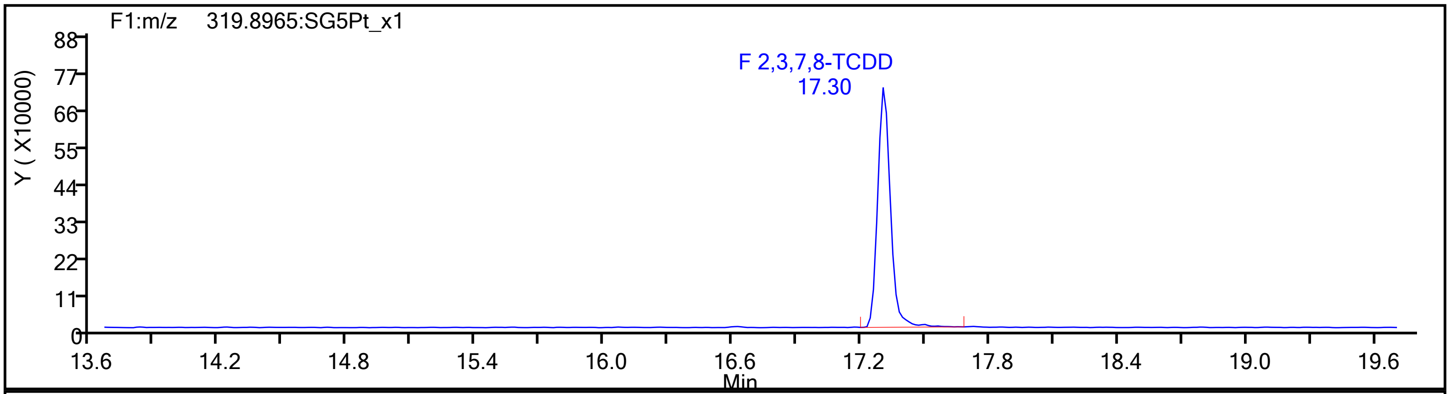

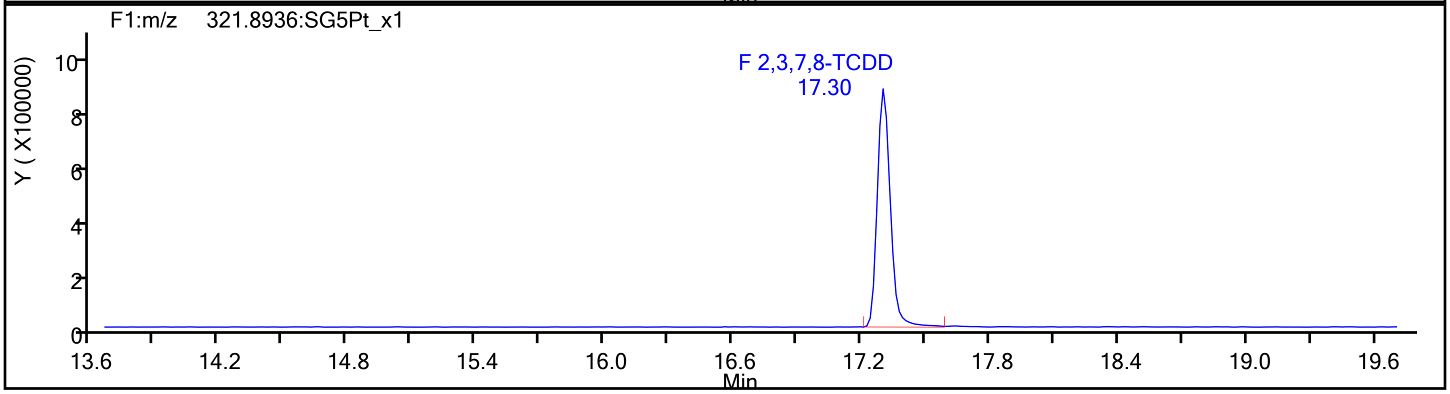

TCDD Standards

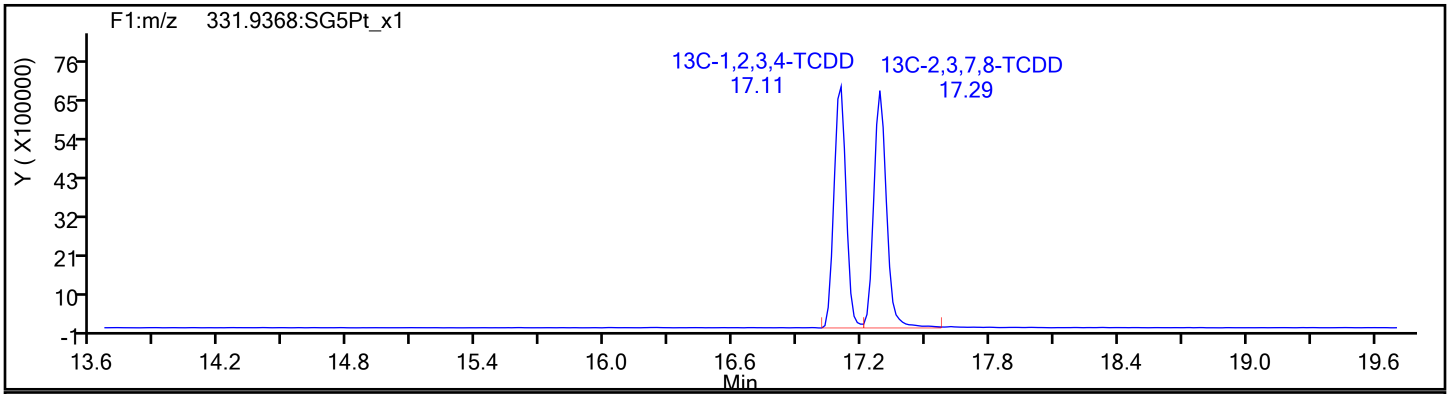

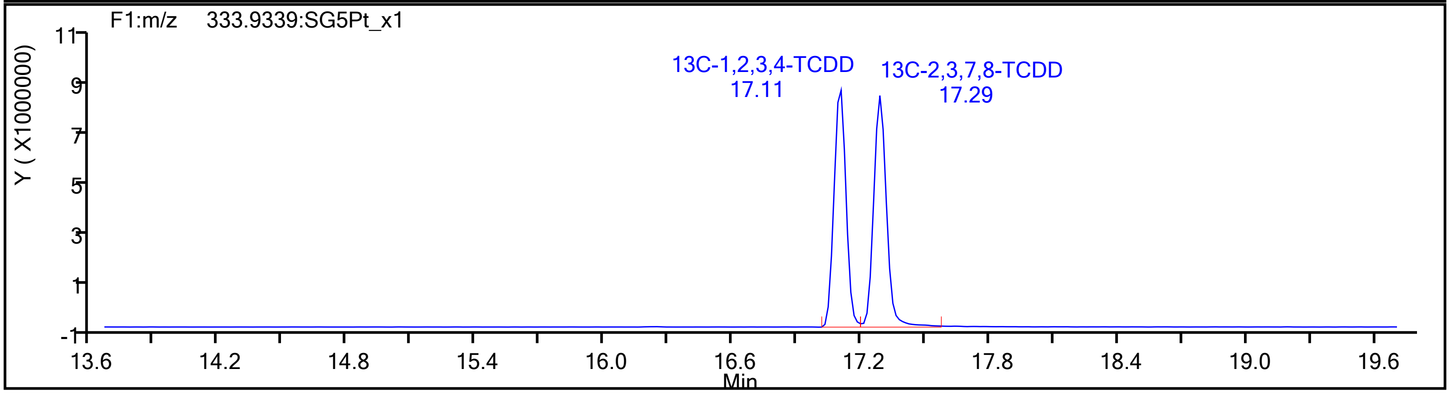

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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37Cl4-TCDD

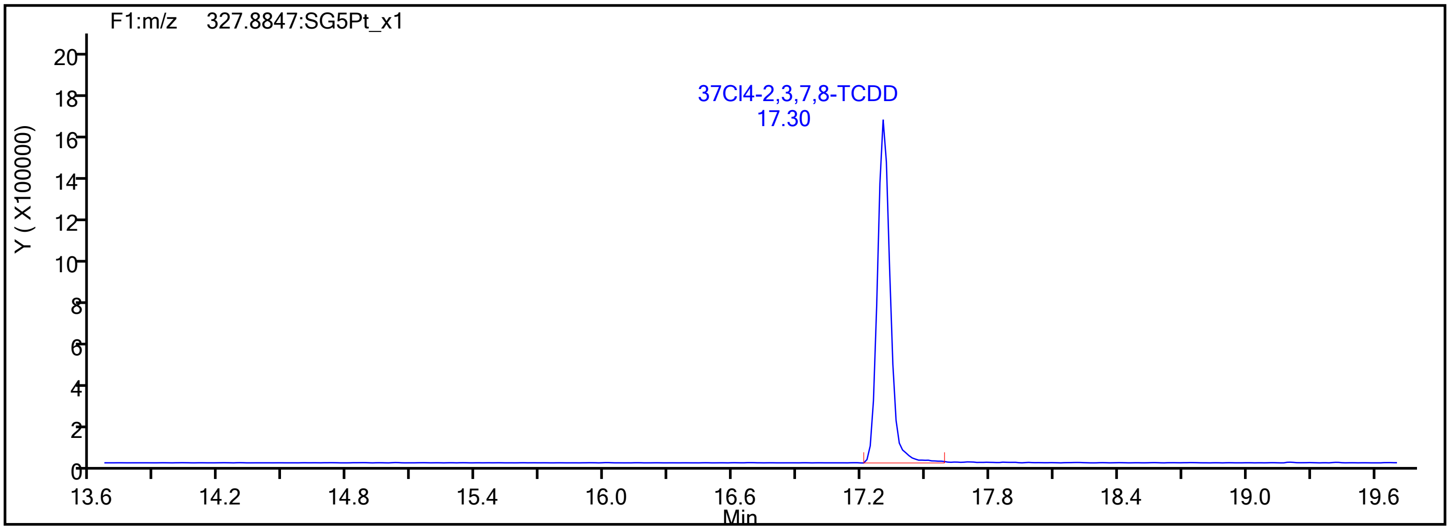

37Cl4-TCDD Standards

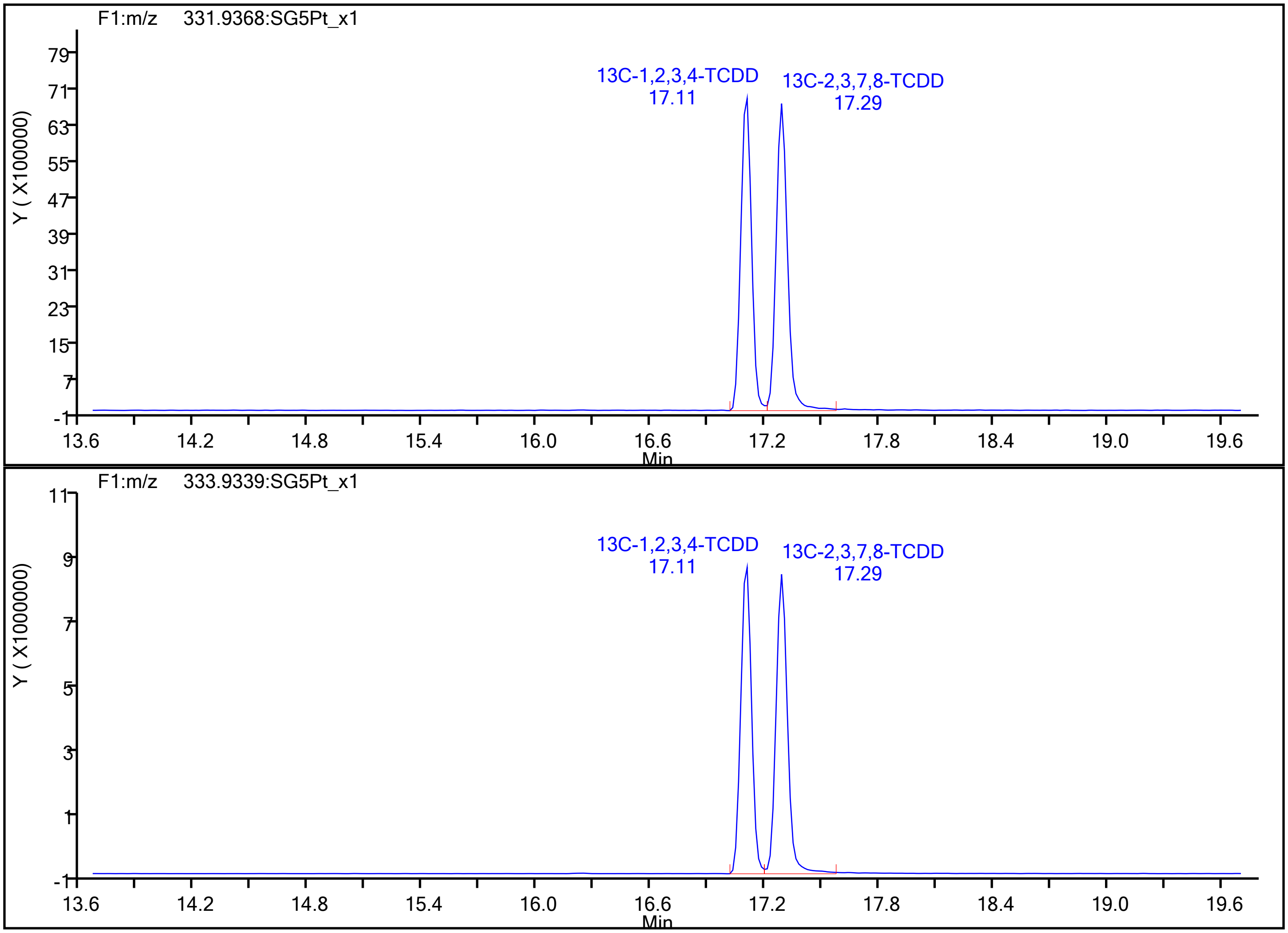

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

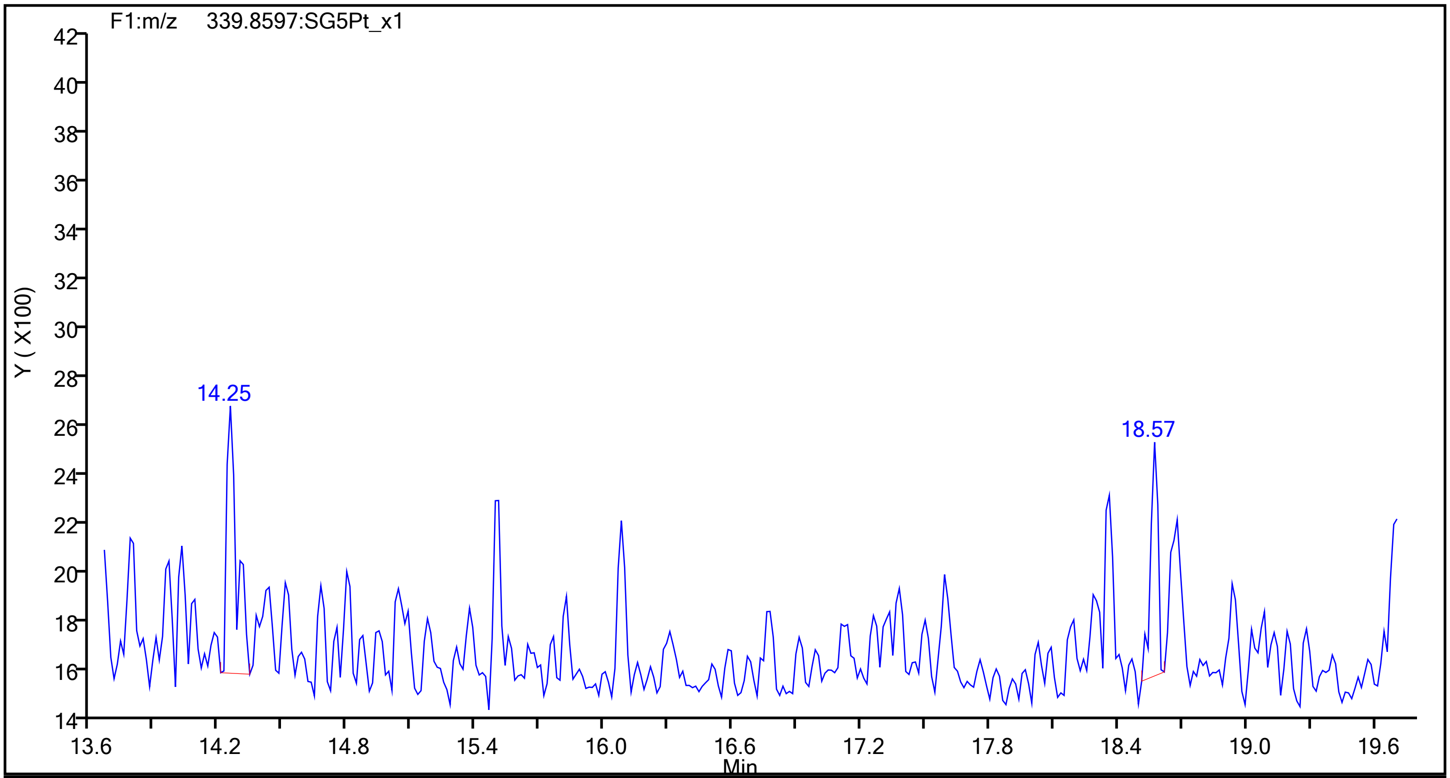

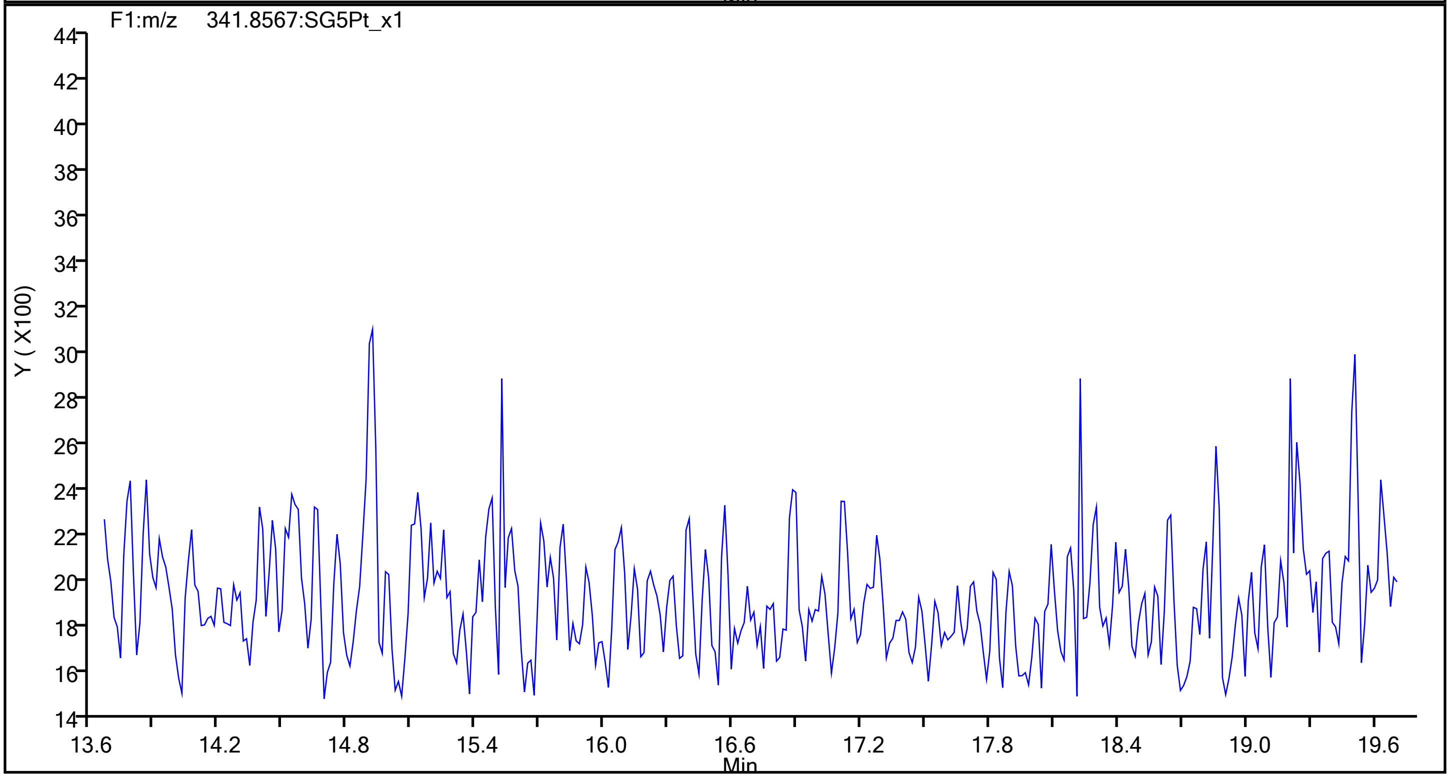

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

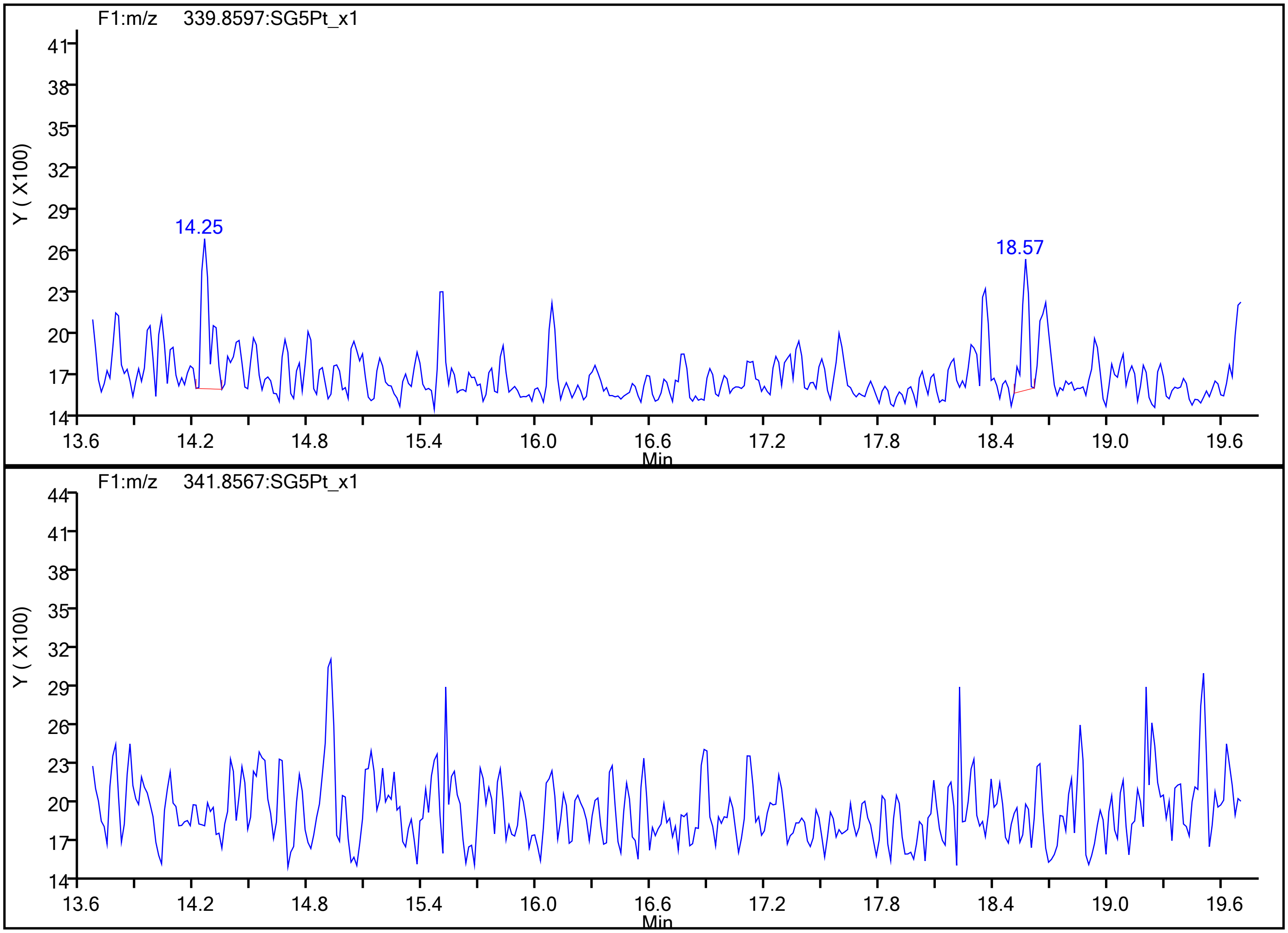

F1 PeCDFs Interference Mass

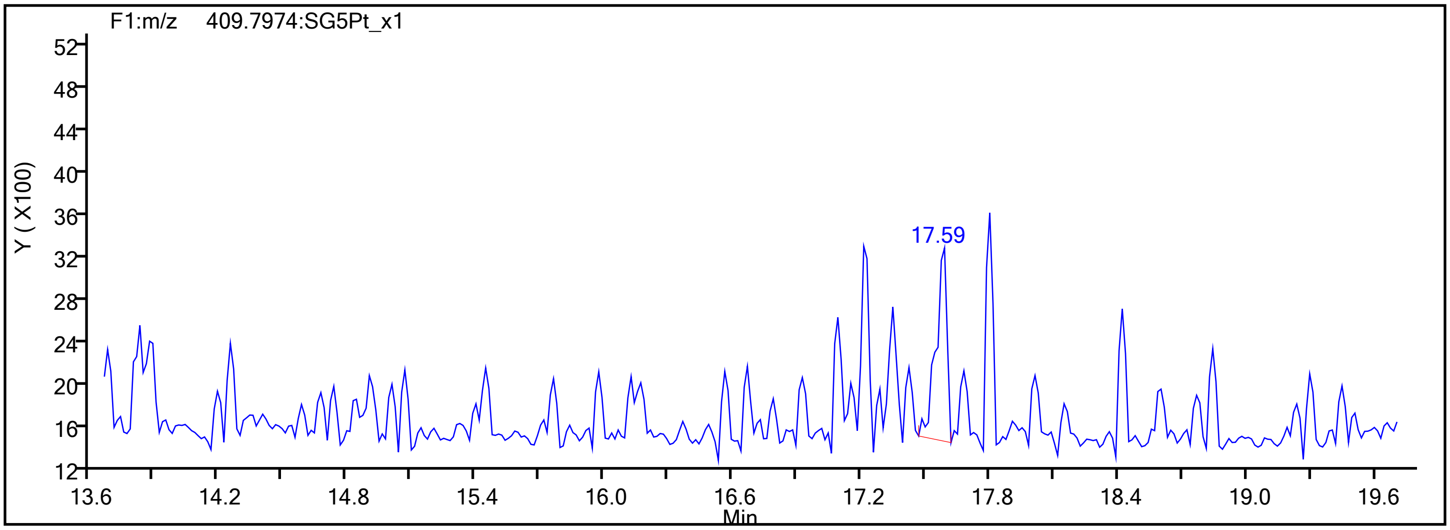

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Eurofins TestAmerica, Sacramento

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PeCDF

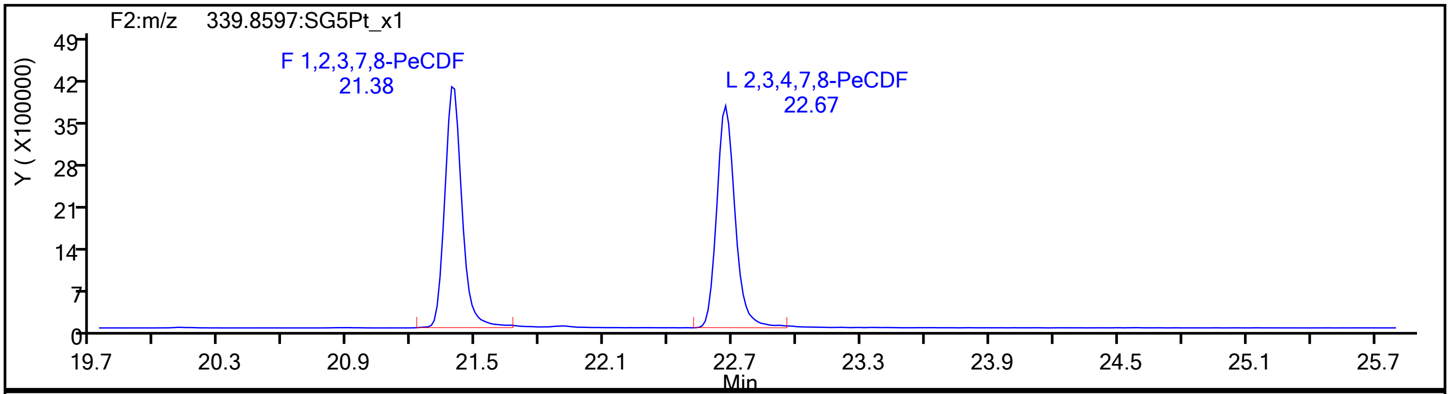

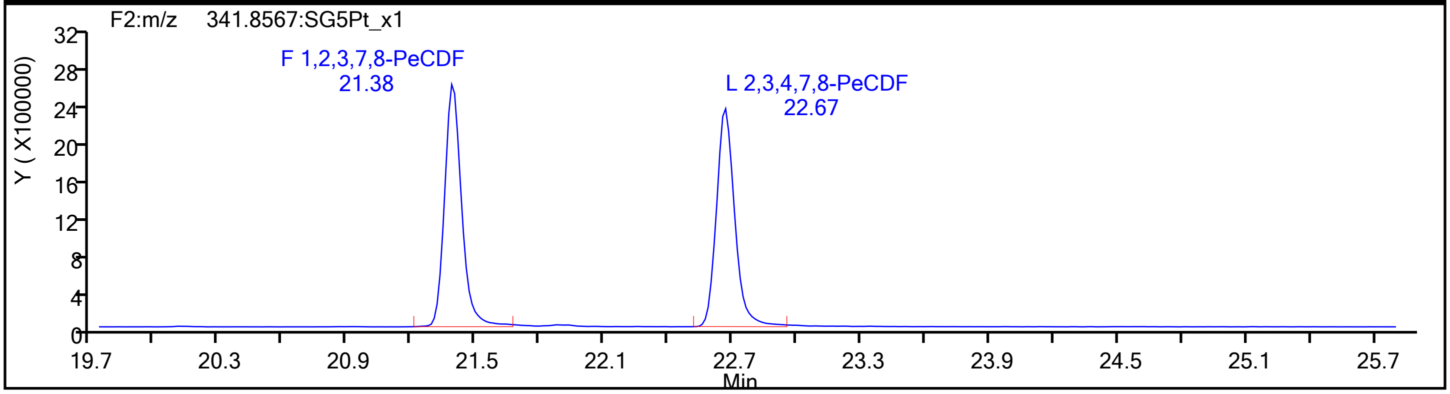

PeCDF Standards

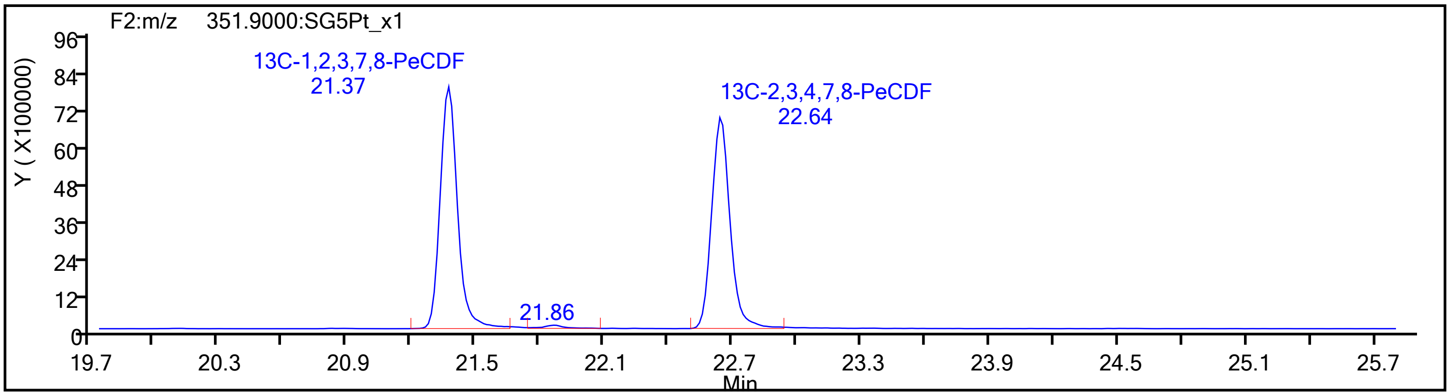

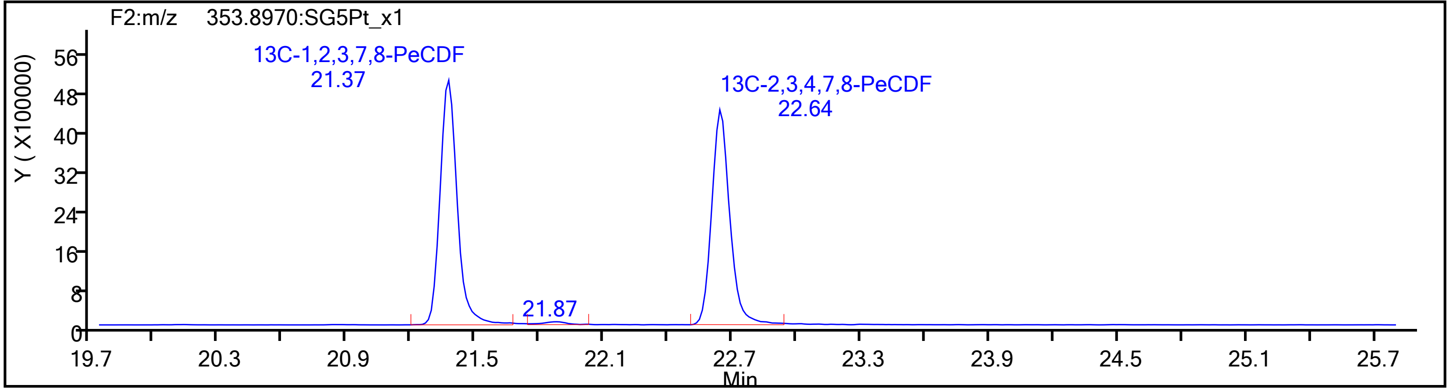

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Eurofins TestAmerica, Sacramento

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PeCDF

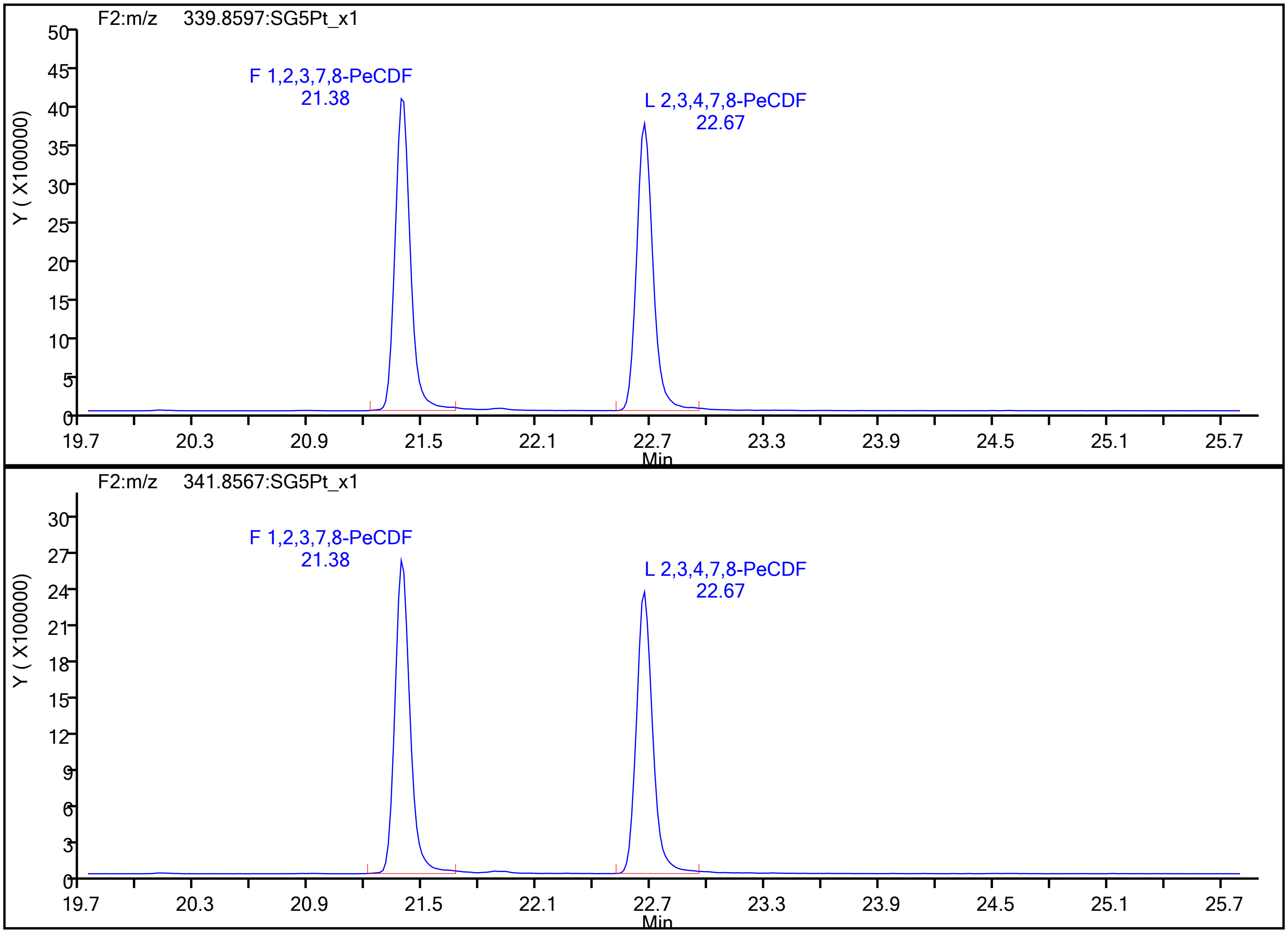

PeCDF Interference Mass

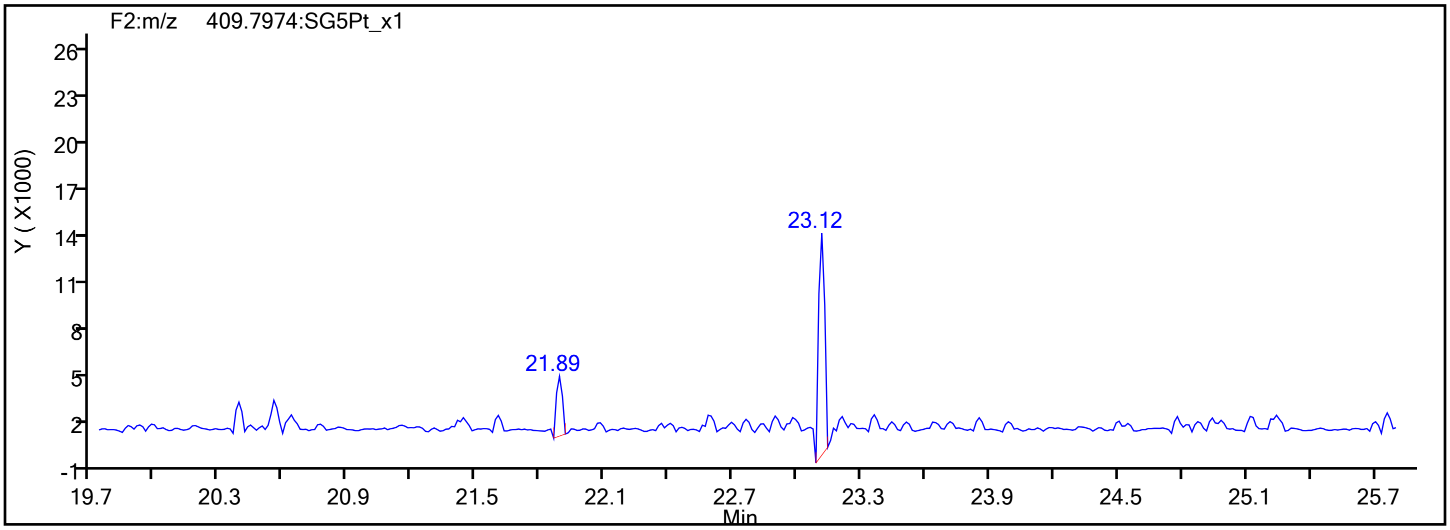

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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PeCDD

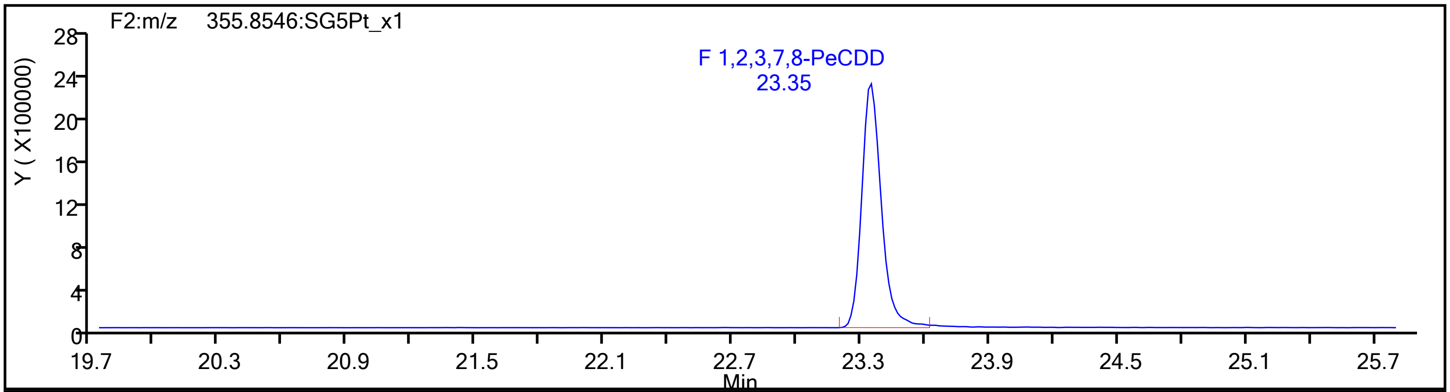

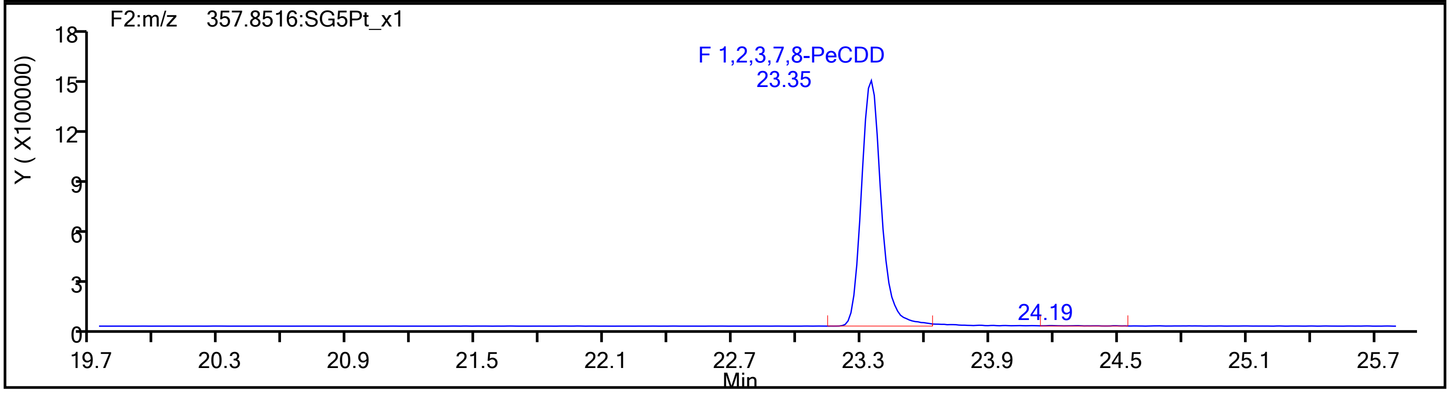

PeCDD Standards

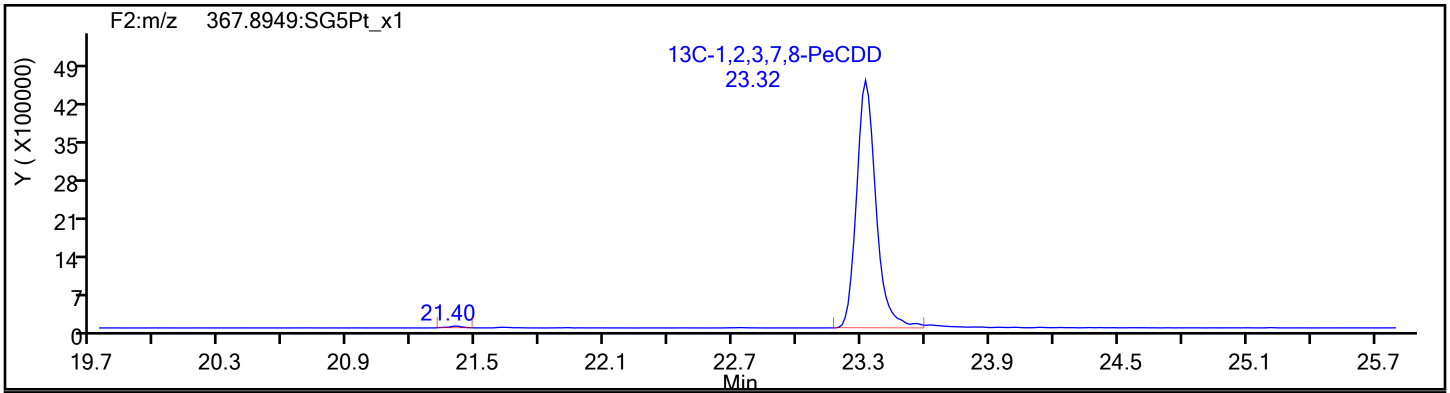

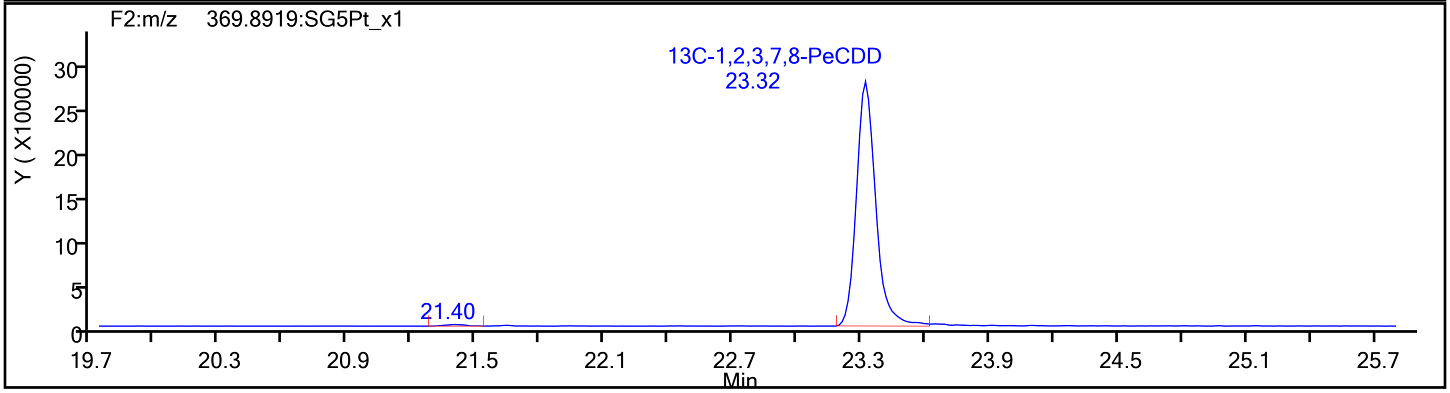

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDF

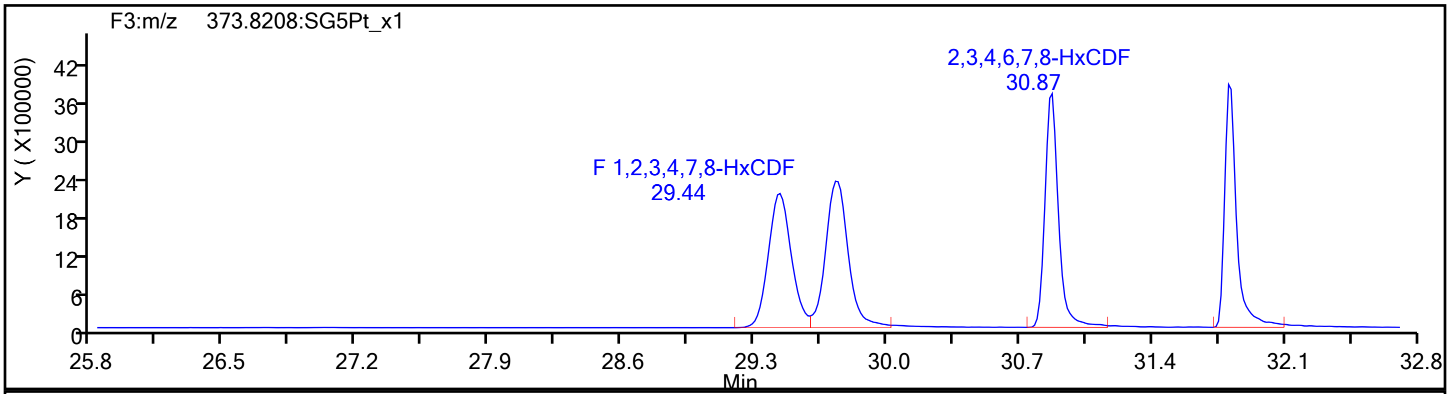

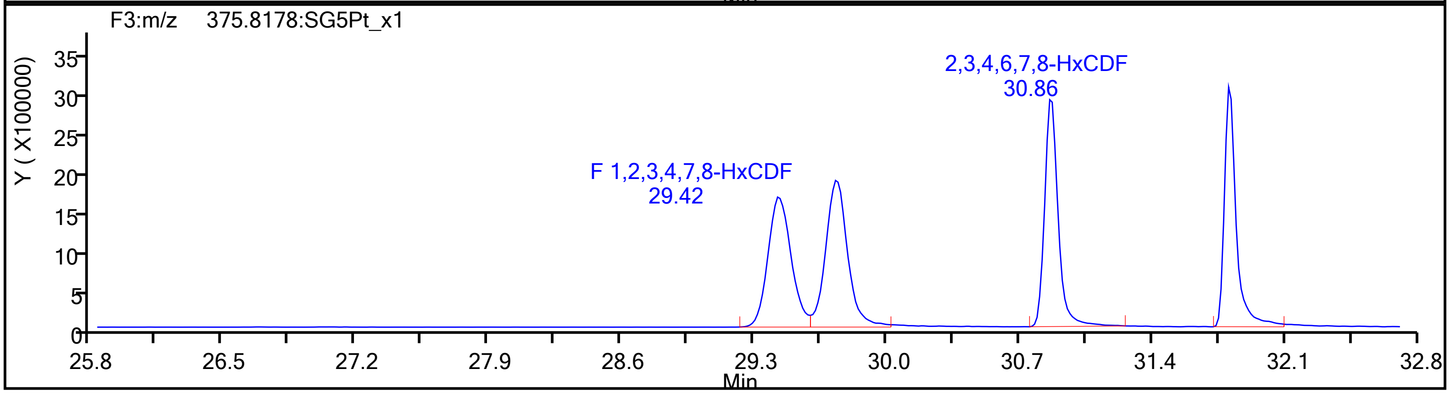

HxCDF Standards

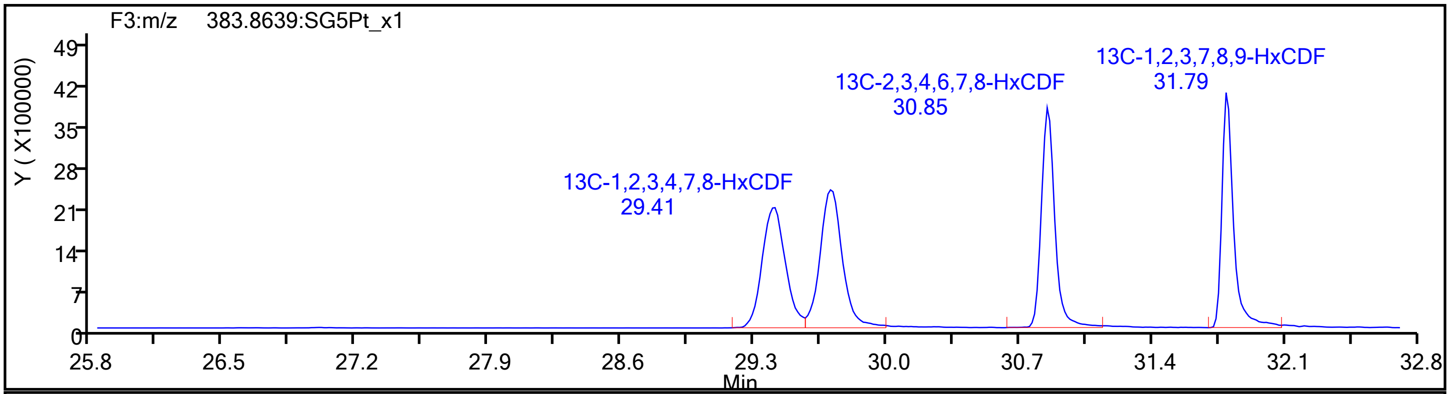

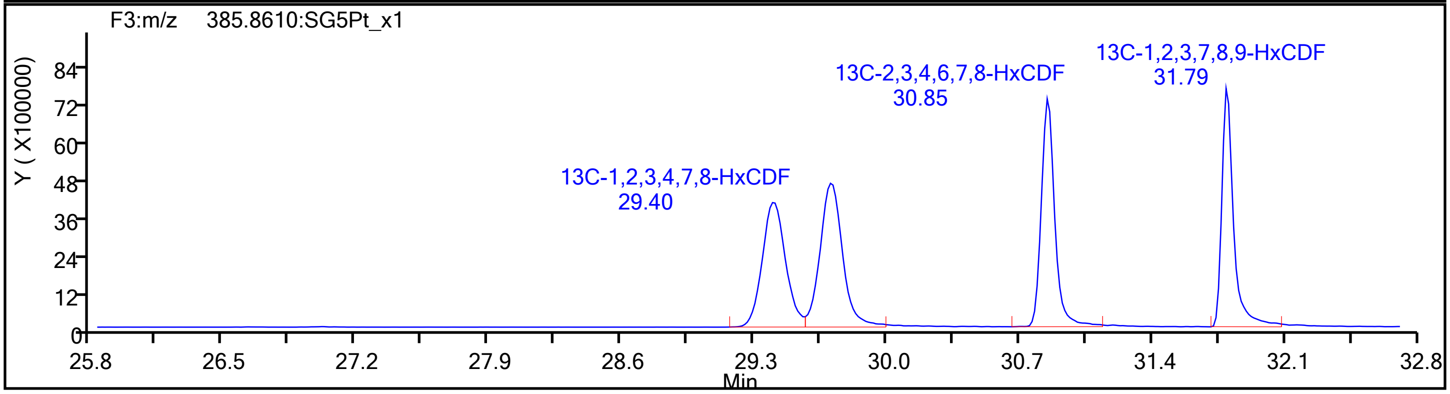

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Eurofins TestAmerica, Sacramento

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HxCDF

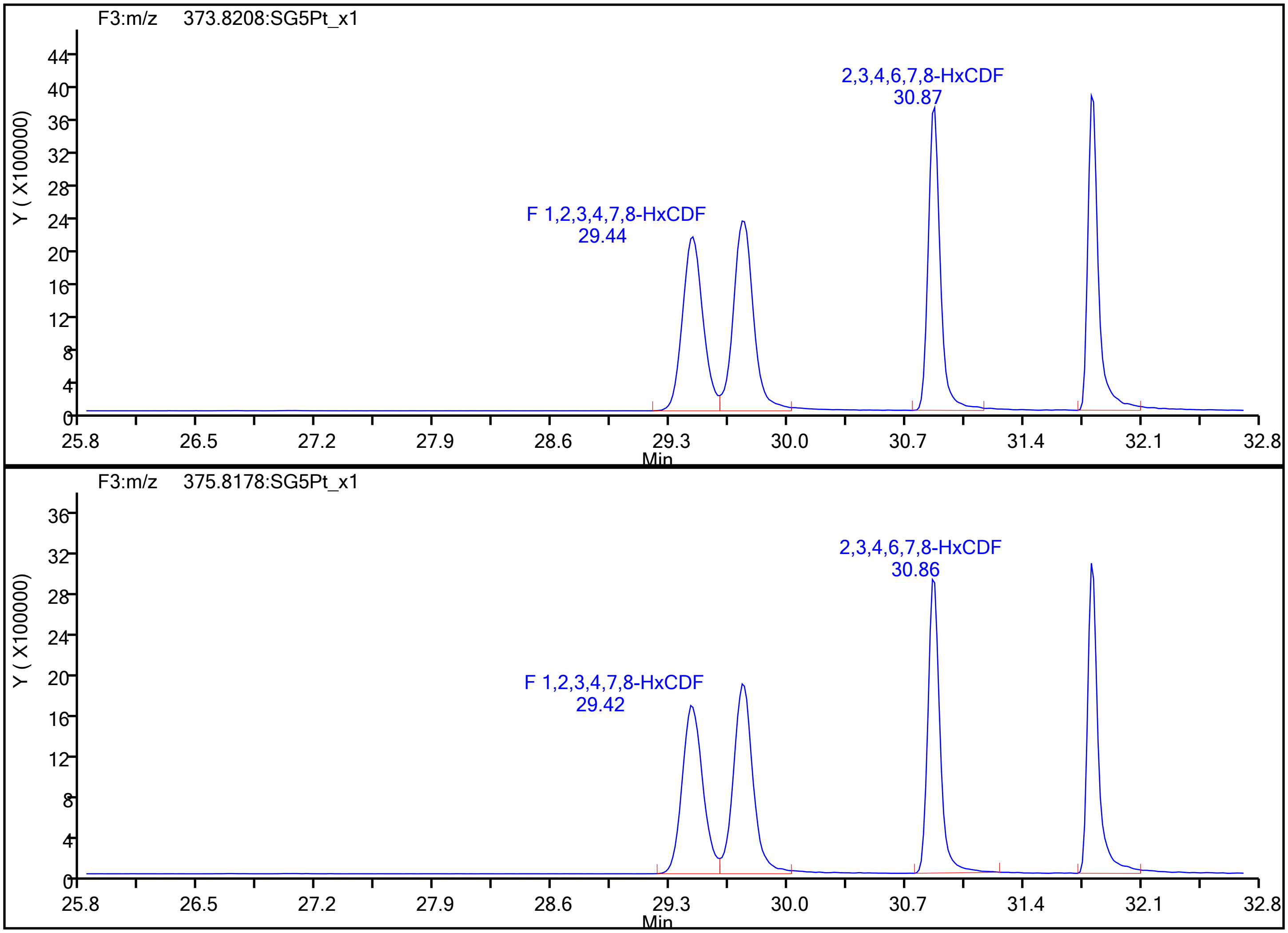

HxCDF Interference Mass

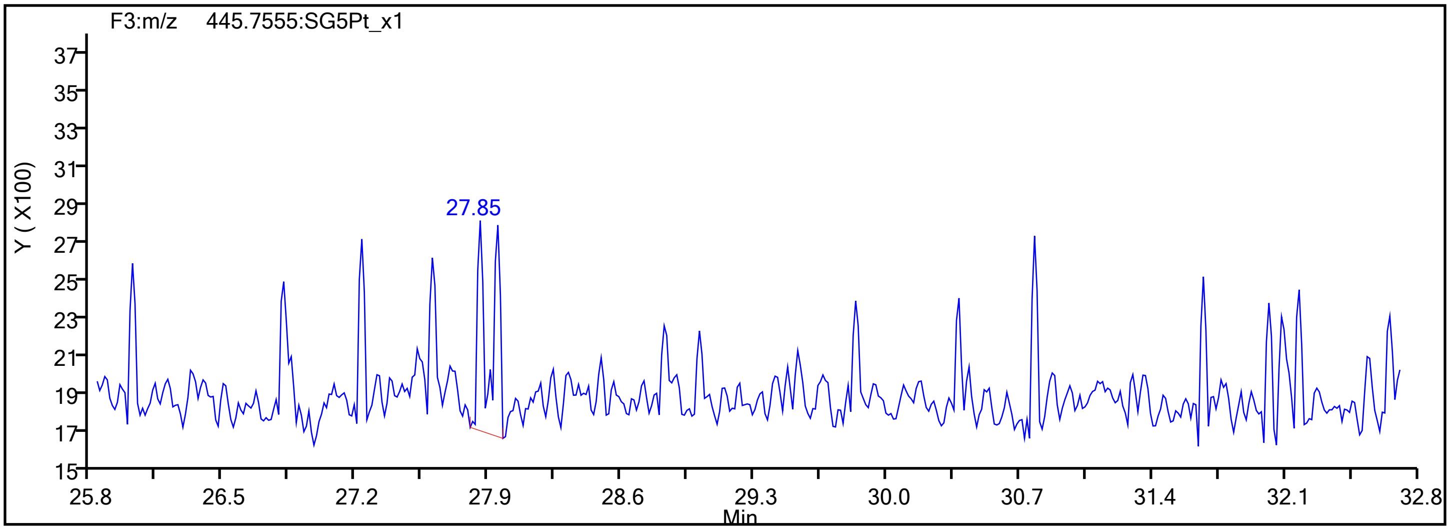

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HxCDD

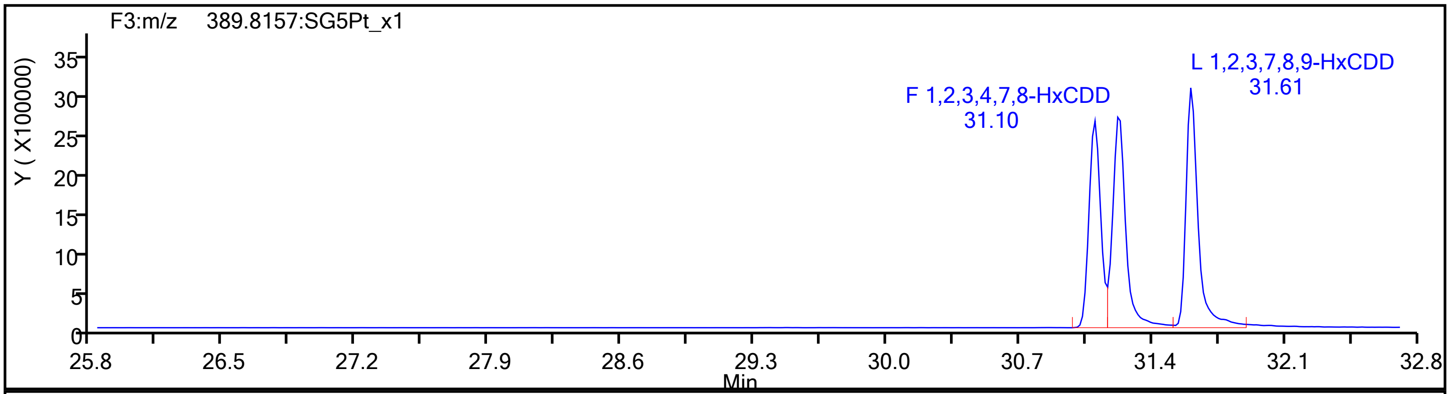

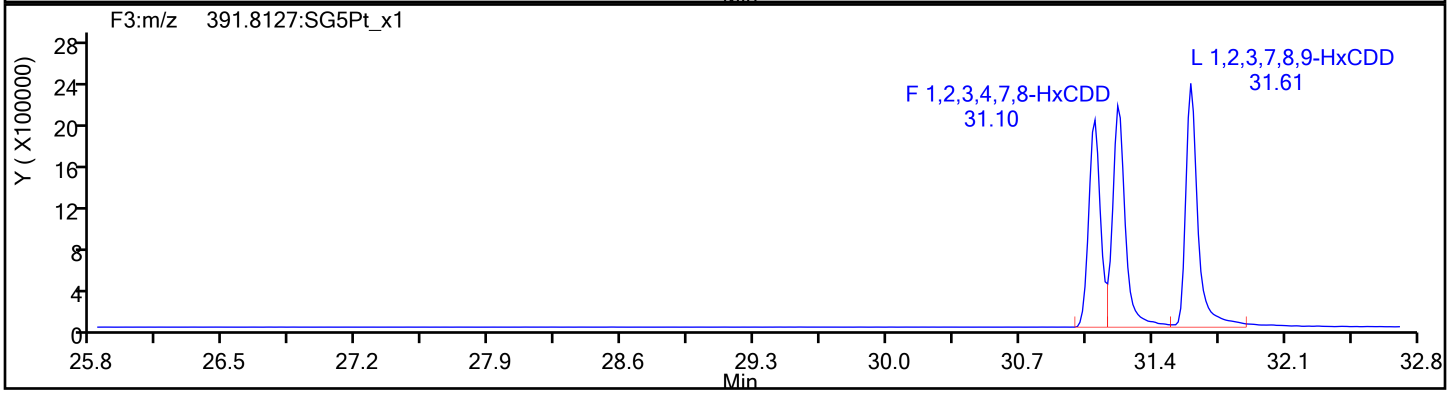

HxCDD Standards

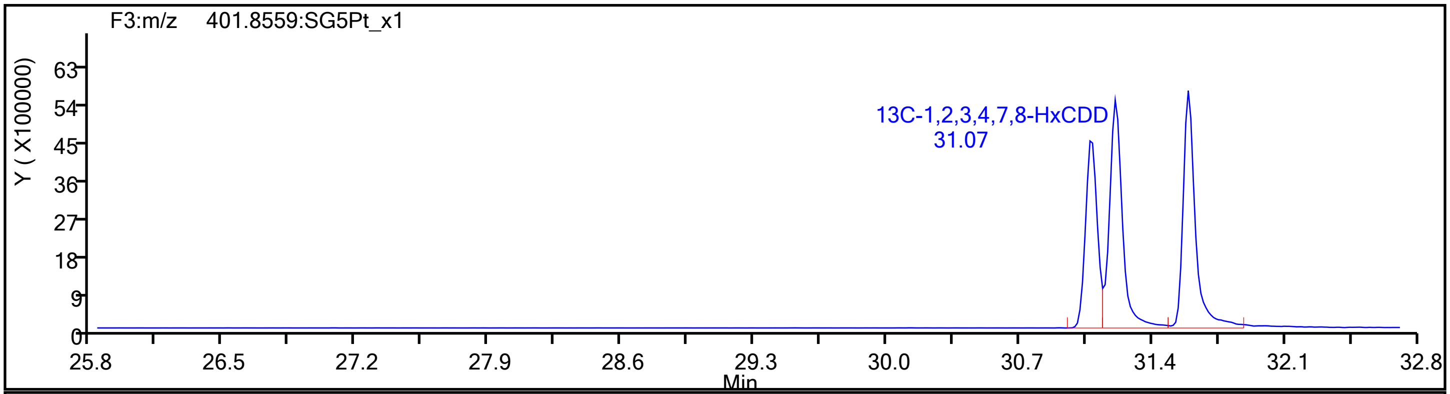

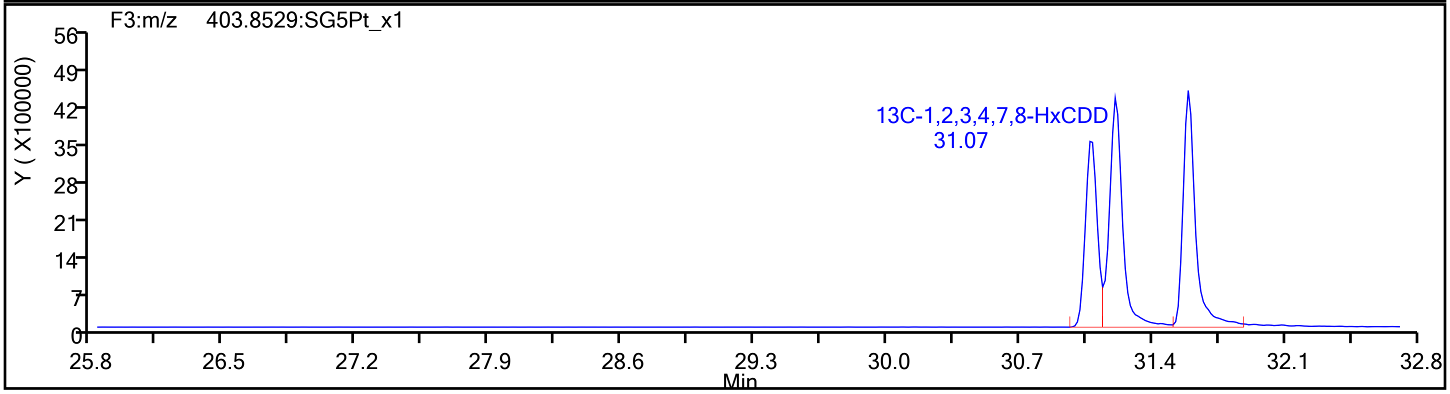

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14
Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
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HpCDF

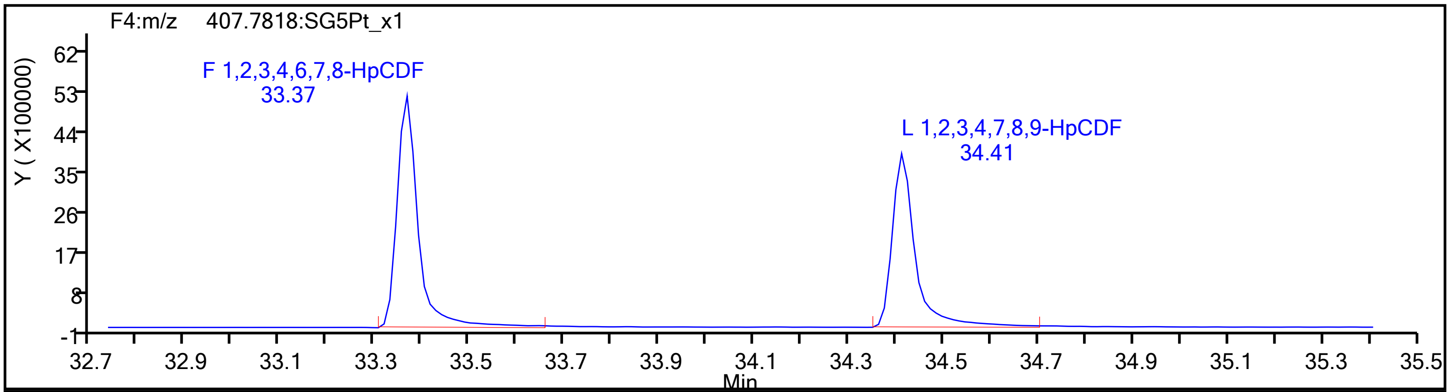

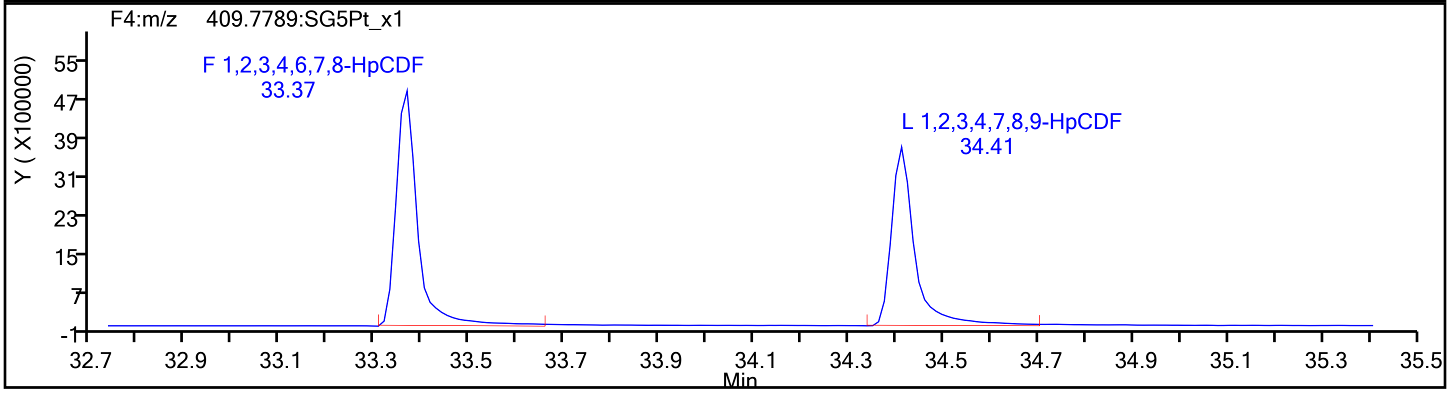

HpCDF Standards

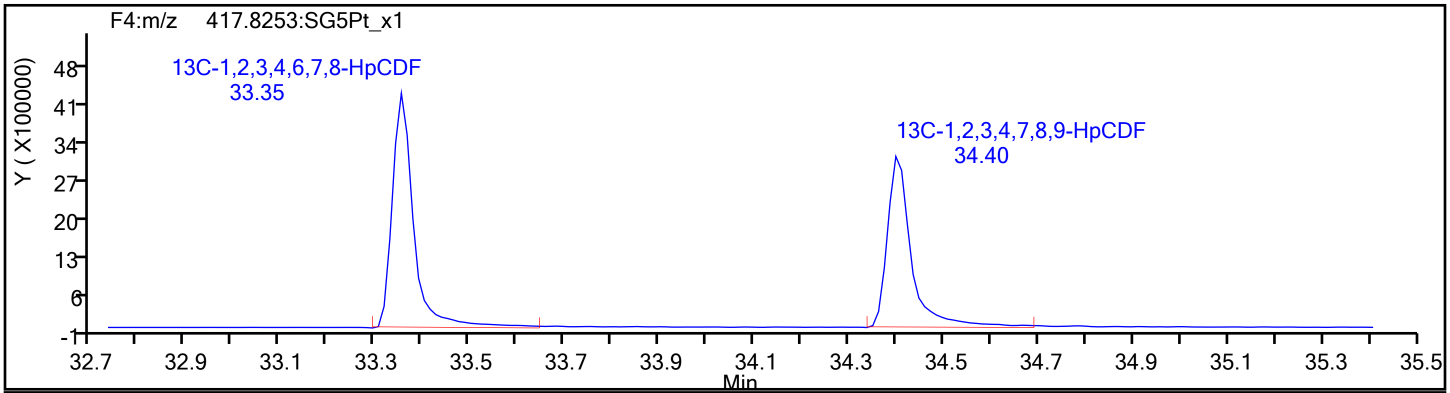

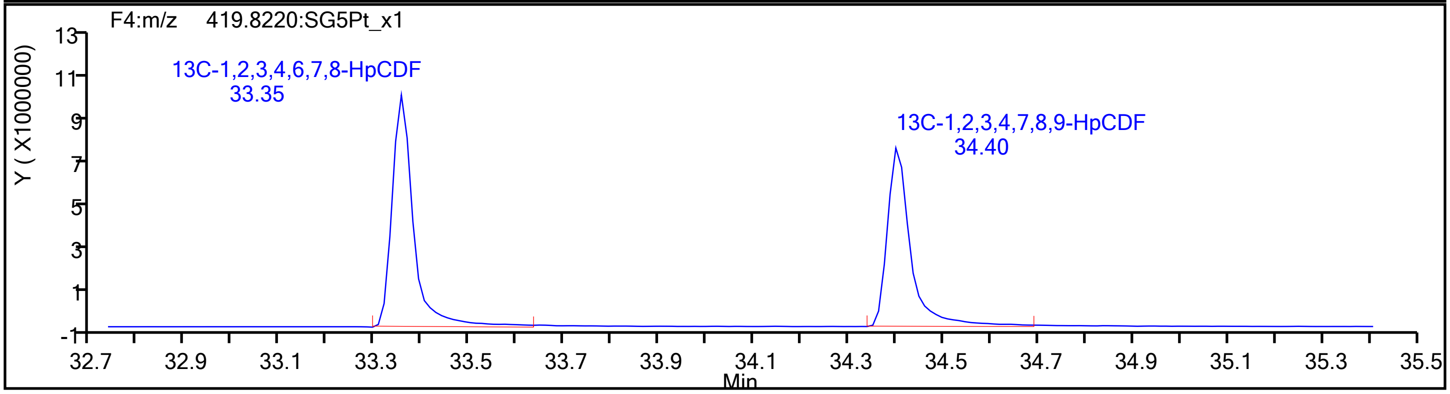

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

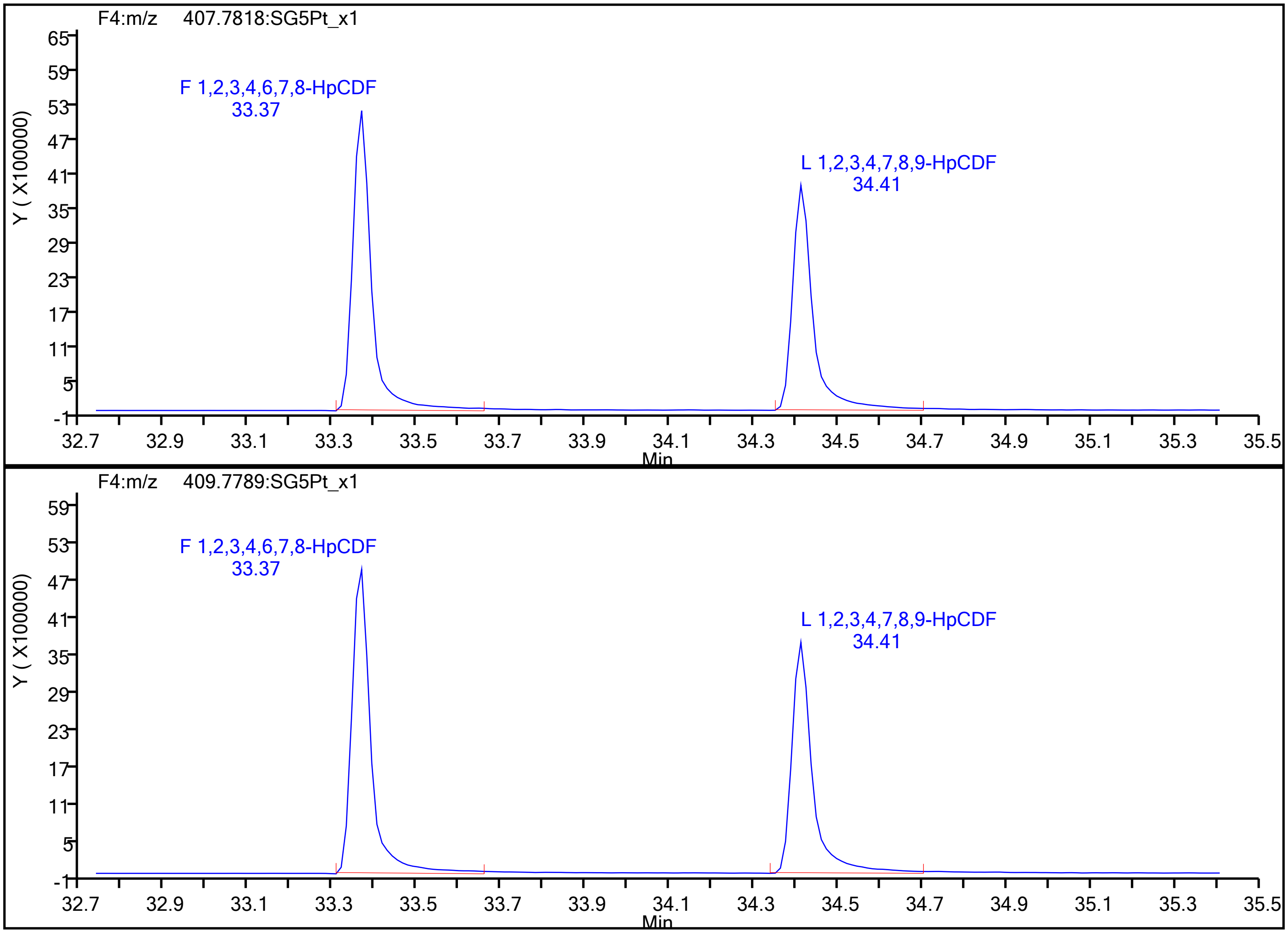

HpCDF Interference Mass

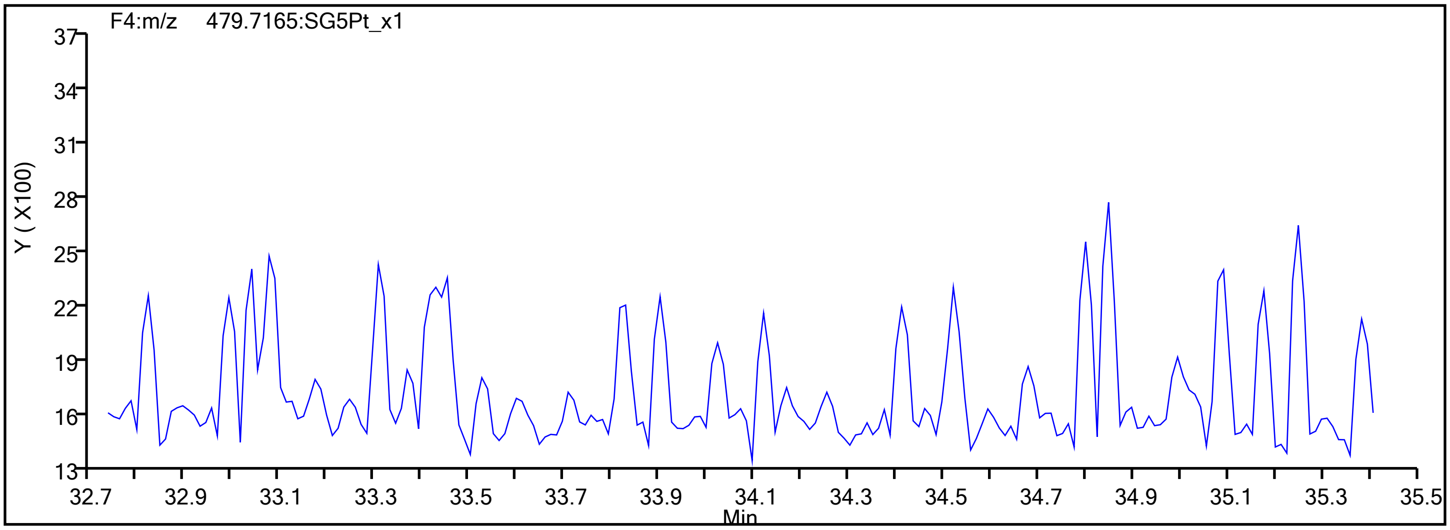

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d		
Injection Date:	12-Oct-2020 22:14:24	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

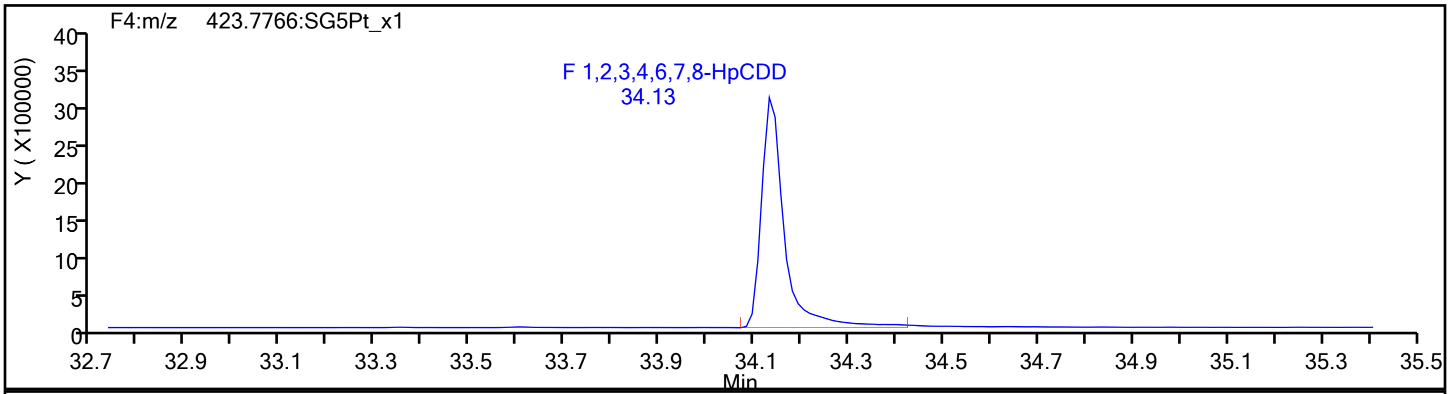

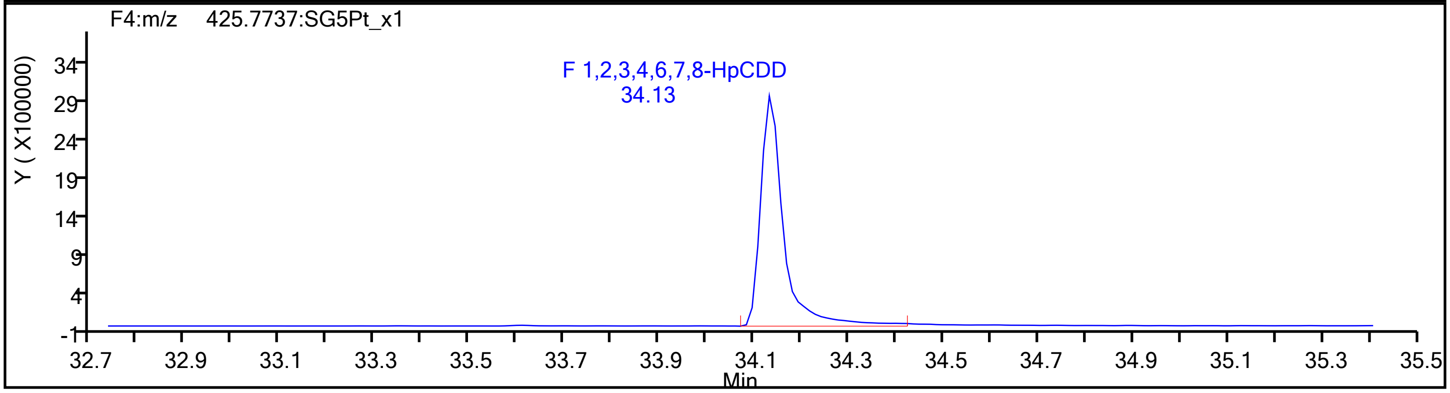

HpCDD Standards

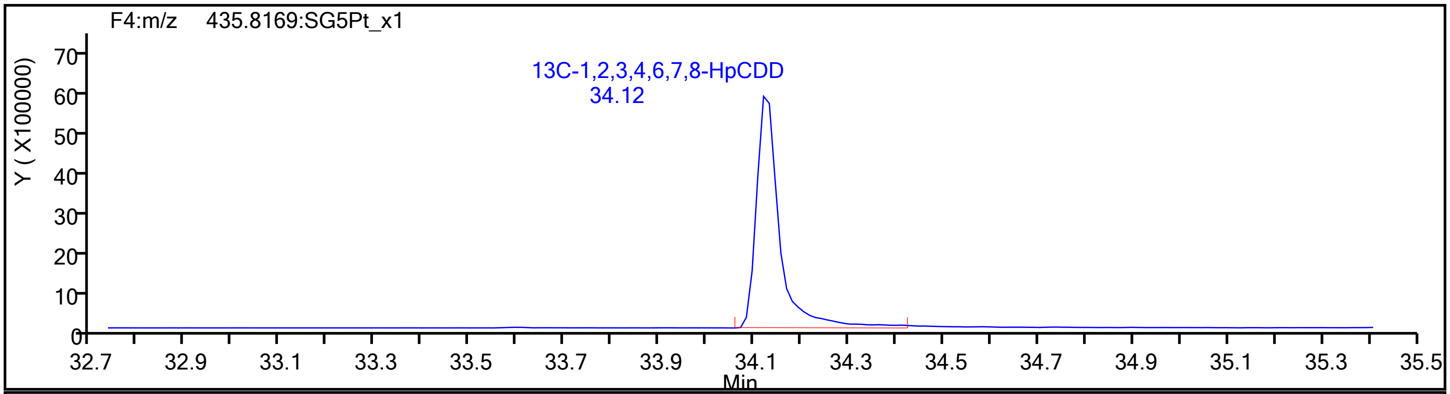

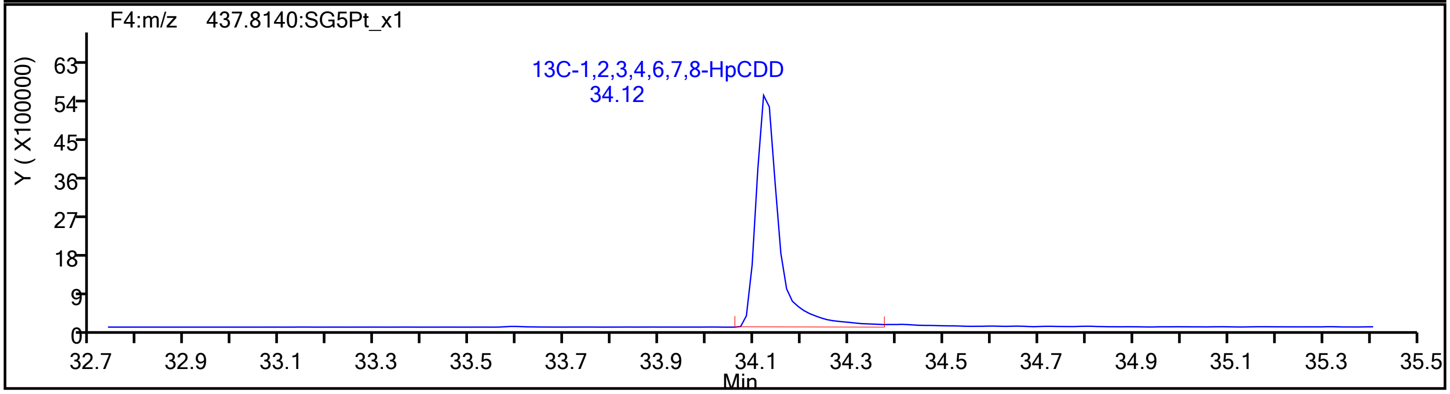

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d		
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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

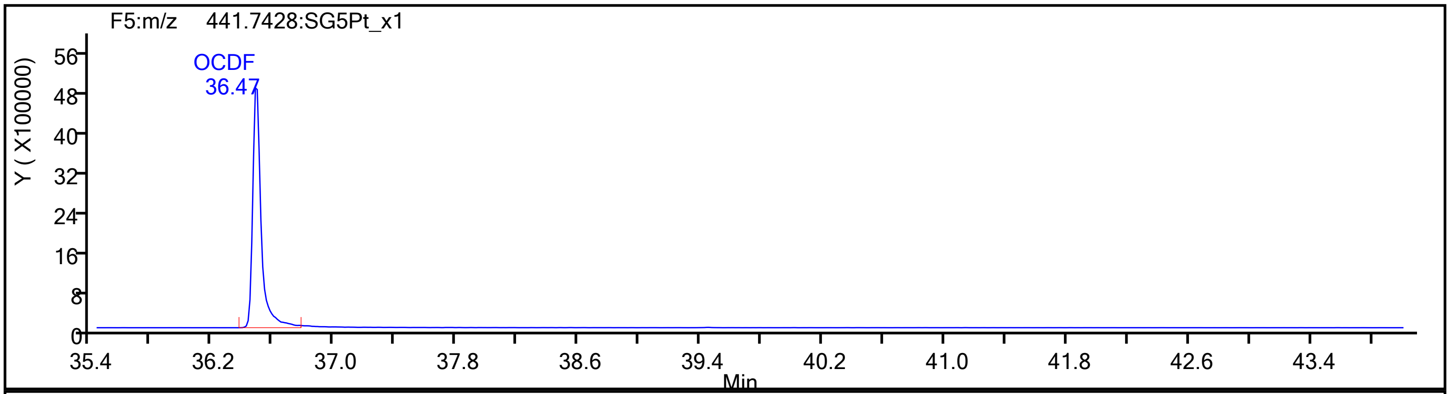

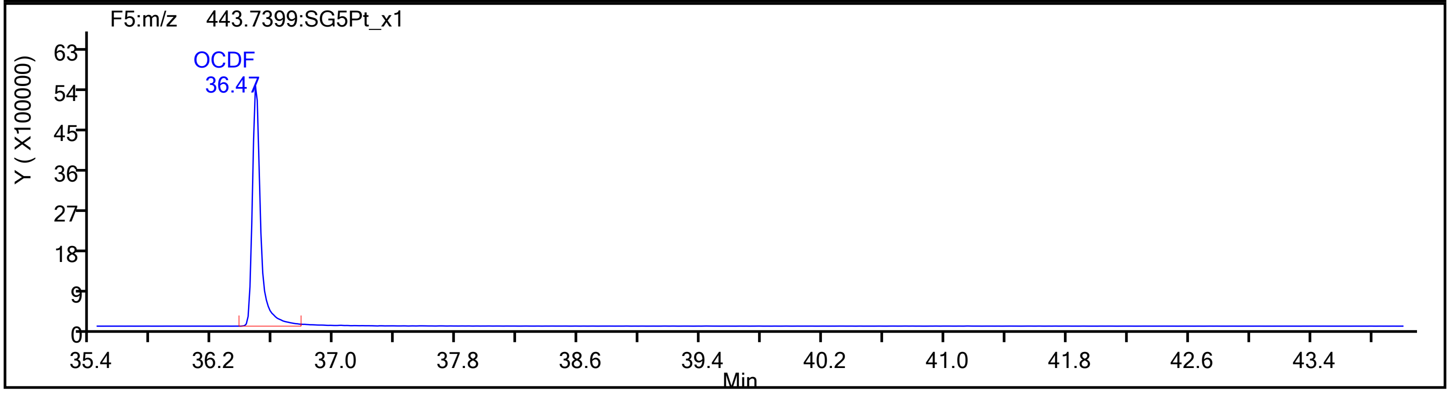

OCDF Standards

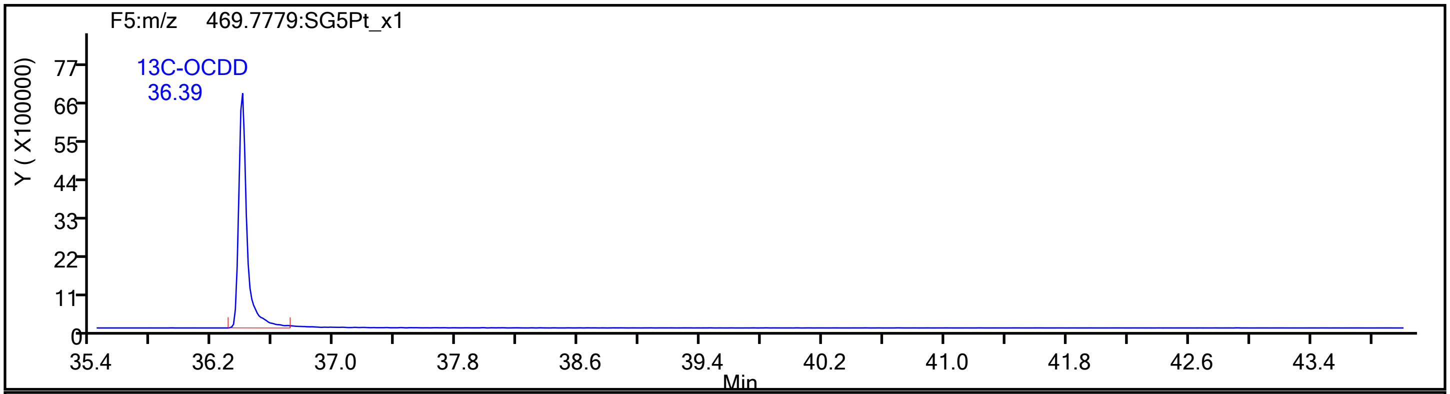

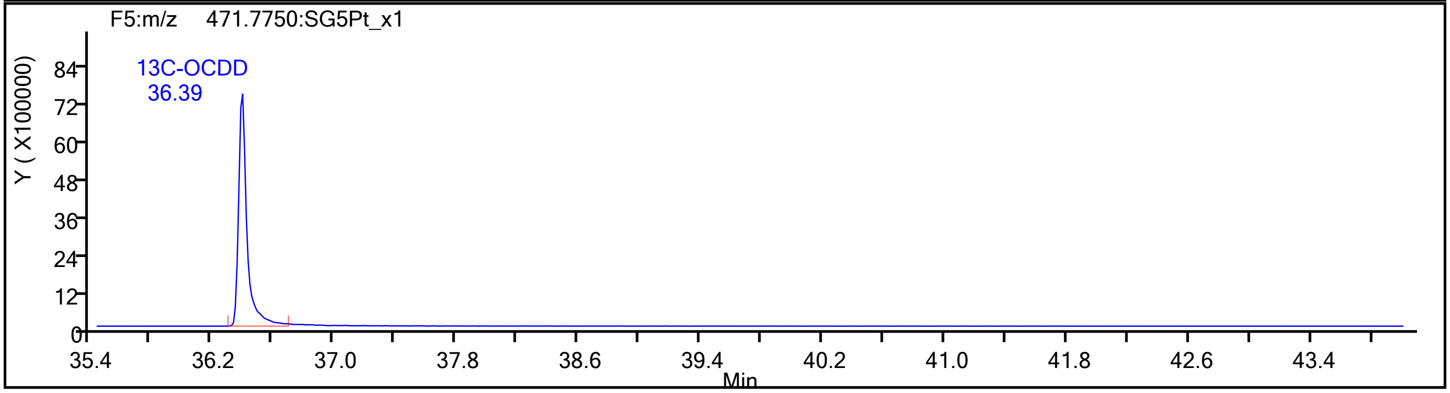

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d		
Injection Date:	12-Oct-2020 22:14:24	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

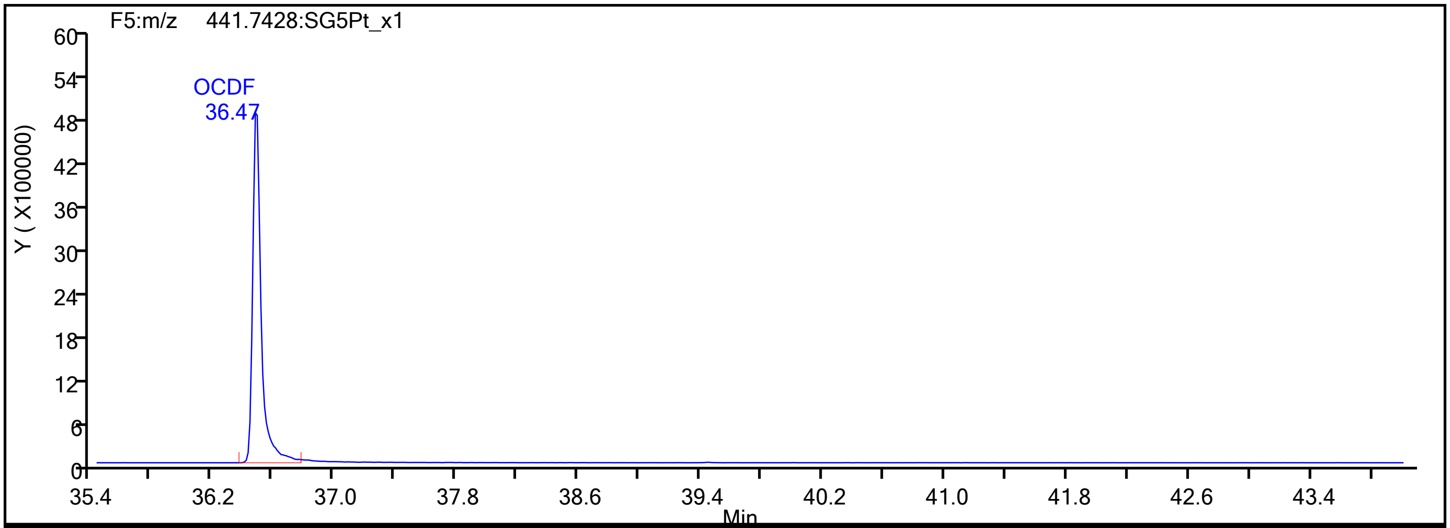

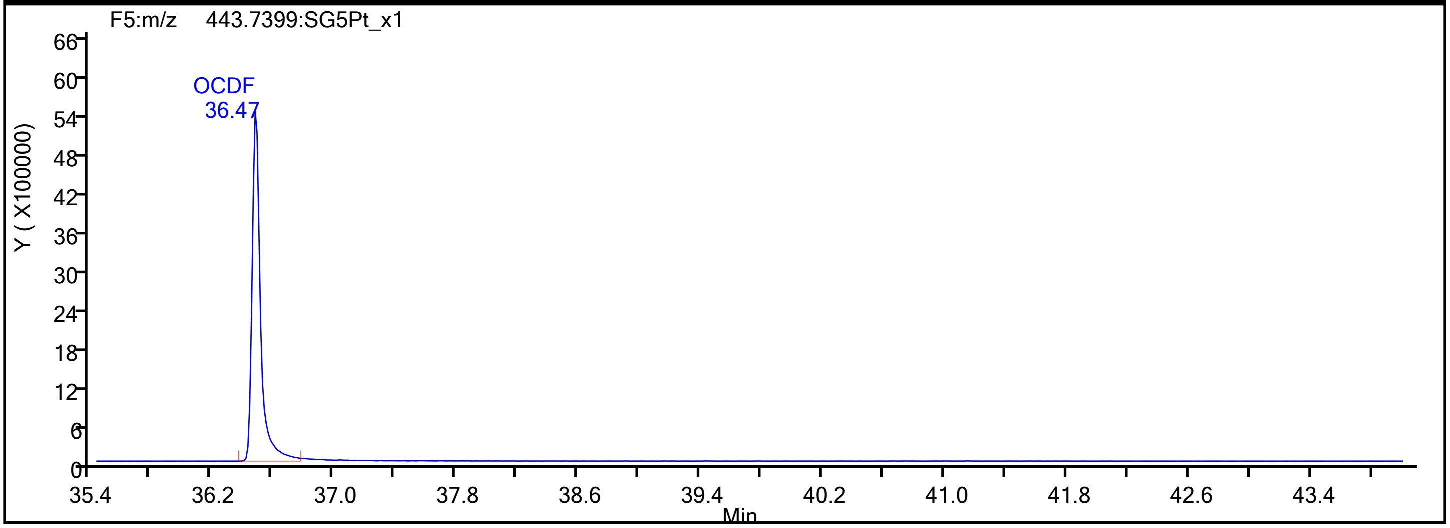

OCDF Interference Mass

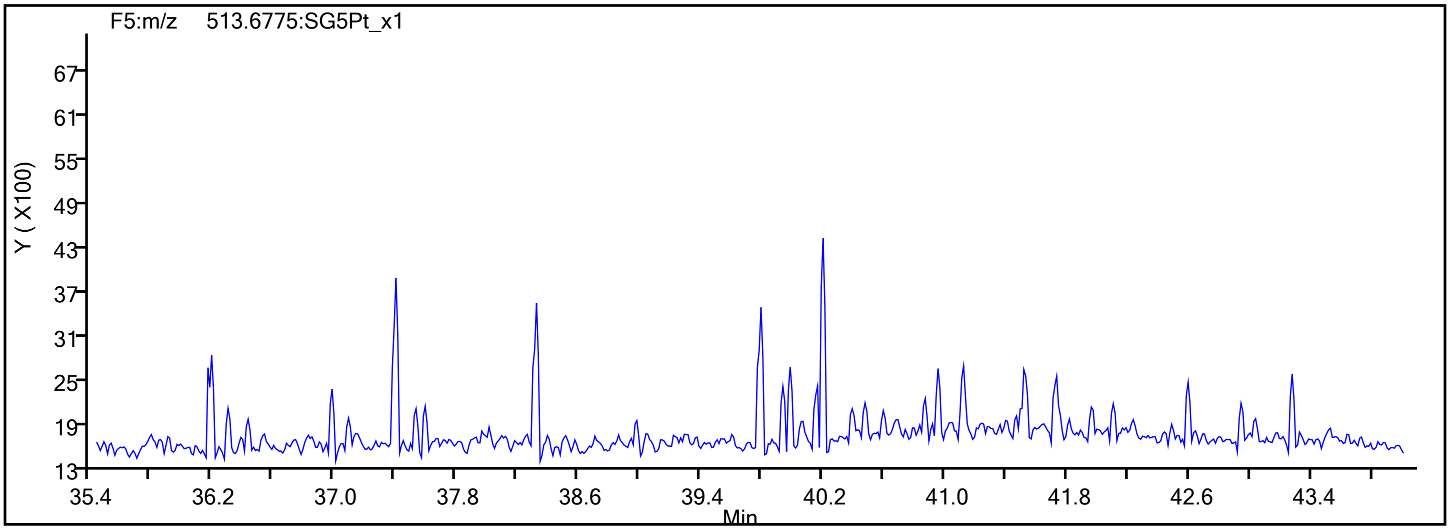

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d
Injection Date: 12-Oct-2020 22:14:24
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

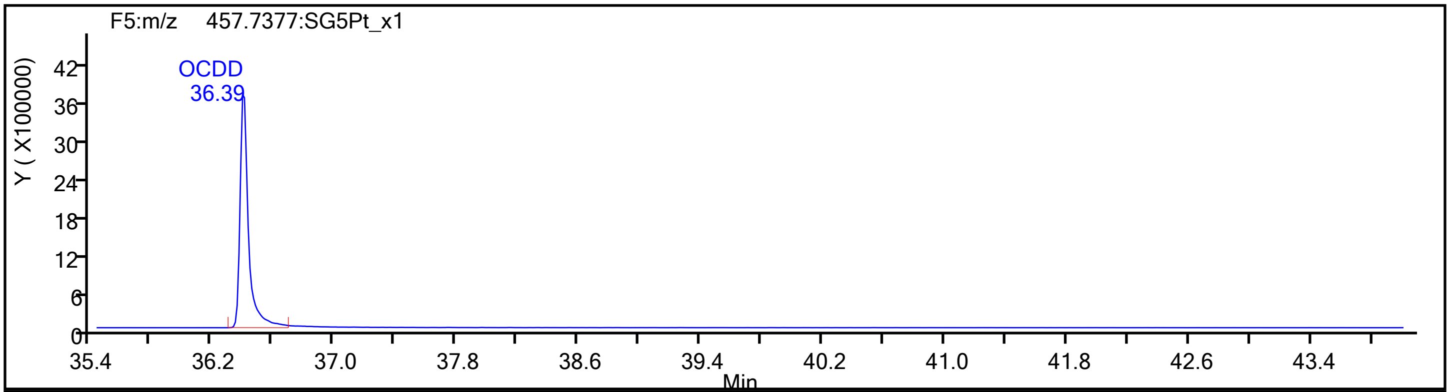

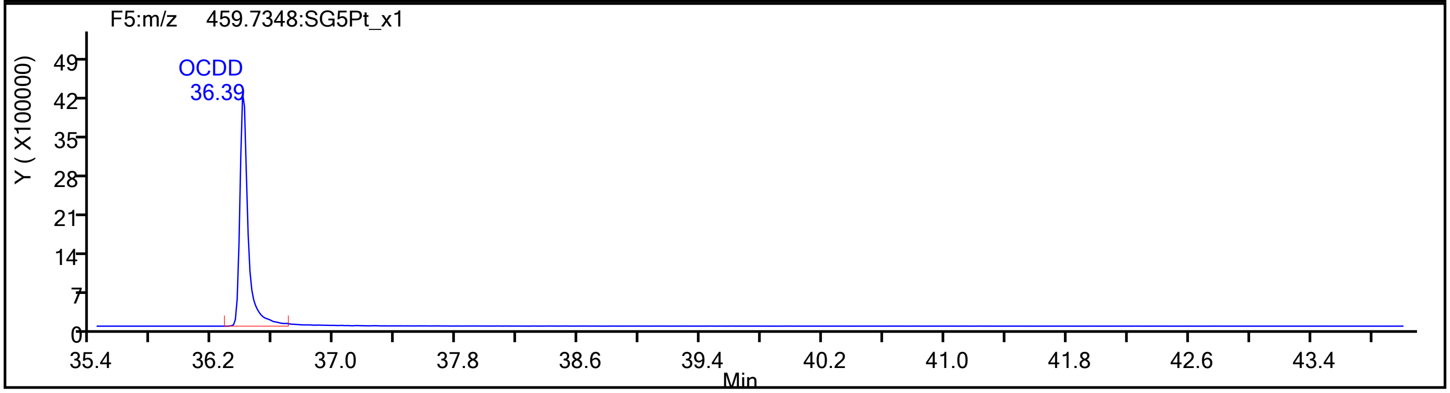

OCDD Standards

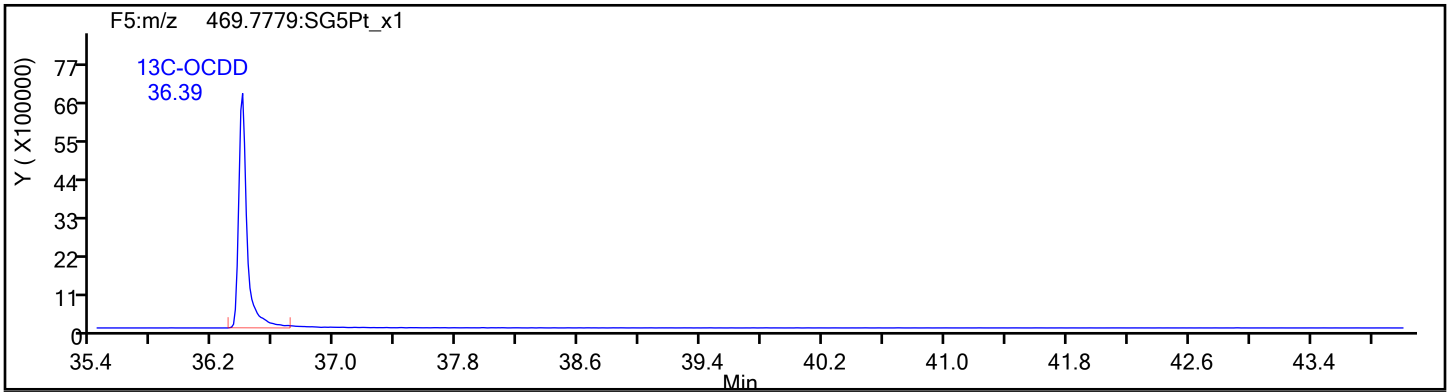

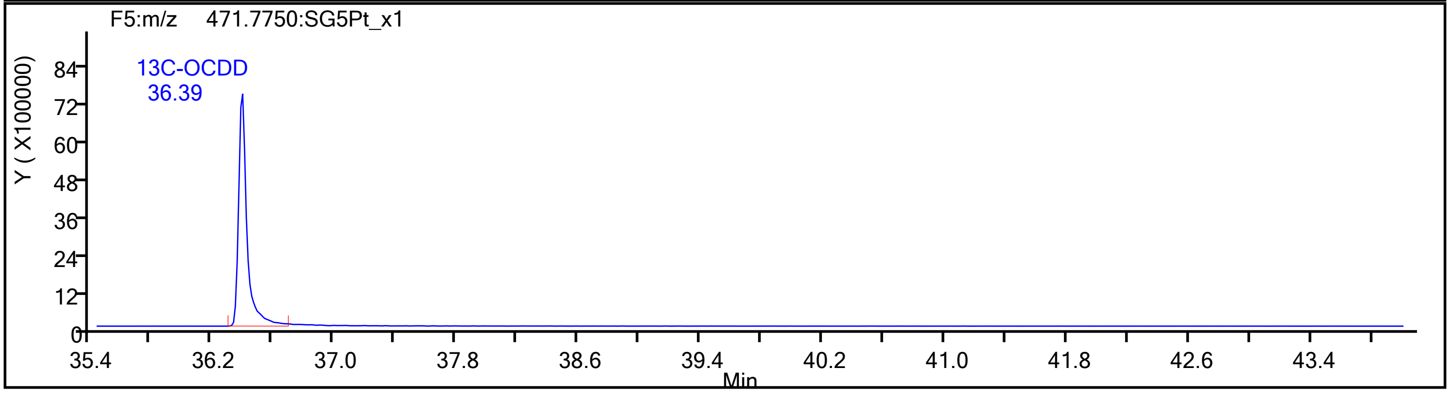

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d		
Injection Date:	12-Oct-2020 22:14:24	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

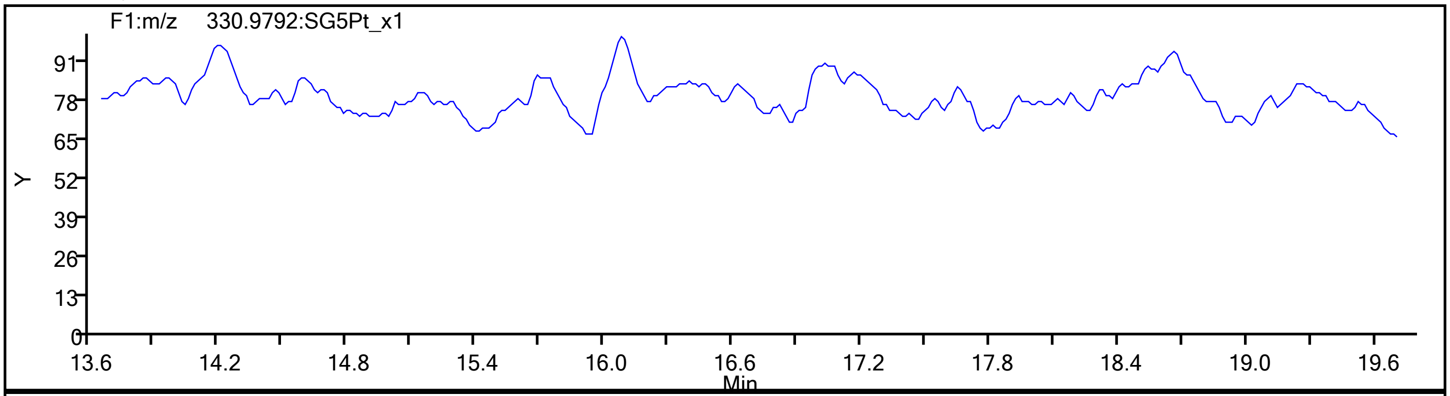

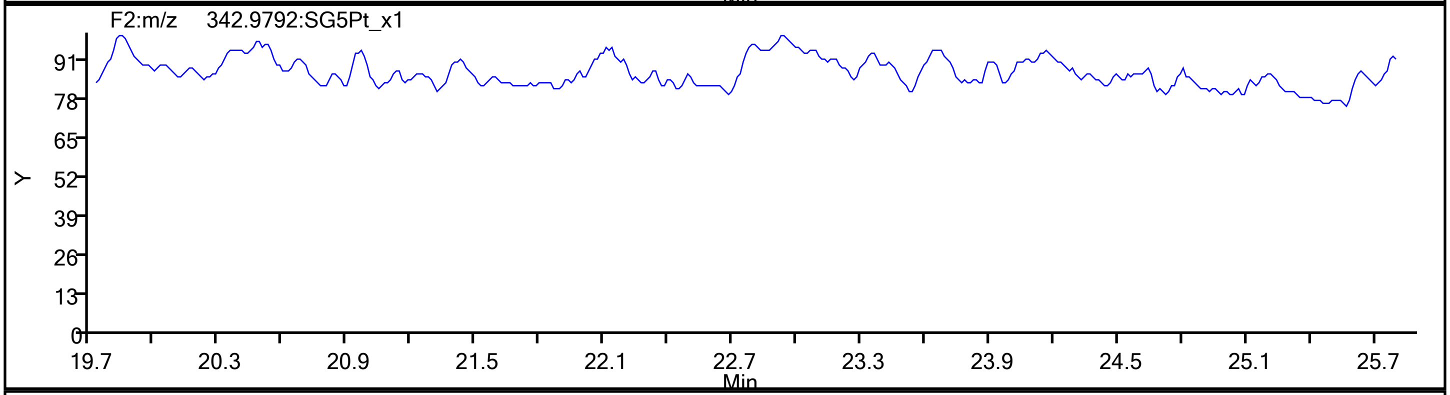

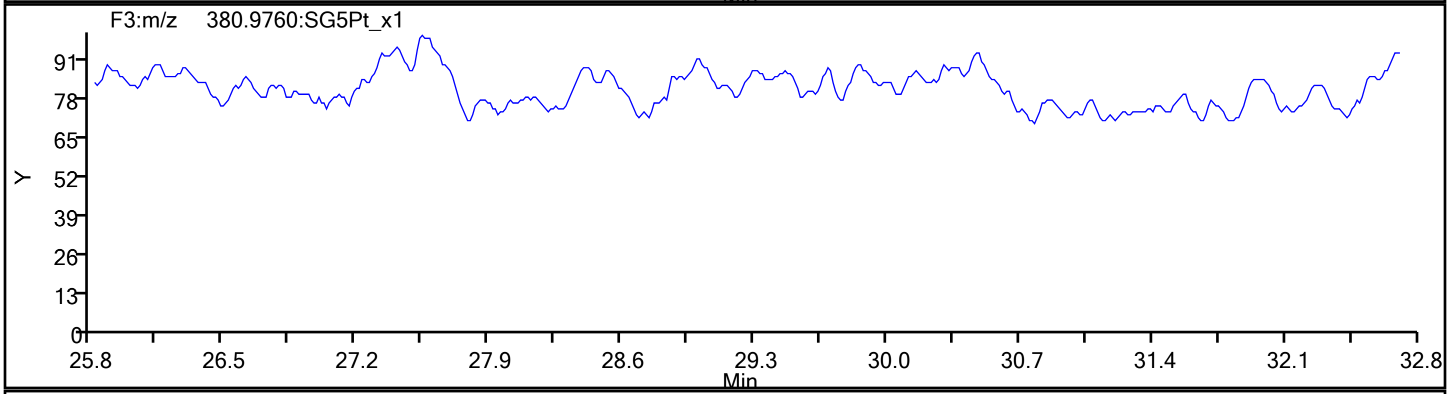

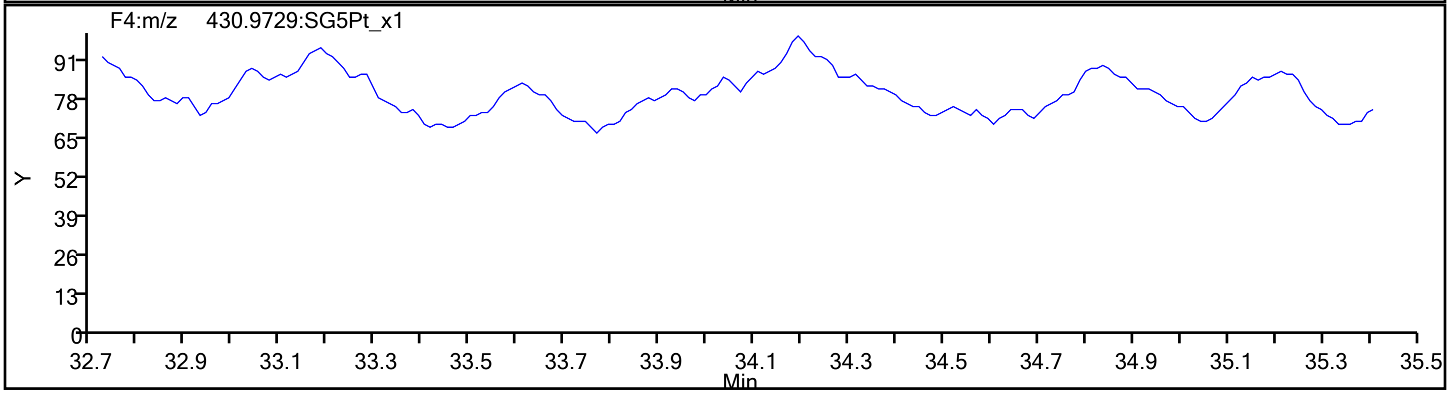

Report Date: 13-Oct-2020 14:05:10 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_2.d		
Injection Date:	12-Oct-2020 22:14:24	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

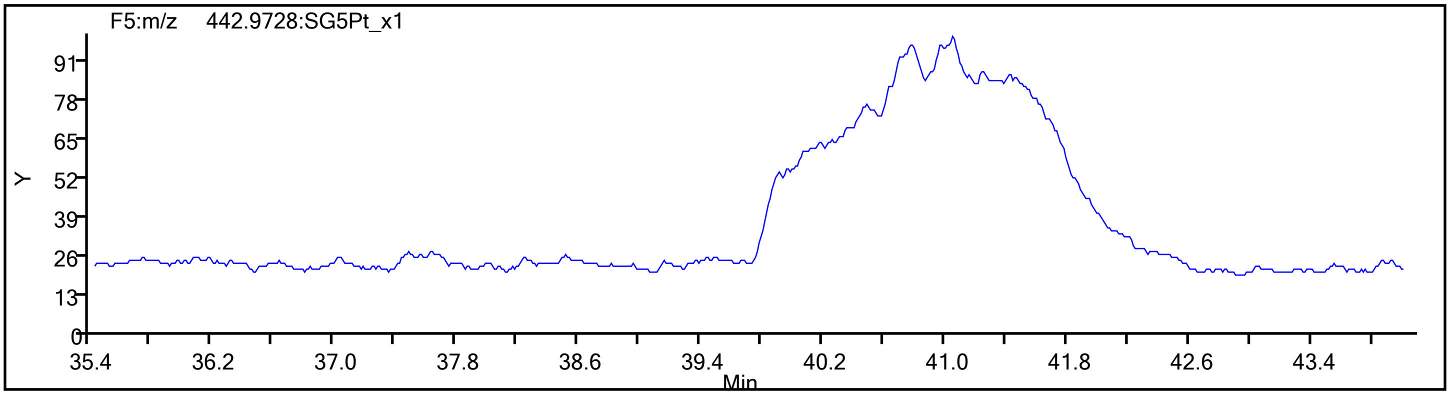

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID: ICV 320-398641/9 Calibration Date: 07/25/2020 03:40

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 24JL2011D2_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Injection Date: 25-Jul-2020 03:40:30 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 9
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

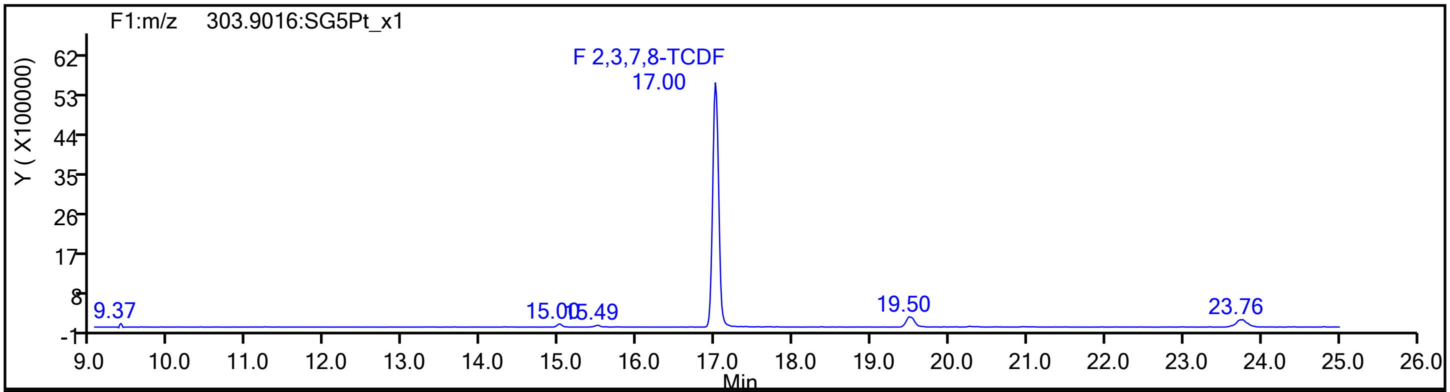

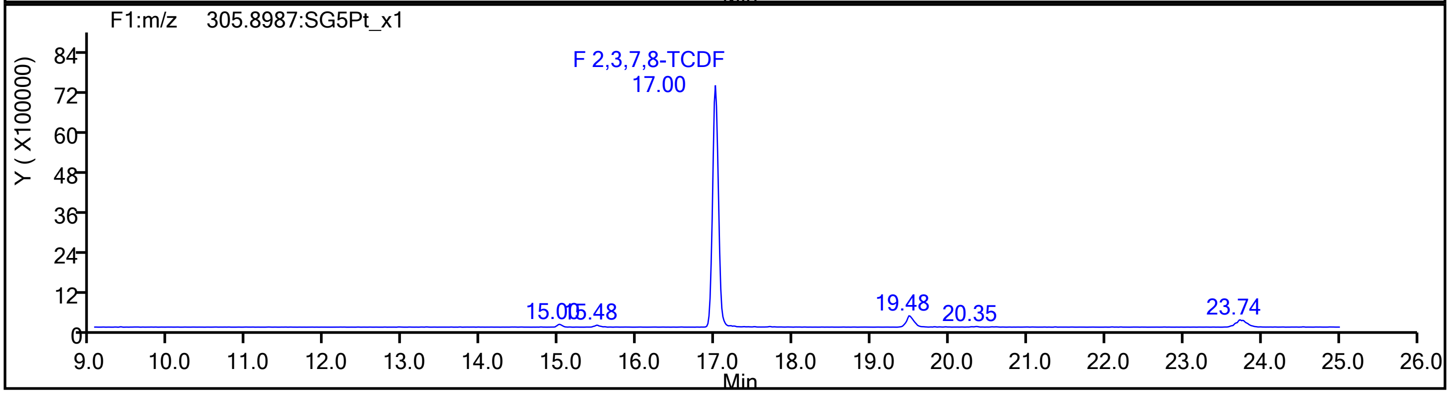

TCDF Standards

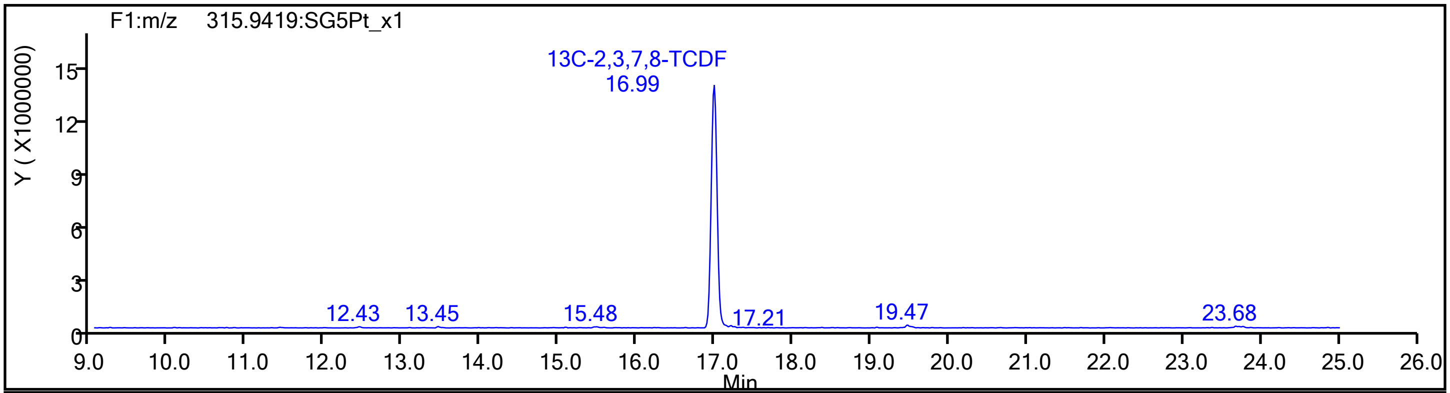

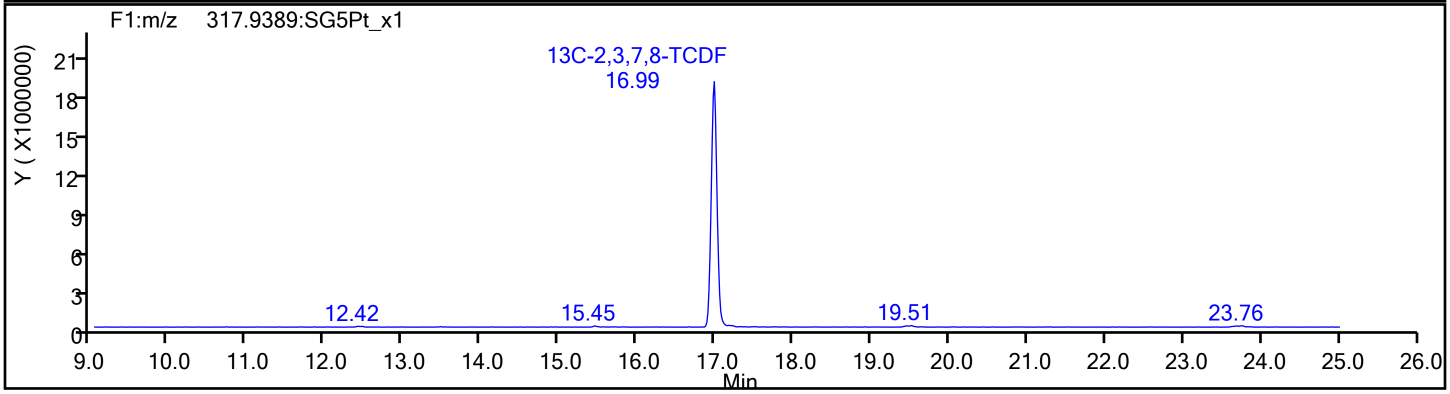

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

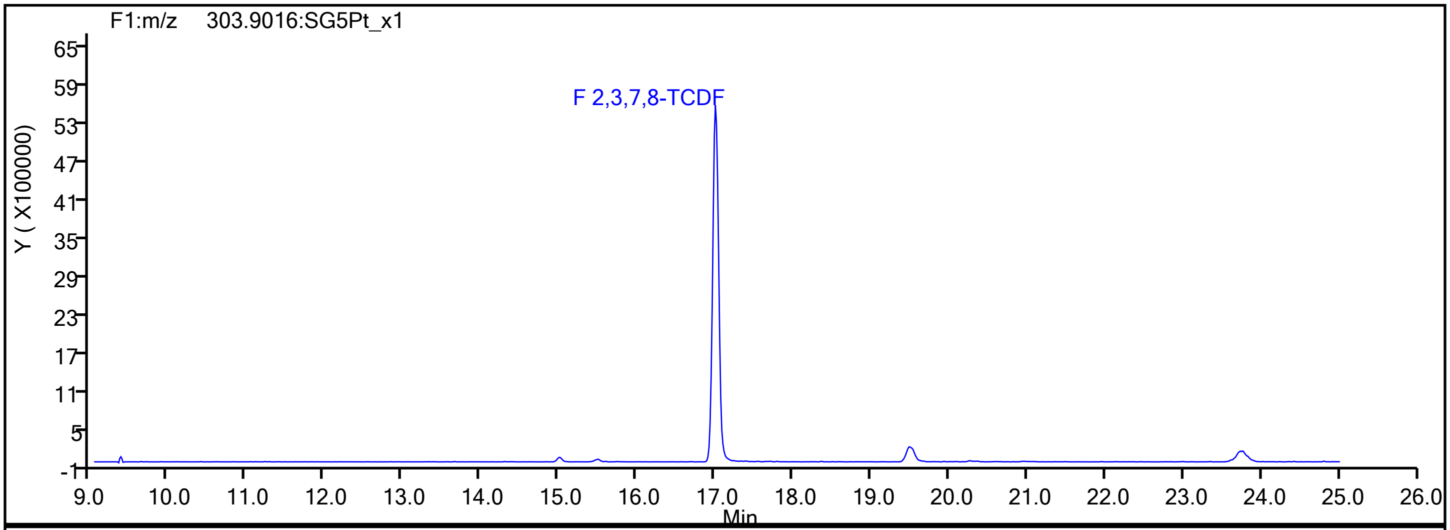

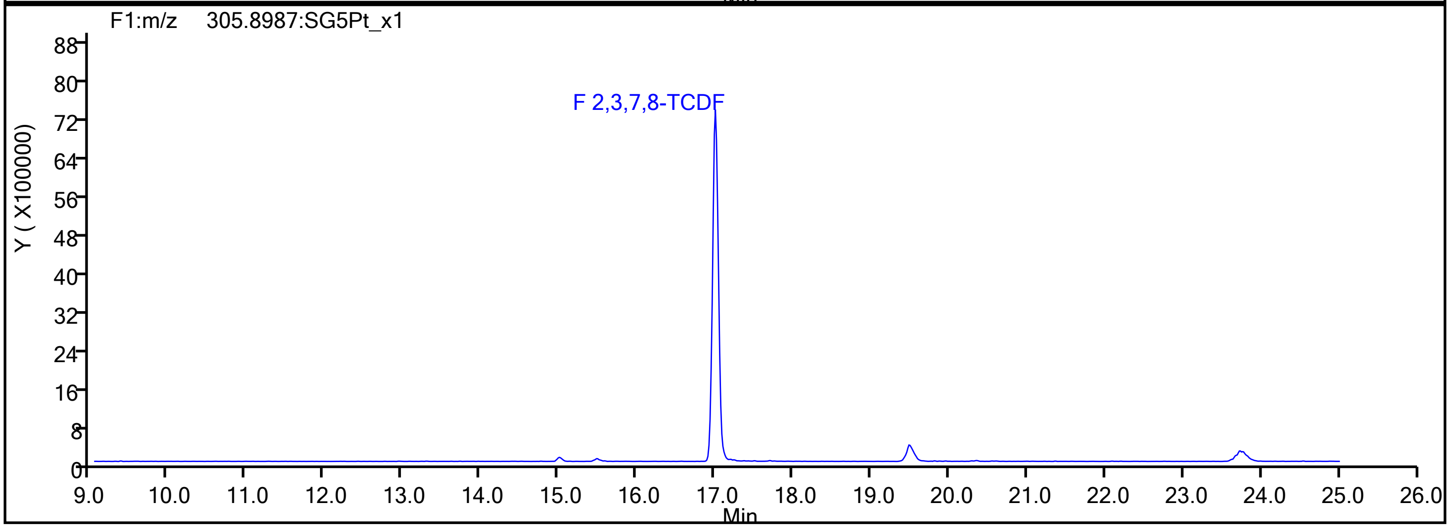

TCDF Interference Mass

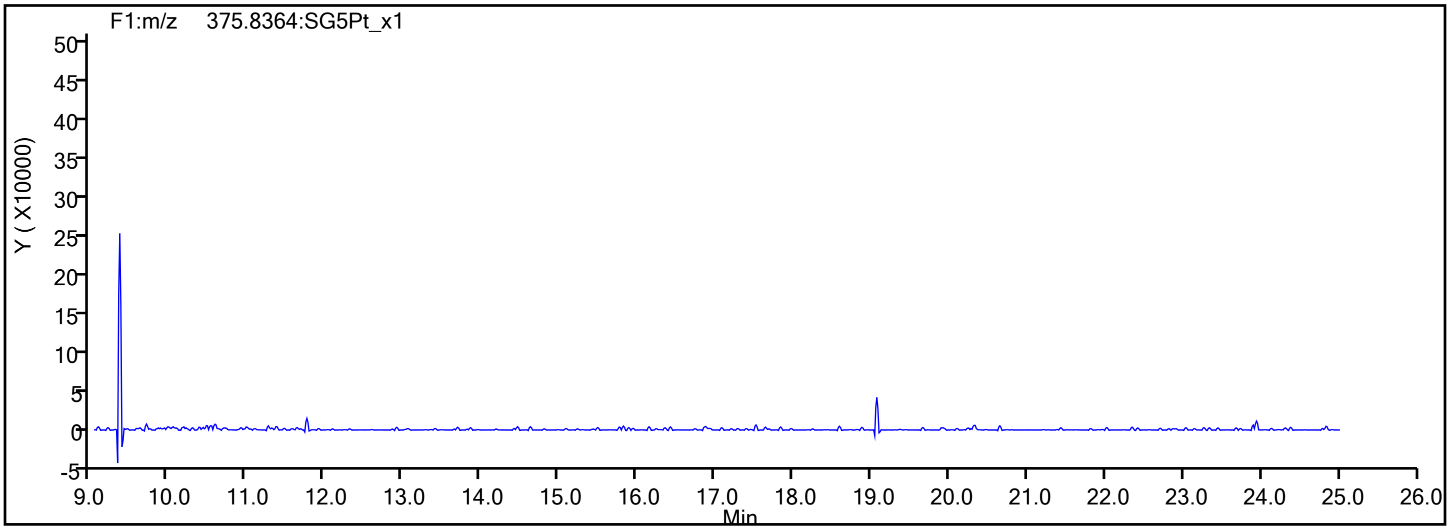

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Injection Date: 25-Jul-2020 03:40:30 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 9
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

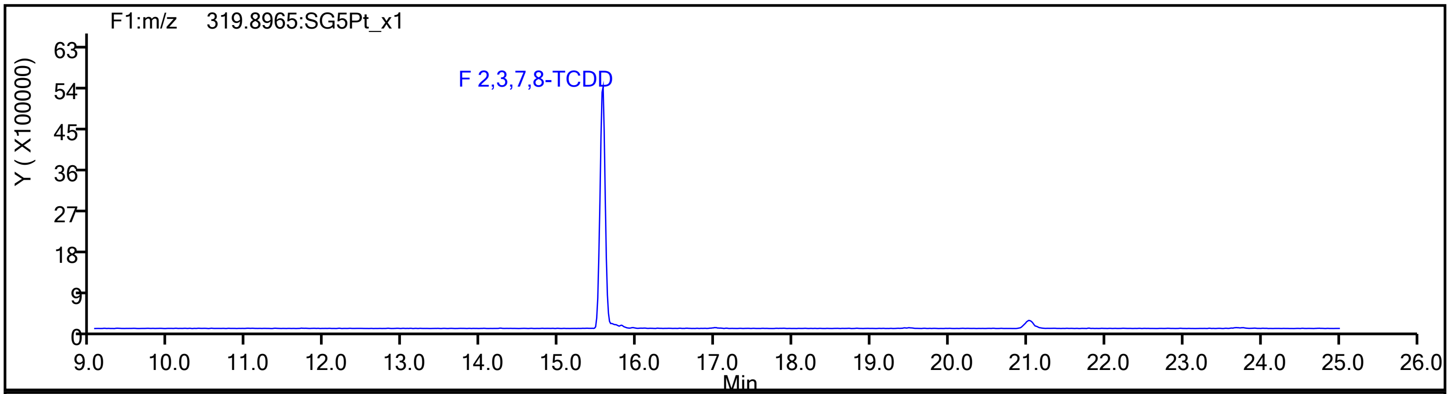

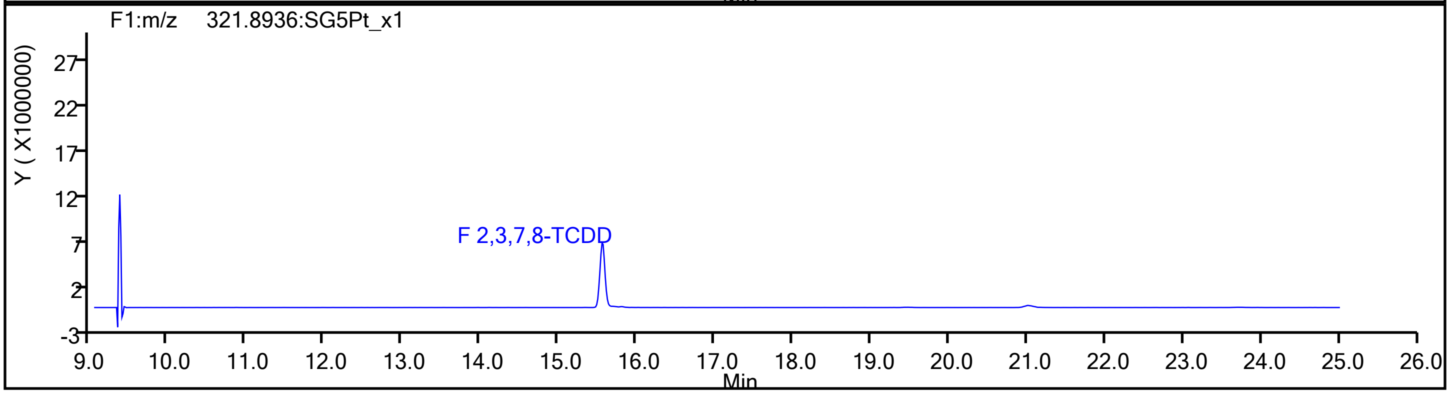

TCDD Standards

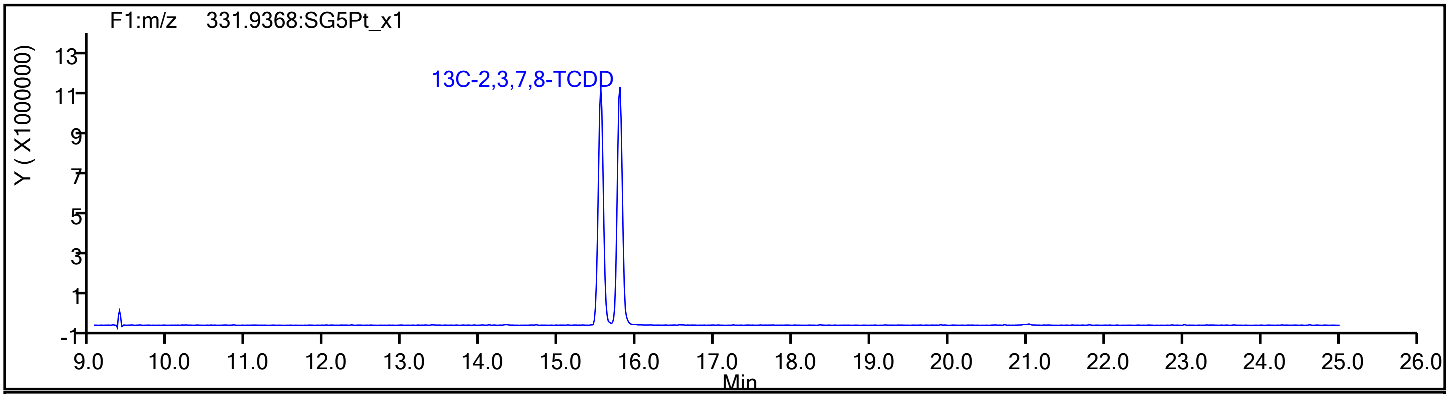

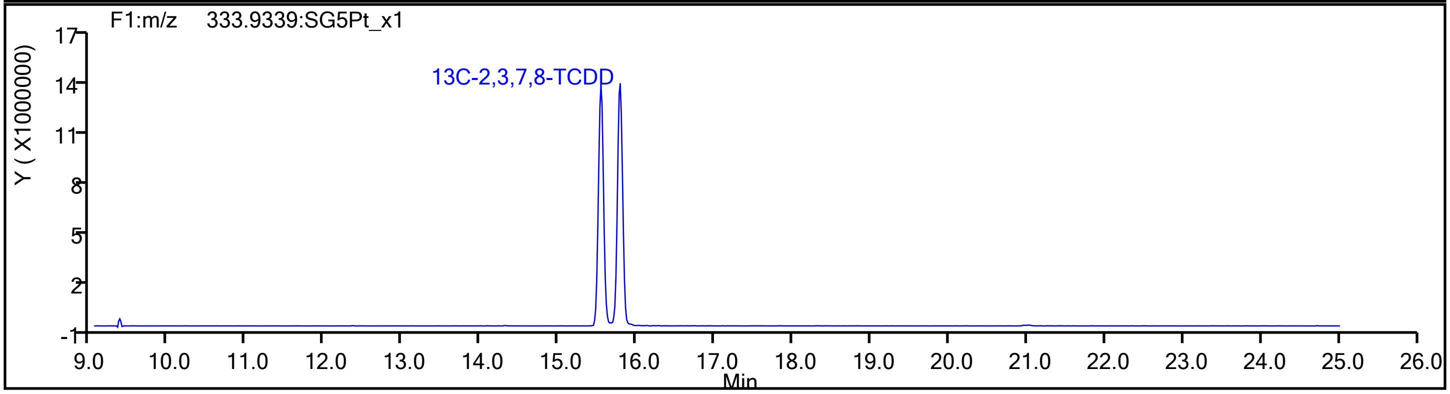

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

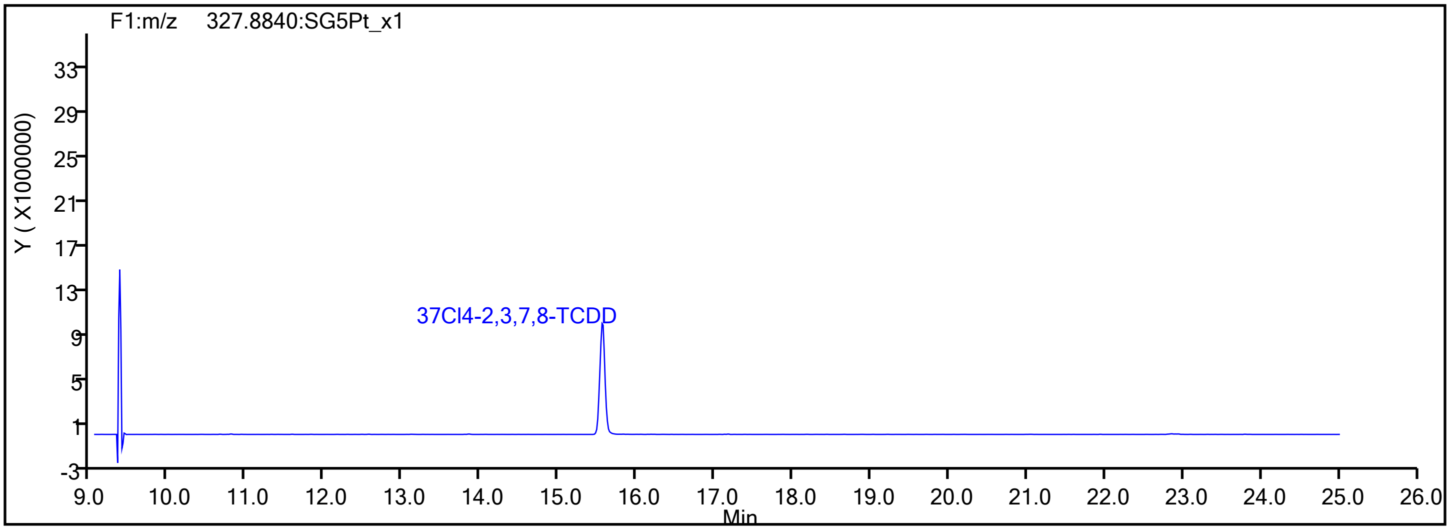

37Cl4-TCDD Standards

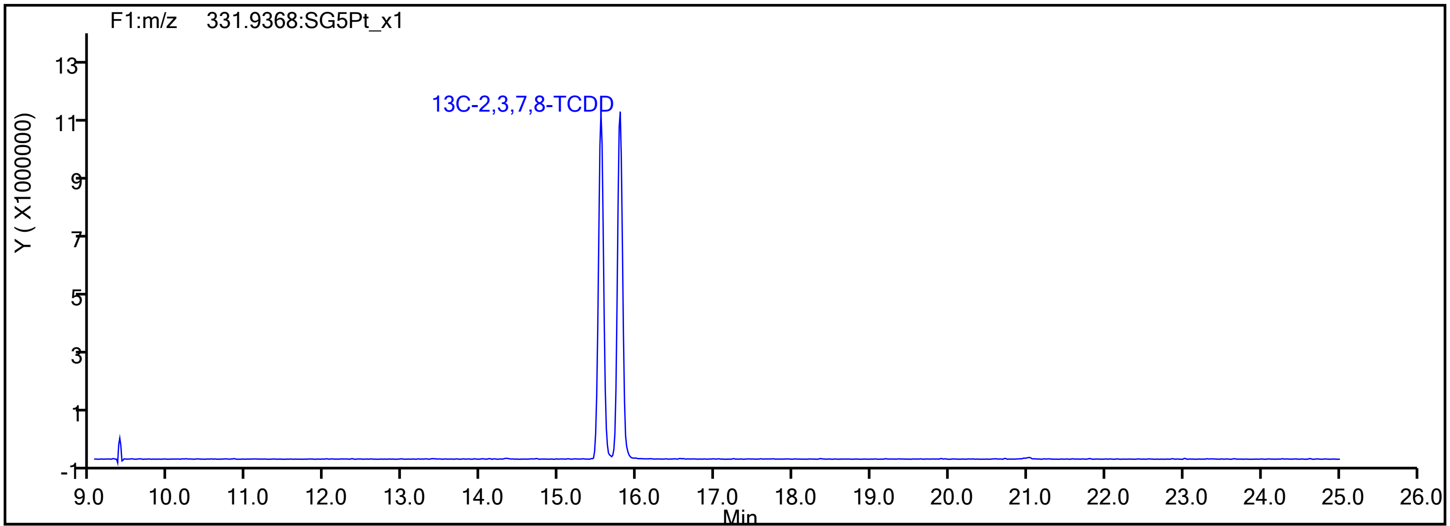

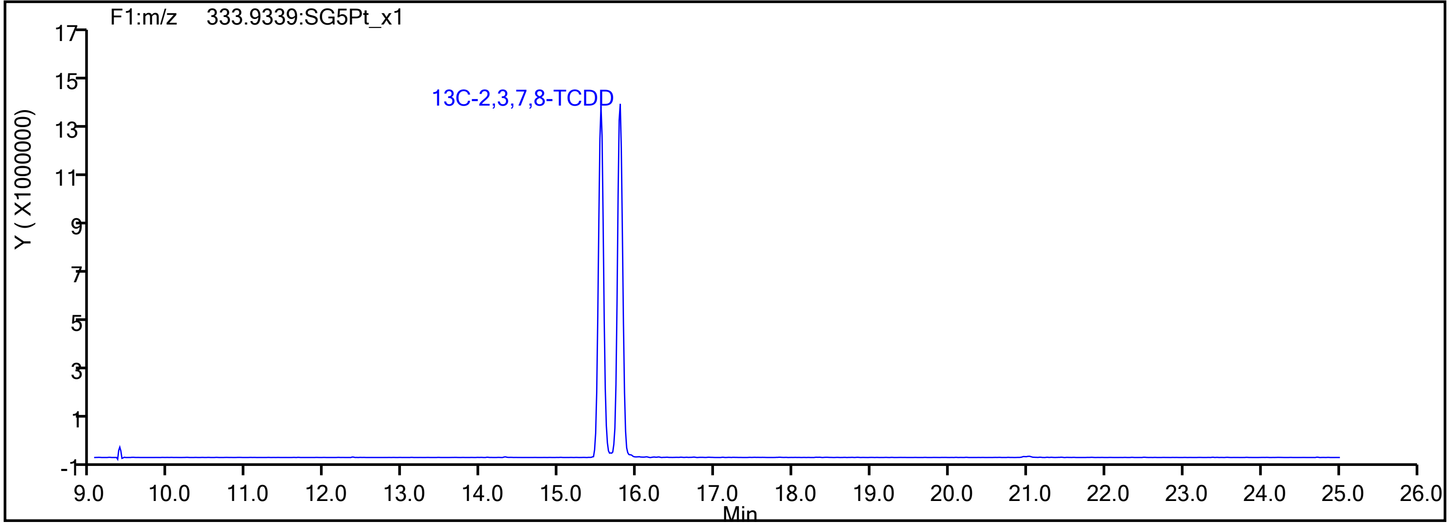

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

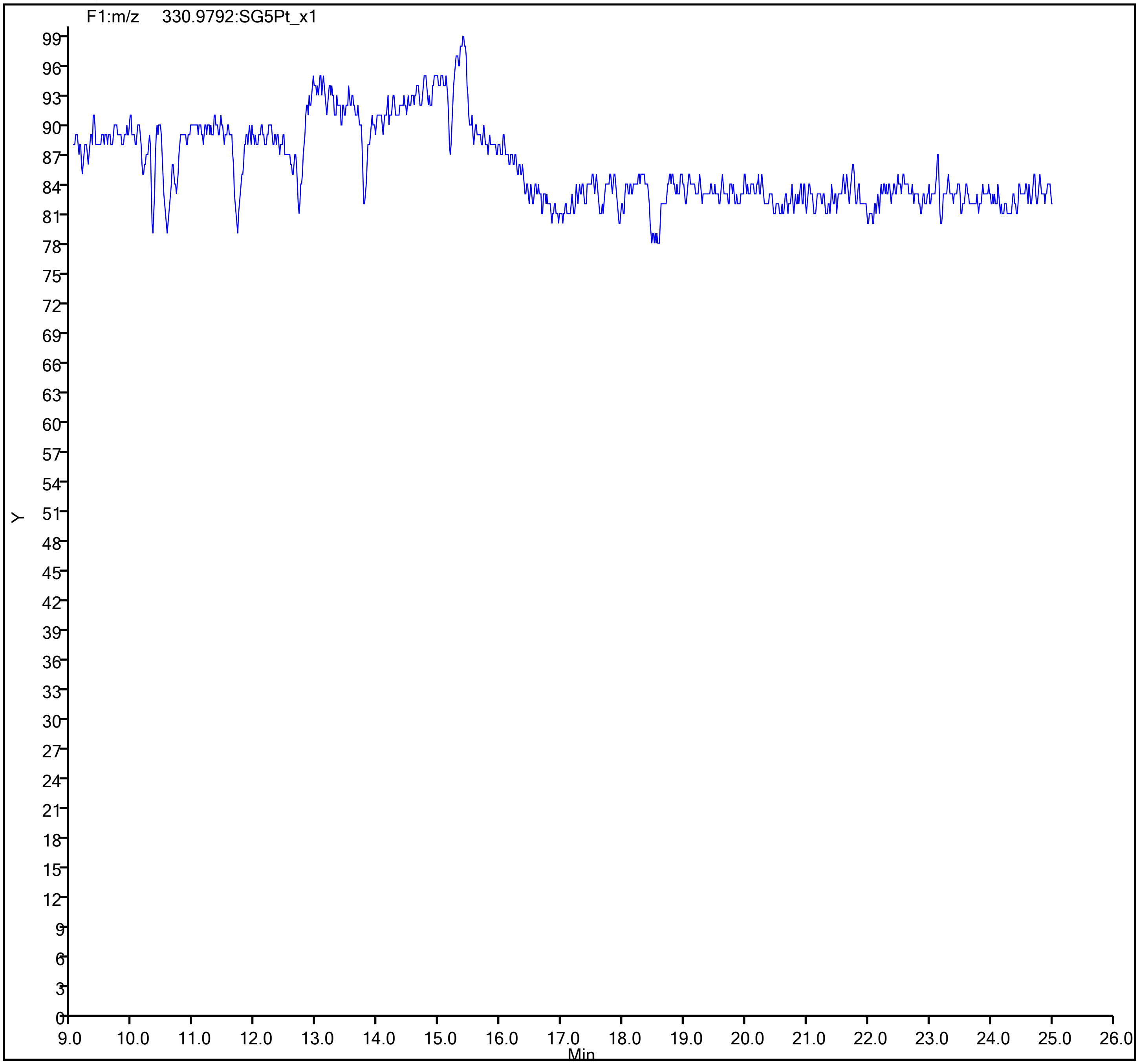

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Lab Sample ID: CCV 320-422408/2 Calibration Date: 10/15/2020 02:00

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 15OC2011D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.089		8.50	10.0	85	78-129
2,3,7,8-TCDF	AveID	0.9943	0.9140		9.19	10.0	92	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	0.9814		99.8	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.581		101	100	101	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.002		10.1	10.0	101	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
15OC2011D2	1	CPS 101520	CPS HRDXNCP_00042				1.00000	
15OC2011D2	2	CCV 101520	CCV CS-4 HRDXNL4_00094				1.00000	
15OC2011D2	3	SB 101520	SB Solvent Blank C-14				1.00000	
15OC2011D2	4	320-418650	500-188700-E-1-A	20	1613B/Solid	D186	10.00000	g
15OC2011D2	5	320-418764	320-65247-A-1-A	20	1613B/Solid	D186	10.00000	g
15OC2011D2	6	320-416712	320-64947-A-3-A	20	8290A_D5/Sol.	D186	10.00000	g
15OC2011D2	7	320-416712	320-64947-A-3-B MS	20	8290A_D5/Sol.		10.00000	g
15OC2011D2	8	320-416712	320-64947-A-3-C MSD	20	8290A_D5/Sol.		10.00000	g
15OC2011D2	9	SB 101520	SB Solvent Blank C-14				1.00000	
15OC2011D2	10	CCV 101520	CCV CS-4 HRDXNL4_00094				1.00000	
15OC2011D2	11						1.00000	
15OC2011D2	12						1.00000	
15OC2011D2	13						1.00000	
15OC2011D2	14						1.00000	
15OC2011D2	15						1.00000	
15OC2011D2	16						1.00000	
15OC2011D2	17						1.00000	
15OC2011D2	18						1.00000	
15OC2011D2	19						1.00000	
15OC2011D2	20						1.00000	
15OC2011D2	21		ALM 10-15-20				1.00000	
15OC2011D2	22						1.00000	

Logfile ✓'d
10/15/20
KSS

Peak Locate Examination:15-OCT-2020:01:19 File:15OC2011D2
Experiment:DB225RES Function:1 Reference:PFK

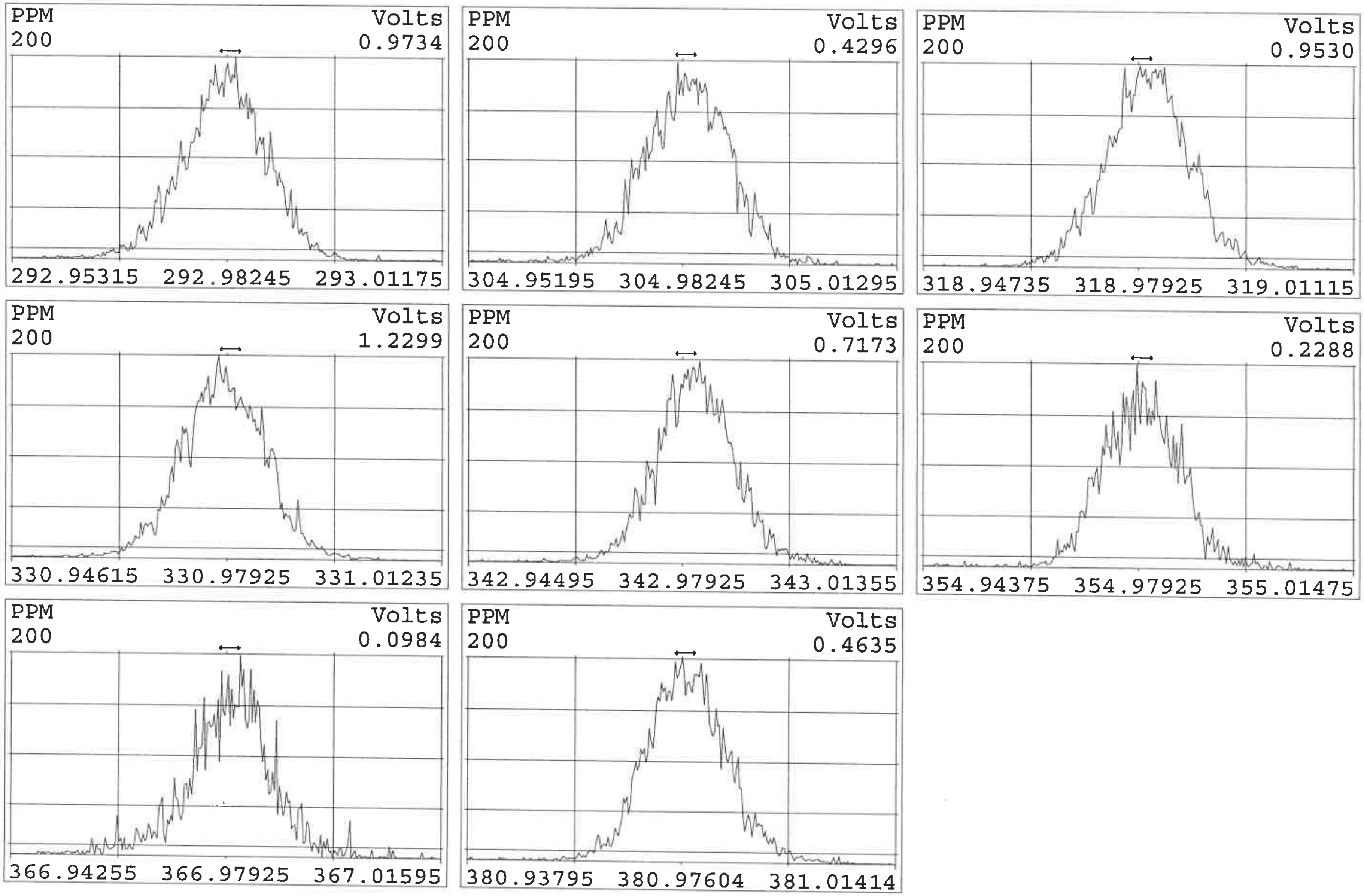

Peak Locate Examination:15-OCT-2020:07:54 File:15OC2011D2ENDRESCK
Experiment:DB225RES Function:1 Reference:PFK

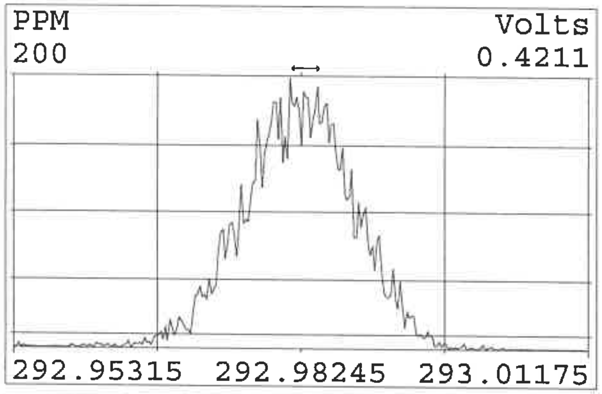

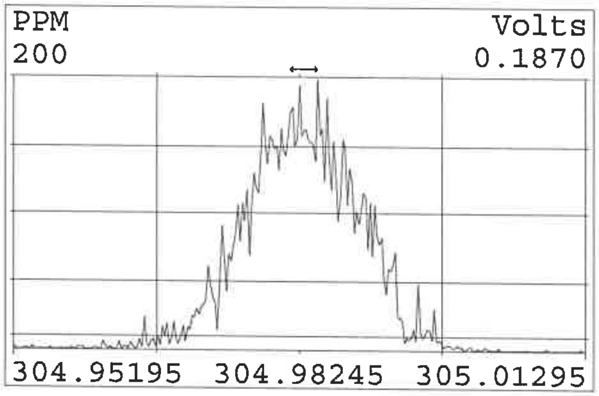

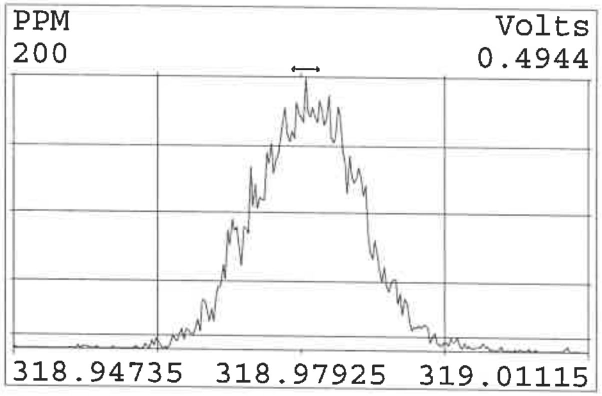

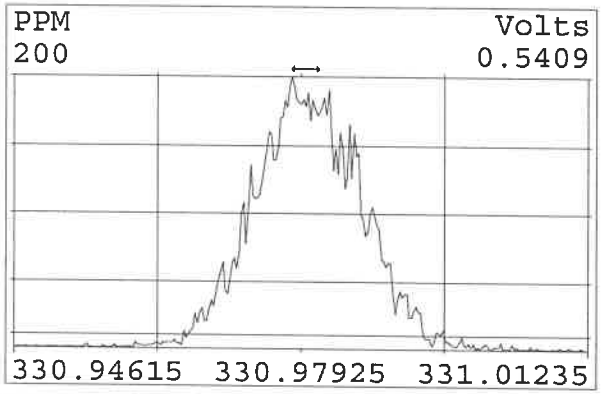

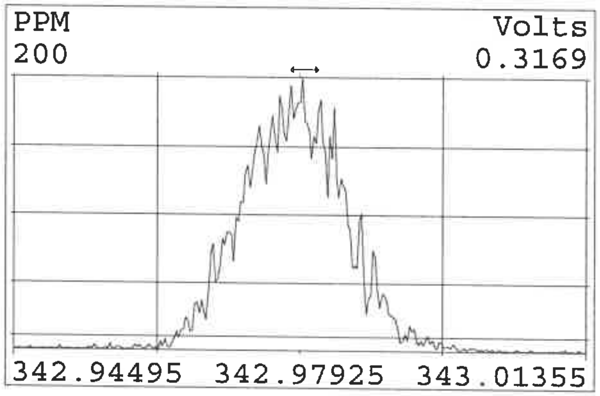

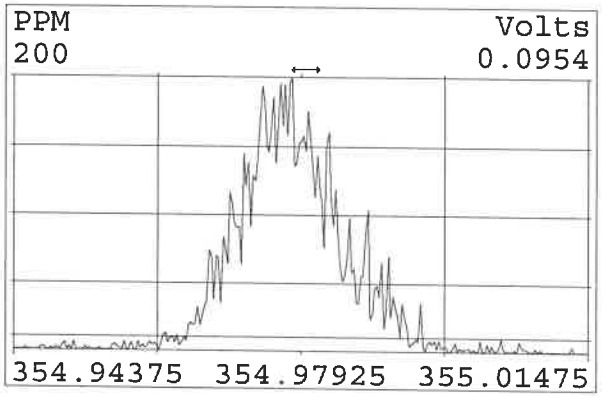

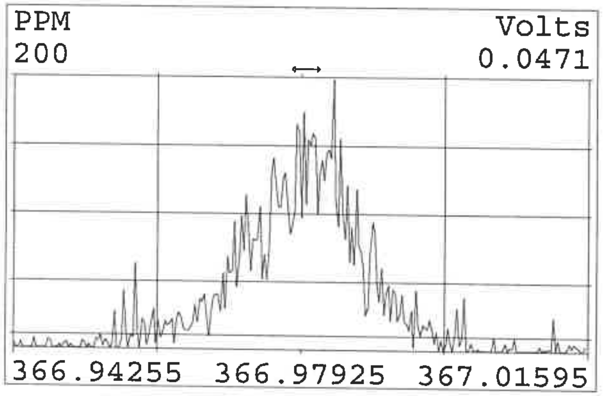

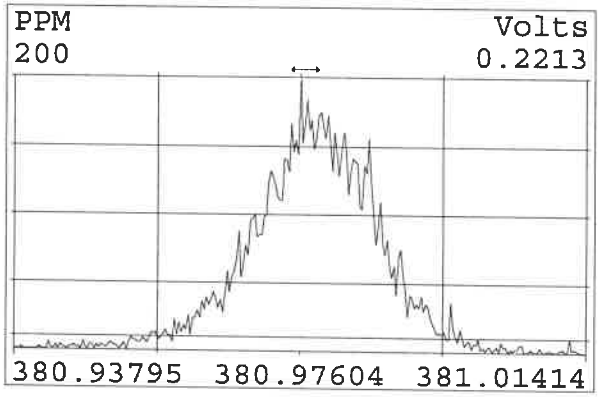

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 15-Oct-2020 02:00:06 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 12:25:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: stephensk Date: 16-Oct-2020 12:21:22

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	14.860	83839585	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	15.999	132552912	0.79	1.5708	100.7	100.7	0.2826	0.2826	101	
2,3,7,8-TCDF	16.012	12115355	0.77	0.9943	9.193	9.193	0.0442	0.0442	91.93	
D 13C-2,3,7,8-TCDD	14.627	82284348	0.82	0.9834	99.8	99.8	0.2160	0.2160	99.81	
2,3,7,8-TCDD	14.640	8964059	0.78	1.2822	8.496	8.496	0.0743	0.0743	84.96	
$ 37Cl4-2,3,7,8-TCDD	14.640	8398119		0.9945	10.1	10.1	0.0696	0.0696	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 15-Oct-2020 02:00:06 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 12:25:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: stephensk Date: 16-Oct-2020 12:21:22

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	14.860	14.860	0		37458840	9156358	11903	29757	769		
333.9339	14.860	14.860	0		46380745	11613847	5743	14357	2022	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	15.999	15.999	0	1.077	58521794	13279516	23011	57527	577		
317.9389	15.999	15.999	0	1.077	74031118	16991160	13867	34667	1225	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.012	16.012	0	1.001	5254774	1211515	2002	5005	605		
305.8987	16.012	16.012	0	1.001	6860581	1560014	3317	8292	470	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.627	14.627	0	0.984	37188063	9517058	11903	29757	800		
333.9339	14.627	14.627	0	0.984	45096285	11351372	5743	14357	1977	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.640	14.640	0	1.001	3937485	998281	4548	11370	219		
321.8936	14.640	14.640	0	1.001	5026574	1303094	3402	8505	383	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.640	14.640	0	0.985	8398119	2106691	5748	14370	367		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 16-Oct-2020 12:25:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d		
Injection Date:	15-Oct-2020 02:00:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

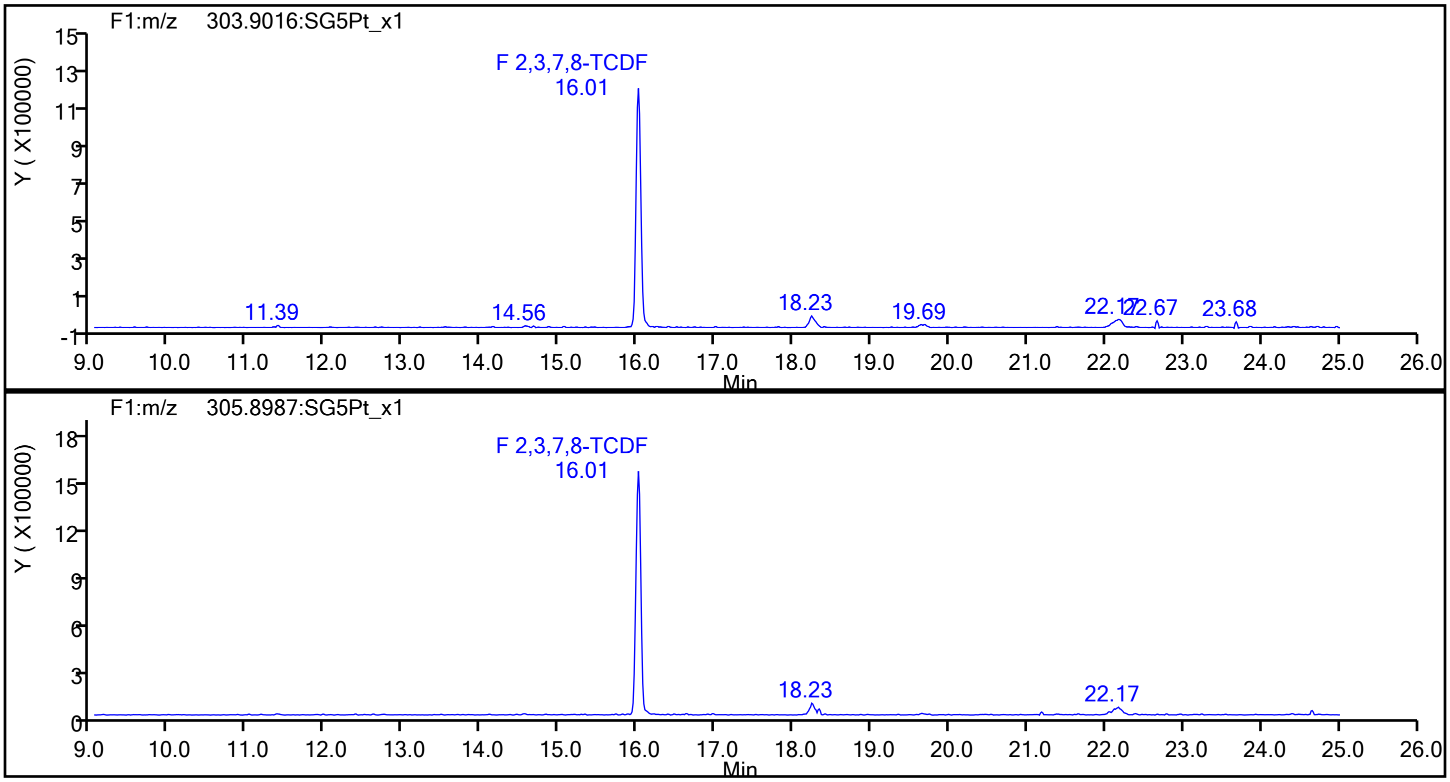

TCDF Standards

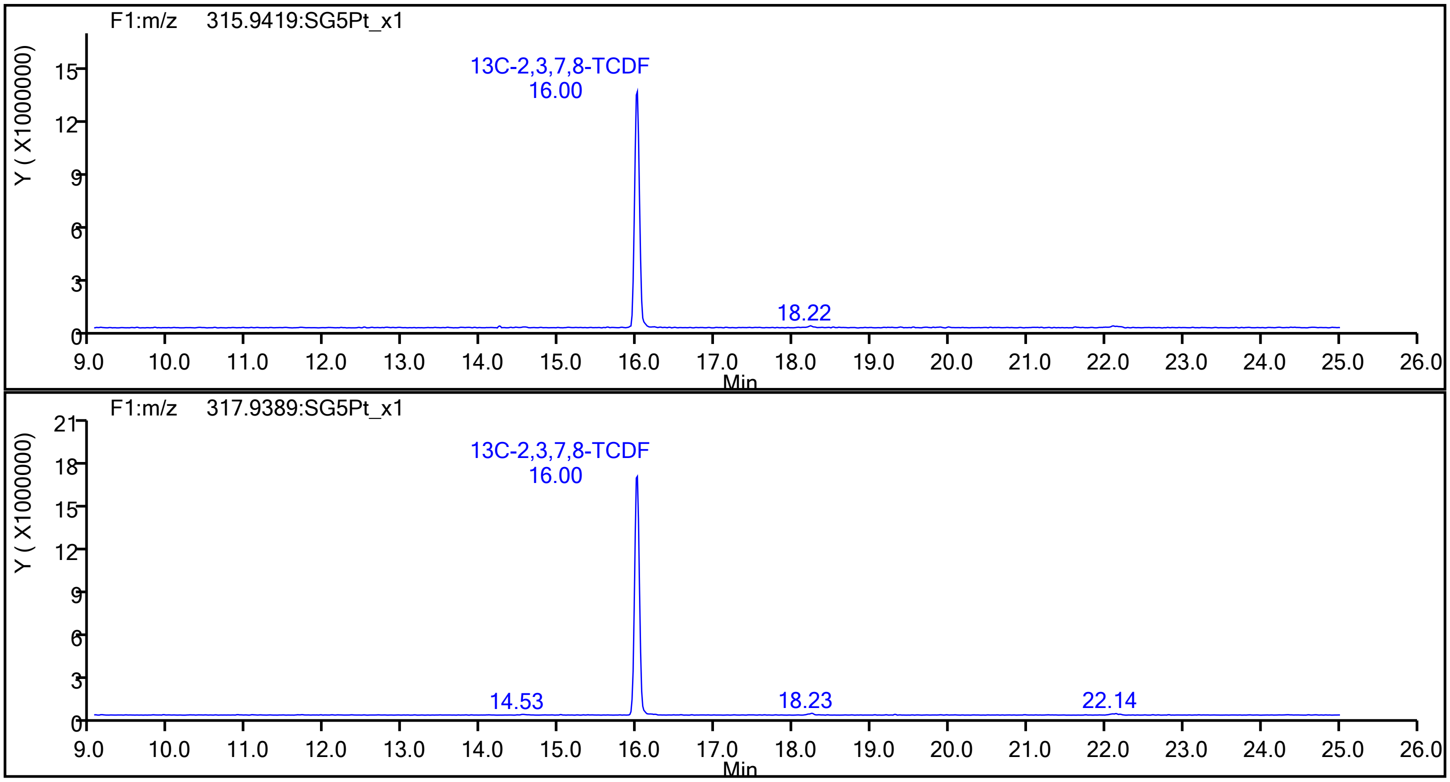

Report Date: 16-Oct-2020 12:25:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d		
Injection Date:	15-Oct-2020 02:00:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

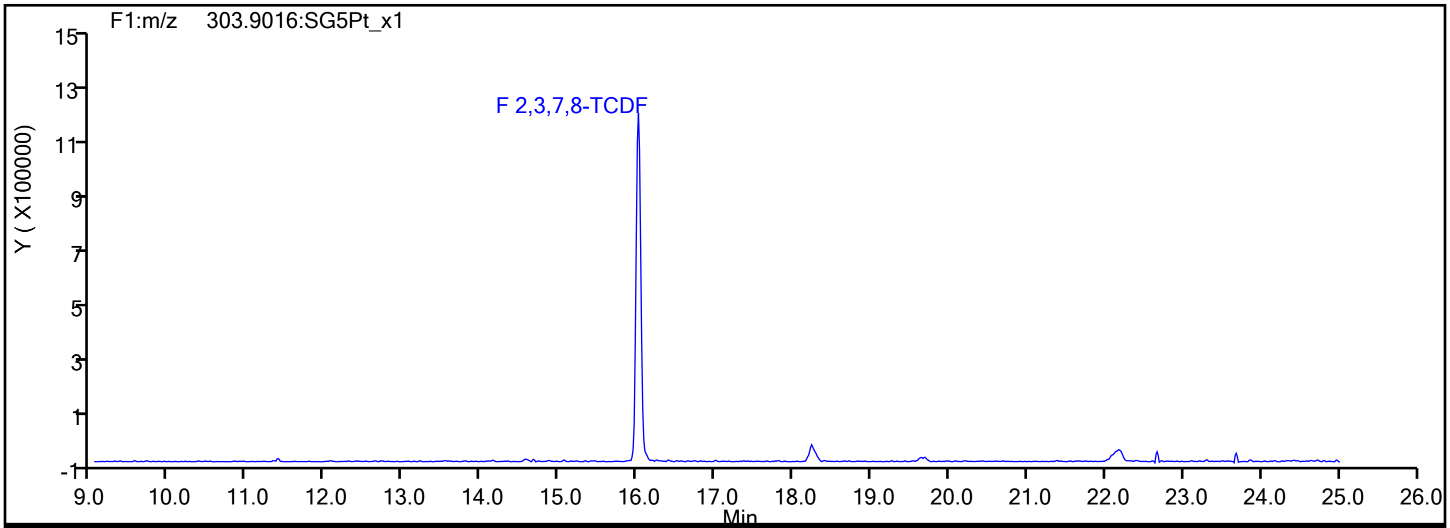

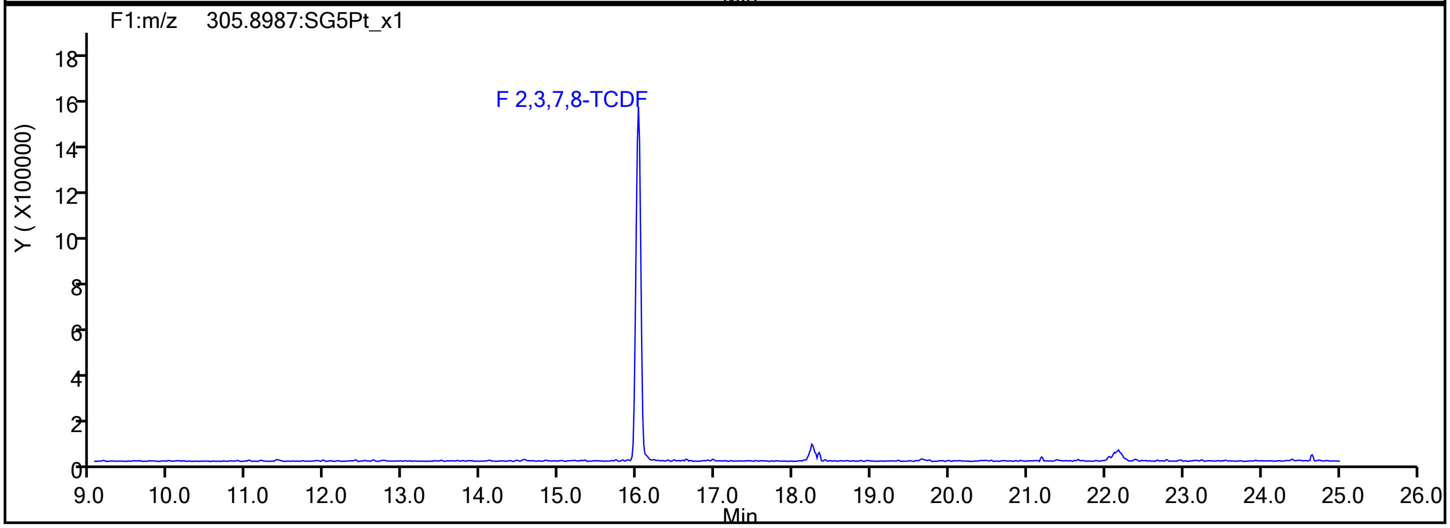

TCDF Interference Mass

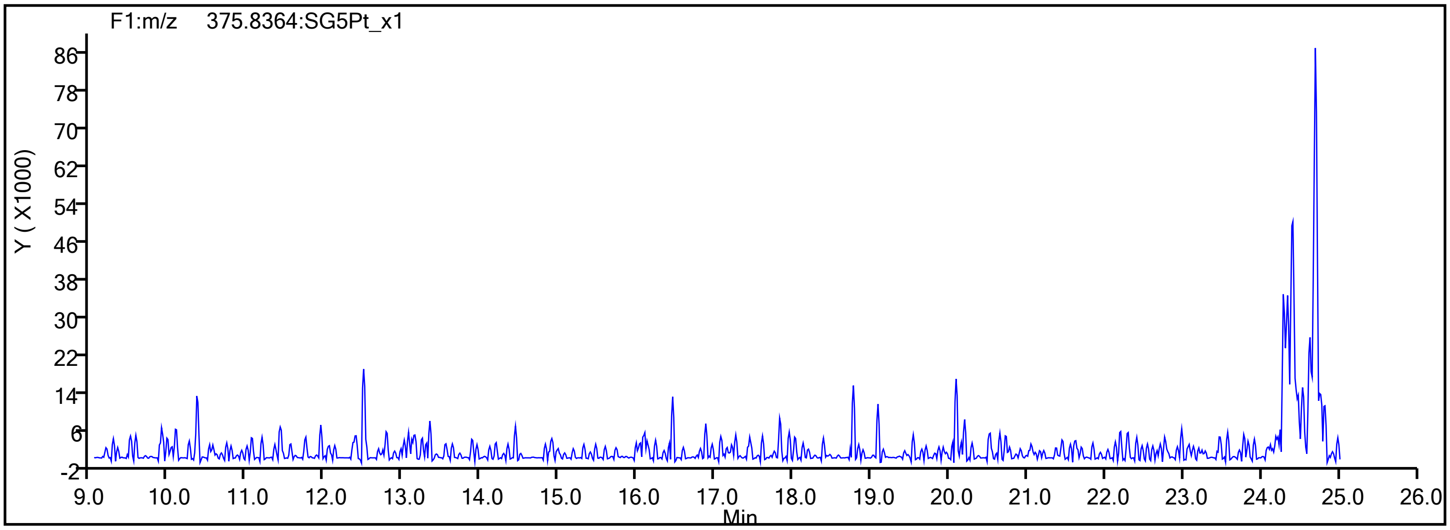

Report Date: 16-Oct-2020 12:25:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d

Injection Date: 15-Oct-2020 02:00:06 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 422408 Sample Line#: 2

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

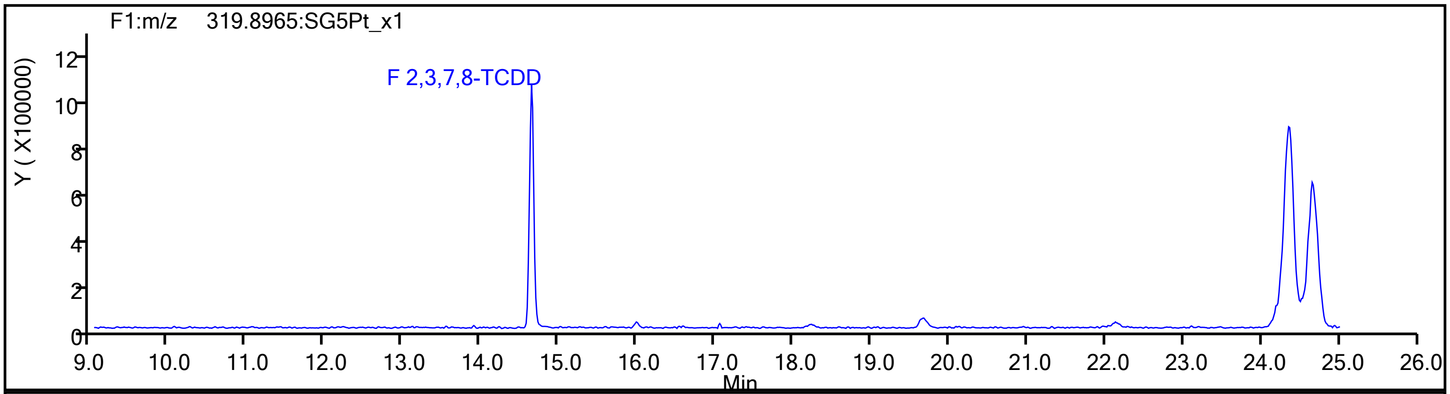

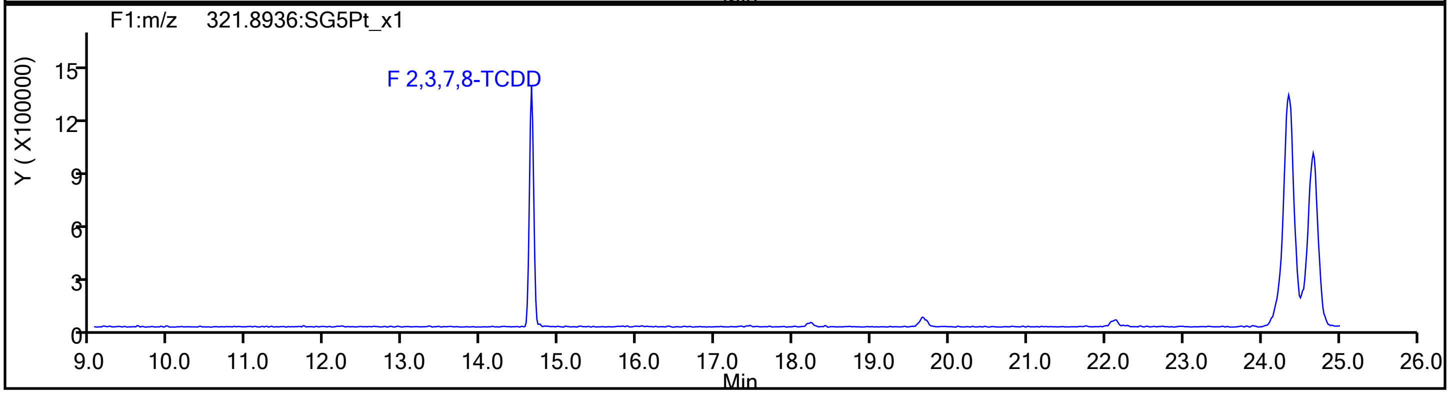

TCDD Standards

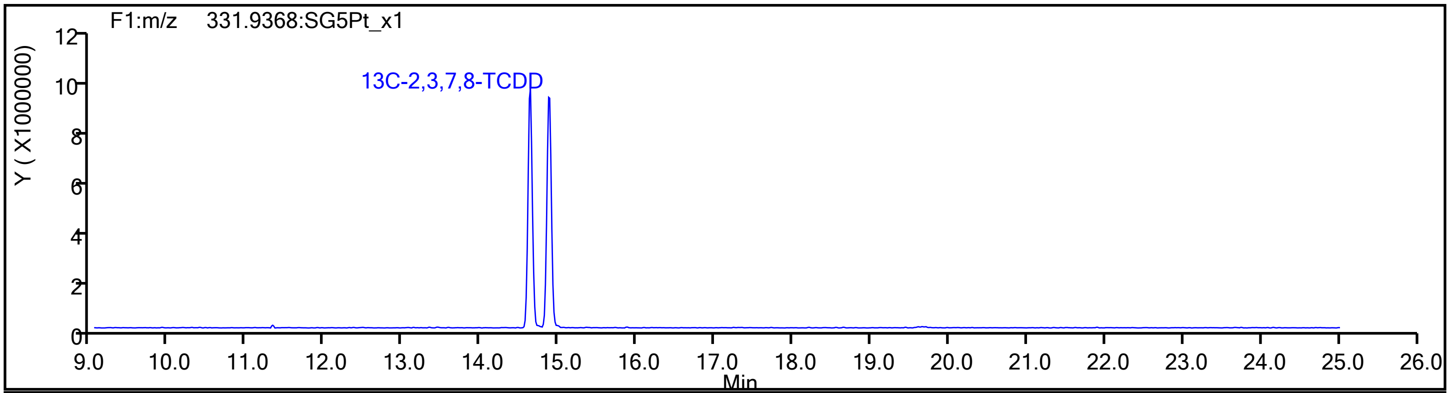

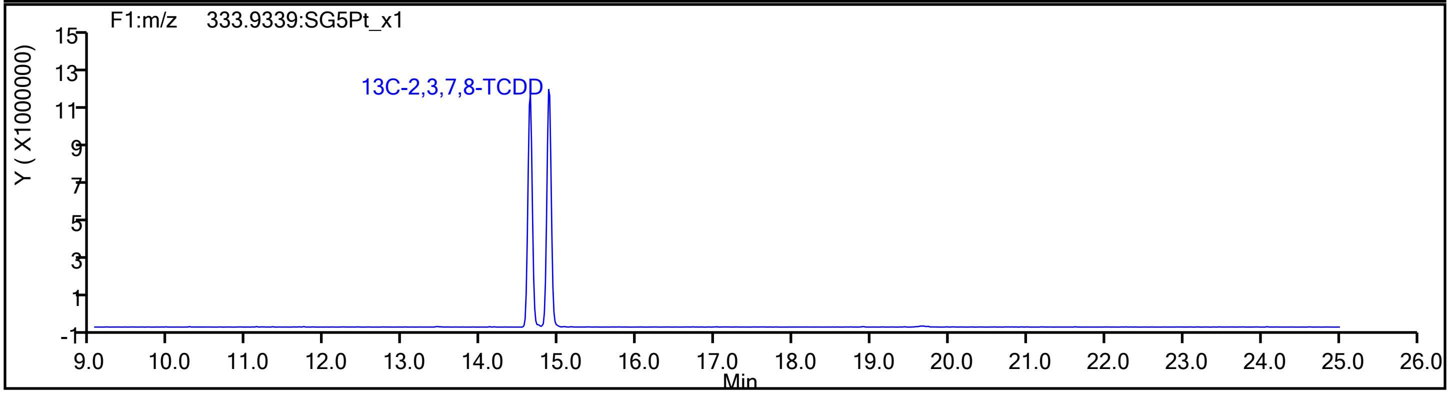

Report Date: 16-Oct-2020 12:25:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d		
Injection Date:	15-Oct-2020 02:00:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

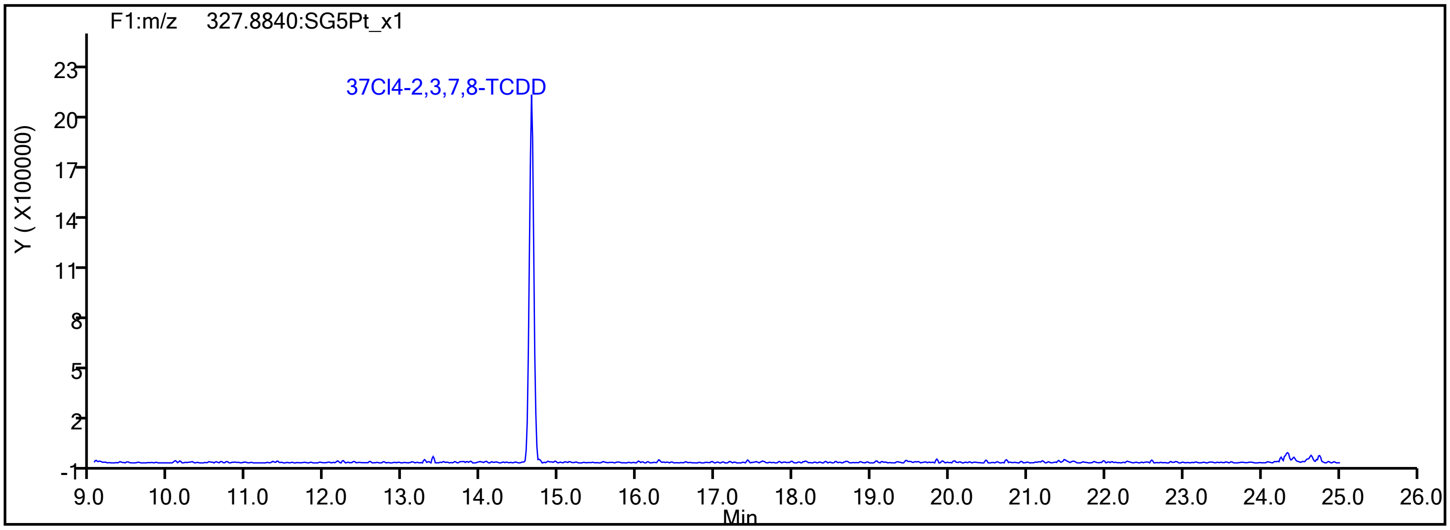

37Cl4-TCDD Standards

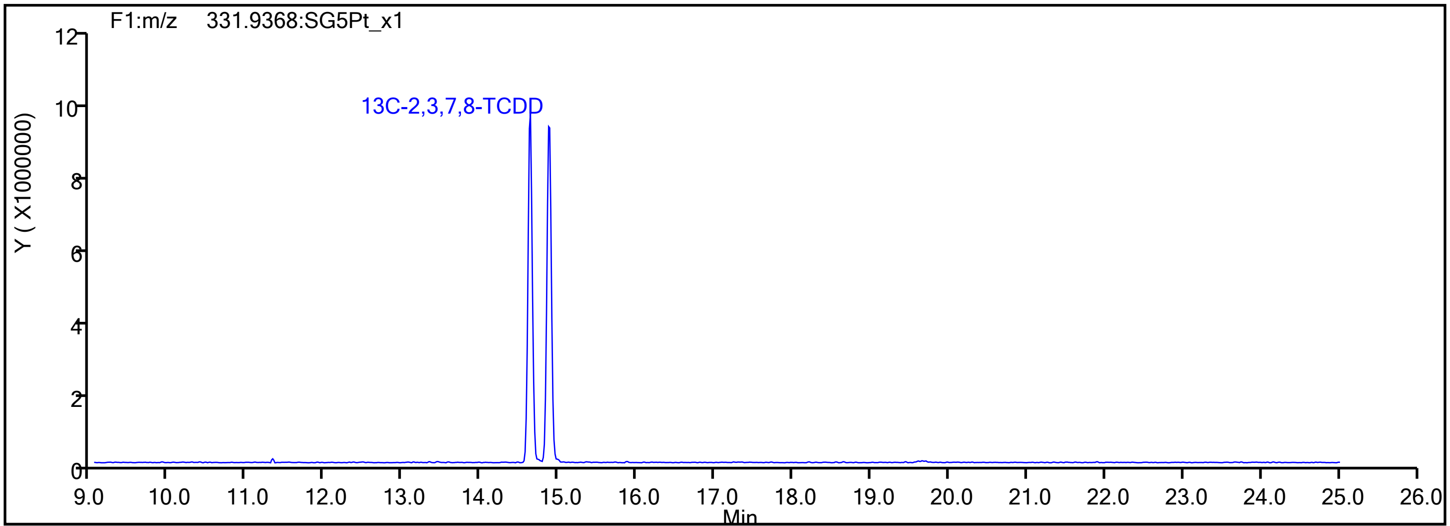

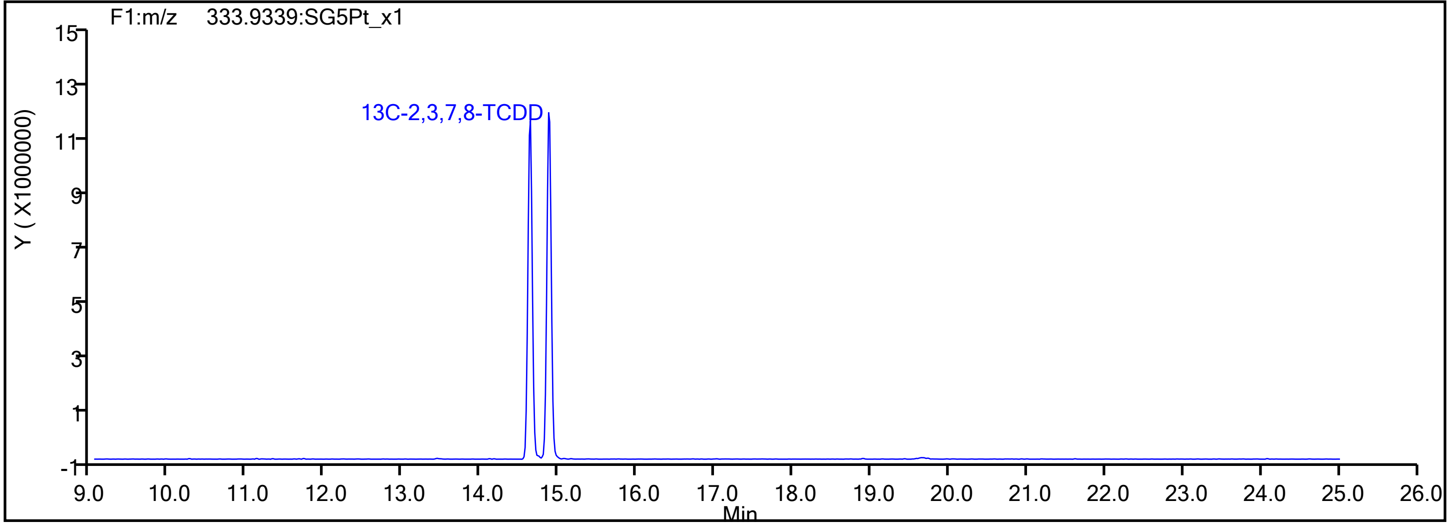

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_002.d		
Injection Date:	15-Oct-2020 02:00:06	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

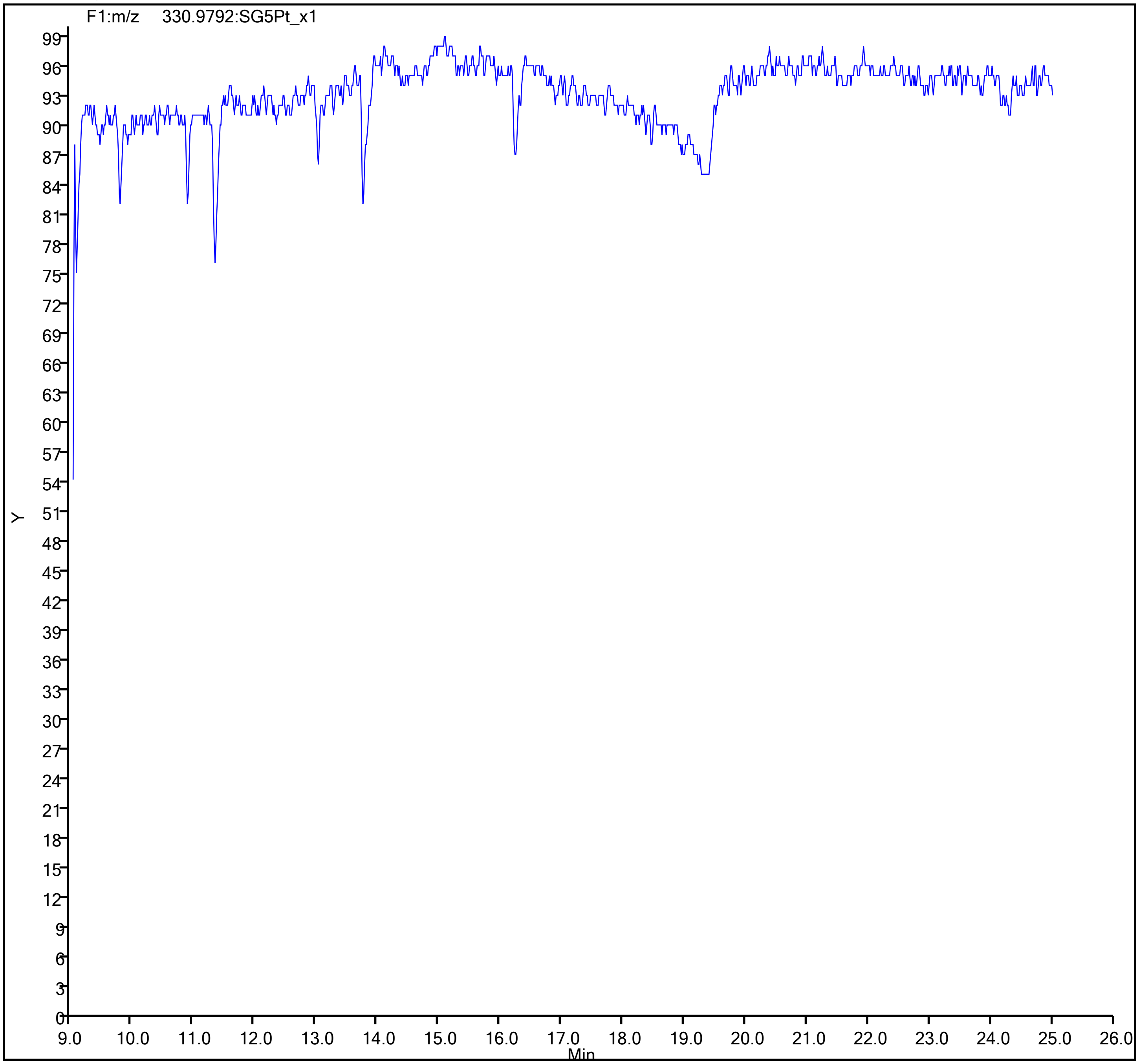

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 14:12:48 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 091720 WDM HRDXNCP_00042
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:03 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 15:04:13

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.203	49250871	0.76	1.3598					0.00	
2,3,7,8-TCDF	17.234	94619925	0.76	0.9077	84.7	84.7	0.3823	0.3823		
A Non-2,3,7,8-sub-TCDF	16.924						0.3823	0.3823		
S Total TCDF					84.7	84.7	0.3823	0.3823		
D 13C-2,3,7,8-TCDD	17.914	36781250	0.77	1.0536					0.00	
2,3,7,8-TCDD	17.929	38351069	0.76	1.0061	41.5	41.5	0.1547	0.1547		
A Non-2,3,7,8-sub-TCDD	17.370						0.1547	0.1547		
S Total TCDD					41.5	41.5	0.1547	0.1547		
A F1 PeCDFs	19.789						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.936	640258	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.187						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.073						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.739	284758	1.14	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.703	30782578	1.03	1.3603						
1,2,3,4,7,8,9-HpCDF	34.761	26162379	1.03	1.3207						
A Non-2,3,7,8-sub-HpCDF	34.232						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.481	23543258	1.03	0.9988						
A Non-2,3,7,8-sub-HpCDD	34.208						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.799	52685451	0.78							
1,3,6,8-TCDD	15.707	38886052	0.75							
2,3,4,7-TCDF	17.234	94619925	0.76							
1,2,3,7-TCDD	17.808	33726511	0.76							
1,2,3,9-TCDF	18.095	40906666	0.75							
1,2,3,9-TCDD	18.095	39676870	0.77							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.033	15863837								
1,2,8,9-TCDF	19.048	42747067	0.76							
1,3,4,6,8-PeCDF	19.305	49971187	1.57							
1,2,4,7,9-PeCDD	21.080	32106370	1.58							
1,2,3,8,9-PeCDD	25.294	29558915	1.56							
1,2,3,8,9-PeCDF	25.525	32468714	1.55							
1,2,3,4,6,8-HxCDF	27.784	30591446	1.24							
1,2,4,6,7,9-HxCDD	29.368	25005964	1.23							
1,2,3,4,6,7-HxCDD	32.043	24127463	1.23							
1,2,3,4,8,9-HxCDF	32.363	27025417	1.24							
1,2,3,4,6,7,9-HpCDD	33.934	26010589	1.01							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 14:12:48 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 091720 WDM HRDXNCP_00042
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:03 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 15:04:13

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	1.000	21193368	5354066	6881	17202	778		
317.9389	17.203	17.203	0	1.000	28057503	7203342	4698	11745	1533	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.234	17.218	1	1.002	40861480	9454804	17414	43535	543		
305.8987	17.234	17.218	1	1.002	53758445	12423371	26167	65417	475	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.924						17414	43535			
305.8987	16.924						26167	65417			
13C-2,3,7,8-TCDD											
331.9368	17.914	17.914	0	1.000	16059124	3776944	4960	12400	761		
333.9339	17.899	17.914	-1	1.000	20722126	4827538	3609	9022	1338	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	16551747	4039033	6220	15550	649		
321.8936	17.929	17.920	1	1.001	21799322	5268055	7172	17930	735	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.370						6220	15550			
321.8936	17.370						7172	17930			
A F1 PeCDFs											
339.8597	19.789						1673	4182			
341.8567	19.789						1070	2675			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	20.834	22.936	-126	1.000	59520	9829	2726	6815	4		
341.8567	20.821	22.936	-127	1.000	62266	9241	2187	5467	4	0.96(1.32-1.78)	
339.8597	21.666	22.936	-76	1.000	76538	13329	2726	6815	5		
341.8567	21.666	22.936	-76	1.000	71982	10240	2187	5467	5	1.06(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	22.239	22.936	-42	1.000	149800	18486	2726	6815	7		
341.8567	22.226	22.936	-43	1.000	104574	15321	2187	5467	7	1.43(1.32-1.78)	
339.8597	22.798	22.936	-8	1.000	96518	14757	2726	6815	5		
341.8567	22.771	22.936	-10	1.000	65529	9587	2187	5467	4	1.47(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.187						3279	8197			
357.8516	23.187						2096	5240			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.073						4012	10030			
375.8178	30.073						3098	7745			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.872	30.739	8	1.000	151698	26301	3698	9245	7		
391.8127	30.885	30.739	9	1.000	133060	26685	3064	7660	9	1.14(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.703	33.694	1	1.000	15628584	4803341	15156	37890	317		
409.7789	33.691	33.694	0	1.000	15153994	4733366	15833	39582	299	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	13275657	3644471	15156	37890	240		
409.7789	34.761	34.763	0	1.000	12886722	3595180	15833	39582	227	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.232						15156	37890			
409.7789	34.232						15833	39582			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	11962711	3539015	11522	28805	307		
425.7737	34.481	34.474	0	1.000	11580547	3380922	10862	27155	311	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.208						11522	28805			
425.7737	34.208						10862	27155			
1,3,6,8-TCDF											
303.9016	14.799	14.799	0		23019498	7225498	17414	43535	415		
305.8987	14.799	14.799	0		29665953	9356851	26167	65417	358	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.707	15.707	0		16676016	4870129	6220	15550	783		
321.8936	15.707	15.707	0		22210036	6470444	7172	17930	902	0.75(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.234	17.234	0		40861480	9454804	17414	43535	543		
305.8987	17.234	17.234	0		53758445	12423371	26167	65417	475	0.76(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.808	17.808	0		14613924	3629930	6220	15550	584		
321.8936	17.808	17.808	0		19112587	4695816	7172	17930	655	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.095	18.095	0		17582733	4186088	17414	43535	240		
305.8987	18.095	18.095	0		23323933	5427889	26167	65417	207	0.75(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.095	18.095	0		17277087	4050603	6220	15550	651		
321.8936	18.095	18.095	0		22399783	5245387	7172	17930	731	0.77(0.65-0.89)	

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	19.033	19.033	0		15863837	3560576	6220	15550	572		
1,2,8,9-TCDF											
303.9016	19.048	19.048	0		18481374	4024176	17414	43535	231		
305.8987	19.033	19.048	-1		24265693	5222787	26167	65417	200	0.76(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.305	19.305	0		30553599	6679807	1673	4182	3993		
341.8567	19.305	19.305	0		19417588	4276637	1070	2675	3997	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.080	21.080	0		19679913	3485372	3279	8197	1063		
357.8516	21.066	21.080	-1		12426457	2201634	2096	5240	1050	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.294	25.294	0		18021612	2589278	3279	8197	790		
357.8516	25.294	25.294	0		11537303	1672342	2096	5240	798	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.525	25.525	0		19715754	2822450	2726	6815	1035		
341.8567	25.512	25.525	-1		12752960	1811480	2187	5467	828	1.55(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.784	27.784	0		16954112	2203906	4012	10030	549		
375.8178	27.771	27.784	-1		13637334	1756070	3098	7745	567	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.368	29.368	0		13810229	1614262	3698	9245	437		
391.8127	29.354	29.368	-1		11195735	1300766	3064	7660	425	1.23(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.043	32.043	0		13319375	3548465	3698	9245	960		
391.8127	32.043	32.043	0		10808088	2862819	3064	7660	934	1.23(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.363	32.363	0		14977762	4045058	4012	10030	1008		
375.8178	32.363	32.363	0		12047655	3303867	3098	7745	1066	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.934	33.934	0		13068820	4207944	11522	28805	365		
425.7737	33.934	33.934	0		12941769	4085568	10862	27155	376	1.01(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 14:12:48	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 22.936

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915				
2,3,4,7,8-PeCDF	0.951				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.834	59520	9829	62266	9241		0.96	R
21.666	76538	13329	71982	10240		1.06	R
22.239	149800	18486	104574	15321		1.43	
22.798	96518	14757	65529	9587		1.47	
Signal Totals:							
	382376	56401	304351	44389			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	686727	100790				1.26	RQ
	640258	96249					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.0 = (686727 * 0.0) / (0 * 0.000)

Empc Amount: 0.0 = (640258 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Sep-2020 14:12:48
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 413246
Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 30.739

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.001				
1,2,3,6,7,8-HxCDD	0.890				
1,2,3,7,8,9-HxCDD	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.872	151698	26301	133060	26685		1.14	
Signal Totals:							
	151698	26301	133060	26685			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	284758	52986				1.14	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (284758 * 0.0) / (0 * 0.000)

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Injection Date: 17-Sep-2020 14:12:48

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

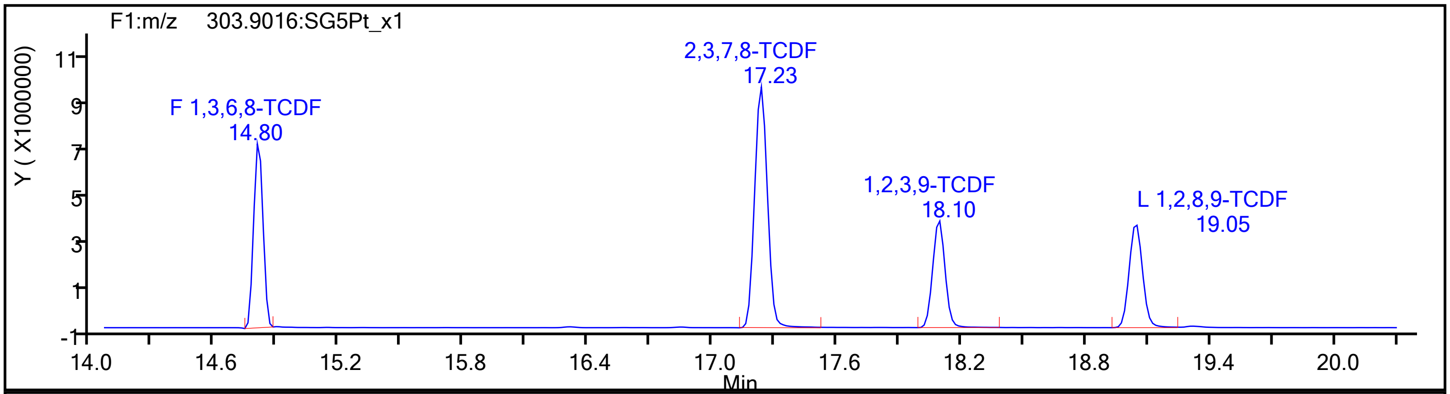

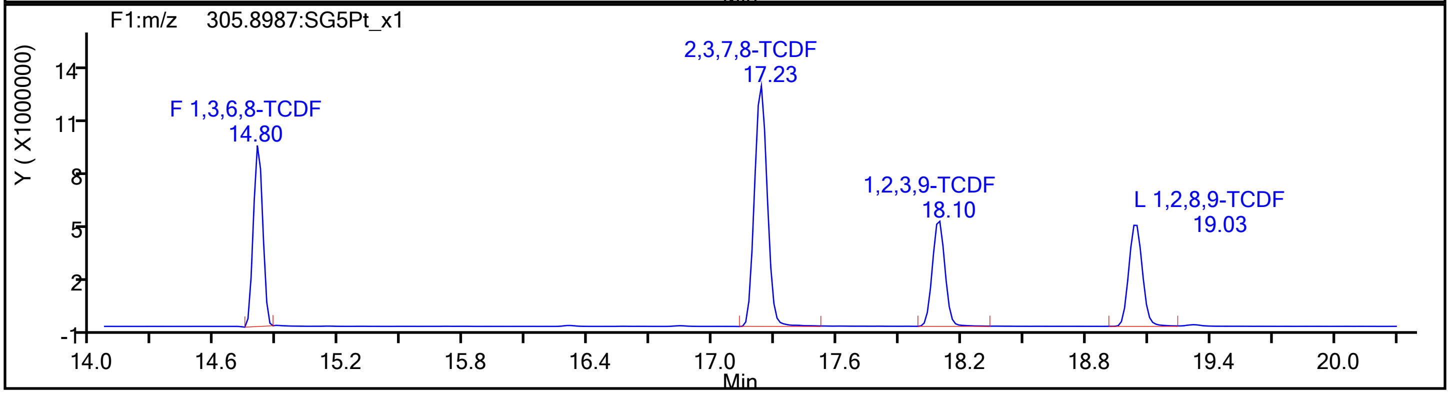

TCDF Standards

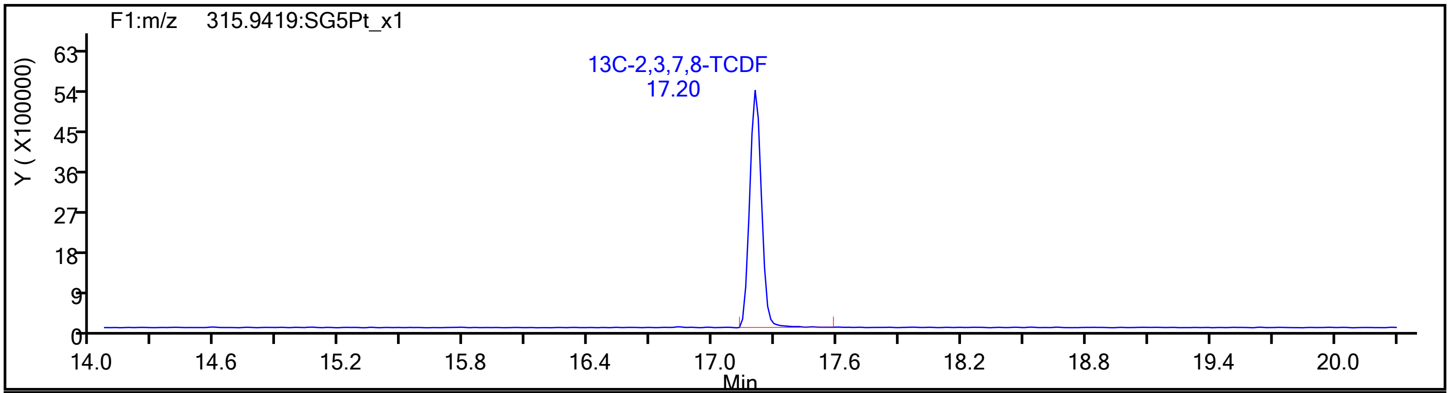

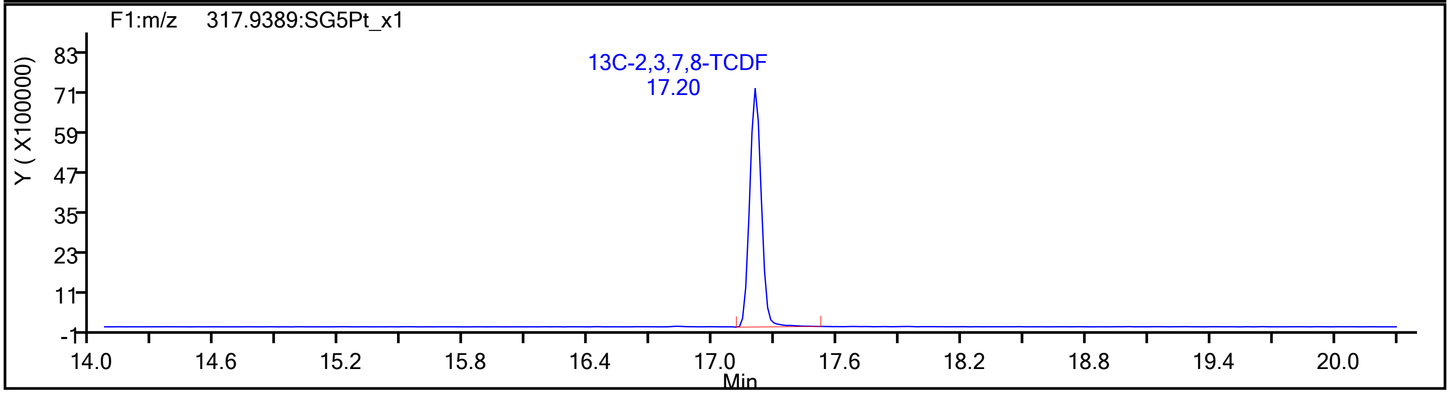

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

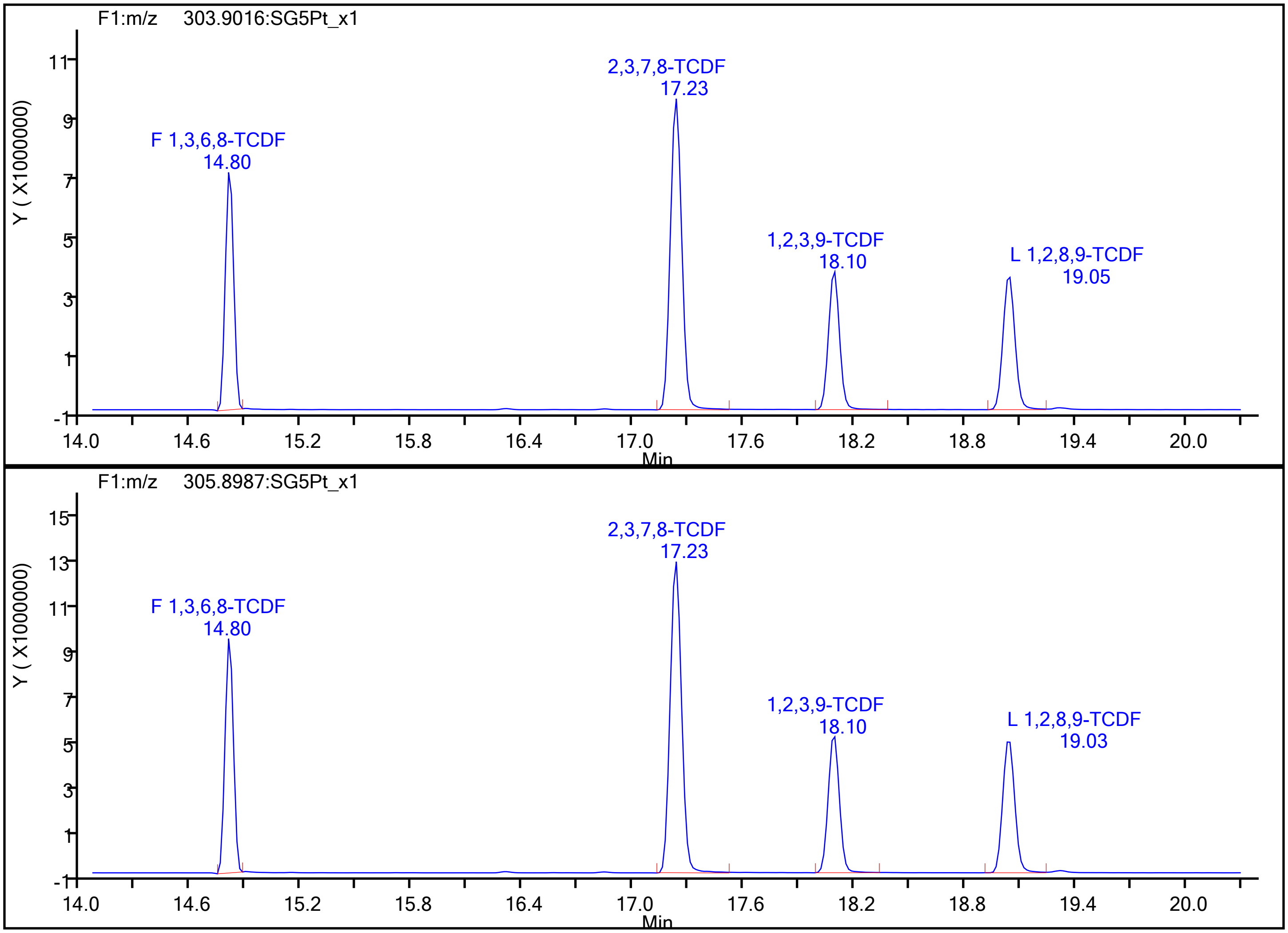

TCDF Interference Mass

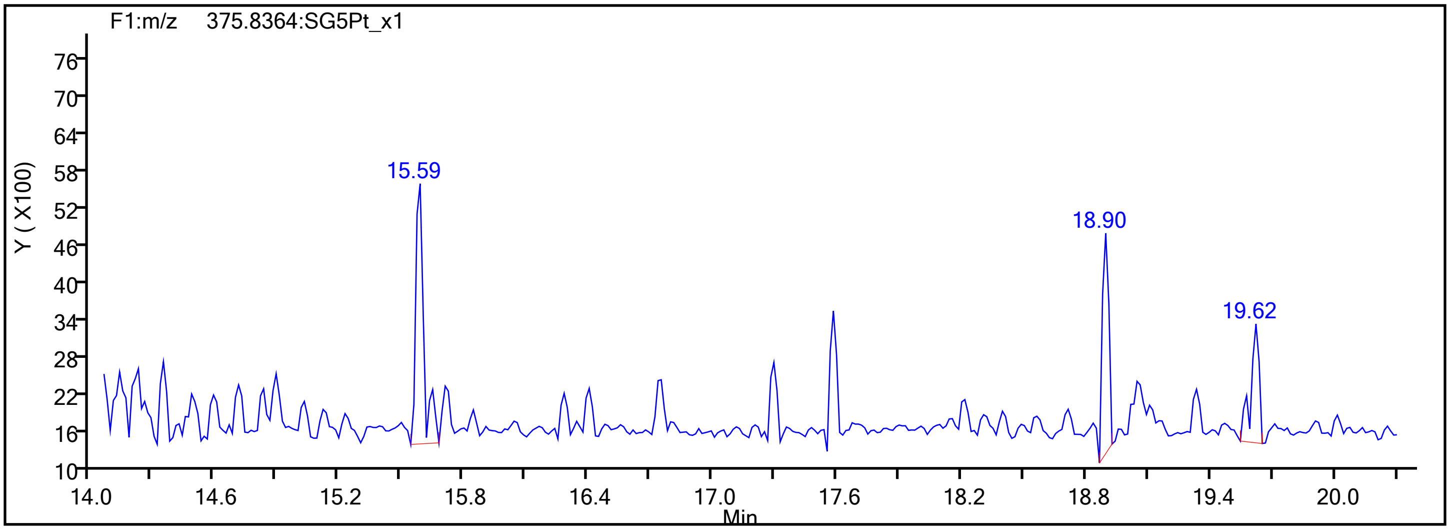

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

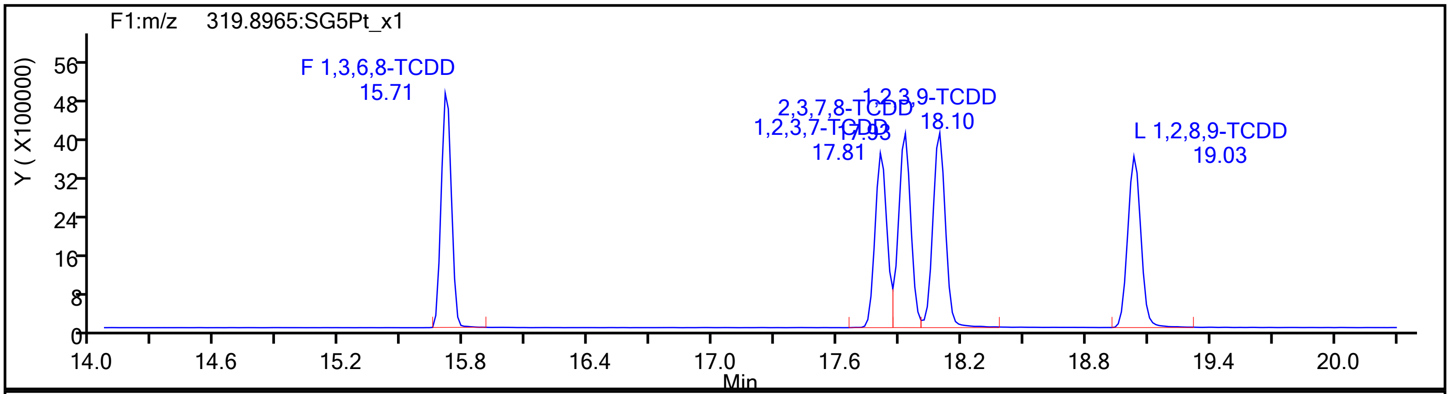

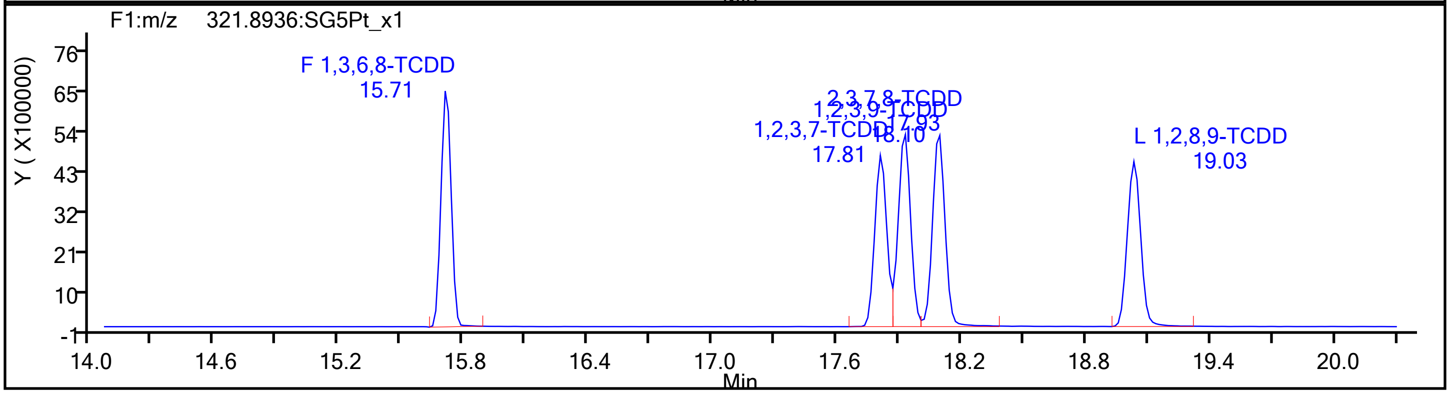

TCDD Standards

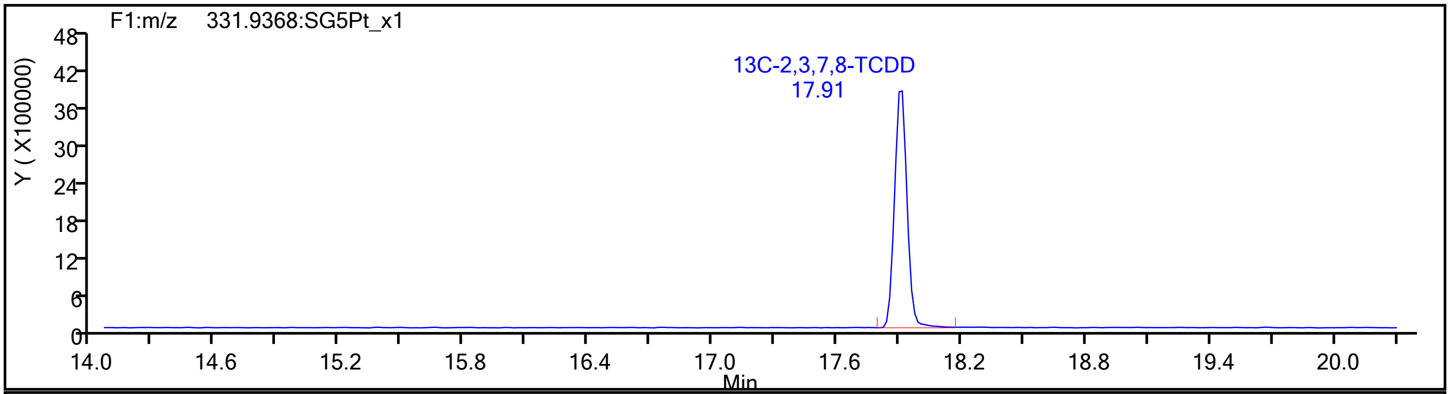

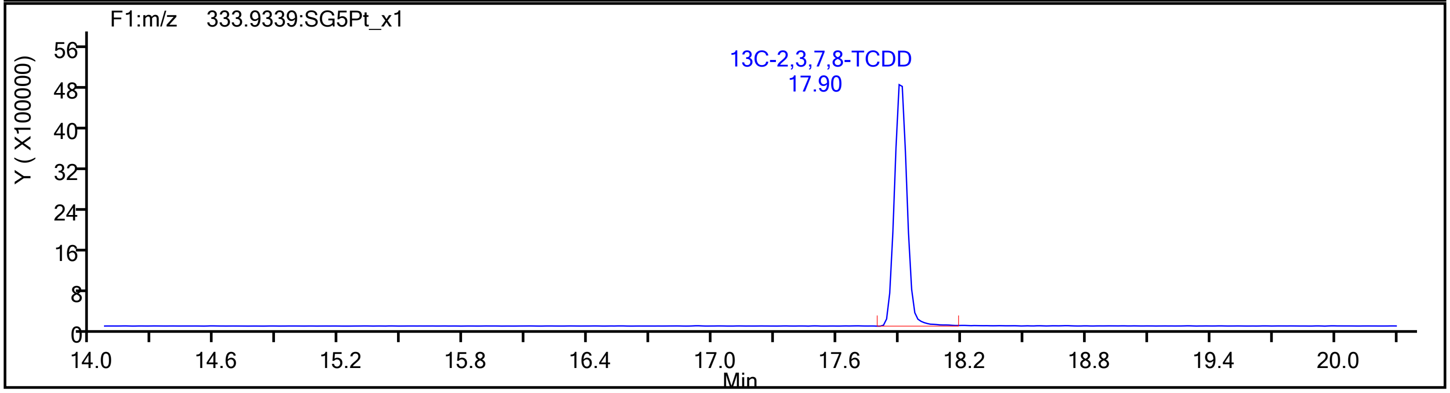

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Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

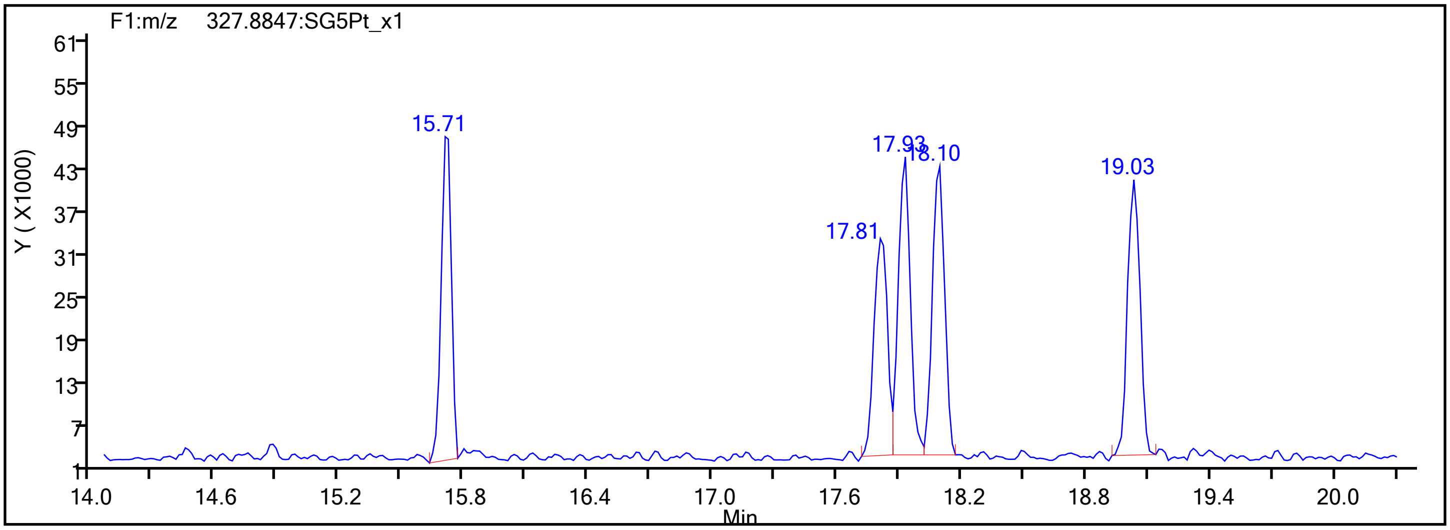

37Cl4-TCDD Standards

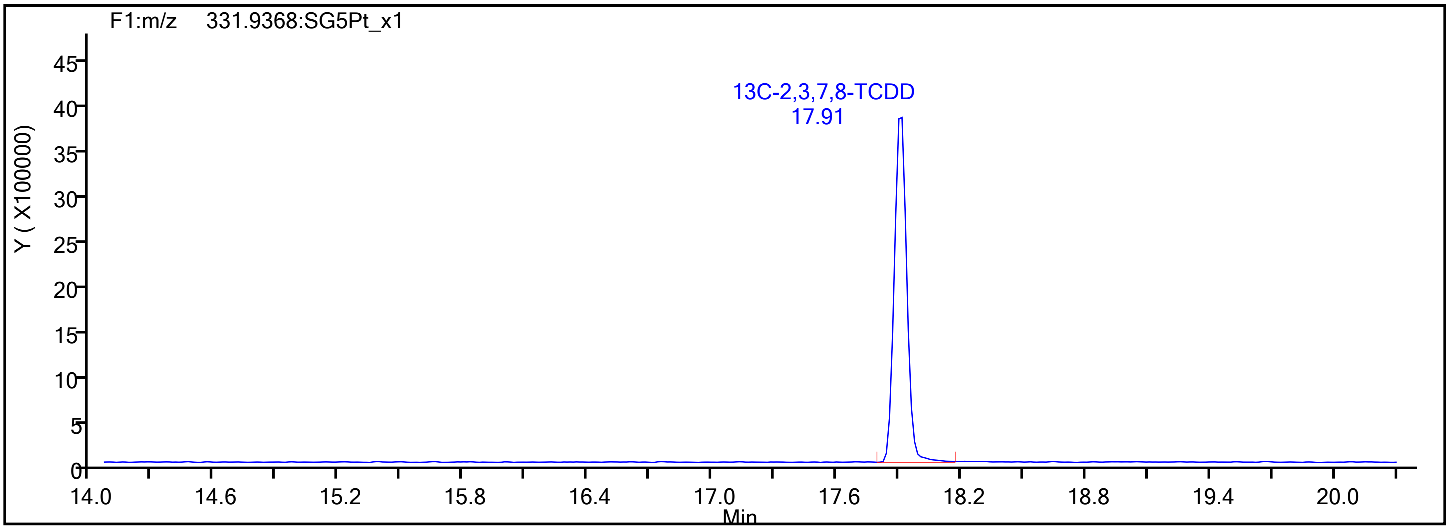

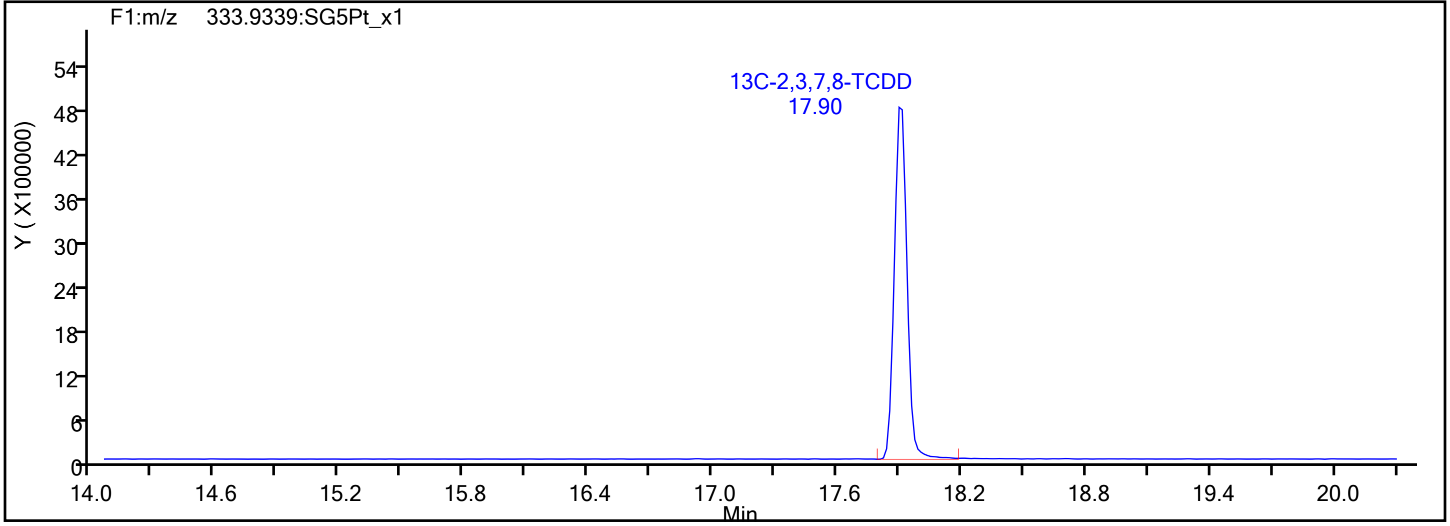

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

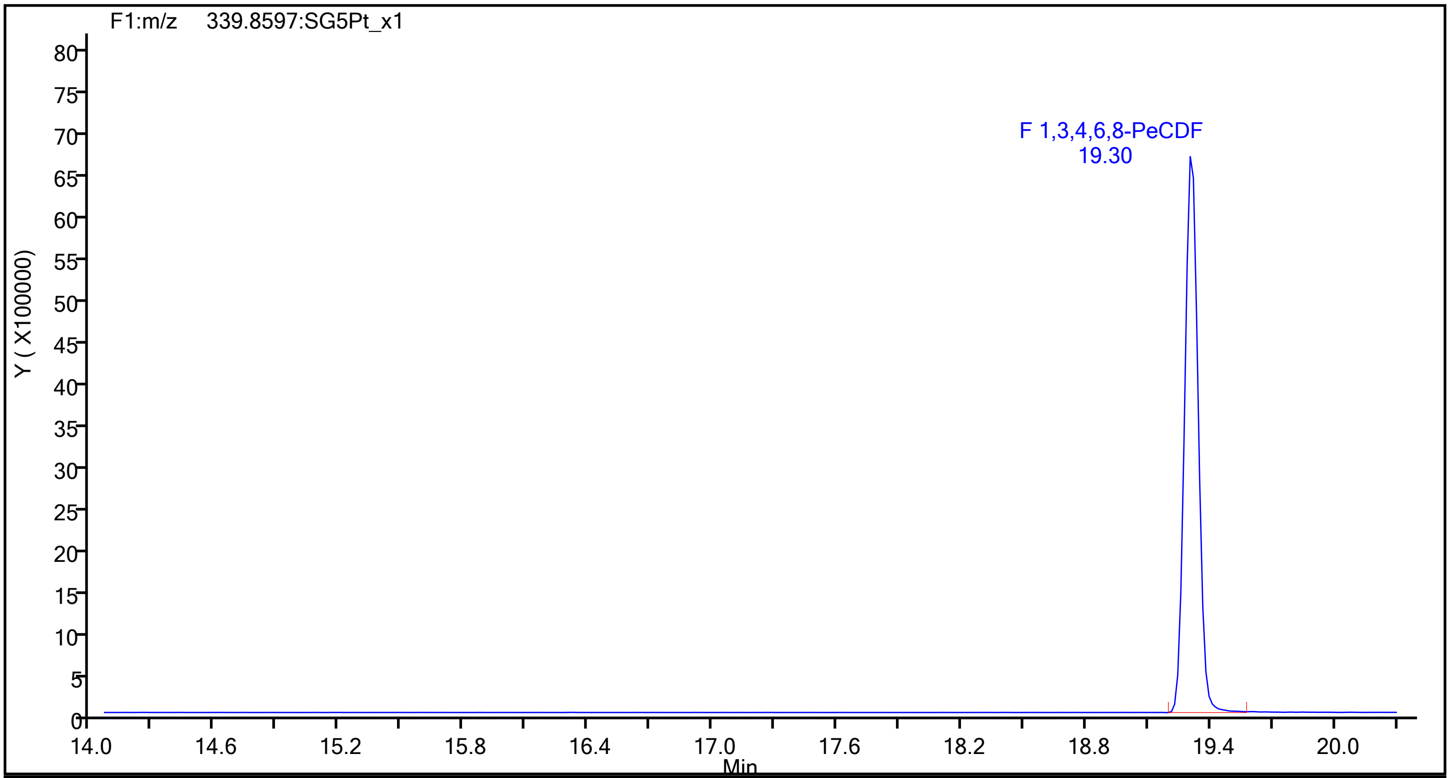

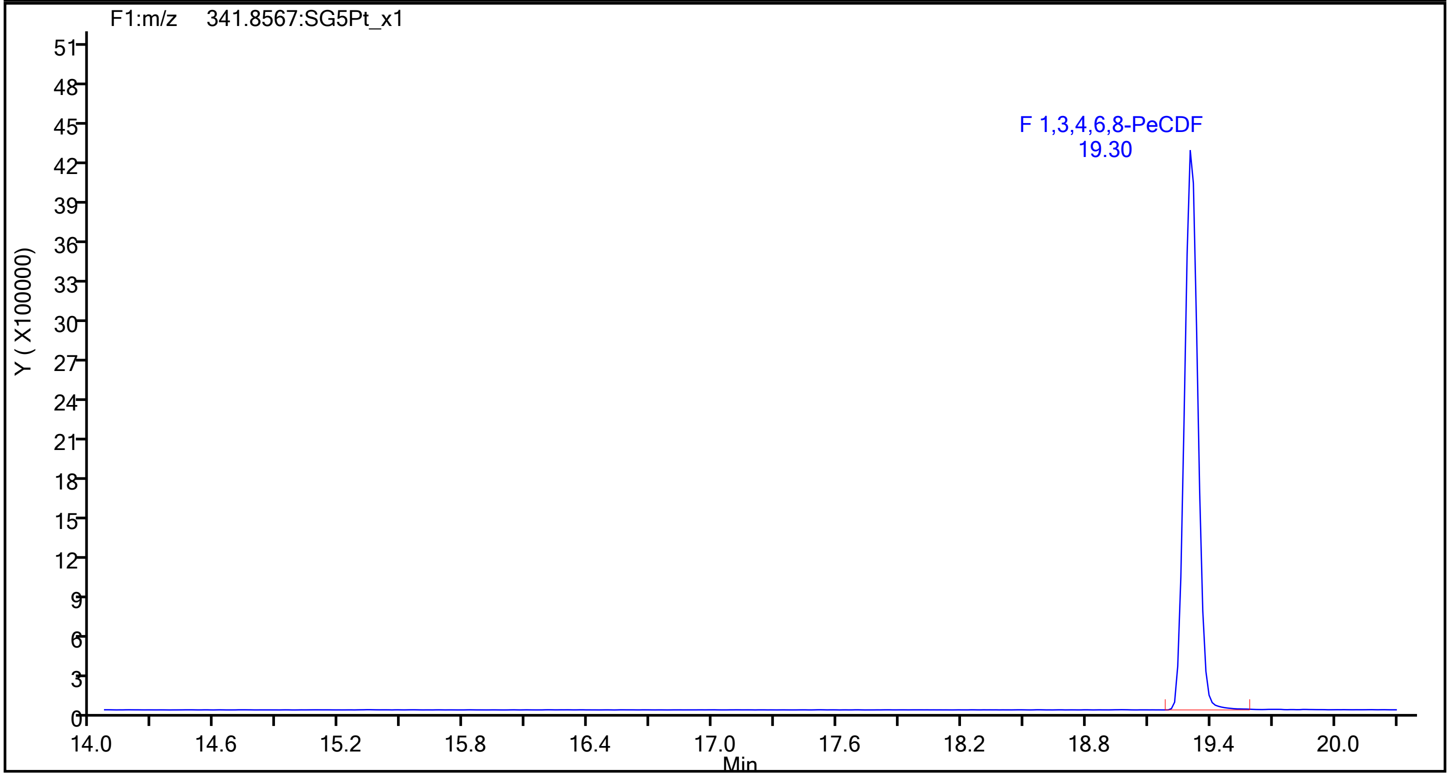

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

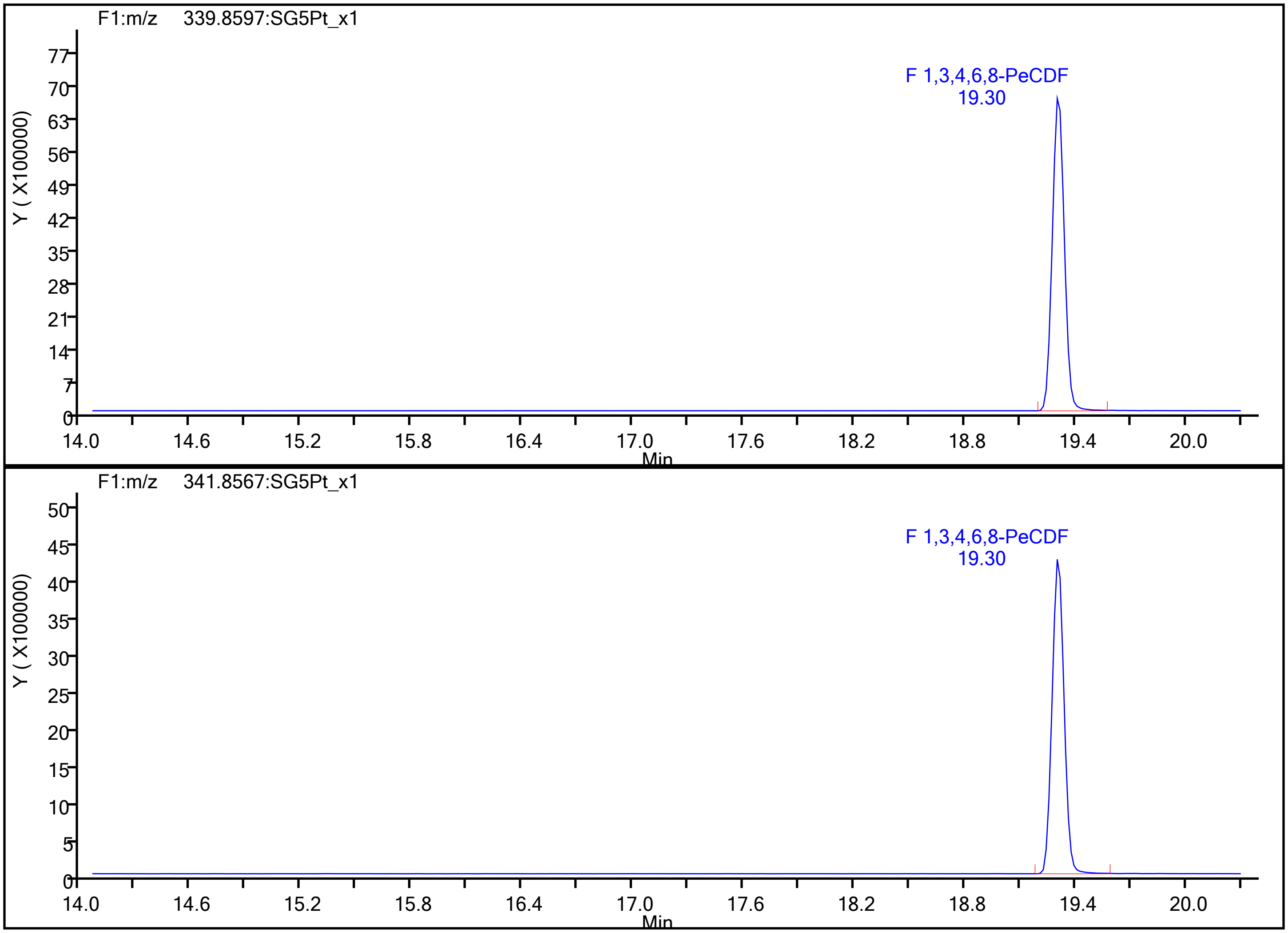

F1 PeCDFs Interference Mass

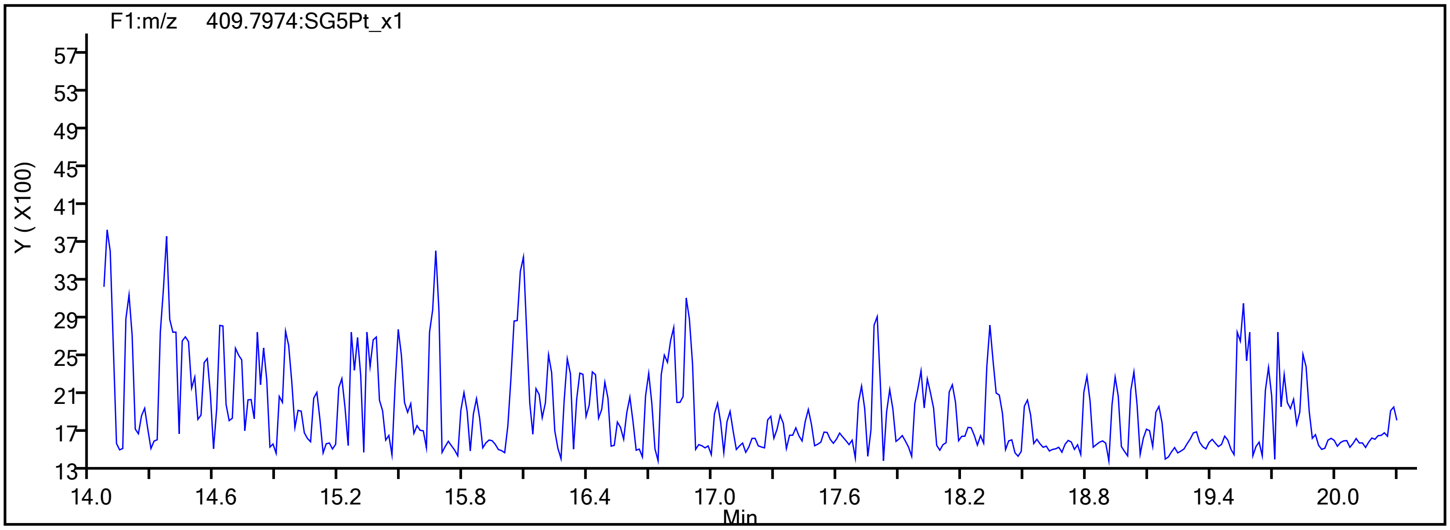

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

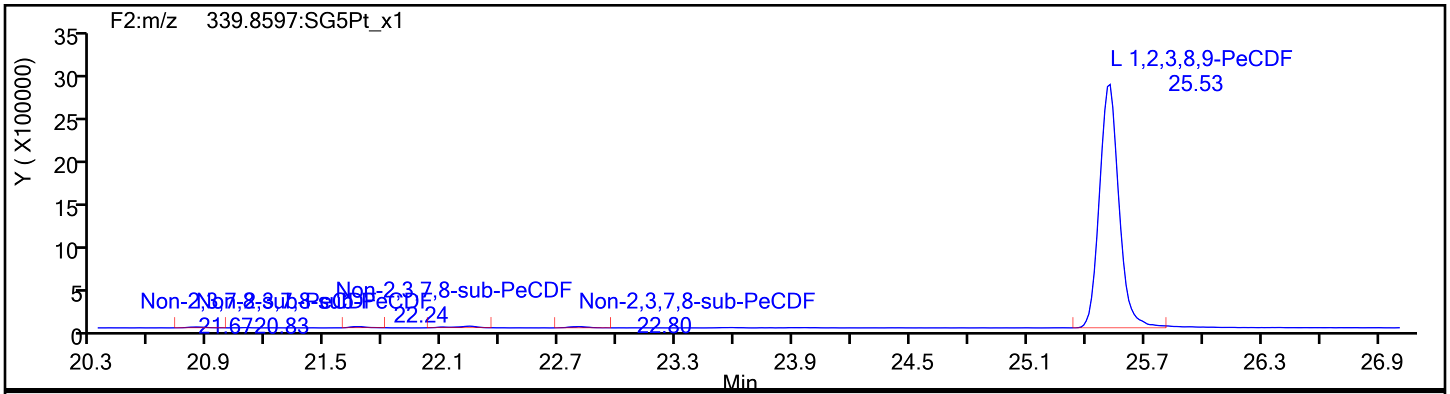

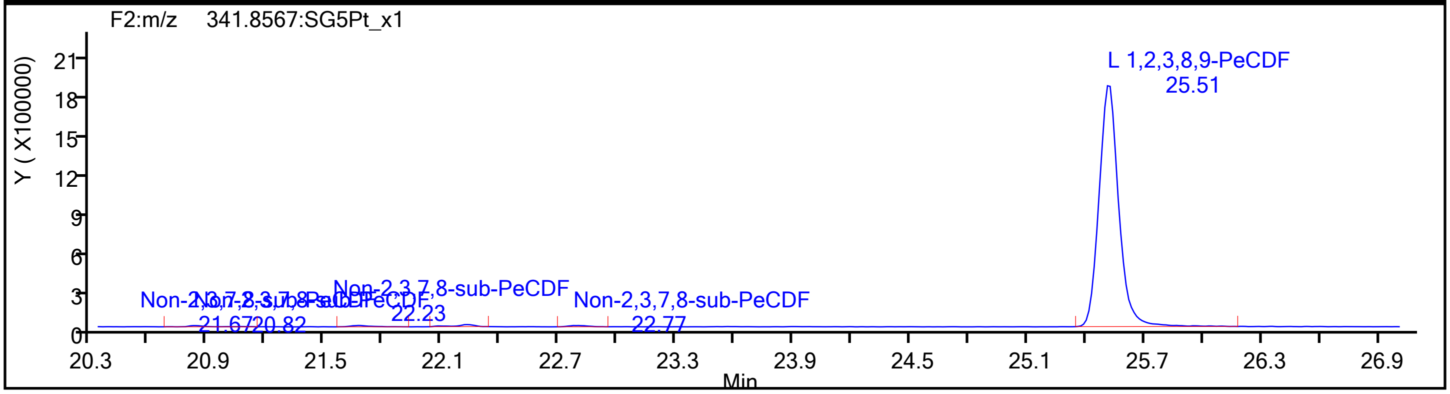

PeCDF Standards

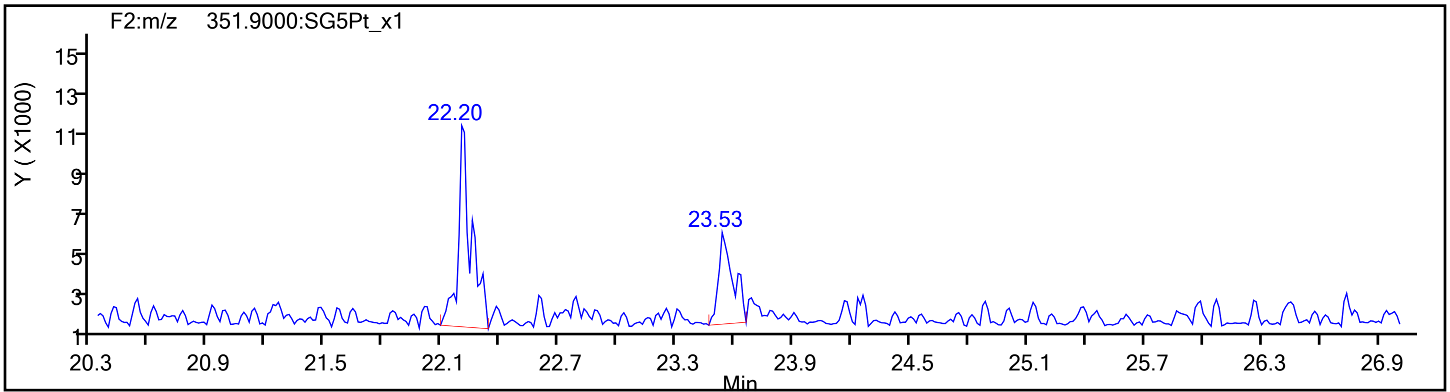

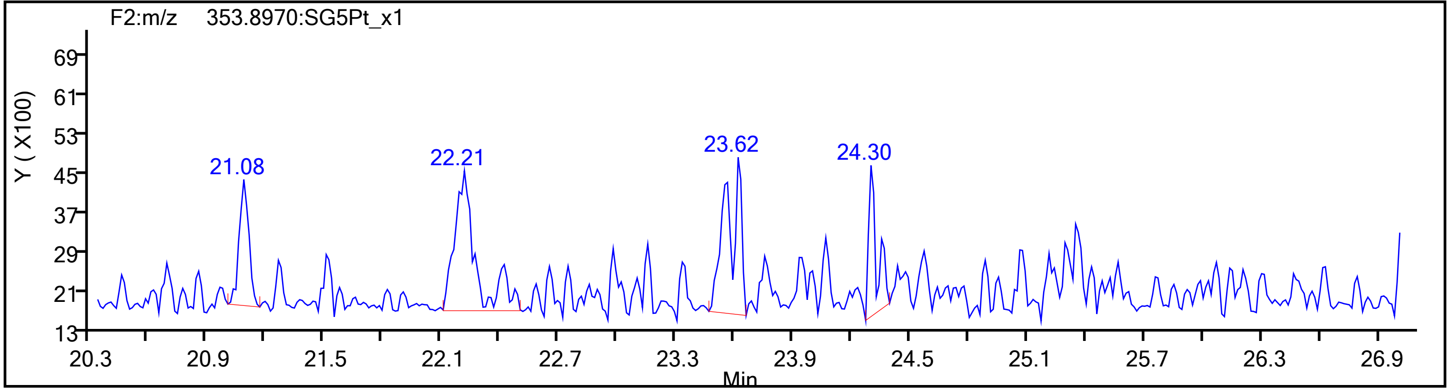

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

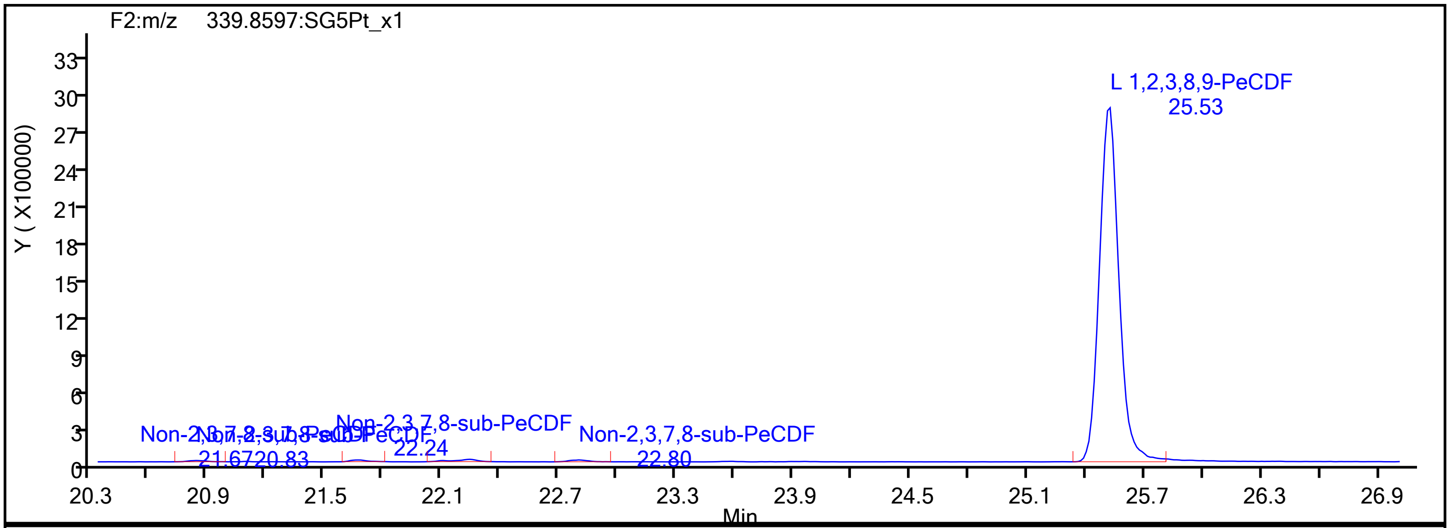

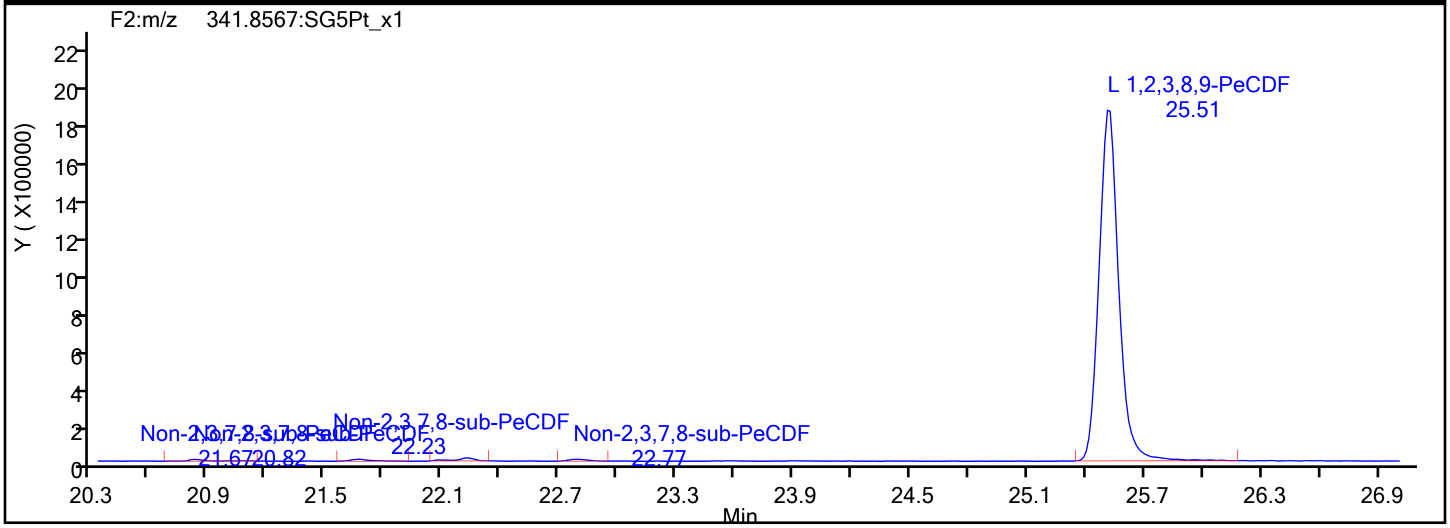

PeCDF Interference Mass

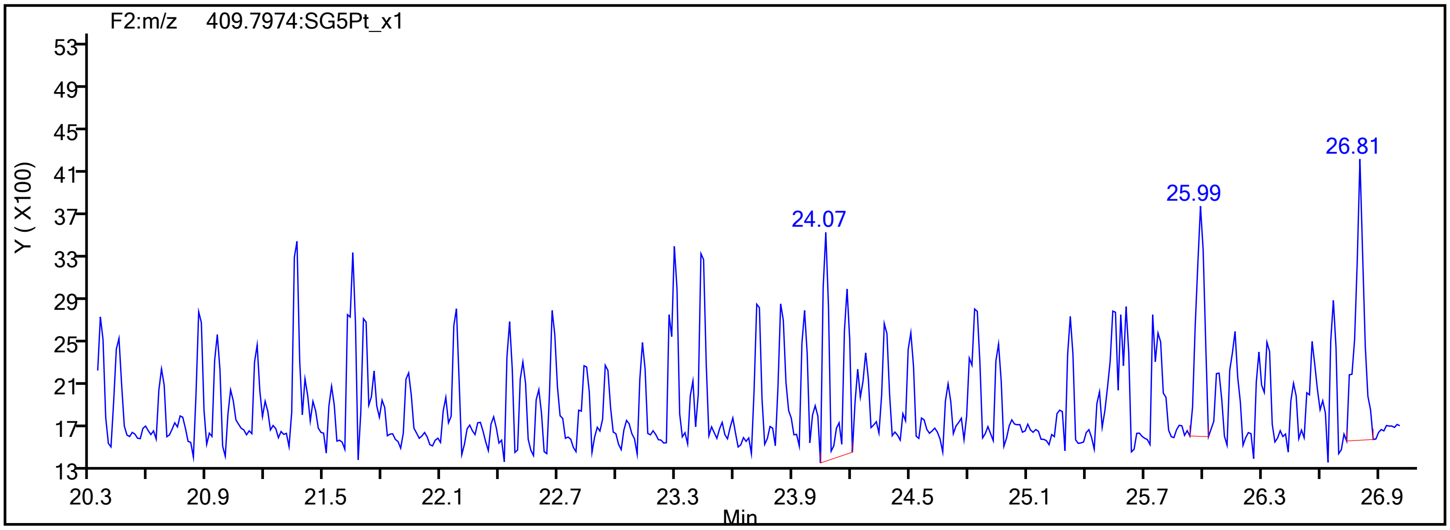

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

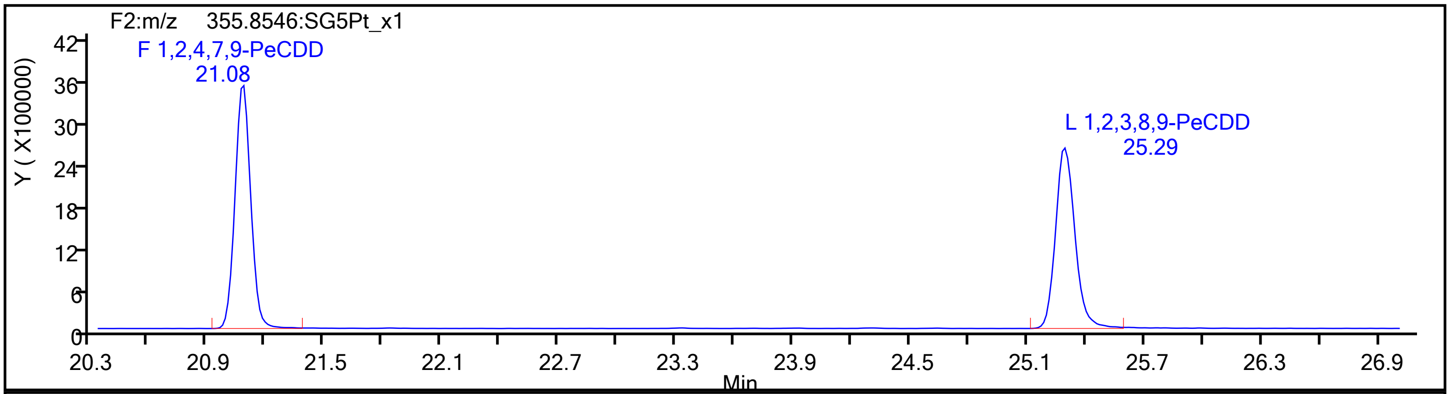

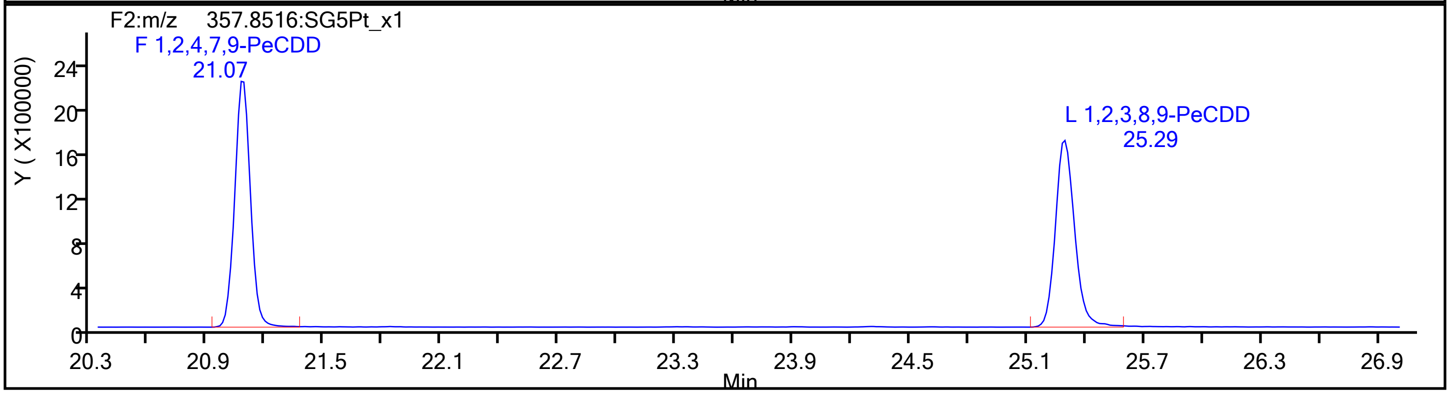

PeCDD Standards

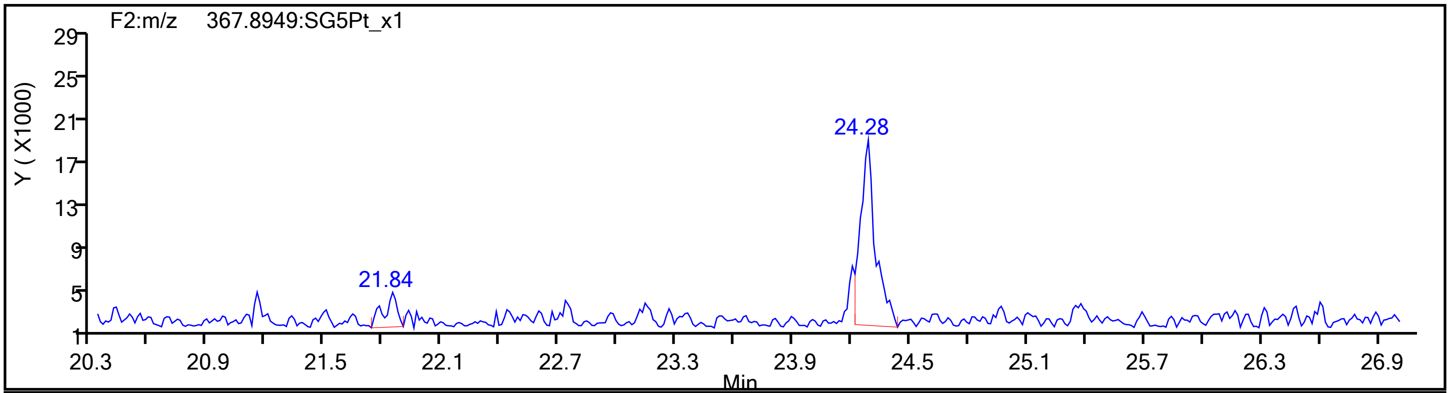

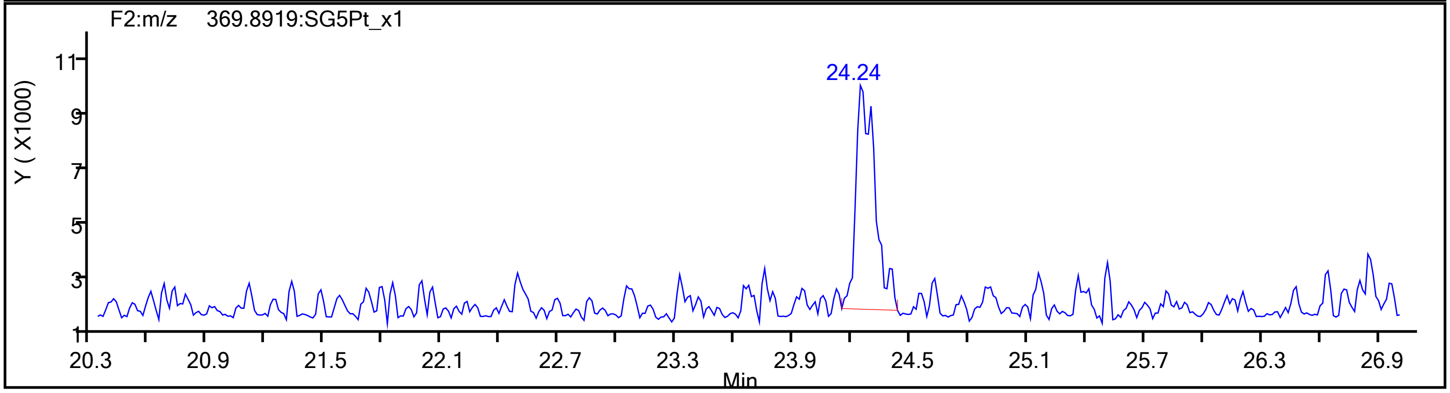

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

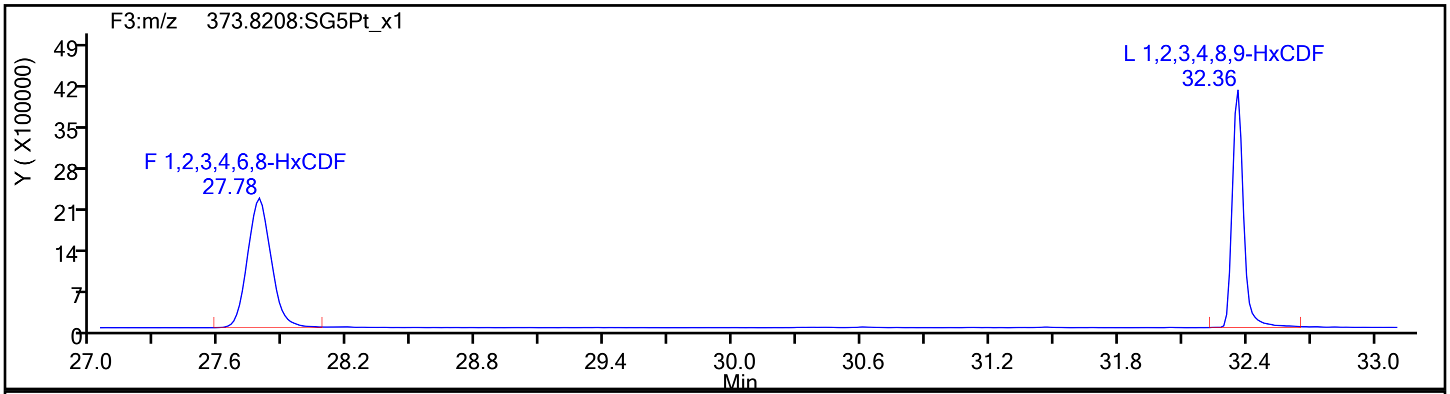

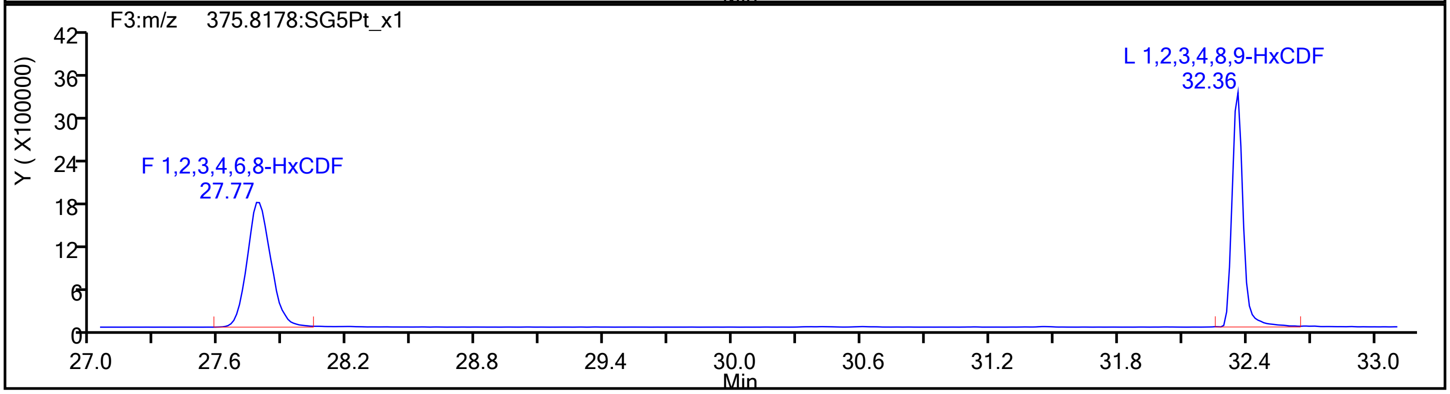

HxCDF Standards

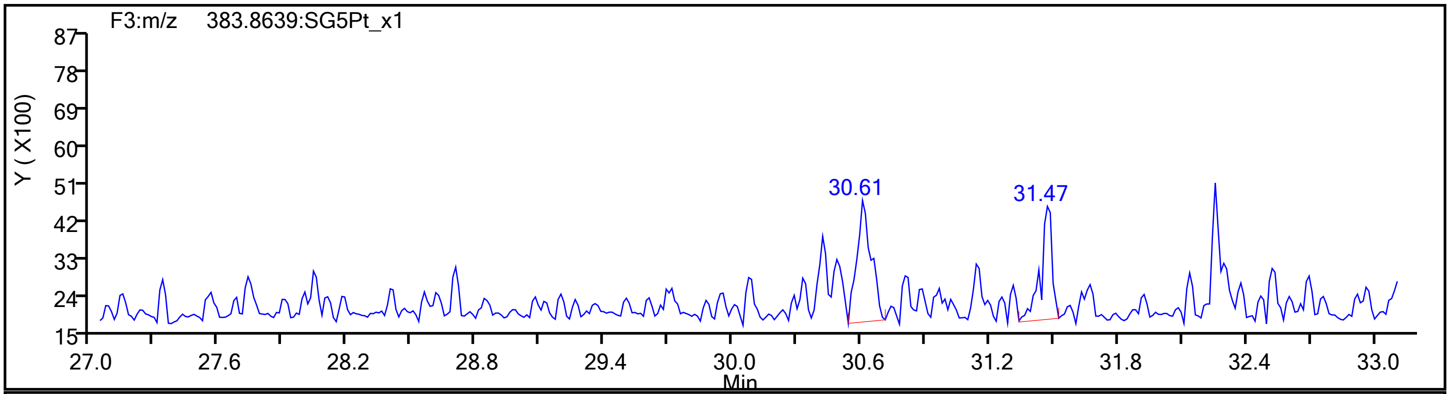

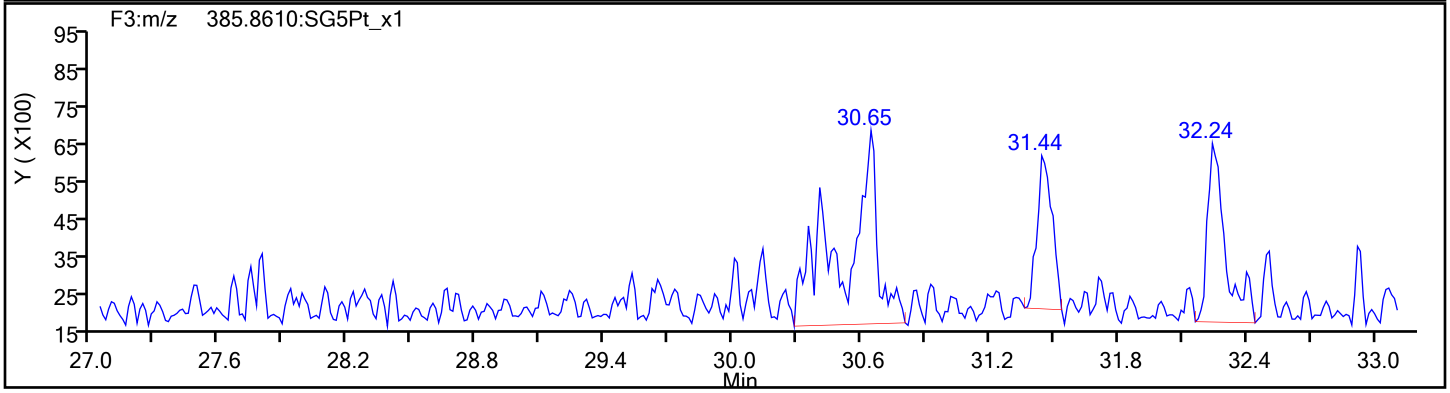

Report Date: 18-Sep-2020 10:38:07   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

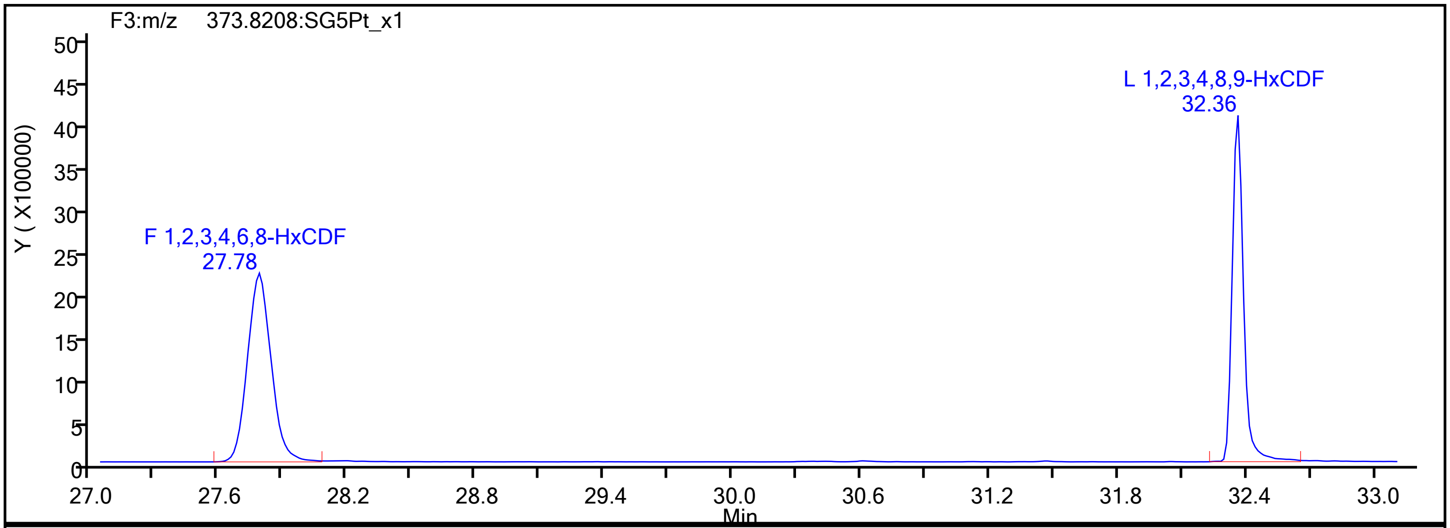

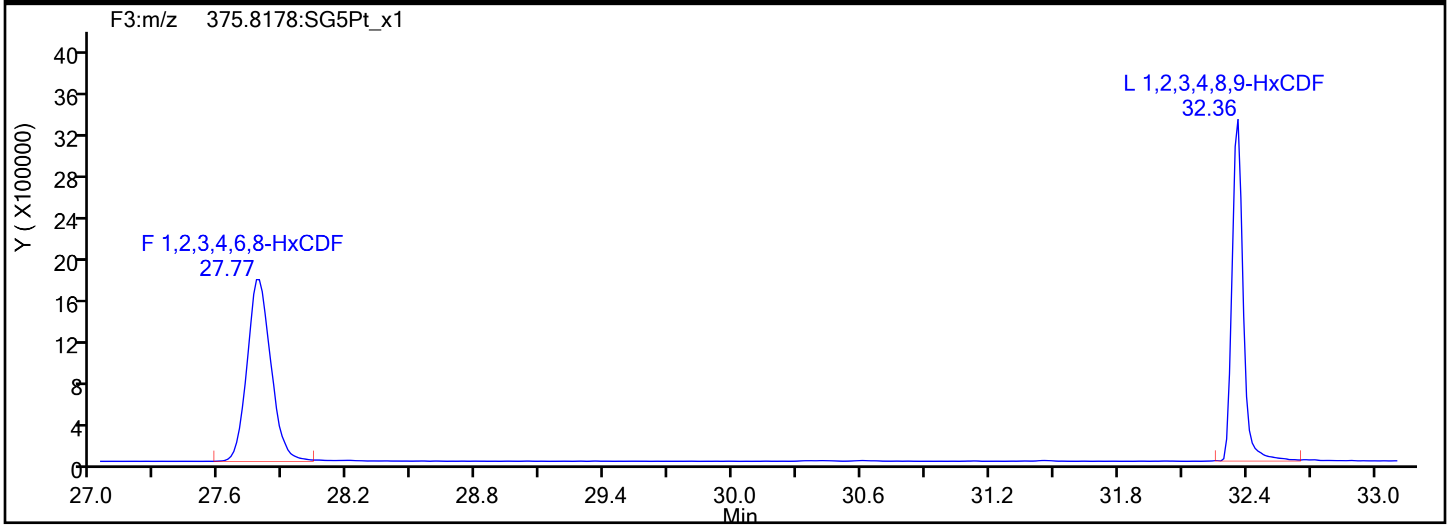

HxCDF Interference Mass

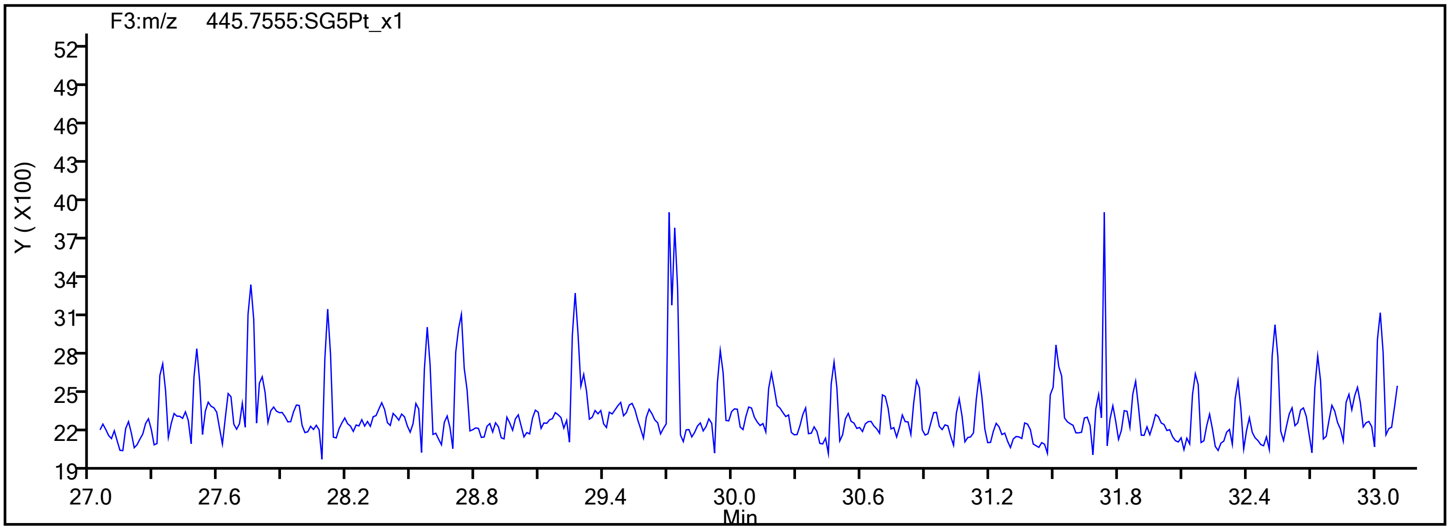

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Injection Date: 17-Sep-2020 14:12:48

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

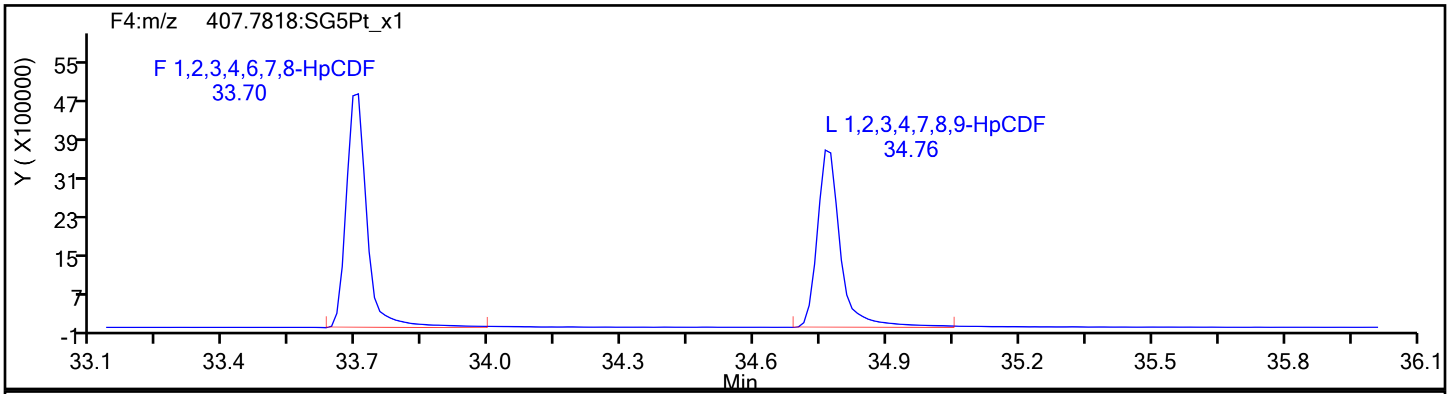

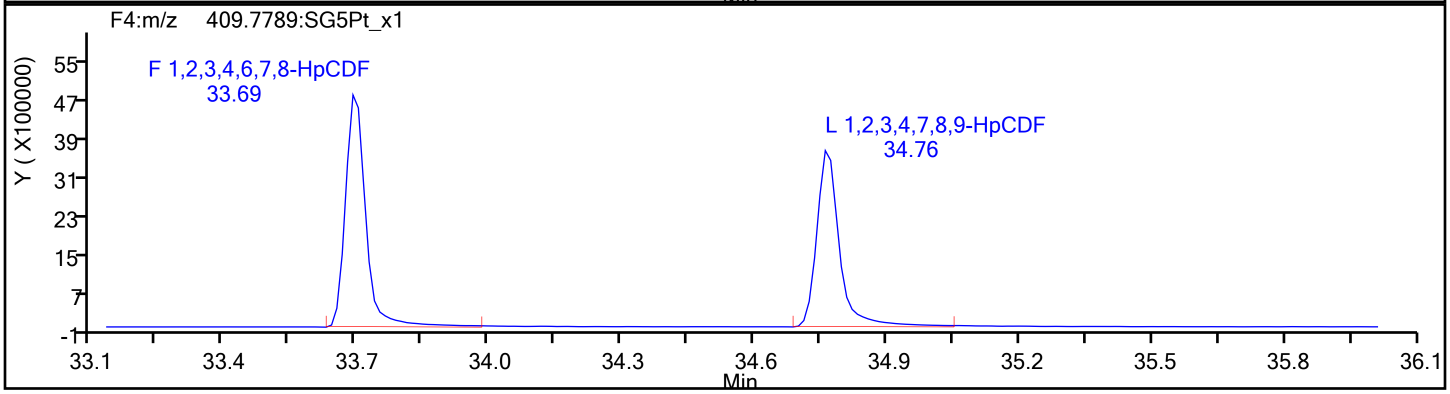

HpCDF Standards

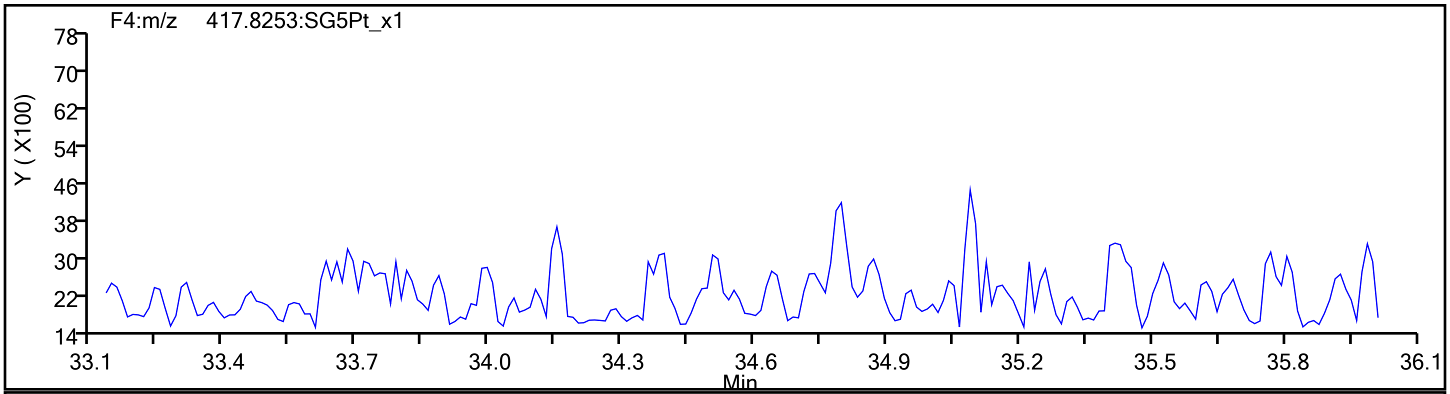

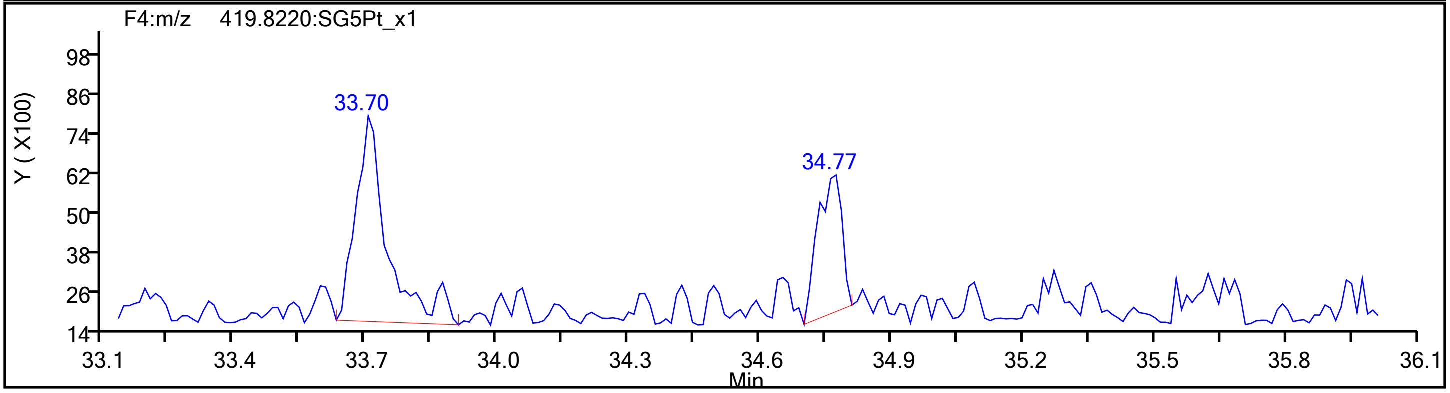

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

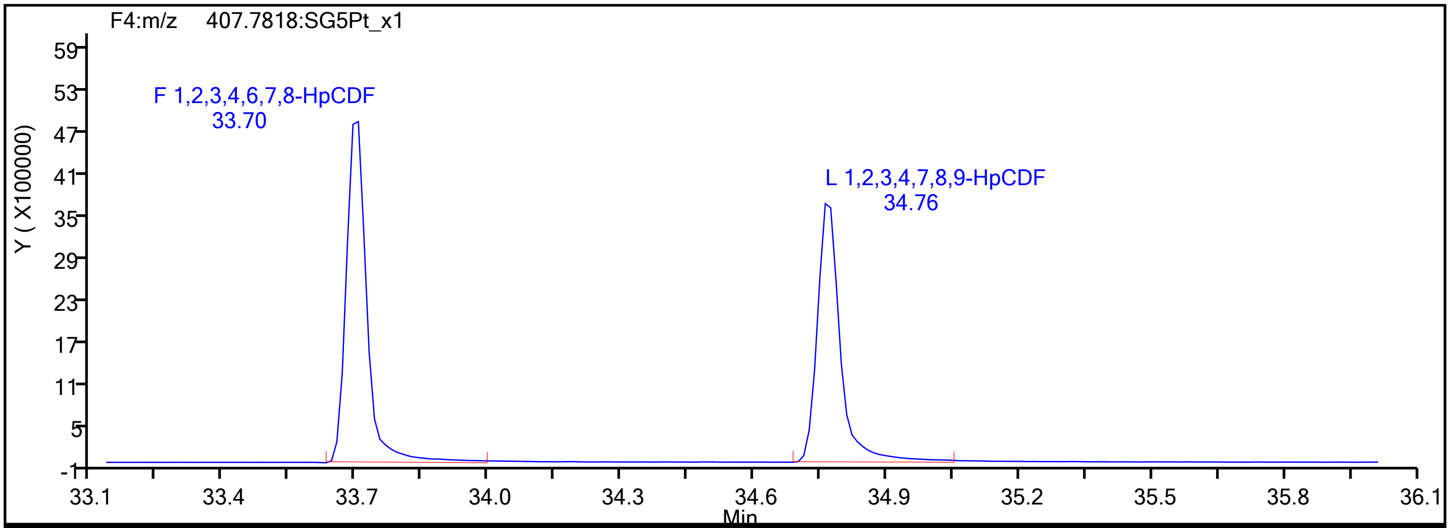

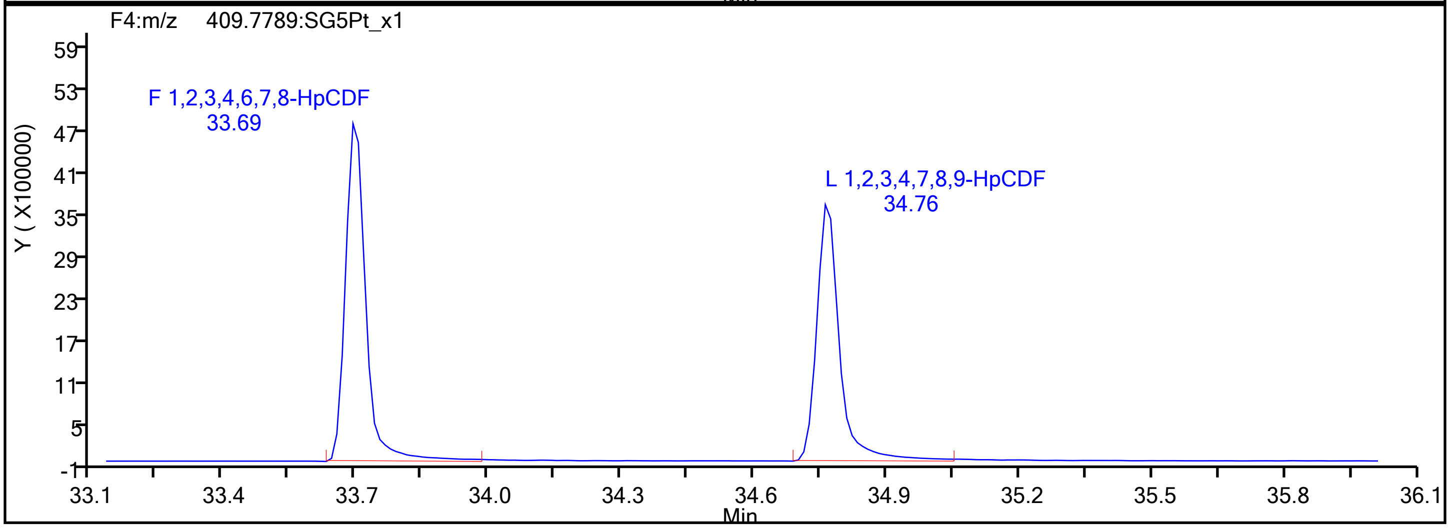

HpCDF Interference Mass

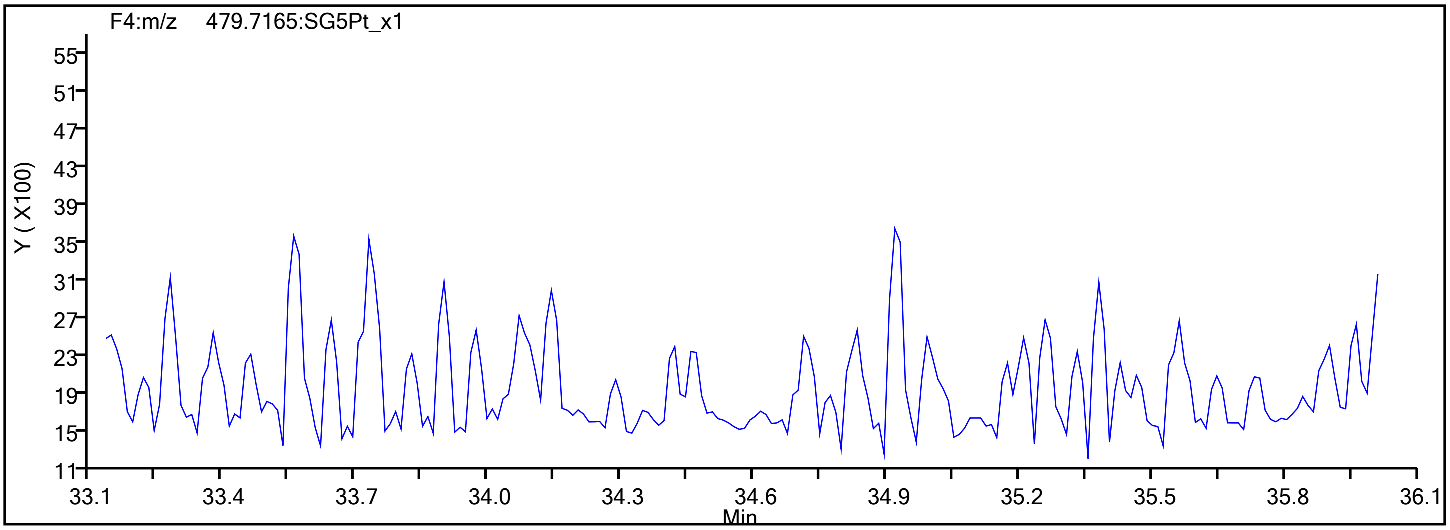

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

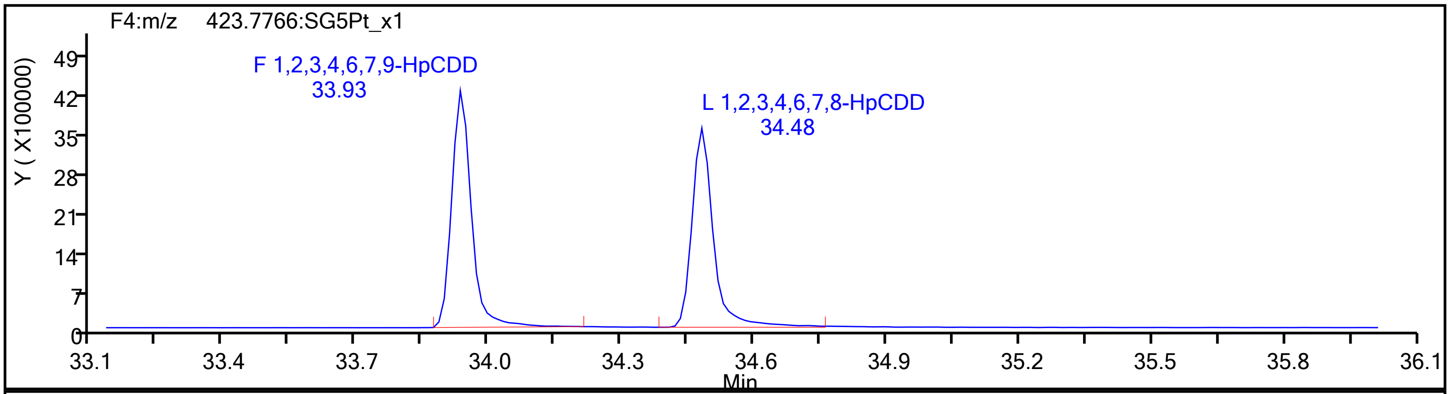

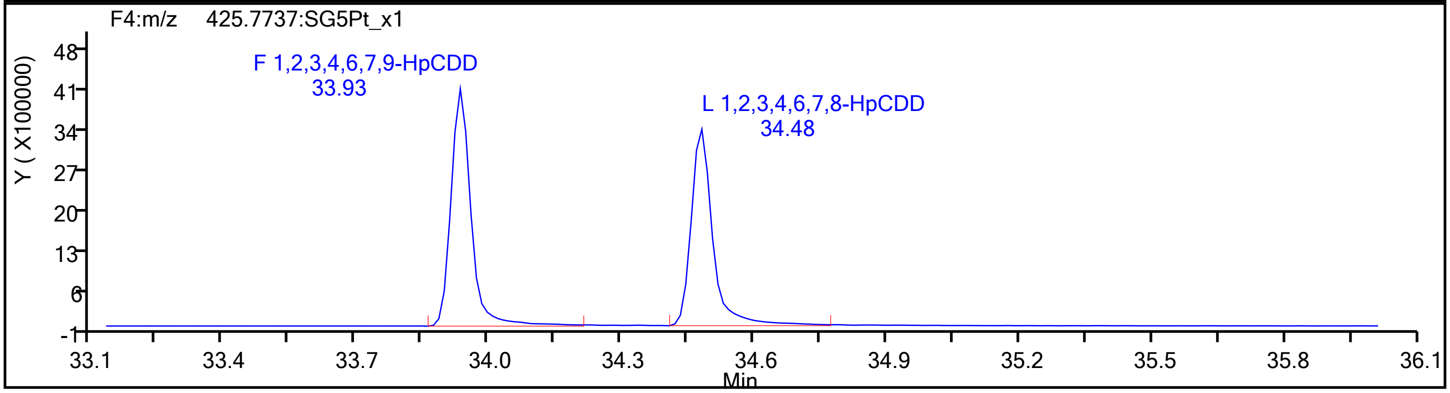

HpCDD Standards

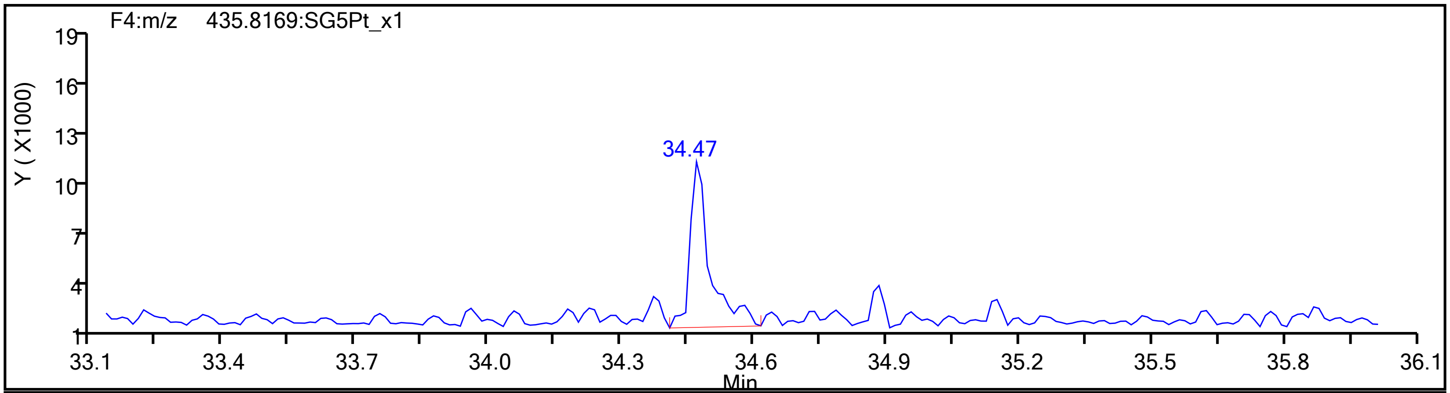

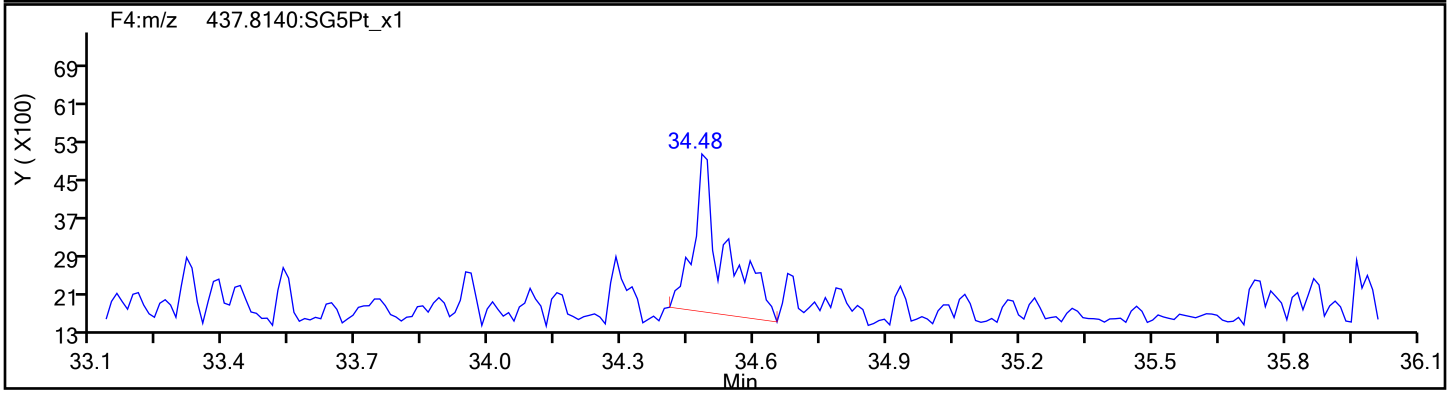

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

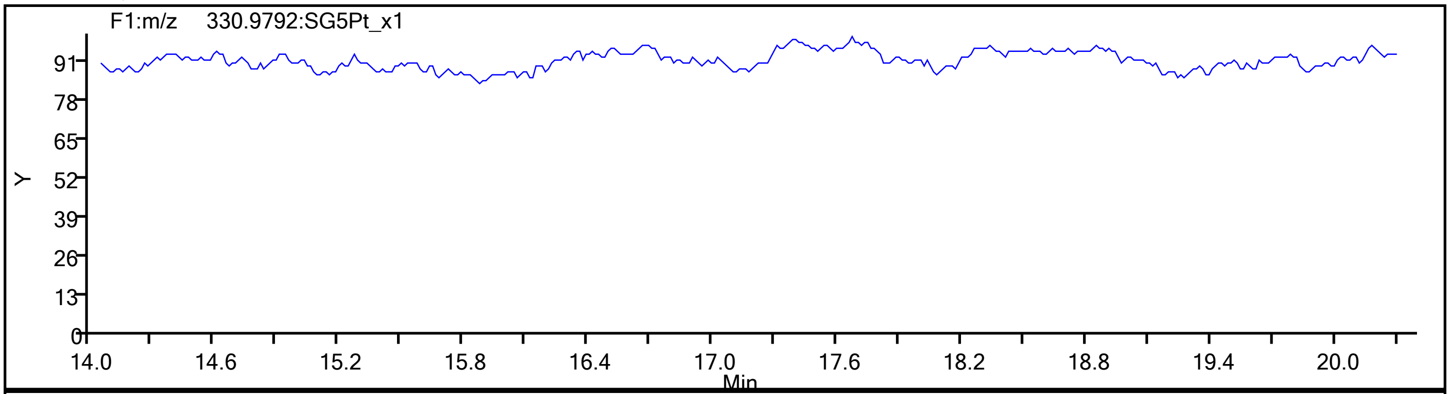

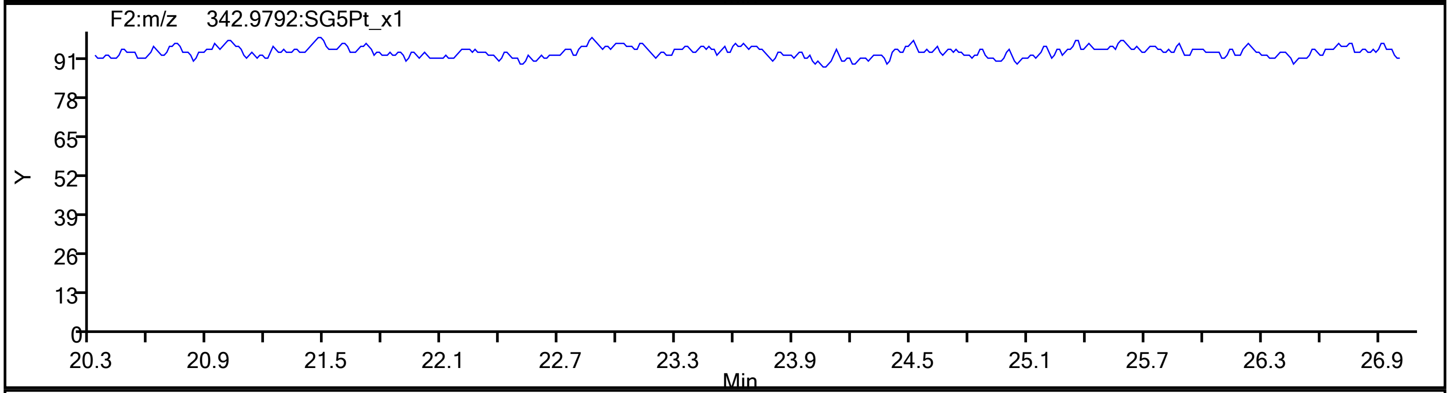

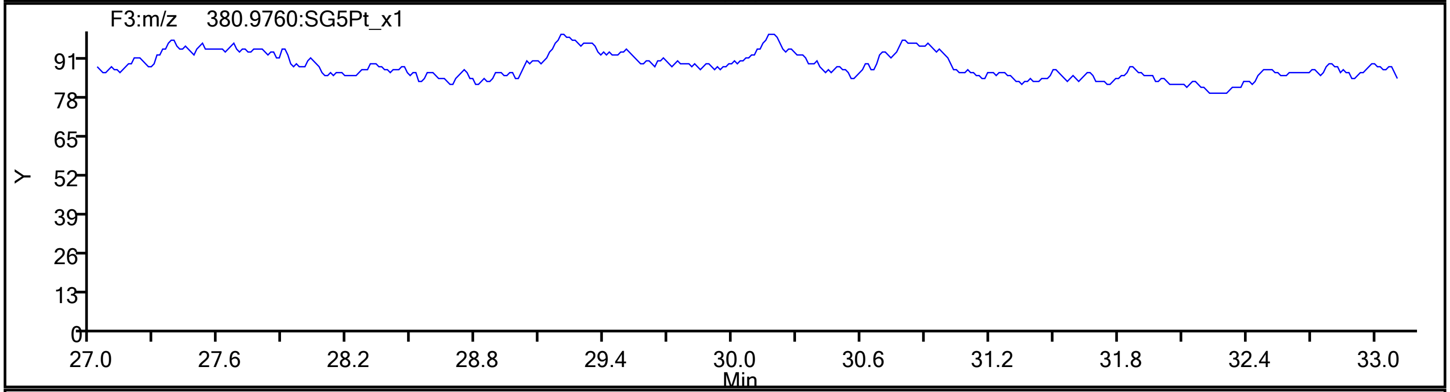

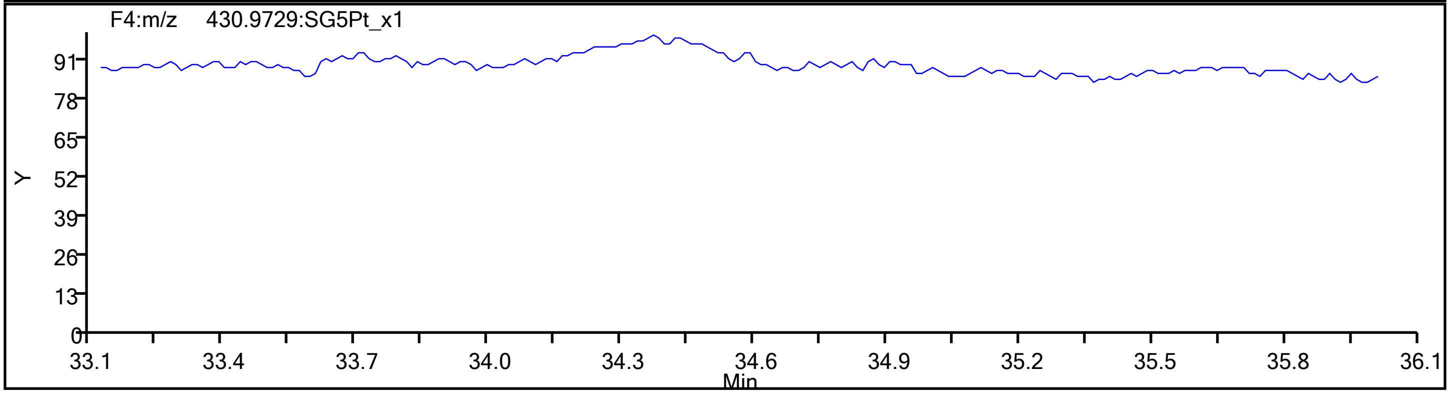

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

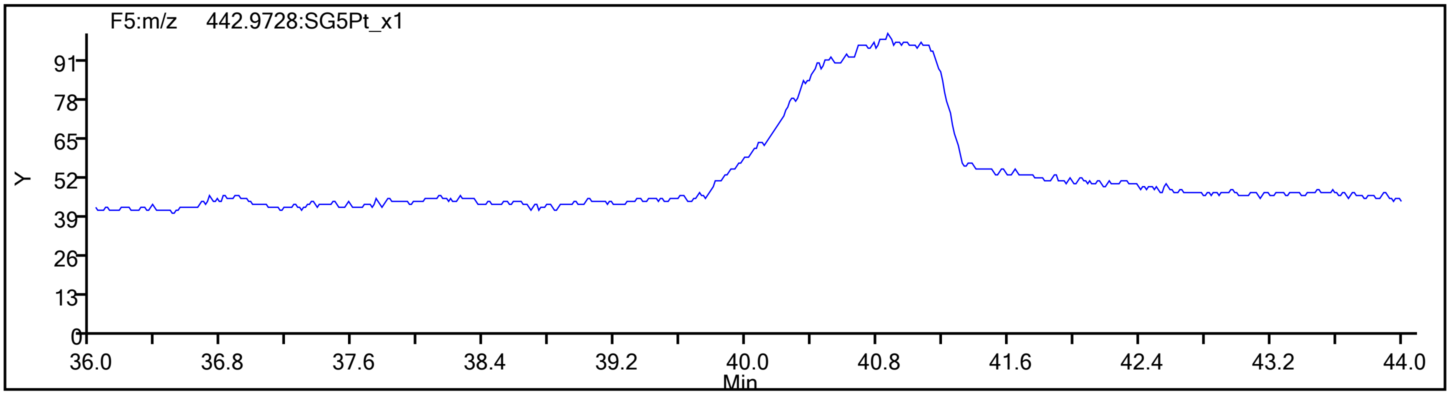

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 12-Oct-2020 21:15:36 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 101220 WDM HRDXNCP_00042
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 14:05:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 13:48:09

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.622	41099876	0.76	1.3598					0.00	
2,3,7,8-TCDF	16.637	89167004	0.78	0.9077	95.6	95.6	0.5086	0.5086		
A Non-2,3,7,8-sub-TCDF	16.342						0.5086	0.5086		
S Total TCDF					95.6	95.6	0.5086	0.5086		
D 13C-2,3,7,8-TCDD	17.287	25327074	0.78	1.0536					0.00	
2,3,7,8-TCDD	17.302	29808663	0.74	1.0061	46.8	46.8	0.3084	0.3084		
A Non-2,3,7,8-sub-TCDD	16.781						0.3084	0.3084		
S Total TCDD					46.8	46.8	0.3084	0.3084		
A F1 PeCDFs	19.147						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.128	150041	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	22.290						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.283						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	29.888	193163	1.17	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.366	22785226	1.05	1.3603						
1,2,3,4,7,8,9-HpCDF	34.411	18171136	1.05	1.3207						
A Non-2,3,7,8-sub-HpCDF	33.889						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.144	14604946	1.04	0.9988						
A Non-2,3,7,8-sub-HpCDD	33.870						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.324	51172571	0.80							
1,3,6,8-TCDD	15.201	31183888	0.77							
2,3,4,7-TCDF	16.637	89167004	0.78							
1,2,3,7-TCDD	17.196	25133951	0.83							
1,2,3,9-TCDF	17.453	38733340	0.78							
1,2,3,9-TCDD	17.453	32453916	0.80							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	18.361	12687938								
1,2,8,9-TCDF	18.361	39289756	0.78							
1,3,4,6,8-PeCDF	18.618	35371527	1.60							
1,2,4,7,9-PeCDD	20.292	23567664	1.59							
1,2,3,8,9-PeCDD	24.288	20689554	1.61							
1,2,3,8,9-PeCDF	24.506	26236203	1.60							
1,2,3,4,6,8-HxCDF	26.654	29837271	1.27							
1,2,4,6,7,9-HxCDD	28.145	20409039	1.26							
1,2,3,4,6,7-HxCDD	31.552	18623026	1.26							
1,2,3,4,8,9-HxCDF	31.911	25221405	1.26							
1,2,3,4,6,7,9-HpCDD	33.597	16542063	1.04							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 12-Oct-2020 21:15:36 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 101220 WDM HRDXNCP_00042
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 13-Oct-2020 14:05:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1642

First Level Reviewer: shardaa Date: 13-Oct-2020 13:48:09

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.622	16.622	0	1.000	17694193	4451818	10536	26340	423		
317.9389	16.622	16.622	0	1.000	23405683	5869038	4634	11585	1267	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.637	16.637	0	1.001	39188022	8929510	20472	51180	436		
305.8987	16.637	16.637	0	1.001	49978982	11386933	27172	67930	419	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.342						20472	51180			
305.8987	16.342						27172	67930			
13C-2,3,7,8-TCDD											
331.9368	17.287	17.287	0	1.000	11101604	2644588	4270	10675	619		
333.9339	17.287	17.287	0	1.000	14225470	3365868	2465	6162	1365	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.302	17.302	0	1.001	12665767	3143586	7281	18202	432		
321.8936	17.302	17.302	0	1.001	17142896	3990908	11372	28430	351	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	16.781						7281	18202			
321.8936	16.781						11372	28430			
A F1 PeCDFs											
339.8597	19.147						1327	3317			
341.8567	19.147						1109	2772			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	21.397	22.128	-44	1.000	120037	17410	2794	6985	6		
341.8567	21.383	22.128	-45	1.000	58840	11128	2060	5150	5	2.04(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.290						4159	10397			
357.8516	22.290						2638	6595			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.283						4868	12170			
375.8178	29.283						3600	9000			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.141	29.888	15	1.000	104192	14709	3141	7852	5		
391.8127	30.115	29.888	14	1.000	88971	11204	2742	6855	4	1.17(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.366	33.366	0	1.000	11693460	3437689	18984	47460	181		
409.7789	33.366	33.366	0	1.000	11091766	3232712	17776	44440	182	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.411	34.411	0	1.000	9299562	2303930	18984	47460	121		
409.7789	34.411	34.411	0	1.000	8871574	2215562	17776	44440	125	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.889						18984	47460			
409.7789	33.889						17776	44440			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.144	34.144	0	1.000	7462172	1928934	15180	37950	127		
425.7737	34.132	34.144	-1	1.000	7142774	1792521	14234	35585	126	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.870						15180	37950			
425.7737	33.870						14234	35585			
1,3,6,8-TCDF											
303.9016	14.324	14.324	0		22703305	6924644	20472	51180	338		
305.8987	14.324	14.324	0		28469266	8782268	27172	67930	323	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.201	15.201	0		13583224	3986089	7281	18202	547		
321.8936	15.201	15.201	0		17600664	5098441	11372	28430	448	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	16.637	16.637	0		39188022	8929510	20472	51180	436		
305.8987	16.637	16.637	0		49978982	11386933	27172	67930	419	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.196	17.196	0		11411238	2809743	7281	18202	386		
321.8936	17.196	17.196	0		13722713	3588825	11372	28430	316	0.83(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	17.453	17.453	0		16986084	4067505	20472	51180	199		
305.8987	17.453	17.453	0		21747256	5220792	27172	67930	192	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	17.453	17.453	0		14422250	3245054	7281	18202	446		
321.8936	17.453	17.453	0		18031666	4098014	11372	28430	360	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.361	18.361	0		12687938	2690684	7281	18202	370		
1,2,8,9-TCDF											
303.9016	18.361	18.361	0		17252297	3779721	20472	51180	185		
305.8987	18.361	18.361	0		22037459	4877112	27172	67930	179	0.78(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	18.618	18.618	0		21758162	4905888	1327	3317	3697		
341.8567	18.618	18.618	0		13613365	3074139	1109	2772	2772	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	20.292	20.292	0		14483982	2582454	4159	10397	621		
357.8516	20.292	20.292	0		9083682	1620836	2638	6595	614	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	24.288	24.288	0		12776790	1788525	4159	10397	430		
357.8516	24.288	24.288	0		7912764	1099654	2638	6595	417	1.61(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	24.506	24.506	0		16134125	2244894	2794	6985	803		
341.8567	24.506	24.506	0		10102078	1419844	2060	5150	689	1.60(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	26.654	26.654	0		16702714	2136876	4868	12170	439		
375.8178	26.654	26.654	0		13134557	1645306	3600	9000	457	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	28.145	28.145	0		11385258	1285561	3141	7852	409		
391.8127	28.145	28.145	0		9023781	1030249	2742	6855	376	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.552	31.552	0		10400391	2212842	3141	7852	705		
391.8127	31.552	31.552	0		8222635	1785707	2742	6855	651	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	31.911	31.911	0		14076190	3198752	4868	12170	657		
375.8178	31.911	31.911	0		11145215	2517740	3600	9000	699	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.597	33.597	0		8432668	2351873	15180	37950	155		
425.7737	33.597	33.597	0		8109395	2341245	14234	35585	164	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 12-Oct-2020 21:15:36 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 22.128

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915				
2,3,4,7,8-PeCDF	0.951				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.397	120037	17410	58840	11128		2.04	R
Signal Totals:							
	120037	17410	58840	11128			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	178877	28538				2.04	RQ
	150041	28376					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (178877 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (150041 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Oct-2020 21:15:36	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 29.888

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.001				
1,2,3,6,7,8-HxCDD	0.890				
1,2,3,7,8,9-HxCDD	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.141	104192	14709	88971	11204		1.17	
Signal Totals:							
	104192	14709	88971	11204			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	193163	25913				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.0 = (193163 * 0.0) / (0 * 0.000)

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

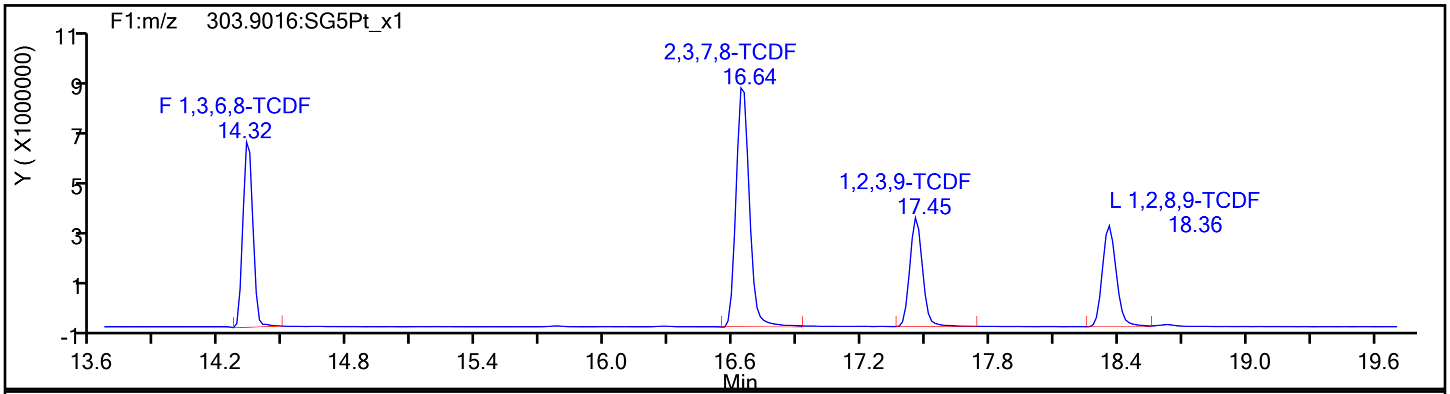

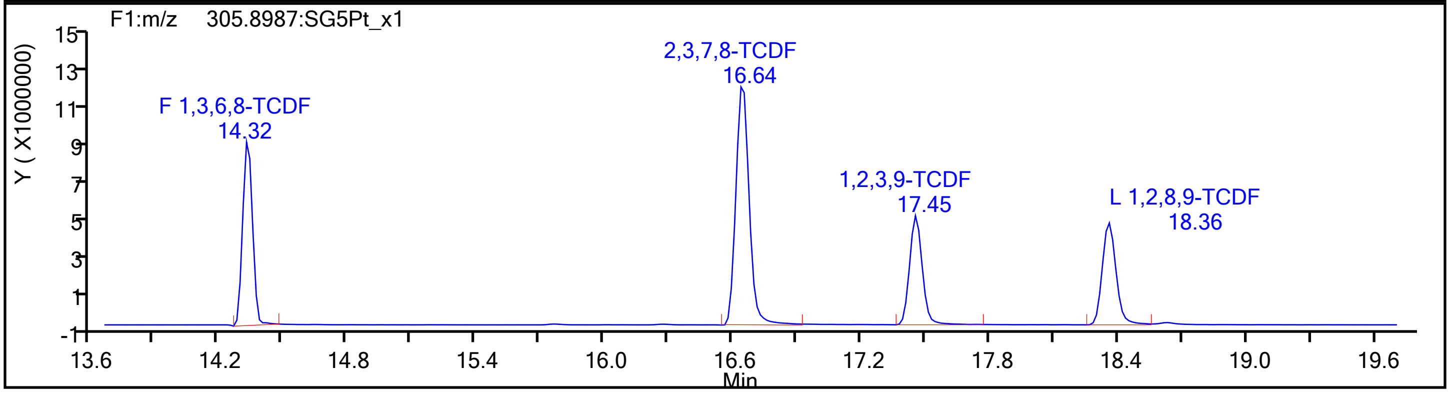

TCDF Standards

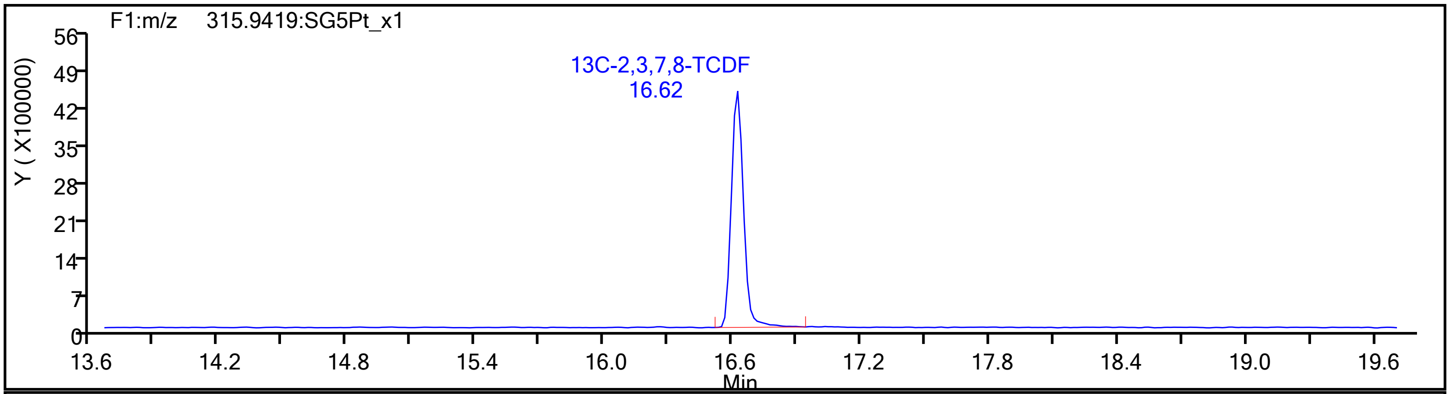

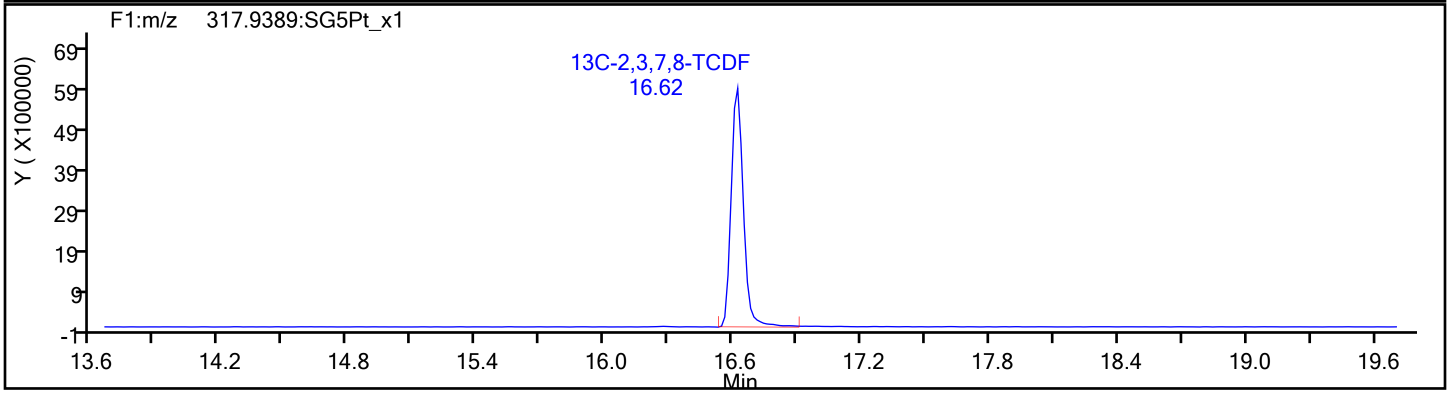

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

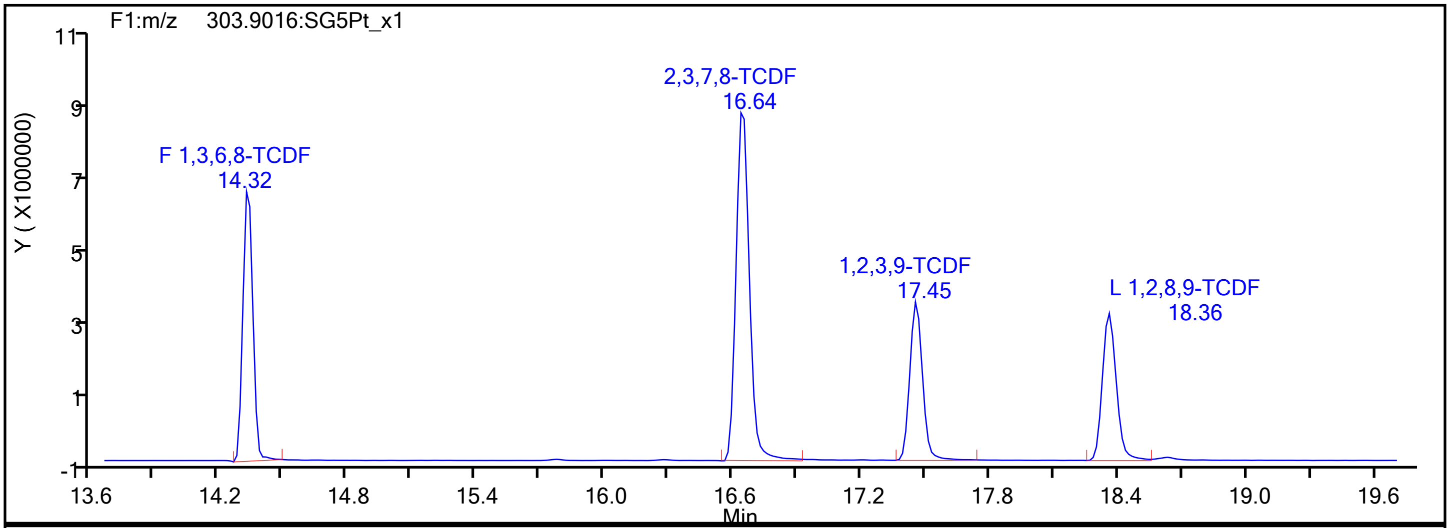

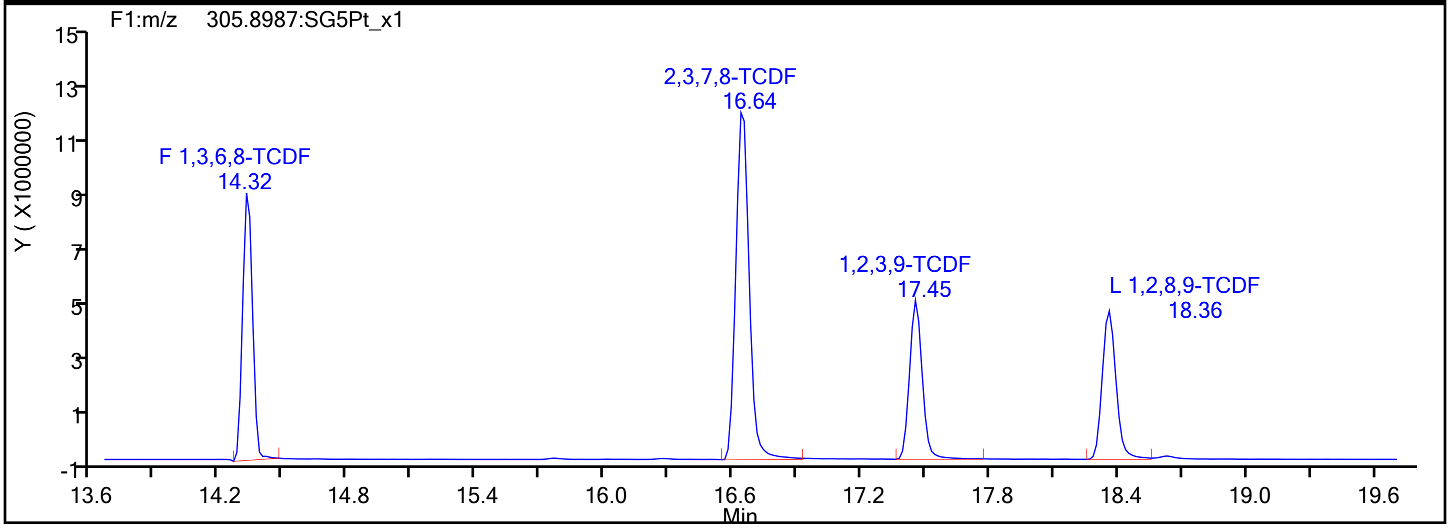

TCDF Interference Mass

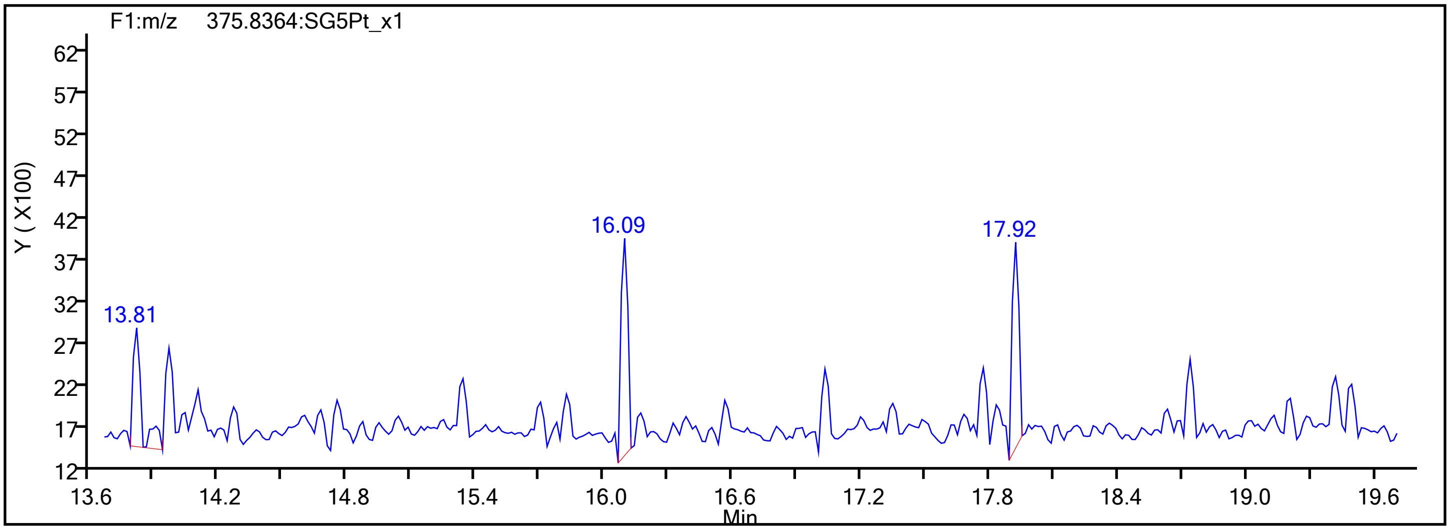

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

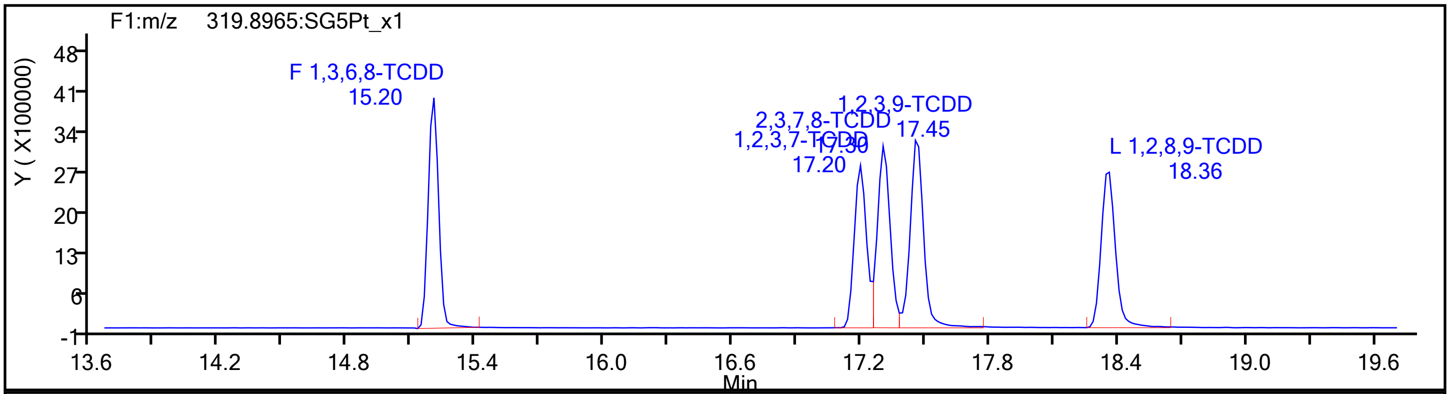

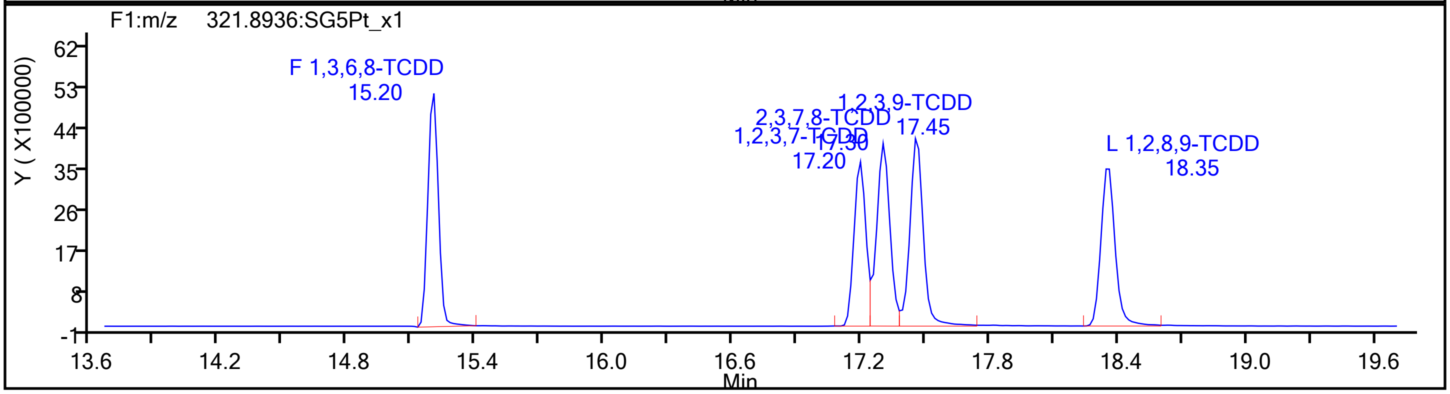

TCDD Standards

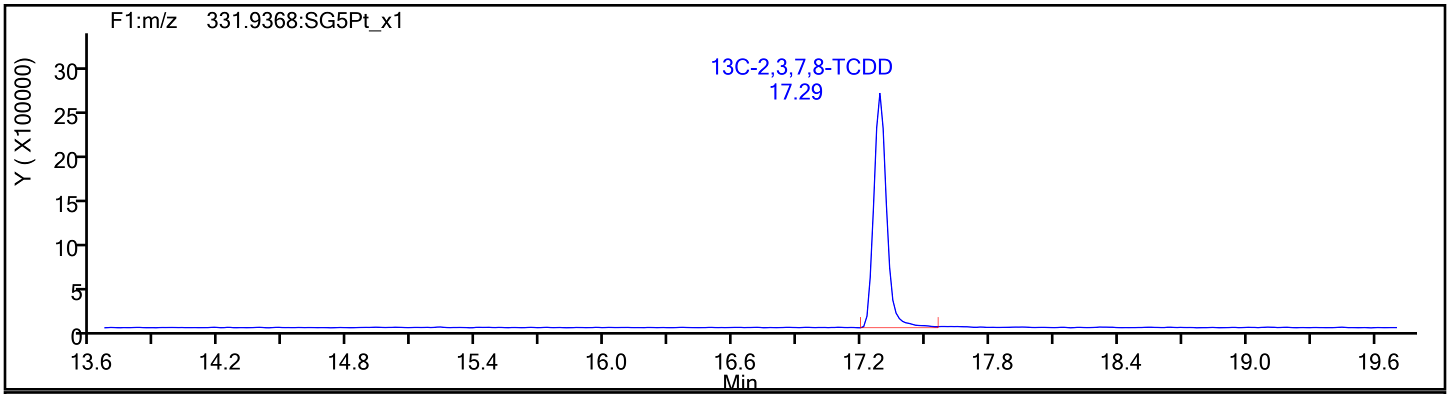

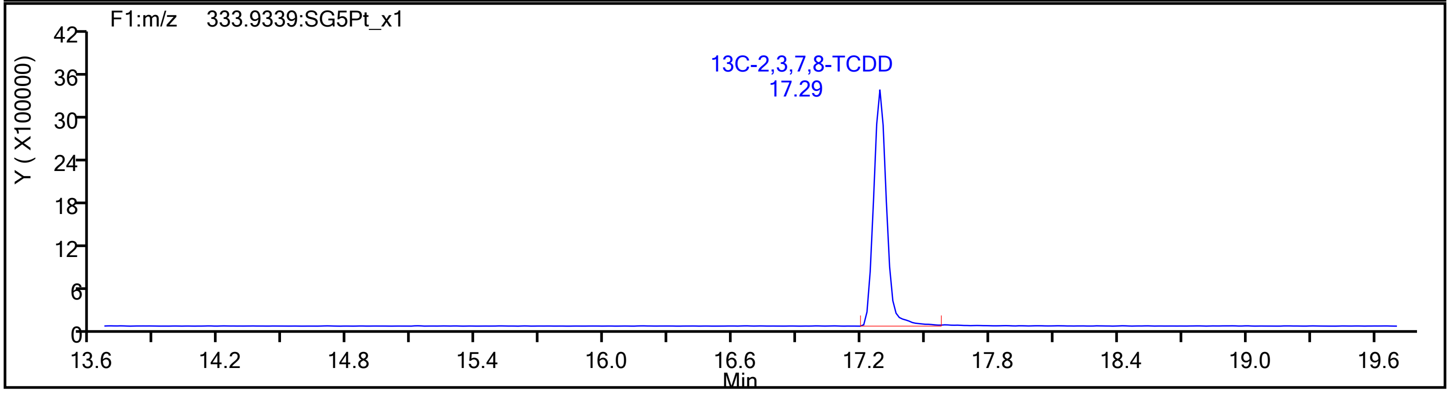

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

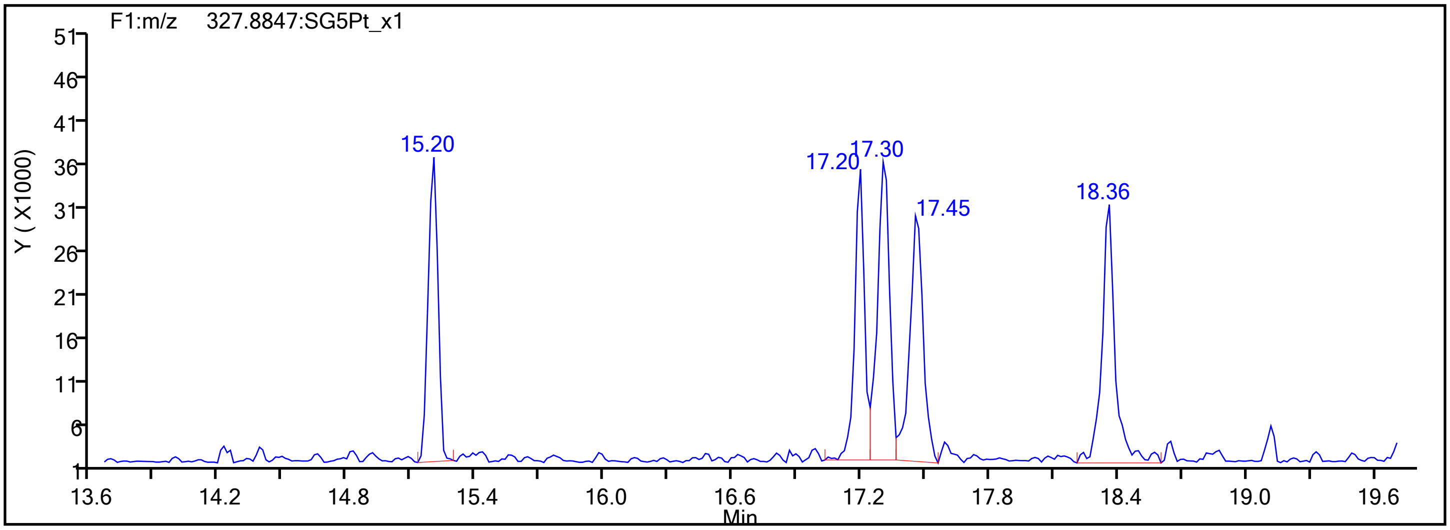

37Cl4-TCDD Standards

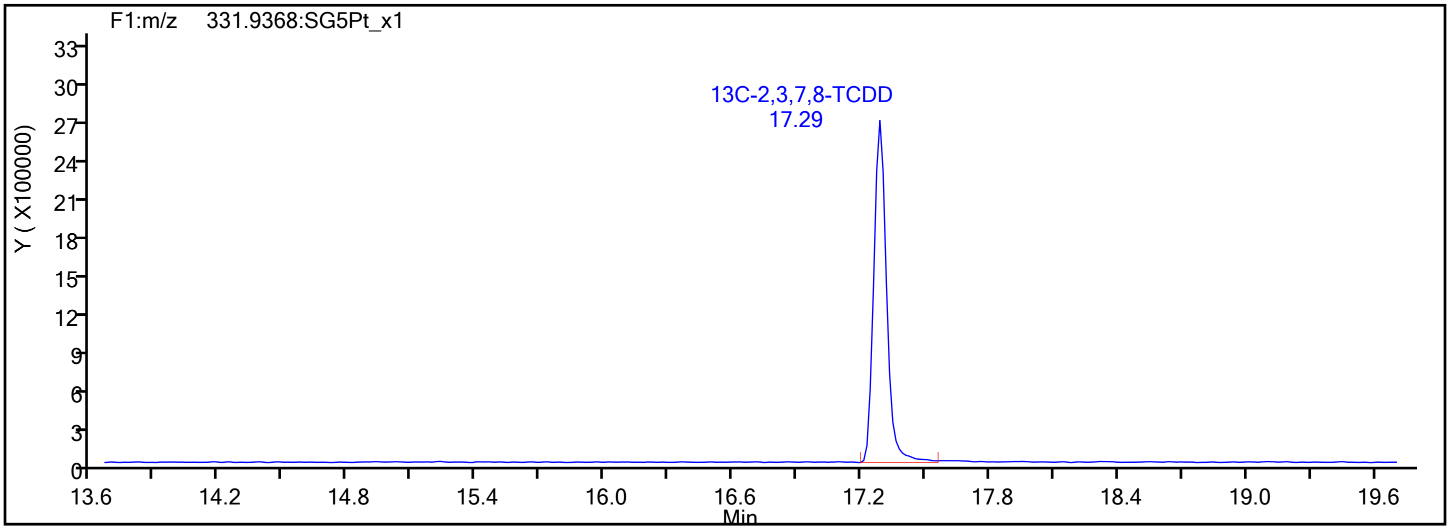

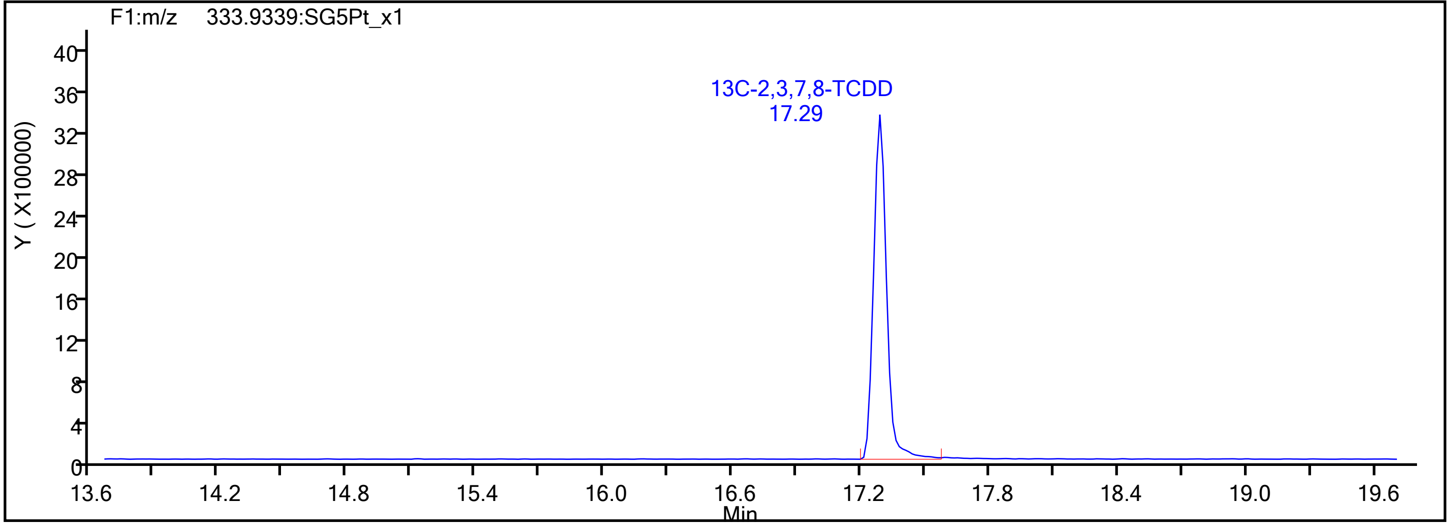

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

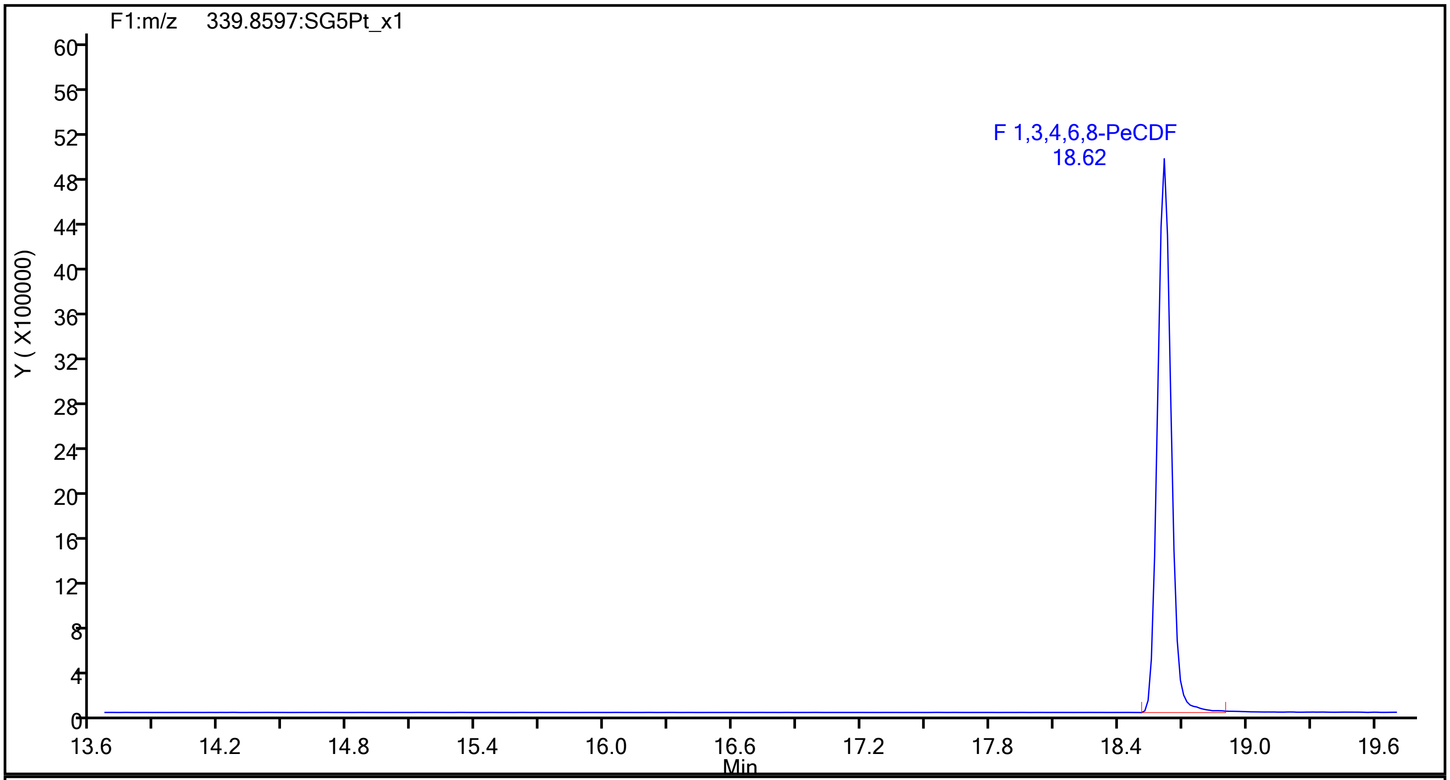

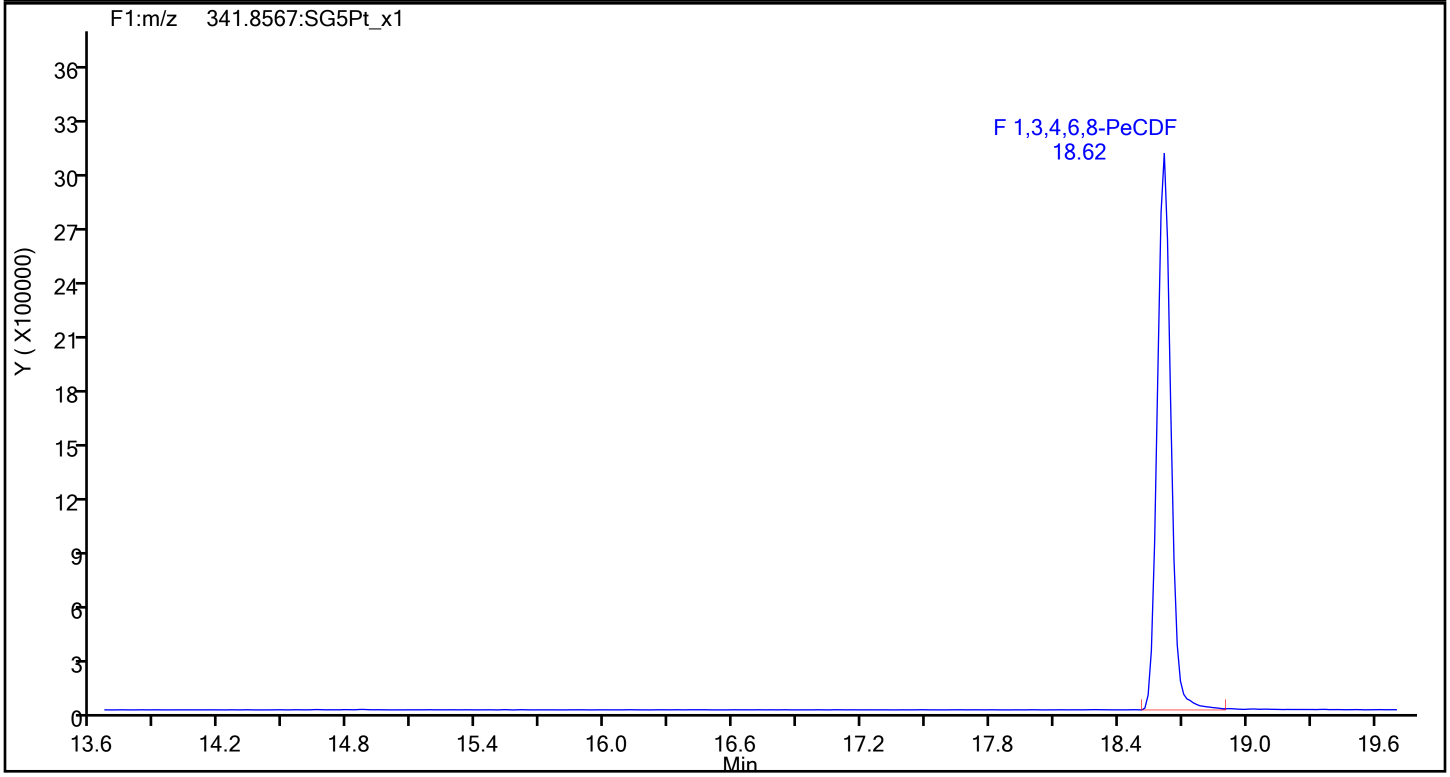

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

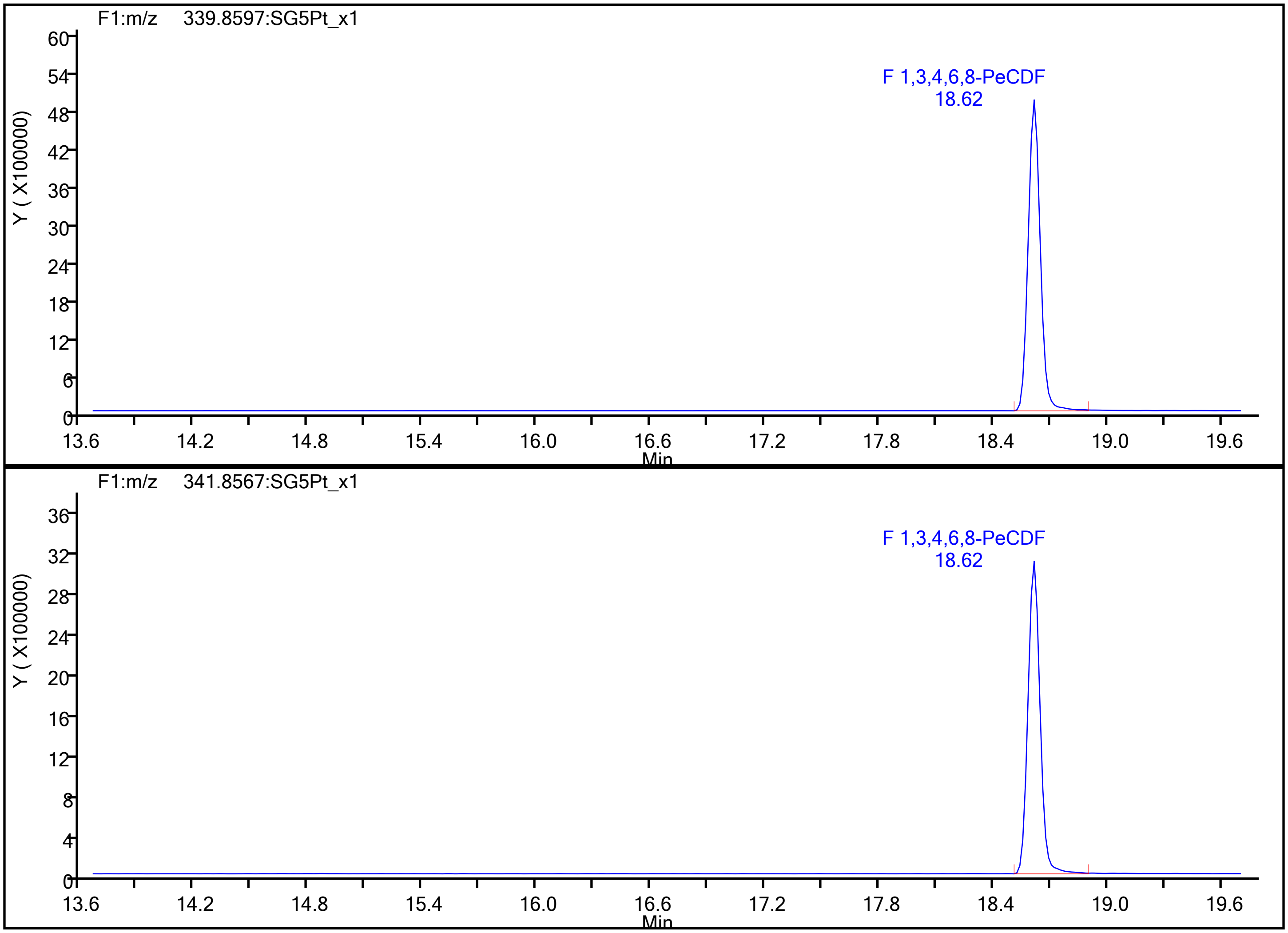

F1 PeCDFs Interference Mass

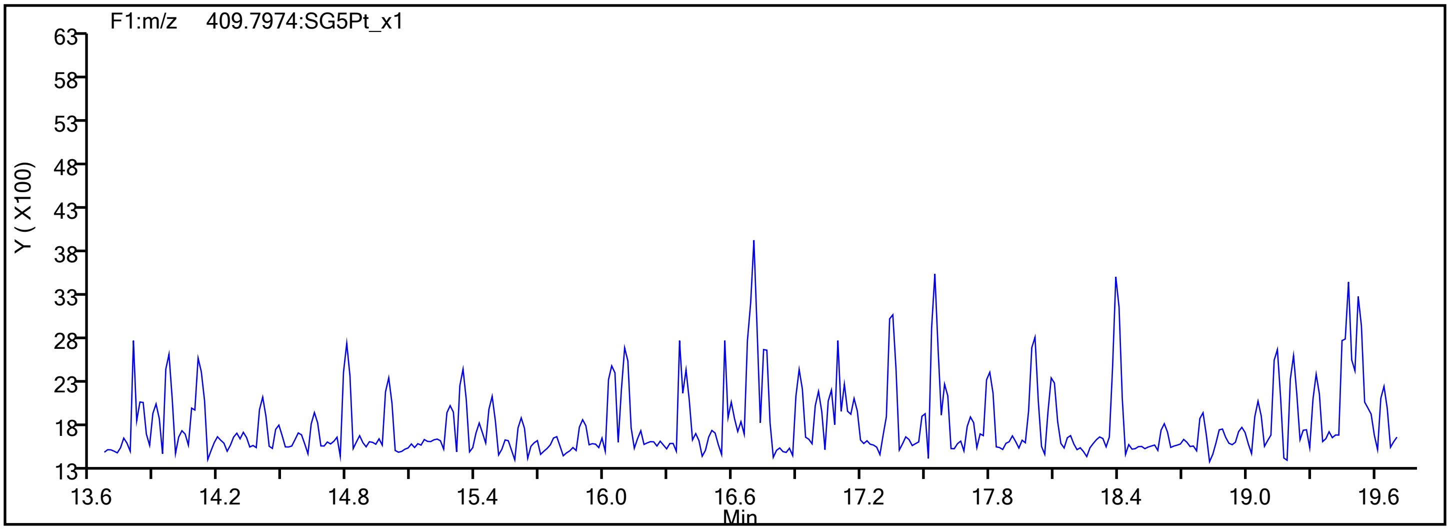

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d
Injection Date: 12-Oct-2020 21:15:36
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

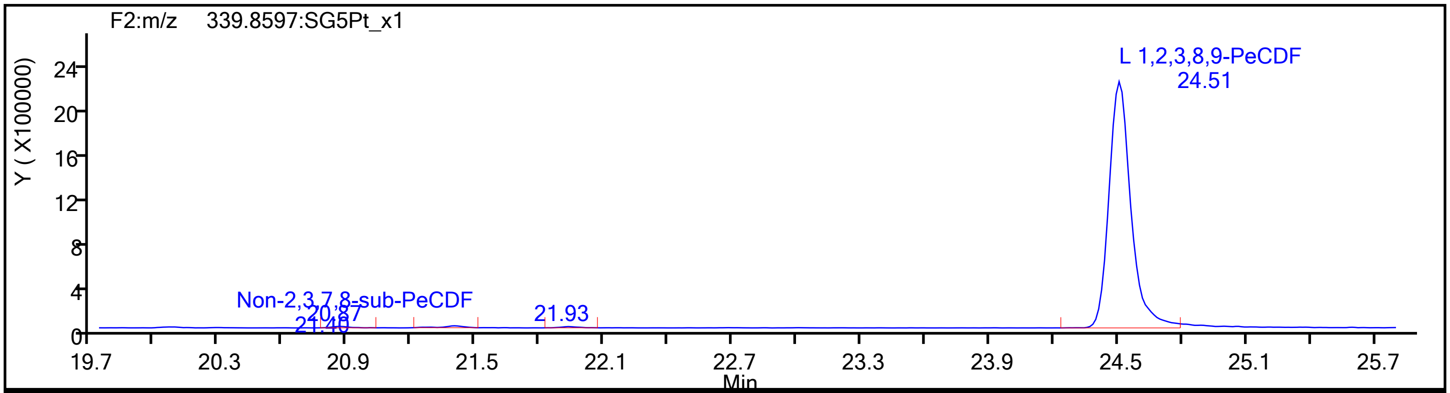

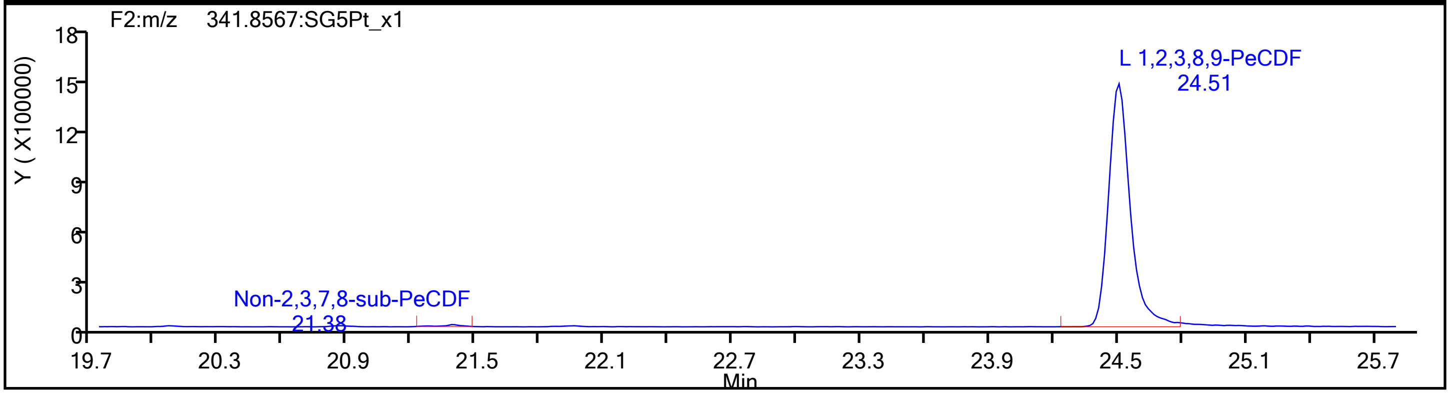

PeCDF Standards

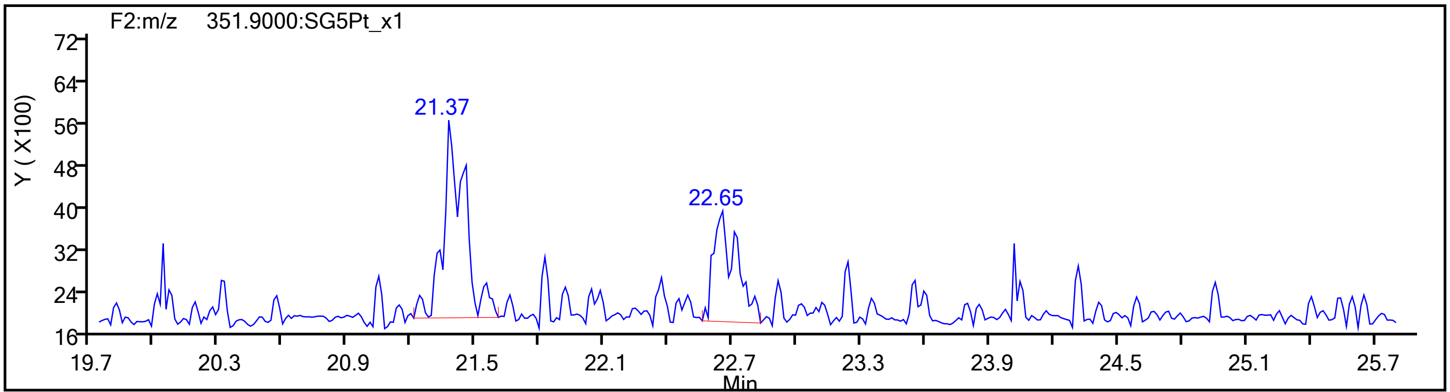

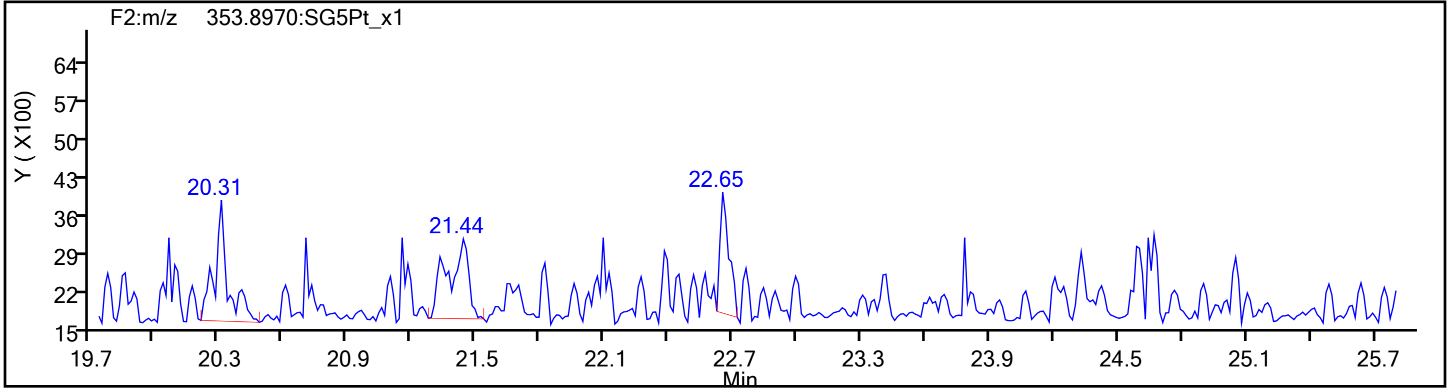

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

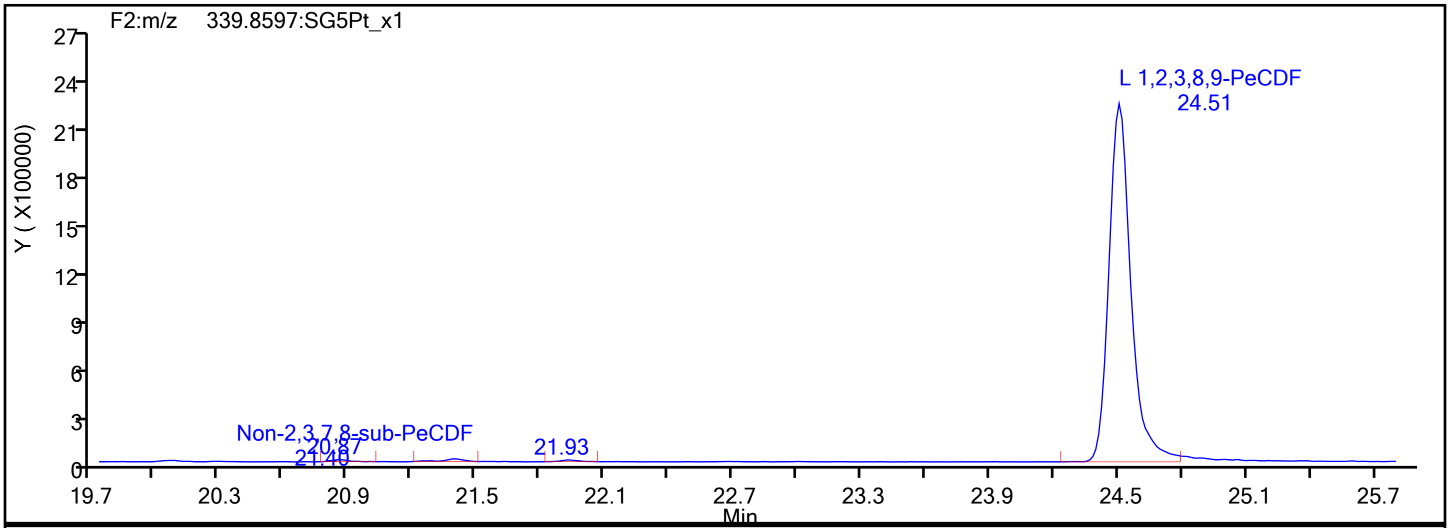

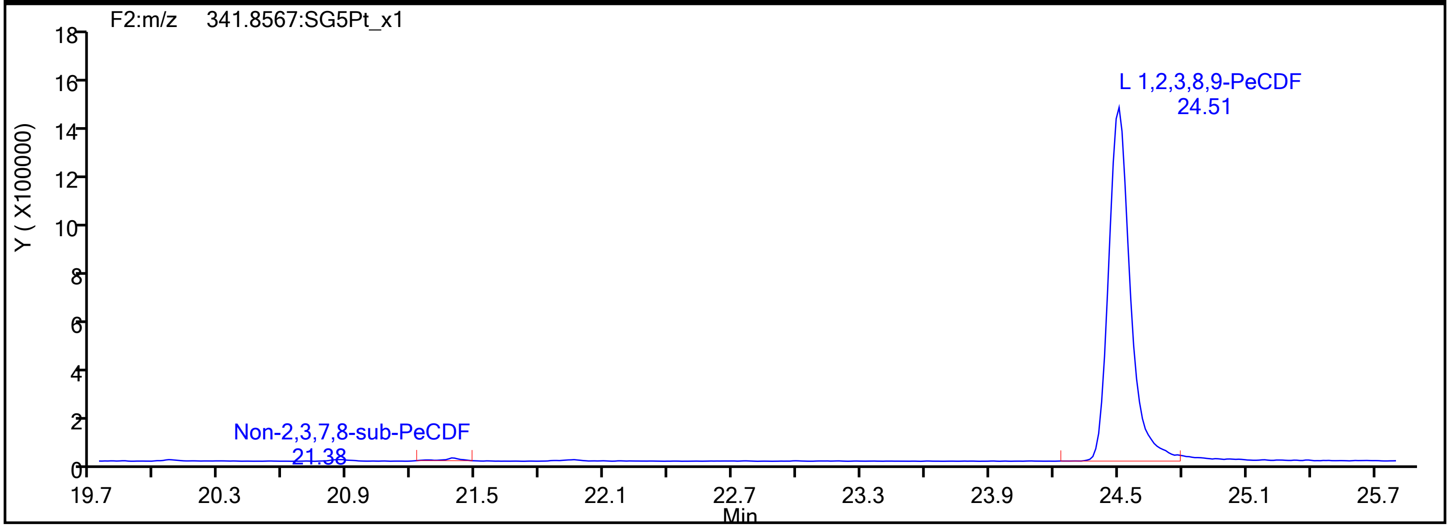

PeCDF Interference Mass

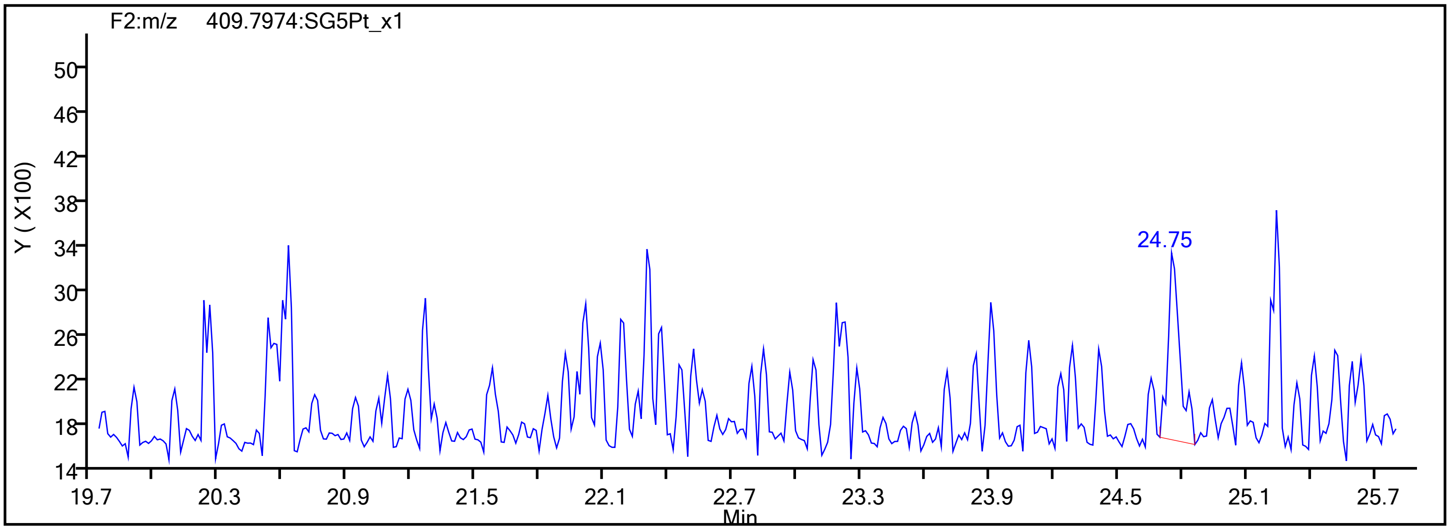

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

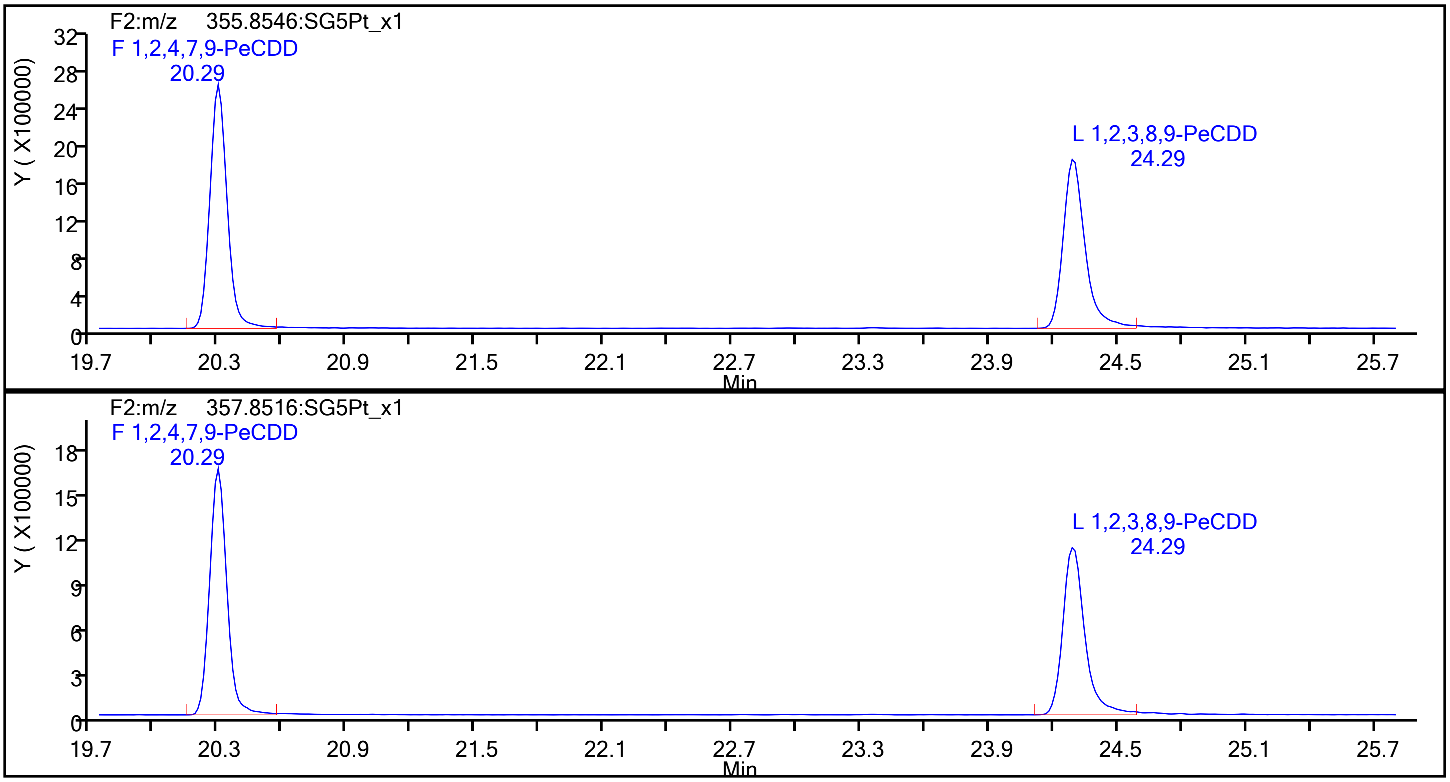

PeCDD Standards

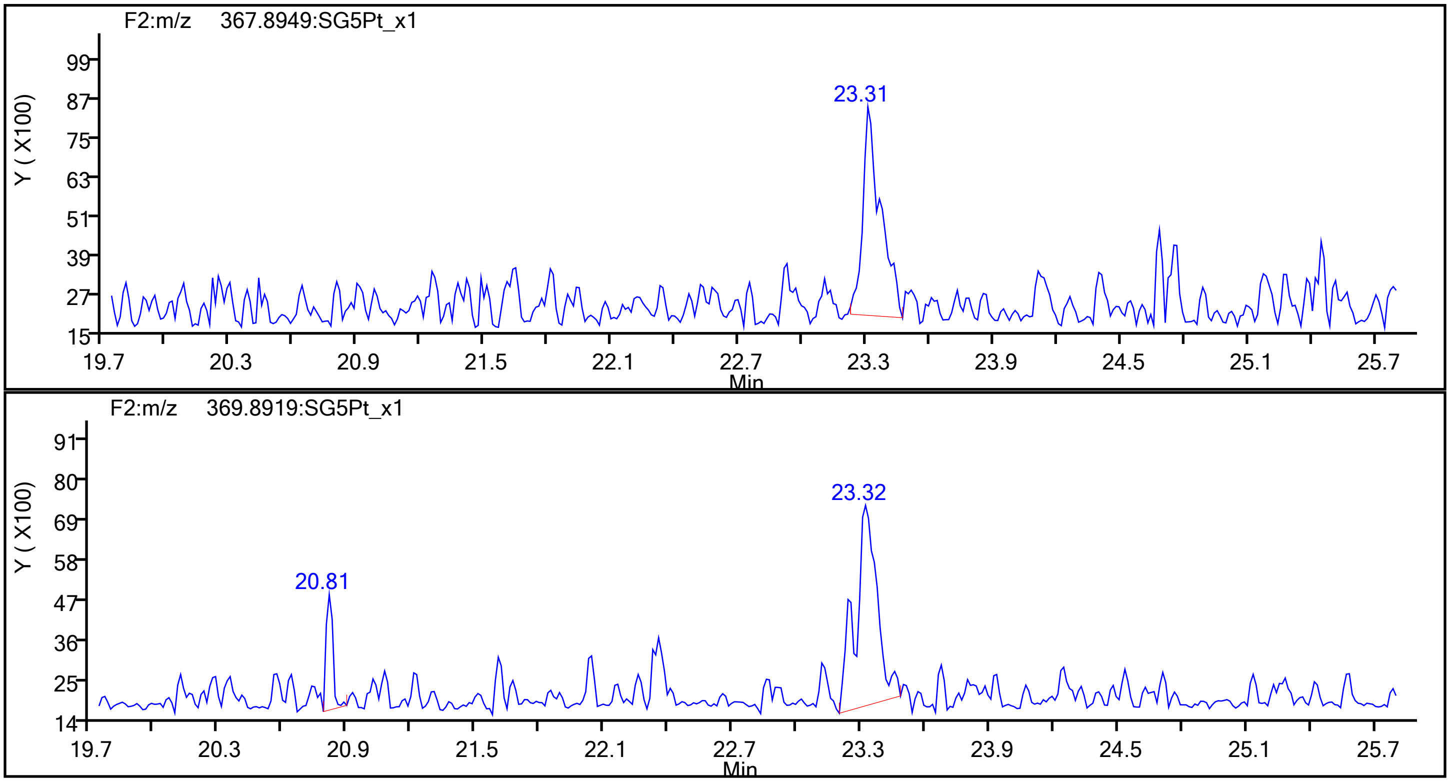

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

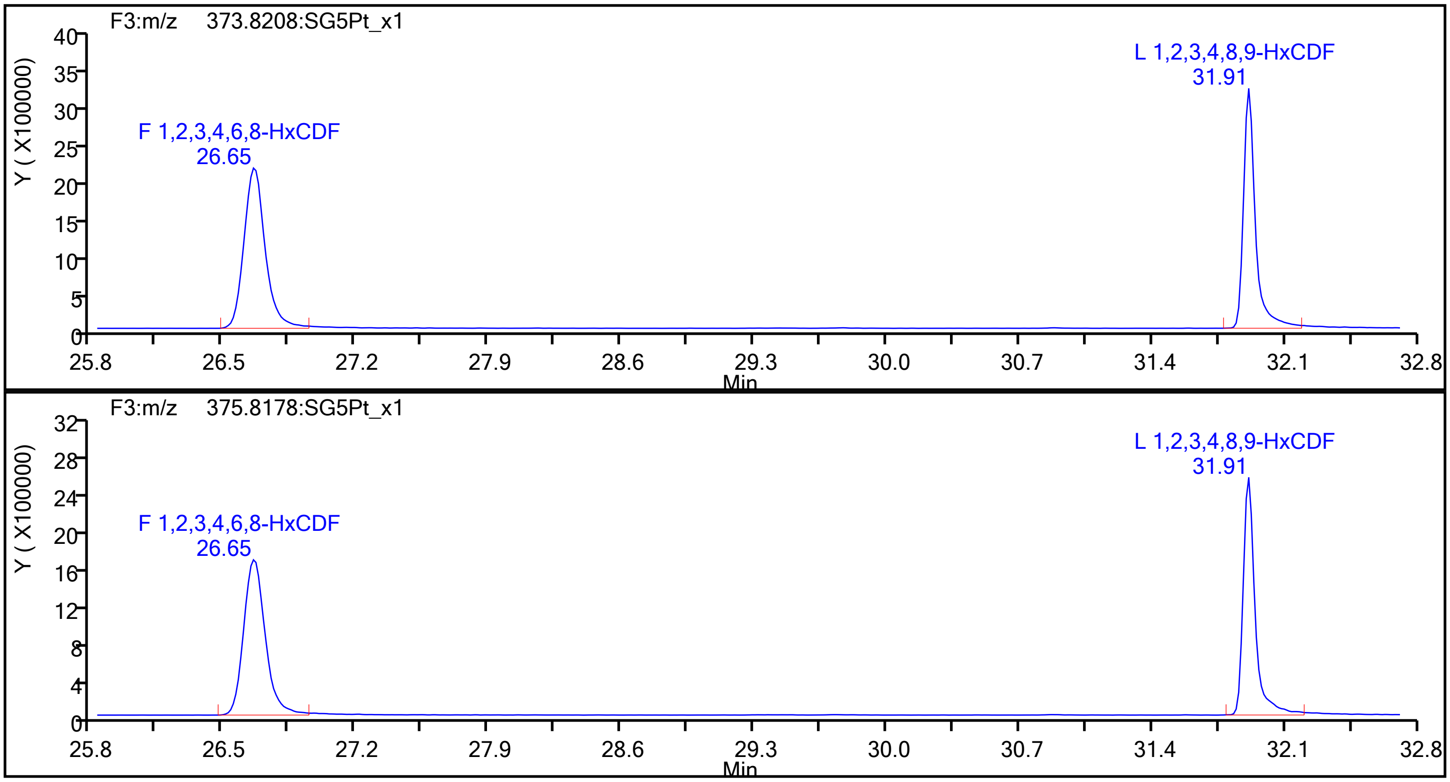

HxCDF Standards

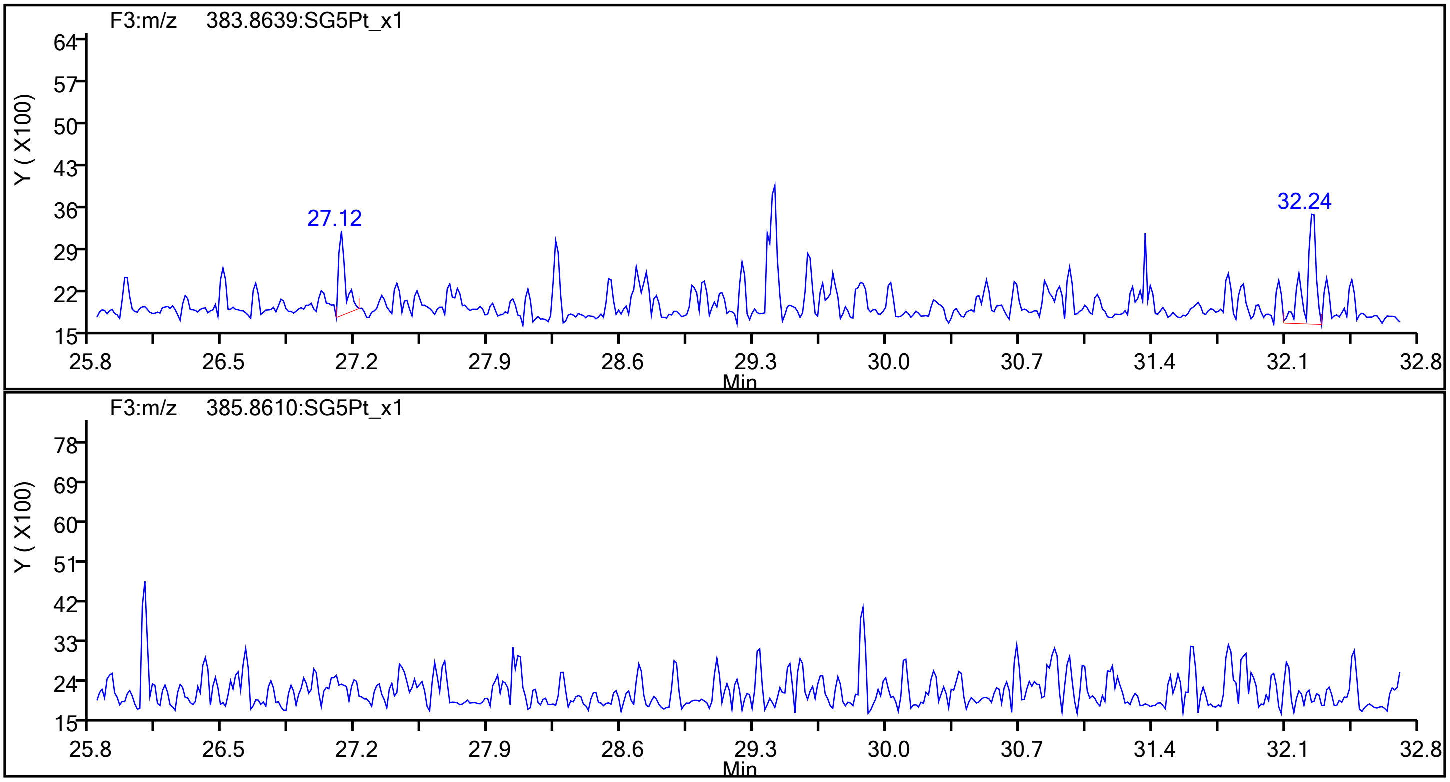

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d

Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

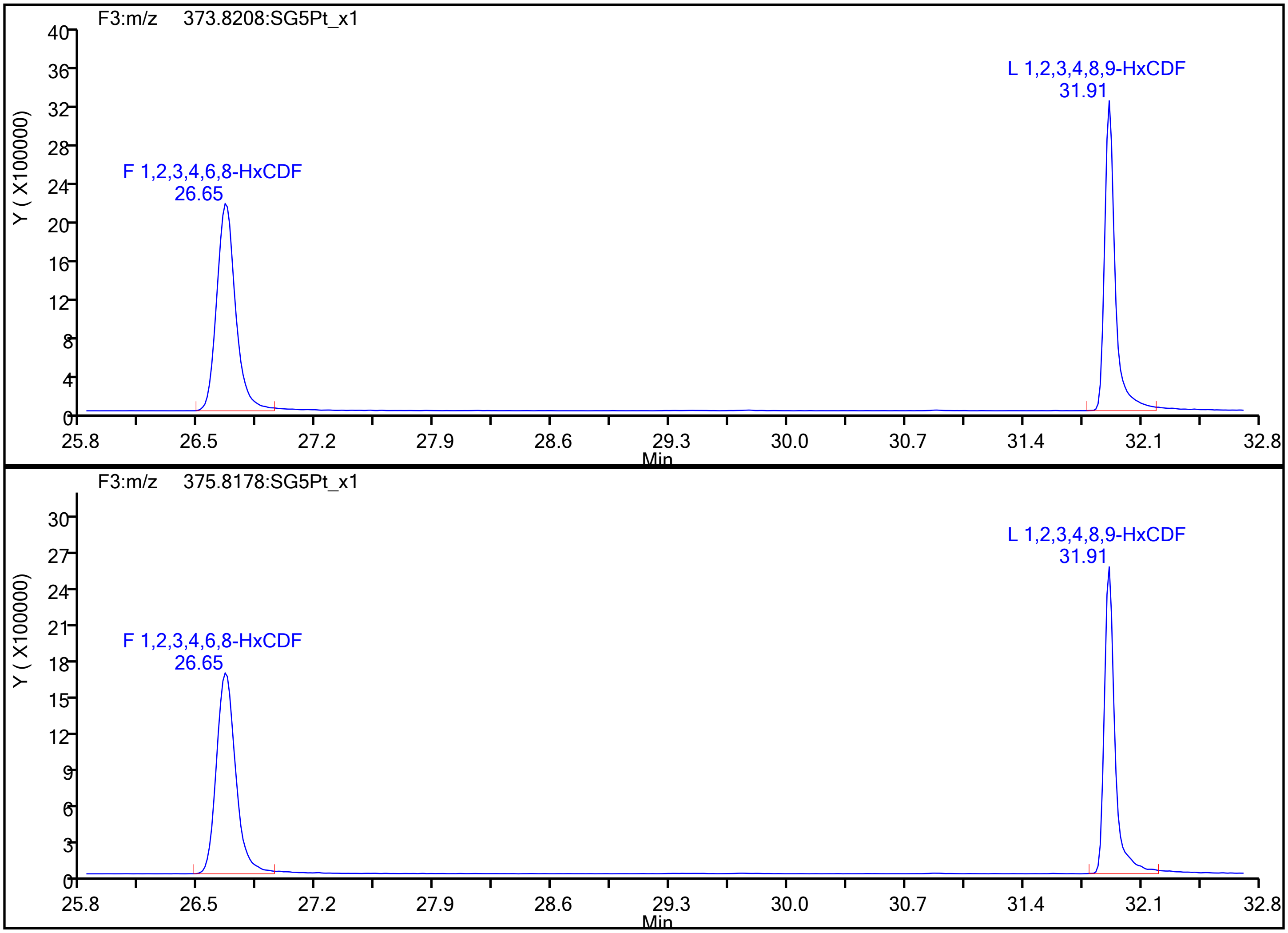

HxCDF Interference Mass

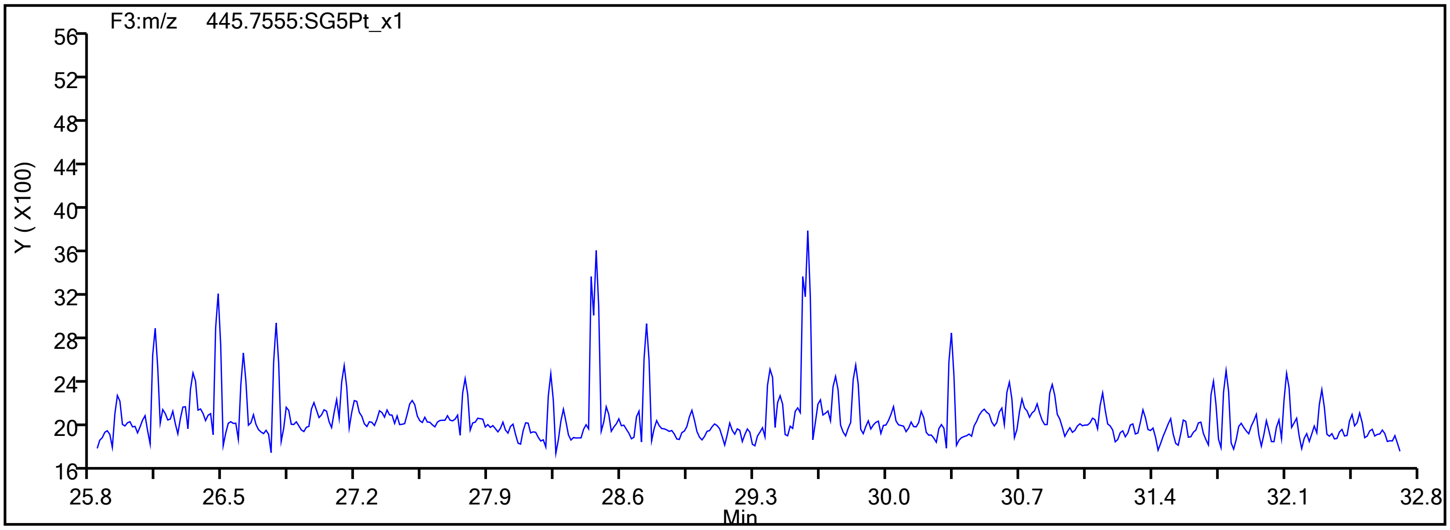

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

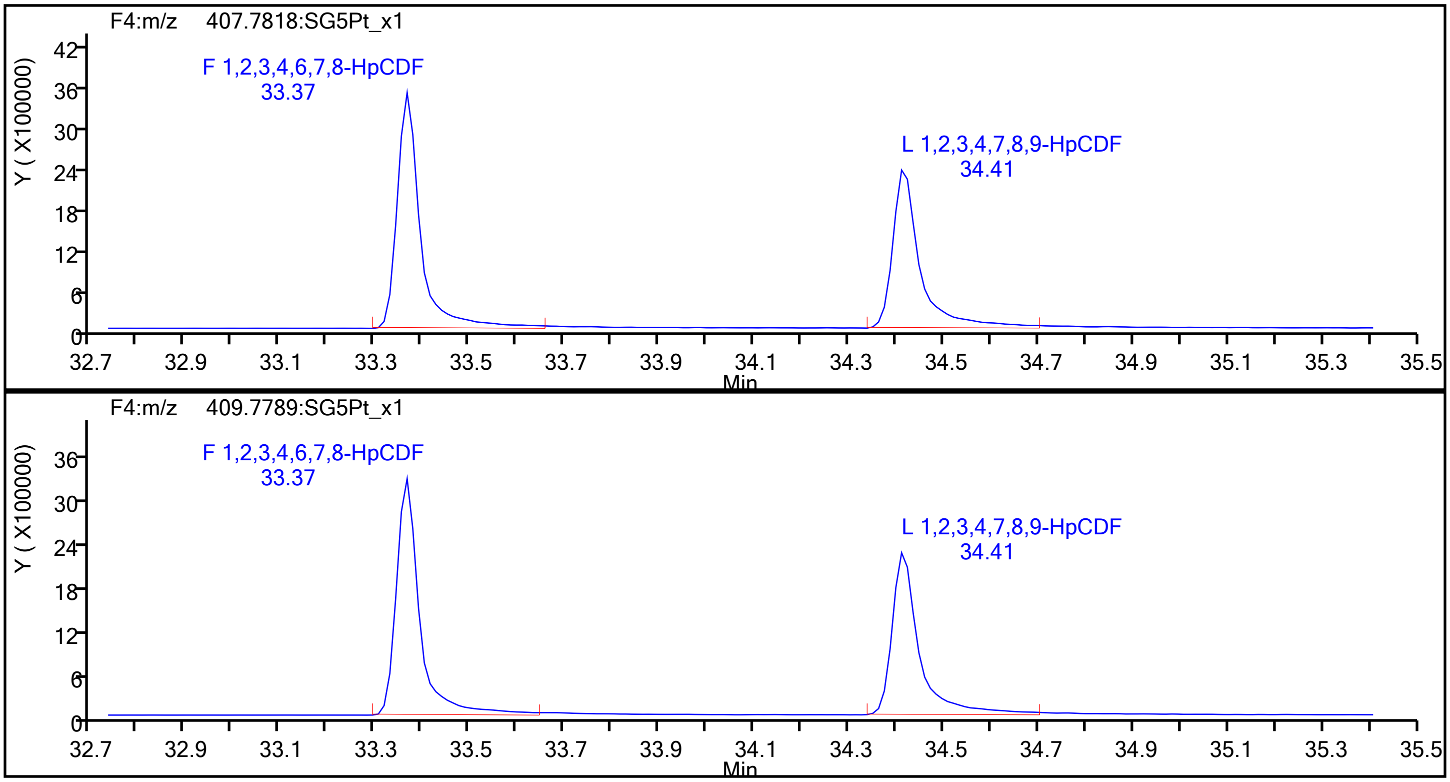

HpCDF Standards

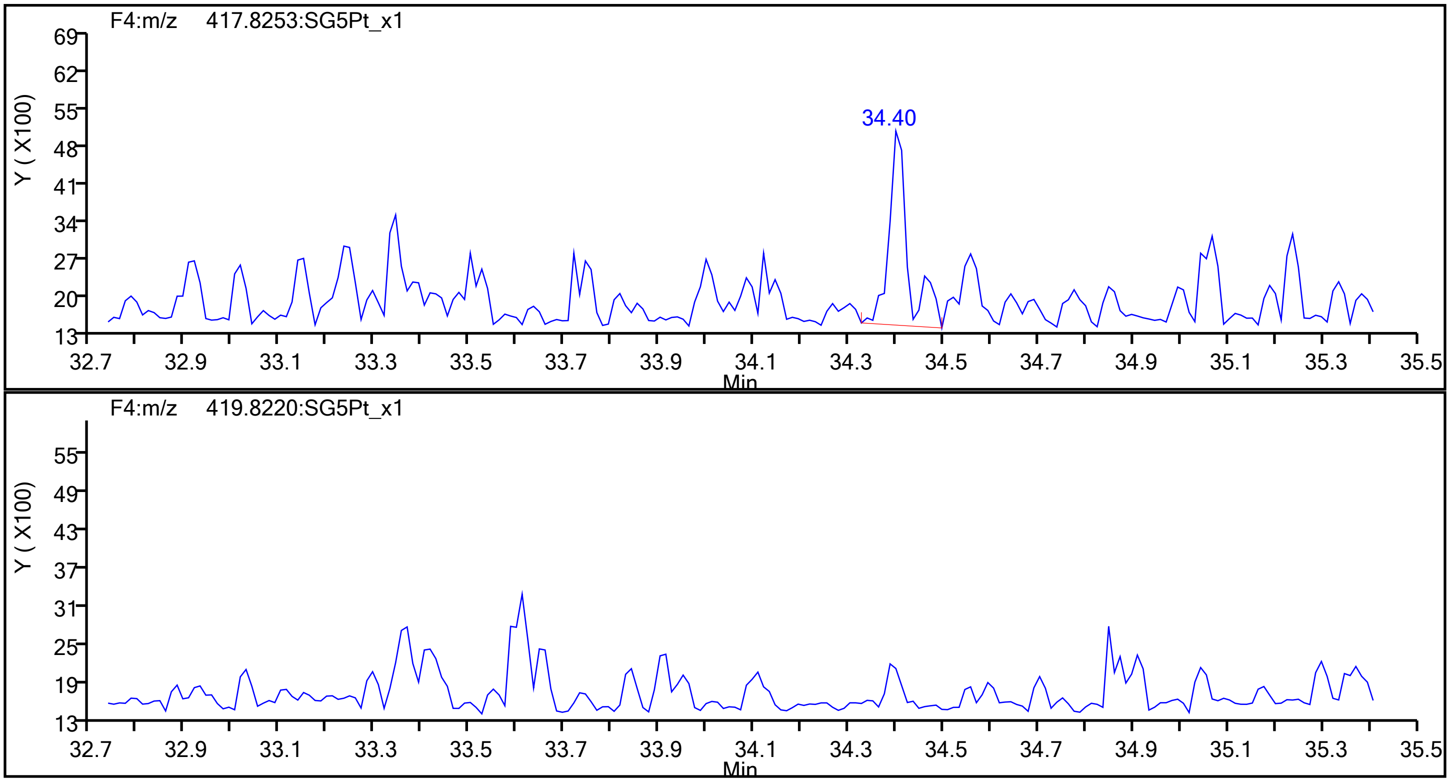

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

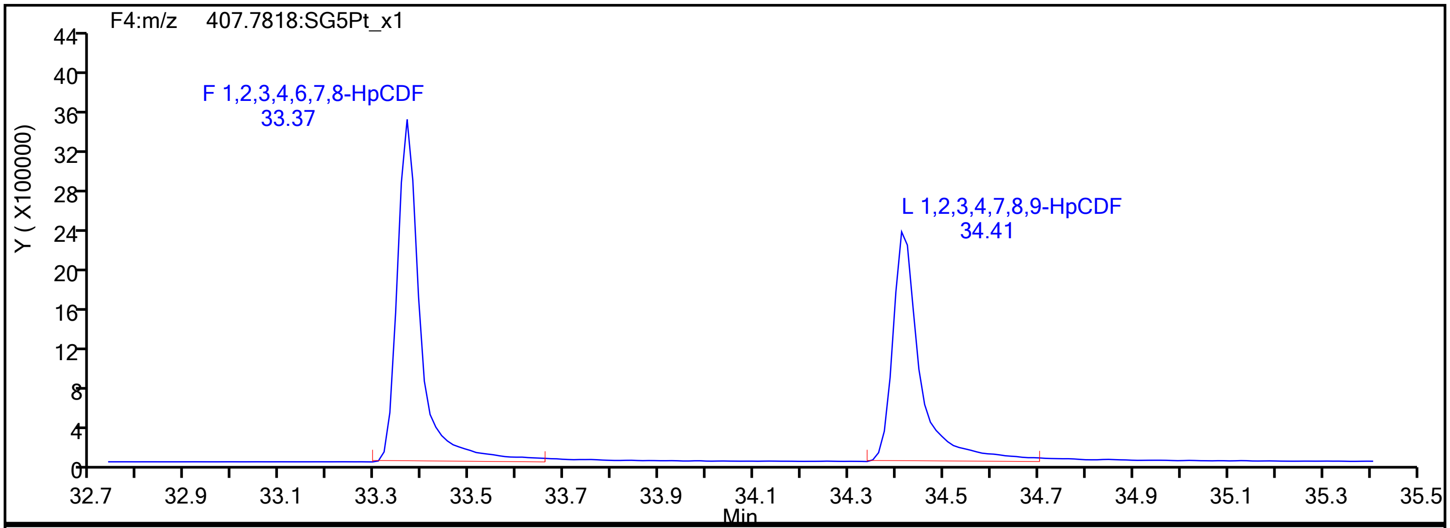

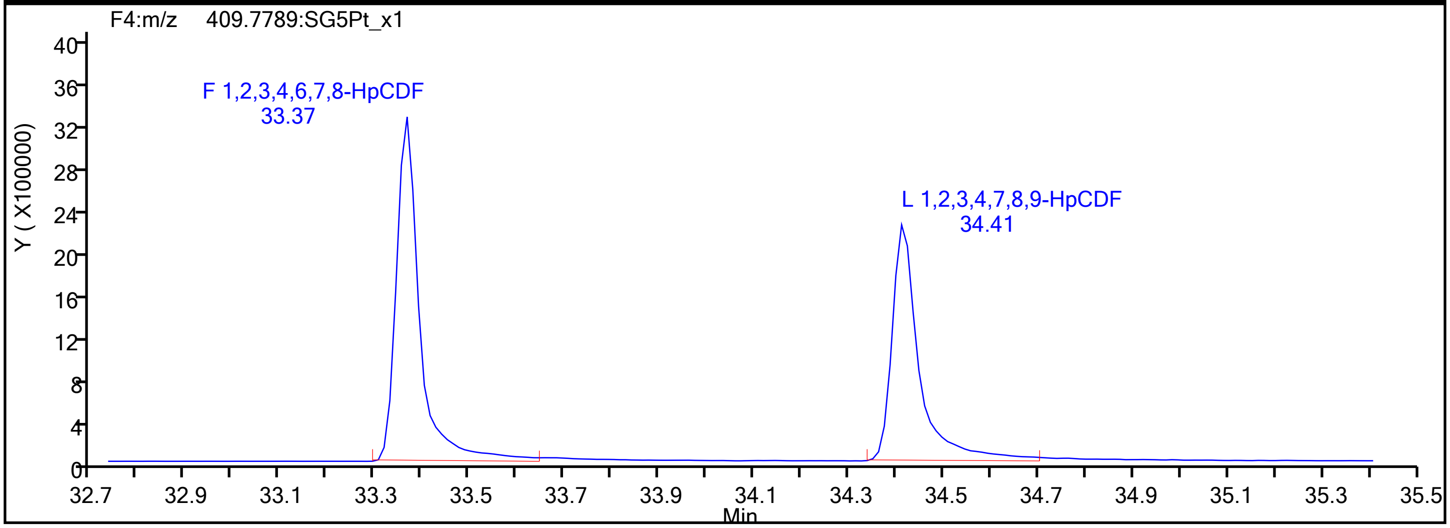

HpCDF Interference Mass

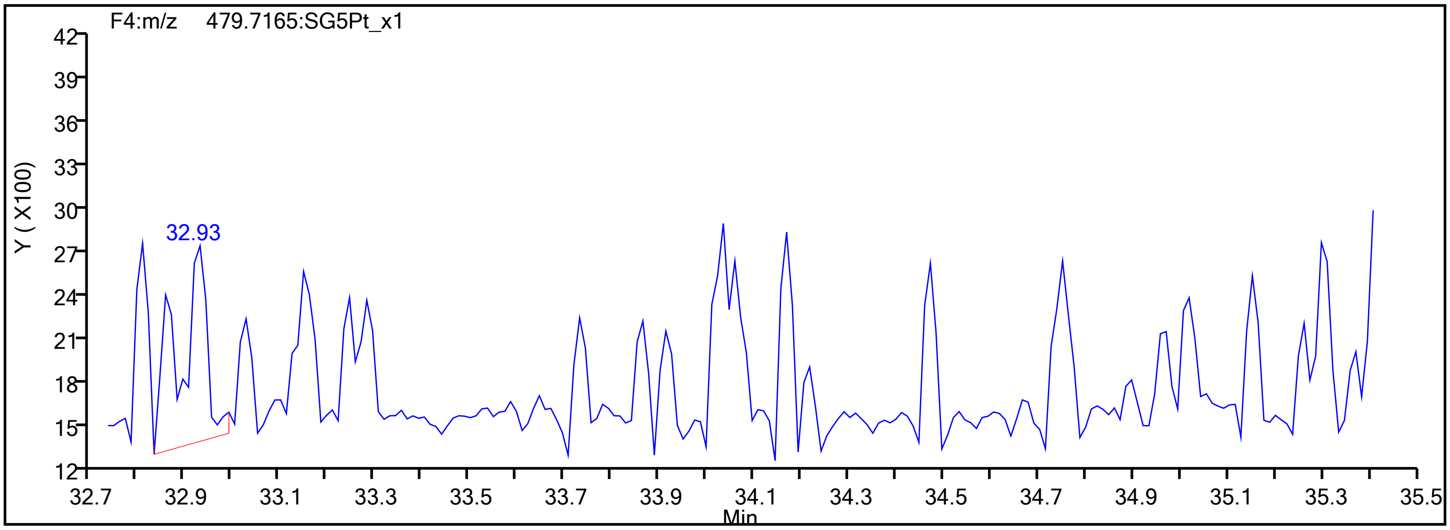

Report Date: 13-Oct-2020 14:05:11 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d		
Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

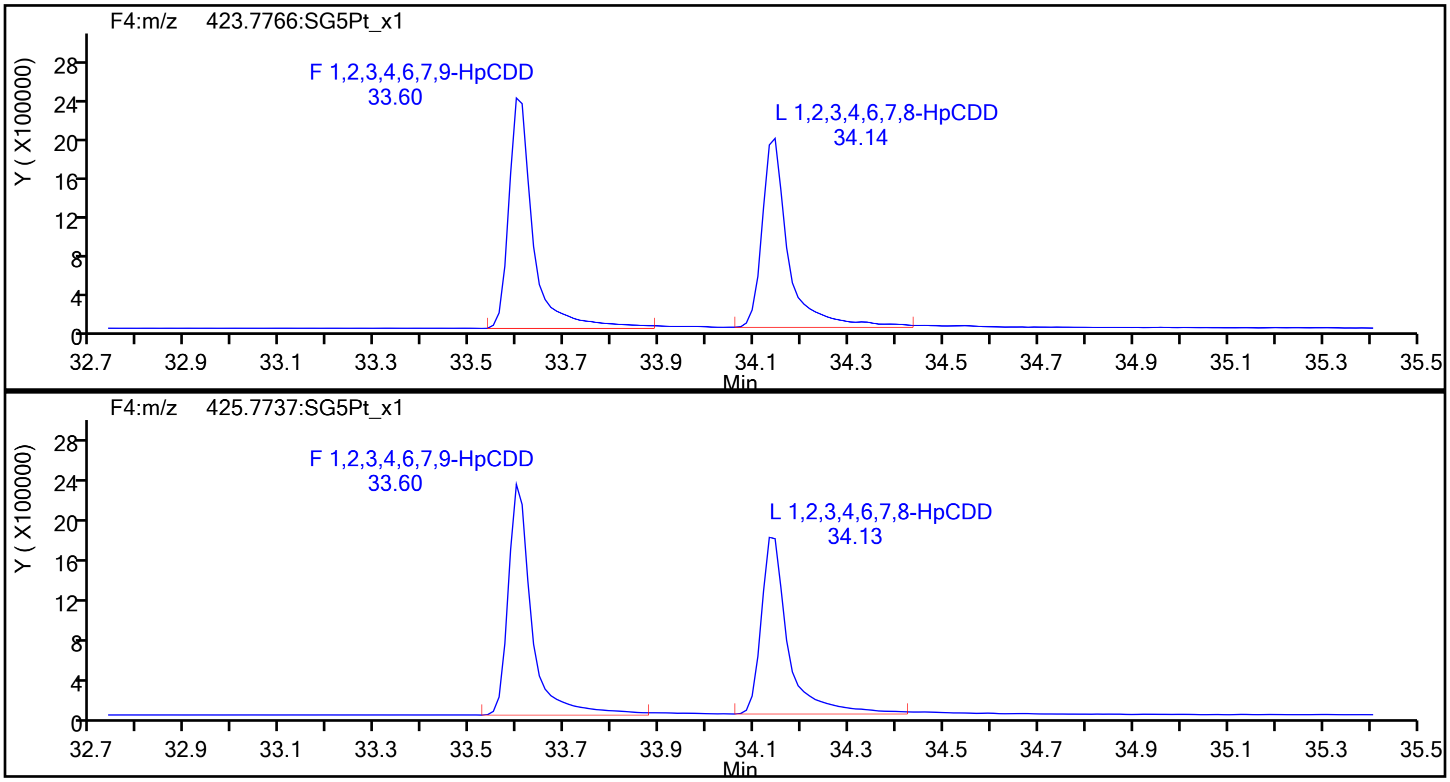

HpCDD Standards

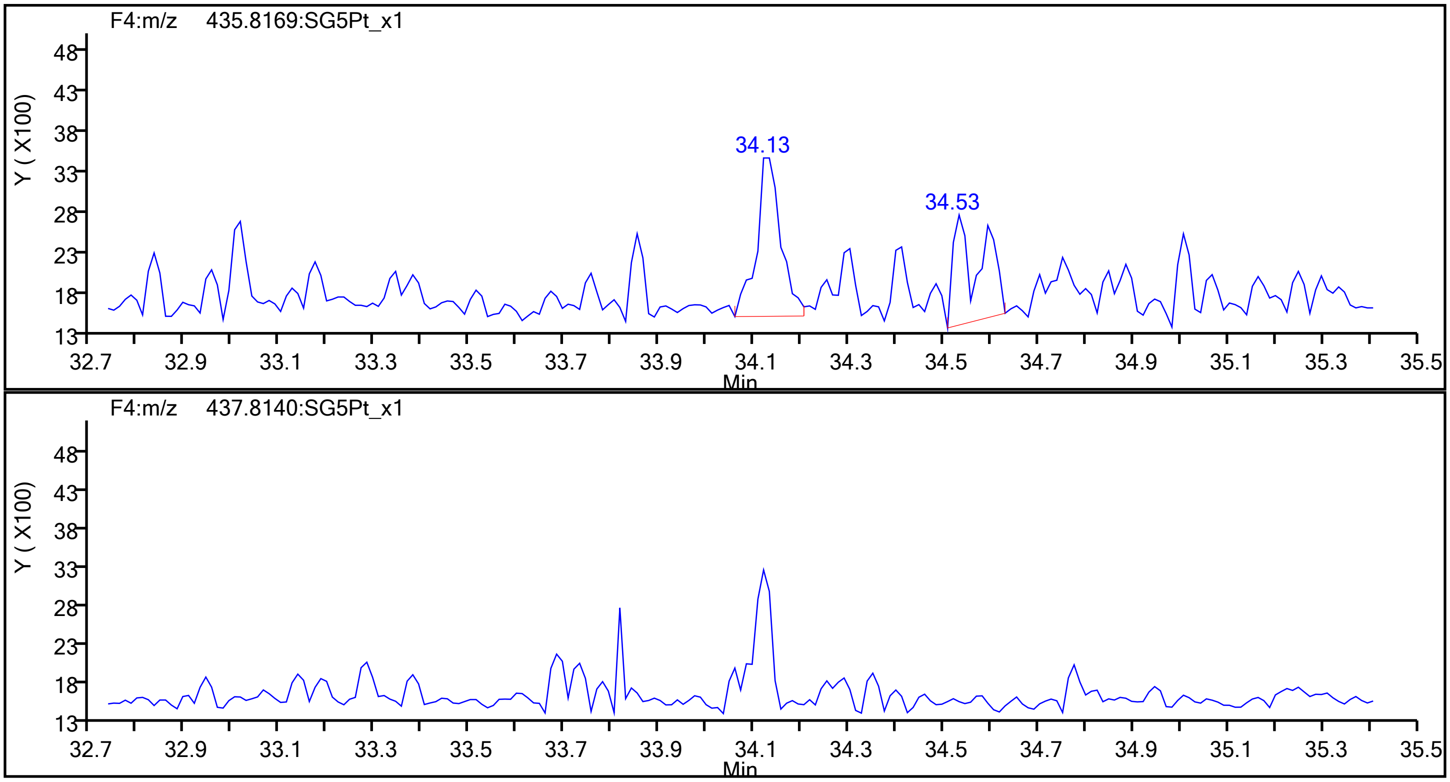

Report Date: 13-Oct-2020 14:05:12
Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d
Injection Date: 12-Oct-2020 21:15:36
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

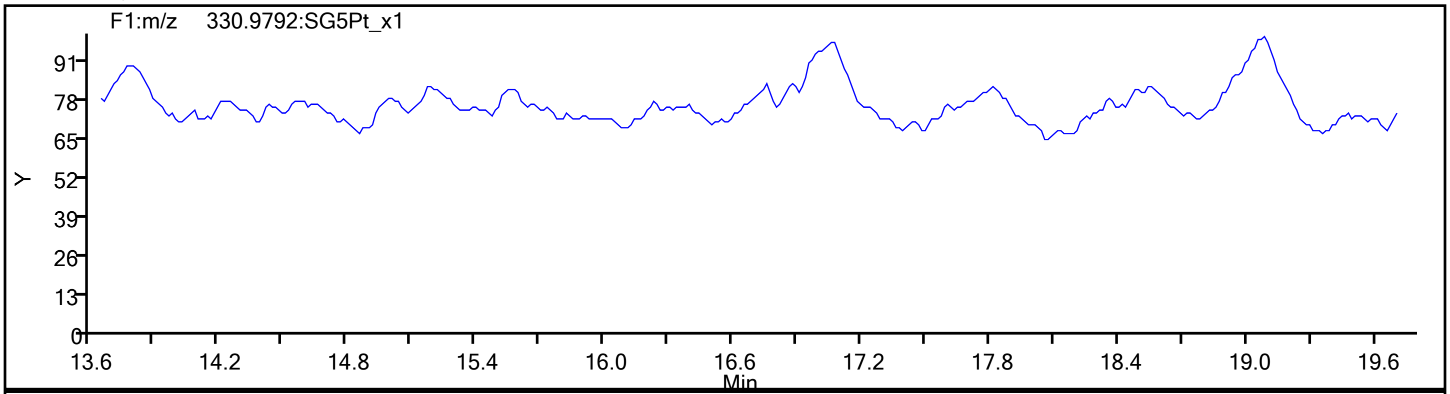

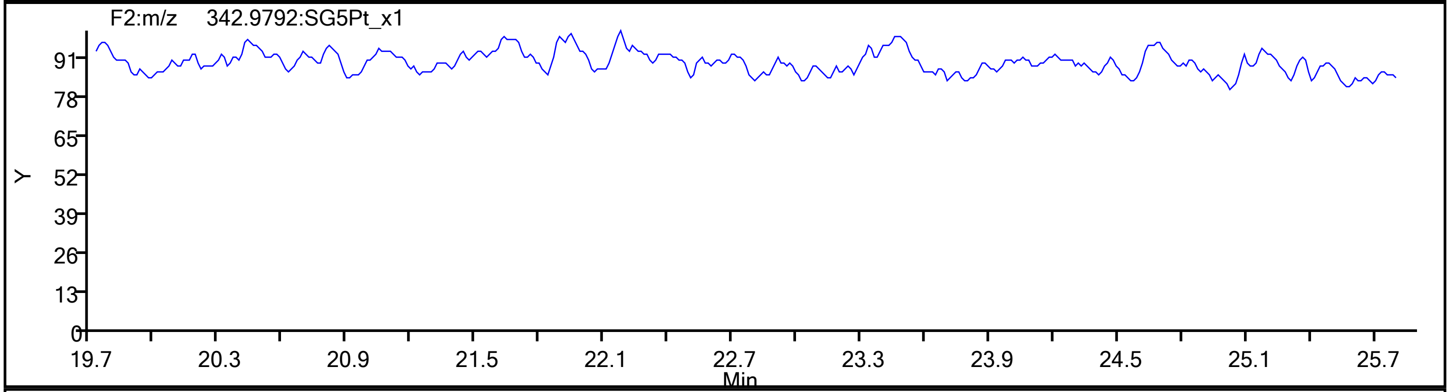

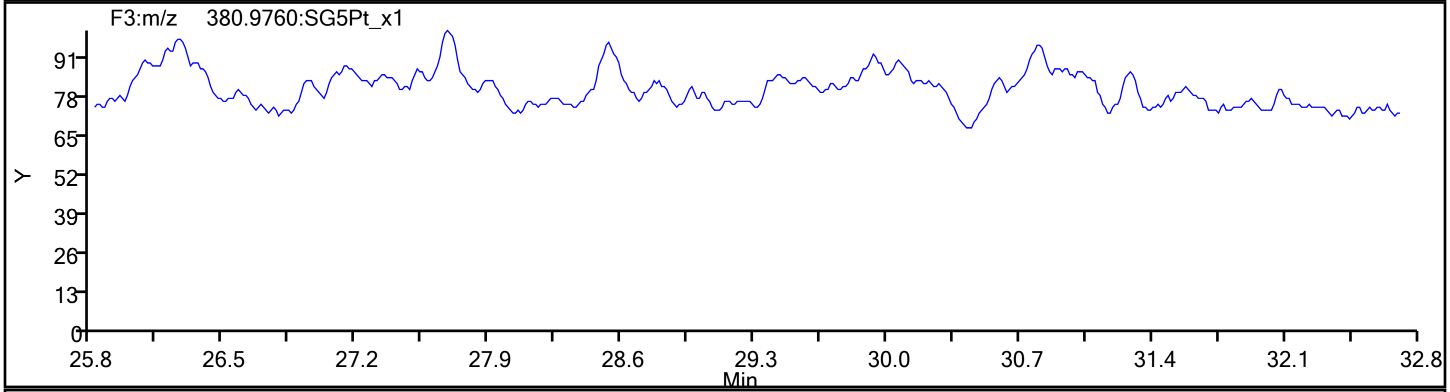

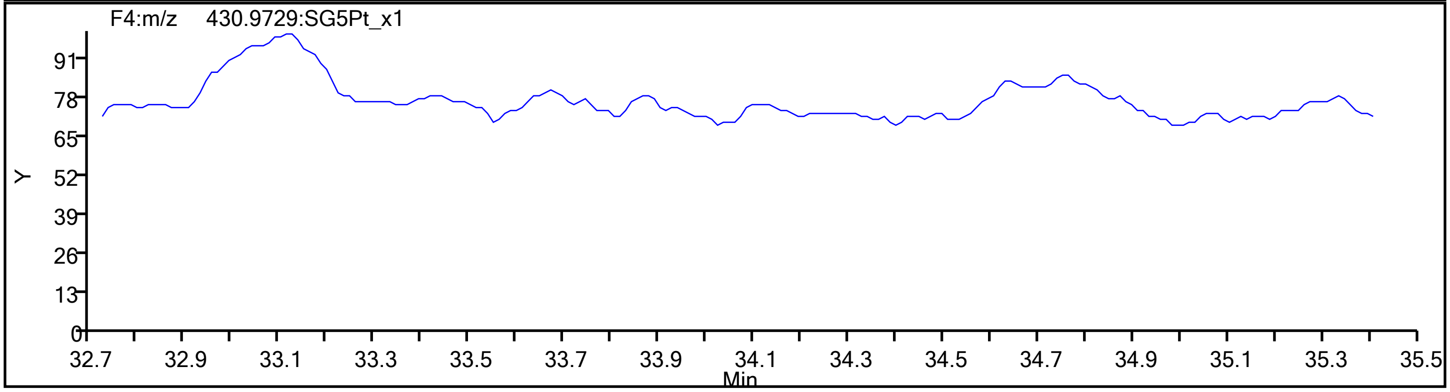

Report Date: 13-Oct-2020 14:05:12 Chrom Revision: 2.3 08-Oct-2020 16:36:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_1.d

Injection Date:	12-Oct-2020 21:15:36	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

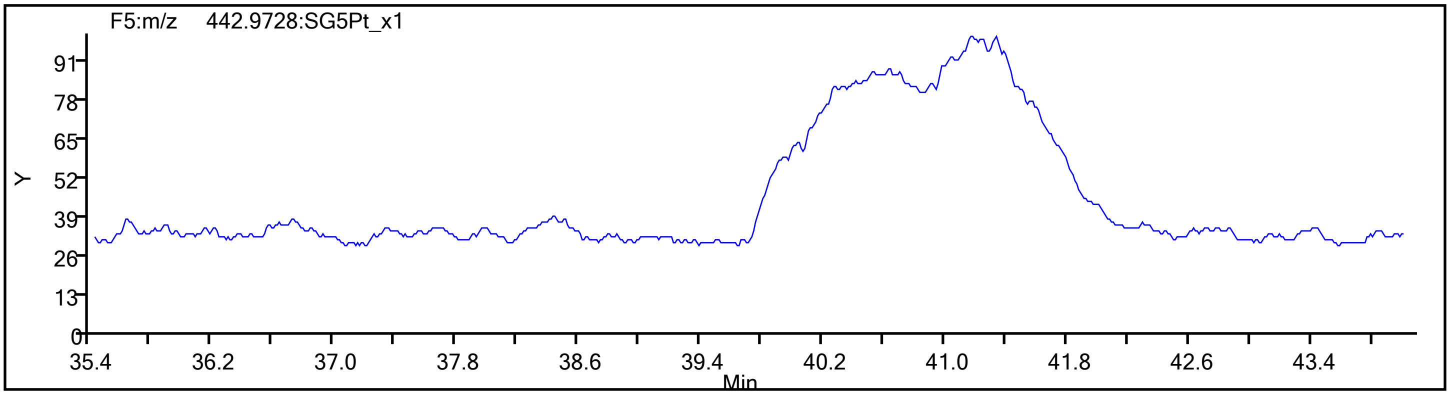

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 24-Jul-2020 22:33:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:20		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

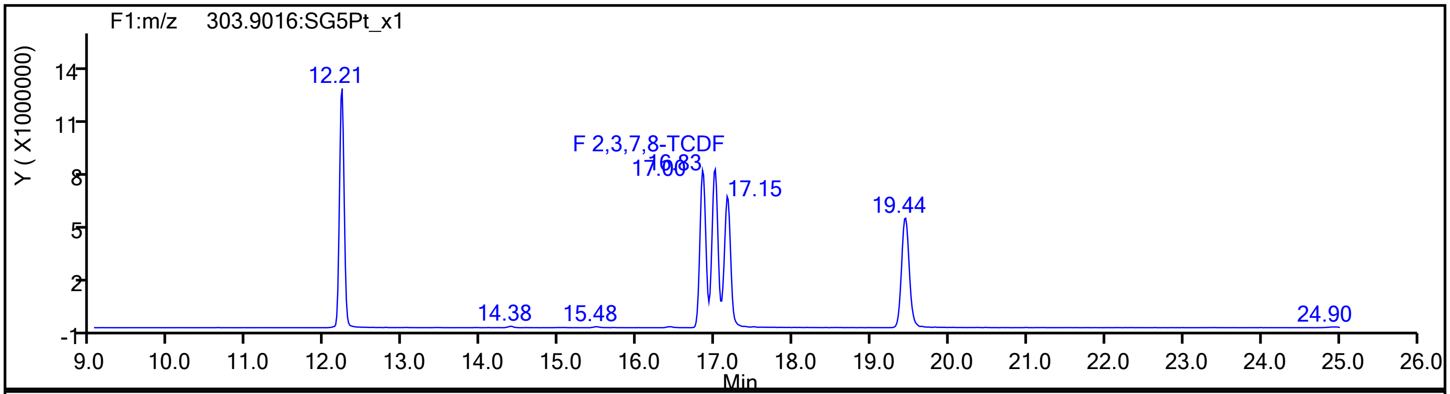

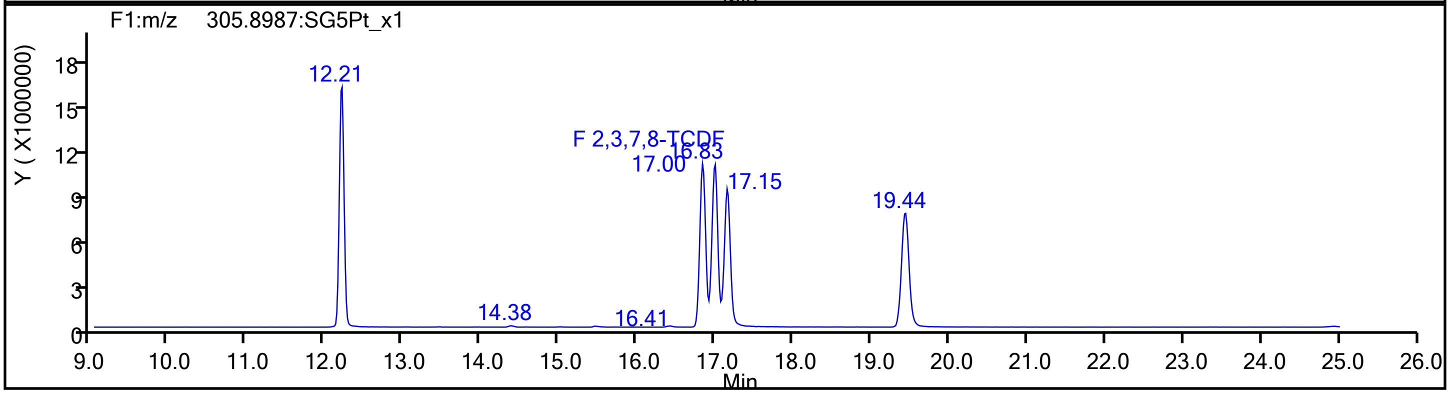

TCDF Standards

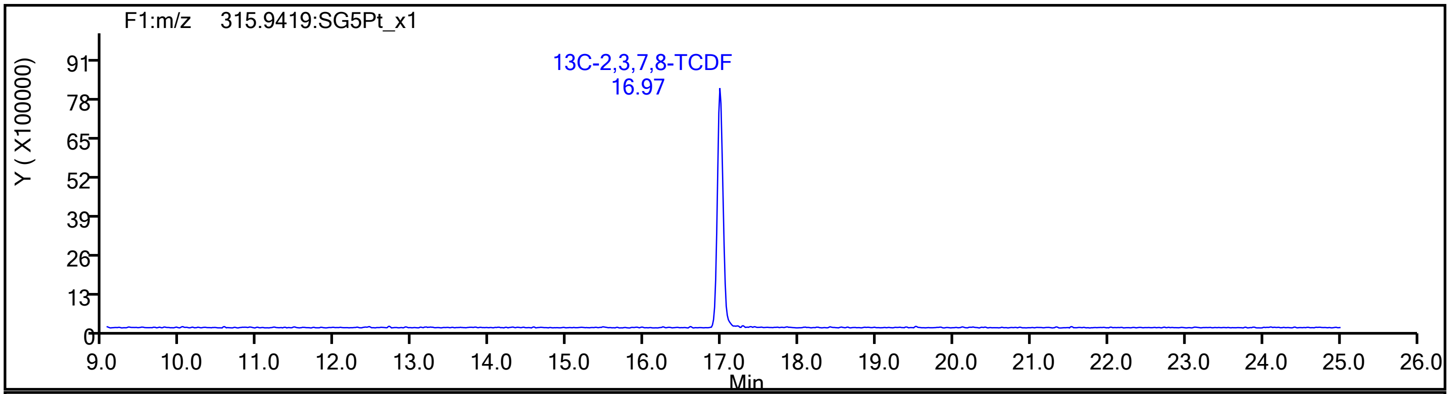

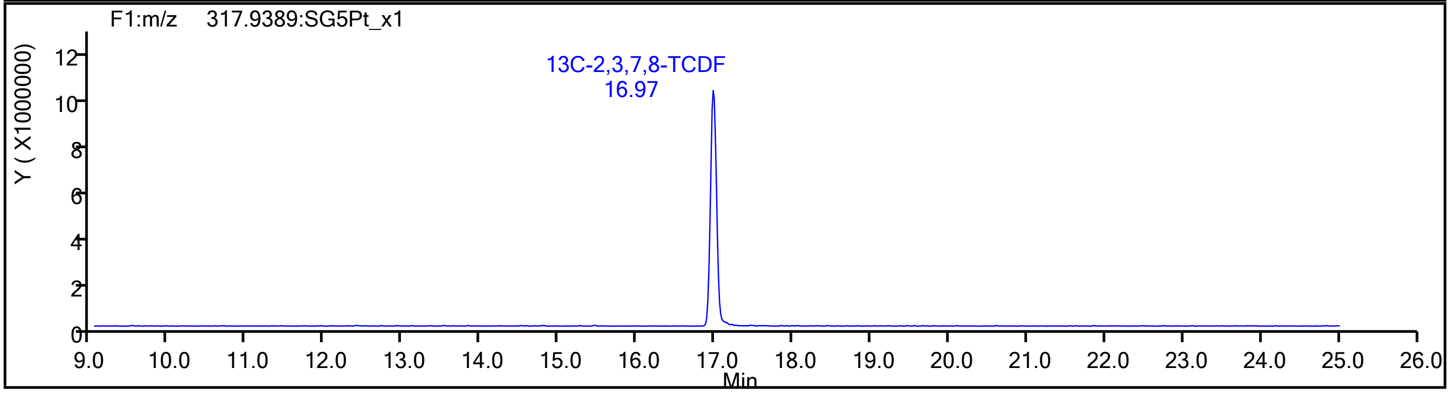

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

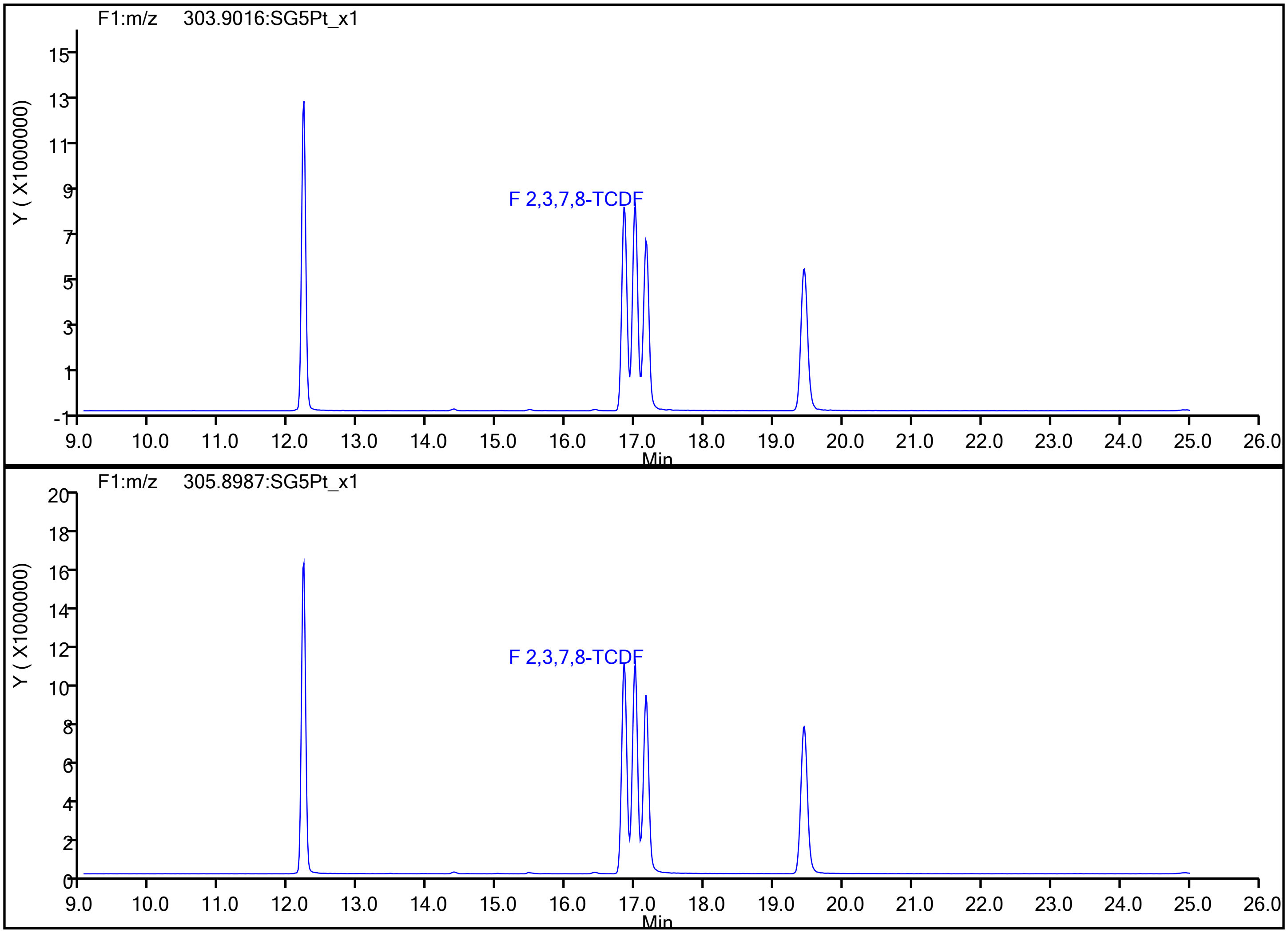

TCDF Interference Mass

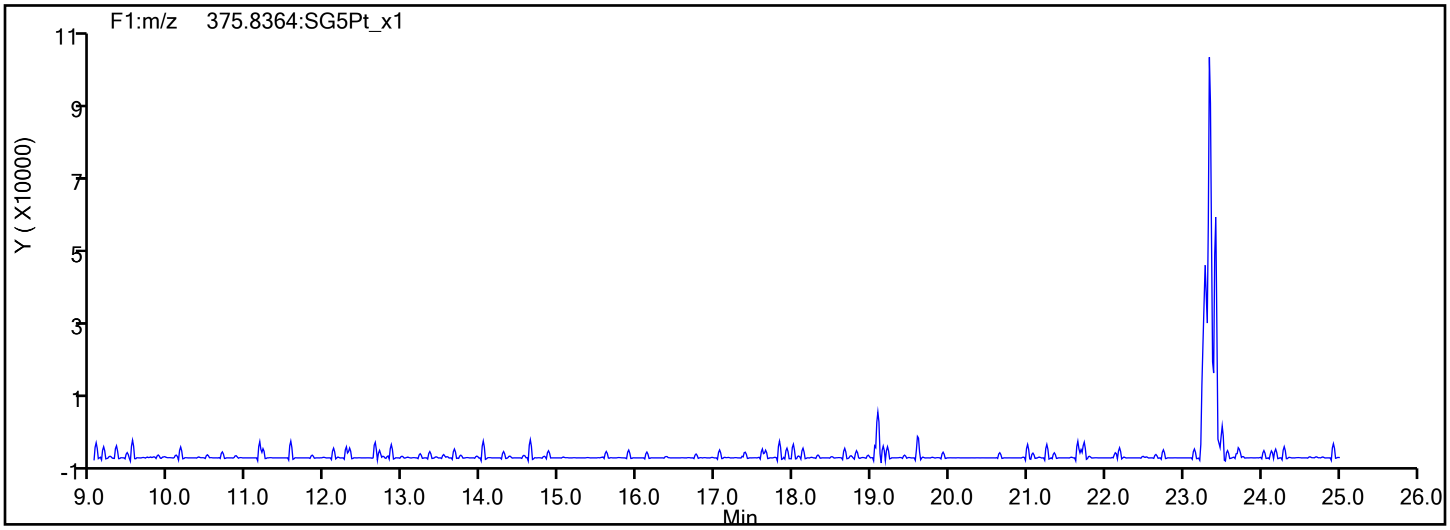

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

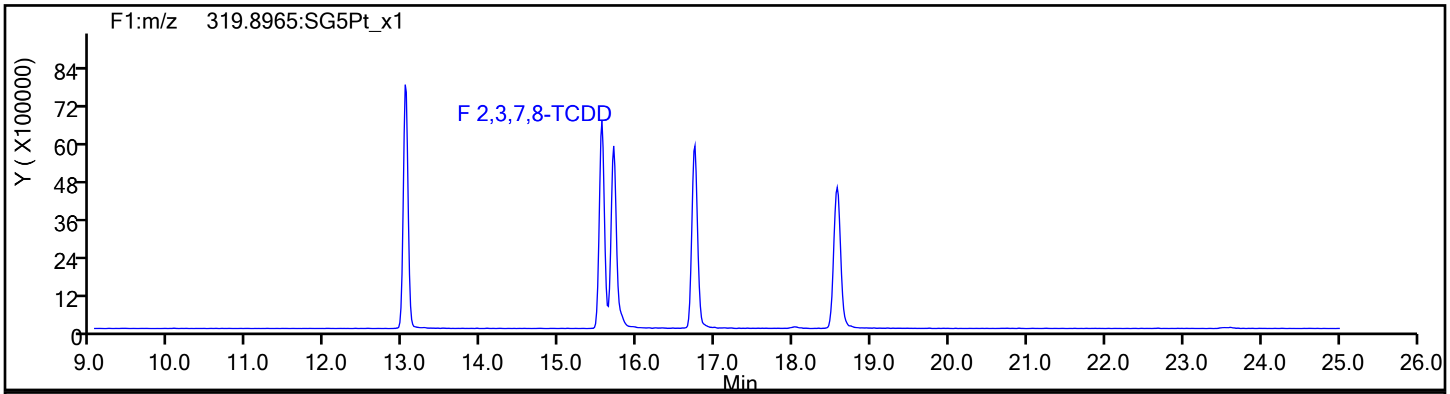

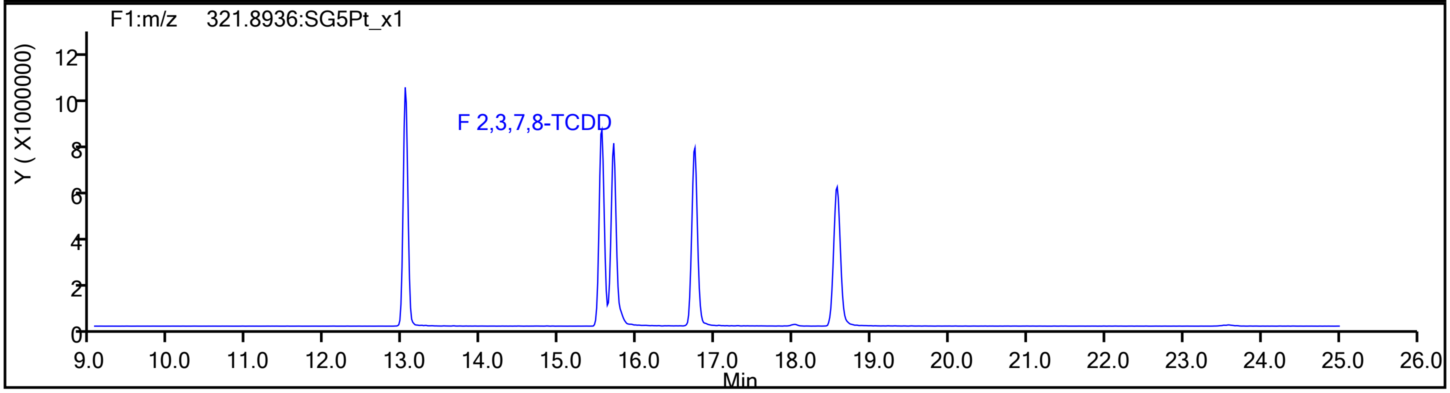

TCDD Standards

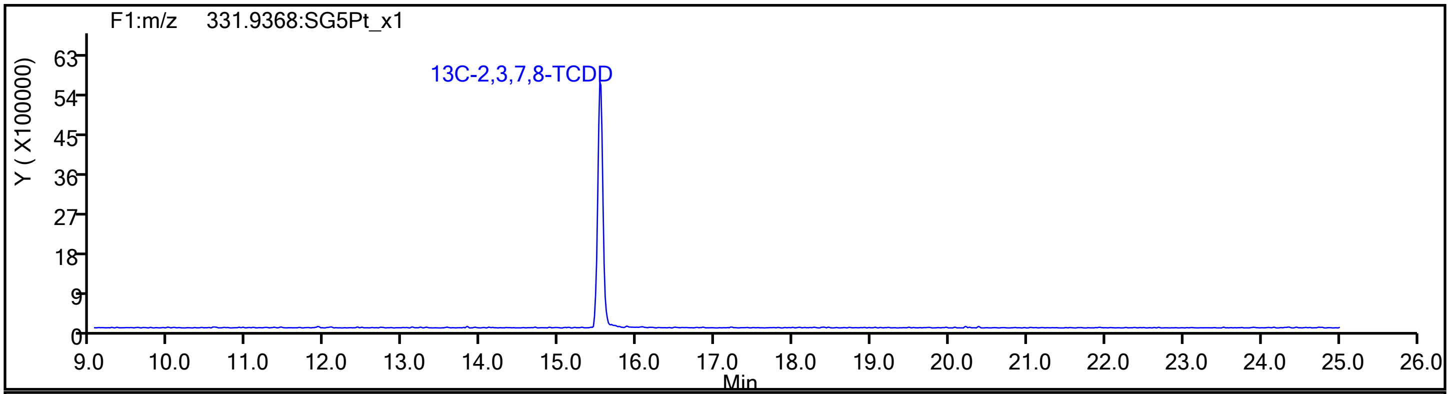

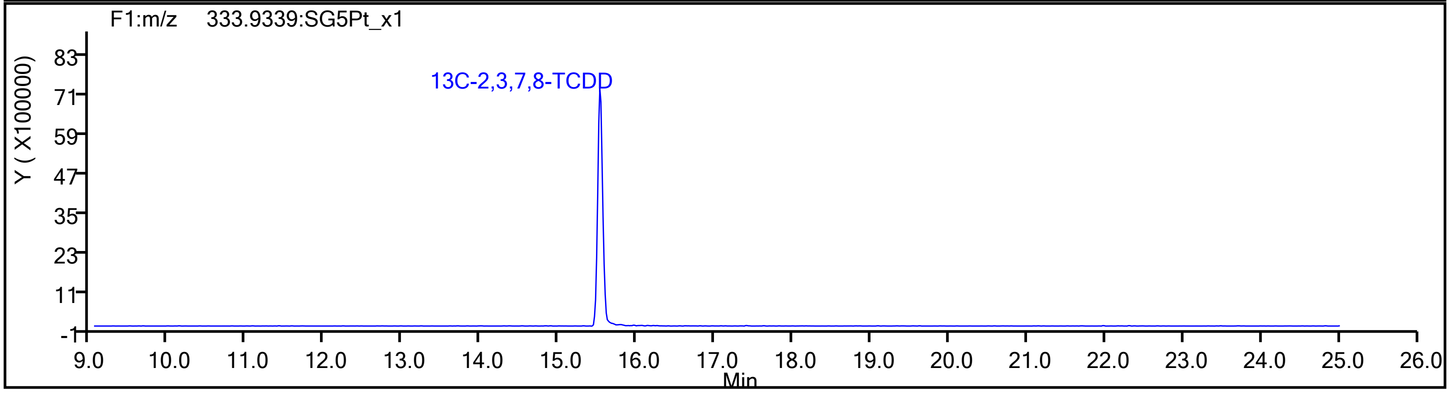

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

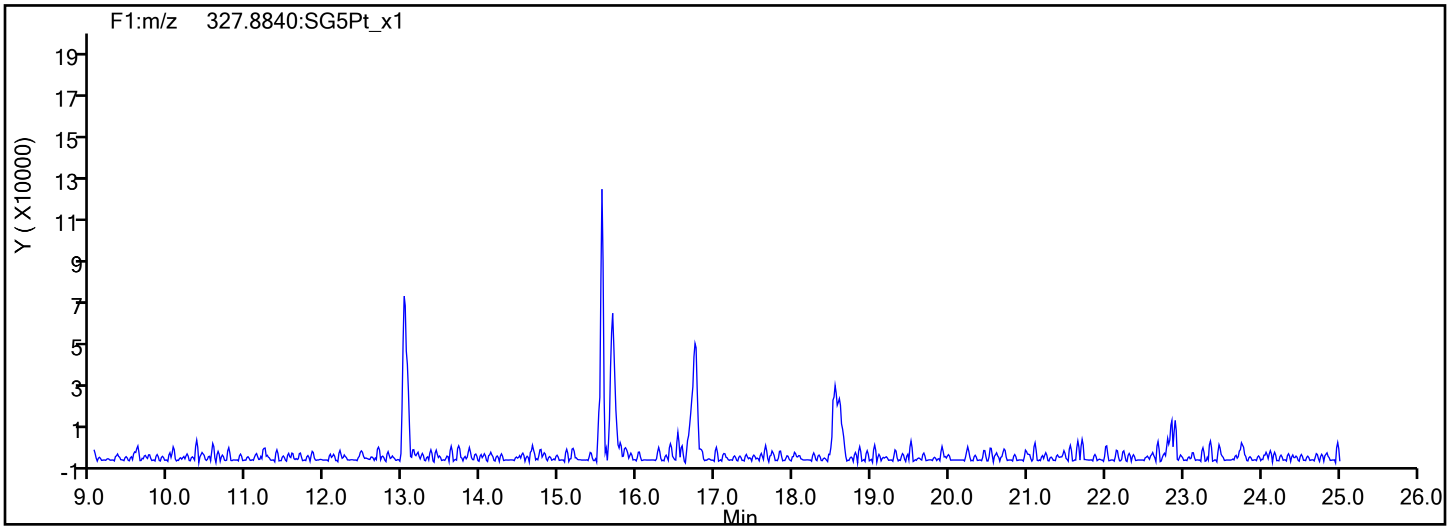

37Cl4-TCDD Standards

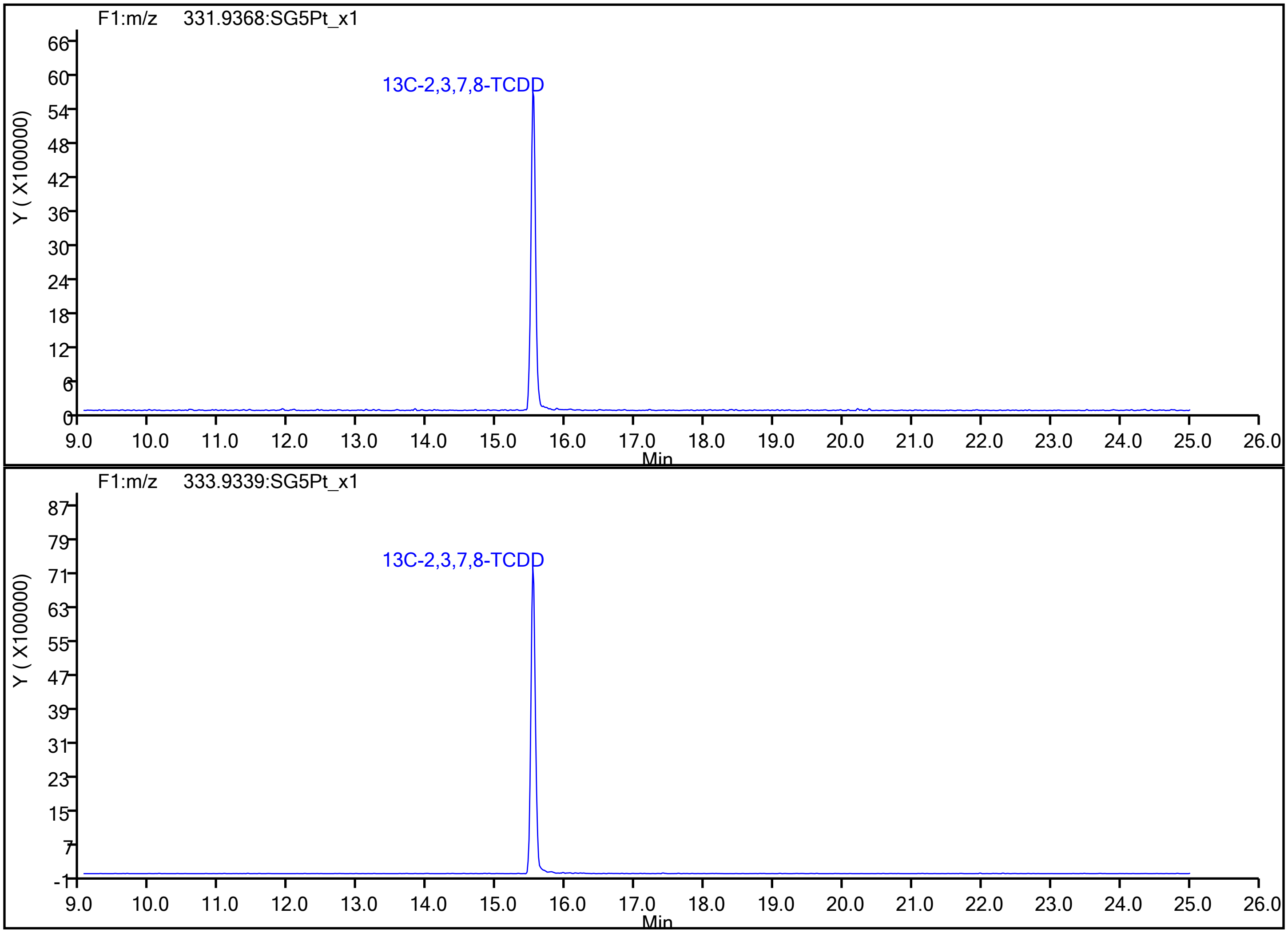

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

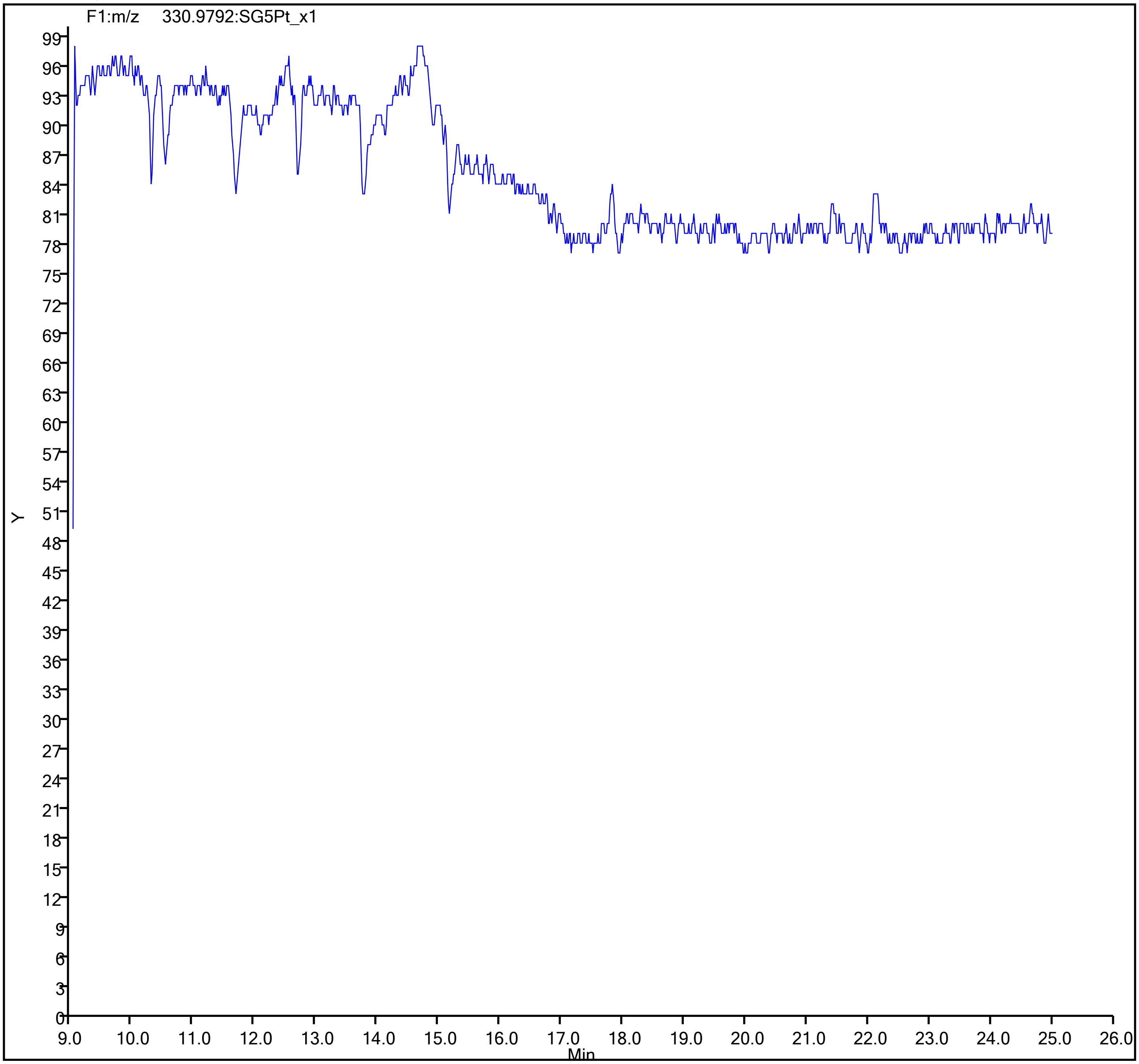

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	15-Oct-2020 01:21:48	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	16-Oct-2020 12:25:50	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1679	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.005	57494861	0.81	1.5708					0.00	
2,3,7,8-TCDF	16.032	57710451	0.76	0.9943	40.4	40.4	0.1076	0.1076		
D 13C-2,3,7,8-TCDD	14.646	32810965	0.77	0.9834					0.00	
2,3,7,8-TCDD	14.660	40642024	0.78	1.2822	38.6	38.6	0.1234	0.1234		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 16-Oct-2020 12:25:50 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 15-Oct-2020 01:21:48 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Oct-2020 12:25:50 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.005	16.005	0	1.000	25762389	5751458	23913	59782	241		
317.9389	16.005	16.005	0	1.000	31732472	7105119	12108	30270	587	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.032	16.032	0	1.002	24987195	5943054	8397	20992	708		
305.8987	16.032	16.032	0	1.002	32723256	7762969	5357	13392	1449	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.646	14.646	0	1.000	14276486	3706535	11154	27885	332		
333.9339	14.646	14.646	0	1.000	18534479	4573151	4798	11995	953	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.660	14.660	0	1.001	17803271	4603222	5595	13987	823		
321.8936	14.660	14.660	0	1.001	22838753	5890977	7510	18775	784	0.78(0.65-0.89)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 16-Oct-2020 12:25:50 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d		
Injection Date:	15-Oct-2020 01:21:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

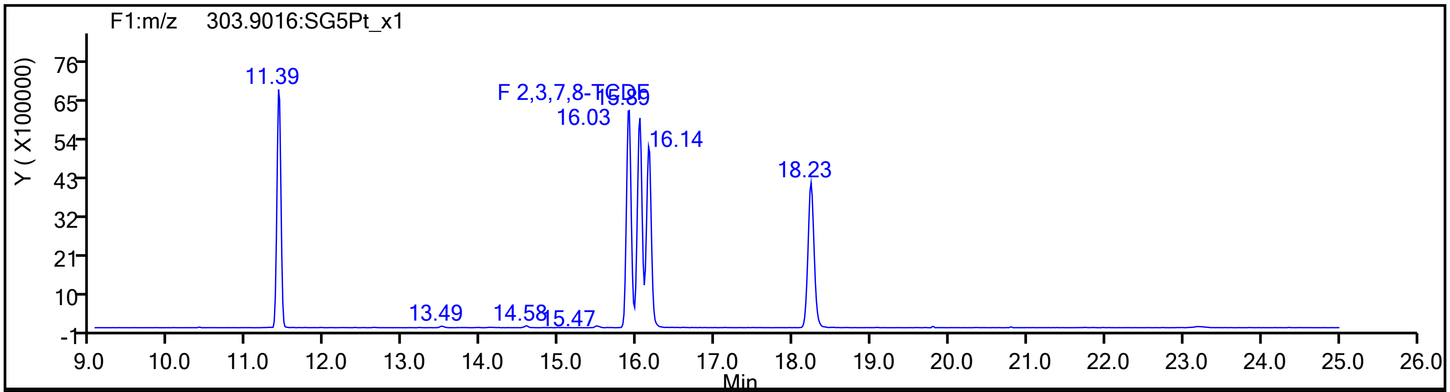

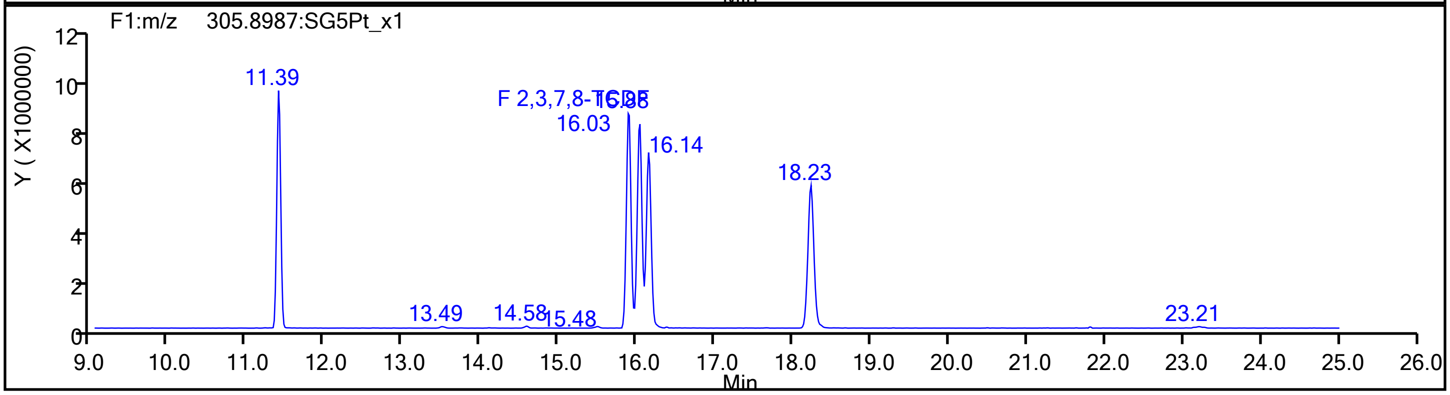

TCDF Standards

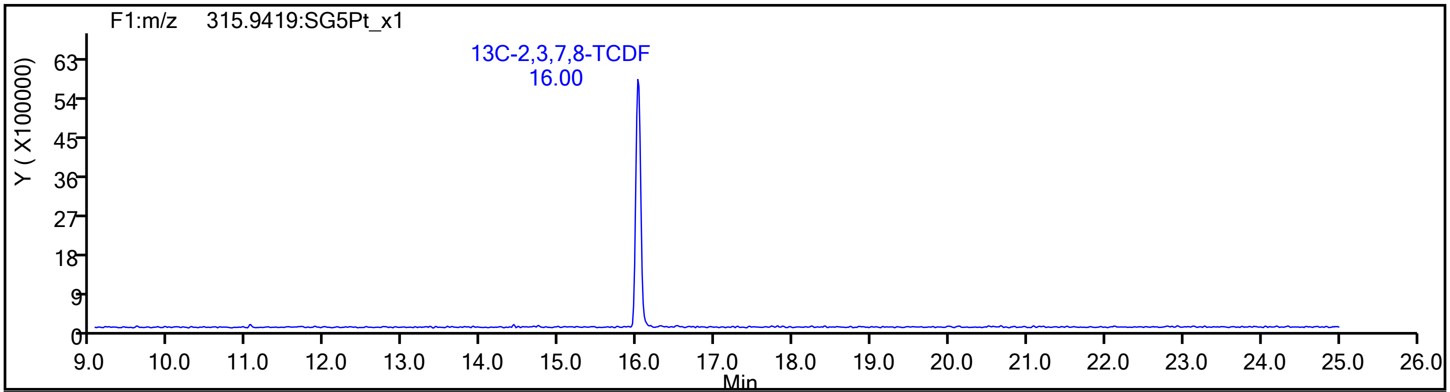

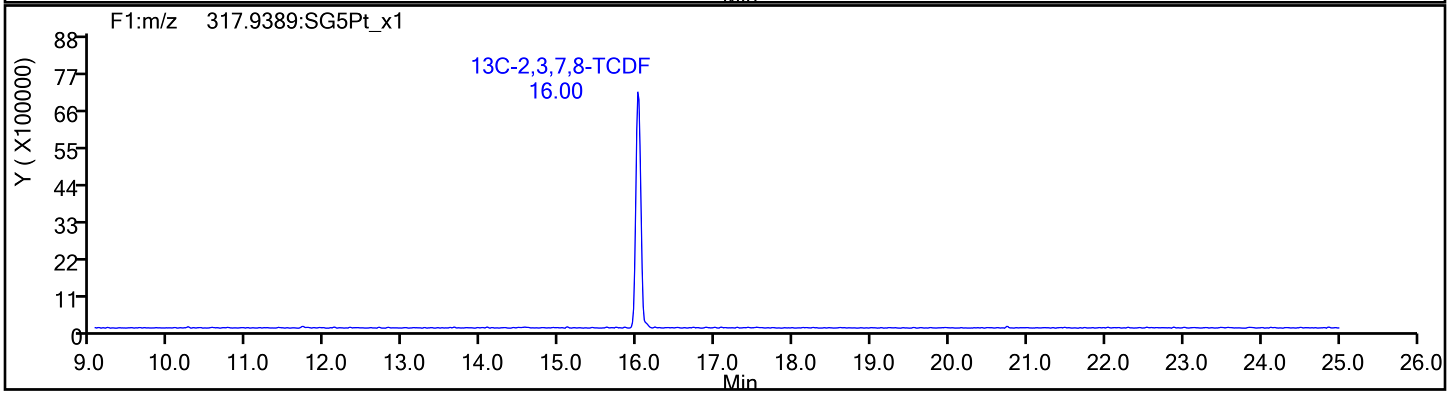

Report Date: 16-Oct-2020 12:25:50 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d		
Injection Date:	15-Oct-2020 01:21:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

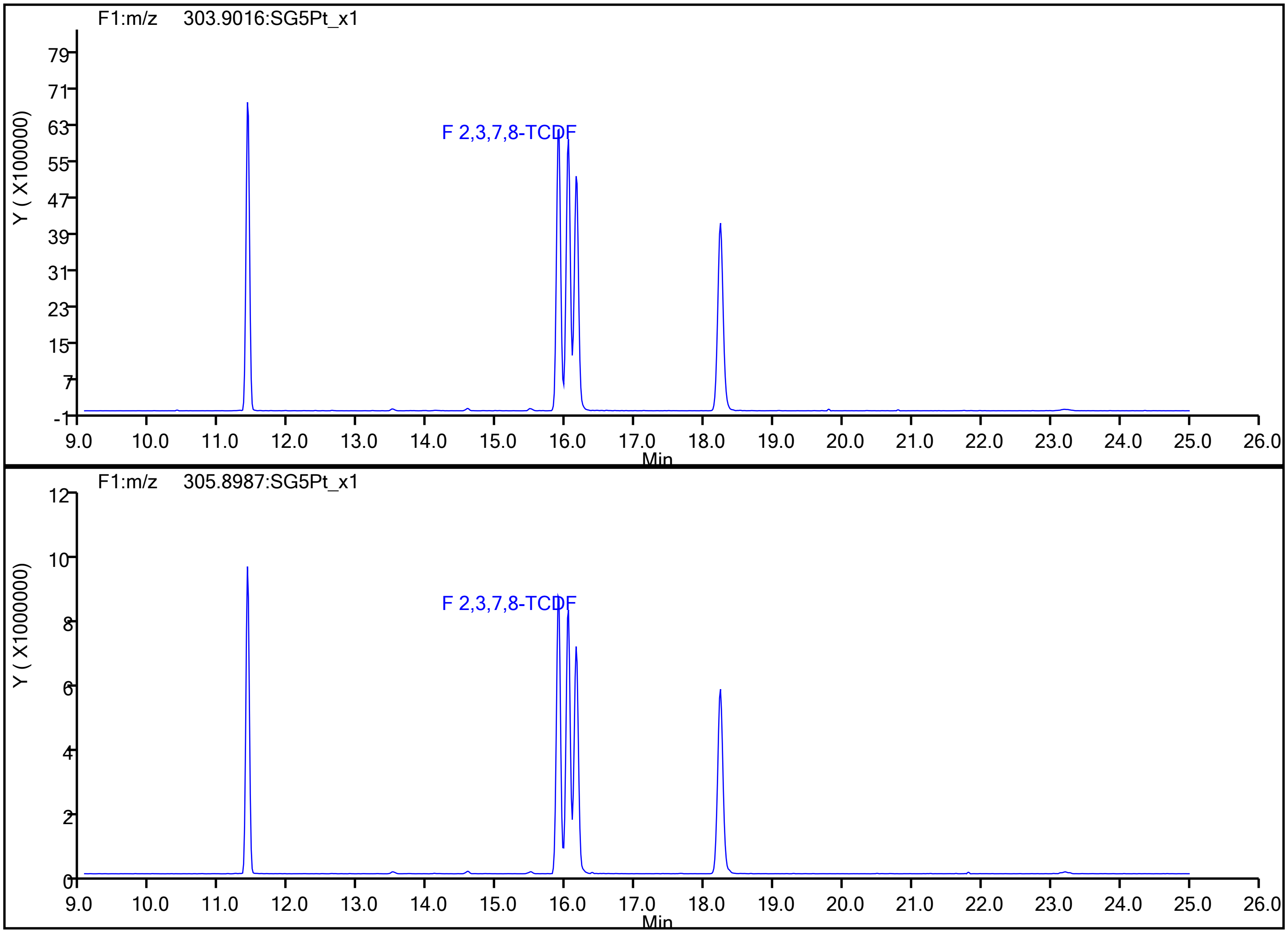

TCDF Interference Mass

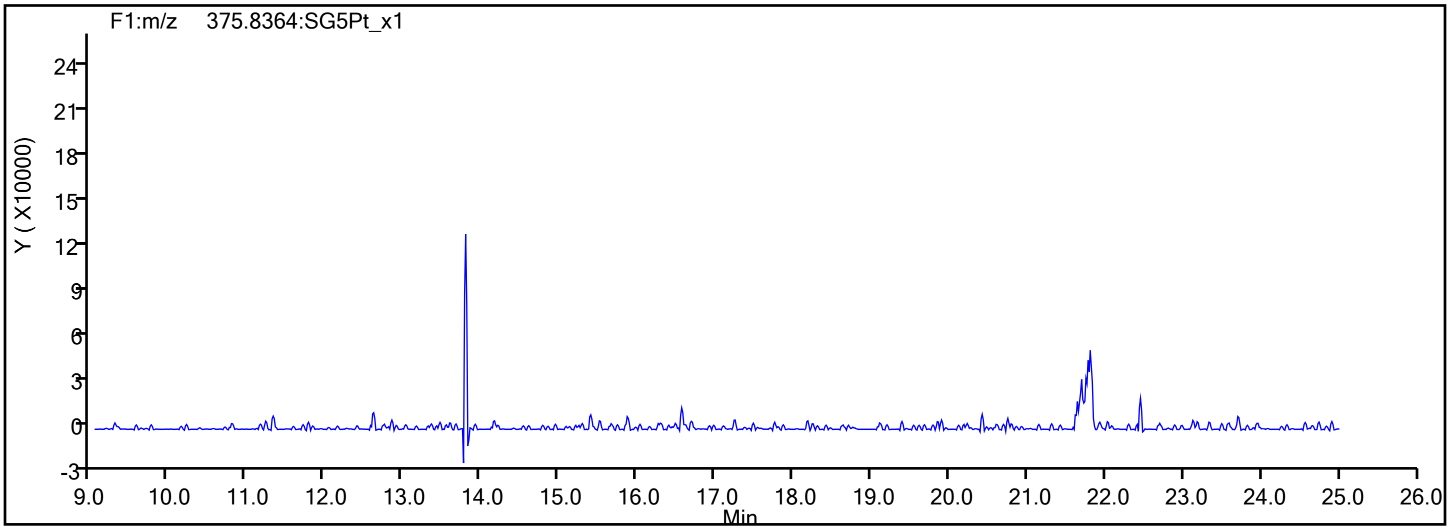

Report Date: 16-Oct-2020 12:25:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d		
Injection Date:	15-Oct-2020 01:21:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

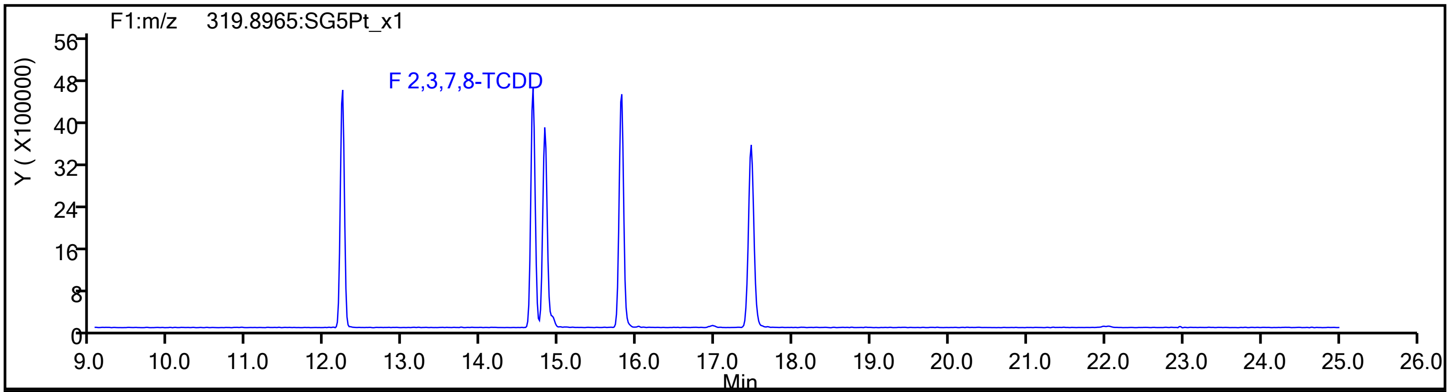

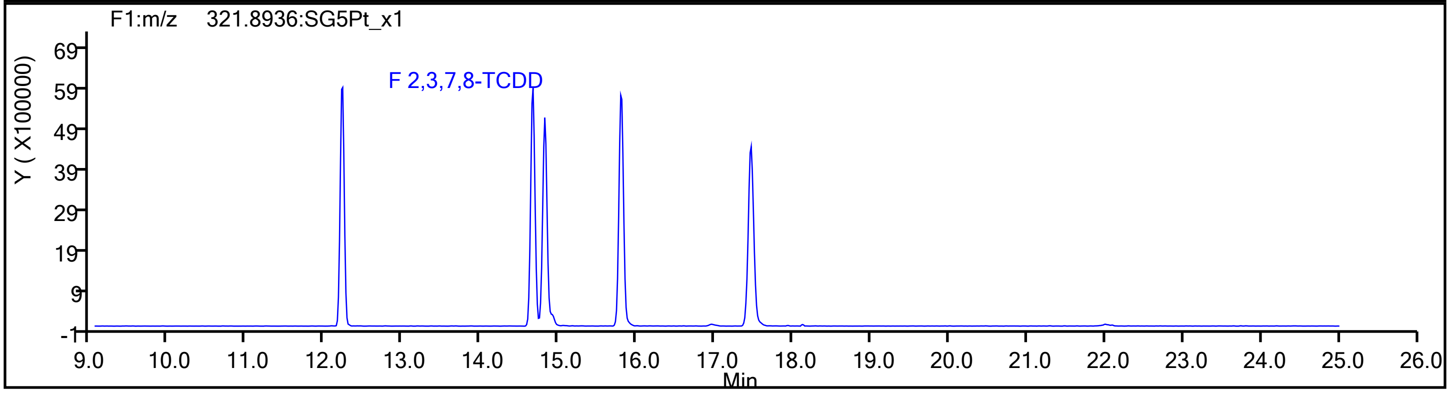

TCDD Standards

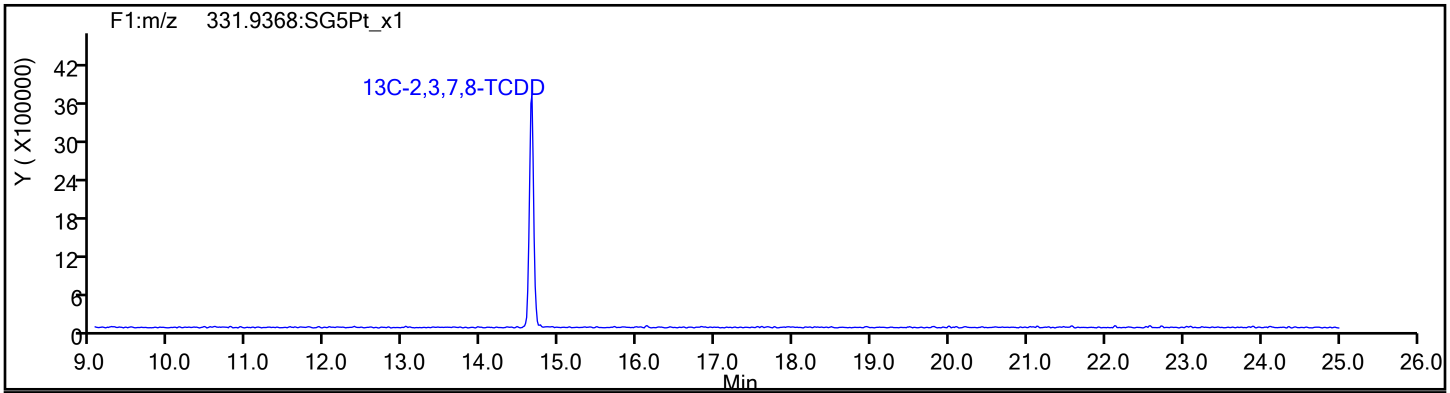

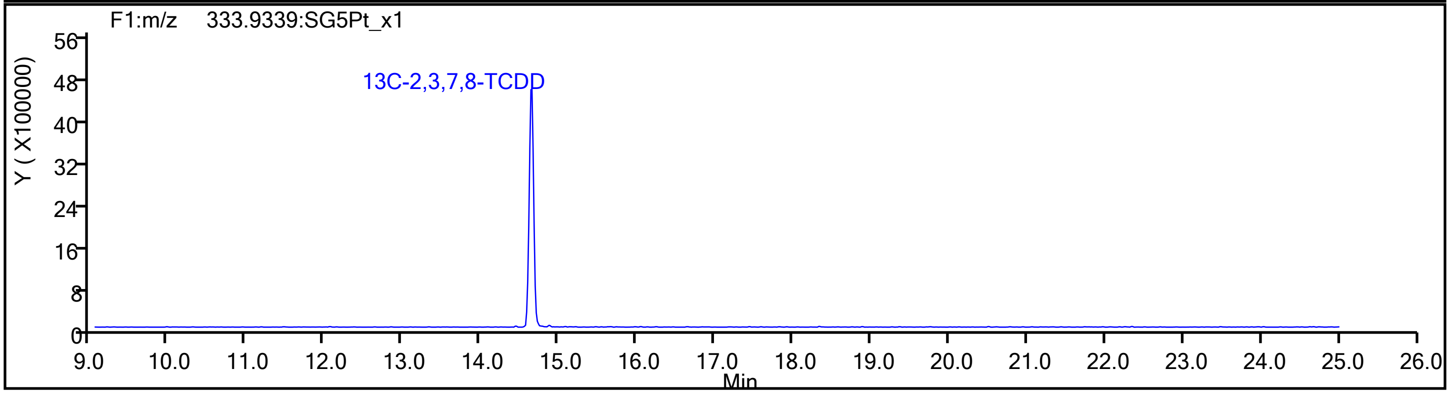

Report Date: 16-Oct-2020 12:25:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d		
Injection Date:	15-Oct-2020 01:21:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

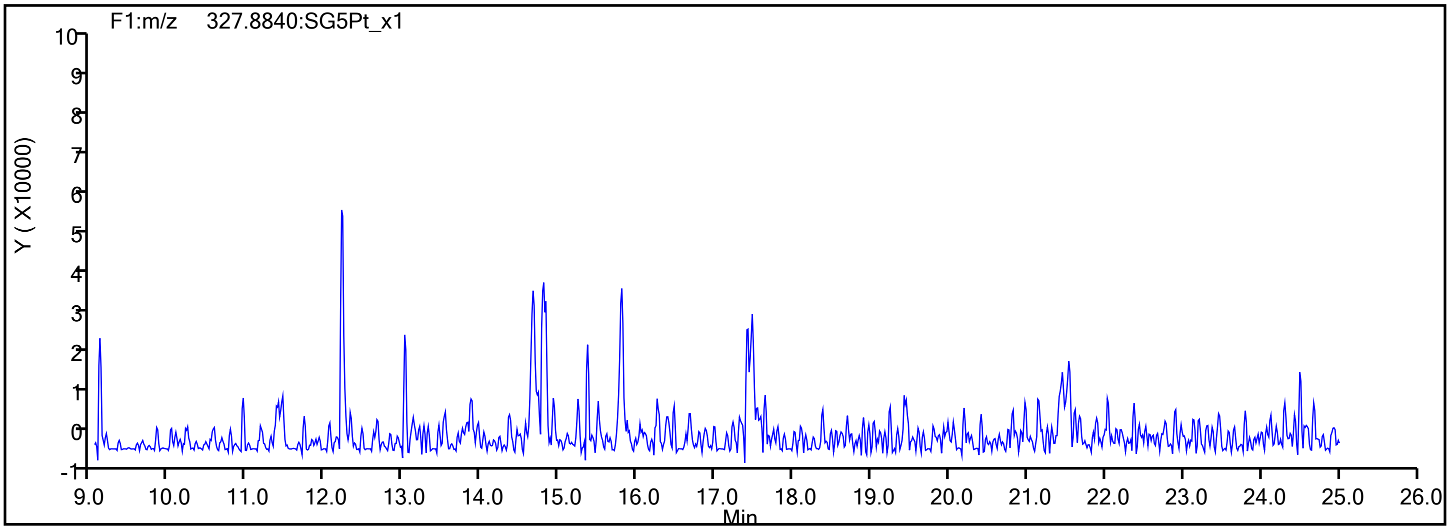

37Cl4-TCDD Standards

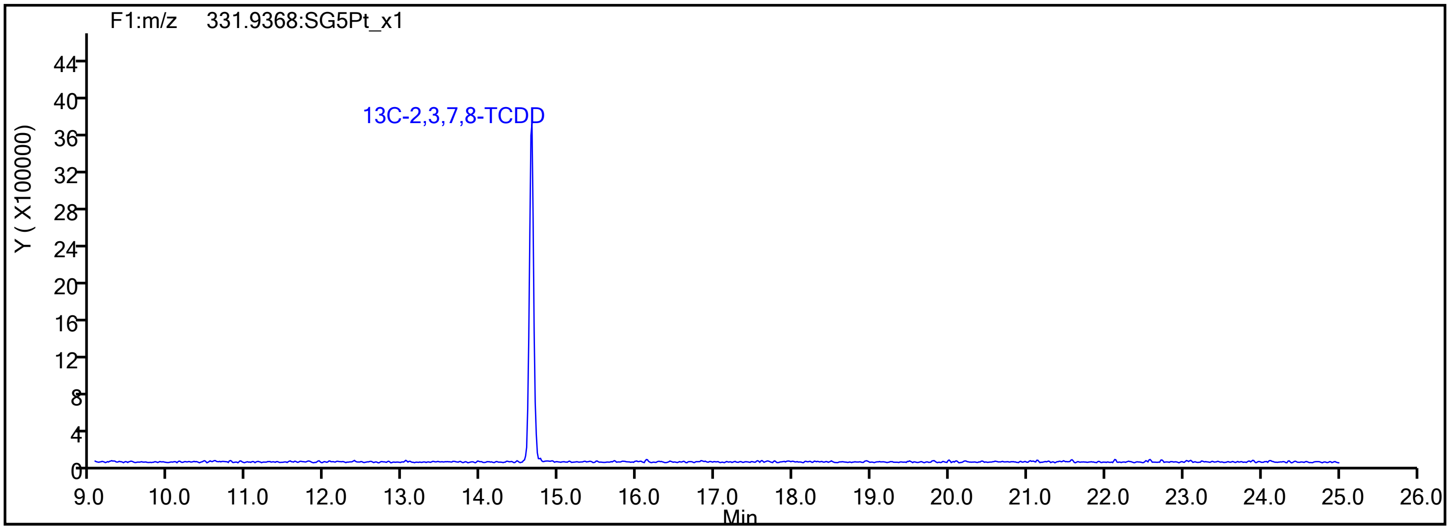

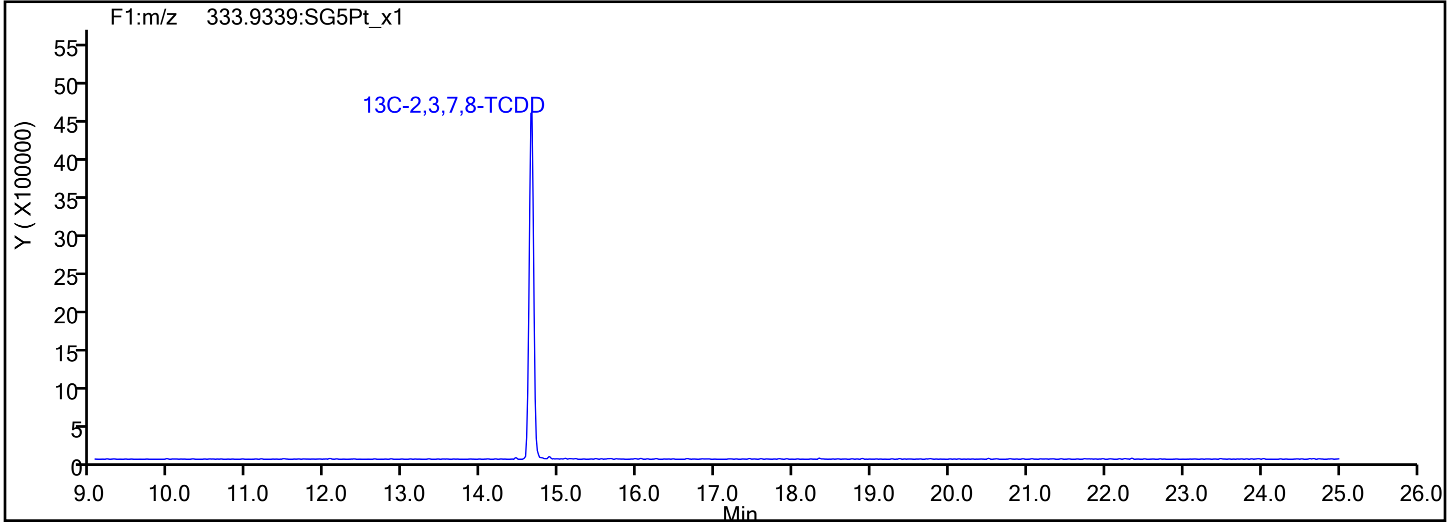

Report Date: 16-Oct-2020 12:25:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201016-105527.b\15OC2011D2_001.d		
Injection Date:	15-Oct-2020 01:21:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	422408	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

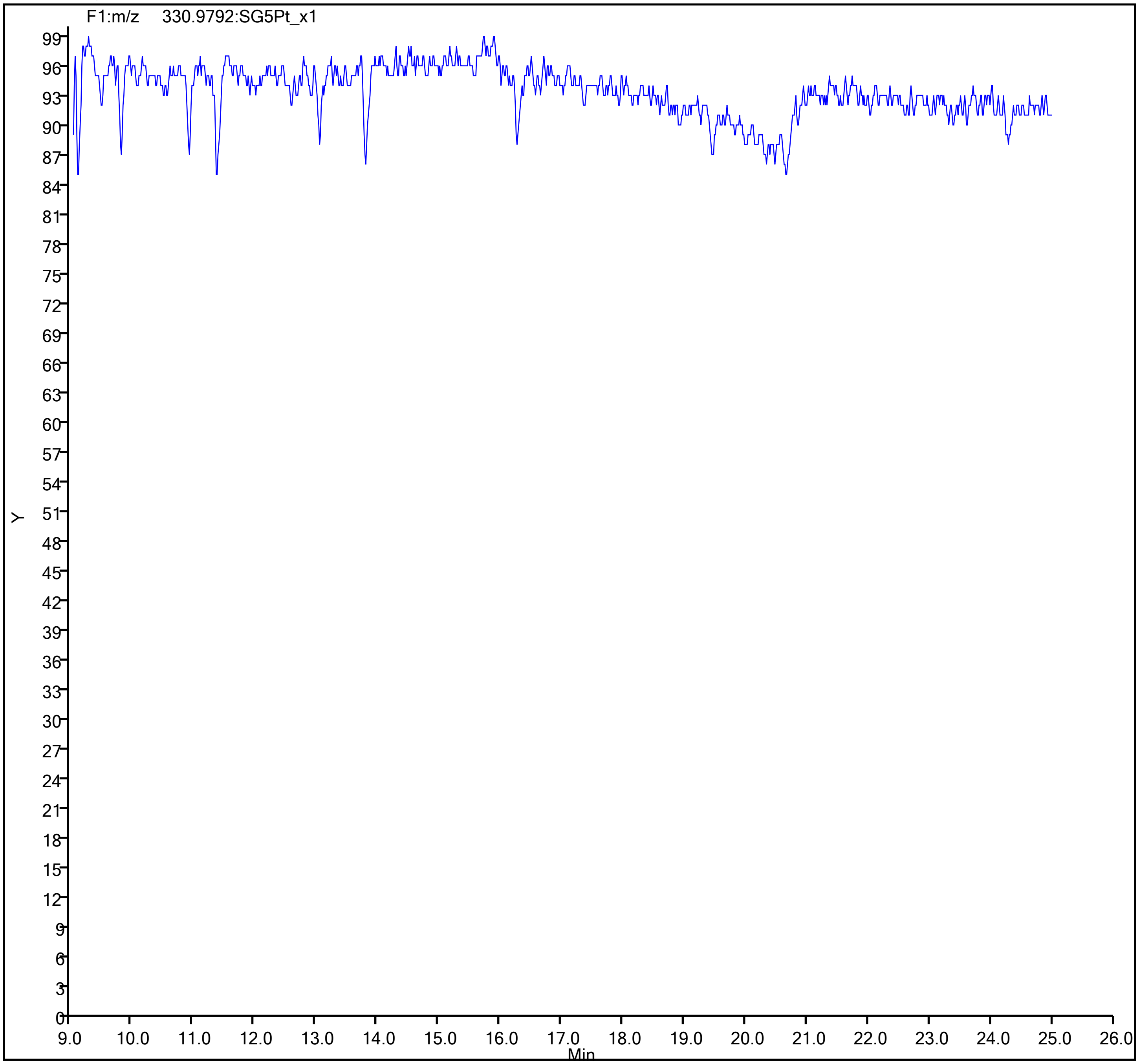

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-418764/1-A

Matrix: Water Lab File ID: 12OC20B10D5_4.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/05/2020 11:15

Sample wt/vol: 1000(mL) Date Analyzed: 10/12/2020 23:54

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421347 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	2.43	J	10	0.38
51207-31-9	2,3,7,8-TCDF	4.60	J	10	0.28
40321-76-4	1,2,3,7,8-PeCDD	4.54	J	50	0.40
57117-41-6	1,2,3,7,8-PeCDF	4.80	J	50	0.33
57117-31-4	2,3,4,7,8-PeCDF	4.90	J	50	0.37
39227-28-6	1,2,3,4,7,8-HxCDD	6.45	J	50	0.46
57653-85-7	1,2,3,6,7,8-HxCDD	5.69	J	50	0.43
19408-74-3	1,2,3,7,8,9-HxCDD	4.89	J	50	0.39
70648-26-9	1,2,3,4,7,8-HxCDF	5.46	J	50	0.71
57117-44-9	1,2,3,6,7,8-HxCDF	5.26	J	50	0.67
72918-21-9	1,2,3,7,8,9-HxCDF	5.15	J	50	0.39
60851-34-5	2,3,4,6,7,8-HxCDF	5.44	J	50	0.40
35822-46-9	1,2,3,4,6,7,8-HpCDD	5.73	J	50	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.13	J	50	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.23	J	50	0.31
3268-87-9	OCDD	9.43	J	100	0.45
39001-02-0	OCDF	9.39	J	100	0.64
41903-57-5	Total TCDD	6.17	J	10	0.38
30402-14-3	Total TCDF	8.09	J	10	0.28
36088-22-9	Total PeCDD	4.54	J	50	0.40
30402-15-4	Total PeCDF	9.70	J	50	0.35
34465-46-8	Total HxCDD	17.0	J	50	0.42
55684-94-1	Total HxCDF	21.3	J	50	0.54
37871-00-4	Total HpCDD	6.99	J	50	0.24
38998-75-3	Total HpCDF	9.36	J	50	0.26

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-418764/1-A

Matrix: Water Lab File ID: 12OC20B10D5_4.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/05/2020 11:15

Sample wt/vol: 1000(mL) Date Analyzed: 10/12/2020 23:54

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421347 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		25-164
89059-46-1	13C-2,3,7,8-TCDF	98		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	76		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	88		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	88		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	81		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	87		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	105		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	100		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	104		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	107		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	97		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	88		26-138
114423-97-1	13C-OCDD	75		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	110		35-197

Report Date: 14-Oct-2020 13:12:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Sample Type: MB
Inject. Date: 12-Oct-2020 23:54:27 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-418764/1-A MB 320-418764/1-A
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 13:12:51 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: dadunj Date: 14-Oct-2020 13:12:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.106	52292192	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.622	69644395	0.77	1.3598	97.9	97.9	0.2803	0.2803	97.94	
2,3,7,8-TCDF	16.637	145415	0.88	0.9077	0.2300	0.2300	0.0138	0.0138		
A Non-2,3,7,8-sub-TCDF	16.342	110364	0.77	0.9077	0.2037	0.1746	0.0138	0.0940		RQ
S Total TCDF					0.4337	0.4046	0.0138	0.0138		RQ
D 13C-2,3,7,8-TCDD	17.287	45980090	0.79	1.0536	83.5	83.5	0.1623	0.1623	83.46	
2,3,7,8-TCDD	17.317	56104	0.77	1.0061	0.1742	0.1213	0.0188	0.0188		RQM
$ 37Cl4-2,3,7,8-TCDD	17.302	24229090		1.0488	44.2	44.2	0.0420	0.0420	110	
A Non-2,3,7,8-sub-TCDD	16.781	86576	0.77	1.0061	0.1985	0.1871	0.0188	0.1323		RQM
S Total TCDD					0.3727	0.3084	0.0188	0.0188		RQ
D 13C-1,2,3,7,8-PeCDF	21.370	51859524	1.62	1.1306	87.7	87.7	0.2404	0.2404	87.72	
1,2,3,7,8-PeCDF	21.397	113834	1.62	0.9147	0.2400	0.2400	0.0166	0.0166		M
D 13C-2,3,4,7,8-PeCDF	22.652	48618423	1.62	1.0539	88.2	88.2	0.2579	0.2579	88.22	
2,3,4,7,8-PeCDF	22.666	113252	1.47	0.9508	0.2450	0.2450	0.0186	0.0186		
A F1 PeCDFs	19.147						0.0151	0.0151		
A Non-2,3,7,8-sub-PeCDF	22.128						0.0175	0.0175		U
S Total PeCDF					0.4850	0.4850	0.0176	0.0176		
D 13C-1,2,3,7,8-PeCDD	23.320	32205646	1.59	0.8084	76.2	76.2	0.1279	0.1279	76.18	
1,2,3,7,8-PeCDD	23.347	72767	1.60	0.9955	0.2270	0.2270	0.0198	0.0198		M
A Non-2,3,7,8-sub-PeCDD	22.290						0.0198	0.0203		RQU
S Total PeCDD					0.2270	0.2270	0.0198	0.0198		
D 13C-1,2,3,4,7,8-HxCDF	29.409	35993156	0.51	0.9225	104.6	104.6	0.6396	0.6396	105	
1,2,3,4,7,8-HxCDF	29.449	108911	1.09	1.1090	0.2729	0.2729	0.0354	0.0354		
D 13C-1,2,3,6,7,8-HxCDF	29.715	38664118	0.52	1.0336	100.3	100.3	0.5708	0.5708	100	
1,2,3,6,7,8-HxCDF	29.769	109056	1.17	1.0721	0.2631	0.2631	0.0336	0.0336		M
D 13C-2,3,4,6,7,8-HxCDF	30.847	39153161	0.53	0.9773	107.4	107.4	0.6037	0.6037	107	
2,3,4,6,7,8-HxCDF	30.860	115463	1.24	1.0838	0.2721	0.2721	0.0200	0.0200		M
D 13C-1,2,3,7,8,9-HxCDF	31.792	35592047	0.52	0.9153	104.3	104.3	0.6446	0.6446	104	
1,2,3,7,8,9-HxCDF	31.819	100141	1.18	1.0931	0.2574	0.2574	0.0193	0.0193		M
A Non-2,3,7,8-sub-HxCDF	29.283						0.0250	0.0250		U
S Total HxCDF					1.065	1.065	0.0271	0.0271		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.592	37288589	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.086	24014967	1.29	0.7977	80.7	80.7	0.3907	0.3907	80.74	
1,2,3,4,7,8-HxCDD	31.086	77614	1.24	1.0014	0.3729	0.3227	0.0228	0.0228		RQ
D 13C-1,2,3,6,7,8-HxCDD	31.206	32518545	1.28	1.0010	87.1	87.1	0.3113	0.3113	87.12	
1,2,3,6,7,8-HxCDD	31.233	82376	1.06	0.8902	0.2846	0.2846	0.0213	0.0213		M
1,2,3,7,8,9-HxCDD	31.605	73076	1.05	1.0579	0.2444	0.2444	0.0196	0.0196		M
A Non-2,3,7,8-sub-HxCDD	29.888						0.0211	0.0211		U
S Total HxCDD					0.9018	0.8517	0.0212	0.0212		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.354	30921937	0.43	0.8506	97.5	97.5	1.315	1.315	97.49	
1,2,3,4,6,7,8-HpCDF	33.366	107942	1.18	1.3603	0.2566	0.2566	0.0109	0.0109		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.399	24933838	0.44	0.7618	87.8	87.8	1.468	1.468	87.78	
1,2,3,4,7,8,9-HpCDF	34.411	69663	1.01	1.3207	0.2116	0.2116	0.0156	0.0156		M
A Non-2,3,7,8-sub-HpCDF	33.889						0.0128	0.0128		
S Total HpCDF					0.4682	0.4682	0.0132	0.0132		
D 13C-1,2,3,4,6,7,8-HpCDD	34.120	25985188	1.07	0.8873	78.5	78.5	0.5763	0.5763	78.54	
1,2,3,4,6,7,8-HpCDD	34.132	74303	1.17	0.9988	0.2863	0.2863	0.0118	0.0118		M
A Non-2,3,7,8-sub-HpCDD	33.870	16380	1.07	0.9988	0.0631	0.0631	0.0118	0.0631		
S Total HpCDD					0.3494	0.3494	0.0118	0.0118		
D 13C-OCDD	36.390	35338748	0.91	0.6287	150.7	150.7	0.2504	0.2504	75.37	
OCDF	36.474	117253	0.95	1.4136	0.4694	0.4694	0.0320	0.0320		M
OCDD	36.402	94096	0.89	1.1290	0.4717	0.4717	0.0225	0.0225		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 14-Oct-2020 13:12:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Sample Type: MB
Inject. Date: 12-Oct-2020 23:54:27 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-418764/1-A MB 320-418764/1-A
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 13:12:51 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: dadunj Date: 14-Oct-2020 13:12:51

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.106	17.106	0		23111580	5996661	4783	11957	1254		
333.9339	17.106	17.106	0		29180612	7551554	4481	11202	1685	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.622	16.622	0	0.972	30348557	7616897	6315	15787	1206		
317.9389	16.622	16.622	0	0.972	39295838	9848244	14339	35847	687	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.637	16.637	0	1.001	68015	16112	311	777	52		
305.8987	16.637	16.637	0	1.001	77400	18526	561	1402	33	0.88(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	15.564	16.342	-47	0.936	7904	2439	311	777	8		
305.8987	15.564	16.342	-47	0.936	9606	3034	561	1402	5	0.82(0.65-0.89)	
303.9016	16.289	16.342	-3	0.980	32837	7227	311	777	23		
	Empc Correction				25849	6009	311	777	19		
305.8987	16.274	16.342	-4	0.979	33571	7805	561	1402	14	0.98(0.65-0.89)	
303.9016	17.060	16.342	43	1.026	10340	1668	311	777	5		
	Empc Correction				6046	2028	311	777	7		
305.8987	17.045	16.342	42	1.025	7852	2635	561	1402	5	1.32(0.65-0.89)	
303.9016	18.376	16.342	122	1.106	8499	2014	311	777	6		
305.8987	18.391	16.342	123	1.106	18140	3155	561	1402	6	0.47(0.65-0.89)	
	Empc Correction				11037	2615	561	1402	5		
13C-2,3,7,8-TCDD											
331.9368	17.287	17.287	0	1.011	20243088	4825351	4783	11957	1009		
333.9339	17.287	17.287	0	1.011	25737002	6161756	4481	11202	1375	0.79(0.65-0.89)	
2,3,7,8-TCDD											RQM
319.8965	17.317	17.302	1	1.002	24407	4478	514	1285	9		
321.8936	17.302	17.302	0	1.001	56205	13105	319	797	41	0.43(0.65-0.89)	M
	Empc Correction				31697	5815	319	797	18		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
37Cl4-2,3,7,8-TCDD											
327.8847	17.302	17.302	0	1.011	24229090	5719851	2389	5972	2394		
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	15.201	16.781	-95	0.879	25667	6150	514	1285	12		M
321.8936	15.201	16.781	-95	0.879	35516	9264	319	797	29	0.72(0.65-0.89)	M
319.8965	15.488	16.781	-77	0.896	11047	3912	514	1285	8		M
321.8936	15.473	16.781	-78	0.895	19584	4786	319	797	15	0.56(0.65-0.89)	M
	Empc Correction				14346	5080	319	797	16		
13C-1,2,3,7,8-PeCDF											
351.9000	21.370	21.370	0	1.249	32056882	5709047	9009	22522	634		
353.8970	21.370	21.370	0	1.249	19802642	3509757	5718	14295	614	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.397	21.383	1	1.001	70432	12330	246	615	50		M
341.8567	21.397	21.383	1	1.001	43402	9323	314	785	30	1.62(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	22.652	22.638	1	1.324	30039979	4866720	9009	22522	540		
353.8970	22.652	22.638	1	1.324	18578444	3043439	5718	14295	532	1.62(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	22.666	22.665	0	1.001	67321	12085	246	615	49		
341.8567	22.693	22.665	2	1.002	45931	7710	314	785	25	1.47(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.147						160	400			
341.8567	19.147						323	807			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	22.128						246	615			
341.8567	22.128						314	785			
13C-1,2,3,7,8-PeCDD											
367.8949	23.320	23.320	0	1.363	19756518	3056017	3420	8550	894		
369.8919	23.320	23.320	0	1.363	12449128	1911103	2183	5457	875	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	23.347	23.347	0	1.001	44736	7464	260	650	29		M
357.8516	23.334	23.347	-1	1.001	28031	5324	131	327	41	1.60(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											U
355.8546	20.306	22.290	-119	0.871	7769	1444	260	650	6		
	Empc Correction				3958	1022	260	650	4		
357.8516	20.293	22.290	-120	0.870	2554	660	131	327	5	3.04(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.409	29.409	0	0.931	12198092	1475641	6856	17140	215		
385.8610	29.409	29.409	0	0.931	23795064	2818495	12883	32207	219	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.449	29.435	1	1.001	56713	6523	372	930	18		
375.8178	29.436	29.435	0	1.001	52198	7153	303	757	24	1.09(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	29.715	29.702	1	0.941	13249559	1615267	6856	17140	236		
385.8610	29.715	29.702	1	0.941	25414559	3067104	12883	32207	238	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											M
373.8208	29.769	29.728	2	1.002	58889	7292	372	930	20		M
375.8178	29.742	29.728	1	1.001	50167	6280	303	757	21	1.17(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	30.847	30.847	0	0.976	13479463	2708843	6856	17140	395		
385.8610	30.847	30.847	0	0.976	25673698	5071356	12883	32207	394	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	30.860	30.873	-1	1.000	63924	13974	372	930	38		M
375.8178	30.874	30.873	0	1.001	51539	9766	303	757	32	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	31.792	31.792	0	1.006	12105564	2717677	6856	17140	396		
385.8610	31.792	31.792	0	1.006	23486483	5287790	12883	32207	410	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	31.819	31.805	1	1.001	54130	13331	372	930	36		M
375.8178	31.805	31.805	0	1.000	46011	10230	303	757	34	1.18(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											U
373.8208	29.283						372	930			
375.8178	29.283						303	757			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.592	31.592	0		20747923	4679157	6012	15030	778		
403.8529	31.592	31.592	0		16540666	3684907	4414	11035	835	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.086	31.073	1	0.984	13510207	3120802	6012	15030	519		
403.8529	31.086	31.073	1	0.984	10504760	2455072	4414	11035	556	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8157	31.086	31.099	-1	1.000	42965	8540	230	575	37		
391.8127	31.100	31.099	0	1.000	46713	8984	280	700	32	0.92(1.05-1.43)	
	Empc Correction				34649	6887	280	700	25		
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.206	31.206	0	0.988	18257348	3721004	6012	15030	619		
403.8529	31.206	31.206	0	0.988	14261197	3007693	4414	11035	681	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8157	31.233	31.219	1	1.001	42305	10461	230	575	45		M
391.8127	31.219	31.219	0	1.000	40071	8403	280	700	30	1.06(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8157	31.605	31.605	0	1.017	37400	9677	230	575	42		M
391.8127	31.619	31.605	1	1.017	35676	6879	280	700	25	1.05(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											U
389.8157	29.888						230	575			
391.8127	29.888						280	700			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.354	33.354	0	1.056	9237928	3051370	12374	30935	247		
419.8220	33.354	33.354	0	1.056	21684009	7043767	25038	62595	281	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.366	33.366	0	1.000	58505	19367	338	845	57		M
409.7789	33.366	33.366	0	1.000	49437	16508	258	645	64	1.18(0.88-1.20)	

Report Date: 14-Oct-2020 13:12:51 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.399	34.399	0	1.089	7587177	2208872	12374	30935	179		
419.8220	34.399	34.399	0	1.089	17346661	5002782	25038	62595	200	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	34.411	34.411	0	1.000	35089	11645	338	845	34		M
409.7789	34.399	34.411	-1	1.000	34574	10765	258	645	42	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.889						338	845			
409.7789	33.889						258	645			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.120	34.119	0	1.080	13422210	4032669	8249	20622	489		
437.8140	34.120	34.119	0	1.080	12562978	3793638	8857	22142	428	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.132	34.144	-1	1.000	40011	11693	190	475	62		M
425.7737	34.132	34.144	-1	1.000	34292	12415	180	450	69	1.17(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.609	33.870	-16	0.985	8480	2508	190	475	13		
425.7737	33.597	33.870	-16	0.985	7900	2554	180	450	14	1.07(0.88-1.20)	
13C-OCDD											
469.7779	36.390	36.390	0	1.152	16880156	4156907	2870	7175	1448		
471.7750	36.390	36.390	0	1.152	18458592	4641460	2397	5992	1936	0.91(0.76-1.02)	
OCDF											M
441.7428	36.474	36.474	0	1.002	57000	17511	308	770	57		M
443.7399	36.486	36.474	1	1.003	60253	19721	487	1217	40	0.95(0.76-1.02)	M
OCDD											M
457.7377	36.402	36.390	1	1.000	44243	12297	249	622	49		M
459.7348	36.390	36.390	0	1.000	49853	15124	198	495	76	0.89(0.76-1.02)	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

U - Marked Undetected

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Inject. Date: 12-Oct-2020 23:54:27 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 4

Non-2,3,7,8-sub-TCDF, RT: 16.342

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	69644395	17465141

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	69644395	17465141

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.564	7904	2439	9606	3034	0.0277	0.82	
16.289	32837	7227	33571	7805	0.1050	0.98	RQ
16.289	25849	6009	33571	7805	0.0940		Empc Correction
17.060	10340	1668	7852	2635	0.0288	1.32	RQ
17.060	6046	2028	7852	2635	0.0220		Empc Correction
18.376	8499	2014	18140	3155	0.0421	0.47	RQ
18.376	8499	2014	11037	2615	0.0309		Empc Correction
Signal Totals:							
	48298	12490	62066	16089			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	128749	29977				0.86	RQ
	110364	28579					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2037 = (128749 * 100.000) / (69644395 * 0.908)
Empc Amount: 0.1746 = (110364 * 100.000) / (69644395 * 0.908)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d		
Lims ID:	MB 320-418764/1-A		
Client ID:			
Inject. Date:	12-Oct-2020 23:54:27	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	4

Non-2,3,7,8-sub-TCDD, RT: 16.781

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.006	D 13C-2,3,7,8-TCDD	100.000	45980090	10987107

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	45980090	10987107

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.201	25667	6150	35516	9264	0.1323	0.72	M
15.488	11047	3912	19584	4786	0.0662	0.56	RQM
15.488	11047	3912	14346	5080	0.0549		Empc Correction
Signal Totals:							
	36714	10062	49862	14344			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	91814	24112				0.67	RQM
	86576	24406					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1985 = (91814 * 100.000) / (45980090 * 1.006)
Empc Amount: 0.1871 = (86576 * 100.000) / (45980090 * 1.006)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Inject. Date: 12-Oct-2020 23:54:27 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 4

Non-2,3,7,8-sub-PeCDF, RT: 22.128

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	51859524	9218804
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	48618423	7910159

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	50238973	8564481

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Inject. Date: 12-Oct-2020 23:54:27 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 4

Non-2,3,7,8-sub-PeCDD, RT: 22.290

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	0.995	D 13C-1,2,3,7,8-PeCDD	100.000	32205646	4967120

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.995		100.000	32205646	4967120

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
20.306	7769	1444	2554	660	0.0322	3.04	RQ
20.306	3958	1022	2554	660	0.0203		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Inject. Date: 12-Oct-2020 23:54:27 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 4

Non-2,3,7,8-sub-HxCDF, RT: 29.283

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.109	D 13C-1,2,3,4,7,8-HxCDF	100.000	35993156	4294136
1,2,3,6,7,8-HxCDF	1.072	D 13C-1,2,3,6,7,8-HxCDF	100.000	38664118	4682371
2,3,4,6,7,8-HxCDF	1.084	D 13C-2,3,4,6,7,8-HxCDF	100.000	39153161	7780199
1,2,3,7,8,9-HxCDF	1.093	D 13C-1,2,3,7,8,9-HxCDF	100.000	35592047	8005467

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.089		100.000	37350620	6190543

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Inject. Date: 12-Oct-2020 23:54:27 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 4

Non-2,3,7,8-sub-HxCDD, RT: 29.888

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.001	D 13C-1,2,3,4,7,8-HxCDD	100.000	24014967	5575874
1,2,3,6,7,8-HxCDD	0.890	D 13C-1,2,3,6,7,8-HxCDD	100.000	32518545	6728697
1,2,3,7,8,9-HxCDD	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.983		100.000	28266756	6152285

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Lims ID: MB 320-418764/1-A
Client ID:
Inject. Date: 12-Oct-2020 23:54:27 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 421347 Lims Sample ID: 4

Non-2,3,7,8-sub-HpCDD, RT: 33.870

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	0.999	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	25985188	7826307

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.999		100.000	25985188	7826307

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.609	8480	2508	7900	2554	0.0631	1.07	
Signal Totals:							
	8480	2508	7900	2554			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16380	5062				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0631 = (16380 * 100.000) / (25985188 * 0.999)

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Injection Date: 12-Oct-2020 23:54:27
Instrument ID: 10D5
Lims ID: MB 320-418764/1-A
Client ID:
Operator ID: ALM
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 17.30
Area: 60779
Amount: 0.184135
Amount Units: pg/ul

Processing Integration Results

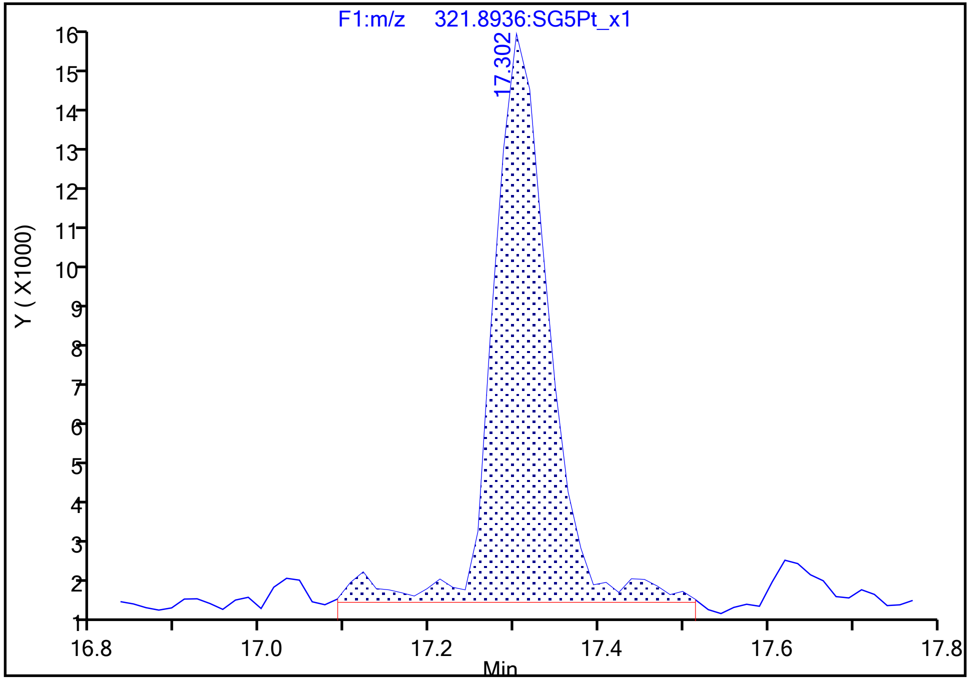

RT: 17.30
Area: 56205
Amount: 0.174248
Amount Units: pg/ul

Manual Integration Results

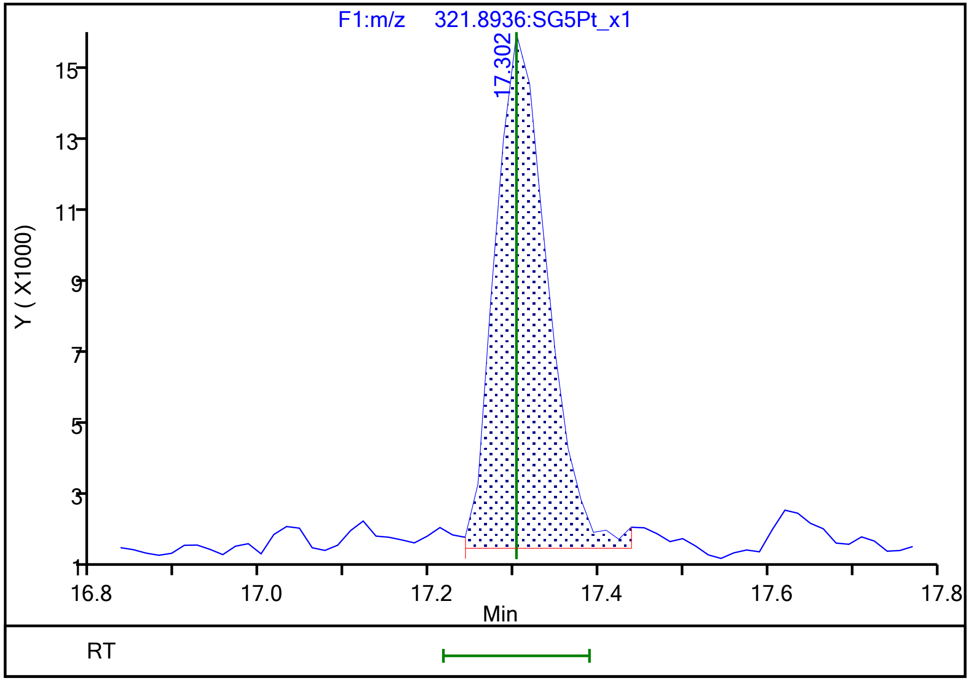

Reviewer: dadunj, 14-Oct-2020 13:09:27

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d

Injection Date: 12-Oct-2020 23:54:27

Instrument ID: 10D5

Lims ID: MB 320-418764/1-A

Client ID:

Operator ID: ALM

ALS Bottle#: 4

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.17- 18.39)

Signal: 1

Processing Integration Results

RT = 15.201 Area = 28529

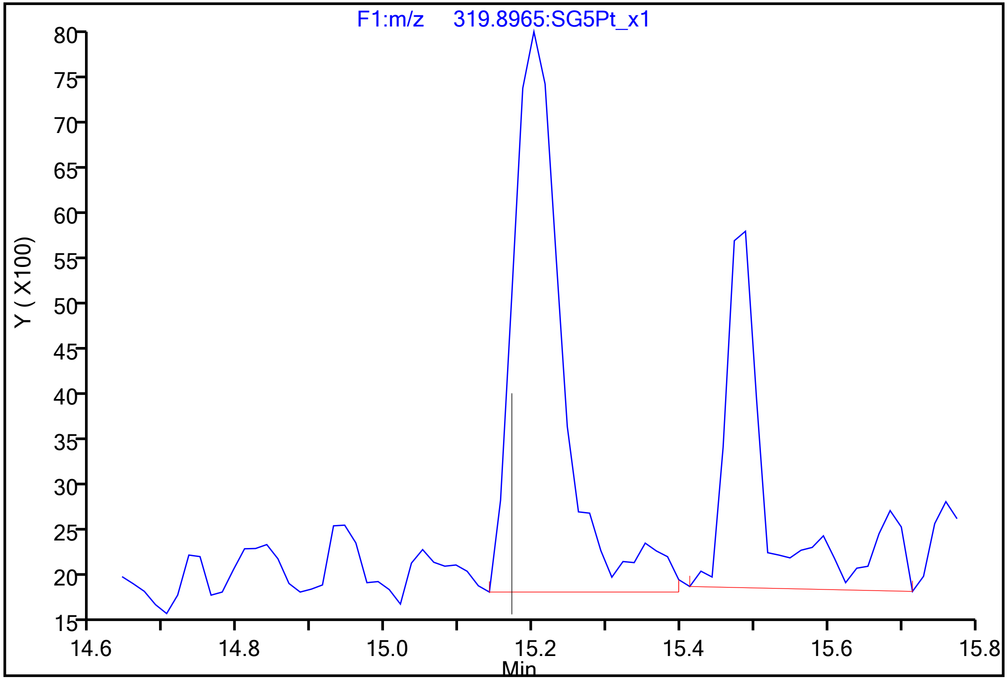

Manual Integration Results

RT = 15.201 Area = 25667 M

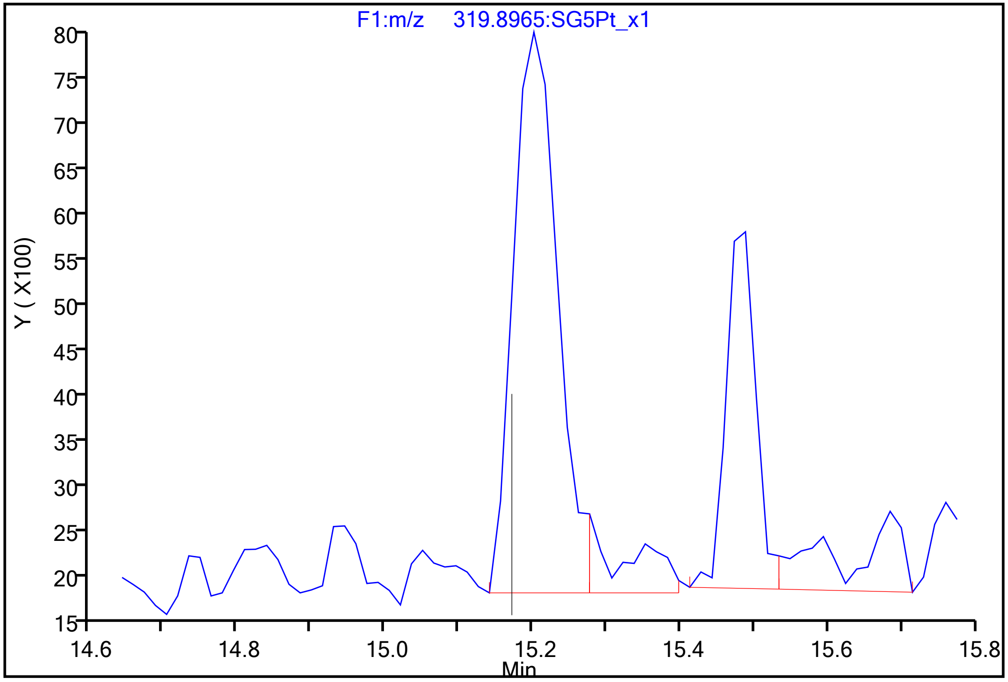

Reviewer: dadunj, 14-Oct-2020 13:09:36

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (15.17- 18.39)

Signal: 2

Processing Integration Results

RT = 15.201 Area = 36595

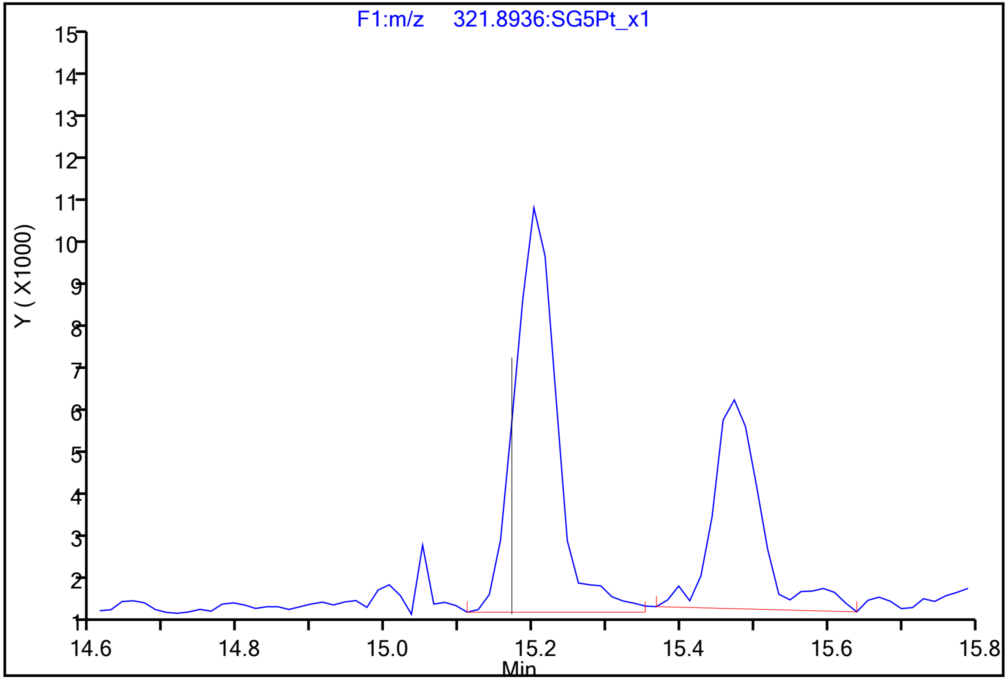

Manual Integration Results

RT = 15.201 Area = 35516 M

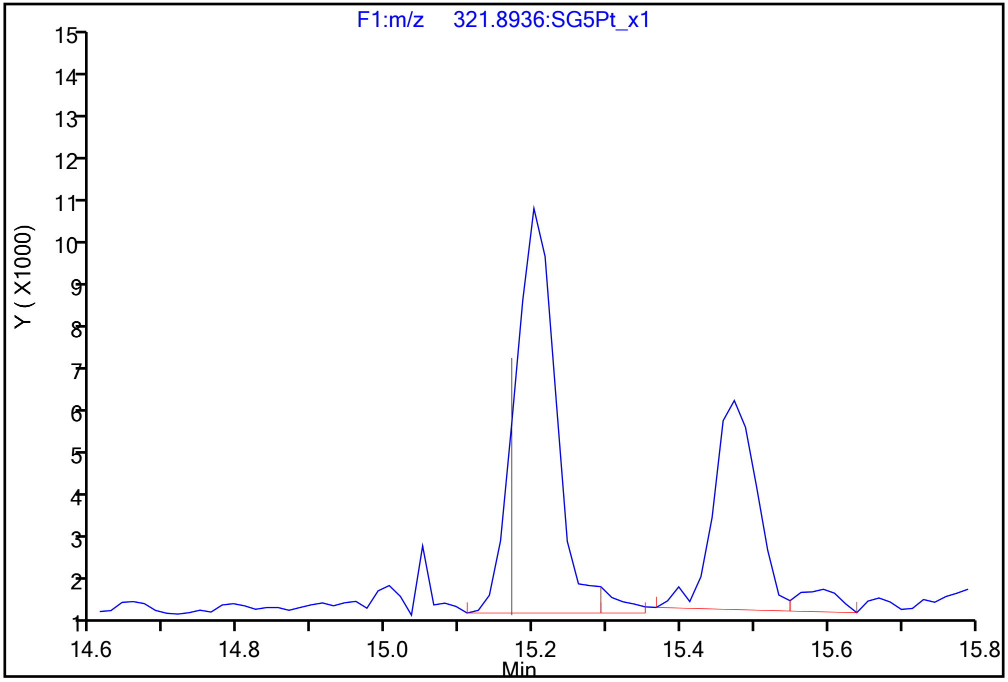

Reviewer: dadunj, 14-Oct-2020 13:09:38

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.17- 18.39)

Signal: 1

Processing Integration Results

RT = 15.488 Area = 15712

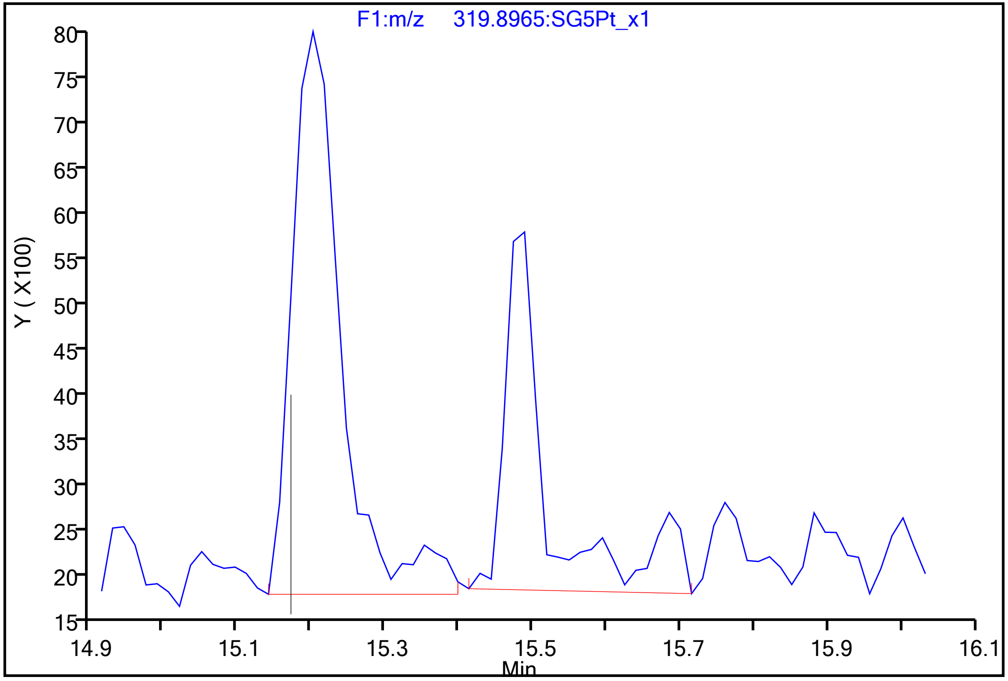

Manual Integration Results

RT = 15.488 Area = 11047 M

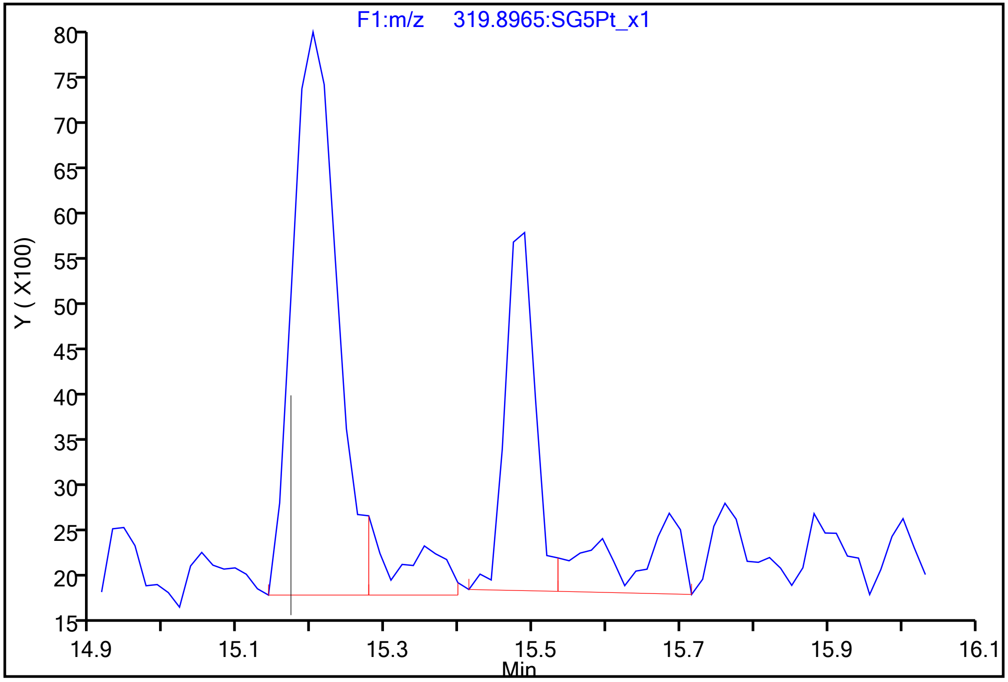

Reviewer: dadunj, 14-Oct-2020 13:09:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52　　Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d
Injection Date: 12-Oct-2020 23:54:27　　Instrument ID: 10D5
Lims ID: MB 320-418764/1-A
Client ID:
Operator ID: ALM　　ALS Bottle#: 4　　Worklist Smp#: 4
Injection Vol: 2.0 ul　　Dil. Factor: 1.0000
Method: Dioxin_10D5　　Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)　　Detector F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (15.17- 18.39)

Signal: 2

Processing Integration Results

RT = 15.473　　Area = 21511

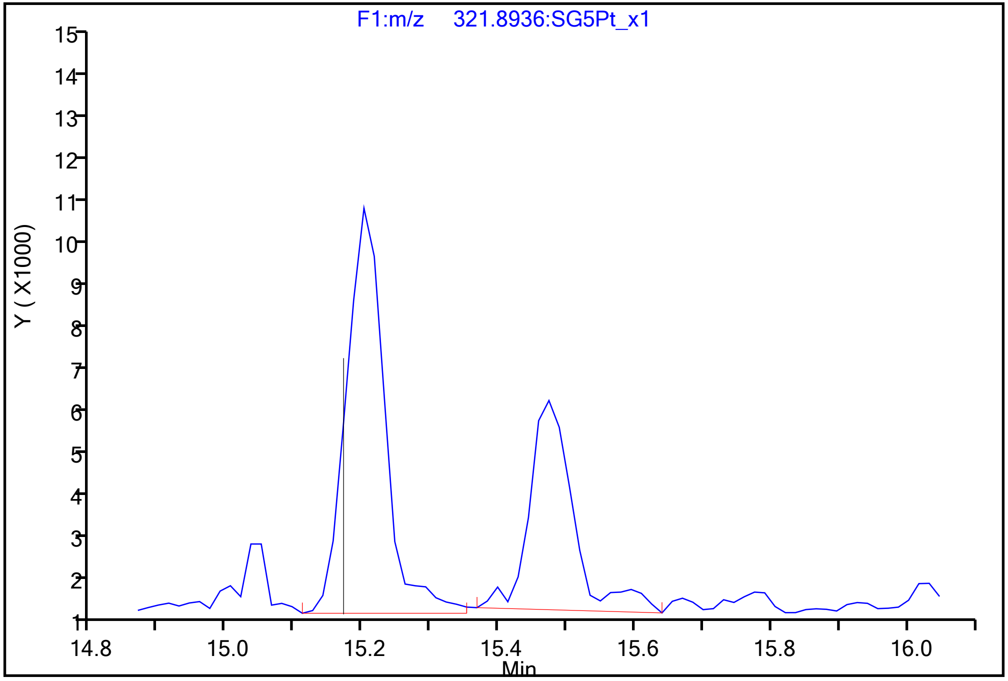

Manual Integration Results

RT = 15.473　　Area = 19584 M

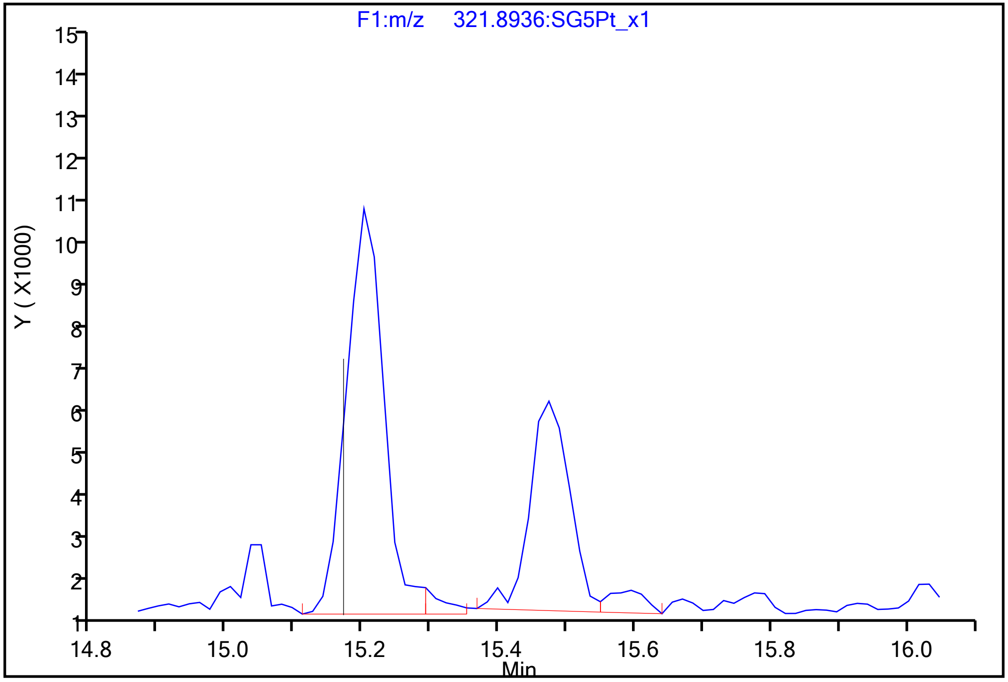

Reviewer: dadunj, 14-Oct-2020 13:09:38

Audit Action: Split an Integrated Peak　　Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d

Injection Date: 12-Oct-2020 23:54:27
Instrument ID: 10D5
Lims ID: MB 320-418764/1-A
Client ID:
Operator ID: ALM
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2:HRSIR

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT: 21.40
Area: 49088
Amount: 0.261993
Amount Units: pg/ul

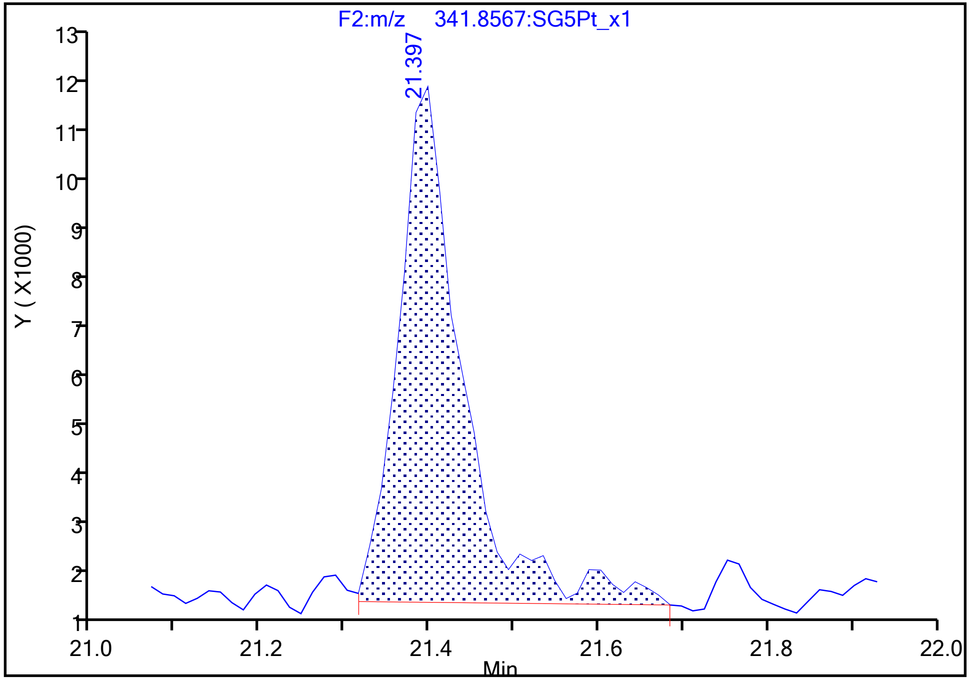

Manual Integration Results

RT: 21.40
Area: 43402
Amount: 0.239963
Amount Units: pg/ul

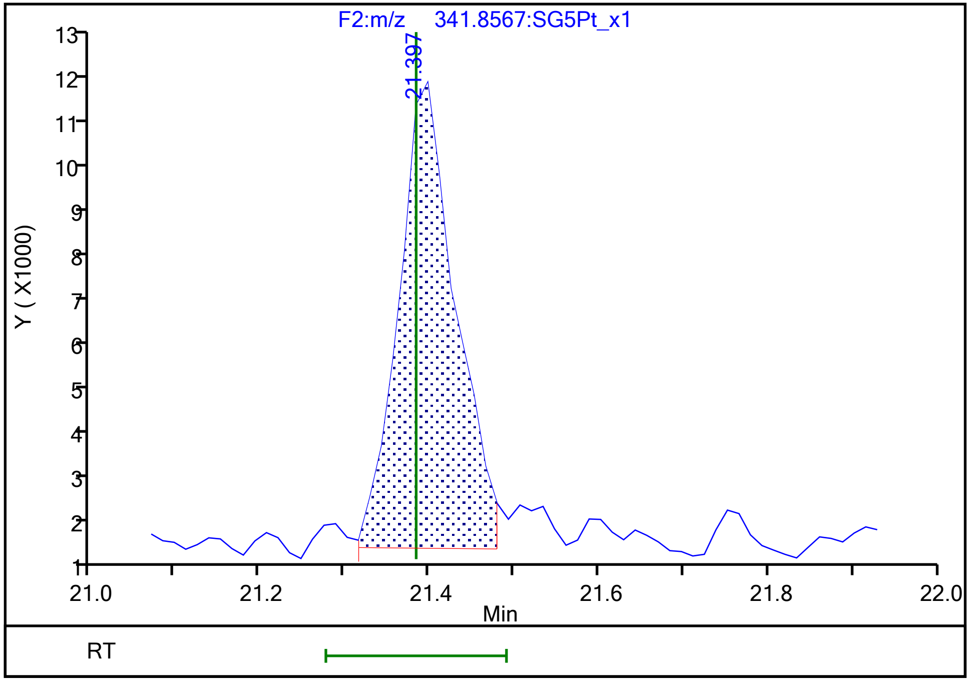

Reviewer: dadunj, 14-Oct-2020 13:09:47

Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT: 21.40
Area: 75197
Amount: 0.261993
Amount Units: pg/ul

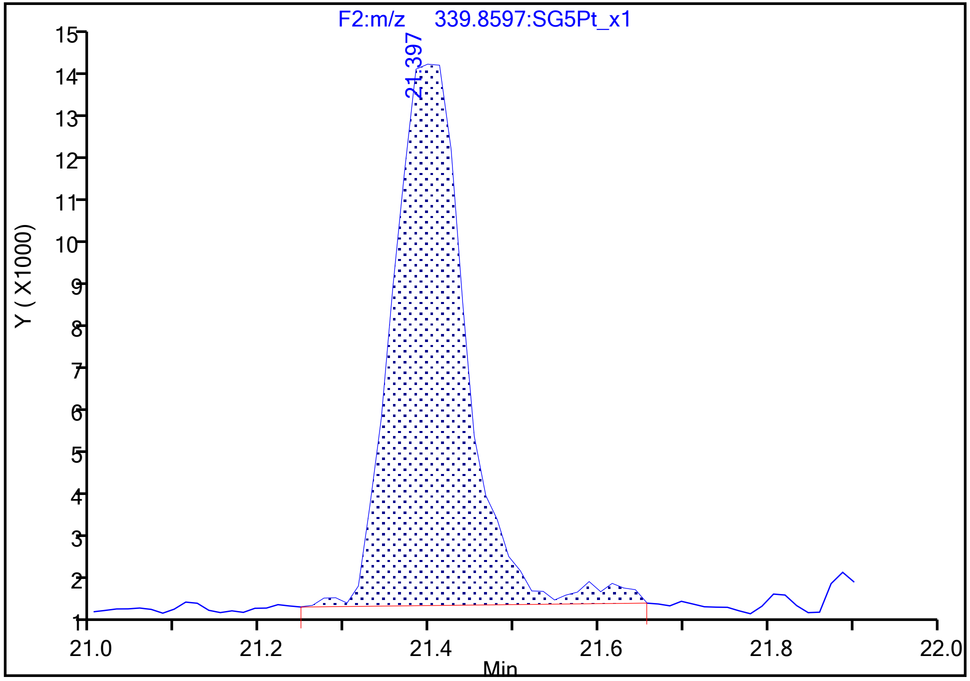

Manual Integration Results

RT: 21.40
Area: 70432
Amount: 0.239963
Amount Units: pg/ul

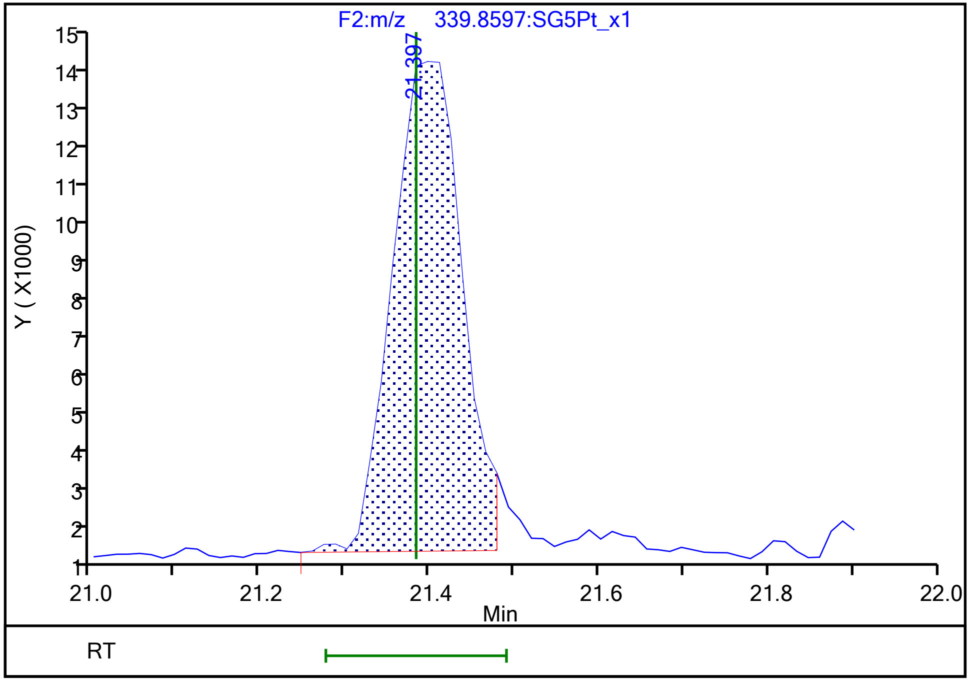

Reviewer: dadunj, 14-Oct-2020 13:09:52

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	23.35
Area:	48503
Amount:	0.248883
Amount Units:	pg/ul

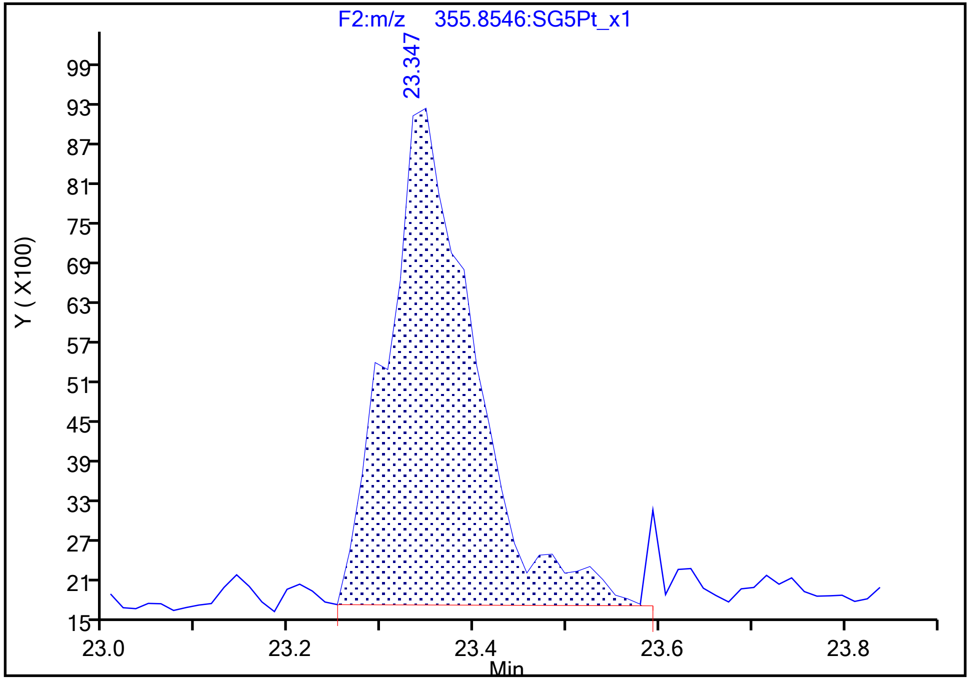

Manual Integration Results

RT:	23.35
Area:	44736
Amount:	0.226973
Amount Units:	pg/ul

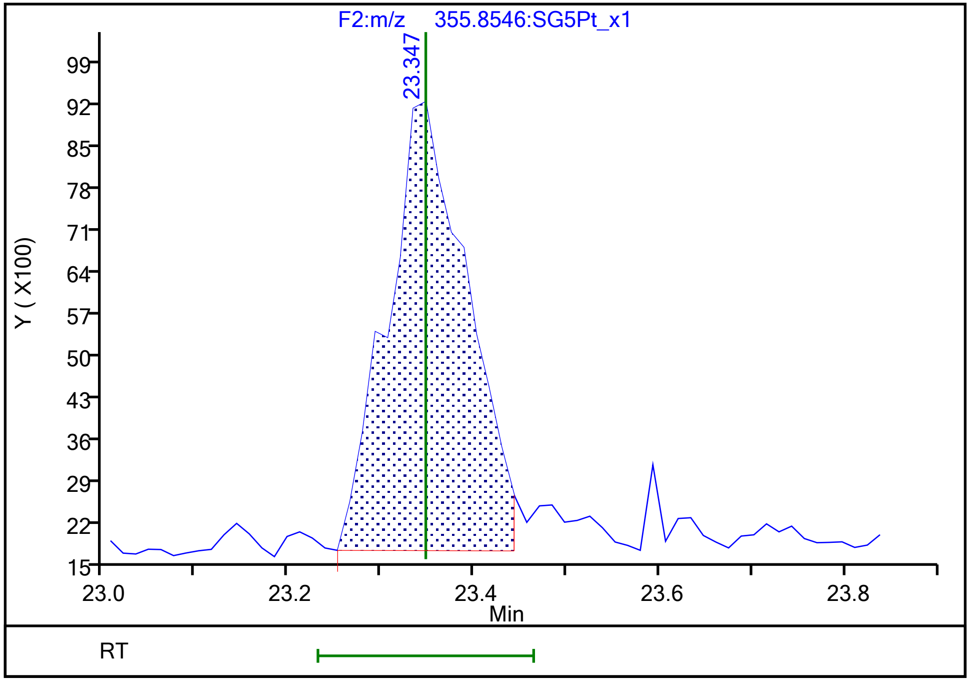

Reviewer: dadunj, 14-Oct-2020 13:10:14

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT:	23.33
Area:	31288
Amount:	0.248883
Amount Units:	pg/ul

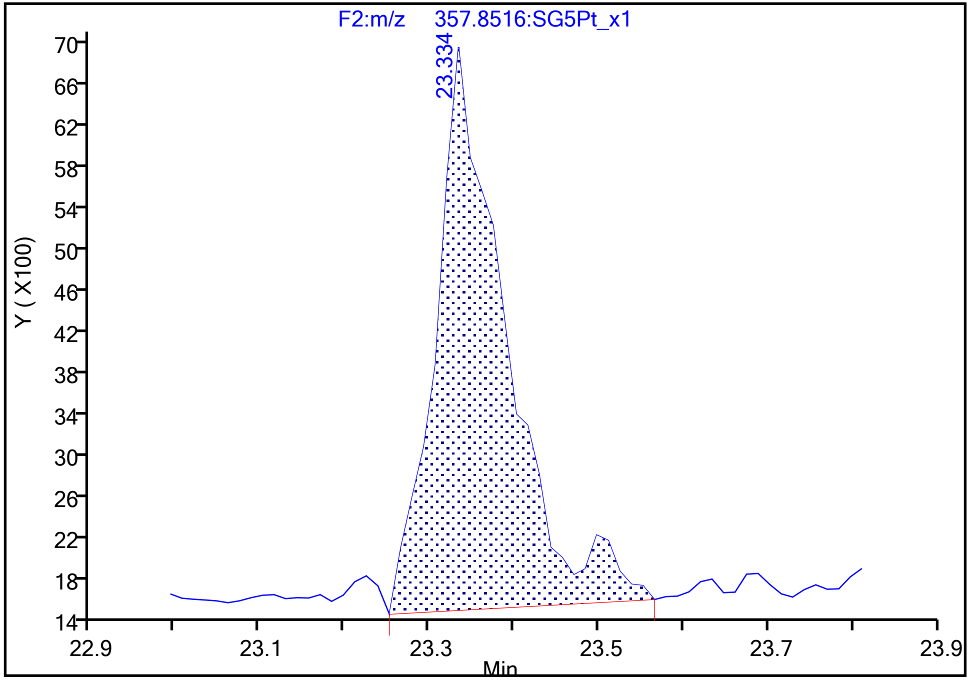

Manual Integration Results

RT:	23.33
Area:	28031
Amount:	0.226973
Amount Units:	pg/ul

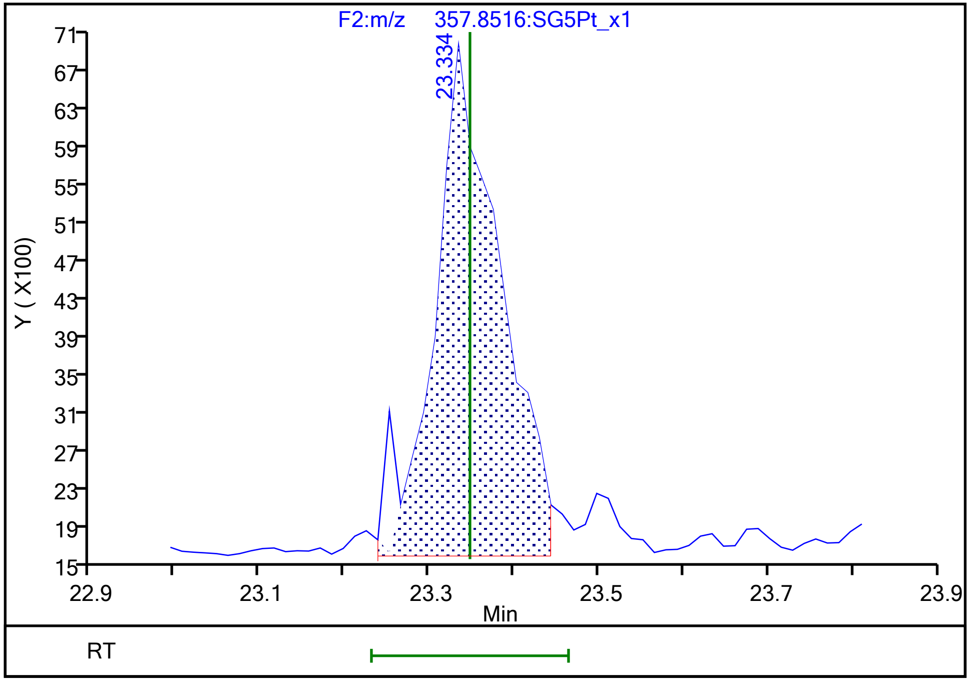

Reviewer: dadunj, 14-Oct-2020 13:10:17

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT:	29.77
Area:	66026
Amount:	0.289743
Amount Units:	pg/ul

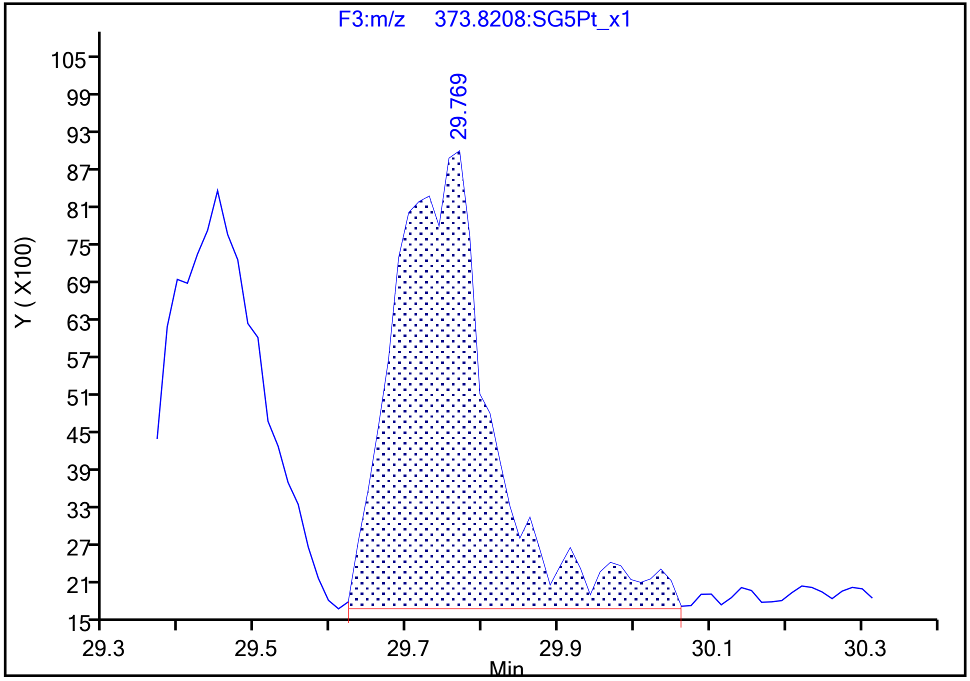

Manual Integration Results

RT:	29.77
Area:	58889
Amount:	0.263088
Amount Units:	pg/ul

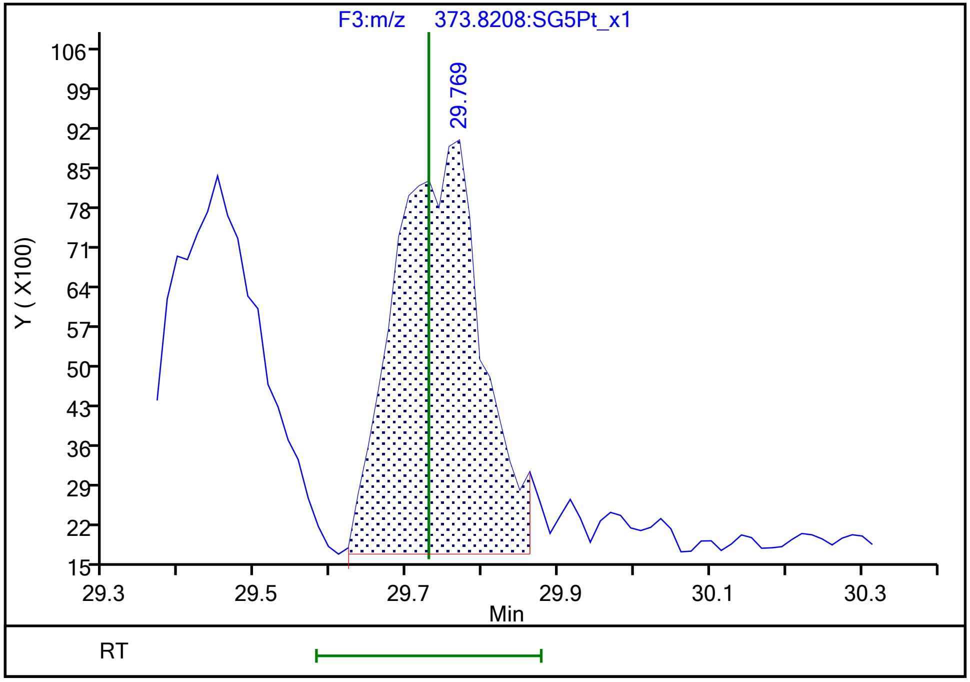

Reviewer: dadunj, 14-Oct-2020 13:10:30

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d		
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5
Lims ID:	MB 320-418764/1-A		
Client ID:			
Operator ID:	ALM	ALS Bottle#:	4 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Processing Integration Results

RT: 29.74
Area: 54079
Amount: 0.289743
Amount Units: pg/ul

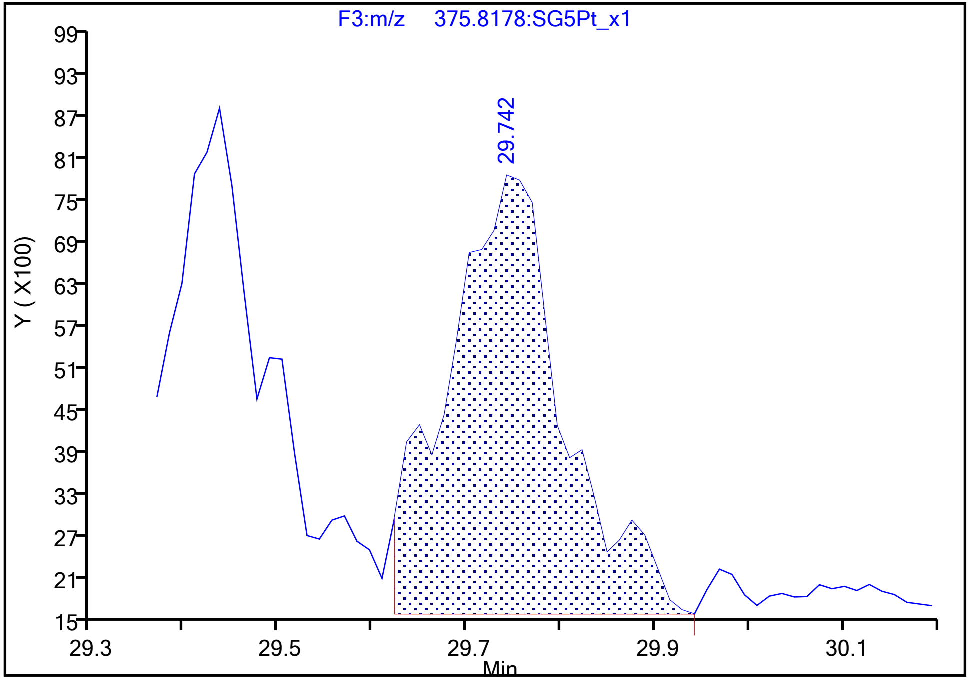

Manual Integration Results

RT: 29.74
Area: 50167
Amount: 0.263088
Amount Units: pg/ul

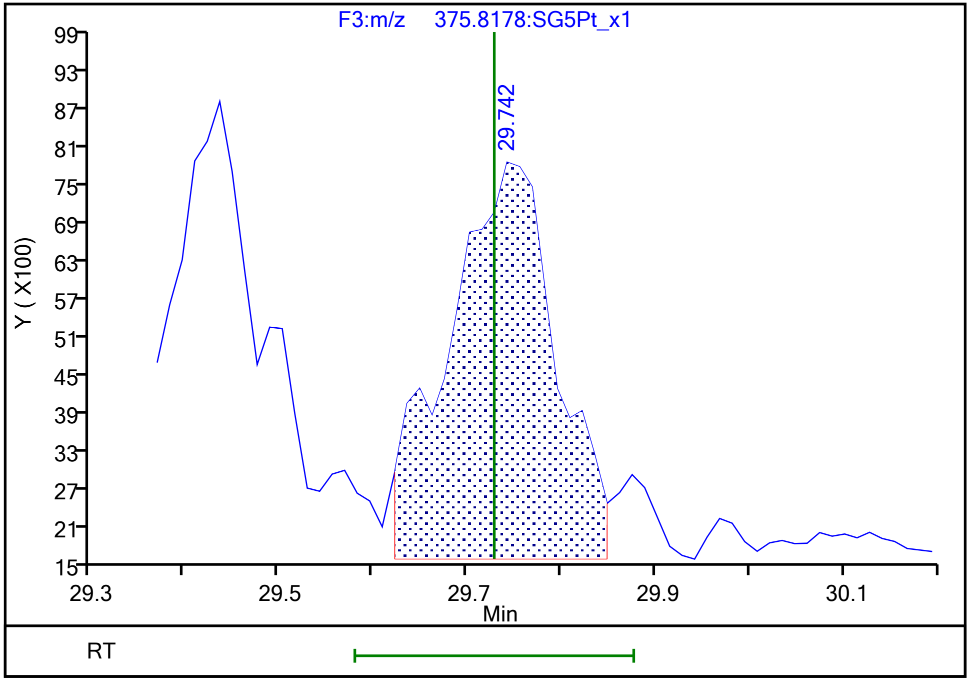

Reviewer: dadunj, 14-Oct-2020 13:10:33

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

Processing Integration Results

RT:	30.86
Area:	66646
Amount:	0.278520
Amount Units:	pg/ul

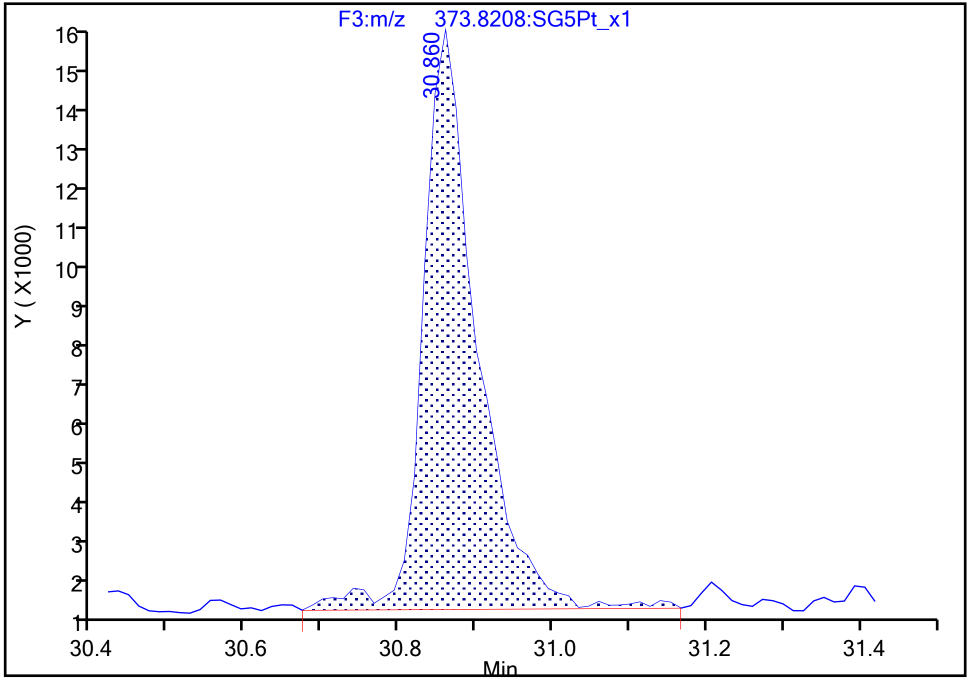

Manual Integration Results

RT:	30.86
Area:	63924
Amount:	0.272105
Amount Units:	pg/ul

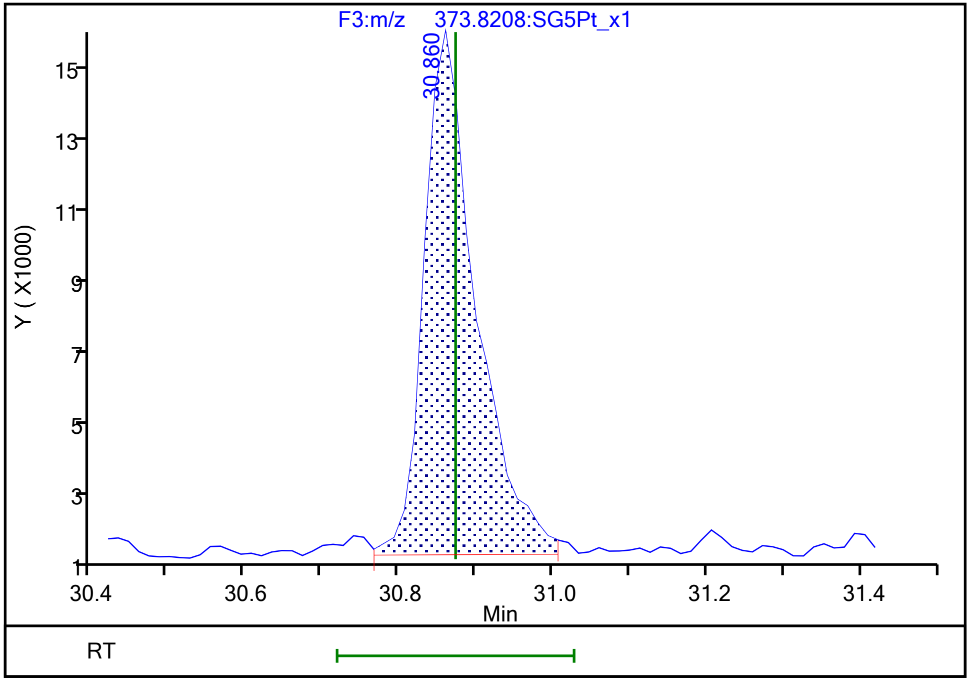

Reviewer: dadunj, 14-Oct-2020 13:10:40

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	31.82
Area:	62966
Amount:	0.306912
Amount Units:	pg/ul

Processing Integration Results

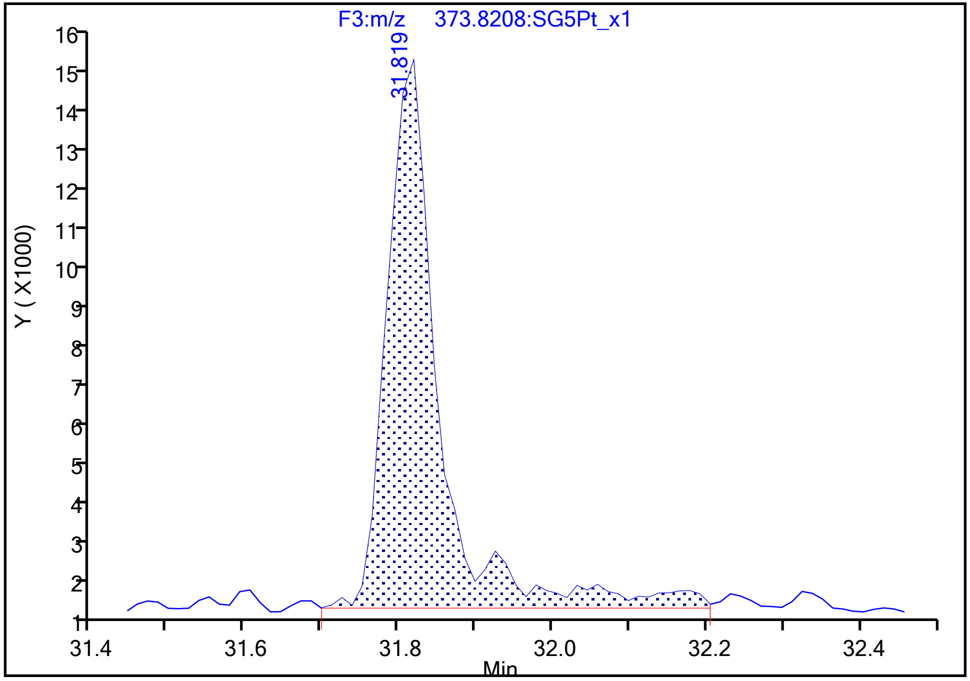

RT:	31.82
Area:	54130
Amount:	0.257401
Amount Units:	pg/ul

Manual Integration Results

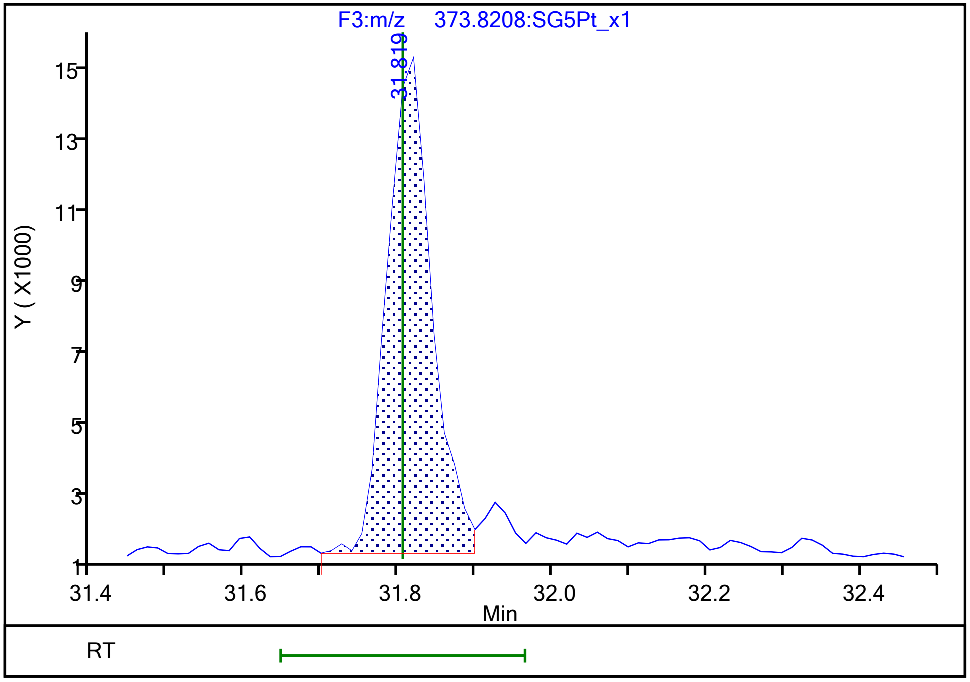

Reviewer: dadunj, 14-Oct-2020 13:10:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT: 31.81
Area: 56437
Amount: 0.306912
Amount Units: pg/ul

Processing Integration Results

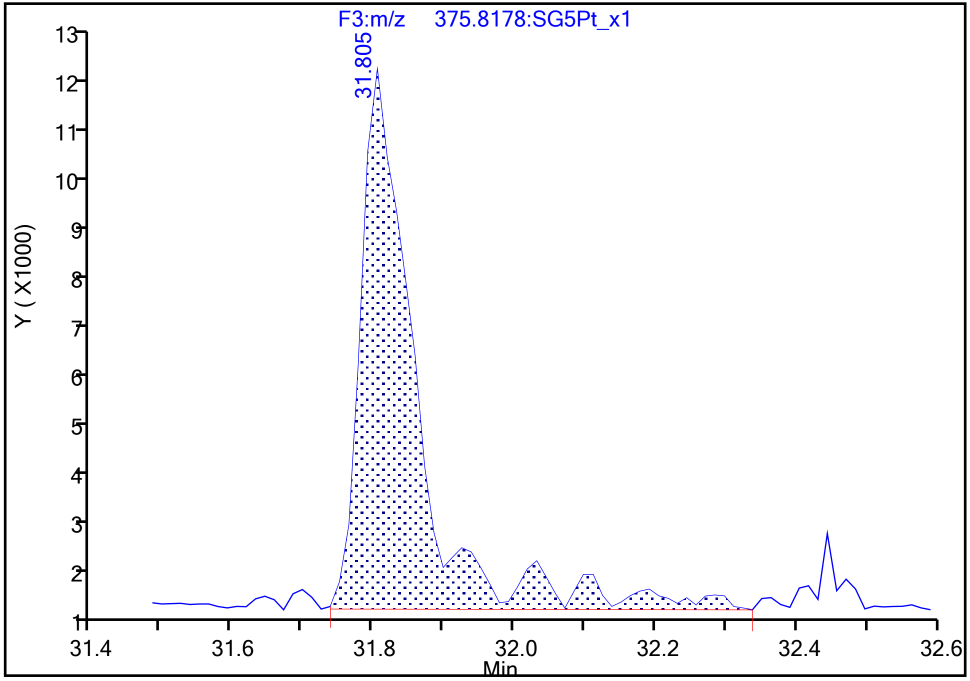

RT: 31.81
Area: 46011
Amount: 0.257401
Amount Units: pg/ul

Manual Integration Results

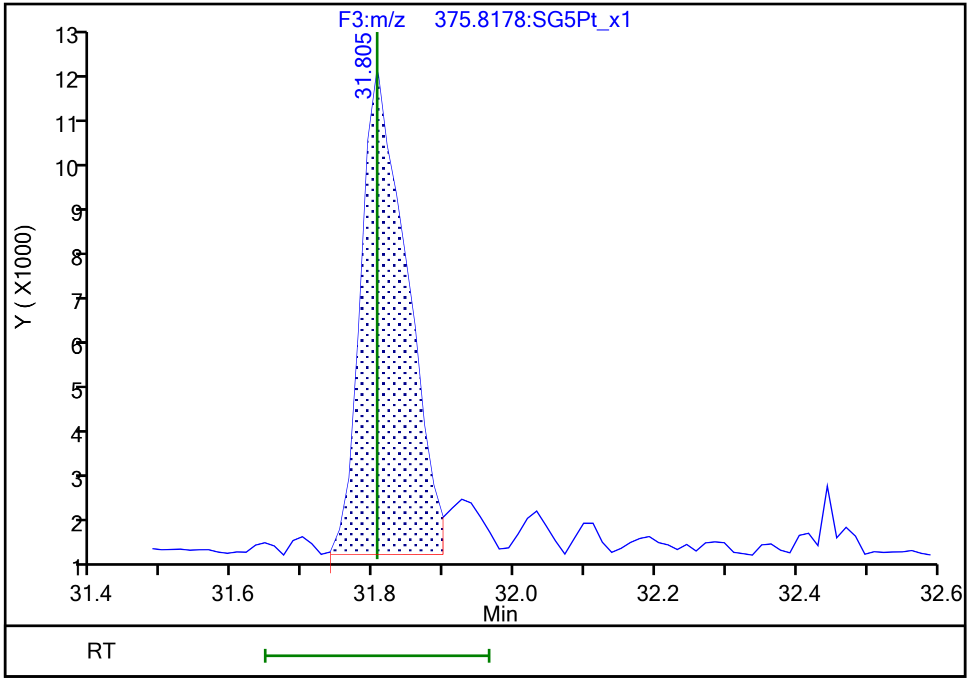

Reviewer: dadunj, 14-Oct-2020 13:10:47

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	31.22
Area:	43177
Amount:	0.304183
Amount Units:	pg/ul

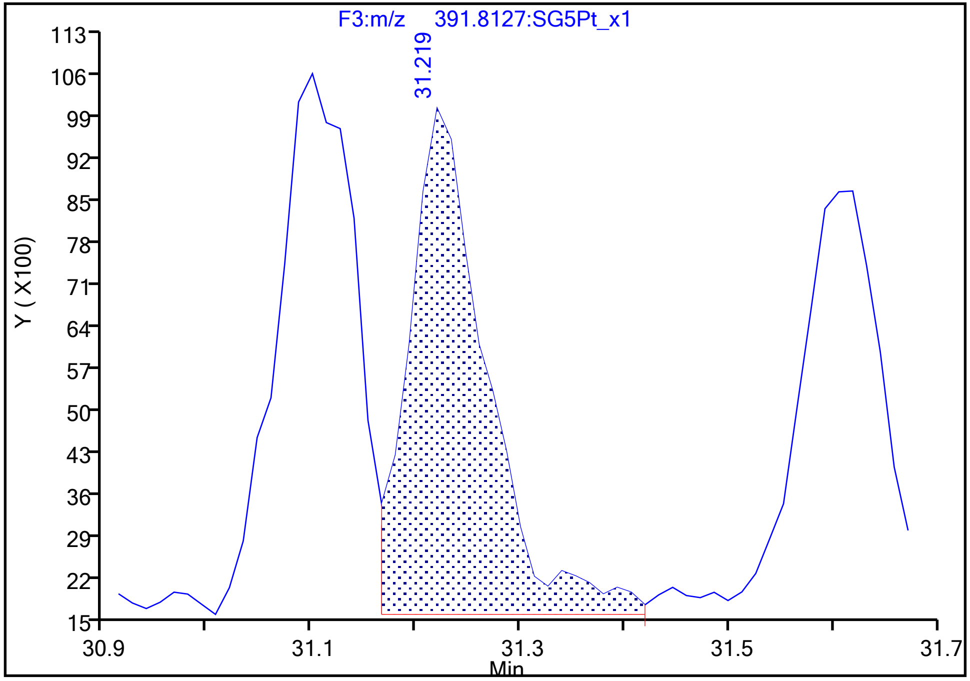

Manual Integration Results

RT:	31.22
Area:	40071
Amount:	0.284581
Amount Units:	pg/ul

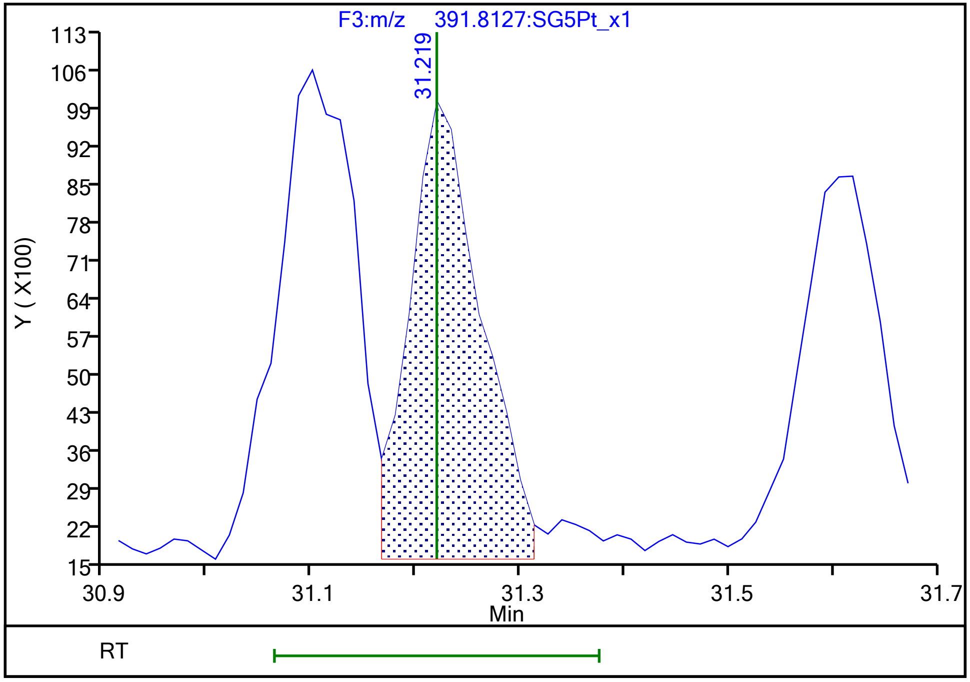

Reviewer: dadunj, 14-Oct-2020 13:11:00

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT: 31.23
Area: 44873
Amount: 0.304183
Amount Units: pg/ul

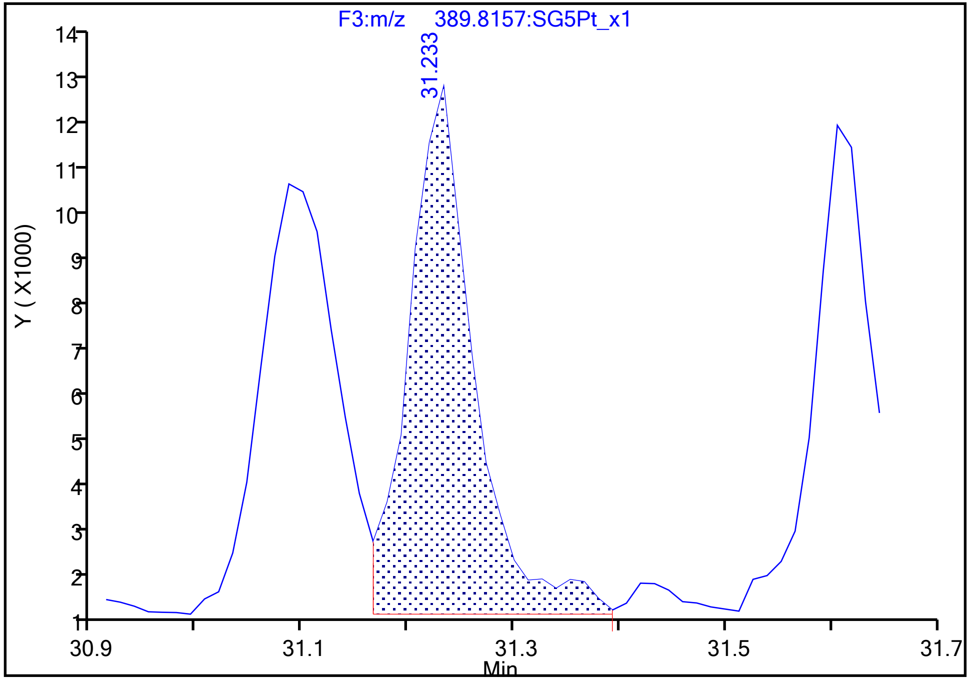

Manual Integration Results

RT: 31.23
Area: 42305
Amount: 0.284581
Amount Units: pg/ul

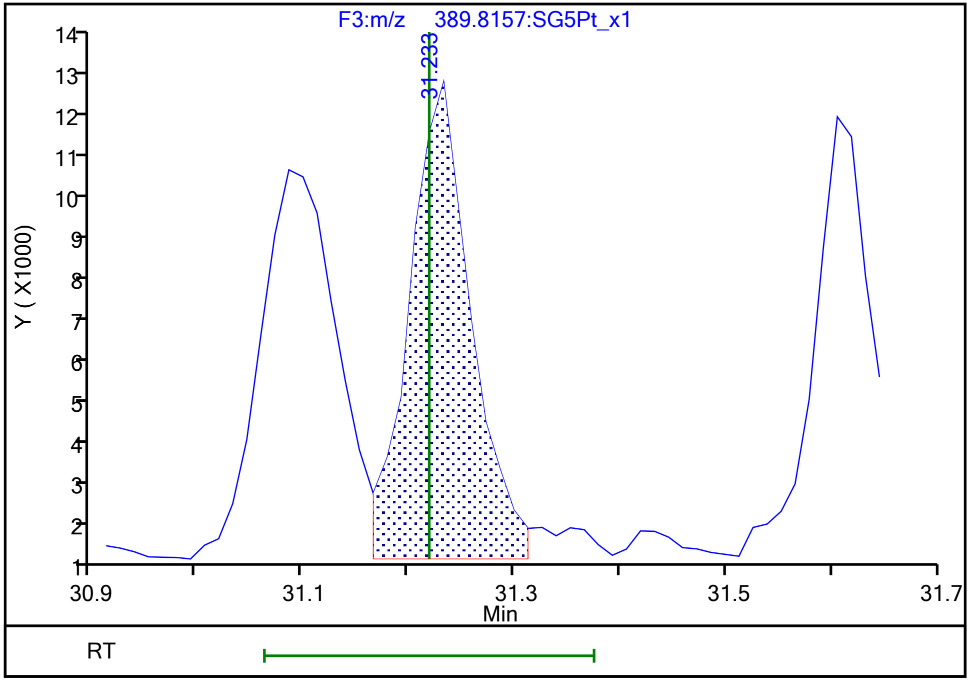

Reviewer: dadunj, 14-Oct-2020 13:11:02

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

RT:	31.61
Area:	49829
Amount:	0.301801
Amount Units:	pg/ul

Processing Integration Results

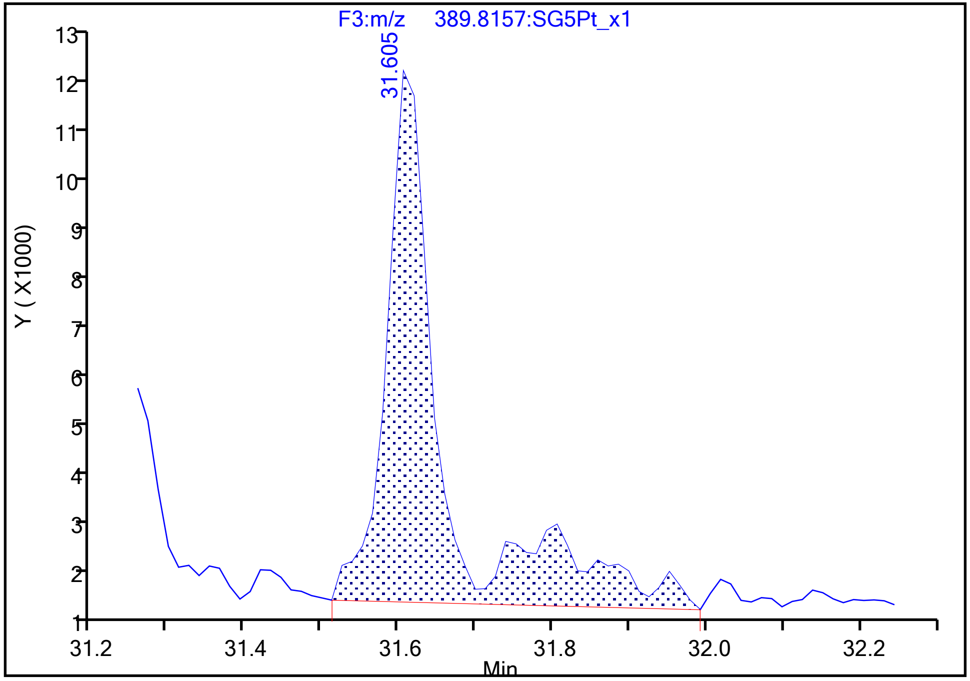

RT:	31.61
Area:	37400
Amount:	0.244379
Amount Units:	pg/ul

Manual Integration Results

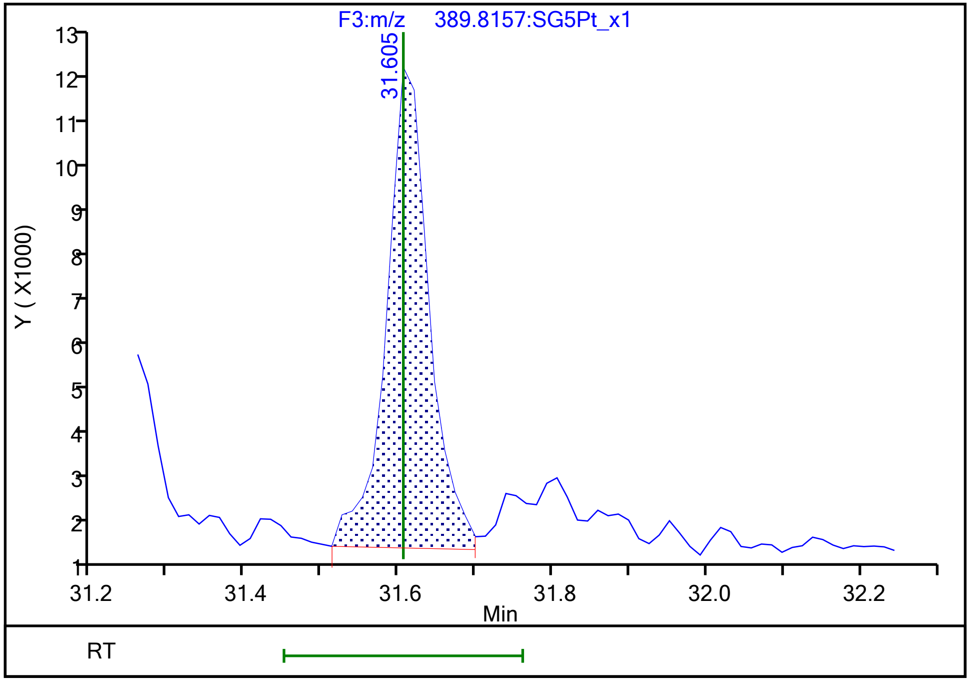

Reviewer: dadunj, 14-Oct-2020 13:11:05

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT:	31.62
Area:	40418
Amount:	0.301801
Amount Units:	pg/ul

Processing Integration Results

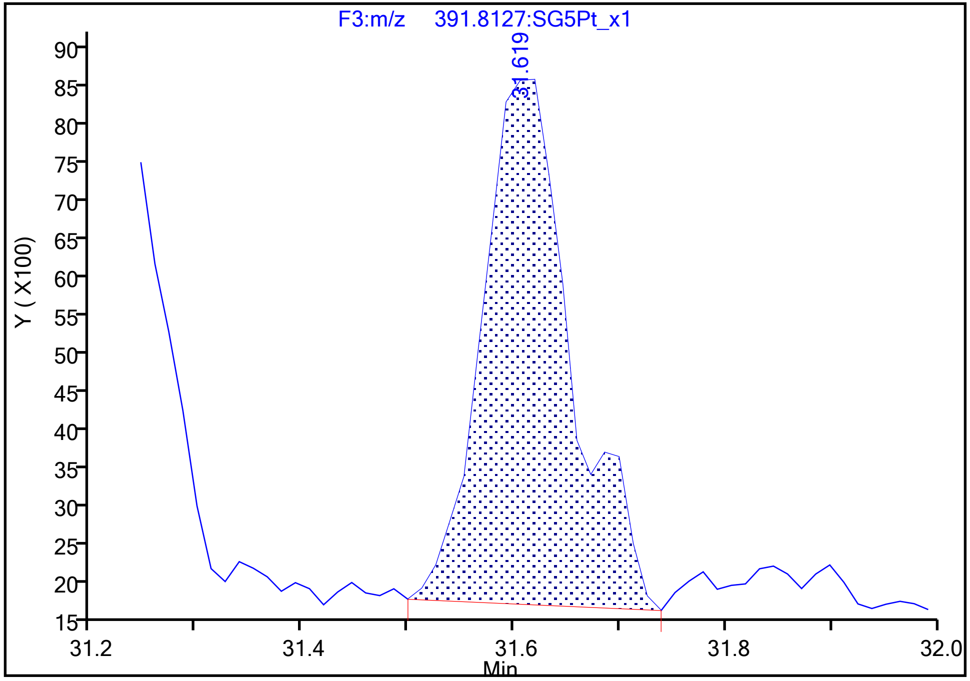

RT:	31.62
Area:	35676
Amount:	0.244379
Amount Units:	pg/ul

Manual Integration Results

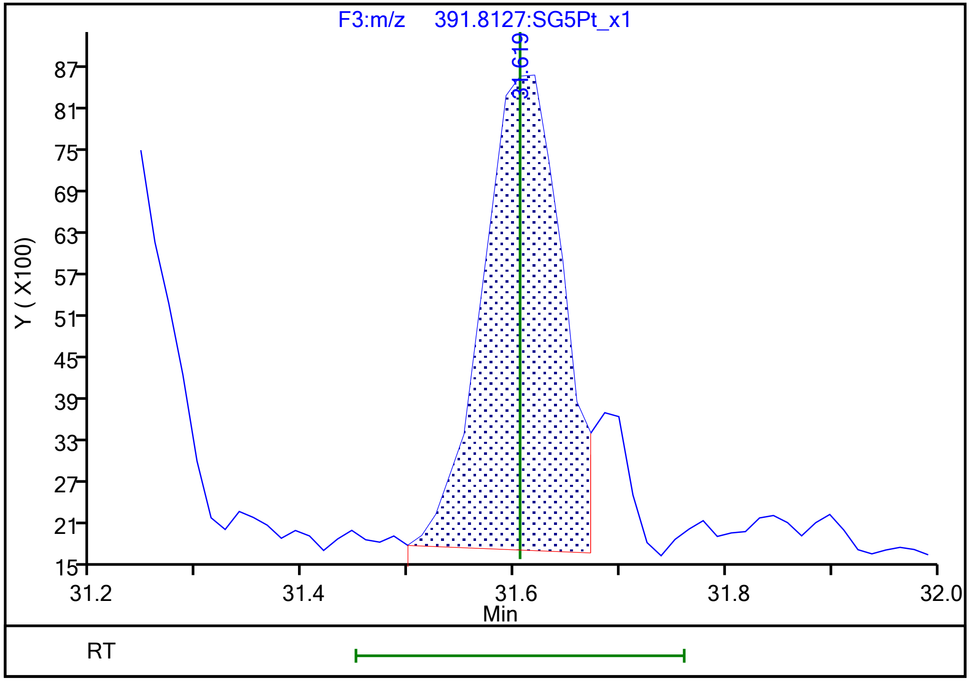

Reviewer: dadunj, 14-Oct-2020 13:11:07

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Chrom Revision: 2.3 13-Oct-2020 12:07:44
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT:	33.37
Area:	63492
Amount:	0.268471
Amount Units:	pg/ul

Processing Integration Results

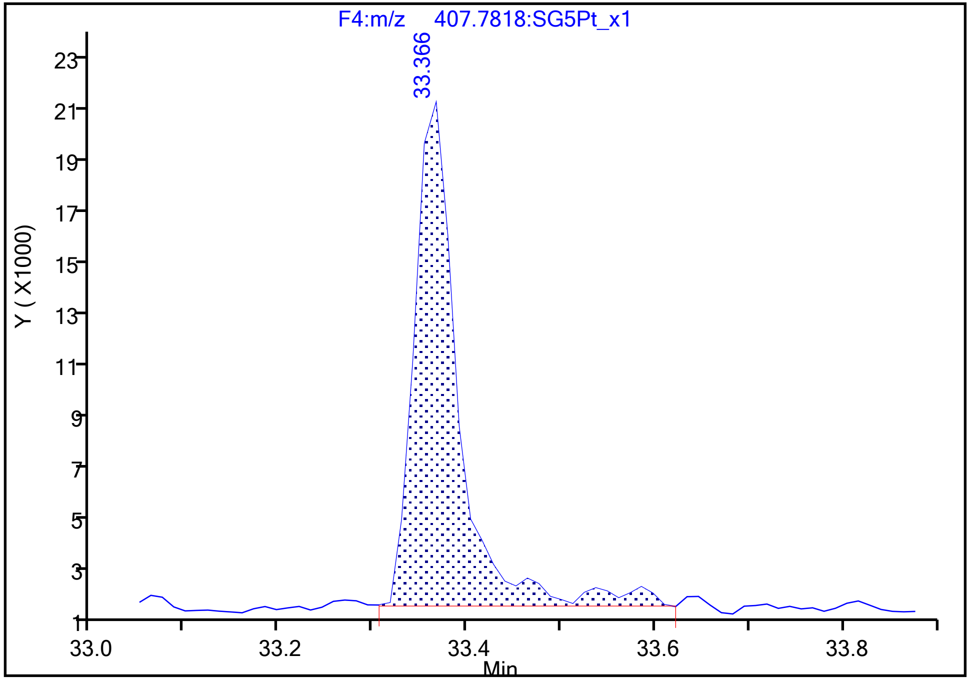

RT:	33.37
Area:	58505
Amount:	0.256615
Amount Units:	pg/ul

Manual Integration Results

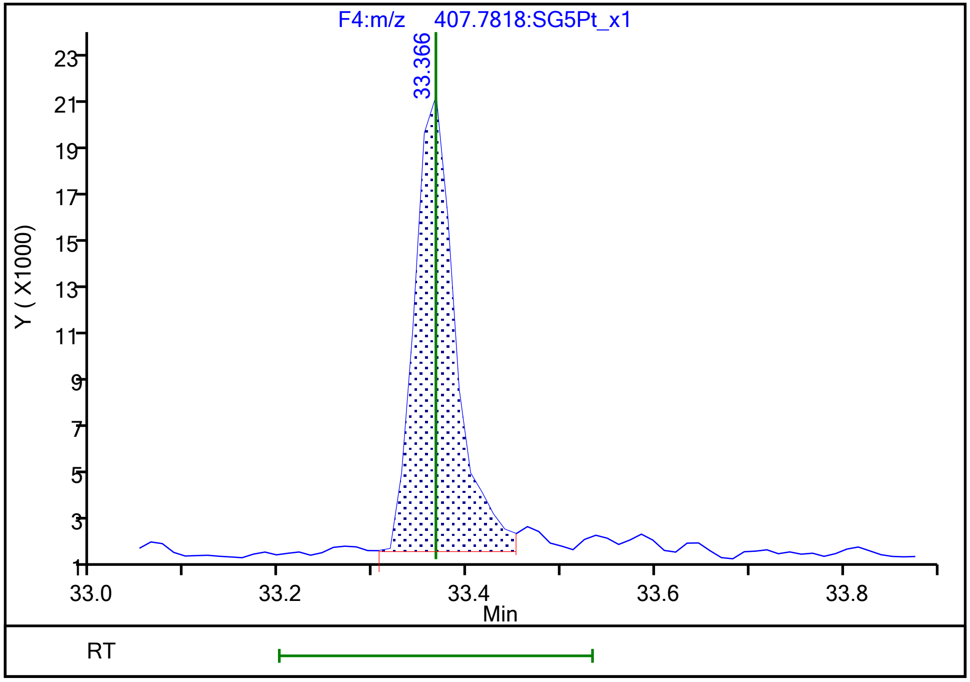

Reviewer: dadunj, 14-Oct-2020 13:11:16

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

RT:	34.41
Area:	40078
Amount:	0.226705
Amount Units:	pg/ul

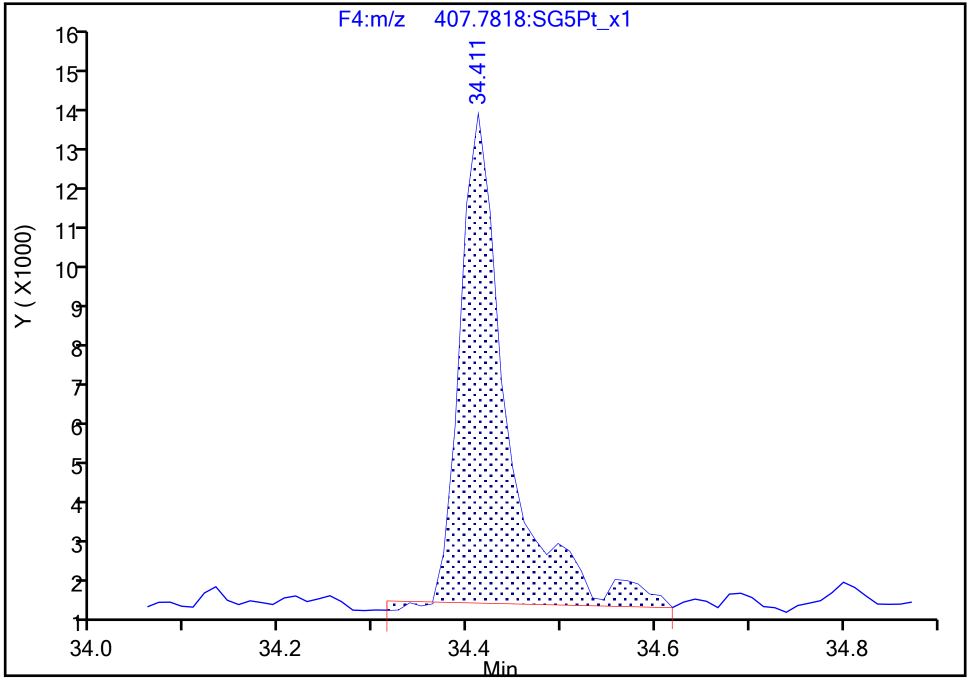

Manual Integration Results

RT:	34.41
Area:	35089
Amount:	0.211555
Amount Units:	pg/ul

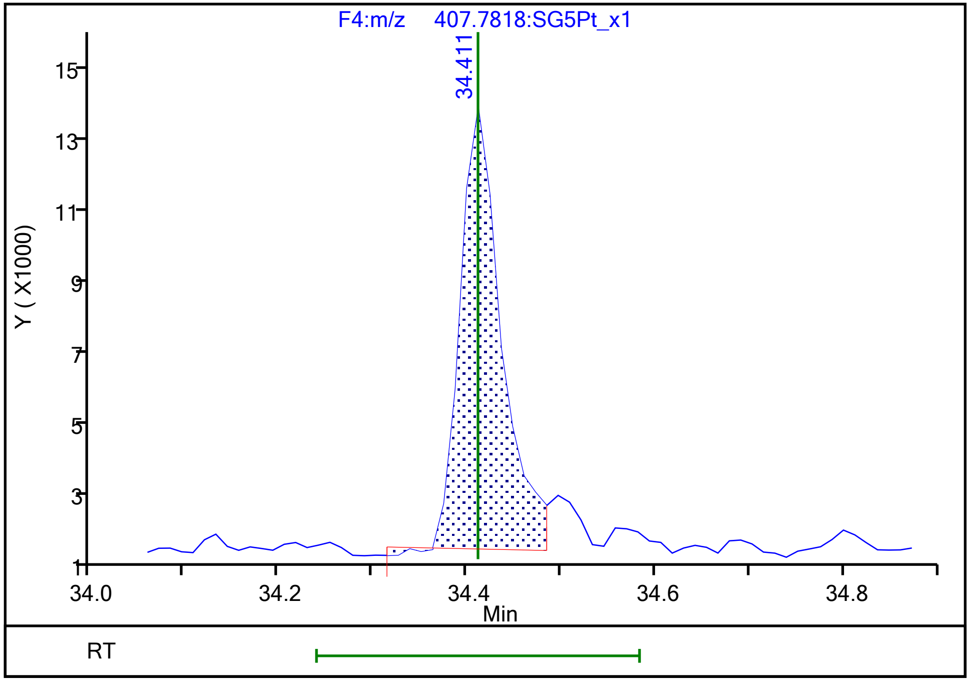

Reviewer: dadunj, 14-Oct-2020 13:11:25

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 34.13
Area: 39946
Amount: 0.316060
Amount Units: pg/ul

Processing Integration Results

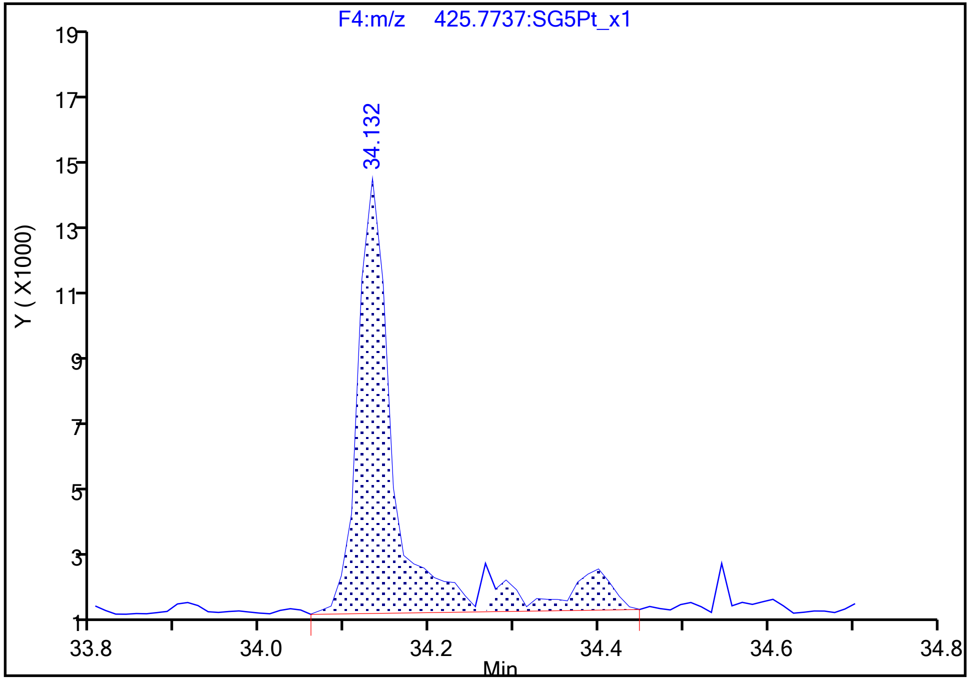

RT: 34.13
Area: 34292
Amount: 0.286299
Amount Units: pg/ul

Manual Integration Results

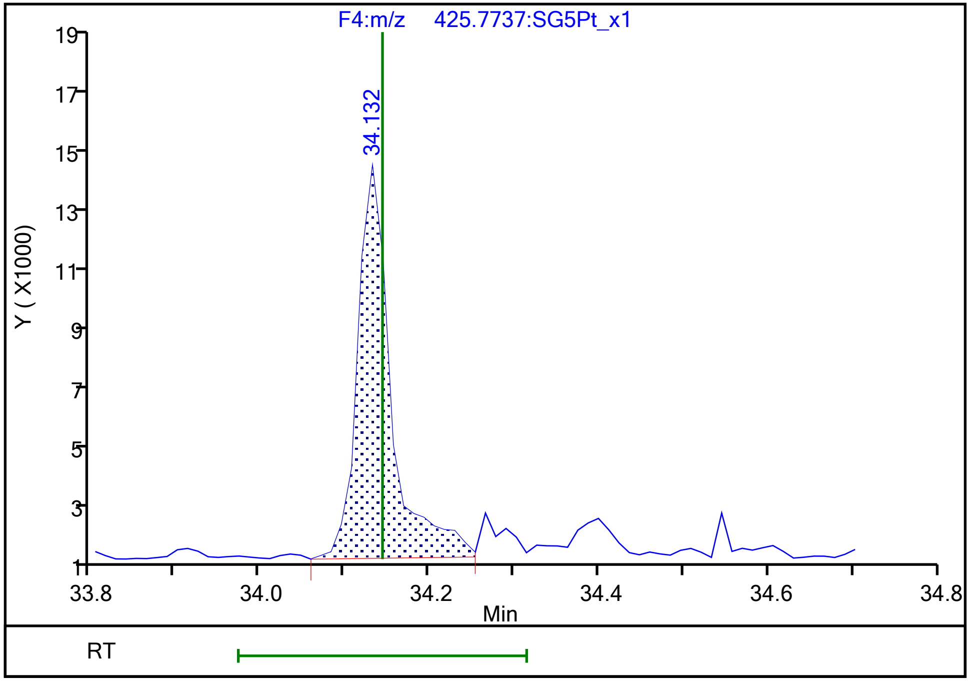

Reviewer: dadunj, 14-Oct-2020 13:11:34

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

RT: 34.13
Area: 42081
Amount: 0.316060
Amount Units: pg/ul

Processing Integration Results

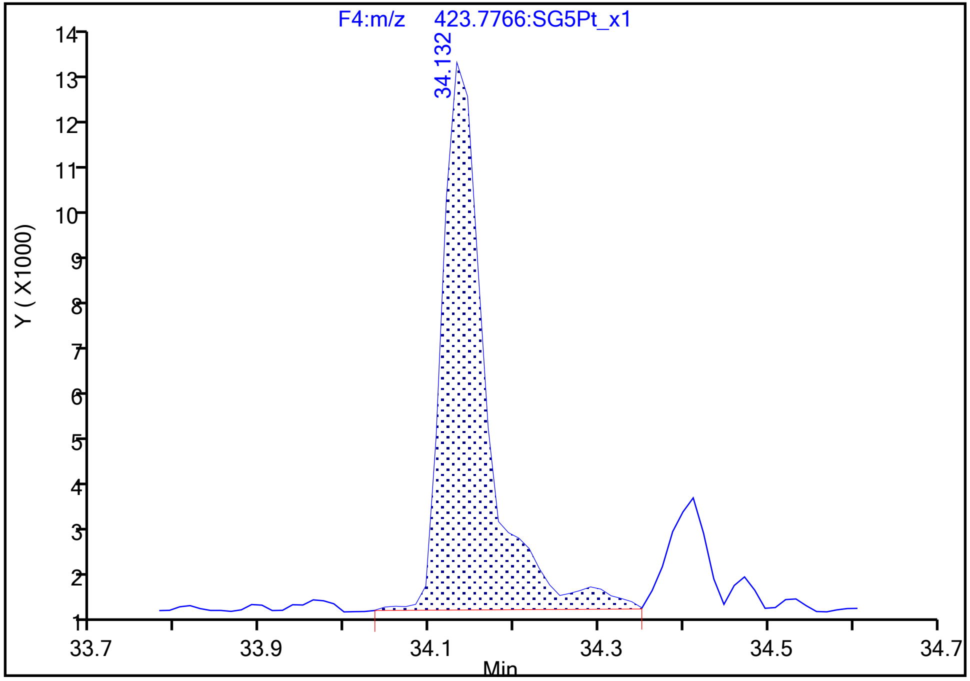

RT: 34.13
Area: 40011
Amount: 0.286299
Amount Units: pg/ul

Manual Integration Results

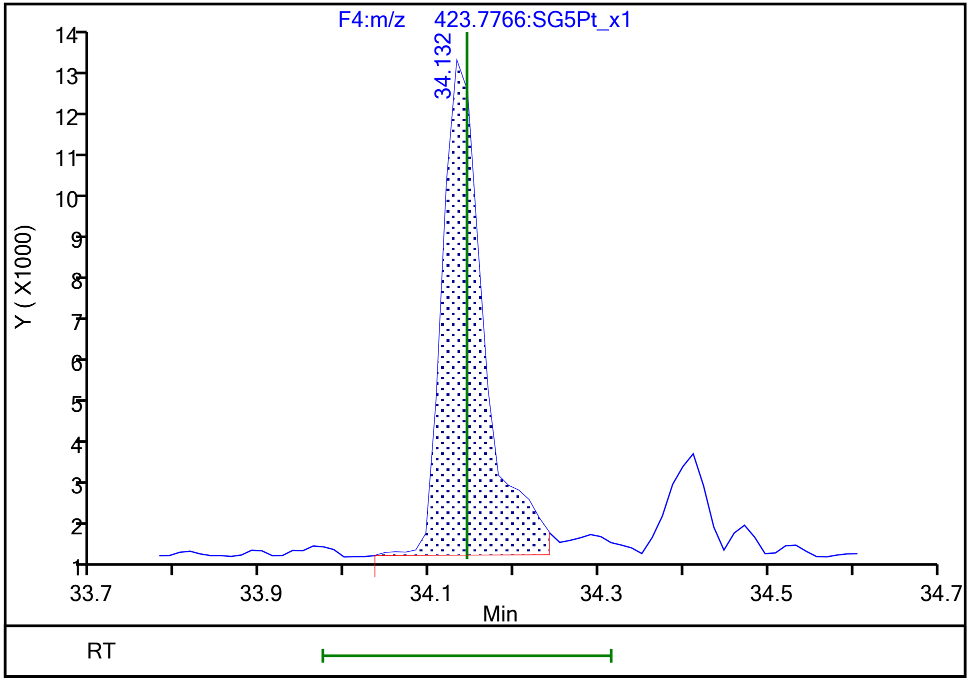

Reviewer: dadunj, 14-Oct-2020 13:11:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

Processing Integration Results

RT:	36.49
Area:	65667
Amount:	0.501493
Amount Units:	pg/ul

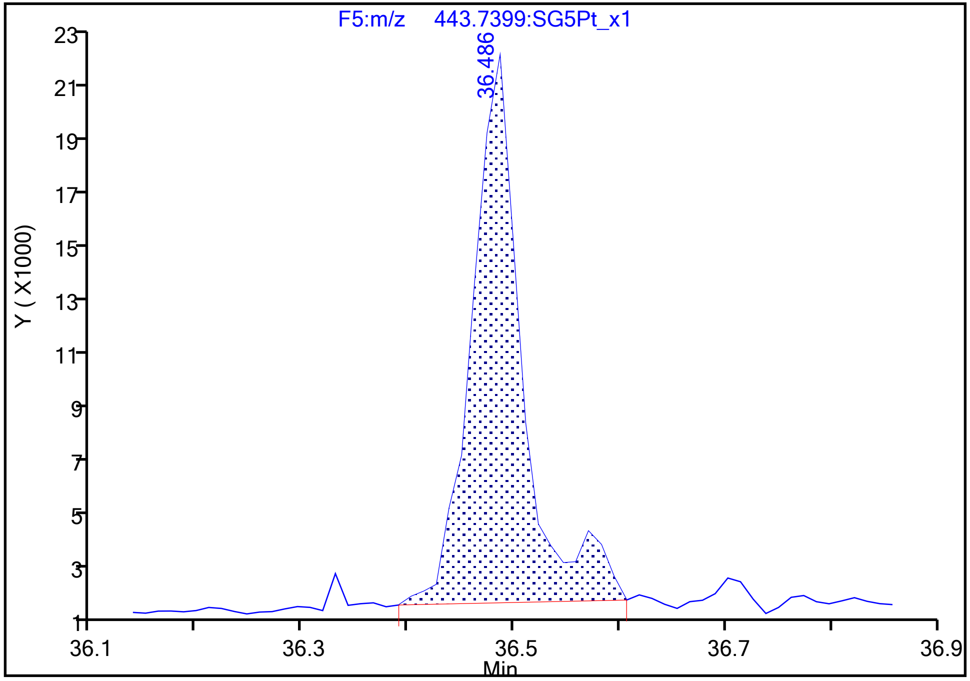

Manual Integration Results

RT:	36.49
Area:	60253
Amount:	0.469440
Amount Units:	pg/ul

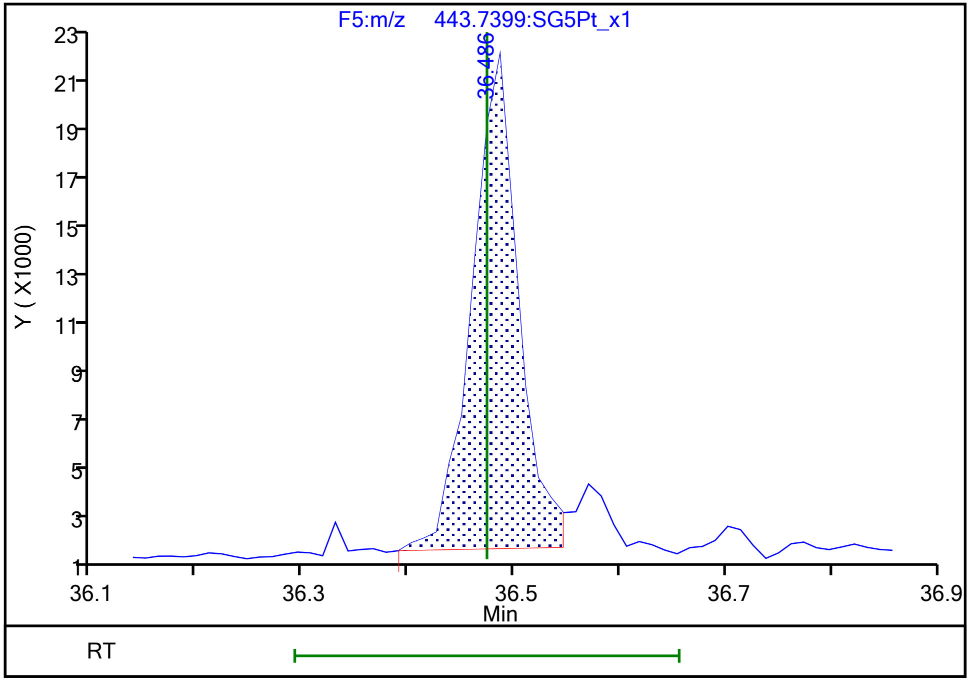

Reviewer: dadunj, 14-Oct-2020 13:11:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d

Injection Date: 12-Oct-2020 23:54:27
Instrument ID: 10D5
Lims ID: MB 320-418764/1-A
Client ID:
Operator ID: ALM
ALS Bottle#: 4
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT: 36.47
Area: 59592
Amount: 0.501493
Amount Units: pg/ul

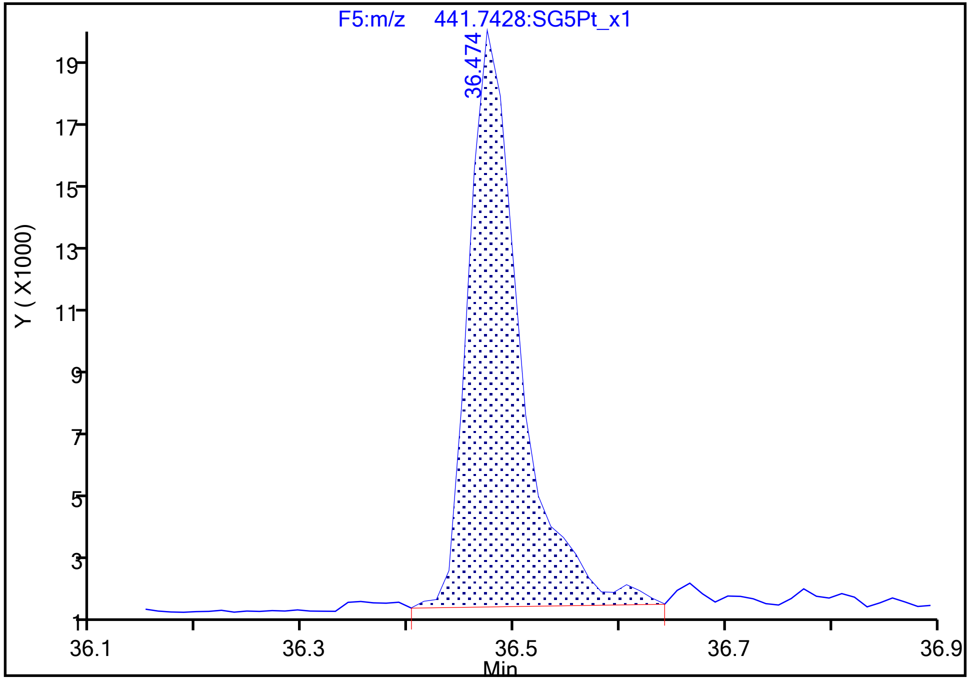

Manual Integration Results

RT: 36.47
Area: 57000
Amount: 0.469440
Amount Units: pg/ul

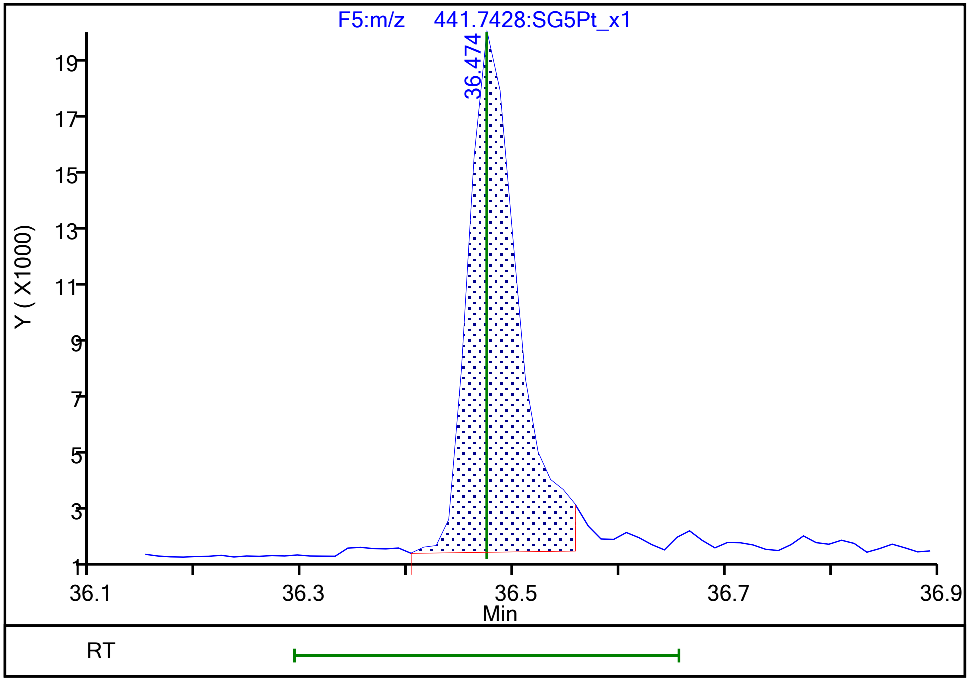

Reviewer: dadunj, 14-Oct-2020 13:11:46

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT:	36.40
Area:	52933
Amount:	0.542667
Amount Units:	pg/ul

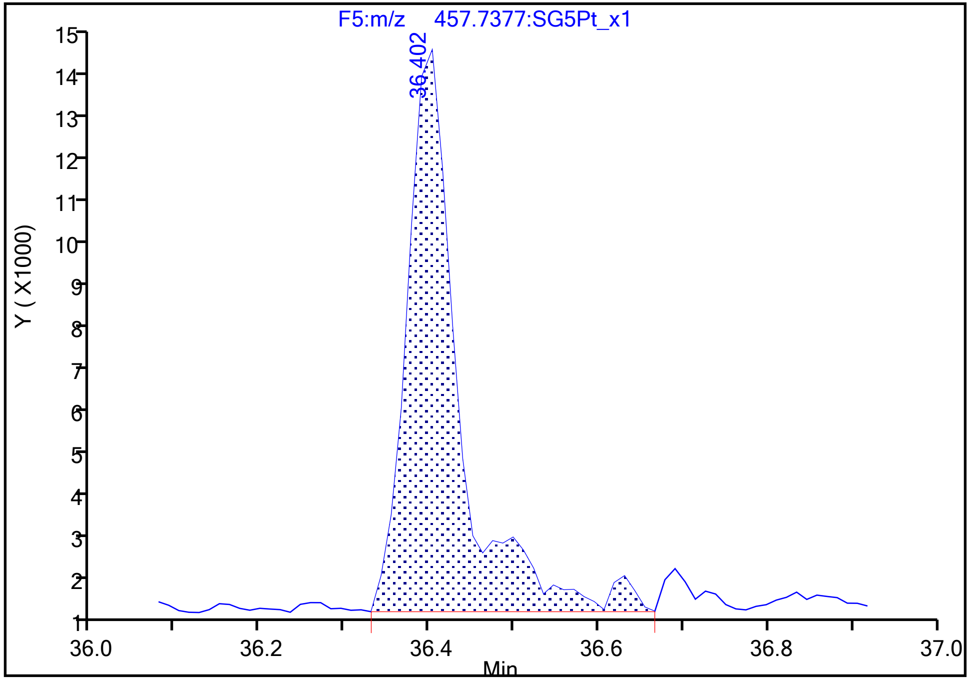

Manual Integration Results

RT:	36.40
Area:	44243
Amount:	0.471708
Amount Units:	pg/ul

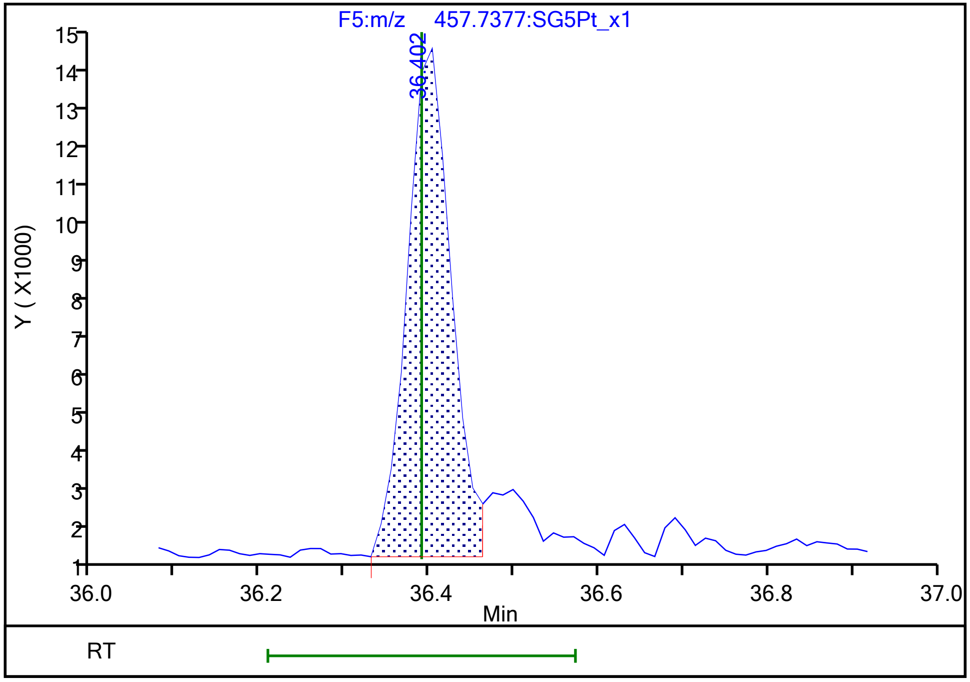

Reviewer: dadunj, 14-Oct-2020 13:11:50

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52

Chrom Revision: 2.3 13-Oct-2020 12:07:44

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d				
Injection Date:	12-Oct-2020 23:54:27	Instrument ID:	10D5		
Lims ID:	MB 320-418764/1-A				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDD, CAS: 3268-87-9

Signal: 2

RT:	36.39
Area:	55318
Amount:	0.542667
Amount Units:	pg/ul

Processing Integration Results

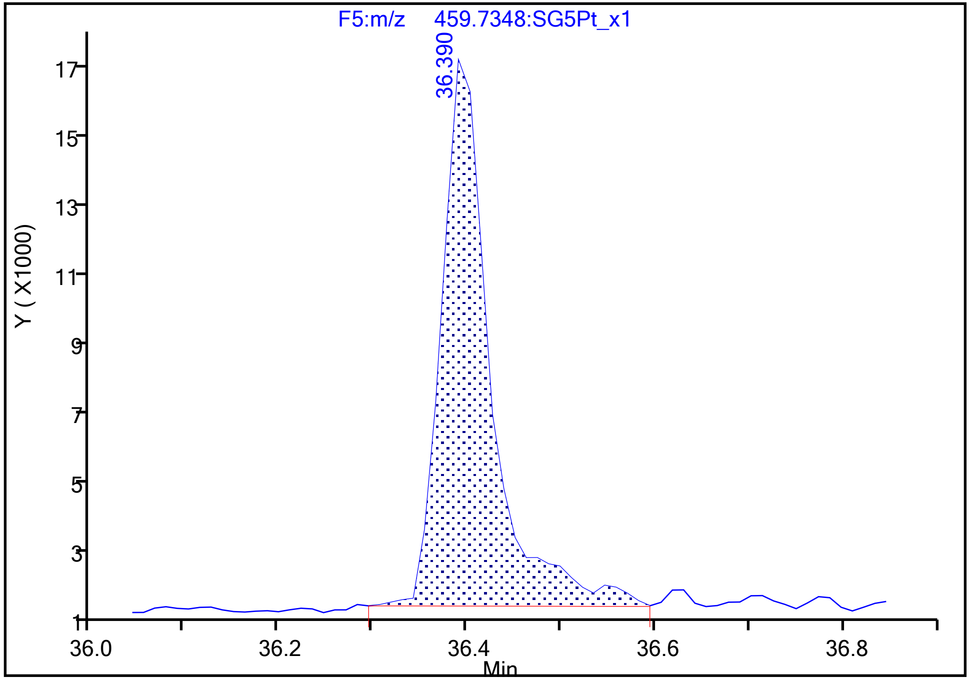

RT:	36.39
Area:	49853
Amount:	0.471708
Amount Units:	pg/ul

Manual Integration Results

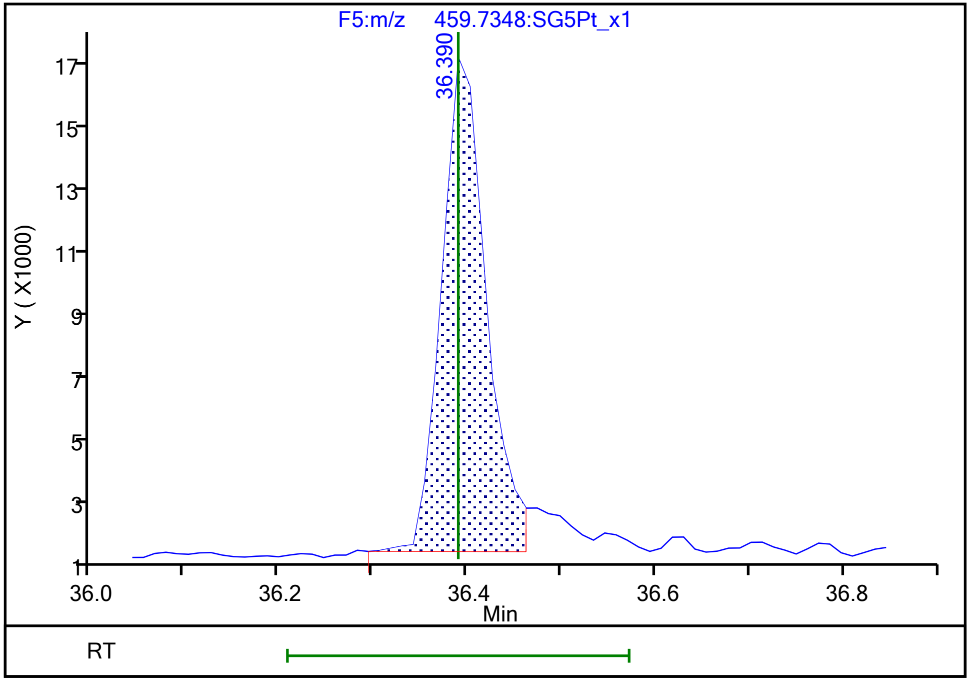

Reviewer: dadunj, 14-Oct-2020 13:11:52

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d		
Injection Date:	12-Oct-2020 23:54:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

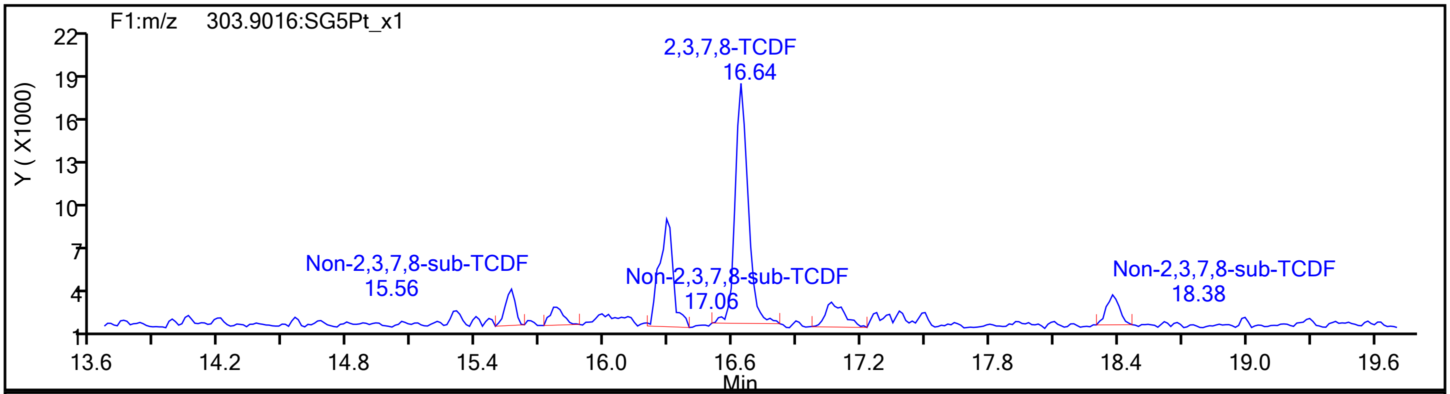

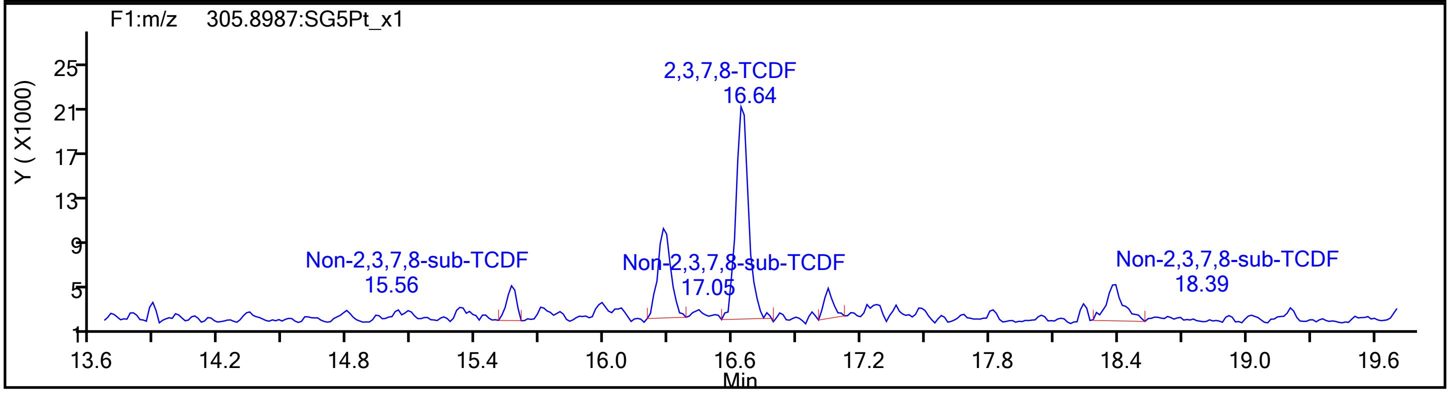

TCDF Standards

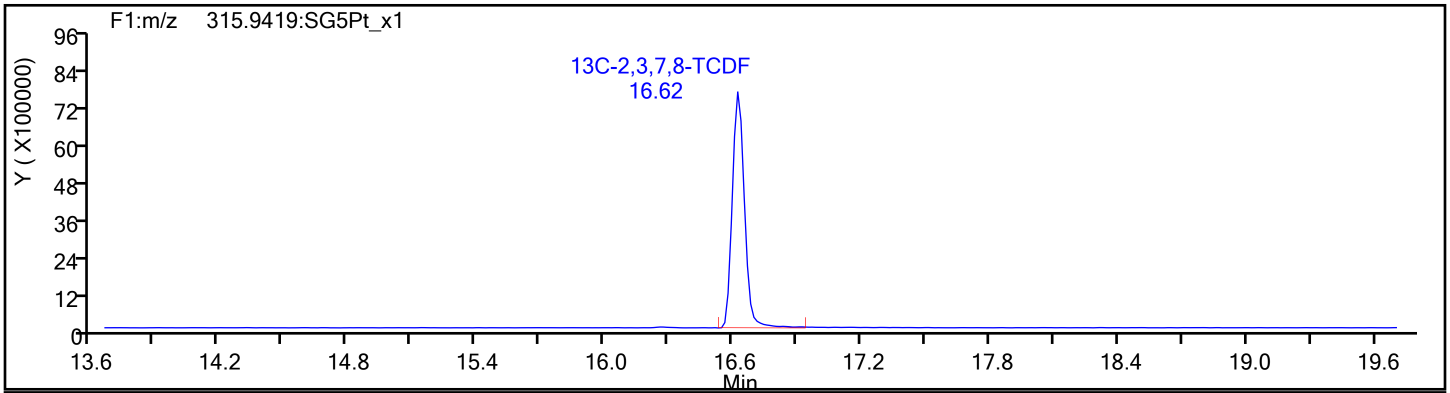

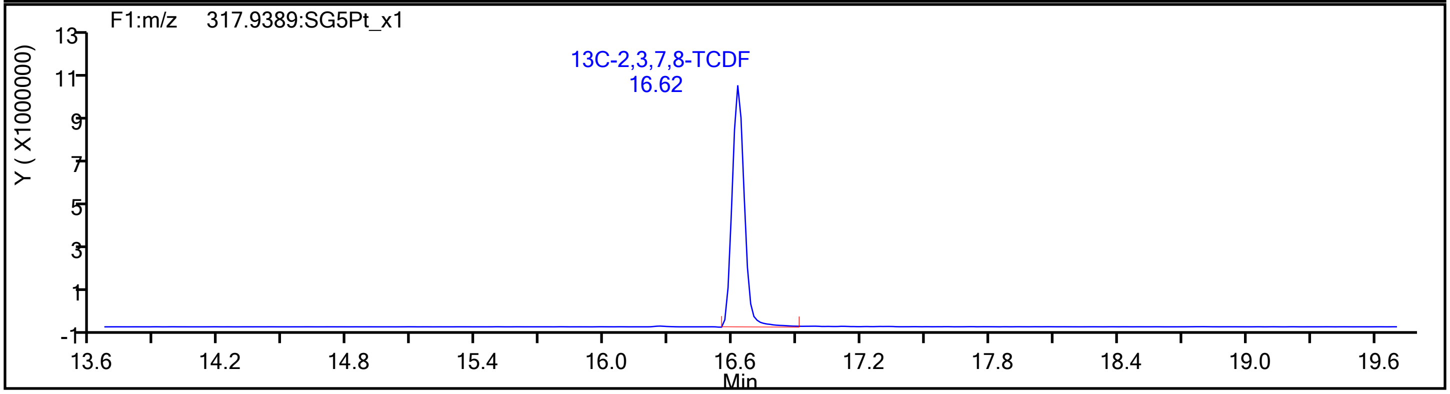

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

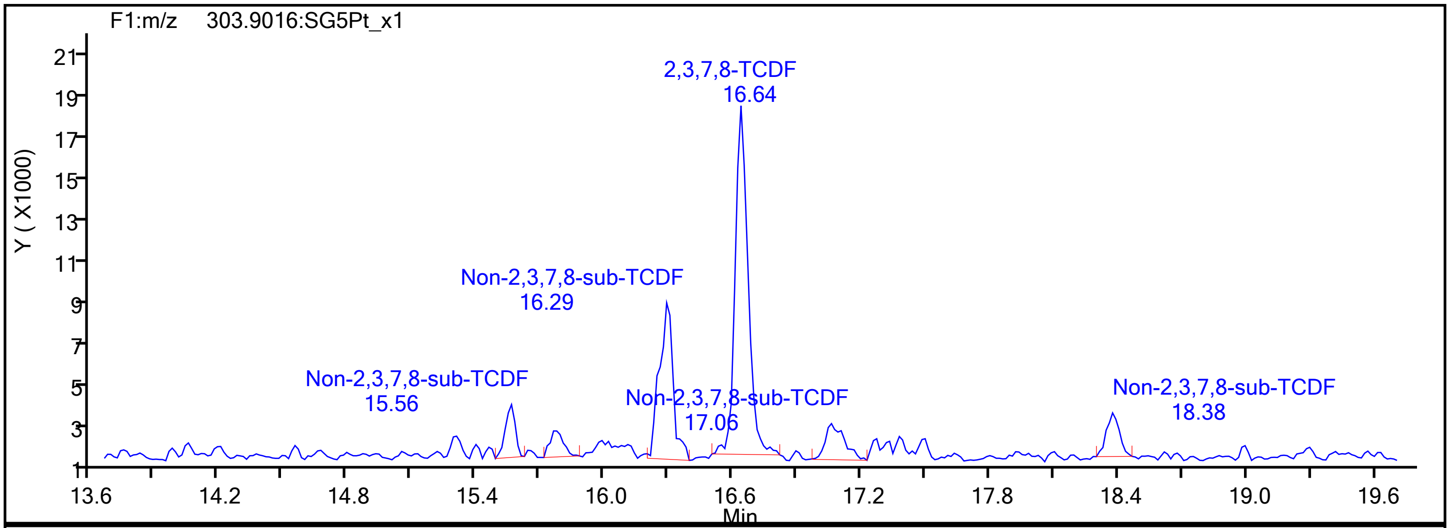

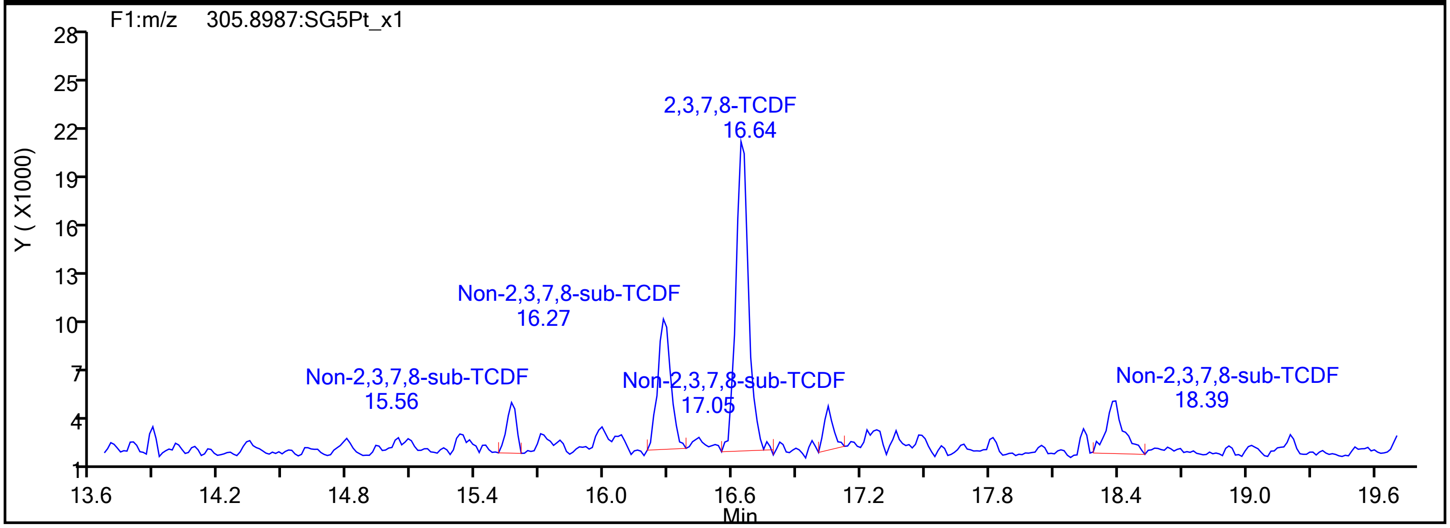

TCDF Interference Mass

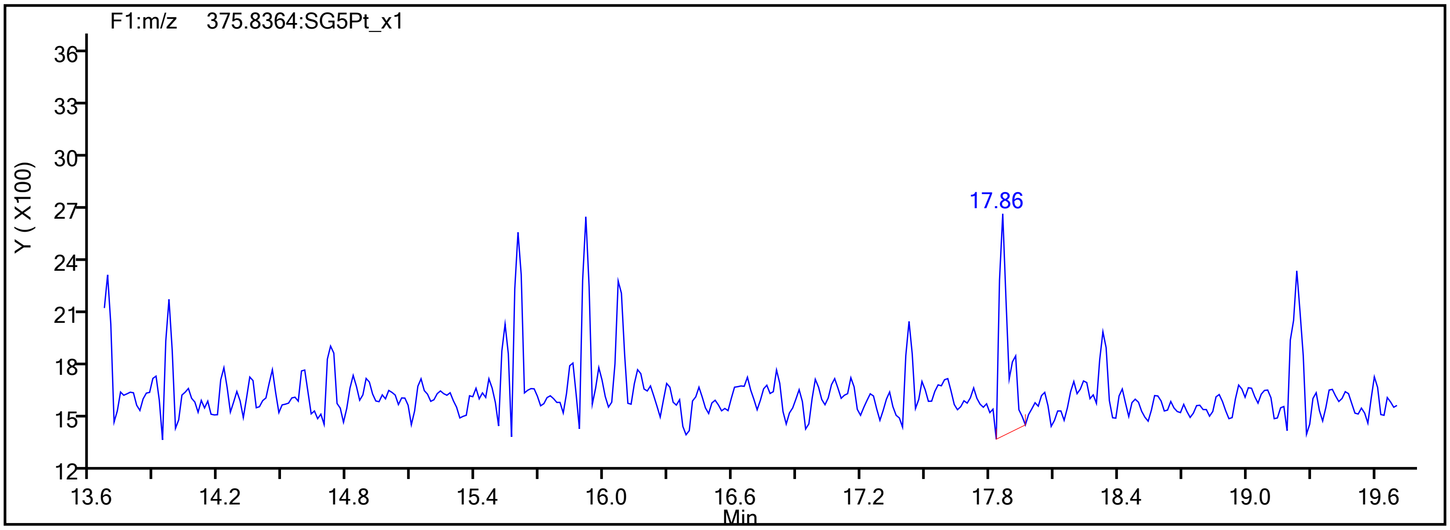

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Eurofins TestAmerica, Sacramento

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TCDD

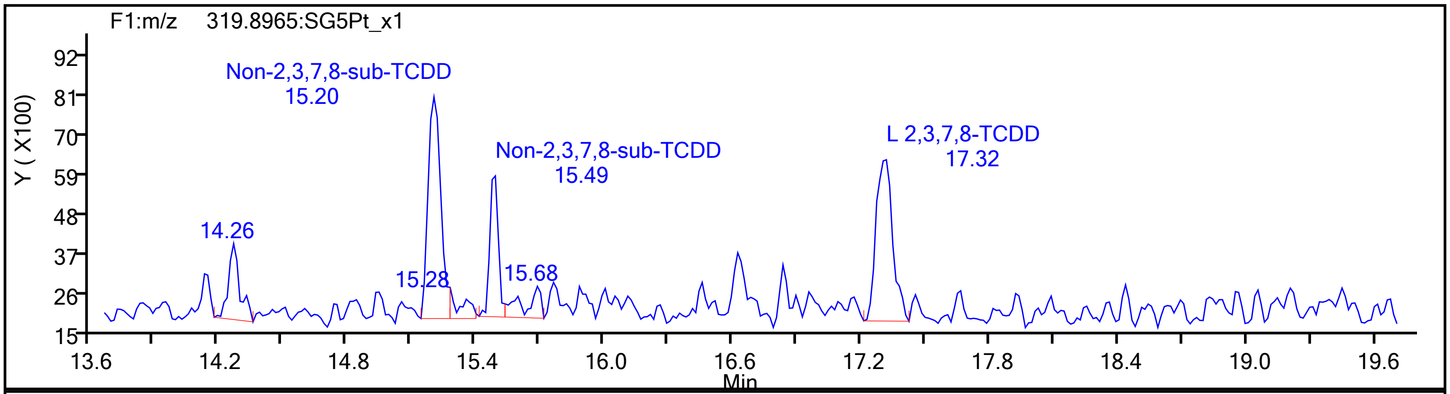

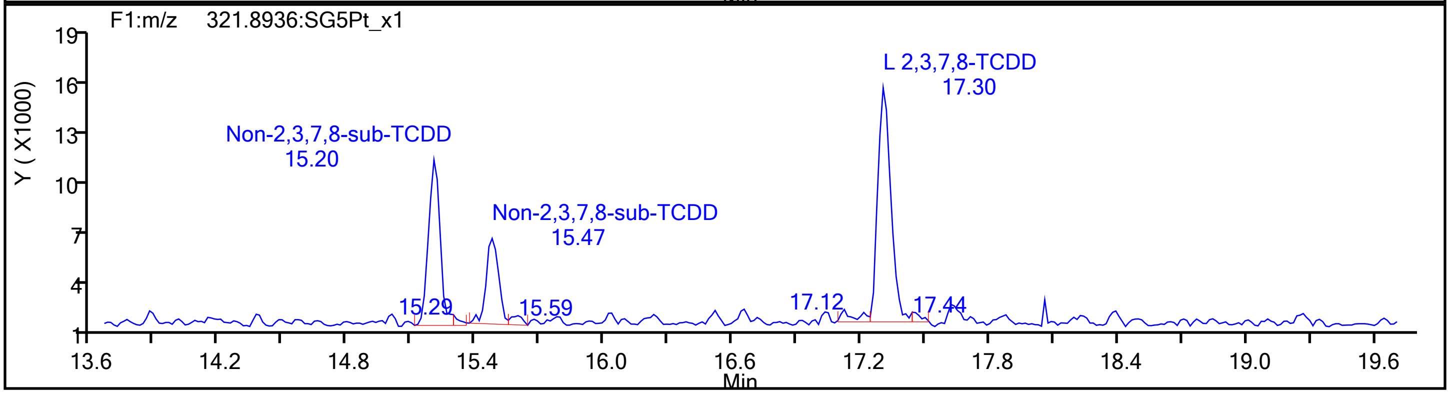

TCDD Standards

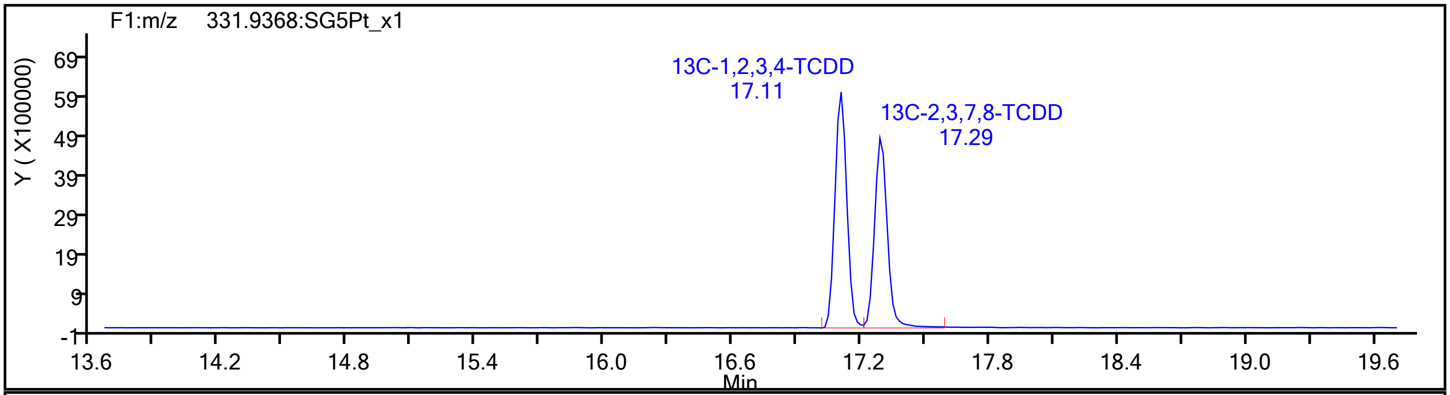

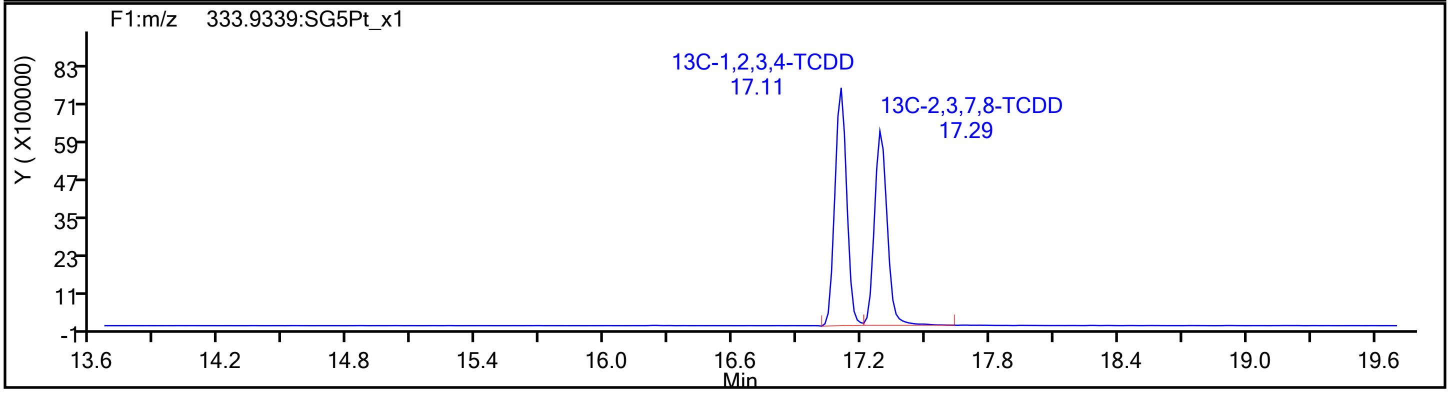

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37Cl4-TCDD

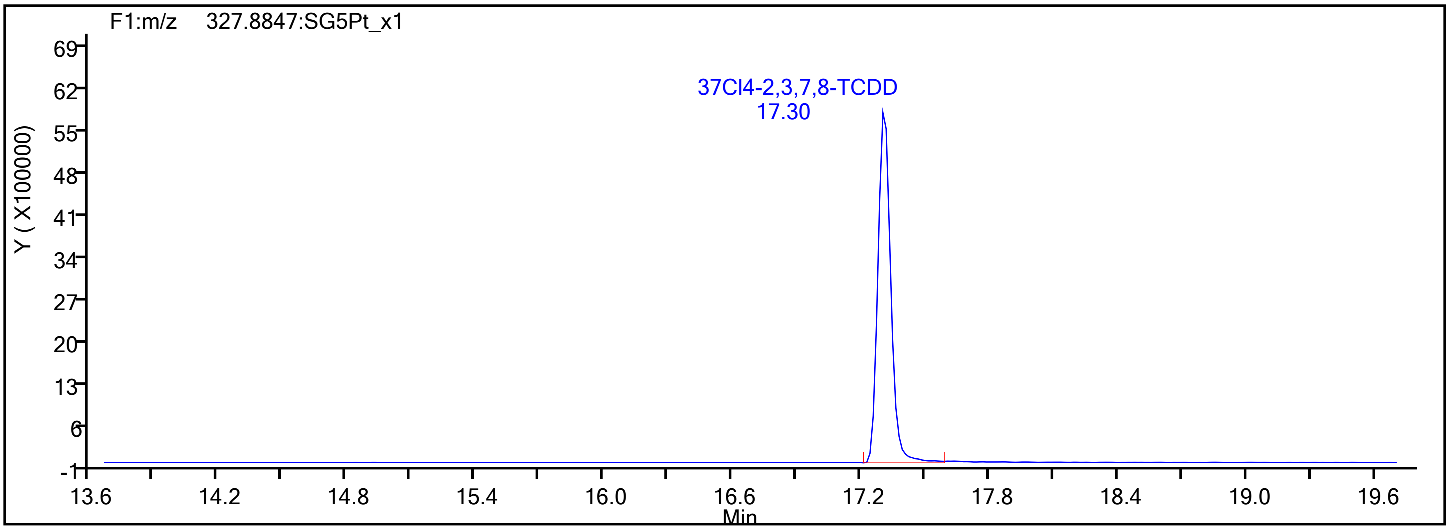

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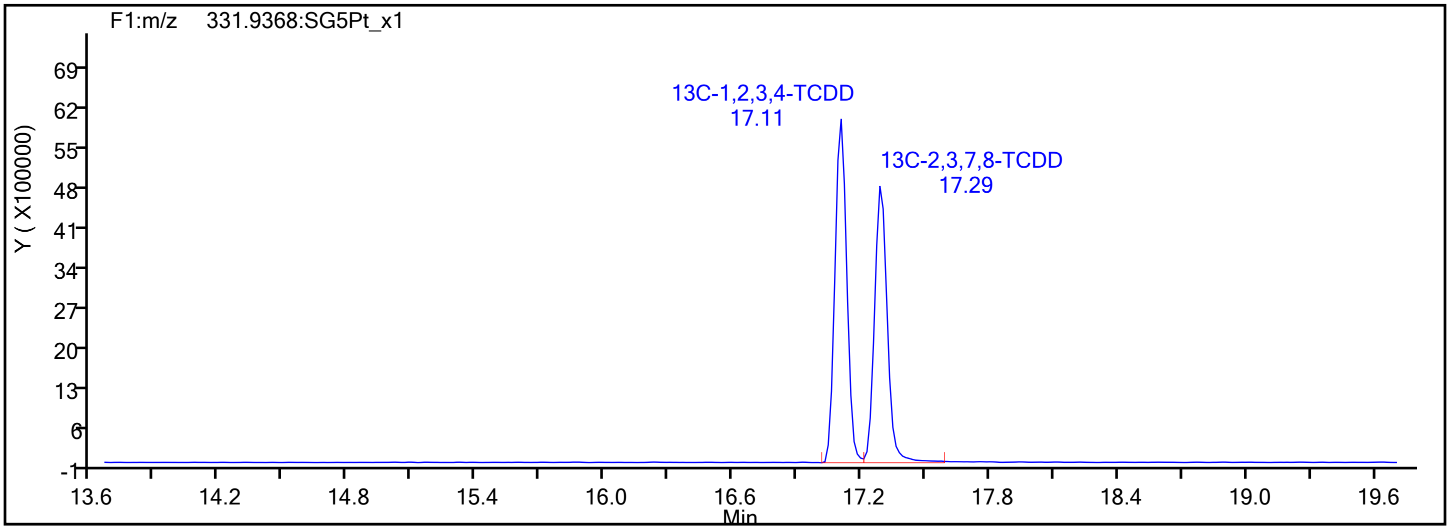

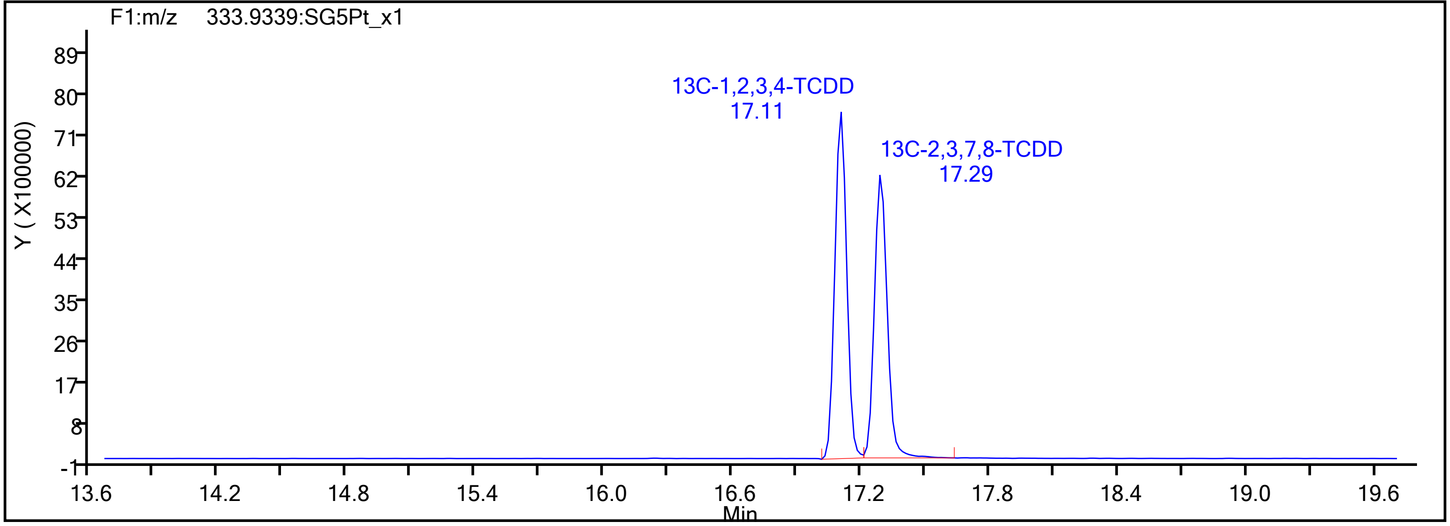

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

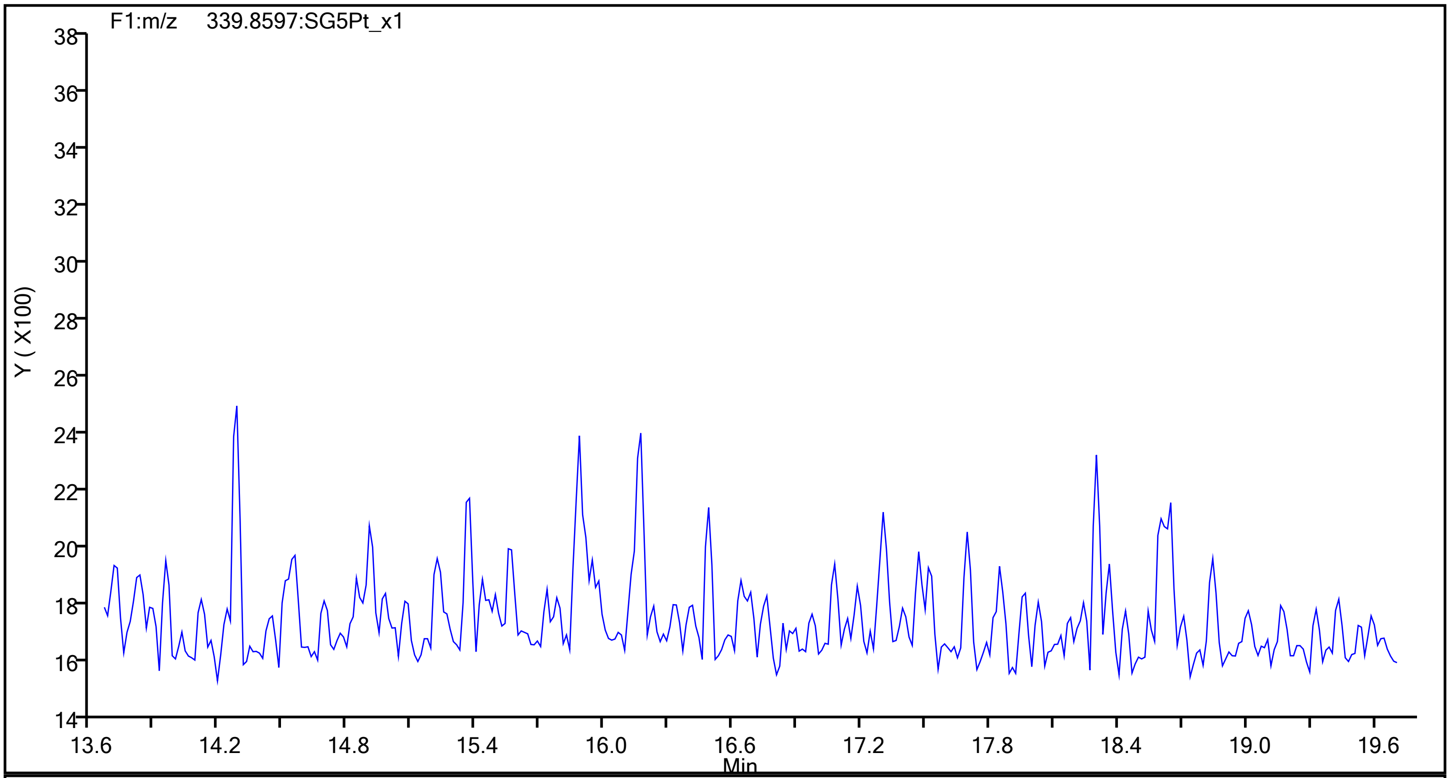

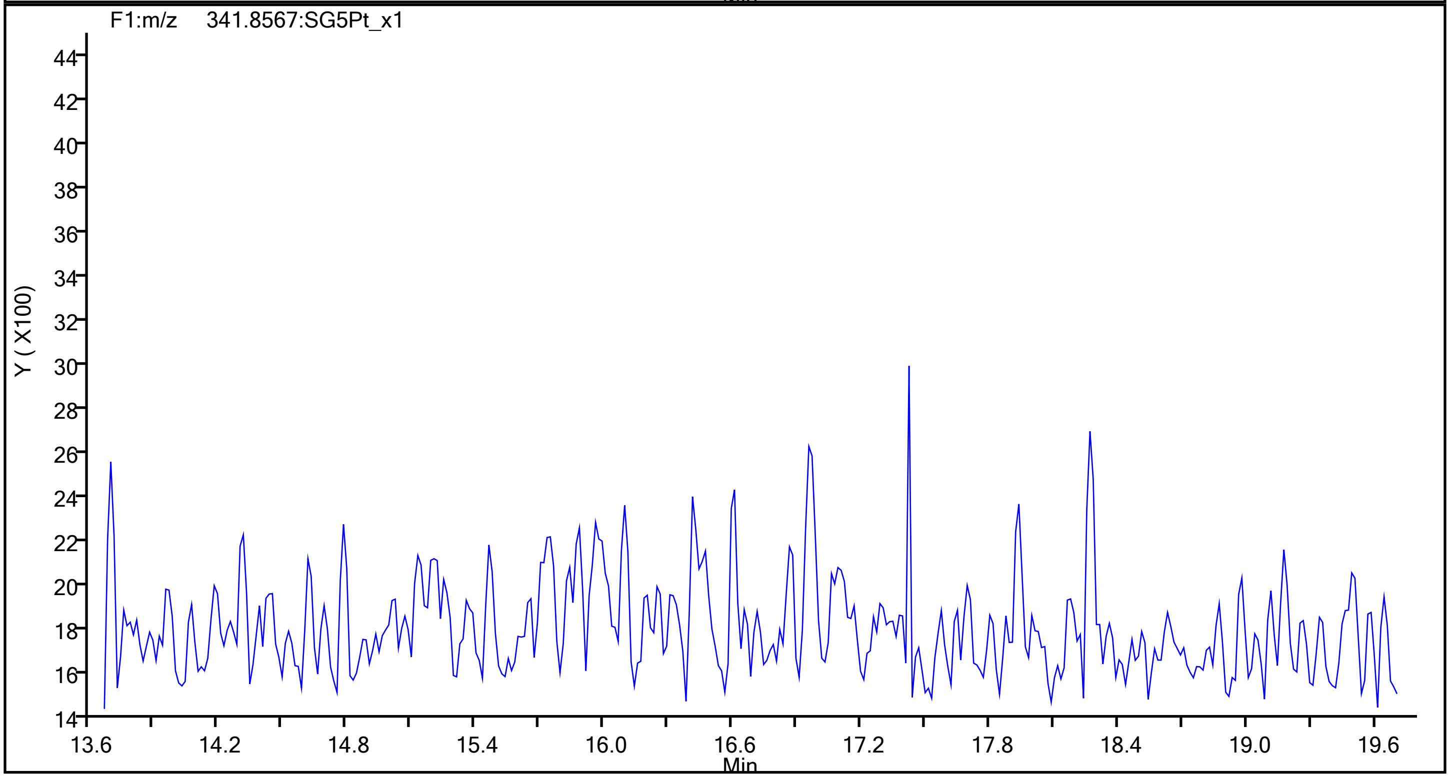

Report Date: 14-Oct-2020 13:12:52		Chrom Revision: 2.3 13-Oct-2020 12:07:44	

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

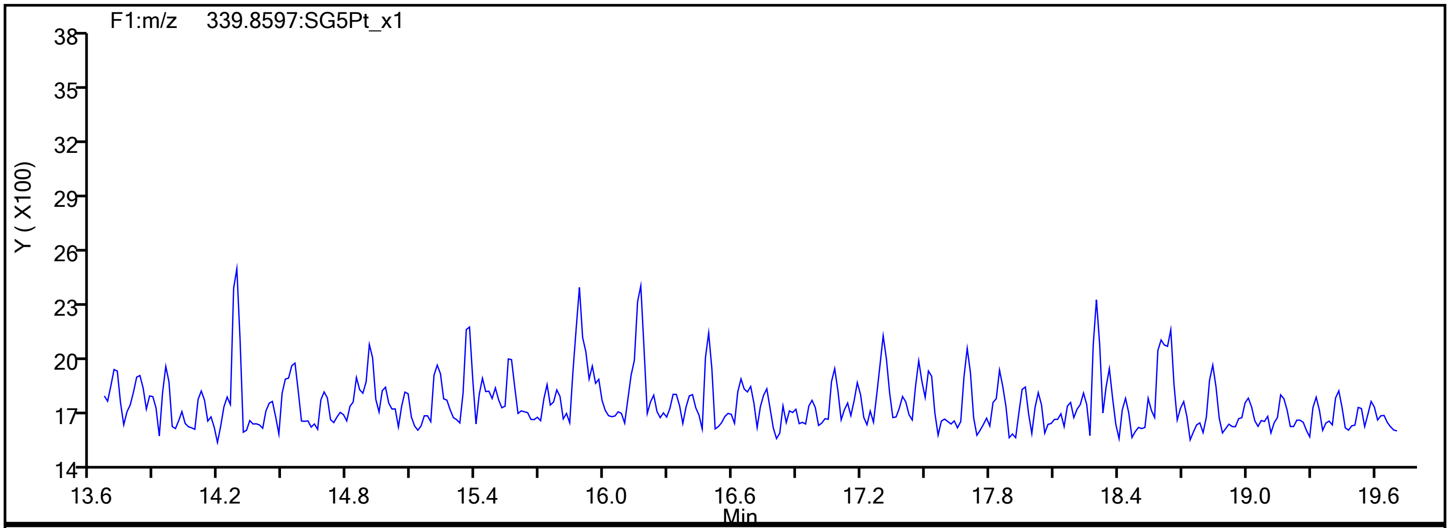

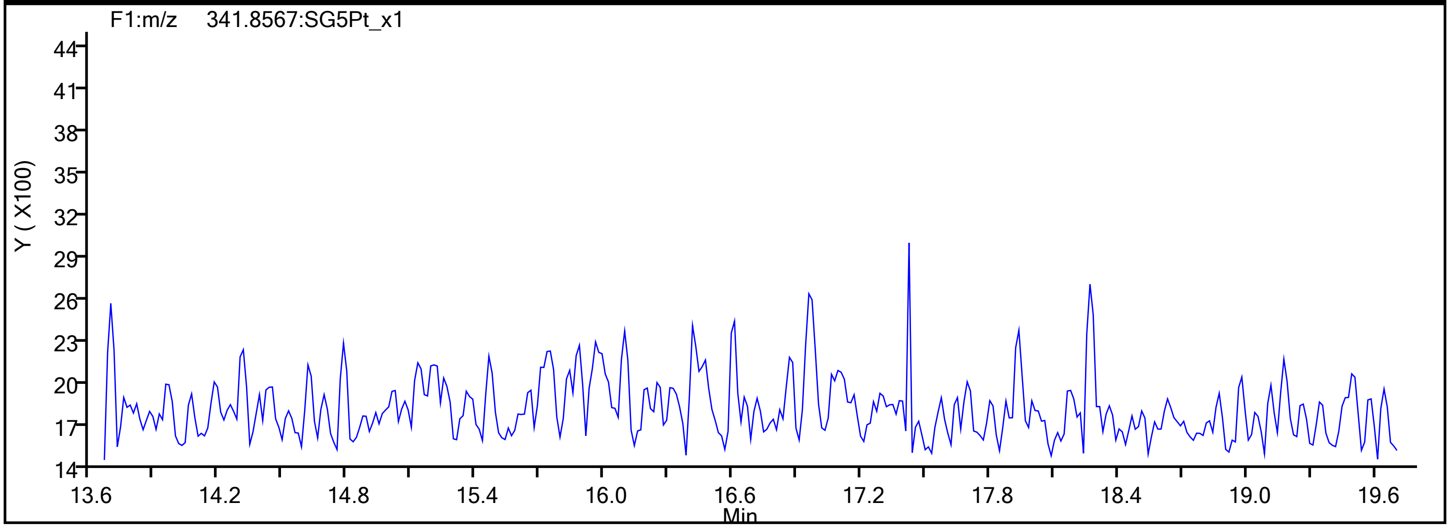

F1 PeCDFs Interference Mass

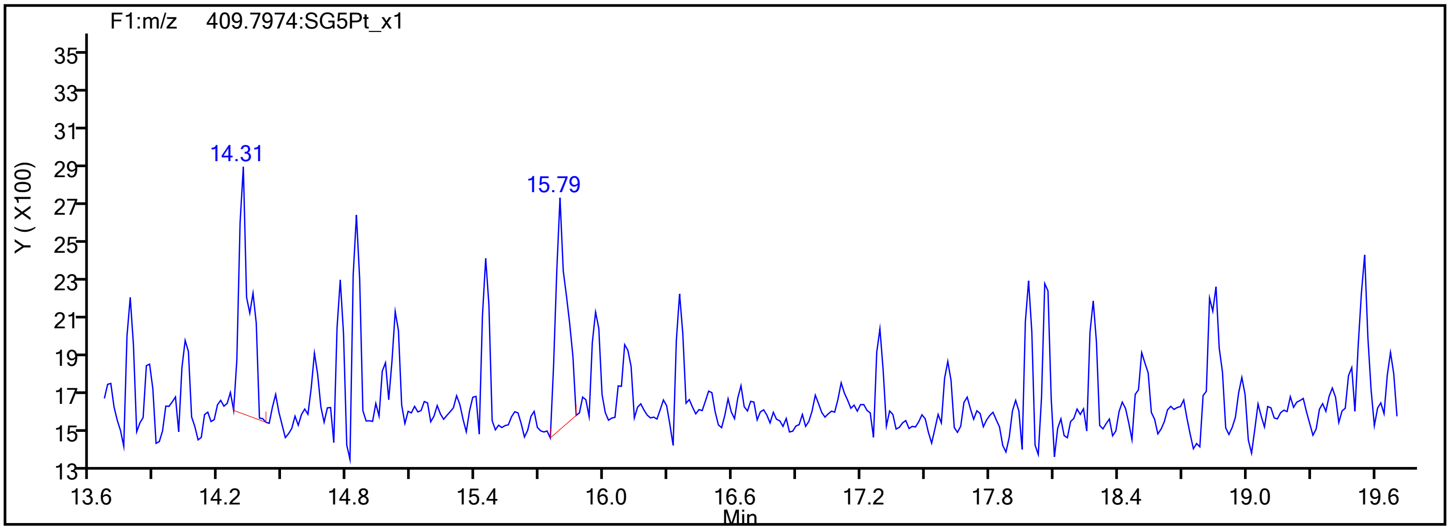

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

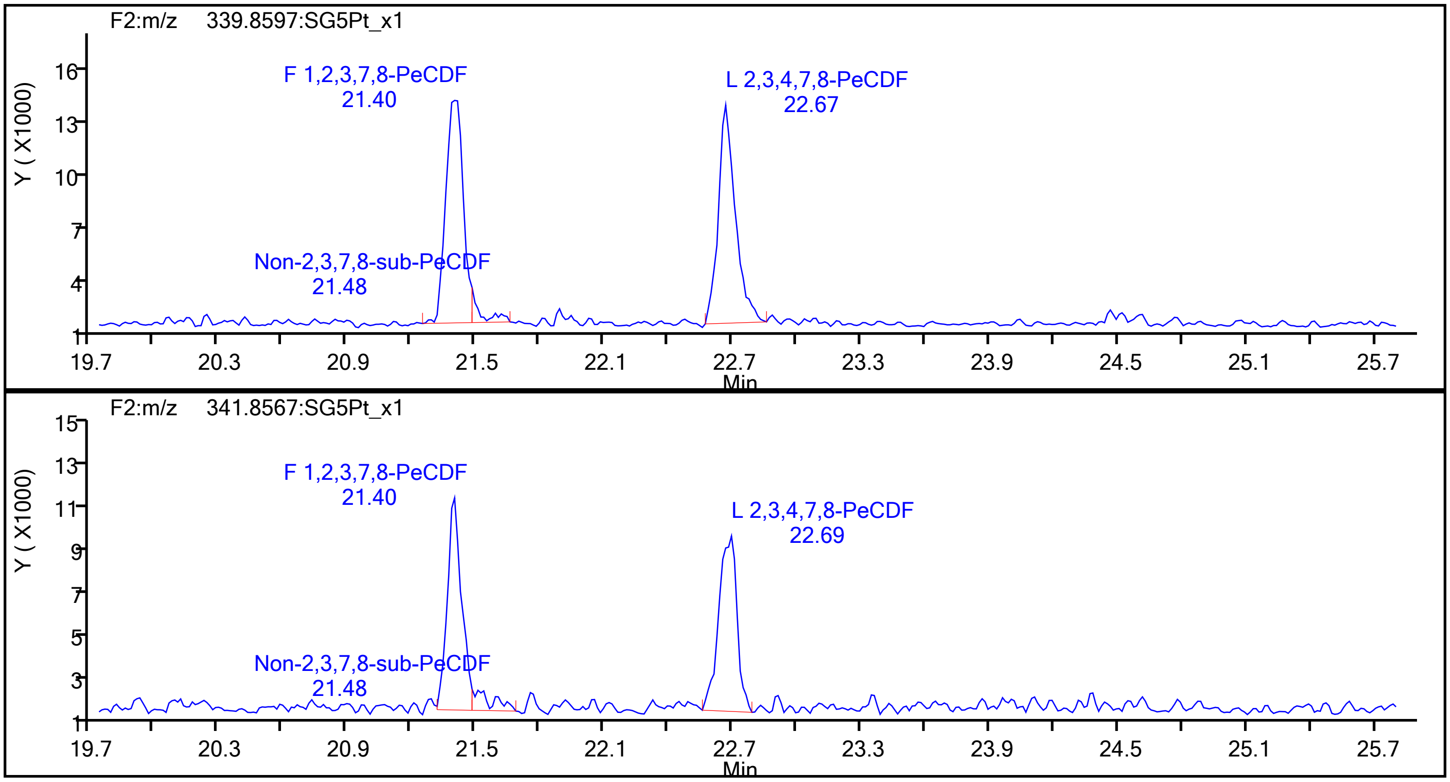

PeCDF Standards

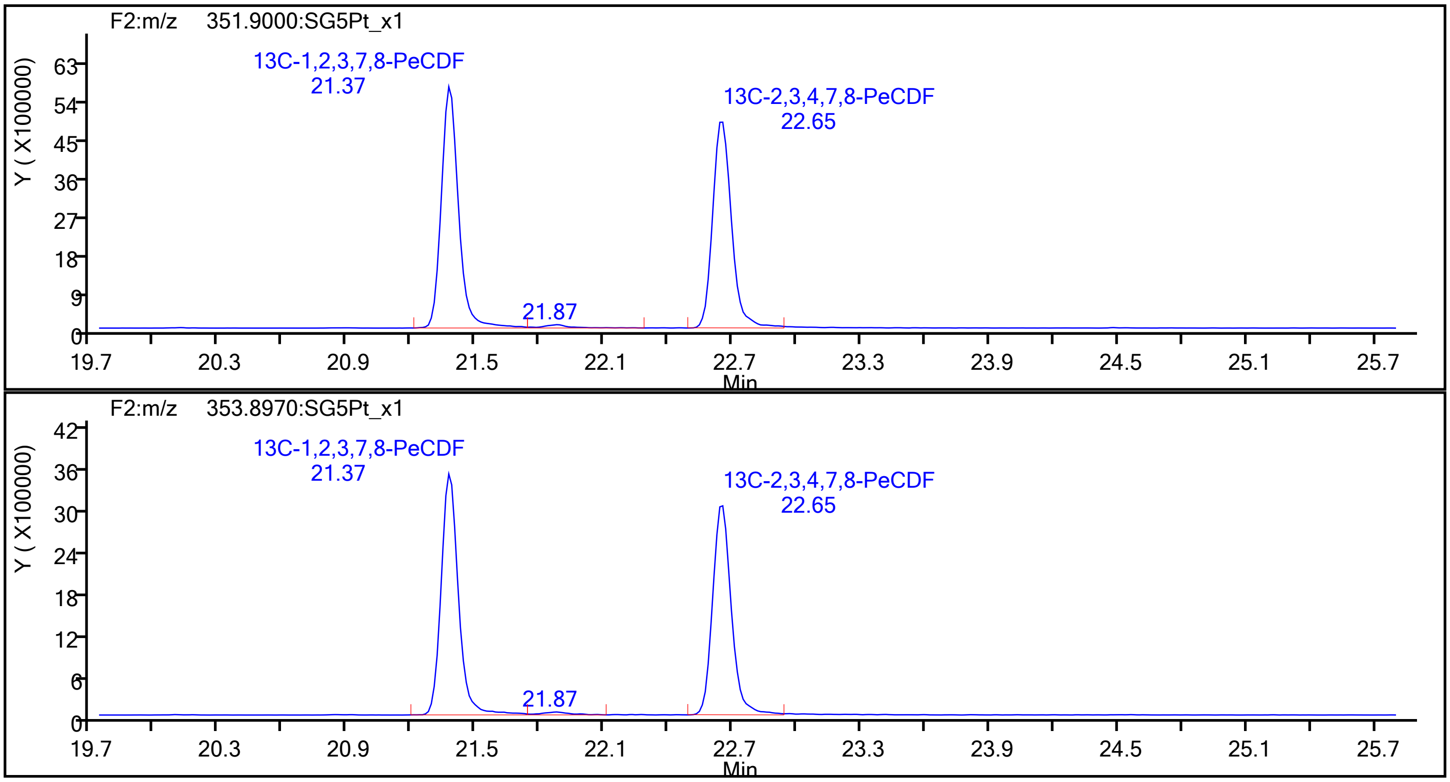

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Eurofins TestAmerica, Sacramento

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PeCDF

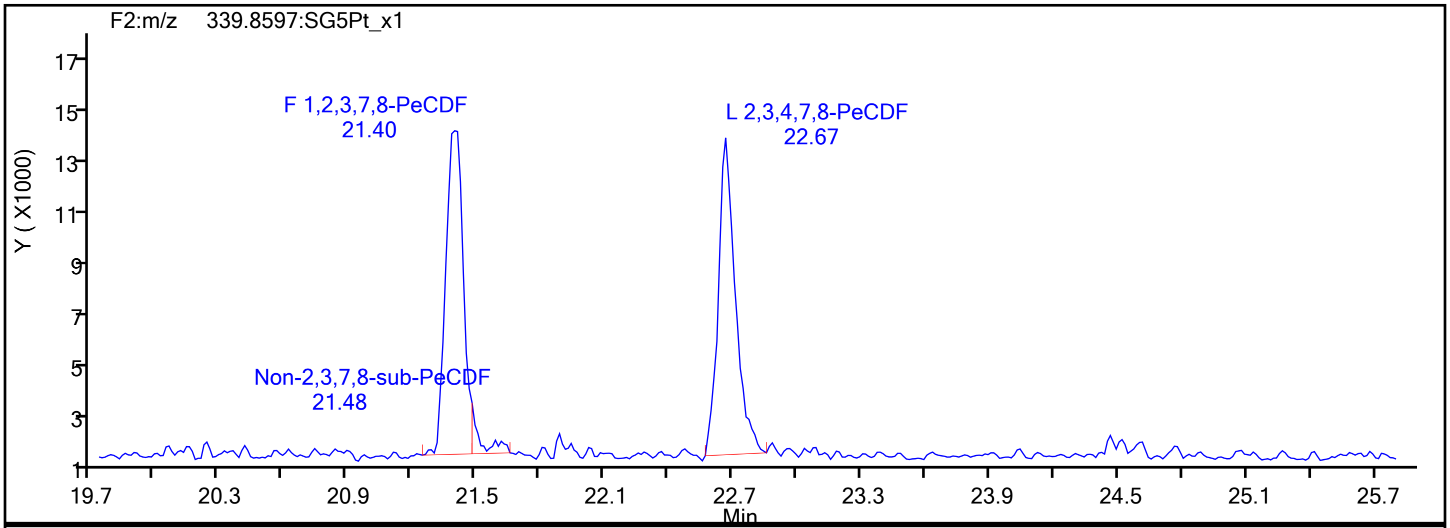

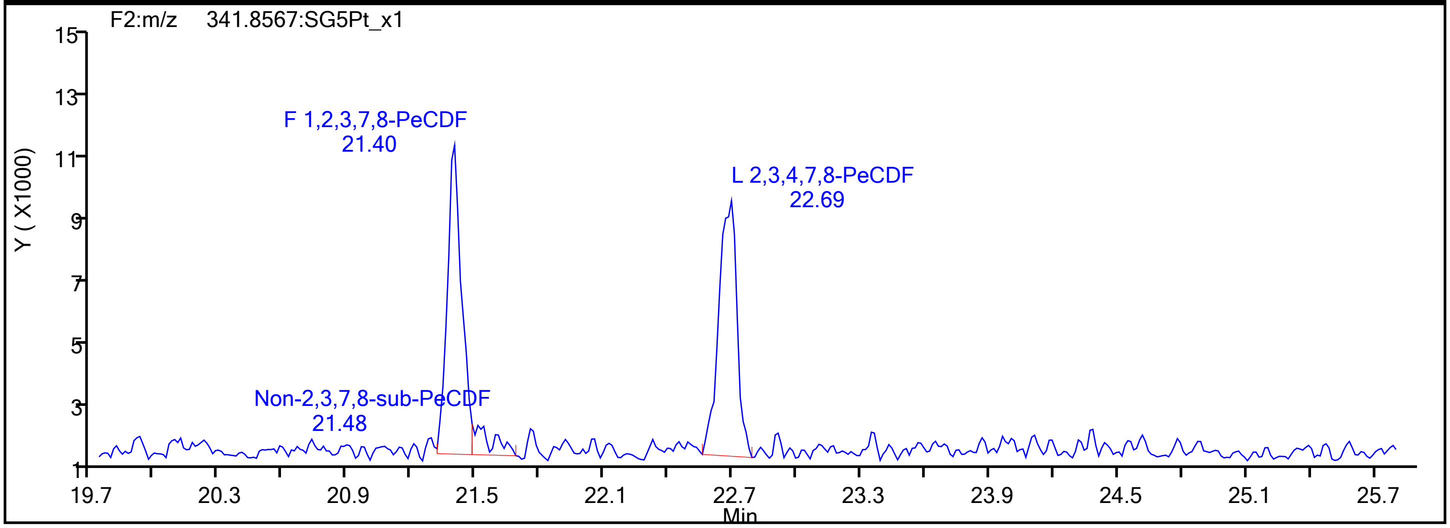

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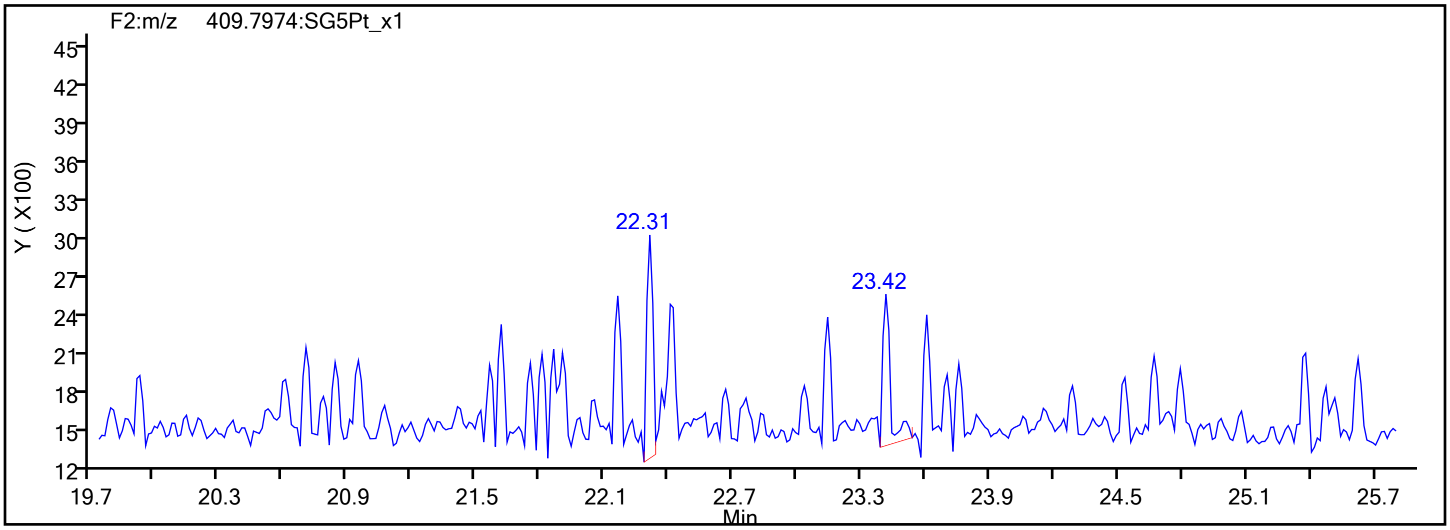

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Eurofins TestAmerica, Sacramento

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PeCDD

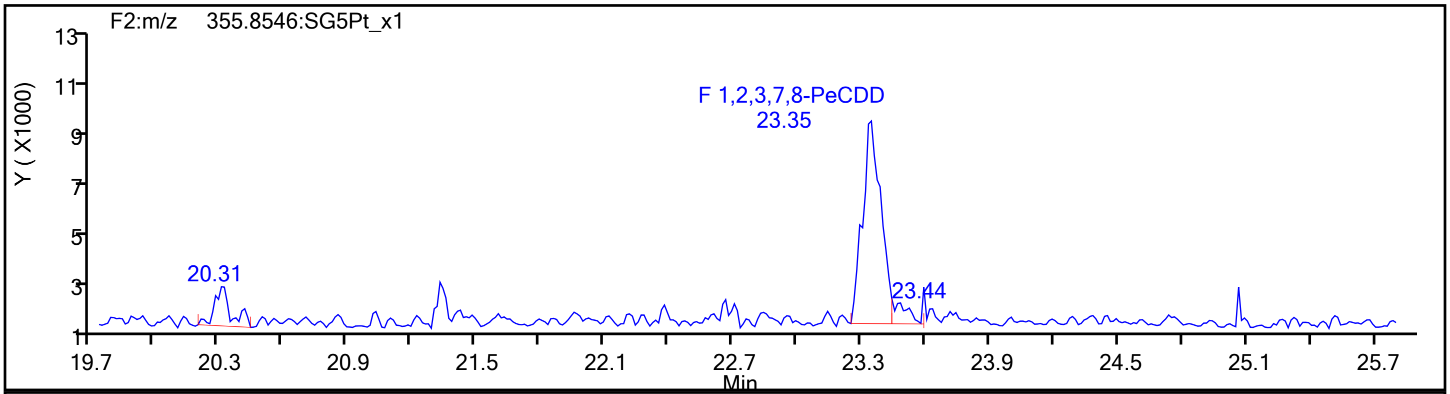

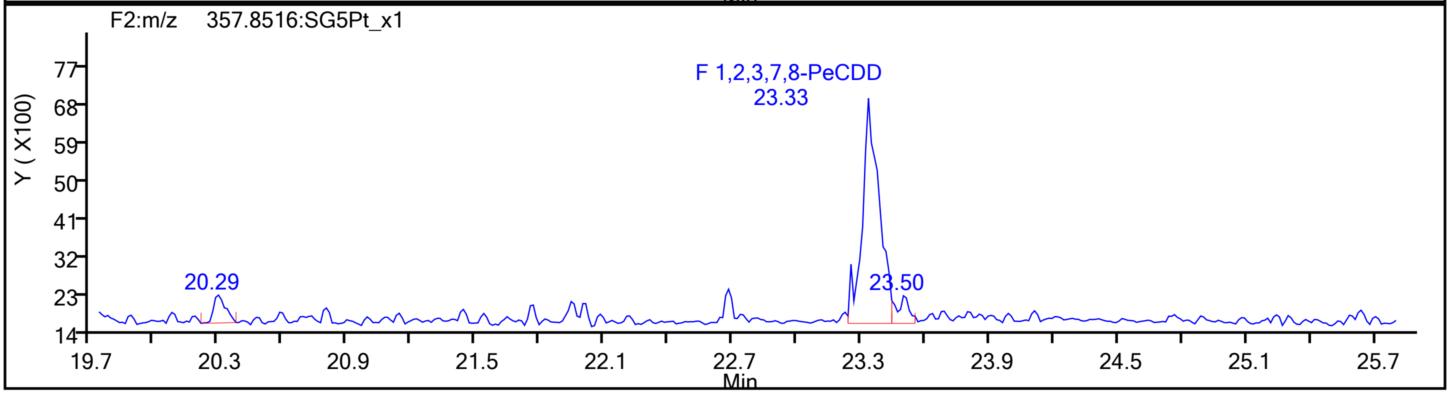

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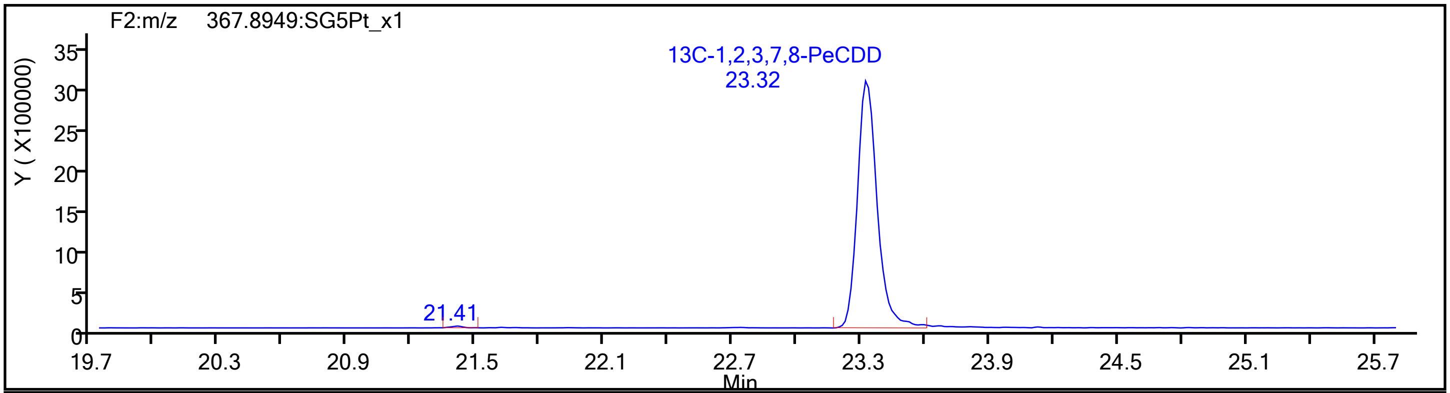

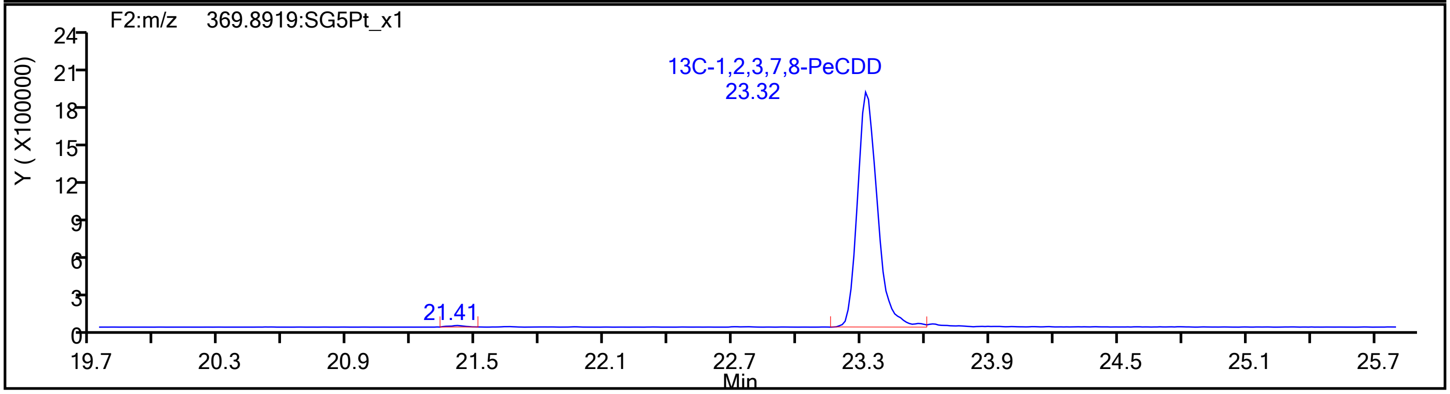

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Eurofins TestAmerica, Sacramento

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Injection Date: 12-Oct-2020 23:54:27 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421347 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

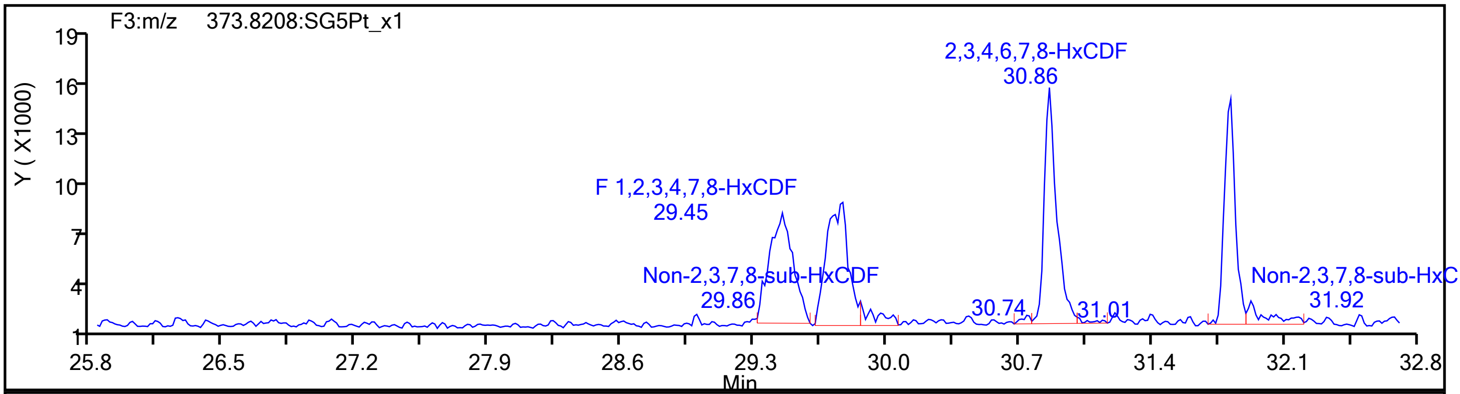

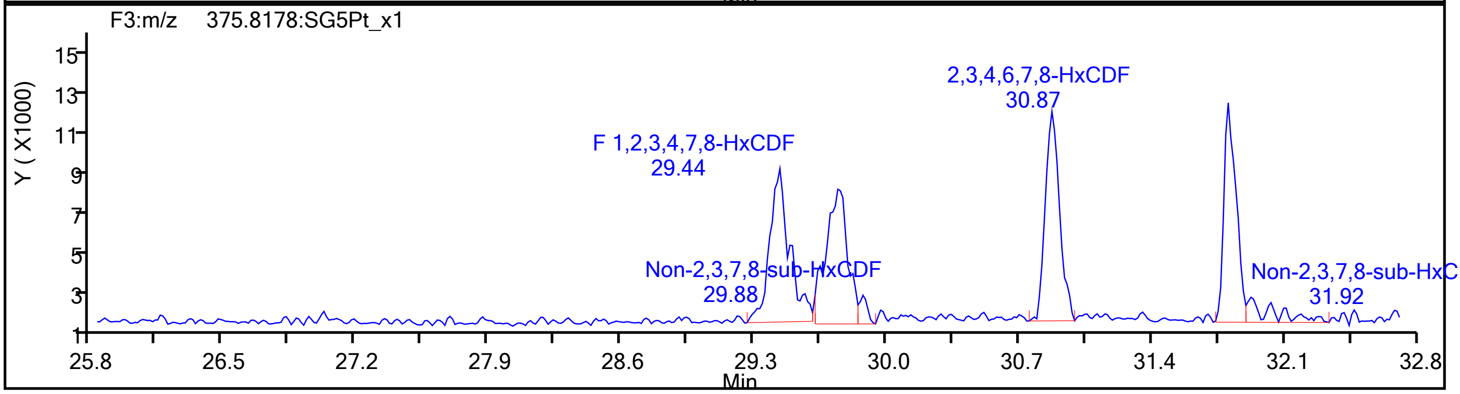

HxCDF Standards

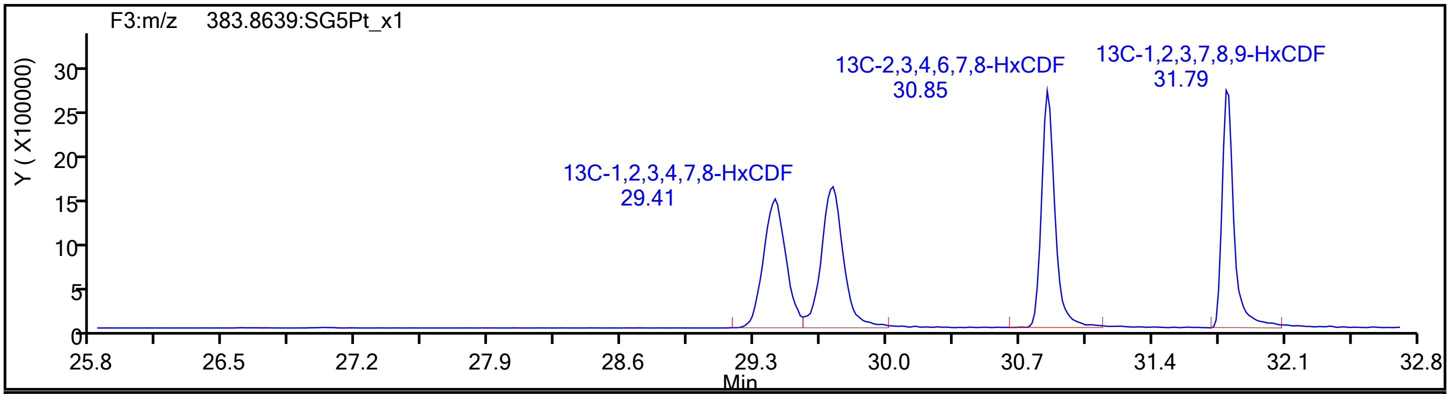

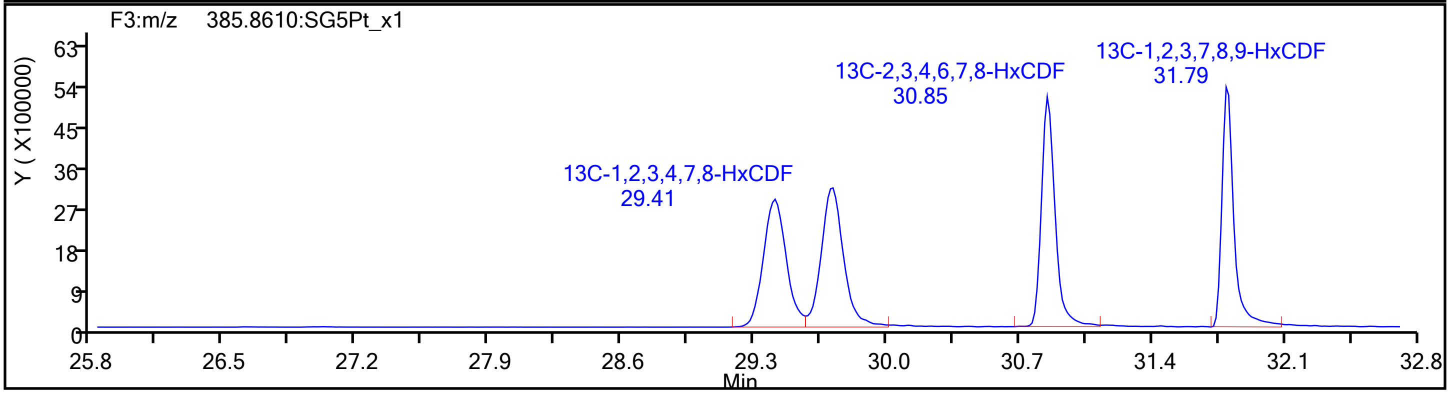

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Eurofins TestAmerica, Sacramento

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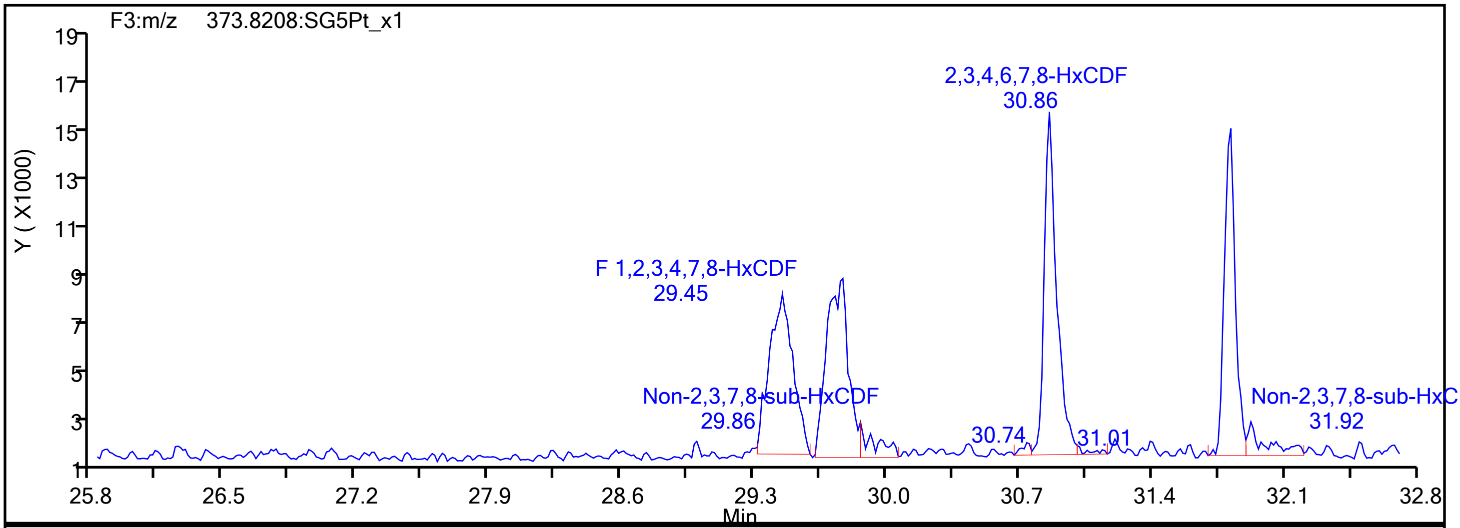

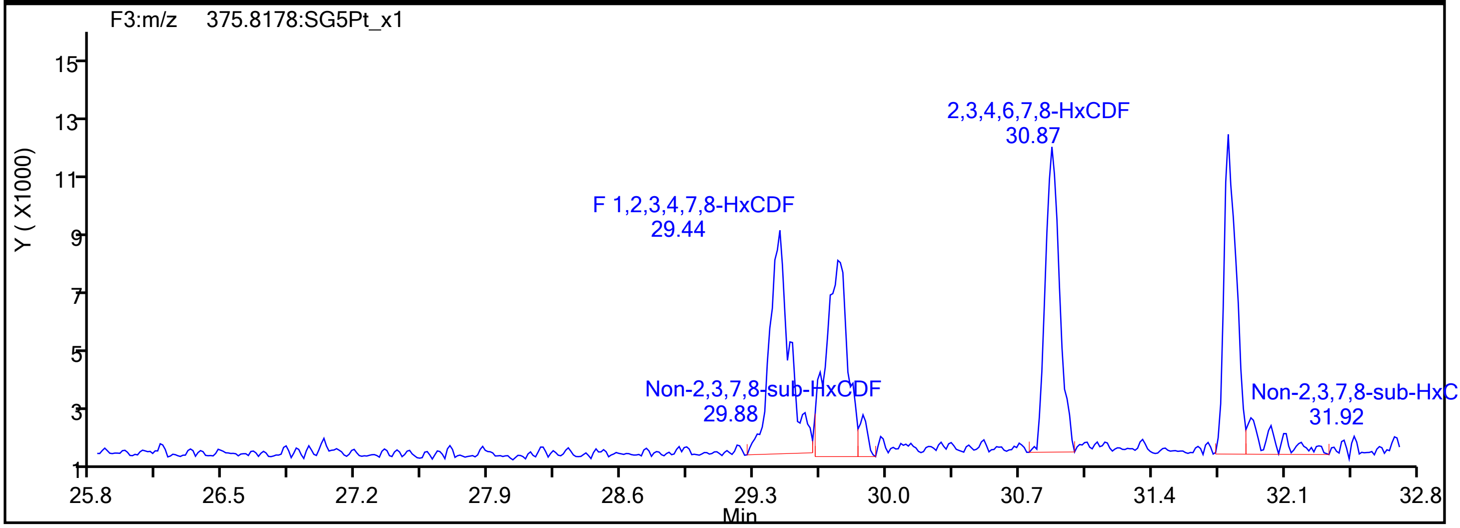

HxCDF Interference Mass

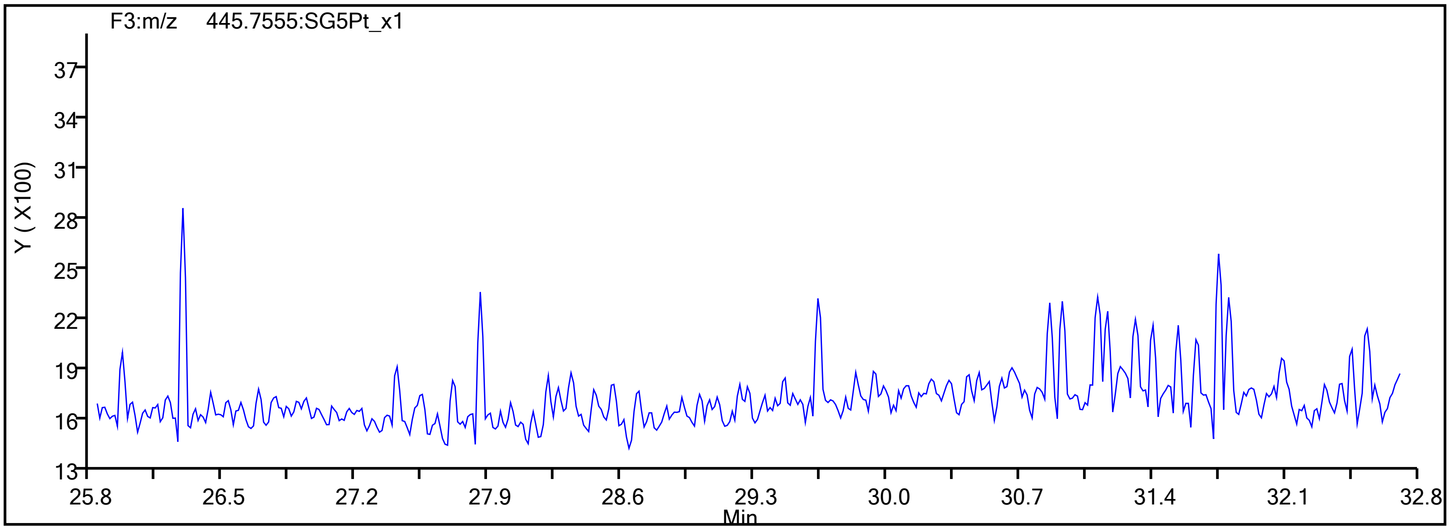

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Client ID:

Worklist#: 421347 Sample Line#: 4

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HxCDD

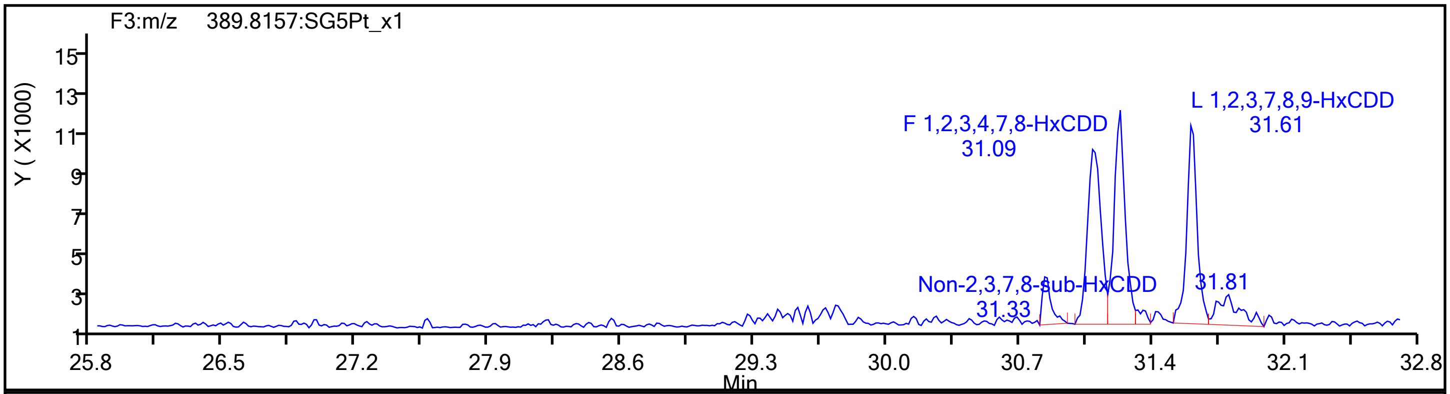

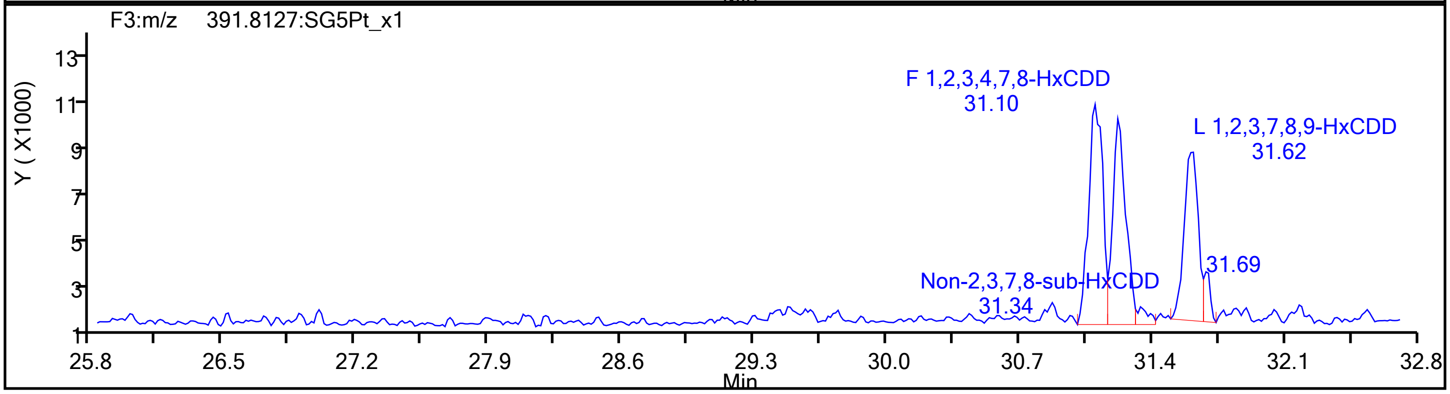

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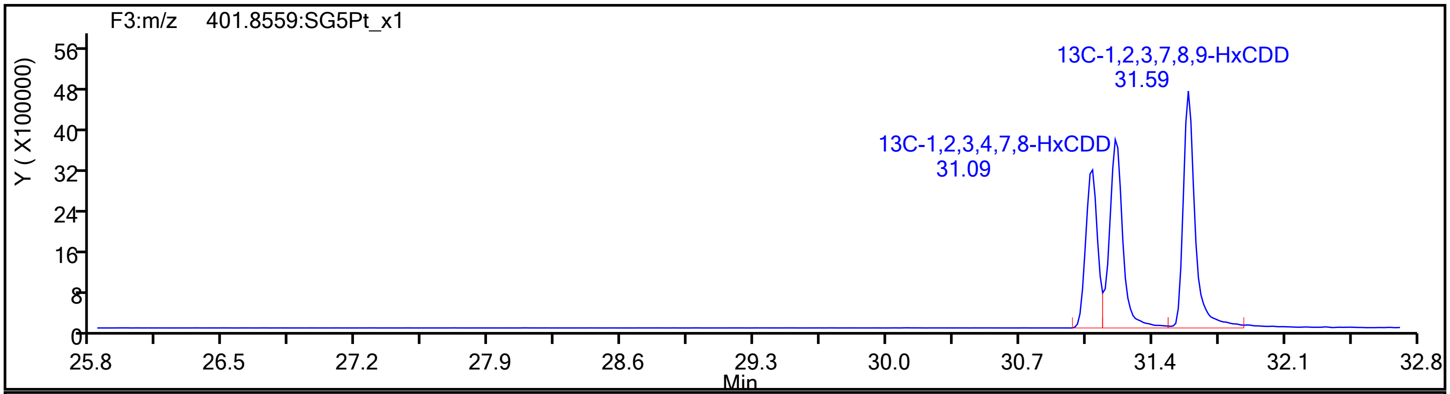

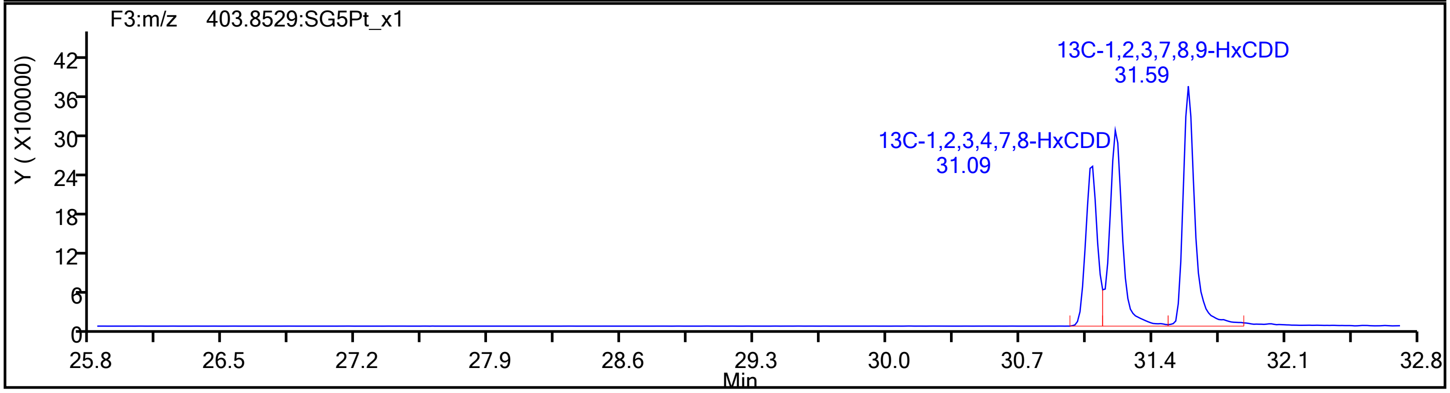

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Eurofins TestAmerica, Sacramento

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HpCDF

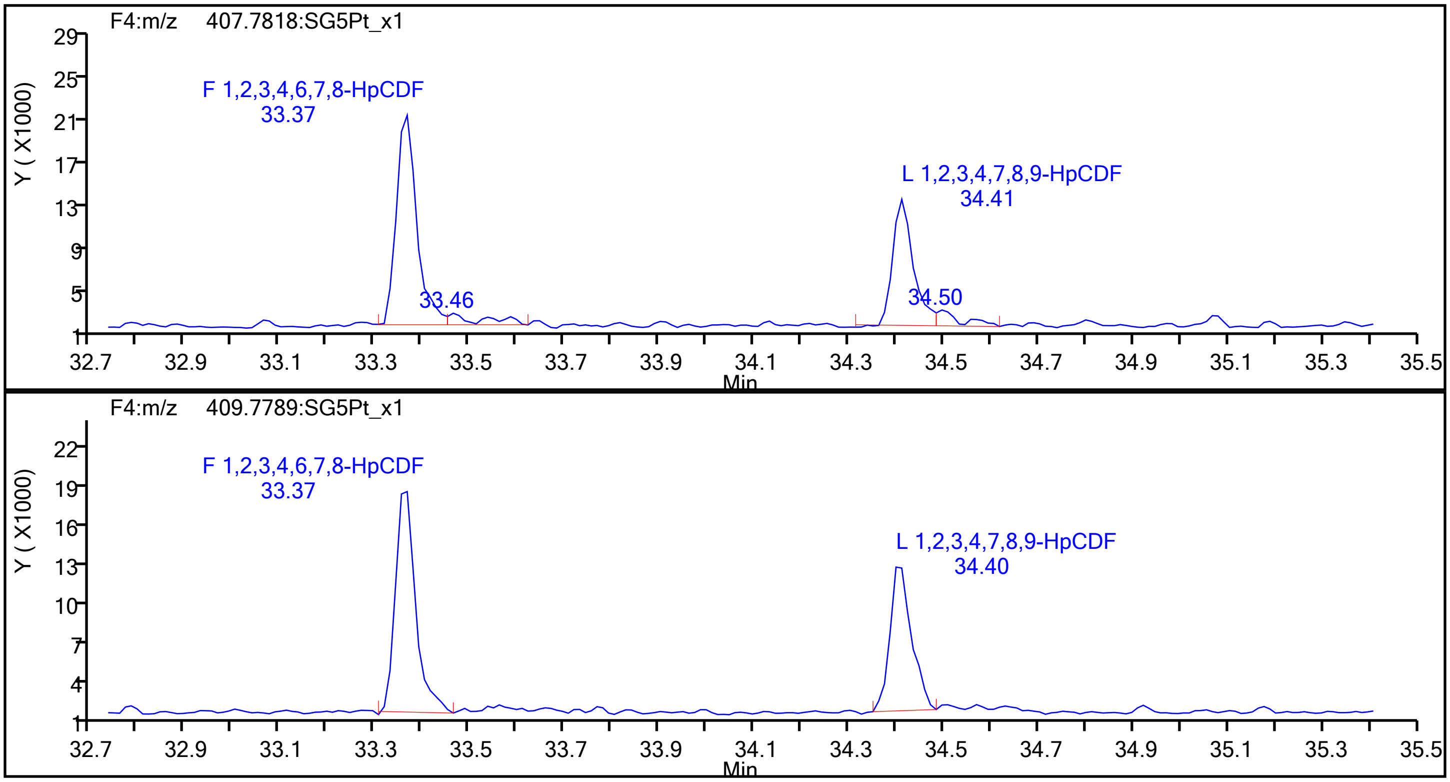

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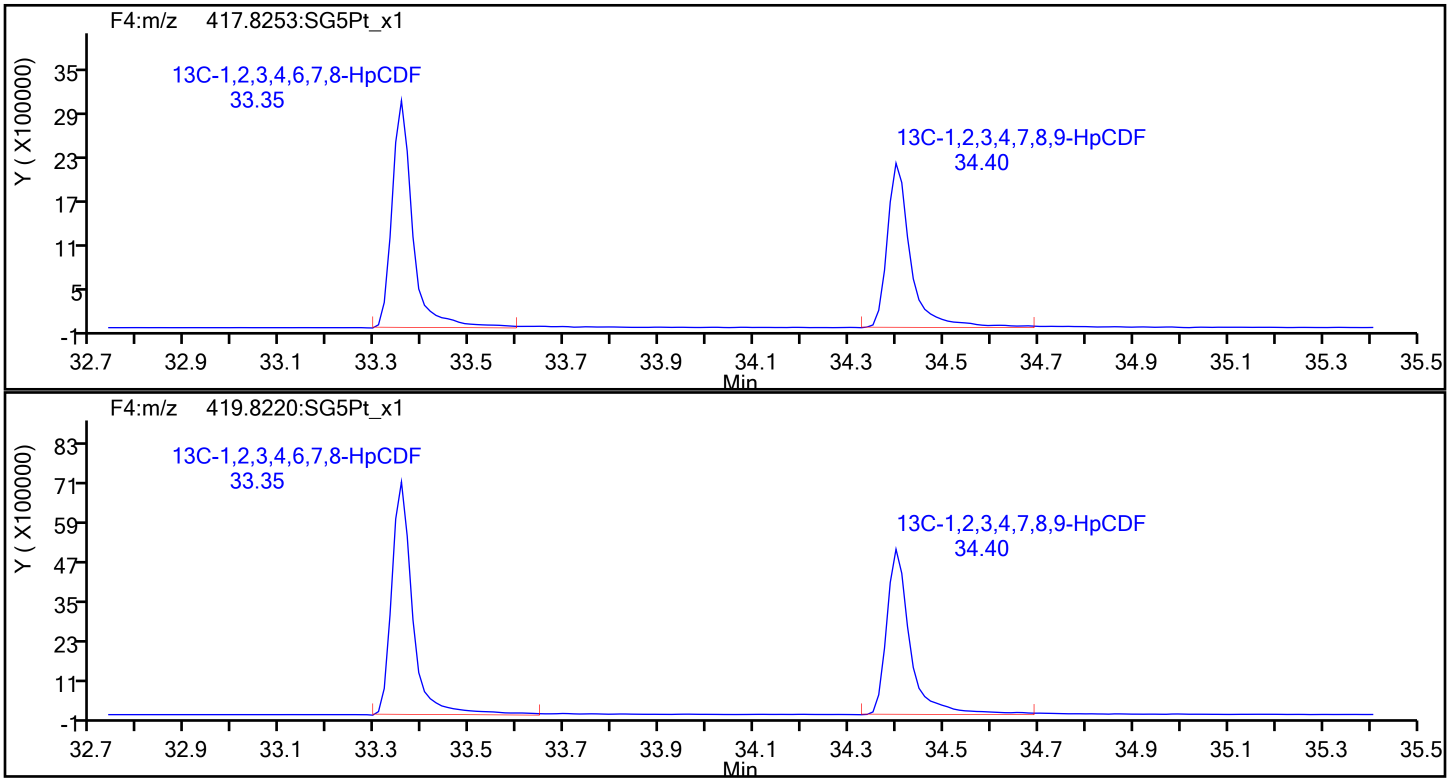

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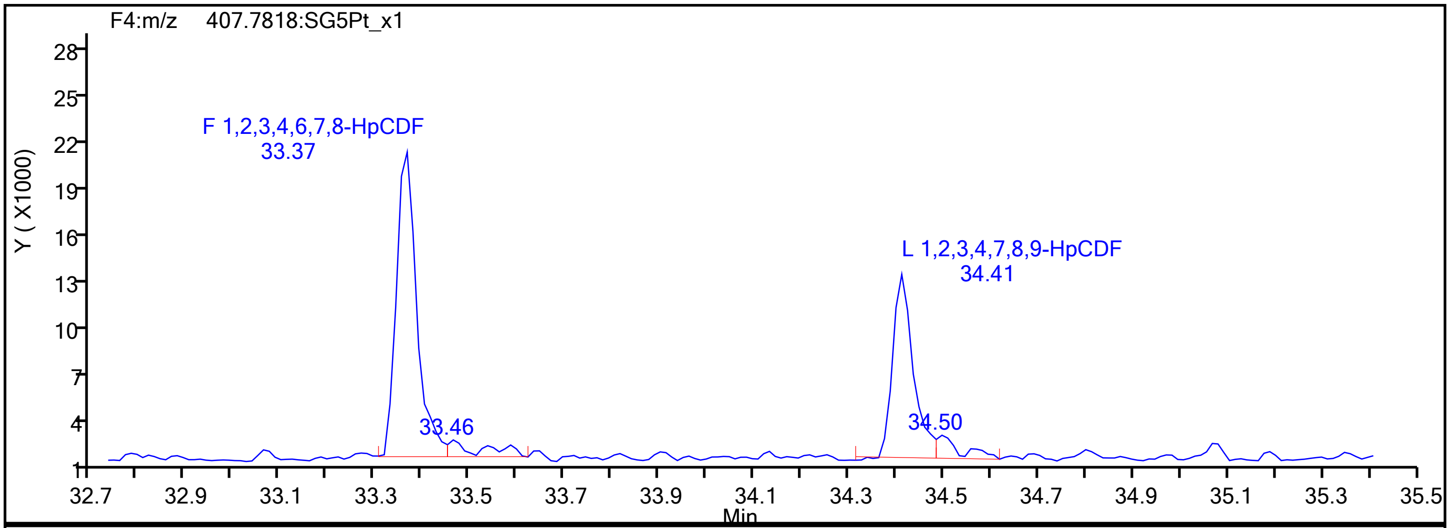

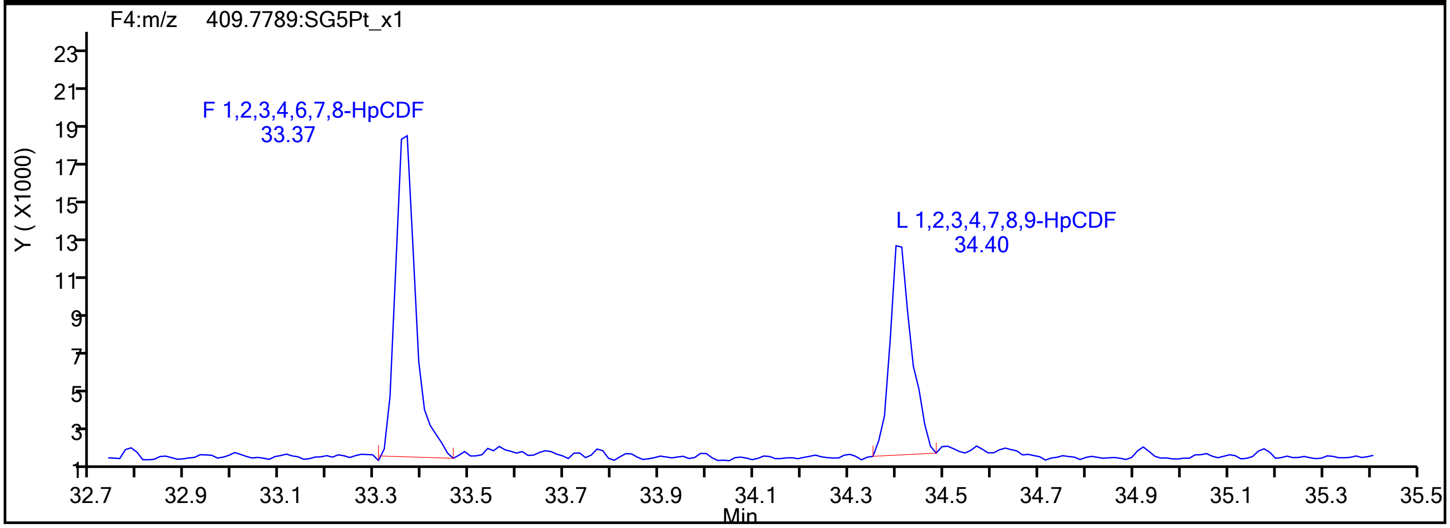

HpCDF Interference Mass

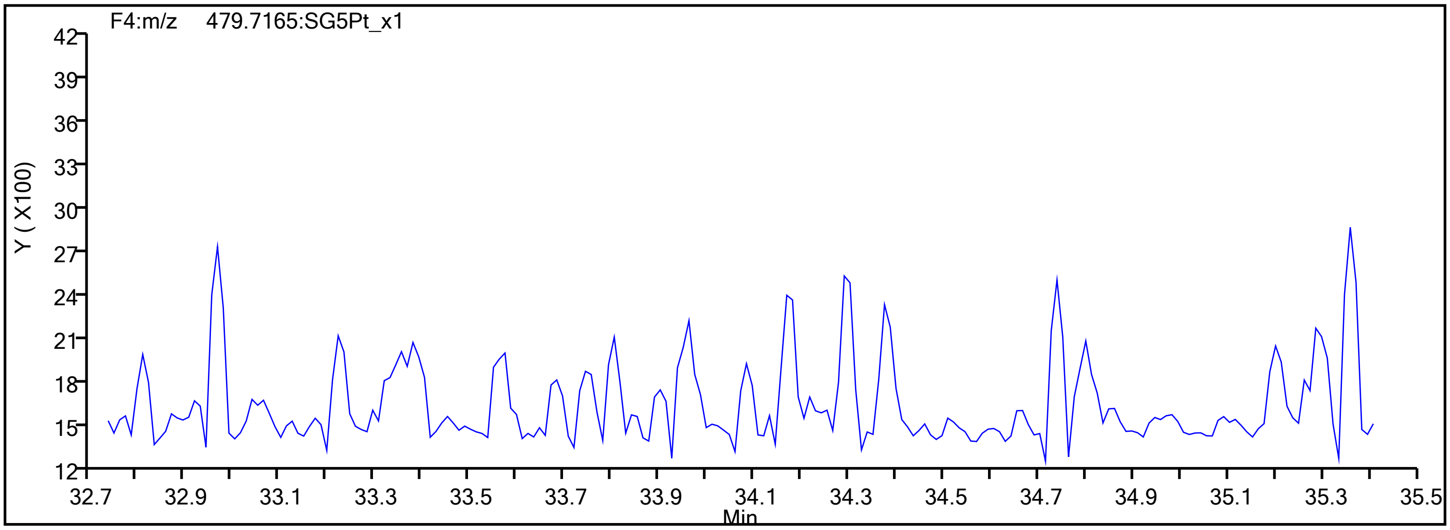

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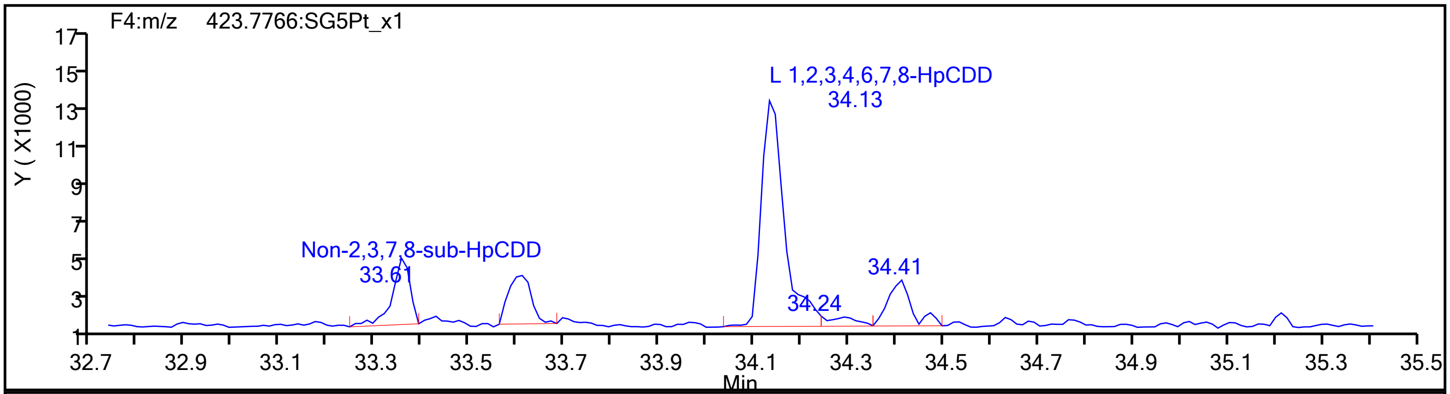

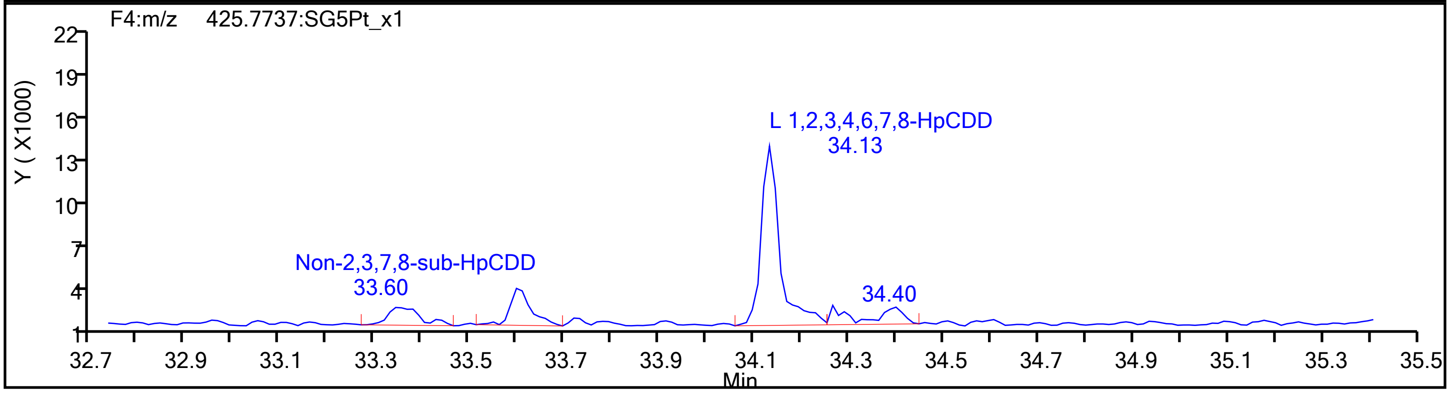

HpCDD Standards

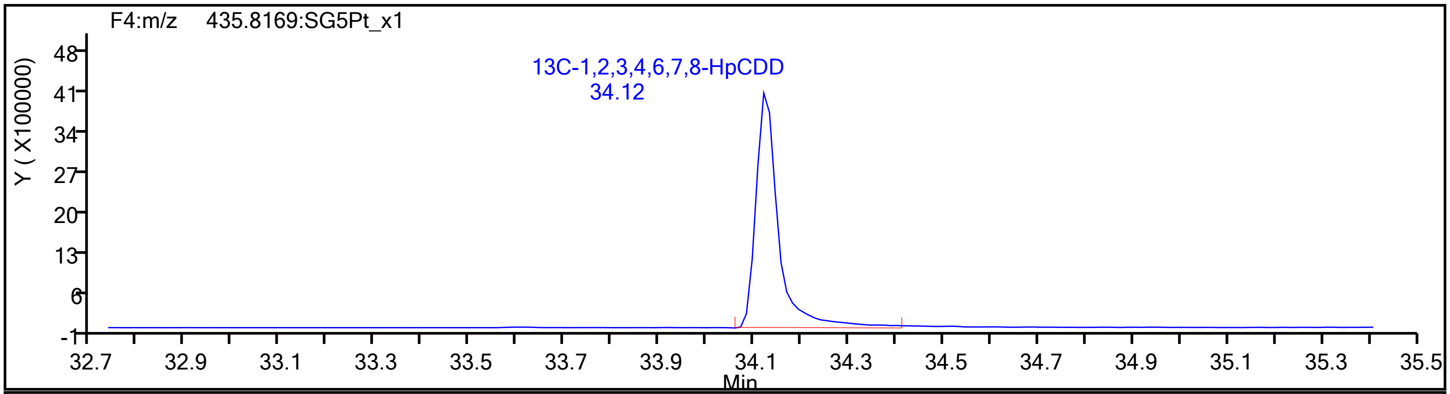

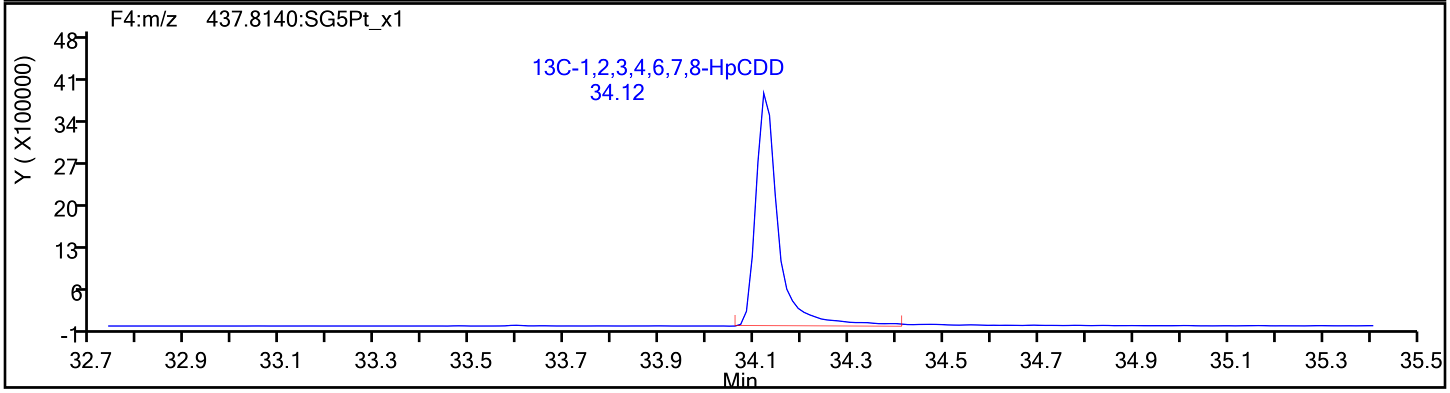

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

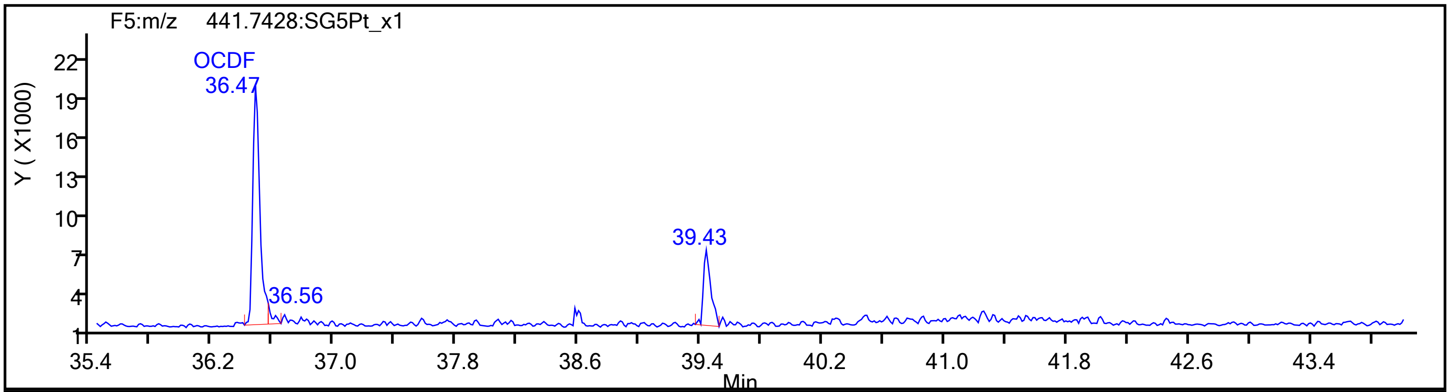

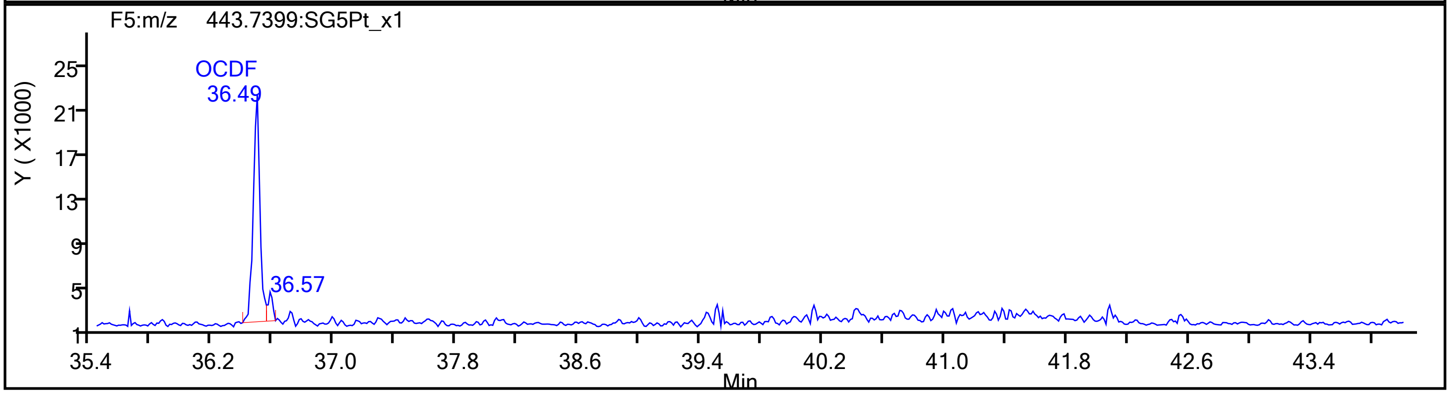

OCDF Standards

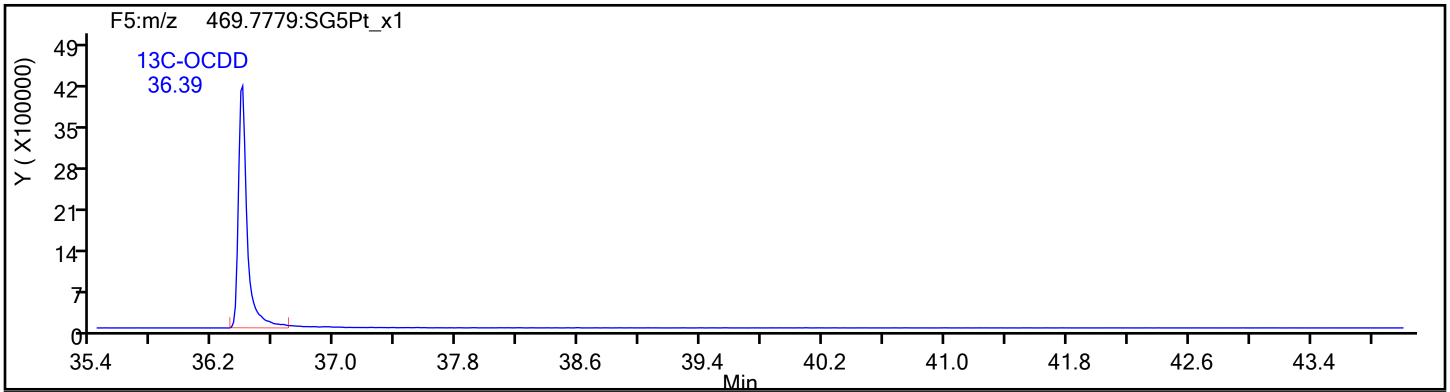

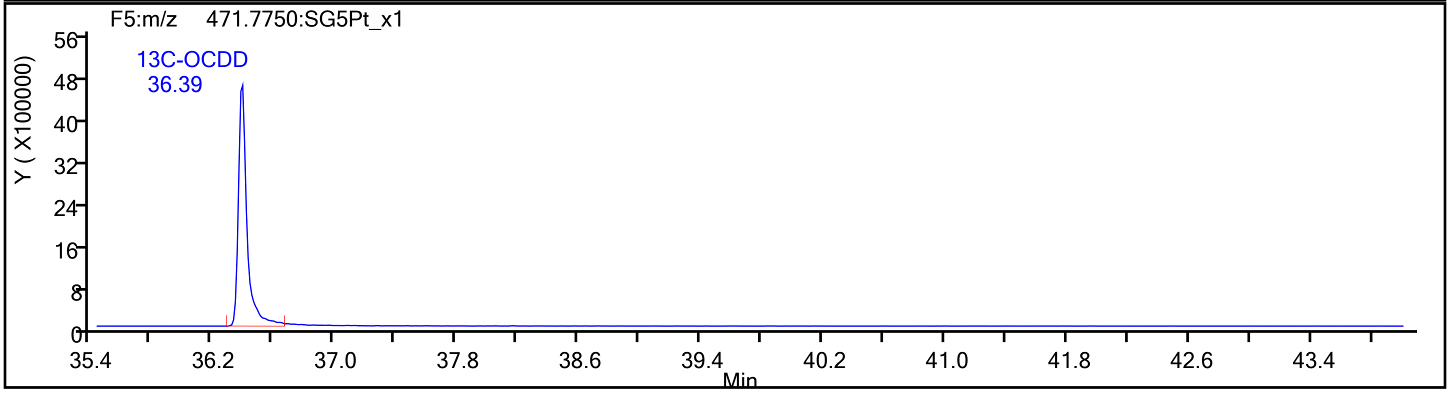

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d		
Injection Date:	12-Oct-2020 23:54:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

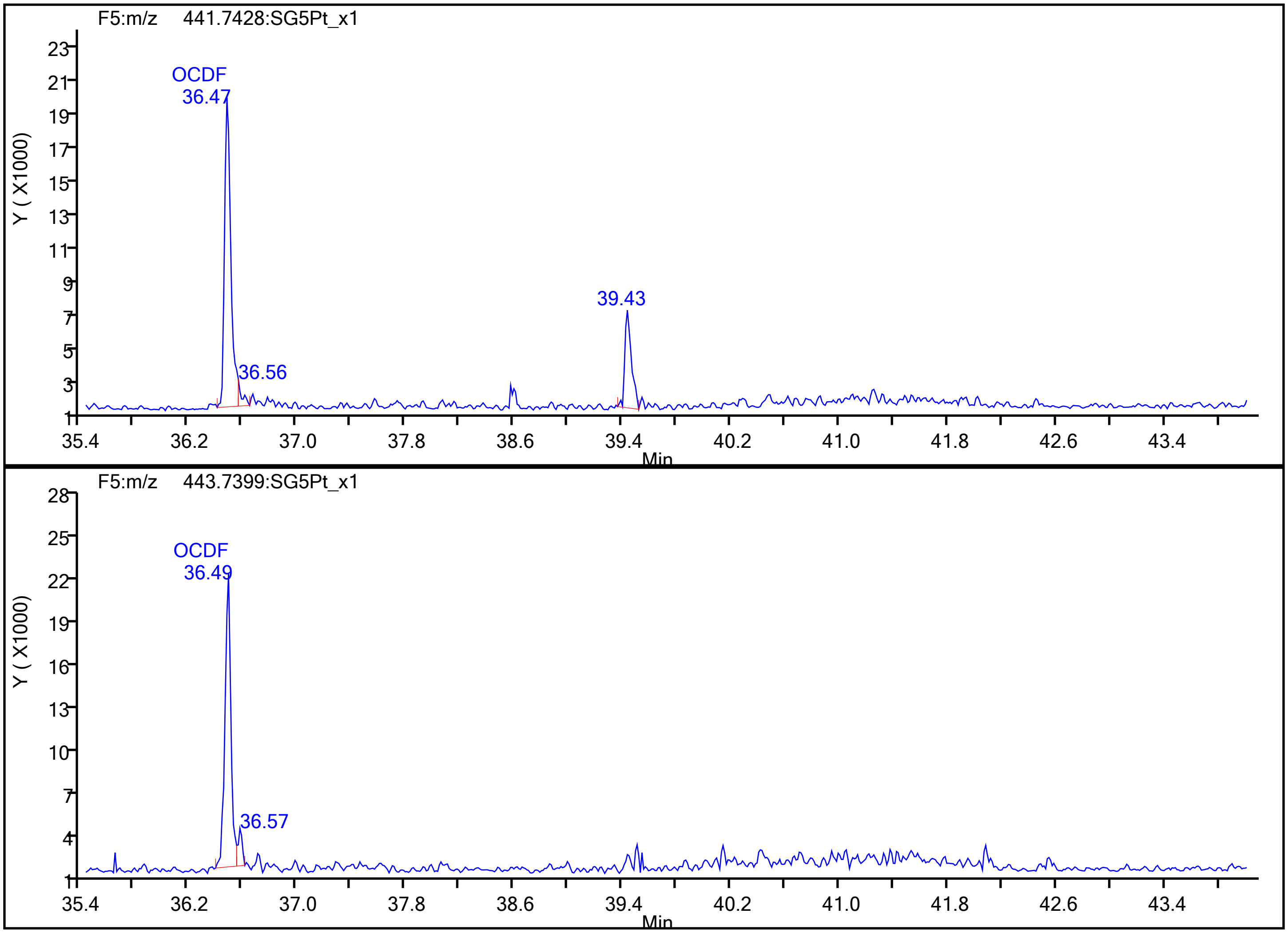

OCDF Interference Mass

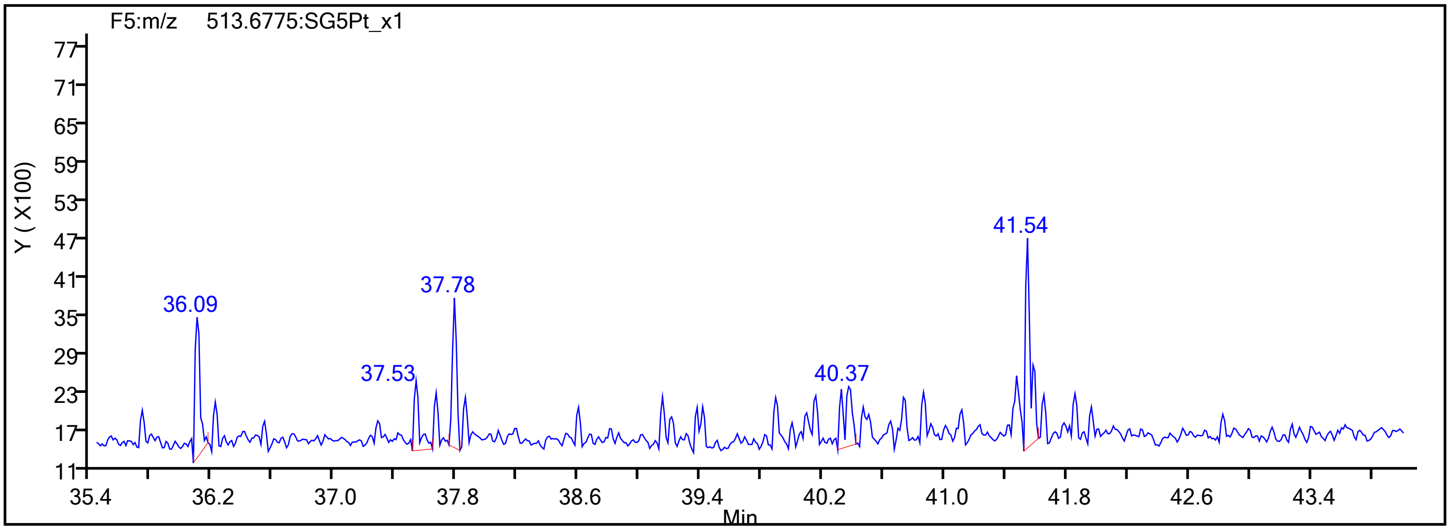

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d

Injection Date:	12-Oct-2020 23:54:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

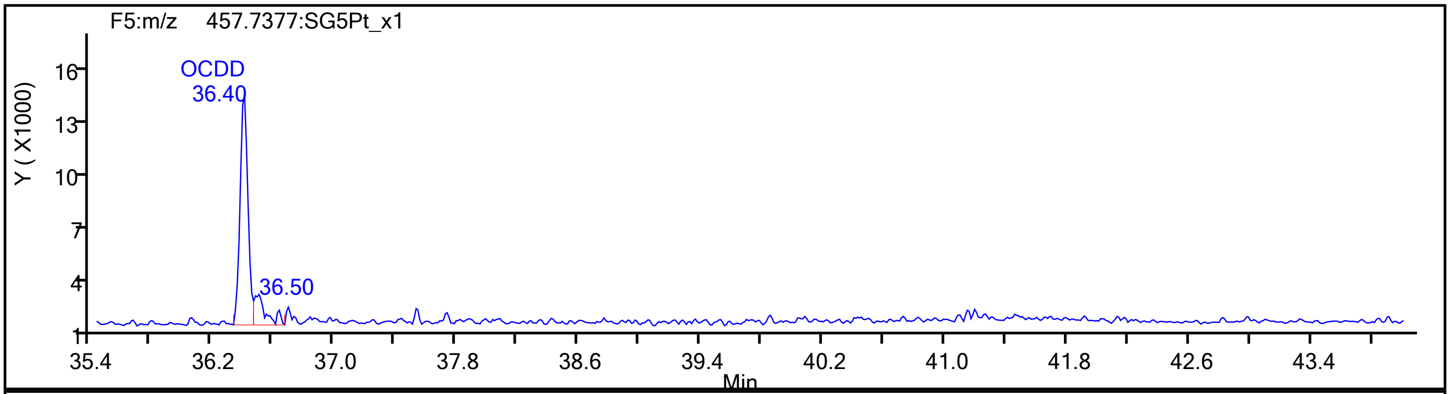

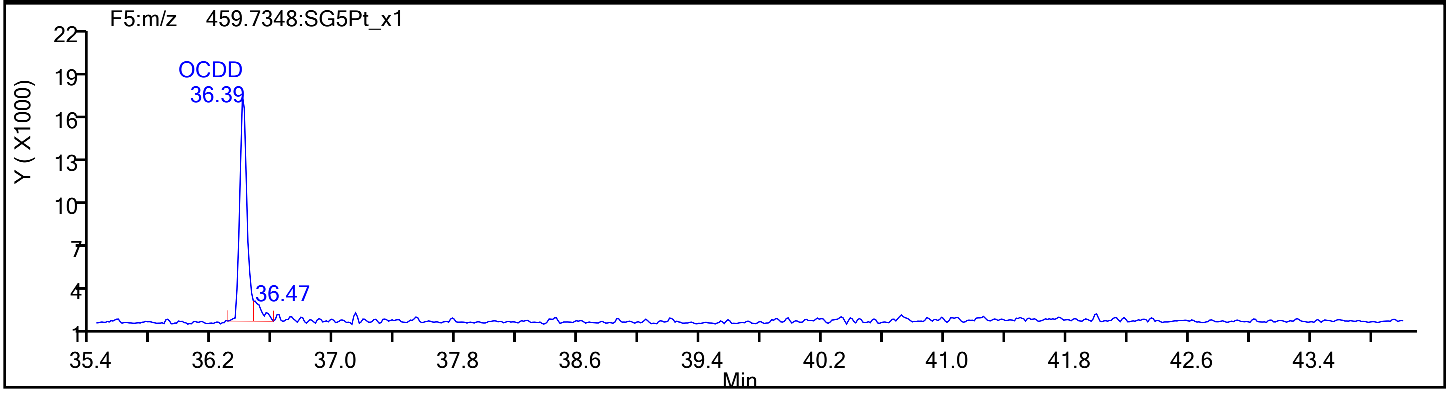

OCDD Standards

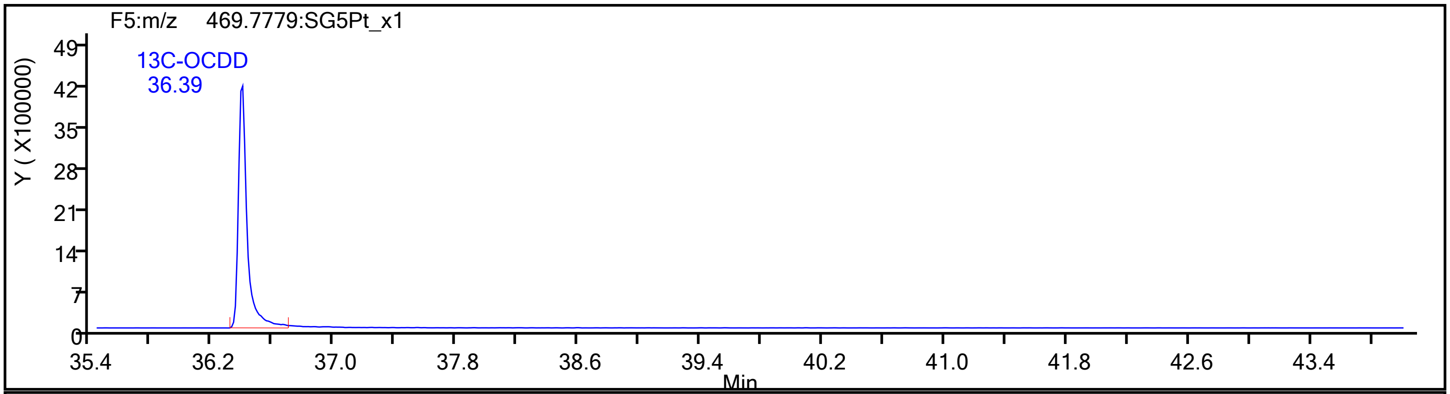

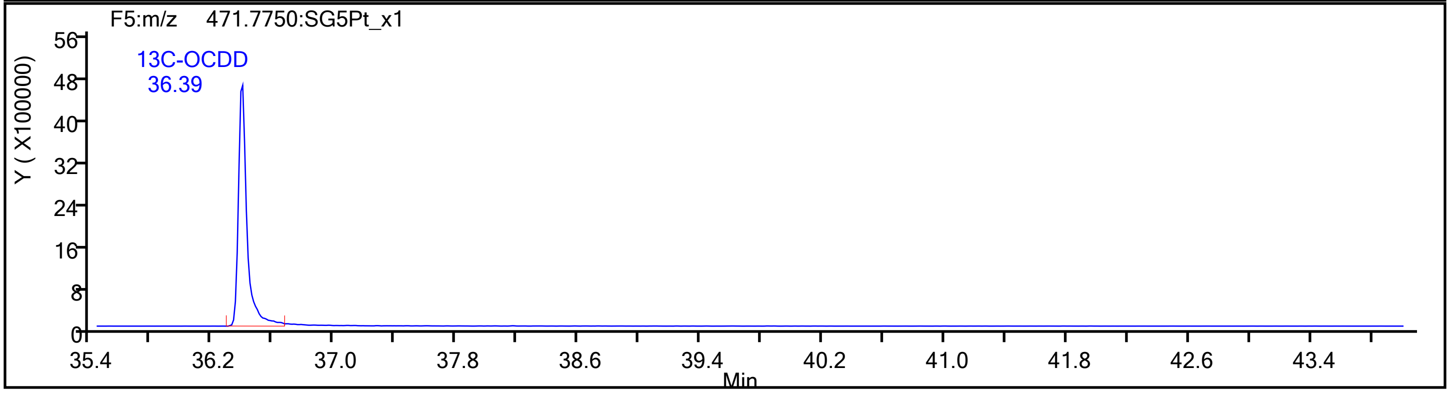

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d

Injection Date: 12-Oct-2020 23:54:27 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421347 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

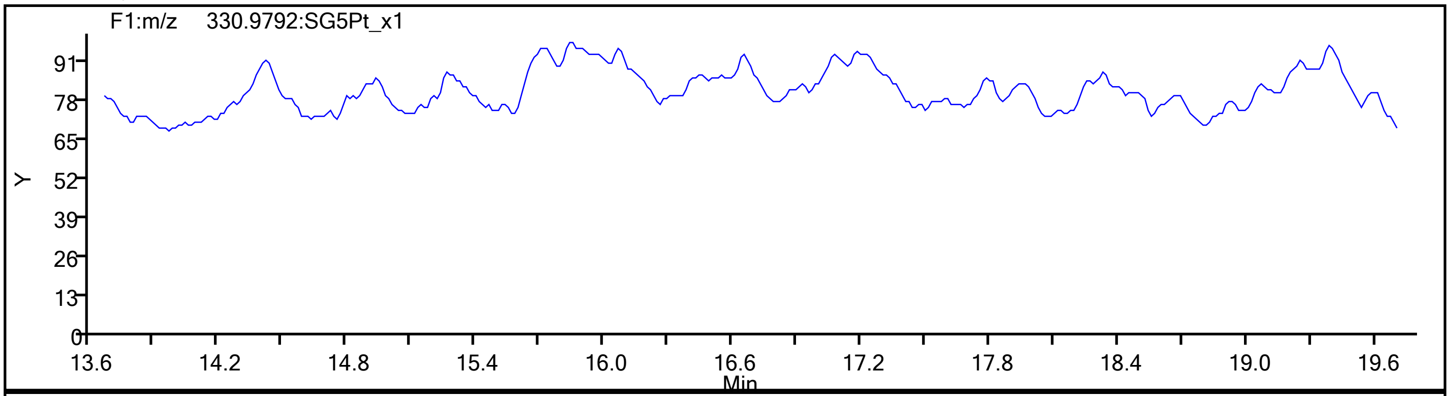

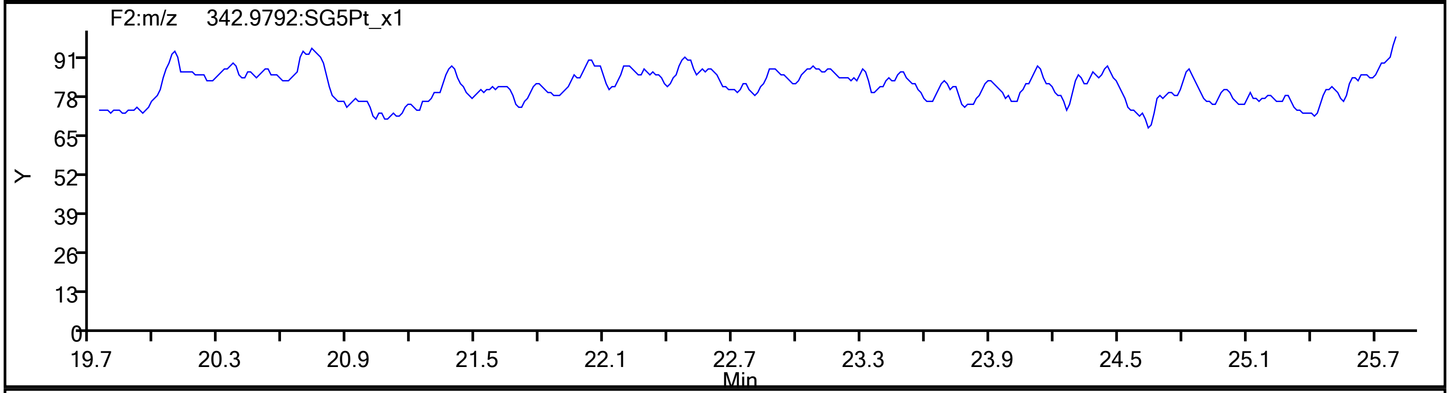

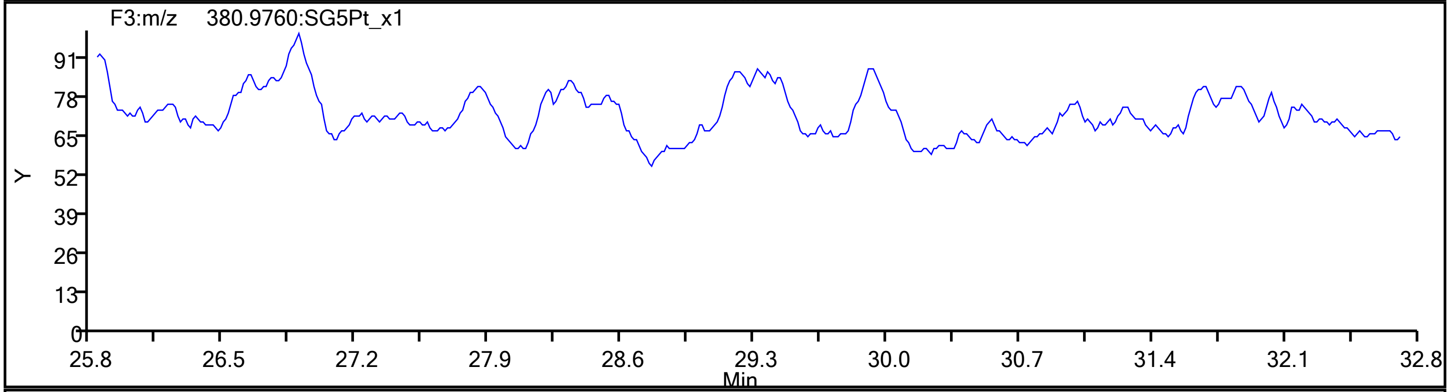

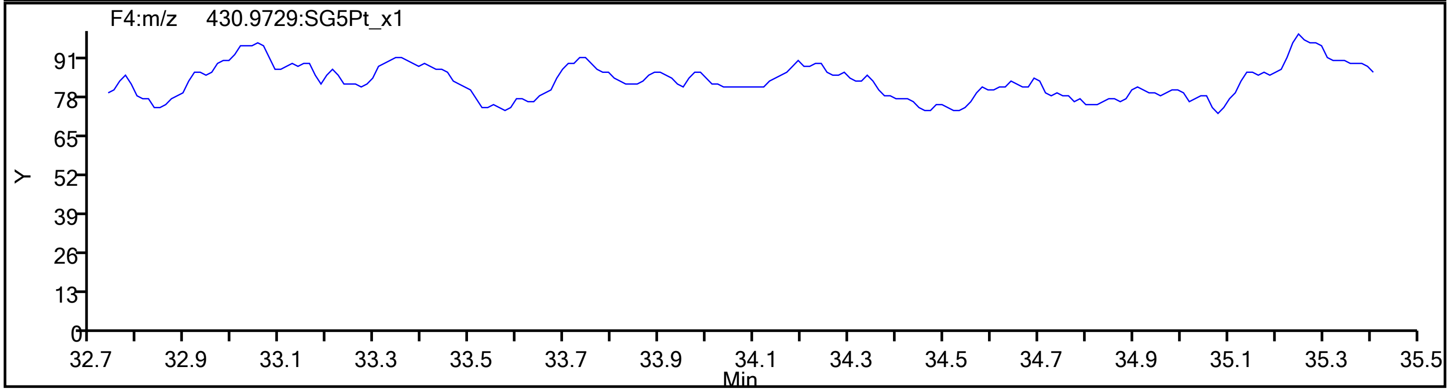

Report Date: 14-Oct-2020 13:12:52 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_4.d		
Injection Date:	12-Oct-2020 23:54:27	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

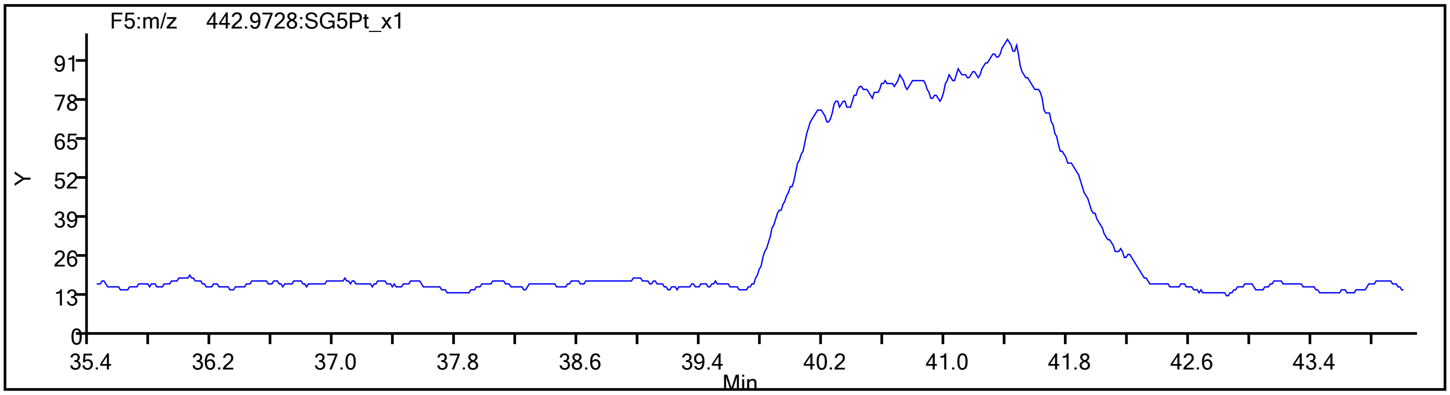

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-418764/2-A

Matrix: Water Lab File ID: 12OC20B10D5_5.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/05/2020 11:15

Sample wt/vol: 1000(mL) Date Analyzed: 10/13/2020 00:39

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421347 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	217		10	2.2
51207-31-9	2,3,7,8-TCDF	226		10	1.7
40321-76-4	1,2,3,7,8-PeCDD	1080		50	4.9
57117-41-6	1,2,3,7,8-PeCDF	1110		50	7.5
57117-31-4	2,3,4,7,8-PeCDF	1120		50	8.2
39227-28-6	1,2,3,4,7,8-HxCDD	1110		50	7.4
57653-85-7	1,2,3,6,7,8-HxCDD	1160		50	7.2
19408-74-3	1,2,3,7,8,9-HxCDD	1070		50	6.5
70648-26-9	1,2,3,4,7,8-HxCDF	1140		50	18
57117-44-9	1,2,3,6,7,8-HxCDF	1110		50	16
72918-21-9	1,2,3,7,8,9-HxCDF	1120		50	10
60851-34-5	2,3,4,6,7,8-HxCDF	1130		50	9.6
35822-46-9	1,2,3,4,6,7,8-HpCDD	1110		50	8.6
67562-39-4	1,2,3,4,6,7,8-HpCDF	1070		50	15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1080		50	22
3268-87-9	OCDD	1960		100	5.0
39001-02-0	OCDF	2060		100	4.5
41903-57-5	Total TCDD	217		10	2.2
30402-14-3	Total TCDF	226		10	1.7
36088-22-9	Total PeCDD	1080		50	4.9
30402-15-4	Total PeCDF	2240		50	7.9
34465-46-8	Total HxCDD	3340		50	7.0
55684-94-1	Total HxCDF	4500		50	13
37871-00-4	Total HpCDD	1110		50	8.6
38998-75-3	Total HpCDF	2150		50	18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-418764/2-A

Matrix: Water Lab File ID: 12OC20B10D5_5.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/05/2020 11:15

Sample wt/vol: 1000(mL) Date Analyzed: 10/13/2020 00:39

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421347 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	93		20-175
89059-46-1	13C-2,3,7,8-TCDF	107		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	88		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	101		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	99		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	101		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	99		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	124		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	126		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	122		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	134		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	101		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	126		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	113		20-186
114423-97-1	13C-OCDD	100		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	114		31-191

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d
Lims ID: LCS 320-418764/2-A
Client ID:
Sample Type: LCS
Inject. Date: 13-Oct-2020 00:39:26 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-418764/2-A LCS 320-418764/2-A
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 13:12:51 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: dadunj Date: 14-Oct-2020 13:13:27

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.091	8819330	0.76	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.607	12795159	0.78	1.3598	106.7	106.7	0.5439	0.5439	107	
2,3,7,8-TCDF	16.637	1310374	0.80	0.9077	11.3	11.3	0.0848	0.0848	113	
A Non-2,3,7,8-sub-TCDF	16.342						0.0848	0.0848		
S Total TCDF					11.3	11.3	0.0848	0.0848		
D 13C-2,3,7,8-TCDD	17.287	8627722	0.77	1.0536	92.9	92.9	0.4232	0.4232	92.85	
2,3,7,8-TCDD	17.302	943275	0.75	1.0061	10.9	10.9	0.1109	0.1109	109	
$ 37Cl4-2,3,7,8-TCDD	17.302	4230999		1.0488	45.7	45.7	0.0823	0.0823	114	
A Non-2,3,7,8-sub-TCDD	16.781						0.1109	0.1109		
S Total TCDD					10.9	10.9	0.1109	0.1109		
D 13C-1,2,3,7,8-PeCDF	21.411	10079899	1.59	1.1306	101.1	101.1	0.4438	0.4438	101	
1,2,3,7,8-PeCDF	21.424	5122825	1.65	0.9147	55.6	55.6	0.3745	0.3745	111	
D 13C-2,3,4,7,8-PeCDF	22.693	9197987	1.51	1.0539	99.0	99.0	0.4761	0.4761	98.96	
2,3,4,7,8-PeCDF	22.706	4917938	1.60	0.9508	56.2	56.2	0.4116	0.4116	112	
A F1 PeCDFs	19.147						0.0708	0.0708		
A Non-2,3,7,8-sub-PeCDF	22.128						0.3917	0.3917		
S Total PeCDF					111.8	111.8	0.3931	0.3931		
D 13C-1,2,3,7,8-PeCDD	23.388	6295087	1.54	0.8084	88.3	88.3	0.2146	0.2146	88.29	
1,2,3,7,8-PeCDD	23.402	3377540	1.57	0.9955	53.9	53.9	0.2427	0.2427	108	
A Non-2,3,7,8-sub-PeCDD	22.290						0.2427	0.2427		
S Total PeCDD					53.9	53.9	0.2427	0.2427		
D 13C-1,2,3,4,7,8-HxCDF	29.449	6868527	0.53	0.9225	123.9	123.9	1.097	1.097	124	
1,2,3,4,7,8-HxCDF	29.502	4339790	1.26	1.1090	57.0	57.0	0.8757	0.8757	114	
D 13C-1,2,3,6,7,8-HxCDF	29.755	7847305	0.52	1.0336	126.4	126.4	0.9789	0.9789	126	
1,2,3,6,7,8-HxCDF	29.782	4661648	1.27	1.0721	55.4	55.4	0.8160	0.8160	111	
D 13C-2,3,4,6,7,8-HxCDF	30.887	7869152	0.52	0.9773	134.0	134.0	1.035	1.035	134	
2,3,4,6,7,8-HxCDF	30.900	4826504	1.27	1.0838	56.6	56.6	0.4803	0.4803	113	
D 13C-1,2,3,7,8,9-HxCDF	31.819	6694218	0.51	0.9153	121.7	121.7	1.105	1.105	122	
1,2,3,7,8,9-HxCDF	31.845	4098154	1.32	1.0931	56.0	56.0	0.5070	0.5070	112	
A Non-2,3,7,8-sub-HxCDF	29.283						0.6225	0.6225		
S Total HxCDF					225.0	225.0	0.6698	0.6698		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.619	6008137	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.113	4844293	1.25	0.7977	101.1	101.1	0.8704	0.8704	101	
1,2,3,4,7,8-HxCDD	31.126	2703026	1.23	1.0014	55.7	55.7	0.3701	0.3701	111	
D 13C-1,2,3,6,7,8-HxCDD	31.233	5982579	1.26	1.0010	99.5	99.5	0.6936	0.6936	99.47	
1,2,3,6,7,8-HxCDD	31.246	3089165	1.27	0.8902	58.0	58.0	0.3591	0.3591	116	
1,2,3,7,8,9-HxCDD	31.632	3064362	1.29	1.0579	53.5	53.5	0.3245	0.3245	107	
A Non-2,3,7,8-sub-HxCDD	29.888						0.3491	0.3491		
S Total HxCDD					167.2	167.2	0.3512	0.3512		
D 13C-1,2,3,4,6,7,8-HpCDF	33.366	6432061	0.42	0.8506	125.9	125.9	2.983	2.983	126	
1,2,3,4,6,7,8-HpCDF	33.379	4676729	1.03	1.3603	53.5	53.5	0.7251	0.7251	107	
D 13C-1,2,3,4,7,8,9-HpCDF	34.424	5161776	0.44	0.7618	112.8	112.8	3.331	3.331	113	
1,2,3,4,7,8,9-HpCDF	34.436	3675681	1.04	1.3207	53.9	53.9	1.105	1.105	108	
A Non-2,3,7,8-sub-HpCDF	33.889						0.8780	0.8780		
S Total HpCDF					107.4	107.4	0.9149	0.9149		
D 13C-1,2,3,4,6,7,8-HpCDD	34.144	5368262	1.07	0.8873	100.7	100.7	0.8888	0.8888	101	
1,2,3,4,6,7,8-HpCDD	34.156	2966327	1.04	0.9988	55.3	55.3	0.4317	0.4317	111	
A Non-2,3,7,8-sub-HpCDD	33.870						0.4317	0.4317		
S Total HpCDD					55.3	55.3	0.4317	0.4317		
D 13C-OCDD	36.402	7592018	0.87	0.6287	201.0	201.0	0.9678	0.9678	100	
OCDF	36.498	5529638	0.92	1.4136	103.0	103.0	0.2240	0.2240	103	
OCDD	36.414	4195736	0.86	1.1290	97.9	97.9	0.2488	0.2488	97.90	

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d
Lims ID: LCS 320-418764/2-A
Client ID:
Sample Type: LCS
Inject. Date: 13-Oct-2020 00:39:26 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-418764/2-A LCS 320-418764/2-A
Misc. Info.: 12OC20B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 14-Oct-2020 13:12:51 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1650

First Level Reviewer: dadunj Date: 14-Oct-2020 13:13:27

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.091	17.106	-1		3802857	945690	2614	6535	362		
333.9339	17.091	17.106	-1		5016473	1262582	1325	3312	953	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.607	16.622	-1	0.972	5594649	1275681	4454	11135	286		
317.9389	16.607	16.622	-1	0.972	7200510	1681295	2079	5197	809	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.637	16.637	0	1.002	583338	125414	369	922	340		
305.8987	16.622	16.637	-1	1.001	727036	167730	541	1352	310	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.342						369	922			
305.8987	16.342						541	1352			
13C-2,3,7,8-TCDD											
331.9368	17.287	17.287	0	1.011	3764823	829758	2614	6535	317		
333.9339	17.287	17.287	0	1.011	4862899	1076792	1325	3312	813	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.302	17.302	0	1.001	405077	88743	501	1252	177		
321.8936	17.302	17.302	0	1.001	538198	114298	350	875	327	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.302	17.302	0	1.012	4230999	941255	762	1905	1235		
A Non-2,3,7,8-sub-TCDD											
319.8965	16.781						501	1252			
321.8936	16.781						350	875			
13C-1,2,3,7,8-PeCDF											
351.9000	21.411	21.370	2	1.253	6187916	1070426	2759	6897	388		
353.8970	21.411	21.370	2	1.253	3891983	668089	1673	4182	399	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.424	21.383	2	1.001	3186928	534196	1415	3537	378		
341.8567	21.424	21.383	2	1.001	1935897	328490	967	2417	340	1.65(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	22.693	22.638	3	1.328	5531912	926359	2759	6897	336		
353.8970	22.693	22.638	3	1.328	3666075	595093	1673	4182	356	1.51(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	22.706	22.665	2	1.001	3025791	471470	1415	3537	333		
341.8567	22.706	22.665	2	1.001	1892147	292310	967	2417	302	1.60(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.147						176	440			
341.8567	19.147						255	637			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.128						1415	3537			
341.8567	22.128						967	2417			
13C-1,2,3,7,8-PeCDD											
367.8949	23.388	23.320	4	1.368	3821256	546231	916	2290	596		
369.8919	23.375	23.320	3	1.368	2473831	356259	617	1542	577	1.54(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.402	23.347	3	1.001	2063417	294627	588	1470	501		
357.8516	23.402	23.347	3	1.001	1314123	194461	284	710	685	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.290						588	1470			
357.8516	22.290						284	710			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.449	29.409	2	0.931	2379572	274360	1789	4472	153		
385.8610	29.462	29.409	3	0.932	4488955	541695	3297	8242	164	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.502	29.435	4	1.002	2420997	282072	1781	4452	158		
375.8178	29.502	29.435	4	1.002	1918793	225215	1389	3472	162	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	29.755	29.702	3	0.941	2690117	310505	1789	4472	174		
385.8610	29.742	29.702	2	0.941	5157188	595335	3297	8242	181	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	29.782	29.728	3	1.001	2606423	311983	1781	4452	175		
375.8178	29.782	29.728	3	1.001	2055225	258654	1389	3472	186	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	30.887	30.847	2	0.977	2690916	524451	1789	4472	293		
385.8610	30.873	30.847	2	0.976	5178236	997949	3297	8242	303	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	30.900	30.873	2	1.000	2696355	553961	1781	4452	311		
375.8178	30.900	30.873	2	1.000	2130149	427454	1389	3472	308	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	31.819	31.792	2	1.006	2251268	473515	1789	4472	265		
385.8610	31.819	31.792	2	1.006	4442950	956391	3297	8242	290	0.51(0.43-0.59)	

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Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	31.845	31.805	2	1.001	2330347	502586	1781	4452	282		
375.8178	31.832	31.805	2	1.000	1767807	389129	1389	3472	280	1.32(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.283						1781	4452			
375.8178	29.283						1389	3472			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.619	31.592	2		3334018	670903	1726	4315	389		
403.8529	31.619	31.592	2		2674119	585791	1764	4410	332	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.113	31.073	2	0.984	2695025	587075	1726	4315	340		
403.8529	31.100	31.073	2	0.984	2149268	496159	1764	4410	281	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.126	31.099	2	1.000	1491689	356449	857	2142	416		
391.8127	31.126	31.099	2	1.000	1211337	288559	749	1872	385	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.233	31.206	2	0.988	3332305	703114	1726	4315	407		
403.8529	31.233	31.206	2	0.988	2650274	552956	1764	4410	313	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.246	31.219	2	1.000	1725986	352219	857	2142	411		
391.8127	31.246	31.219	2	1.000	1363179	281470	749	1872	376	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.632	31.605	2	1.017	1724890	374498	857	2142	437		
391.8127	31.632	31.605	2	1.017	1339472	286319	749	1872	382	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	29.888						857	2142			
391.8127	29.888						749	1872			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.366	33.354	1	1.055	1889872	617147	3750	9375	165		
419.8220	33.366	33.354	1	1.055	4542189	1446544	9006	22515	161	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.379	33.366	1	1.000	2375183	738985	4673	11682	158		
409.7789	33.379	33.366	1	1.000	2301546	736642	3469	8672	212	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.424	34.399	1	1.089	1576188	434181	3750	9375	116		
419.8220	34.424	34.399	1	1.089	3585588	960974	9006	22515	107	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.436	34.411	1	1.000	1877460	506573	4673	11682	108		
409.7789	34.424	34.411	1	1.000	1798221	512216	3469	8672	148	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.889						4673	11682			
409.7789	33.889						3469	8672			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.144	34.119	1	1.080	2769907	849624	2136	5340	398		
437.8140	34.144	34.119	1	1.080	2598355	766819	1828	4570	419	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.156	34.144	1	1.000	1510663	432768	1452	3630	298		
425.7737	34.156	34.144	1	1.000	1455664	390730	1336	3340	292	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.870						1452	3630			
425.7737	33.870						1336	3340			
13C-OCDD											
469.7779	36.402	36.390	1	1.151	3526046	942455	1850	4625	509		
471.7750	36.402	36.390	1	1.151	4065972	1048754	1209	3022	867	0.87(0.76-1.02)	
OCDF											
441.7428	36.498	36.474	1	1.003	2647642	680144	542	1355	1255		
443.7399	36.498	36.474	1	1.003	2881996	728503	719	1797	1013	0.92(0.76-1.02)	
OCDD											
457.7377	36.414	36.390	1	1.000	1943014	484998	451	1127	1075		
459.7348	36.414	36.390	1	1.000	2252722	560647	668	1670	839	0.86(0.76-1.02)	

QC Flag Legend

Processing Flags

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

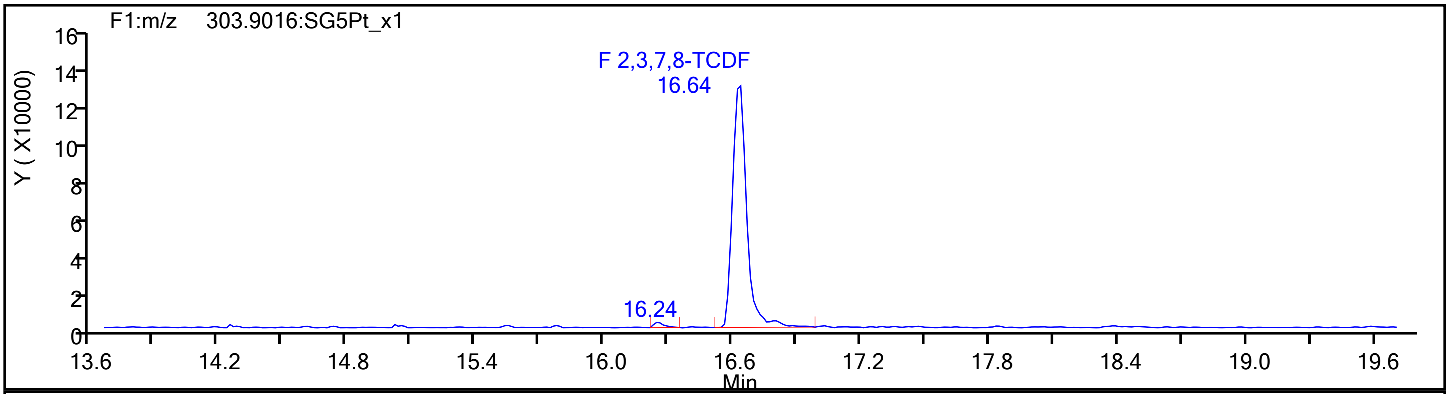

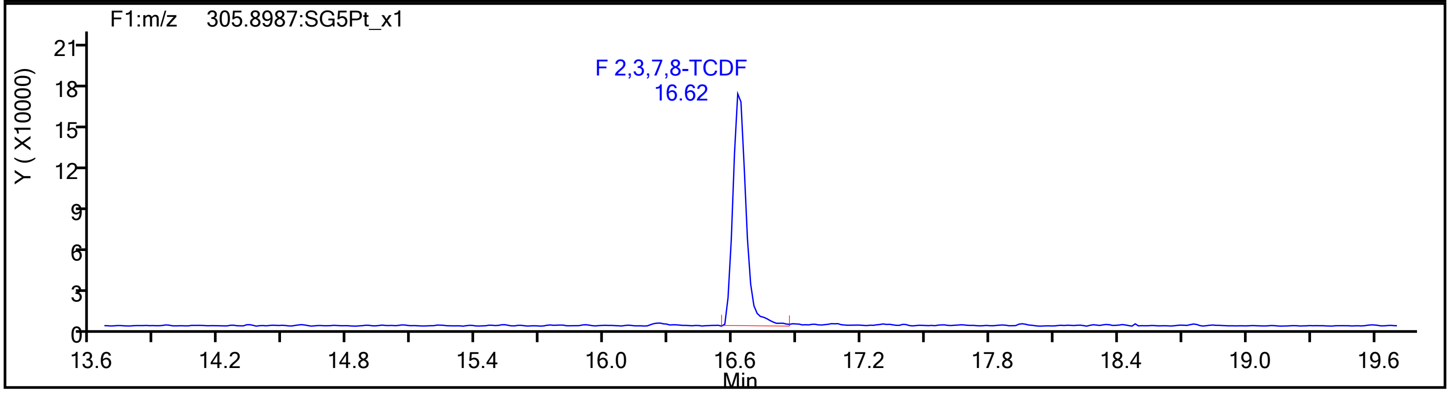

TCDF Standards

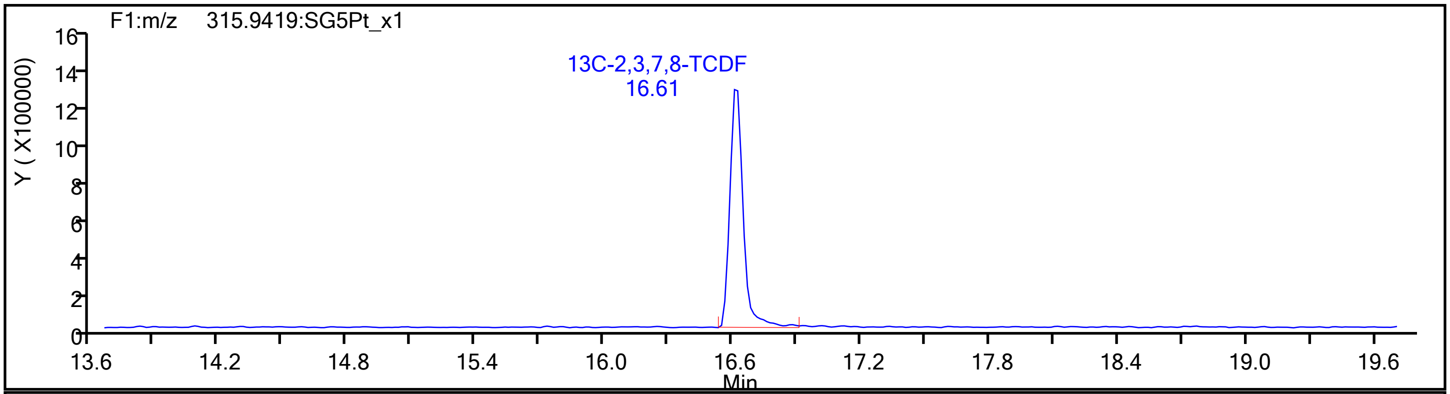

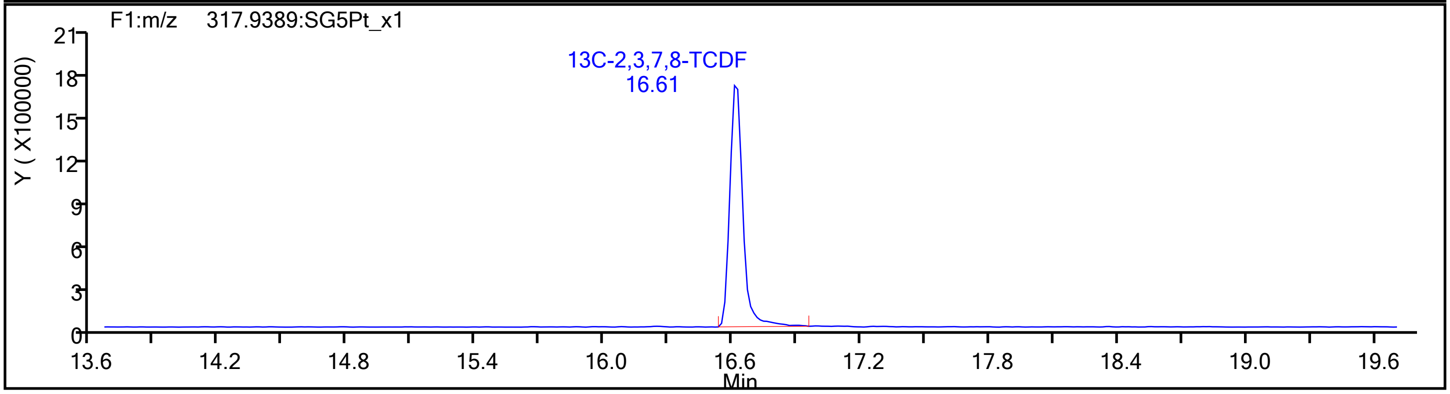

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

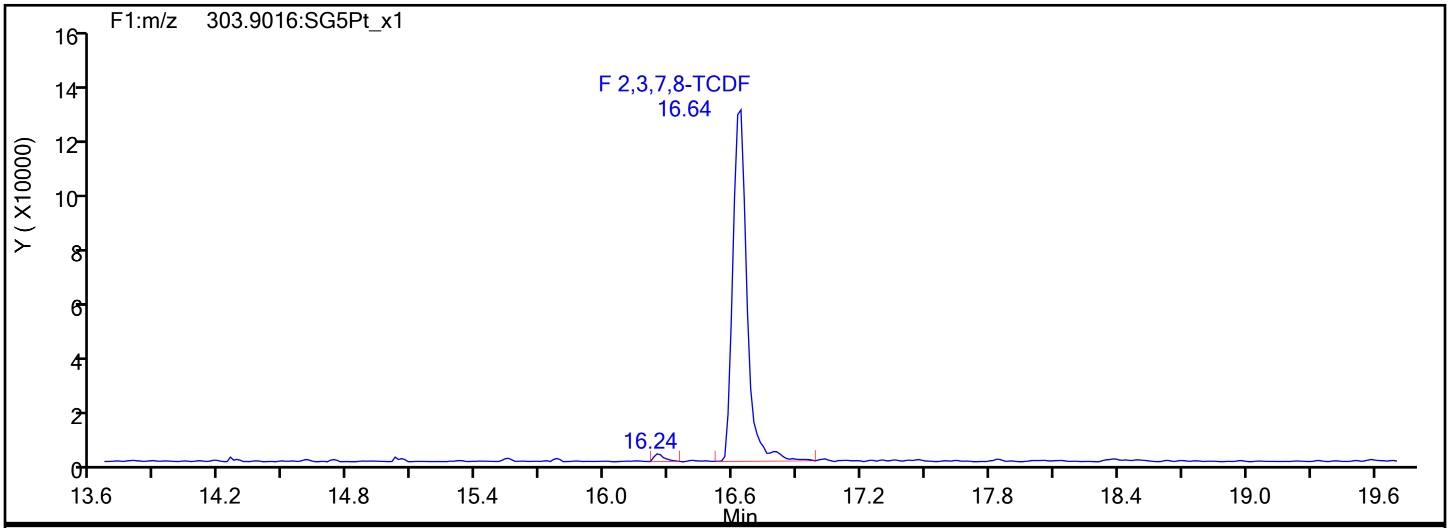

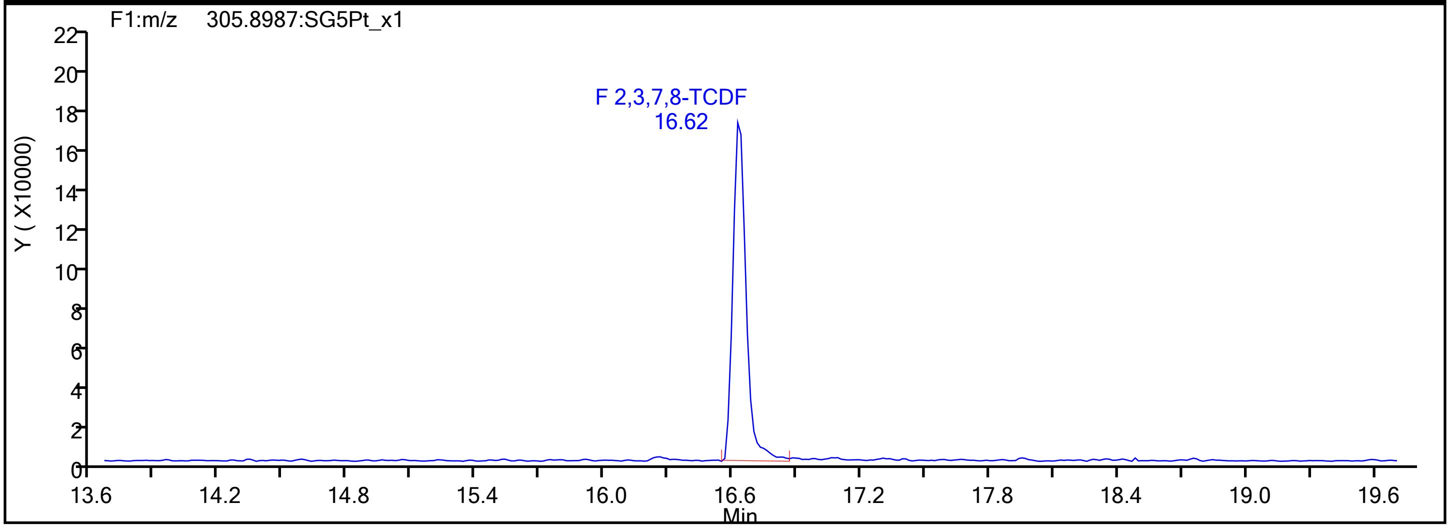

TCDF Interference Mass

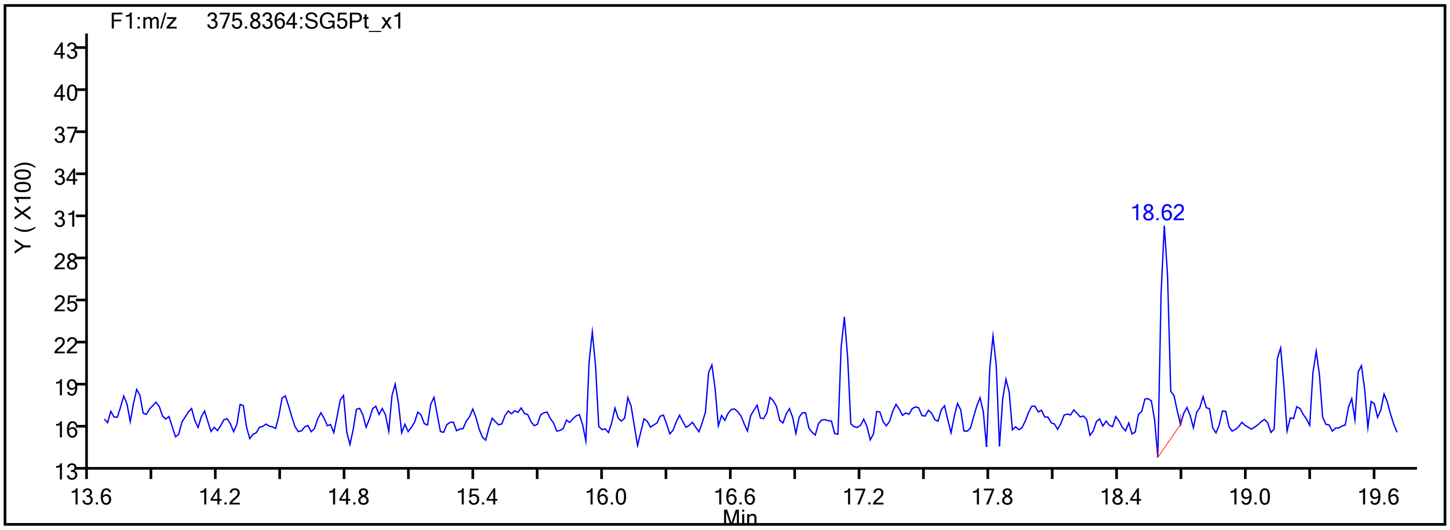

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d

Injection Date: 13-Oct-2020 00:39:26

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421347

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

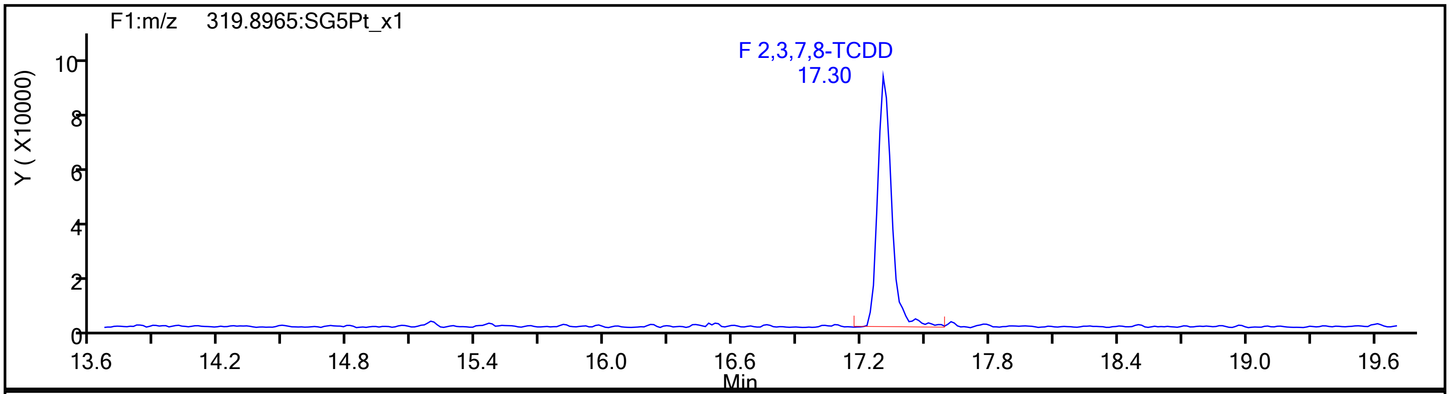

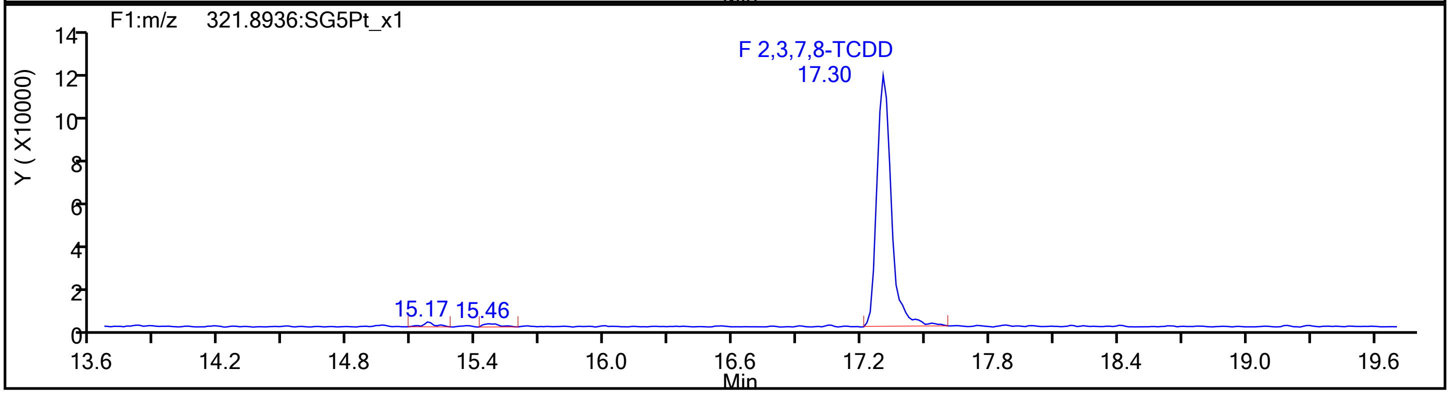

TCDD Standards

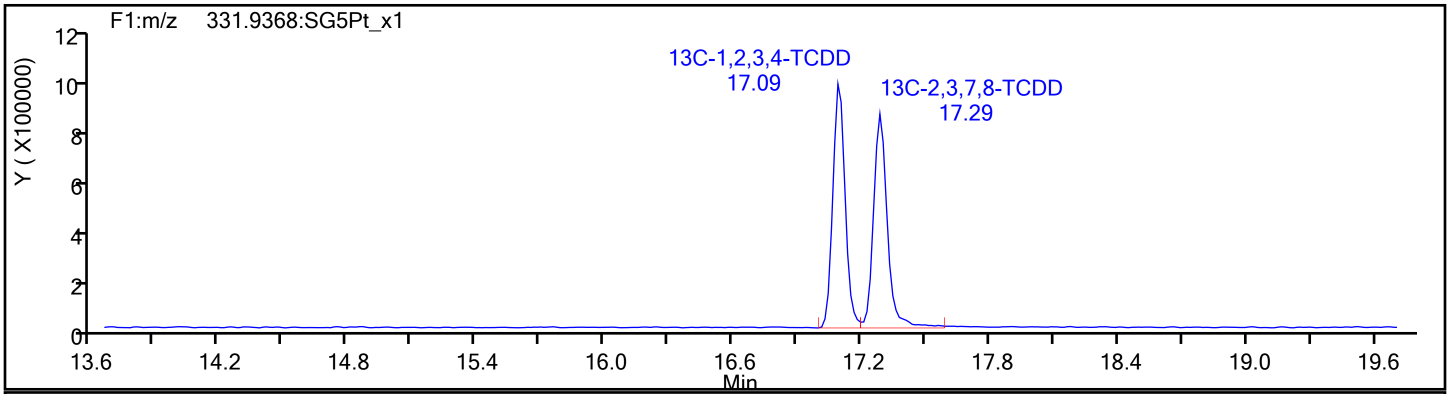

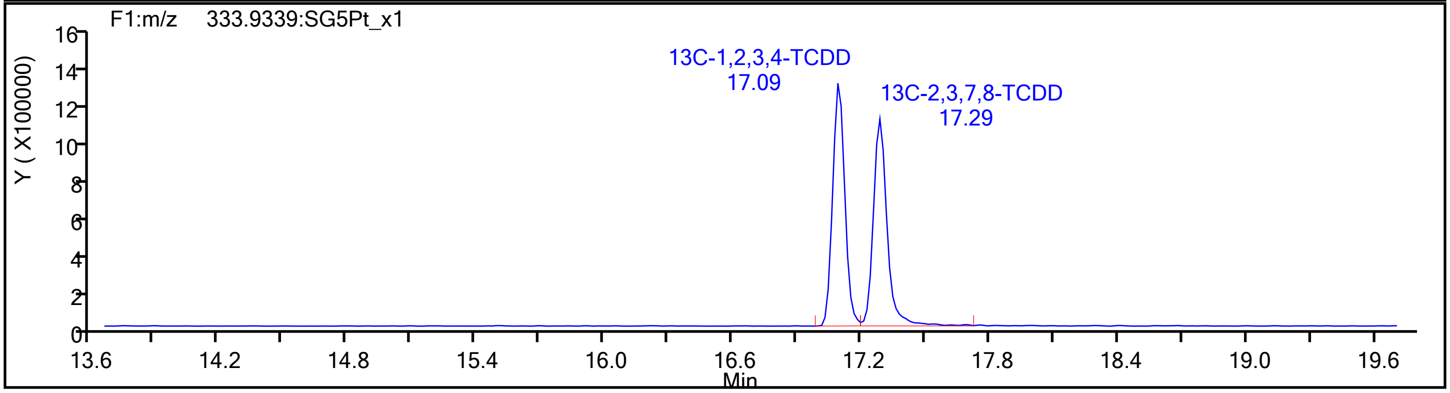

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

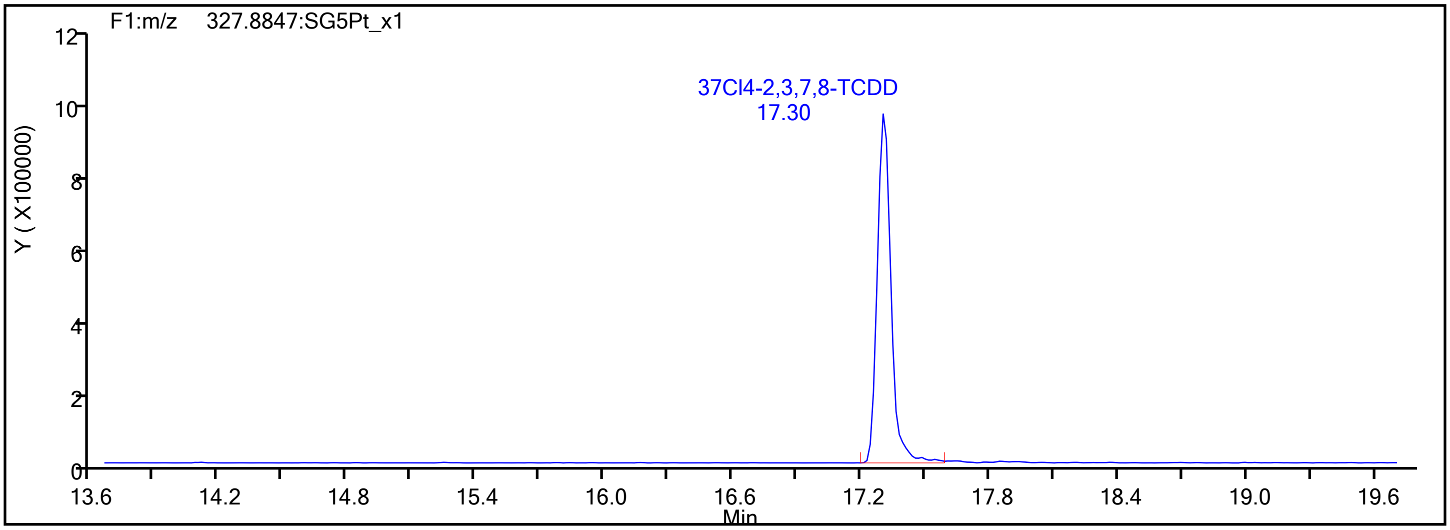

37Cl4-TCDD Standards

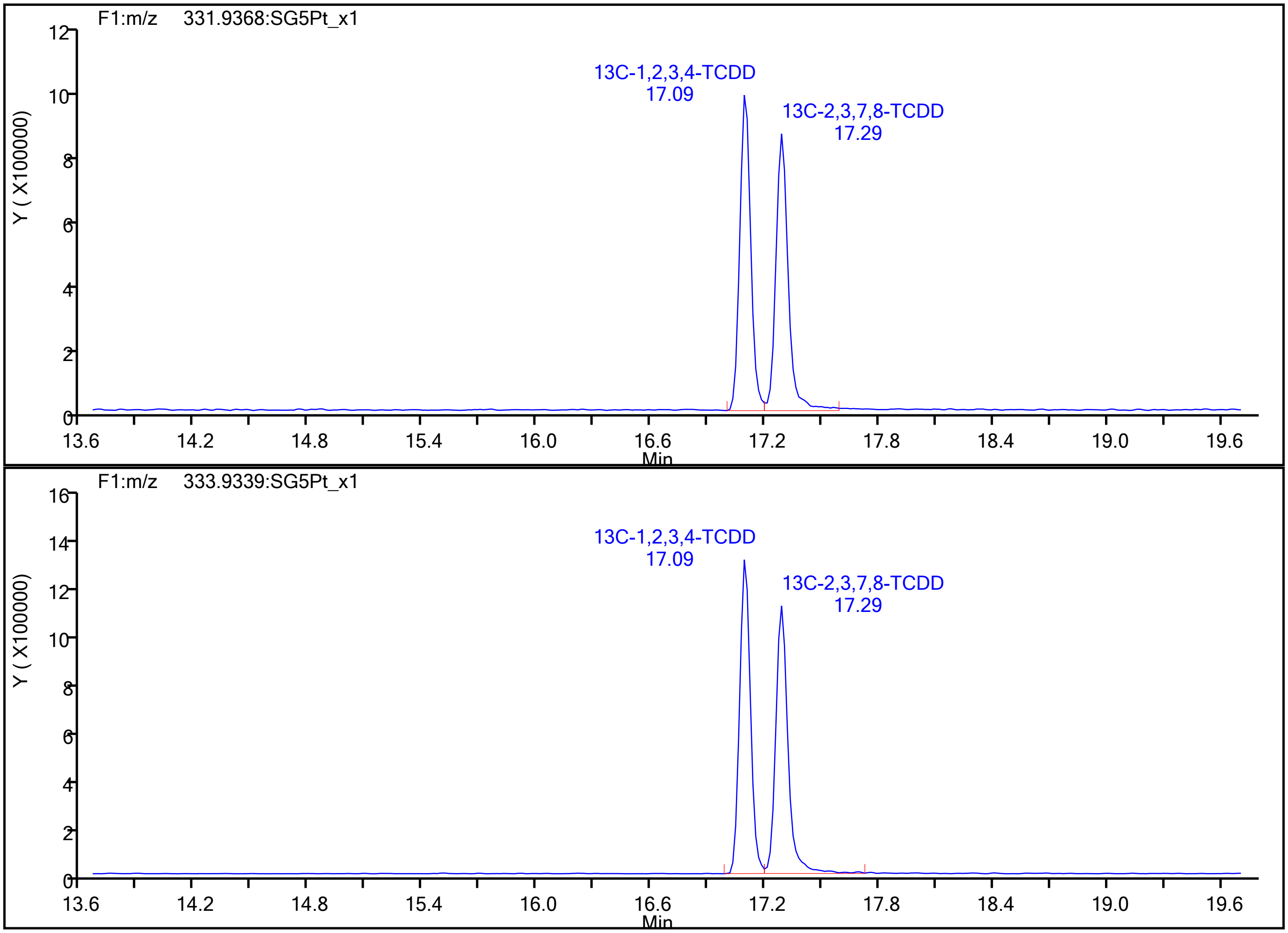

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d

Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

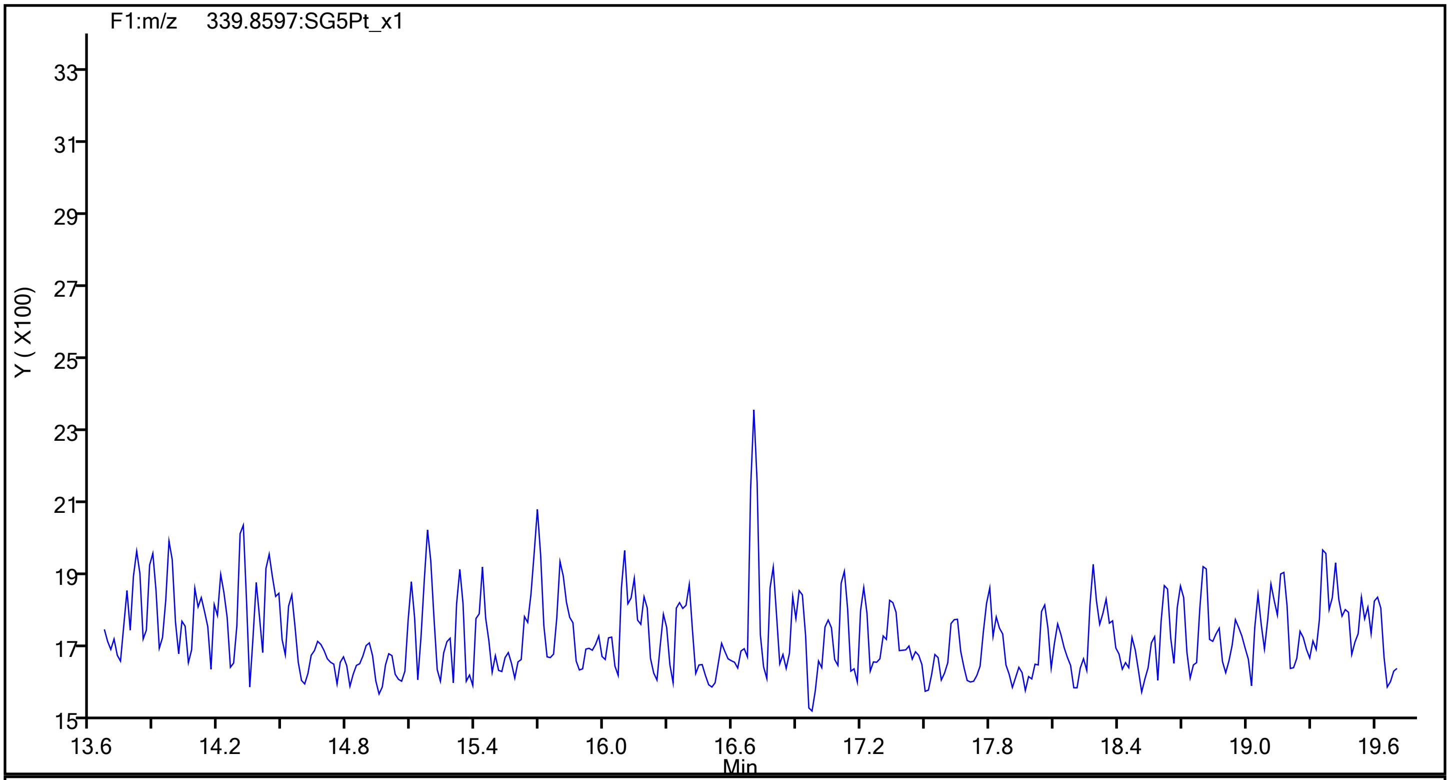

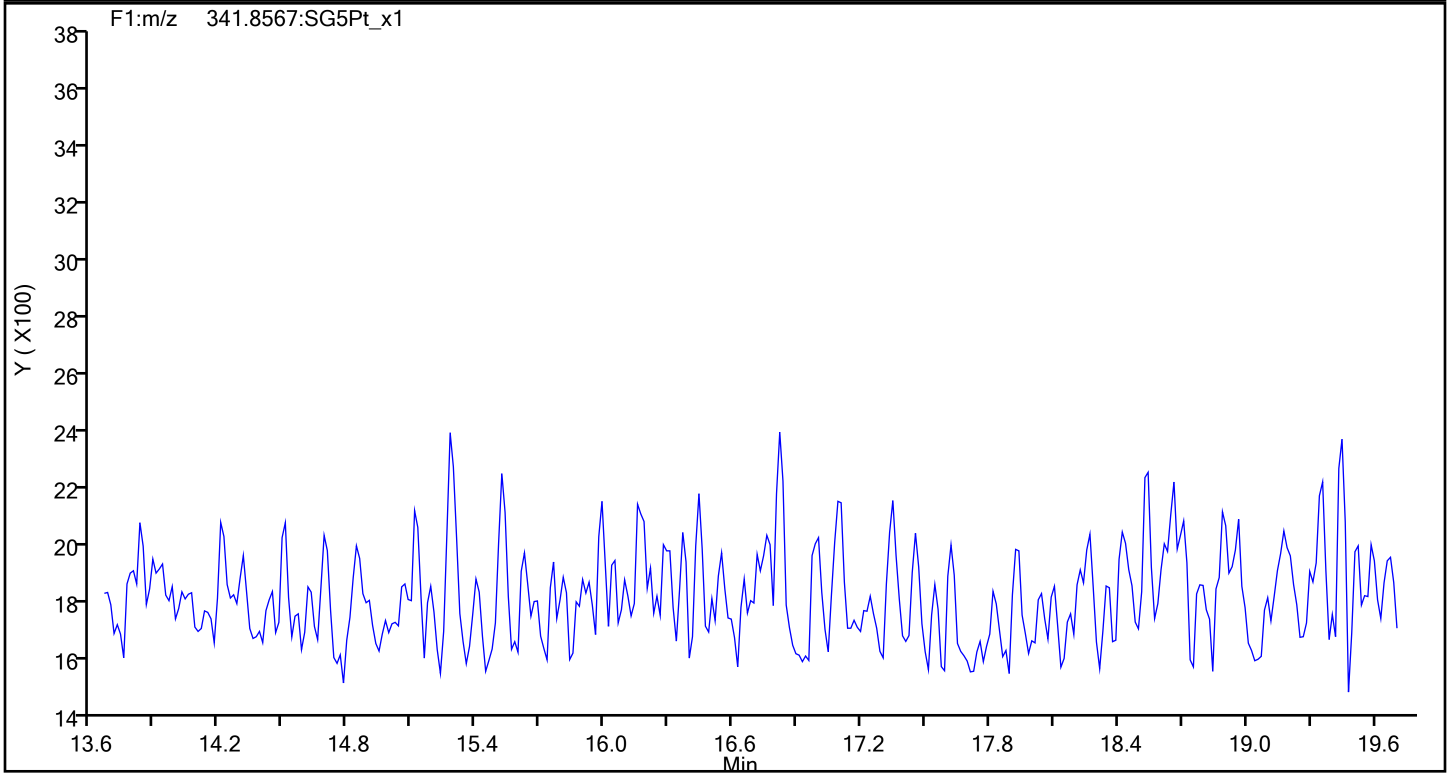

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

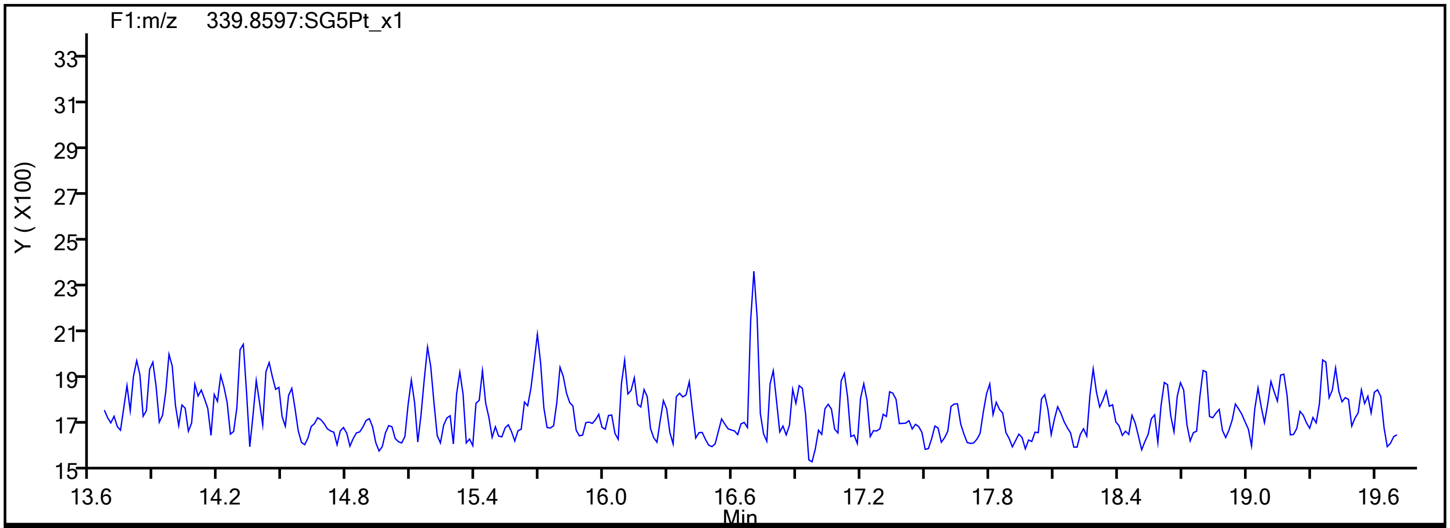

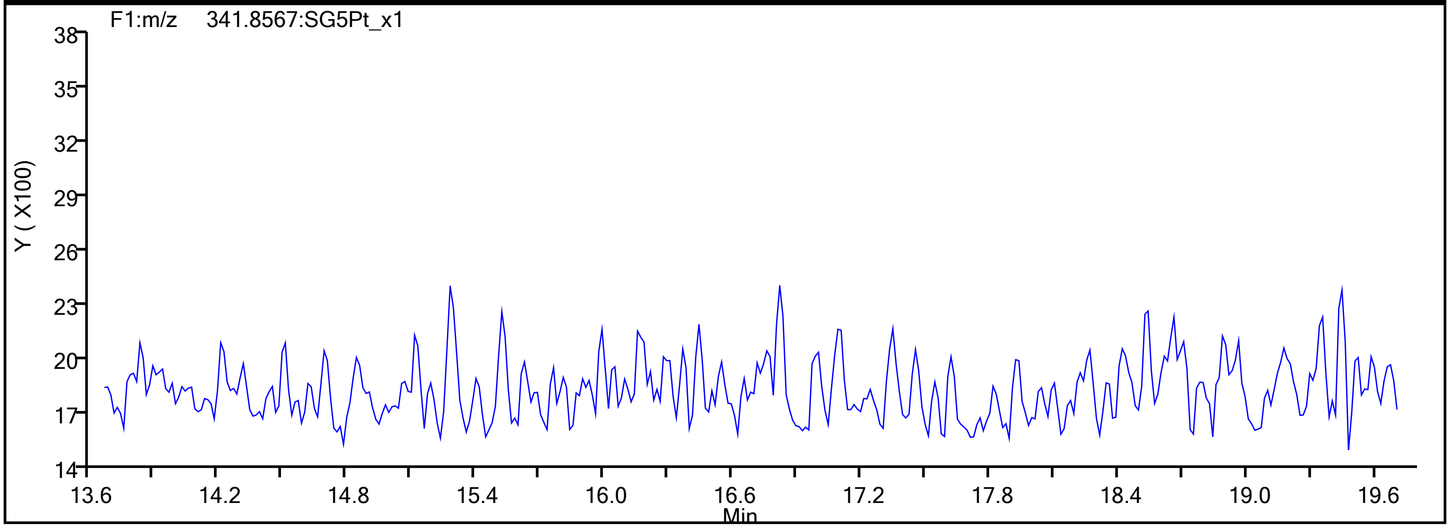

F1 PeCDFs Interference Mass

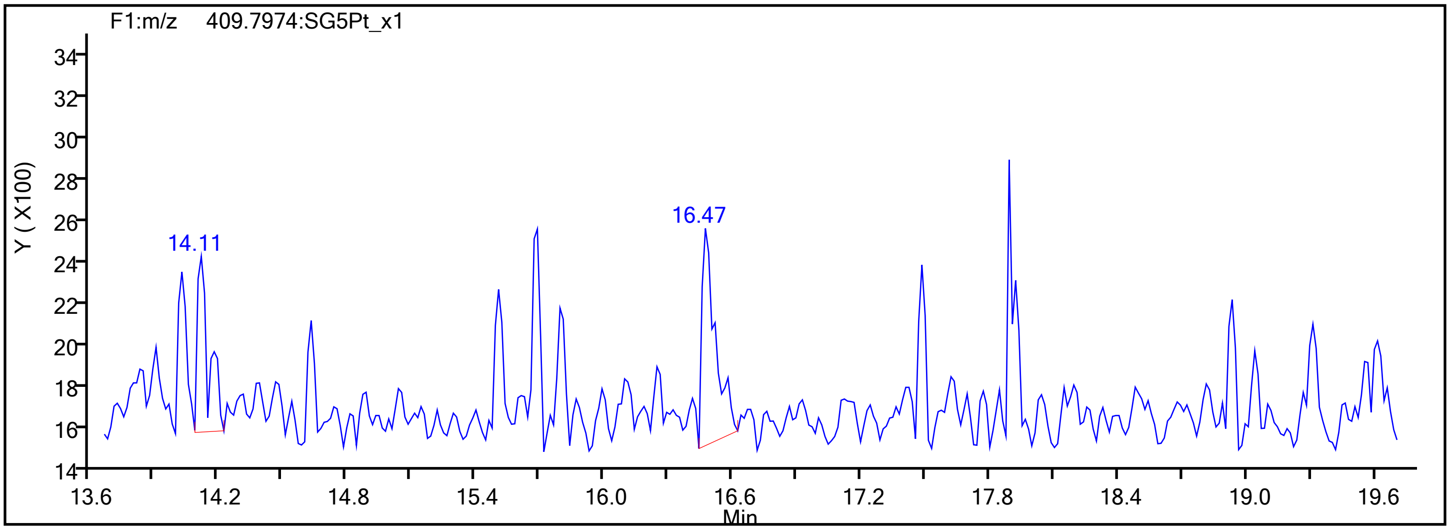

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

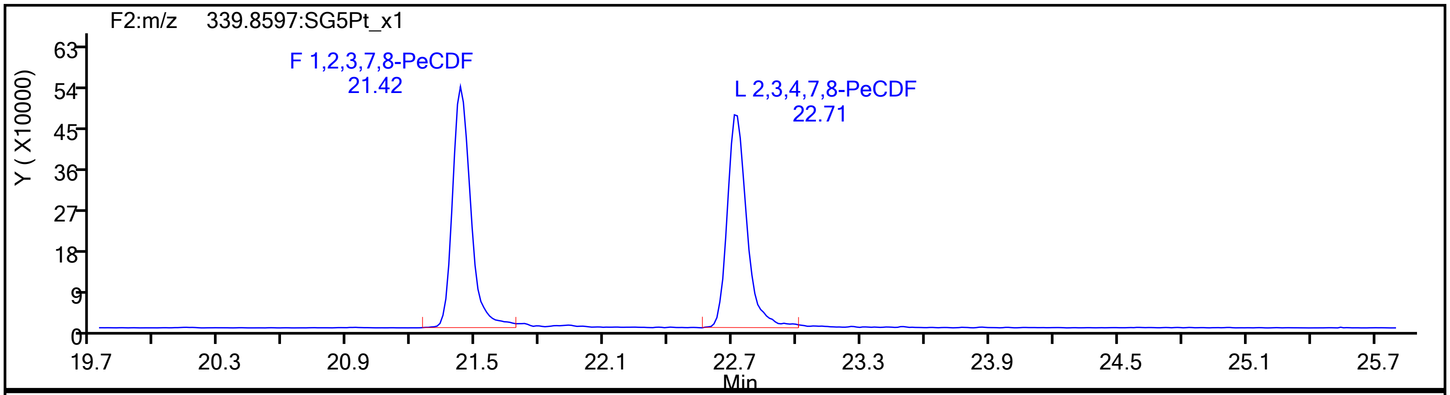

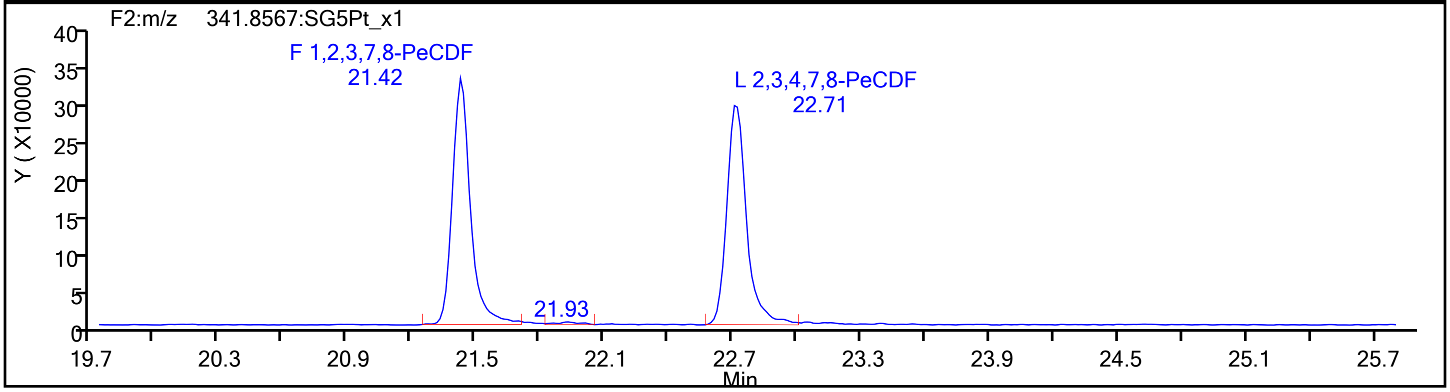

PeCDF Standards

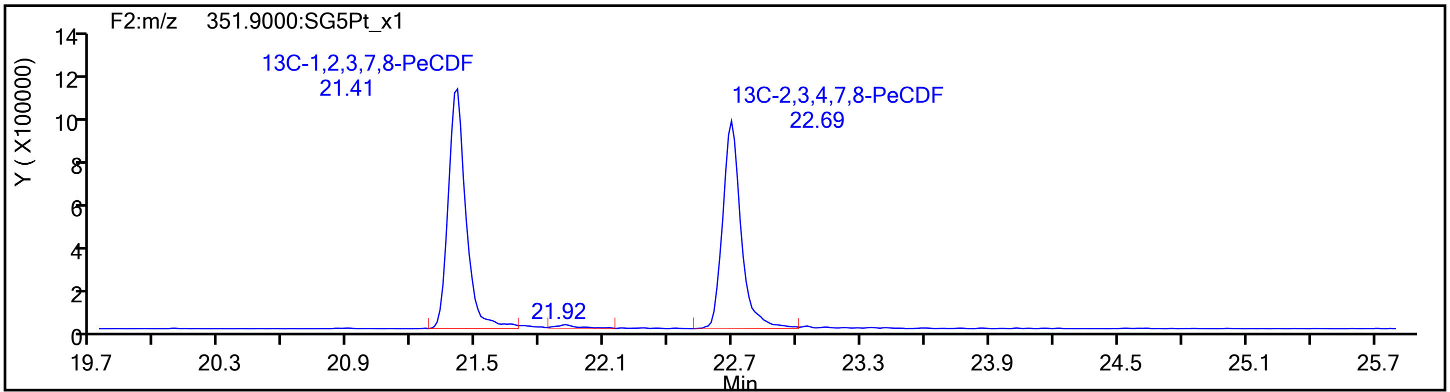

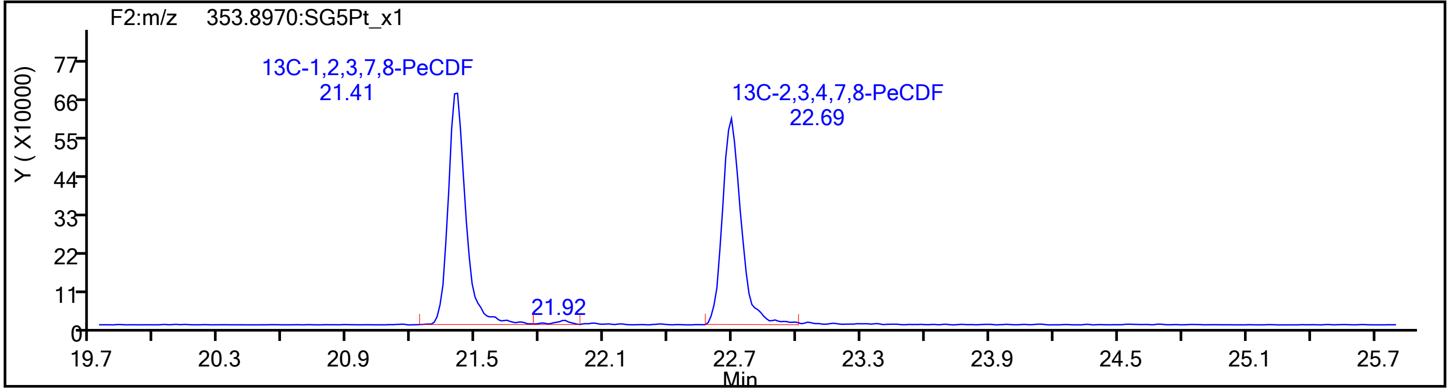

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

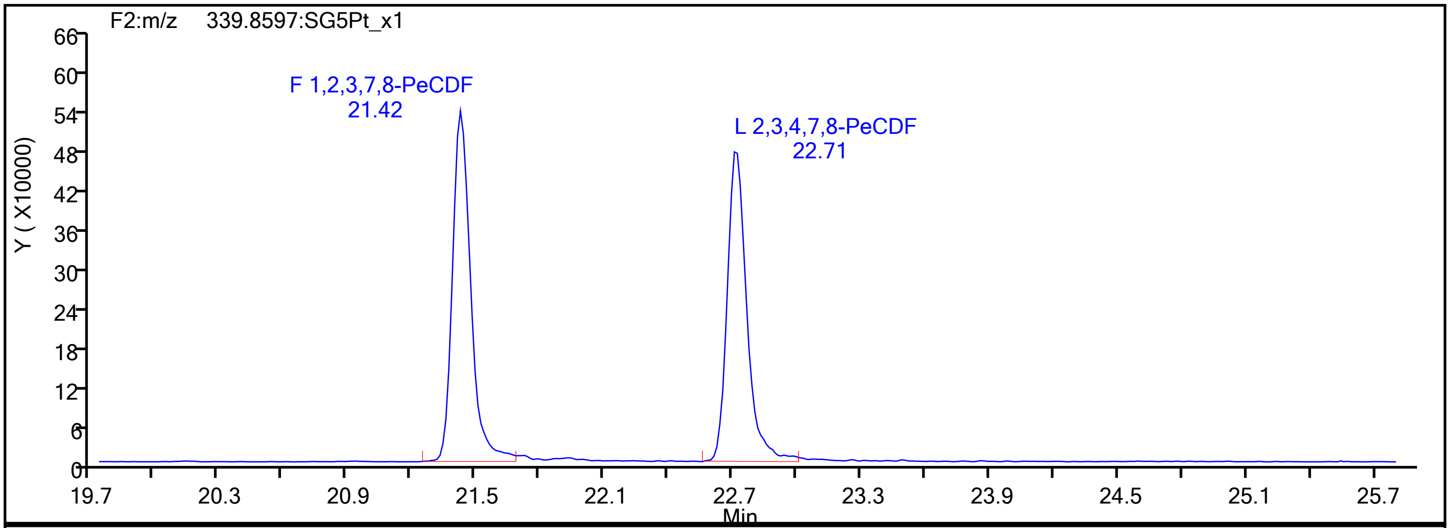

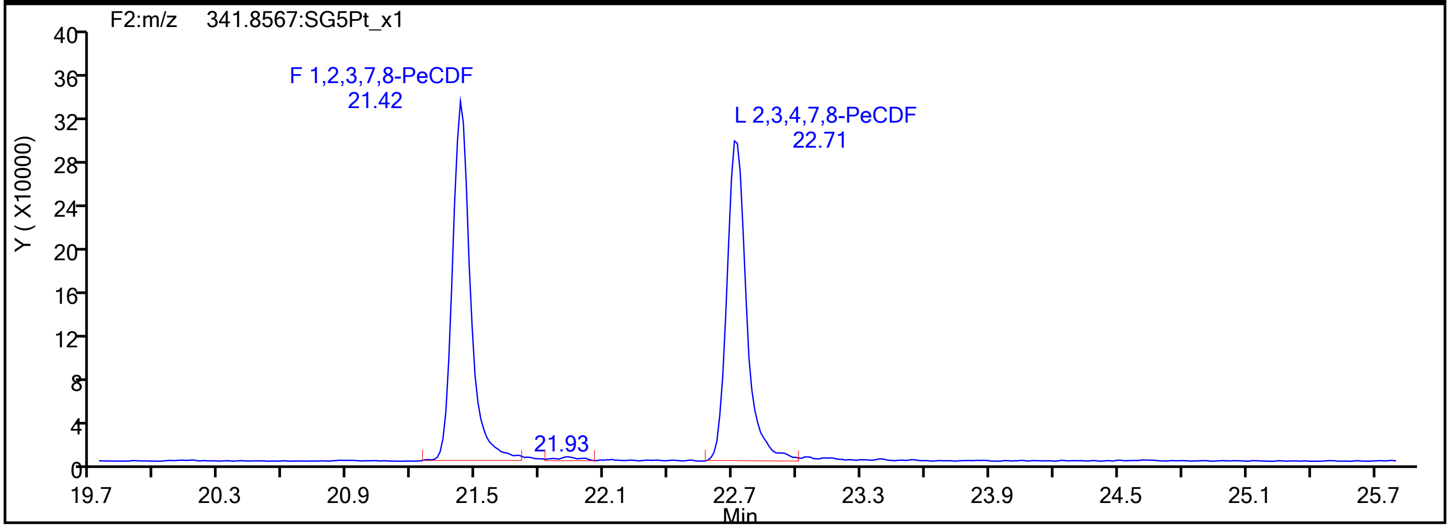

PeCDF Interference Mass

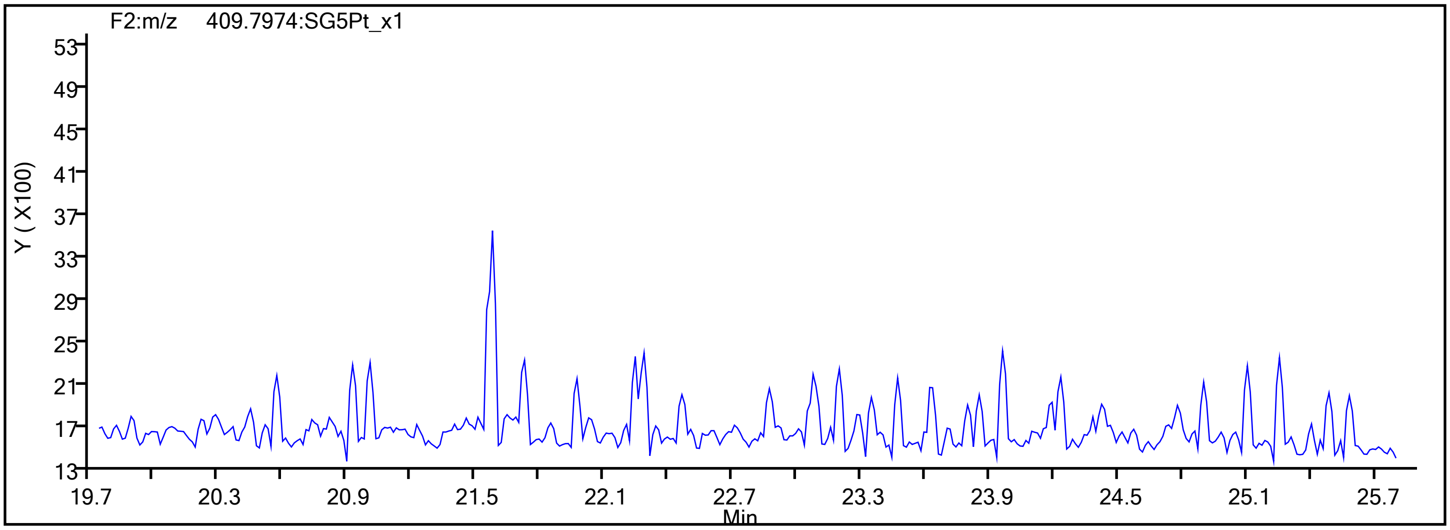

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

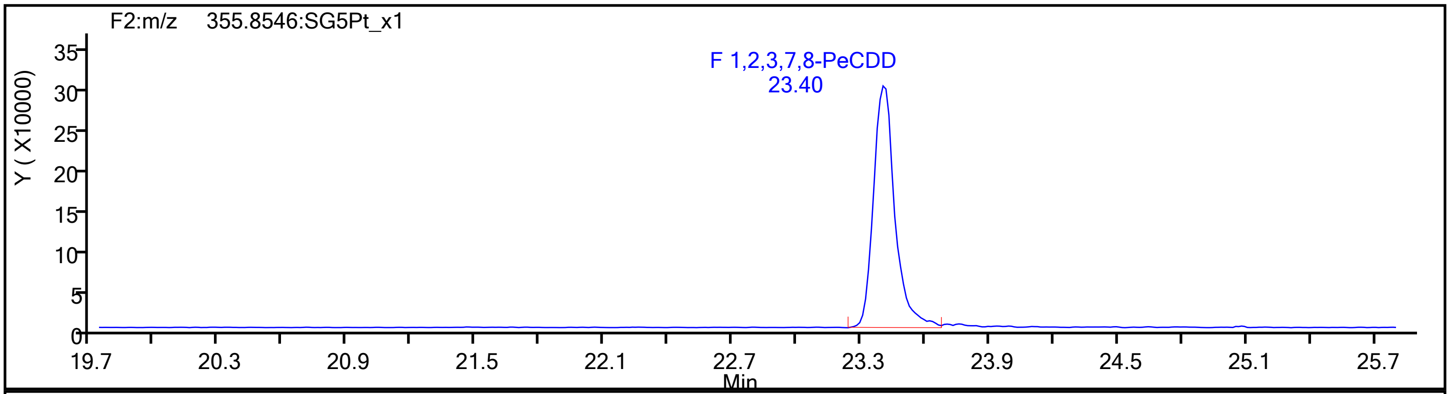

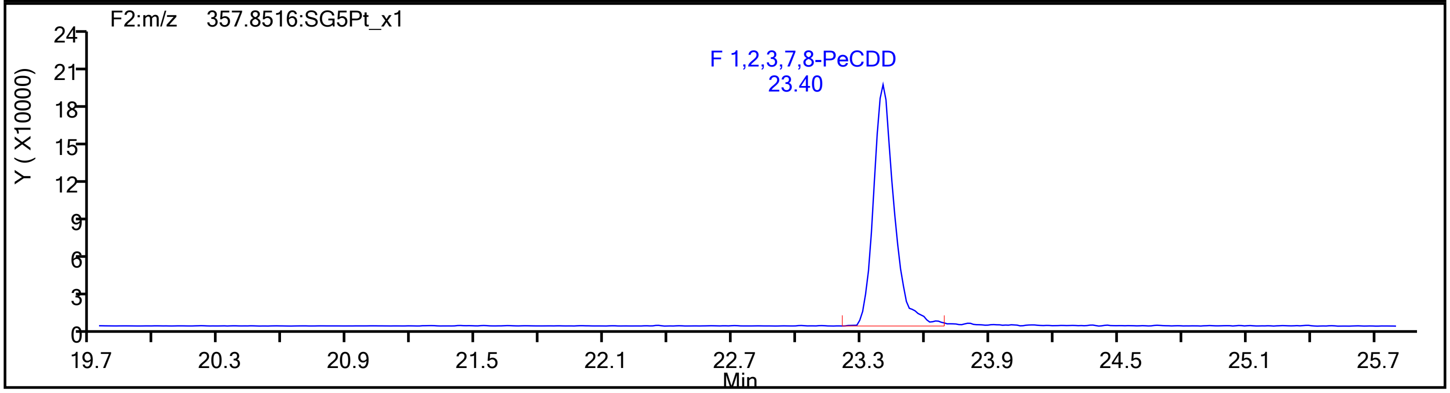

PeCDD Standards

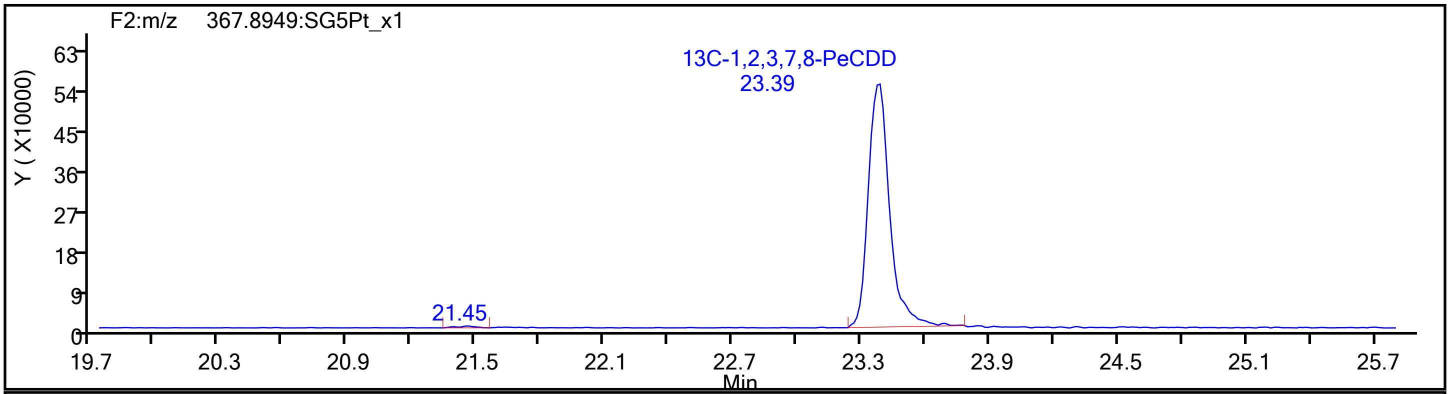

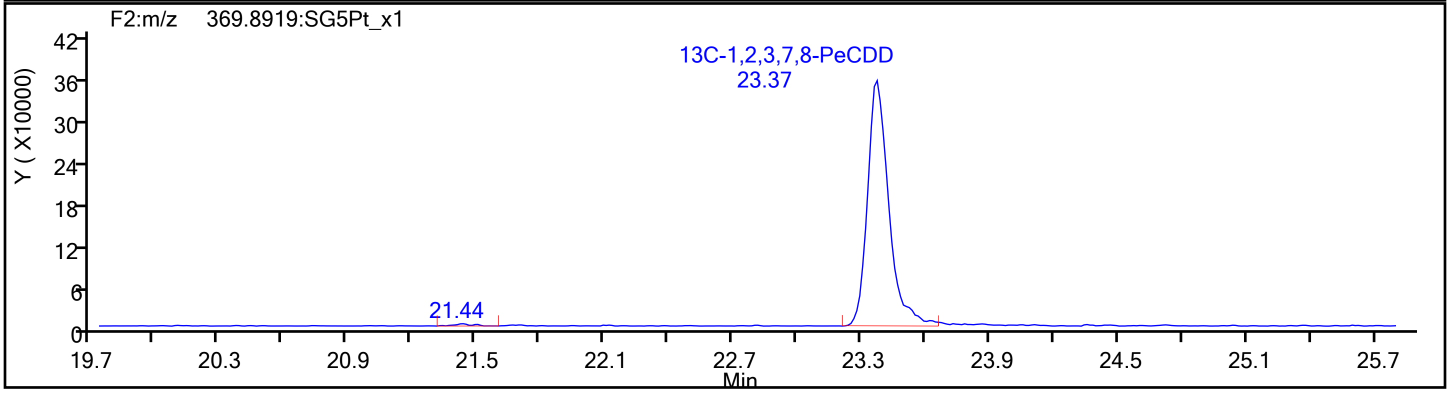

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Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

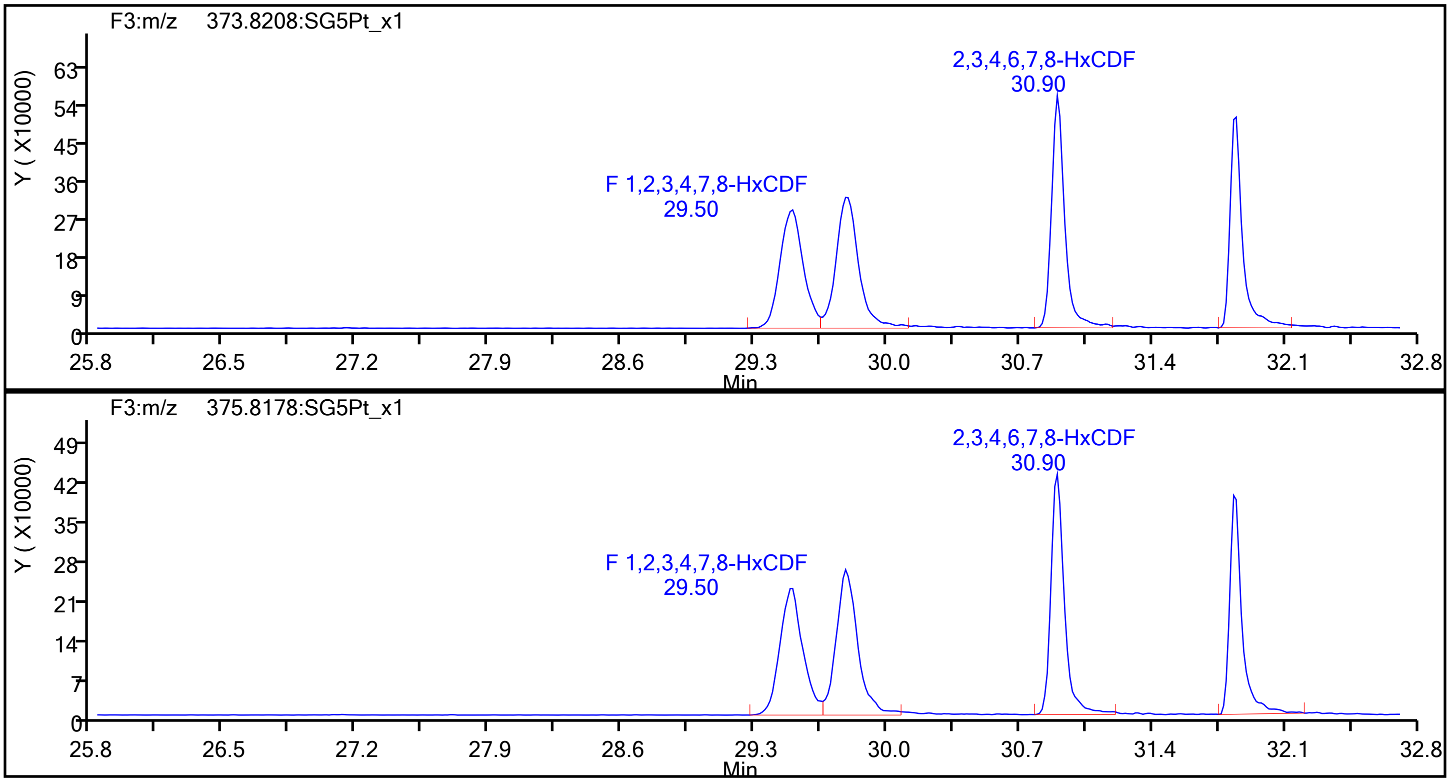

HxCDF Standards

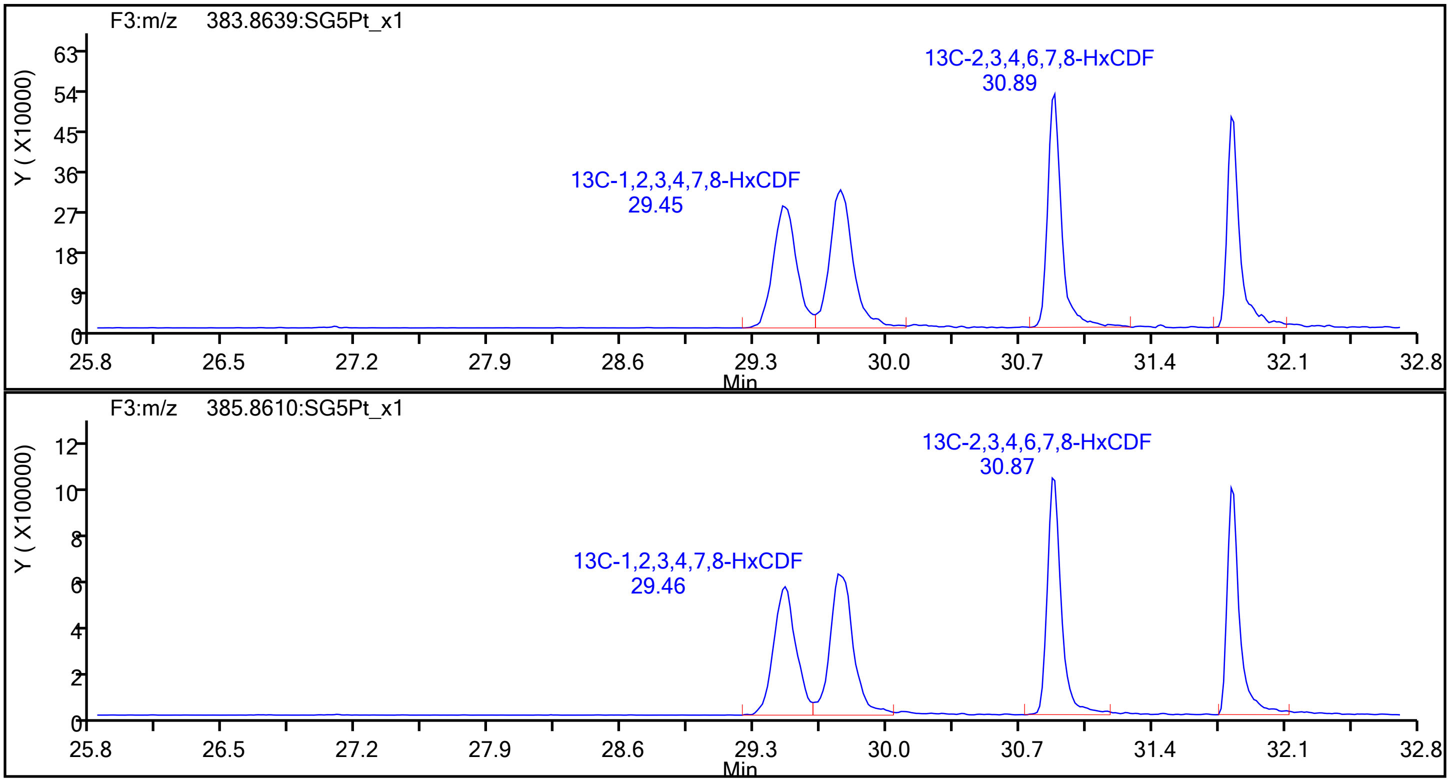

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
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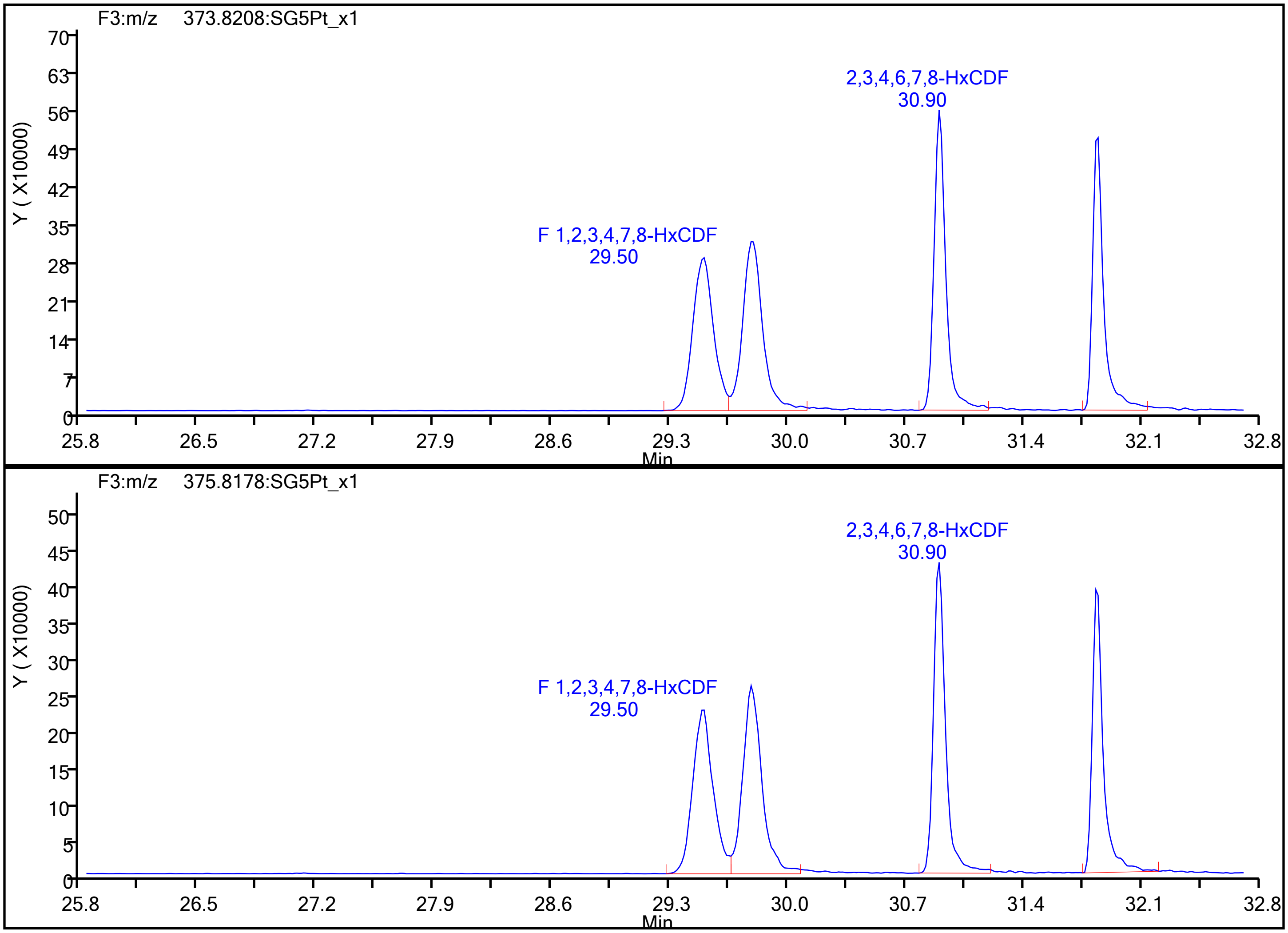

HxCDF Interference Mass

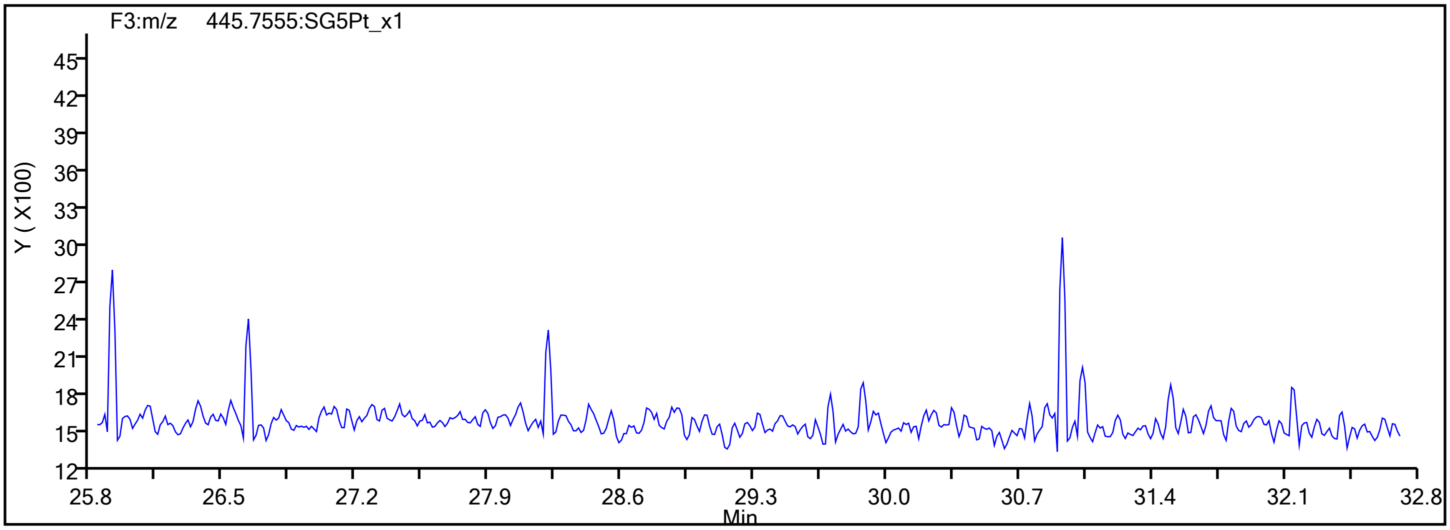

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

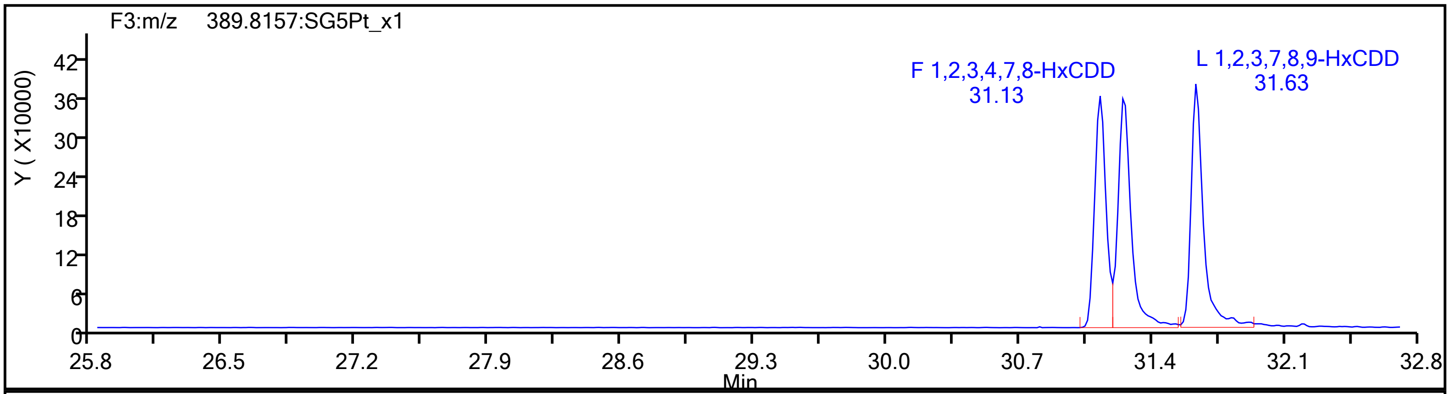

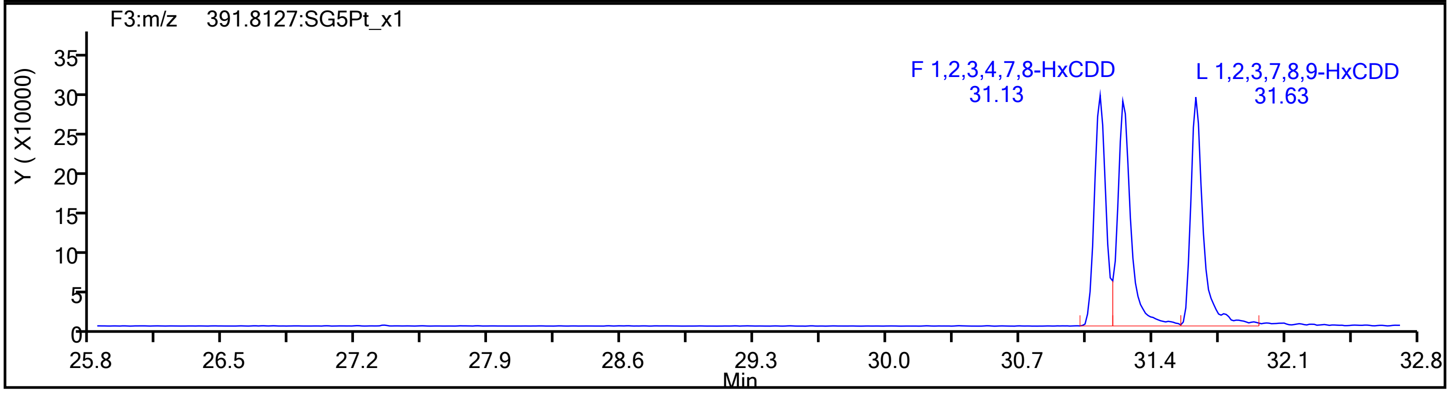

HxCDD Standards

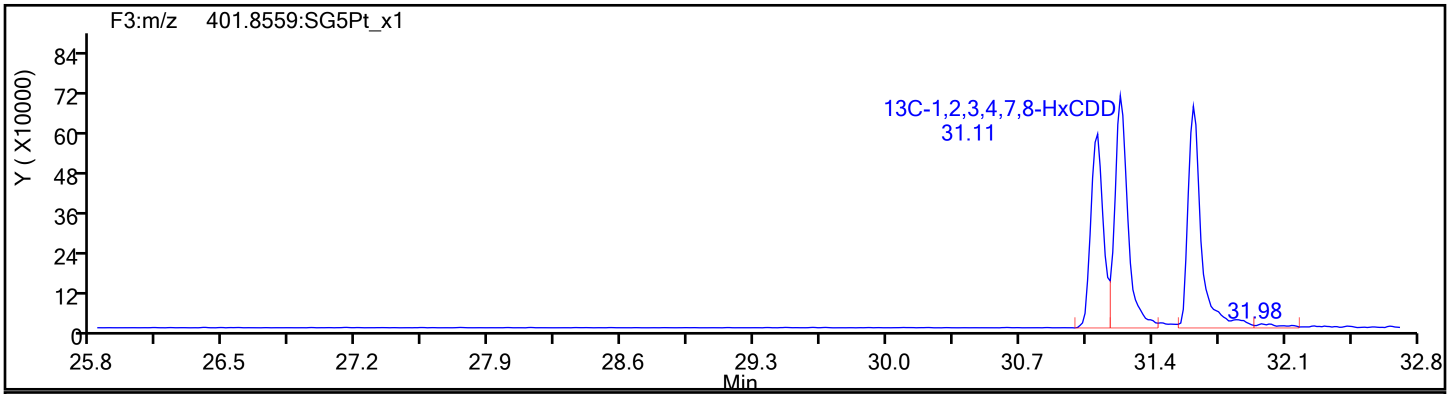

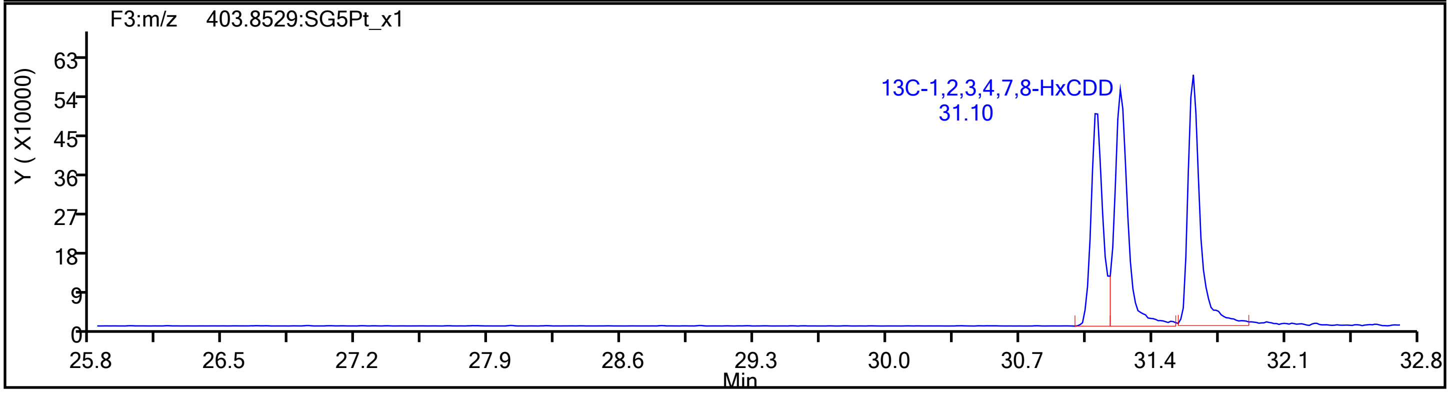

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

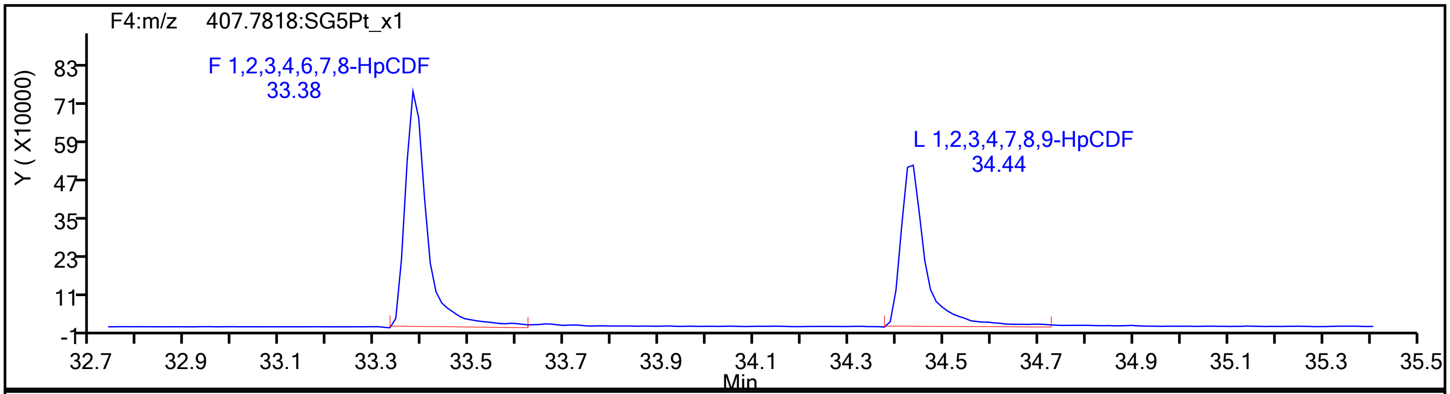

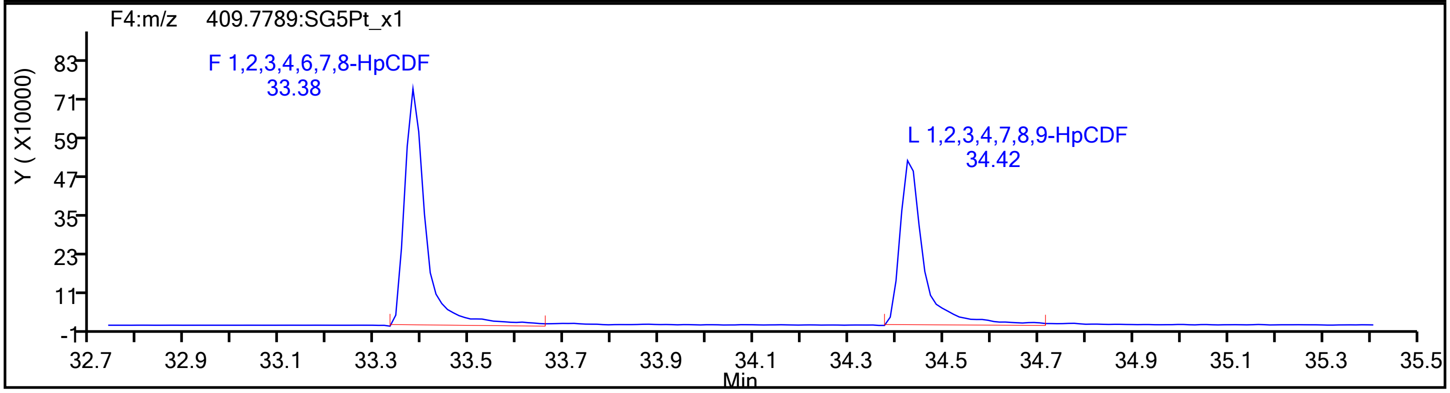

HpCDF Standards

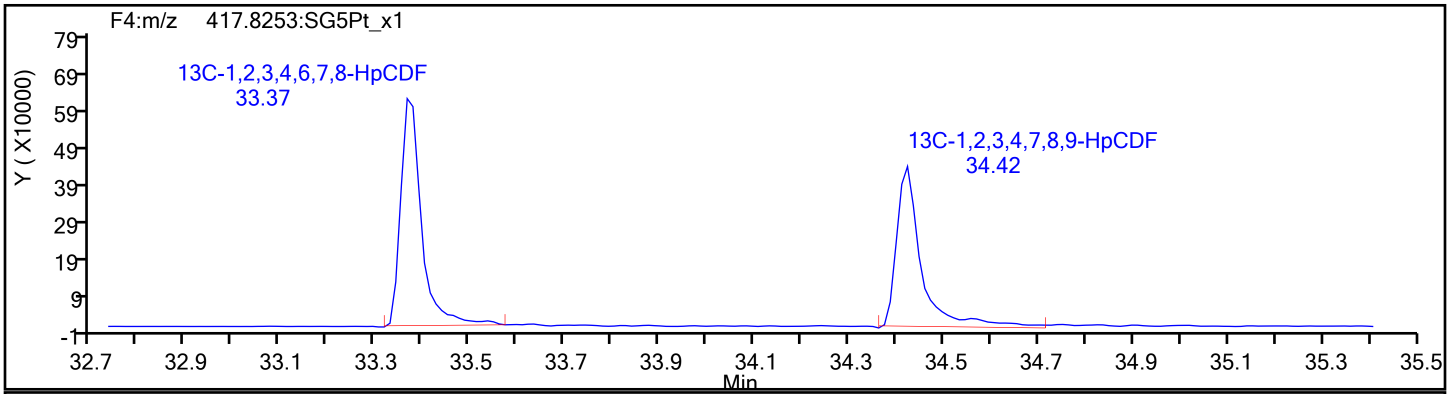

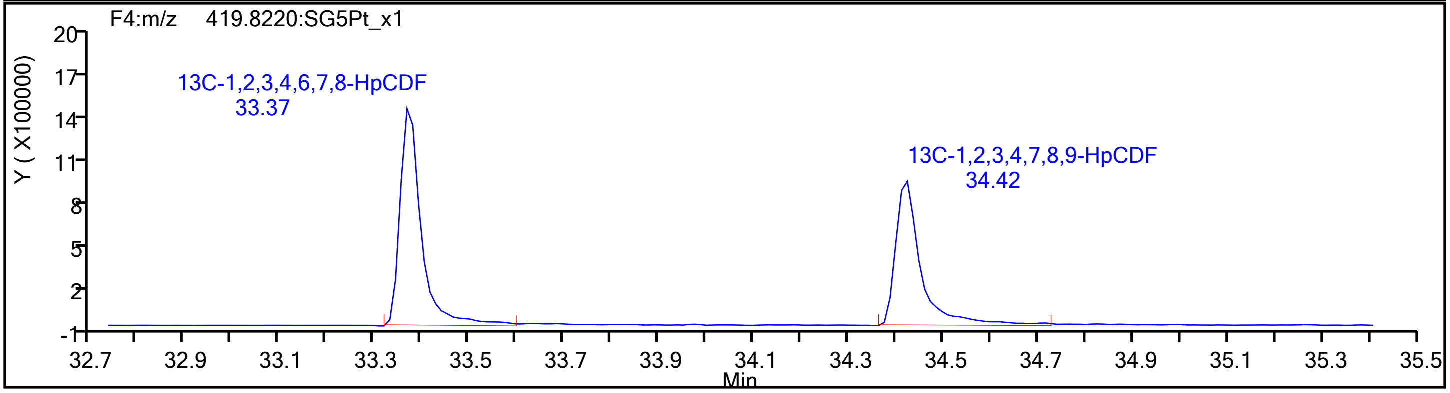

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

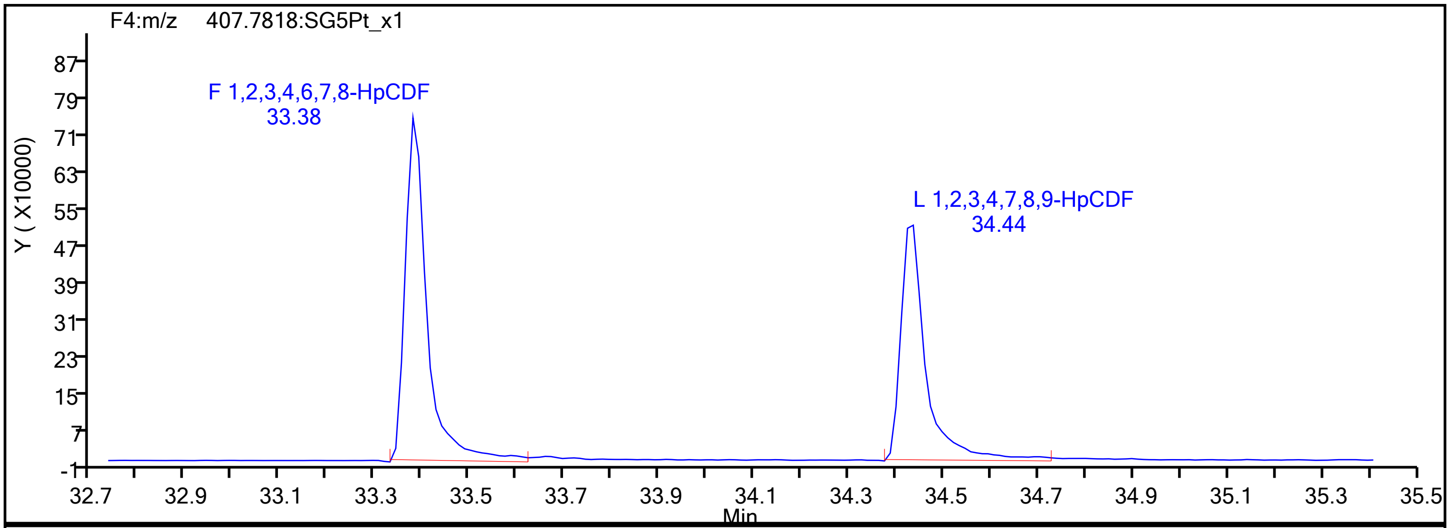

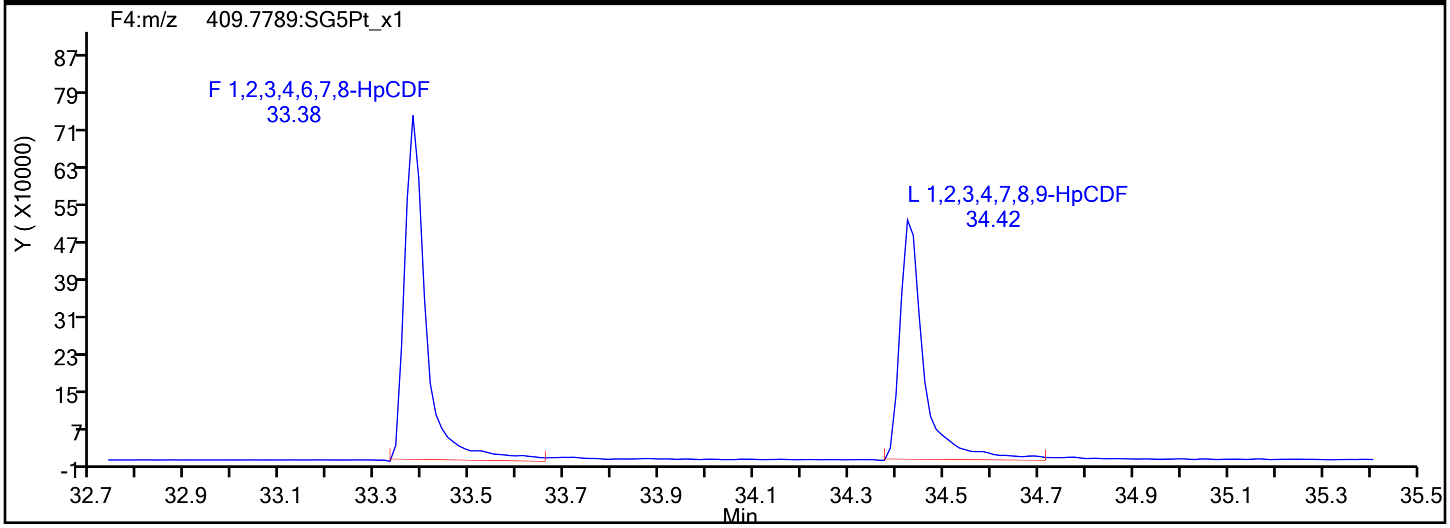

HpCDF Interference Mass

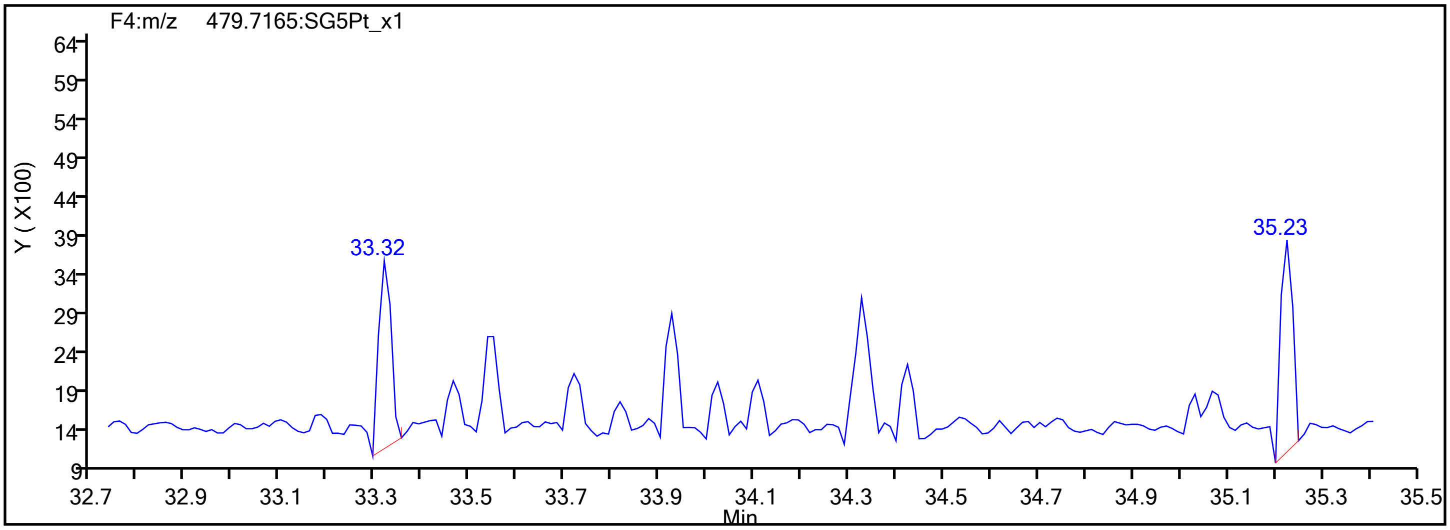

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

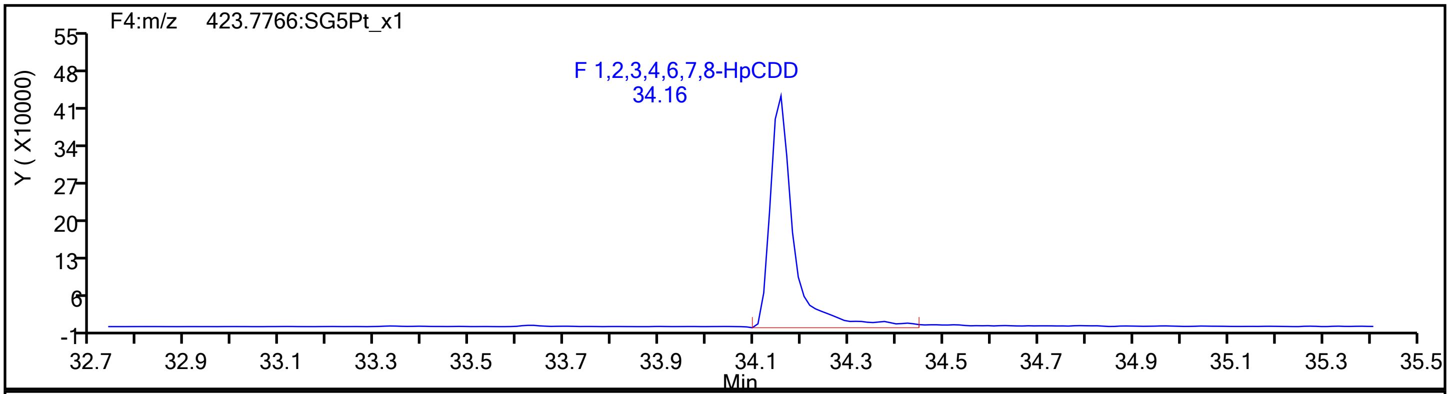

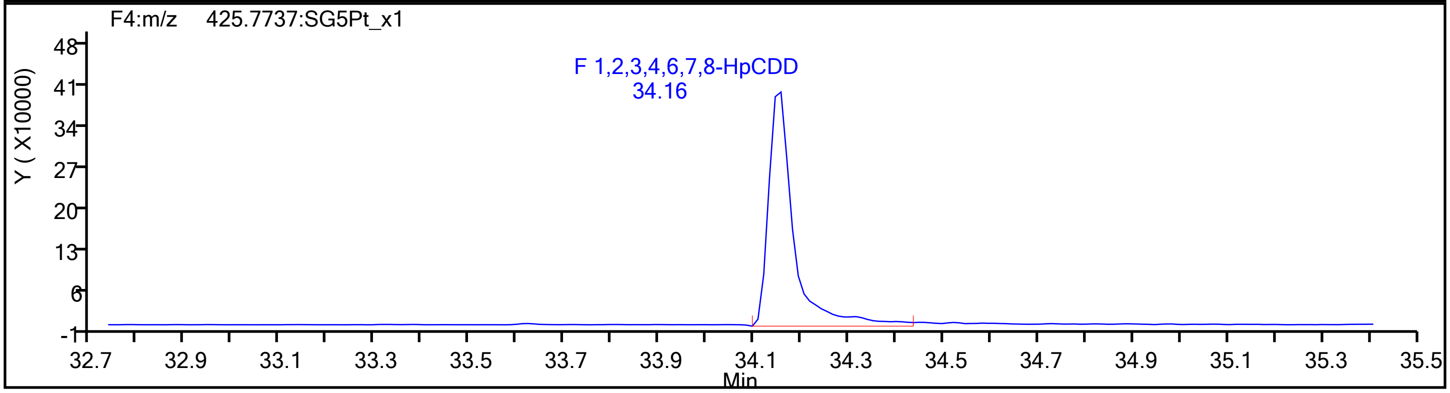

HpCDD Standards

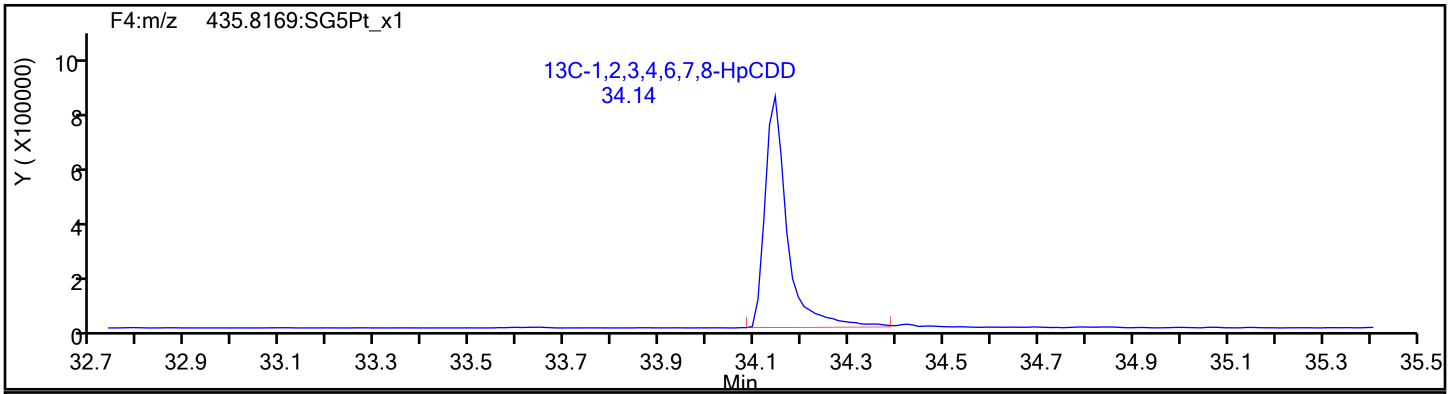

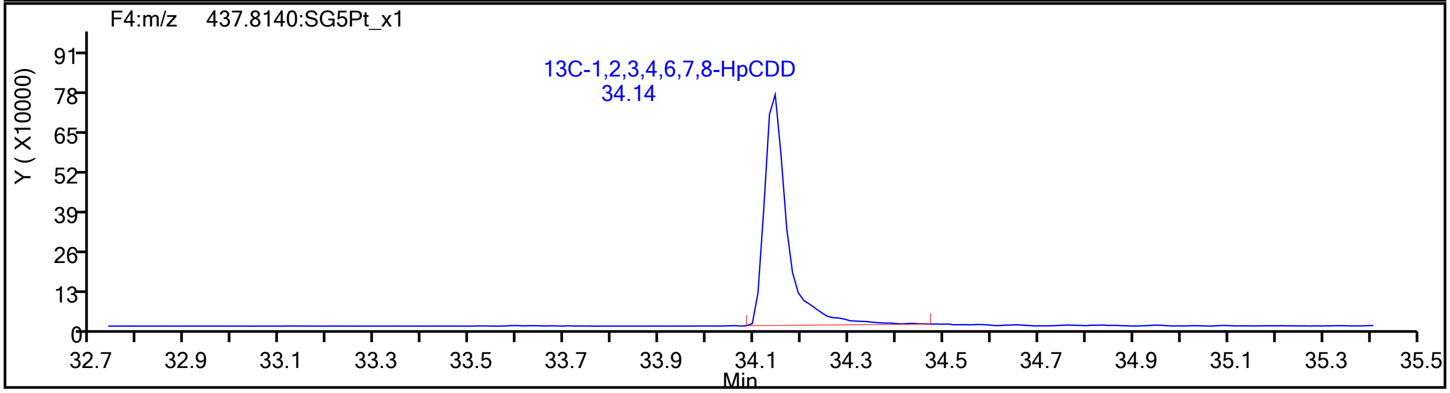

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

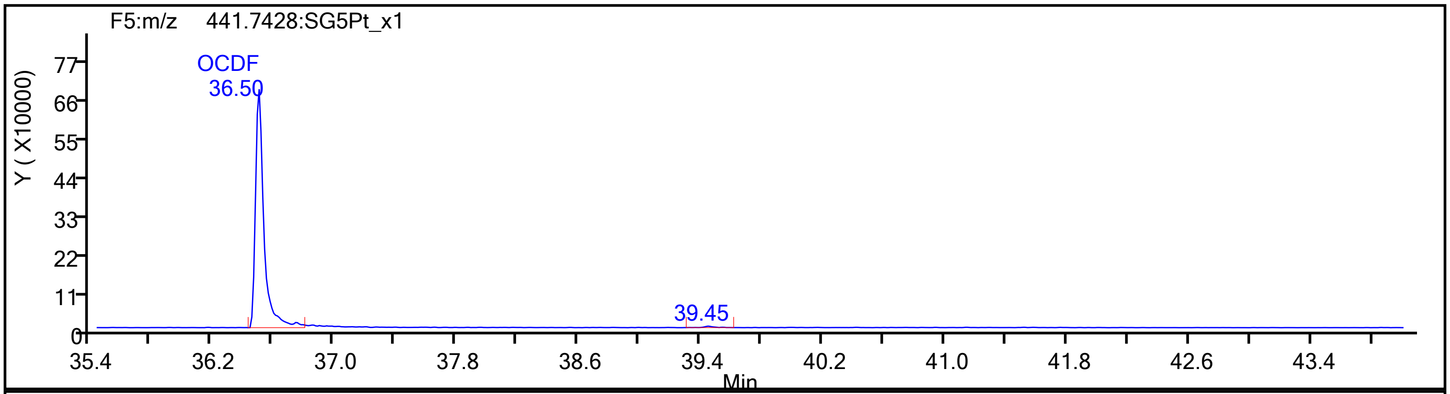

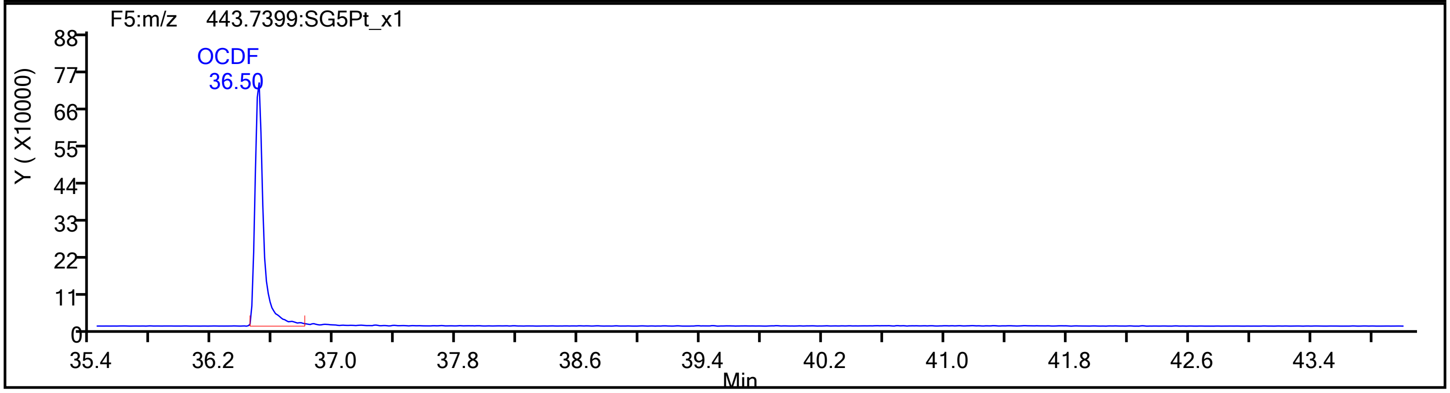

OCDF Standards

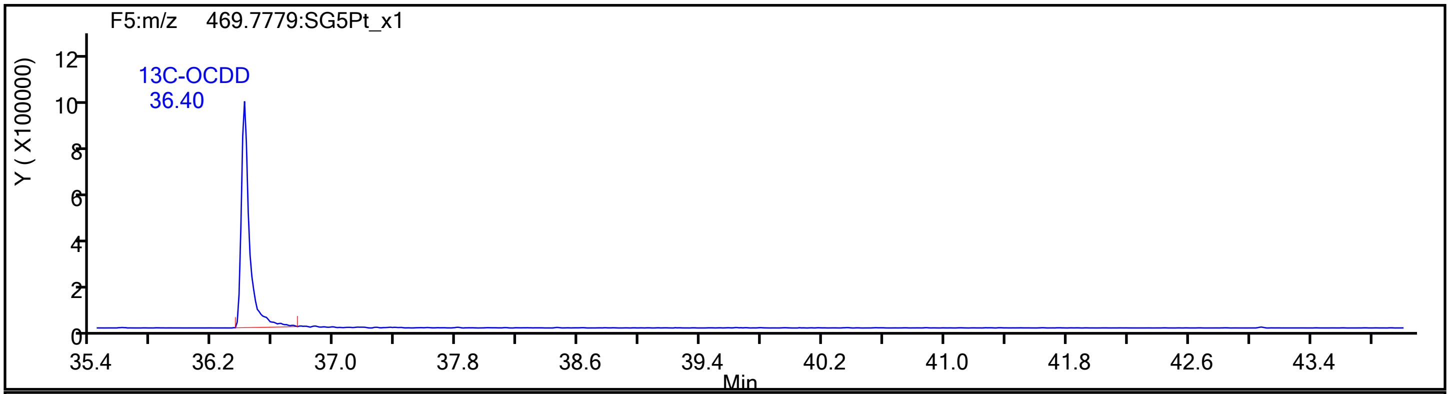

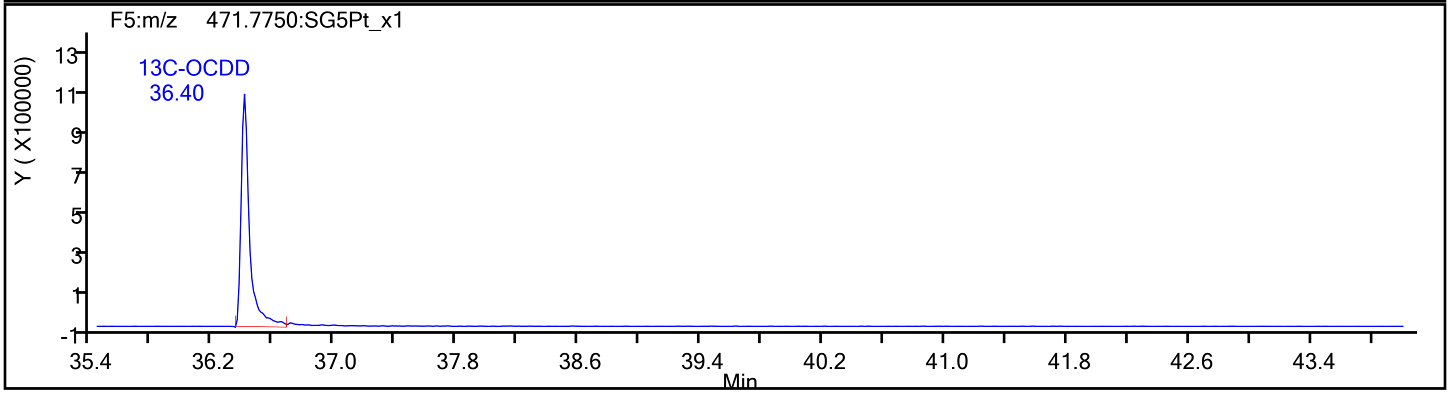

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d
Injection Date: 13-Oct-2020 00:39:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

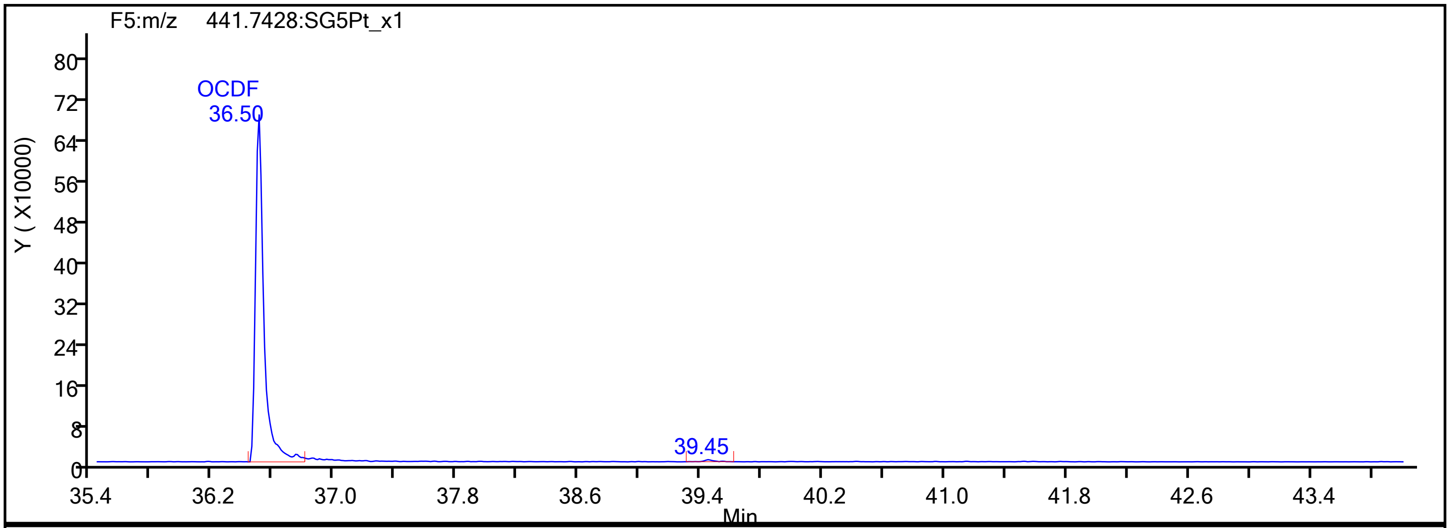

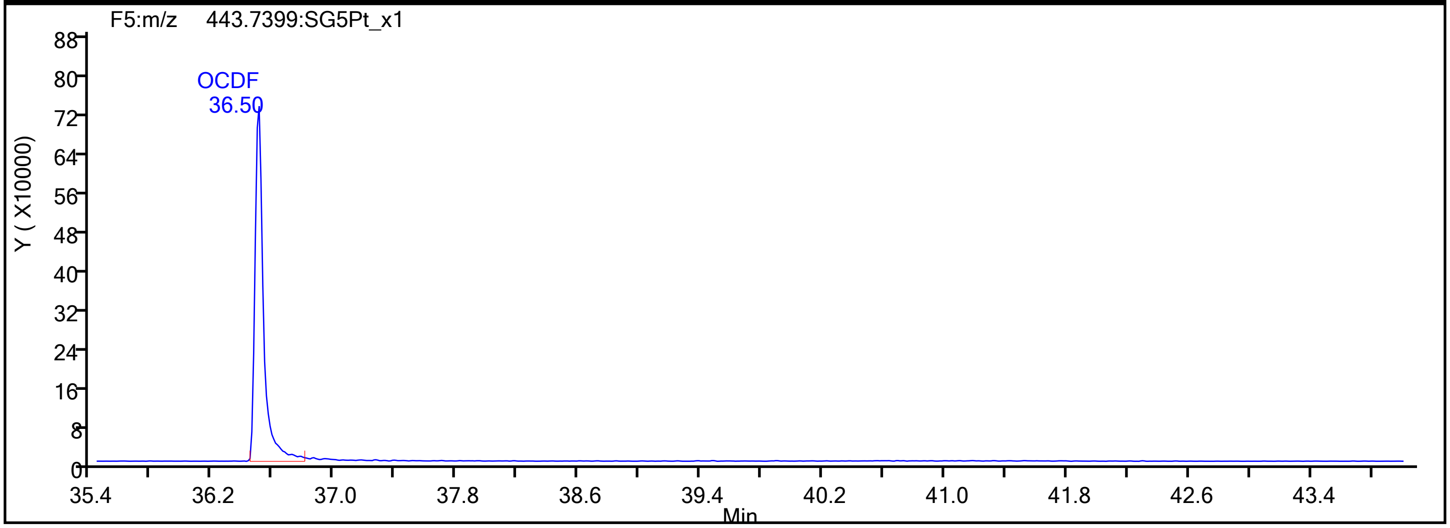

OCDF Interference Mass

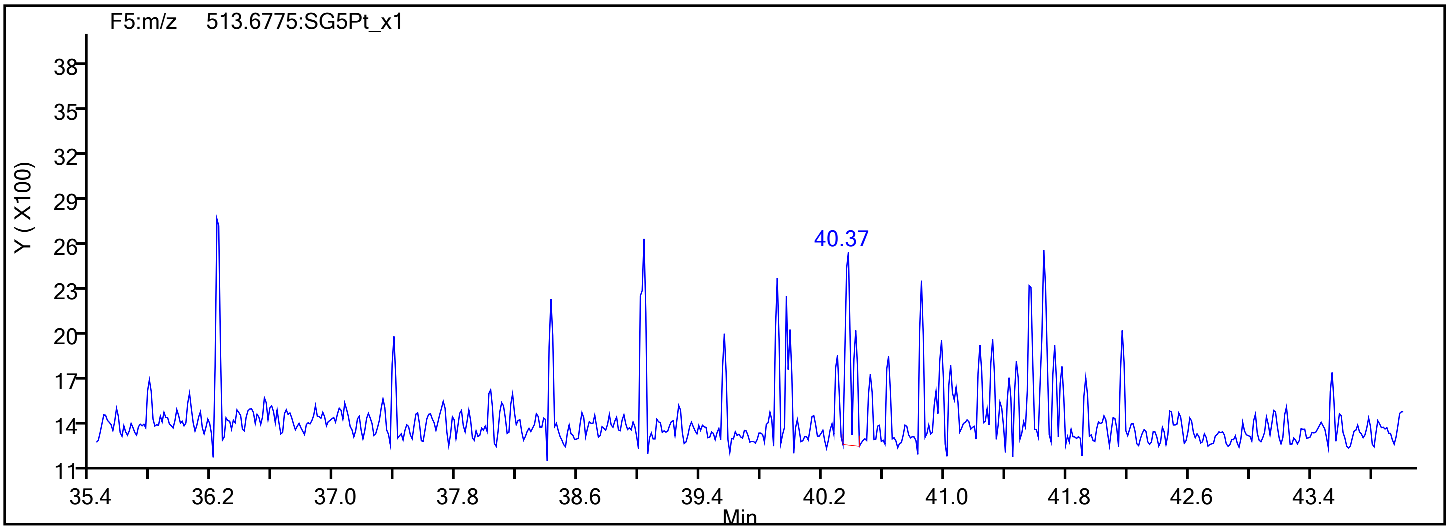

Report Date: 14-Oct-2020 13:13:27 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
Injection Date:	13-Oct-2020 00:39:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

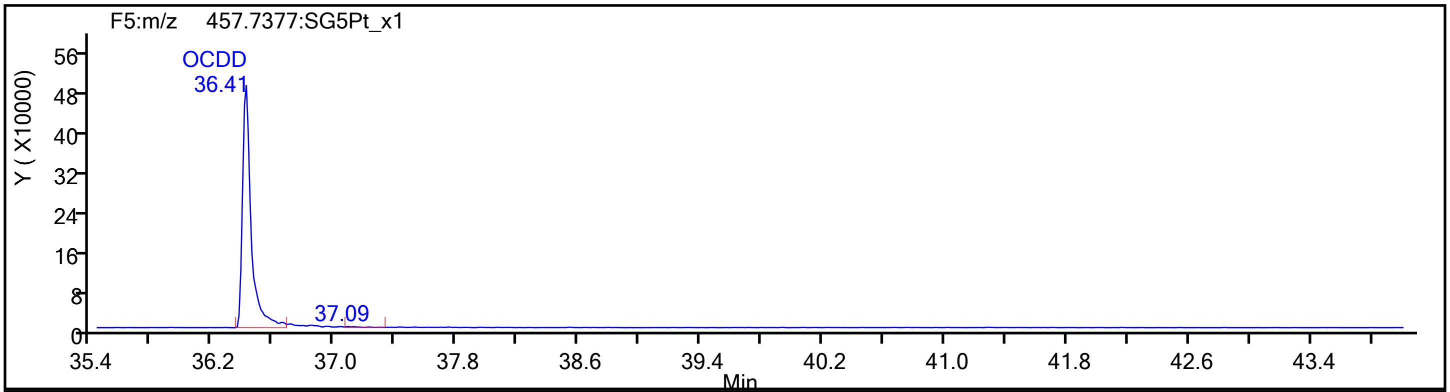

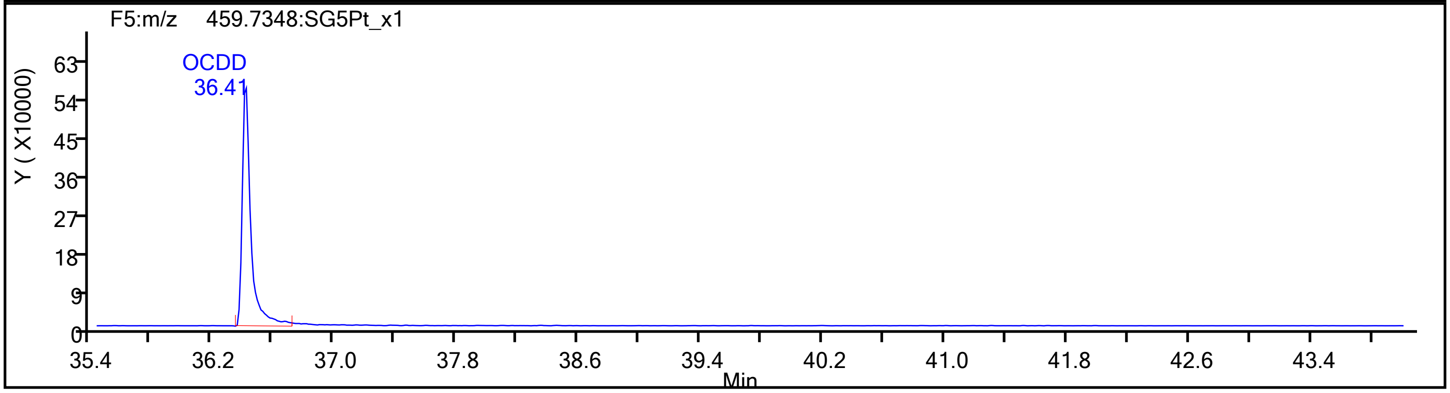

OCDD Standards

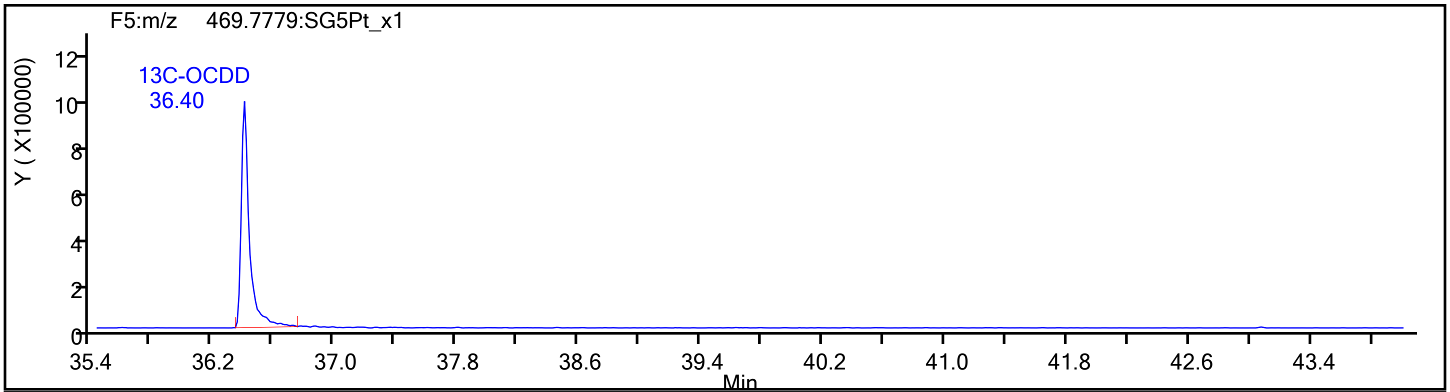

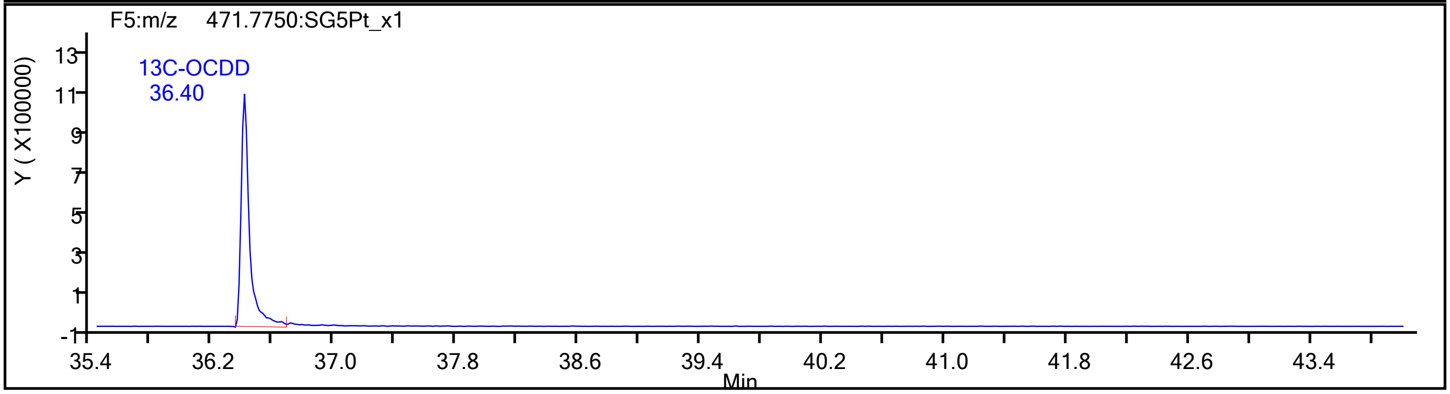

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Eurofins TestAmerica, Sacramento

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Injection Date: 13-Oct-2020 00:39:26 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421347 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

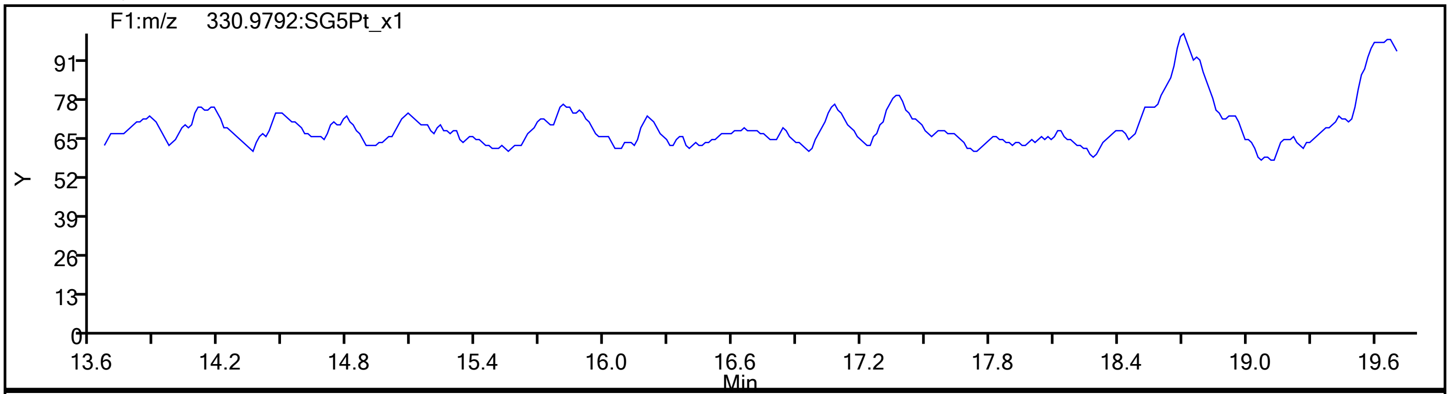

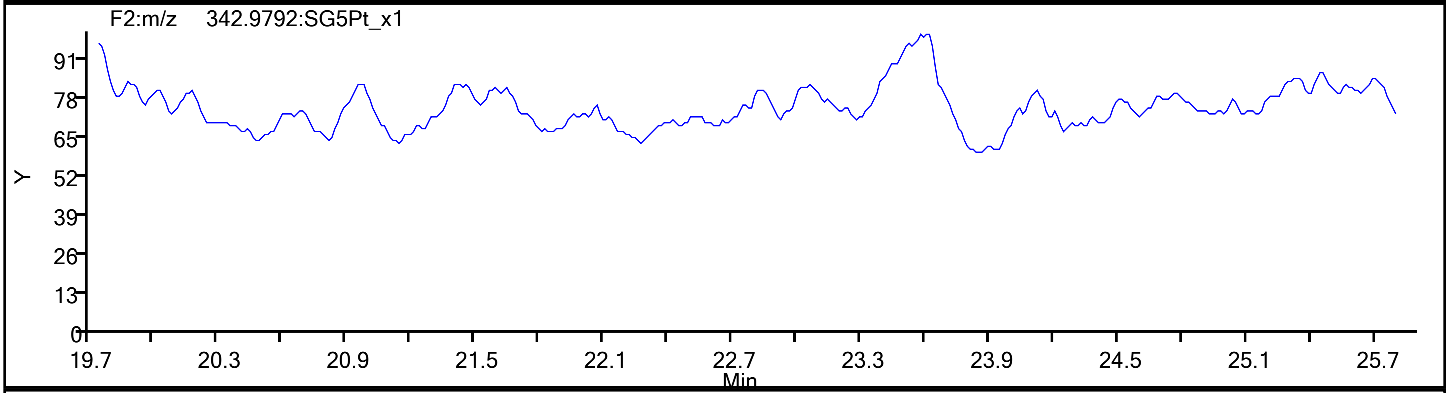

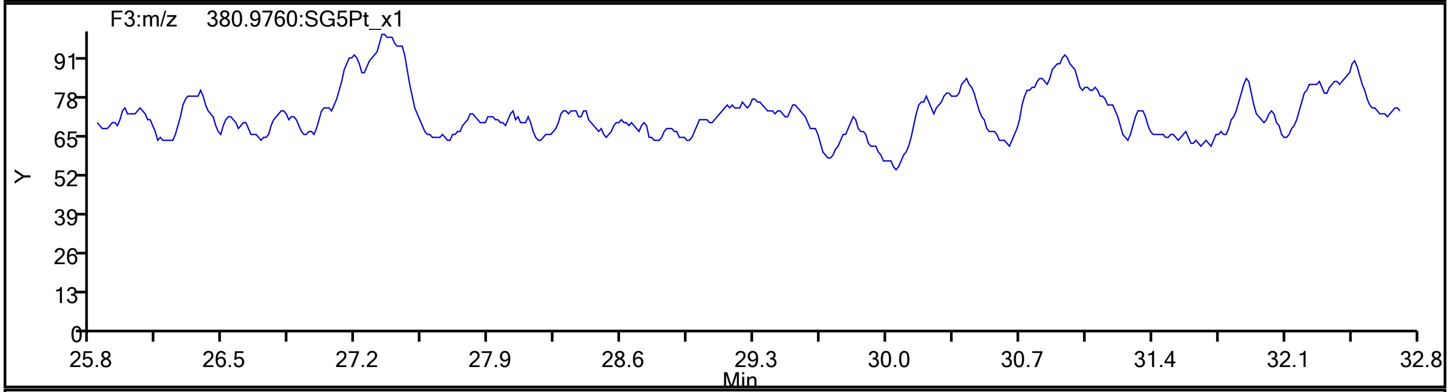

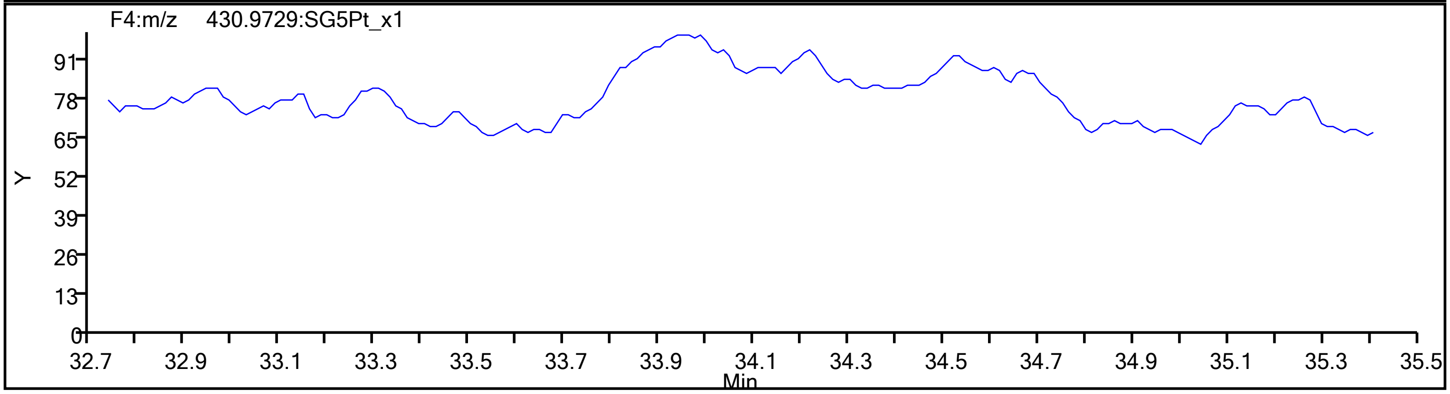

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_5.d		
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

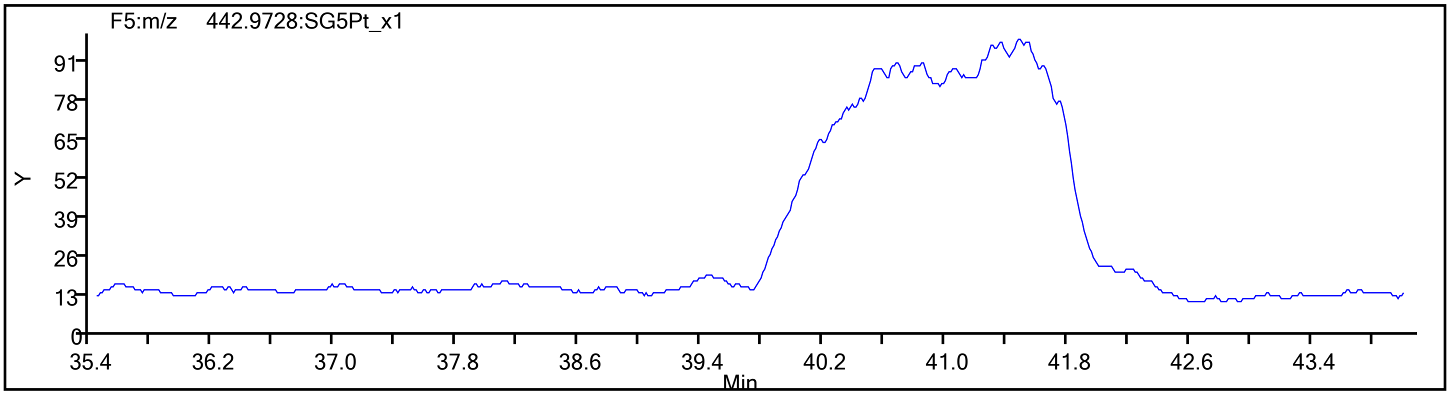

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-65247-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSD 320-418764/3-A
Matrix: Water
Lab File ID: 12OC20B10D5_6.d
Analysis Method: 1613B
Date Collected:
Extract. Method: 1613B
Date Extracted: 10/05/2020 11:15
Sample wt/vol: 1000(mL)
Date Analyzed: 10/13/2020 01:24
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 421347
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	210		10	0.61
51207-31-9	2,3,7,8-TCDF	220		10	0.70
40321-76-4	1,2,3,7,8-PeCDD	1040		50	2.0
57117-41-6	1,2,3,7,8-PeCDF	1090		50	4.2
57117-31-4	2,3,4,7,8-PeCDF	1100		50	4.5
39227-28-6	1,2,3,4,7,8-HxCDD	1110		50	4.2
57653-85-7	1,2,3,6,7,8-HxCDD	1130		50	3.9
19408-74-3	1,2,3,7,8,9-HxCDD	1080		50	3.6
70648-26-9	1,2,3,4,7,8-HxCDF	1100		50	11
57117-44-9	1,2,3,6,7,8-HxCDF	1100		50	9.6
72918-21-9	1,2,3,7,8,9-HxCDF	1090		50	5.8
60851-34-5	2,3,4,6,7,8-HxCDF	1100		50	6.2
35822-46-9	1,2,3,4,6,7,8-HpCDD	1060		50	5.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	1040		50	9.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	1060		50	13
3268-87-9	OCDD	1990		100	2.7
39001-02-0	OCDF	2090		100	2.5
41903-57-5	Total TCDD	210		10	0.61
30402-14-3	Total TCDF	220		10	0.70
36088-22-9	Total PeCDD	1040		50	2.0
30402-15-4	Total PeCDF	2190		50	4.4
34465-46-8	Total HxCDD	3310		50	3.9
55684-94-1	Total HxCDF	4390		50	8.2
37871-00-4	Total HpCDD	1060		50	5.8
38998-75-3	Total HpCDF	2100		50	12

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-418764/3-A

Matrix: Water Lab File ID: 12OC20B10D5_6.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/05/2020 11:15

Sample wt/vol: 1000(mL) Date Analyzed: 10/13/2020 01:24

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 421347 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		20-175
89059-46-1	13C-2,3,7,8-TCDF	96		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	73		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	84		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	86		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	74		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	95		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	98		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	96		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	98		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	82		20-186
114423-97-1	13C-OCDD	73		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	118		31-191

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d				
Lims ID:	LCSD 320-418764/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	13-Oct-2020 01:24:26	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 320-418764/3-A LCSD 320-418764/3-A				
Misc. Info.:	12OC20B10D5				
Operator ID:	ALM	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 13:14:02	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1650				
First Level Reviewer: dadunj		Date:	14-Oct-2020 13:14:02		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.106	48488845	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.637	63373904	0.78	1.3598	96.1	96.1	0.1819	0.1819	96.11	
2,3,7,8-TCDF	16.652	6336505	0.77	0.9077	11.0	11.0	0.0349	0.0349	110	
A Non-2,3,7,8-sub-TCDF	16.342						0.0349	0.0349		
S Total TCDF					11.0	11.0	0.0349	0.0349		
D 13C-2,3,7,8-TCDD	17.302	42603444	0.77	1.0536	83.4	83.4	0.1557	0.1557	83.40	
2,3,7,8-TCDD	17.317	4507708	0.76	1.0061	10.5	10.5	0.0305	0.0305	105	
$ 37Cl4-2,3,7,8-TCDD	17.317	24056002		1.0488	47.3	47.3	0.0795	0.0795	118	
A Non-2,3,7,8-sub-TCDD	16.781						0.0305	0.1514		U
S Total TCDD					10.5	10.5	0.0305	0.0305		
D 13C-1,2,3,7,8-PeCDF	21.383	46200920	1.59	1.1306	84.3	84.3	0.2308	0.2308	84.28	
1,2,3,7,8-PeCDF	21.411	22988900	1.62	0.9147	54.4	54.4	0.2110	0.2110	109	
D 13C-2,3,4,7,8-PeCDF	22.652	44125741	1.59	1.0539	86.3	86.3	0.2476	0.2476	86.35	
2,3,4,7,8-PeCDF	22.679	23028641	1.63	0.9508	54.9	54.9	0.2268	0.2268	110	
A F1 PeCDFs	19.147						0.0156	0.0156		
A Non-2,3,7,8-sub-PeCDF	22.128						0.2184	0.2184		
S Total PeCDF					109.3	109.3	0.2189	0.2189		
D 13C-1,2,3,7,8-PeCDD	23.334	28663127	1.61	0.8084	73.1	73.1	0.0867	0.0867	73.12	
1,2,3,7,8-PeCDD	23.361	14783292	1.60	0.9955	51.8	51.8	0.1008	0.1008	104	
A Non-2,3,7,8-sub-PeCDD	22.290						0.1008	0.1008		
S Total PeCDD					51.8	51.8	0.1008	0.1008		
D 13C-1,2,3,4,7,8-HxCDF	29.409	30662672	0.51	0.9225	94.8	94.8	0.5388	0.5388	94.81	
1,2,3,4,7,8-HxCDF	29.449	18641705	1.26	1.1090	54.8	54.8	0.5658	0.5658	110	
D 13C-1,2,3,6,7,8-HxCDF	29.715	35393149	0.52	1.0336	97.7	97.7	0.4809	0.4809	97.68	
1,2,3,6,7,8-HxCDF	29.742	20820563	1.26	1.0721	54.9	54.9	0.4797	0.4797	110	
D 13C-2,3,4,6,7,8-HxCDF	30.860	33533351	0.52	0.9773	97.9	97.9	0.5086	0.5086	97.87	
2,3,4,6,7,8-HxCDF	30.873	20020796	1.28	1.0838	55.1	55.1	0.3097	0.3097	110	
D 13C-1,2,3,7,8,9-HxCDF	31.805	30807858	0.52	0.9153	96.0	96.0	0.5430	0.5430	96.01	
1,2,3,7,8,9-HxCDF	31.818	18412291	1.28	1.0931	54.7	54.7	0.2878	0.2878	109	
A Non-2,3,7,8-sub-HxCDF	29.283						0.3786	0.3786		
S Total HxCDF					219.5	219.5	0.4108	0.4108		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.605	35057671	1.26	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.086	20579477	1.29	0.7977	73.6	73.6	0.3717	0.3717	73.59	
1,2,3,4,7,8-HxCDD	31.099	11395921	1.27	1.0014	55.3	55.3	0.2099	0.2099	111	
D 13C-1,2,3,6,7,8-HxCDD	31.219	27710113	1.27	1.0010	79.0	79.0	0.2962	0.2962	78.96	
1,2,3,6,7,8-HxCDD	31.232	13885280	1.28	0.8902	56.3	56.3	0.1939	0.1939	113	
1,2,3,7,8,9-HxCDD	31.618	13771328	1.27	1.0579	53.9	53.9	0.1791	0.1791	108	
A Non-2,3,7,8-sub-HxCDD	29.888						0.1928	0.1928		
S Total HxCDD					165.5	165.5	0.1943	0.1943		
D 13C-1,2,3,4,6,7,8-HpCDF	33.366	26731081	0.43	0.8506	89.6	89.6	1.212	1.212	89.64	
1,2,3,4,6,7,8-HpCDF	33.366	18914479	1.03	1.3603	52.0	52.0	0.4908	0.4908	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.411	21981315	0.43	0.7618	82.3	82.3	1.353	1.353	82.31	
1,2,3,4,7,8,9-HpCDF	34.423	15413087	1.04	1.3207	53.1	53.1	0.6671	0.6671	106	
A Non-2,3,7,8-sub-HpCDF	33.889						0.5667	0.5667		
S Total HpCDF					105.1	105.1	0.5789	0.5789		
D 13C-1,2,3,4,6,7,8-HpCDD	34.132	22268324	1.06	0.8873	71.6	71.6	0.4787	0.4787	71.59	
1,2,3,4,6,7,8-HpCDD	34.144	11811269	1.04	0.9988	53.1	53.1	0.2880	0.2880	106	
A Non-2,3,7,8-sub-HpCDD	33.870						0.2880	0.2880		
S Total HpCDD					53.1	53.1	0.2880	0.2880		
D 13C-OCDD	36.390	32289819	0.91	0.6287	146.5	146.5	0.1813	0.1813	73.25	
OCDF	36.486	23870142	0.90	1.4136	104.6	104.6	0.1232	0.1232	105	
OCDD	36.402	18123482	0.89	1.1290	99.4	99.4	0.1349	0.1349	99.43	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d				
Lims ID:	LCSD 320-418764/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	13-Oct-2020 01:24:26	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 320-418764/3-A LCSD 320-418764/3-A				
Misc. Info.:	12OC20B10D5				
Operator ID:	ALM	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	14-Oct-2020 13:14:02	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1650				
First Level Reviewer: dadunj		Date:	14-Oct-2020 13:14:02		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.106	17.106	0		21277086	5328141	4455	11137	1196		
333.9339	17.106	17.106	0		27211759	6804078	3505	8762	1941	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.637	16.622	1	0.973	27738539	7028997	5252	13130	1338		
317.9389	16.637	16.622	1	0.973	35635365	8926852	6752	16880	1322	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.652	16.637	1	1.001	2763050	696353	735	1837	947		
305.8987	16.652	16.637	1	1.001	3573455	887248	1287	3217	689	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.342						735	1837			
305.8987	16.342						1287	3217			
13C-2,3,7,8-TCDD											
331.9368	17.302	17.287	1	1.011	18592474	4473175	4455	11137	1004		
333.9339	17.302	17.287	1	1.011	24010970	5743331	3505	8762	1639	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.317	17.302	1	1.001	1949074	463114	692	1730	669		
321.8936	17.317	17.302	1	1.001	2558634	604808	564	1410	1072	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.317	17.302	1	1.012	24056002	5799137	4044	10110	1434		
A Non-2,3,7,8-sub-TCDD											U
319.8965	15.216	16.781	-94	0.879	29990	6954	692	1730	10		
321.8936	15.216	16.781	-94	0.879	34909	9214	564	1410	16	0.86(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.383	21.370	1	1.250	28396607	5058066	7804	19510	648		
353.8970	21.383	21.370	1	1.250	17804313	3211420	4860	12150	661	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.411	21.383	2	1.001	14200513	2515535	3837	9592	656		
341.8567	21.397	21.383	1	1.001	8788387	1557247	2547	6367	611	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	22.652	22.638	1	1.324	27063159	4564262	7804	19510	585		
353.8970	22.652	22.638	1	1.324	17062582	2836380	4860	12150	584	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	22.679	22.665	1	1.001	14285202	2400813	3837	9592	626		
341.8567	22.679	22.665	1	1.001	8743439	1461343	2547	6367	574	1.63(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.147						166	415			
341.8567	19.147						291	727			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.128						3837	9592			
341.8567	22.128						2547	6367			
13C-1,2,3,7,8-PeCDD											
367.8949	23.334	23.320	1	1.364	17674797	2771057	1954	4885	1418		
369.8919	23.334	23.320	1	1.364	10988330	1711473	1446	3615	1184	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.361	23.347	1	1.001	9091550	1454237	1051	2627	1384		
357.8516	23.361	23.347	1	1.001	5691742	889992	749	1872	1188	1.60(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.290						1051	2627			
357.8516	22.290						749	1872			
13C-1,2,3,4,7,8-HxCDF											
383.8639	29.409	29.409	0	0.931	10328485	1233495	5775	14437	214		
385.8610	29.422	29.409	1	0.931	20334187	2401696	9989	24972	240	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	29.449	29.435	1	1.001	10397351	1222686	5008	12520	244		
375.8178	29.449	29.435	1	1.001	8244354	949527	4116	10290	231	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	29.715	29.702	1	0.940	12138627	1523837	5775	14437	264		
385.8610	29.715	29.702	1	0.940	23254522	2911157	9989	24972	291	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	29.742	29.728	1	1.001	11613572	1489074	5008	12520	297		
375.8178	29.742	29.728	1	1.001	9206991	1175600	4116	10290	286	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	30.860	30.847	1	0.976	11418238	2324146	5775	14437	402		
385.8610	30.860	30.847	1	0.976	22115113	4470903	9989	24972	448	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	30.873	30.873	0	1.000	11227014	2240986	5008	12520	447		
375.8178	30.873	30.873	0	1.000	8793782	1771684	4116	10290	430	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	31.805	31.792	1	1.006	10530322	2474610	5775	14437	429		
385.8610	31.805	31.792	1	1.006	20277536	4777321	9989	24972	478	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	31.818	31.805	1	1.000	10350911	2383494	5008	12520	476		
375.8178	31.818	31.805	1	1.000	8061380	1890995	4116	10290	459	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.283						5008	12520			
375.8178	29.283						4116	10290			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.605	31.592	1		19559200	4433525	5341	13352	830		
403.8529	31.605	31.592	1		15498471	3495562	4063	10157	860	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.086	31.073	1	0.984	11577356	2735732	5341	13352	512		
403.8529	31.086	31.073	1	0.984	9002121	2087696	4063	10157	514	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.099	31.099	0	1.000	6384336	1477045	2233	5582	661		
391.8127	31.099	31.099	0	1.000	5011585	1166517	1822	4555	640	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.219	31.206	1	0.988	15476307	3294751	5341	13352	617		
403.8529	31.219	31.206	1	0.988	12233806	2579563	4063	10157	635	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.232	31.219	1	1.000	7805788	1617530	2233	5582	724		
391.8127	31.232	31.219	1	1.000	6079492	1288293	1822	4555	707	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.618	31.605	1	1.017	7695165	1802333	2233	5582	807		
391.8127	31.618	31.605	1	1.017	6076163	1392989	1822	4555	765	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	29.888						2233	5582			
391.8127	29.888						1822	4555			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.366	33.354	1	1.056	8010035	2578061	11142	27855	231		
419.8220	33.366	33.354	1	1.056	18721046	5952310	21560	53900	276	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.366	33.366	0	1.000	9603875	3051507	13573	33932	225		
409.7789	33.366	33.366	0	1.000	9310604	3044133	9209	23022	331	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.411	34.399	1	1.089	6564654	1922284	11142	27855	173		
419.8220	34.411	34.399	1	1.089	15416661	4542698	21560	53900	211	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.423	34.411	1	1.000	7849159	2339218	13573	33932	172		
409.7789	34.423	34.411	1	1.000	7563928	2169692	9209	23022	236	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.889						13573	33932			
409.7789	33.889						9209	23022			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.132	34.119	1	1.080	11466699	3554860	6712	16780	530		
437.8140	34.132	34.119	1	1.080	10801625	3382015	6759	16897	500	1.06(0.88-1.20)	

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44
Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.144	34.144	0	1.000	6023096	1875563	3227	8067	581		
425.7737	34.144	34.144	0	1.000	5788173	1777614	4754	11885	374	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.870						3227	8067			
425.7737	33.870						4754	11885			
13C-OCDD											
469.7779	36.390	36.390	0	1.151	15344084	4061976	1544	3860	2631		
471.7750	36.390	36.390	0	1.151	16945735	4579337	2071	5177	2211	0.91(0.76-1.02)	
OCDF											
441.7428	36.486	36.474	1	1.003	11322535	3093846	1389	3472	2227		
443.7399	36.486	36.474	1	1.003	12547607	3376227	1621	4052	2083	0.90(0.76-1.02)	
OCDD											
457.7377	36.402	36.390	1	1.000	8516703	2321433	1072	2680	2166		
459.7348	36.402	36.390	1	1.000	9606779	2598512	1561	3902	1665	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d		
Lims ID:	LCSD 320-418764/3-A		
Client ID:			
Inject. Date:	13-Oct-2020 01:24:26	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	10D5	Operator:	ALM
Lims Batch ID:	421347	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDD, RT: 16.781

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.006	D 13C-2,3,7,8-TCDD	100.000	42603444	10216506

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	42603444	10216506

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.216	29990	6954	34909	9214	0.1514	0.86	
15.503	13240	3320	16325	5694	0.0690	0.81	

Compound is Marked ND

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d		
Injection Date:	13-Oct-2020 01:24:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

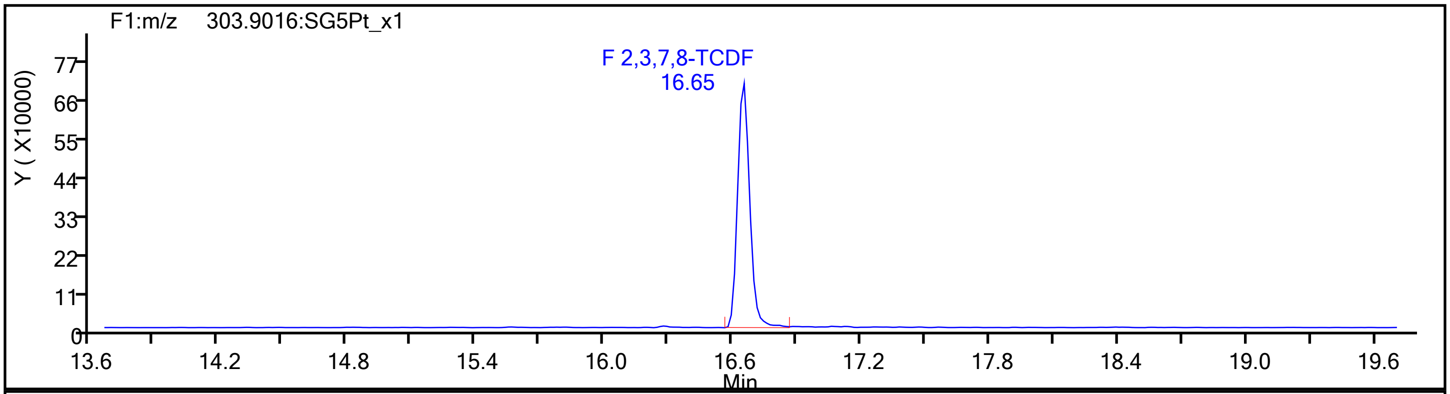

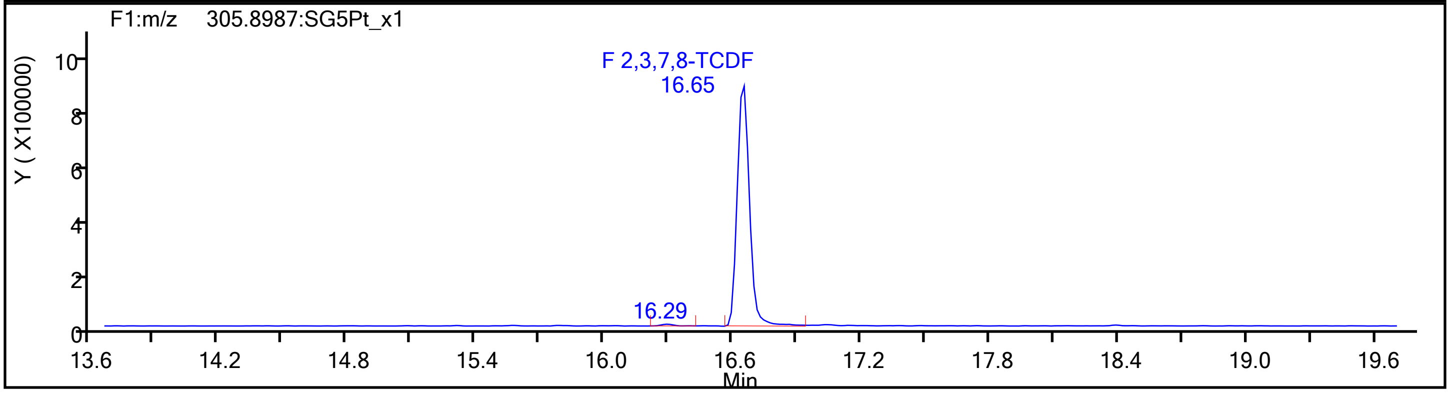

TCDF Standards

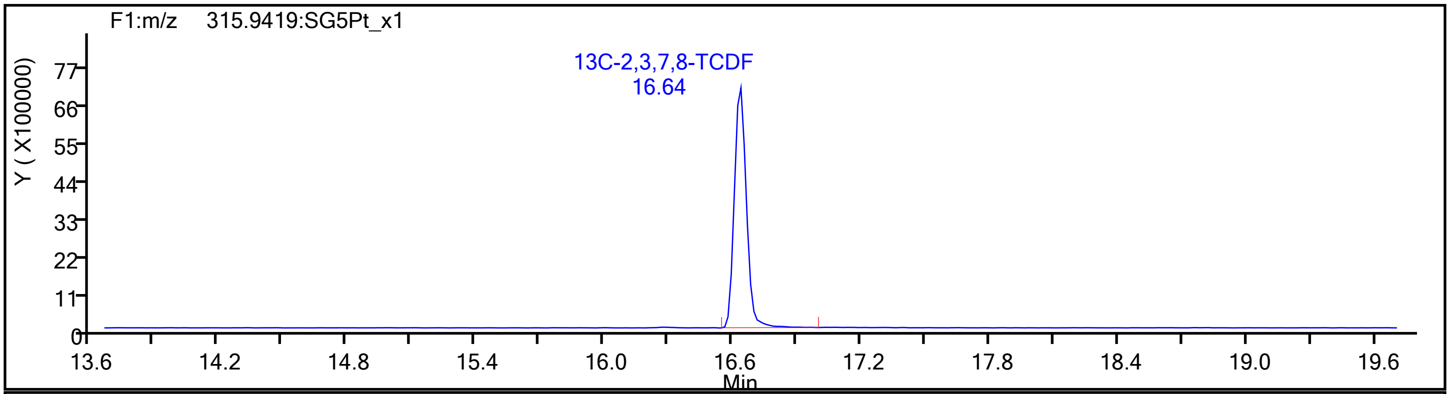

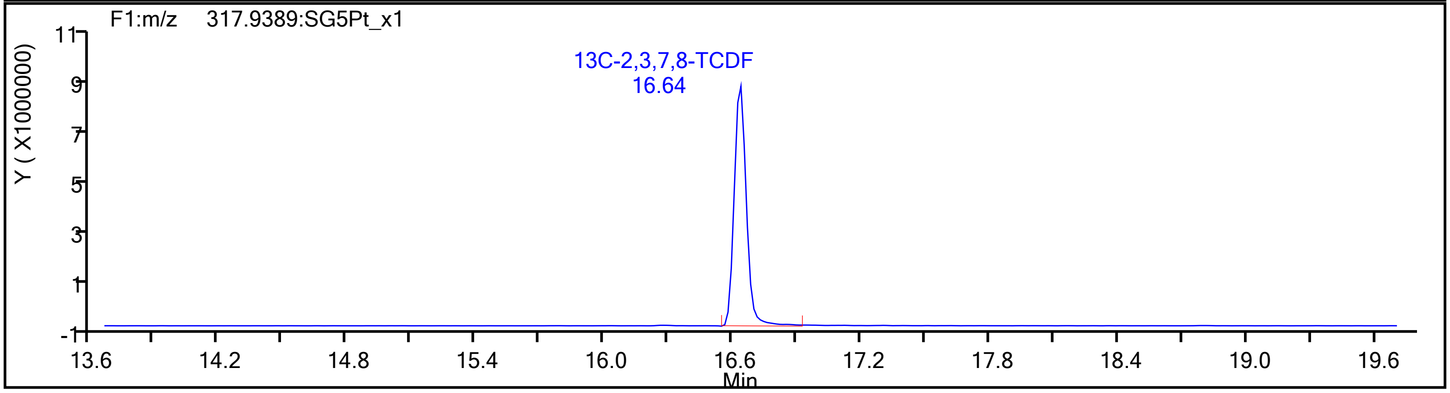

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

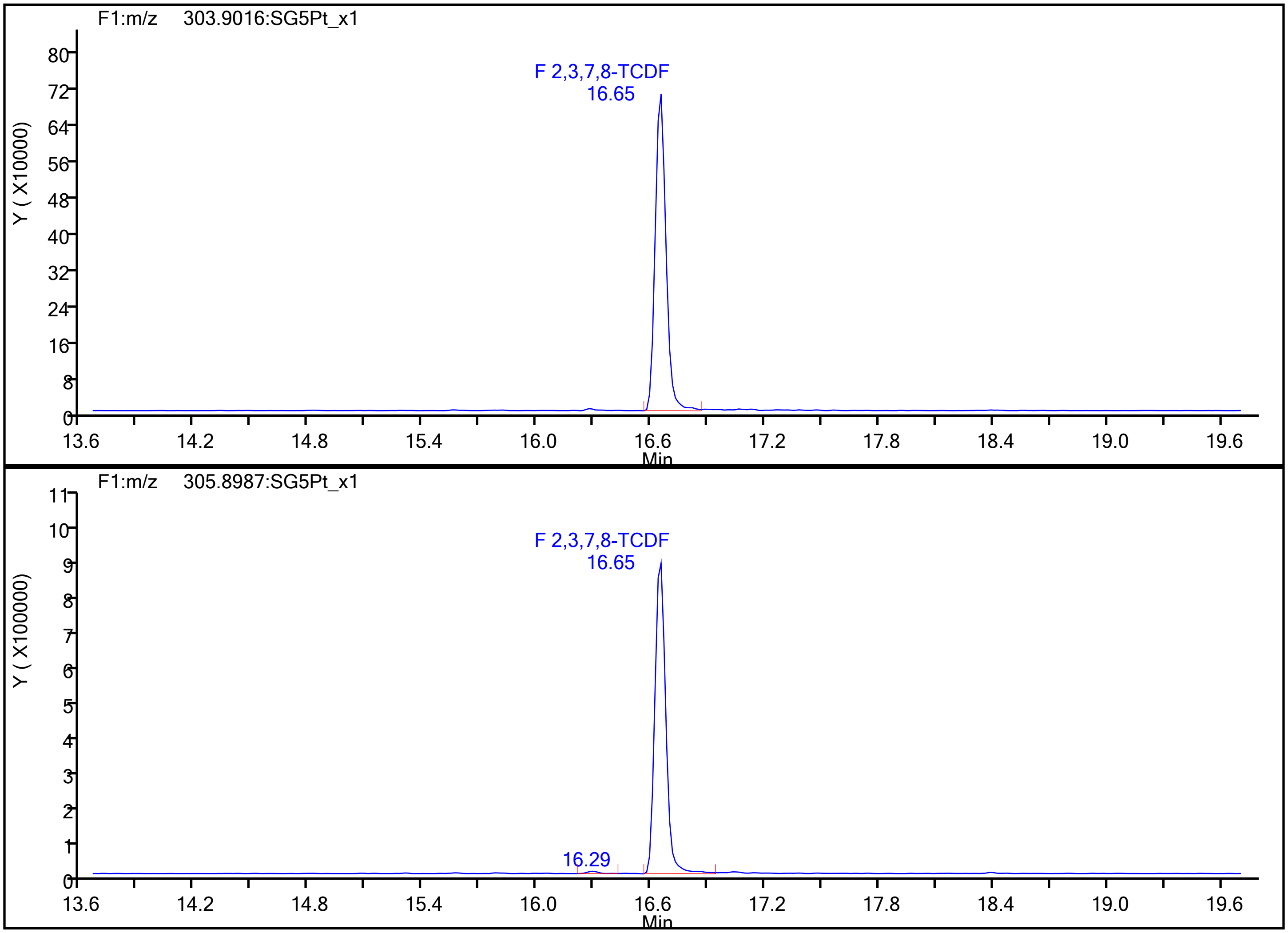

TCDF Interference Mass

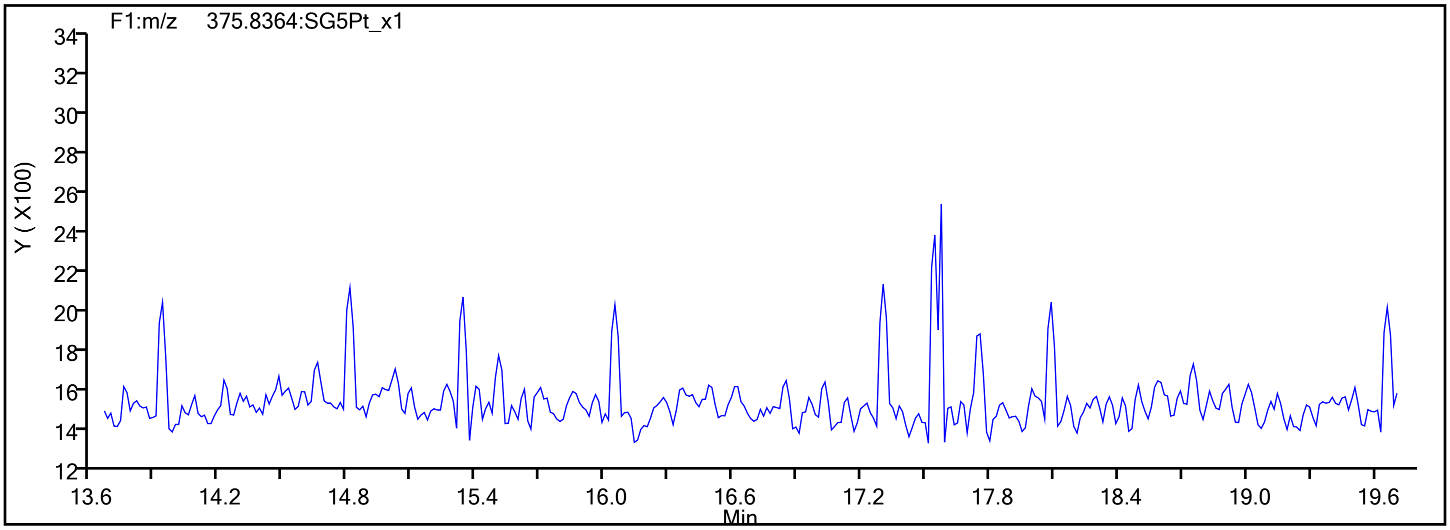

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Injection Date: 13-Oct-2020 01:24:26 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 421347 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

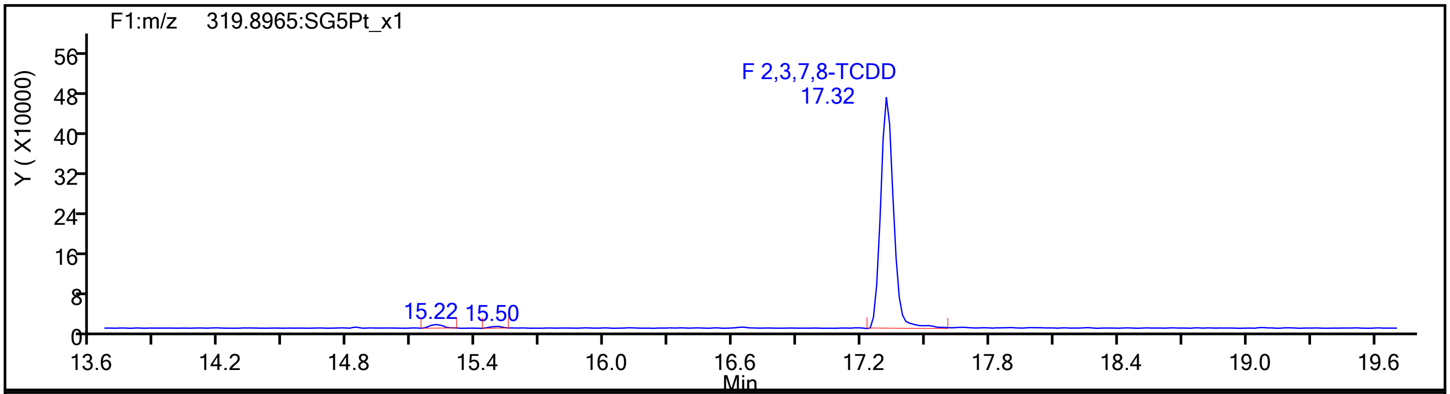

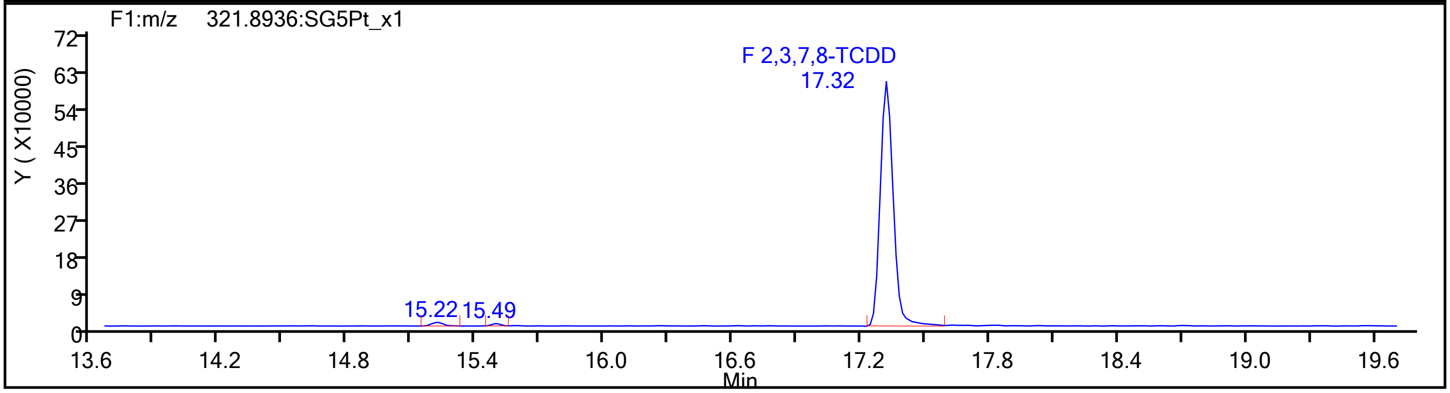

TCDD Standards

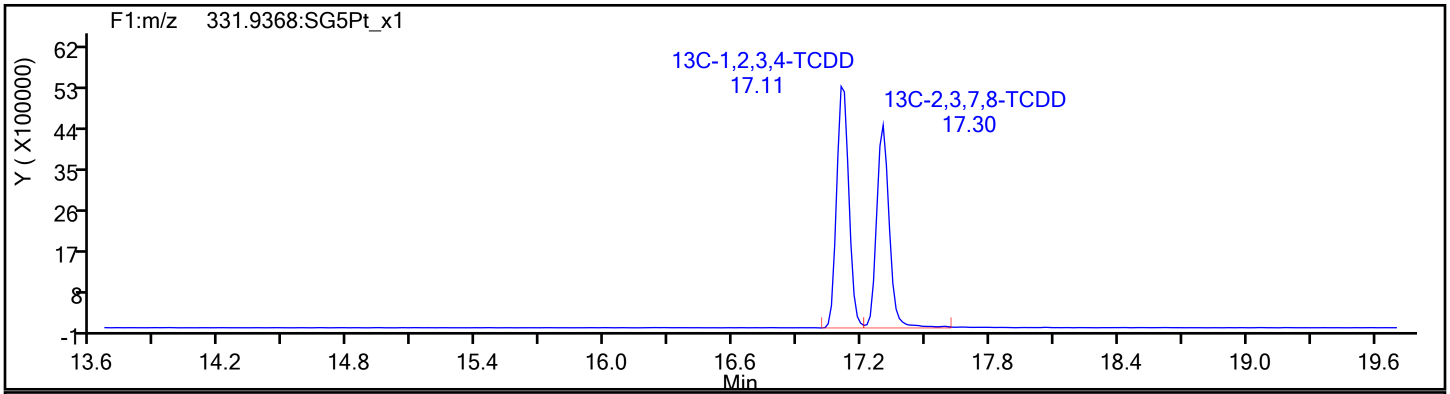

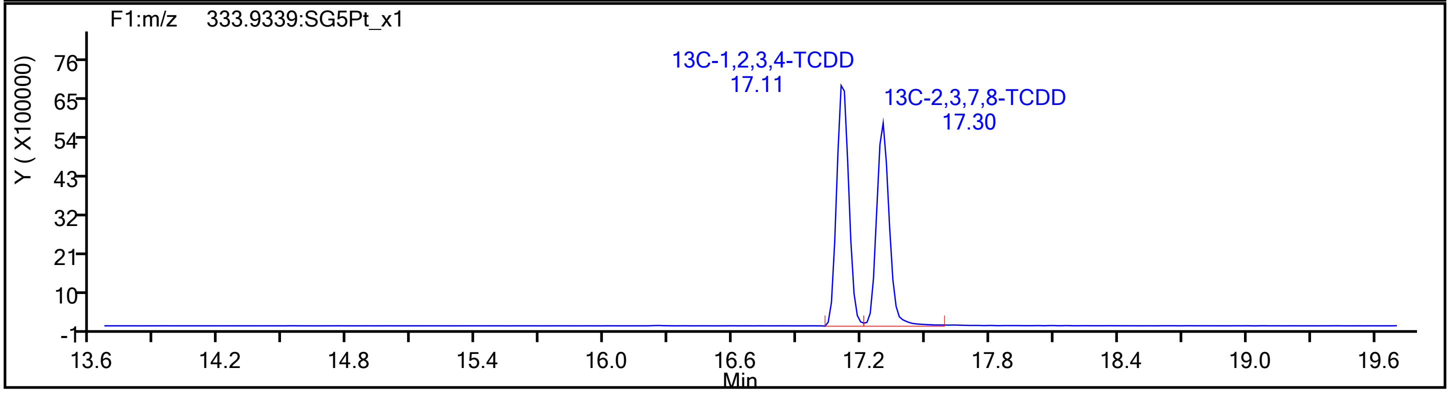

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

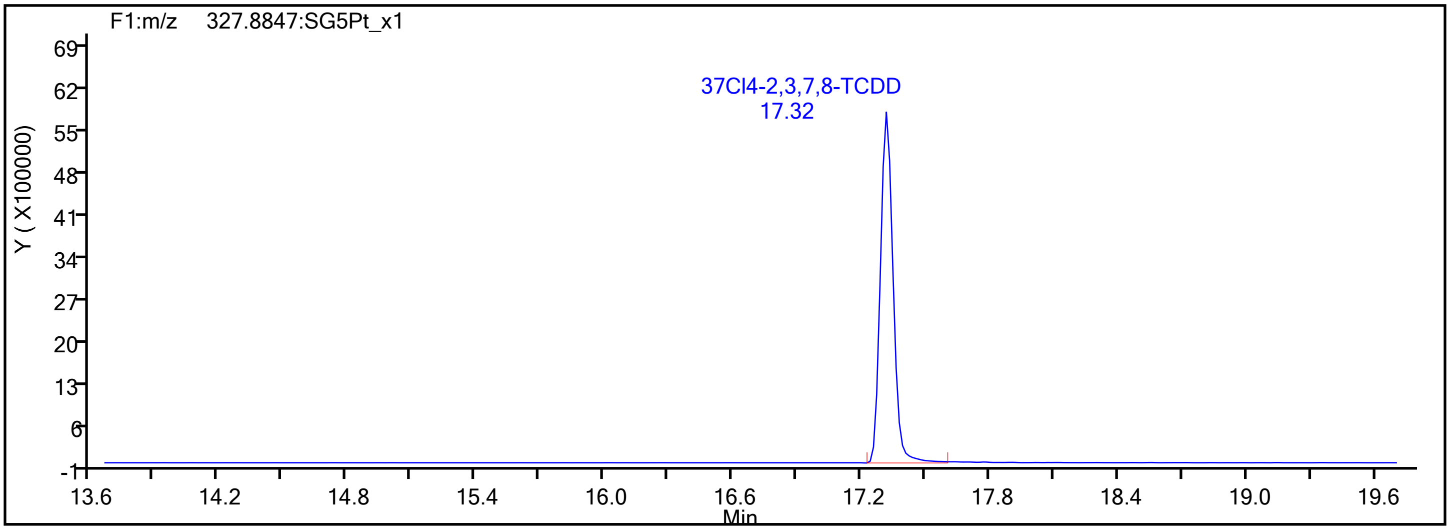

37Cl4-TCDD Standards

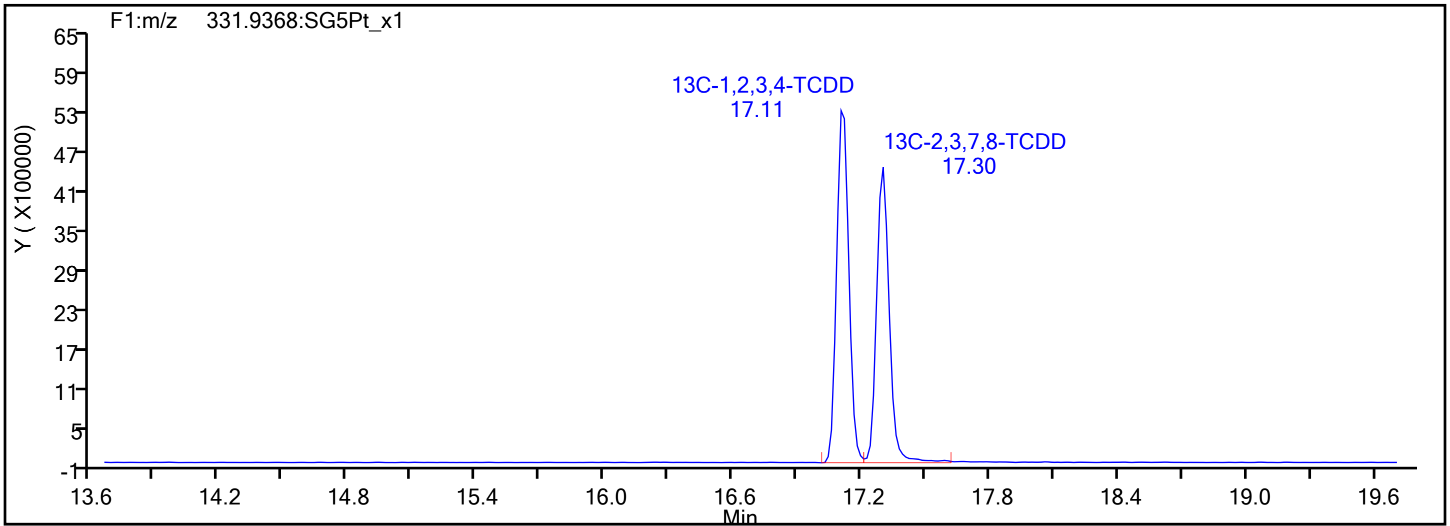

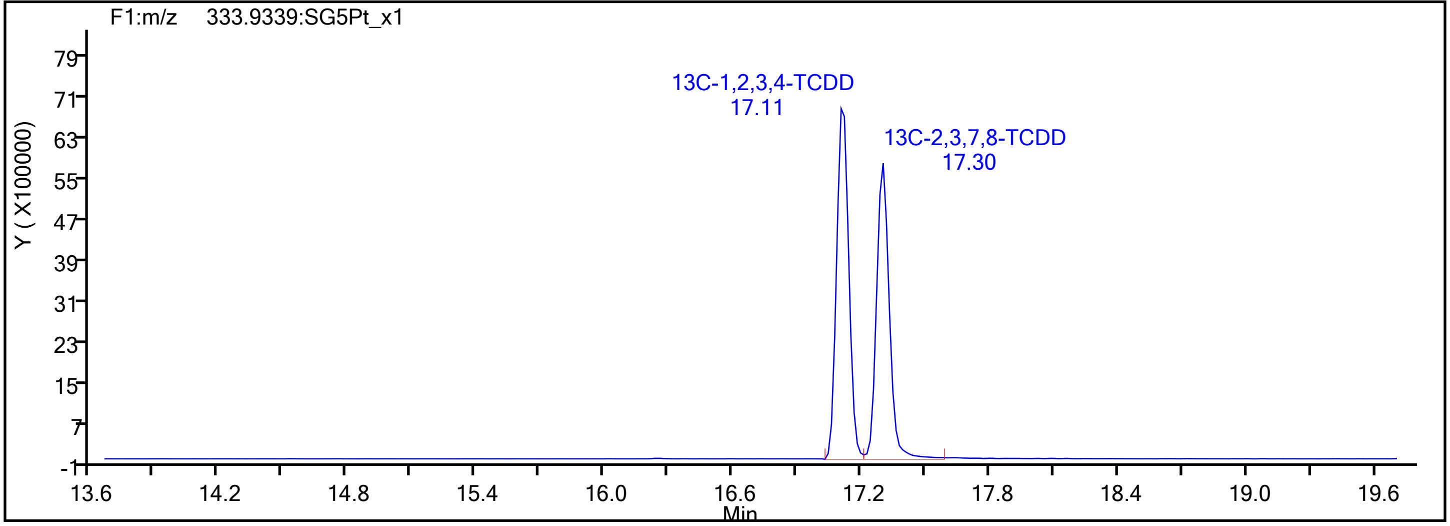

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

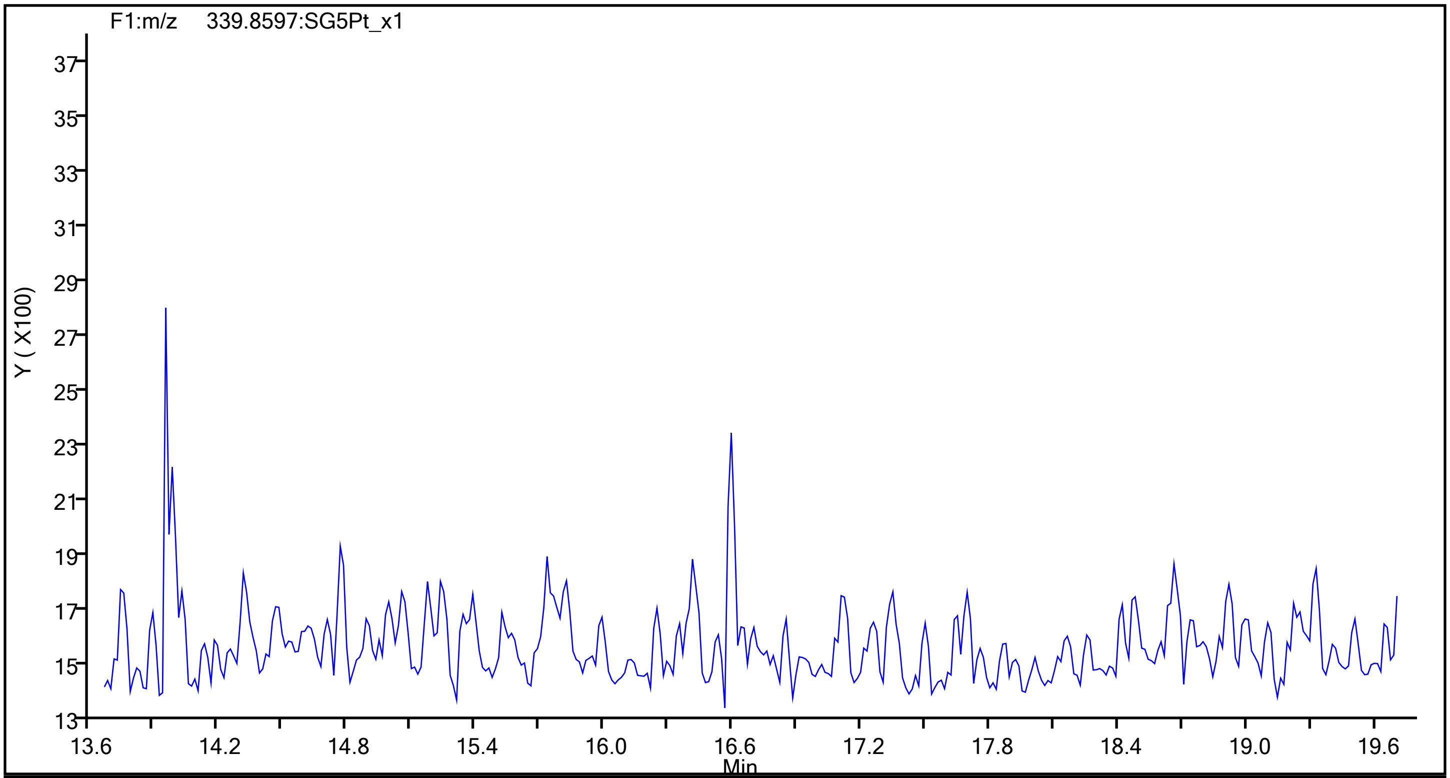

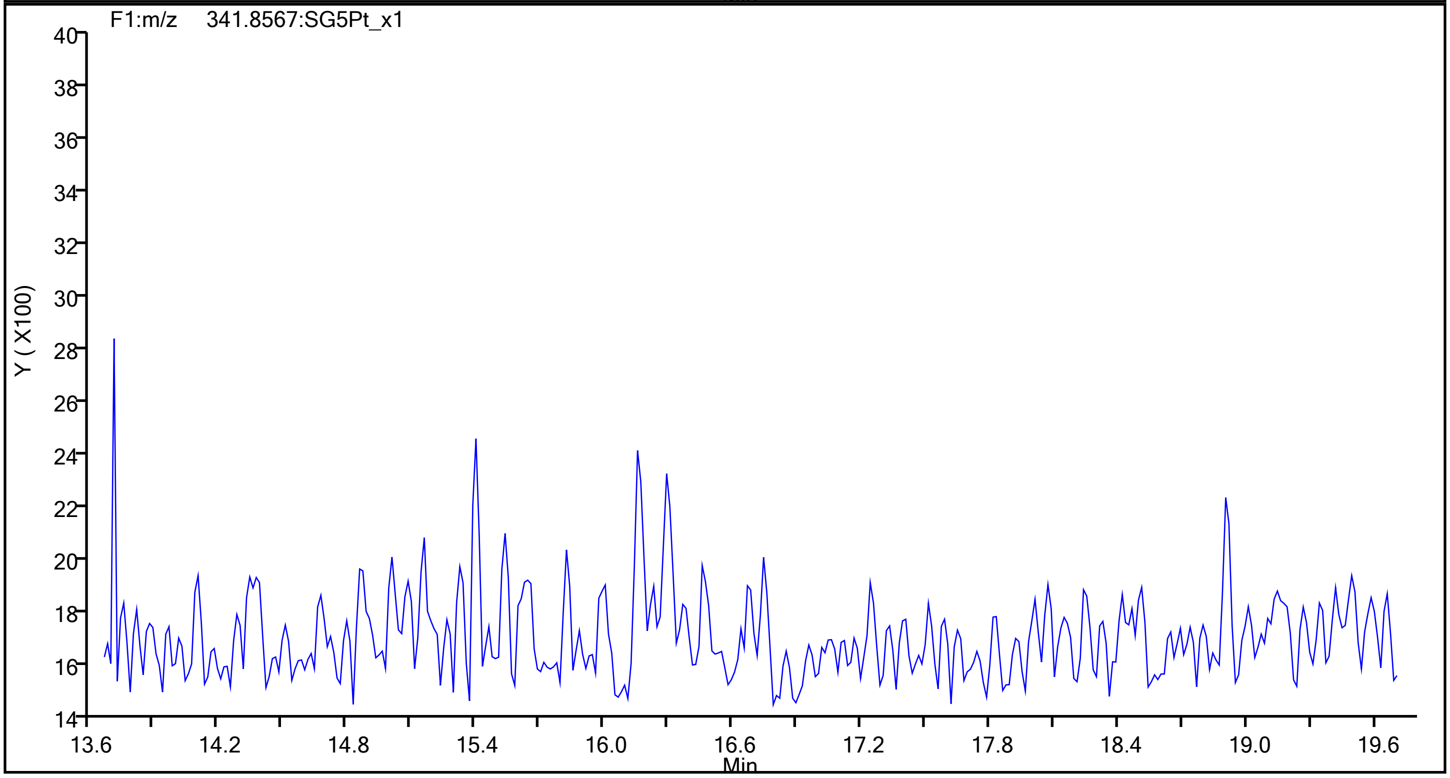

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d		
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

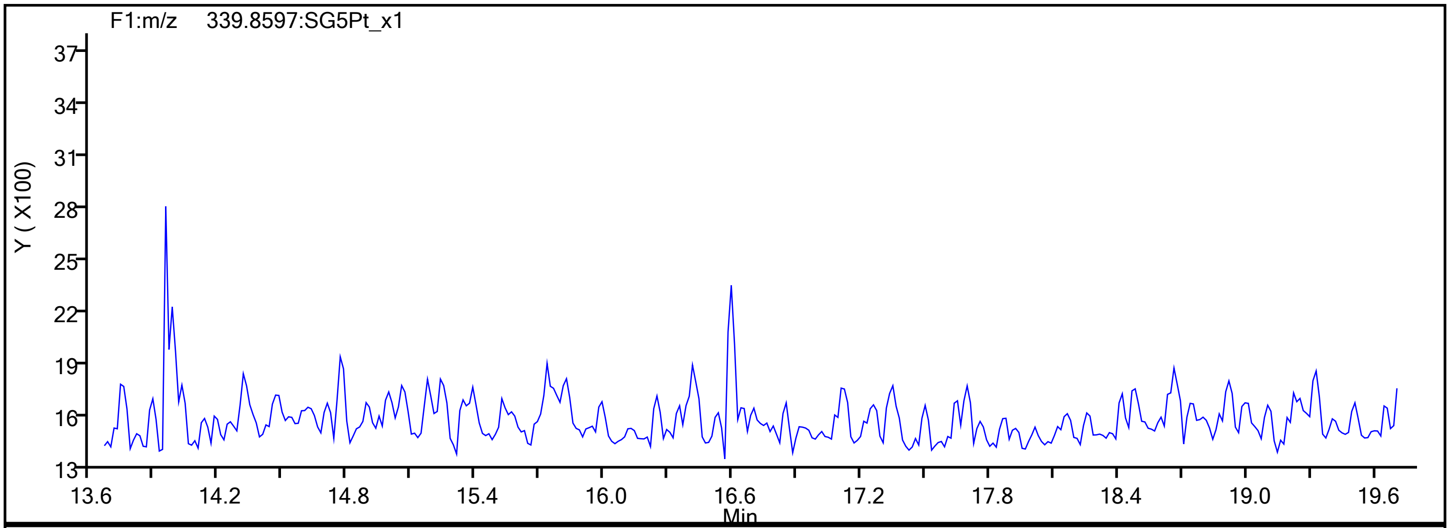

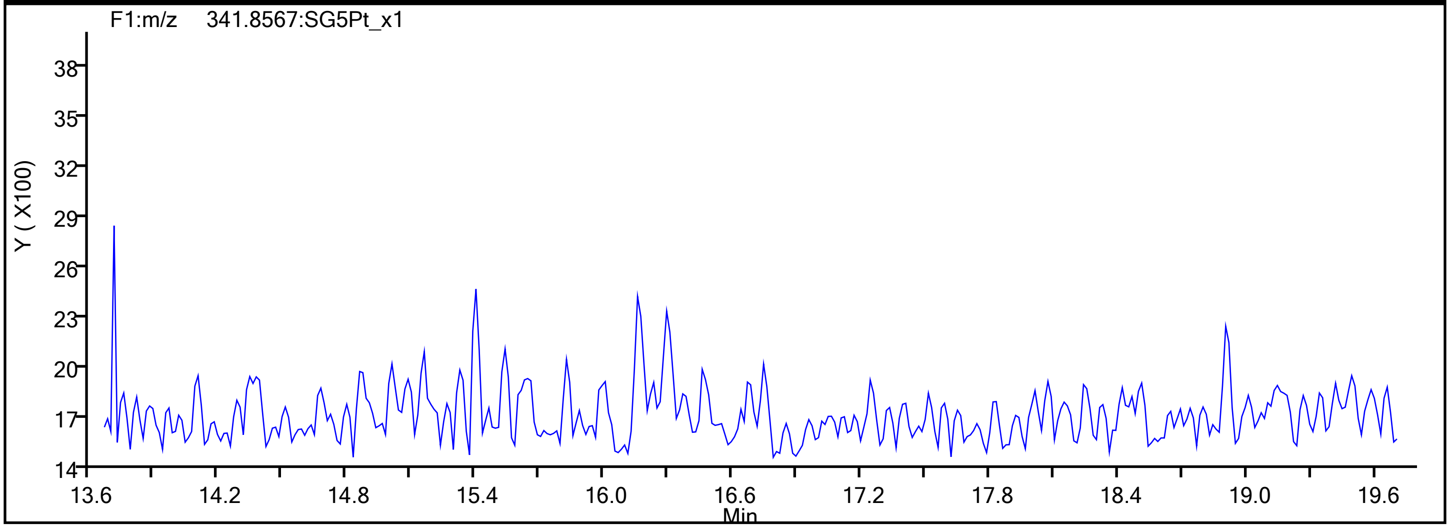

F1 PeCDFs Interference Mass

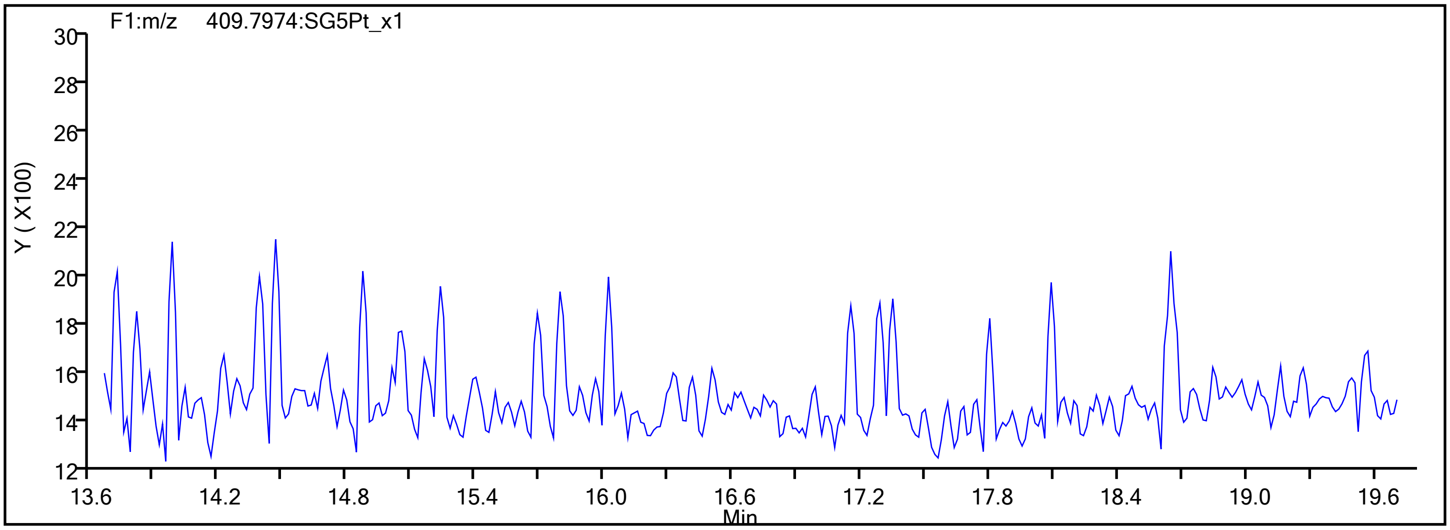

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Eurofins TestAmerica, Sacramento

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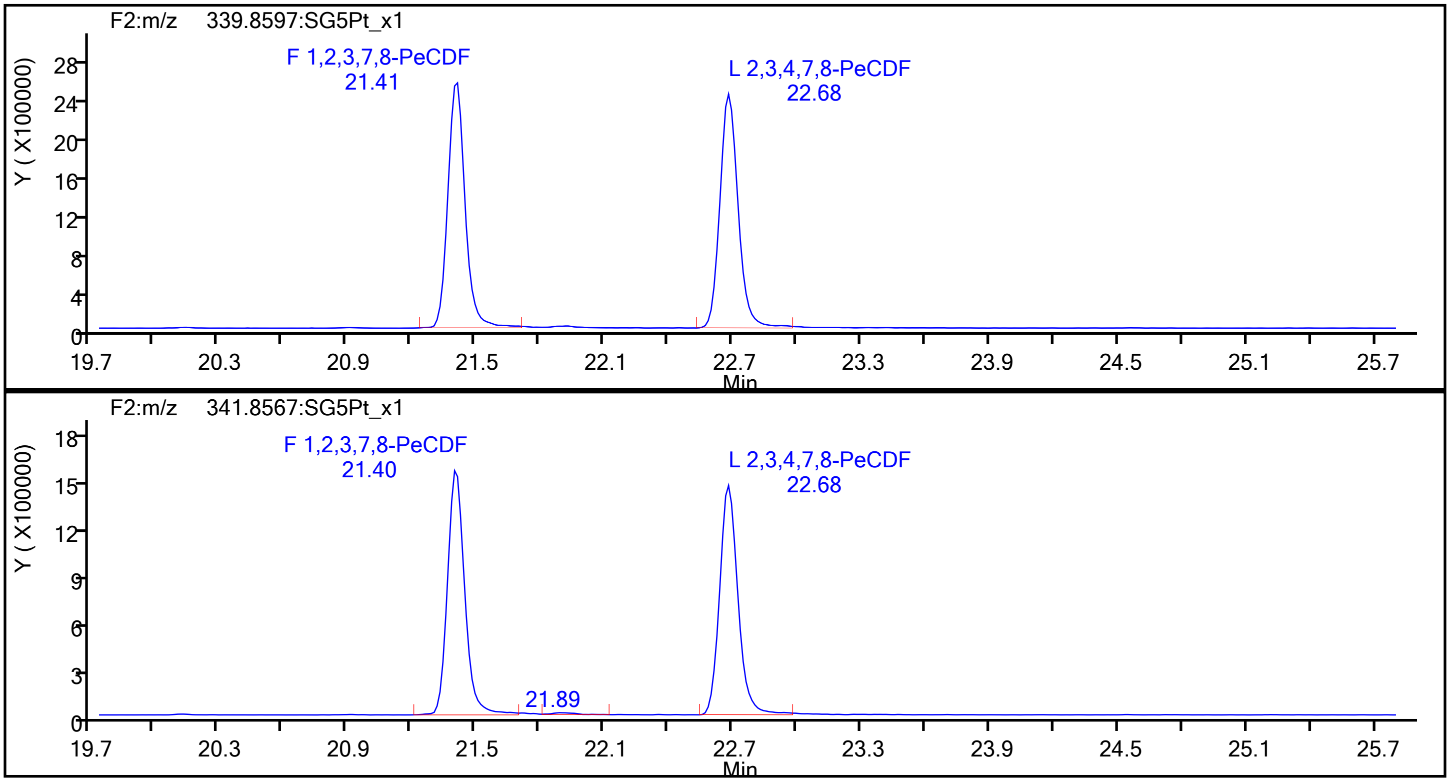

PeCDF Standards

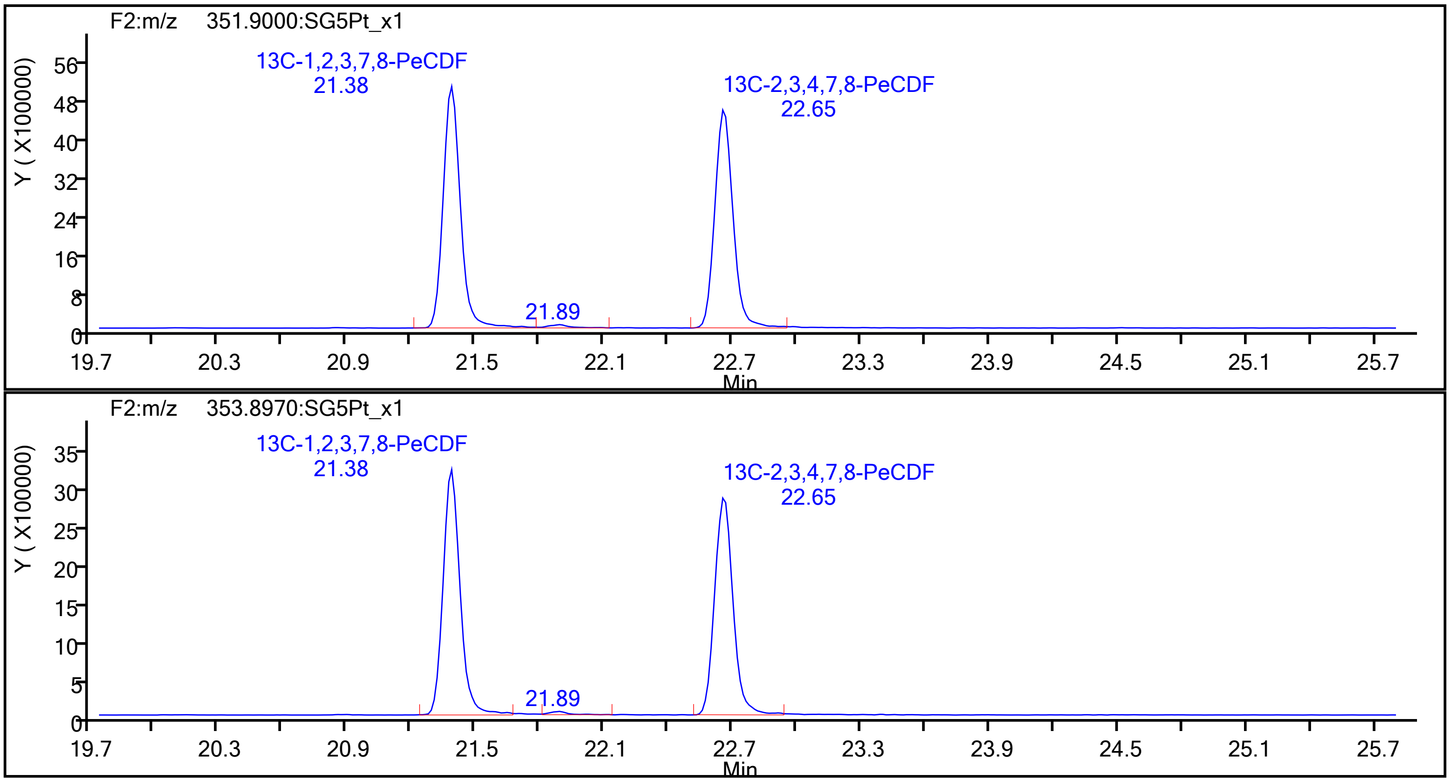

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Eurofins TestAmerica, Sacramento

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PeCDF

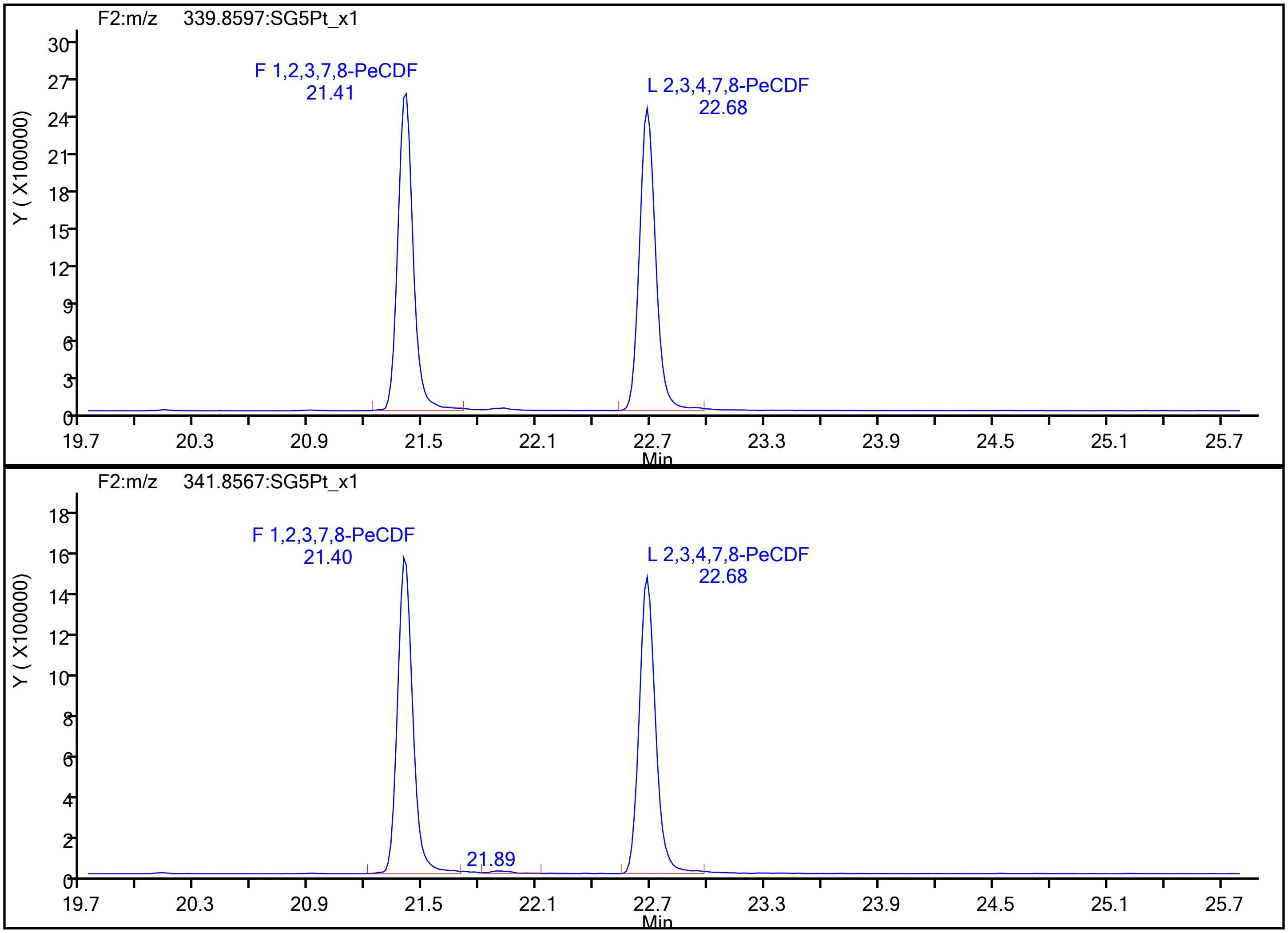

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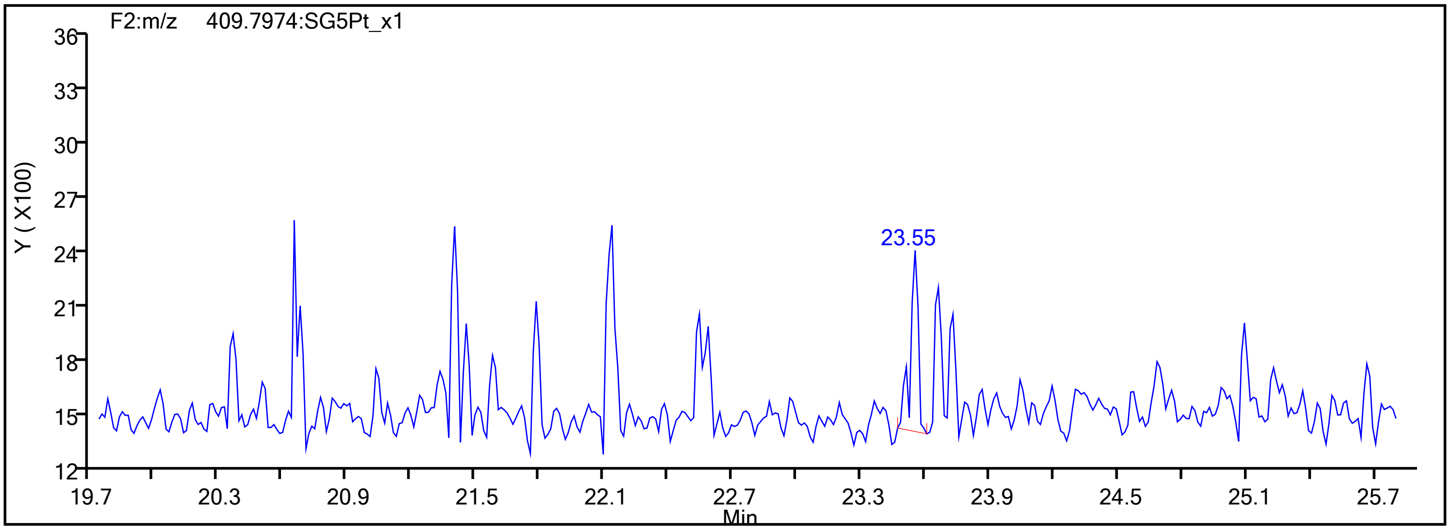

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

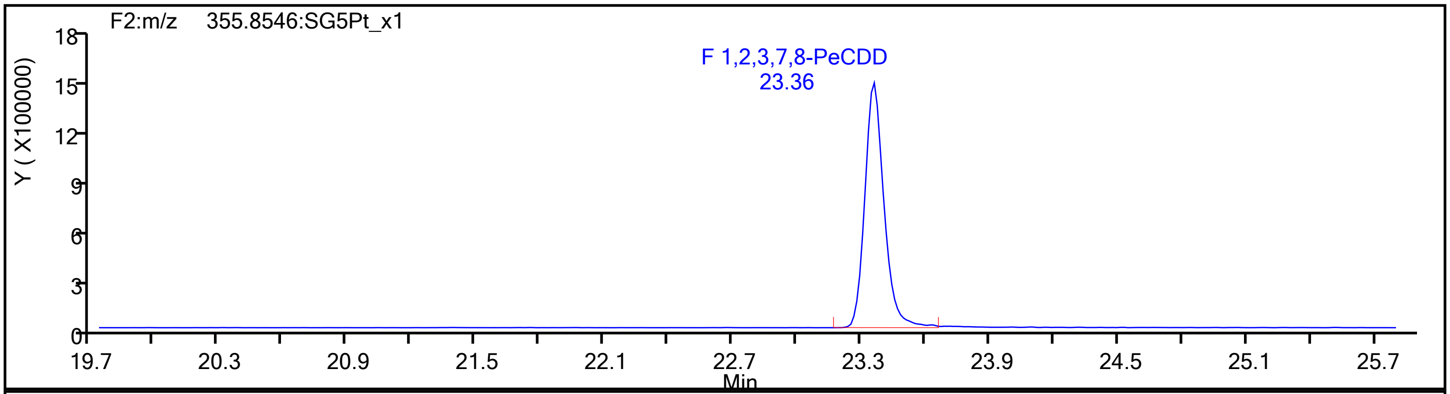

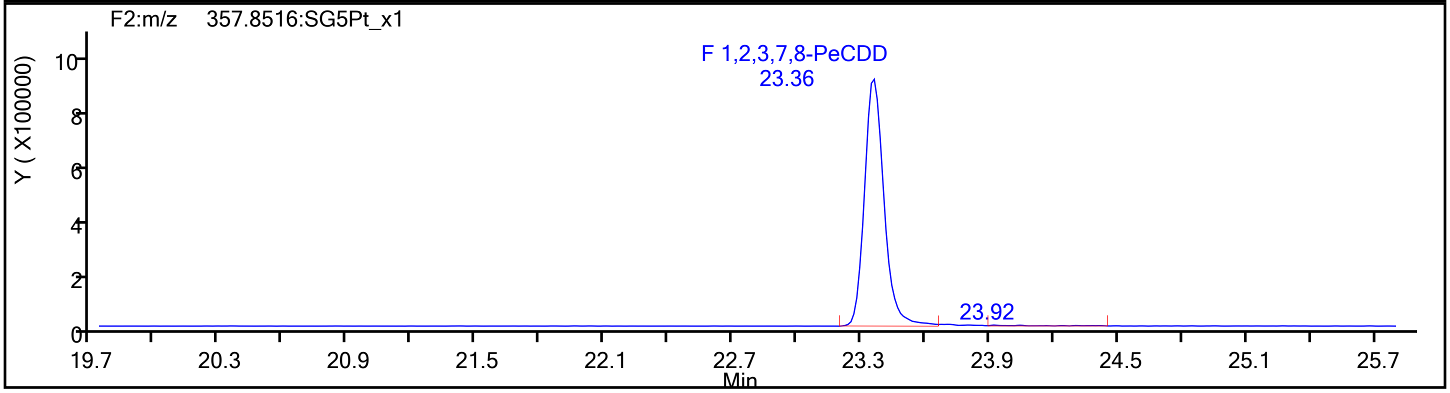

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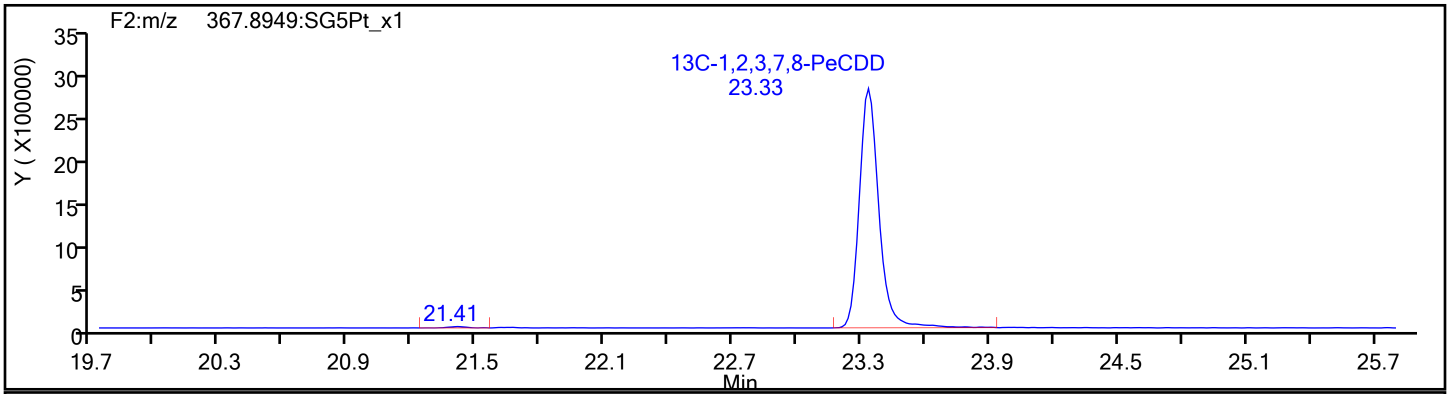

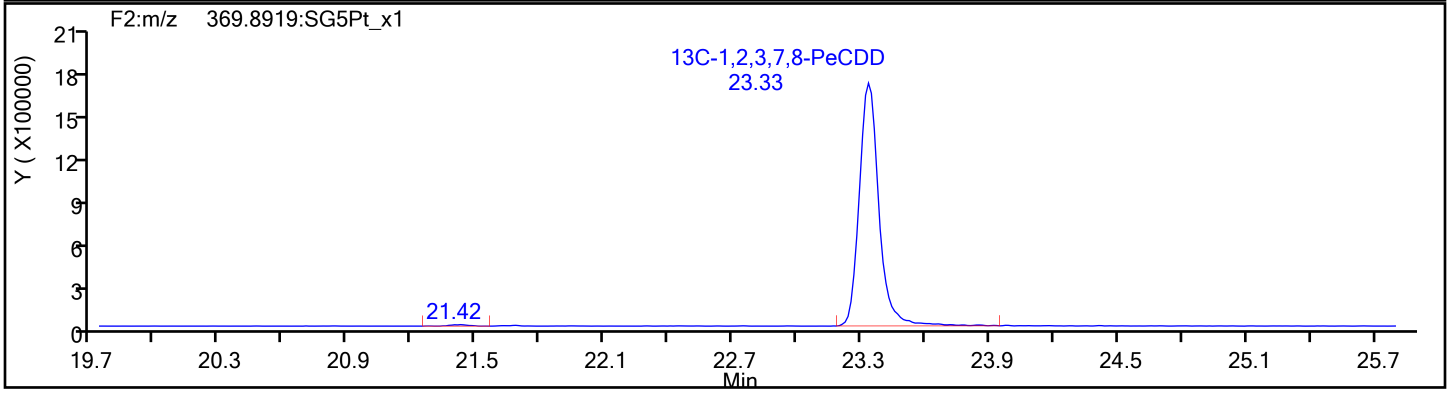

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Eurofins TestAmerica, Sacramento

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HxCDF

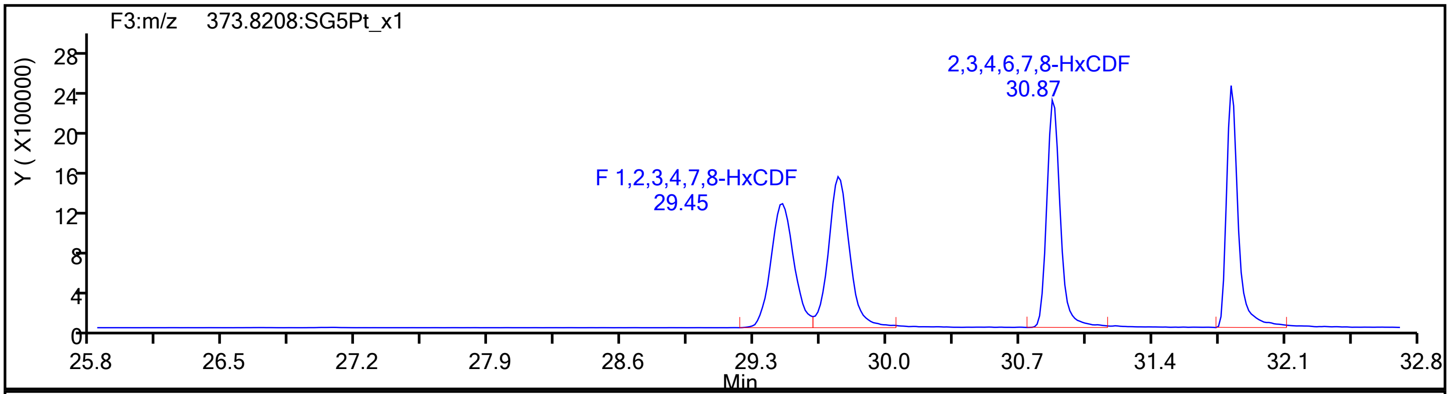

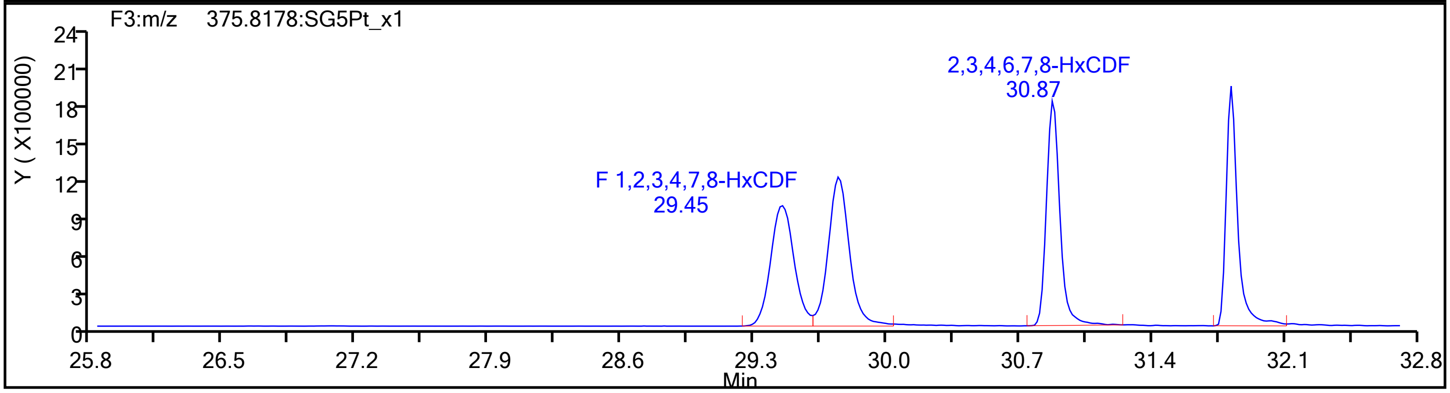

HxCDF Standards

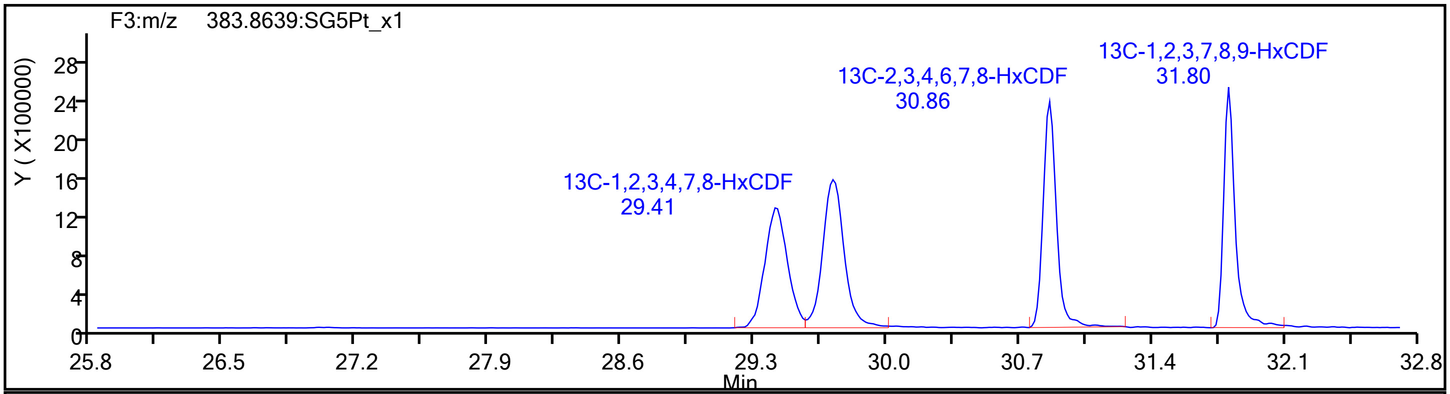

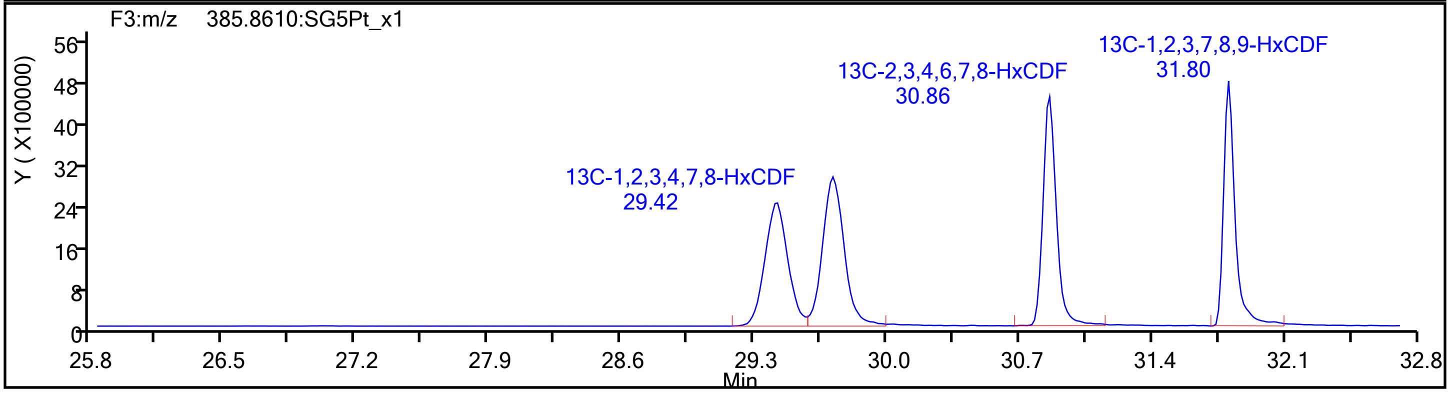

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Eurofins TestAmerica, Sacramento

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HxCDF

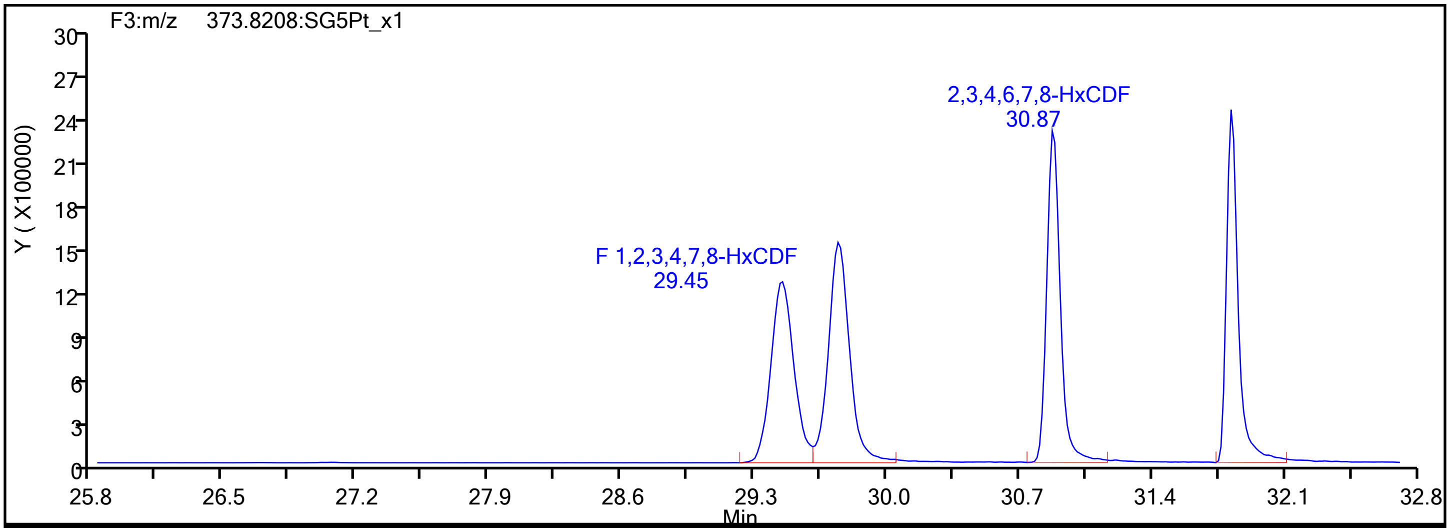

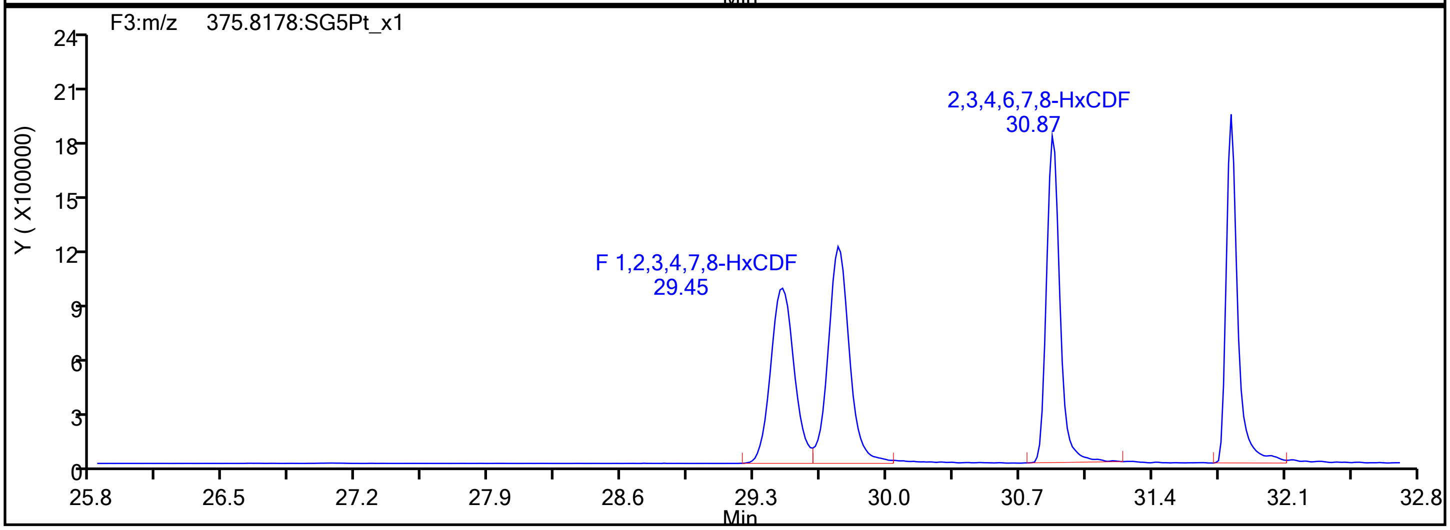

HxCDF Interference Mass

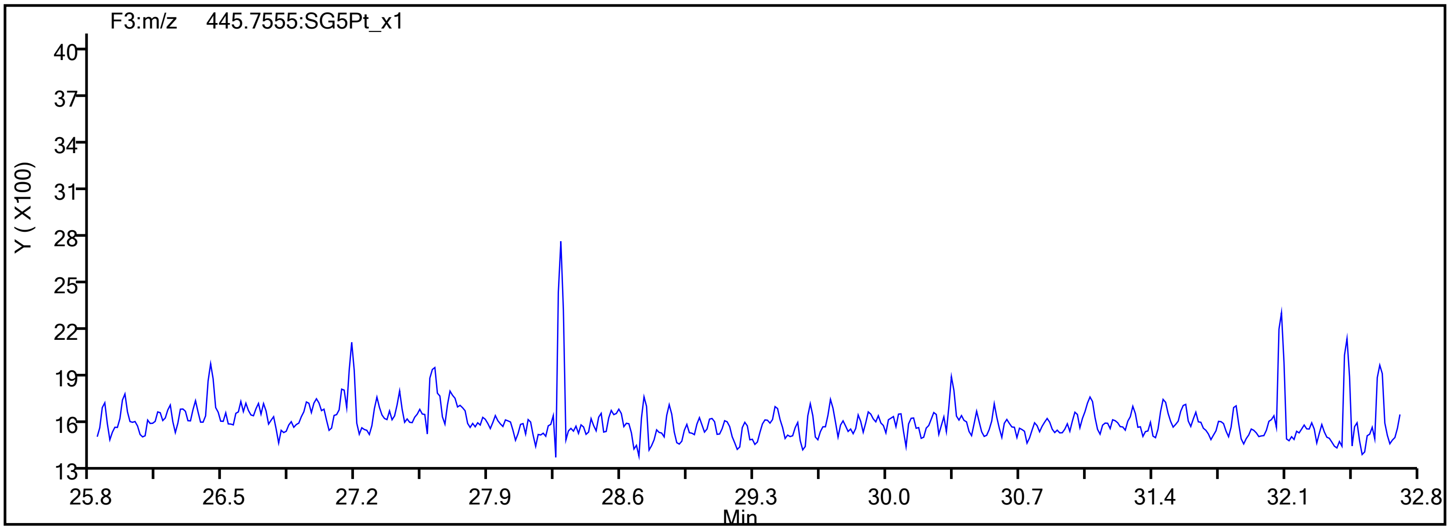

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
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Column Dia: 0.32 mm

HxCDD

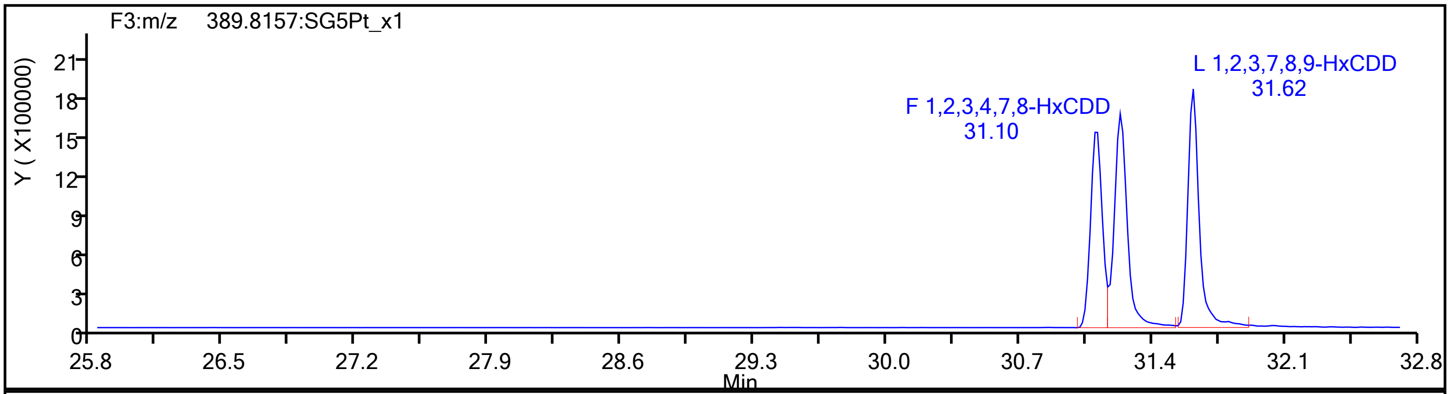

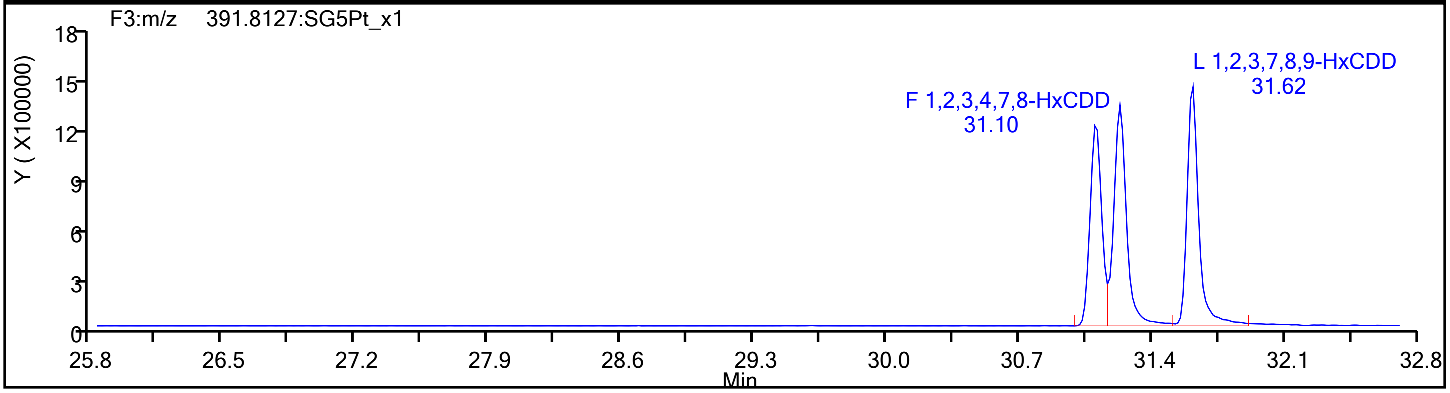

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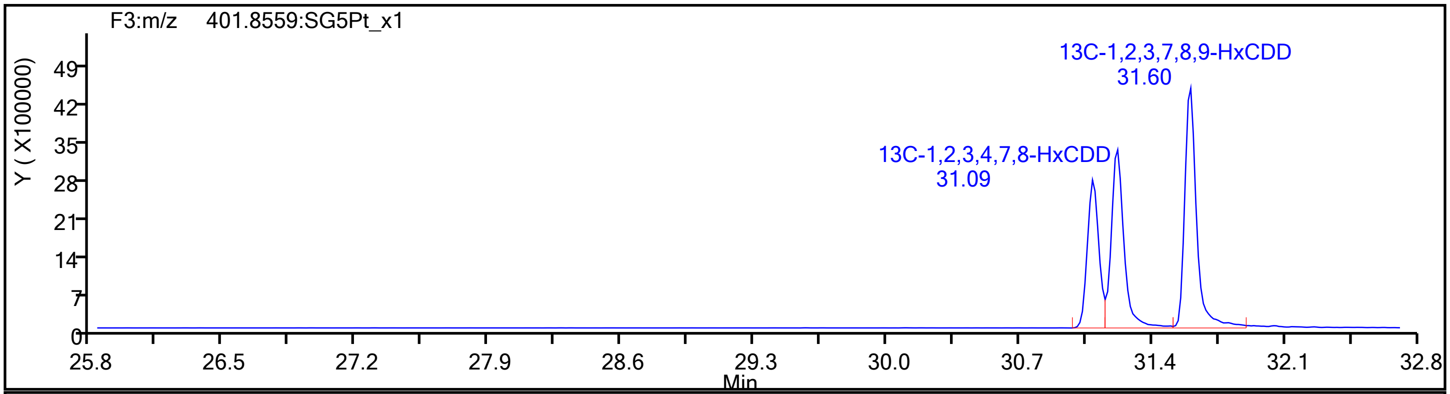

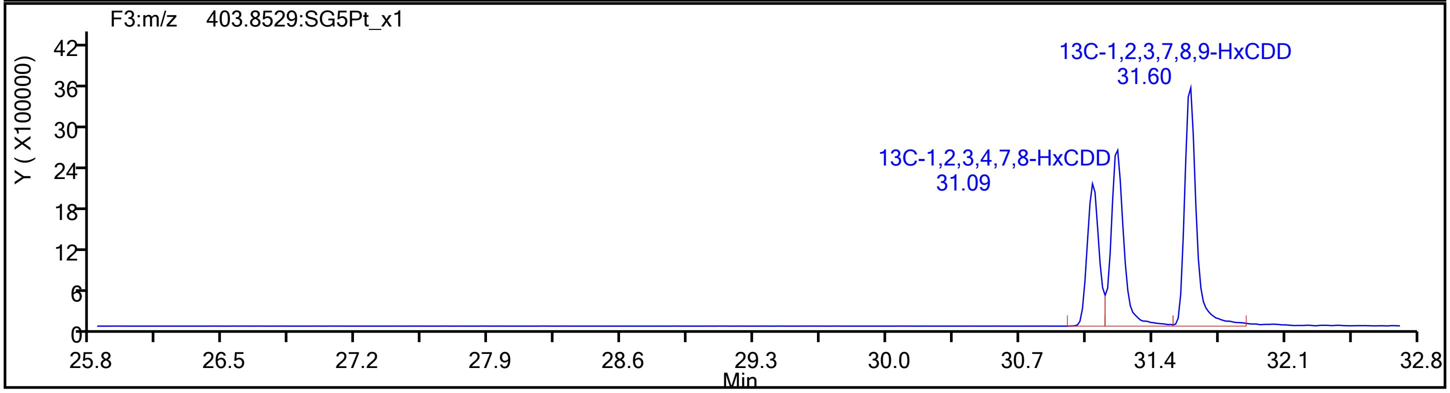

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Eurofins TestAmerica, Sacramento

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HpCDF

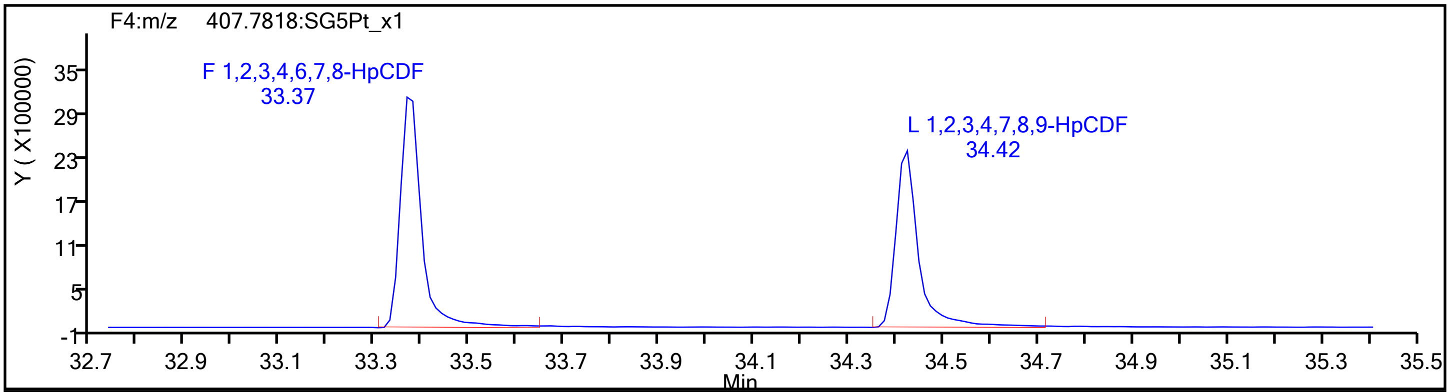

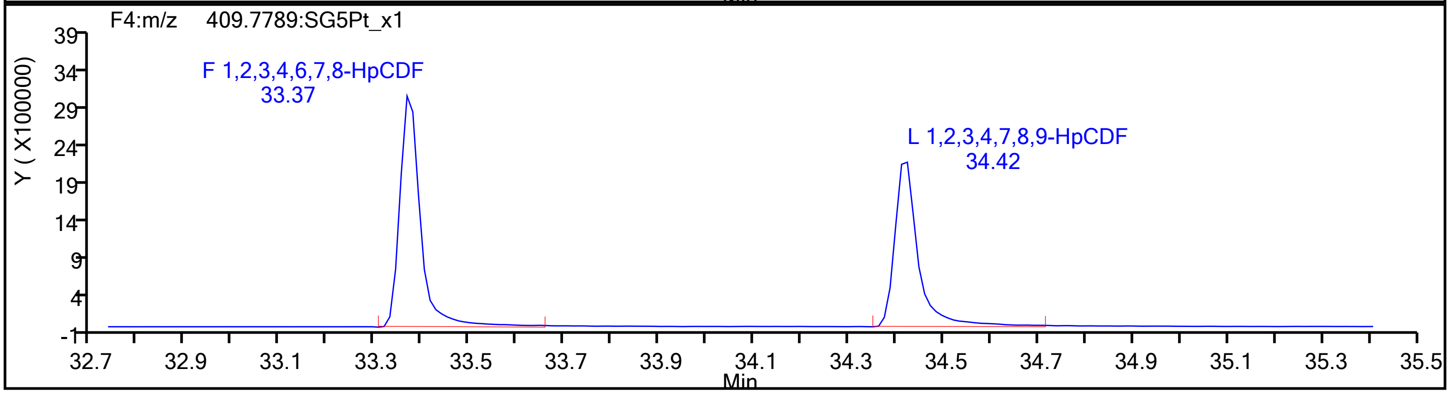

HpCDF Standards

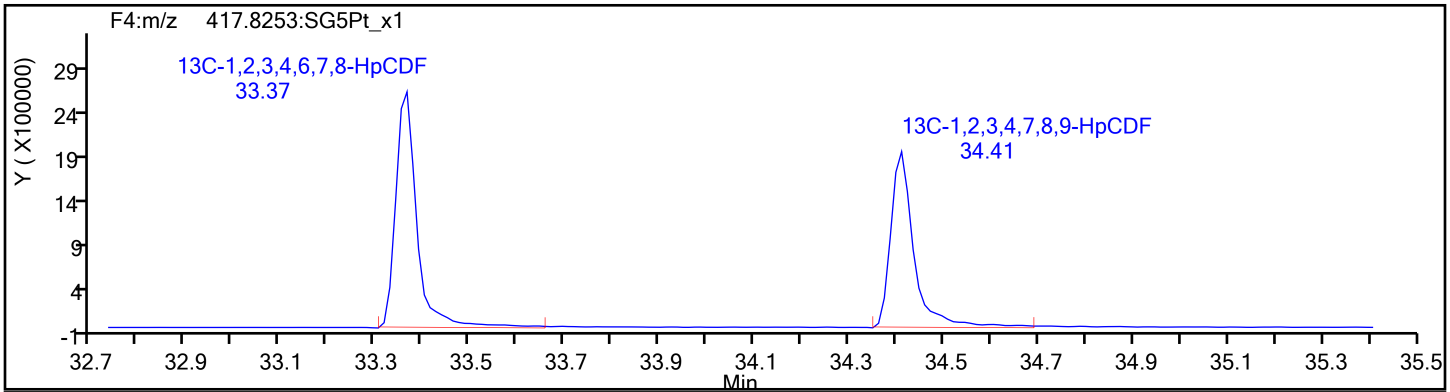

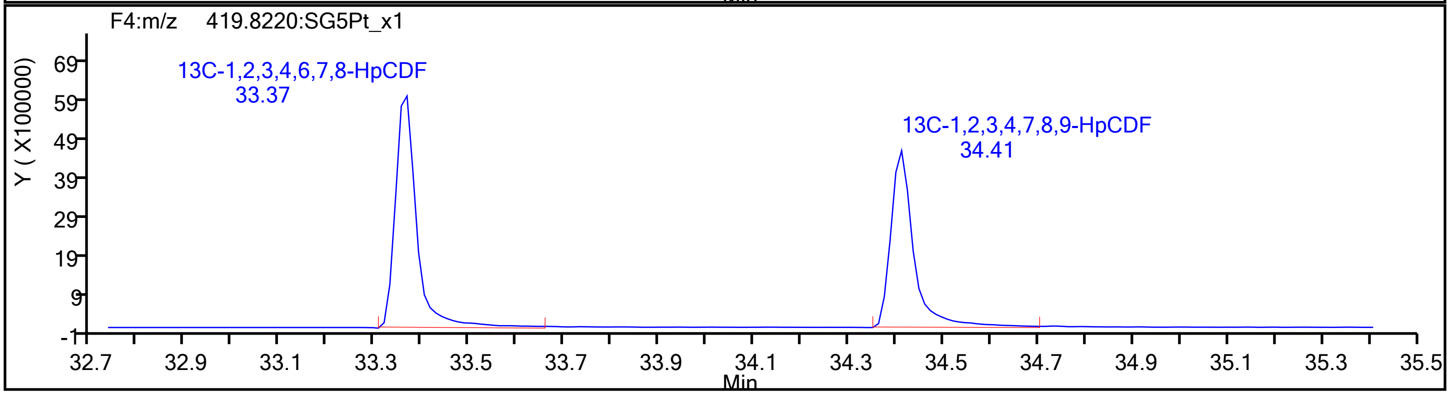

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Eurofins TestAmerica, Sacramento

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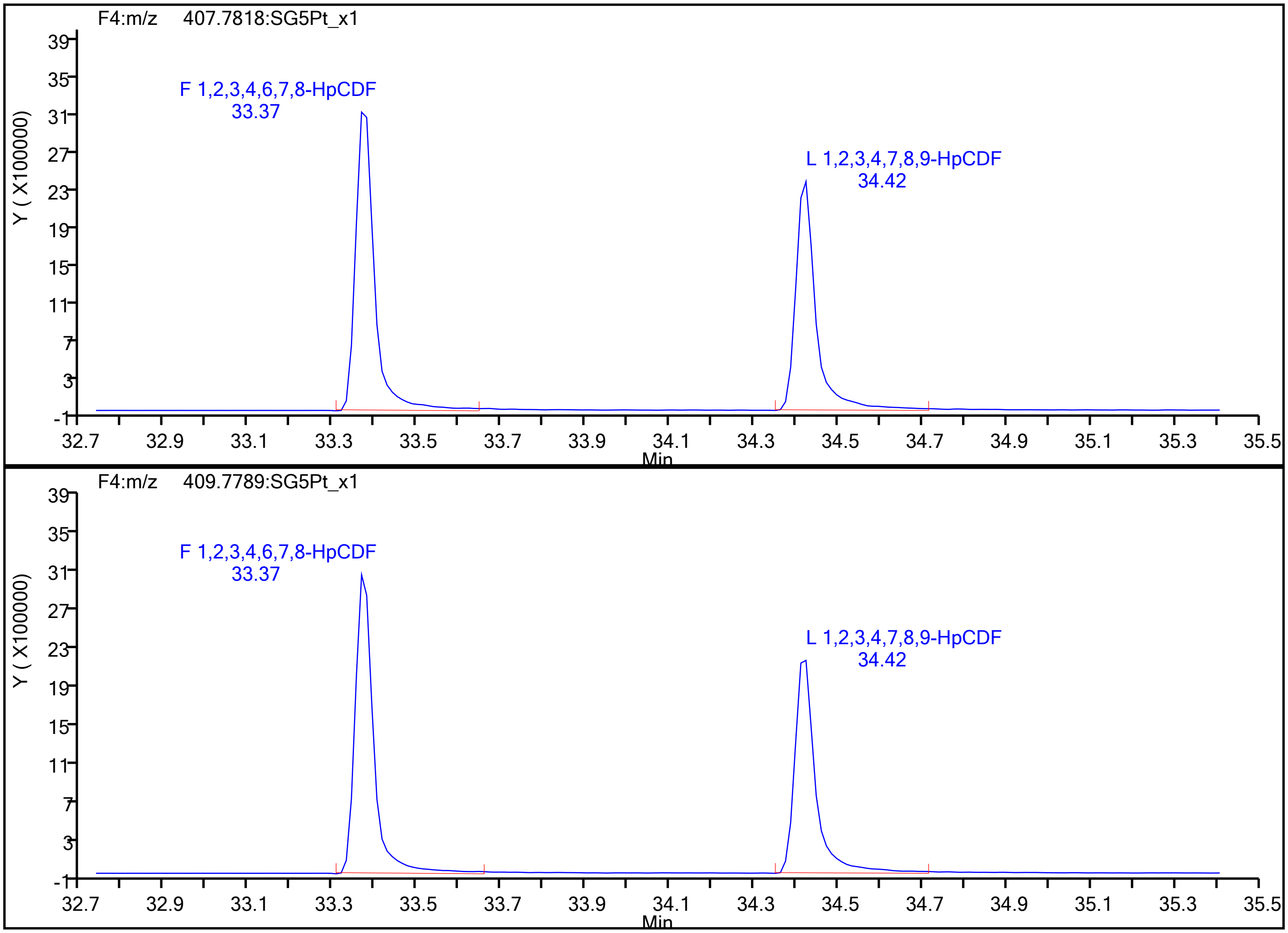

HpCDF Interference Mass

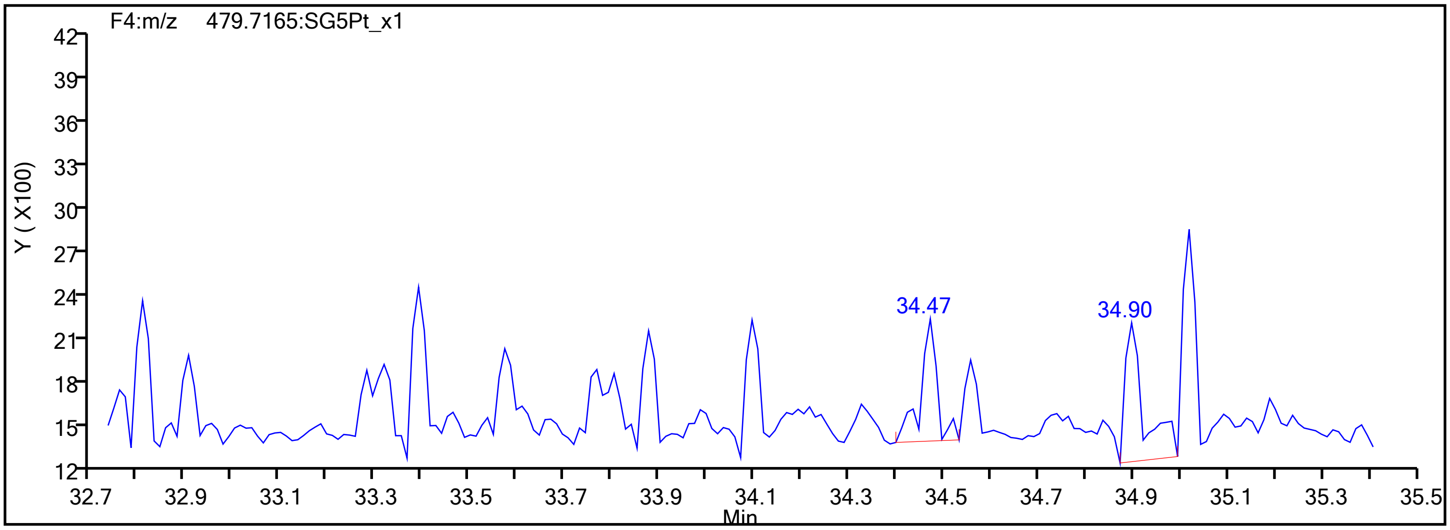

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Eurofins TestAmerica, Sacramento

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HpCDD

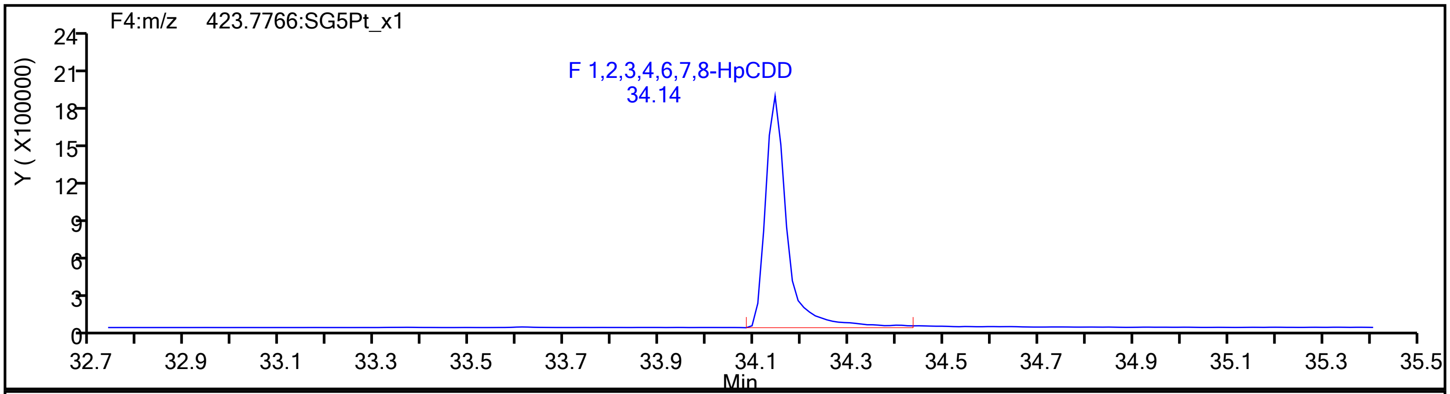

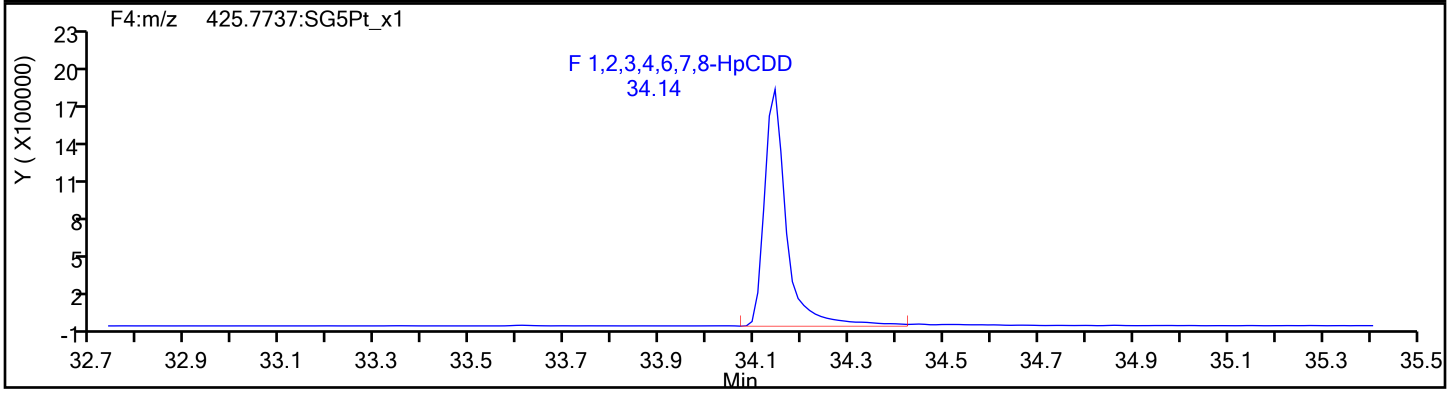

HpCDD Standards

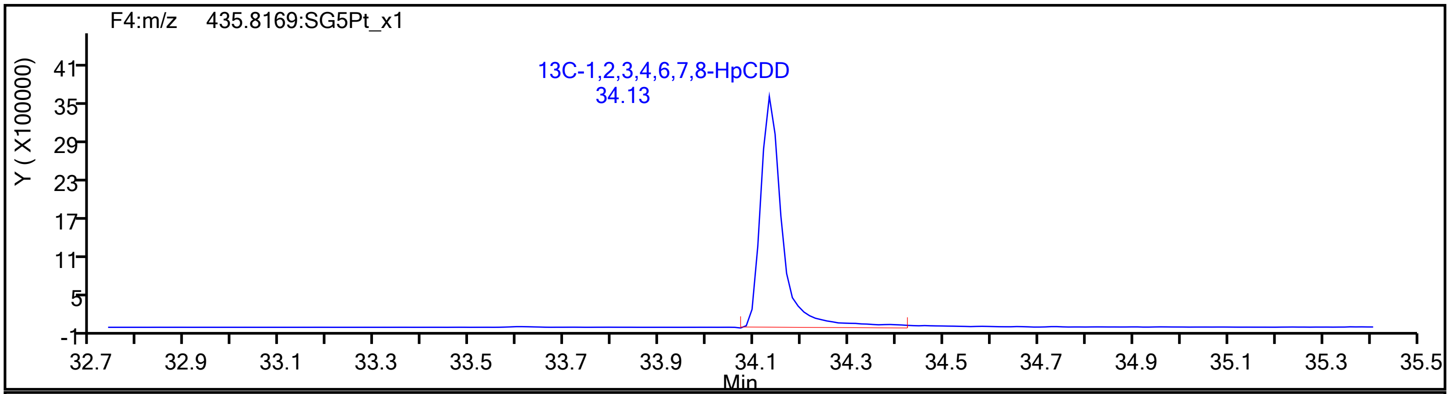

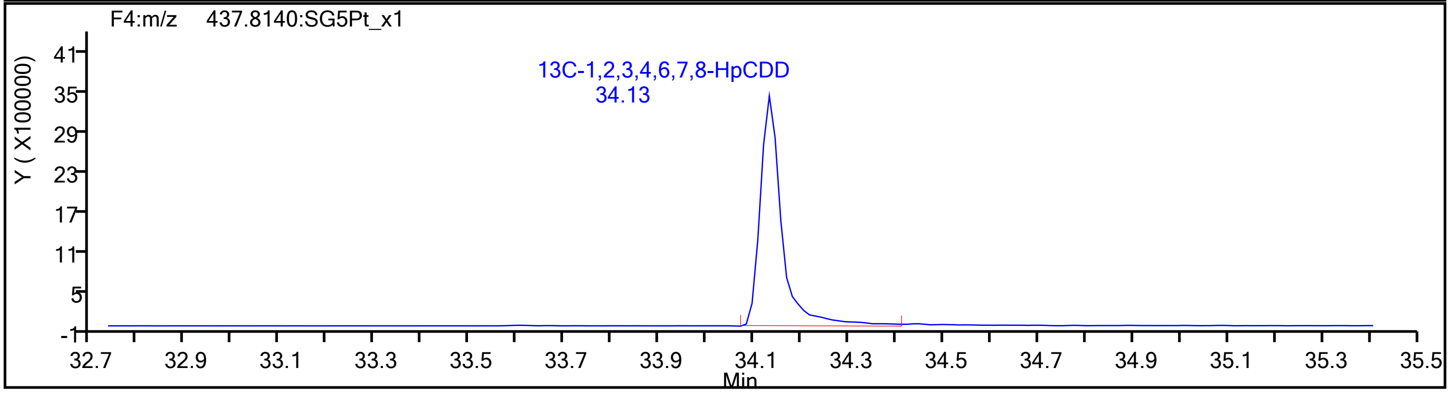

Report Date: 14-Oct-2020 13:14:02
Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d		
Injection Date:	13-Oct-2020 01:24:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

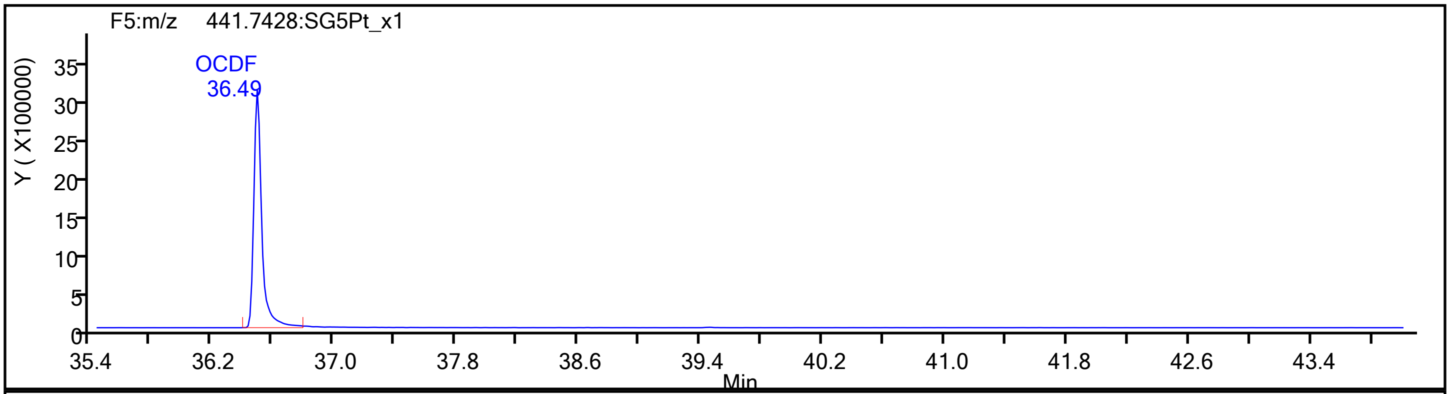

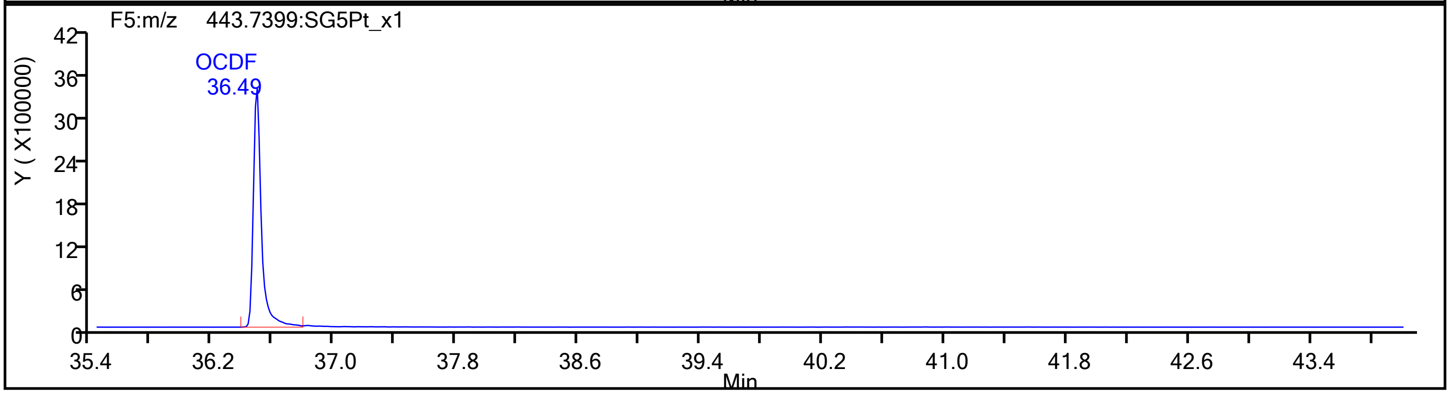

OCDF Standards

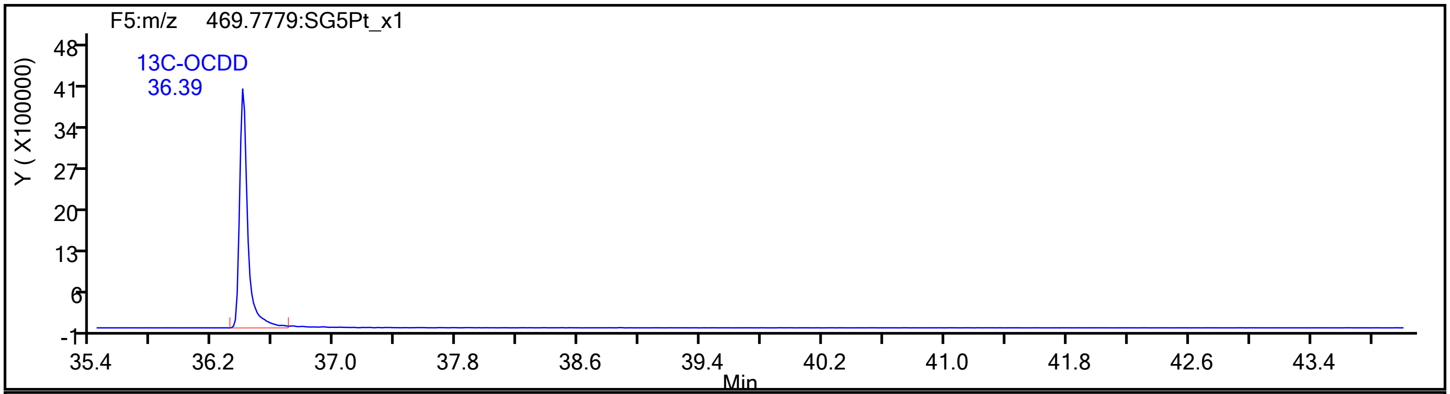

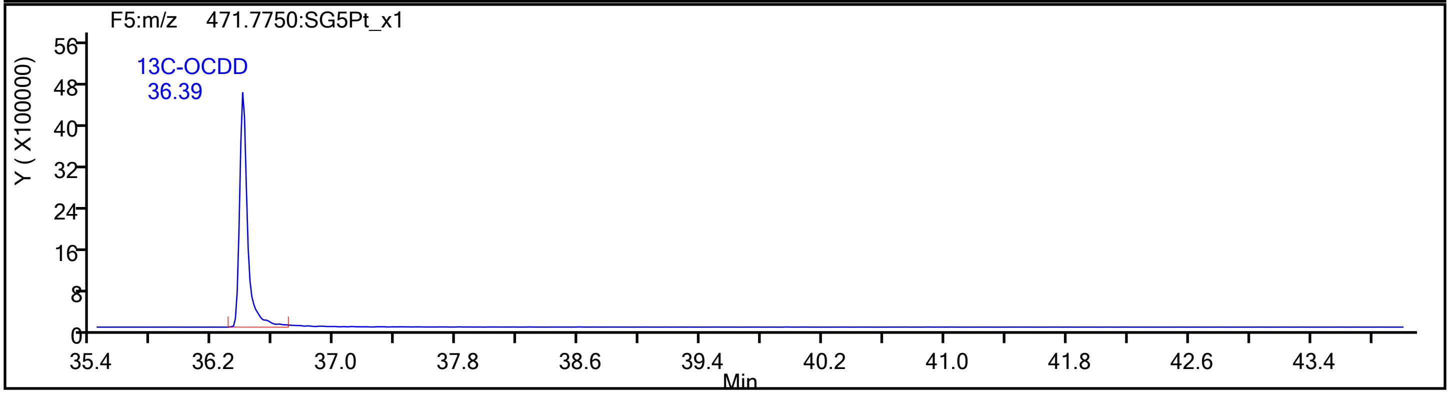

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d

Injection Date:	13-Oct-2020 01:24:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

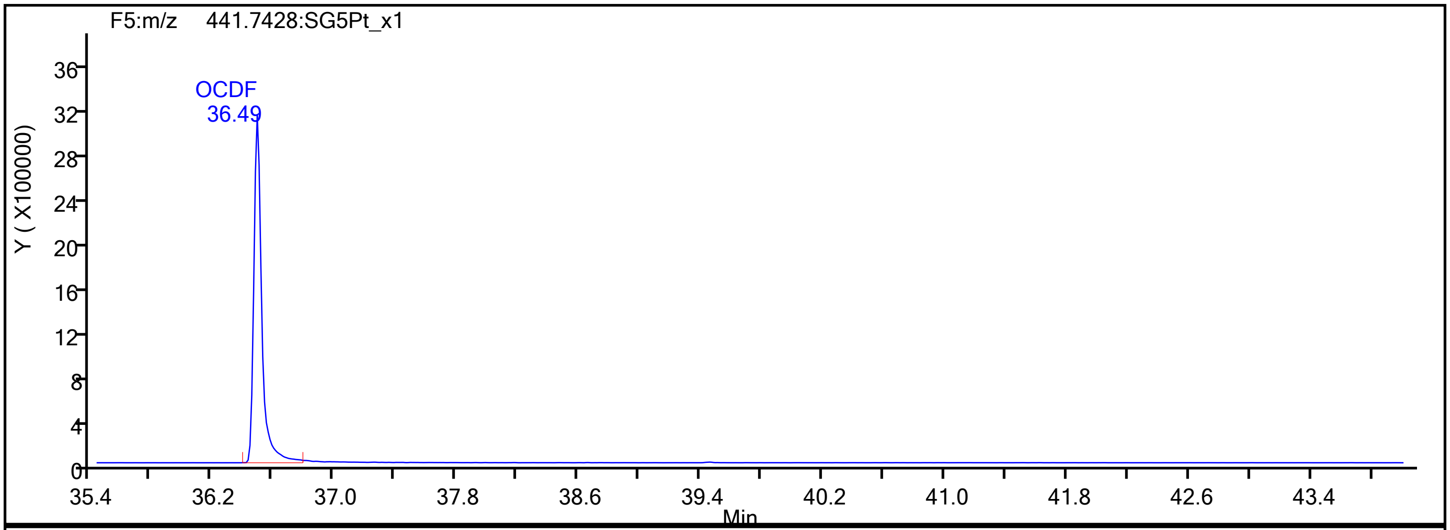

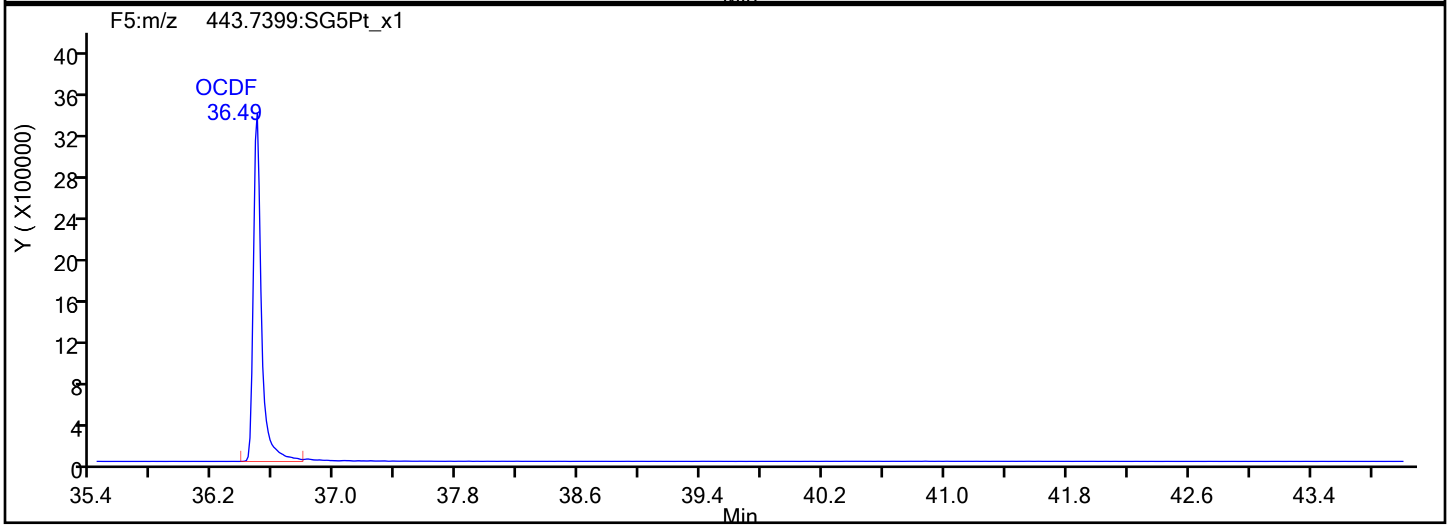

OCDF Interference Mass

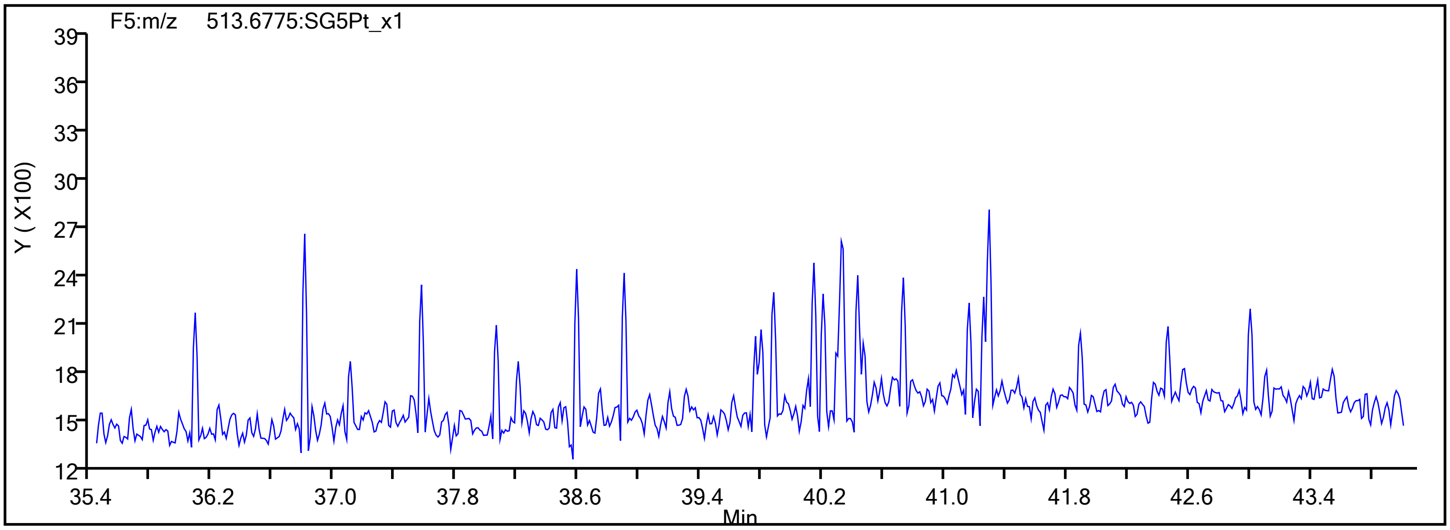

Report Date: 14-Oct-2020 13:14:02 Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d

Injection Date: 13-Oct-2020 01:24:26
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

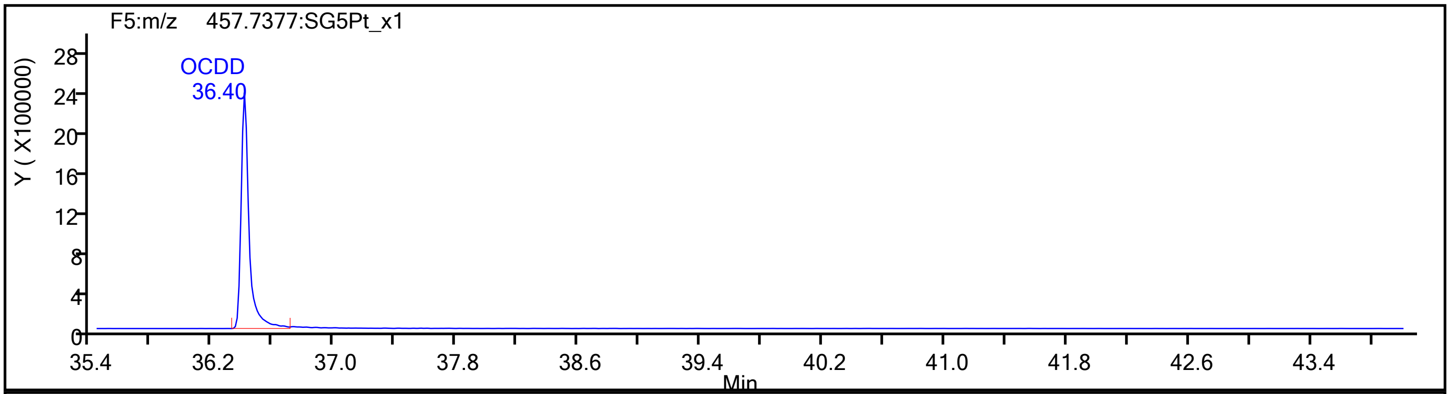

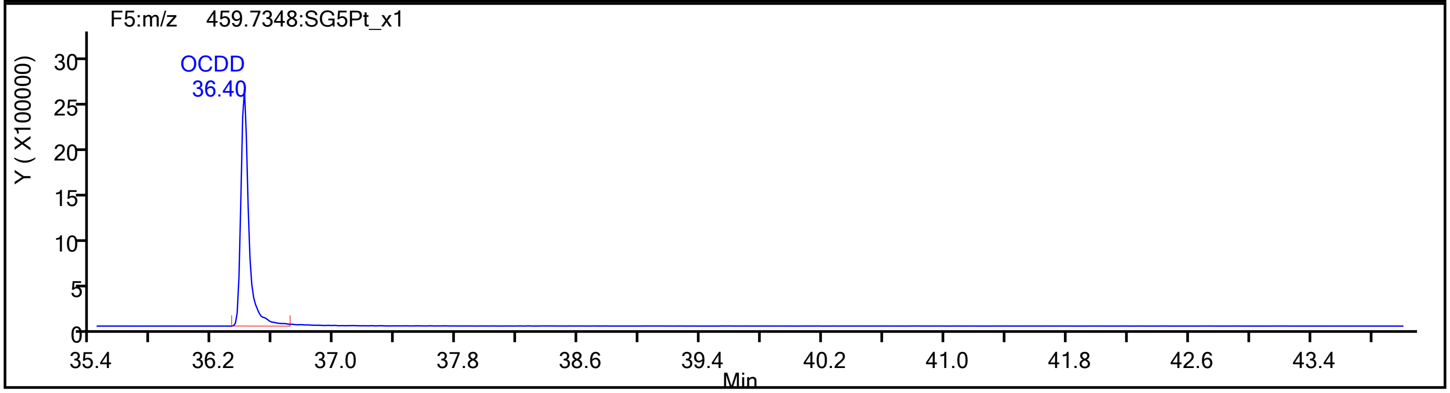

OCDD Standards

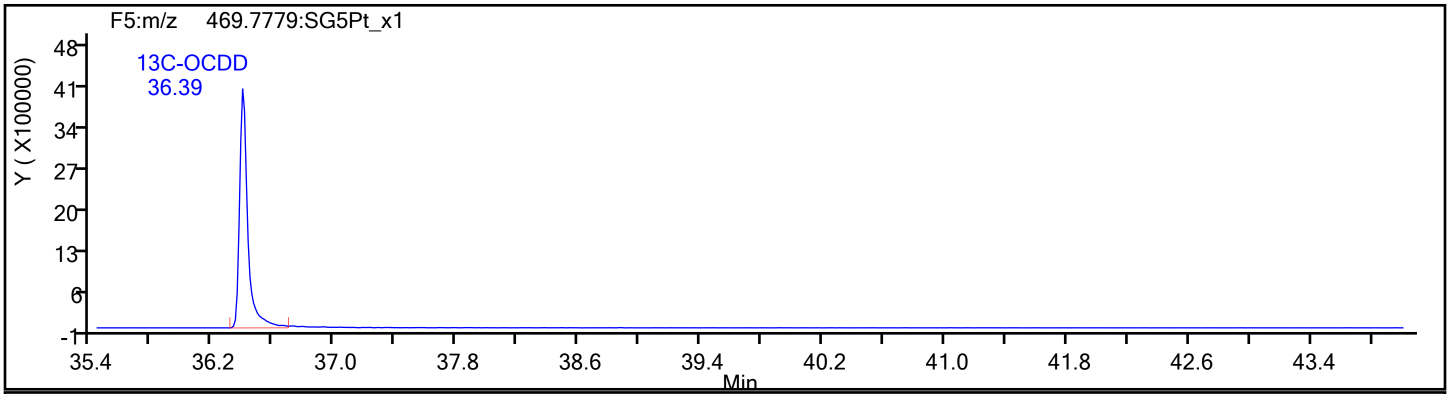

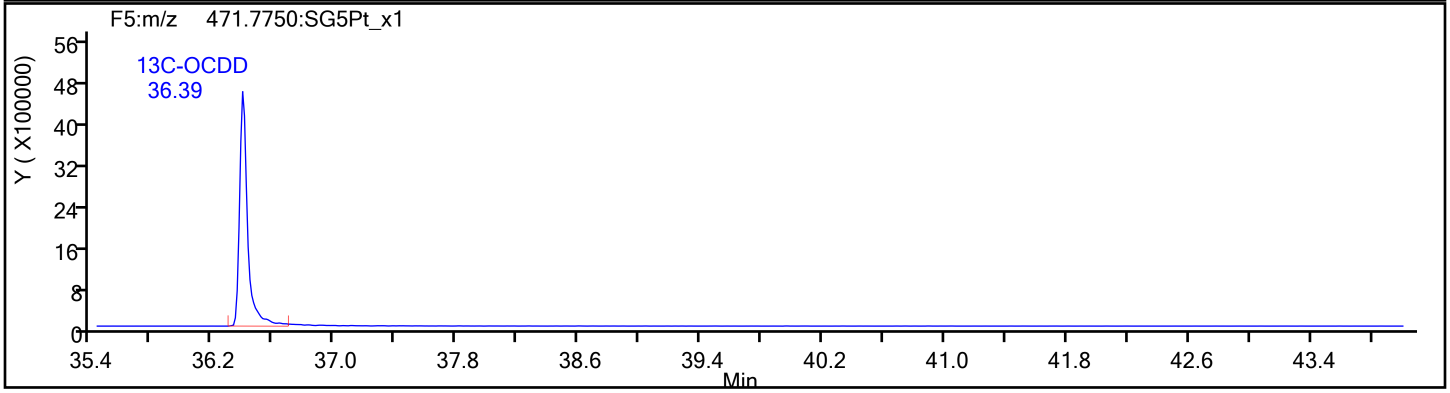

Report Date: 14-Oct-2020 13:14:02   Chrom Revision: 2.3 13-Oct-2020 12:07:44

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d
Injection Date: 13-Oct-2020 01:24:26   Injection Vol: 2.0 ul
Instrument ID: 10D5   Operator ID: ALM
Method: Dioxin_10D5   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 421347   Sample Line#: 6
Column Type: DB-5   Column Dia: 0.32 mm

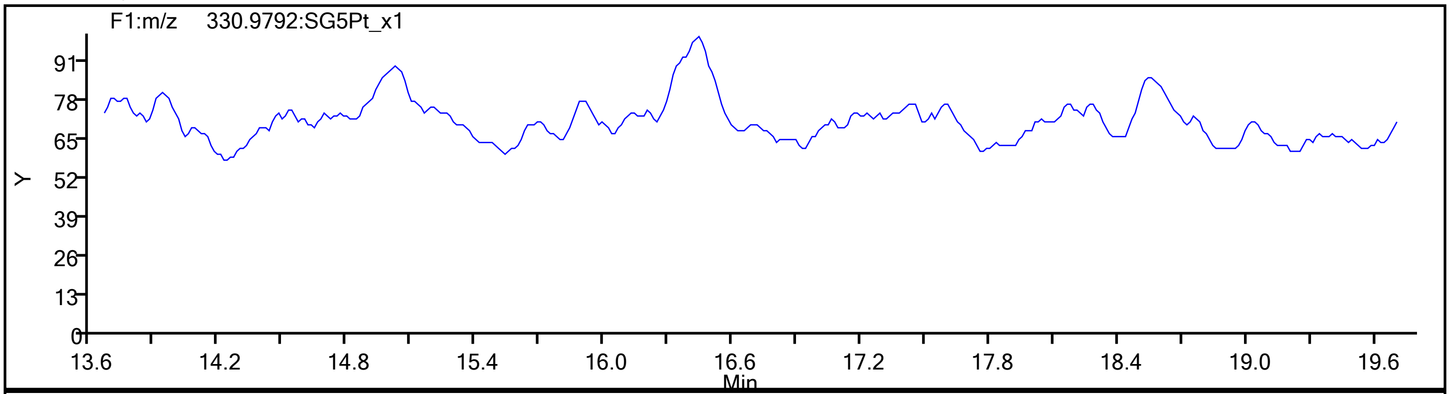

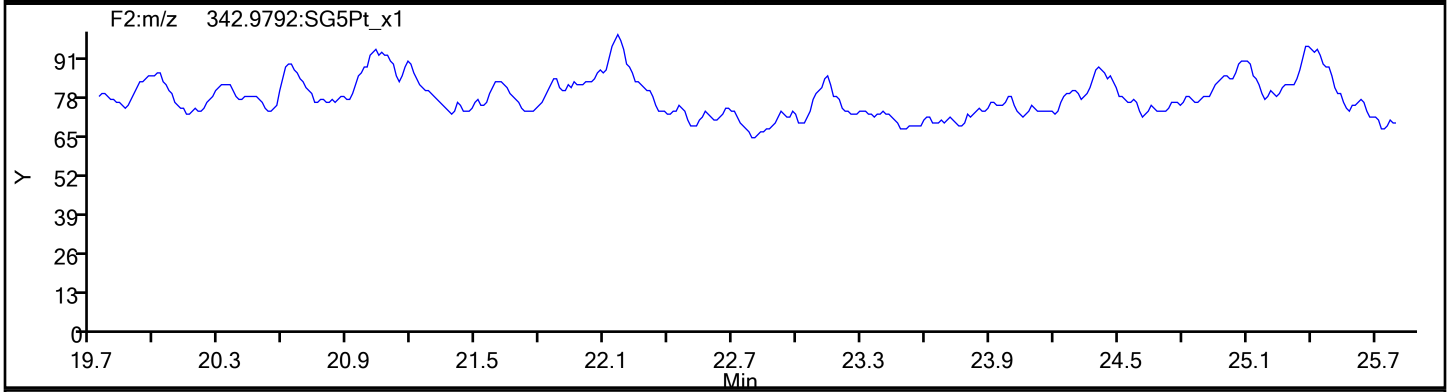

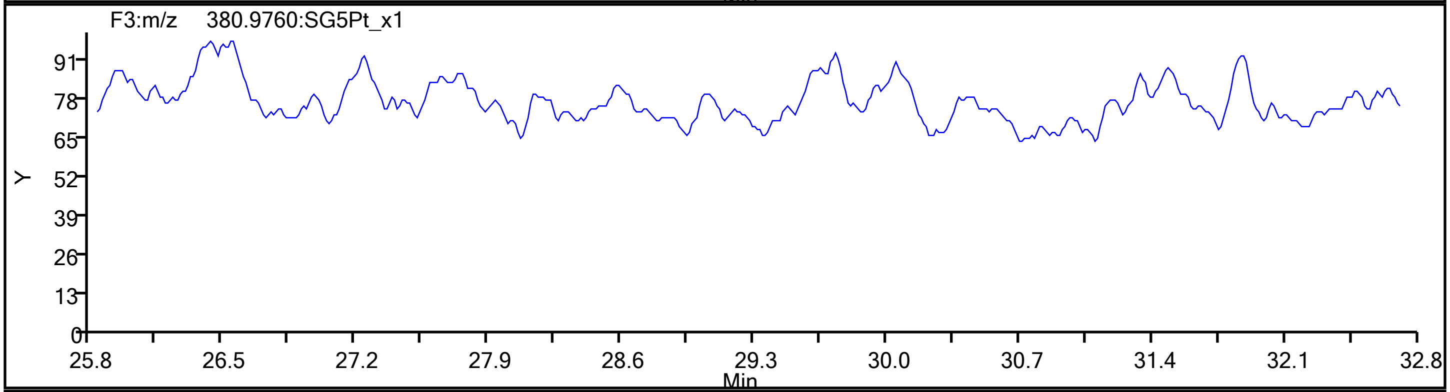

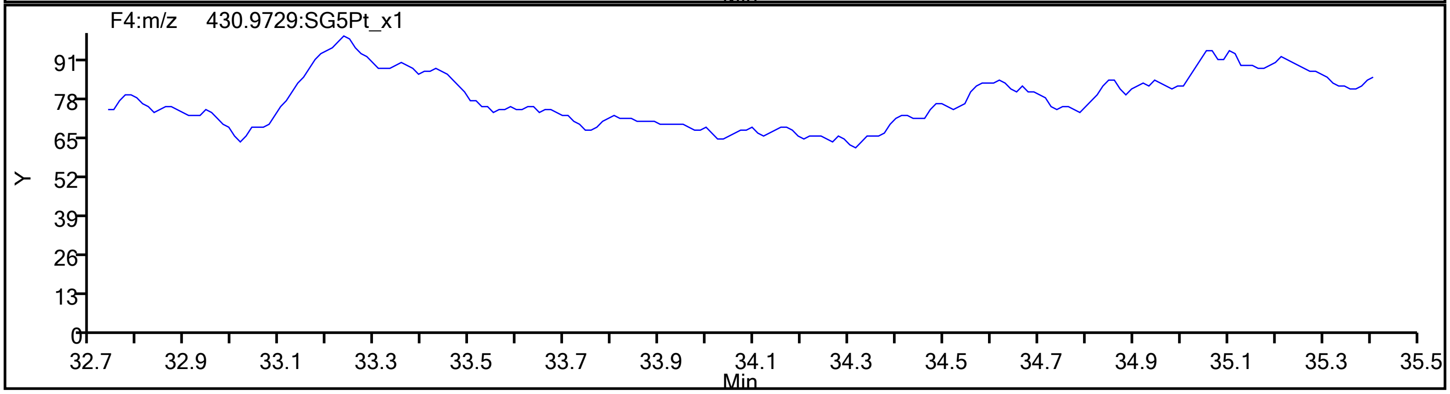

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201013-105296.b\12OC20B10D5_6.d

Injection Date:	13-Oct-2020 01:24:26	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	421347	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

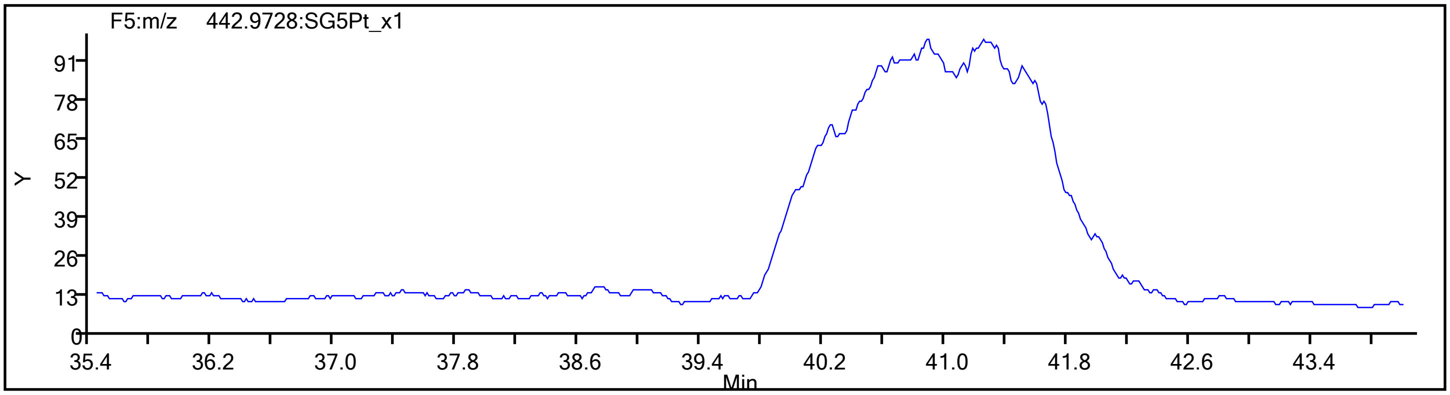

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Instrument ID: 10D5 Start Date: 09/17/2020 14:12

Analysis Batch Number: 413246 End Date: 09/17/2020 20:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-413246/1		09/17/2020 14:12	1	17SE2010D5_1.d	DB-5 0.32(mm)
IC 320-413246/3		09/17/2020 16:09	1	17SE2010D5_3.d	DB-5 0.32(mm)
IC 320-413246/4		09/17/2020 16:54	1	17SE2010D5_4.d	DB-5 0.32(mm)
IC 320-413246/5		09/17/2020 17:39	1	17SE2010D5_5.d	DB-5 0.32(mm)
IC 320-413246/6		09/17/2020 18:24	1	17SE2010D5_6.d	DB-5 0.32(mm)
IC 320-413246/7		09/17/2020 19:09	1	17SE2010D5_7.d	DB-5 0.32(mm)
ICV 320-413246/9		09/17/2020 20:42	1	17SE2010D5_9.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Instrument ID: 10D5 Start Date: 10/12/2020 21:15

Analysis Batch Number: 421347 End Date: 10/13/2020 05:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-421347/1		10/12/2020 21:15	1	12OC20B10D5_1.d	DB-5 0.32(mm)
CCV 320-421347/2		10/12/2020 22:14	1	12OC20B10D5_2.d	DB-5 0.32(mm)
MB 320-418764/1-A		10/12/2020 23:54	1	12OC20B10D5_4.d	DB-5 0.32(mm)
LCS 320-418764/2-A		10/13/2020 00:39	1	12OC20B10D5_5.d	DB-5 0.32(mm)
LCSD 320-418764/3-A		10/13/2020 01:24	1	12OC20B10D5_6.d	DB-5 0.32(mm)
ZZZZZ		10/13/2020 02:09	1		DB-5 0.32(mm)
ZZZZZ		10/13/2020 03:39	1		DB-5 0.32(mm)
320-65247-1	11215702-Tank#1-Valve-3-2-Repl	10/13/2020 04:24	1	12OC20B10D5_10.d	DB-5 0.32(mm)
ZZZZZ		10/13/2020 05:09	1		DB-5 0.32(mm)
ZZZZZ		10/13/2020 05:54	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-65247-1

SDG No.:

Instrument ID: 11D2 Start Date: 10/15/2020 01:21

Analysis Batch Number: 422408 End Date: 10/15/2020 03:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-422408/1		10/15/2020 01:21	1	15OC2011D2_001.d	DB-225 0.32(mm)
CCV 320-422408/2		10/15/2020 02:00	1	15OC2011D2_002.d	DB-225 0.32(mm)
ZZZZZ		10/15/2020 02:38	1		DB-225 0.32(mm)
ZZZZZ		10/15/2020 03:16	1		DB-225 0.32(mm)
320-65247-1 RA	11215702-Tank#1-Valve-3-2-Repl RA	10/15/2020 03:55	1	15OC2011D2_005.d	DB-225 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65247-1

SDG No.:

Batch Number: 418764 Batch Start Date: 10/05/20 11:13 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 10/06/20 14:26

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-418764/1		1613B, 1613B				1000 mL	20.0 uL	SS1 - 6	4
LCS 320-418764/2		1613B, 1613B				1000 mL	20.0 uL	SS2 - 1	6
LCSD 320-418764/3		1613B, 1613B				1000 mL	20.0 uL	SS2 - 2	4
320-65247-A-1	11215702-Tank#1-Valve-3-2-Repl	1613B, 1613B	T	756.1 g	247.71 g	508.4 mL	20.0 uL	SS2 - 6	4

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00439	HRDXNIS 00129	HRDXNSU 00242	HRDXNTA 00122		
MB 320-418764/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-418764/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-418764/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-65247-A-1	11215702-Tank#1-Valve-3-2-Repl	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-65247-1

SDG No.:

Batch Number: 418764 Batch Start Date: 10/05/20 11:13 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 10/06/20 14:26

Batch Notes	
20% DCM:Hexane ID	DH28_00176 mL
65% DCM:Hexane ID	DH6535_00492 mL
Acid Silica Gel ID	SA5644_00656
Acid Alumina ID	Acid_Alumina_00007
Balance ID	QA - 070
C14 ID	tetradecane_00009
Hexane ID	Hexane_00223 mL
IFB Clean Up	RDR 10/06/20
MeCL2 ID	DCM_00333 mL
Na2SO4 ID	Na2SO4_00120
Analyst ID - IDA Reagent Drop	NR 10/05/20 HRDXNIDA_00439 B1/4 HD05018 1.00 mL
Analyst ID - IDA Reagent Drop Witness	FC 10/05/20
Analyst ID - IS Reagent Drop	RDR 10/06/20 HRDXNIS_00129 B3/4 DB15270 20 uL
Analyst ID - IS Reagent Drop Witness	TGL 10/06/20
Analyst ID - SU Reagent Drop	RDR 10/06/20 HRDXNSU_00242 B3/4 HD05018 1.00 mL
Analyst ID - SU Reagent Drop Witness	NR 10/06/20
Analyst ID - TA Reagent Drop	NR 10/05/20 HRDXNTA_00122 B5/10 DB15270 50 uL
Analyst ID - TA Reagent Drop Witness	FC 10/05/20
Silica Gel ID	SilicaGel_00340
Soxhlet/Soxtherm End	NR 10/05/20 14:45
Soxhlet/Soxtherm Start	NR 10/05/20 11:45
Storage Box ID	DXN - 186
Toluene ID	Toluene_00074 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

CHAIN OF CUSTODY RECORD

COC NO.: 59860

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-297-6150 Fax:

Project No/ Phase/Task Code: 11215702-NI0411	**Laboratory Name:** Eurofins / TestAmerica	**Lab Location:** Sacramento	**SSOW ID:** 11187072-2019-002
Project Name: San Jacinto	**Lab Contact:** Carrie Gamber / Beth Hitt		**Cooler No:**
Project Location: Texas			**Carrier:**
GHD Chemistry Contact: Debbie Brennan			**Airbill No:**
Sampler(s): Don Pope			**Total # of Containers:** 1

ANALYSIS REQUESTED (See Back of COC for Definitions)

PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	SAMPLE TYPE: Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins and Furans	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	11215702-Tank#1-Valve-3-Z-Repl	9/11/20	13:30	WG			X			Attn to: Carrie Gamber 412-963-2428
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

320-65247 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week Other:

Notes/ Special Requirements:

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. Don Pope	GHD	10/1/20	14:45	1.	ETASAC	10/2/20	945
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

11.0 Cor 11.4

CRA Form: COC-10B (20110804)

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Sacramento
Sample Receiving Notes

320-65247 Field Sheet

Job:

Tracking #: 4576 5886 9647

SO [✓ PO] FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Therm. ID: AK13 Corr. Factor: ([✓ +] / -) 0.4 °C

Ice ✓ Wet ____ Gel ____ Other ____

Cooler Custody Seal: —

Cooler ID: —

Temp Observed: 11.0 °C Corrected: 11.4 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☐	☑	☐

Initials: ST Date: 10/2/20

Unpacking/Labeling The Samples	Yes	No	NA
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: MAN Date: 10/02/20

Notes: single sample came in heavy bubble wrap - small bag of ice on one side of cooler - sample not surrounded by ice - no temp blank ST 10/2/20

Trizma Lot #(s):

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☑	☐	☐

Initials: MAN Date: 10/02/20

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 01OCT20
ACTWGT: 5.00 LB MAN
CAD: 68417/CAFE3313

BILL SENDER

TO **SAMPLE RECEIVING**
EUROFINS/TEST AMERICA
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215702 – NI0411 GEB (POPE)

565C2/A27E/05A2

FedEx
Express

E

J191219082001uv

FRI – 02 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **4576 5886 9647**

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/2

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-65247-1

Login Number: 65247

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Thompson, Sarah W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Job Number: 320-66850-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
12/2/2020 2:38 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
12/02/2020

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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NELAP ACCREDITED TNI LABORATORY

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Definitions/Glossary

Client: GHD Services Inc.
Job ID: 320-66850-1
Project/Site: San Jacinto River Waste Pits Superfund

Qualifiers

Dioxin

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-66850-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.5 C.

DIOXINS
Total HpCDF, Total HxCDD and Total HxCDF were detected in method blank MB 320-432973/1-A at levels exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes were detected in method blank MB 320-432973/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The laboratory control sample duplicate (LCSD) for preparation batch 320-432973 and analytical batch 320-434777 recovered outside acceptance limits low for 1,2,3,4,6,7,8-HpCDF, 1,2,3,6,7,8-HxCDF, and OCDD and was confirmed by reanalysis. There was insufficient sample to perform re-extraction; therefore, the data have been reported.

Detection Summary

Client Sample ID: 11215702-Tank #1-1um Lab Sample ID: 320-66850-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	3.2	J B q	47	0.43	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.6	J B	47	0.45	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	3.0	J B	47	0.44	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.2	J B q	47	0.42	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	2.2	J B	47	0.43	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	2.0	J * B q	47	0.41	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	4.5	J B	47	0.44	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	2.5	J B	47	0.37	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	4.7	J B	47	0.27	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	3.7	J * B	47	0.37	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	3.5	J B q	47	0.46	pg/L	1		1613B	Total/NA
OCDD	13	J * B q	95	0.43	pg/L	1		1613B	Total/NA
OCDF	7.2	J B	95	0.87	pg/L	1		1613B	Total/NA
Total PeCDF	3.2	J B q	47	0.45	pg/L	1		1613B	Total/NA
Total HxCDD	8.8	J B q	47	0.44	pg/L	1		1613B	Total/NA
Total HxCDF	11	J B q	47	0.41	pg/L	1		1613B	Total/NA
Total HpCDD	4.7	J B	47	0.27	pg/L	1		1613B	Total/NA
Total HpCDF	7.2	J B q	47	0.42	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank #2 1um Lab Sample ID: 320-66850-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	37		9.4	0.85	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	6.5	J B	47	0.40	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	3.8	J B	47	0.48	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.8	J B q	47	0.36	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	12	J B	47	0.37	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	3.8	J * B	47	0.35	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.0	J B	47	0.37	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1.6	J B q	47	0.34	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	8.3	J B q	47	0.31	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	7.7	J * B	47	0.45	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	2.6	J B q	47	0.53	pg/L	1		1613B	Total/NA
OCDD	240	* B	94	1.2	pg/L	1		1613B	Total/NA
OCDF	15	J B	94	0.82	pg/L	1		1613B	Total/NA
Total TCDD	37		9.4	0.85	pg/L	1		1613B	Total/NA
Total TCDF	150	B q	9.4	0.91	pg/L	1		1613B	Total/NA
Total PeCDF	13	J B	47	0.44	pg/L	1		1613B	Total/NA
Total HxCDD	1.8	J B q	47	0.35	pg/L	1		1613B	Total/NA
Total HxCDF	20	J B q	47	0.36	pg/L	1		1613B	Total/NA
Total HpCDD	16	J B q	47	0.31	pg/L	1		1613B	Total/NA
Total HpCDF	12	J B q	47	0.49	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	75	B	9.4	0.71	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank #1-1um

Lab Sample ID: 320-66850-1

Date Collected: 11/10/20 10:00
Date Received: 11/17/20 10:10

Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.5	0.58	pg/L		11/18/20 11:29	11/24/20 12:41	1
2,3,7,8-TCDF	ND		9.5	0.32	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,7,8-PeCDD	ND		47	0.57	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,7,8-PeCDF	**3.2**	**J B q**	47	0.43	pg/L		11/18/20 11:29	11/24/20 12:41	1
2,3,4,7,8-PeCDF	ND		47	0.47	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,4,7,8-HxCDD	**3.6**	**J B**	47	0.45	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,6,7,8-HxCDD	**3.0**	**J B**	47	0.44	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,7,8,9-HxCDD	**2.2**	**J B q**	47	0.42	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,4,7,8-HxCDF	**2.2**	**J B**	47	0.43	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,6,7,8-HxCDF	**2.0**	**J * B q**	47	0.41	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,7,8,9-HxCDF	**4.5**	**J B**	47	0.44	pg/L		11/18/20 11:29	11/24/20 12:41	1
2,3,4,6,7,8-HxCDF	**2.5**	**J B**	47	0.37	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,4,6,7,8-HpCDD	**4.7**	**J B**	47	0.27	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,4,6,7,8-HpCDF	**3.7**	**J * B**	47	0.37	pg/L		11/18/20 11:29	11/24/20 12:41	1
1,2,3,4,7,8,9-HpCDF	**3.5**	**J B q**	47	0.46	pg/L		11/18/20 11:29	11/24/20 12:41	1
OCDD	**13**	**J * B q**	95	0.43	pg/L		11/18/20 11:29	11/24/20 12:41	1
OCDF	**7.2**	**J B**	95	0.87	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total TCDD	ND		9.5	0.58	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total TCDF	ND		9.5	0.32	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total PeCDD	ND		47	0.57	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total PeCDF	**3.2**	**J B q**	47	0.45	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total HxCDD	**8.8**	**J B q**	47	0.44	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total HxCDF	**11**	**J B q**	47	0.41	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total HpCDD	**4.7**	**J B**	47	0.27	pg/L		11/18/20 11:29	11/24/20 12:41	1
Total HpCDF	**7.2**	**J B q**	47	0.42	pg/L		11/18/20 11:29	11/24/20 12:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,7,8-PeCDF	*63*		*24 - 185*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-2,3,4,7,8-PeCDF	*63*		*21 - 178*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,4,7,8-HxCDD	*64*		*32 - 141*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,4,7,8-HxCDF	*61*		*26 - 152*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,7,8,9-HxCDF	*67*		*29 - 147*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-2,3,4,6,7,8-HxCDF	*66*		*28 - 136*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*69*		*23 - 140*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*28 - 143*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*63*		*26 - 138*	*11/18/20 11:29*	*11/24/20 12:41*	*1*
13C-OCDD	*68*		*17 - 157*	*11/18/20 11:29*	*11/24/20 12:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*11/18/20 11:29*	*11/24/20 12:41*	*1*

Client Sample Results

Client Sample ID: 11215702-Tank #2 1um

Lab Sample ID: 320-66850-2

Date Collected: 11/10/20 11:00
Matrix: Water
Date Received: 11/17/20 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**37**		9.4	0.85	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,7,8-PeCDD	ND		47	0.57	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,7,8-PeCDF	**6.5**	**J B**	47	0.40	pg/L		11/18/20 11:29	11/24/20 13:29	1
2,3,4,7,8-PeCDF	**3.8**	**J B**	47	0.48	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,4,7,8-HxCDD	**1.8**	**J B q**	47	0.36	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,6,7,8-HxCDD	ND		47	0.36	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,7,8,9-HxCDD	ND		47	0.34	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,4,7,8-HxCDF	**12**	**J B**	47	0.37	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,6,7,8-HxCDF	**3.8**	**J * B**	47	0.35	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,7,8,9-HxCDF	**3.0**	**J B**	47	0.37	pg/L		11/18/20 11:29	11/24/20 13:29	1
2,3,4,6,7,8-HxCDF	**1.6**	**J B q**	47	0.34	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,4,6,7,8-HpCDD	**8.3**	**J B q**	47	0.31	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,4,6,7,8-HpCDF	**7.7**	**J * B**	47	0.45	pg/L		11/18/20 11:29	11/24/20 13:29	1
1,2,3,4,7,8,9-HpCDF	**2.6**	**J B q**	47	0.53	pg/L		11/18/20 11:29	11/24/20 13:29	1
OCDD	**240**	*** B**	94	1.2	pg/L		11/18/20 11:29	11/24/20 13:29	1
OCDF	**15**	**J B**	94	0.82	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total TCDD	**37**		9.4	0.85	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total TCDF	**150**	**B q**	9.4	0.91	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total PeCDD	ND		47	0.57	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total PeCDF	**13**	**J B**	47	0.44	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total HxCDD	**1.8**	**J B q**	47	0.35	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total HxCDF	**20**	**J B q**	47	0.36	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total HpCDD	**16**	**J B q**	47	0.31	pg/L		11/18/20 11:29	11/24/20 13:29	1
Total HpCDF	**12**	**J B q**	47	0.49	pg/L		11/18/20 11:29	11/24/20 13:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*25 - 164*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,7,8-PeCDD	*81*		*25 - 181*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*24 - 185*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-2,3,4,7,8-PeCDF	*76*		*21 - 178*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*32 - 141*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,6,7,8-HxCDD	*80*		*28 - 130*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*26 - 123*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,7,8,9-HxCDF	*81*		*29 - 147*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*83*		*23 - 140*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*28 - 143*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*26 - 138*	*11/18/20 11:29*	*11/24/20 13:29*	*1*
13C-OCDD	*78*		*17 - 157*	*11/18/20 11:29*	*11/24/20 13:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*11/18/20 11:29*	*11/24/20 13:29*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**75**	**B**	9.4	0.71	pg/L		11/18/20 11:29	11/30/20 19:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*81*		*24 - 169*	*11/18/20 11:29*	*11/30/20 19:29*	*1*

Client Sample ID: 11215702-Tank #2 1um
Lab Sample ID: 320-66850-2

Date Collected: 11/10/20 11:00
Matrix: Water
Date Received: 11/17/20 10:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*11/18/20 11:29*	*11/30/20 19:29*	*1*

Toxicity Summary

Client Sample ID: 11215702-Tank #1-1um — Lab Sample ID: 320-66850-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		9.5	0.58	pg/L	1	0.29	1613B
2,3,7,8-TCDF	ND		9.5	0.32	pg/L	0.1	0.016	1613B
1,2,3,7,8-PeCDD	ND		47	0.57	pg/L	1	0.29	1613B
1,2,3,7,8-PeCDF	**3.2**	**J B q**	47	0.43	pg/L	0.03	**0.096**	1613B
2,3,4,7,8-PeCDF	ND		47	0.47	pg/L	0.3	0.071	1613B
1,2,3,4,7,8-HxCDD	**3.6**	**J B**	47	0.45	pg/L	0.1	**0.36**	1613B
1,2,3,6,7,8-HxCDD	**3.0**	**J B**	47	0.44	pg/L	0.1	**0.30**	1613B
1,2,3,7,8,9-HxCDD	**2.2**	**J B q**	47	0.42	pg/L	0.1	**0.22**	1613B
1,2,3,4,7,8-HxCDF	**2.2**	**J B**	47	0.43	pg/L	0.1	**0.22**	1613B
1,2,3,6,7,8-HxCDF	**2.0**	**J * B q**	47	0.41	pg/L	0.1	**0.20**	1613B
1,2,3,7,8,9-HxCDF	**4.5**	**J B**	47	0.44	pg/L	0.1	**0.45**	1613B
2,3,4,6,7,8-HxCDF	**2.5**	**J B**	47	0.37	pg/L	0.1	**0.25**	1613B
1,2,3,4,6,7,8-HpCDD	**4.7**	**J B**	47	0.27	pg/L	0.01	**0.047**	1613B
1,2,3,4,6,7,8-HpCDF	**3.7**	**J * B**	47	0.37	pg/L	0.01	**0.037**	1613B
1,2,3,4,7,8,9-HpCDF	**3.5**	**J B q**	47	0.46	pg/L	0.01	**0.035**	1613B
OCDD	**13**	**J * B q**	95	0.43	pg/L	0.0003	**0.0039**	1613B
OCDF	**7.2**	**J B**	95	0.87	pg/L	0.0003	**0.0022**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		2.9	TEQ

Client Sample ID: 11215702-Tank #2 1um — Lab Sample ID: 320-66850-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**37**		9.4	0.85	pg/L	1	**37**	1613B
1,2,3,7,8-PeCDD	ND		47	0.57	pg/L	1	0.29	1613B
1,2,3,7,8-PeCDF	**6.5**	**J B**	47	0.40	pg/L	0.03	**0.20**	1613B
2,3,4,7,8-PeCDF	**3.8**	**J B**	47	0.48	pg/L	0.3	**1.1**	1613B
1,2,3,4,7,8-HxCDD	**1.8**	**J B q**	47	0.36	pg/L	0.1	**0.18**	1613B
1,2,3,6,7,8-HxCDD	ND		47	0.36	pg/L	0.1	0.018	1613B
1,2,3,7,8,9-HxCDD	ND		47	0.34	pg/L	0.1	0.017	1613B
1,2,3,4,7,8-HxCDF	**12**	**J B**	47	0.37	pg/L	0.1	**1.2**	1613B
1,2,3,6,7,8-HxCDF	**3.8**	**J * B**	47	0.35	pg/L	0.1	**0.38**	1613B
1,2,3,7,8,9-HxCDF	**3.0**	**J B**	47	0.37	pg/L	0.1	**0.30**	1613B
2,3,4,6,7,8-HxCDF	**1.6**	**J B q**	47	0.34	pg/L	0.1	**0.16**	1613B
1,2,3,4,6,7,8-HpCDD	**8.3**	**J B q**	47	0.31	pg/L	0.01	**0.083**	1613B
1,2,3,4,6,7,8-HpCDF	**7.7**	**J * B**	47	0.45	pg/L	0.01	**0.077**	1613B
1,2,3,4,7,8,9-HpCDF	**2.6**	**J B q**	47	0.53	pg/L	0.01	**0.026**	1613B
OCDD	**240**	*** B**	94	1.2	pg/L	0.0003	**0.072**	1613B
OCDF	**15**	**J B**	94	0.82	pg/L	0.0003	**0.0045**	1613B
2,3,7,8-TCDF - RA	**75**	**B**	9.4	0.71	pg/L	0.1	**7.5**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank #2 1um (Continued) Lab Sample ID: 320-66850-2

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		49	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc. Job ID: 320-66850-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL	Units
1,2,3,4,6,7,8-HpCDD	50	pg/L
1,2,3,4,6,7,8-HpCDF	50	pg/L
1,2,3,4,7,8,9-HpCDF	50	pg/L
1,2,3,4,7,8-HxCDD	50	pg/L
1,2,3,4,7,8-HxCDF	50	pg/L
1,2,3,6,7,8-HxCDD	50	pg/L
1,2,3,6,7,8-HxCDF	50	pg/L
1,2,3,7,8,9-HxCDD	50	pg/L
1,2,3,7,8,9-HxCDF	50	pg/L
1,2,3,7,8-PeCDD	50	pg/L
1,2,3,7,8-PeCDF	50	pg/L
2,3,4,6,7,8-HxCDF	50	pg/L
2,3,4,7,8-PeCDF	50	pg/L
2,3,7,8-TCDD	10	pg/L
2,3,7,8-TCDF	10	pg/L
OCDD	100	pg/L
OCDF	100	pg/L
Total HpCDD	50	pg/L
Total HpCDF	50	pg/L
Total HxCDD	50	pg/L
Total HxCDF	50	pg/L
Total PeCDD	50	pg/L
Total PeCDF	50	pg/L
Total TCDD	10	pg/L
Total TCDF	10	pg/L

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-66850-1	11215702-Tank #1-1um	96
320-66850-2	11215702-Tank #2 1um	90
320-66850-2 - RA	11215702-Tank #2 1um	102
MB 320-432973/1-A	Method Blank	88

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-432973/2-A	Lab Control Sample	102
LCSD 320-432973/3-A	Lab Control Sample Dup	103

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc.

Job ID: 320-66850-1

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
320-66850-1	11215702-Tank #1-1um	74	67	67	63	63	64	69	61
320-66850-2	11215702-Tank #2 1um	81	80	81	79	76	75	80	73
320-66850-2 - RA	11215702-Tank #2 1um		81						
MB 320-432973/1-A	Method Blank	83	80	85	83	80	78	86	79

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-66850-1	11215702-Tank #1-1um	65	67	66	69	66	63	68
320-66850-2	11215702-Tank #2 1um	79	81	77	83	76	77	78
320-66850-2 - RA	11215702-Tank #2 1um							
MB 320-432973/1-A	Method Blank	81	85	85	86	83	80	83

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-432973/2-A	Lab Control Sample	81	98	80	88	86	74	78	88
LCSD 320-432973/3-A	Lab Control Sample Dup	82	96	81	89	85	78	81	98

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-432973/2-A	Lab Control Sample	91	92	96	70	78	75	73
LCSD 320-432973/3-A	Lab Control Sample Dup	99	97	99	74	84	80	75

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD

Isotope Dilution Summary

HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-432973/1-A
Matrix: Water
Analysis Batch: 434777

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432973

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.62	pg/L		11/18/20 11:29	11/24/20 10:17	1
2,3,7,8-TCDF	1.70	J q	10	0.27	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8-PeCDD	19.9	J	50	0.66	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8-PeCDF	15.0	J	50	0.45	pg/L		11/18/20 11:29	11/24/20 10:17	1
2,3,4,7,8-PeCDF	20.3	J	50	0.49	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,7,8-HxCDD	28.3	J	50	0.55	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,6,7,8-HxCDD	24.7	J	50	0.54	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8,9-HxCDD	28.3	J	50	0.52	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,7,8-HxCDF	23.2	J	50	0.50	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,6,7,8-HxCDF	24.4	J	50	0.48	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8,9-HxCDF	28.7	J	50	0.51	pg/L		11/18/20 11:29	11/24/20 10:17	1
2,3,4,6,7,8-HxCDF	29.5	J	50	0.44	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,6,7,8-HpCDD	25.7	J	50	0.41	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,6,7,8-HpCDF	25.1	J	50	0.47	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,7,8,9-HpCDF	26.4	J	50	0.59	pg/L		11/18/20 11:29	11/24/20 10:17	1
OCDD	58.0	J	100	0.64	pg/L		11/18/20 11:29	11/24/20 10:17	1
OCDF	49.9	J	100	1.0	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total TCDD	ND		10	0.62	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total TCDF	1.70	J q	10	0.27	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total PeCDD	19.9	J	50	0.66	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total PeCDF	35.3	J	50	0.47	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HxCDD	81.3		50	0.54	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HxCDF	106		50	0.48	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HpCDD	25.7	J	50	0.41	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HpCDF	51.6		50	0.53	pg/L		11/18/20 11:29	11/24/20 10:17	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*25 - 164*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*24 - 185*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*21 - 178*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*32 - 141*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*26 - 152*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,6,7,8-HxCDF	*81*		*26 - 123*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*		*29 - 147*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-2,3,4,6,7,8-HxCDF	*85*		*28 - 136*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*23 - 140*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*26 - 138*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-OCDD	*83*		*17 - 157*	*11/18/20 11:29*	*11/24/20 10:17*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*88*		*35 - 197*	*11/18/20 11:29*	*11/24/20 10:17*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-432973/2-A **Client Sample ID: Lab Control Sample**

Matrix: Water **Prep Type: Total/NA**

Analysis Batch: 435203 **Prep Batch: 432973**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	184		pg/L		92	67 - 158
2,3,7,8-TCDF	200	184		pg/L		92	75 - 158
1,2,3,7,8-PeCDD	1000	823		pg/L		82	70 - 142
1,2,3,7,8-PeCDF	1000	857		pg/L		86	80 - 134
2,3,4,7,8-PeCDF	1000	903		pg/L		90	68 - 160
1,2,3,4,7,8-HxCDD	1000	892		pg/L		89	70 - 164
1,2,3,6,7,8-HxCDD	1000	887		pg/L		89	76 - 134
1,2,3,7,8,9-HxCDD	1000	896		pg/L		90	64 - 162
1,2,3,4,7,8-HxCDF	1000	873		pg/L		87	72 - 134
1,2,3,6,7,8-HxCDF	1000	848		pg/L		85	84 - 130
1,2,3,7,8,9-HxCDF	1000	853		pg/L		85	78 - 130
2,3,4,6,7,8-HxCDF	1000	854		pg/L		85	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	859		pg/L		86	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	851		pg/L		85	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	875		pg/L		88	78 - 138
OCDD	2000	1610		pg/L		81	78 - 144
OCDF	2000	1670		pg/L		83	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*81*		*20 - 175*
13C-2,3,7,8-TCDF	*98*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*80*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*88*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*86*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*74*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*78*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*88*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*91*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*92*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*96*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*20 - 186*
13C-OCDD	*73*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*102*		*31 - 191*

Lab Sample ID: LCSD 320-432973/3-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Water **Prep Type: Total/NA**

Analysis Batch: 435203 **Prep Batch: 432973**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	164		pg/L		82	67 - 158	11	50
2,3,7,8-TCDF	200	163		pg/L		81	75 - 158	12	50
1,2,3,7,8-PeCDD	1000	747		pg/L		75	70 - 142	10	50
1,2,3,7,8-PeCDF	1000	802		pg/L		80	80 - 134	7	50
2,3,4,7,8-PeCDF	1000	812		pg/L		81	68 - 160	11	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-432973/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 435203 **Prep Batch: 432973**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD			1000	854		pg/L		85	70 - 164	4	50
1,2,3,6,7,8-HxCDD			1000	807		pg/L		81	76 - 134	9	50
1,2,3,7,8,9-HxCDD			1000	847		pg/L		85	64 - 162	6	50
1,2,3,4,7,8-HxCDF			1000	790		pg/L		79	72 - 134	10	50
1,2,3,6,7,8-HxCDF			1000	801	*	pg/L		80	84 - 130	6	50
1,2,3,7,8,9-HxCDF			1000	787		pg/L		79	78 - 130	8	50
2,3,4,6,7,8-HxCDF			1000	778		pg/L		78	70 - 156	9	50
1,2,3,4,6,7,8-HpCDD			1000	785		pg/L		79	70 - 140	9	50
1,2,3,4,6,7,8-HpCDF			1000	775	*	pg/L		78	82 - 122	9	50
1,2,3,4,7,8,9-HpCDF			1000	794		pg/L		79	78 - 138	10	50
OCDD			2000	1500	*	pg/L		75	78 - 144	7	50
OCDF			2000	1530		pg/L		77	63 - 170	8	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*82*		*20 - 175*
13C-2,3,7,8-TCDF	*96*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*81*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*89*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*85*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*78*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*81*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*98*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*99*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*97*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*99*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*74*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*20 - 186*
13C-OCDD	*75*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*103*		*31 - 191*

Specialty Organics

Prep Batch: 432973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-66850-1	11215702-Tank #1-1um	Total/NA	Water	1613B	
320-66850-2 - RA	11215702-Tank #2 1um	Total/NA	Water	1613B	
320-66850-2	11215702-Tank #2 1um	Total/NA	Water	1613B	
MB 320-432973/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-432973/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-432973/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 434777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-66850-1	11215702-Tank #1-1um	Total/NA	Water	1613B	432973
320-66850-2	11215702-Tank #2 1um	Total/NA	Water	1613B	432973
MB 320-432973/1-A	Method Blank	Total/NA	Water	1613B	432973

Analysis Batch: 435203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-432973/2-A	Lab Control Sample	Total/NA	Water	1613B	432973
LCSD 320-432973/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	432973

Analysis Batch: 436991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-66850-2 - RA	11215702-Tank #2 1um	Total/NA	Water	1613B	432973

Client Sample ID: 11215702-Tank #1-1um

Lab Sample ID: 320-66850-1

Date Collected: 11/10/20 10:00
Matrix: Water
Date Received: 11/17/20 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B		1	434777	11/24/20 12:41	ALM	TAL SAC

Client Sample ID: 11215702-Tank #2 1um

Lab Sample ID: 320-66850-2

Date Collected: 11/10/20 11:00
Matrix: Water
Date Received: 11/17/20 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	436991	11/30/20 19:29	KSS	TAL SAC
Total/NA	Prep	1613B			432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B		1	434777	11/24/20 13:29	ALM	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 320-66850-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	**Program**	**Identification Number**	**Expiration Date**
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-66850-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-66850-1	11215702-Tank #1-1um	Water	11/10/20 10:00	11/17/20 10:10	
320-66850-2	11215702-Tank #2 1um	Water	11/10/20 11:00	11/17/20 10:10	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 413246

Lab Sample ID: IC 320-413246/3 Client Sample ID:

Date Analyzed: 09/17/20 16:09 Lab File ID: 17SE2010D5_3.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	17.91	Poor chromatography	shardaa	09/17/20 17:16

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 432585

Lab Sample ID: IC 320-432585/5 Client Sample ID:

Date Analyzed: 11/17/20 14:27 Lab File ID: 17no20dfs1_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.80	Peak assignment corrected	stephensk	11/17/20 16:09

Lab Sample ID: IC 320-432585/6 Client Sample ID:

Date Analyzed: 11/17/20 15:14 Lab File ID: 17no20dfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.79	Peak assignment corrected	stephensk	11/17/20 16:09

Lab Sample ID: IC 320-432585/7 Client Sample ID:

Date Analyzed: 11/17/20 16:08 Lab File ID: 17no20dfs1_8.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.85	Peak assignment corrected	stephensk	11/18/20 08:59

Lab Sample ID: ICV 320-432585/10 Client Sample ID:

Date Analyzed: 11/17/20 18:32 Lab File ID: 17no20dfs1_11.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDF	35.21	Poor chromatography	stephensk	11/18/20 09:10
13C-1,2,3,6,7,8-HxCDF	35.36	Poor chromatography	stephensk	11/18/20 09:10

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 434777

Lab Sample ID: CCV 320-434777/28 Client Sample ID:

Date Analyzed: 11/24/20 07:33 Lab File ID: 23no20dfs1_32.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.77	Peak assignment corrected	stephensk	11/24/20 08:53

Lab Sample ID: MB 320-432973/1-A Client Sample ID:

Date Analyzed: 11/24/20 10:17 Lab File ID: 23no20dfs1_36.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.74	Poor chromatography	stephensk	11/25/20 14:40

Lab Sample ID: 320-66850-1 Client Sample ID: 11215702-Tank #1-1um

Date Analyzed: 11/24/20 12:41 Lab File ID: 23no20dfs1_39.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDD		Invalid Compound ID	dadunj	11/30/20 10:43
1,2,3,7,8-PeCDF	27.64	Split Peak	dadunj	11/30/20 10:43
1,2,3,6,7,8-HxCDF	35.37	Baseline	dadunj	11/30/20 10:44
2,3,4,6,7,8-HxCDF	36.14	Baseline	dadunj	11/30/20 10:44
1,2,3,4,7,8-HxCDD	36.34	Baseline	dadunj	11/30/20 10:44
1,2,3,6,7,8-HxCDD	36.45	Split Peak	dadunj	11/30/20 10:45
1,2,3,7,8,9-HxCDD	36.83	Split Peak	dadunj	11/30/20 10:45
1,2,3,7,8,9-HxCDF	37.00	Split Peak	dadunj	11/30/20 10:44
1,2,3,4,6,7,8-HpCDF	38.78	Split Peak	dadunj	11/30/20 10:45
1,2,3,4,6,7,8-HpCDD	39.69	Split Peak	dadunj	11/30/20 10:45
1,2,3,4,7,8,9-HpCDF	40.00	Split Peak	dadunj	11/30/20 10:45
OCDD	42.18	Split Peak	dadunj	11/30/20 10:45
OCDF	42.27	Split Peak	dadunj	11/30/20 10:45

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 434777

Lab Sample ID: 320-66850-2 Client Sample ID: 11215702-Tank #2 1um

Date Analyzed: 11/24/20 13:29 Lab File ID: 23no20dfs1_40.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	11/30/20 10:48
2,3,7,8-TCDD	22.11	Split Peak	dadunj	11/30/20 10:46
1,2,3,7,8-PeCDF	27.60	Split Peak	dadunj	11/30/20 10:47
1,2,3,6,7,8-HxCDF	35.31	Split Peak	dadunj	11/30/20 10:47
2,3,4,6,7,8-HxCDF	36.11	Baseline	dadunj	11/30/20 10:47
1,2,3,4,7,8-HxCDD	36.29	Invalid Compound ID	dadunj	11/30/20 10:48
1,2,3,7,8,9-HxCDF	36.99	Split Peak	dadunj	11/30/20 10:47
1,2,3,4,6,7,8-HpCDF	38.73	Split Peak	dadunj	11/30/20 10:48
1,2,3,4,6,7,8-HpCDD	39.67	Split Peak	dadunj	11/30/20 10:48
1,2,3,4,7,8,9-HpCDF	39.97	Split Peak	dadunj	11/30/20 10:48
OCDF	42.24	Split Peak	dadunj	11/30/20 10:49

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
HRDXNIC_00046	01/31/21	09/11/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00445	01/31/21	10/21/20	Acetone, Lot 0000242180	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL2_00030	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00122	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL3_00028	01/31/21	09/11/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00122	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00095	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

HRDXNL4_00096	01/31/21	11/24/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL5_00031	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL6_00027	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00244	11/02/21	11/02/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00123	10/02/21	11/02/20	Acetone, Lot 00000242180	10 mL	HRDXNTA_00111	0.1 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 kss

(pg 1/6)

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Certilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/MS
Column:	DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min
Injector Temp:	Cool-on-Column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

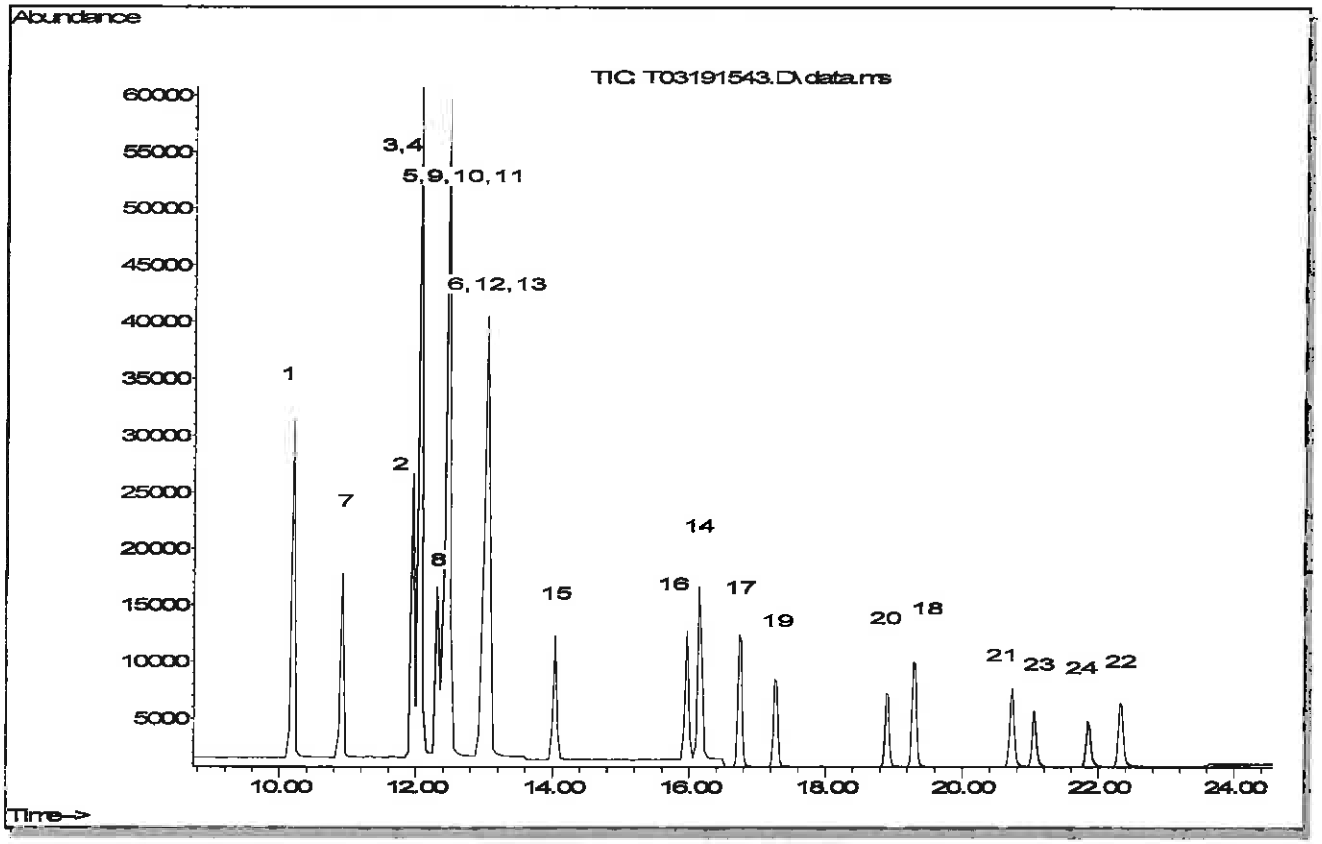

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNCP_00041

rec 7/29/20 skv

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

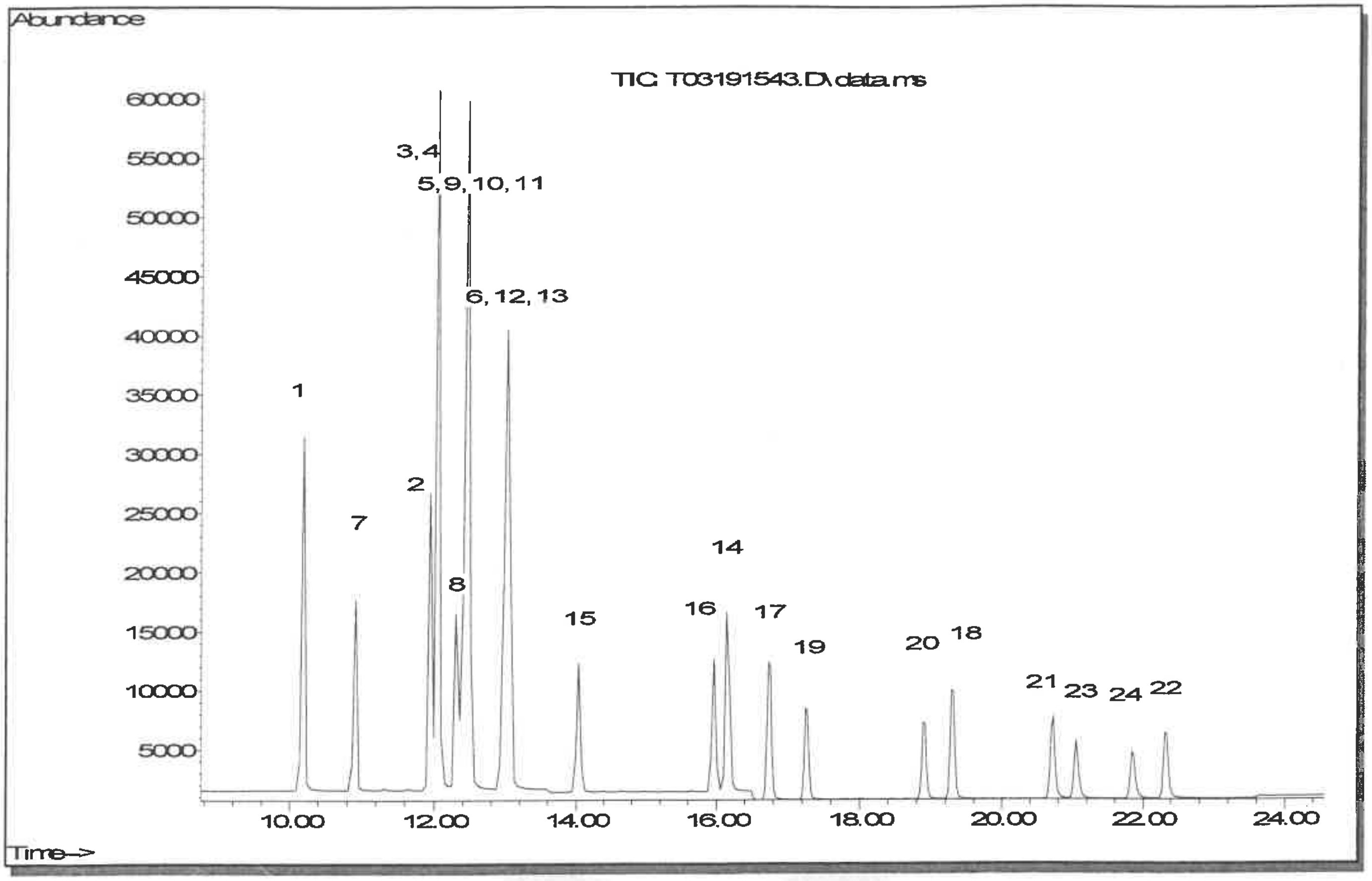

1	1,3,6,8-Tetrachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5	1,2,3,9-Tetrachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin
13	1,3,4,6,8-Pentachlorodibenzofuran
14	1,2,3,8,9-Pentachlorodibenzofuran
15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17	1,2,3,4,6,8-Hexachlorodibenzofuran
18	1,2,3,4,8,9-Hexachlorodibenzofuran
19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00398

8280 I#24
Received 11-11-19
GWB

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Revision 00
Page 1 of 4

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

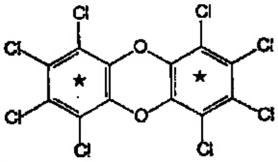

Catalog Number: ED-981-1.2
Solution Lot: ER04051701
Expiration Date: April 2027
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

[illegible]

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	70°C to 200°C at 40°C/min 200°C to 280°C at 10°C/min hold 15 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	3
Linearity (r):	0.997

Neat Material Data

Compound Name:	Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER04041601
Chemical Formula:	$^{13}C_{12}Cl_8O_2$
CAS Number:	114423-97-1
Molecular Weight:	471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

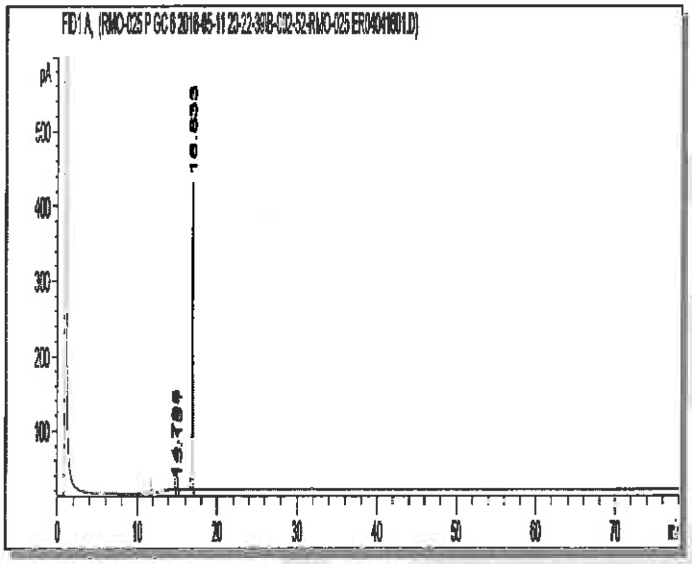

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument:	GC#6
Sample Name:	ER04041601
Acquired:	May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.80	12.12	3.62	0.61
2	15.15	4.72	1.32	0.24
3	16.83	1980.56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name           : Octachlorodibenzo-p-dioxin-13C12
Lot Number              : ER04041601
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Wed May 04 13:45:40 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

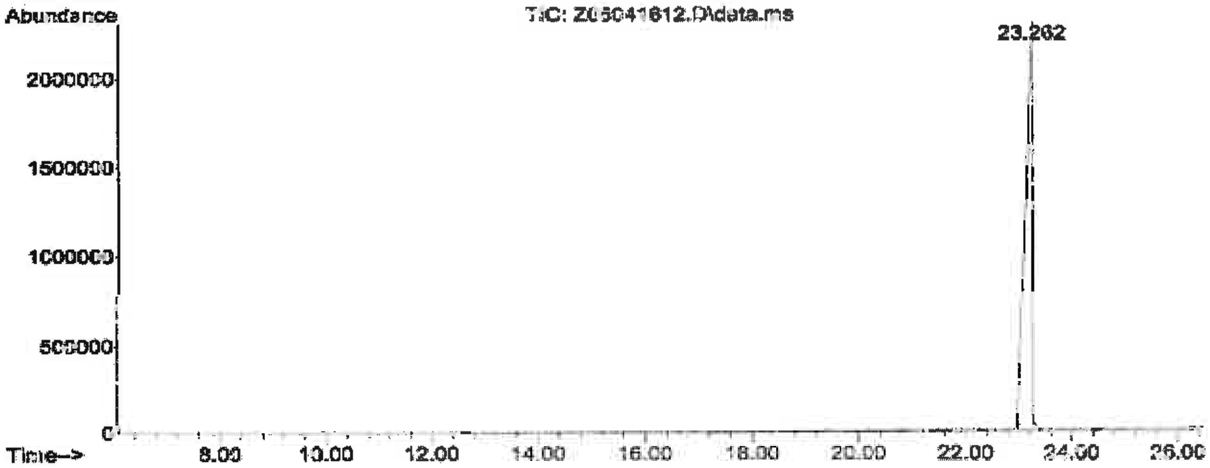

Mass Spectrum

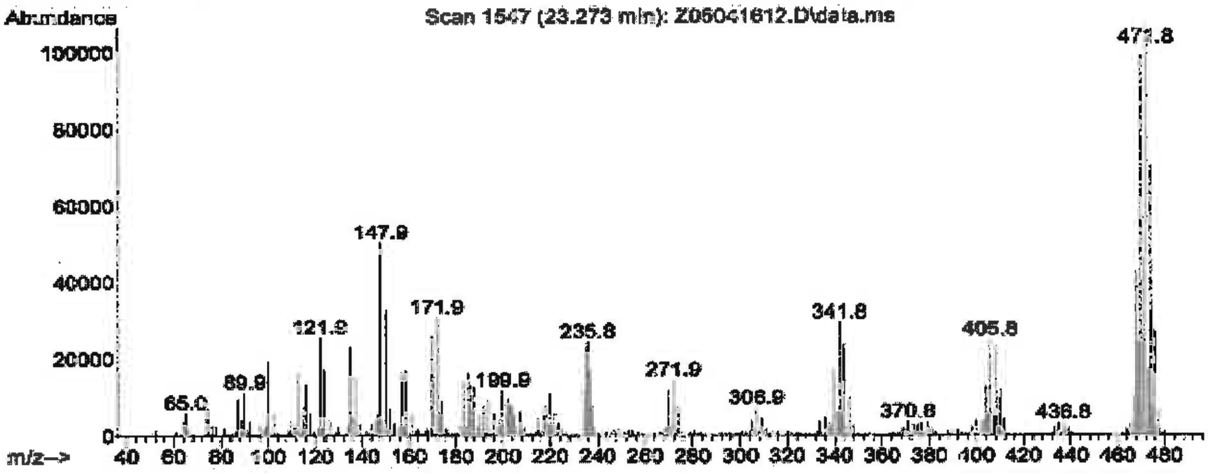

Reagent

HRDXNIDA_00407

Recvd 11-26-19

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

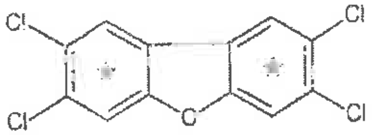

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

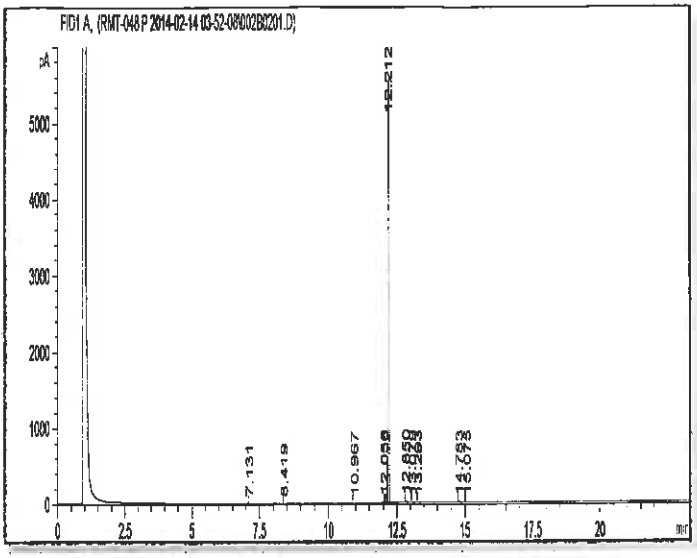

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

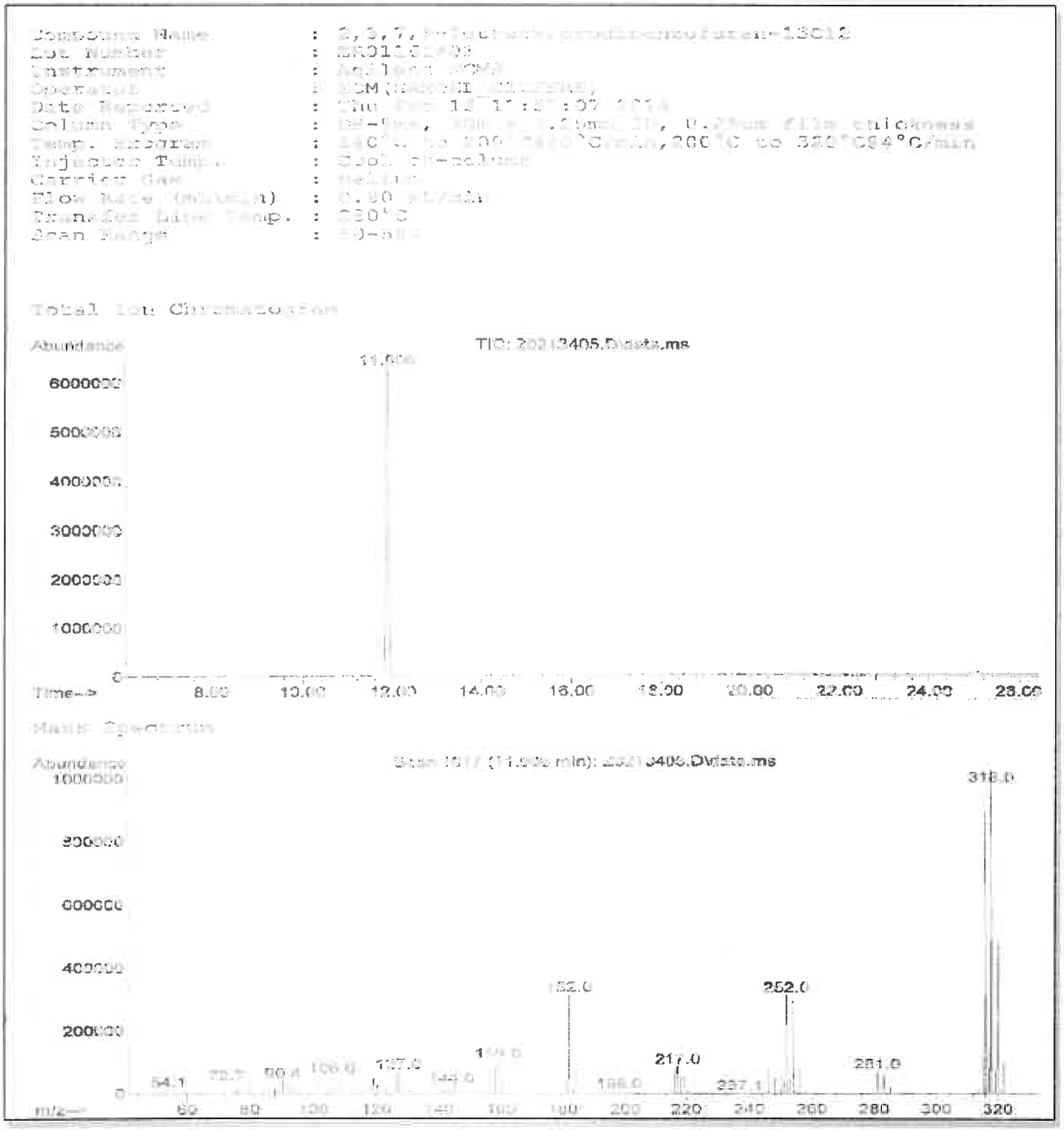

```
Compound Name             : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number                : ER01131-03
Instrument                : Agilent 5973
Operator                  : BCM([illegible])
Date Reported             : Thu Feb 13 11:5[illegible]:07 2014
Column Type               : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program             : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.            : Cool on-column
Carrier Gas               : Helium
Flow Rate (mL/min)        : 0.80 mL/min
Transfer Line Temp.       : 280°C
Scan Range                : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-16

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Revision 01
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ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

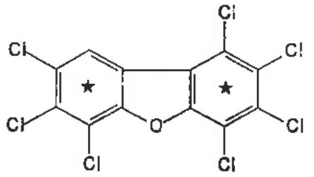

Catalog Number:	EF-974
Solution Lot:	ER08101404
Expiration Date:	November 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

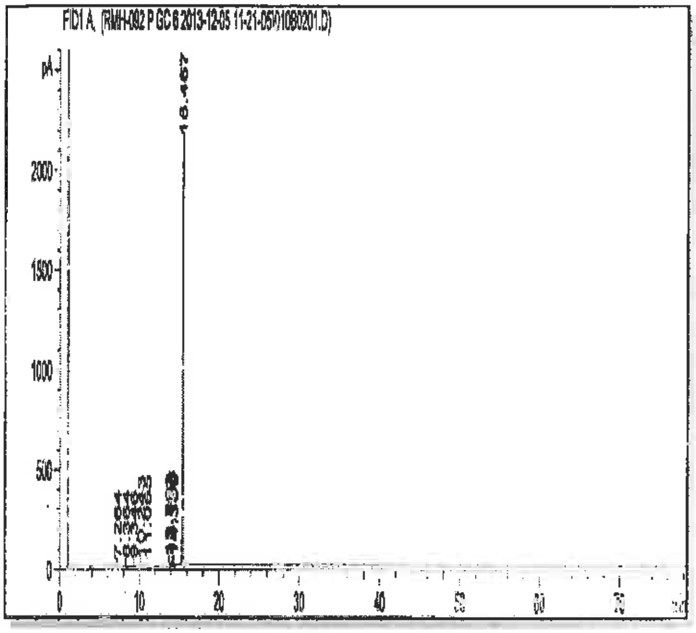

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Data File Name:	RMH-092 P GC 6 2013-12-05 11-21-05\01080201.D
Instrument:	GC#6
Sample Name:	ER020507-02
Acquired:	December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

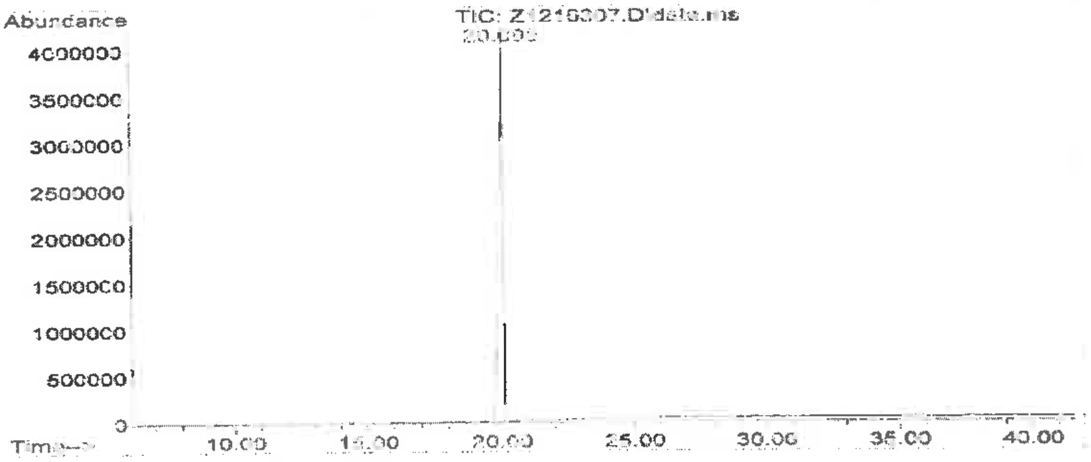

Mass Spectrum

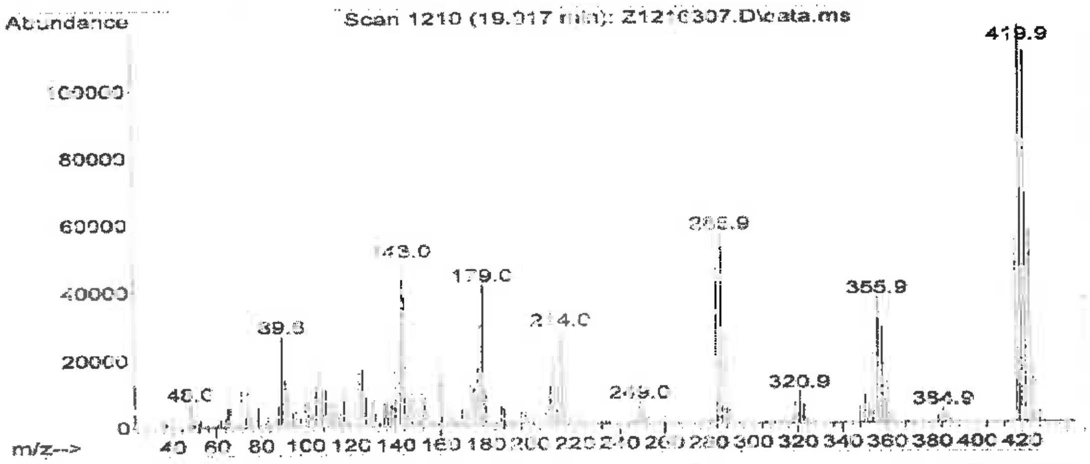

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-2[illegible]

Cerilliant
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CIL

Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

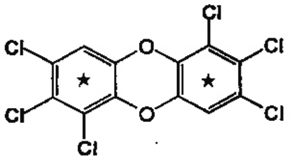

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

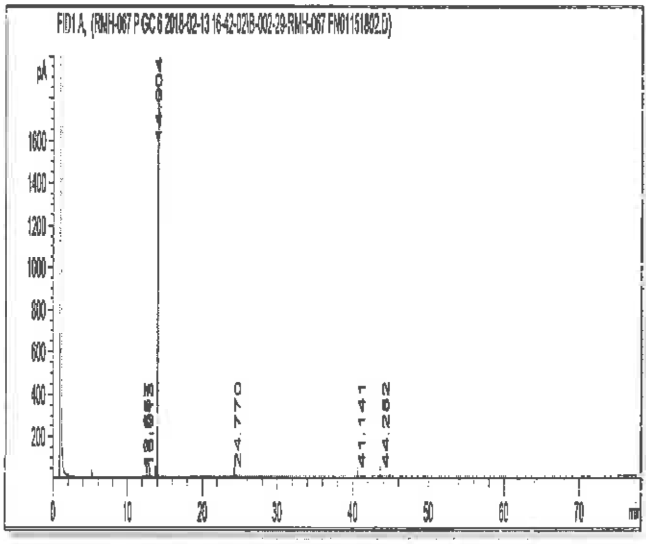

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

Spectral and Physical Data (cont.)

GC/MS

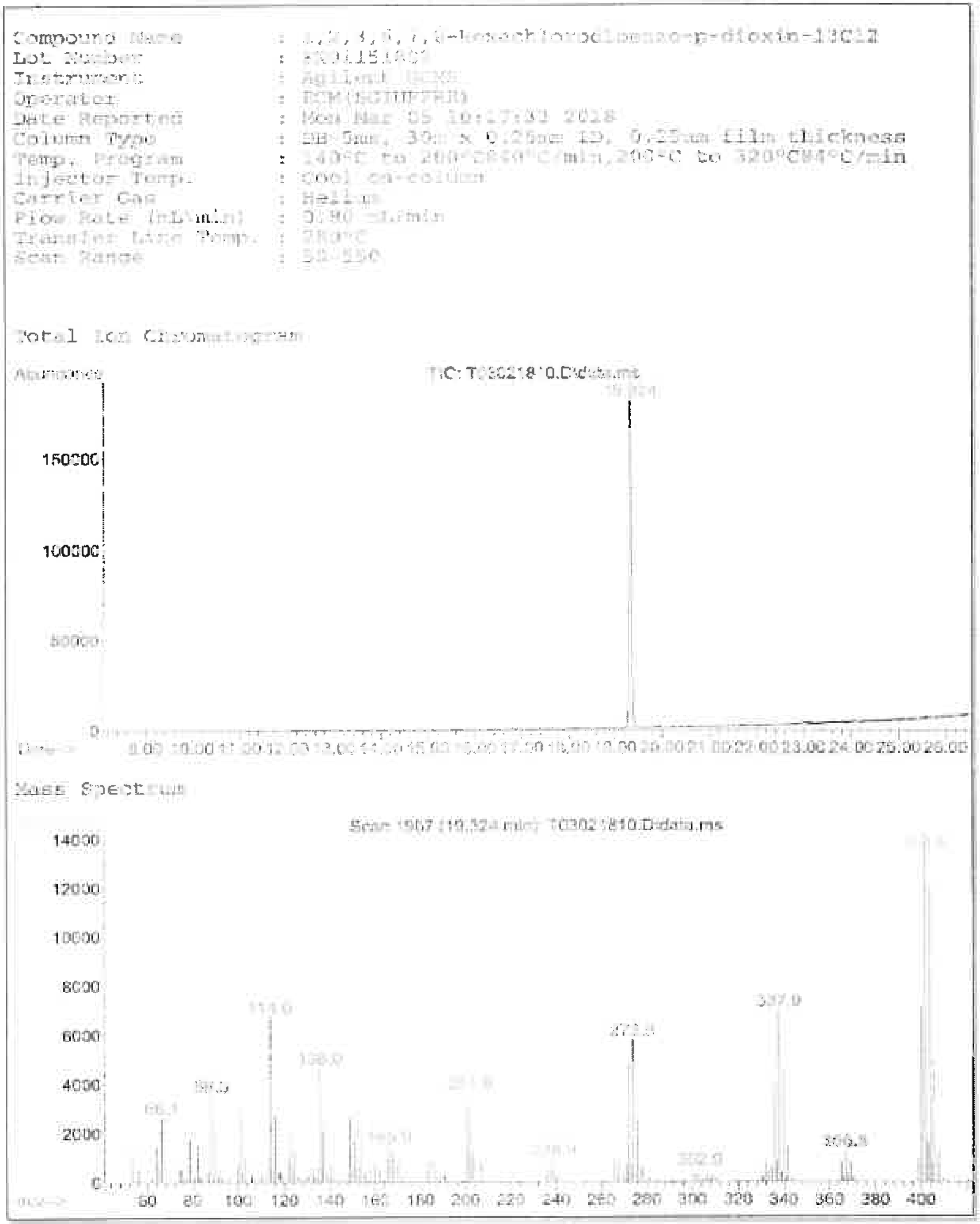

Compound Name : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number : FR01151801
Instrument : Agilent GCMS
Operator : ECM(SCHUFFER)
Date Reported : Mon Mar 05 10:17:33 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.90 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Reagent

HRDXNIDA_00410

Rec'ed 11-21-16

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Analytical Reference Standards
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Revision 0
Page 1 of 4

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

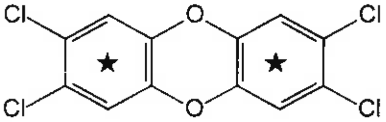

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

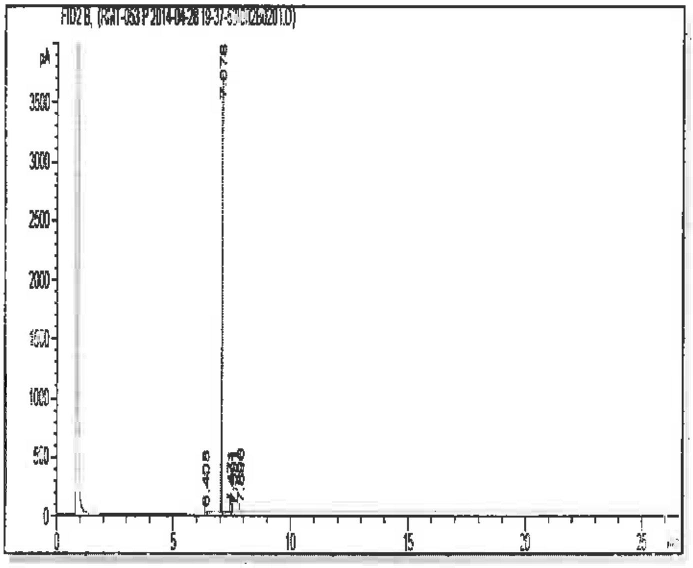

Column:	DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument:	GC#6
Sample Name:	ER01201405
Acquired:	April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

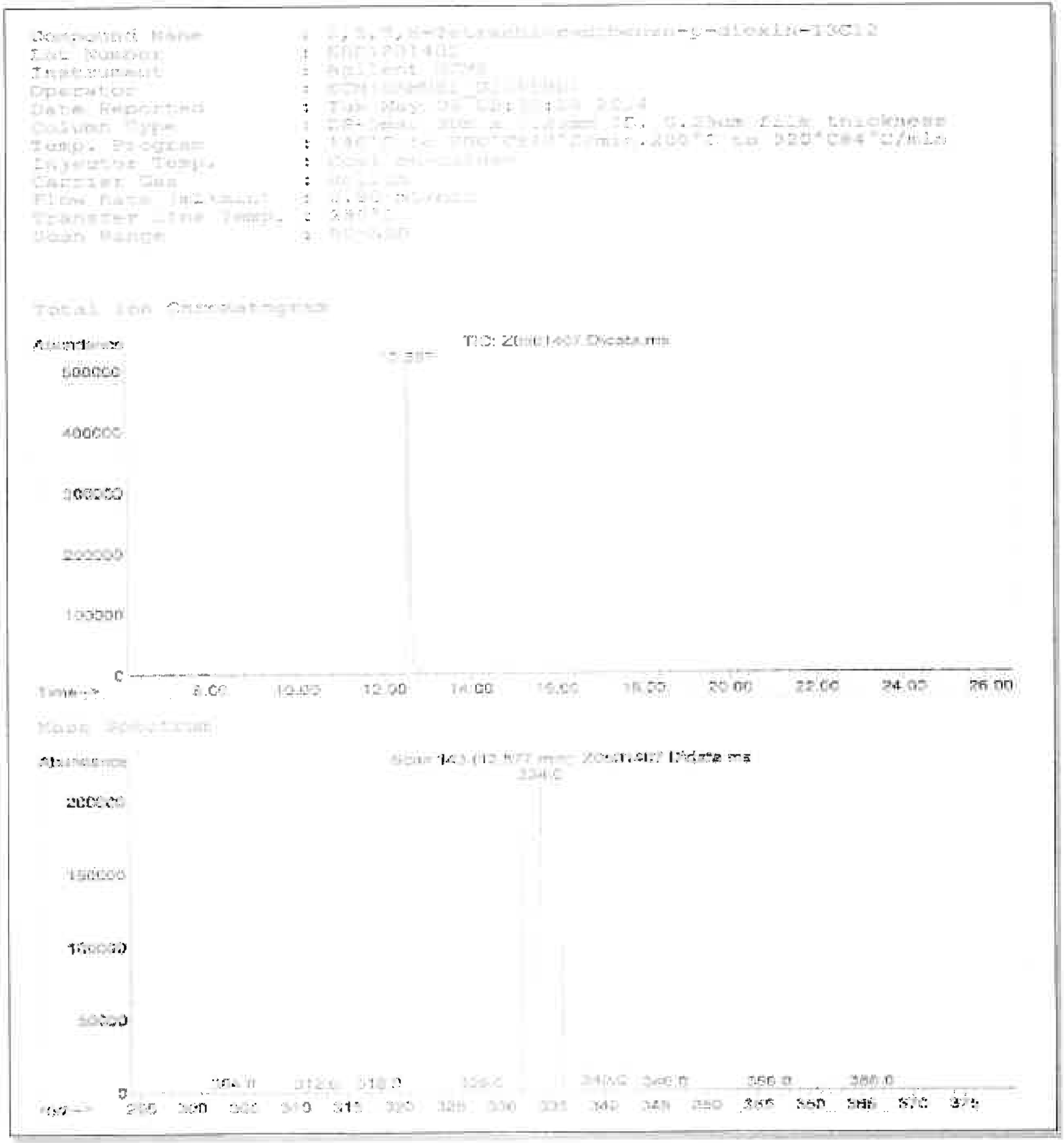

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent GCMS
Operator : [illegible]
Date Reported : Tue May 20 [illegible] 2014
Column Type : [illegible] ID, 0.25um film thickness
Temp. Program : [illegible]°C/min,200°C to 320°C@4°C/min
Injector Temp. : [illegible]
Carrier Gas : [illegible]
Flow Rate (mL/min) : [illegible]
Transfer Line Temp. : [illegible]
Scan Range : [illegible]

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00417

r: 3/30/20

Cerilliant
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CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

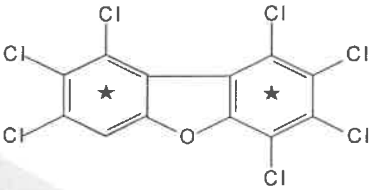

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

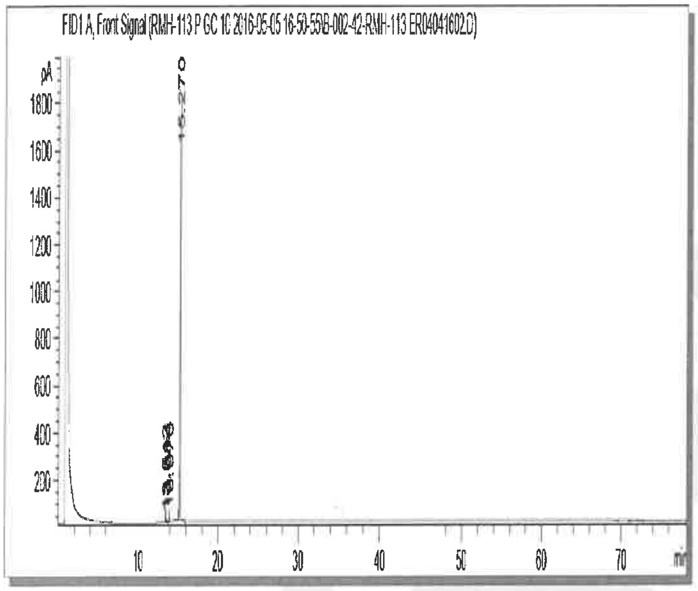

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

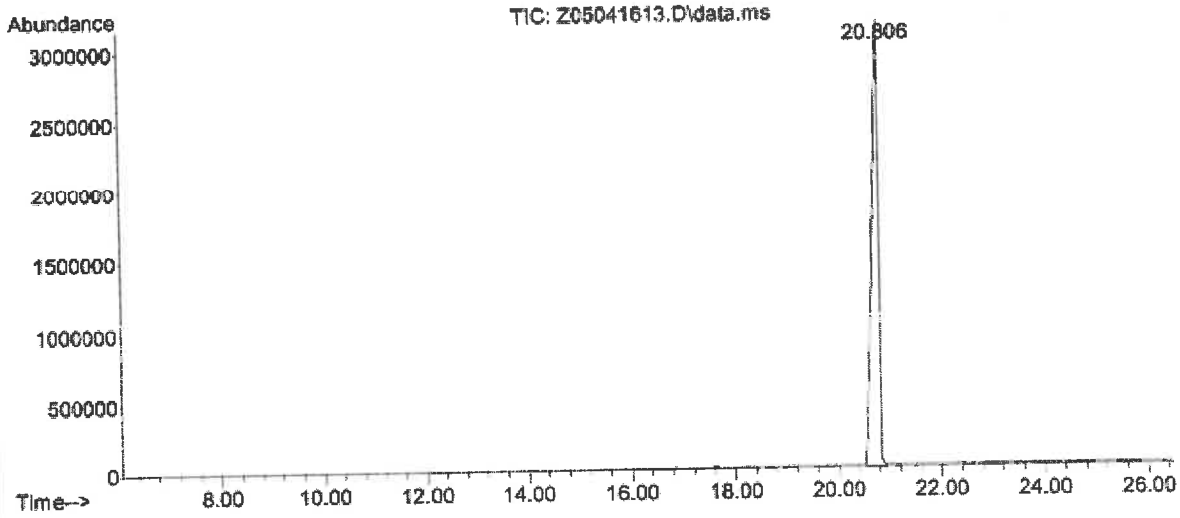

Mass Spectrum

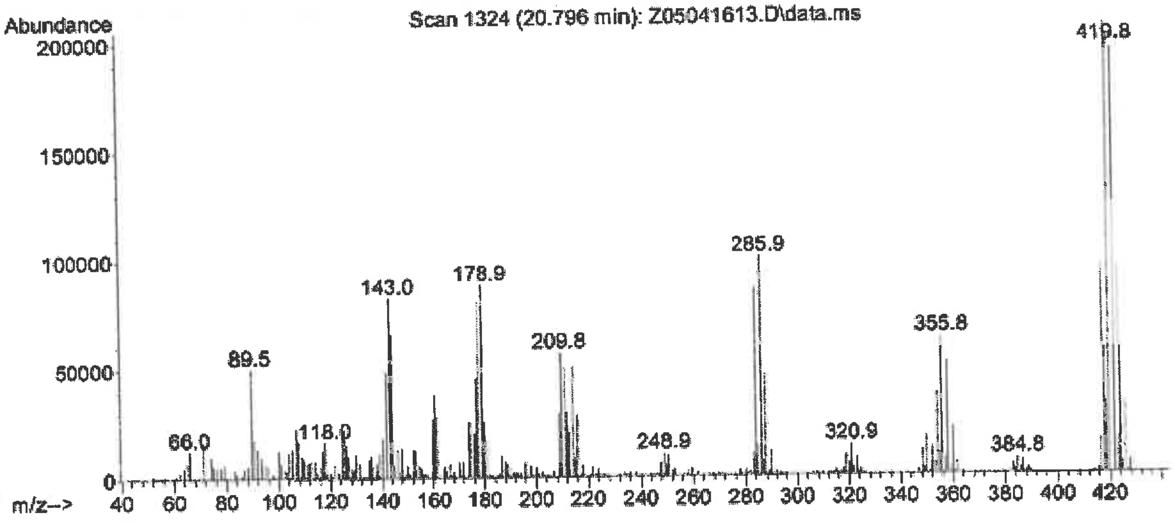

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/20/20 SAD

Cerilliant
Analytical Reference Standards
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CIL

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

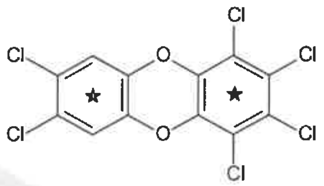

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

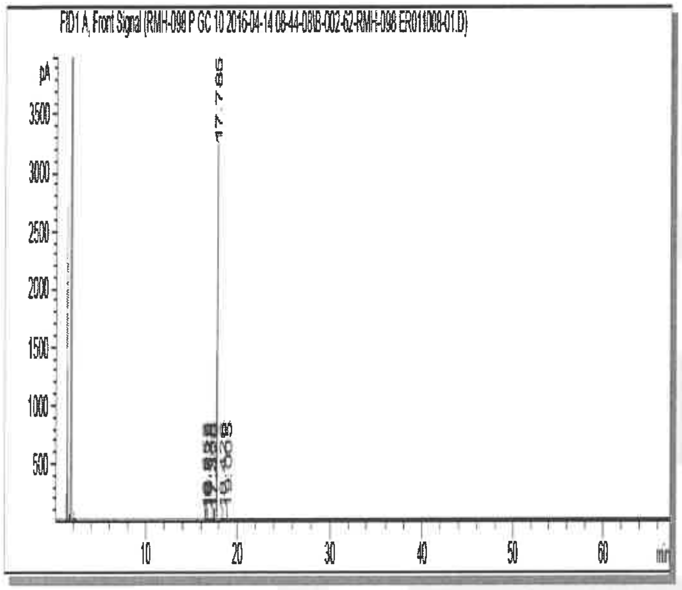

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

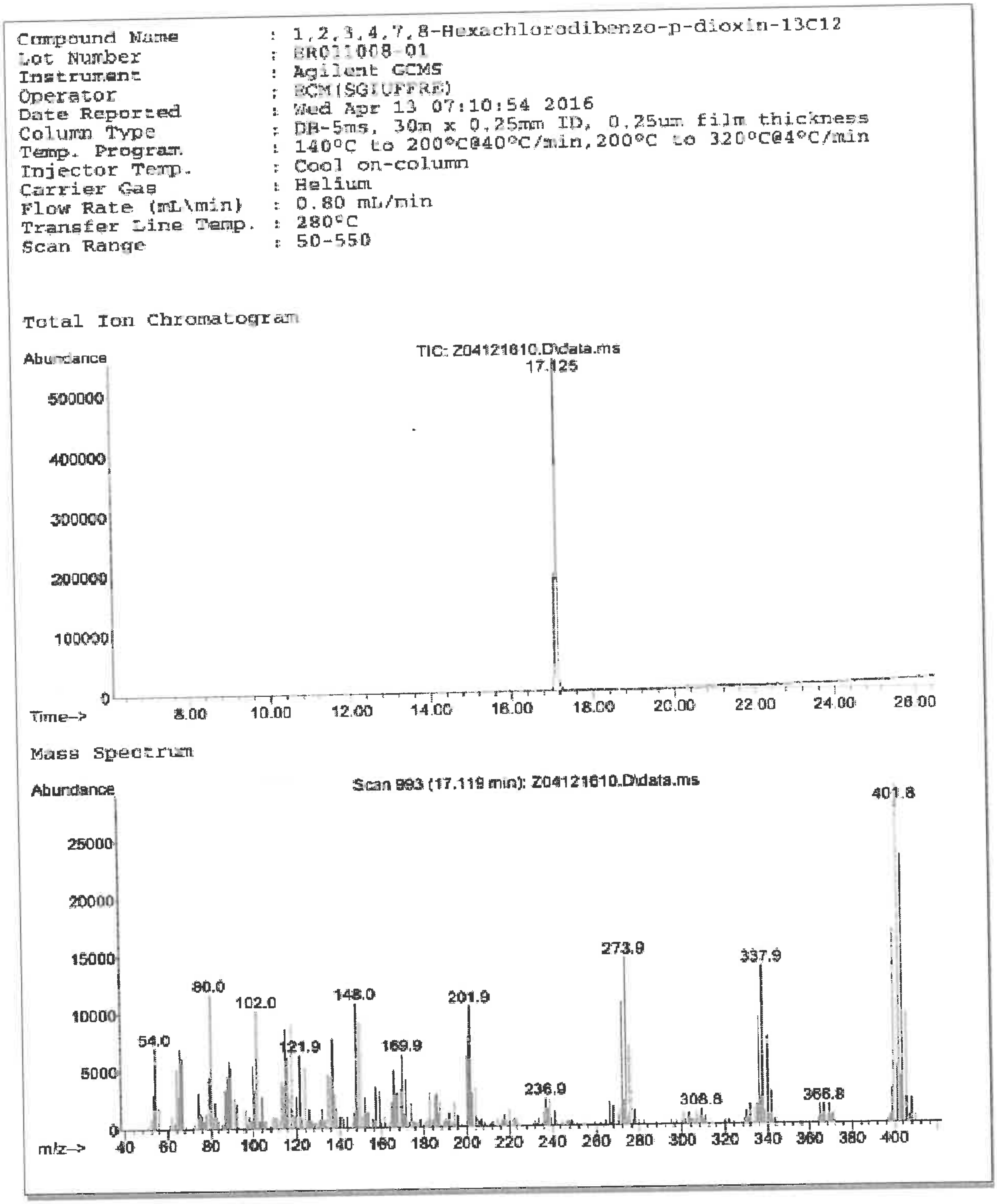

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : BR011008-01
Instrument : Agilent GCMS
Operator : BCM(SGIUFFRE)
Date Reported : Wed Apr 13 07:10:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SK✓

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Analytical Reference Standards
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CIL

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

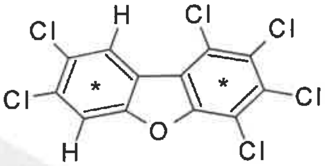

Catalog Number: EF-963
Solution Lot: ER04211701
Expiration Date: July 2027
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601
Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

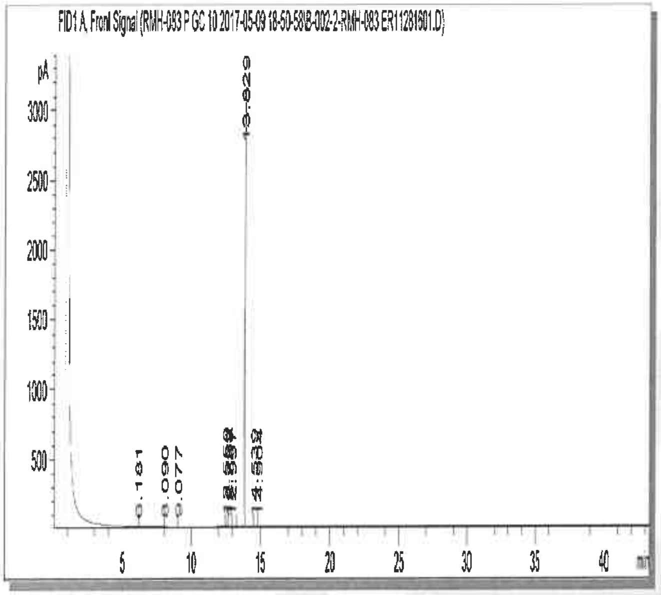

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 30 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Data File Name:	RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument:	GC#10
Sample Name:	ER11281601
Acquired:	May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

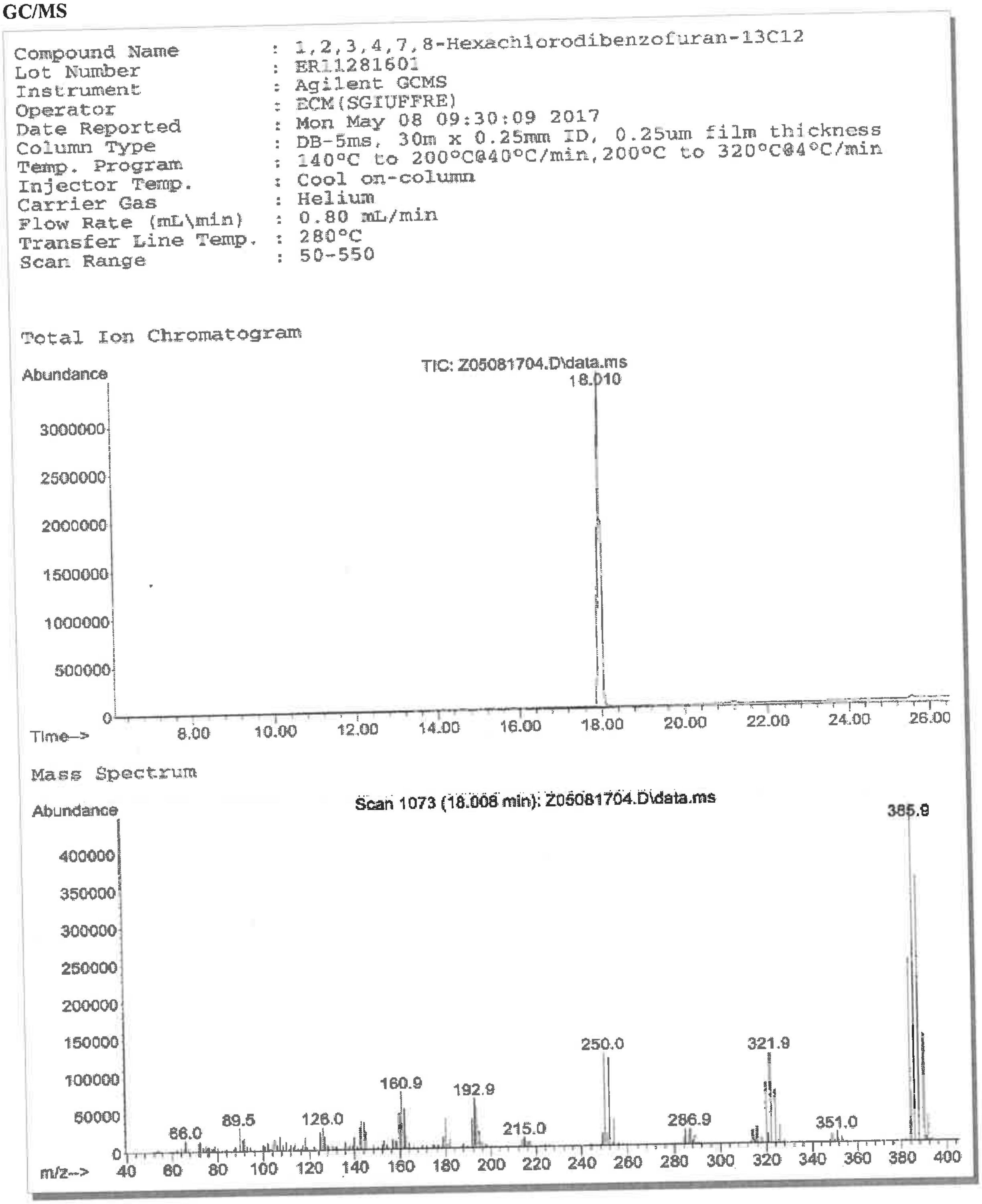

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

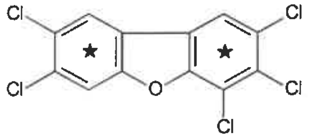

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11101601

Chemical Formula: $^{13}C_{12}H_3Cl_5O$
CAS Number: 116843-02-8
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

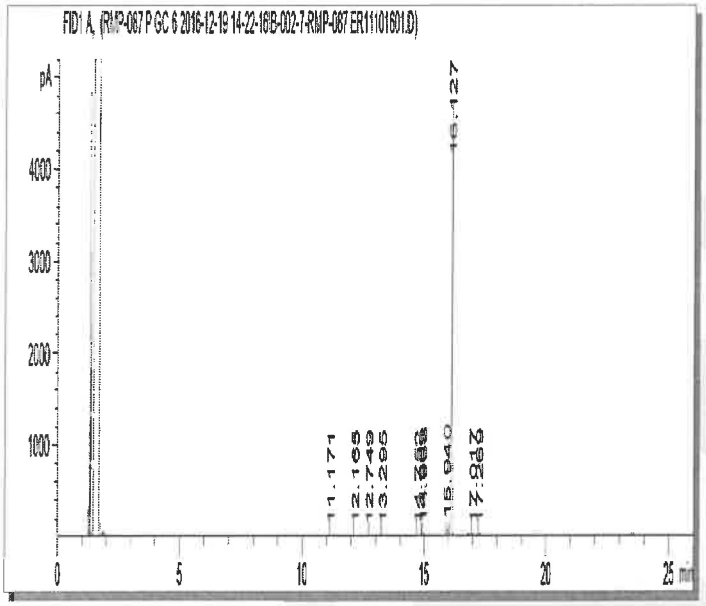

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument:	GC#6
Sample Name:	ER11101601
Acquired:	December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

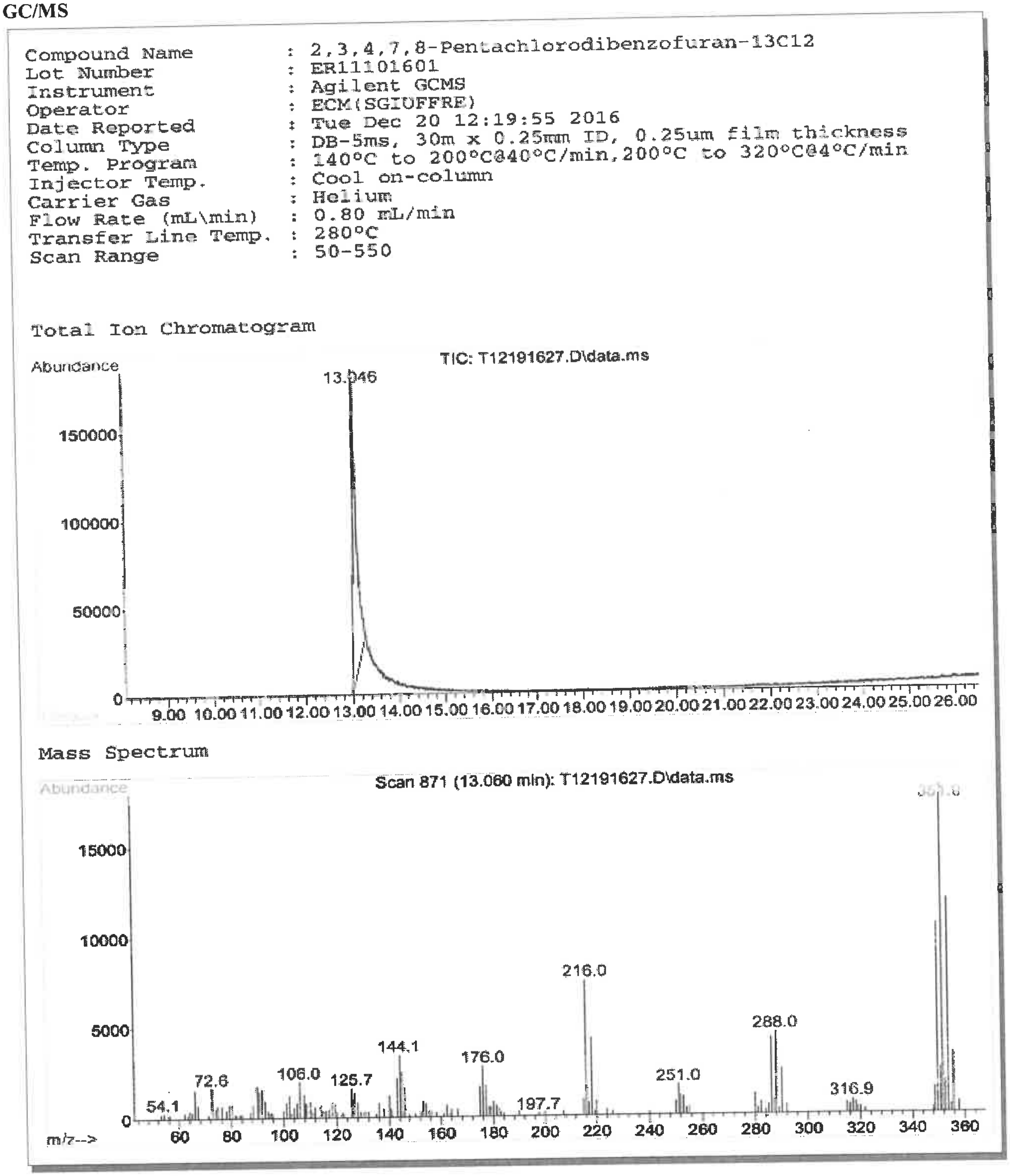

```
Compound Name           : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number              : ER11101601
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Tue Dec 20 12:19:55 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00421

r: 4|21|20 sd

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Analytical Reference Standards
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Revision 02
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
CERTIFICATE AR1353
ISO/IEC 17025
CERTIFICATE AT1352
ISO 9001:2008
CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

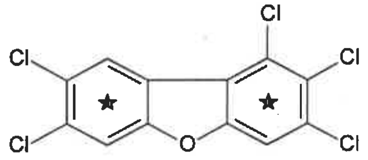

Catalog Number:	EF-952
Solution Lot:	ER012111-01
Expiration Date:	January 2021
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3OCl_5$
CAS Number: 109719-77-9
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

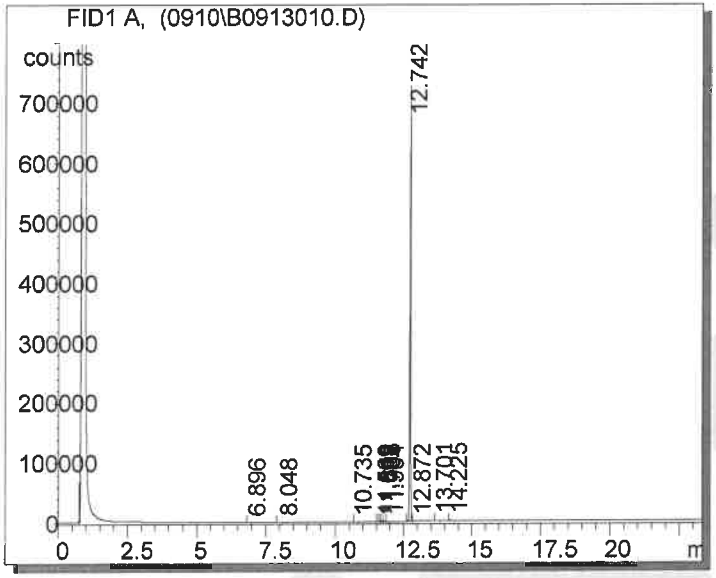

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

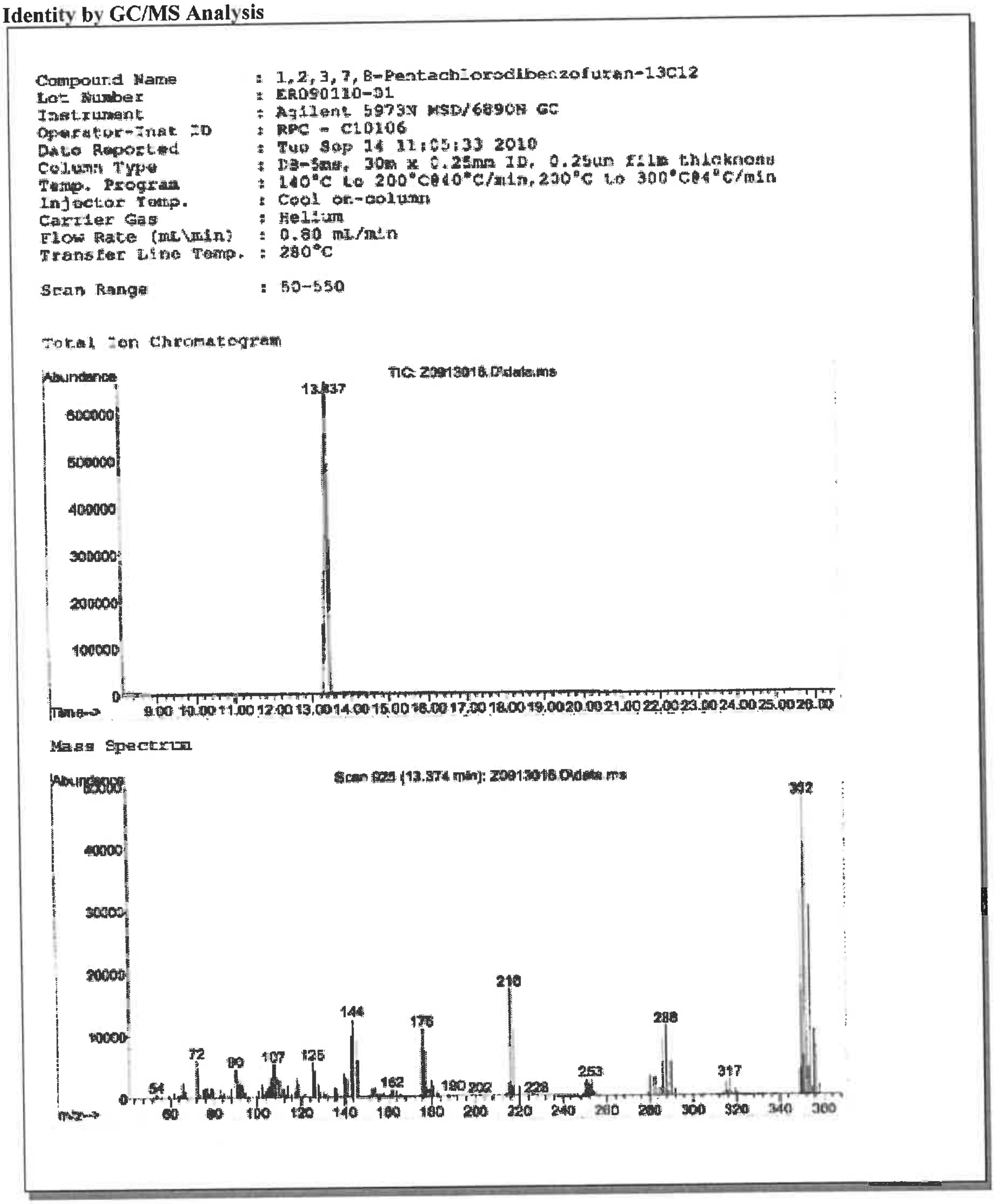

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number             : ER090110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Tue Sep 14 11:05:33 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@10°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

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Revision 01
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

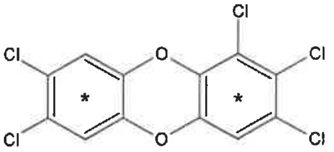

Catalog Number: ED-955
Solution Lot: ER08041401
Expiration Date: August 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

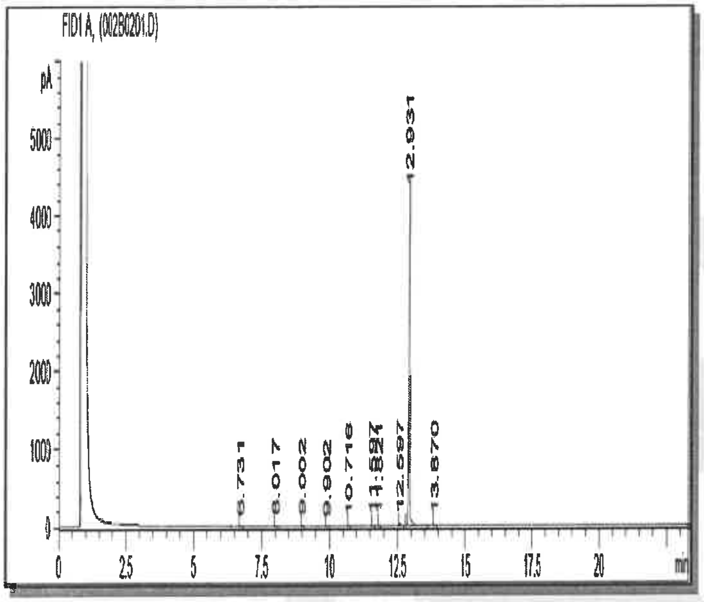

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

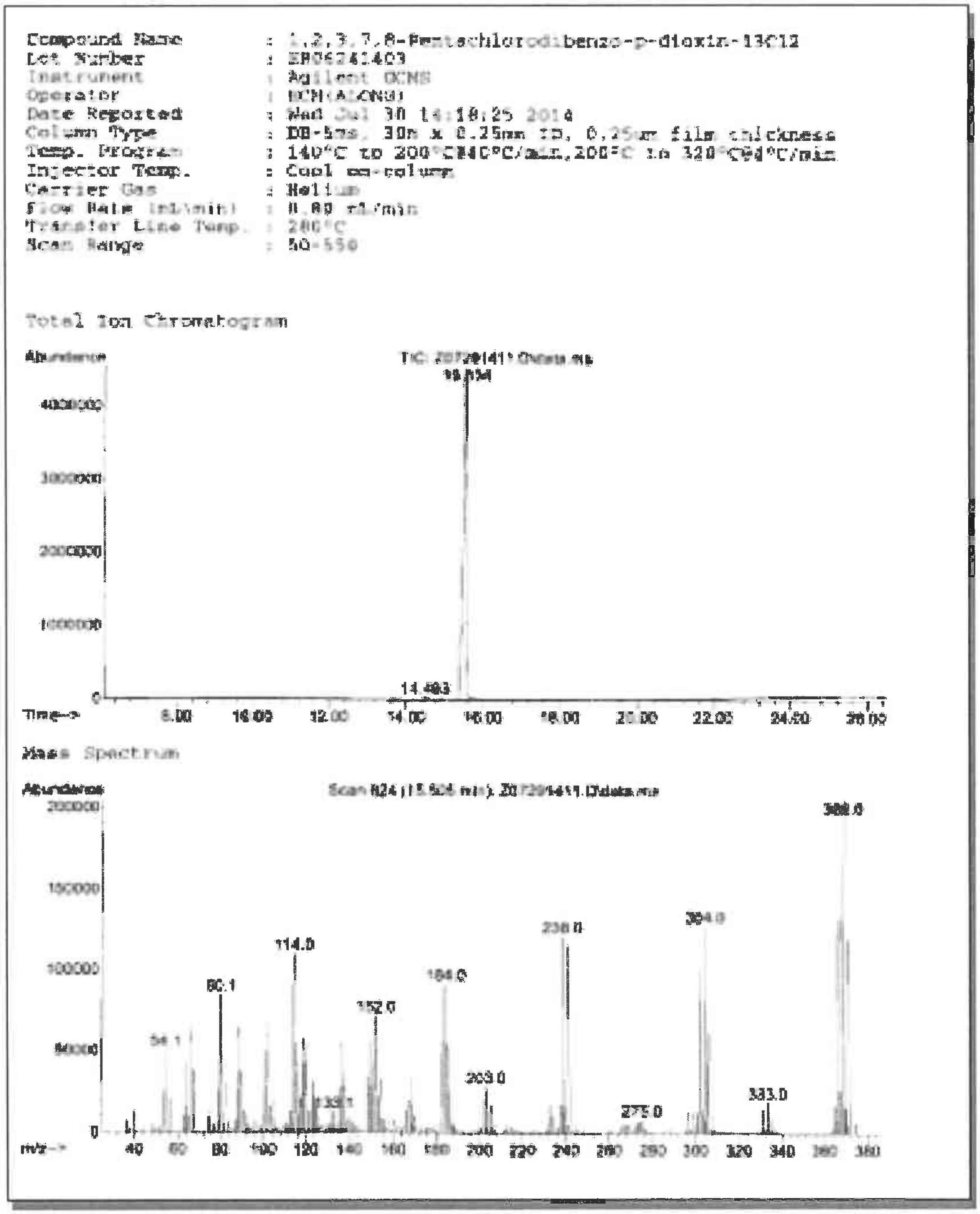

```
Compound Name           : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number              : ER06241403
Instrument              : Agilent GCMS
Operator                : ECH(ALONG)
Date Reported           : Wed Jul 30 14:18:25 2014
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (ml/min)      : 0.80 ml/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

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Analytical Reference Standards
a SIGMA-ALDRICH® company

CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

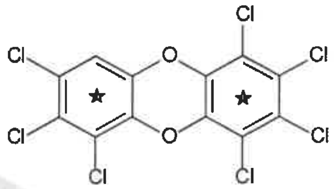

Catalog Number:	ED-972
Solution Lot:	ER09271601
Expiration Date:	October 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	0.999

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER100110-01
Chemical Formula:	$^{13}C_{12}HCl_7O_2$
CAS Number:	109719-83-7
Molecular Weight:	437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

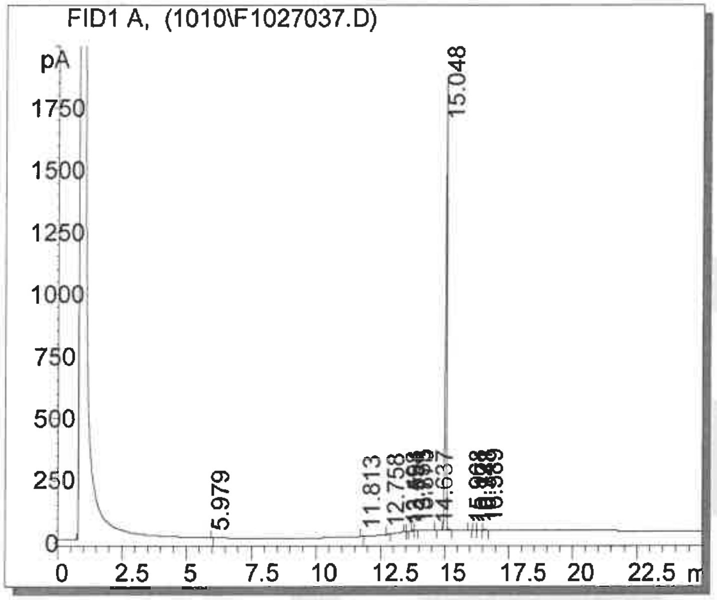

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

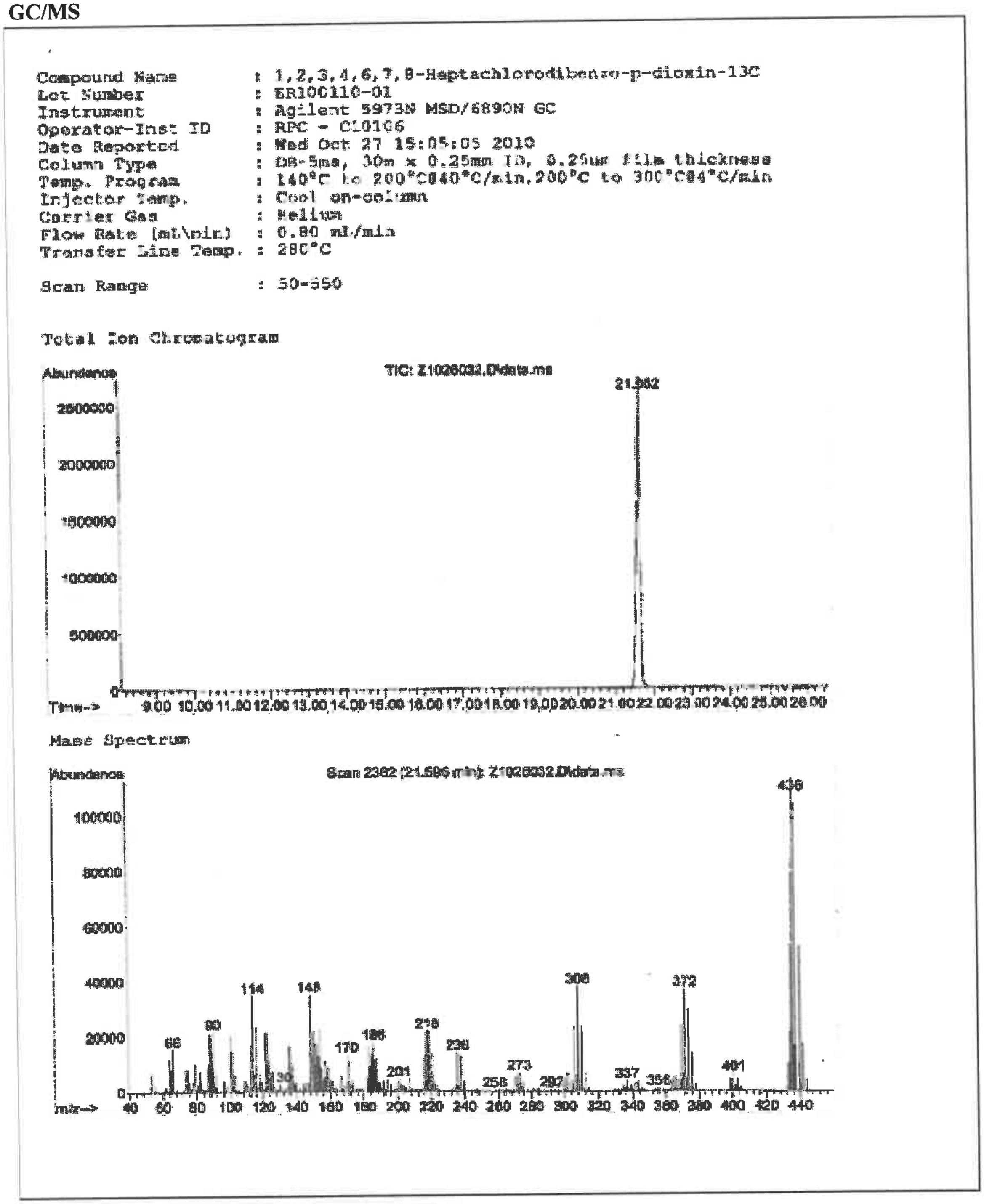

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number : ER10C110-01
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst ID : RPC - C10106
Date Reported : Wed Oct 27 15:05:05 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C

Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

r: 4/21/20 SW

Cerilliant
Analytical Reference Standards
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Revision 0
Page 1 of 5

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

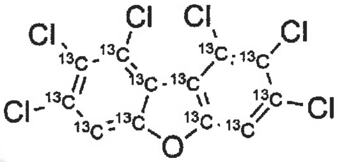

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

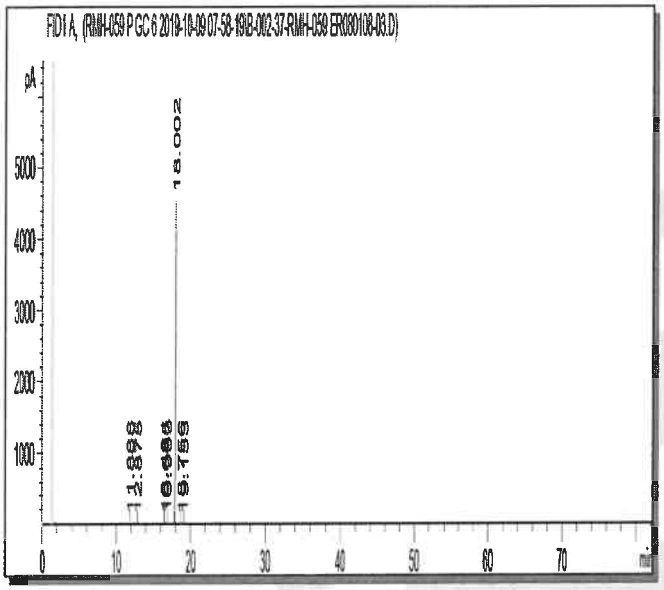

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Sample Name:	ER080108-03
Acquired:	October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

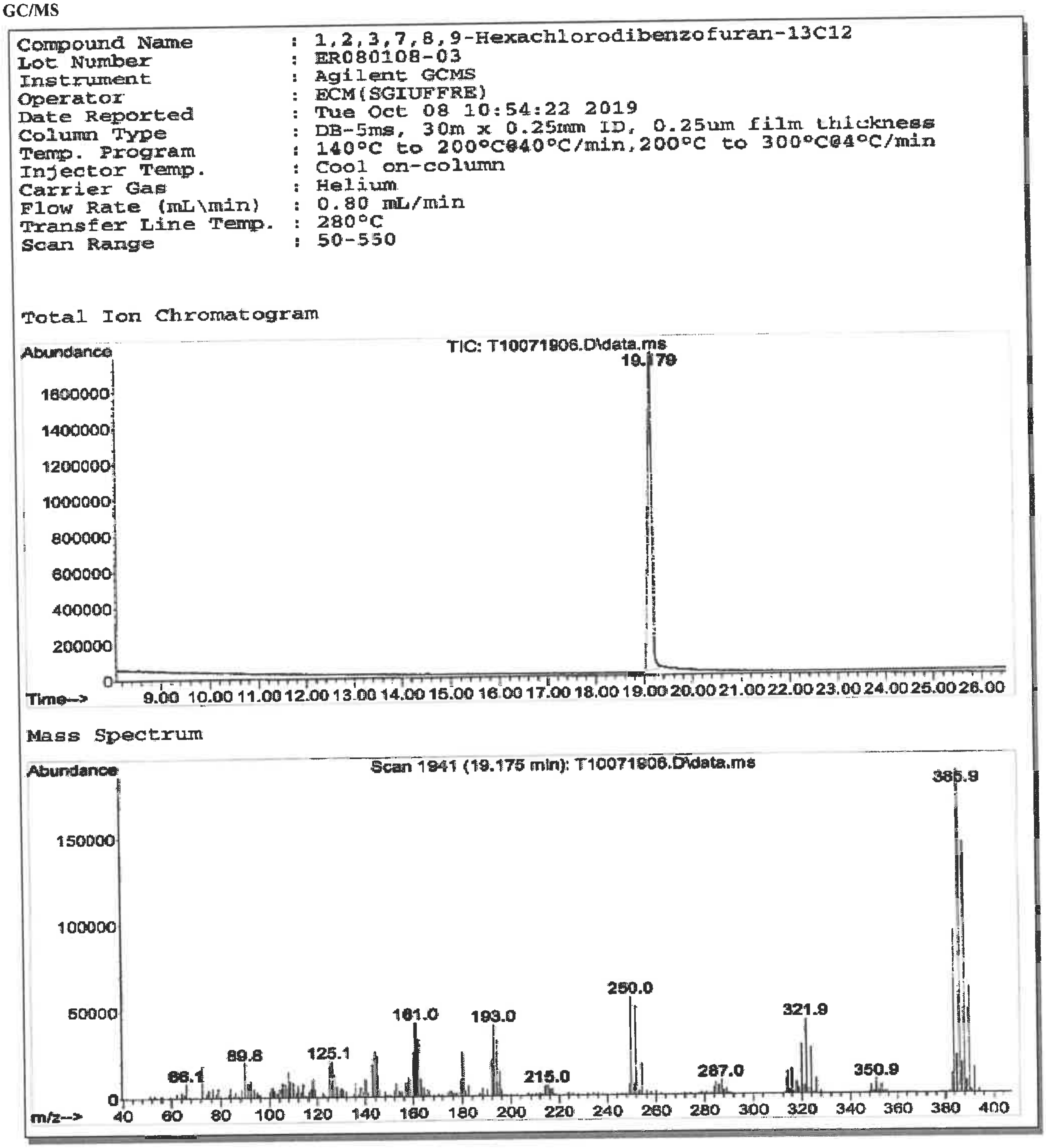

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number : ER080108-03
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Oct 08 10:54:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skw

Cerilliant
Analytical Reference Standards
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Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

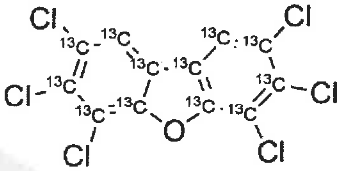

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

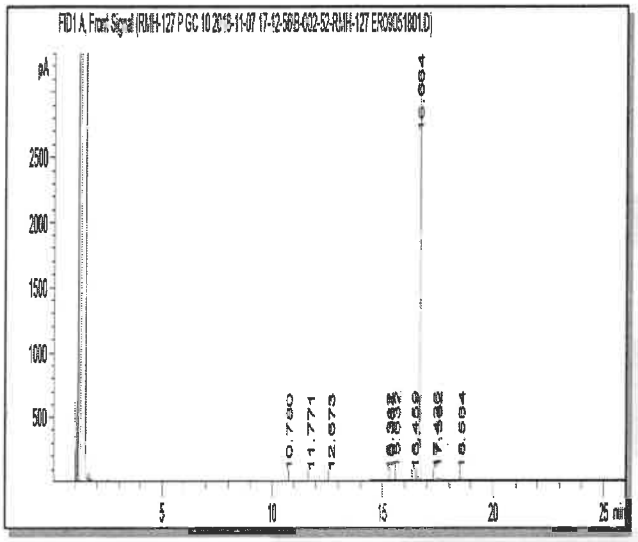

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER09051801
Acquired:	February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

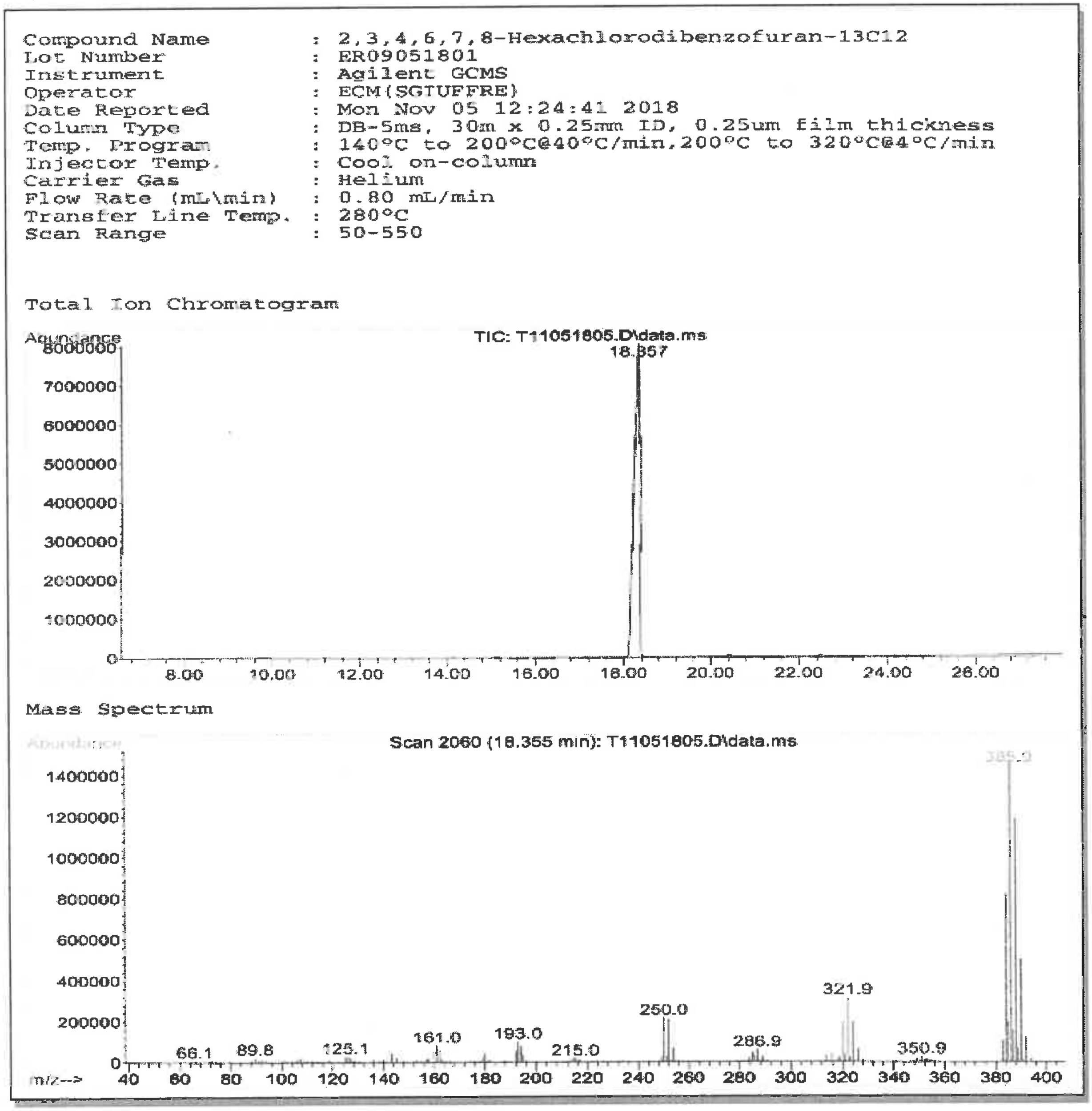

```
Compound Name          : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER09051801
Instrument             : Agilent GCMS
Operator               : ECM(SGTUFFRE)
Date Reported          : Mon Nov 05 12:24:41 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	**Date**	**Reason for Revision**
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20SKW

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

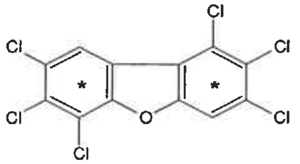

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB
ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER051607-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-03-9
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

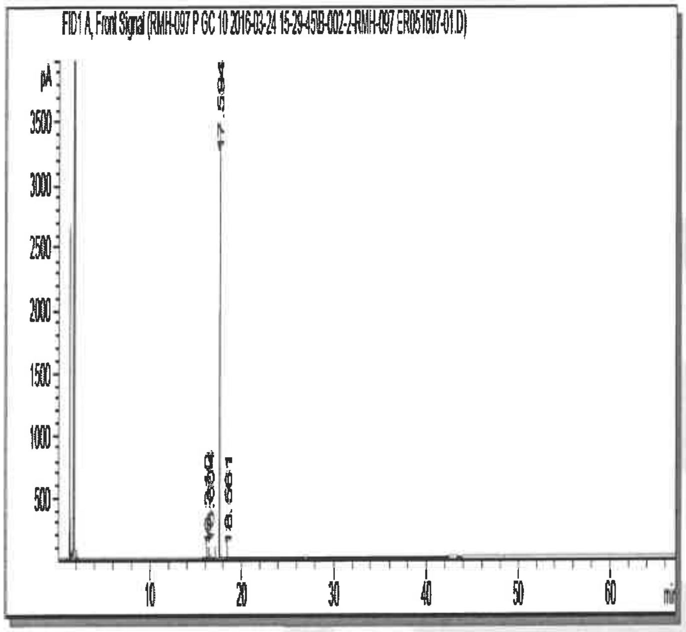

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER051607-01
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Fri Mar 18 07:08:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

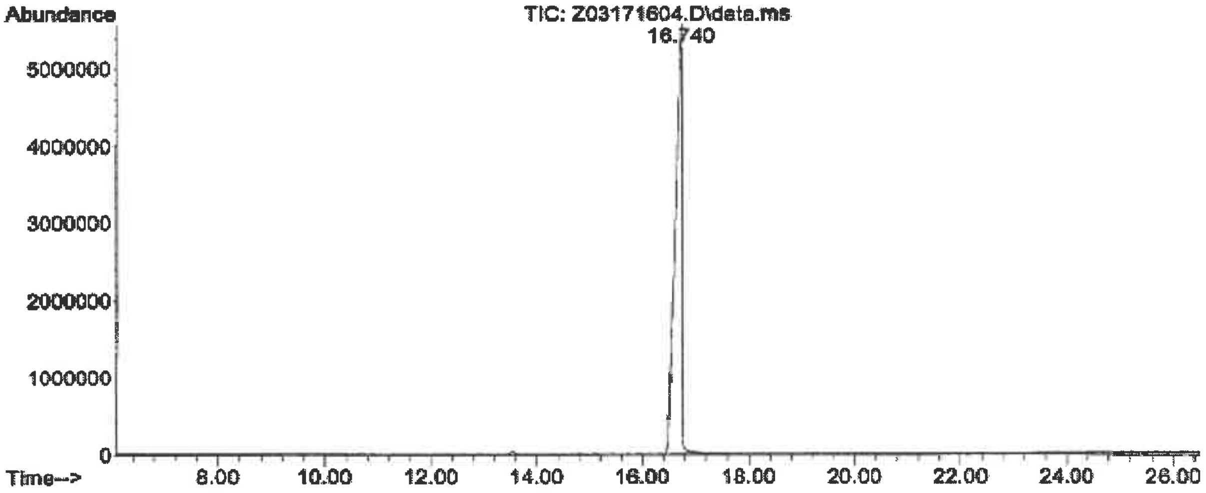

Mass Spectrum

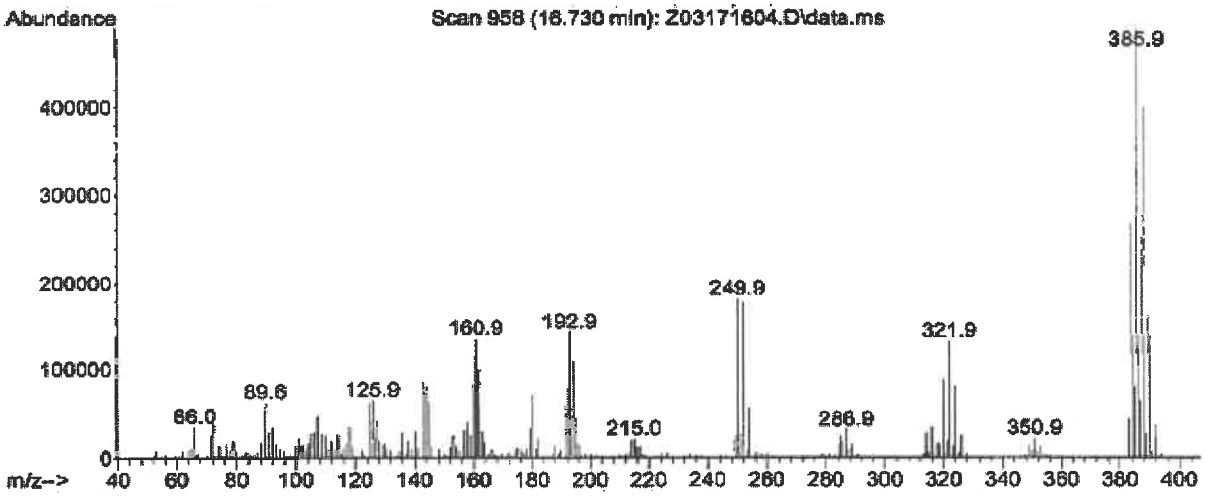

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

rec'. 3/26/20 SW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

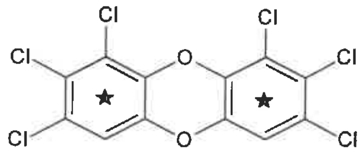

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER110510-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-82-6
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

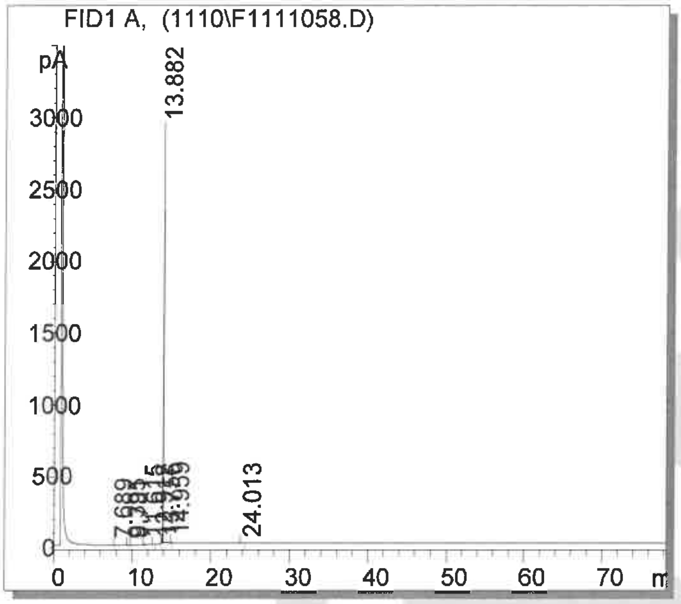

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

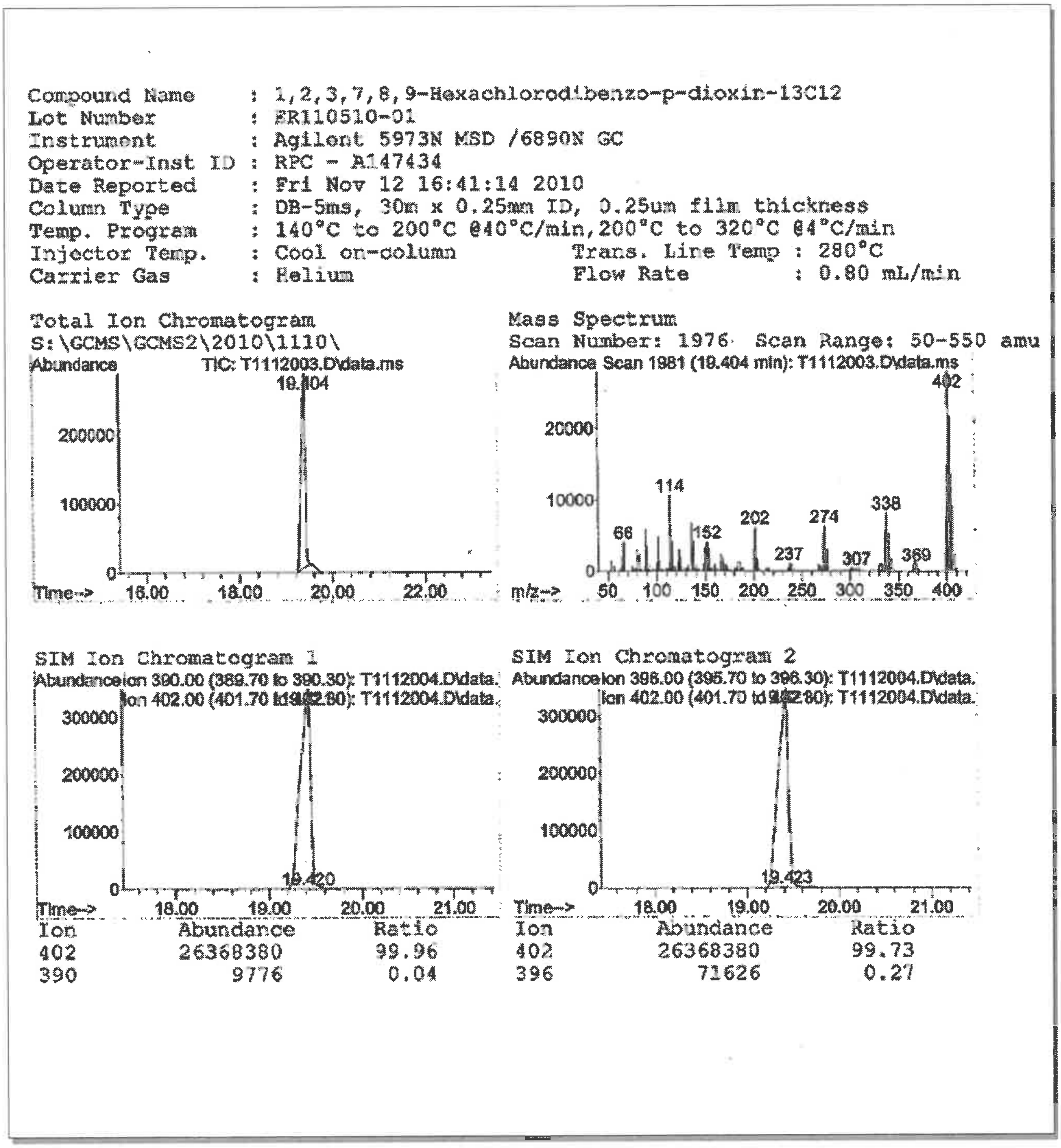

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER110510-01
Instrument : Agilent 5973N MSD /6890N GC
Operator-Inst ID : RPC - A147434
Date Reported : Fri Nov 12 16:41:14 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp. : Cool on-column
Trans. Line Temp : 280°C
Carrier Gas : Helium
Flow Rate : 0.80 mL/min

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

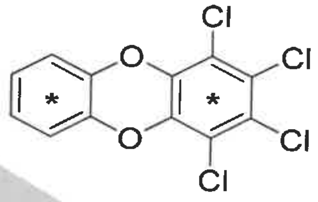

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

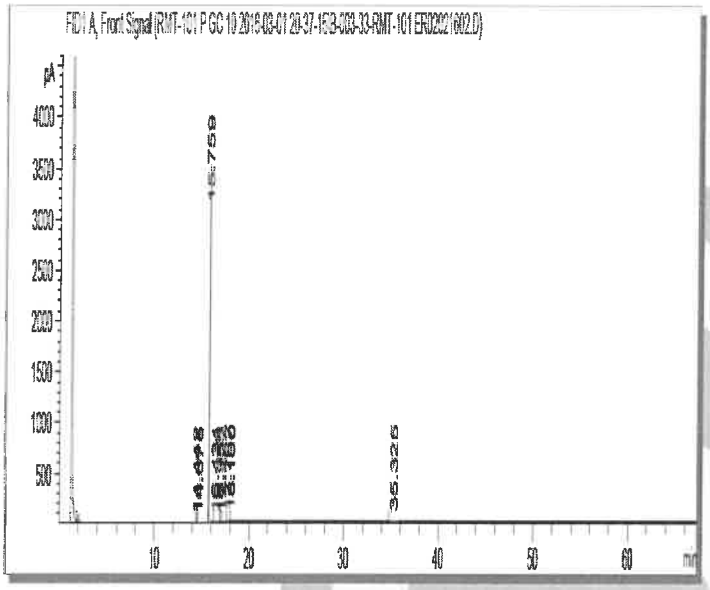

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

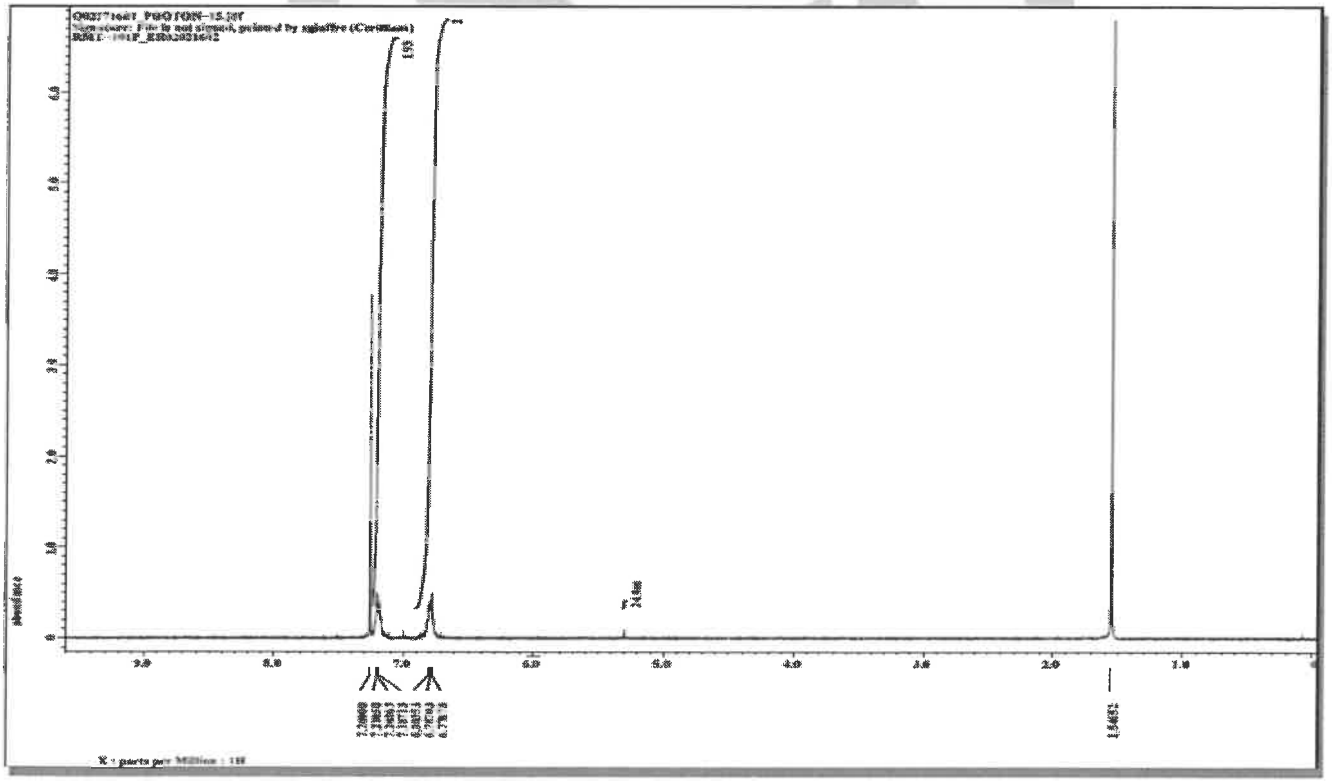

Spectral and Physical Data (cont.)

GC/MS

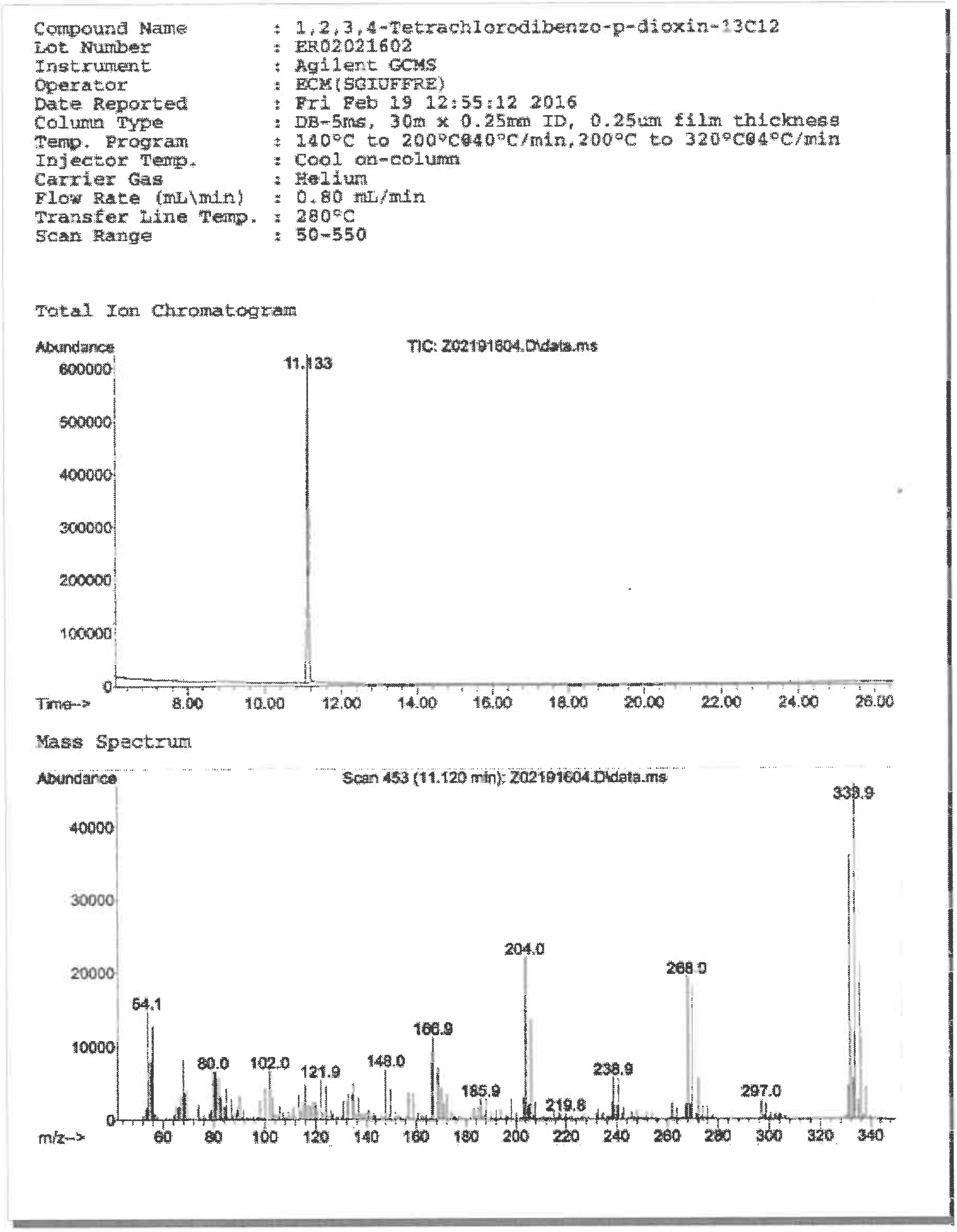

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

②

P: 4/24/19 SKJ

WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF
Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \dots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \dots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

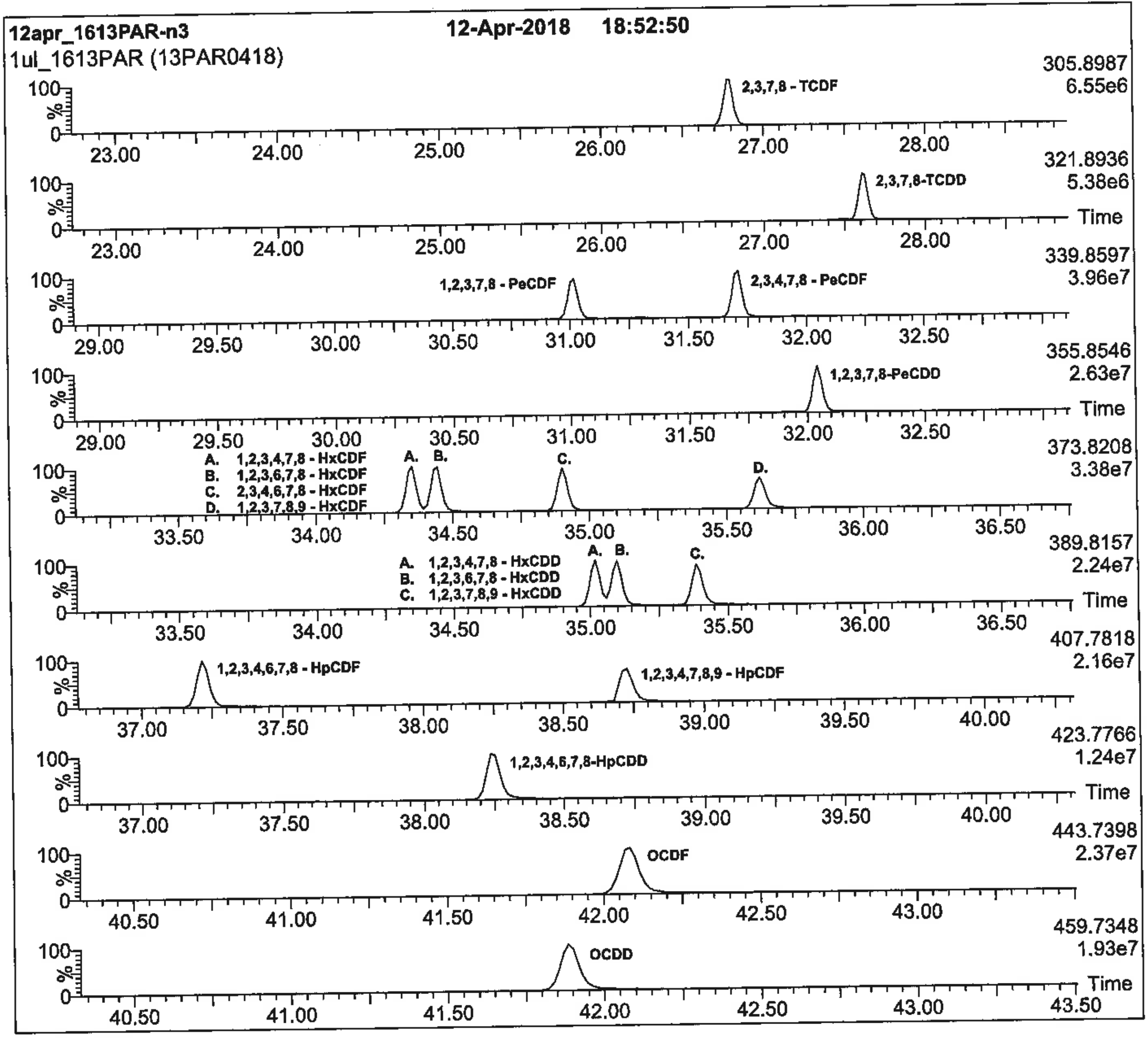

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min
Injector: 280 °C (Splitless Injection)
Ionization: EI+
Detector: 280 °C
SIR at 10,000 mass resolving power

Oven:
150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/16 SKV

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Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/ECD
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

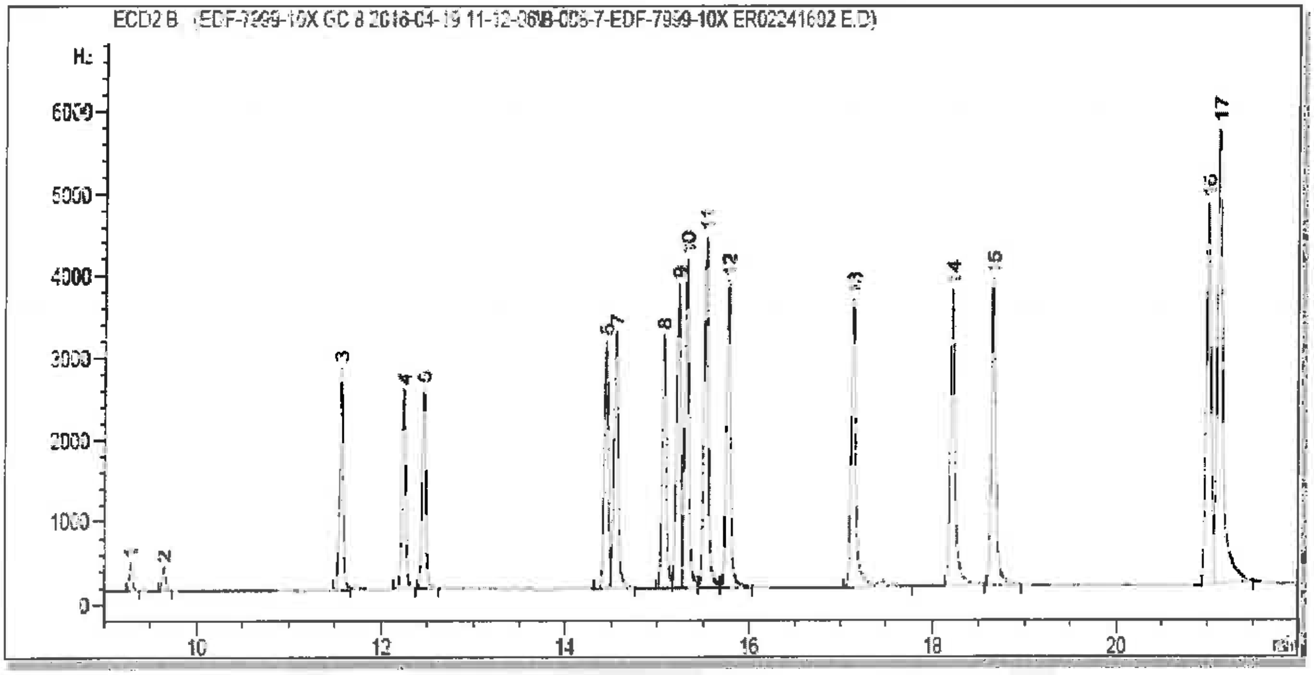

Peak:	**Analyte:**
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
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11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

r: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
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Revision 01
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Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

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1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

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Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

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1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
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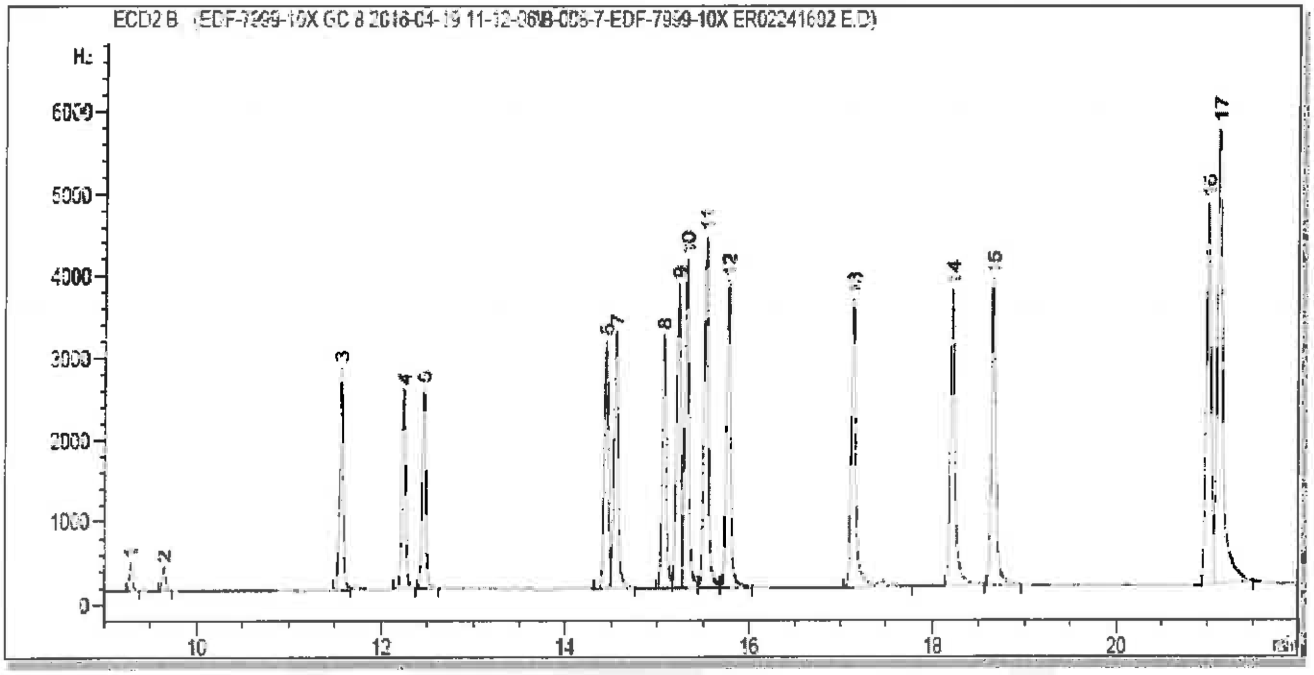

Peak:	Analyte:
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15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-432973/2-A	98	81	102	88	86	80	88	91
	LCSD 320-432973/3-A	96	82	103	89	85	81	98	99

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-432973/2-A	96	74	78	92	78	70	75	73
	LCSD 320-432973/3-A	99	78	81	97	84	74	80	75

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Tank #2 1um RA	320-66850-2 RA	81	102

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Tank #1-1um	320-66850-1	67	74	96	63	63	67	61	65
11215702-Tank #2 1um	320-66850-2	80	81	90	79	76	81	73	79
	MB 320-432973/1-A	80	83	88	83	80	85	79	81

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank #1-1um	320-66850-1	66	64	69	67	66	69	63	68
11215702-Tank #2 1um	320-66850-2	77	75	80	81	76	83	77	78
	MB 320-432973/1-A	85	78	86	85	83	86	80	83

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 23NO2010D5_52.d

Lab ID: LCS 320-432973/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	184	92	67-158	
2,3,7,8-TCDF	200	184	92	75-158	
1,2,3,7,8-PeCDD	1000	823	82	70-142	
1,2,3,7,8-PeCDF	1000	857	86	80-134	
2,3,4,7,8-PeCDF	1000	903	90	68-160	
1,2,3,4,7,8-HxCDD	1000	892	89	70-164	
1,2,3,6,7,8-HxCDD	1000	887	89	76-134	
1,2,3,7,8,9-HxCDD	1000	896	90	64-162	
1,2,3,4,7,8-HxCDF	1000	873	87	72-134	
1,2,3,6,7,8-HxCDF	1000	848	85	84-130	
1,2,3,7,8,9-HxCDF	1000	853	85	78-130	
2,3,4,6,7,8-HxCDF	1000	854	85	70-156	
1,2,3,4,6,7,8-HpCDD	1000	859	86	70-140	
1,2,3,4,6,7,8-HpCDF	1000	851	85	82-122	
1,2,3,4,7,8,9-HpCDF	1000	875	88	78-138	
OCDD	2000	1610	81	78-144	
OCDF	2000	1670	83	63-170	
13C-2,3,7,8-TCDD	2000	1620	81	20-175	
13C-2,3,7,8-TCDF	2000	1970	98	22-152	
13C-1,2,3,7,8-PeCDD	2000	1600	80	21-227	
13C-1,2,3,7,8-PeCDF	2000	1760	88	21-192	
13C-2,3,4,7,8-PeCDF	2000	1720	86	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1490	74	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1550	78	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1760	88	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1820	91	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1830	92	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1910	96	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1400	70	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1570	78	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1500	75	20-186	
13C-OCDD	4000	2920	73	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 23NO2010D5_53.d

Lab ID: LCSD 320-432973/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	164	82	11	50	67-158	
2,3,7,8-TCDF	200	163	81	12	50	75-158	
1,2,3,7,8-PeCDD	1000	747	75	10	50	70-142	
1,2,3,7,8-PeCDF	1000	802	80	7	50	80-134	
2,3,4,7,8-PeCDF	1000	812	81	11	50	68-160	
1,2,3,4,7,8-HxCDD	1000	854	85	4	50	70-164	
1,2,3,6,7,8-HxCDD	1000	807	81	9	50	76-134	
1,2,3,7,8,9-HxCDD	1000	847	85	6	50	64-162	
1,2,3,4,7,8-HxCDF	1000	790	79	10	50	72-134	
1,2,3,6,7,8-HxCDF	1000	801	80	6	50	84-130	*
1,2,3,7,8,9-HxCDF	1000	787	79	8	50	78-130	
2,3,4,6,7,8-HxCDF	1000	778	78	9	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	785	79	9	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	775	78	9	50	82-122	*
1,2,3,4,7,8,9-HpCDF	1000	794	79	10	50	78-138	
OCDD	2000	1500	75	7	50	78-144	*
OCDF	2000	1530	77	8	50	63-170	
13C-2,3,7,8-TCDD	2000	1630	82			20-175	
13C-2,3,7,8-TCDF	2000	1930	96			22-152	
13C-1,2,3,7,8-PeCDD	2000	1620	81			21-227	
13C-1,2,3,7,8-PeCDF	2000	1780	89			21-192	
13C-2,3,4,7,8-PeCDF	2000	1710	85			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1570	78			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1630	81			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1960	98			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1980	99			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1940	97			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1990	99			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1480	74			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1670	84			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1590	80			20-186	
13C-OCDD	4000	2990	75			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-66850-1
SDG No.:
Lab File ID: 23no20dfs1_36.d
Lab Sample ID: MB 320-432973/1-A
Matrix: Water
Date Extracted: 11/18/2020 11:29
Instrument ID: DFS 1
Date Analyzed: 11/24/2020 10:17
Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Tank #1-1um	320-66850-1	23no20dfs1_39.d	11/24/2020 12:41
11215702-Tank #2 1um	320-66850-2	23no20dfs1_40.d	11/24/2020 13:29
	LCS 320-432973/2-A	23NO2010D5_52.d	11/25/2020 01:18
	LCSD 320-432973/3-A	23NO2010D5_53.d	11/25/2020 02:03
11215702-Tank #2 1um RA	320-66850-2 RA	30NO2011D2_012.d	11/30/2020 19:29

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-66850-1
SDG No.:
Client Sample ID: 11215702-Tank #1-1um
Lab Sample ID: 320-66850-1
Matrix: Water
Lab File ID: 23no20dfs1_39.d
Analysis Method: 1613B
Date Collected: 11/10/2020 10:00
Extract. Method: 1613B
Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1058.2(mL)
Date Analyzed: 11/24/2020 12:41
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.5	0.58
51207-31-9	2,3,7,8-TCDF	ND		9.5	0.32
40321-76-4	1,2,3,7,8-PeCDD	ND		47	0.57
57117-41-6	1,2,3,7,8-PeCDF	3.2	J B q	47	0.43
57117-31-4	2,3,4,7,8-PeCDF	ND		47	0.47
39227-28-6	1,2,3,4,7,8-HxCDD	3.6	J B	47	0.45
57653-85-7	1,2,3,6,7,8-HxCDD	3.0	J B	47	0.44
19408-74-3	1,2,3,7,8,9-HxCDD	2.2	J B q	47	0.42
70648-26-9	1,2,3,4,7,8-HxCDF	2.2	J B	47	0.43
57117-44-9	1,2,3,6,7,8-HxCDF	2.0	J * B q	47	0.41
72918-21-9	1,2,3,7,8,9-HxCDF	4.5	J B	47	0.44
60851-34-5	2,3,4,6,7,8-HxCDF	2.5	J B	47	0.37
35822-46-9	1,2,3,4,6,7,8-HpCDD	4.7	J B	47	0.27
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.7	J * B	47	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.5	J B q	47	0.46
3268-87-9	OCDD	13	J * B q	95	0.43
39001-02-0	OCDF	7.2	J B	95	0.87
41903-57-5	Total TCDD	ND		9.5	0.58
30402-14-3	Total TCDF	ND		9.5	0.32
36088-22-9	Total PeCDD	ND		47	0.57
30402-15-4	Total PeCDF	3.2	J B q	47	0.45
34465-46-8	Total HxCDD	8.8	J B q	47	0.44
55684-94-1	Total HxCDF	11	J B q	47	0.41
37871-00-4	Total HpCDD	4.7	J B	47	0.27
38998-75-3	Total HpCDF	7.2	J B q	47	0.42

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-1
SDG No.:	
Client Sample ID: 11215702-Tank #1-1um	Lab Sample ID: 320-66850-1
Matrix: Water	Lab File ID: 23no20dfs1_39.d
Analysis Method: 1613B	Date Collected: 11/10/2020 10:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1058.2(mL)	Date Analyzed: 11/24/2020 12:41
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		25-164
89059-46-1	13C-2,3,7,8-TCDF	67		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	67		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	63		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	63		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	61		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	65		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	67		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	66		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	63		26-138
114423-97-1	13C-OCDD	68		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Lims ID: 320-66850-A-1-B
Client ID: 11215702-Tank #1-1um
Sample Type: Client
Inject. Date: 24-Nov-2020 12:41:00 ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-1-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Nov-2020 10:46:15 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1612

First Level Reviewer: stephensk Date: 24-Nov-2020 15:18:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.725	3345795	0.83	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.712	3750806	0.78	1.6832	66.6	66.6	0.1572	0.1572	66.60	
2,3,7,8-TCDF	20.776						0.0167	0.0167		
A Non-2,3,7,8-sub-TCDF	20.119						0.0167	0.0167		
S Total TCDF							0.0167	0.0167		
D 13C-2,3,7,8-TCDD	22.112	2702457	0.81	1.0896	74.1	74.1	0.1675	0.1675	74.13	
2,3,7,8-TCDD	22.159						0.0305	0.0305		
$ 37Cl4-2,3,7,8-TCDD	22.146	1469165		1.1445	38.4	38.4	0.0226	0.0226	95.91	
A Non-2,3,7,8-sub-TCDD	20.973						0.0305	0.0305		
S Total TCDD							0.0305	0.0305		
D 13C-1,2,3,7,8-PeCDF	27.607	3097132	1.61	1.4604	63.4	63.4	0.1975	0.1975	63.38	
1,2,3,7,8-PeCDF	27.641	5902	1.55	1.1322	0.1822	0.1683	0.0227	0.0227		RQM
D 13C-2,3,4,7,8-PeCDF	29.157	2832174	1.58	1.3504	62.7	62.7	0.2135	0.2135	62.68	
2,3,4,7,8-PeCDF	29.217						0.0249	0.0249		
A F1 PeCDFs	24.940						0.007406	0.007406		
A Non-2,3,7,8-sub-PeCDF	28.506						0.0237	0.0237		U
S Total PeCDF					0.1822	0.1683	0.0238	0.0238		RQ
D 13C-1,2,3,7,8-PeCDD	29.991	1966330	1.66	0.8729	67.3	67.3	0.1019	0.1019	67.33	
1,2,3,7,8-PeCDD	30.033						0.0300	0.0300		RQU
A Non-2,3,7,8-sub-PeCDD	28.748						0.0300	0.0300		U
S Total PeCDD							0.0300	0.0300		
D 13C-1,2,3,4,7,8-HxCDF	35.175	2474624	0.55	1.2808	60.8	60.8	0.3568	0.3568	60.85	
1,2,3,4,7,8-HxCDF	35.184	3731	1.31	1.3205	0.1142	0.1142	0.0228	0.0228		
D 13C-1,2,3,6,7,8-HxCDF	35.327	2994800	0.52	1.4615	64.5	64.5	0.3127	0.3127	64.53	
1,2,3,6,7,8-HxCDF	35.369	4102	1.24	1.2682	0.1225	0.1080	0.0215	0.0215		RQM
D 13C-2,3,4,6,7,8-HxCDF	36.118	2766078	0.53	1.3227	65.9	65.9	0.3455	0.3455	65.86	
2,3,4,6,7,8-HxCDF	36.135	4789	1.19	1.2838	0.1349	0.1349	0.0195	0.0195		M
D 13C-1,2,3,7,8,9-HxCDF	36.986	2369717	0.54	1.1062	67.5	67.5	0.4131	0.4131	67.47	
1,2,3,7,8,9-HxCDF	37.002	7441	1.13	1.3063	0.2404	0.2404	0.0232	0.0232		M
A Non-2,3,7,8-sub-HxCDF	35.280						0.0216	0.0216		U
S Total HxCDF					0.6120	0.5974	0.0217	0.0217		RQ
* 13C-1,2,3,7,8,9-HxCDD	36.792	3175206	1.29	3.7E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.320	1783624	1.30	0.8757	64.1	64.1	0.2901	0.2901	64.15	
1,2,3,4,7,8-HxCDD	36.337	4029	1.13	1.1972	0.1887	0.1887	0.0237	0.0237		M
D 13C-1,2,3,6,7,8-HxCDD	36.430	2341569	1.26	1.0651	69.2	69.2	0.2385	0.2385	69.24	
1,2,3,6,7,8-HxCDD	36.447	3936	1.29	1.0695	0.1572	0.1572	0.0231	0.0231		M
1,2,3,7,8,9-HxCDD	36.834	2876	1.24	1.1806	0.1354	0.1181	0.0224	0.0224		RQM
A Non-2,3,7,8-sub-HxCDD	35.613						0.0230	0.0230		
S Total HxCDD					0.4812	0.4640	0.0231	0.0231		RQ
1,2,3,4,6,7,8-HpCDF	38.783	6103	1.19	1.5618	0.1961	0.1961	0.0198	0.0198		M
D 13C-1,2,3,4,6,7,8-HpCDF	38.758	1992477	0.46	0.9521	65.9	65.9	0.5063	0.5063	65.91	
1,2,3,4,7,8,9-HpCDF	39.996	4385	1.04	1.4975	0.2045	0.1874	0.0242	0.0242		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	39.988	1562788	0.46	0.7782	63.2	63.2	0.6195	0.6195	63.25	
A Non-2,3,7,8-sub-HpCDF	39.360						0.0218	0.0218		
S Total HpCDF					0.4006	0.3835	0.0220	0.0220		RQ
1,2,3,4,6,7,8-HpCDD	39.693	5113	1.15	1.1079	0.2512	0.2512	0.0142	0.0142		M
D 13C-1,2,3,4,6,7,8-HpCDD	39.685	1837222	1.08	0.8393	68.9	68.9	0.2945	0.2945	68.94	
A Non-2,3,7,8-sub-HpCDD	40.007						0.0142	0.0142		U
S Total HpCDD					0.2512	0.2512	0.0142	0.0142		
D 13C-OCDD	42.157	2291265	0.94	0.5301	136.1	136.1	0.3077	0.3077	68.06	
OCDF	42.267	6429	0.87	1.4802	0.3791	0.3791	0.0459	0.0459		M
OCDD	42.182	9039	0.89	1.1666	0.7477	0.6763	0.0227	0.0227		RQM

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Lims ID: 320-66850-A-1-B
Client ID: 11215702-Tank #1-1um
Sample Type: Client
Inject. Date: 24-Nov-2020 12:41:00 ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-1-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Nov-2020 10:46:15 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1612

First Level Reviewer: stephensk Date: 24-Nov-2020 15:18:40

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.725	21.772	-3		1513775	211589	235	587	900		a
333.9338	21.725	21.772	-3		1832020	260720	110	275	2370	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.712	20.725	-1	0.953	1644022	231219	377	942	613		
317.9389	20.721	20.725	0	0.954	2106784	297304	123	307	2417	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.776						5	12			
305.8987	20.776						36	90			
A Non-2,3,7,8-sub-TCDF											
303.9016	20.119						5	12			
305.8987	20.119						36	90			
13C-2,3,7,8-TCDD											
331.9368	22.112	22.124	-1	1.018	1205295	158867	235	587	676		
333.9338	22.112	22.124	-1	1.018	1497162	198751	110	275	1807	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.159						45	112			
321.8936	22.159						6	15			
37Cl4-2,3,7,8-TCDD											
327.8847	22.146	22.201	-3	1.019	1469165	191322	49	122	3905		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.973						45	112			
321.8936	20.973						6	15			
13C-1,2,3,7,8-PeCDF											
351.9000	27.607	27.633	-2	1.271	1909240	266491	291	727	916		
353.8970	27.607	27.633	-2	1.271	1187892	169712	254	635	668	1.61(1.32-1.78)	

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											RQM
339.8597	27.641	27.659	-1	1.001	3588	470	11	27	43		M
341.8567	27.633	27.659	-2	1.001	2800	450	34	85	13	1.28(1.32-1.78)	M
	Empc Correction				2314	303	34	85	9		
13C-2,3,4,7,8-PeCDF											
351.9000	29.157	29.184	-2	1.342	1735160	236832	291	727	814		
353.8970	29.157	29.184	-2	1.342	1097014	152045	254	635	599	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.217						11	27			
341.8567	29.217						34	85			
A F1 PeCDFs											
339.8597	24.940						1	2			
341.8567	24.940						13	32			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	28.506						11	27			
341.8567	28.506						34	85			
13C-1,2,3,7,8-PeCDD											
367.8949	29.991	30.017	-2	1.380	1226743	161790	93	232	1740		
369.8919	30.000	30.017	-1	1.381	739587	97655	75	187	1302	1.66(1.32-1.78)	
1,2,3,7,8-PeCDD											RQU
355.8546	30.051						31	77			
357.8516	30.051						4	10			
A Non-2,3,7,8-sub-PeCDD											U
355.8546	28.748						31	77			
357.8516	28.748						4	10			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.175	35.175	0	0.956	876542	177712	416	1040	427		
385.8610	35.175	35.175	0	0.956	1598082	338144	845	2112	400	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.184	35.200	-1	1.000	2114	449	40	100	11		
375.8178	35.200	35.200	0	1.001	1617	349	22	55	16	1.31(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.327	35.335	0	0.960	1028522	200261	416	1040	481		
385.8610	35.327	35.335	0	0.960	1966278	368417	845	2112	436	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQM
373.8208	35.369	35.351	1	1.001	2271	422	40	100	11		M
375.8178	35.369	35.351	1	1.001	2383	491	22	55	22	0.95(1.05-1.43)	
	Empc Correction				1831	340	22	55	15		
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.118	36.118	0	0.982	959105	213875	416	1040	514		
385.8610	36.118	36.118	0	0.982	1806973	406766	845	2112	481	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	36.135	36.135	0	1.000	2607	637	40	100	16		M
375.8178	36.118	36.135	-1	1.000	2182	409	22	55	19	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.986	36.986	0	1.005	827390	177275	416	1040	426		
385.8610	36.986	36.986	0	1.005	1542327	334132	845	2112	395	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											M
373.8208	37.002	37.003	0	1.000	3951	945	40	100	24		M
375.8178	37.002	37.003	0	1.000	3490	775	22	55	35	1.13(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											U
373.8208	35.280						40	100			
375.8178	35.280						22	55			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.792	36.792	0		1787486	388795	387	967	1005		
403.8529	36.792	36.792	0		1387720	300963	314	785	958	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.320	36.320	0	0.987	1007635	256243	387	967	662		
403.8529	36.320	36.320	0	0.987	775989	190885	314	785	608	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	36.337	36.337	0	1.000	2134	598	26	65	23		M
391.8127	36.320	36.337	-1	1.000	1895	428	25	62	17	1.13(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.430	36.438	0	0.990	1305605	289151	387	967	747		
403.8529	36.430	36.438	0	0.990	1035964	225080	314	785	717	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	36.447	36.446	0	1.000	2214	487	26	65	19		
391.8127	36.447	36.446	0	1.000	1722	299	25	62	12	1.29(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											RQM
389.8158	36.834	36.809	2	1.014	2012	404	26	65	16		M
	Empc Correction				1592	434	26	65	17		
391.8127	36.817	36.809	1	1.014	1284	350	25	62	14	1.57(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.613						26	65			
391.8127	35.613						25	62			
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.783	38.745	2	1.001	3319	775	47	117	16		M
409.7788	38.775	38.745	2	1.000	2784	728	16	40	46	1.19(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.758	38.749	1	1.053	628285	159329	466	1165	342		
419.8220	38.750	38.749	0	1.053	1364192	347614	864	2160	402	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQM
407.7817	39.996	39.975	1	1.000	2636	699	47	117	15		
	Empc Correction				2235	688	47	117	15		
409.7788	39.996	39.975	1	1.000	2150	662	16	40	41	1.23(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.988	39.979	1	1.087	489237	136845	466	1165	294		
419.8220	39.988	39.979	1	1.087	1073551	296333	864	2160	343	0.46(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.360						47	117			
409.7788	39.360						16	40			
1,2,3,4,6,7,8-HpCDD											M
423.7767	39.693	39.672	1	1.000	2735	786	23	57	34		M
425.7737	39.693	39.672	1	1.000	2378	807	9	22	90	1.15(0.88-1.20)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.685	39.676	1	1.079	952988	260948	325	812	803		
437.8140	39.685	39.676	1	1.079	884234	249057	357	892	698	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											U
423.7767	40.007						23	57			
425.7737	40.007						9	22			
13C-OCDD											
469.7780	42.157	42.158	0	1.146	1107924	254457	255	637	998		
471.7750	42.157	42.158	0	1.146	1183341	275205	195	487	1411	0.94(0.76-1.02)	
OCDF											M
441.7428	42.267	42.251	1	1.003	3000	854	17	42	50		M
443.7399	42.258	42.251	0	1.002	3429	1122	55	137	20	0.87(0.76-1.02)	M
OCDD											RQM
457.7377	42.182	42.167	1	1.001	5209	1317	12	30	110		M
	Empc Correction				4256	1064	12	30	89		
459.7348	42.174	42.167	0	1.000	4783	1196	16	40	75	1.09(0.76-1.02)	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Lims ID: 320-66850-A-1-B
Client ID: 11215702-Tank #1-1um
Inject. Date: 24-Nov-2020 12:41:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 34

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	3097132	436203
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2832174	388877

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2964653	412540

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Lims ID:	320-66850-A-1-B		
Client ID:	11215702-Tank #1-1um		
Inject. Date:	24-Nov-2020 12:41:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	34

Non-2,3,7,8-sub-PeCDD, RT: 28.748

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.119	D 13C-1,2,3,7,8-PeCDD	100.000	1966330	259445

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	1966330	259445

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Lims ID:	320-66850-A-1-B		
Client ID:	11215702-Tank #1-1um		
Inject. Date:	24-Nov-2020 12:41:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	34

Non-2,3,7,8-sub-HxCDF, RT: 35.280

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320	D 13C-1,2,3,4,7,8-HxCDF	100.000	2474624	515856
1,2,3,6,7,8-HxCDF	1.268	D 13C-1,2,3,6,7,8-HxCDF	100.000	2994800	568678
2,3,4,6,7,8-HxCDF	1.284	D 13C-2,3,4,6,7,8-HxCDF	100.000	2766078	620641
1,2,3,7,8,9-HxCDF	1.306	D 13C-1,2,3,7,8,9-HxCDF	100.000	2369717	511407

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.295		100.000	2651304	554145

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Lims ID:	320-66850-A-1-B		
Client ID:	11215702-Tank #1-1um		
Inject. Date:	24-Nov-2020 12:41:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	34

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1837222	510005

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	1837222	510005

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags

Compound is Marked ND

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	27.64
Area:	3261
Amount:	0.193637
Amount Units:	pg/ul

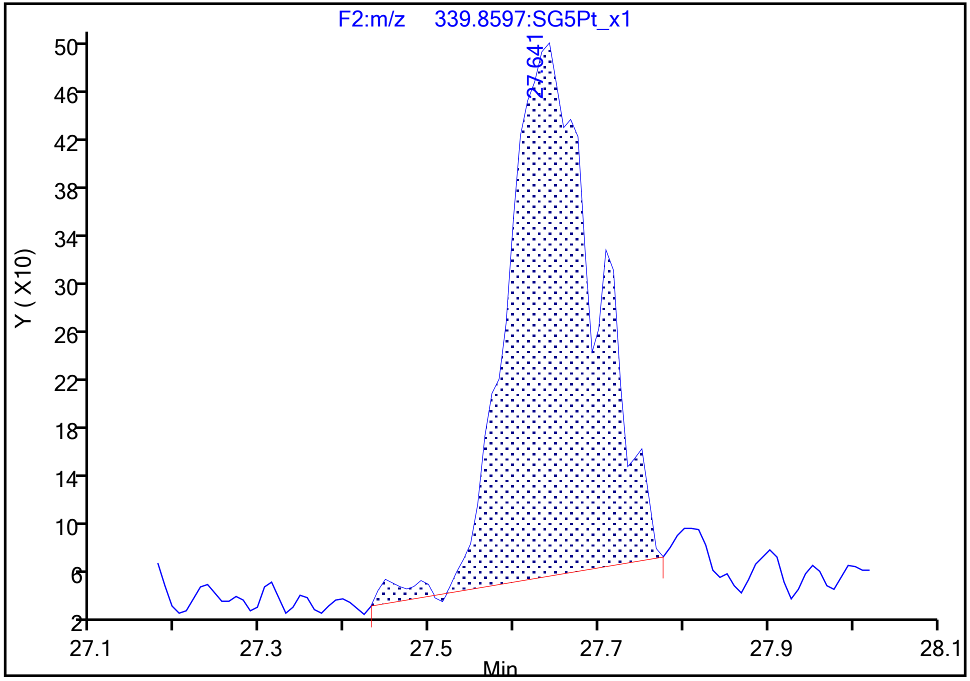

Manual Integration Results

RT:	27.64
Area:	3588
Amount:	0.182173
Amount Units:	pg/ul

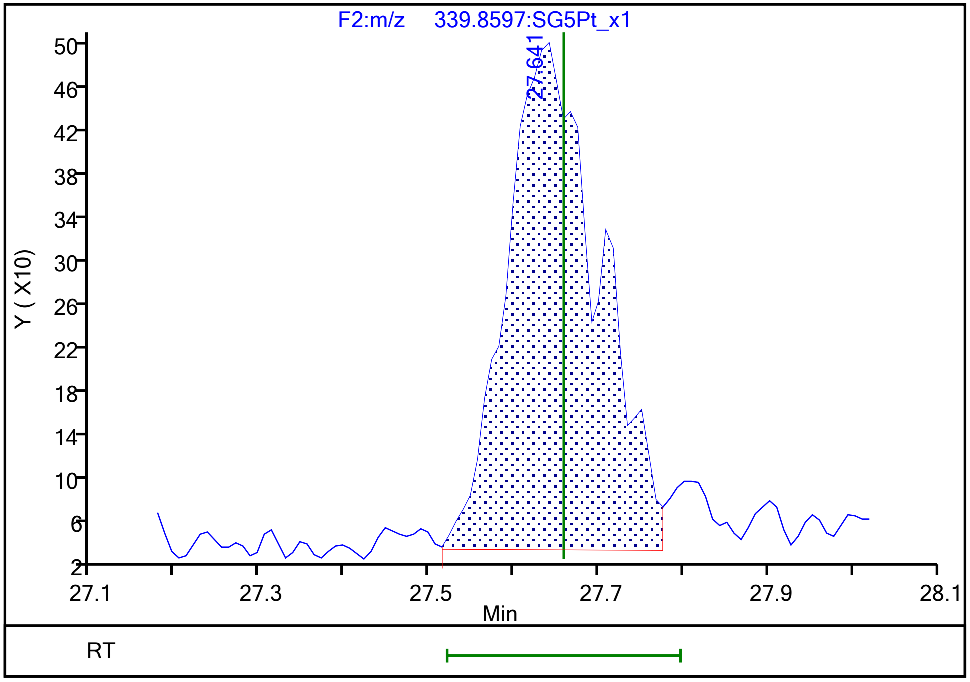

Reviewer: dadunj, 30-Nov-2020 10:43:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	27.63
Area:	3529
Amount:	0.193637
Amount Units:	pg/ul

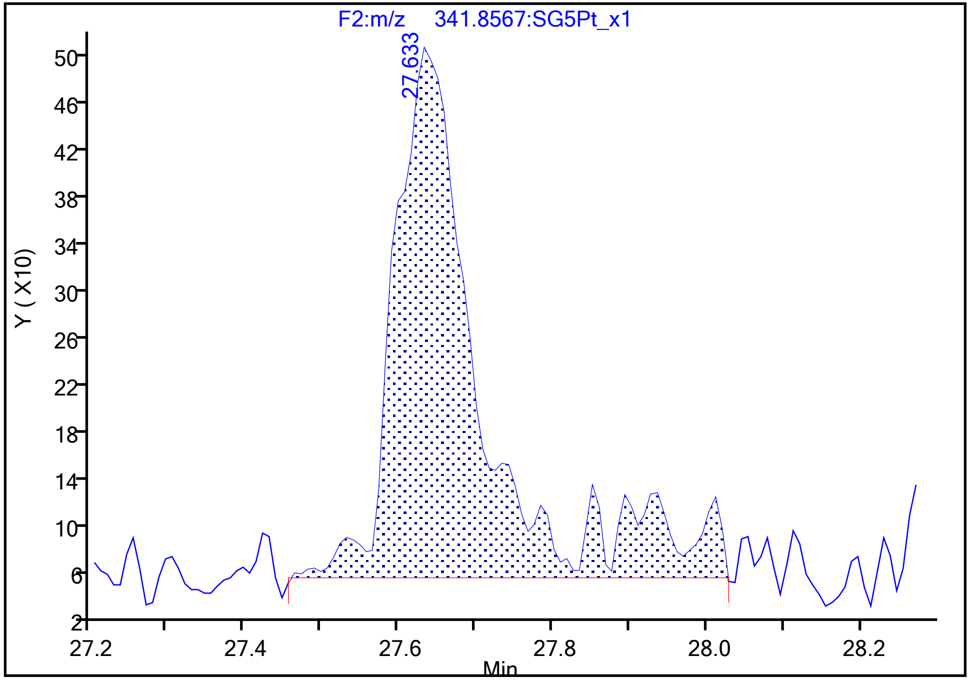

Manual Integration Results

RT:	27.63
Area:	2800
Amount:	0.182173
Amount Units:	pg/ul

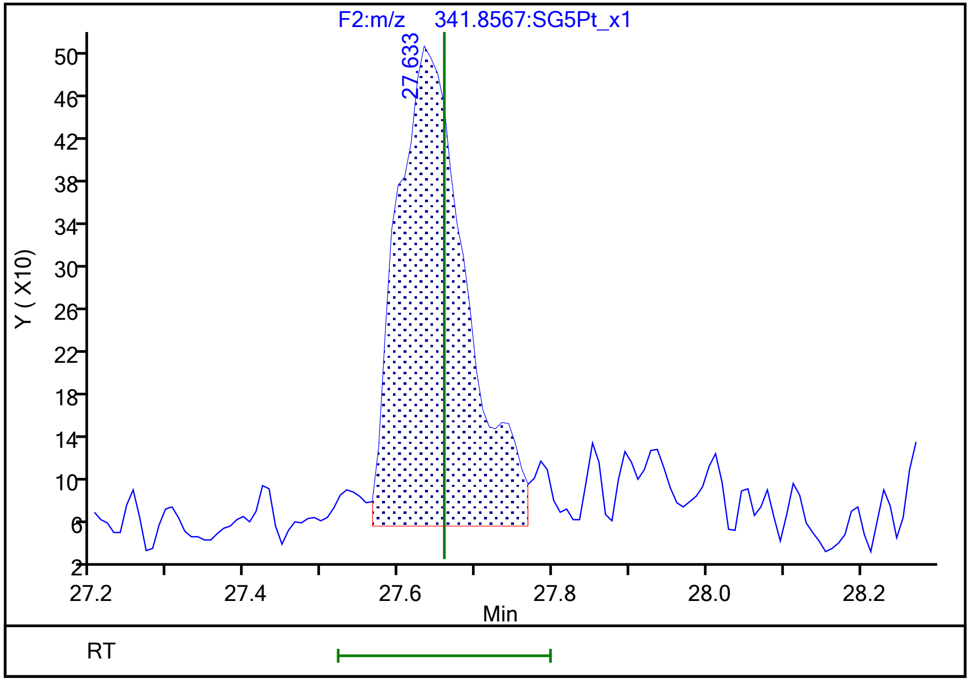

Reviewer: dadunj, 30-Nov-2020 10:43:37

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Instrument ID: DFS 1
Lims ID: 320-66850-A-1-B
Lab Sample ID: 320-66850-1
Client ID: 11215702-Tank #1-1um
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 34
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT: 35.37
Area: 2751
Amount: 0.135180
Amount Units: pg/ul

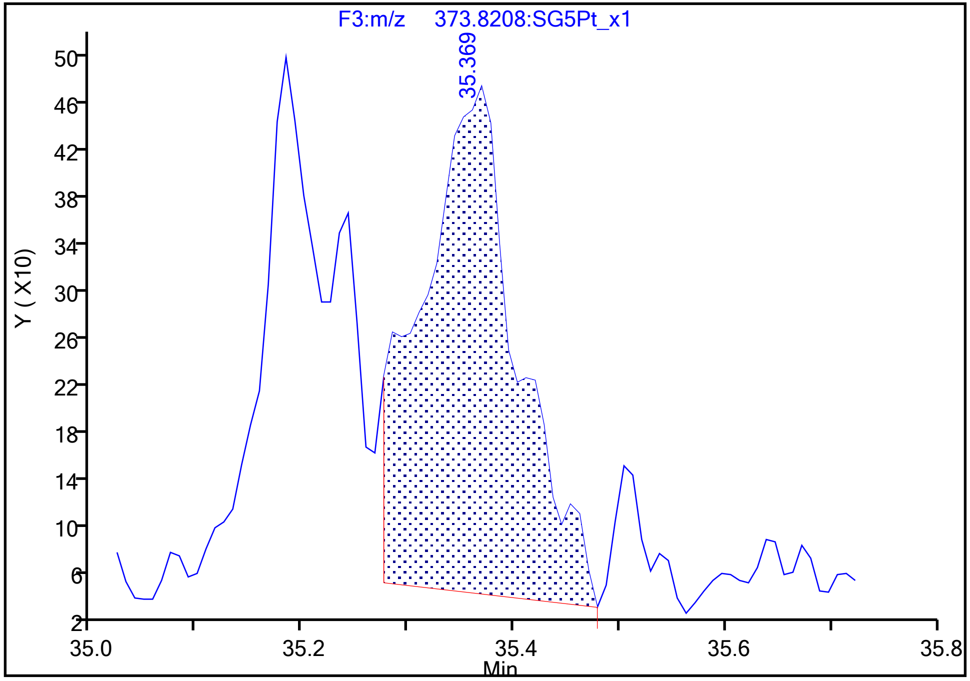

Manual Integration Results

RT: 35.37
Area: 2271
Amount: 0.122542
Amount Units: pg/ul

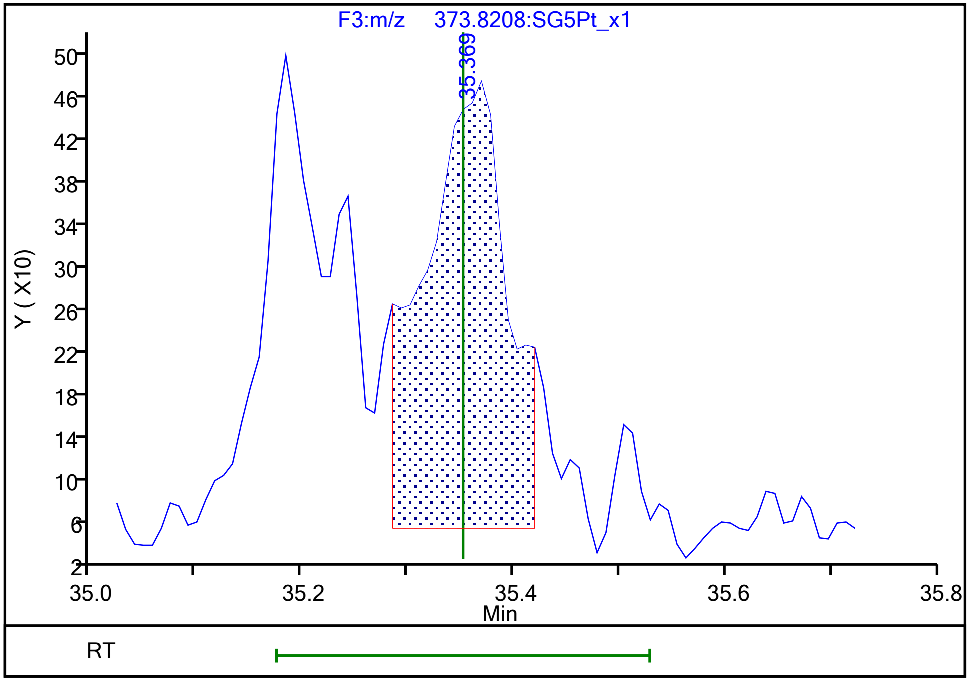

Reviewer: dadunj, 30-Nov-2020 10:44:09

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

Processing Integration Results

RT:	36.14
Area:	2046
Amount:	0.119066
Amount Units:	pg/ul

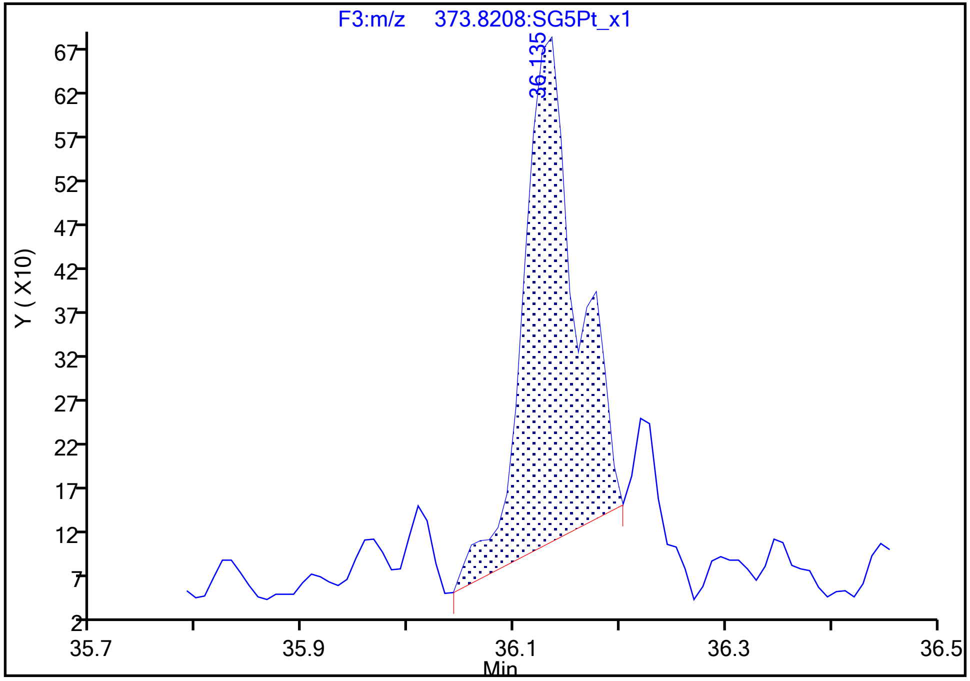

Manual Integration Results

RT:	36.14
Area:	2607
Amount:	0.134865
Amount Units:	pg/ul

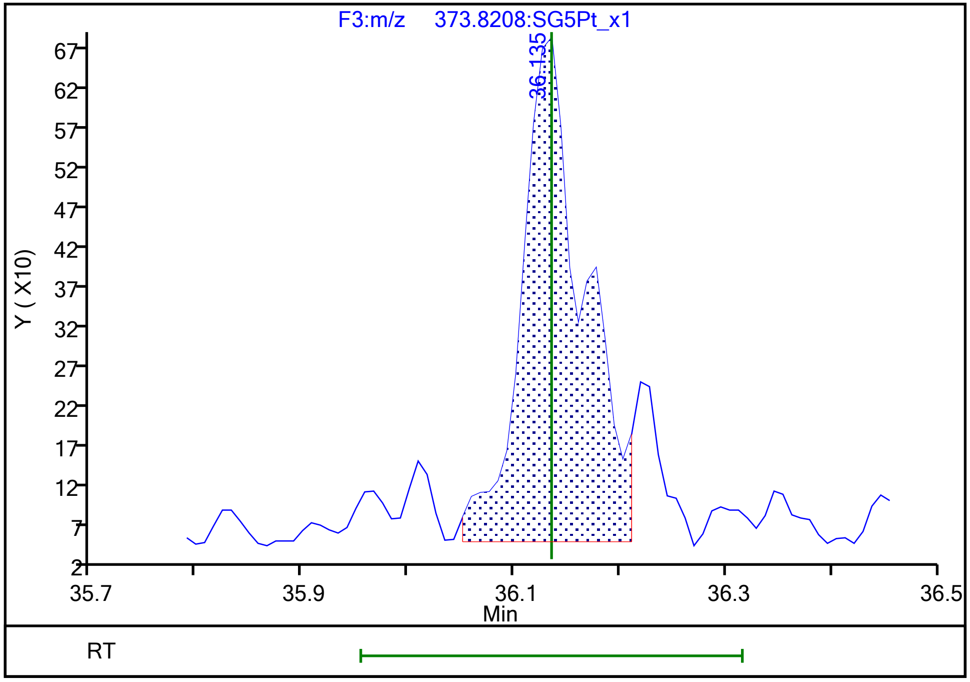

Reviewer: dadunj, 30-Nov-2020 10:44:19

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	37.00
Area:	4706
Amount:	0.264770
Amount Units:	pg/ul

Processing Integration Results

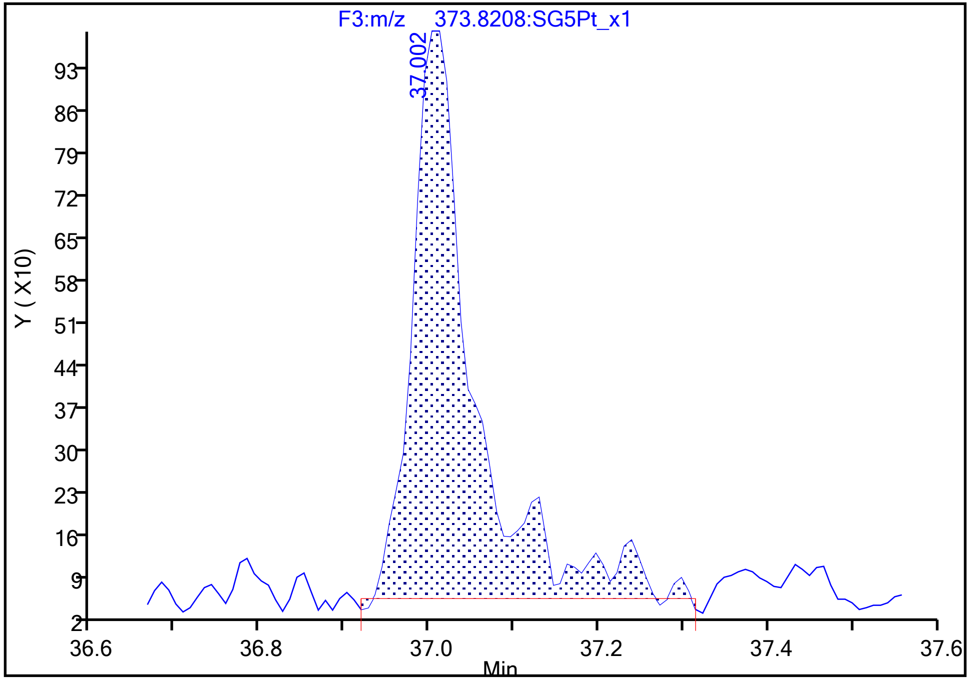

RT:	37.00
Area:	3951
Amount:	0.240380
Amount Units:	pg/ul

Manual Integration Results

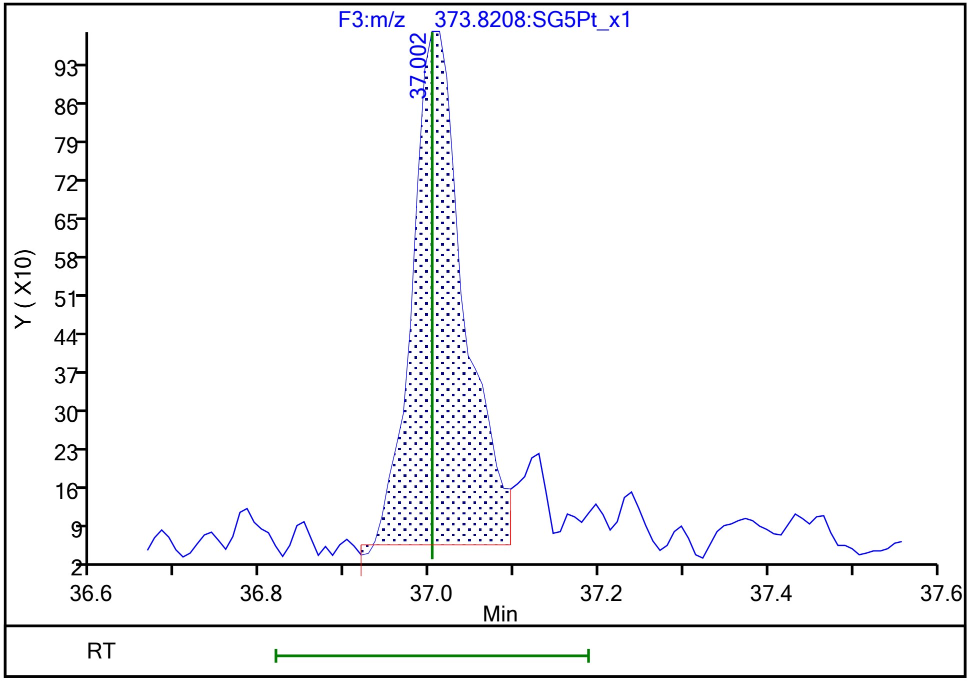

Reviewer: dadunj, 30-Nov-2020 10:44:28

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	36.34
Area:	2151
Amount:	0.188776
Amount Units:	pg/ul

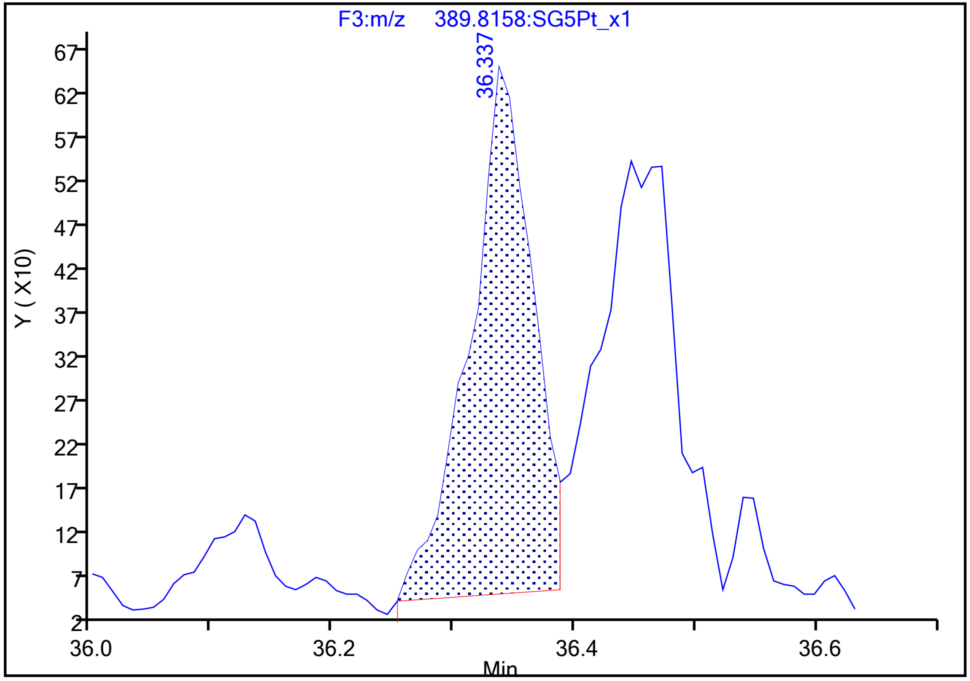

Manual Integration Results

RT:	36.34
Area:	2134
Amount:	0.188682
Amount Units:	pg/ul

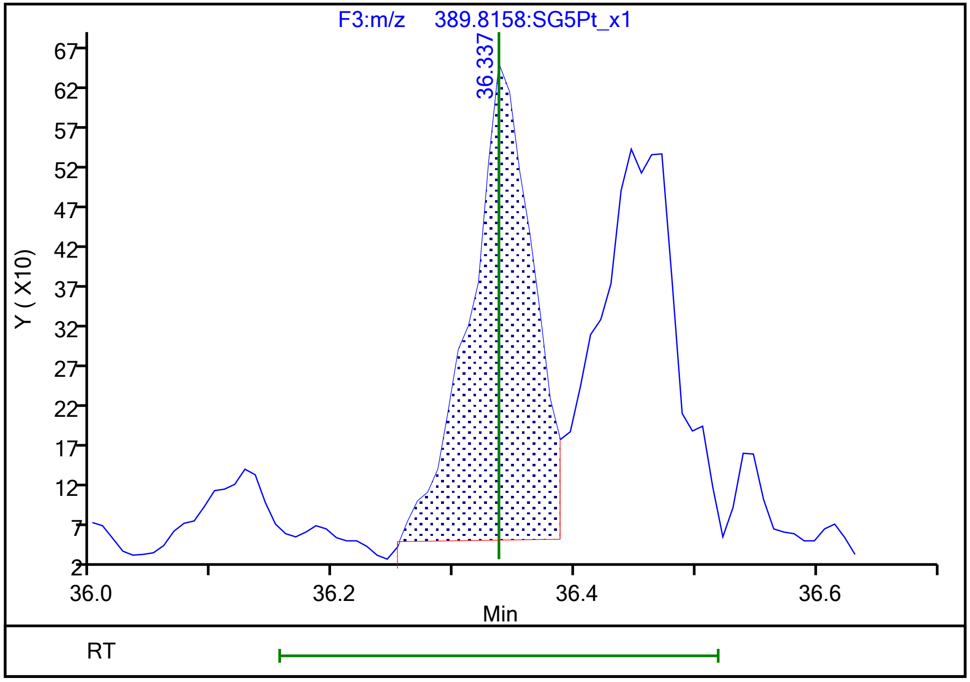

Reviewer: dadunj, 30-Nov-2020 10:44:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	36.32
Area:	1880
Amount:	0.188776
Amount Units:	pg/ul

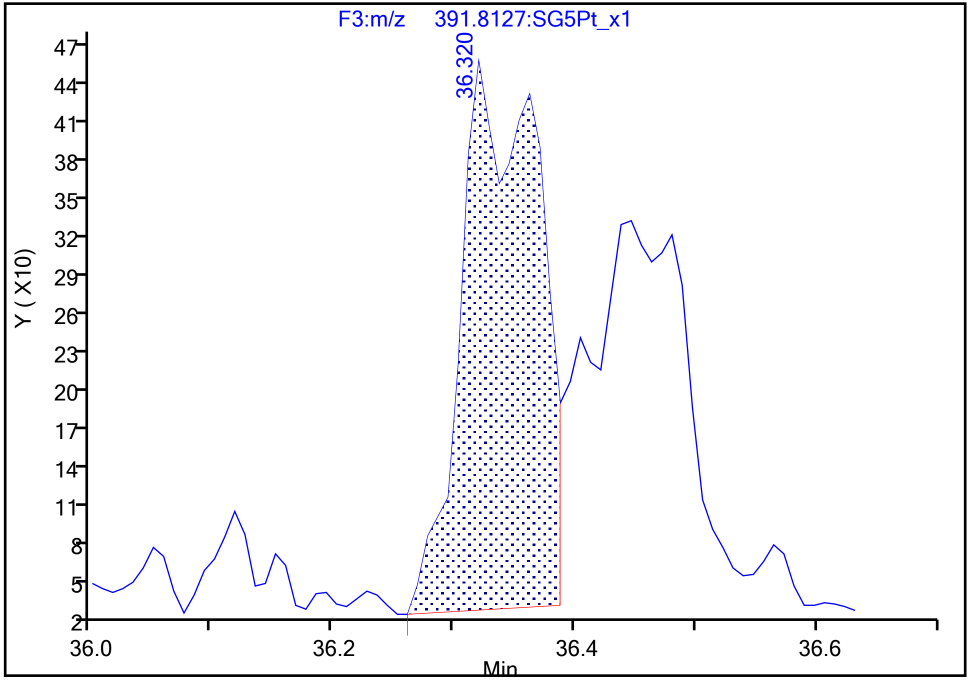

Manual Integration Results

RT:	36.32
Area:	1895
Amount:	0.188682
Amount Units:	pg/ul

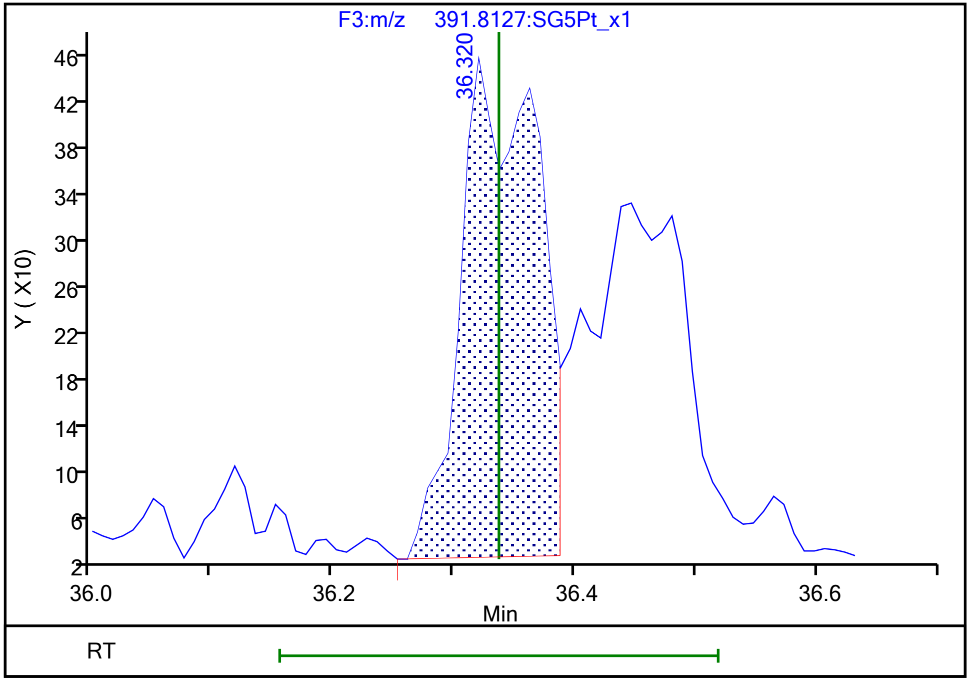

Reviewer: dadunj, 30-Nov-2020 10:44:57

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	36.45
Area:	1808
Amount:	0.160609
Amount Units:	pg/ul

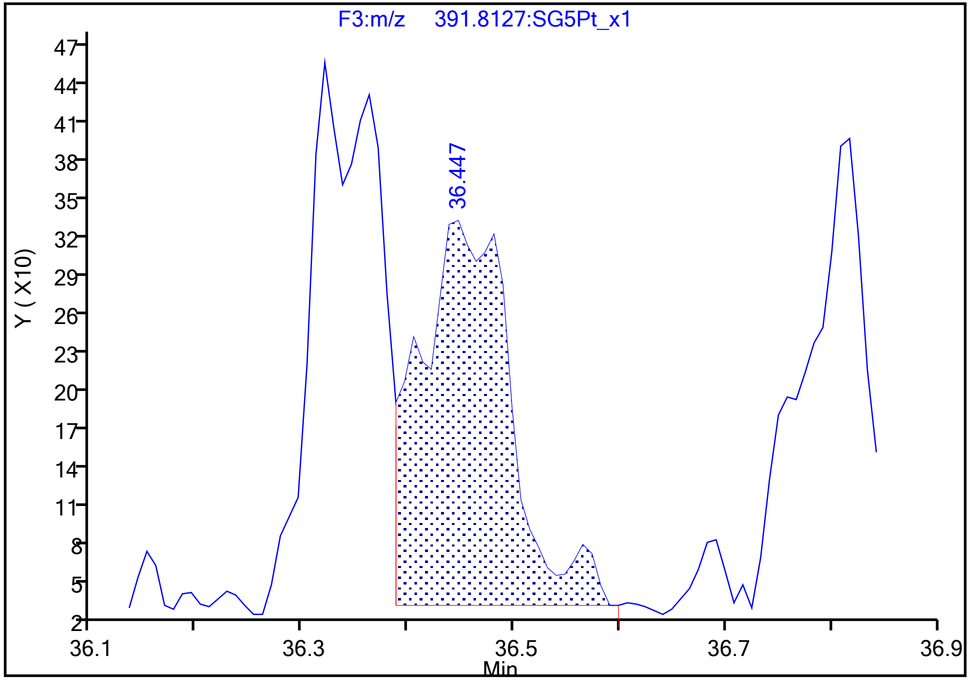

Manual Integration Results

RT:	36.45
Area:	1722
Amount:	0.157175
Amount Units:	pg/ul

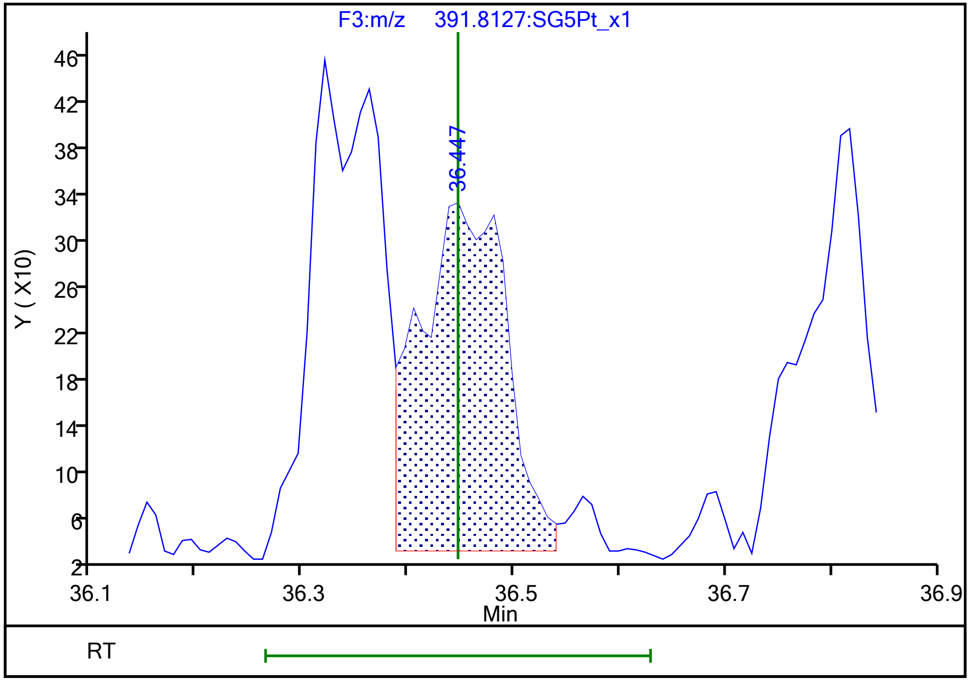

Reviewer: dadunj, 30-Nov-2020 10:45:04

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Processing Integration Results

RT:	36.82
Area:	2299
Amount:	0.189239
Amount Units:	pg/ul

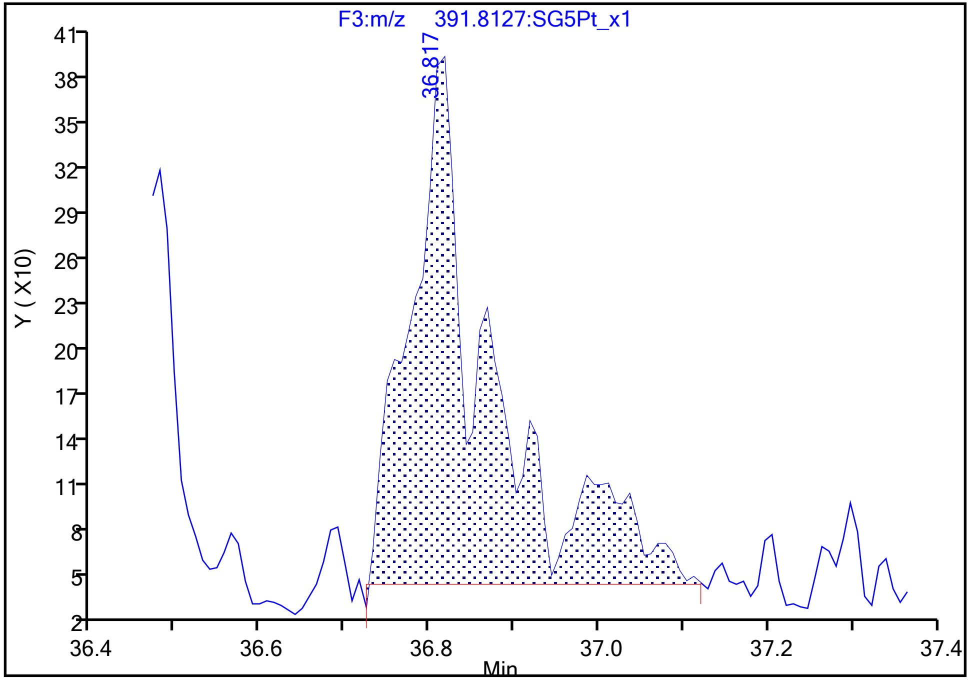

Manual Integration Results

RT:	36.82
Area:	1284
Amount:	0.135359
Amount Units:	pg/ul

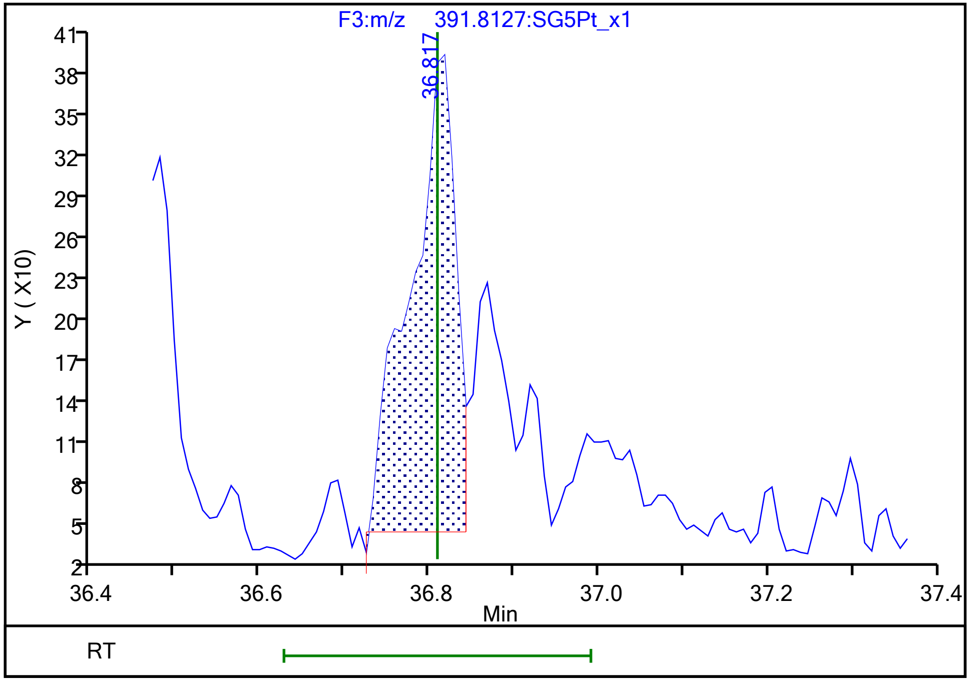

Reviewer: dadunj, 30-Nov-2020 10:45:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	36.83
Area:	2309
Amount:	0.189239
Amount Units:	pg/ul

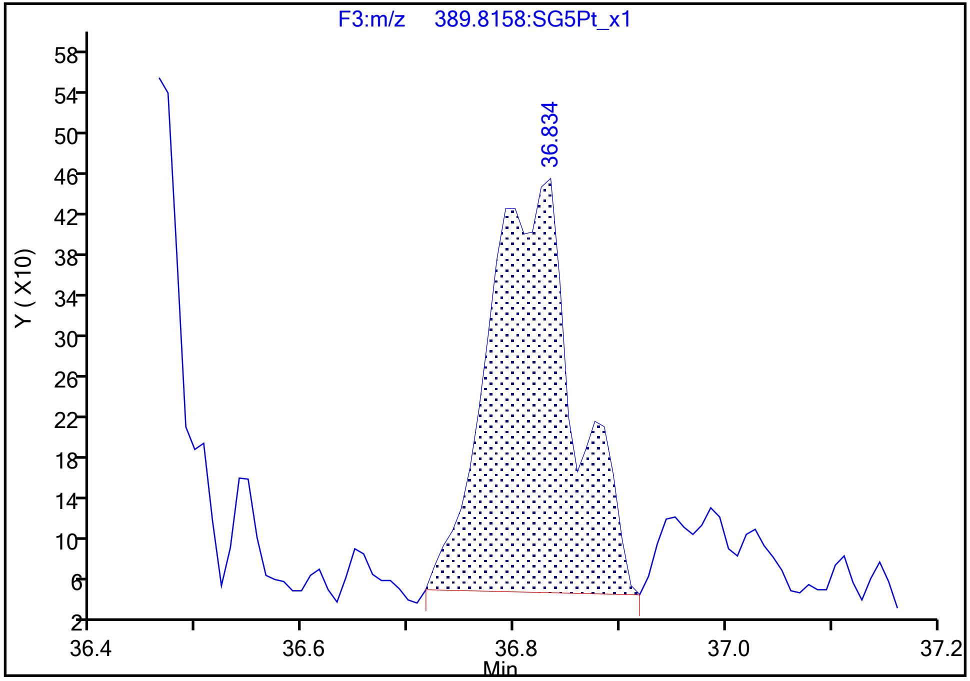

Manual Integration Results

RT:	36.83
Area:	2012
Amount:	0.135359
Amount Units:	pg/ul

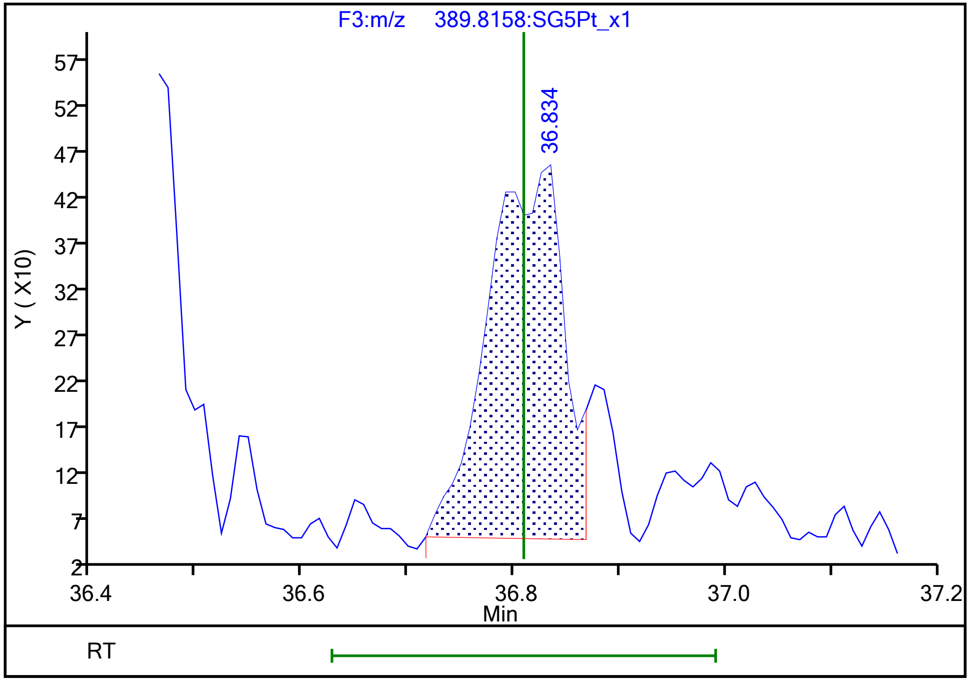

Reviewer: dadunj, 30-Nov-2020 10:45:09

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT: 38.78
Area: 3370
Amount: 0.197754
Amount Units: pg/ul

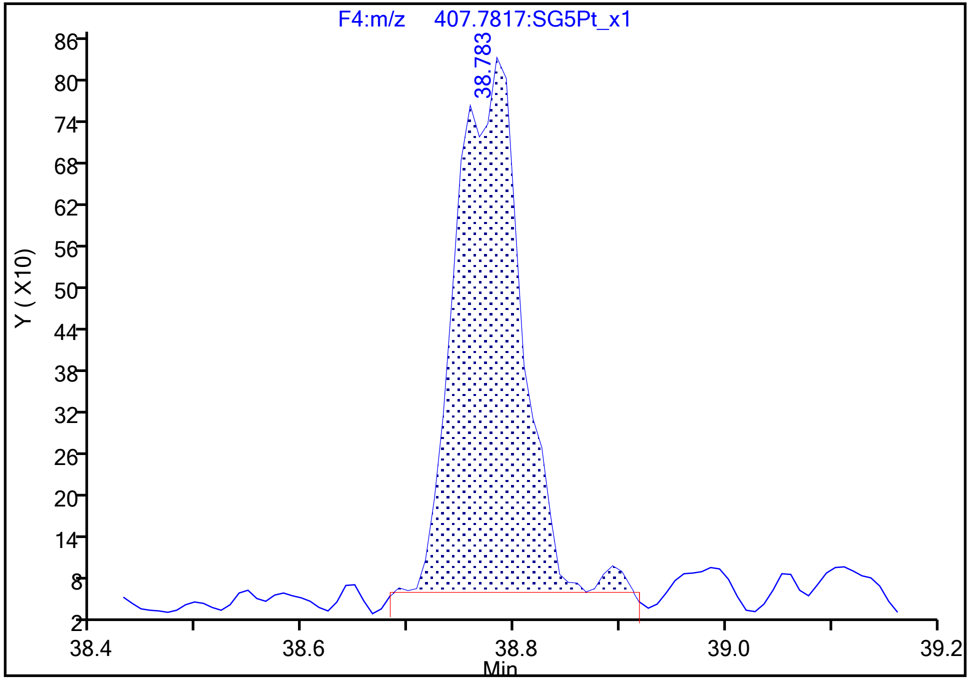

Manual Integration Results

RT: 38.78
Area: 3319
Amount: 0.196115
Amount Units: pg/ul

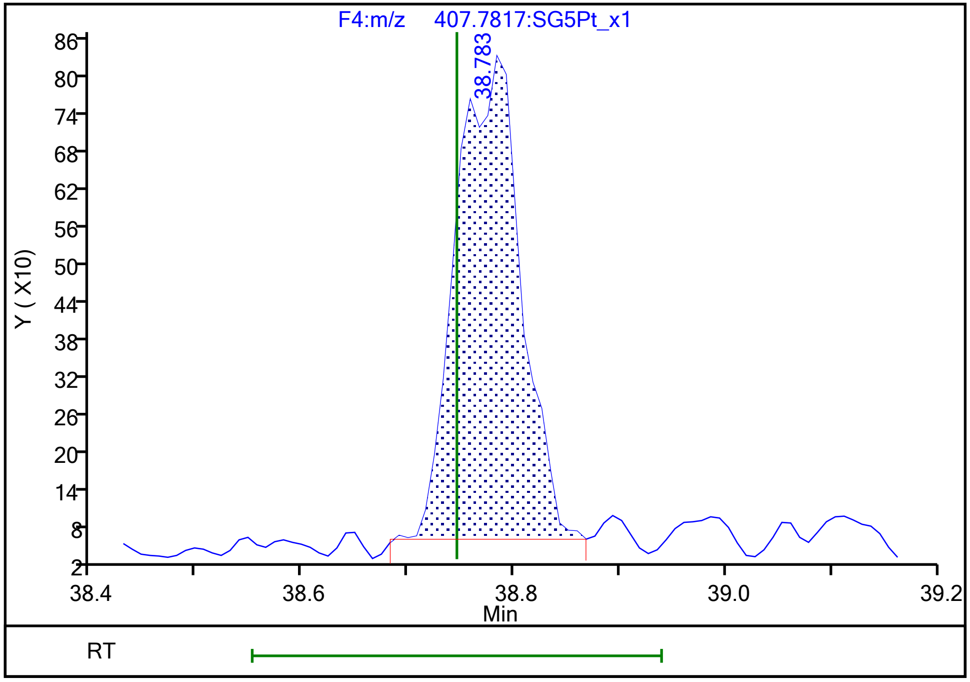

Reviewer: dadunj, 30-Nov-2020 10:45:17

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT:	40.00
Area:	2267
Amount:	0.209511
Amount Units:	pg/ul

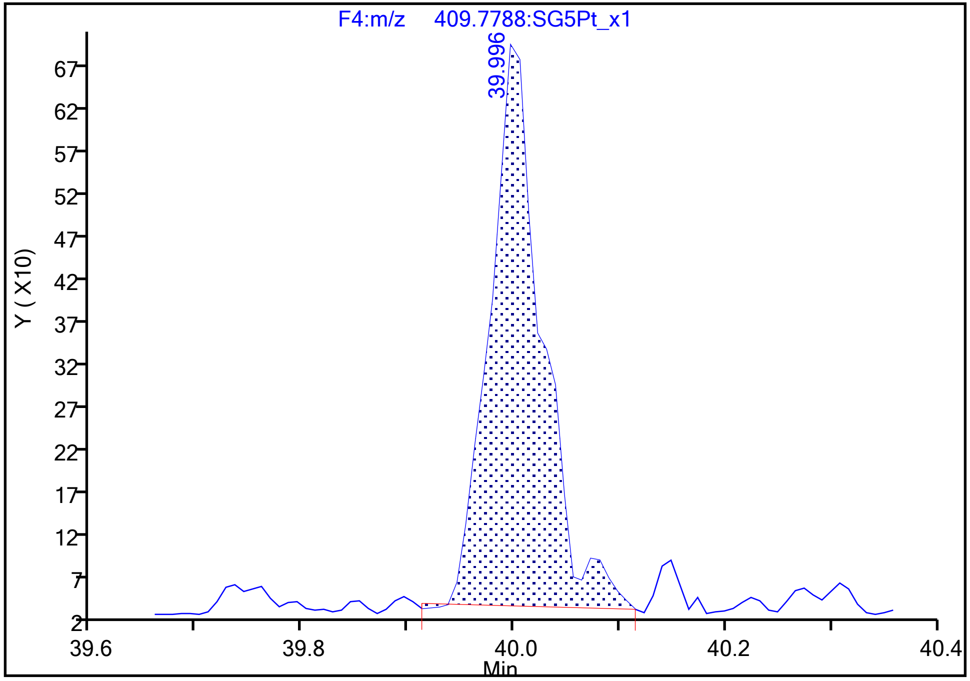

Manual Integration Results

RT:	40.00
Area:	2150
Amount:	0.204511
Amount Units:	pg/ul

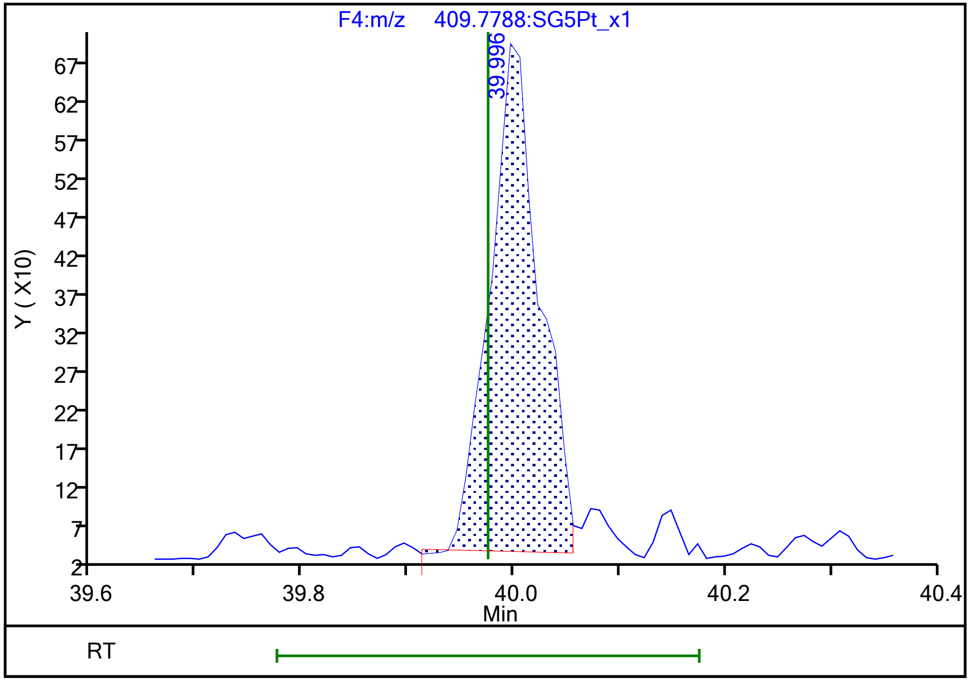

Reviewer: dadunj, 30-Nov-2020 10:45:21

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Instrument ID: DFS 1
Lims ID: 320-66850-A-1-B
Lab Sample ID: 320-66850-1
Client ID: 11215702-Tank #1-1um
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 34
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 39.69
Area: 2768
Amount: 0.258015
Amount Units: pg/ul

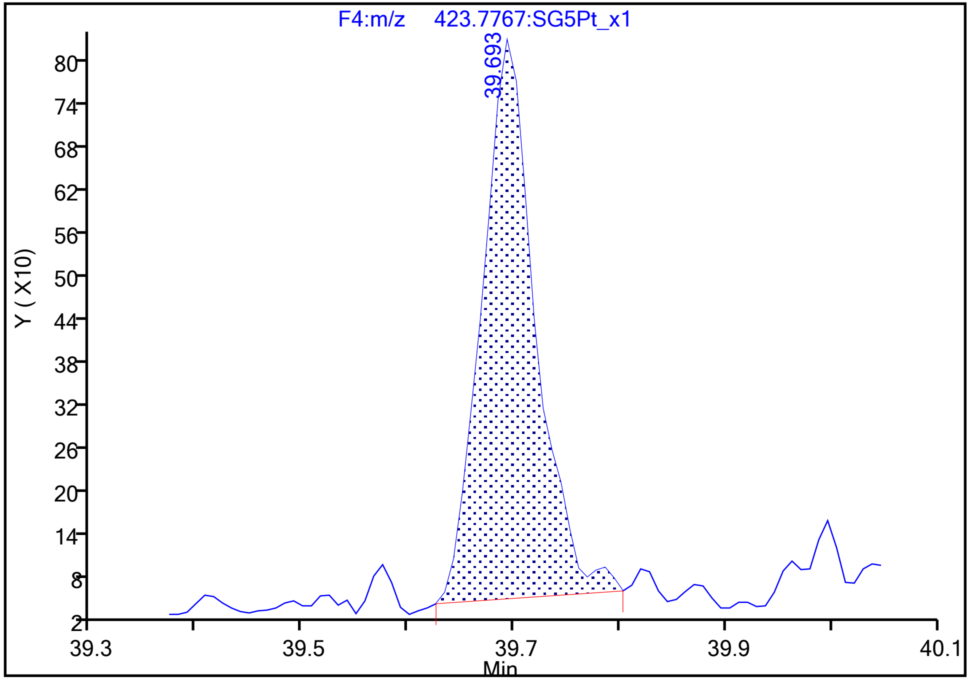

Manual Integration Results

RT: 39.69
Area: 2735
Amount: 0.251186
Amount Units: pg/ul

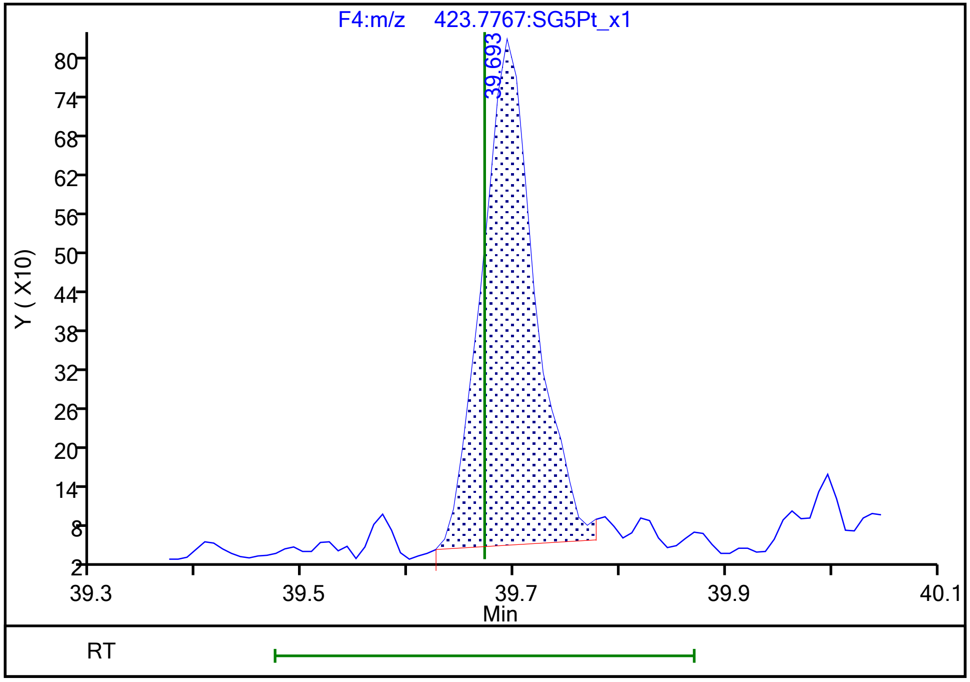

Reviewer: dadunj, 30-Nov-2020 10:45:29

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 39.69
Area: 2484
Amount: 0.258015
Amount Units: pg/ul

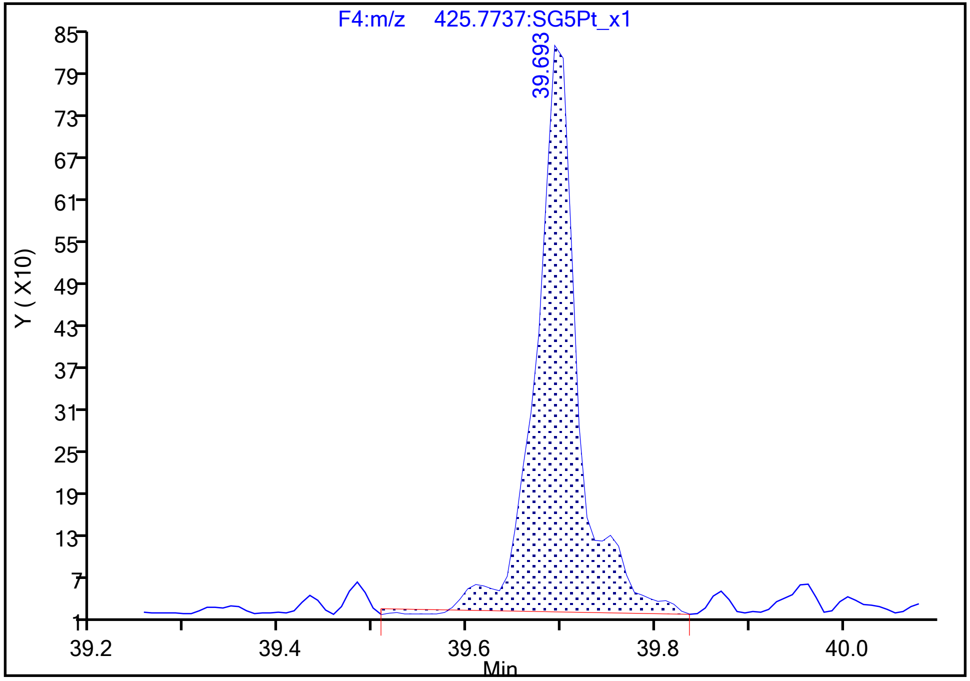

Manual Integration Results

RT: 39.69
Area: 2378
Amount: 0.251186
Amount Units: pg/ul

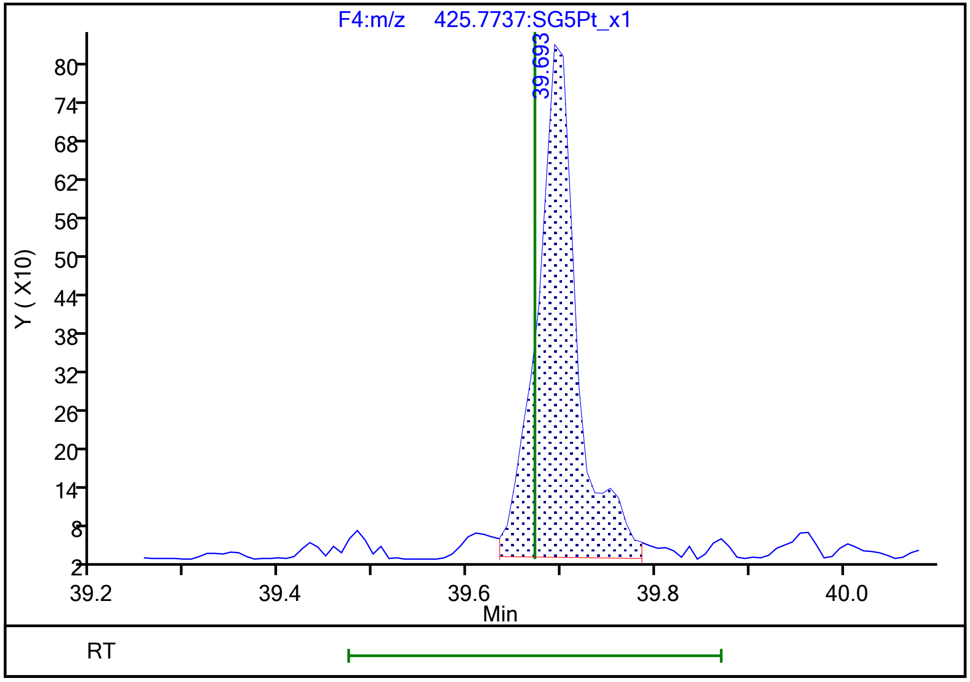

Reviewer: dadunj, 30-Nov-2020 10:45:29
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Instrument ID: DFS 1
Lims ID: 320-66850-A-1-B
Lab Sample ID: 320-66850-1
Client ID: 11215702-Tank #1-1um
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 34
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 1

RT: 42.27
Area: 3711
Amount: 0.444409
Amount Units: pg/ul

Processing Integration Results

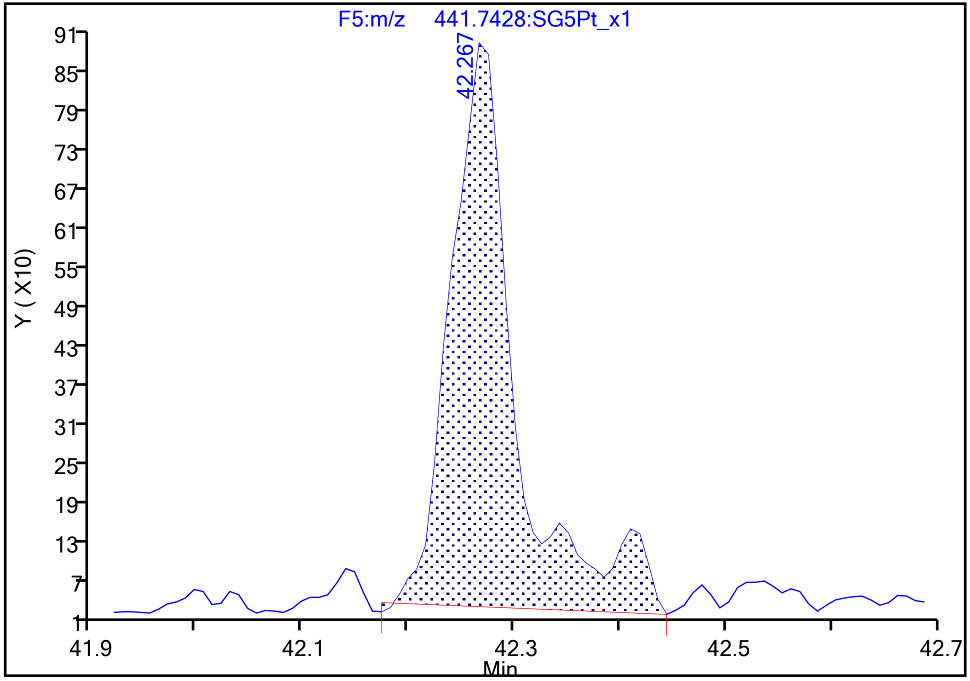

RT: 42.27
Area: 3000
Amount: 0.379128
Amount Units: pg/ul

Manual Integration Results

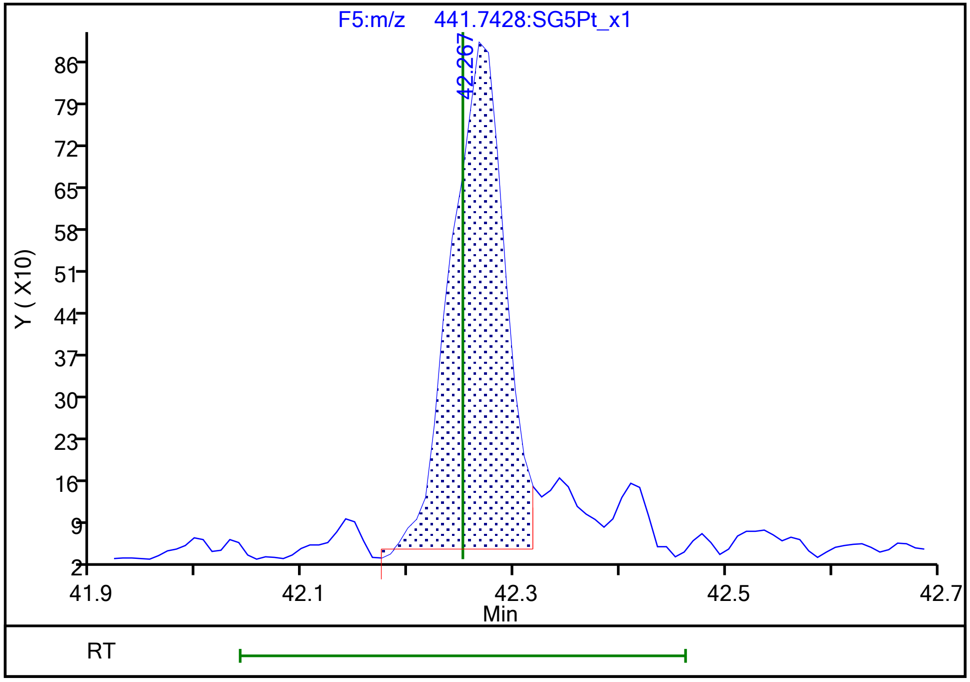

Reviewer: dadunj, 30-Nov-2020 10:45:43
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 2

RT:	42.26
Area:	3825
Amount:	0.444409
Amount Units:	pg/ul

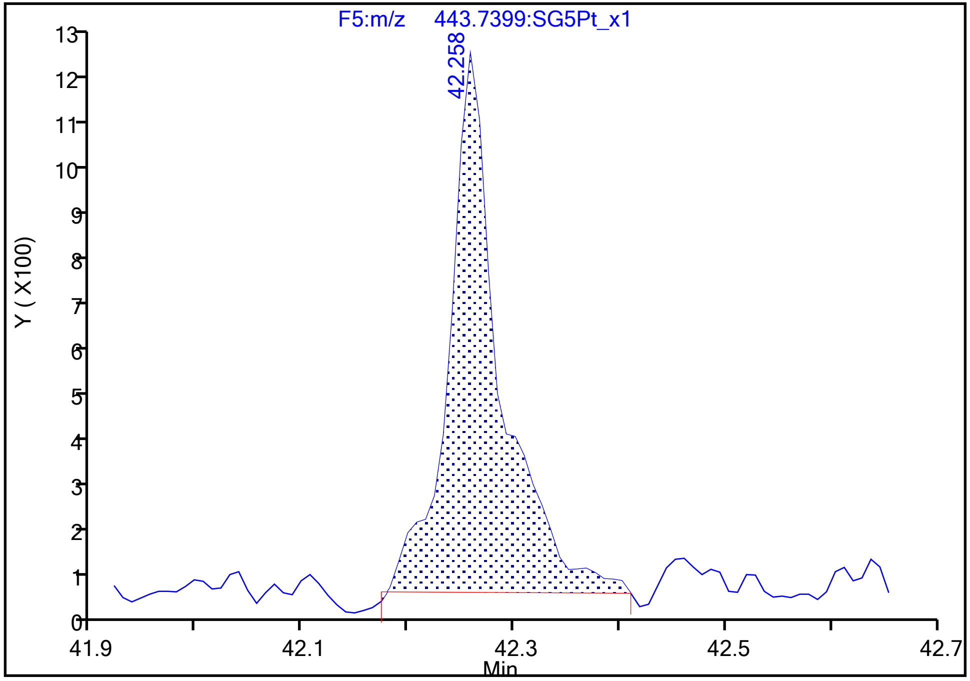

Processing Integration Results

RT:	42.26
Area:	3429
Amount:	0.379128
Amount Units:	pg/ul

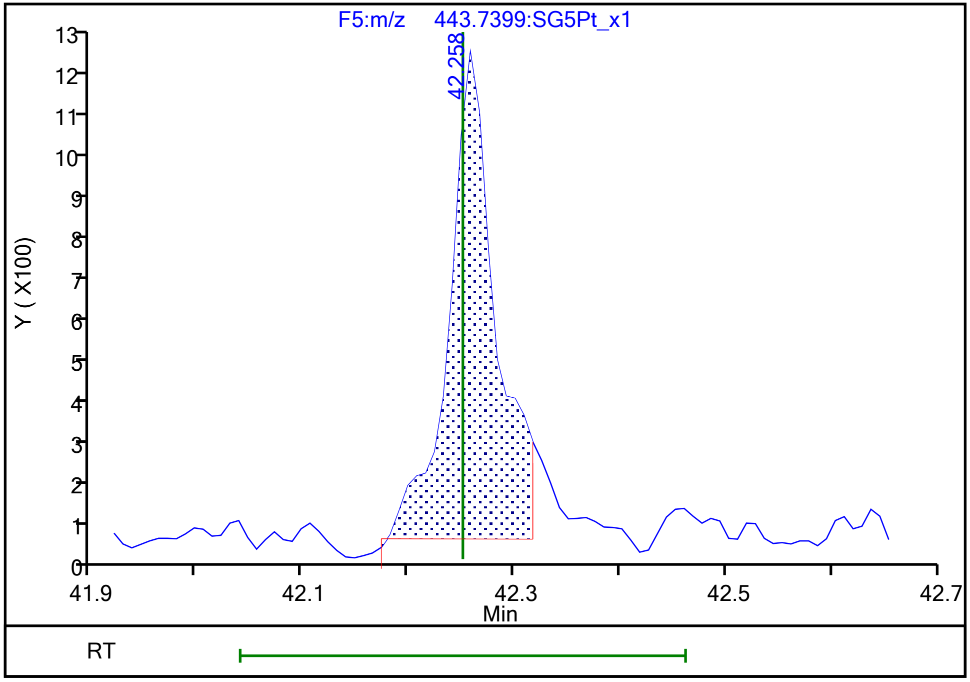

Manual Integration Results

Reviewer: dadunj, 30-Nov-2020 10:45:45

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d				
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1		
Client ID:	11215702-Tank #1-1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

RT: 42.17
Area: 5266
Amount: 0.805640
Amount Units: pg/ul

Processing Integration Results

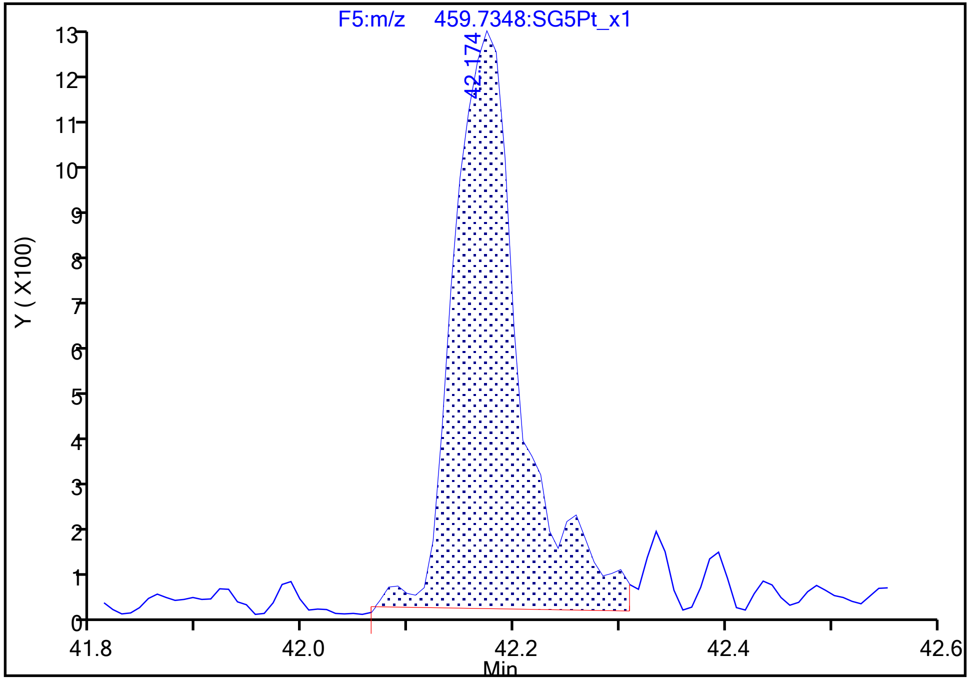

RT: 42.17
Area: 4783
Amount: 0.747651
Amount Units: pg/ul

Manual Integration Results

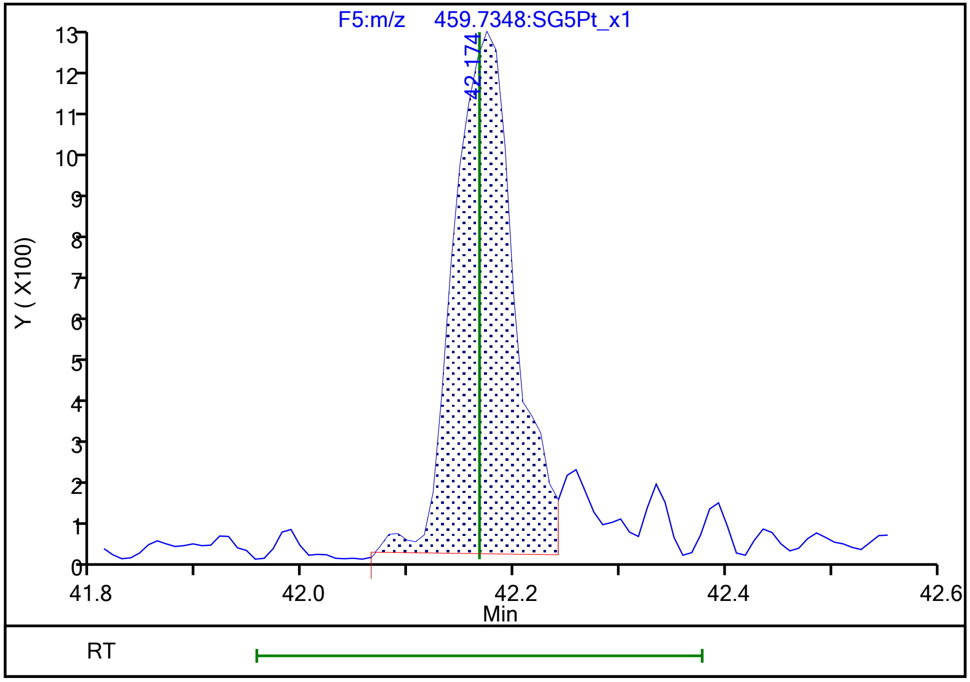

Reviewer: dadunj, 30-Nov-2020 10:45:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-1-B	Lab Sample ID:	320-66850-1
Client ID:	11215702-Tank #1-1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 34
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)

OCDD, CAS: 3268-87-9

Signal: 1

RT:	42.18
Area:	5501
Amount:	0.805640
Amount Units:	pg/ul

Processing Integration Results

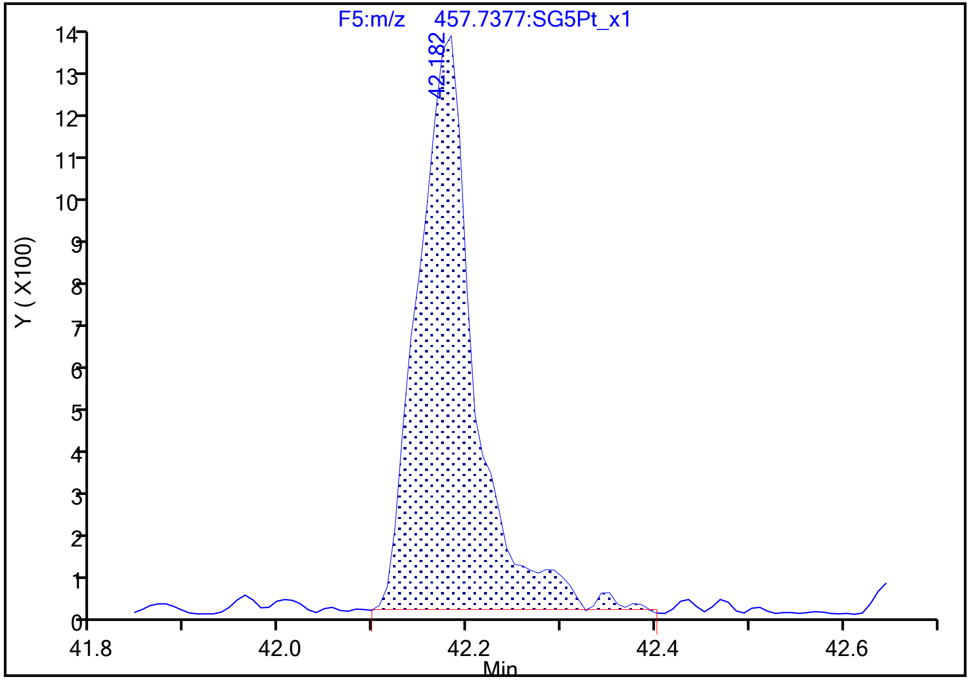

RT:	42.18
Area:	5209
Amount:	0.747651
Amount Units:	pg/ul

Manual Integration Results

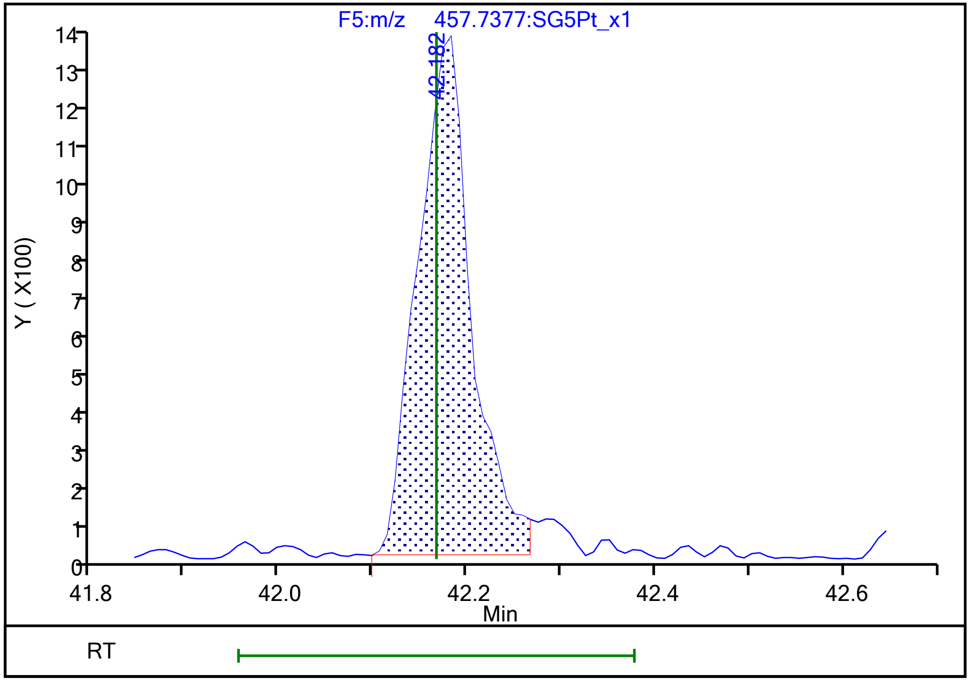

Reviewer: dadunj, 30-Nov-2020 10:45:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

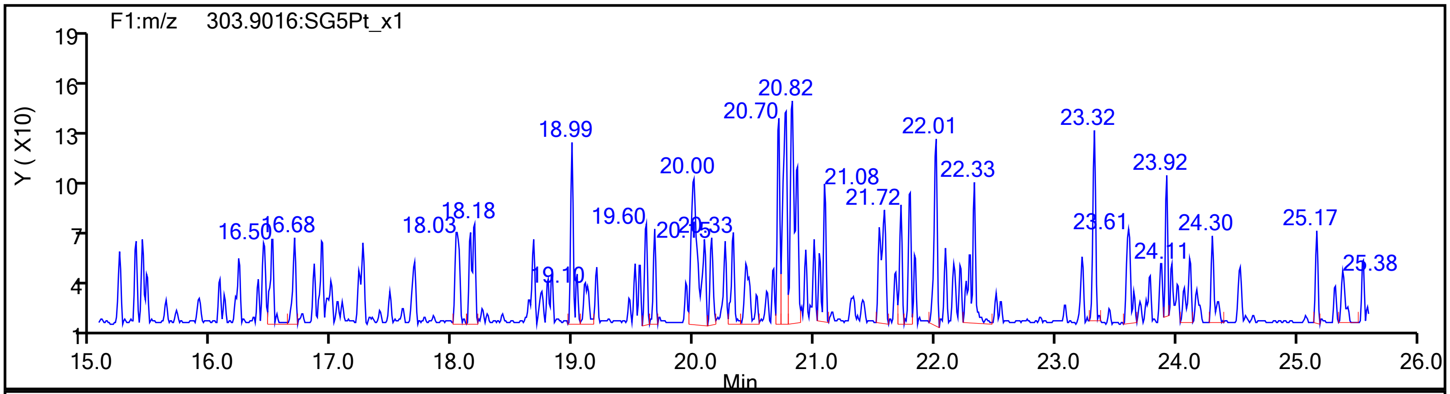

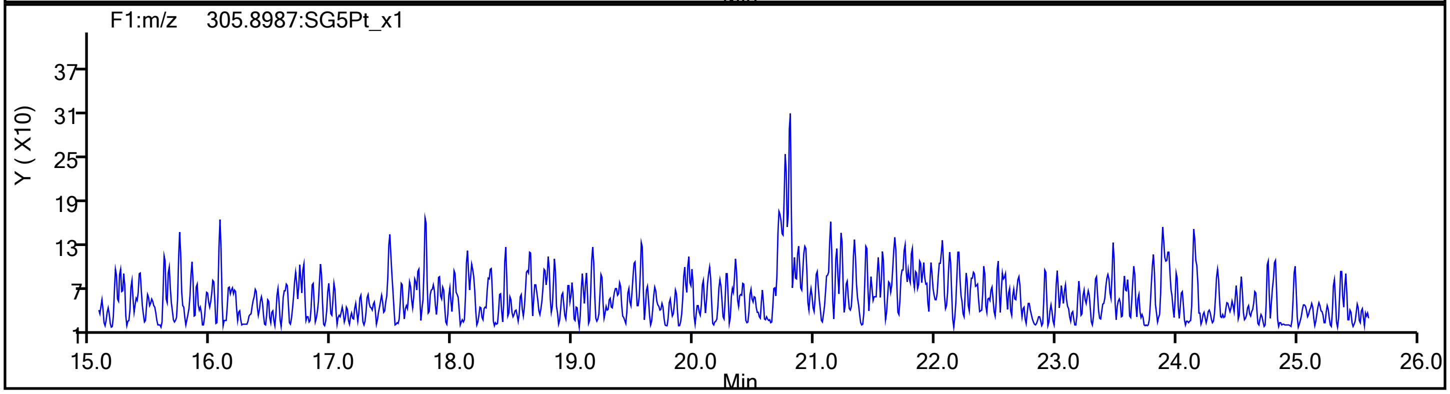

TCDF Standards

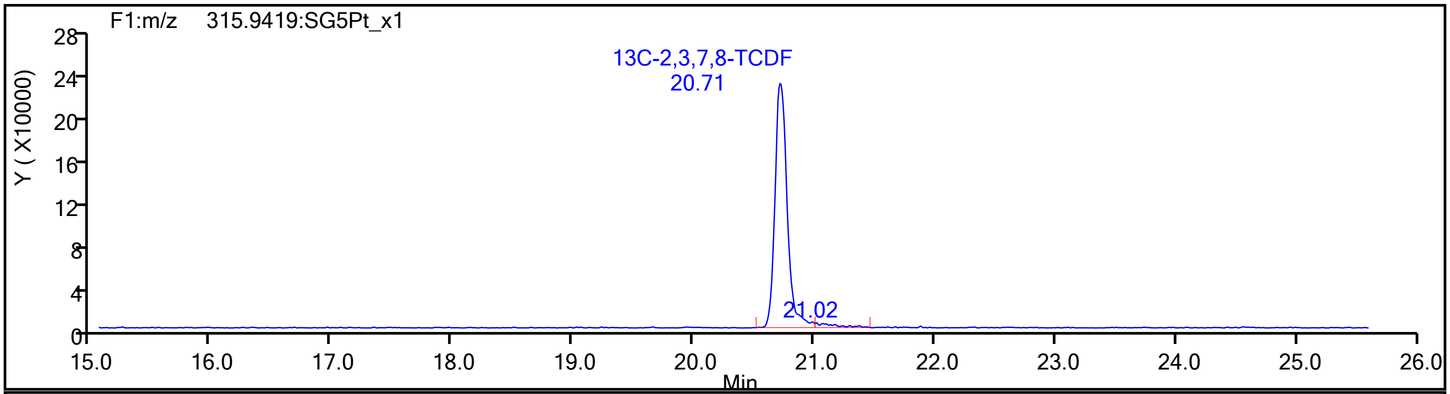

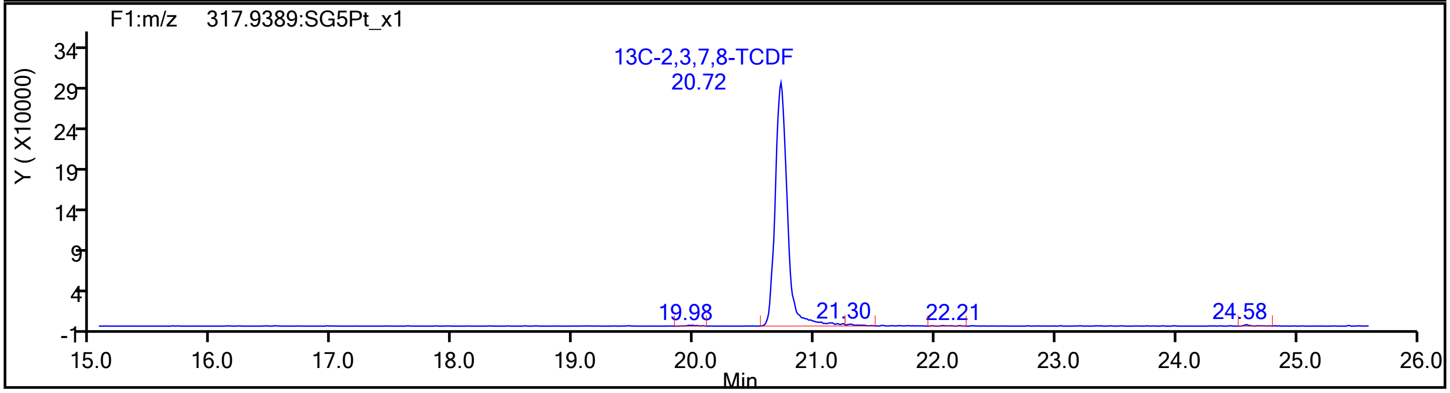

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

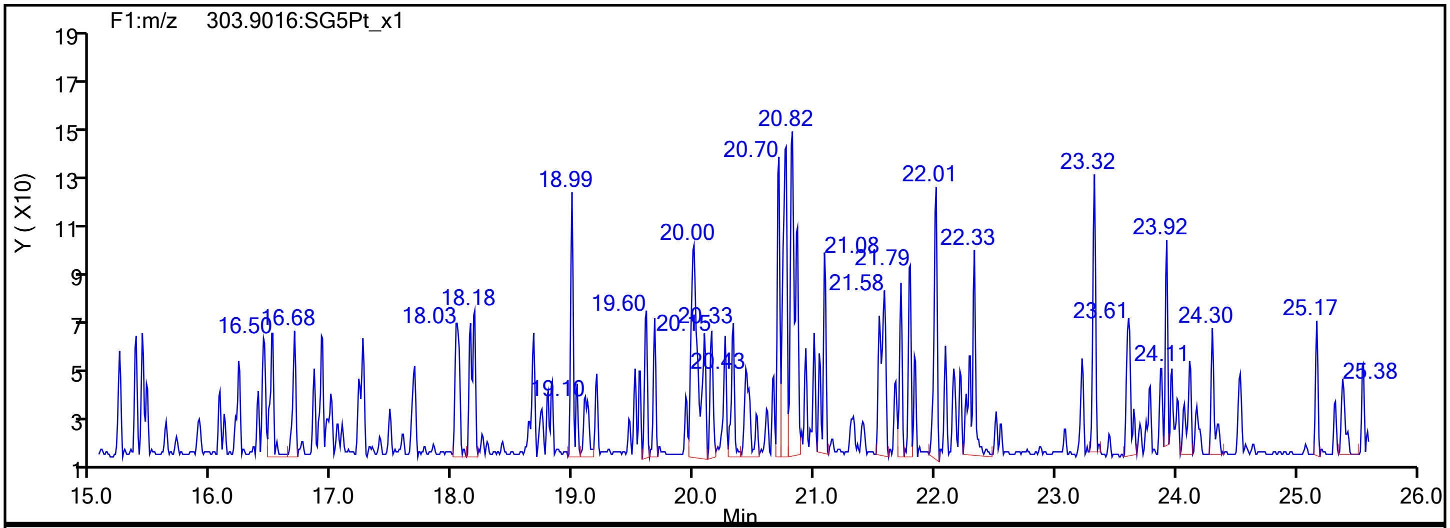

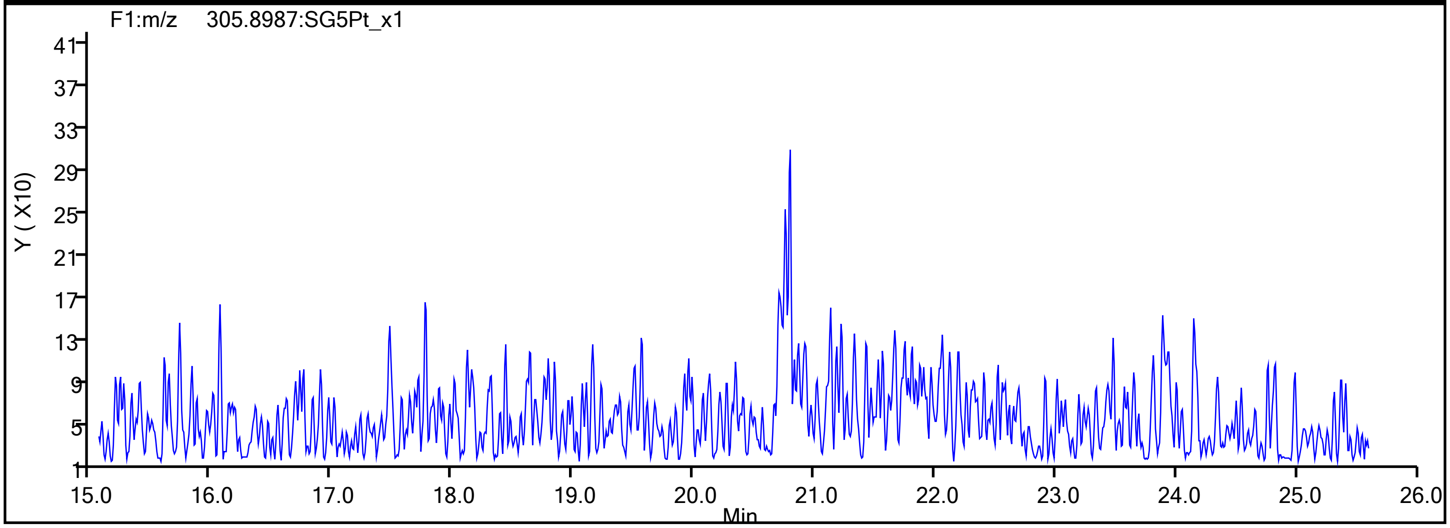

TCDF Interference Mass

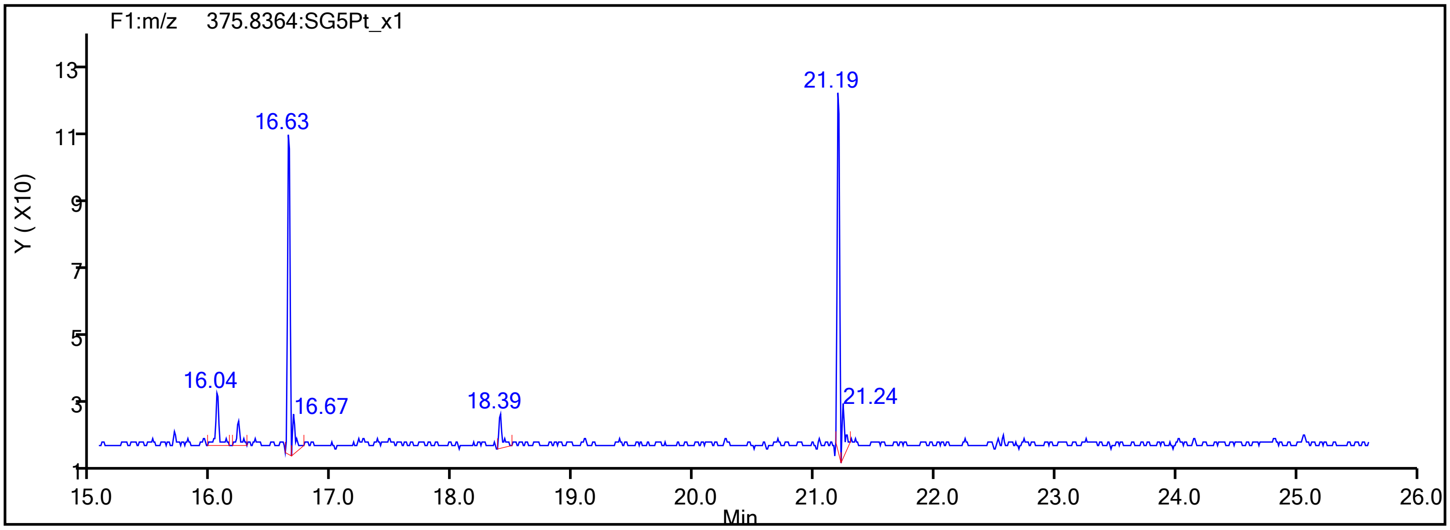

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

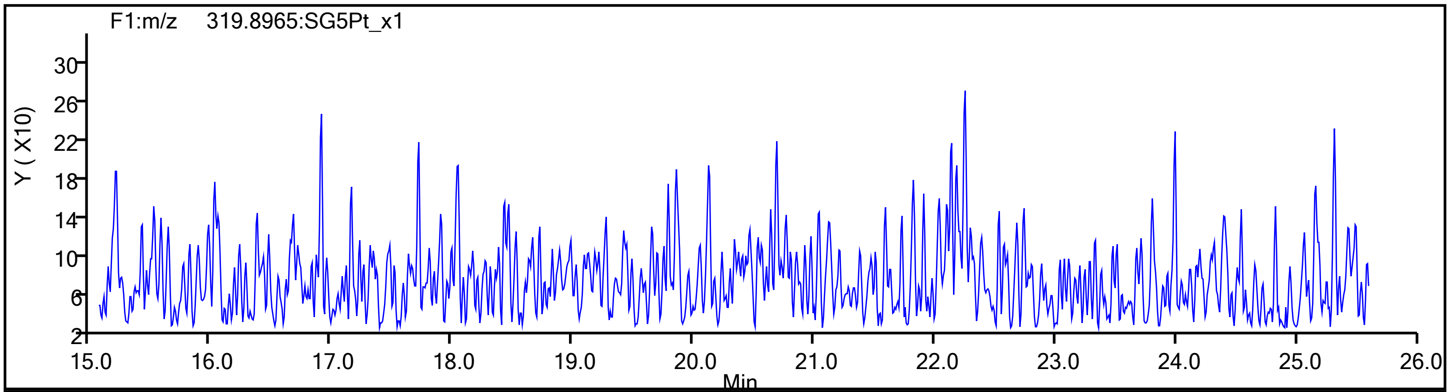

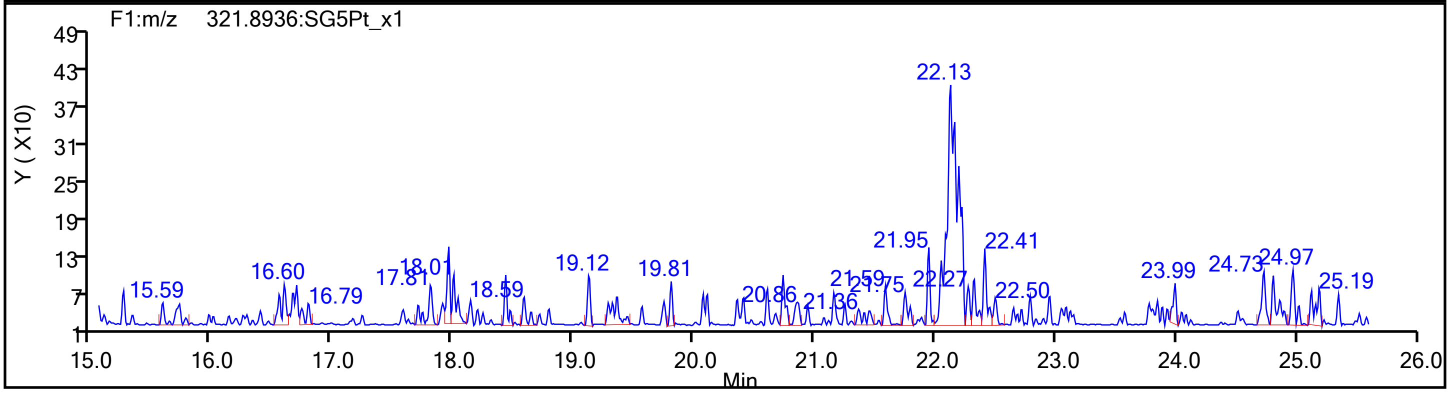

TCDD Standards

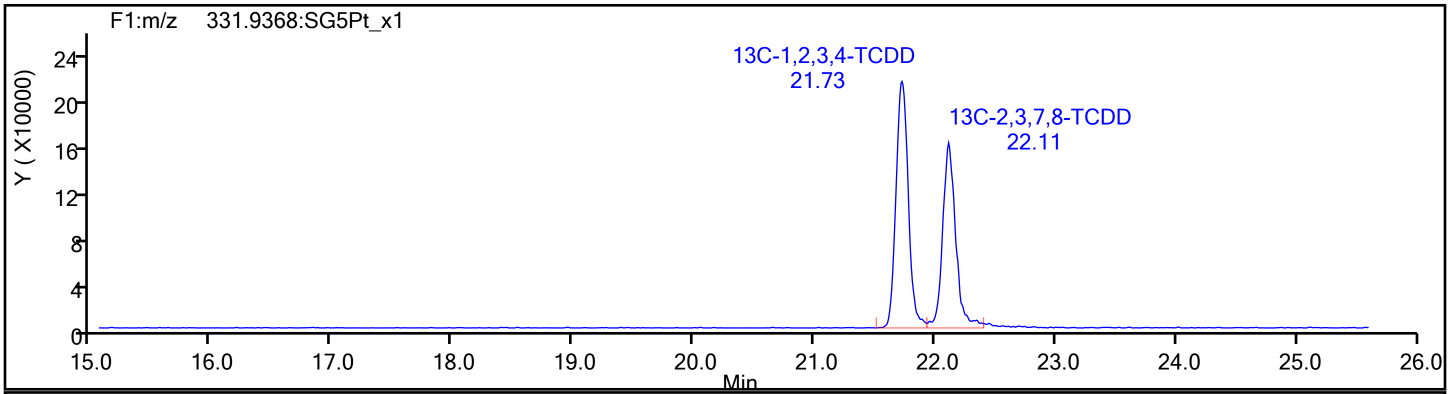

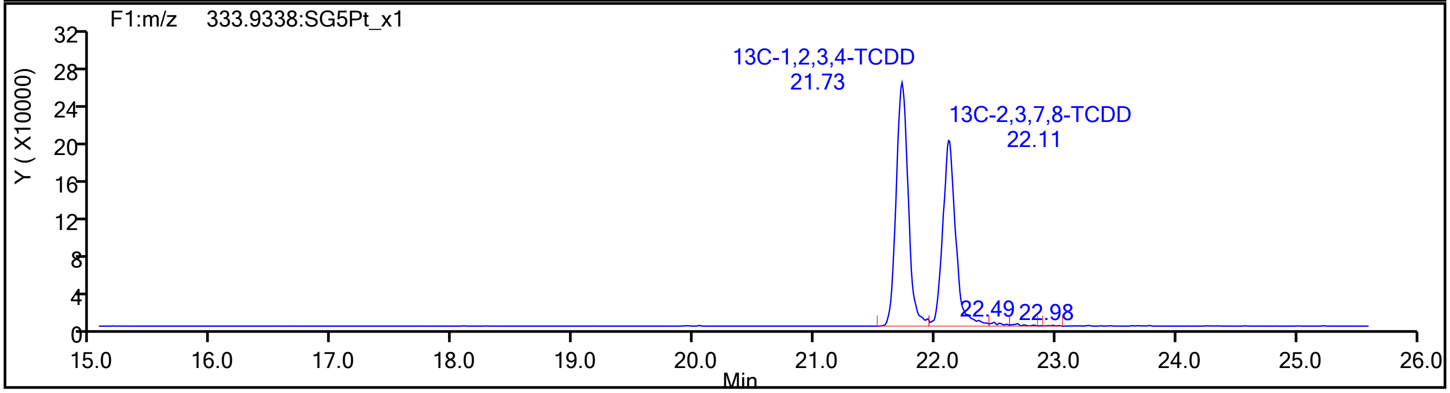

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

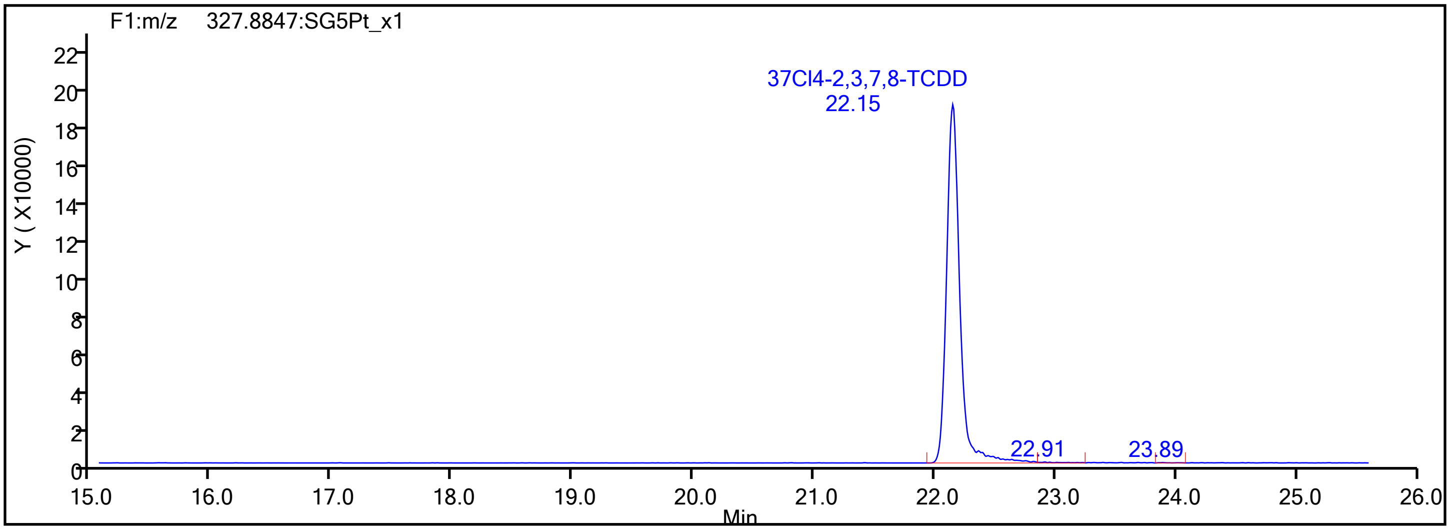

37Cl4-TCDD Standards

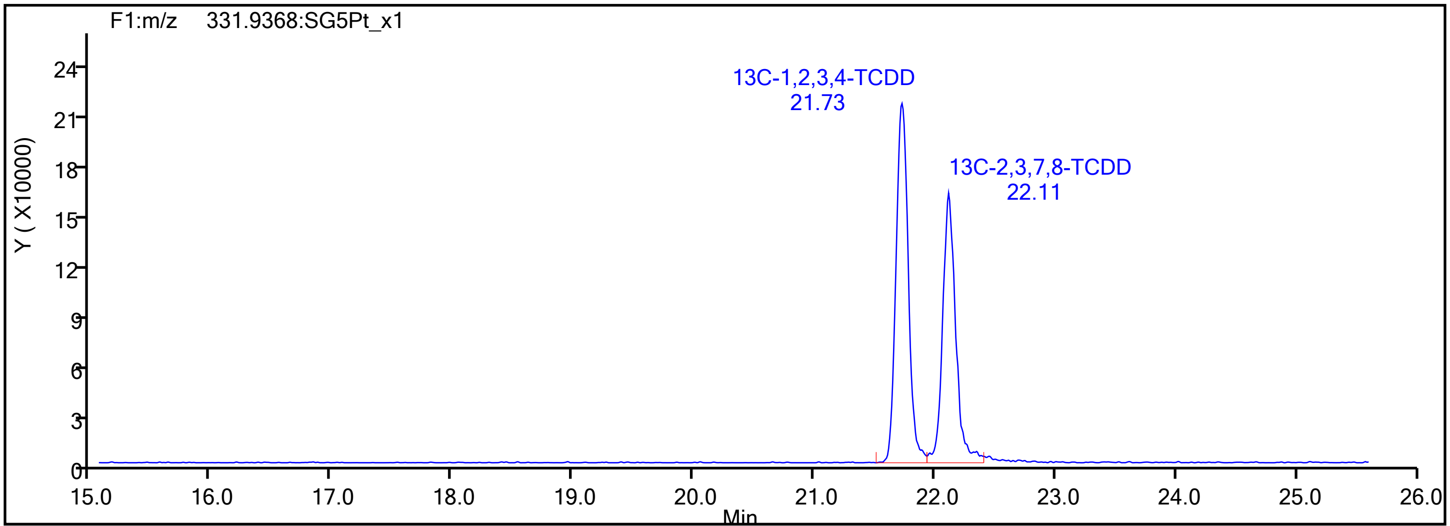

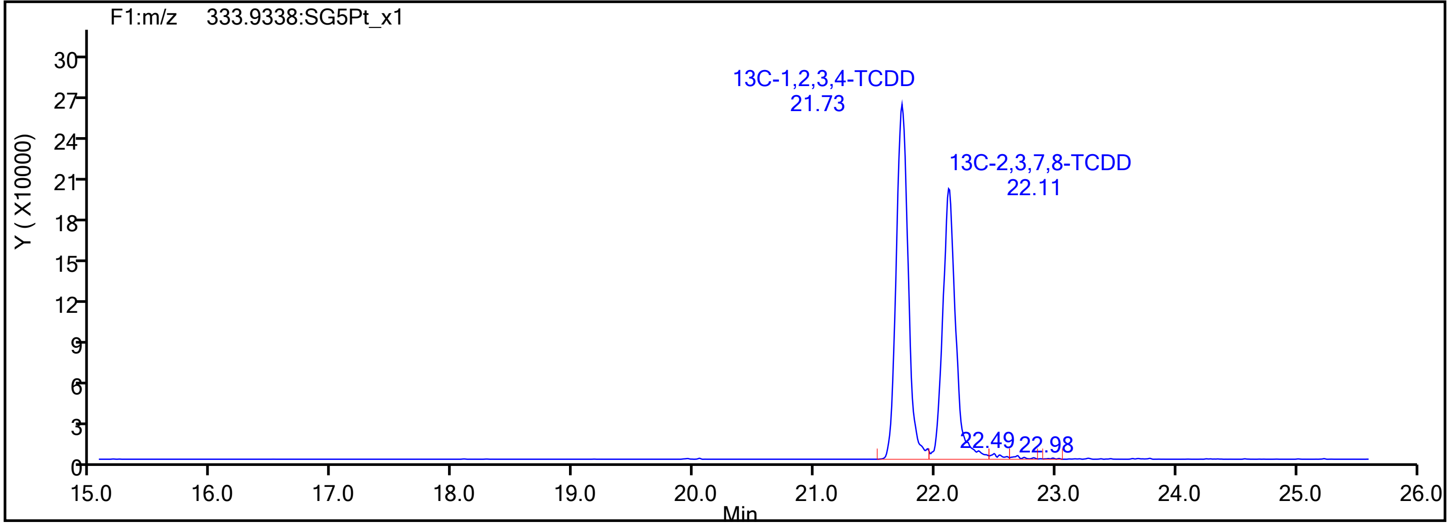

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

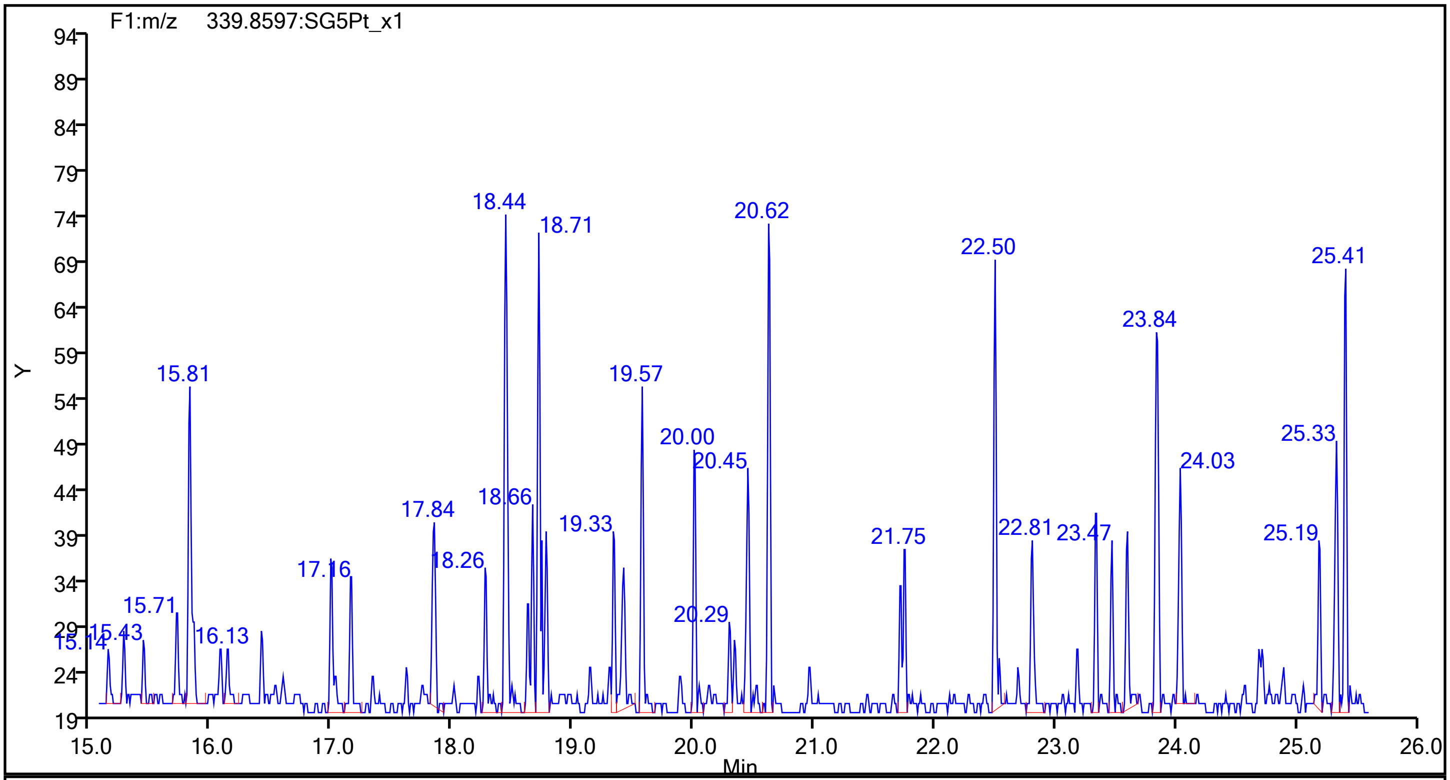

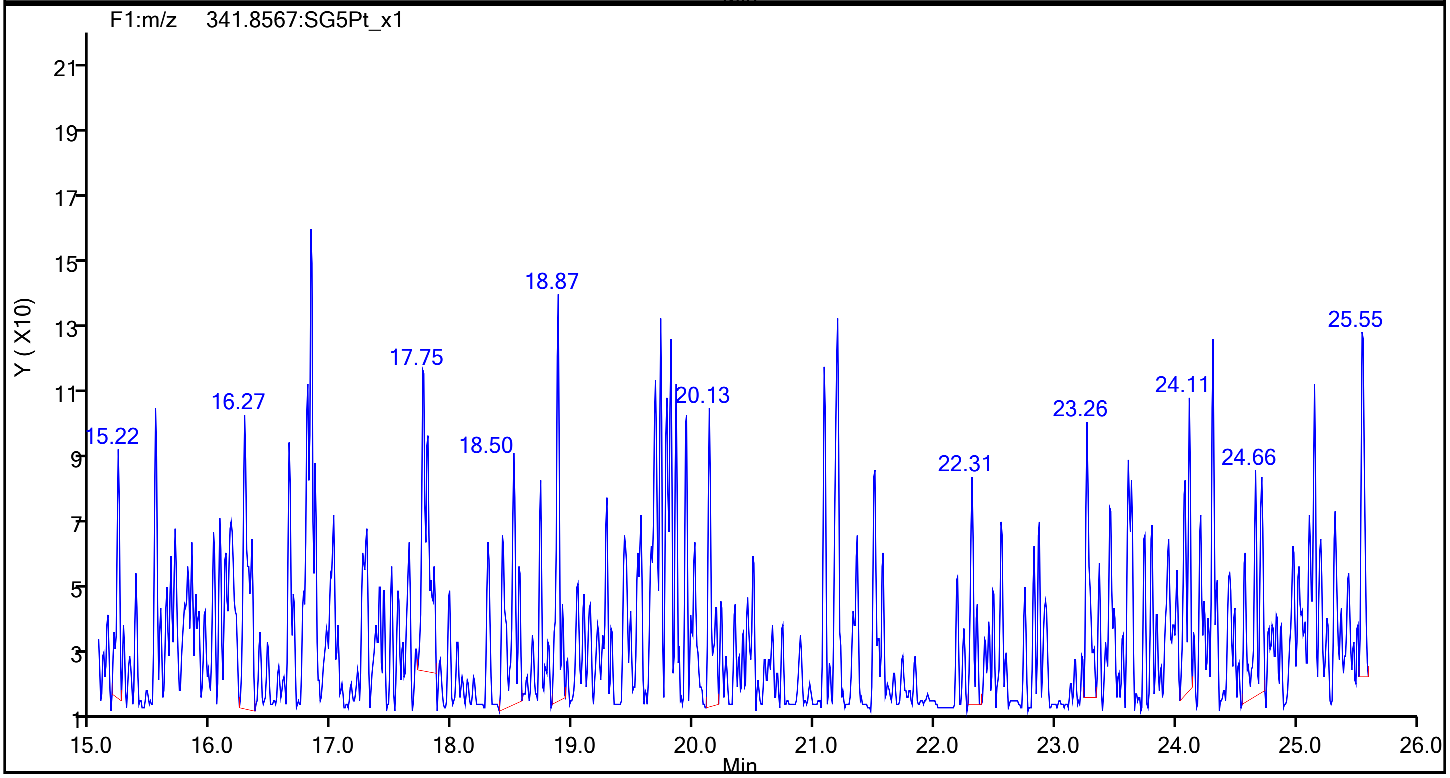

Report Date: 30-Nov-2020 10:46:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1-1um
Worklist#: 434777
Sample Line#: 34
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

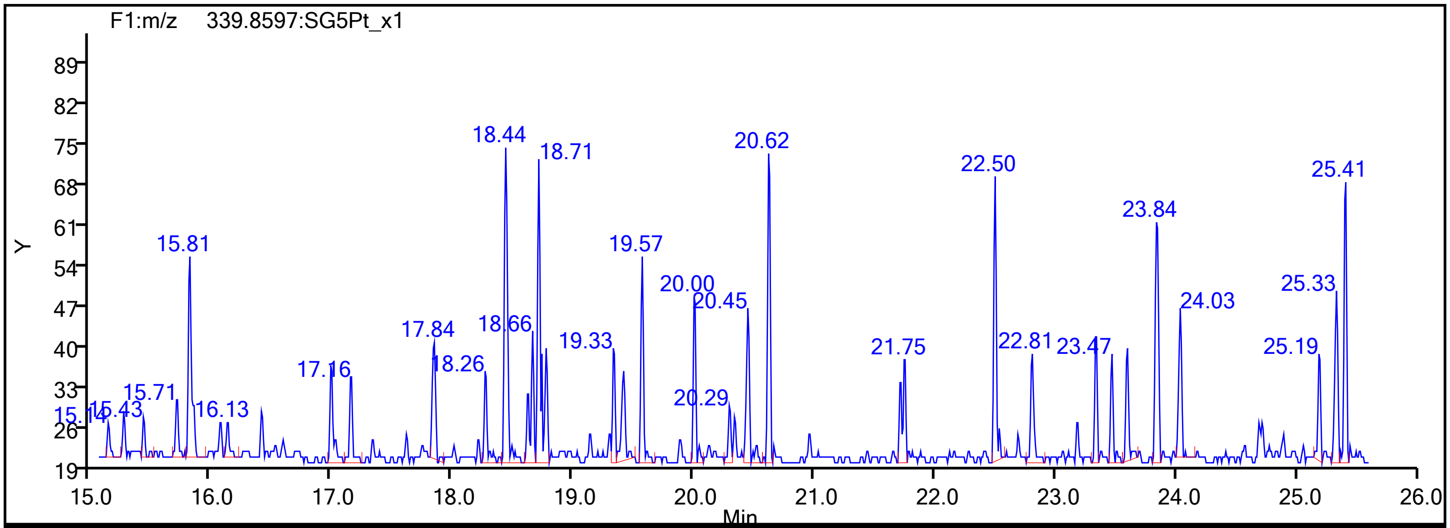

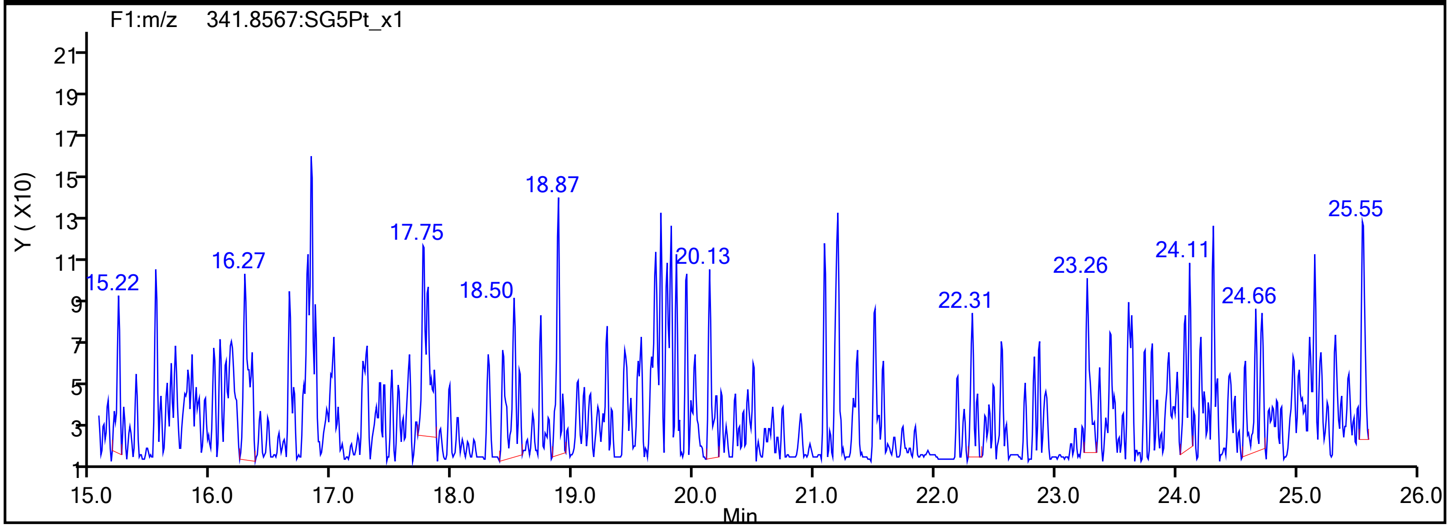

F1 PeCDFs Interference Mass

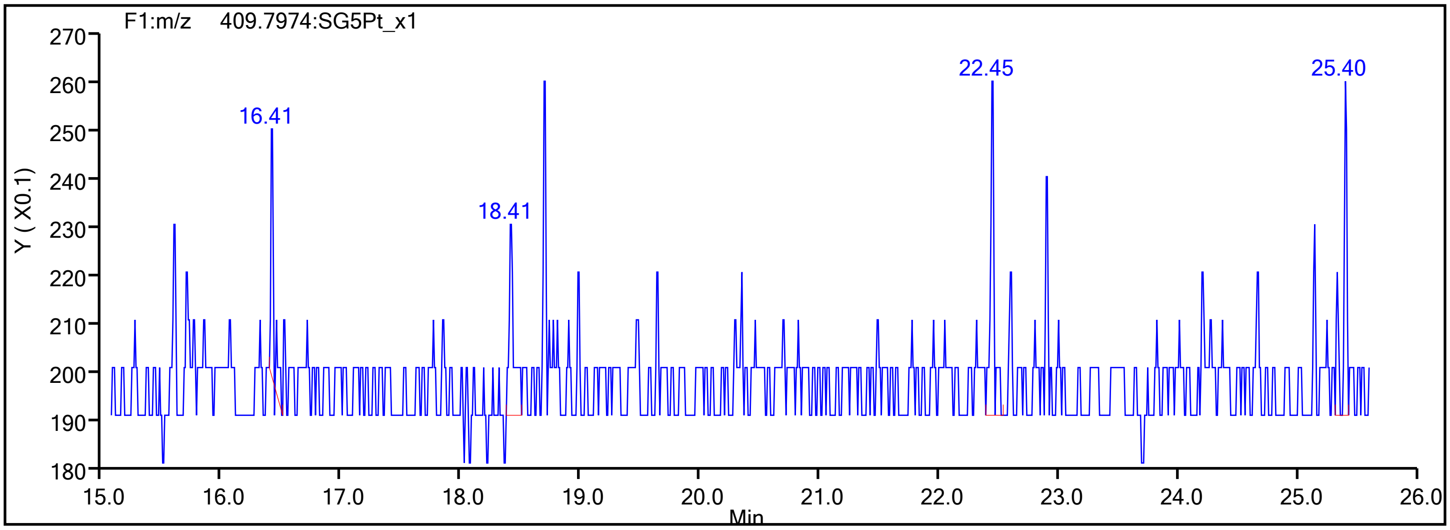

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d

Injection Date: 24-Nov-2020 12:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1-1um
Worklist#: 434777
Sample Line#: 34
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

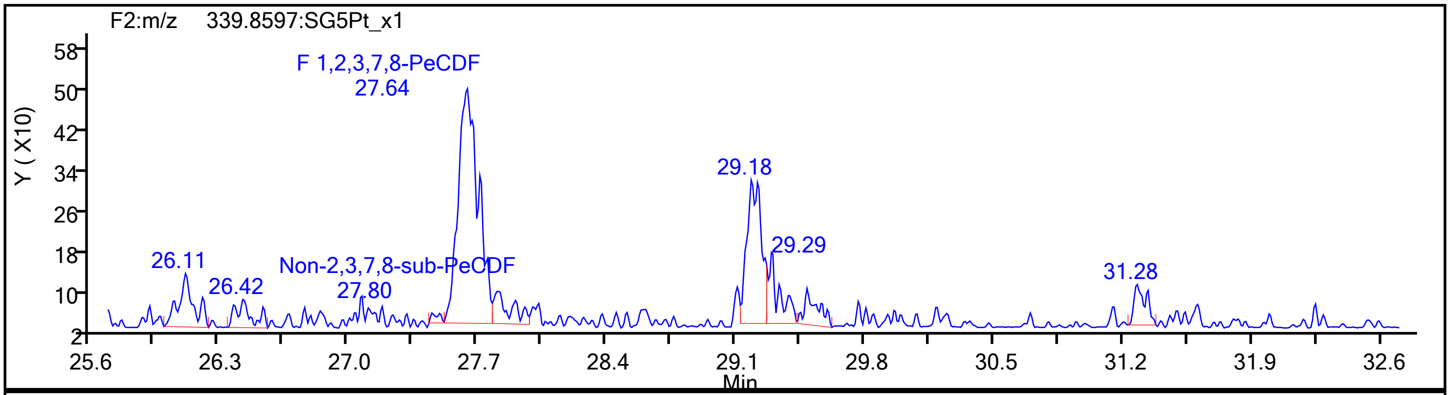

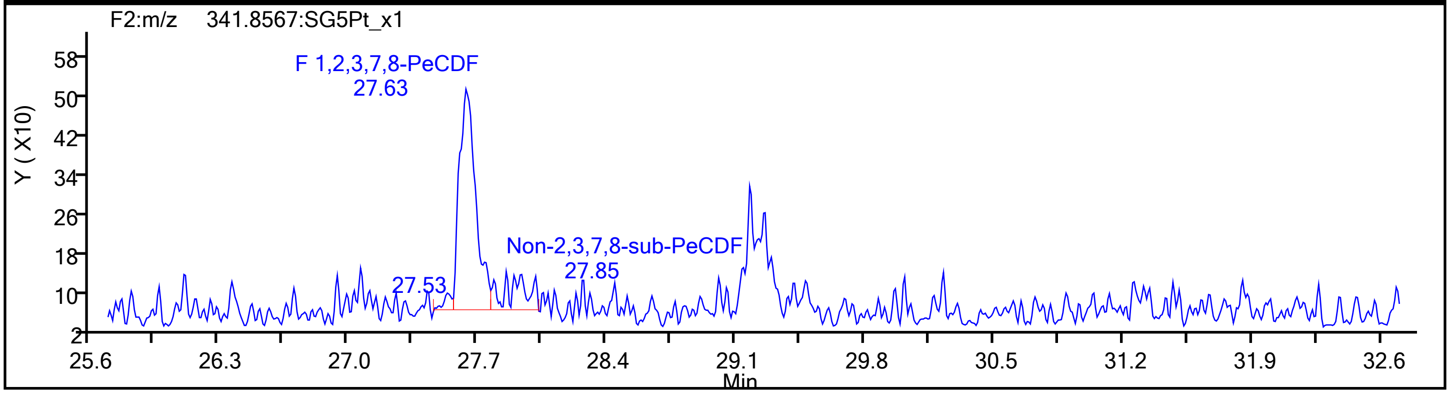

PeCDF Standards

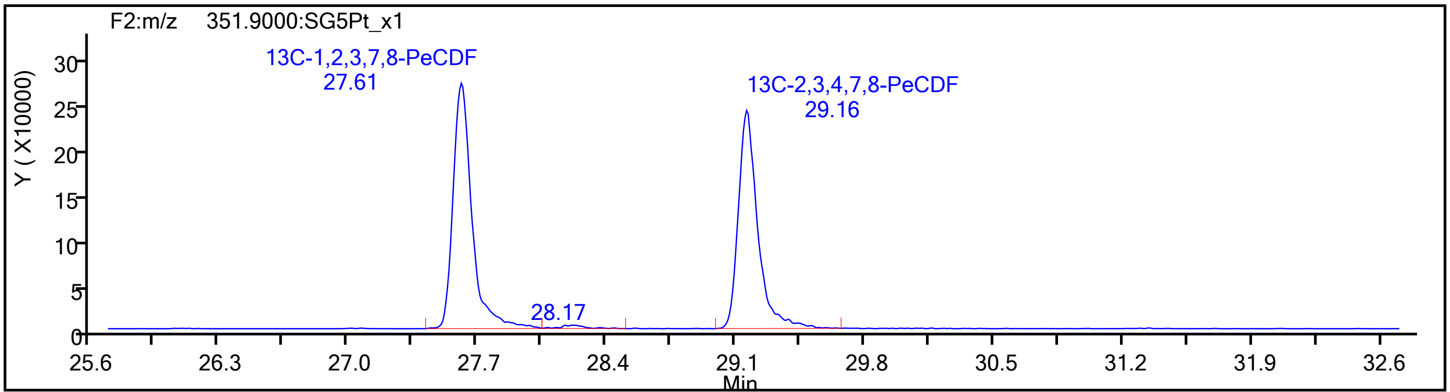

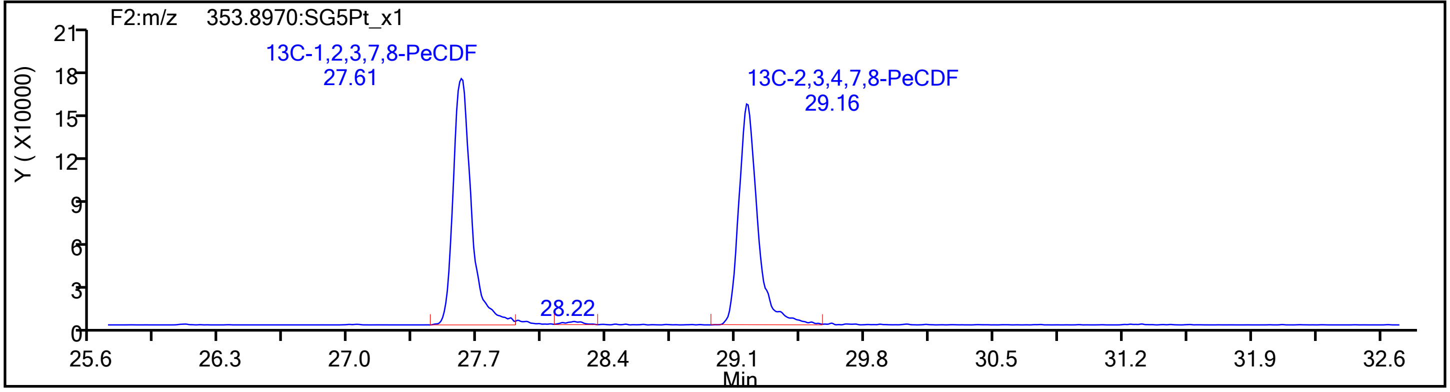

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1-1um
Worklist#: 434777
Sample Line#: 34
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

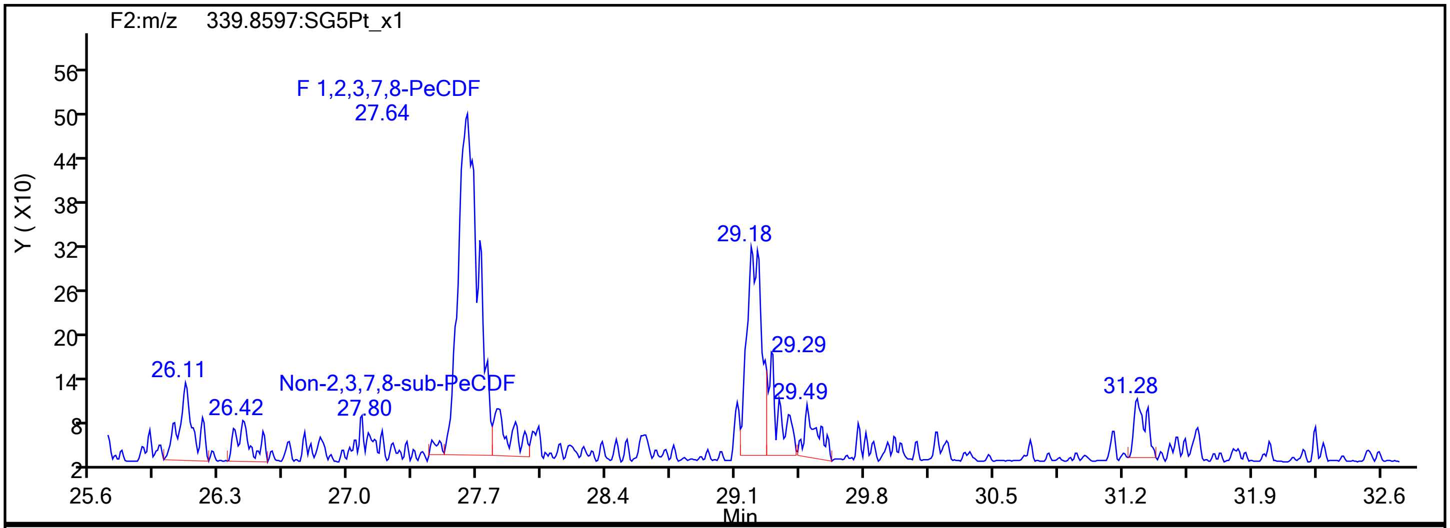

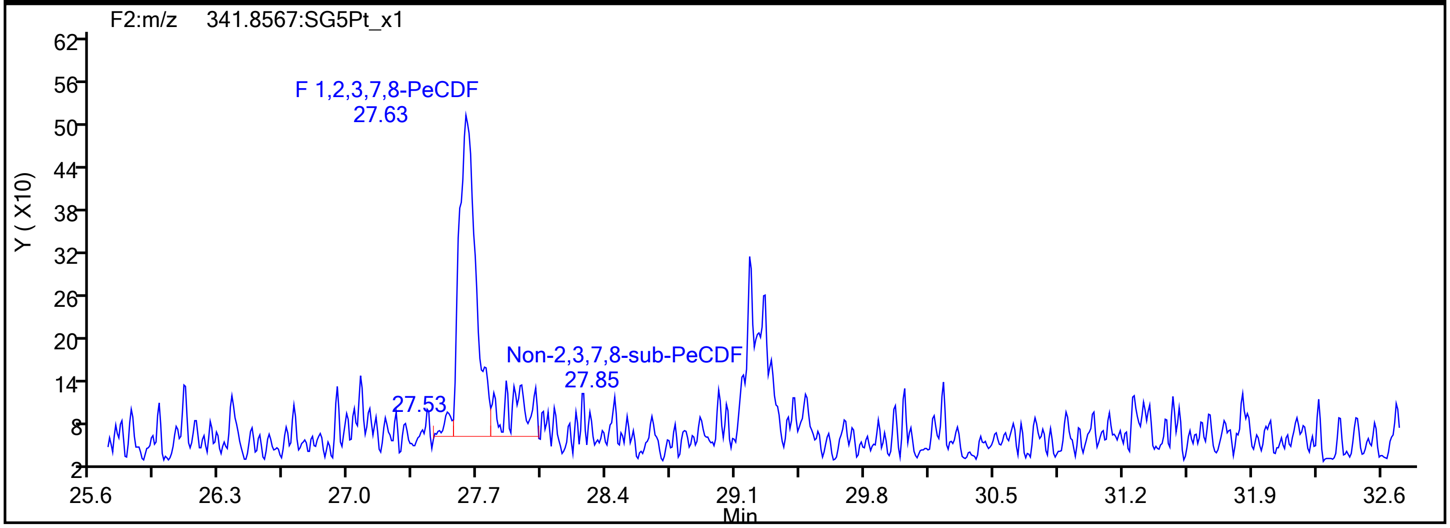

PeCDF Interference Mass

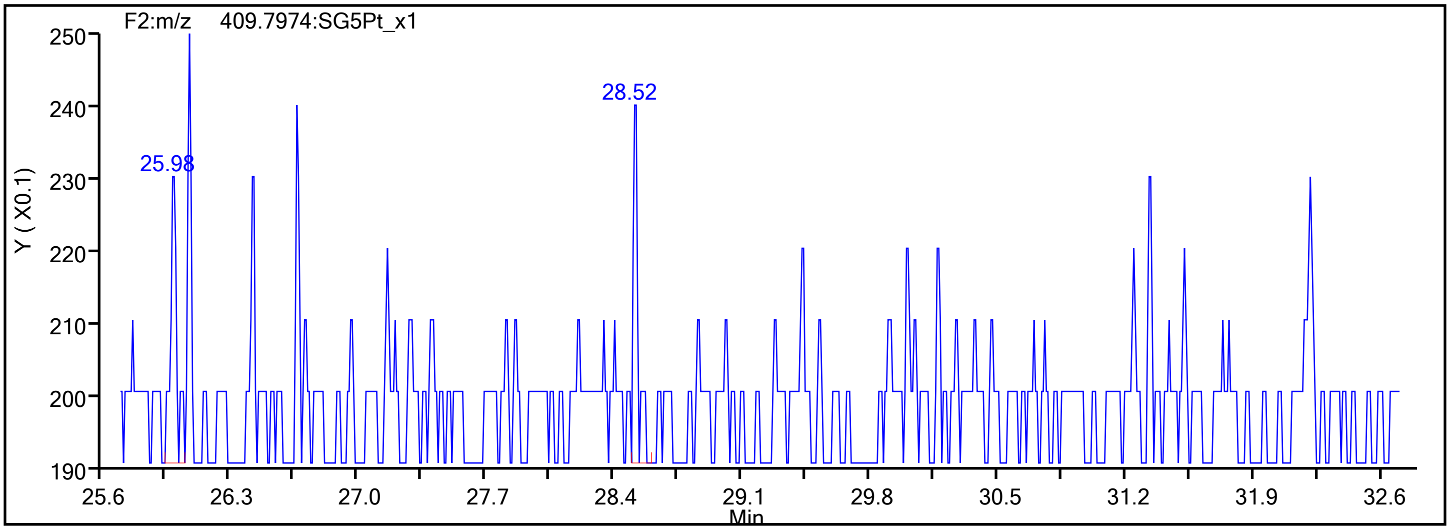

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

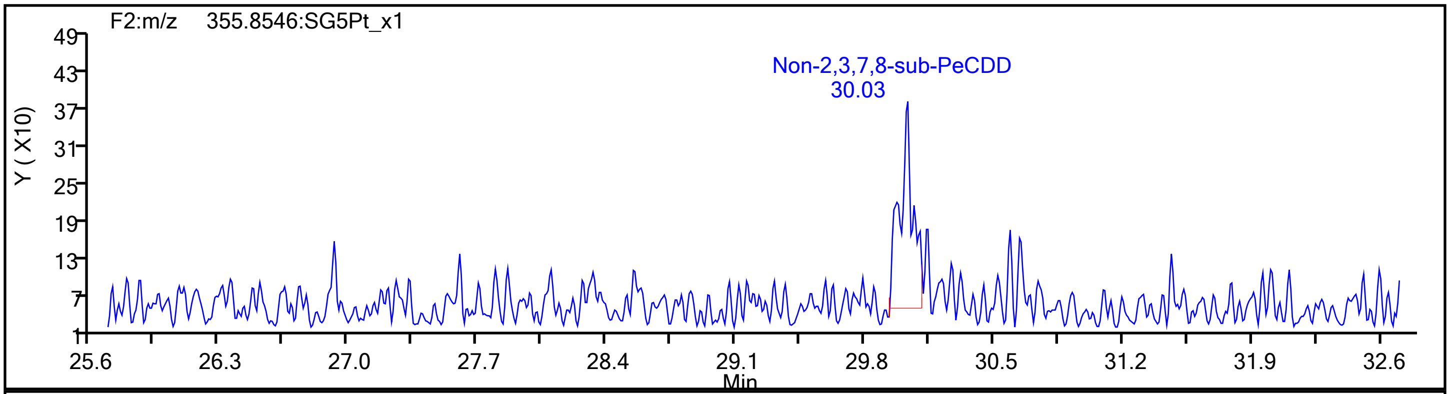

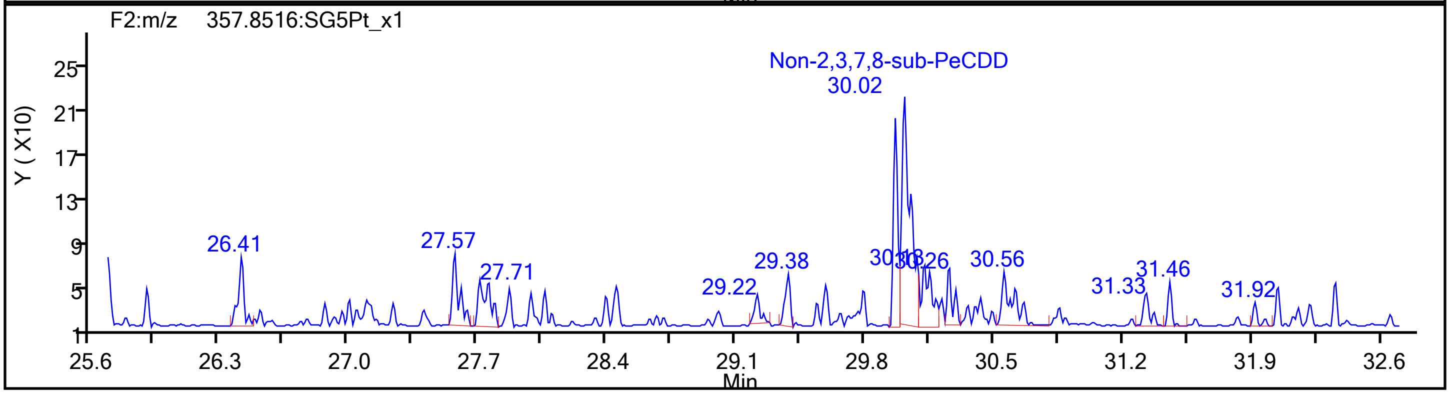

PeCDD Standards

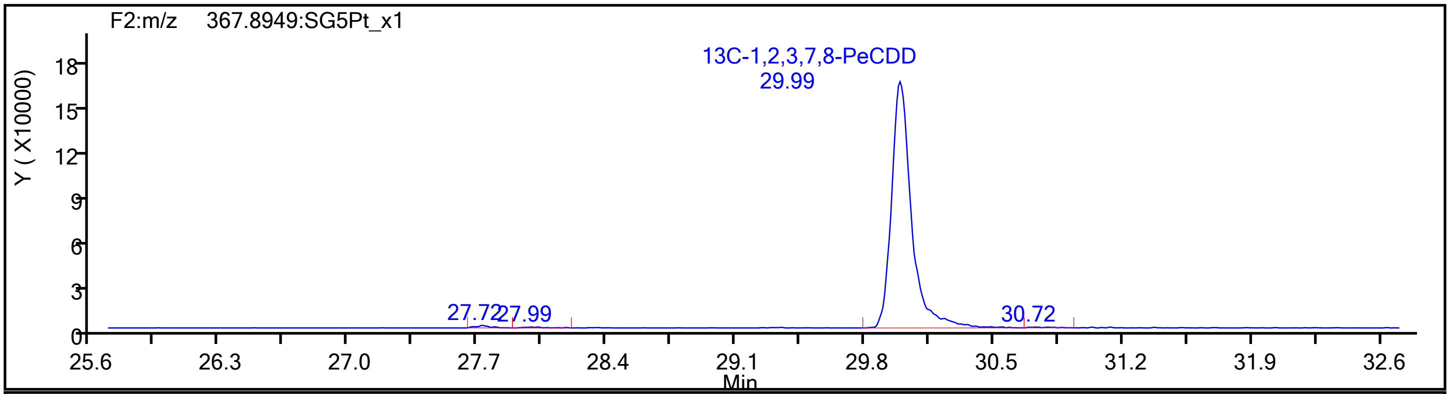

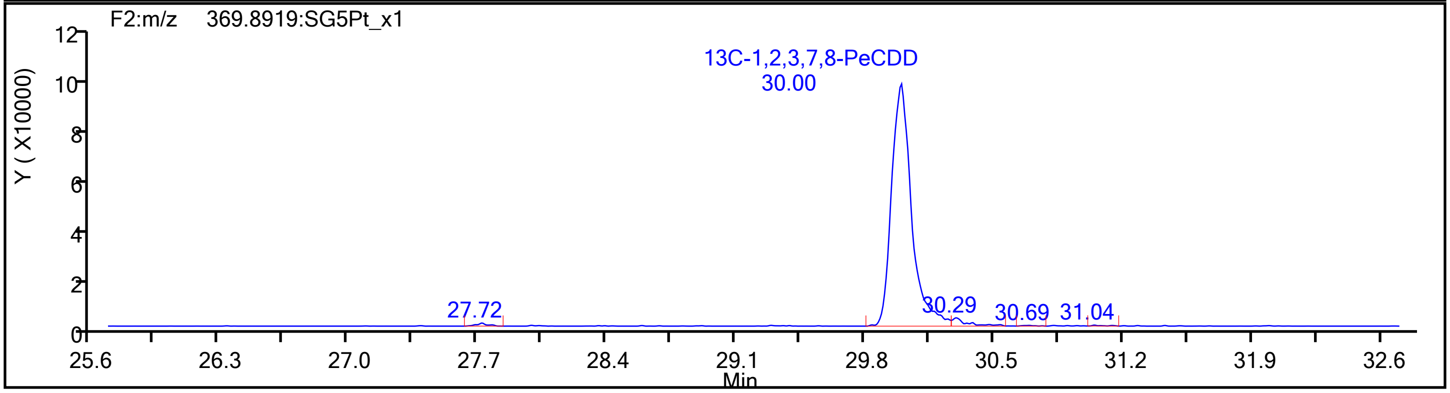

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d

Injection Date: 24-Nov-2020 12:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1-1um

Worklist#: 434777 Sample Line#: 34

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

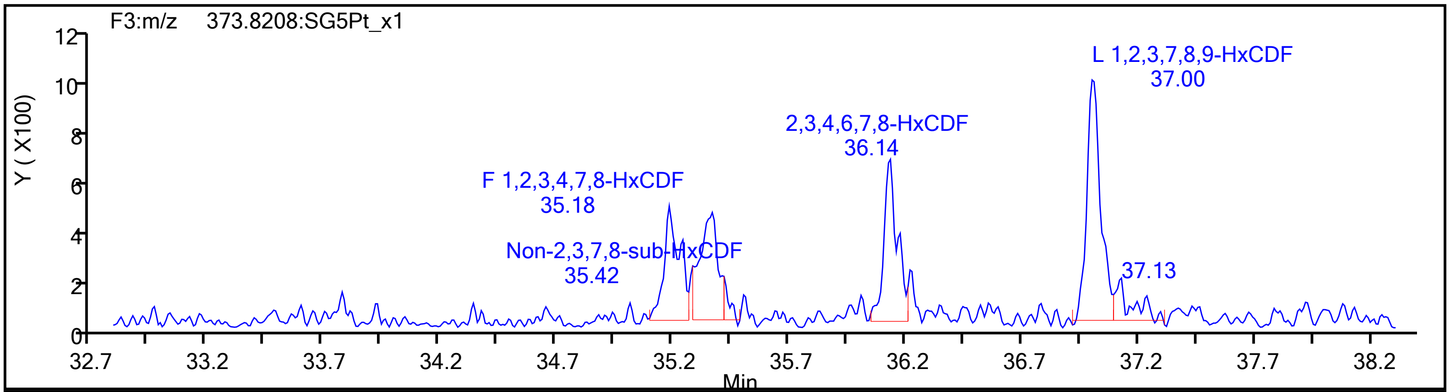

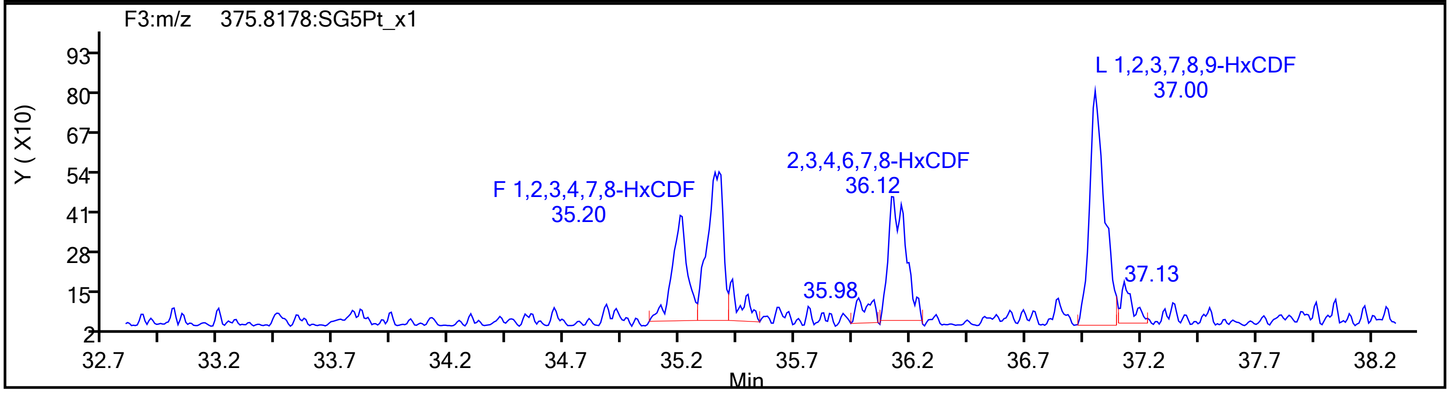

HxCDF Standards

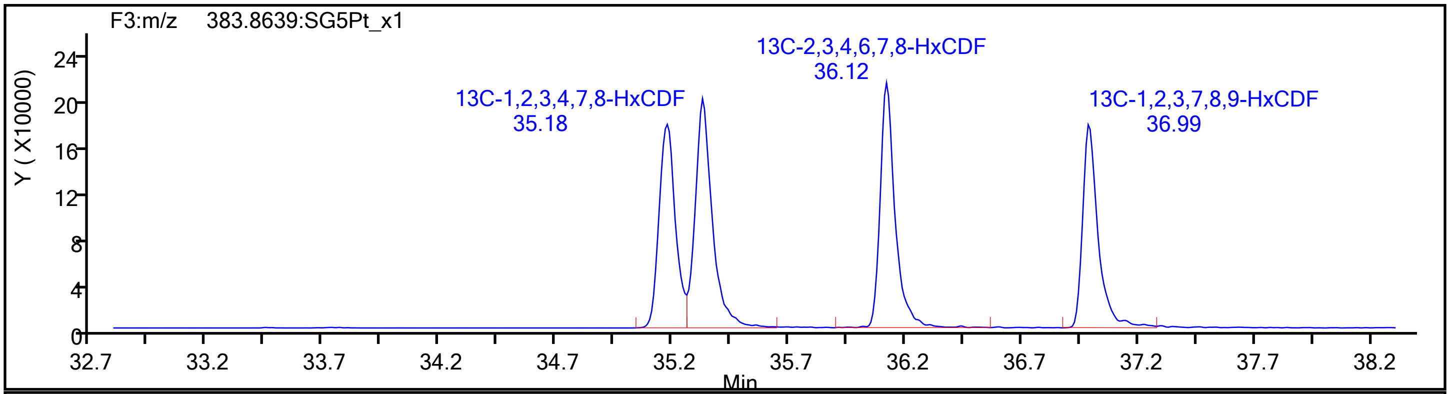

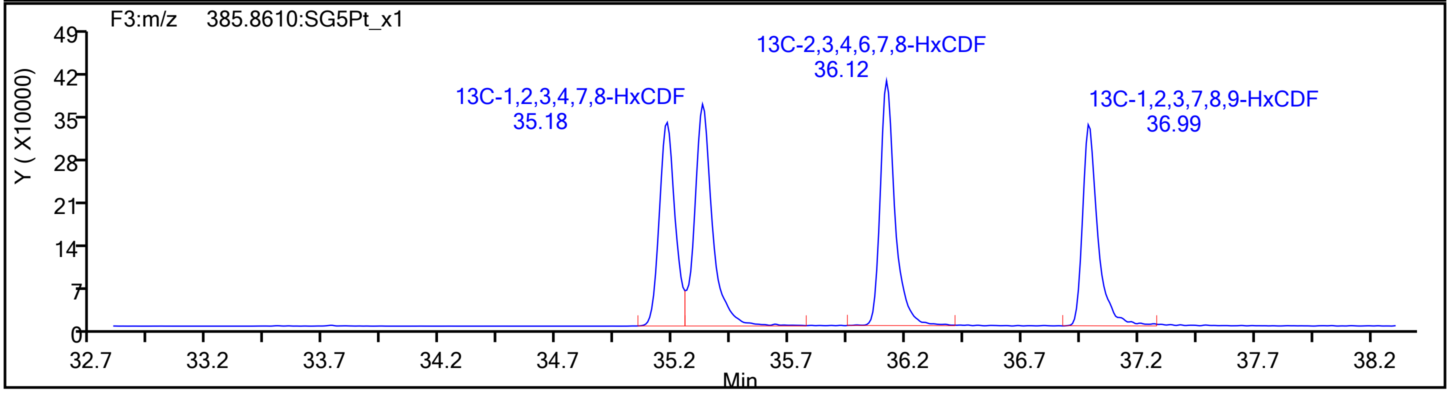

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d

Injection Date: 24-Nov-2020 12:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1-1um
Worklist#: 434777
Sample Line#: 34
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

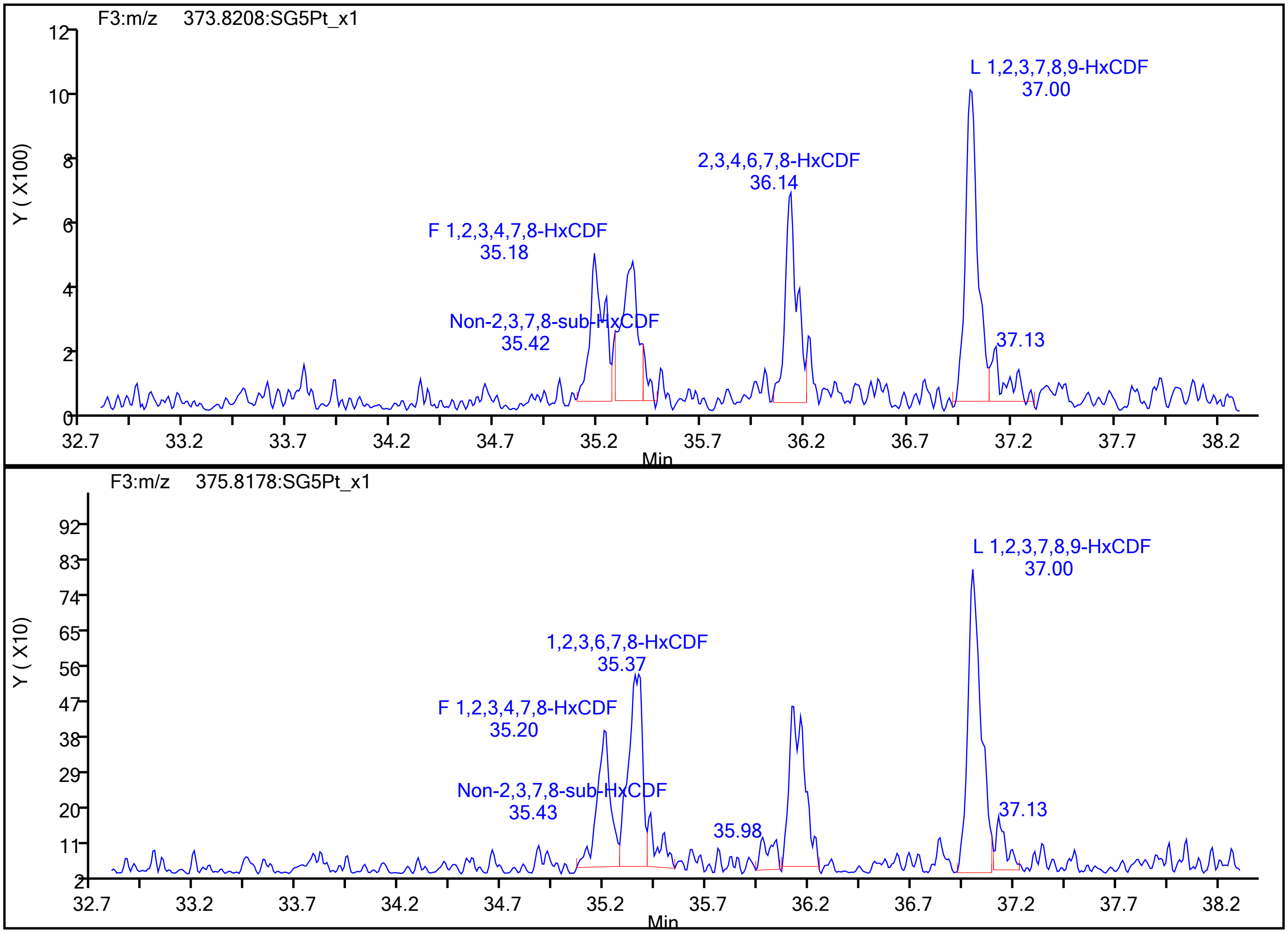

HxCDF Interference Mass

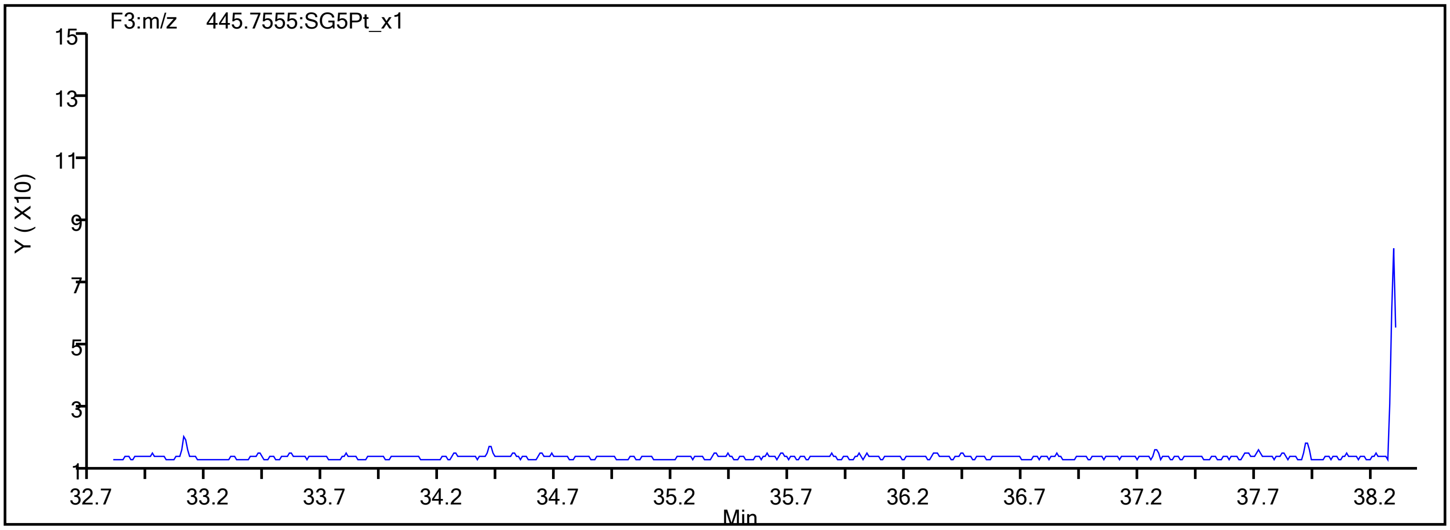

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1-1um
Worklist#: 434777
Sample Line#: 34
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

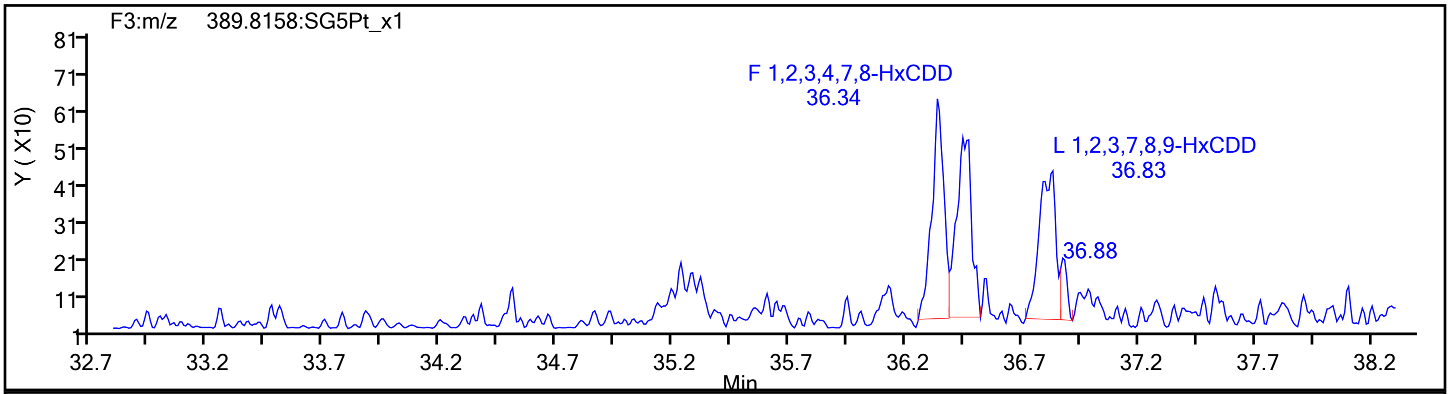

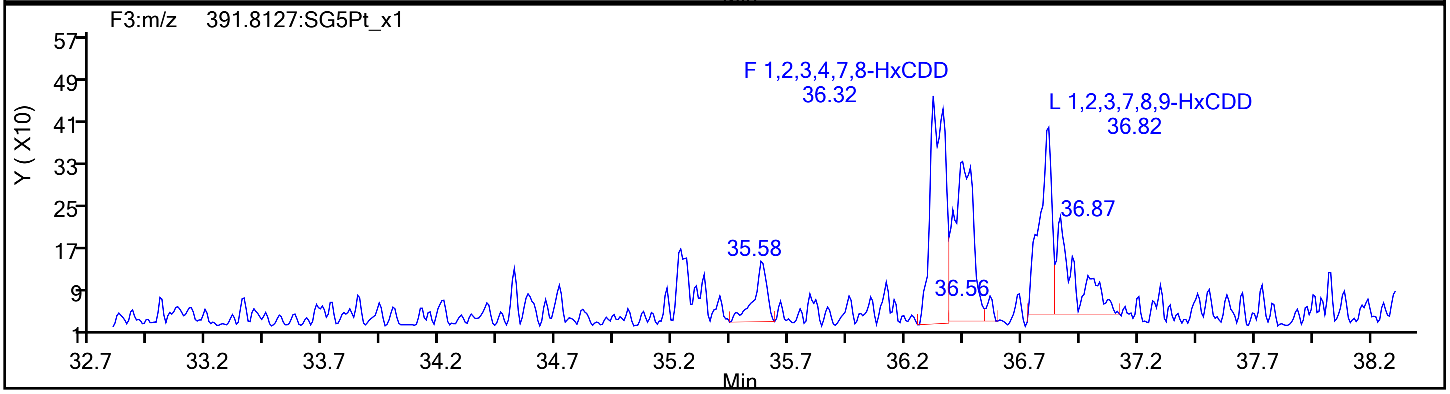

HxCDD Standards

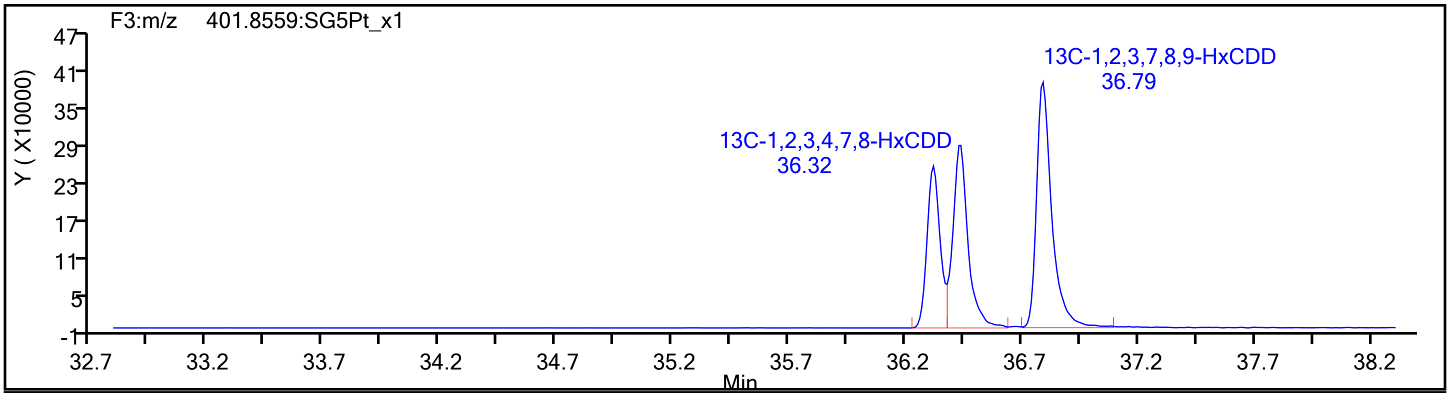

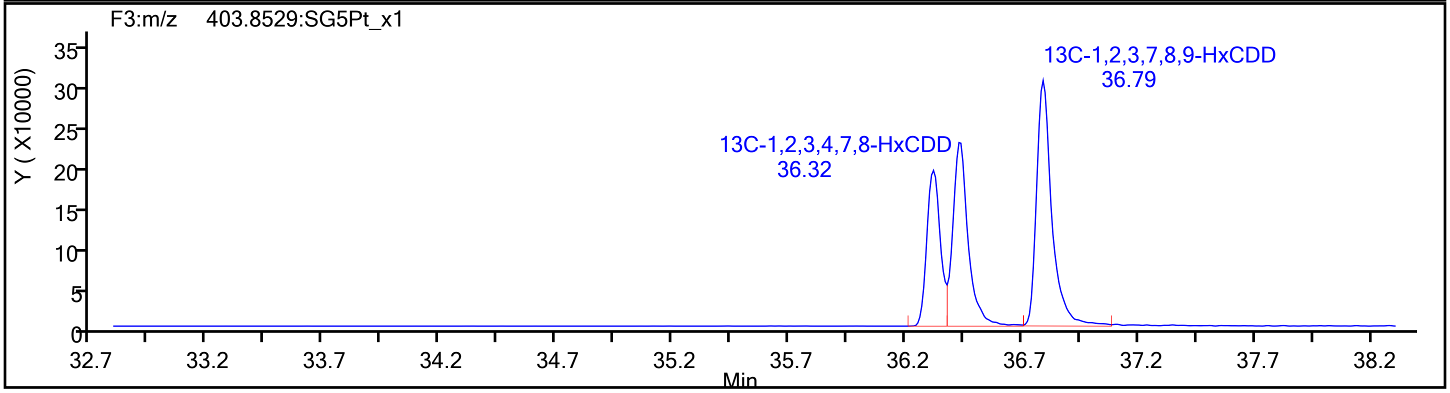

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

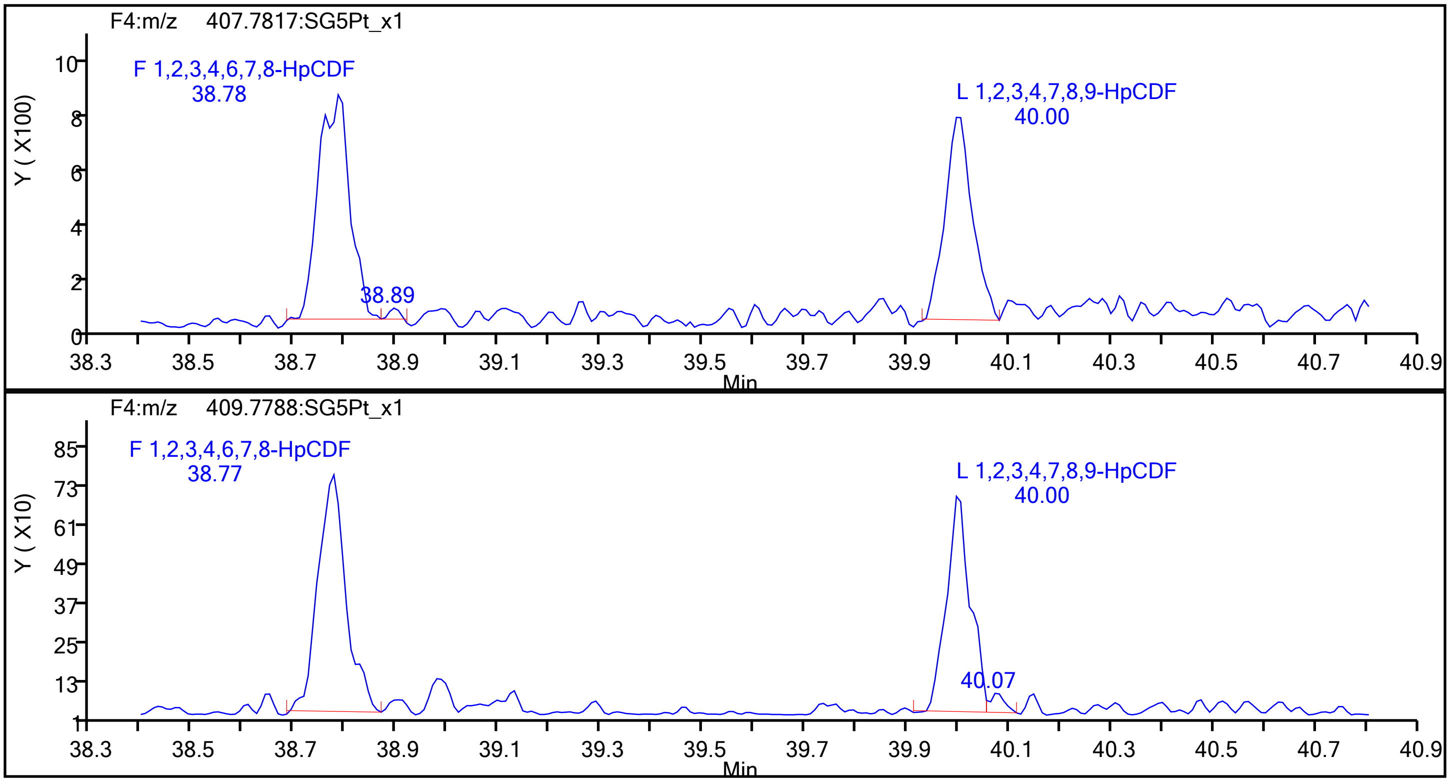

HpCDF Standards

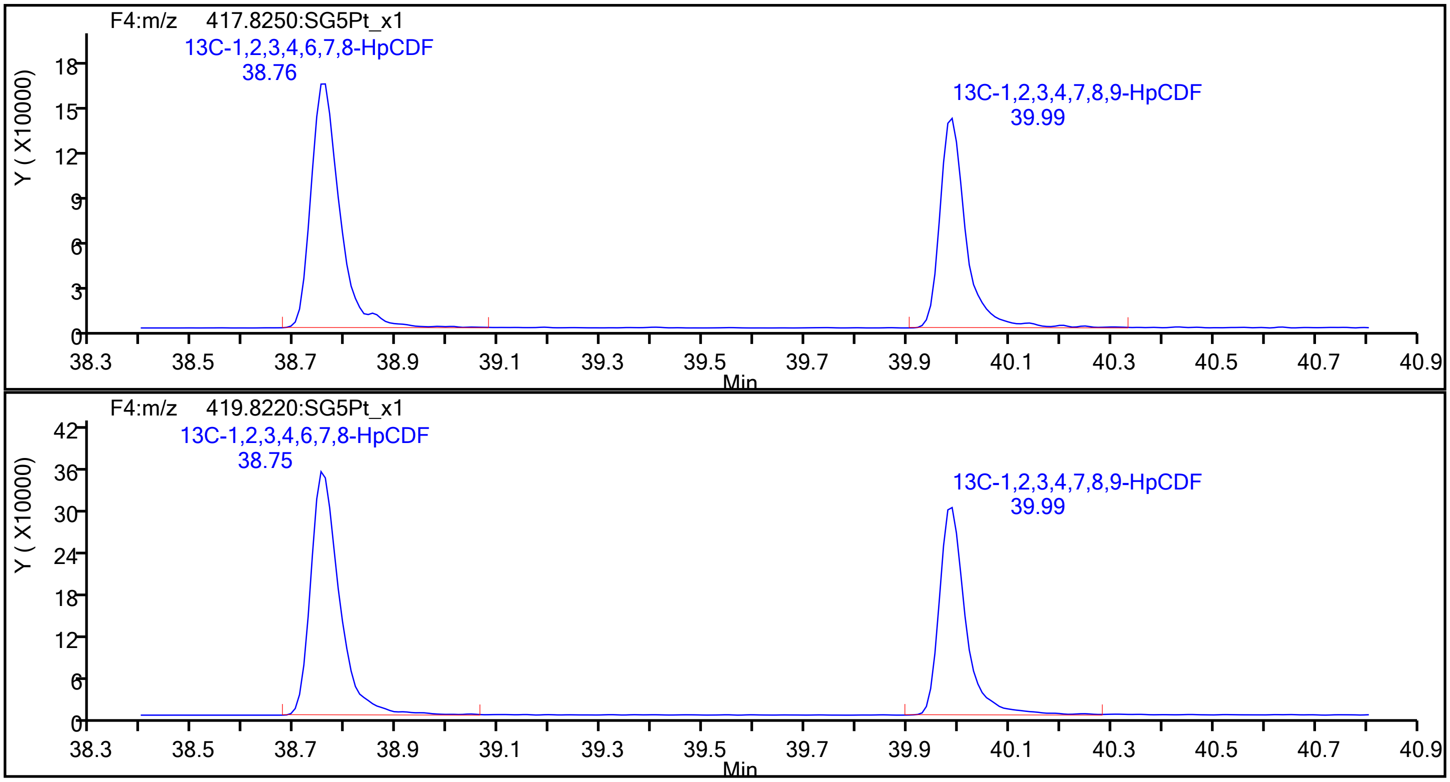

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d

Injection Date: 24-Nov-2020 12:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1-1um

Worklist#: 434777

Sample Line#: 34

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

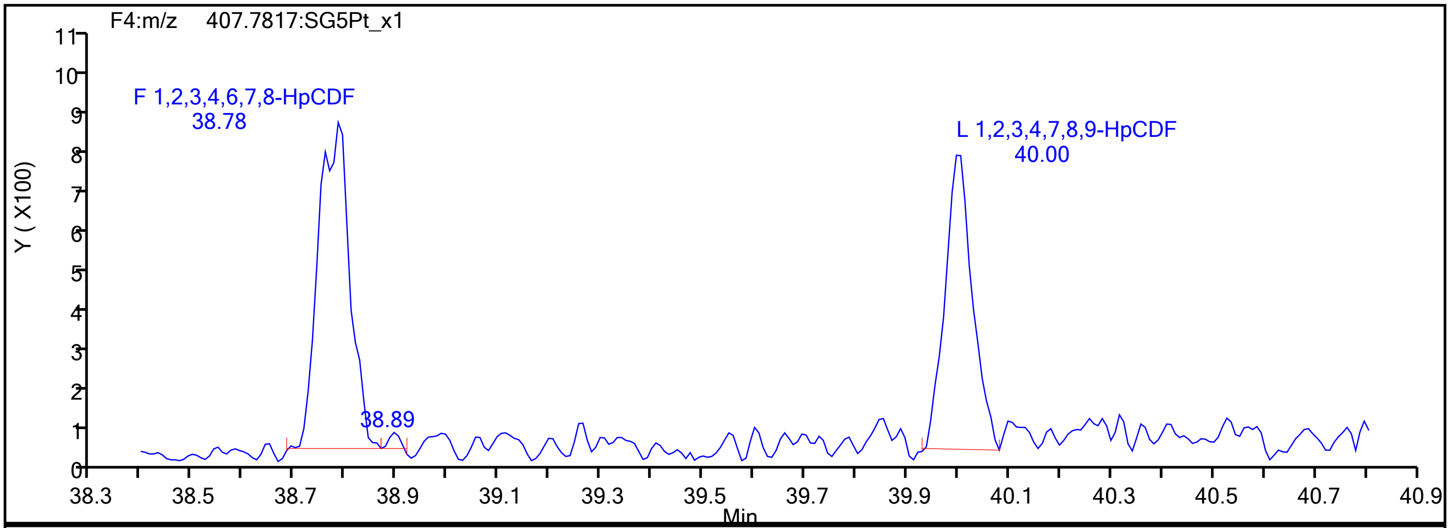

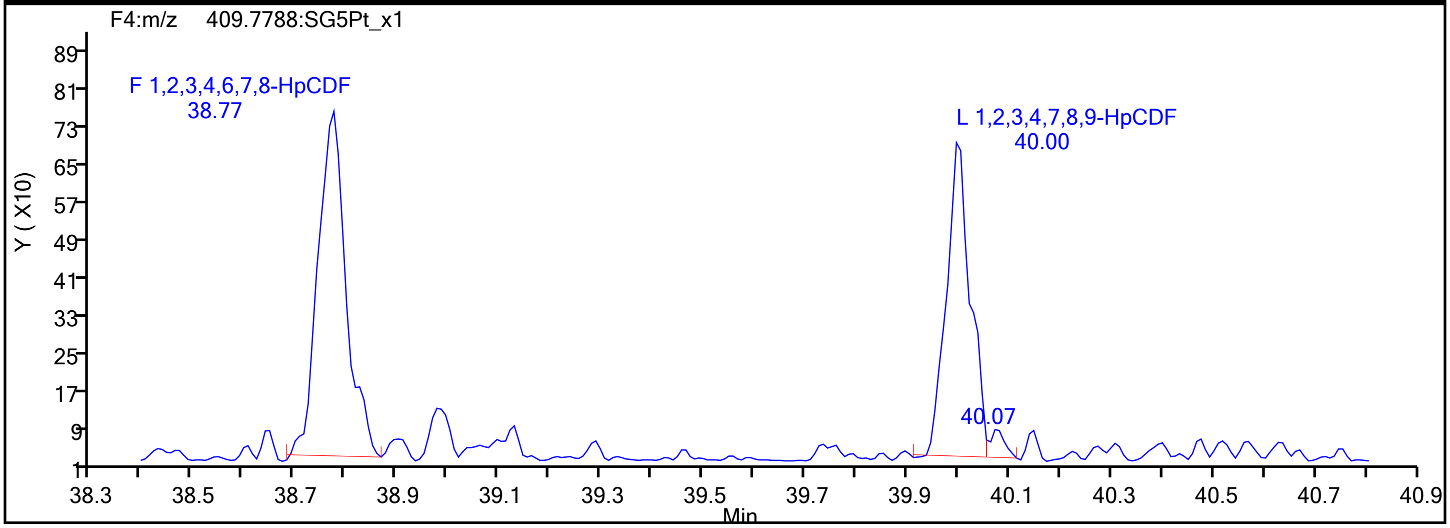

HpCDF Interference Mass

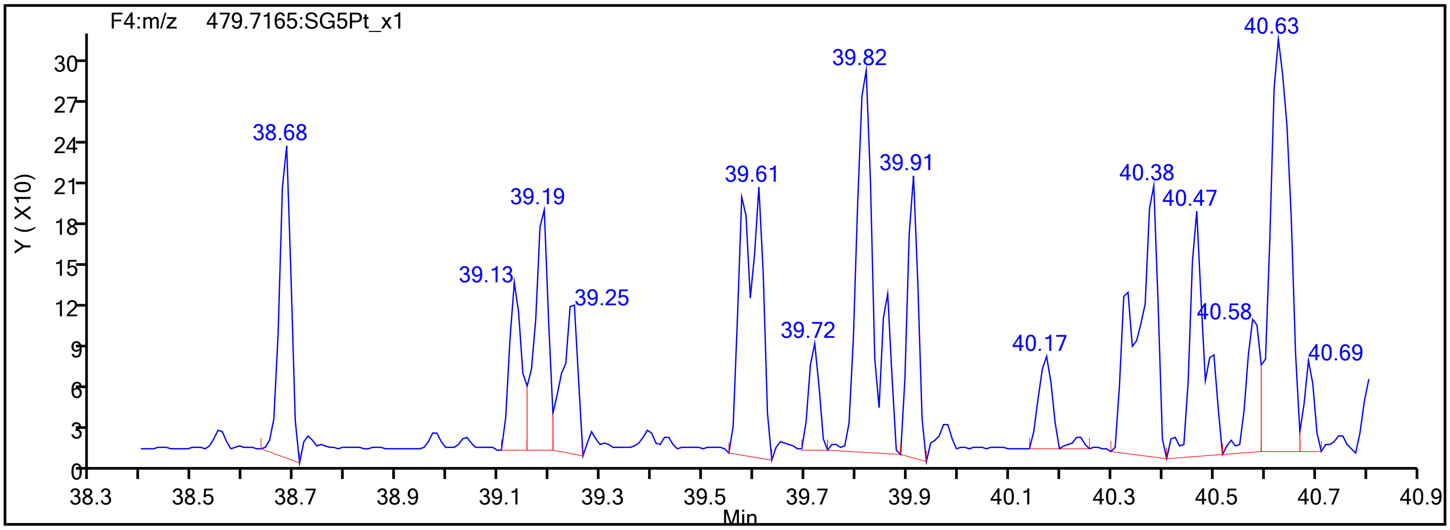

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

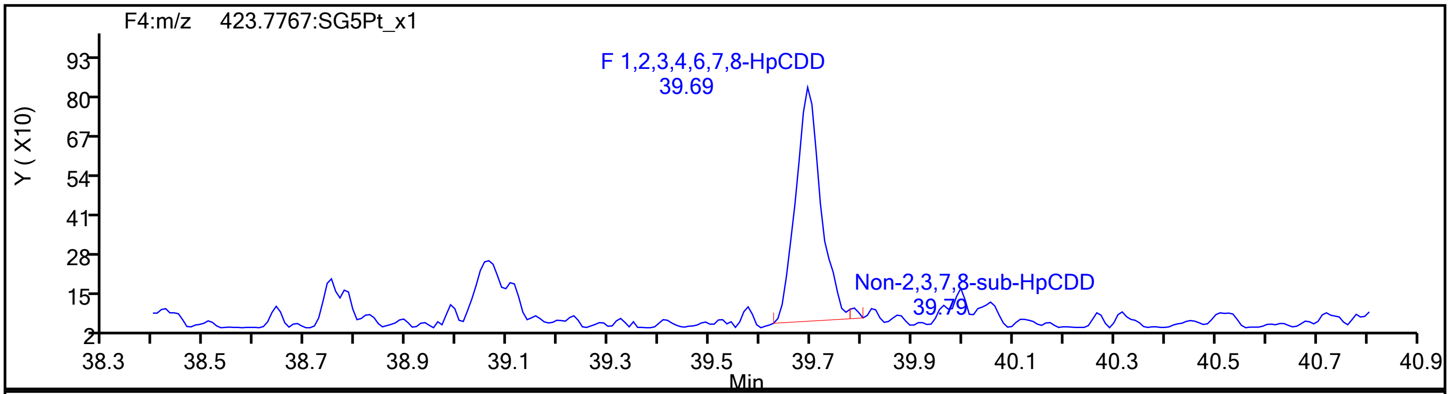

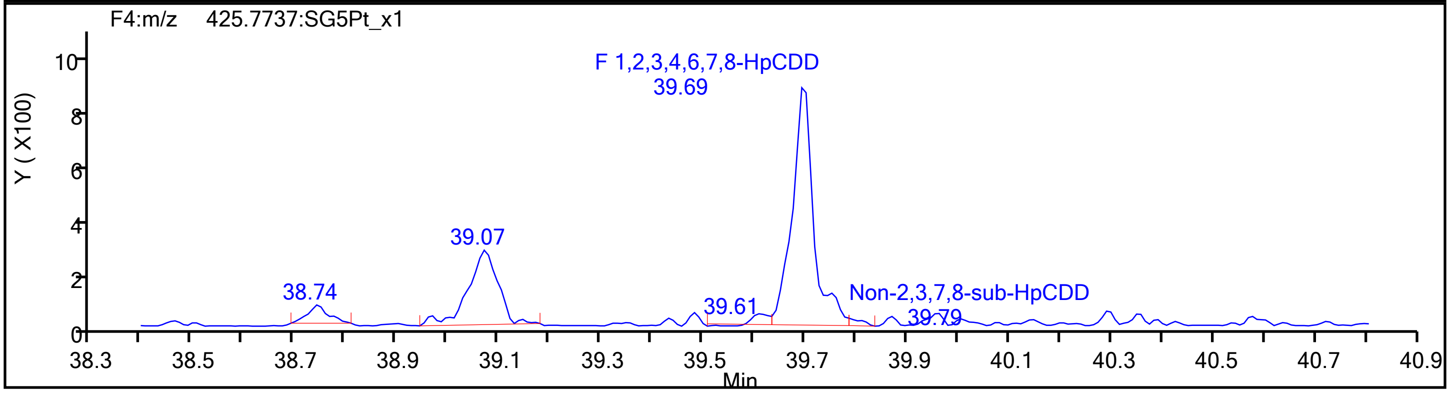

HpCDD Standards

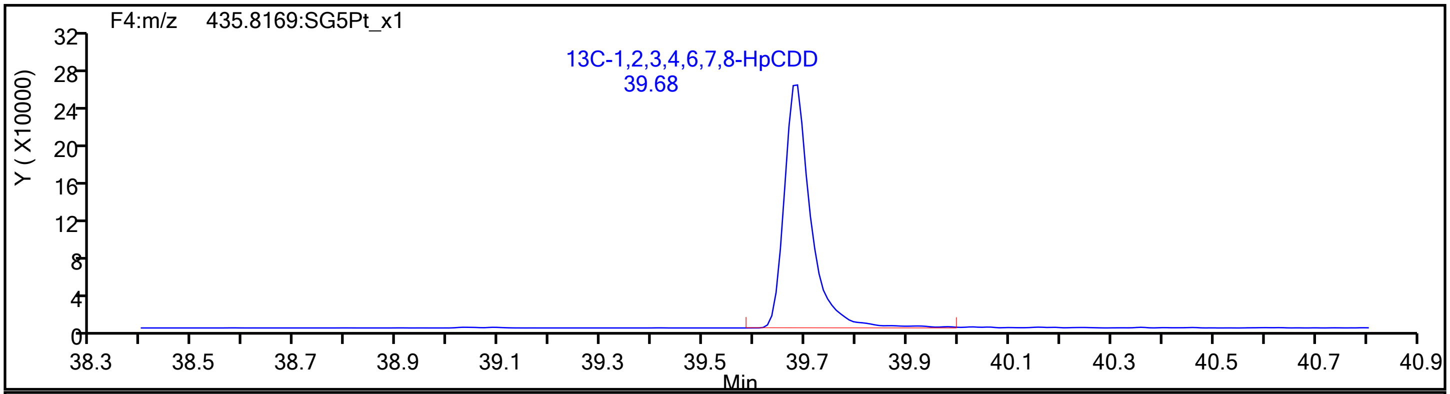

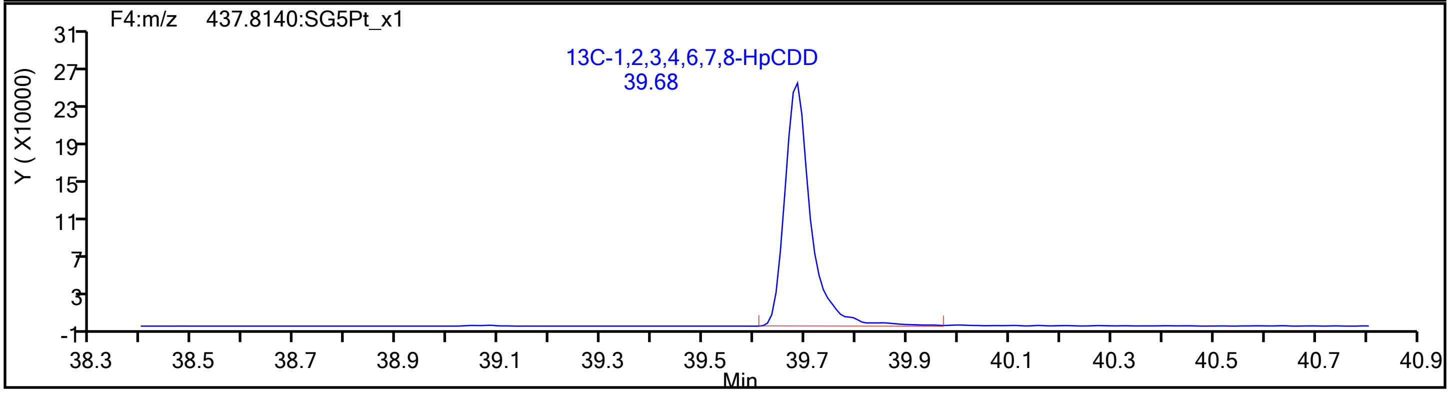

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

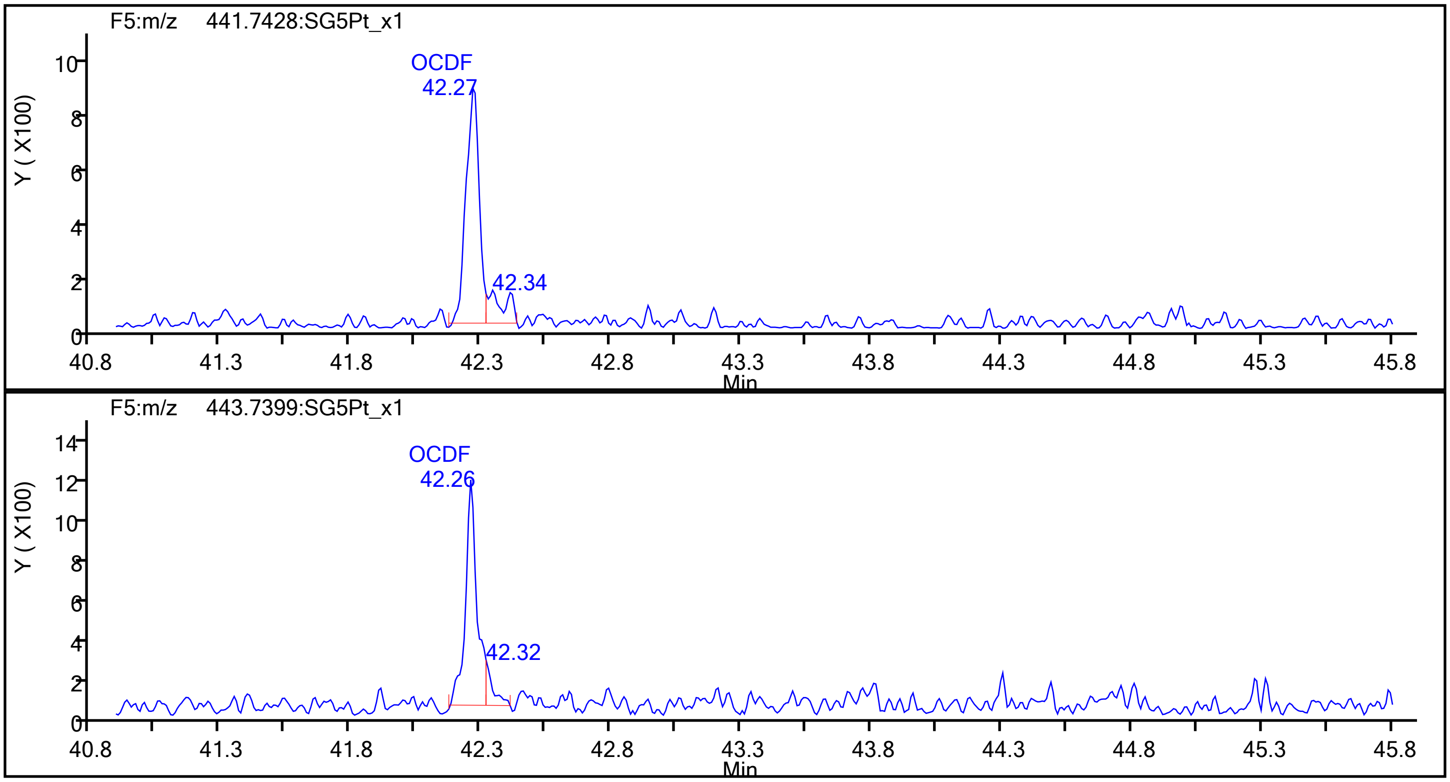

OCDF Standards

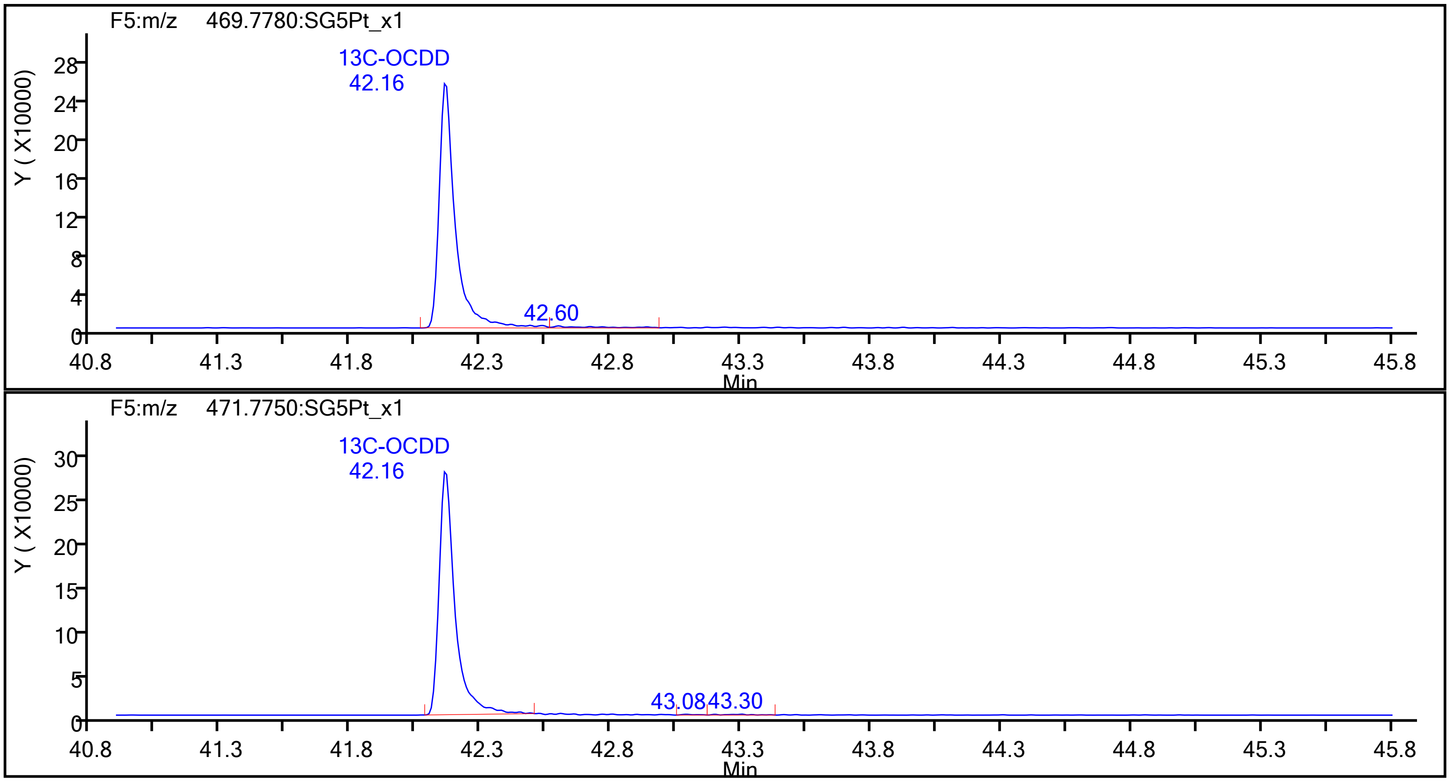

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

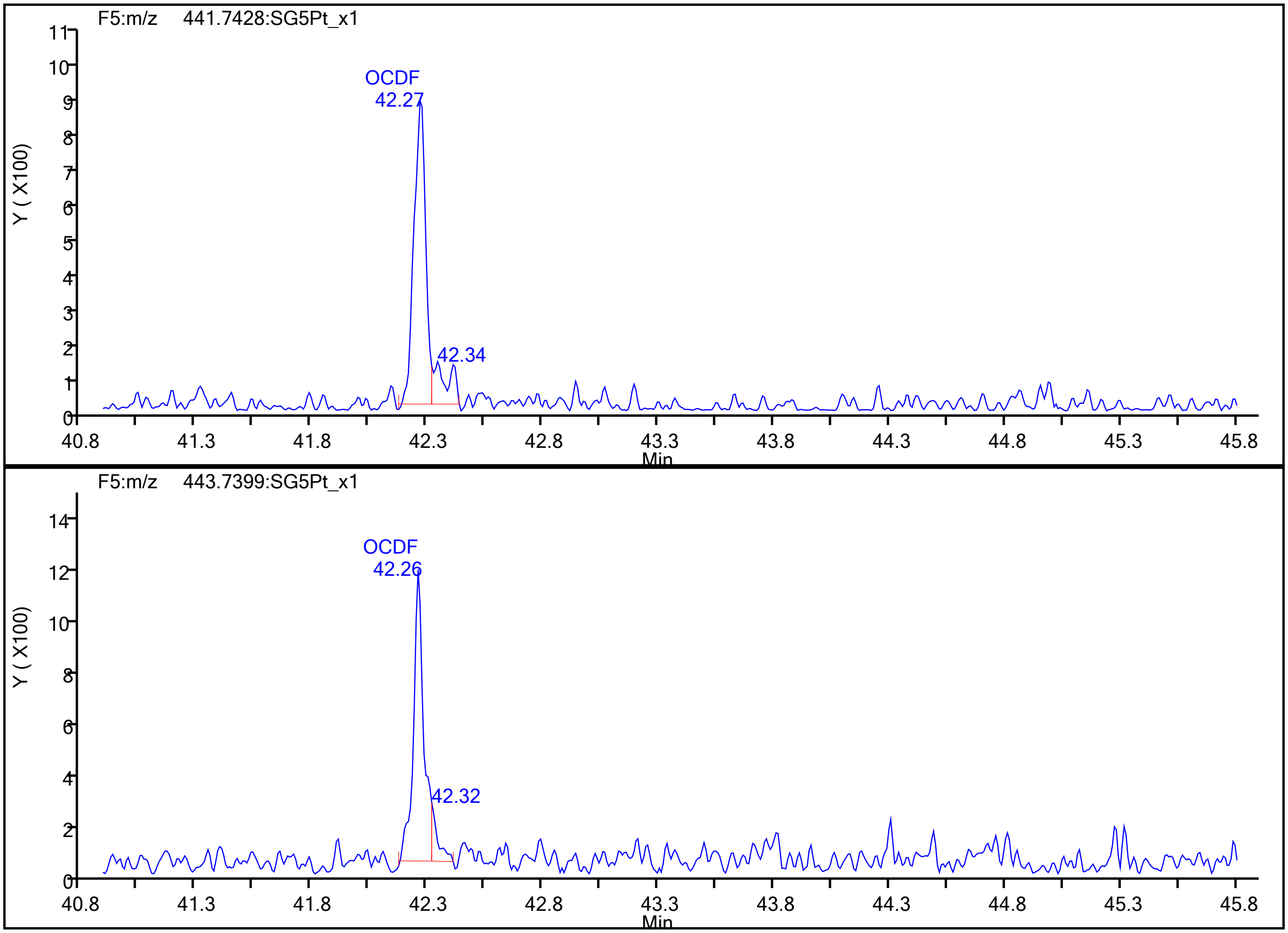

OCDF Interference Mass

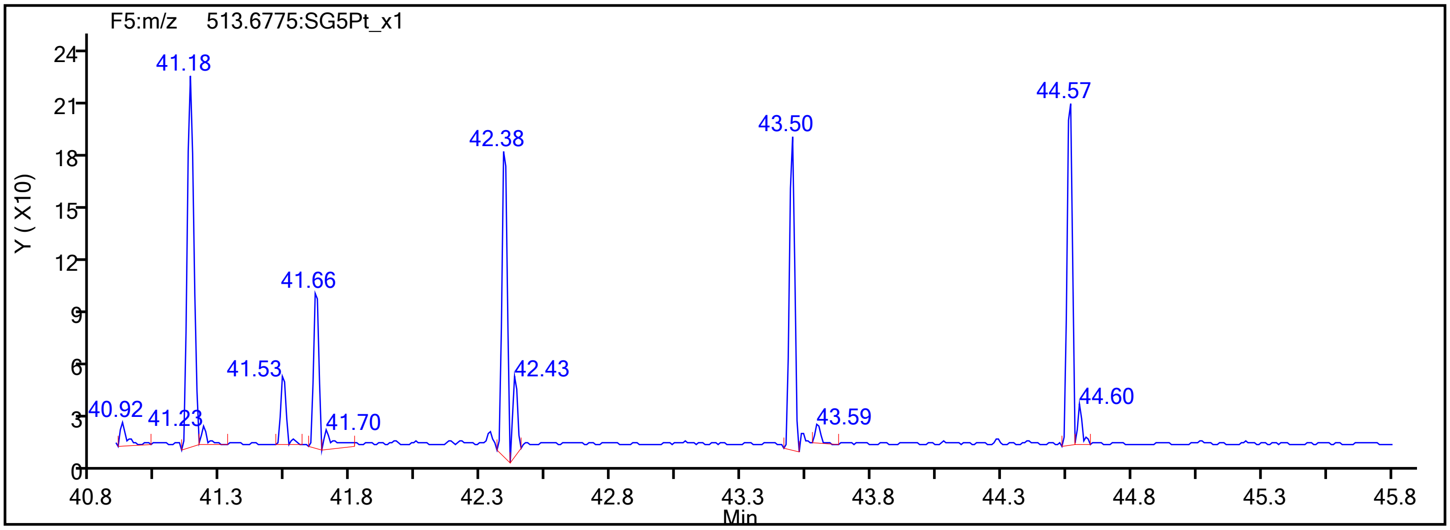

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d
Injection Date: 24-Nov-2020 12:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1-1um
Worklist#: 434777
Sample Line#: 34
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

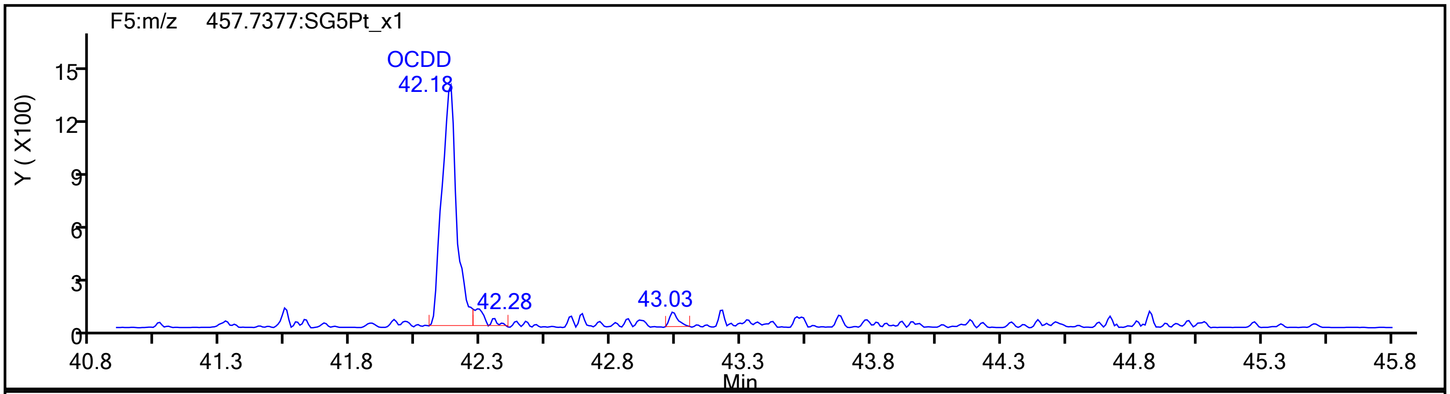

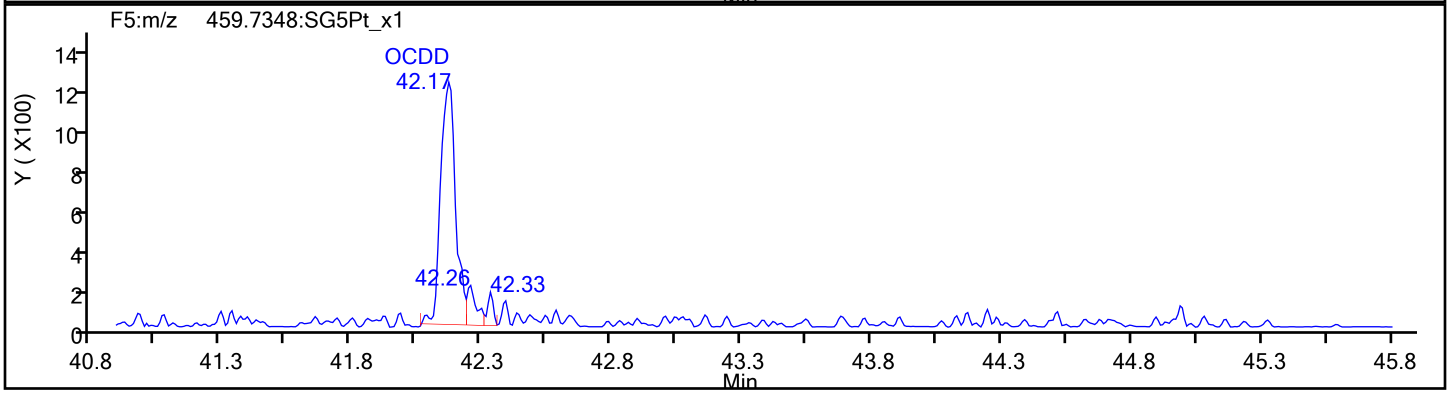

OCDD Standards

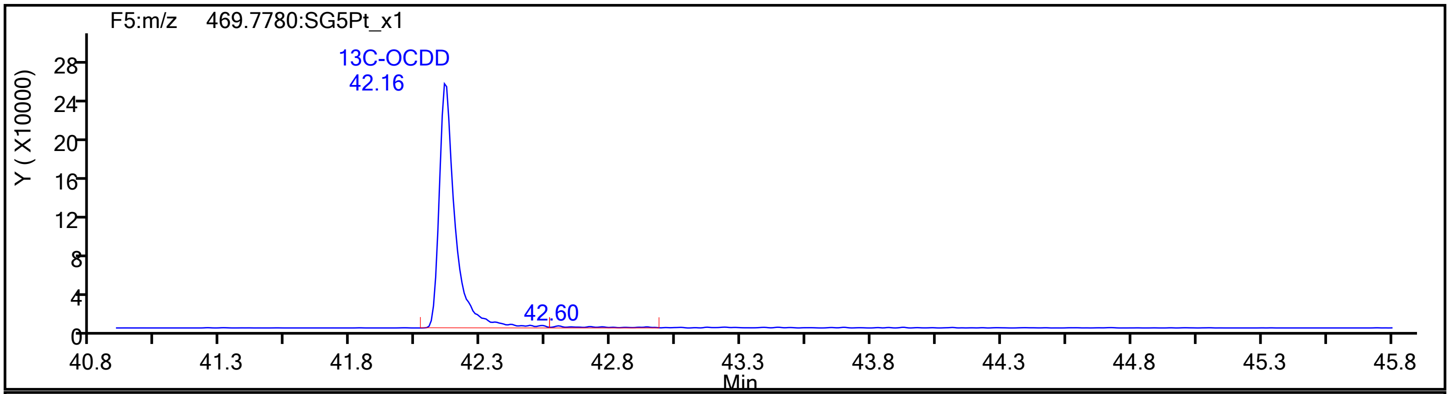

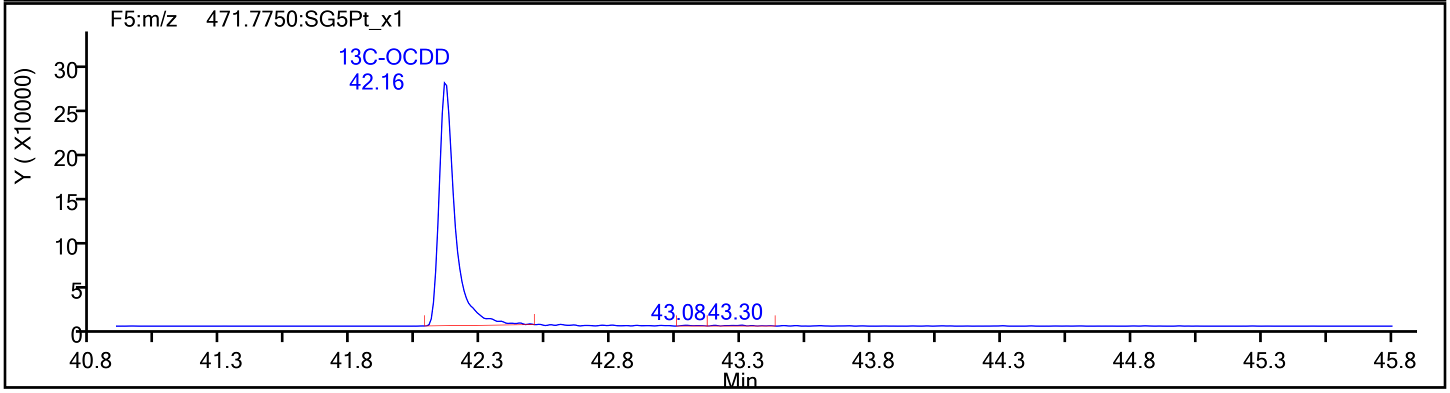

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d		
Injection Date:	24-Nov-2020 12:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1-1um		
Worklist#:	434777	Sample Line#:	34
Column Type:	DB-5	Column Dia:	0.32 mm

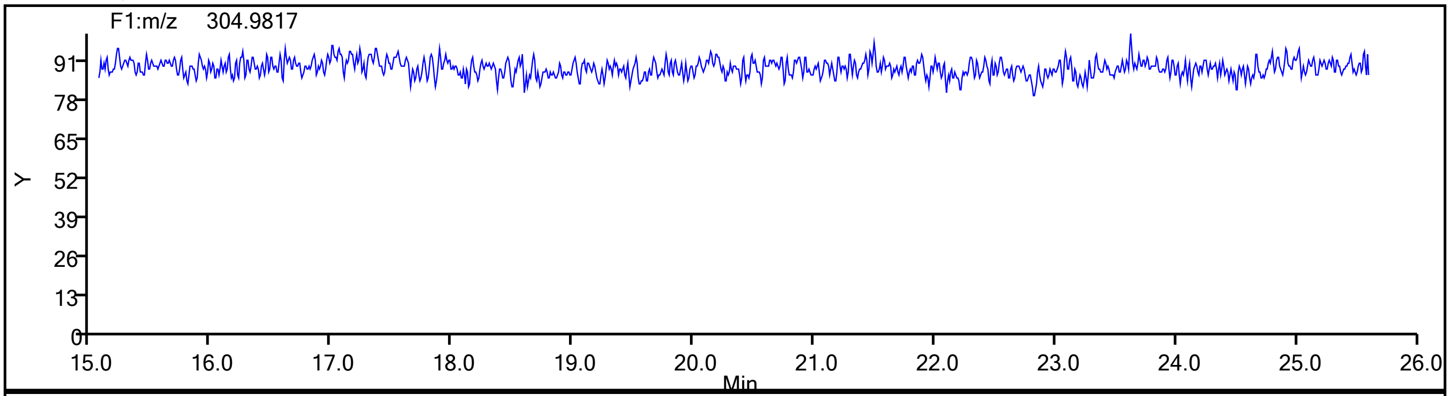

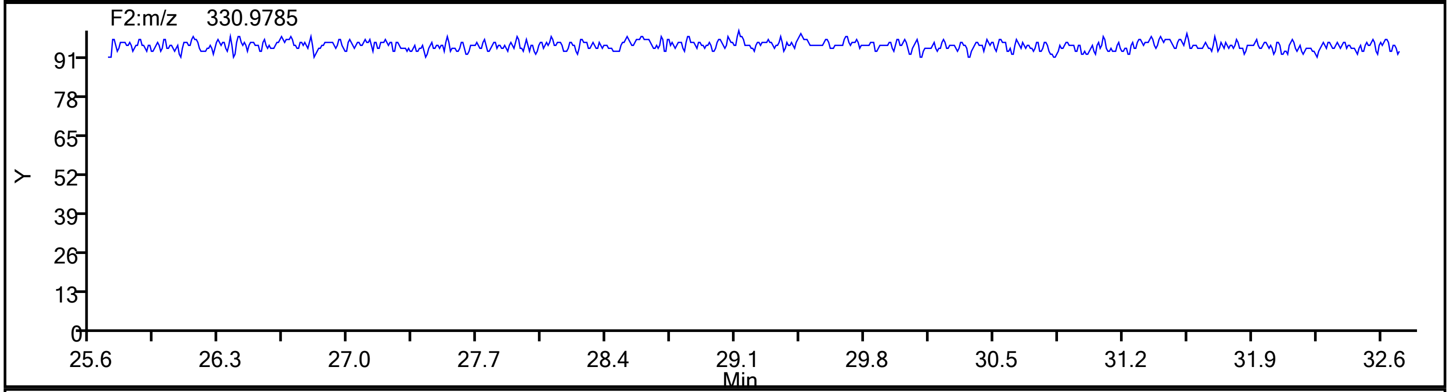

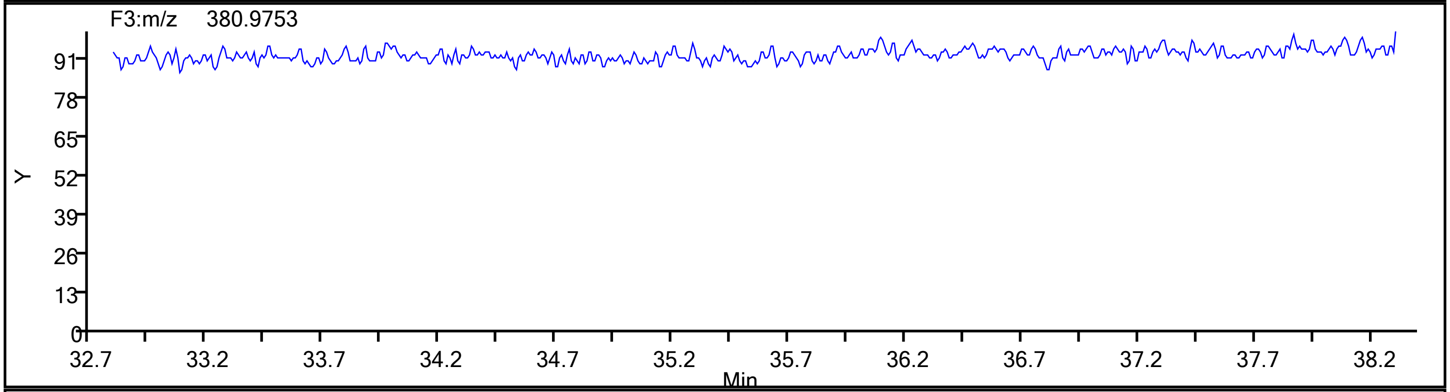

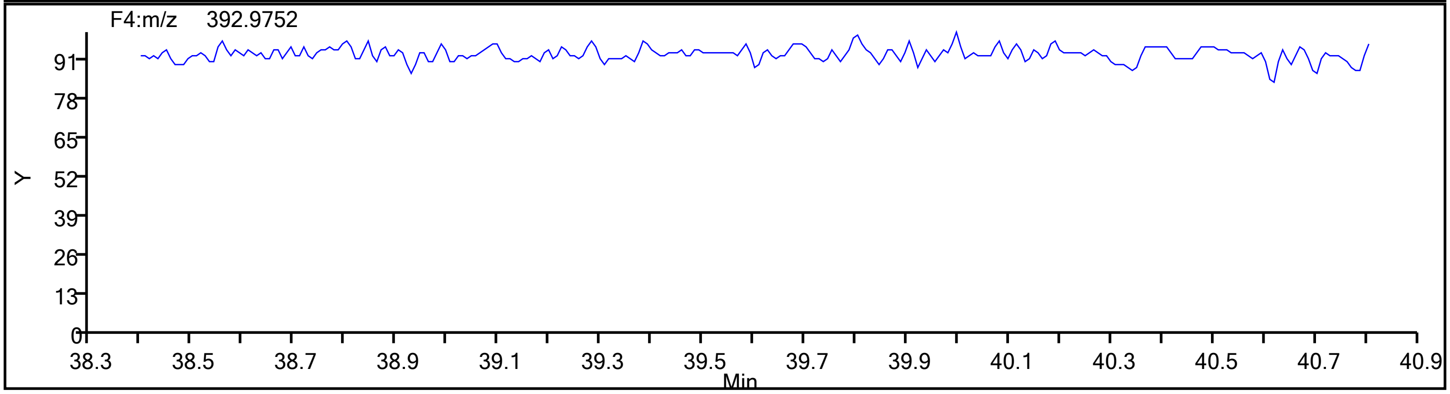

Report Date: 30-Nov-2020 10:46:17 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_39.d

Injection Date: 24-Nov-2020 12:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1-1um

Worklist#: 434777

Sample Line#: 34

Column Type: DB-5

Column Dia: 0.32 mm

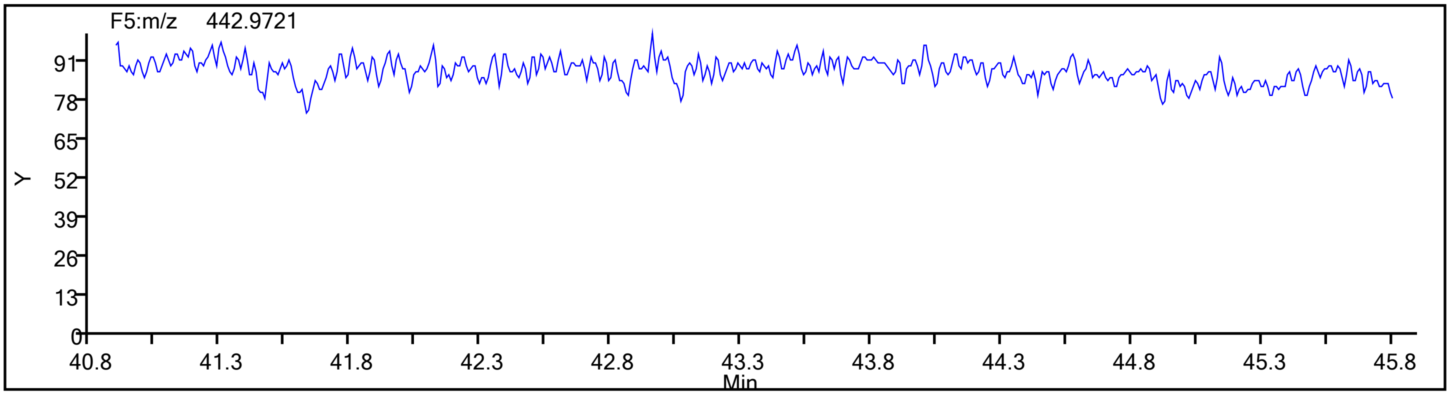

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-1
SDG No.:	
Client Sample ID: 11215702-Tank #2 1um	Lab Sample ID: 320-66850-2
Matrix: Water	Lab File ID: 23no20dfs1_40.d
Analysis Method: 1613B	Date Collected: 11/10/2020 11:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1058.6(mL)	Date Analyzed: 11/24/2020 13:29
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	37		9.4	0.85
40321-76-4	1,2,3,7,8-PeCDD	ND		47	0.57
57117-41-6	1,2,3,7,8-PeCDF	6.5	J B	47	0.40
57117-31-4	2,3,4,7,8-PeCDF	3.8	J B	47	0.48
39227-28-6	1,2,3,4,7,8-HxCDD	1.8	J B q	47	0.36
57653-85-7	1,2,3,6,7,8-HxCDD	ND		47	0.36
19408-74-3	1,2,3,7,8,9-HxCDD	ND		47	0.34
70648-26-9	1,2,3,4,7,8-HxCDF	12	J B	47	0.37
57117-44-9	1,2,3,6,7,8-HxCDF	3.8	J * B	47	0.35
72918-21-9	1,2,3,7,8,9-HxCDF	3.0	J B	47	0.37
60851-34-5	2,3,4,6,7,8-HxCDF	1.6	J B q	47	0.34
35822-46-9	1,2,3,4,6,7,8-HpCDD	8.3	J B q	47	0.31
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.7	J * B	47	0.45
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.6	J B q	47	0.53
3268-87-9	OCDD	240	* B	94	1.2
39001-02-0	OCDF	15	J B	94	0.82
41903-57-5	Total TCDD	37		9.4	0.85
30402-14-3	Total TCDF	150	B q	9.4	0.91
36088-22-9	Total PeCDD	ND		47	0.57
30402-15-4	Total PeCDF	13	J B	47	0.44
34465-46-8	Total HxCDD	1.8	J B q	47	0.35
55684-94-1	Total HxCDF	20	J B q	47	0.36
37871-00-4	Total HpCDD	16	J B q	47	0.31
38998-75-3	Total HpCDF	12	J B q	47	0.49

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-1
SDG No.:	
Client Sample ID: 11215702-Tank #2 1um	Lab Sample ID: 320-66850-2
Matrix: Water	Lab File ID: 23no20dfs1_40.d
Analysis Method: 1613B	Date Collected: 11/10/2020 11:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1058.6(mL)	Date Analyzed: 11/24/2020 13:29
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		25-164
89059-46-1	13C-2,3,7,8-TCDF	80		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	81		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	79		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	76		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	75		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	80		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	79		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	81		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	77		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	83		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	77		26-138
114423-97-1	13C-OCDD	78		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	90		35-197

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Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Lims ID: 320-66850-A-2-B
Client ID: 11215702-Tank #2 1um
Sample Type: Client
Inject. Date: 24-Nov-2020 13:29:00 ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-2-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Nov-2020 10:50:03 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1612

First Level Reviewer: stephensk Date: 24-Nov-2020 15:19:03

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.679	2880269	0.78	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.683	3855414	0.84	1.6832	79.5	79.5	0.2023	0.2023	79.52	
2,3,7,8-TCDF	20.709	222181	0.78	1.1547	4.991	4.991	0.0482	0.0482		
A Non-2,3,7,8-sub-TCDF	20.119	130523	0.77	1.1547	2.989	2.932	0.0482	1.964		RQ
S Total TCDF					7.980	7.923	0.0482	0.0482		RQ
D 13C-2,3,7,8-TCDD	22.083	2533100	0.77	1.0896	80.7	80.7	0.2033	0.2033	80.71	
2,3,7,8-TCDD	22.109	57435	0.76	1.1659	1.945	1.945	0.0452	0.0452		M
$ 37Cl4-2,3,7,8-TCDD	22.109	1192032		1.1445	36.2	36.2	0.0924	0.0924	90.40	
A Non-2,3,7,8-sub-TCDD	20.973						0.0452	0.0452		U
S Total TCDD					1.945	1.945	0.0452	0.0452		
D 13C-1,2,3,7,8-PeCDF	27.579	3342156	1.59	1.4604	79.5	79.5	0.2437	0.2437	79.45	
1,2,3,7,8-PeCDF	27.604	12931	1.38	1.1322	0.3417	0.3417	0.0212	0.0212		M
D 13C-2,3,4,7,8-PeCDF	29.138	2956251	1.57	1.3504	76.0	76.0	0.2635	0.2635	76.01	
2,3,4,7,8-PeCDF	29.154	6889	1.40	1.1588	0.2011	0.2011	0.0256	0.0256		
A F1 PeCDFs	24.940						0.007136	0.007136		
A Non-2,3,7,8-sub-PeCDF	28.506	5167	1.58	1.1455	0.1432	0.1432	0.0231	0.1432		
S Total PeCDF					0.6861	0.6861	0.0234	0.0234		
D 13C-1,2,3,7,8-PeCDD	29.963	2040712	1.59	0.8729	81.2	81.2	0.1095	0.1095	81.17	
1,2,3,7,8-PeCDD	30.051						0.0300	0.0300		
A Non-2,3,7,8-sub-PeCDD	28.748						0.0300	0.0300		
S Total PeCDD							0.0300	0.0300		
D 13C-1,2,3,4,7,8-HxCDF	35.148	2493556	0.54	1.2808	73.1	73.1	0.4262	0.4262	73.08	
1,2,3,4,7,8-HxCDF	35.165	20880	1.19	1.3205	0.6341	0.6341	0.0198	0.0198		
D 13C-1,2,3,6,7,8-HxCDF	35.300	3082262	0.54	1.4615	79.2	79.2	0.3735	0.3735	79.17	
1,2,3,6,7,8-HxCDF	35.308	7871	1.38	1.2682	0.2014	0.2014	0.0187	0.0187		M
D 13C-2,3,4,6,7,8-HxCDF	36.091	2715602	0.52	1.3227	77.1	77.1	0.4127	0.4127	77.07	
2,3,4,6,7,8-HxCDF	36.108	2931	1.24	1.2838	0.0954	0.0841	0.0181	0.0181		RQM
D 13C-1,2,3,7,8,9-HxCDF	36.959	2394481	0.53	1.1062	81.3	81.3	0.4935	0.4935	81.26	
1,2,3,7,8,9-HxCDF	36.985	4974	1.19	1.3063	0.1590	0.1590	0.0197	0.0197		M
A Non-2,3,7,8-sub-HxCDF	35.280						0.0190	0.0590		U
S Total HxCDF					1.090	1.079	0.0191	0.0191		RQ

Report Date: 30-Nov-2020 10:50:03 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.766	2663911	1.29	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.293	1743136	1.28	0.8757	74.7	74.7	0.3097	0.3097	74.73	
1,2,3,4,7,8-HxCDD	36.293	2020	1.24	1.1972	0.1215	0.0968	0.0192	0.0192		RQM
D 13C-1,2,3,6,7,8-HxCDD	36.403	2257691	1.30	1.0651	79.6	79.6	0.2546	0.2546	79.57	
1,2,3,6,7,8-HxCDD	36.293						0.0189	0.0189		RQMU
1,2,3,7,8,9-HxCDD	36.809						0.0182	0.0182		
A Non-2,3,7,8-sub-HxCDD	35.613						0.0187	0.0187		U
S Total HxCDD					0.1215	0.0968	0.0188	0.0188		RQ
1,2,3,4,6,7,8-HpCDF	38.732	12295	1.10	1.5618	0.4061	0.4061	0.0238	0.0238		M
D 13C-1,2,3,4,6,7,8-HpCDF	38.723	1938576	0.45	0.9521	76.4	76.4	0.6434	0.6434	76.43	
1,2,3,4,7,8,9-HpCDF	39.971	3321	1.04	1.4975	0.1533	0.1392	0.0282	0.0282		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	39.954	1592995	0.47	0.7782	76.8	76.8	0.7872	0.7872	76.85	
A Non-2,3,7,8-sub-HpCDF	39.360	2743	1.04	1.5297	0.1165	0.1016	0.0258	0.1016		RQM
S Total HpCDF					0.6760	0.6468	0.0260	0.0260		RQ
1,2,3,4,6,7,8-HpCDD	39.667	9063	1.04	1.1079	0.4784	0.4406	0.0166	0.0166		RQM
D 13C-1,2,3,4,6,7,8-HpCDD	39.650	1856454	1.05	0.8393	83.0	83.0	0.3076	0.3076	83.03	
A Non-2,3,7,8-sub-HpCDD	40.007	8675	1.11	1.1079	0.4218	0.4218	0.0166	0.4218		M
S Total HpCDD					0.9002	0.8624	0.0166	0.0166		RQ
D 13C-OCDD	42.130	2203349	0.91	0.5301	156.0	156.0	0.3047	0.3047	78.01	
OCDF	42.240	13127	0.97	1.4802	0.8050	0.8050	0.0434	0.0434		M
OCDD	42.139	164719	0.90	1.1666	12.8	12.8	0.0633	0.0633		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Lims ID: 320-66850-A-2-B
Client ID: 11215702-Tank #2 1um
Sample Type: Client
Inject. Date: 24-Nov-2020 13:29:00 ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-2-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 30-Nov-2020 10:50:03 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1612

First Level Reviewer: stephensk Date: 24-Nov-2020 15:19:03

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.679	21.772	-6		1266413	178175	240	600	742		a
333.9338	21.688	21.772	-5		1613856	234922	126	315	1864	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.683	20.725	-3	0.954	1756263	251483	344	860	731		
317.9389	20.674	20.725	-3	0.954	2099151	304962	219	547	1393	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.709	20.776	-4	1.001	97422	13225	41	102	323		
305.8987	20.700	20.776	-5	1.001	124759	16369	83	207	197	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	18.089	20.119	-122	0.875	4531	792	41	102	19		
305.8987	18.097	20.119	-121	0.875	5971	1047	83	207	13	0.76(0.65-0.89)	
303.9016	18.596	20.119	-91	0.899	4959	715	41	102	17		
	Empc Correction				3923	755	41	102	18		
305.8987	18.578	20.119	-92	0.898	5096	981	83	207	12	0.97(0.65-0.89)	
303.9016	19.970	20.119	-9	0.966	38483	5956	41	102	145		
305.8987	19.961	20.119	-9	0.965	48965	7196	83	207	87	0.79(0.65-0.89)	
303.9016	21.490	20.119	82	1.039	6849	800	41	102	20		
	Empc Correction				5327	1020	41	102	25		
305.8987	21.525	20.119	84	1.041	6919	1325	83	207	16	0.99(0.65-0.89)	
303.9016	23.887	20.119	226	1.155	5180	1103	41	102	27		
305.8987	23.887	20.119	226	1.155	6128	1146	83	207	14	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.083	22.124	-2	1.019	1102578	142327	240	600	593		
333.9338	22.066	22.124	-4	1.018	1430522	180560	126	315	1433	0.77(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											M
319.8965	22.109	22.159	-3	1.001	24744	3098	55	137	56		M
321.8936	22.109	22.159	-3	1.001	32691	4700	13	32	362	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.109	22.201	-6	1.020	1192032	158014	175	437	903		
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.973						55	137			
321.8936	20.973						13	32			
13C-1,2,3,7,8-PeCDF											
351.9000	27.579	27.633	-3	1.272	2052584	306006	326	815	939		
353.8970	27.579	27.633	-3	1.272	1289572	194595	262	655	743	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	27.604	27.659	-3	1.001	7500	1325	14	35	95		M
341.8567	27.596	27.659	-4	1.001	5431	885	34	85	26	1.38(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	29.138	29.184	-3	1.344	1803799	246463	326	815	756		
353.8970	29.129	29.184	-3	1.344	1152452	158166	262	655	604	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.154	29.217	-4	1.001	4018	582	14	35	42		
341.8567	29.129	29.217	-5	1.000	2871	495	34	85	15	1.40(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.940						2	5			
341.8567	24.940						13	32			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.079	28.506	-145	0.946	3167	539	14	35	39		
341.8567	26.096	28.506	-144	0.946	2000	351	34	85	10	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.963	30.017	-3	1.382	1251439	162780	82	205	1985		
369.8919	29.963	30.017	-3	1.382	789273	110817	76	190	1458	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.051						30	75			
357.8516	30.051						7	17			
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.748						30	75			
357.8516	28.748						7	17			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.148	35.175	-2	0.956	872335	192046	491	1227	391		
385.8610	35.148	35.175	-2	0.956	1621221	351728	803	2007	438	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.165	35.200	-2	1.000	11362	2499	34	85	74		
375.8178	35.165	35.200	-2	1.000	9518	1851	23	57	80	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.300	35.335	-2	0.960	1082251	213370	491	1227	435		
385.8610	35.300	35.335	-2	0.960	2000011	384963	803	2007	479	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											M
373.8208	35.308	35.351	-3	1.000	4567	840	34	85	25		M
375.8178	35.308	35.351	-3	1.000	3304	652	23	57	28	1.38(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.091	36.118	-2	0.982	934036	207484	491	1227	423		
385.8610	36.091	36.118	-2	0.982	1781566	402375	803	2007	501	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQM
373.8208	36.108	36.135	-2	1.000	1623	331	34	85	10		M
375.8178	36.100	36.135	-2	1.000	1703	387	23	57	17	0.95(1.05-1.43)	
	Empc Correction				1308	266	23	57	12		
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.959	36.986	-2	1.005	825911	184695	491	1227	376		
385.8610	36.959	36.986	-2	1.005	1568570	366575	803	2007	457	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	36.985	37.003	-1	1.001	2699	652	34	85	19		M
375.8178	36.976	37.003	-2	1.000	2275	510	23	57	22	1.19(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											U
373.8208	35.280	35.280	0	1.004	1174	262	34	85			
375.8178	35.280	35.280	0	1.004	865	397	23	57		1.36(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.766	36.792	-2		1500833	331579	368	920	901		
403.8529	36.766	36.792	-2		1163078	260994	275	687	949	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.293	36.320	-2	0.987	980125	251121	368	920	682		
403.8529	36.293	36.320	-2	0.987	763011	191899	275	687	698	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	36.293	36.337	-3	1.000	1634	374	20	50	19		
	Empc Correction				1118	339	20	50	17		
391.8127	36.302	36.337	-2	1.000	902	274	21	52	13	1.81(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.403	36.438	-2	0.990	1274446	286636	368	920	779		
403.8529	36.403	36.438	-2	0.990	983245	218610	275	687	795	1.30(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMU
389.8158	36.446						20	50			
391.8127	36.446						21	52			
1,2,3,7,8,9-HxCDD											
389.8158	36.809						20	50			
391.8127	36.809						21	52			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	35.613						20	50			
391.8127	35.613						21	52			
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.732	38.745	-1	1.000	6431	1557	51	127	31		M
409.7788	38.740	38.745	0	1.000	5864	1617	25	62	65	1.10(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.723	38.749	-2	1.053	605819	162386	523	1307	310		
419.8220	38.723	38.749	-2	1.053	1332757	348880	929	2322	376	0.45(0.37-0.51)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8,9-HpCDF											RQM
407.7817	39.971	39.975	0	1.000	2030	566	51	127	11		
	Empc Correction				1693	444	51	127	9		
409.7788	39.954	39.975	-1	1.000	1628	427	25	62	17	1.25(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.954	39.979	-2	1.087	507076	139685	523	1307	267		
419.8220	39.954	39.979	-2	1.087	1085919	310446	929	2322	334	0.47(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											RQM
407.7817	39.094	39.360	-16	1.010	1803	513	51	127	10		M
	Empc Correction				1398	471	51	127	9		
409.7788	39.094	39.360	-16	1.010	1345	453	25	62	18	1.34(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											RQM
423.7767	39.667	39.672	0	1.000	5398	1465	25	62	59		M
	Empc Correction				4620	1414	25	62	57		
425.7737	39.659	39.672	-1	1.000	4443	1360	13	32	105	1.21(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.650	39.676	-2	1.078	952349	266614	348	870	766		
437.8140	39.650	39.676	-2	1.078	904105	250280	264	660	948	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											M
423.7767	39.027	40.007	-59	0.984	4566	1279	25	62	51		M
425.7737	39.027	40.007	-59	0.984	4109	1147	13	32	88	1.11(0.88-1.20)	
13C-OCDD											
469.7780	42.130	42.158	-2	1.146	1050146	248759	194	485	1282		
471.7750	42.130	42.158	-2	1.146	1153203	270994	189	472	1434	0.91(0.76-1.02)	
OCDF											M
441.7428	42.240	42.251	-1	1.003	6471	1419	14	35	101		M
443.7399	42.231	42.251	-1	1.002	6656	1806	53	132	34	0.97(0.76-1.02)	
OCDD											
457.7377	42.139	42.167	-2	1.000	78143	18884	46	115	411		
459.7348	42.139	42.167	-2	1.000	86576	21420	31	77	691	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	3855414	556445

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	3855414	556445

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.089	4531	792	5971	1047	0.2359	0.76	
18.596	4959	715	5096	981	0.2259	0.97	RQ
18.596	3923	755	5096	981	0.2026		Empc Correction
19.970	38483	5956	48965	7196	1.96	0.79	
21.490	6849	800	6919	1325	0.3093	0.99	RQ
21.490	5327	1020	6919	1325	0.2751		Empc Correction
23.887	5180	1103	6128	1146	0.2540	0.85	
Signal Totals:							
	57444	9626	73079	11695			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	133081	21061				0.82	RQ
	130523	21321					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.989 = (133081 * 100.000) / (3855414 * 1.155)
Empc Amount: 2.932 = (130523 * 100.000) / (3855414 * 1.155)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 30-Nov-2020 10:50:03 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	2533100	322887

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	2533100	322887

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	3342156	500601
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2956251	404629

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	3149203	452615

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.079	3167	539	2000	351	0.1432	1.58	
Signal Totals:							
	3167	539	2000	351			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5167	890				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1432 = (5167 * 100.000) / (3149203 * 1.145)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-HxCDF, RT: 35.280

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320	D 13C-1,2,3,4,7,8-HxCDF	100.000	2493556	543774
1,2,3,6,7,8-HxCDF	1.268	D 13C-1,2,3,6,7,8-HxCDF	100.000	3082262	598333
2,3,4,6,7,8-HxCDF	1.284	D 13C-2,3,4,6,7,8-HxCDF	100.000	2715602	609859
1,2,3,7,8,9-HxCDF	1.306	D 13C-1,2,3,7,8,9-HxCDF	100.000	2394481	551270

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.295		100.000	2671475	575809

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.990	1174	262	865	397	0.0590	1.36	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	1743136	443020
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	2257691	505246
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2000413	474133

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-HpCDF, RT: 39.360

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.562	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1938576	511266
1,2,3,4,7,8,9-HpCDF	1.497	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1592995	450131

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.530		100.000	1765785	480698

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.094	1803	513	1345	453	0.1165	1.34	RQM
39.094	1398	471	1345	453	0.1016		Empc Correction
Signal Totals:							
	1398	471	1345	453			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3148	966				1.34	RQM
	2743	924					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1165 = (3148 * 100.000) / (1765785 * 1.530)
Empc Amount: 0.1016 = (2743 * 100.000) / (1765785 * 1.530)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Lims ID:	320-66850-A-2-B		
Client ID:	11215702-Tank #2 1um		
Inject. Date:	24-Nov-2020 13:29:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	35

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1856454	516894

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	1856454	516894

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.027	4566	1279	4109	1147	0.4218	1.11	M
Signal Totals:							
	4566	1279	4109	1147			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8675	2426				1.11	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4218 = (8675 * 100.000) / (1856454 * 1.108)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 30-Nov-2020 10:50:03
Chrom Revision: 2.3 12-Nov-2020 21:52:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Injection Date: 24-Nov-2020 13:29:00
Instrument ID: DFS 1
Lims ID: 320-66850-A-2-B
Lab Sample ID: 320-66850-2
Client ID: 11215702-Tank #2 1um
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 35
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT: 22.11
Area: 26307
Amount: 1.997646
Amount Units: pg/ul

Processing Integration Results

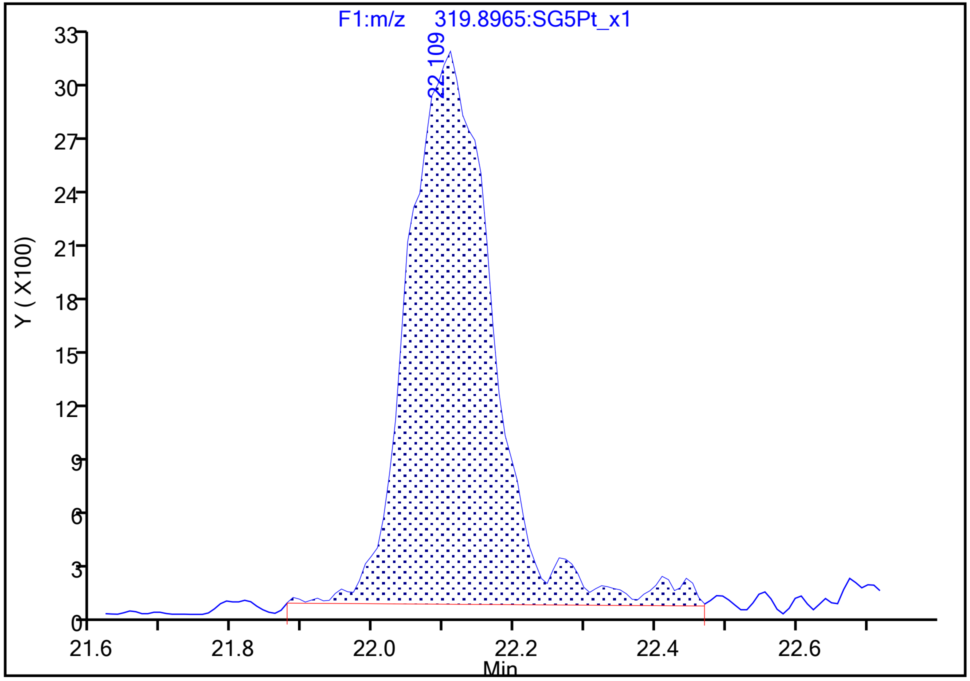

RT: 22.11
Area: 24744
Amount: 1.944724
Amount Units: pg/ul

Manual Integration Results

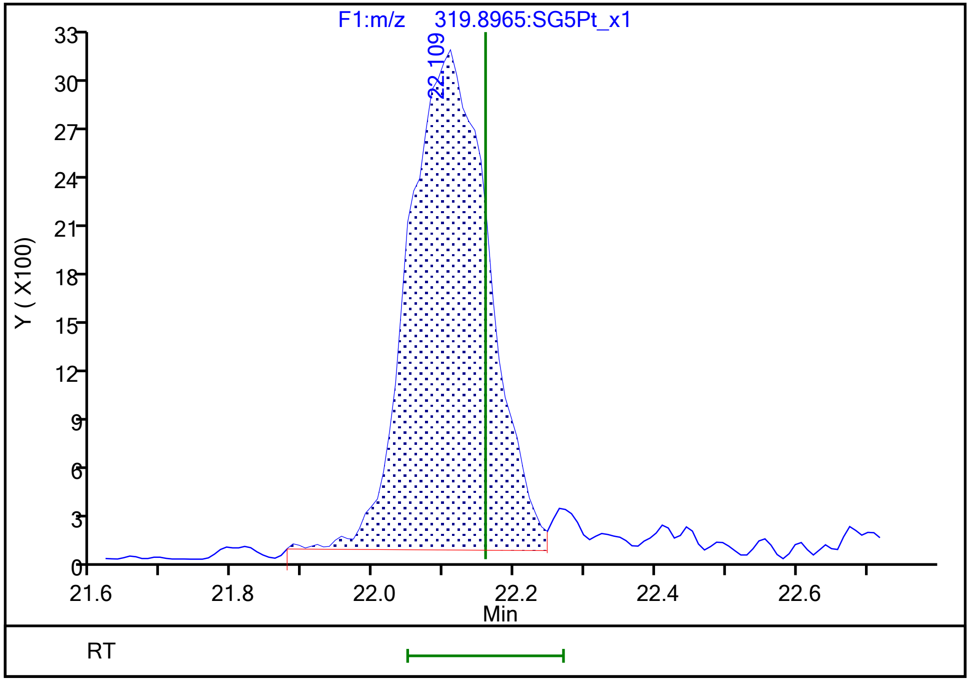

Reviewer: dadunj, 30-Nov-2020 10:46:45
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:50:03 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT:	27.60
Area:	8122
Amount:	0.379231
Amount Units:	pg/ul

Processing Integration Results

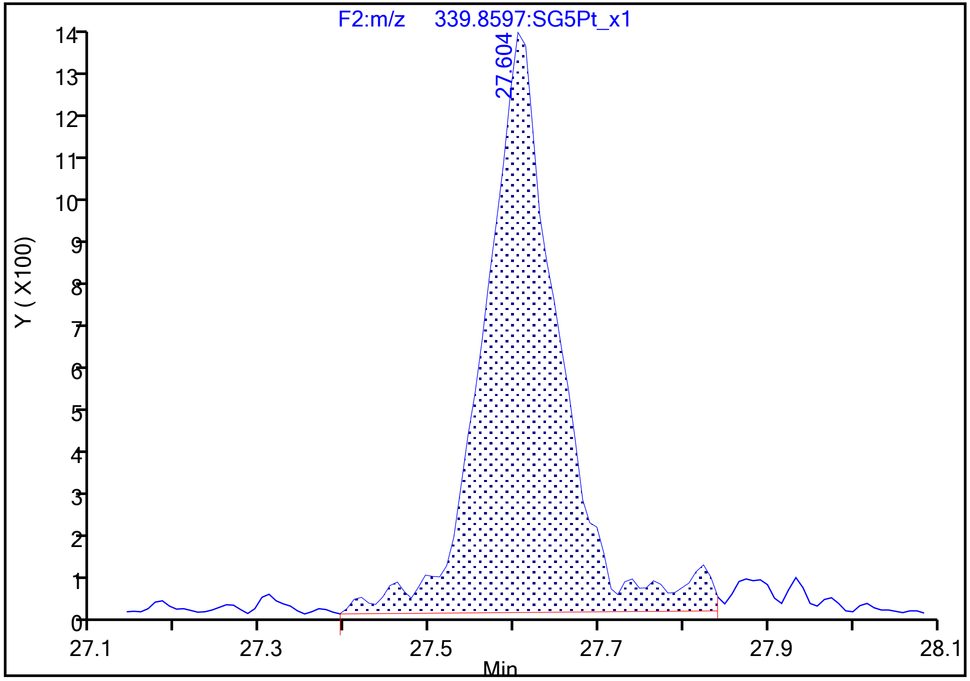

RT:	27.60
Area:	7500
Amount:	0.341731
Amount Units:	pg/ul

Manual Integration Results

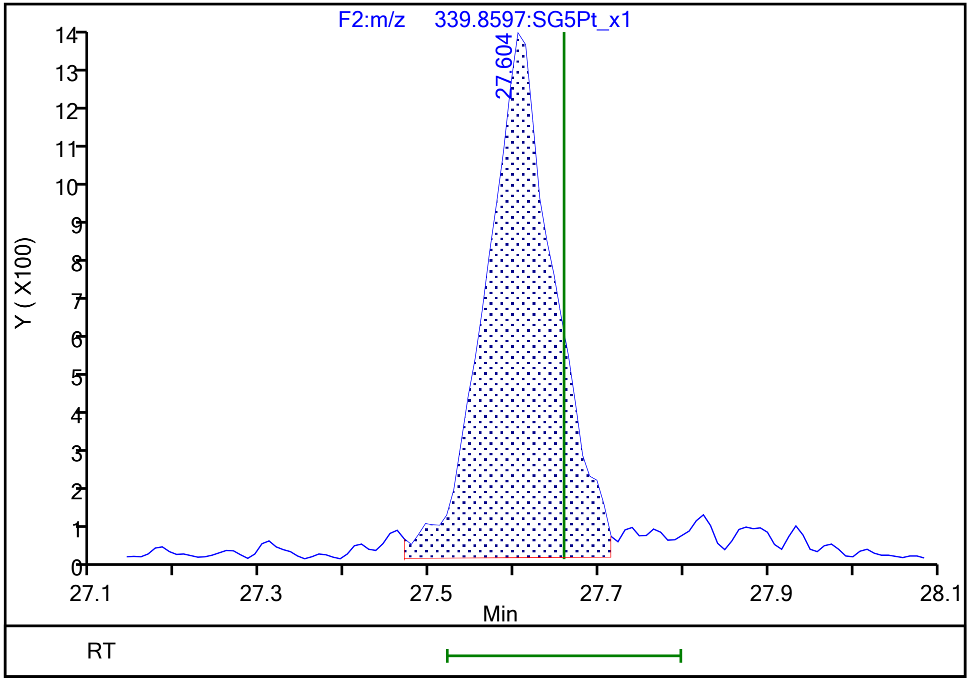

Reviewer: dadunj, 30-Nov-2020 10:47:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT: 27.60
Area: 6228
Amount: 0.379231
Amount Units: pg/ul

Processing Integration Results

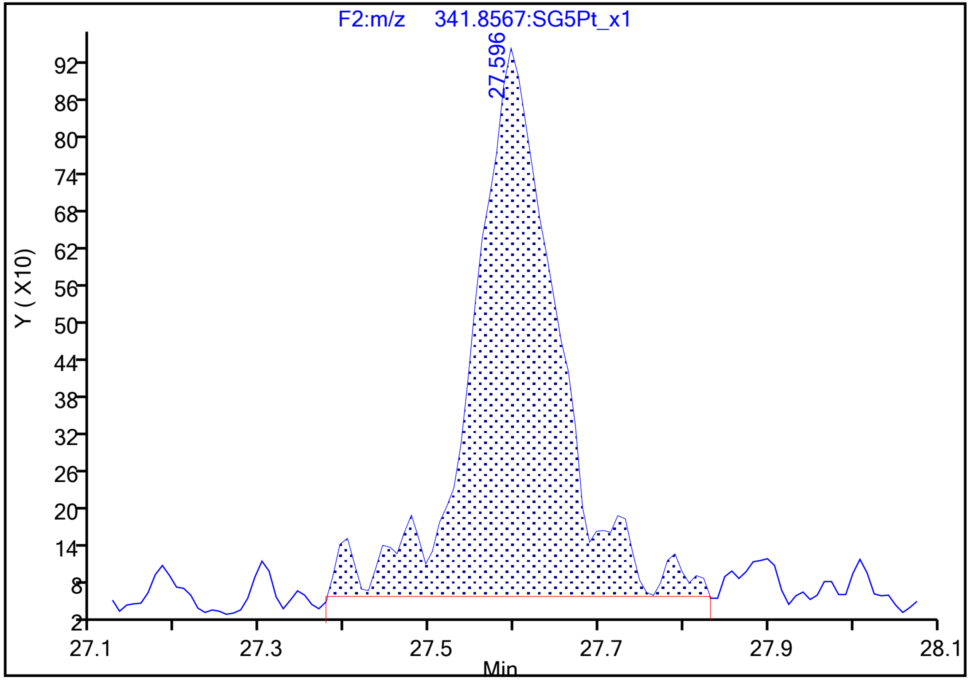

RT: 27.60
Area: 5431
Amount: 0.341731
Amount Units: pg/ul

Manual Integration Results

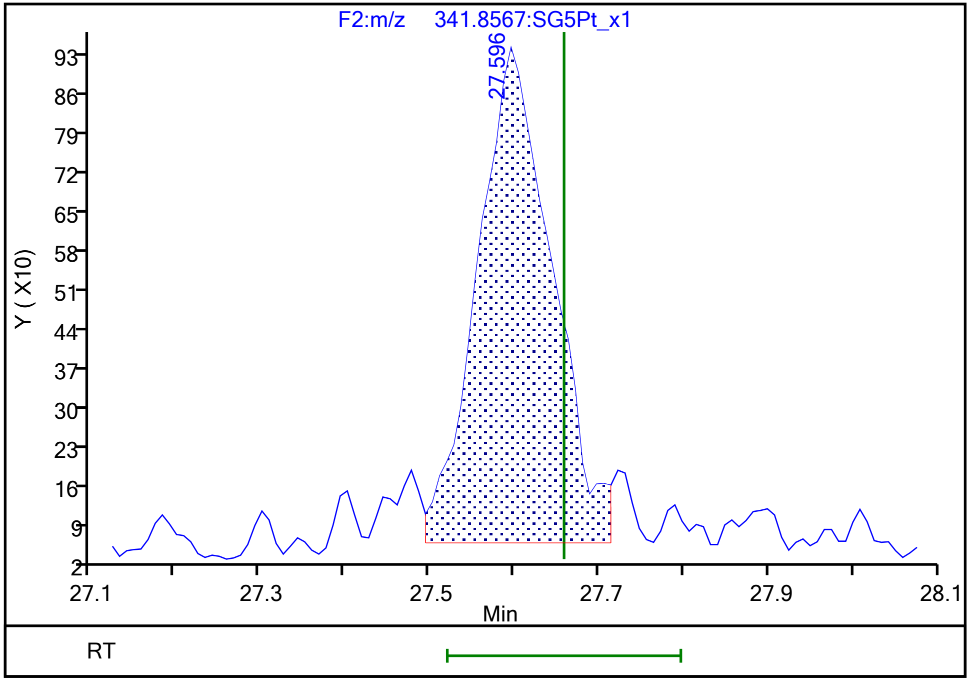

Reviewer: dadunj, 30-Nov-2020 10:47:07

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

RT: 35.31
Area: 3888
Amount: 0.223649
Amount Units: pg/ul

Processing Integration Results

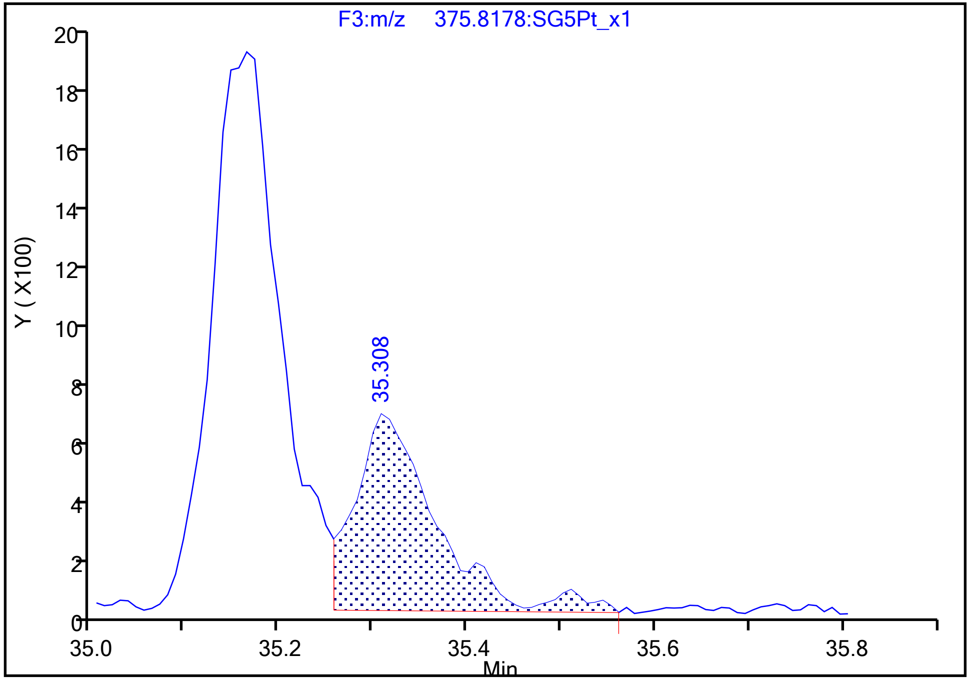

RT: 35.31
Area: 3304
Amount: 0.201366
Amount Units: pg/ul

Manual Integration Results

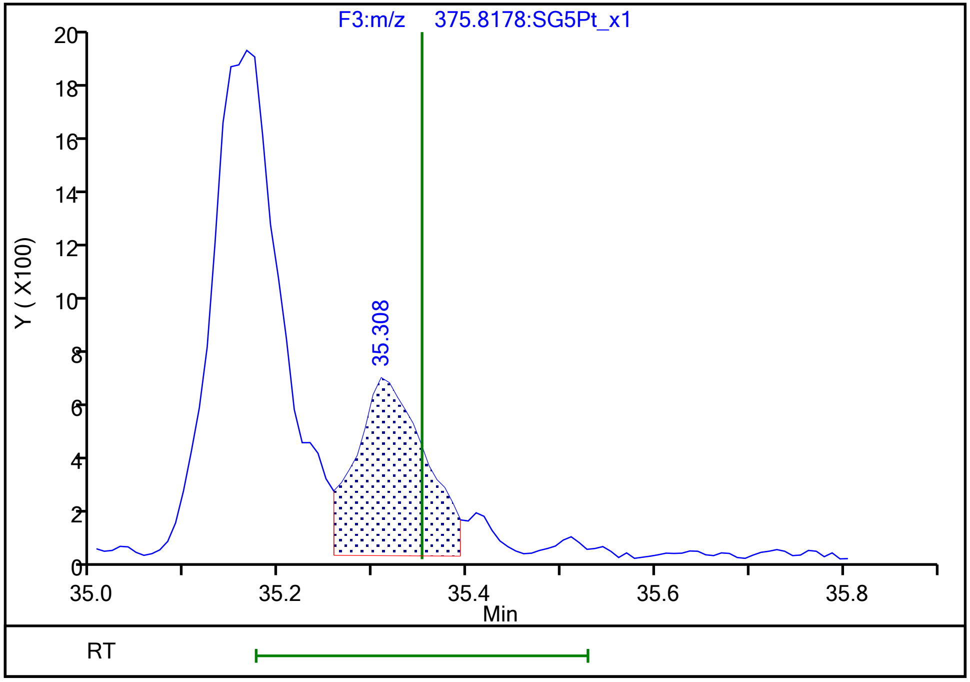

Reviewer: dadunj, 30-Nov-2020 10:47:32

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:50:03 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT:	35.31
Area:	4854
Amount:	0.223649
Amount Units:	pg/ul

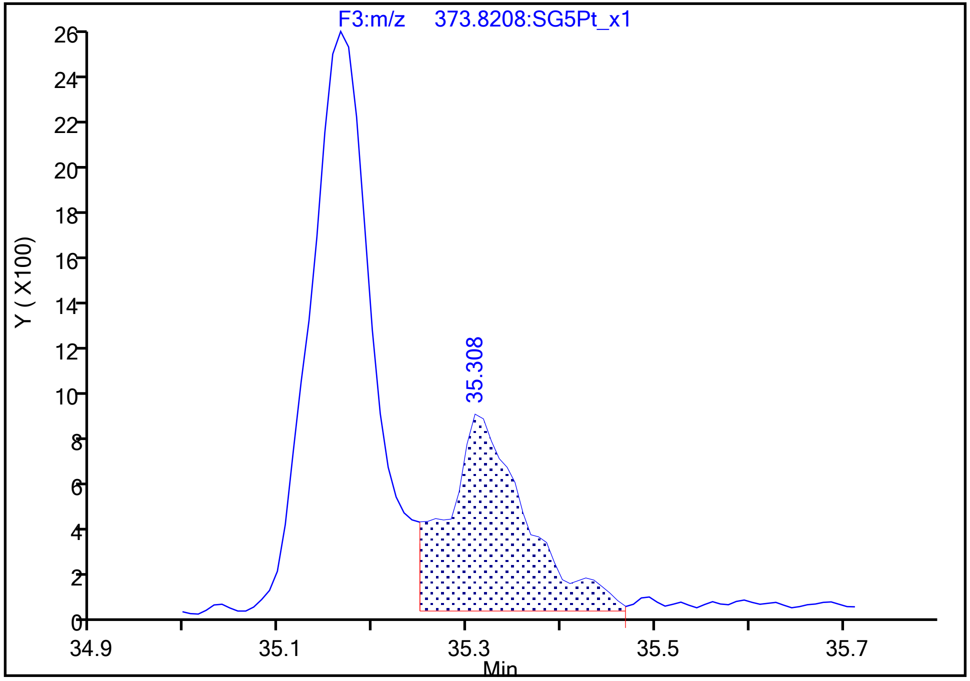

Manual Integration Results

RT:	35.31
Area:	4567
Amount:	0.201366
Amount Units:	pg/ul

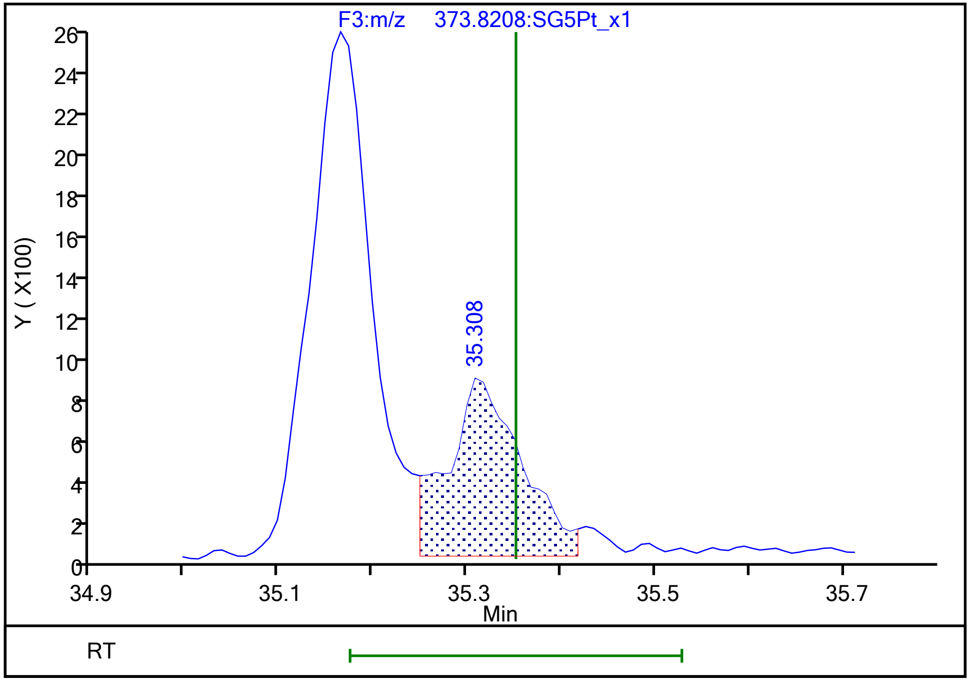

Reviewer: dadunj, 30-Nov-2020 10:47:33

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	36.11
Area:	1421
Amount:	0.089611
Amount Units:	pg/ul

Processing Integration Results

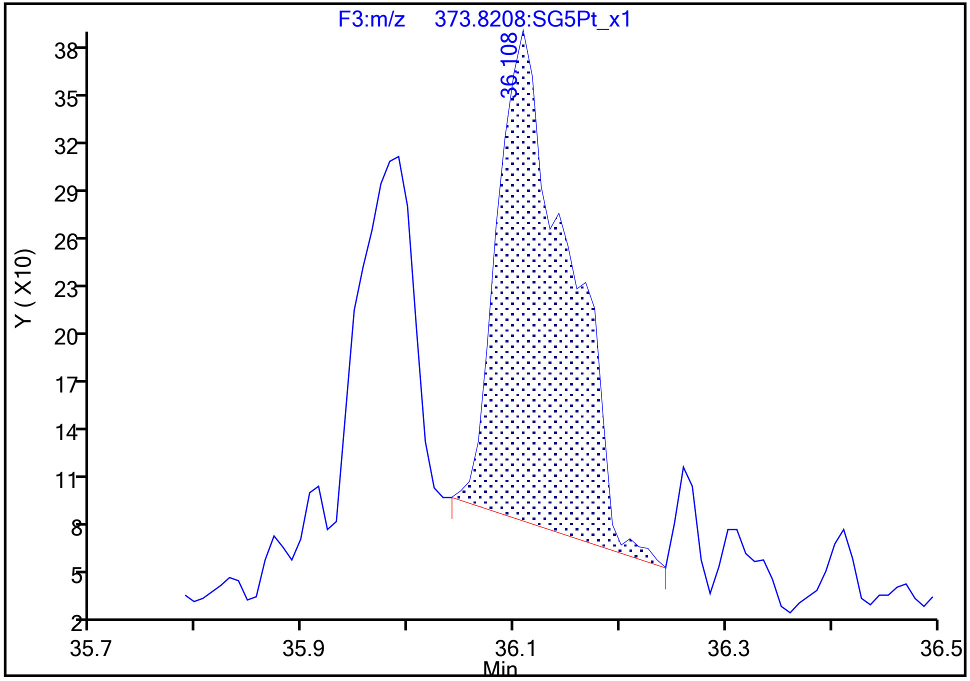

RT:	36.11
Area:	1623
Amount:	0.095406
Amount Units:	pg/ul

Manual Integration Results

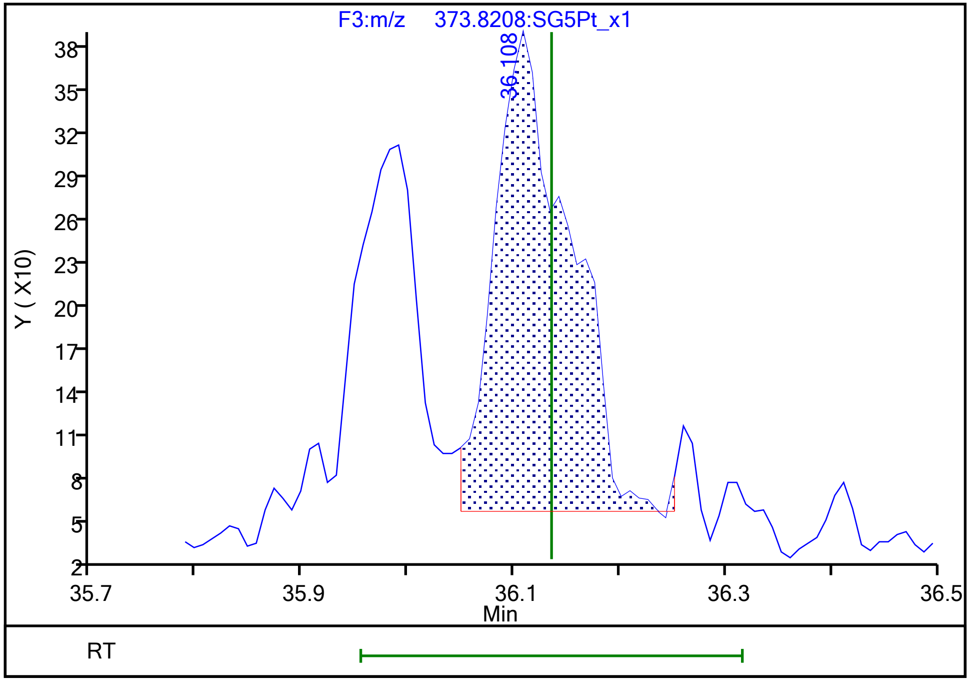

Reviewer: dadunj, 30-Nov-2020 10:47:46

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2
Client ID:	11215702-Tank #2 1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT: 36.98
Area: 3437
Amount: 0.206882
Amount Units: pg/ul

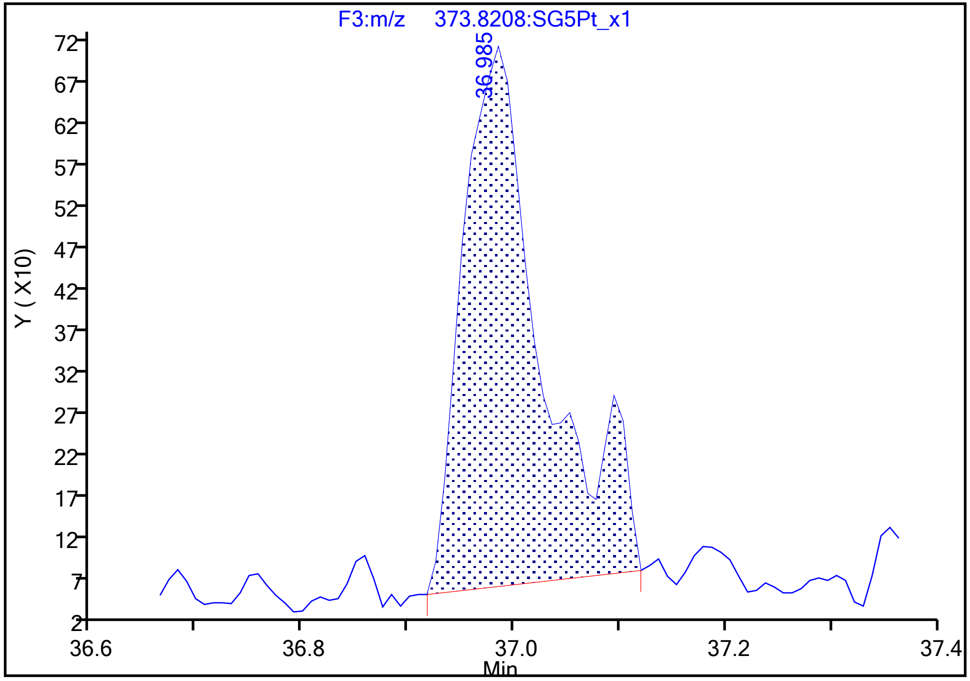

Manual Integration Results

RT: 36.98
Area: 2699
Amount: 0.159022
Amount Units: pg/ul

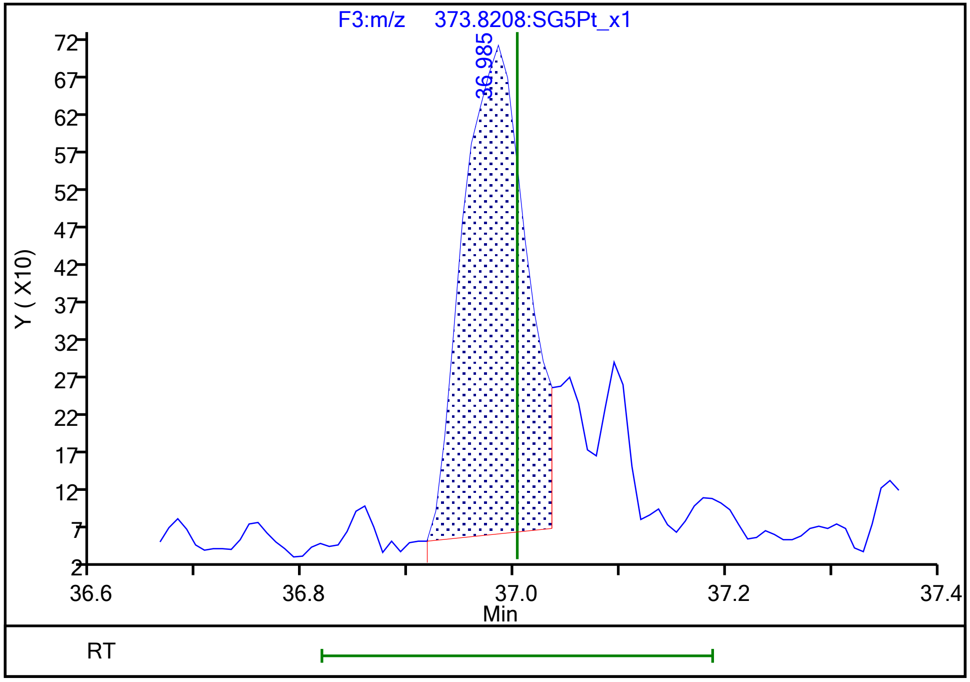

Reviewer: dadunj, 30-Nov-2020 10:47:57

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2
Client ID:	11215702-Tank #2 1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT:	36.98
Area:	3034
Amount:	0.206882
Amount Units:	pg/ul

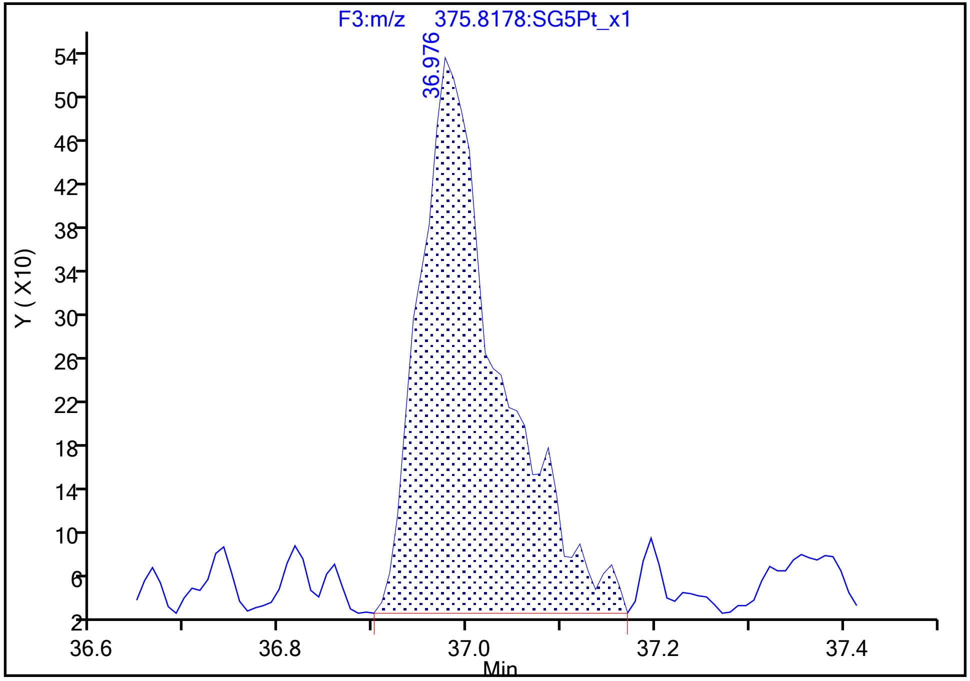

Manual Integration Results

RT:	36.98
Area:	2275
Amount:	0.159022
Amount Units:	pg/ul

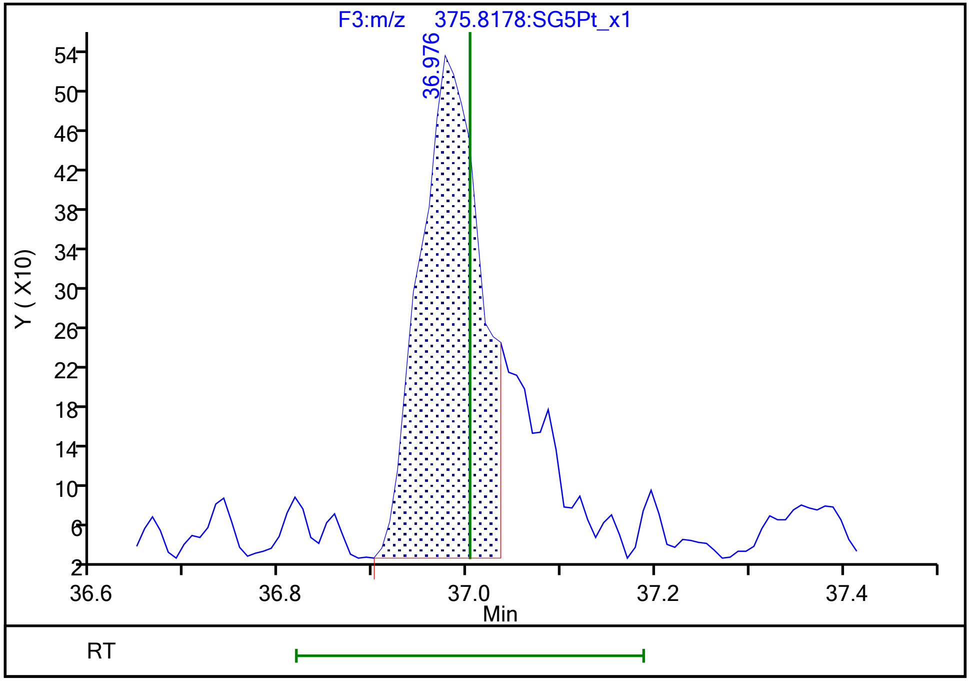

Reviewer: dadunj, 30-Nov-2020 10:47:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 3

Processing Integration Results

RT:	36.29
Area:	3446
Amount:	0.165128
Amount Units:	pg/ul

Manual Integration Results

RT:	36.29
Area:	2536
Amount:	0.121522
Amount Units:	pg/ul

Reviewer: dadunj, 30-Nov-2020 10:48:12

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 30-Nov-2020 10:50:03

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	36.30
Area:	1812
Amount:	0.165128
Amount Units:	pg/ul

Processing Integration Results

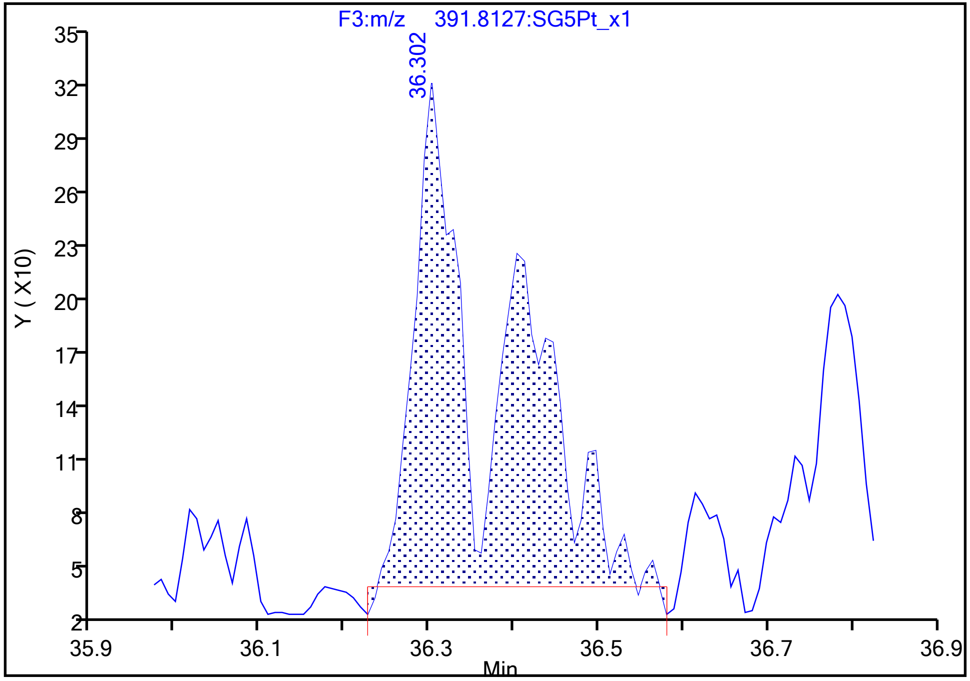

RT:	36.30
Area:	902
Amount:	0.121522
Amount Units:	pg/ul

Manual Integration Results

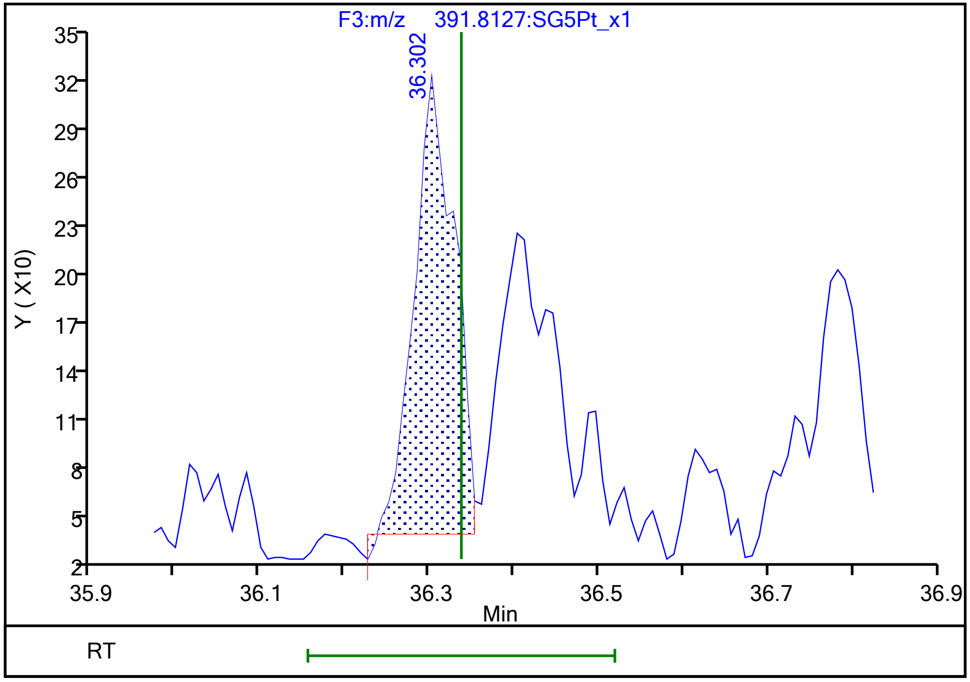

Reviewer: dadunj, 30-Nov-2020 10:48:24

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2
Client ID:	11215702-Tank #2 1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT:	38.73
Area:	6603
Amount:	0.411757
Amount Units:	pg/ul

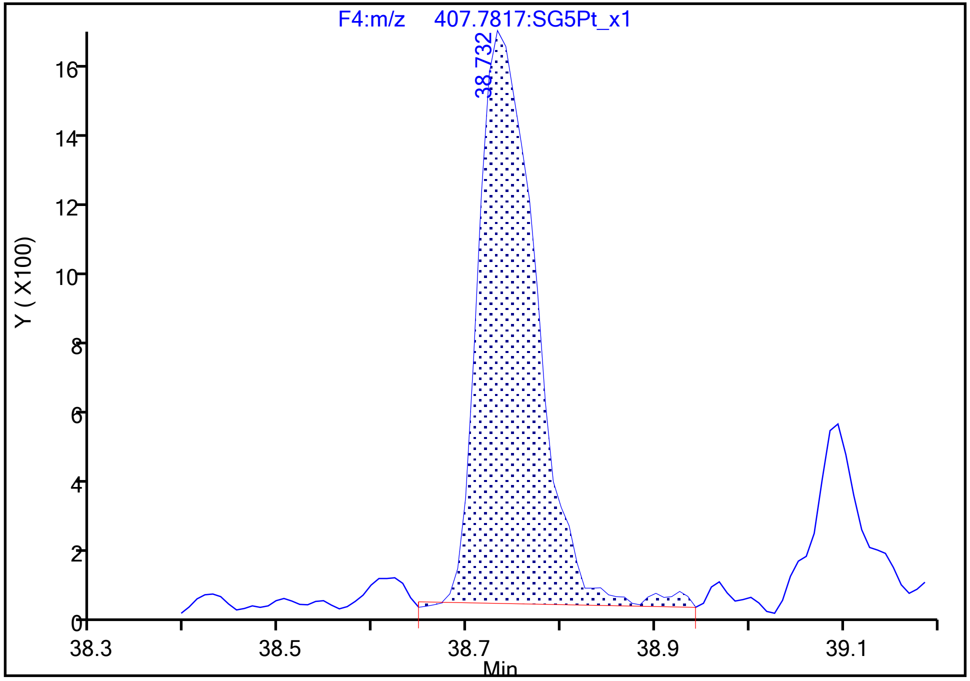

Manual Integration Results

RT:	38.73
Area:	6431
Amount:	0.406076
Amount Units:	pg/ul

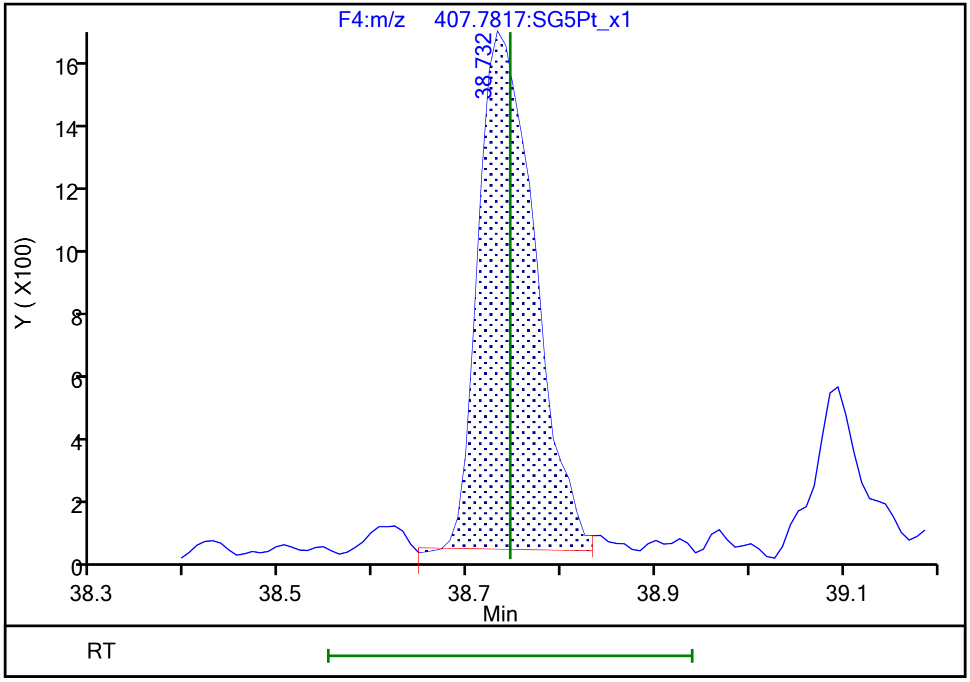

Reviewer: dadunj, 30-Nov-2020 10:48:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT:	39.95
Area:	1818
Amount:	0.161311
Amount Units:	pg/ul

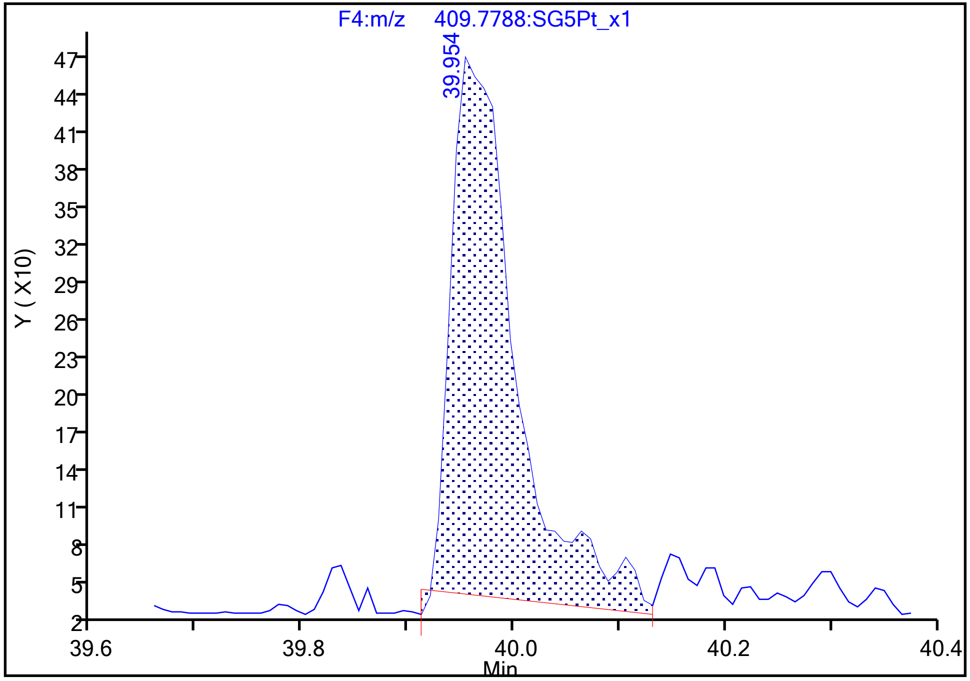

Manual Integration Results

RT:	39.95
Area:	1628
Amount:	0.153346
Amount Units:	pg/ul

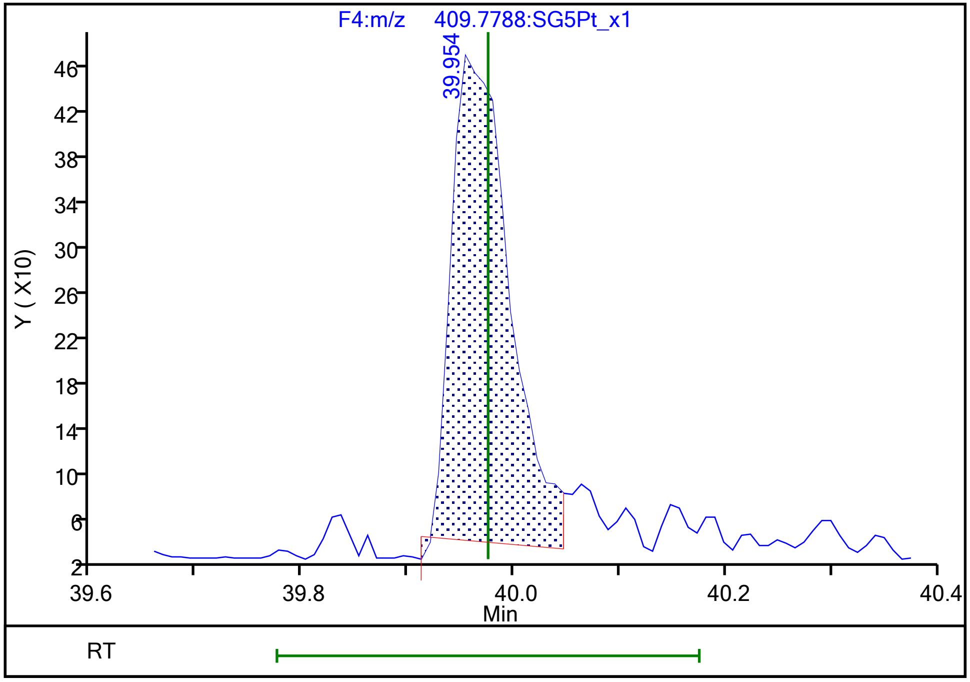

Reviewer: dadunj, 30-Nov-2020 10:48:41

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7817, RT: (38.72- 40.00)

Signal: 1

Processing Integration Results

RT = 39.094 Area = 2466

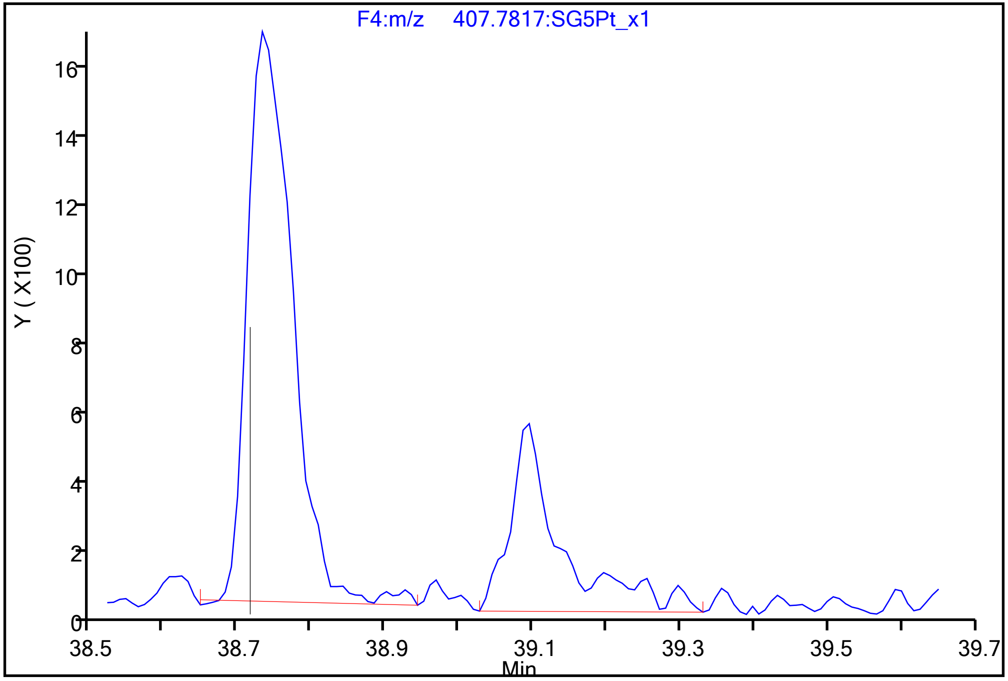

Manual Integration Results

RT = 39.094 Area = 1803 M

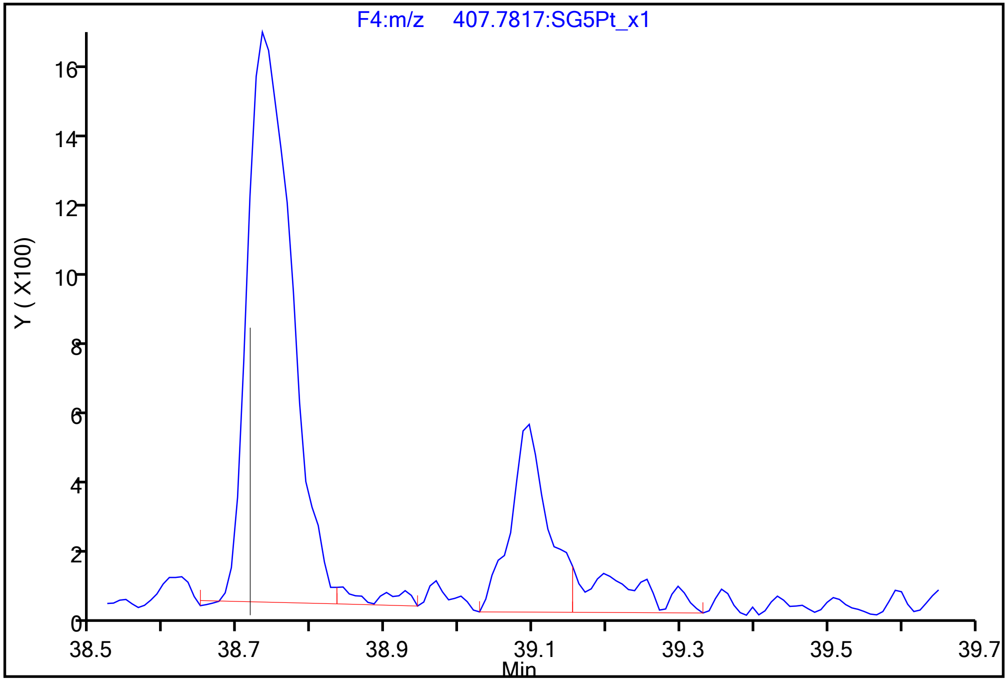

Reviewer: dadunj, 30-Nov-2020 10:48:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

RT:	39.67
Area:	5814
Amount:	0.508933
Amount Units:	pg/ul

Processing Integration Results

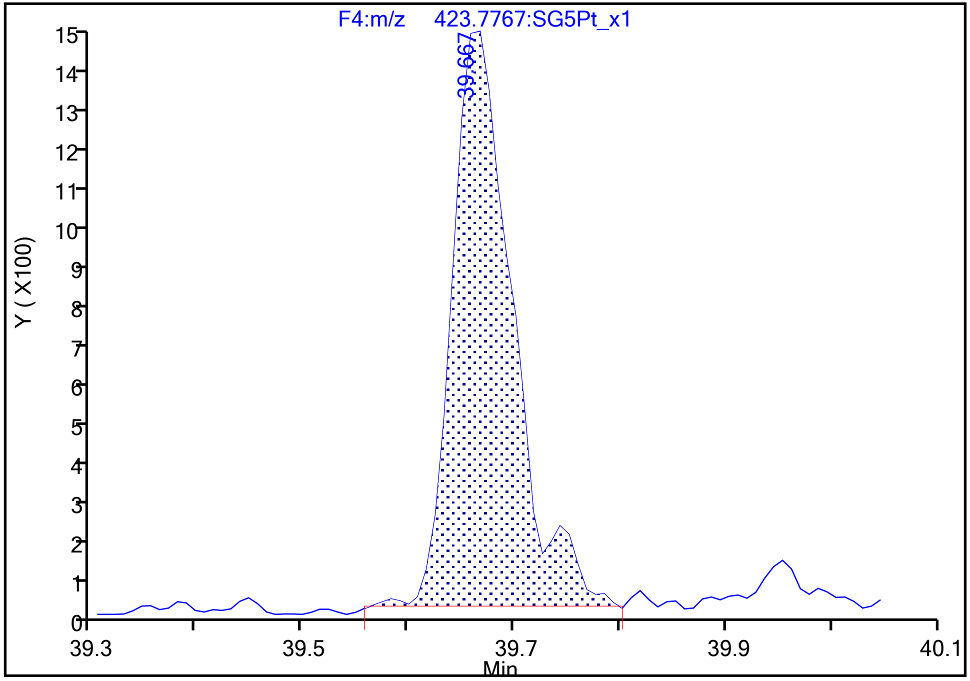

RT:	39.67
Area:	5398
Amount:	0.478450
Amount Units:	pg/ul

Manual Integration Results

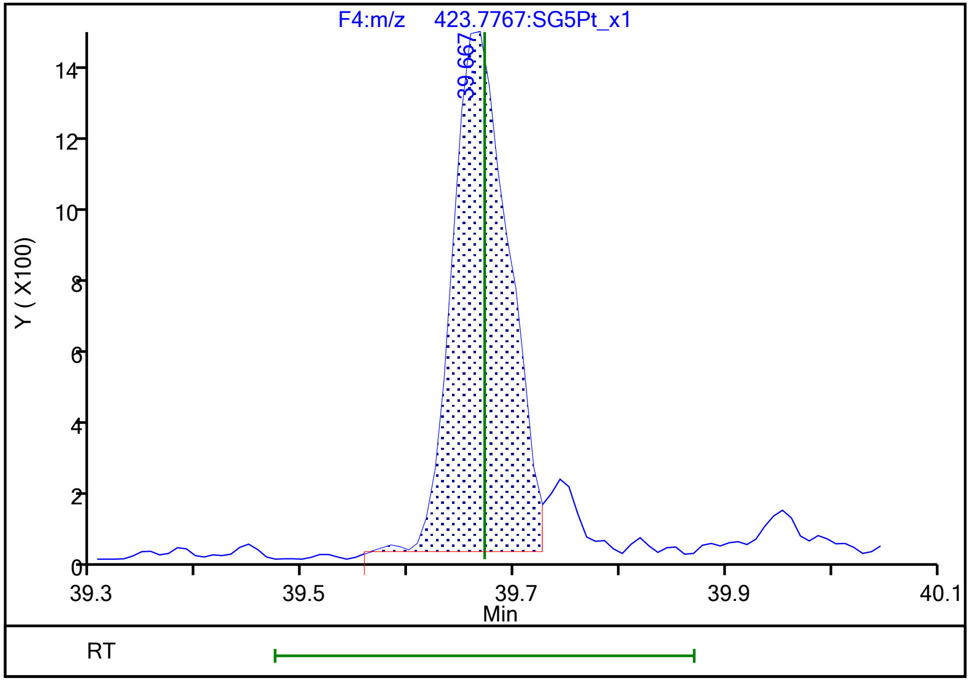

Reviewer: dadunj, 30-Nov-2020 10:48:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT:	39.66
Area:	4654
Amount:	0.508933
Amount Units:	pg/ul

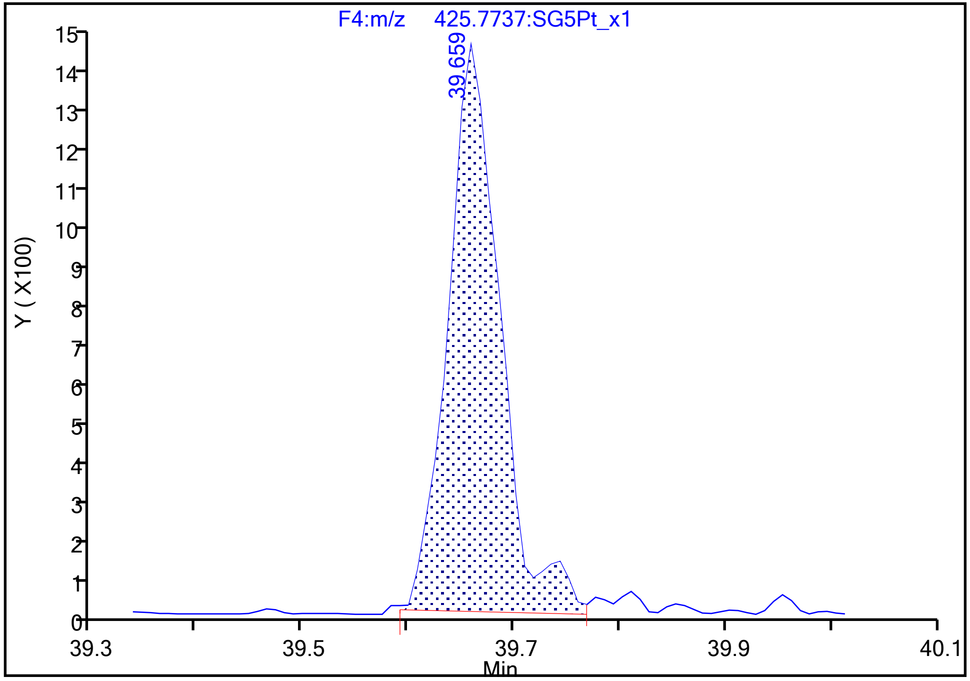

Manual Integration Results

RT:	39.66
Area:	4443
Amount:	0.478450
Amount Units:	pg/ul

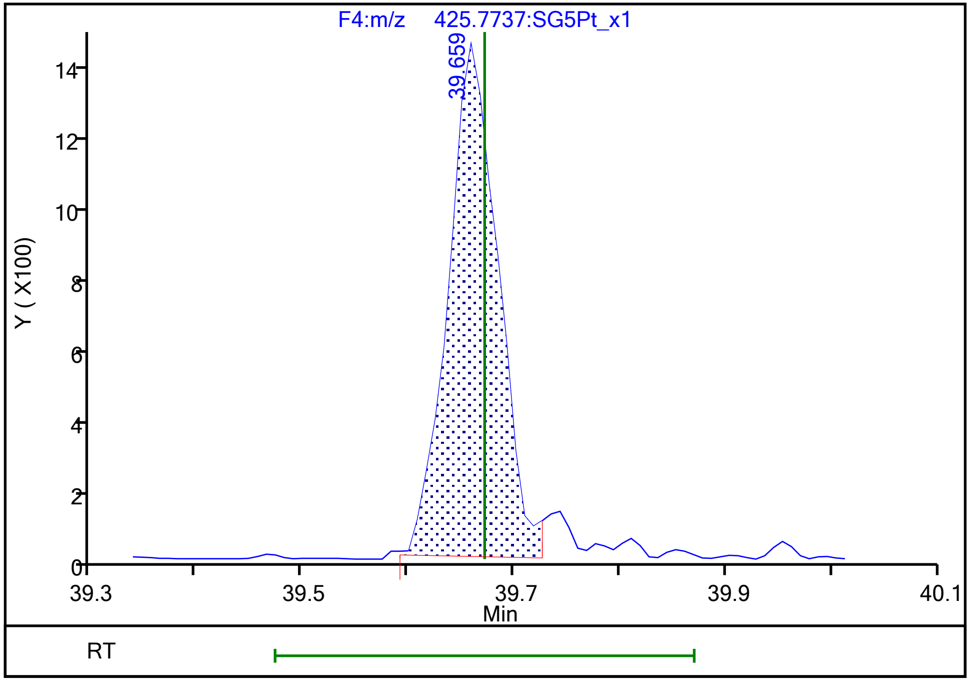

Reviewer: dadunj, 30-Nov-2020 10:48:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d				
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2		
Client ID:	11215702-Tank #2 1um				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (39.22- 40.80)

Signal: 1

Processing Integration Results

RT = 39.027 Area = 4758

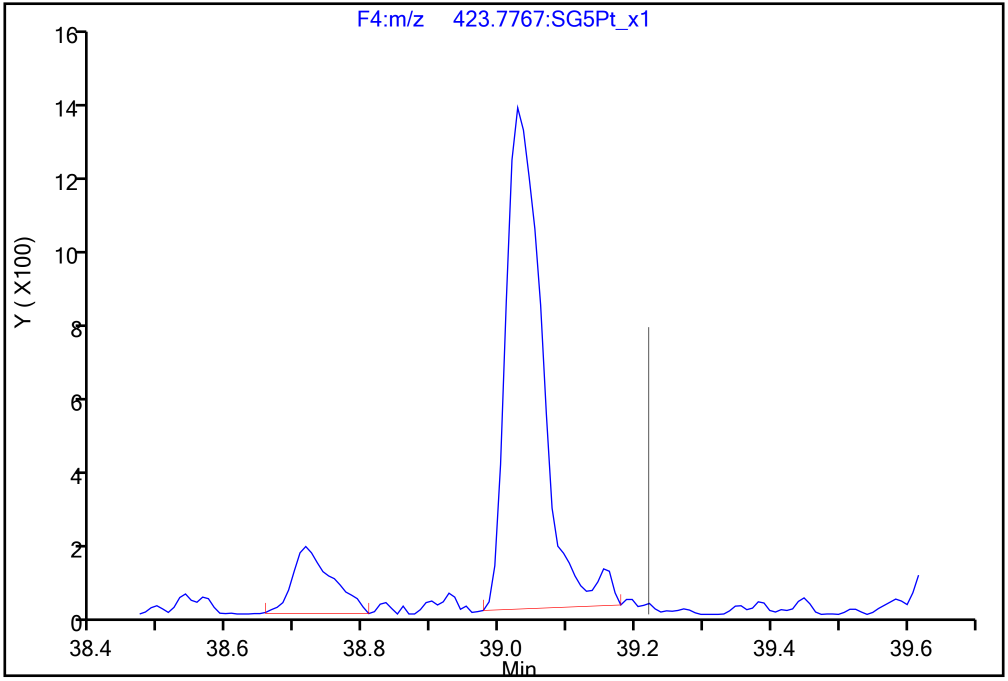

Manual Integration Results

RT = 39.027 Area = 4566 M

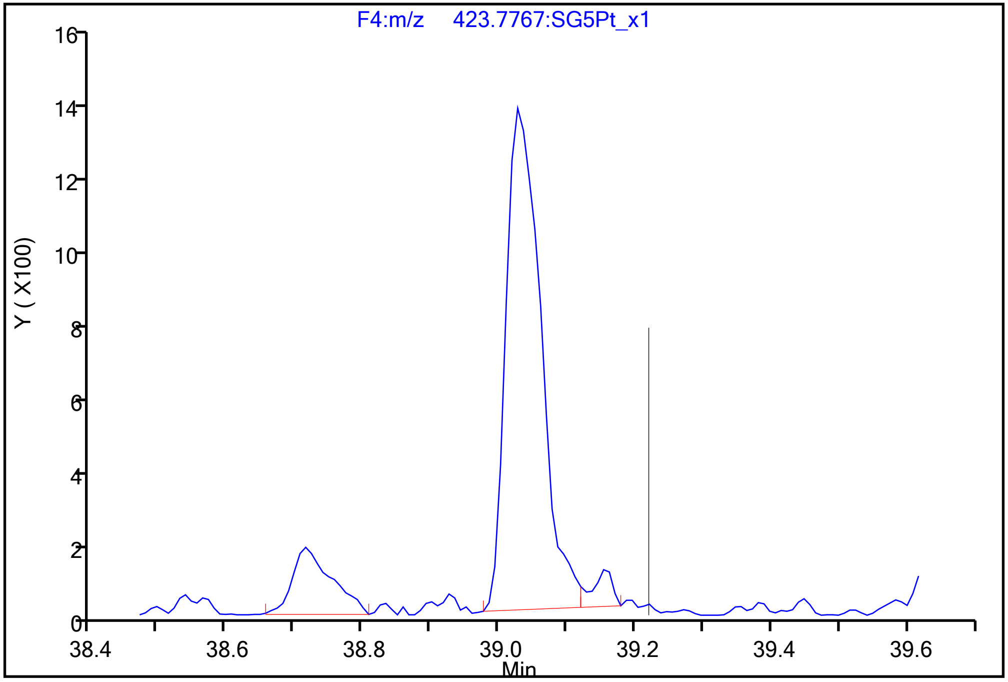

Reviewer: dadunj, 30-Nov-2020 10:49:11

Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Injection Date:	24-Nov-2020 13:29:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-2-B	Lab Sample ID:	320-66850-2
Client ID:	11215702-Tank #2 1um		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 35
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT:	42.24
Area:	6802
Amount:	0.825306
Amount Units:	pg/ul

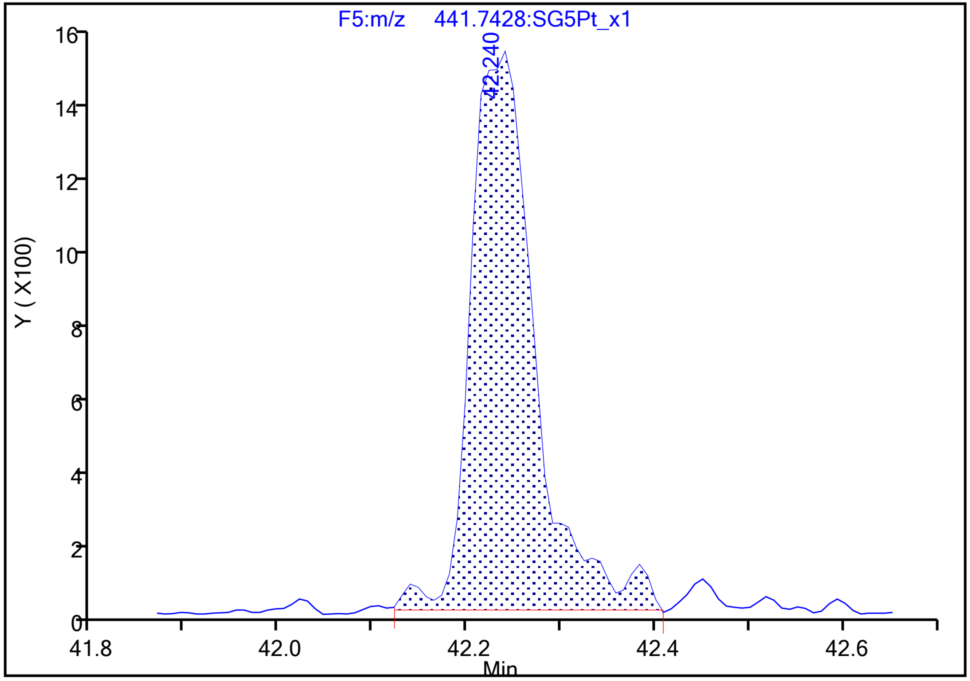

Manual Integration Results

RT:	42.24
Area:	6471
Amount:	0.805007
Amount Units:	pg/ul

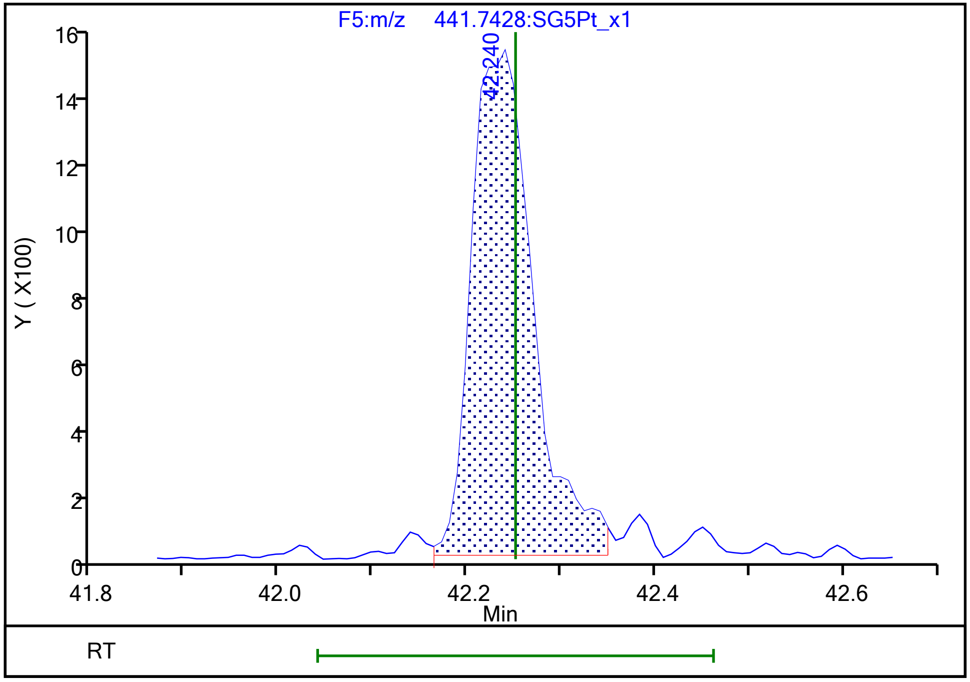

Reviewer: dadunj, 30-Nov-2020 10:49:29

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Injection Date:	24-Nov-2020 13:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

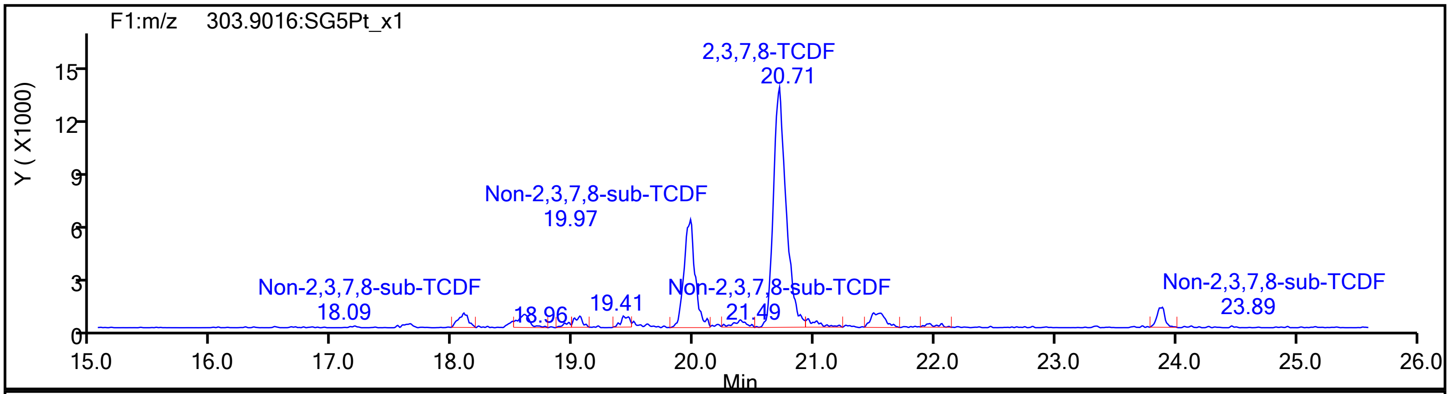

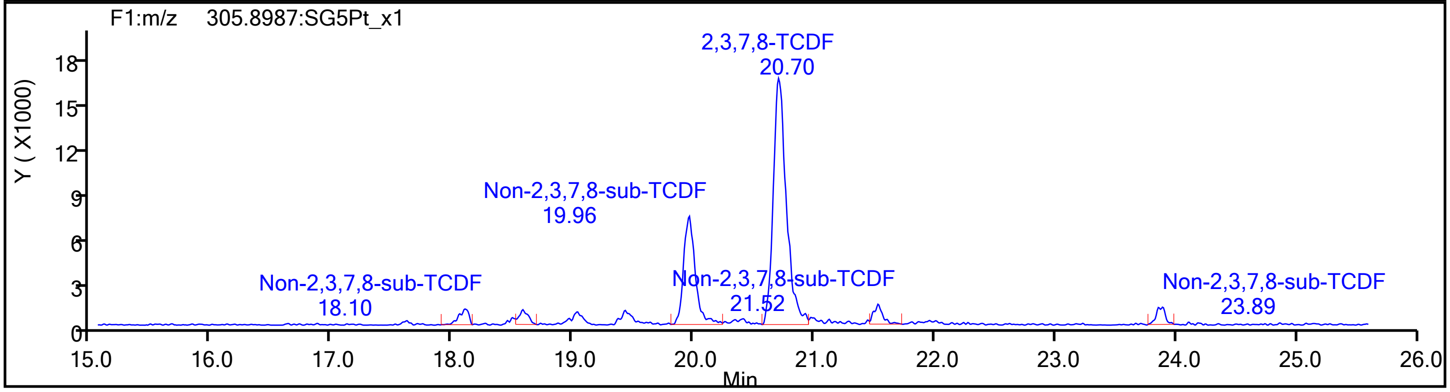

TCDF Standards

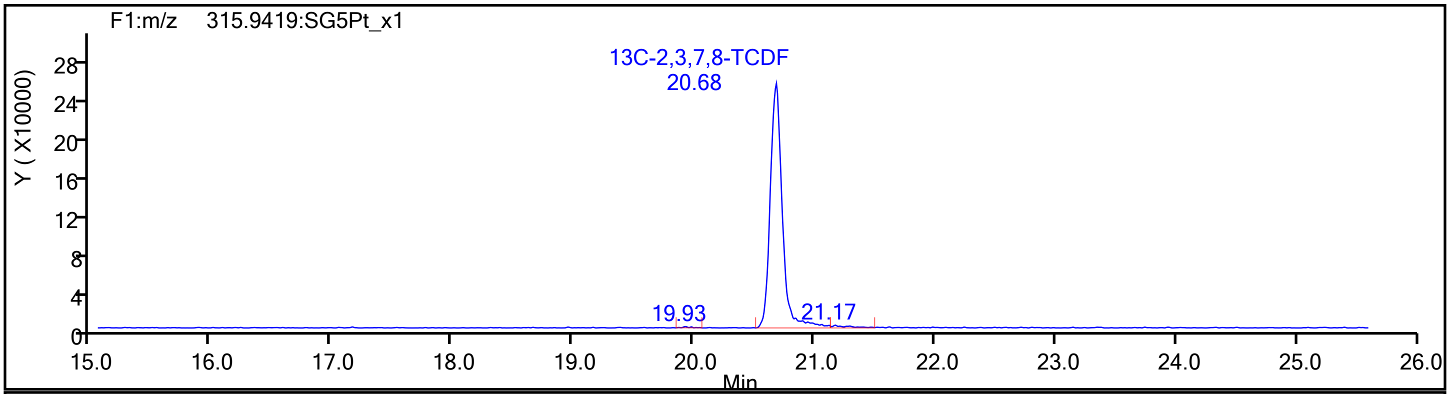

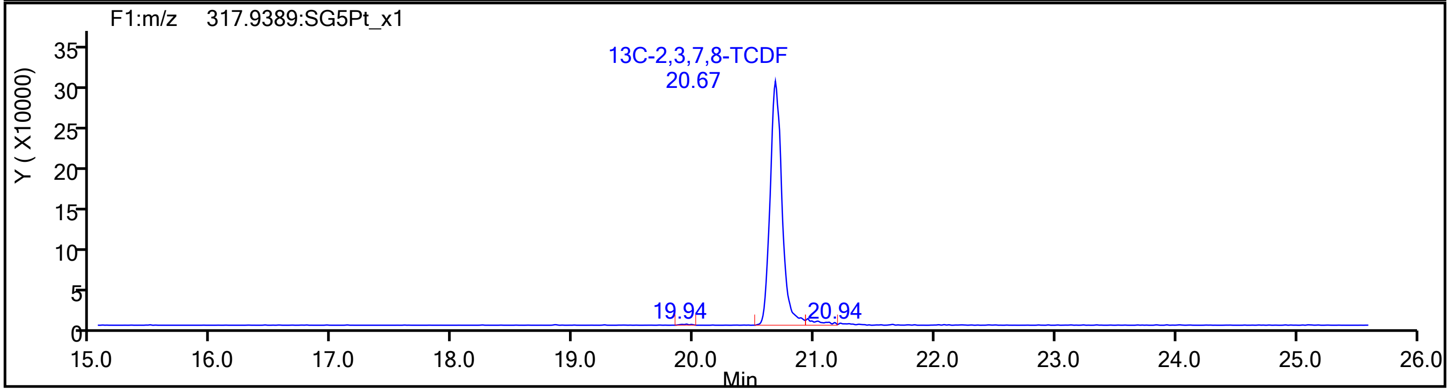

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date: 24-Nov-2020 13:29:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 1um

Worklist#: 434777 Sample Line#: 35

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

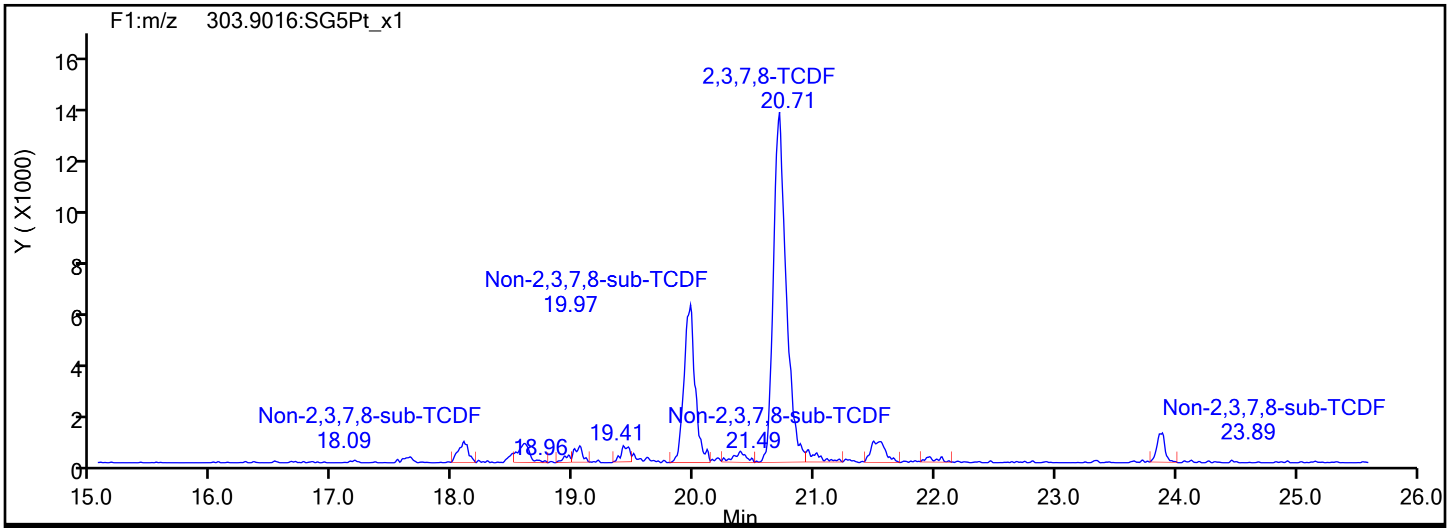

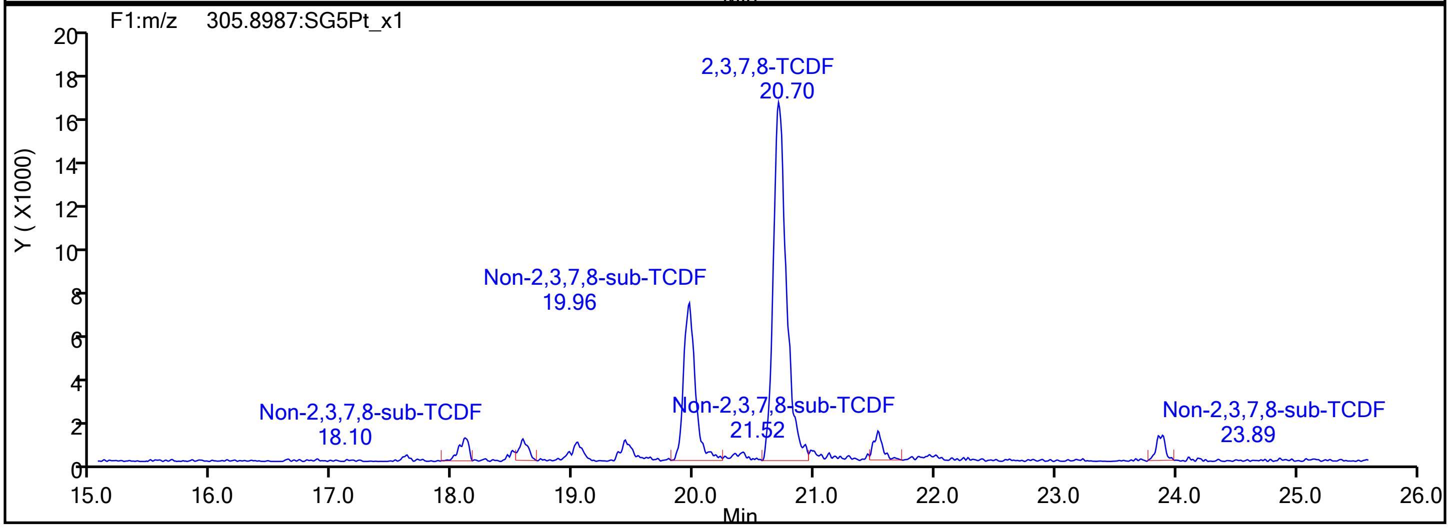

TCDF Interference Mass

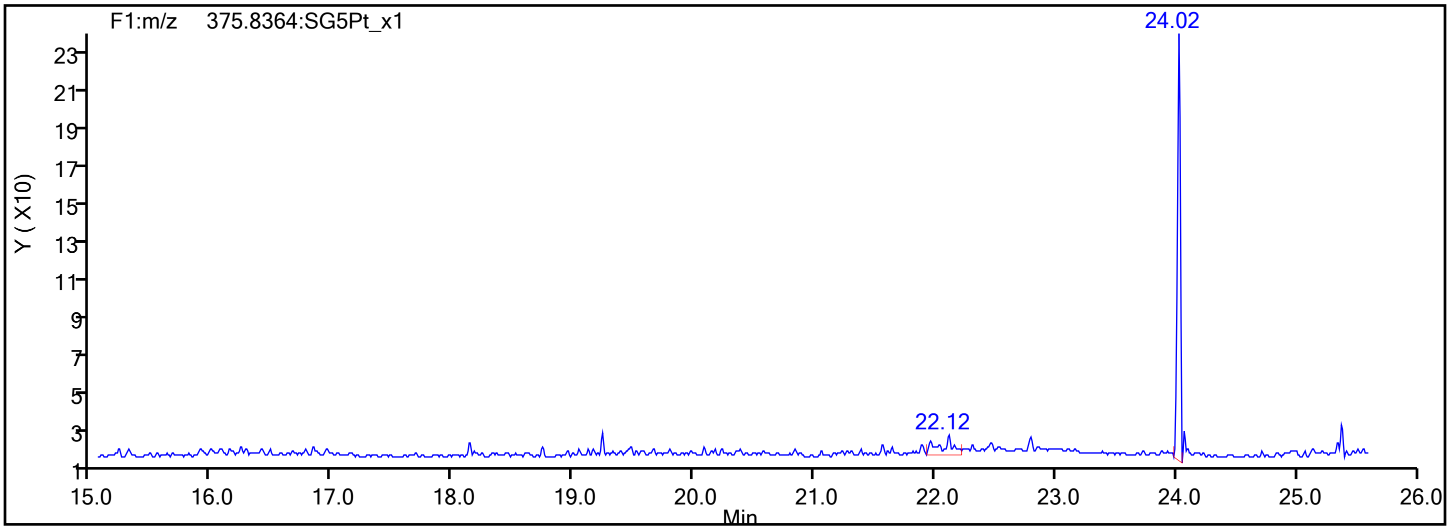

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date: 24-Nov-2020 13:29:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 1um

Worklist#: 434777 Sample Line#: 35

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

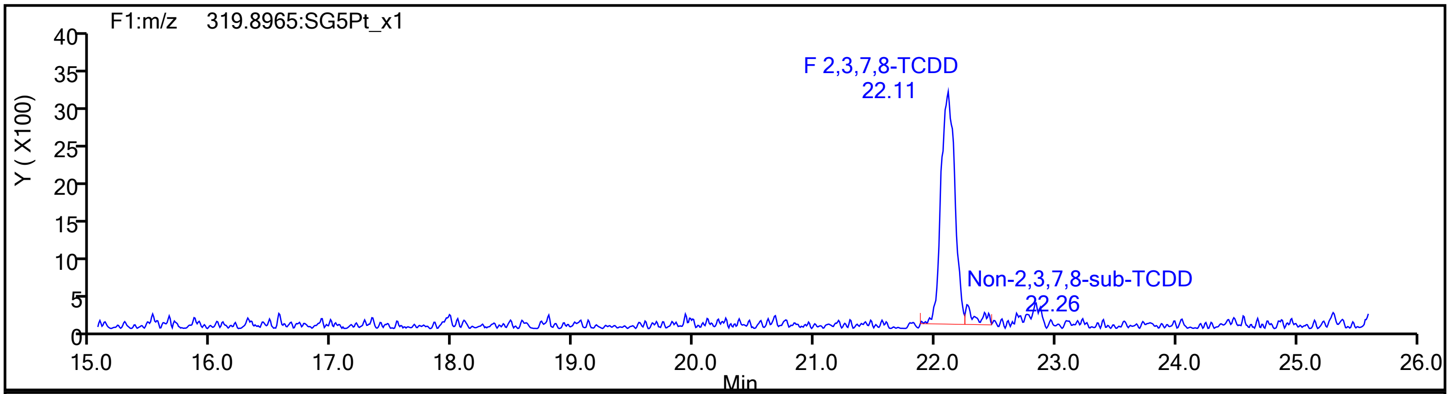

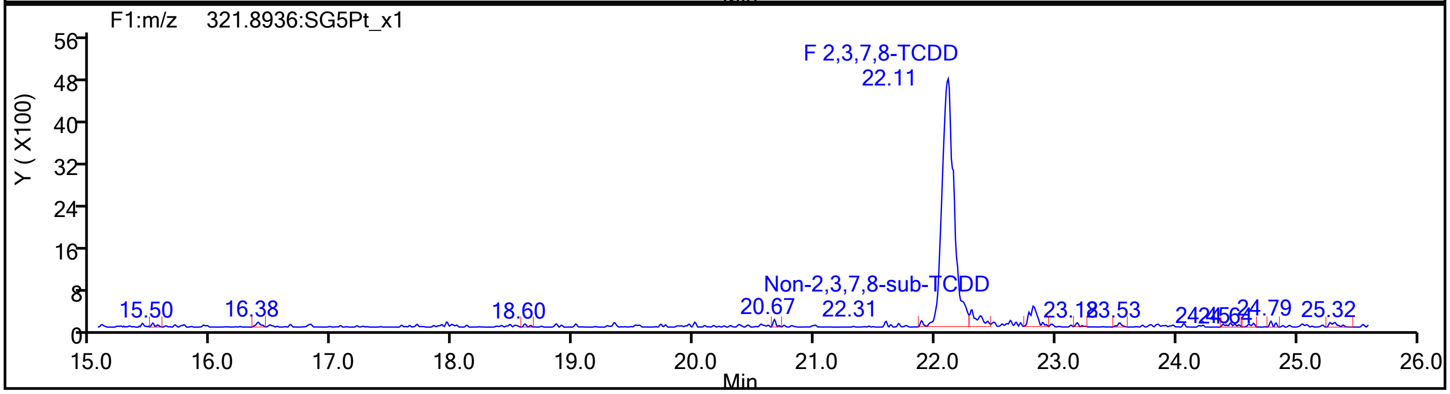

TCDD Standards

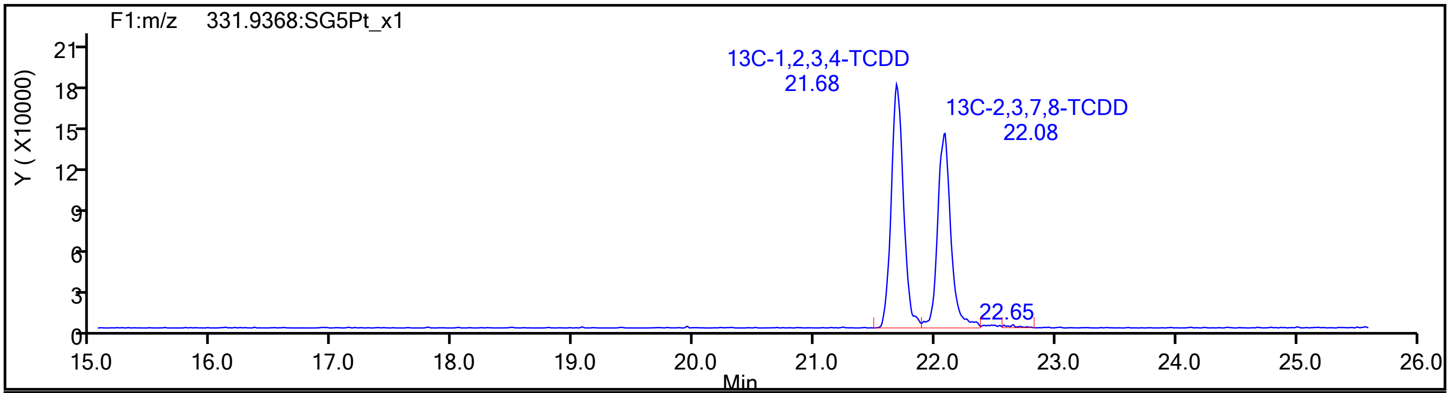

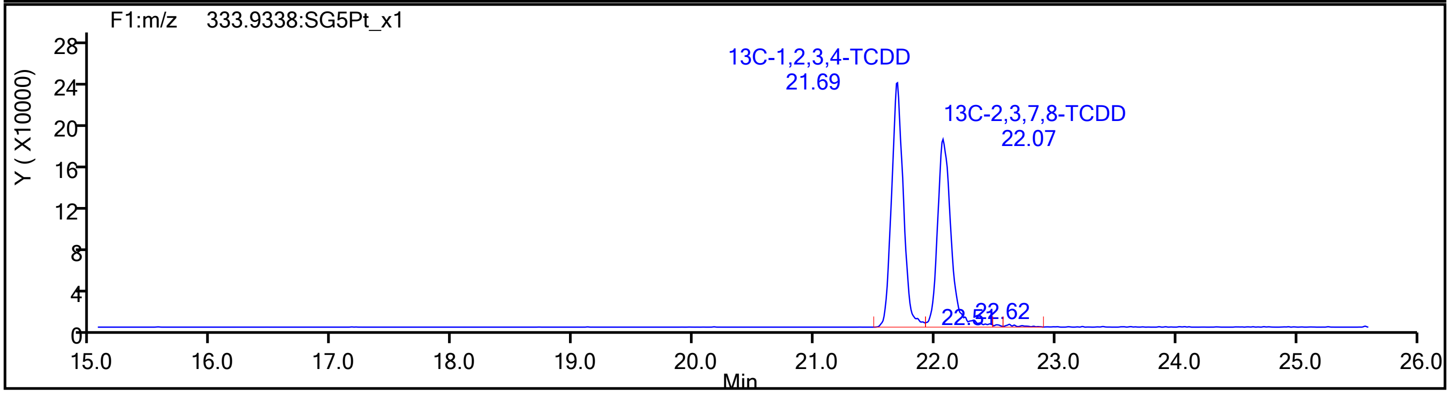

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Injection Date: 24-Nov-2020 13:29:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777 Sample Line#: 35
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

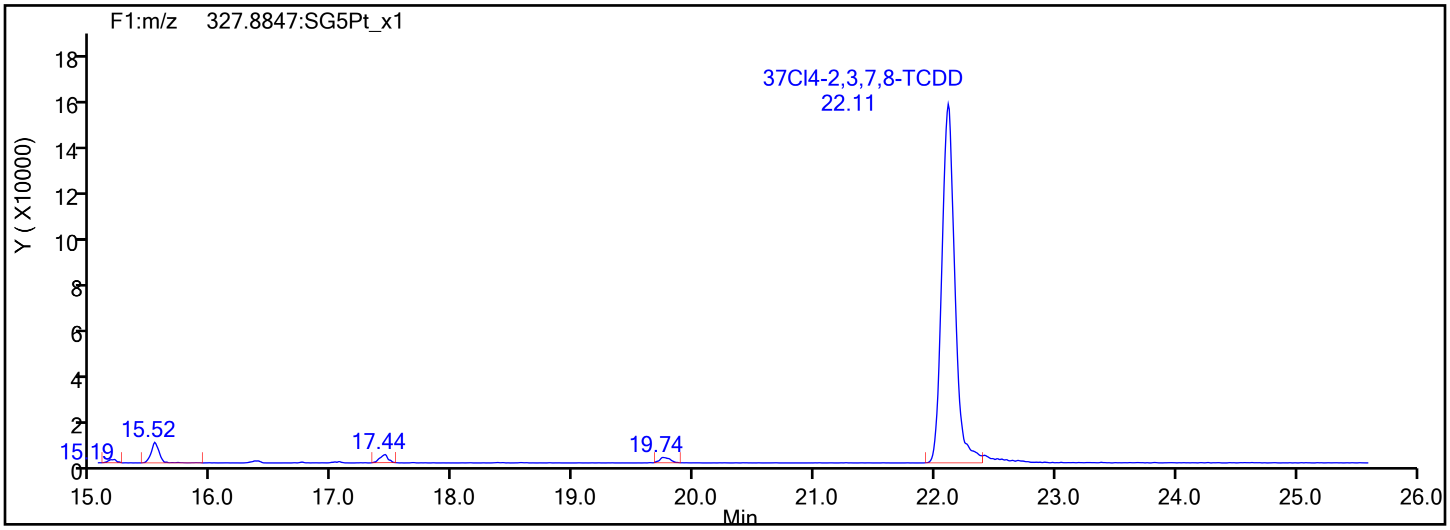

37Cl4-TCDD Standards

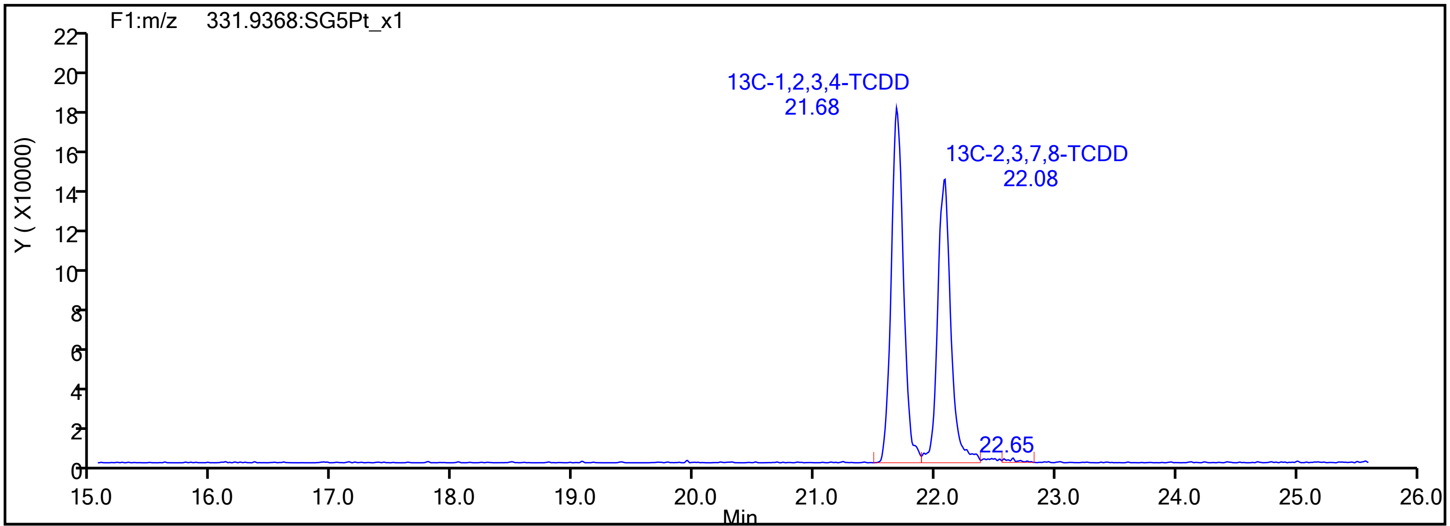

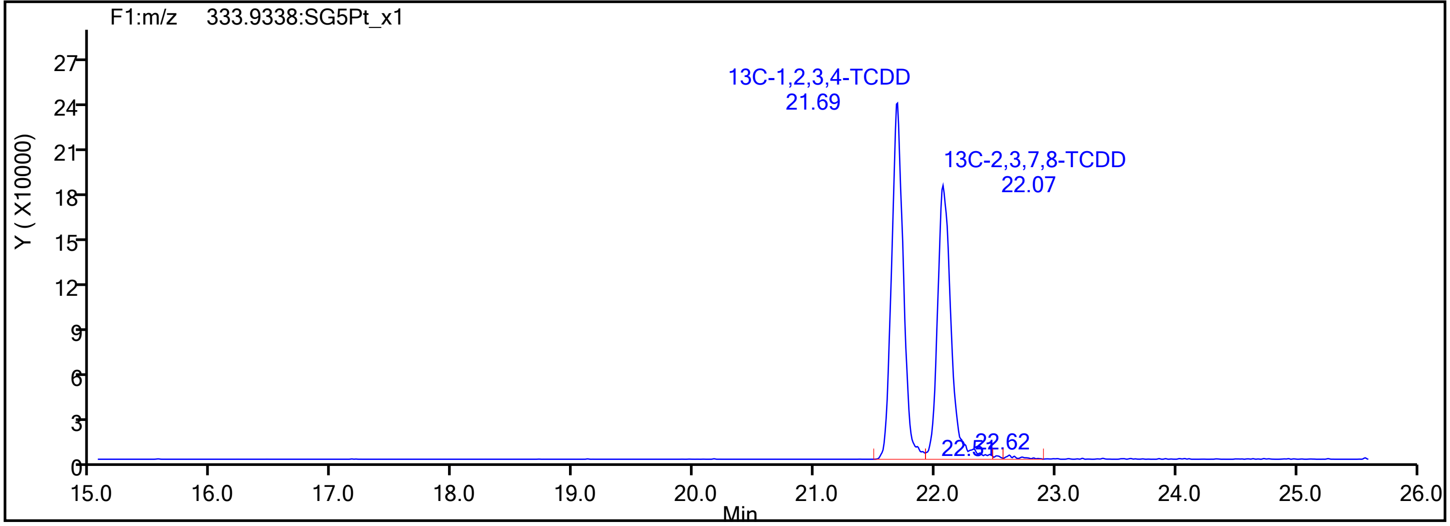

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
Injection Date:	24-Nov-2020 13:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

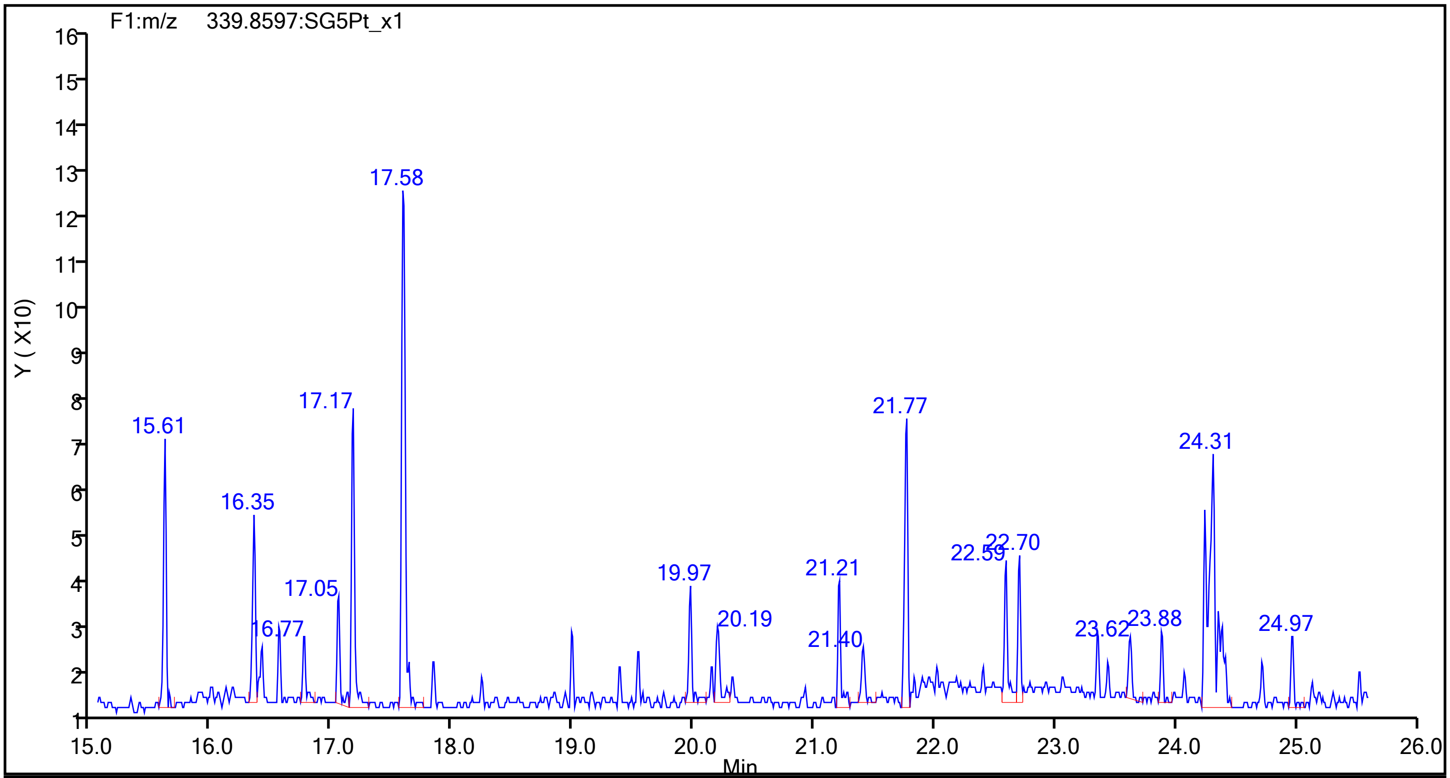

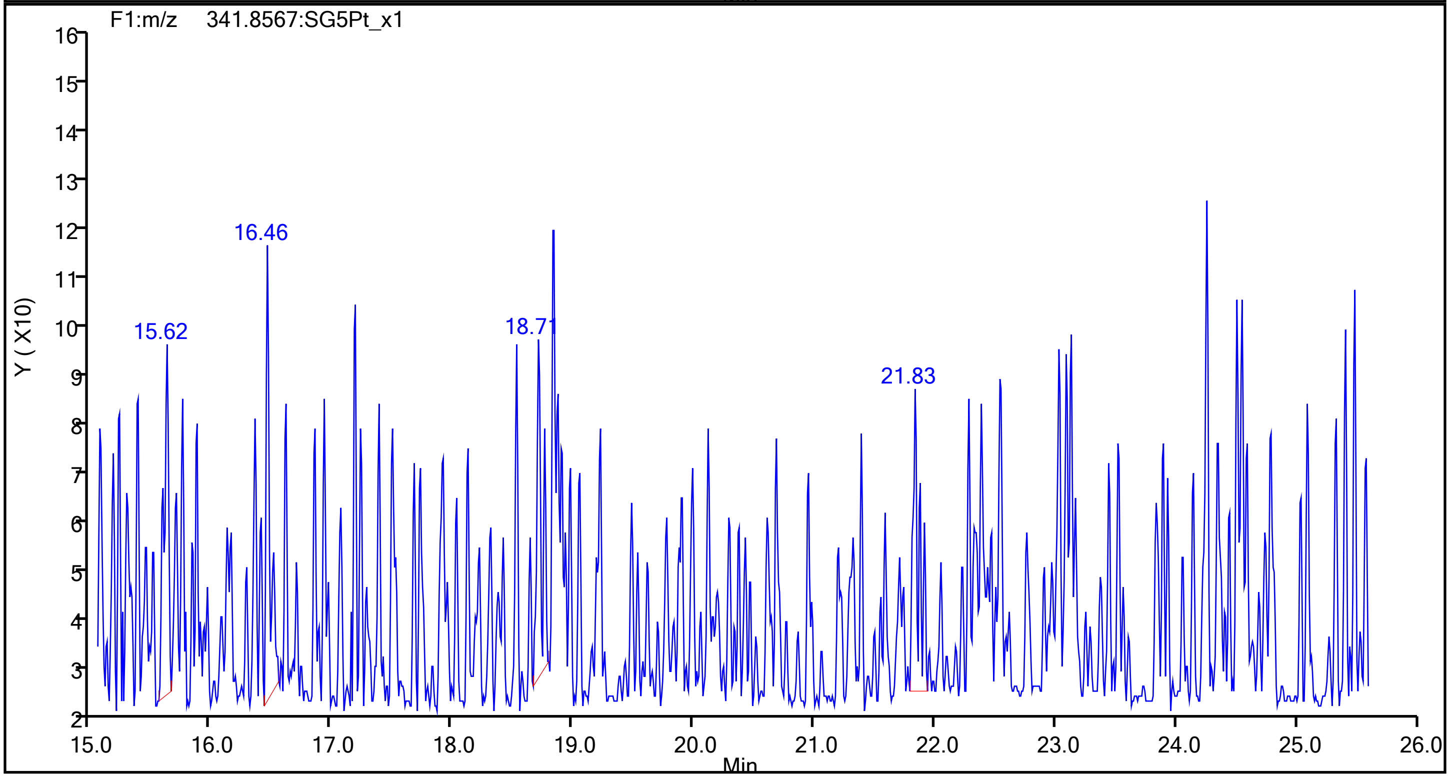

Report Date: 30-Nov-2020 10:50:04
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Injection Date: 24-Nov-2020 13:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777
Sample Line#: 35
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

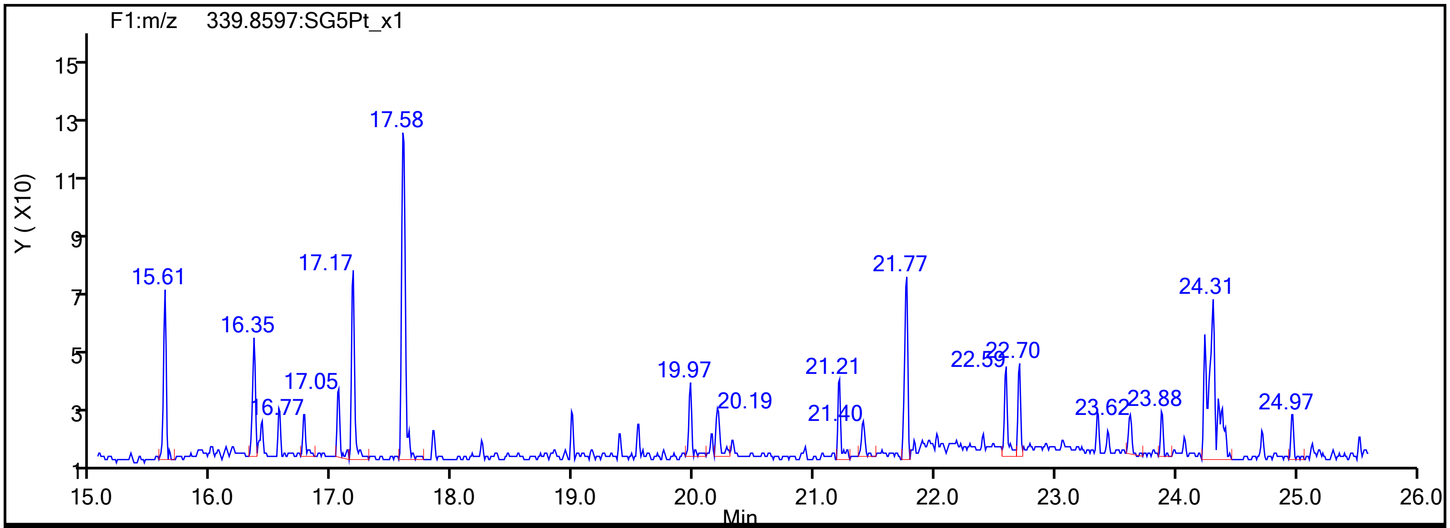

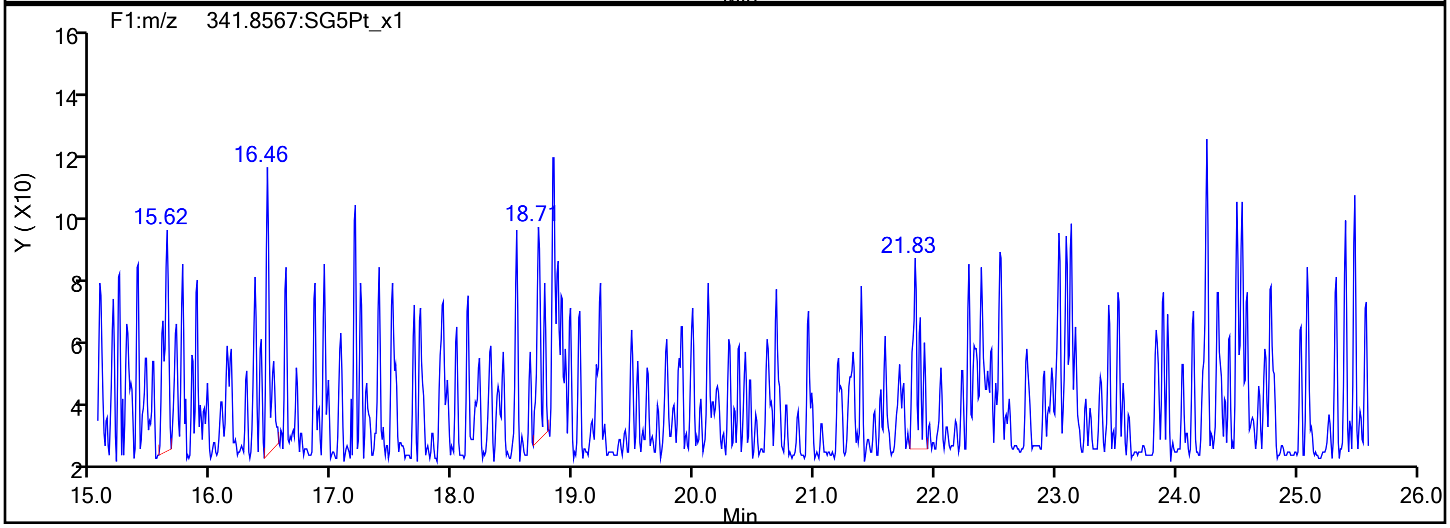

F1 PeCDFs Interference Mass

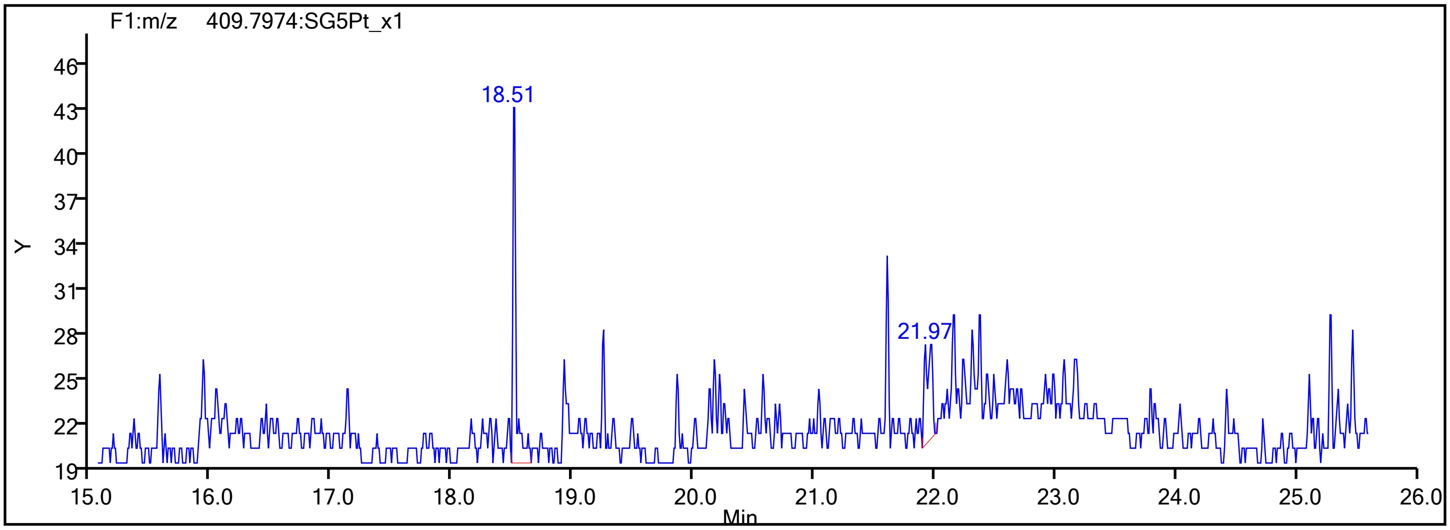

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Injection Date: 24-Nov-2020 13:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777
Sample Line#: 35
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

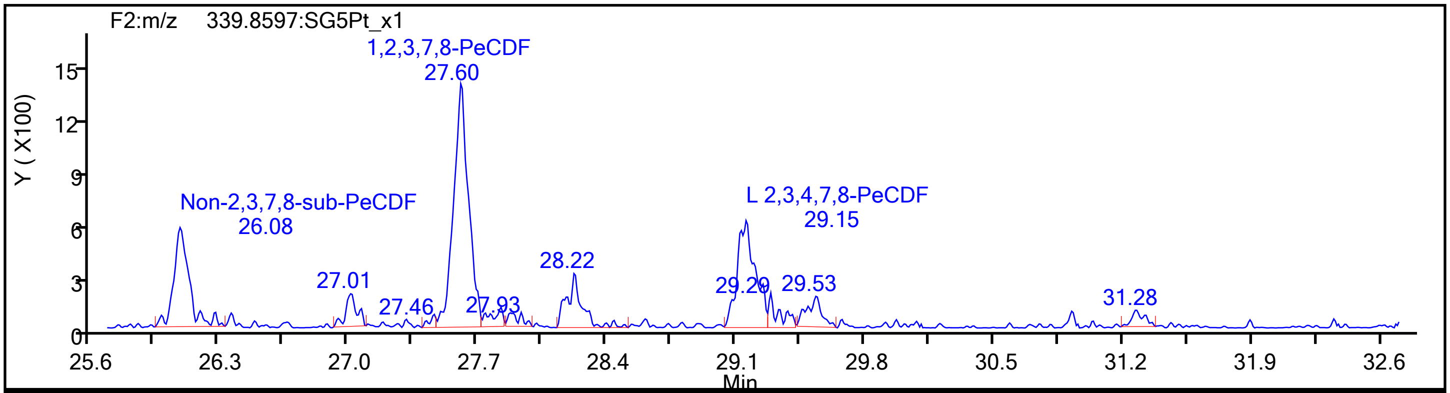

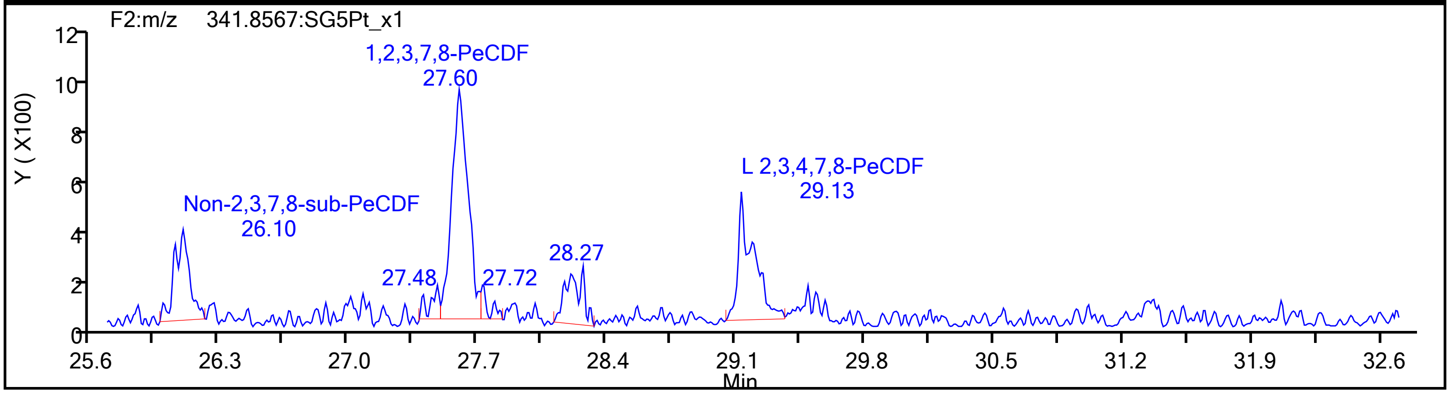

PeCDF Standards

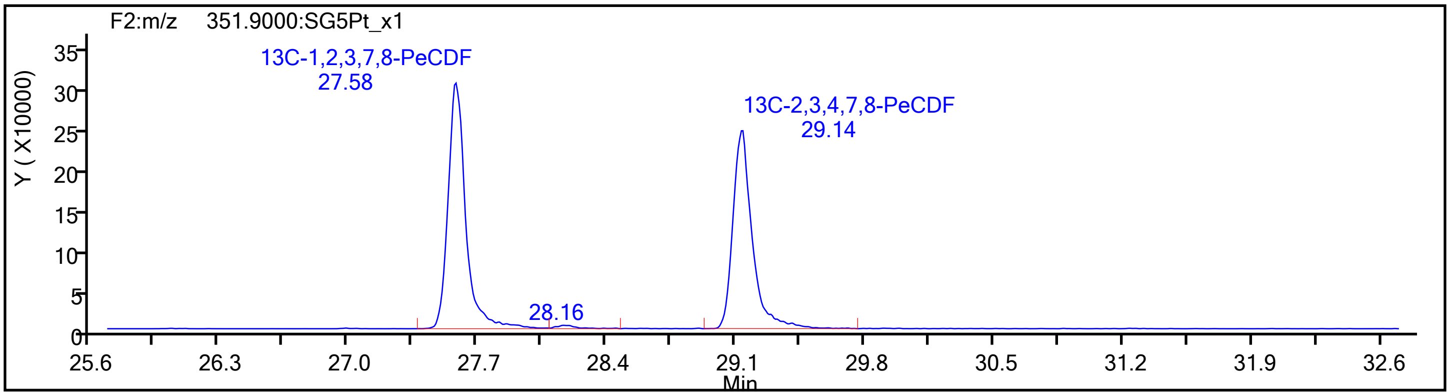

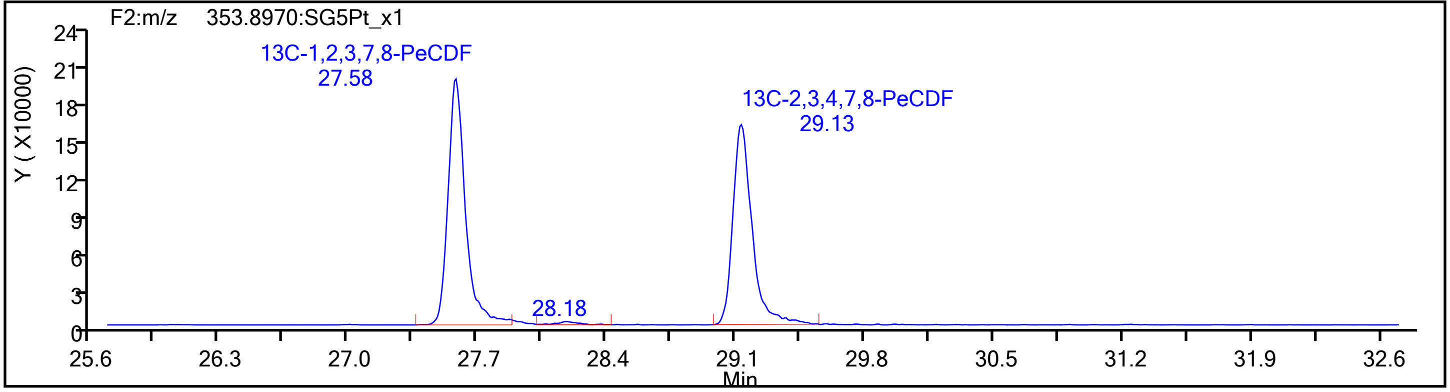

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date:	24-Nov-2020 13:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

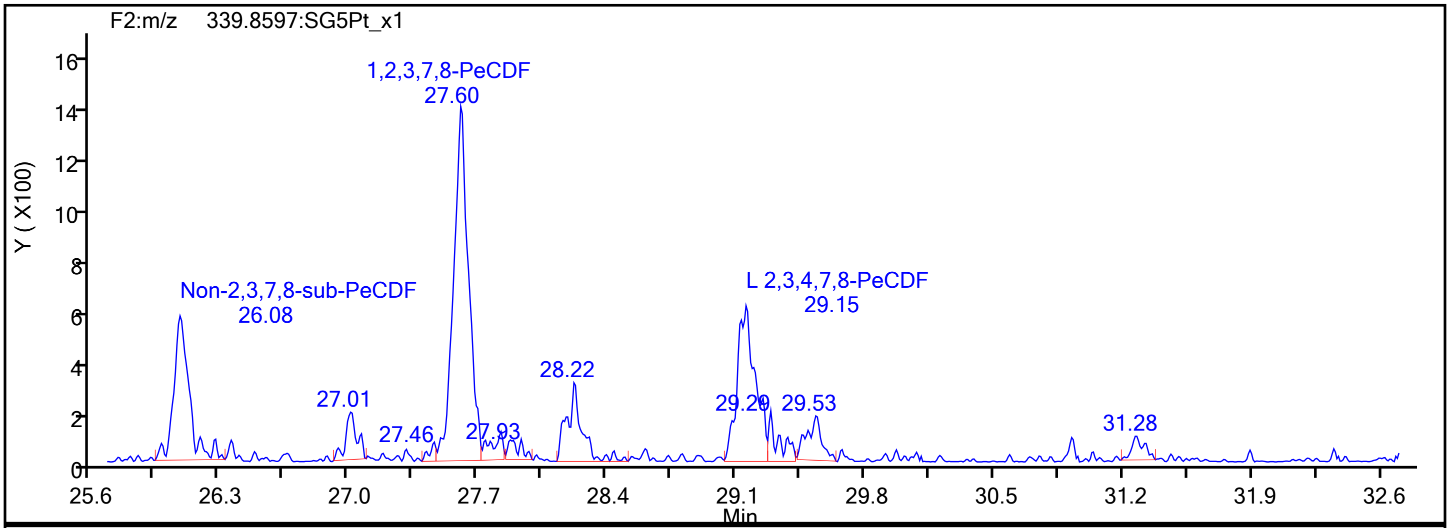

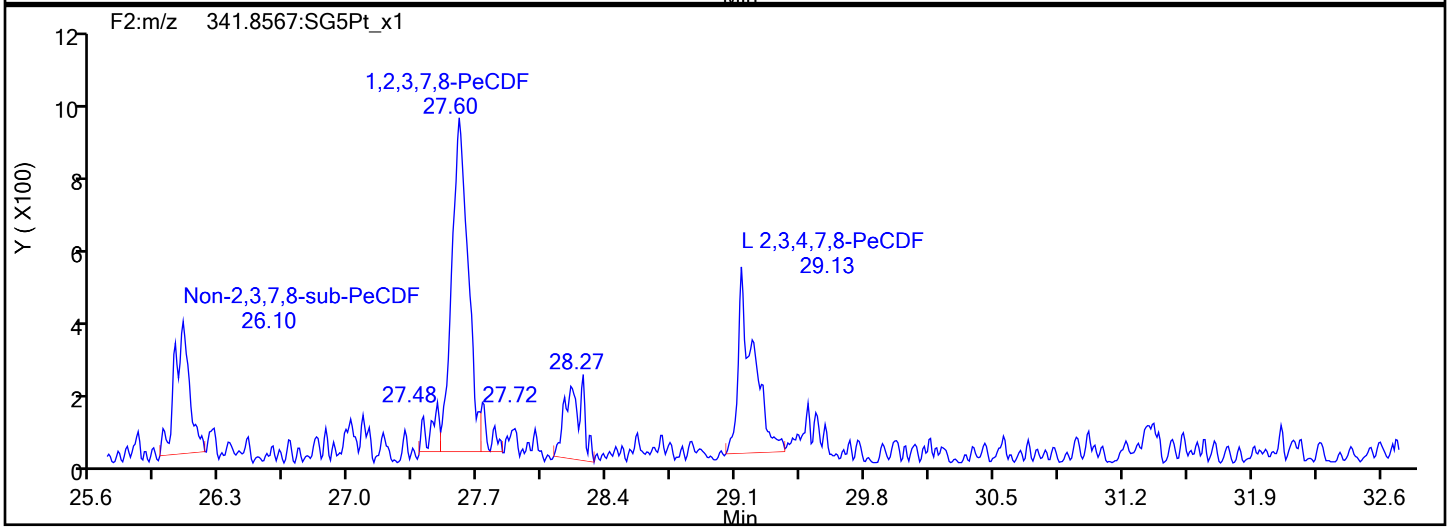

PeCDF Interference Mass

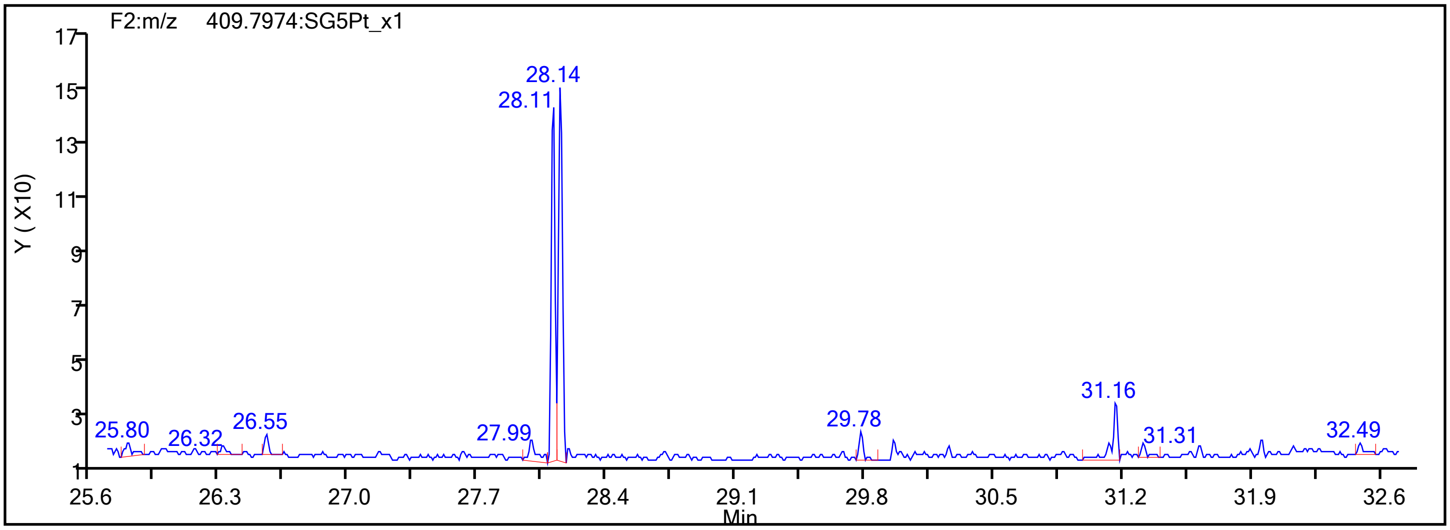

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date: 24-Nov-2020 13:29:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 1um

Worklist#: 434777 Sample Line#: 35

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

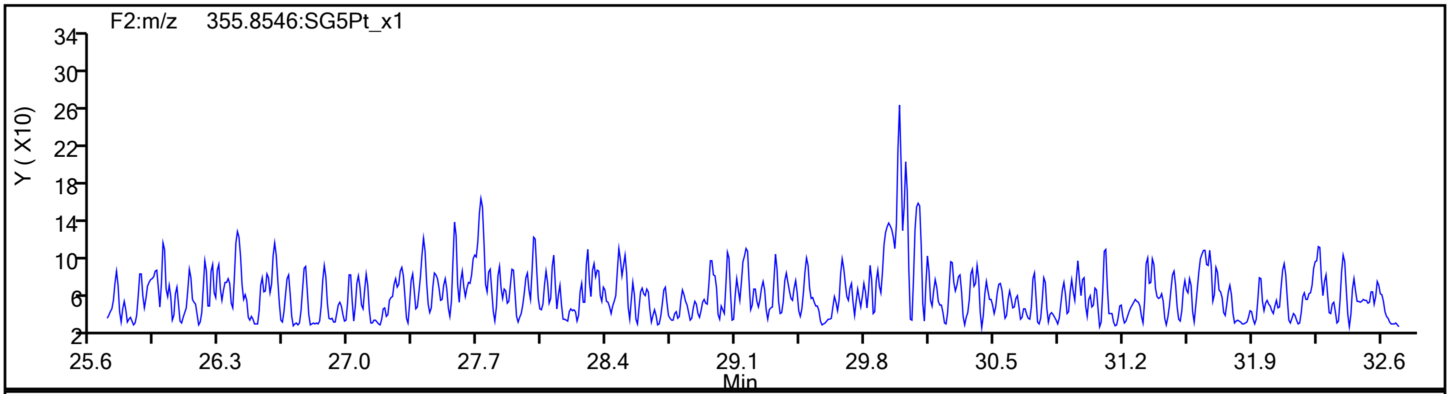

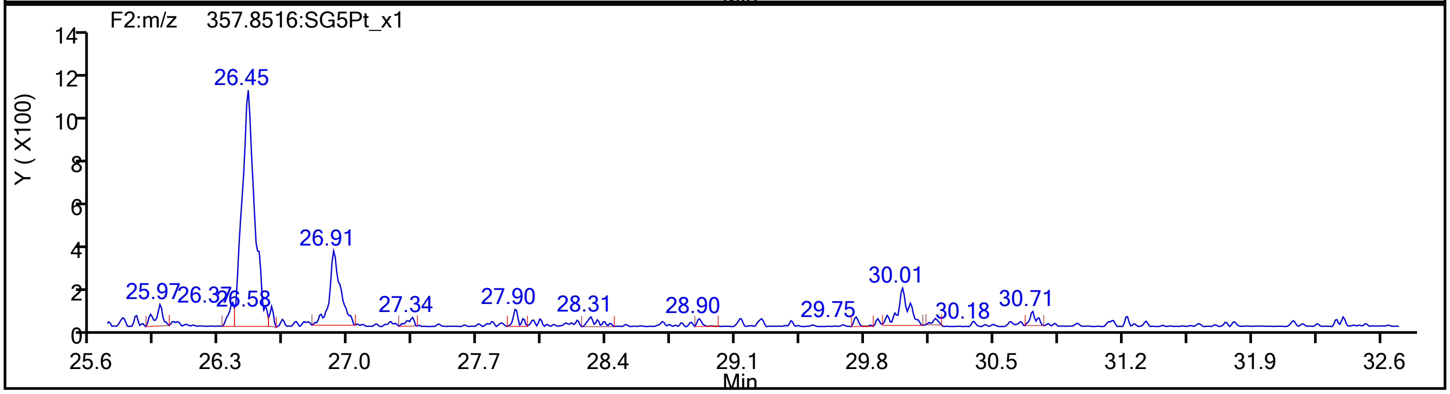

PeCDD Standards

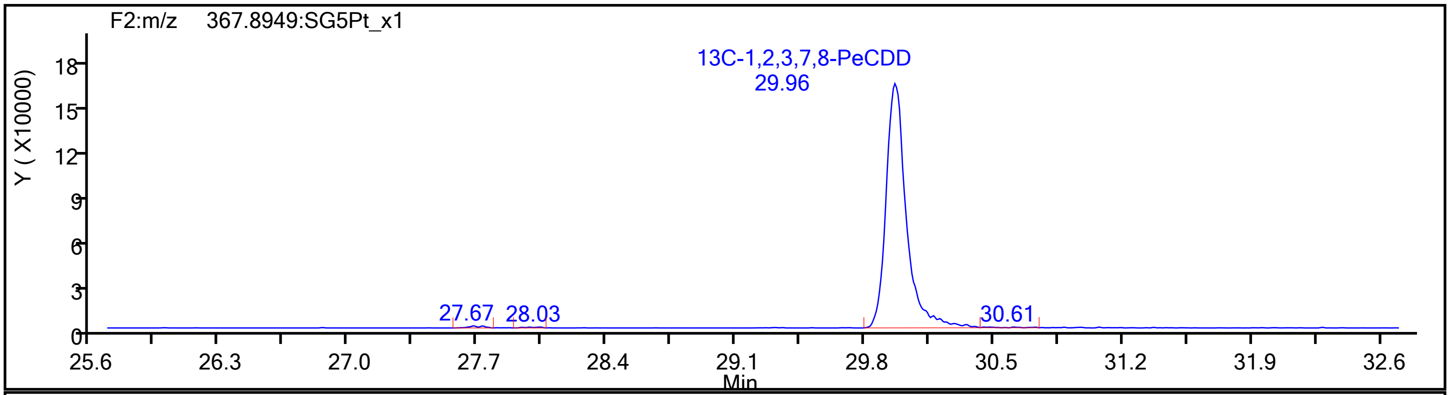

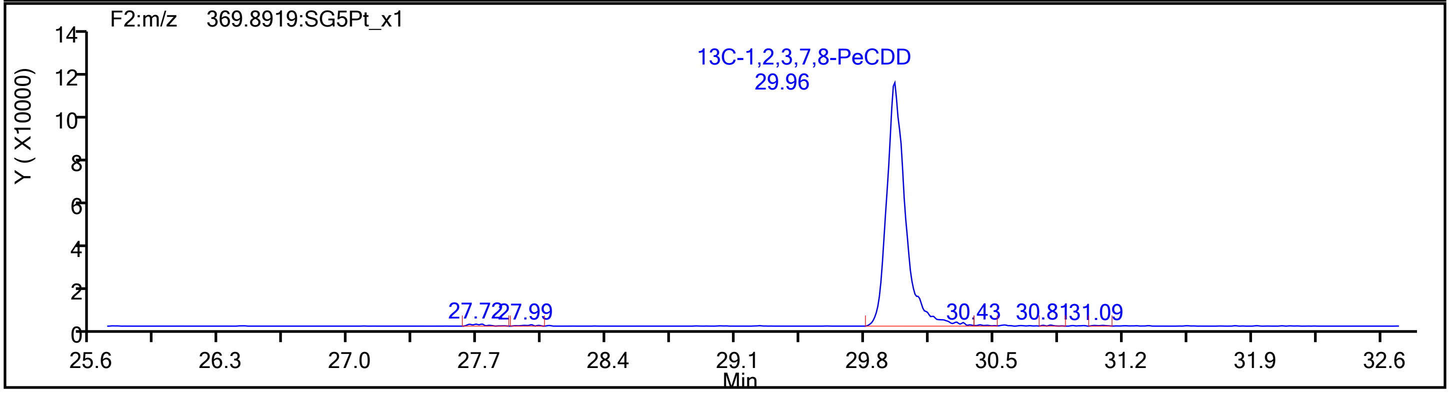

Report Date: 30-Nov-2020 10:50:04
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

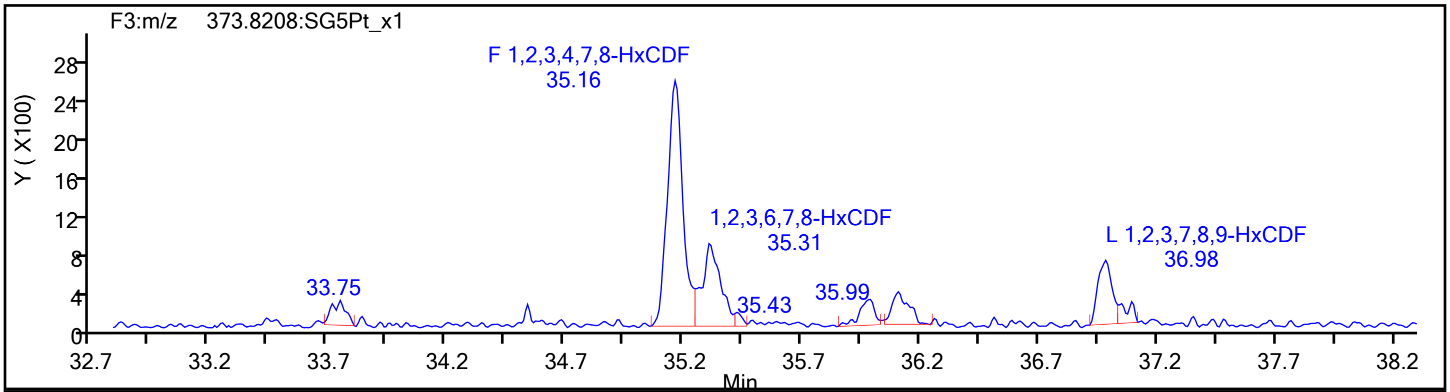

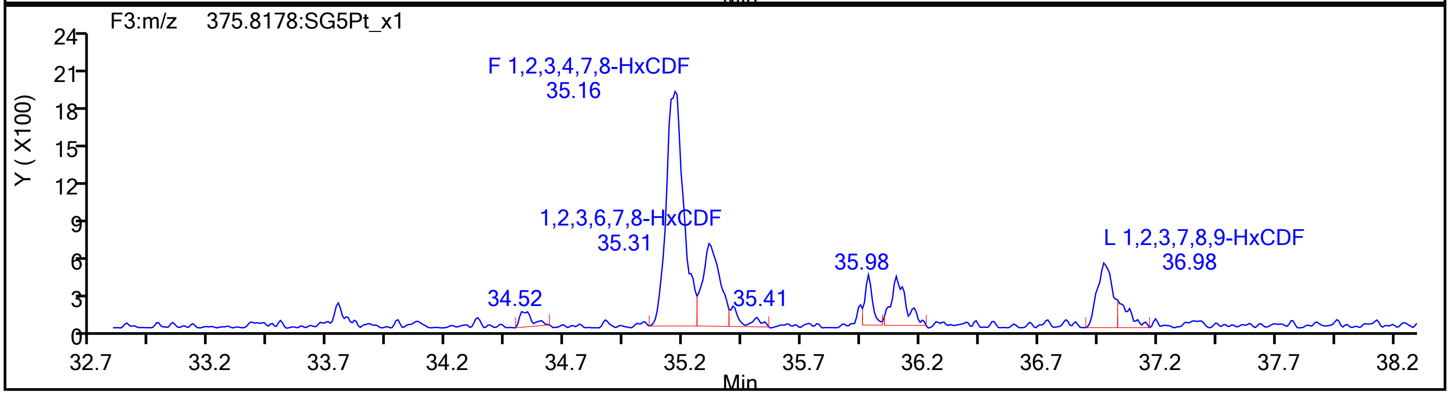

HxCDF Standards

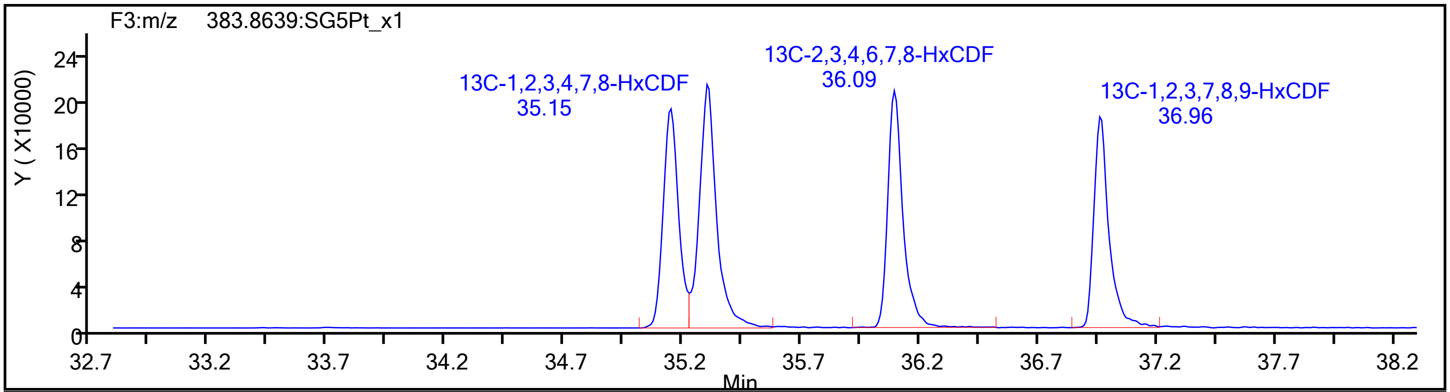

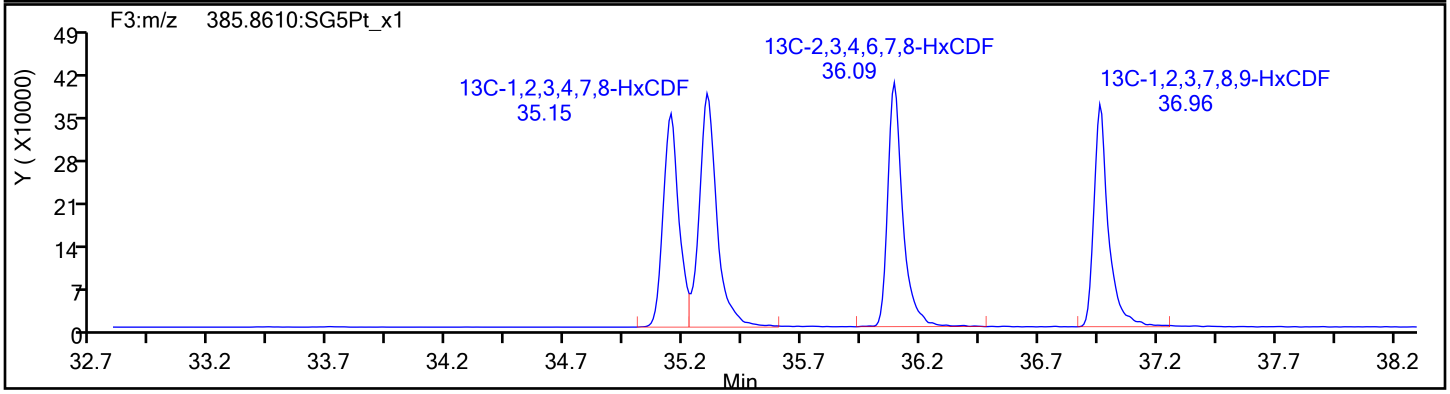

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

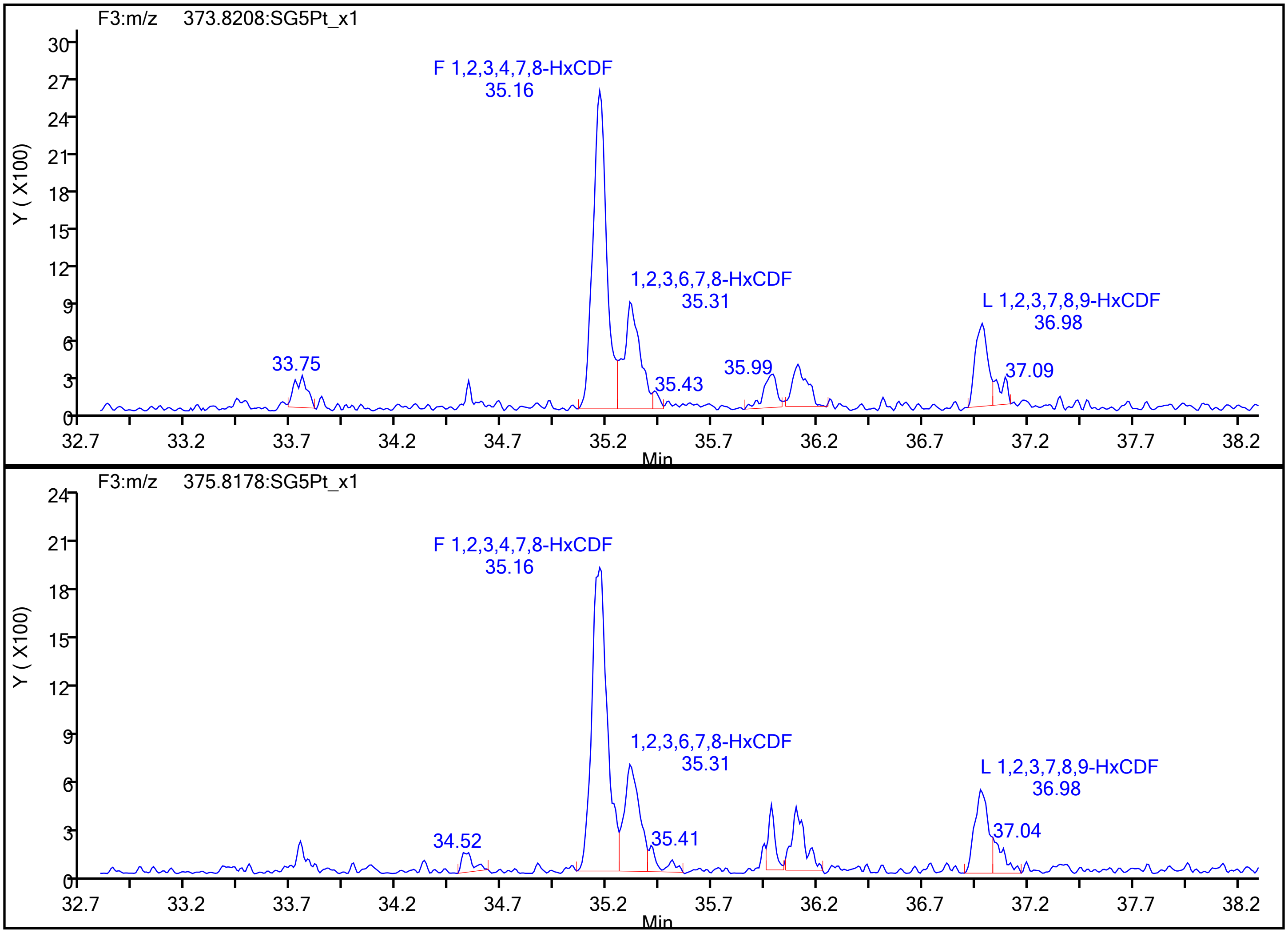

HxCDF Interference Mass

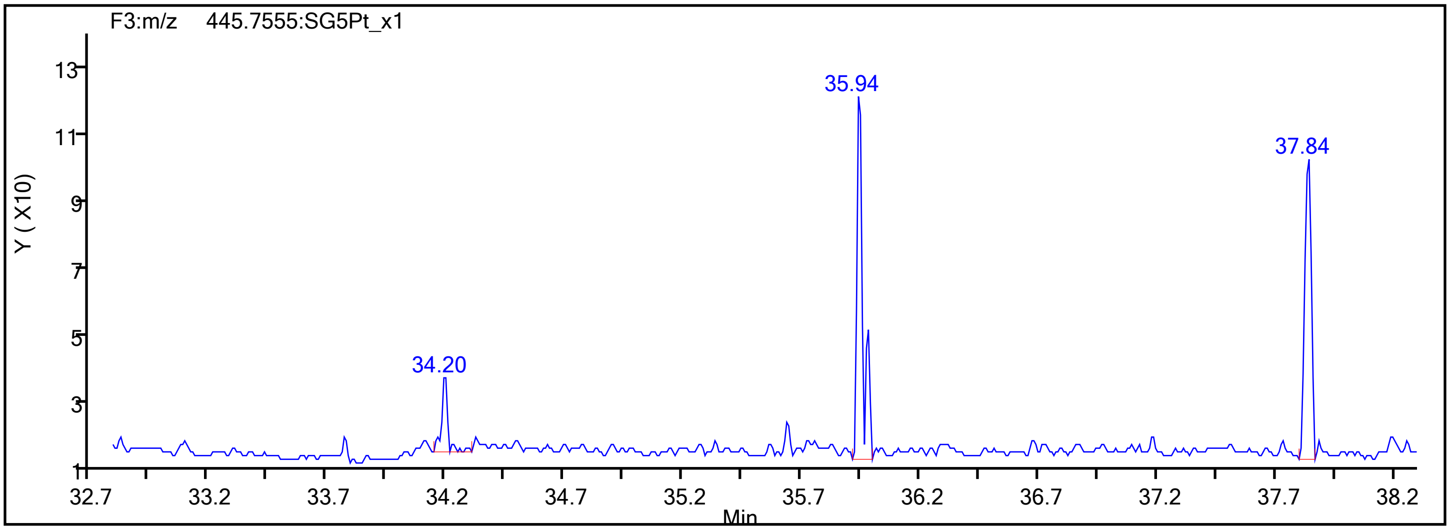

Report Date: 30-Nov-2020 10:50:04 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Injection Date: 24-Nov-2020 13:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777
Sample Line#: 35
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

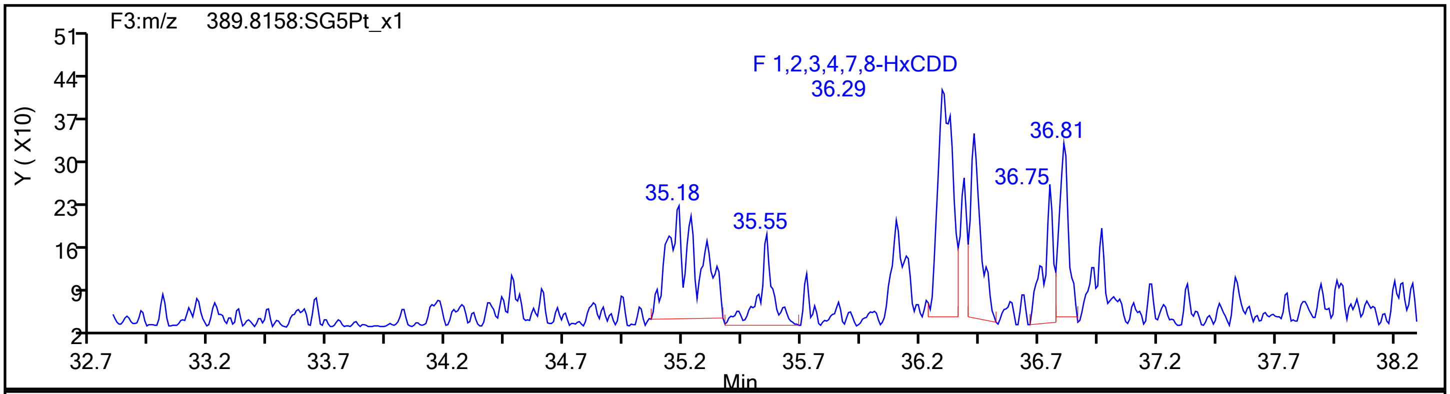

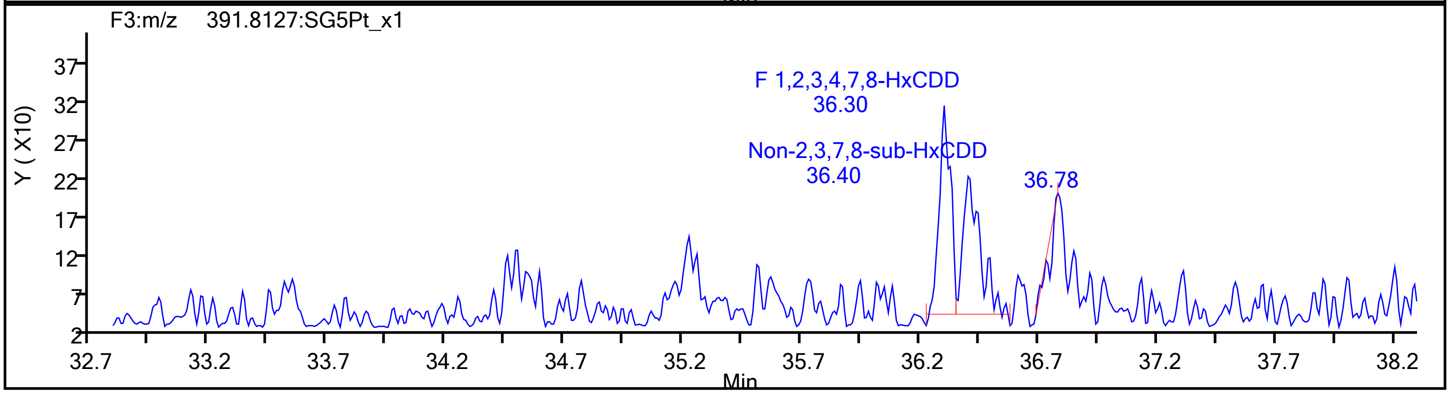

HxCDD Standards

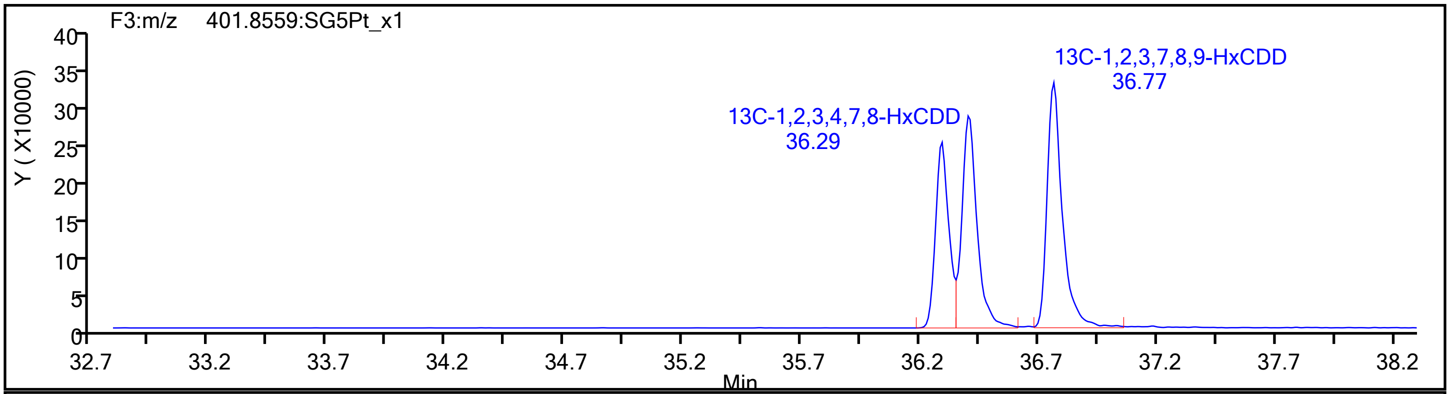

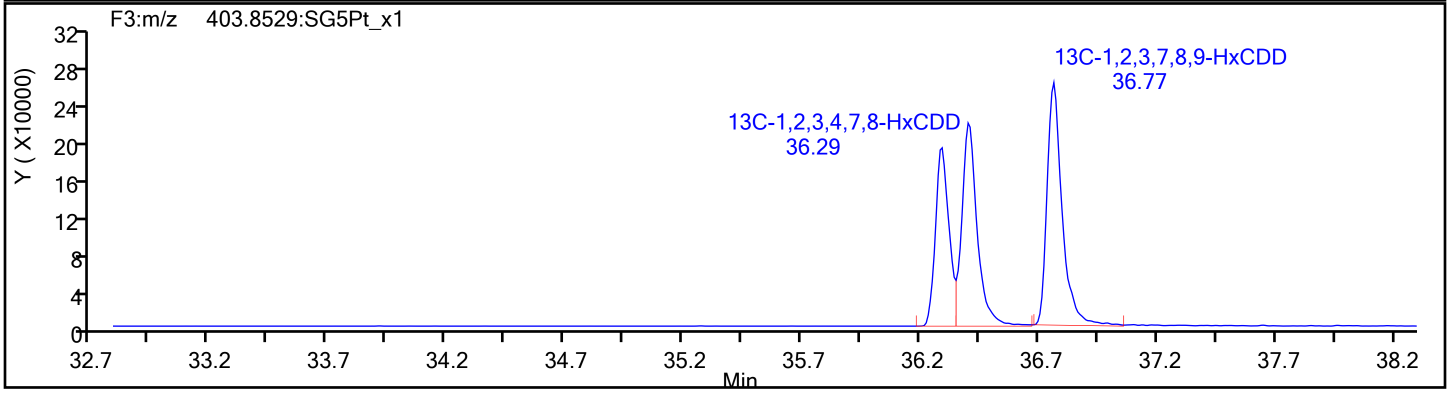

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 13:29:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777 Sample Line#: 35
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

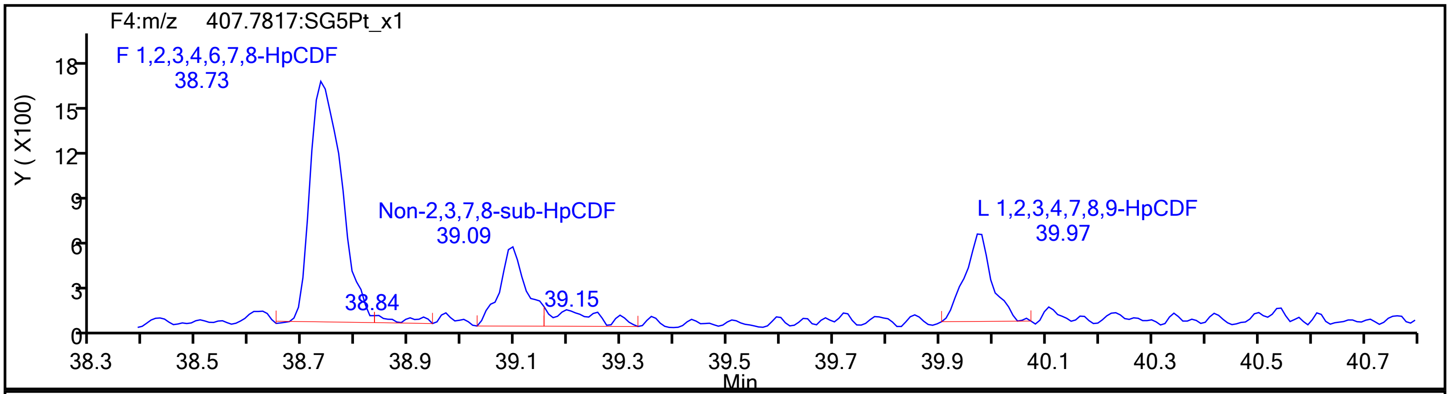

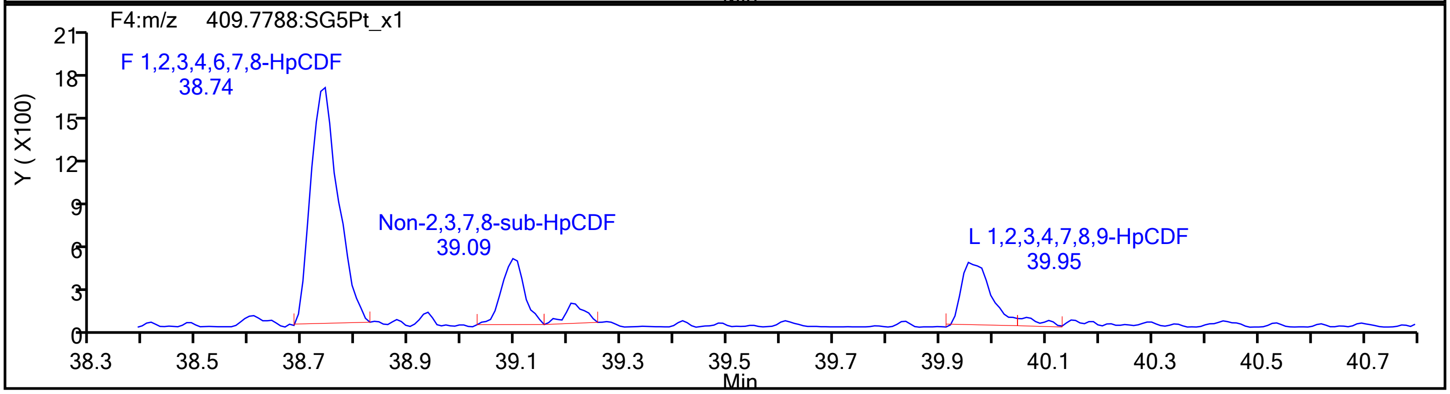

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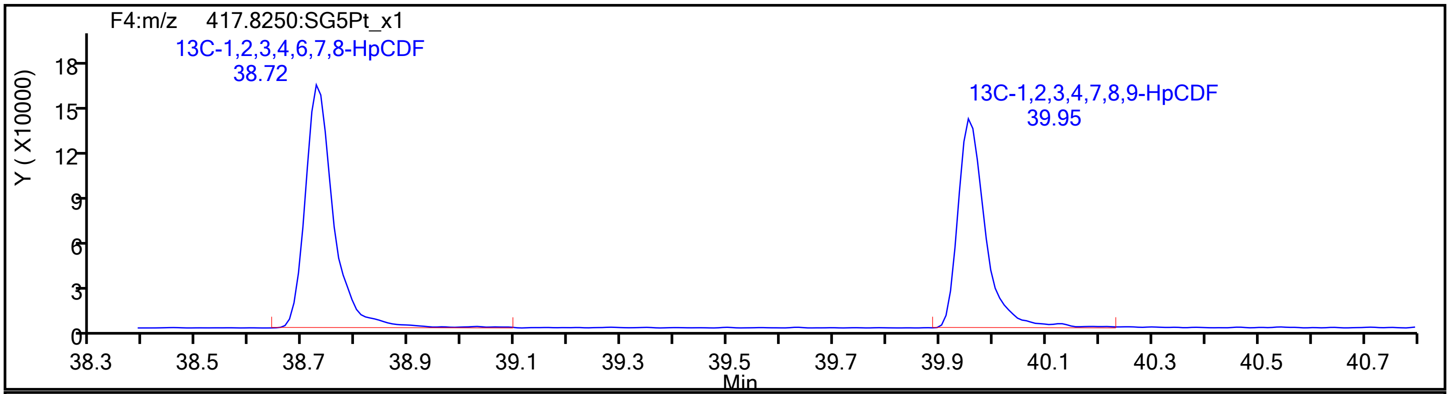

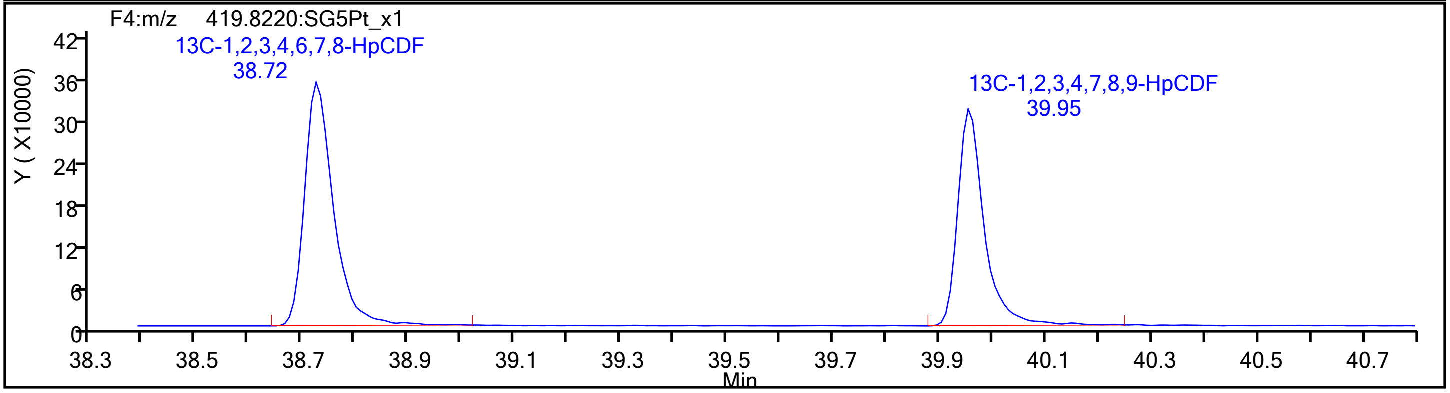

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 13:29:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777 Sample Line#: 35
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

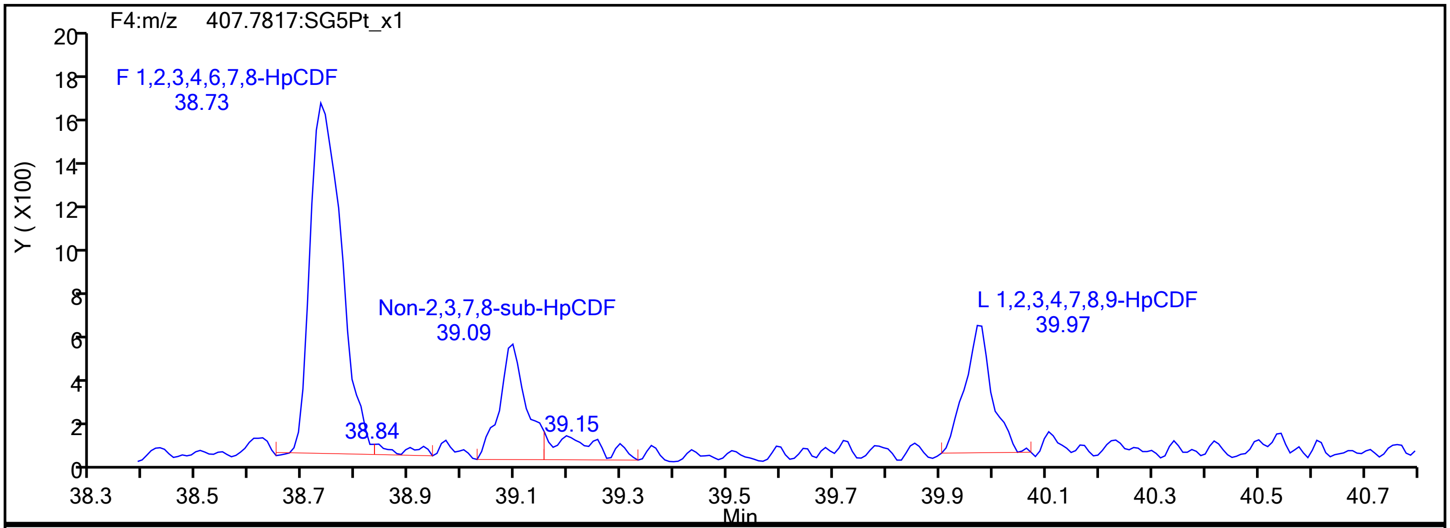

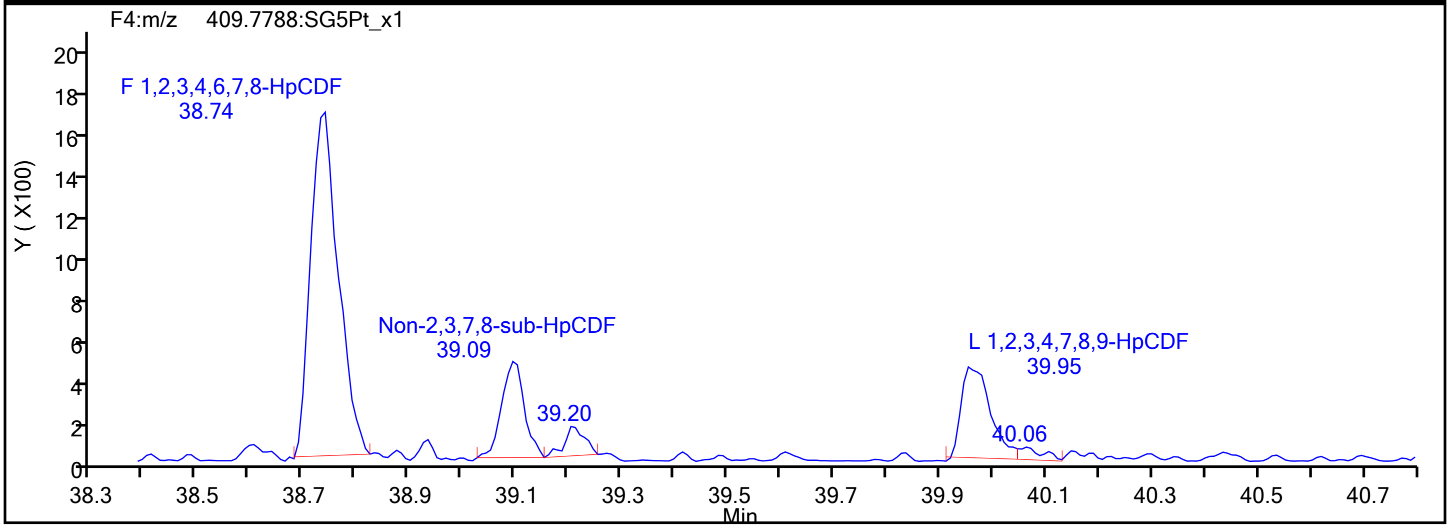

HpCDF Interference Mass

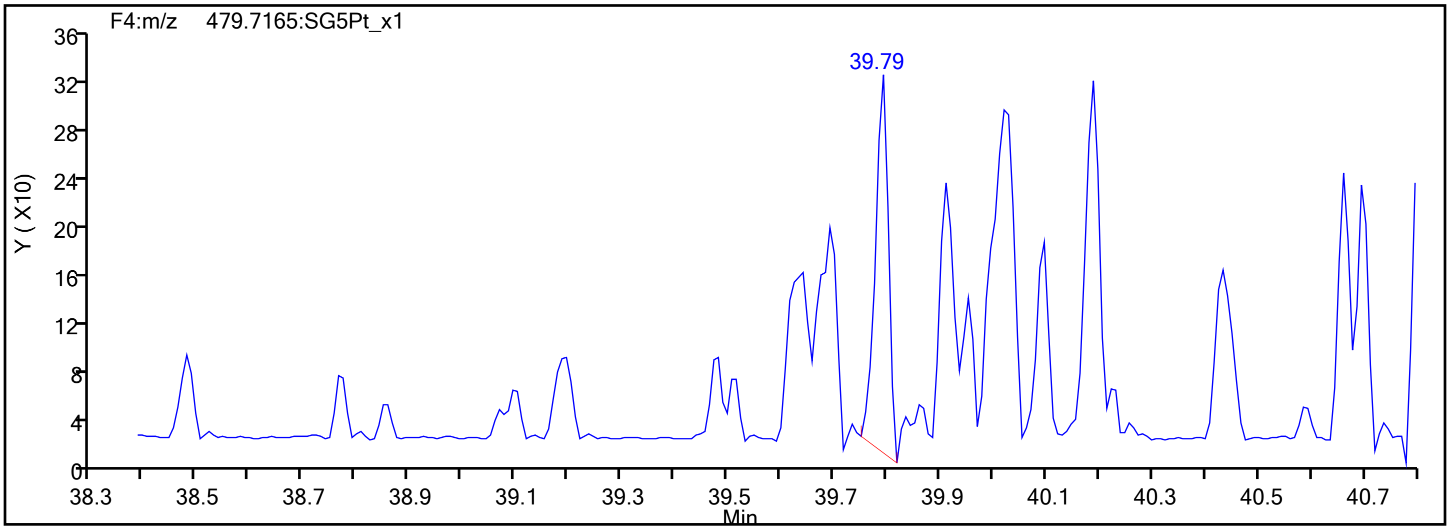

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

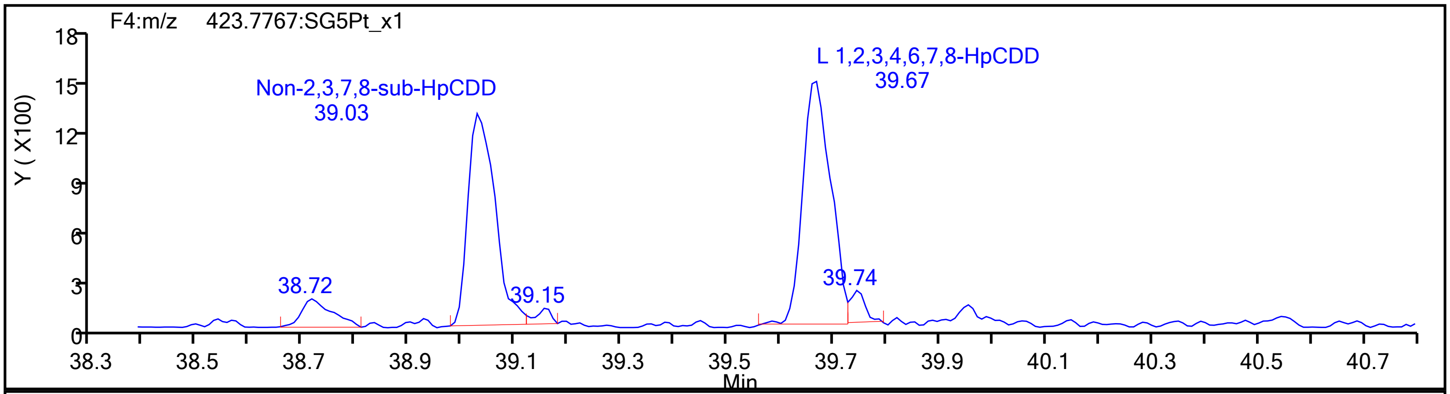

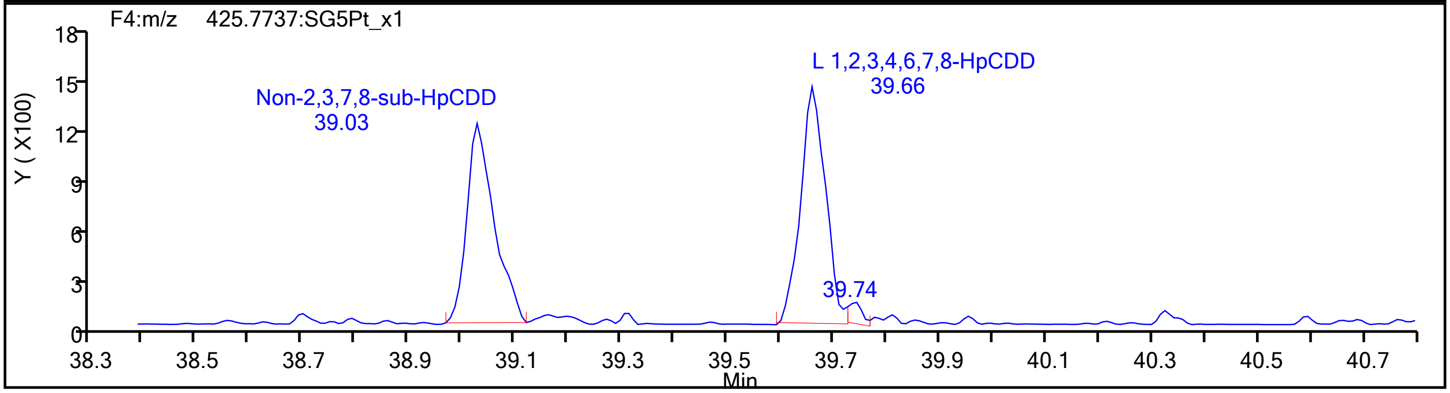

HpCDD Standards

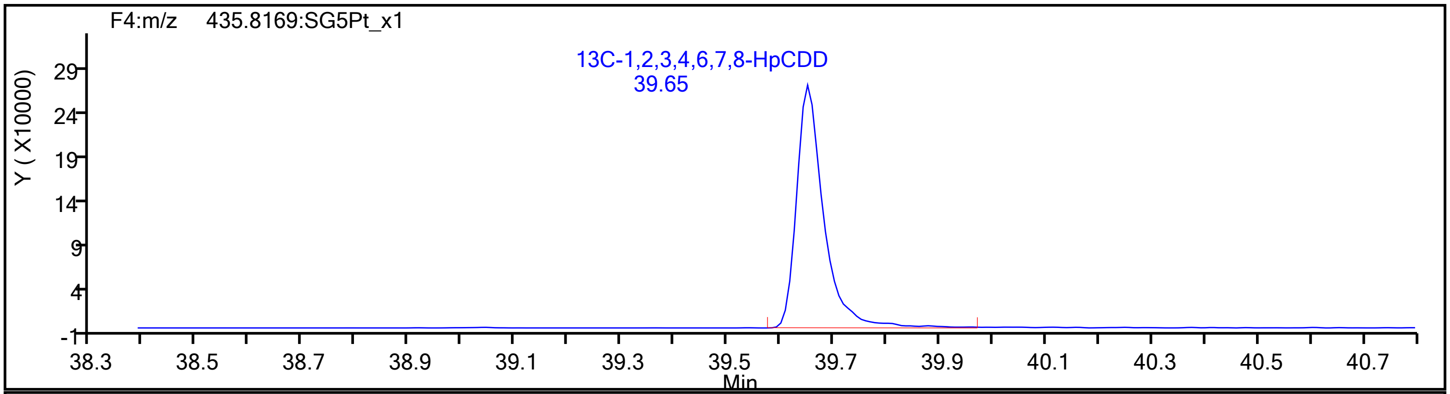

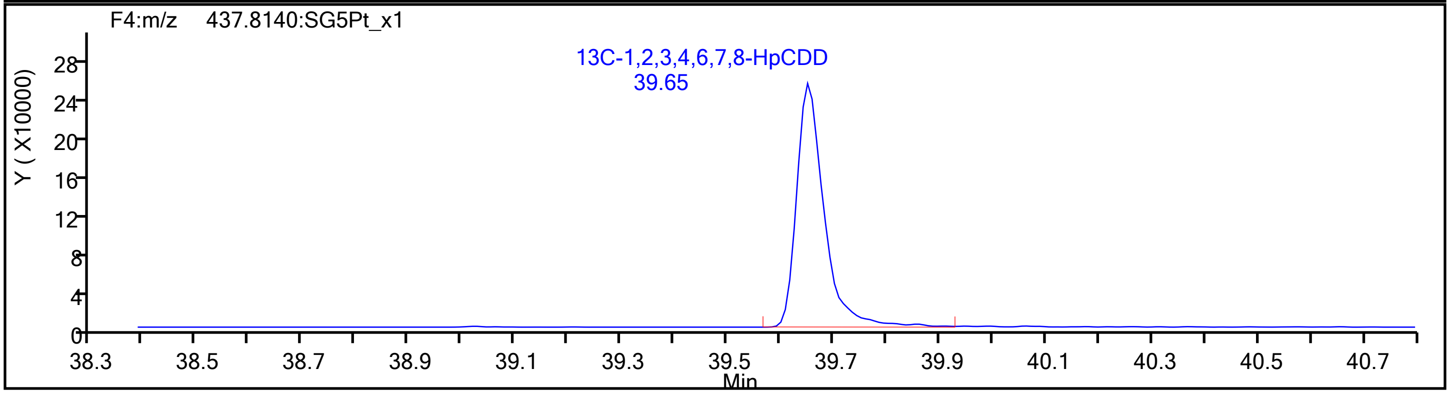

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

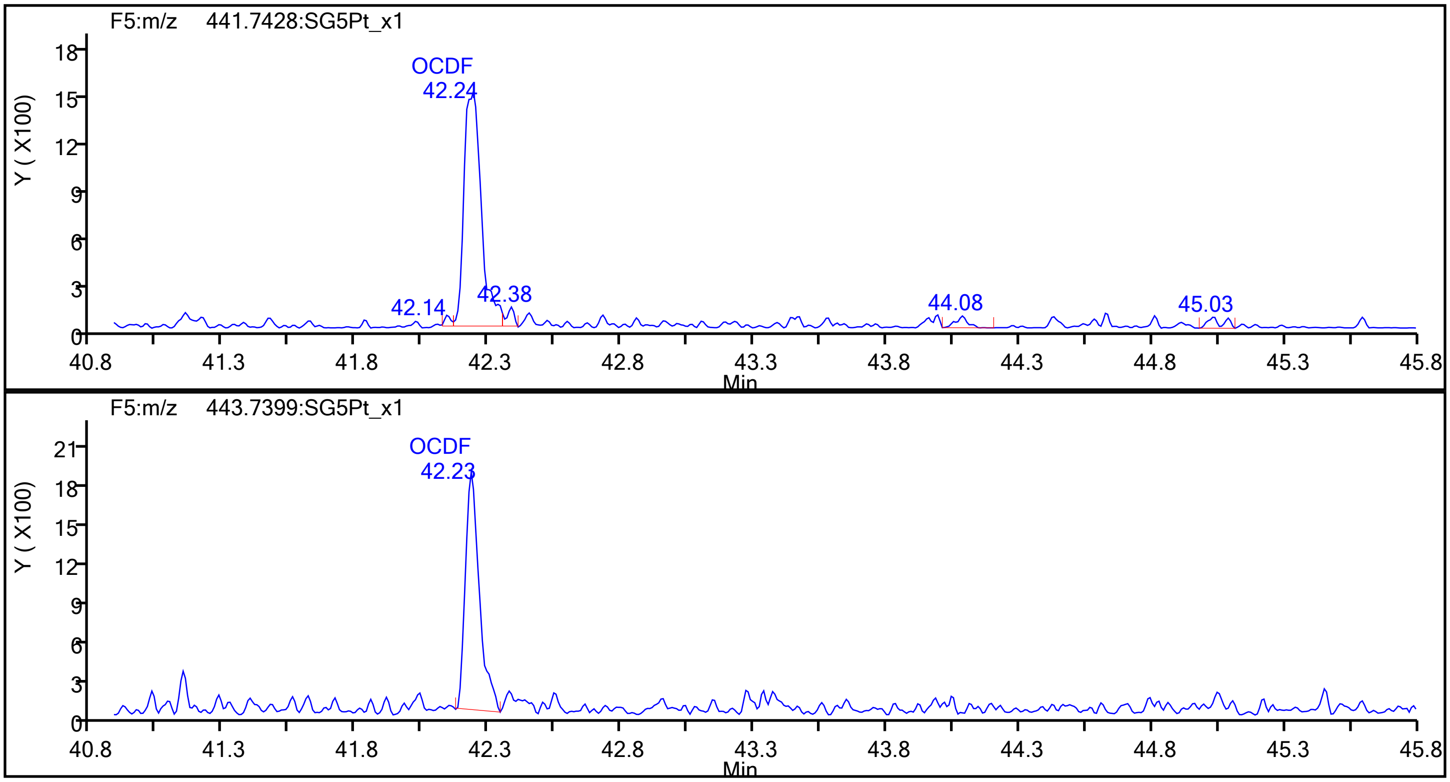

OCDF Standards

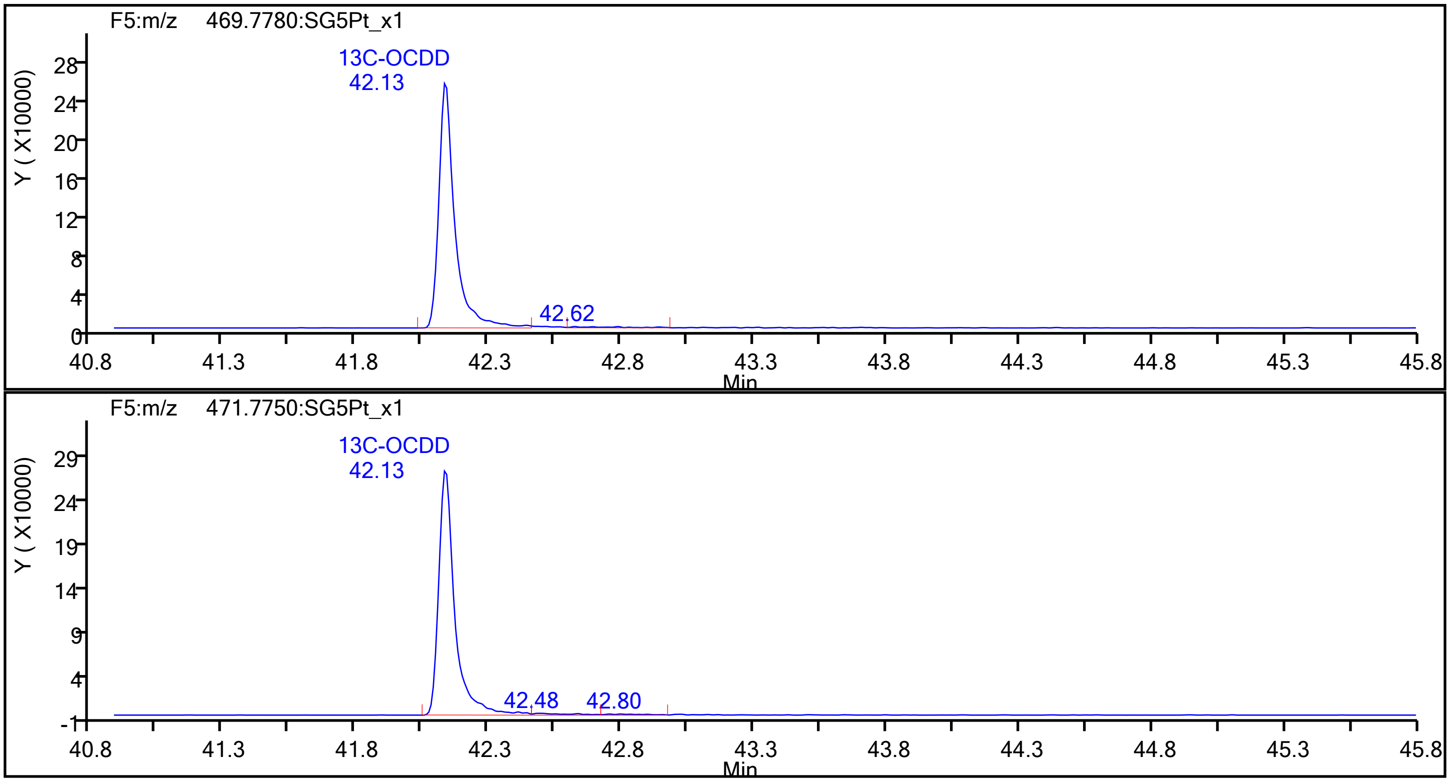

Report Date: 30-Nov-2020 10:50:05 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d
Injection Date: 24-Nov-2020 13:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 434777
Sample Line#: 35
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

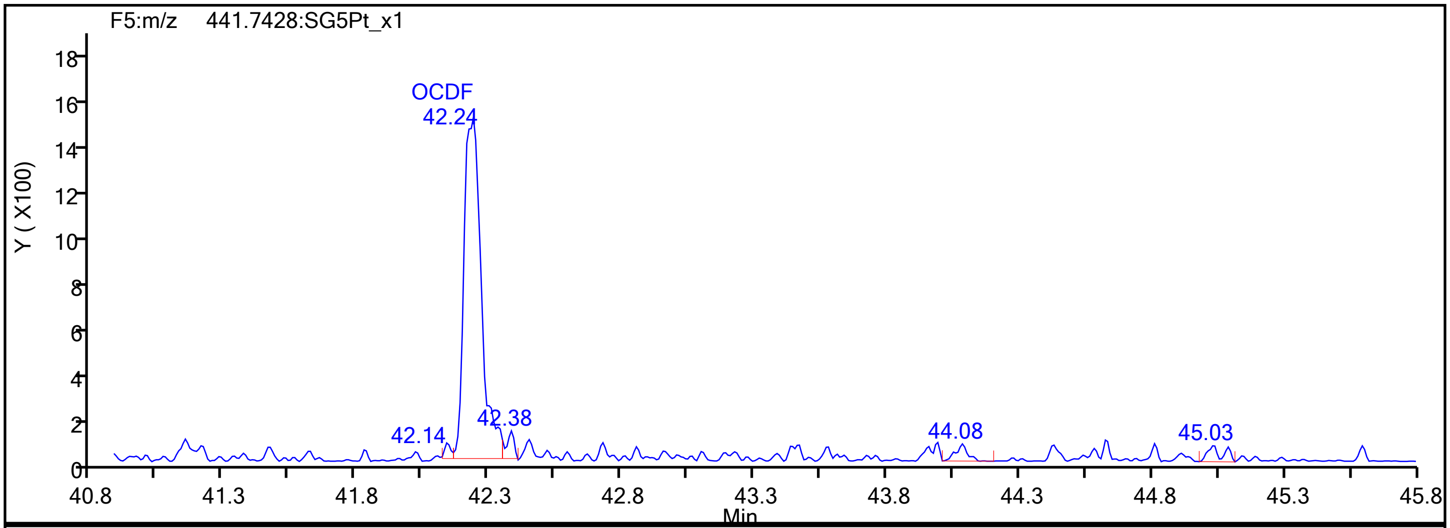

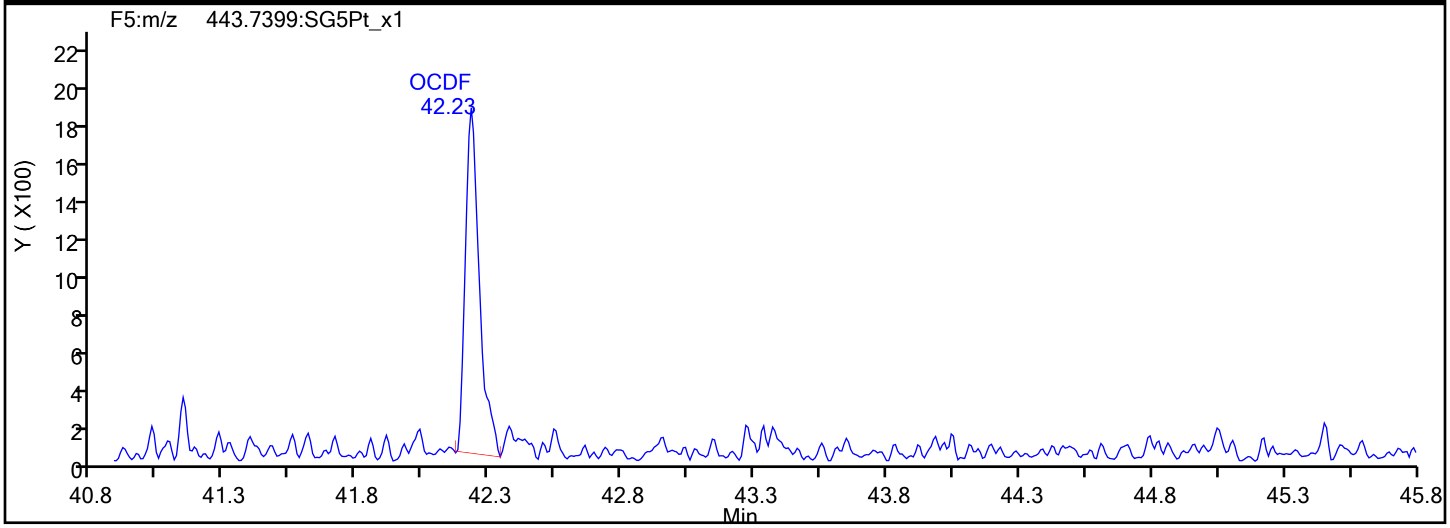

OCDF Interference Mass

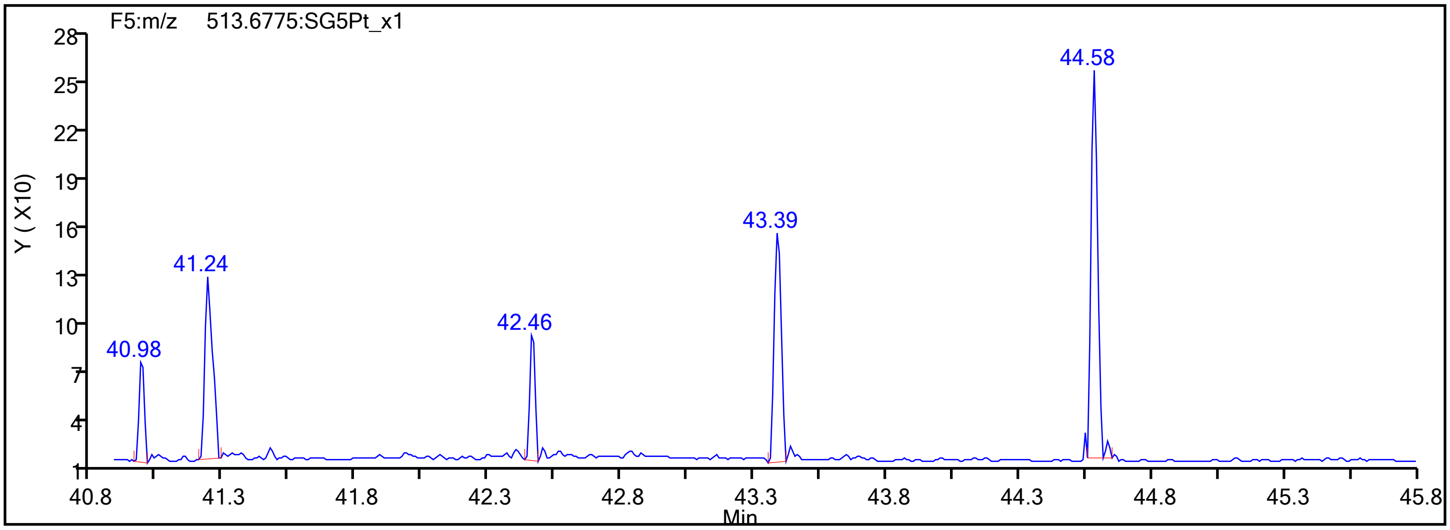

Report Date: 30-Nov-2020 10:50:05　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date: 24-Nov-2020 13:29:00　　Injection Vol: 1.0 ul

Instrument ID: DFS 1　　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 1um

Worklist#: 434777　　Sample Line#: 35

Column Type: DB-5　　Column Dia: 0.32 mm

OCDD

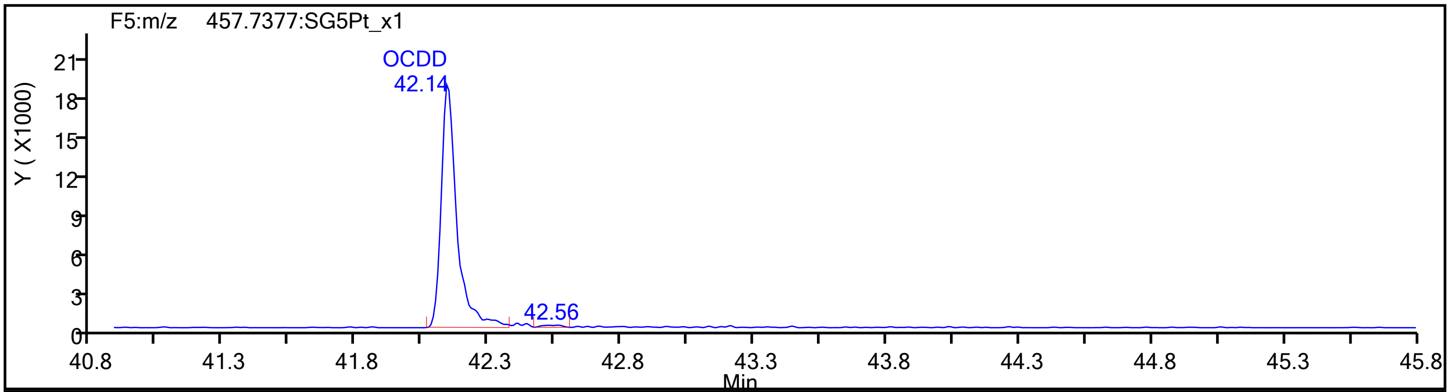

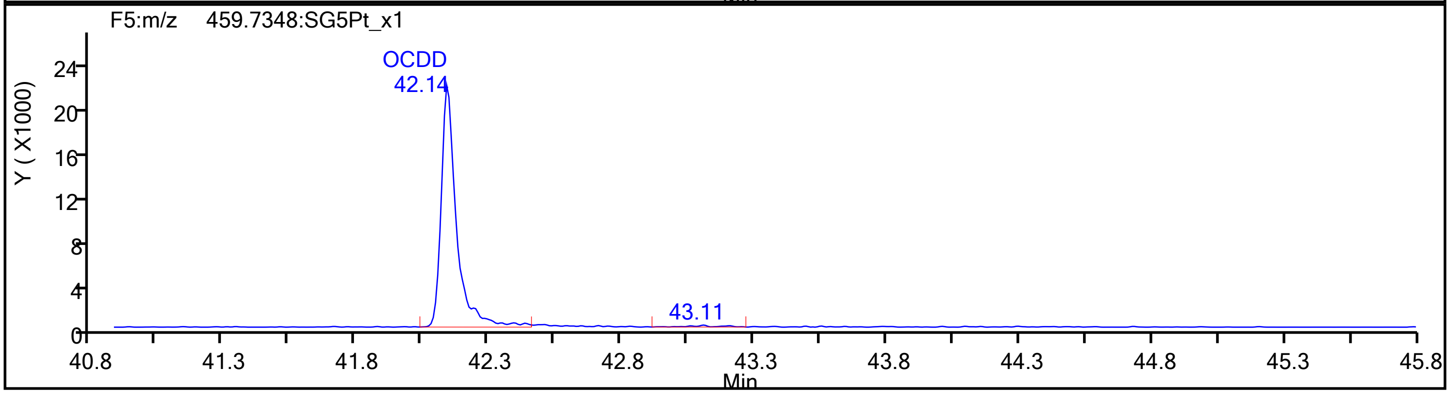

OCDD Standards

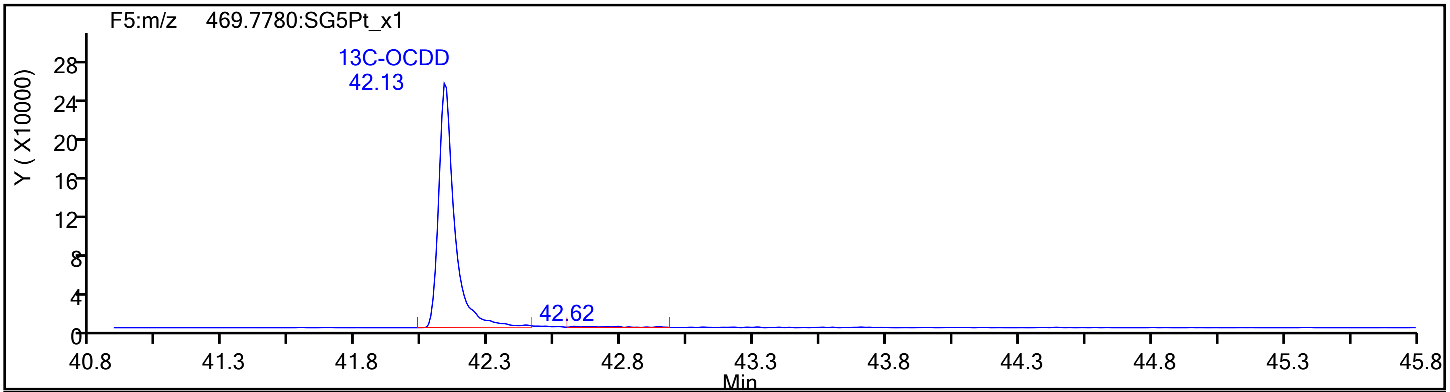

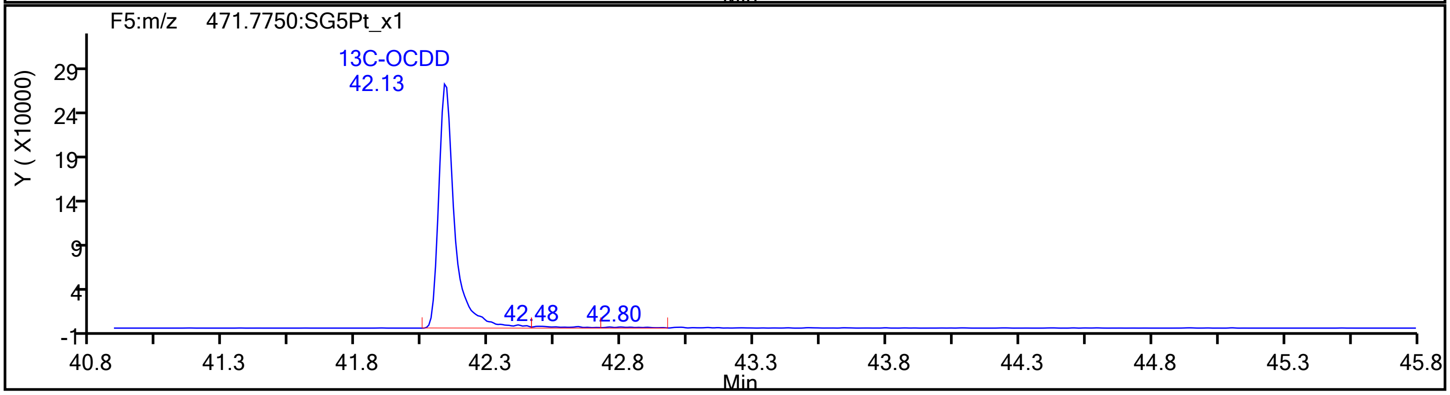

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	434777	Sample Line#:	35
Column Type:	DB-5	Column Dia:	0.32 mm

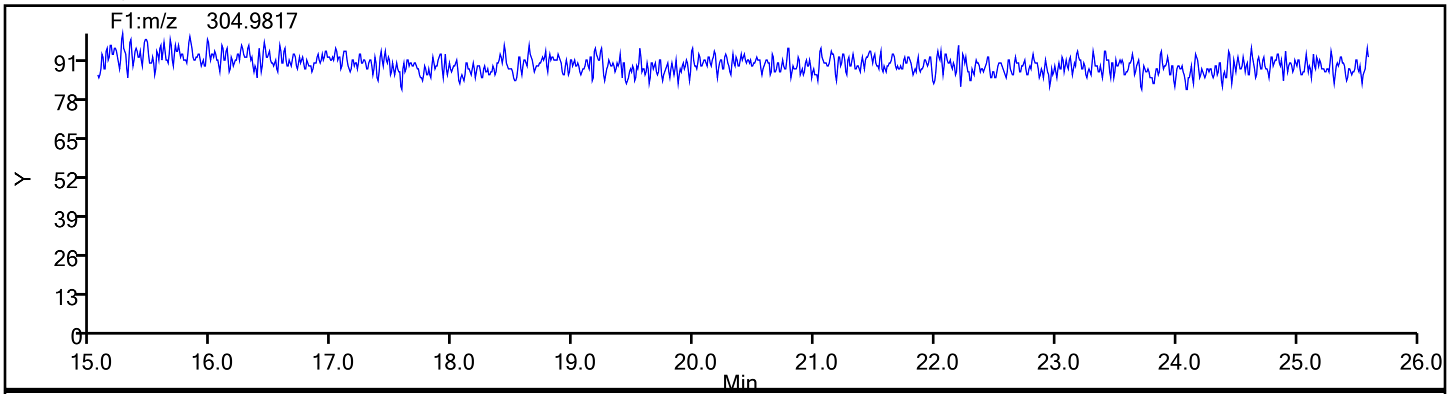

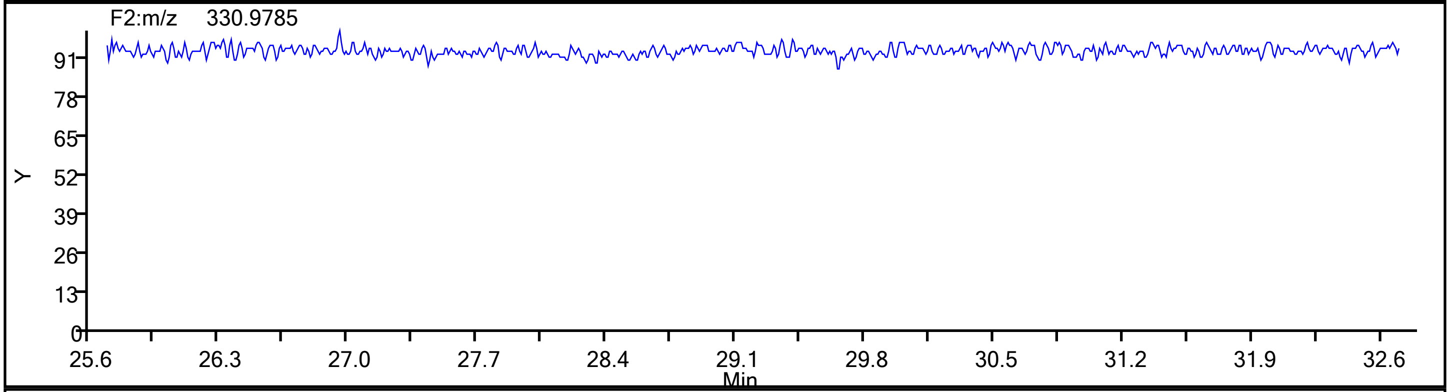

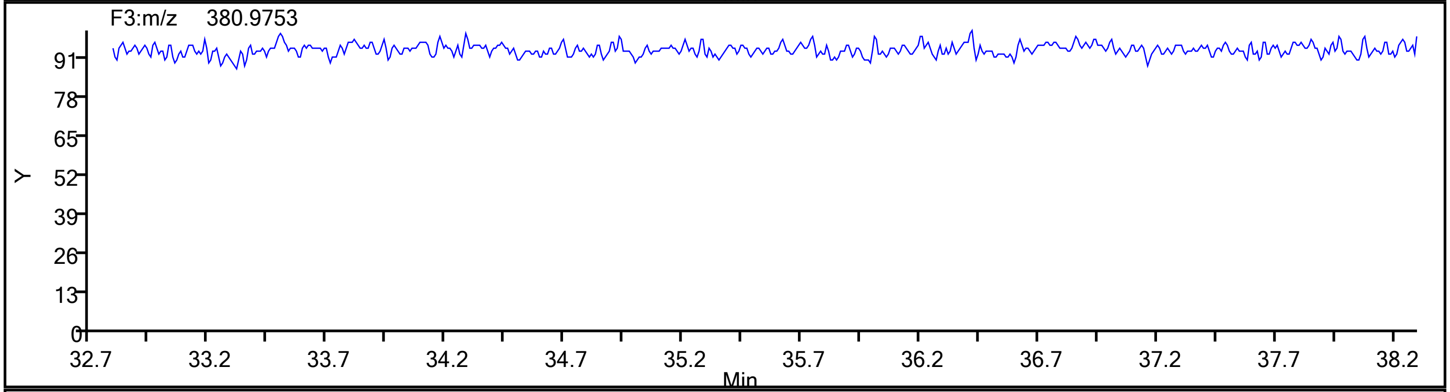

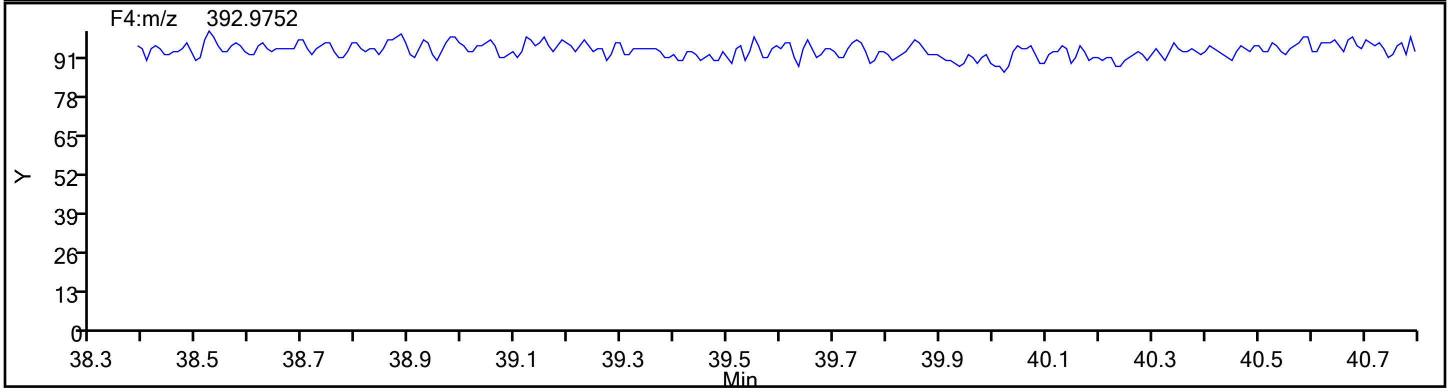

Report Date: 30-Nov-2020 10:50:05 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_40.d

Injection Date: 24-Nov-2020 13:29:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 1um

Worklist#: 434777

Sample Line#: 35

Column Type: DB-5

Column Dia: 0.32 mm

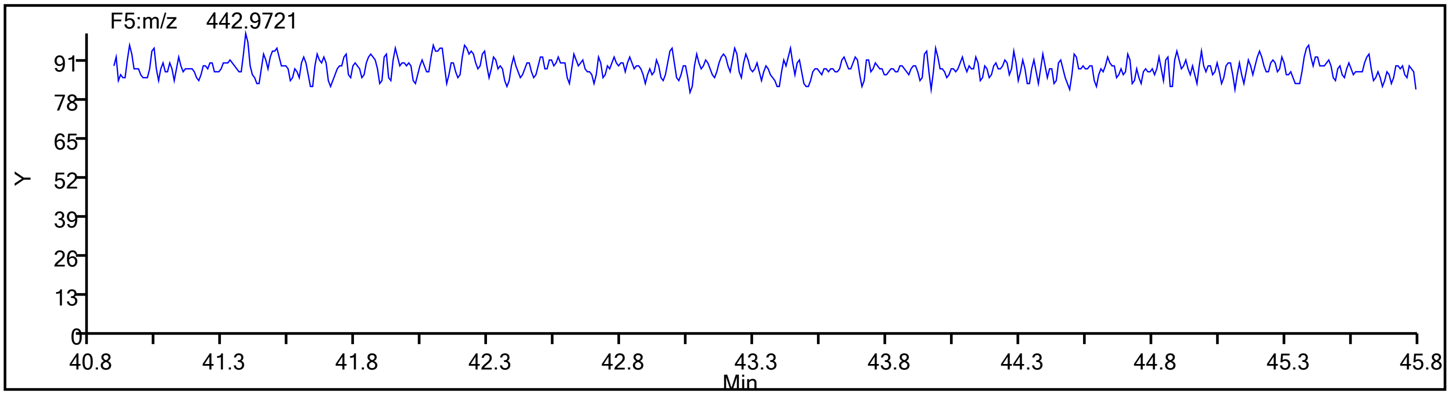

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Client Sample ID: 11215702-Tank #2 1um RA Lab Sample ID: 320-66850-2 RA

Matrix: Water Lab File ID: 30NO2011D2_012.d

Analysis Method: 1613B Date Collected: 11/10/2020 11:00

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1058.6(mL) Date Analyzed: 11/30/2020 19:29

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 436991 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	75	B	9.4	0.71

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	81		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_012.d				
Lims ID:	320-66850-A-2-B				
Client ID:	11215702-Tank #2 1um				
Sample Type:	Client				
Inject. Date:	30-Nov-2020 19:29:35	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-66850-A-2-B				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:38	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.574	212268277	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.754	270411198	0.77	1.5708	81.1	81.1	0.1954	0.1954	81.10	
2,3,7,8-TCDF	16.781	10613180	0.77	0.9943	3.947	3.947	0.0374	0.0374		
D 13C-2,3,7,8-TCDD	15.327	177959304	0.78	0.9834	85.3	85.3	0.7059	0.7059	85.26	
$ 37Cl4-2,3,7,8-TCDD	15.340	86332830		0.9945	40.9	40.9	0.0723	0.0723	102	
2,3,7,8-TCDD	15.340	4893172	0.74	1.2822	2.144	2.144	0.0441	0.0441		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_012.d
Lims ID: 320-66850-A-2-B
Client ID: 11215702-Tank #2 1um
Sample Type: Client
Inject. Date: 30-Nov-2020 19:29:35 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-A-2-B
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.574	15.560	1		93789751	21921755	58139	145347	377		
333.9339	15.574	15.560	1		118478526	27635784	79459	198647	348	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.754	16.779	-2	1.076	117769673	24102528	36080	90200	668		
317.9389	16.754	16.779	-2	1.076	152641525	31269017	24761	61902	1263	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.781	16.792	-1	1.002	4627330	942745	4081	10202	231		
305.8987	16.781	16.792	-1	1.002	5985850	1250421	4156	10390	301	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.327	15.324	0	0.984	77976510	18799311	58139	145347	323		
333.9339	15.327	15.324	0	0.984	99982794	23840822	79459	198647	300	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.340	15.340	0	0.985	86332830	21014685	14244	35610	1475		
2,3,7,8-TCDD											
319.8965	15.340	15.352	-1	1.001	2079327	503197	5229	13072	96		
321.8936	15.340	15.352	-1	1.001	2813845	624755	4419	11047	141	0.74(0.65-0.89)	

Report Date: 01-Dec-2020 08:43:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_012.d

Injection Date: 30-Nov-2020 19:29:35 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 1um

Worklist#: 436991 Sample Line#: 12

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

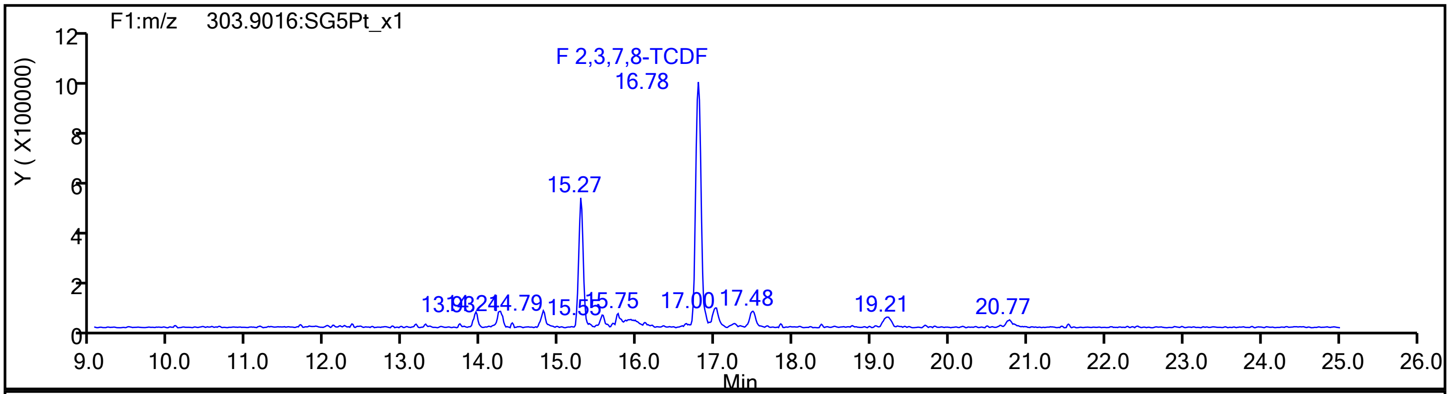

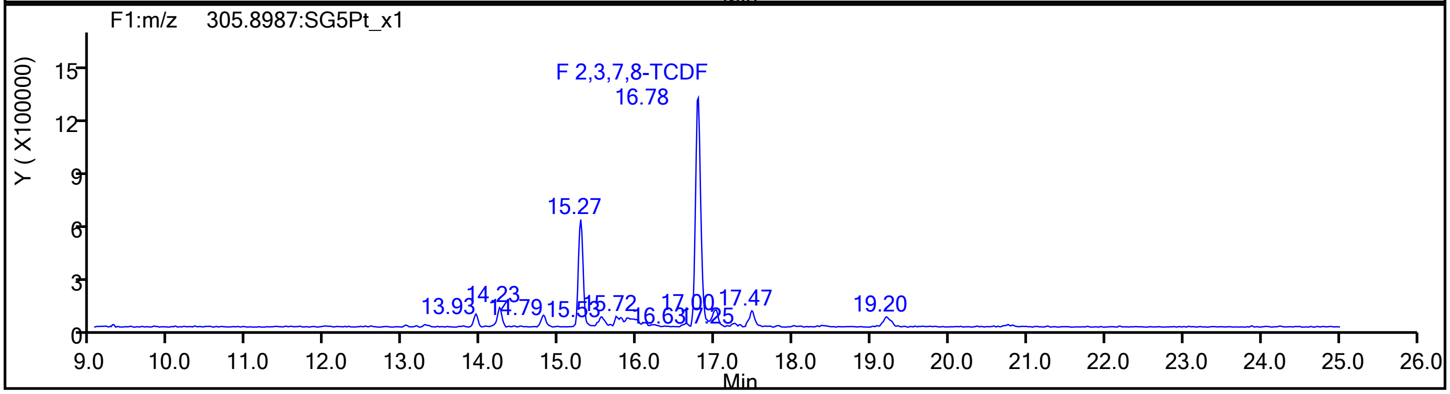

TCDF Standards

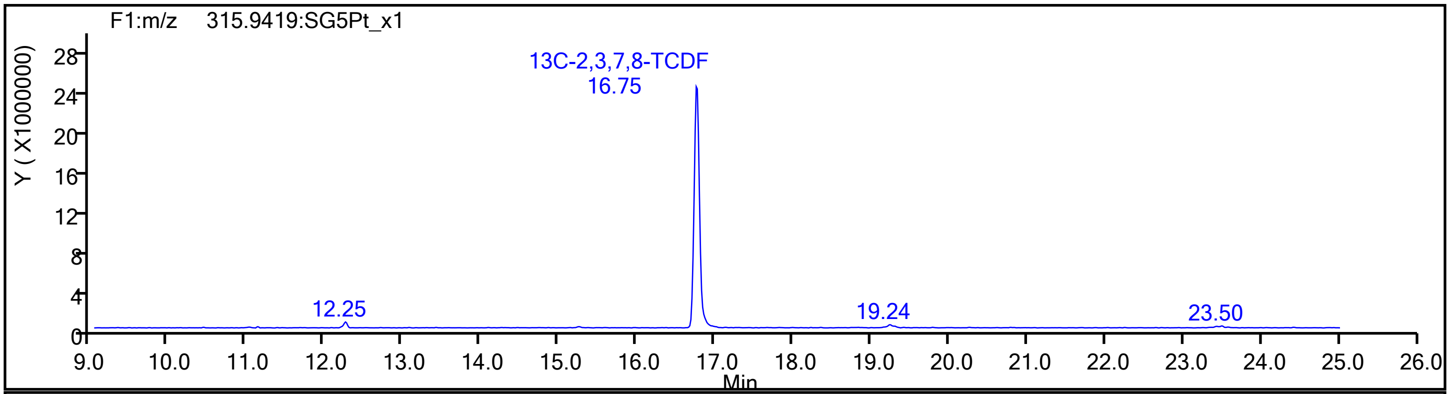

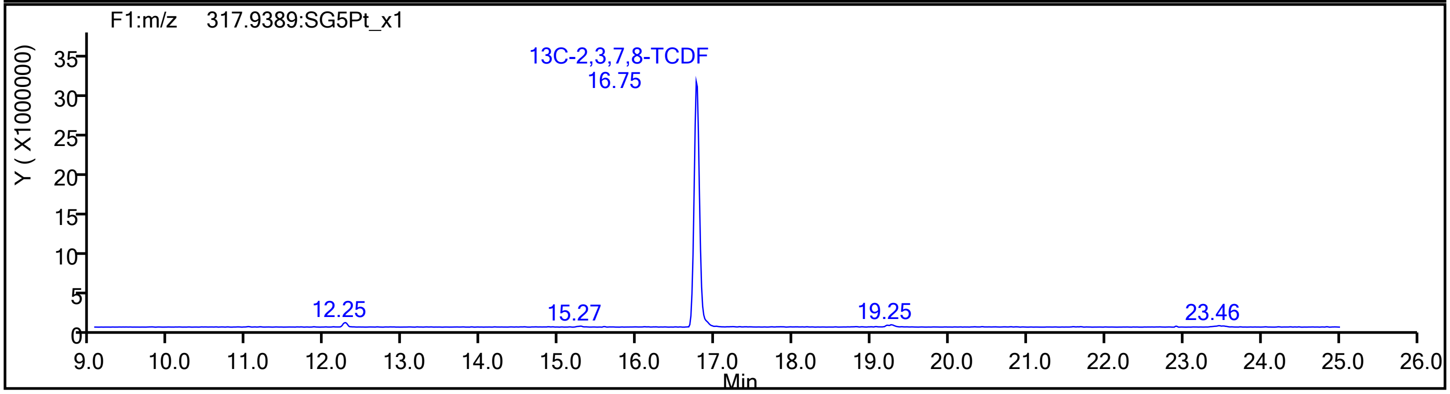

Report Date: 01-Dec-2020 08:43:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_012.d		
Injection Date:	30-Nov-2020 19:29:35	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	436991	Sample Line#:	12
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

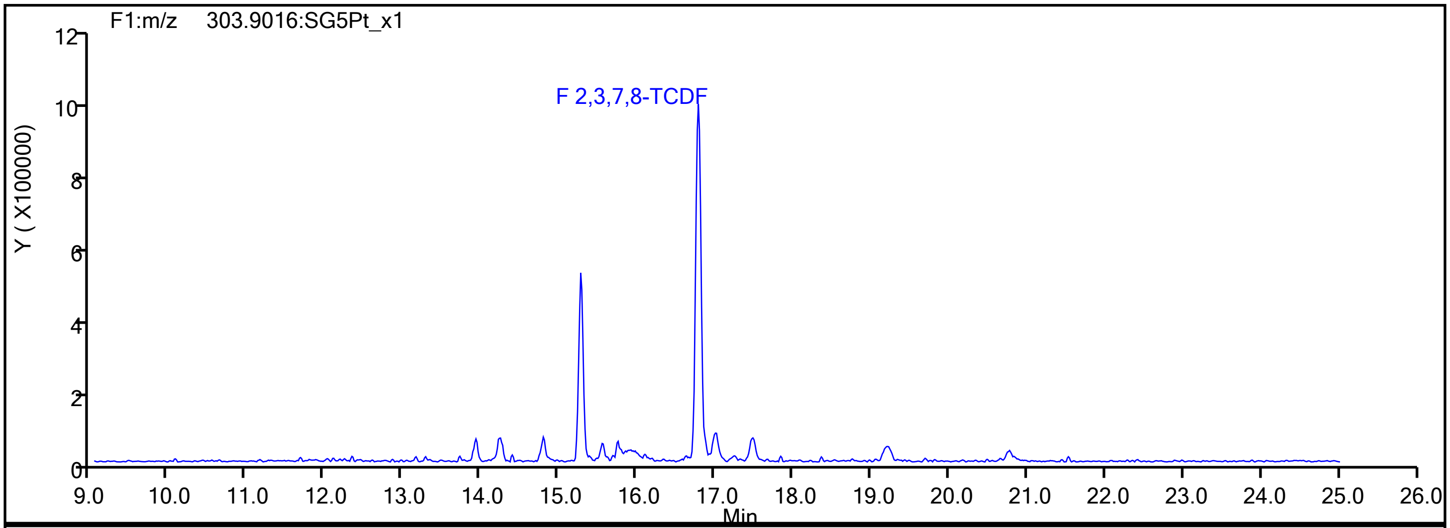

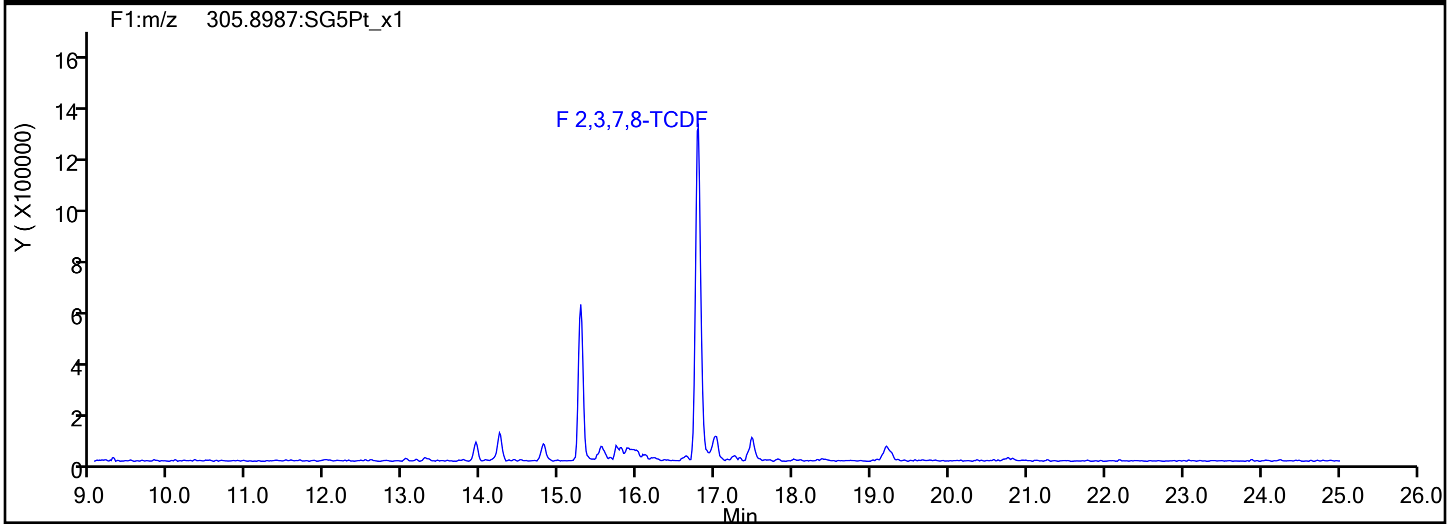

TCDF Interference Mass

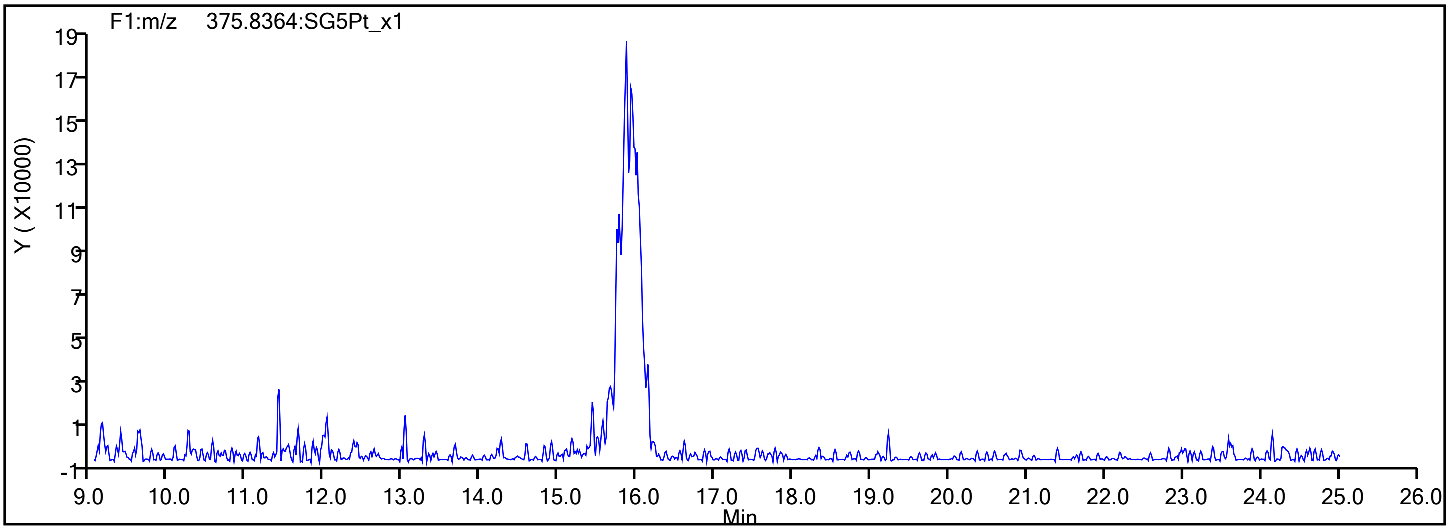

Report Date: 01-Dec-2020 08:43:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_012.d
Injection Date: 30-Nov-2020 19:29:35
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 1um
Worklist#: 436991
Sample Line#: 12
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

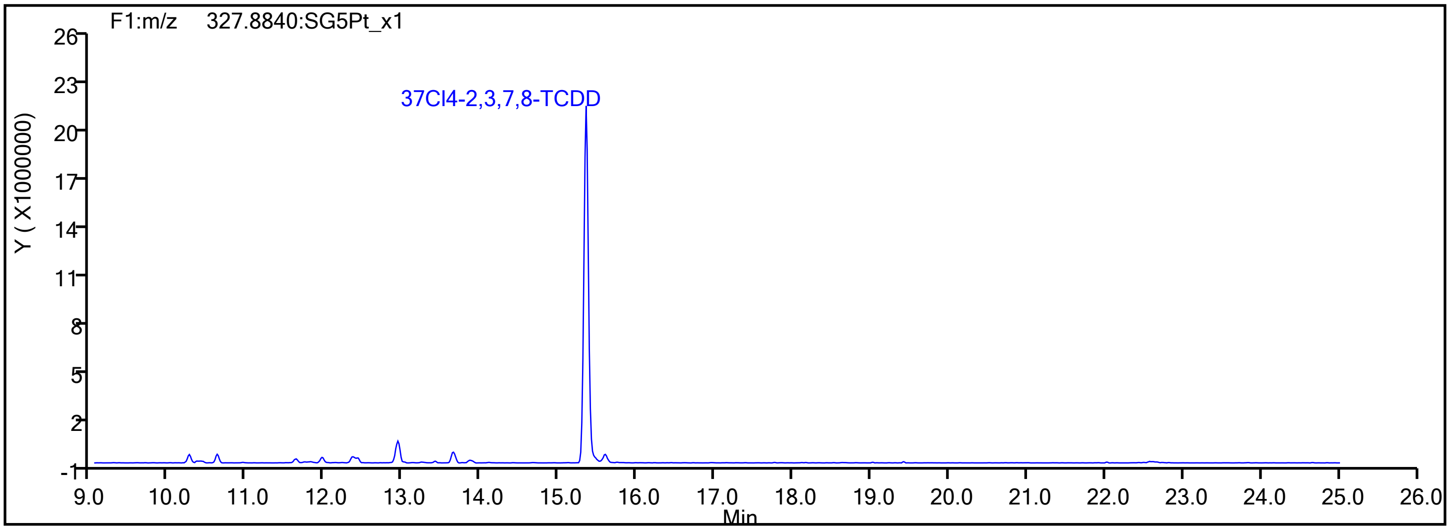

37Cl4-TCDD Standards

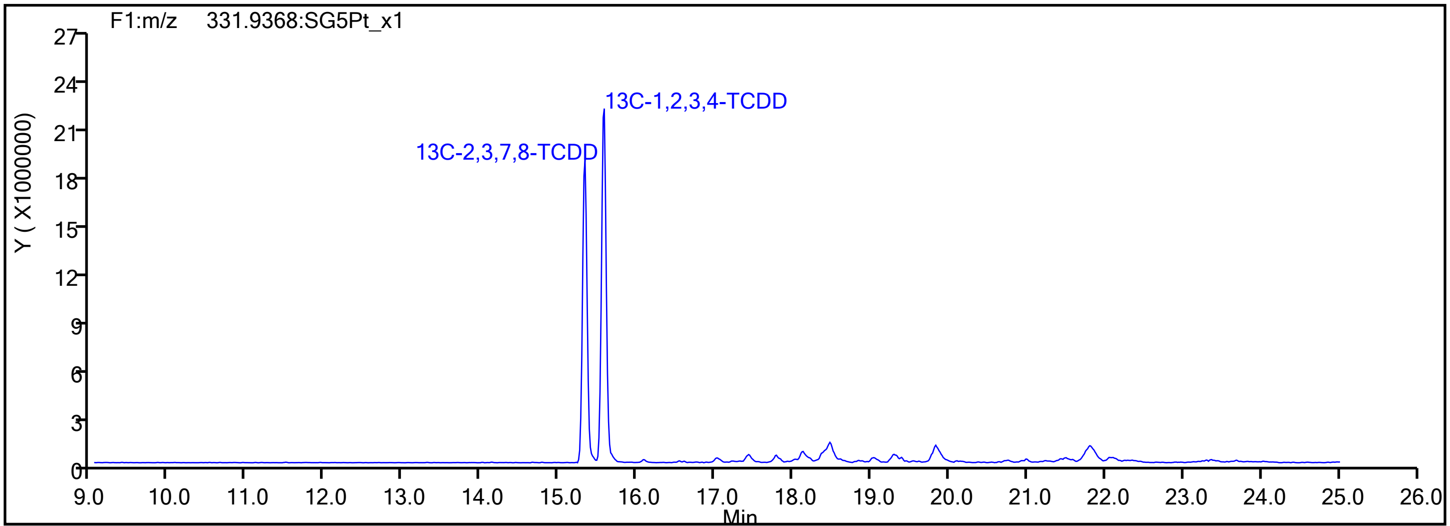

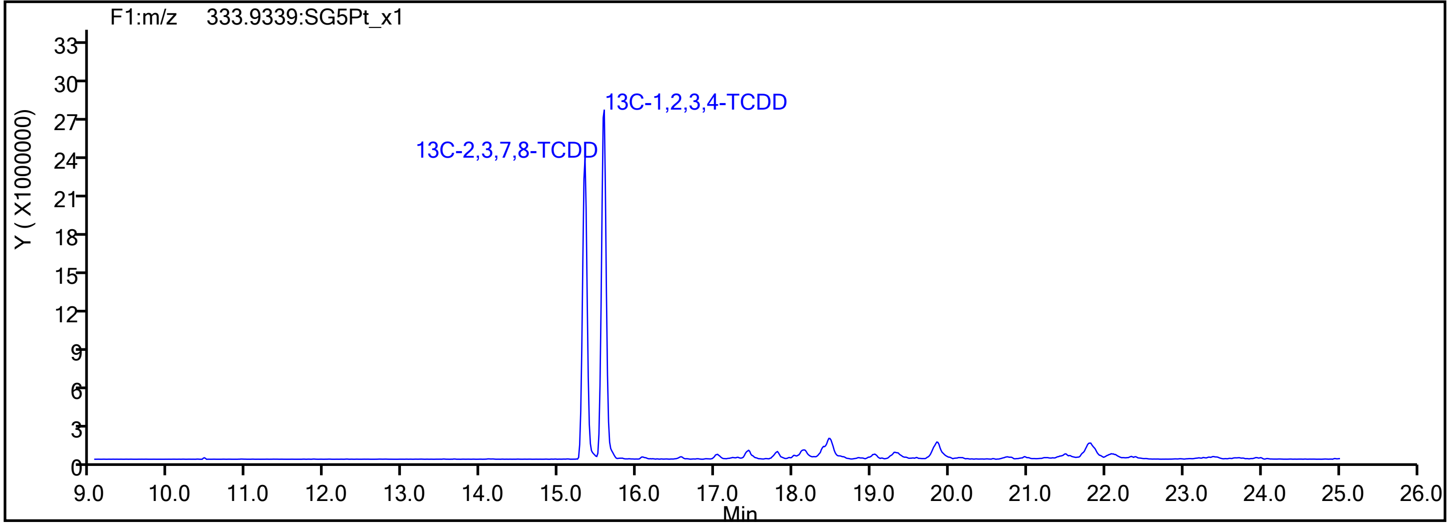

Report Date: 01-Dec-2020 08:43:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_012.d		
Injection Date:	30-Nov-2020 19:29:35	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 1um		
Worklist#:	436991	Sample Line#:	12
Column Type:	DB-225	Column Dia:	0.32 mm

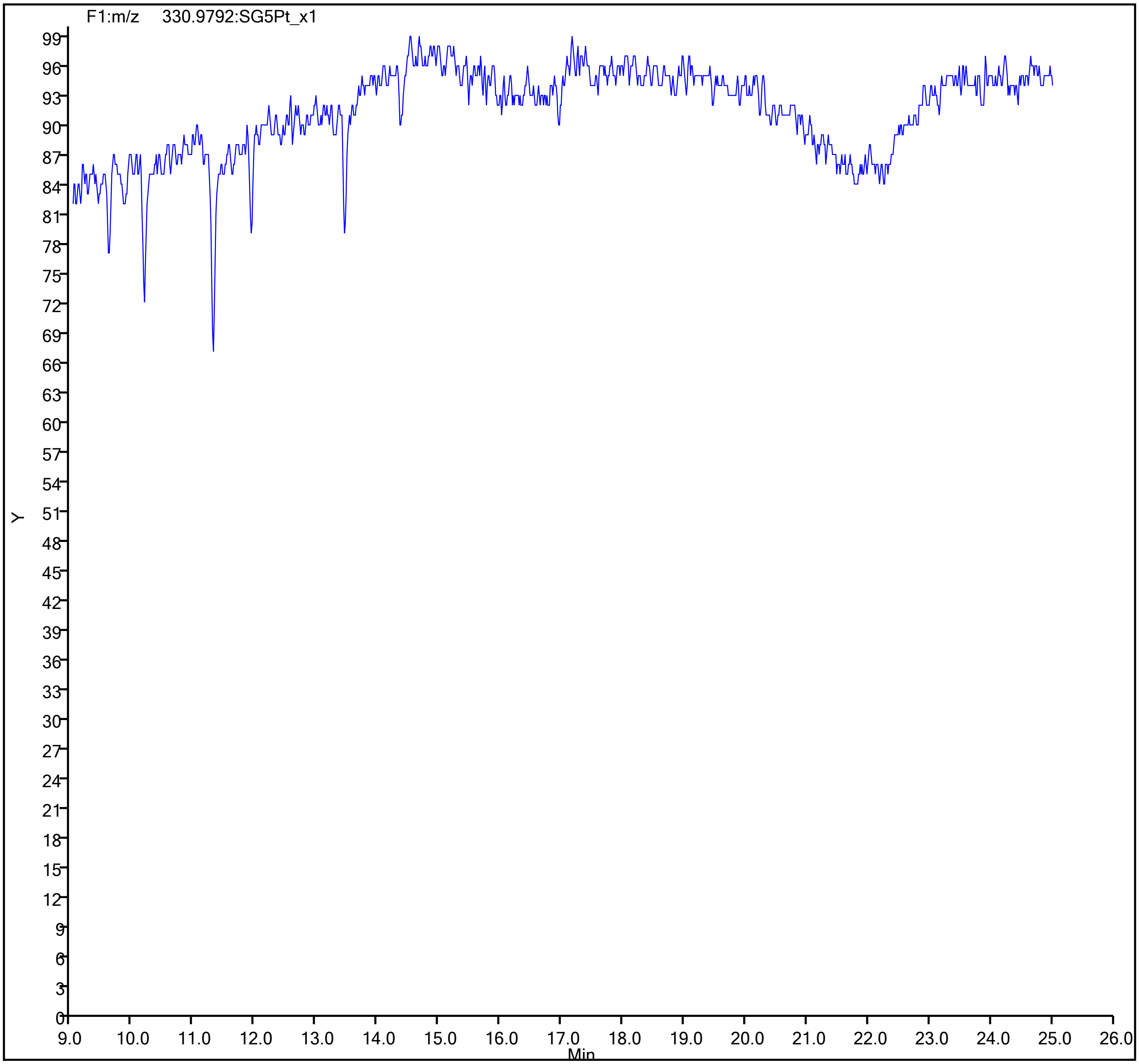

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413246/3	17SE2010D5_3.d
Level 2	IC 320-413246/4	17SE2010D5_4.d
Level 3	IC 320-413246/5	17SE2010D5_5.d
Level 4	IC 320-413246/6	17SE2010D5_6.d
Level 5	IC 320-413246/7	17SE2010D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9215	0.9157	0.8702	0.9028	0.9285	AveID		0.9077				2.5		20.0			
2,3,7,8-TCDD	1.0304	1.0156	0.9803	0.9998	1.0048	AveID		1.0061				1.9		20.0			
1,2,3,7,8-PeCDF	0.9425	0.9098	0.9005	0.9094	0.9115	AveID		0.9147				1.8		20.0			
2,3,4,7,8-PeCDF	1.0017	0.9125	0.9443	0.9536	0.9420	AveID		0.9508				3.4		20.0			
1,2,3,7,8-PeCDD	1.0735	0.9769	0.9618	0.9846	0.9805	AveID		0.9955				4.5		20.0			
1,2,3,4,7,8-HxCDF	1.1432	1.0765	1.0960	1.1207	1.1086	AveID		1.1090				2.3		20.0			
1,2,3,6,7,8-HxCDF	1.1160	1.0662	1.0537	1.0660	1.0588	AveID		1.0721				2.3		20.0			
2,3,4,6,7,8-HxCDF	1.1336	1.0735	1.0607	1.0765	1.0747	AveID		1.0838				2.6		20.0			
1,2,3,4,7,8-HxCDD	1.0496	0.9283	1.0423	1.0084	0.9788	AveID		1.0014				5.0		20.0			
1,2,3,6,7,8-HxCDD	0.9504	0.8671	0.8363	0.8998	0.8972	AveID		0.8902				4.8		20.0			
1,2,3,7,8,9-HxCDD	1.1027	1.0520	1.0426	1.0576	1.0346	AveID		1.0579				2.5		20.0			
1,2,3,7,8,9-HxCDF	1.1588	1.0659	1.0664	1.1010	1.0732	AveID		1.0931				3.6		20.0			
1,2,3,4,6,7,8-HpCDF	1.4212	1.3501	1.3425	1.3603	1.3276	AveID		1.3603				2.6		20.0			
1,2,3,4,6,7,8-HpCDD	1.0332	0.9625	0.9911	1.0116	0.9954	AveID		0.9988				2.6		20.0			
1,2,3,4,7,8,9-HpCDF	1.3865	1.2937	1.3119	1.3185	1.2928	AveID		1.3207				2.9		20.0			
OCDD	1.1948	1.1232	1.1051	1.1253	1.0965	AveID		1.1290				3.4		20.0			
OCDF	1.4223	1.3889	1.3942	1.4424	1.4201	AveID		1.4136				1.6		20.0			
13C-2,3,7,8-TCDF	1.3615	1.3523	1.3350	1.3918	1.3585	Ave		1.3598				1.5		35.0			
13C-2,3,7,8-TCDD	1.0423	1.0161	1.0367	1.0800	1.0927	Ave		1.0536				3.0		35.0			
13C-1,2,3,7,8-PeCDF	1.1189	1.0762	1.1110	1.1519	1.1947	Ave		1.1306				4.0		35.0			
13C-2,3,4,7,8-PeCDF	1.0269	1.0416	1.0237	1.0477	1.1296	Ave		1.0539				4.1		35.0			
13C-1,2,3,7,8-PeCDD	0.8028	0.7562	0.7970	0.8255	0.8607	Ave		0.8084				4.8		35.0			
13C-1,2,3,4,7,8-HxCDF	0.8906	0.9258	0.9204	0.9429	0.9327	Ave		0.9225				2.1		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0270	1.0141	1.0262	1.0567	1.0438	Ave		1.0336				1.6		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9589	0.9509	0.9792	1.0084	0.9894	Ave		0.9773				2.4		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7818	0.8165	0.7577	0.7974	0.8350	Ave		0.7977				3.8		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9690	0.9720	1.0222	1.0401	1.0019	Ave		1.0010				3.1		35.0			
13C-1,2,3,7,8,9-HxCDF	0.8903	0.9031	0.9138	0.9282	0.9412	Ave		0.9153				2.2		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8344	0.8296	0.8494	0.8655	0.8742	Ave		0.8506				2.3		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8770	0.8586	0.8797	0.9047	0.9163	Ave		0.8873				2.6		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7298	0.7458	0.7430	0.7948	0.7956	Ave		0.7618				4.1		35.0			
13C-OCDD	0.6076	0.5869	0.6272	0.6389	0.6831	Ave		0.6287				5.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	0.9314	0.9786	1.0629	1.1339	1.1371	Ave		1.0488				8.8					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413246/3	17SE2010D5_3.d
Level 2	IC 320-413246/4	17SE2010D5_4.d
Level 3	IC 320-413246/5	17SE2010D5_5.d
Level 4	IC 320-413246/6	17SE2010D5_6.d
Level 5	IC 320-413246/7	17SE2010D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	435861	1708632	8215614	34873455	208980759	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	373087	1423835	7186766	29967613	181906530	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1831854	6755406	35377066	145371529	902066653	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1786782	6557191	34181205	138637753	881532861	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1497052	5096638	27105714	112792500	699080341	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	1347531	5051863	26528941	112104497	708040990	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	1516975	5480754	28435765	119502715	756804000	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	1438567	5174349	27314505	115165865	728098205	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1086110	3841879	20769529	85297387	559642002	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1218876	4272300	22482418	99286402	615512540	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1277610	4768543	24401221	103076569	650702045	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	1365563	4879551	25630034	108414785	691727822	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1569431	5677563	29988985	124894209	794756968	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1199192	4188952	22930767	97091283	624600336	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	1339219	4890701	25636290	111173202	704300587	2.50	10.0	50.0	200	1000
OCDD		AveID	1921704	6682705	36458371	152532525	1025752146	5.00	20.0	100	400	2000
OCDF		AveID	2287654	8263927	45999109	195516483	1328467600	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	94597447	93295703	94412734	96572003	112538942	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	72418737	70100427	73314161	74937692	90520287	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	77742057	74247718	78572668	79929046	98967595	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	71348405	71861705	72394702	72693510	93576375	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	55779906	52169753	56361860	57281119	71300628	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	47151495	46927290	48411968	50016942	63870758	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	54372821	51405634	53975320	56052859	71480069	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	50763245	48201659	51503814	53491599	67749621	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	41391638	41387059	39854770	42294958	57179178	100	100	100	100	100

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	51300838	49272149	53764731	55171129	68606469	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	47135979	45779728	48067141	49233772	64454067	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	44172724	42054304	44675630	45908363	59864107	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	46427849	43522391	46274068	47987052	62747060	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	38635465	37805388	39083845	42158862	54480485	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	64335649	59498409	65984325	67776385	93549216	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	323571	1350233	7516852	31470753	188393047	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User	Sample Size
1	17SE2010D5_1	WDM HRDXNCP_00042	WDM 091720	Tray01:1	Dioxin		AJS	1.000000
2	17SE2010D5_2	Solvent Blank C-14	SB 091720	Tray01:3	---		AJS	1.000000
3	17SE2010D5_3	CS-2 HRDXNL2_00030	IC 091720	Tray01:4	Dioxin		AJS	1.000000
4	17SE2010D5_4	CS-3 HRDXNL3_00028	IC 091720A	Tray01:5	Dioxin		AJS	1.000000
5	17SE2010D5_5	CS-4 HRDXNL4_00095	IC 091720B	Tray01:2	Dioxin		AJS	1.000000
6	17SE2010D5_6	CS-5 HRDXNL5_00031	IC 091720C	Tray01:6	Dioxin		AJS	1.000000
7	17SE2010D5_7	CS-6 HRDXNL6_00027	IC 091720D	Tray01:7	Dioxin		AJS	1.000000
8	17SE2010D5_8	Solvent Blank C-14	SB 091720A	Tray01:3	---		AJS	1.000000
9	17SE2010D5_9	ICV HRDXNIC_00046	ICV 091720	Tray01:8	Dioxin		AJS	1.000000

logfile checked
9-17-20 ALM

Units	MS File	Inlet File	Inject Volume	Process
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck

Process Options	Action On Error	s5
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:09:06 Pacific Daylight Time

M 292.9824 R 11902

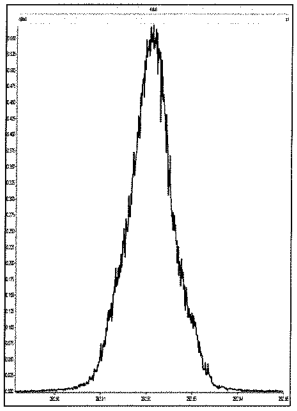

M 304.9824 R 12073

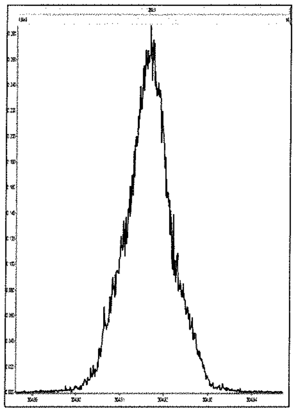

M 318.9792 R 12254

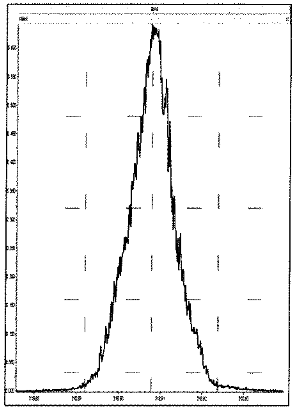

M 330.9792 R 11959

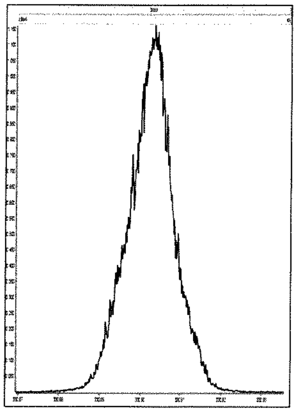

M 342.9792 R 11962

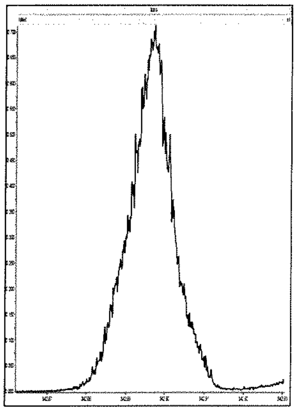

M 354.9792 R 11736

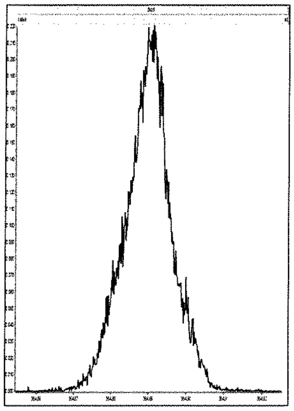

M 366.9792 R 11417

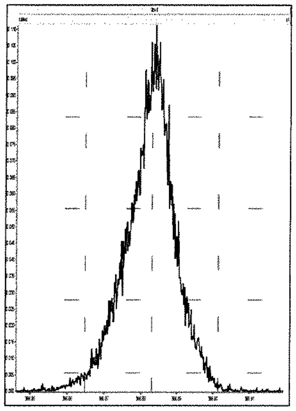

M 380.9760 R 11261

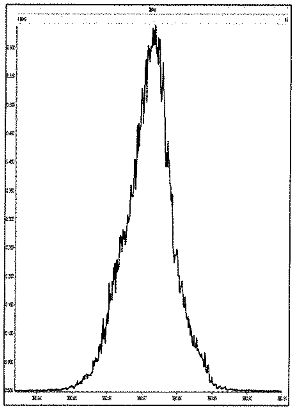

M 392.9760 R 11466

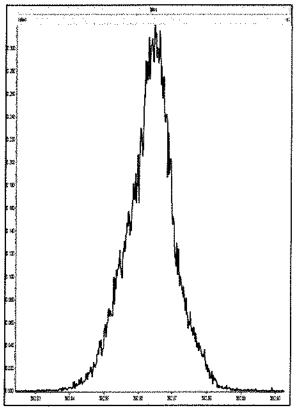

M 404.9760 R 11521

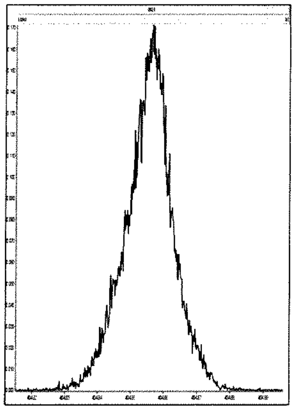

M 416.9760 R 11467

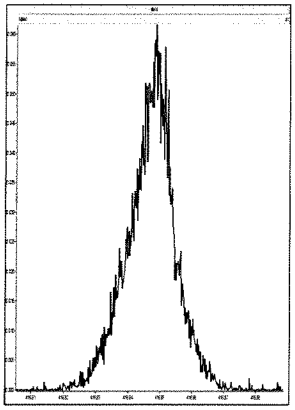

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:09:26 Pacific Daylight Time

M 318.9792 R 12371

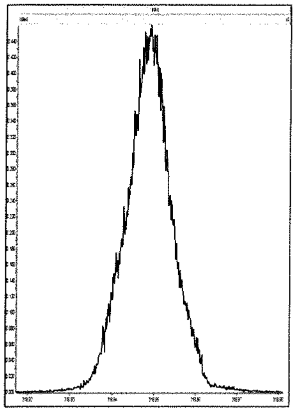

M 330.9792 R 11961

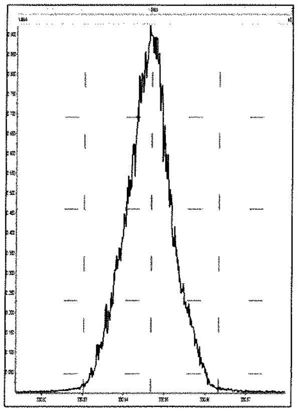

M 342.9792 R 11734

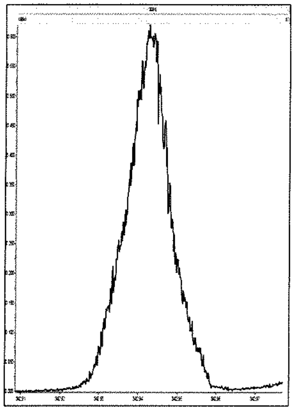

M 354.9792 R 12077

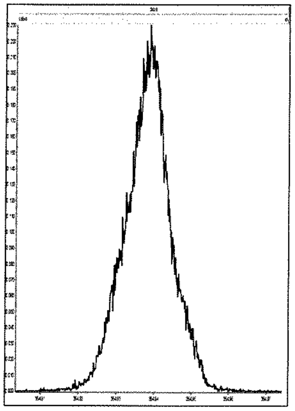

M 366.9792 R 11572

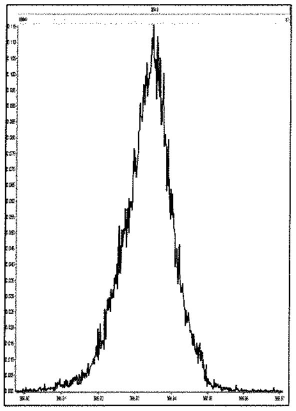

M 380.9760 R 11571

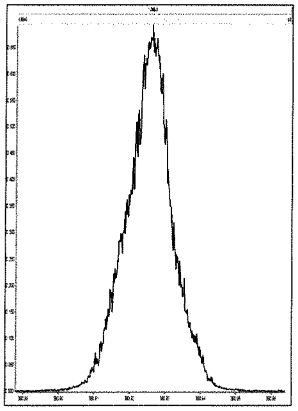

M 392.9760 R 11682

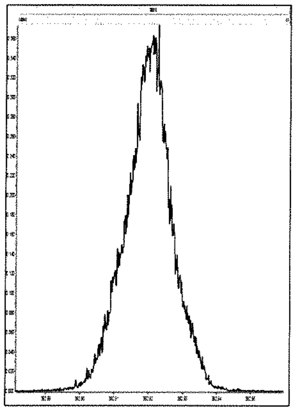

M 404.9760 R 11846

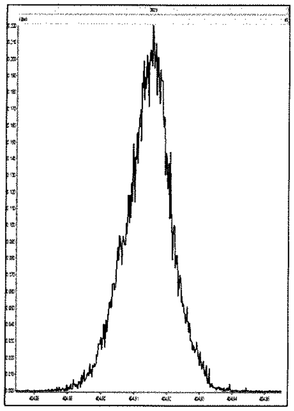

M 416.9760 R 12196

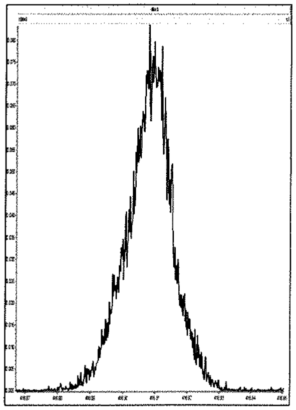

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:10:05 Pacific Daylight Time

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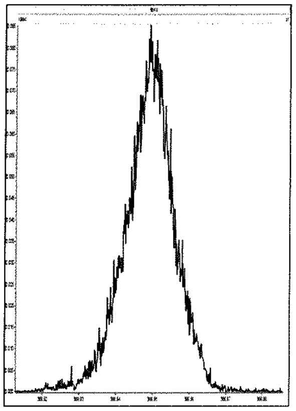
M 366.9792 R 11631

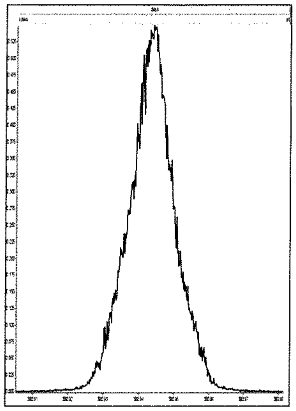
M 380.9760 R 11907

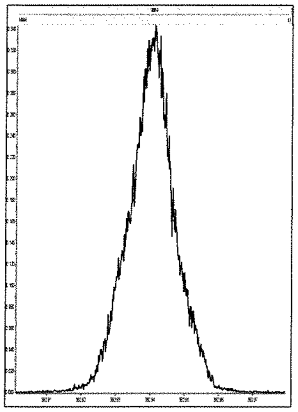
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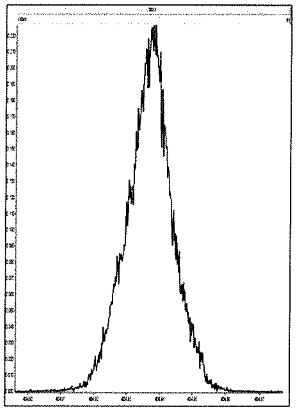
M 404.9760 R 11847

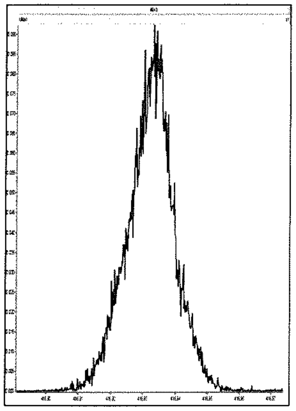
M 416.9760 R 12079

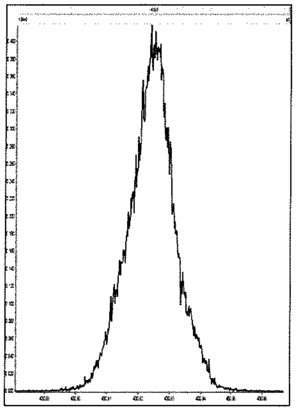
M 430.9728 R 11574

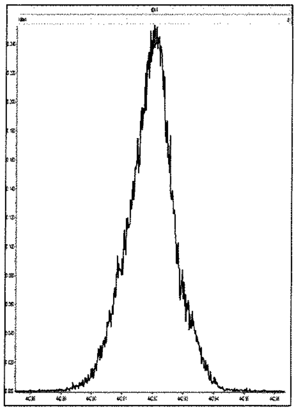
M 442.9728 R 11847

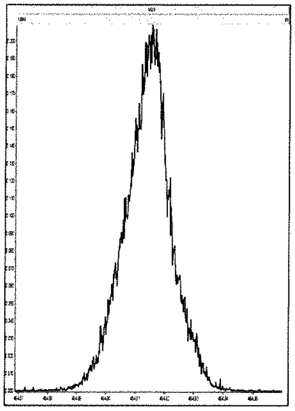
M 454.9728 R 11789

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:10:33 Pacific Daylight Time

M 380.9760 R 11904

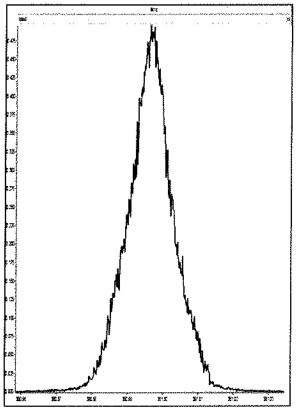

M 392.9760 R 12079

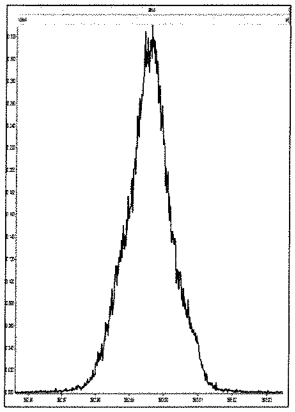

M 404.9760 R 11962

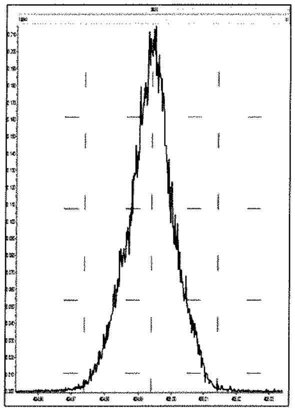

M 416.9760 R 12253

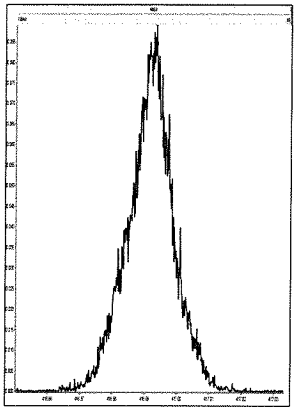

M 430.9728 R 12197

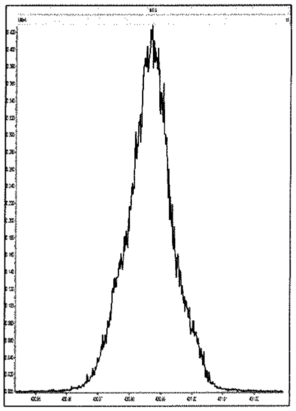

M 442.9728 R 11468

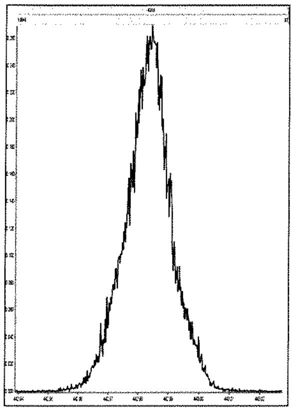

M 454.9728 R 12022

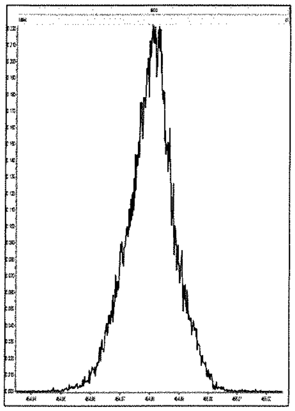

M 466.9728 R 12316

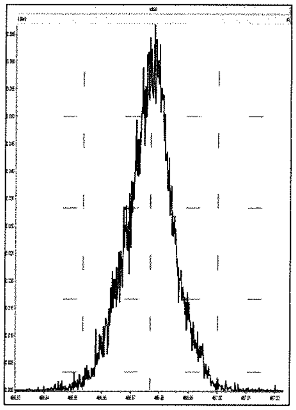

M 480.9696 R 11308

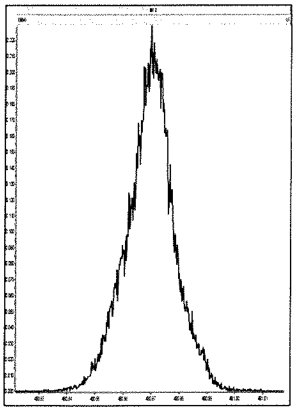

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:11:09 Pacific Daylight Time

M 380.9760 R 12018

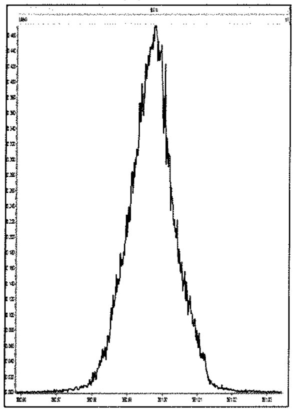

M 392.9760 R 11907

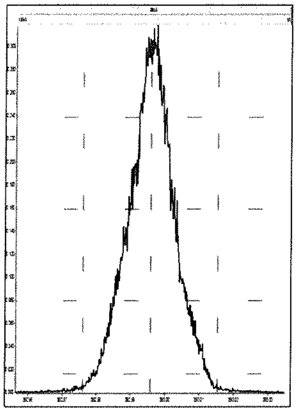

M 404.9760 R 12255

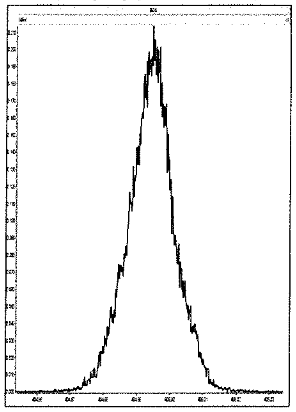

M 416.9760 R 12076

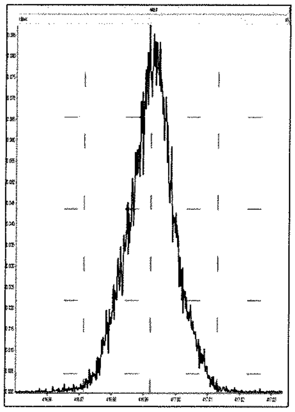

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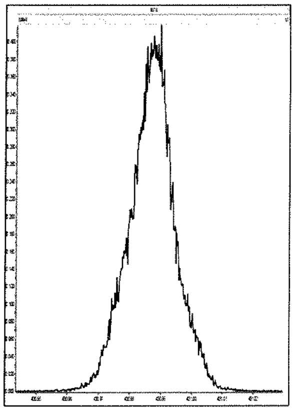

M 442.9728 R 12255

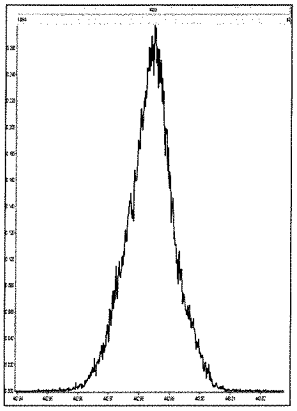

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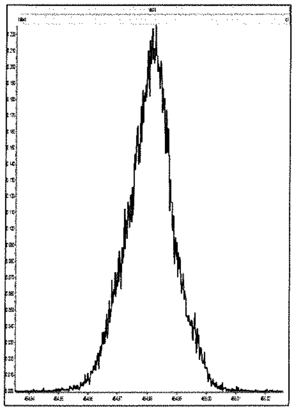

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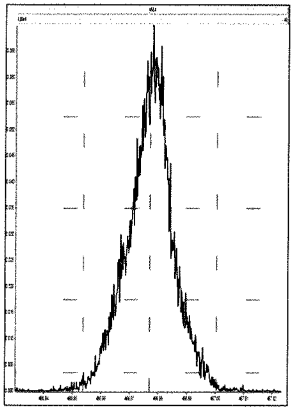

M 480.9696 R 11792

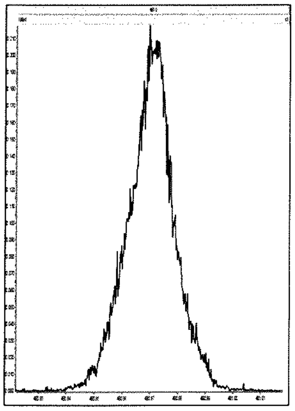

M 492.9696 R 11960

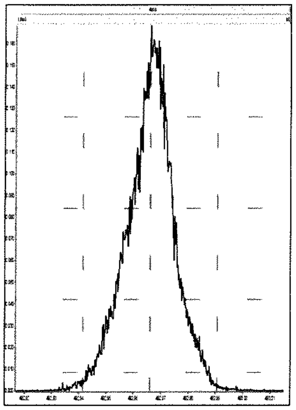

M 504.9696 R 11364

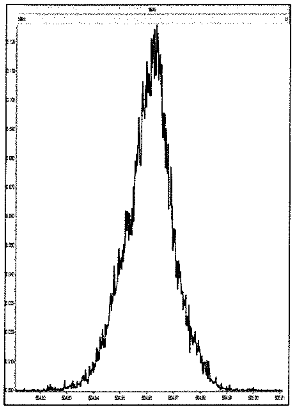

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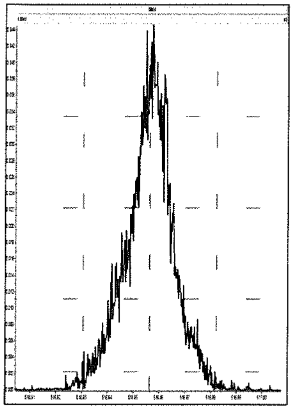

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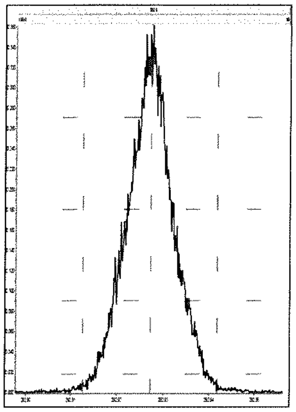

M 304.9824 R 12254
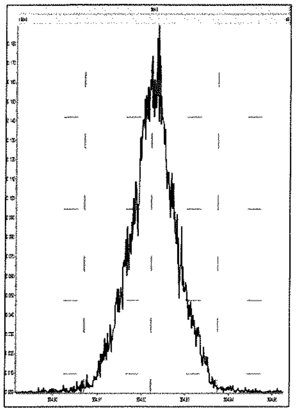

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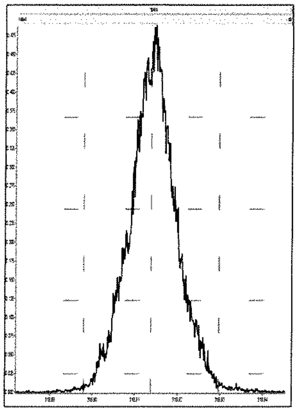

M 330.9792 R 11850
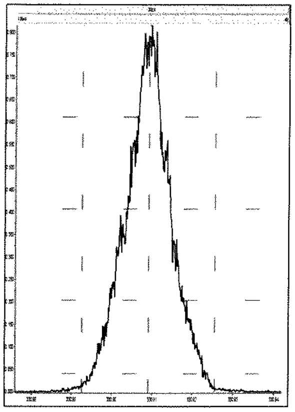

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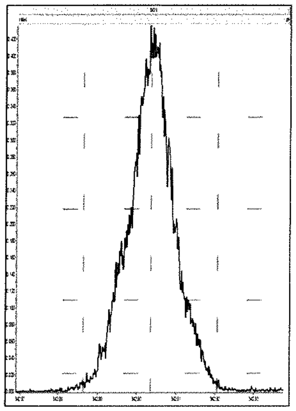

M 354.9792 R 12079
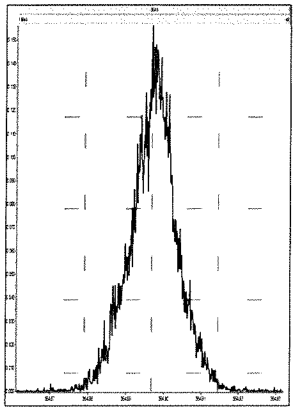

M 366.9792 R 11672
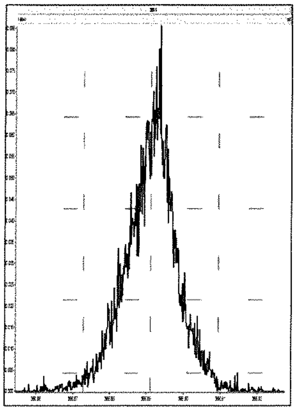

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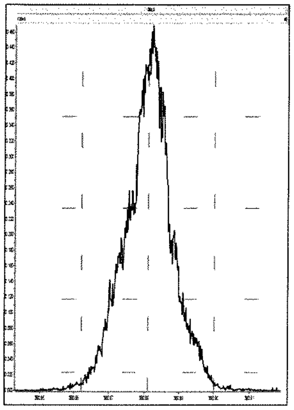

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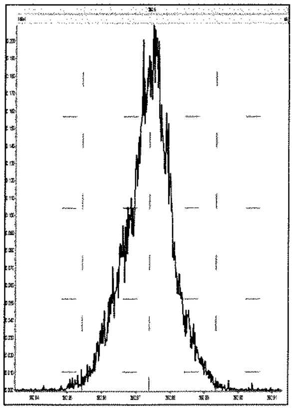

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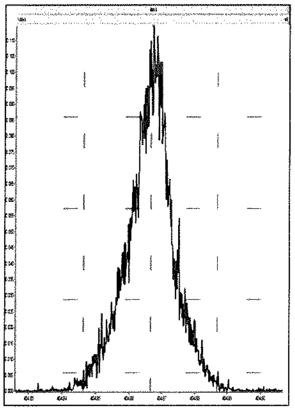

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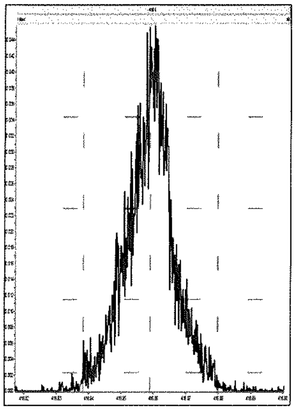

M 318.9792 R 11904
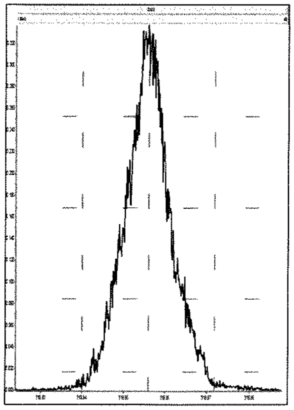

M 330.9792 R 12288
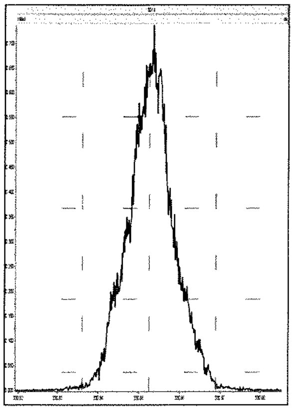

M 342.9792 R 11494
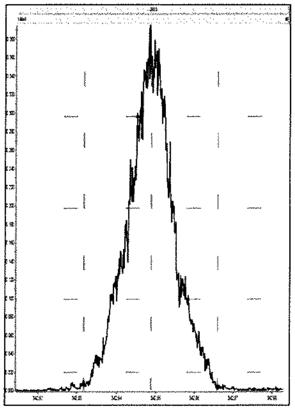

M 354.9792 R 12345
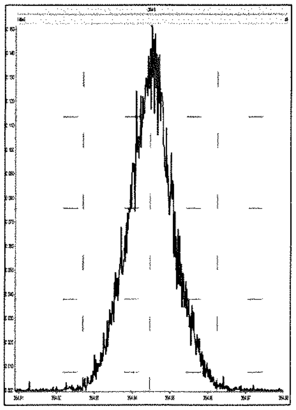

M 366.9792 R 12469
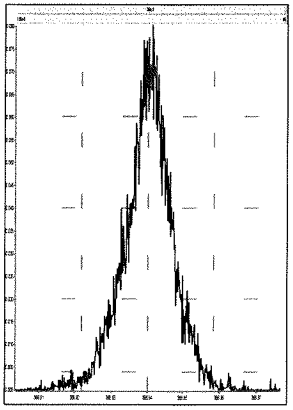

M 380.9760 R 11737

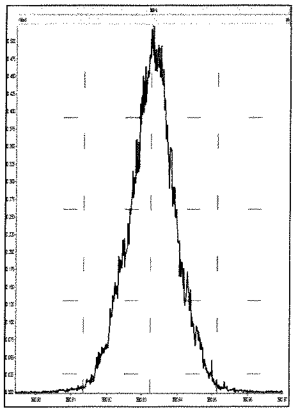

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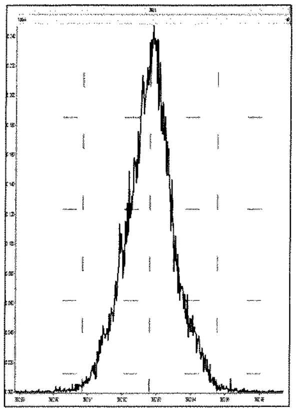

M 404.9760 R 12255

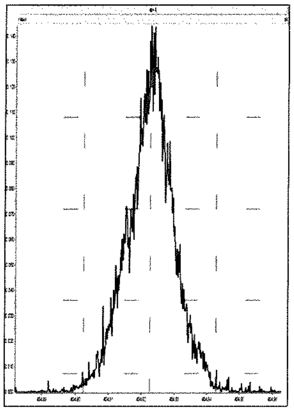

M 416.9760 R 13440

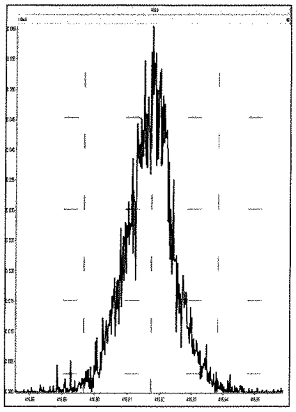

M 366.9792 R 12854

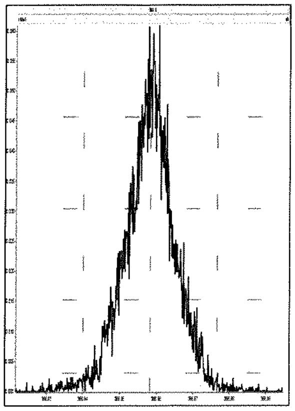

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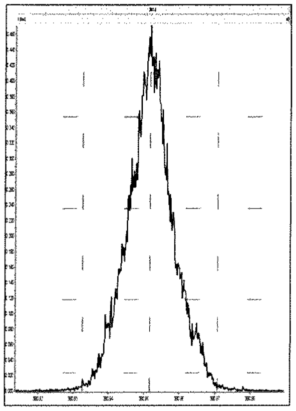

M 392.9760 R 11961

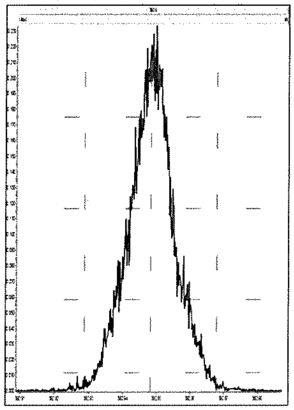

M 404.9760 R 12199

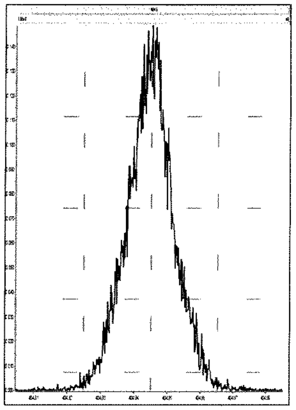

M 416.9760 R 12855

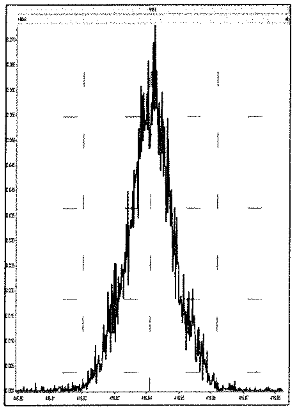

M 430.9728 R 11737

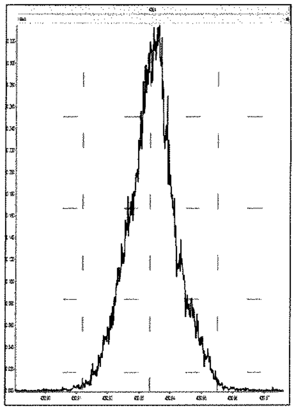

M 442.9728 R 11961

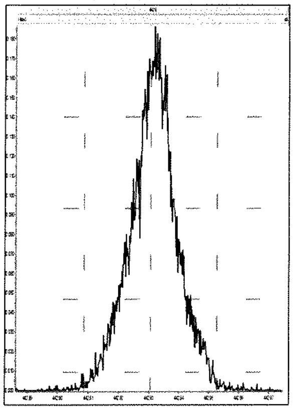

M 454.9728 R 12378

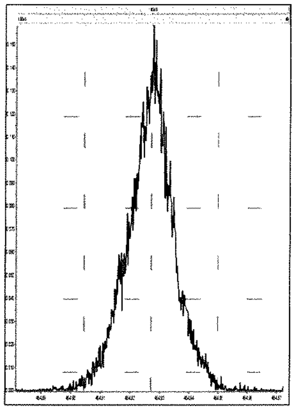

M 380.9760 R 12165

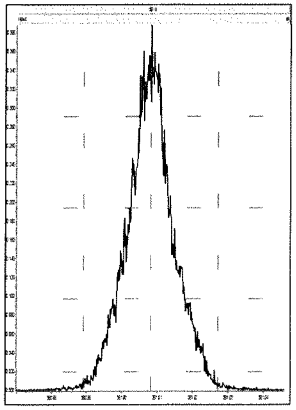

M 392.9760 R 11794

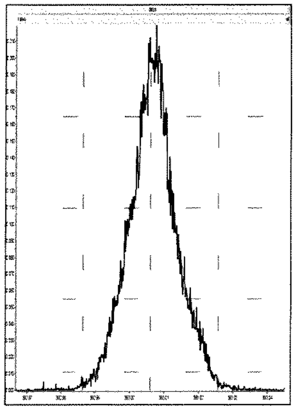

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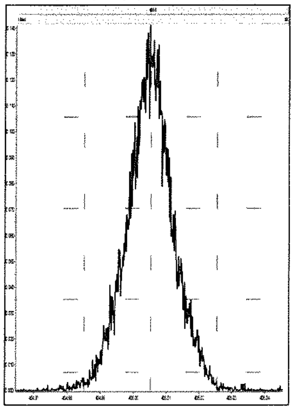

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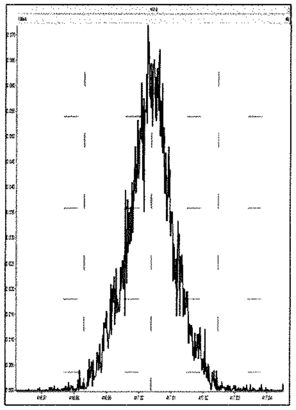

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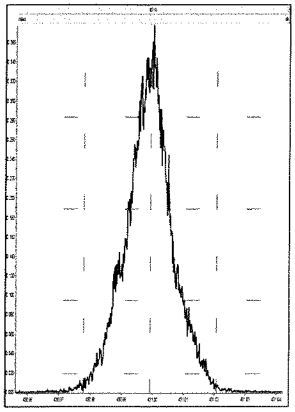

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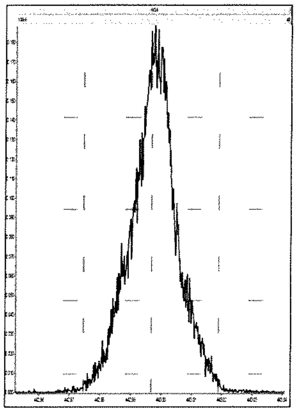

M 454.9728 R 12026

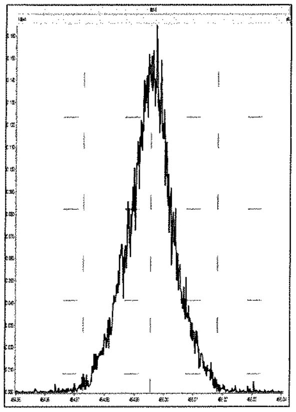

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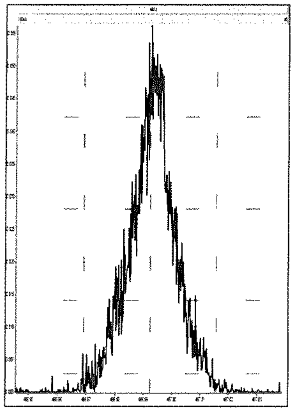

M 480.9696 R 11712

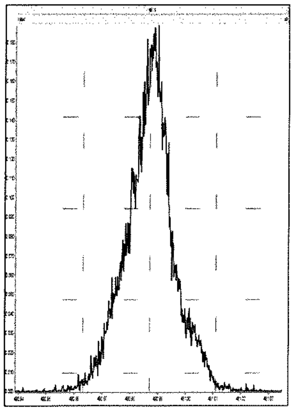

M 380.9760 R 12348

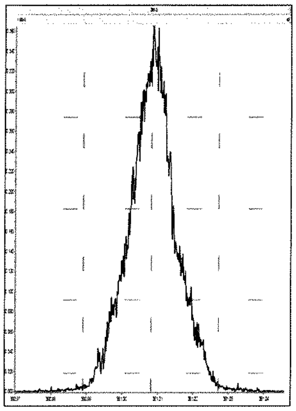

M 392.9760 R 12077

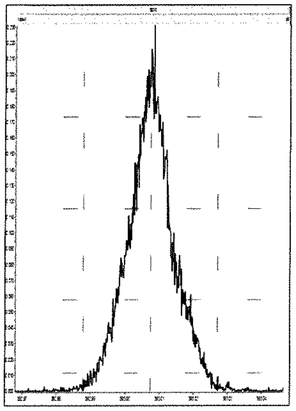

M 404.9760 R 12628

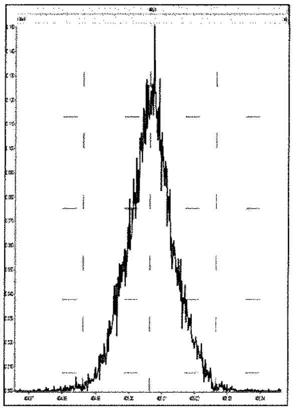

M 416.9760 R 12698

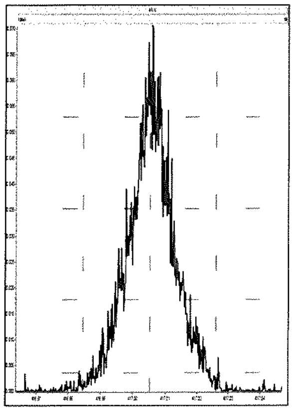

M 430.9728 R 12196

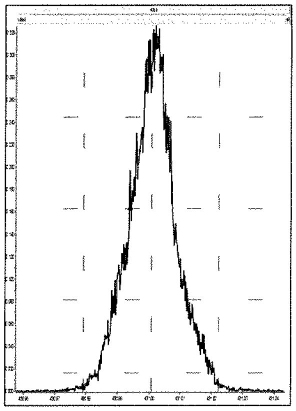

M 442.9728 R 11769

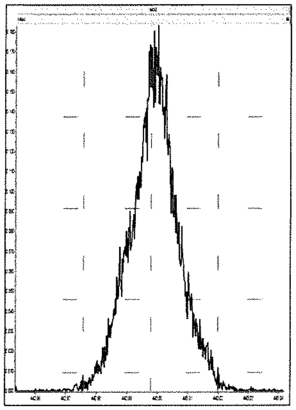

M 454.9728 R 11820

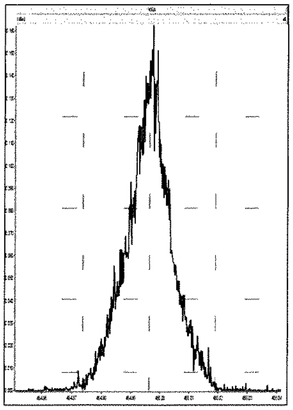

M 466.9728 R 11849

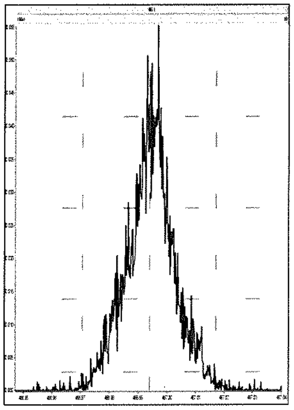

M 480.9696 R 11263

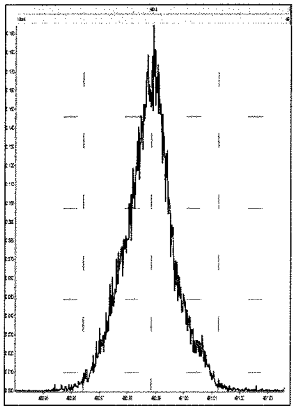

M 492.9696 R 11737

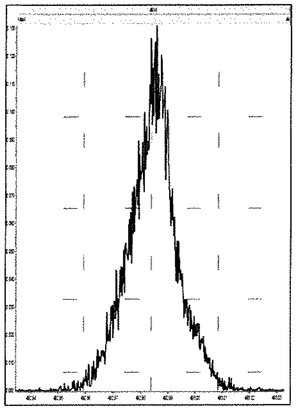

M 504.9696 R 11908

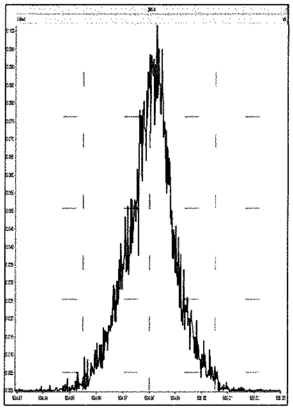

M 516.9697 R 12789

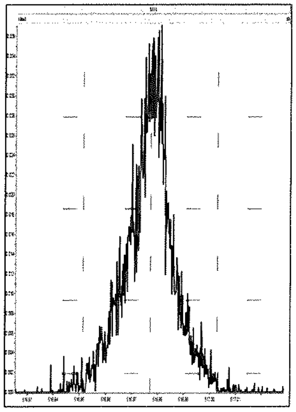

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 16:09:46 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720 CS-2 HRDXNL2_00030
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:36 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 17:19:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.717	69479316	0.77	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	94597447	0.78	1.3598	100.1	100.1	0.1646	0.1646	100	
2,3,7,8-TCDF	17.219	435861	0.70	0.9077	0.5076	0.5076	0.0130	0.0130	102	
S Total TCDF					0.5076	0.5076	0.0130	0.0130		
D 13C-2,3,7,8-TCDD	17.899	72418737	0.77	1.0536	98.9	98.9	0.1503	0.1503	98.93	
2,3,7,8-TCDD	17.914	373087	0.68	1.0061	0.5120	0.5120	0.0182	0.0182	102	M
$ 37Cl4-2,3,7,8-TCDD	17.929	323571		1.0488	0.4441	0.4441	0.009651	0.009651	88.81	
S Total TCDD					0.5120	0.5120	0.0182	0.0182		
D 13C-1,2,3,7,8-PeCDF	22.198	77742057	1.57	1.1306	99.0	99.0	0.2250	0.2250	98.97	
1,2,3,7,8-PeCDF	22.212	1831854	1.53	0.9147	2.576	2.576	0.0264	0.0264	103	
D 13C-2,3,4,7,8-PeCDF	23.535	71348405	1.53	1.0539	97.4	97.4	0.2414	0.2414	97.44	
2,3,4,7,8-PeCDF	23.562	1786782	1.53	0.9508	2.634	2.634	0.0300	0.0300	105	
S Total PeCDF					5.210	5.210	0.0282	0.0282		
D 13C-1,2,3,7,8-PeCDD	24.257	55779906	1.62	0.8084	99.3	99.3	0.1303	0.1303	99.31	
1,2,3,7,8-PeCDD	24.285	1497052	1.52	0.9955	2.696	2.696	0.0246	0.0246	108	
S Total PeCDD					2.696	2.696	0.0246	0.0246		
D 13C-1,2,3,4,7,8-HxCDF	30.393	47151495	0.51	0.9225	96.5	96.5	0.5646	0.5646	96.55	
1,2,3,4,7,8-HxCDF	30.406	1347531	1.16	1.1090	2.577	2.577	0.0330	0.0330	103	
D 13C-1,2,3,6,7,8-HxCDF	30.579	54372821	0.50	1.0336	99.4	99.4	0.5039	0.5039	99.37	
1,2,3,6,7,8-HxCDF	30.593	1516975	1.27	1.0721	2.602	2.602	0.0297	0.0297	104	
D 13C-2,3,4,6,7,8-HxCDF	31.431	50763245	0.51	0.9773	98.1	98.1	0.5329	0.5329	98.11	
2,3,4,6,7,8-HxCDF	31.458	1438567	1.29	1.0838	2.615	2.615	0.0247	0.0247	105	
D 13C-1,2,3,7,8,9-HxCDF	32.256	47135979	0.51	0.9153	97.3	97.3	0.5690	0.5690	97.27	
1,2,3,7,8,9-HxCDF	32.270	1365563	1.23	1.0931	2.650	2.650	0.0245	0.0245	106	
S Total HxCDF					10.4	10.4	0.0280	0.0280		
* 13C-1,2,3,7,8,9-HxCDD	32.070	52941411	1.21	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	41391638	1.24	0.7977	98.0	98.0	0.4078	0.4078	98.02	
1,2,3,4,7,8-HxCDD	31.644	1086110	1.27	1.0014	2.620	2.620	0.0316	0.0316	105	
D 13C-1,2,3,6,7,8-HxCDD	31.737	51300838	1.26	1.0010	96.8	96.8	0.3249	0.3249	96.80	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	1218876	1.25	0.8902	2.669	2.669	0.0297	0.0297	107	
1,2,3,7,8,9-HxCDD	32.083	1277610	1.20	1.0579	2.606	2.606	0.0272	0.0272	104	
S Total HxCDD					7.895	7.895	0.0295	0.0295		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	44172724	0.42	0.8506	98.1	98.1	1.306	1.306	98.09	
1,2,3,4,6,7,8-HpCDF	33.691	1569431	1.05	1.3603	2.612	2.612	0.0343	0.0343	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.749	38635465	0.44	0.7618	95.8	95.8	1.458	1.458	95.80	
1,2,3,4,7,8,9-HpCDF	34.761	1339219	1.04	1.3207	2.625	2.625	0.0454	0.0454	105	
S Total HpCDF					5.237	5.237	0.0399	0.0399		
D 13C-1,2,3,4,6,7,8-HpCDD	34.457	46427849	1.05	0.8873	98.8	98.8	0.6222	0.6222	98.84	
1,2,3,4,6,7,8-HpCDD	34.469	1199192	1.01	0.9988	2.586	2.586	0.0322	0.0322	103	
S Total HpCDD					2.586	2.586	0.0322	0.0322		
D 13C-OCDD	36.779	64335649	0.90	0.6287	193.3	193.3	0.3370	0.3370	96.64	
OCDF	36.875	2287654	0.88	1.4136	5.031	5.031	0.0347	0.0347	101	
OCDD	36.791	1921704	0.89	1.1290	5.292	5.292	0.0254	0.0254	106	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 16:09:46 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720 CS-2 HRDXNL2_00030
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:36 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 17:19:26

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.717	17.711	0		30177552	7479139	6207	15517	1205		
333.9339	17.717	17.711	0		39301764	9633030	4631	11577	2080	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.971	41352489	10455241	7584	18960	1379		
317.9389	17.203	17.203	0	0.971	53244958	13402215	7733	19332	1733	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	179767	45403	406	1015	112		
305.8987	17.219	17.218	0	1.001	256094	65363	718	1795	91	0.70(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.010	31528479	7573809	6207	15517	1220		
333.9339	17.899	17.905	0	1.010	40890258	9620747	4631	11577	2077	0.77(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	17.914	17.920	0	1.001	150442	34466	820	2050	42		M
321.8936	17.914	17.920	0	1.001	222645	52312	437	1092	120	0.68(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	323571	77695	693	1732	112		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.253	47523565	8332657	10134	25335	822		
353.8970	22.198	22.204	0	1.253	30218492	5332333	7281	18202	732	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.220	0	1.001	1108293	183113	533	1332	344		
341.8567	22.226	22.220	0	1.001	723561	128260	787	1967	163	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.328	43182296	6970287	10134	25335	688		
353.8970	23.535	23.540	0	1.328	28166109	4598648	7281	18202	632	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	1080869	170226	533	1332	319		
341.8567	23.562	23.567	0	1.001	705913	114123	787	1967	145	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.369	34452671	5322945	4183	10457	1273		
369.8919	24.257	24.263	0	1.369	21327235	3275530	3030	7575	1081	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	902673	137221	561	1402	245		
357.8516	24.285	24.290	0	1.001	594379	94491	282	705	335	1.52(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	15907677	2787175	8771	21927	318		
385.8610	30.393	30.398	0	0.948	31243818	5538607	17428	43570	318	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.414	0	1.000	724407	124761	657	1642	190		
375.8178	30.406	30.414	0	1.000	623124	108921	562	1405	194	1.16(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.587	0	0.954	18219024	3190920	8771	21927	364		
385.8610	30.579	30.587	0	0.954	36153797	6377045	17428	43570	366	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.593	30.608	-1	1.000	847853	146794	657	1642	223		
375.8178	30.606	30.608	0	1.001	669122	114984	562	1405	205	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.431	31.439	0	0.980	17206437	3856341	8771	21927	440		
385.8610	31.431	31.439	0	0.980	33556808	7542406	17428	43570	433	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.001	810783	196014	657	1642	298		
375.8178	31.458	31.458	0	1.001	627784	140674	562	1405	250	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	15820168	3819576	8771	21927	435		
385.8610	32.243	32.254	-1	1.005	31315811	7580727	17428	43570	435	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	753629	188592	657	1642	287		
375.8178	32.270	32.267	0	1.000	611934	139615	562	1405	248	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		29016794	6898053	7532	18830	916		
403.8529	32.070	32.067	0		23924617	5677861	8830	22075	643	1.21(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	22935871	5591026	7532	18830	742		
403.8529	31.631	31.631	0	0.986	18455767	4566751	8830	22075	517	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	606908	163932	725	1812	226		
391.8127	31.644	31.647	0	1.000	479202	120418	561	1402	215	1.27(1.05-1.43)	

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	28568934	6776183	7532	18830	900		
403.8529	31.737	31.740	0	0.990	22731904	5391682	8830	22075	611	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	678278	161129	725	1812	222		
391.8127	31.750	31.756	0	1.000	540598	129703	561	1402	231	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	698192	166908	725	1812	230		
391.8127	32.083	32.081	0	1.014	579418	129354	561	1402	231	1.20(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.050	13076522	4036860	17282	43205	234		
419.8220	33.679	33.684	0	1.050	31096202	9610968	38605	96512	249	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	803164	241501	1368	3420	177		
409.7789	33.691	33.694	0	1.000	766267	228291	1181	2952	193	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.749	34.751	0	1.084	11792323	3269167	17282	43205	189		
419.8220	34.749	34.751	0	1.084	26843142	7361380	38605	96512	191	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	684290	181563	1368	3420	133		
409.7789	34.761	34.763	0	1.000	654929	178452	1181	2952	151	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.457	34.464	0	1.074	23767396	6568207	14181	35452	463		
437.8140	34.457	34.464	0	1.074	22660453	6275329	13587	33967	462	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	603635	174404	958	2395	182		
425.7737	34.469	34.474	0	1.000	595557	174022	692	1730	251	1.01(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	30510995	7267643	4698	11745	1547		
471.7750	36.779	36.784	0	1.147	33824654	7894909	5961	14902	1324	0.90(0.76-1.02)	
OCDF											
441.7428	36.875	36.882	0	1.003	1073527	253448	666	1665	381		
443.7399	36.875	36.882	0	1.003	1214127	284662	820	2050	347	0.88(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	905814	204726	430	1075	476		
459.7348	36.791	36.791	0	1.000	1015890	236753	439	1097	539	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46
Instrument ID: 10D5
Lims ID: IC
Client ID:
Operator ID: AJS
ALS Bottle#: 4
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 17.91
Area: 145499
Amount: 0.500000
Amount Units: pg/ul

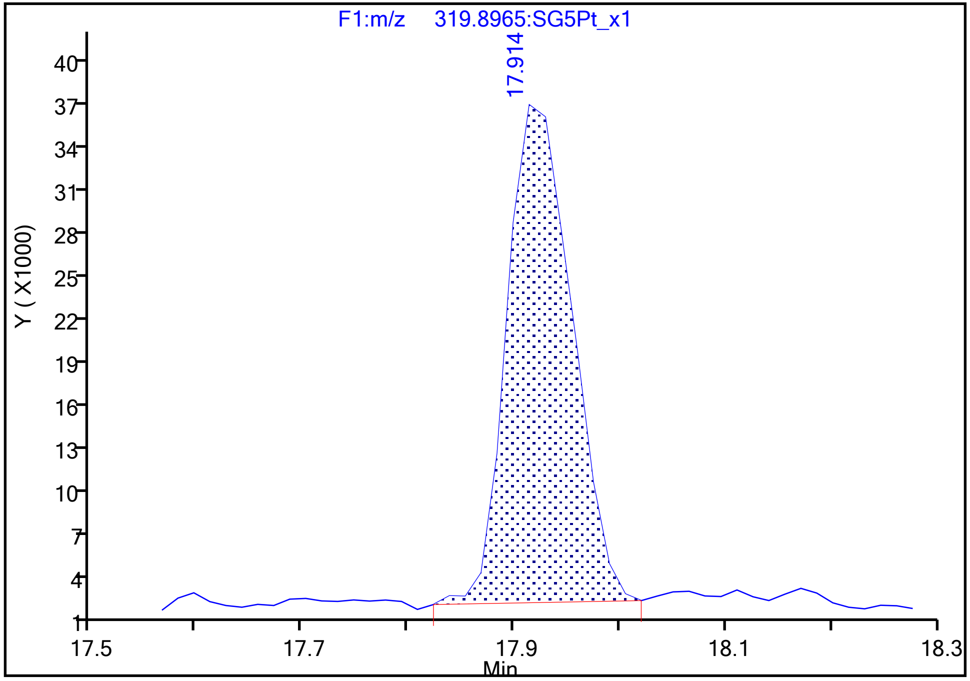

Manual Integration Results

RT: 17.91
Area: 150442
Amount: 0.512033
Amount Units: pg/ul

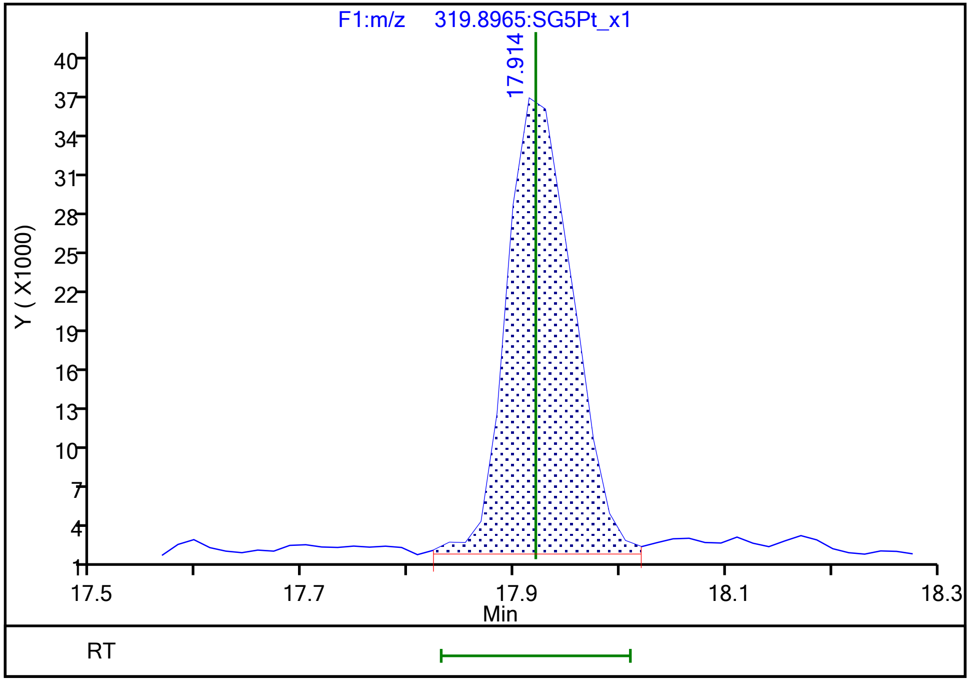

Reviewer: shardaa, 17-Sep-2020 17:16:26

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 17.91
Area: 227601
Amount: 0.500000
Amount Units: pg/ul

Processing Integration Results

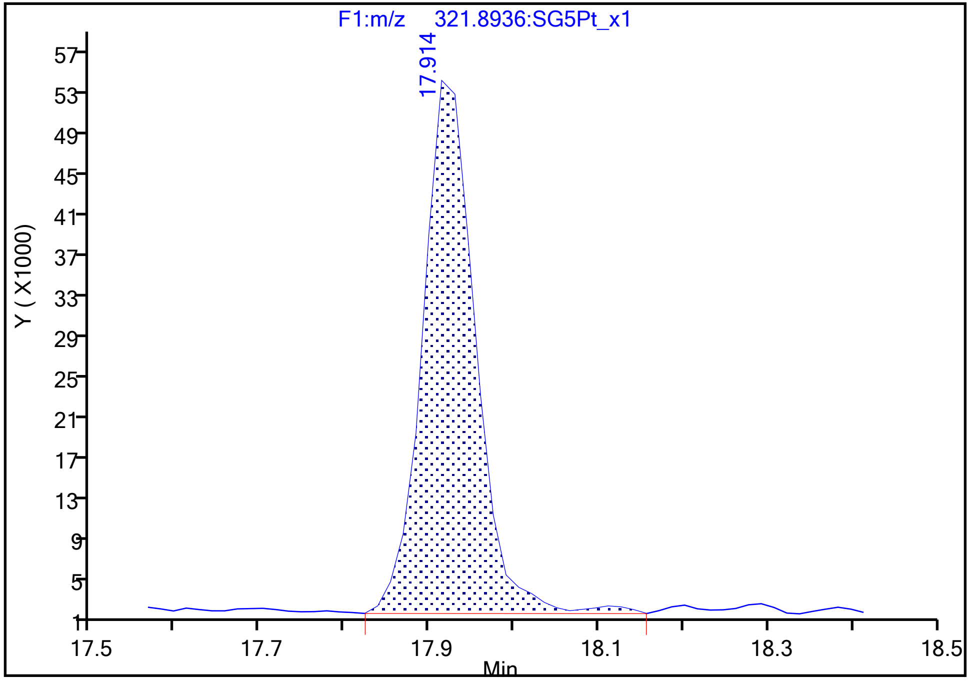

RT: 17.91
Area: 222645
Amount: 0.512033
Amount Units: pg/ul

Manual Integration Results

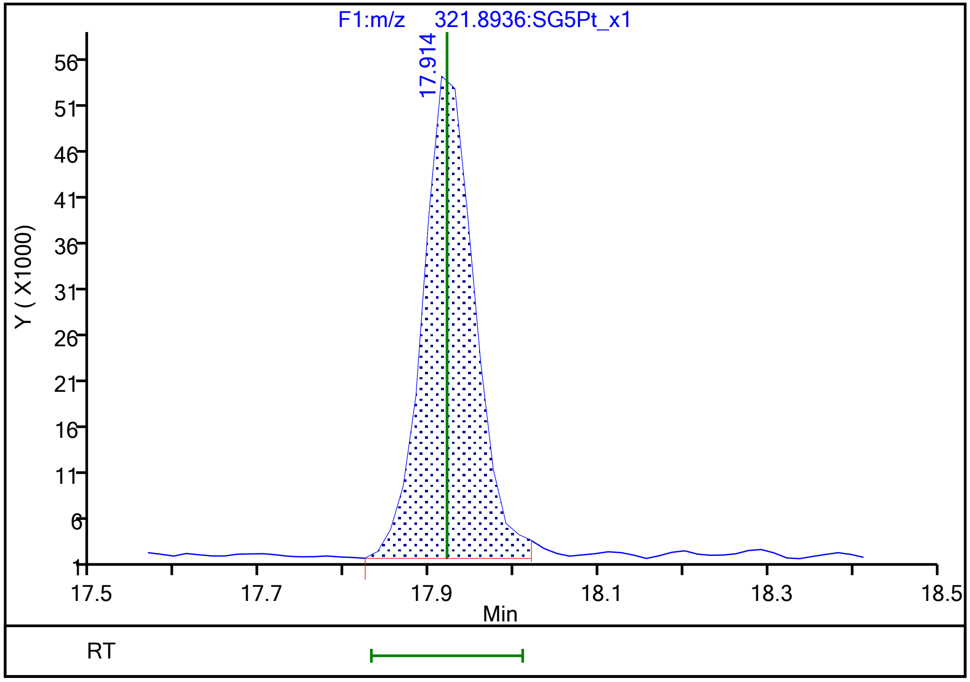

Reviewer: shardaa, 17-Sep-2020 17:16:37

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 18-Sep-2020 10:35:40
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

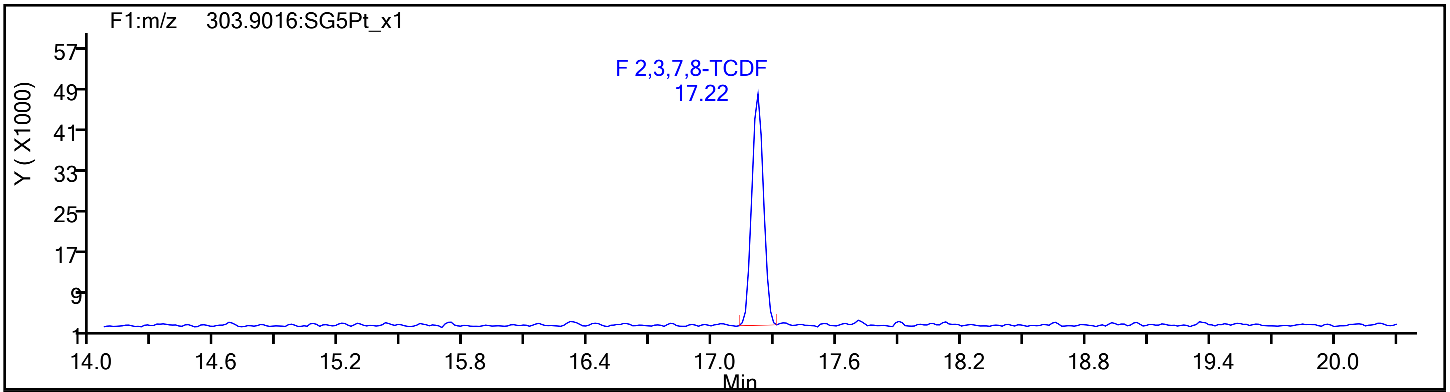

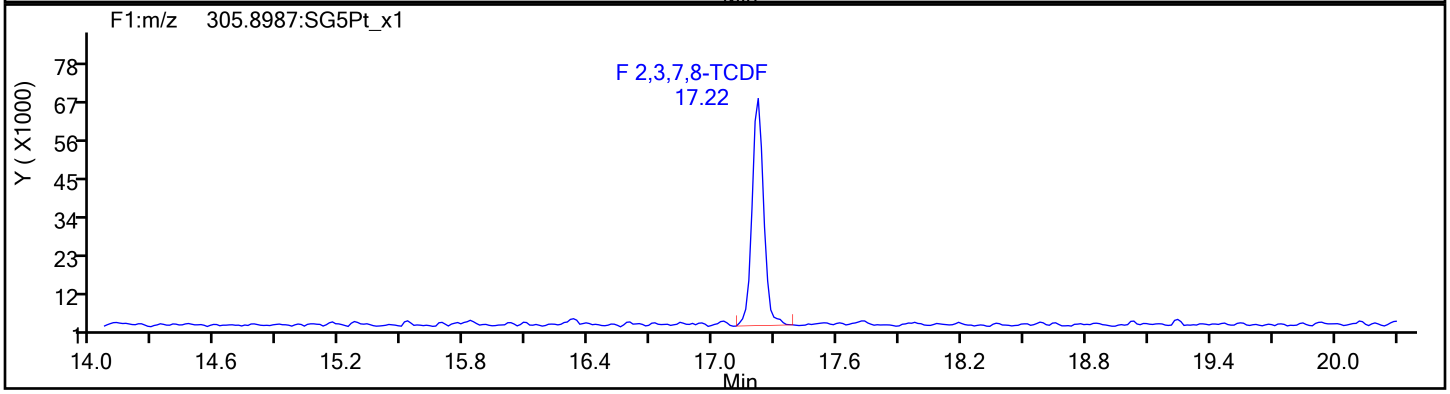

TCDF Standards

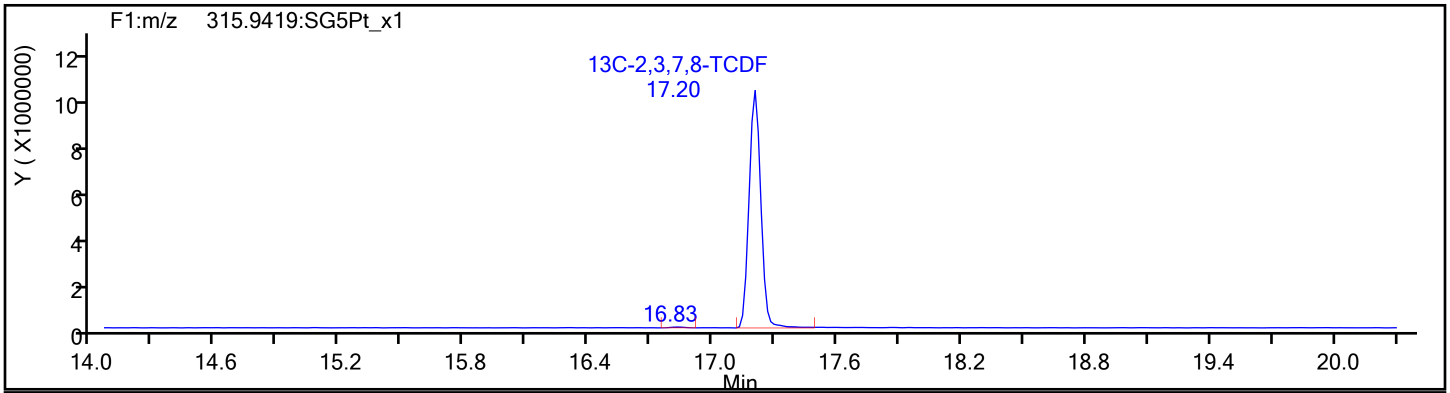

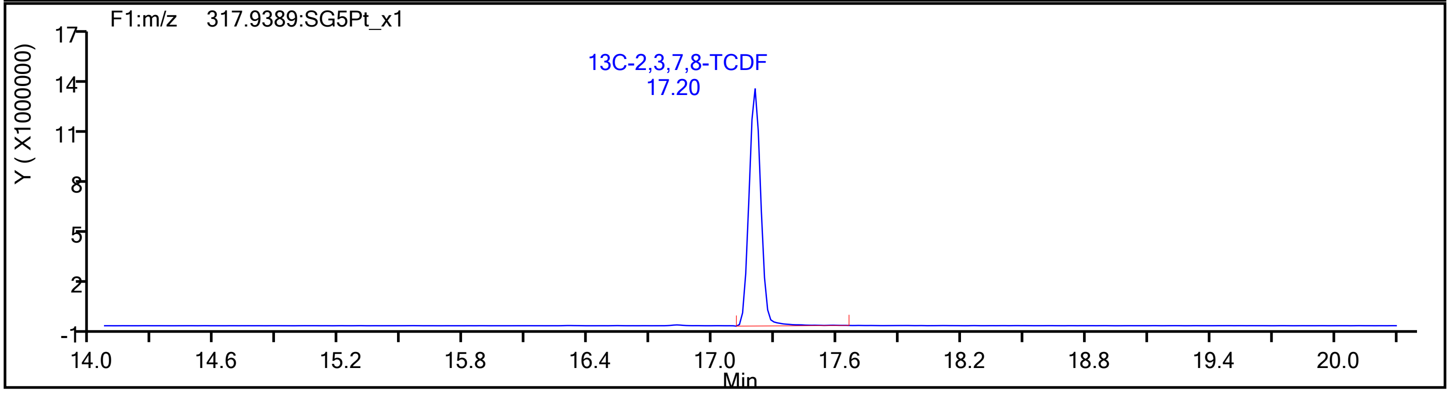

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date: 17-Sep-2020 16:09:46 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

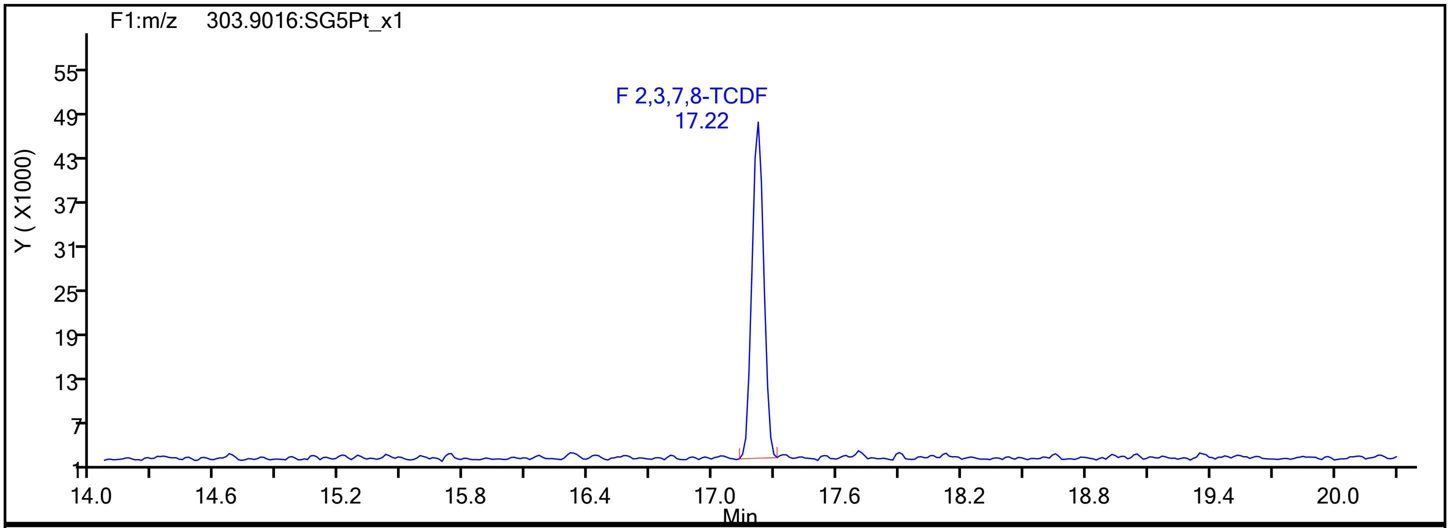

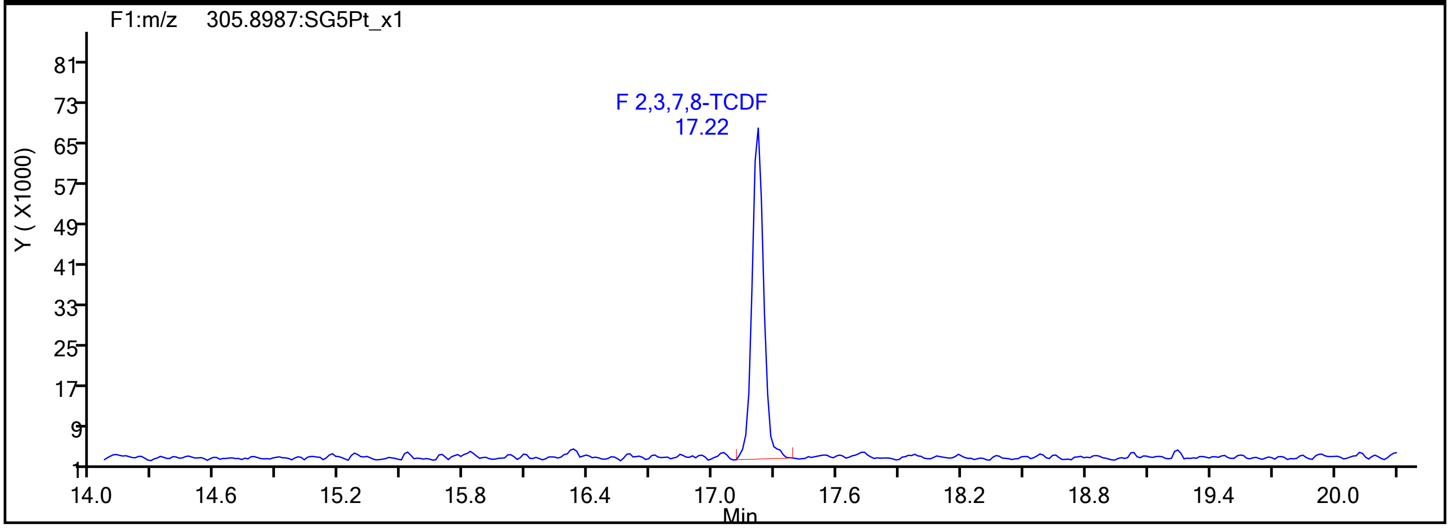

TCDF Interference Mass

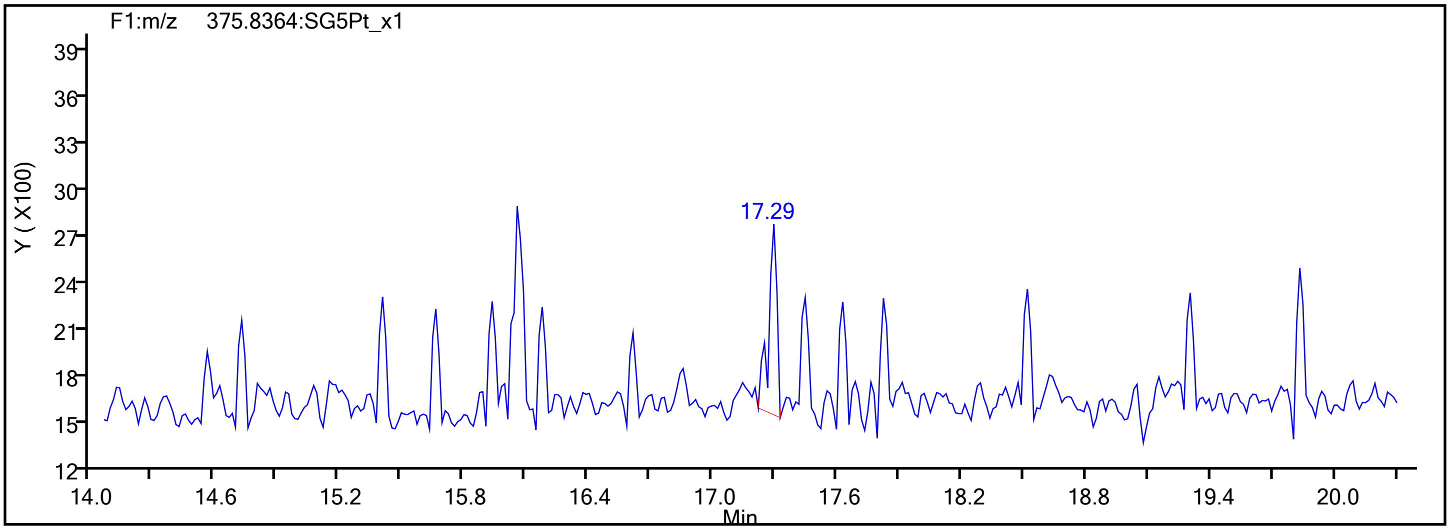

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

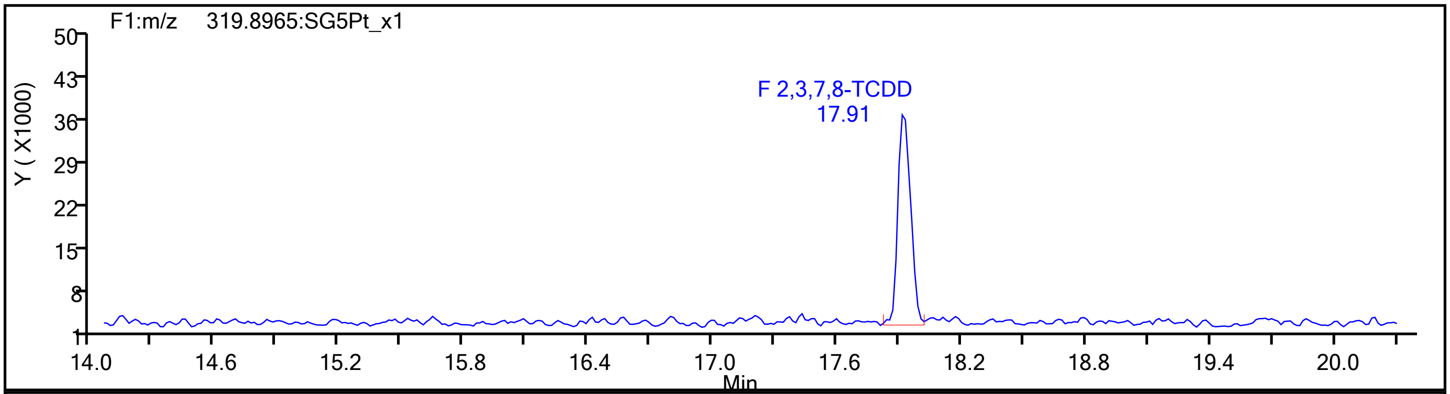

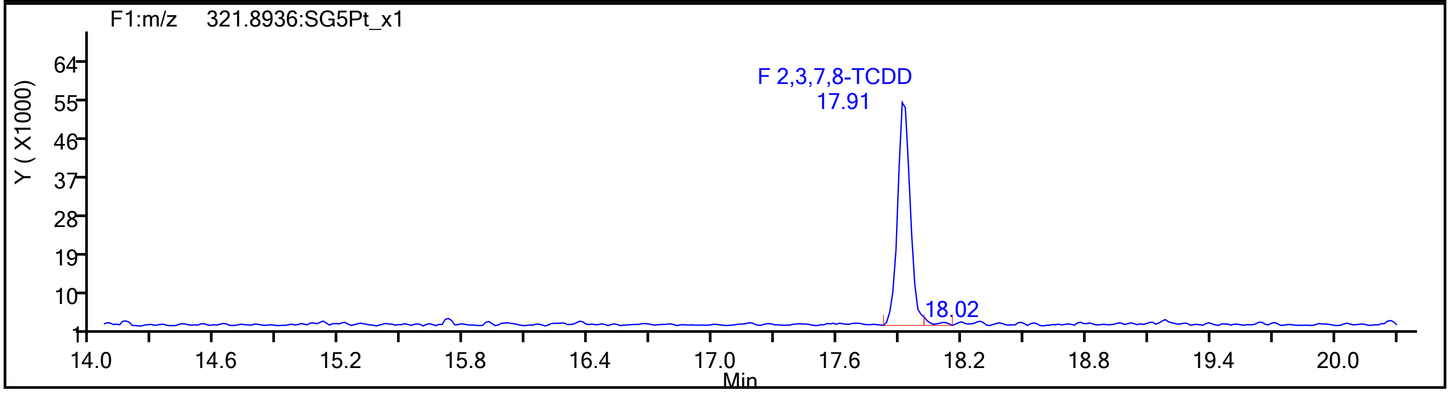

TCDD Standards

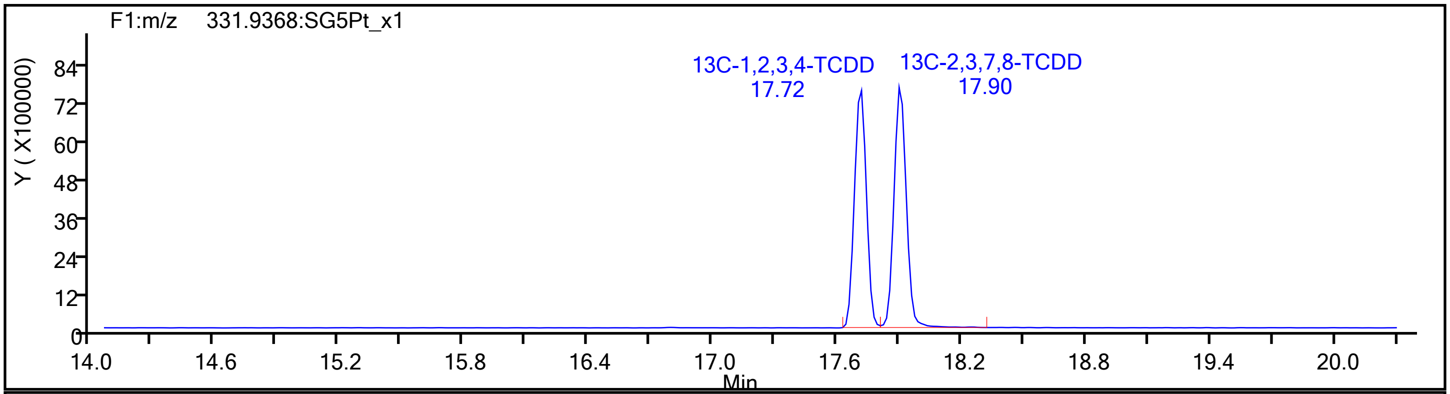

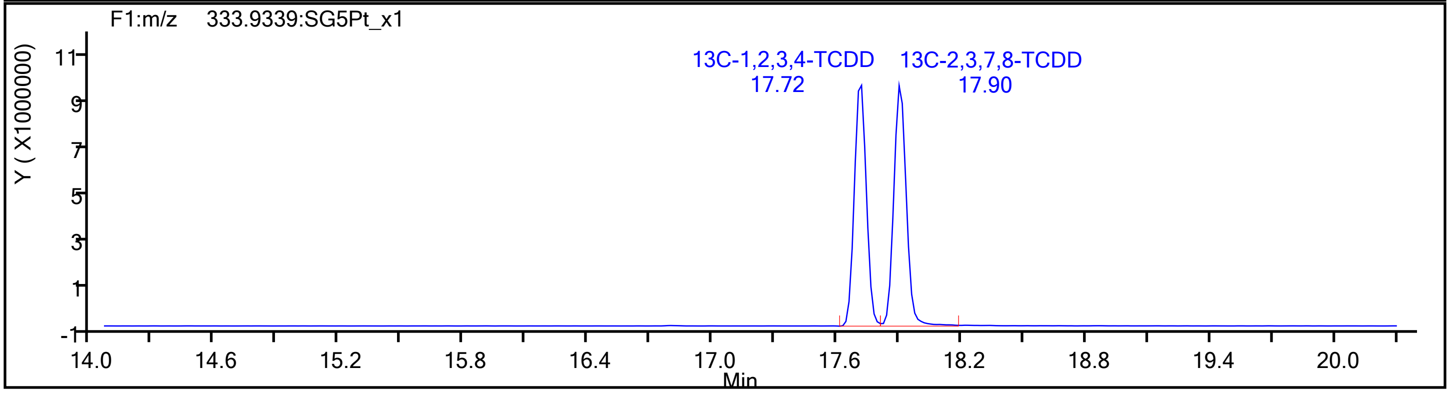

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

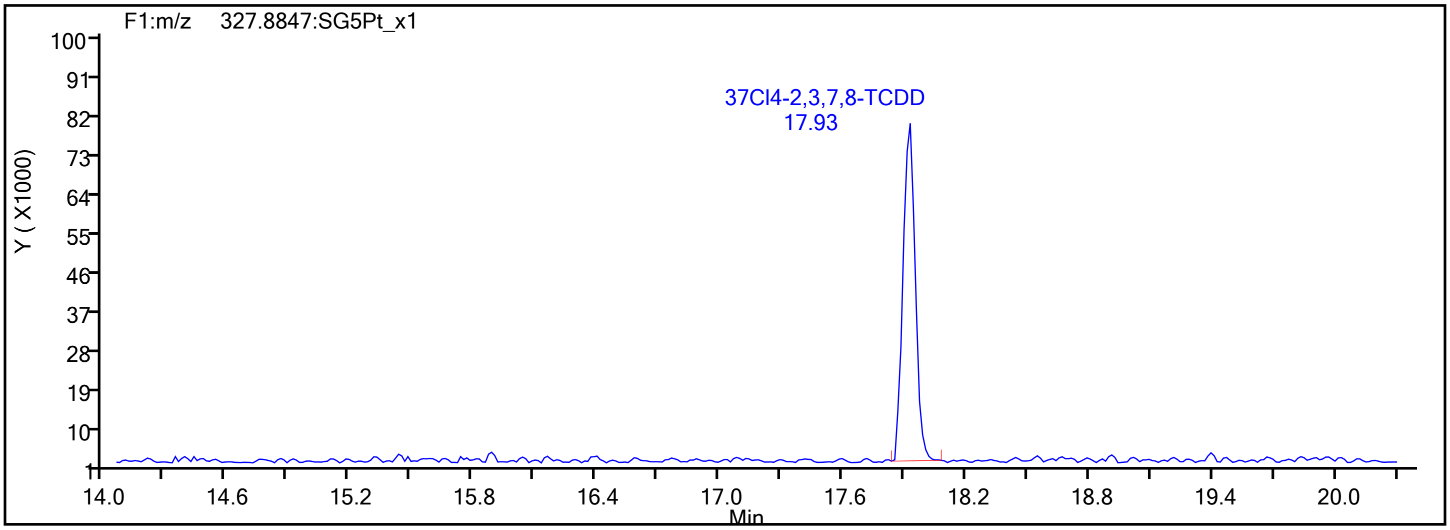

37Cl4-TCDD Standards

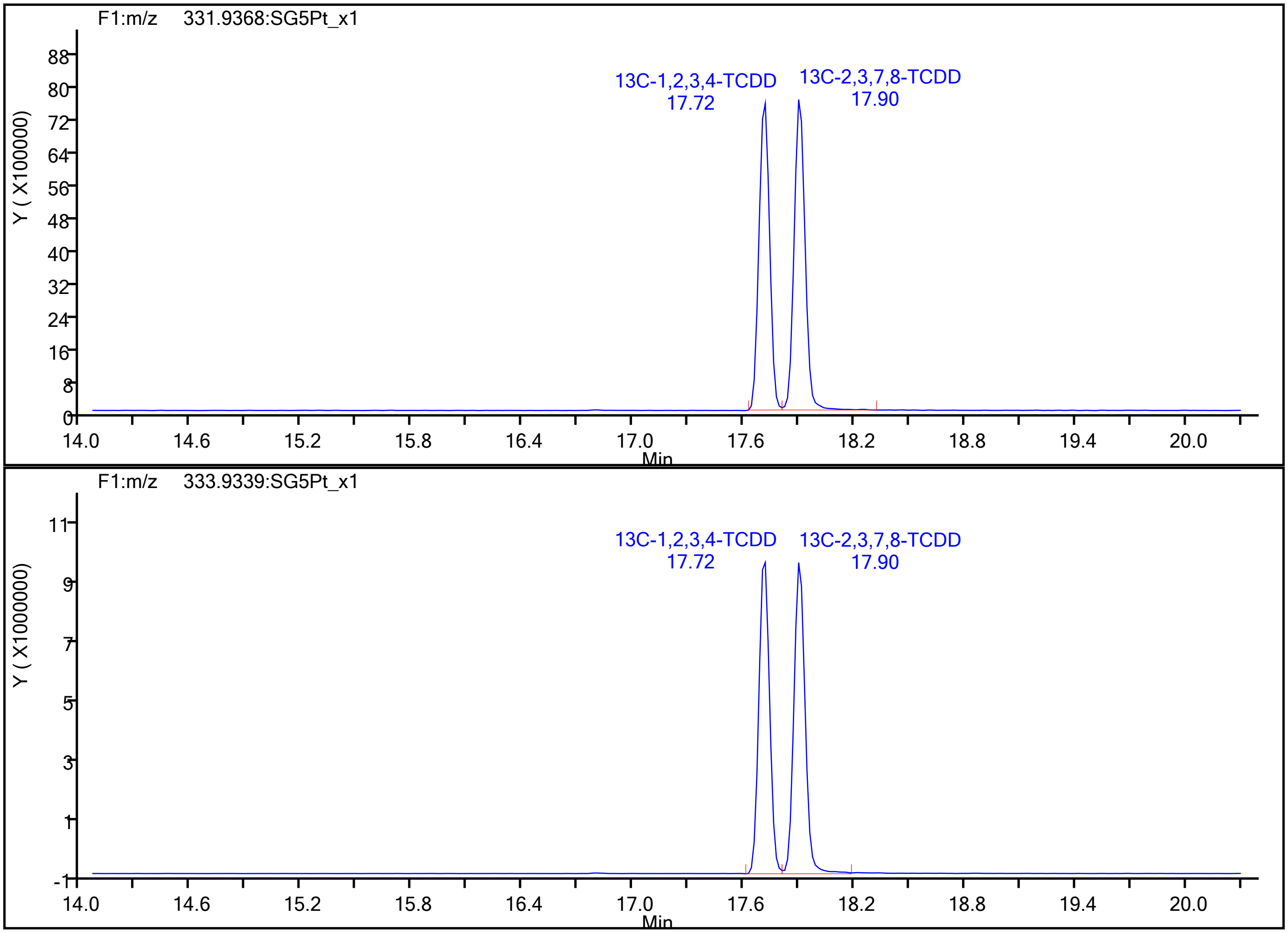

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

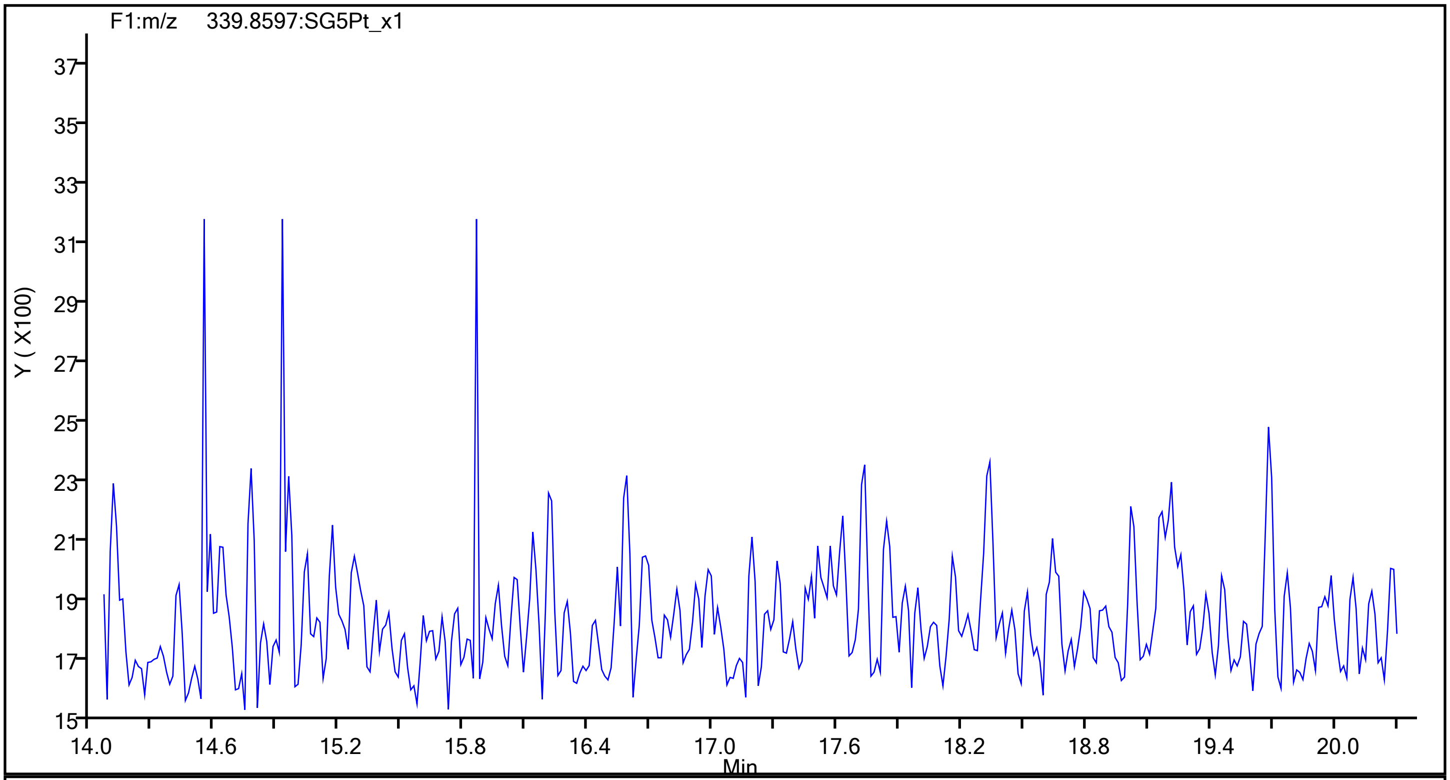

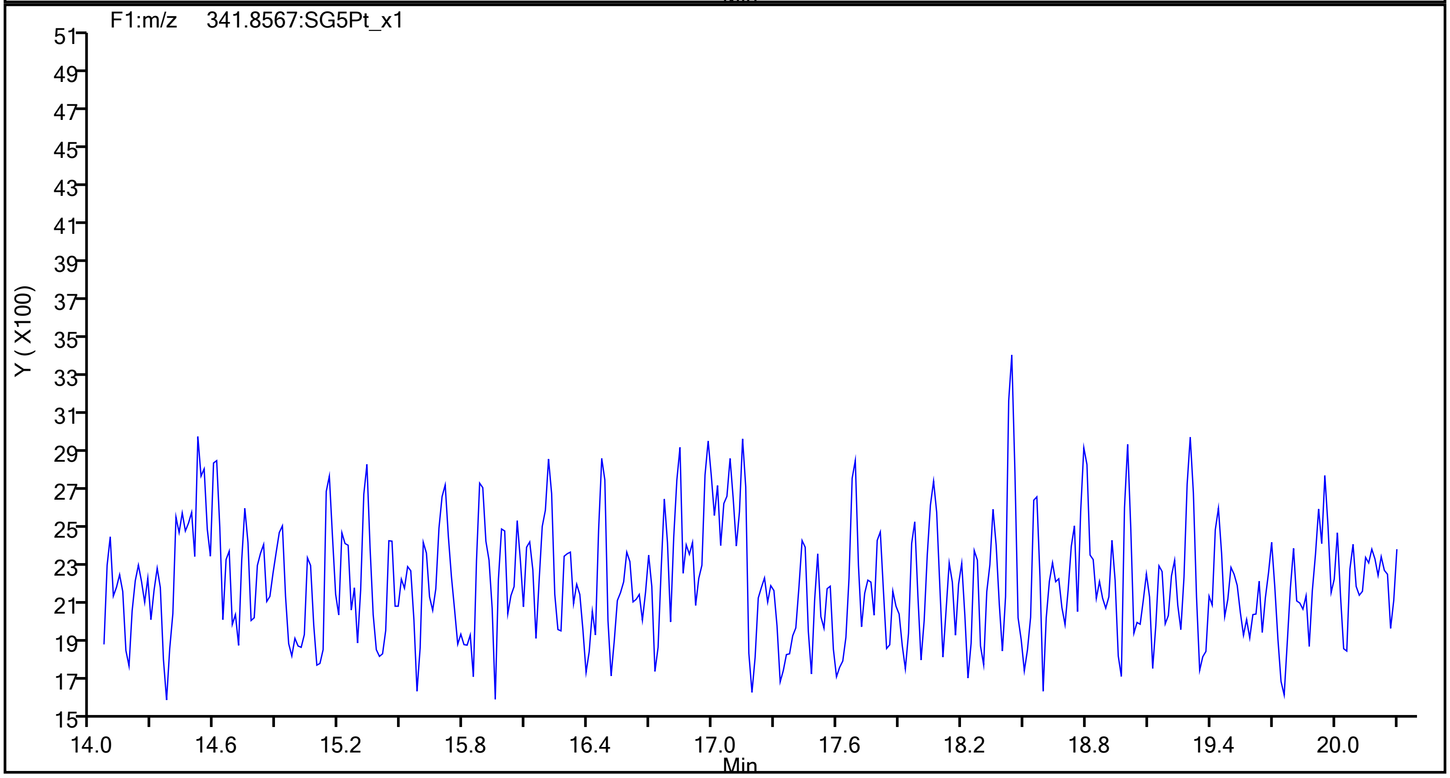

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

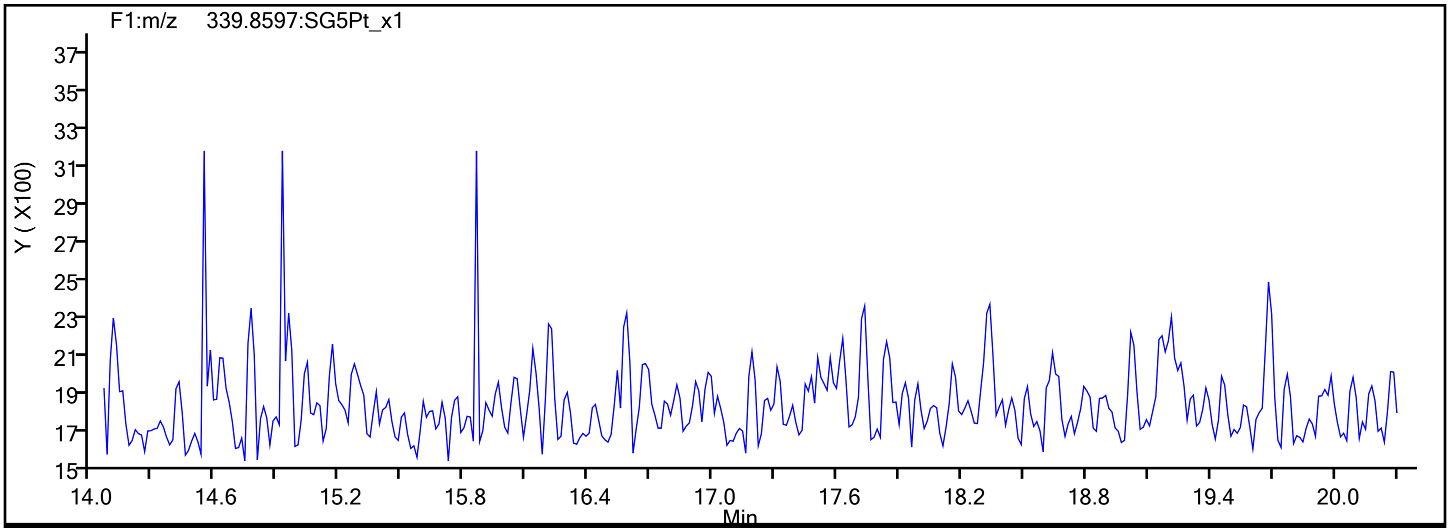

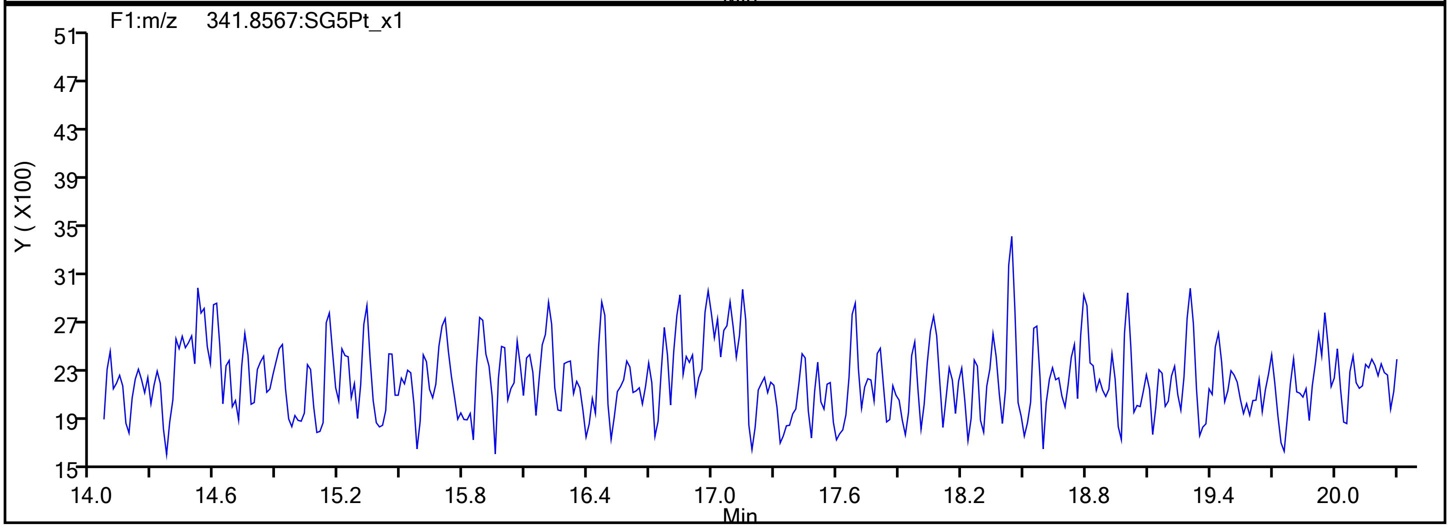

F1 PeCDFs Interference Mass

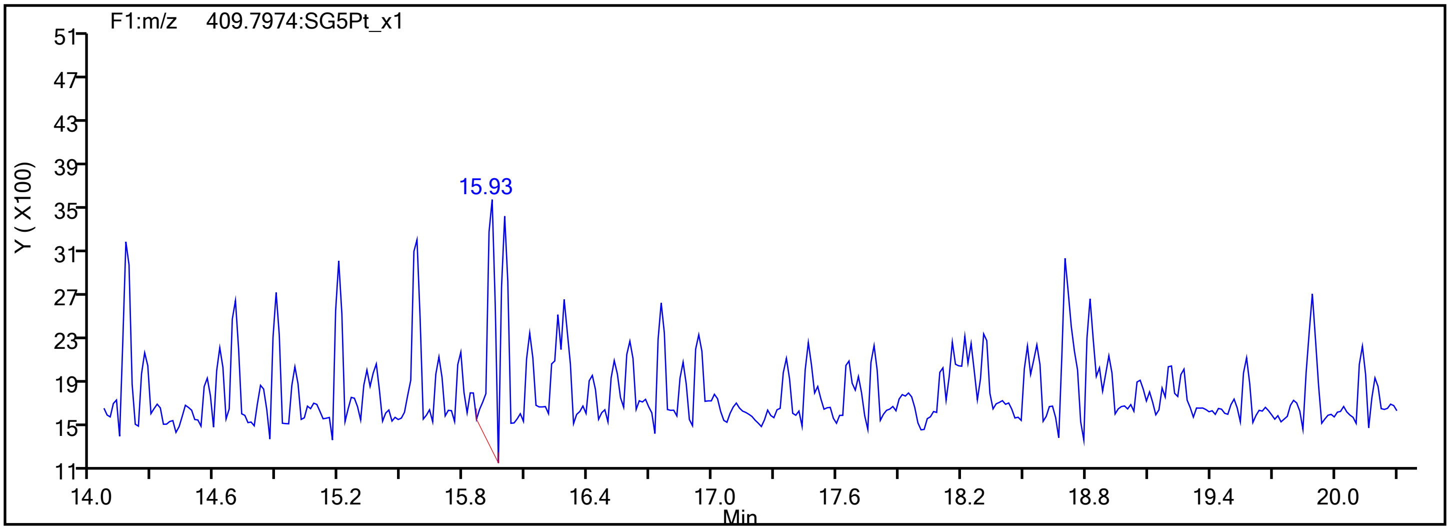

Report Date: 18-Sep-2020 10:35:40　　Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

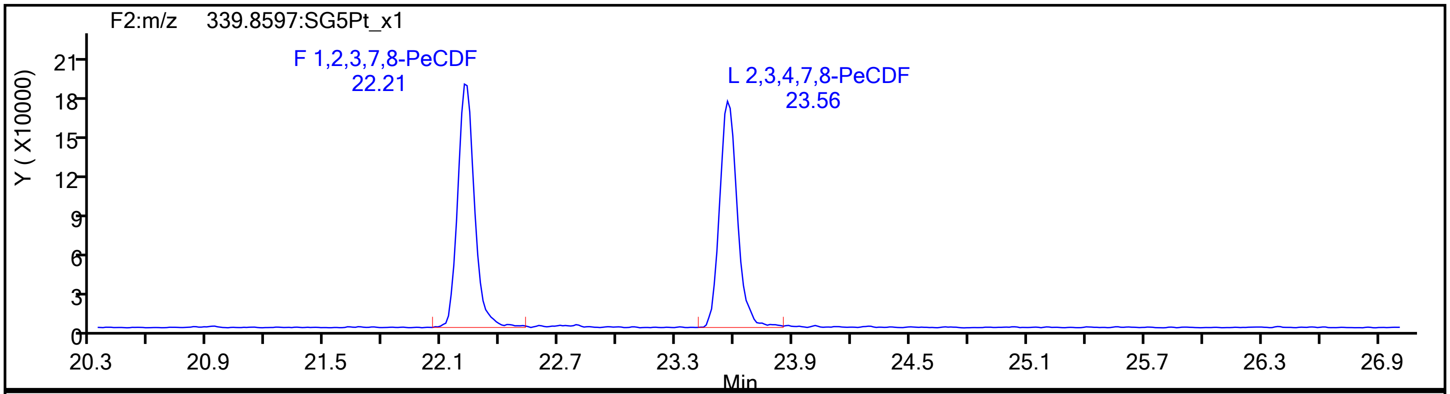

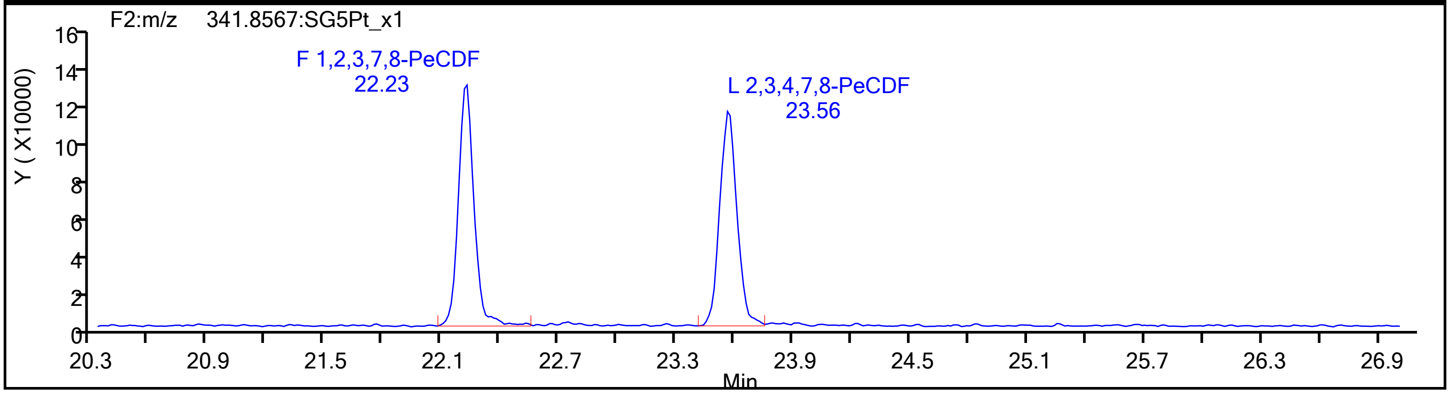

PeCDF Standards

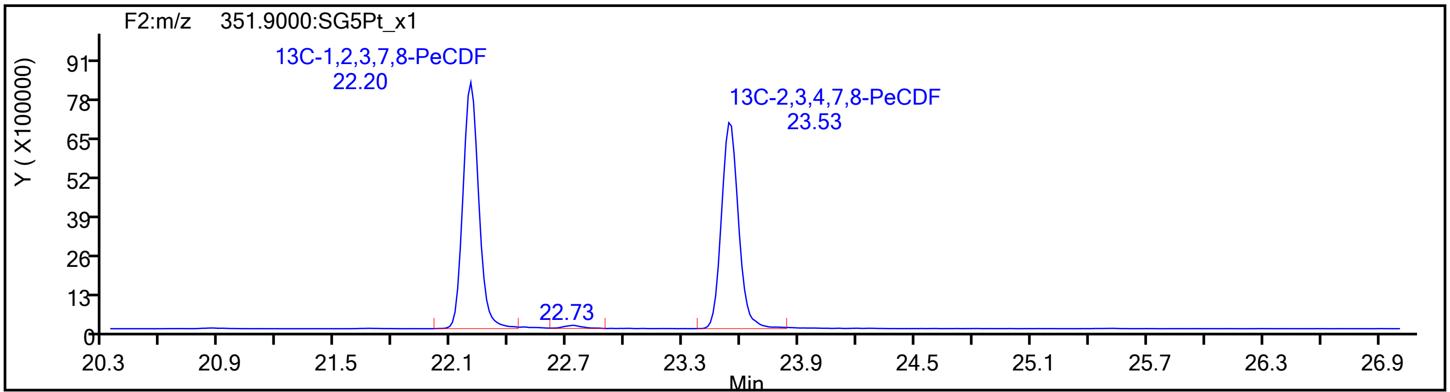

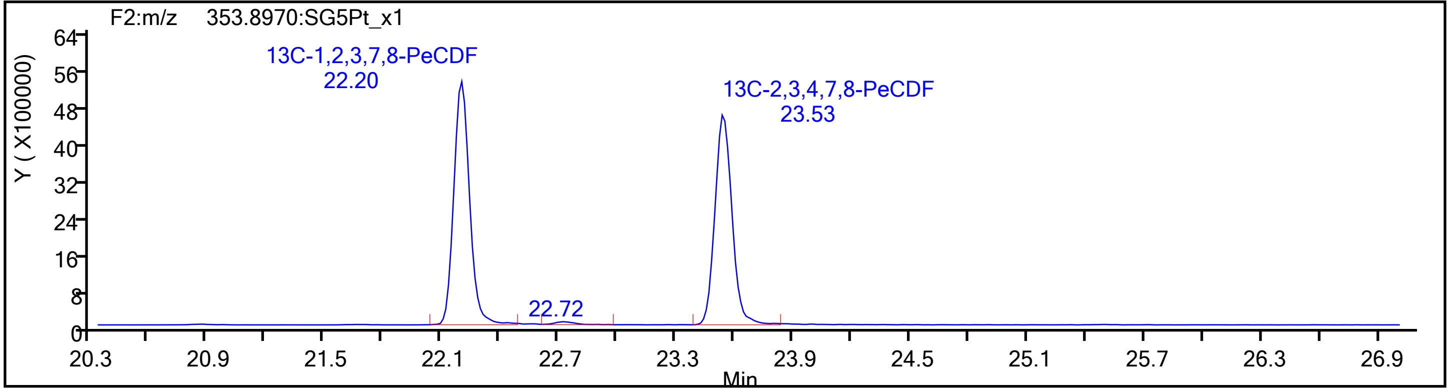

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

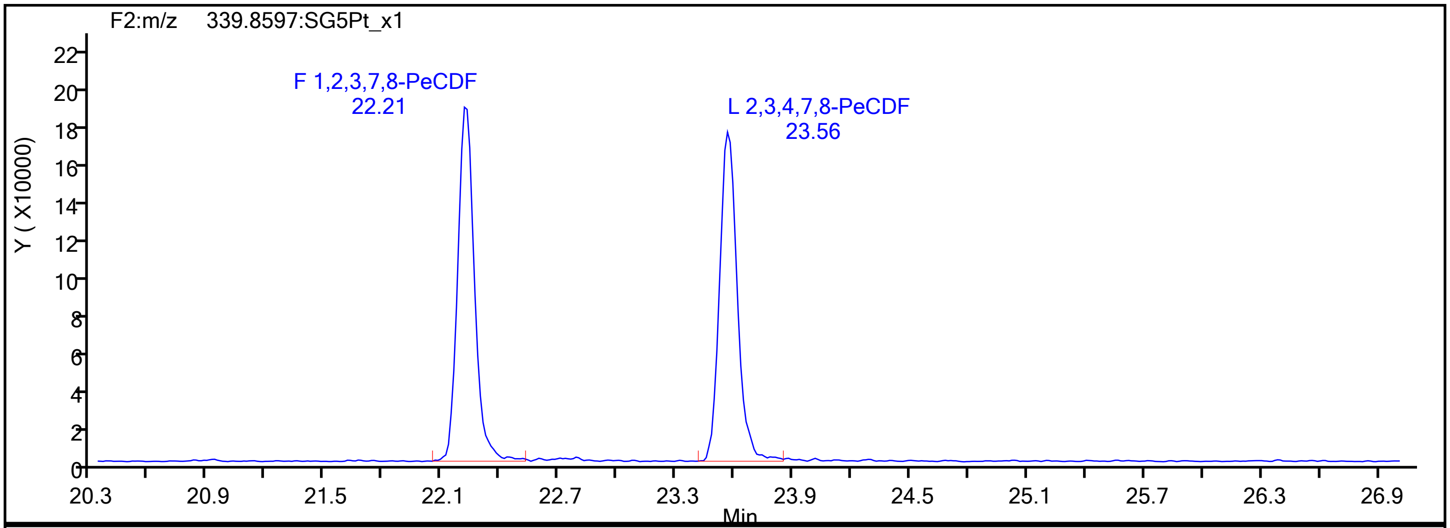

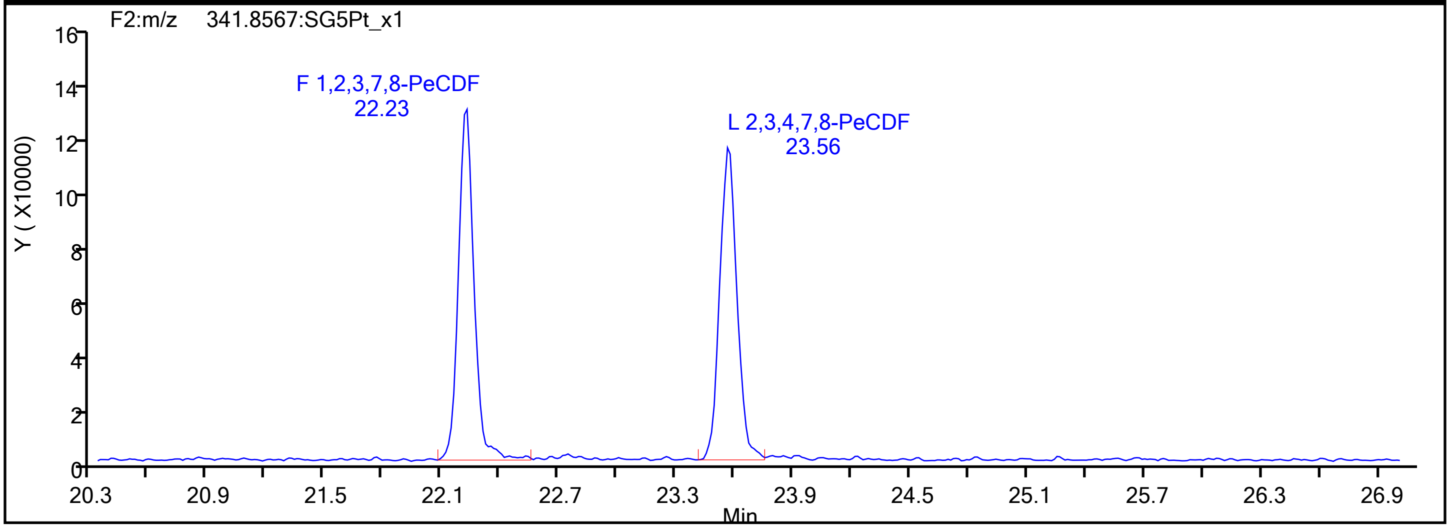

PeCDF Interference Mass

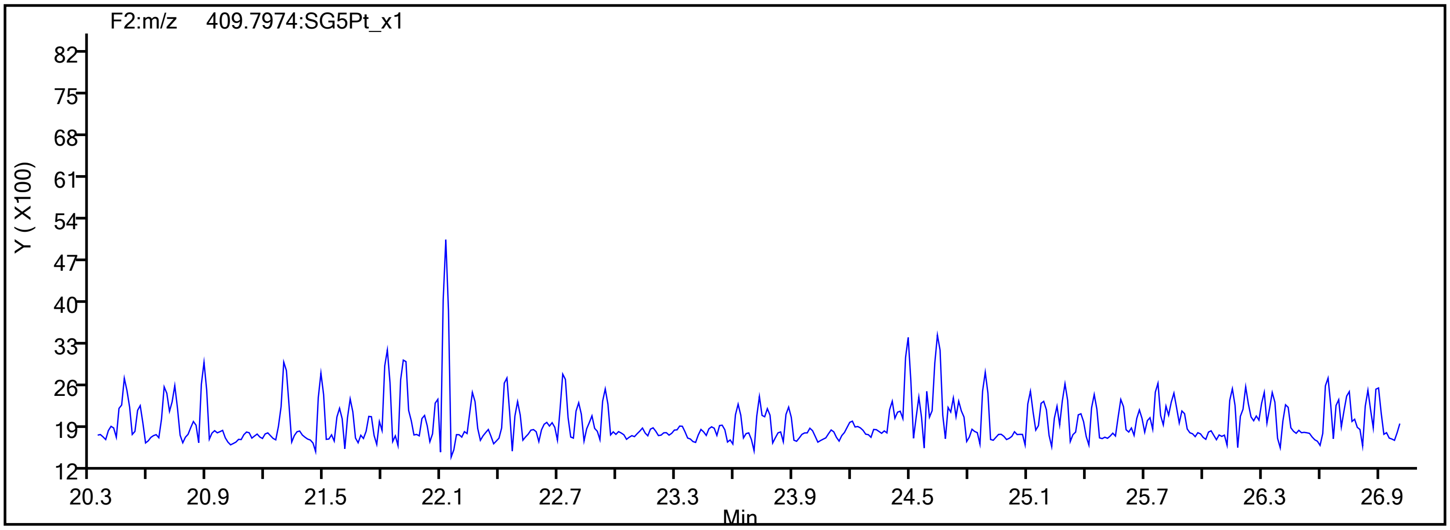

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date: 17-Sep-2020 16:09:46 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

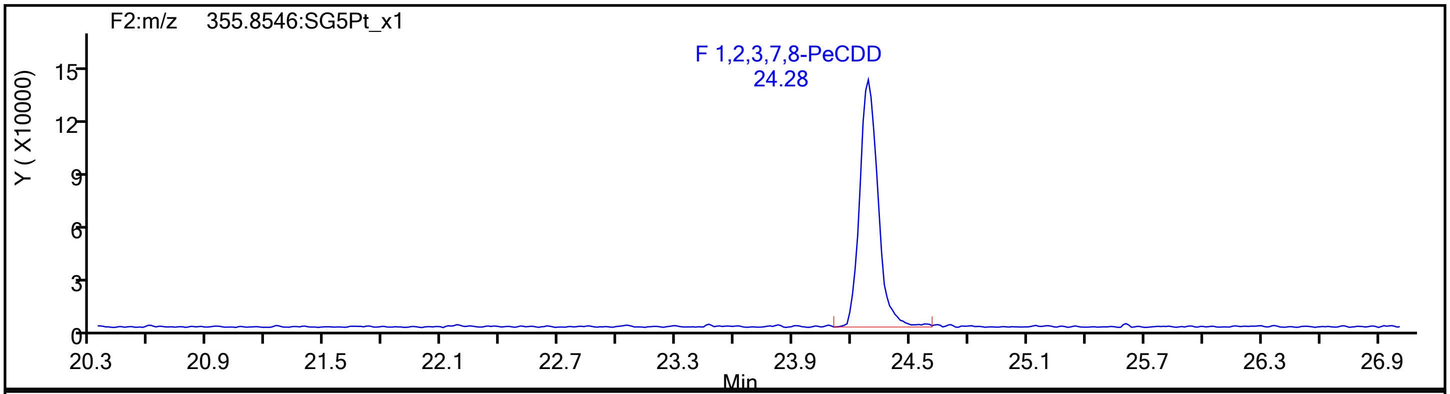

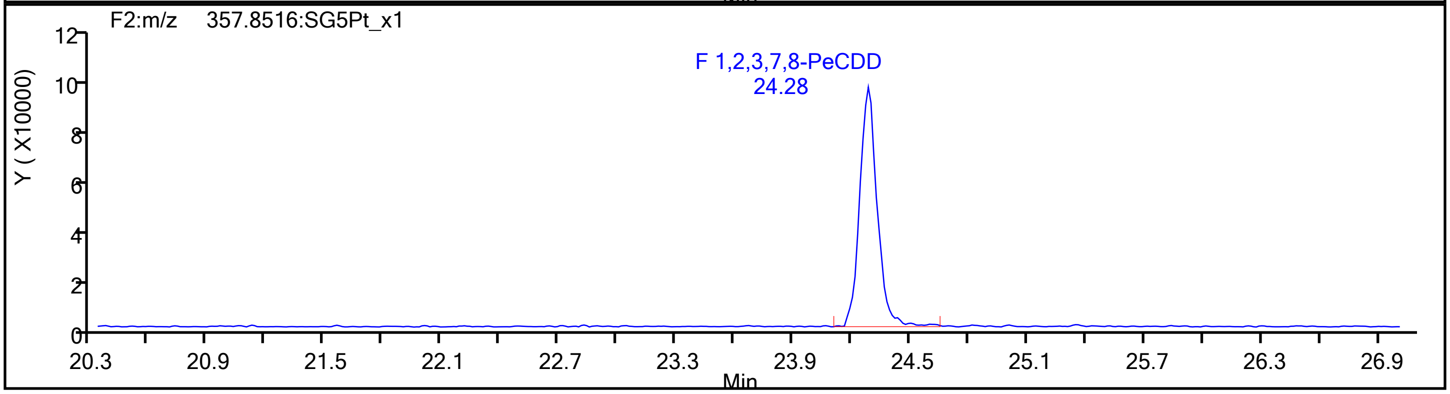

PeCDD Standards

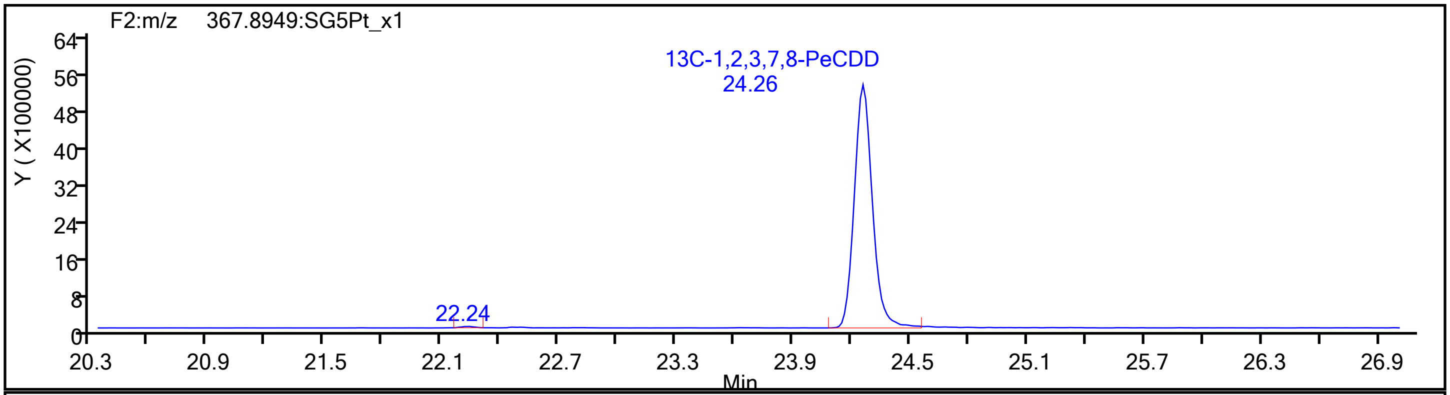

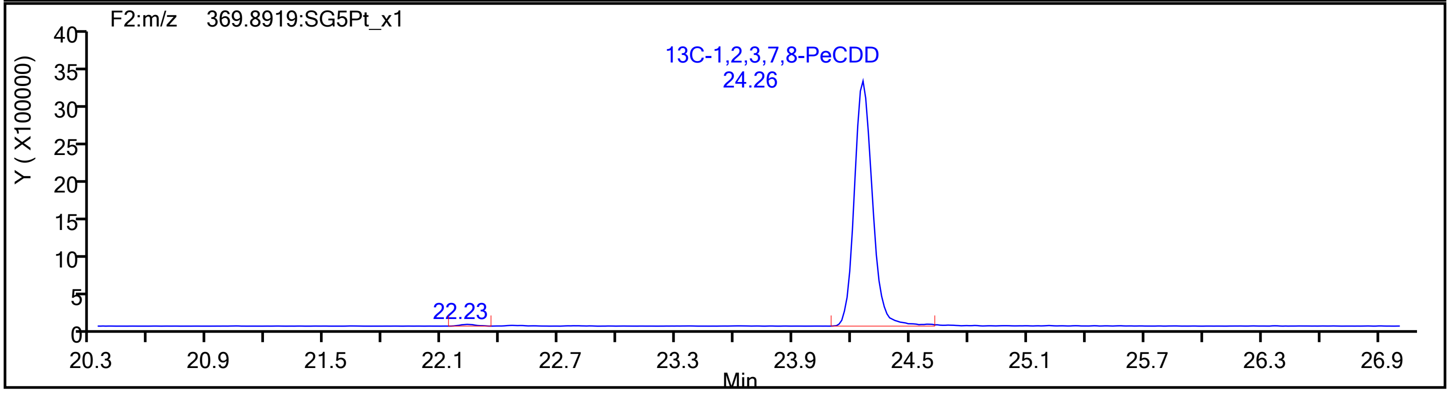

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

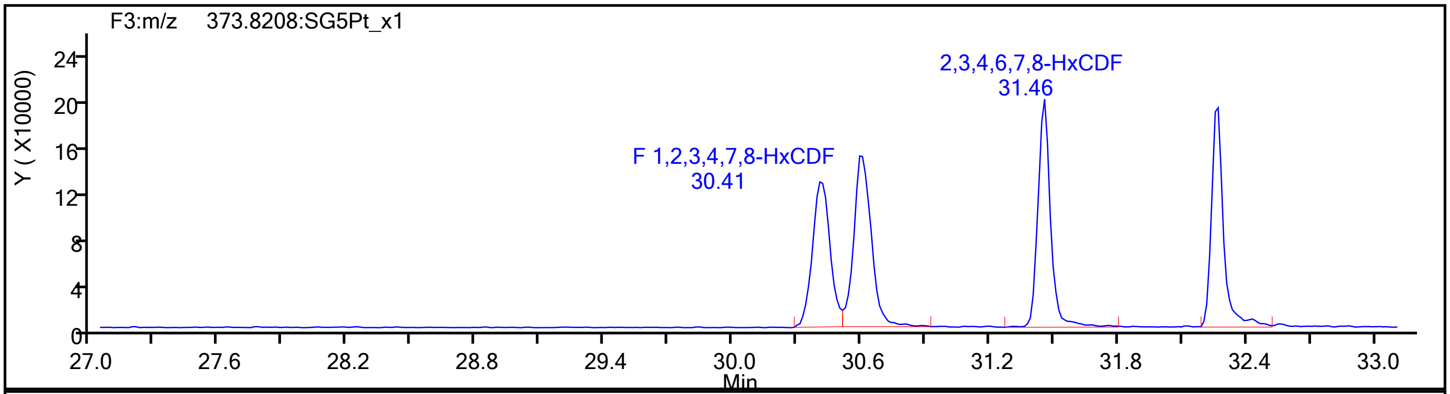

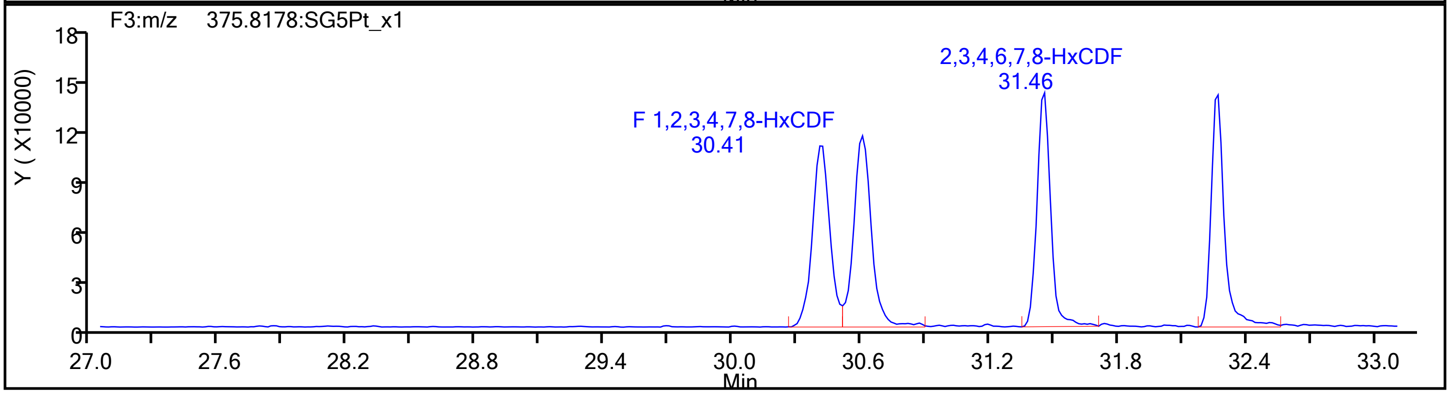

HxCDF Standards

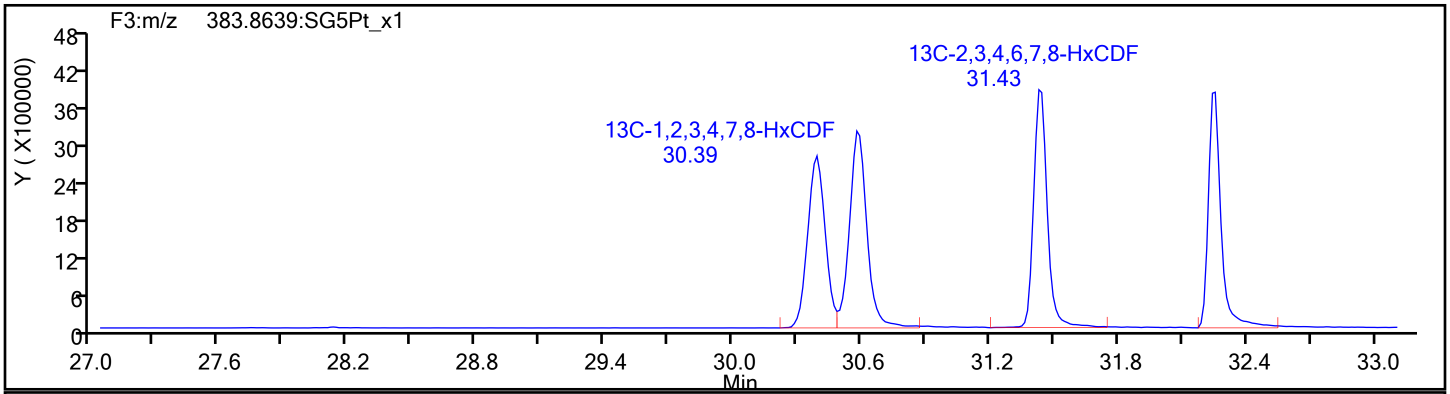

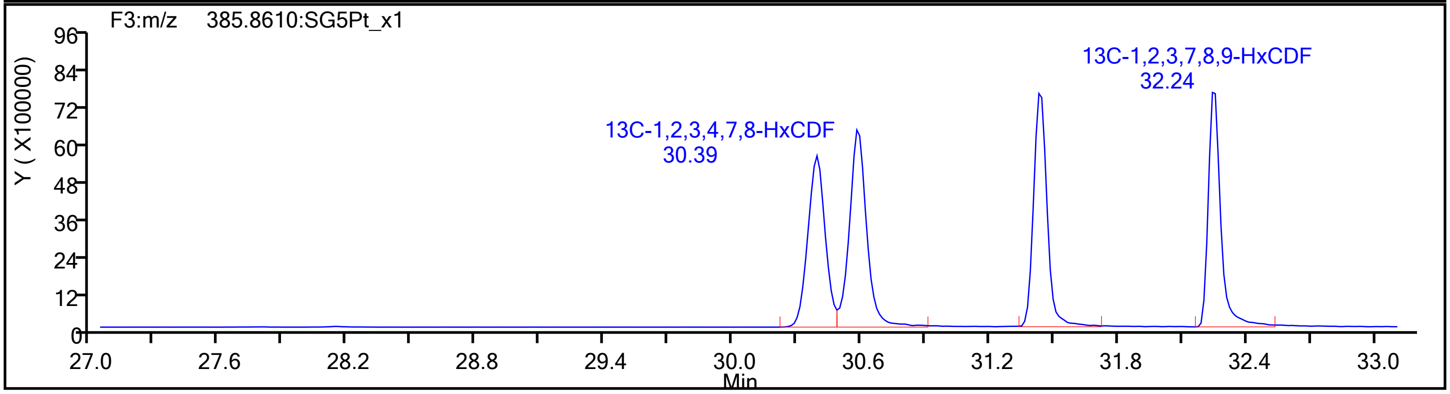

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
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Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

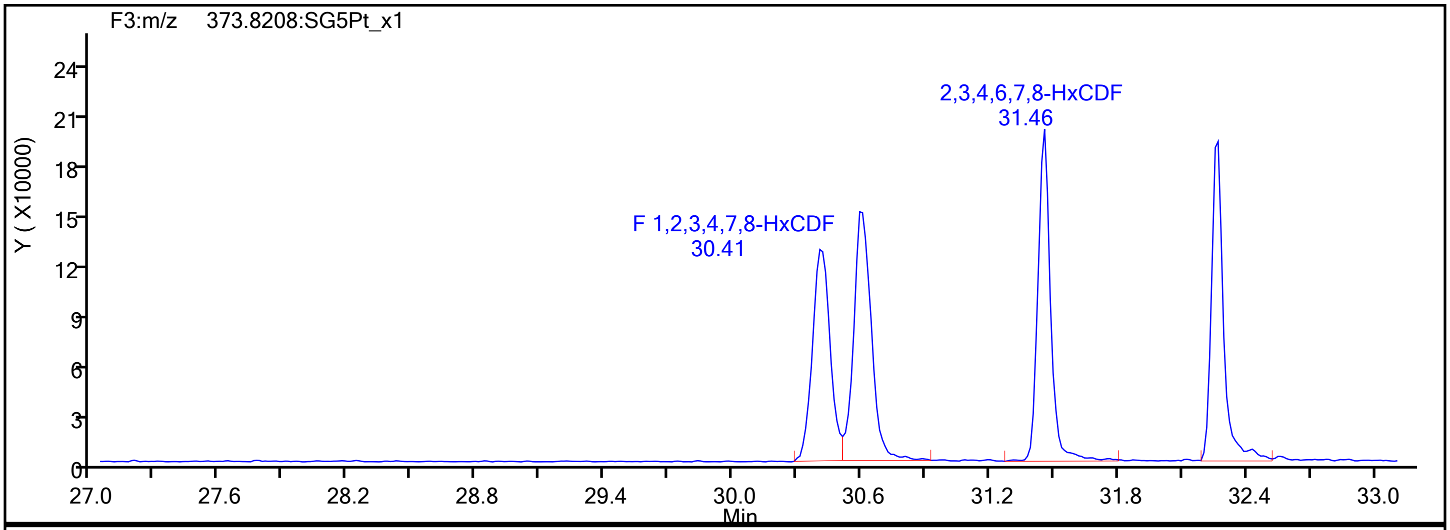

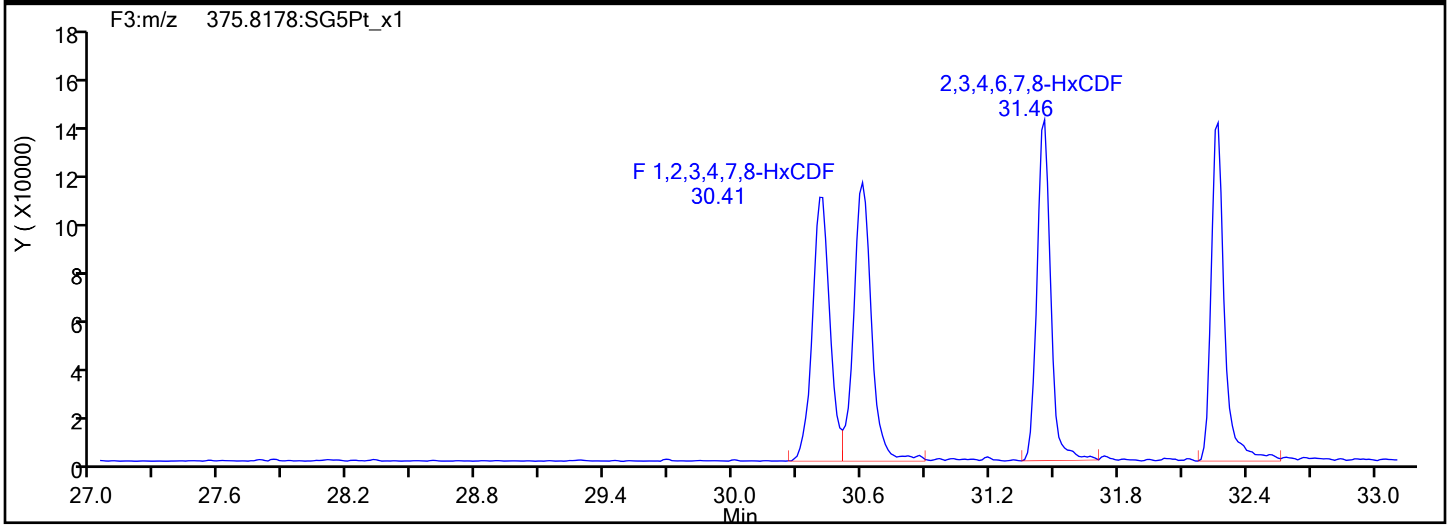

HxCDF Interference Mass

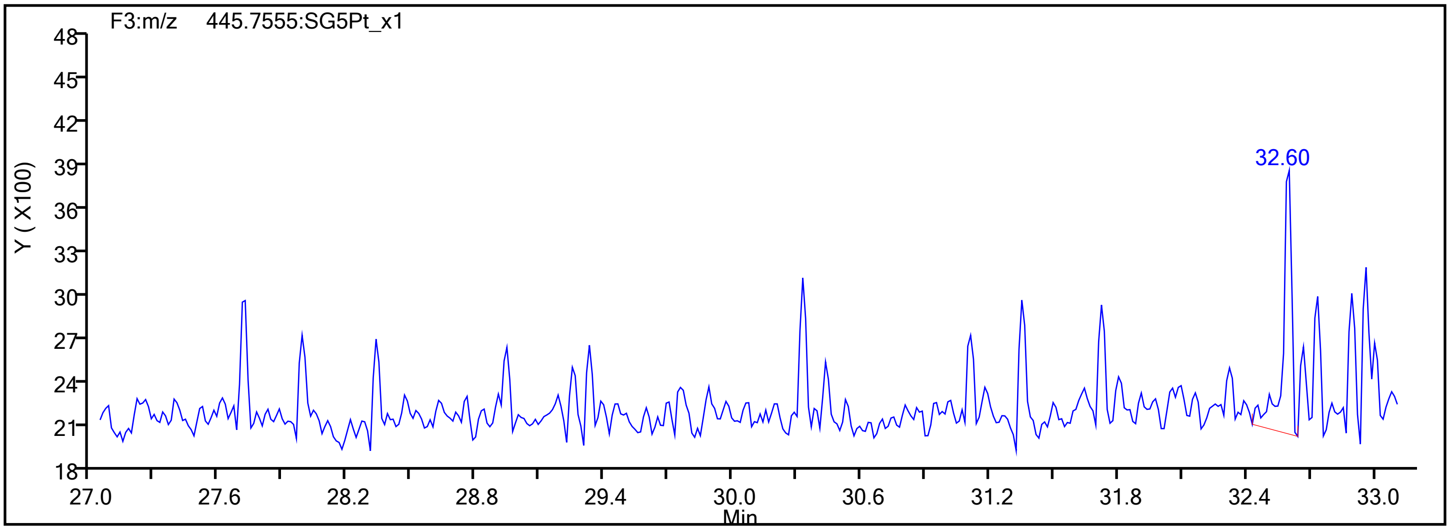

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

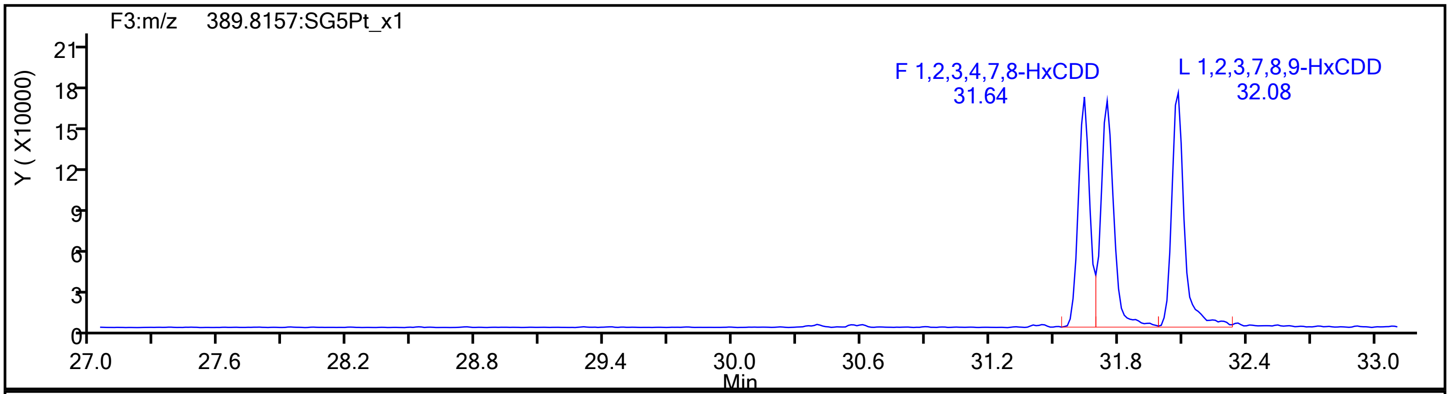

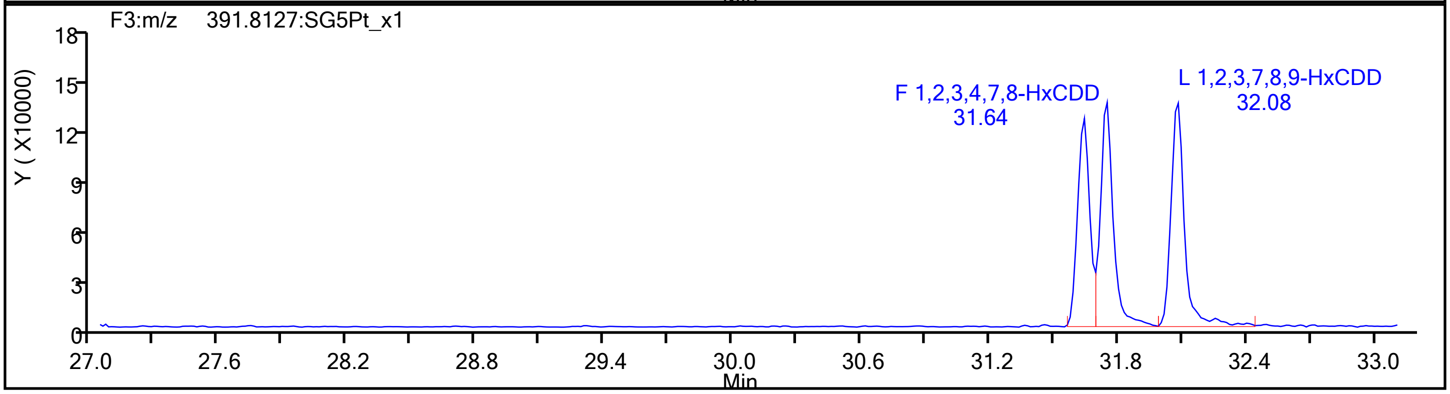

HxCDD Standards

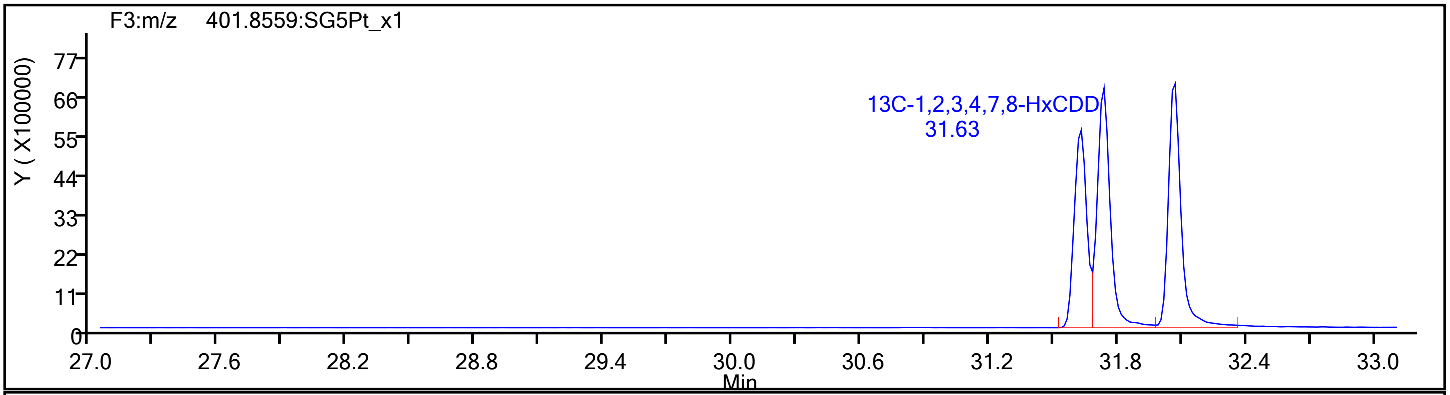

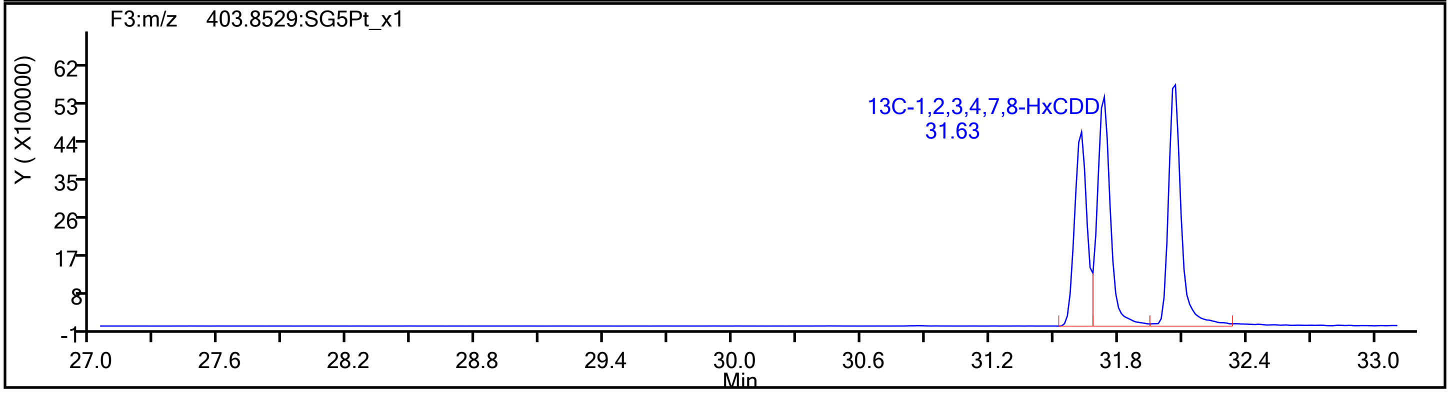

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: AJS

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246
Sample Line#: 3

Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

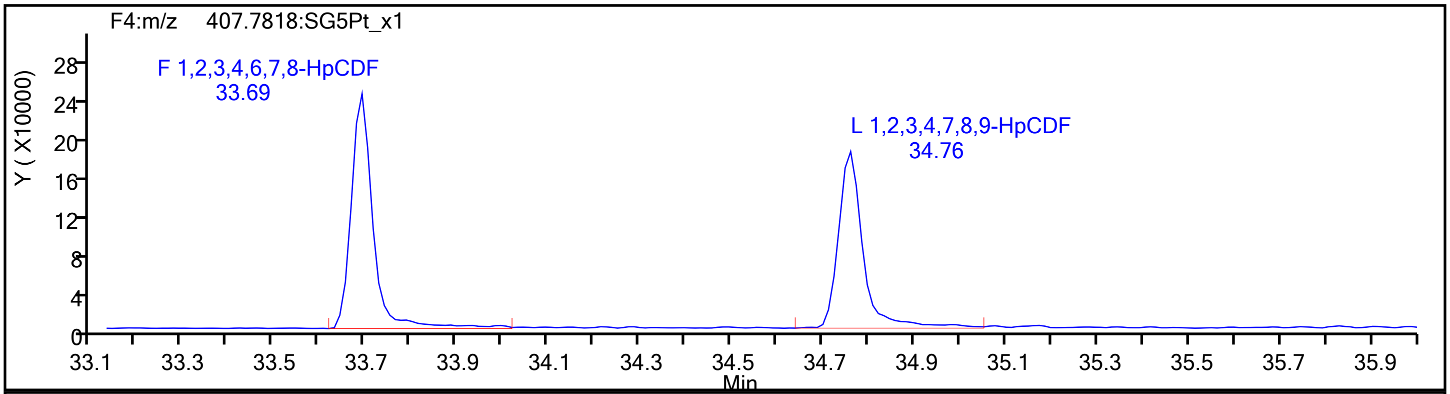

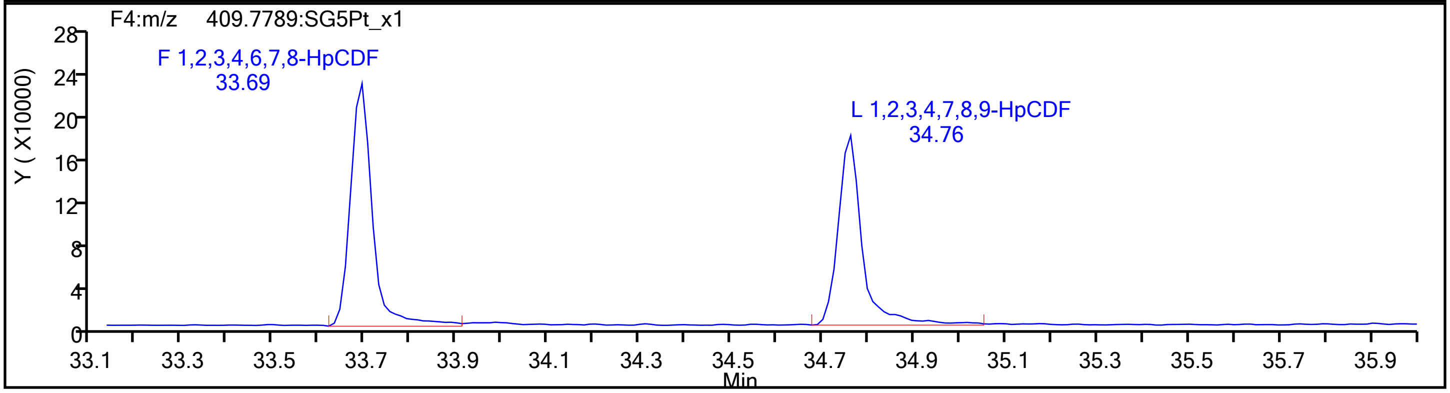

HpCDF Standards

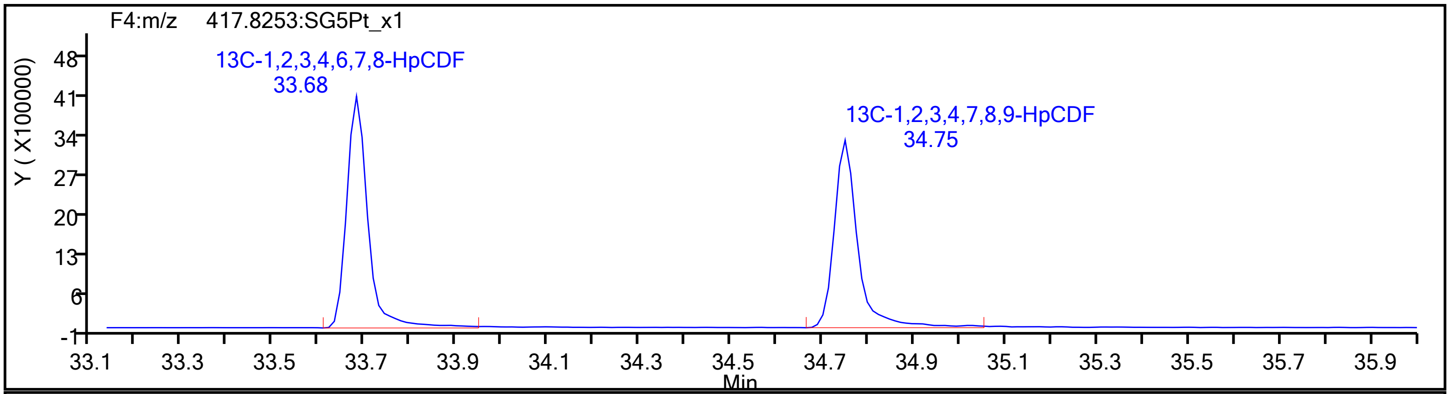

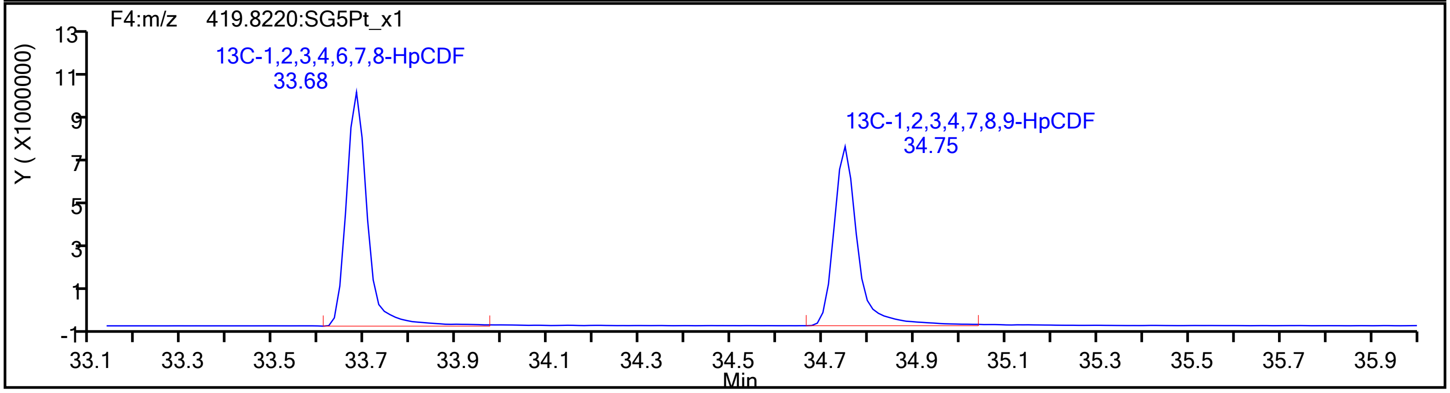

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	413246	Sample Line#:	3
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HpCDF

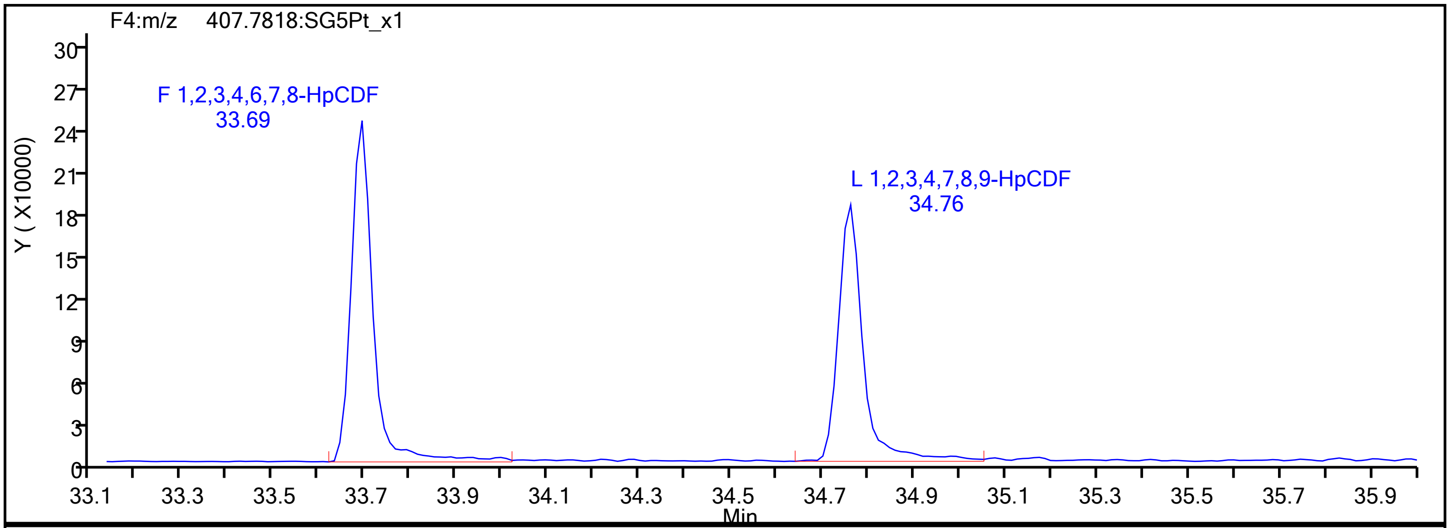

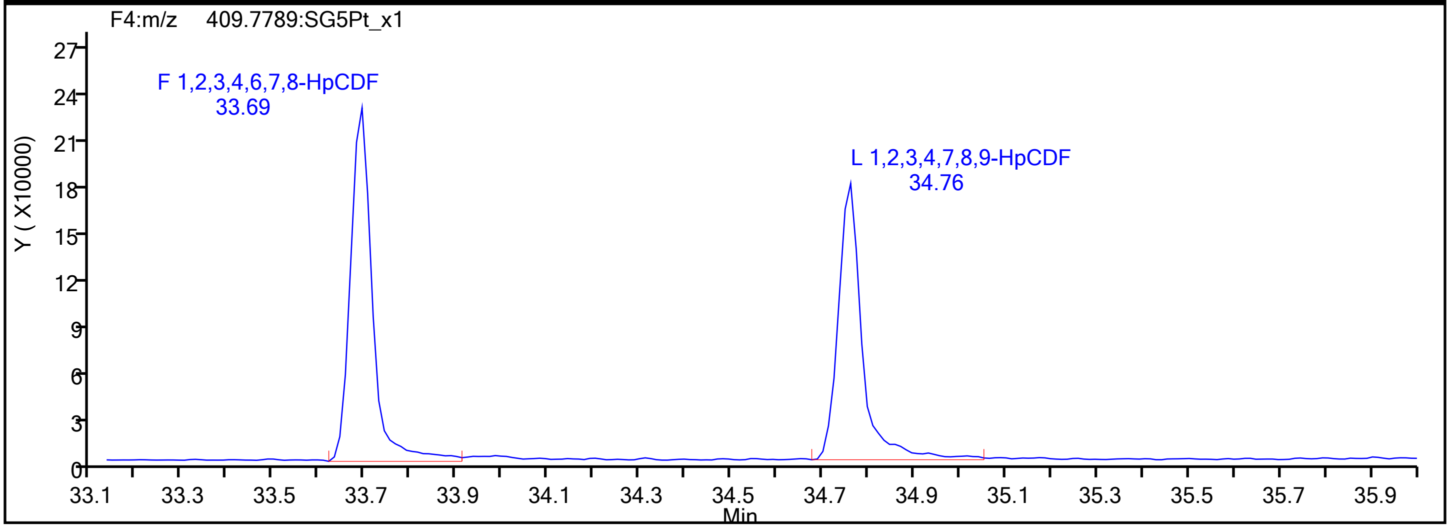

HpCDF Interference Mass

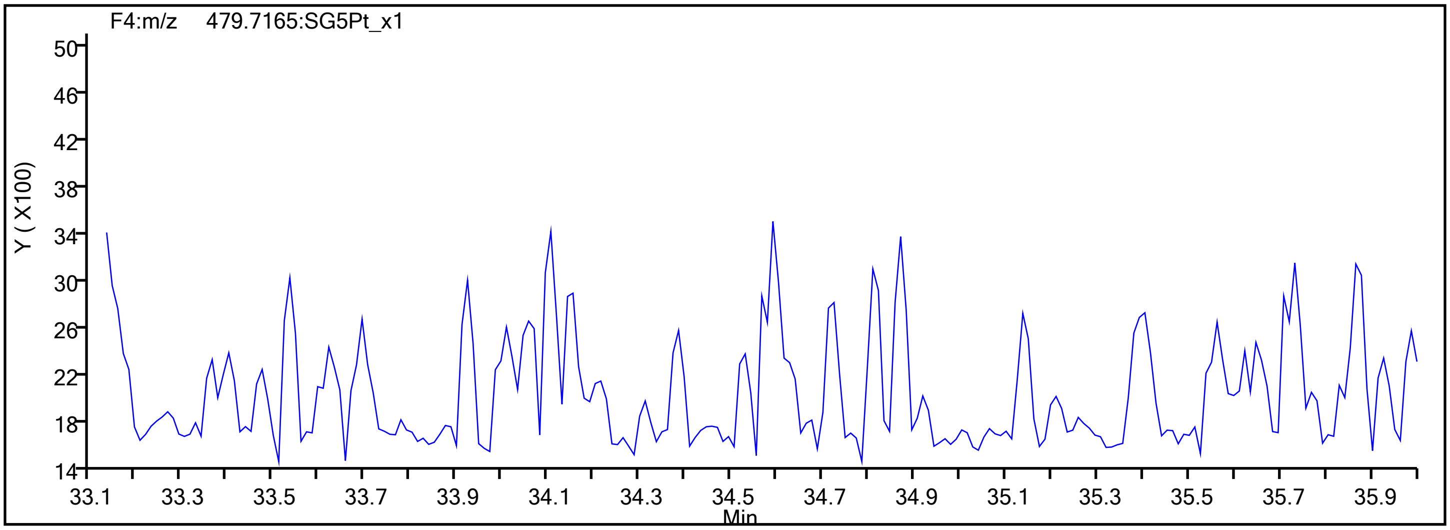

Report Date: 18-Sep-2020 10:35:40
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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HpCDD

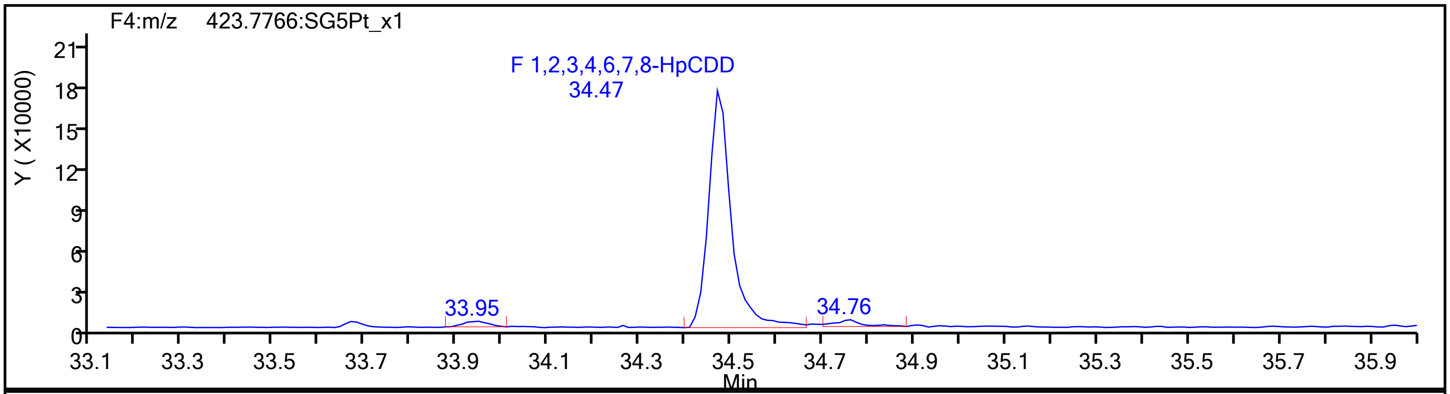

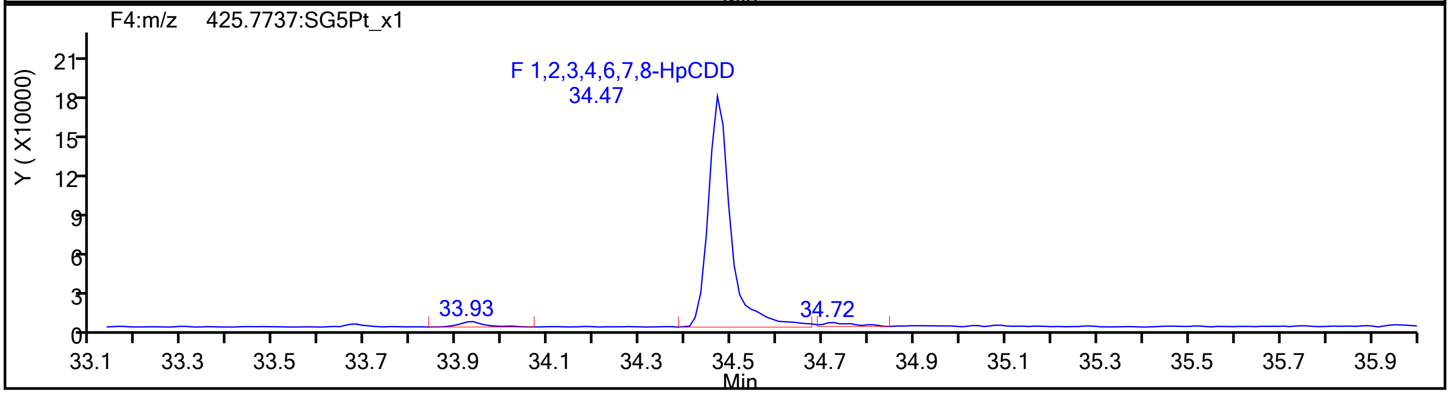

HpCDD Standards

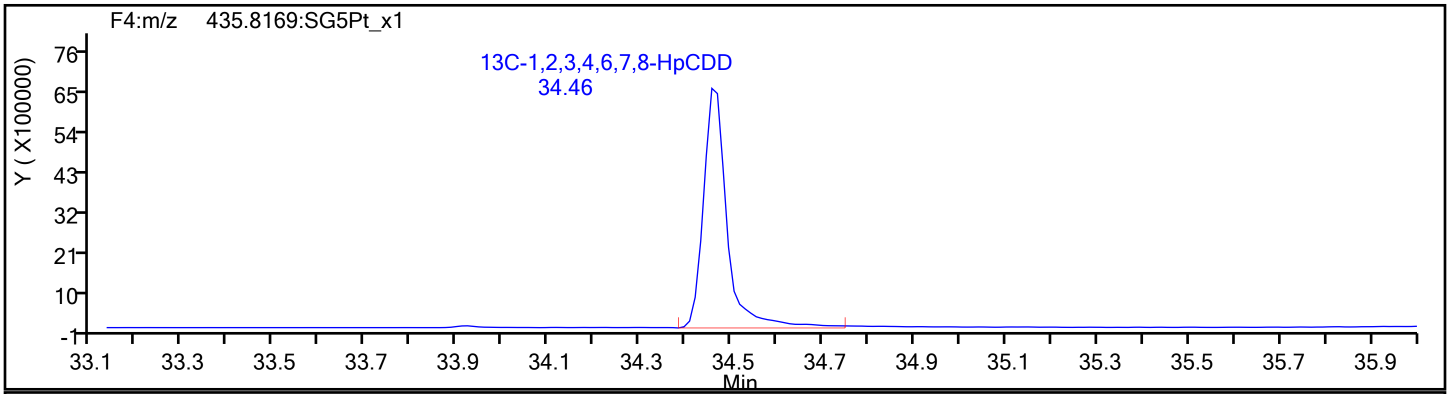

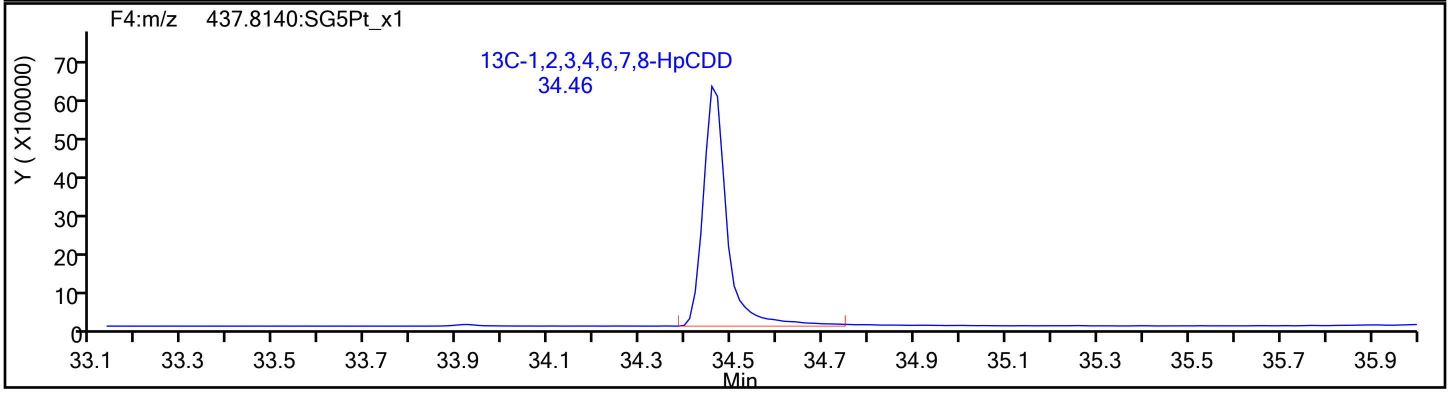

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
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OCDF

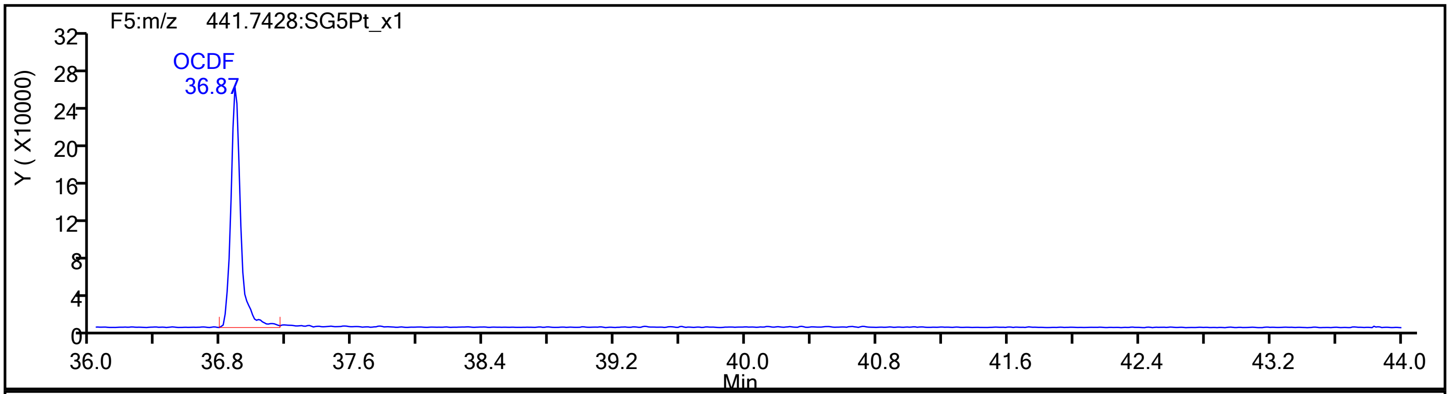

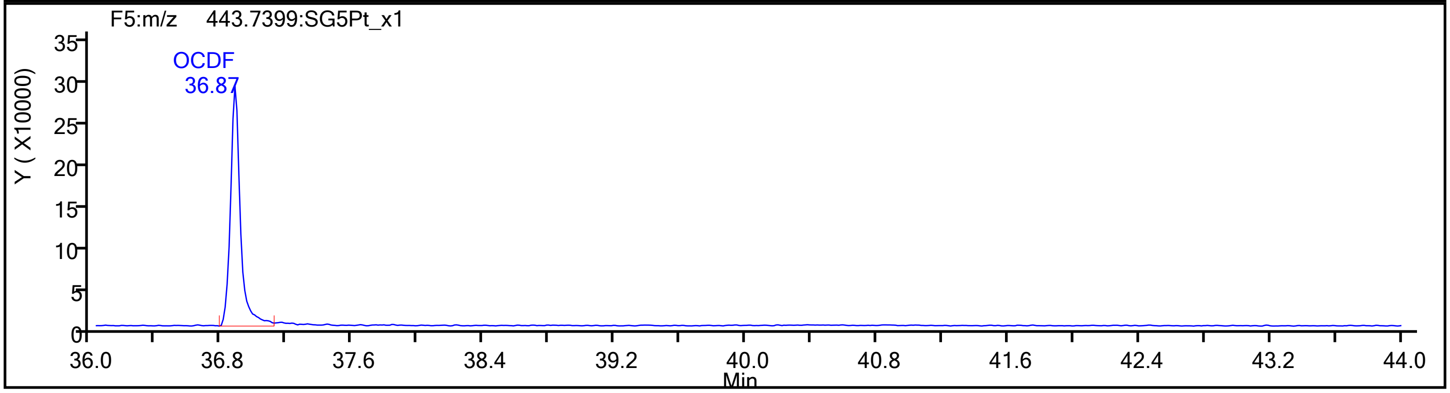

OCDF Standards

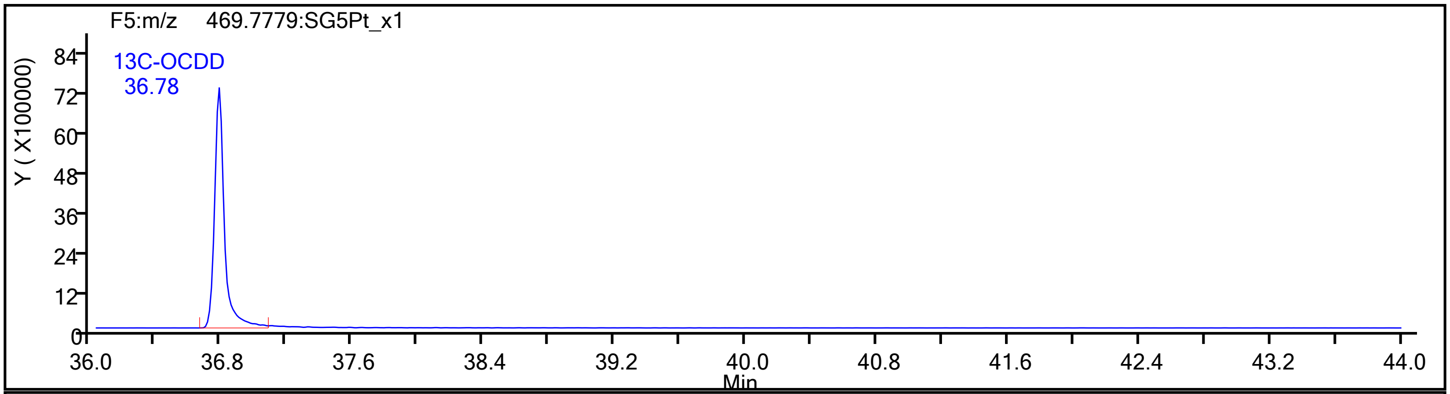

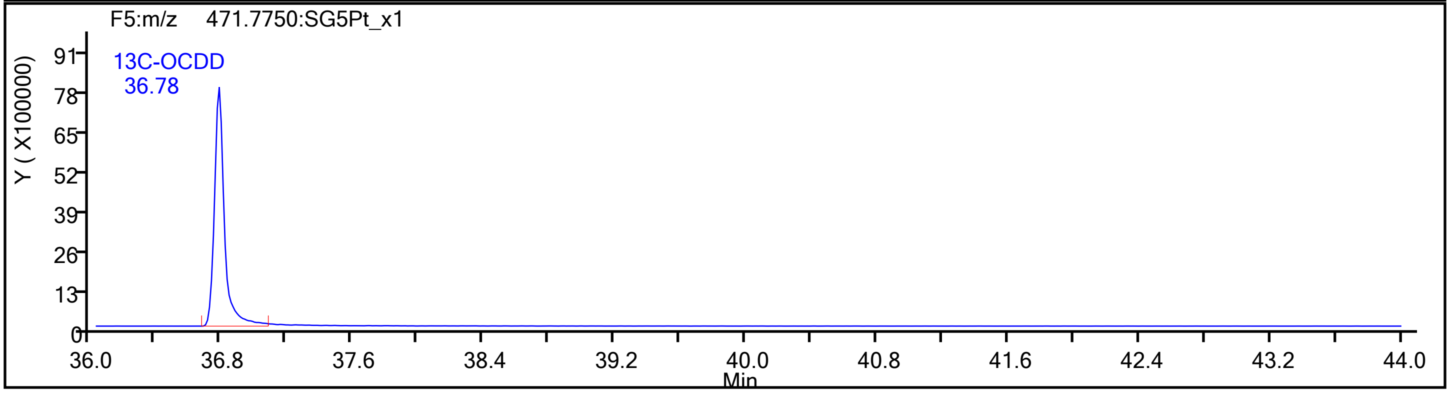

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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OCDF

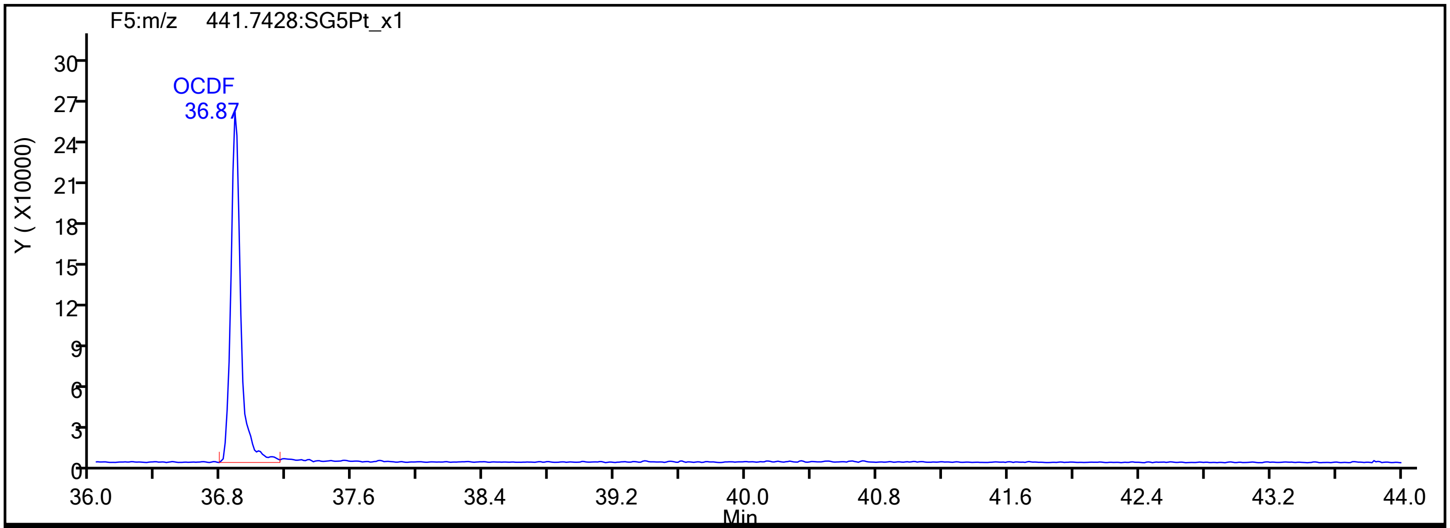

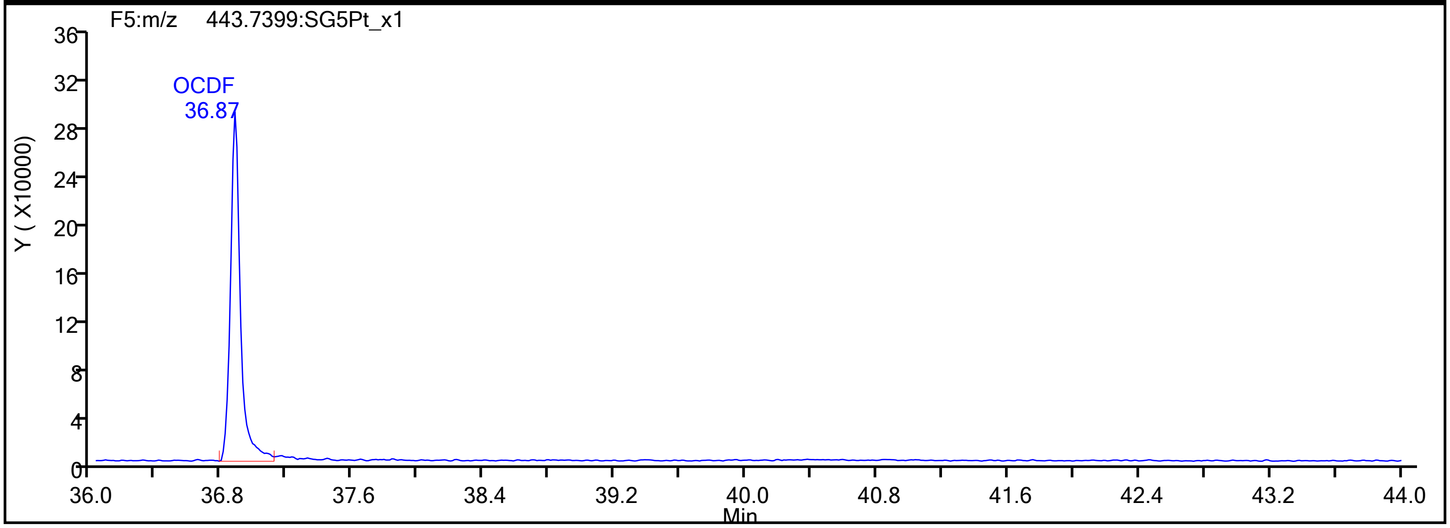

OCDF Interference Mass

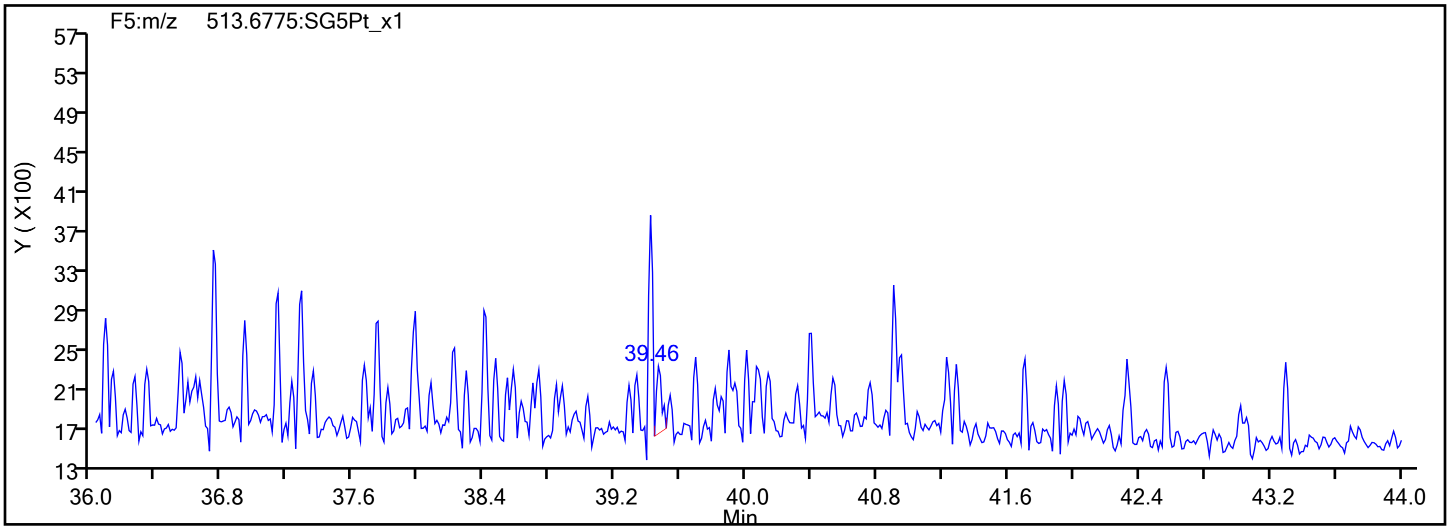

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

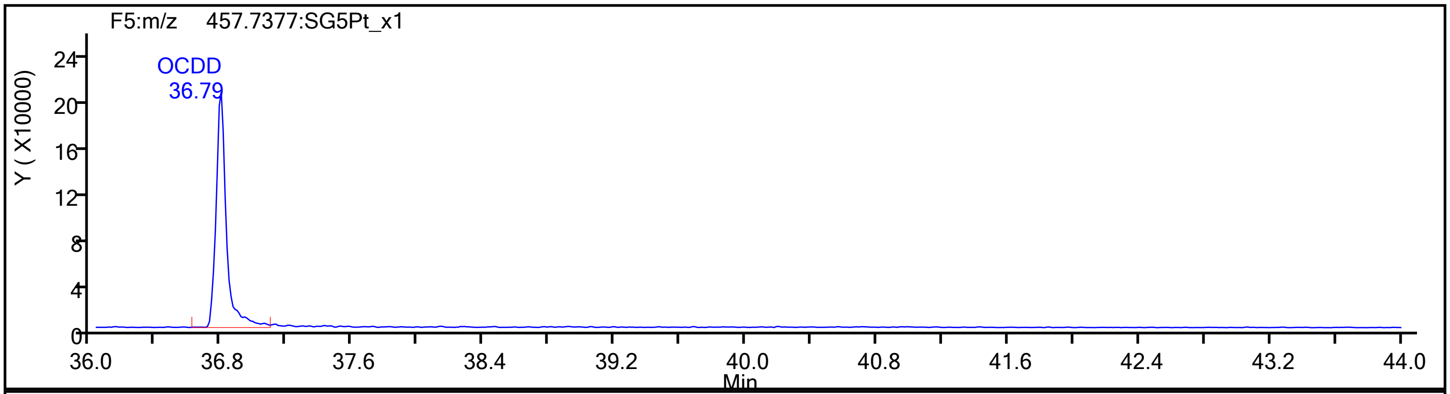

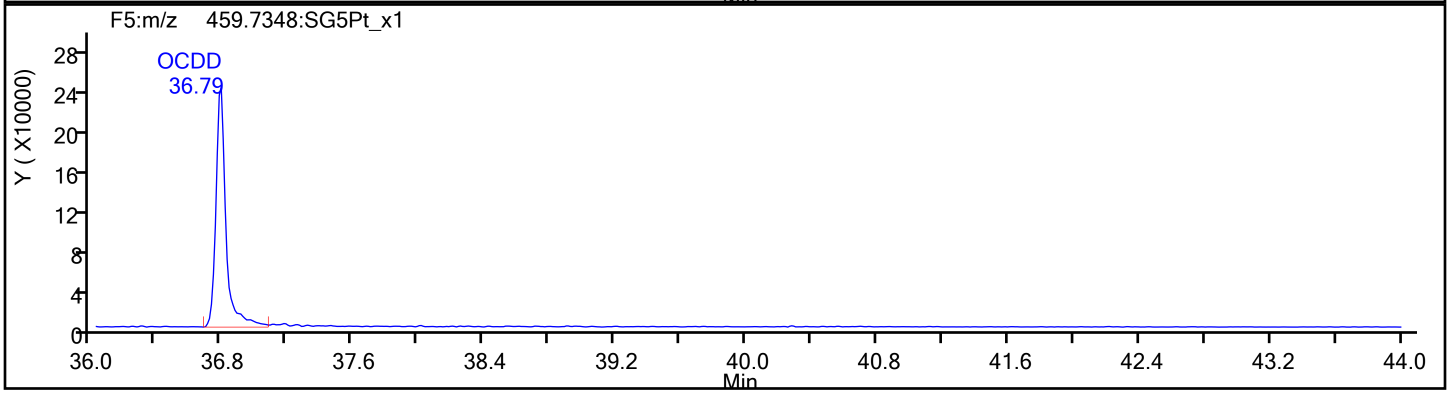

OCDD Standards

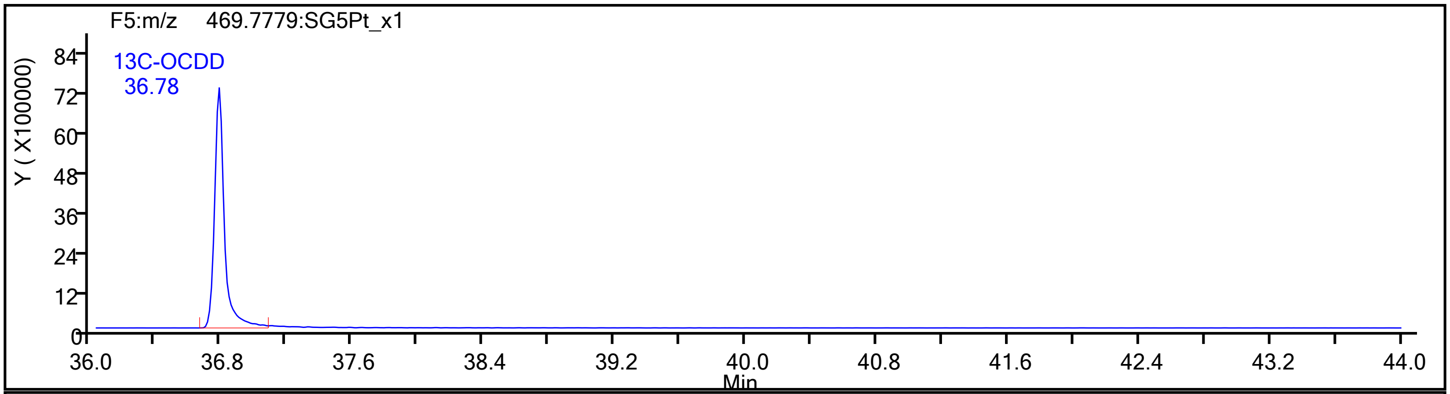

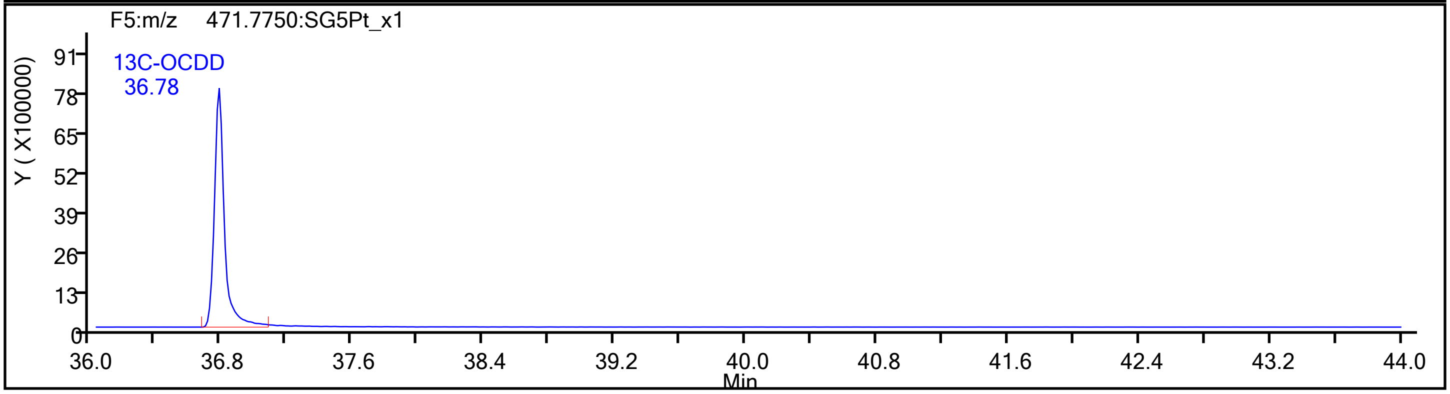

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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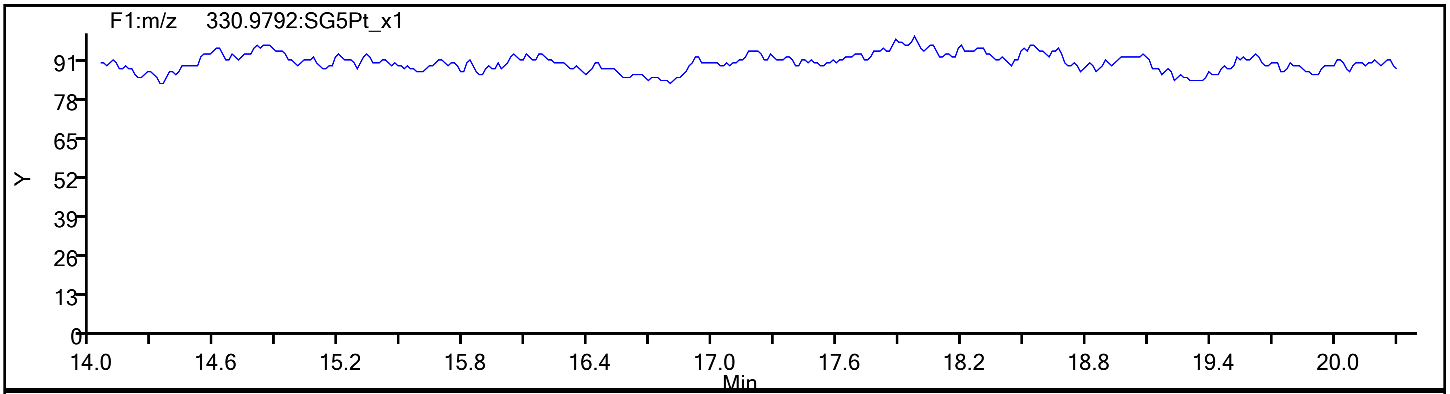
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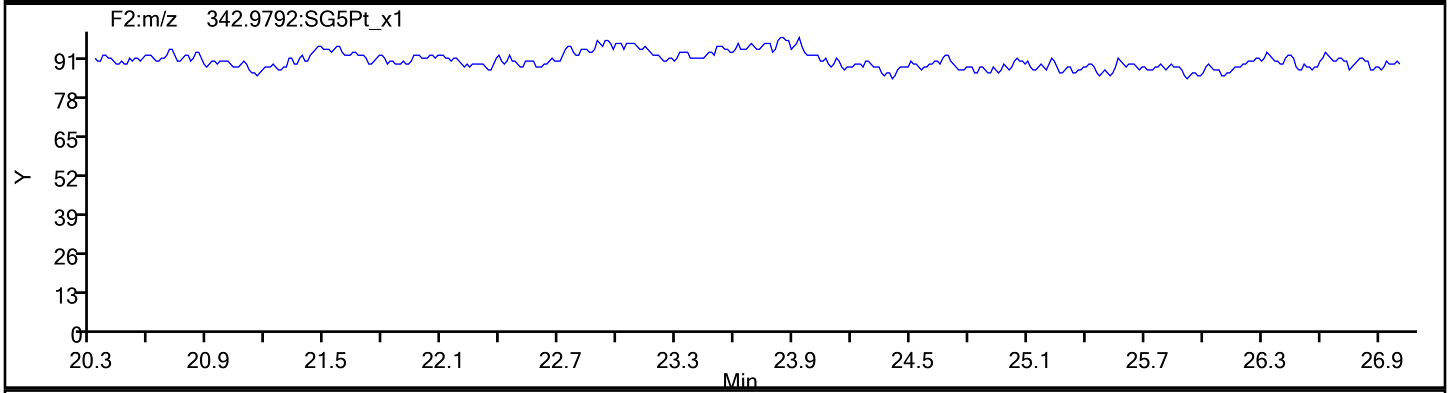
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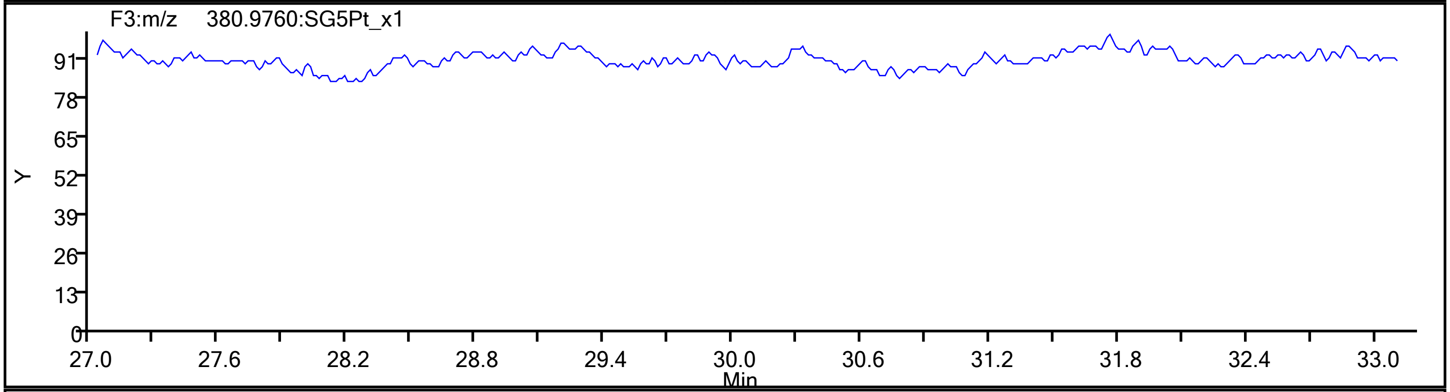
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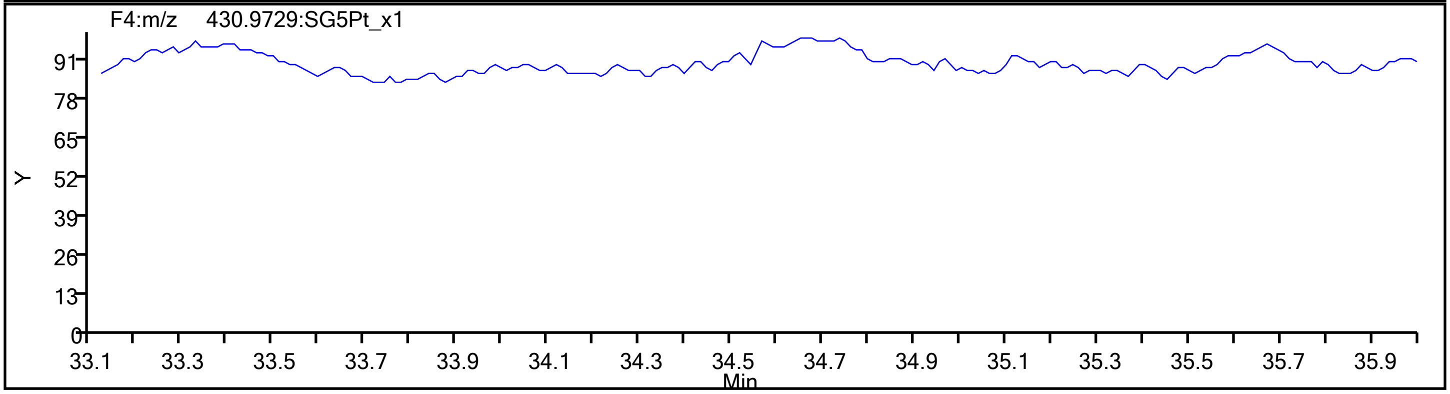
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Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

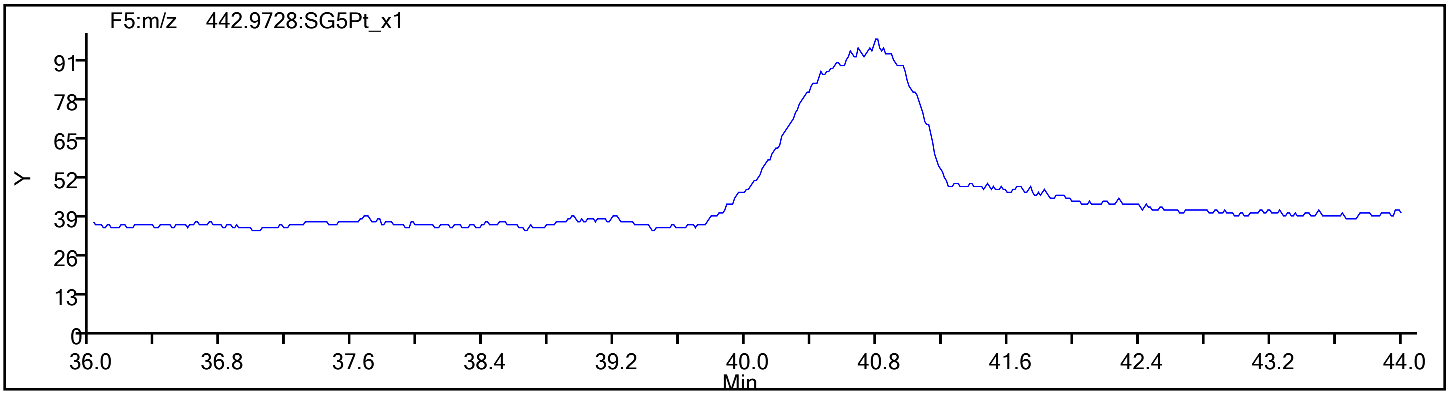

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 16:54:45 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720A CS-3 HRDXNL3_00028
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:16:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.717	68990527	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.219	93295703	0.75	1.3598	99.4	99.4	0.1693	0.1693	99.45	
2,3,7,8-TCDF	17.233	1708632	0.76	0.9077	2.018	2.018	0.0137	0.0137	101	
S Total TCDF					2.018	2.018	0.0137	0.0137		
D 13C-2,3,7,8-TCDD	17.914	70100427	0.78	1.0536	96.4	96.4	0.1596	0.1596	96.44	
2,3,7,8-TCDD	17.929	1423835	0.77	1.0061	2.019	2.019	0.0244	0.0244	101	
$ 37Cl4-2,3,7,8-TCDD	17.929	1350233		1.0488	1.866	1.866	0.009519	0.009519	93.31	
S Total TCDD					2.019	2.019	0.0244	0.0244		
D 13C-1,2,3,7,8-PeCDF	22.212	74247718	1.57	1.1306	95.2	95.2	0.2302	0.2302	95.19	
1,2,3,7,8-PeCDF	22.226	6755406	1.55	0.9147	9.946	9.946	0.0471	0.0471	99.46	
D 13C-2,3,4,7,8-PeCDF	23.548	71861705	1.55	1.0539	98.8	98.8	0.2470	0.2470	98.84	
2,3,4,7,8-PeCDF	23.576	6557191	1.58	0.9508	9.597	9.597	0.0491	0.0491	95.97	
S Total PeCDF					19.5	19.5	0.0481	0.0481		
D 13C-1,2,3,7,8-PeCDD	24.271	52169753	1.60	0.8084	93.5	93.5	0.1193	0.1193	93.54	
1,2,3,7,8-PeCDD	24.298	5096638	1.58	0.9955	9.814	9.814	0.0330	0.0330	98.14	
S Total PeCDD					9.814	9.814	0.0330	0.0330		
D 13C-1,2,3,4,7,8-HxCDF	30.406	46927290	0.51	0.9225	100.4	100.4	0.5382	0.5382	100	
1,2,3,4,7,8-HxCDF	30.419	5051863	1.24	1.1090	9.707	9.707	0.0959	0.0959	97.07	
D 13C-1,2,3,6,7,8-HxCDF	30.592	51405634	0.51	1.0336	98.1	98.1	0.4803	0.4803	98.12	
1,2,3,6,7,8-HxCDF	30.619	5480754	1.24	1.0721	9.945	9.945	0.0909	0.0909	99.45	
D 13C-2,3,4,6,7,8-HxCDF	31.444	48201659	0.51	0.9773	97.3	97.3	0.5080	0.5080	97.29	
2,3,4,6,7,8-HxCDF	31.471	5174349	1.21	1.0838	9.905	9.905	0.0711	0.0711	99.05	
D 13C-1,2,3,7,8,9-HxCDF	32.256	45779728	0.51	0.9153	98.7	98.7	0.5424	0.5424	98.66	
1,2,3,7,8,9-HxCDF	32.269	4879551	1.26	1.0931	9.751	9.751	0.0713	0.0713	97.51	
S Total HxCDF					39.3	39.3	0.0823	0.0823		
* 13C-1,2,3,7,8,9-HxCDD	32.070	50690907	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.644	41387059	1.24	0.7977	102.4	102.4	0.3954	0.3954	102	
1,2,3,4,7,8-HxCDD	31.657	3841879	1.28	1.0014	9.269	9.269	0.0485	0.0485	92.69	
D 13C-1,2,3,6,7,8-HxCDD	31.750	49272149	1.24	1.0010	97.1	97.1	0.3151	0.3151	97.10	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.764	4272300	1.24	0.8902	9.741	9.741	0.0464	0.0464	97.41	
1,2,3,7,8,9-HxCDD	32.083	4768543	1.26	1.0579	9.944	9.944	0.0422	0.0422	99.44	
S Total HxCDD					29.0	29.0	0.0457	0.0457		
D 13C-1,2,3,4,6,7,8-HpCDF	33.691	42054304	0.43	0.8506	97.5	97.5	1.042	1.042	97.53	
1,2,3,4,6,7,8-HpCDF	33.703	5677563	0.97	1.3603	9.925	9.925	0.1057	0.1057	99.25	
D 13C-1,2,3,4,7,8,9-HpCDF	34.760	37805388	0.43	0.7618	97.9	97.9	1.164	1.164	97.90	
1,2,3,4,7,8,9-HpCDF	34.772	4890701	1.03	1.3207	9.796	9.796	0.1339	0.1339	97.96	
S Total HpCDF					19.7	19.7	0.1198	0.1198		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	43522391	1.07	0.8873	96.8	96.8	0.6526	0.6526	96.77	
1,2,3,4,6,7,8-HpCDD	34.481	4188952	1.03	0.9988	9.637	9.637	0.0752	0.0752	96.37	
S Total HpCDD					9.637	9.637	0.0752	0.0752		
D 13C-OCDD	36.791	59498409	0.88	0.6287	186.7	186.7	0.3244	0.3244	93.34	
OCDF	36.887	8263927	0.92	1.4136	19.7	19.7	0.0507	0.0507	98.26	
OCDD	36.803	6682705	0.89	1.1290	19.9	19.9	0.0499	0.0499	99.49	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	17-Sep-2020 16:54:45	ALS Bottle#:	5	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 091720A CS-3 HRDXNL3_00028				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:35:45	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:16:40

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.717	17.711	0		30271867	7391555	5698	14245	1297		
333.9339	17.717	17.711	0		38718660	9456382	5635	14087	1678	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.219	17.203	1	0.972	39965916	9954863	7261	18152	1371		
317.9389	17.219	17.203	1	0.972	53329787	13099748	8258	20645	1586	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.233	17.218	1	1.001	736716	185710	484	1210	384		
305.8987	17.233	17.218	1	1.001	971916	239970	666	1665	360	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.011	30806430	7295166	5698	14245	1280		
333.9339	17.914	17.905	1	1.011	39293997	9240658	5635	14087	1640	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	620615	143049	1087	2717	132		
321.8936	17.929	17.920	1	1.001	803220	187057	537	1342	348	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	1350233	319770	673	1682	475		
13C-1,2,3,7,8-PeCDF											
351.9000	22.212	22.204	0	1.254	45338036	7837437	10489	26222	747		
353.8970	22.212	22.204	0	1.254	28909682	5088739	7051	17627	722	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	4106763	692324	1176	2940	589		
341.8567	22.226	22.220	0	1.001	2648643	443559	1050	2625	422	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.548	23.540	0	1.329	43677378	7227444	10489	26222	689		
353.8970	23.548	23.540	0	1.329	28184327	4693729	7051	17627	666	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.576	23.567	0	1.001	4019655	644235	1176	2940	548		
341.8567	23.576	23.567	0	1.001	2537536	409798	1050	2625	390	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.271	24.263	0	1.370	32084051	4948303	3931	9827	1259		
369.8919	24.271	24.263	0	1.370	20085702	3074322	2571	6427	1196	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.298	24.290	0	1.001	3120498	479916	664	1660	723		
357.8516	24.298	24.290	0	1.001	1976140	296292	390	975	760	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.406	30.398	0	0.948	15862738	2738964	8063	20157	340		
385.8610	30.406	30.398	0	0.948	31064552	5354365	15450	38625	347	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.419	30.414	0	1.000	2797700	487863	1850	4625	264		
375.8178	30.419	30.414	0	1.000	2254163	396525	1594	3985	249	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.592	30.587	0	0.954	17471478	3040203	8063	20157	377		
385.8610	30.592	30.587	0	0.954	33934156	5790019	15450	38625	375	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.619	30.608	1	1.001	3037205	542821	1850	4625	293		
375.8178	30.619	30.608	1	1.001	2443549	421125	1594	3985	264	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	16300349	3763985	8063	20157	467		
385.8610	31.444	31.439	0	0.980	31901310	7412832	15450	38625	480	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.471	31.458	1	1.001	2835641	630077	1850	4625	341		
375.8178	31.458	31.458	0	1.000	2338708	540139	1594	3985	339	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	15449991	3673540	8063	20157	456		
385.8610	32.256	32.254	0	1.006	30329737	7376877	15450	38625	477	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.269	32.267	0	1.000	2716071	637876	1850	4625	345		
375.8178	32.269	32.267	0	1.000	2163480	533593	1594	3985	335	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		28150092	6518580	8160	20400	799		
403.8529	32.070	32.067	0		22540815	5321978	6779	16947	785	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.644	31.631	1	0.987	22922425	5554603	8160	20400	681		
403.8529	31.631	31.631	0	0.986	18464634	4491856	6779	16947	663	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.657	31.647	1	1.000	2158558	540045	1123	2807	481		
391.8127	31.657	31.647	1	1.000	1683321	419033	830	2075	505	1.28(1.05-1.43)	

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.750	31.740	1	0.990	27299257	6605372	8160	20400	809		
403.8529	31.750	31.740	1	0.990	21972892	5219049	6779	16947	770	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.764	31.756	0	1.000	2360992	557234	1123	2807	496		
391.8127	31.764	31.756	0	1.000	1911308	451570	830	2075	544	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	2659612	628709	1123	2807	560		
391.8127	32.083	32.081	0	1.014	2108931	495604	830	2075	597	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.691	33.684	0	1.051	12556838	3909769	12847	32117	304		
419.8220	33.691	33.684	0	1.051	29497466	9034077	29146	72865	310	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.703	33.694	1	1.000	2797163	852978	4040	10100	211		
409.7789	33.703	33.694	1	1.000	2880400	868985	3407	8517	255	0.97(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.760	34.751	1	1.084	11322959	3174646	12847	32117	247		
419.8220	34.760	34.751	1	1.084	26482429	7353625	29146	72865	252	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.772	34.763	1	1.000	2482073	658836	4040	10100	163		
409.7789	34.772	34.763	1	1.000	2408628	635338	3407	8517	186	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	22520525	6337080	13670	34175	464		
437.8140	34.469	34.464	0	1.075	21001866	5882126	13754	34385	428	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	2124201	612915	1929	4822	318		
425.7737	34.481	34.474	0	1.000	2064751	594538	1742	4355	341	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.791	36.784	0	1.147	27863400	6692110	4873	12182	1373		
471.7750	36.791	36.784	0	1.147	31635009	7478443	4787	11967	1562	0.88(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	3963678	938447	902	2255	1040		
443.7399	36.887	36.882	0	1.003	4300249	1047583	1129	2822	928	0.92(0.76-1.02)	
OCDD											
457.7377	36.803	36.791	1	1.000	3139043	744024	661	1652	1126		
459.7348	36.791	36.791	0	1.000	3543662	826318	935	2337	884	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

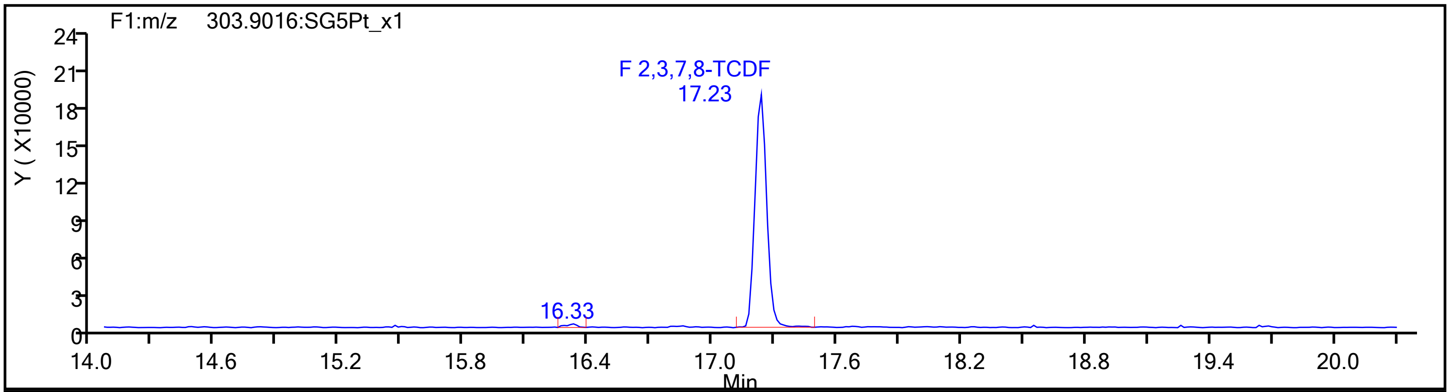

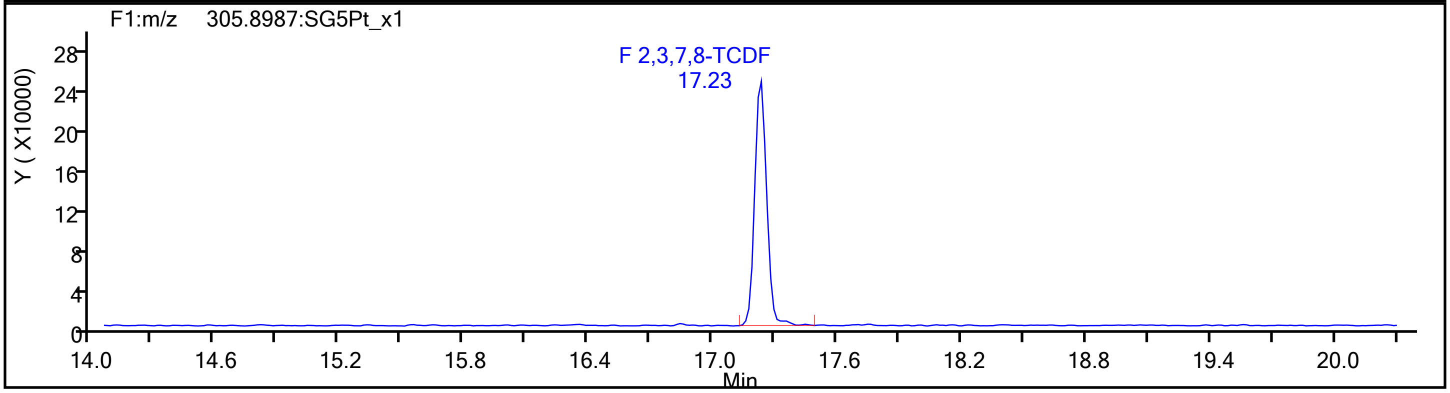

TCDF Standards

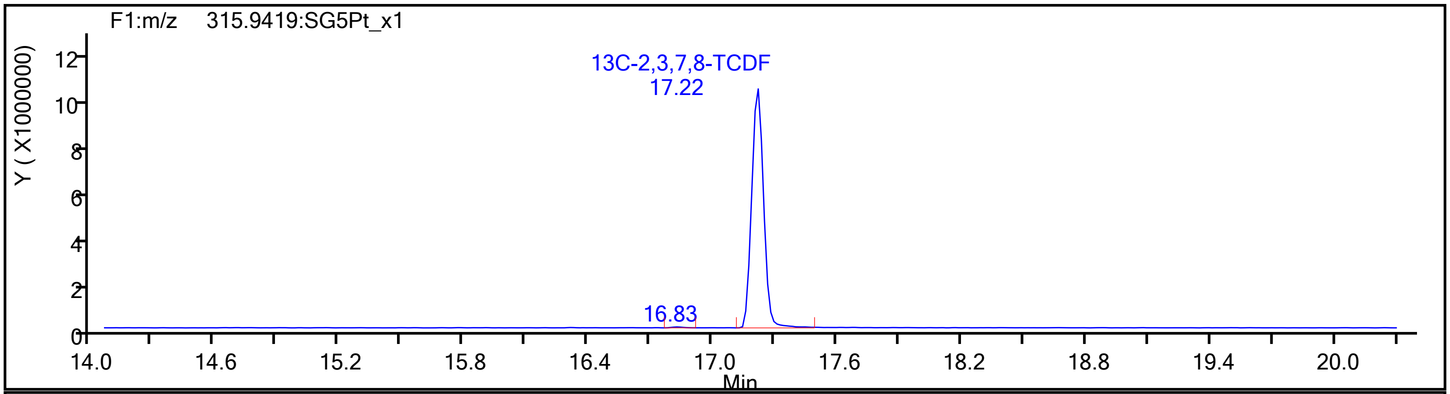

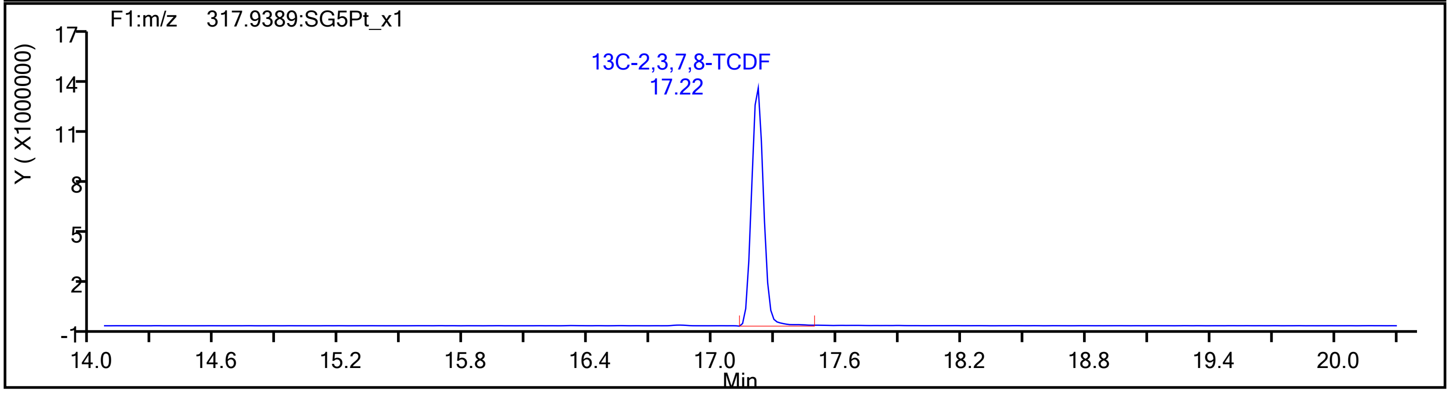

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

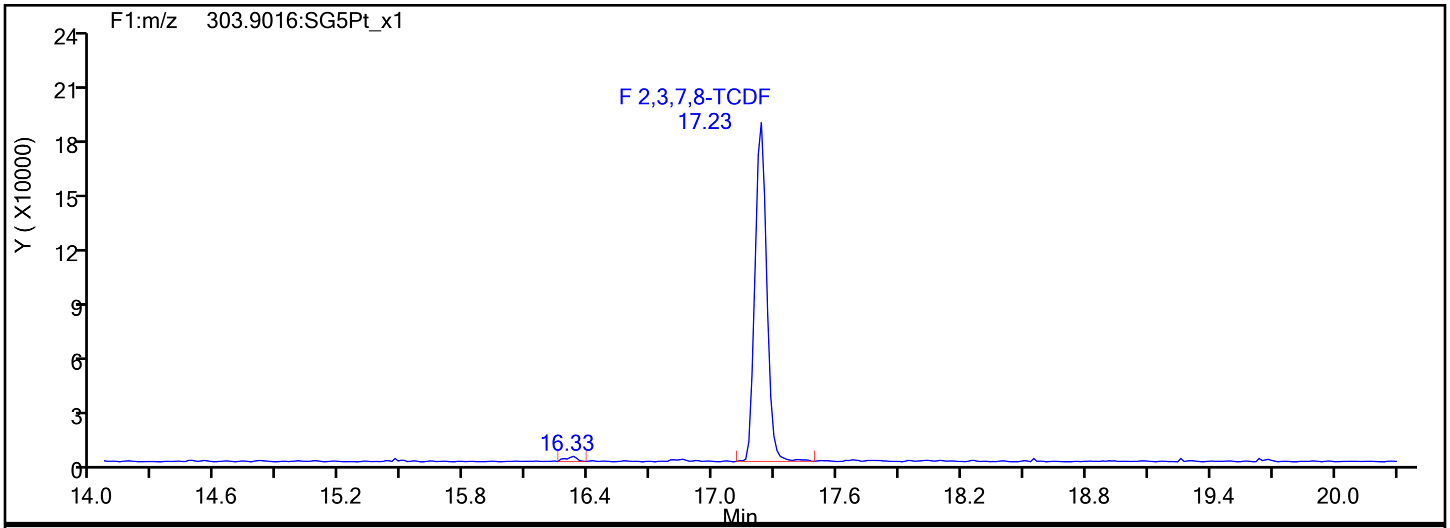

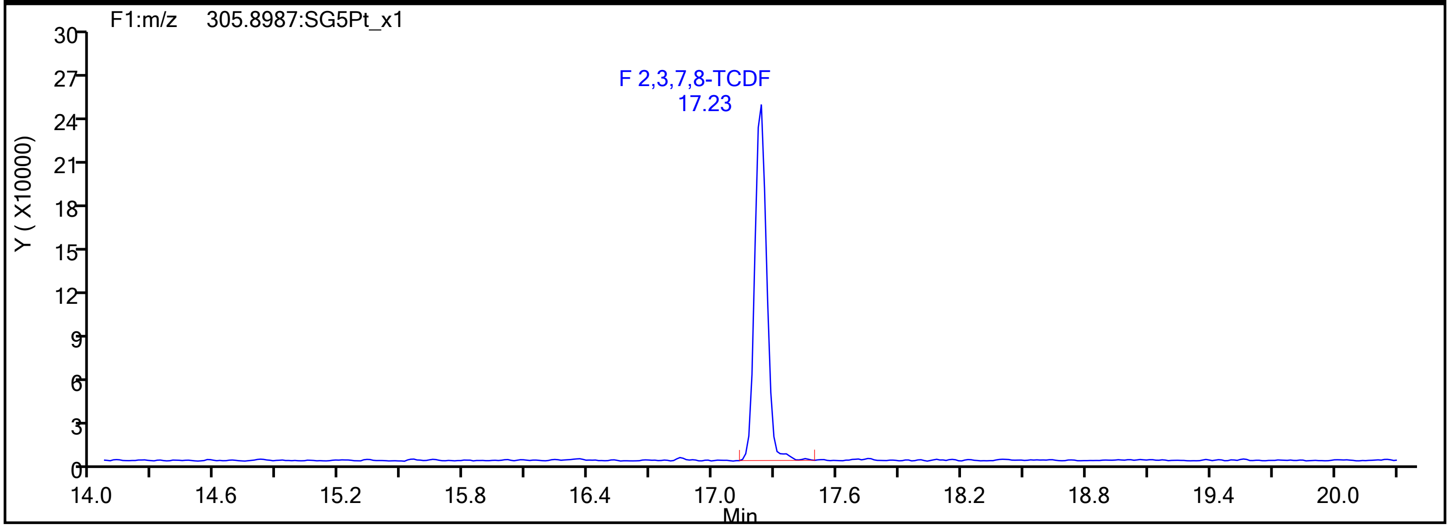

TCDF Interference Mass

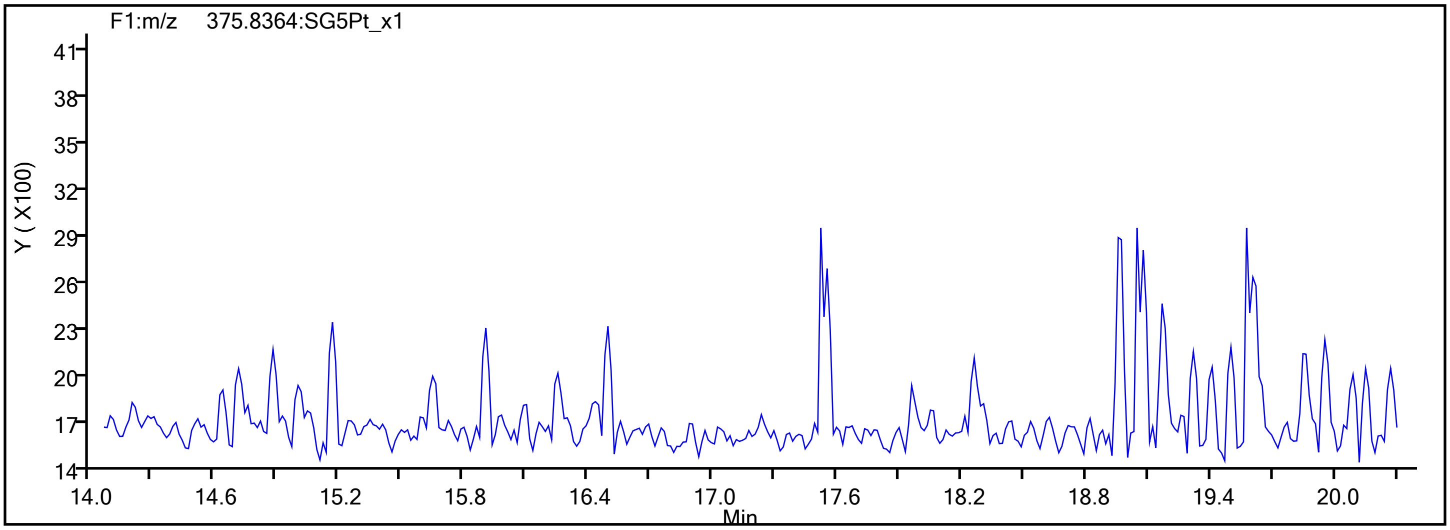

Report Date: 18-Sep-2020 10:35:48
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

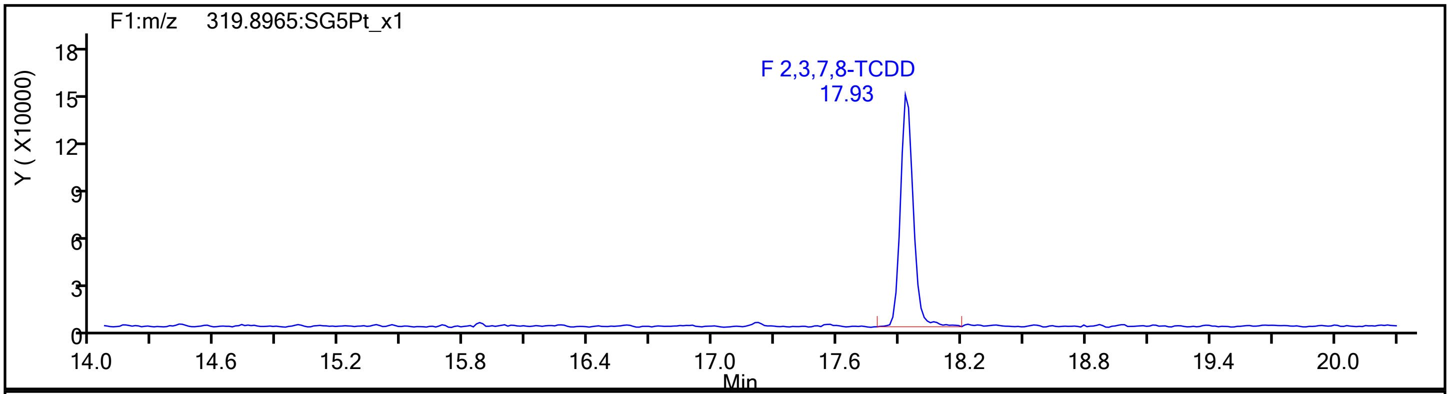

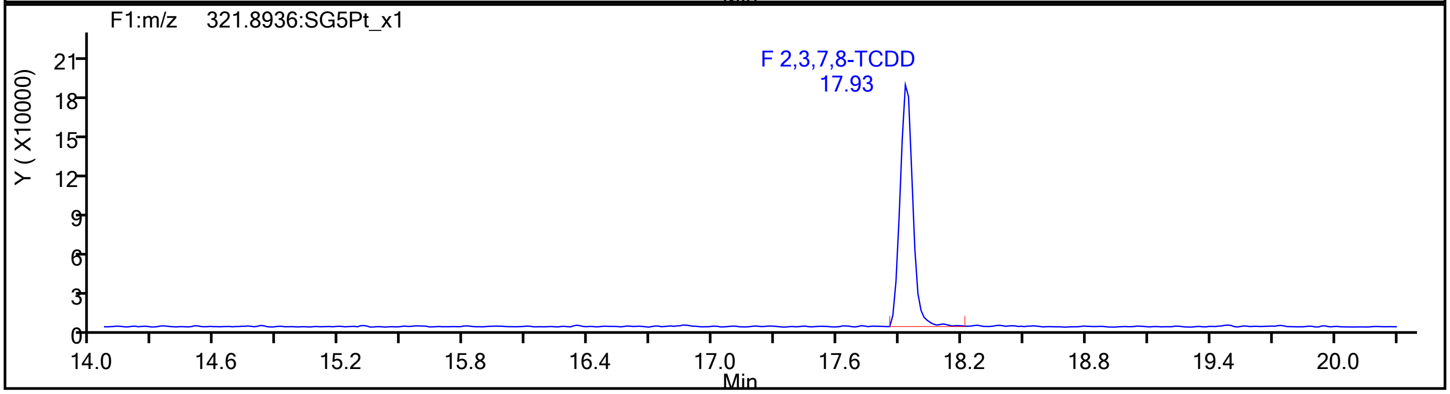

TCDD Standards

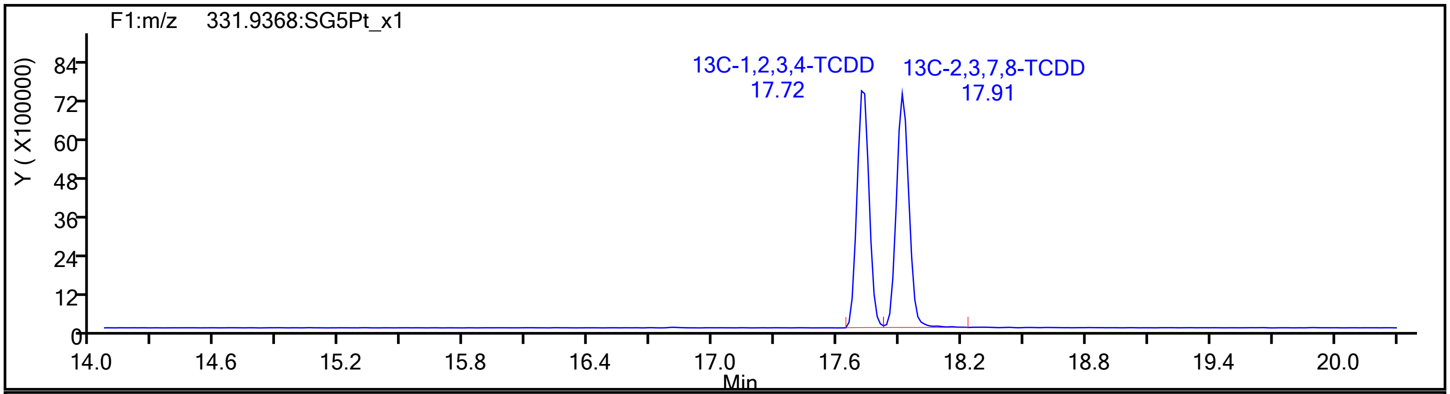

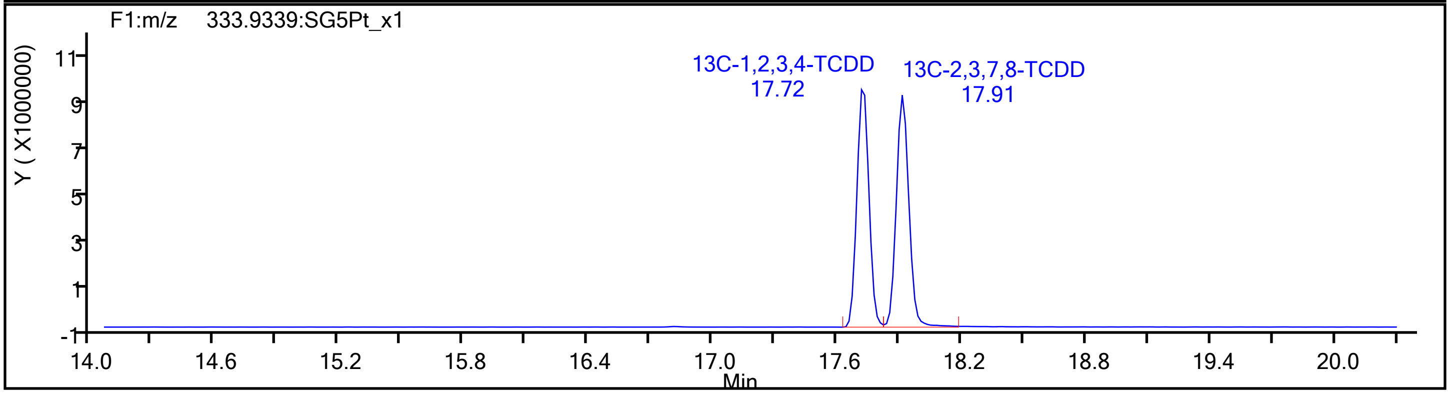

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Method: Dioxin_10D5
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37Cl4-TCDD

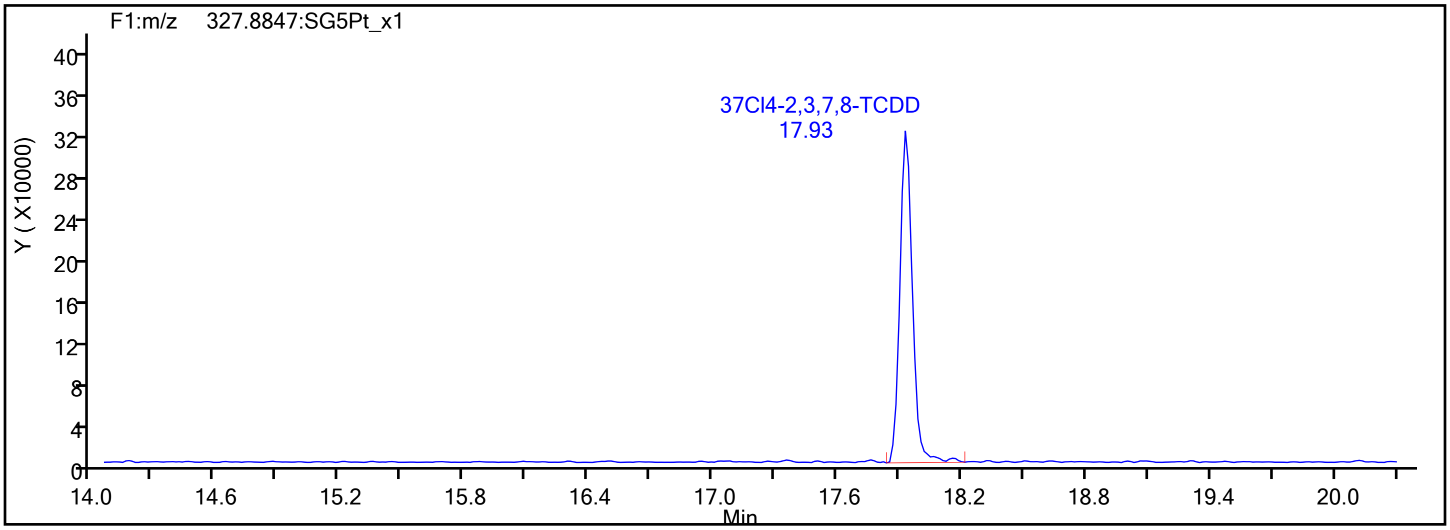

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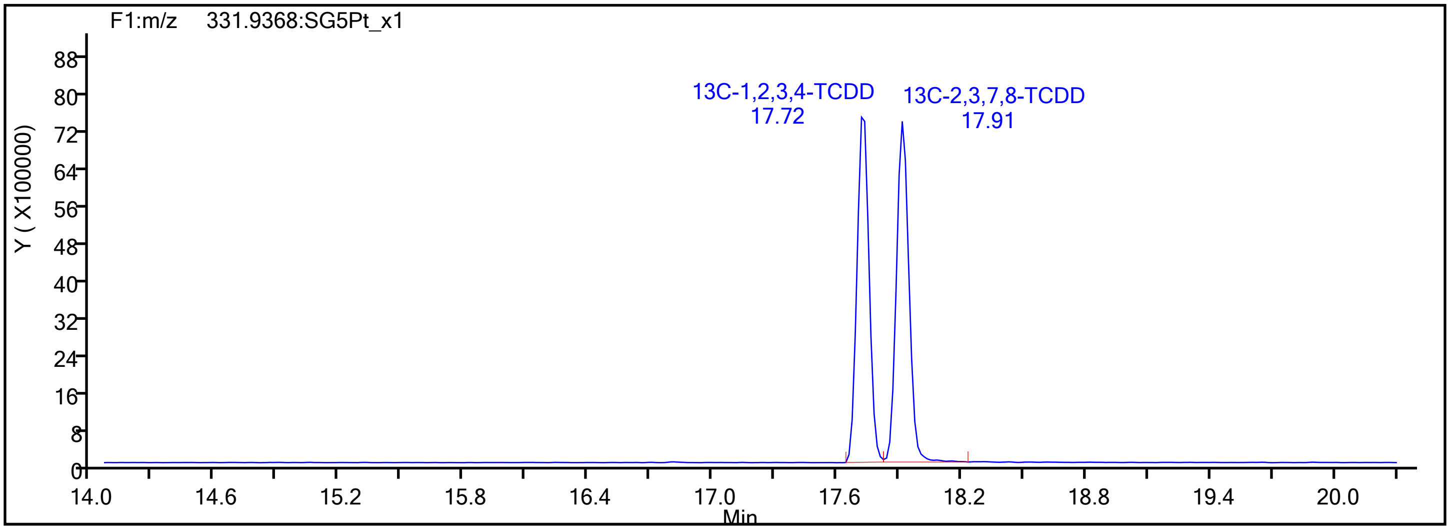

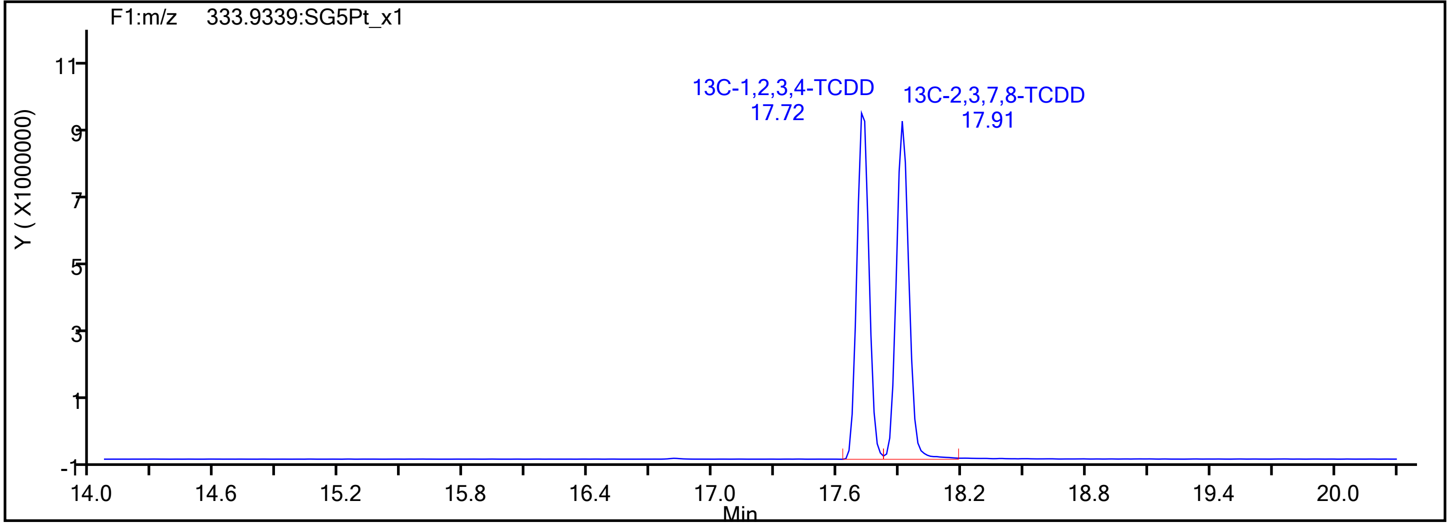

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F1 PeCDFs

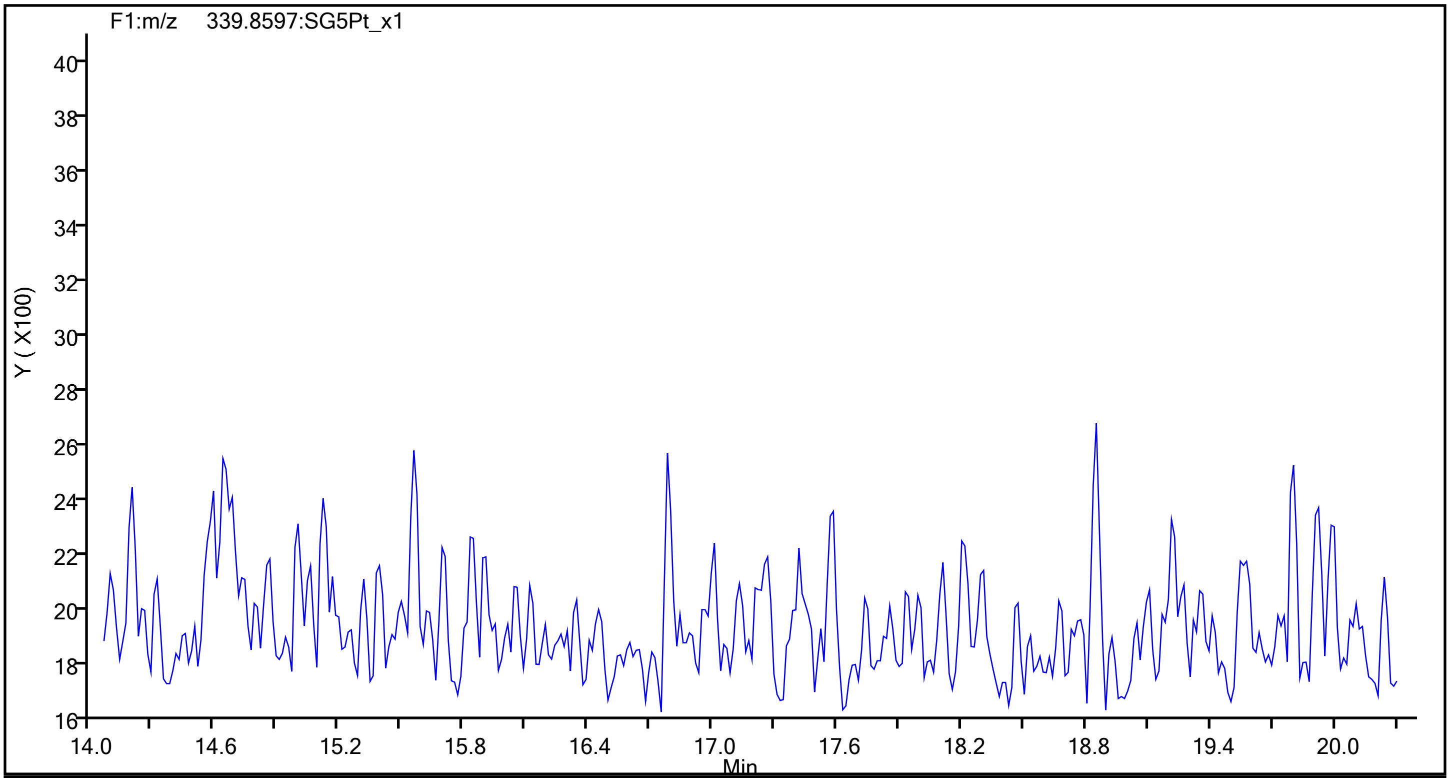

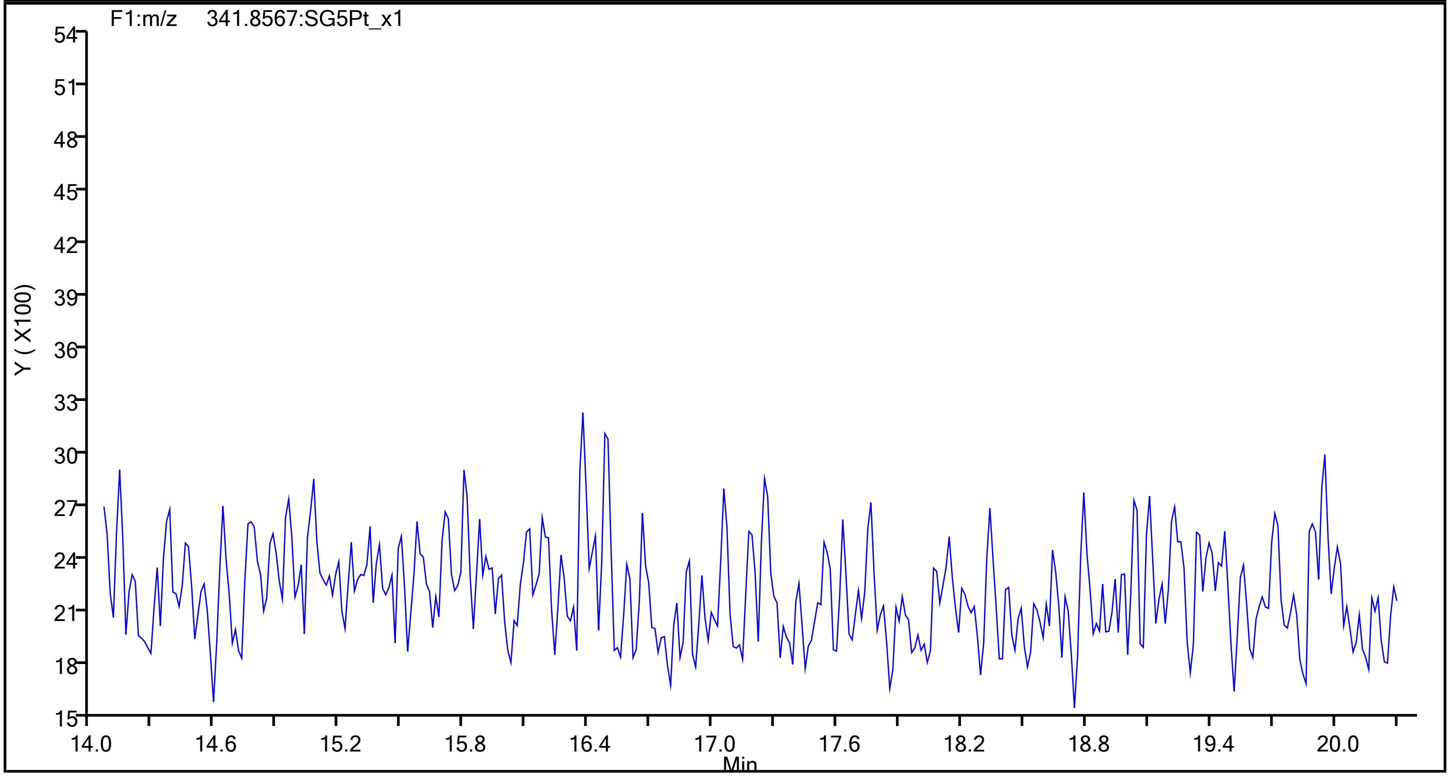

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Eurofins TestAmerica, Sacramento

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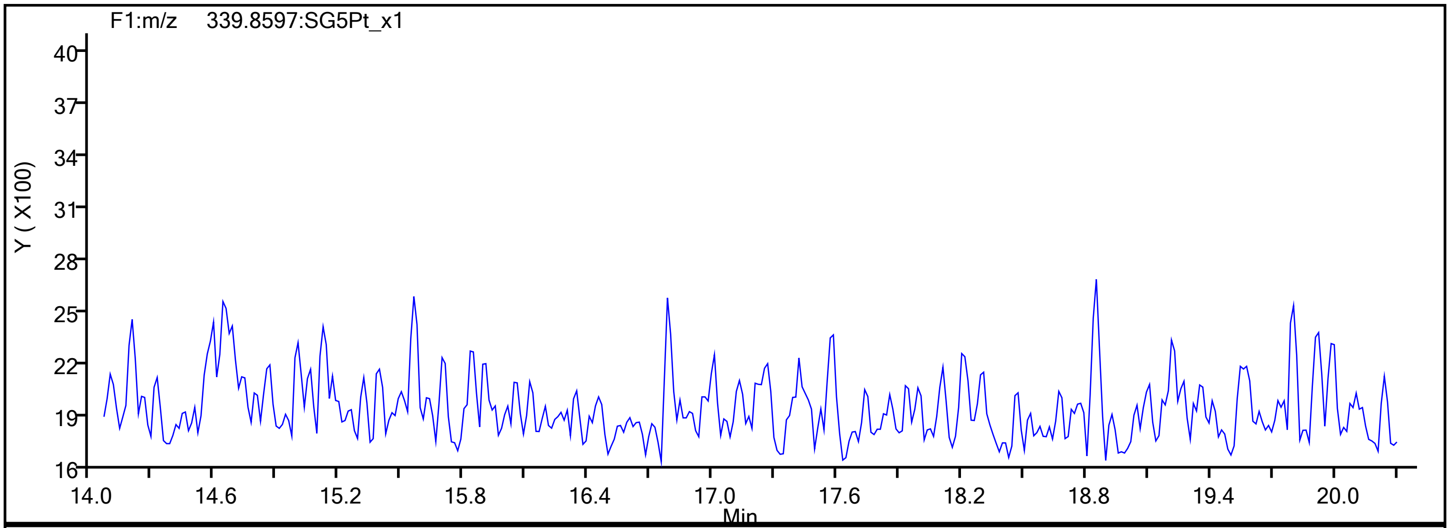

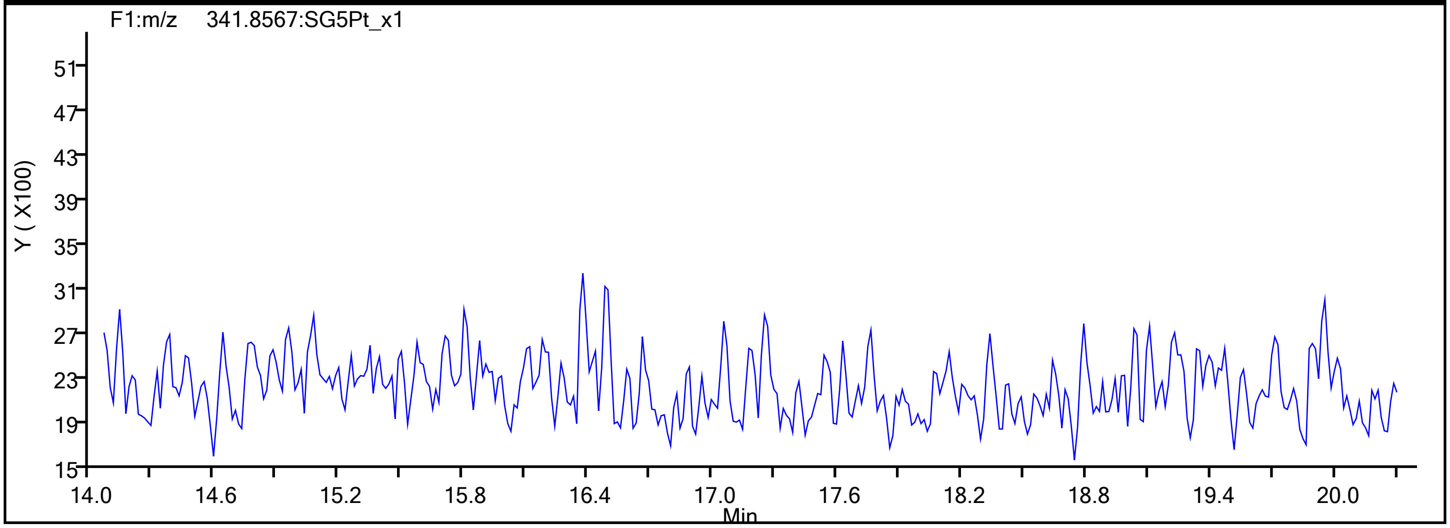

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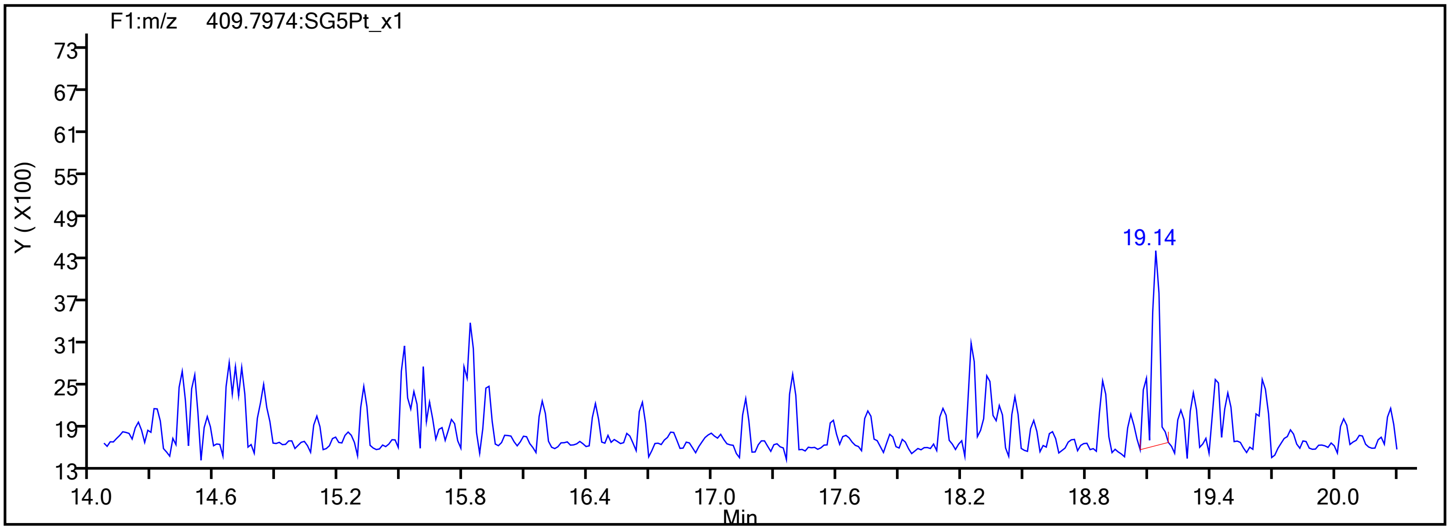

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Eurofins TestAmerica, Sacramento

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PeCDF

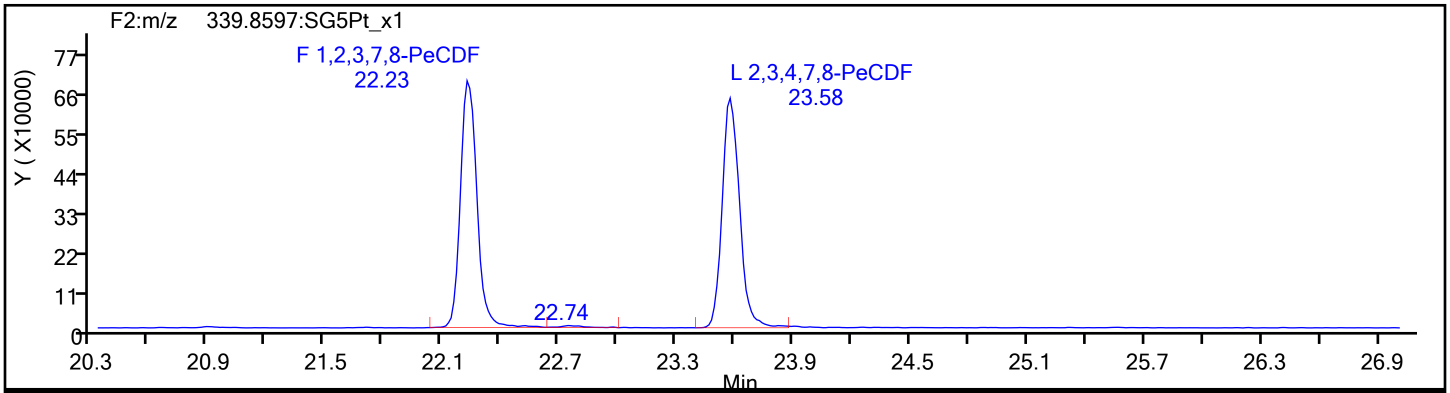

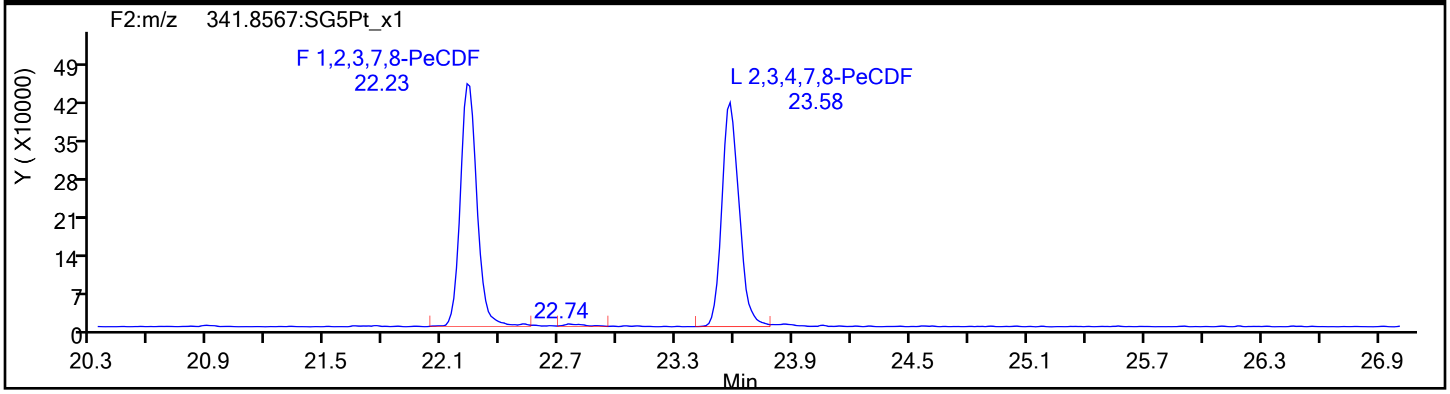

PeCDF Standards

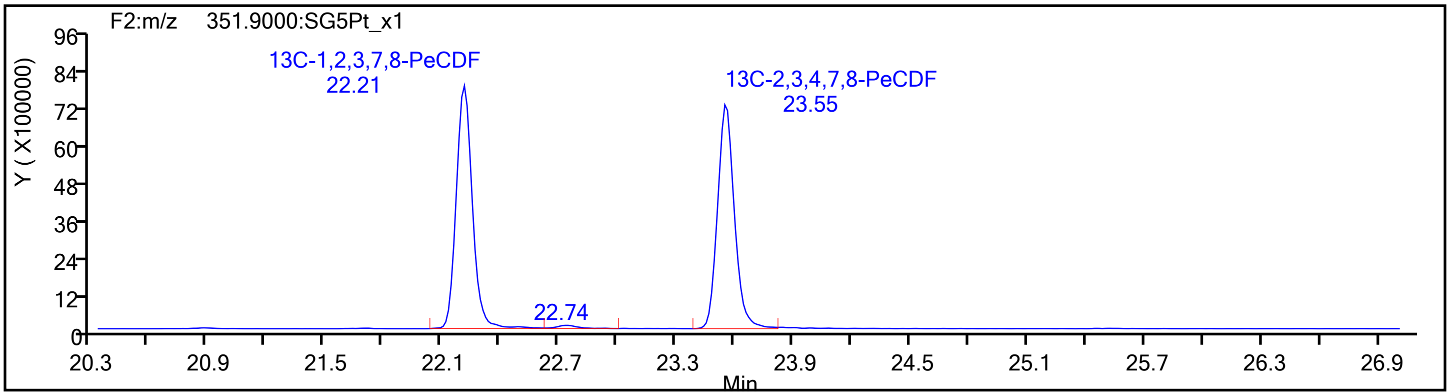

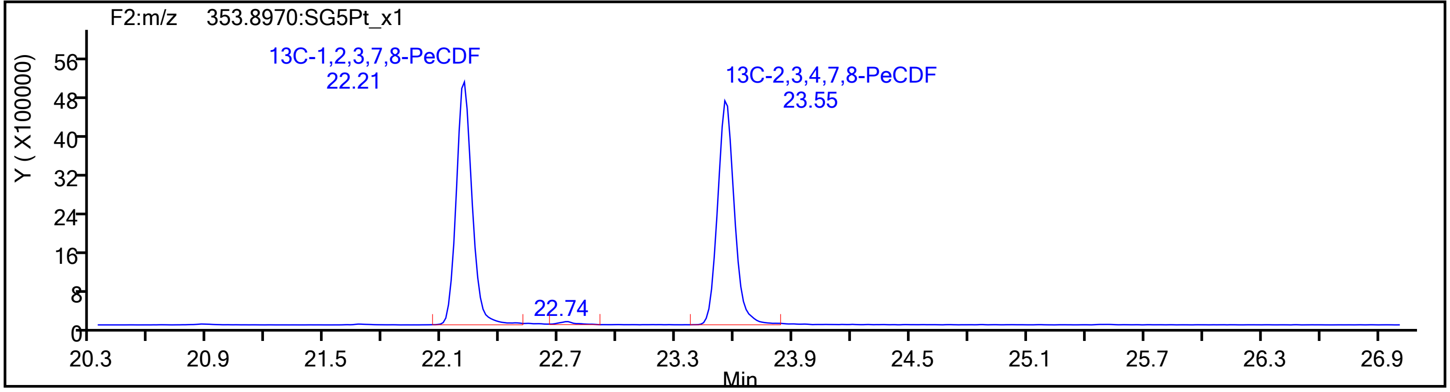

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Eurofins TestAmerica, Sacramento

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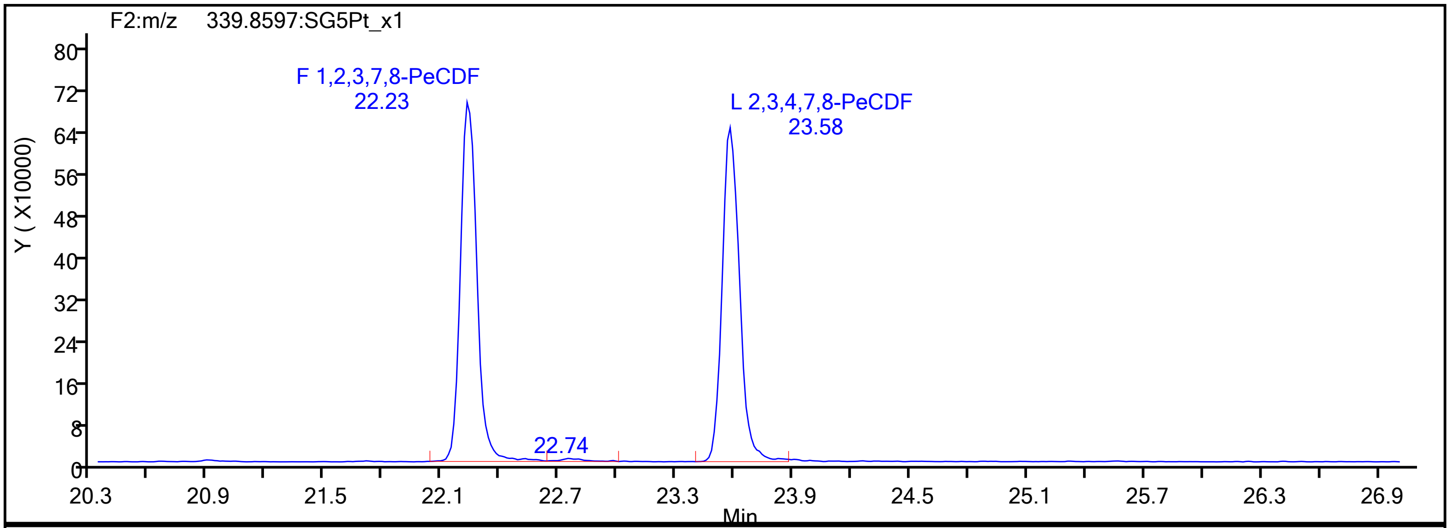

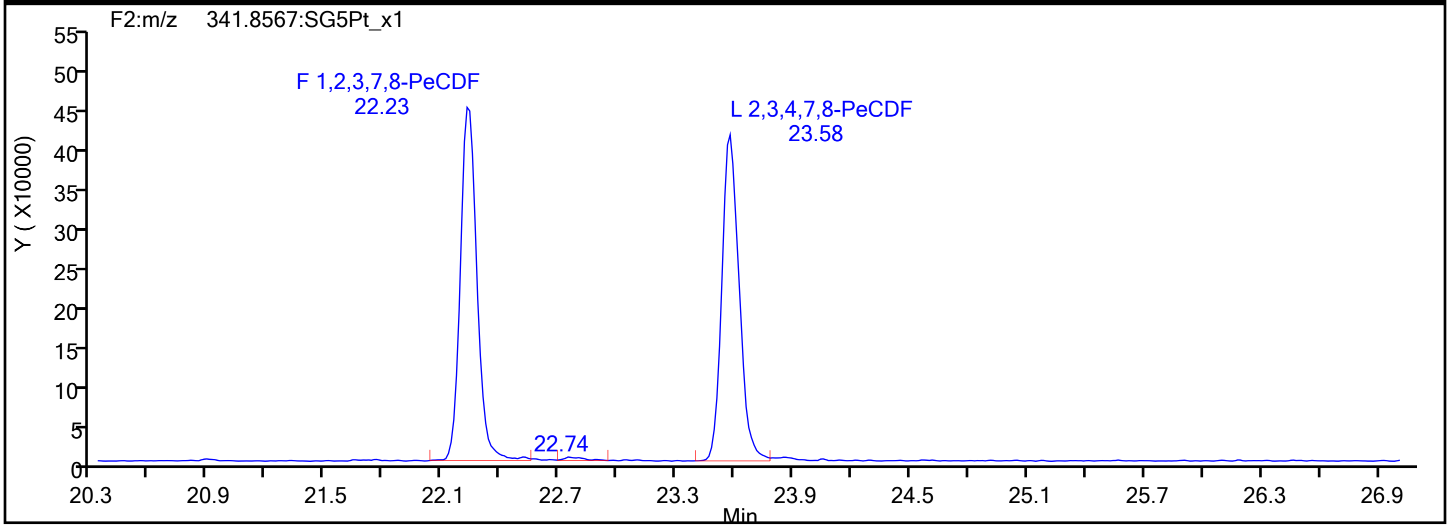

PeCDF Interference Mass

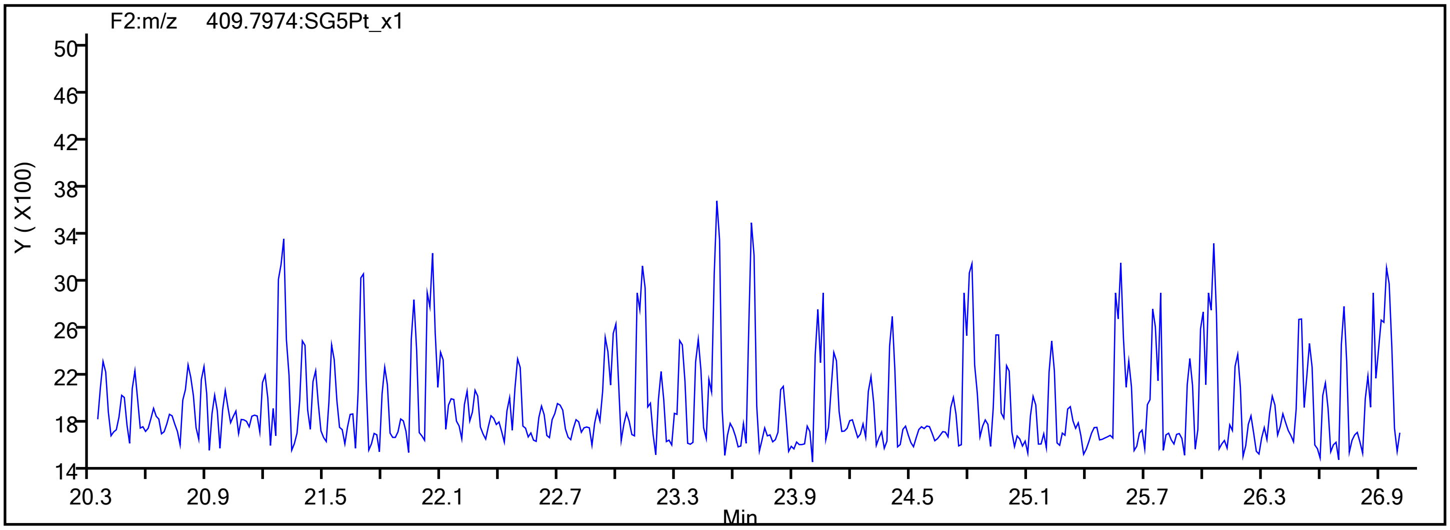

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: AJS

Method: Dioxin_10D5

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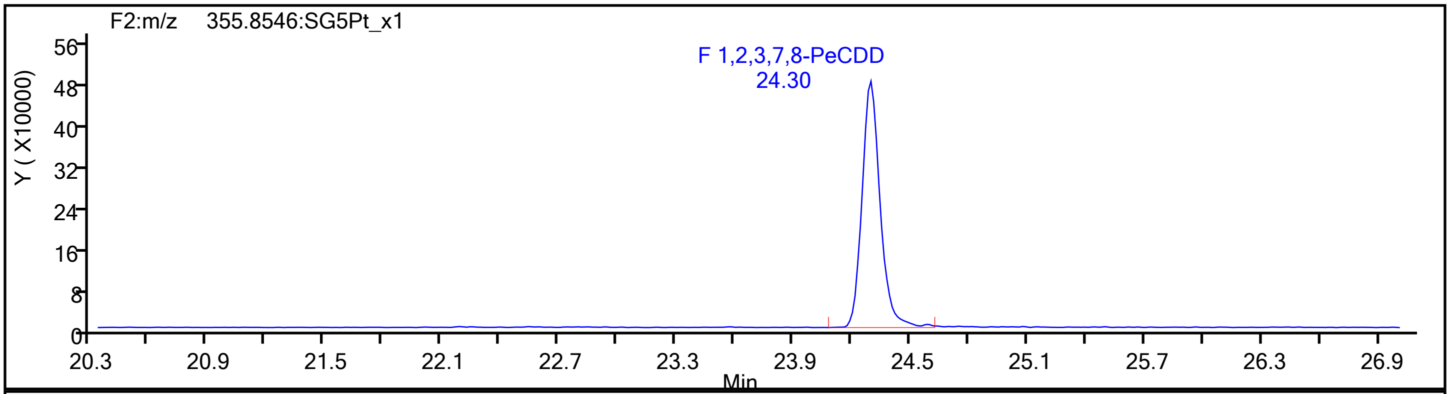

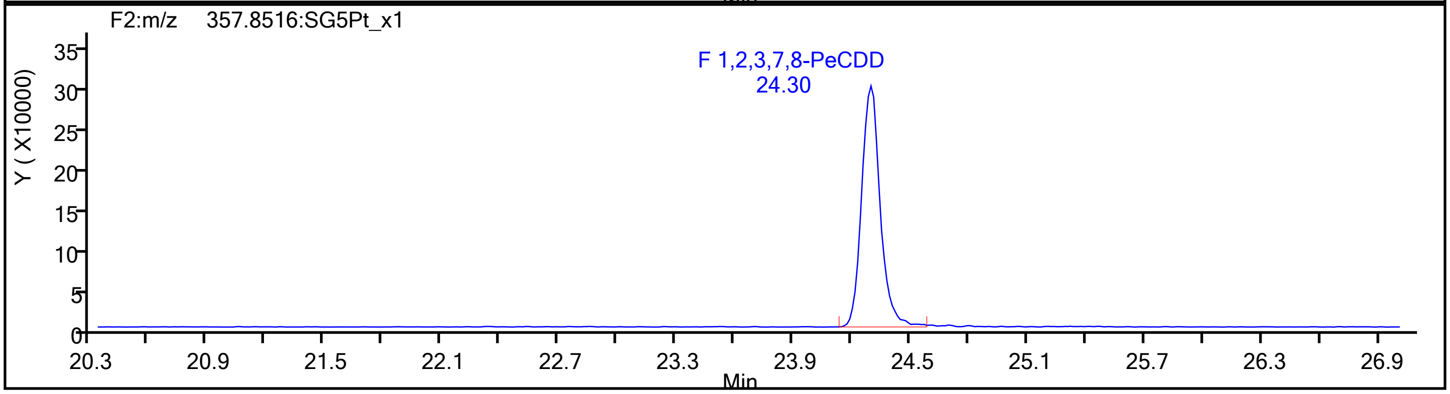

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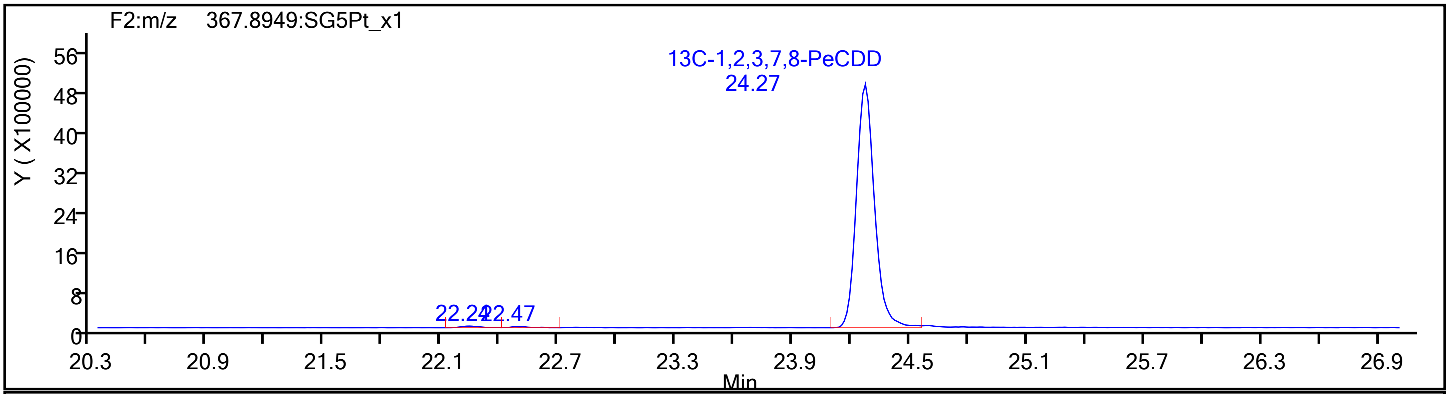

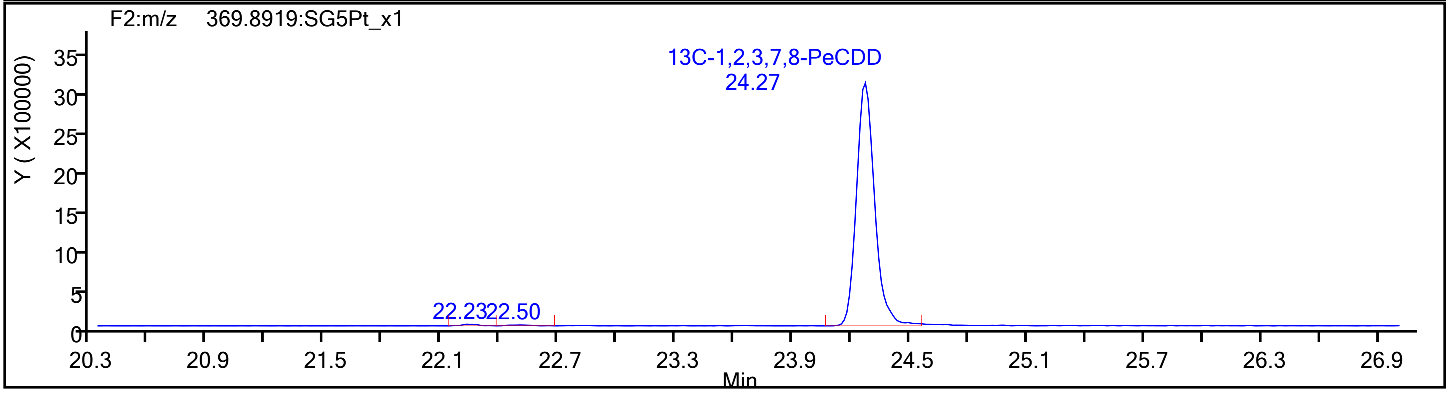

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Eurofins TestAmerica, Sacramento

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HxCDF

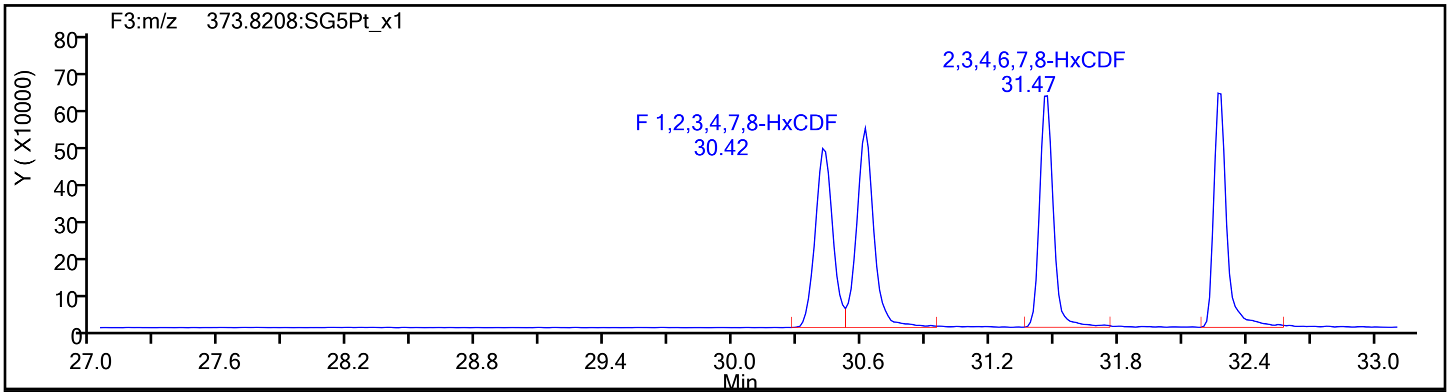

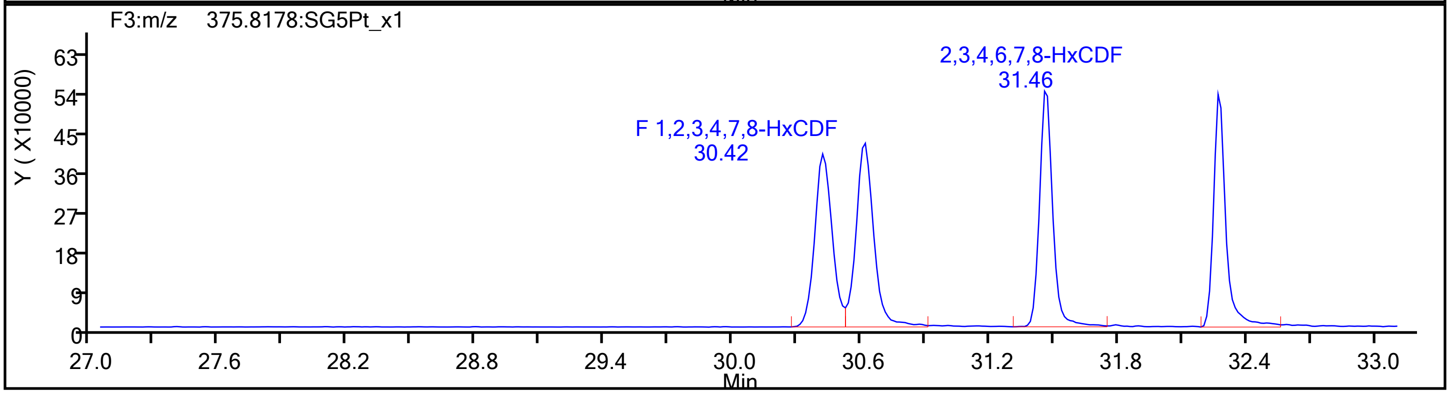

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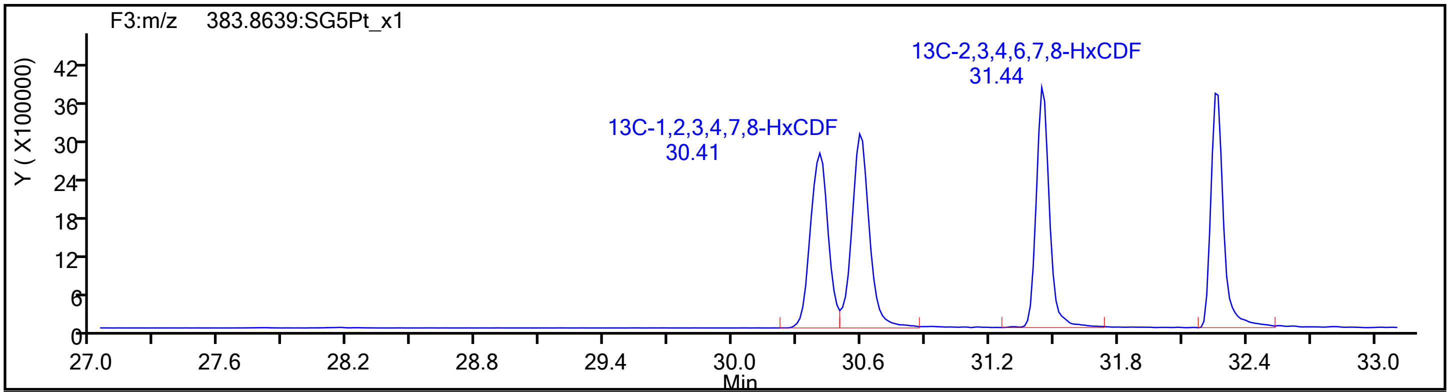

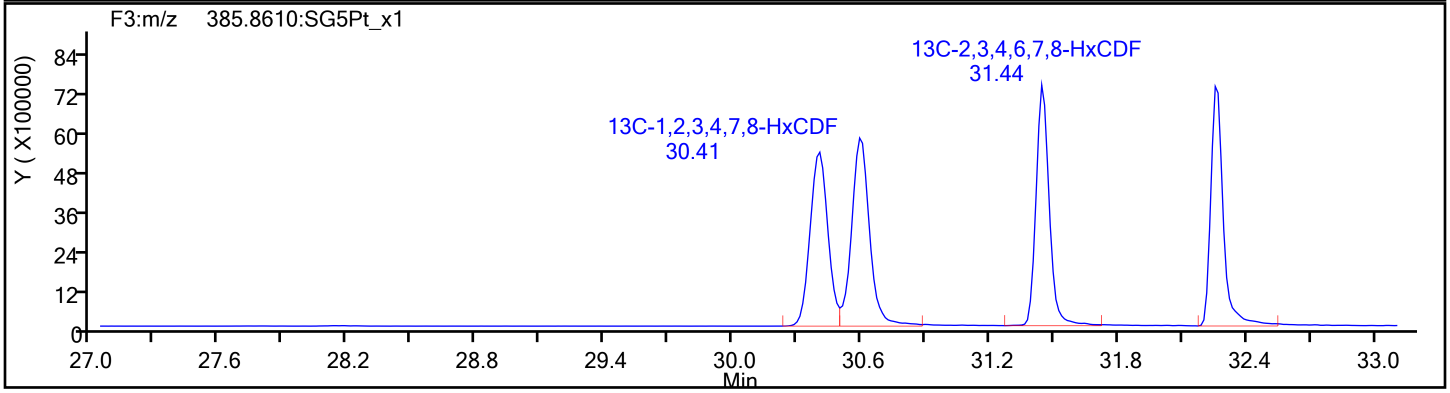

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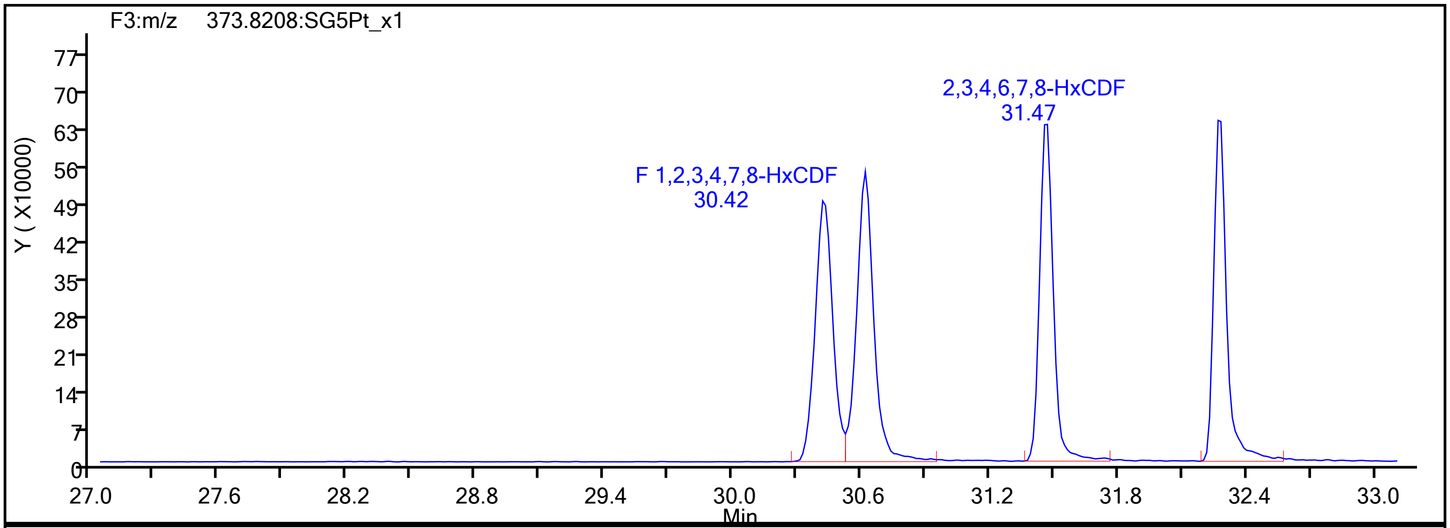

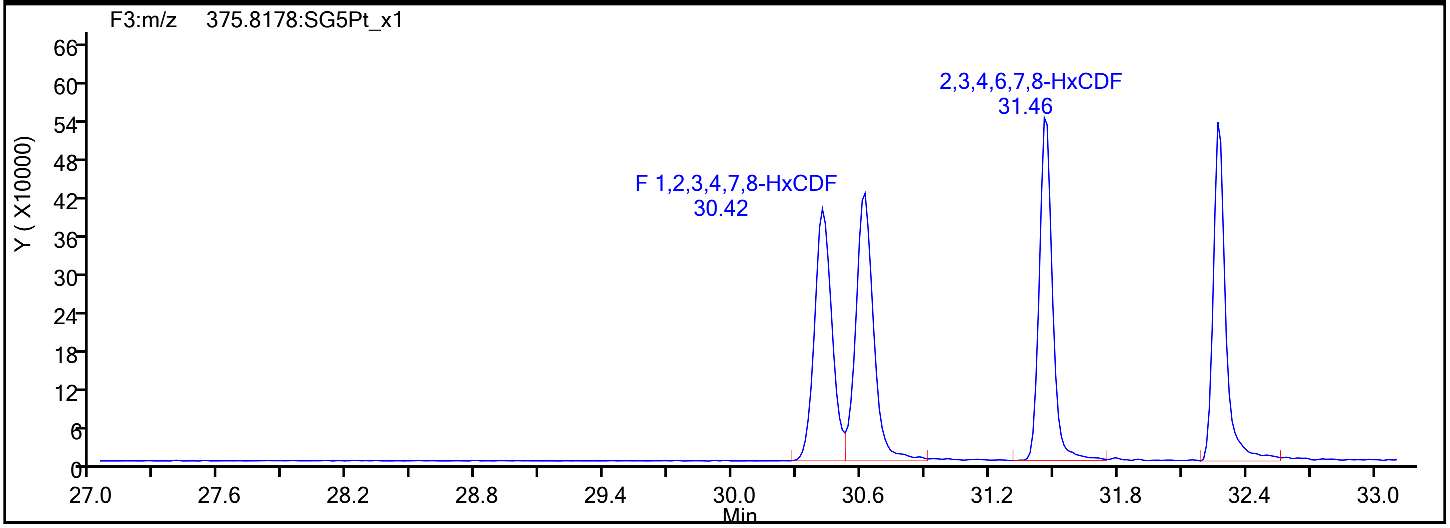

HxCDF Interference Mass

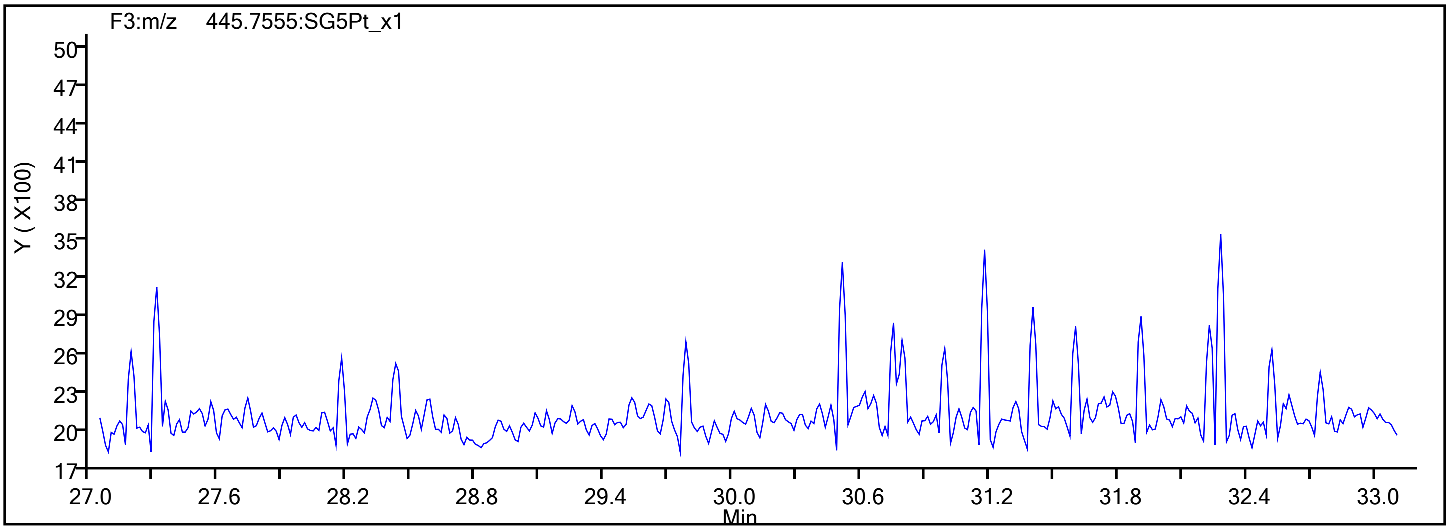

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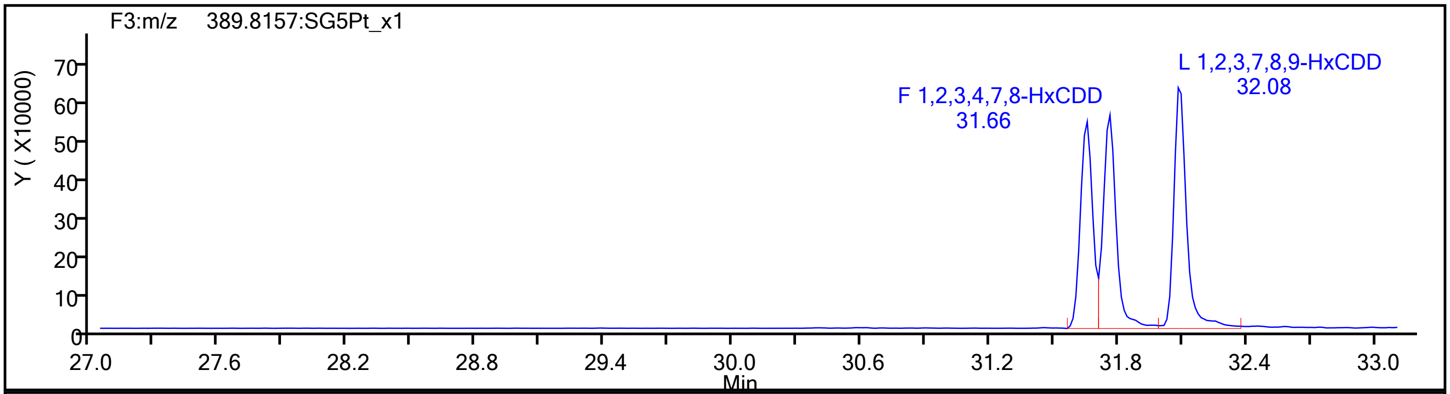

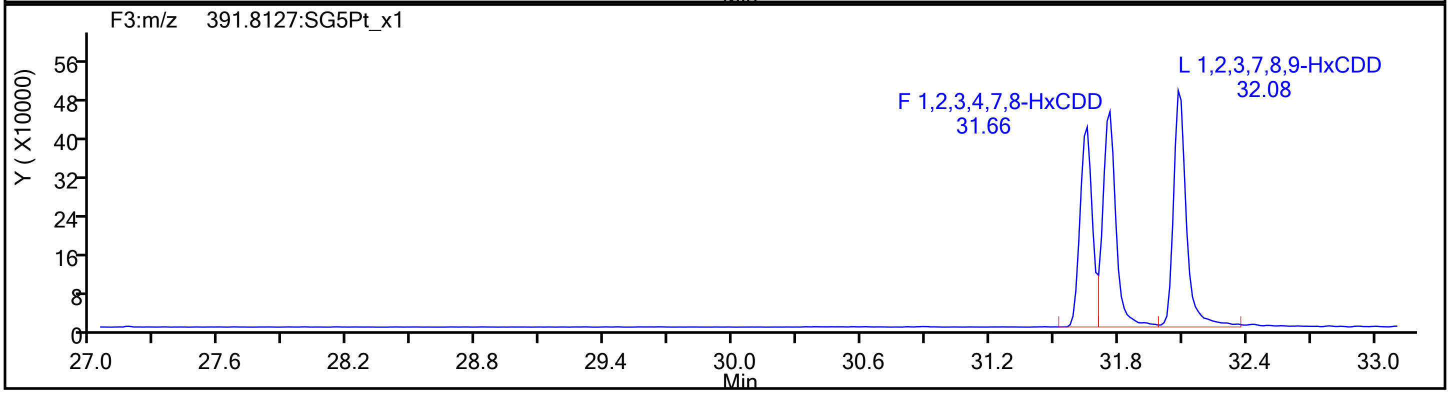

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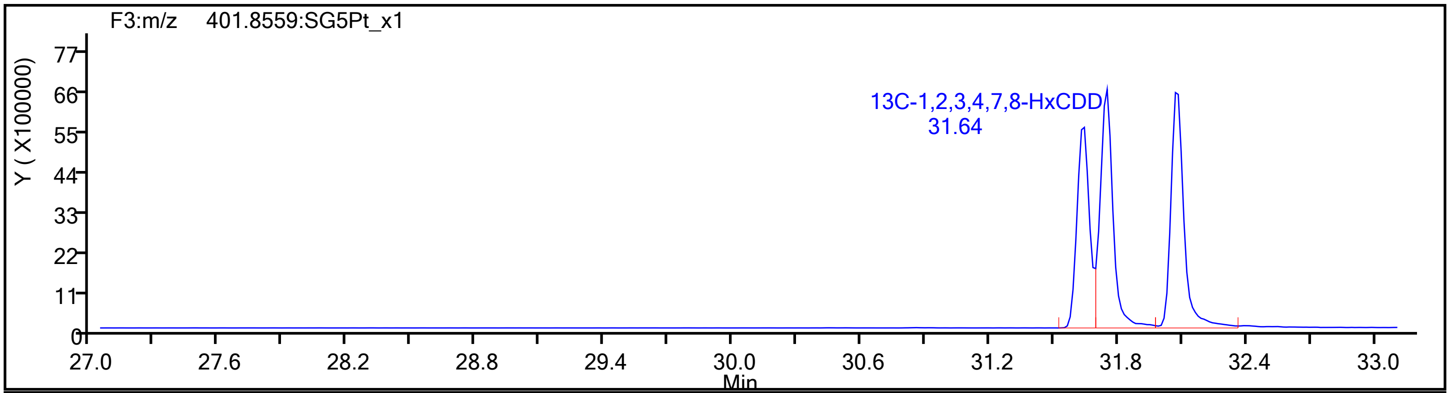

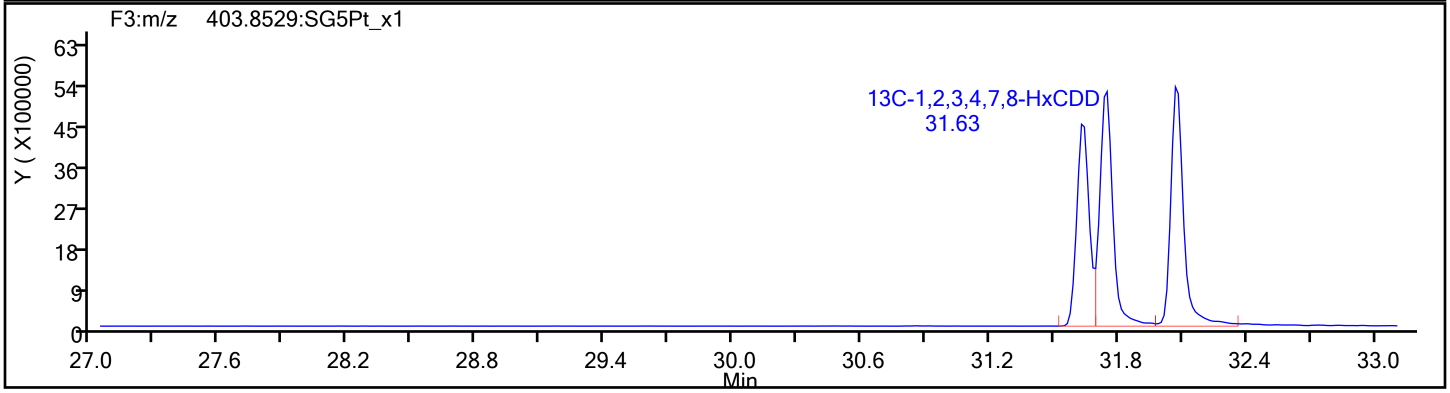

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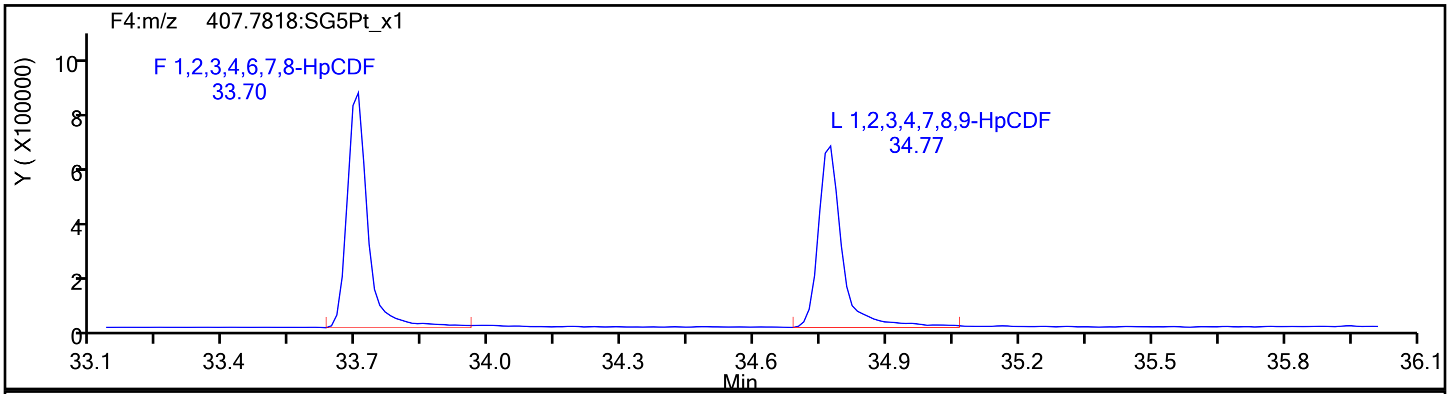

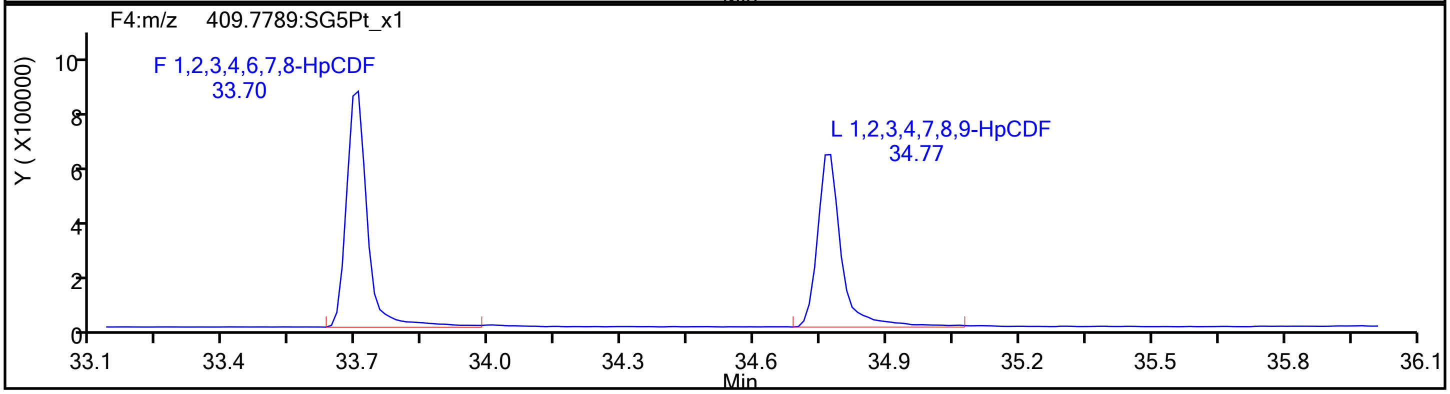

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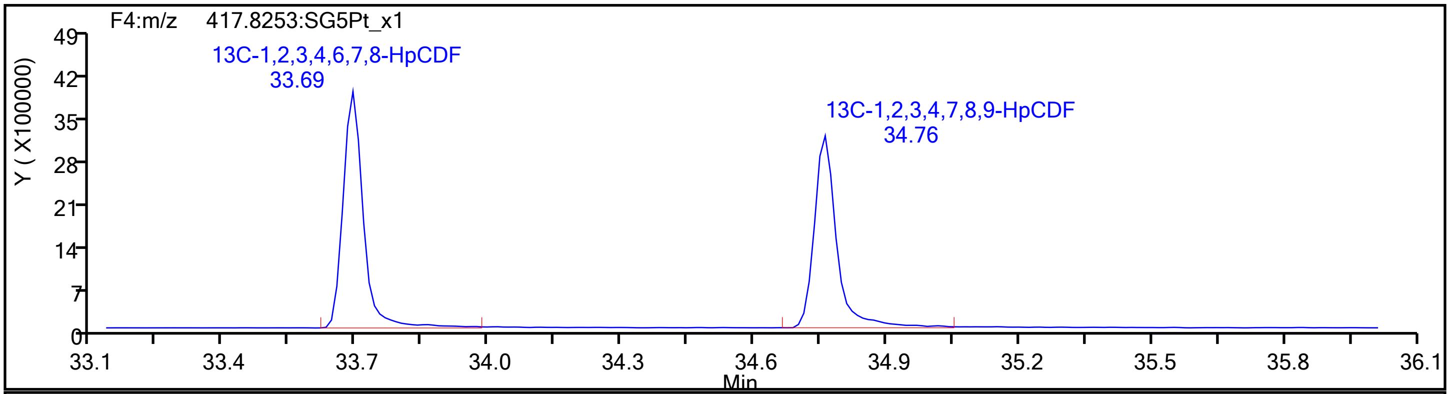

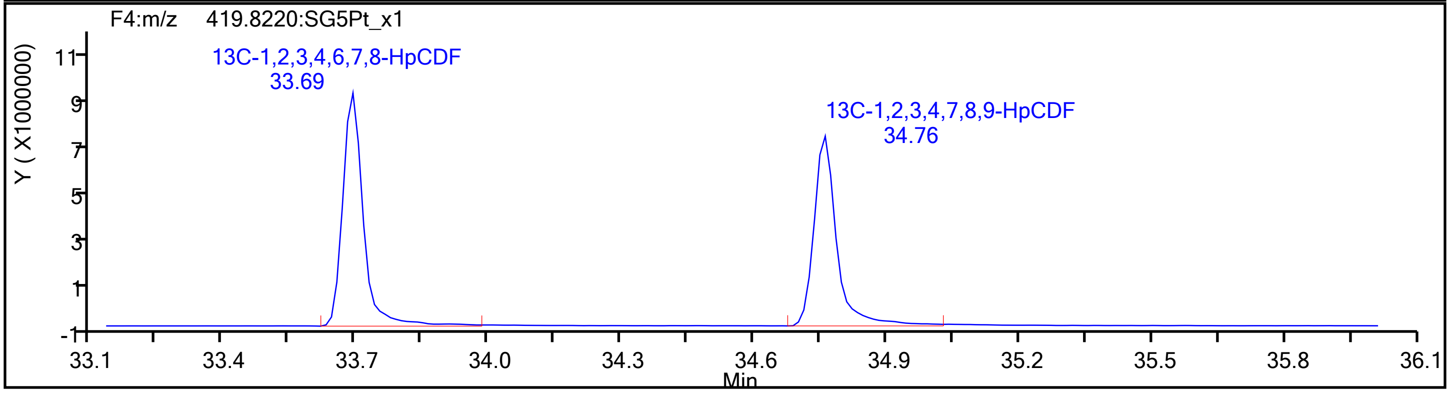

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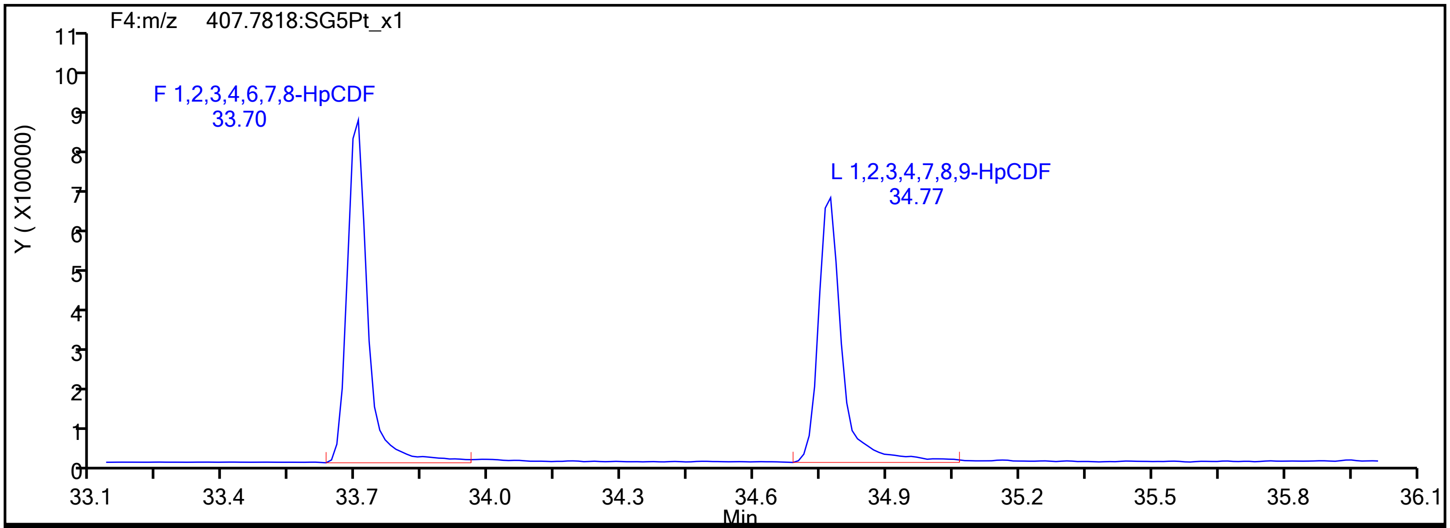

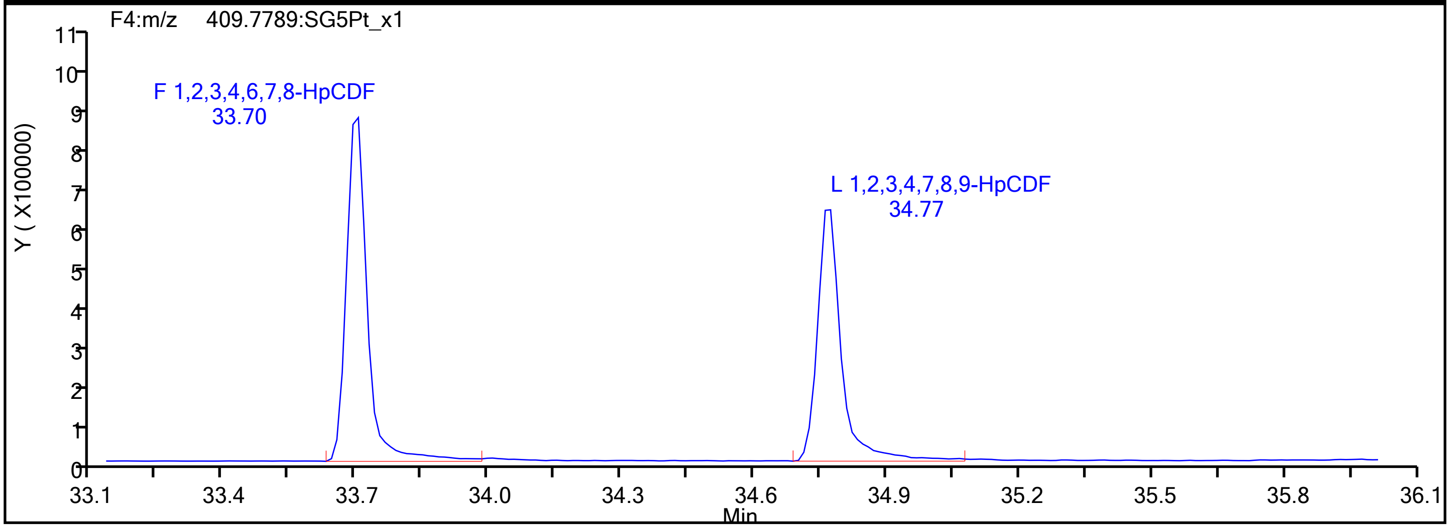

HpCDF Interference Mass

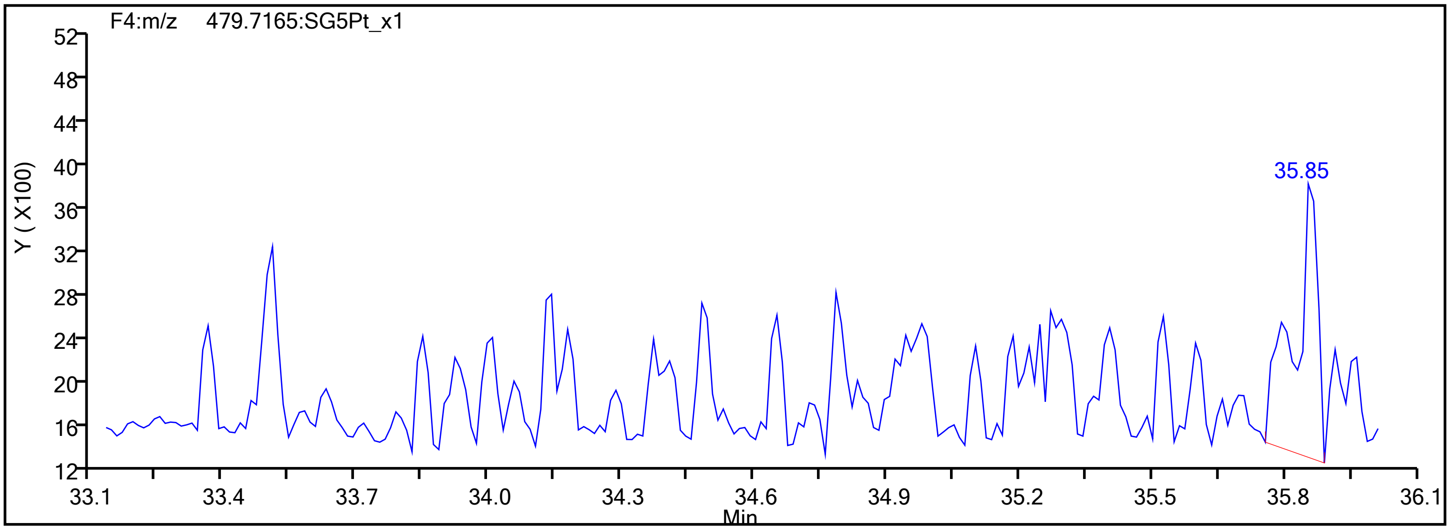

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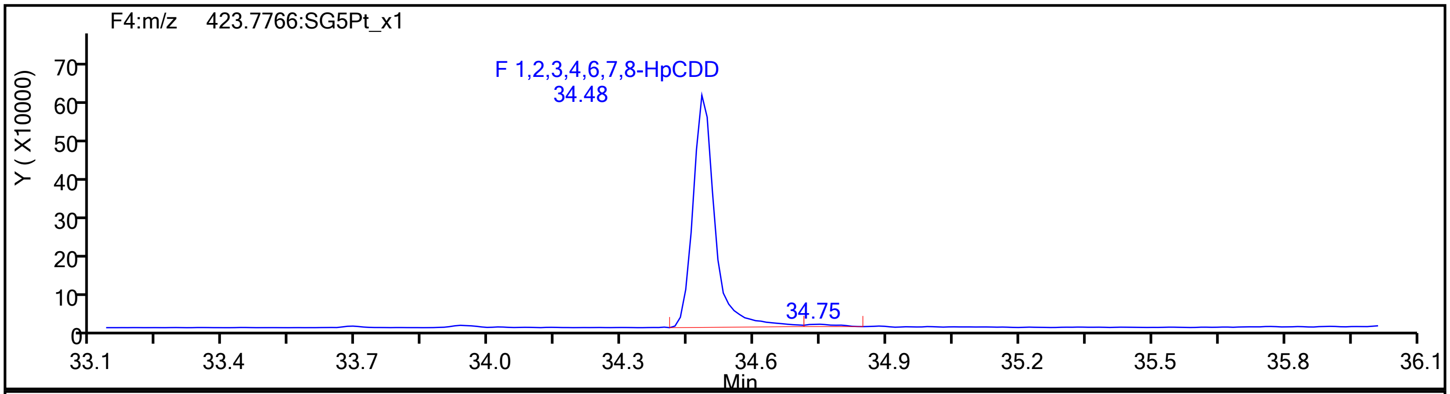

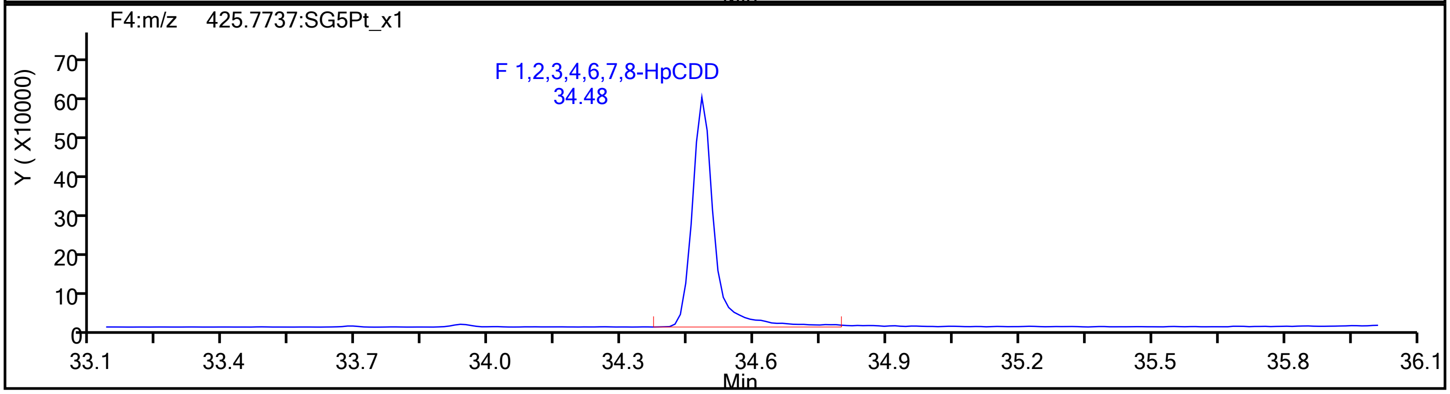

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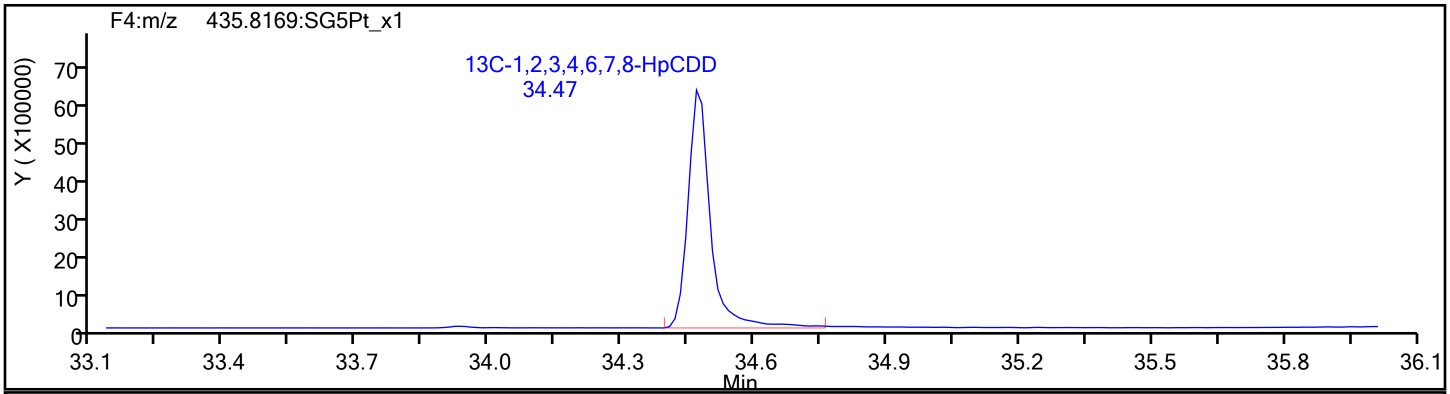

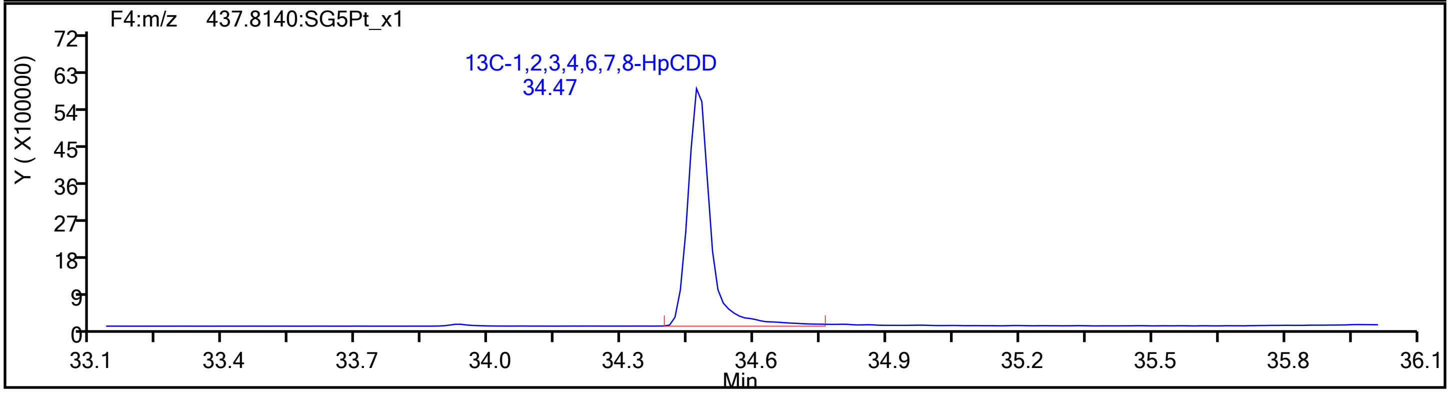

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OCDF

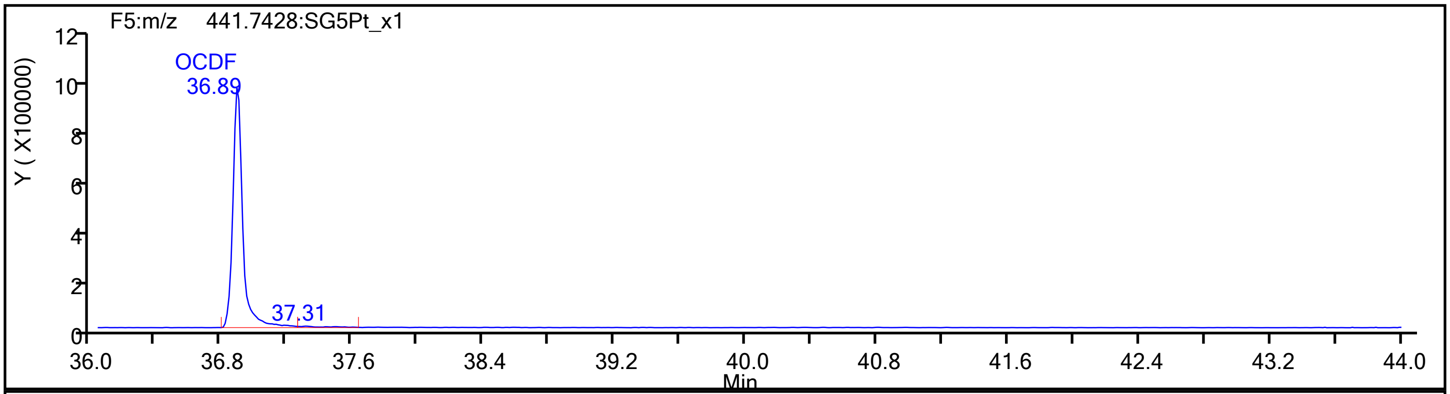

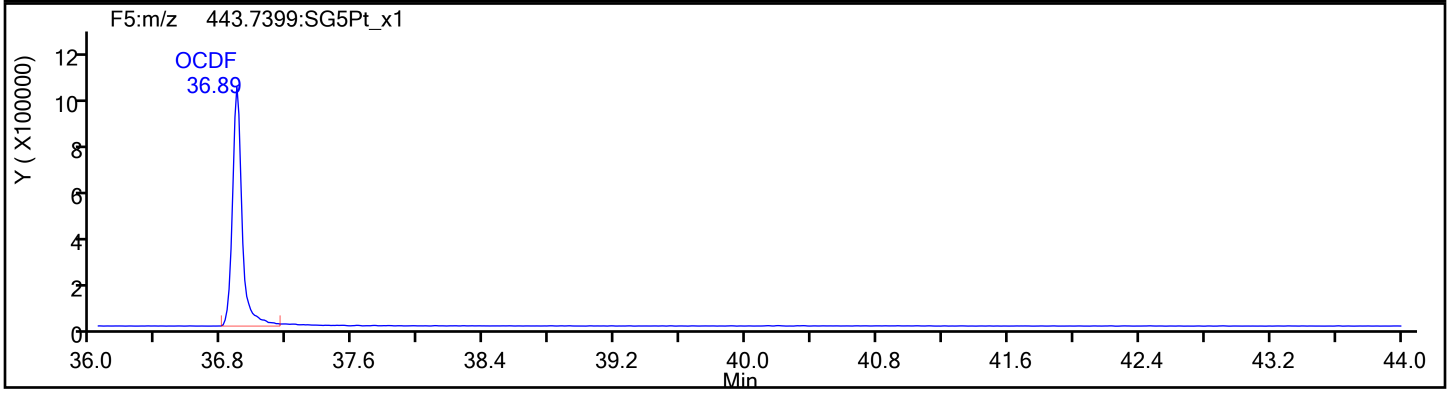

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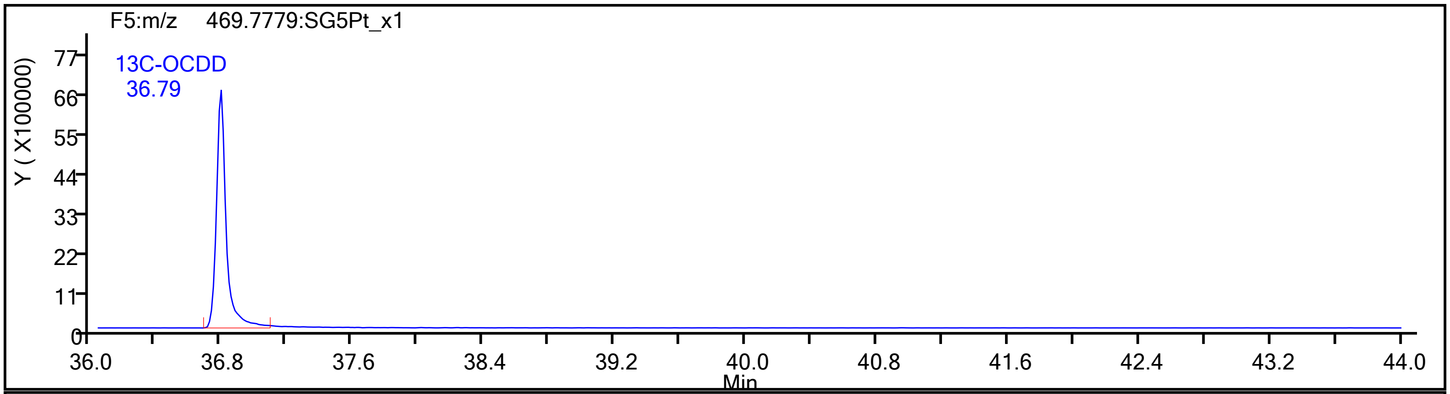

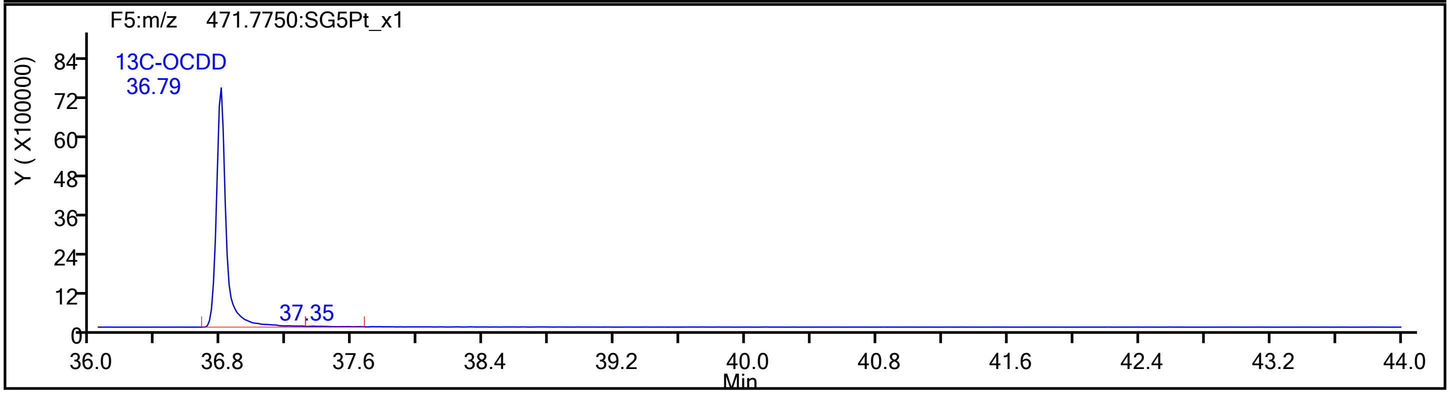

Report Date: 18-Sep-2020 10:35:49		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

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OCDF

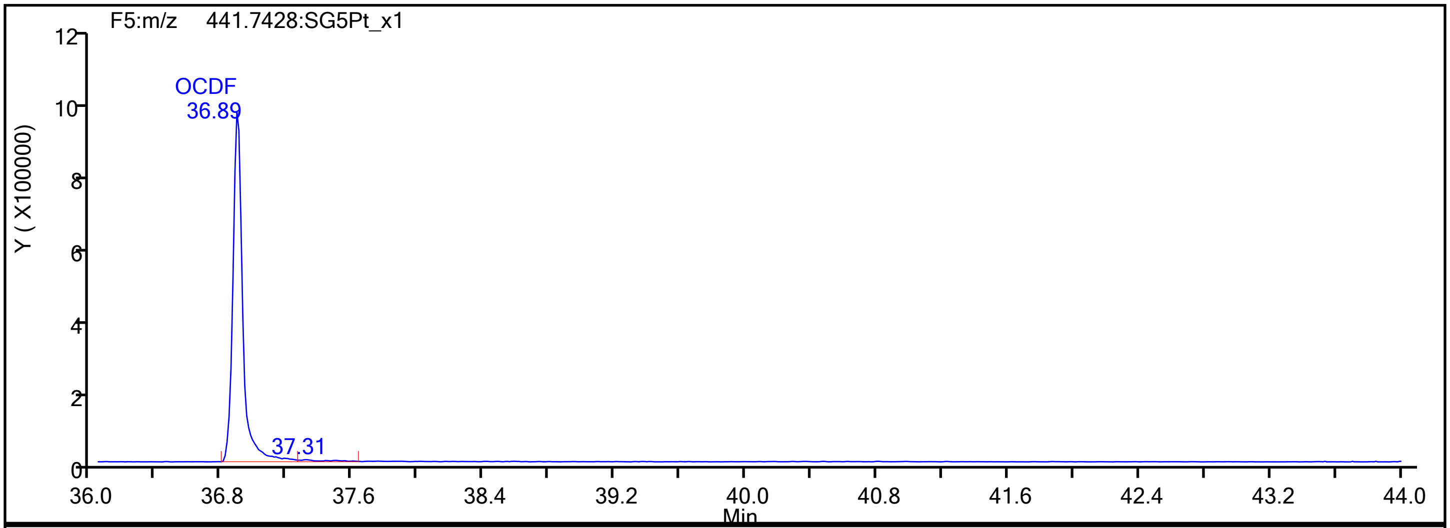

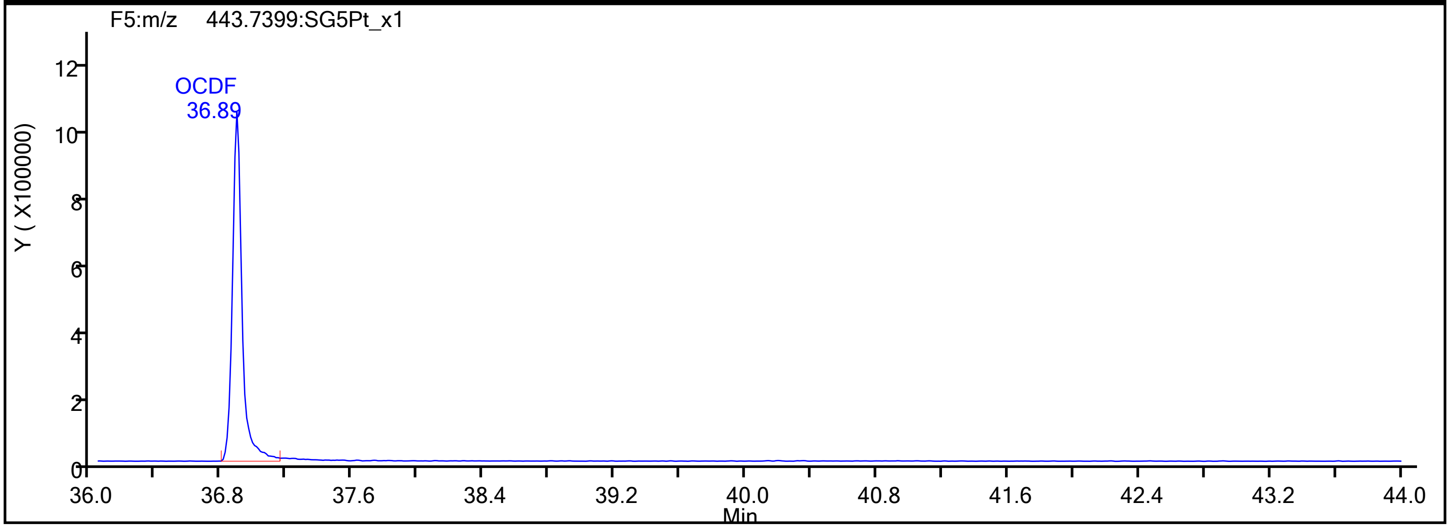

OCDF Interference Mass

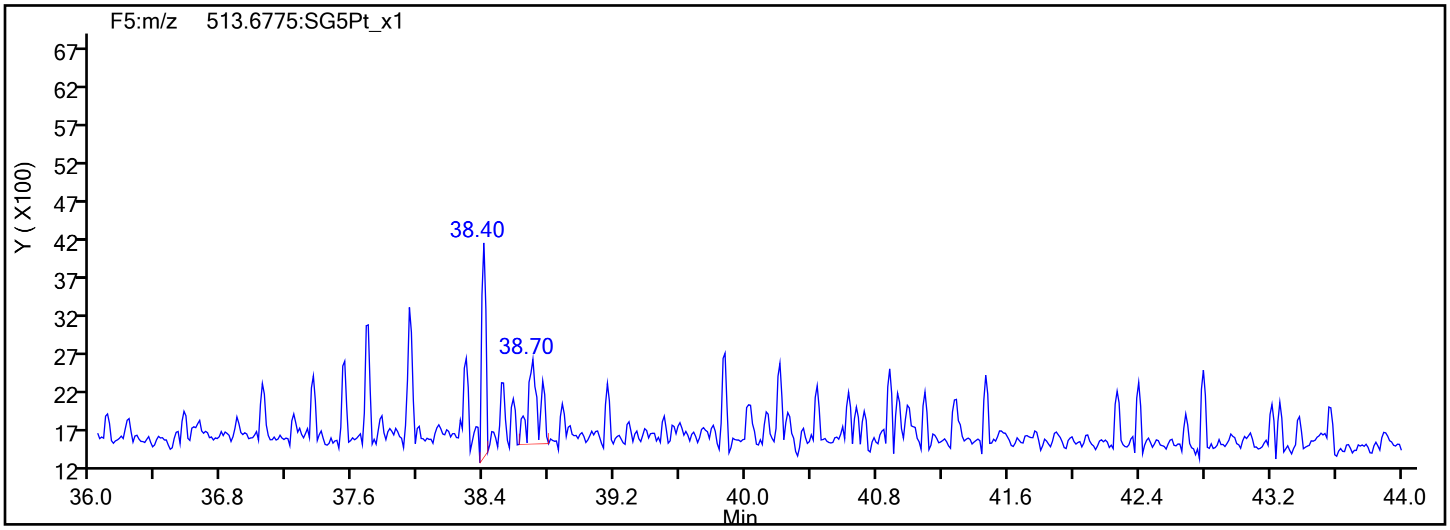

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

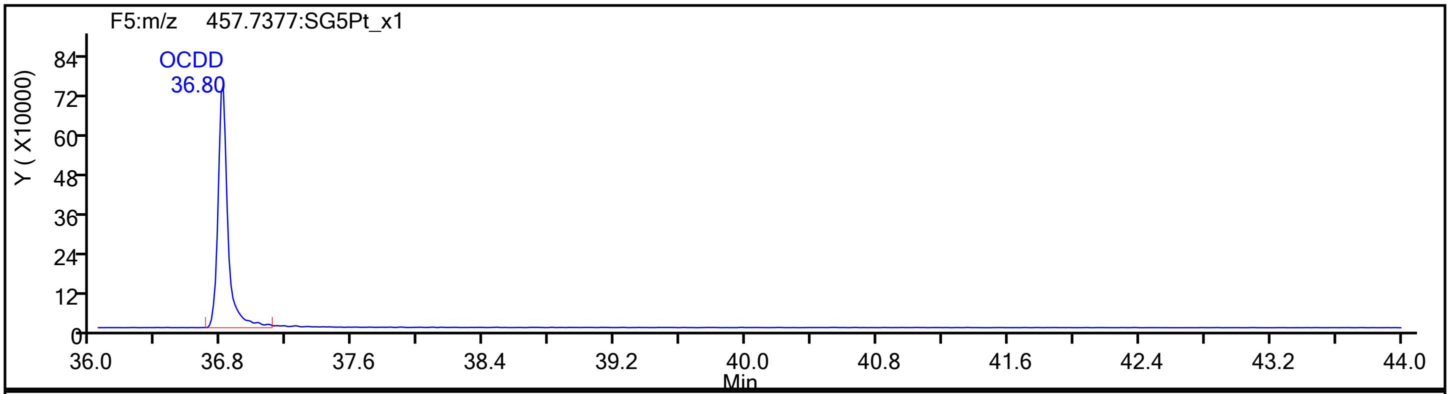

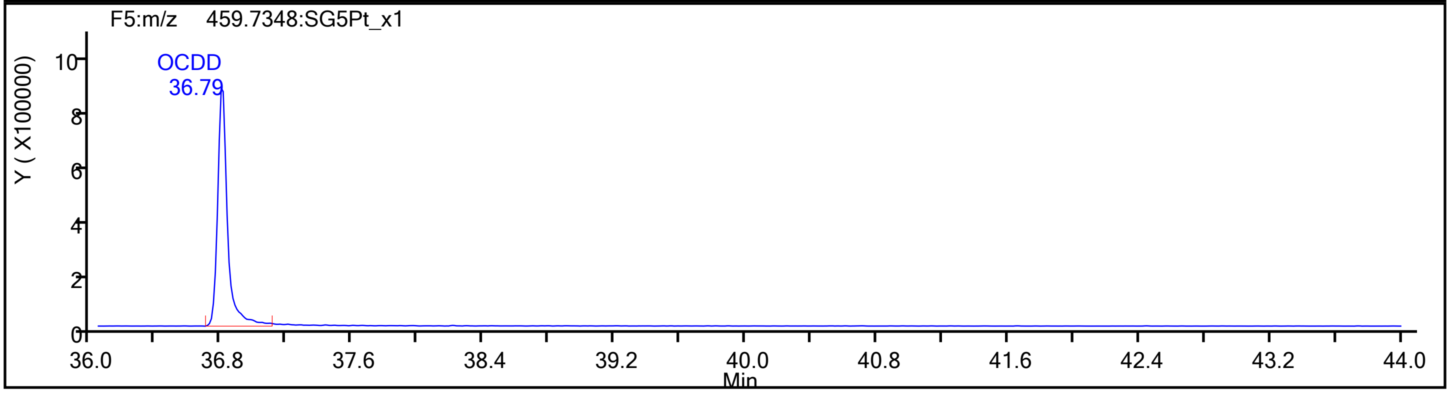

OCDD Standards

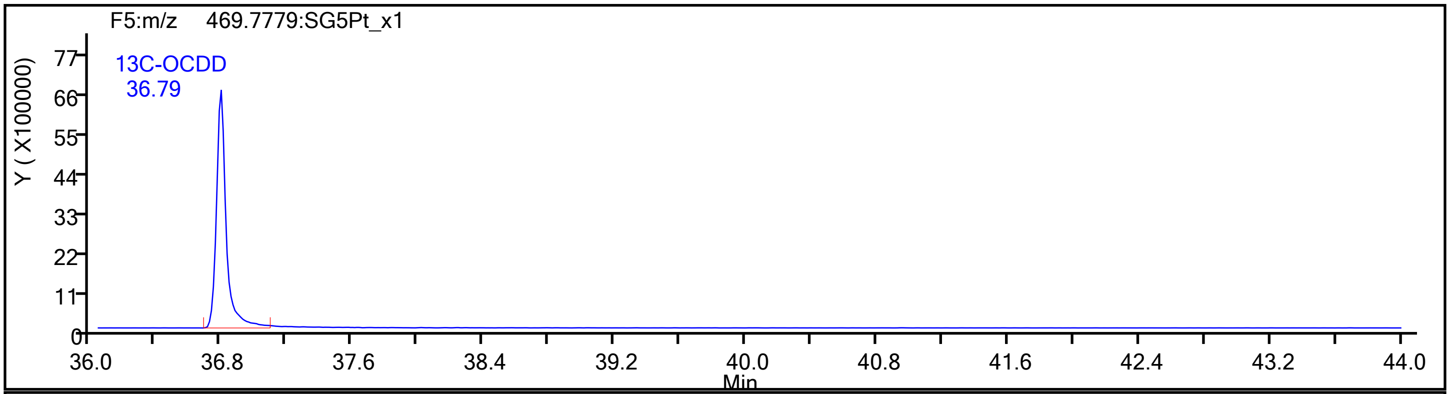

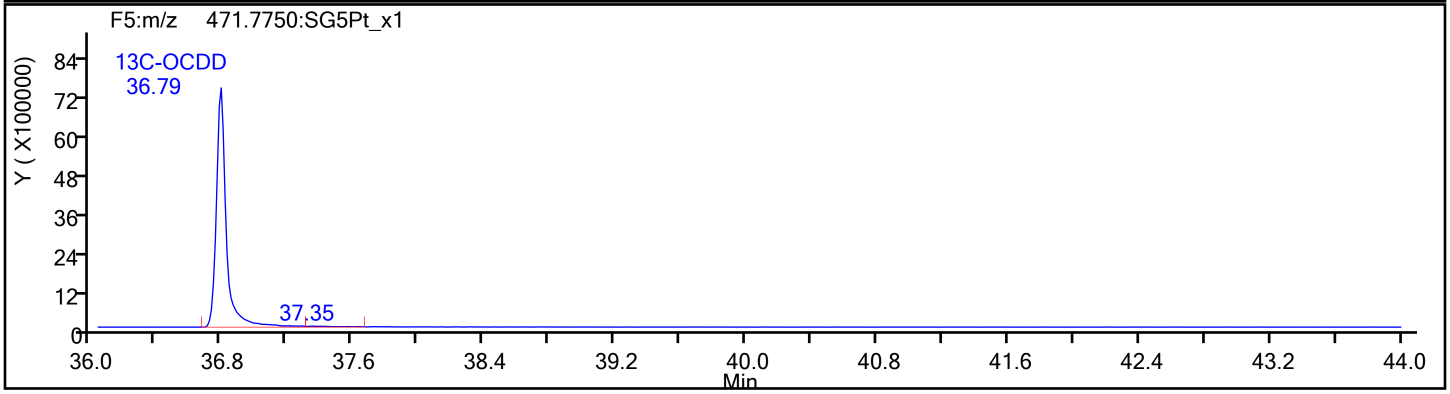

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

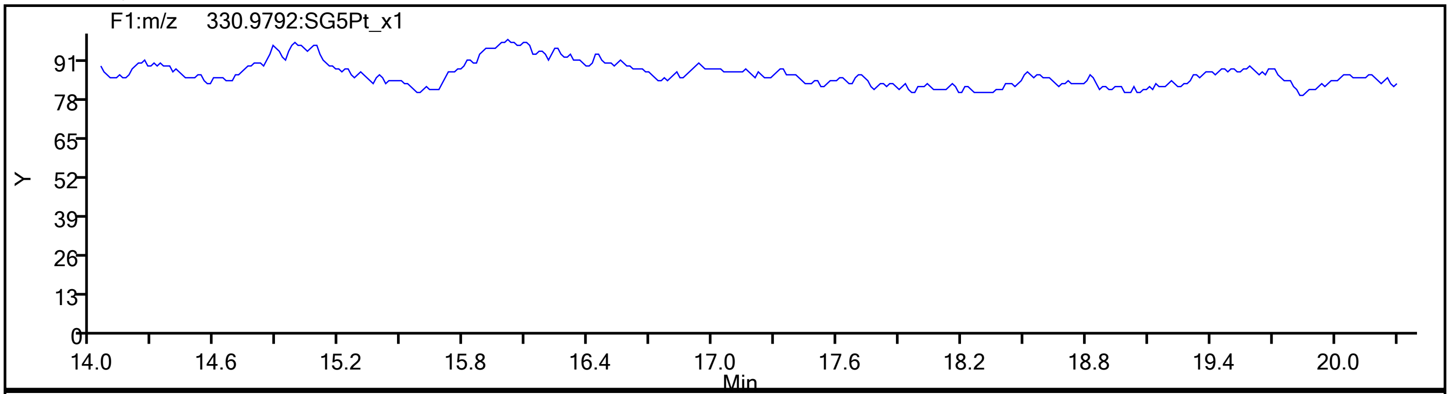

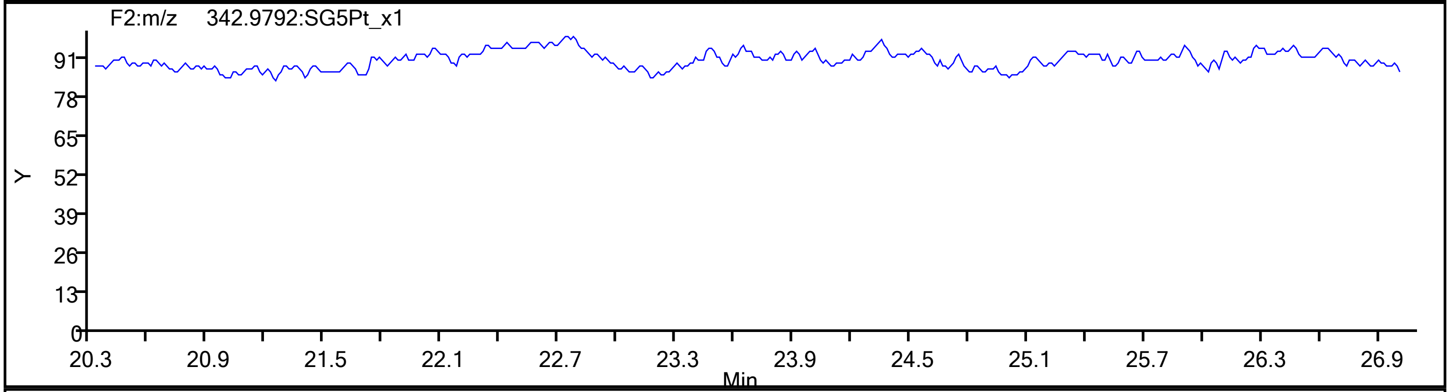

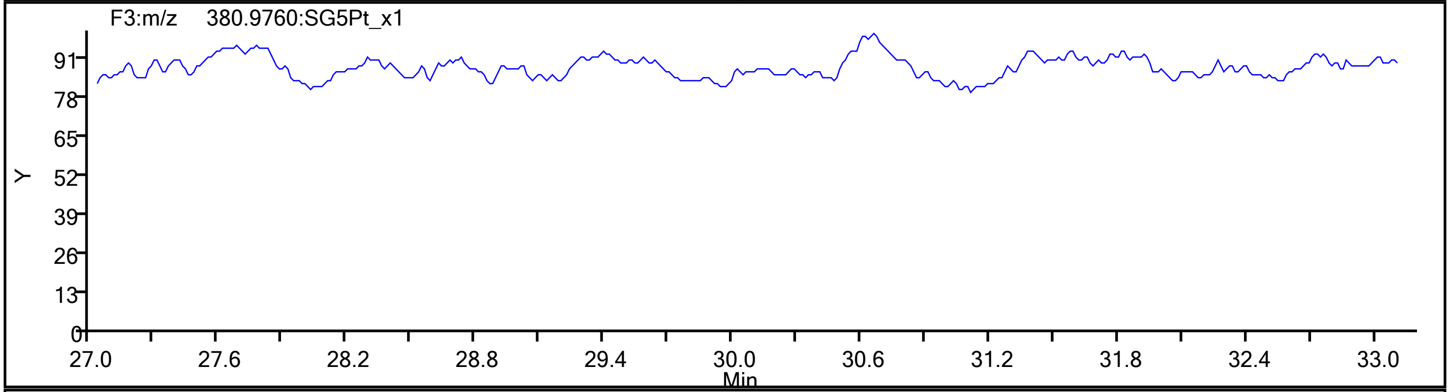

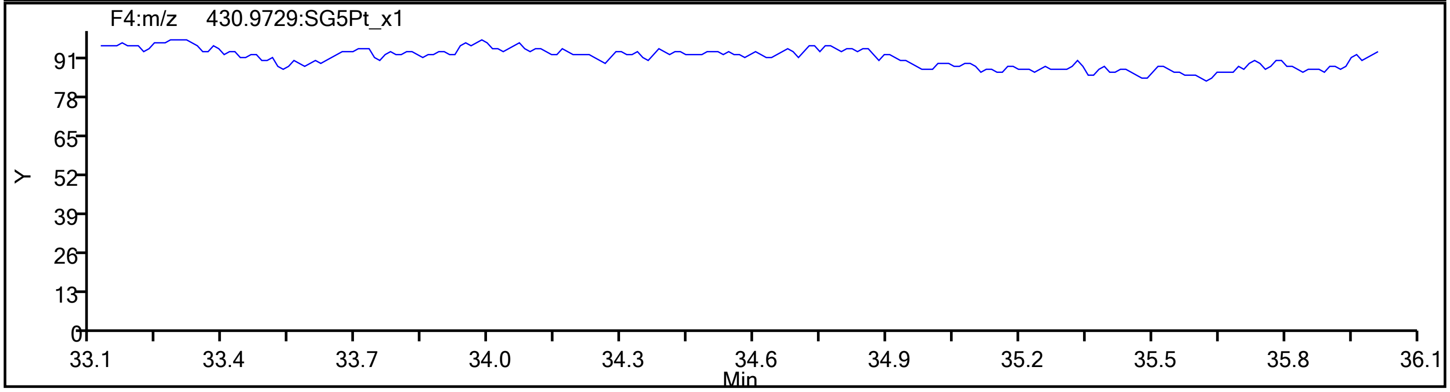

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

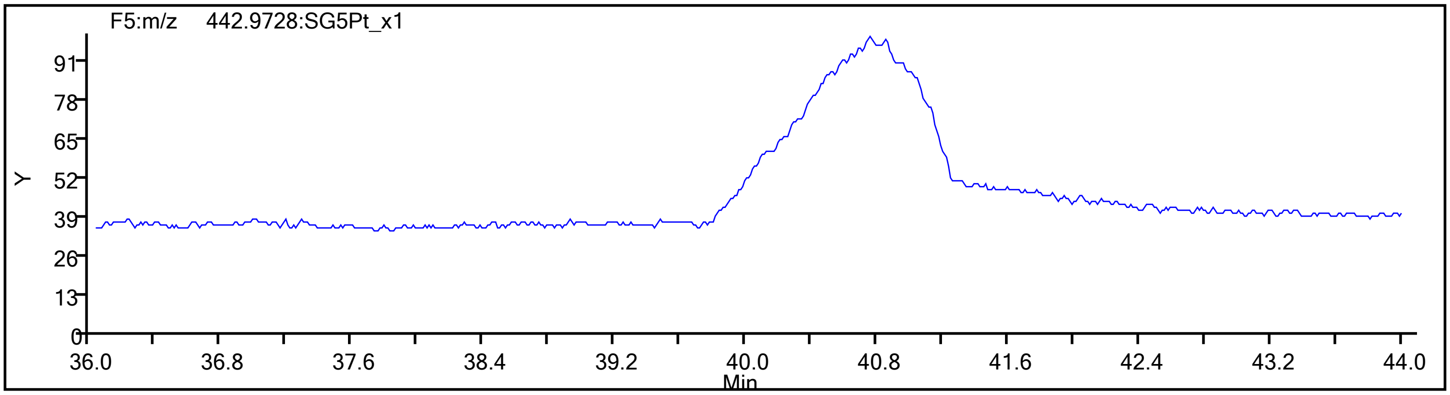

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 17:39:44 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720B CS-4 HRDXNL4_00095
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:52 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	70720595	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	94412734	0.77	1.3598	98.2	98.2	0.1474	0.1474	98.17	
2,3,7,8-TCDF	17.219	8215614	0.77	0.9077	9.586	9.586	0.0248	0.0248	95.86	
S Total TCDF					9.586	9.586	0.0248	0.0248		
D 13C-2,3,7,8-TCDD	17.899	73314161	0.77	1.0536	98.4	98.4	0.1717	0.1717	98.40	
2,3,7,8-TCDD	17.914	7186766	0.79	1.0061	9.743	9.743	0.0278	0.0278	97.43	
$ 37Cl4-2,3,7,8-TCDD	17.914	7516852		1.0488	10.1	10.1	0.0107	0.0107	101	
S Total TCDD					9.743	9.743	0.0278	0.0278		
D 13C-1,2,3,7,8-PeCDF	22.198	78572668	1.53	1.1306	98.3	98.3	0.2168	0.2168	98.27	
1,2,3,7,8-PeCDF	22.212	35377066	1.53	0.9147	49.2	49.2	0.1606	0.1606	98.44	
D 13C-2,3,4,7,8-PeCDF	23.535	72394702	1.55	1.0539	97.1	97.1	0.2325	0.2325	97.13	
2,3,4,7,8-PeCDF	23.562	34181205	1.57	0.9508	49.7	49.7	0.1780	0.1780	99.31	
S Total PeCDF					98.9	98.9	0.1693	0.1693		
D 13C-1,2,3,7,8-PeCDD	24.257	56361860	1.58	0.8084	98.6	98.6	0.1209	0.1209	98.58	
1,2,3,7,8-PeCDD	24.285	27105714	1.55	0.9955	48.3	48.3	0.0763	0.0763	96.62	
S Total PeCDD					48.3	48.3	0.0763	0.0763		
D 13C-1,2,3,4,7,8-HxCDF	30.393	48411968	0.51	0.9225	99.8	99.8	0.5508	0.5508	99.77	
1,2,3,4,7,8-HxCDF	30.406	26528941	1.24	1.1090	49.4	49.4	0.3476	0.3476	98.83	
D 13C-1,2,3,6,7,8-HxCDF	30.579	53975320	0.50	1.0336	99.3	99.3	0.4916	0.4916	99.28	
1,2,3,6,7,8-HxCDF	30.605	28435765	1.22	1.0721	49.1	49.1	0.3230	0.3230	98.28	
D 13C-2,3,4,6,7,8-HxCDF	31.431	51503814	0.51	0.9773	100.2	100.2	0.5199	0.5199	100	
2,3,4,6,7,8-HxCDF	31.444	27314505	1.24	1.0838	48.9	48.9	0.2532	0.2532	97.87	
D 13C-1,2,3,7,8,9-HxCDF	32.243	48067141	0.51	0.9153	99.8	99.8	0.5551	0.5551	99.84	
1,2,3,7,8,9-HxCDF	32.256	25630034	1.24	1.0931	48.8	48.8	0.2530	0.2530	97.56	
S Total HxCDF					196.3	196.3	0.2942	0.2942		
* 13C-1,2,3,7,8,9-HxCDD	32.056	52599435	1.22	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.617	39854770	1.22	0.7977	95.0	95.0	0.3444	0.3444	94.99	
1,2,3,4,7,8-HxCDD	31.644	20769529	1.23	1.0014	52.0	52.0	0.1645	0.1645	104	
D 13C-1,2,3,6,7,8-HxCDD	31.737	53764731	1.23	1.0010	102.1	102.1	0.2744	0.2744	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	22482418	1.27	0.8902	47.0	47.0	0.1521	0.1521	93.95	
1,2,3,7,8,9-HxCDD	32.070	24401221	1.25	1.0579	49.3	49.3	0.1405	0.1405	98.55	
S Total HxCDD					148.3	148.3	0.1524	0.1524		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	44675630	0.43	0.8506	99.9	99.9	0.9835	0.9835	99.85	
1,2,3,4,6,7,8-HpCDF	33.691	29988985	1.04	1.3603	49.3	49.3	0.4595	0.4595	98.69	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	39083845	0.43	0.7618	97.5	97.5	1.098	1.098	97.54	
1,2,3,4,7,8,9-HpCDF	34.761	25636290	1.03	1.3207	49.7	49.7	0.6020	0.6020	99.33	
S Total HpCDF					99.0	99.0	0.5308	0.5308		
D 13C-1,2,3,4,6,7,8-HpCDD	34.457	46274068	1.03	0.8873	99.2	99.2	0.5830	0.5830	99.15	
1,2,3,4,6,7,8-HpCDD	34.469	22930767	1.04	0.9988	49.6	49.6	0.2747	0.2747	99.23	
S Total HpCDD					49.6	49.6	0.2747	0.2747		
D 13C-OCDD	36.779	65984325	0.90	0.6287	199.5	199.5	0.2284	0.2284	99.76	
OCDF	36.875	45999109	0.91	1.4136	98.6	98.6	0.1285	0.1285	98.63	
OCDD	36.779	36458371	0.89	1.1290	97.9	97.9	0.1218	0.1218	97.88	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 17:39:44 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720B CS-4 HRDXNL4_00095
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:52 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:23

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.711	-1		31112804	7733116	6224	15560	1242		
333.9339	17.702	17.711	-1		39607791	9816368	6478	16195	1515	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.972	41030020	10154846	7855	19637	1293		
317.9389	17.203	17.203	0	0.972	53382714	13133900	6218	15545	2112	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	3561888	894232	983	2457	910		
305.8987	17.219	17.218	0	1.001	4653726	1157857	1112	2780	1041	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	31968779	7718913	6224	15560	1240		
333.9339	17.899	17.905	0	1.011	41345382	9900999	6478	16195	1528	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.920	0	1.001	3174976	757094	1105	2762	685		
321.8936	17.914	17.920	0	1.001	4011790	981191	870	2175	1128	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	7516852	1794624	791	1977	2269		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.254	47497432	8216899	10419	26047	789		
353.8970	22.198	22.204	0	1.254	31075236	5302735	6785	16962	782	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.220	0	1.001	21398670	3762258	4666	11665	806		
341.8567	22.212	22.220	0	1.001	13978396	2405130	3277	8192	734	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.329	44029183	7101834	10419	26047	682		
353.8970	23.535	23.540	0	1.329	28365519	4629716	6785	16962	682	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	20877521	3397982	4666	11665	728		
341.8567	23.562	23.567	0	1.001	13303684	2199628	3277	8192	671	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.370	34503673	5302158	4255	10637	1246		
369.8919	24.257	24.263	0	1.370	21858187	3302460	2605	6512	1268	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	16467085	2528070	1607	4017	1573		
357.8516	24.285	24.290	0	1.001	10638629	1635439	1007	2517	1624	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	16384882	2900679	8887	22217	326		
385.8610	30.393	30.398	0	0.948	32027086	5699628	17116	42790	333	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.414	0	1.000	14665484	2592019	7313	18282	354		
375.8178	30.406	30.414	0	1.000	11863457	2111122	5948	14870	355	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.587	0	0.954	17889731	3184718	8887	22217	358		
385.8610	30.579	30.587	0	0.954	36085589	6387733	17116	42790	373	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.605	30.608	0	1.001	15646365	2747883	7313	18282	376		
375.8178	30.605	30.608	0	1.001	12789400	2231277	5948	14870	375	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.431	31.439	0	0.980	17351960	4081309	8887	22217	459		
385.8610	31.431	31.439	0	0.980	34151854	7997923	17116	42790	467	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.444	31.458	-1	1.000	15135925	3506180	7313	18282	479		
375.8178	31.444	31.458	-1	1.000	12178580	2839003	5948	14870	477	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.243	32.254	-1	1.006	16215735	4033898	8887	22217	454		
385.8610	32.243	32.254	-1	1.006	31851406	7952589	17116	42790	465	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.256	32.267	-1	1.000	14177856	3484841	7313	18282	477		
375.8178	32.256	32.267	-1	1.000	11452178	2906201	5948	14870	489	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.056	32.067	-1		28868385	7036881	7771	19427	906		
403.8529	32.056	32.067	-1		23731050	5756704	6286	15715	916	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.617	31.631	-1	0.986	21933952	5608002	7771	19427	722		
403.8529	31.617	31.631	-1	0.986	17920818	4605232	6286	15715	733	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.001	11456611	2920731	3765	9412	776		
391.8127	31.644	31.647	0	1.001	9312918	2314083	2966	7415	780	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	29688232	6940958	7771	19427	893		
403.8529	31.737	31.740	0	0.990	24076499	5485435	6286	15715	873	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	12569862	3058042	3765	9412	812		
391.8127	31.750	31.756	0	1.000	9912556	2352065	2966	7415	793	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.070	32.081	-1	1.014	13561068	3292948	3765	9412	875		
391.8127	32.070	32.081	-1	1.014	10840153	2666284	2966	7415	899	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.051	13393731	4211850	13505	33762	312		
419.8220	33.679	33.684	0	1.051	31281899	9685953	29305	73262	331	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	15279832	4726569	17863	44657	265		
409.7789	33.679	33.694	-1	1.000	14709153	4492869	16886	42215	266	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.751	0	1.084	11797708	3362255	13505	33762	249		
419.8220	34.748	34.751	0	1.084	27286137	7564178	29305	73262	258	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	13006303	3556686	17863	44657	199		
409.7789	34.748	34.763	-1	1.000	12629987	3473252	16886	42215	206	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.457	34.464	0	1.075	23465448	6729742	13575	33937	496		
437.8140	34.457	34.464	0	1.075	22808620	6552009	12896	32240	508	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	11701156	3397612	7315	18287	464		
425.7737	34.469	34.474	0	1.000	11229611	3229876	7260	18150	445	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	31180213	7357720	3942	9855	1866		
471.7750	36.779	36.784	0	1.147	34804112	8192437	3407	8517	2405	0.90(0.76-1.02)	
OCDF											
441.7428	36.875	36.882	0	1.003	21919771	5421255	2520	6300	2151		
443.7399	36.875	36.882	0	1.003	24079338	5903685	3129	7822	1887	0.91(0.76-1.02)	
OCDD											
457.7377	36.779	36.791	-1	1.000	17204055	4070324	1648	4120	2470		
459.7348	36.779	36.791	-1	1.000	19254316	4623817	2627	6567	1760	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: AJS

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246
Sample Line#: 5

Column Type: DB-5
Column Dia: 0.32 mm

TCDF

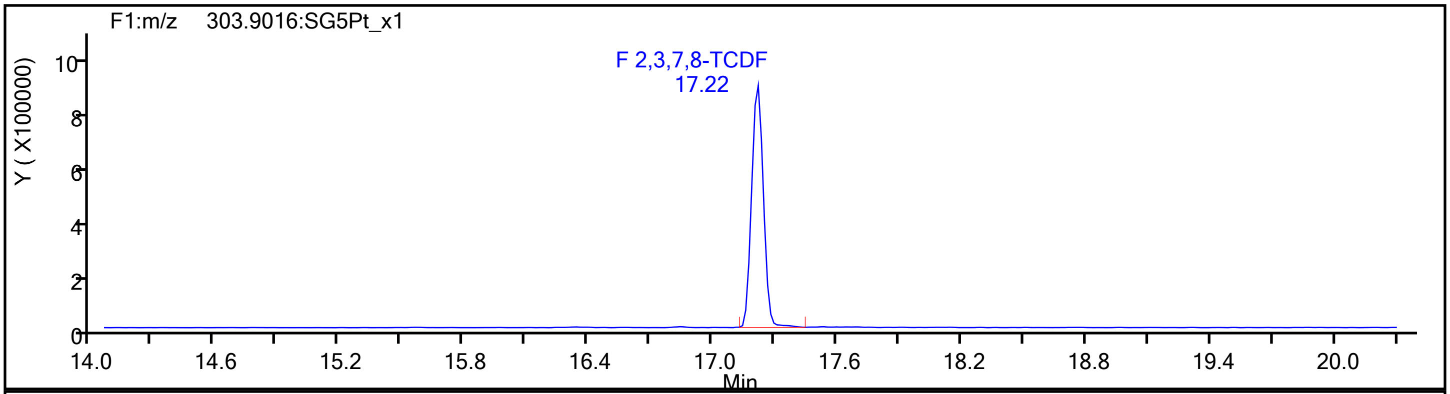

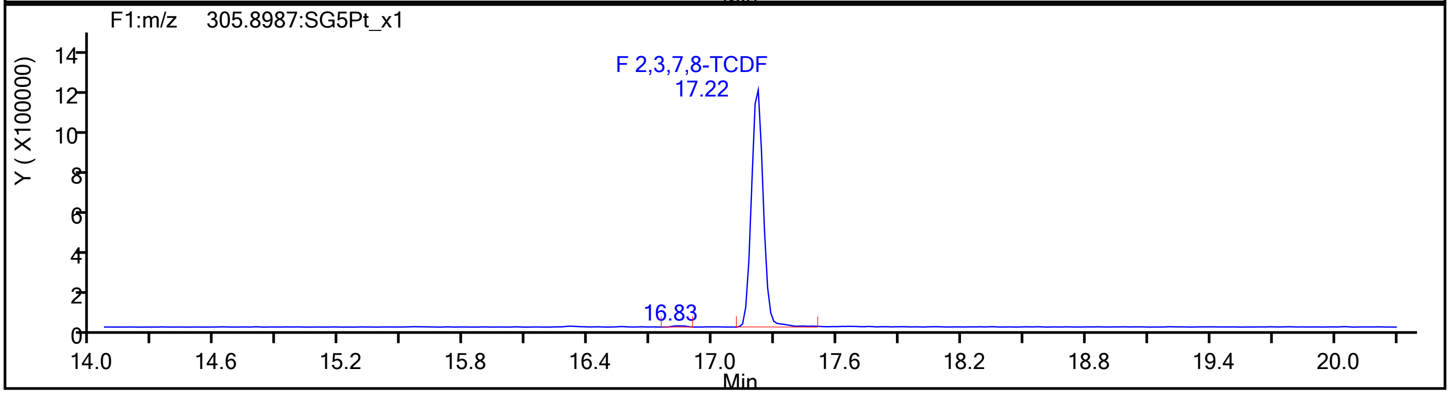

TCDF Standards

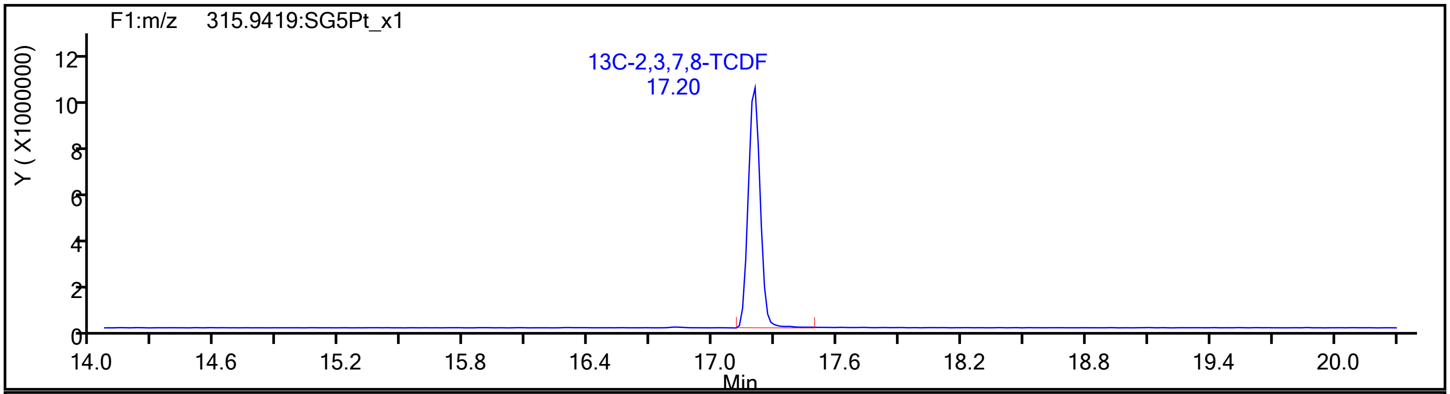

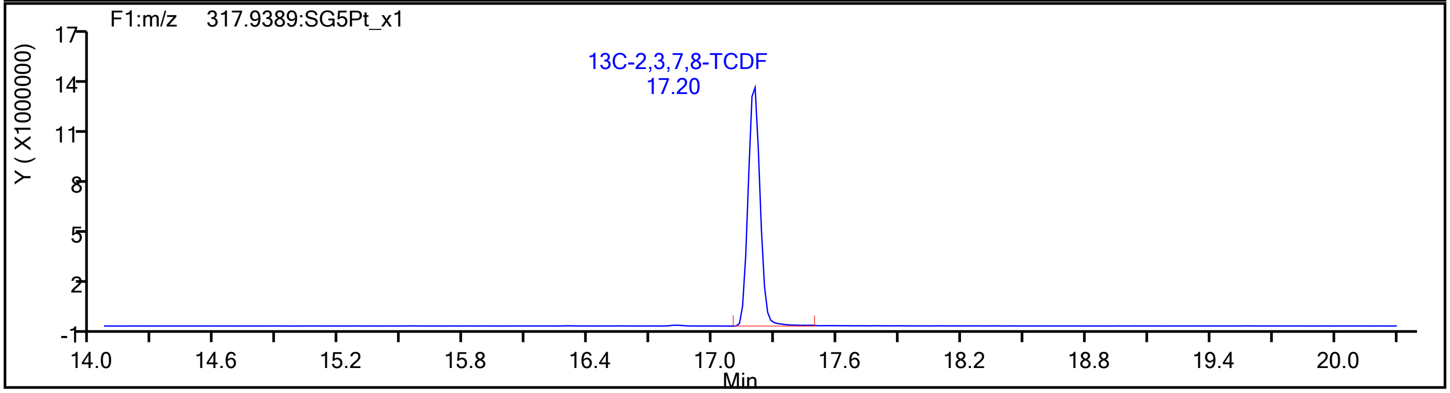

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

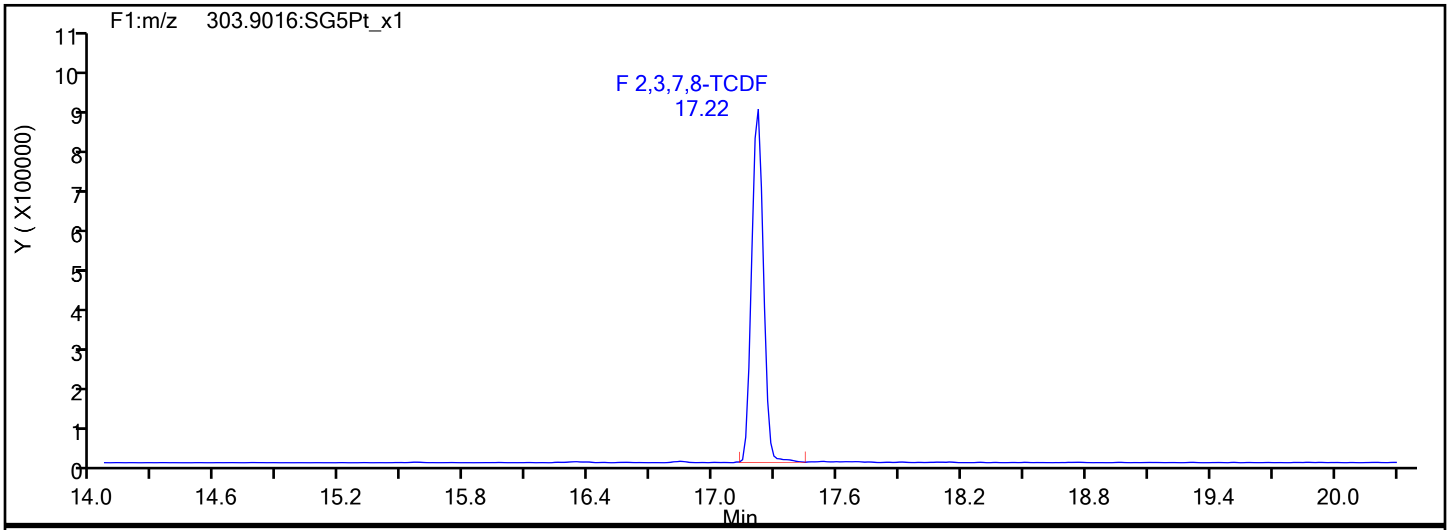

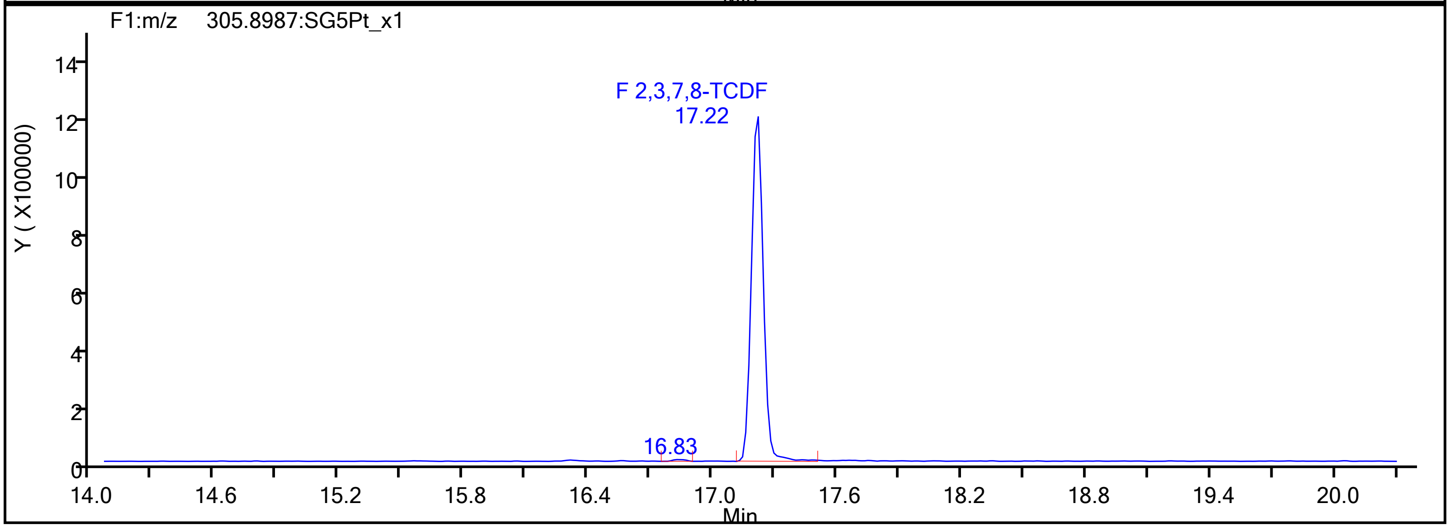

TCDF Interference Mass

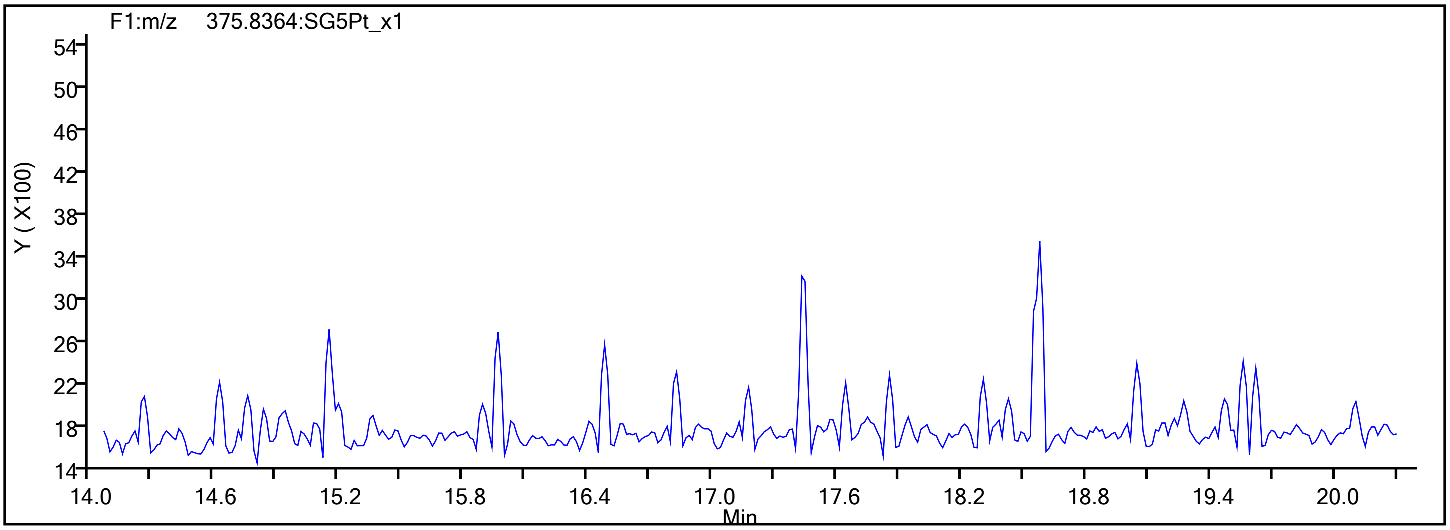

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 17:39:44
Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Column Type: DB-5
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TCDD

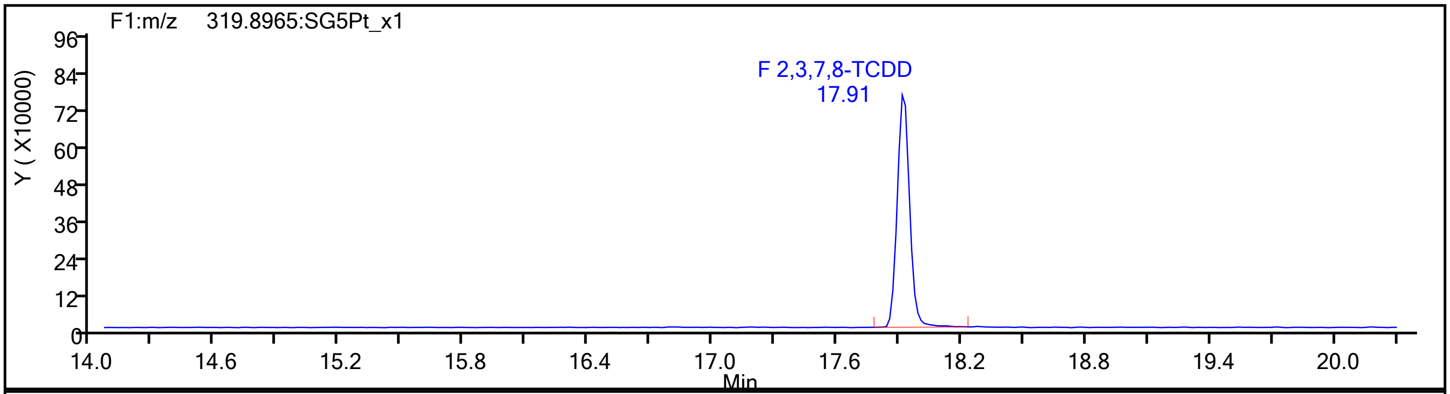

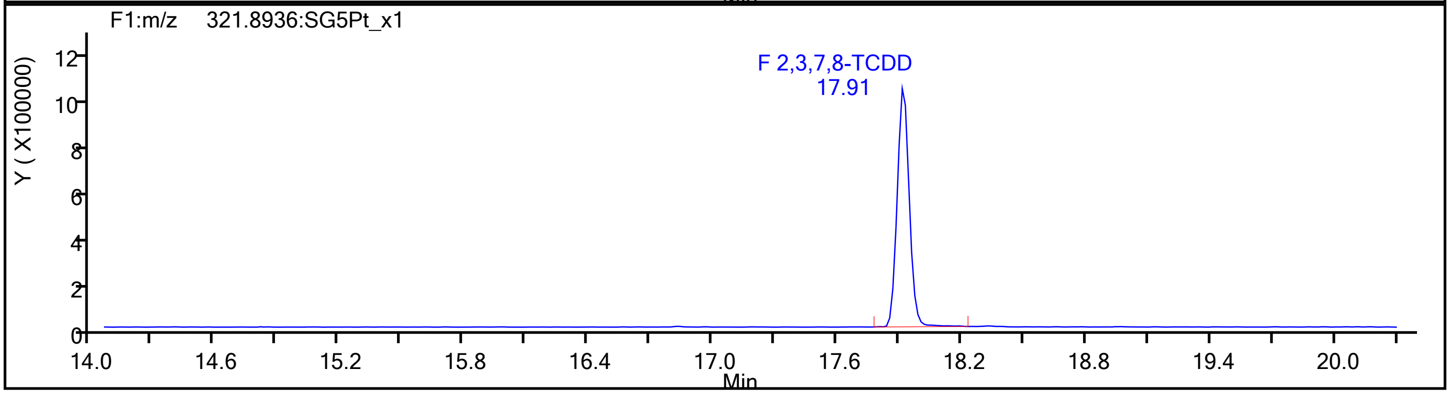

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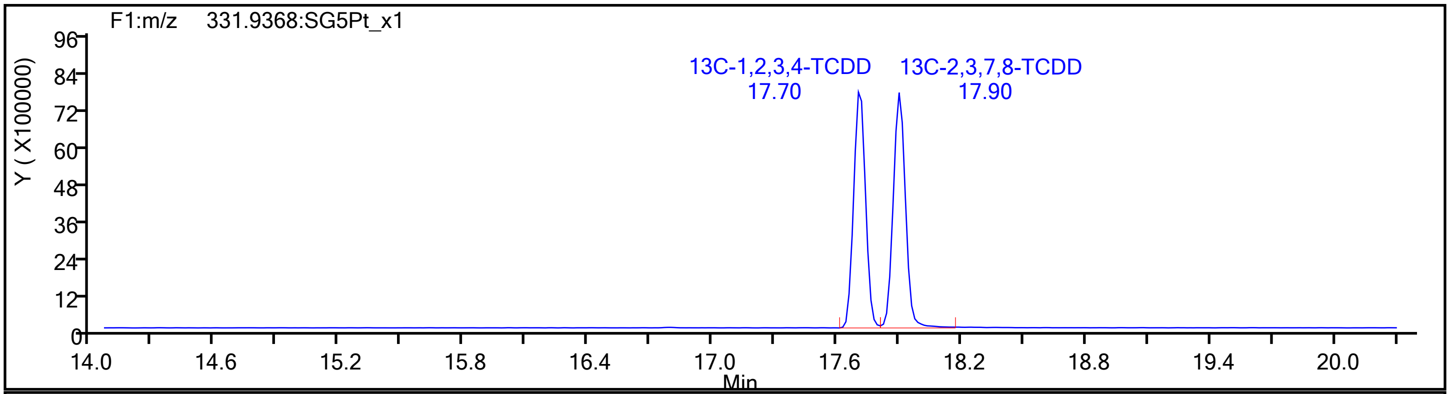

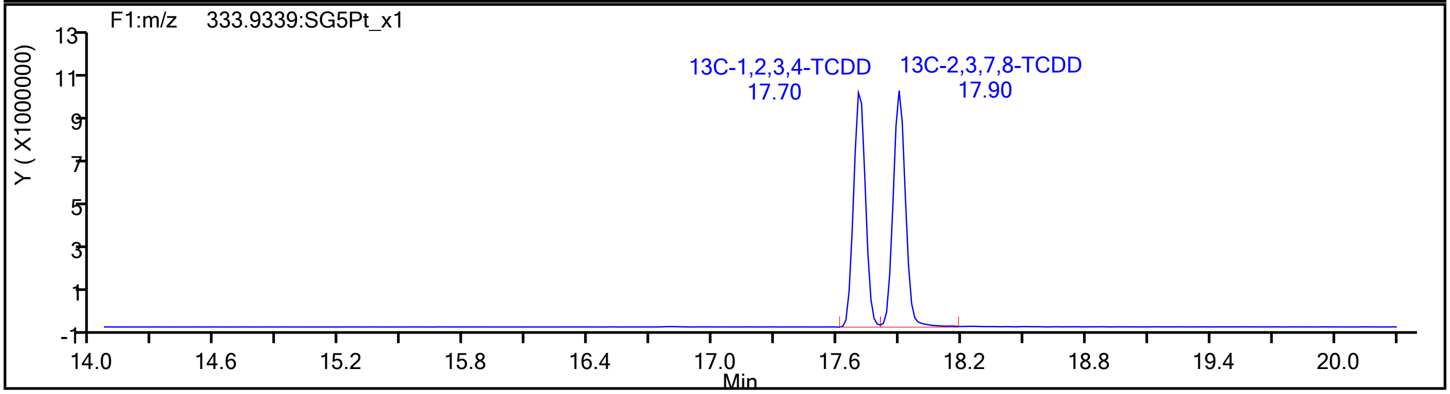

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Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 17:39:44
Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

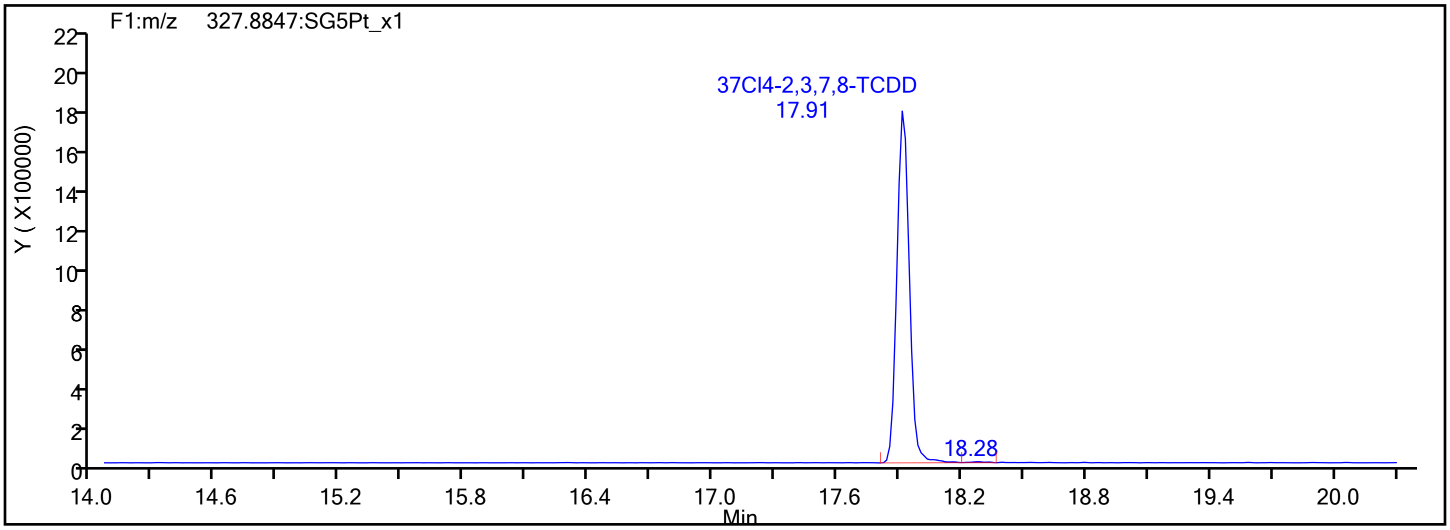

37Cl4-TCDD Standards

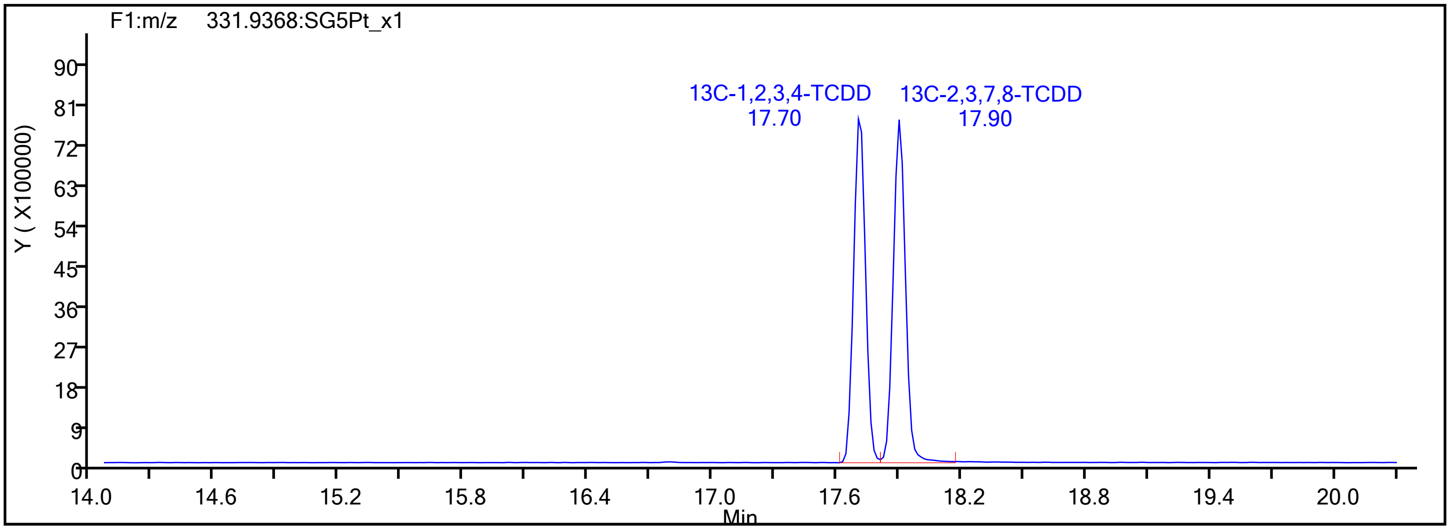

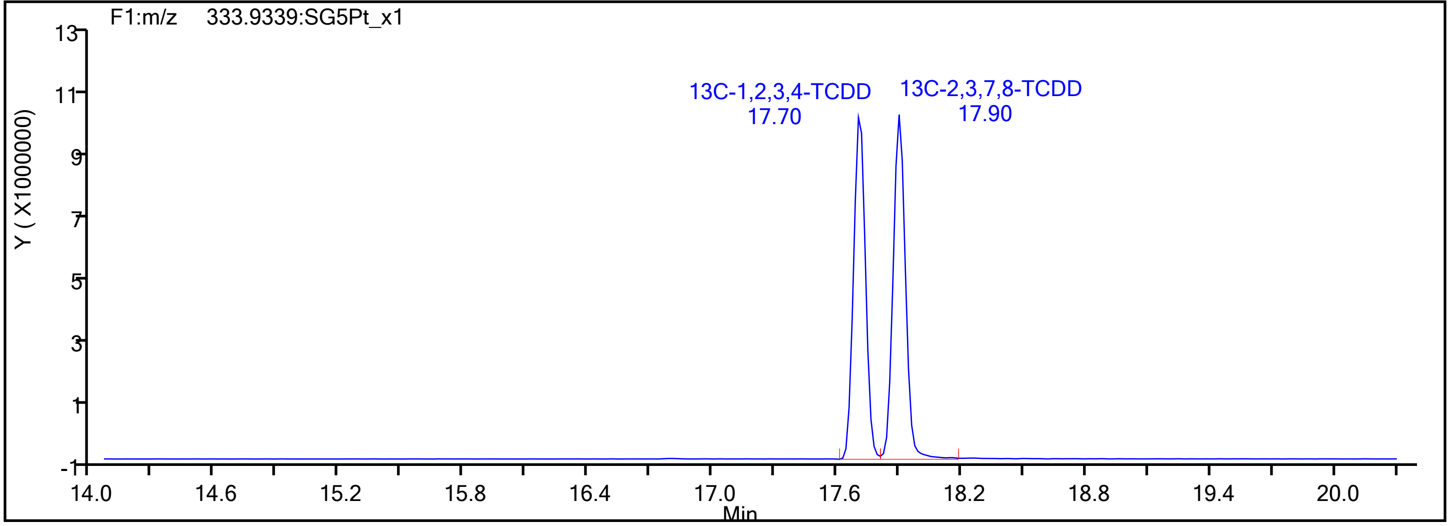

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

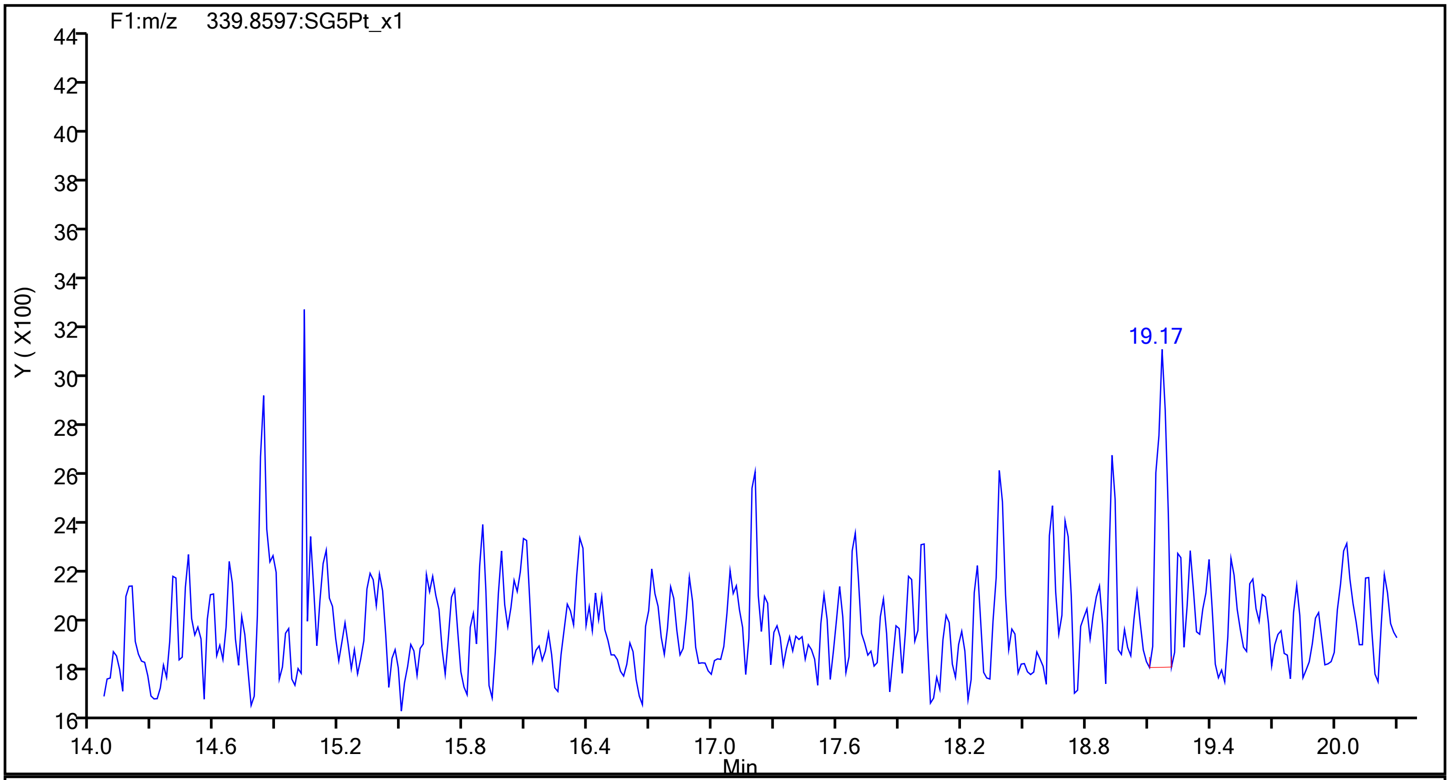

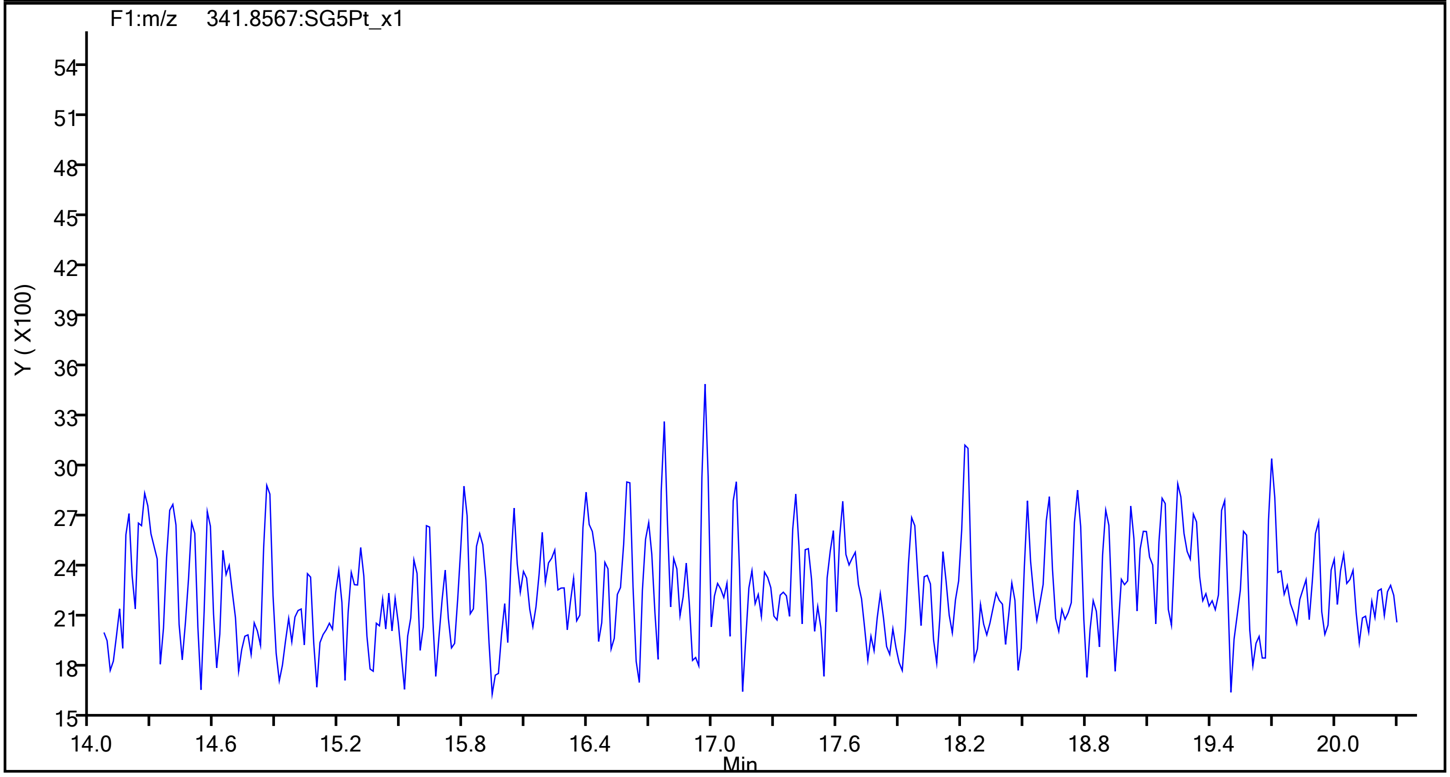

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F1 PeCDFs

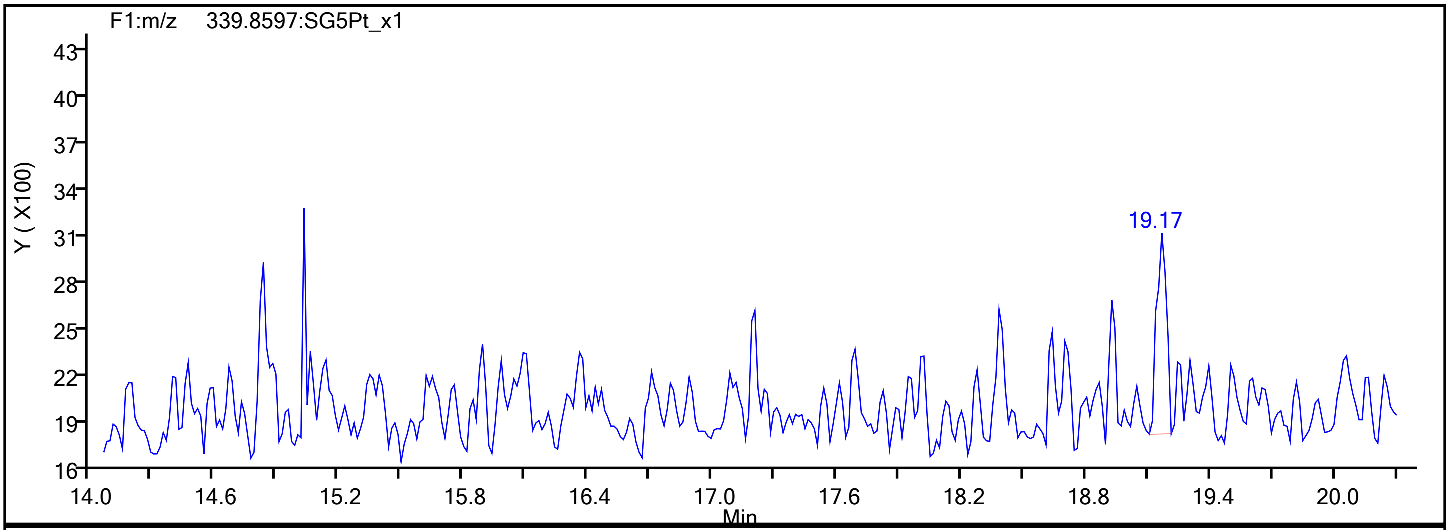

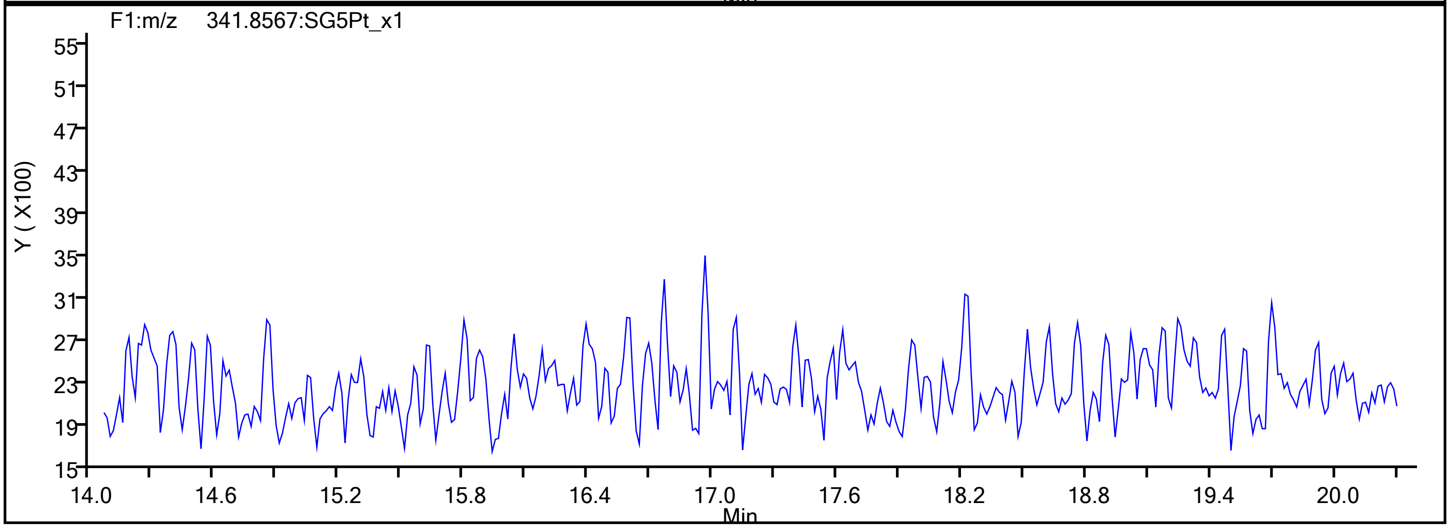

F1 PeCDFs Interference Mass

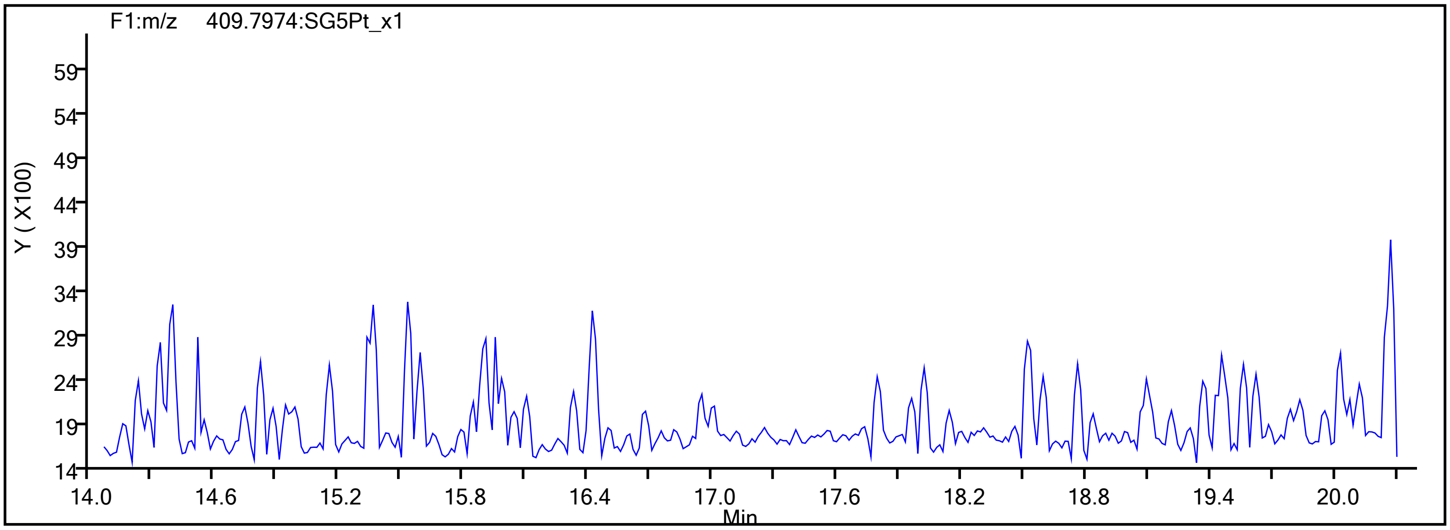

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Eurofins TestAmerica, Sacramento

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Operator ID: AJS
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Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

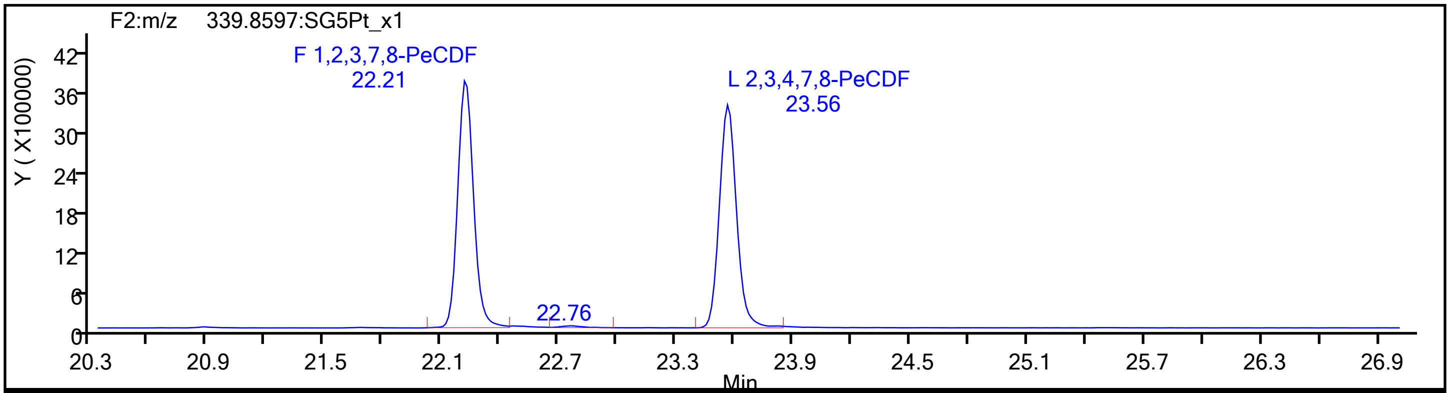

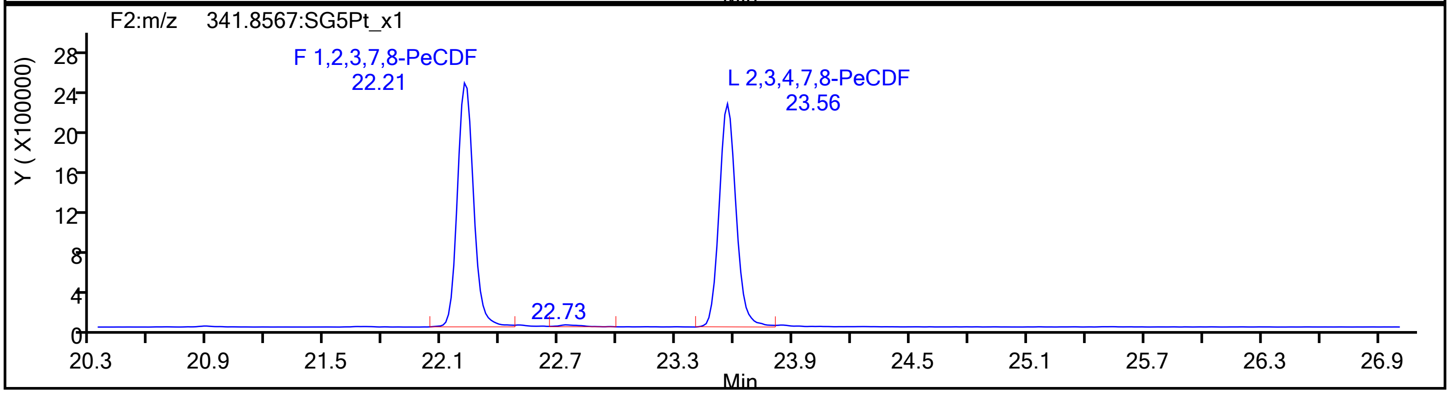

PeCDF Standards

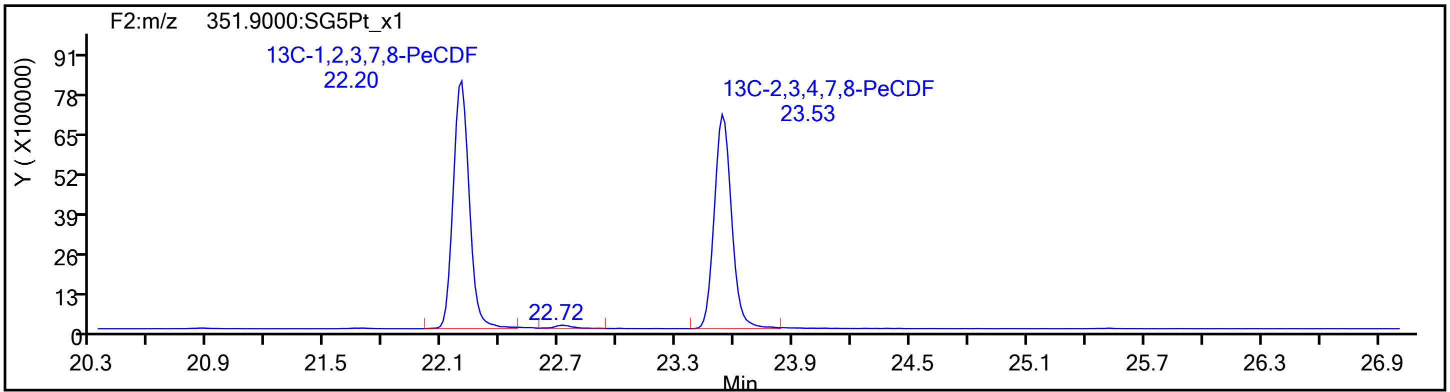

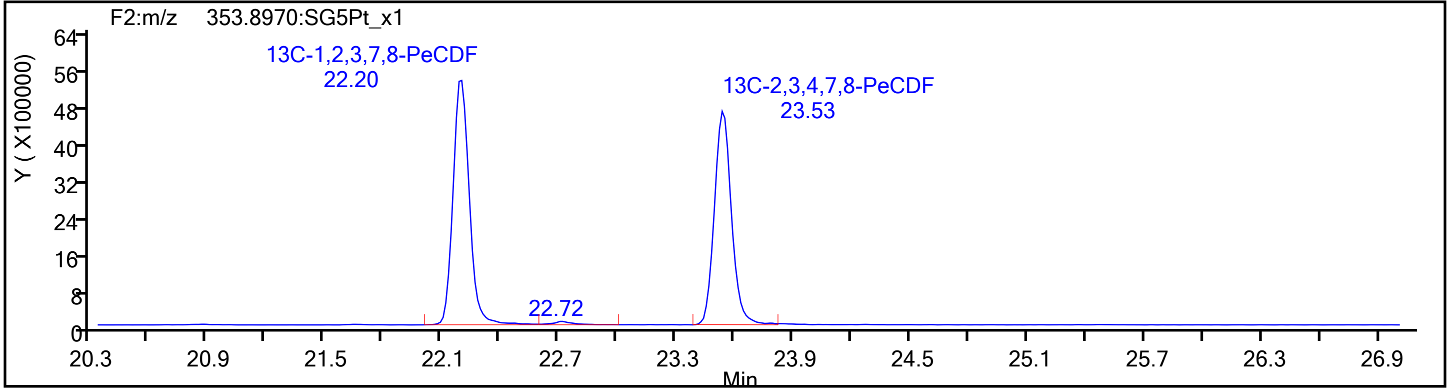

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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PeCDF

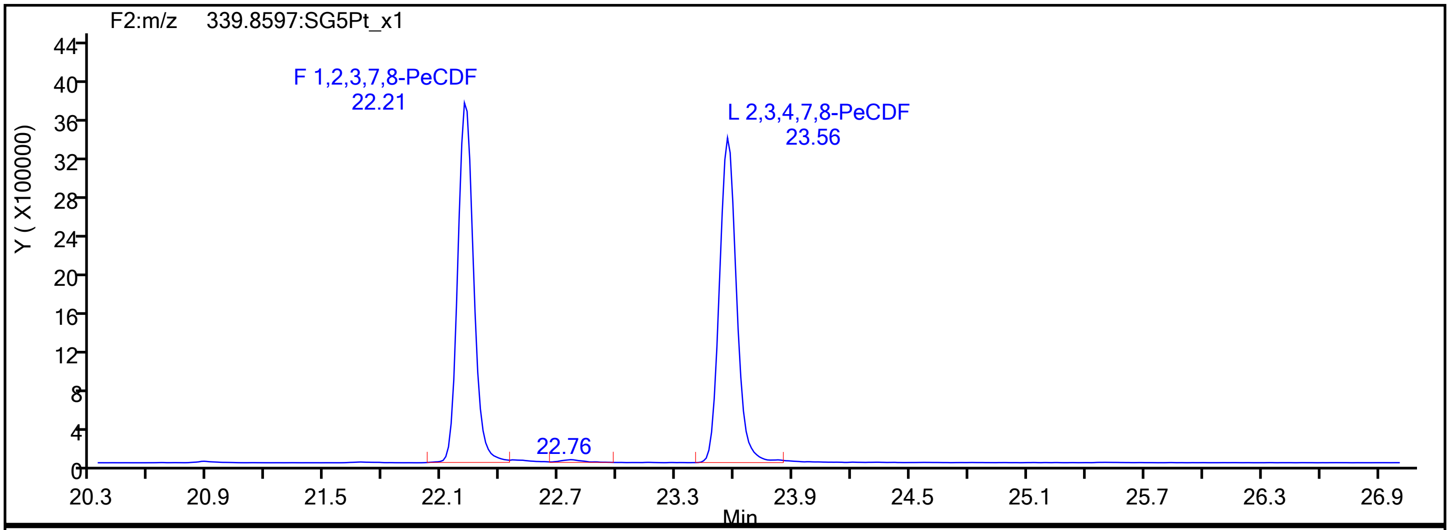

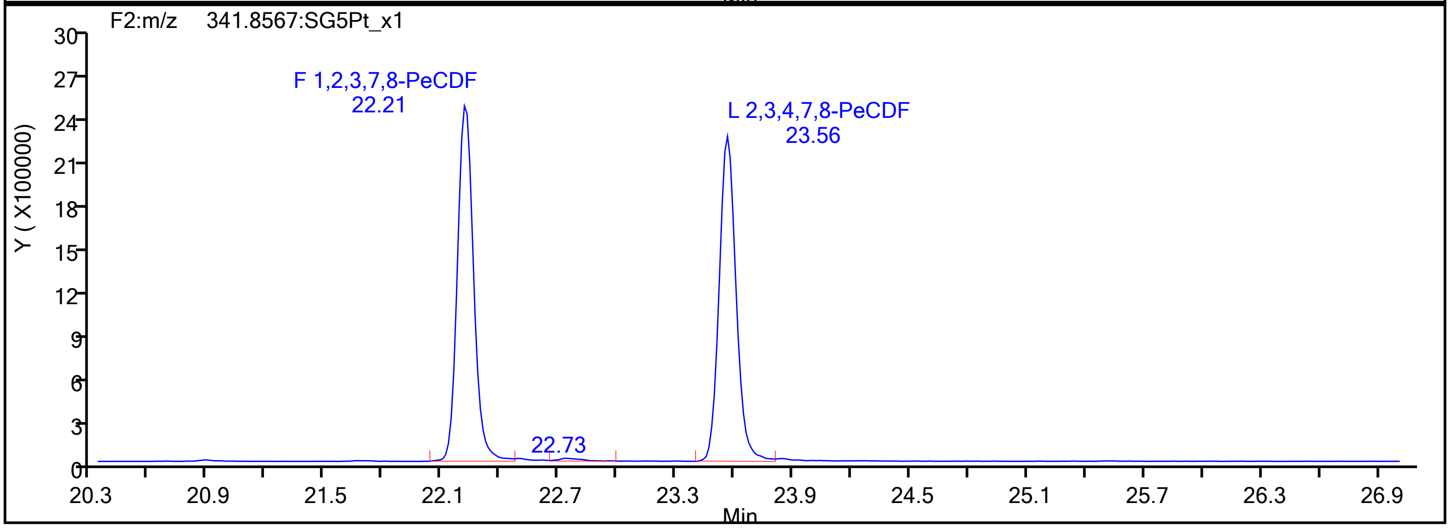

PeCDF Interference Mass

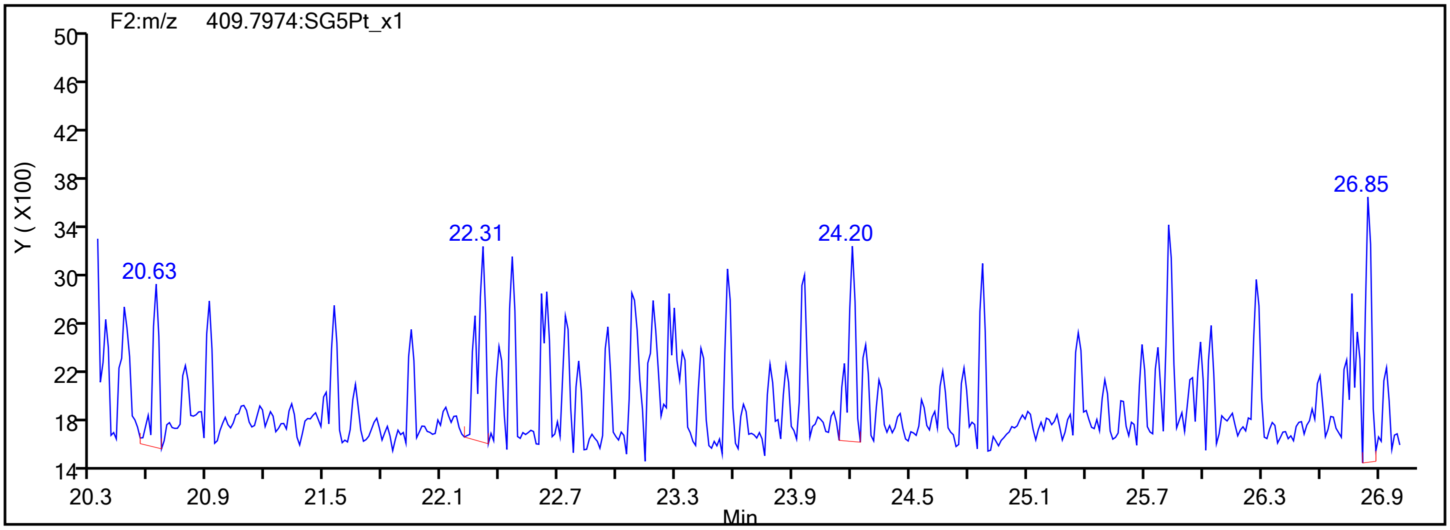

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Eurofins TestAmerica, Sacramento

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Operator ID: AJS
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PeCDD

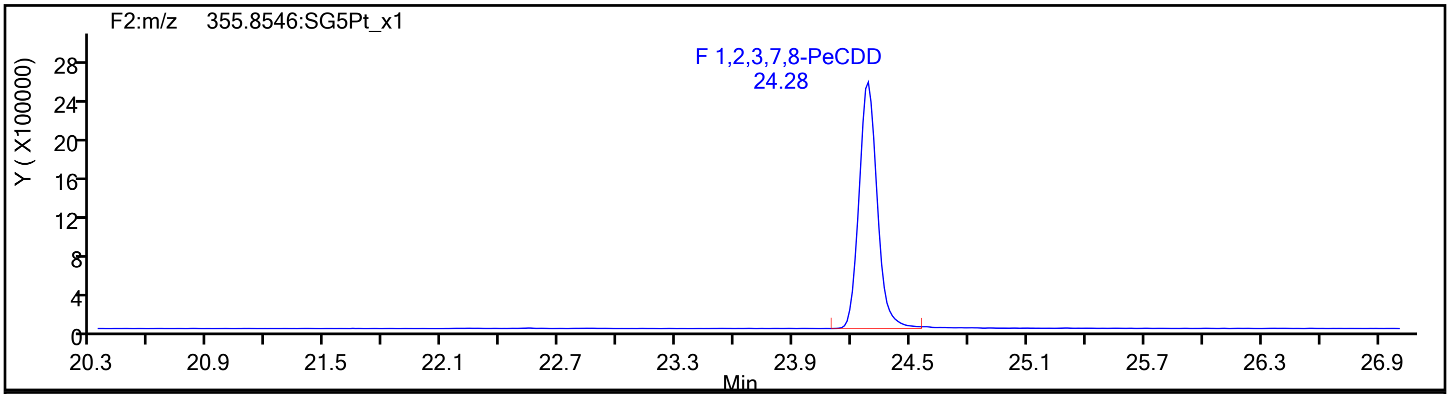

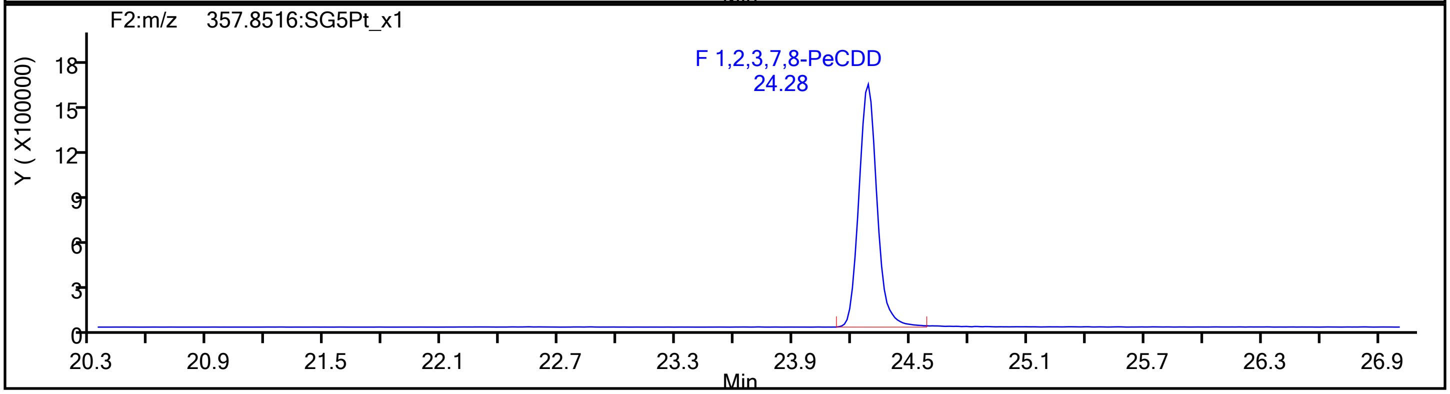

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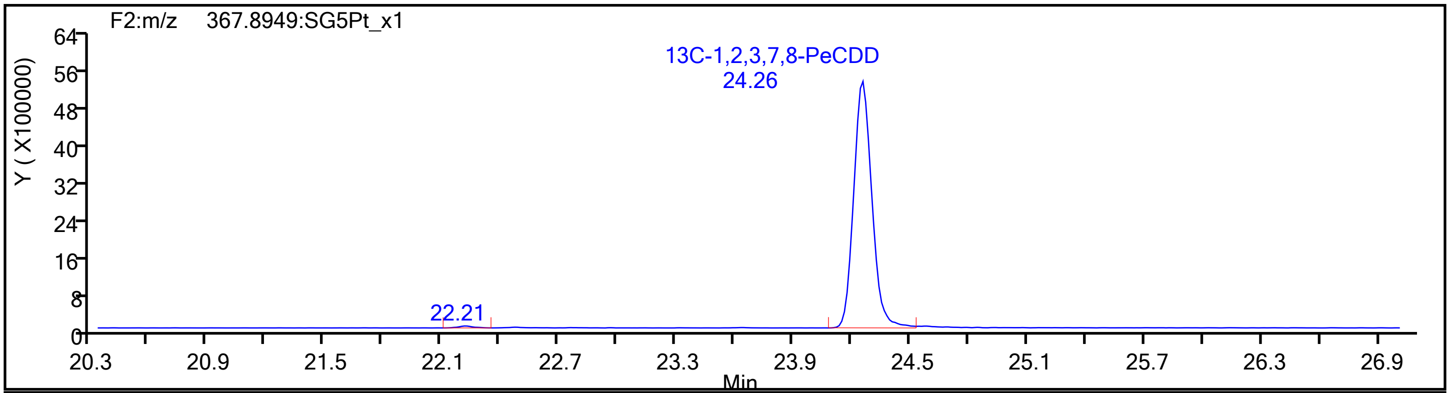

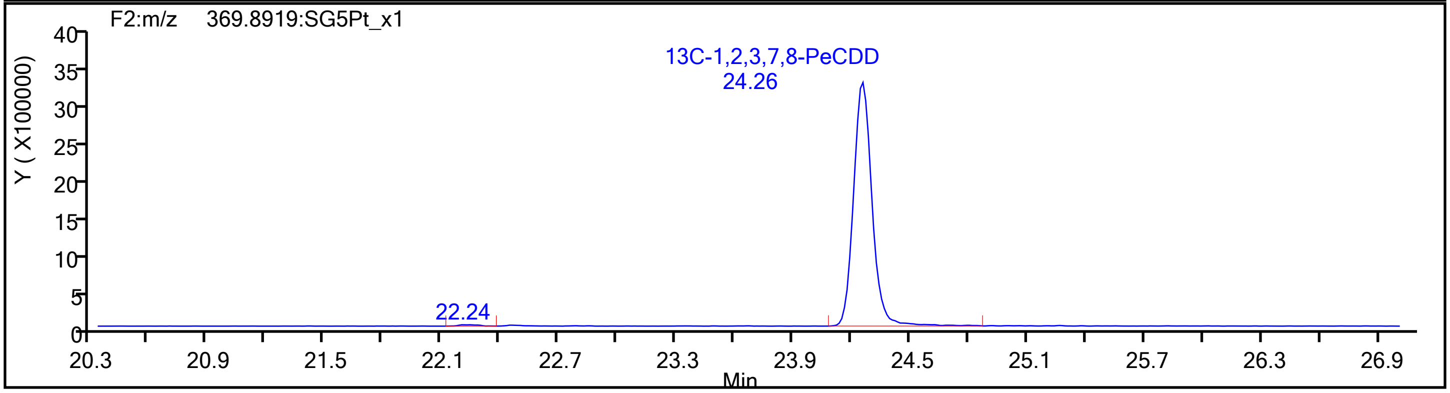

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Eurofins TestAmerica, Sacramento

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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
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Column Dia: 0.32 mm

HxCDF

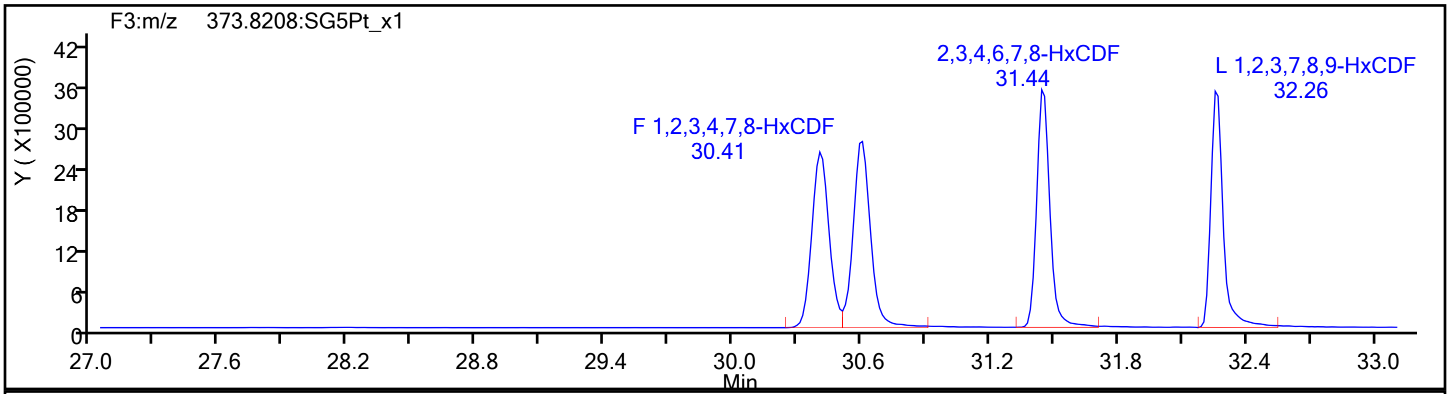

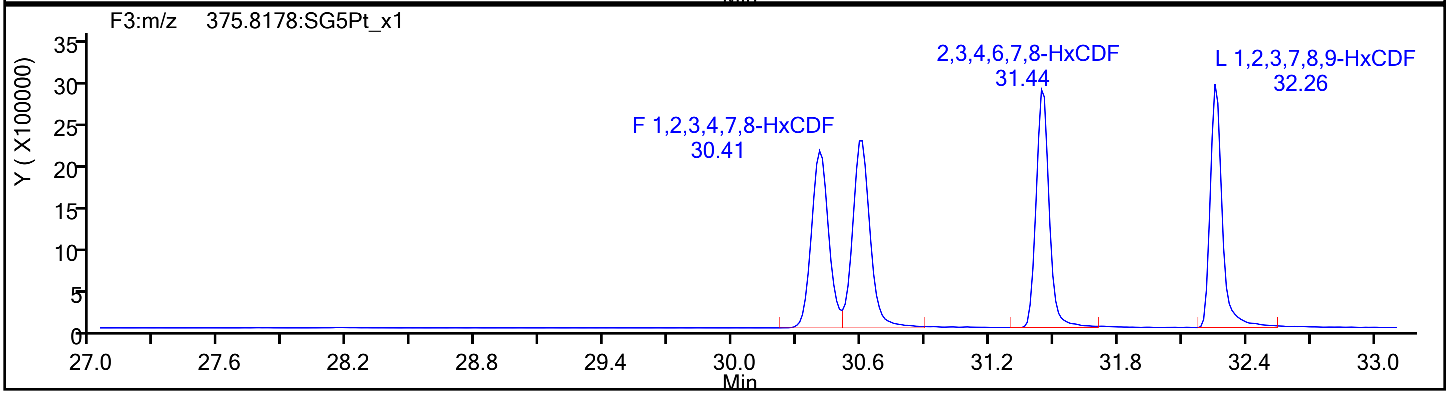

HxCDF Standards

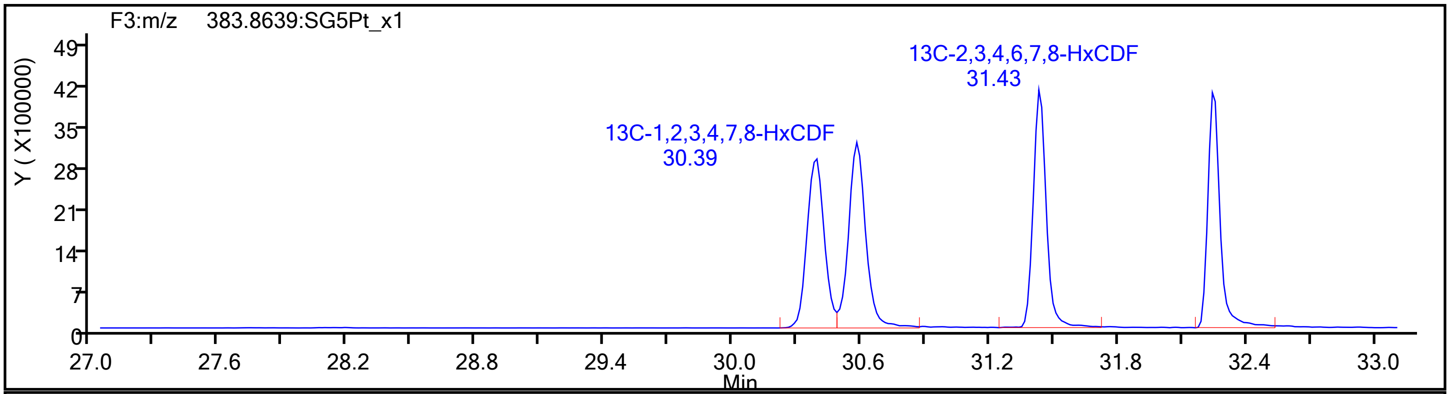

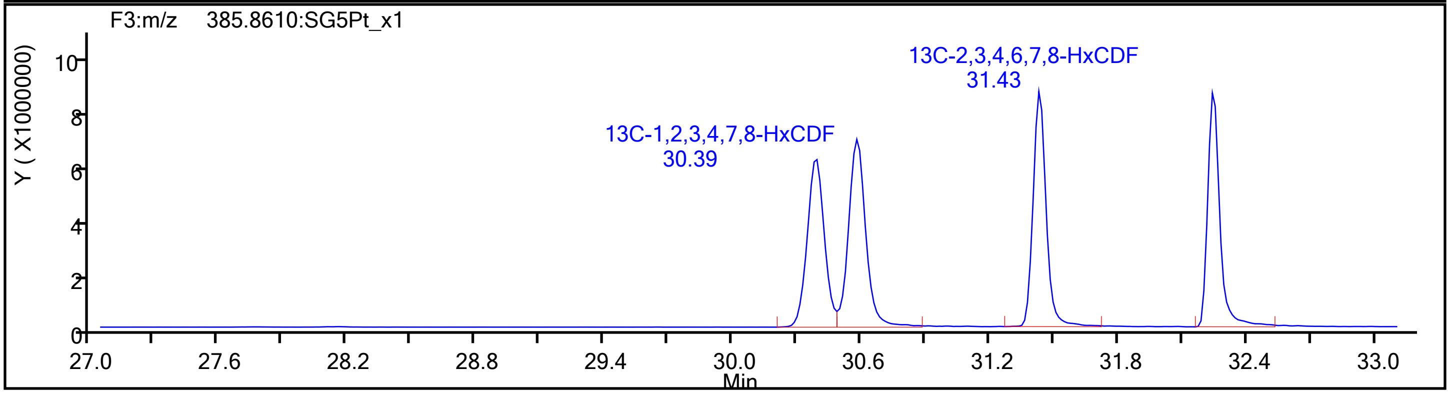

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Eurofins TestAmerica, Sacramento

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HxCDF

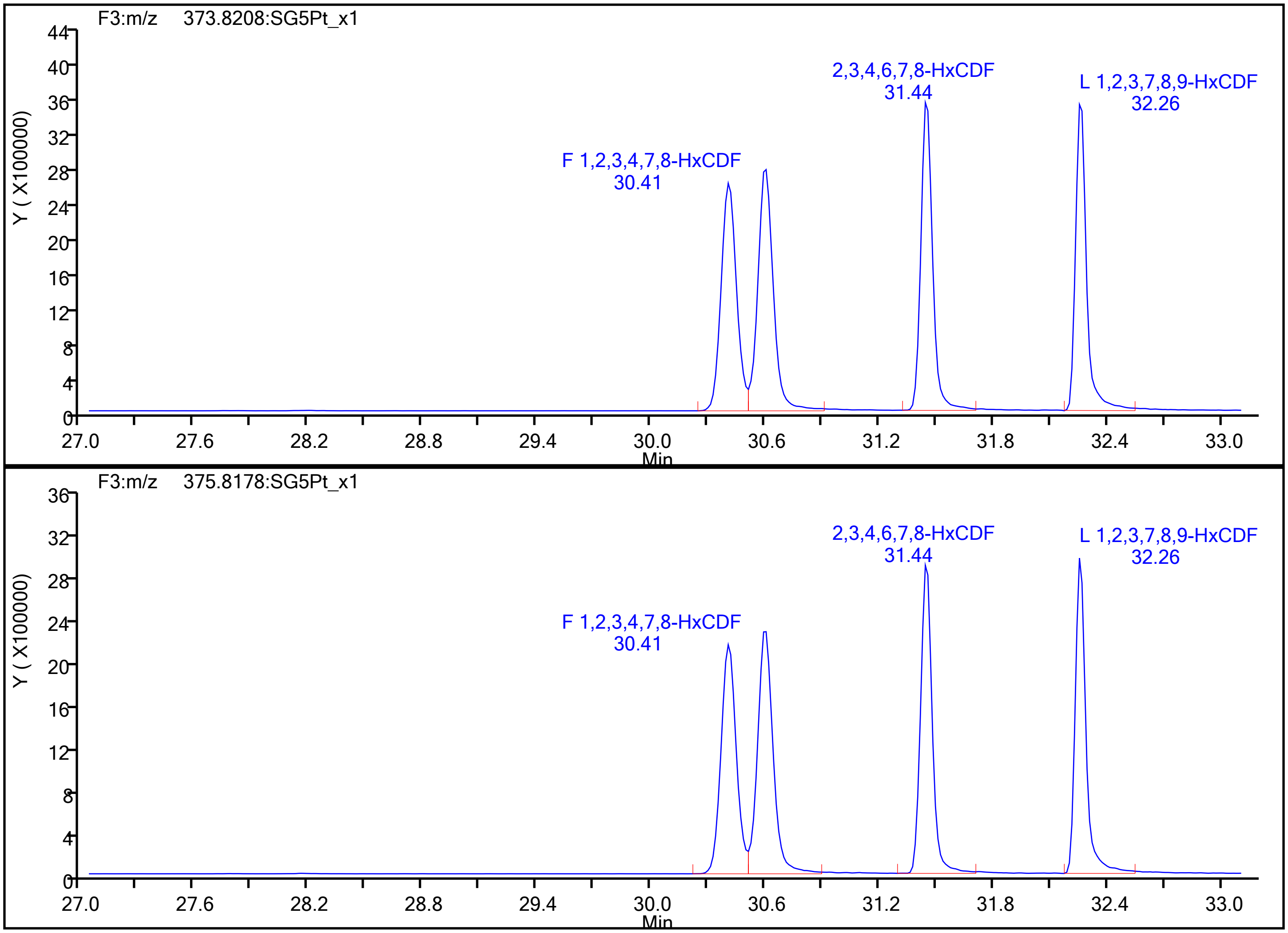

HxCDF Interference Mass

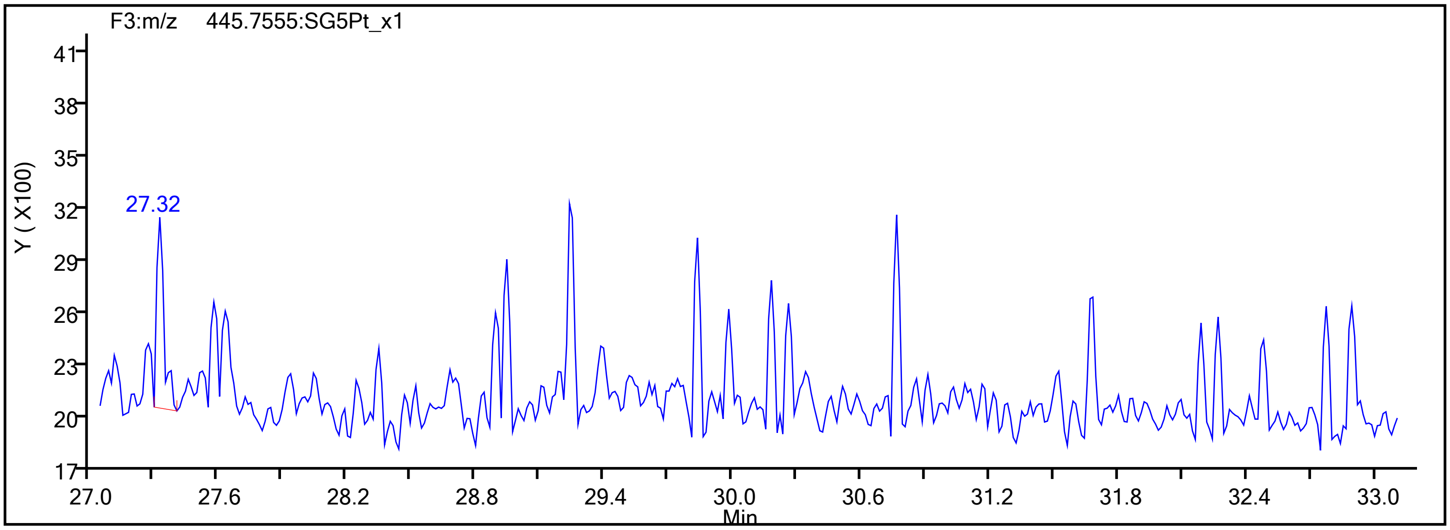

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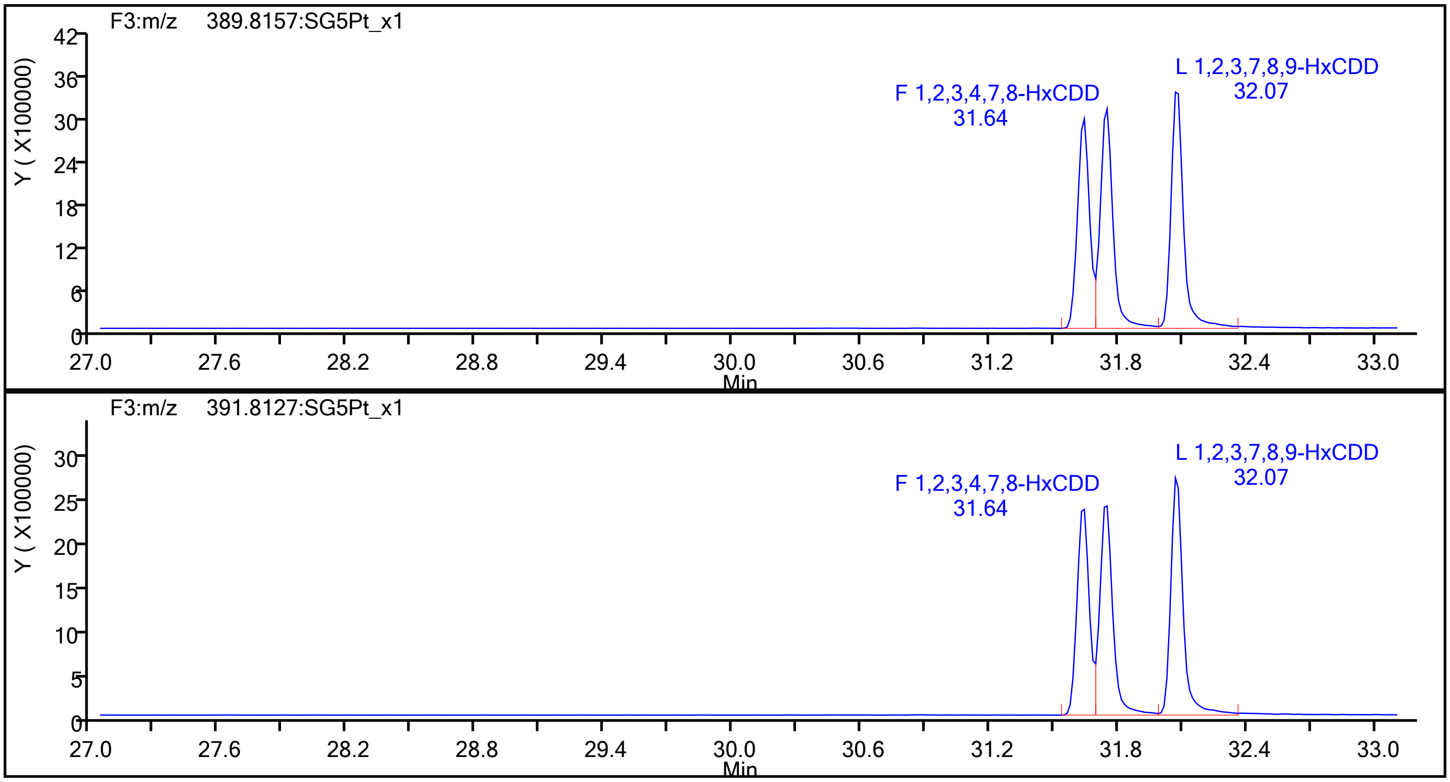

HxCDD Standards

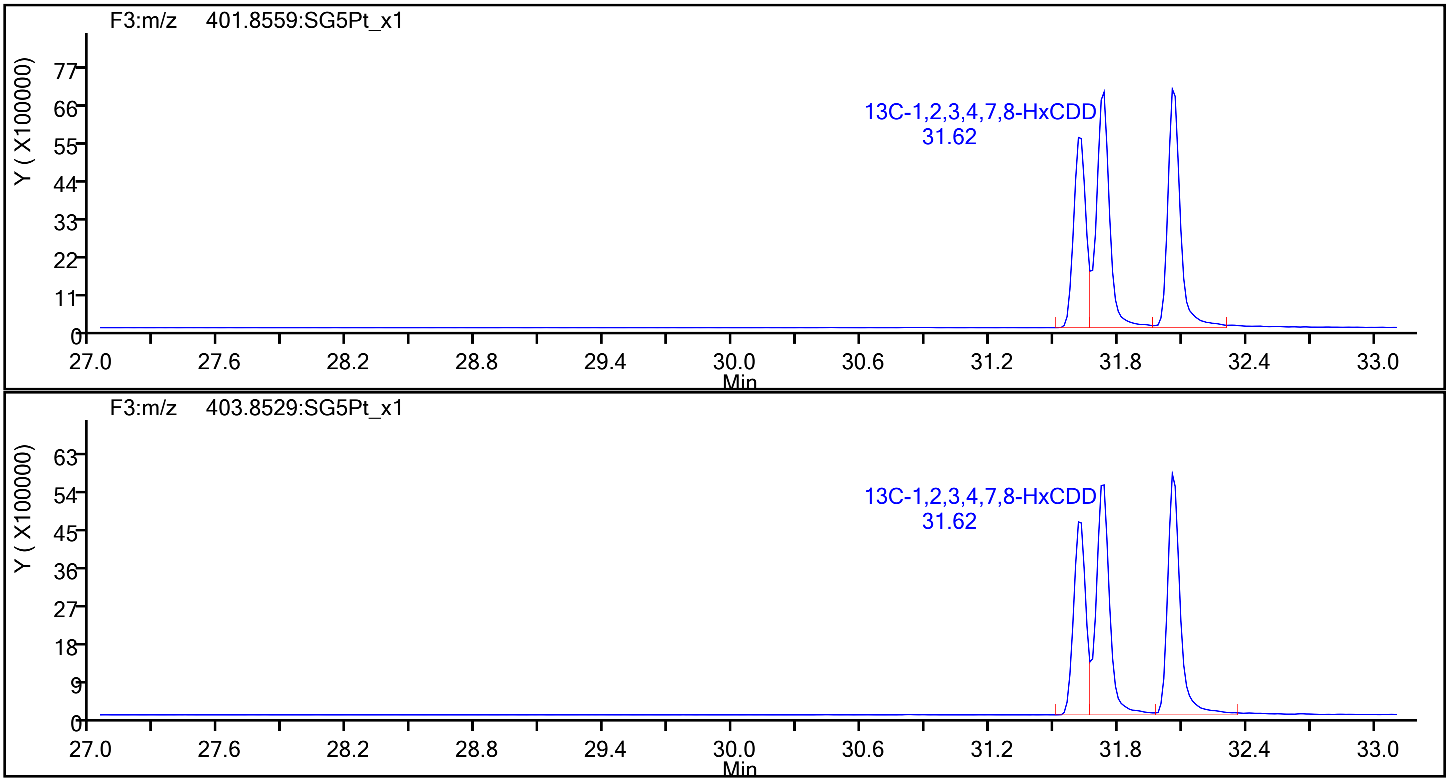

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HpCDF

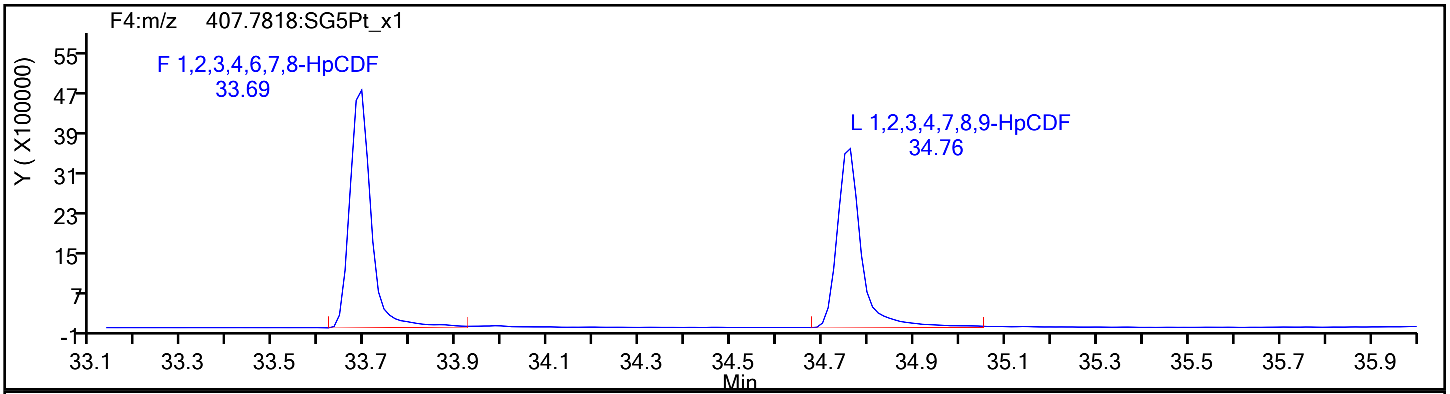

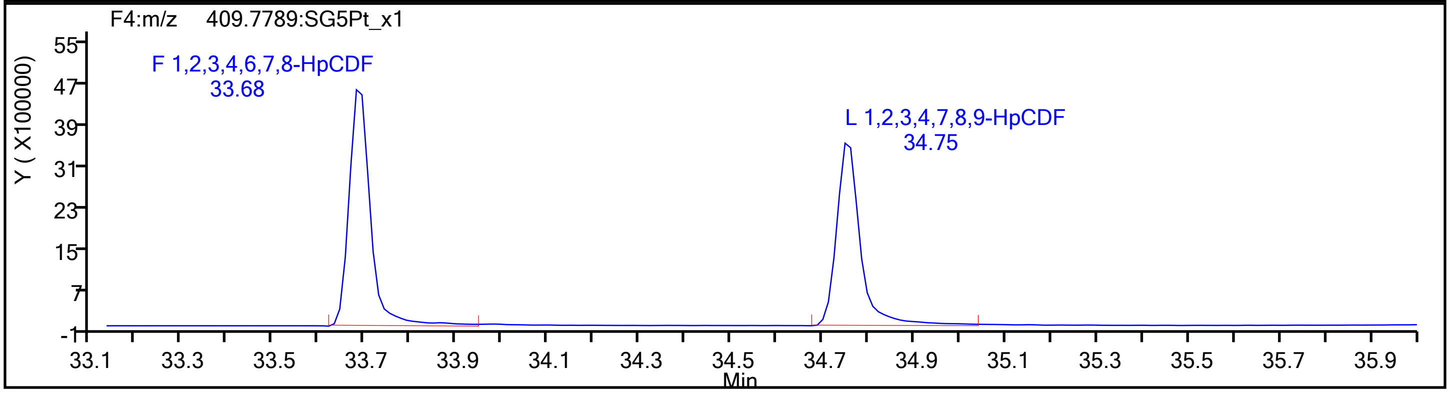

HpCDF Standards

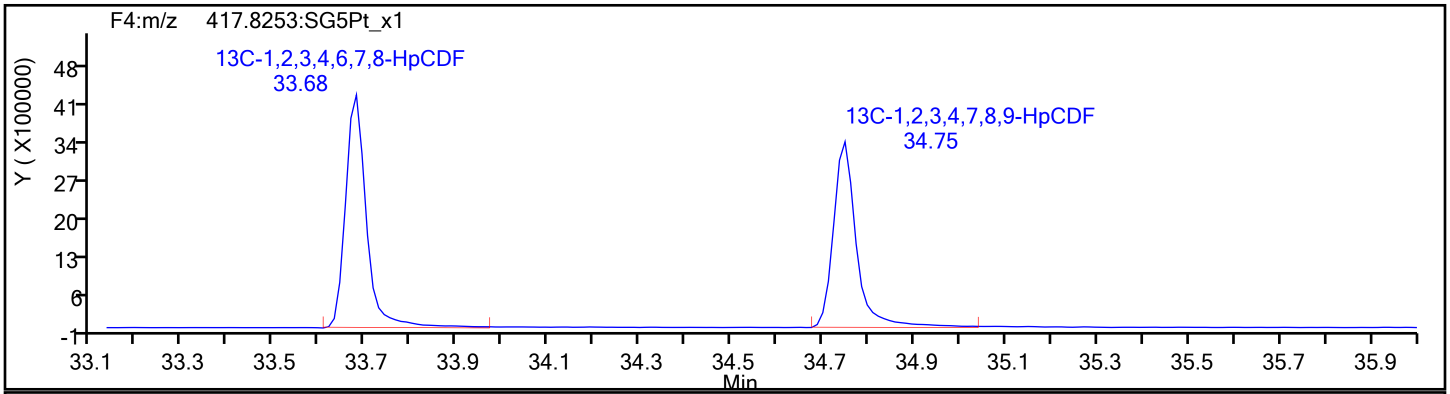

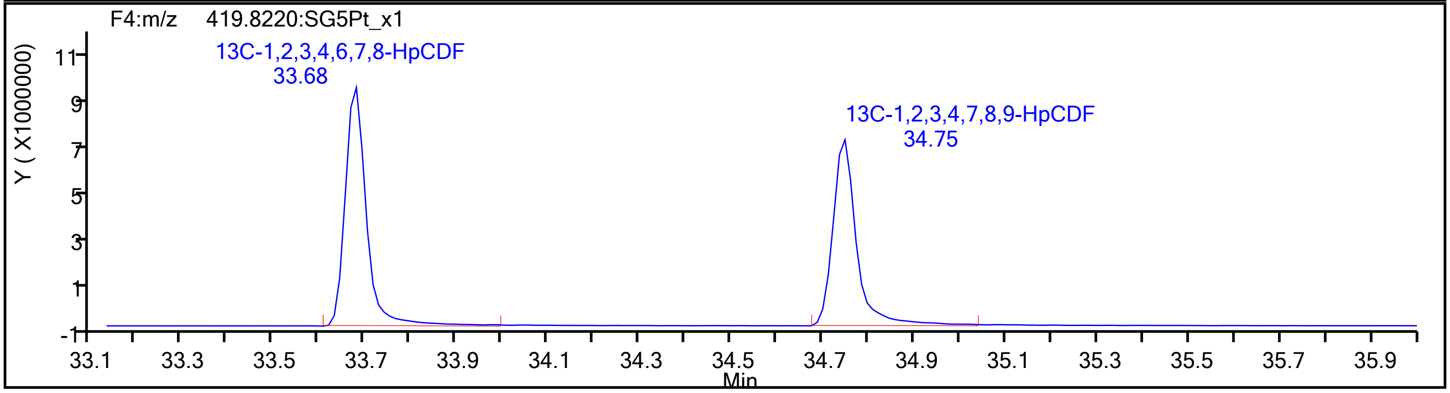

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HpCDF

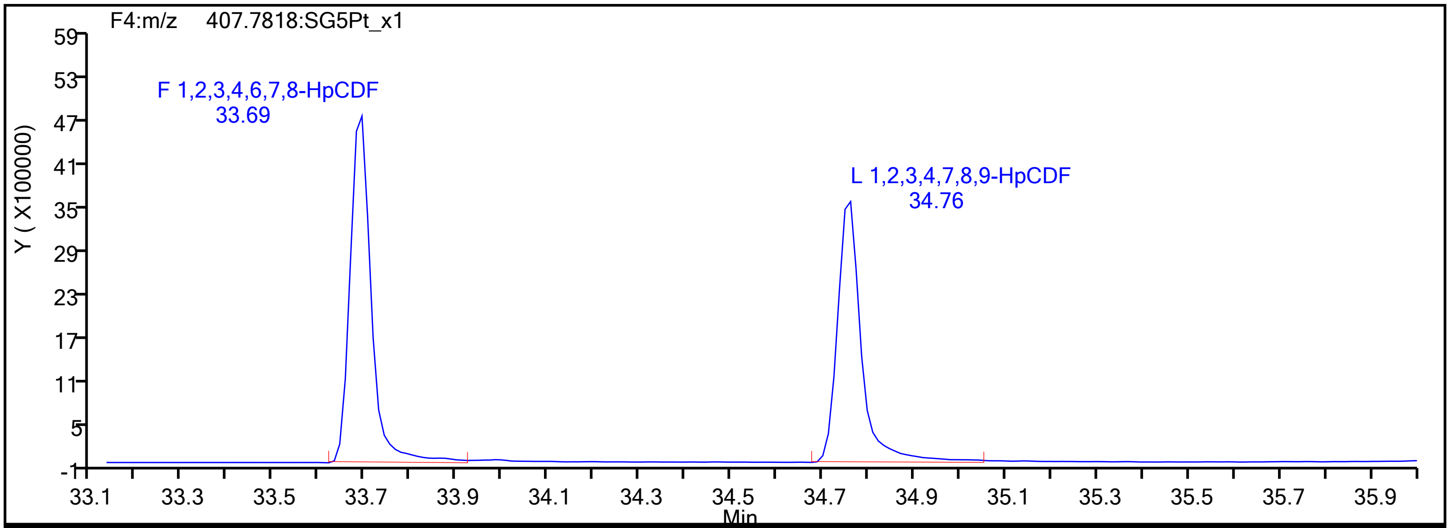

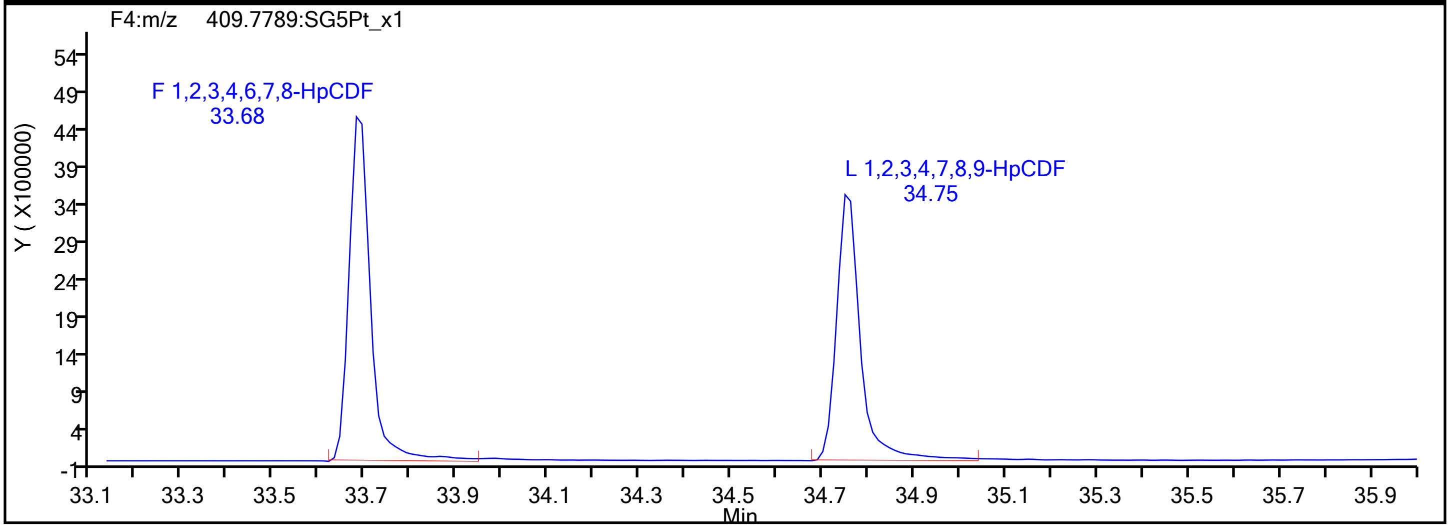

HpCDF Interference Mass

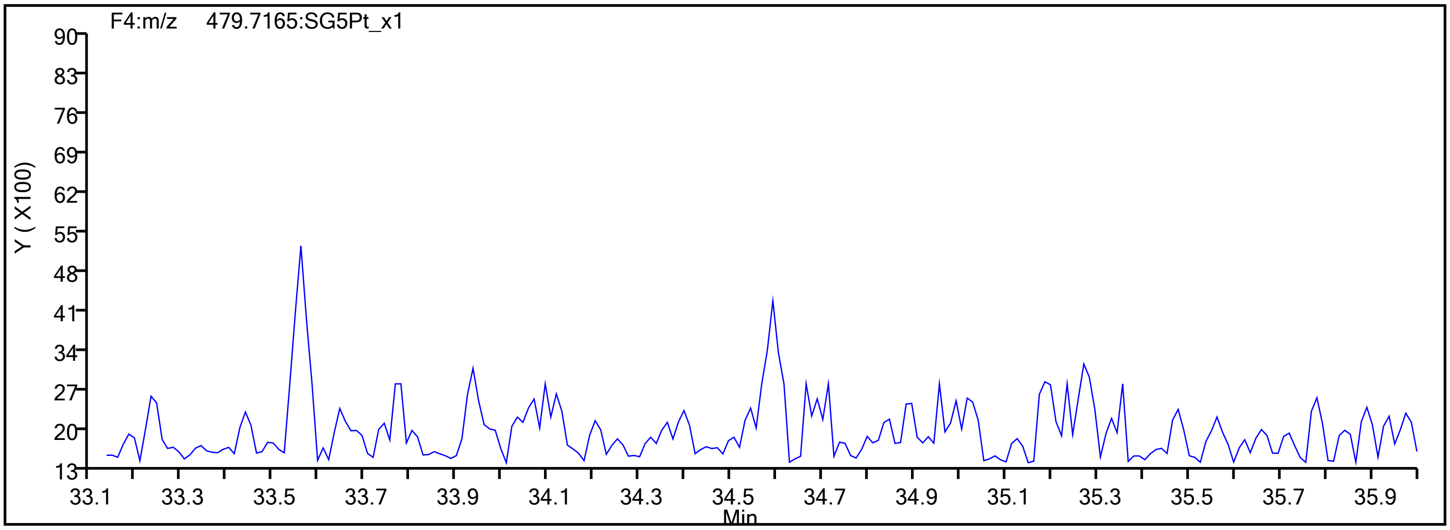

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

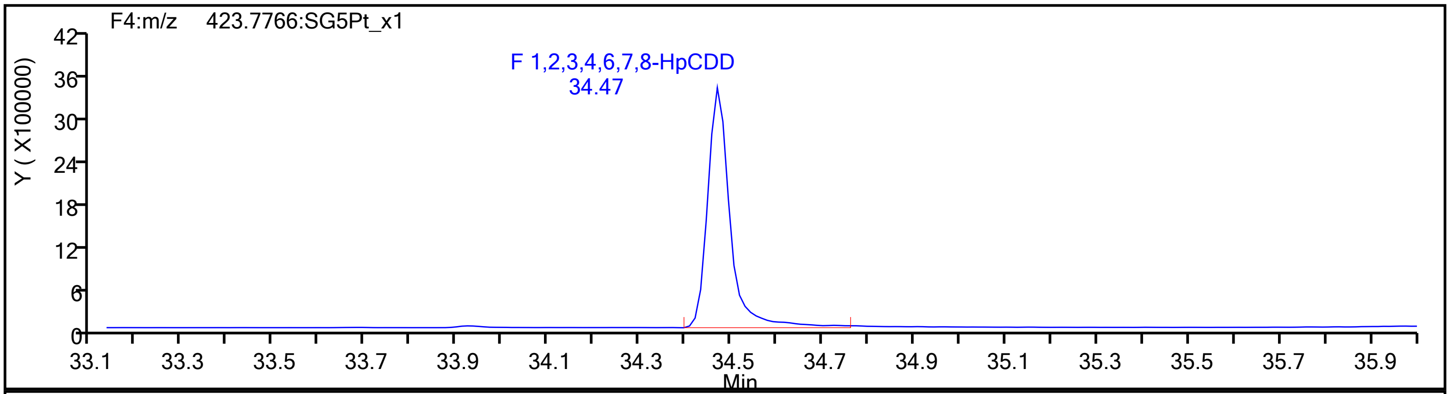

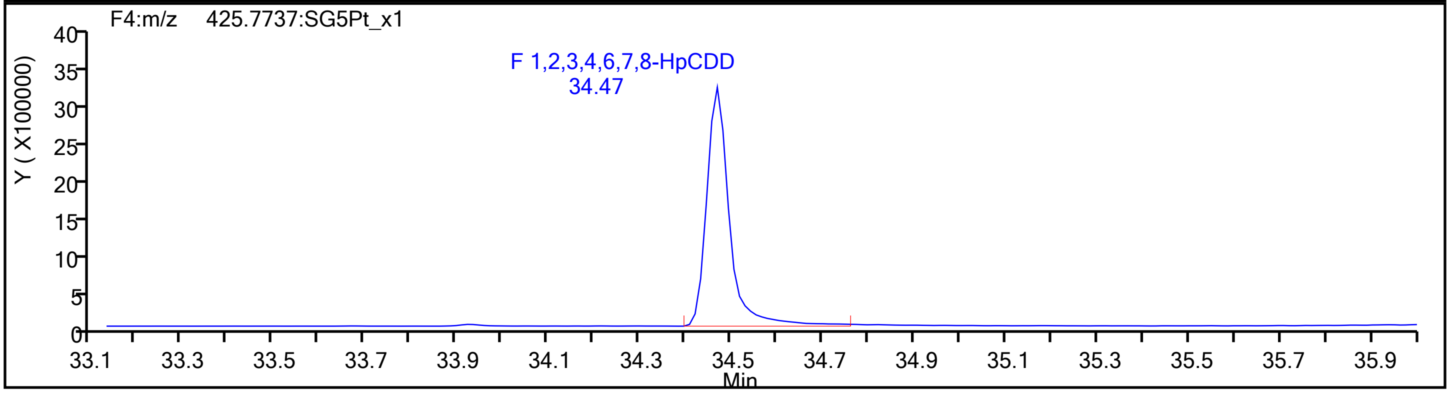

HpCDD Standards

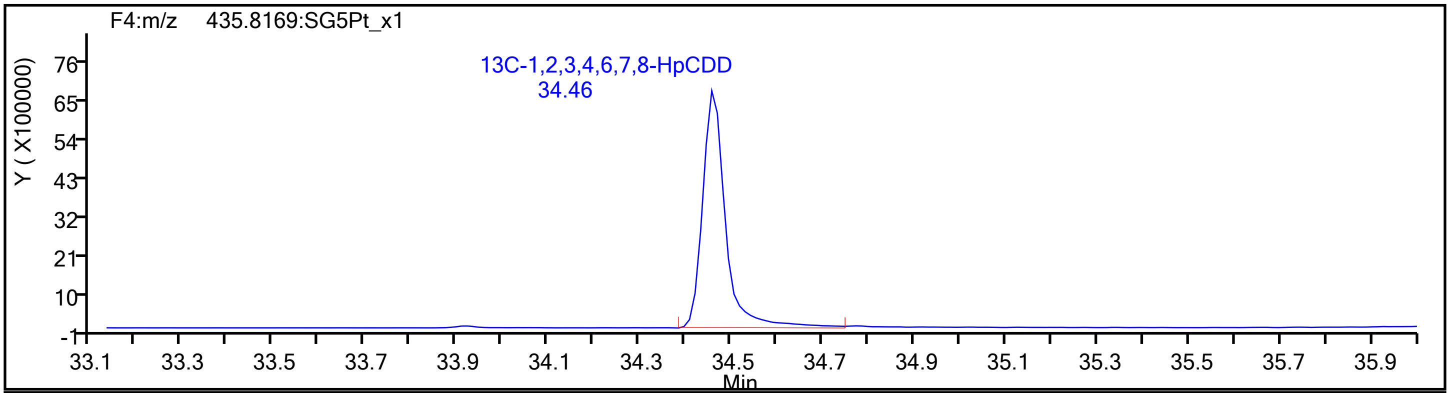

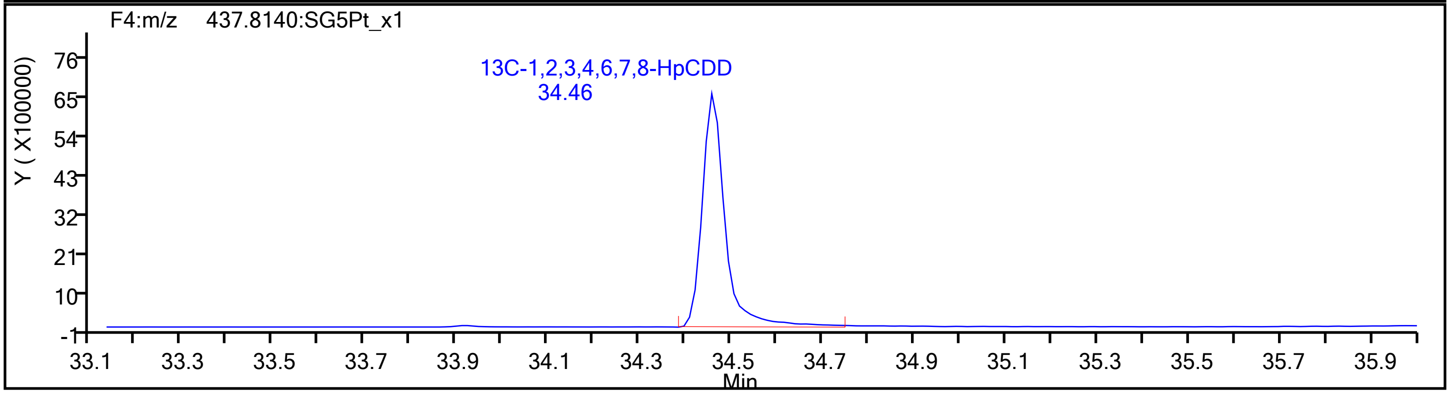

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

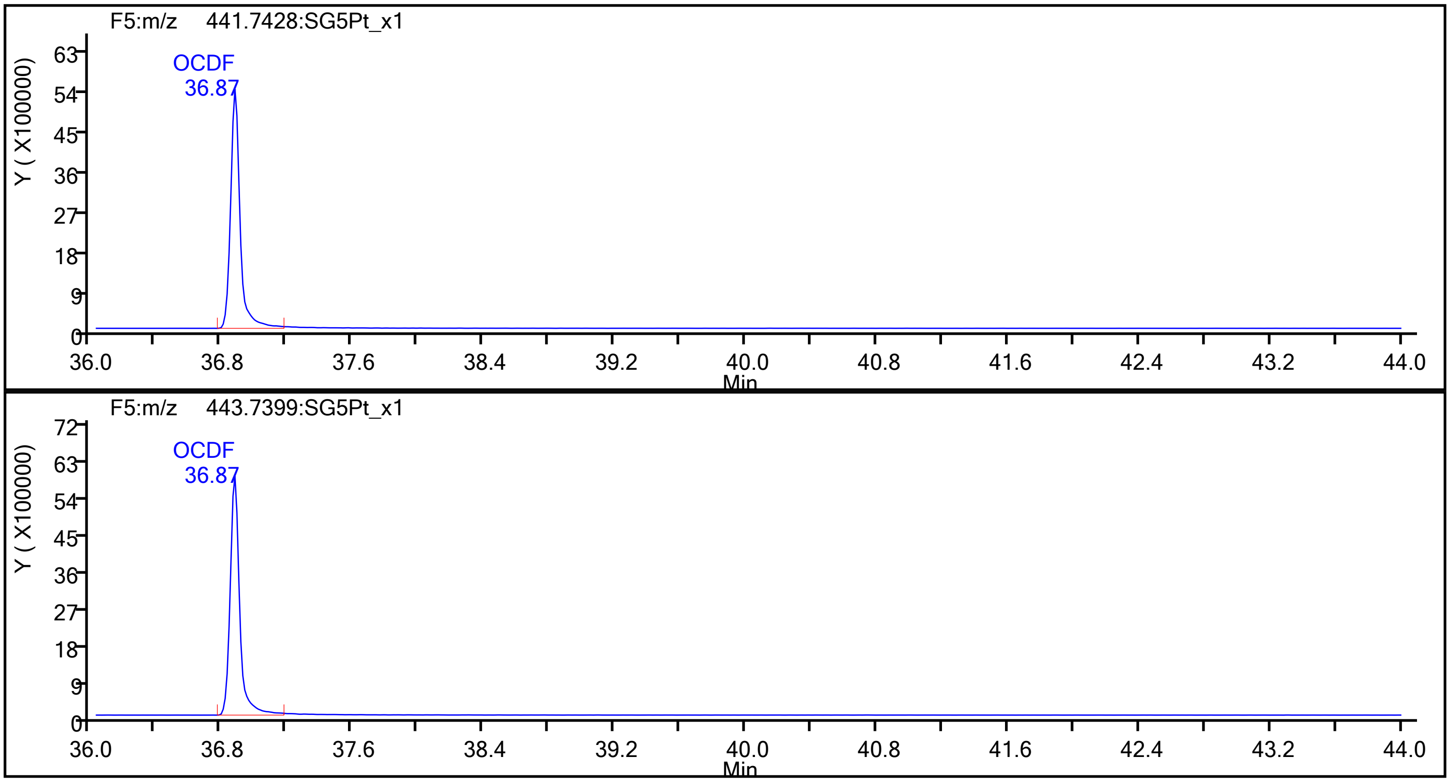

OCDF Standards

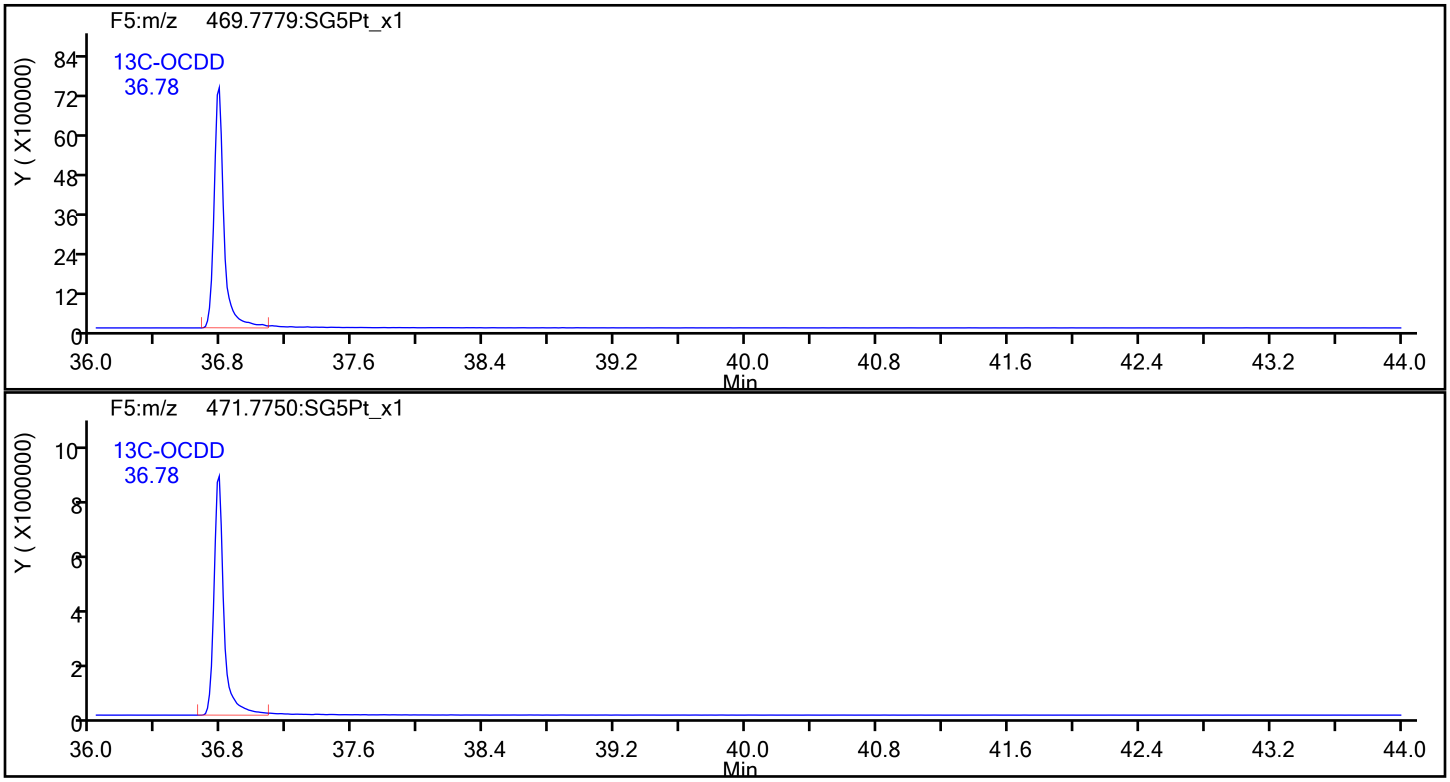

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Injection Date: 17-Sep-2020 17:39:44
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

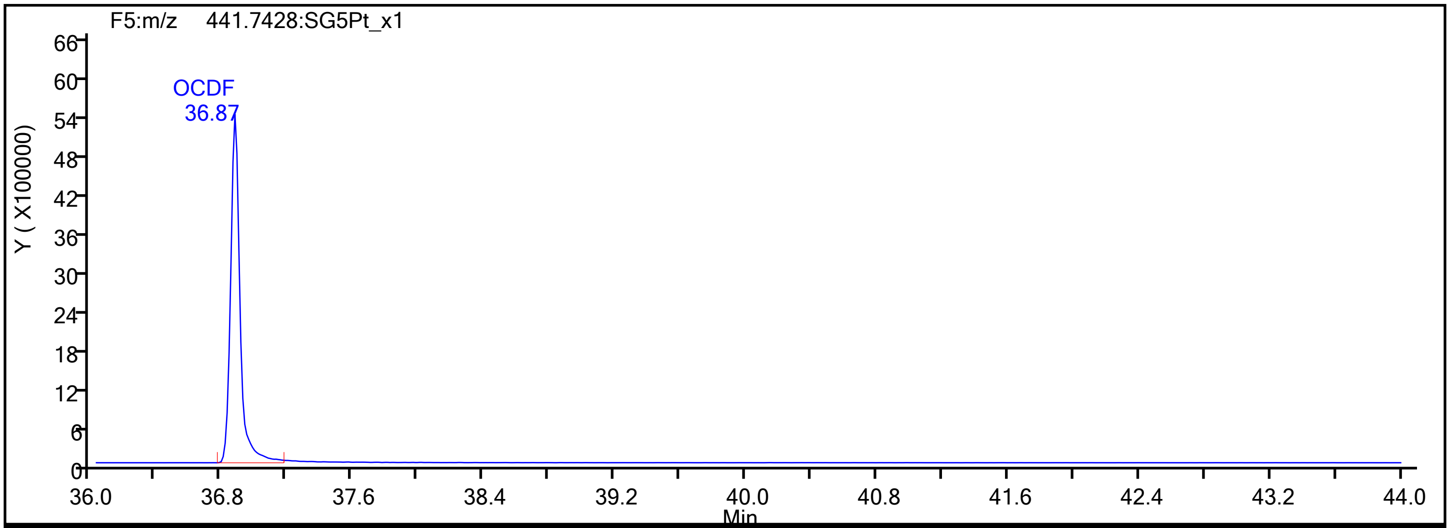

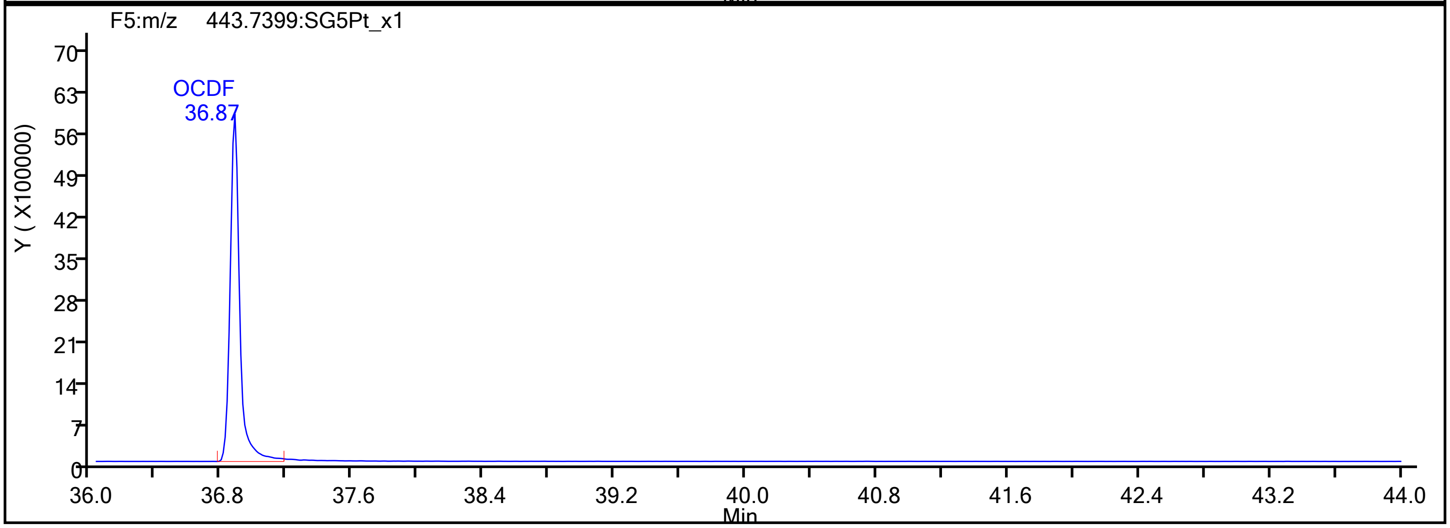

OCDF Interference Mass

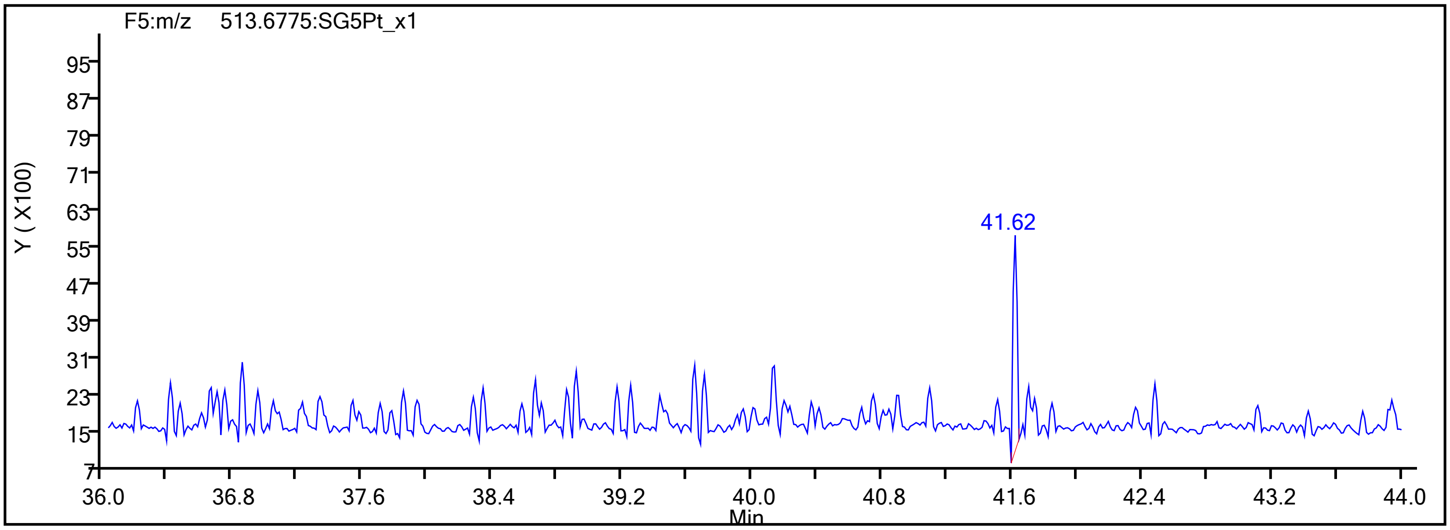

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

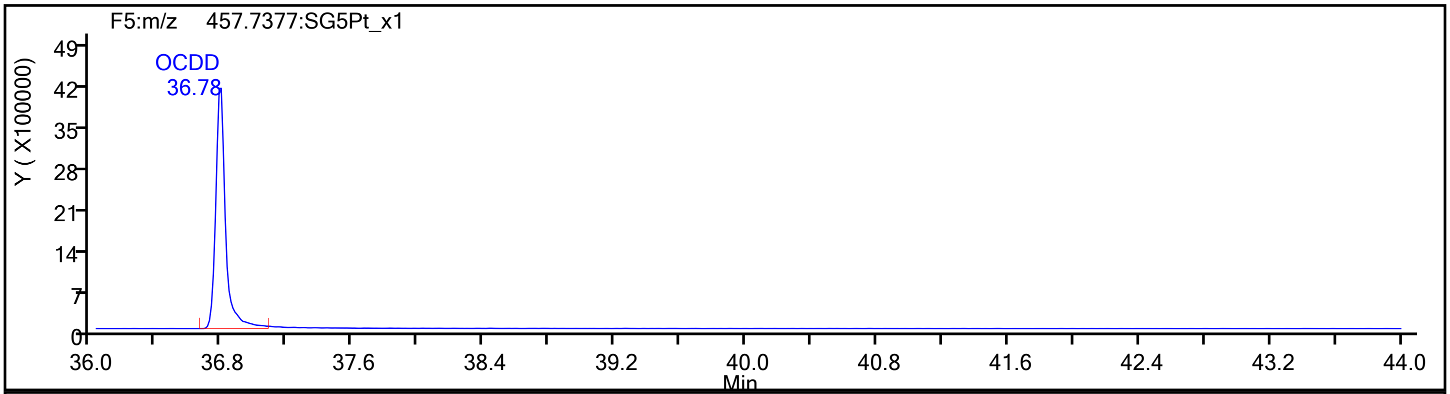

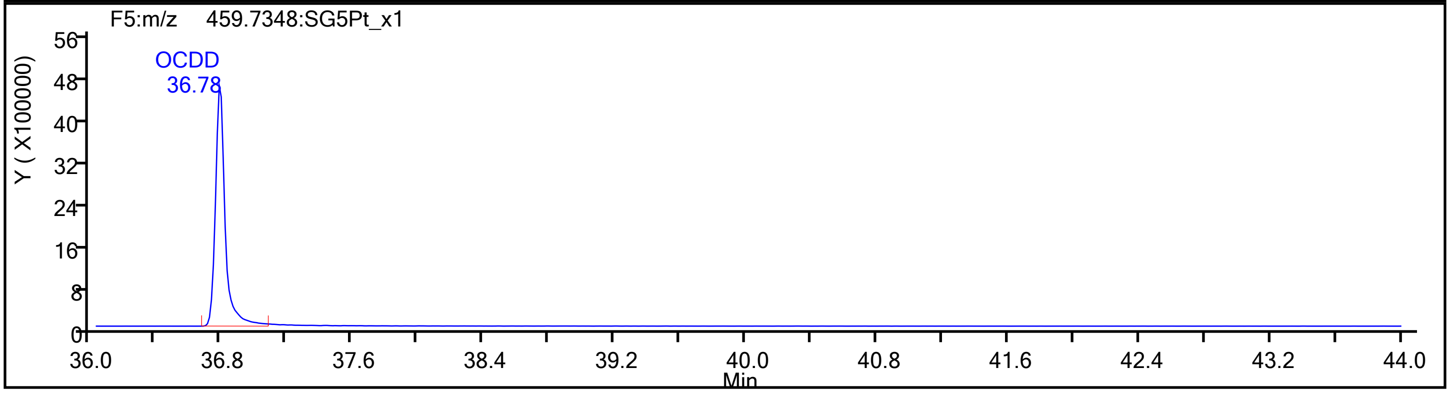

OCDD Standards

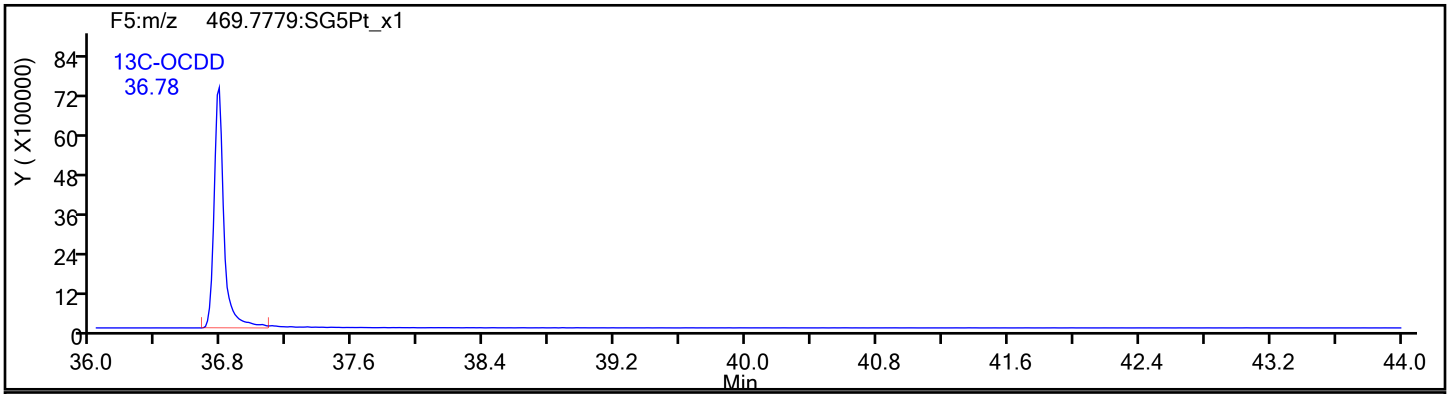

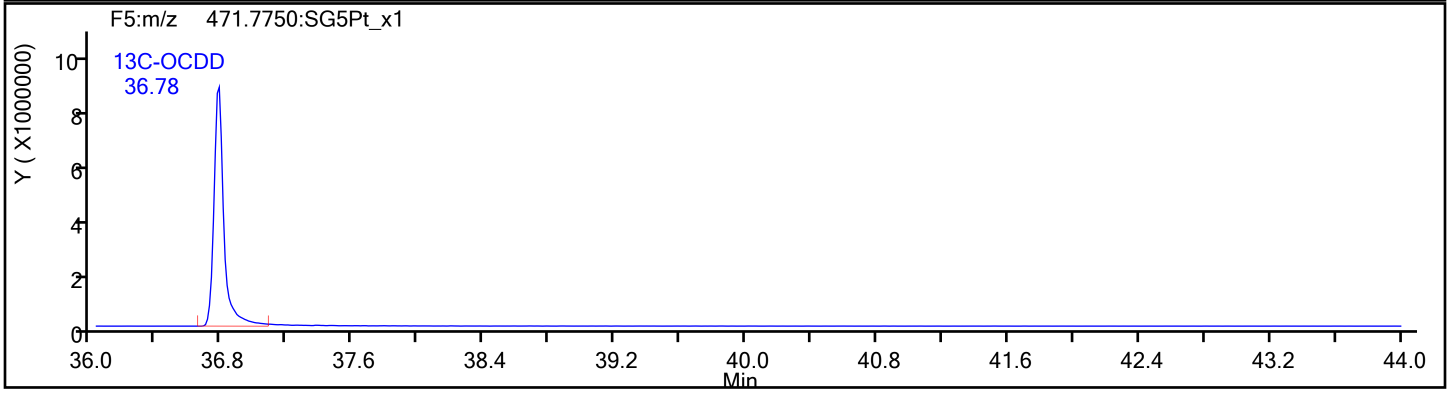

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

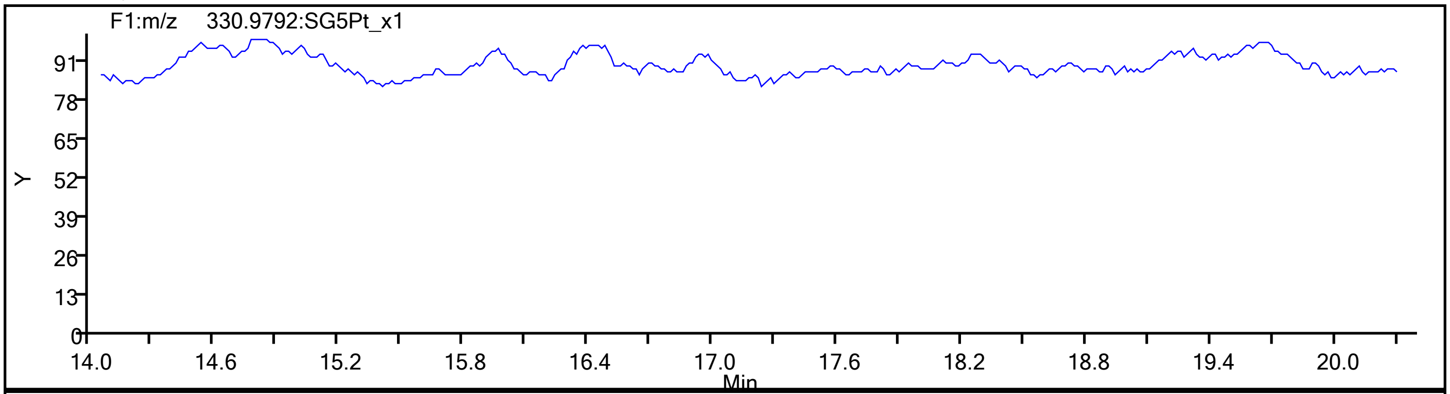

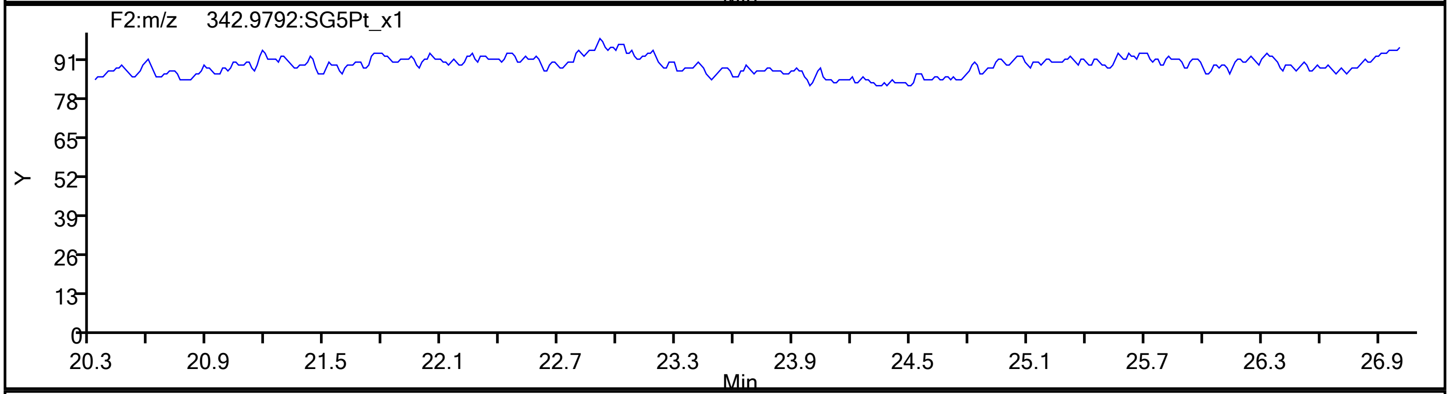

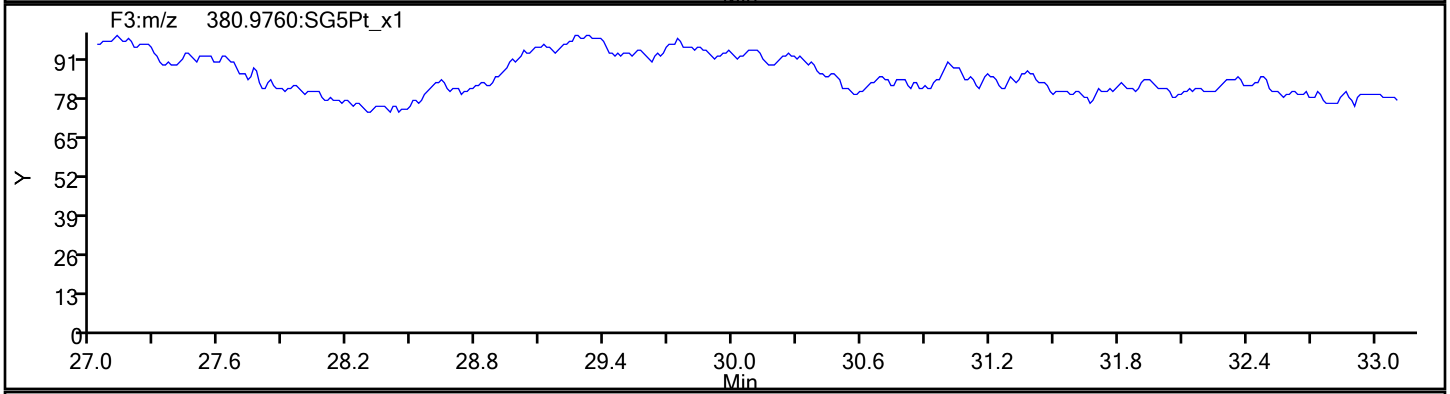

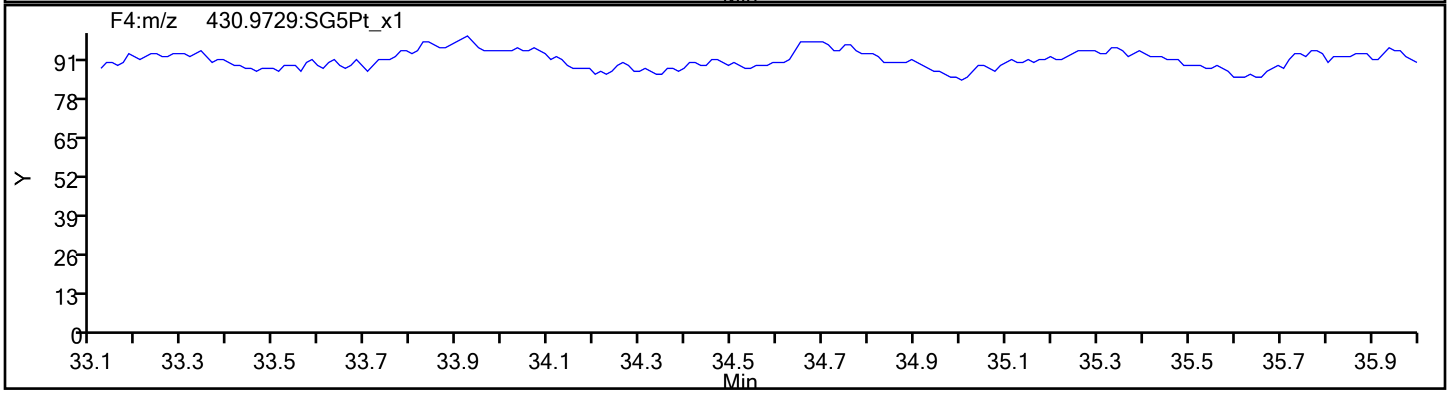

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

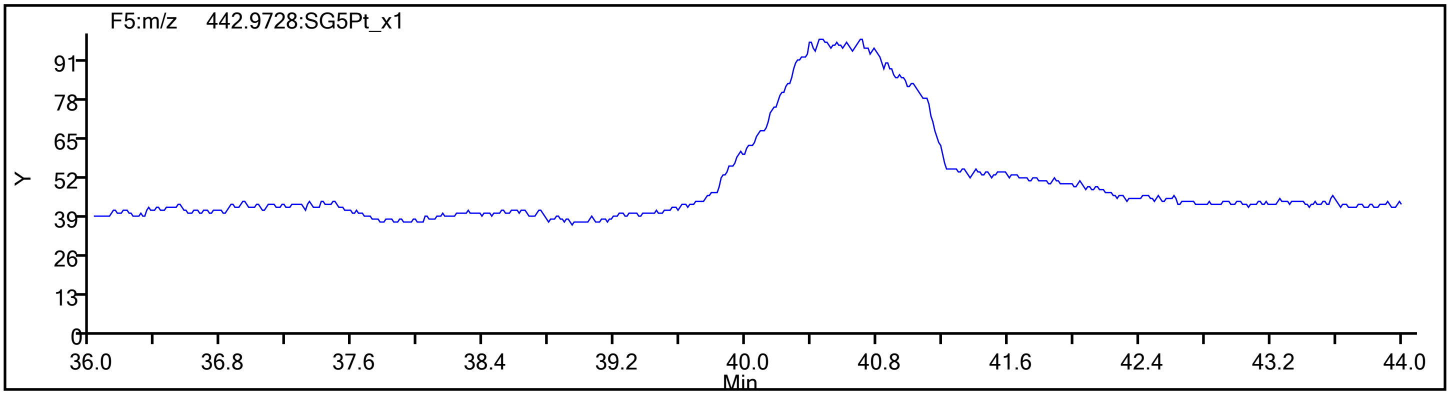

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Sep-2020 18:24:43 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720C CS-5 HRDXNL5_00031
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:02 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.718	69385886	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	96572003	0.77	1.3598	102.4	102.4	0.1609	0.1609	102	
2,3,7,8-TCDF	17.219	34873455	0.75	0.9077	39.8	39.8	0.0638	0.0638	99.45	
S Total TCDF					39.8	39.8	0.0638	0.0638		
D 13C-2,3,7,8-TCDD	17.914	74937692	0.76	1.0536	102.5	102.5	0.1762	0.1762	103	
2,3,7,8-TCDD	17.929	29967613	0.77	1.0061	39.7	39.7	0.0451	0.0451	99.36	
$ 37Cl4-2,3,7,8-TCDD	17.929	31470753		1.0488	43.2	43.2	0.0397	0.0397	108	
S Total TCDD					39.7	39.7	0.0451	0.0451		
D 13C-1,2,3,7,8-PeCDF	22.212	79929046	1.56	1.1306	101.9	101.9	0.2060	0.2060	102	
1,2,3,7,8-PeCDF	22.226	145371529	1.52	0.9147	198.8	198.8	0.5356	0.5356	99.41	
D 13C-2,3,4,7,8-PeCDF	23.548	72693510	1.55	1.0539	99.4	99.4	0.2210	0.2210	99.41	
2,3,4,7,8-PeCDF	23.576	138637753	1.54	0.9508	200.6	200.6	0.6044	0.6044	100	
S Total PeCDF					399.4	399.4	0.5700	0.5700		
D 13C-1,2,3,7,8-PeCDD	24.271	57281119	1.57	0.8084	102.1	102.1	0.1244	0.1244	102	
1,2,3,7,8-PeCDD	24.298	112792500	1.57	0.9955	197.8	197.8	0.2179	0.2179	98.90	
S Total PeCDD					197.8	197.8	0.2179	0.2179		
D 13C-1,2,3,4,7,8-HxCDF	30.406	50016942	0.51	0.9225	102.2	102.2	0.5034	0.5034	102	
1,2,3,4,7,8-HxCDF	30.420	112104497	1.24	1.1090	202.1	202.1	1.246	1.246	101	
D 13C-1,2,3,6,7,8-HxCDF	30.593	56052859	0.50	1.0336	102.2	102.2	0.4493	0.4493	102	
1,2,3,6,7,8-HxCDF	30.619	119502715	1.25	1.0721	198.9	198.9	1.138	1.138	99.43	
D 13C-2,3,4,6,7,8-HxCDF	31.444	53491599	0.51	0.9773	103.2	103.2	0.4751	0.4751	103	
2,3,4,6,7,8-HxCDF	31.458	115165865	1.24	1.0838	198.7	198.7	0.8770	0.8770	99.33	
D 13C-1,2,3,7,8,9-HxCDF	32.257	49233772	0.51	0.9153	101.4	101.4	0.5073	0.5073	101	
1,2,3,7,8,9-HxCDF	32.270	108414785	1.24	1.0931	201.5	201.5	0.8756	0.8756	101	
S Total HxCDF					801.1	801.1	1.034	1.034		
* 13C-1,2,3,7,8,9-HxCDD	32.070	53044339	1.24	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	42294958	1.24	0.7977	100.0	100.0	0.3382	0.3382	99.96	
1,2,3,4,7,8-HxCDD	31.644	85297387	1.23	1.0014	201.4	201.4	0.6505	0.6505	101	
D 13C-1,2,3,6,7,8-HxCDD	31.737	55171129	1.25	1.0010	103.9	103.9	0.2695	0.2695	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.764	99286402	1.23	0.8902	202.2	202.2	0.6268	0.6268	101	
1,2,3,7,8,9-HxCDD	32.083	103076569	1.24	1.0579	199.9	199.9	0.5682	0.5682	99.97	
S Total HxCDD					603.5	603.5	0.6151	0.6151		
D 13C-1,2,3,4,6,7,8-HpCDF	33.692	45908363	0.43	0.8506	101.7	101.7	0.9584	0.9584	102	
1,2,3,4,6,7,8-HpCDF	33.692	124894209	1.03	1.3603	200.0	200.0	1.822	1.822	100	
D 13C-1,2,3,4,7,8,9-HpCDF	34.749	42158862	0.43	0.7618	104.3	104.3	1.070	1.070	104	
1,2,3,4,7,8,9-HpCDF	34.761	111173202	1.03	1.3207	199.7	199.7	2.239	2.239	99.84	
S Total HpCDF					399.7	399.7	2.030	2.030		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	47987052	1.05	0.8873	102.0	102.0	0.5622	0.5622	102	
1,2,3,4,6,7,8-HpCDD	34.481	97091283	1.05	0.9988	202.6	202.6	0.9652	0.9652	101	
S Total HpCDD					202.6	202.6	0.9652	0.9652		
D 13C-OCDD	36.791	67776385	0.89	0.6287	203.2	203.2	0.2176	0.2176	102	
OCDF	36.887	195516483	0.92	1.4136	408.1	408.1	0.4076	0.4076	102	
OCDD	36.791	152532525	0.90	1.1290	398.7	398.7	0.4762	0.4762	99.67	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Sep-2020 18:24:43 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720C CS-5 HRDXNL5_00031
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:02 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:55

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.718	17.711	0		30594649	7615613	5357	13392	1422		
333.9339	17.718	17.711	0		38791237	9634885	7452	18630	1293	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.971	42088557	10712904	7778	19445	1377		
317.9389	17.203	17.203	0	0.971	54483446	13775198	7322	18305	1881	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	14988137	3834769	2179	5447	1760		
305.8987	17.219	17.218	0	1.001	19885318	5073329	3490	8725	1454	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.011	32475298	7514063	5357	13392	1403		
333.9339	17.914	17.905	1	1.011	42462394	9735287	7452	18630	1306	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	13023923	3137911	1586	3965	1979		
321.8936	17.929	17.920	1	1.001	16943690	4053189	1542	3855	2629	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	31470753	7536773	2874	7185	2622		
13C-1,2,3,7,8-PeCDF											
351.9000	22.212	22.204	0	1.254	48735874	8487133	9442	23605	899		
353.8970	22.212	22.204	0	1.254	31193172	5478294	6628	16570	827	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	87680093	15315046	16350	40875	937		
341.8567	22.226	22.220	0	1.001	57691436	10049417	11018	27545	912	1.52(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.548	23.540	0	1.329	44169998	7215550	9442	23605	764		
353.8970	23.548	23.540	0	1.329	28523512	4690652	6628	16570	708	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.576	23.567	0	1.001	84161718	13445088	16350	40875	822		
341.8567	23.576	23.567	0	1.001	54476035	8800004	11018	27545	799	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.271	24.263	0	1.370	35025877	5428276	4136	10340	1312		
369.8919	24.271	24.263	0	1.370	22255242	3412885	2802	7005	1218	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.298	24.290	0	1.001	68895744	10787859	4993	12482	2161		
357.8516	24.298	24.290	0	1.001	43896756	6792774	2679	6697	2536	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.406	30.398	0	0.948	16907006	3041251	8598	21495	354		
385.8610	30.406	30.398	0	0.948	33109936	5874433	16570	41425	355	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.420	30.414	0	1.000	62032242	11250500	27684	69210	406		
375.8178	30.420	30.414	0	1.000	50072255	9165427	21597	53992	424	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.593	30.587	0	0.954	18696062	3370533	8598	21495	392		
385.8610	30.593	30.587	0	0.954	37356797	6724539	16570	41425	406	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.619	30.608	1	1.001	66272566	12017984	27684	69210	434		
375.8178	30.619	30.608	1	1.001	53230149	9732786	21597	53992	451	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	17949694	4342395	8598	21495	505		
385.8610	31.444	31.439	0	0.980	35541905	8619284	16570	41425	520	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	63742674	15178042	27684	69210	548		
375.8178	31.458	31.458	0	1.000	51423191	12352167	21597	53992	572	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.257	32.254	0	1.006	16524564	4298019	8598	21495	500		
385.8610	32.257	32.254	0	1.006	32709208	8575005	16570	41425	518	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	60052822	15631621	27684	69210	565		
375.8178	32.270	32.267	0	1.000	48361963	12559390	21597	53992	582	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		29372372	7522788	7772	19430	968		
403.8529	32.070	32.067	0		23671967	6026631	6849	17122	880	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	23417365	6210189	7772	19430	799		
403.8529	31.631	31.631	0	0.986	18877593	5111540	6849	17122	746	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	47067080	12706631	17058	42645	745		
391.8127	31.644	31.647	0	1.000	38230307	10405760	12442	31105	836	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	30670919	7242217	7772	19430	932		
403.8529	31.737	31.740	0	0.990	24500210	5975738	6849	17122	872	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.764	31.756	0	1.001	54790140	12827485	17058	42645	752		
391.8127	31.751	31.756	0	1.000	44496262	10591613	12442	31105	851	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	57027257	14698359	17058	42645	862		
391.8127	32.083	32.081	0	1.014	46049312	11880470	12442	31105	955	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.692	33.684	0	1.051	13795751	4370624	13699	34247	319		
419.8220	33.680	33.684	0	1.050	32112612	10081277	30486	76215	331	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.692	33.694	0	1.000	63263736	20559612	71281	178202	288		
409.7789	33.692	33.694	0	1.000	61630473	20287990	71983	179957	282	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.749	34.751	0	1.084	12683797	3685698	13699	34247	269		
419.8220	34.749	34.751	0	1.084	29475065	8429189	30486	76215	276	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	56512355	16491490	71281	178202	231		
409.7789	34.761	34.763	0	1.000	54660847	16222332	71983	179957	225	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	24611998	7479570	14817	37042	505		
437.8140	34.469	34.464	0	1.075	23375054	7114259	12218	30545	582	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	49621378	14929353	28416	71040	525		
425.7737	34.481	34.474	0	1.000	47469905	14098323	27857	69642	506	1.05(0.88-1.20)	
13C-OCDD											
469.7779	36.791	36.784	0	1.147	31885312	7968197	3222	8055	2473		
471.7750	36.779	36.784	0	1.147	35891073	9011207	4194	10485	2149	0.89(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	93607627	24454795	9427	23567	2594		
443.7399	36.887	36.882	0	1.003	101908856	26336292	10137	25342	2598	0.92(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	72170058	18527867	8405	21012	2204		
459.7348	36.791	36.791	0	1.000	80362467	20814258	9853	24632	2112	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

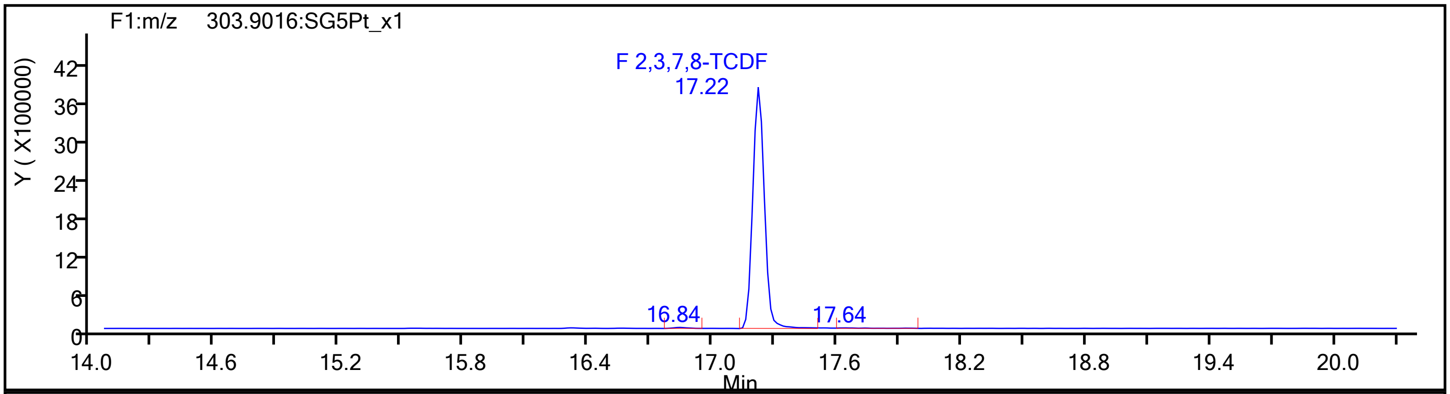

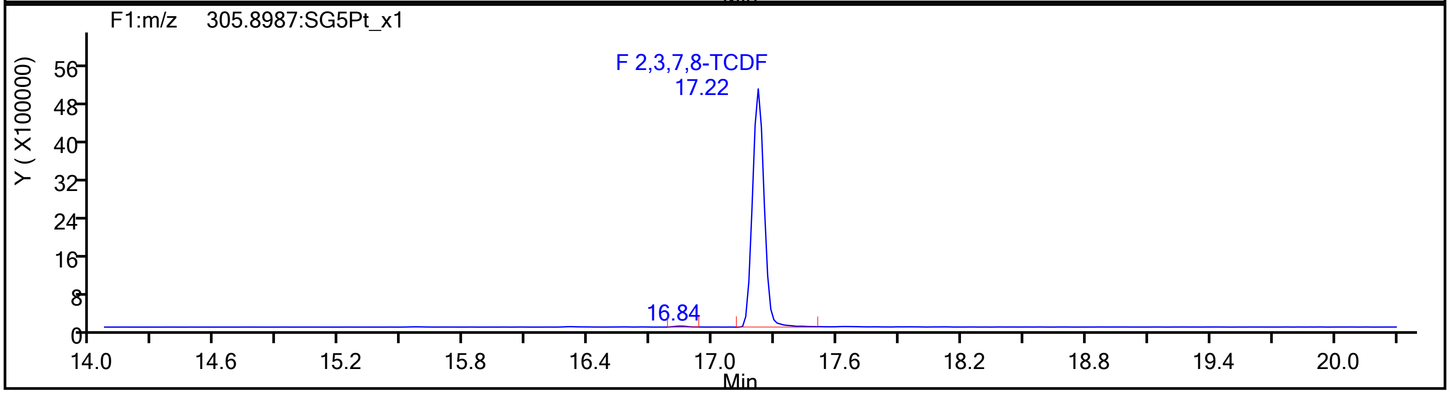

TCDF Standards

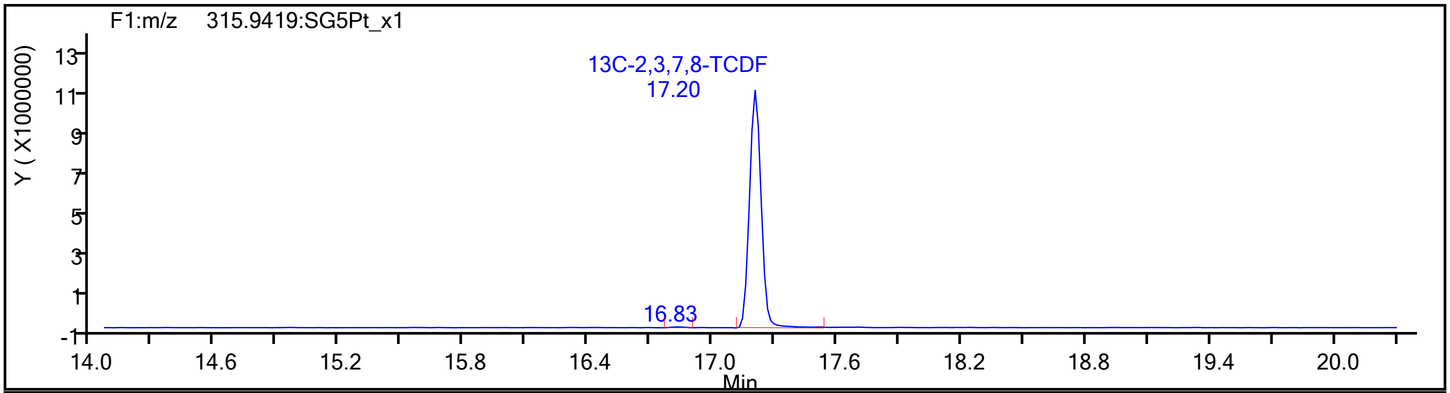

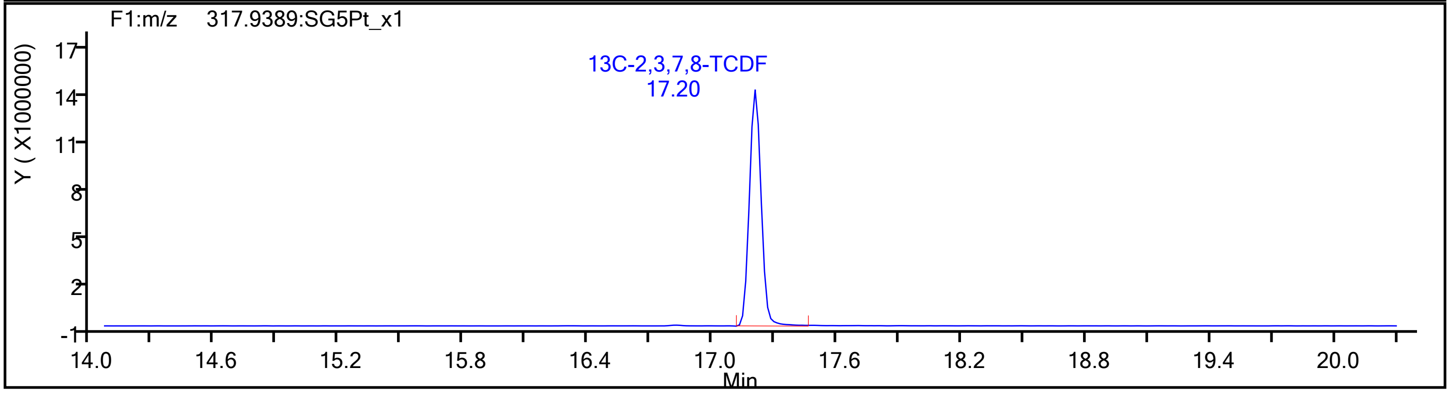

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

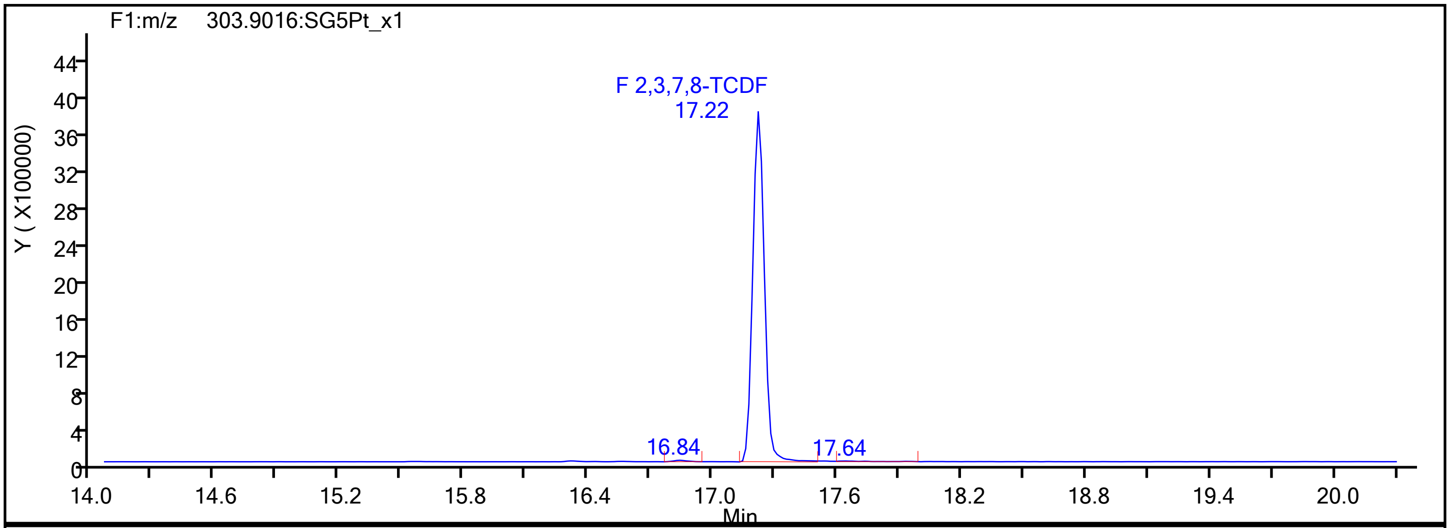

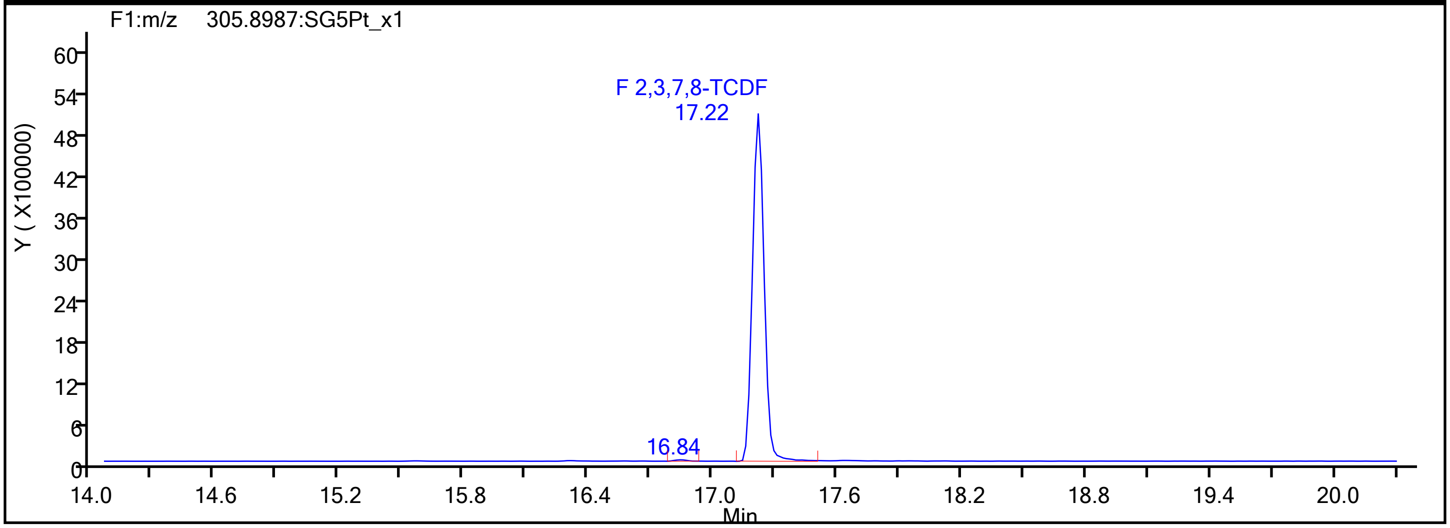

TCDF Interference Mass

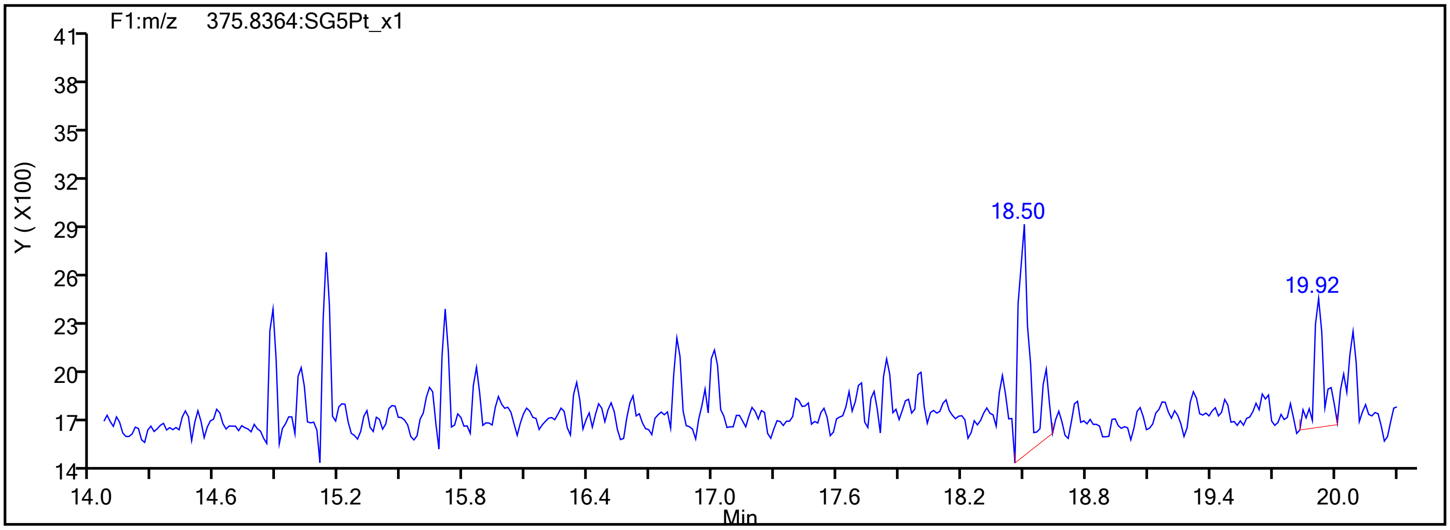

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 18:24:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

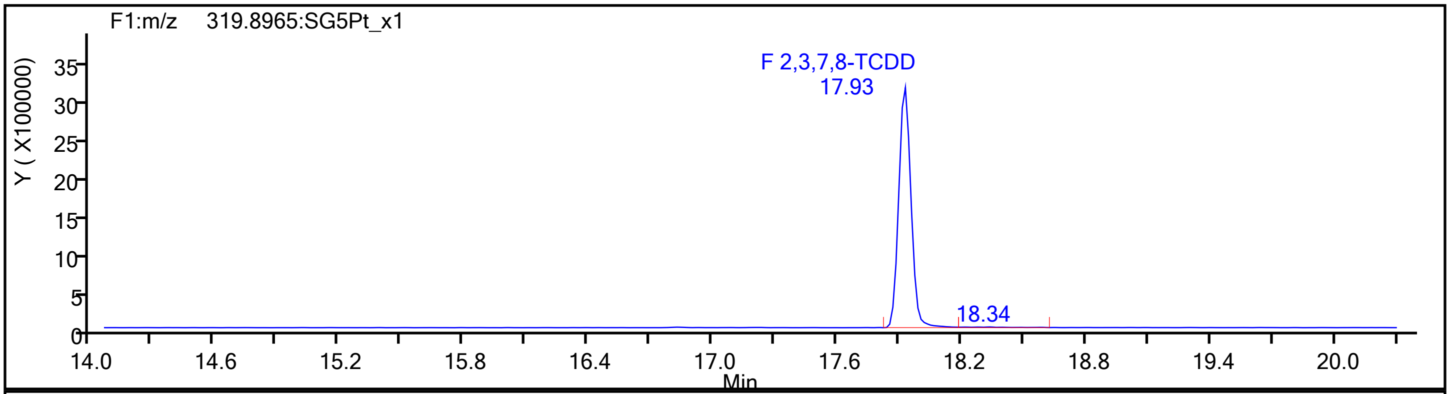

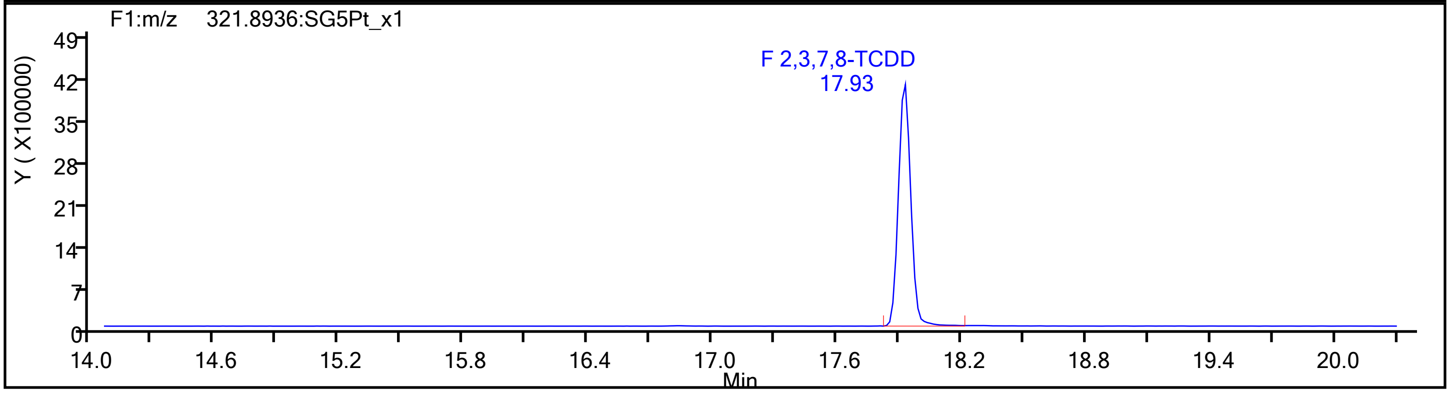

TCDD Standards

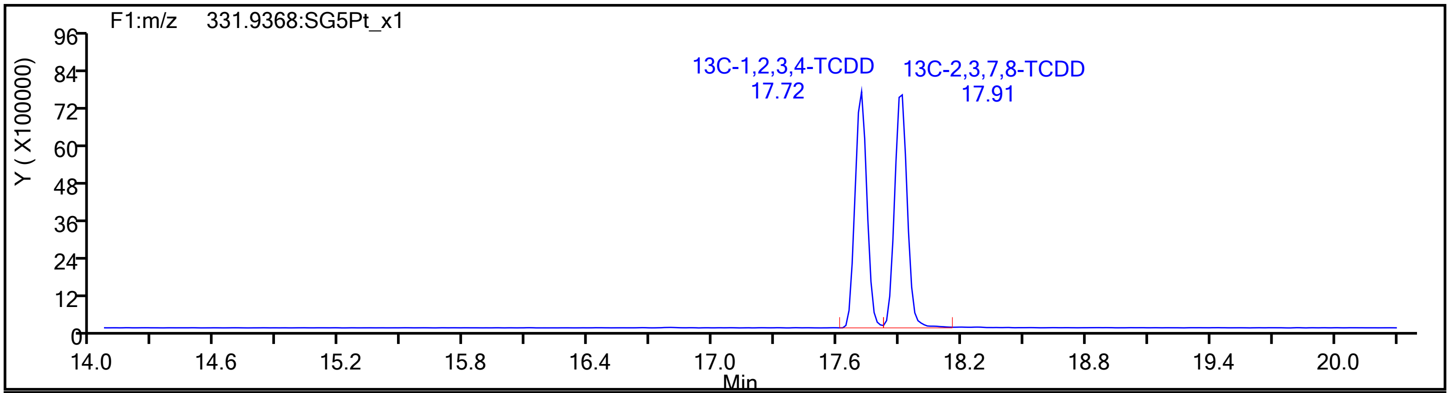

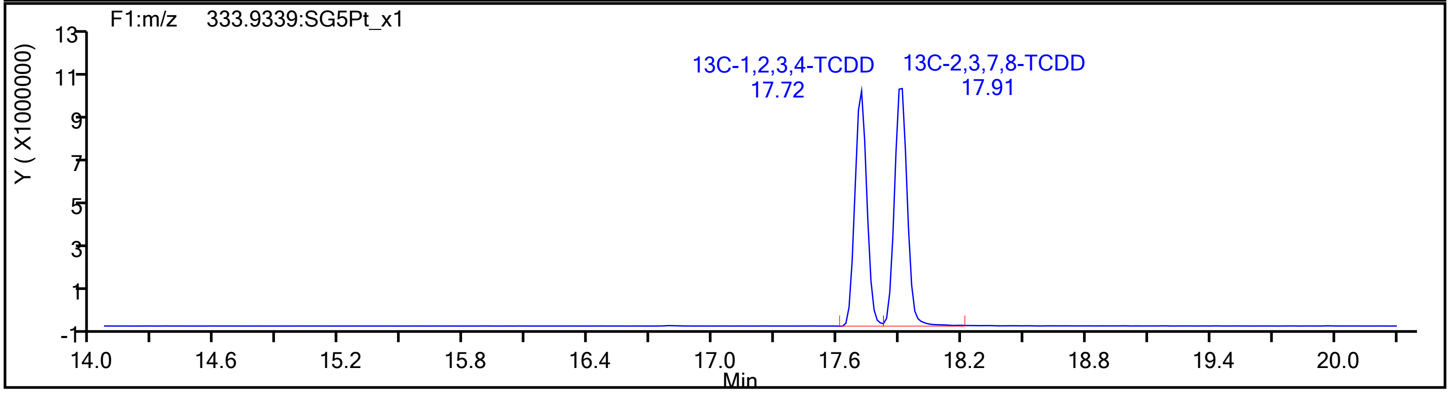

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

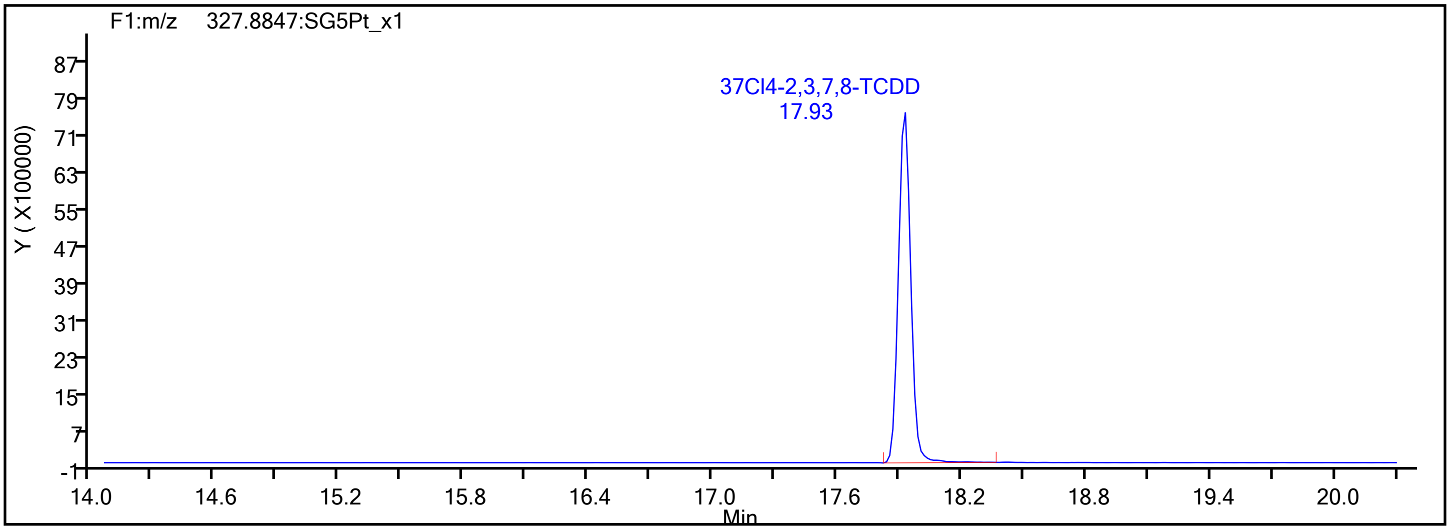

37Cl4-TCDD Standards

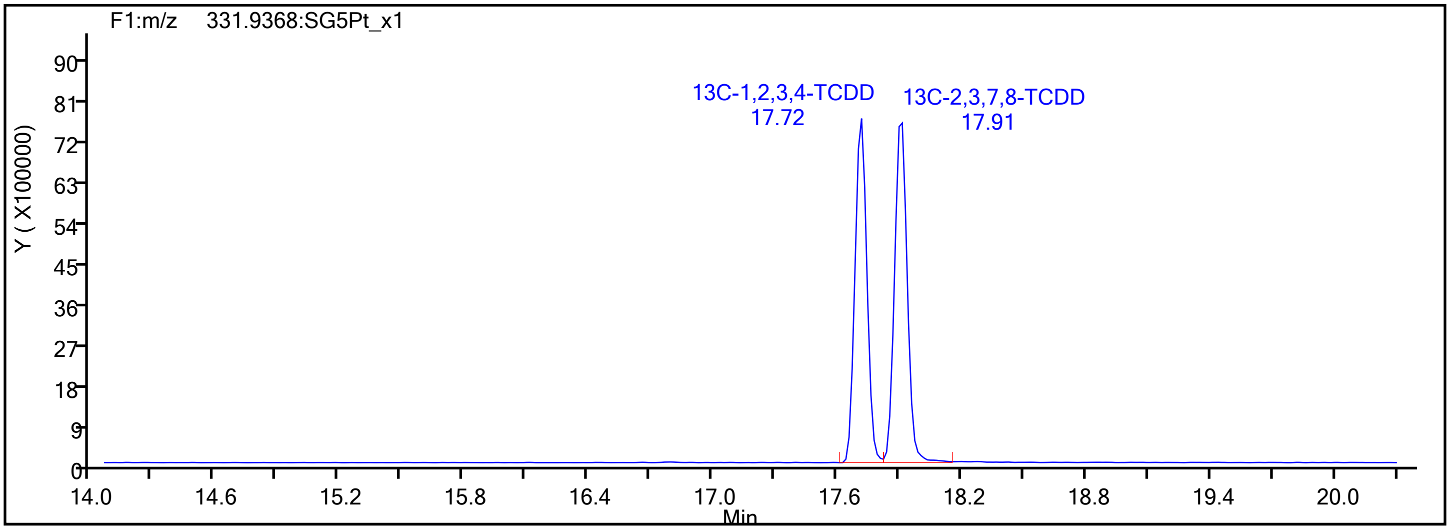

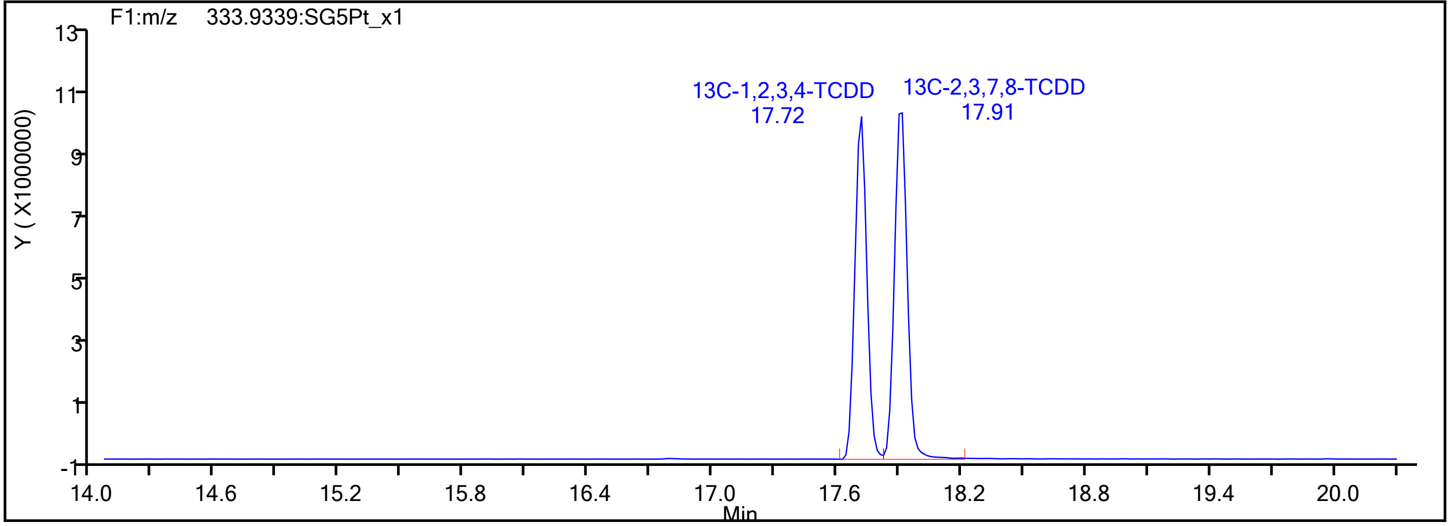

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

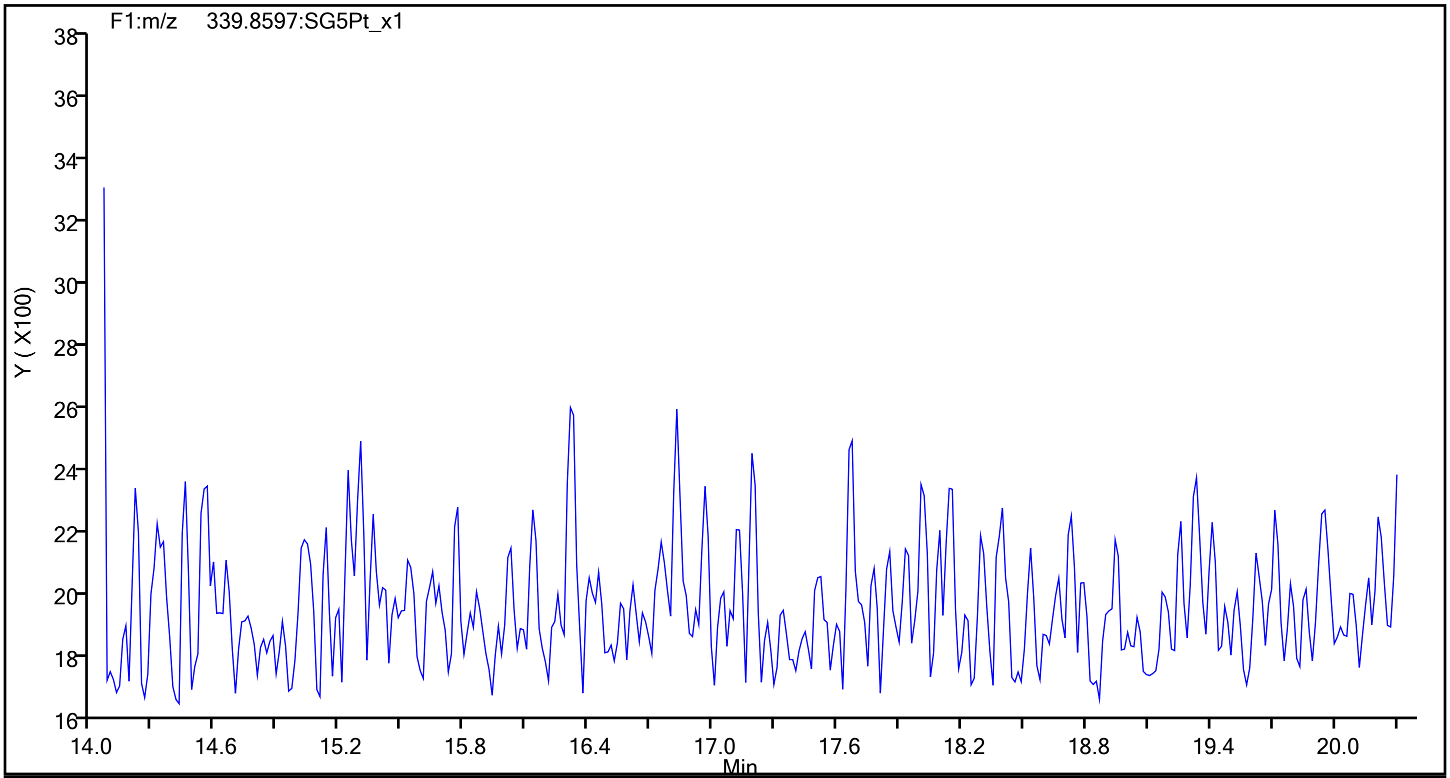

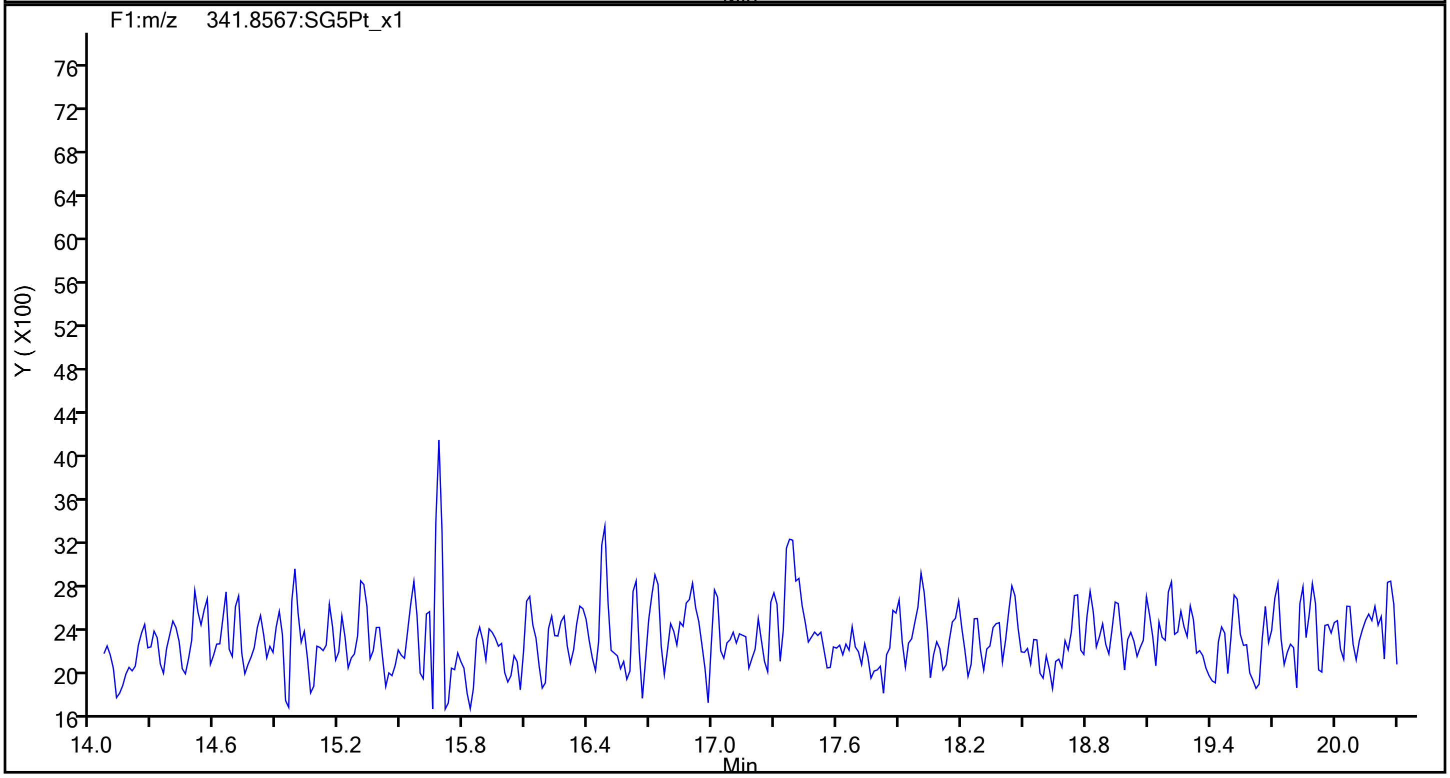

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

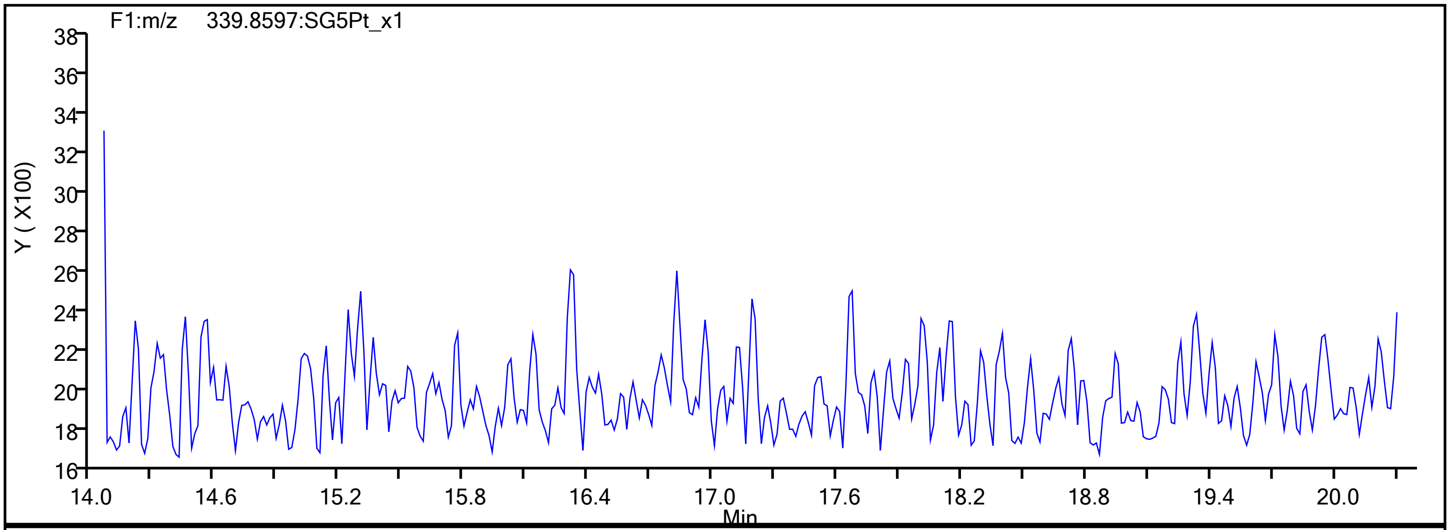

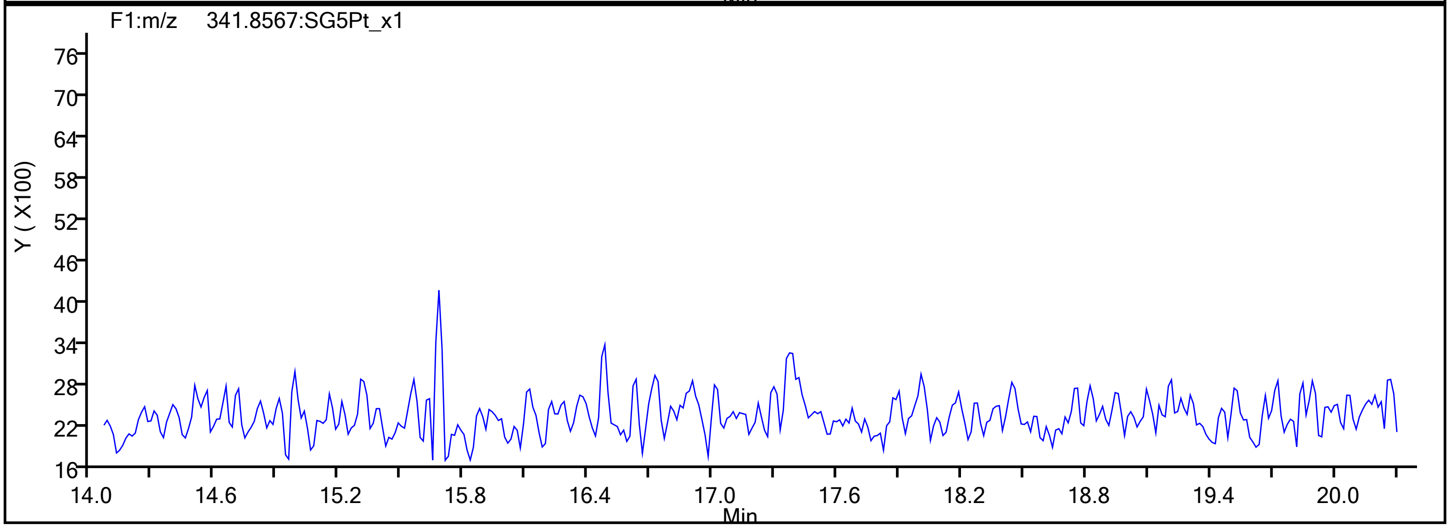

F1 PeCDFs Interference Mass

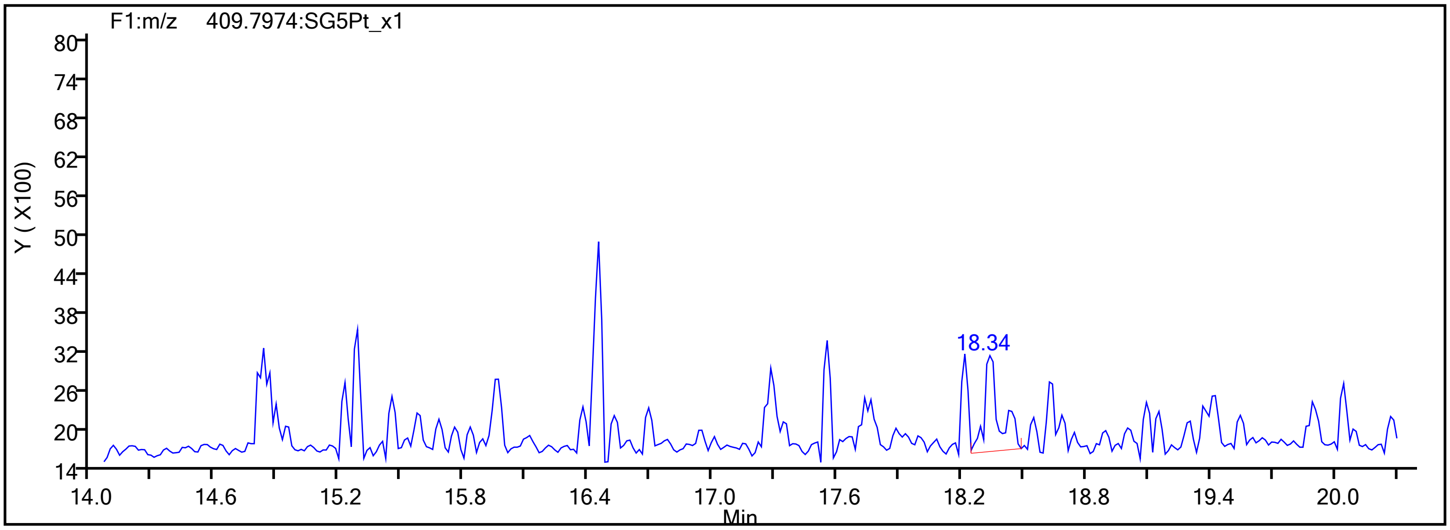

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 18:24:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

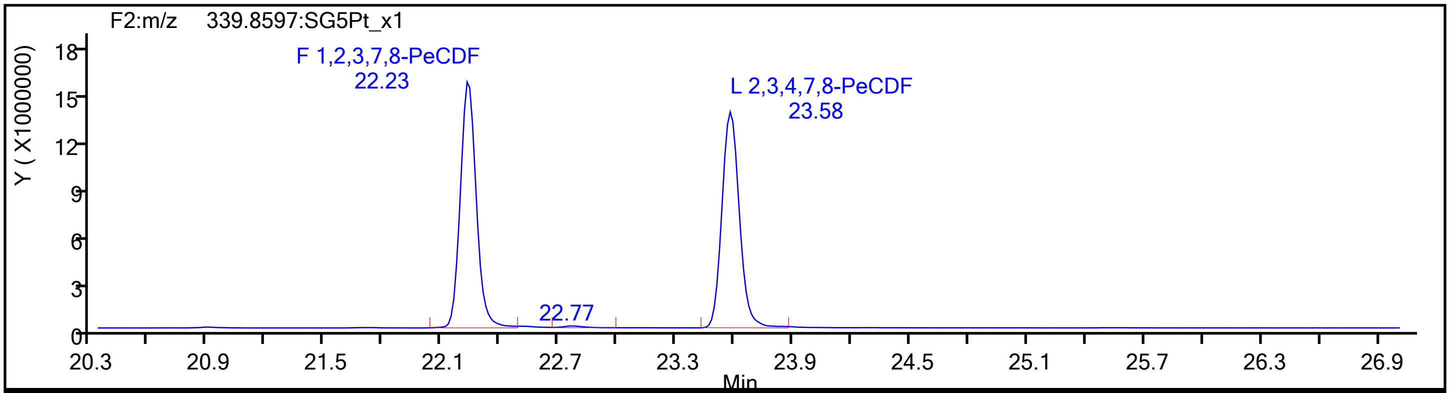

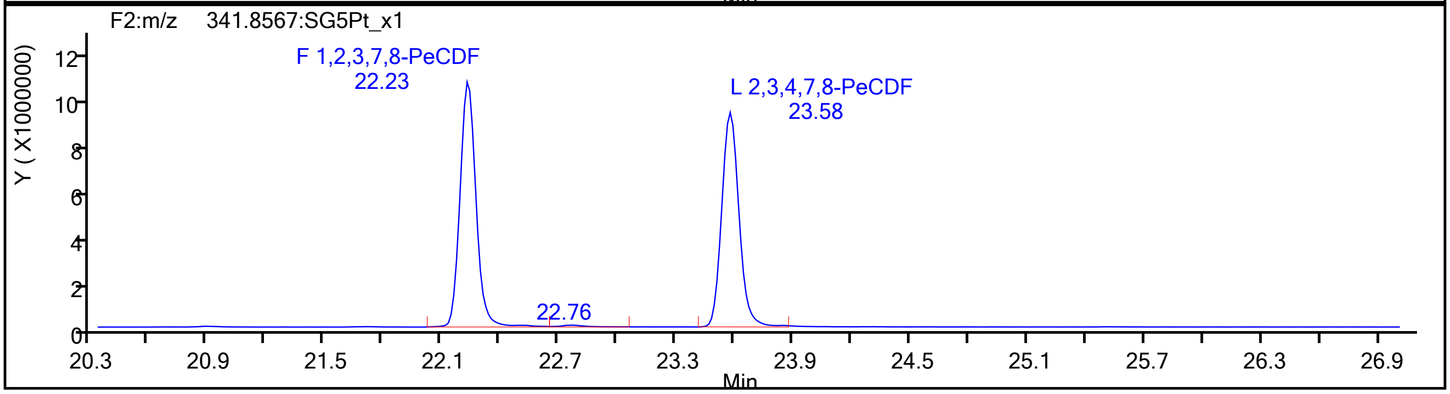

PeCDF Standards

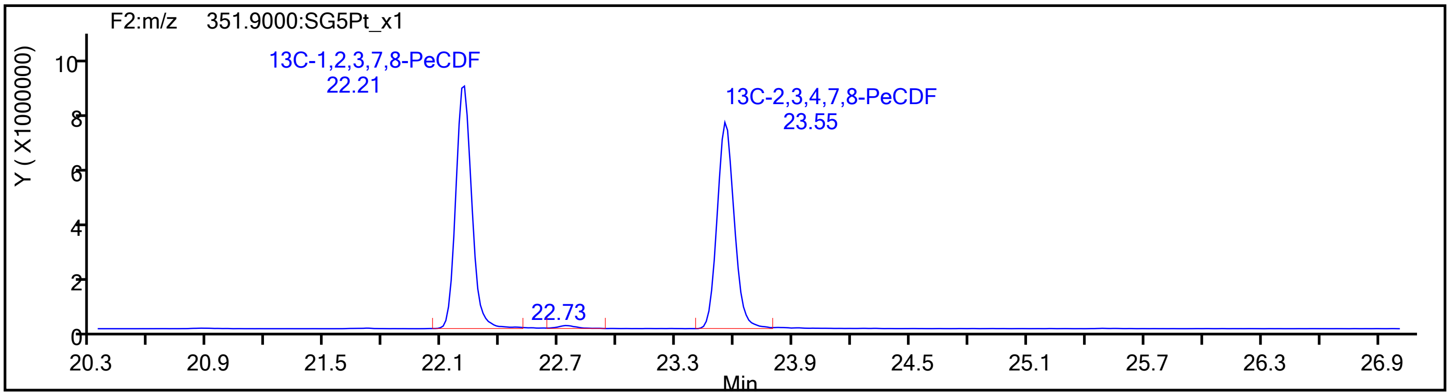

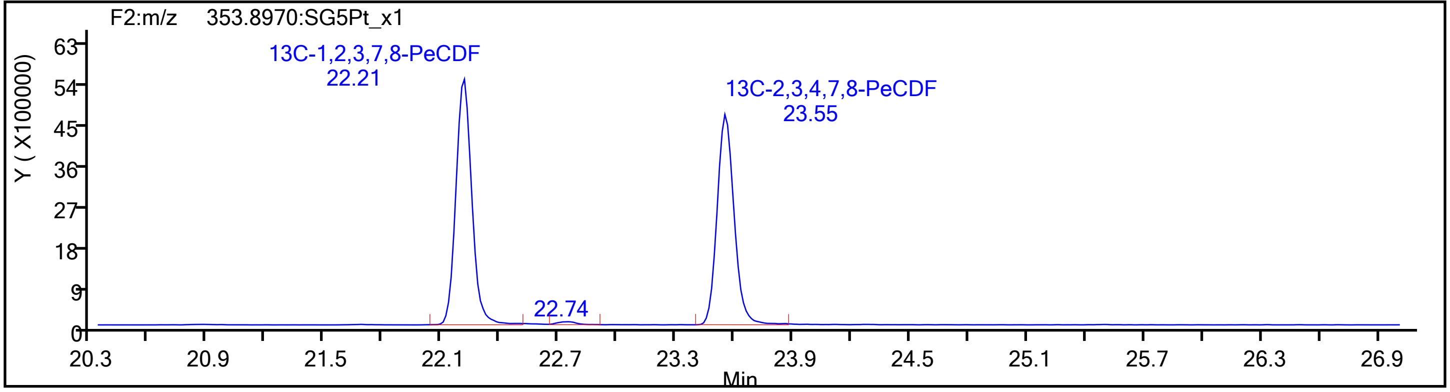

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

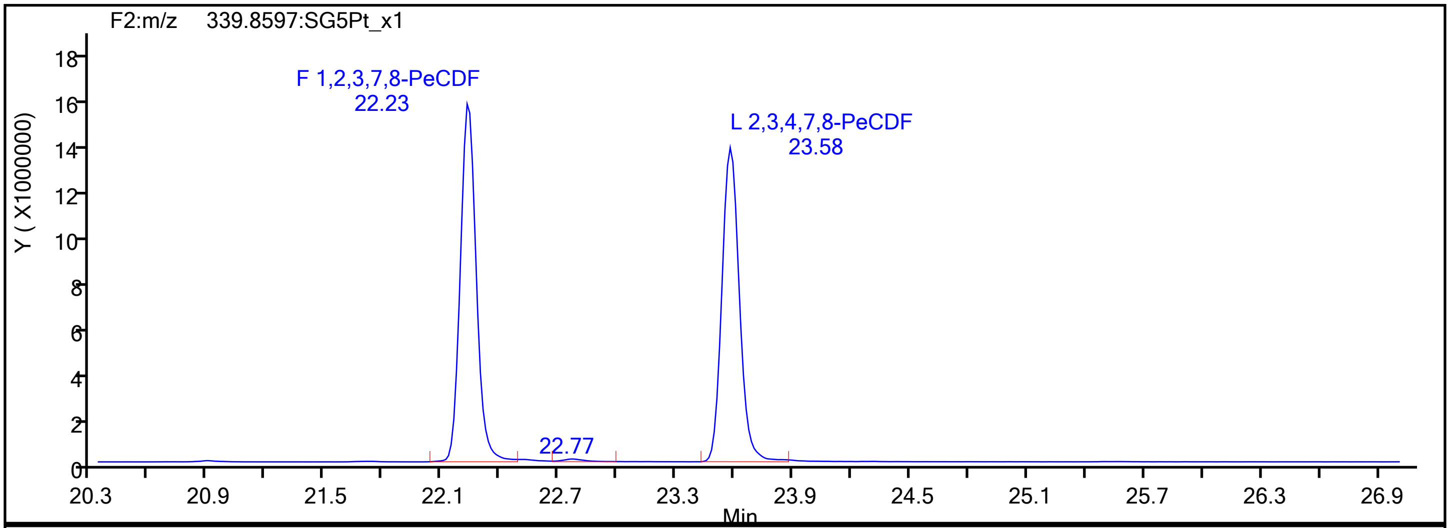

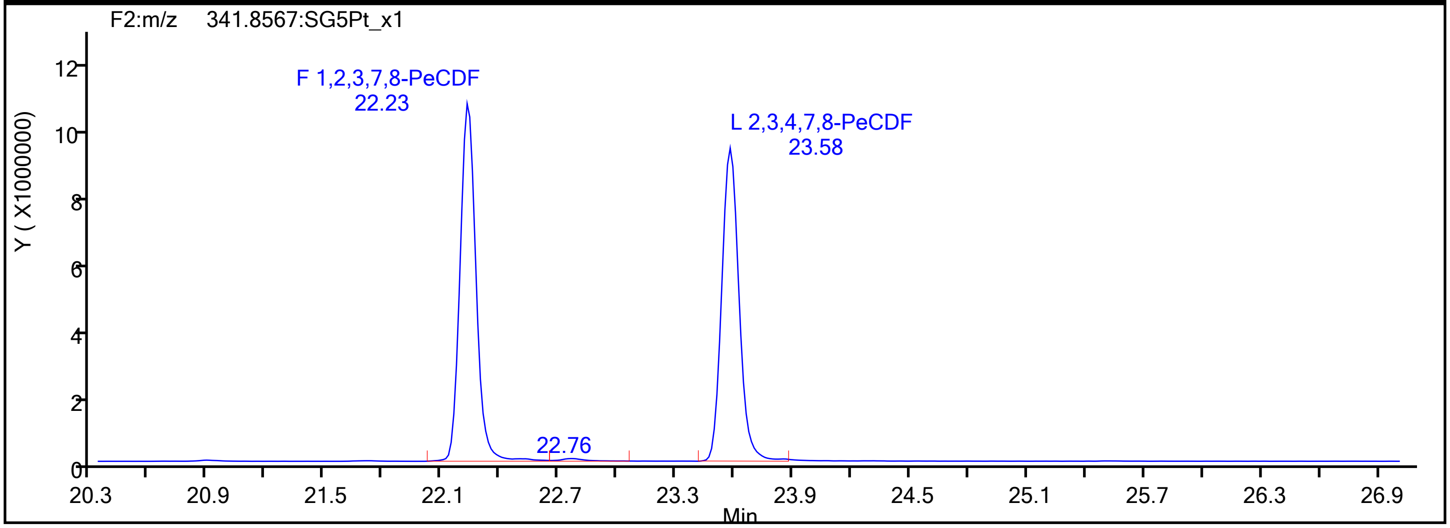

PeCDF Interference Mass

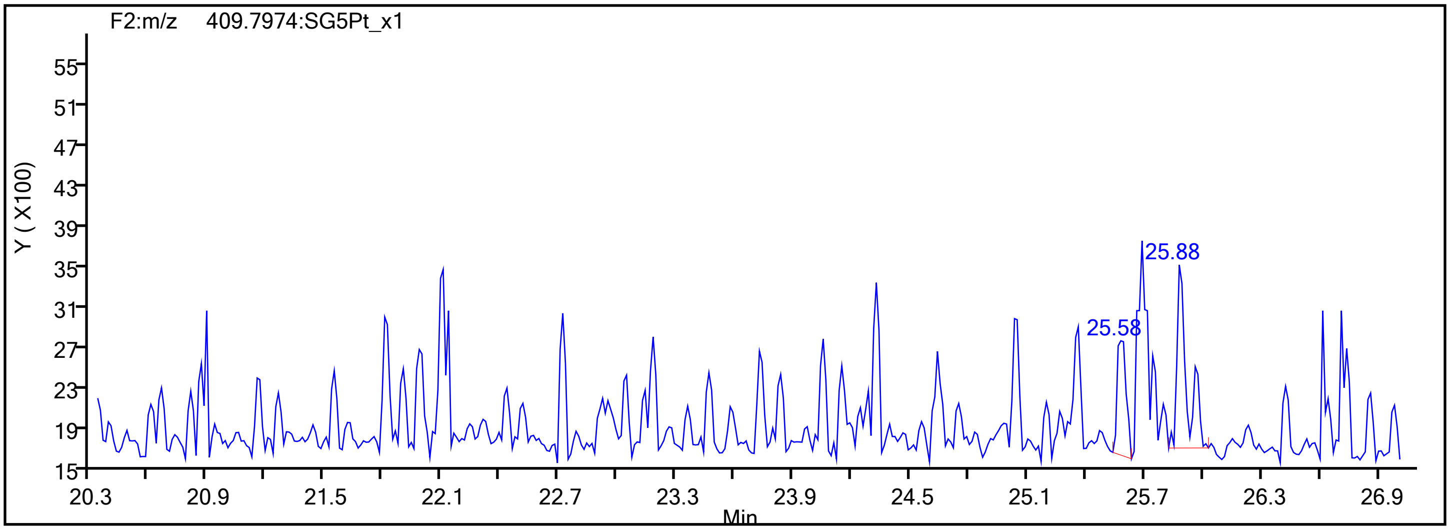

Report Date: 18-Sep-2020 10:36:06   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Injection Date: 17-Sep-2020 18:24:43   Injection Vol: 2.0 ul
Instrument ID: 10D5   Operator ID: AJS
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Client ID:
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Column Type: DB-5   Column Dia: 0.32 mm

PeCDD

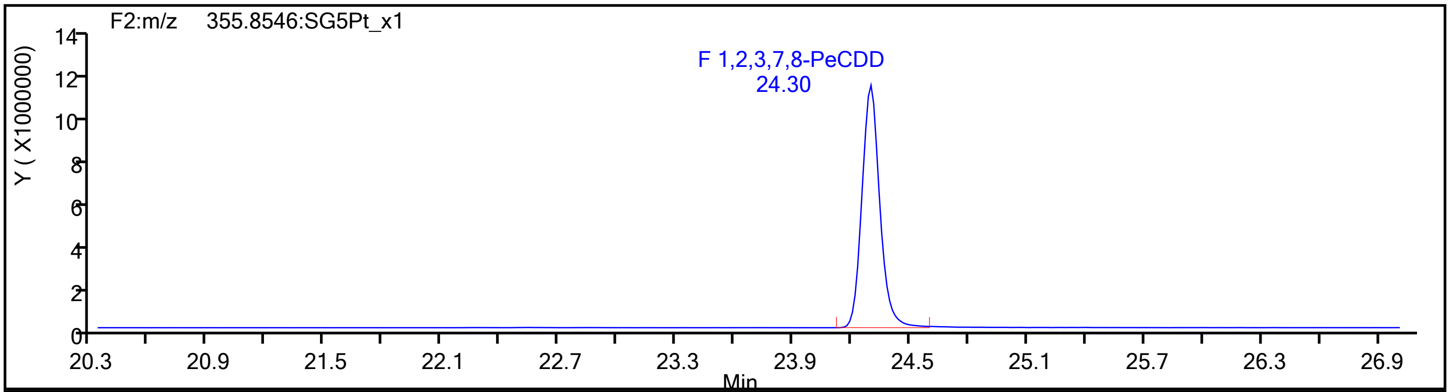

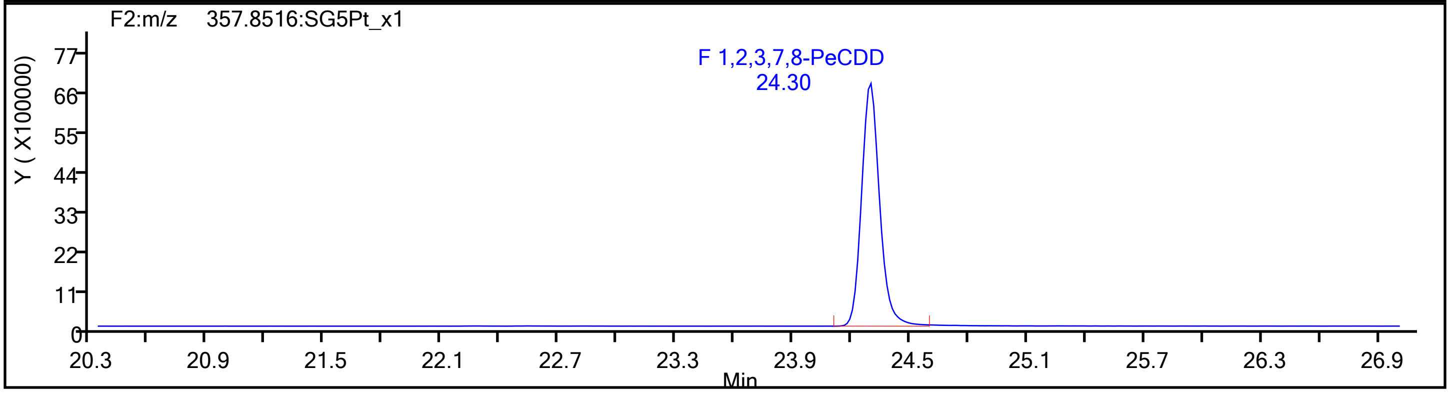

PeCDD Standards

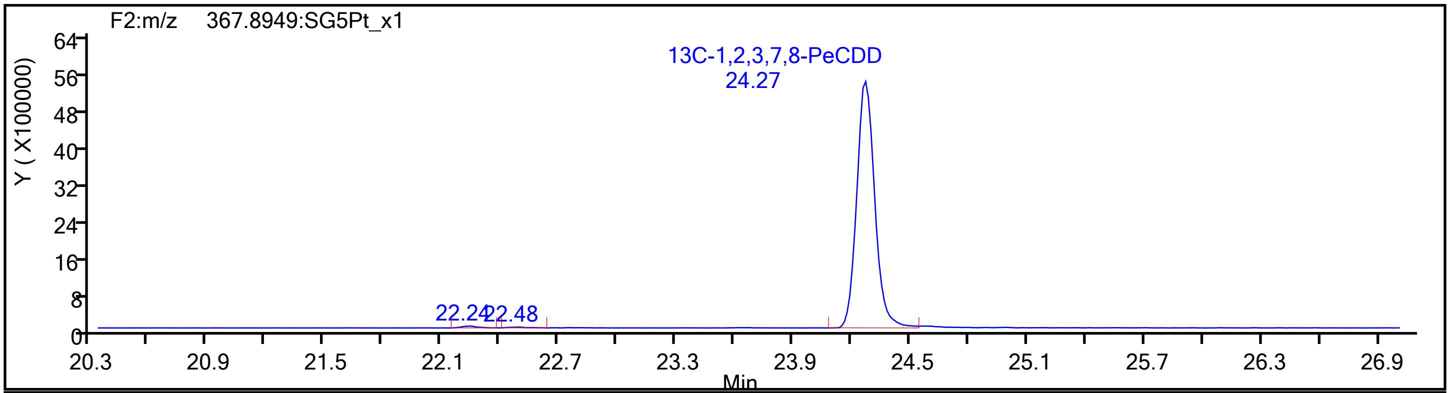

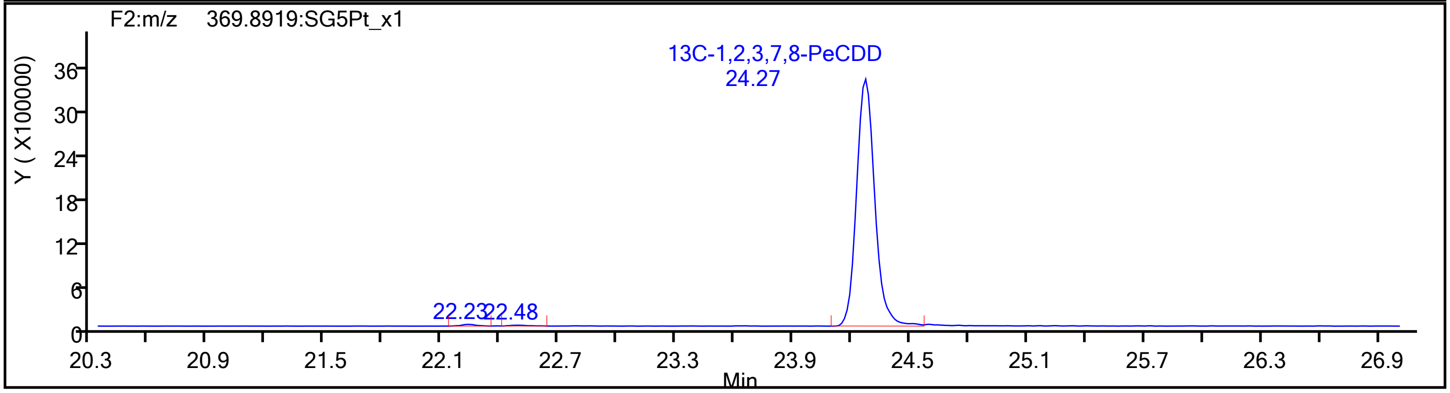

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

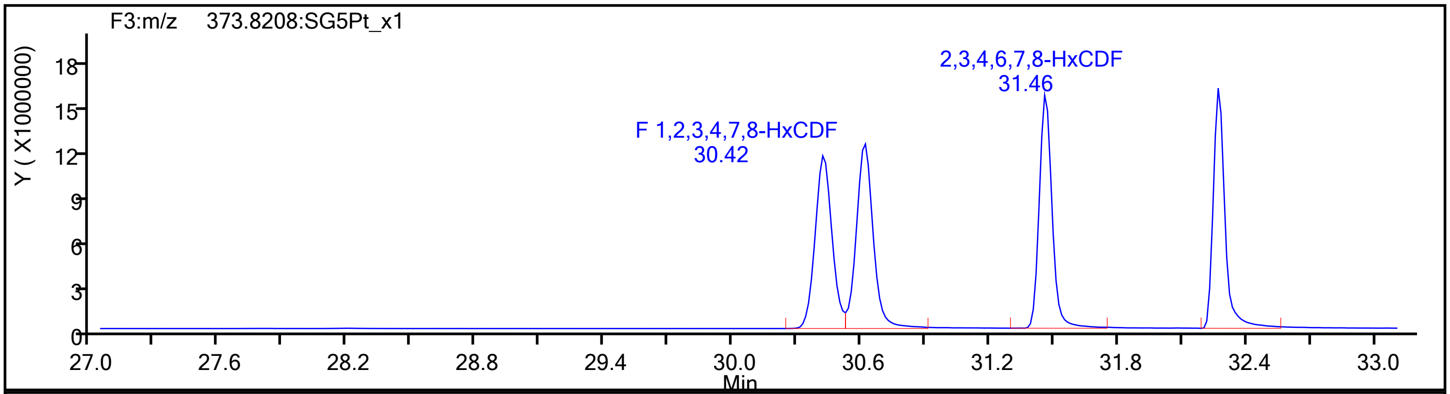
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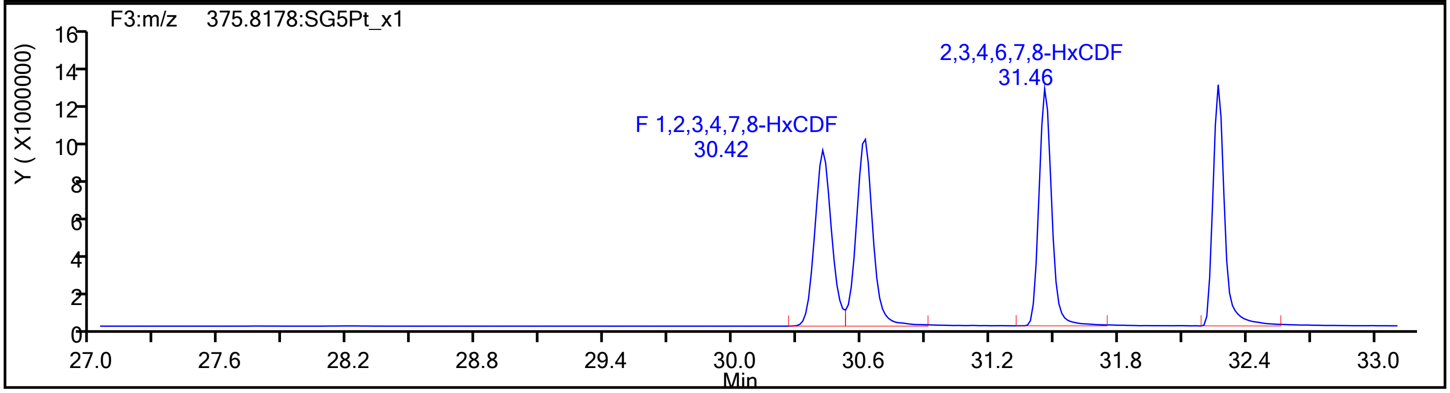
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HxCDF Standards

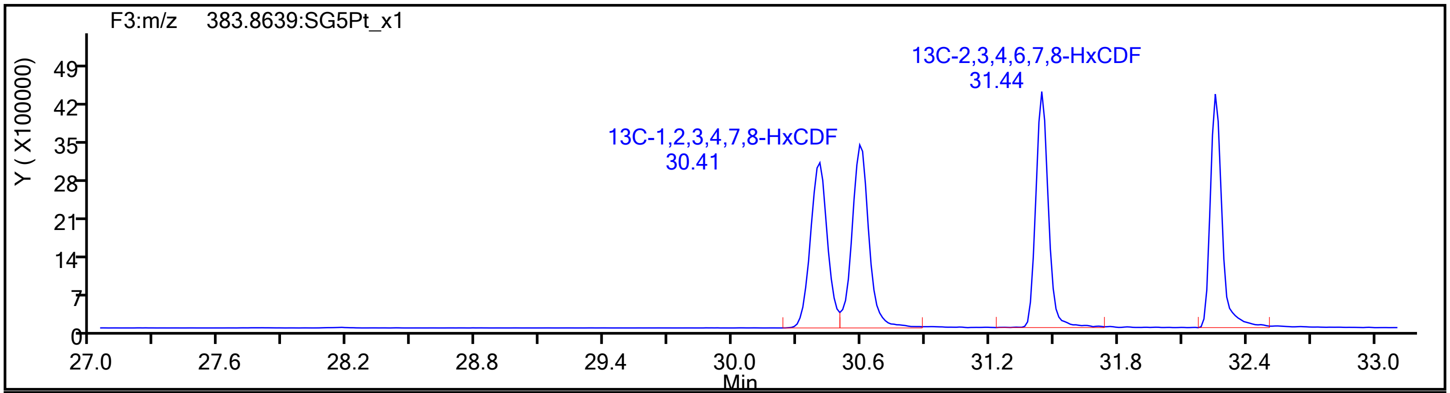
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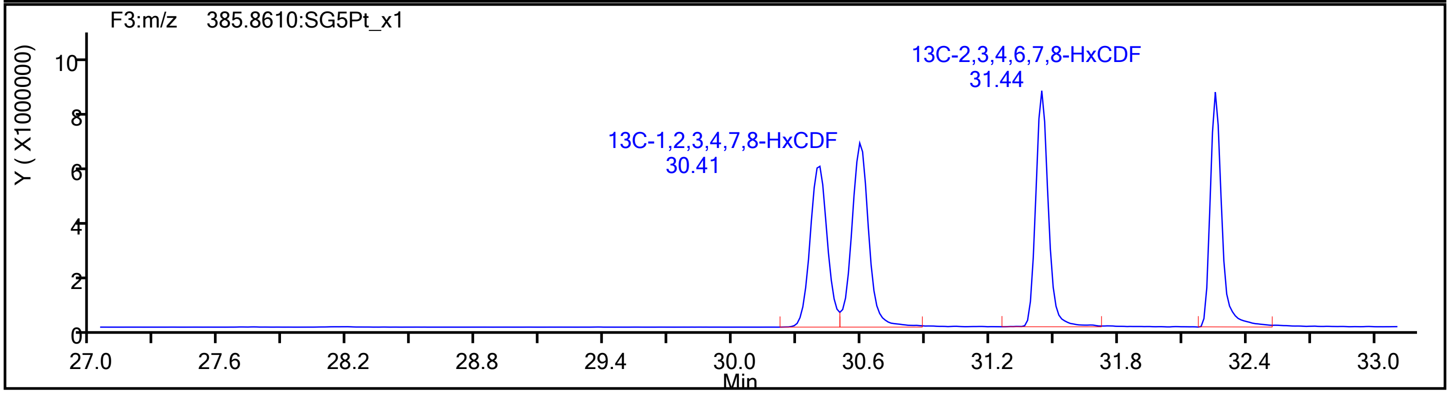
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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

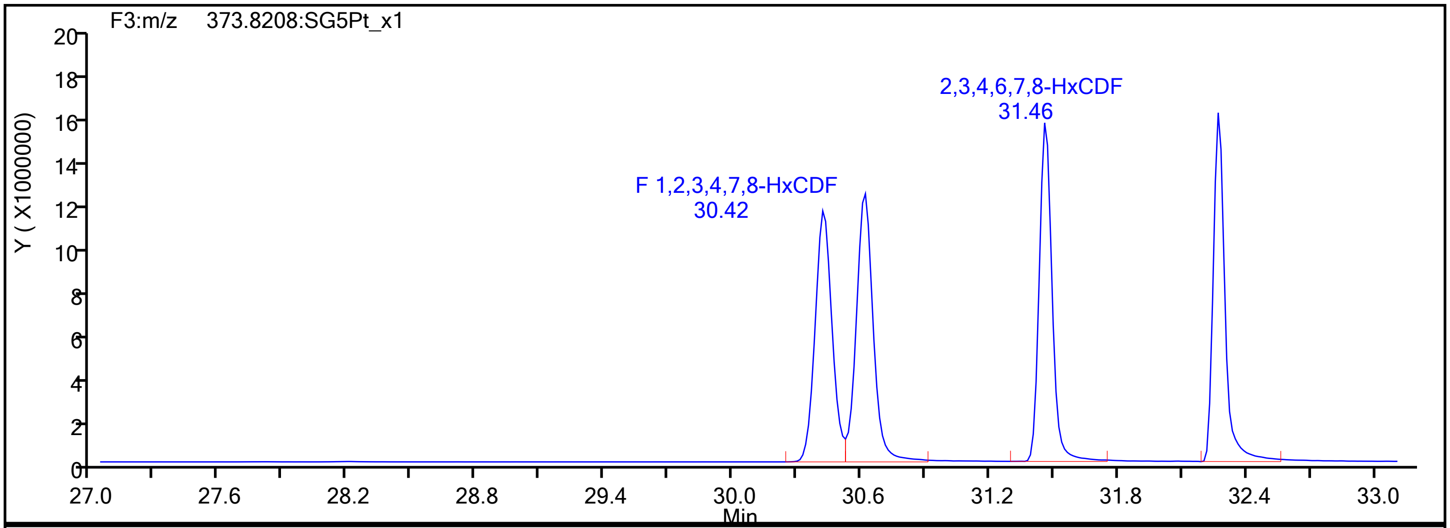

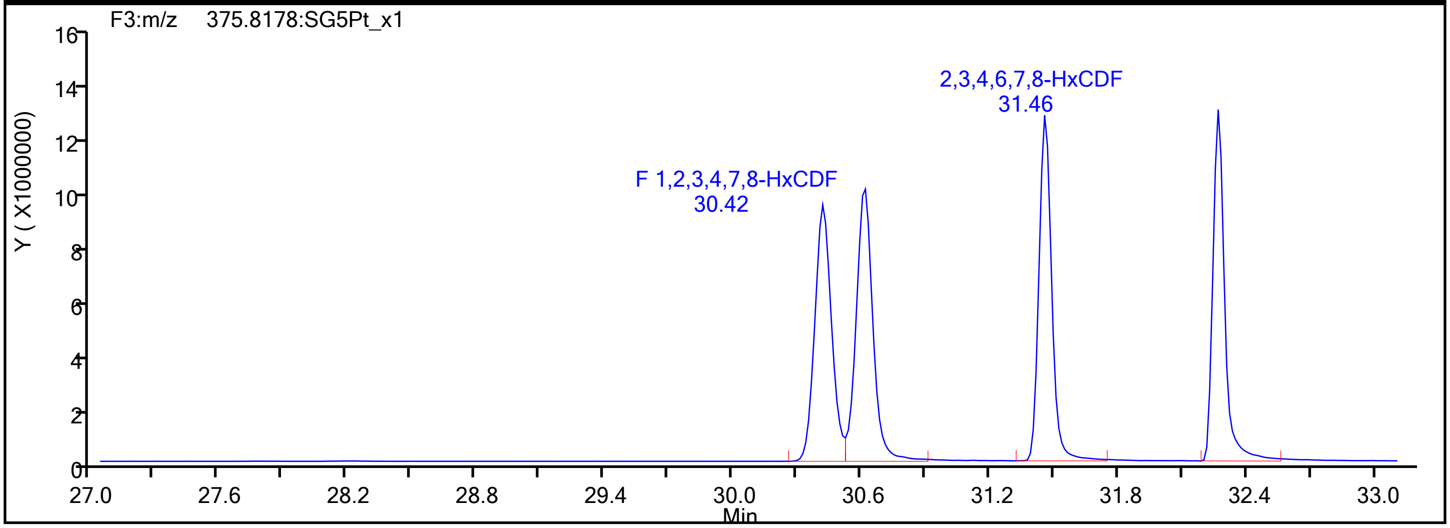

HxCDF Interference Mass

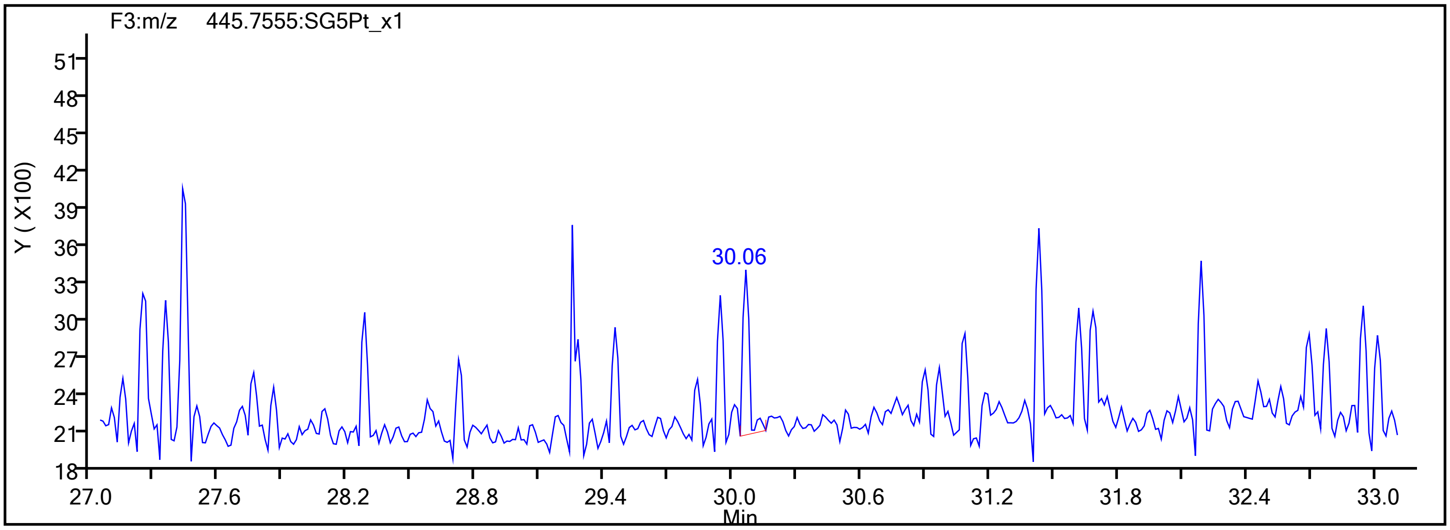

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

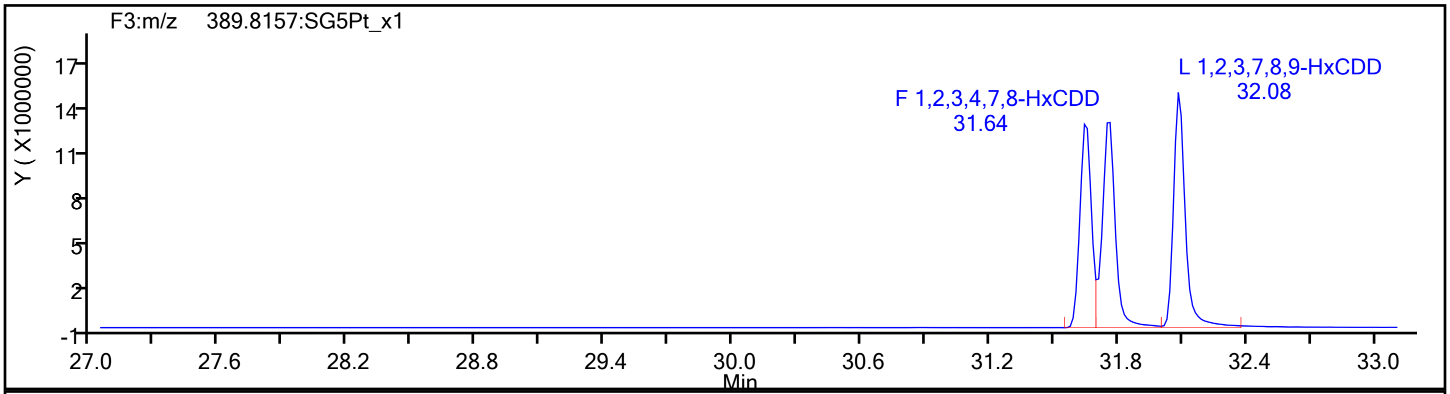

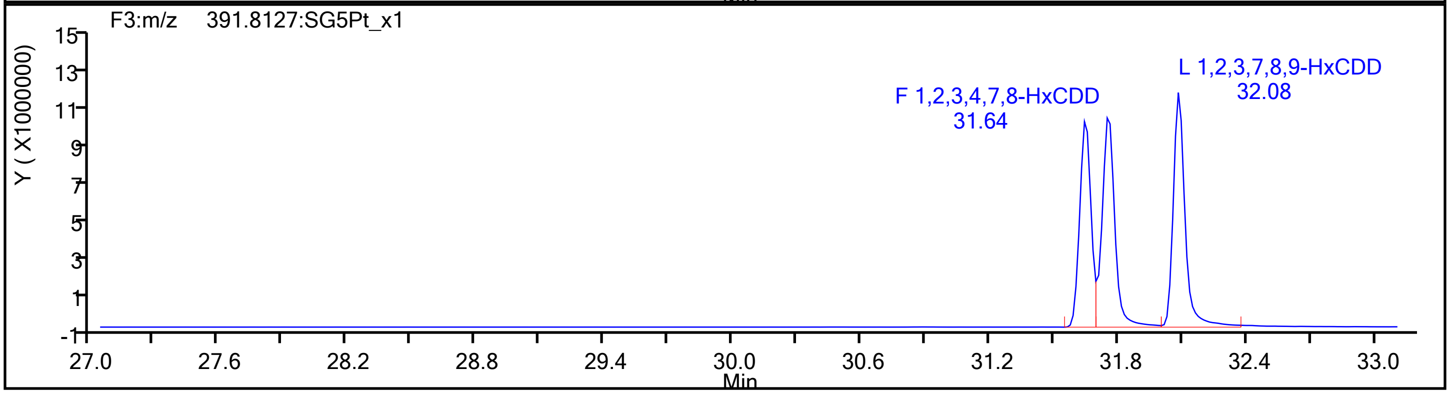

HxCDD Standards

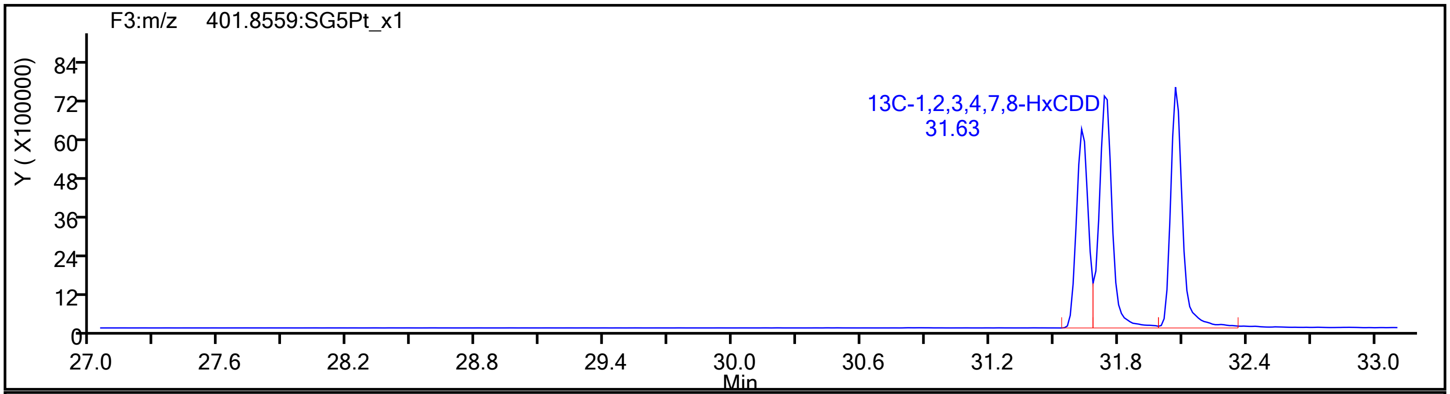

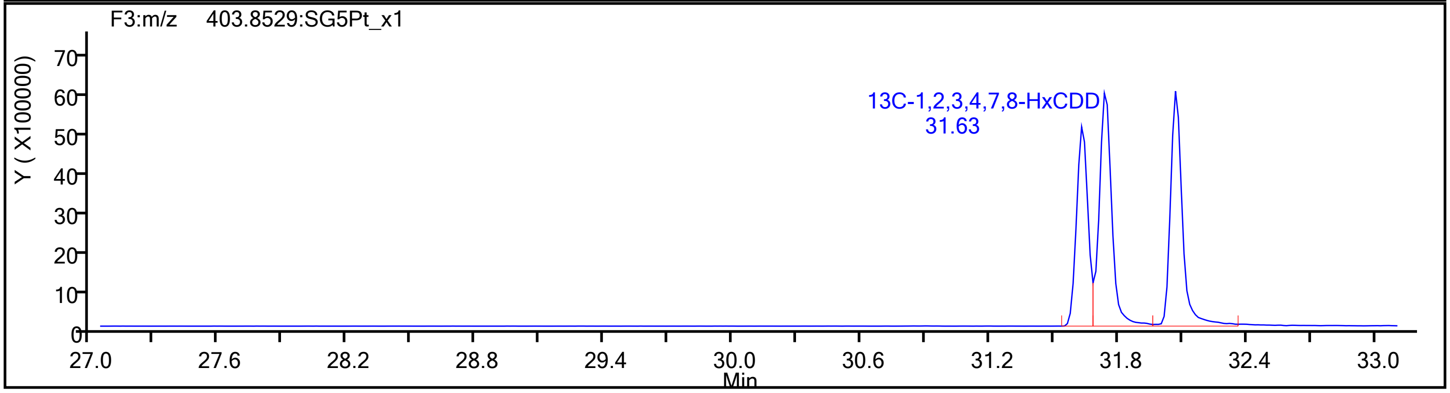

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Injection Date: 17-Sep-2020 18:24:43

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

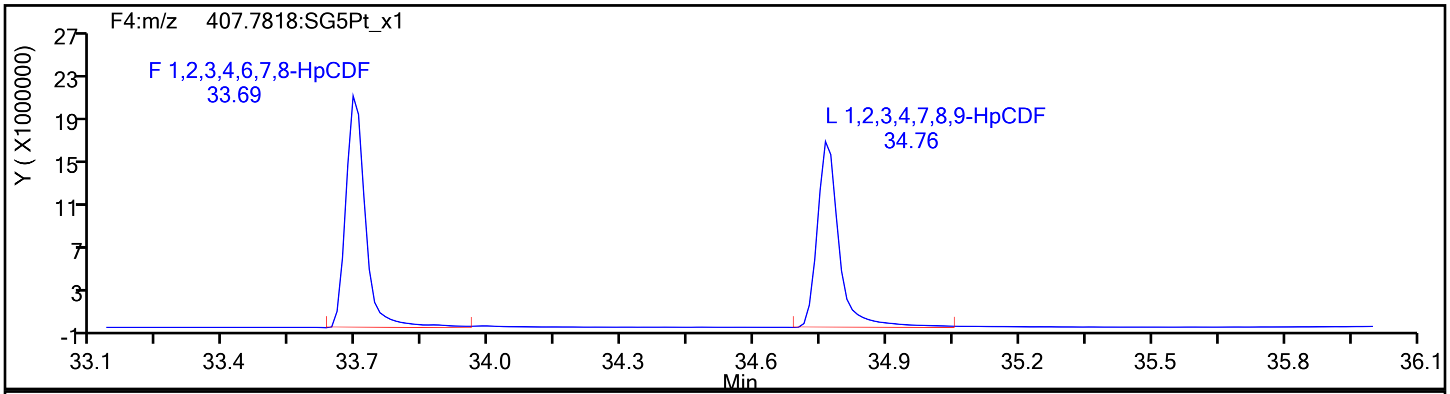

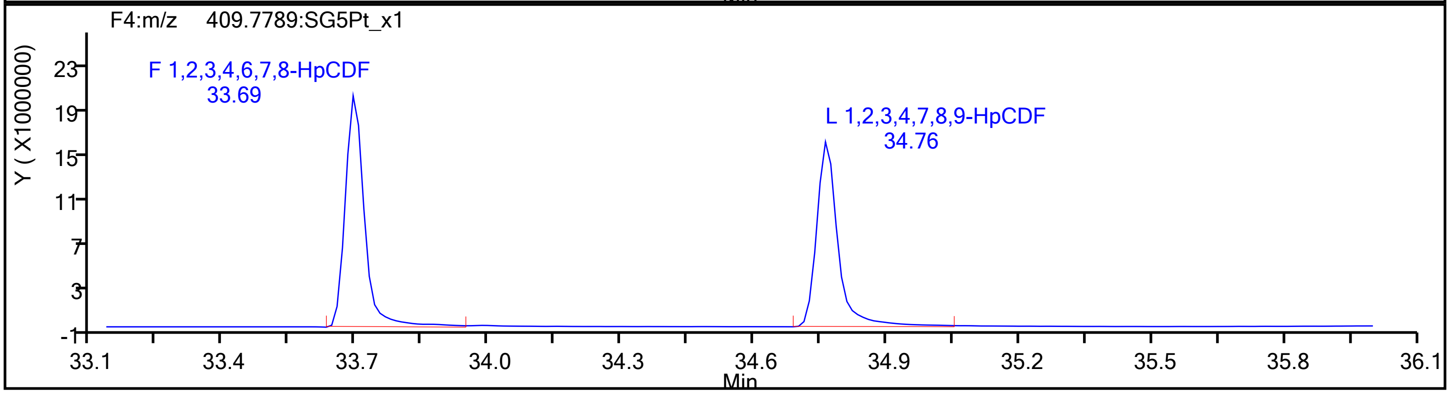

HpCDF Standards

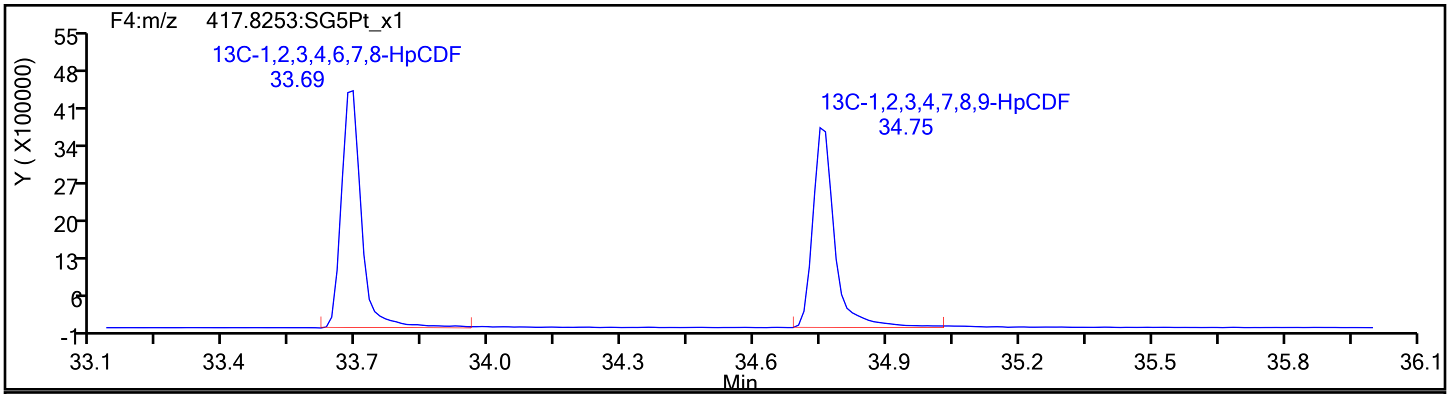

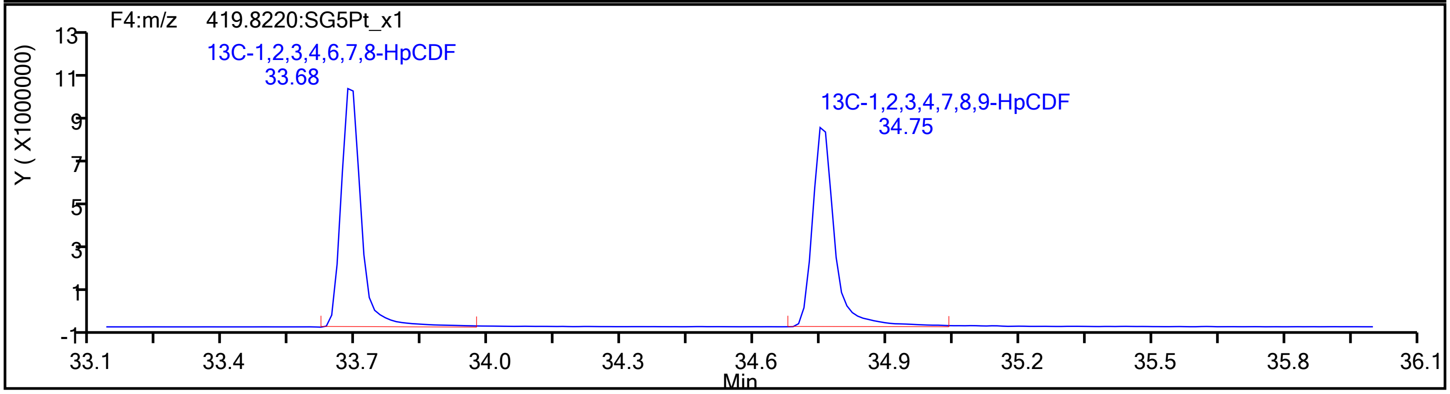

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

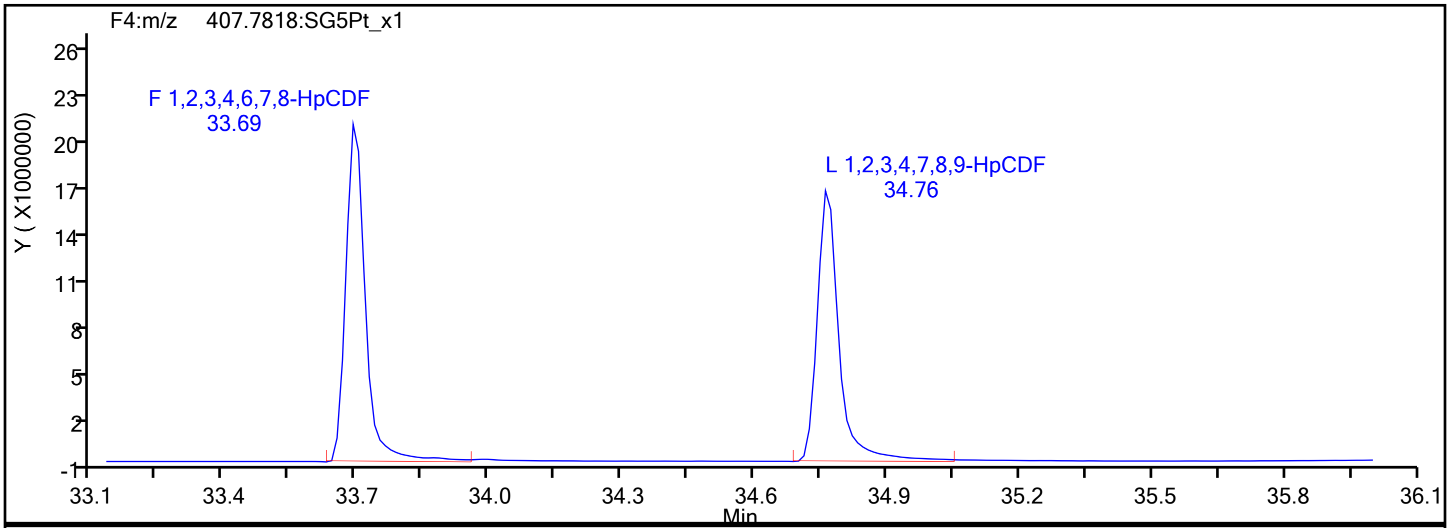

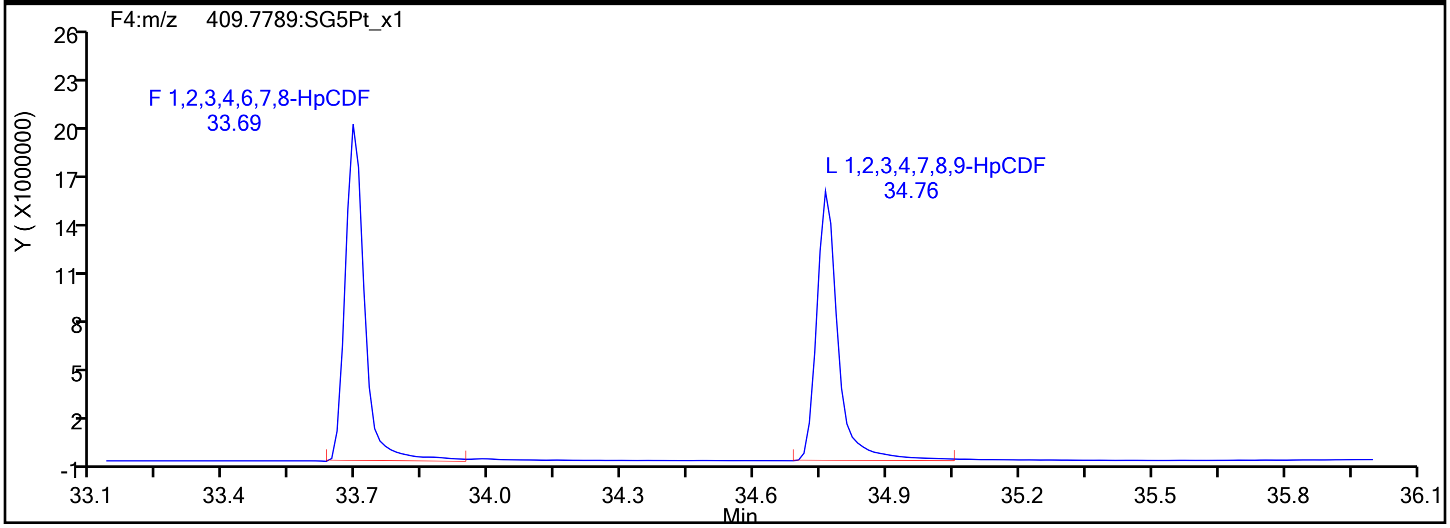

HpCDF Interference Mass

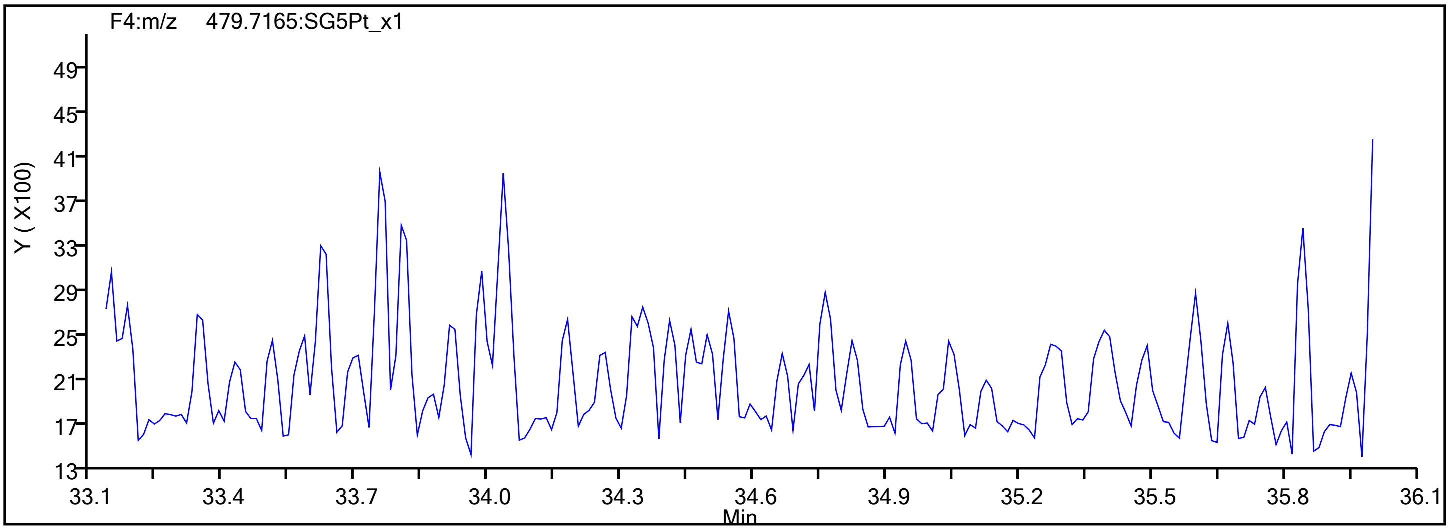

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Injection Date: 17-Sep-2020 18:24:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

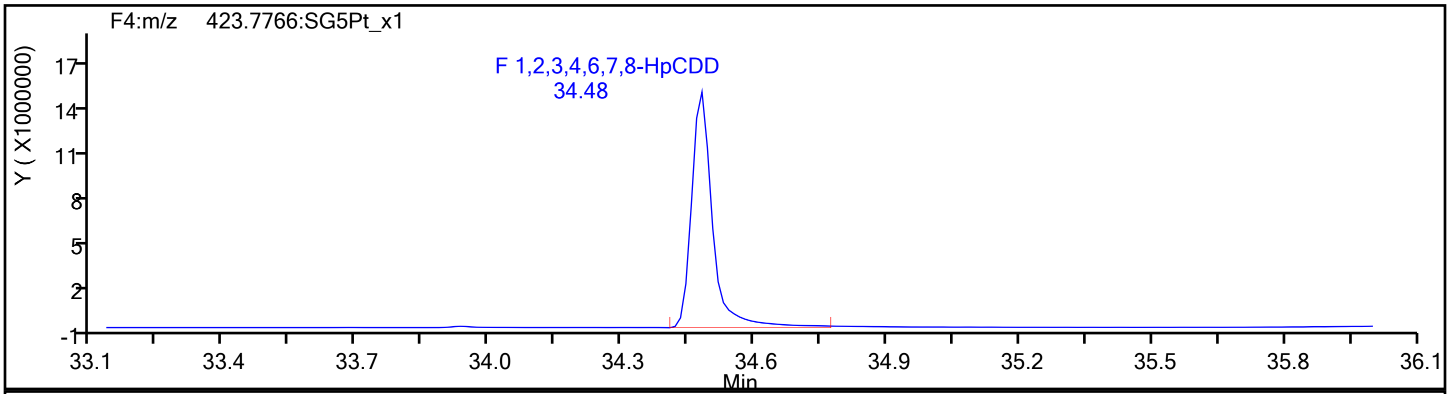

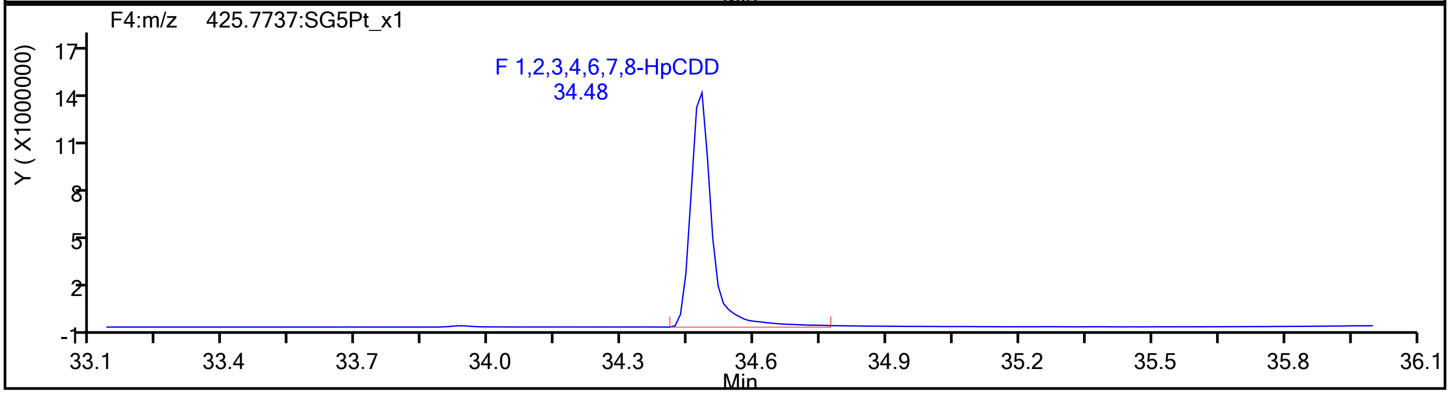

HpCDD Standards

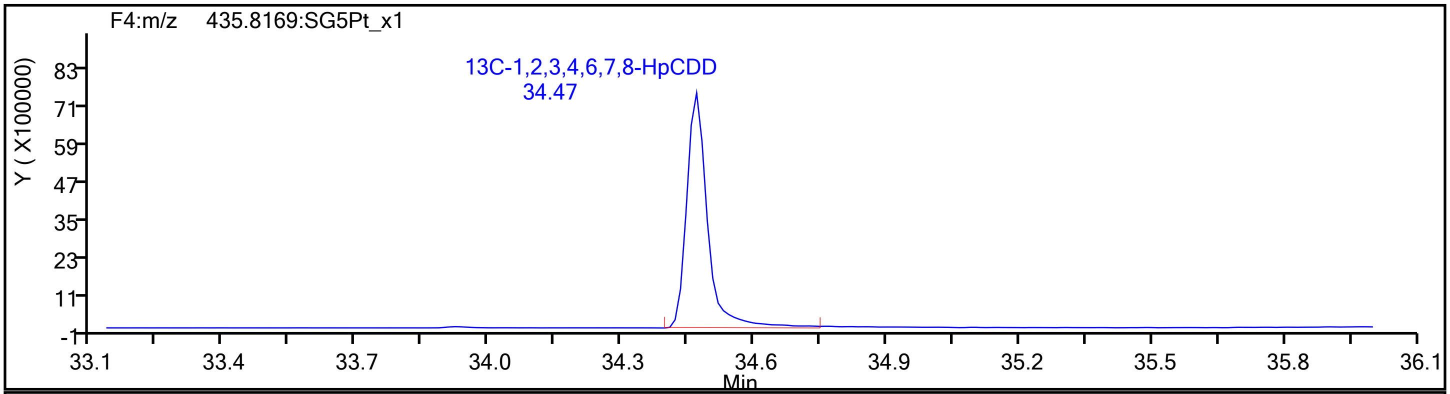

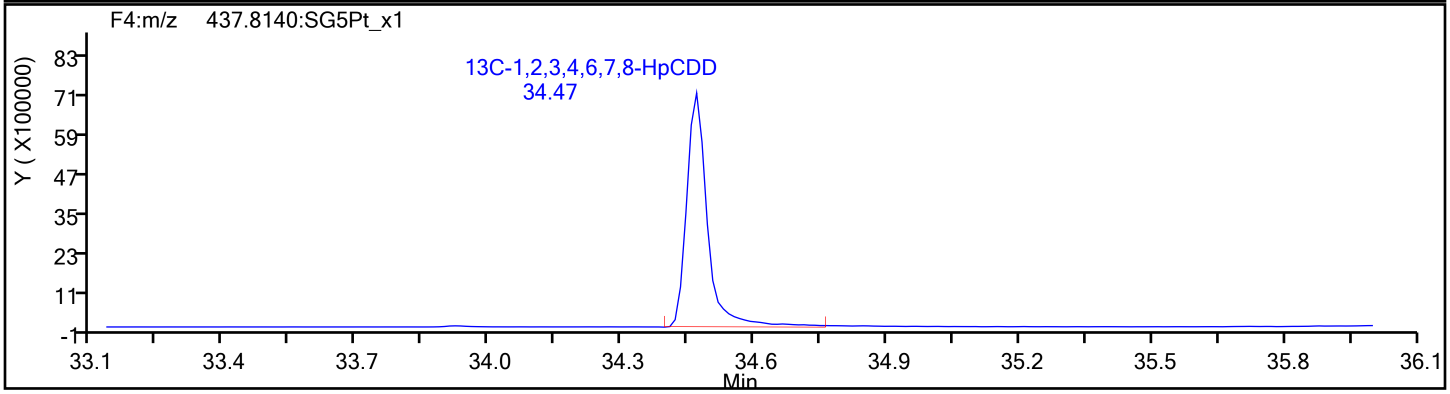

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Injection Date: 17-Sep-2020 18:24:43 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

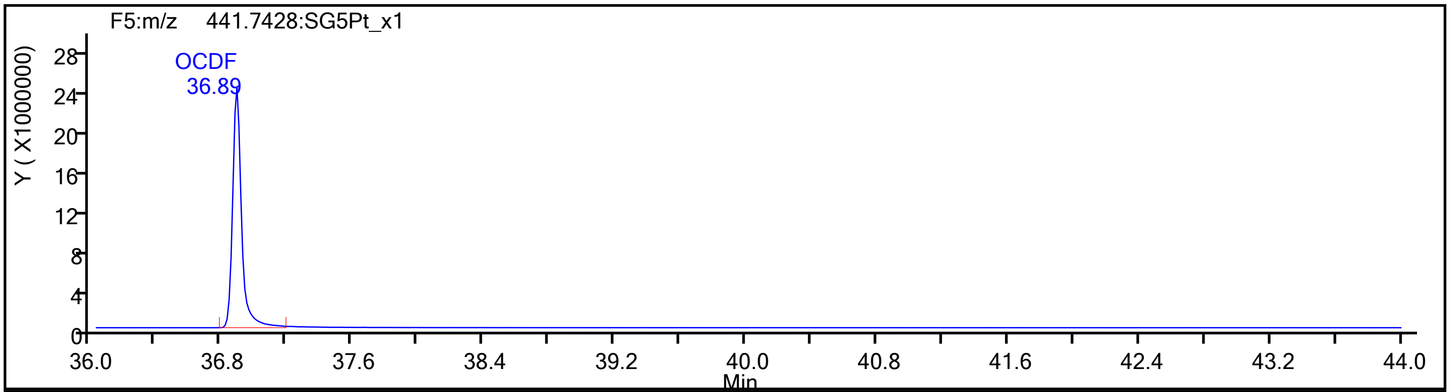

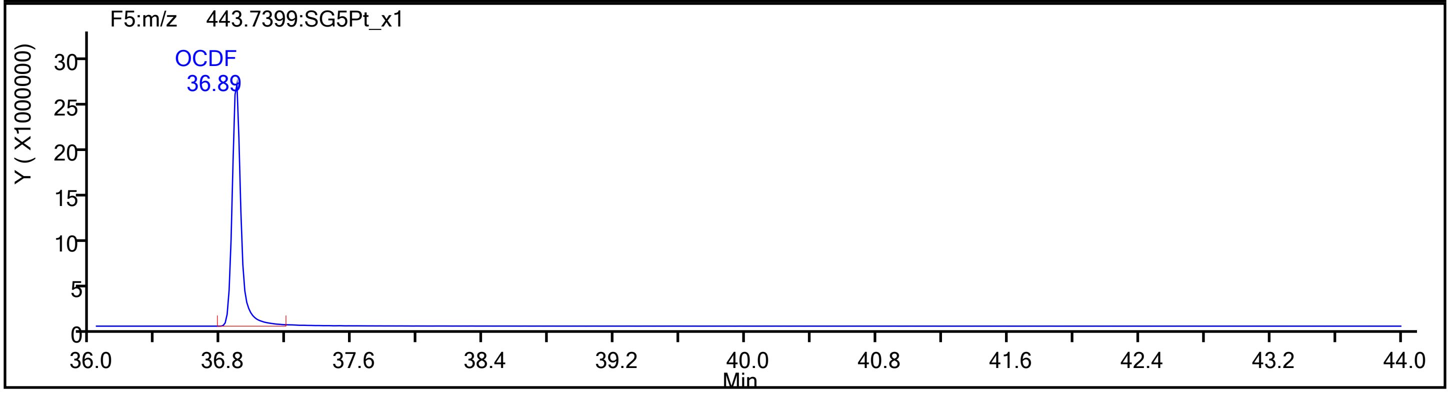

OCDF Standards

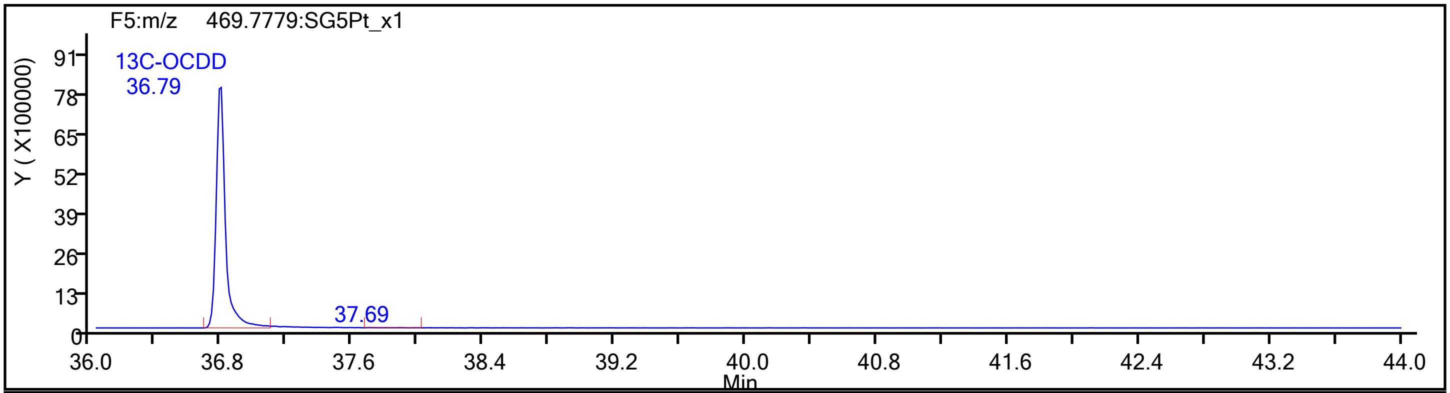

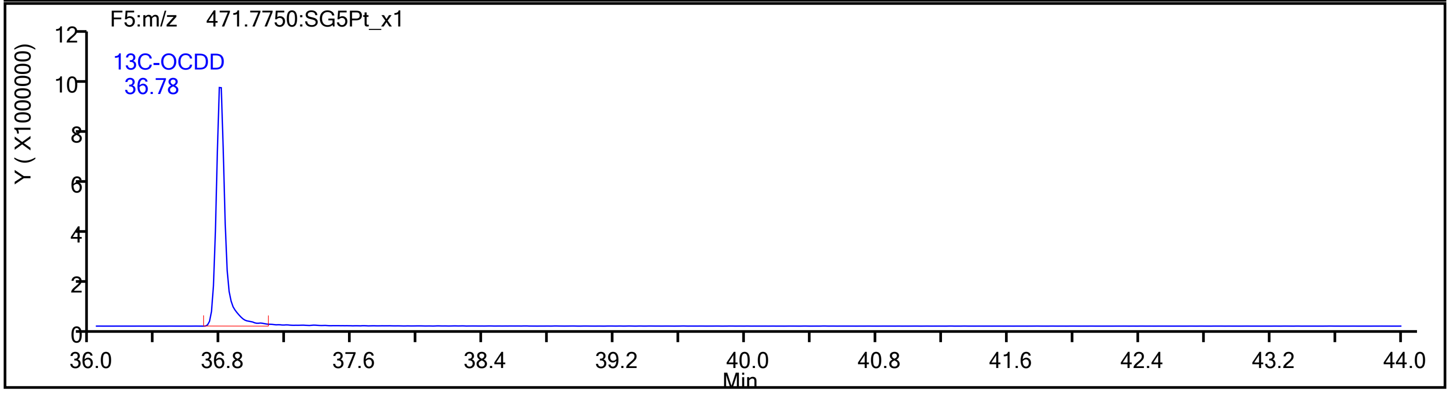

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Injection Date: 17-Sep-2020 18:24:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

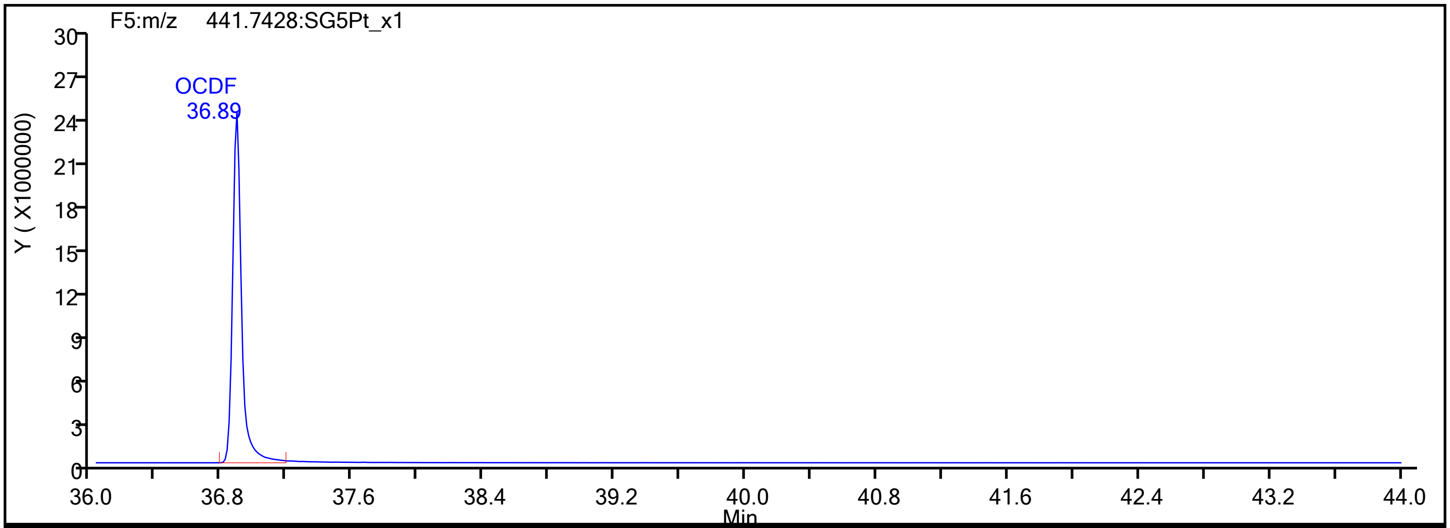

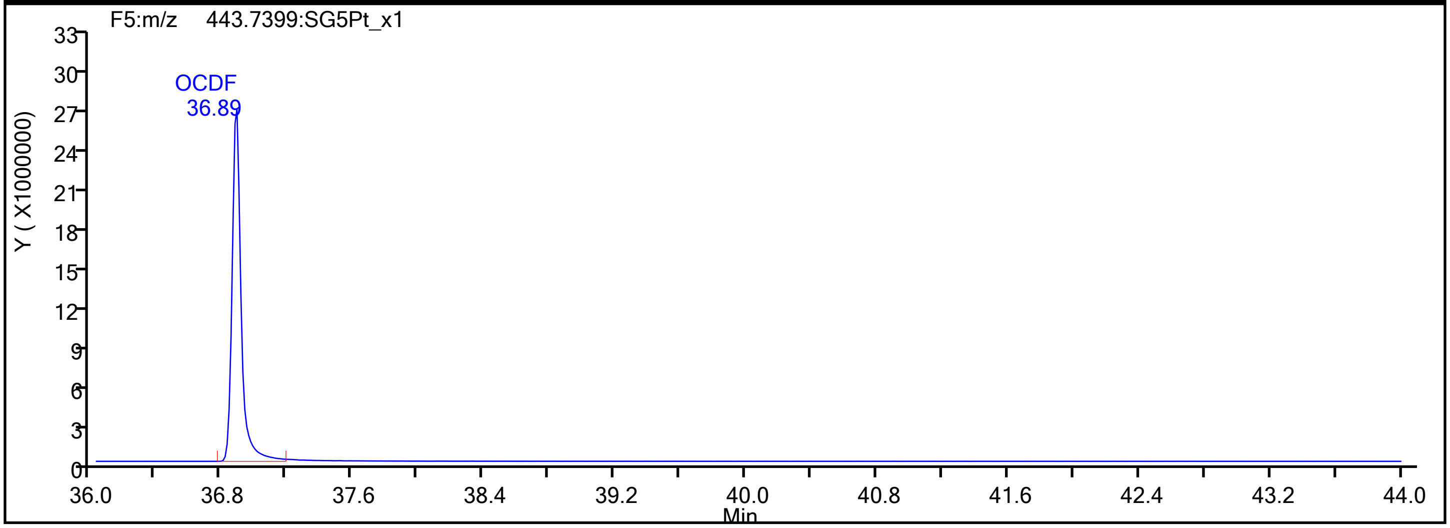

OCDF Interference Mass

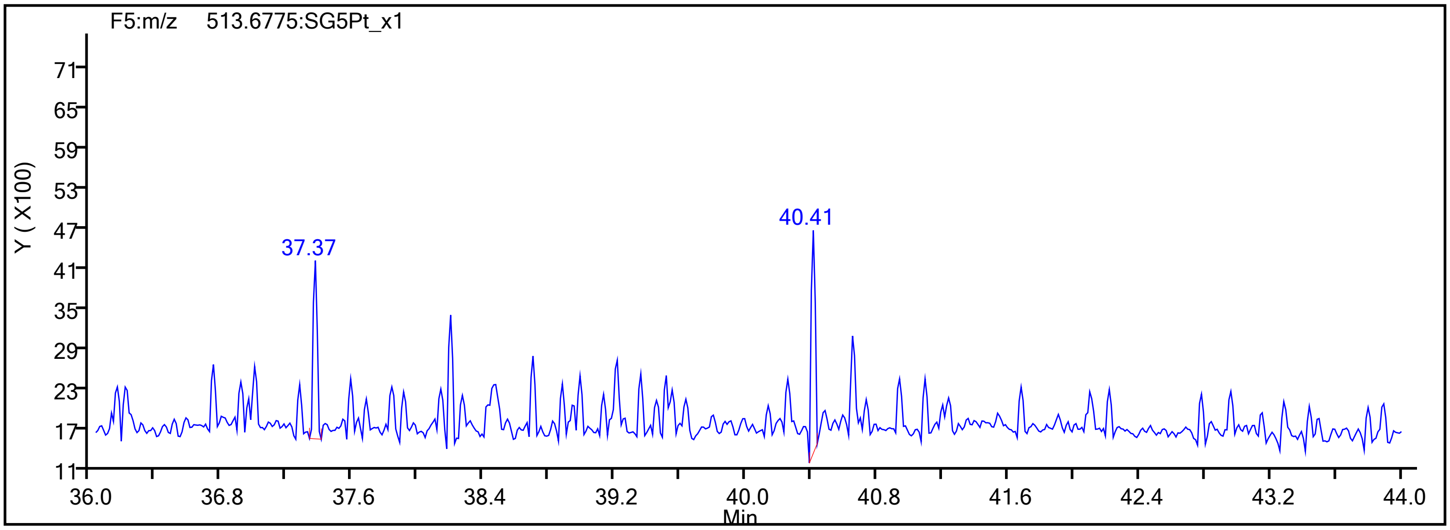

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

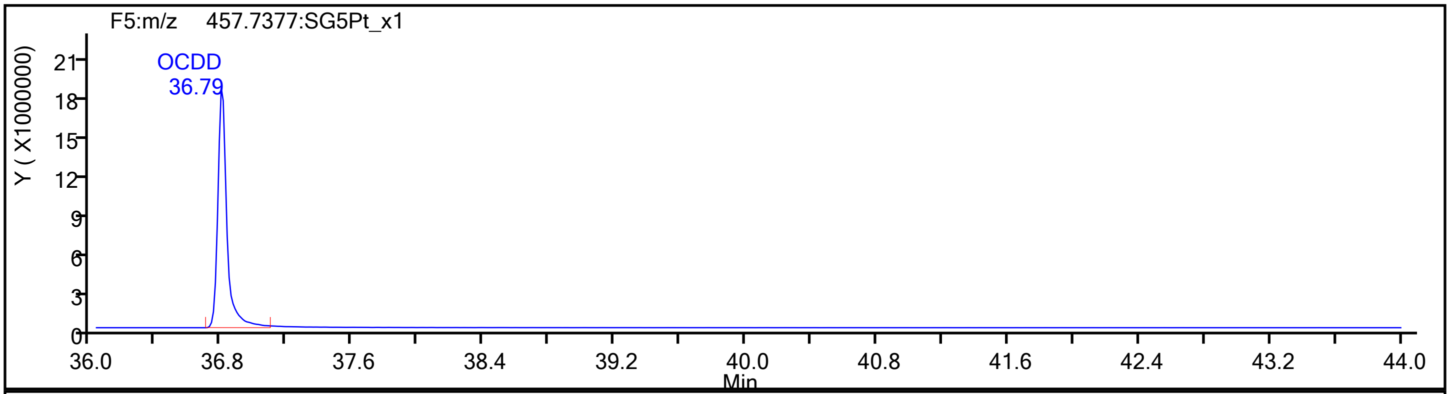

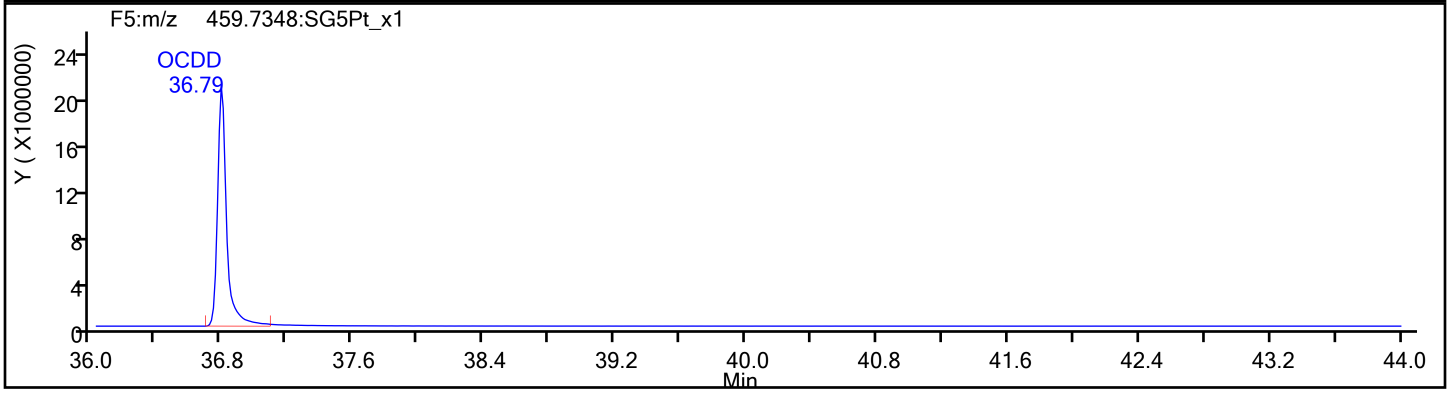

OCDD Standards

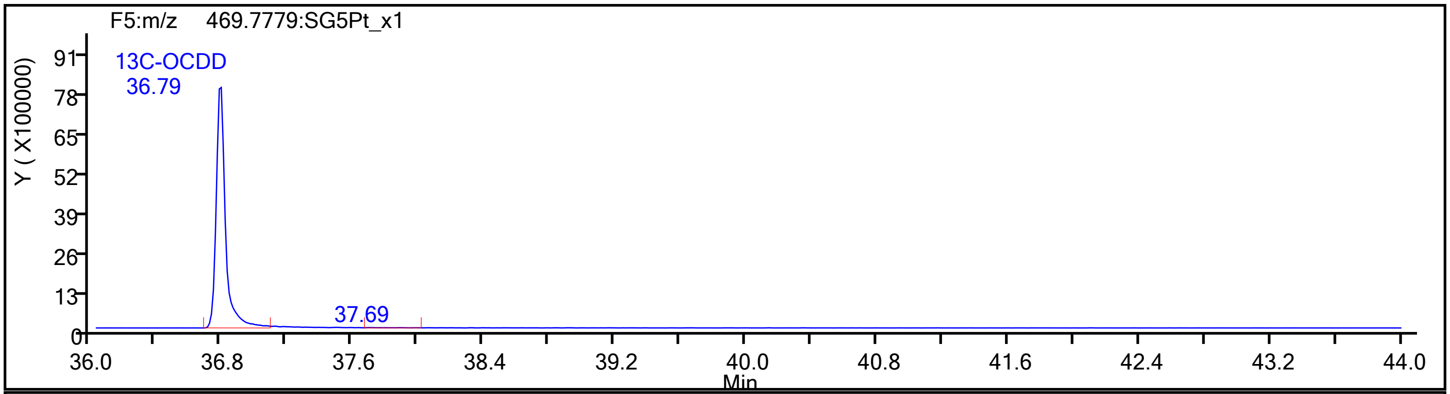

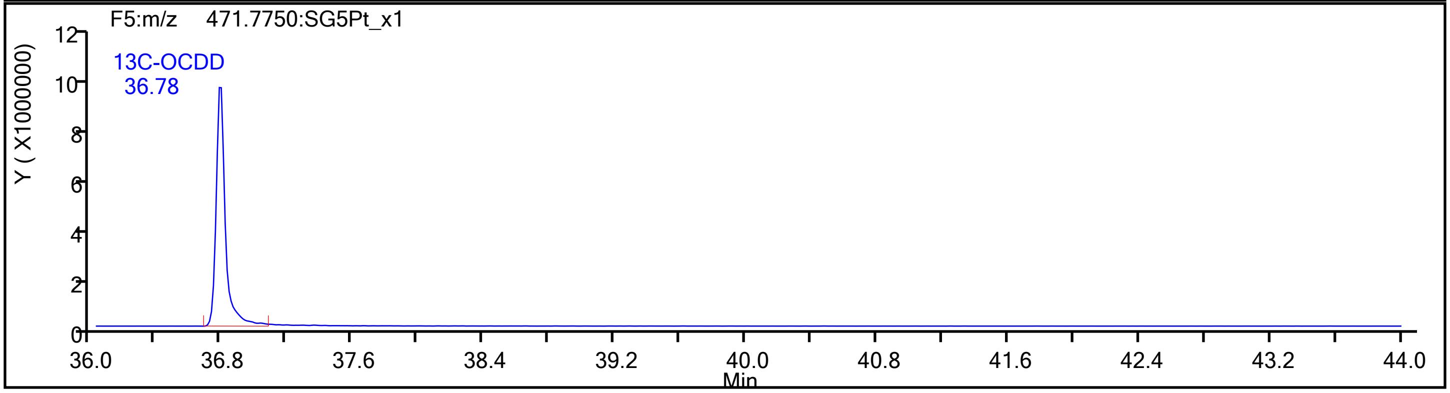

Report Date: 18-Sep-2020 10:36:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d

Injection Date: 17-Sep-2020 18:24:43 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

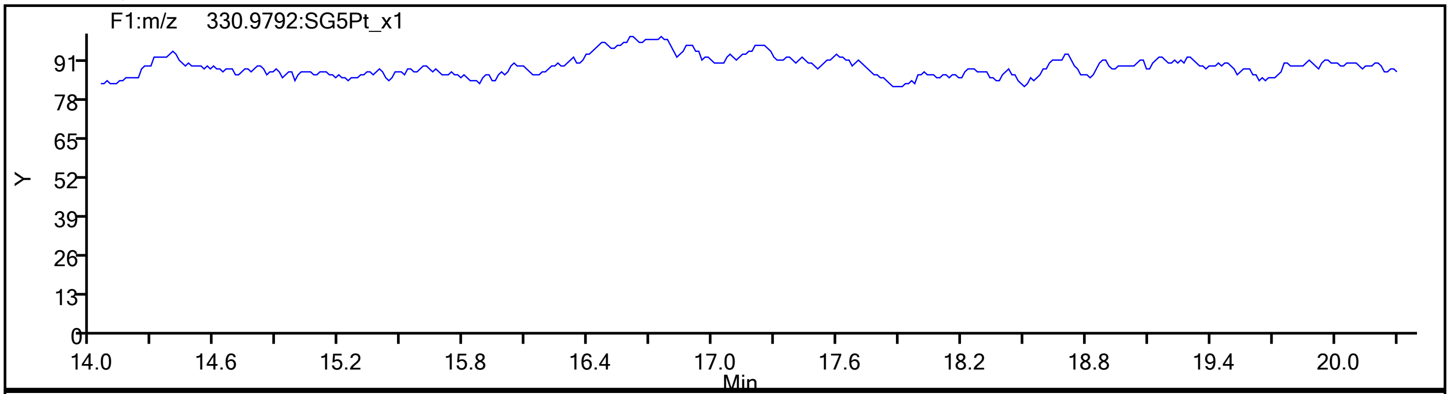

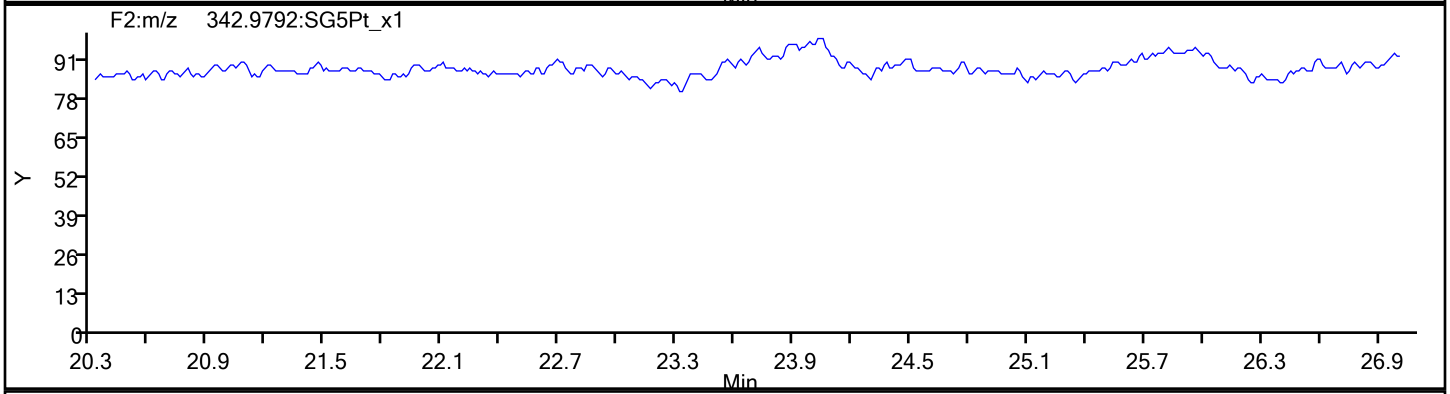

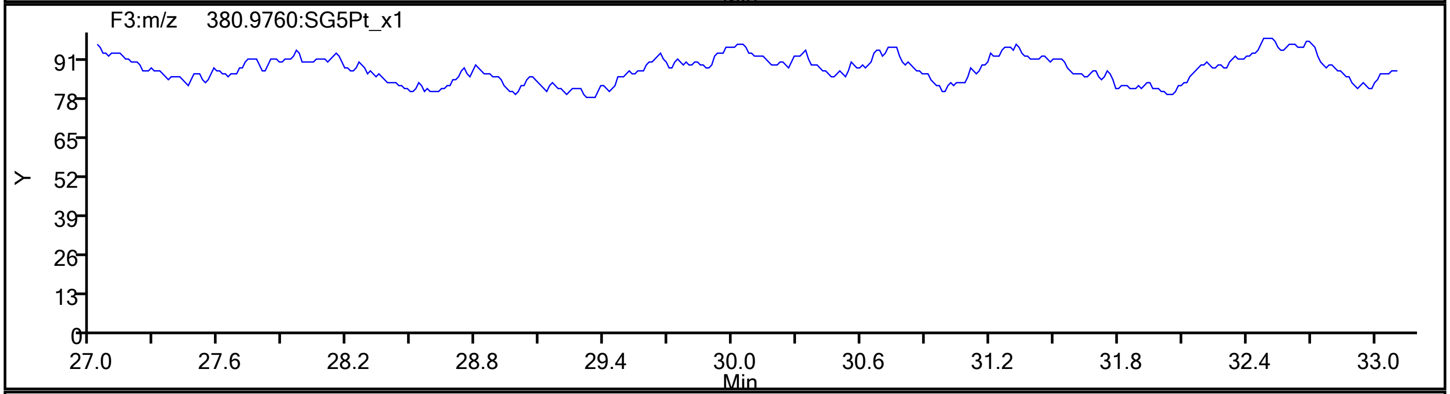

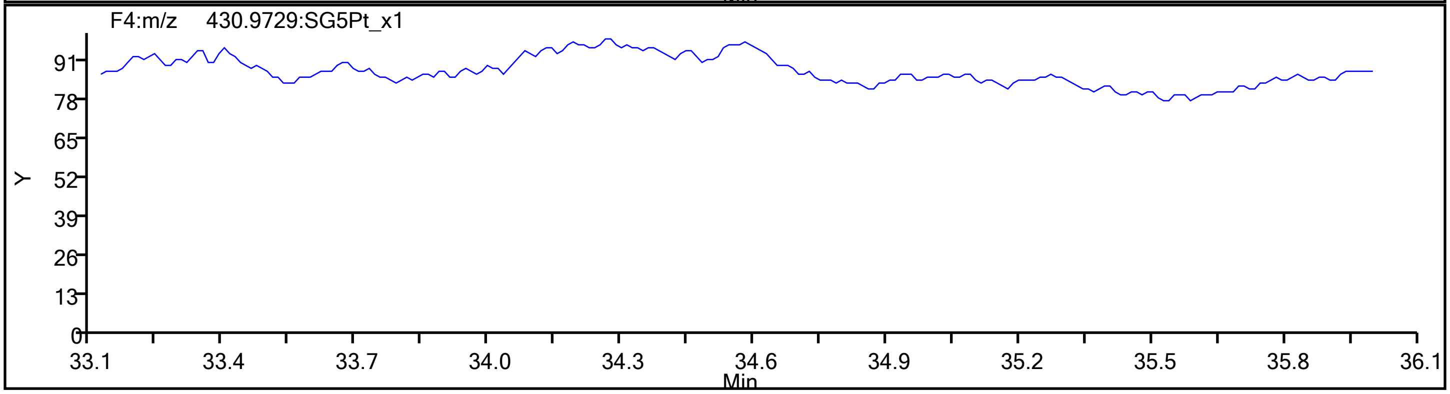

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

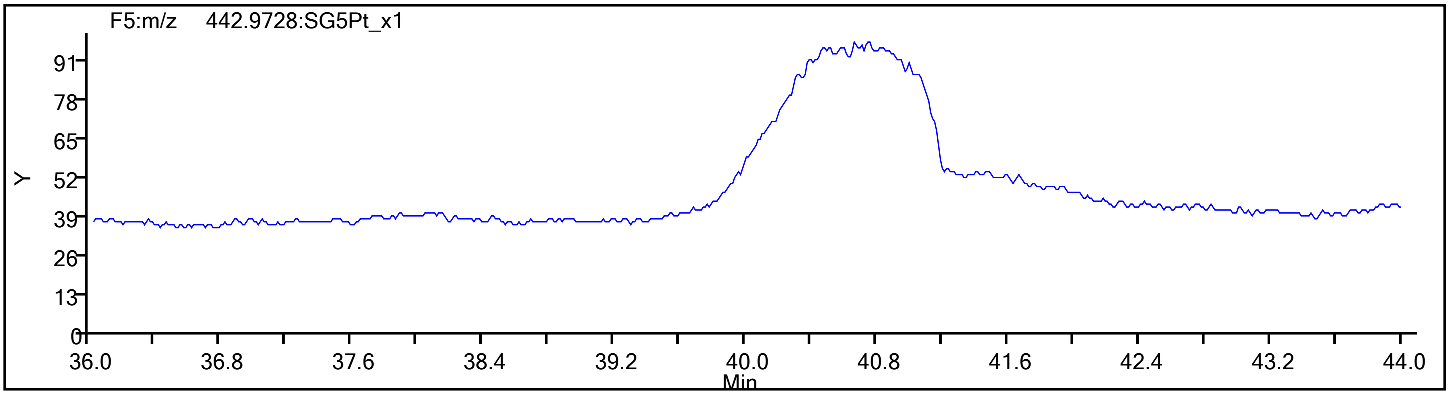

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 19:09:42 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720D CS-6 HRDXNL6_00027
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:12 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:18:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	82839664	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	112538942	0.77	1.3598	99.9	99.9	0.1328	0.1328	99.90	
2,3,7,8-TCDF	17.203	208980759	0.77	0.9077	204.6	204.6	0.2542	0.2542	102	
S Total TCDF					204.6	204.6	0.2542	0.2542		
D 13C-2,3,7,8-TCDD	17.899	90520287	0.78	1.0536	103.7	103.7	0.2060	0.2060	104	
2,3,7,8-TCDD	17.914	181906530	0.77	1.0061	199.7	199.7	0.1321	0.1321	99.86	
$ 37Cl4-2,3,7,8-TCDD	17.914	188393047		1.0488	216.8	216.8	0.2418	0.2418	108	
S Total TCDD					199.7	199.7	0.1321	0.1321		
D 13C-1,2,3,7,8-PeCDF	22.198	98967595	1.55	1.1306	105.7	105.7	0.1952	0.1952	106	
1,2,3,7,8-PeCDF	22.226	902066653	1.54	0.9147	996.4	996.4	2.315	2.315	99.64	
D 13C-2,3,4,7,8-PeCDF	23.535	93576375	1.56	1.0539	107.2	107.2	0.2094	0.2094	107	
2,3,4,7,8-PeCDF	23.562	881532861	1.55	0.9508	990.8	990.8	2.631	2.631	99.08	
S Total PeCDF					1987.2	1987.2	2.473	2.473		
D 13C-1,2,3,7,8-PeCDD	24.257	71300628	1.62	0.8084	106.5	106.5	0.1098	0.1098	106	
1,2,3,7,8-PeCDD	24.285	699080341	1.55	0.9955	984.9	984.9	0.8577	0.8577	98.49	
S Total PeCDD					984.9	984.9	0.8577	0.8577		
D 13C-1,2,3,4,7,8-HxCDF	30.393	63870758	0.50	0.9225	101.1	101.1	0.4103	0.4103	101	
1,2,3,4,7,8-HxCDF	30.419	708040990	1.23	1.1090	999.6	999.6	5.172	5.172	99.96	
D 13C-1,2,3,6,7,8-HxCDF	30.592	71480069	0.50	1.0336	101.0	101.0	0.3662	0.3662	101	
1,2,3,6,7,8-HxCDF	30.606	756804000	1.23	1.0721	987.5	987.5	4.711	4.711	98.75	
D 13C-2,3,4,6,7,8-HxCDF	31.444	67749621	0.51	0.9773	101.2	101.2	0.3873	0.3873	101	
2,3,4,6,7,8-HxCDF	31.458	728098205	1.23	1.0838	991.6	991.6	3.753	3.753	99.16	
D 13C-1,2,3,7,8,9-HxCDF	32.256	64454067	0.51	0.9153	102.8	102.8	0.4135	0.4135	103	
1,2,3,7,8,9-HxCDF	32.270	691727822	1.24	1.0931	981.8	981.8	3.441	3.441	98.18	
S Total HxCDF					3960.6	3960.6	4.269	4.269		
* 13C-1,2,3,7,8,9-HxCDD	32.070	68477434	1.23	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	57179178	1.26	0.7977	104.7	104.7	0.2996	0.2996	105	
1,2,3,4,7,8-HxCDD	31.644	559642002	1.23	1.0014	977.3	977.3	2.479	2.479	97.73	
D 13C-1,2,3,6,7,8-HxCDD	31.737	68606469	1.24	1.0010	100.1	100.1	0.2387	0.2387	100	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	615512540	1.24	0.8902	1007.9	1007.9	2.381	2.381	101	
1,2,3,7,8,9-HxCDD	32.083	650702045	1.24	1.0579	978.0	978.0	2.162	2.162	97.80	
S Total HxCDD					2963.2	2963.2	2.341	2.341		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	59864107	0.43	0.8506	102.8	102.8	1.056	1.056	103	
1,2,3,4,6,7,8-HpCDF	33.691	794756968	1.03	1.3603	975.9	975.9	9.265	9.265	97.59	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	54480485	0.44	0.7618	104.4	104.4	1.179	1.179	104	
1,2,3,4,7,8,9-HpCDF	34.761	704300587	1.03	1.3207	978.9	978.9	11.8	11.8	97.89	
S Total HpCDF					1954.8	1954.8	10.5	10.5		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	62747060	1.05	0.8873	103.3	103.3	0.6046	0.6046	103	
1,2,3,4,6,7,8-HpCDD	34.469	624600336	1.04	0.9988	996.7	996.7	3.834	3.834	99.67	
S Total HpCDD					996.7	996.7	3.834	3.834		
D 13C-OCDD	36.779	93549216	0.91	0.6287	217.3	217.3	0.2539	0.2539	109	
OCDF	36.887	1328467600	0.91	1.4136	2009.2	2009.2	1.470	1.470	100	
OCDD	36.791	1025752146	0.90	1.1290	1942.5	1942.5	2.538	2.538	97.12	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:15   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 6
Inject. Date: 17-Sep-2020 19:09:42   ALS Bottle#: 7   Worklist Smp#: 7
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: IC 091720D CS-6 HRDXNL6_00027
Misc. Info.: 17SE2010D5
Operator ID: AJS   Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:12   Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis   Date: 18-Sep-2020 10:18:30

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.711	-1		36265705	8998511	8935	22337	1007		
333.9339	17.702	17.711	-1		46573959	11572929	8924	22310	1297	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.971	48777539	12497008	7712	19280	1620		
317.9389	17.188	17.203	-1	0.971	63761403	16180769	7143	17857	2265	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.218	-1	1.001	90736146	23113639	9914	24785	2331		
305.8987	17.203	17.218	-1	1.001	118244613	30212266	16560	41400	1824	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	39757194	9381443	8935	22337	1050		
333.9339	17.899	17.905	0	1.011	50763093	11985425	8924	22310	1343	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.920	0	1.001	79337957	19089008	5189	12972	3679		
321.8936	17.914	17.920	0	1.001	102568573	24753380	6170	15425	4012	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	188393047	45007588	20867	52167	2157		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.254	60181059	10820105	10516	26290	1029		
353.8970	22.198	22.204	0	1.254	38786536	7030773	7646	19115	920	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	547147193	96829975	91320	228300	1060		
341.8567	22.212	22.220	0	1.001	354919460	62761523	59870	149675	1048	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.329	57068694	9204299	10516	26290	875		
353.8970	23.535	23.540	0	1.329	36507681	5907507	7646	19115	773	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	535474925	87654759	91320	228300	960		
341.8567	23.562	23.567	0	1.001	346057936	56952234	59870	149675	951	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.370	44042244	6991886	4343	10857	1610		
369.8919	24.257	24.263	0	1.370	27258384	4340482	2964	7410	1464	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	425216588	66893677	23507	58767	2846		
357.8516	24.285	24.290	0	1.001	273863753	43014297	15196	37990	2831	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	21353346	3735596	9504	23760	393		
385.8610	30.393	30.398	0	0.948	42517412	7541415	17334	43335	435	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.419	30.414	0	1.001	390623698	69210360	144699	361747	478		
375.8178	30.419	30.414	0	1.001	317417292	55842354	114030	285075	490	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.592	30.587	0	0.954	23831741	4284718	9504	23760	451		
385.8610	30.592	30.587	0	0.954	47648328	8520496	17334	43335	492	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.606	30.608	0	1.000	417477301	76471193	144699	361747	528		
375.8178	30.606	30.608	0	1.000	339326699	62317195	114030	285075	546	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	22867854	5367919	9504	23760	565		
385.8610	31.444	31.439	0	0.980	44881767	10535673	17334	43335	608	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	401761842	96152976	144699	361747	665		
375.8178	31.458	31.458	0	1.000	326336363	77698323	114030	285075	681	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	21707742	5888250	9504	23760	620		
385.8610	32.256	32.254	0	1.006	42746325	11309936	17334	43335	652	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	382964510	103123325	144699	361747	713		
375.8178	32.270	32.267	0	1.000	308763312	82432457	114030	285075	723	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		37715128	9806077	9513	23782	1031		
403.8529	32.070	32.067	0		30762306	7919228	7430	18575	1066	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	31831270	8312743	9513	23782	874		
403.8529	31.631	31.631	0	0.986	25347908	6557876	7430	18575	883	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	309092416	82861363	82628	206570	1003		
391.8127	31.644	31.647	0	1.000	250549586	66798770	65041	162602	1027	1.23(1.05-1.43)	

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	37988346	9644110	9513	23782	1014		
403.8529	31.737	31.740	0	0.990	30618123	7772384	7430	18575	1046	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	340937209	84715031	82628	206570	1025		
391.8127	31.750	31.756	0	1.000	274575331	68578489	65041	162602	1054	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	360109538	93726788	82628	206570	1134		
391.8127	32.083	32.081	0	1.014	290592507	74938635	65041	162602	1152	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.050	18070930	5942919	16854	42135	353		
419.8220	33.679	33.684	0	1.050	41793177	13661866	46806	117015	292	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	402533640	132249546	496016	1240040	267		
409.7789	33.691	33.694	0	1.000	392223328	128744831	492357	1230892	261	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.751	0	1.084	16669269	4937793	16854	42135	293		
419.8220	34.748	34.751	0	1.084	37811216	10942649	46806	117015	234	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	357604024	103225889	496016	1240040	208		
409.7789	34.761	34.763	0	1.000	346696563	99564112	492357	1230892	202	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	32145048	9496257	16712	41780	568		
437.8140	34.469	34.464	0	1.075	30602012	9099651	21325	53312	427	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	317811790	91651803	141262	353155	649		
425.7737	34.469	34.474	0	1.000	306788546	89877662	143540	358850	626	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	44483628	10712295	4504	11260	2378		
471.7750	36.779	36.784	0	1.147	49065588	11867172	6814	17035	1742	0.91(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	633744193	156394749	46138	115345	3390		
443.7399	36.887	36.882	0	1.003	694723407	167173603	47678	119195	3506	0.91(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	485602206	117161035	57581	143952	2035		
459.7348	36.791	36.791	0	1.000	540149940	130532603	71827	179567	1817	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

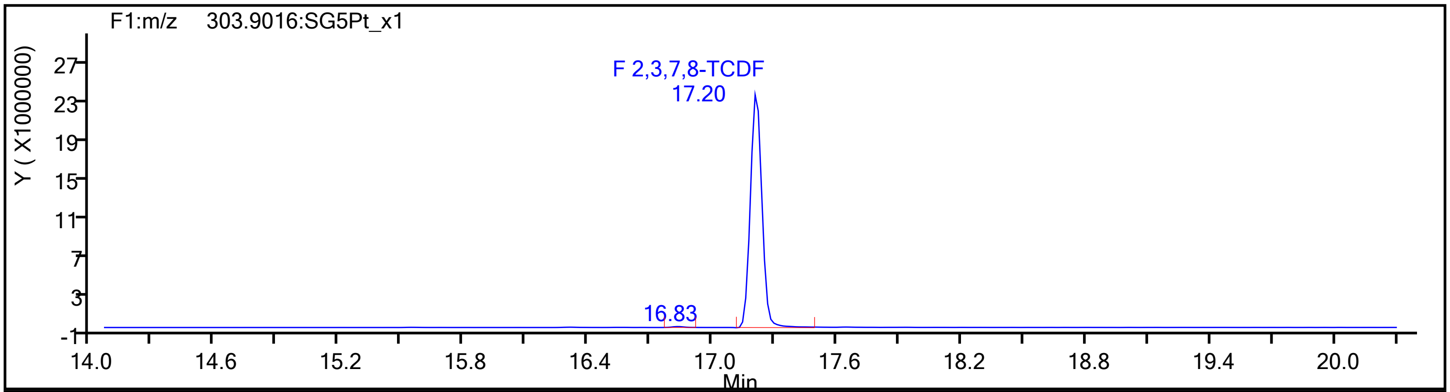

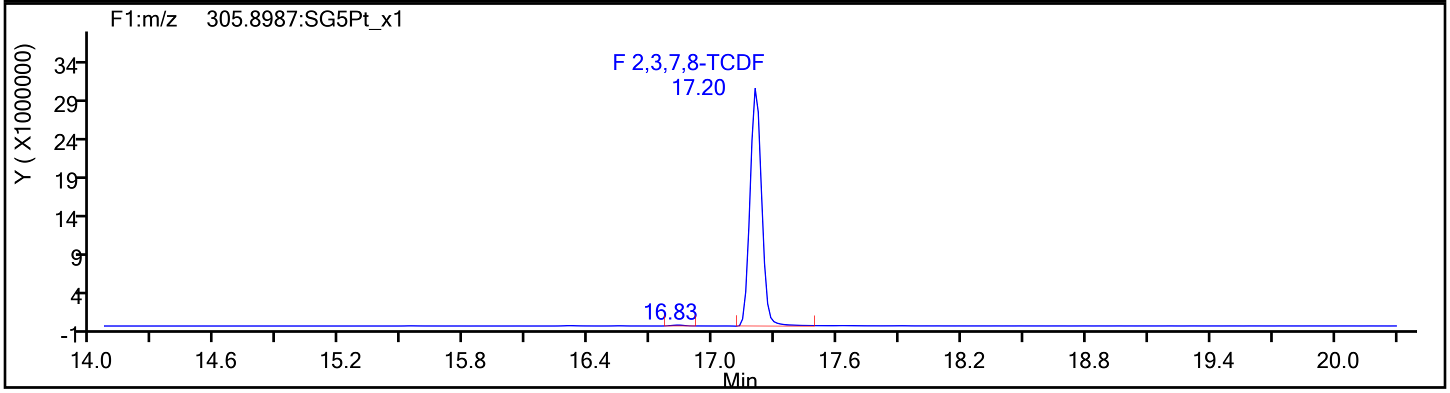

TCDF Standards

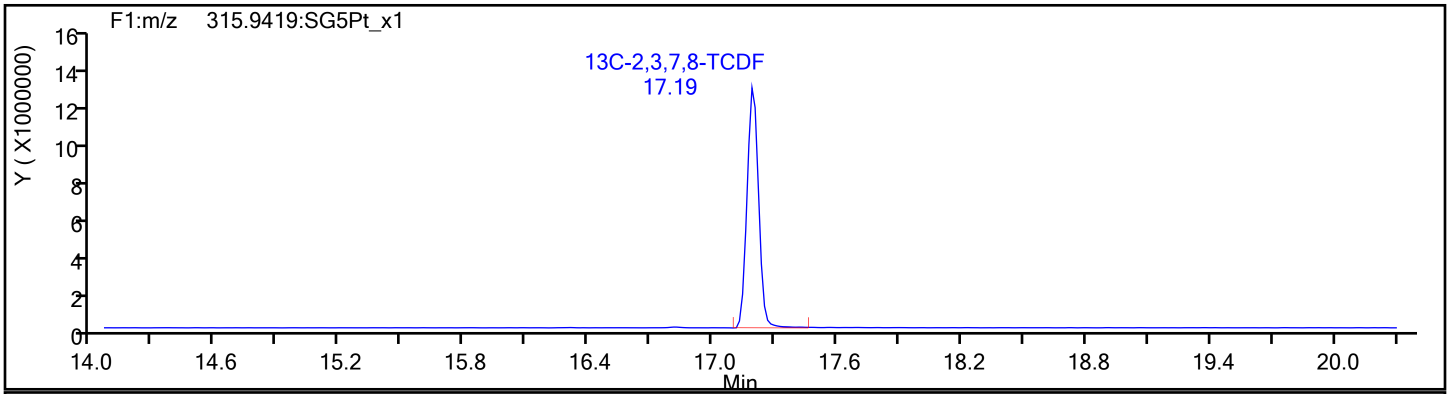

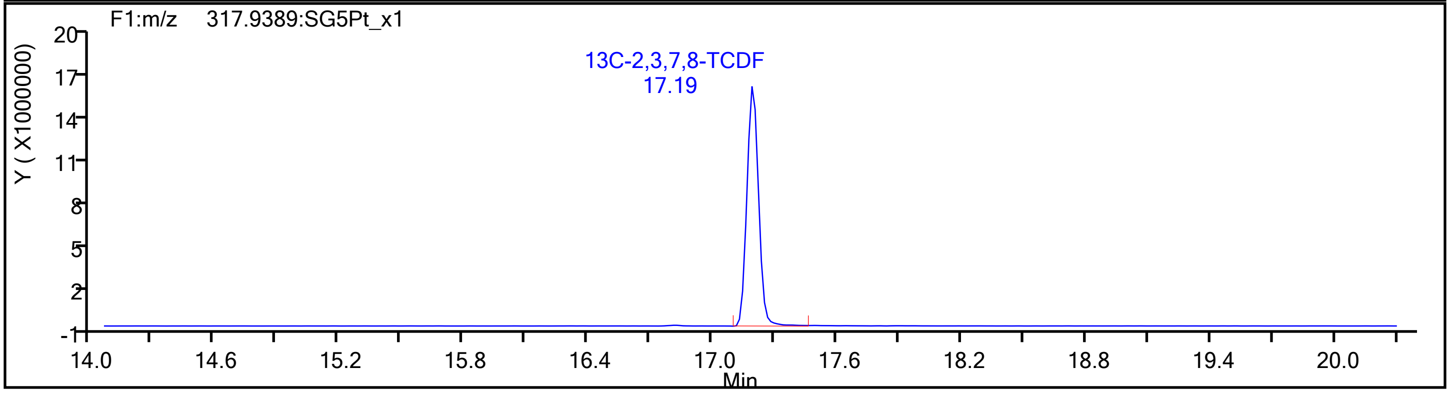

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

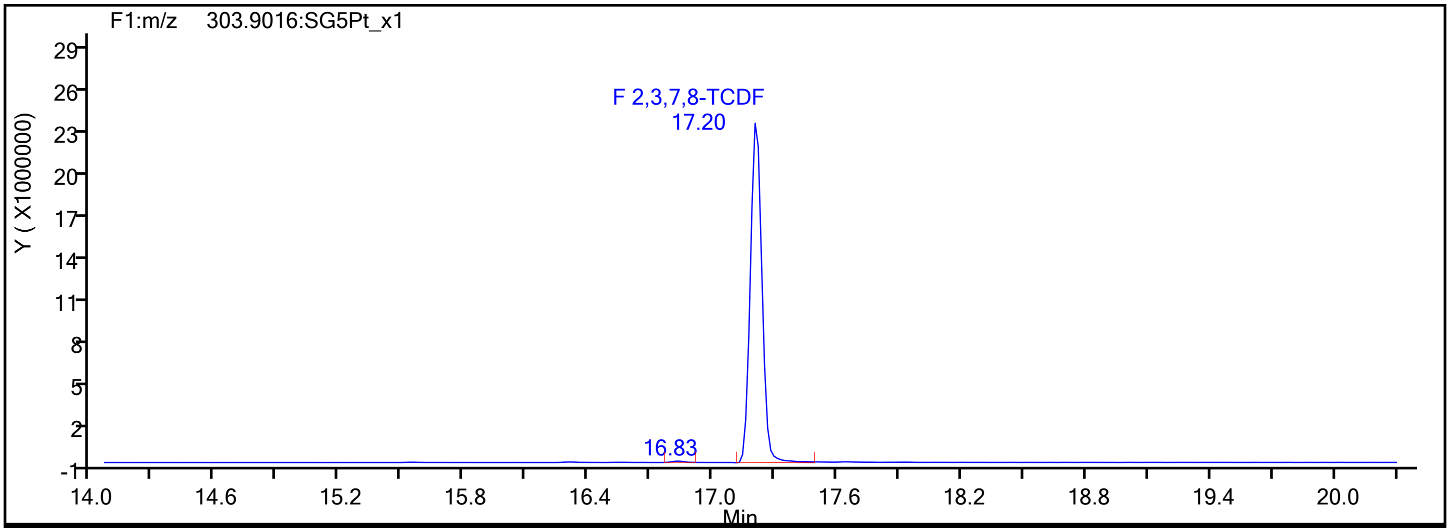

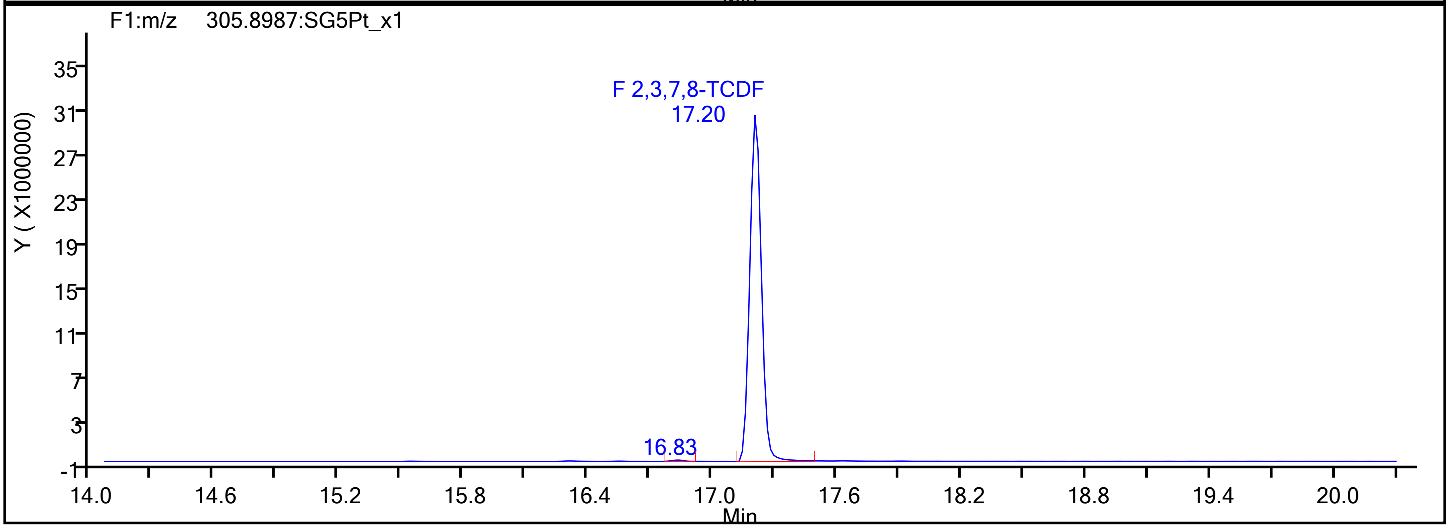

TCDF Interference Mass

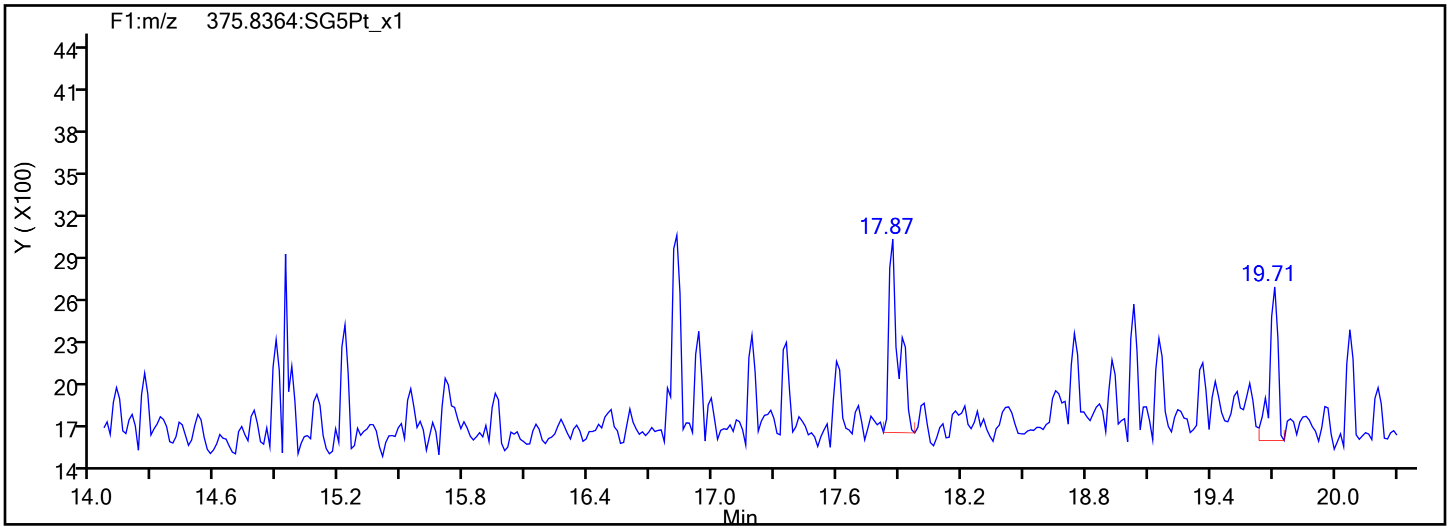

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

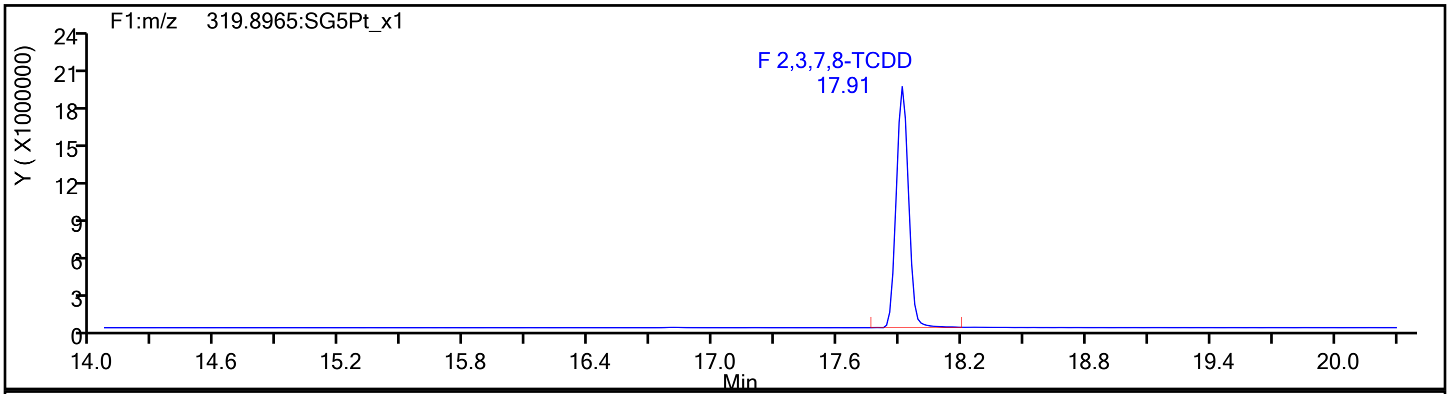

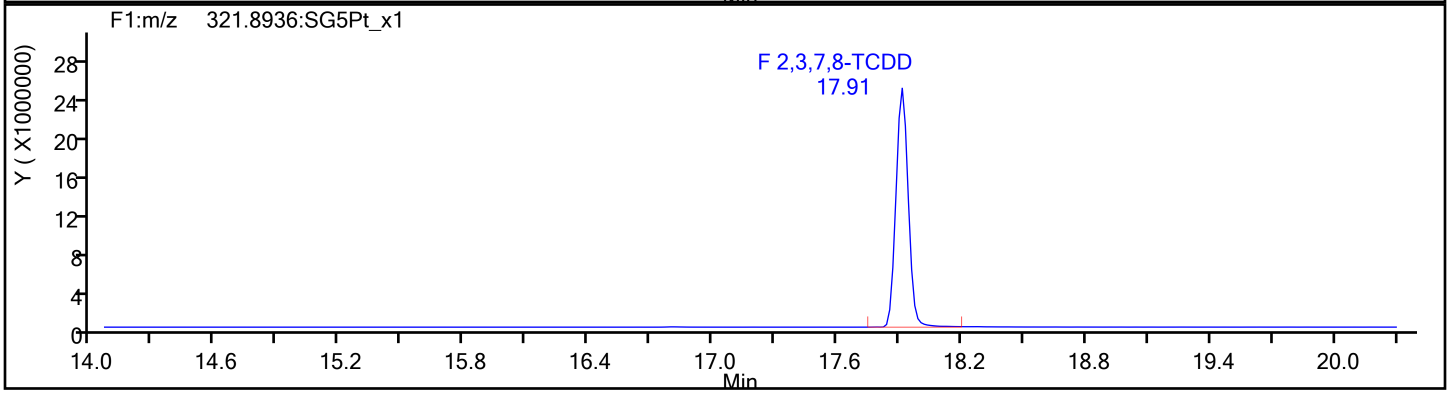

TCDD Standards

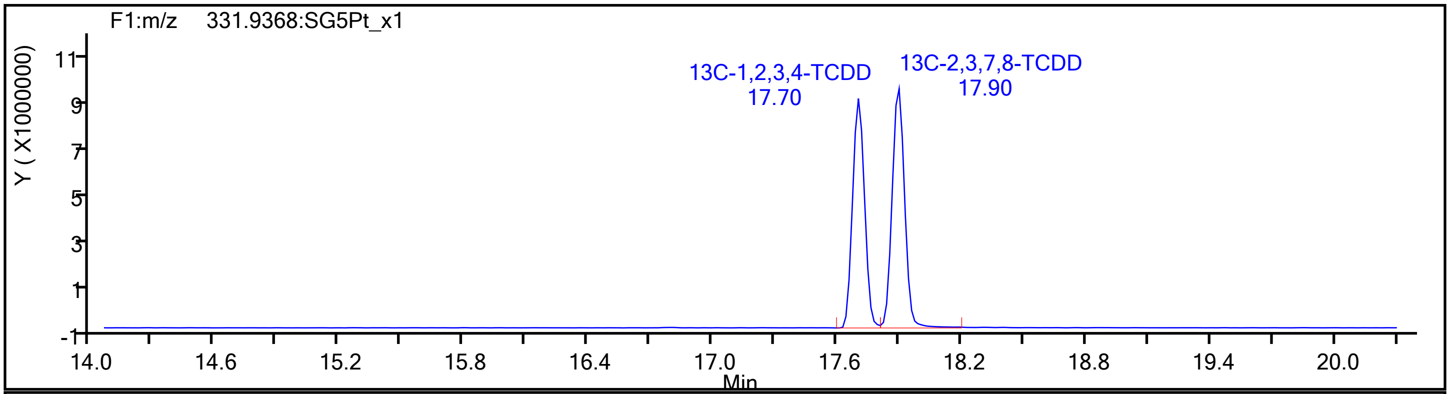

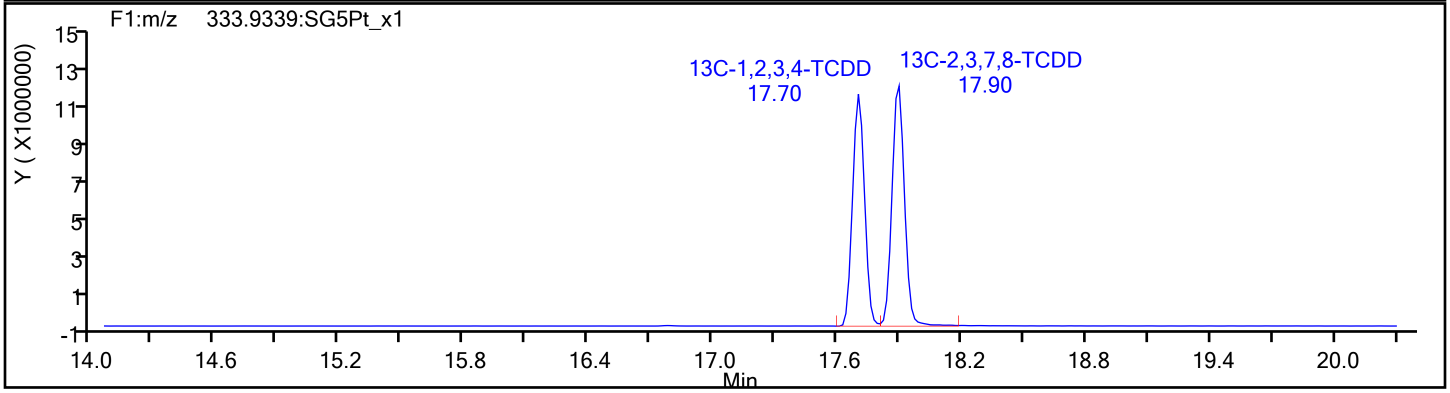

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

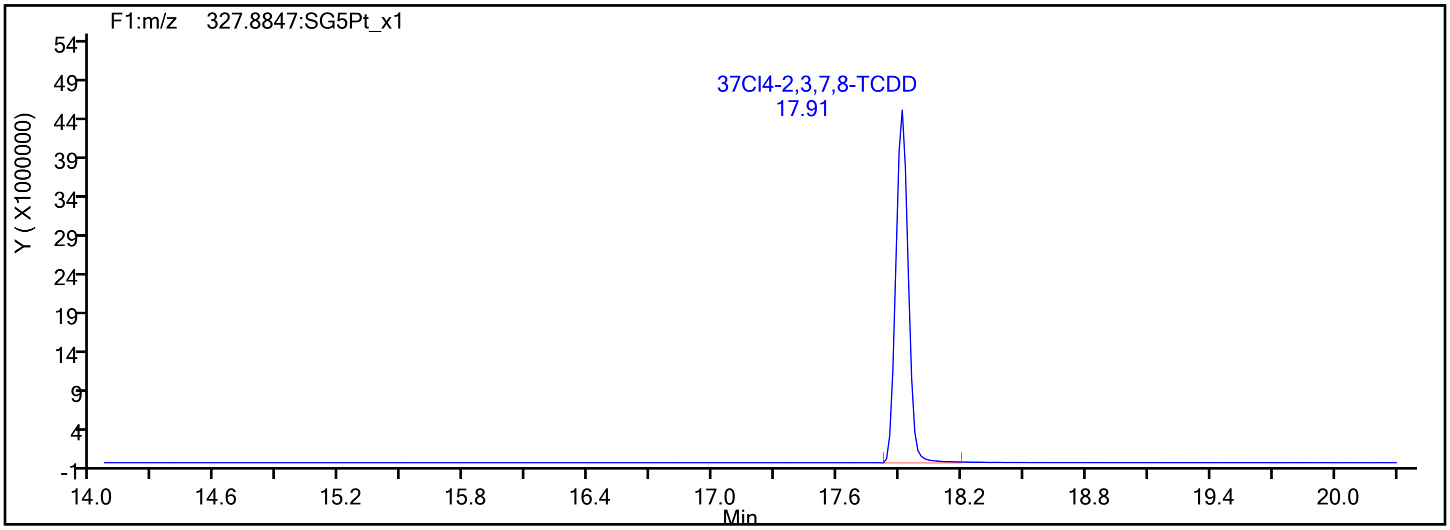

37Cl4-TCDD Standards

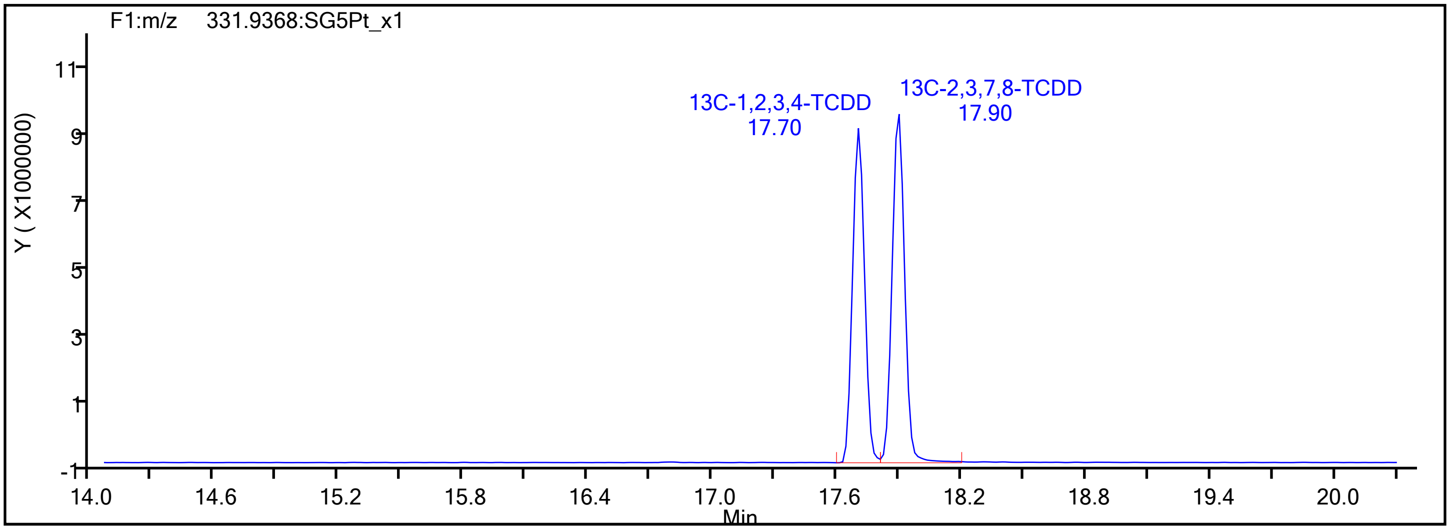

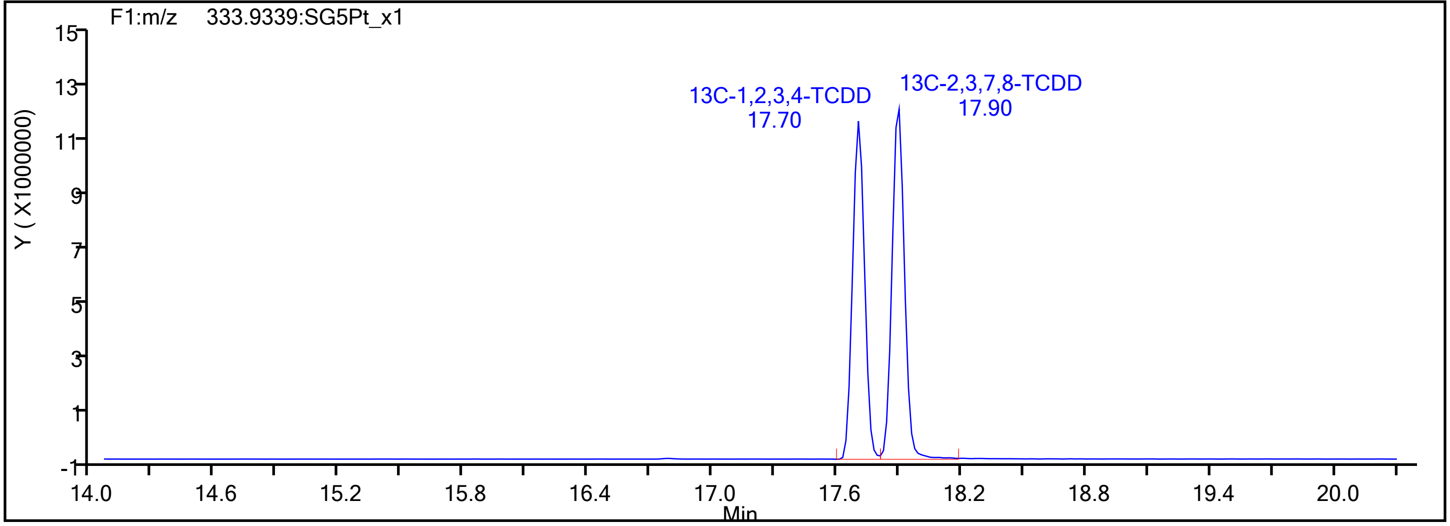

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

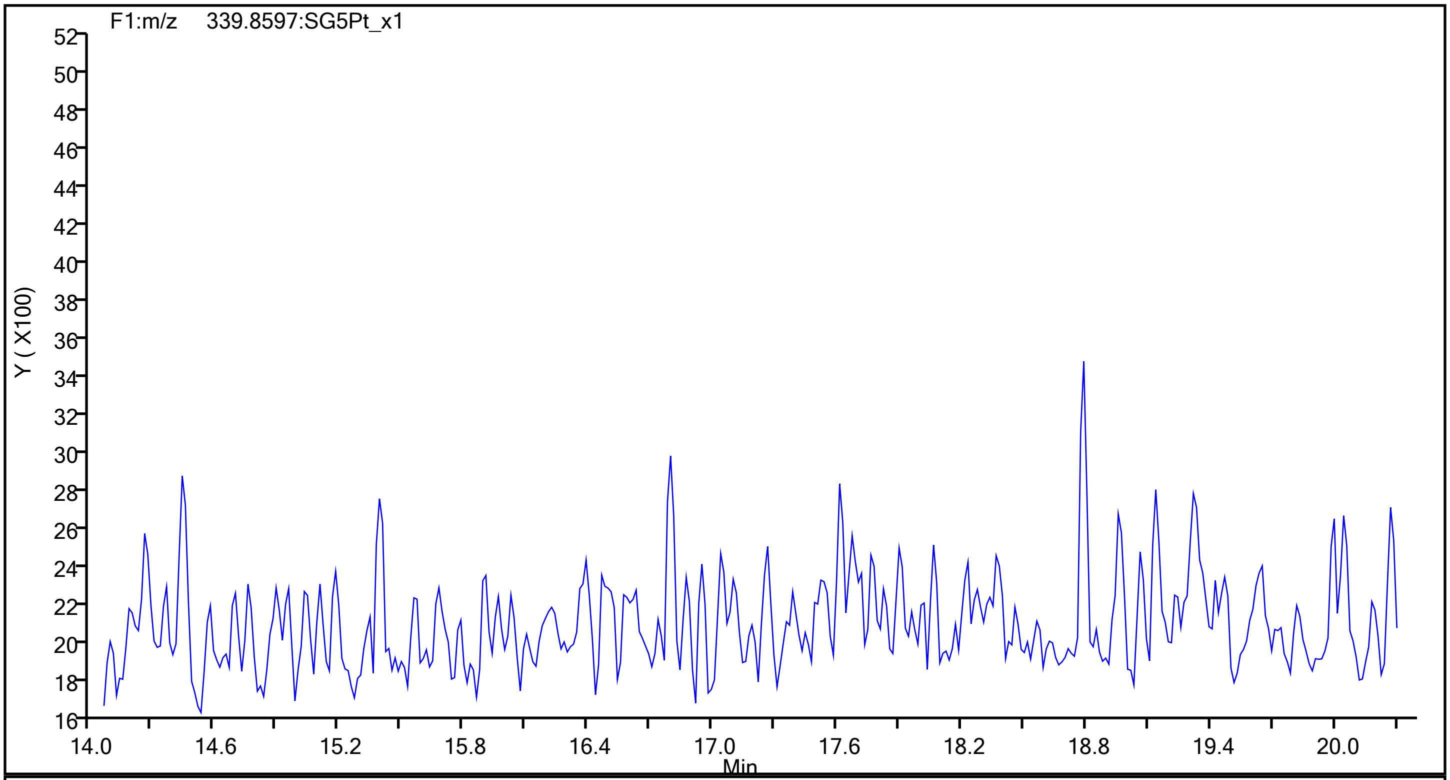

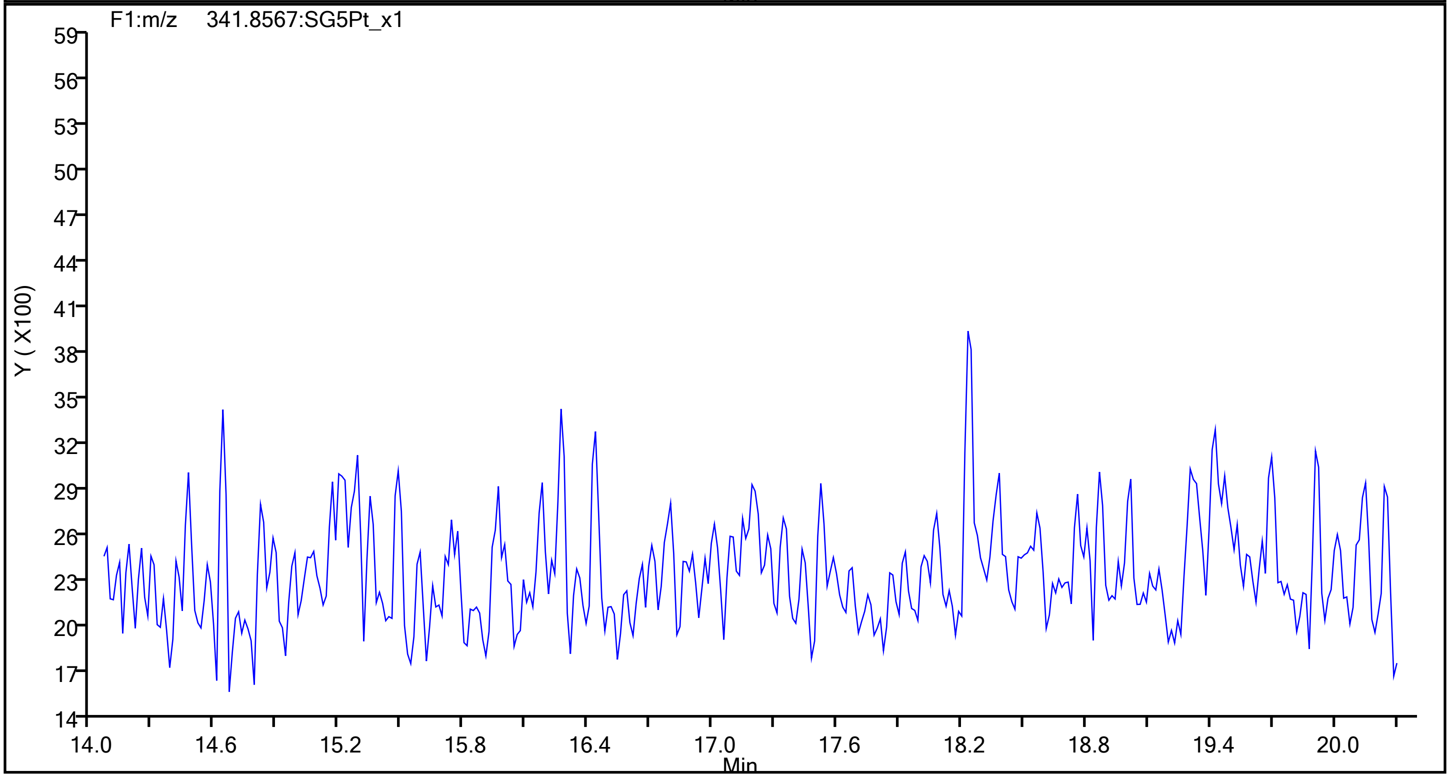

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

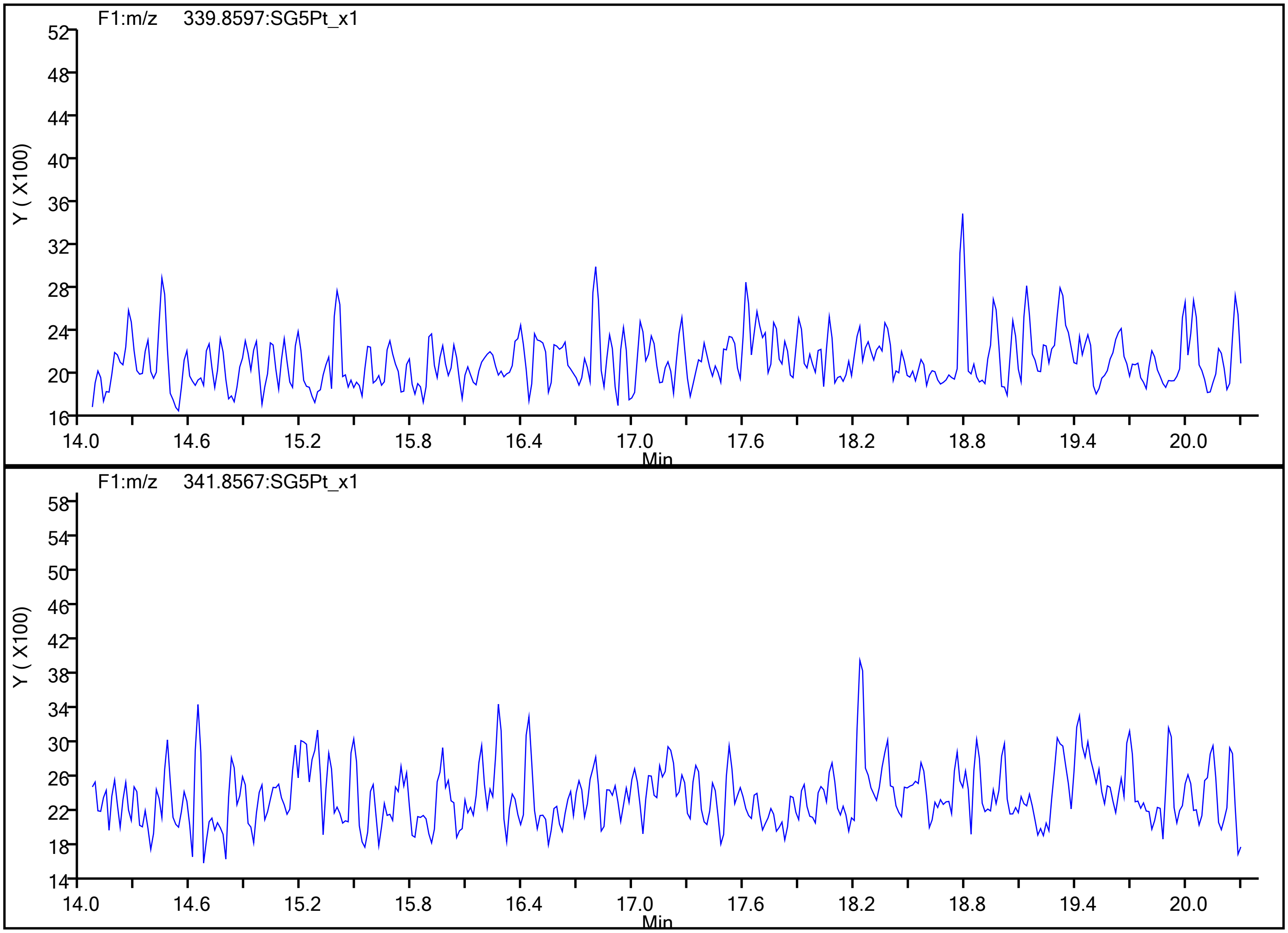

F1 PeCDFs Interference Mass

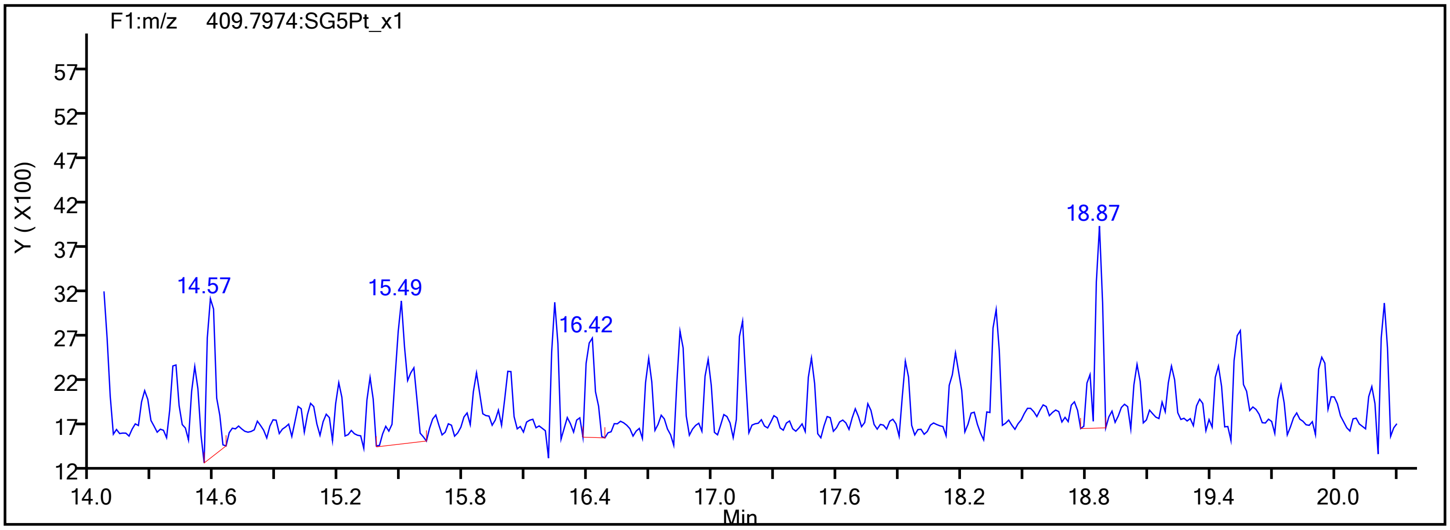

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date: 17-Sep-2020 19:09:42

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

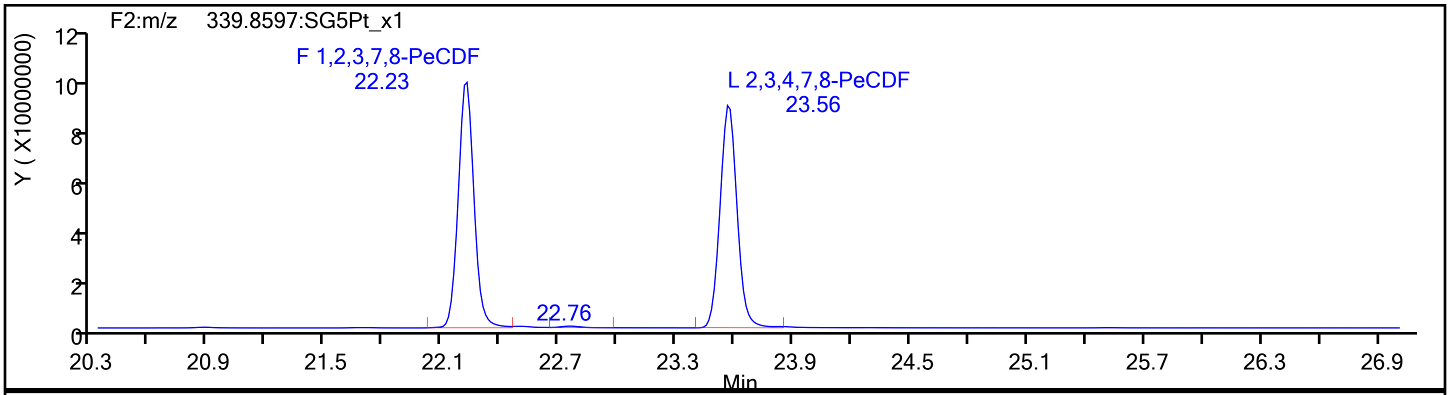

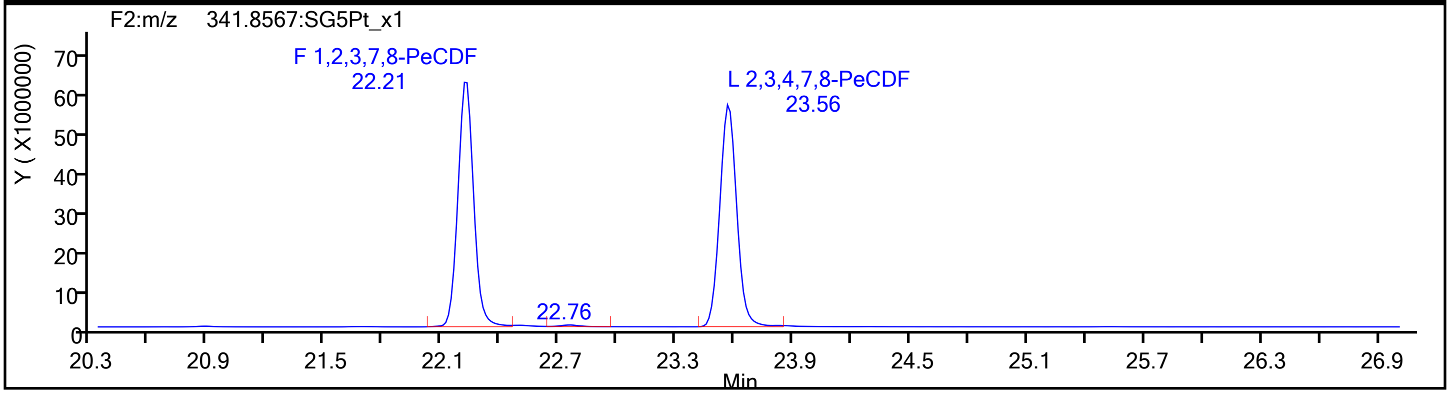

PeCDF Standards

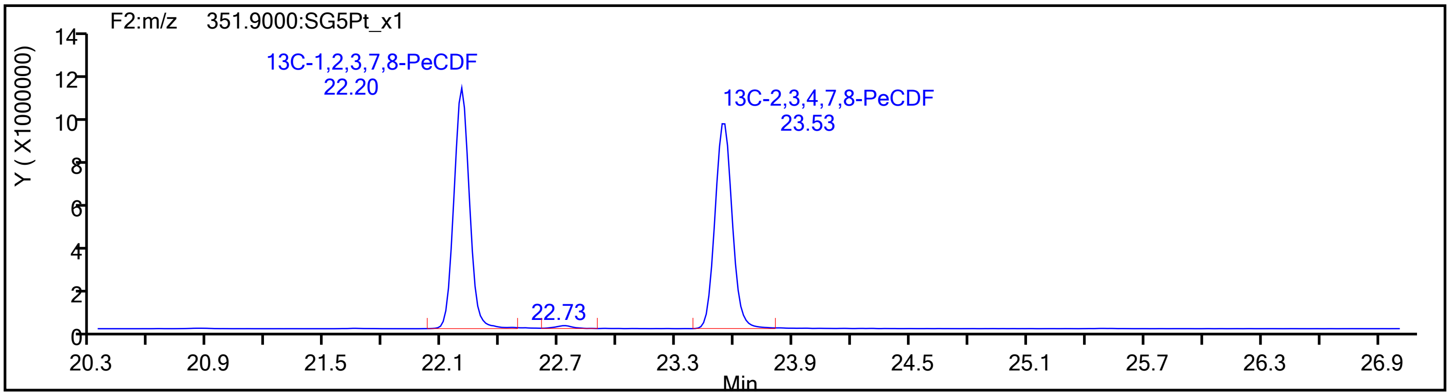

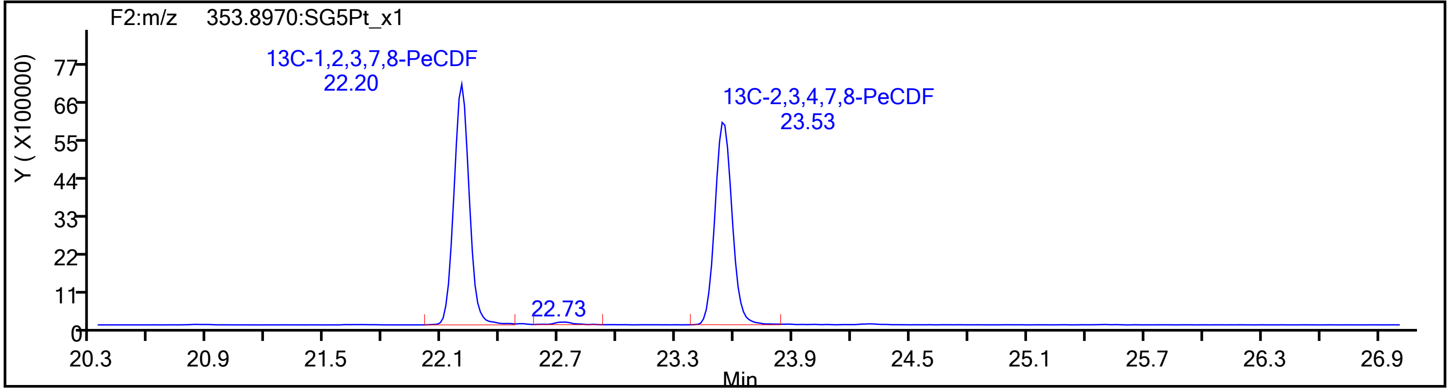

Report Date: 18-Sep-2020 10:36:16		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

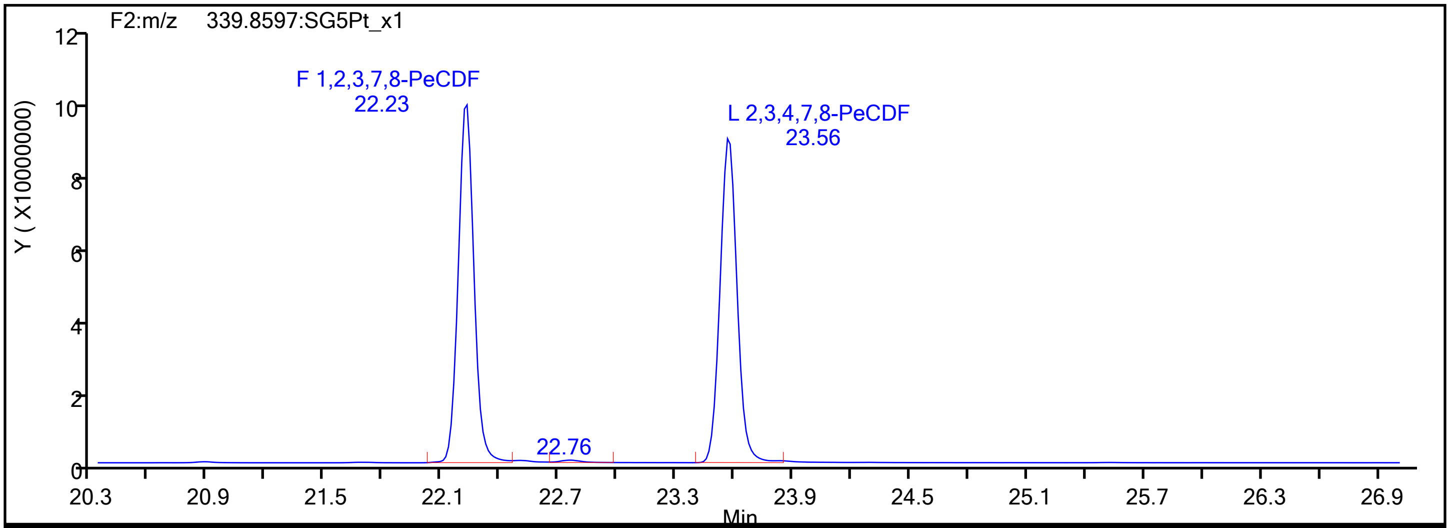

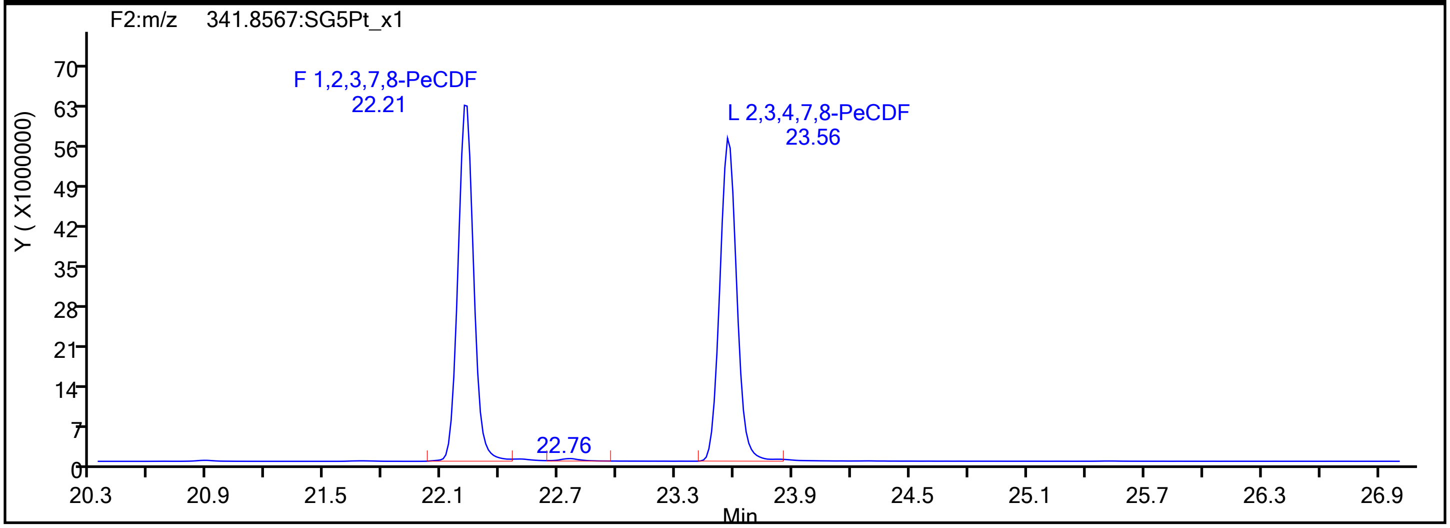

PeCDF Interference Mass

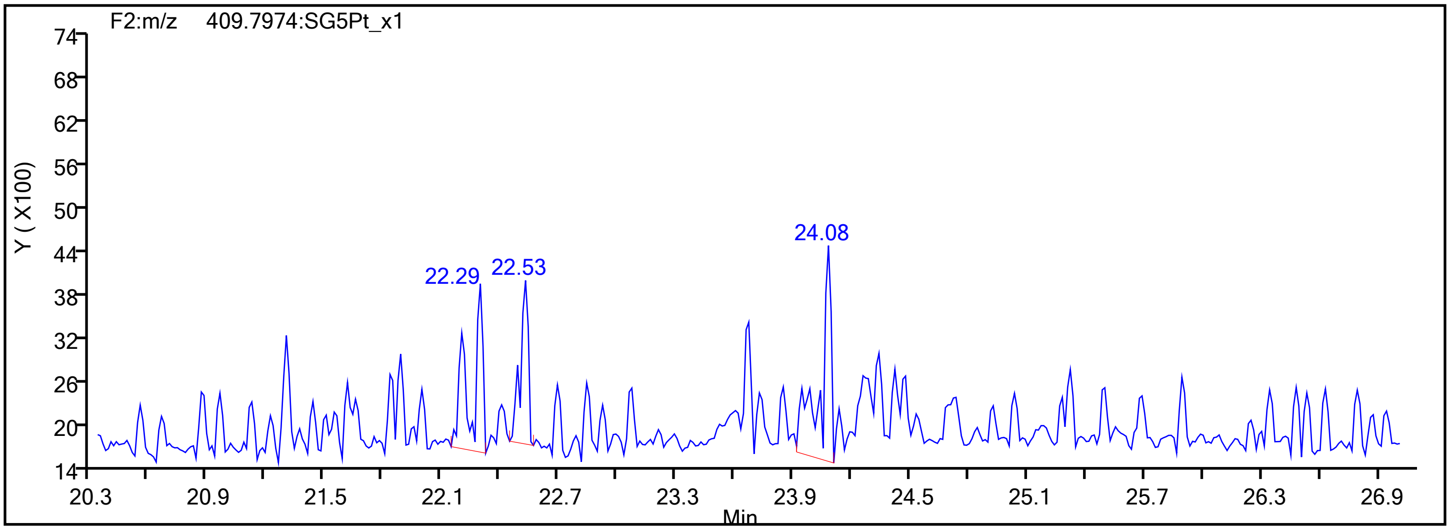

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

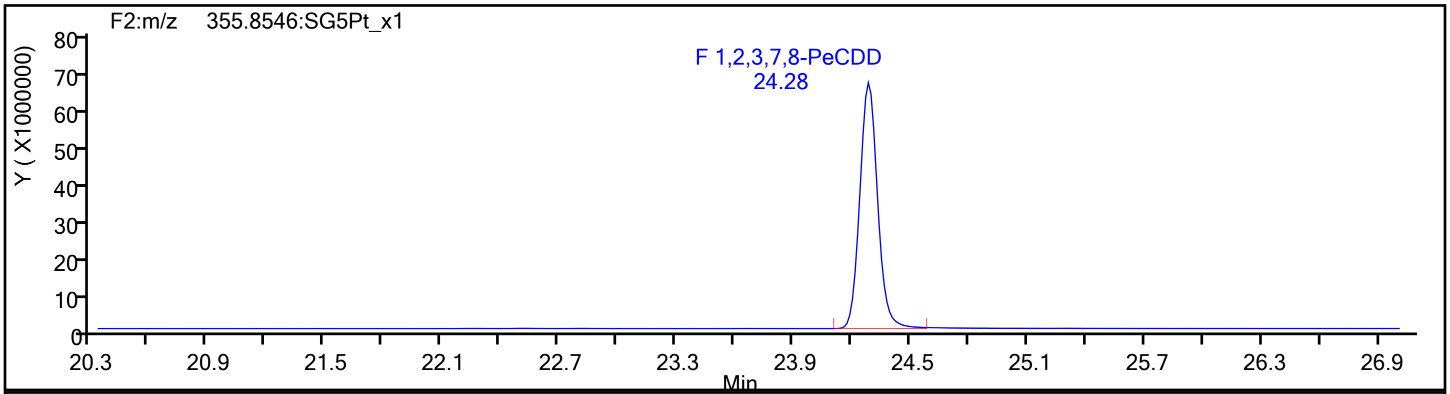

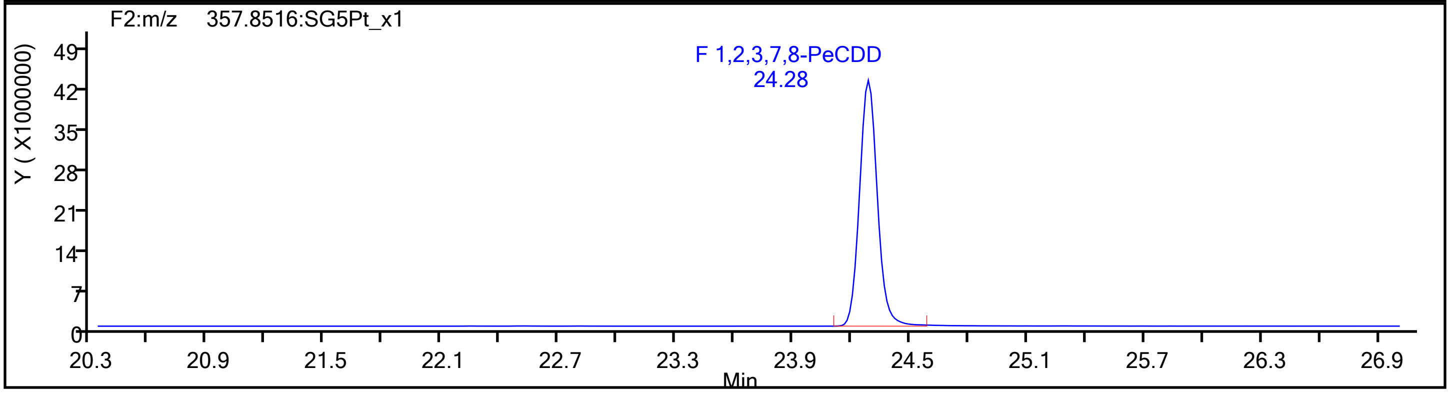

PeCDD Standards

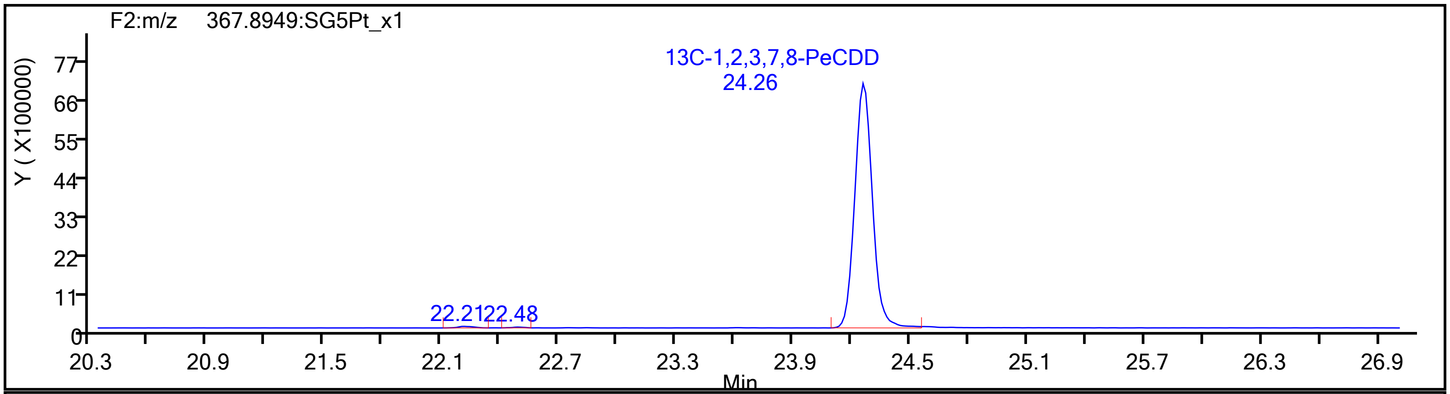

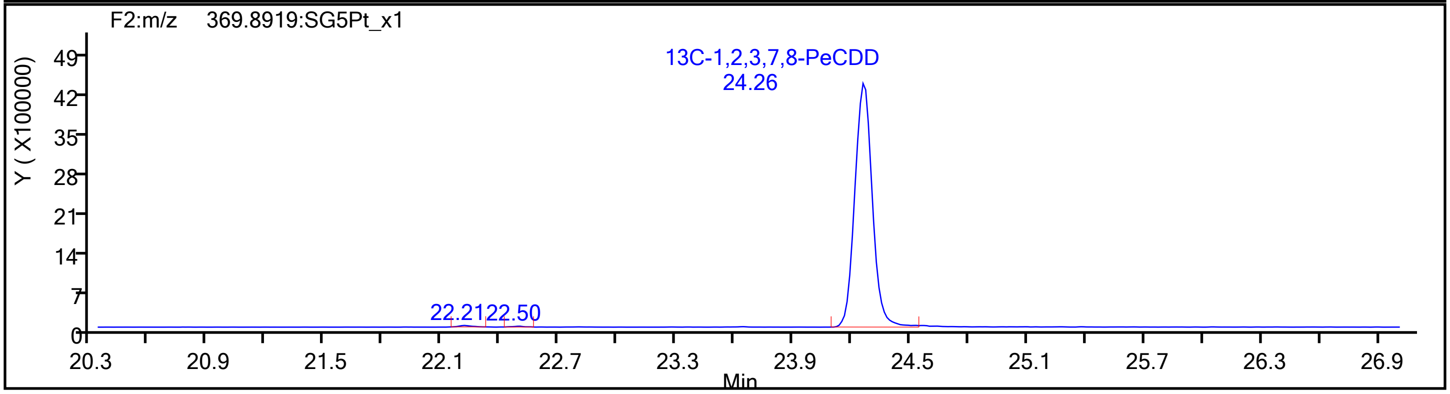

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 19:09:42 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

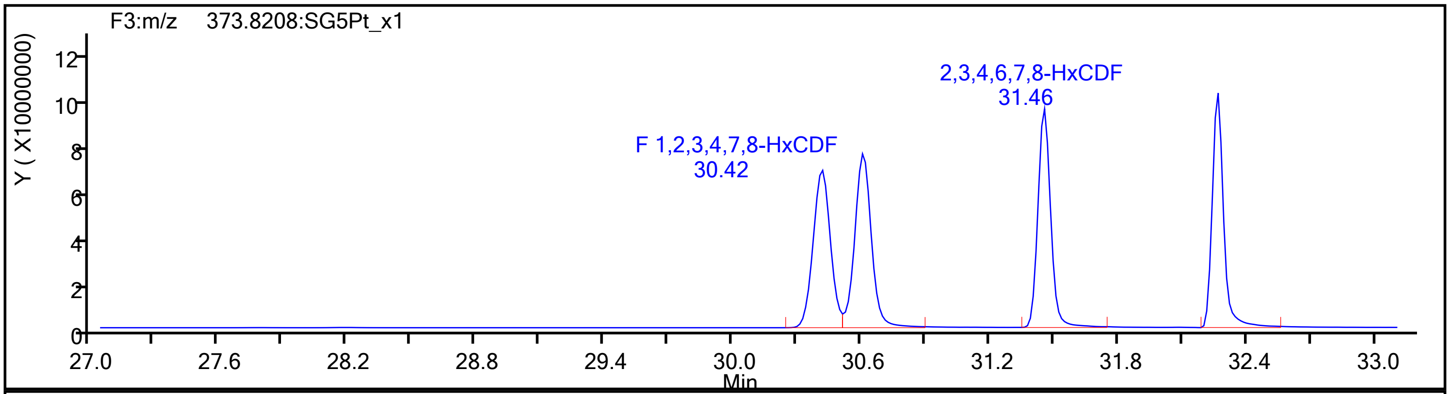

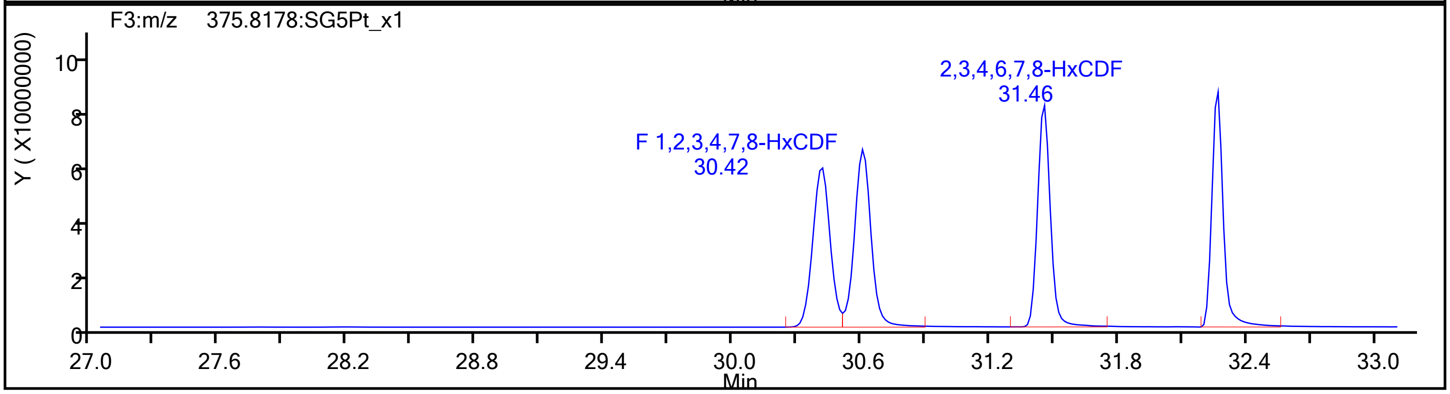

HxCDF Standards

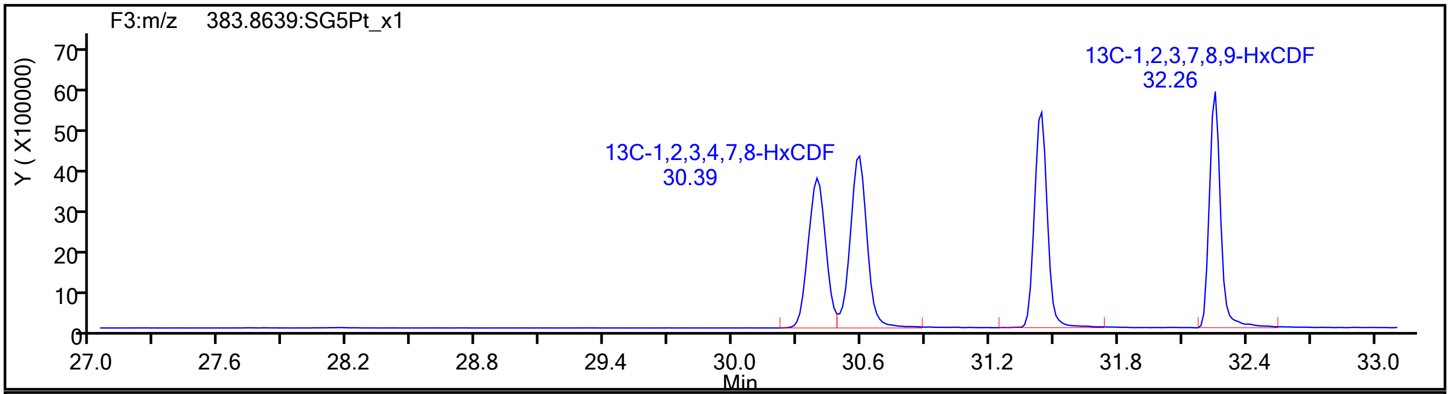

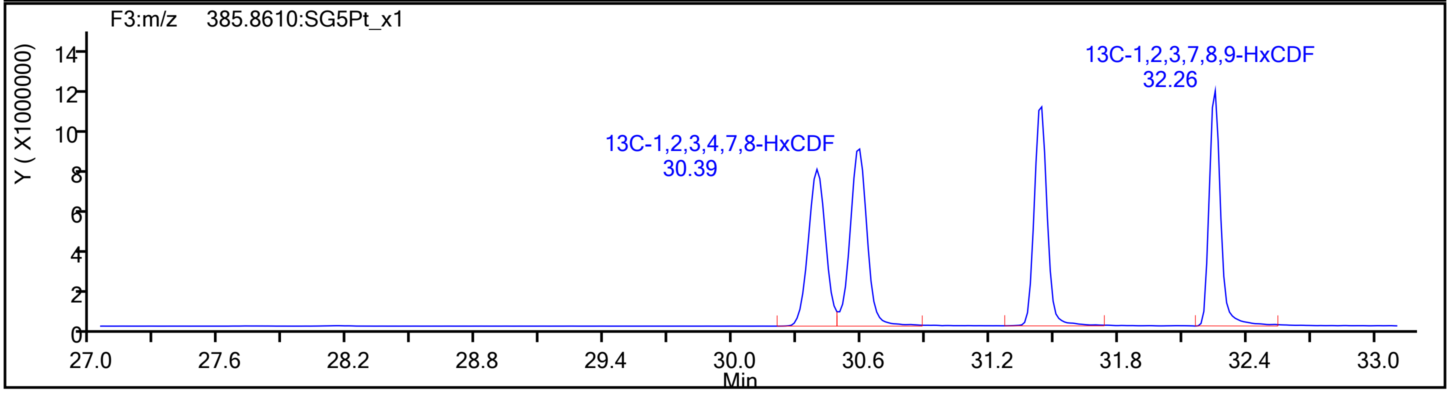

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

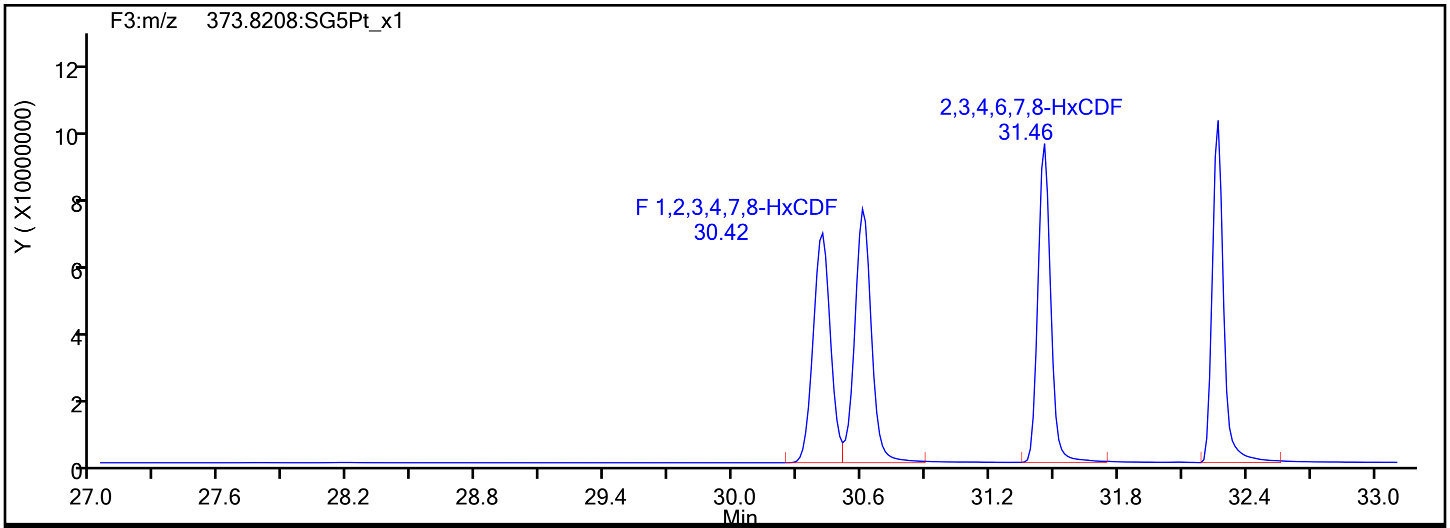

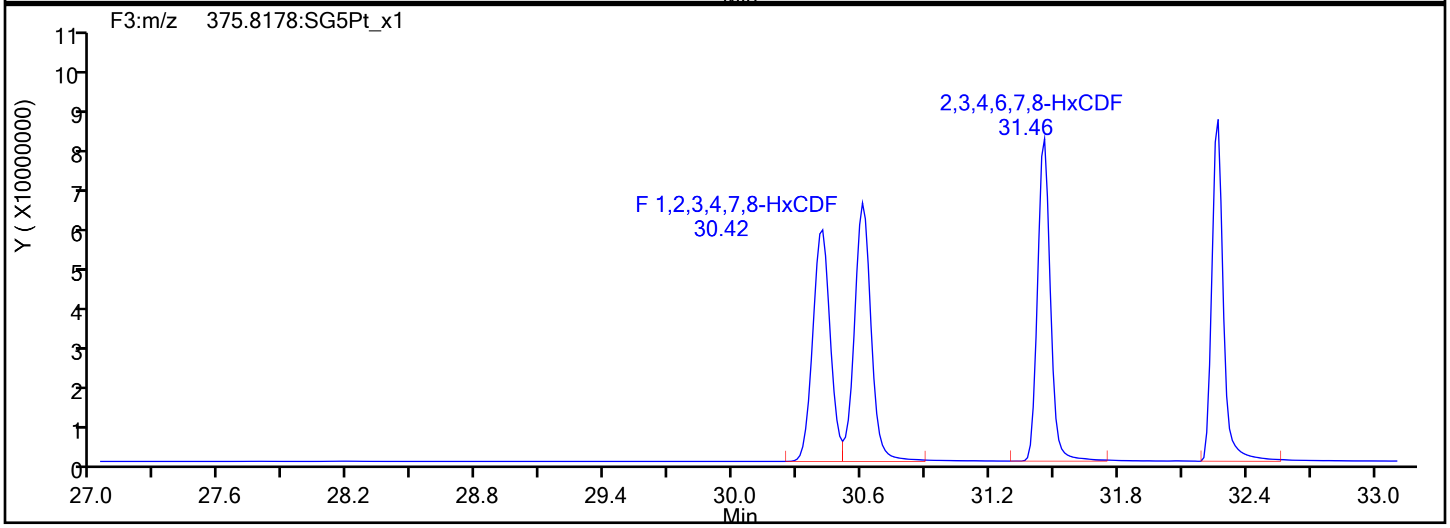

HxCDF Interference Mass

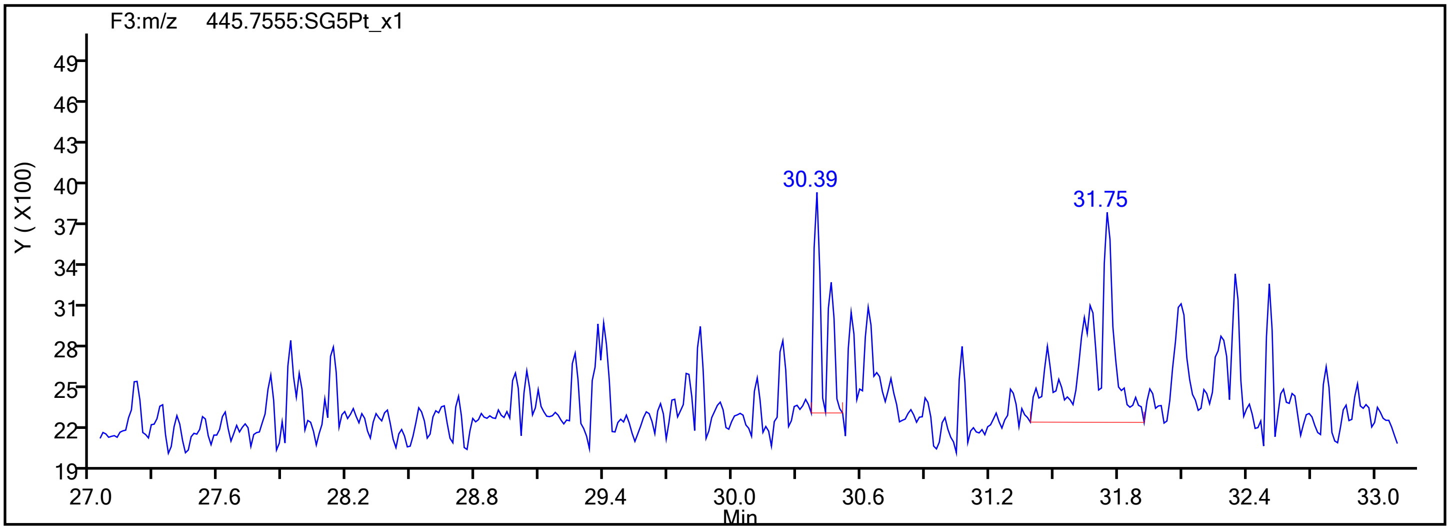

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

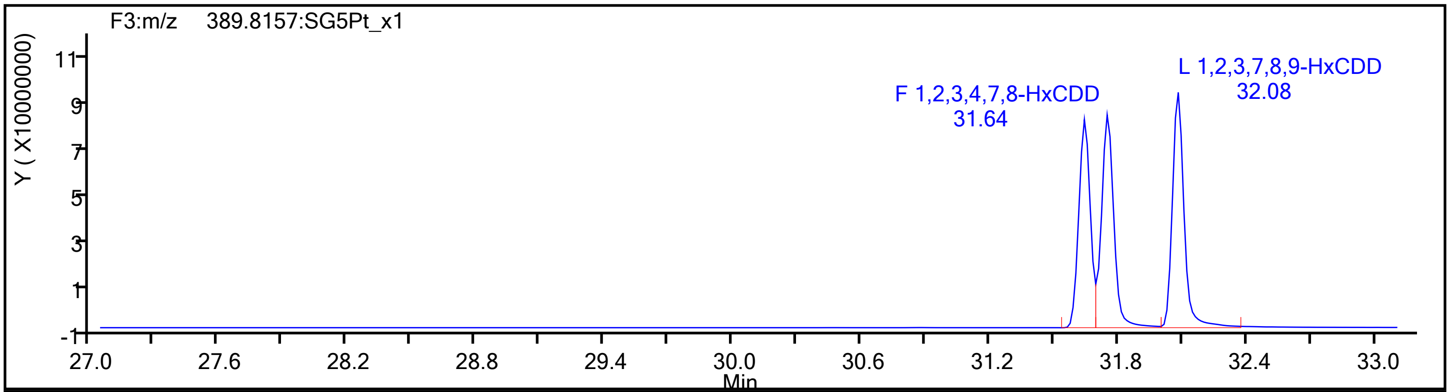

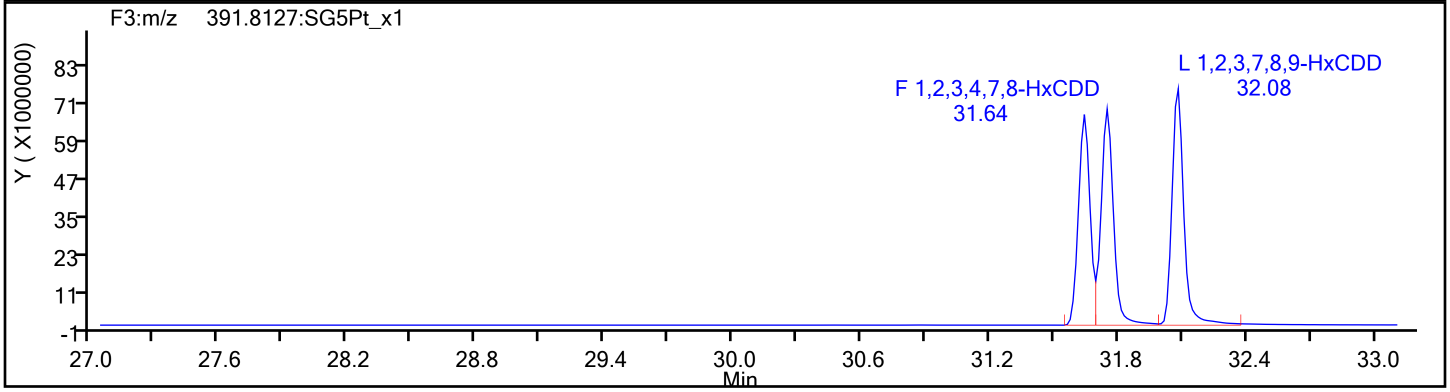

HxCDD Standards

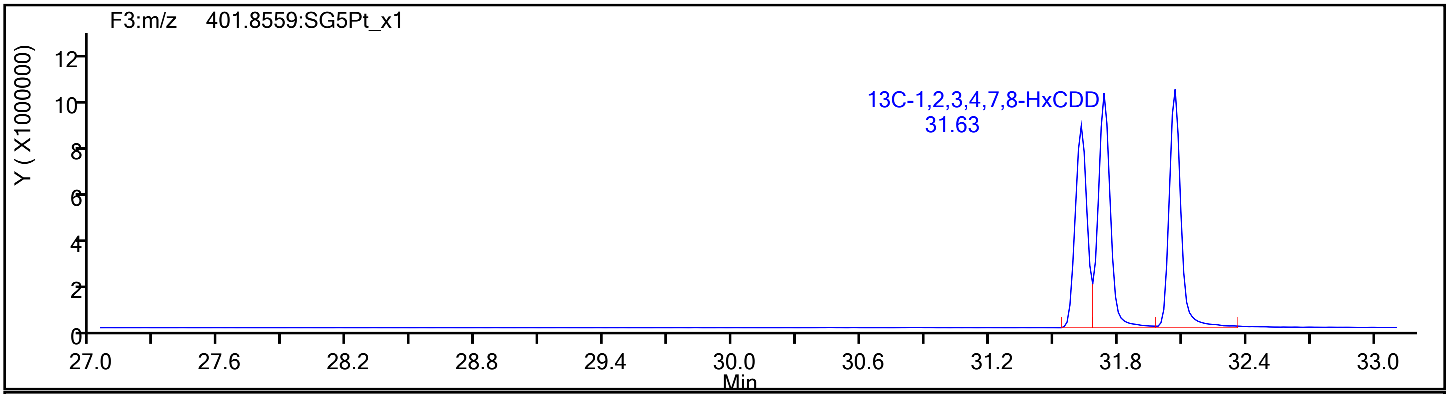

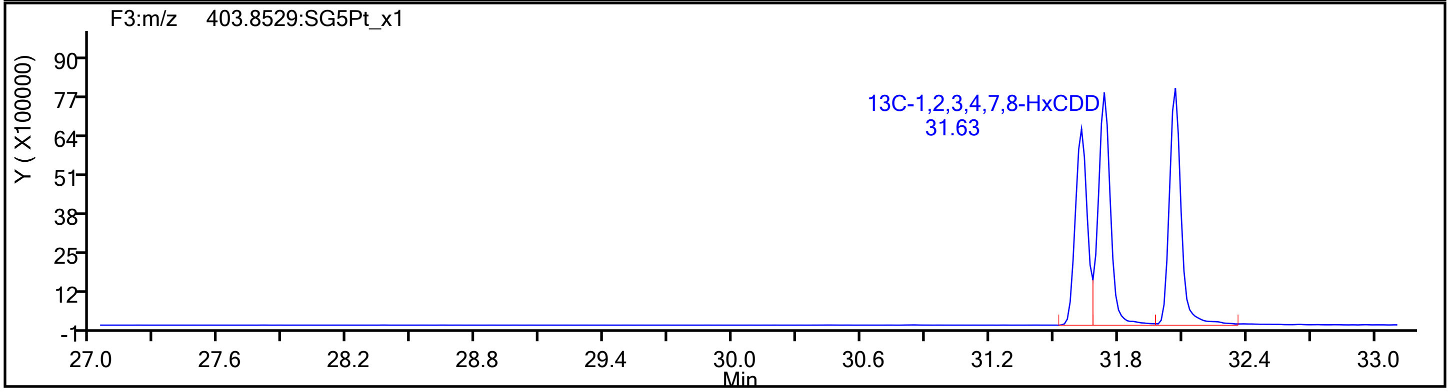

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Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

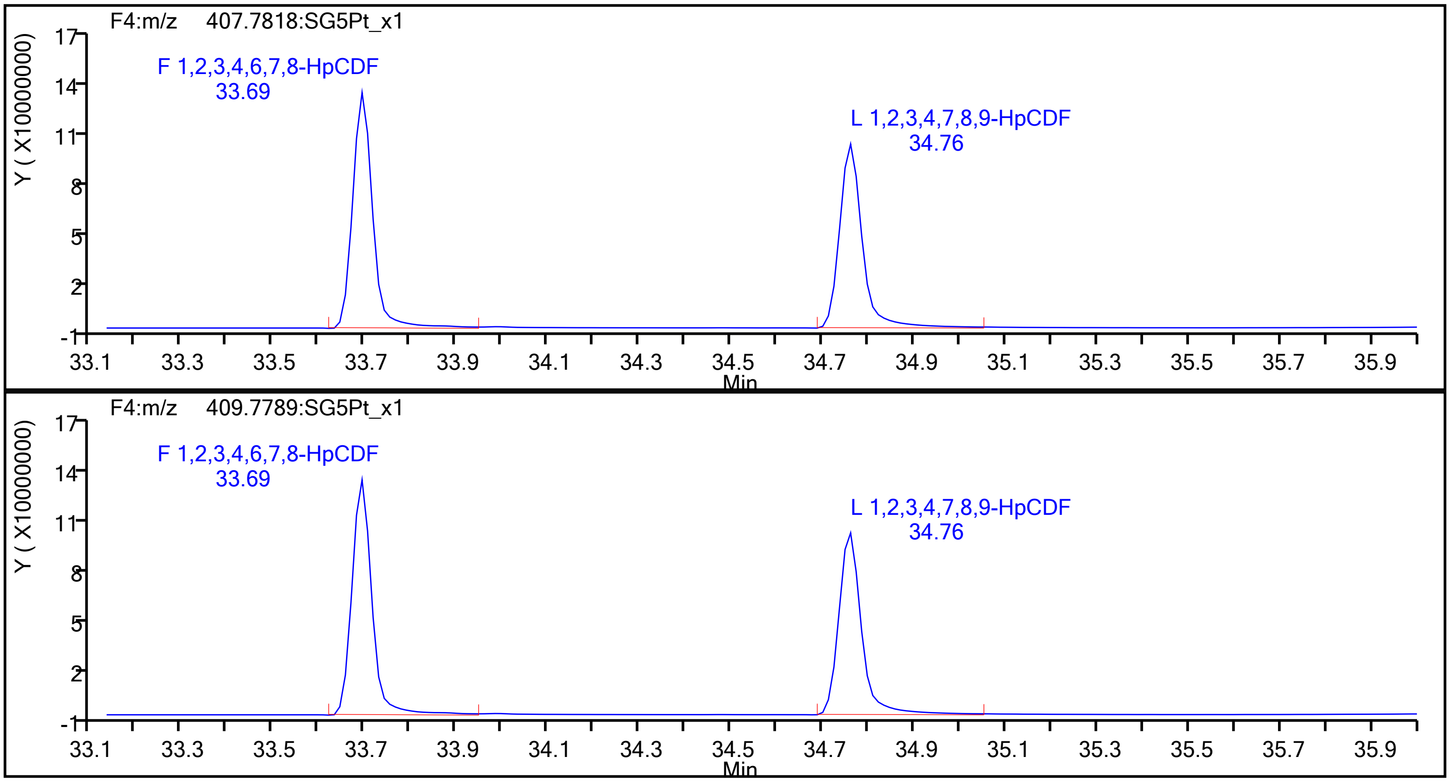

HpCDF Standards

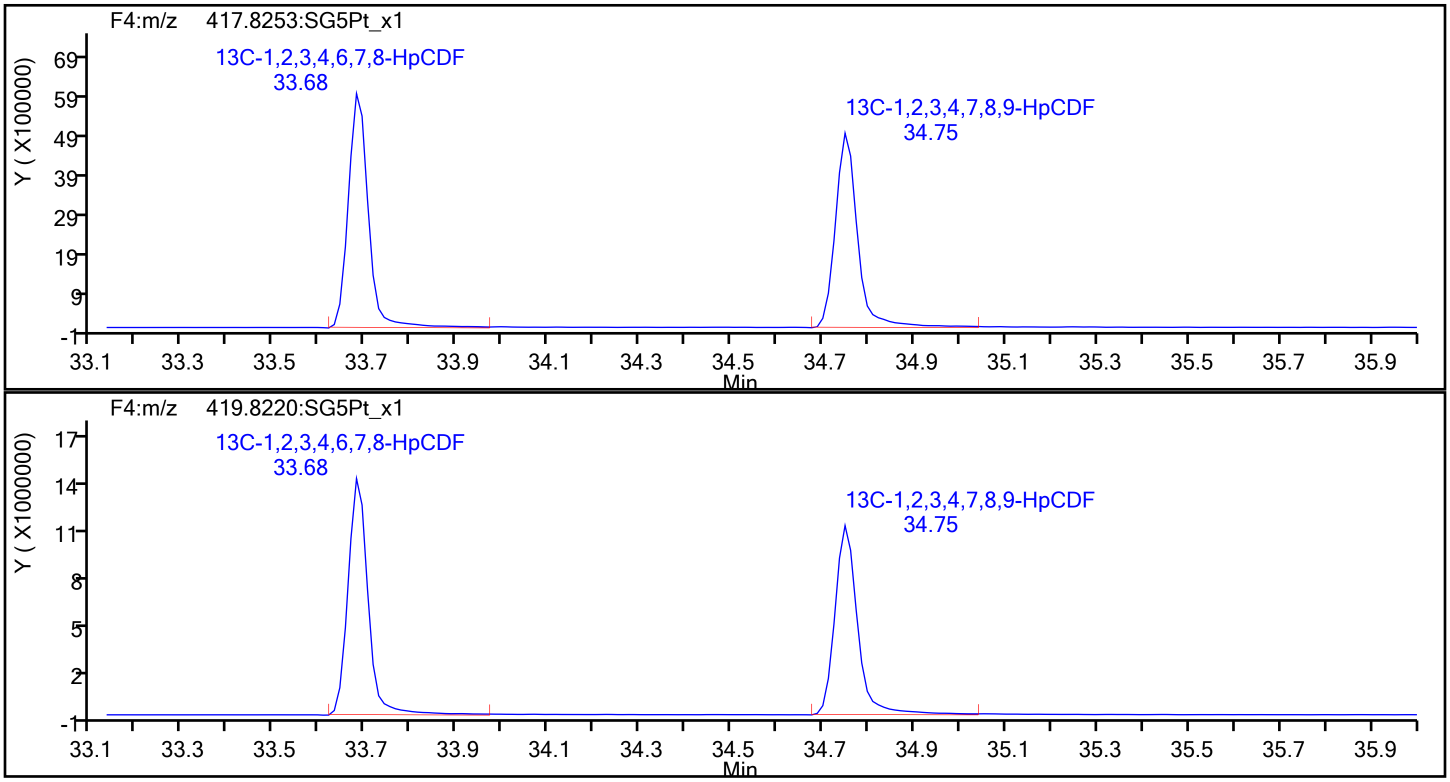

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

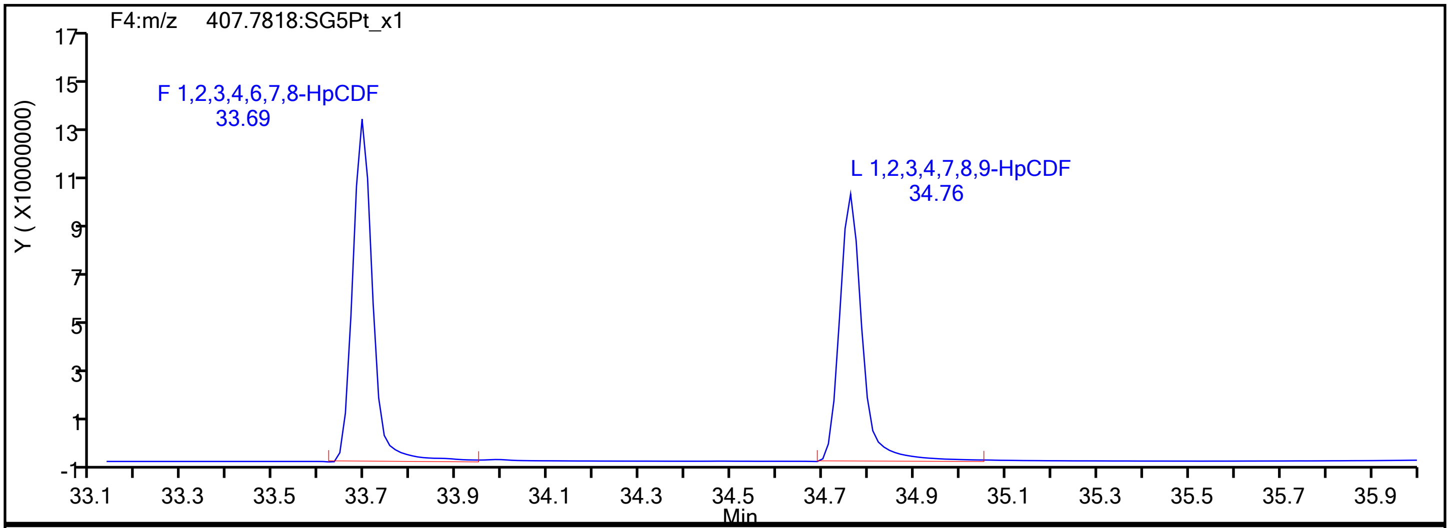

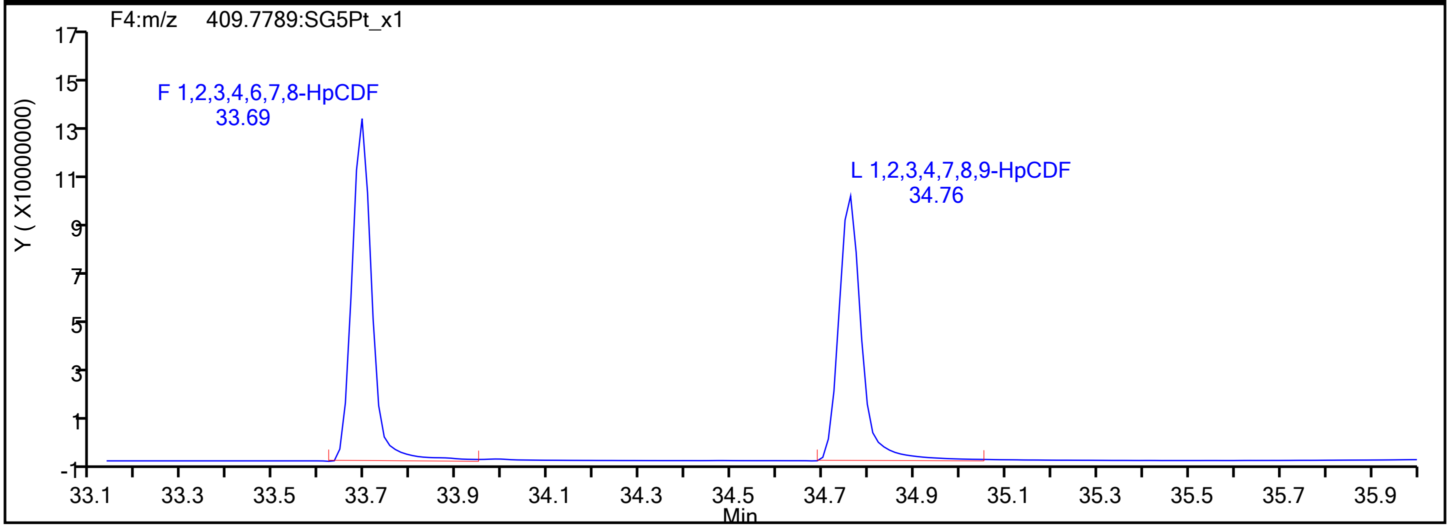

HpCDF Interference Mass

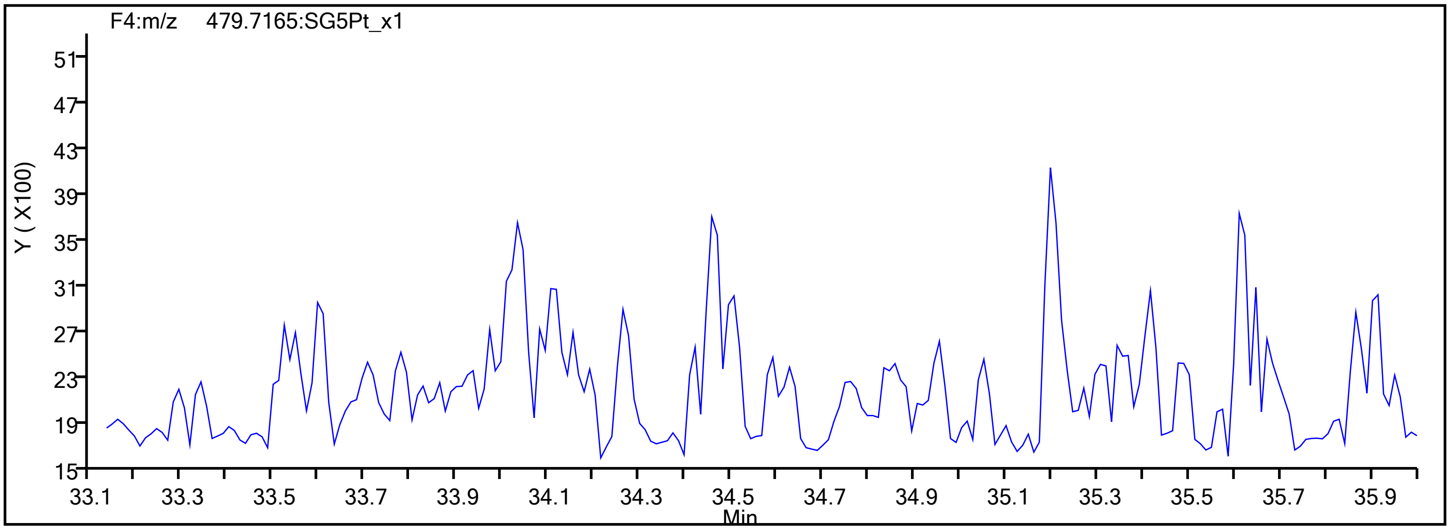

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

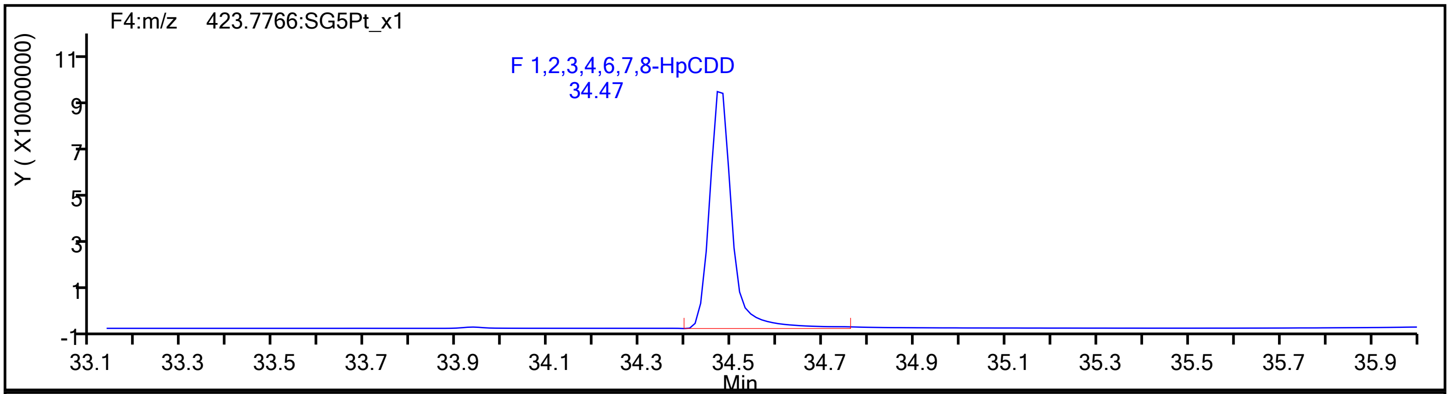

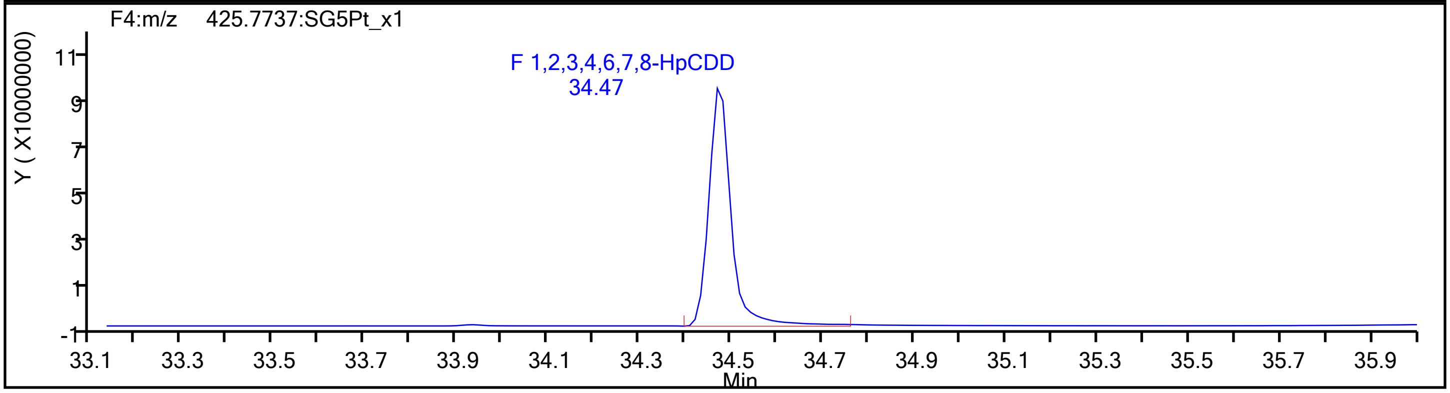

HpCDD Standards

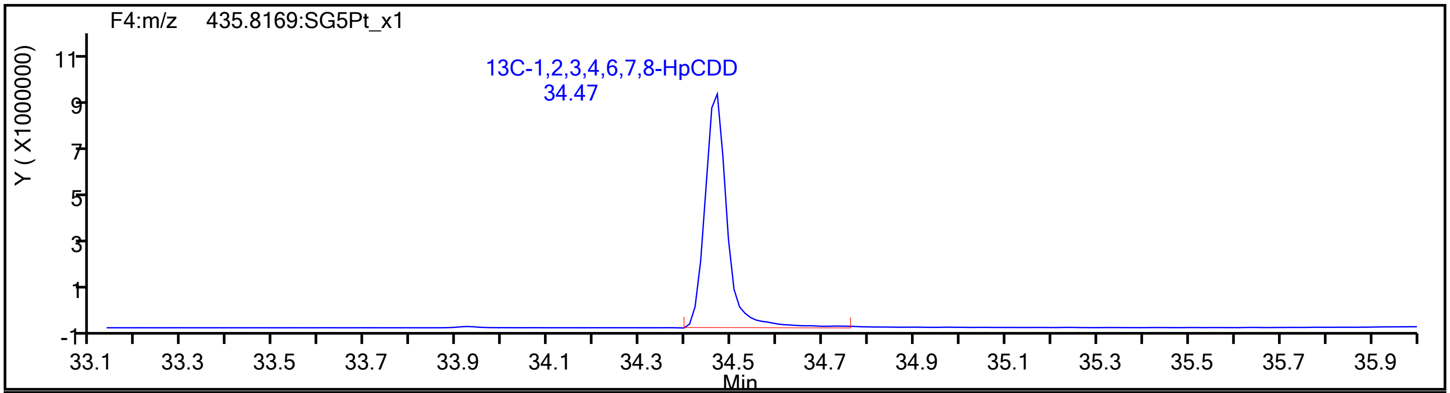

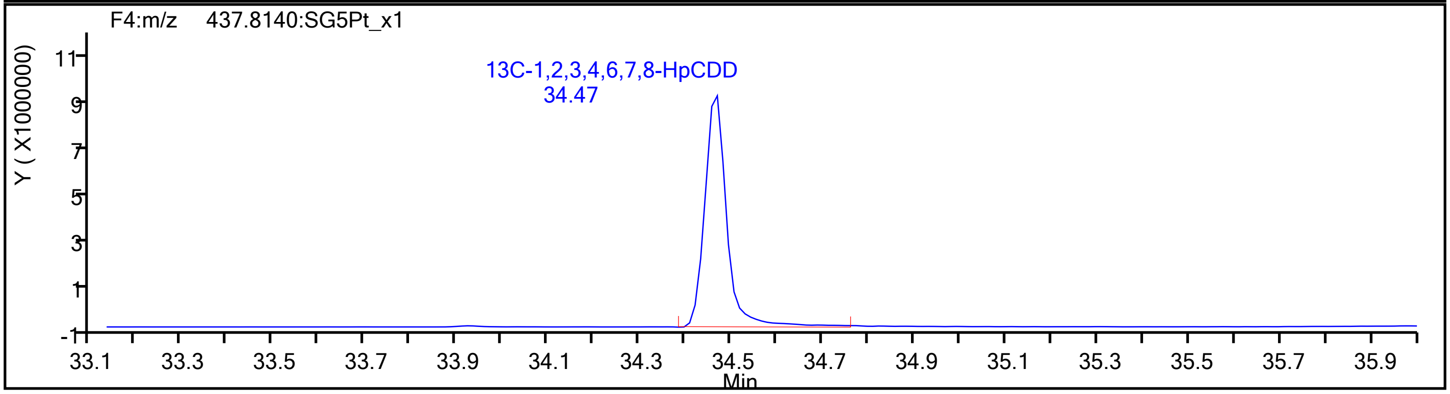

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 19:09:42
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

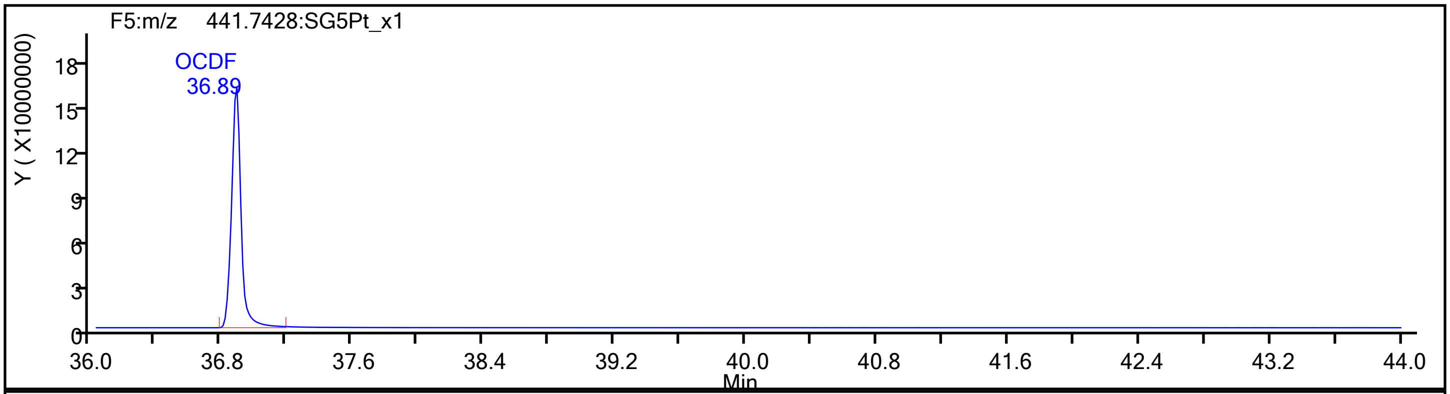

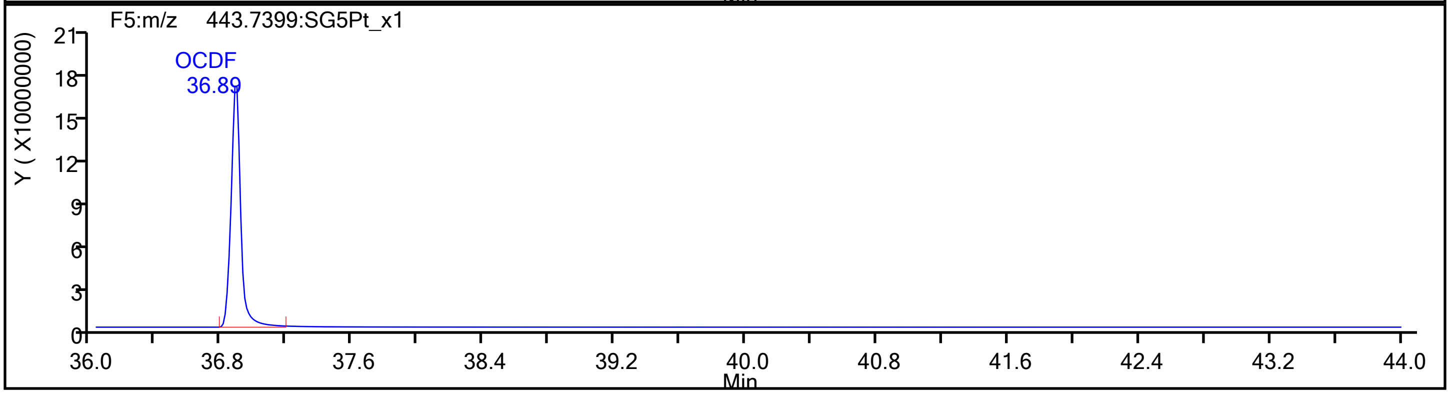

OCDF Standards

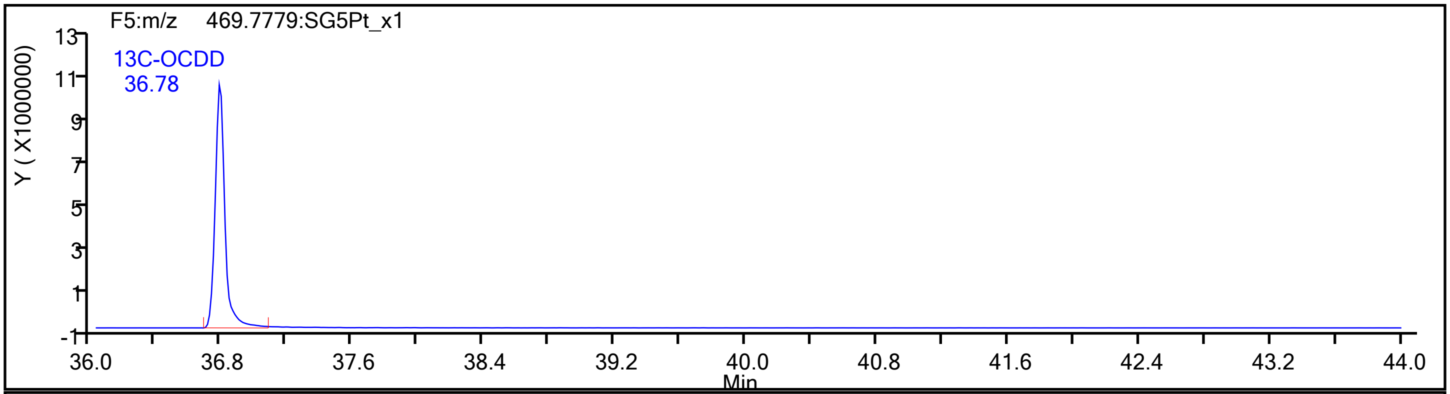

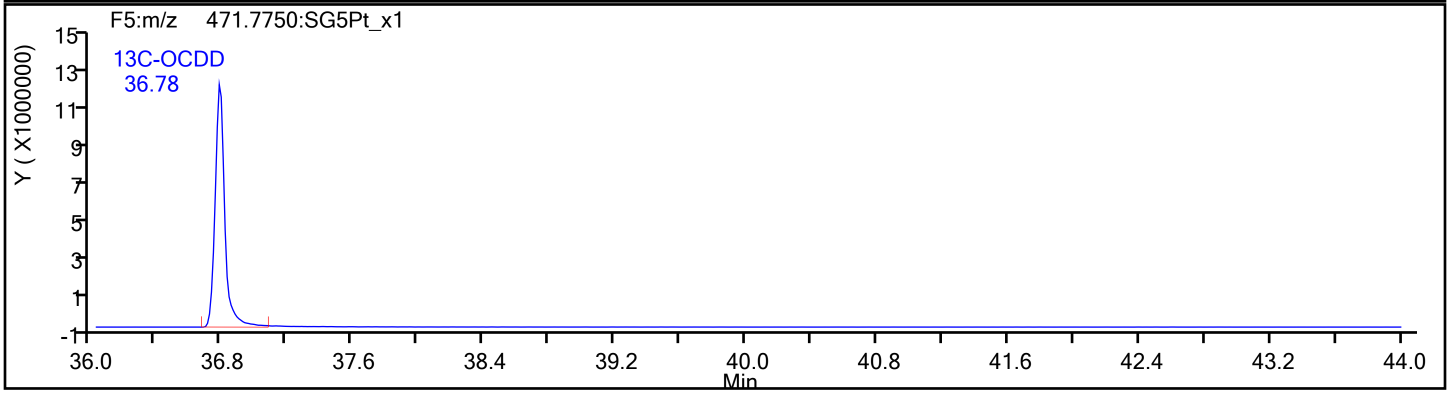

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

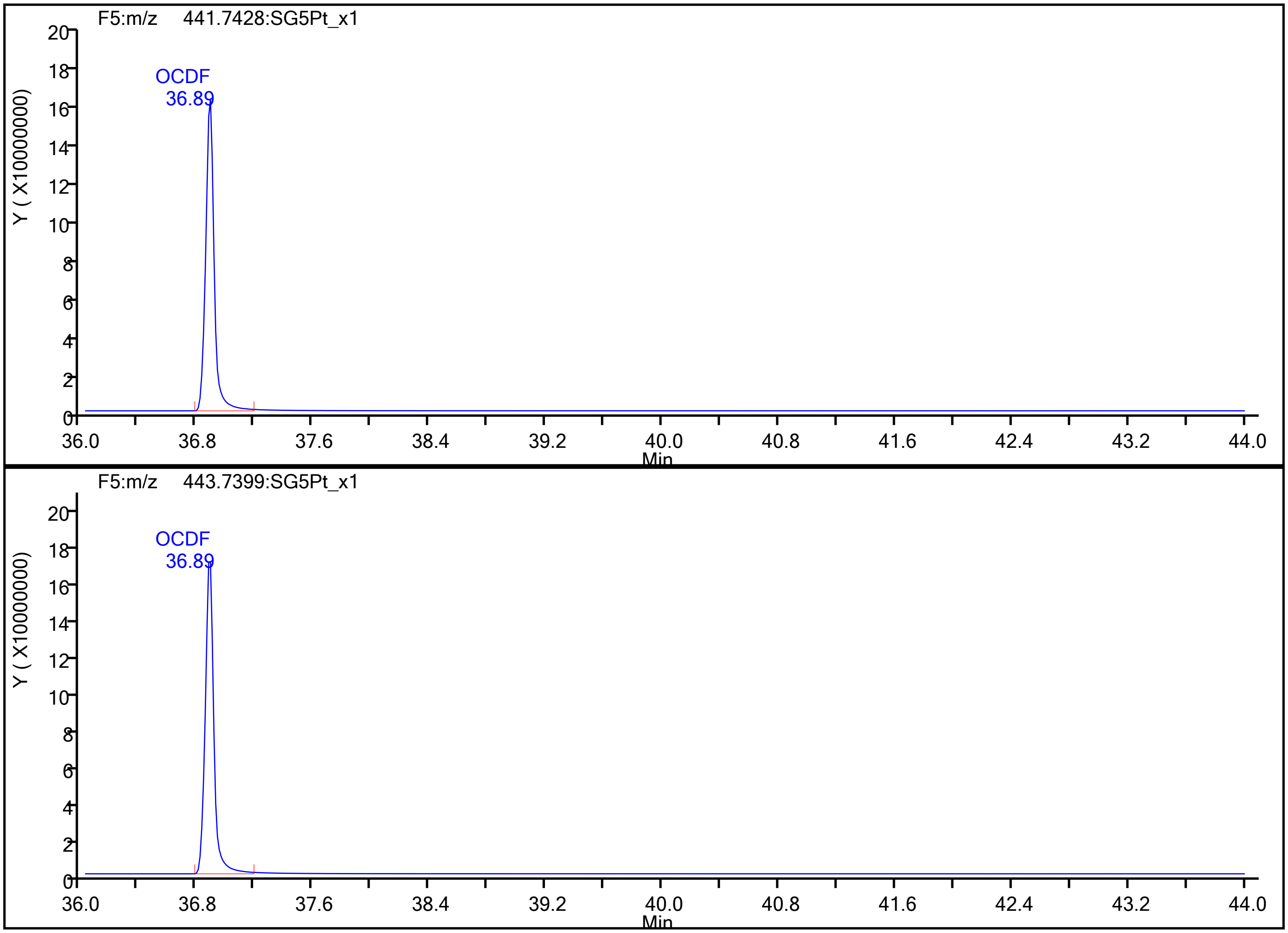

OCDF Interference Mass

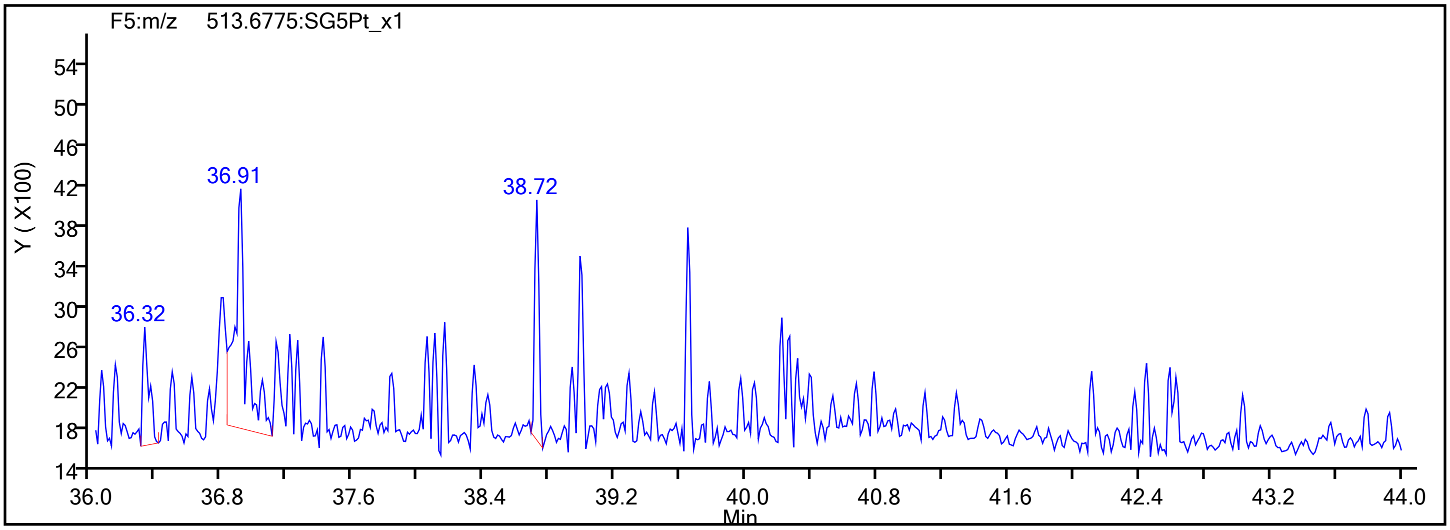

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date: 17-Sep-2020 19:09:42 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

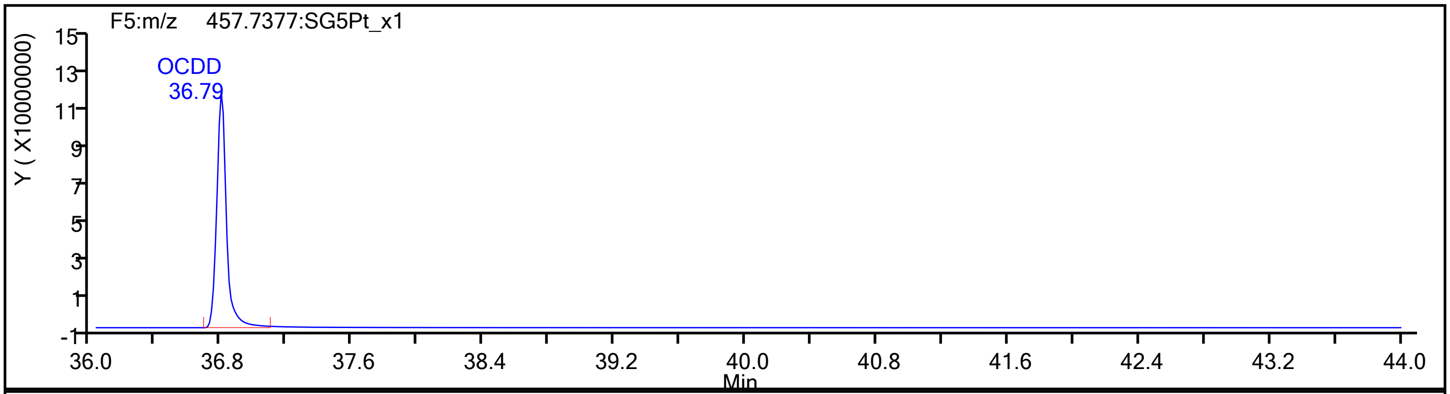

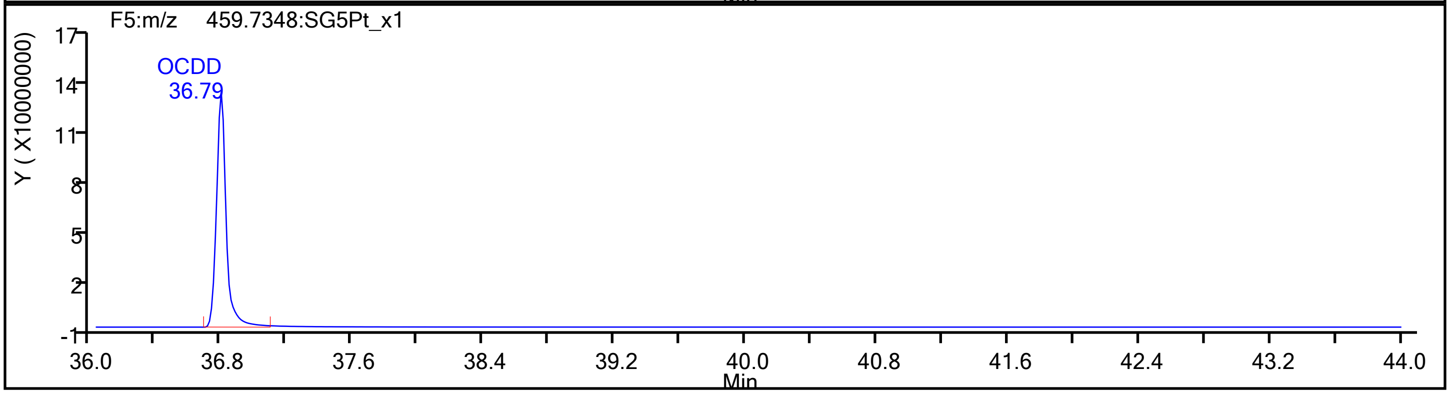

OCDD Standards

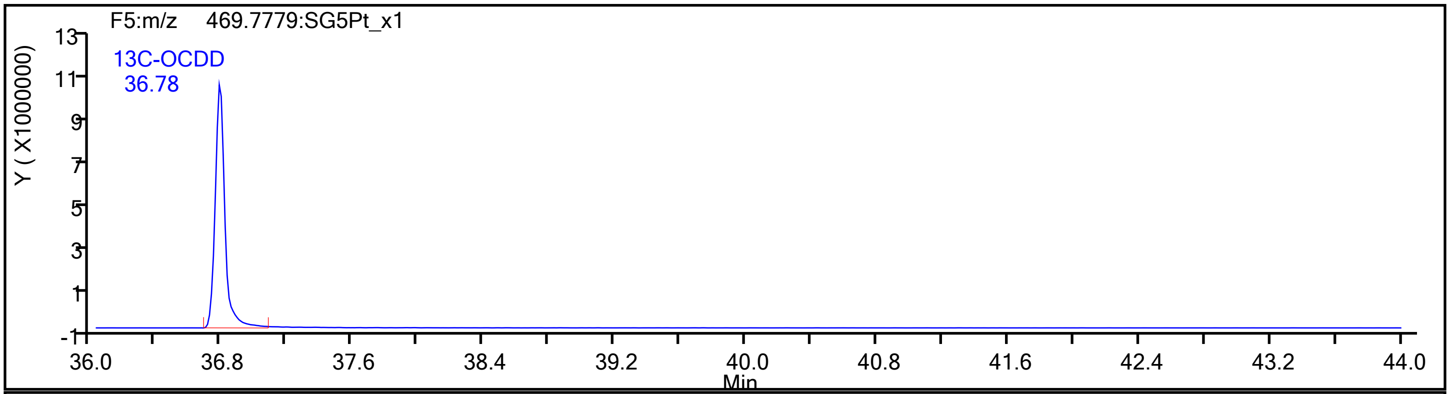

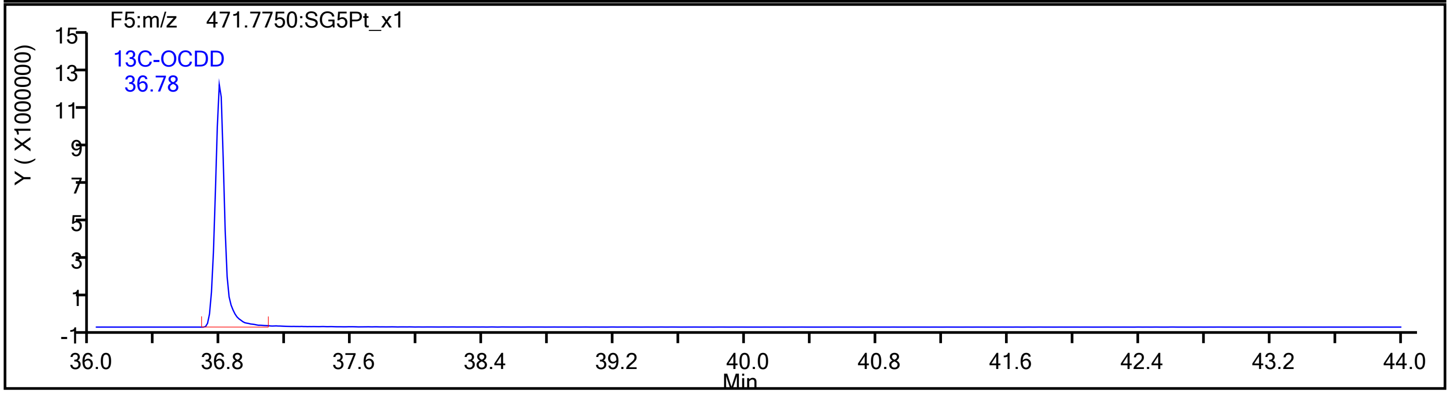

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

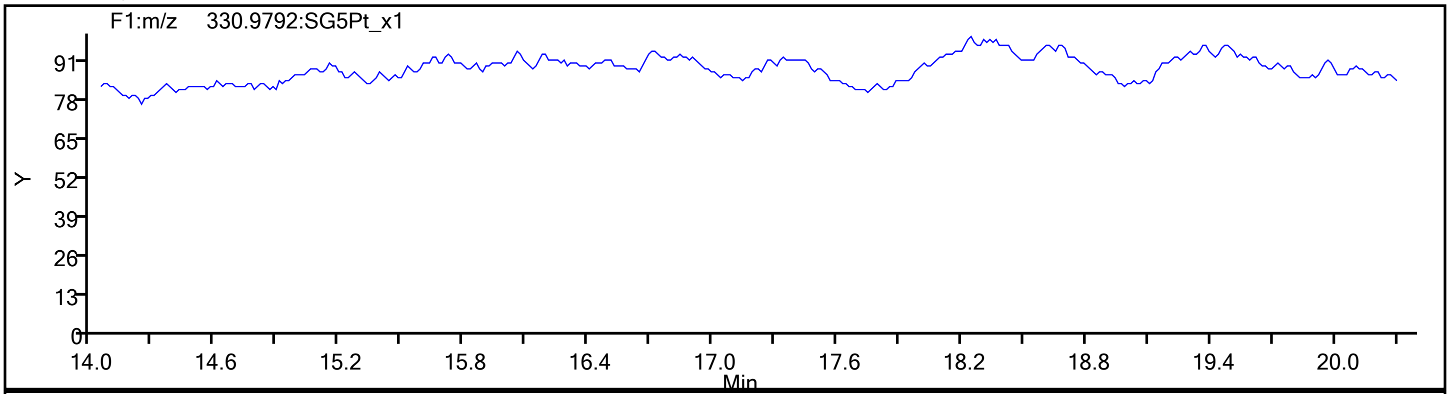

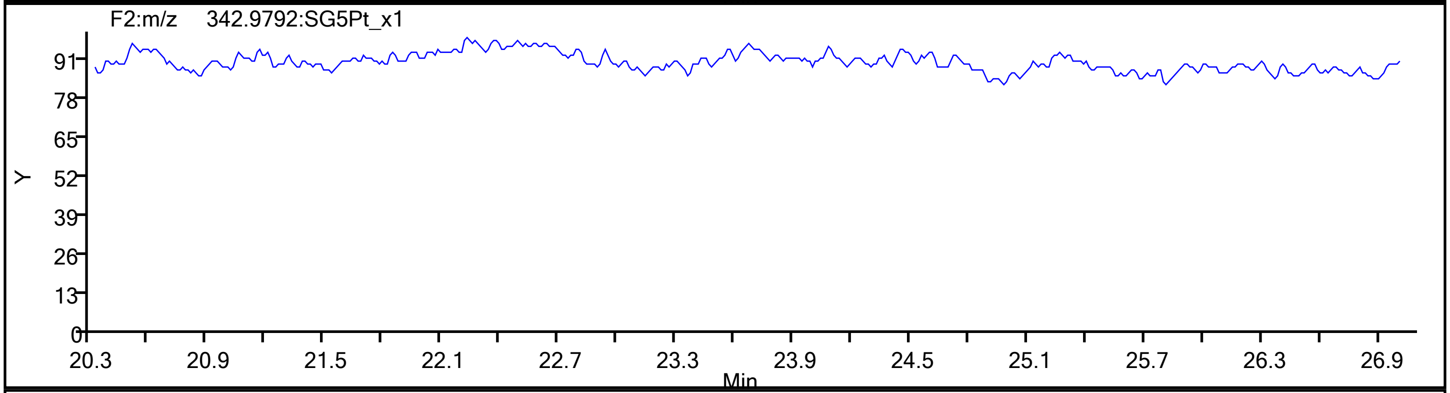

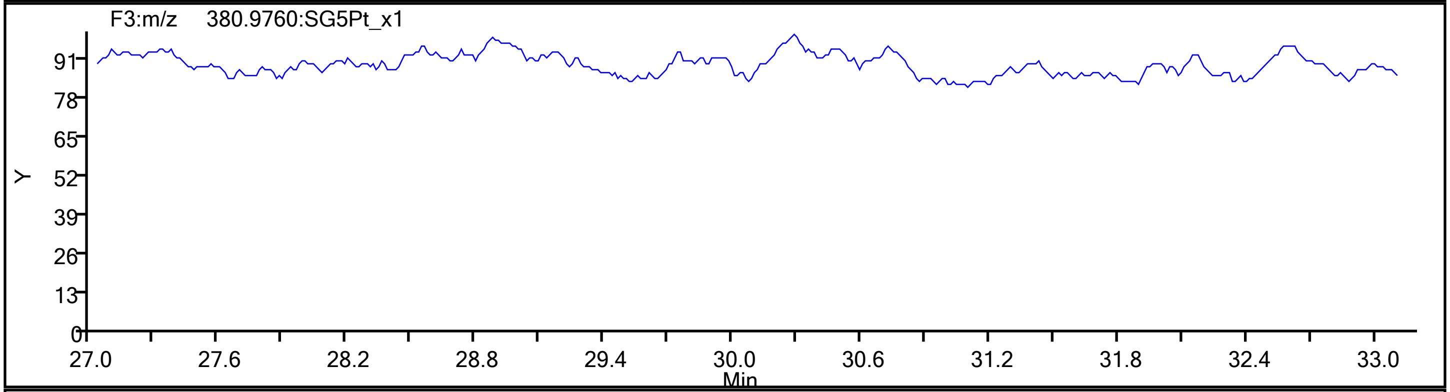

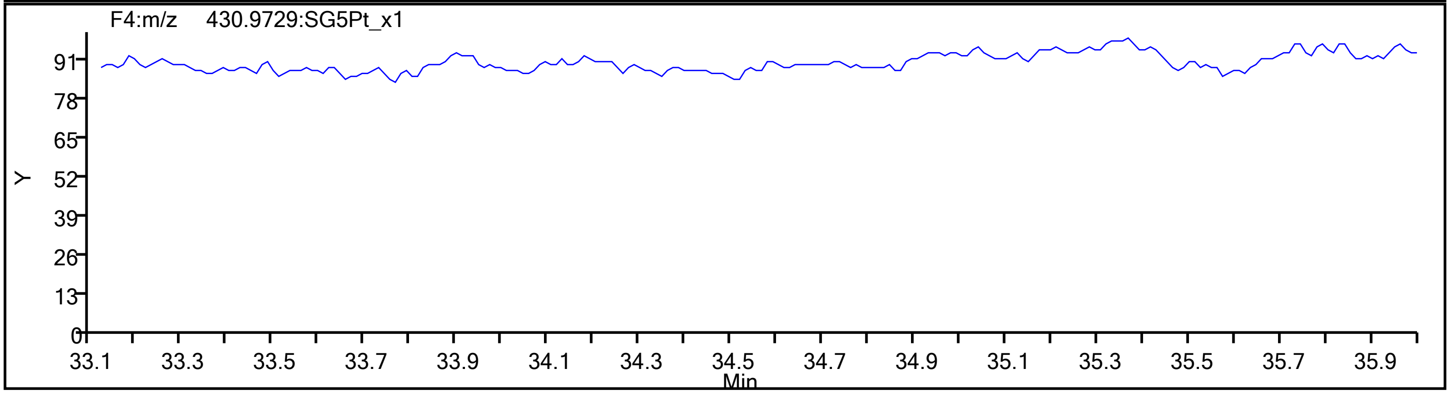

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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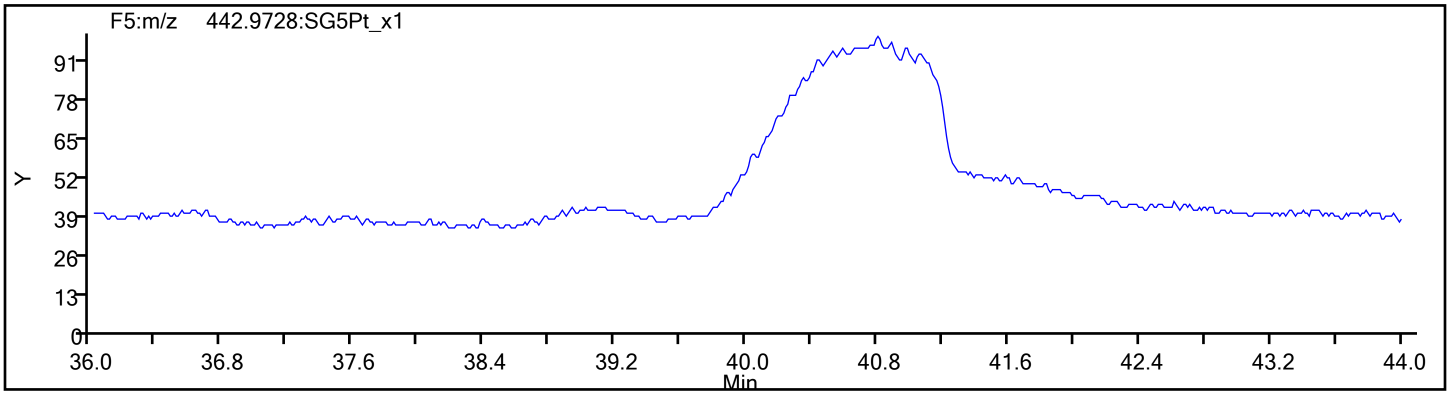

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCDD	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCDD	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

```
Data file    Smp Work Order    Sample ID                  FV-uL Method/Matrix Box  Size      U

24JL2011D2   1   CPS 072420    CPS HRDXNCP_00040                Dioxin             1.00000
24JL2011D2   2   SB 072420     SB Solvent Blank C-14                               1.00000
24JL2011D2   3   IC 072420     CS-2 HRDXNL2_00029               Dioxin        ICAL 1.00000
24JL2011D2   4   IC 072420A    CS-3 HRDXNL3_00027               Dioxin             1.00000
24JL2011D2   5   IC 072420B    CS-4 HRDXNL4_00094               Dioxin             1.00000
24JL2011D2   6   IC 072420C    CS-5 HRDXNL5_00030               Dioxin             1.00000
24JL2011D2   7   IC 072420D    CS-6 HRDXNL6_00026               Dioxin             1.00000
24JL2011D2   8   SB 072420C    SB Solvent Blank C-14                               1.00000
24JL2011D2   9   ICV 072420    ICV HRDXNIC_00045                Dioxin             1.00000
24JL2011D2   10                                                                    1.00000
24JL2011D2   11                                                                    1.00000
24JL2011D2   12                                                                    1.00000
24JL2011D2   13                                                                    1.00000
24JL2011D2   14                                                                    1.00000
24JL2011D2   15                                                                    1.00000
24JL2011D2   16                                                                    1.00000
24JL2011D2   17                                                                    1.00000
24JL2011D2   18                ALM 07-24-20                                        1.00000
24JL2011D2   19                                                                    1.00000
```

Logfile ✓ id
7/27/20 KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

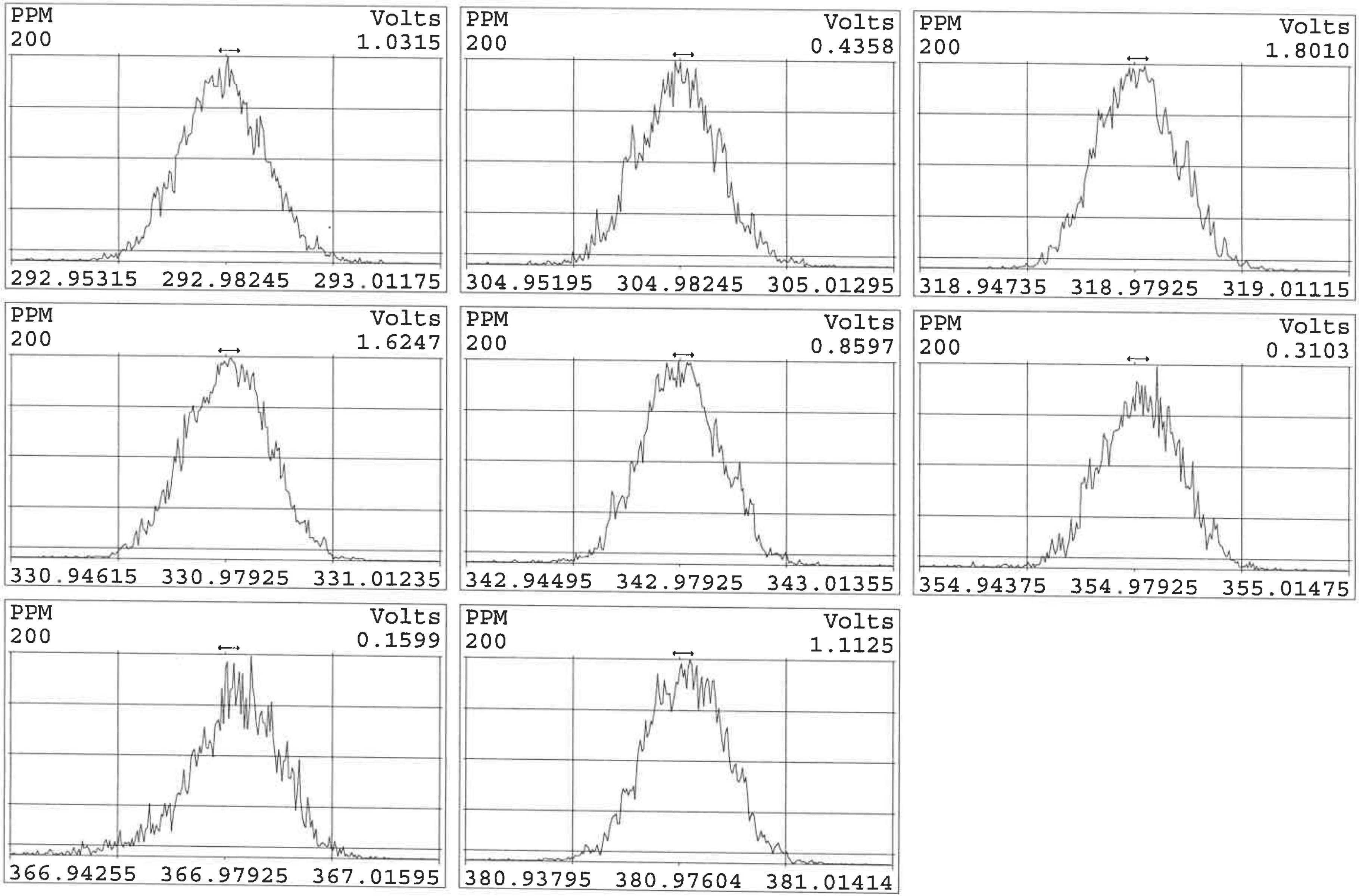

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

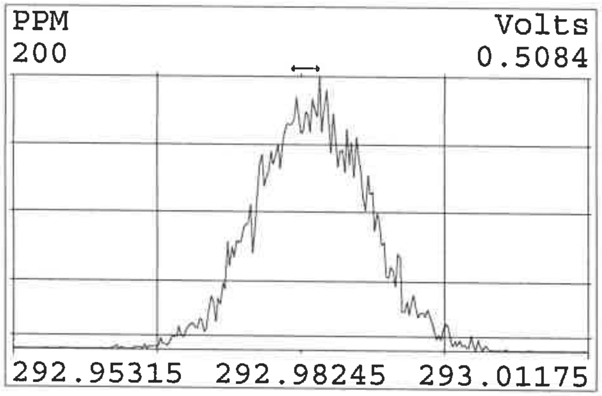

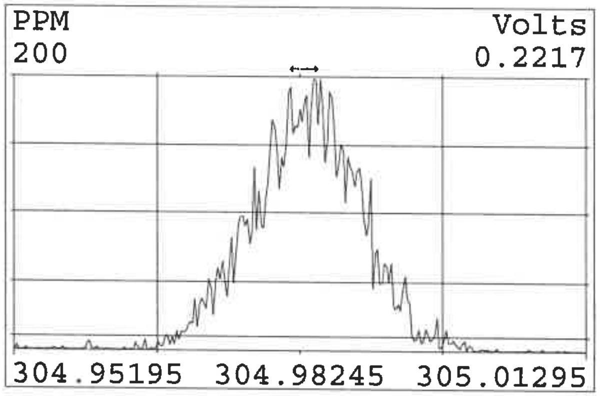

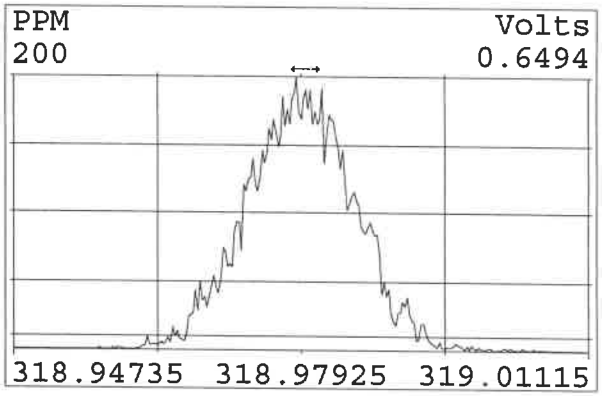

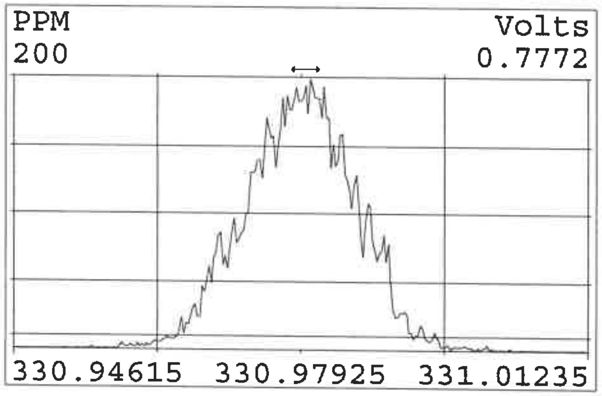

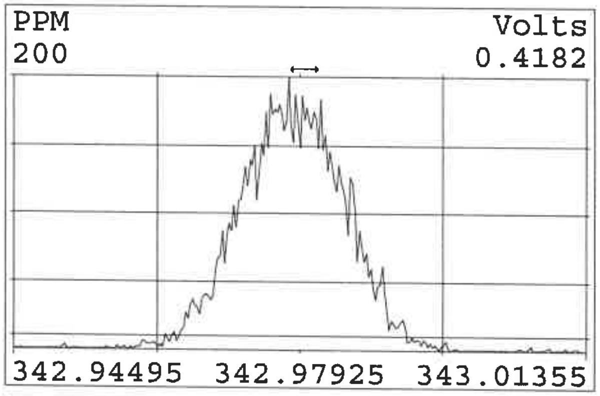

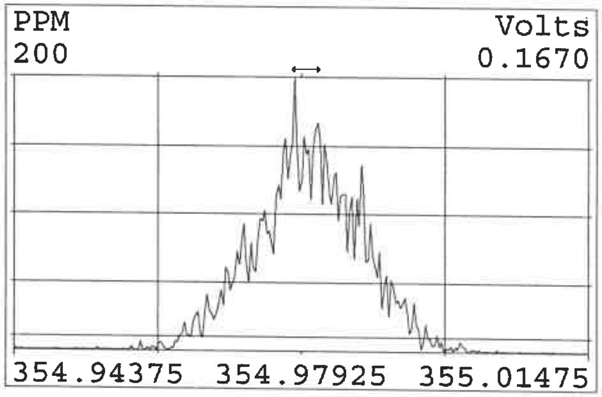

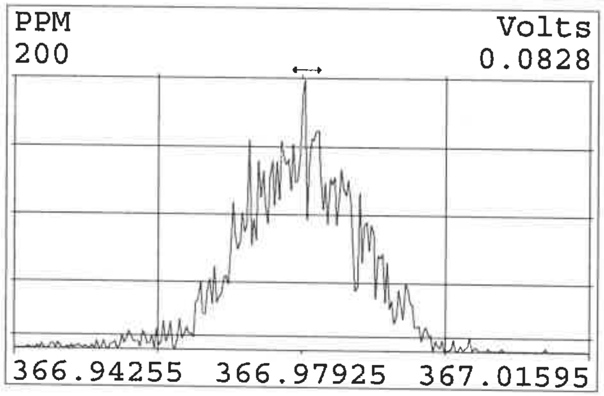

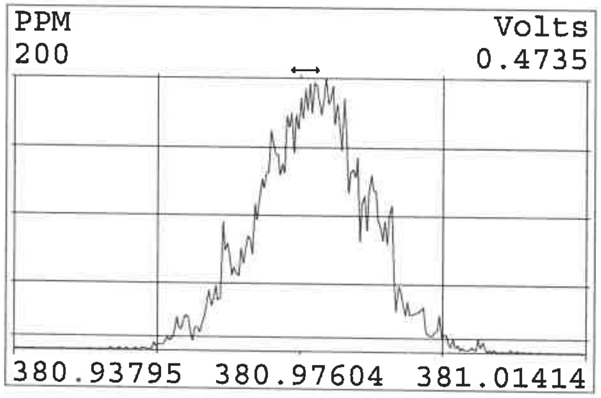

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

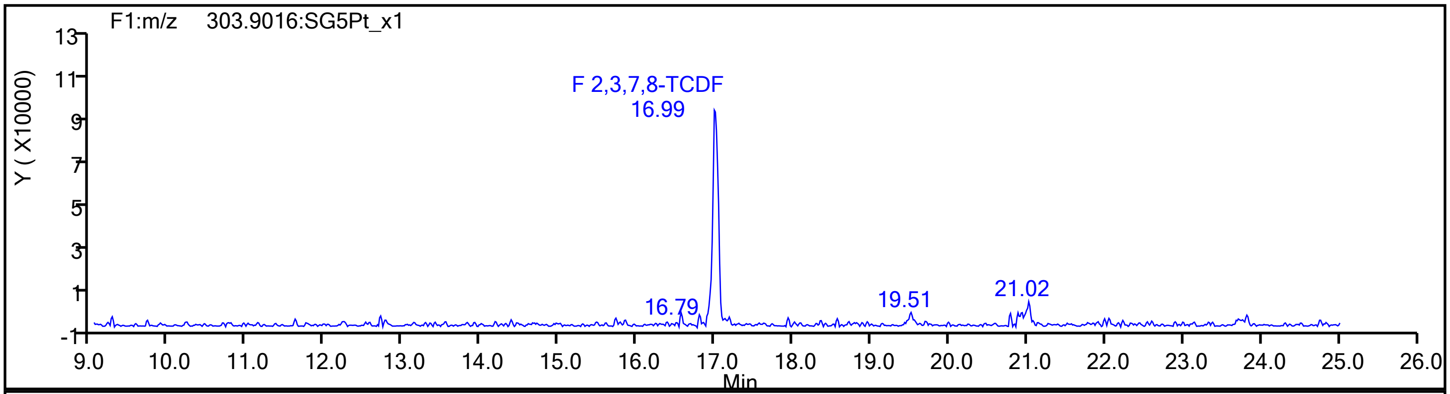

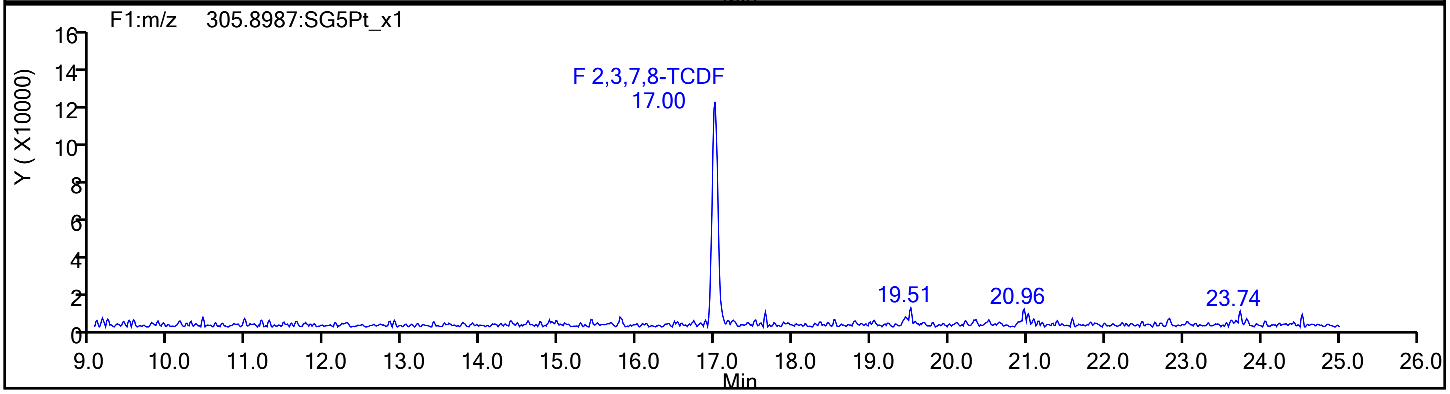

TCDF Standards

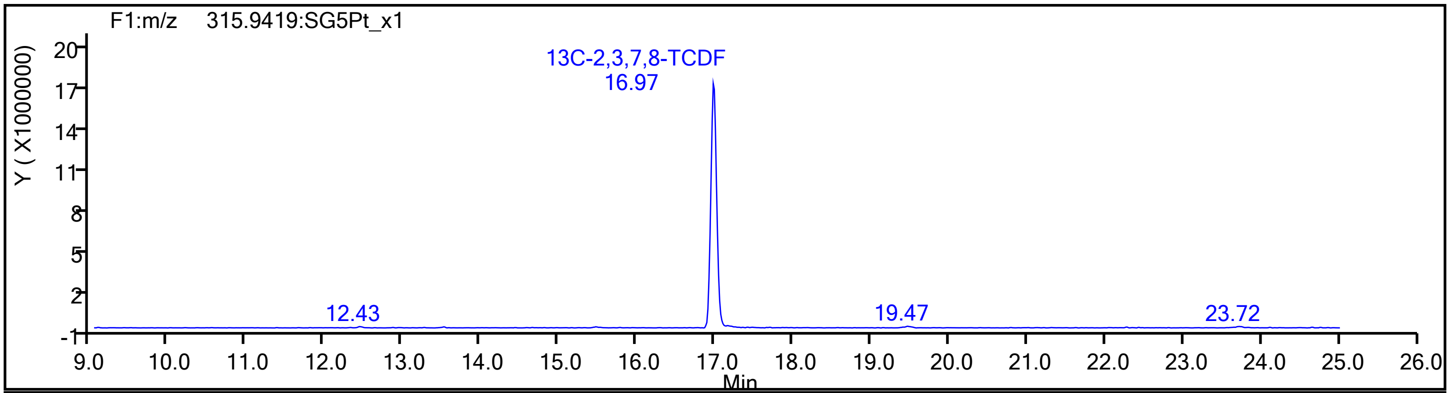

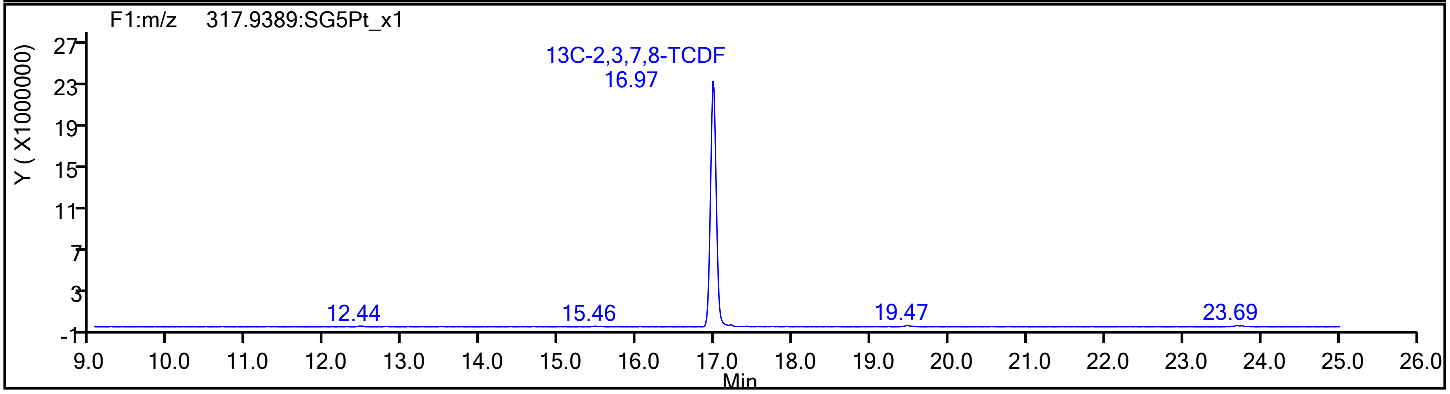

Report Date: 27-Jul-2020 12:42:51
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

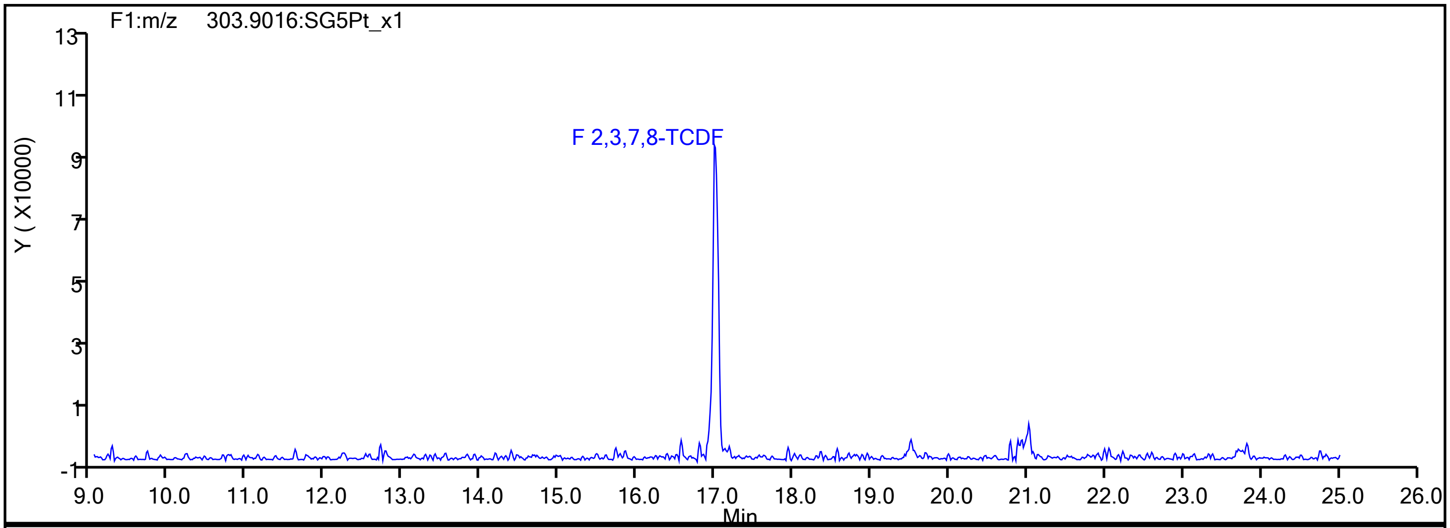

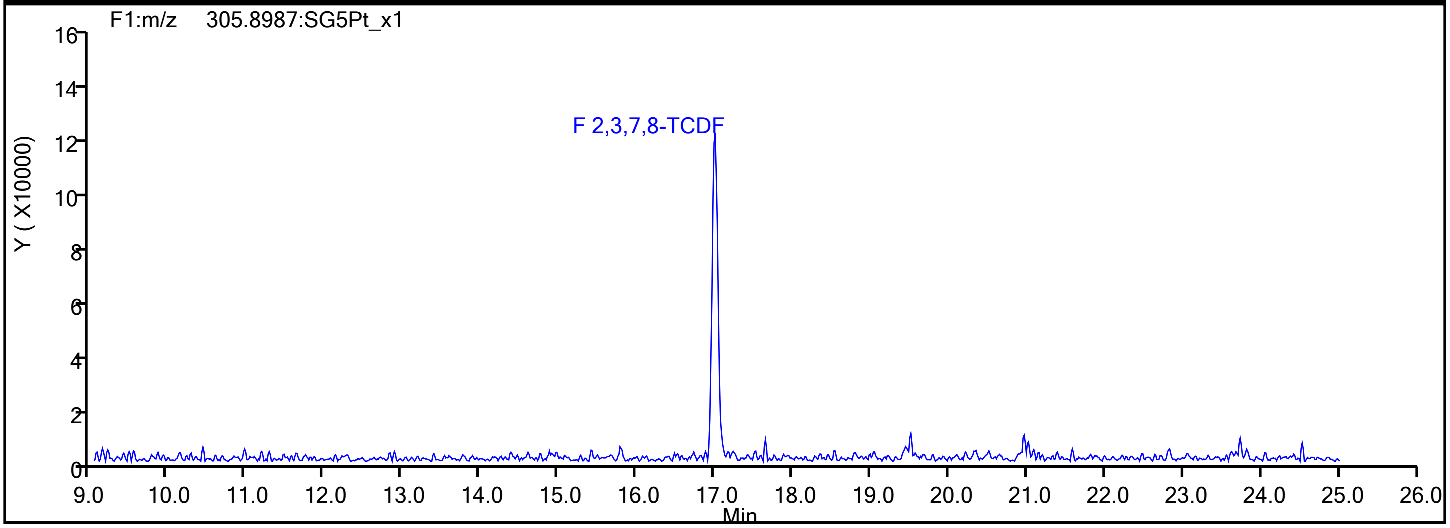

TCDF Interference Mass

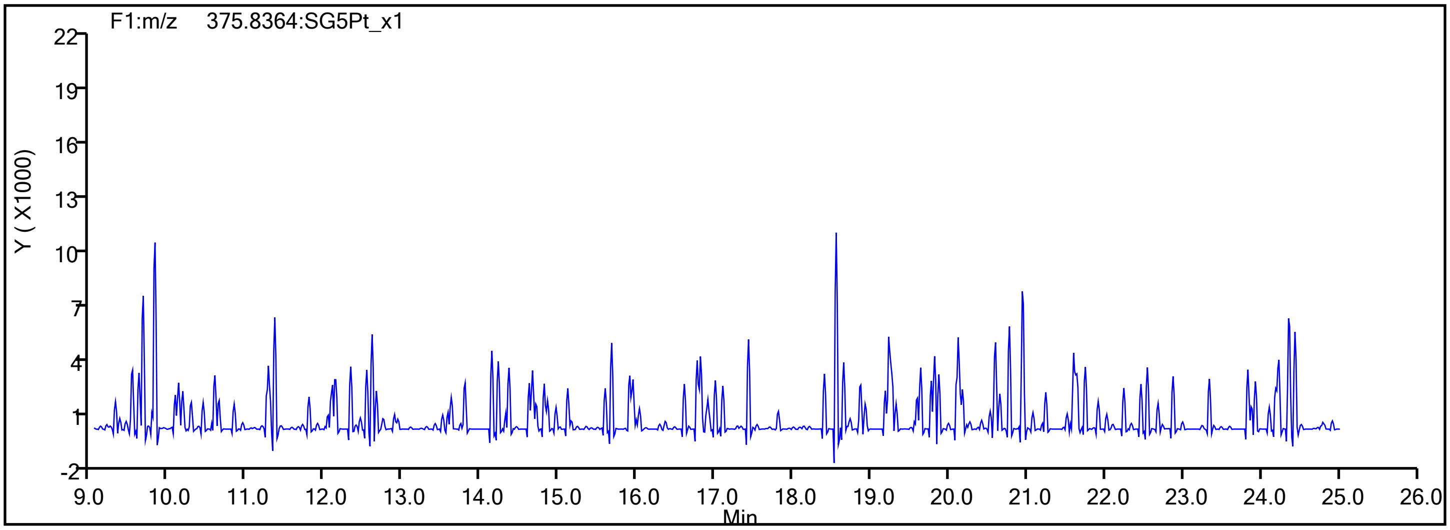

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

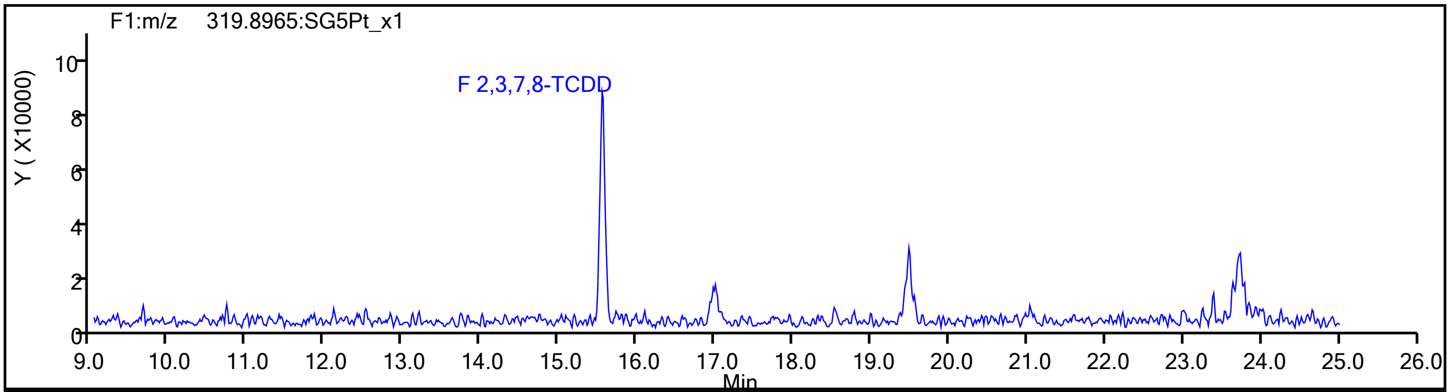

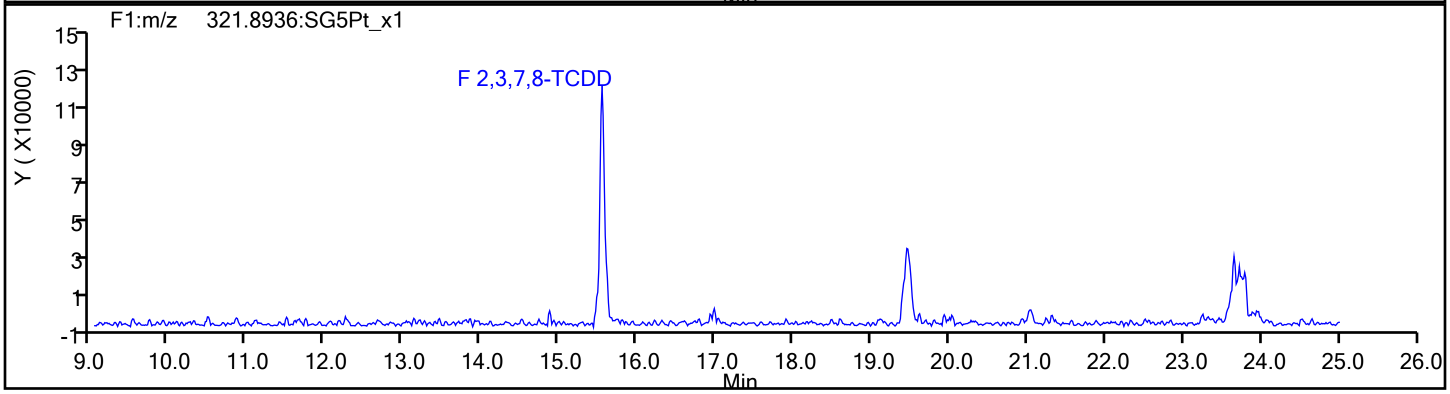

TCDD Standards

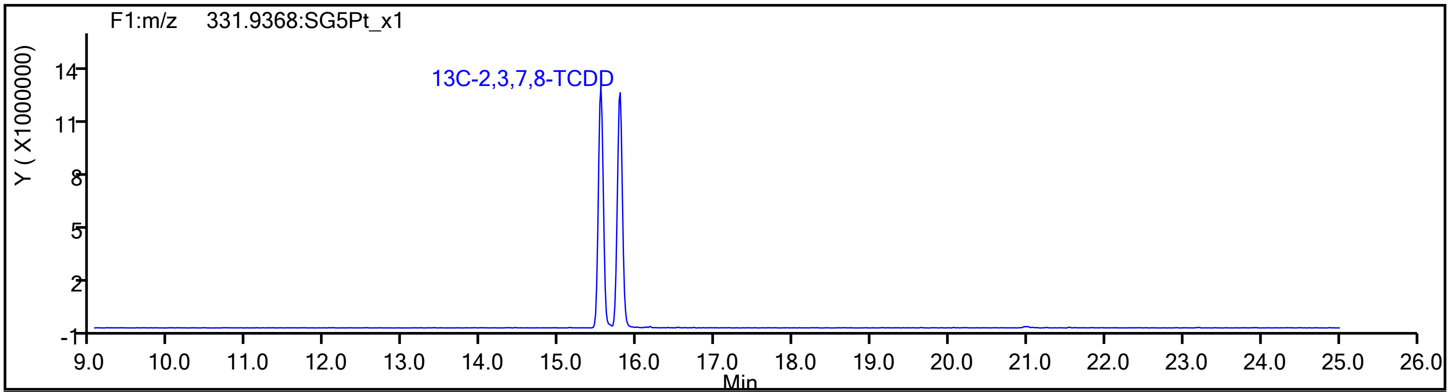

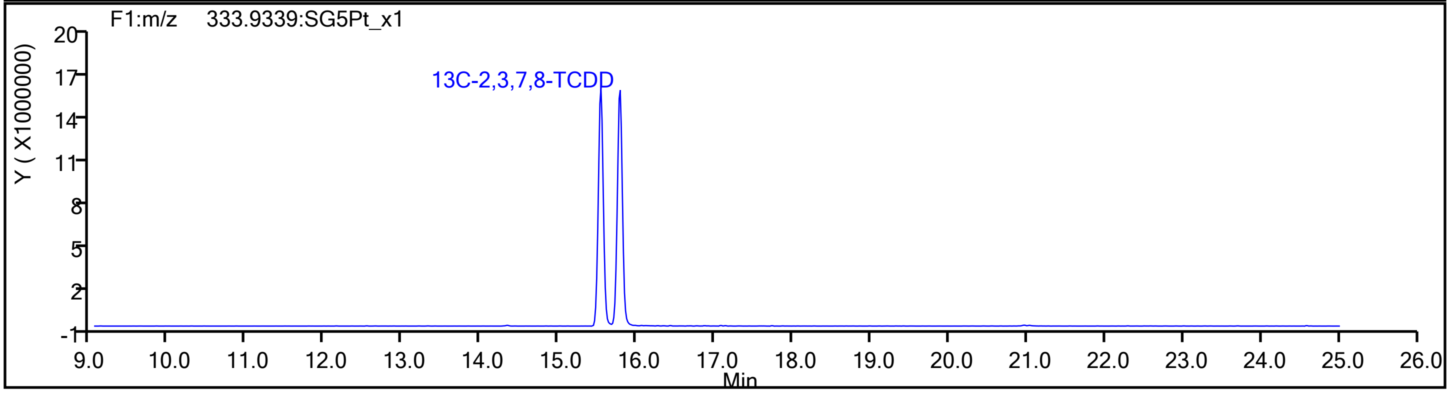

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

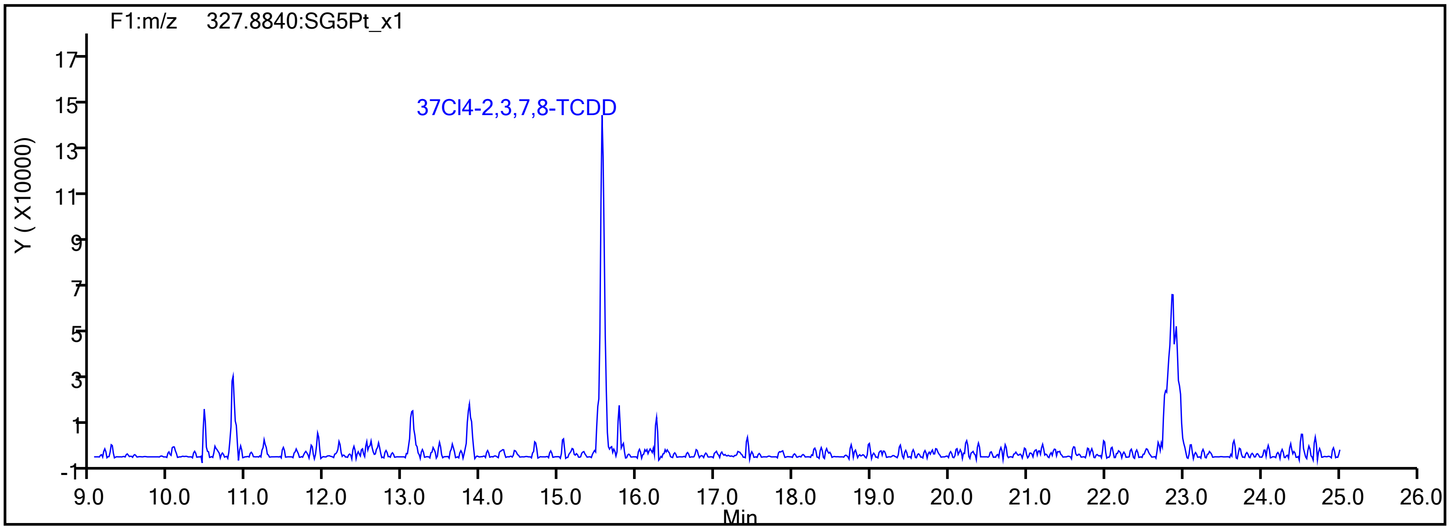

37Cl4-TCDD Standards

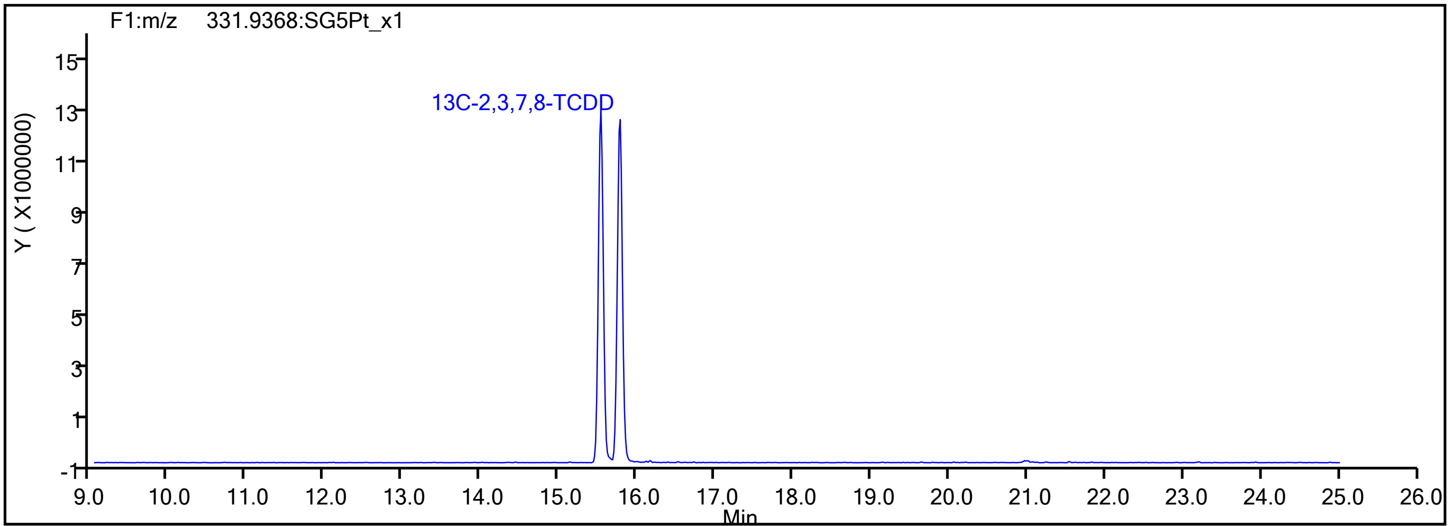

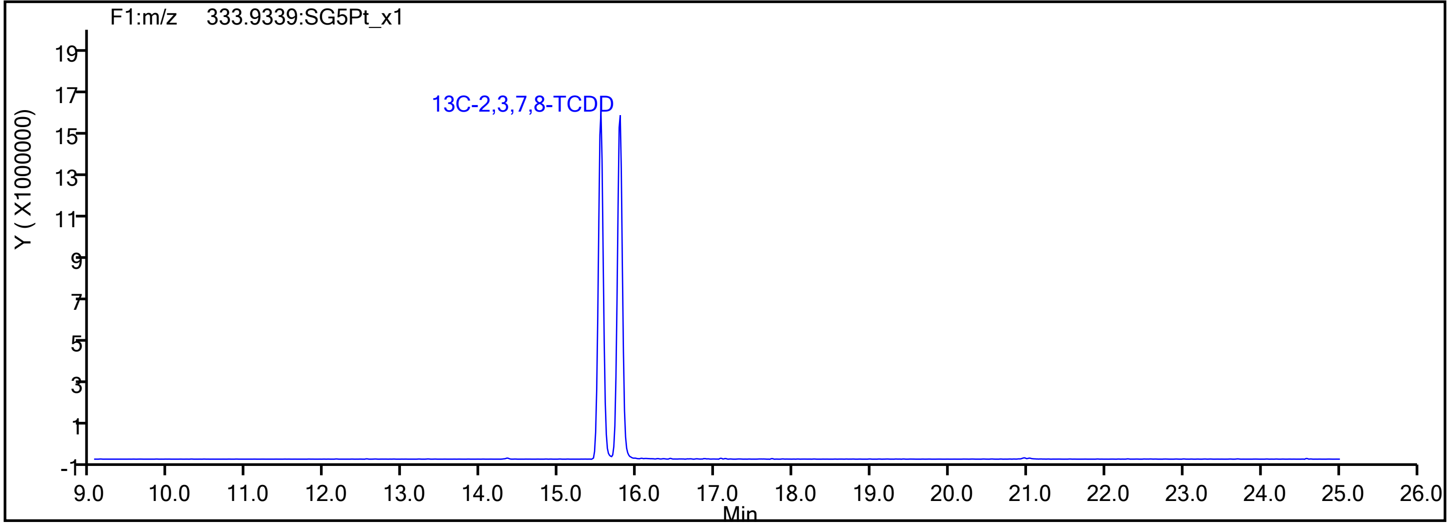

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

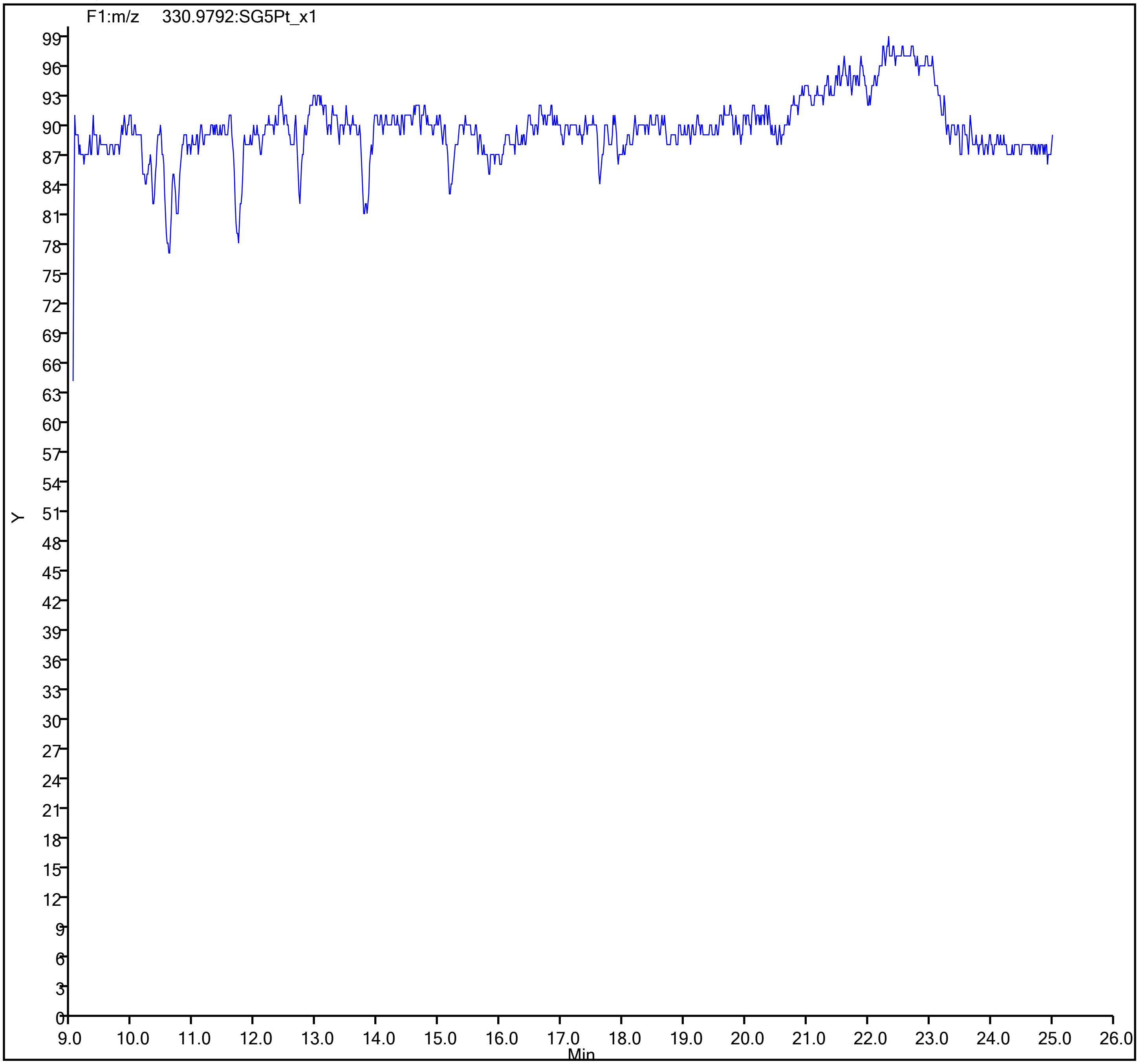

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:47		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 25-Jul-2020 00:28:40 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:53 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

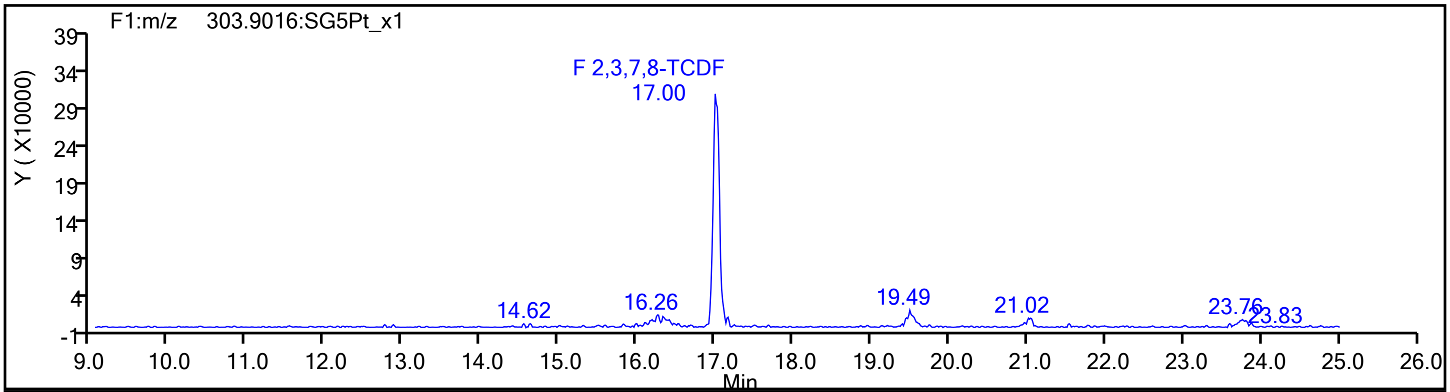

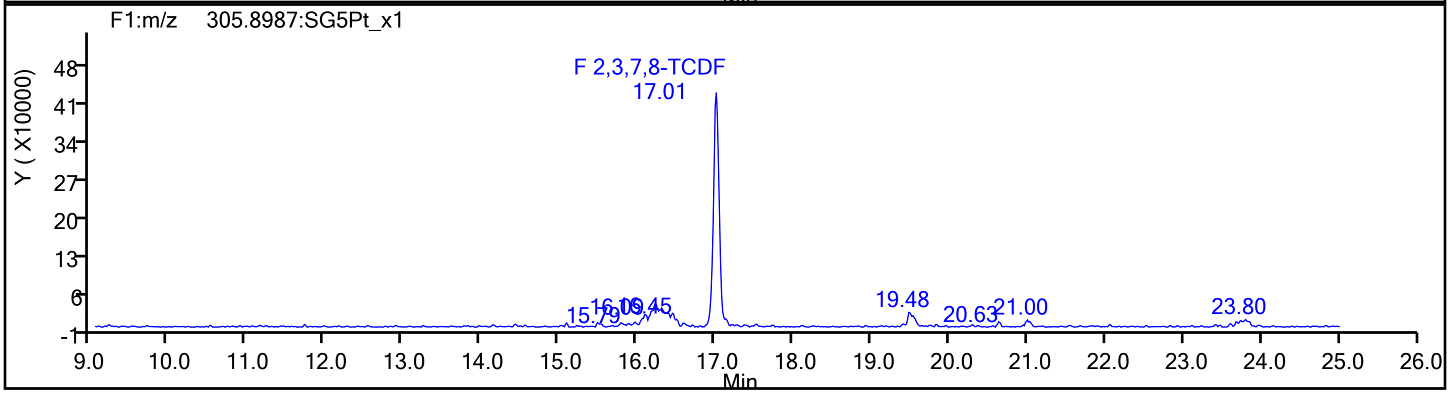

TCDF Standards

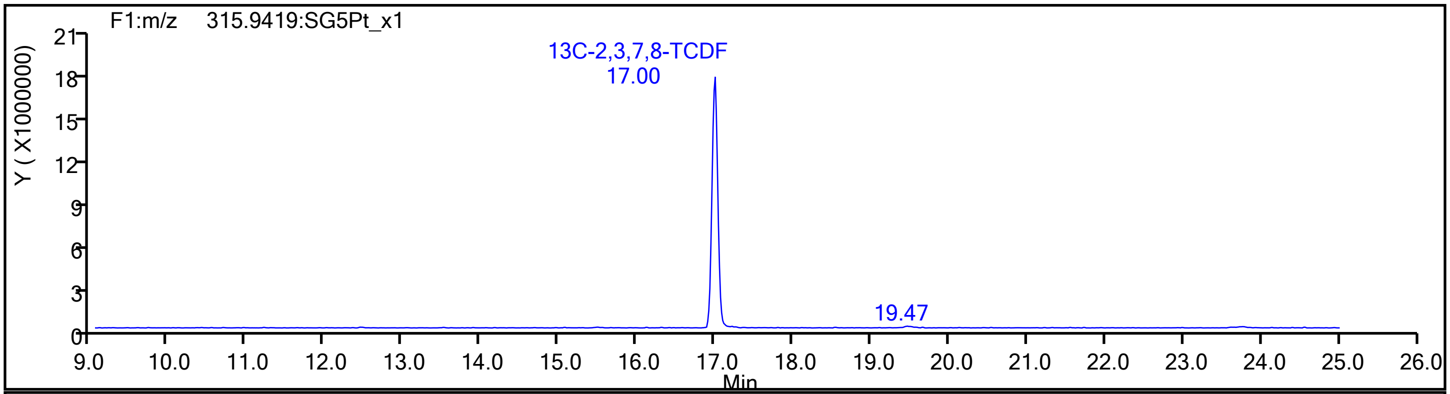

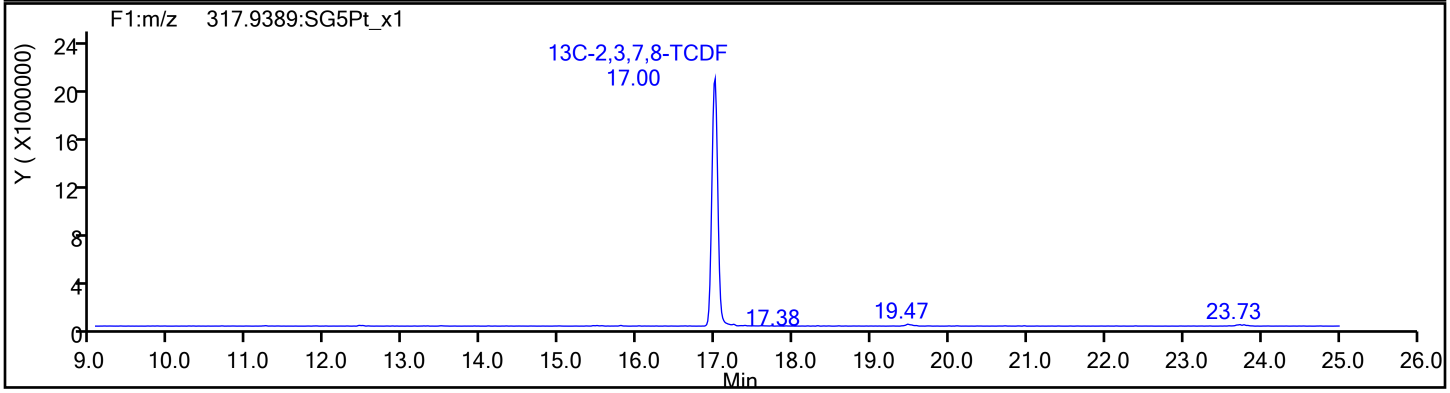

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

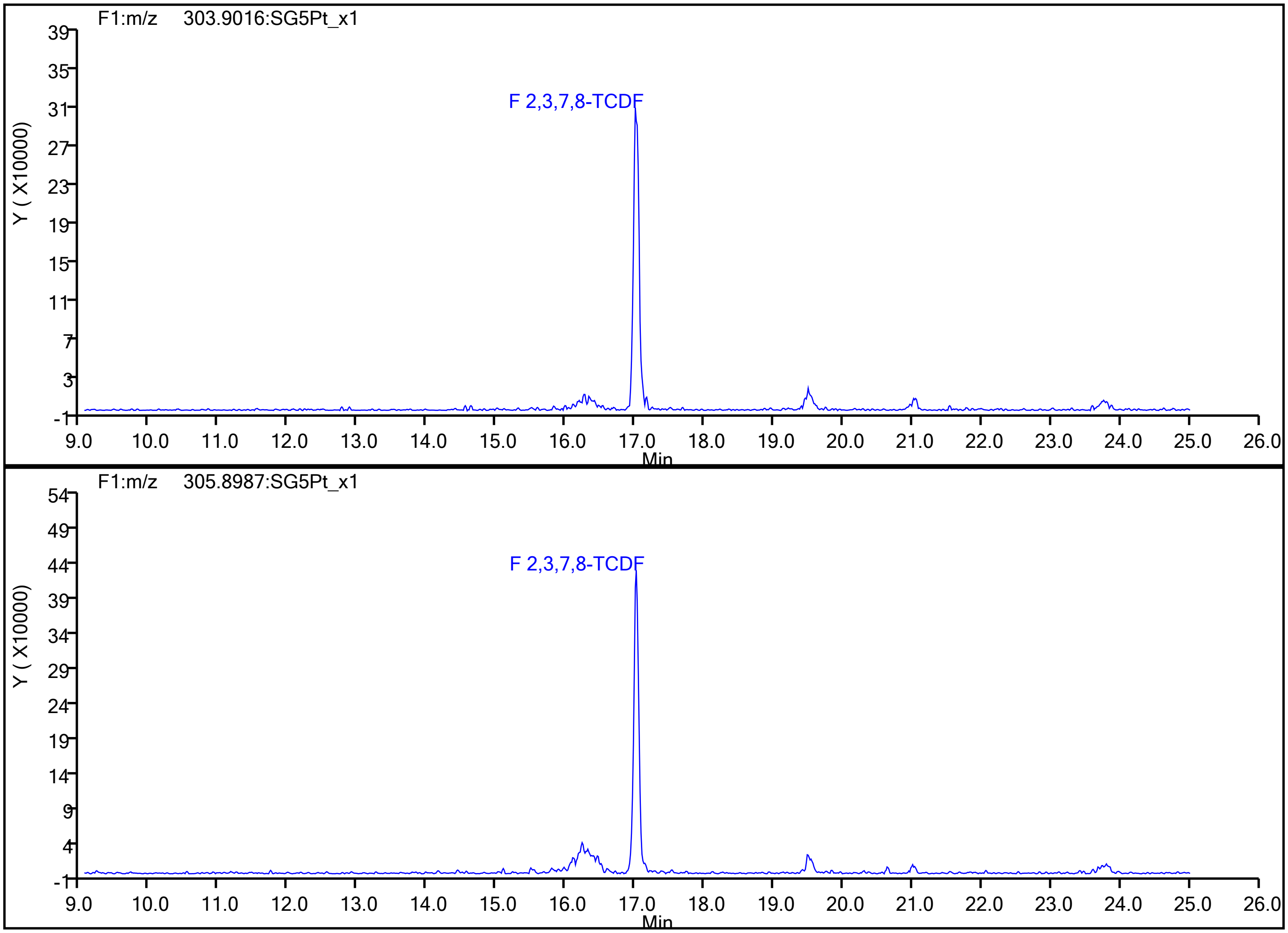

TCDF Interference Mass

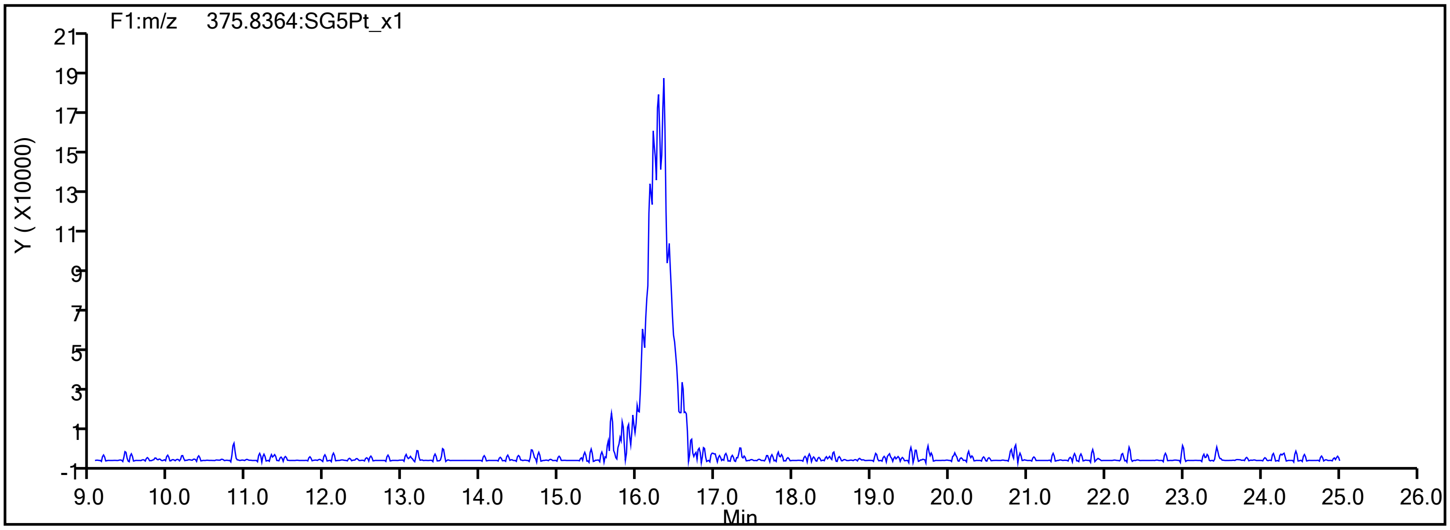

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

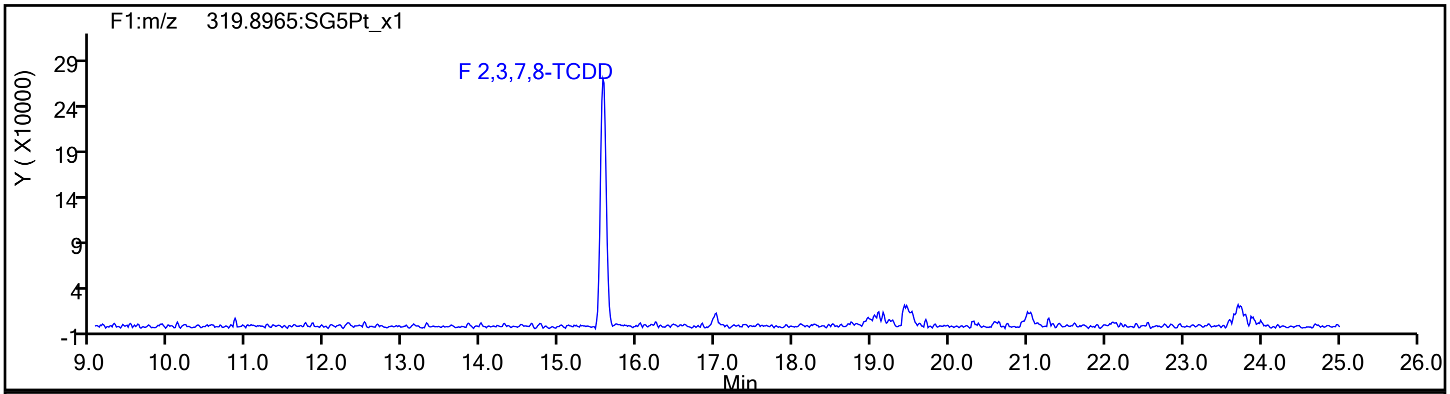

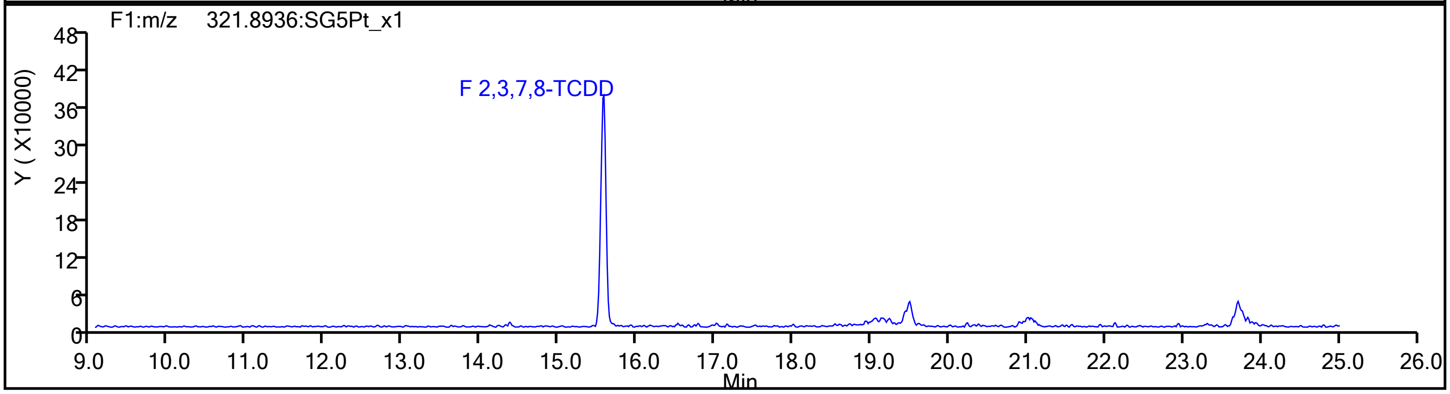

TCDD Standards

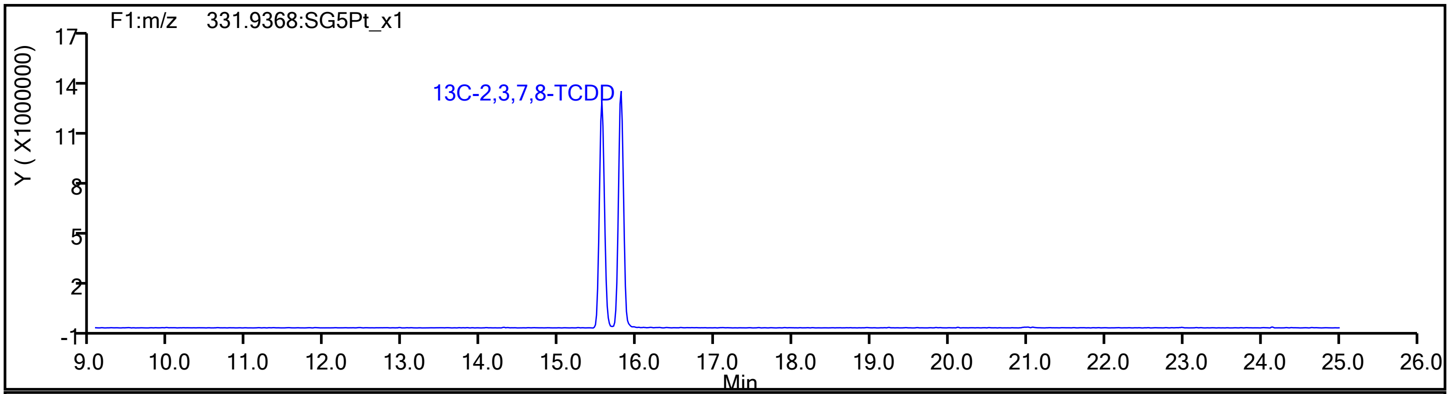

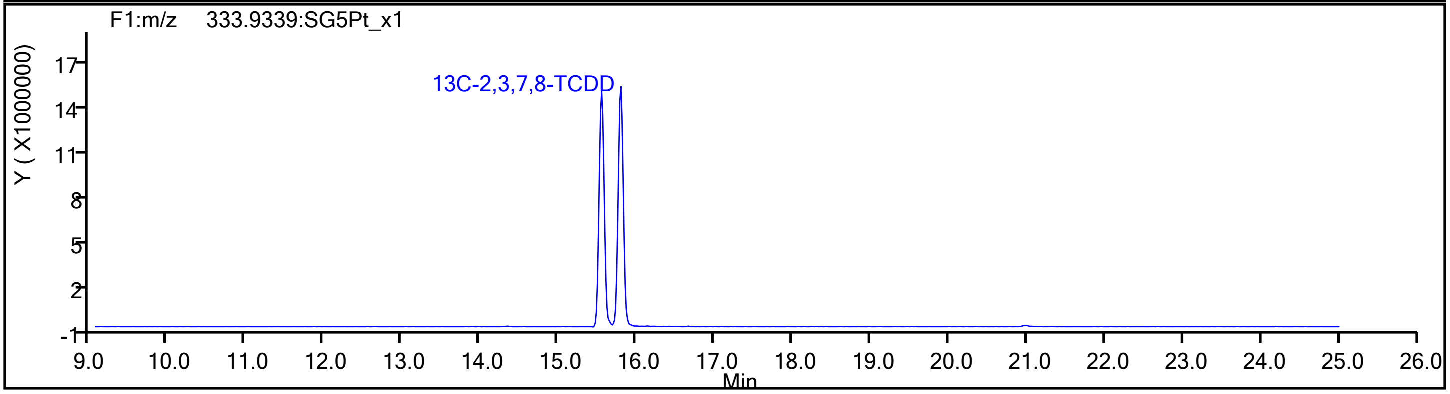

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d

Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

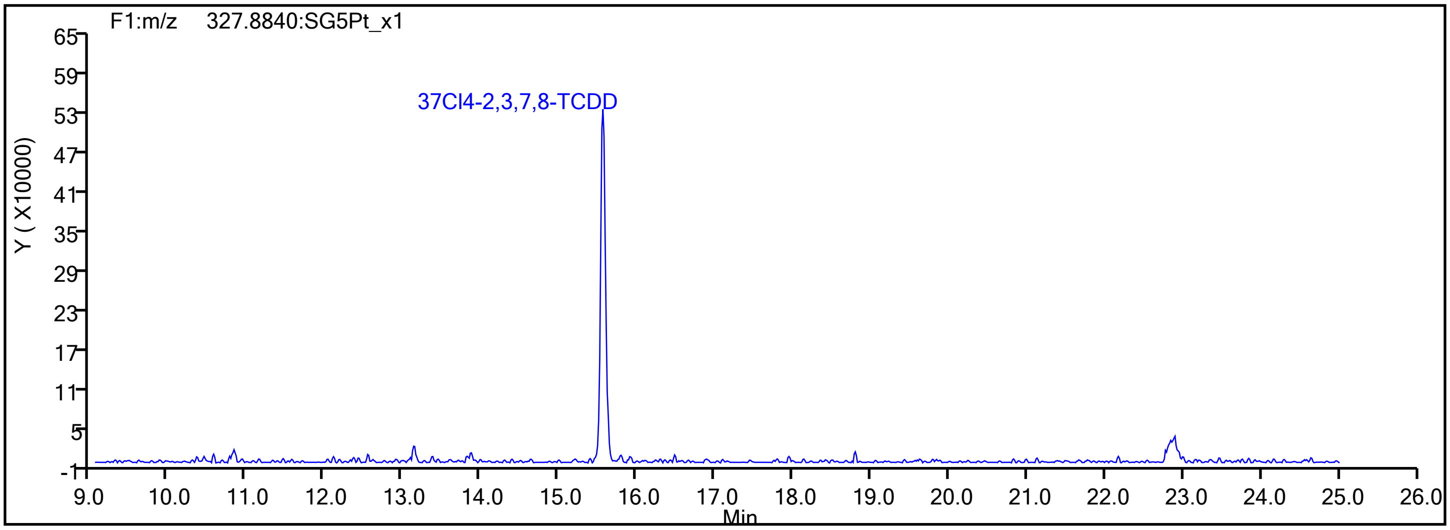

37Cl4-TCDD Standards

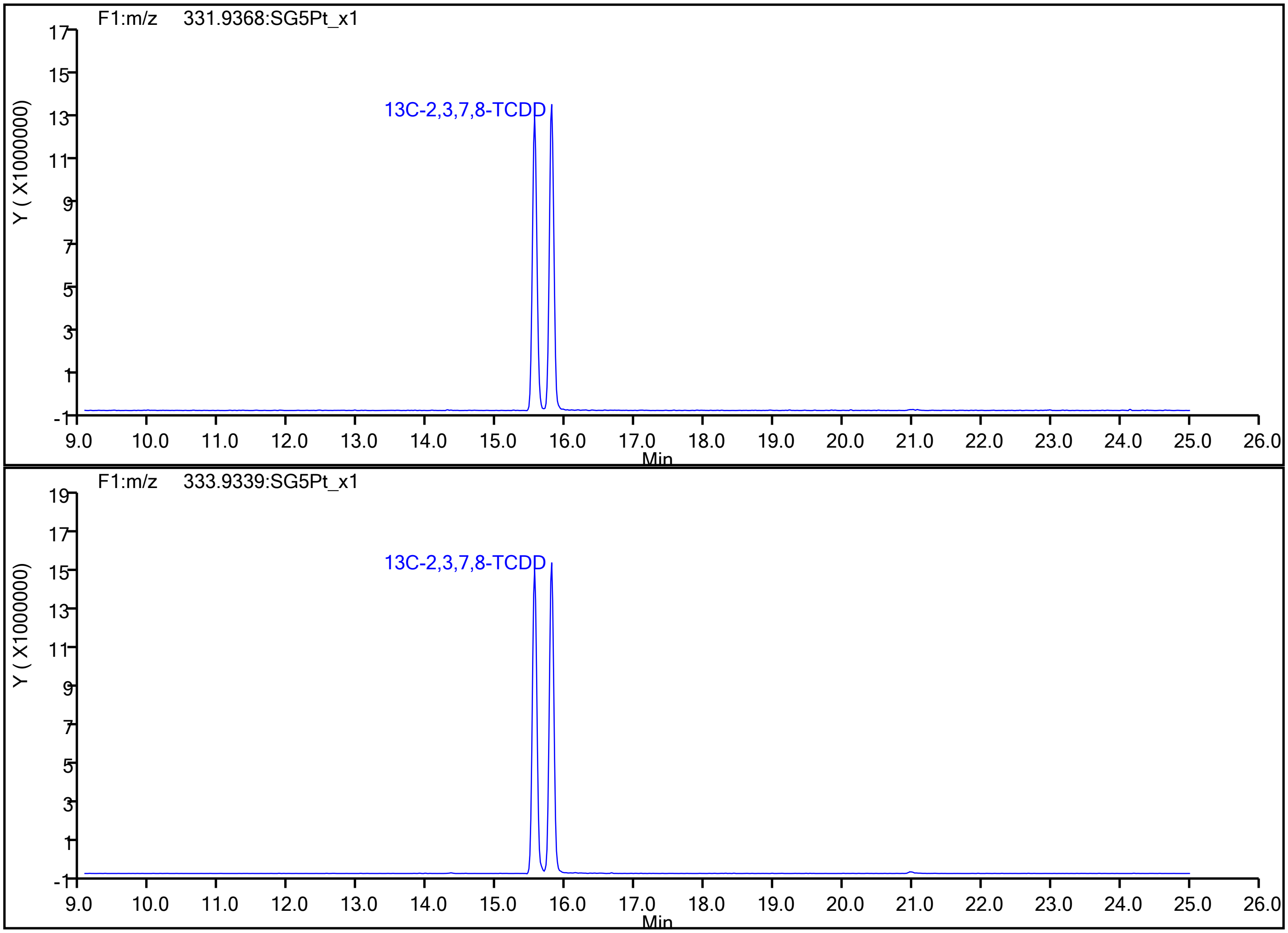

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

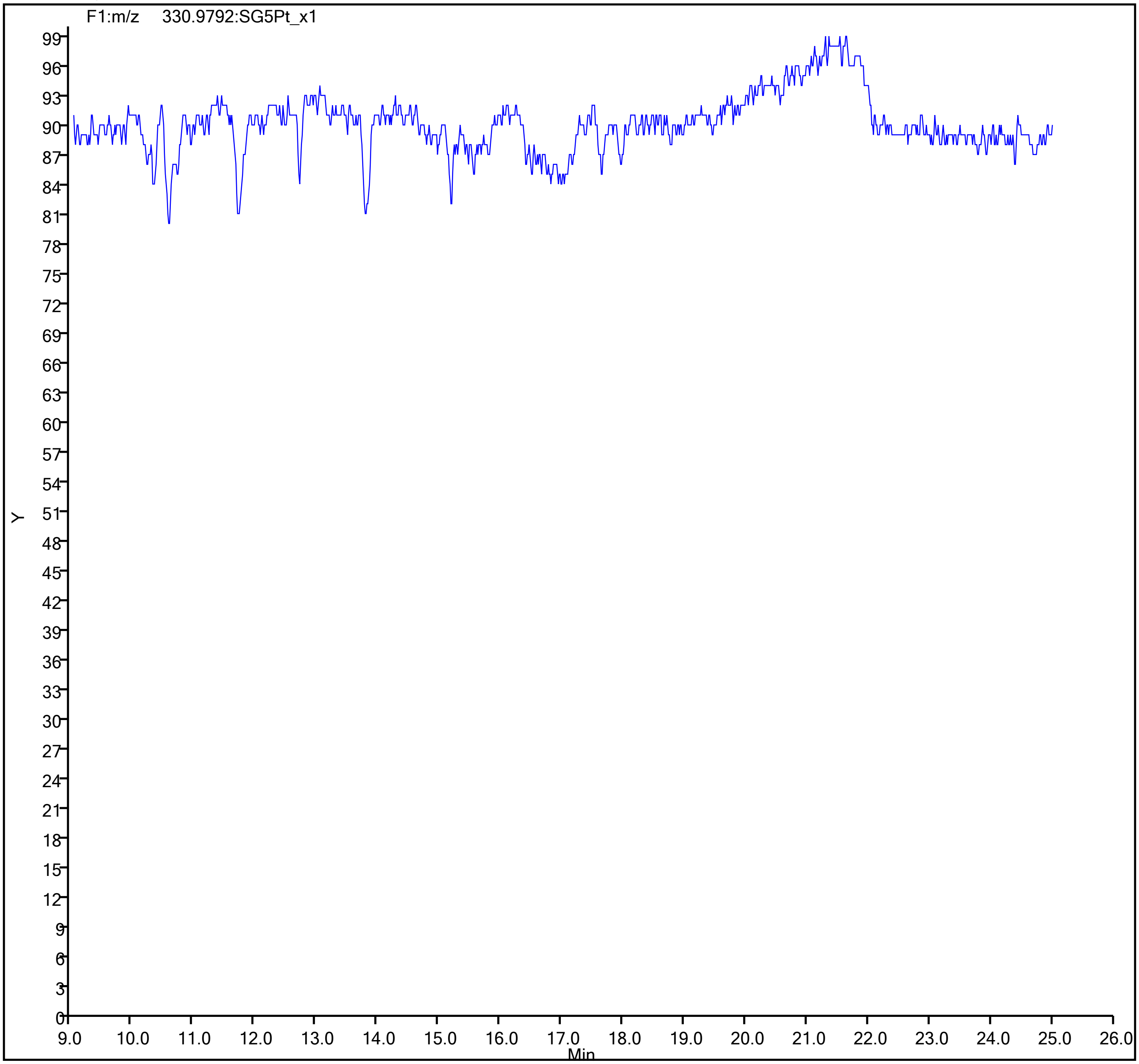

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d				
Lims ID:	IC 4				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	25-Jul-2020 01:07:02	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:57	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

Reagent	Amount Added	Units
HRDXNL4_00094	2.00	uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

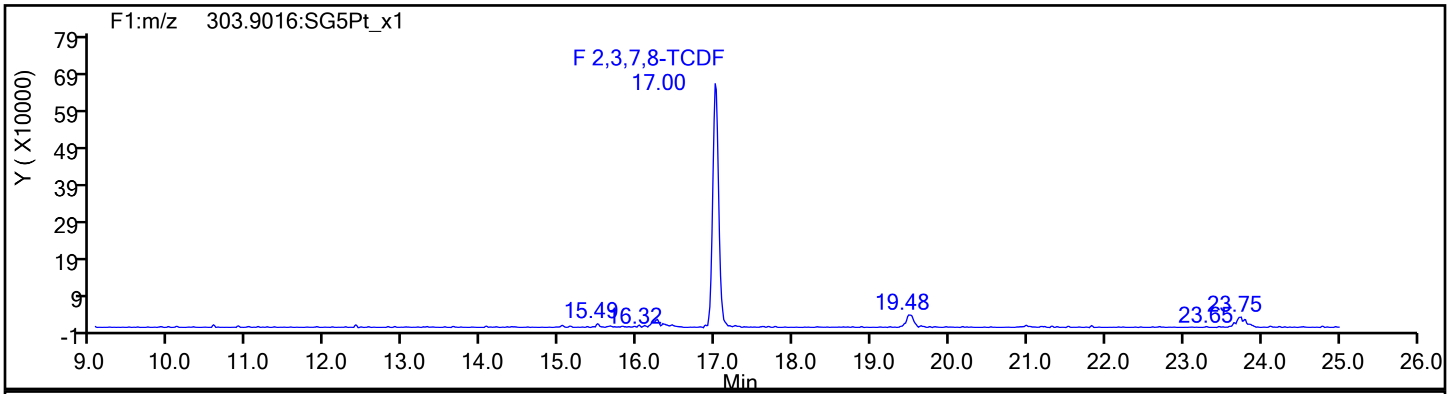

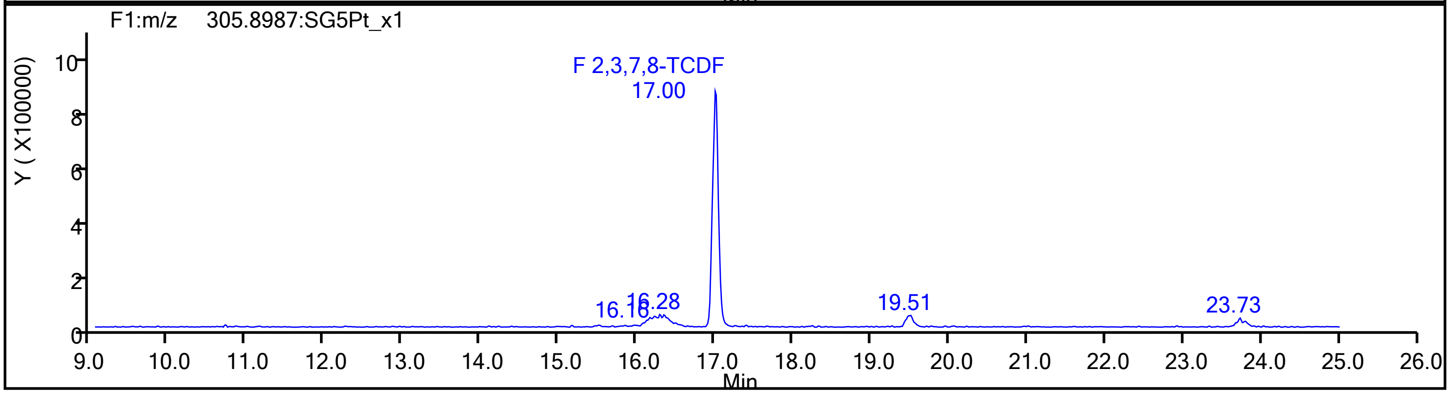

TCDF Standards

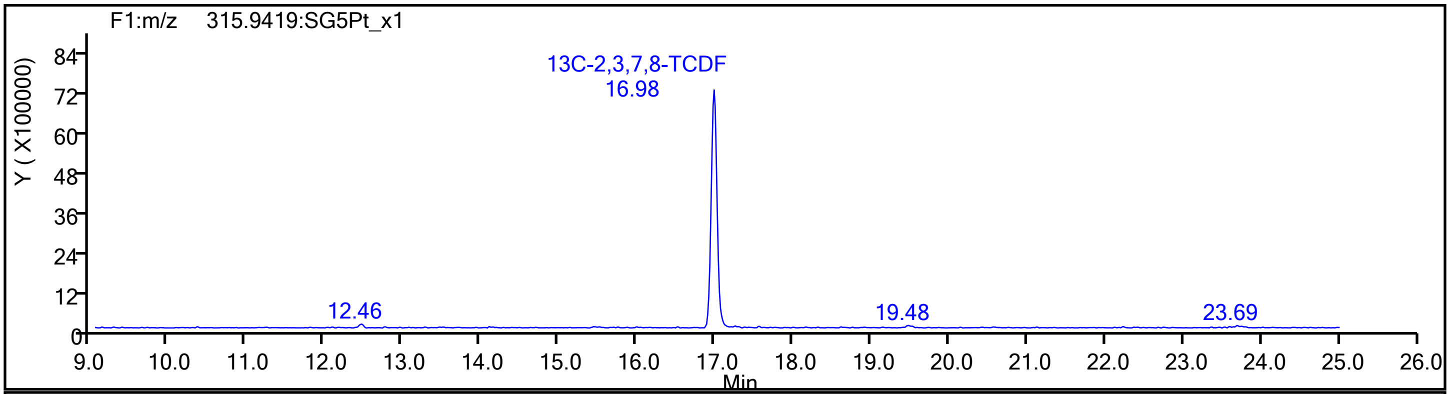

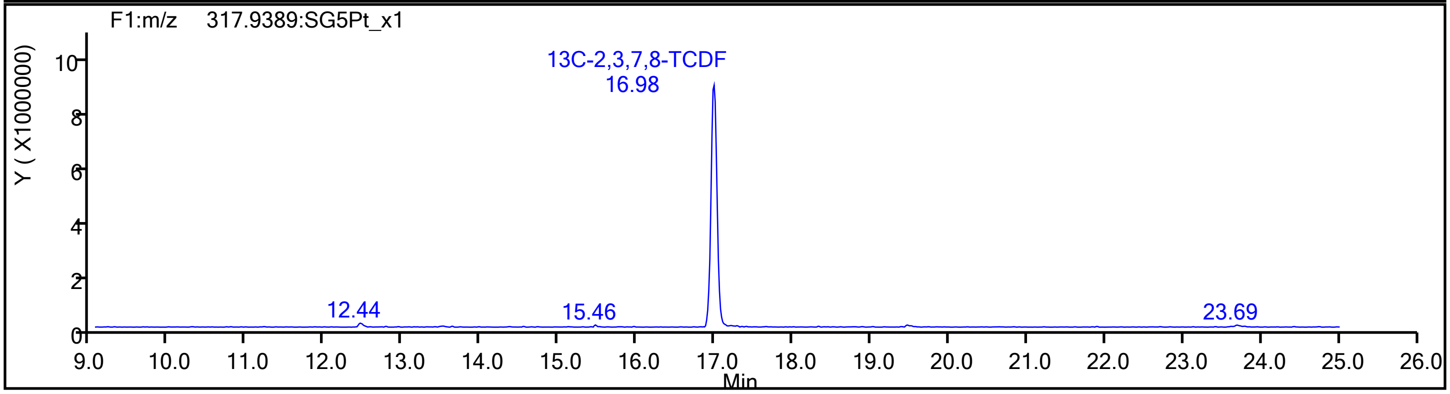

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

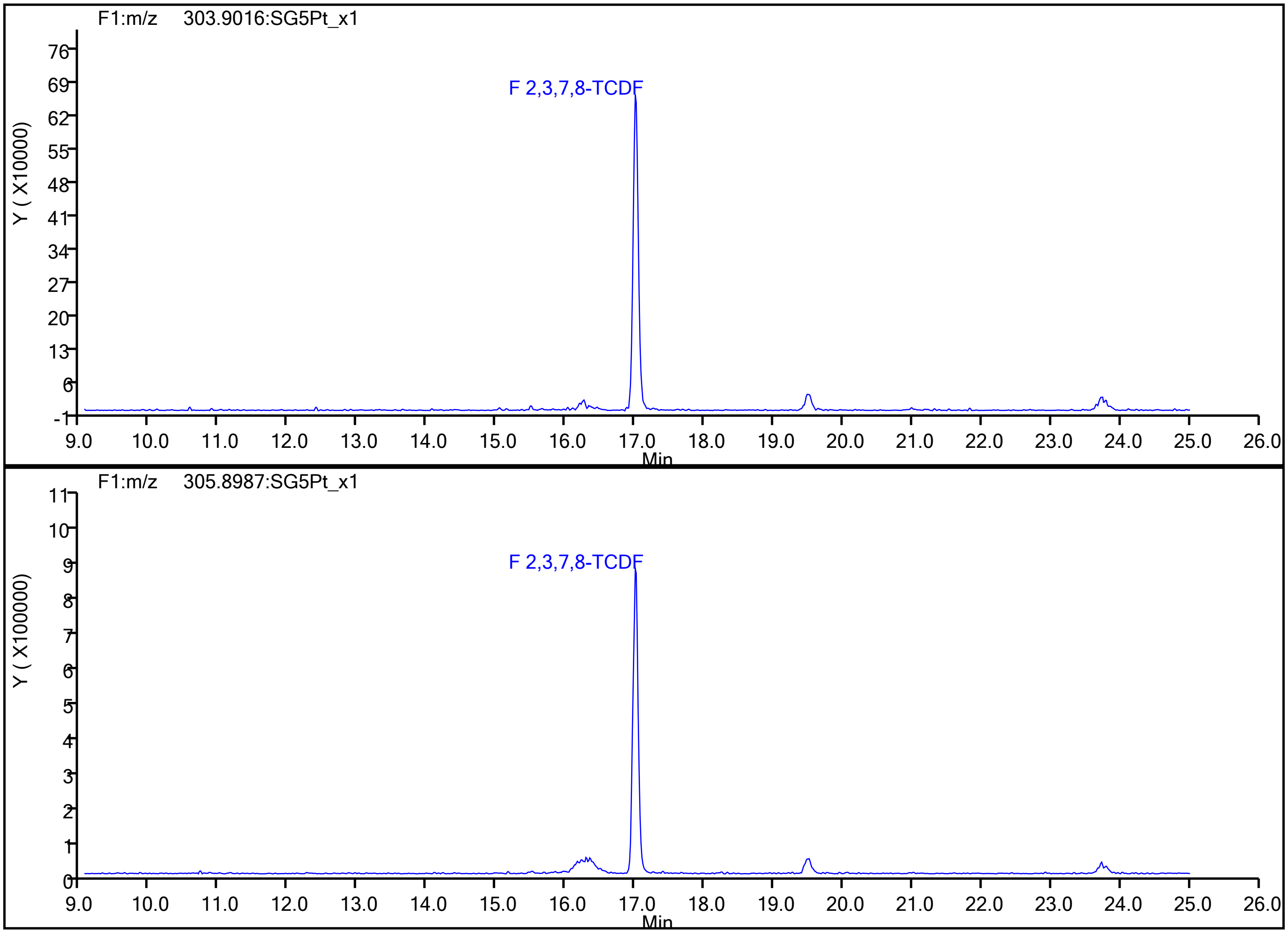

TCDF Interference Mass

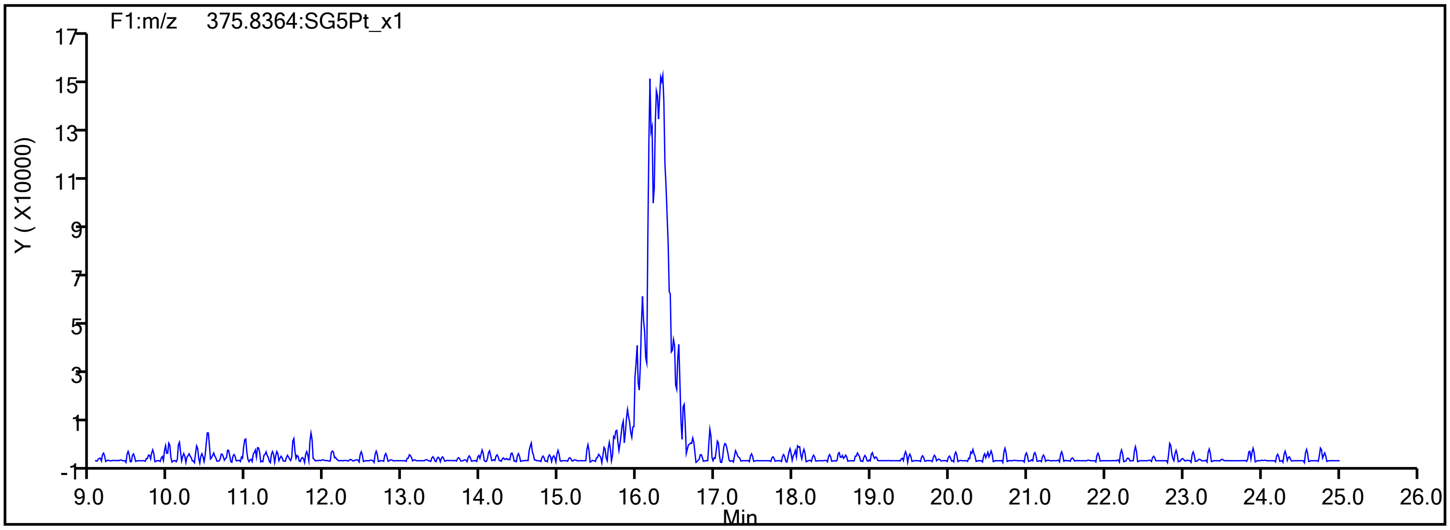

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

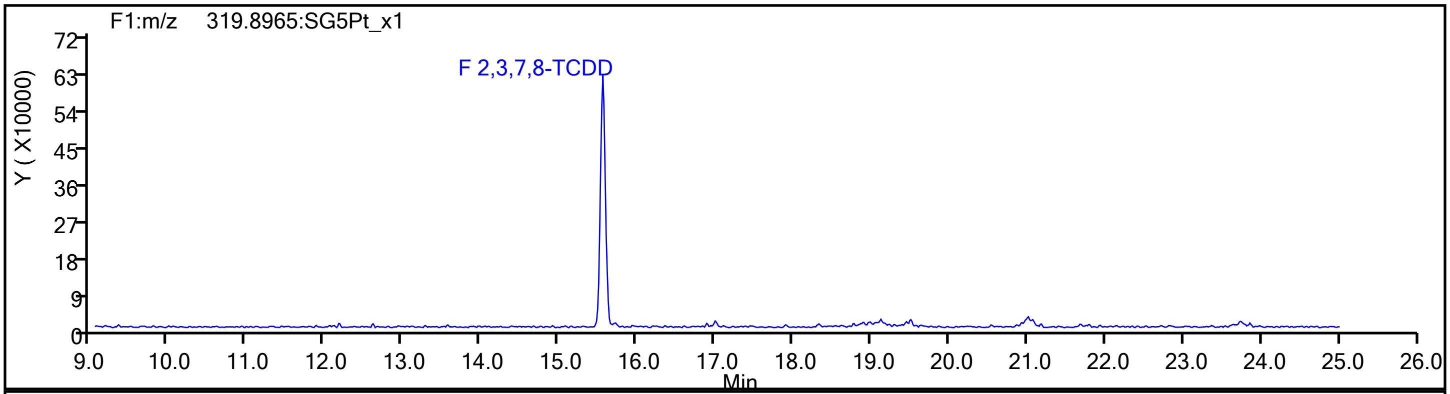

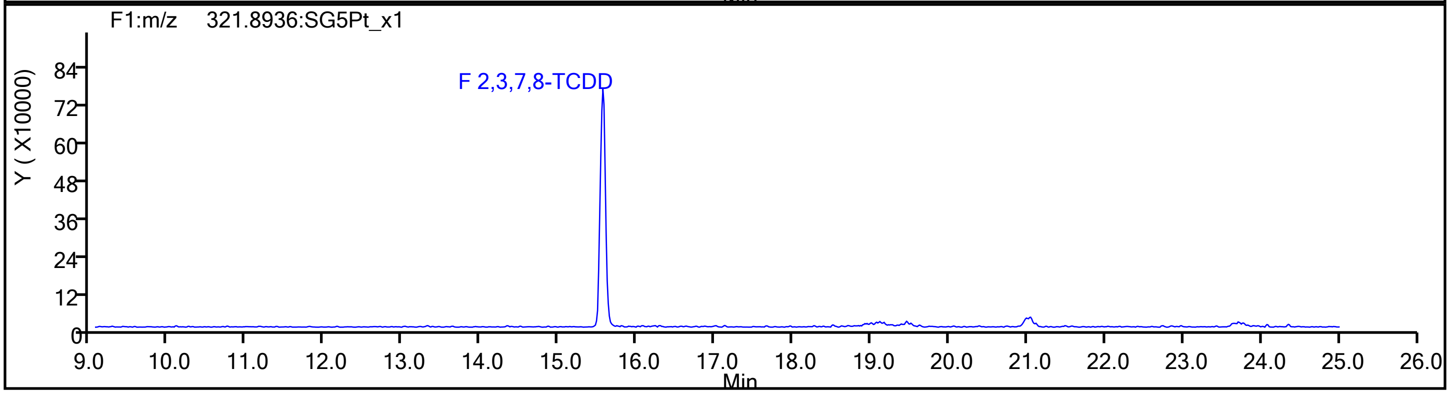

TCDD Standards

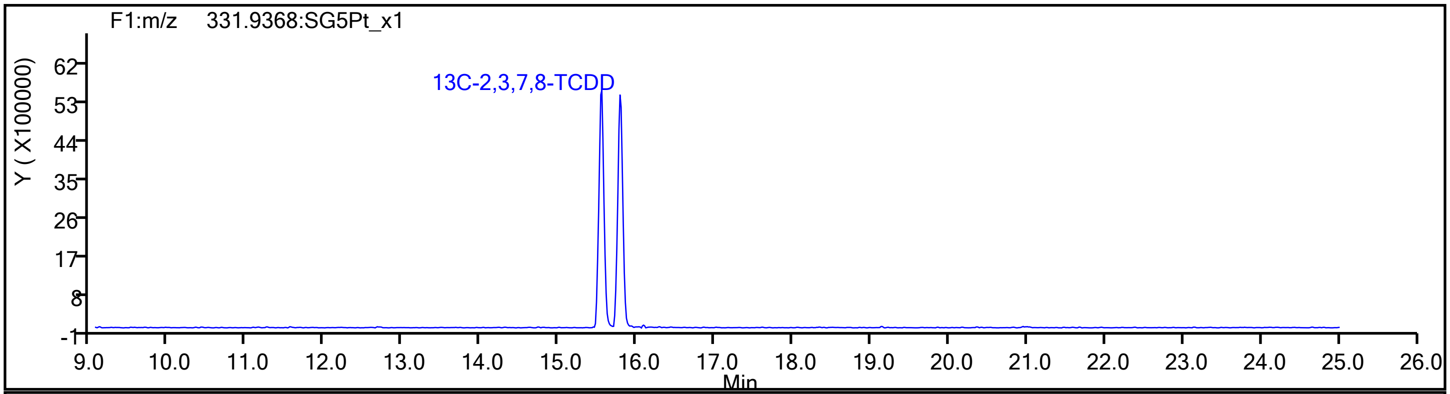

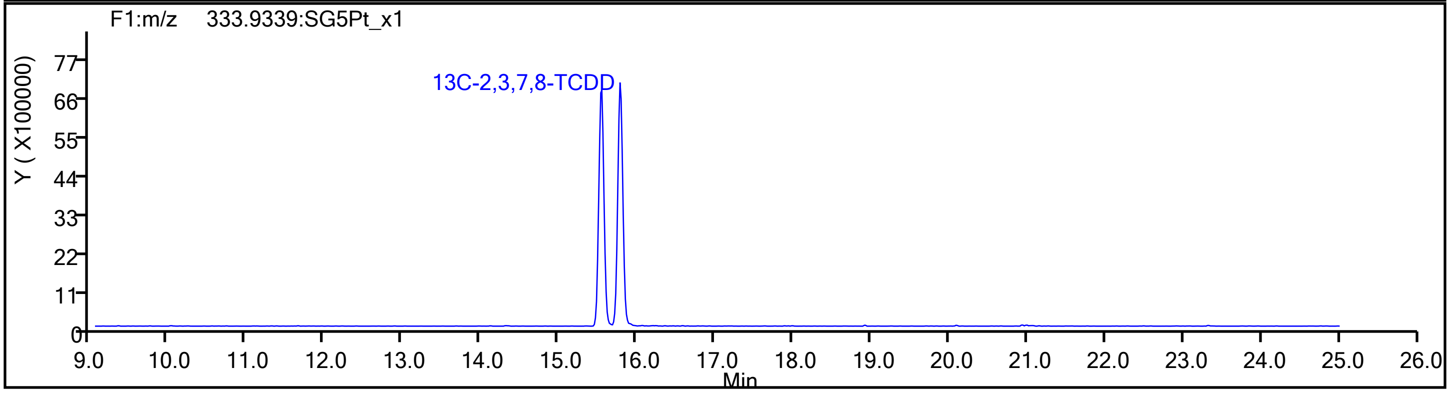

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

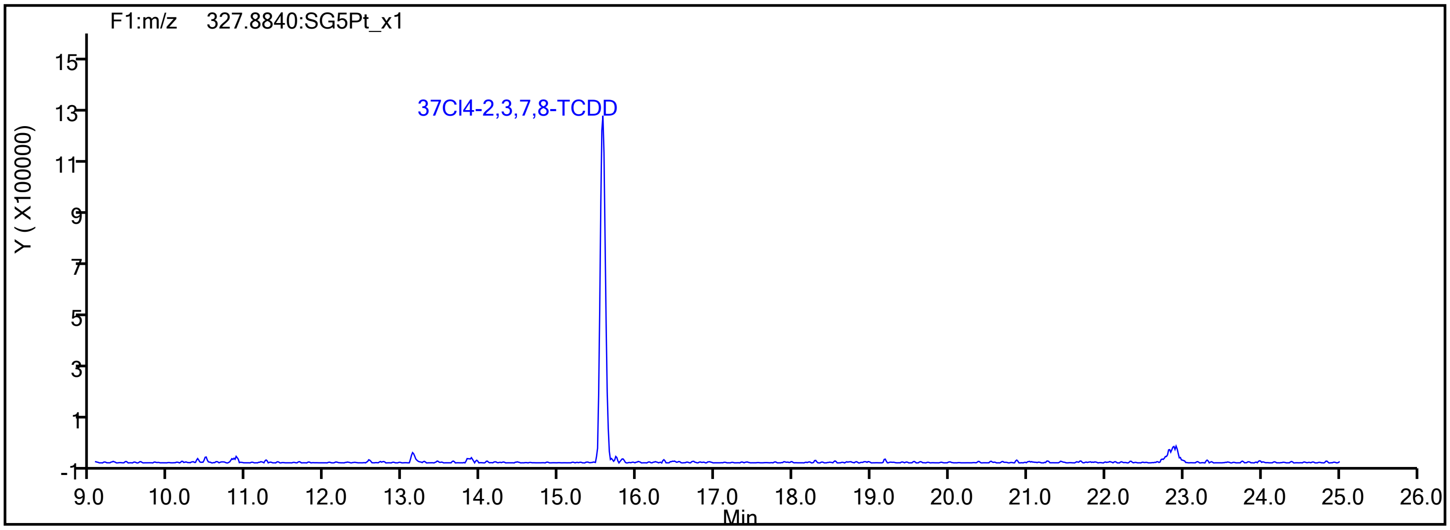

37Cl4-TCDD Standards

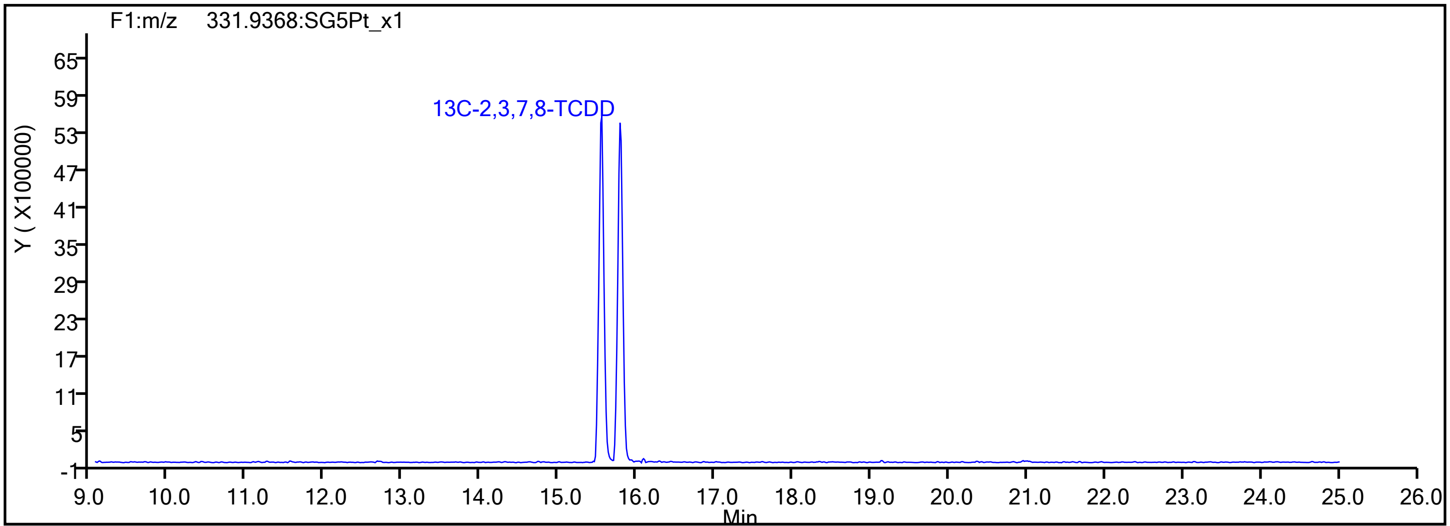

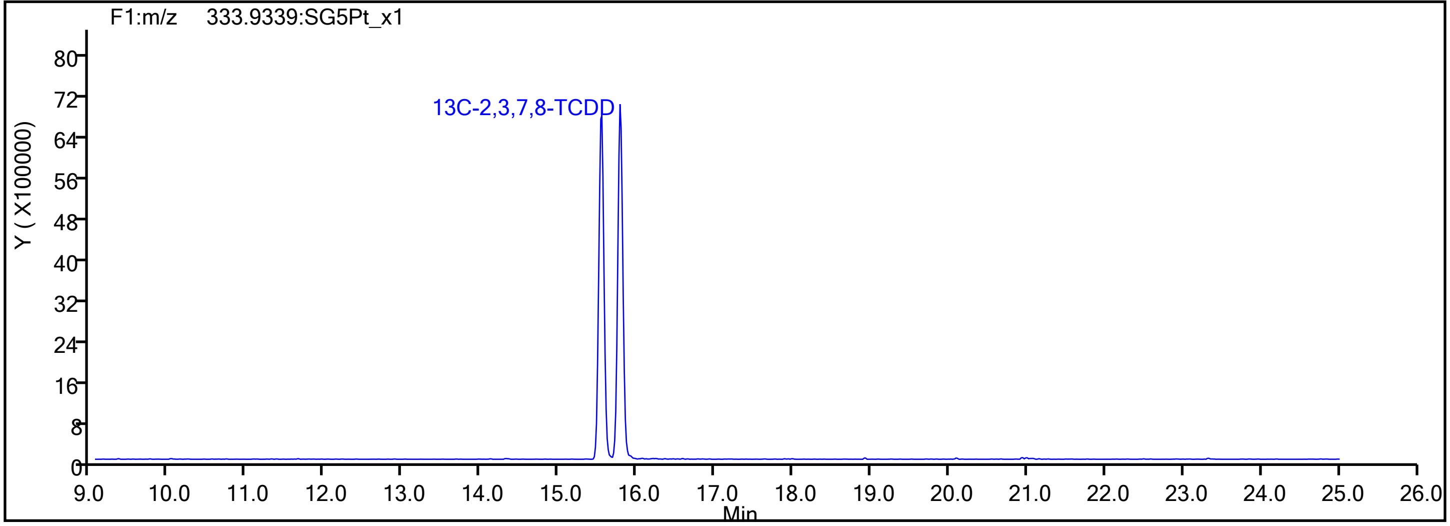

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

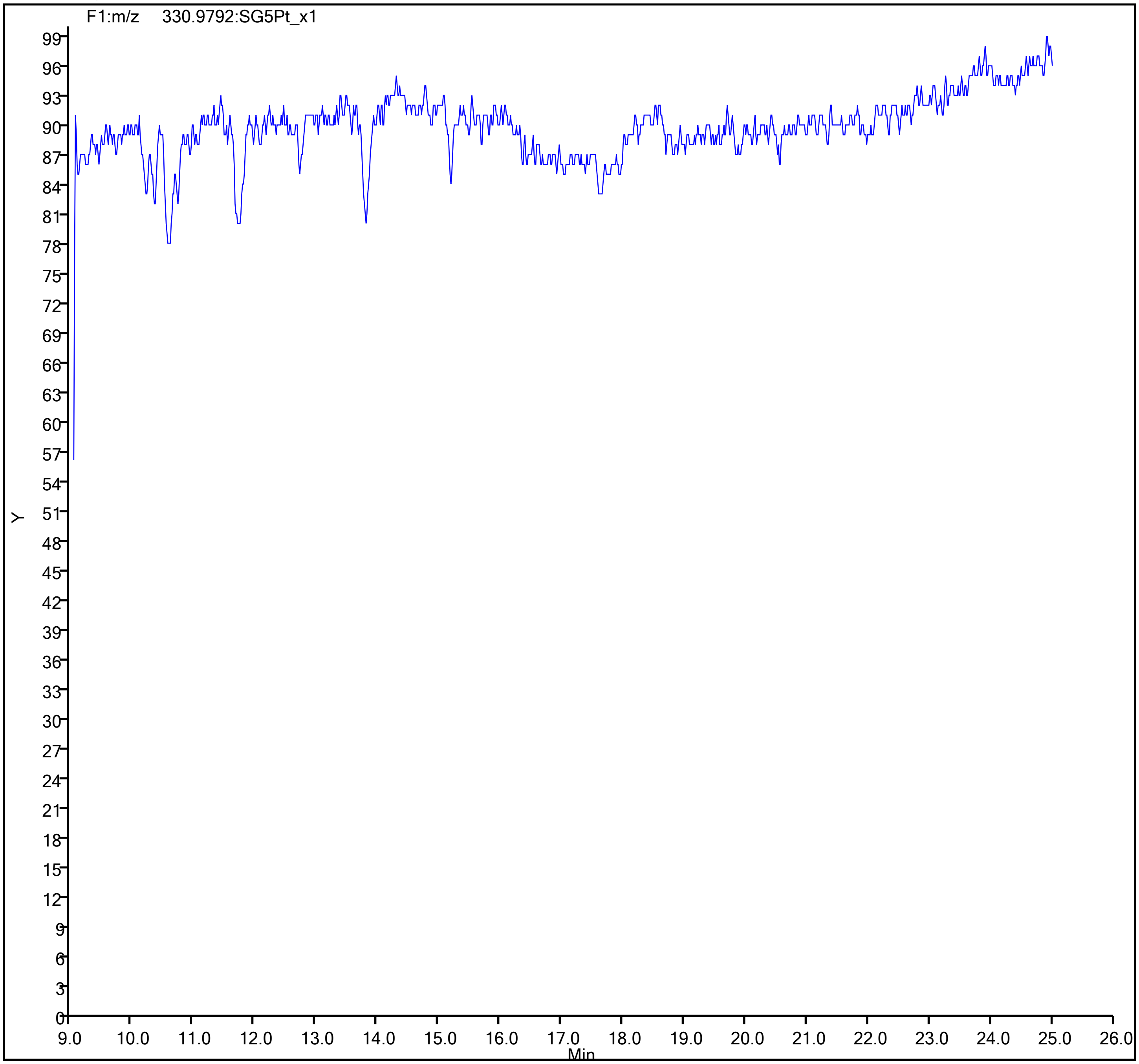

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Lims ID: IC 5
Client ID:
Sample Type: IC
Calib Level: 5
Inject. Date: 25-Jul-2020 01:45:24
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Misc. Info.: DB225RES
Operator ID:
Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:03
Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)
Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa
Date: 27-Jul-2020 12:34:06

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

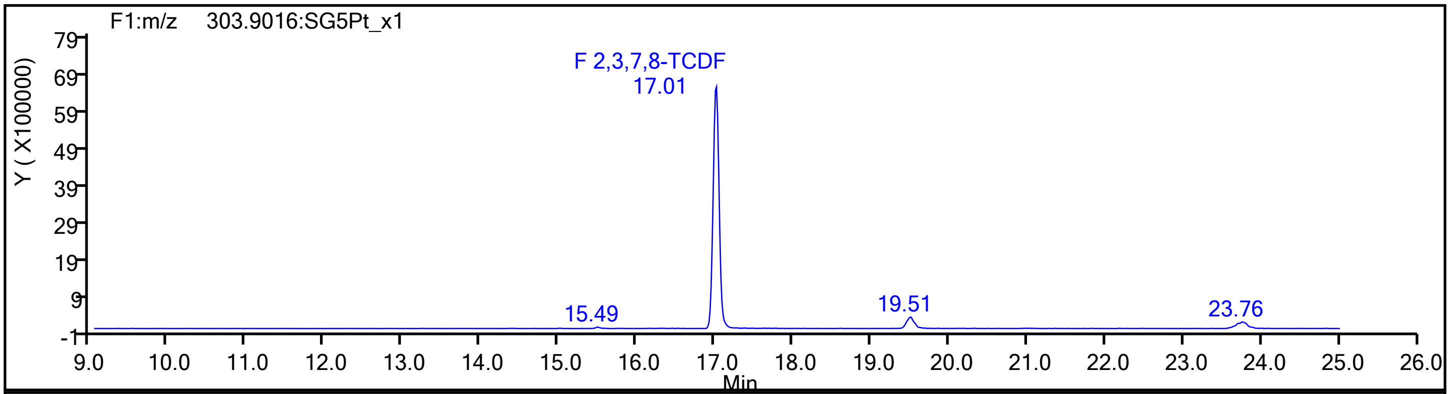

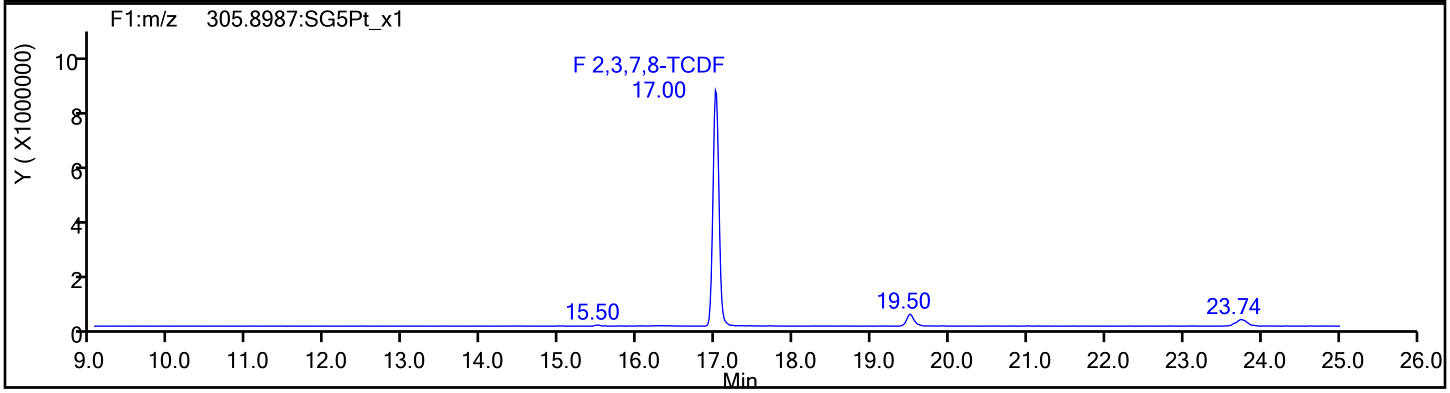

TCDF Standards

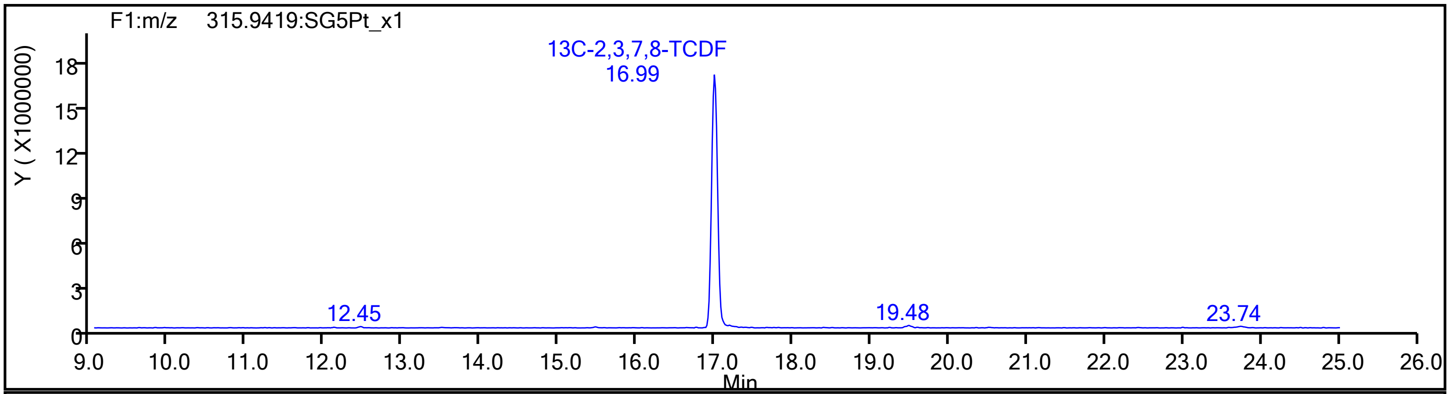

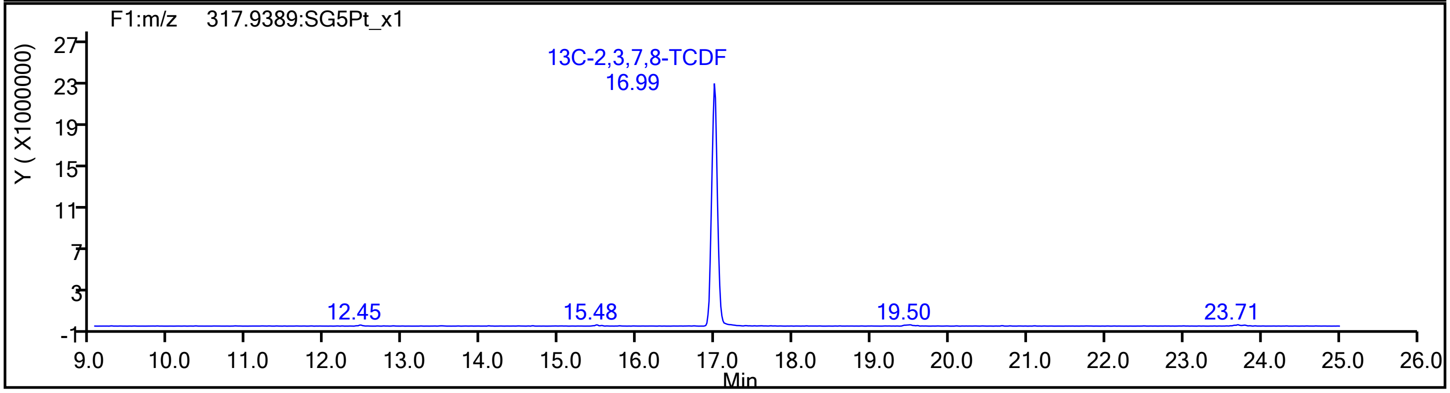

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

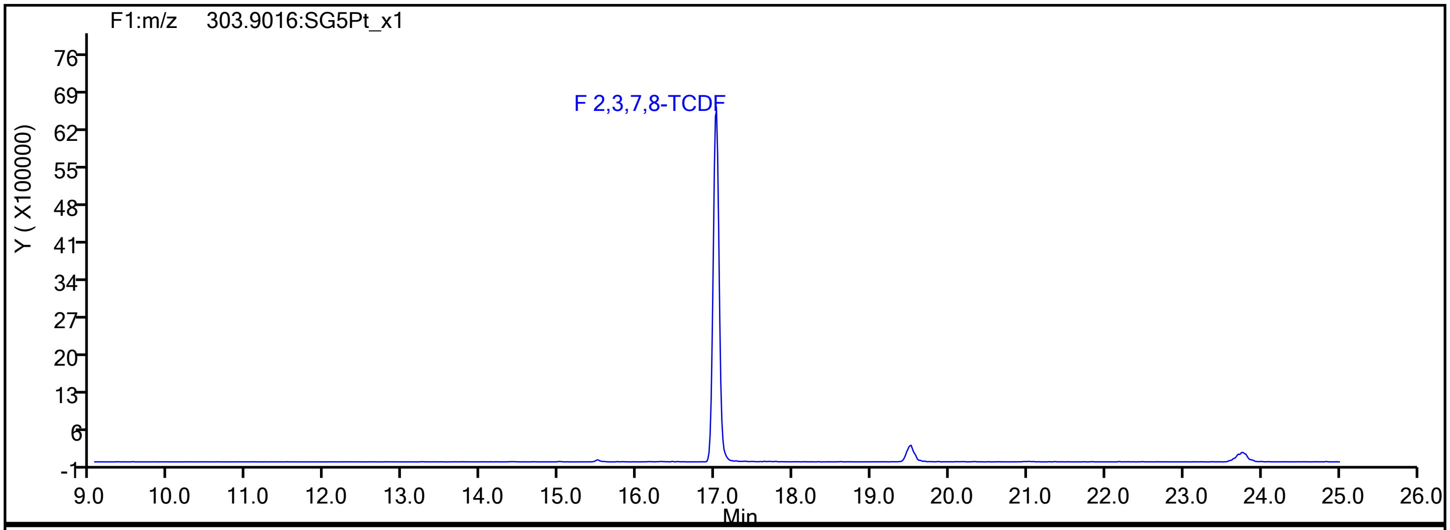

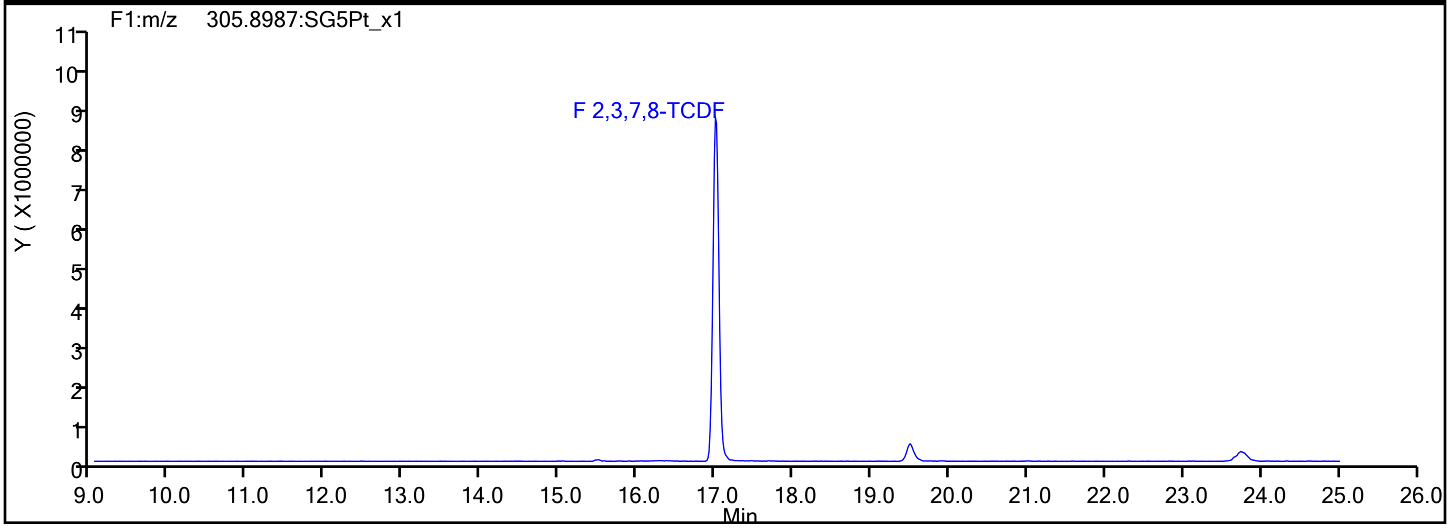

TCDF Interference Mass

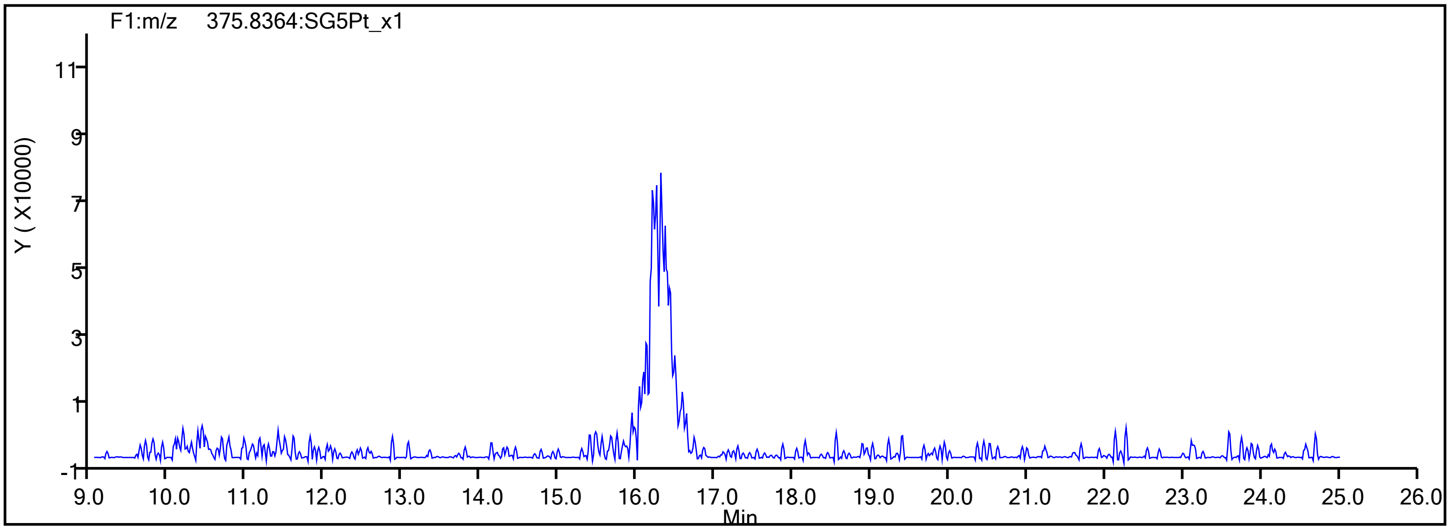

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

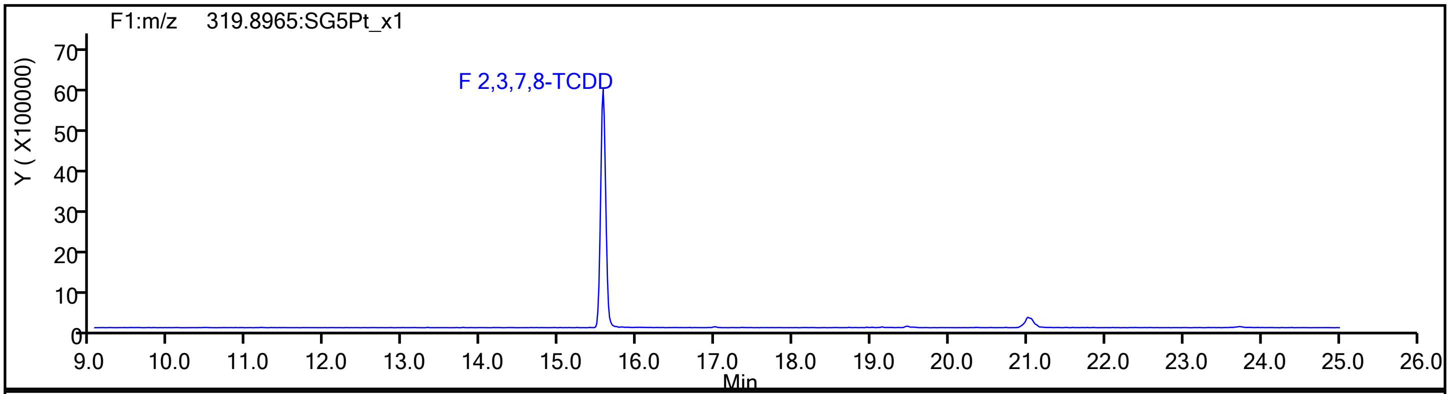

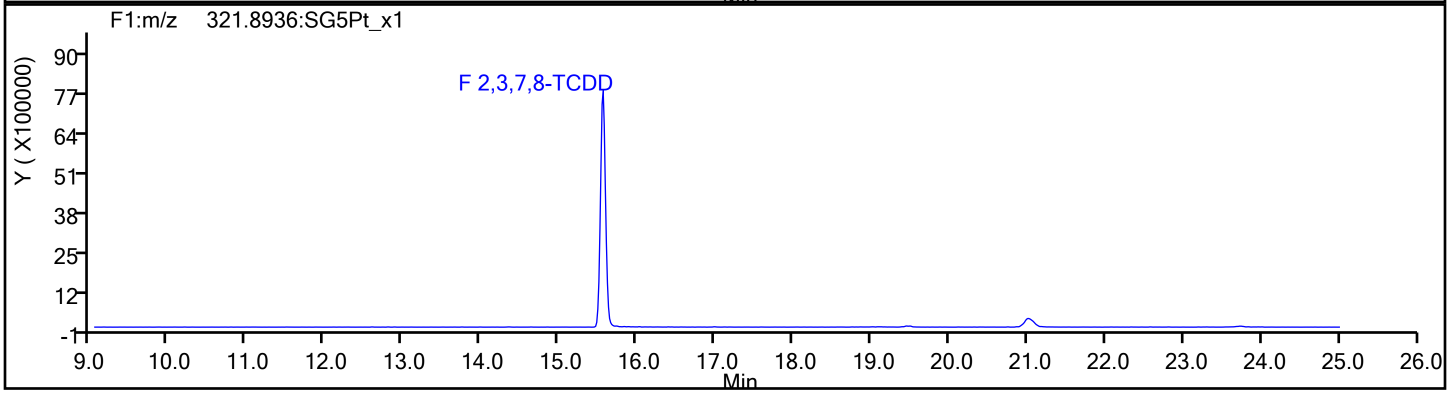

TCDD Standards

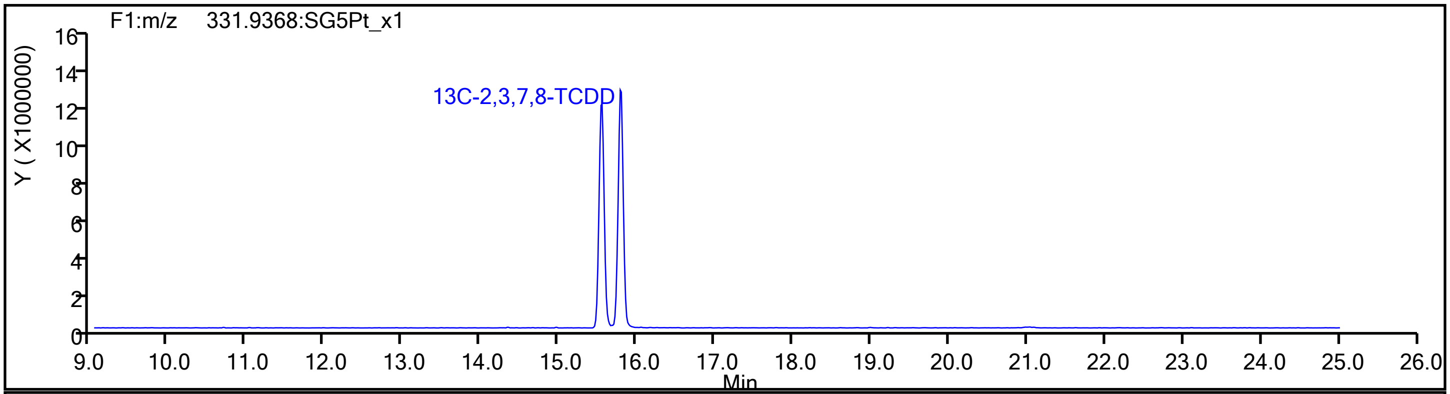

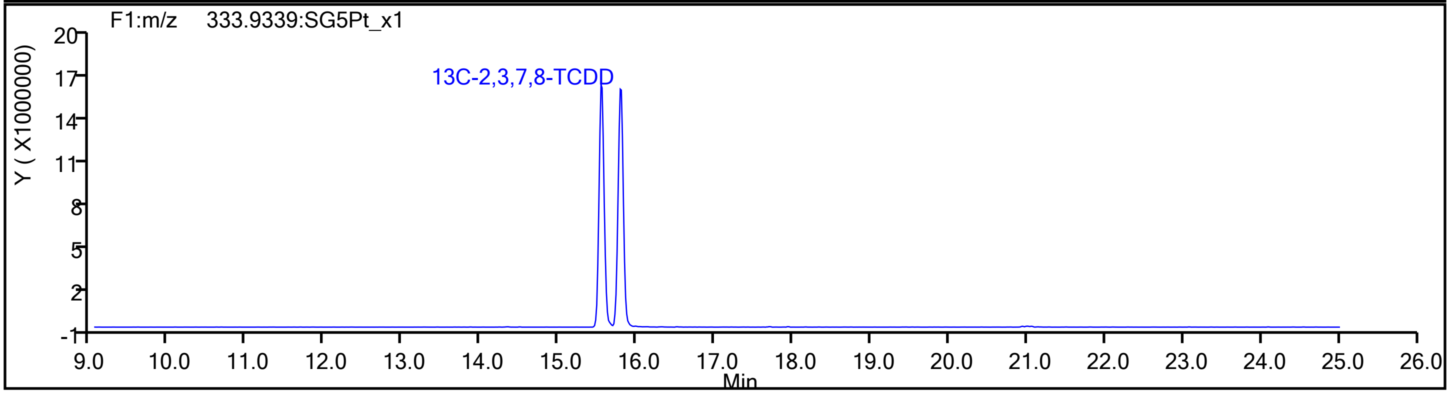

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

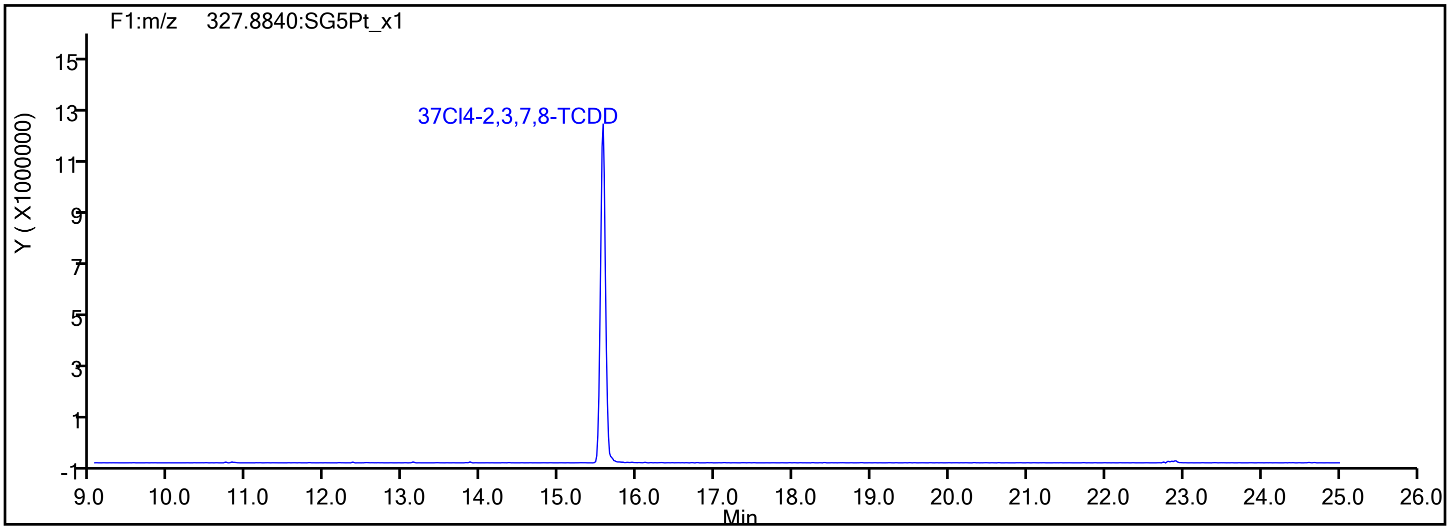

37Cl4-TCDD Standards

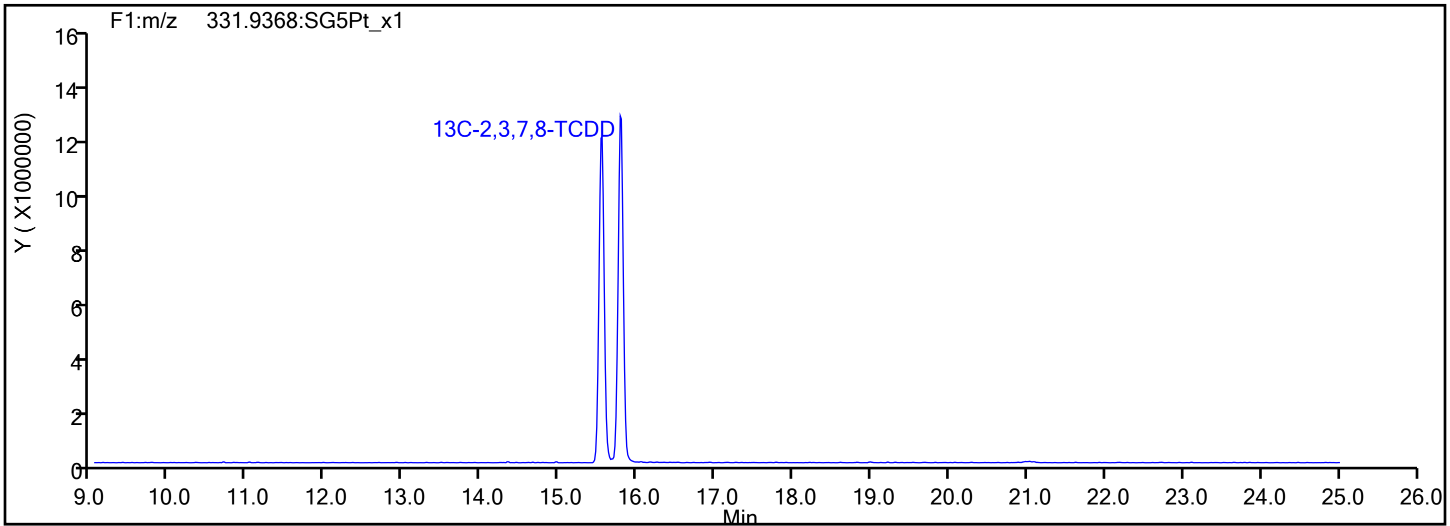

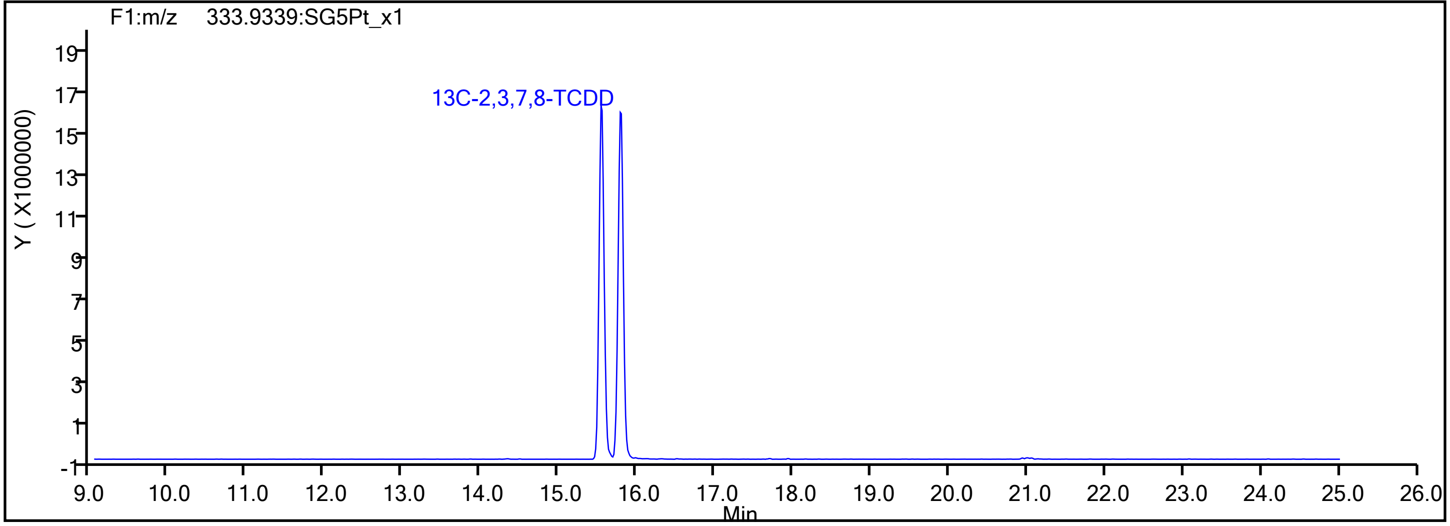

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

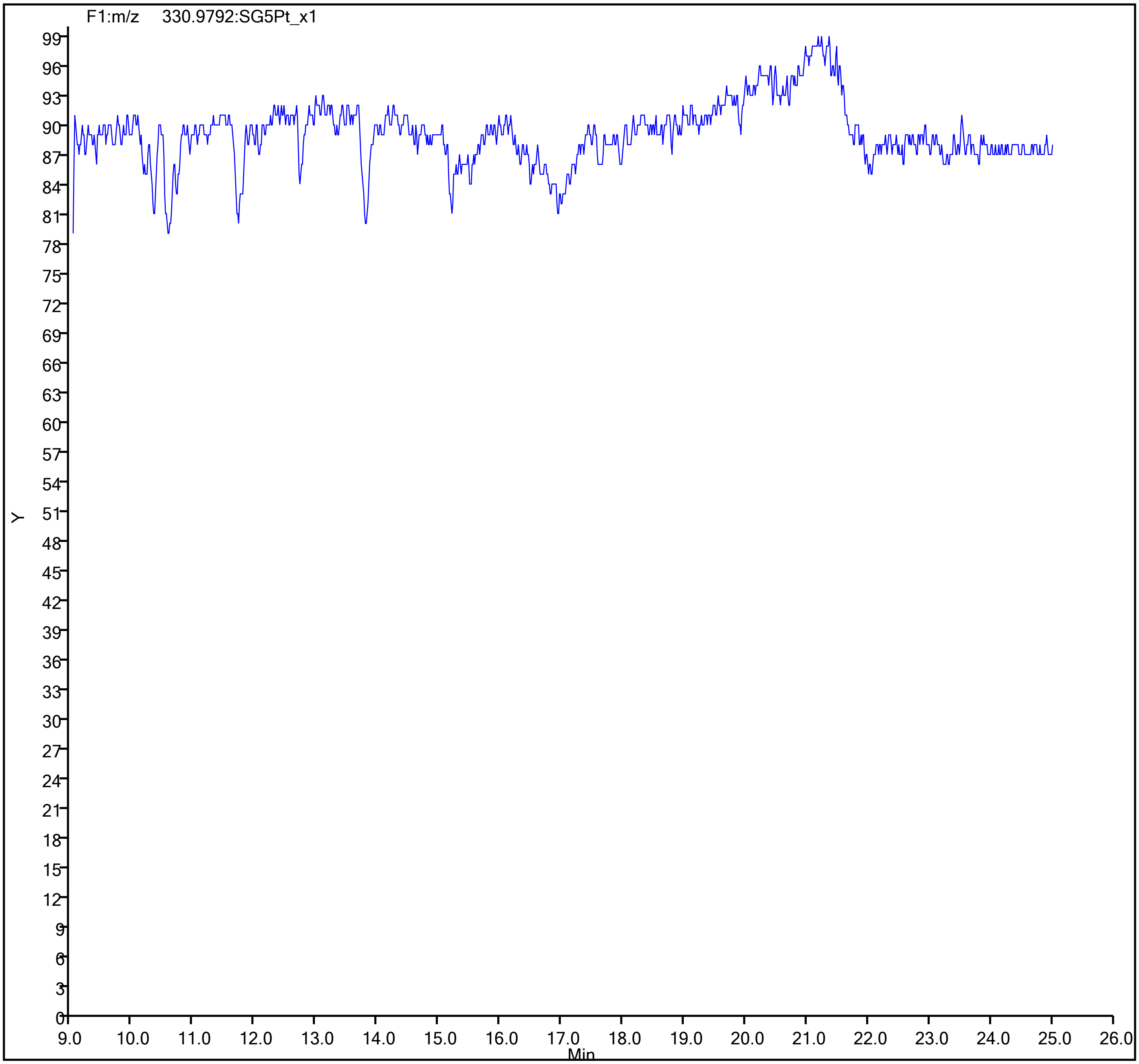

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Jul-2020 02:23:46 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:08 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 25-Jul-2020 02:23:46 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:08 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

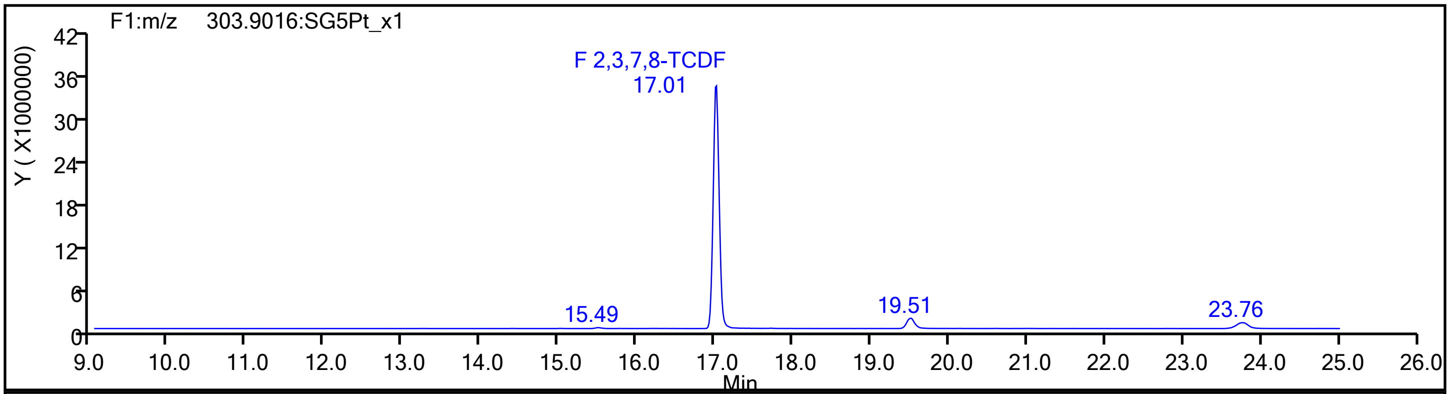

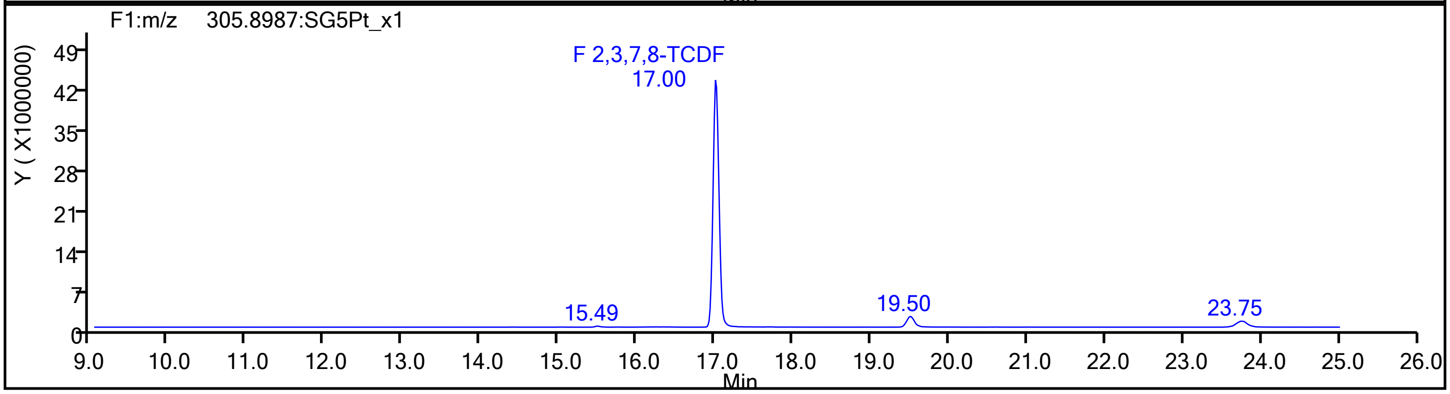

TCDF Standards

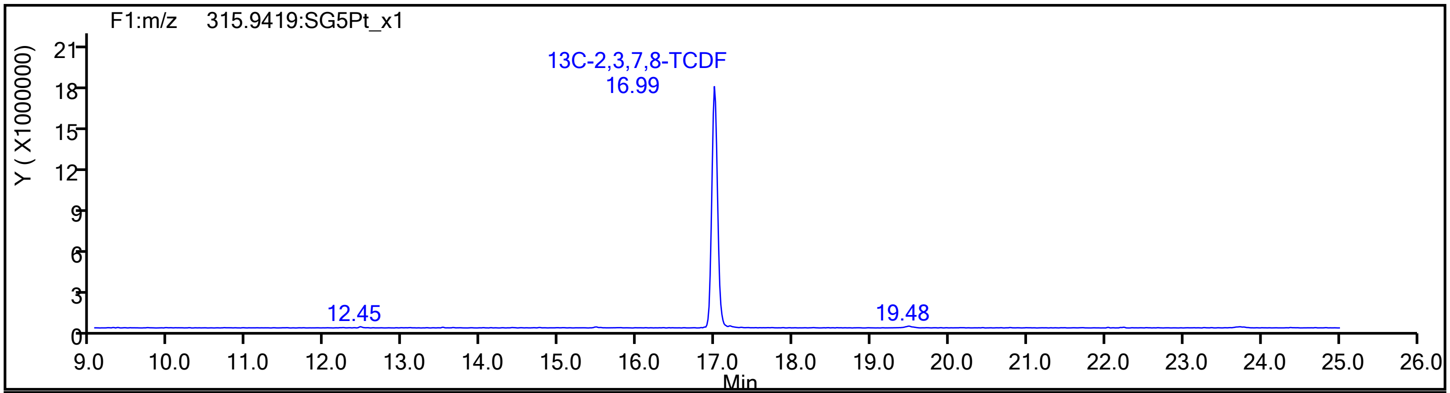

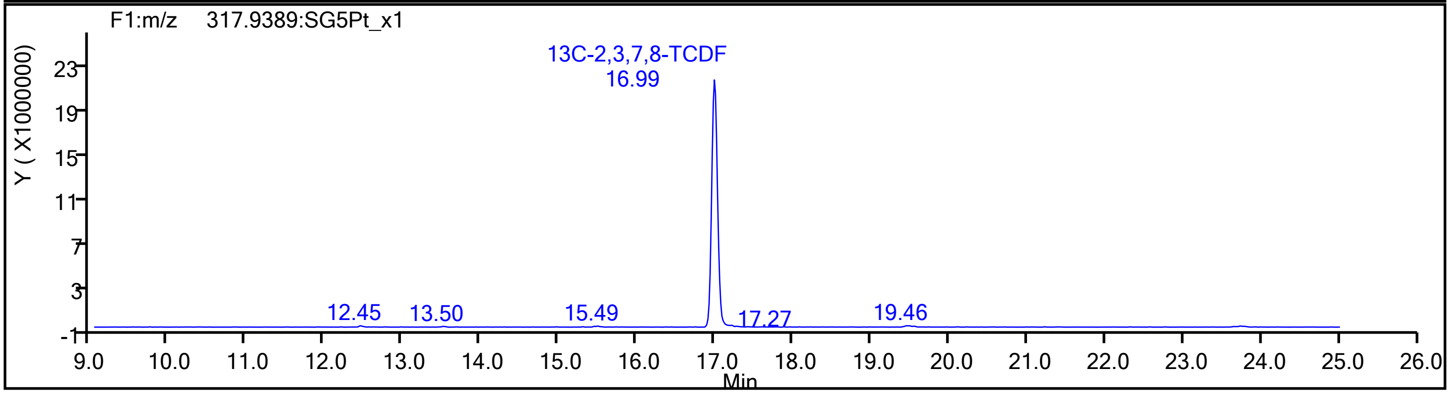

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

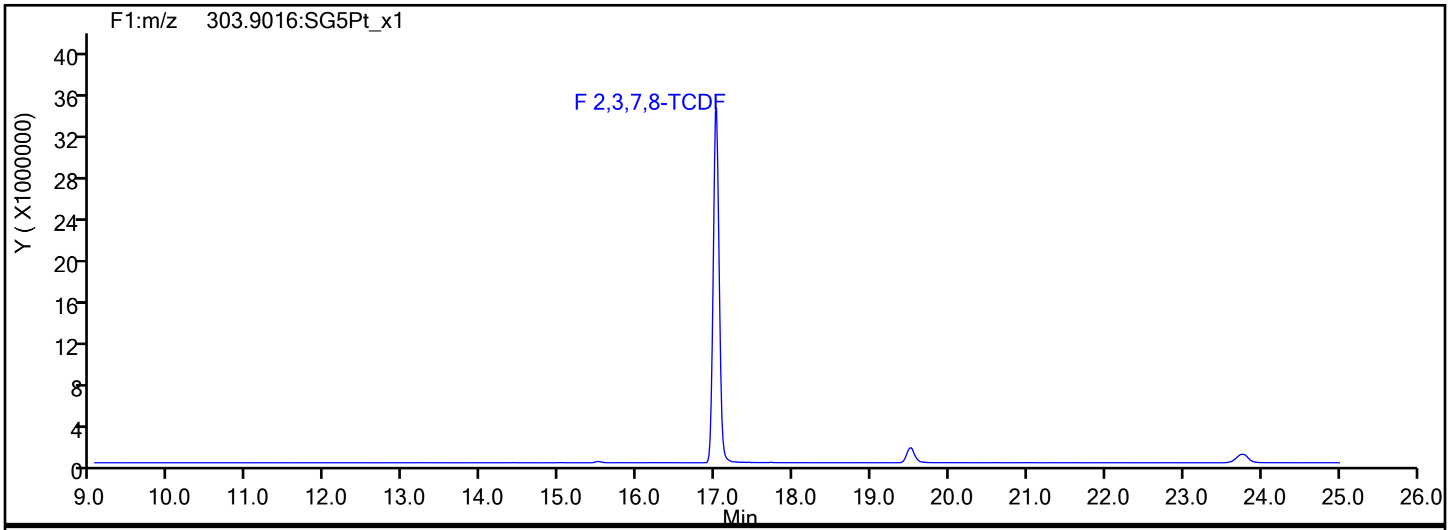

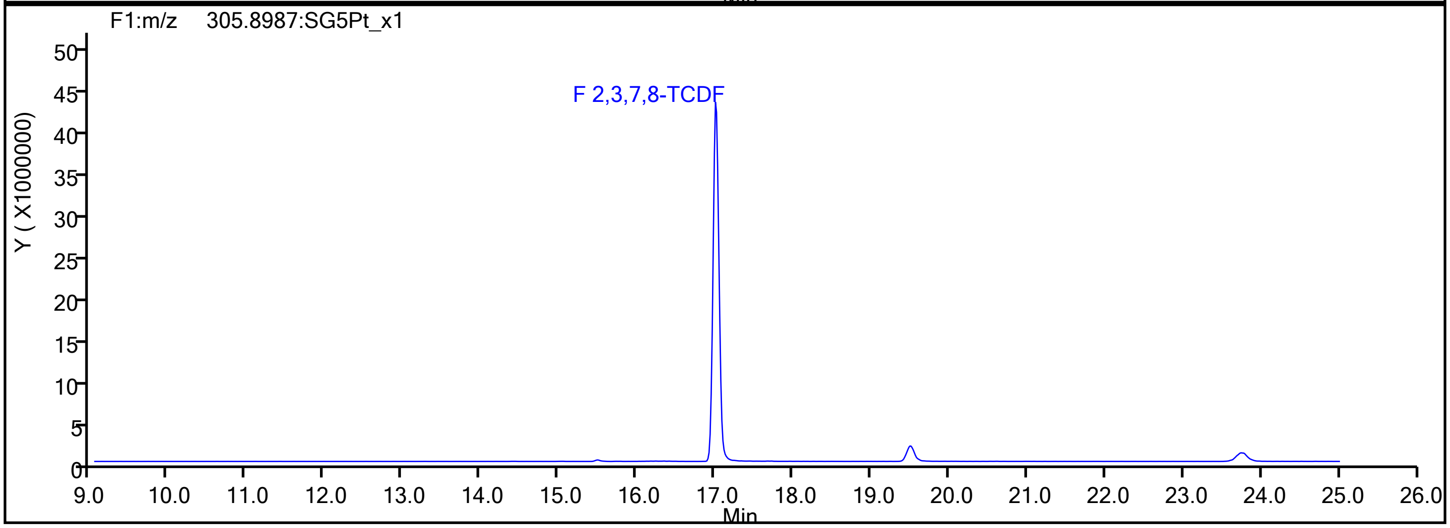

TCDF Interference Mass

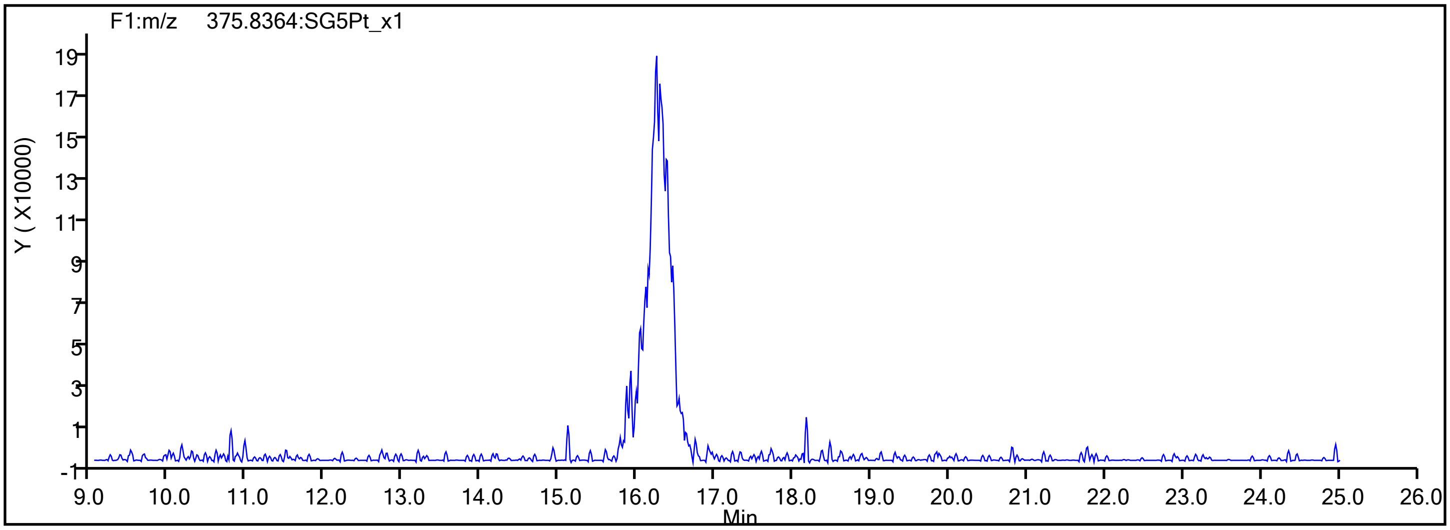

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Injection Date: 25-Jul-2020 02:23:46 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 7

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

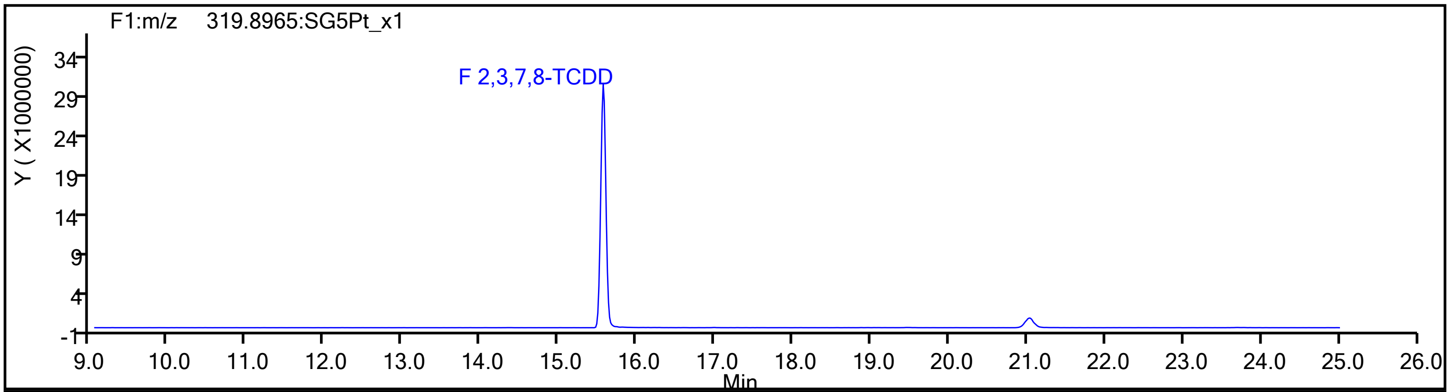

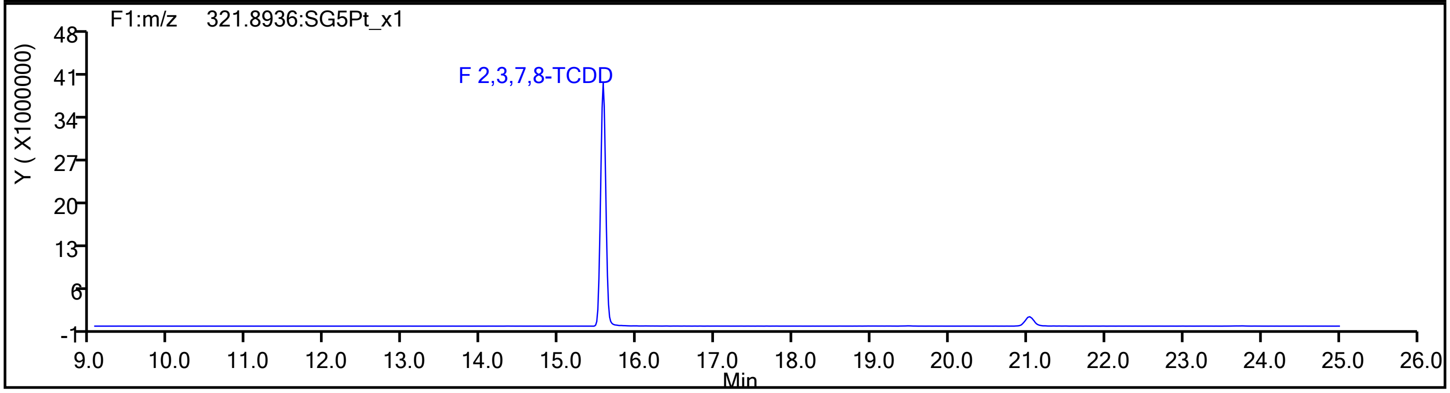

TCDD Standards

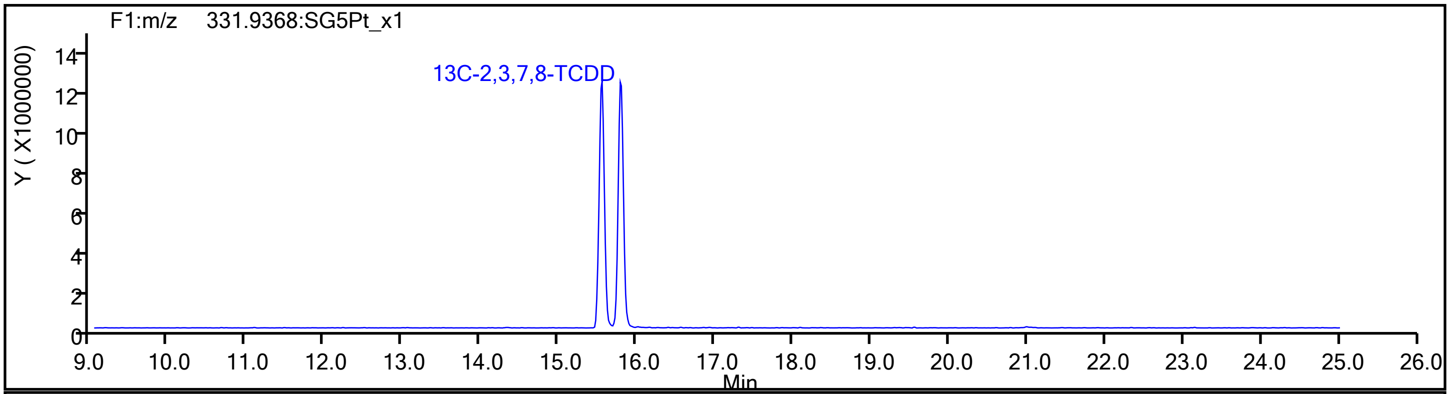

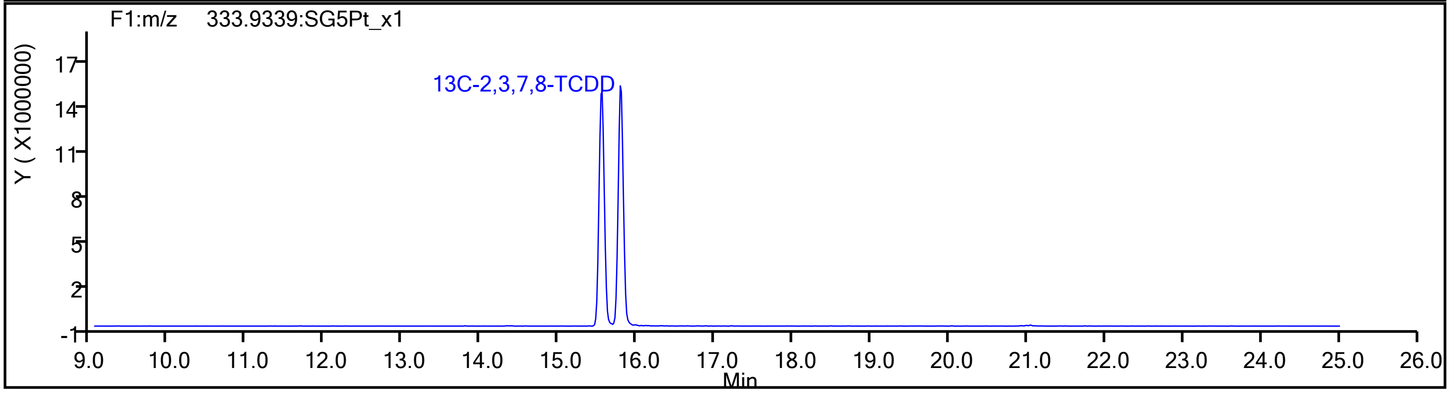

Report Date: 27-Jul-2020 12:43:10
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

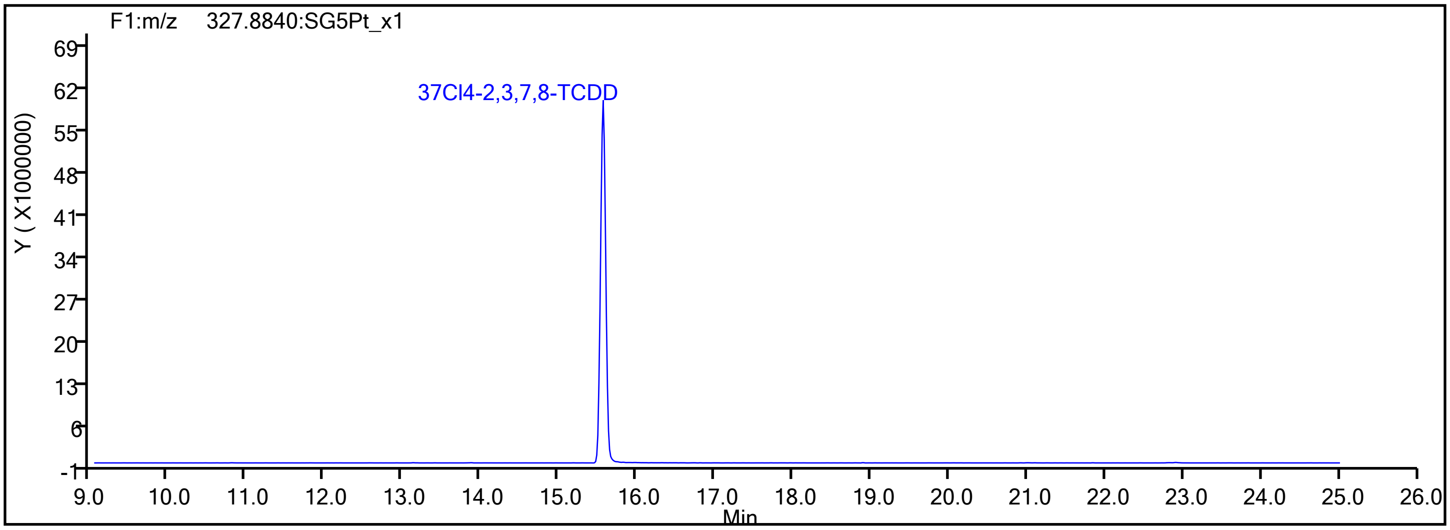

37Cl4-TCDD Standards

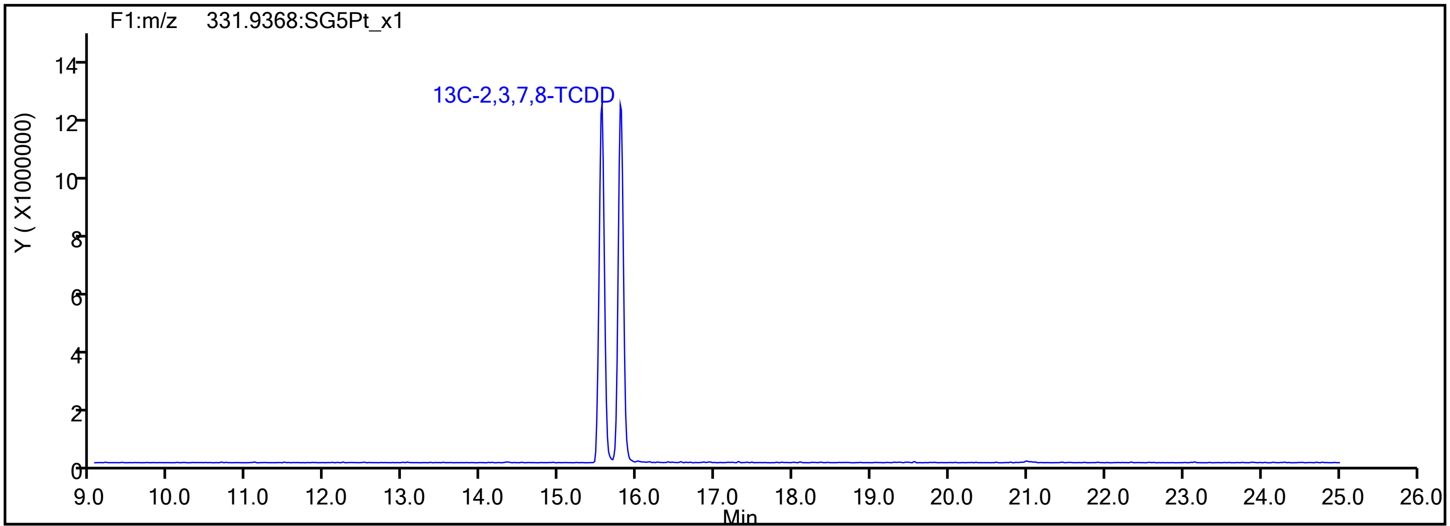

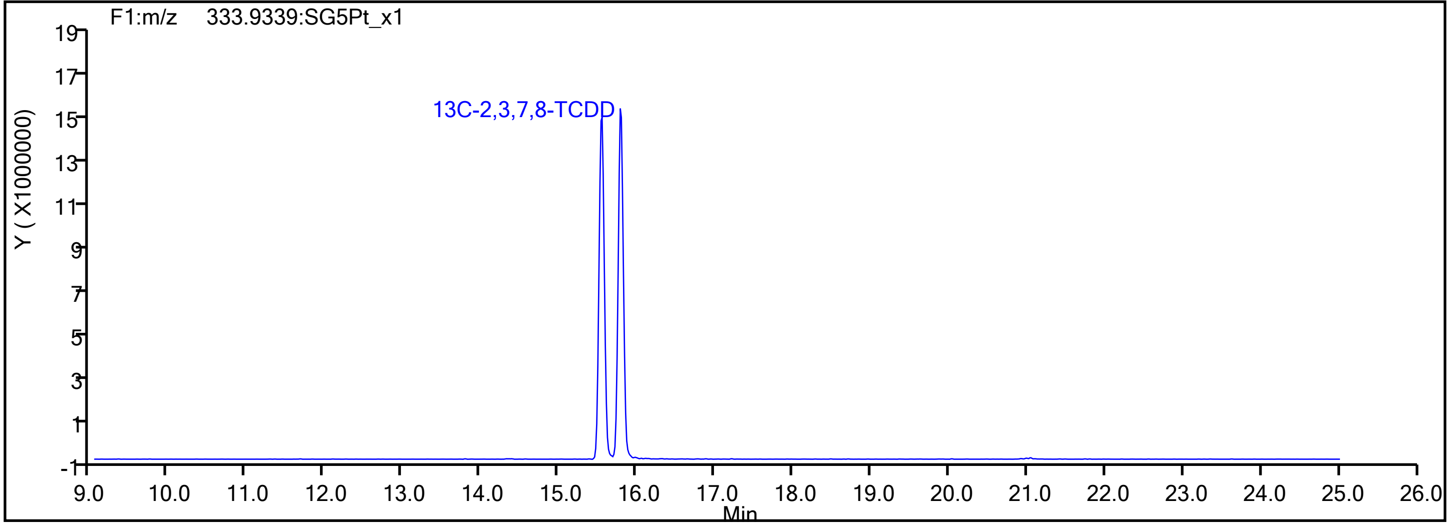

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

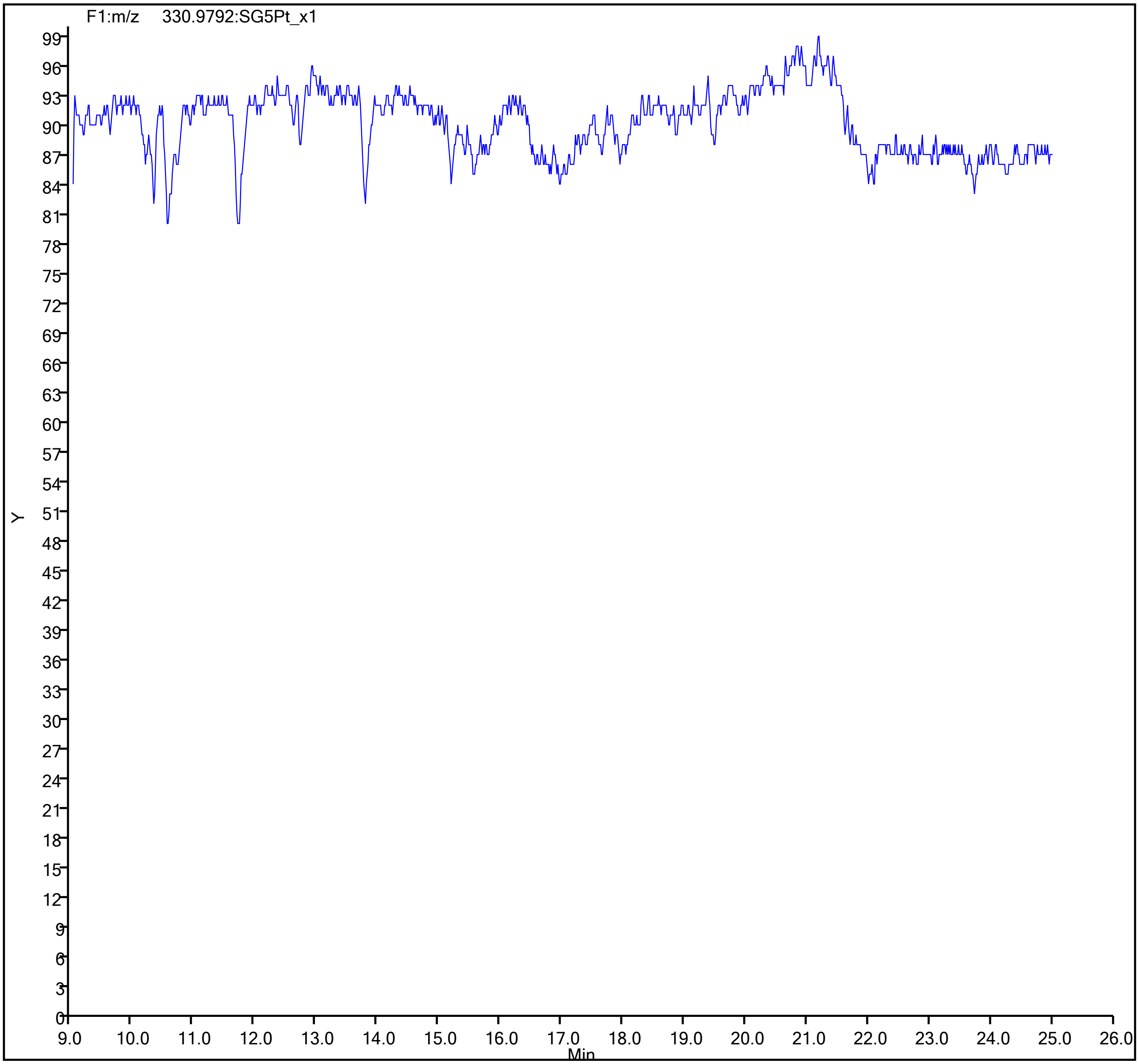

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento　Job No.: 320-66850-1　Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1　GC Column: DB-5　ID: 0.32(mm)　Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38　Calibration End Date: 11/17/2020 17:44　Calibration ID: 53030

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-432585/9	17no20dfs1_10.d
Level 2	IC 320-432585/4	17no20dfs1_5.d
Level 3	IC 320-432585/5	17no20dfs1_6.d
Level 4	IC 320-432585/6	17no20dfs1_7.d
Level 5	IC 320-432585/7	17no20dfs1_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.4187	1.0861	1.1076	1.0908	1.0701	AveID		1.1547				12.8		20.0			
2,3,7,8-TCDD	1.3727	1.1507	1.1151	1.0942	1.0969	AveID		1.1659				10.1		20.0			
1,2,3,7,8-PeCDF	1.3403	1.1398	1.1049	1.0366	1.0395	AveID		1.1322				11.0		20.0			
2,3,4,7,8-PeCDF	1.3262	1.1628	1.1364	1.1019	1.0667	AveID		1.1588				8.7		20.0			
1,2,3,7,8-PeCDD	1.3238	1.1428	1.0649	1.0456	1.0184	AveID		1.1191				11.0		20.0			
1,2,3,4,7,8-HxCDF	1.5361	1.3299	1.2902	1.2440	1.2021	AveID		1.3205				9.8		20.0			
1,2,3,6,7,8-HxCDF	1.4964	1.2776	1.2237	1.1769	1.1662	AveID		1.2682				10.6		20.0			
2,3,4,6,7,8-HxCDF	1.4886	1.3040	1.2353	1.1909	1.2000	AveID		1.2838				9.6		20.0			
1,2,3,4,7,8-HxCDD	1.4901	1.1472	1.1740	1.1016	1.0731	AveID		1.1972				14.1		20.0			
1,2,3,6,7,8-HxCDD	1.2757	1.0840	1.0135	1.0119	0.9622	AveID		1.0695				11.5		20.0			
1,2,3,7,8,9-HxCDD	1.4384	1.1763	1.1247	1.0906	1.0728	AveID		1.1806				12.7		20.0			
1,2,3,7,8,9-HxCDF	1.5811	1.3111	1.2429	1.2031	1.1933	AveID		1.3063				12.3		20.0			
1,2,3,4,6,7,8-HpCDF	1.8820	1.5698	1.4975	1.4105	1.4494	AveID		1.5618				12.1		20.0			
1,2,3,4,6,7,8-HpCDD	1.3593	1.0851	1.0649	1.0294	1.0010	AveID		1.1079				13.0		20.0			
1,2,3,4,7,8,9-HpCDF	1.8432	1.4559	1.4319	1.3948	1.3616	AveID		1.4975				13.1		20.0			
OCDD	1.4508	1.1851	1.1003	1.0672	1.0294	AveID		1.1666				14.5		20.0			
OCDF	1.7508	1.4794	1.3712	1.4069	1.3926	AveID		1.4802				10.6		20.0			
13C-2,3,7,8-TCDF	1.6134	1.6929	1.6568	1.7111	1.7420	Ave		1.6832				3.0		35.0			
13C-2,3,7,8-TCDD	1.0810	1.0797	1.0648	1.0923	1.1304	Ave		1.0896				2.3		35.0			
13C-1,2,3,7,8-PeCDF	1.4981	1.3876	1.3863	1.4986	1.5315	Ave		1.4604				4.7		35.0			
13C-2,3,4,7,8-PeCDF	1.3631	1.3074	1.2846	1.3579	1.4391	Ave		1.3504				4.4		35.0			
13C-1,2,3,7,8-PeCDD	0.8732	0.8261	0.8449	0.8970	0.9232	Ave		0.8729				4.5		35.0			
13C-1,2,3,4,7,8-HxCDF	1.2577	1.3068	1.2661	1.2903	1.2832	Ave		1.2808				1.5		35.0			
13C-1,2,3,6,7,8-HxCDF	1.4245	1.4653	1.4758	1.5151	1.4269	Ave		1.4615				2.6		35.0			
13C-2,3,4,6,7,8-HxCDF	1.3095	1.3116	1.3272	1.3636	1.3015	Ave		1.3227				1.9		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8585	0.8944	0.8525	0.9021	0.8708	Ave		0.8757				2.5		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0577	1.0633	1.0665	1.0850	1.0528	Ave		1.0651				1.2		35.0			
13C-1,2,3,7,8,9-HxCDF	1.1012	1.0467	1.0986	1.1490	1.1355	Ave		1.1062				3.6		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9197	0.9532	0.9437	0.9913	0.9526	Ave		0.9521				2.7		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8143	0.8253	0.8337	0.8604	0.8630	Ave		0.8393				2.6		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7349	0.7699	0.7727	0.7932	0.8202	Ave		0.7782				4.0		35.0			
13C-OCDD	0.4938	0.4848	0.5285	0.5597	0.5837	Ave		0.5301				8.0		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.1787	1.1309	1.1089	1.1322	1.1719	Ave		1.1445				2.6					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-432585/9	17no20dfs1_10.d
Level 2	IC 320-432585/4	17no20dfs1_5.d
Level 3	IC 320-432585/5	17no20dfs1_6.d
Level 4	IC 320-432585/6	17no20dfs1_7.d
Level 5	IC 320-432585/7	17no20dfs1_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	48543	78902	629710	3500107	16528690	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	31468	53314	407439	2241168	10994725	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	212906	339347	2627930	14564784	70578766	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	191690	326187	2504487	14028593	68057207	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	122563	202562	1543597	8794530	41683724	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	198989	335604	2568215	14234353	73274262	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	219564	361503	2839217	15812779	79051672	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	200786	330280	2577456	14400763	74190158	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	131766	198132	1573325	8812547	44391919	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	138982	222574	1699311	9736393	48120799	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	141949	222340	1696471	9609067	49018548	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	179336	265008	2146580	12258577	64367080	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	178282	288953	2221729	12400149	65590399	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	114006	172927	1395664	7854304	41036566	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	139513	216435	1739348	9811769	53047298	2.50	10.0	50.0	200	1000
OCDD		AveID	147577	221914	1828375	10594948	57080751	5.00	20.0	100	400	2000
OCDF		AveID	178099	277015	2278487	13966649	77222416	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	6843222	3632320	5685124	8021729	7723296	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	4584854	2316674	3653681	5120726	5011703	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	6354139	2977170	4756996	7025605	6789961	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	5781548	2805191	4407855	6365852	6380229	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	3703477	1772472	2899131	4205499	4093198	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	5181766	2523469	3980989	5721063	6095612	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	5869111	2829584	4640355	6718059	6778427	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	5395434	2532810	4173055	6046028	6182541	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	3537152	1727097	2680342	3999855	4136810	100	100	100	100	100

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	4357819	2053194	3353387	4810874	5001351	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	4537064	2021278	3454092	5094707	5394247	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	3789205	1840655	2967331	4395524	4525374	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	3354869	1593650	2621187	3814878	4099544	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	3027653	1486611	2429483	3517248	3896084	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	4068864	1872512	3323397	4963784	5545172	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	24998	48530	380492	2123196	10391691	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	17NO20DFS1_1	Resolution Check	RC 111720	46			KSS	1.000	
2	17NO20DFS1_2	WDM HRDXNCP_00042	WDM 111720	1	Dioxin		KSS	1.000	
3	17NO20DFS1_3	SB Solvent Blank C-14	SB 111720	3			KSS	1.000	
4	17NO20DFS1_4	CS-2 HRDXNL2_00030	IC 111720	49	Dioxin		KSS	1.000	
5	17NO20DFS1_5	CS-3 HRDXNL3_00028	IC 111720A	50	Dioxin		KSS	1.000	
6	17NO20DFS1_6	CS-4 HRDXNL4_00095	IC 111720B	51	Dioxin		KSS	1.000	
7	17NO20DFS1_7	CS-5 HRDXNL5_00031	IC 111720C	52	Dioxin		KSS	1.000	
8	17NO20DFS1_8	CS-6 HRDXNL6_00027	IC 111720D	53	Dioxin		KSS	1.000	
9	17NO20DFS1_9	SB Solvent Blank C-14	SB 111720A	3			KSS	1.000	
10	17NO20DFS1_10	CS-2 HRDXNL2_00030	IC 111720 RI	49	Dioxin		KSS	1.000	
11	17NO20DFS1_11	ICV HRDXNIC_00046	ICV 111720	54	Dioxin		KSS	1.000	
12	17NO20DFS1_12	Resolution Check	RC 111720A	46			KSS	1.000	
13	17NO20DFS1_13	CCV CS-4 HRDXNL4_00095	CCV 111720	2	8290/1613B		KSS	1.000	
14	17NO20DFS1_14	WDM HRDXNCP_00042	WDM 111720A	1	8290/1613B		KSS	1.000	
15	17NO20DFS1_15	SB Solvent Blank C-14	SB 111720B	3			KSS	1.000	
16	17NO20DFS1_16	MB 320-430415/1-A	MB 320-430415/1-A	4	8290/Na2SO4	QC88	KSS	10.000	g
17	17NO20DFS1_17	MB 320-428541/1-A	MB 320-428541/1-A	5	8290A/Solid	D197	KSS	10.000	g
18	17NO20DFS1_18	LCS 320-428541/2-A	LCS 320-428541/2-A	6	8290A/Solid		KSS	10.000	g
19	17NO20DFS1_19	320-66234-A-4-A	320-66234-A-4-A	7	8290A/Solid		KSS	10.000	g
20	17NO20DFS1_20	320-66234-A-4-B MS	320-66234-A-4-B MS	8	8290A/Solid		KSS	10.000	g
21	17NO20DFS1_21	320-66234-A-4-C MSD	320-66234-A-4-C MSD	9	8290A/Solid		KSS	10.000	g
22	17NO20DFS1_22	240-138847-b-2-b RI	240-138847-b-2-b	10	8290A/Solid	D195	KSS	10.000	g
23	17NO20DFS1_23	240-138860-b-1-b RI	240-138860-b-1-b	11	8290A/Solid		KSS	10.000	g
24	17NO20DFS1_24	240-138860-b-2-b RI	240-138860-b-2-b	12	8290A/Solid		KSS	10.000	g
25	17NO20DFS1_25	SB Solvent Blank C-14	SB 111720C	3			KSS	1.000	
26	17NO20DFS1_26	Resolution Check	RC 111720B	46			KSS	1.000	
27	17NO20DFS1_27	CCV CS-4 HRDXNL4_00095	CCV 111720A	2	8290/1613B		KSS	1.000	
28	17NO20DFS1_28	Resolution Check	RC 111720C	46			KSS	1.000	
29	17NO20DFS1_29	WDM HRDXNCP_00042	WDM 111720B	1	8290/1613B		KSS	1.000	
30	17NO20DFS1_30	SB Solvent Blank C-14	SB 111720D	3			KSS	1.000	
31	17NO20DFS1_31	MB 320-429943/1-A	MB 320-429943/1-A	13	8290/Water	87	KSS	1.000	L
32	17NO20DFS1_32	LCS 320-429943/2-A	LCS 320-429943/2-A	14	8290/Water		KSS	1.000	L
33	17NO20DFS1_33	LCSD 320-429943/3-A	LCSD 320-429943/3-A	15	8290/Water		KSS	1.000	L
34	17NO20DFS1_34	280-142337-E-1-A	280-142337-E-1-A	16	8290A/Solid	D197	KSS	10.000	g
35	17NO20DFS1_35	280-142337-C-1-A MS	280-142337-C-1-A MS	17	8290A/Solid		KSS	10.000	g
36	17NO20DFS1_36	280-142337-C-1-B MSD	280-142337-C-1-B MSD	18	8290A/Solid		KSS	10.000	g
37	17NO20DFS1_37	550-152400-s-1-a	550-152400-s-1-a	19	8290/Water	87	KSS	1.000	L
38	17NO20DFS1_38	240-138860-b-3-b RI	240-138860-b-3-b	20	8290A/Solid	D195	KSS	10.000	g
39	17NO20DFS1_39	240-138860-b-4-b RI	240-138860-b-4-b	21	8290A/Solid		KSS	10.000	g
40	17NO20DFS1_40	SB Solvent Blank C-14	SB 111720E	3			KSS	1.000	
41	17NO20DFS1_41	Resolution Check	RC 111720D	46			KSS	1.000	
42	17NO20DFS1_42	CCV CS-4 HRDXNL4_00095	CCV 111720B	2	8290/1613B		KSS	1.000	
43	17NO20DFS1_43	Resolution Check	RC 111720E	46			KSS	1.000	
44	17NO20DFS1_44	WDM HRDXNCP_00042	WDM 111720C	1	8290/1613B		KSS	1.000	
45	17NO20DFS1_45	SB Solvent Blank C-14	SB 111720F	3			KSS	1.000	
46	17NO20DFS1_46	240-138847-b-7-b RI	240-138847-b-7-b	22	8290A/Solid	D195	KSS	10.000	g
47	17NO20DFS1_47	240-138847-b-8-b RI	240-138847-b-8-b	23	8290A/Solid		KSS	10.000	g
48	17NO20DFS1_48	320-66234-a-3-a	320-66234-a-3-a	24	8290A/Solid		KSS	10.000	g
49	17NO20DFS1_49	320-66234-a-5-a	320-66234-a-5-a	25	8290A/Solid		KSS	10.000	g
50	17NO20DFS1_50	320-66234-a-6-a	320-66234-a-6-a	26	8290A/Solid		KSS	10.000	g
51	17NO20DFS1_51	320-66234-a-7-a	320-66234-a-7-a	27	8290A/Solid		KSS	10.000	g
52	17NO20DFS1_52	320-66234-A-2-A screen	320-66234-A-2-A screen	28	8290A/Water	D197	KSS	1.000	L
53	17NO20DFS1_53	SB Solvent Blank C-14	SB 111720G	3			KSS	1.000	
54	17NO20DFS1_54	Resolution Check	RC 111720F	46			KSS	1.000	
55	17NO20DFS1_55	CCV CS-4 HRDXNL4_00095	CCV 111720C	2	8290/1613B		KSS	1.000	

Log file checked
11/18/20 SMA

(1→12)

Resolution Check Report (DFS SN: 3487)

eurofins Environment Testing TestAmerica

Date:	17 Nov 2020 10:55
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11567 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11439 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11350 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11472 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11371 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11582 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11117 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11881 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11468 [5%height]

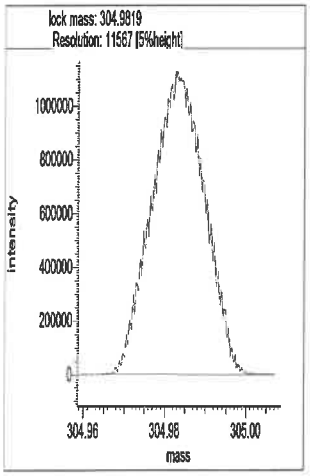

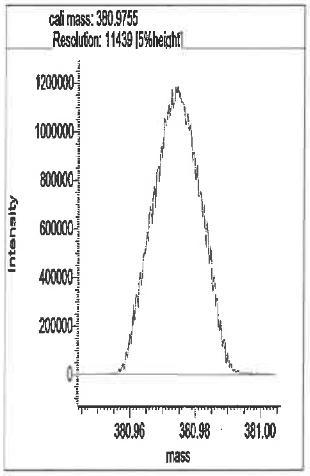

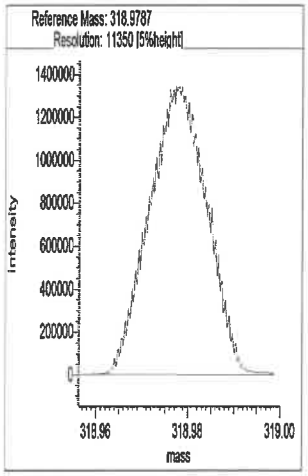

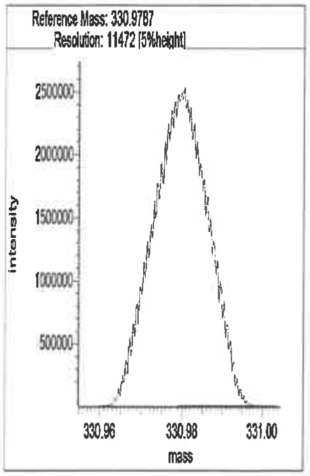

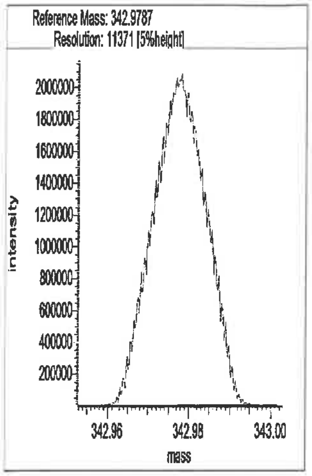

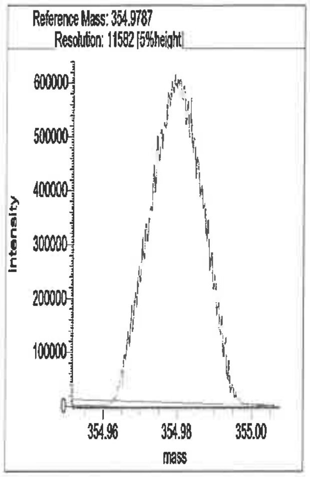

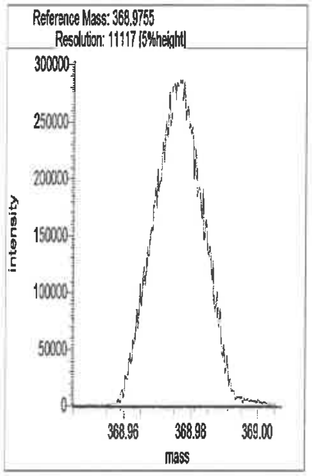

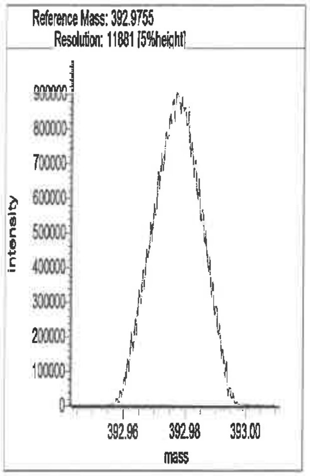

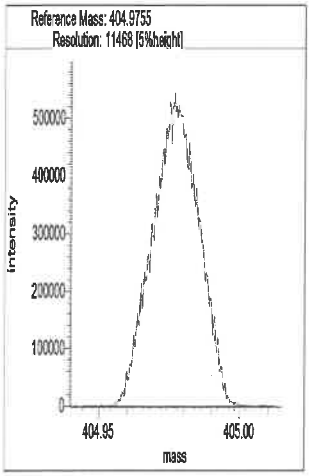

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11425 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11544 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11430 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11470 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10940 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11424 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11476 [5%height]

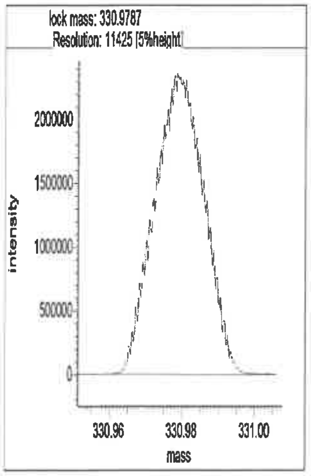

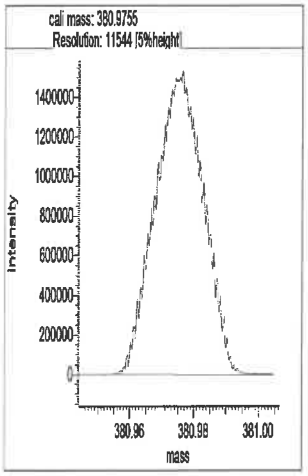

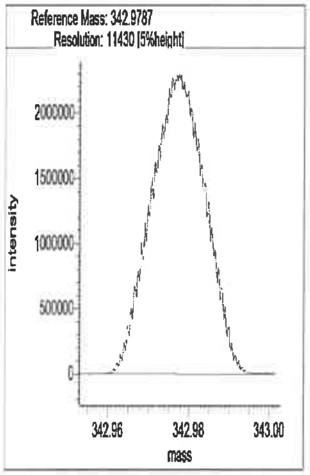

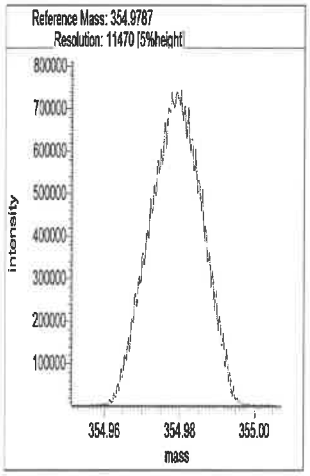

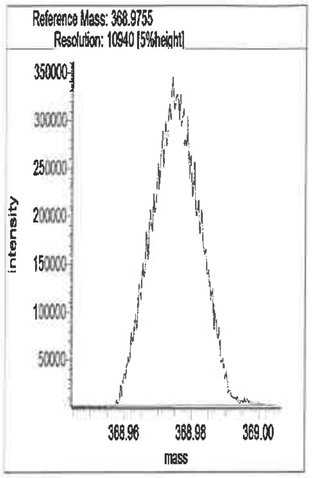

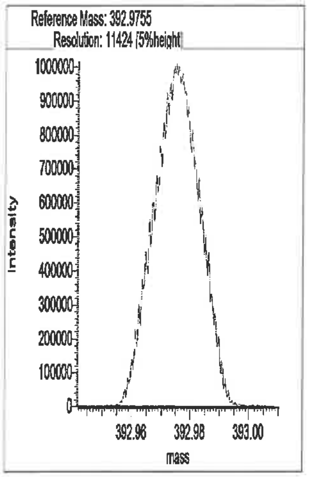

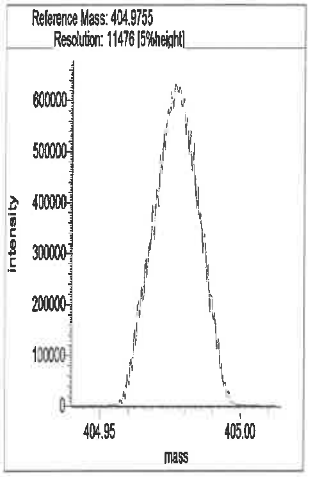

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11313 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11479 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11518 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11583 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11993 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11966 [5%height]

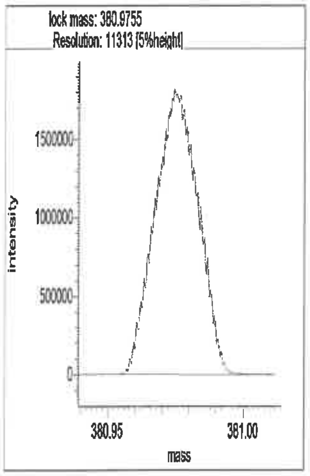

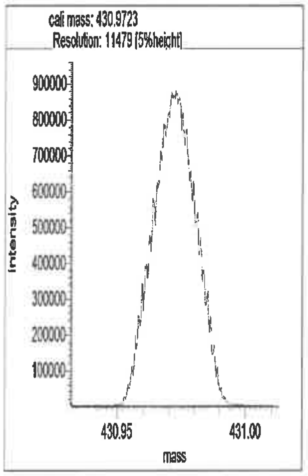

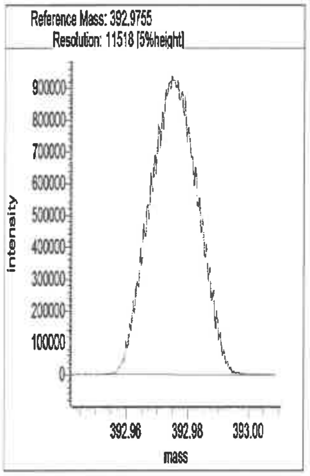

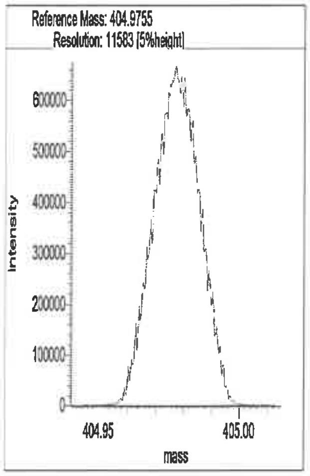

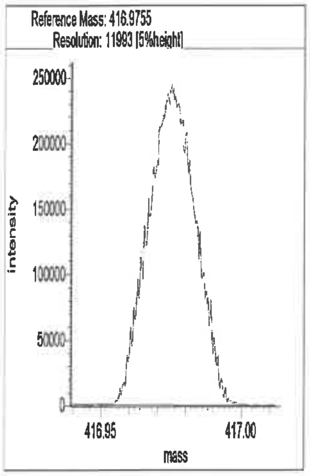

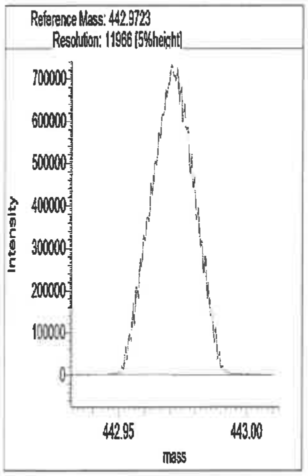

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11605 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11830 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11439 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11883 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11561 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11566 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12175 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11567 [5%height]

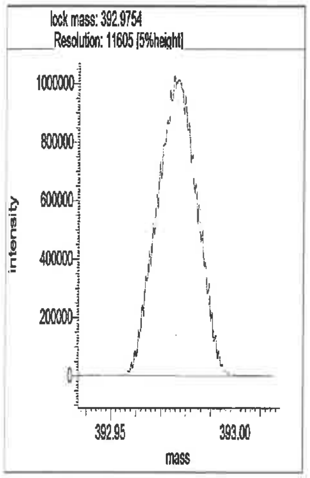

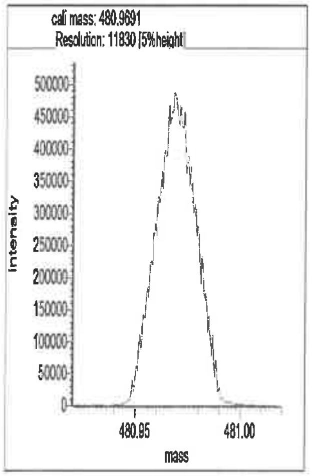

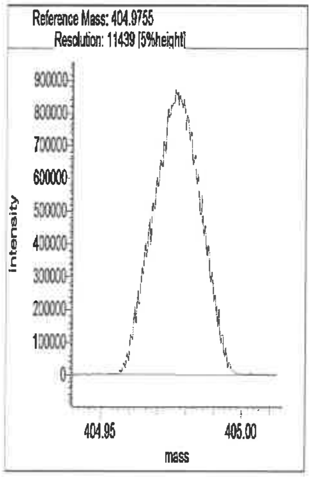

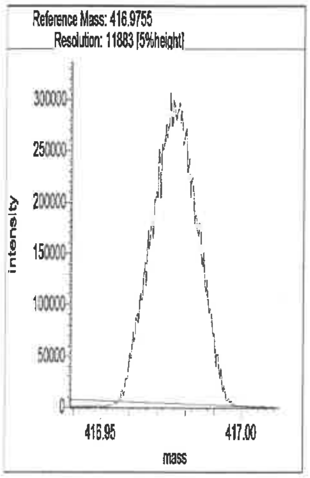

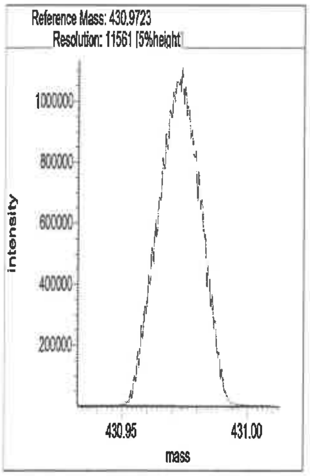

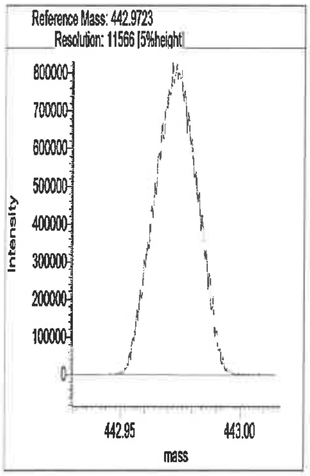

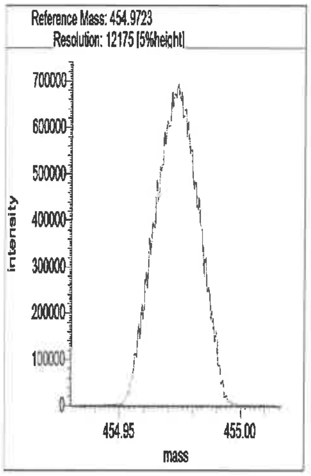

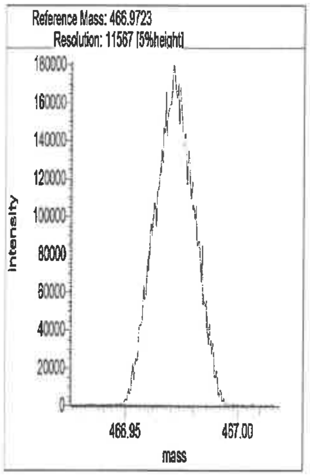

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11444 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11464 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11474 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11656 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11792 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11704 [5%height]

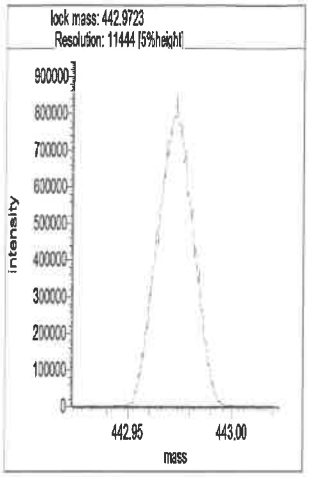
lock mass: 442.9723
Resolution: 11444 [5%height]

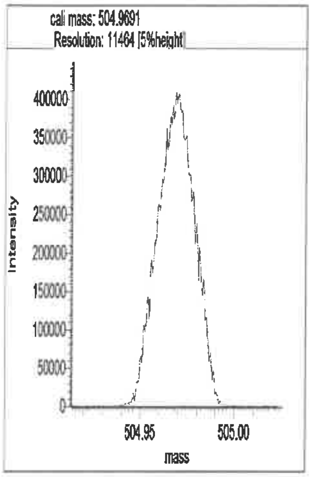
cali mass: 504.9691
Resolution: 11464 [5%height]

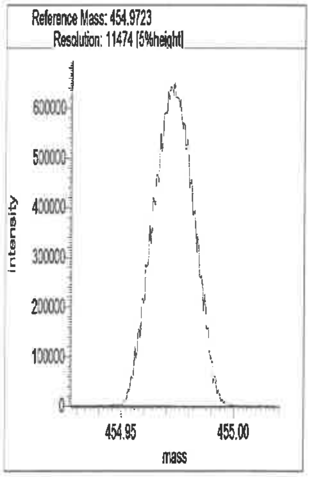
Reference Mass: 454.9723
Resolution: 11474 [5%height]

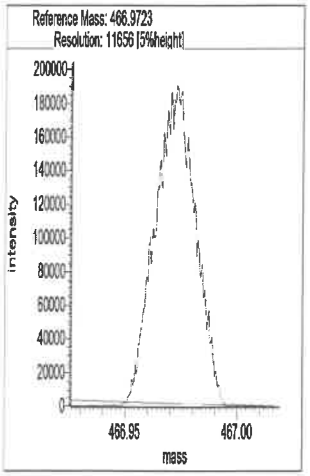
Reference Mass: 466.9723
Resolution: 11656 [5%height]

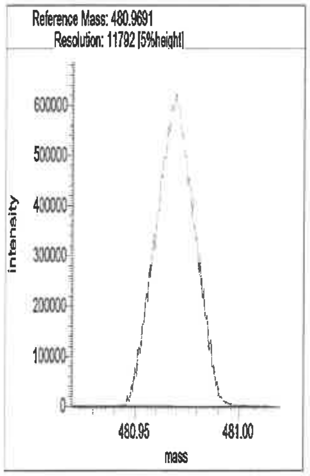
Reference Mass: 480.9691
Resolution: 11792 [5%height]

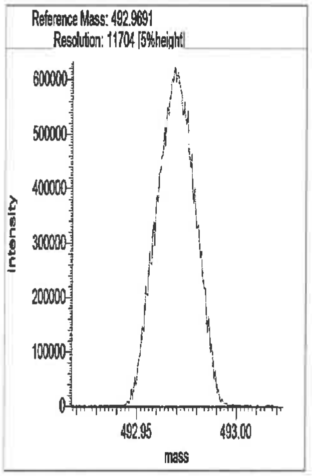
Reference Mass: 492.9691
Resolution: 11704 [5%height]

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date:	17 Nov 2020 19:20
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12887 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 13544 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 13530 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12838 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12850 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12863 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12646 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12699 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12839 [5%height]

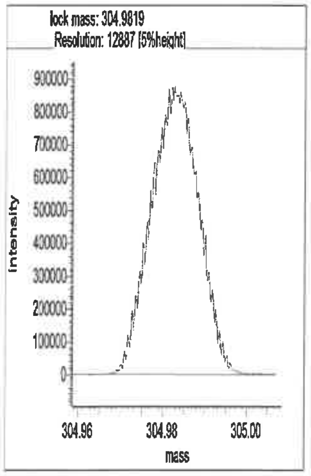

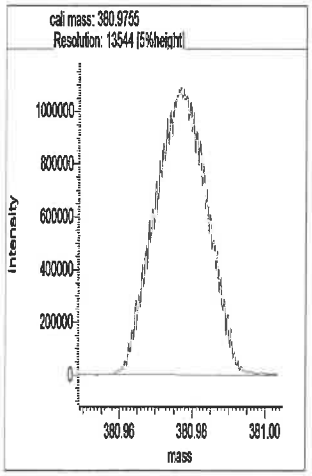

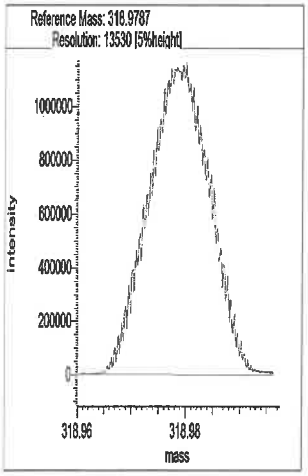

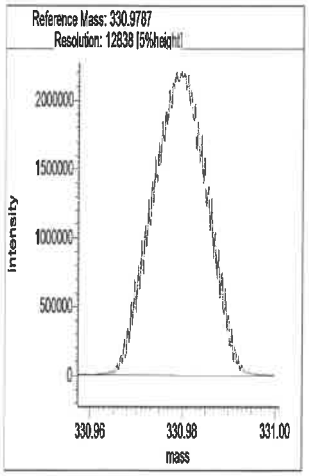

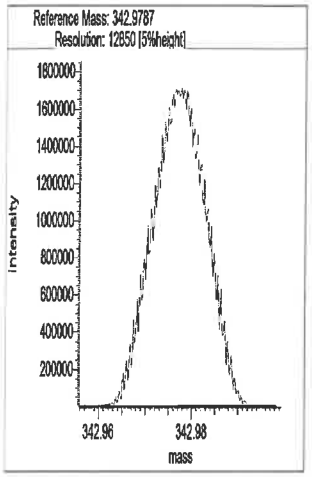

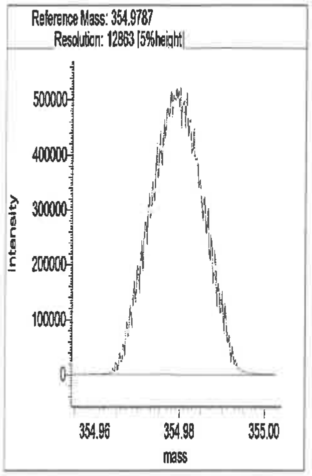

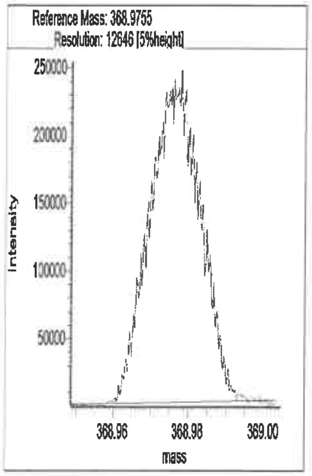

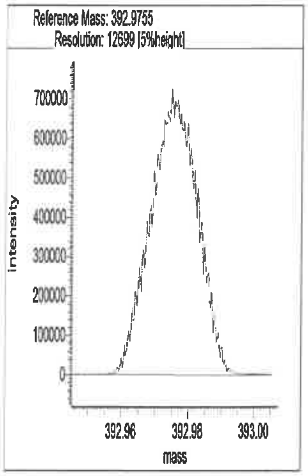

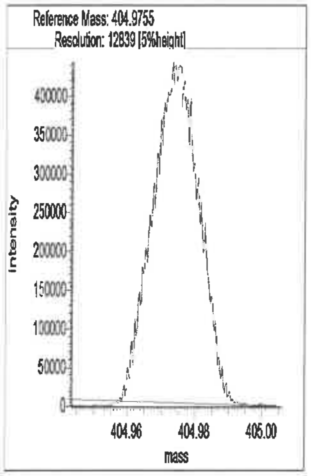

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12734 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12790 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12800 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12910 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12711 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12888 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12922 [5%height]

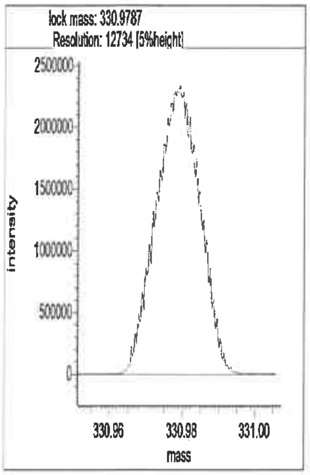

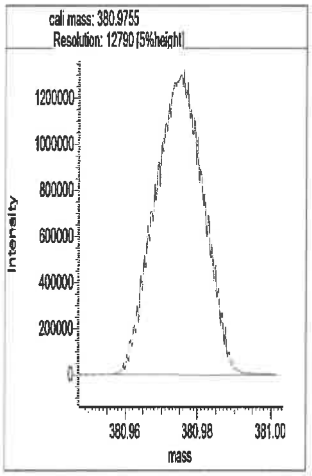

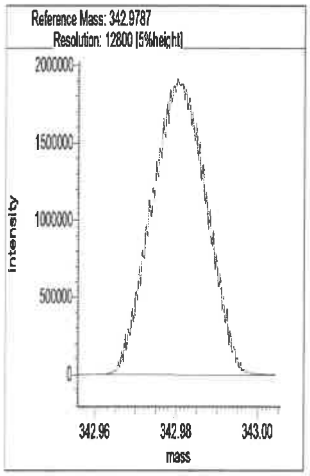

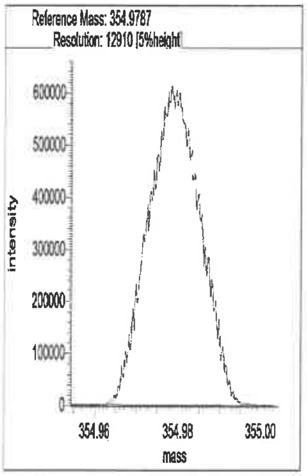

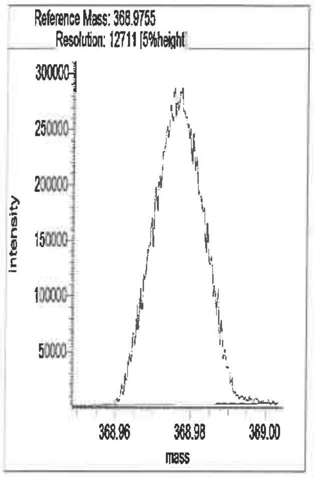

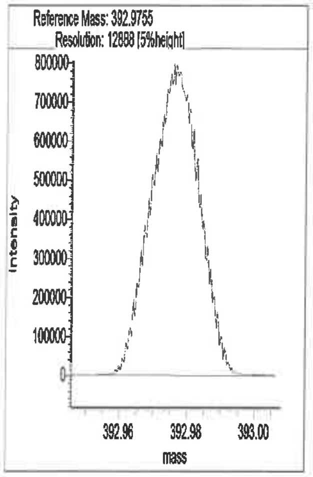

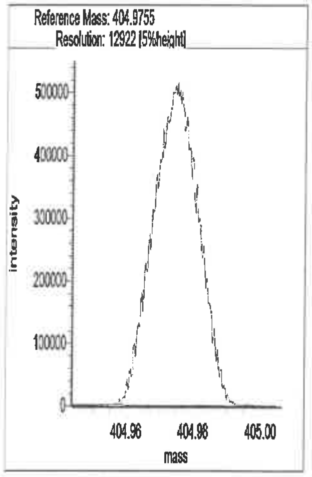

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12859 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12868 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12976 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13057 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12823 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13333 [5%height]

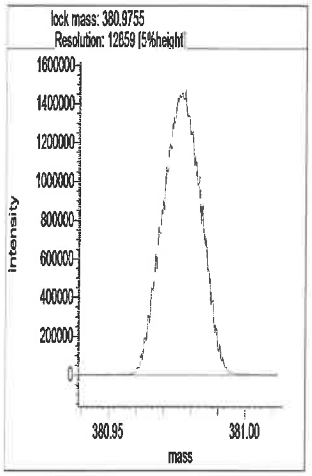

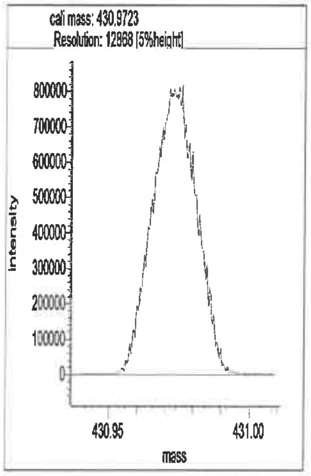

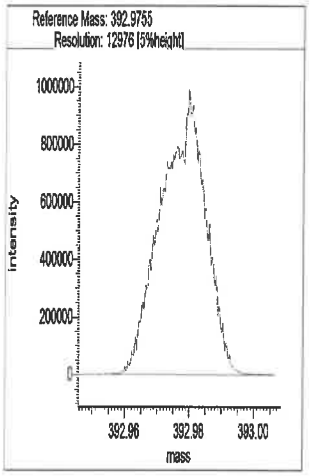

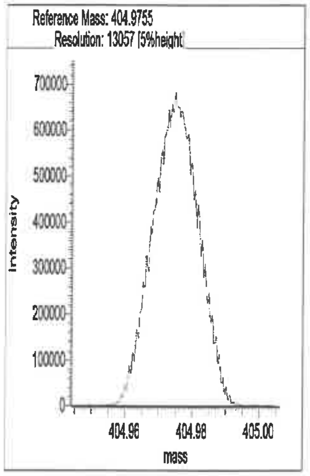

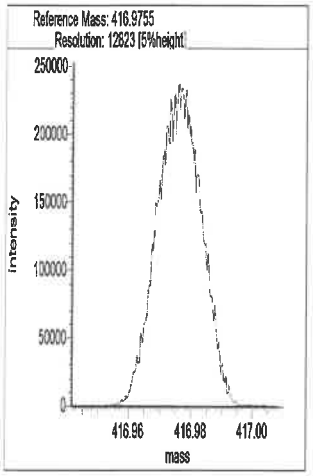

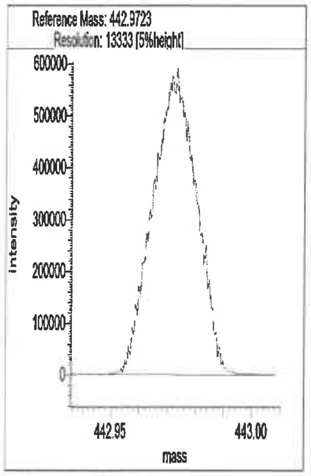

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13055 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12888 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13175 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12944 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12912 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13000 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12911 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12974 [5%height]

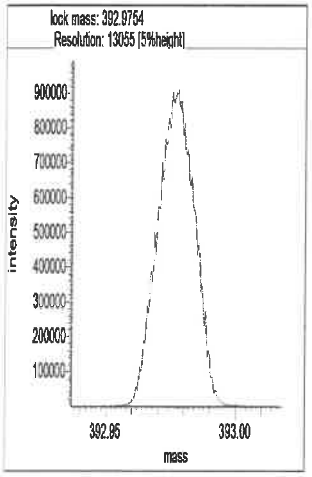

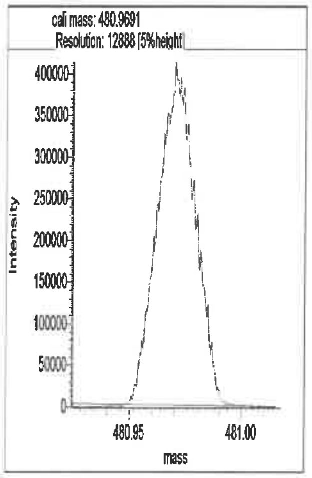

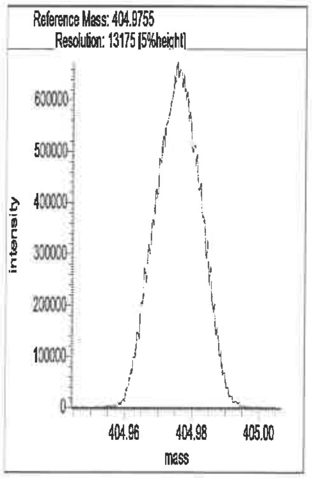

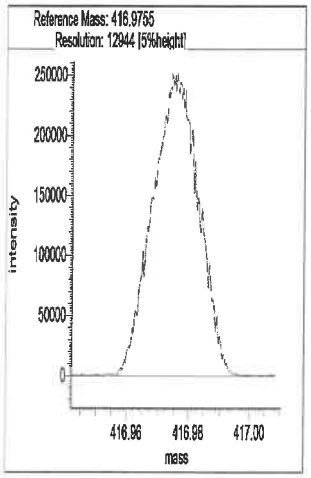

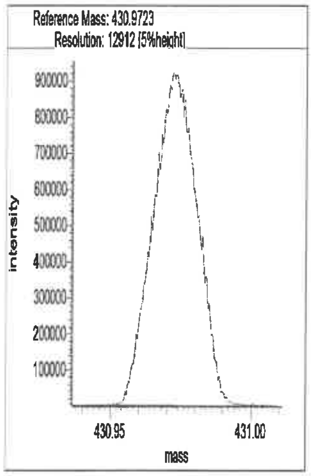

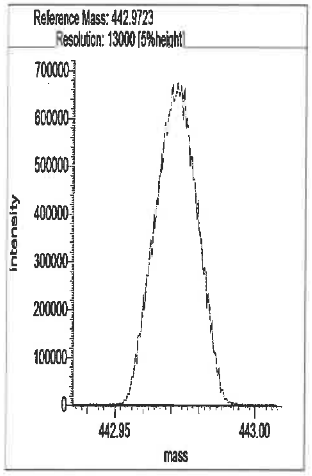

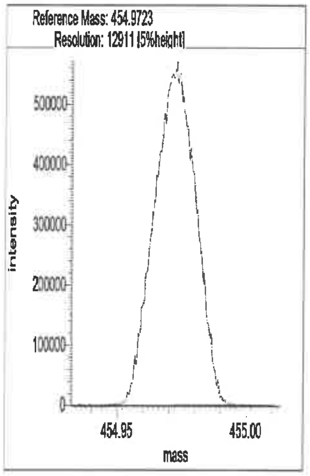

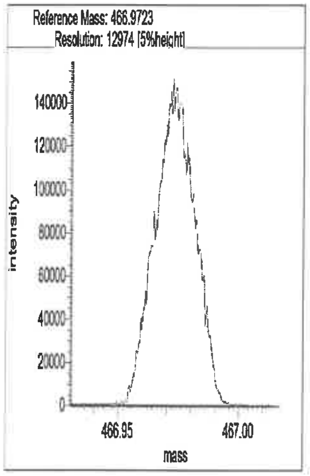

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13016 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 13206 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12739 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12763 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 13230 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12956 [5%height]

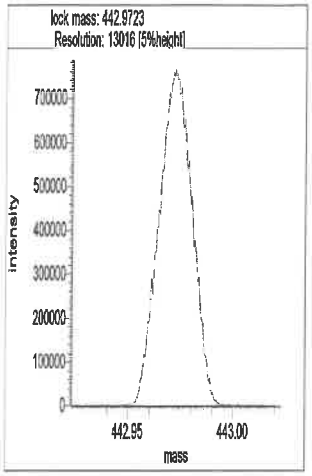
lock mass: 442.9723
Resolution: 13016 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

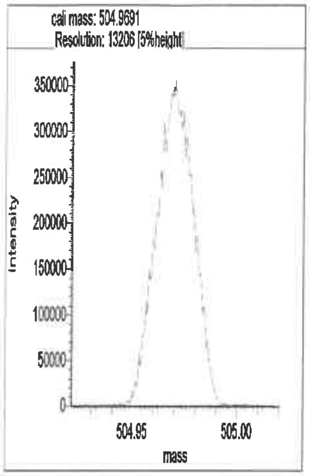
cali mass: 504.9691
Resolution: 13206 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

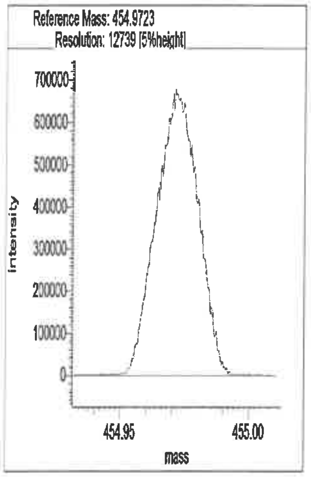
Reference Mass: 454.9723
Resolution: 12739 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

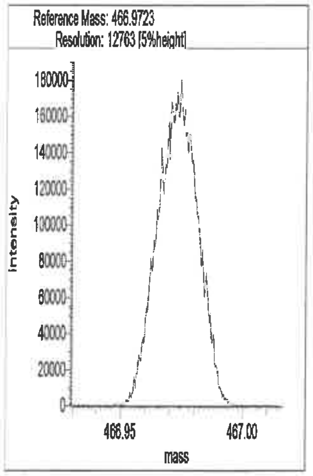
Reference Mass: 466.9723
Resolution: 12763 [5%height]
intensity
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160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

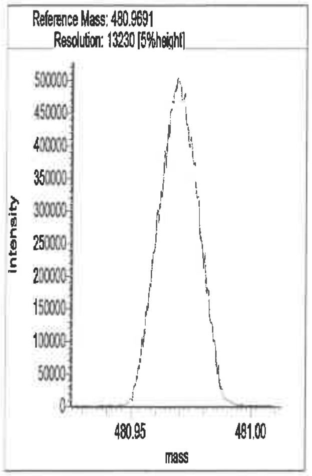
Reference Mass: 480.9691
Resolution: 13230 [5%height]
intensity
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400000
350000
300000
250000
200000
150000
100000
50000
0
480.95
481.00
mass

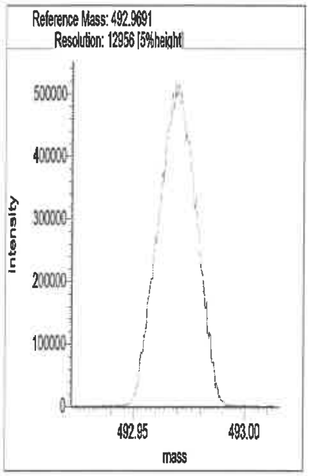
Reference Mass: 492.9691
Resolution: 12956 [5%height]
intensity
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Report Date: 18-Nov-2020 12:34:43   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 3
Inject. Date: 17-Nov-2020 13:38:00   ALS Bottle#: 0   Worklist Smp#: 4
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:32   Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1679

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.834	2145599	0.79	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.813	3632320	0.81	1.6832	100.6	100.6	0.4316	0.4316	101	
2,3,7,8-TCDF	20.838	78902	0.68	1.1547	1.881	1.881	0.0242	0.0242	94.06	
S Total TCDF					1.881	1.881	0.0242	0.0242		
D 13C-2,3,7,8-TCDD	22.220	2316674	0.82	1.0896	99.1	99.1	0.3693	0.3693	99.09	
2,3,7,8-TCDD	22.255	53314	0.76	1.1659	1.974	1.974	0.0626	0.0626	98.69	
$ 37Cl4-2,3,7,8-TCDD	22.263	48530		1.1445	1.976	1.976	0.0147	0.0147	98.81	
S Total TCDD					1.974	1.974	0.0626	0.0626		
D 13C-1,2,3,7,8-PeCDF	27.690	2977170	1.60	1.4604	95.0	95.0	0.4112	0.4112	95.01	
1,2,3,7,8-PeCDF	27.715	339347	1.58	1.1322	10.1	10.1	0.0686	0.0686	101	
D 13C-2,3,4,7,8-PeCDF	29.248	2805191	1.59	1.3504	96.8	96.8	0.4447	0.4447	96.82	
2,3,4,7,8-PeCDF	29.282	326187	1.60	1.1588	10.0	10.0	0.0767	0.0767	100	
S Total PeCDF					20.1	20.1	0.0726	0.0726		
D 13C-1,2,3,7,8-PeCDD	30.090	1772472	1.58	0.8729	94.6	94.6	0.1493	0.1493	94.64	
1,2,3,7,8-PeCDD	30.116	202562	1.60	1.1191	10.2	10.2	0.0707	0.0707	102	
S Total PeCDD					10.2	10.2	0.0707	0.0707		
D 13C-1,2,3,4,7,8-HxCDF	35.215	2523469	0.55	1.2808	102.0	102.0	0.3863	0.3863	102	
1,2,3,4,7,8-HxCDF	35.232	335604	1.20	1.3205	10.1	10.1	0.0606	0.0606	101	
D 13C-1,2,3,6,7,8-HxCDF	35.375	2829584	0.54	1.4615	100.3	100.3	0.3385	0.3385	100	
1,2,3,6,7,8-HxCDF	35.383	361503	1.27	1.2682	10.1	10.1	0.0602	0.0602	101	
D 13C-2,3,4,6,7,8-HxCDF	36.150	2532810	0.54	1.3227	99.2	99.2	0.3740	0.3740	99.16	
2,3,4,6,7,8-HxCDF	36.167	330280	1.24	1.2838	10.2	10.2	0.0580	0.0580	102	
D 13C-1,2,3,7,8,9-HxCDF	37.018	2021278	0.53	1.1062	94.6	94.6	0.4472	0.4472	94.62	
1,2,3,7,8,9-HxCDF	37.026	265008	1.23	1.3063	10.0	10.0	0.0667	0.0667	100	
S Total HxCDF					40.3	40.3	0.0614	0.0614		
* 13C-1,2,3,7,8,9-HxCDD	36.816	1931038	1.31	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.352	1727097	1.30	0.8757	102.1	102.1	0.2842	0.2842	102	
1,2,3,4,7,8-HxCDD	36.369	198132	1.23	1.1972	9.582	9.582	0.0511	0.0511	95.82	
D 13C-1,2,3,6,7,8-HxCDD	36.462	2053194	1.27	1.0651	99.8	99.8	0.2337	0.2337	99.83	
1,2,3,6,7,8-HxCDD	36.479	222574	1.30	1.0695	10.1	10.1	0.0525	0.0525	101	
1,2,3,7,8,9-HxCDD	36.833	222340	1.26	1.1806	9.964	9.964	0.0496	0.0496	99.64	
S Total HxCDD					29.7	29.7	0.0511	0.0511		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,6,7,8-HpCDF	38.764	1840655	0.46	0.9521	100.1	100.1	0.4871	0.4871	100	
1,2,3,4,6,7,8-HpCDF	38.781	288953	1.03	1.5618	10.1	10.1	0.0598	0.0598	101	
D 13C-1,2,3,4,7,8,9-HpCDF	39.993	1486611	0.46	0.7782	98.9	98.9	0.5960	0.5960	98.93	
1,2,3,4,7,8,9-HpCDF	40.002	216435	1.07	1.4975	9.722	9.722	0.0684	0.0684	97.22	
S Total HpCDF					19.8	19.8	0.0641	0.0641		
D 13C-1,2,3,4,6,7,8-HpCDD	39.690	1593650	1.05	0.8393	98.3	98.3	0.3115	0.3115	98.33	
1,2,3,4,6,7,8-HpCDD	39.699	172927	1.03	1.1079	9.794	9.794	0.0462	0.0462	97.94	
S Total HpCDD					9.794	9.794	0.0462	0.0462		
D 13C-OCDD	42.170	1872512	0.91	0.5301	182.9	182.9	0.4512	0.4512	91.46	
OCDF	42.271	277015	0.91	1.4802	20.0	20.0	0.0880	0.0880	99.95	
OCDD	42.179	221914	0.93	1.1666	20.3	20.3	0.0623	0.0623	102	

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Nov-2020 13:38:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:32 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.834	21.818	1		950220	123783	324	810	382		
333.9338	21.825	21.818	0		1195379	156312	127	317	1231	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.813	20.808	0	0.953	1624350	229982	574	1435	401		
317.9389	20.804	20.808	0	0.953	2007970	289347	240	600	1206	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.838	20.834	0	1.001	31919	4485	10	25	449		
305.8987	20.838	20.834	0	1.001	46983	6724	48	120	140	0.68(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.220	22.213	0	1.018	1045090	129437	324	810	399		
333.9338	22.212	22.213	0	1.017	1271584	168031	127	317	1323	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.255	22.239	1	1.002	23103	3259	76	190	43		
321.8936	22.263	22.239	1	1.002	30211	3878	11	27	353	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.263	22.241	1	1.020	48530	7331	19	47	386		
13C-1,2,3,7,8-PeCDF											
351.9000	27.690	27.677	1	1.268	1831386	273744	384	960	713		
353.8970	27.690	27.677	1	1.268	1145784	170632	289	722	590	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.715	27.702	1	1.001	207991	30217	61	152	495		
341.8567	27.723	27.702	1	1.001	131356	19443	77	192	253	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.248	29.235	1	1.340	1723633	237217	384	960	618		
353.8970	29.256	29.235	1	1.340	1081558	150922	289	722	522	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.282	29.262	1	1.001	200945	27937	61	152	458		
341.8567	29.273	29.262	1	1.001	125242	17321	77	192	225	1.60(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.090	30.073	1	1.378	1086265	145201	75	187	1936		
369.8919	30.090	30.073	1	1.378	686207	88509	71	177	1247	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.116	30.100	1	1.001	124772	16774	49	122	342		
357.8516	30.107	30.100	0	1.001	77790	11210	25	62	448	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.215	35.202	1	0.957	897968	200757	348	870	577		
385.8610	35.215	35.202	1	0.957	1625501	369963	630	1575	587	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.232	35.219	1	1.000	183143	41440	107	267	387		
375.8178	35.232	35.219	1	1.000	152461	32334	76	190	425	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.375	35.361	1	0.961	993960	211131	348	870	607		
385.8610	35.366	35.361	0	0.961	1835624	387055	630	1575	614	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.383	35.376	0	1.000	202362	43878	107	267	410		
375.8178	35.383	35.376	0	1.000	159141	33207	76	190	437	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.150	36.142	0	0.982	884722	214114	348	870	615		
385.8610	36.150	36.142	0	0.982	1648088	399675	630	1575	634	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.167	36.158	1	1.000	183030	43640	107	267	408		
375.8178	36.167	36.158	1	1.000	147250	36203	76	190	476	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.018	37.005	1	1.005	701532	183134	348	870	526		
385.8610	37.018	37.005	1	1.005	1319746	341244	630	1575	542	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.026	37.019	0	1.000	145963	38646	107	267	361		
375.8178	37.026	37.019	0	1.000	119045	31257	76	190	411	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.816	36.808	0		1095001	280424	281	702	998		
403.8529	36.816	36.808	0		836037	213786	211	527	1013	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.352	36.340	1	0.987	975795	261970	281	702	932		
403.8529	36.352	36.340	1	0.987	751302	203994	211	527	967	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.369	36.355	1	1.000	109271	29220	61	152	479		
391.8127	36.361	36.355	0	1.000	88861	24044	53	132	454	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.462	36.454	0	0.990	1150642	283945	281	702	1010		
403.8529	36.470	36.454	1	0.991	902552	223766	211	527	1061	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.479	36.468	1	1.000	125926	30770	61	152	504		
391.8127	36.479	36.468	1	1.000	96648	24483	53	132	462	1.30(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.833	36.821	1	1.013	124161	31482	61	152	516		
391.8127	36.833	36.821	1	1.013	98179	25395	53	132	479	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.764	38.755	0	1.053	583640	179518	318	795	565		
419.8220	38.764	38.755	0	1.053	1257015	384806	599	1497	642	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.781	38.769	1	1.000	146265	44351	123	307	361		
409.7788	38.781	38.769	1	1.000	142688	42730	88	220	486	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.993	39.984	1	1.086	469795	160877	318	795	506		
419.8220	39.993	39.984	1	1.086	1016816	353717	599	1497	591	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.002	39.994	0	1.000	111930	39522	123	307	321		
409.7788	40.002	39.994	0	1.000	104505	36677	88	220	417	1.07(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.690	39.679	1	1.078	818030	275660	263	657	1048		
437.8140	39.690	39.679	1	1.078	775620	255649	254	635	1006	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.699	39.689	1	1.000	87549	27915	68	170	411		
425.7737	39.699	39.689	1	1.000	85378	27678	41	102	675	1.03(0.88-1.20)	
13C-OCDD											
469.7780	42.170	42.157	1	1.145	894190	261146	216	540	1209		
471.7750	42.170	42.157	1	1.145	978322	294673	257	642	1147	0.91(0.76-1.02)	
OCDF											
441.7428	42.271	42.260	1	1.002	131633	39228	46	115	853		
443.7399	42.263	42.260	0	1.002	145382	41838	99	247	423	0.91(0.76-1.02)	
OCDD											
457.7377	42.179	42.167	1	1.000	106961	33011	40	100	825		
459.7348	42.179	42.167	1	1.000	114953	34211	41	102	834	0.93(0.76-1.02)	

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

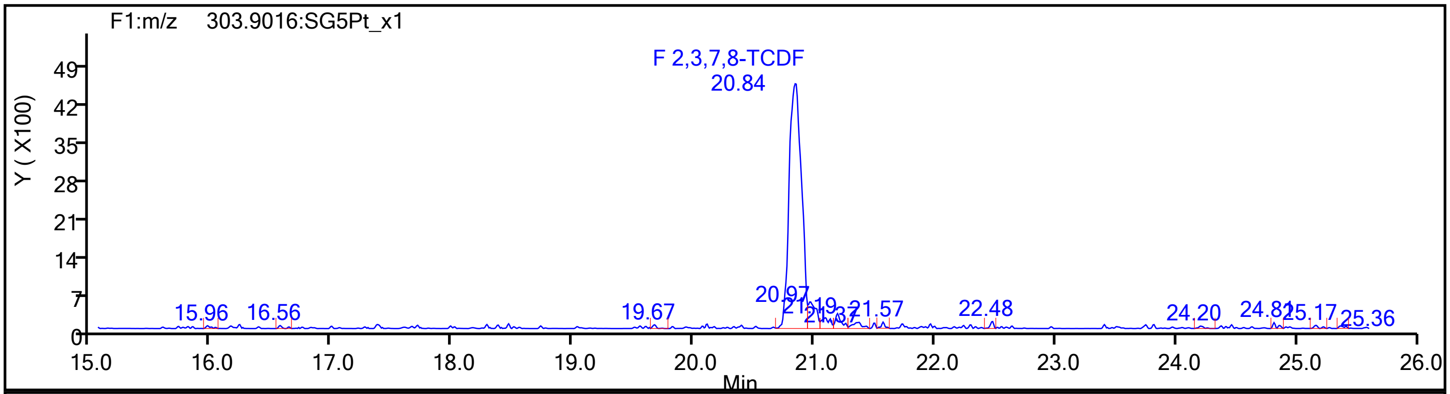

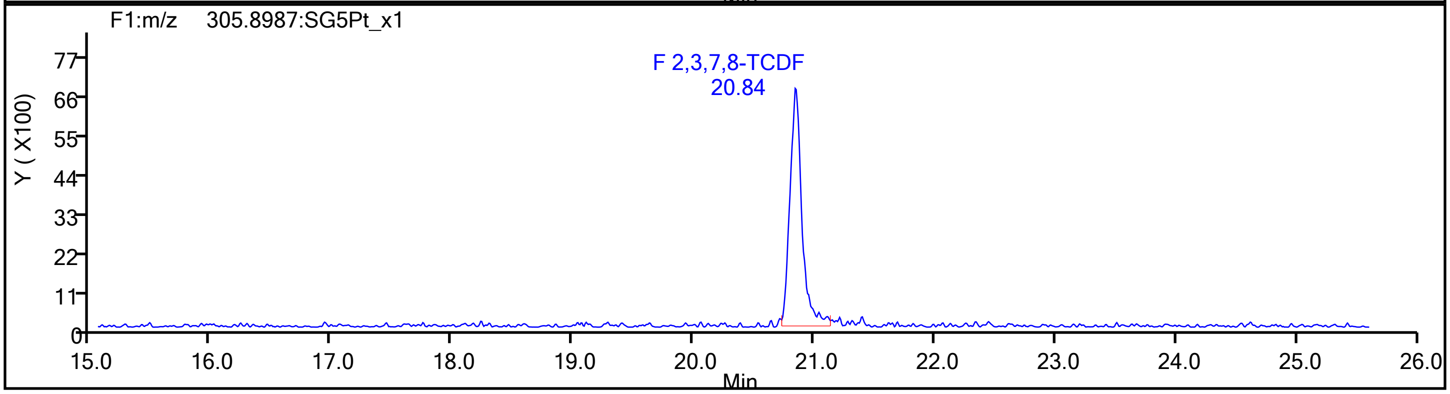

TCDF Standards

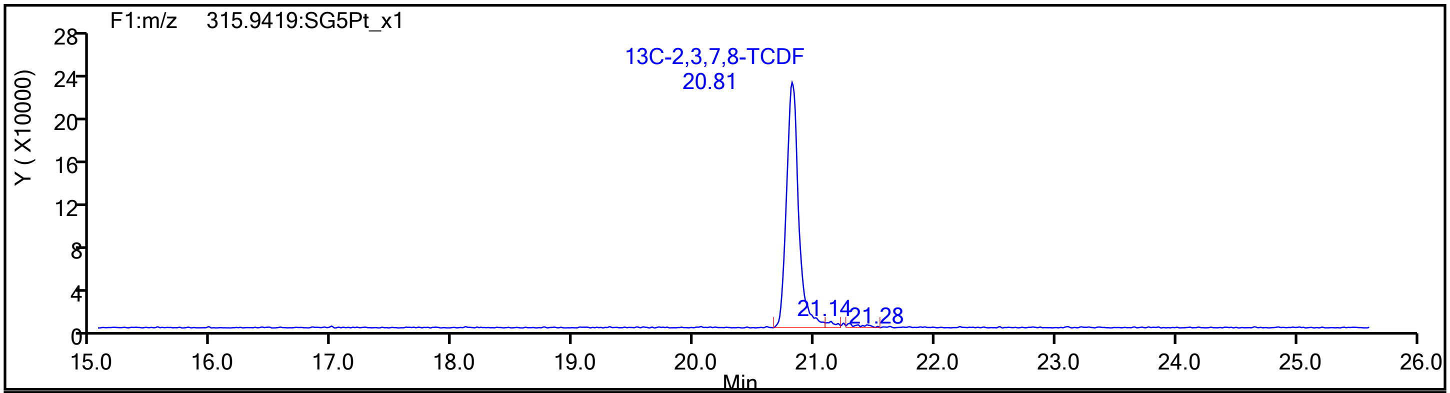

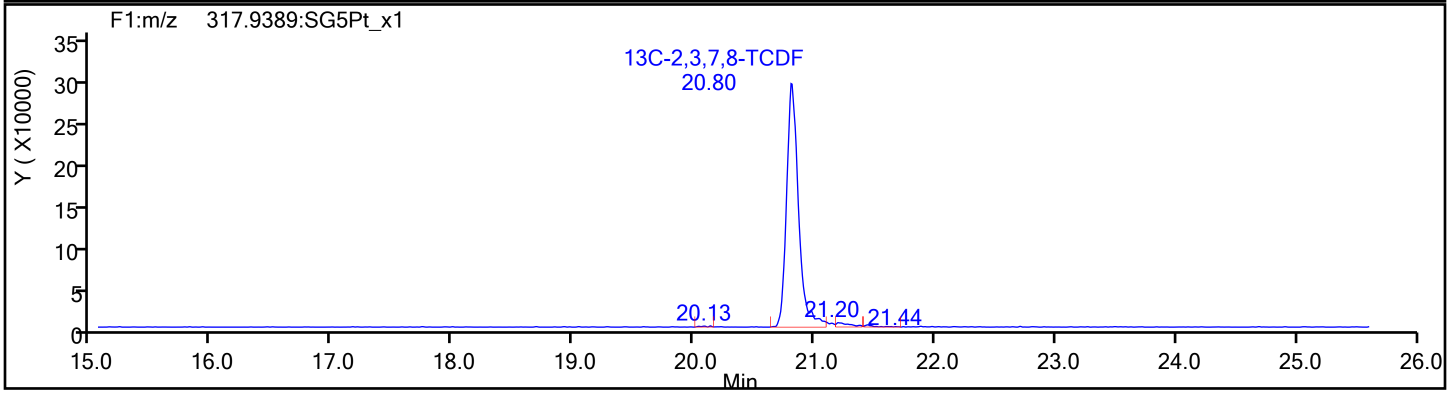

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
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Method: Dioxin_DFS1
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Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

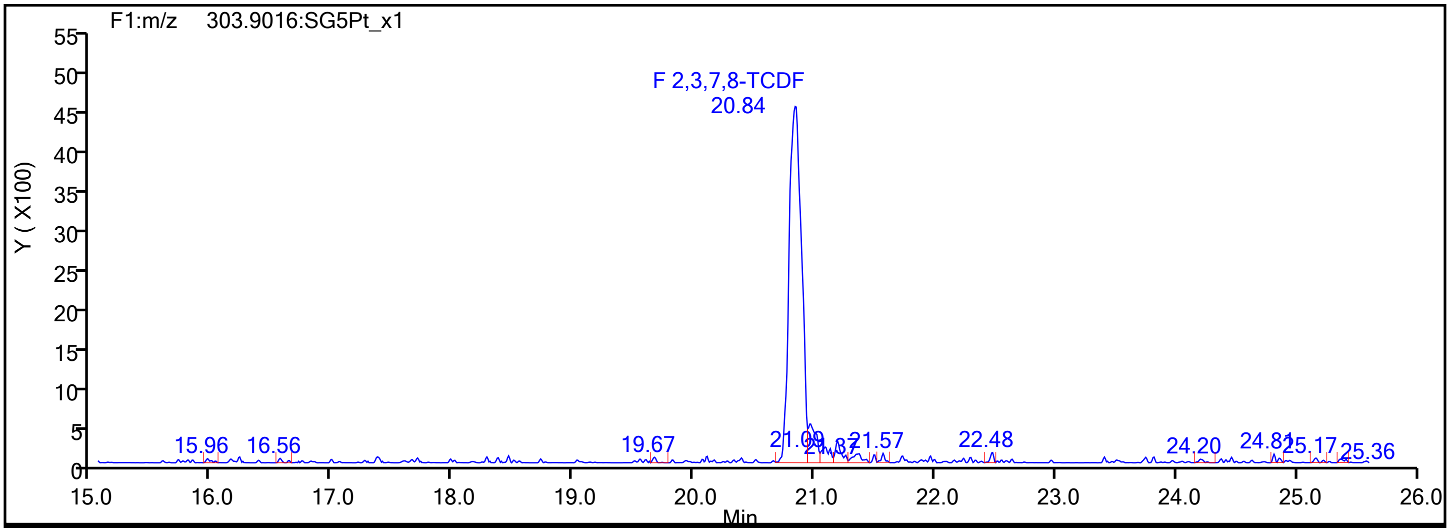

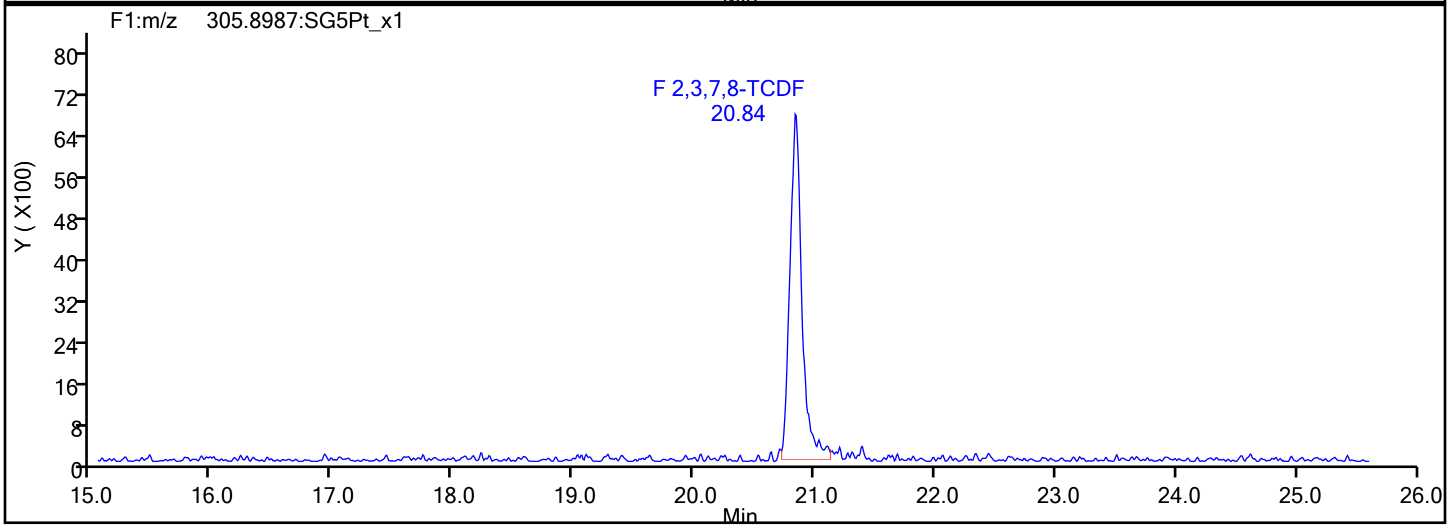

TCDF Interference Mass

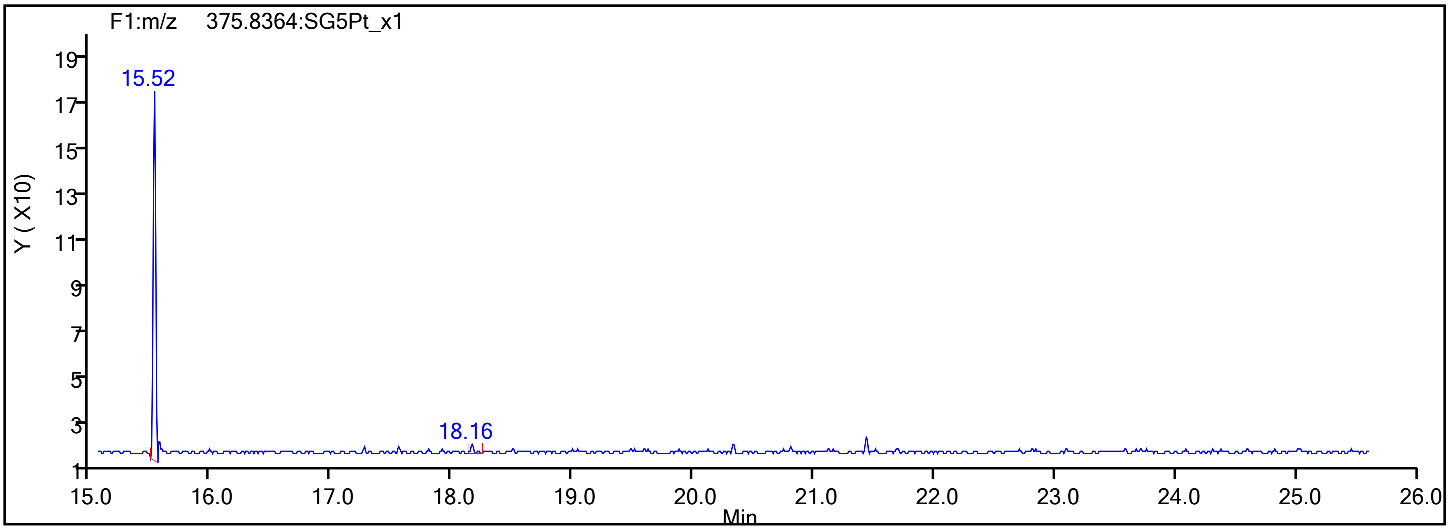

Report Date: 18-Nov-2020 12:34:43   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 13:38:00   Injection Vol: 1.0 ul
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Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
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TCDD

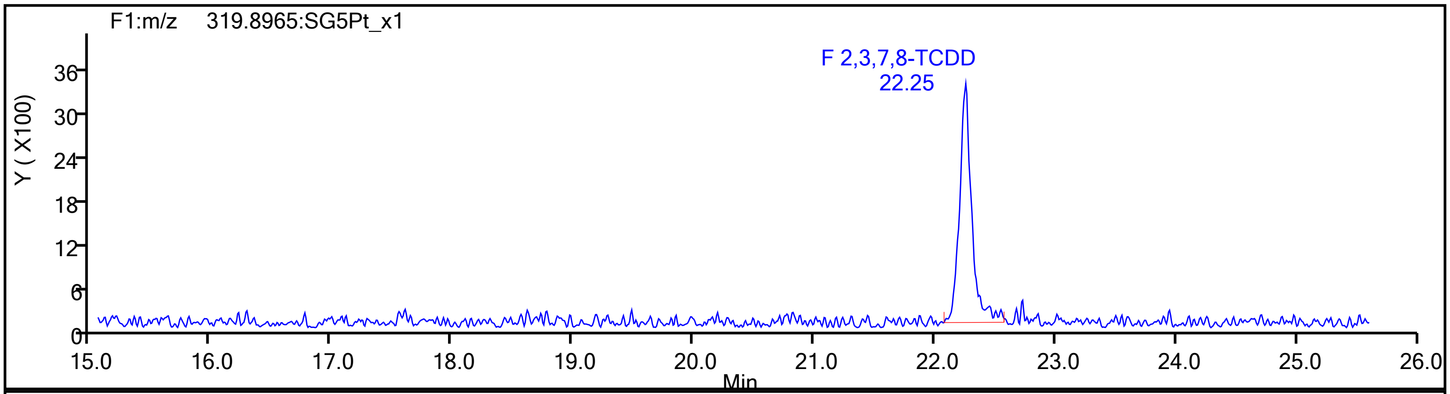

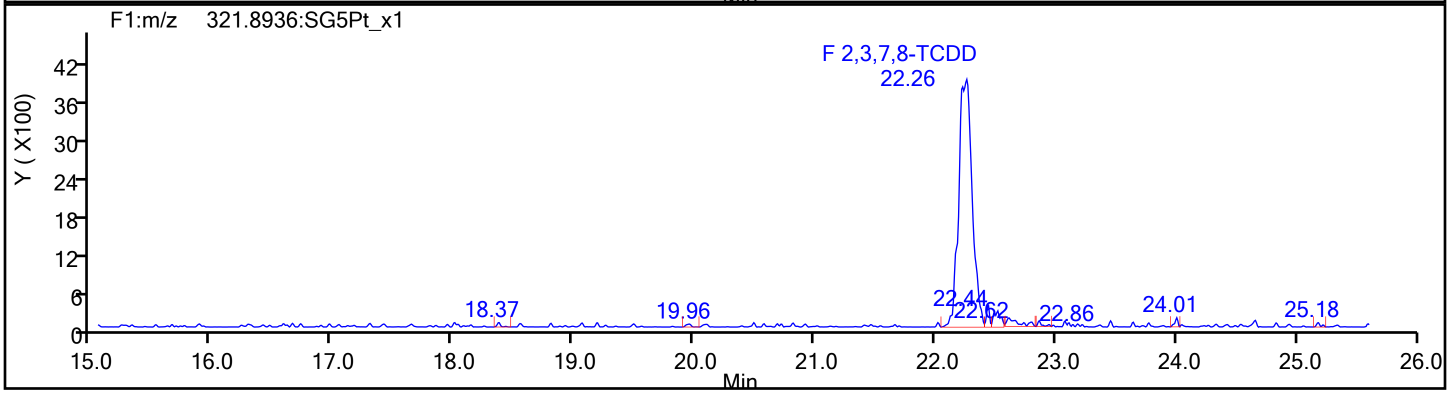

TCDD Standards

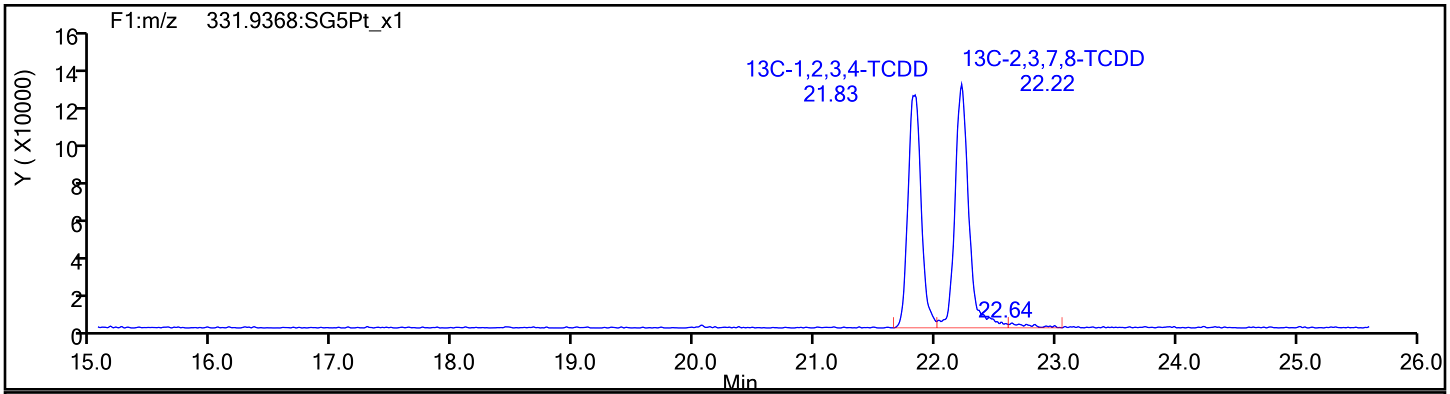

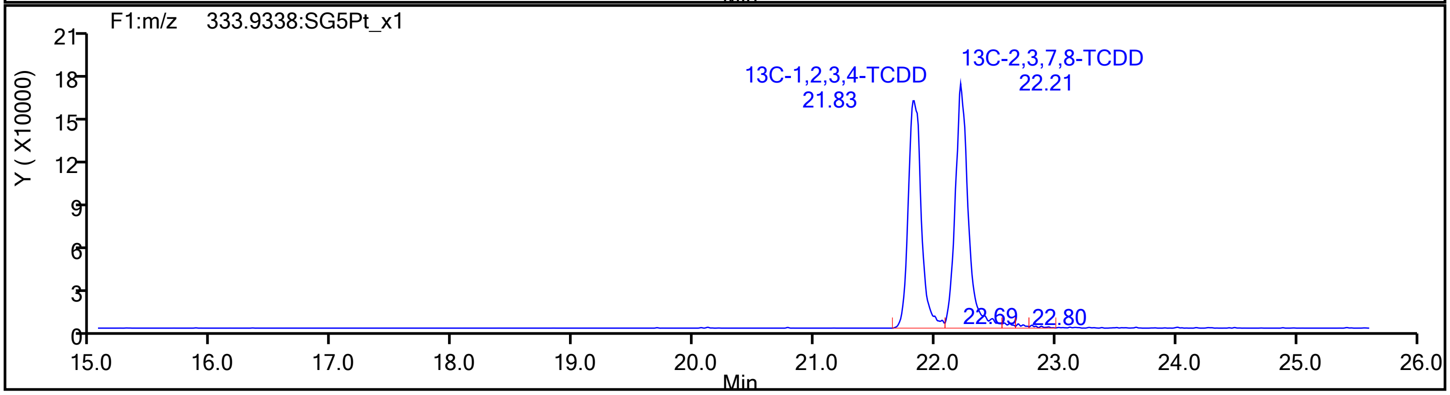

Report Date: 18-Nov-2020 12:34:43

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

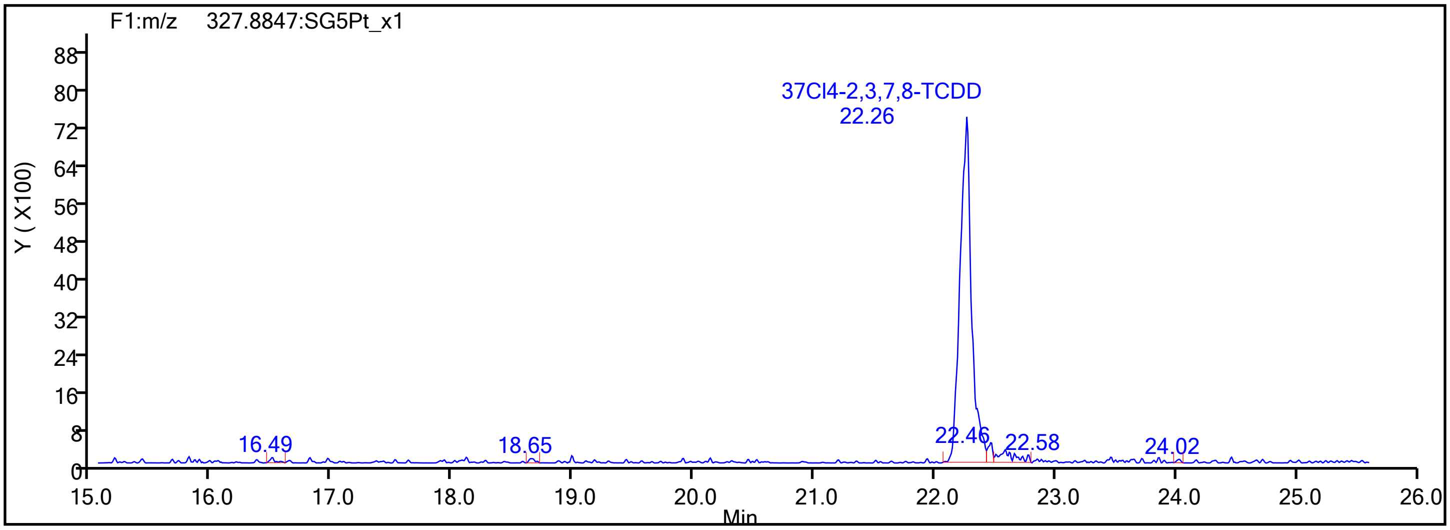

37Cl4-TCDD Standards

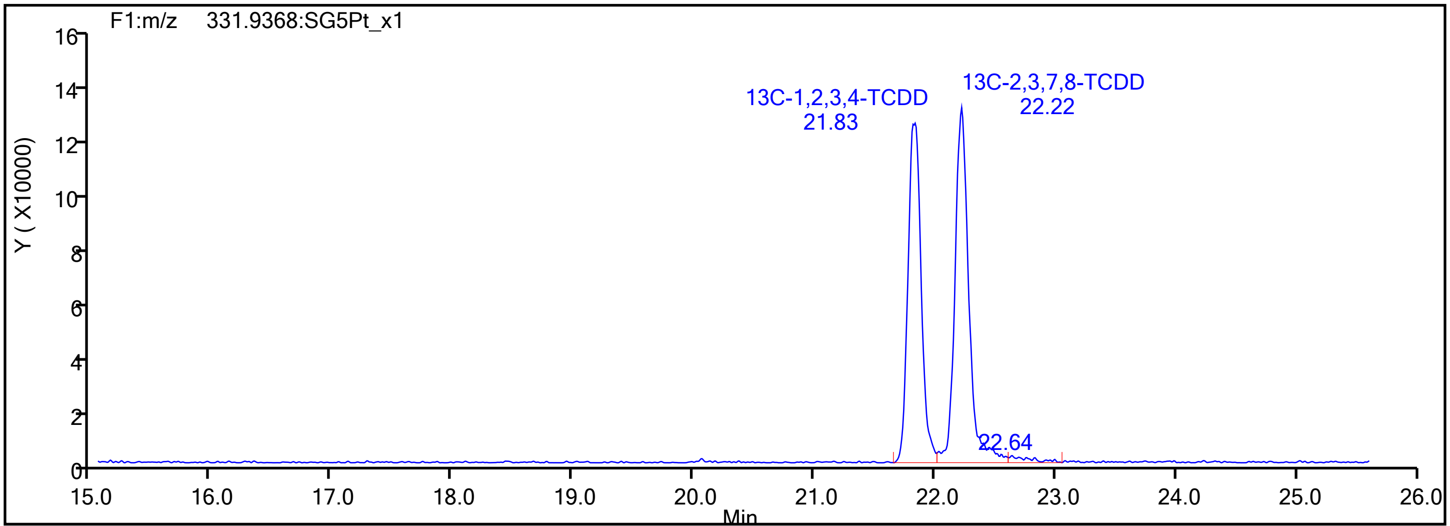

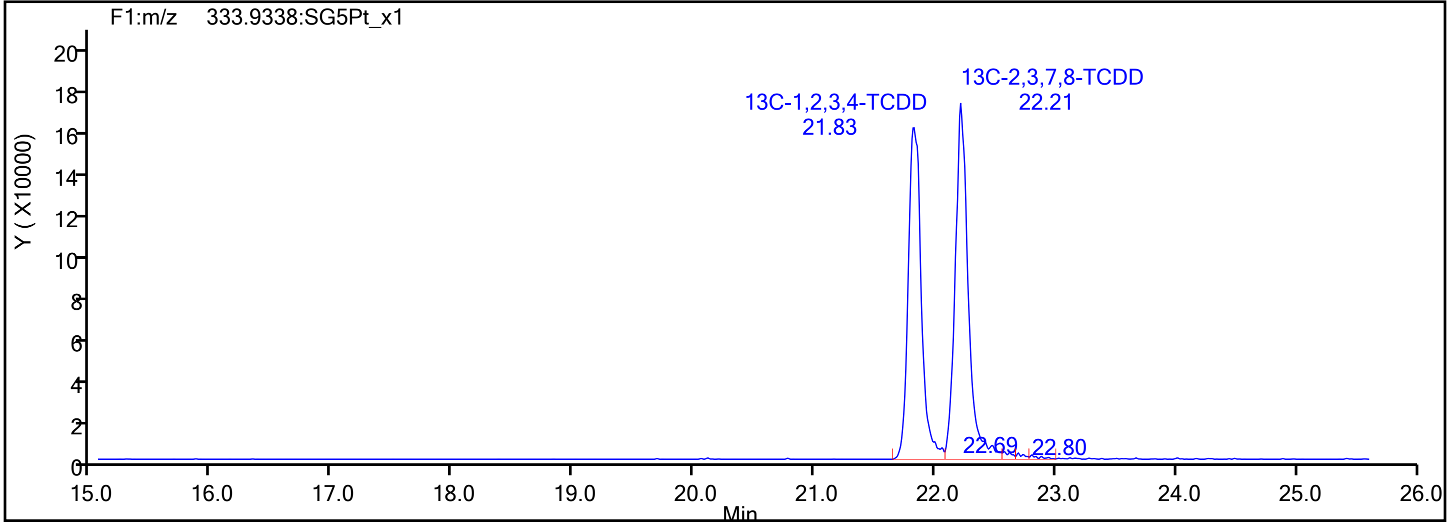

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Injection Date: 17-Nov-2020 13:38:00　Injection Vol: 1.0 ul

Instrument ID: DFS 1　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585　Sample Line#: 4

Column Type: DB-5　Column Dia: 0.32 mm

F1 PeCDFs

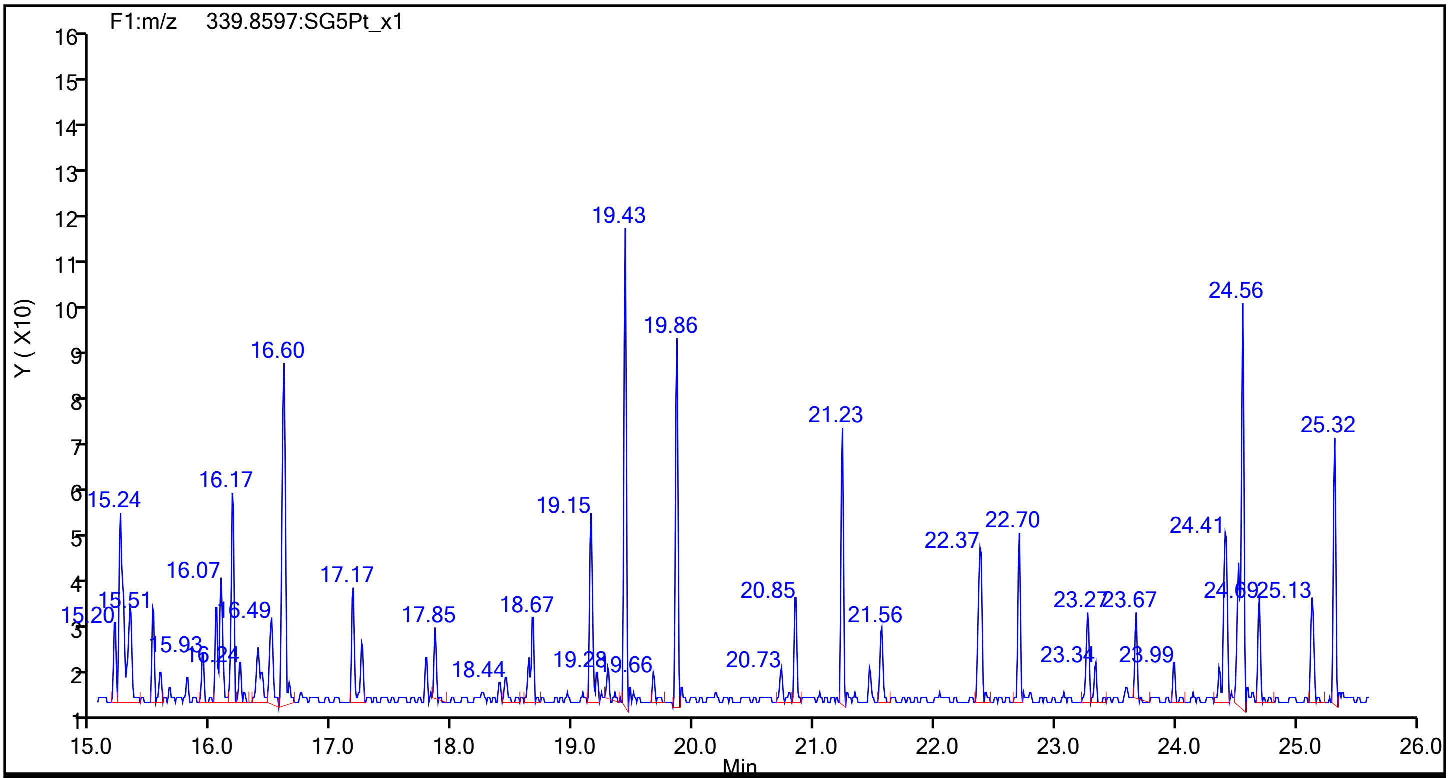

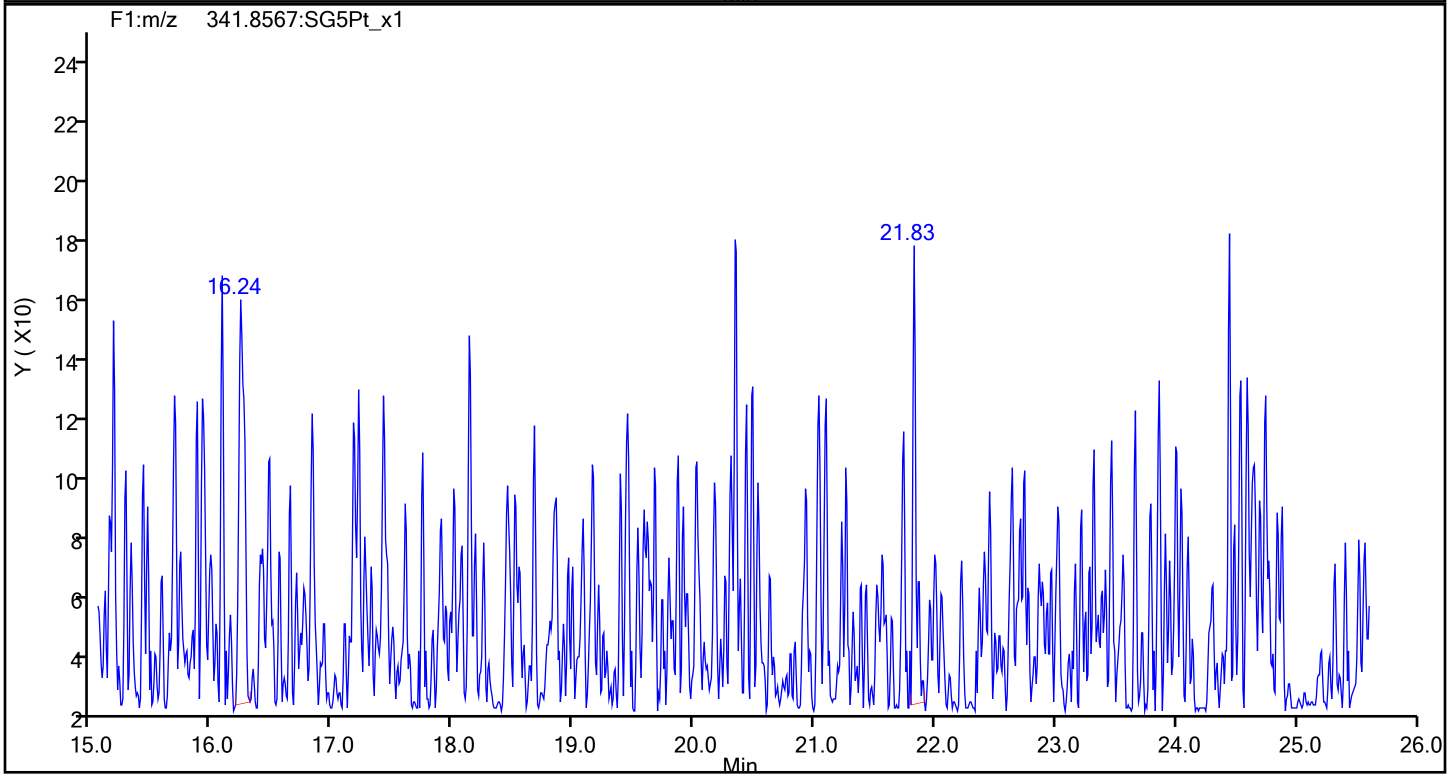

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
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Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

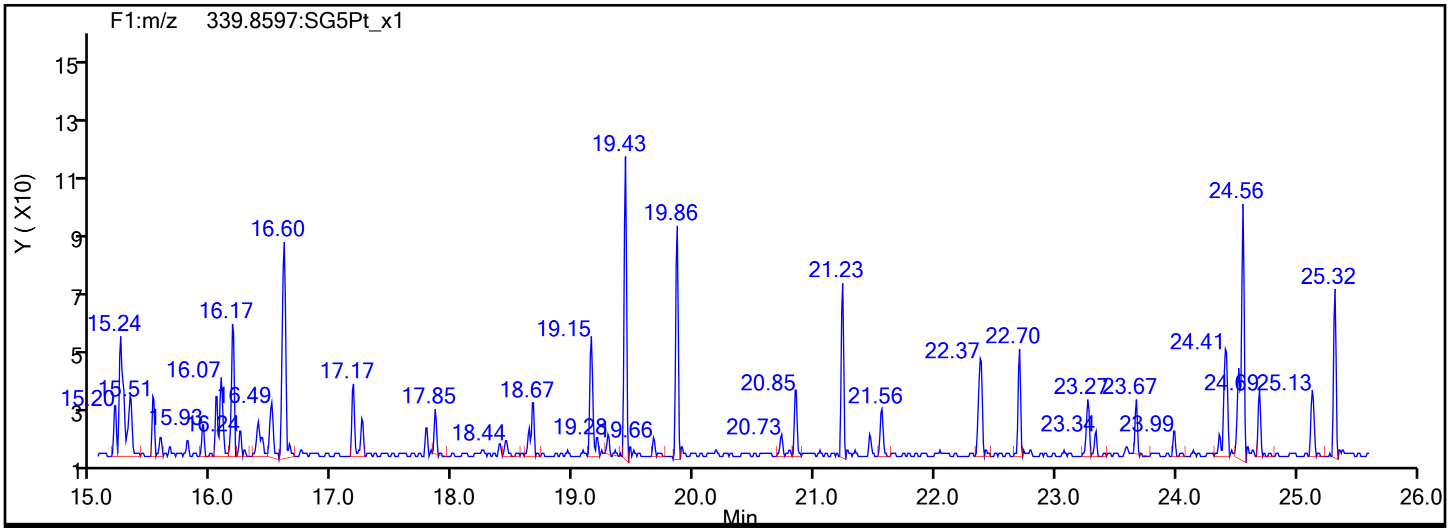

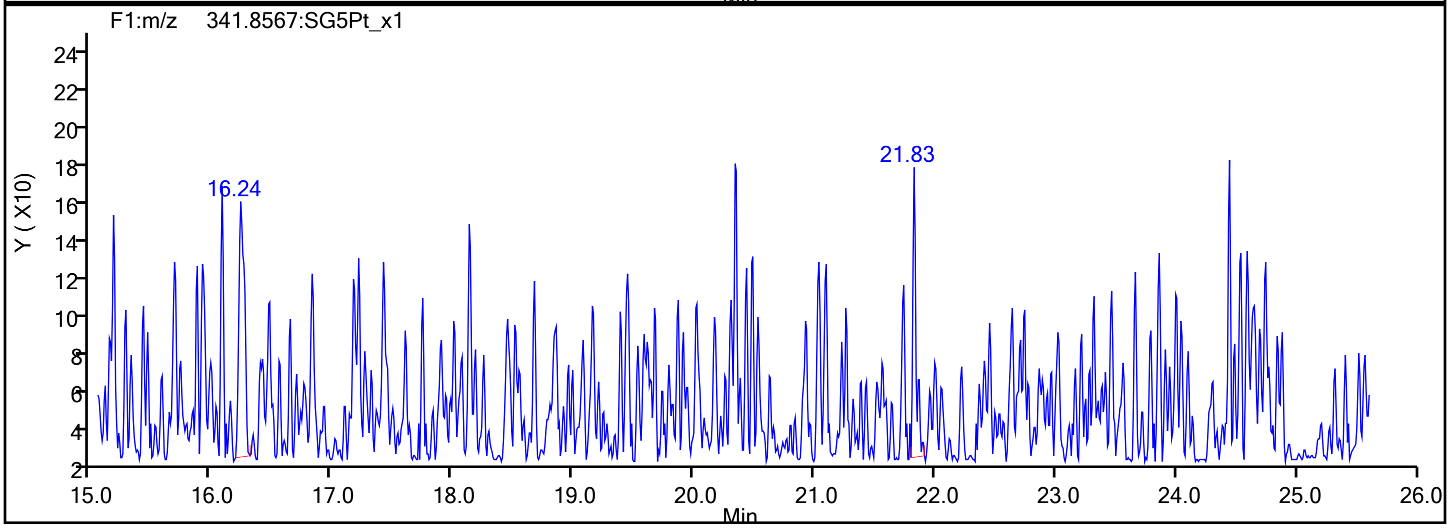

F1 PeCDFs Interference Mass

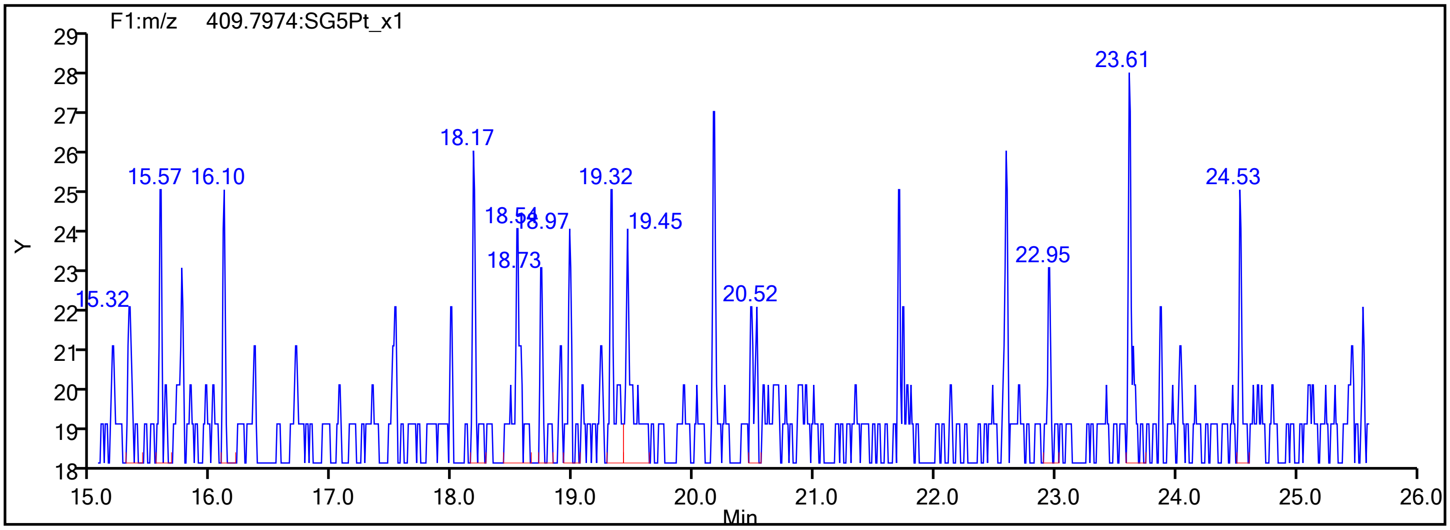

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
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Method: Dioxin_DFS1
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PeCDF

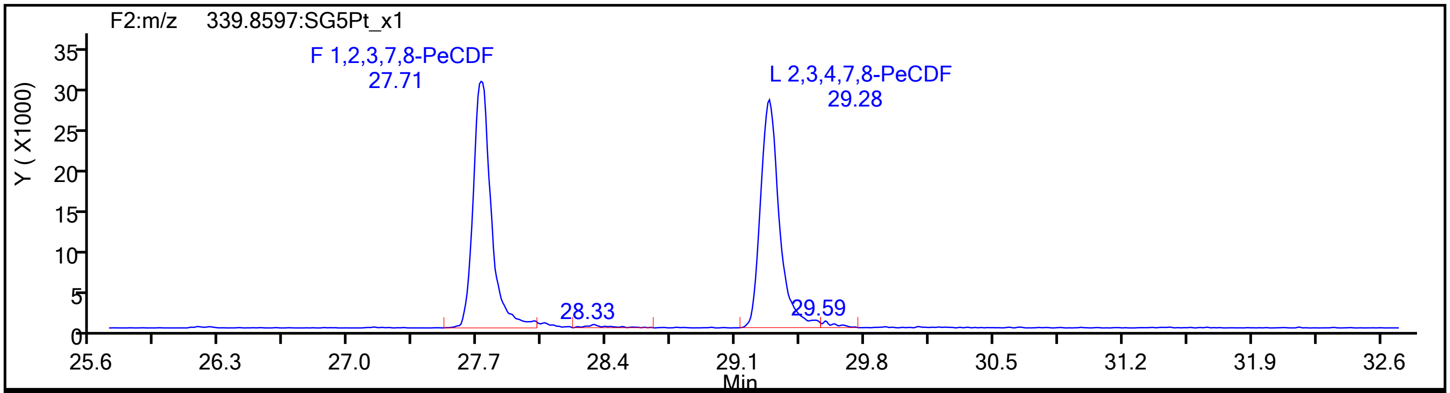

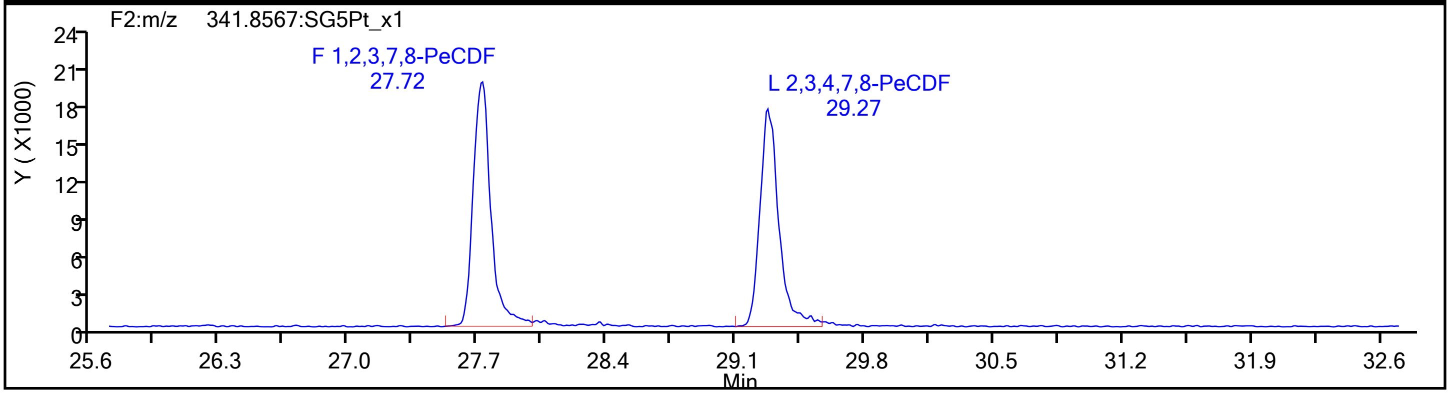

PeCDF Standards

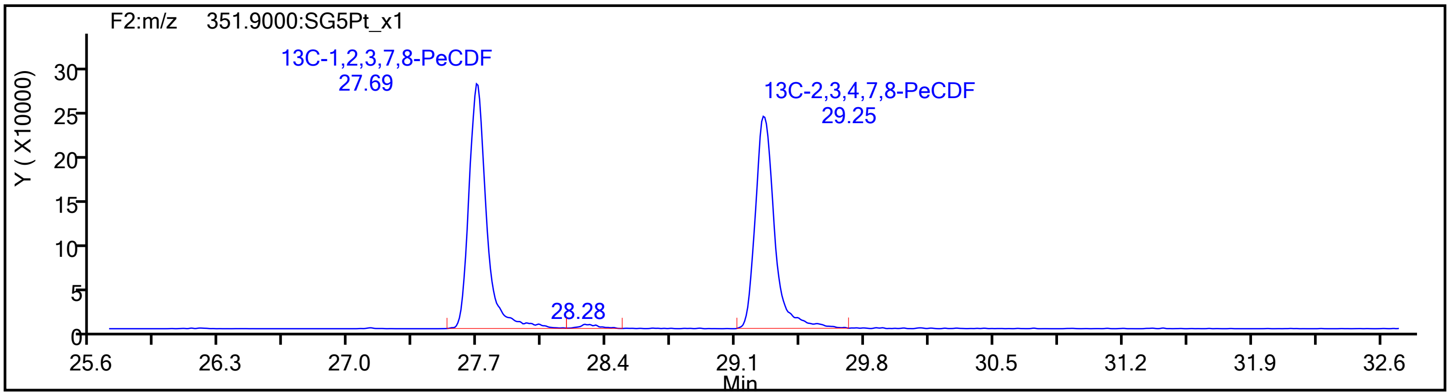

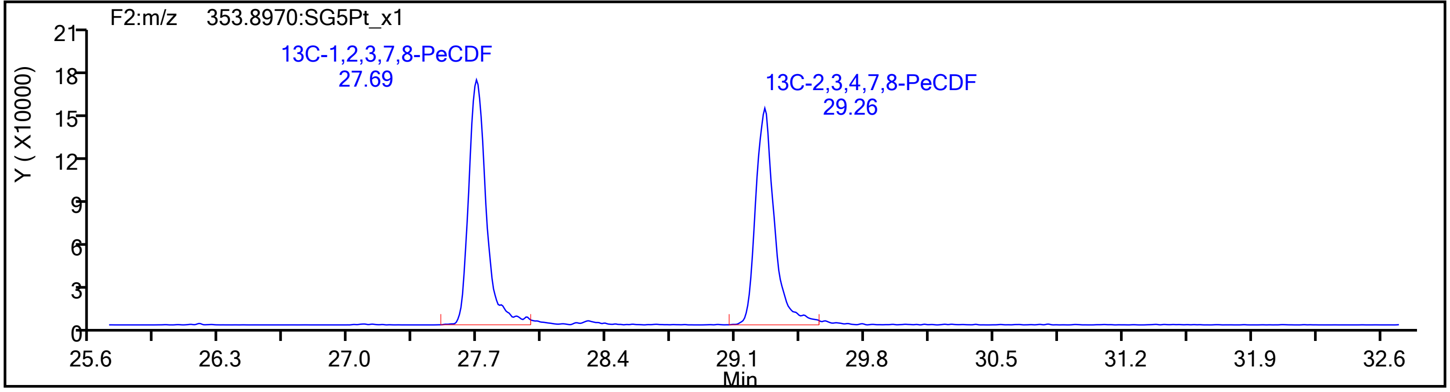

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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PeCDF

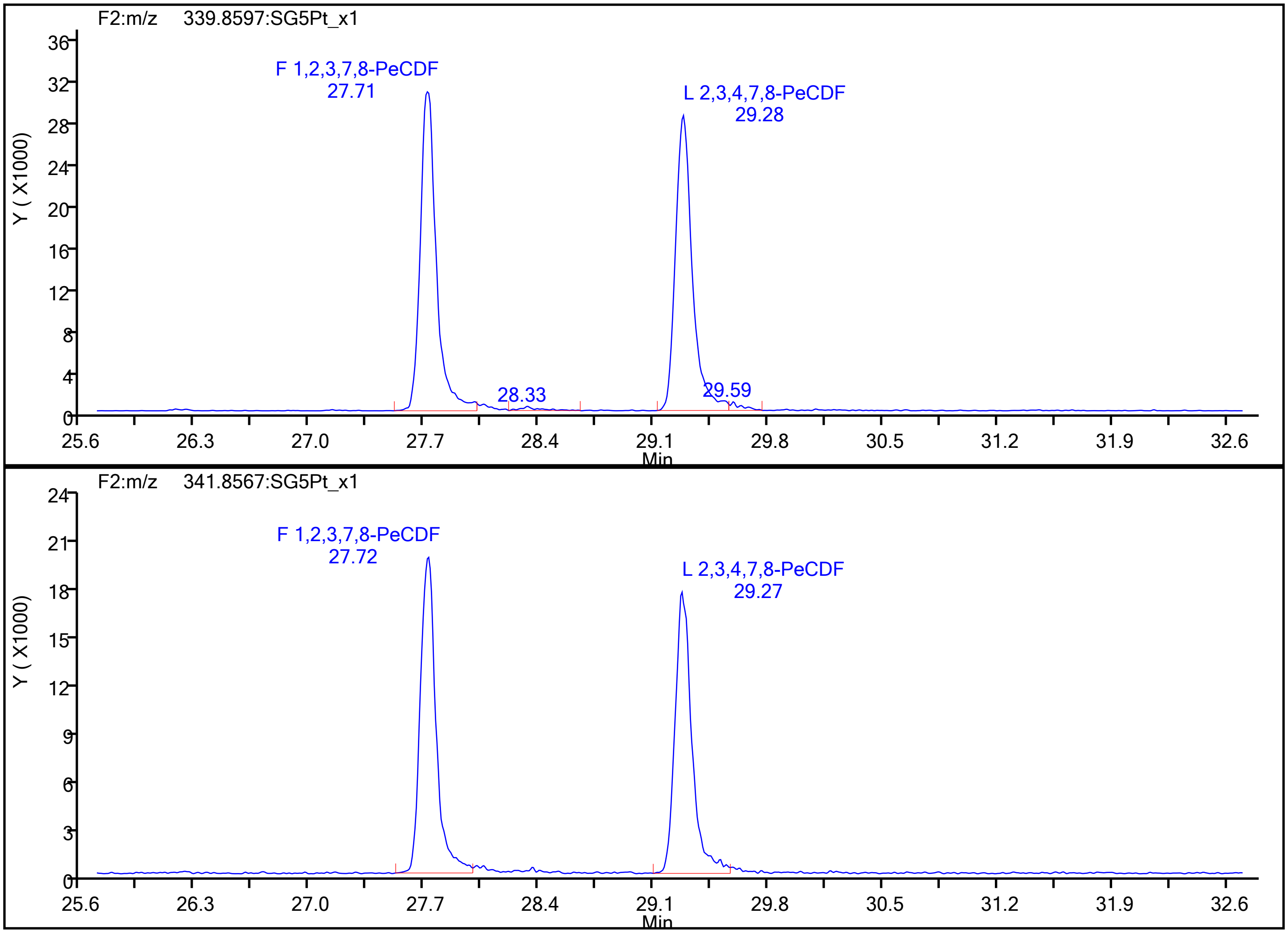

PeCDF Interference Mass

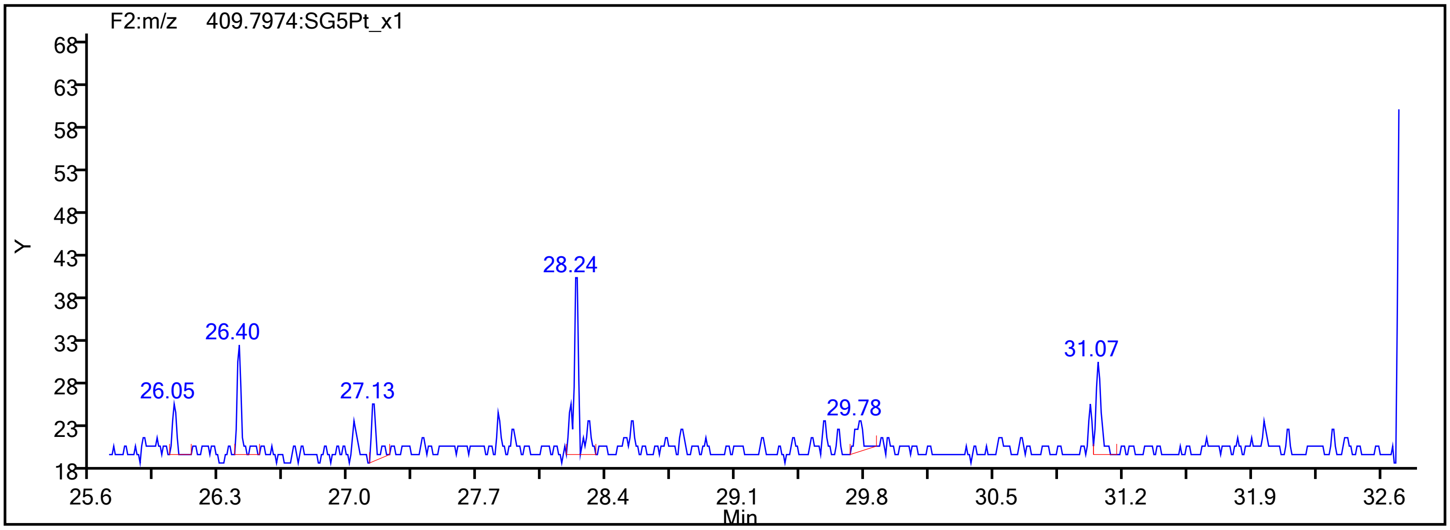

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Eurofins TestAmerica, Sacramento

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PeCDD

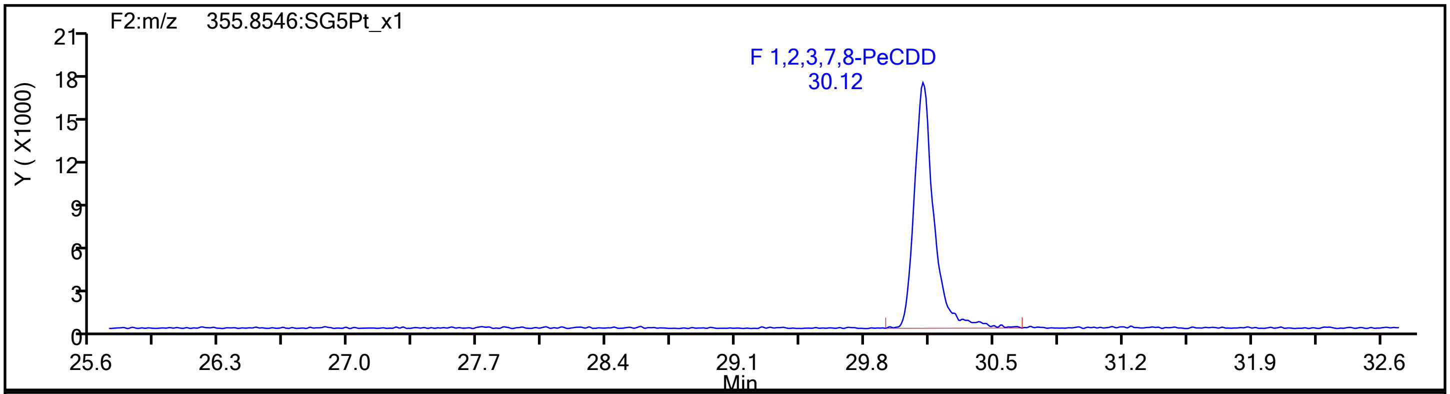

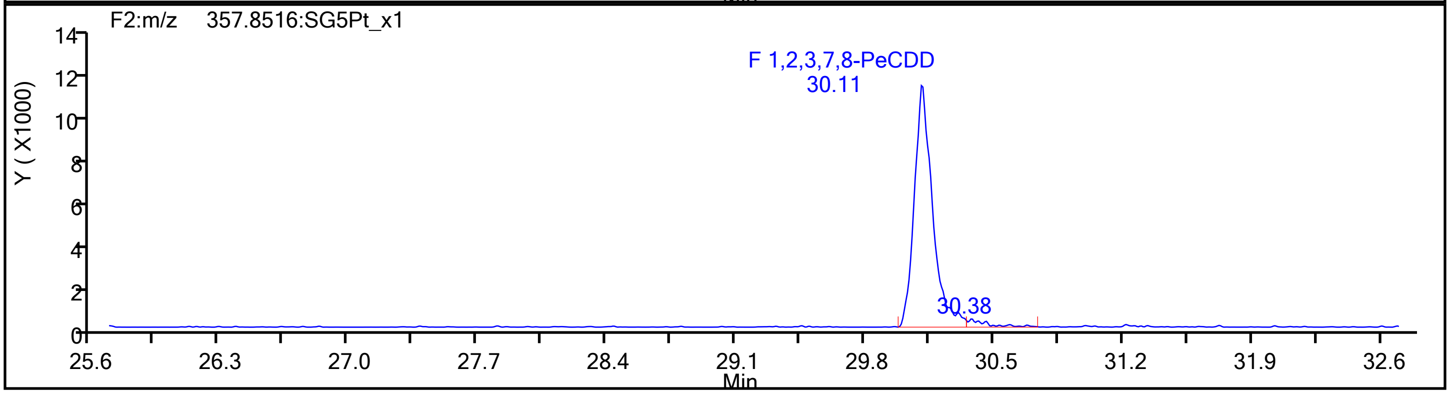

PeCDD Standards

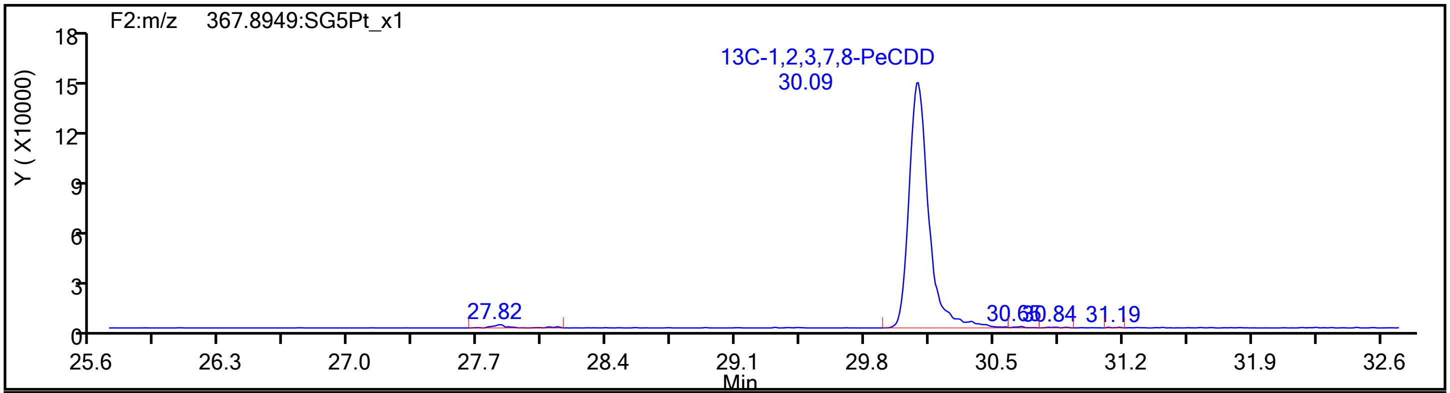

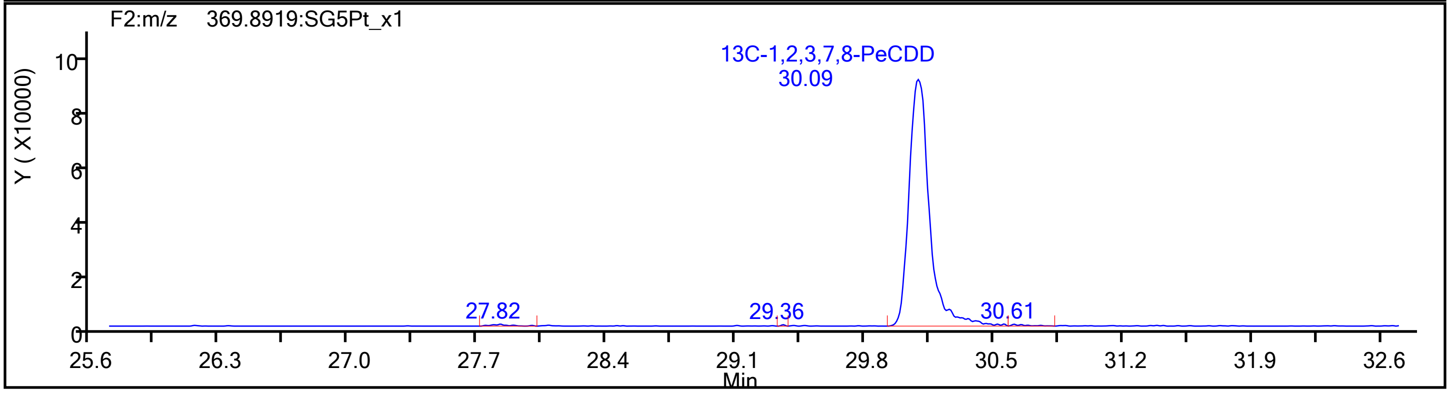

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Injection Date: 17-Nov-2020 13:38:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

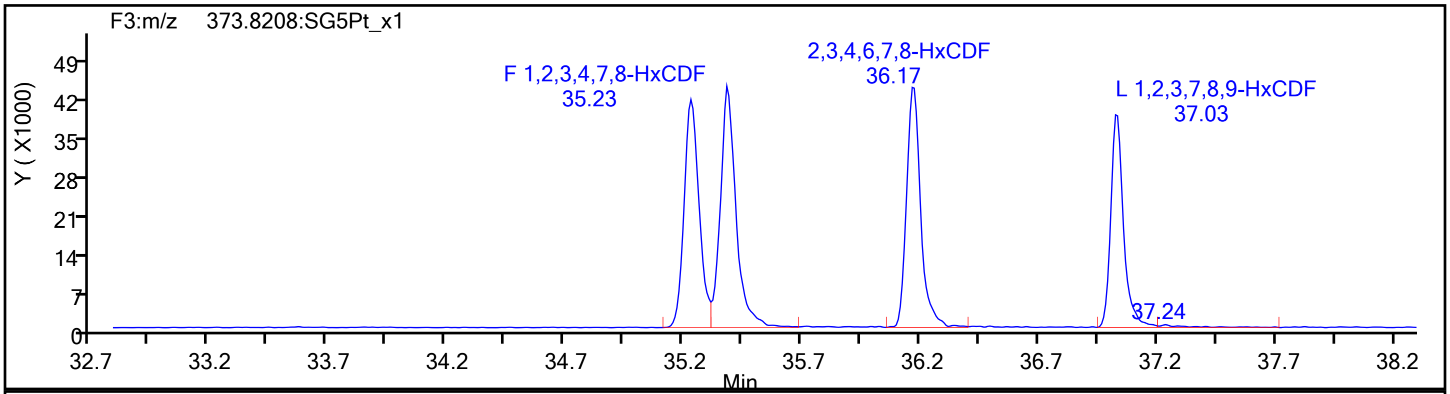

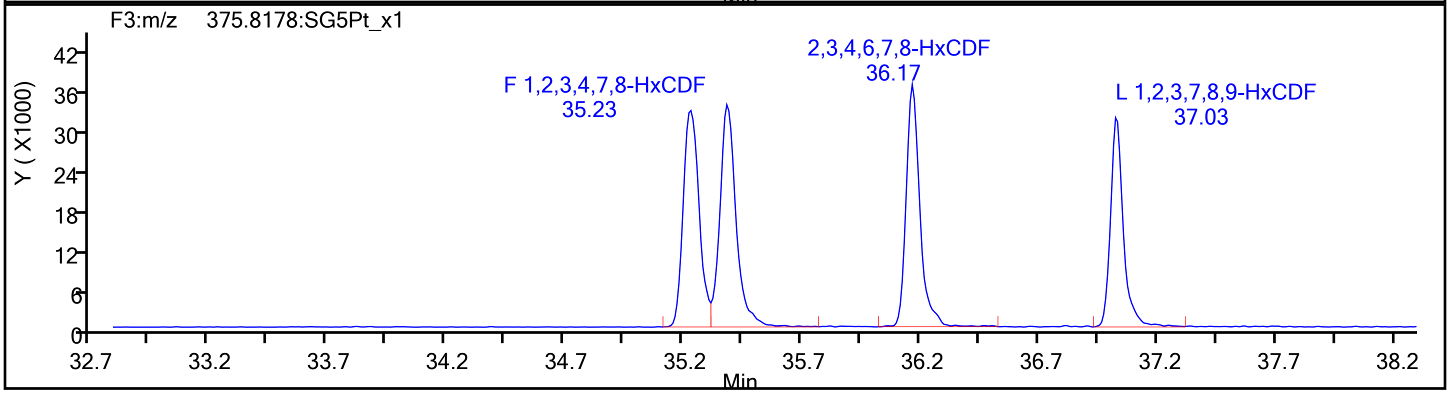

HxCDF Standards

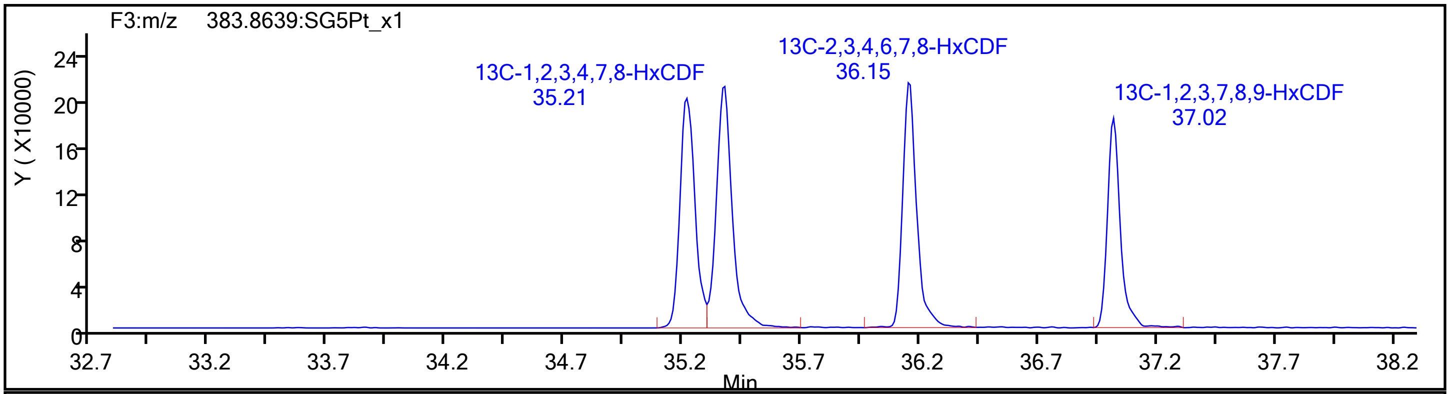

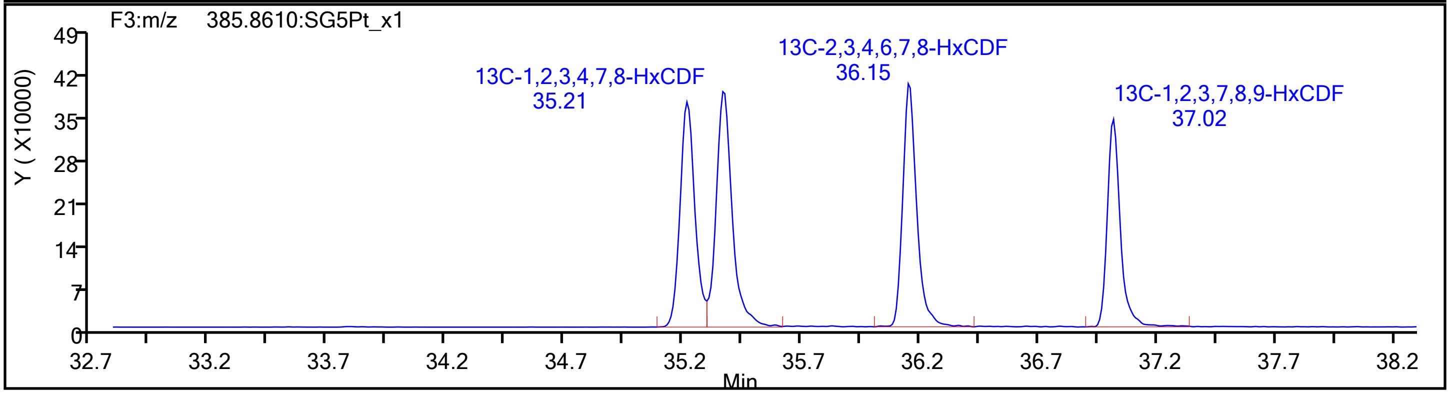

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Eurofins TestAmerica, Sacramento

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Client ID:			
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HxCDF

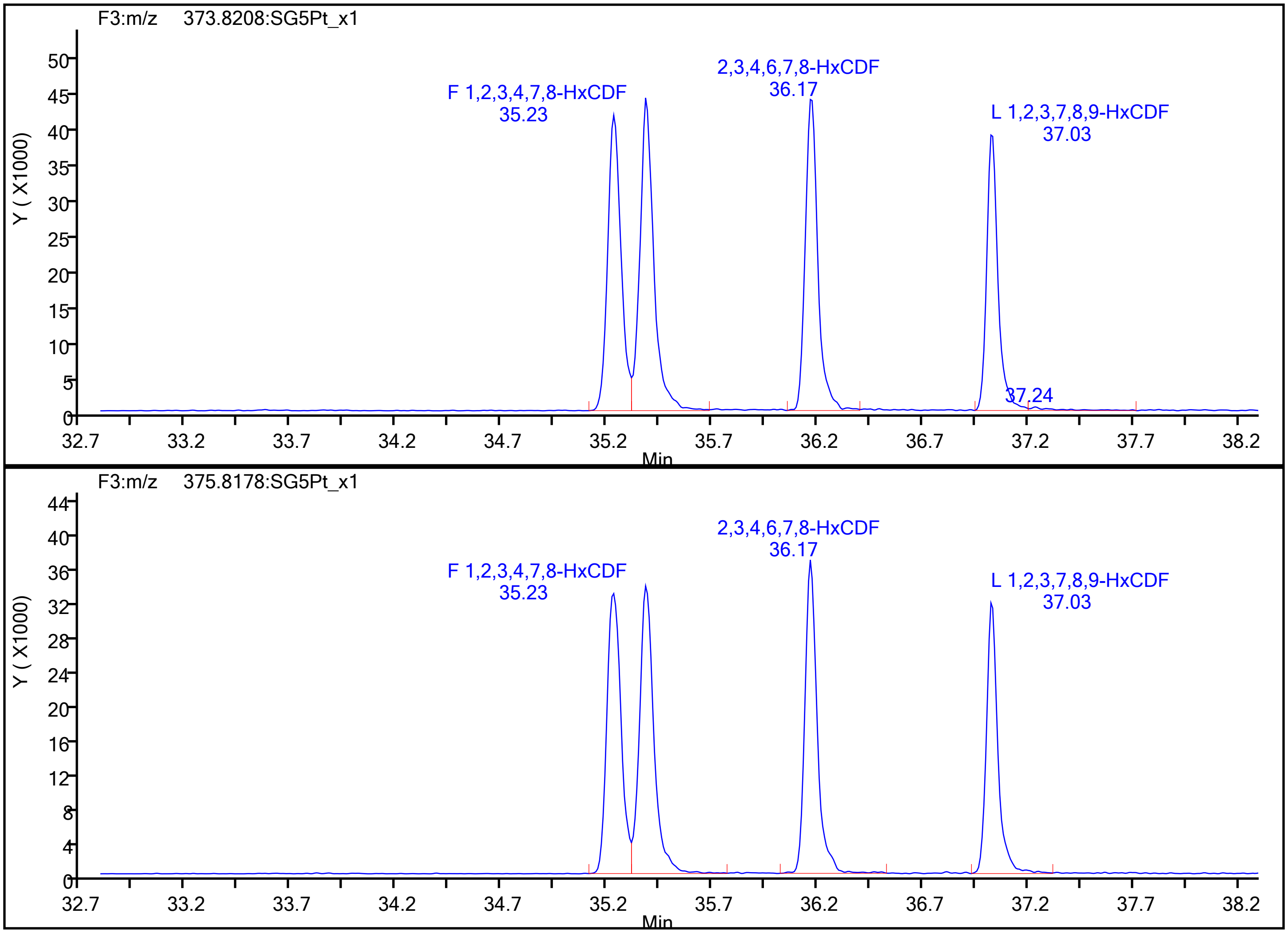

HxCDF Interference Mass

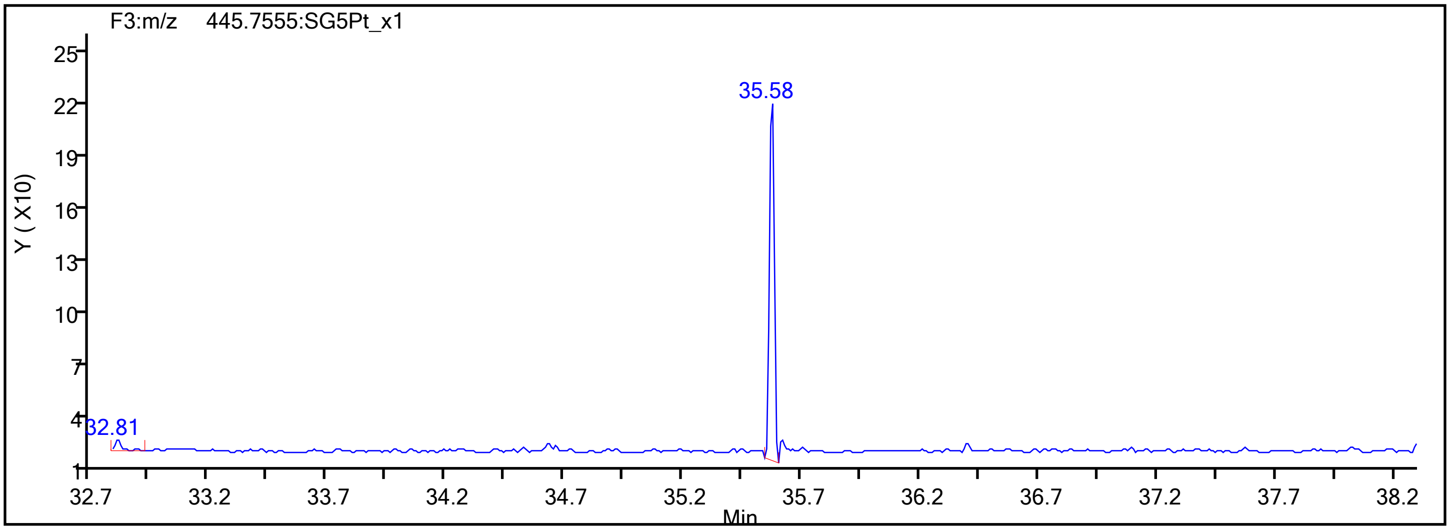

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Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento
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HxCDD

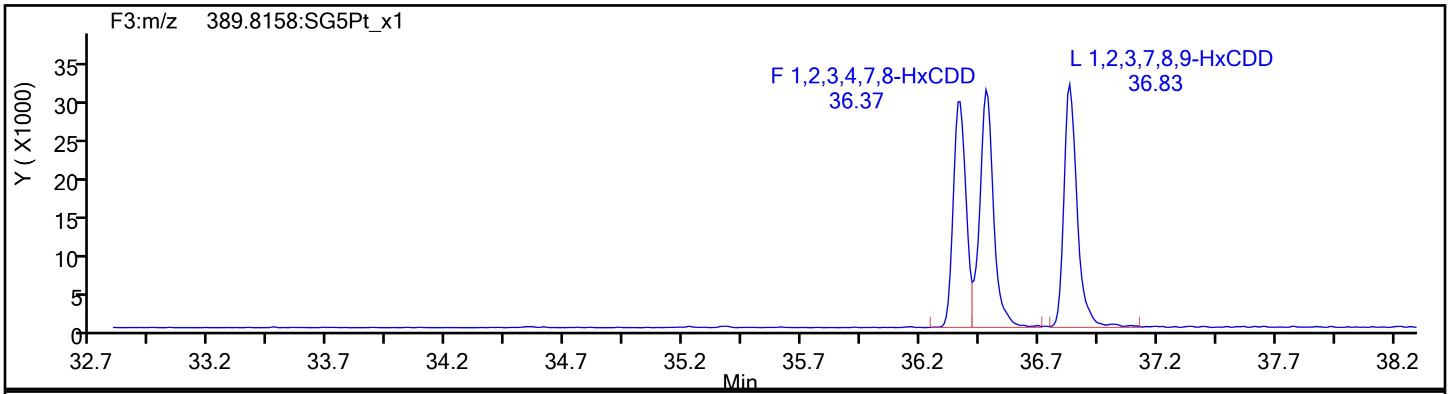

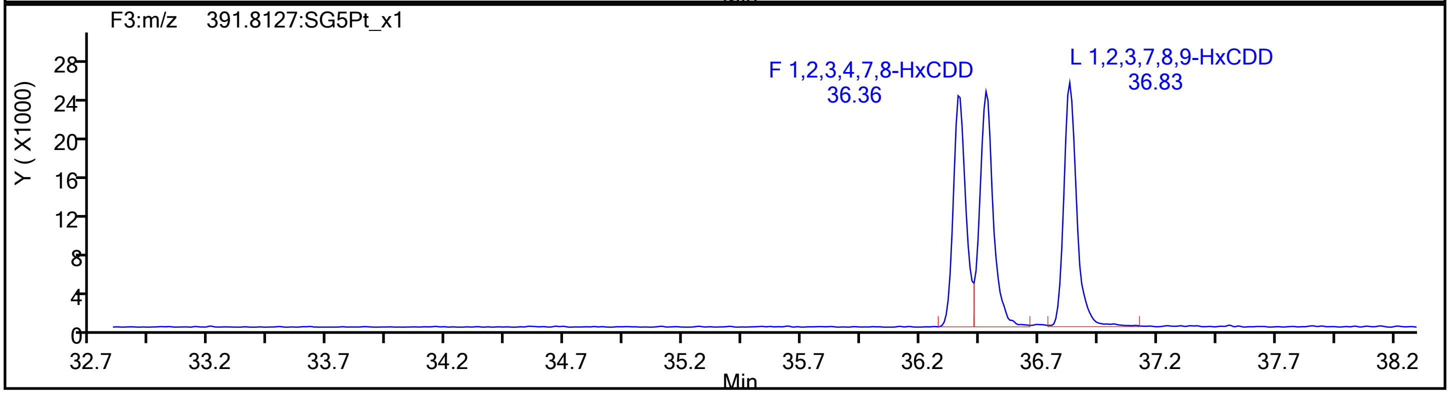

HxCDD Standards

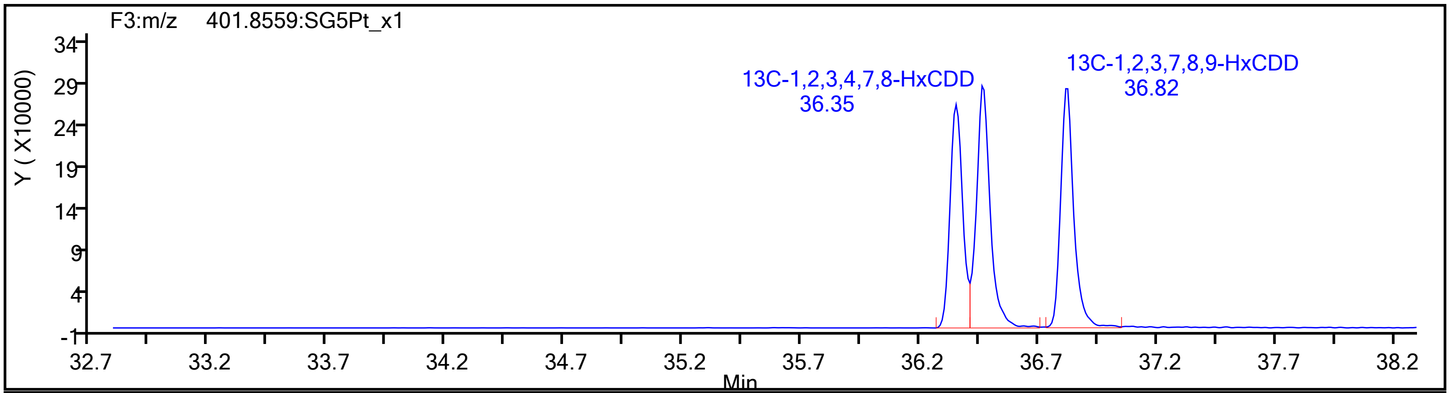

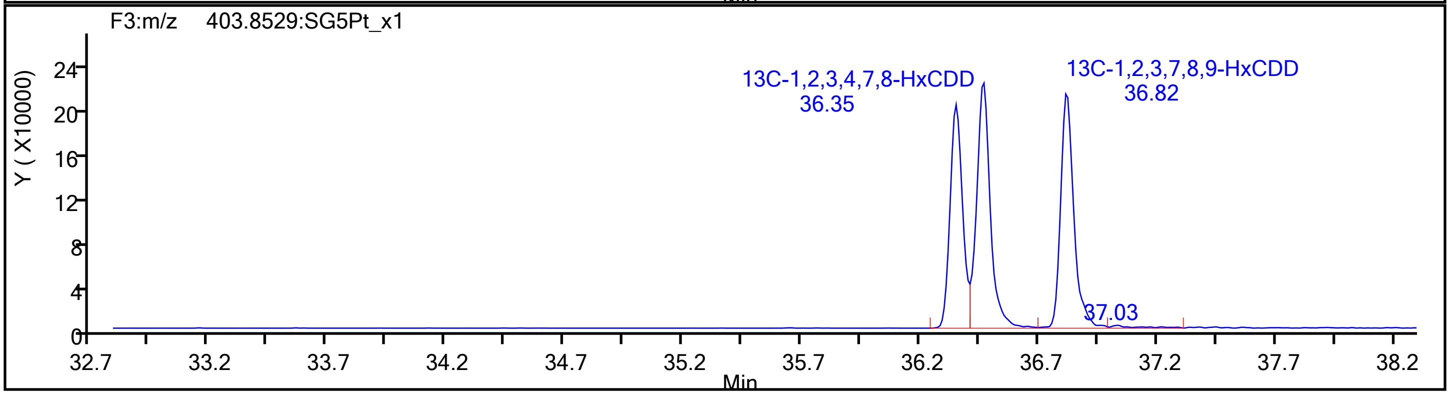

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

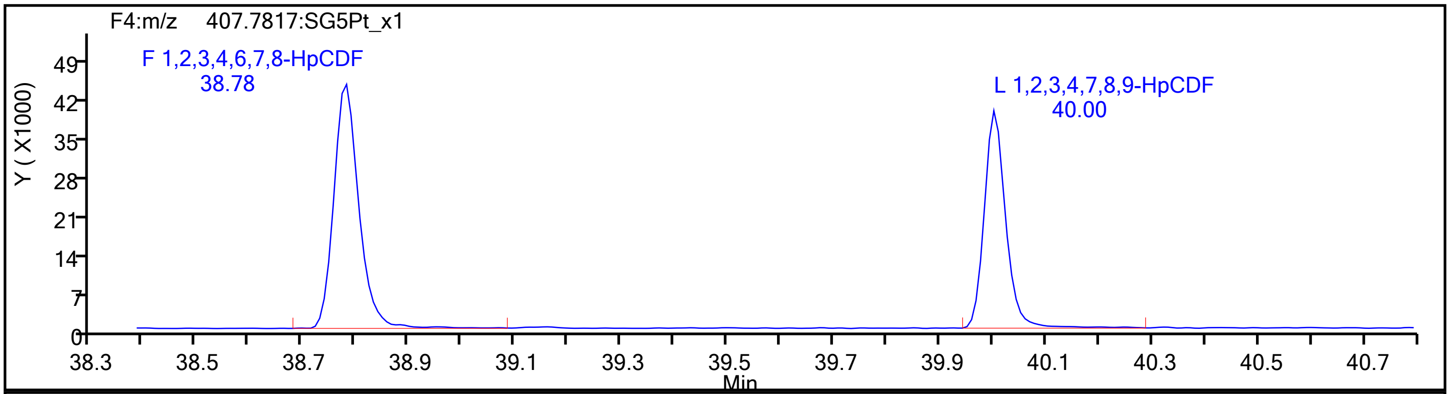

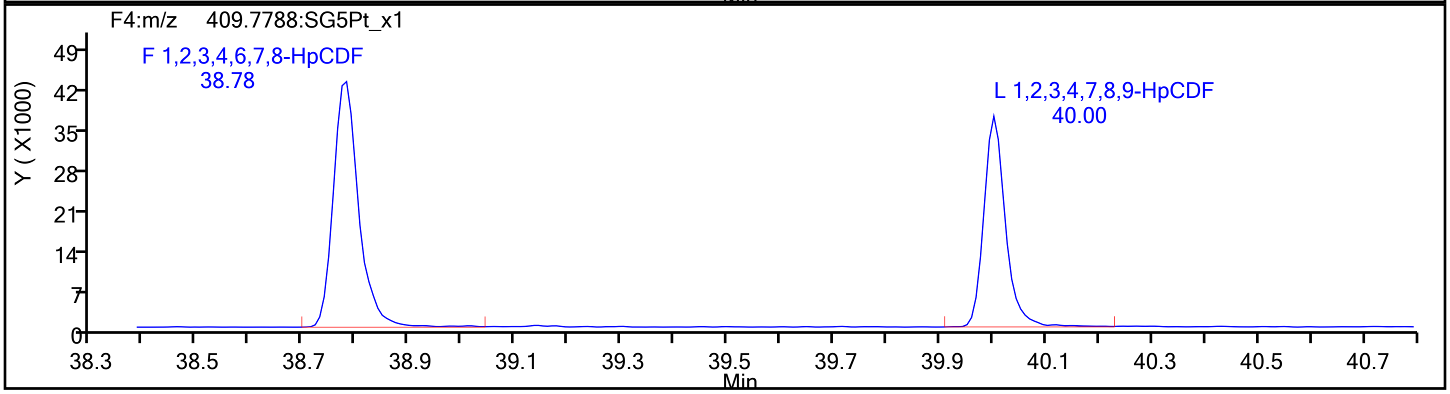

HpCDF Standards

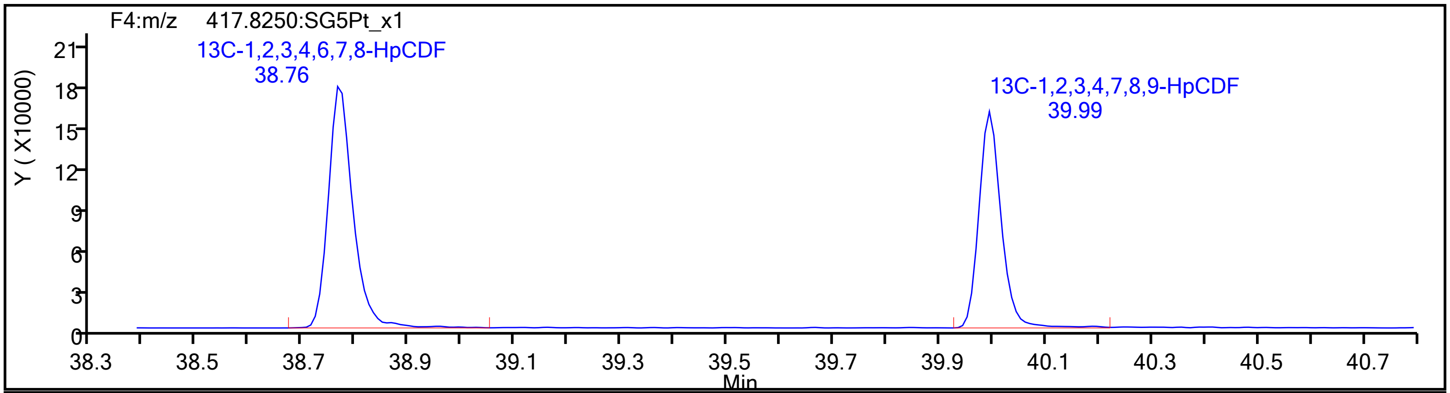

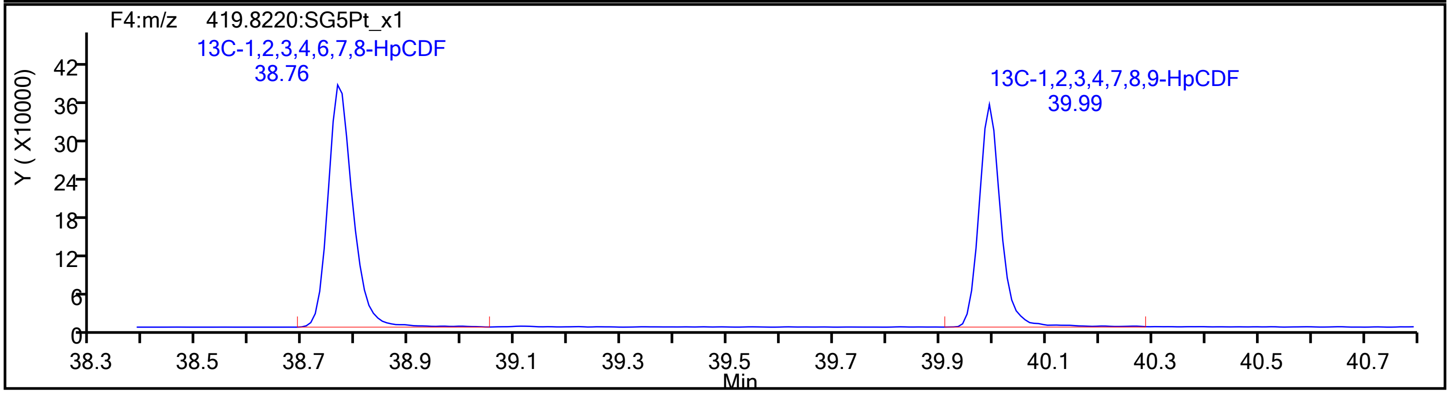

Eurofins TestAmerica, Sacramento

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HpCDF

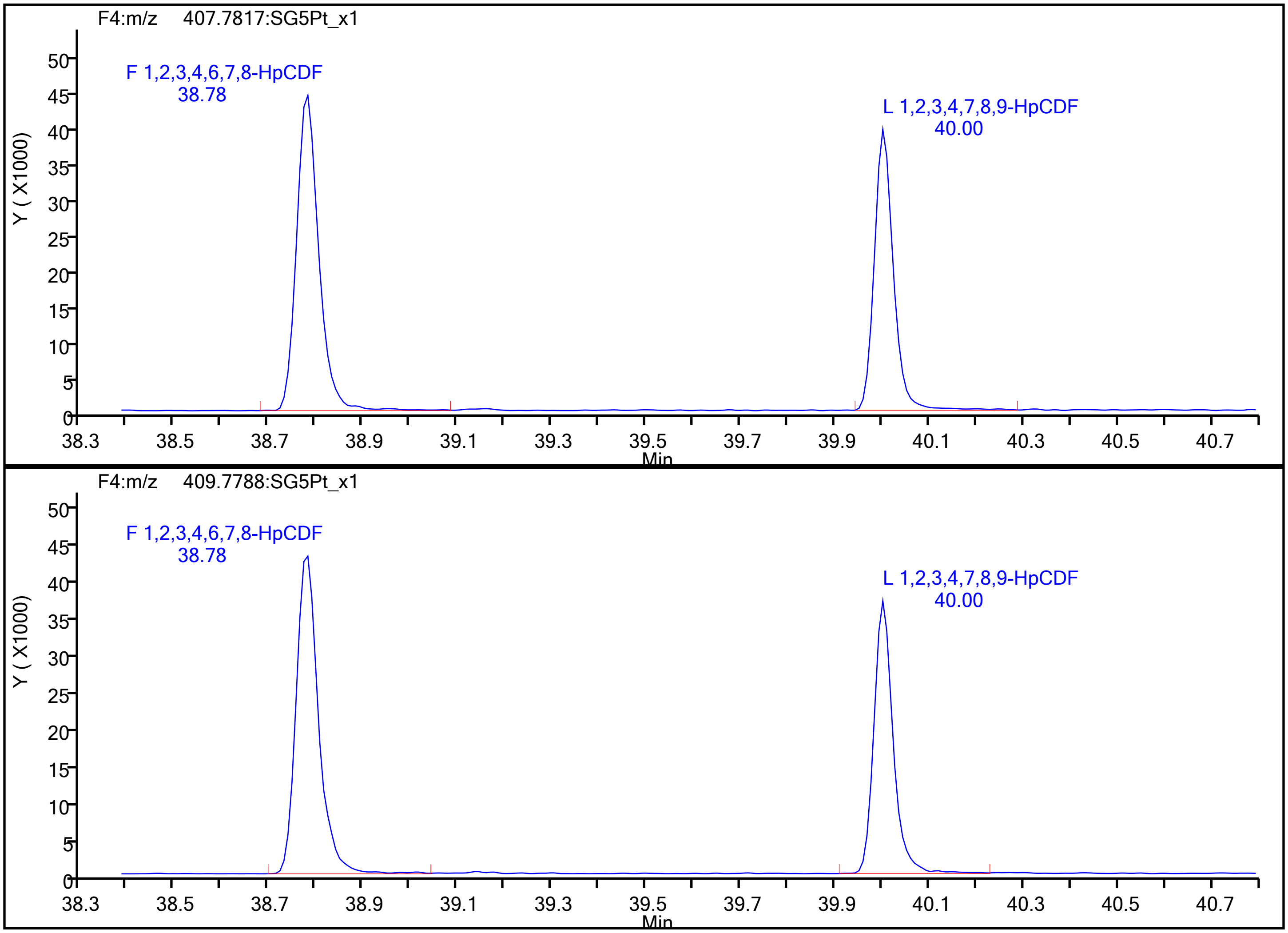

HpCDF Interference Mass

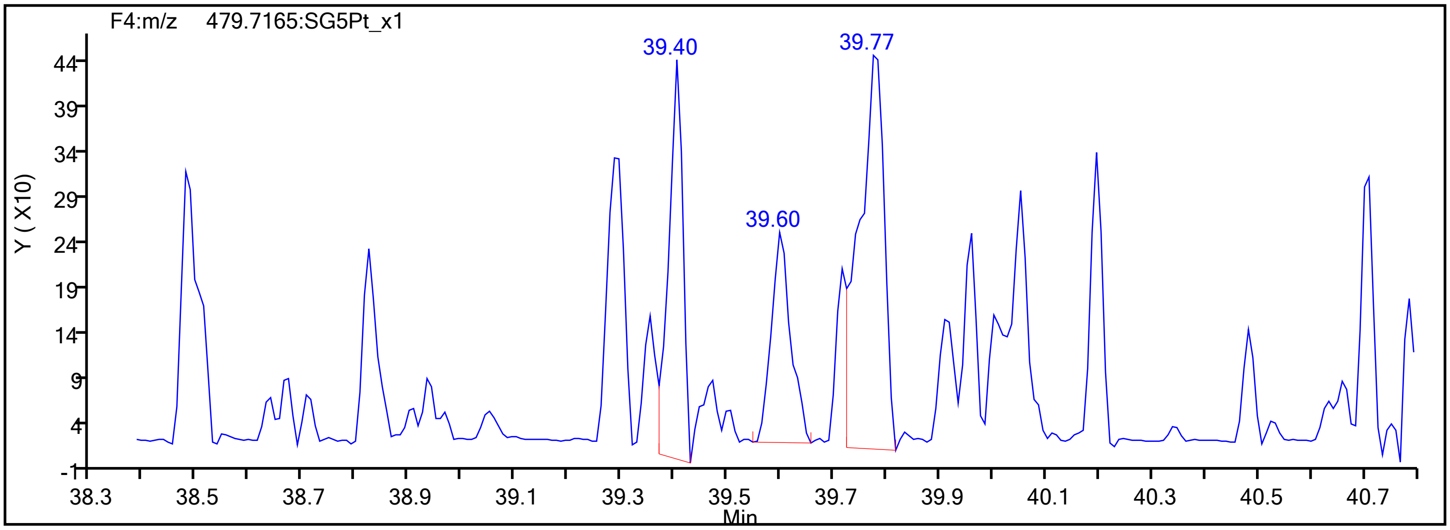

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Eurofins TestAmerica, Sacramento

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HpCDD

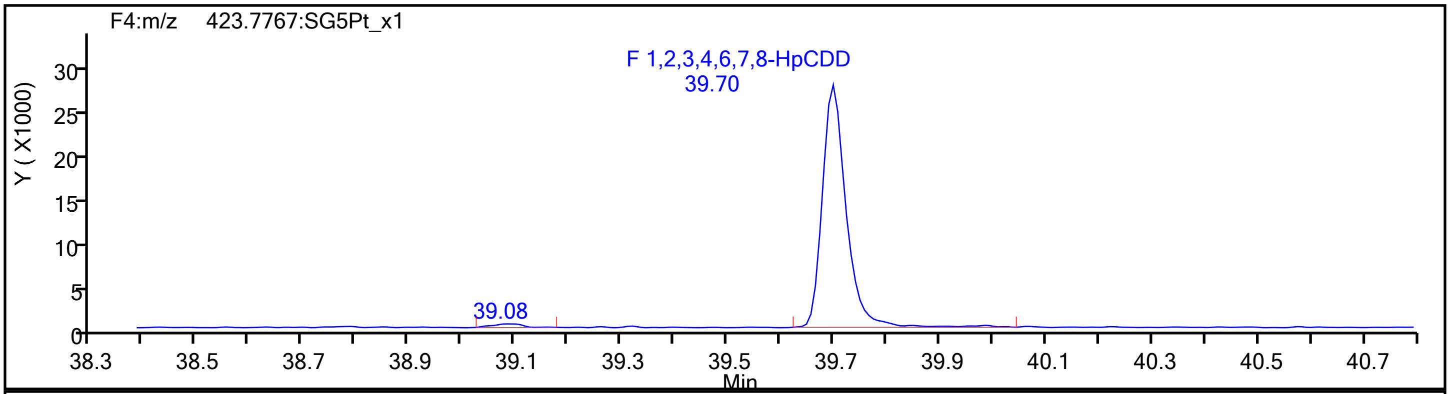

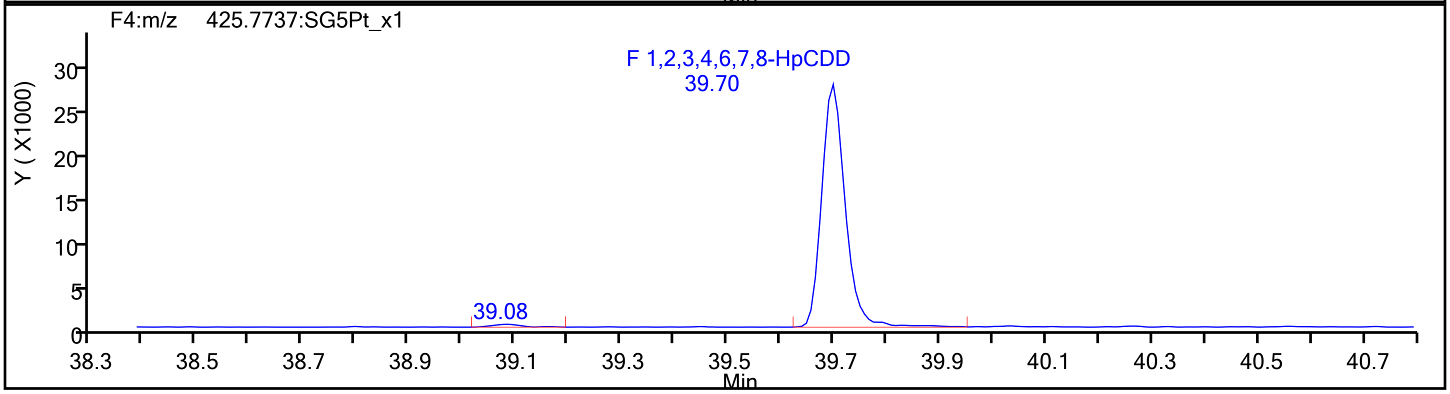

HpCDD Standards

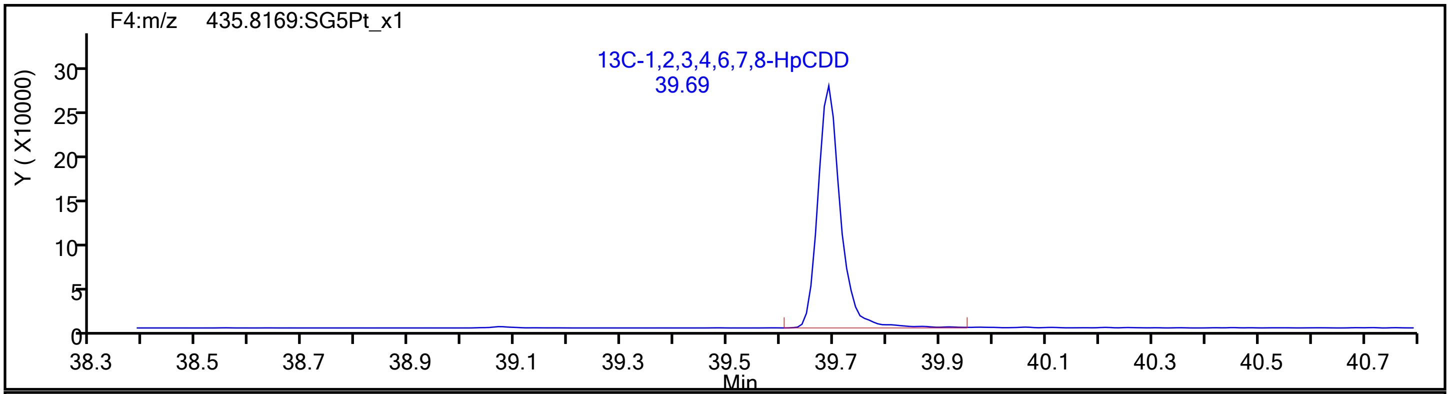

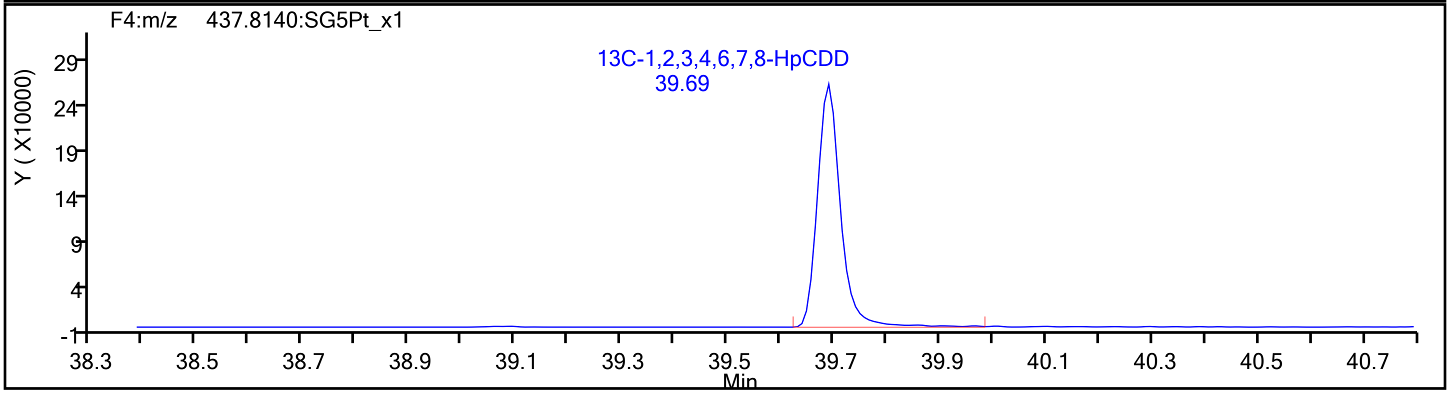

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

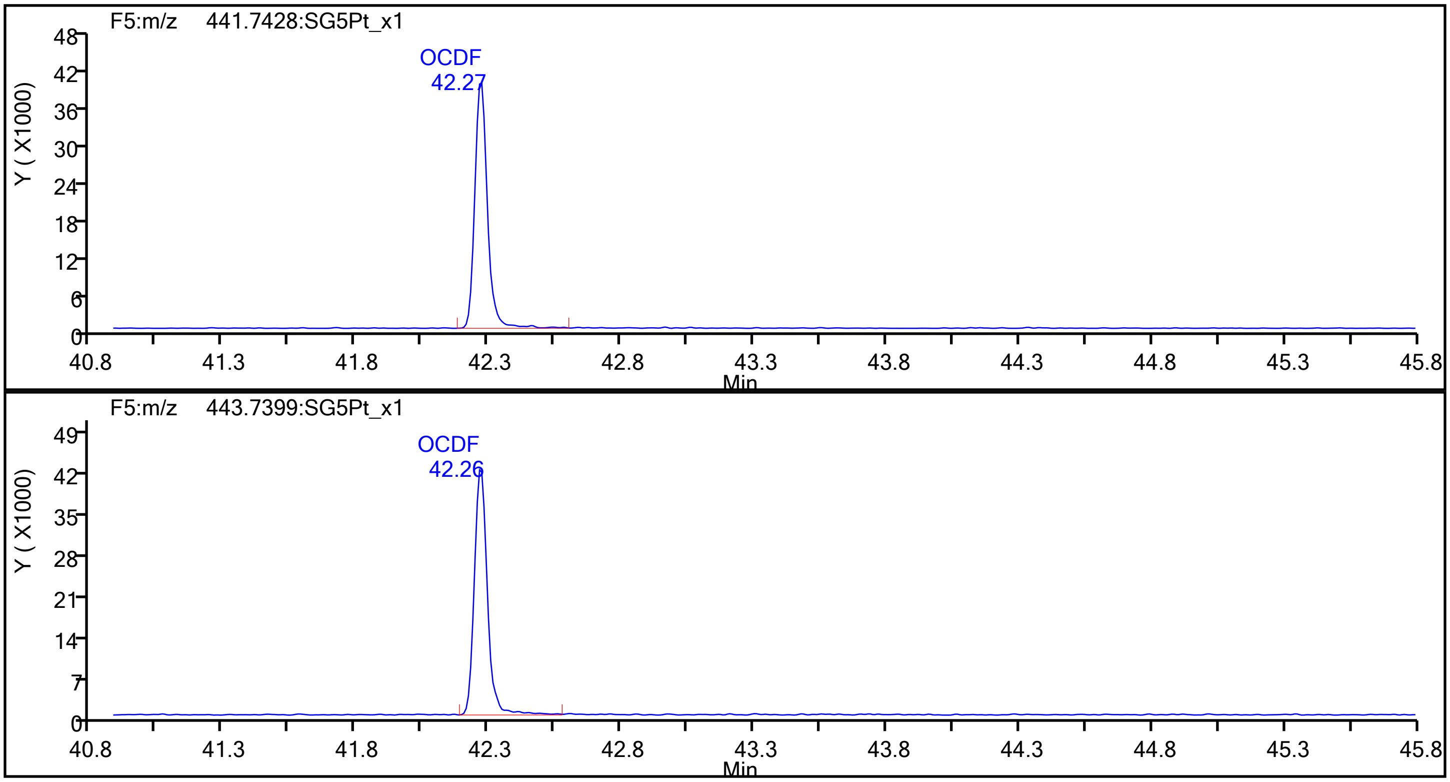

OCDF Standards

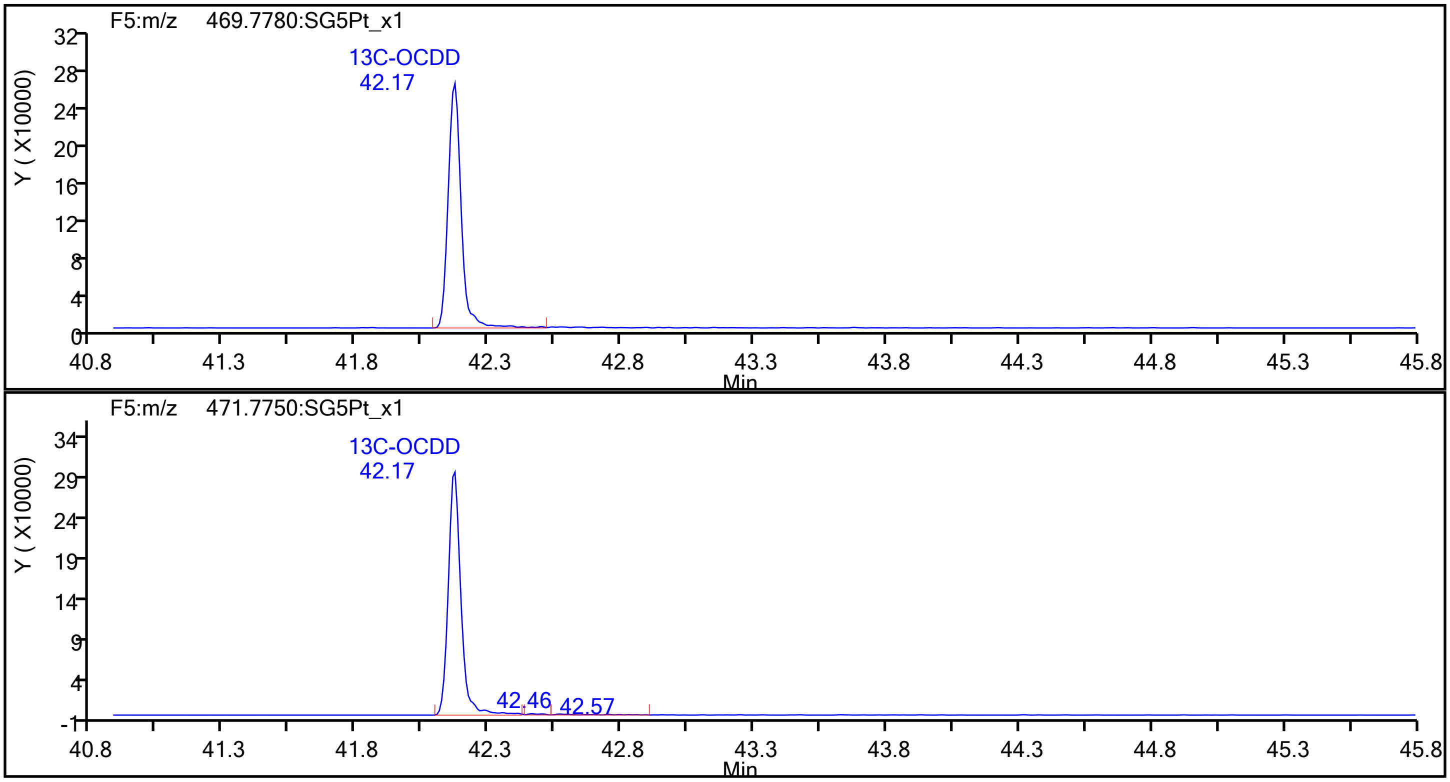

Report Date: 18-Nov-2020 12:34:44

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

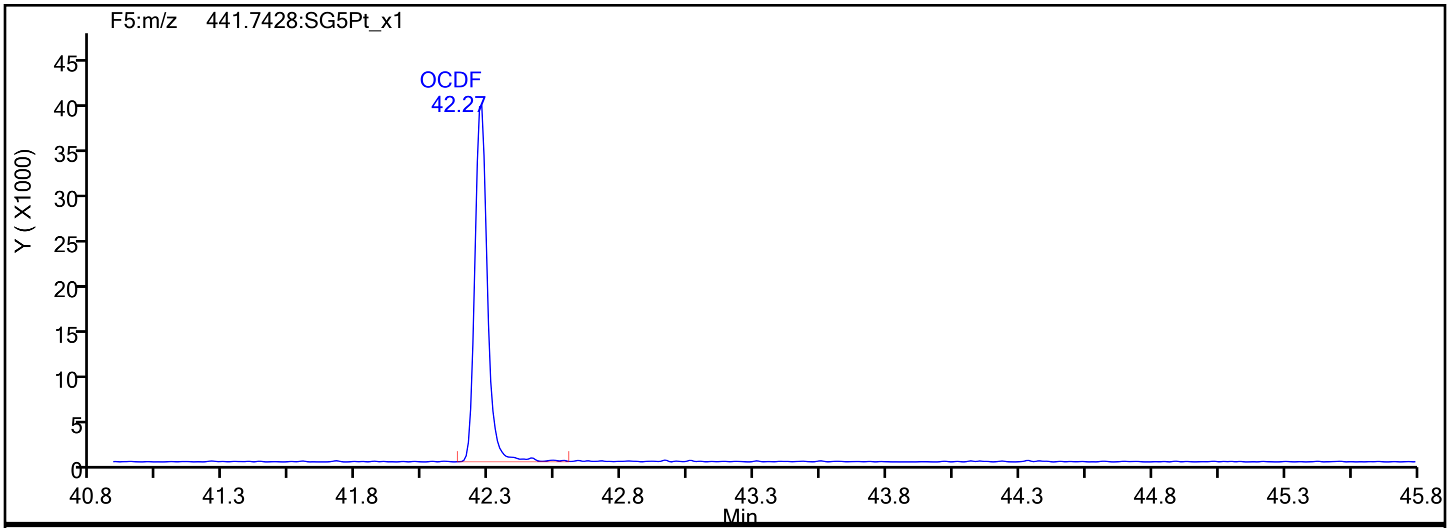

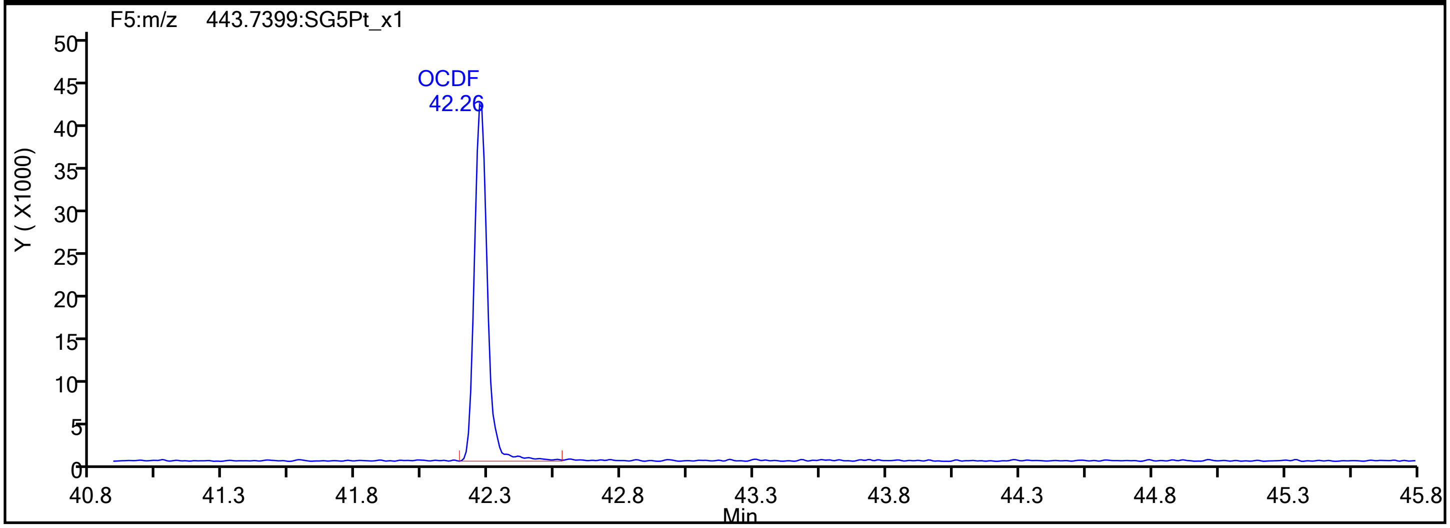

OCDF Interference Mass

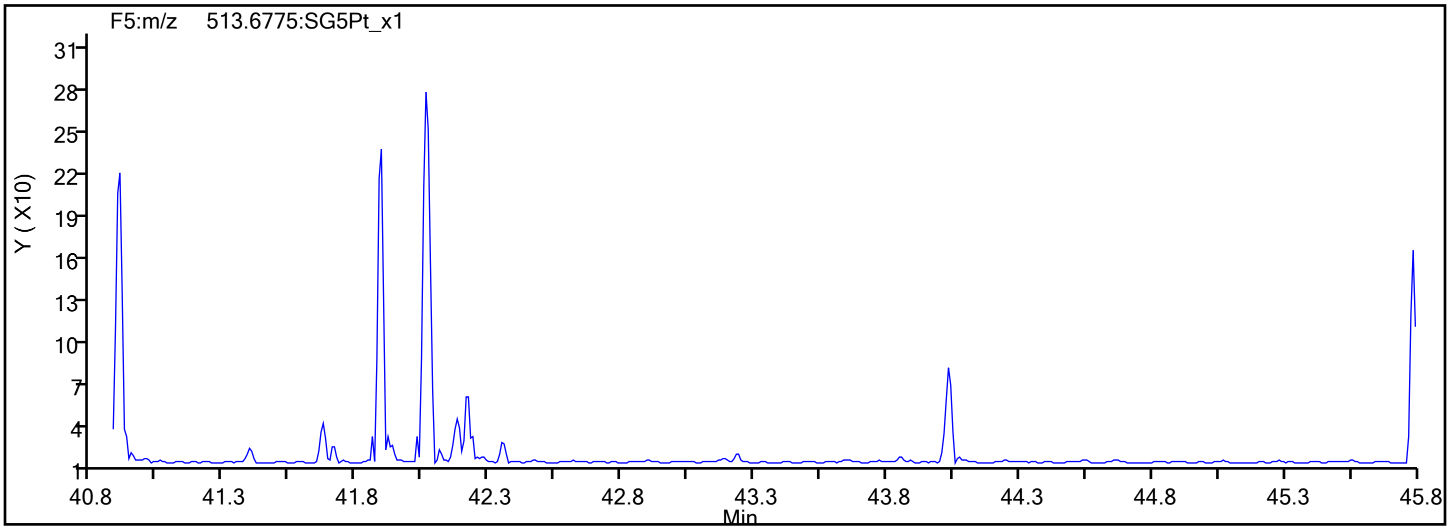

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

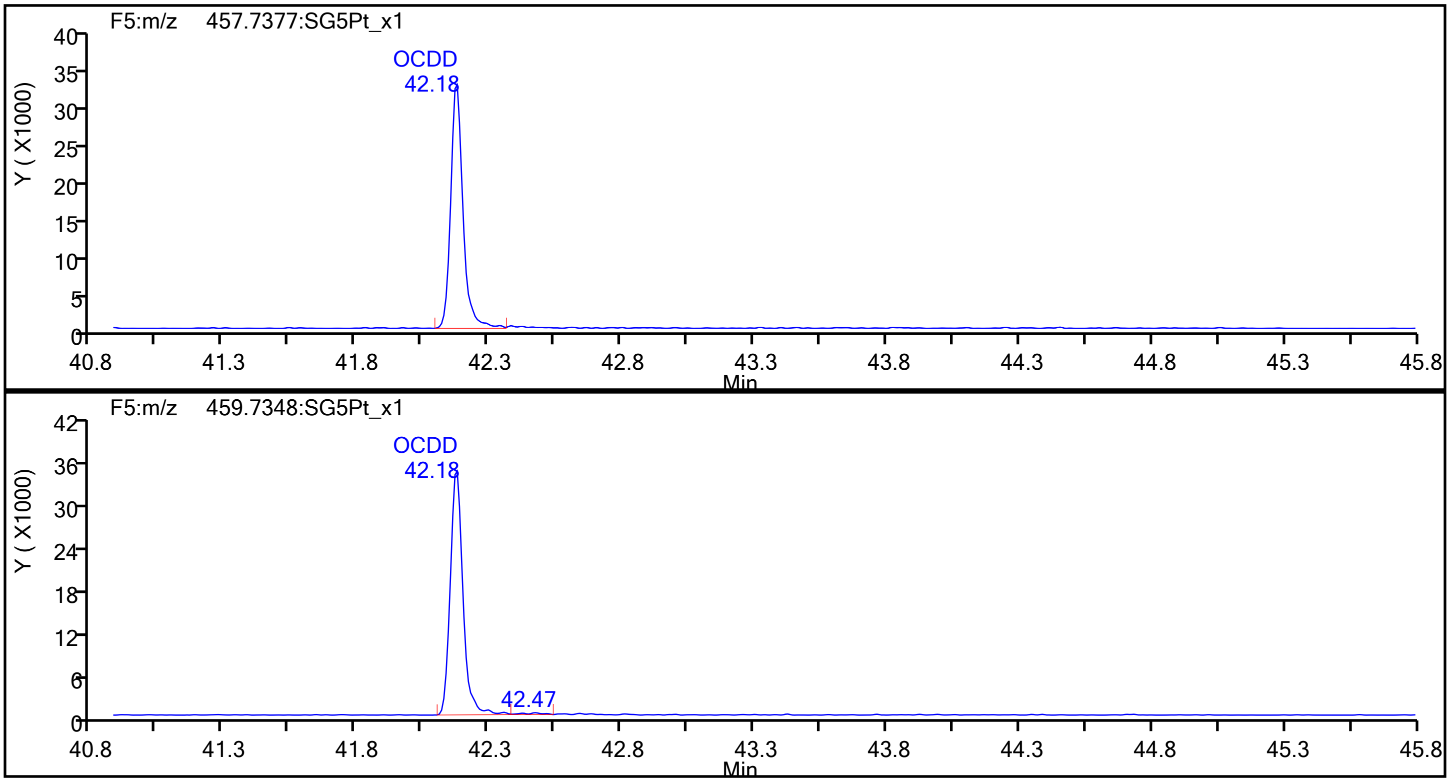

OCDD Standards

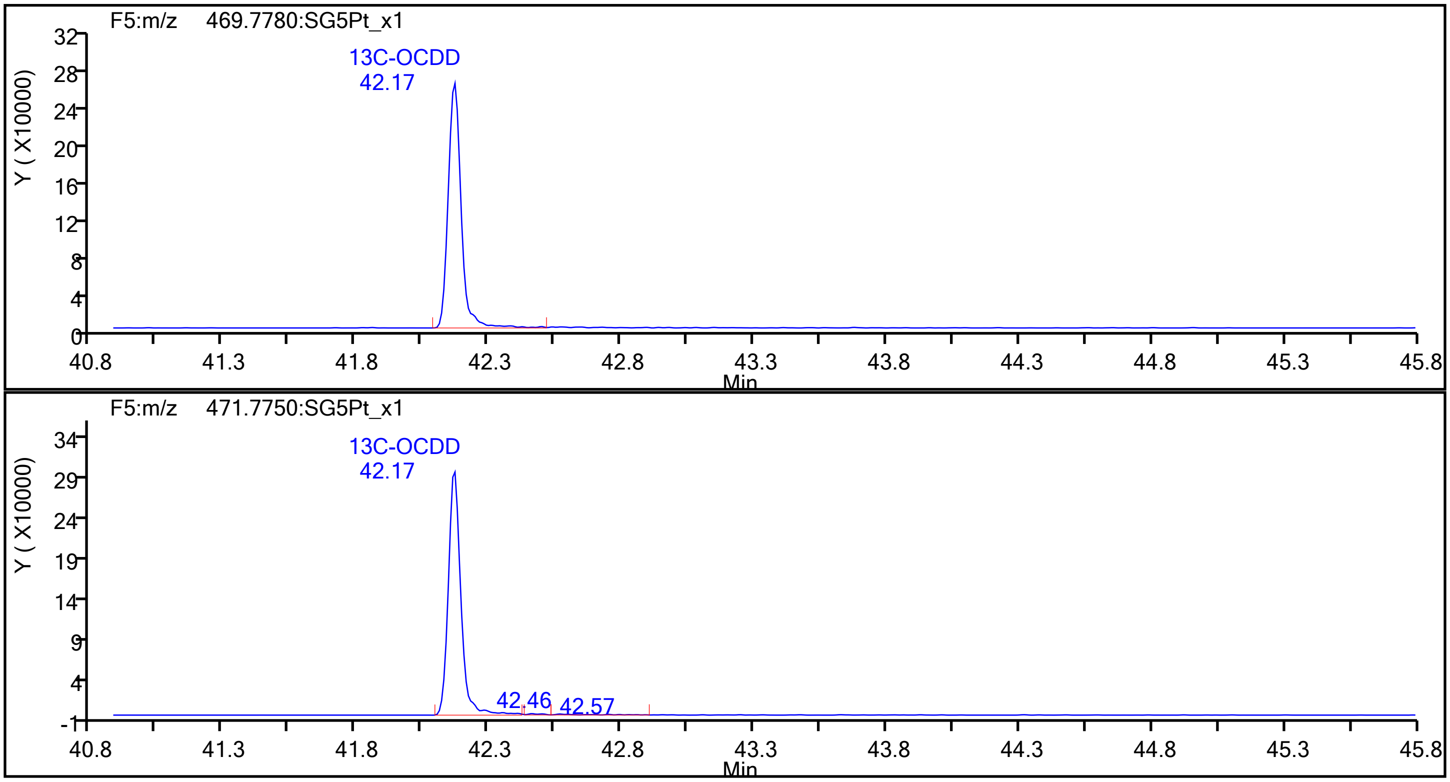

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

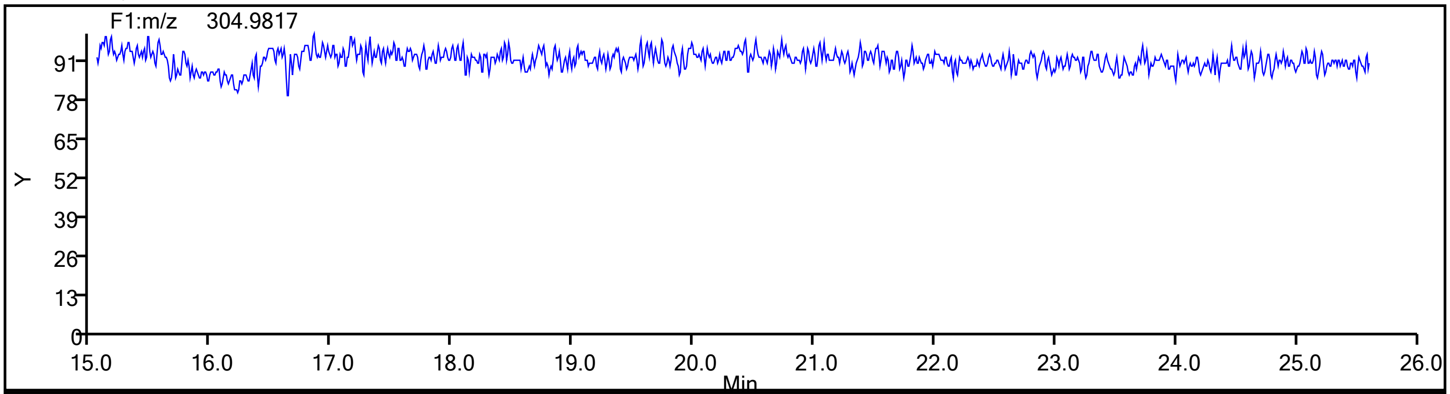

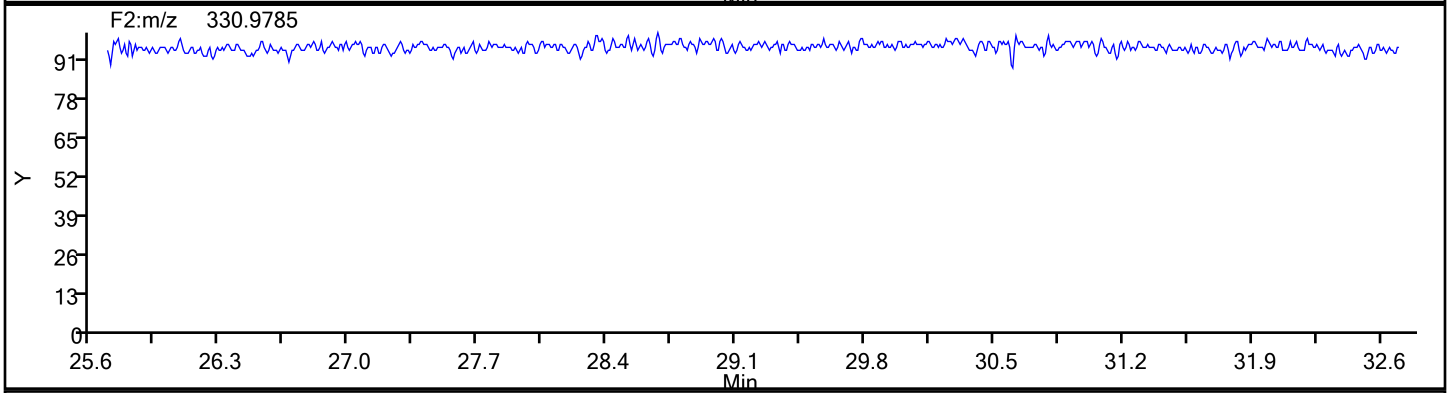

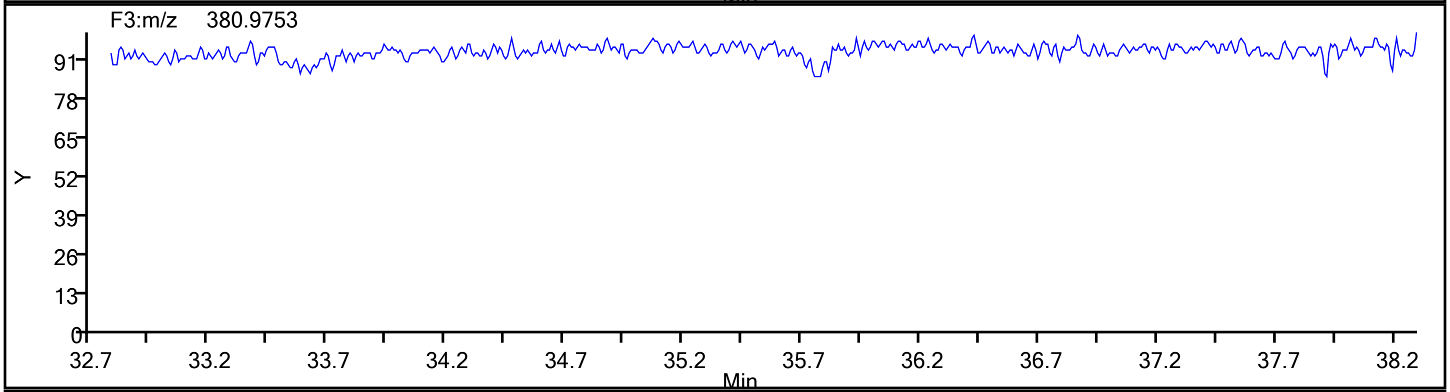

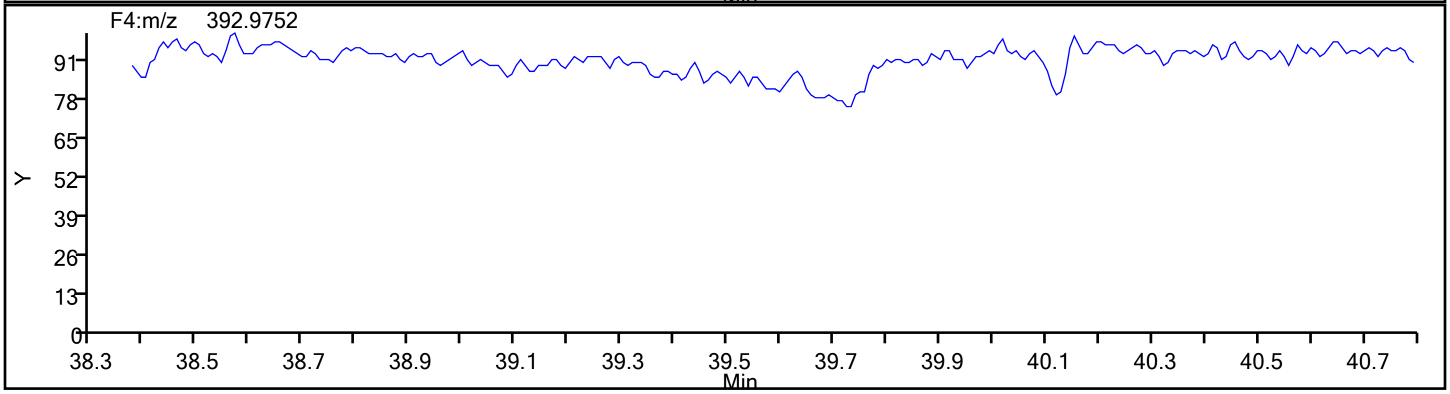

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

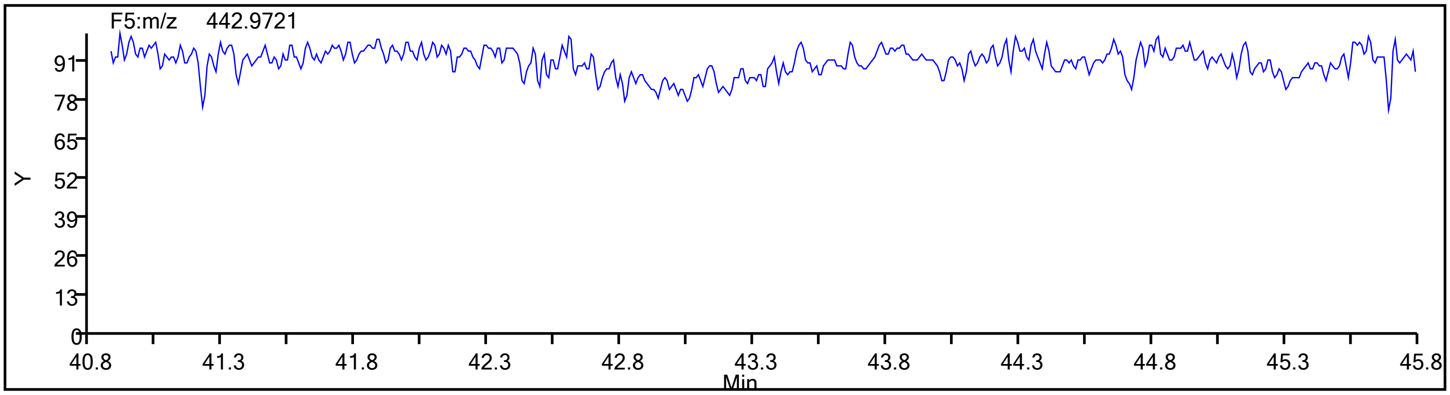

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Nov-2020 14:27:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:47 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:09:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.803	3431370	0.79	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.799	5685124	0.79	1.6832	98.4	98.4	0.2514	0.2514	98.43	
2,3,7,8-TCDF	20.833	629710	0.79	1.1547	9.593	9.593	0.0333	0.0333	95.93	
S Total TCDF					9.593	9.593	0.0333	0.0333		
D 13C-2,3,7,8-TCDD	22.198	3653681	0.81	1.0896	97.7	97.7	0.2220	0.2220	97.72	
2,3,7,8-TCDD	22.215	407439	0.80	1.1659	9.565	9.565	0.0543	0.0543	95.65	
$ 37Cl4-2,3,7,8-TCDD	22.224	380492		1.1445	9.688	9.688	0.0226	0.0226	96.88	
S Total TCDD					9.565	9.565	0.0543	0.0543		
D 13C-1,2,3,7,8-PeCDF	27.667	4756996	1.57	1.4604	94.9	94.9	0.3626	0.3626	94.93	
1,2,3,7,8-PeCDF	27.692	2627930	1.59	1.1322	48.8	48.8	0.1718	0.1718	97.59	
D 13C-2,3,4,7,8-PeCDF	29.225	4407855	1.63	1.3504	95.1	95.1	0.3921	0.3921	95.13	
2,3,4,7,8-PeCDF	29.251	2504487	1.58	1.1588	49.0	49.0	0.1878	0.1878	98.07	
S Total PeCDF					97.8	97.8	0.1798	0.1798		
D 13C-1,2,3,7,8-PeCDD	30.059	2899131	1.60	0.8729	96.8	96.8	0.1353	0.1353	96.79	
1,2,3,7,8-PeCDD	30.093	1543597	1.56	1.1191	47.6	47.6	0.0655	0.0655	95.16	
S Total PeCDD					47.6	47.6	0.0655	0.0655		
D 13C-1,2,3,4,7,8-HxCDF	35.192	3980989	0.54	1.2808	98.9	98.9	0.3752	0.3752	98.85	
1,2,3,4,7,8-HxCDF	35.209	2568215	1.24	1.3205	48.9	48.9	0.1946	0.1946	97.71	
D 13C-1,2,3,6,7,8-HxCDF	35.353	4640355	0.54	1.4615	101.0	101.0	0.3288	0.3288	101	
1,2,3,6,7,8-HxCDF	35.370	2839217	1.26	1.2682	48.2	48.2	0.1902	0.1902	96.49	
D 13C-2,3,4,6,7,8-HxCDF	36.136	4173055	0.54	1.3227	100.3	100.3	0.3633	0.3633	100	
2,3,4,6,7,8-HxCDF	36.153	2577456	1.25	1.2838	48.1	48.1	0.1799	0.1799	96.22	
D 13C-1,2,3,7,8,9-HxCDF	36.995	3454092	0.54	1.1062	99.3	99.3	0.4344	0.4344	99.31	
1,2,3,7,8,9-HxCDF	37.012	2146580	1.25	1.3063	47.6	47.6	0.1963	0.1963	95.15	
S Total HxCDF					192.8	192.8	0.1902	0.1902		
* 13C-1,2,3,7,8,9-HxCDD	36.802	3144209	1.27	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.330	2680342	1.28	0.8757	97.4	97.4	0.2348	0.2348	97.35	
1,2,3,4,7,8-HxCDD	36.347	1573325	1.26	1.1972	49.0	49.0	0.1134	0.1134	98.06	
D 13C-1,2,3,6,7,8-HxCDD	36.448	3353387	1.28	1.0651	100.1	100.1	0.1930	0.1930	100	
1,2,3,6,7,8-HxCDD	36.465	1699311	1.27	1.0695	47.4	47.4	0.1096	0.1096	94.77	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.819	1696471	1.25	1.1806	47.6	47.6	0.1066	0.1066	95.27	
S Total HxCDD					144.0	144.0	0.1099	0.1099		
D 13C-1,2,3,4,6,7,8-HpCDF	38.751	2967331	0.47	0.9521	99.1	99.1	0.4900	0.4900	99.12	
1,2,3,4,6,7,8-HpCDF	38.760	2221729	1.05	1.5618	47.9	47.9	0.2086	0.2086	95.88	
D 13C-1,2,3,4,7,8,9-HpCDF	39.981	2429483	0.45	0.7782	99.3	99.3	0.5995	0.5995	99.30	
1,2,3,4,7,8,9-HpCDF	39.990	1739348	1.04	1.4975	47.8	47.8	0.2471	0.2471	95.62	
S Total HpCDF					95.7	95.7	0.2278	0.2278		
D 13C-1,2,3,4,6,7,8-HpCDD	39.669	2621187	1.09	0.8393	99.3	99.3	0.3308	0.3308	99.33	
1,2,3,4,6,7,8-HpCDD	39.686	1395664	1.05	1.1079	48.1	48.1	0.1247	0.1247	96.12	
S Total HpCDD					48.1	48.1	0.1247	0.1247		
D 13C-OCDD	42.149	3323397	0.91	0.5301	199.4	199.4	0.2904	0.2904	99.70	
OCDF	42.250	2278487	0.90	1.4802	92.6	92.6	0.1192	0.1192	92.64	
OCDD	42.157	1828375	0.89	1.1666	94.3	94.3	0.1292	0.1292	94.32	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Nov-2020 14:27:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:47 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:09:17

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.803	21.818	-1		1515599	210511	315	787	668		a
333.9338	21.812	21.818	0		1915771	271968	152	380	1789	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.799	20.808	-1	0.954	2511960	355868	588	1470	605		
317.9389	20.790	20.808	-1	0.954	3173164	454741	229	572	1986	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.833	20.834	0	1.002	276938	40028	50	125	801		
305.8987	20.825	20.834	-1	1.001	352772	49925	75	187	666	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.198	22.213	-1	1.018	1632239	212981	315	787	676		
333.9338	22.190	22.213	-1	1.018	2021442	252790	152	380	1663	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.215	22.239	-1	1.001	181691	24097	80	200	301		
321.8936	22.224	22.239	-1	1.001	225748	30176	38	95	794	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.224	22.241	-1	1.019	380492	51169	50	125	1023		
13C-1,2,3,7,8-PeCDF											
351.9000	27.667	27.677	-1	1.269	2909341	444784	594	1485	749		
353.8970	27.675	27.677	0	1.269	1847655	290456	428	1070	679	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.692	27.702	-1	1.001	1613103	248835	346	865	719		
341.8567	27.692	27.702	-1	1.001	1014827	157154	226	565	695	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.225	29.235	-1	1.340	2729077	406056	594	1485	684		
353.8970	29.225	29.235	-1	1.340	1678778	250980	428	1070	586	1.63(1.32-1.78)	

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.251	29.262	-1	1.001	1535569	229683	346	865	664		
341.8567	29.251	29.262	-1	1.001	968918	146052	226	565	646	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.059	30.073	-1	1.379	1784249	258327	129	322	2003		
369.8919	30.059	30.073	-1	1.379	1114882	157710	99	247	1593	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.093	30.100	0	1.001	939692	128004	85	212	1506		
357.8516	30.085	30.100	-1	1.001	603905	82837	37	92	2239	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.192	35.202	-1	0.956	1395119	329306	535	1337	616		
385.8610	35.201	35.202	0	0.956	2585870	600994	1066	2665	564	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.209	35.219	-1	1.000	1424206	333414	562	1405	593		
375.8178	35.209	35.219	-1	1.000	1144009	270302	394	985	686	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.353	35.361	0	0.961	1626301	344446	535	1337	644		
385.8610	35.353	35.361	0	0.961	3014054	646222	1066	2665	606	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.370	35.376	0	1.000	1583648	343481	562	1405	611		
375.8178	35.370	35.376	0	1.000	1255569	272464	394	985	692	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.136	36.142	0	0.982	1462180	356524	535	1337	666		
385.8610	36.136	36.142	0	0.982	2710875	678338	1066	2665	636	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.153	36.158	0	1.000	1432440	345460	562	1405	615		
375.8178	36.145	36.158	-1	1.000	1145016	276901	394	985	703	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.995	37.005	-1	1.005	1212339	329648	535	1337	616		
385.8610	36.995	37.005	-1	1.005	2241753	602619	1066	2665	565	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.012	37.019	0	1.000	1191978	328741	562	1405	585		
375.8178	37.012	37.019	0	1.000	954602	258080	394	985	655	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.802	36.808	0		1758248	460446	386	965	1193		
403.8529	36.802	36.808	0		1385961	372366	299	747	1245	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.330	36.340	-1	0.987	1502316	408269	386	965	1058		
403.8529	36.330	36.340	-1	0.987	1178026	320634	299	747	1072	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.347	36.355	0	1.000	877490	239288	220	550	1088		
391.8127	36.347	36.355	0	1.000	695835	188859	176	440	1073	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.448	36.454	0	0.990	1884073	472843	386	965	1225		
403.8529	36.448	36.454	0	0.990	1469314	371644	299	747	1243	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.465	36.468	0	1.000	951268	235856	220	550	1072		
391.8127	36.456	36.468	-1	1.000	748043	187777	176	440	1067	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.819	36.821	0	1.013	942799	247779	220	550	1126		
391.8127	36.819	36.821	0	1.013	753672	197606	176	440	1123	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.751	38.755	0	1.053	952777	300537	514	1285	585		
419.8220	38.751	38.755	0	1.053	2014554	616393	1040	2600	593	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.760	38.769	-1	1.000	1136088	347269	643	1607	540		
409.7788	38.760	38.769	-1	1.000	1085641	333434	552	1380	604	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.981	39.984	0	1.086	748459	248343	514	1285	483		
419.8220	39.973	39.984	-1	1.086	1681024	558874	1040	2600	537	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.990	39.994	0	1.000	885211	296257	643	1607	461		
409.7788	39.990	39.994	0	1.000	854137	285502	552	1380	517	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.669	39.679	-1	1.078	1365105	452531	456	1140	992		
437.8140	39.669	39.679	-1	1.078	1256082	424518	469	1172	905	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.686	39.689	0	1.000	714189	237136	257	642	923		
425.7737	39.678	39.689	-1	1.000	681475	225964	228	570	991	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.149	42.157	0	1.145	1579827	482868	203	507	2379		
471.7750	42.149	42.157	0	1.145	1743570	525685	310	775	1696	0.91(0.76-1.02)	
OCDF											
441.7428	42.250	42.260	-1	1.002	1081774	337666	146	365	2313		
443.7399	42.250	42.260	-1	1.002	1196713	367791	210	525	1751	0.90(0.76-1.02)	
OCDD											
457.7377	42.157	42.167	-1	1.000	860561	260643	141	352	1849		
459.7348	42.157	42.167	-1	1.000	967814	292189	163	407	1793	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d				
Injection Date:	17-Nov-2020 14:27:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.82

Processing Integration Results

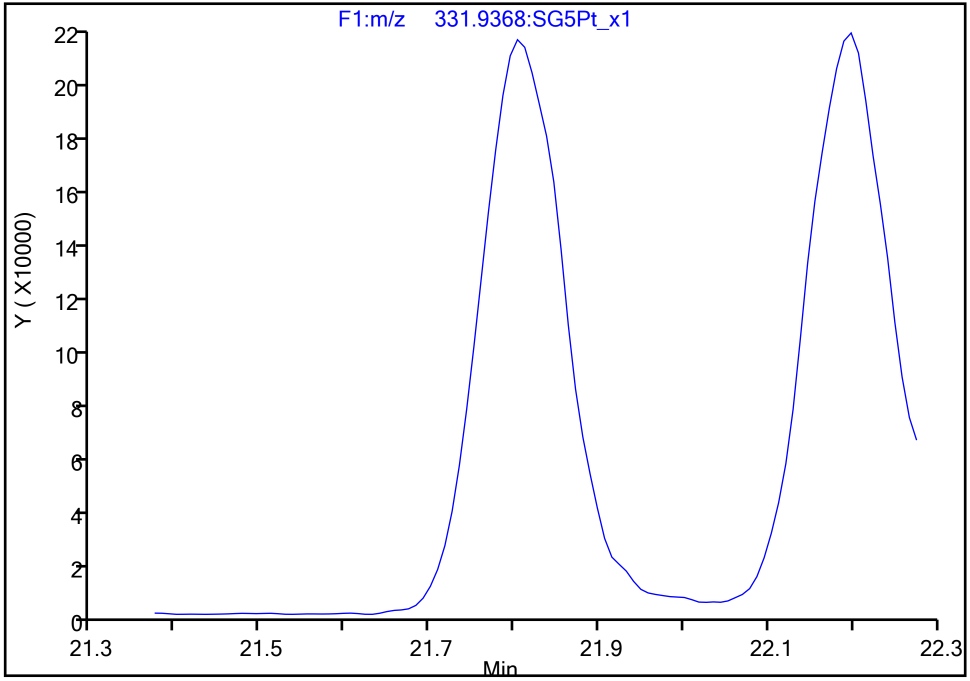

RT: 21.80

Area: 1515599

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

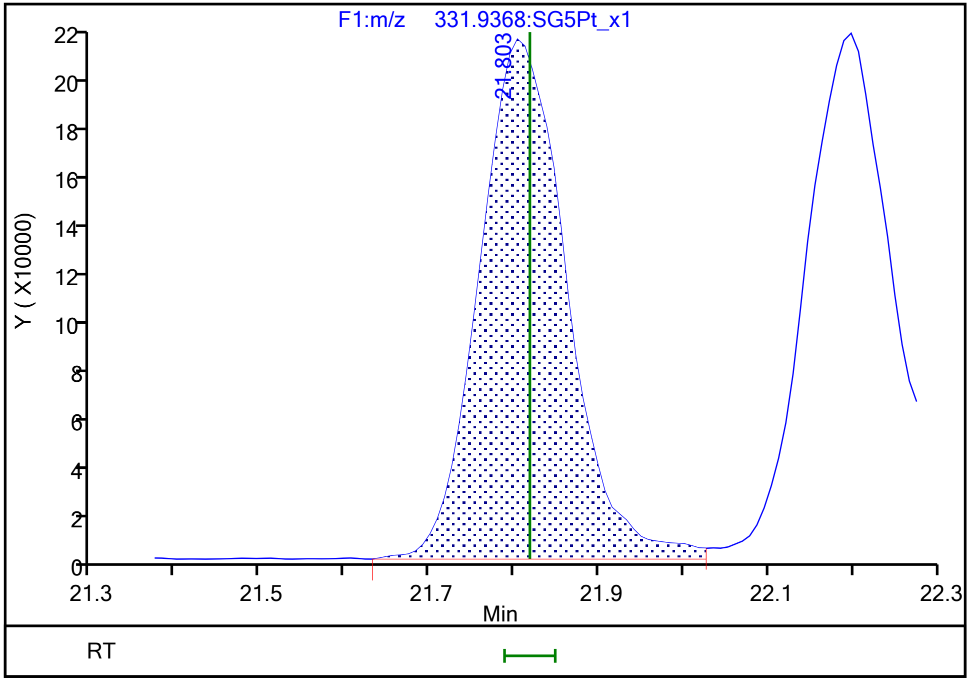

Reviewer: stephensk, 17-Nov-2020 16:09:10

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

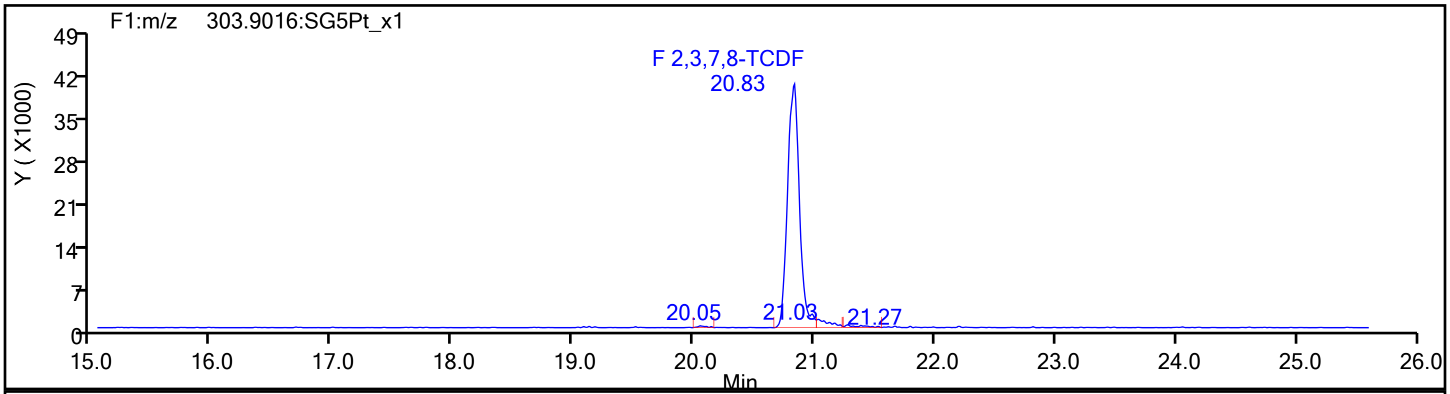

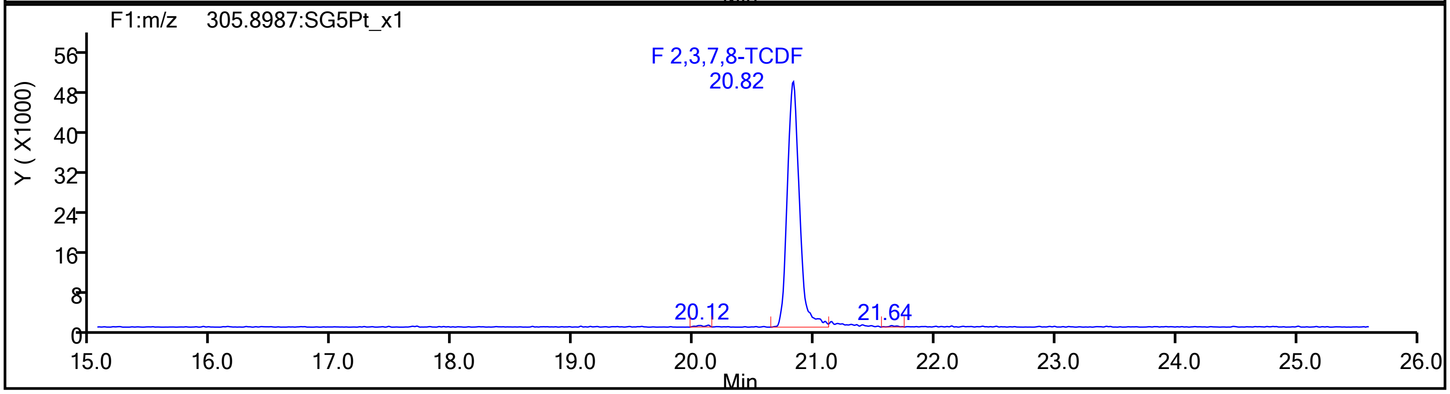

TCDF Standards

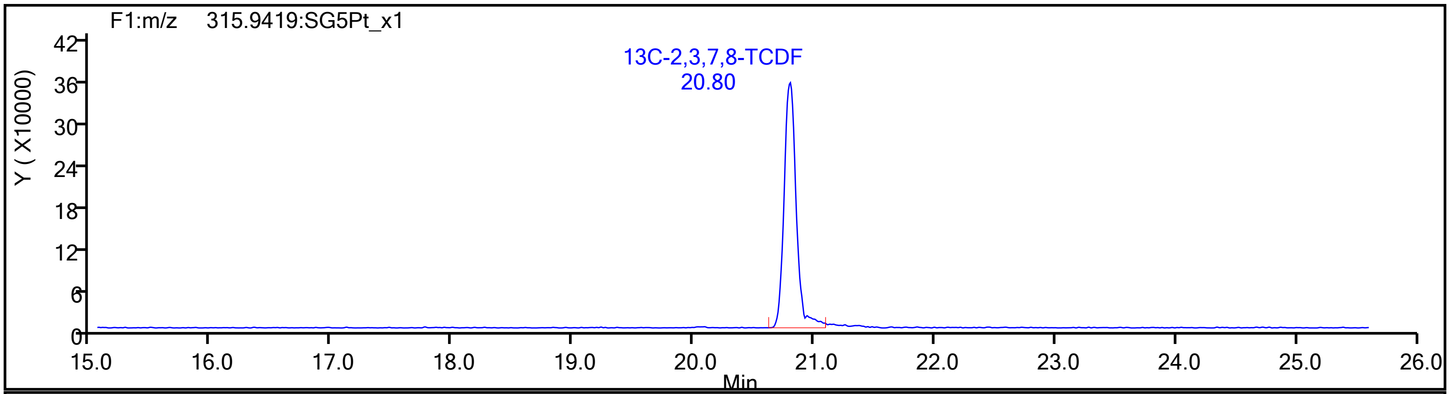

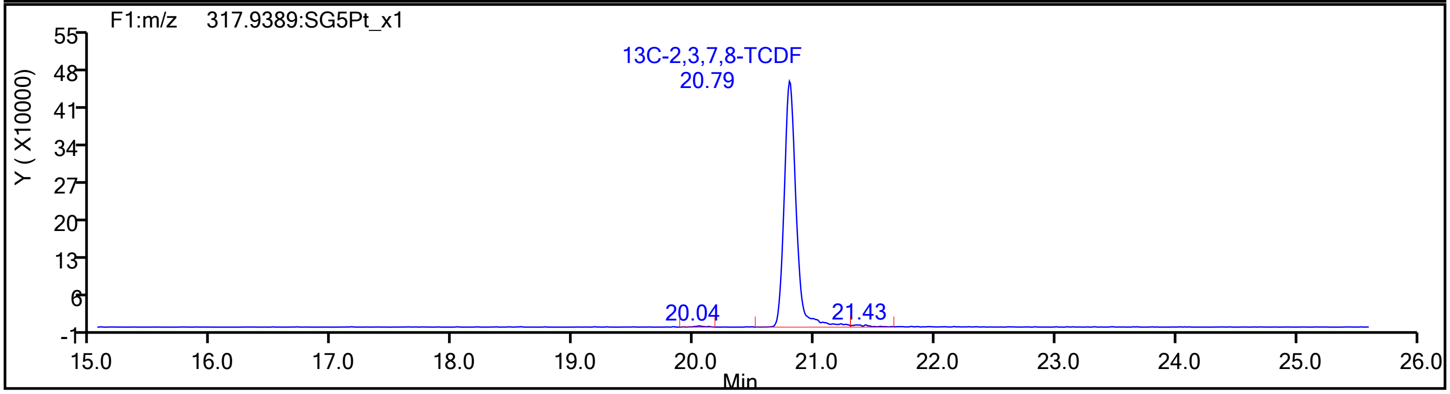

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

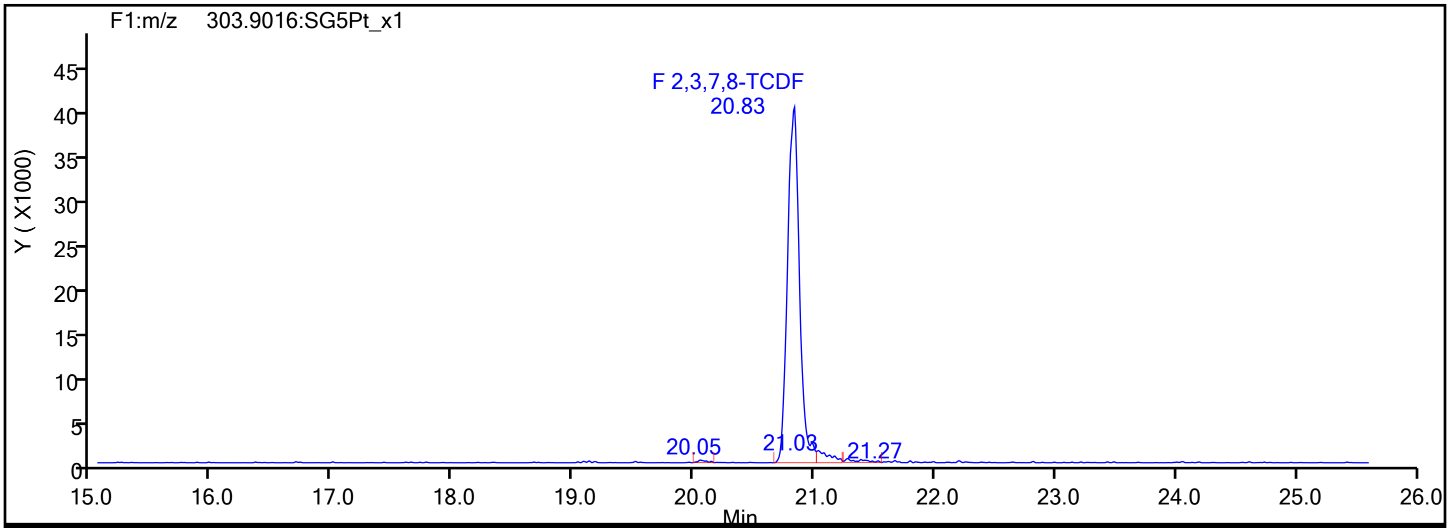

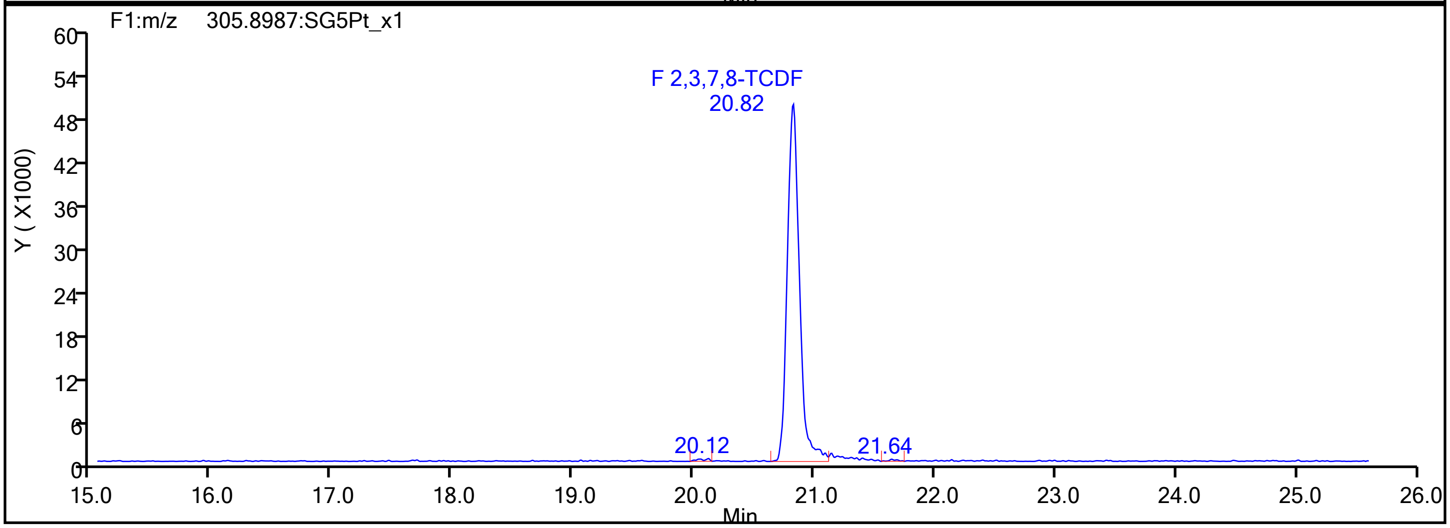

TCDF Interference Mass

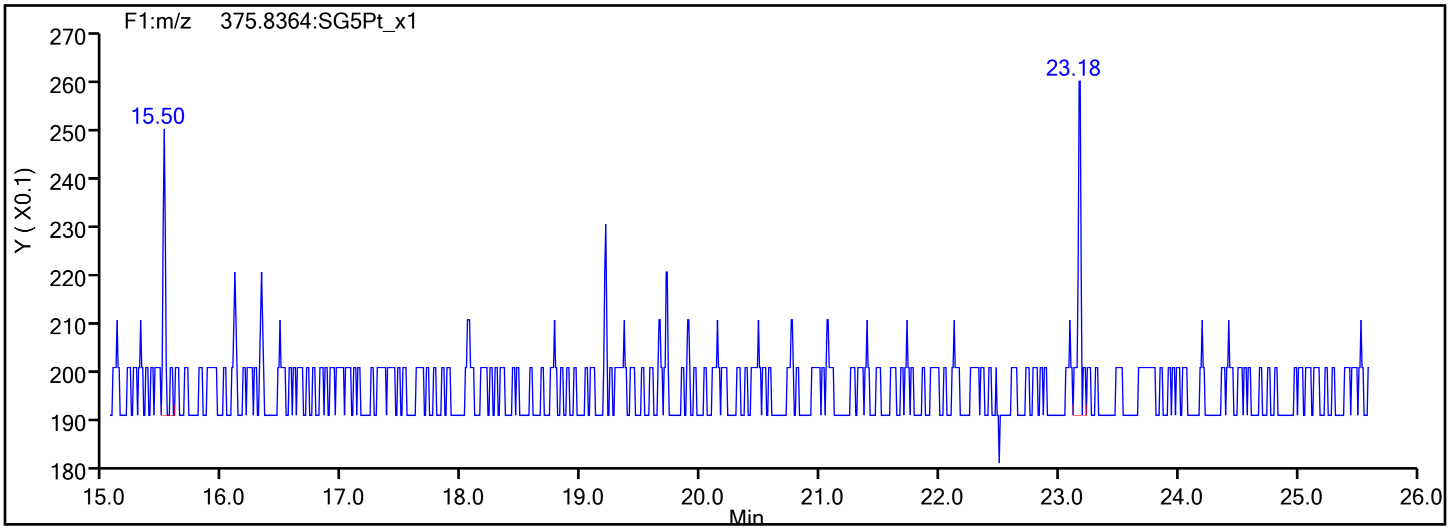

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

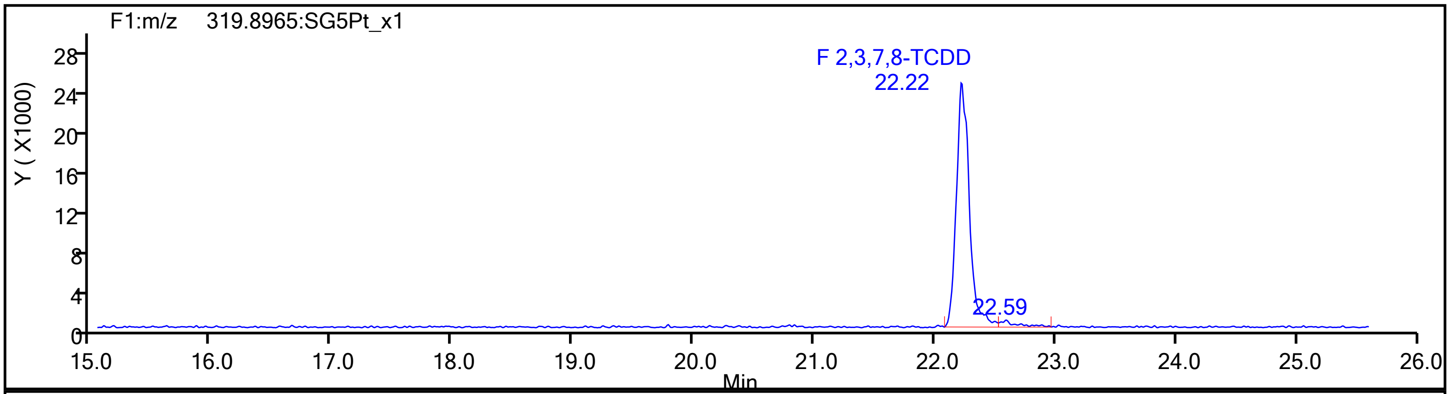

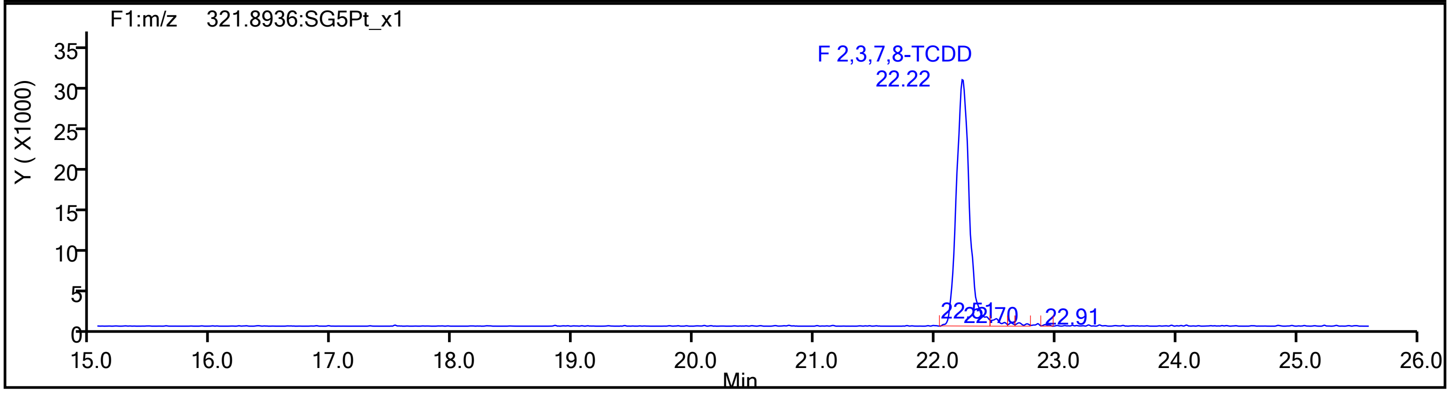

TCDD Standards

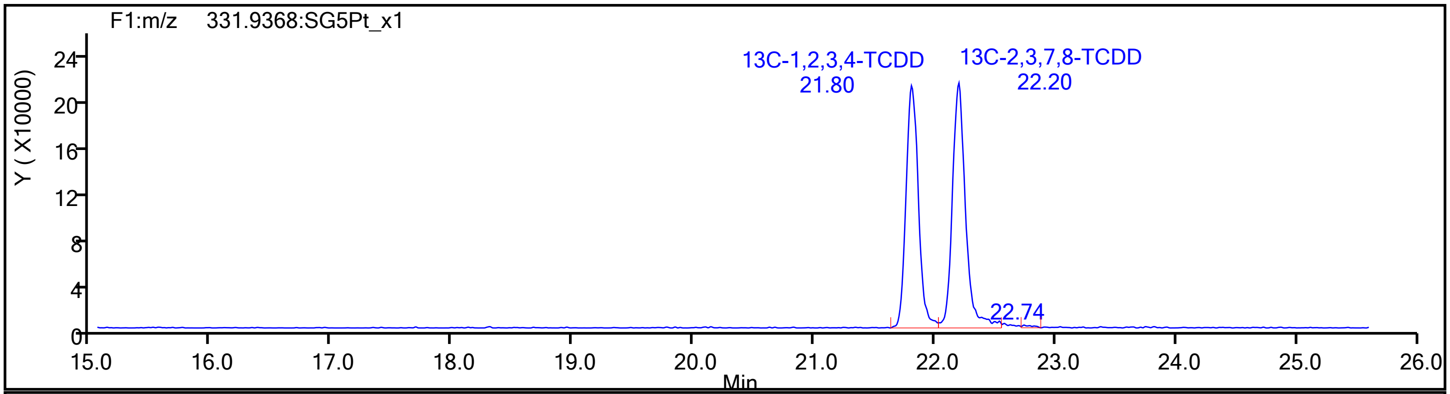

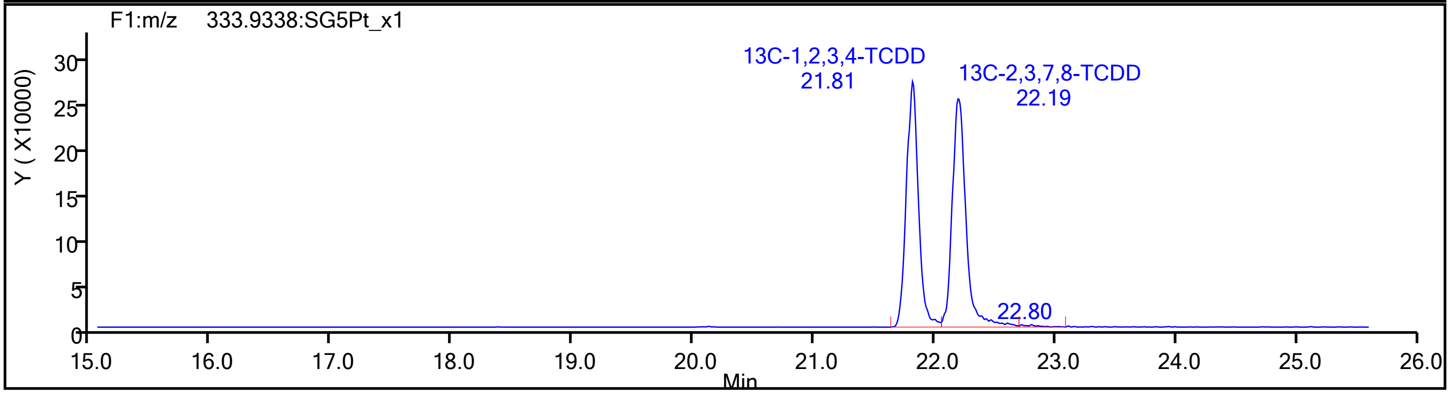

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

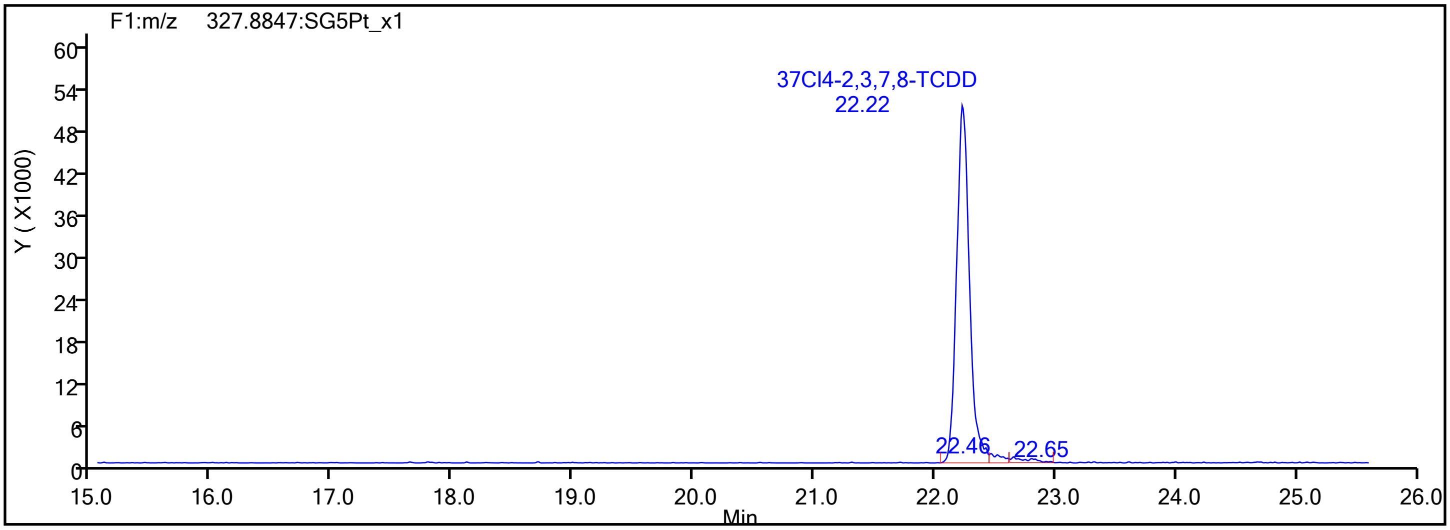

37Cl4-TCDD Standards

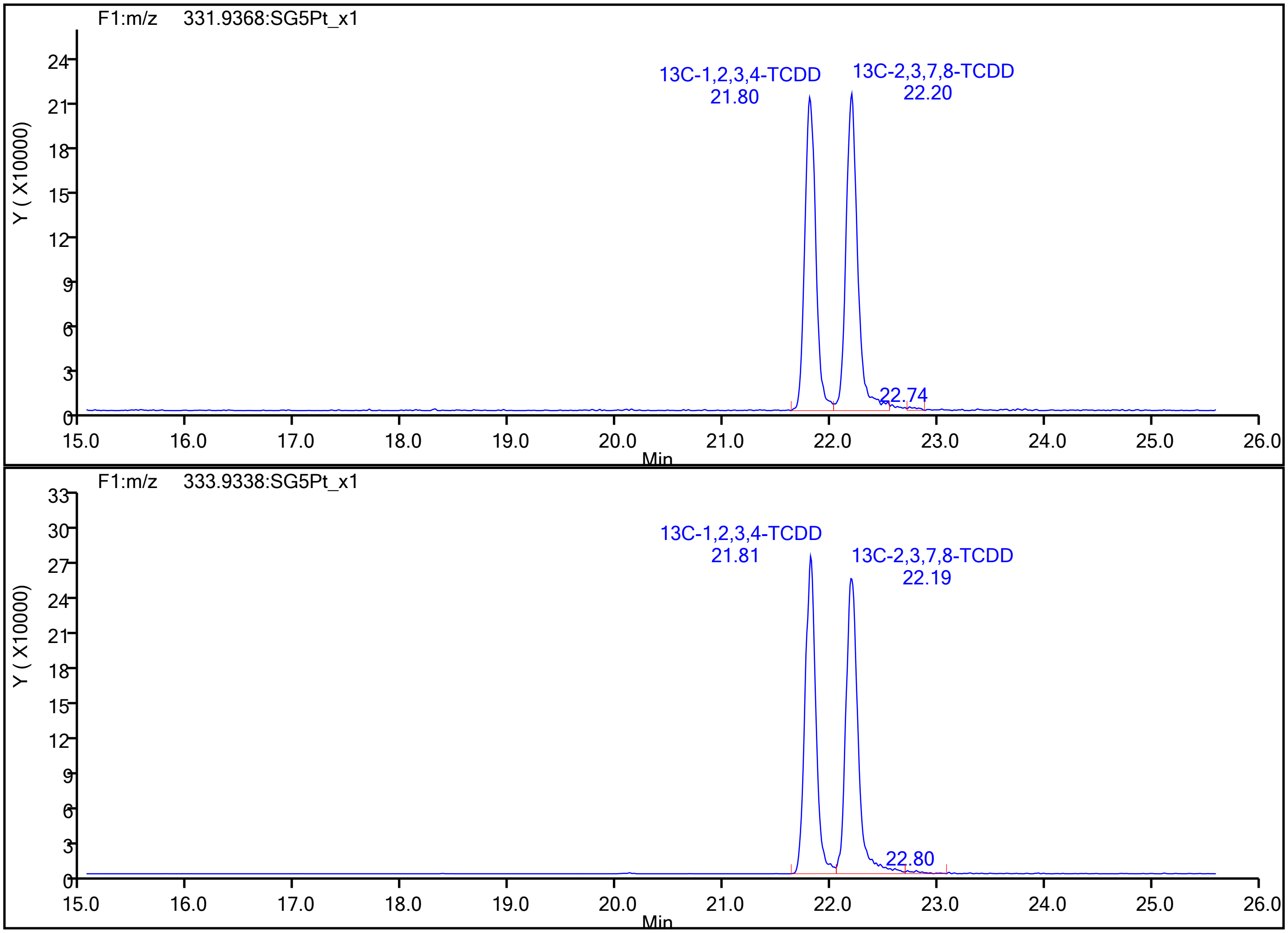

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

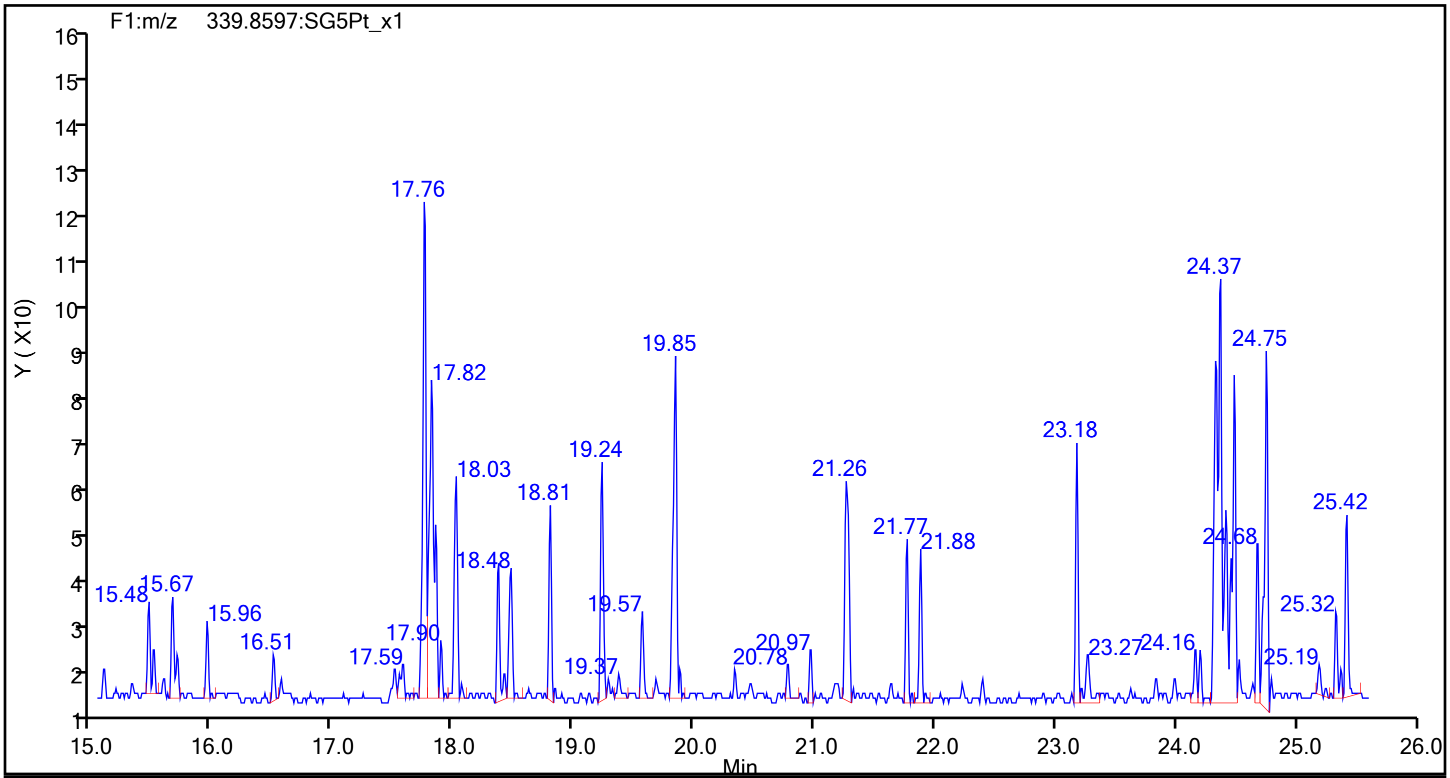

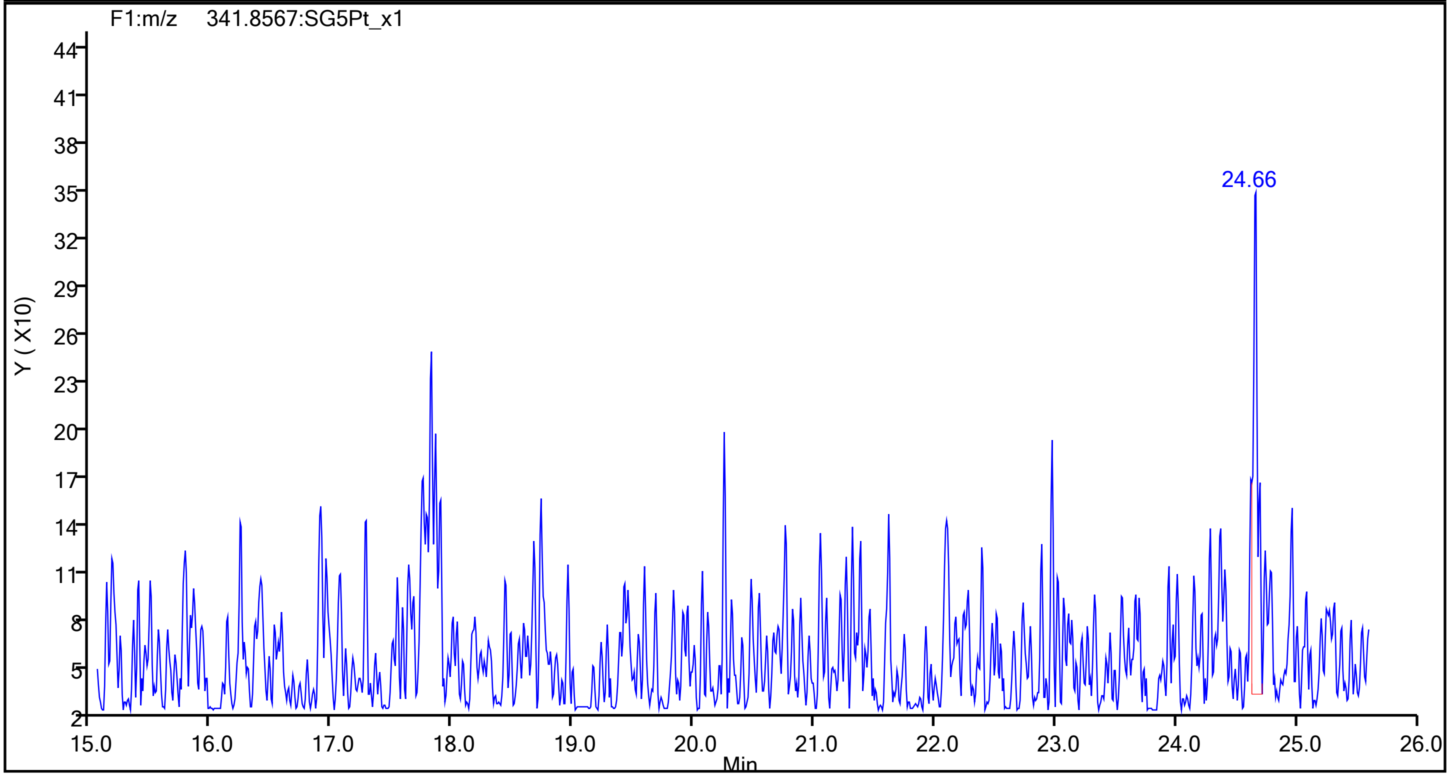

Report Date: 18-Nov-2020 12:34:59
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

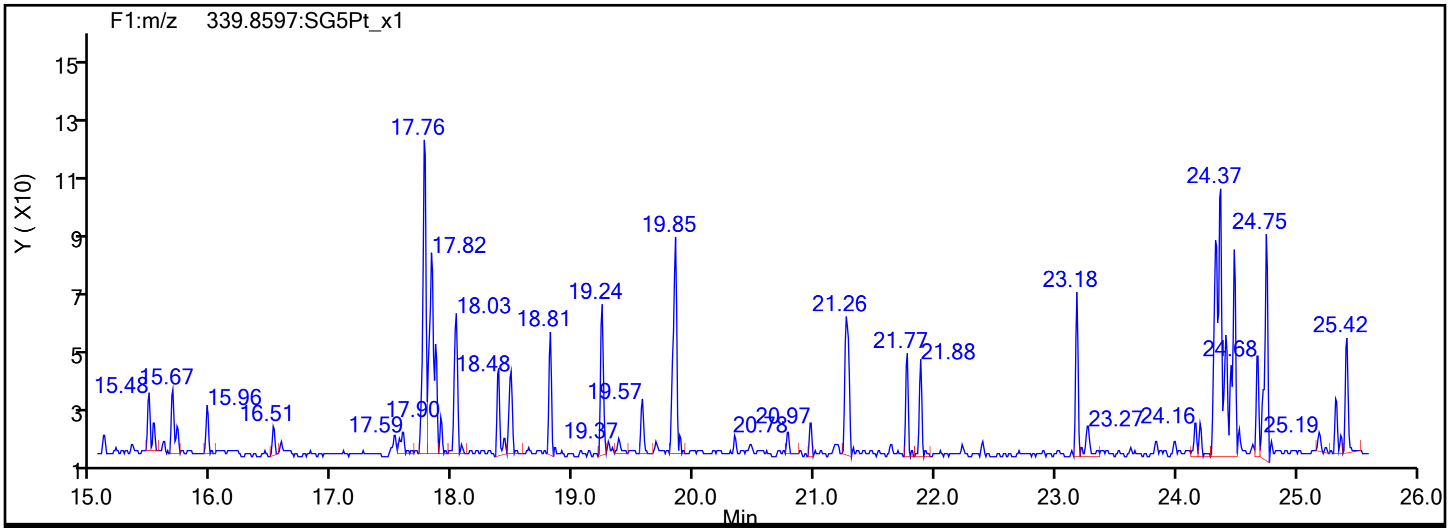

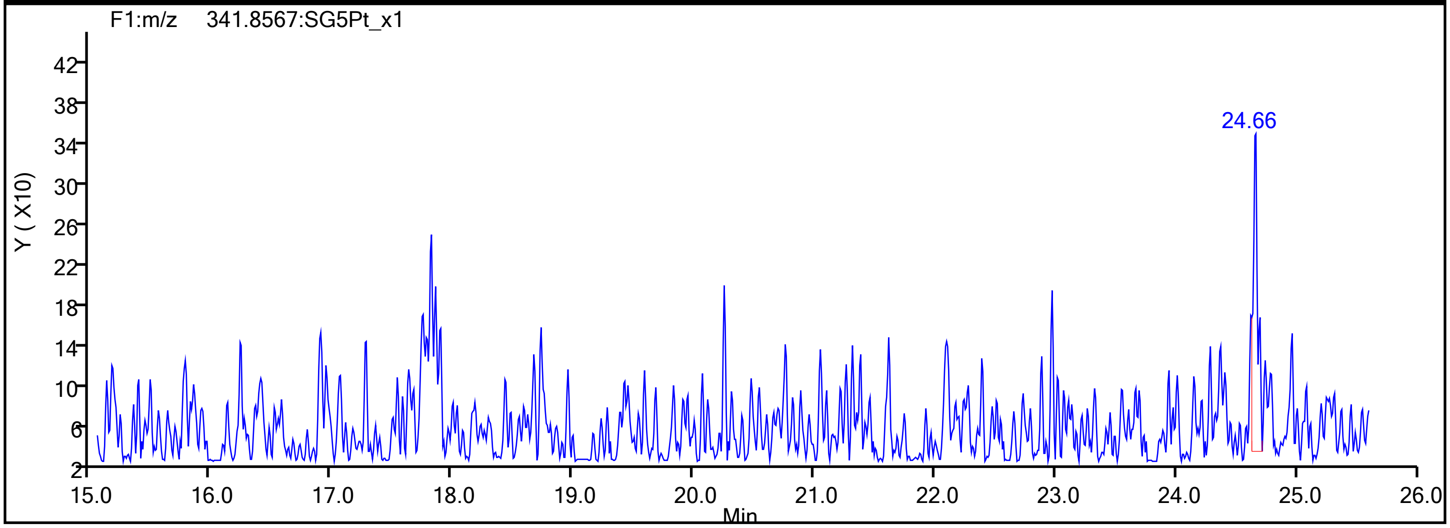

F1 PeCDFs Interference Mass

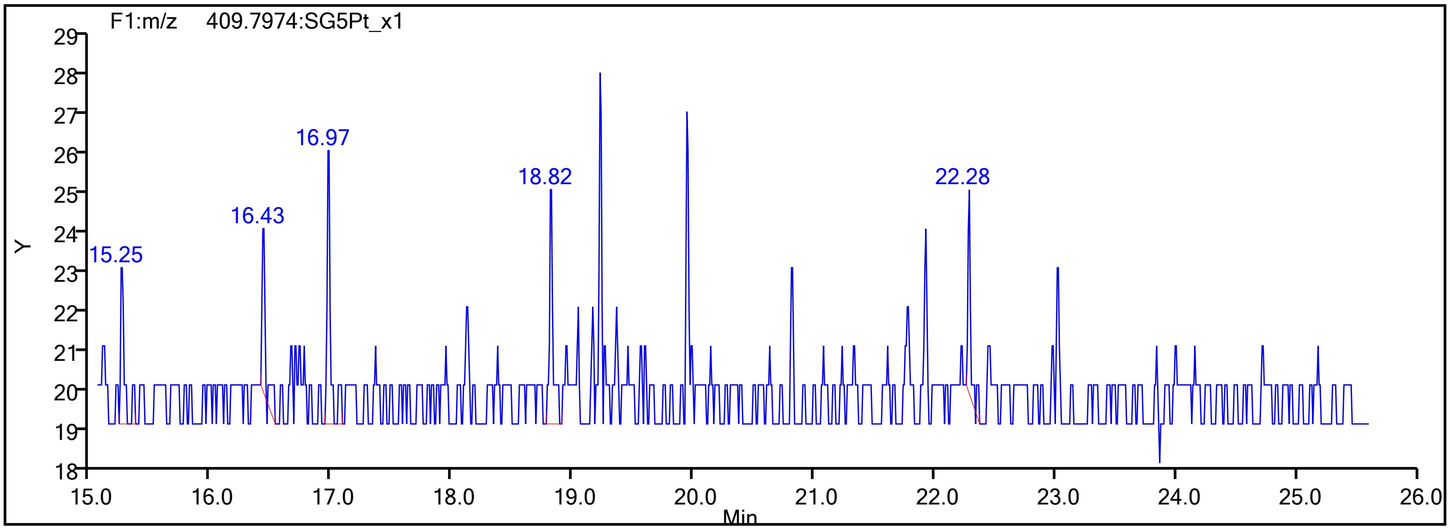

Report Date: 18-Nov-2020 12:34:59　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

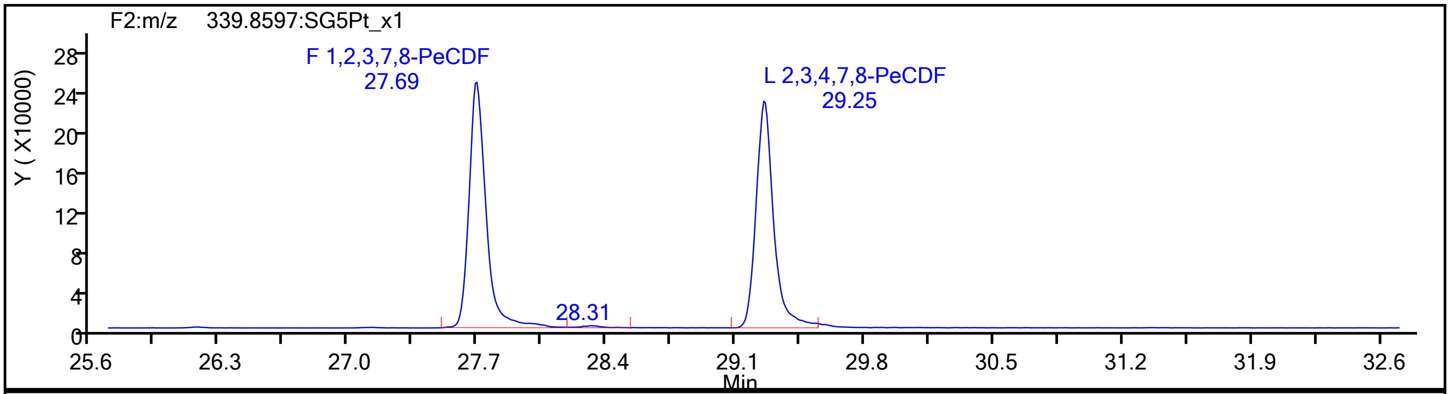

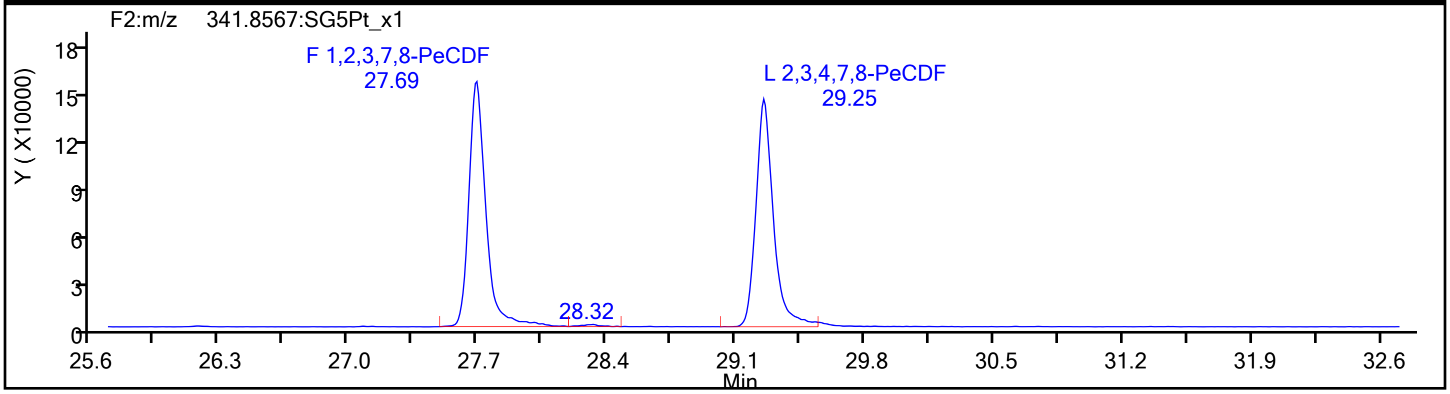

PeCDF Standards

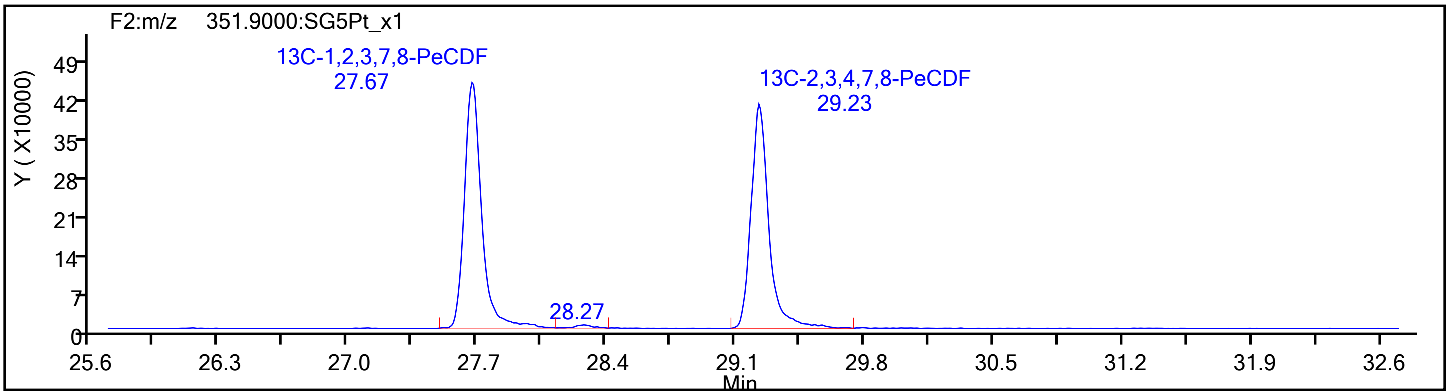

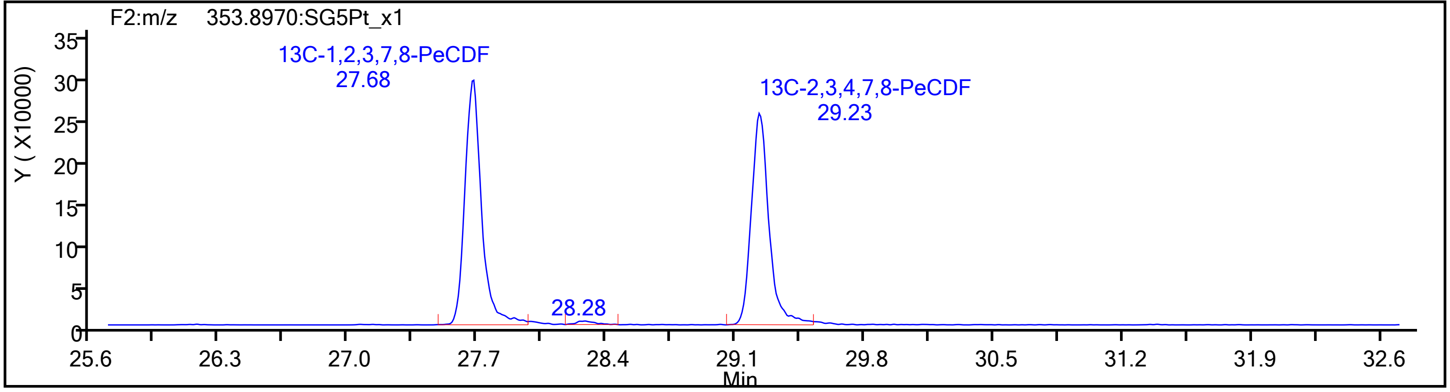

Report Date: 18-Nov-2020 12:34:59

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Injection Date: 17-Nov-2020 14:27:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

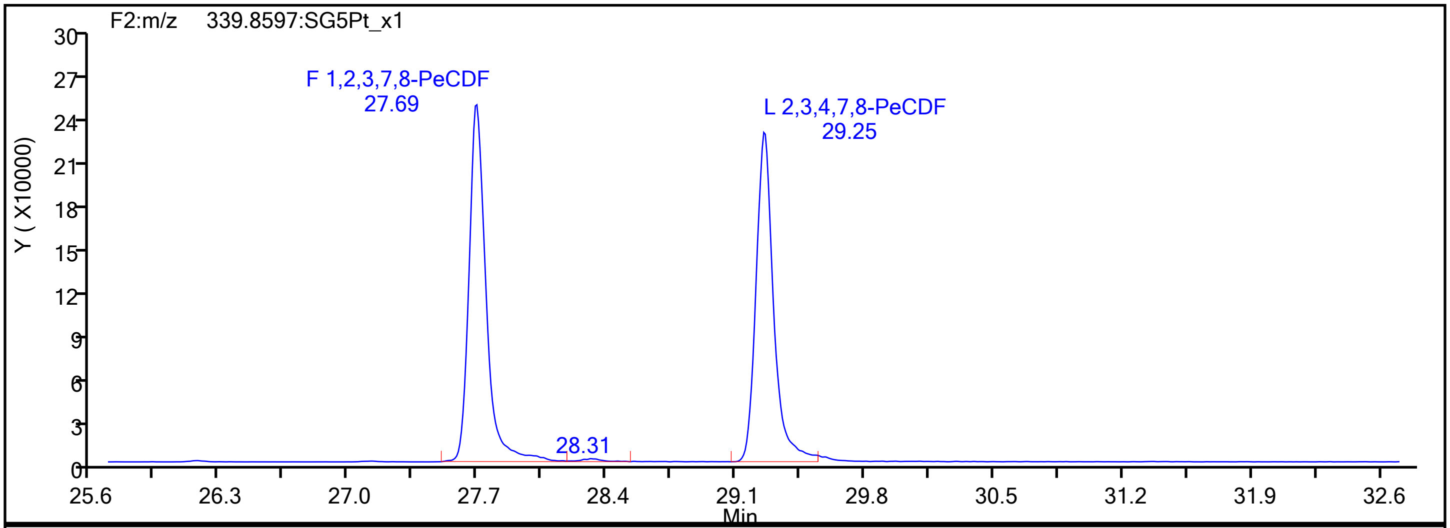

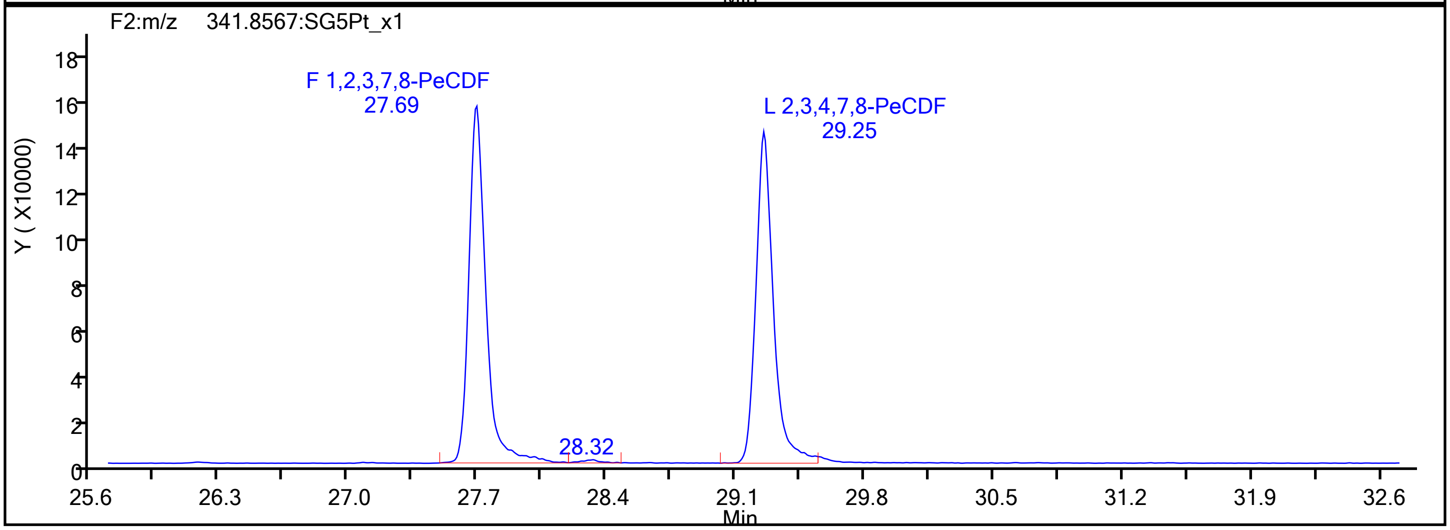

PeCDF Interference Mass

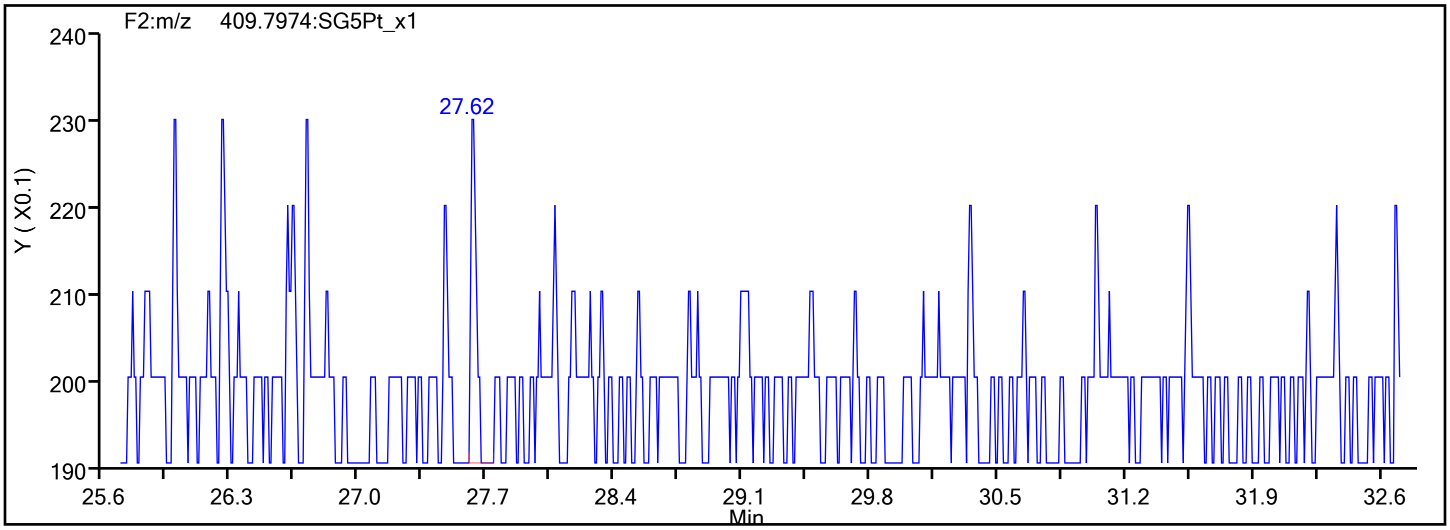

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

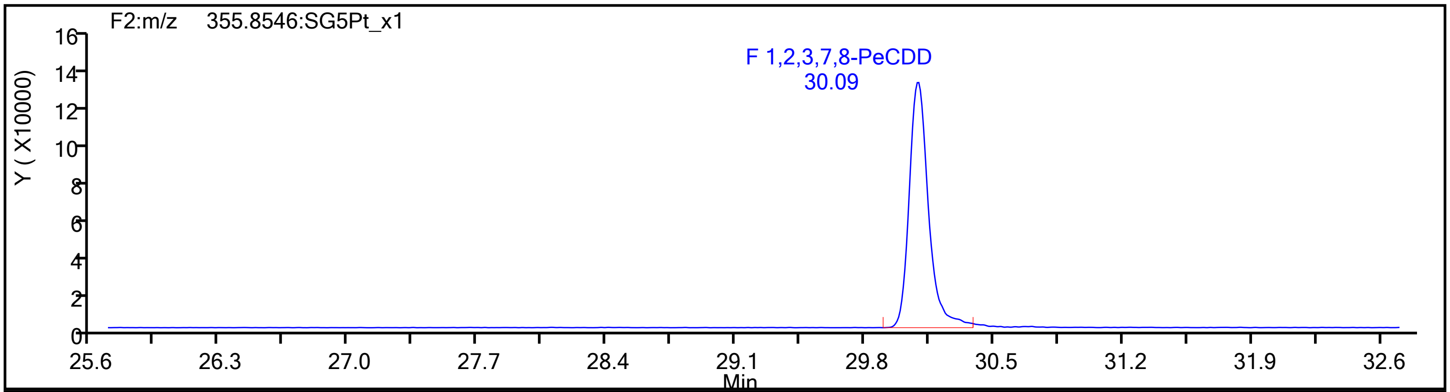

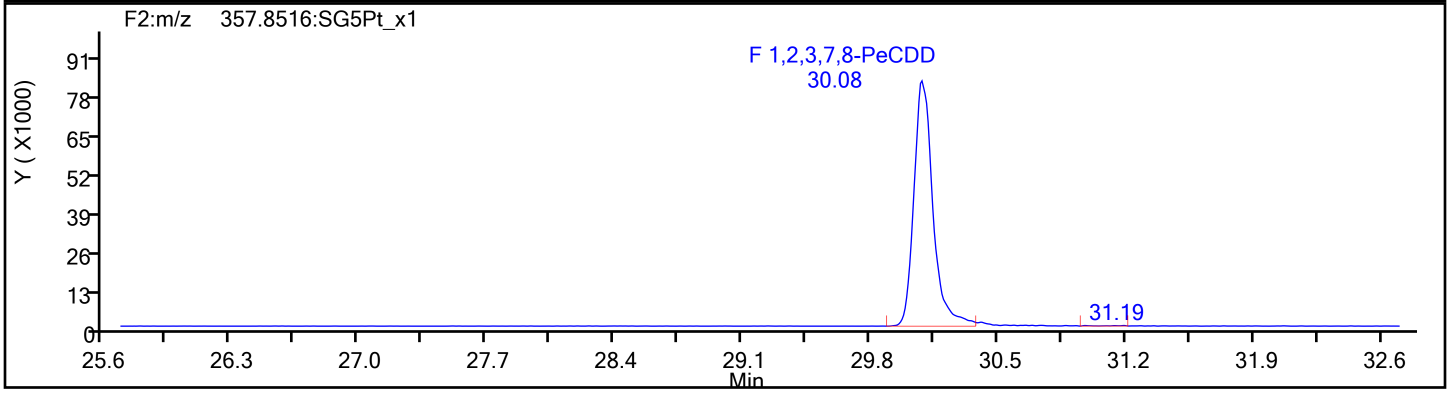

PeCDD Standards

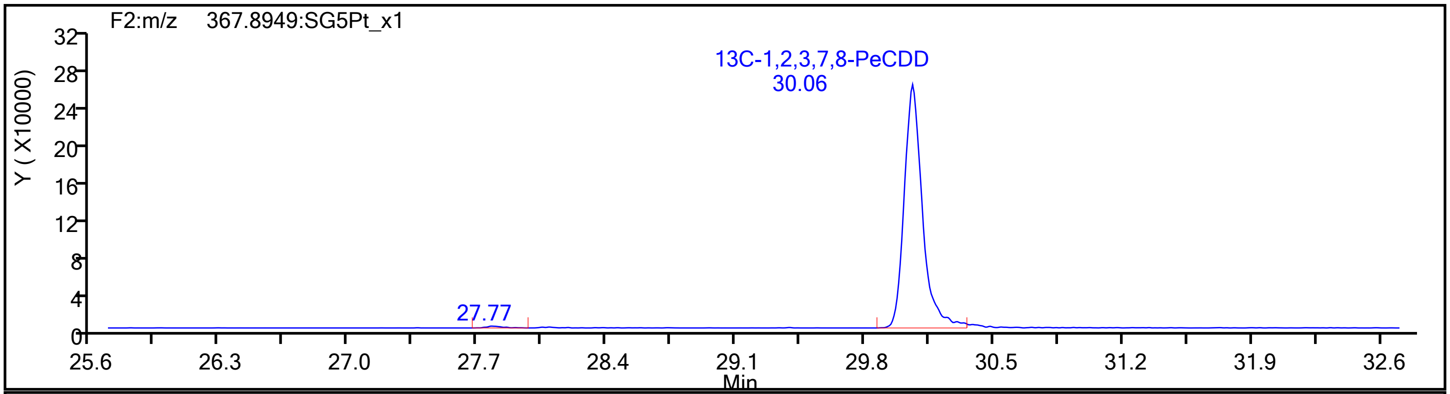

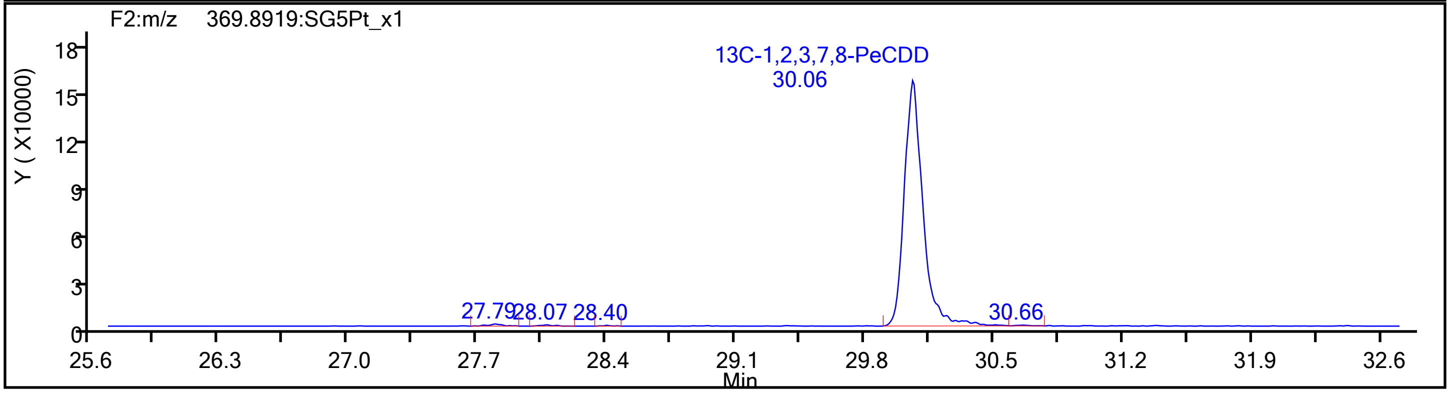

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Injection Date: 17-Nov-2020 14:27:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

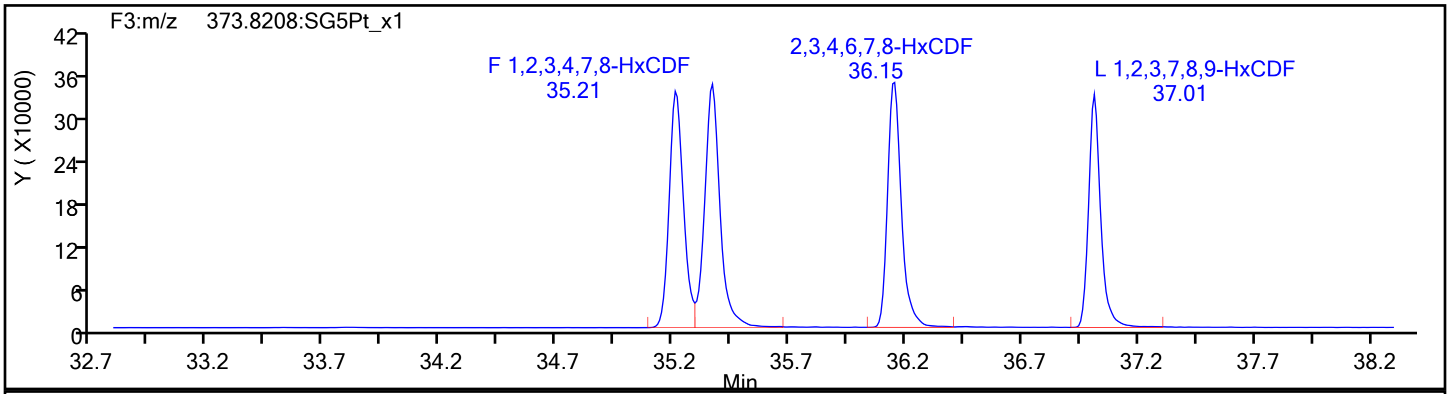

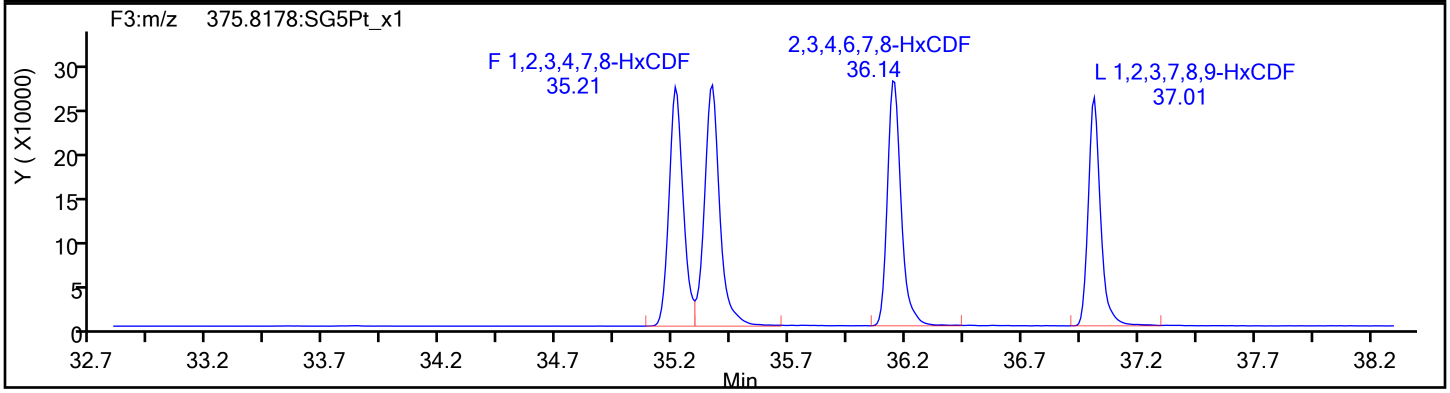

HxCDF Standards

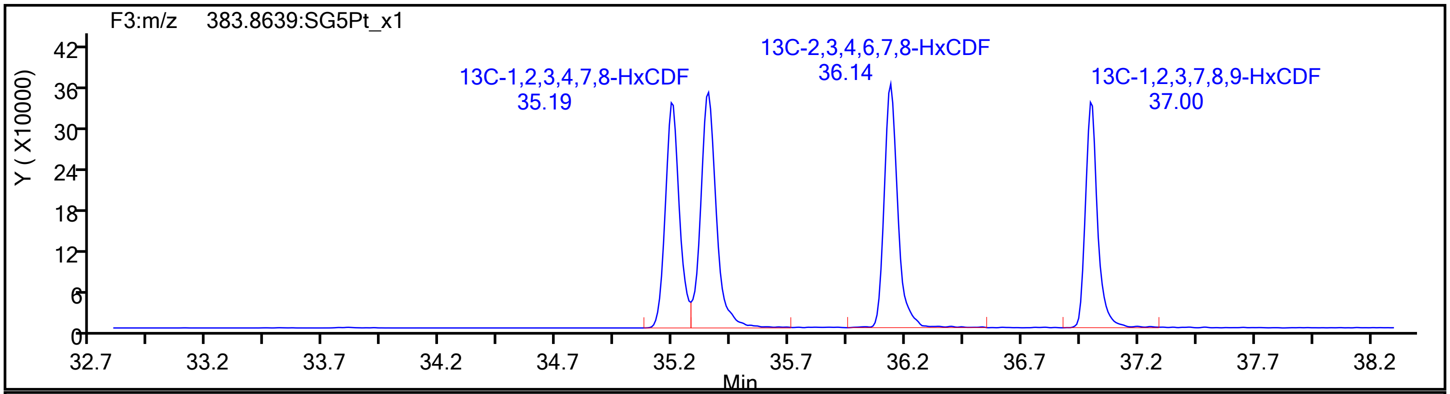

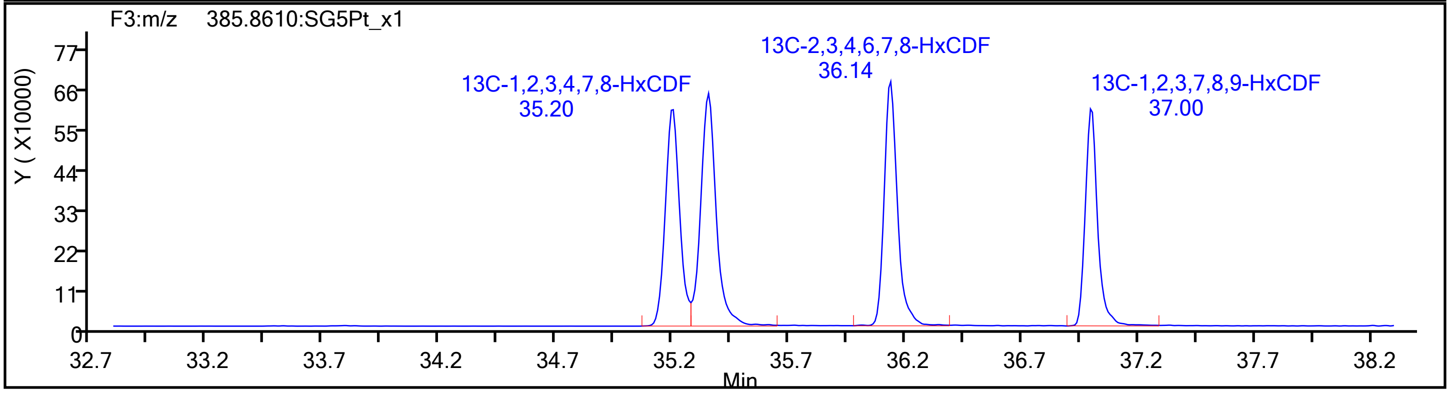

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

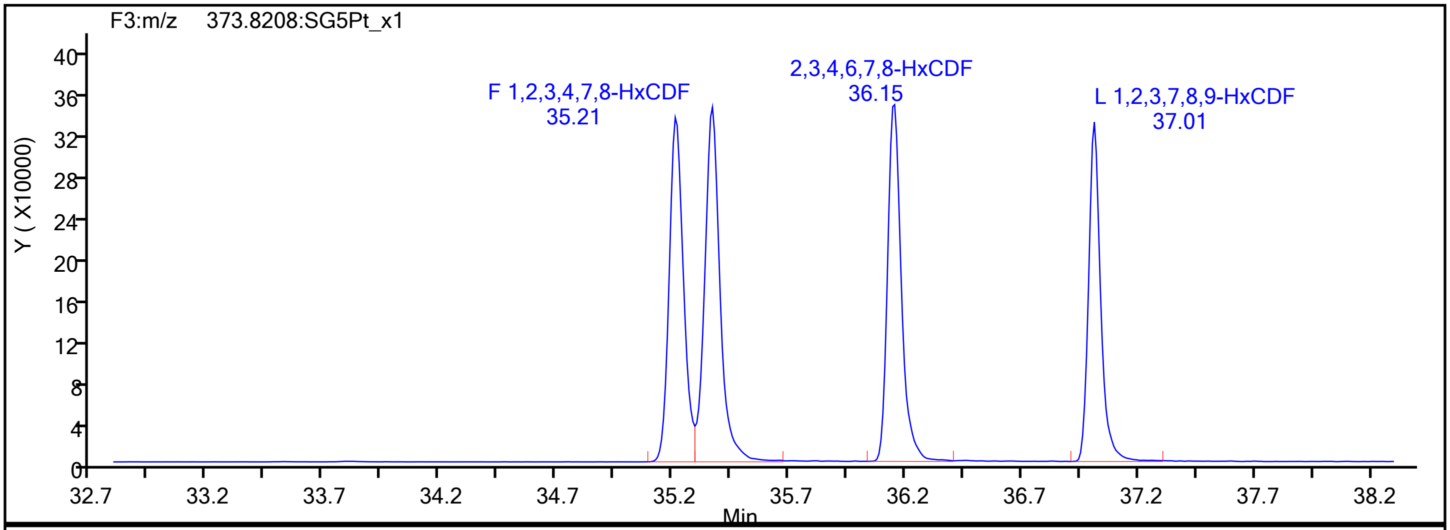

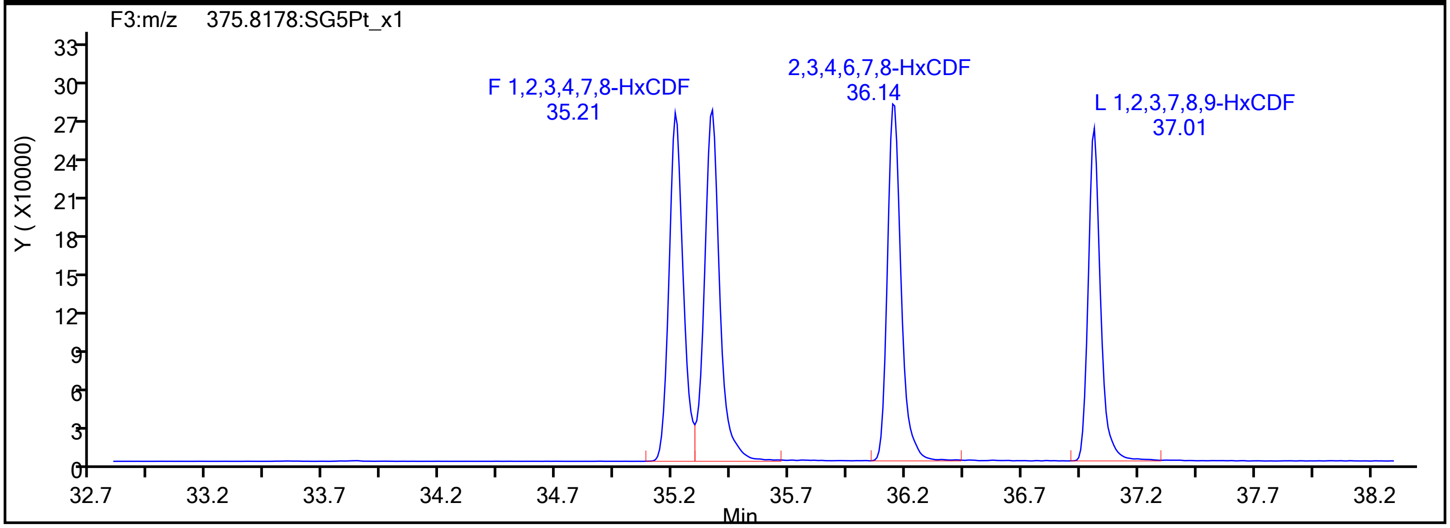

HxCDF Interference Mass

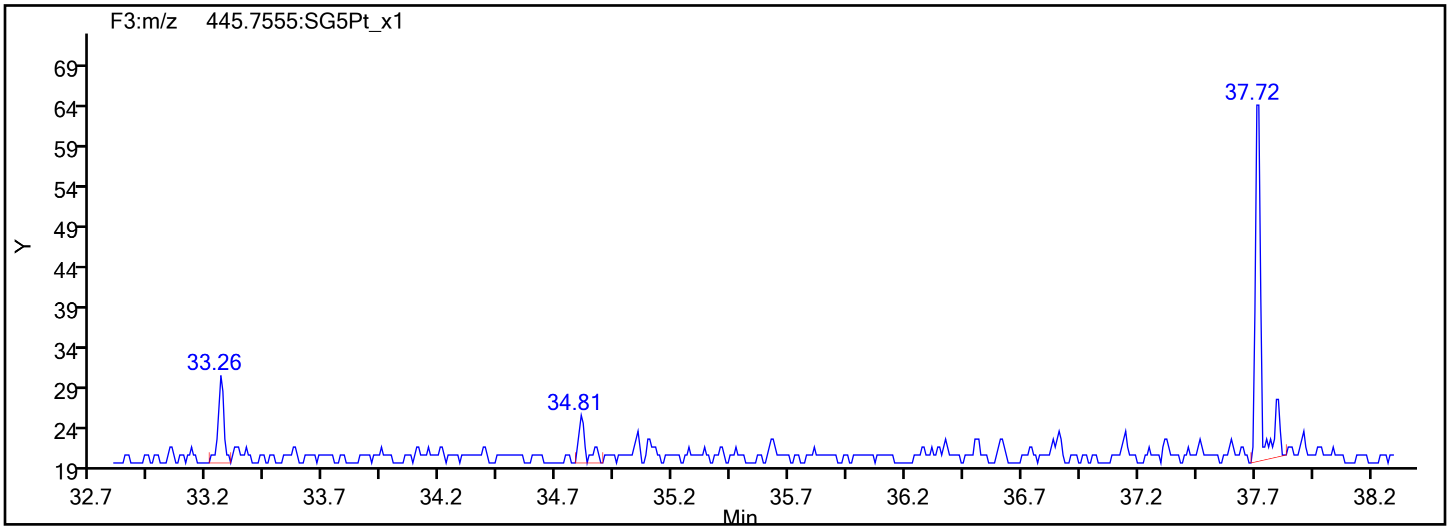

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

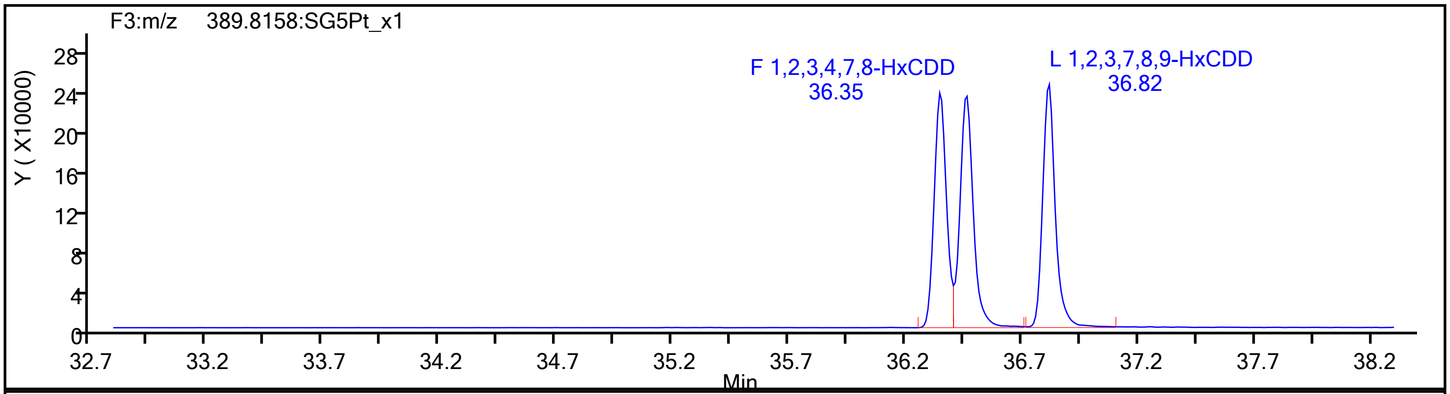

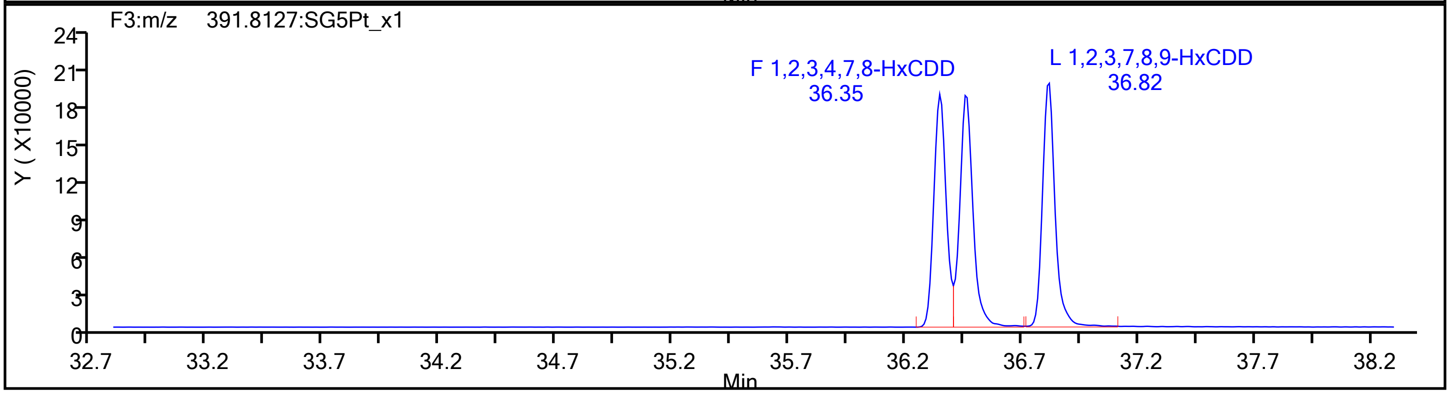

HxCDD Standards

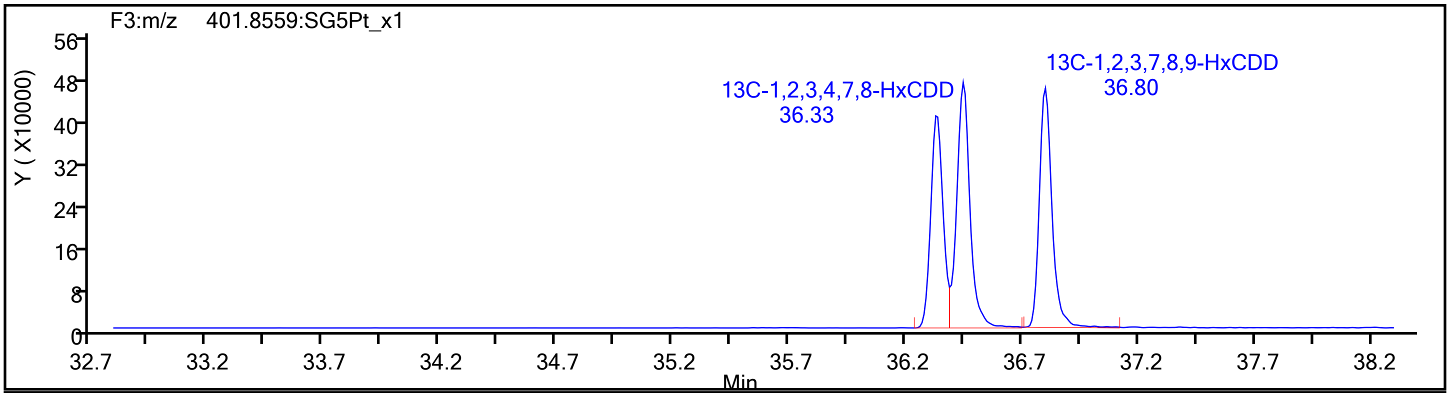

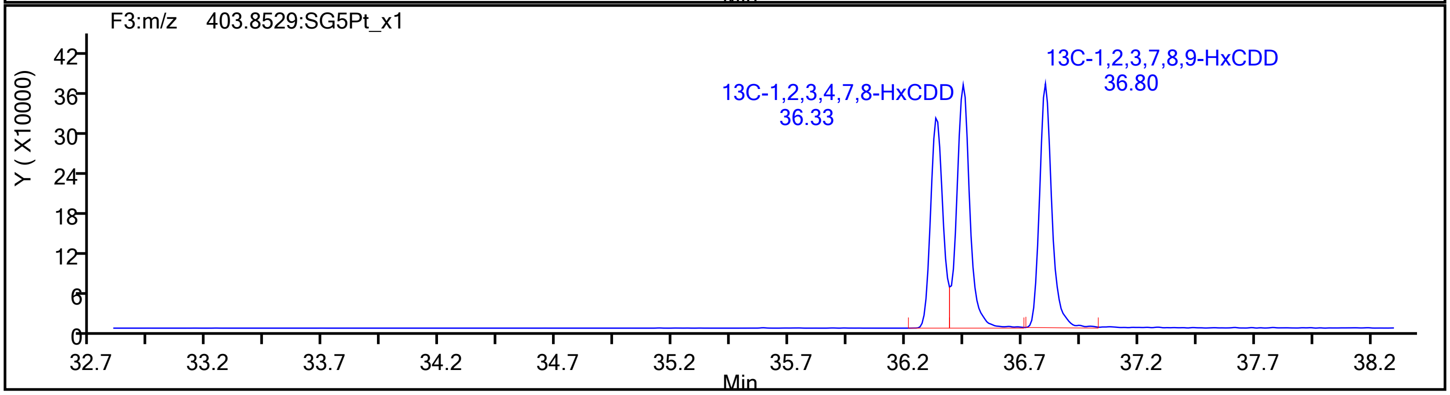

Report Date: 18-Nov-2020 12:34:59
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

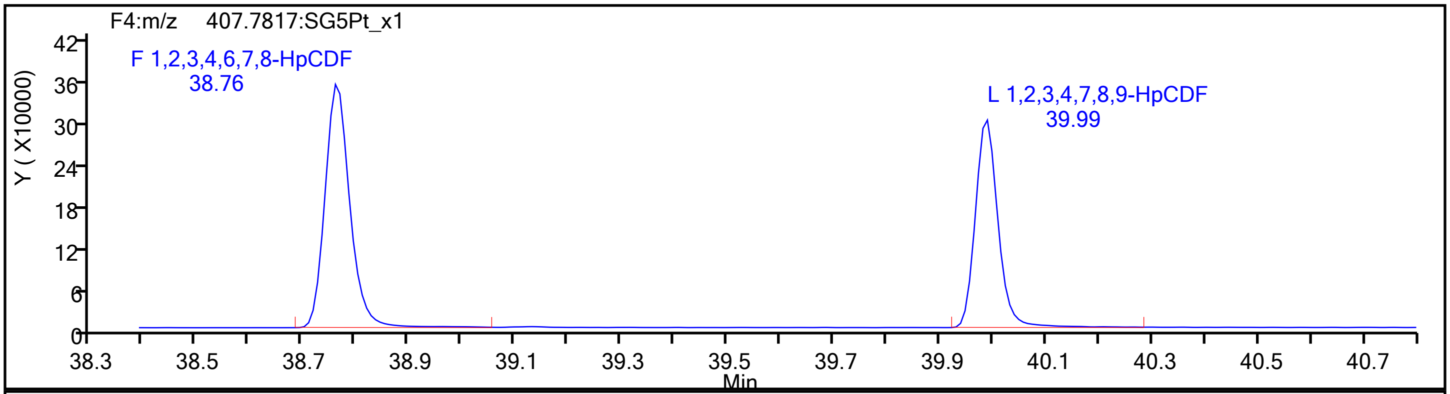

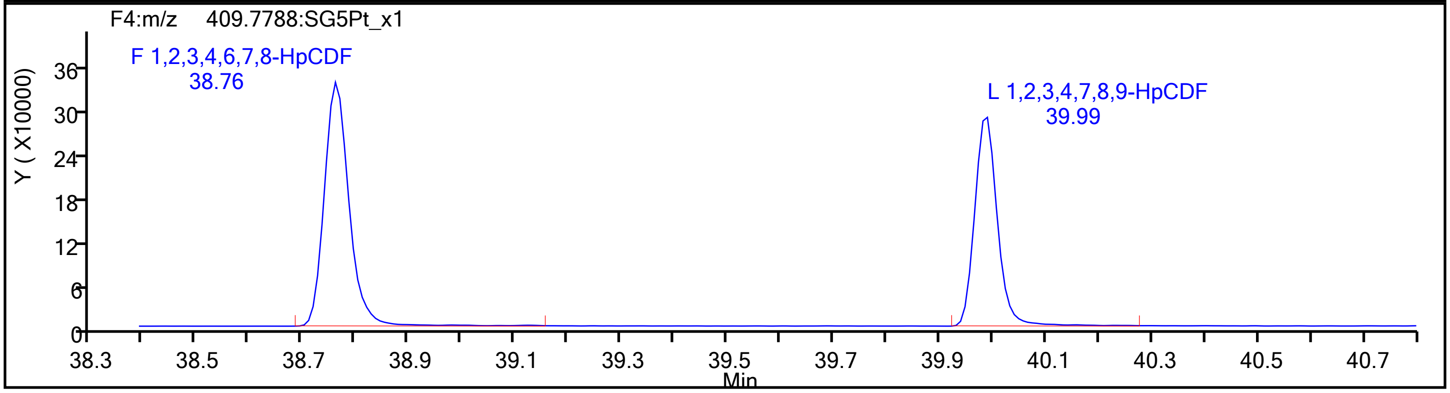

HpCDF Standards

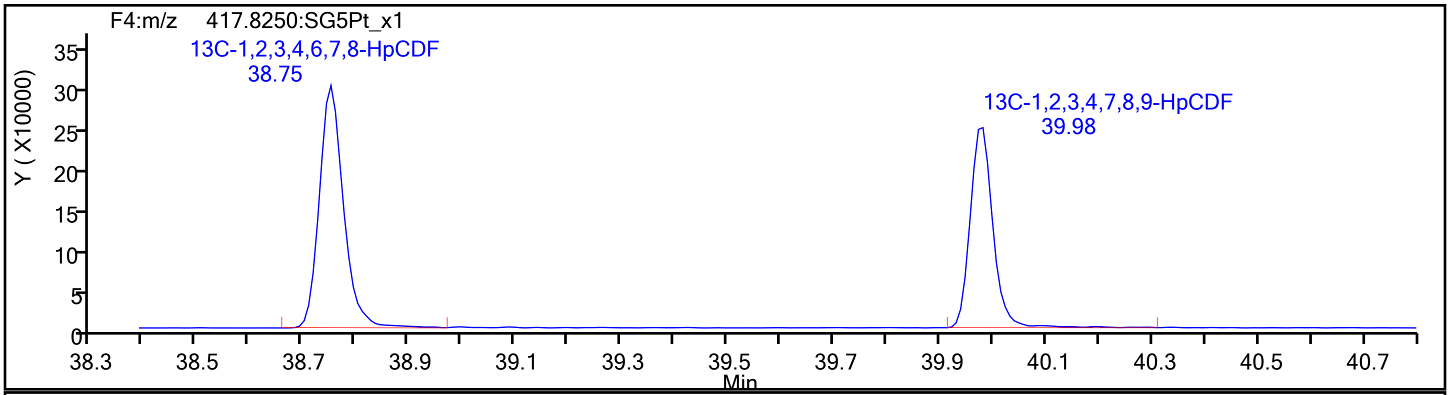

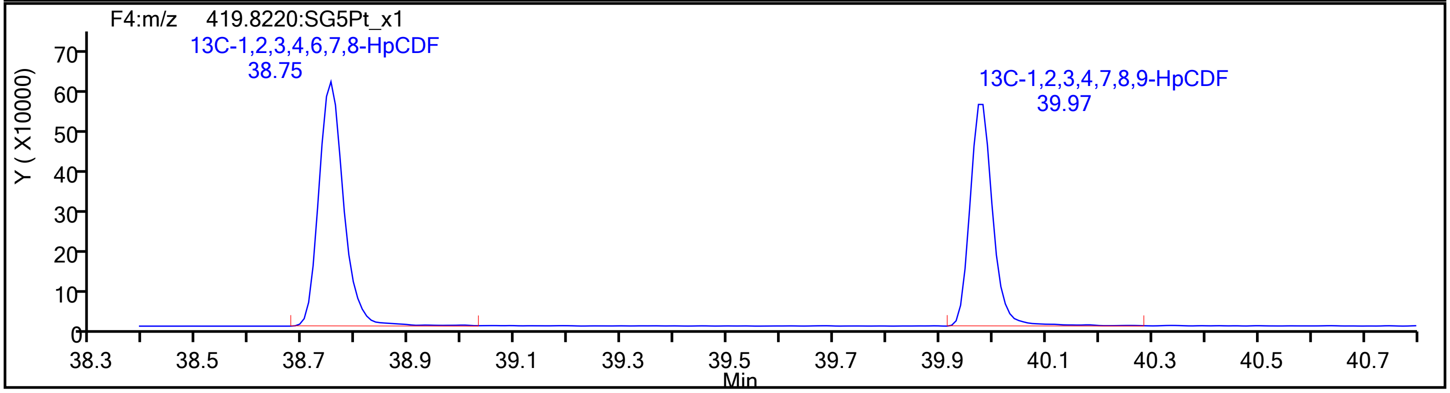

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

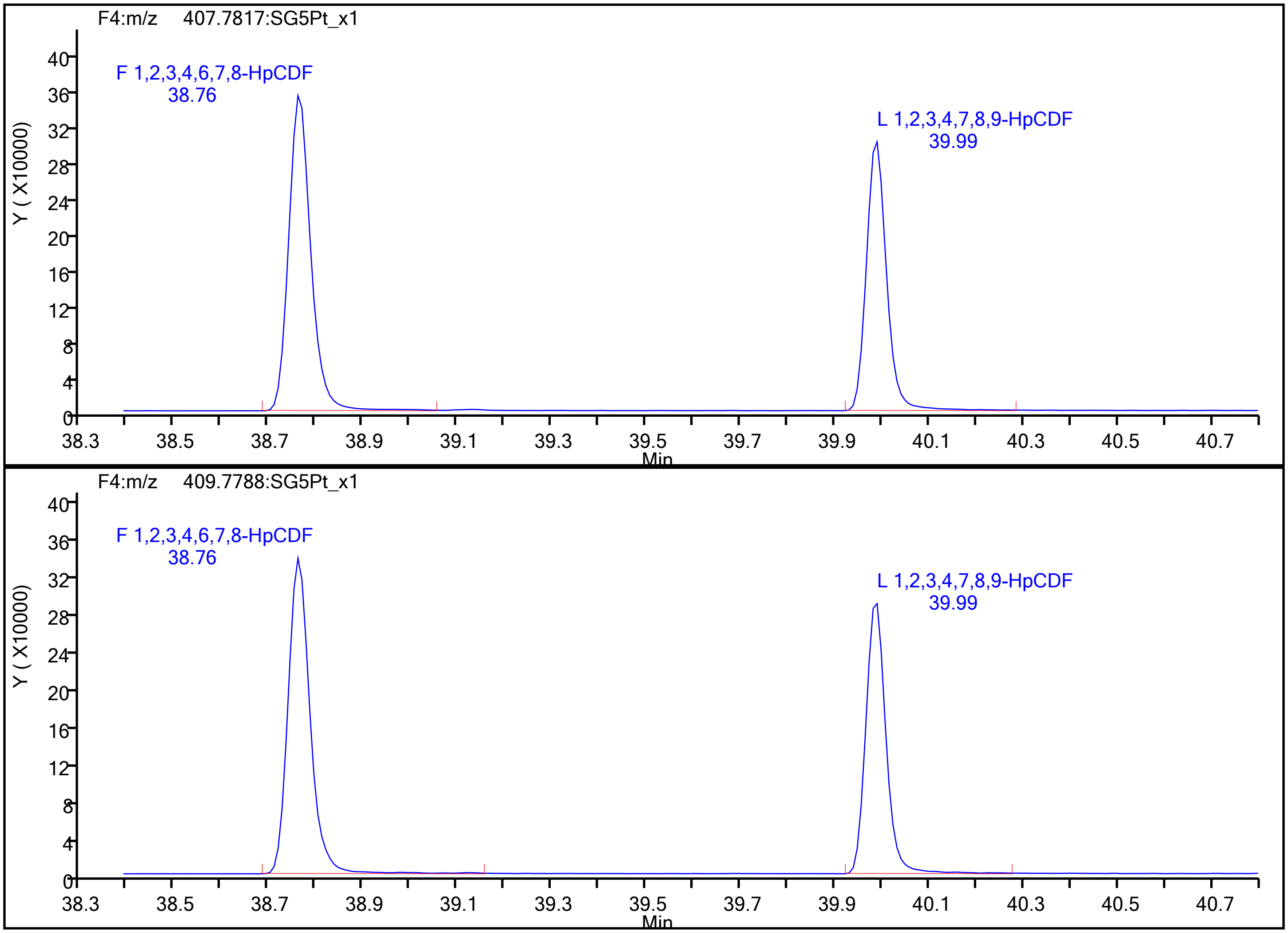

HpCDF Interference Mass

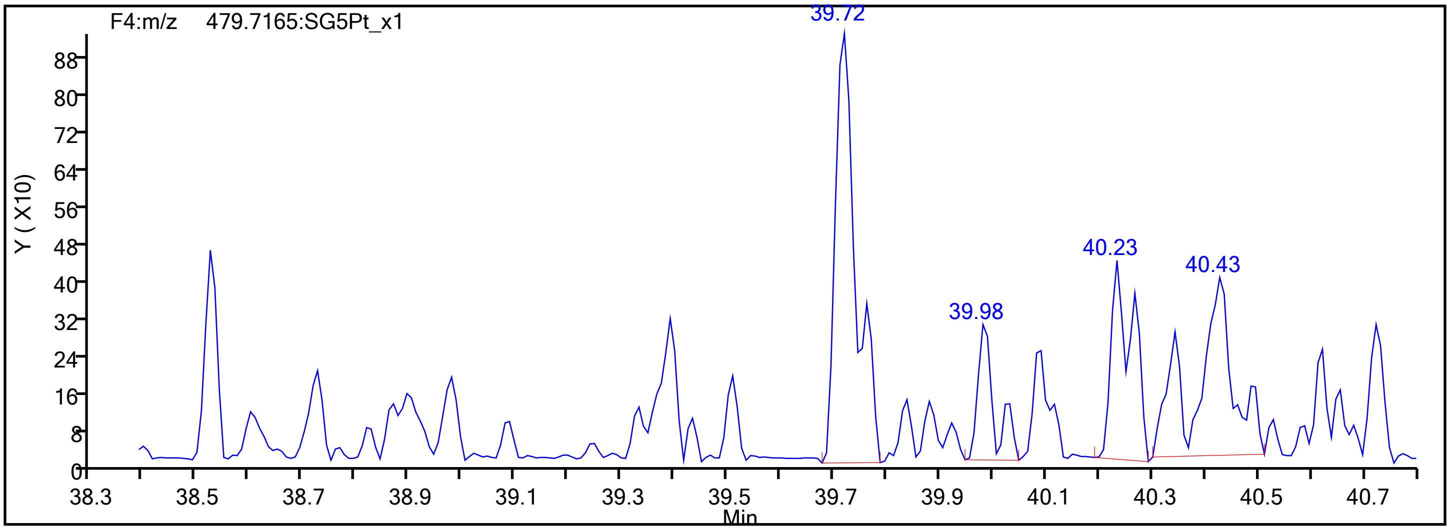

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

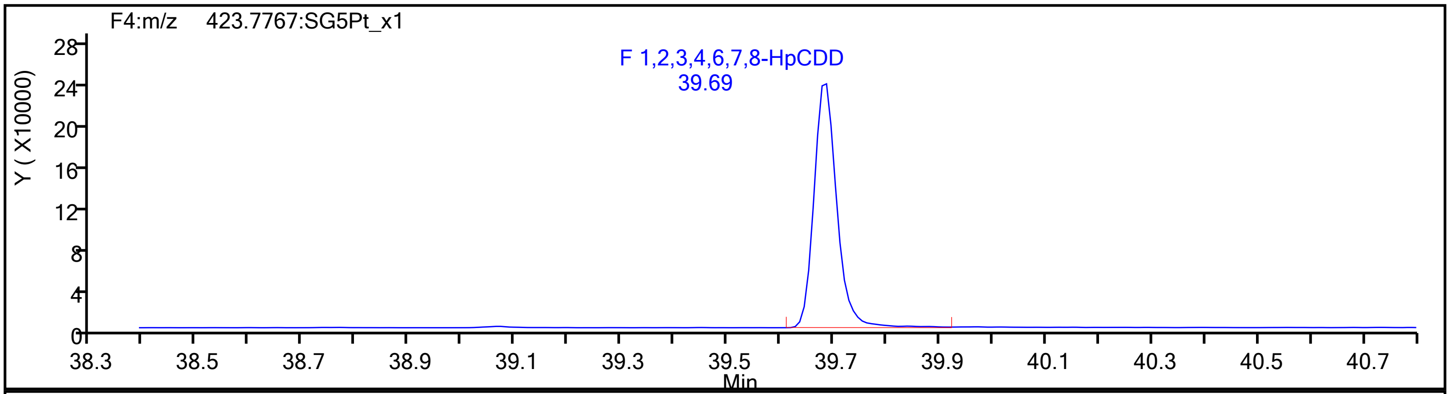

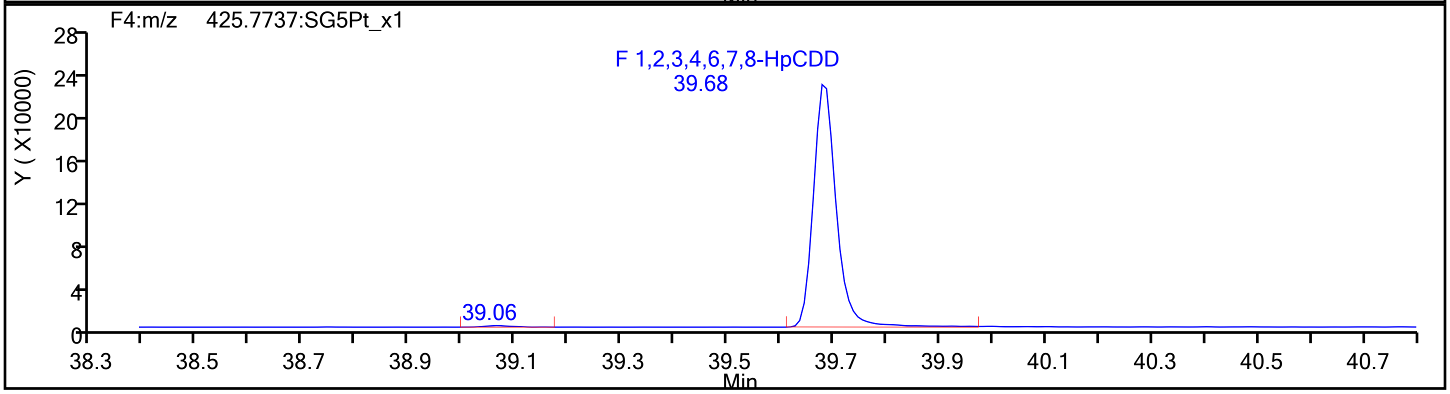

HpCDD Standards

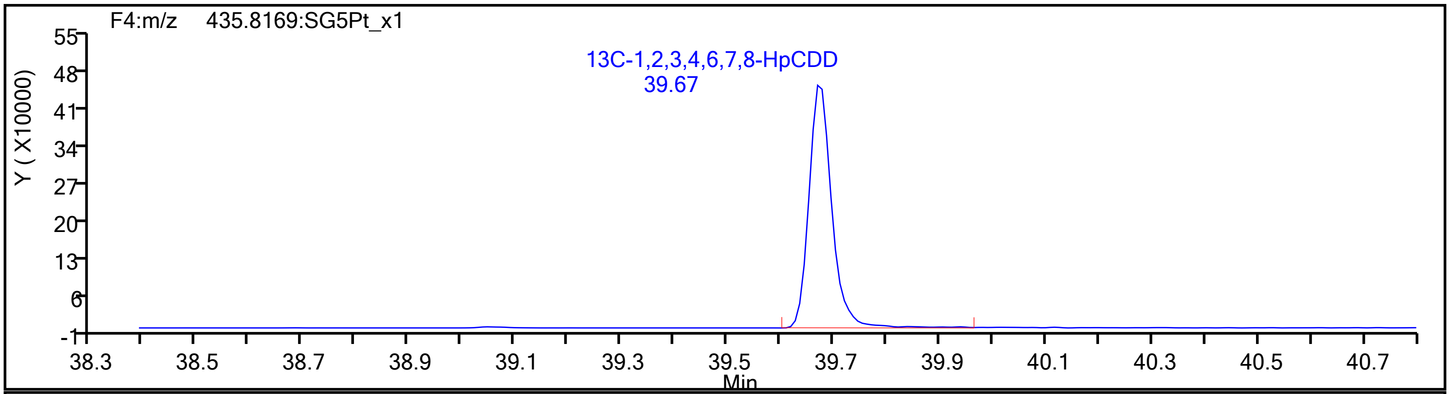

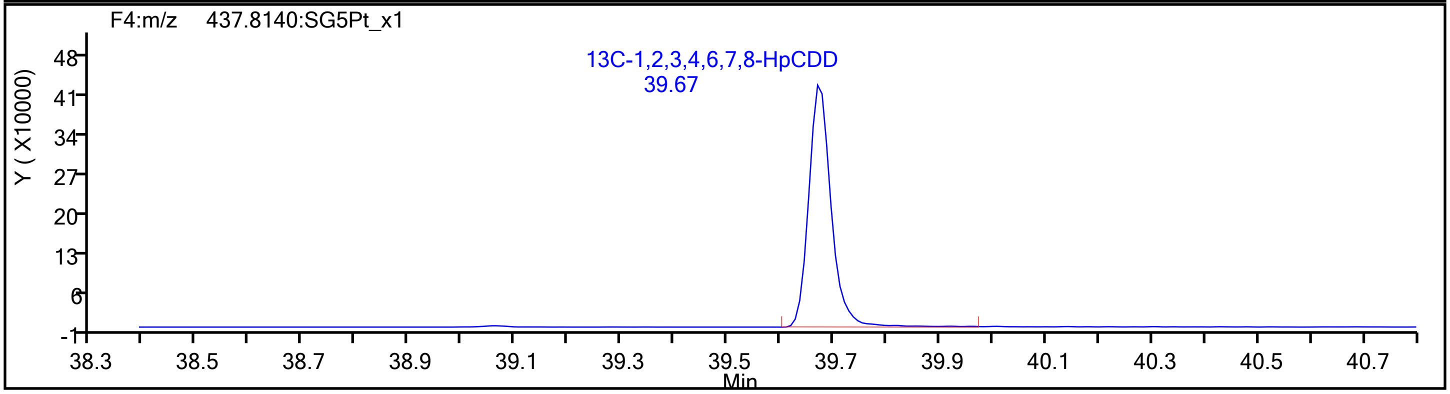

Report Date: 18-Nov-2020 12:35:00		Chrom Revision: 2.3 12-Nov-2020 21:52:08	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

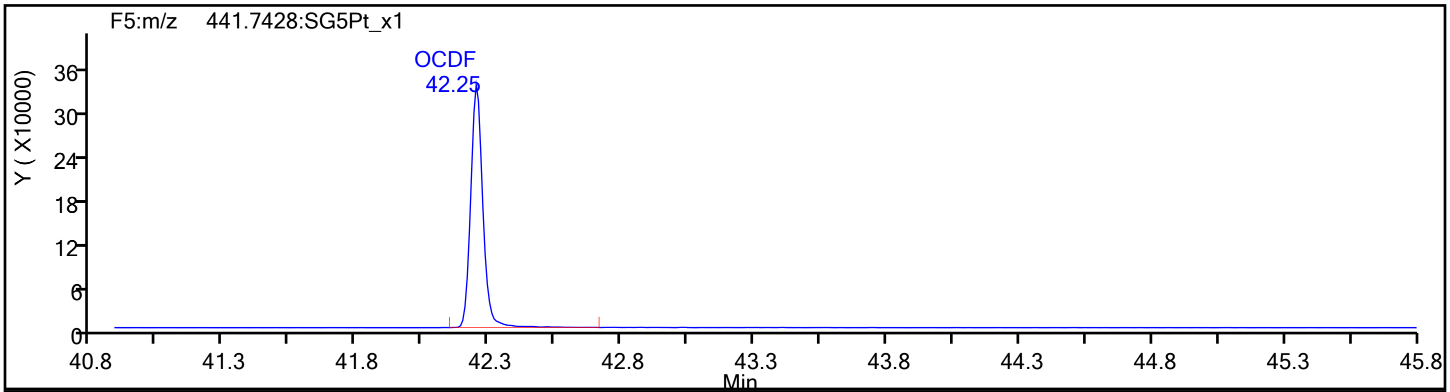

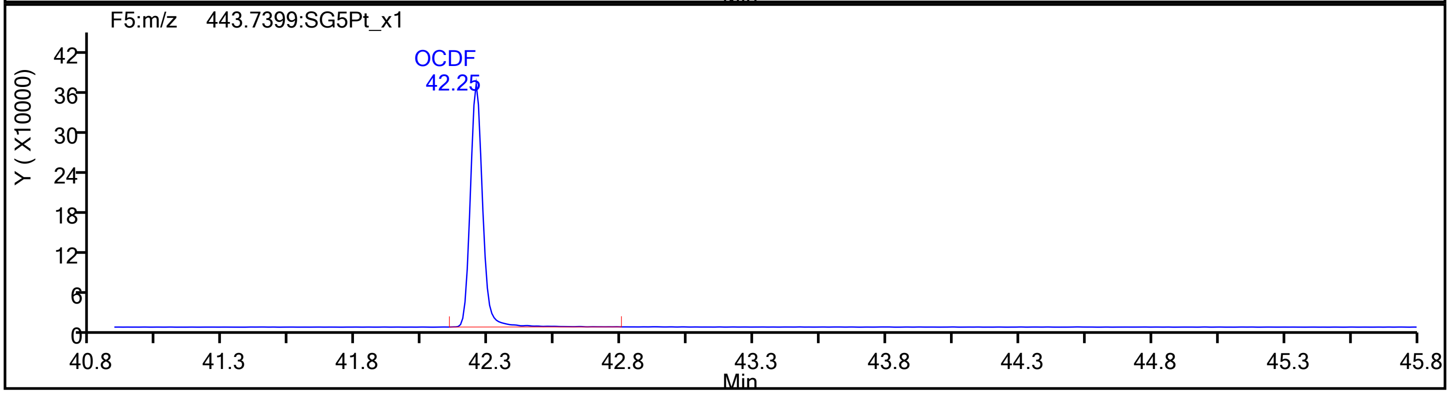

OCDF Standards

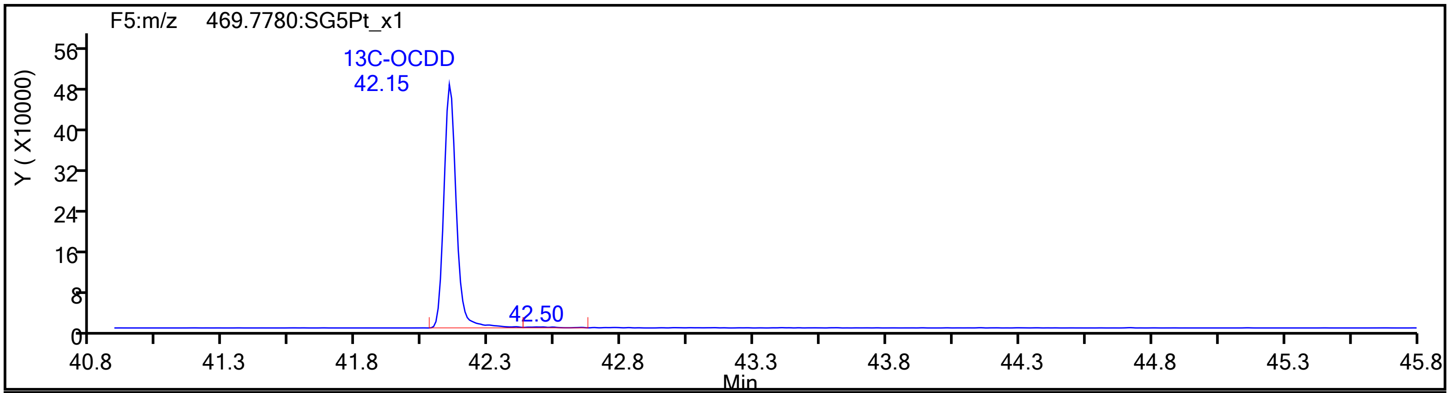

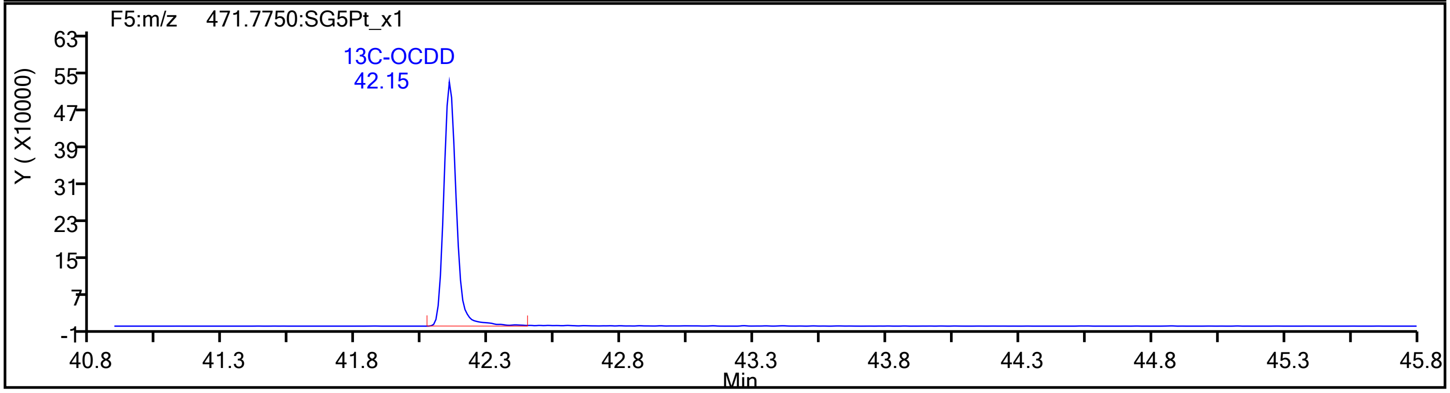

Report Date: 18-Nov-2020 12:35:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

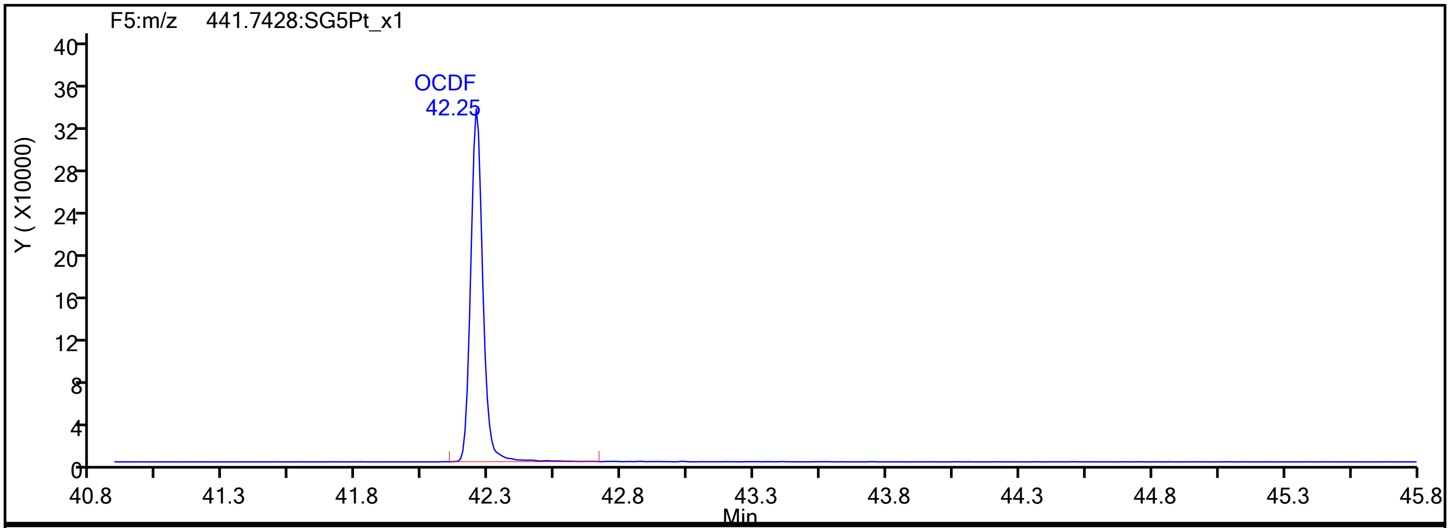

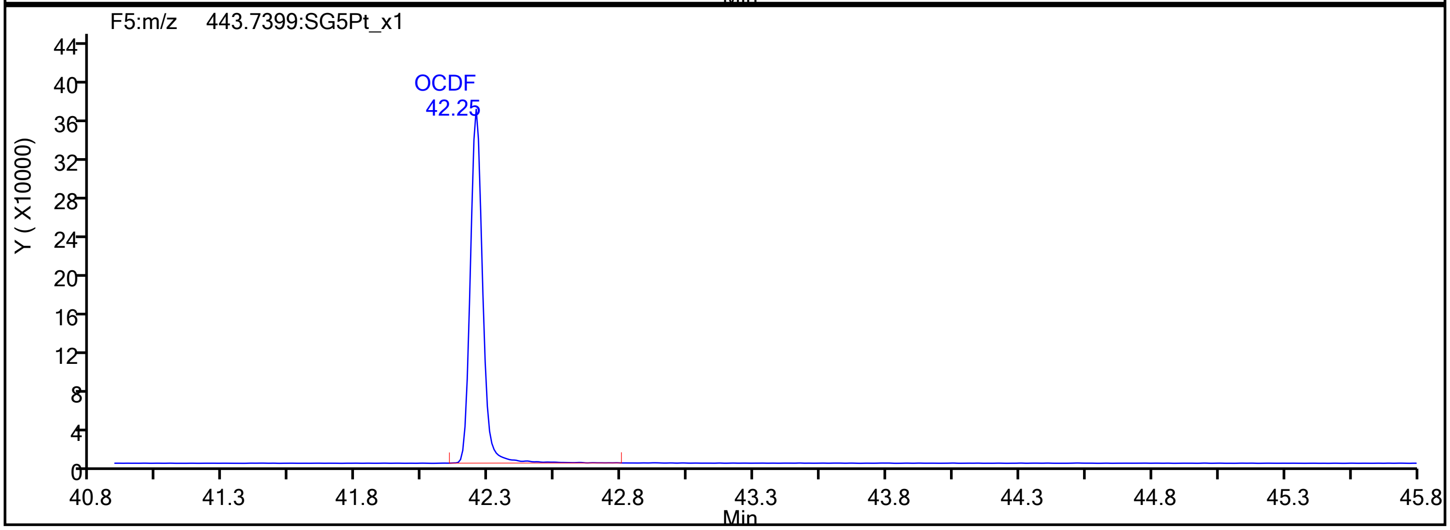

OCDF Interference Mass

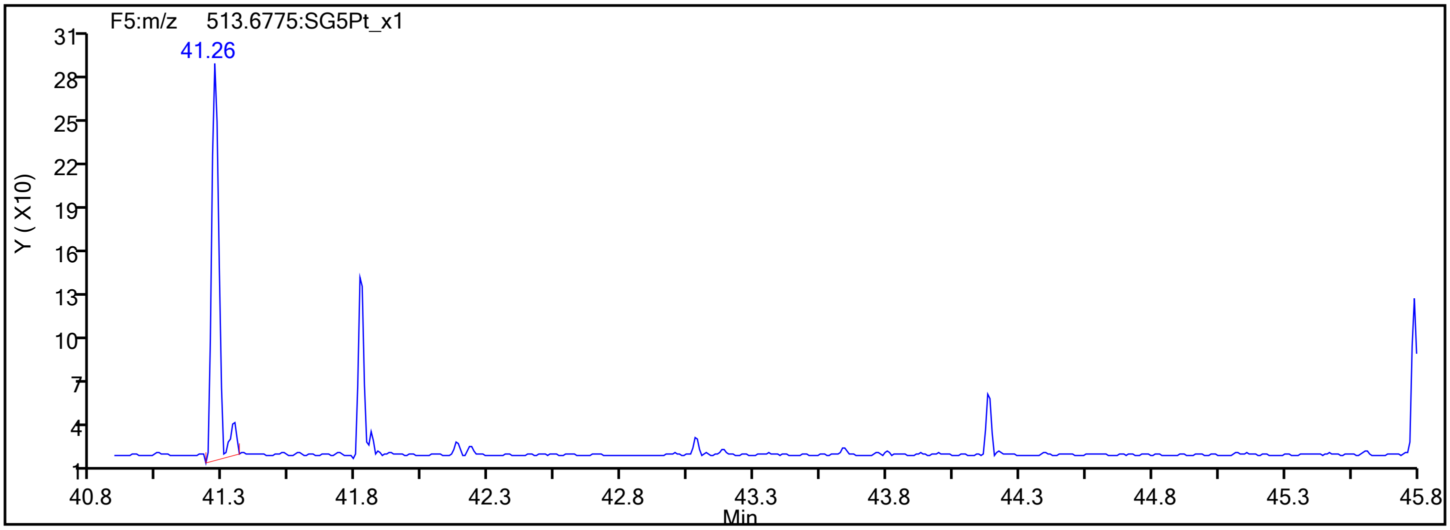

Report Date: 18-Nov-2020 12:35:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

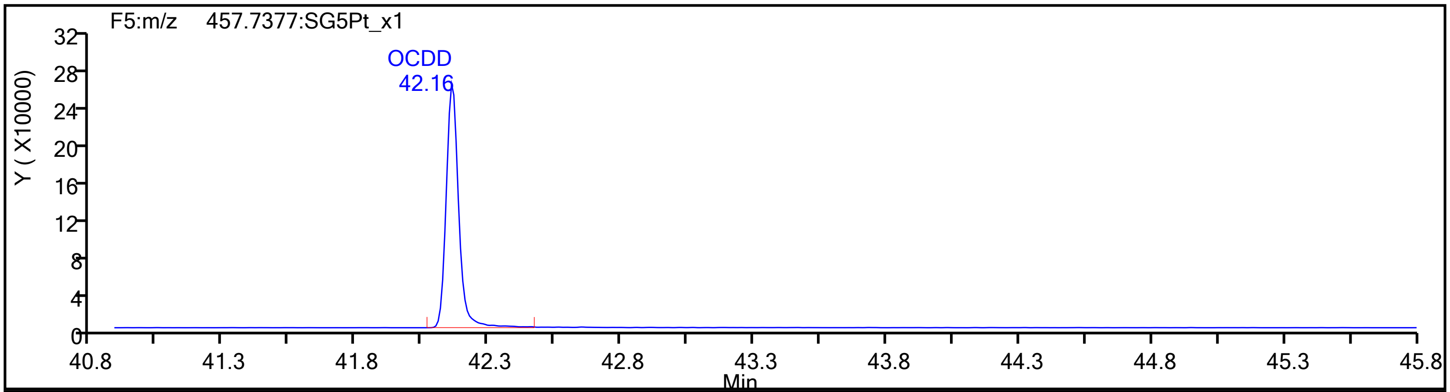

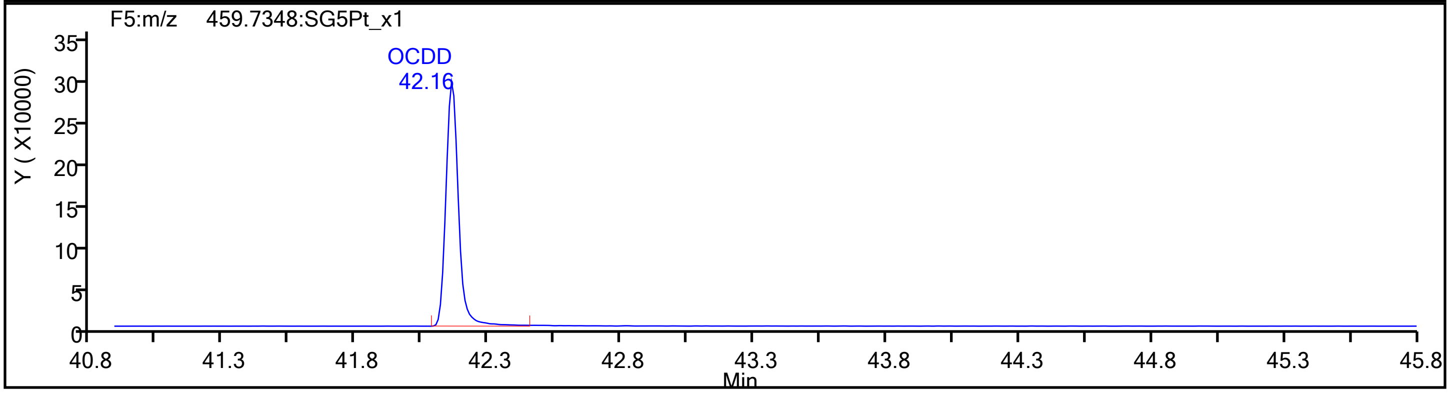

OCDD Standards

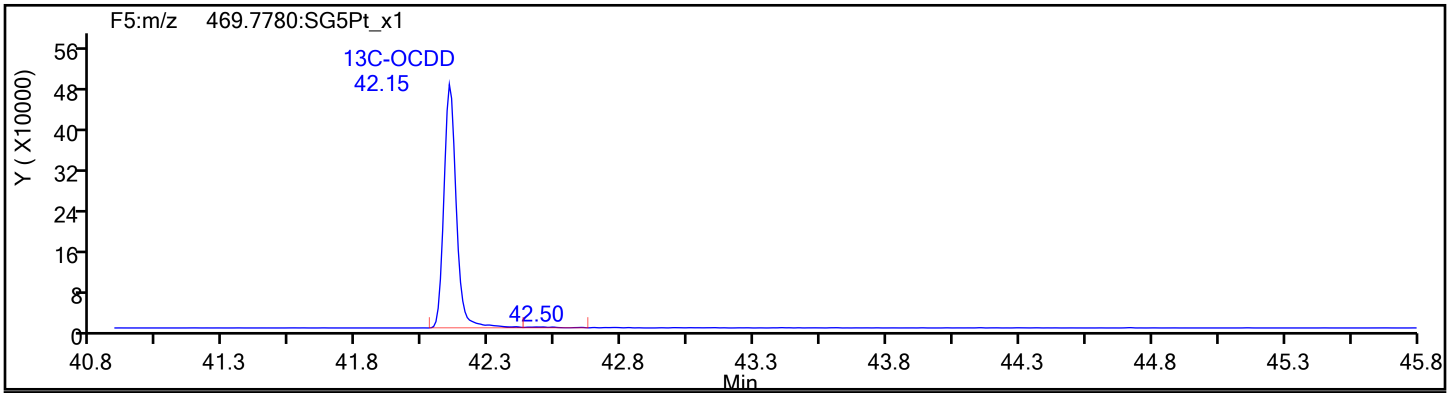

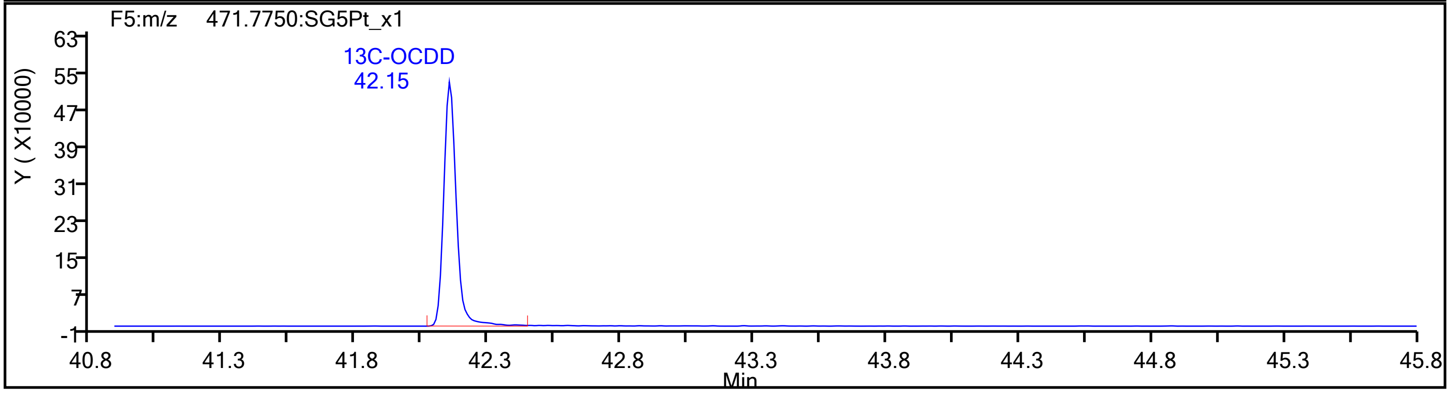

Report Date: 18-Nov-2020 12:35:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

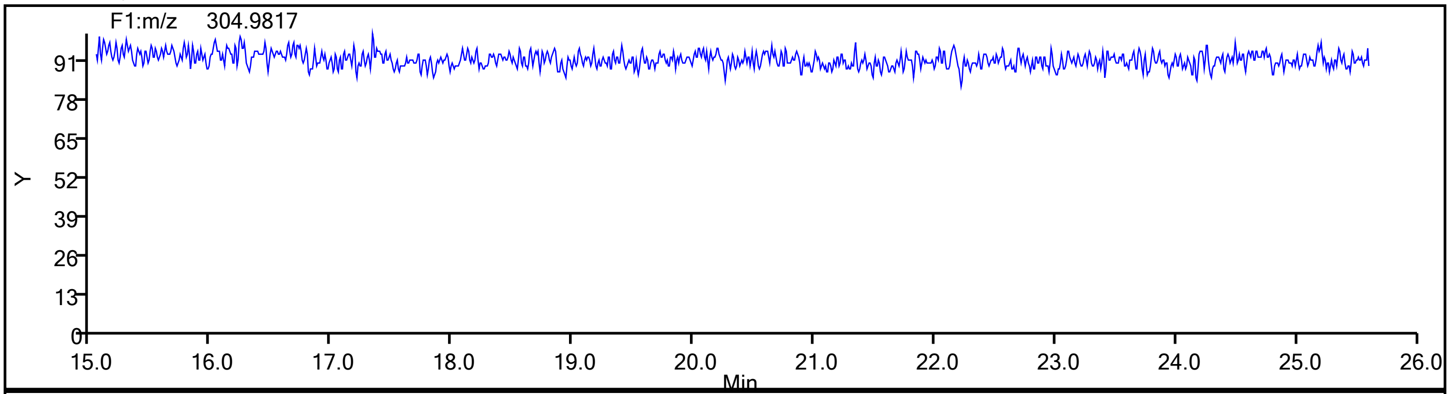

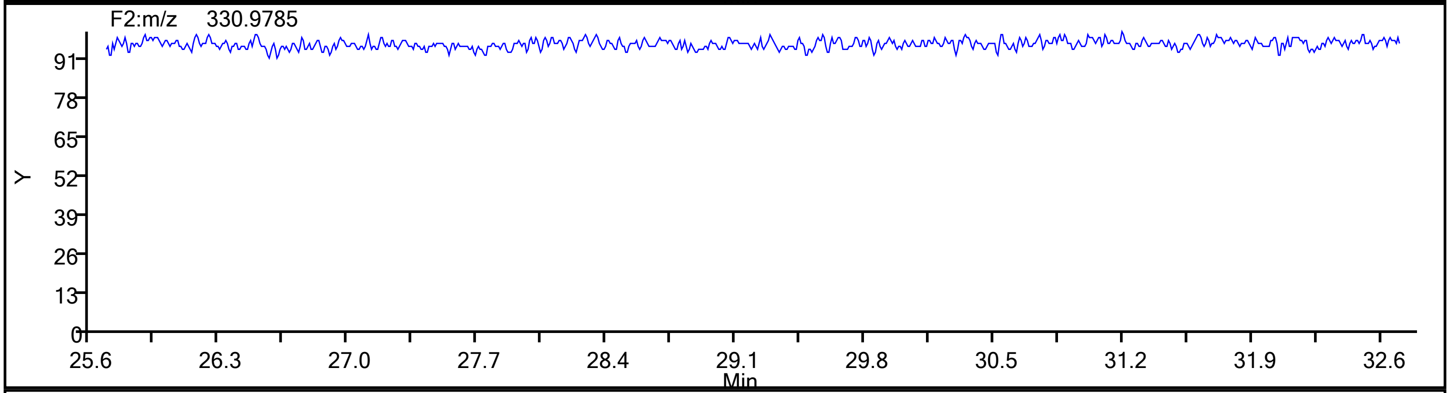

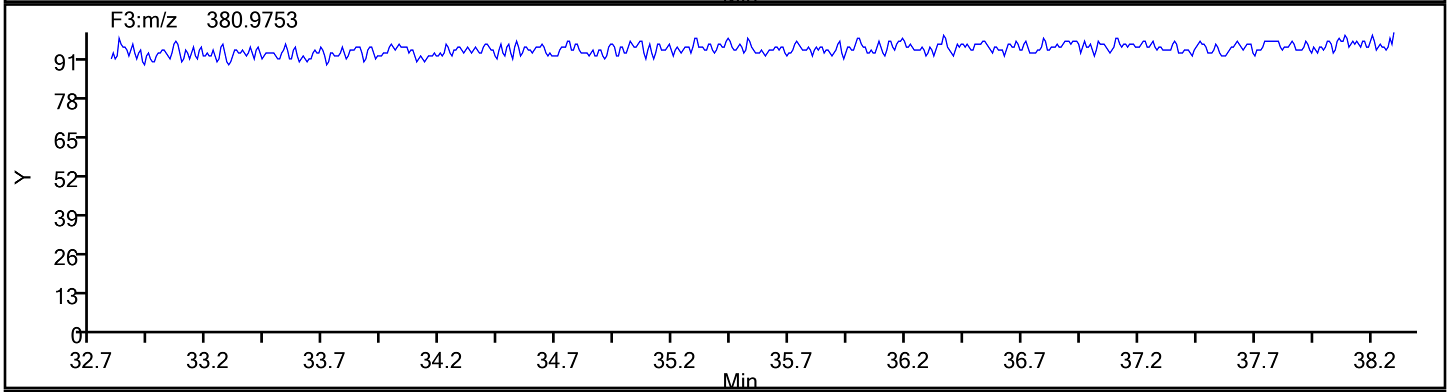

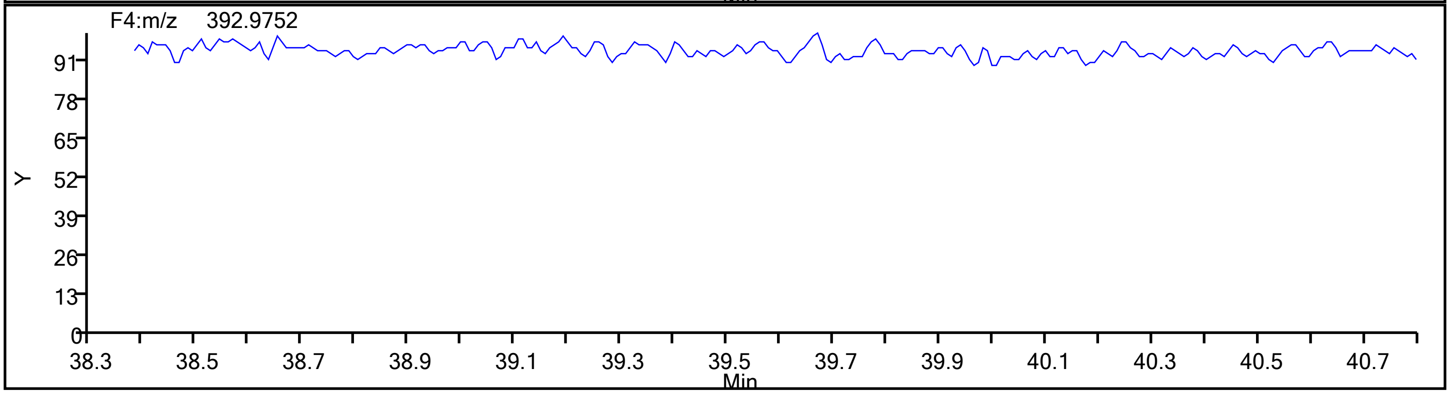

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

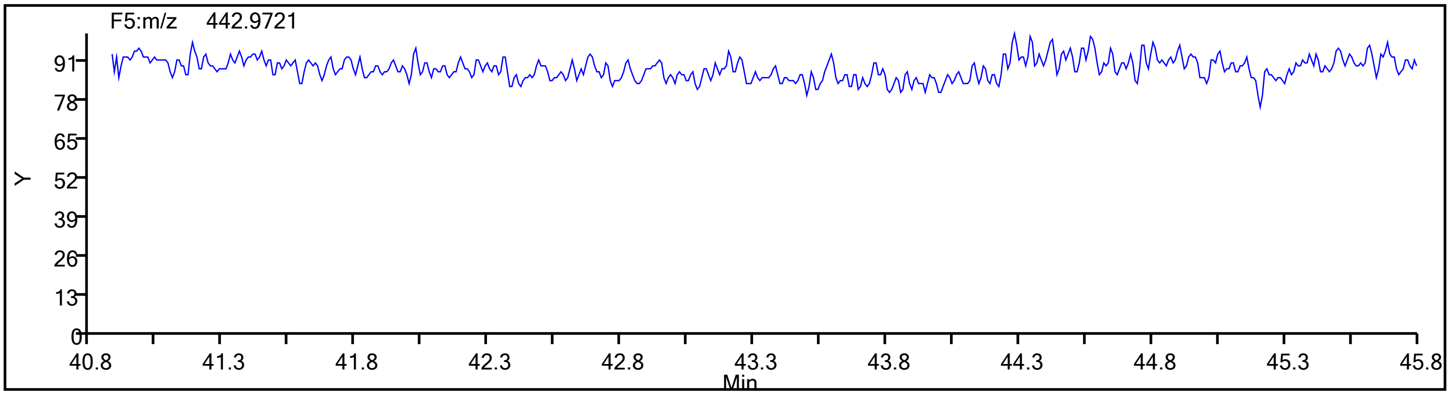

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Nov-2020 15:14:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:04 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:17:25

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.788	4688160	0.80	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.792	8021729	0.80	1.6832	101.7	101.7	0.2236	0.2236	102	
2,3,7,8-TCDF	20.809	3500107	0.79	1.1547	37.8	37.8	0.0435	0.0435	94.47	
S Total TCDF					37.8	37.8	0.0435	0.0435		
D 13C-2,3,7,8-TCDD	22.191	5120726	0.82	1.0896	100.2	100.2	0.2142	0.2142	100	
2,3,7,8-TCDD	22.217	2241168	0.79	1.1659	37.5	37.5	0.0642	0.0642	93.85	
$ 37Cl4-2,3,7,8-TCDD	22.226	2123196		1.1445	39.6	39.6	0.0337	0.0337	98.92	
S Total TCDD					37.5	37.5	0.0642	0.0642		
D 13C-1,2,3,7,8-PeCDF	27.661	7025605	1.57	1.4604	102.6	102.6	0.4053	0.4053	103	
1,2,3,7,8-PeCDF	27.686	14564784	1.55	1.1322	183.1	183.1	0.6417	0.6417	91.55	
D 13C-2,3,4,7,8-PeCDF	29.219	6365852	1.58	1.3504	100.6	100.6	0.4383	0.4383	101	
2,3,4,7,8-PeCDF	29.244	14028593	1.57	1.1588	190.2	190.2	0.7615	0.7615	95.09	
S Total PeCDF					373.3	373.3	0.7016	0.7016		
D 13C-1,2,3,7,8-PeCDD	30.061	4205499	1.62	0.8729	102.8	102.8	0.1275	0.1275	103	
1,2,3,7,8-PeCDD	30.087	8794530	1.58	1.1191	186.9	186.9	0.1391	0.1391	93.43	
S Total PeCDD					186.9	186.9	0.1391	0.1391		
D 13C-1,2,3,4,7,8-HxCDF	35.189	5721063	0.53	1.2808	100.7	100.7	0.3434	0.3434	101	
1,2,3,4,7,8-HxCDF	35.214	14234353	1.25	1.3205	188.4	188.4	0.7027	0.7027	94.21	
D 13C-1,2,3,6,7,8-HxCDF	35.349	6718059	0.52	1.4615	103.7	103.7	0.3009	0.3009	104	
1,2,3,6,7,8-HxCDF	35.365	15812779	1.25	1.2682	185.6	185.6	0.6386	0.6386	92.80	
D 13C-2,3,4,6,7,8-HxCDF	36.132	6046028	0.54	1.3227	103.1	103.1	0.3325	0.3325	103	
2,3,4,6,7,8-HxCDF	36.149	14400763	1.24	1.2838	185.5	185.5	0.6077	0.6077	92.77	
D 13C-1,2,3,7,8,9-HxCDF	37.000	5094707	0.53	1.1062	103.9	103.9	0.3976	0.3976	104	
1,2,3,7,8,9-HxCDF	37.008	12258577	1.26	1.3063	184.2	184.2	0.6840	0.6840	92.10	
S Total HxCDF					743.8	743.8	0.6583	0.6583		
* 13C-1,2,3,7,8,9-HxCDD	36.797	4434003	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.334	3999855	1.29	0.8757	103.0	103.0	0.2236	0.2236	103	
1,2,3,4,7,8-HxCDD	36.343	8812547	1.25	1.1972	184.0	184.0	0.3390	0.3390	92.02	
D 13C-1,2,3,6,7,8-HxCDD	36.444	4810874	1.27	1.0651	101.9	101.9	0.1839	0.1839	102	
1,2,3,6,7,8-HxCDD	36.461	9736393	1.26	1.0695	189.2	189.2	0.3374	0.3374	94.62	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.814	9609067	1.25	1.1806	184.8	184.8	0.3236	0.3236	92.38	
S Total HxCDD					558.0	558.0	0.3333	0.3333		
D 13C-1,2,3,4,6,7,8-HpCDF	38.747	4395524	0.46	0.9521	104.1	104.1	0.4587	0.4587	104	
1,2,3,4,6,7,8-HpCDF	38.764	12400149	1.04	1.5618	180.6	180.6	0.6755	0.6755	90.31	
D 13C-1,2,3,4,7,8,9-HpCDF	39.977	3517248	0.45	0.7782	101.9	101.9	0.5612	0.5612	102	
1,2,3,4,7,8,9-HpCDF	39.986	9811769	1.05	1.4975	186.3	186.3	0.7909	0.7909	93.14	
S Total HpCDF					366.9	366.9	0.7332	0.7332		
D 13C-1,2,3,4,6,7,8-HpCDD	39.674	3814878	1.07	0.8393	102.5	102.5	0.2960	0.2960	103	
1,2,3,4,6,7,8-HpCDD	39.682	7854304	1.05	1.1079	185.8	185.8	0.3808	0.3808	92.91	
S Total HpCDD					185.8	185.8	0.3808	0.3808		
D 13C-OCDD	42.153	4963784	0.91	0.5301	211.2	211.2	0.2760	0.2760	106	
OCDF	42.254	13966649	0.91	1.4802	380.2	380.2	0.3603	0.3603	95.05	
OCDD	42.162	10594948	0.90	1.1666	365.9	365.9	0.3665	0.3665	91.48	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Nov-2020 15:14:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:04 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:17:25

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.788	21.818	-2		2082554	295213	408	1020	724		a
333.9338	21.796	21.818	-1		2605606	365422	209	522	1748	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.792	20.808	-1	0.954	3561785	529058	590	1475	897		
317.9389	20.792	20.808	-1	0.954	4459944	650726	405	1012	1607	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.809	20.834	-1	1.001	1546632	224633	88	220	2553		
305.8987	20.809	20.834	-1	1.001	1953475	282201	149	372	1894	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.191	22.213	-1	1.019	2302530	298080	408	1020	731		
333.9338	22.191	22.213	-1	1.019	2818196	377109	209	522	1804	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.217	22.239	-1	1.001	988936	131728	117	292	1126		
321.8936	22.226	22.239	-1	1.002	1252232	167392	85	212	1969	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.226	22.241	-1	1.020	2123196	284845	102	255	2793		
13C-1,2,3,7,8-PeCDF											
351.9000	27.661	27.677	-1	1.270	4293603	681092	948	2370	718		
353.8970	27.661	27.677	-1	1.270	2732002	431926	616	1540	701	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.686	27.702	-1	1.001	8845803	1379922	1962	4905	703		
341.8567	27.686	27.702	-1	1.001	5718981	890732	1273	3182	700	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.219	29.235	-1	1.341	3897630	556892	948	2370	587		
353.8970	29.227	29.235	0	1.341	2468222	359600	616	1540	584	1.58(1.32-1.78)	

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.244	29.262	-1	1.001	8568433	1228129	1962	4905	626		
341.8567	29.244	29.262	-1	1.001	5460160	793018	1273	3182	623	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.061	30.073	-1	1.380	2599993	352624	152	380	2320		
369.8919	30.061	30.073	-1	1.380	1605506	222536	142	355	1567	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.087	30.100	-1	1.001	5379226	749959	234	585	3205		
357.8516	30.087	30.100	-1	1.001	3415304	478996	124	310	3863	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.189	35.202	-1	0.956	1988709	451324	728	1820	620		
385.8610	35.197	35.202	0	0.957	3732354	862525	1379	3447	625	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.214	35.219	0	1.001	7902200	1812461	2734	6835	663		
375.8178	35.214	35.219	0	1.001	6332153	1460404	2143	5357	681	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.349	35.361	-1	0.961	2308755	517320	728	1820	711		
385.8610	35.349	35.361	-1	0.961	4409304	988259	1379	3447	717	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.365	35.376	-1	1.000	8794569	1925080	2734	6835	704		
375.8178	35.365	35.376	-1	1.000	7018210	1531863	2143	5357	715	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.132	36.142	-1	0.982	2109961	544356	728	1820	748		
385.8610	36.132	36.142	-1	0.982	3936067	1018449	1379	3447	739	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.149	36.158	-1	1.000	7959077	1978076	2734	6835	724		
375.8178	36.149	36.158	-1	1.000	6441686	1601859	2143	5357	747	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.000	37.005	0	1.005	1774834	475595	728	1820	653		
385.8610	37.000	37.005	0	1.005	3319873	888914	1379	3447	645	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.008	37.019	-1	1.000	6822485	1841445	2734	6835	674		
375.8178	37.008	37.019	-1	1.000	5436092	1467279	2143	5357	685	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.797	36.808	-1		2492138	673939	505	1262	1335		
403.8529	36.797	36.808	-1		1941865	523607	433	1082	1209	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.334	36.340	0	0.987	2252142	613545	505	1262	1215		
403.8529	36.334	36.340	0	0.987	1747713	479811	433	1082	1108	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.343	36.355	-1	1.000	4902081	1324899	989	2472	1340		
391.8127	36.343	36.355	-1	1.000	3910466	1077677	786	1965	1371	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.444	36.454	-1	0.990	2694401	688973	505	1262	1364		
403.8529	36.452	36.454	0	0.991	2116473	540607	433	1082	1249	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.461	36.468	0	1.000	5436051	1385203	989	2472	1401		
391.8127	36.461	36.468	0	1.000	4300342	1099278	786	1965	1399	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.814	36.821	0	1.013	5337111	1414966	989	2472	1431		
391.8127	36.814	36.821	0	1.013	4271956	1130375	786	1965	1438	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.747	38.755	0	1.053	1385487	437616	693	1732	631		
419.8220	38.747	38.755	0	1.053	3010037	957376	1399	3497	684	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.764	38.769	0	1.000	6319814	1970833	3025	7562	652		
409.7788	38.756	38.769	-1	1.000	6080335	1885569	2862	7155	659	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.977	39.984	0	1.086	1097127	383348	693	1732	553		
419.8220	39.977	39.984	0	1.086	2420121	859241	1399	3497	614	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.986	39.994	0	1.000	5025736	1741972	3025	7562	576		
409.7788	39.986	39.994	0	1.000	4786033	1651078	2862	7155	577	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.674	39.679	0	1.078	1971412	681267	632	1580	1078		
437.8140	39.674	39.679	0	1.078	1843466	628716	558	1395	1127	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.682	39.689	0	1.000	4028321	1372028	1157	2892	1186		
425.7737	39.682	39.689	0	1.000	3825983	1296217	1054	2635	1230	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.153	42.157	0	1.146	2367654	723843	382	955	1895		
471.7750	42.153	42.157	0	1.146	2596130	789437	319	797	2475	0.91(0.76-1.02)	
OCDF											
441.7428	42.254	42.260	0	1.002	6658396	1998013	764	1910	2615		
443.7399	42.254	42.260	0	1.002	7308253	2171772	850	2125	2555	0.91(0.76-1.02)	
OCDD											
457.7377	42.162	42.167	0	1.000	5025901	1544750	622	1555	2484		
459.7348	42.162	42.167	0	1.000	5569047	1701284	672	1680	2532	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d				
Injection Date:	17-Nov-2020 15:14:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.82

Processing Integration Results

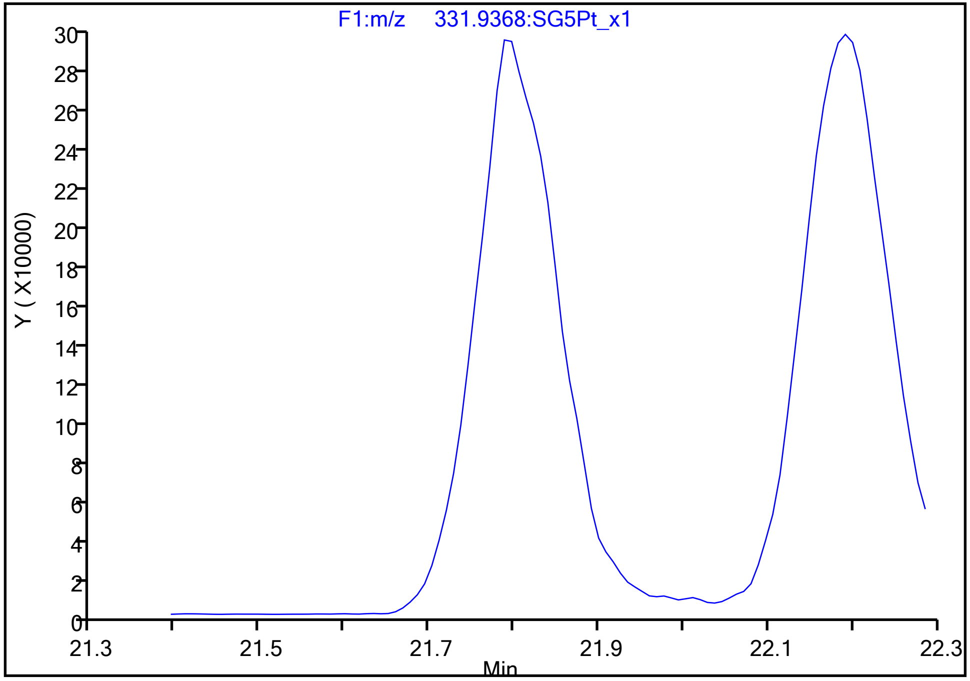

RT: 21.79
Area: 2082554
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

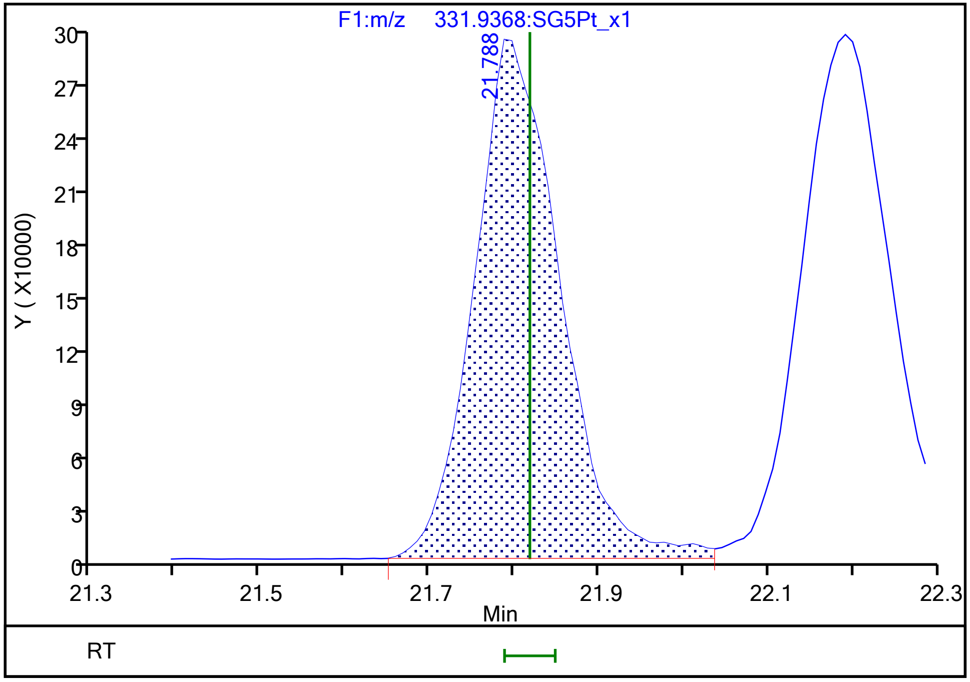

Reviewer: stephensk, 17-Nov-2020 16:09:26
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

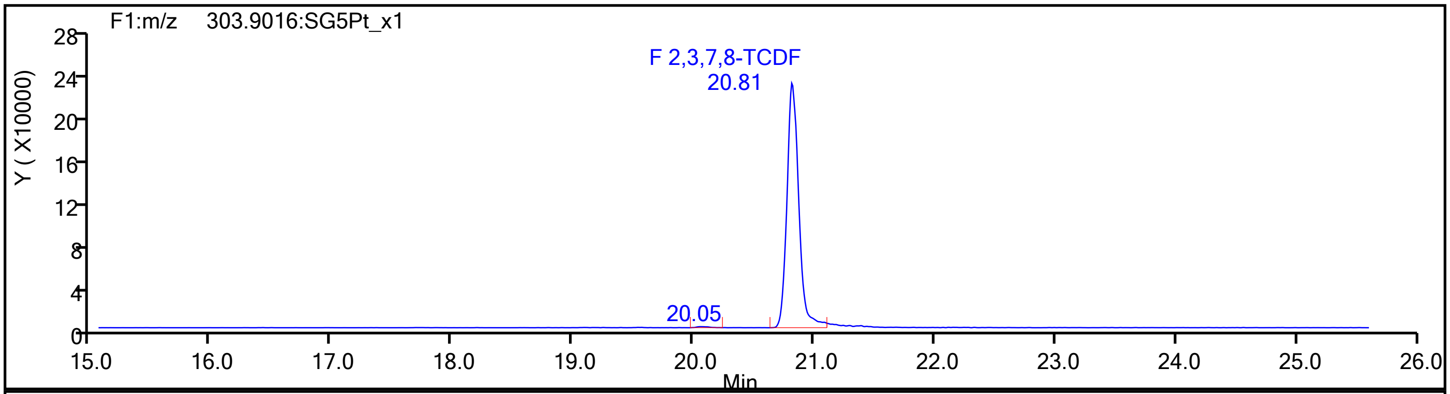

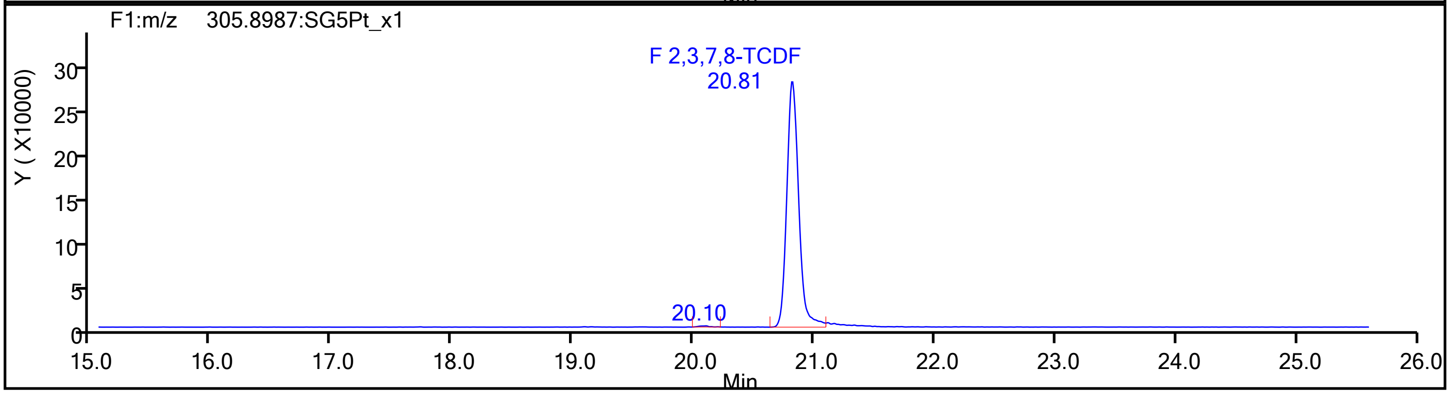

TCDF Standards

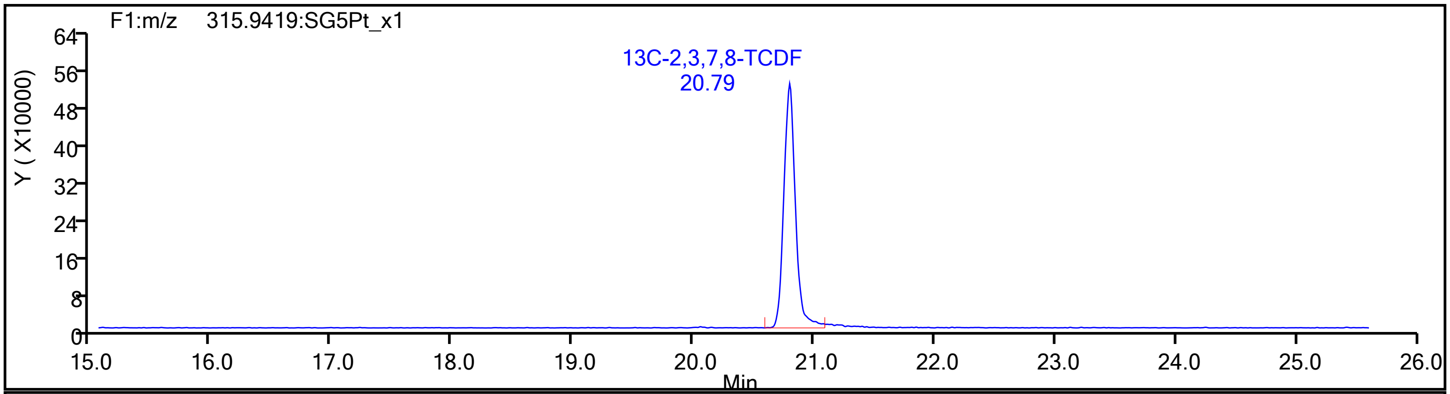

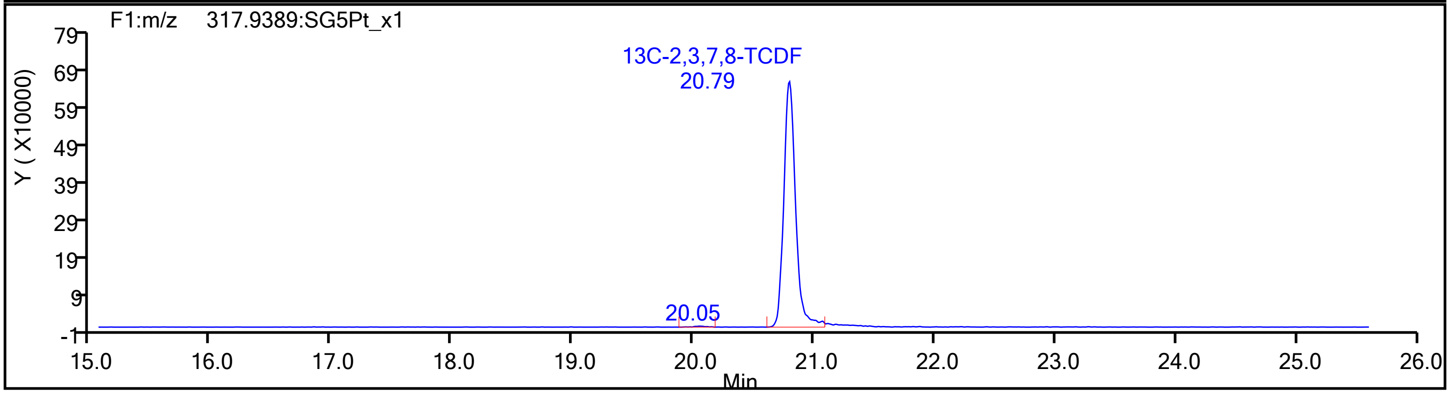

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d

Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

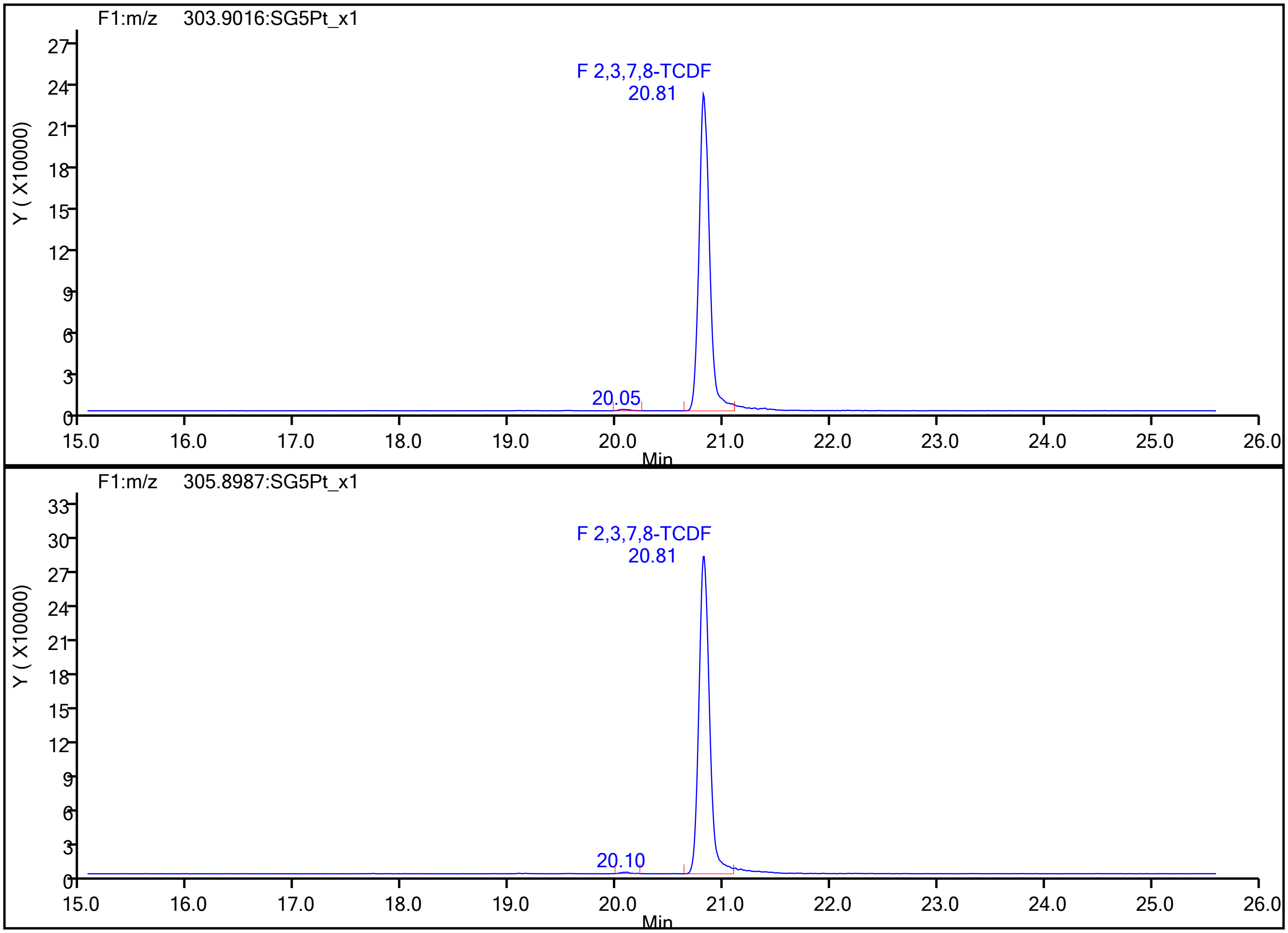

TCDF Interference Mass

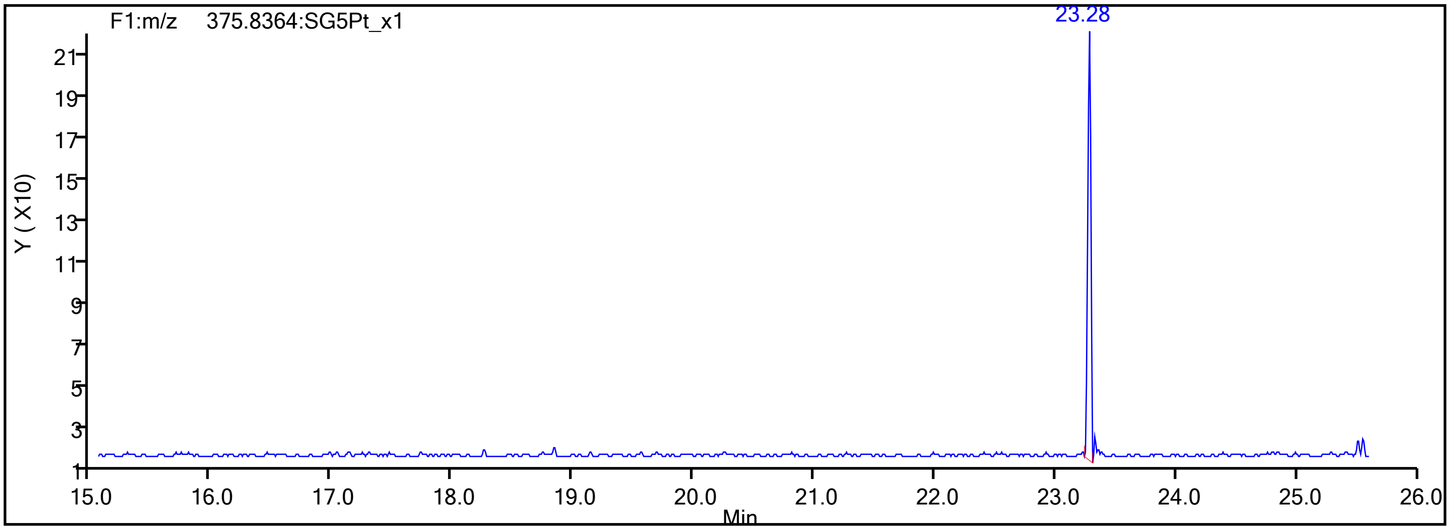

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Injection Date: 17-Nov-2020 15:14:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

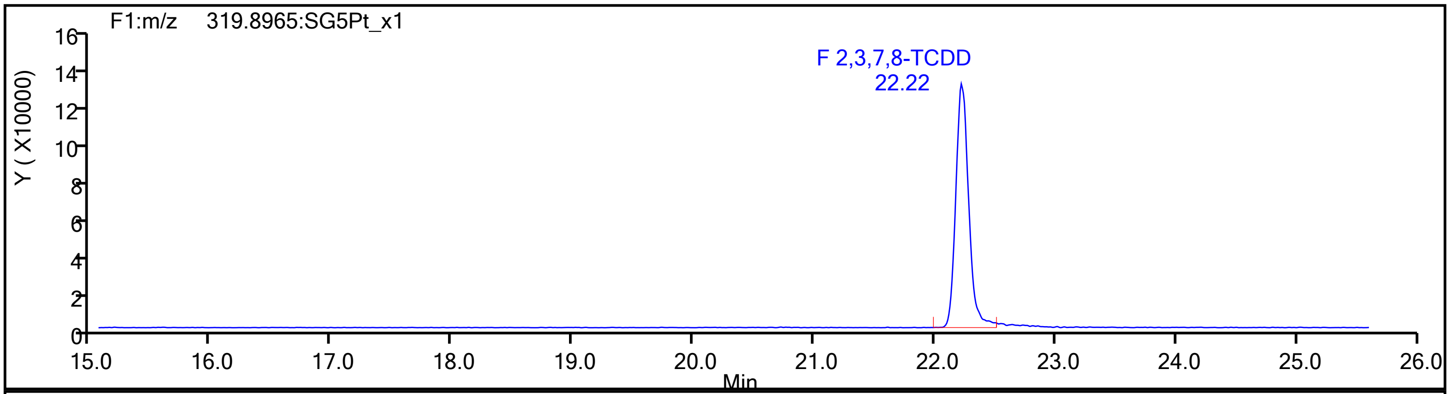

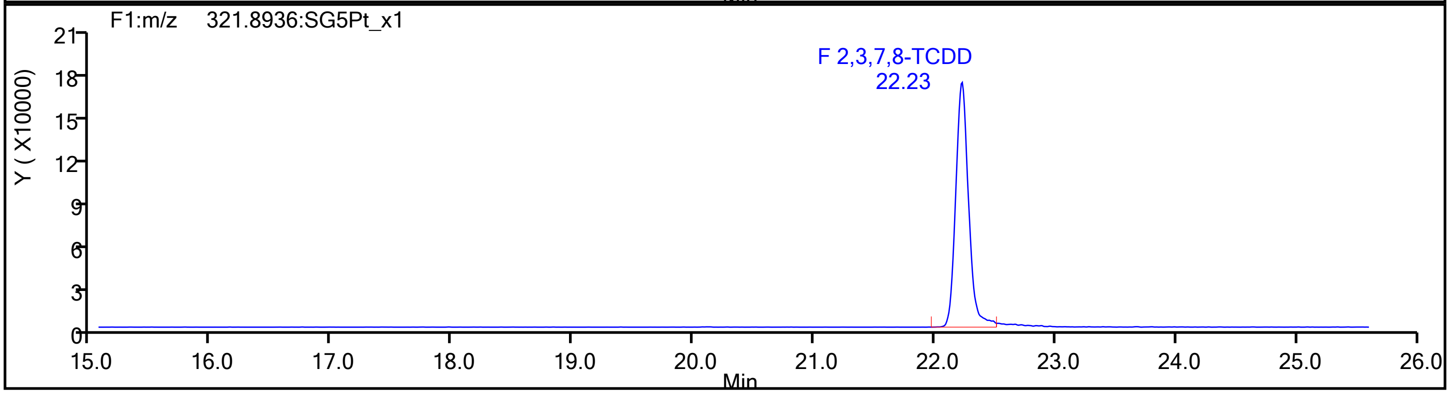

TCDD Standards

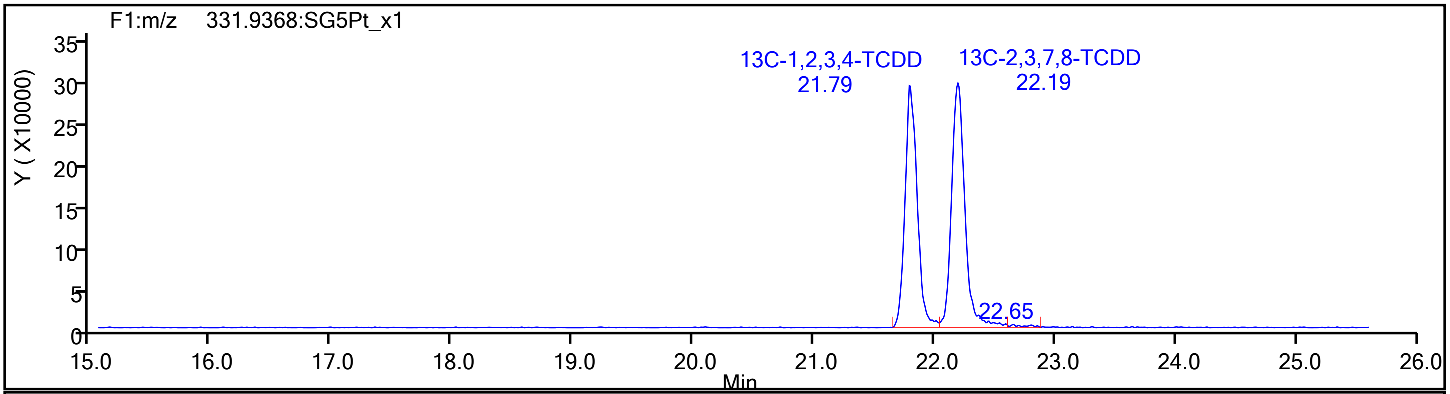

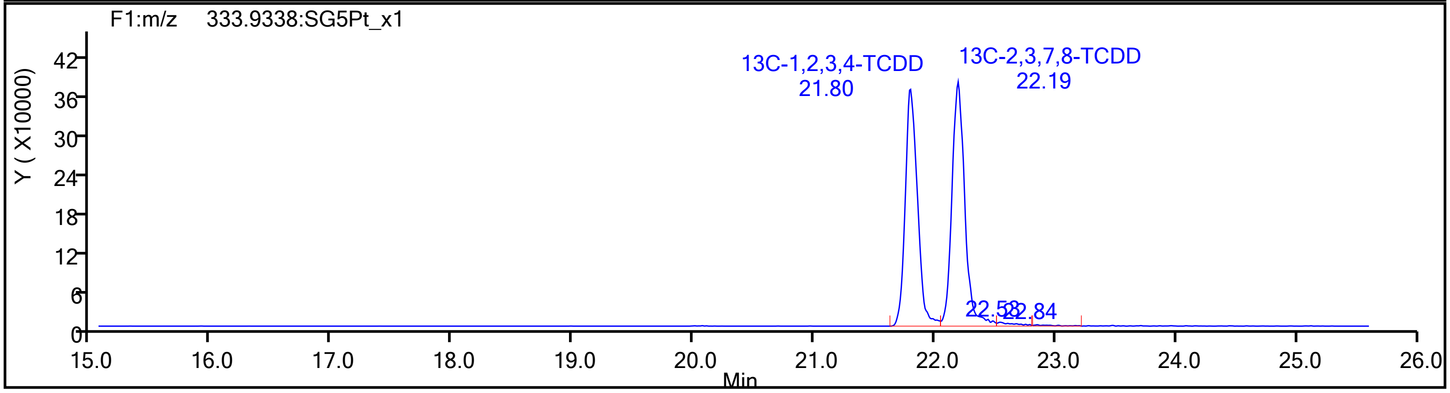

Report Date: 18-Nov-2020 12:35:15		Chrom Revision: 2.3 12-Nov-2020 21:52:08	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

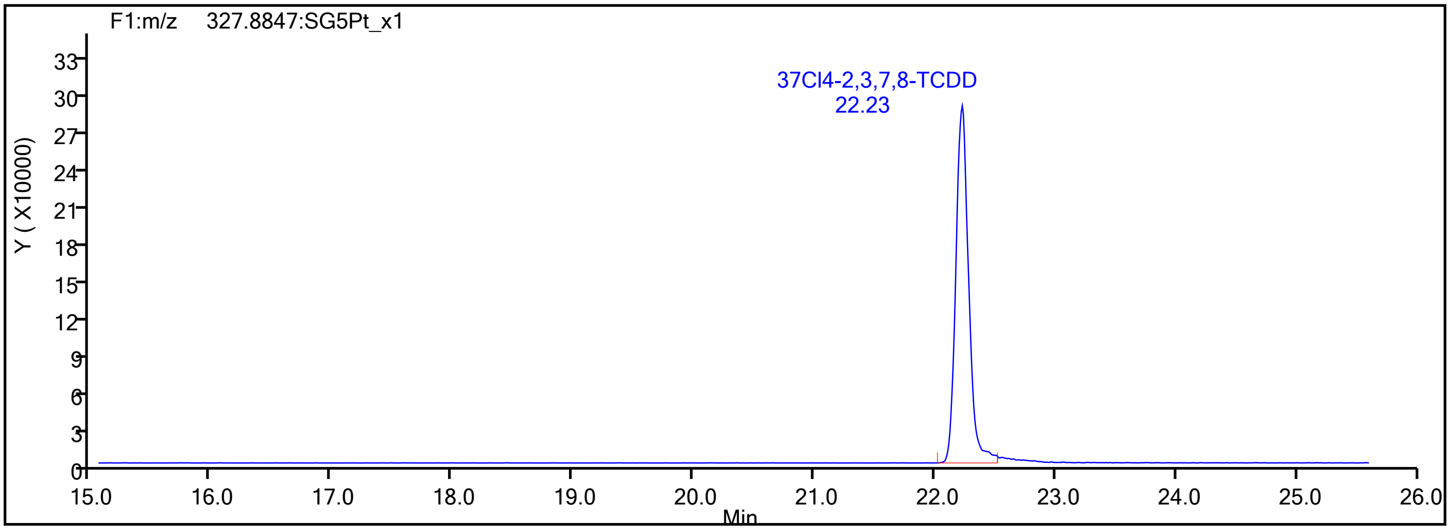

37Cl4-TCDD Standards

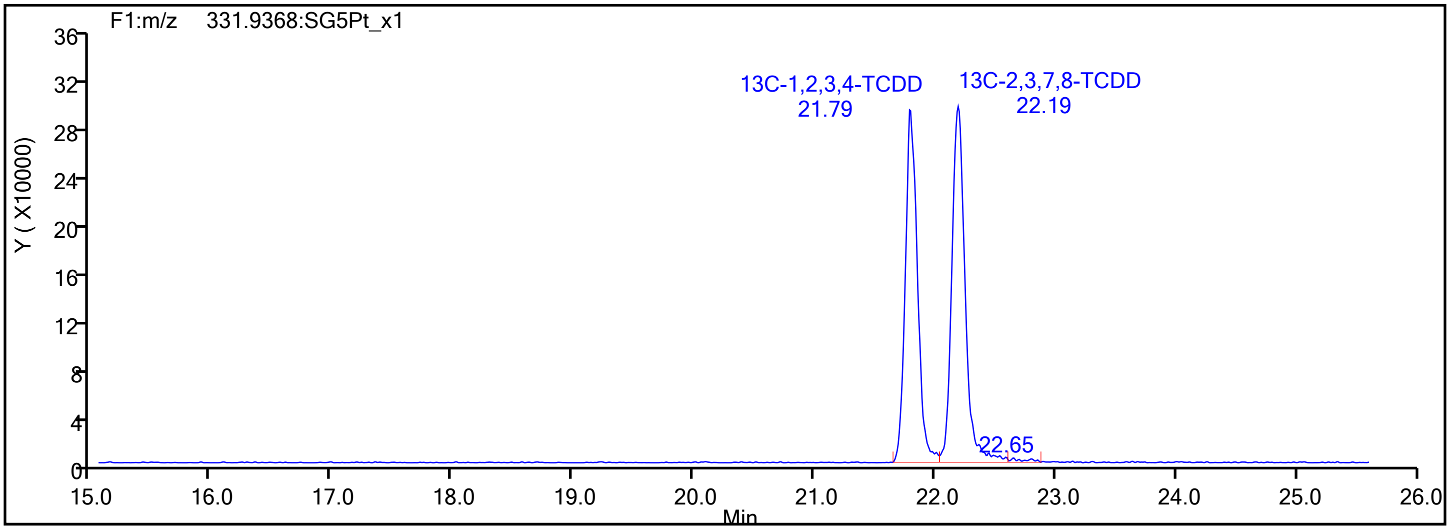

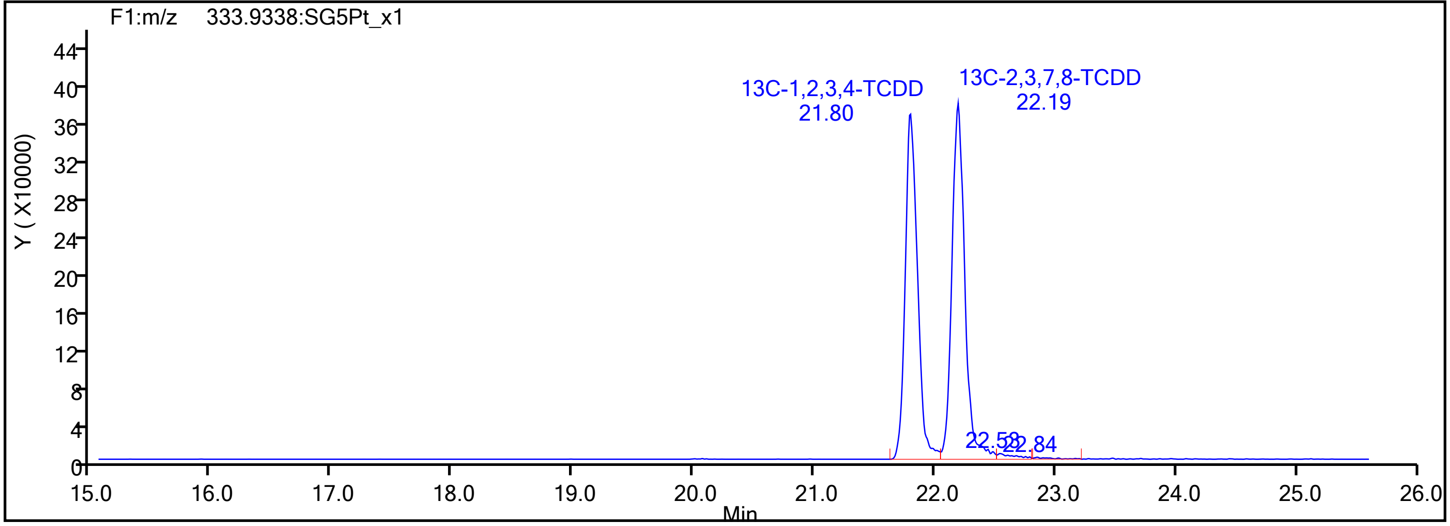

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

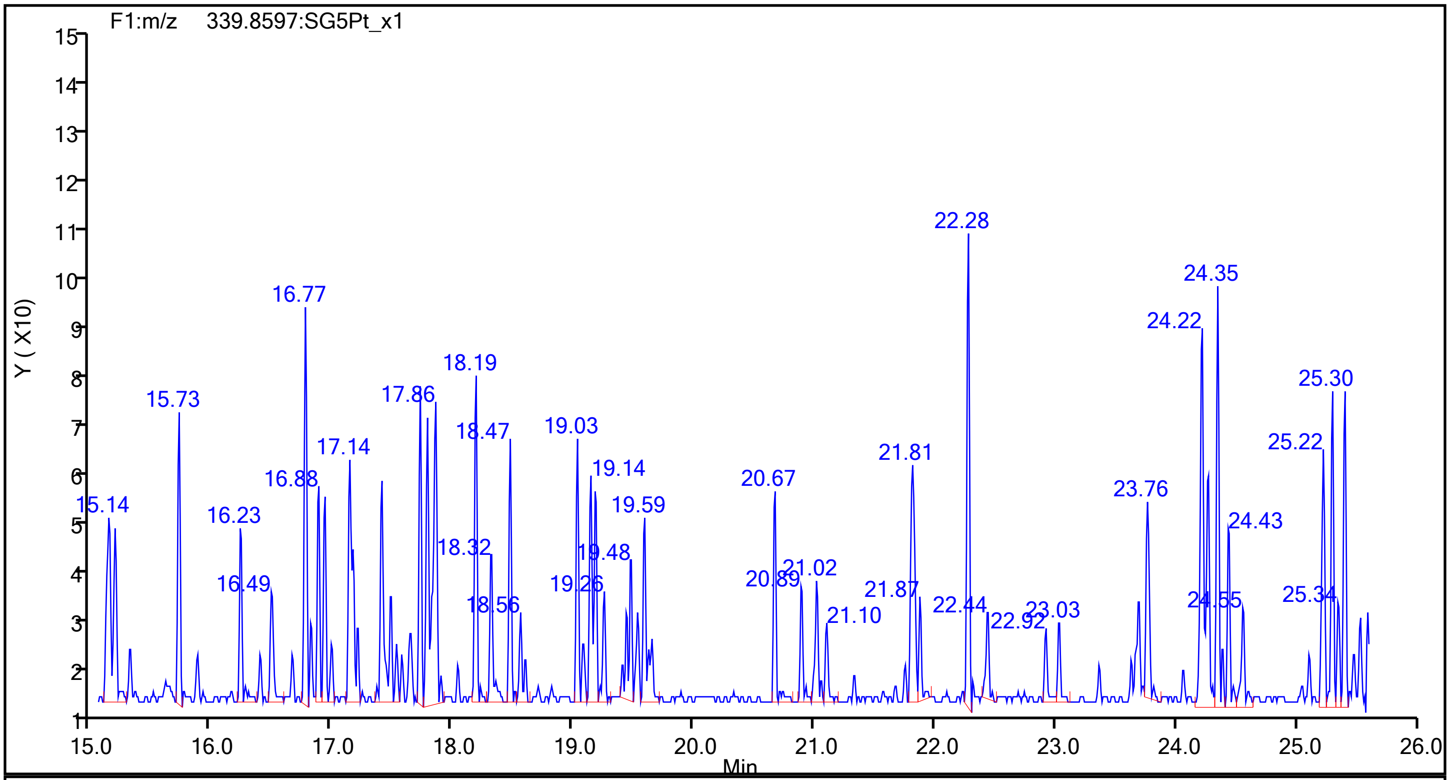

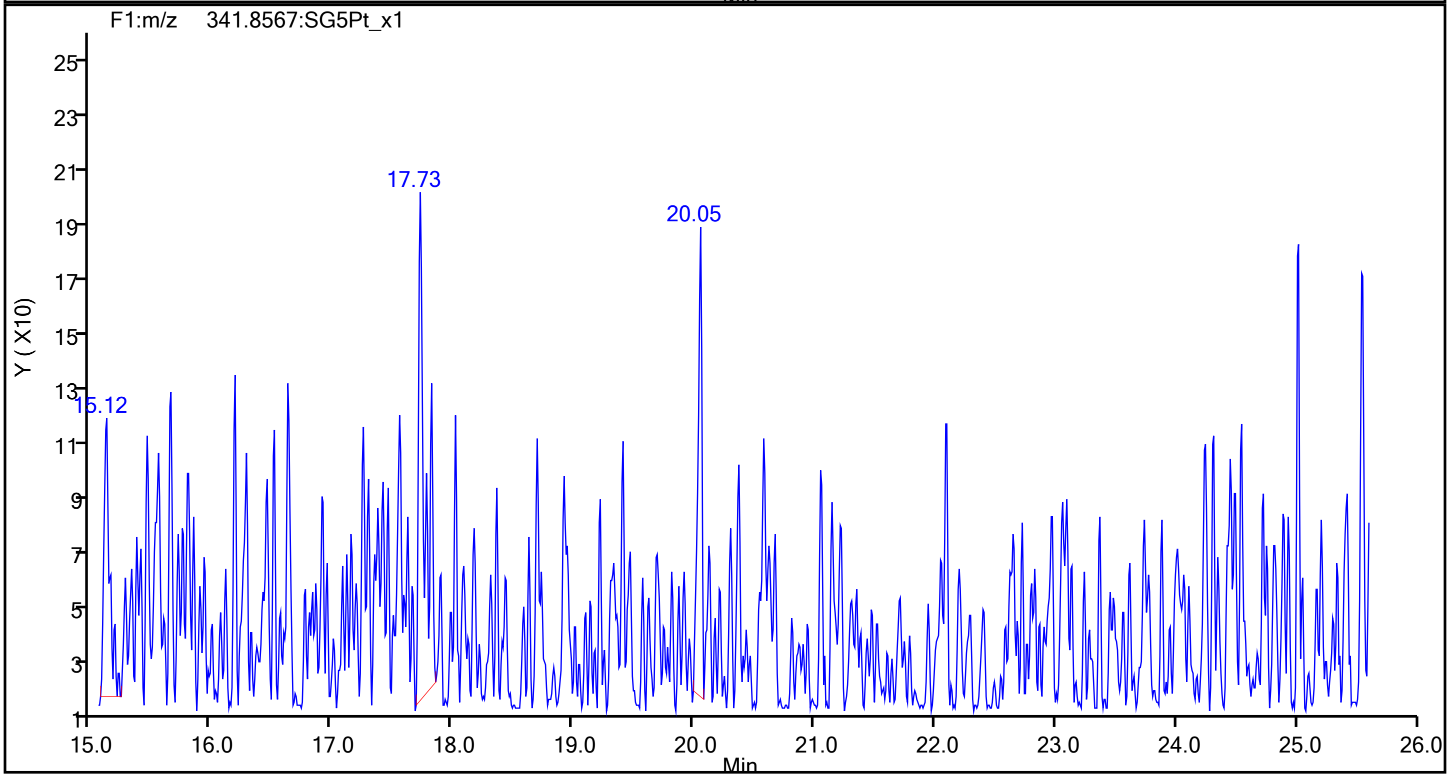

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

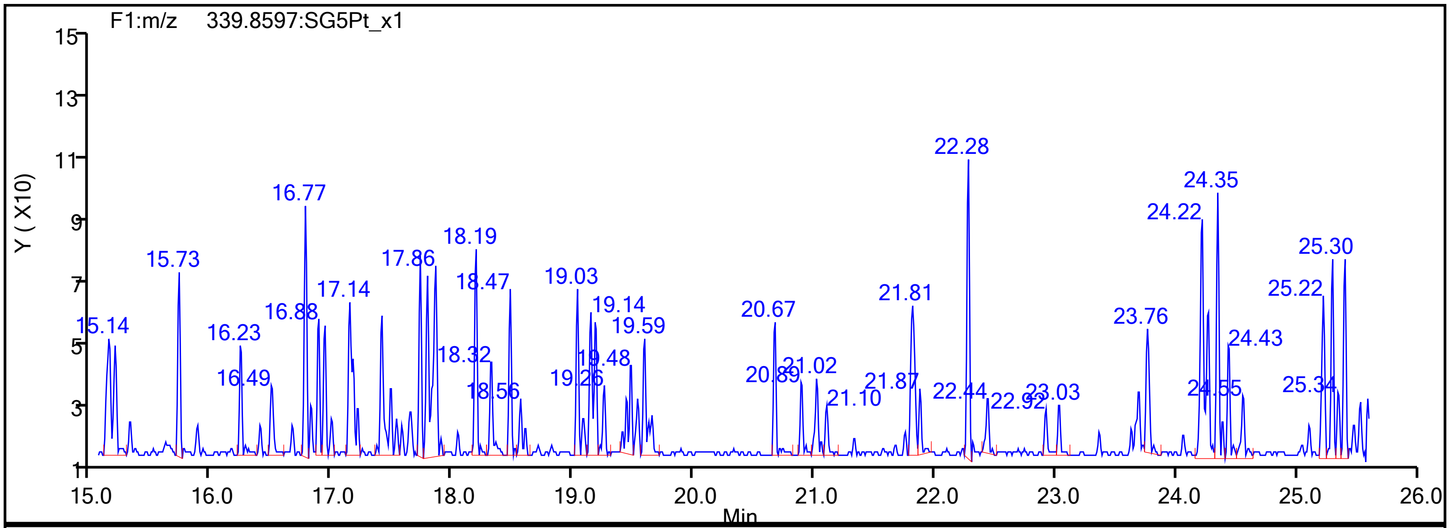

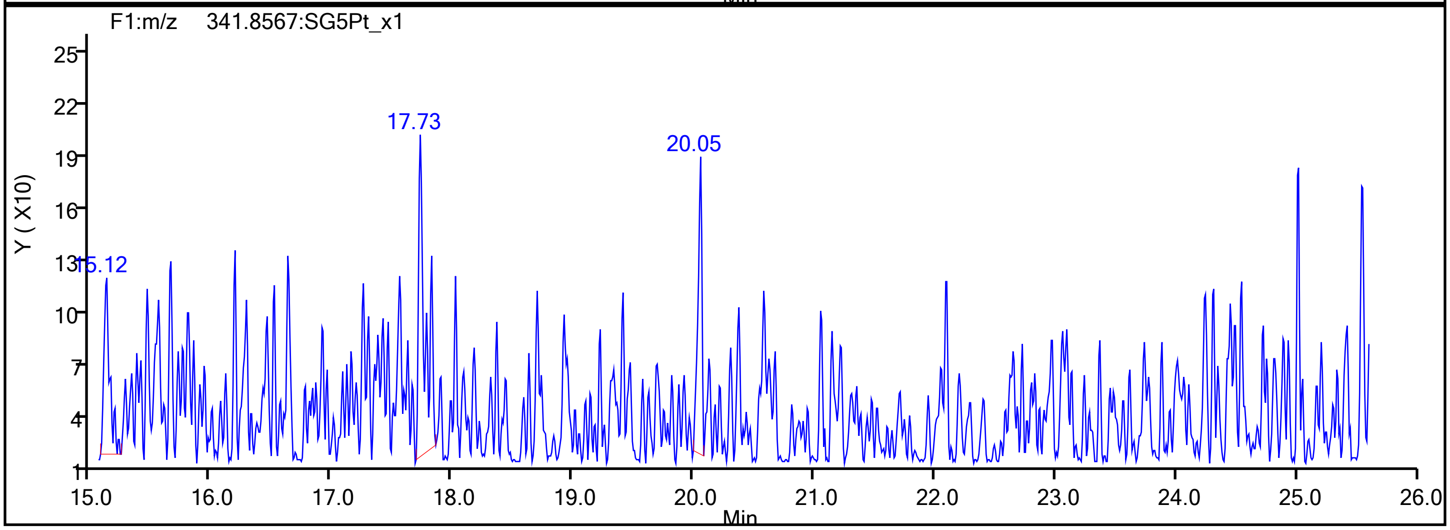

F1 PeCDFs Interference Mass

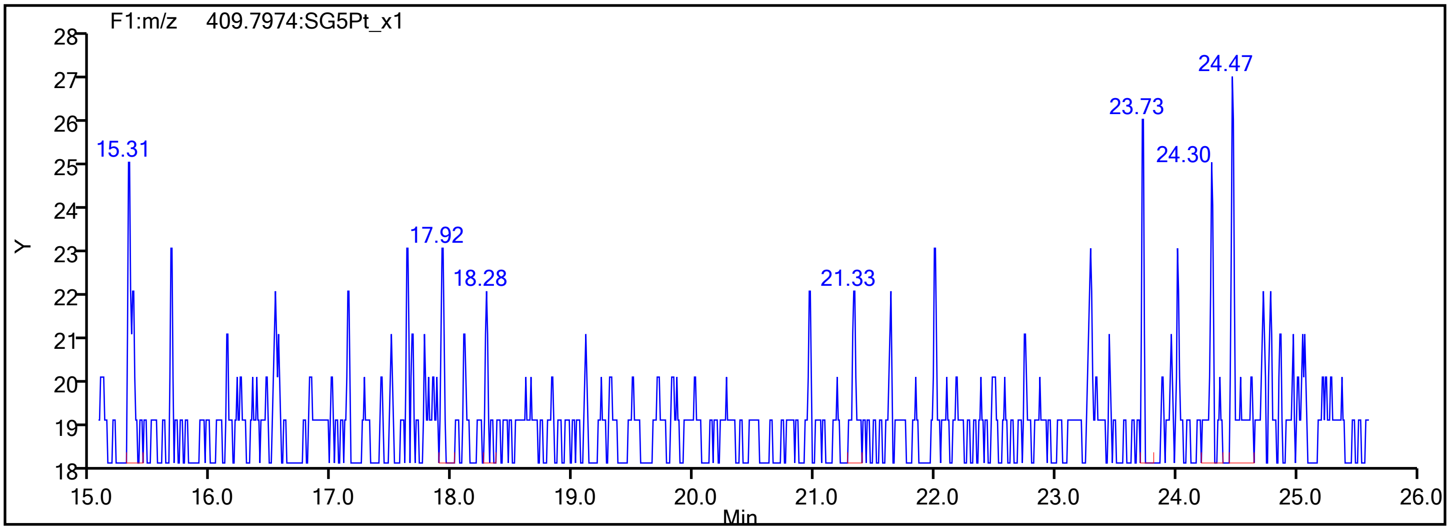

Report Date: 18-Nov-2020 12:35:16   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Injection Date: 17-Nov-2020 15:14:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

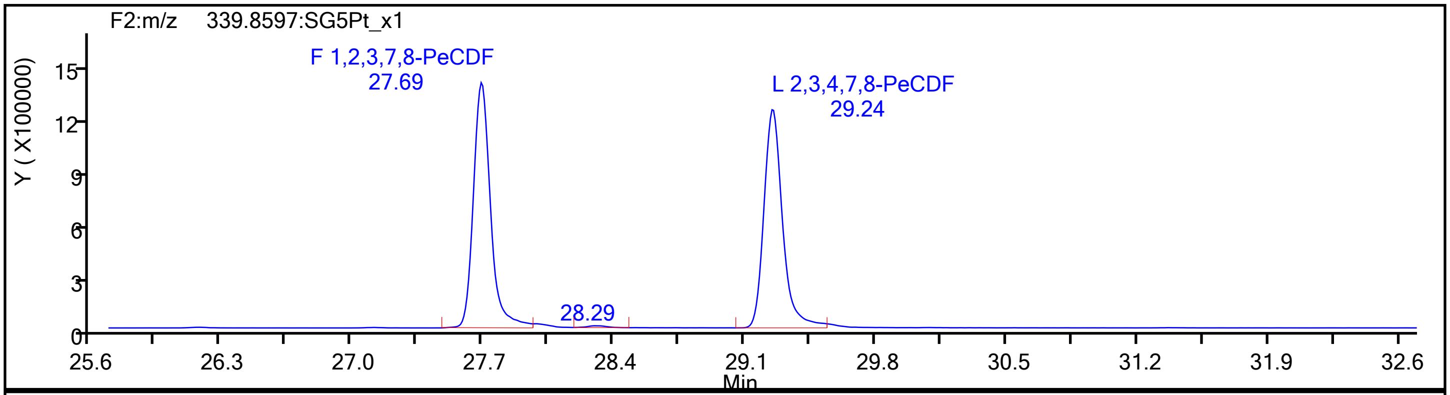

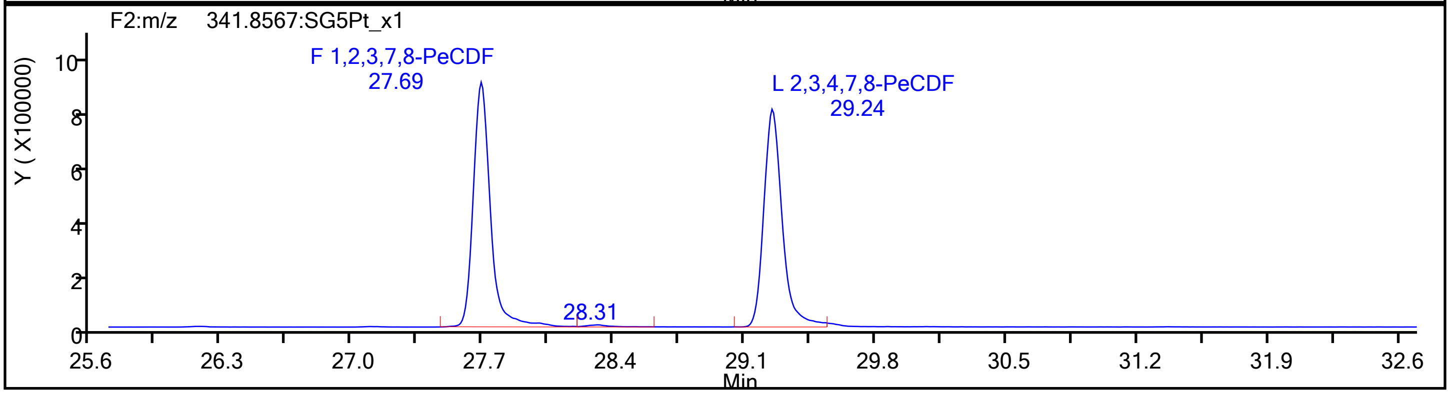

PeCDF Standards

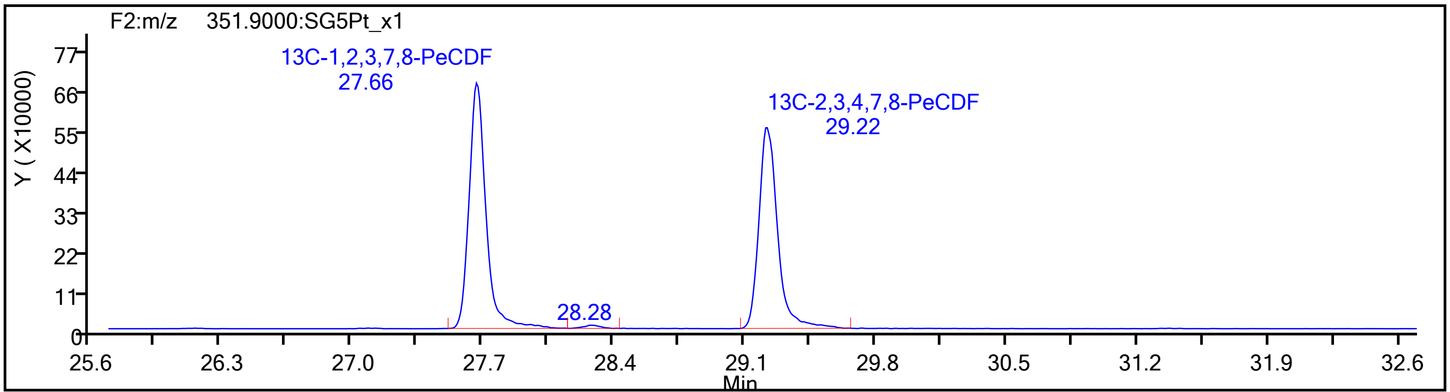

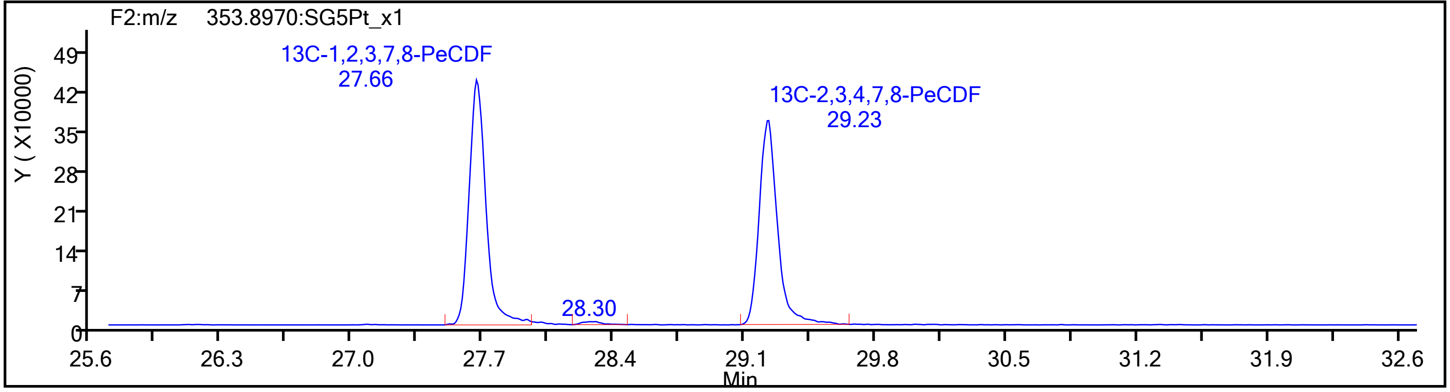

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

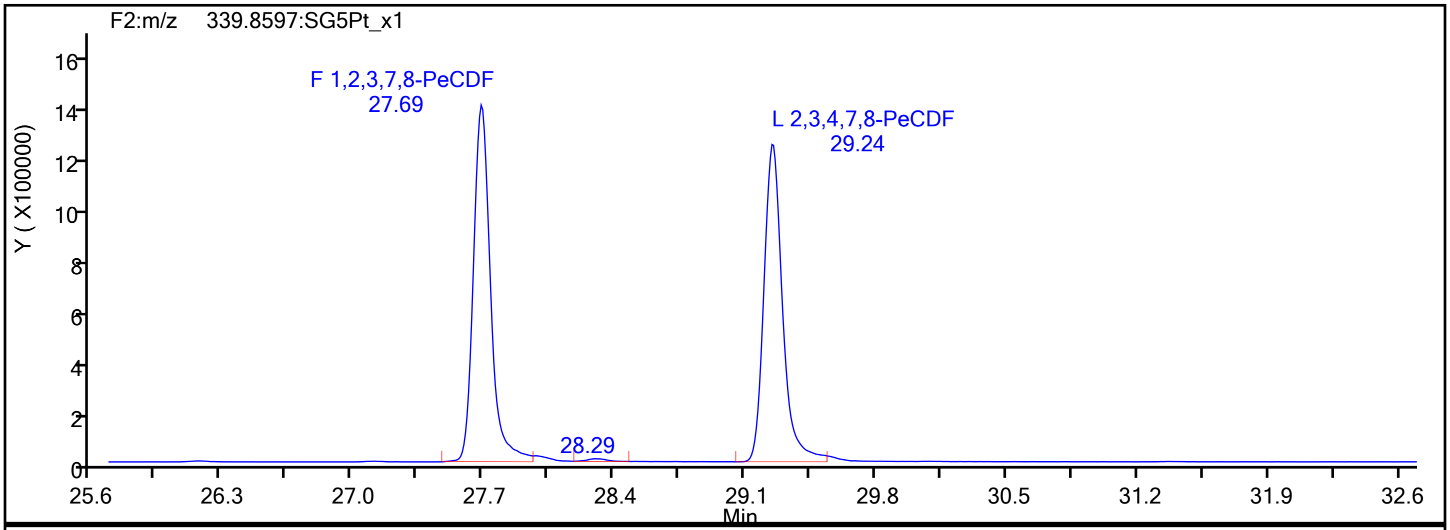

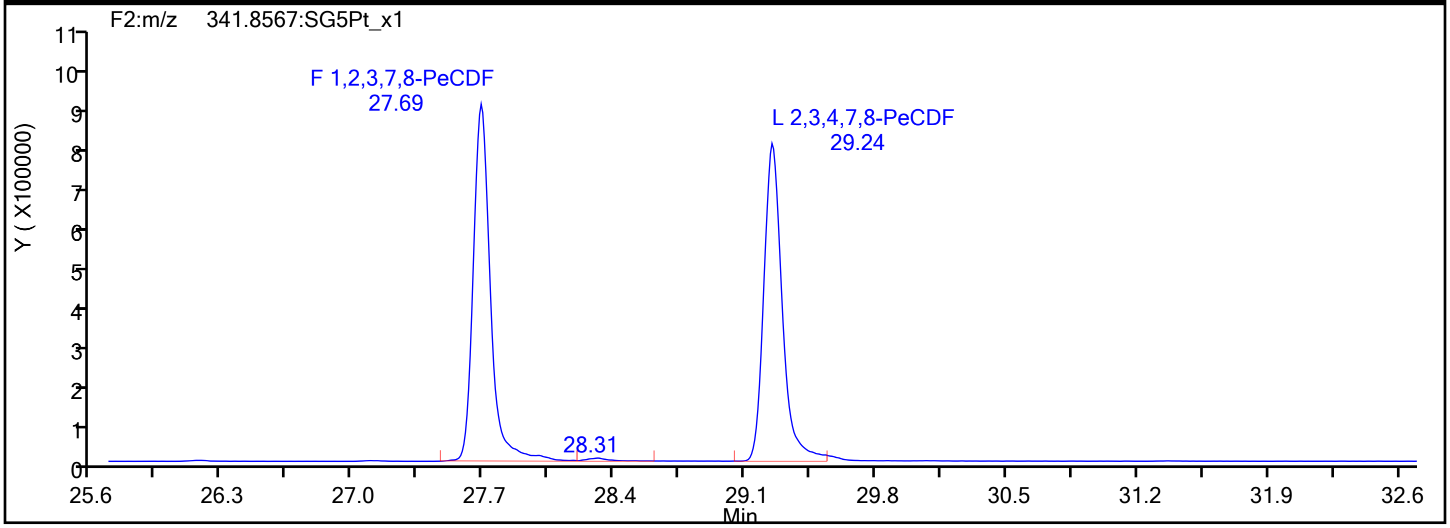

PeCDF Interference Mass

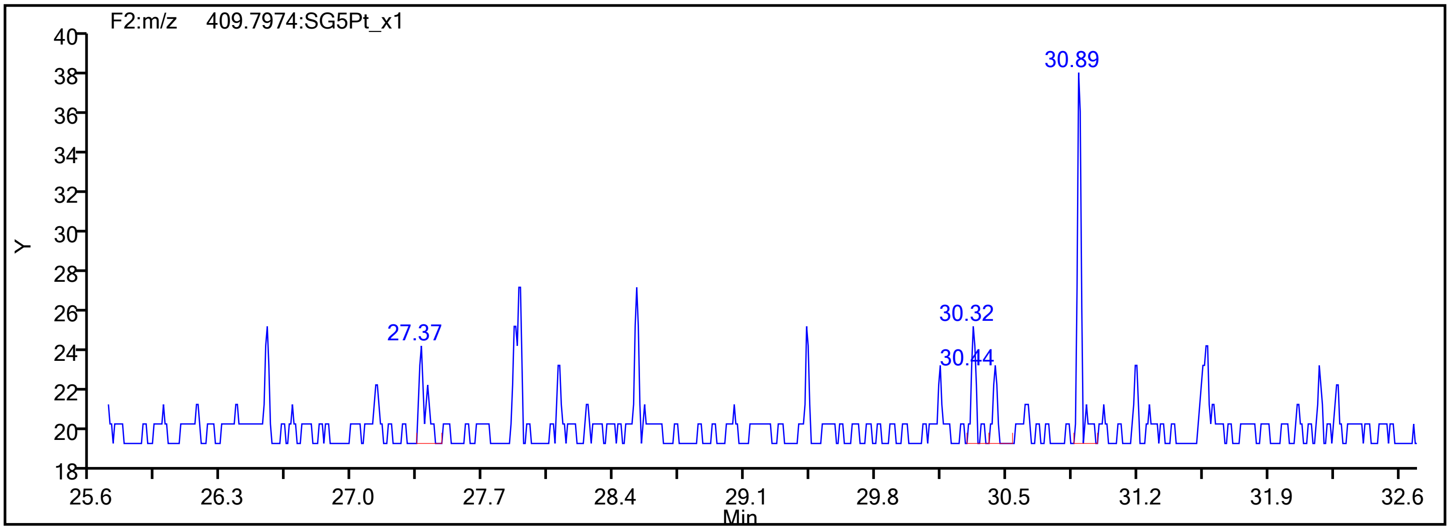

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Method: Dioxin_DFS1
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Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

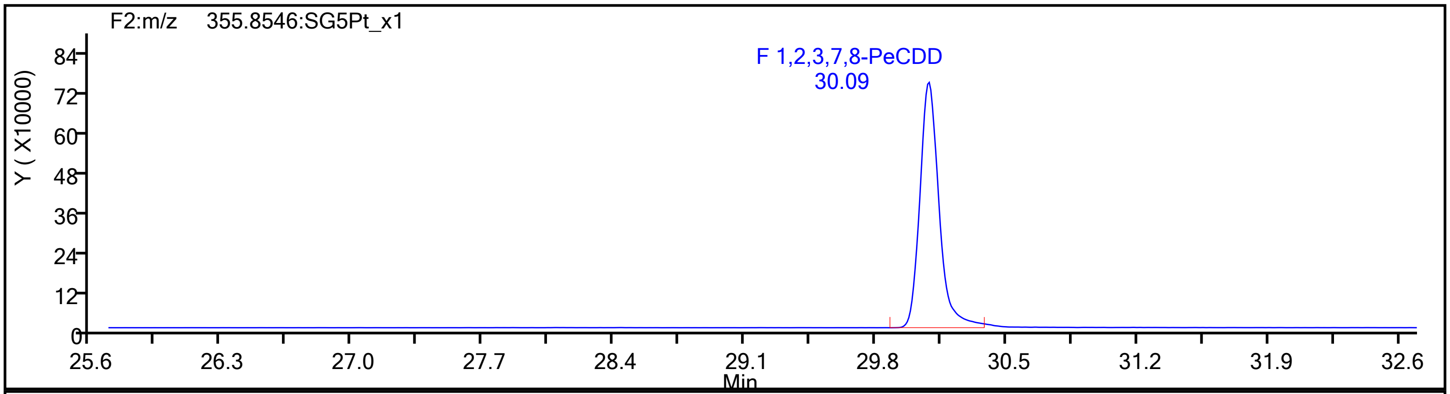

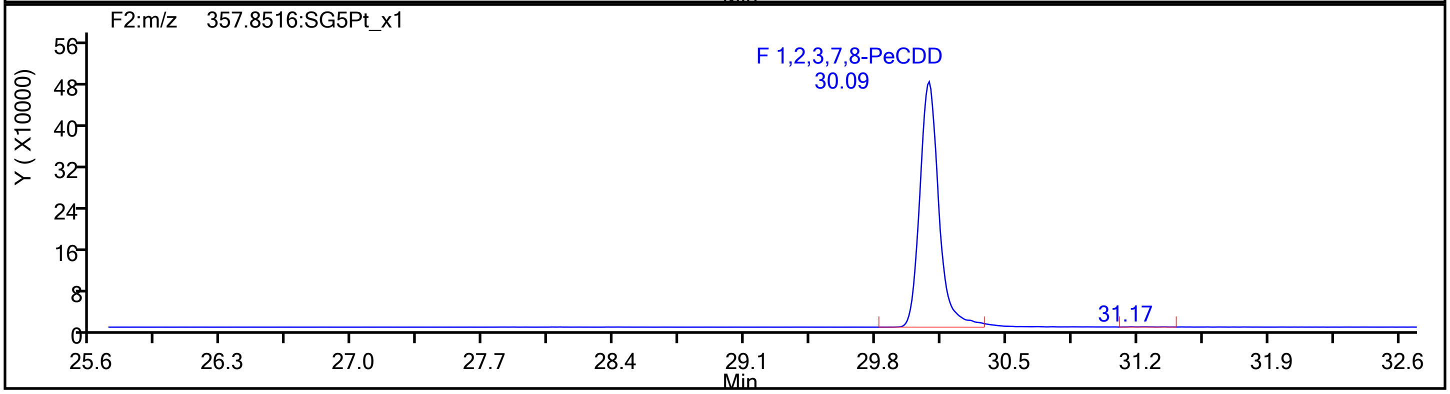

PeCDD Standards

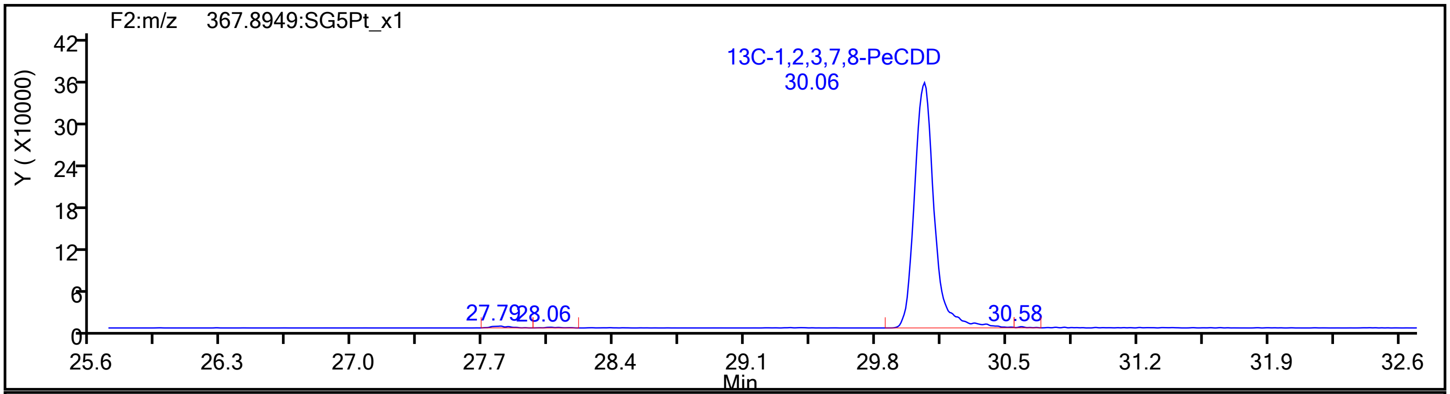

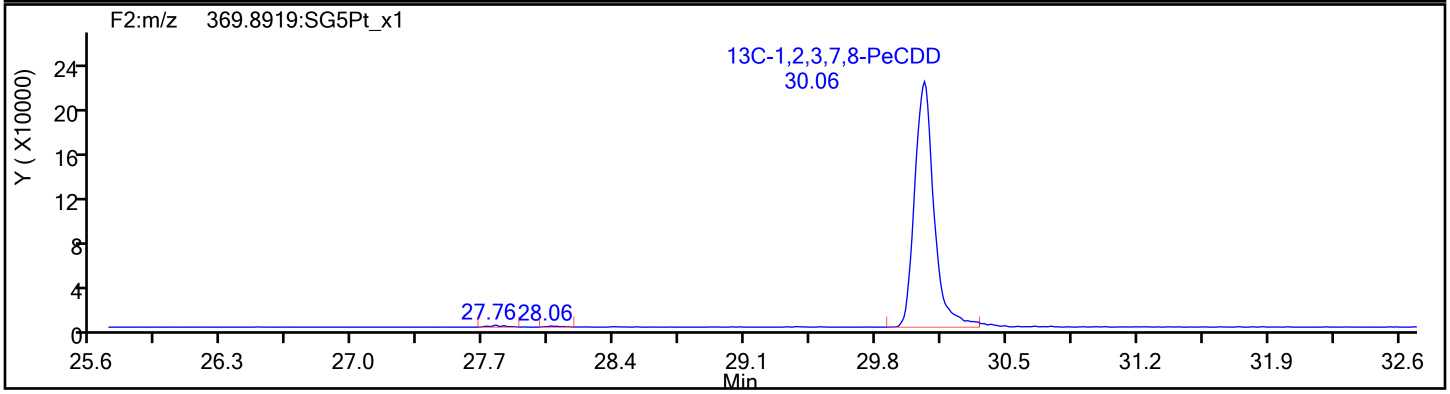

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 15:14:00
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Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

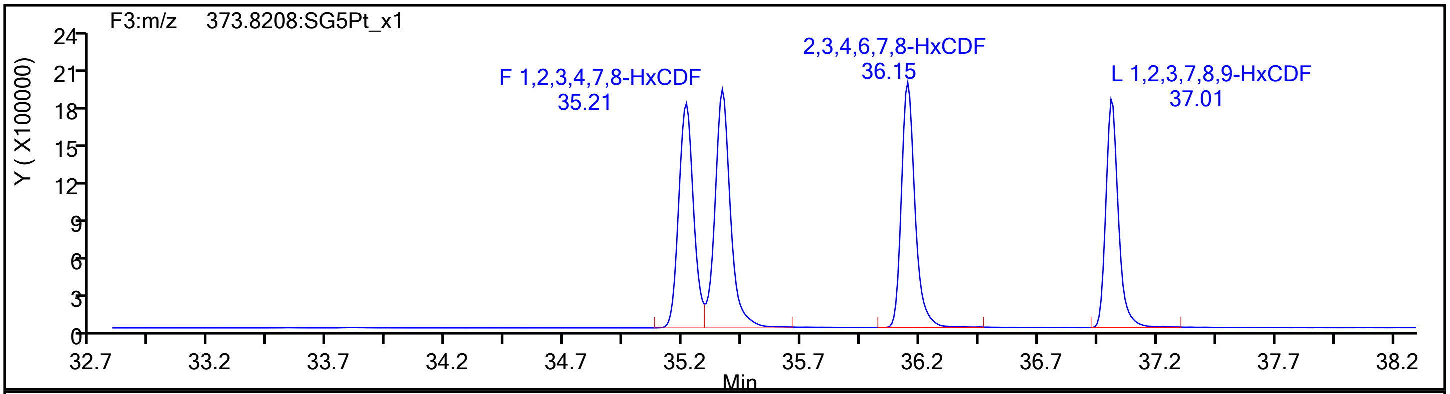

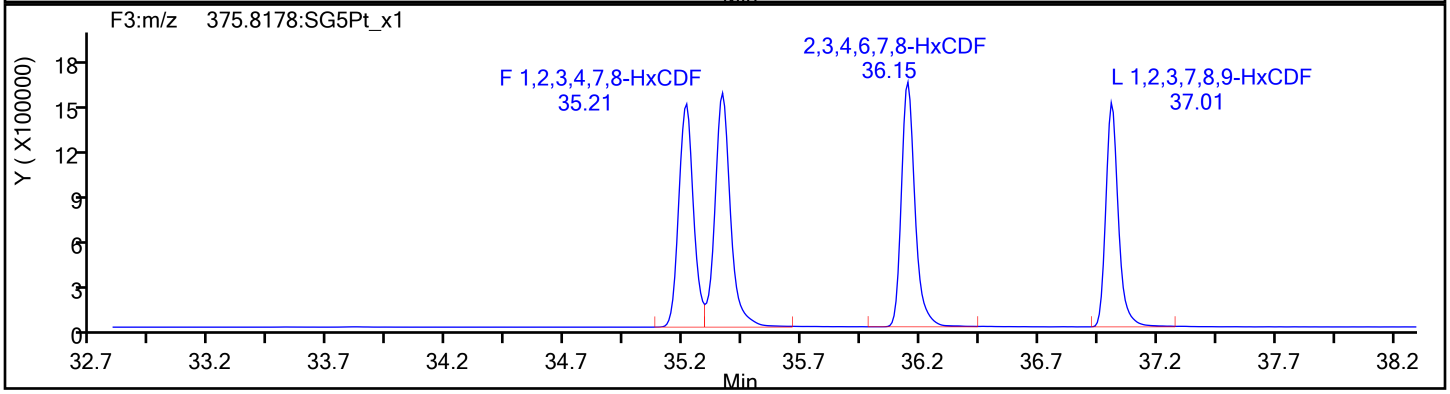

HxCDF Standards

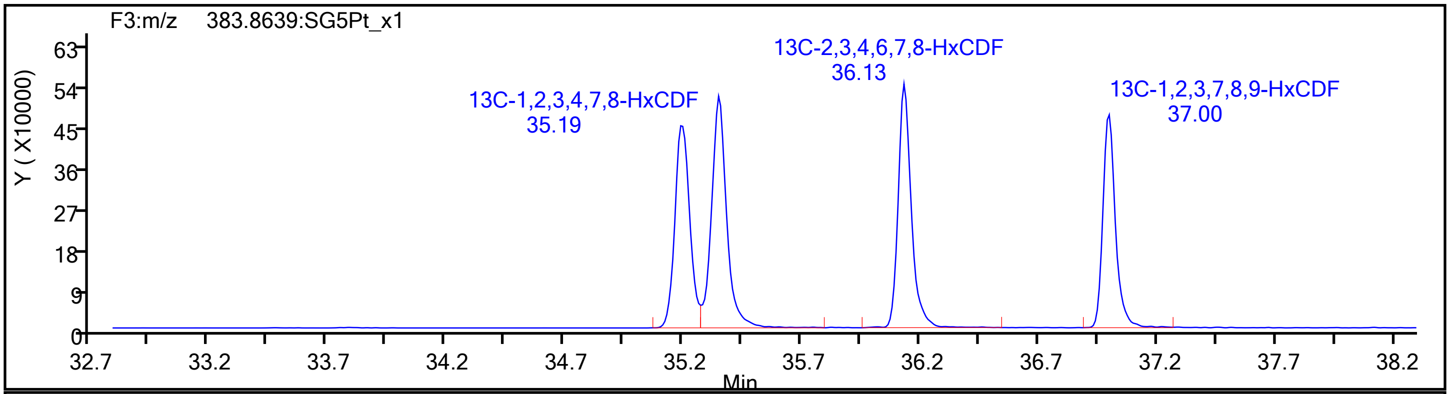

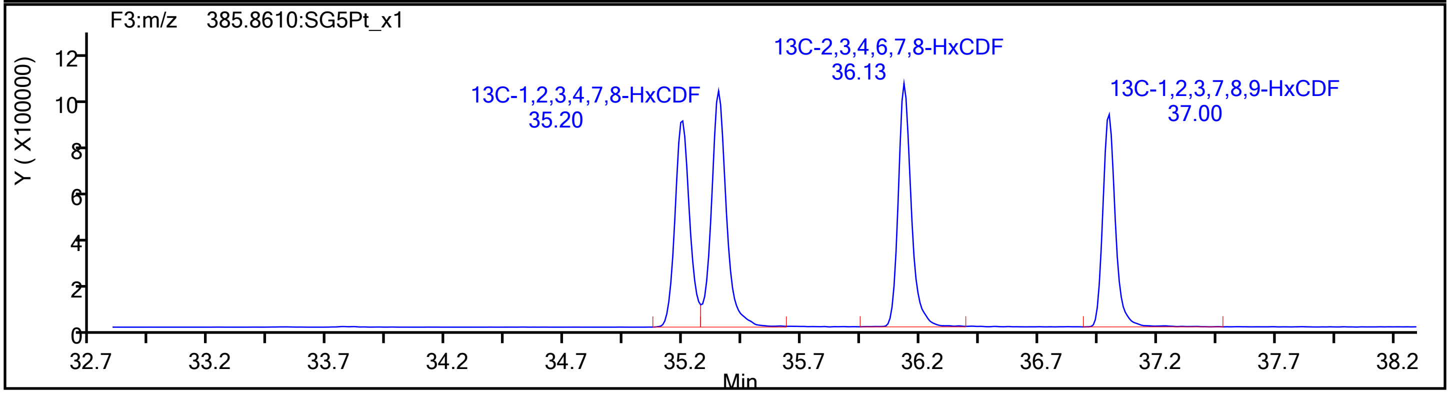

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

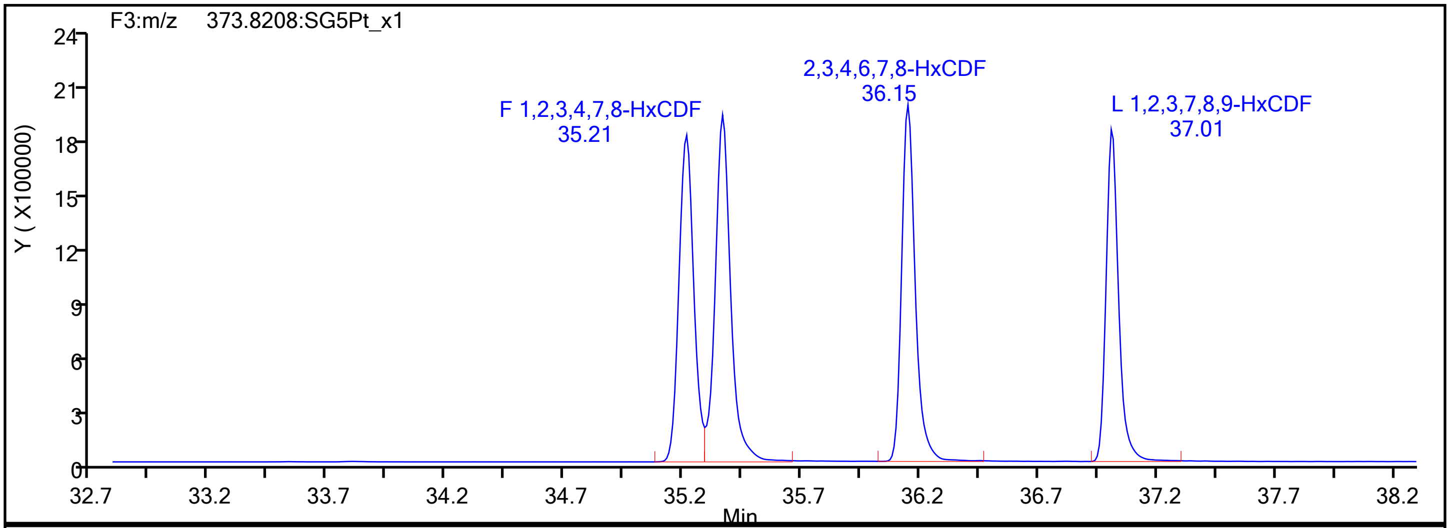

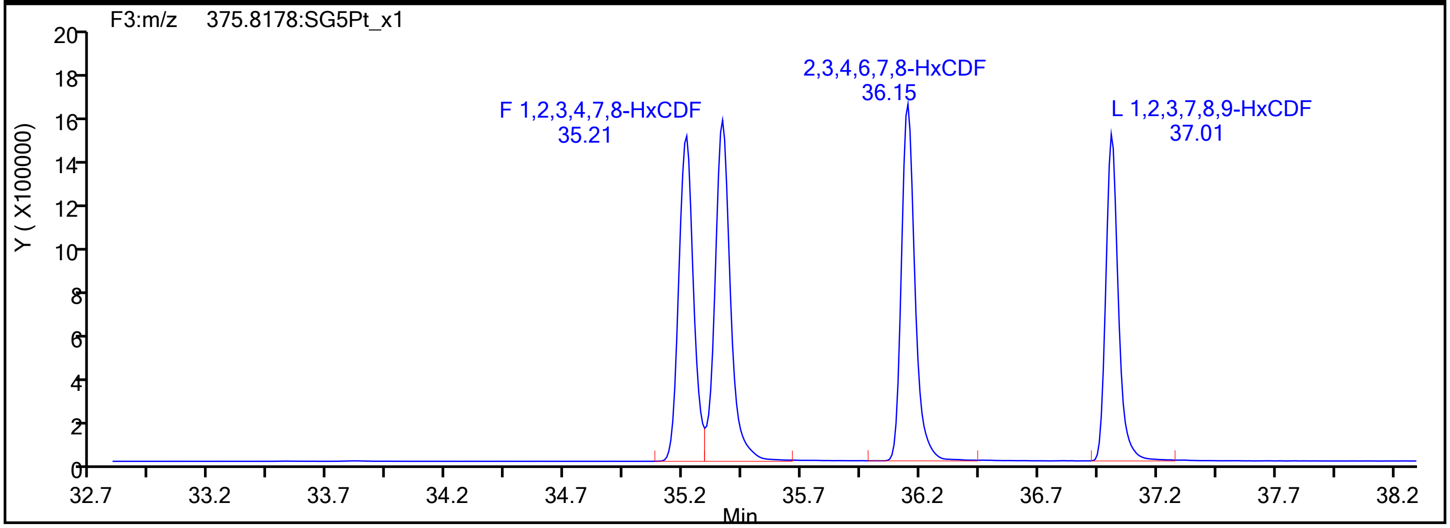

HxCDF Interference Mass

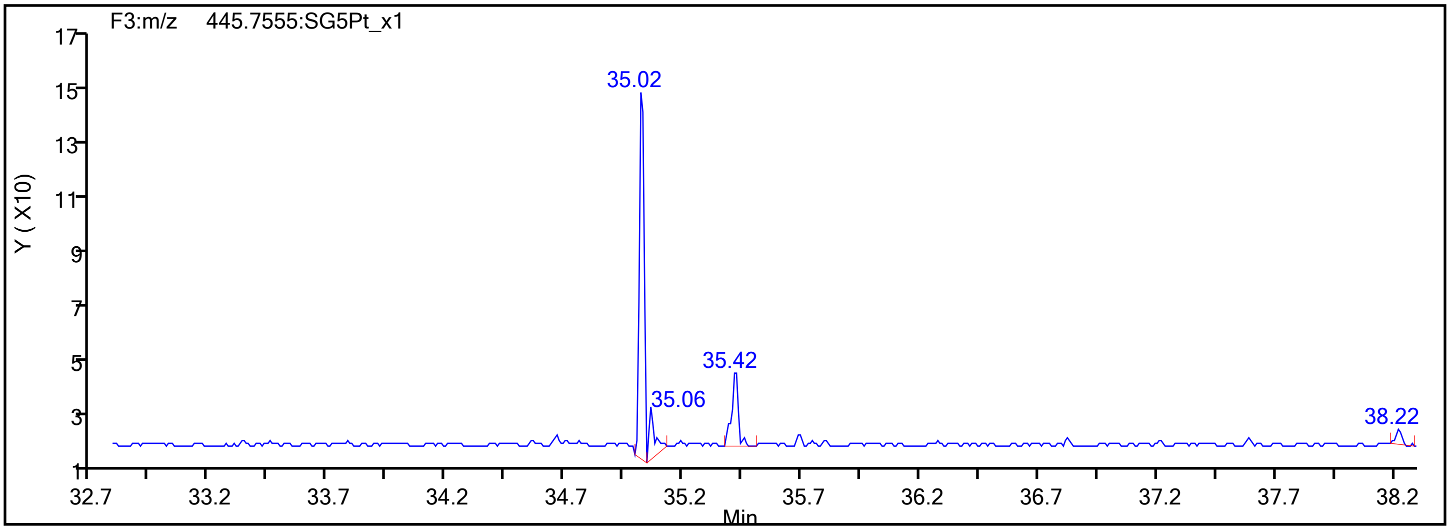

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

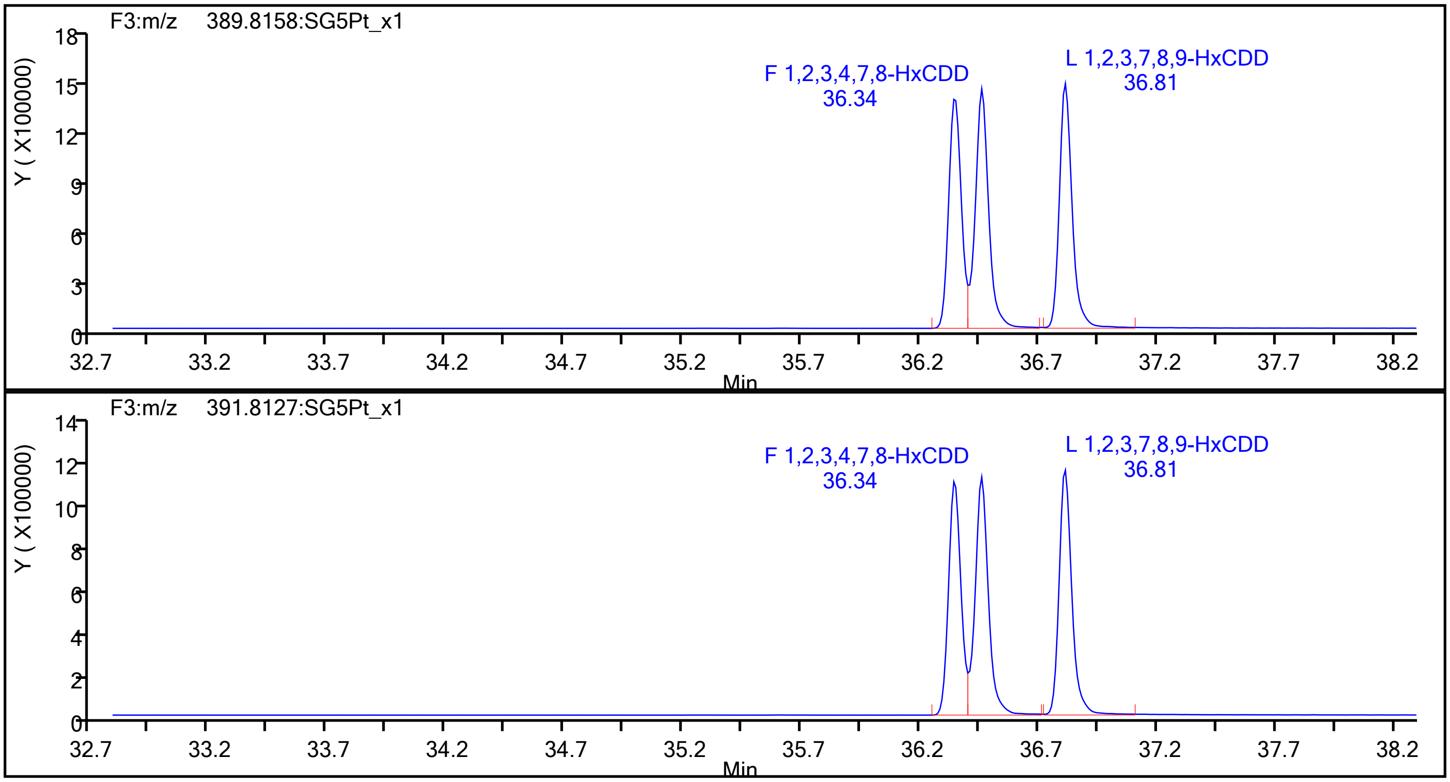

HxCDD Standards

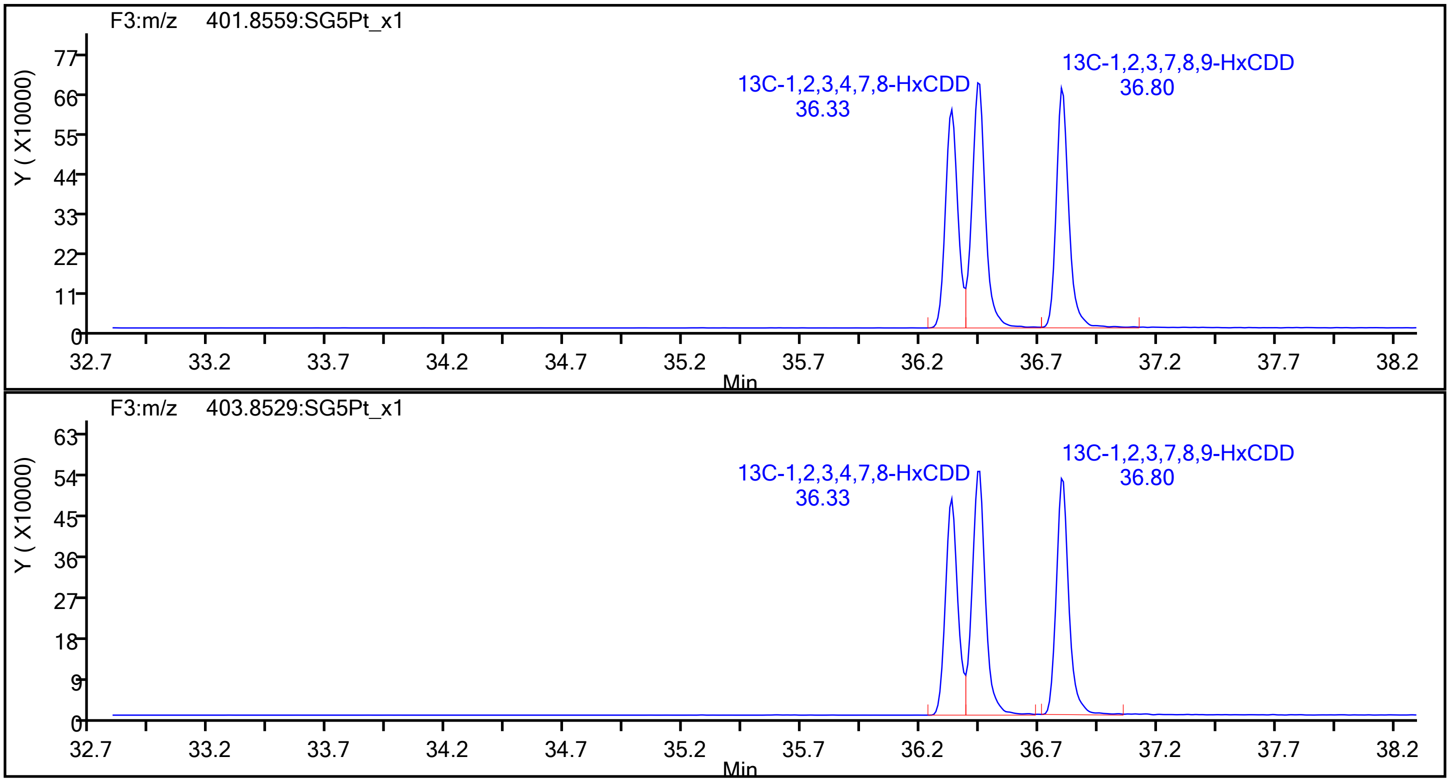

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d

Injection Date: 17-Nov-2020 15:14:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

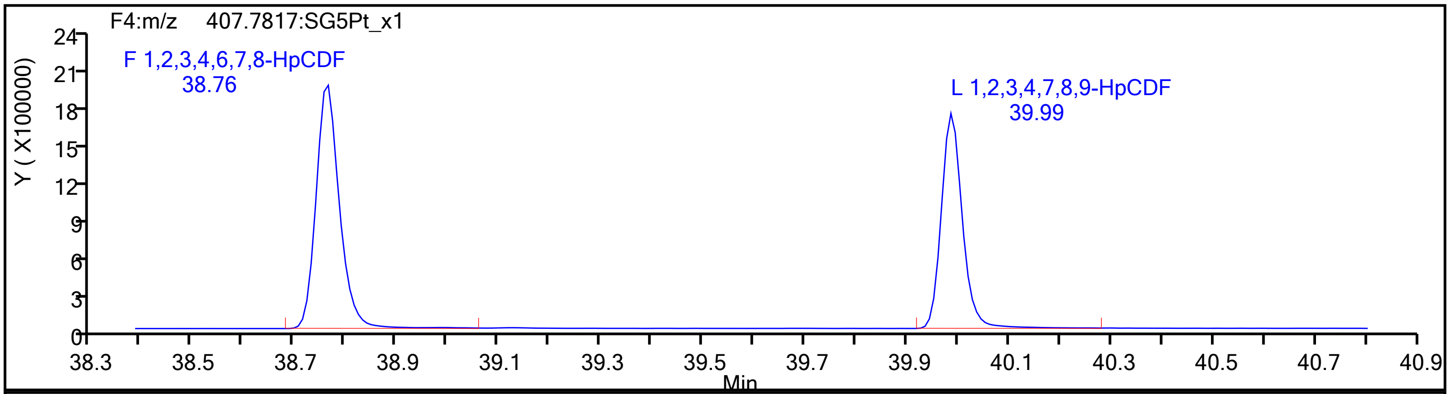

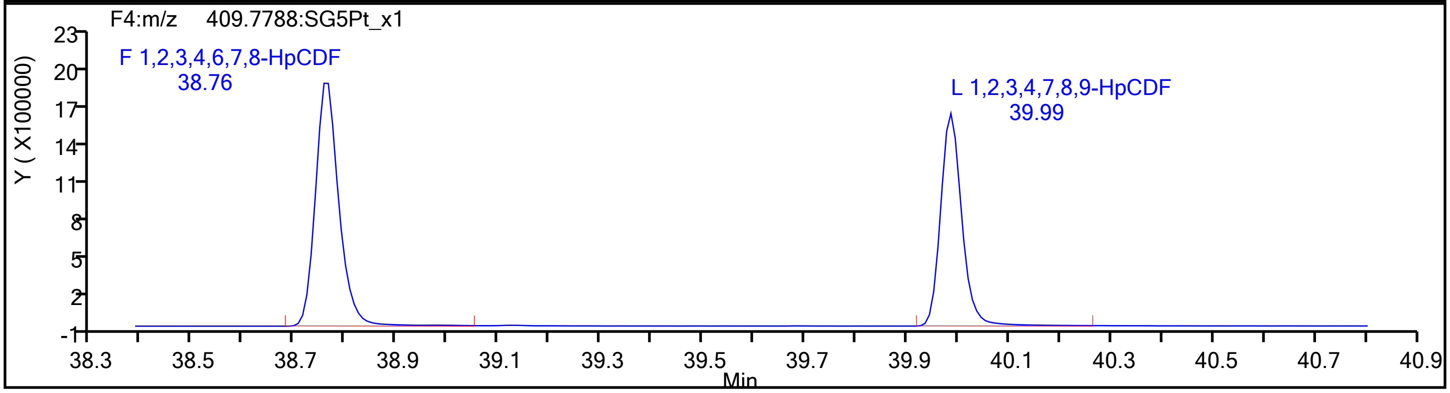

HpCDF Standards

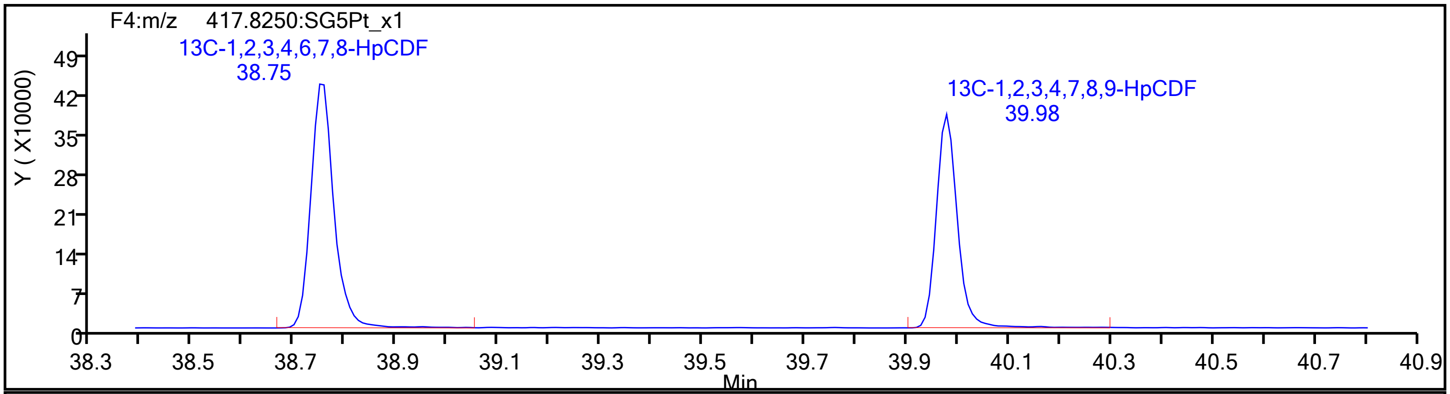

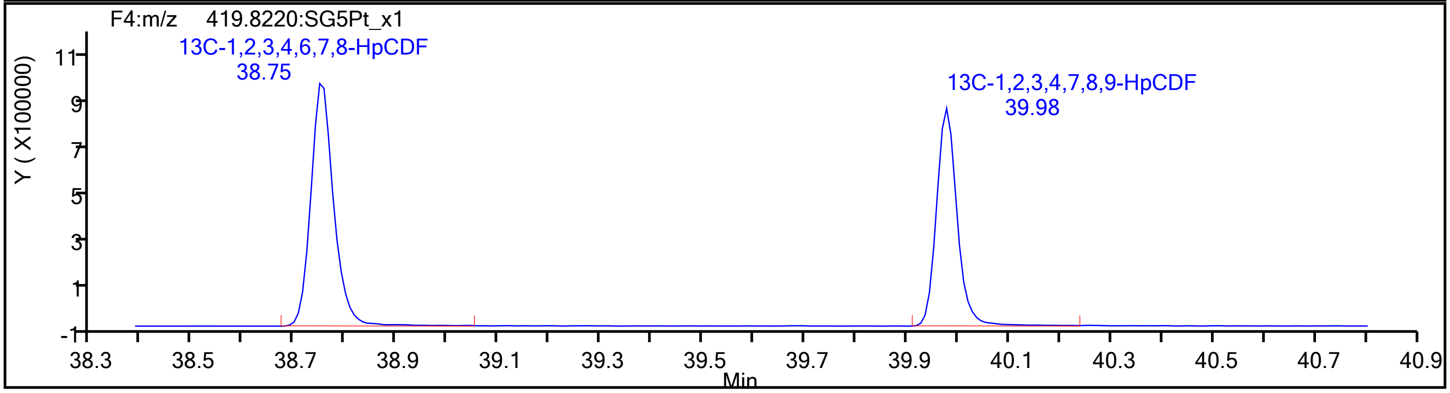

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

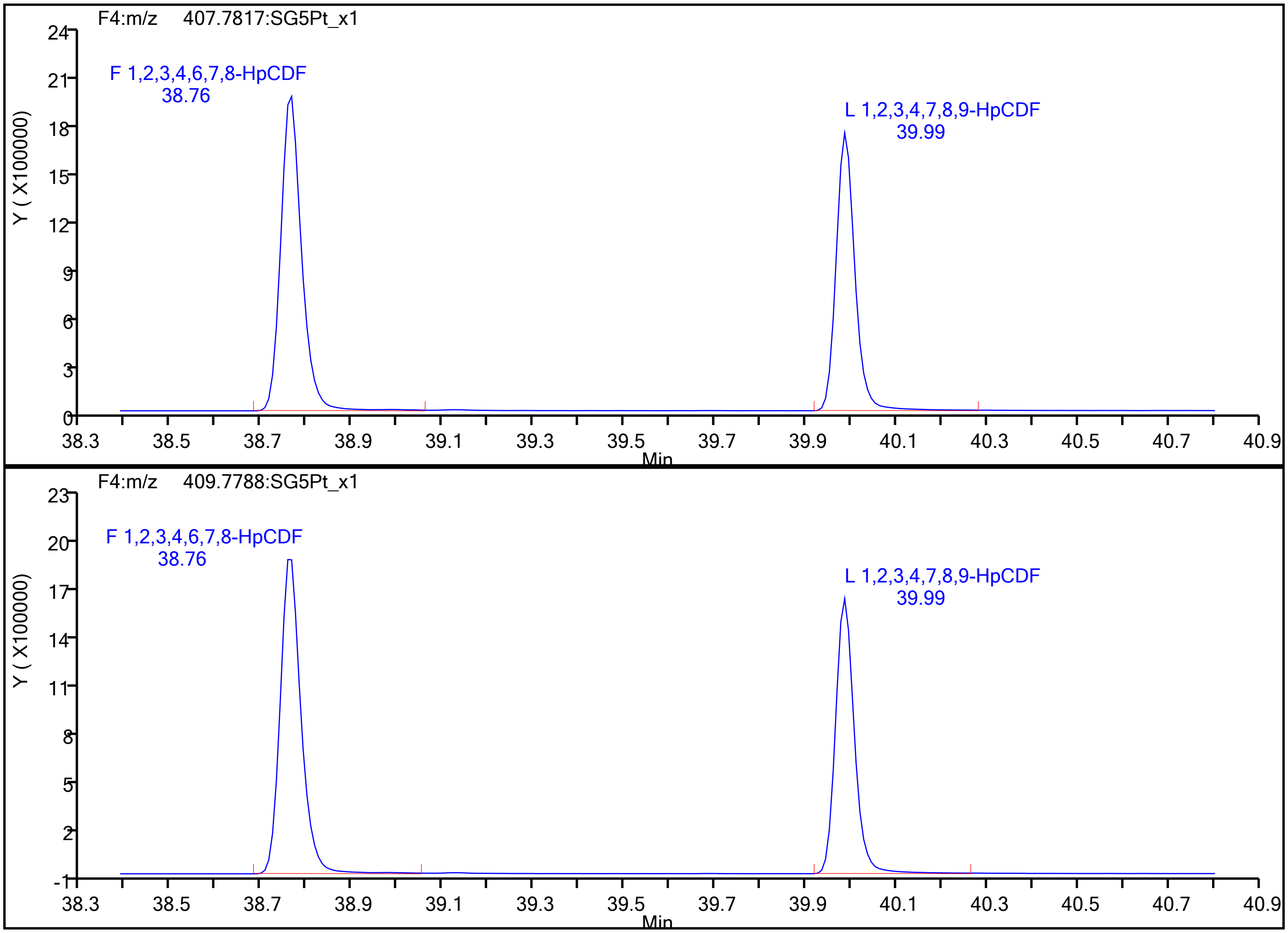

HpCDF Interference Mass

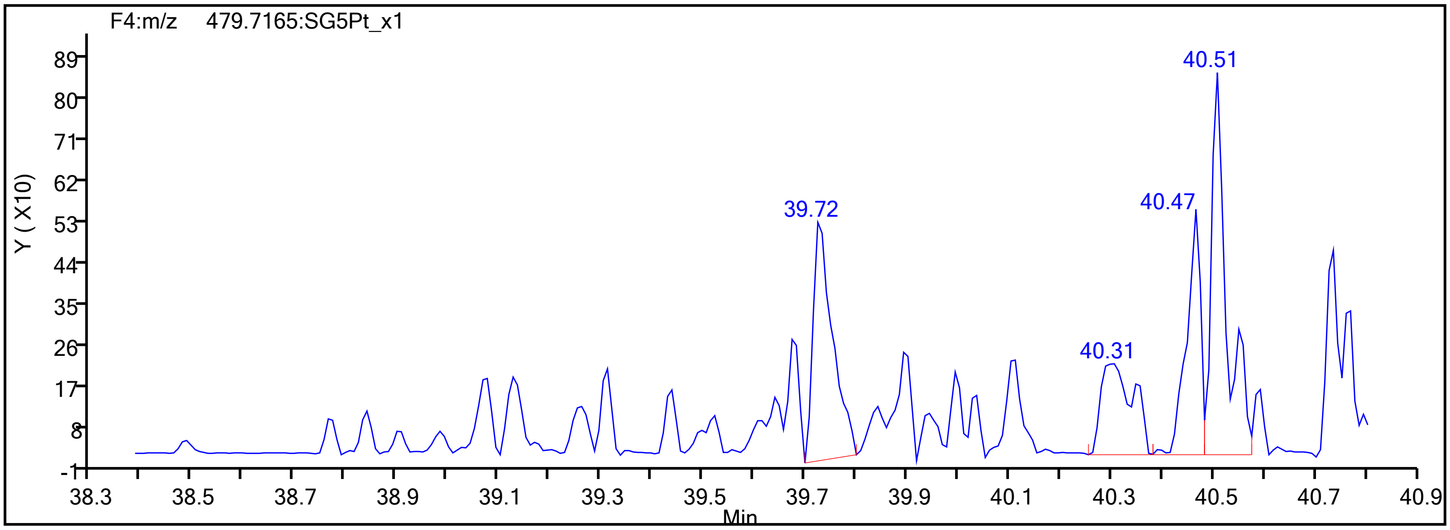

Report Date: 18-Nov-2020 12:35:16
Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

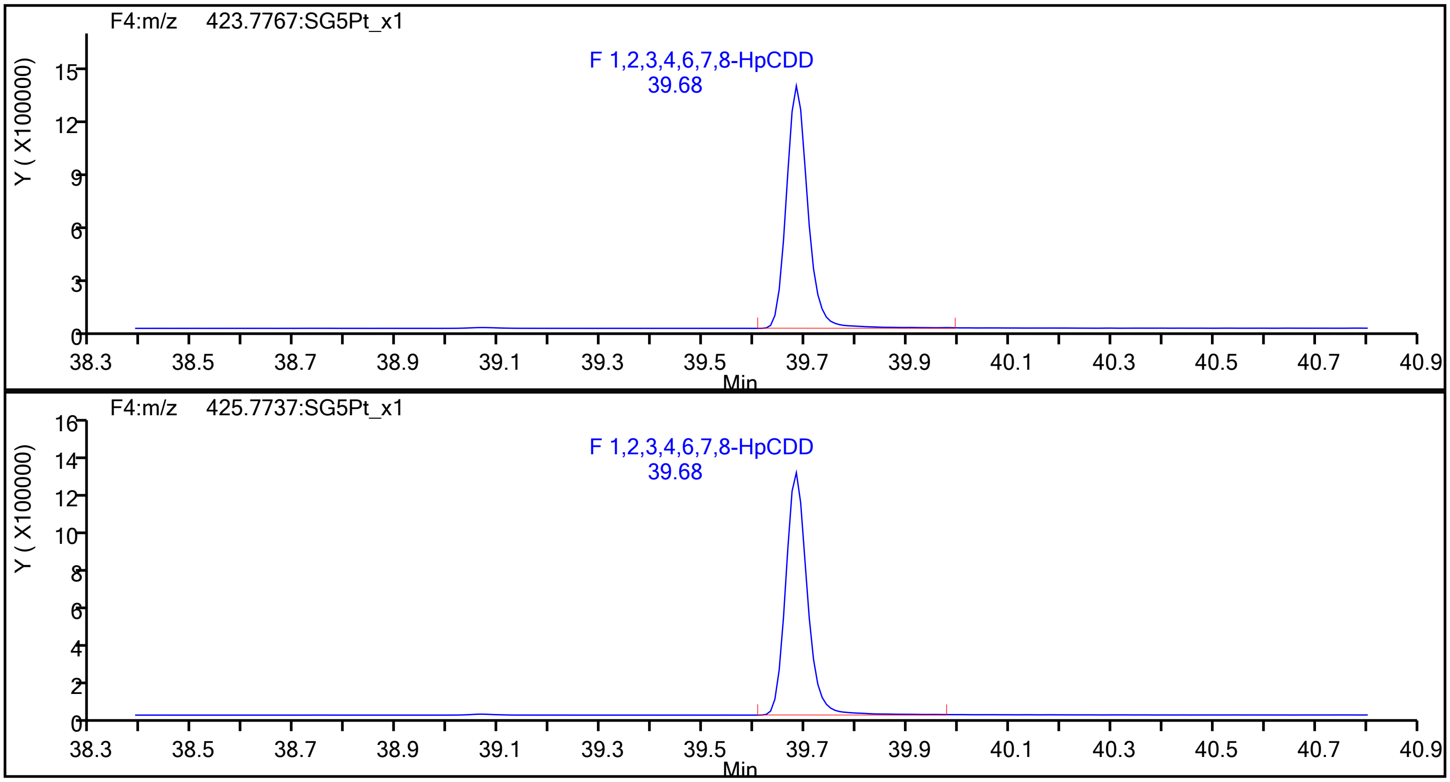

HpCDD Standards

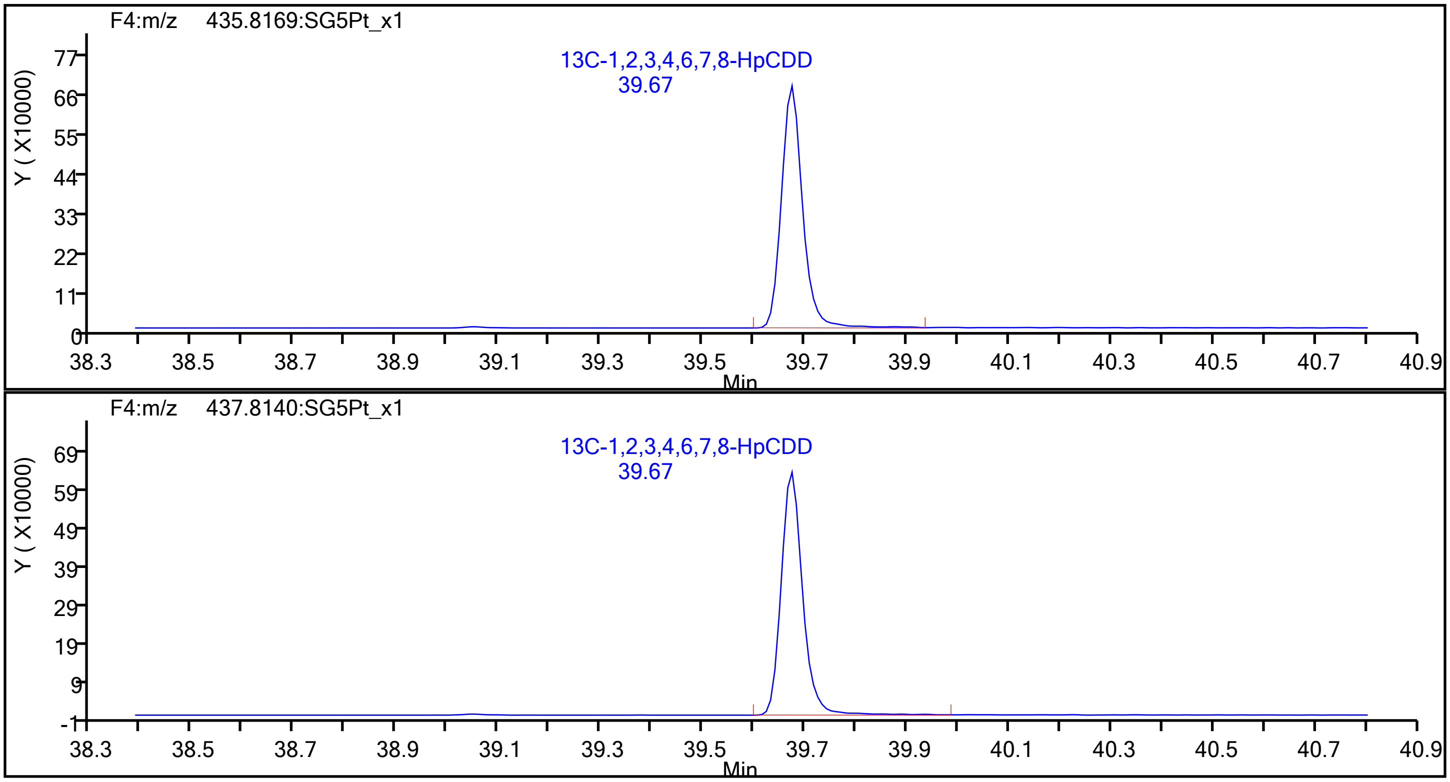

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

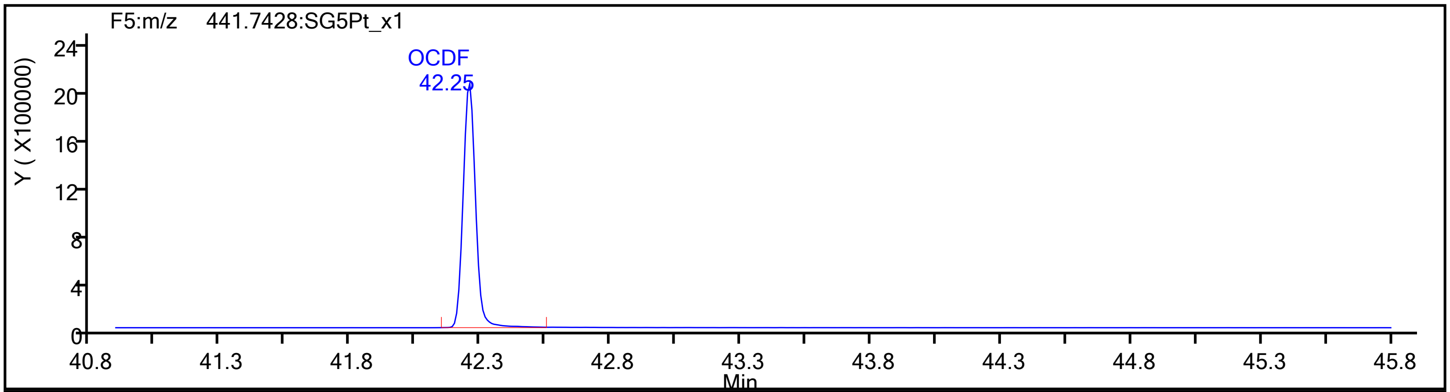

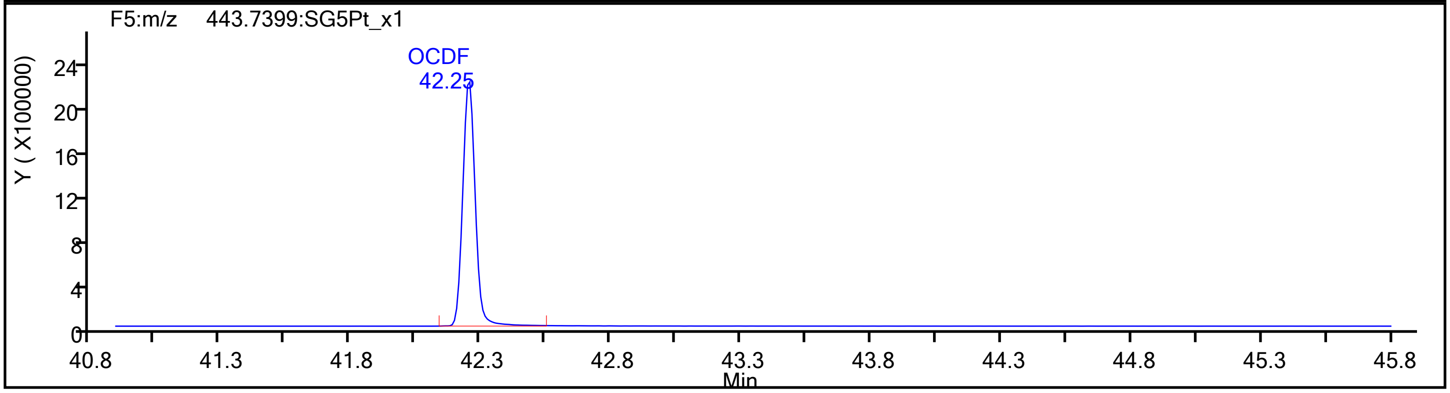

OCDF Standards

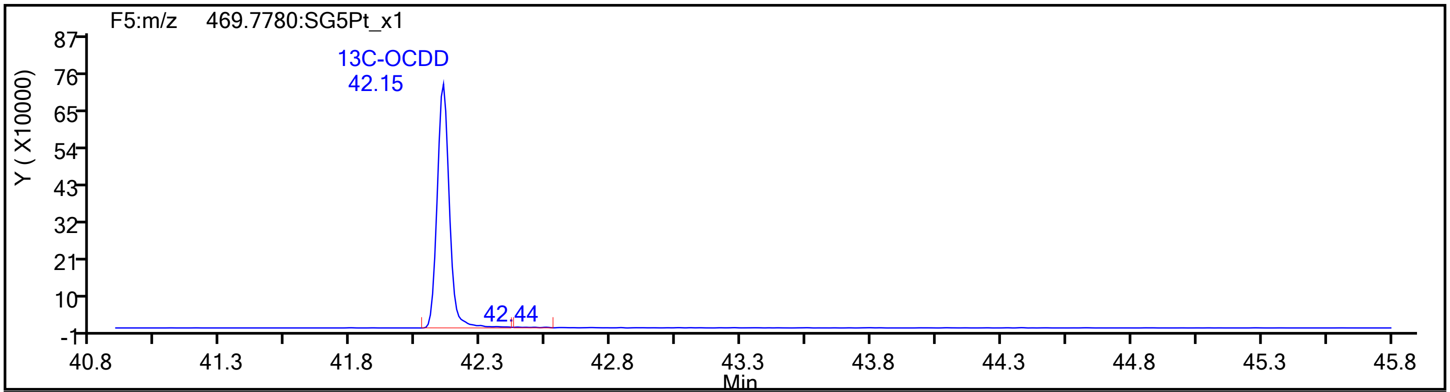

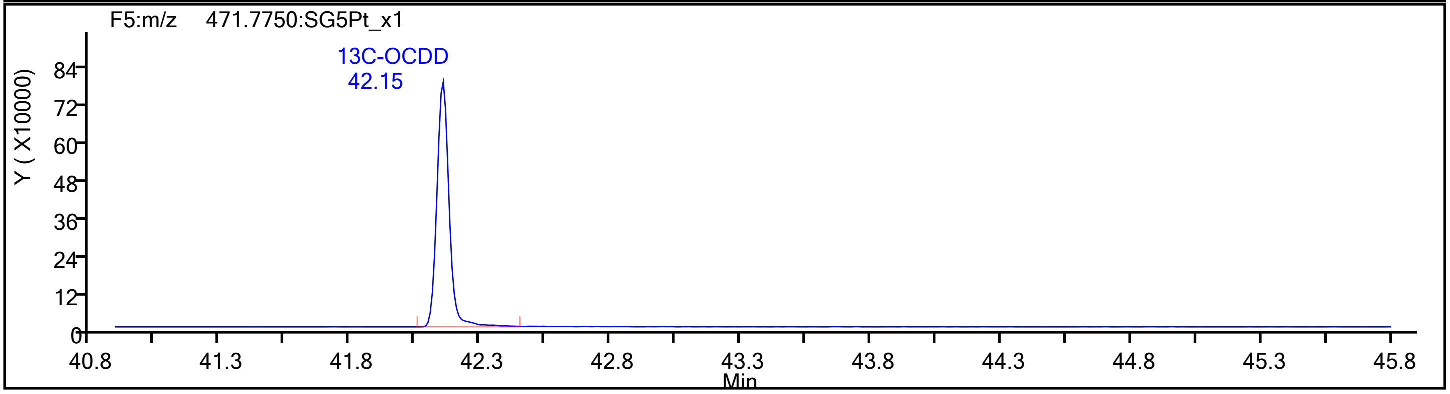

Report Date: 18-Nov-2020 12:35:16
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Injection Date: 17-Nov-2020 15:14:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

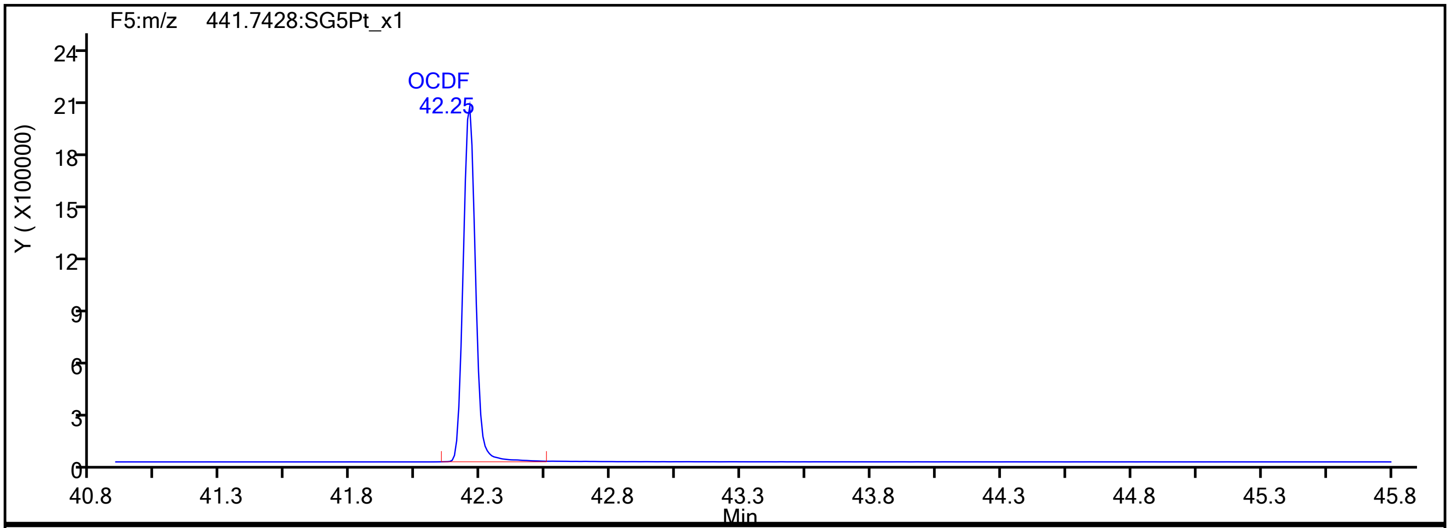

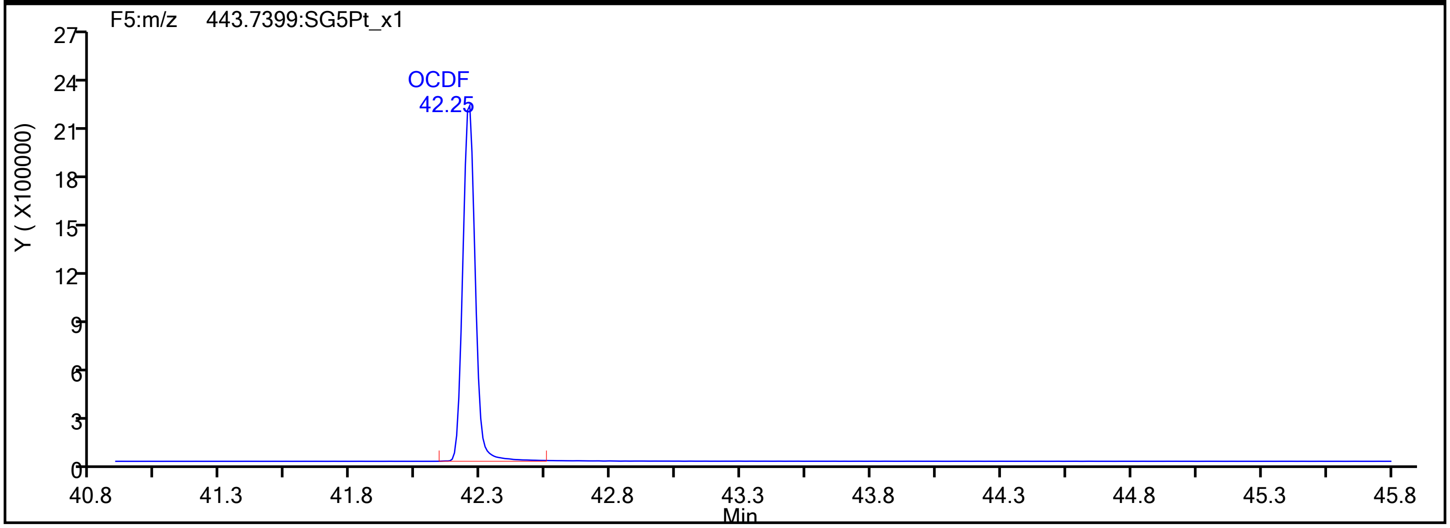

OCDF Interference Mass

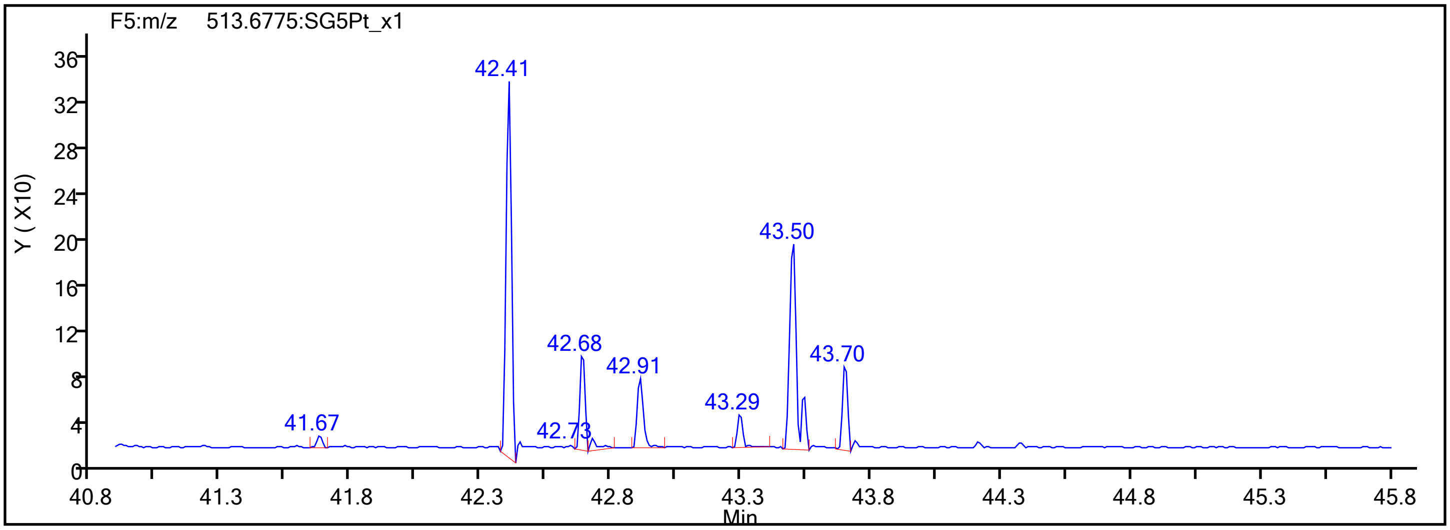

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

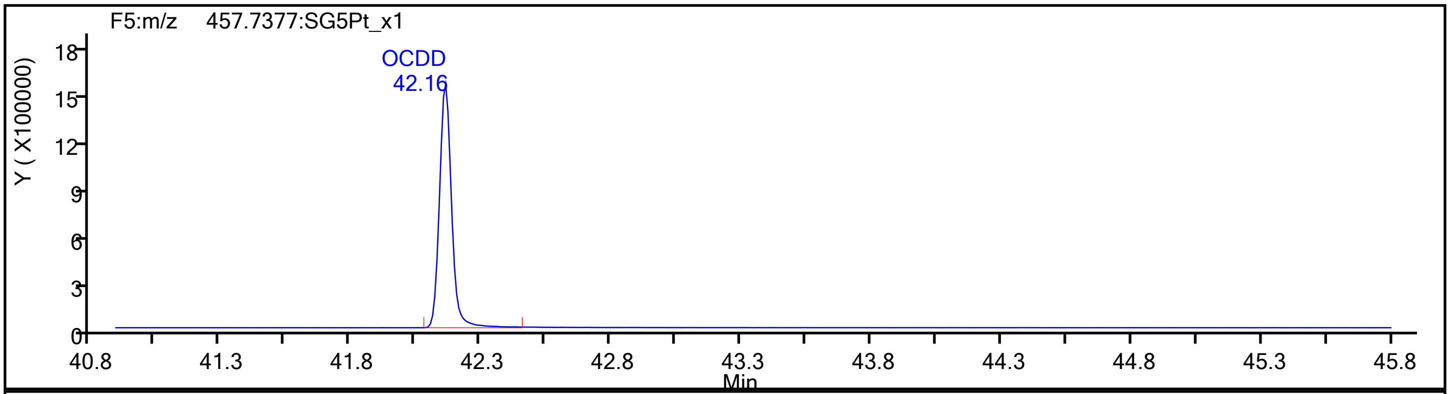

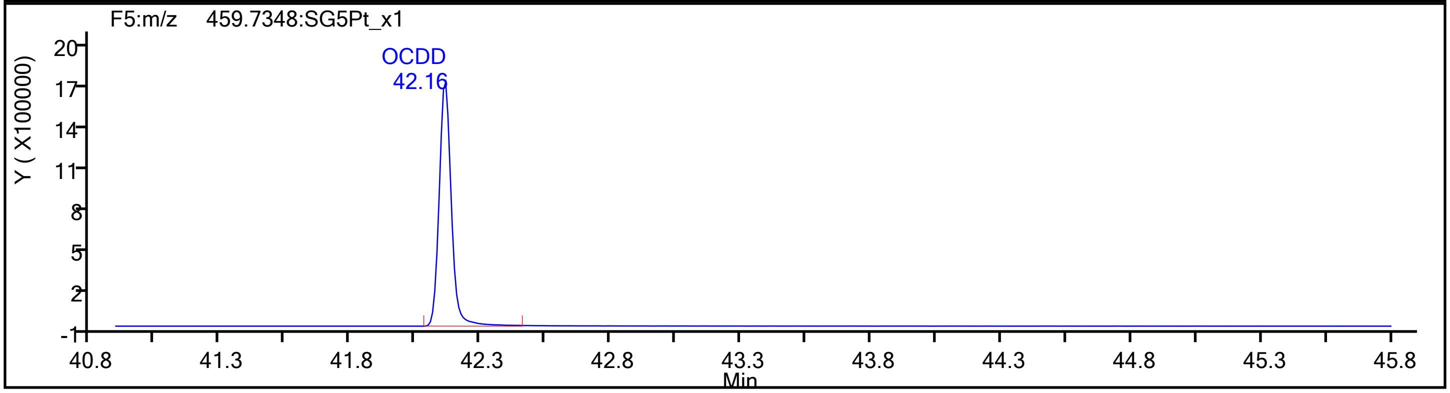

OCDD Standards

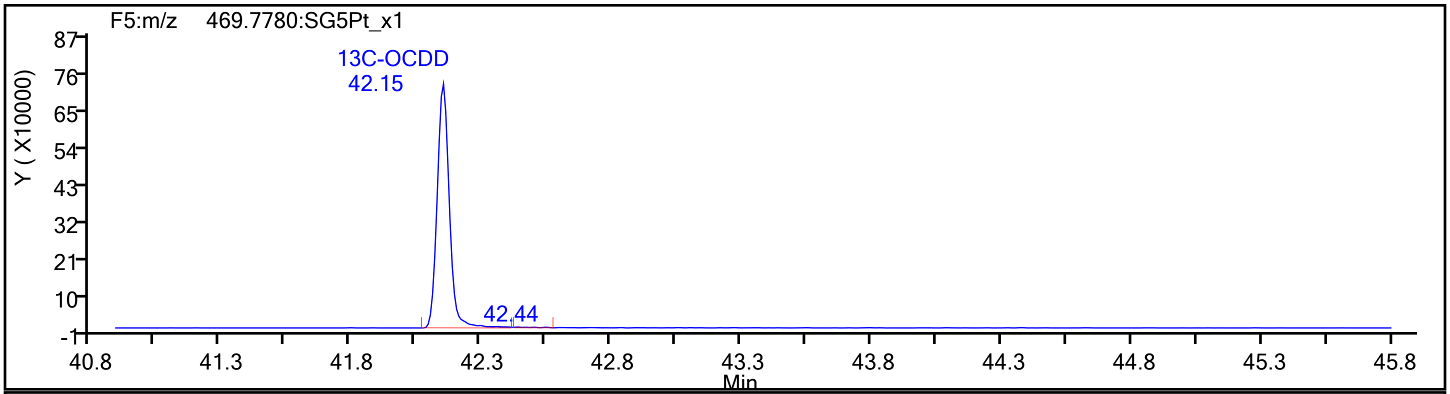

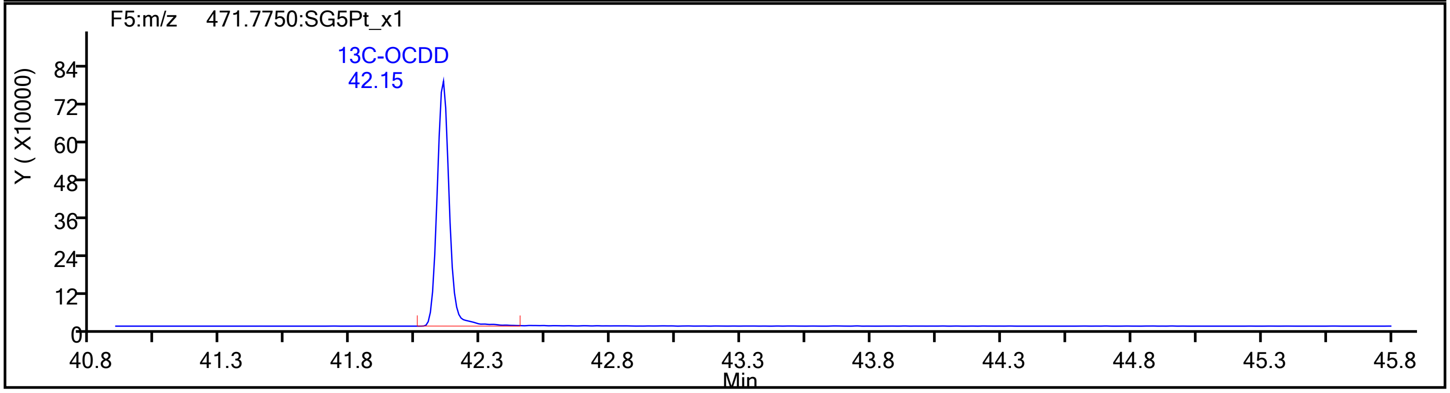

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d

Injection Date: 17-Nov-2020 15:14:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

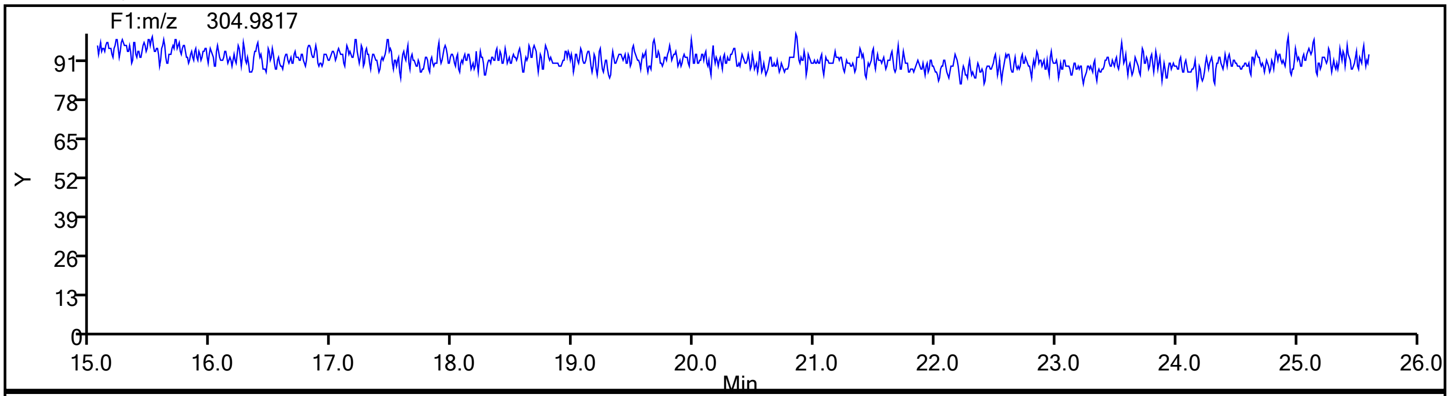

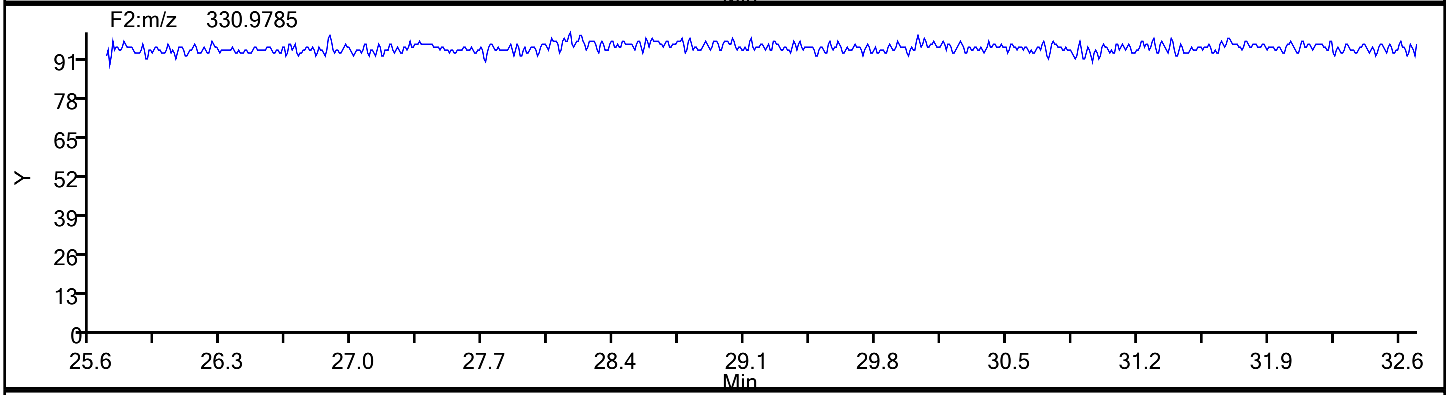

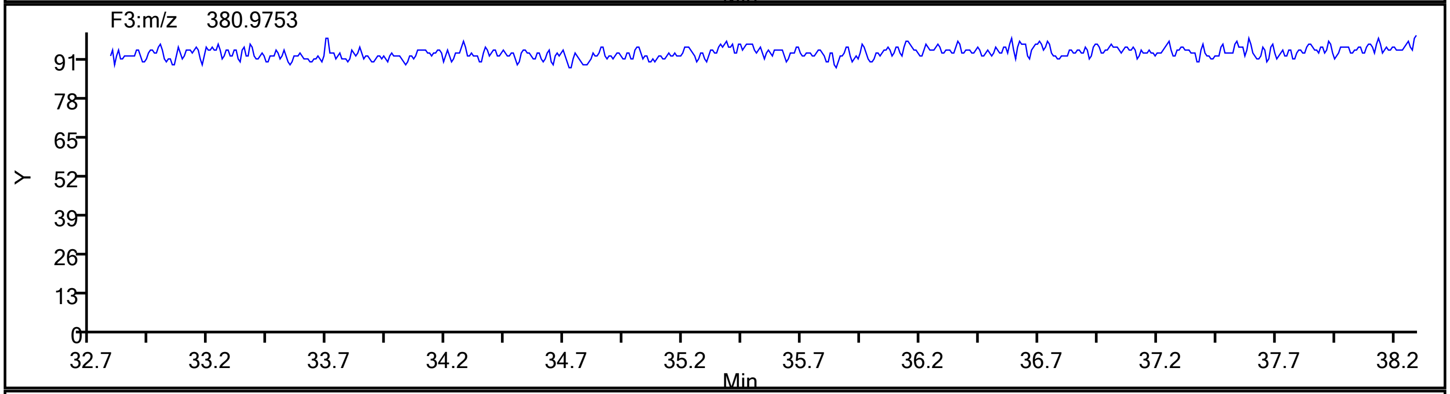

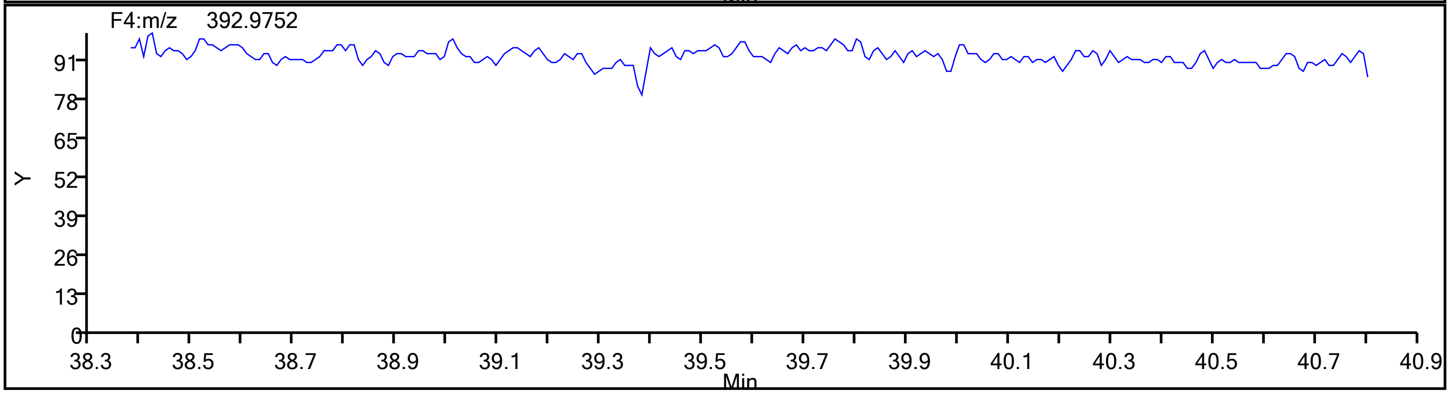

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d

Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

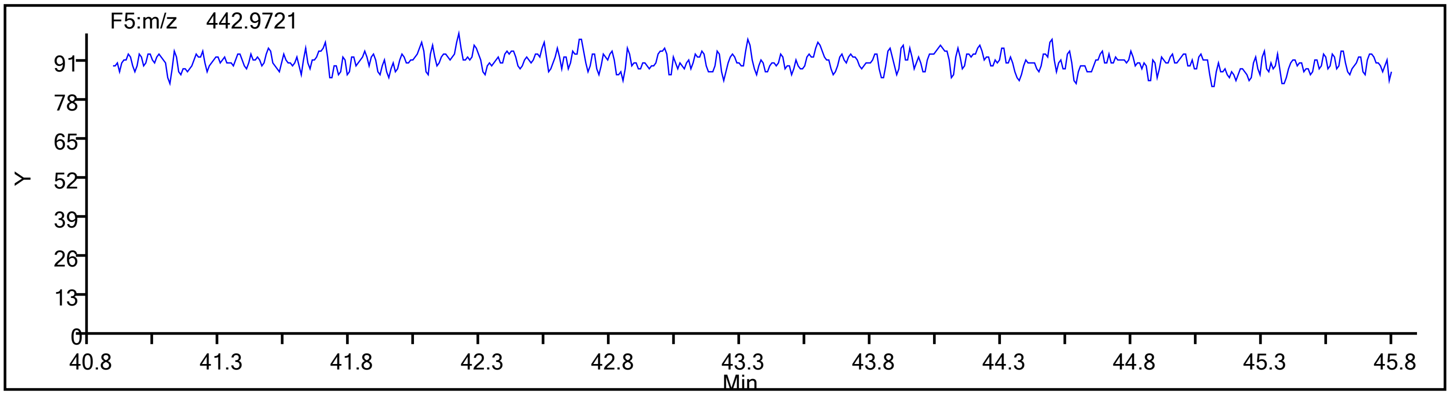

Report Date: 18-Nov-2020 12:35:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Nov-2020 16:08:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00027
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:19 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 08:59:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.845	4433551	0.80	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.832	7723296	0.82	1.6832	103.5	103.5	0.1903	0.1903	103	
2,3,7,8-TCDF	20.857	16528690	0.80	1.1547	185.3	185.3	0.1656	0.1656	92.67	
S Total TCDF					185.3	185.3	0.1656	0.1656		
D 13C-2,3,7,8-TCDD	22.240	5011703	0.81	1.0896	103.7	103.7	0.1997	0.1997	104	
2,3,7,8-TCDD	22.266	10994725	0.79	1.1659	188.2	188.2	0.1466	0.1466	94.08	
$ 37Cl4-2,3,7,8-TCDD	22.266	10391691		1.1445	204.8	204.8	0.1002	0.1002	102	
S Total TCDD					188.2	188.2	0.1466	0.1466		
D 13C-1,2,3,7,8-PeCDF	27.692	6789961	1.62	1.4604	104.9	104.9	0.3602	0.3602	105	
1,2,3,7,8-PeCDF	27.717	70578766	1.62	1.1322	918.1	918.1	2.931	2.931	91.81	
D 13C-2,3,4,7,8-PeCDF	29.251	6380229	1.62	1.3504	106.6	106.6	0.3895	0.3895	107	
2,3,4,7,8-PeCDF	29.276	68057207	1.59	1.1588	920.5	920.5	3.103	3.103	92.05	
S Total PeCDF					1838.6	1838.6	3.017	3.017		
D 13C-1,2,3,7,8-PeCDD	30.085	4093198	1.61	0.8729	105.8	105.8	0.0941	0.0941	106	
1,2,3,7,8-PeCDD	30.111	41683724	1.56	1.1191	910.0	910.0	0.4885	0.4885	91.00	
S Total PeCDD					910.0	910.0	0.4885	0.4885		
D 13C-1,2,3,4,7,8-HxCDF	35.212	6095612	0.53	1.2808	100.2	100.2	0.2779	0.2779	100	
1,2,3,4,7,8-HxCDF	35.221	73274262	1.26	1.3205	910.3	910.3	2.887	2.887	91.03	
D 13C-1,2,3,6,7,8-HxCDF	35.364	6778427	0.54	1.4615	97.6	97.6	0.2435	0.2435	97.63	
1,2,3,6,7,8-HxCDF	35.380	79051672	1.25	1.2682	919.6	919.6	2.807	2.807	91.96	
D 13C-2,3,4,6,7,8-HxCDF	36.147	6182541	0.54	1.3227	98.4	98.4	0.2691	0.2691	98.40	
2,3,4,6,7,8-HxCDF	36.164	74190158	1.26	1.2838	934.8	934.8	2.715	2.715	93.48	
D 13C-1,2,3,7,8,9-HxCDF	37.007	5394247	0.54	1.1062	102.7	102.7	0.3217	0.3217	103	
1,2,3,7,8,9-HxCDF	37.024	64367080	1.27	1.3063	913.5	913.5	2.764	2.764	91.35	
S Total HxCDF					3678.2	3678.2	2.793	2.793		
* 13C-1,2,3,7,8,9-HxCDD	36.813	4750408	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.341	4136810	1.26	0.8757	99.4	99.4	0.1818	0.1818	99.45	
1,2,3,4,7,8-HxCDD	36.358	44391919	1.26	1.1972	896.3	896.3	1.387	1.387	89.63	
D 13C-1,2,3,6,7,8-HxCDD	36.459	5001351	1.27	1.0651	98.9	98.9	0.1495	0.1495	98.85	
1,2,3,6,7,8-HxCDD	36.468	48120799	1.26	1.0695	899.7	899.7	1.345	1.345	89.97	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.822	49018548	1.26	1.1806	908.8	908.8	1.306	1.306	90.88	
S Total HxCDD					2704.8	2704.8	1.346	1.346		
D 13C-1,2,3,4,6,7,8-HpCDF	38.762	4525374	0.46	0.9521	100.1	100.1	0.3902	0.3902	100	
1,2,3,4,6,7,8-HpCDF	38.770	65590399	1.04	1.5618	928.0	928.0	3.033	3.033	92.80	
D 13C-1,2,3,4,7,8,9-HpCDF	39.984	3896084	0.47	0.7782	105.4	105.4	0.4775	0.4775	105	
1,2,3,4,7,8,9-HpCDF	39.992	53047298	1.04	1.4975	909.2	909.2	3.341	3.341	90.92	
S Total HpCDF					1837.2	1837.2	3.187	3.187		
D 13C-1,2,3,4,6,7,8-HpCDD	39.680	4099544	1.09	0.8393	102.8	102.8	0.2344	0.2344	103	
1,2,3,4,6,7,8-HpCDD	39.689	41036566	1.04	1.1079	903.5	903.5	1.719	1.719	90.35	
S Total HpCDD					903.5	903.5	1.719	1.719		
D 13C-OCDD	42.154	5545172	0.91	0.5301	220.2	220.2	0.2537	0.2537	110	
OCDF	42.263	77222416	0.89	1.4802	1881.7	1881.7	1.263	1.263	94.08	
OCDD	42.170	57080751	0.88	1.1666	1764.8	1764.8	1.499	1.499	88.24	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Nov-2020 16:08:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00027
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:19 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 08:59:42

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.845	21.818	2		1964389	275920	341	852	809		a
333.9338	21.837	21.818	1		2469162	347597	202	505	1721	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.832	20.808	1	0.954	3469289	506420	543	1357	933		
317.9389	20.832	20.808	1	0.954	4254007	592766	256	640	2315	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.857	20.834	1	1.001	7349159	1074459	303	757	3546		
305.8987	20.857	20.834	1	1.001	9179531	1334514	538	1345	2481	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.240	22.213	2	1.018	2249178	304970	341	852	894		
333.9338	22.240	22.213	2	1.018	2762525	365104	202	505	1807	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.266	22.239	2	1.001	4858326	686278	243	607	2824		
321.8936	22.266	22.239	2	1.001	6136399	858980	215	537	3995	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.266	22.241	2	1.019	10391691	1453545	286	715	5082		
13C-1,2,3,7,8-PeCDF											
351.9000	27.692	27.677	1	1.268	4201687	623536	752	1880	829		
353.8970	27.692	27.677	1	1.268	2588274	396436	560	1400	708	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.717	27.702	1	1.001	43595227	6995937	8454	21135	828		
341.8567	27.717	27.702	1	1.001	26983539	4287757	5083	12707	844	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.251	29.235	1	1.339	3942765	582640	752	1880	775		
353.8970	29.251	29.235	1	1.339	2437464	358500	560	1400	640	1.62(1.32-1.78)	

Report Date: 18-Nov-2020 12:35:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.276	29.262	1	1.001	41742707	6316100	8454	21135	747		
341.8567	29.276	29.262	1	1.001	26314500	3961305	5083	12707	779	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.085	30.073	1	1.377	2522492	358863	95	237	3778		
369.8919	30.094	30.073	1	1.378	1570706	219134	110	275	1992	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.111	30.100	1	1.001	25380747	3606470	788	1970	4577		
357.8516	30.111	30.100	1	1.001	16302977	2306755	476	1190	4846	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.212	35.202	1	0.957	2110885	499171	661	1652	755		
385.8610	35.212	35.202	1	0.957	3984727	918044	1186	2965	774	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.221	35.219	0	1.000	40842565	9807153	11955	29887	820		
375.8178	35.221	35.219	0	1.000	32431697	7785371	9659	24147	806	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.364	35.361	0	0.961	2376366	539601	661	1652	816		
385.8610	35.364	35.361	0	0.961	4402061	978422	1186	2965	825	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.380	35.376	0	1.000	43933360	10003012	11955	29887	837		
375.8178	35.380	35.376	0	1.000	35118312	7920609	9659	24147	820	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.147	36.142	0	0.982	2167173	543132	661	1652	822		
385.8610	36.147	36.142	0	0.982	4015368	1007438	1186	2965	849	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.164	36.158	0	1.000	41423788	11004248	11955	29887	920		
375.8178	36.164	36.158	0	1.000	32766370	8634193	9659	24147	894	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.007	37.005	0	1.005	1889310	528835	661	1652	800		
385.8610	37.007	37.005	0	1.005	3504937	967600	1186	2965	816	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.024	37.019	0	1.000	36031424	10376035	11955	29887	868		
375.8178	37.024	37.019	0	1.000	28335656	8061009	9659	24147	835	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.813	36.808	0		2669360	730972	453	1132	1614		
403.8529	36.813	36.808	0		2081048	566331	373	932	1518	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.341	36.340	0	0.987	2307965	641727	453	1132	1417		
403.8529	36.341	36.340	0	0.987	1828845	507956	373	932	1362	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.358	36.355	0	1.000	24747908	6986517	4262	10655	1639		
391.8127	36.358	36.355	0	1.000	19644011	5526498	3375	8437	1637	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.459	36.454	0	0.990	2796496	744105	453	1132	1643		
403.8529	36.459	36.454	0	0.990	2204855	582689	373	932	1562	1.27(1.05-1.43)	

Report Date: 18-Nov-2020 12:35:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.468	36.468	0	1.000	26843676	7122125	4262	10655	1671		
391.8127	36.468	36.468	0	1.000	21277123	5687048	3375	8437	1685	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.822	36.821	0	1.013	27310421	7623020	4262	10655	1789		
391.8127	36.822	36.821	0	1.013	21708127	6063055	3375	8437	1796	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.762	38.755	0	1.053	1434724	456017	708	1770	644		
419.8220	38.762	38.755	0	1.053	3090650	983425	1220	3050	806	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.770	38.769	0	1.000	33410665	11199419	14182	35455	790		
409.7788	38.770	38.769	0	1.000	32179734	10712658	13091	32727	818	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.984	39.984	0	1.086	1241560	428114	708	1770	605		
419.8220	39.984	39.984	0	1.086	2654524	934638	1220	3050	766	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.992	39.994	0	1.000	27042217	9782975	14182	35455	690		
409.7788	39.992	39.994	0	1.000	26005081	9390740	13091	32727	717	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.680	39.679	0	1.078	2140949	740893	493	1232	1503		
437.8140	39.680	39.679	0	1.078	1958595	671115	528	1320	1271	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.689	39.689	0	1.000	20960176	7477924	5602	14005	1335		
425.7737	39.689	39.689	0	1.000	20076390	7124263	5155	12887	1382	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.154	42.157	0	1.145	2642796	816997	356	890	2295		
471.7750	42.154	42.157	0	1.145	2902376	908750	342	855	2657	0.91(0.76-1.02)	
OCDF											
441.7428	42.263	42.260	0	1.003	36348194	11728155	3078	7695	3810		
443.7399	42.255	42.260	0	1.002	40874222	13484662	3377	8442	3993	0.89(0.76-1.02)	
OCDD											
457.7377	42.170	42.167	0	1.000	26726653	8635915	2802	7005	3082		
459.7348	42.162	42.167	0	1.000	30354098	9941453	3235	8087	3073	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:31

Chrom Revision: 2.3 12-Nov-2020 21:52:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d				
Injection Date:	17-Nov-2020 16:08:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.82

Processing Integration Results

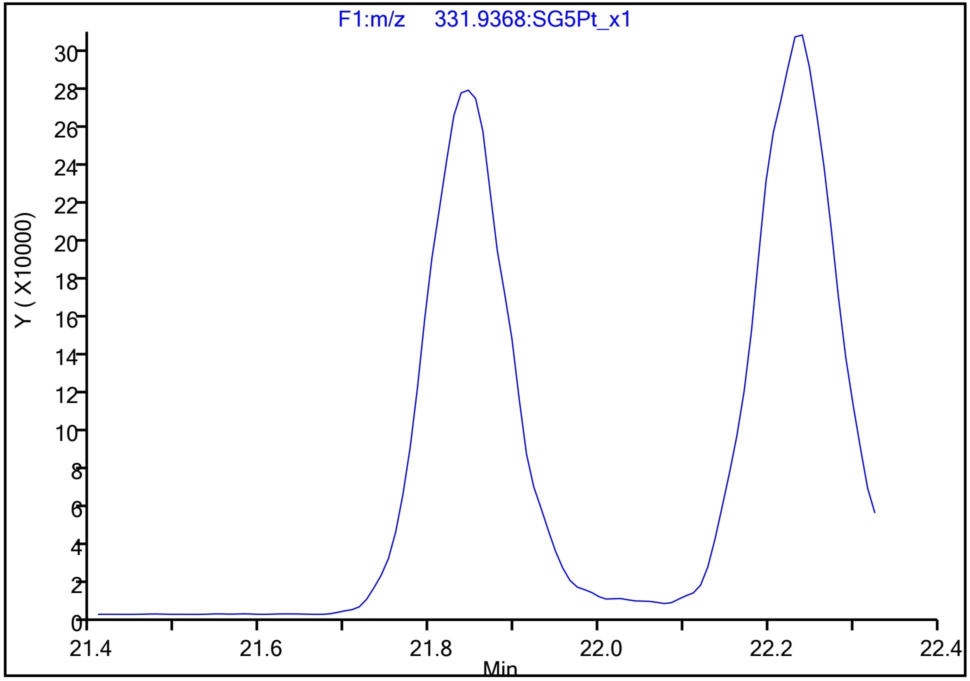

RT: 21.85
Area: 1964389
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

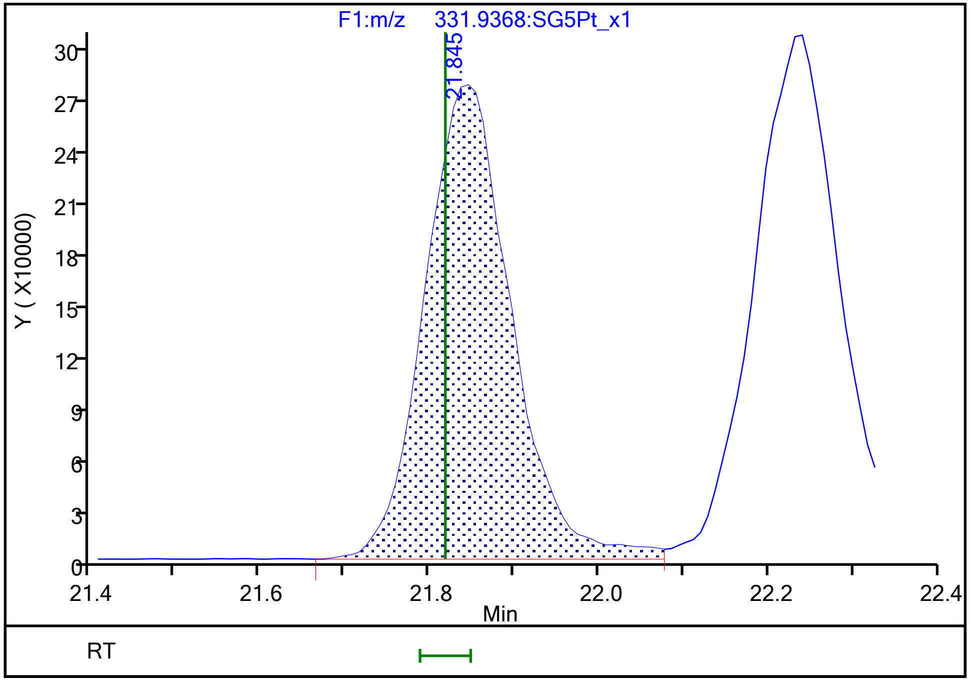

Reviewer: stephensk, 18-Nov-2020 08:59:02

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 18-Nov-2020 12:35:31
Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Injection Date: 17-Nov-2020 16:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

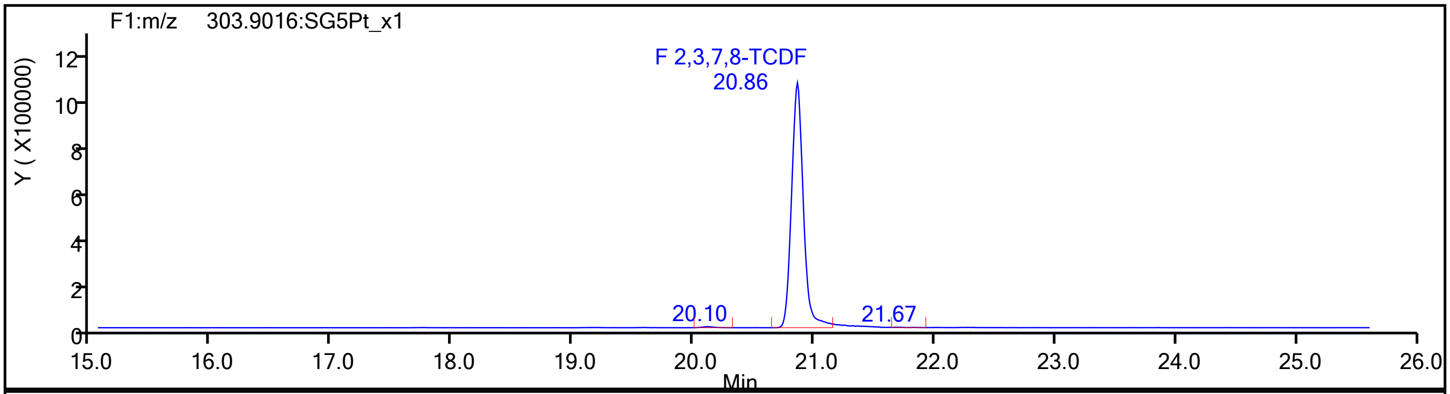

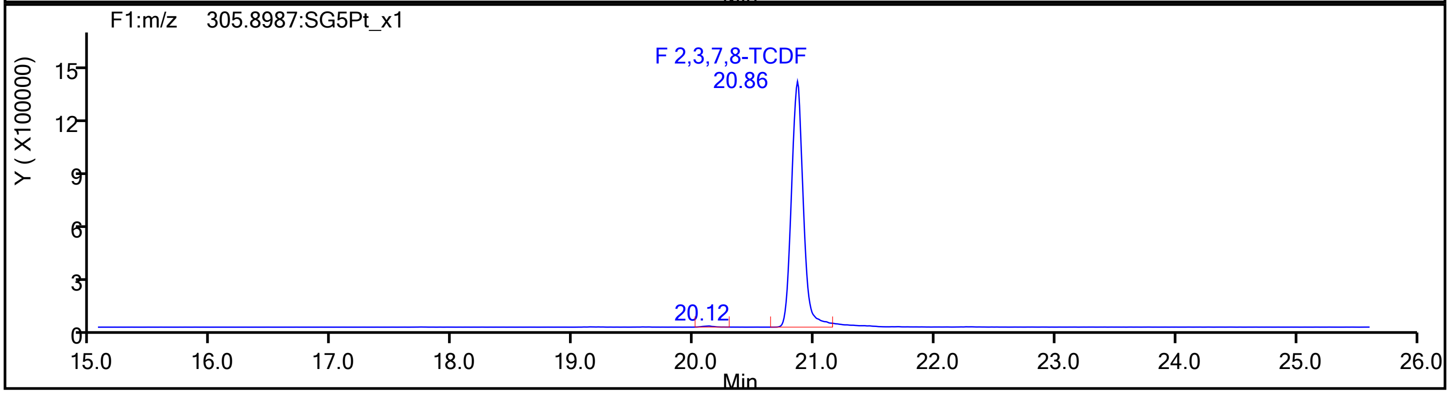

TCDF Standards

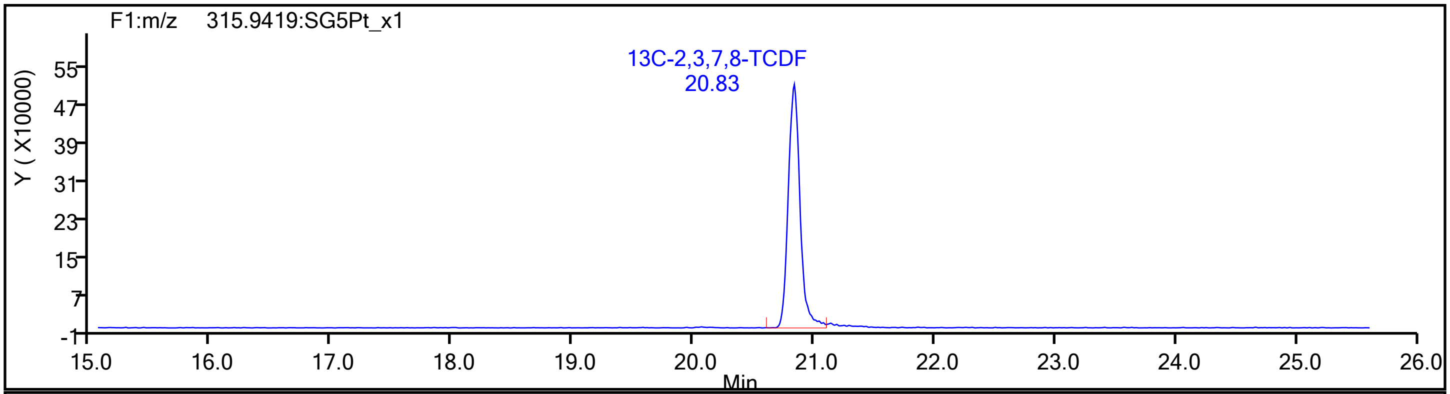

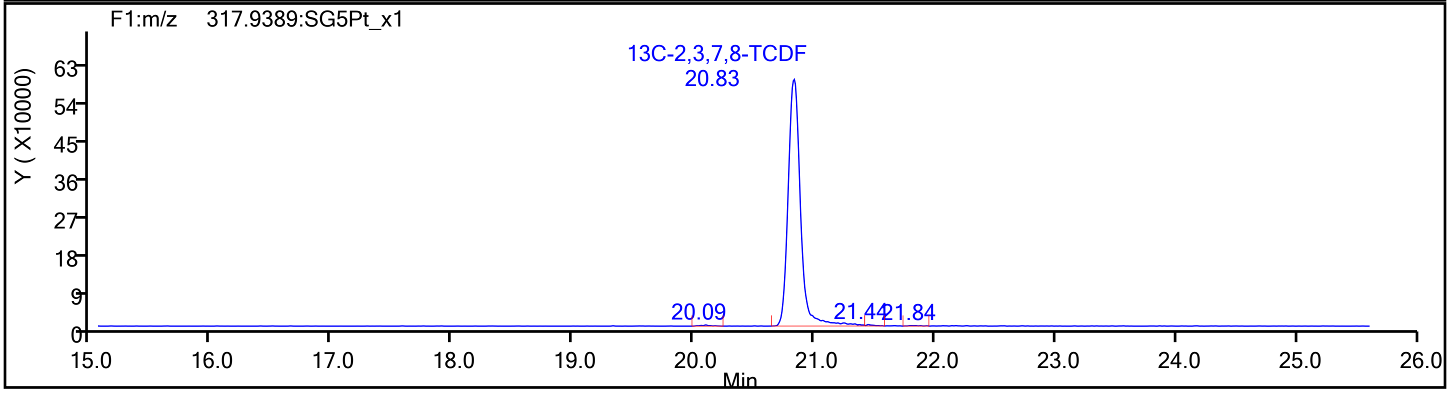

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

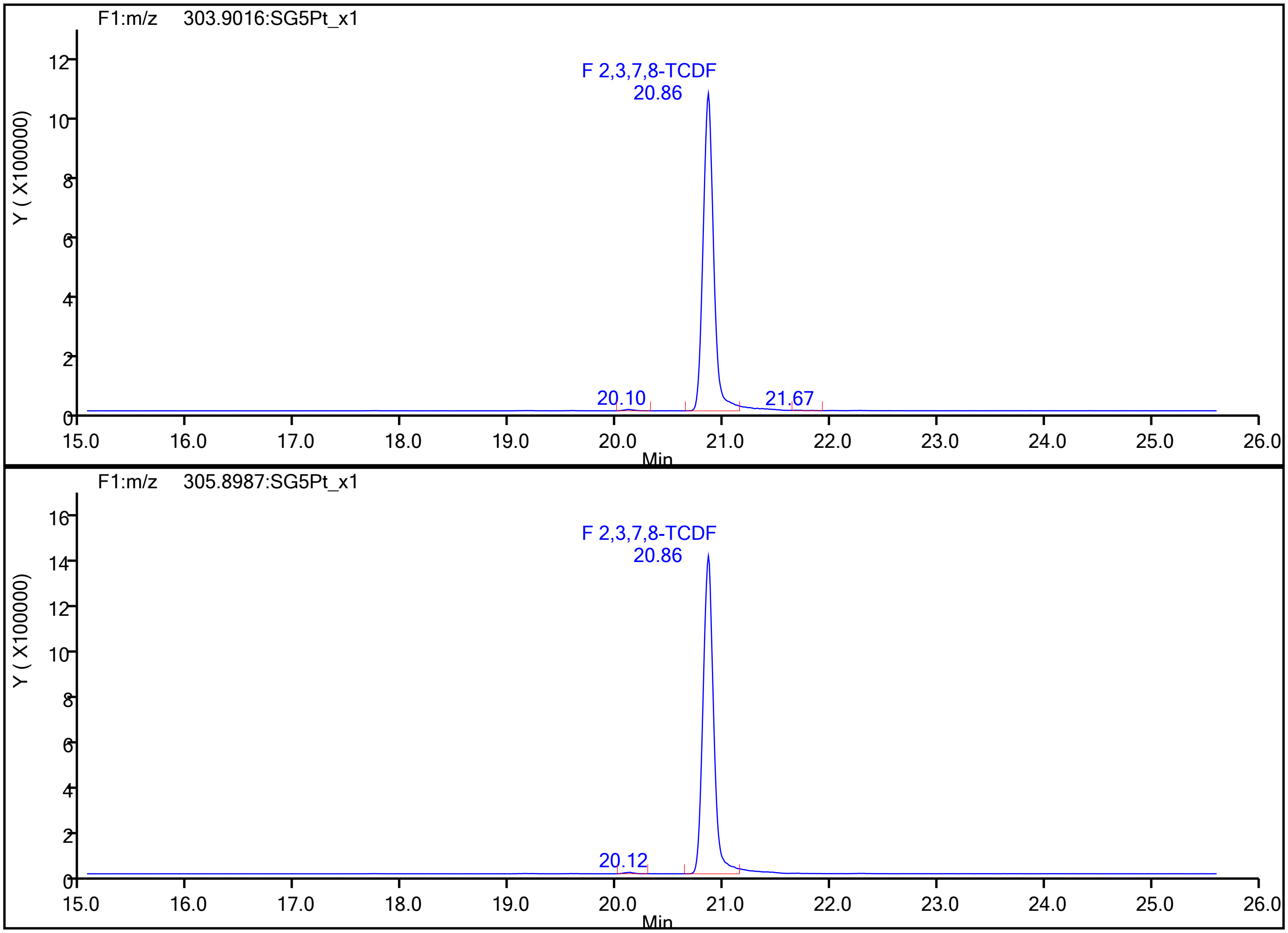

TCDF Interference Mass

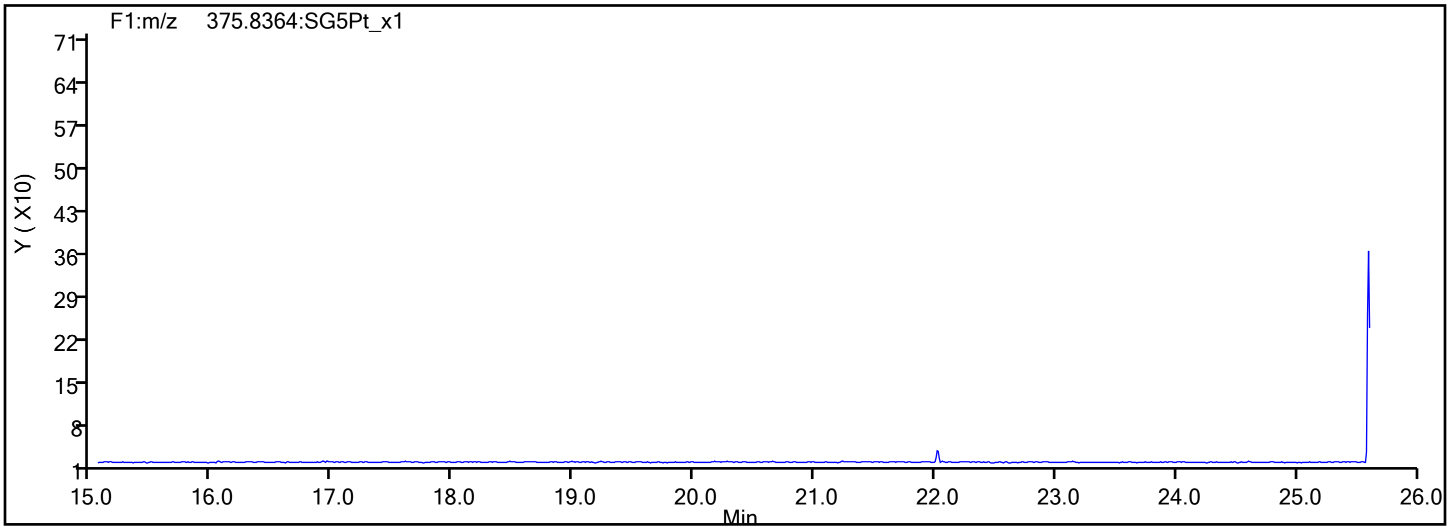

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Injection Date: 17-Nov-2020 16:08:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

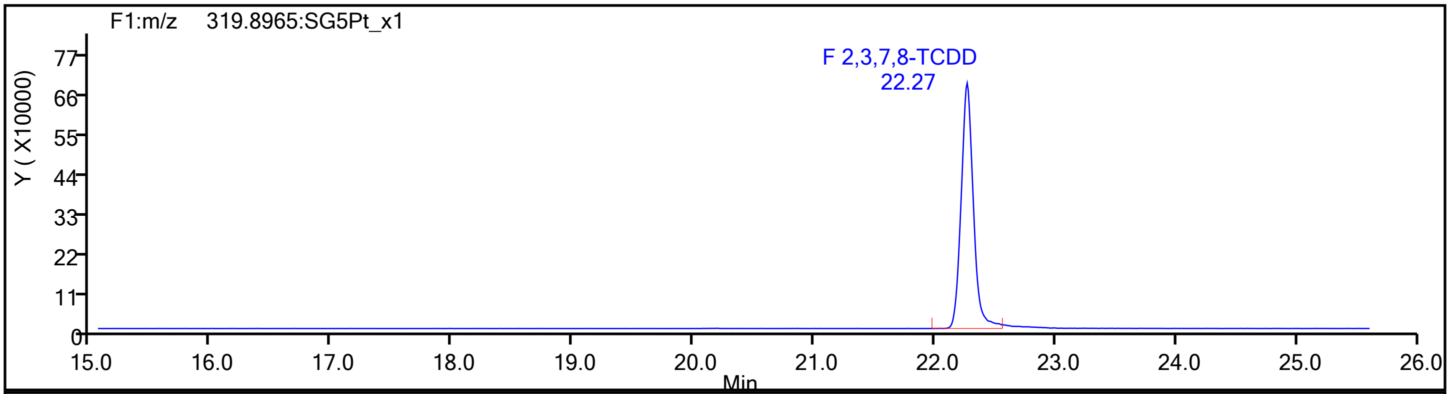

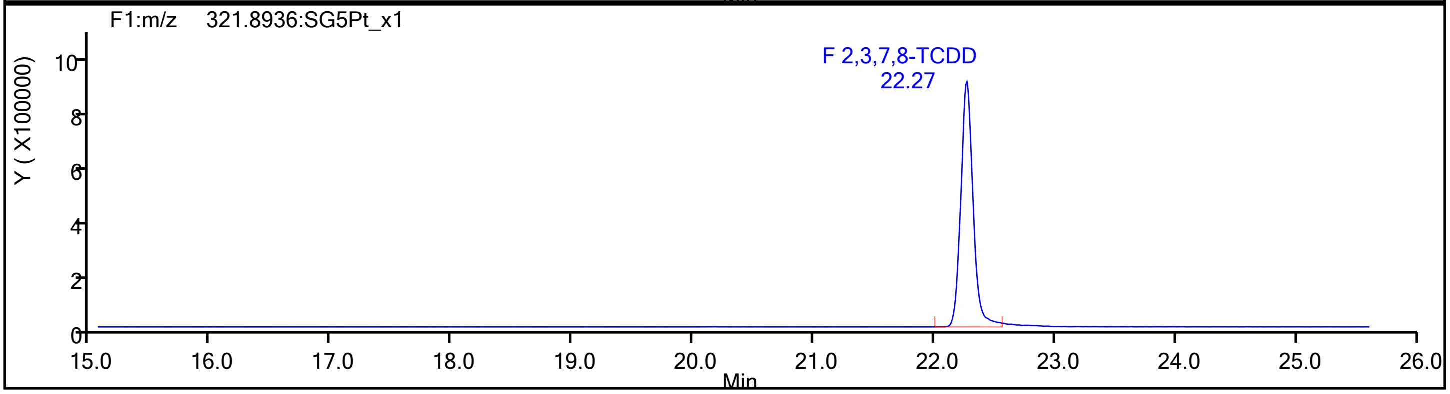

TCDD Standards

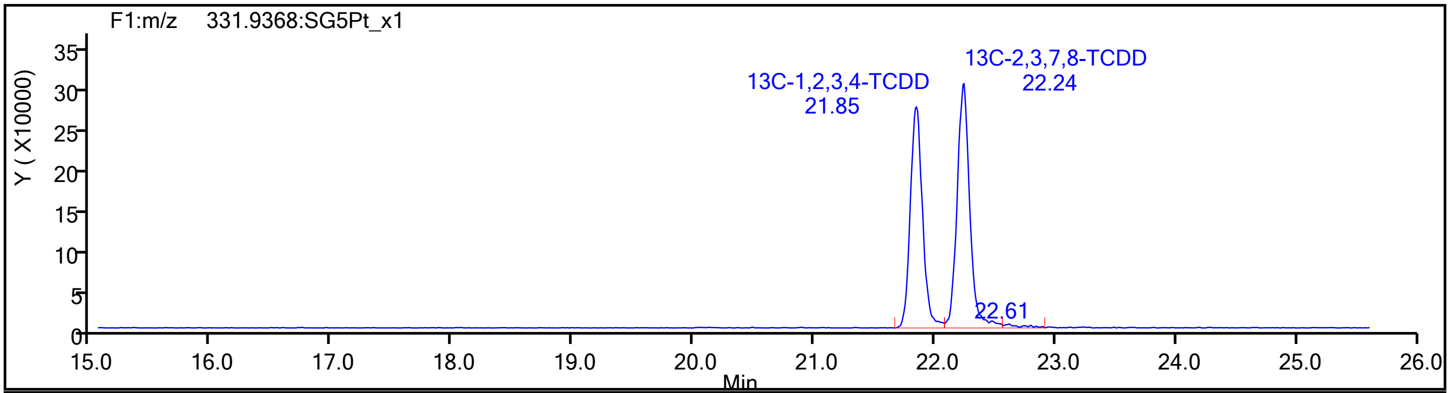

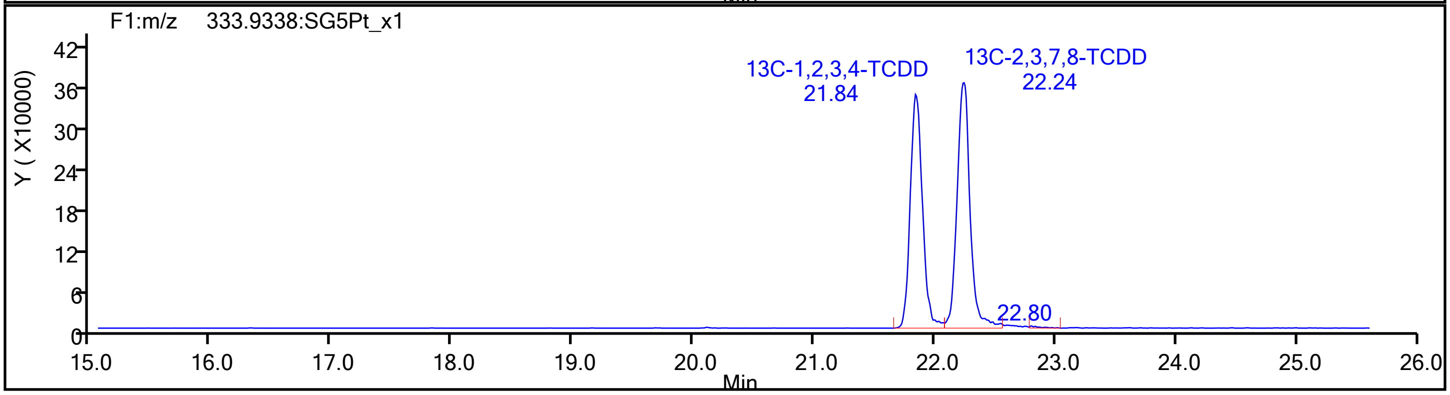

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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37Cl4-TCDD

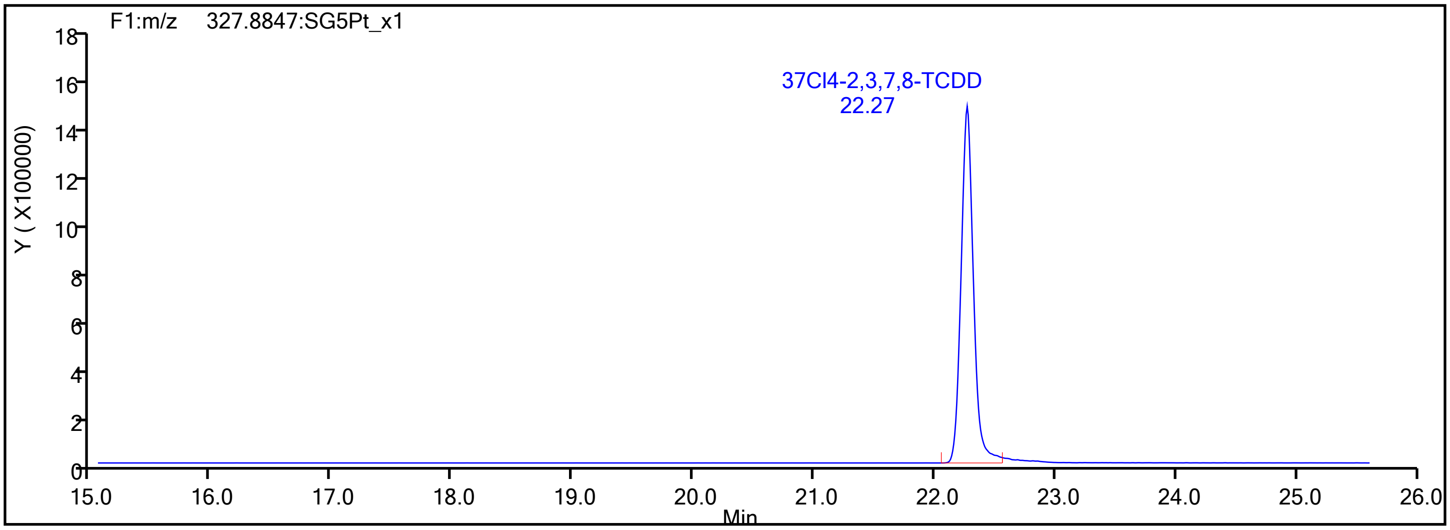

37Cl4-TCDD Standards

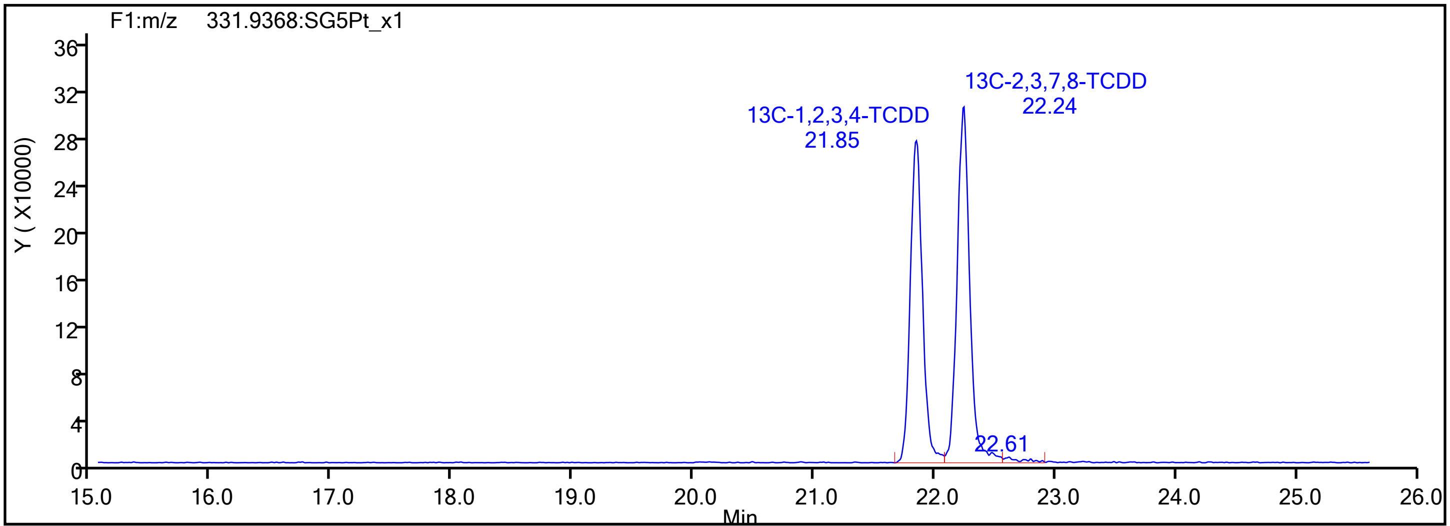

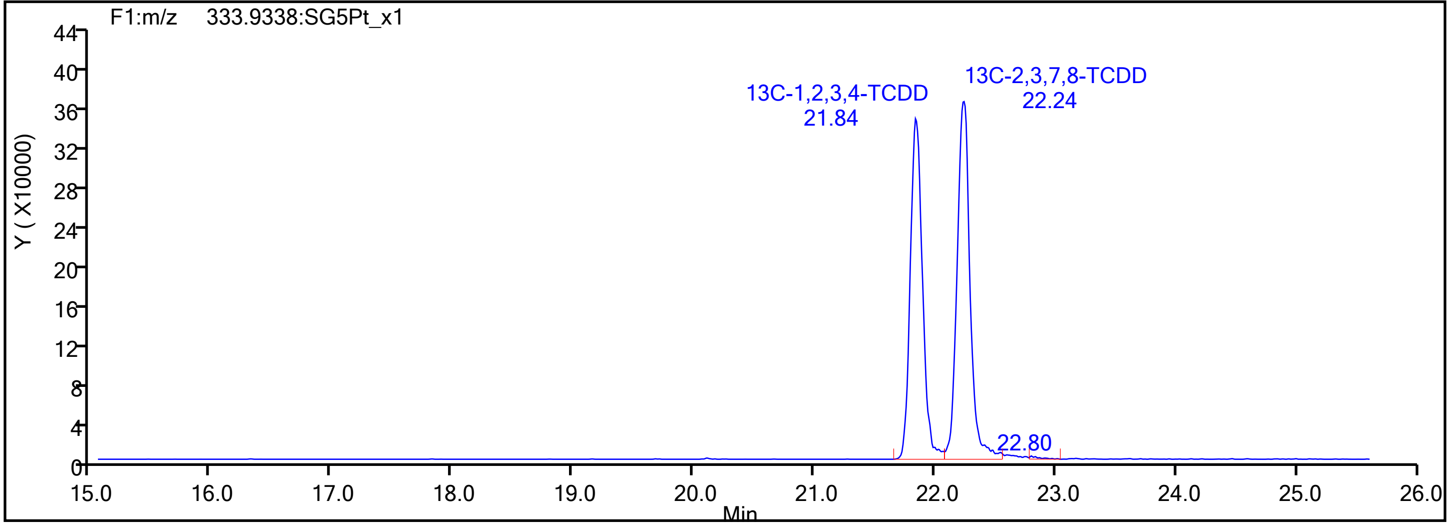

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Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

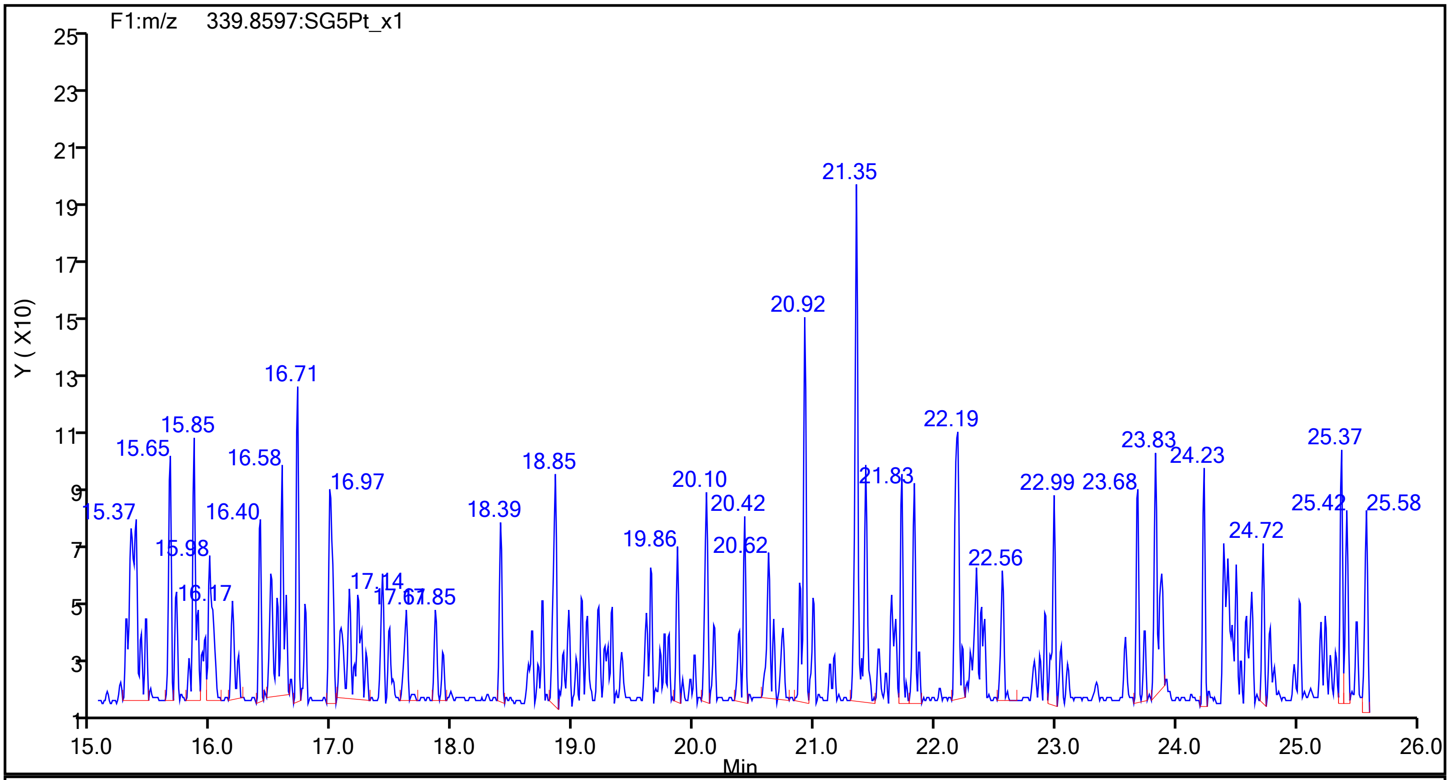

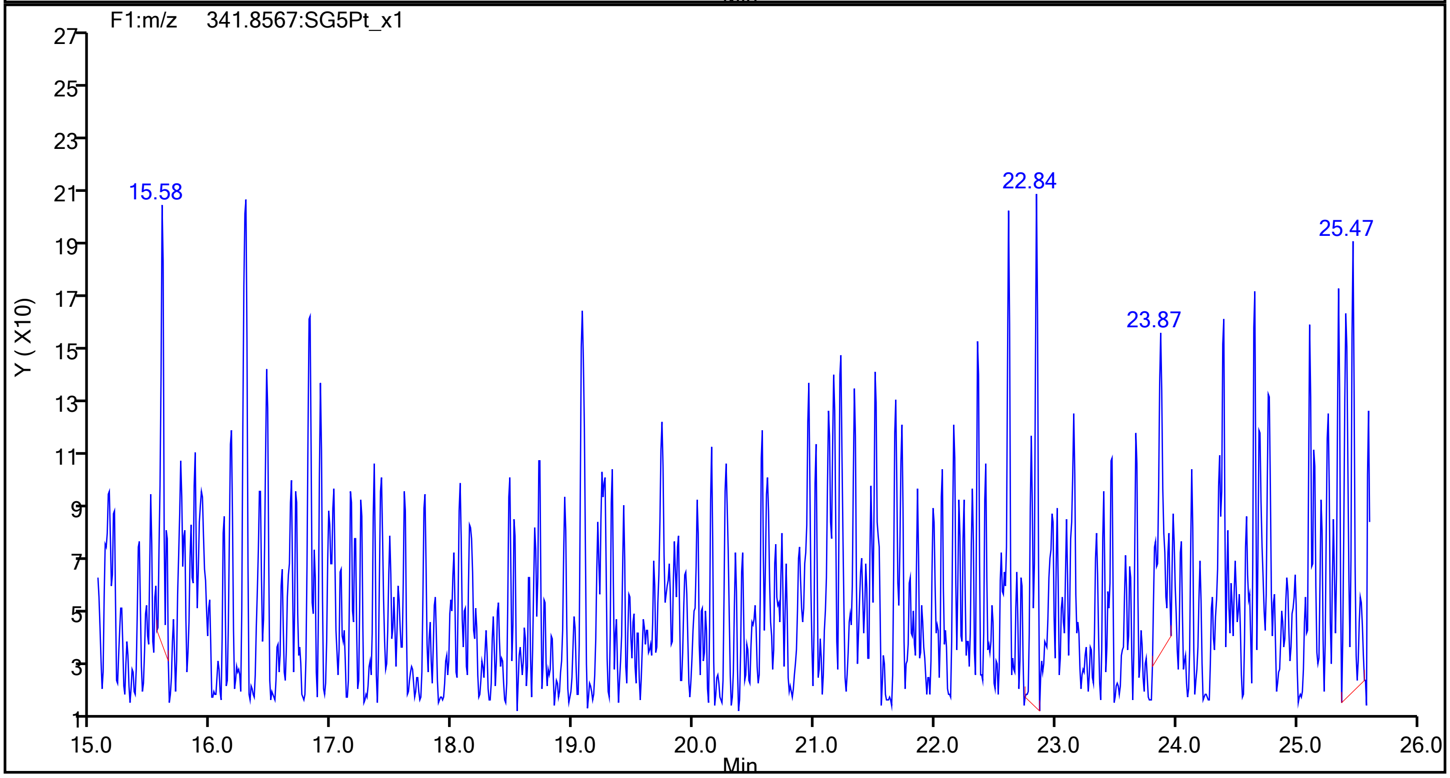

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

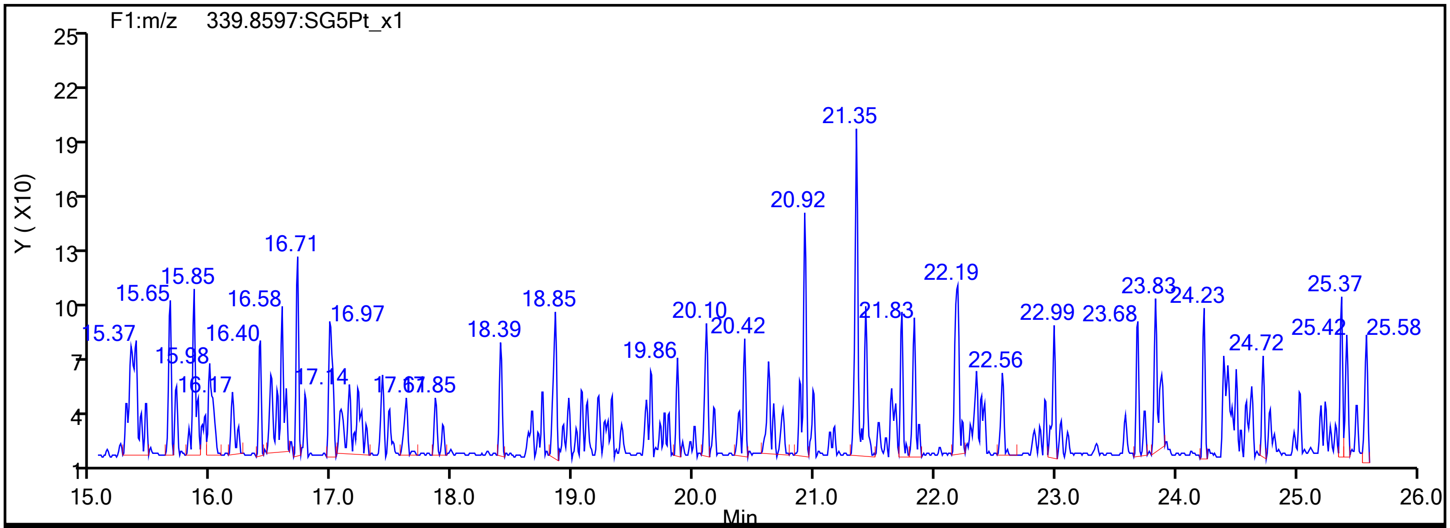

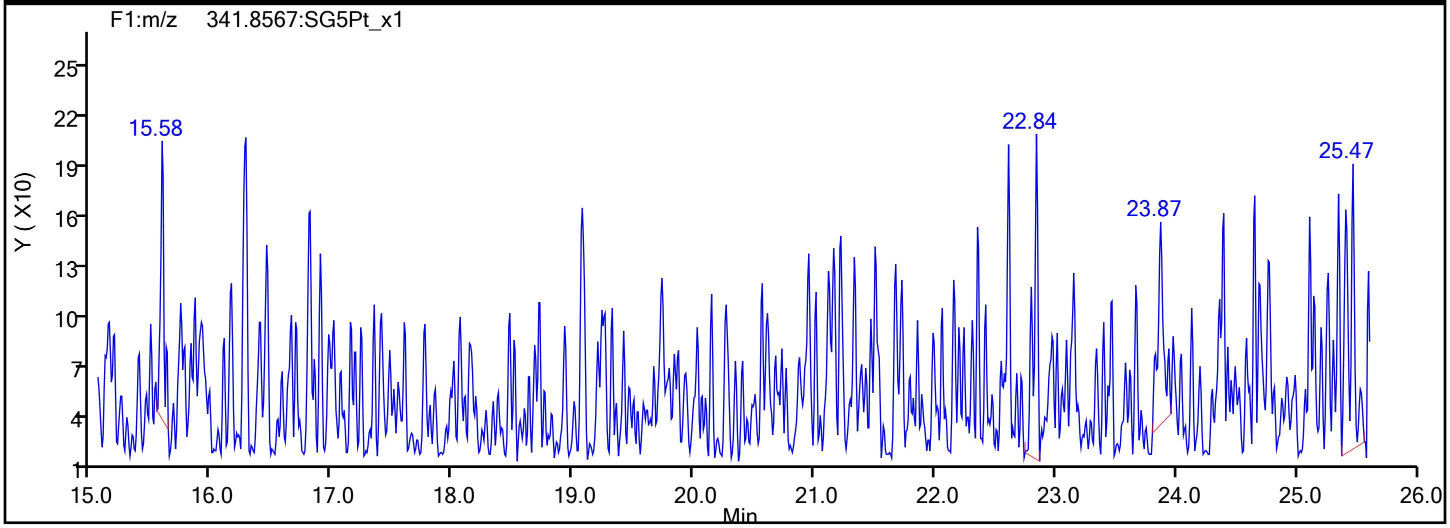

F1 PeCDFs Interference Mass

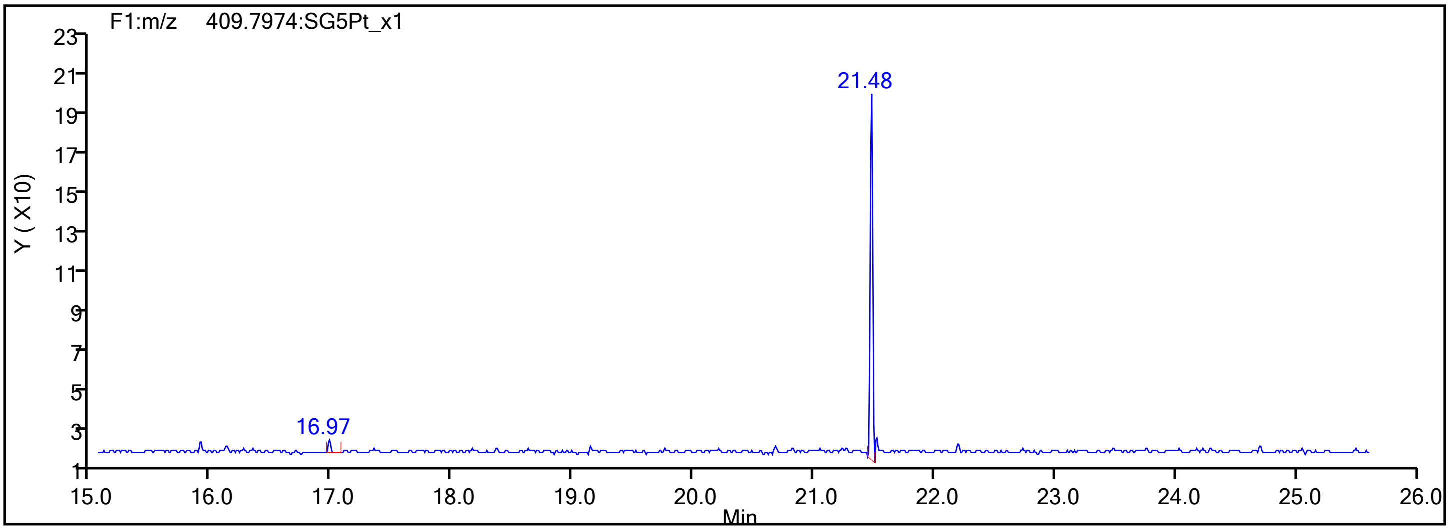

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Eurofins TestAmerica, Sacramento

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PeCDF

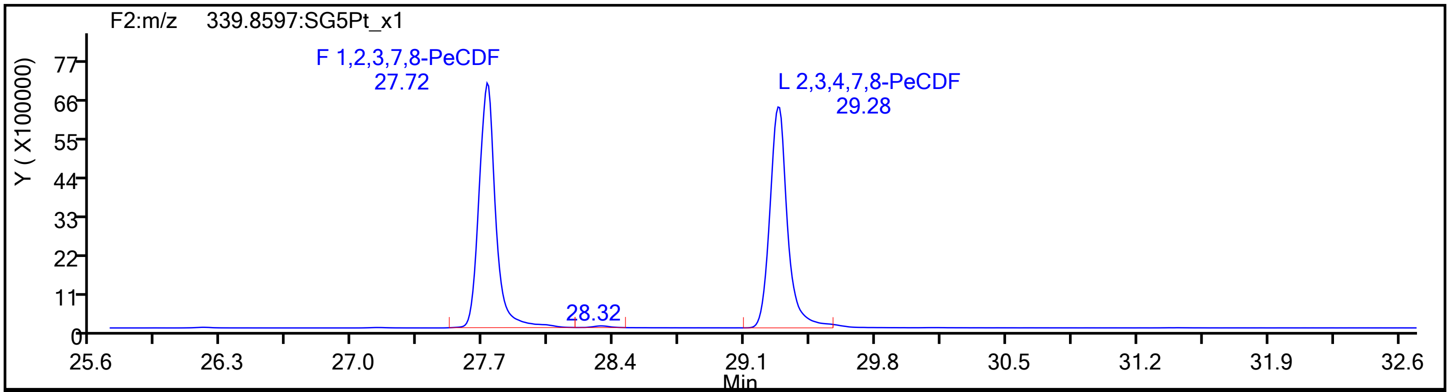

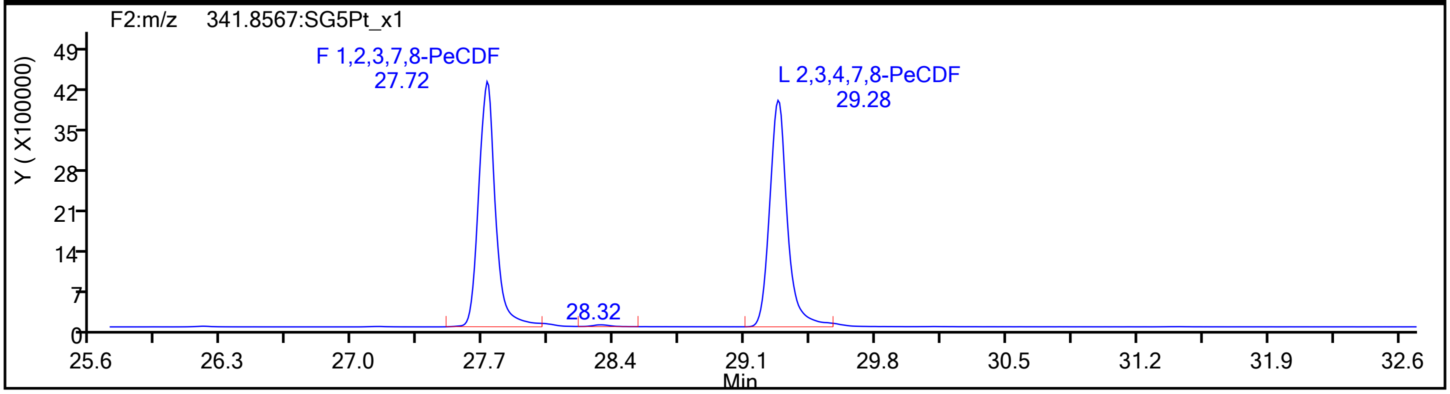

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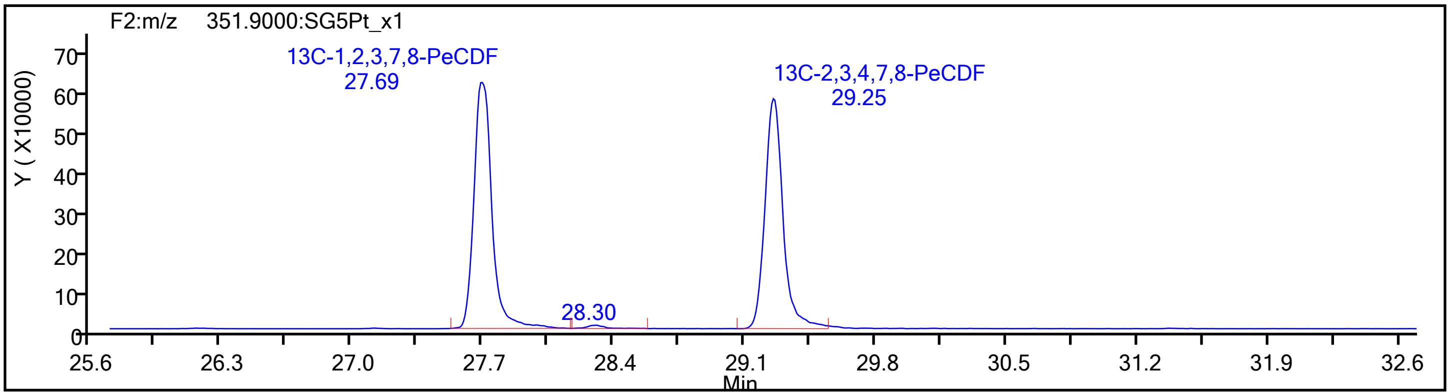

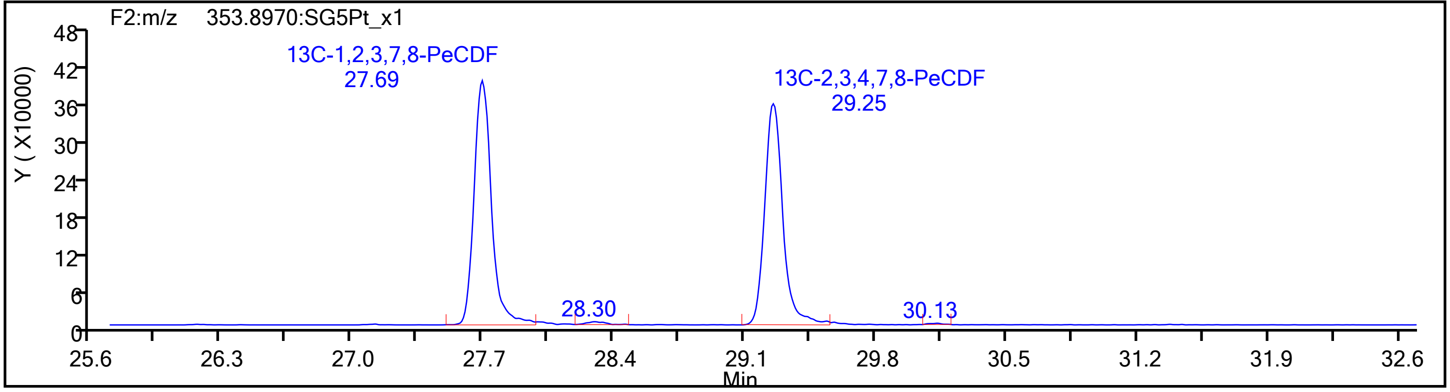

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Eurofins TestAmerica, Sacramento

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Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

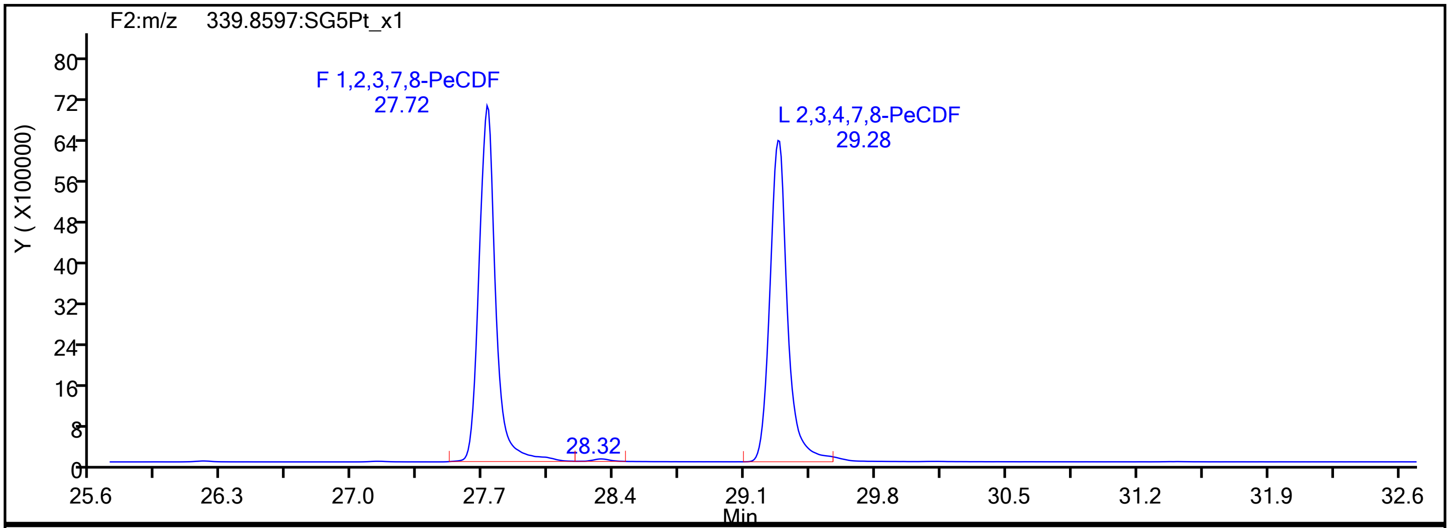

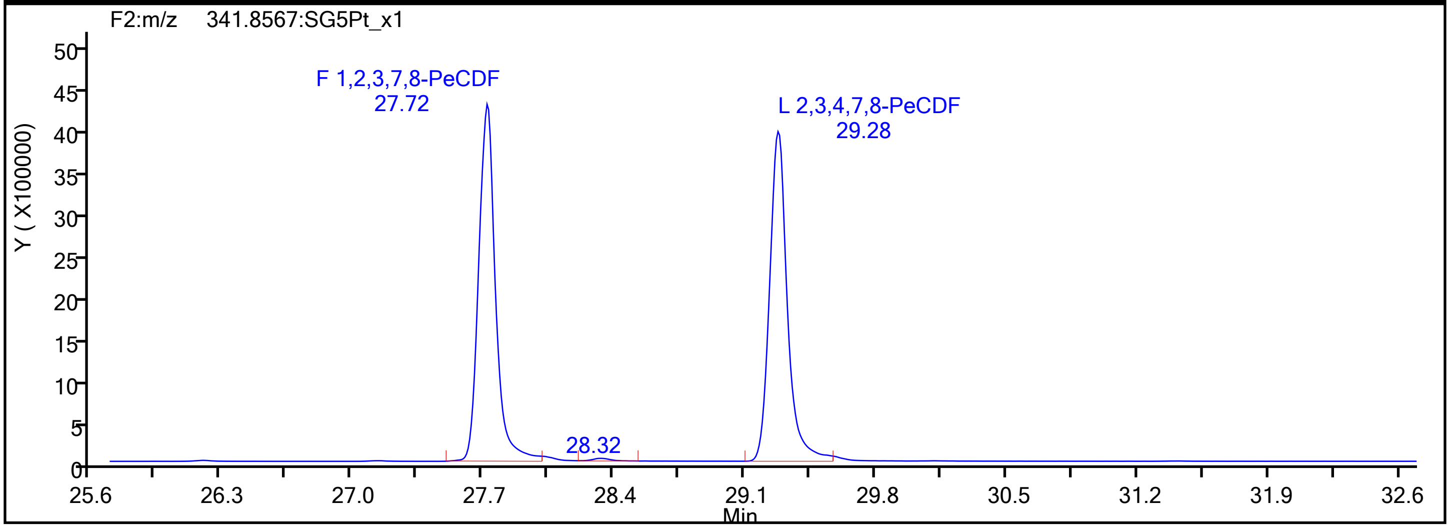

PeCDF Interference Mass

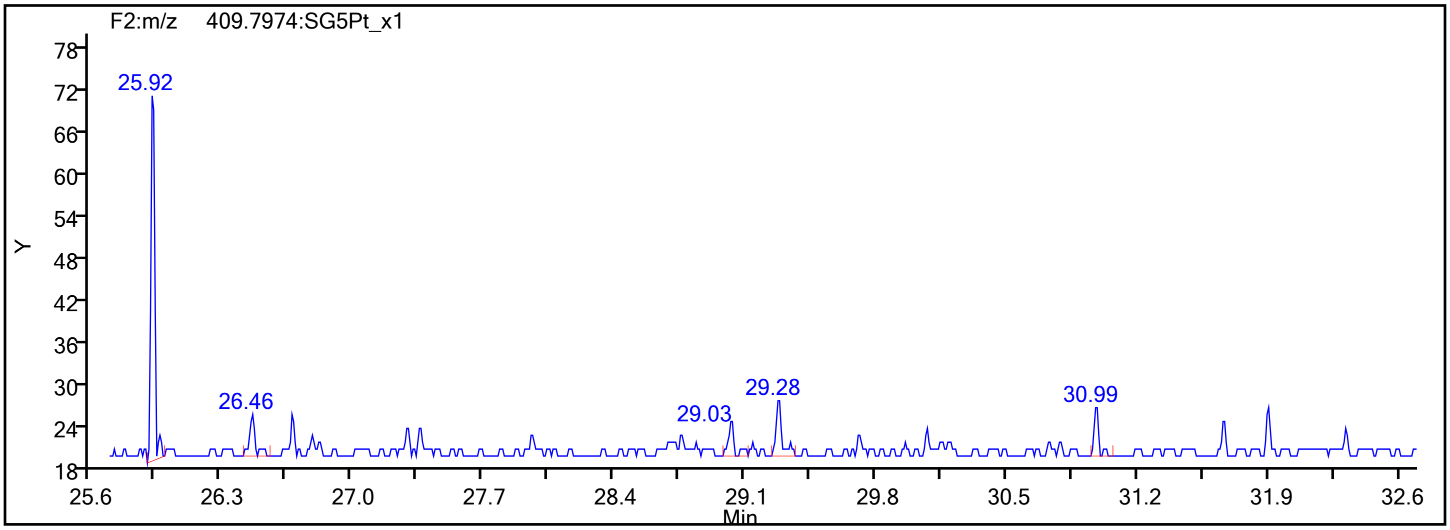

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Eurofins TestAmerica, Sacramento

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PeCDD

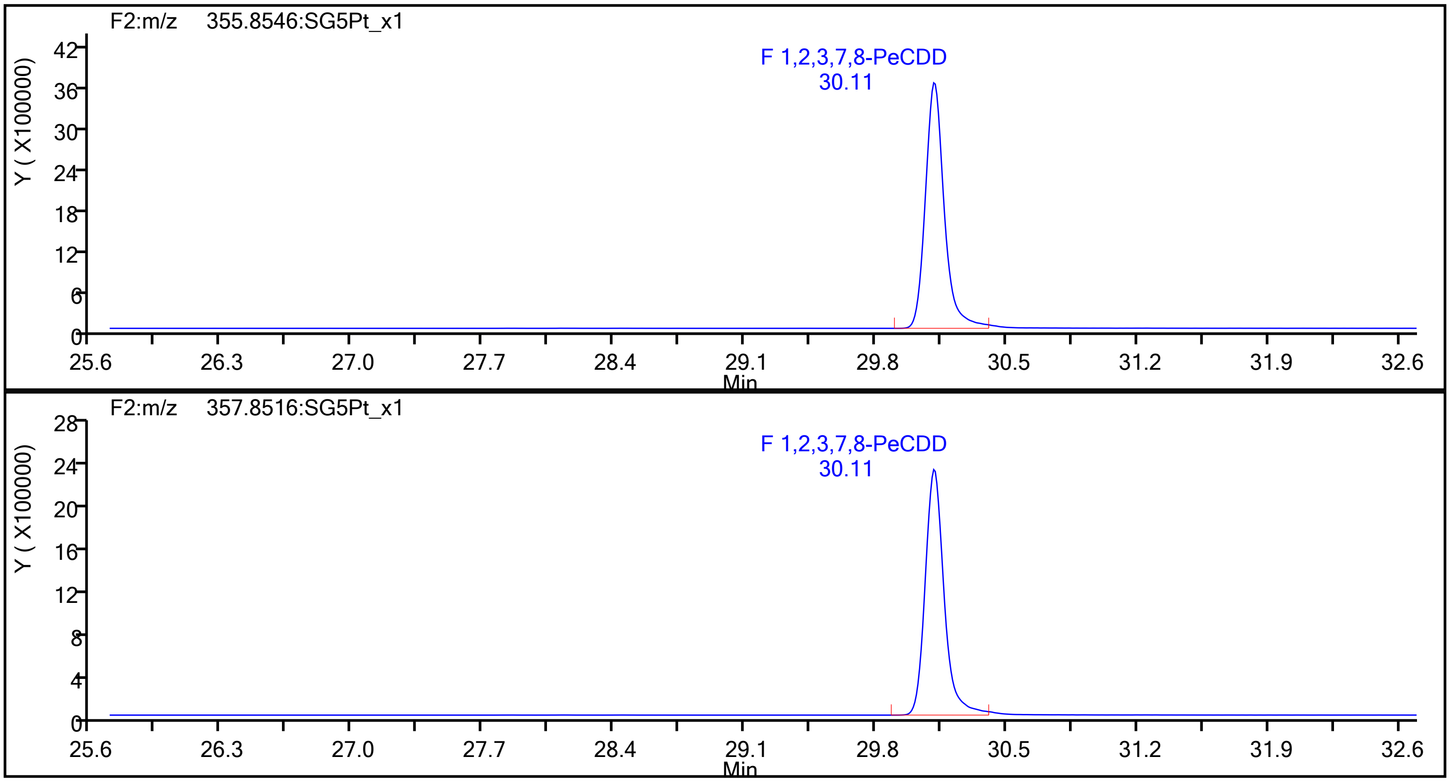

PeCDD Standards

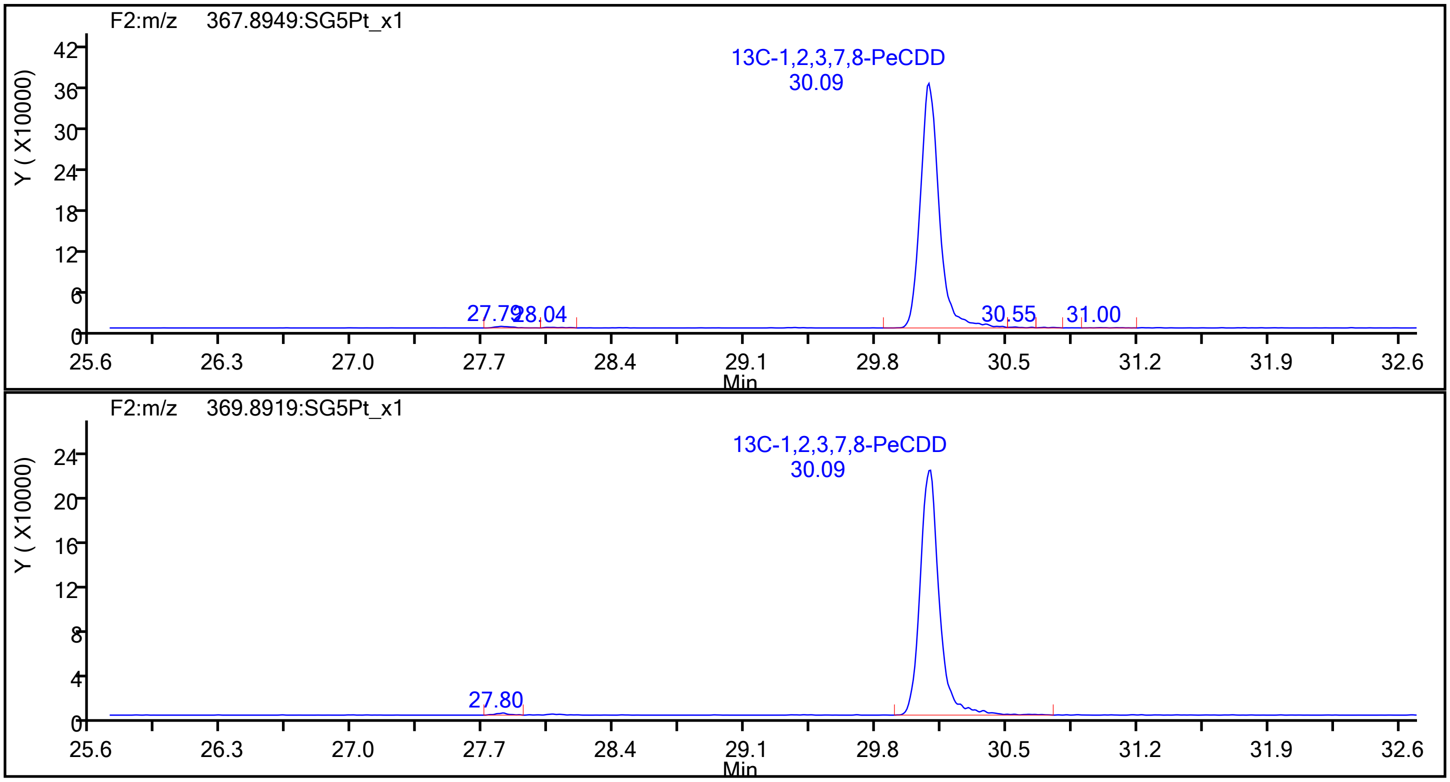

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 16:08:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

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Client ID:

Worklist#: 432585 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

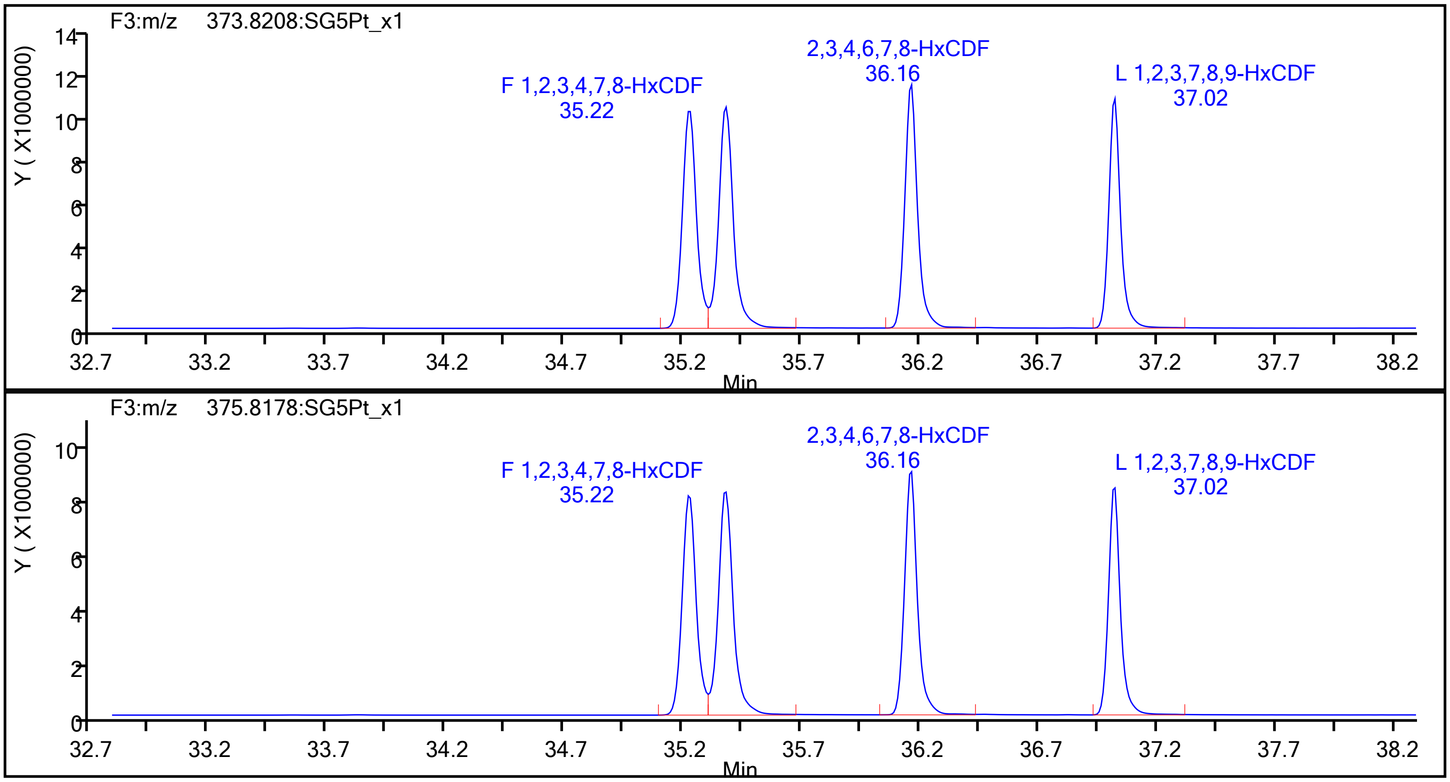

HxCDF Standards

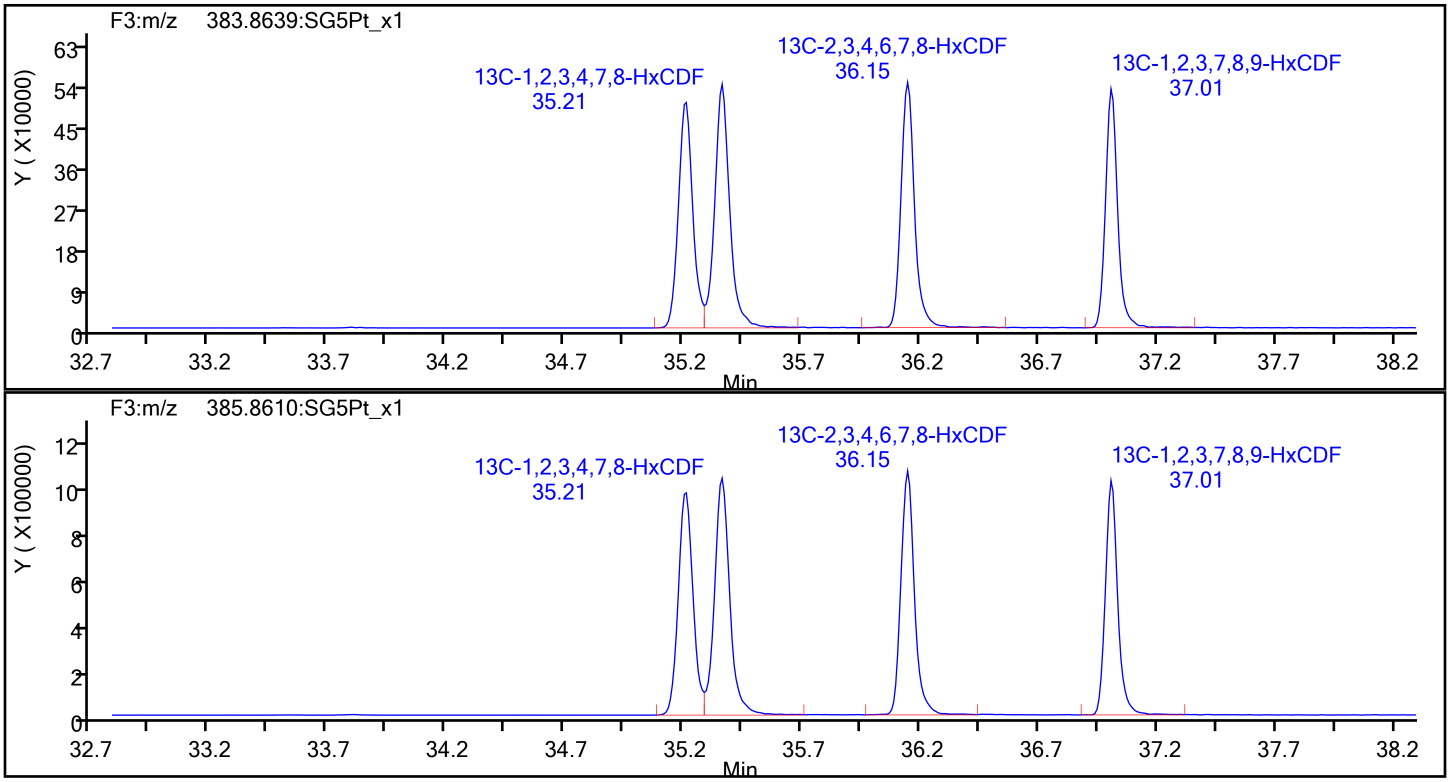

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Eurofins TestAmerica, Sacramento

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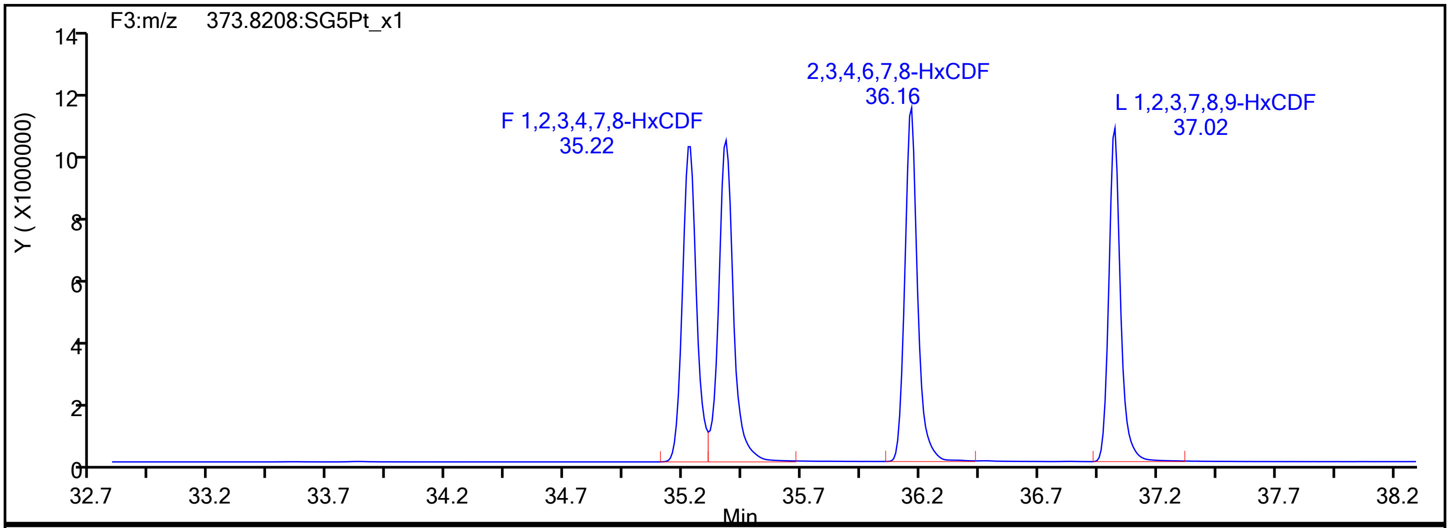

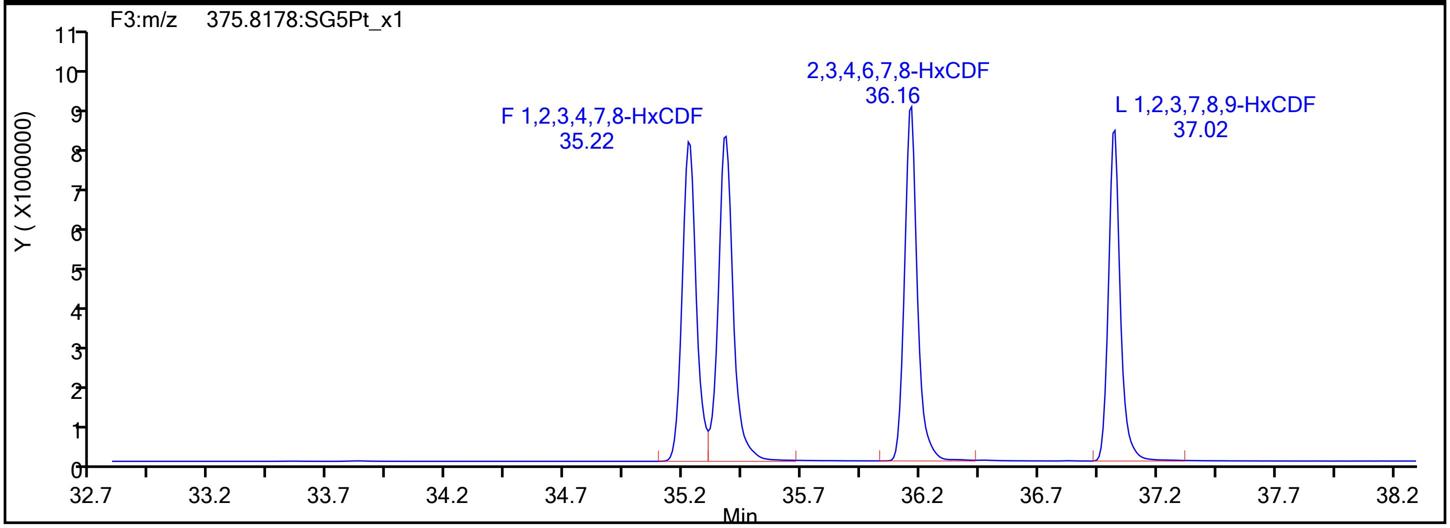

HxCDF Interference Mass

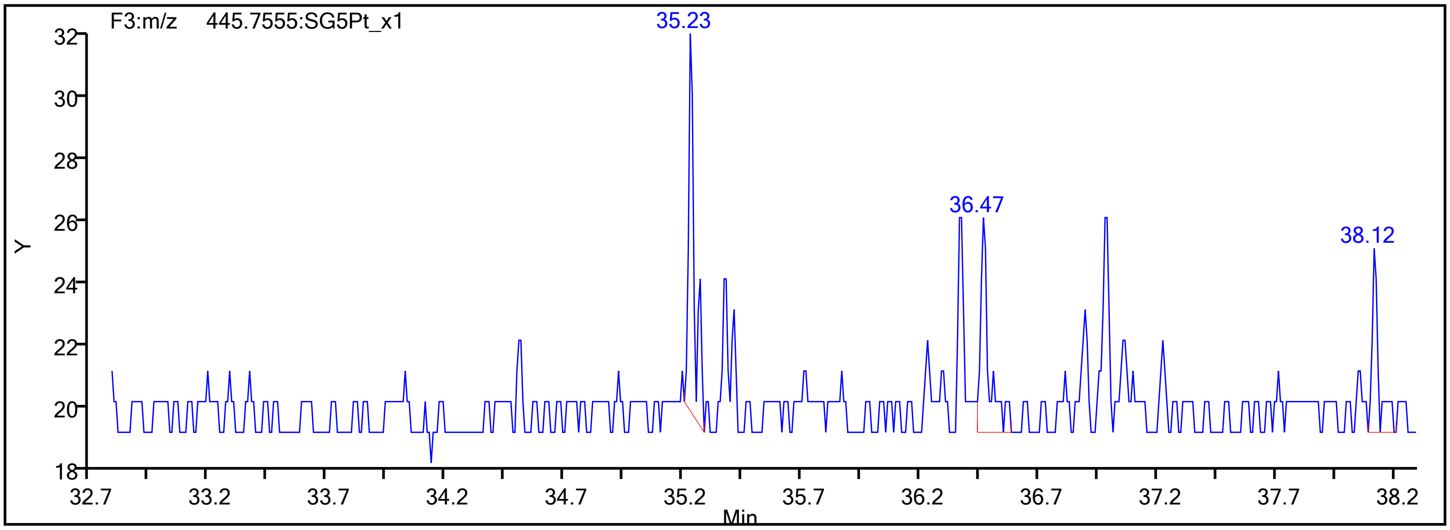

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HxCDD

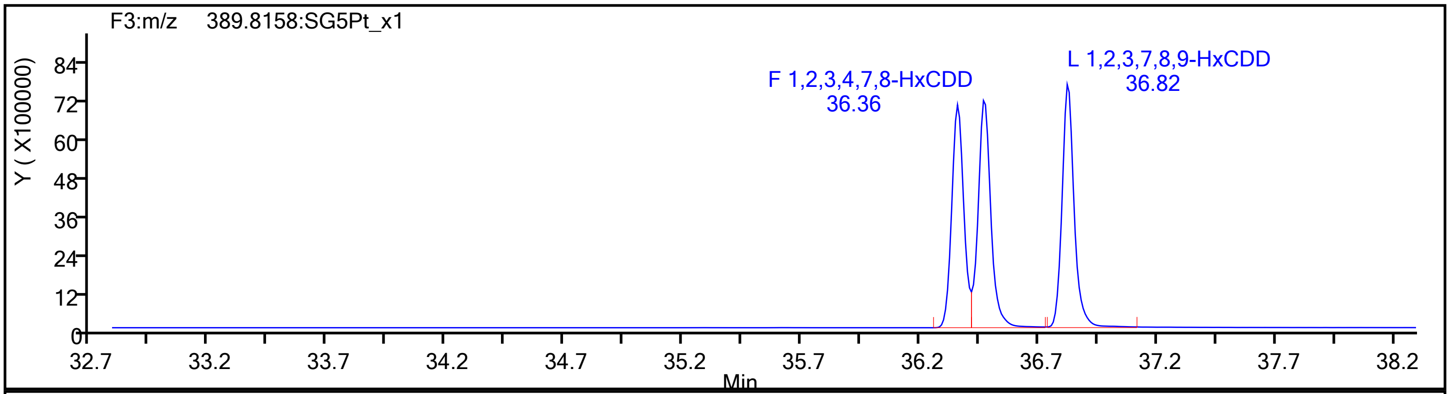

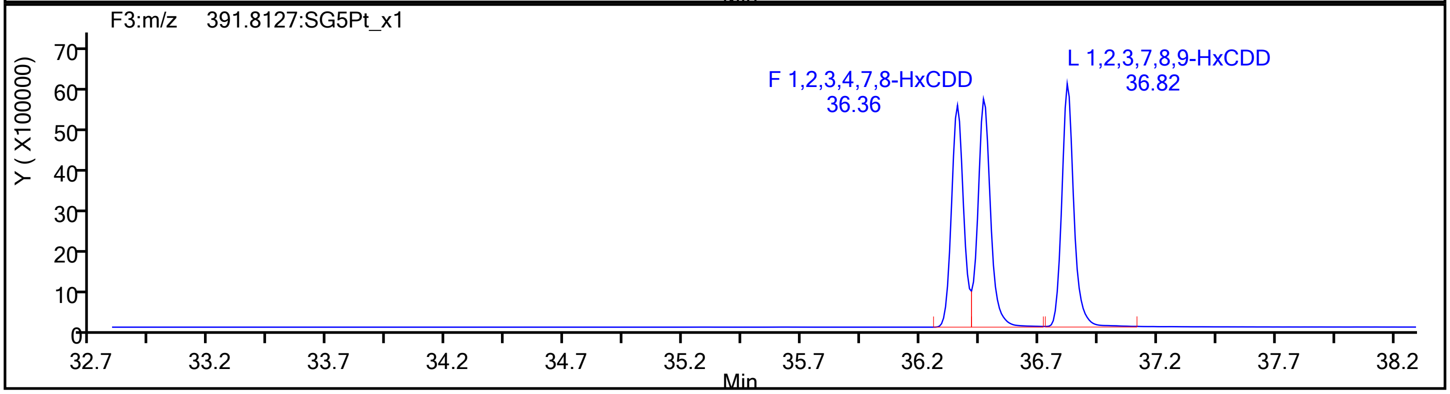

HxCDD Standards

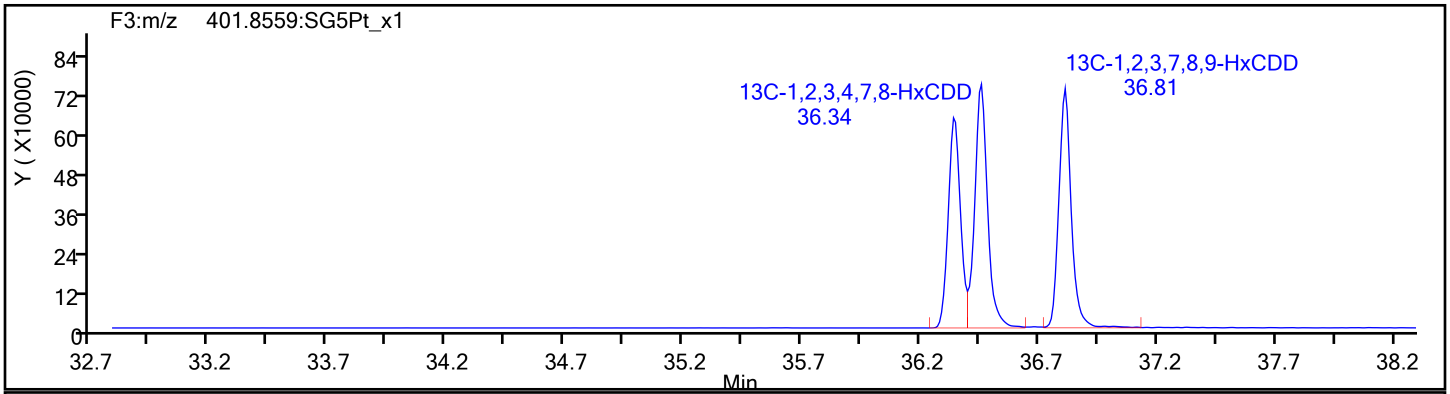

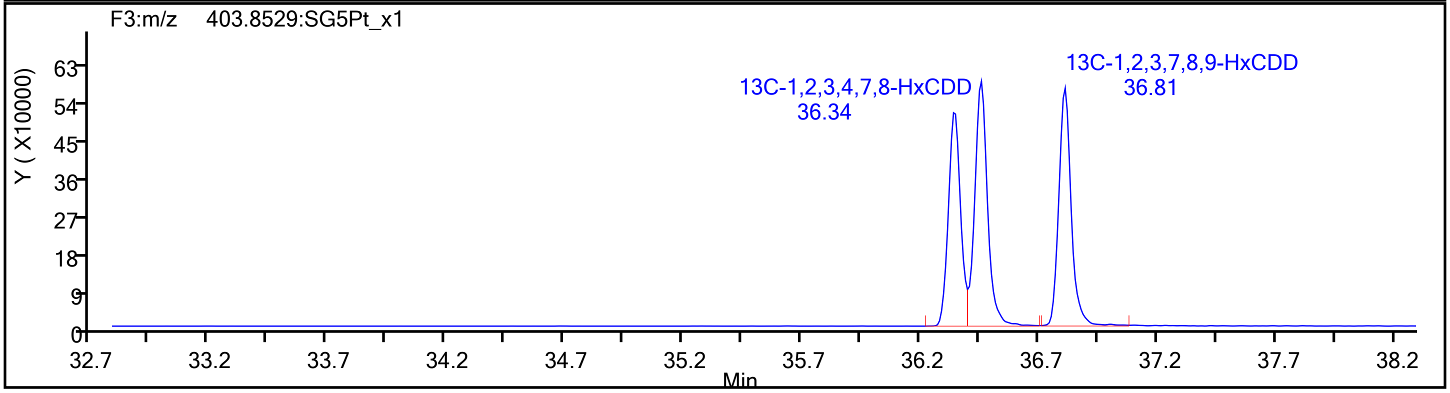

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

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Sample Line#: 7

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Column Dia: 0.32 mm

HpCDF

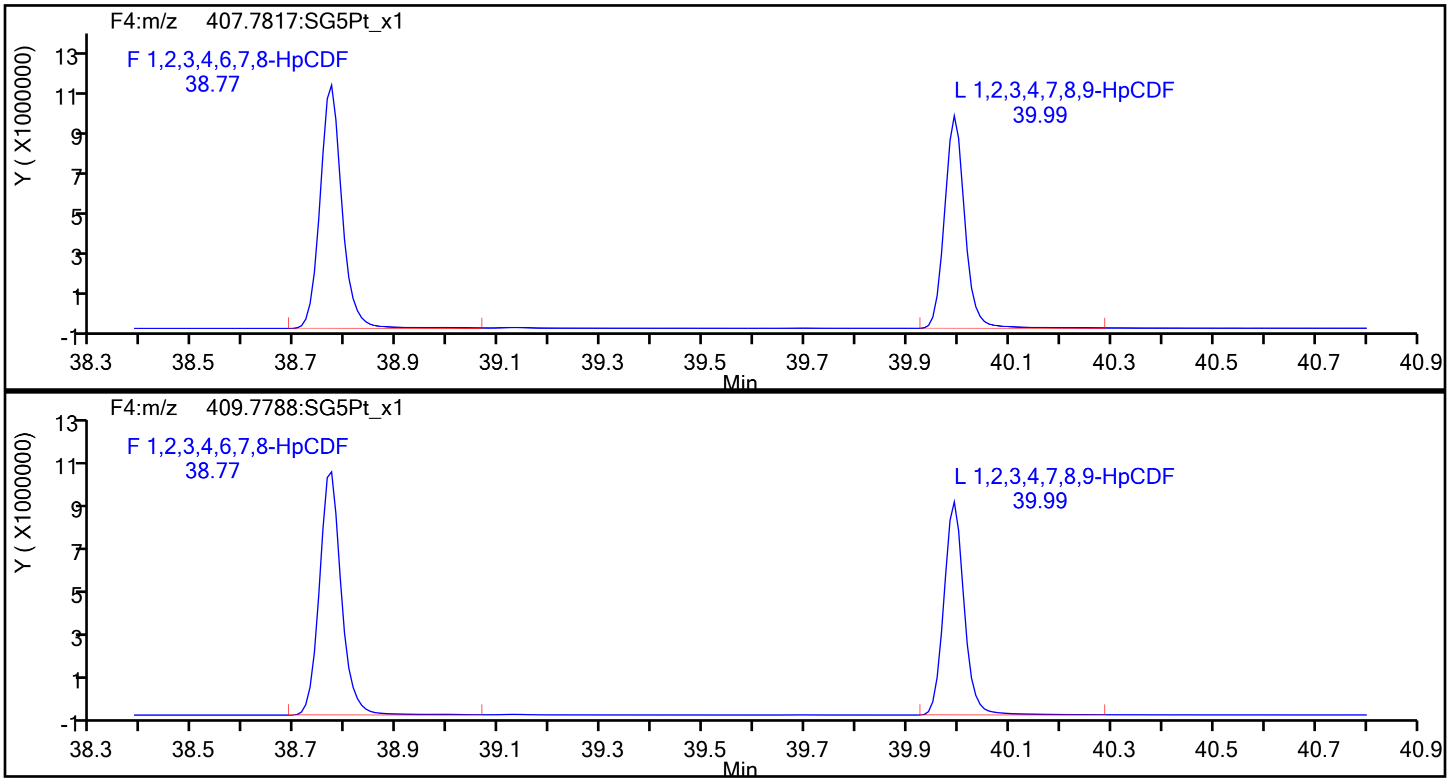

HpCDF Standards

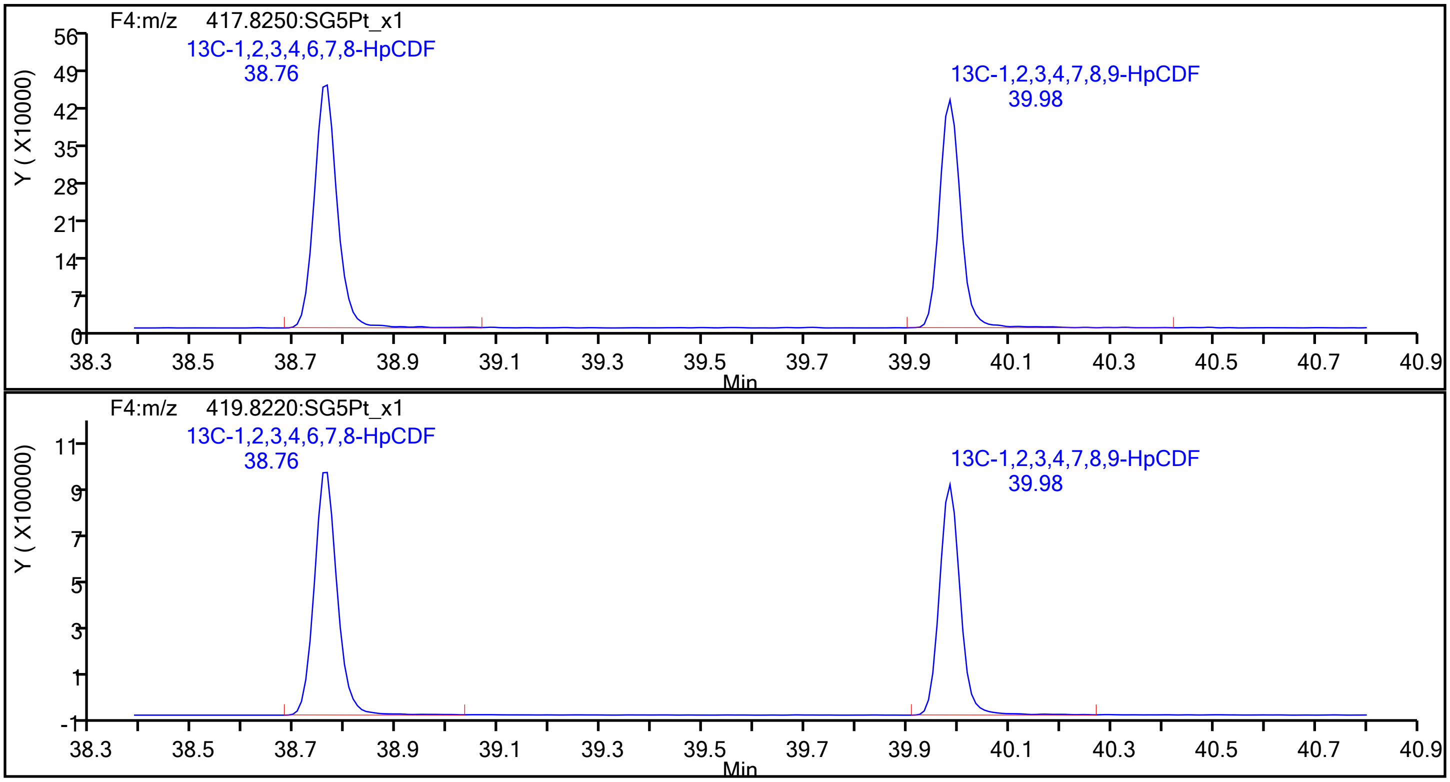

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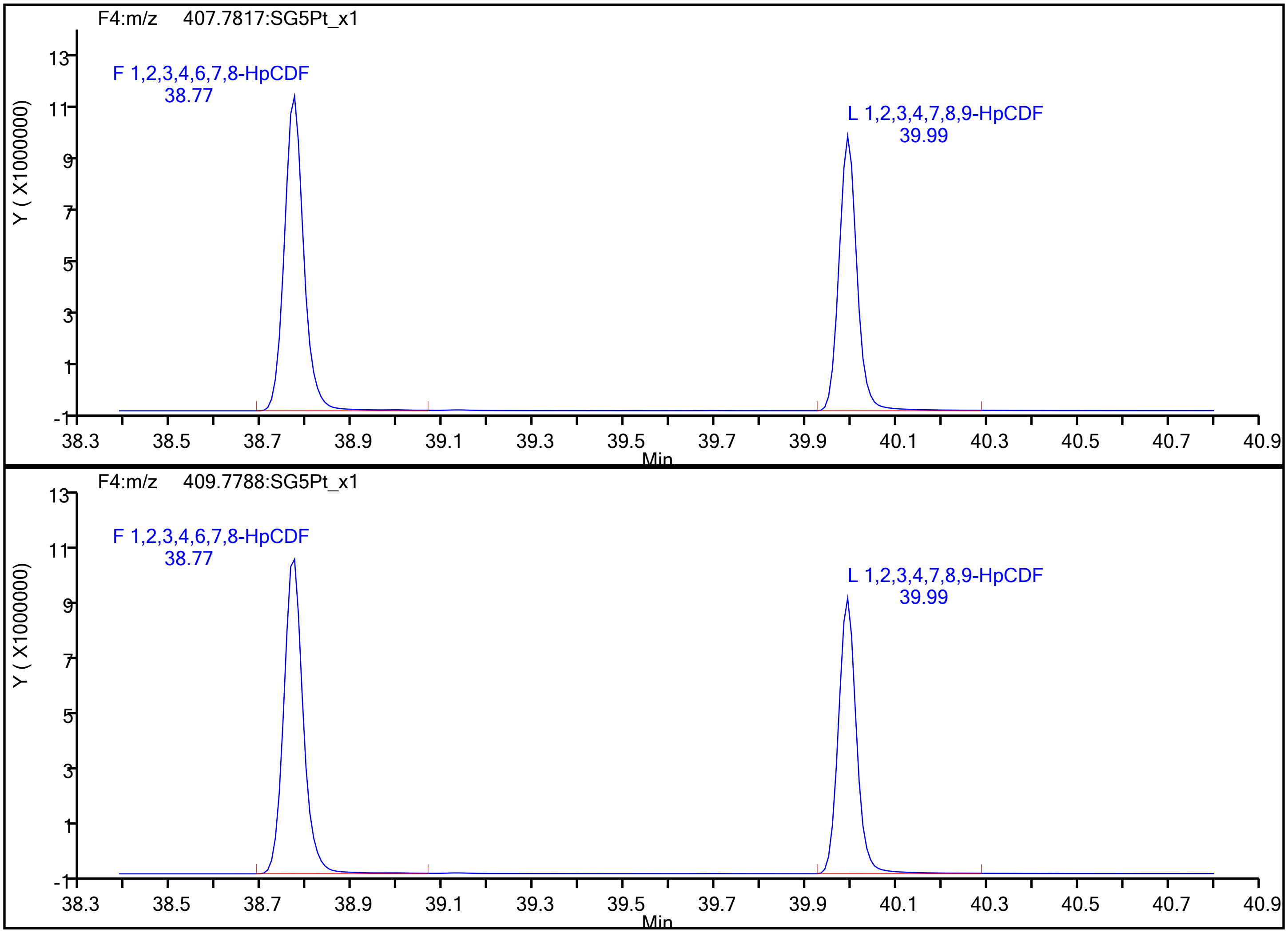

HpCDF Interference Mass

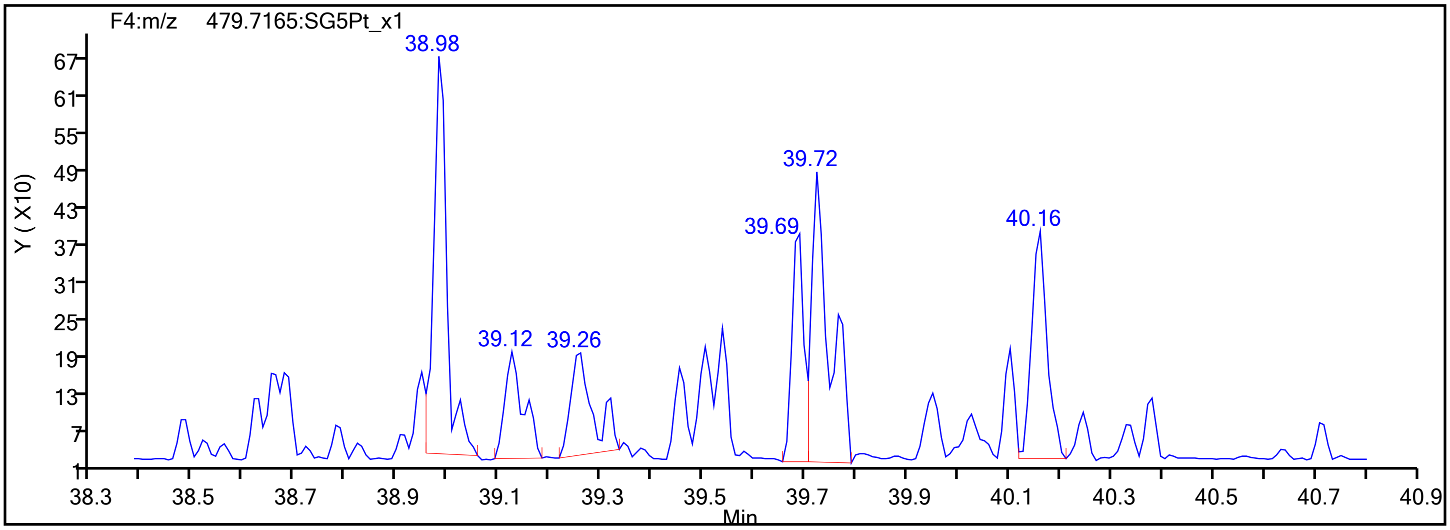

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HpCDD

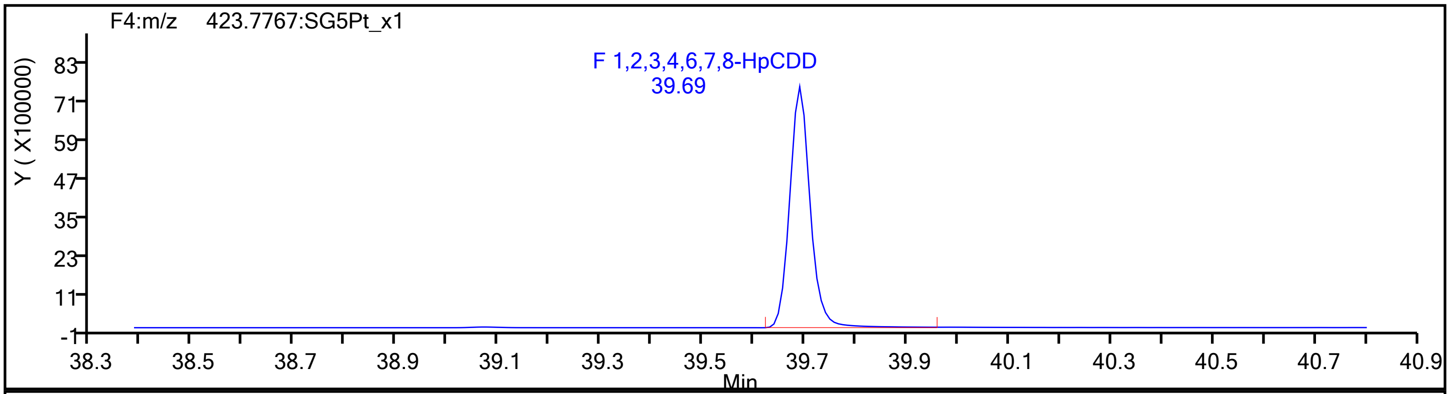

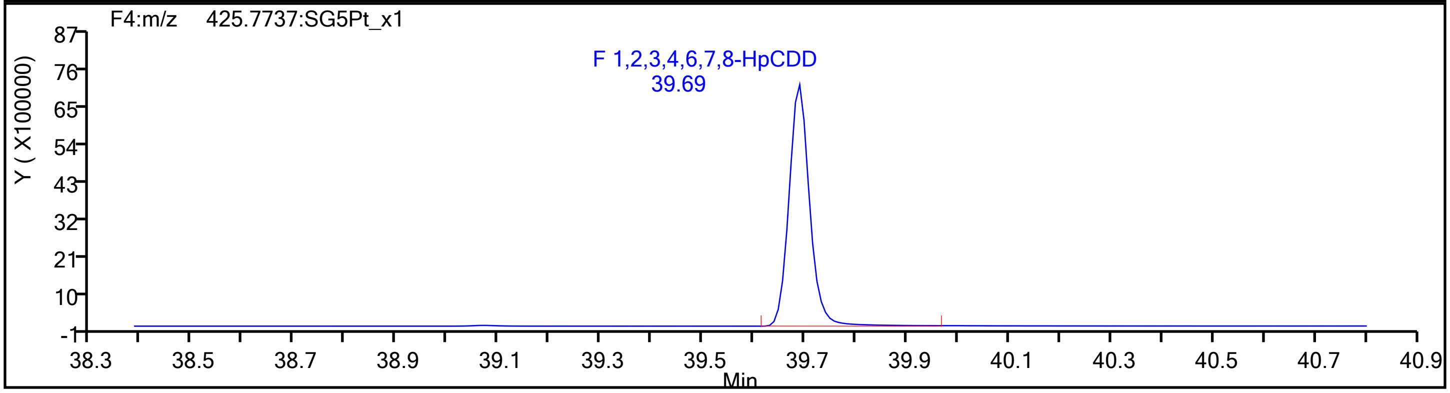

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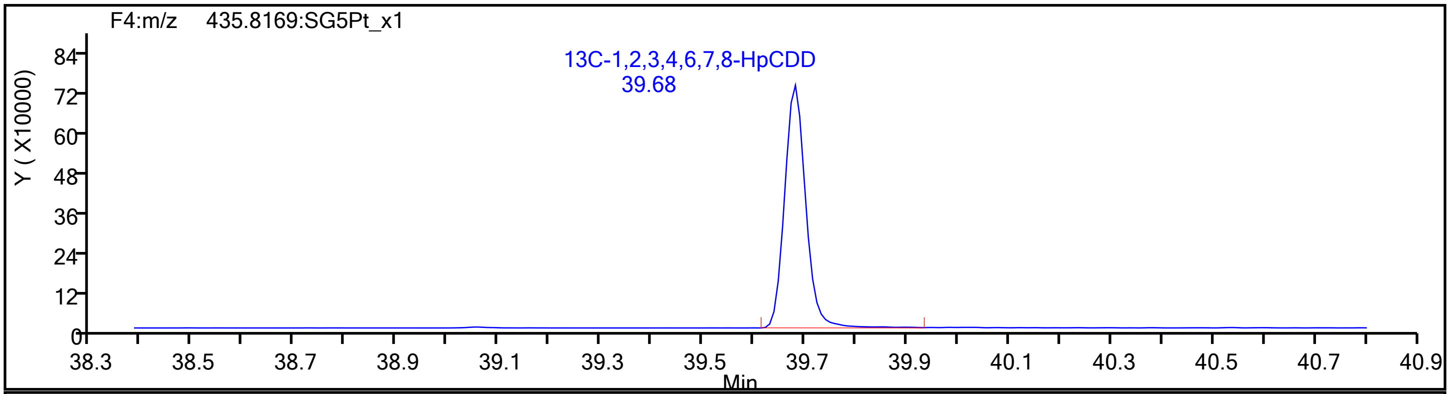

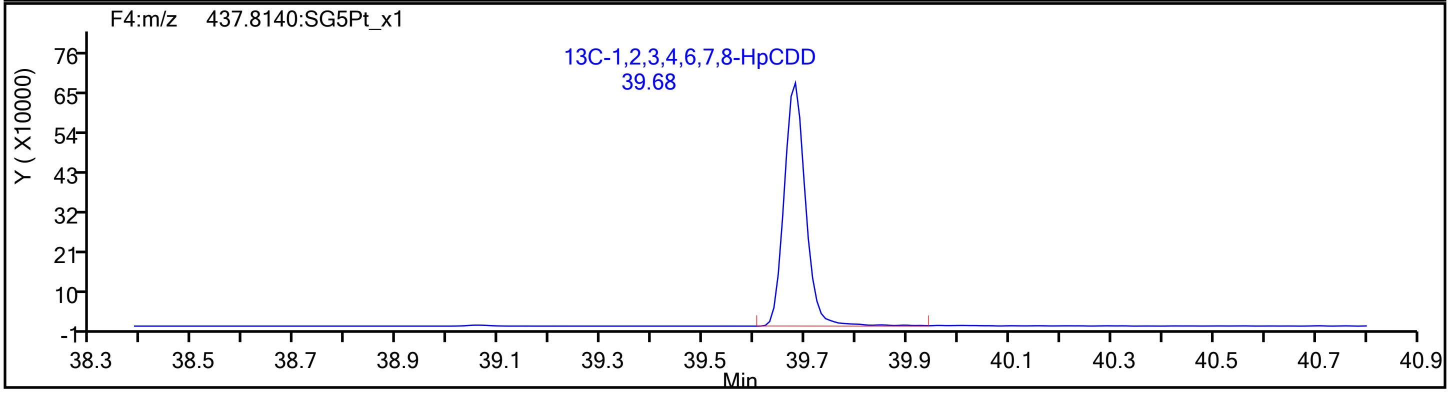

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OCDF

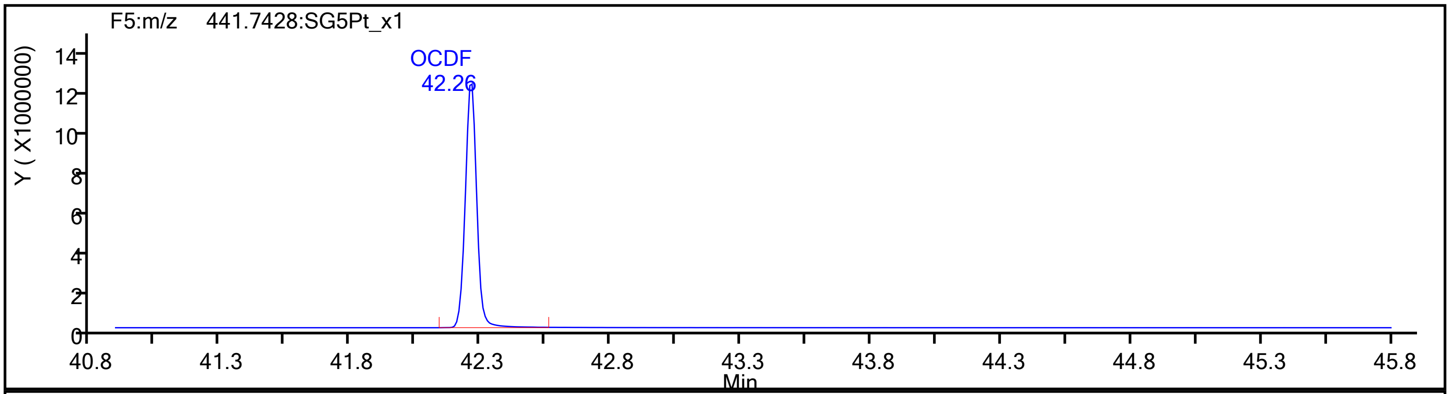

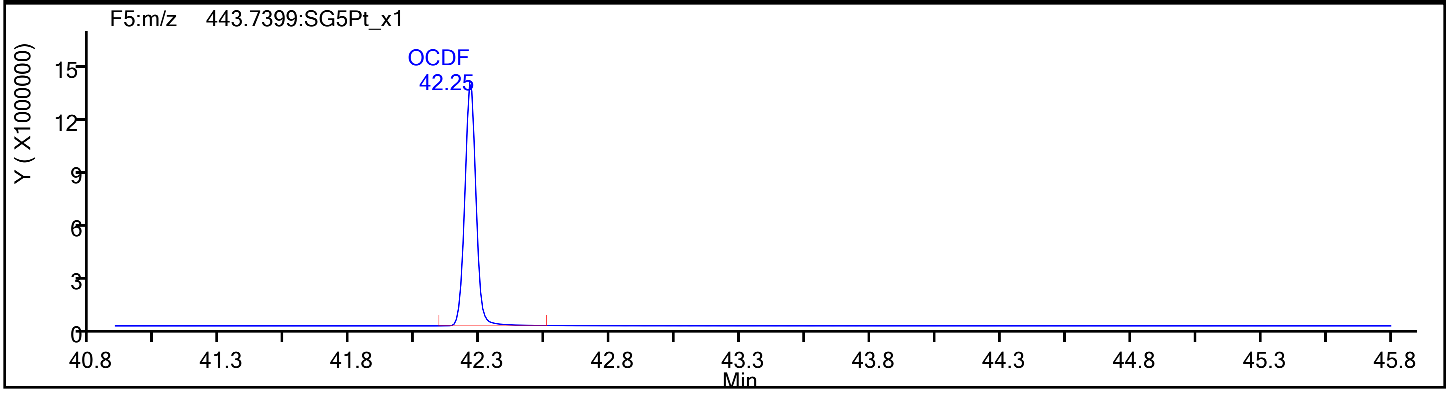

OCDF Standards

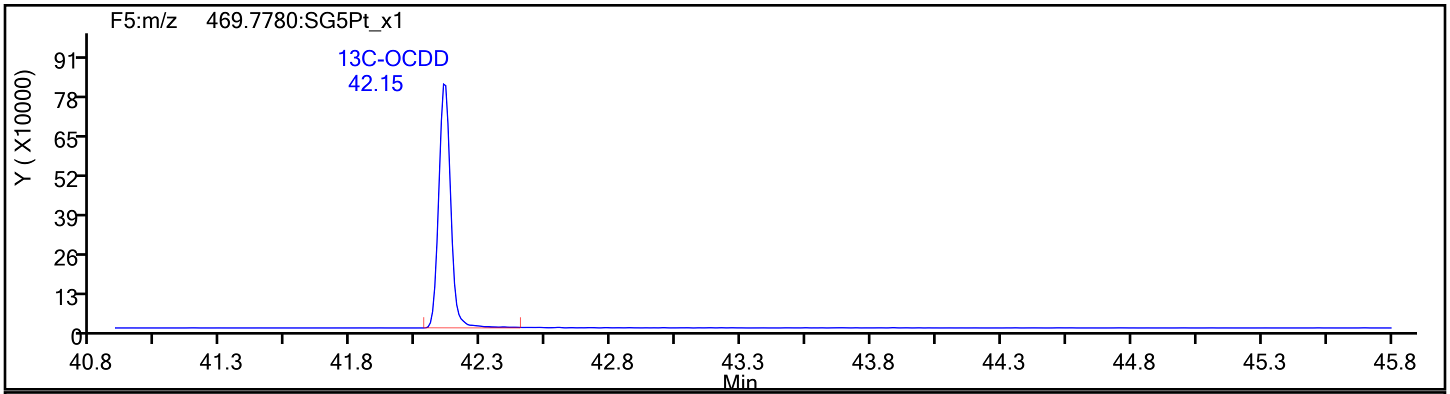

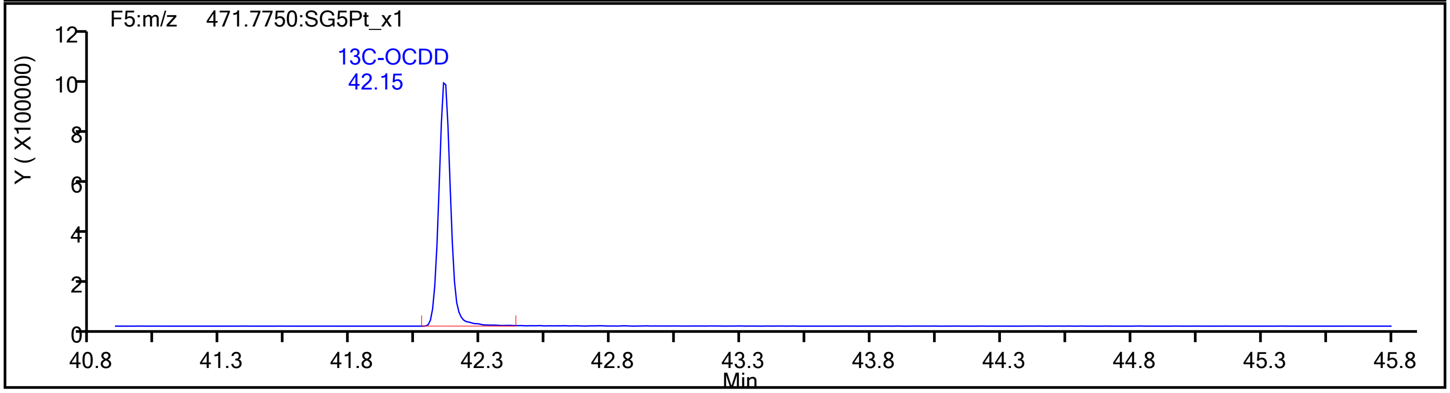

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OCDF

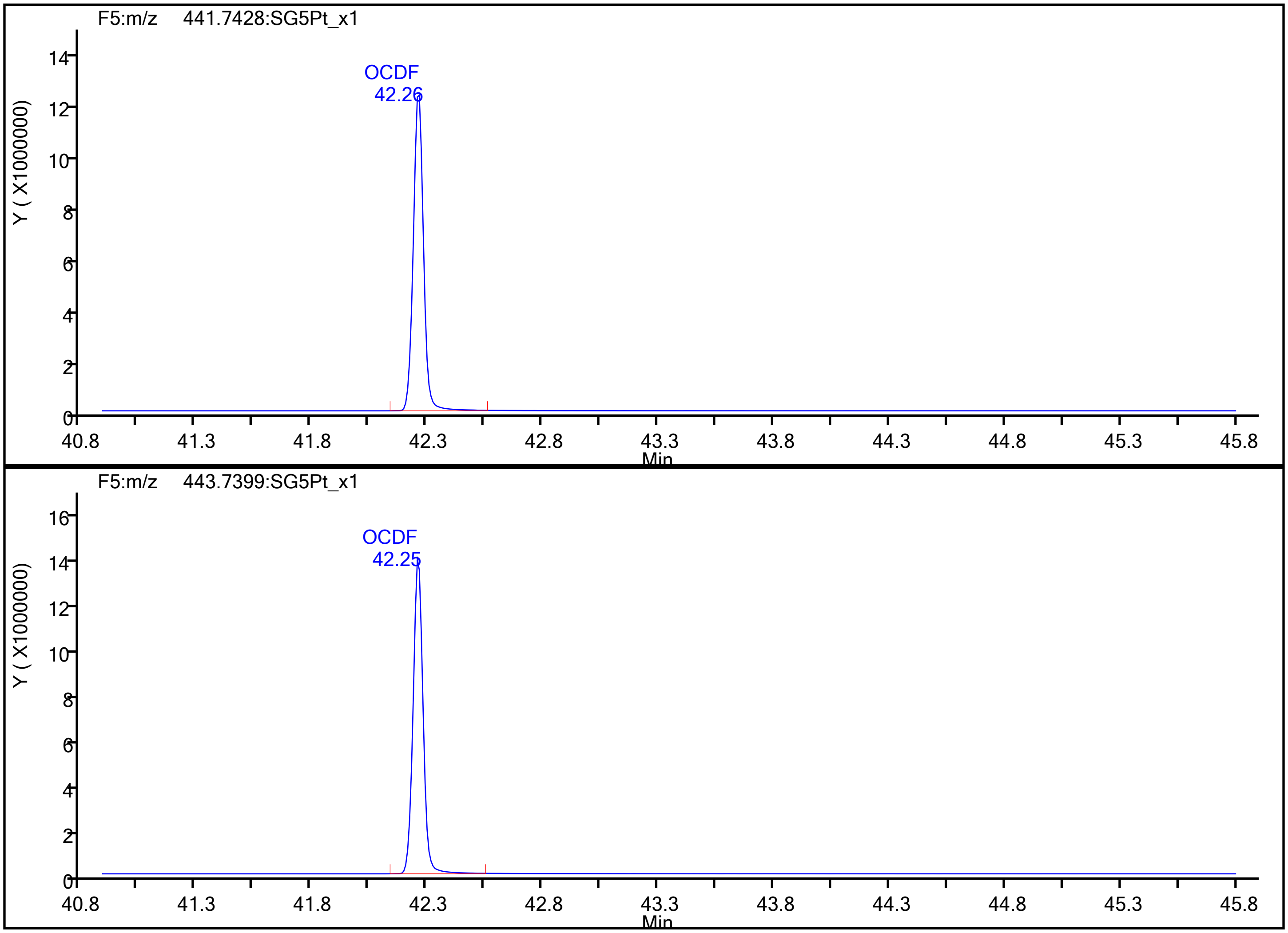

OCDF Interference Mass

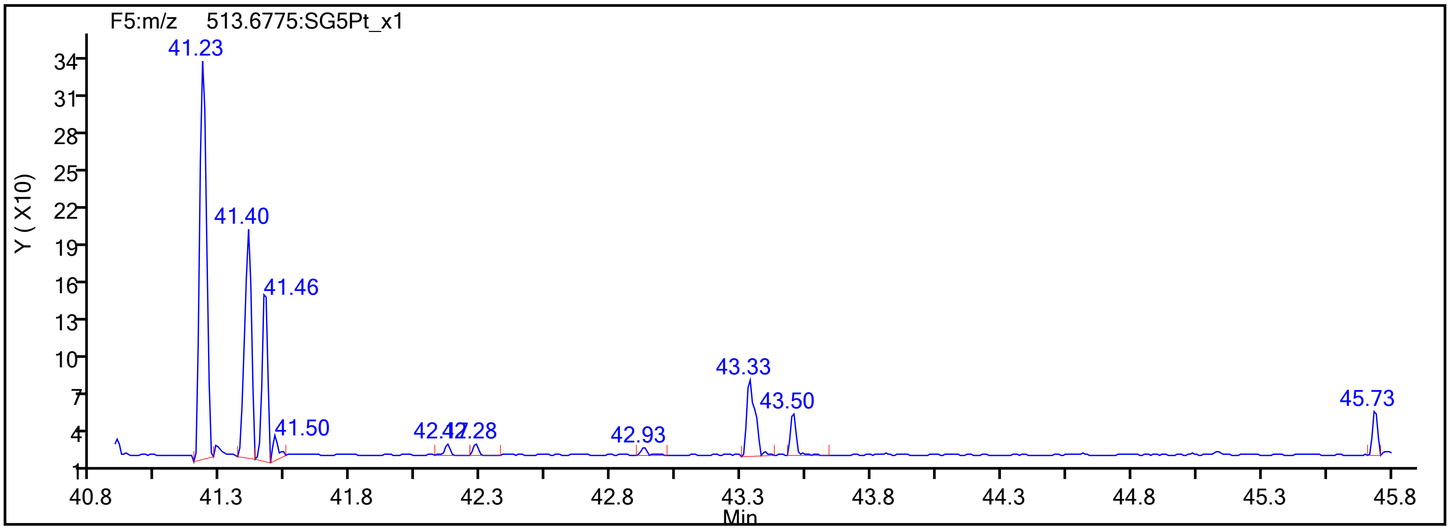

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Eurofins TestAmerica, Sacramento

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OCDD

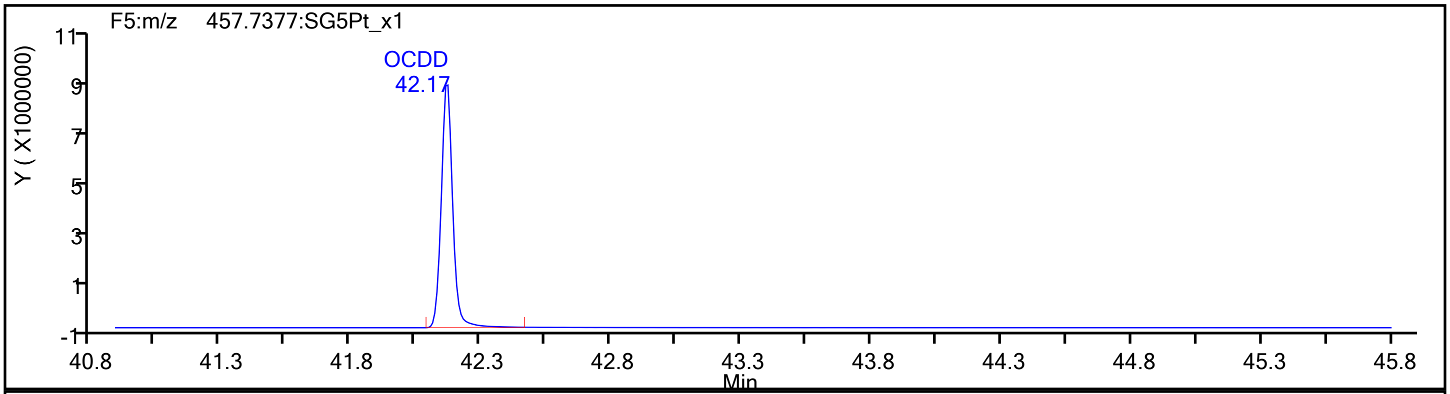

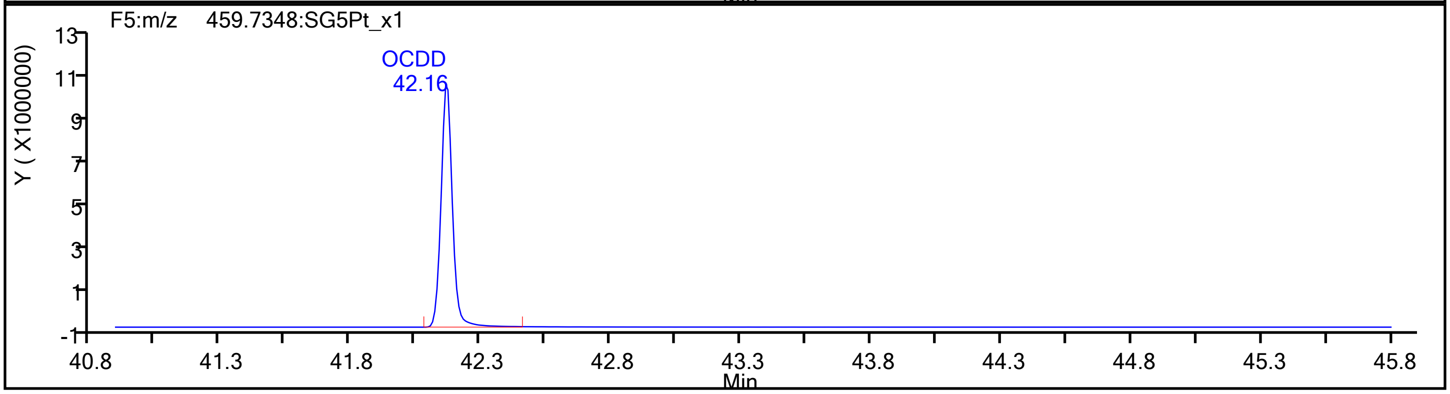

OCDD Standards

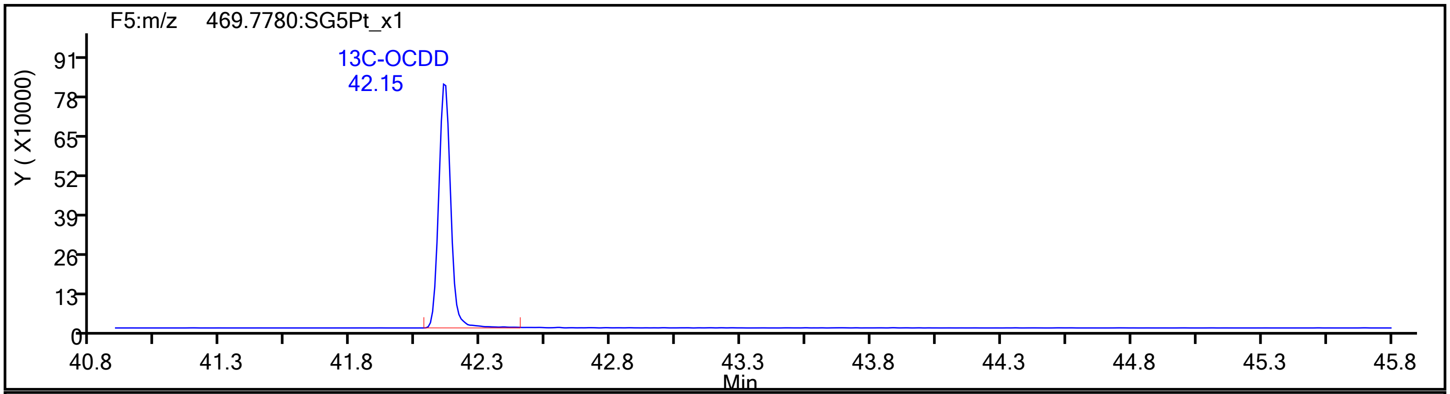

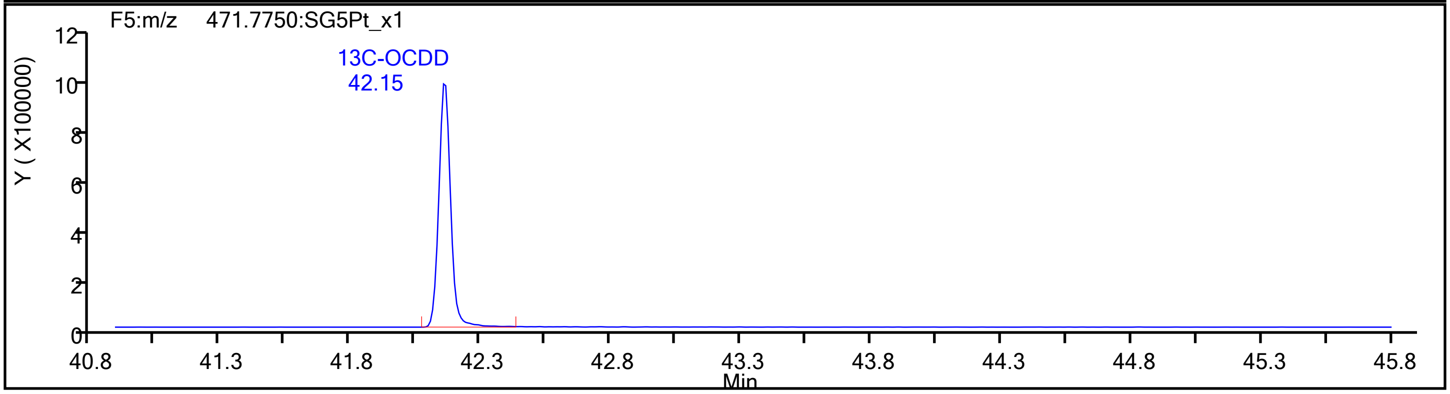

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

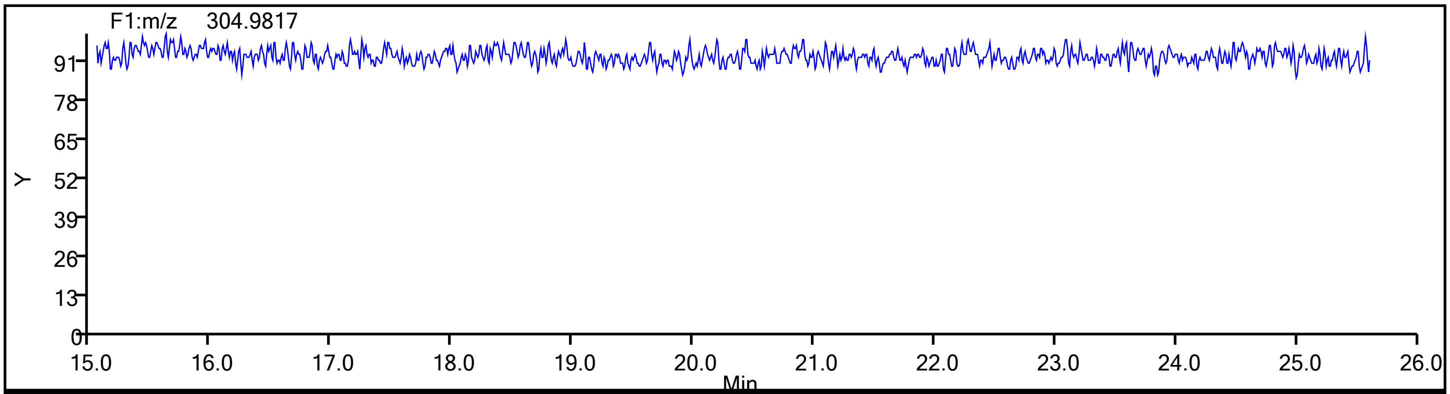

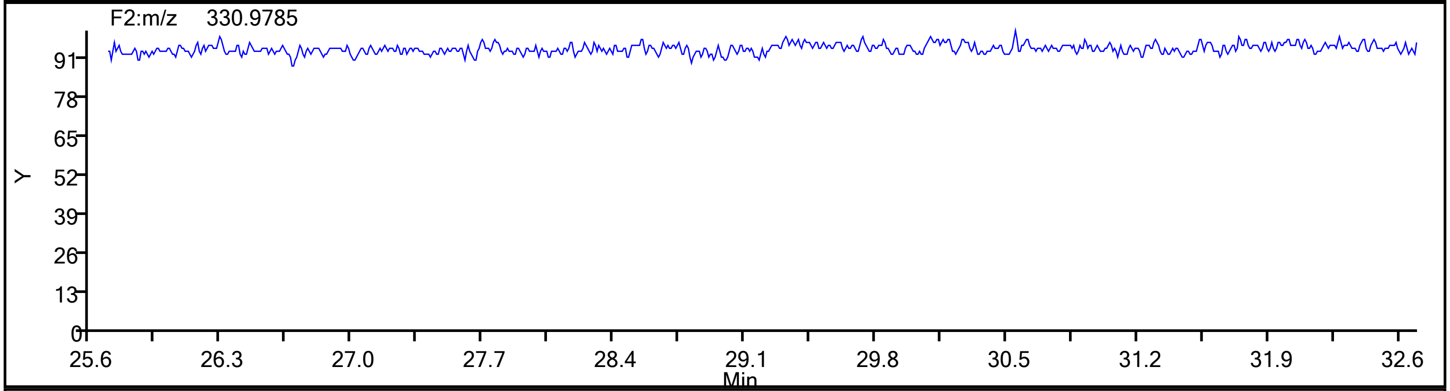

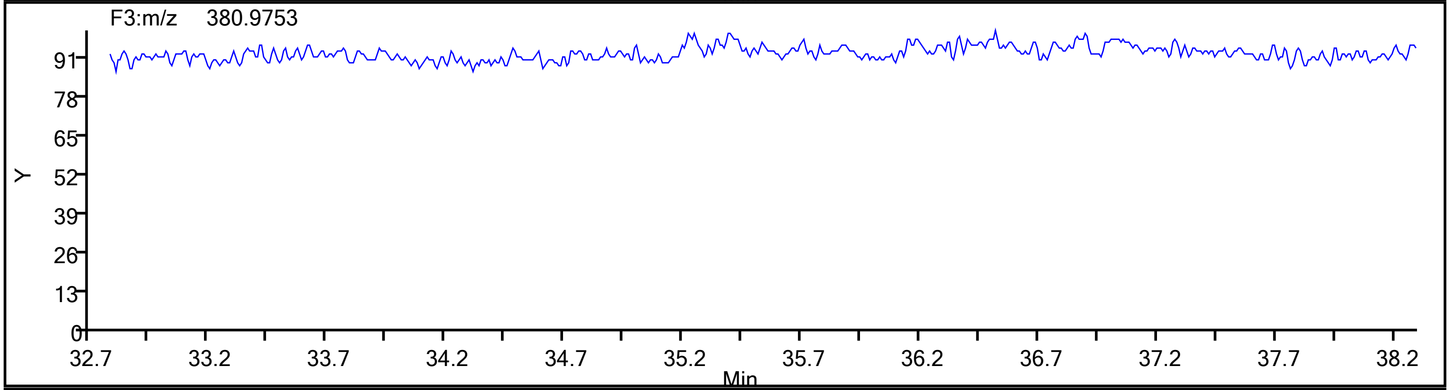

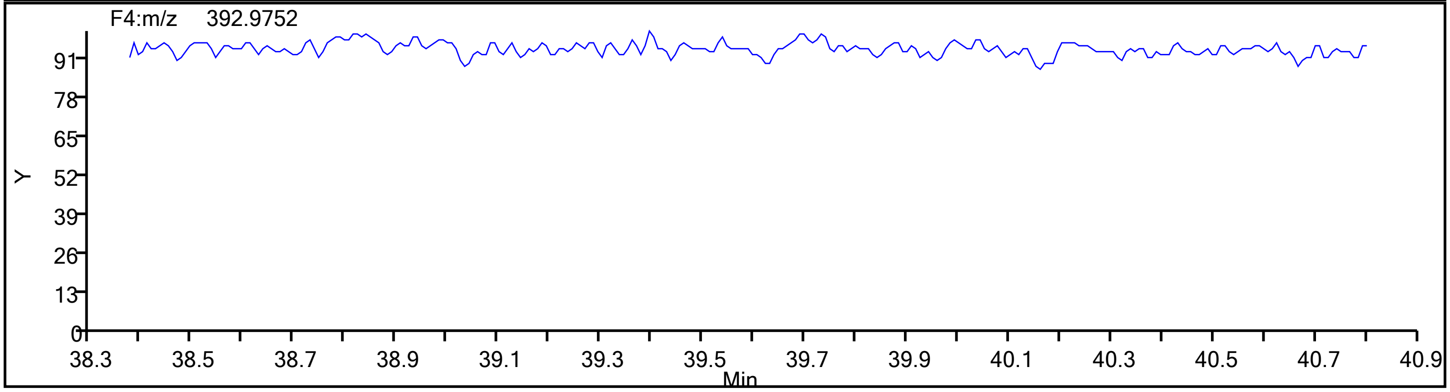

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Injection Date: 17-Nov-2020 16:08:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585
Sample Line#: 7

Column Type: DB-5
Column Dia: 0.32 mm

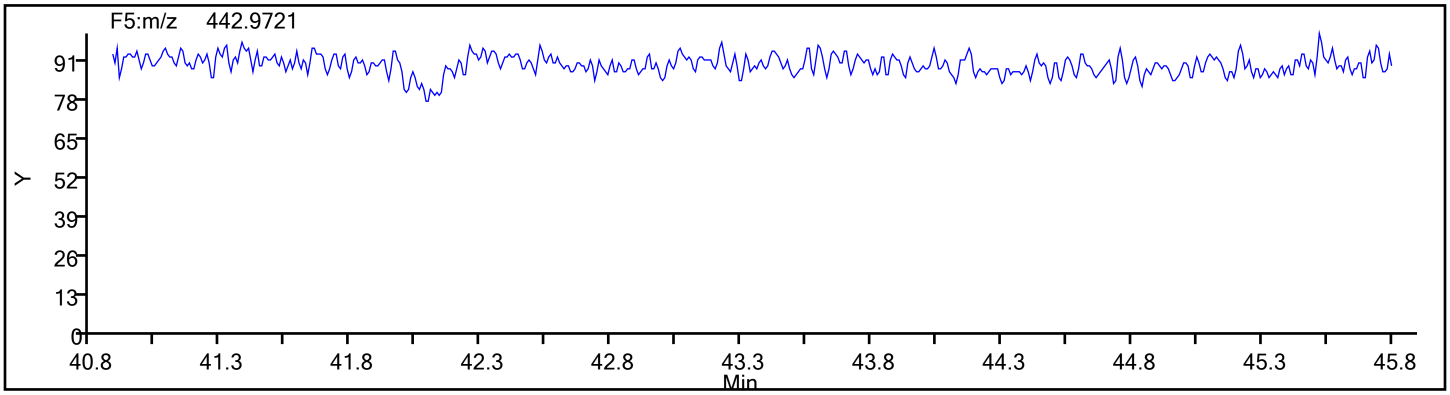

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Nov-2020 17:44:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:35 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:00:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.820	4241448	0.79	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.806	6843222	0.83	1.6832	95.9	95.9	0.2882	0.2882	95.85	
2,3,7,8-TCDF	20.832	48543	0.78	1.1547	0.6143	0.6143	0.0132	0.0132	123	
S Total TCDF					0.6143	0.6143	0.0132	0.0132		
D 13C-2,3,7,8-TCDD	22.215	4584854	0.82	1.0896	99.2	99.2	0.2004	0.2004	99.20	
2,3,7,8-TCDD	22.241	31468	0.84	1.1659	0.5887	0.5887	0.0311	0.0311	118	
$ 37Cl4-2,3,7,8-TCDD	22.224	24998		1.1445	0.5149	0.5149	0.006888	0.006888	103	
S Total TCDD					0.5887	0.5887	0.0311	0.0311		
D 13C-1,2,3,7,8-PeCDF	27.675	6354139	1.62	1.4604	102.6	102.6	0.4372	0.4372	103	
1,2,3,7,8-PeCDF	27.700	212906	1.57	1.1322	2.959	2.959	0.0332	0.0332	118	
D 13C-2,3,4,7,8-PeCDF	29.234	5781548	1.59	1.3504	100.9	100.9	0.4729	0.4729	101	
2,3,4,7,8-PeCDF	29.259	191690	1.55	1.1588	2.861	2.861	0.0387	0.0387	114	
S Total PeCDF					5.821	5.821	0.0359	0.0359		
D 13C-1,2,3,7,8-PeCDD	30.067	3703477	1.62	0.8729	100.0	100.0	0.1166	0.1166	100	
1,2,3,7,8-PeCDD	30.093	122563	1.61	1.1191	2.957	2.957	0.0486	0.0486	118	
S Total PeCDD					2.957	2.957	0.0486	0.0486		
D 13C-1,2,3,4,7,8-HxCDF	35.203	5181766	0.54	1.2808	98.2	98.2	0.3671	0.3671	98.19	
1,2,3,4,7,8-HxCDF	35.220	198989	1.26	1.3205	2.908	2.908	0.0323	0.0323	116	
D 13C-1,2,3,6,7,8-HxCDF	35.363	5869111	0.54	1.4615	97.5	97.5	0.3217	0.3217	97.47	
1,2,3,6,7,8-HxCDF	35.380	219564	1.19	1.2682	2.950	2.950	0.0310	0.0310	118	
D 13C-2,3,4,6,7,8-HxCDF	36.146	5395434	0.52	1.3227	99.0	99.0	0.3555	0.3555	99.01	
2,3,4,6,7,8-HxCDF	36.155	200786	1.25	1.2838	2.899	2.899	0.0291	0.0291	116	
D 13C-1,2,3,7,8,9-HxCDF	37.006	4537064	0.54	1.1062	99.5	99.5	0.4251	0.4251	99.55	
1,2,3,7,8,9-HxCDF	37.023	179336	1.25	1.3063	3.026	3.026	0.0310	0.0310	121	
S Total HxCDF					11.8	11.8	0.0308	0.0308		
* 13C-1,2,3,7,8,9-HxCDD	36.812	4120075	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.340	3537152	1.29	0.8757	98.0	98.0	0.2350	0.2350	98.04	
1,2,3,4,7,8-HxCDD	36.357	131766	1.26	1.1972	3.112	3.112	0.0325	0.0325	124	
D 13C-1,2,3,6,7,8-HxCDD	36.458	4357819	1.28	1.0651	99.3	99.3	0.1932	0.1932	99.31	
1,2,3,6,7,8-HxCDD	36.466	138982	1.25	1.0695	2.982	2.982	0.0330	0.0330	119	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.820	141949	1.27	1.1806	3.046	3.046	0.0314	0.0314	122	
S Total HxCDD					9.140	9.140	0.0323	0.0323		
D 13C-1,2,3,4,6,7,8-HpCDF	38.753	3789205	0.45	0.9521	96.6	96.6	0.4375	0.4375	96.59	
1,2,3,4,6,7,8-HpCDF	38.770	178282	1.06	1.5618	3.012	3.012	0.0269	0.0269	120	
D 13C-1,2,3,4,7,8,9-HpCDF	39.983	3027653	0.45	0.7782	94.4	94.4	0.5353	0.5353	94.44	
1,2,3,4,7,8,9-HpCDF	40.000	139513	1.08	1.4975	3.077	3.077	0.0315	0.0315	123	
S Total HpCDF					6.090	6.090	0.0292	0.0292		
D 13C-1,2,3,4,6,7,8-HpCDD	39.680	3354869	1.05	0.8393	97.0	97.0	0.2717	0.2717	97.02	
1,2,3,4,6,7,8-HpCDD	39.688	114006	1.03	1.1079	3.067	3.067	0.0229	0.0229	123	
S Total HpCDD					3.067	3.067	0.0229	0.0229		
D 13C-OCDD	42.160	4068864	0.90	0.5301	186.3	186.3	0.2868	0.2868	93.15	
OCDF	42.261	178099	0.90	1.4802	5.914	5.914	0.0413	0.0413	118	
OCDD	42.168	147577	0.96	1.1666	6.218	6.218	0.0285	0.0285	124	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Nov-2020 17:44:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:35 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:00:33

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.820	21.818	0		1877506	267395	377	942	709		
333.9338	21.820	21.818	0		2363942	328789	144	360	2283	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.806	20.808	0	0.954	3103577	464725	604	1510	769		
317.9389	20.806	20.808	0	0.954	3739645	581979	553	1382	1052	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.832	20.834	0	1.001	21303	3205	17	42	189		
305.8987	20.815	20.834	-1	1.000	27240	4510	47	117	96	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.215	22.213	0	1.018	2067944	266183	377	942	706		
333.9338	22.198	22.213	-1	1.017	2516910	327532	144	360	2275	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.241	22.239	0	1.001	14361	2167	72	180	30		
321.8936	22.258	22.239	1	1.002	17107	2537	14	35	181	0.84(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.224	22.241	-1	1.019	24998	3349	19	47	176		
13C-1,2,3,7,8-PeCDF											
351.9000	27.675	27.677	0	1.268	3925688	616378	921	2302	669		
353.8970	27.675	27.677	0	1.268	2428451	387020	602	1505	643	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.700	27.702	0	1.001	129982	20036	60	150	334		
341.8567	27.700	27.702	0	1.001	82924	12393	91	227	136	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.234	29.235	0	1.340	3549189	513672	921	2302	558		
353.8970	29.234	29.235	0	1.340	2232359	327076	602	1505	543	1.59(1.32-1.78)	

Report Date: 18-Nov-2020 12:35:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.259	29.262	0	1.001	116508	16620	60	150	277		
341.8567	29.250	29.262	-1	1.001	75182	10119	91	227	111	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.067	30.073	0	1.378	2289185	306280	151	377	2028		
369.8919	30.059	30.073	-1	1.378	1414292	190664	92	230	2072	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.093	30.100	0	1.001	75533	9834	66	165	149		
357.8516	30.109	30.100	1	1.001	47030	6207	42	105	148	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.203	35.202	0	0.956	1816093	414668	738	1845	562		
385.8610	35.203	35.202	0	0.956	3365673	760607	1275	3187	597	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.220	35.219	0	1.000	111108	25806	118	295	219		
375.8178	35.220	35.219	0	1.000	87881	20142	83	207	243	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.363	35.361	0	0.961	2054895	444653	738	1845	603		
385.8610	35.363	35.361	0	0.961	3814216	832641	1275	3187	653	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.380	35.376	0	1.000	119147	25320	118	295	215		
375.8178	35.371	35.376	0	1.000	100417	20662	83	207	249	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.146	36.142	0	0.982	1850628	466806	738	1845	633		
385.8610	36.146	36.142	0	0.982	3544806	878912	1275	3187	689	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.155	36.158	0	1.000	111371	28175	118	295	239		
375.8178	36.155	36.158	0	1.000	89415	22000	83	207	265	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.006	37.005	0	1.005	1585694	429630	738	1845	582		
385.8610	37.006	37.005	0	1.005	2951370	810150	1275	3187	635	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.023	37.019	0	1.000	99750	25726	118	295	218		
375.8178	37.023	37.019	0	1.000	79586	20596	83	207	248	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.812	36.808	0		2312665	594447	480	1200	1238		
403.8529	36.812	36.808	0		1807410	475631	401	1002	1186	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.340	36.340	0	0.987	1991502	561408	480	1200	1170		
403.8529	36.340	36.340	0	0.987	1545650	421505	401	1002	1051	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.357	36.355	0	1.000	73551	19464	84	210	232		
391.8127	36.357	36.355	0	1.000	58215	15454	69	172	224	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.458	36.454	0	0.990	2446546	601835	480	1200	1254		
403.8529	36.458	36.454	0	0.990	1911273	479286	401	1002	1195	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.466	36.468	0	1.000	77221	18316	84	210	218		
391.8127	36.466	36.468	0	1.000	61761	15354	69	172	223	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.820	36.821	0	1.013	79402	19327	84	210	230		
391.8127	36.820	36.821	0	1.013	62547	15820	69	172	229	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.753	38.755	0	1.053	1183472	365739	645	1612	567		
419.8220	38.762	38.755	0	1.053	2605733	789828	1138	2845	694	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.770	38.769	0	1.000	91605	27550	115	287	240		
409.7788	38.770	38.769	0	1.000	86677	27098	79	197	343	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.983	39.984	0	1.086	941227	318519	645	1612	494		
419.8220	39.983	39.984	0	1.086	2086426	709350	1138	2845	623	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.000	39.994	0	1.000	72394	24595	115	287	214		
409.7788	39.992	39.994	0	1.000	67119	23171	79	197	293	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.680	39.679	0	1.078	1715826	576653	491	1227	1174		
437.8140	39.680	39.679	0	1.078	1639043	554670	485	1212	1144	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.688	39.689	0	1.000	57877	19580	74	185	265		
425.7737	39.688	39.689	0	1.000	56129	18826	41	102	459	1.03(0.88-1.20)	
13C-OCDD											
469.7780	42.160	42.157	0	1.145	1932377	578644	324	810	1786		
471.7750	42.160	42.157	0	1.145	2136487	655571	327	817	2005	0.90(0.76-1.02)	
OCDF											
441.7428	42.261	42.260	0	1.002	84155	24281	42	105	578		
443.7399	42.261	42.260	0	1.002	93944	27204	109	272	250	0.90(0.76-1.02)	
OCDD											
457.7377	42.168	42.167	0	1.000	72389	21679	41	102	529		
459.7348	42.168	42.167	0	1.000	75188	22291	41	102	544	0.96(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:46
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

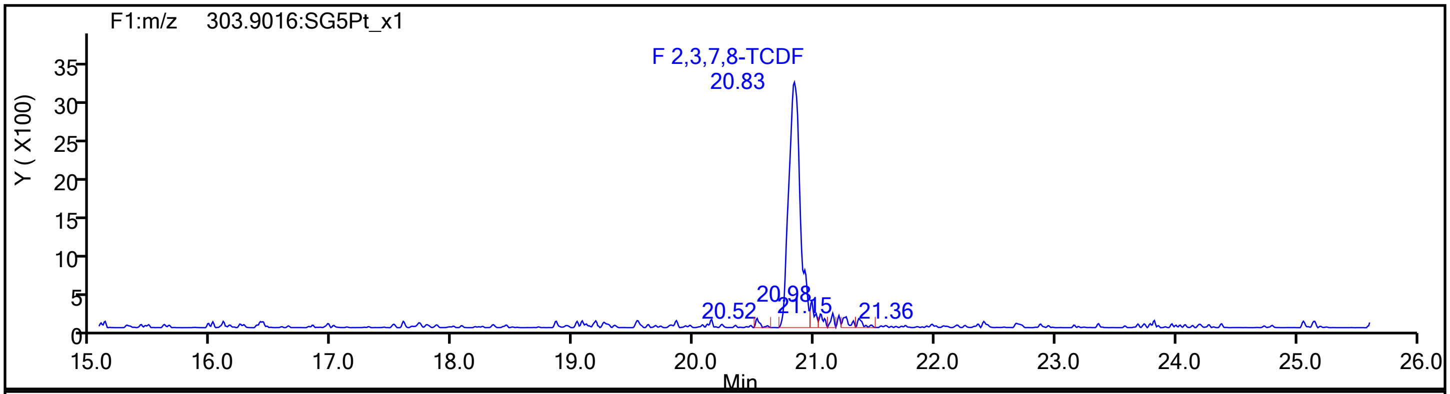

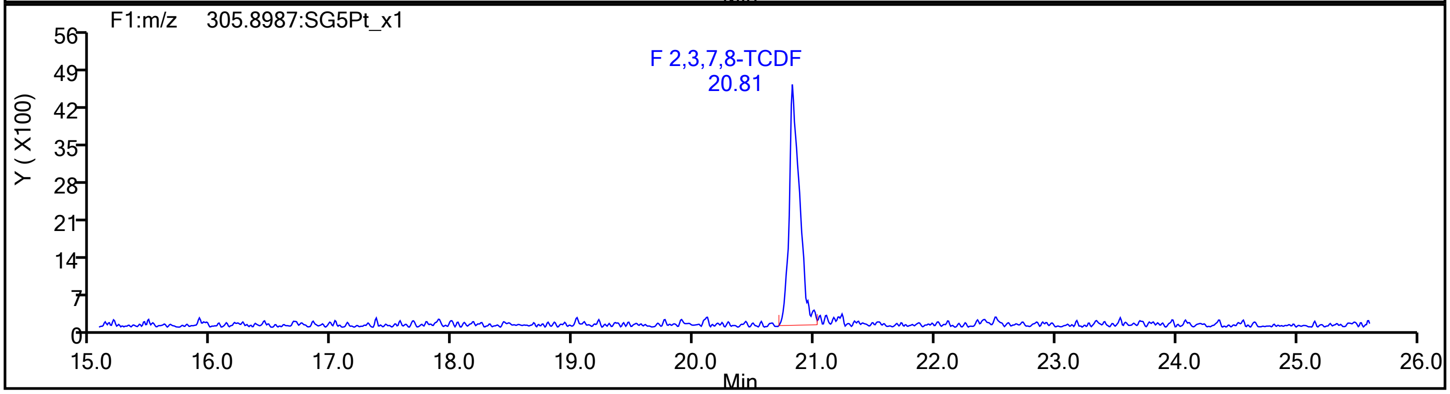

TCDF Standards

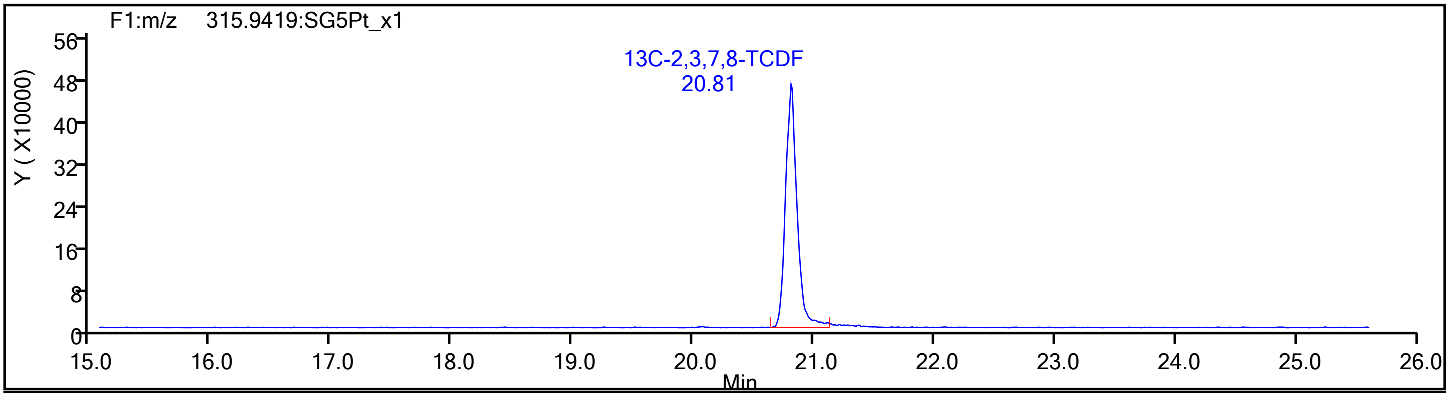

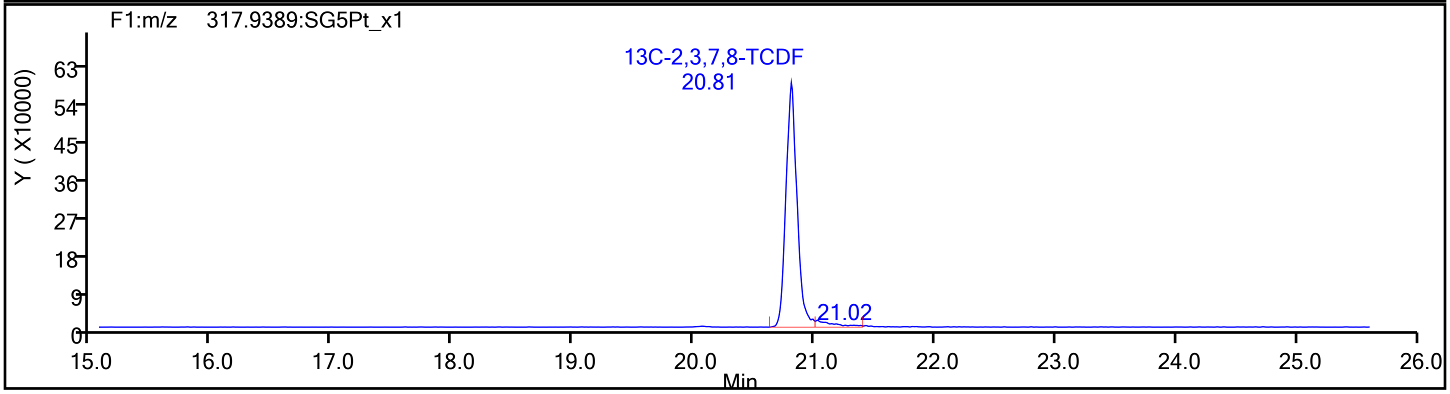

Report Date: 18-Nov-2020 12:35:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 9
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TCDF

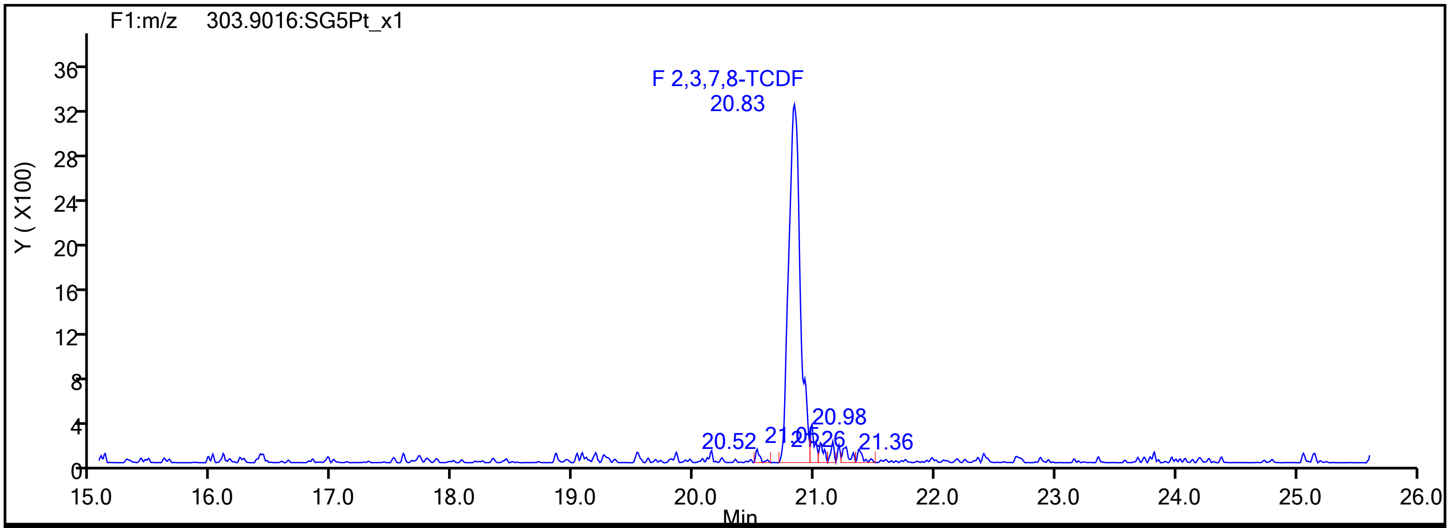

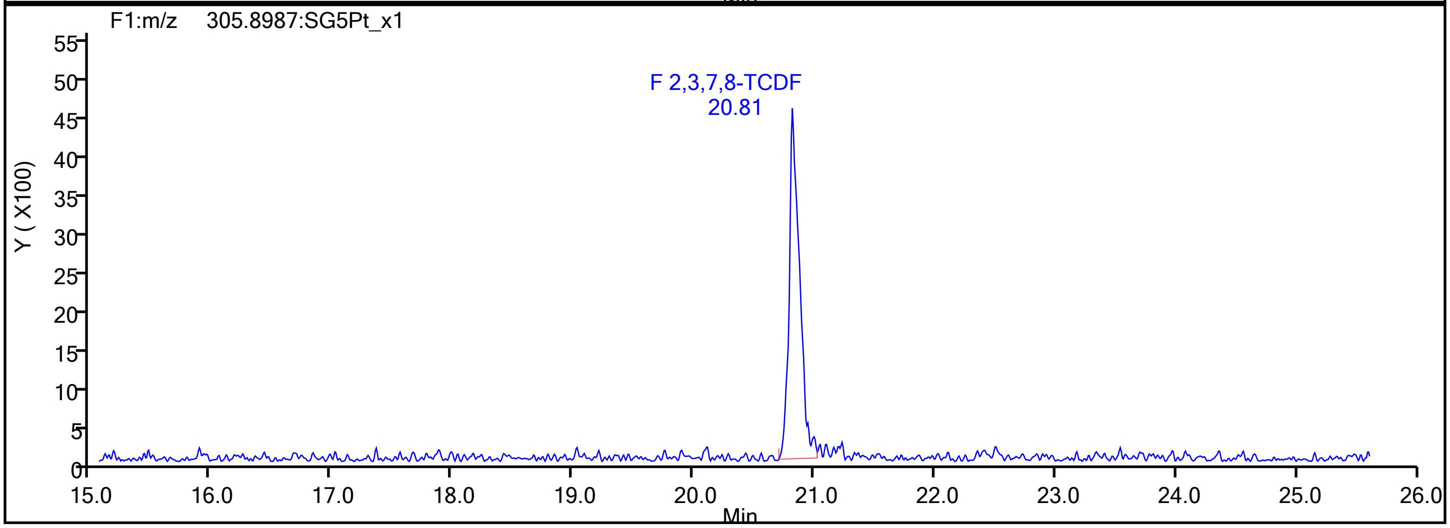

TCDF Interference Mass

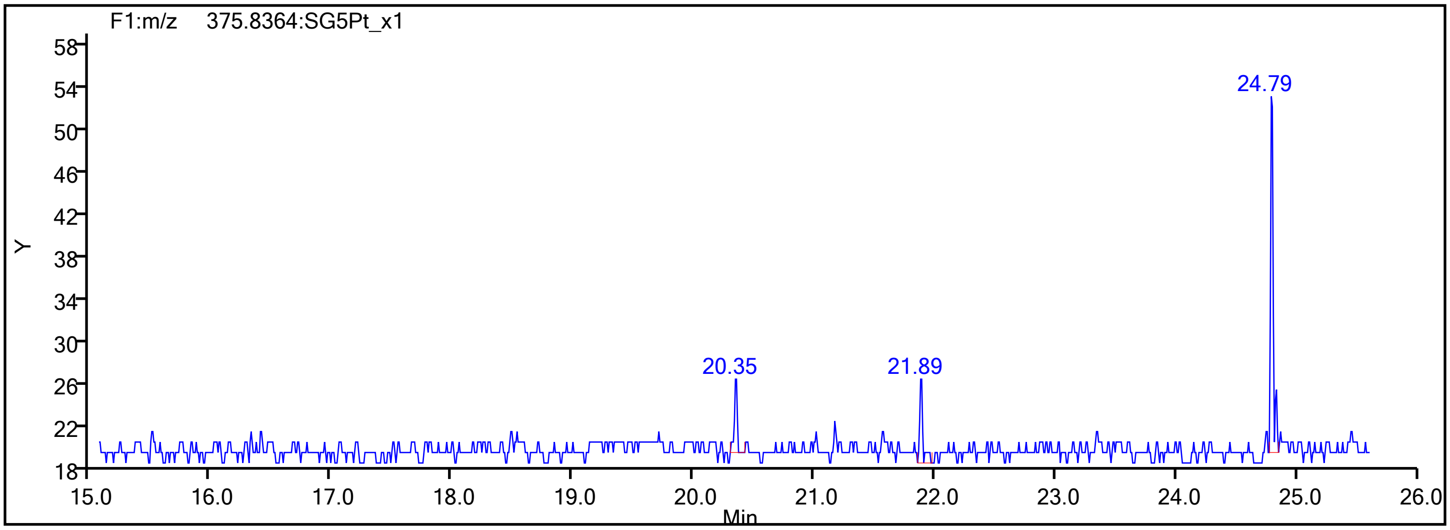

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Eurofins TestAmerica, Sacramento

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TCDD

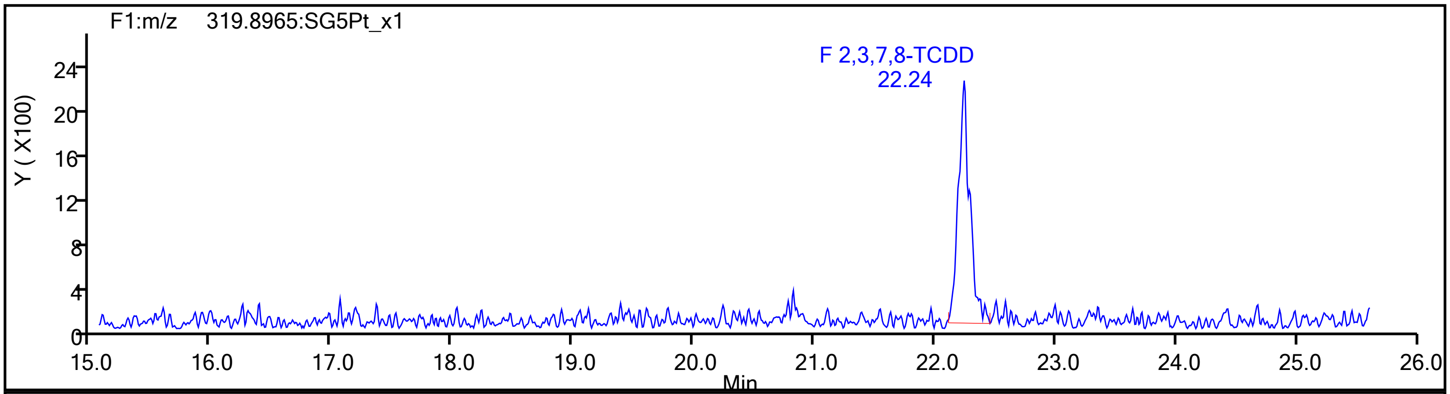

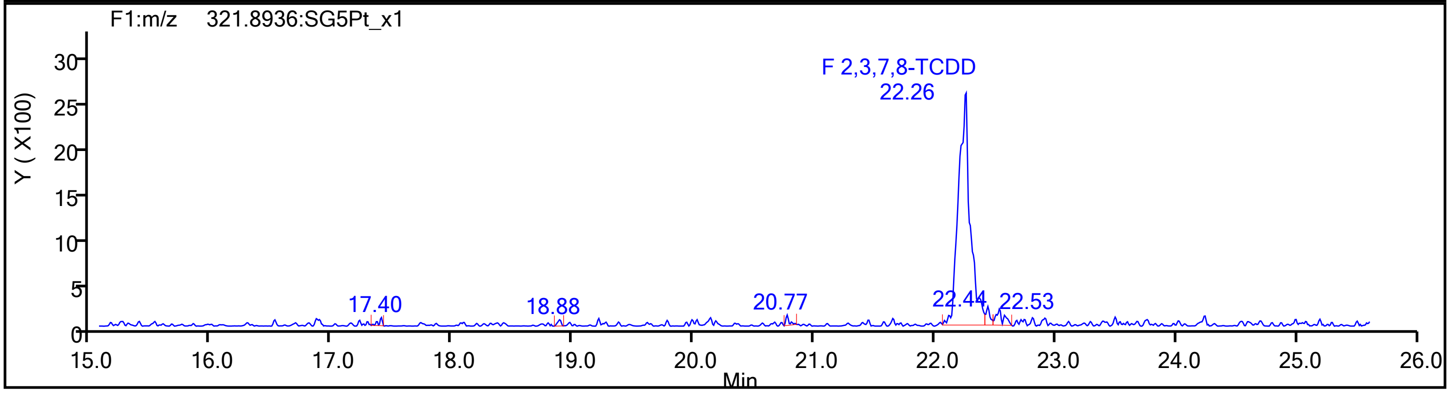

TCDD Standards

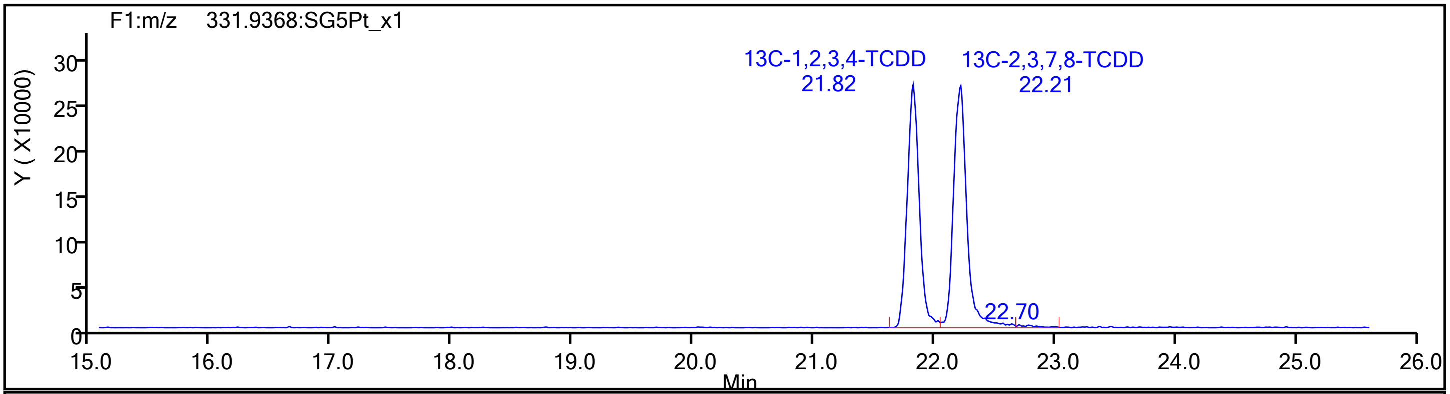

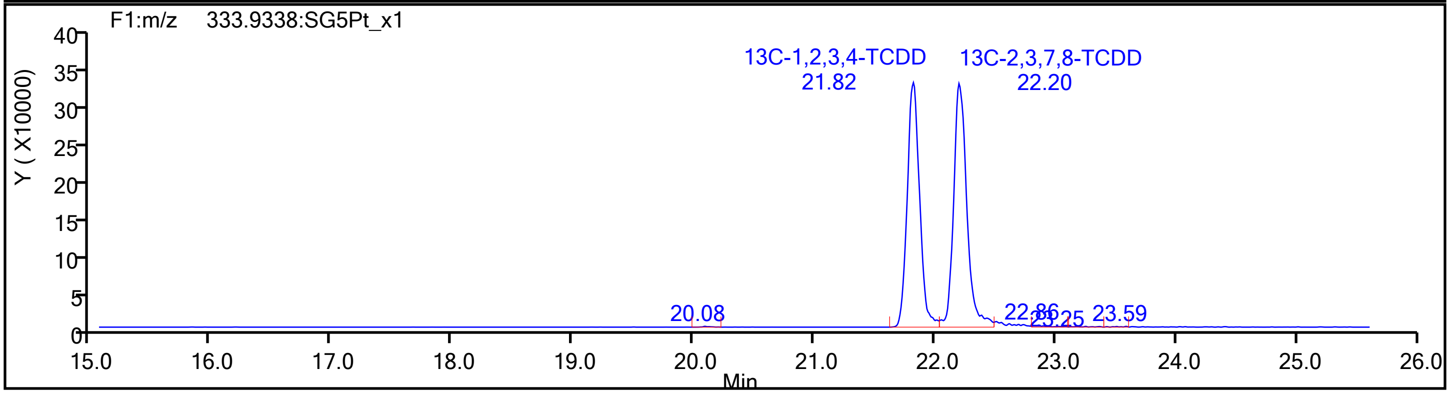

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

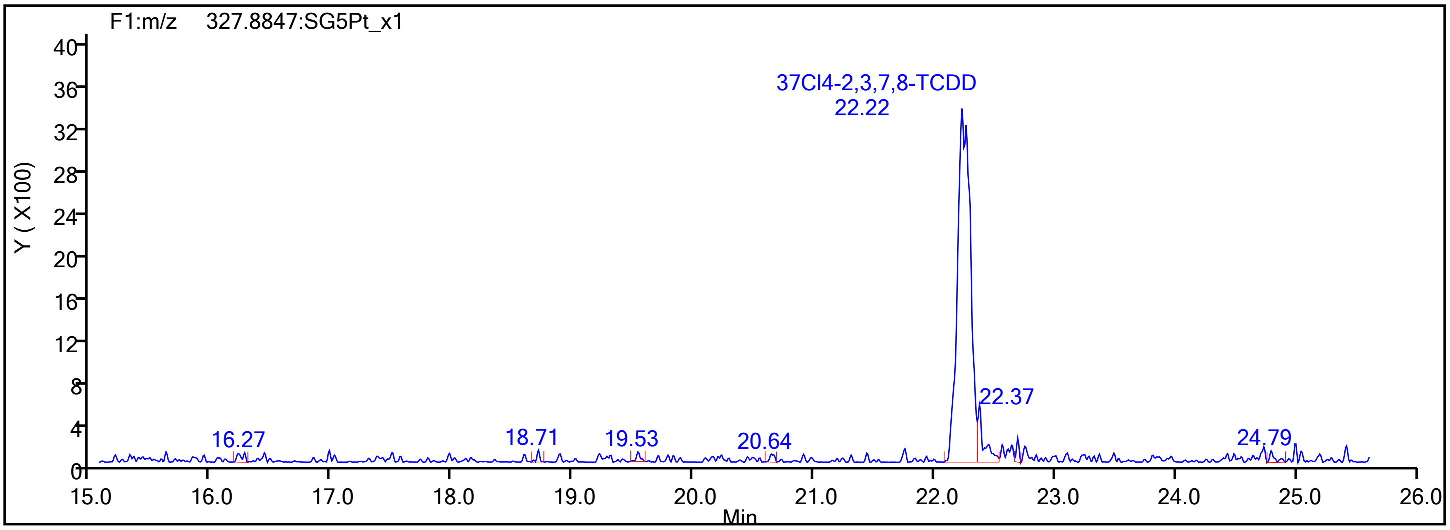

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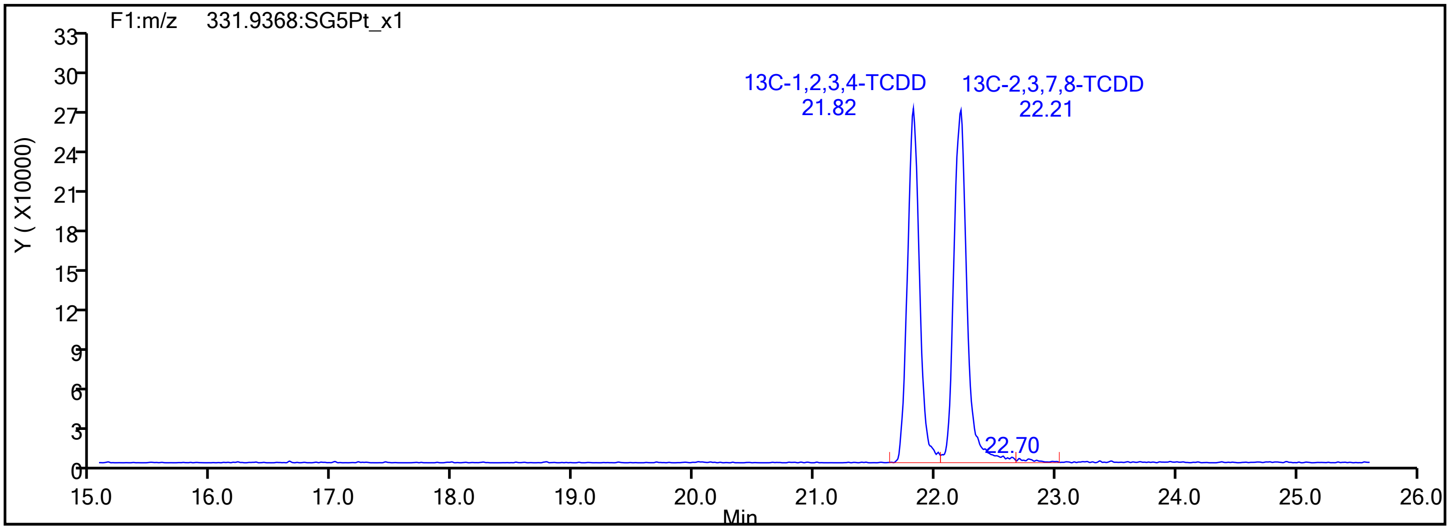

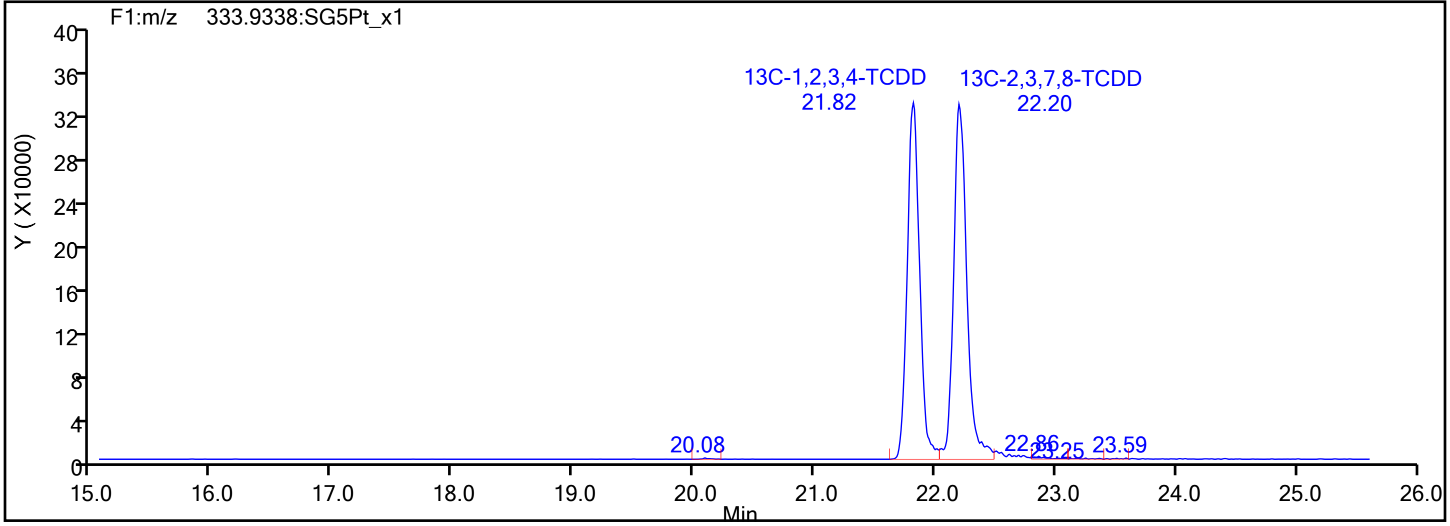

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

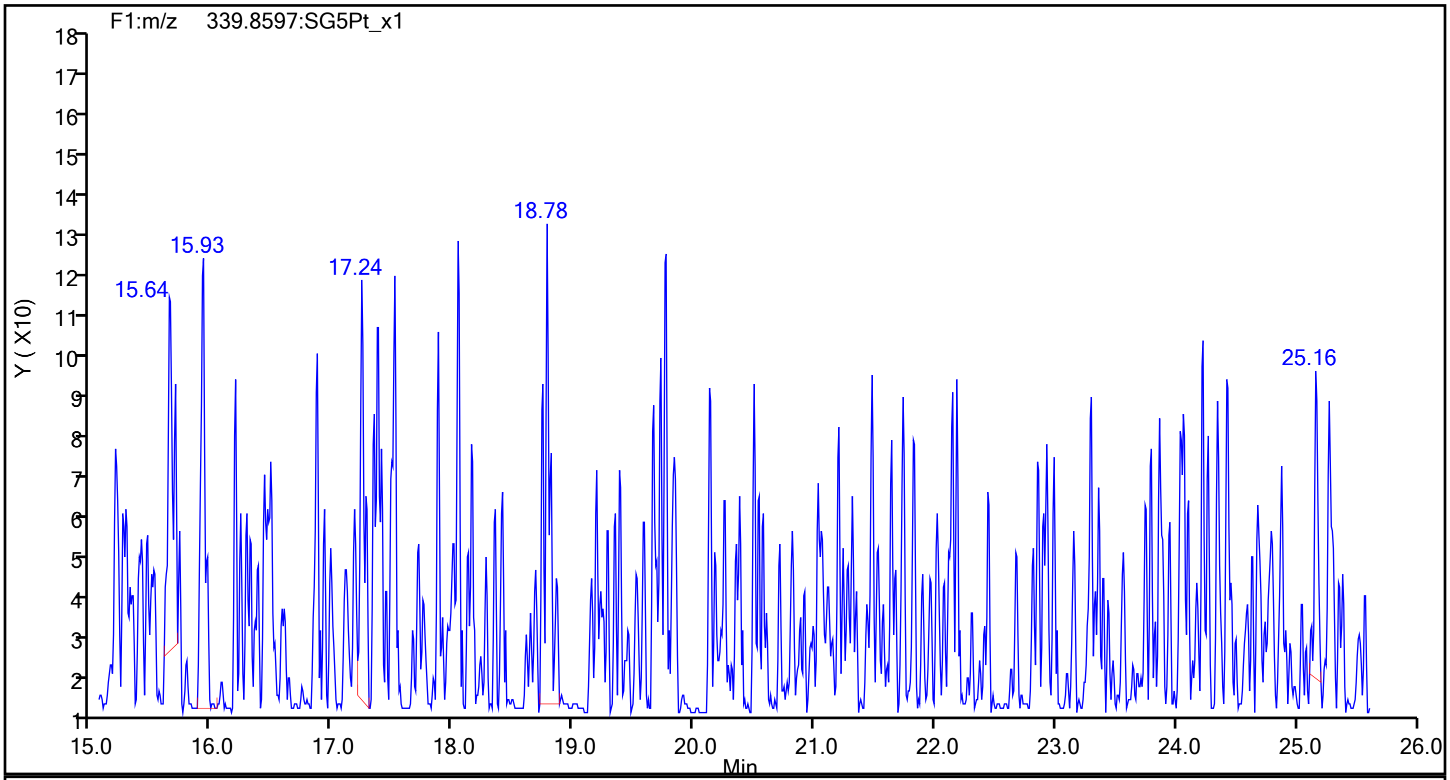

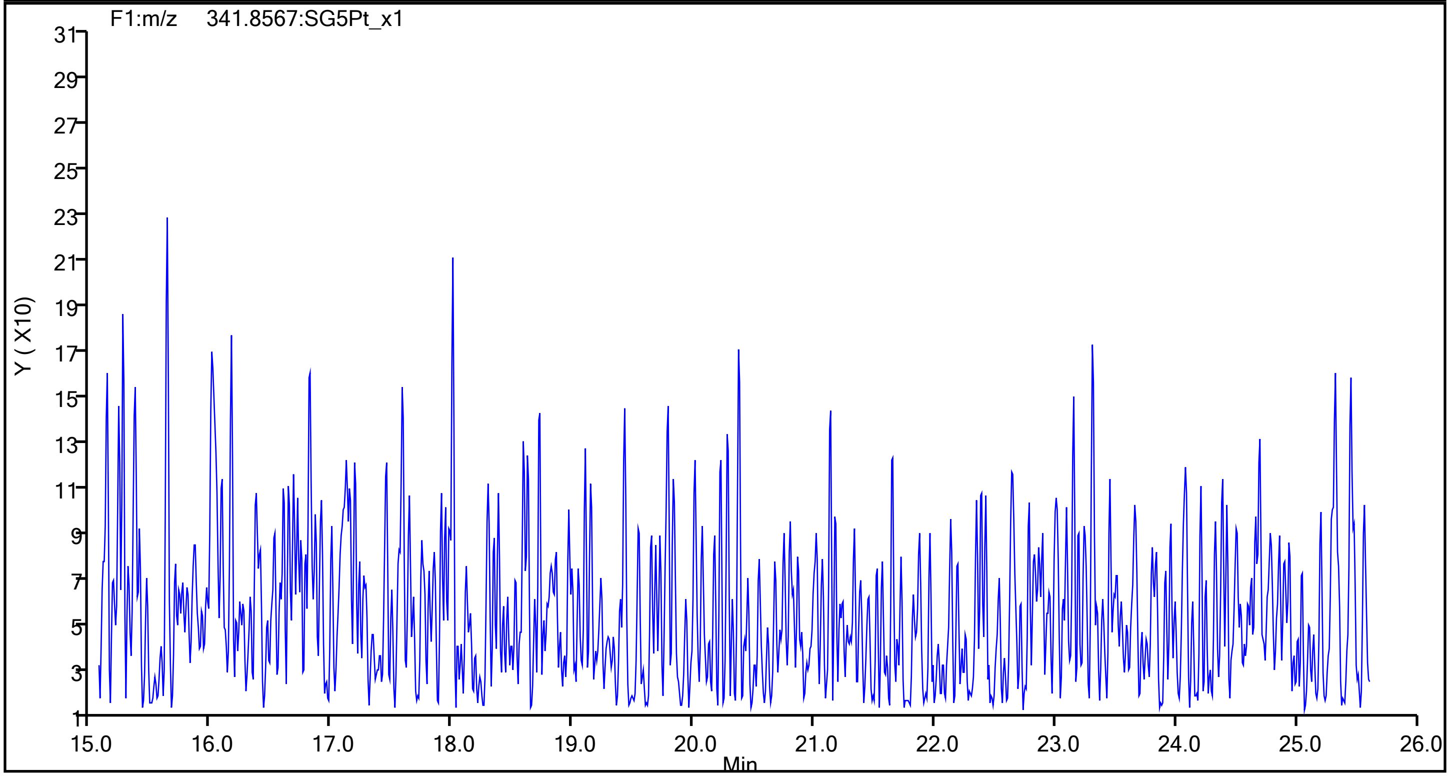

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F1 PeCDFs

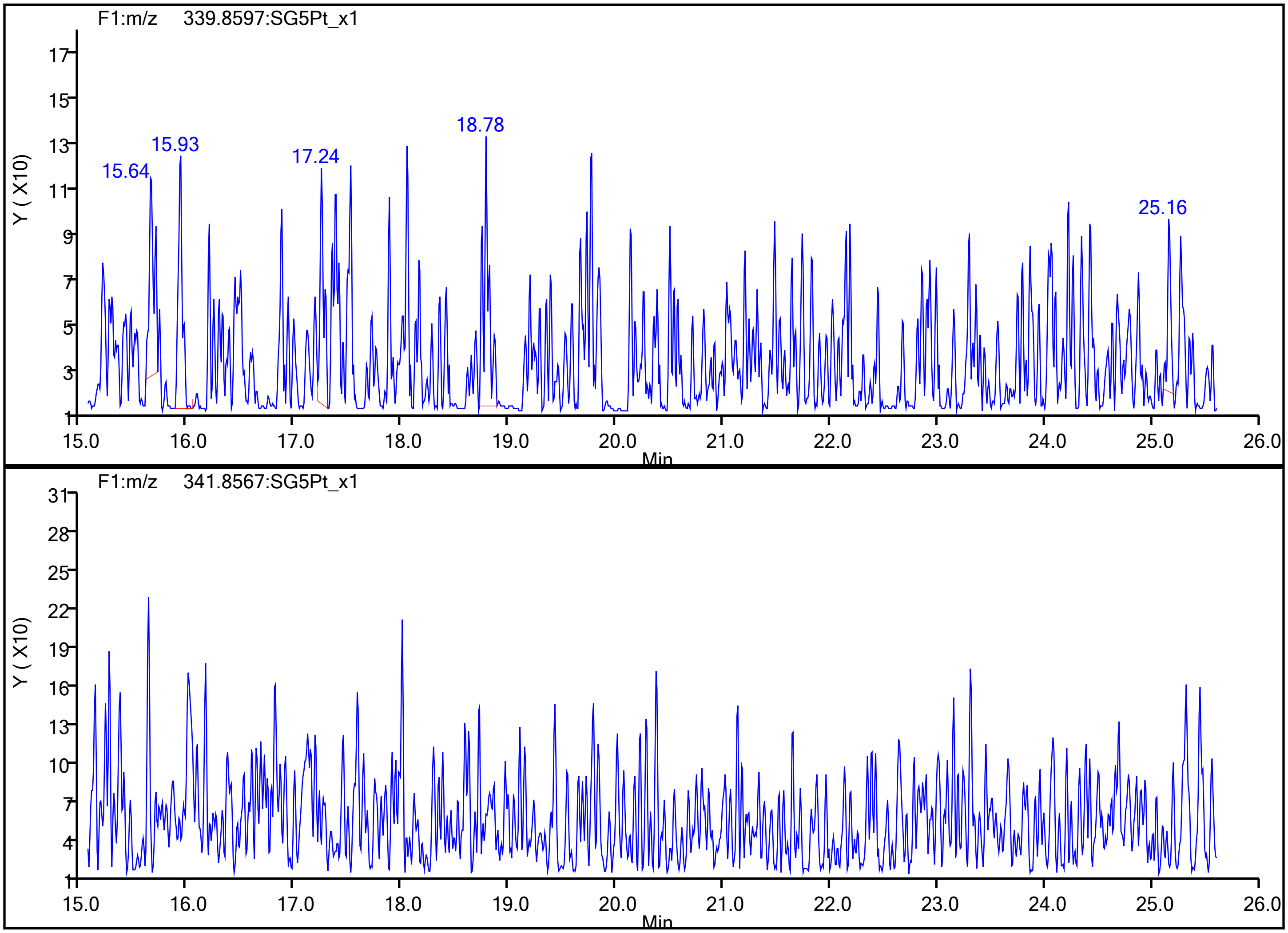

F1 PeCDFs Interference Mass

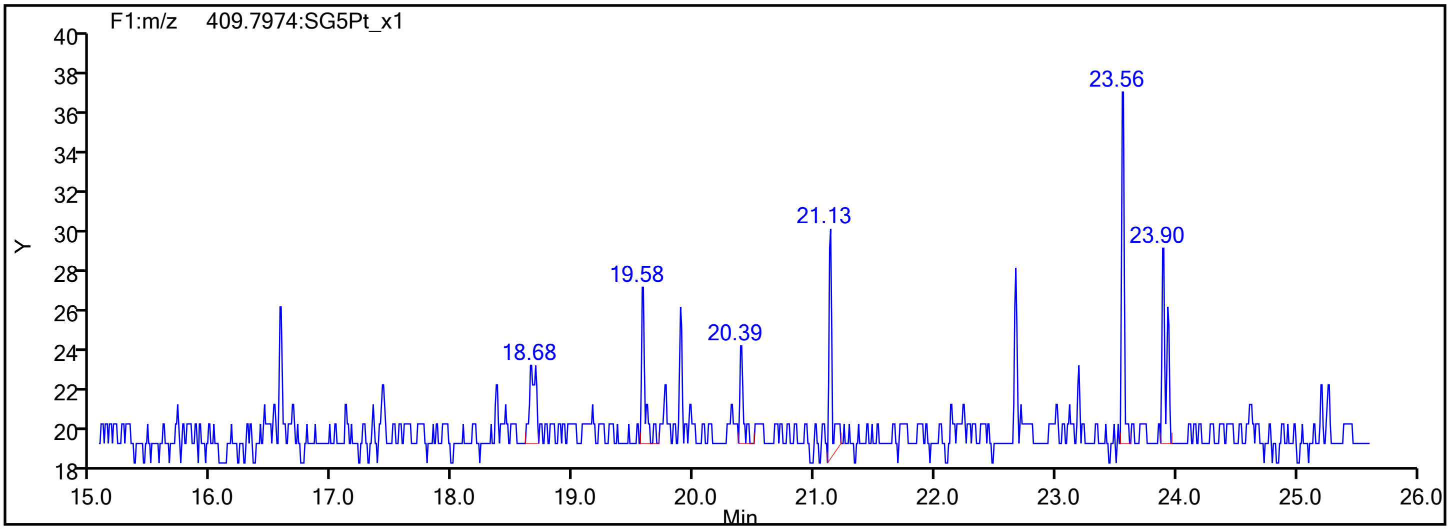

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Eurofins TestAmerica, Sacramento

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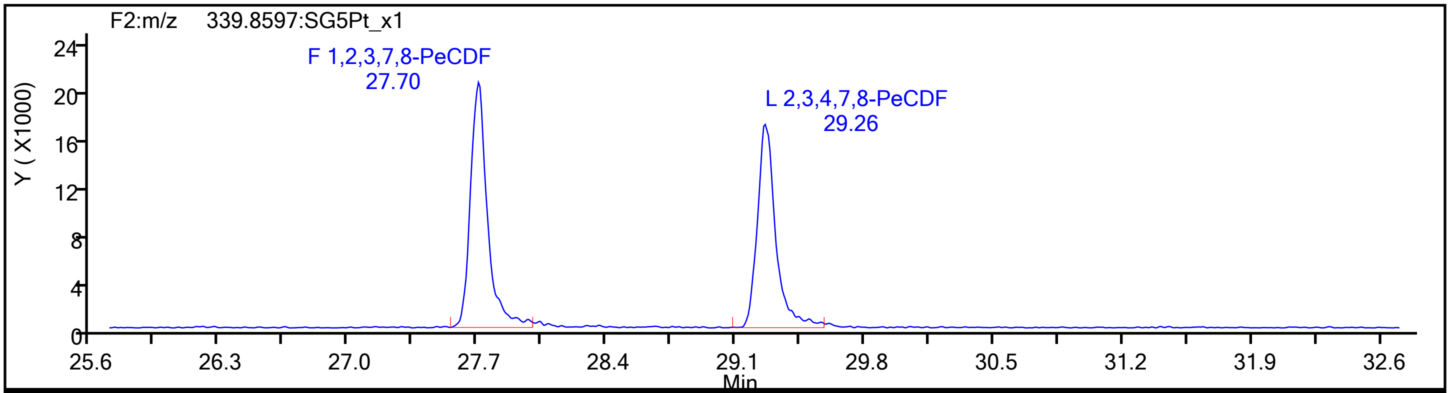

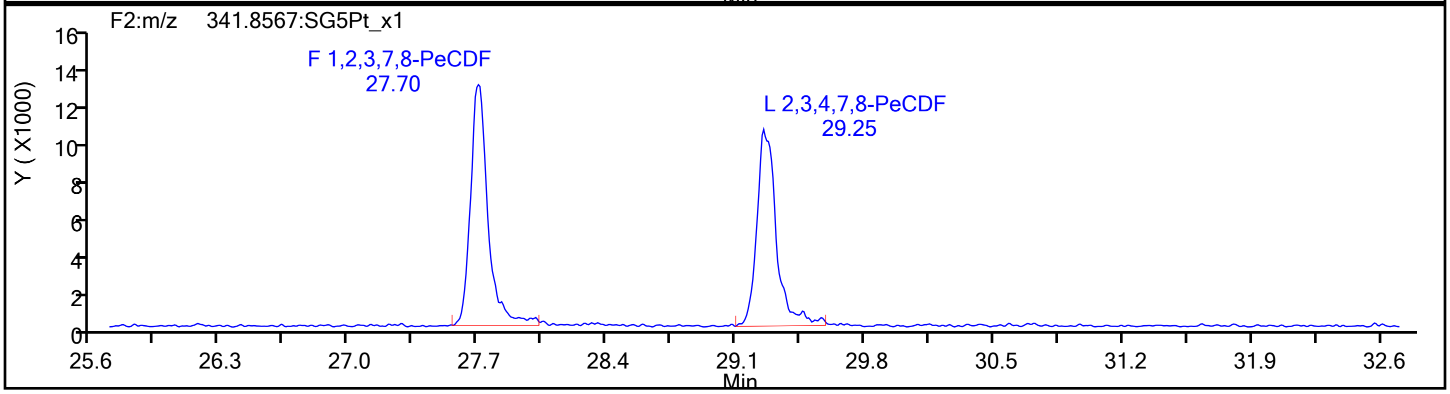

PeCDF Standards

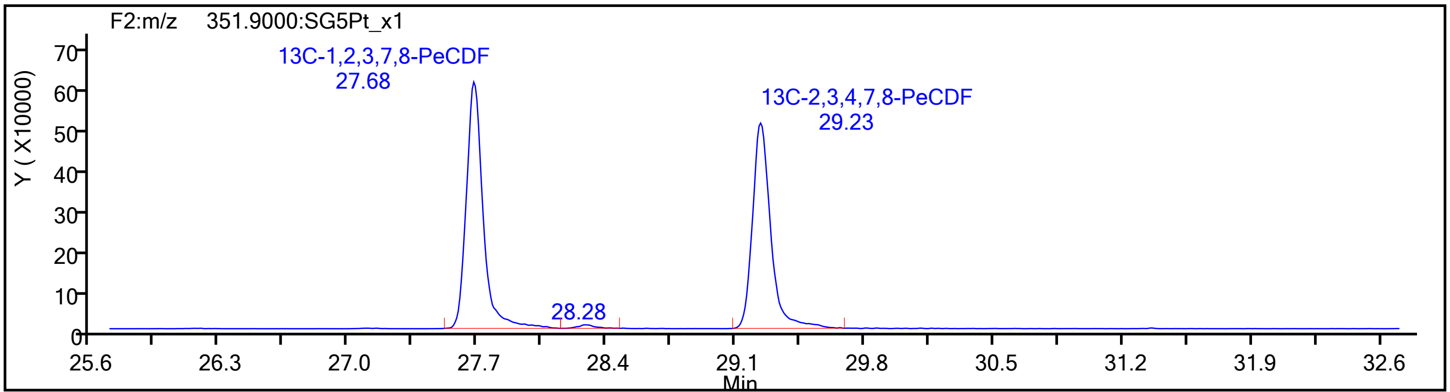

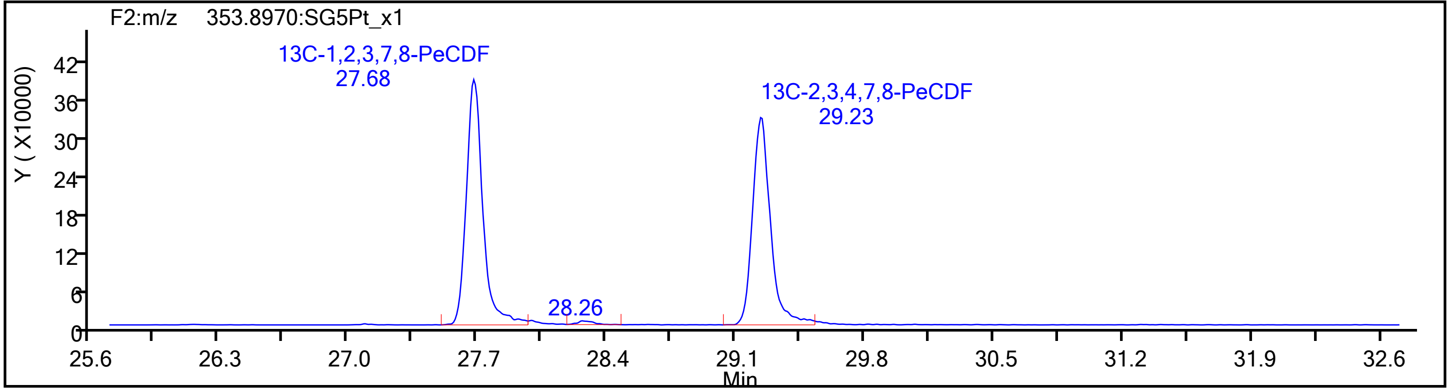

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Eurofins TestAmerica, Sacramento

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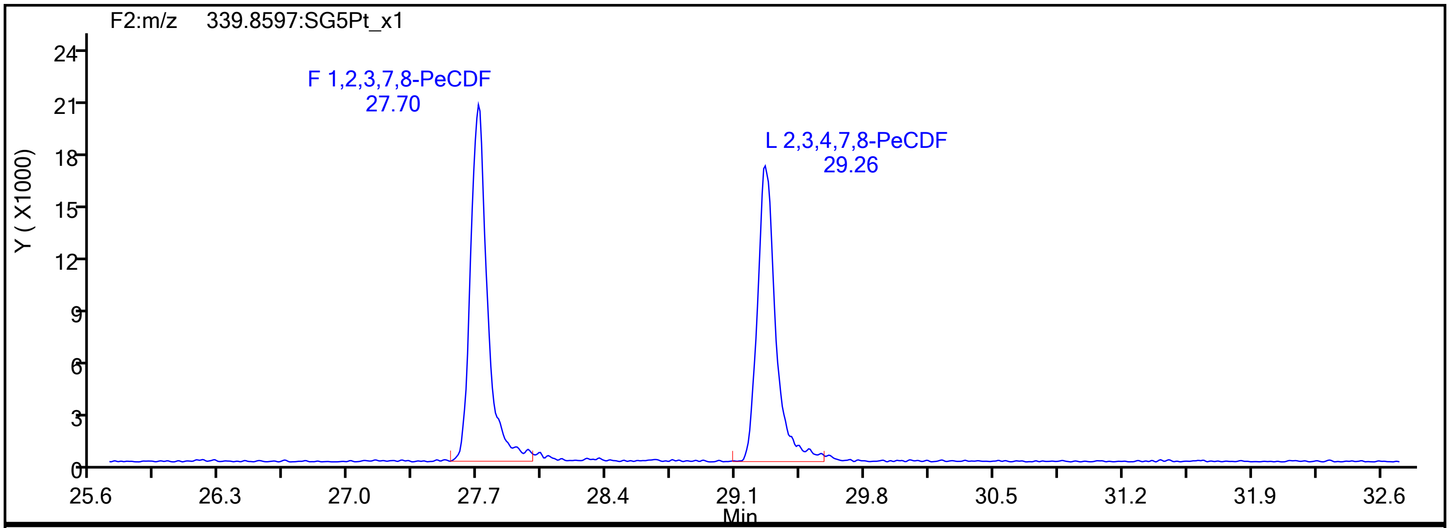

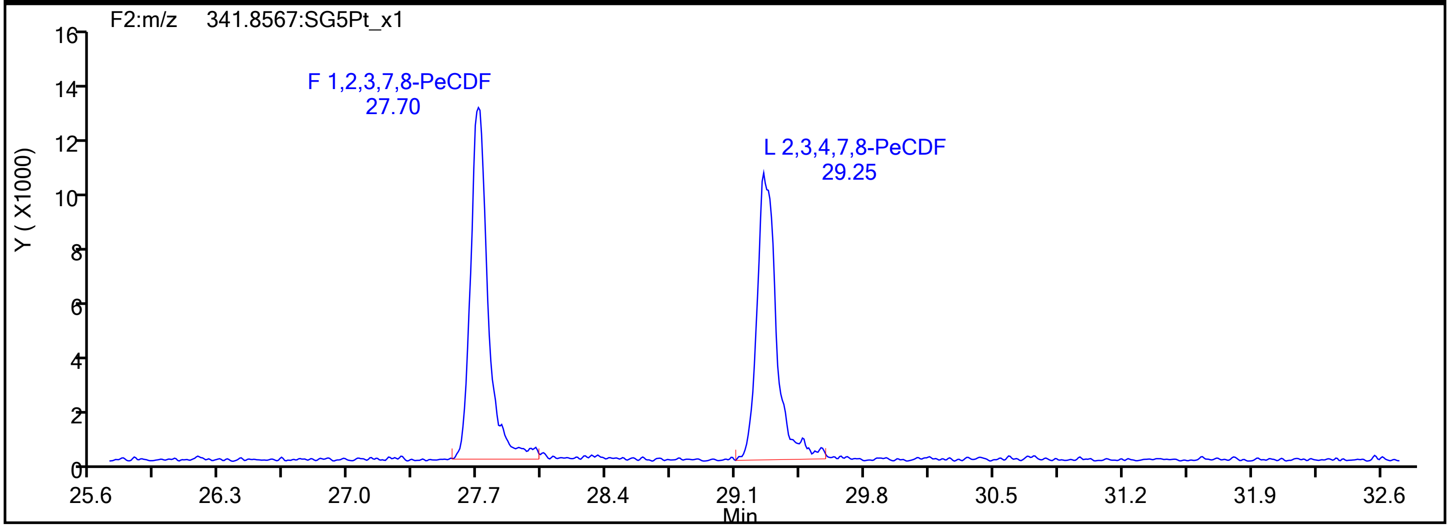

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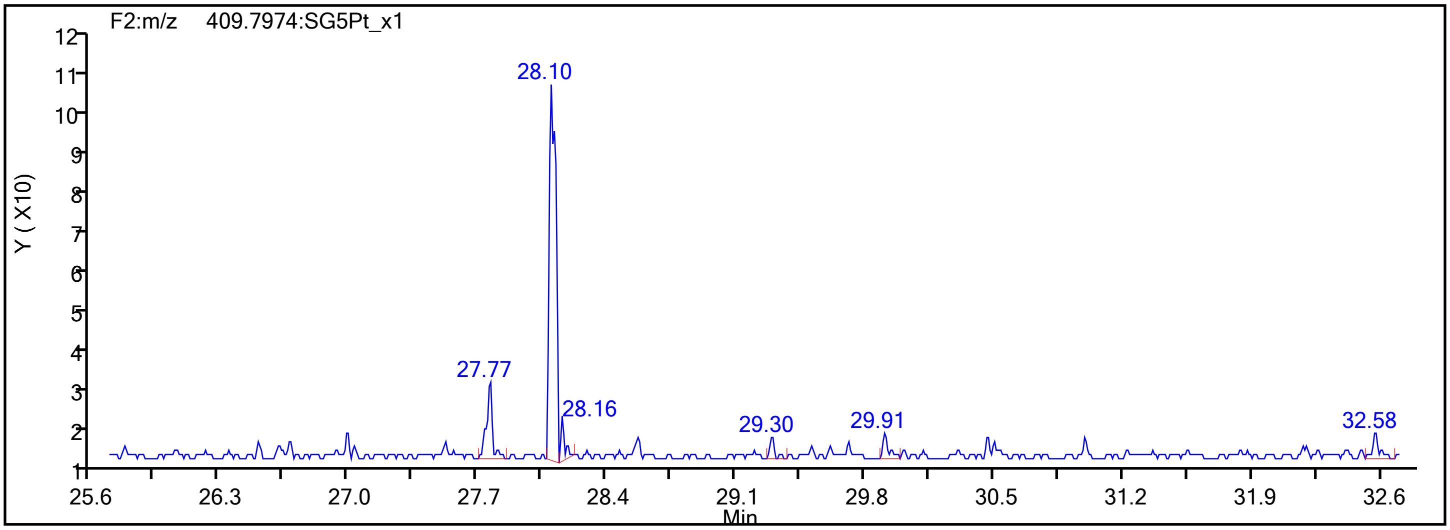

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Eurofins TestAmerica, Sacramento

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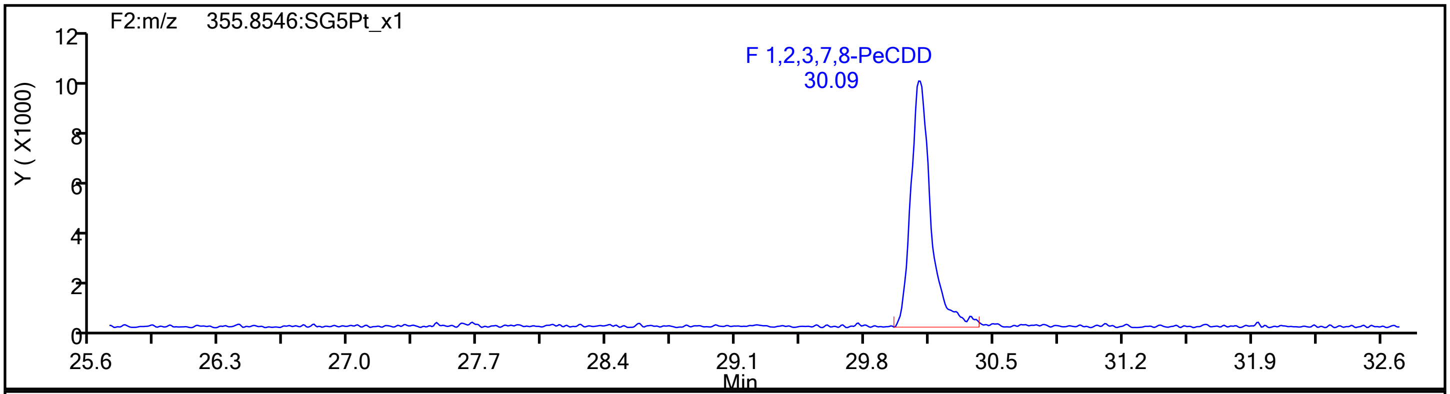

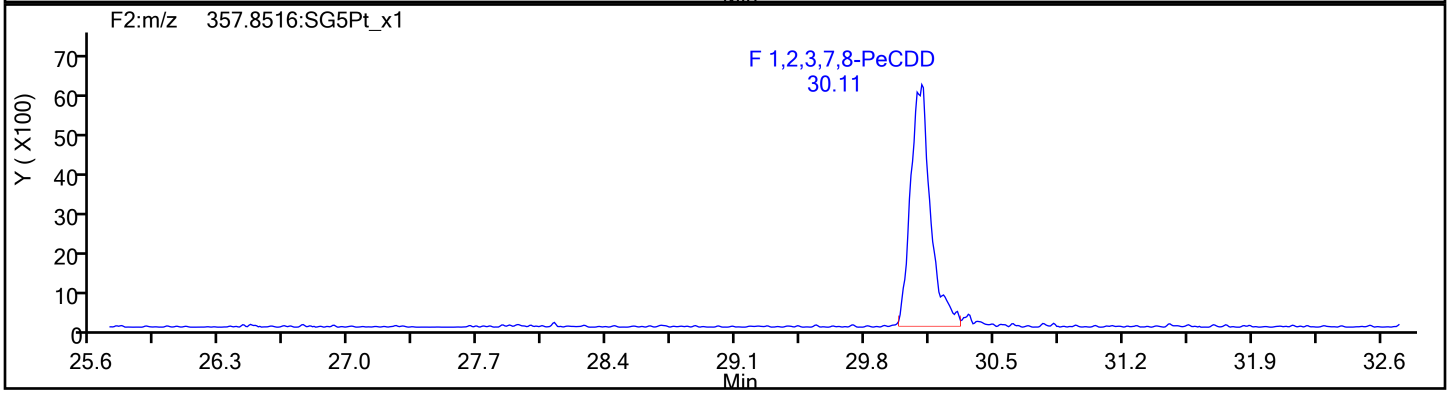

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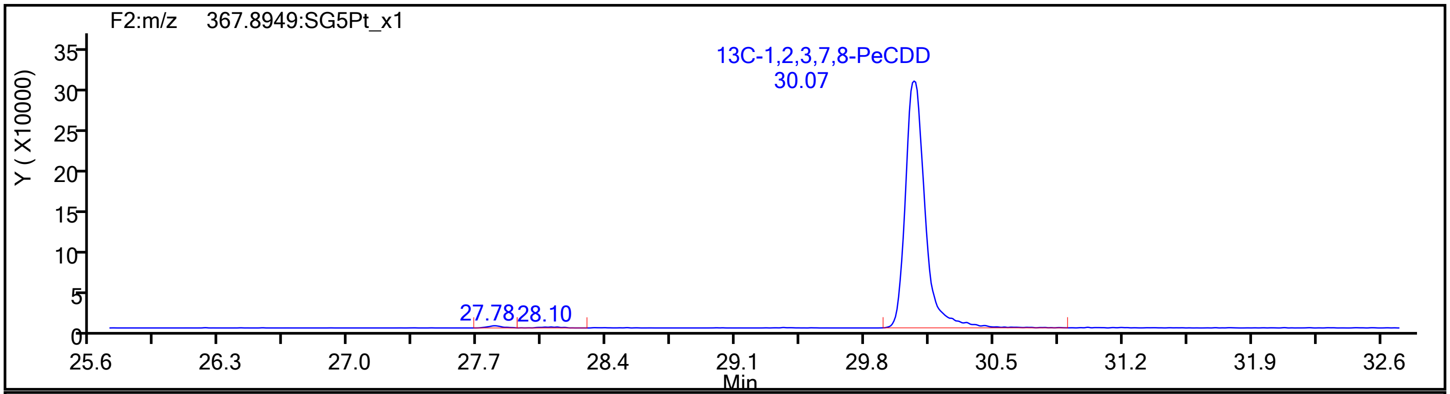

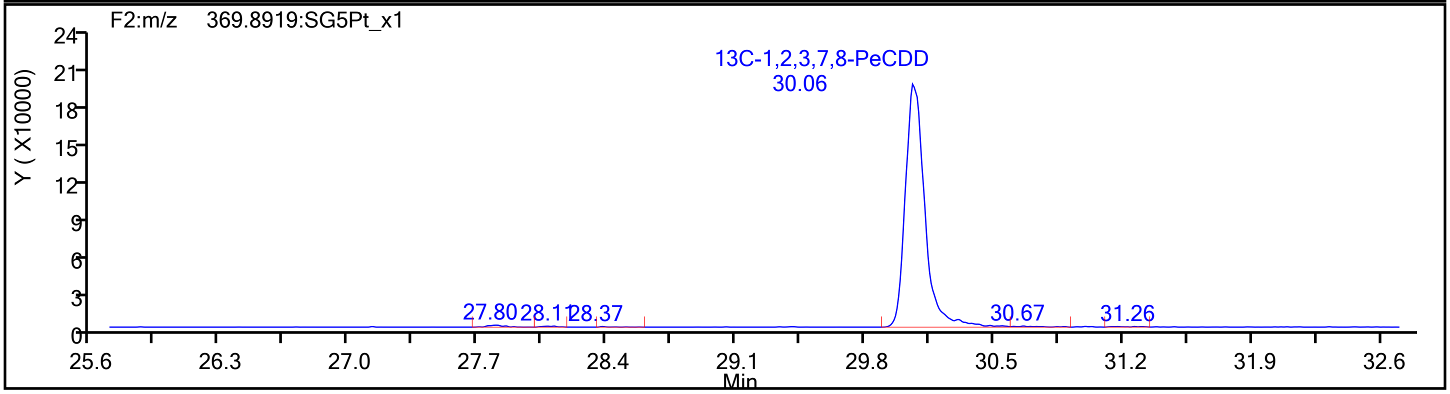

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Eurofins TestAmerica, Sacramento

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HxCDF

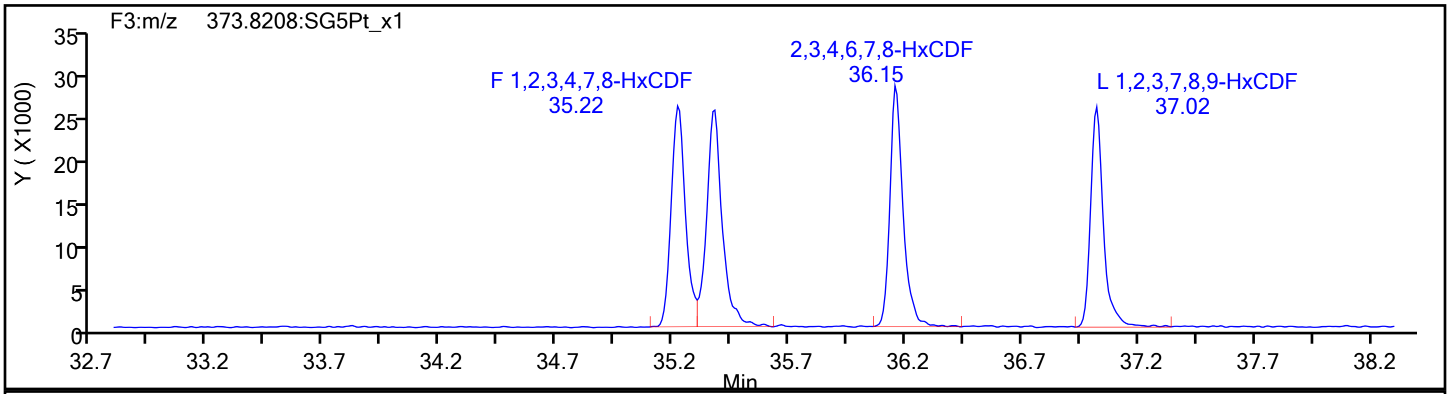

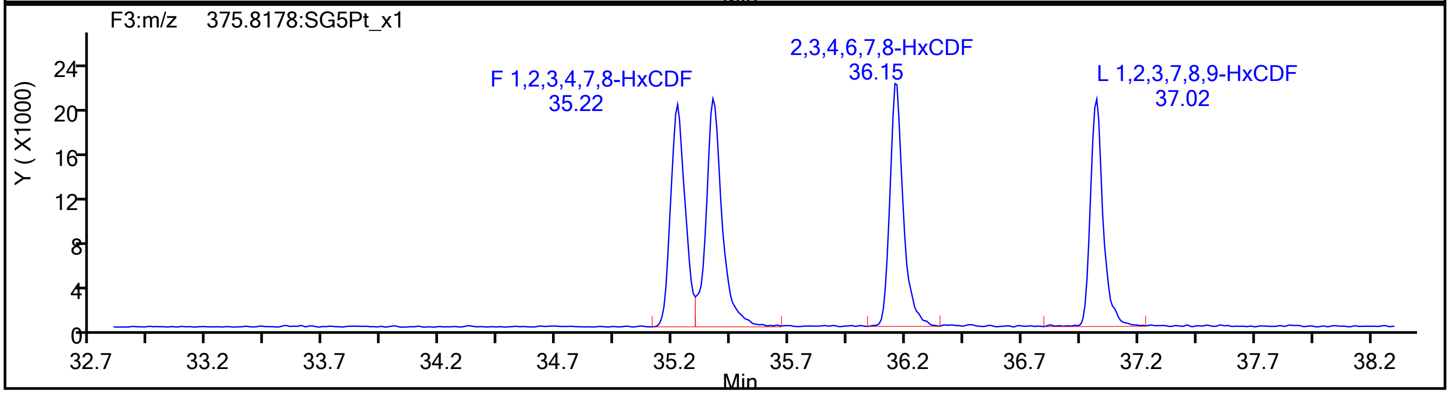

HxCDF Standards

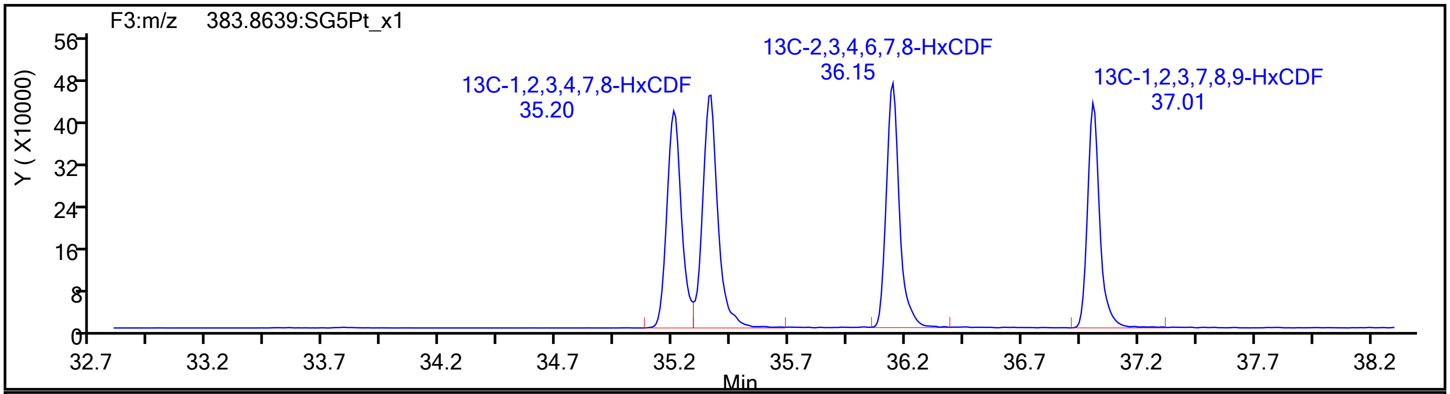

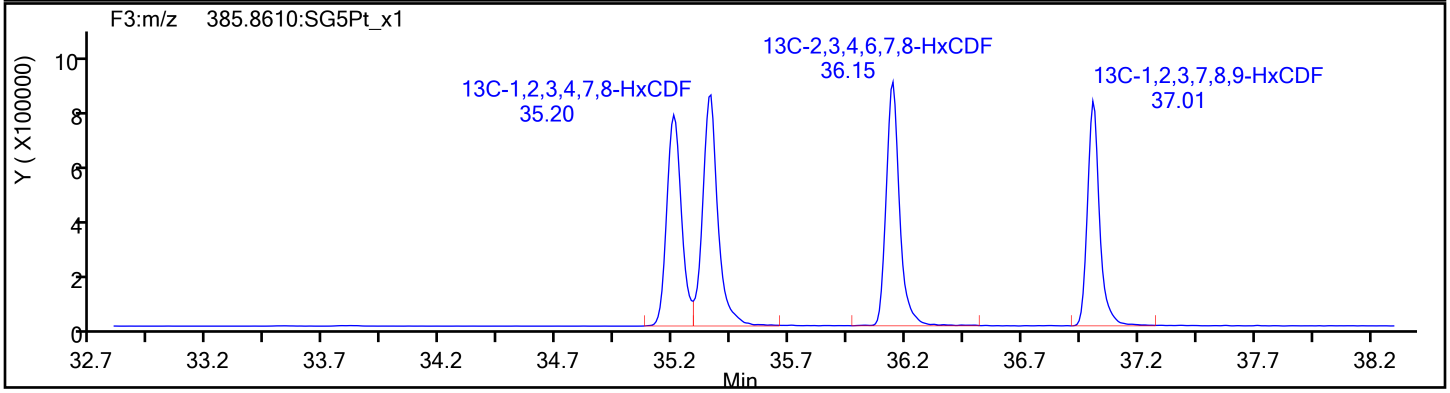

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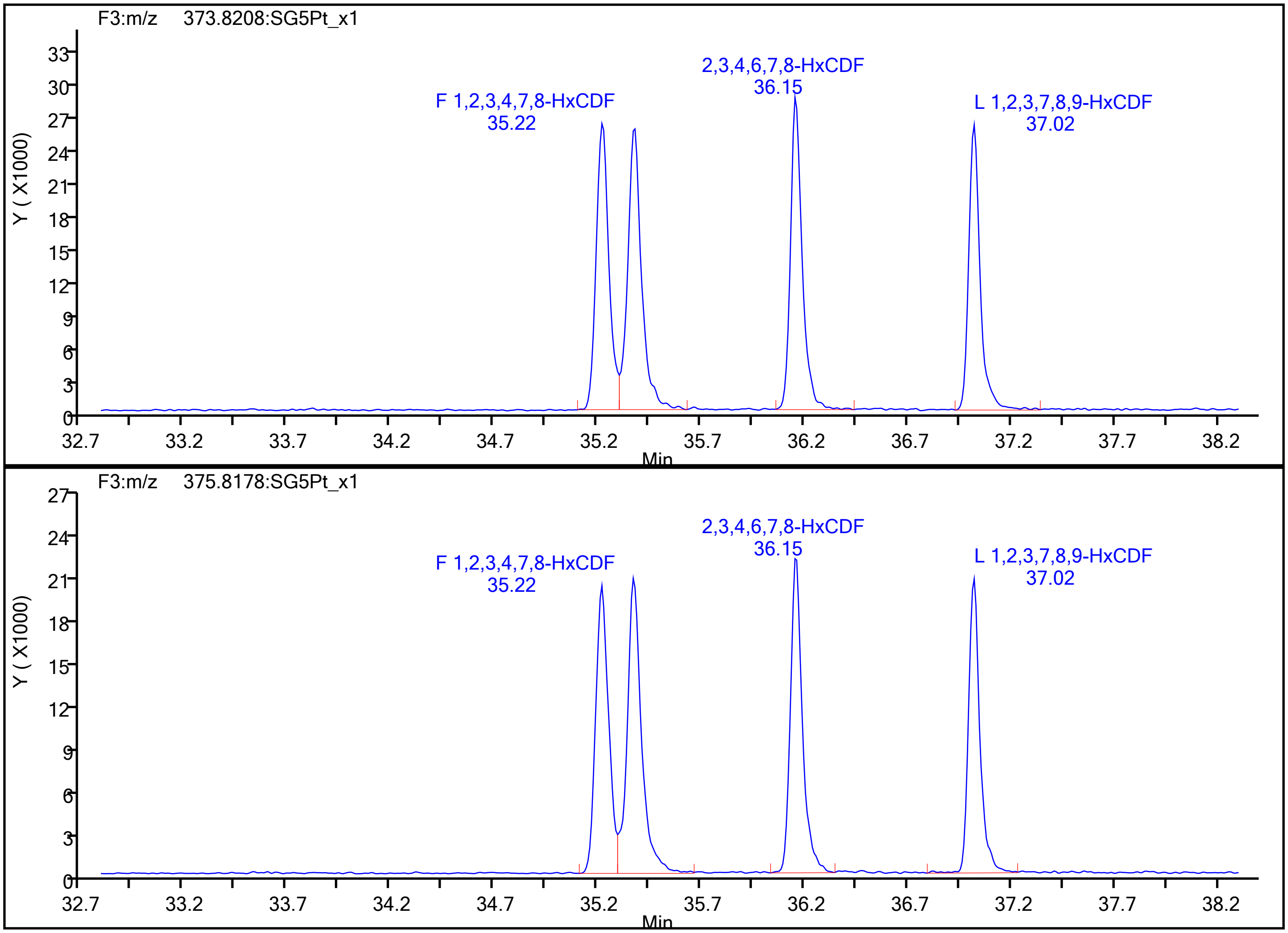

HxCDF Interference Mass

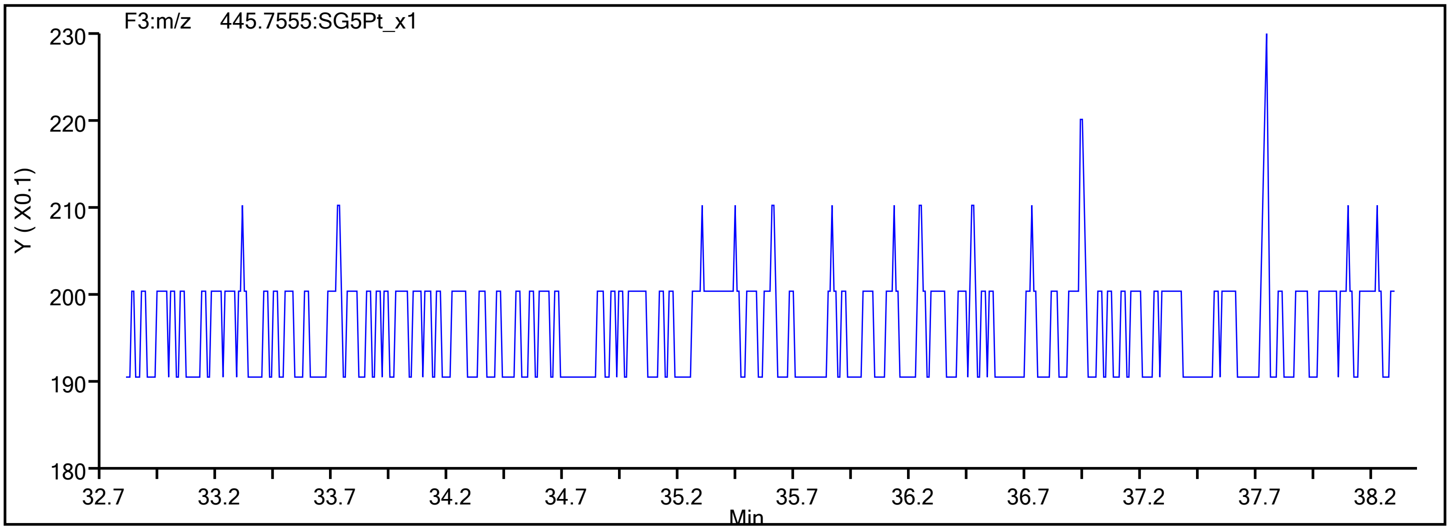

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Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

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HxCDD

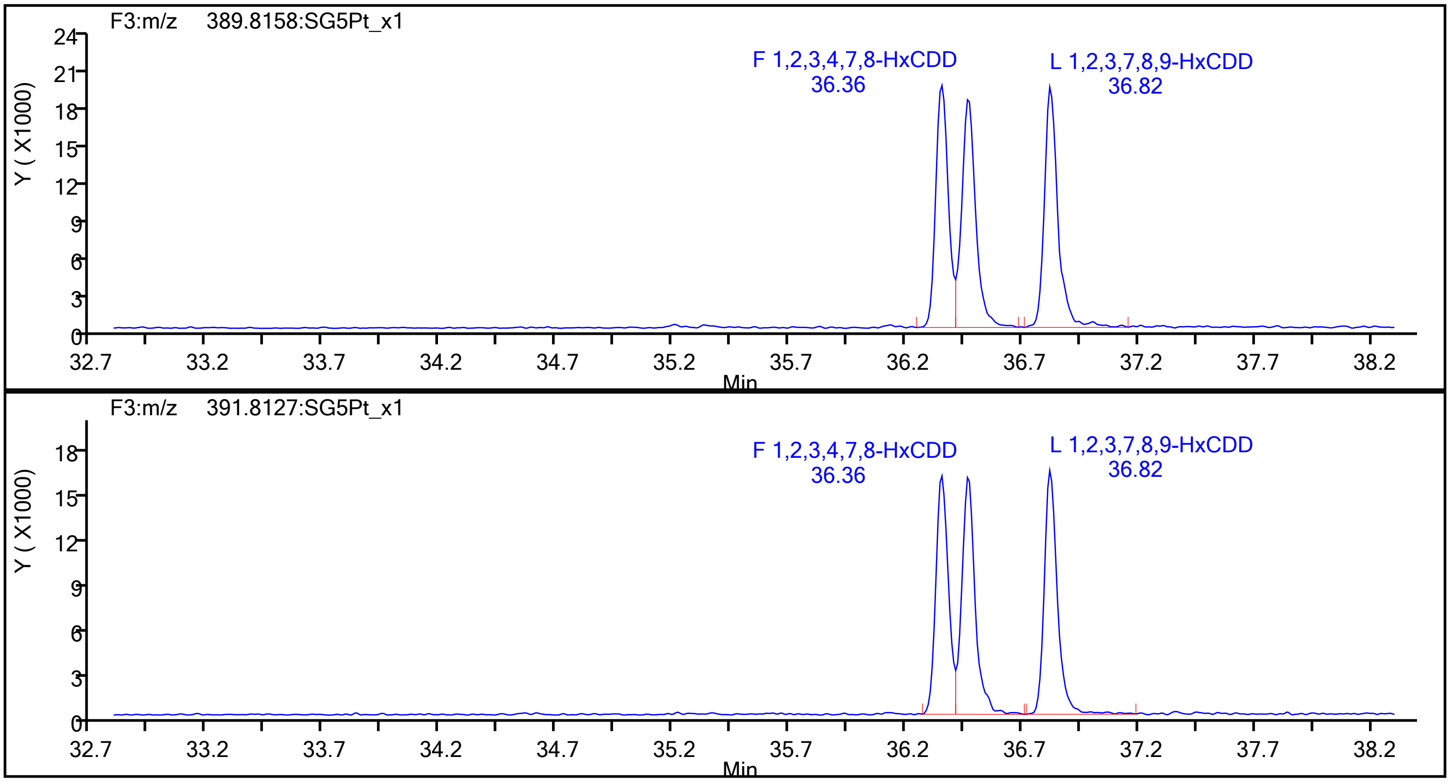

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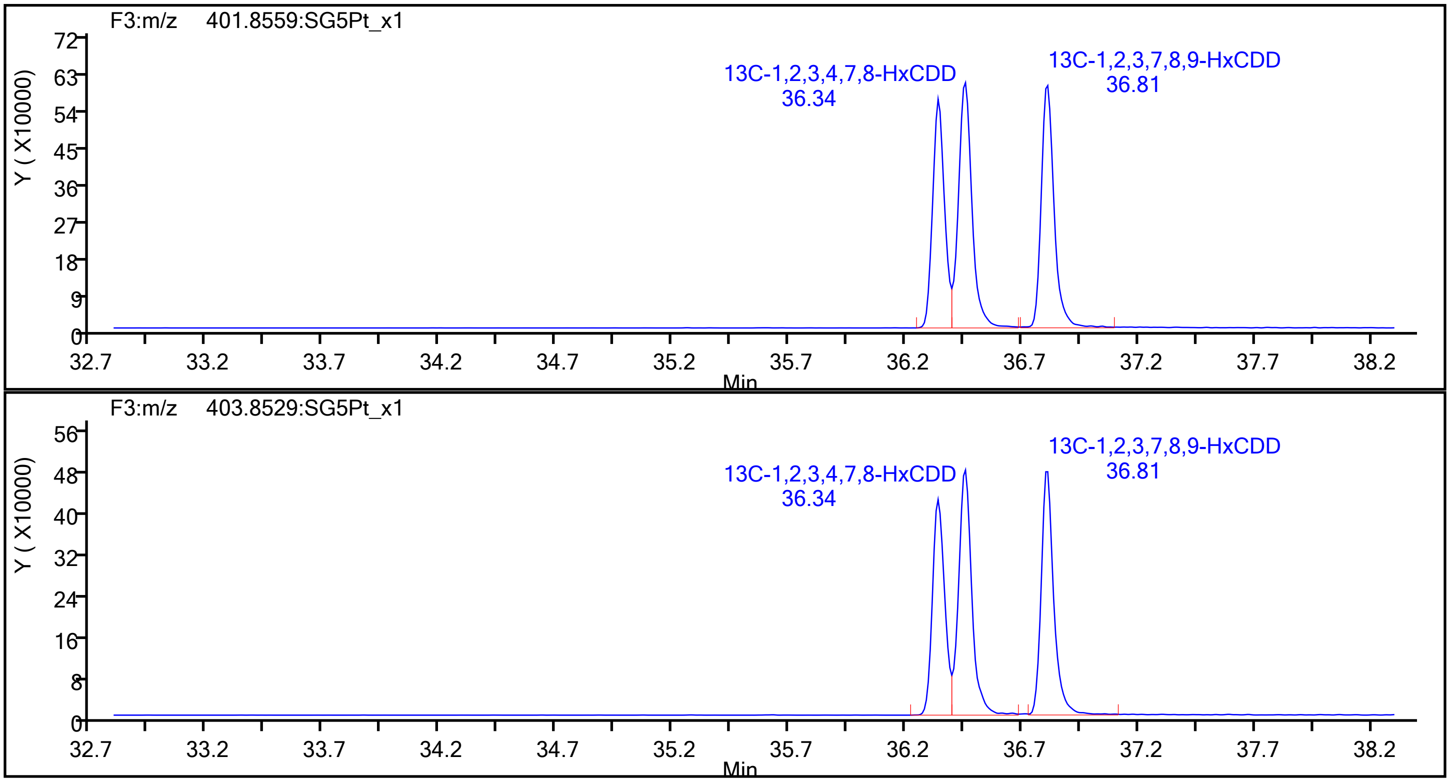

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Eurofins TestAmerica, Sacramento

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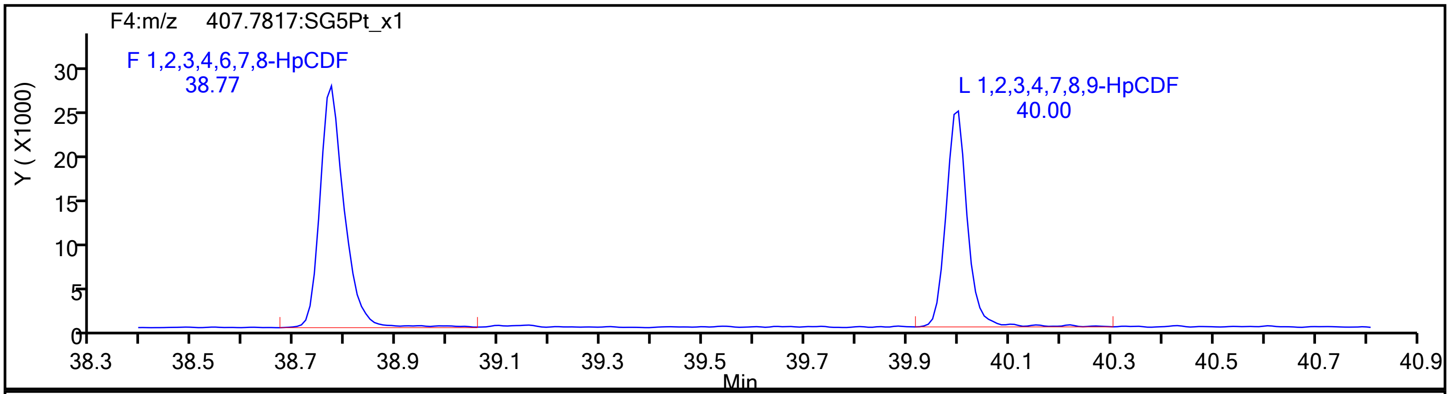

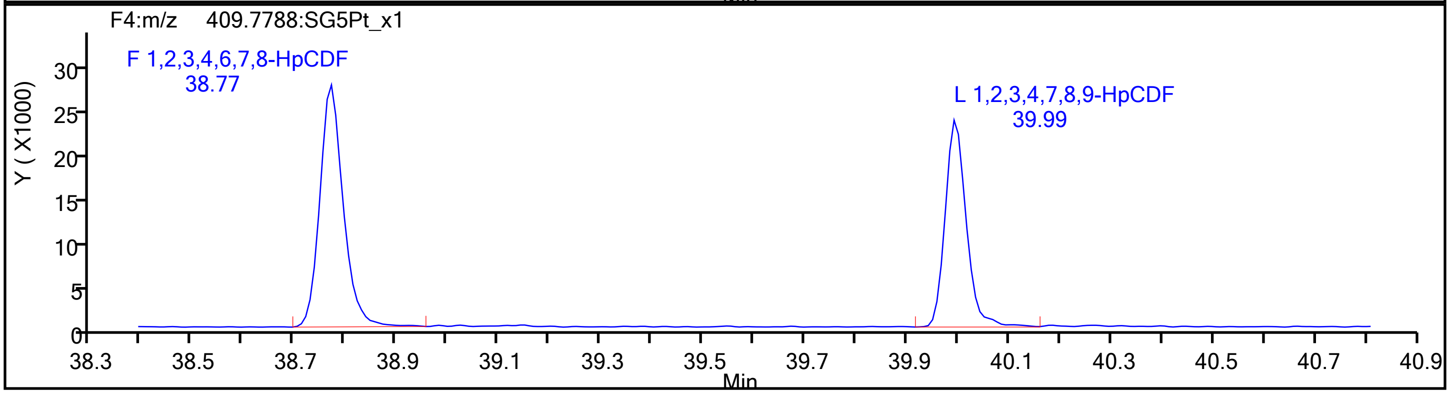

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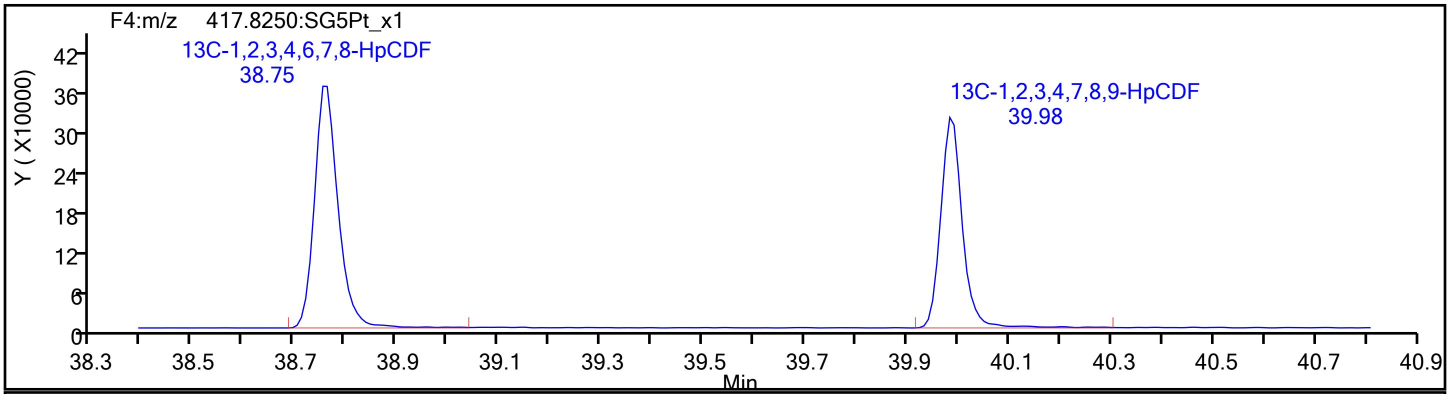

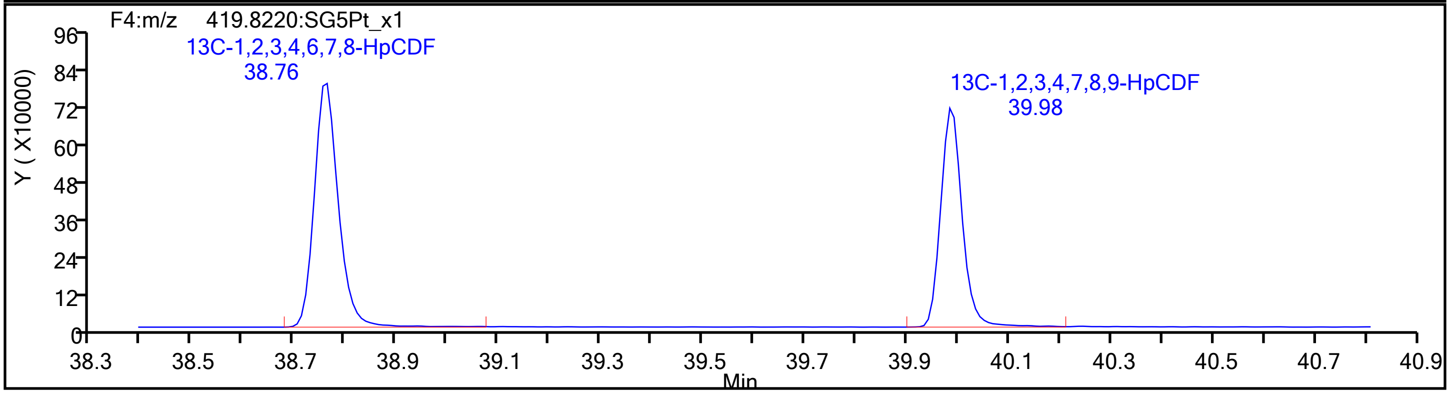

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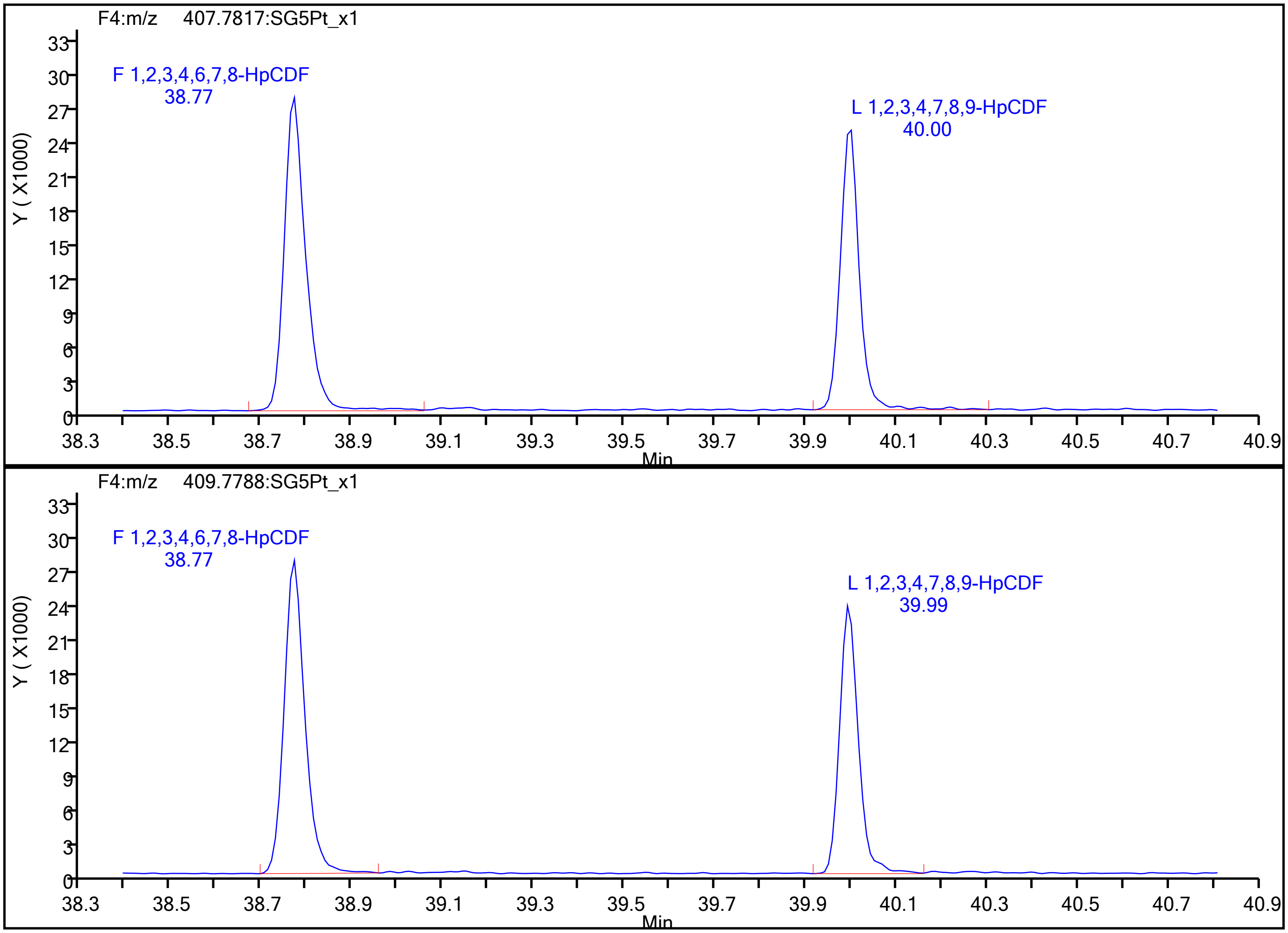

HpCDF Interference Mass

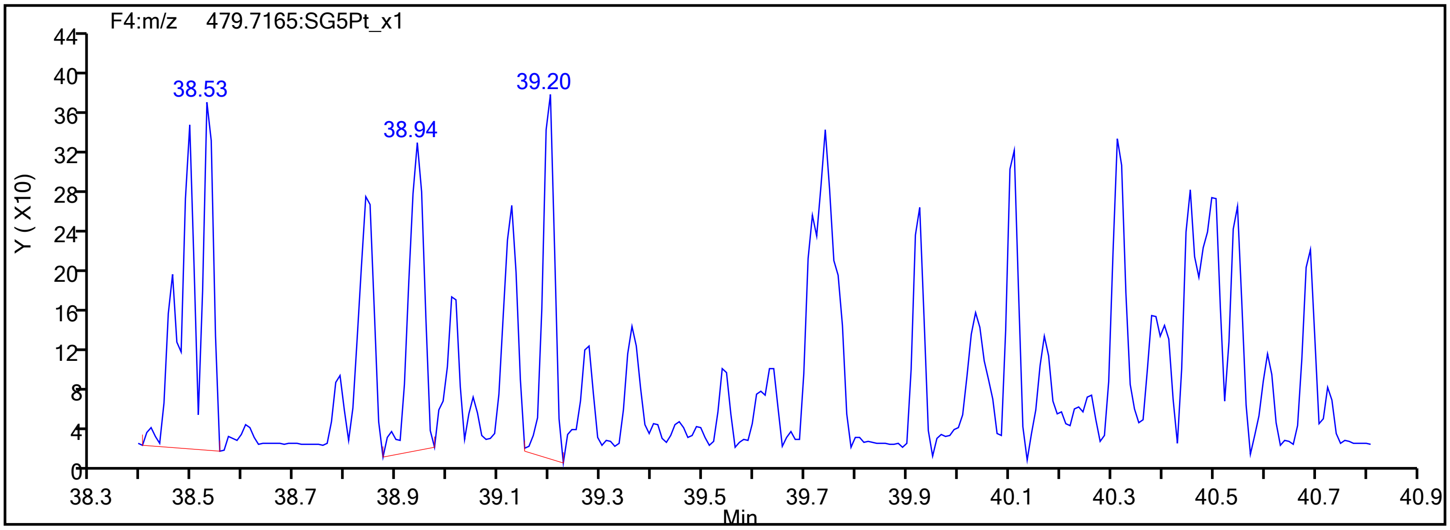

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HpCDD

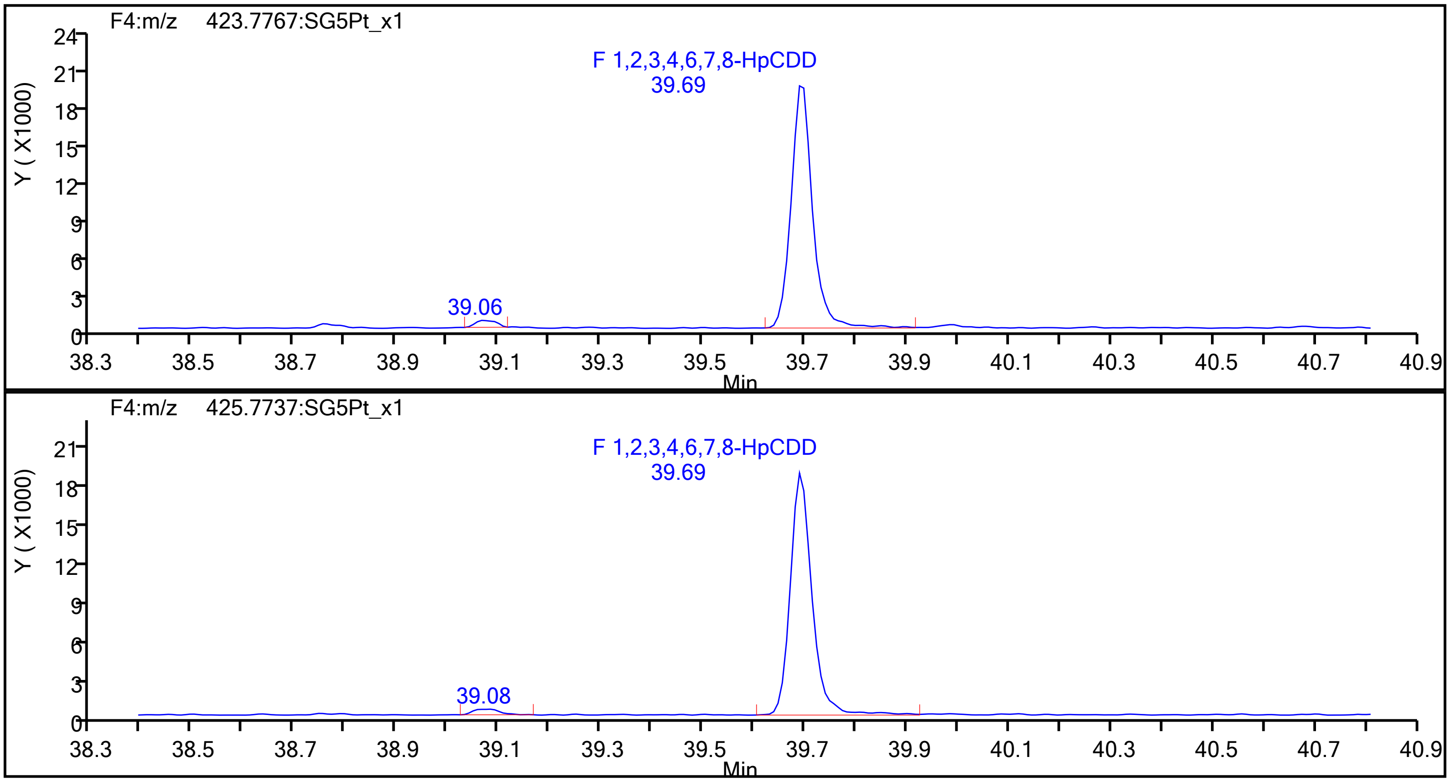

HpCDD Standards

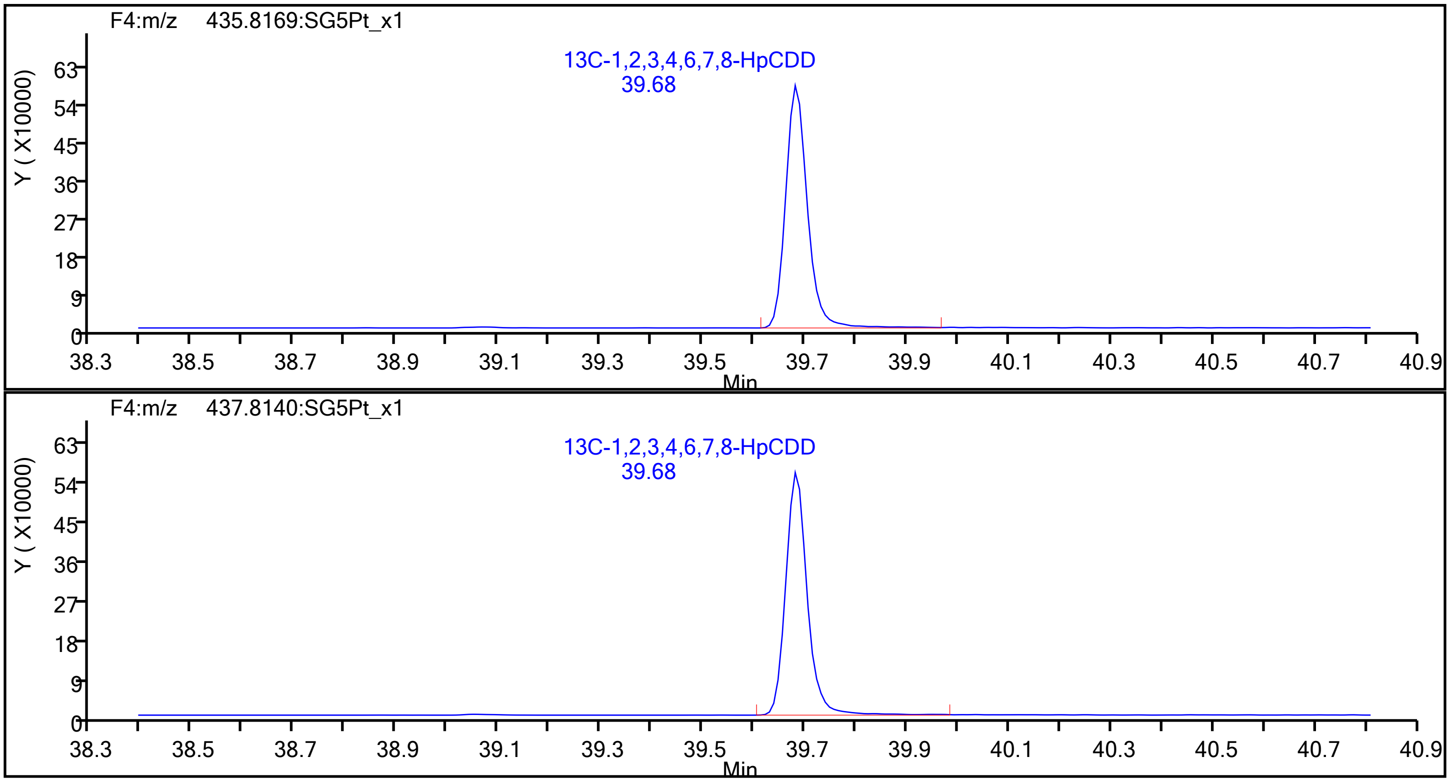

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Eurofins TestAmerica, Sacramento

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OCDF

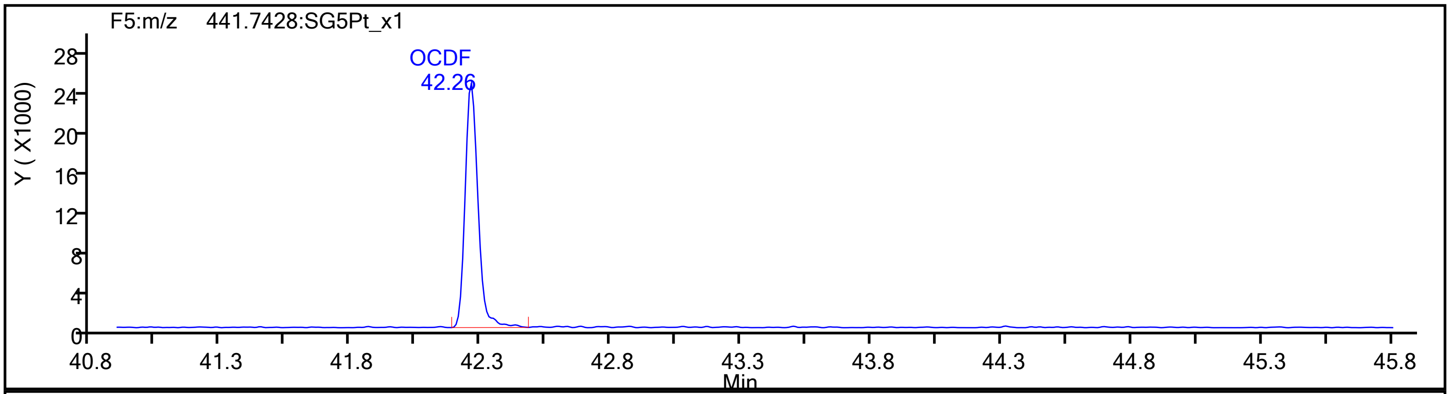

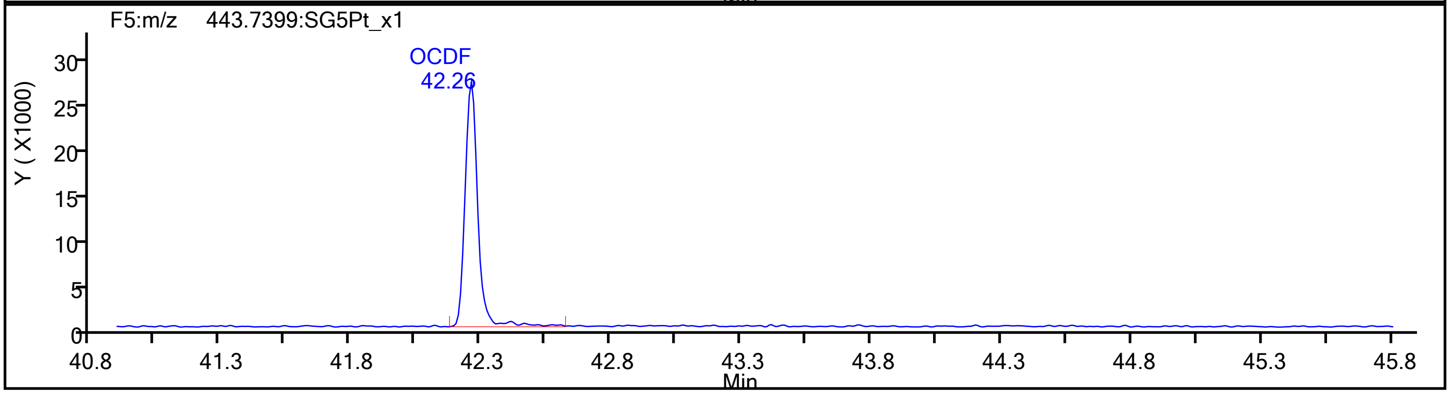

OCDF Standards

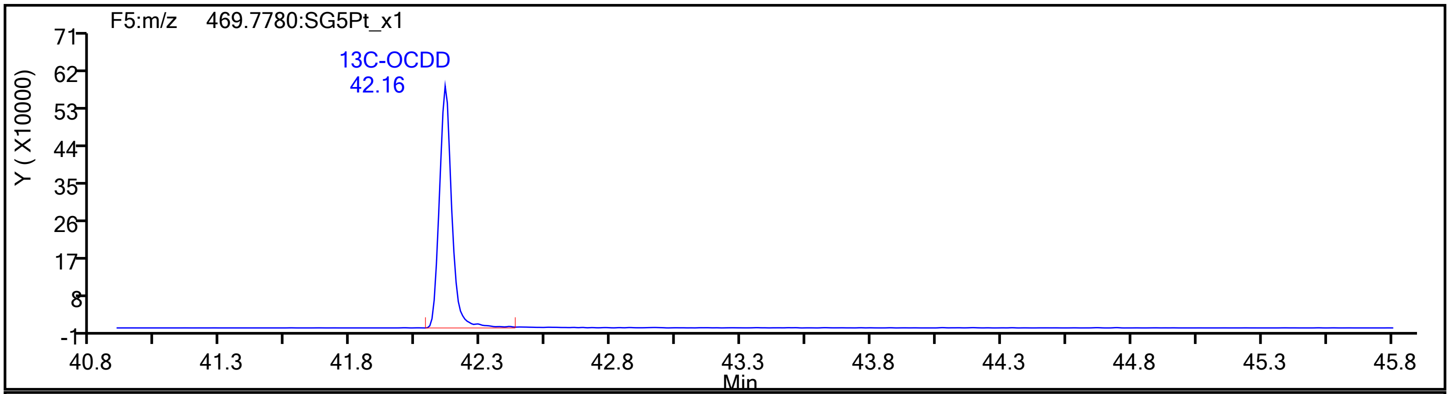

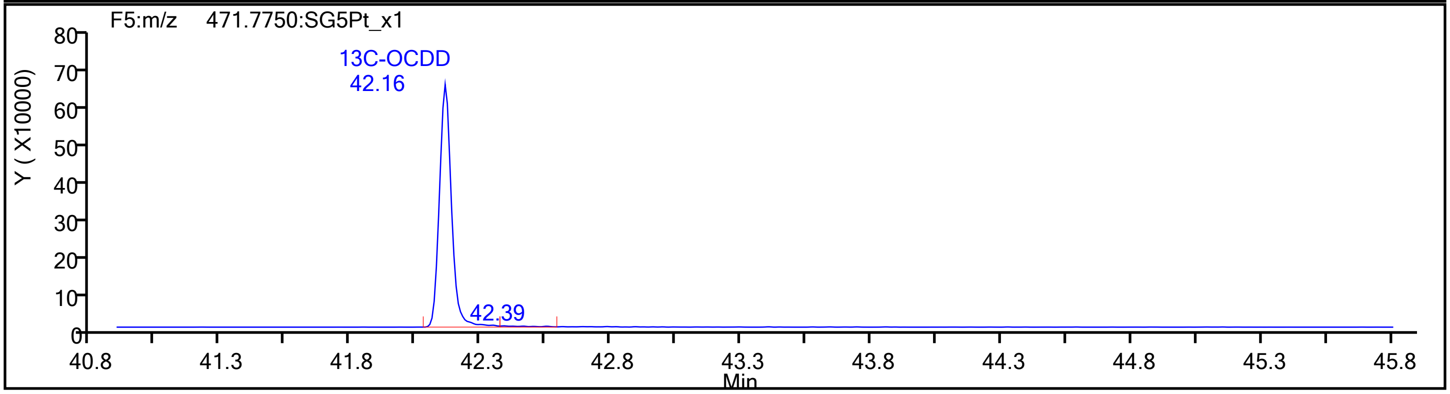

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

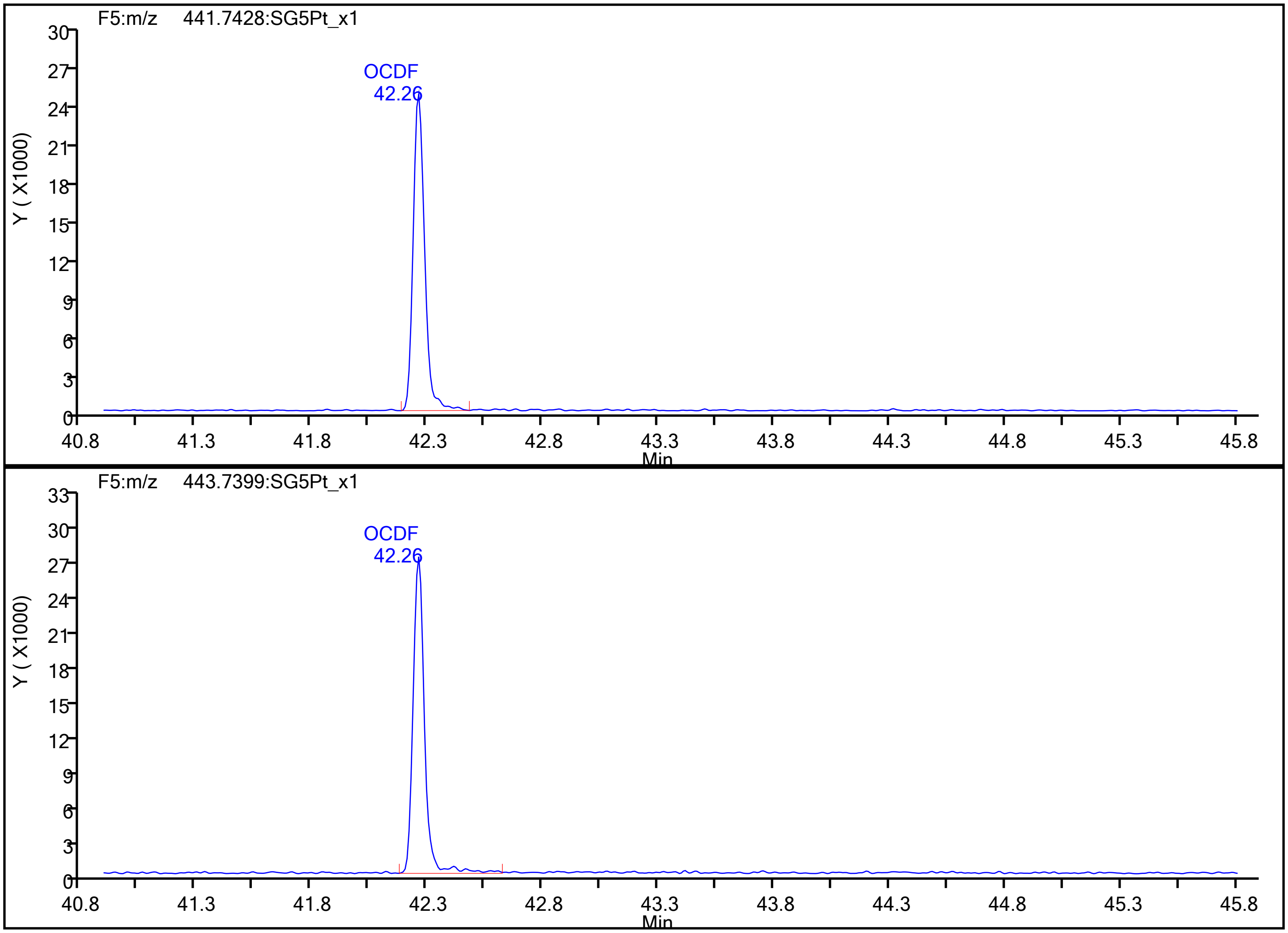

OCDF Interference Mass

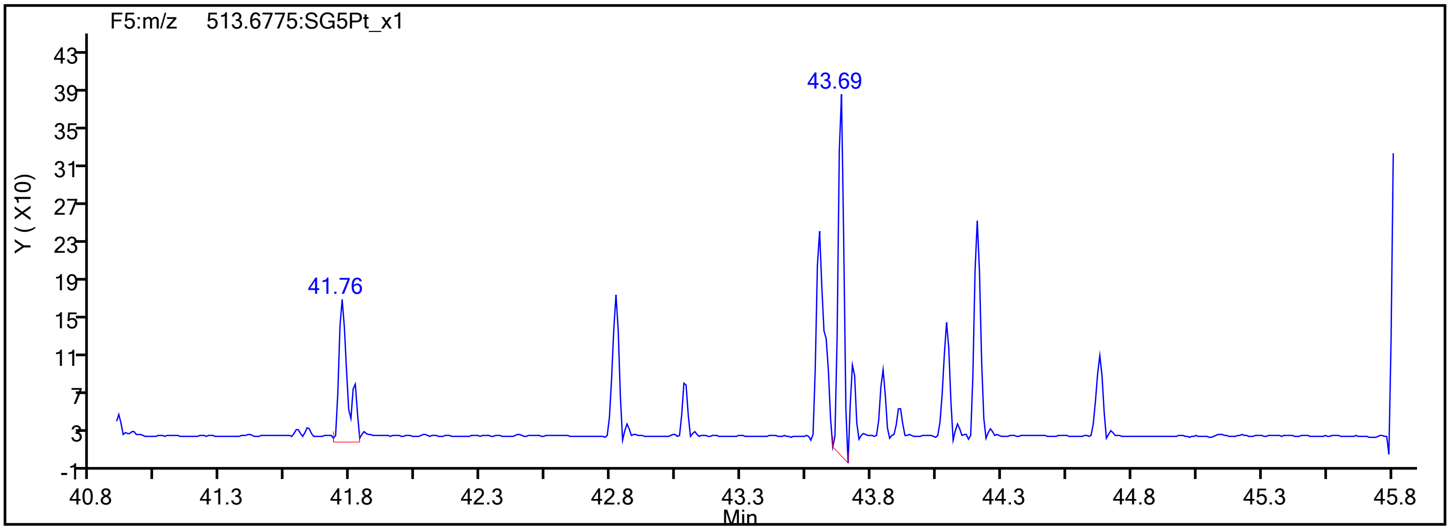

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d
Injection Date: 17-Nov-2020 17:44:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

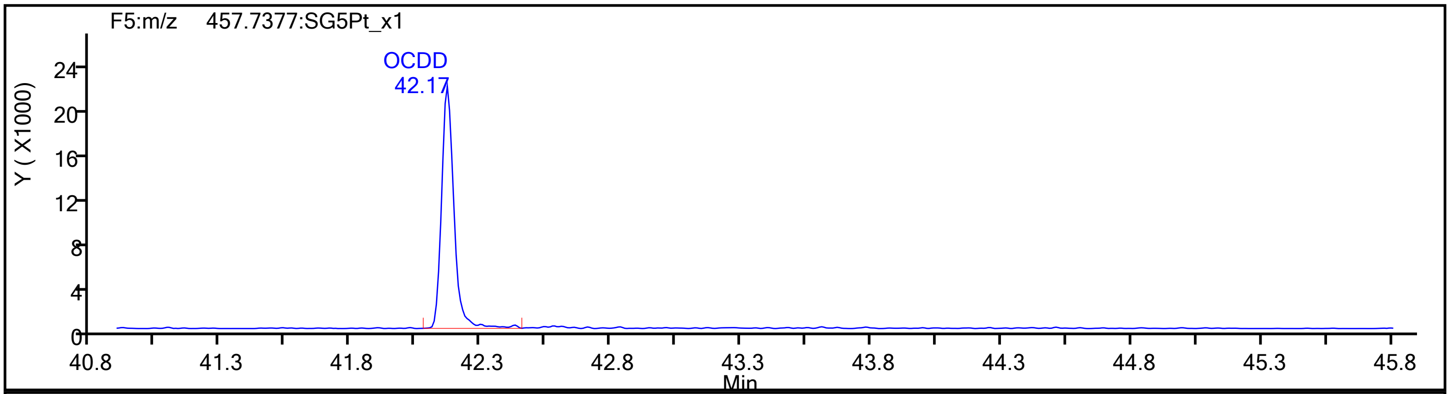

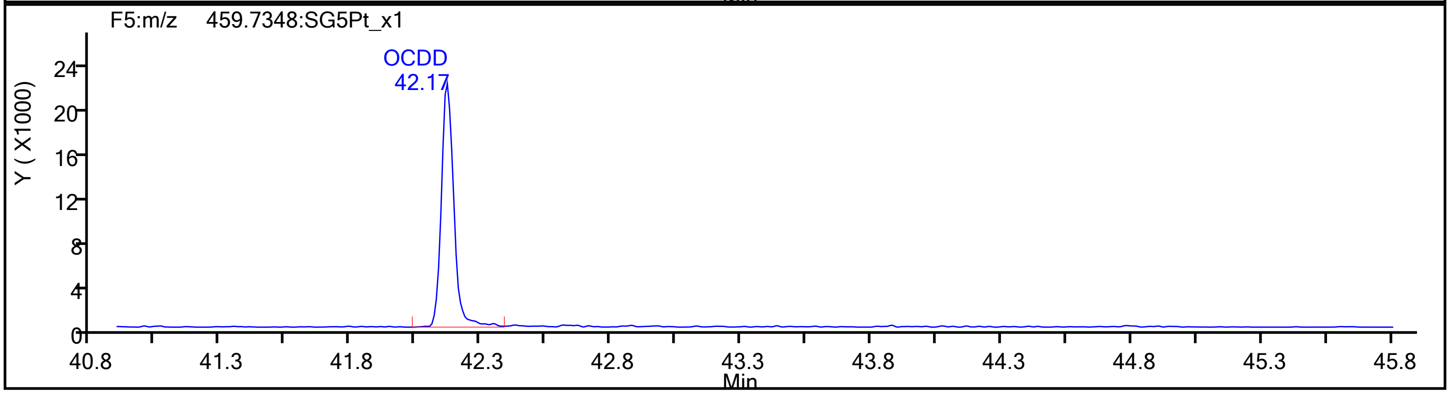

OCDD Standards

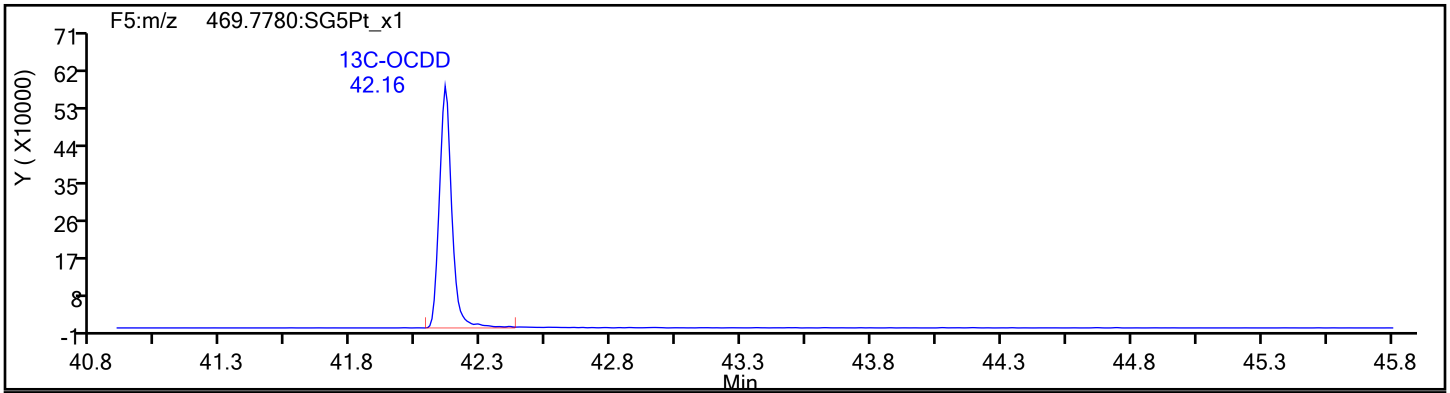

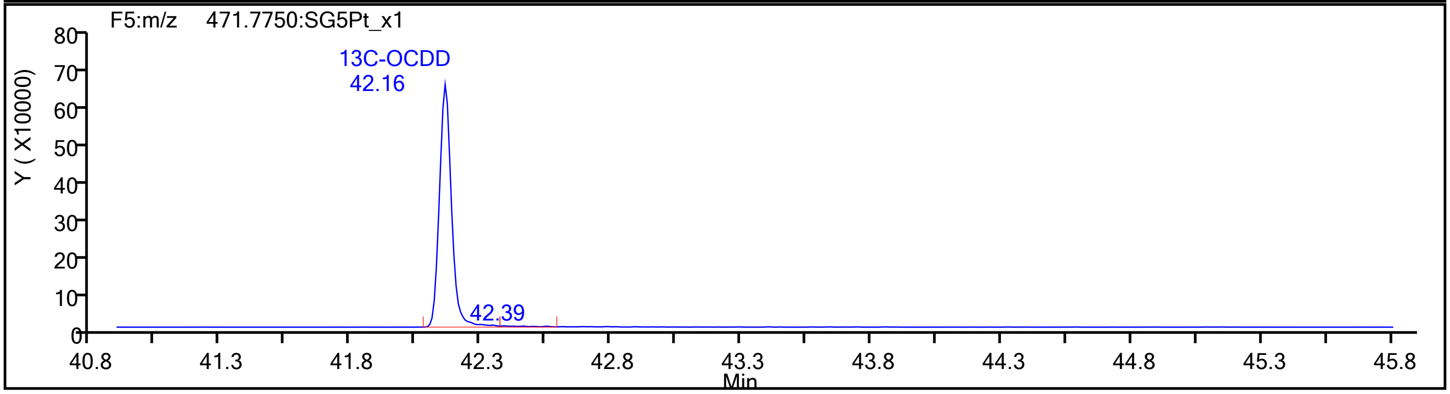

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Injection Date: 17-Nov-2020 17:44:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

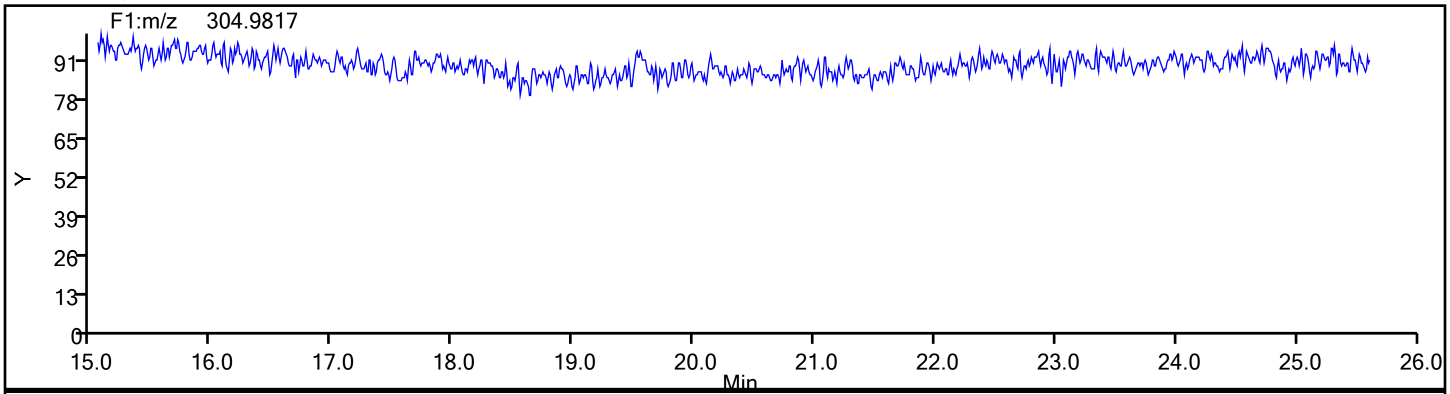

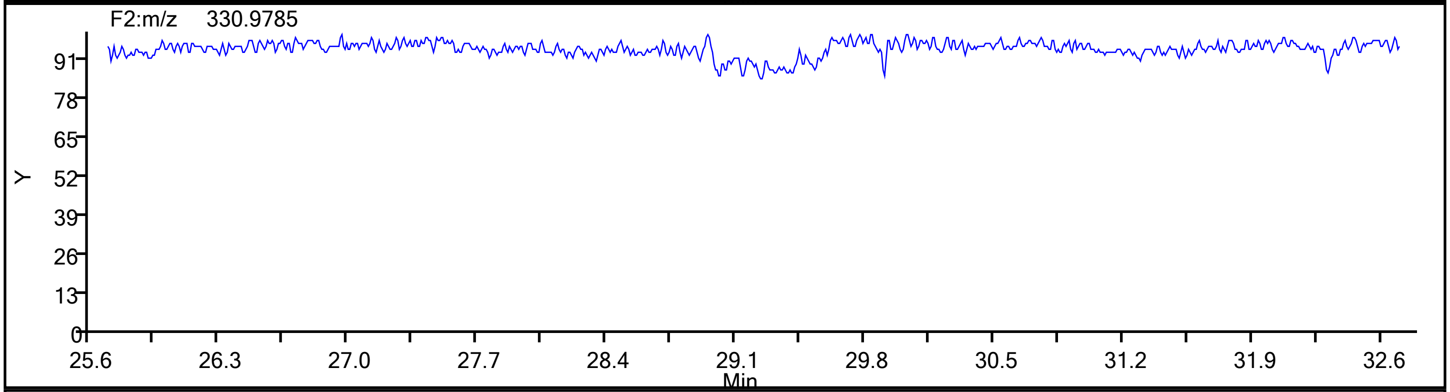

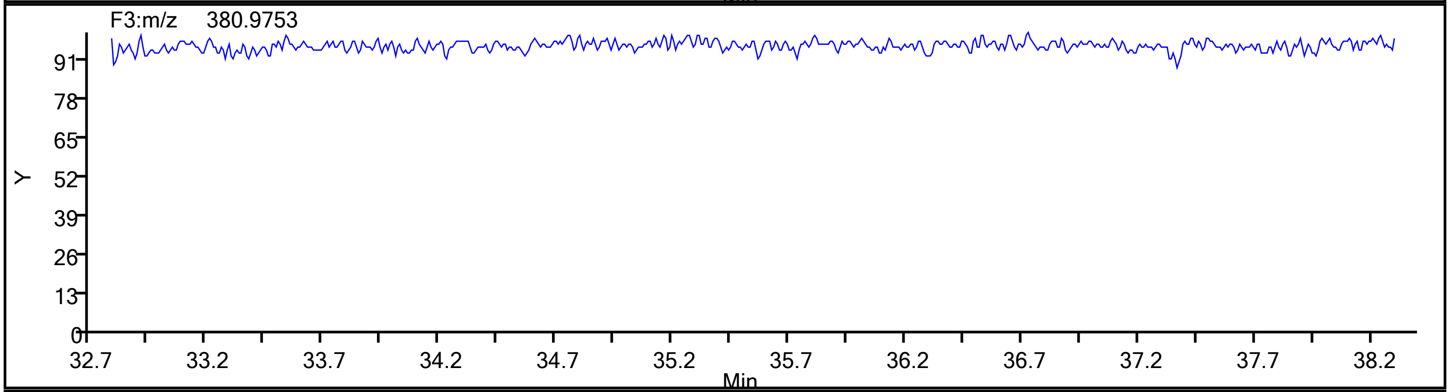

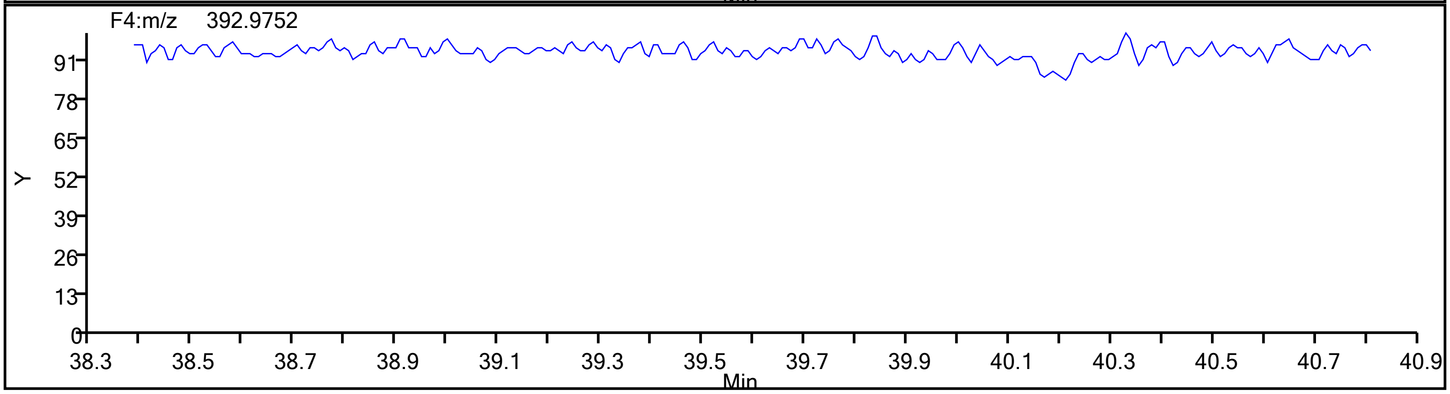

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

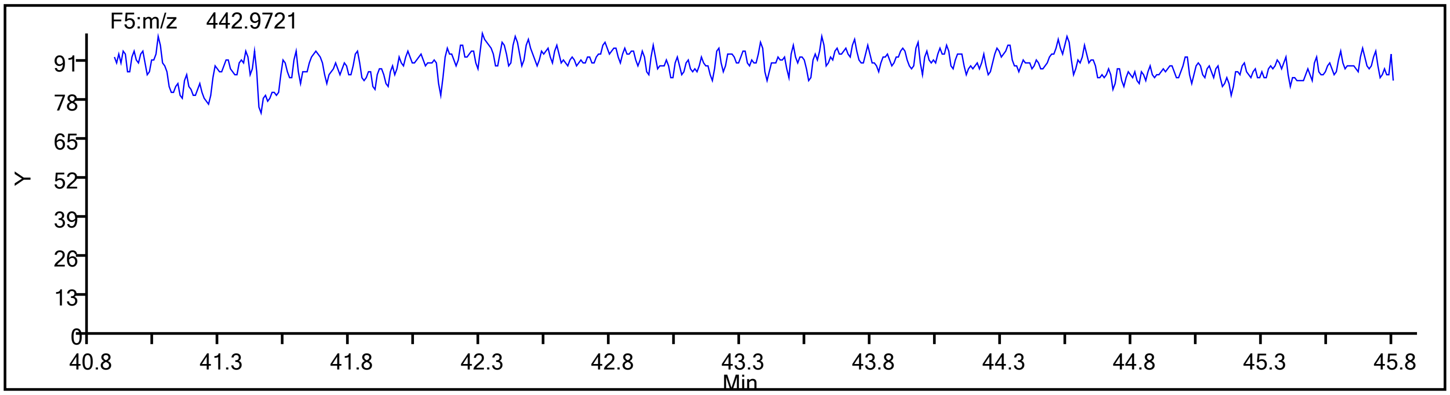

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.108

Error Coefficients

Standard Error:	20900000
Relative Standard Error:	13.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.976

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.398225	100.0	3354869.0	1.35929	Y
2	IC 320-432585/4	10.0	10.851002	100.0	1593650.0	1.0851	Y
3	IC 320-432585/5	50.0	53.245495	100.0	2621187.0	1.06491	Y
4	IC 320-432585/6	200.0	205.886112	100.0	3814878.0	1.029431	Y
5	IC 320-432585/7	1000.0	1001.003185	100.0	4099544.0	1.001003	Y

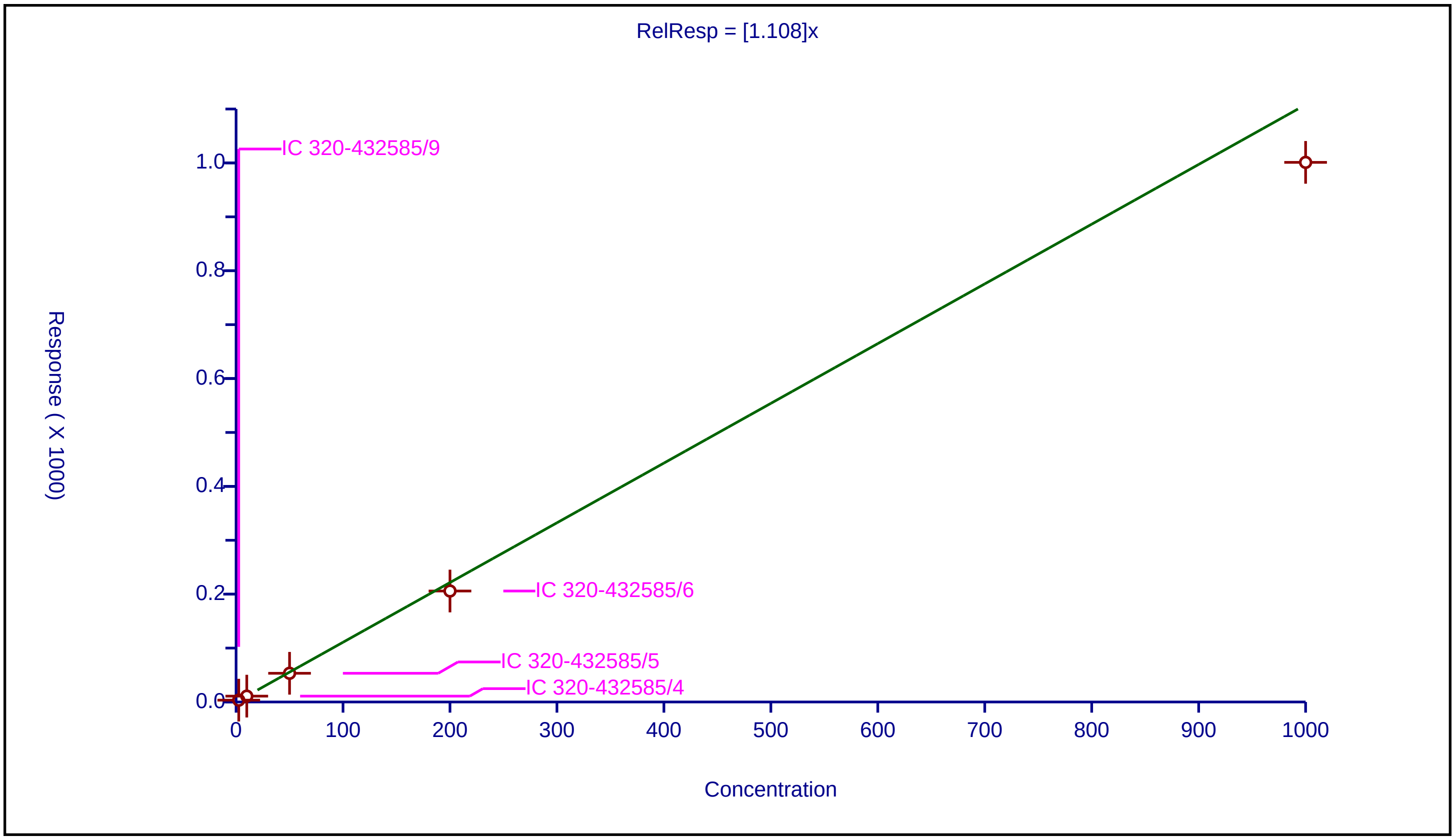

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.562

Error Coefficients

Standard Error:	33400000
Relative Standard Error:	12.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.980

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	4.704997	100.0	3789205.0	1.881999	Y
2	IC 320-432585/4	10.0	15.698379	100.0	1840655.0	1.569838	Y
3	IC 320-432585/5	50.0	74.872975	100.0	2967331.0	1.49746	Y
4	IC 320-432585/6	200.0	282.10855	100.0	4395524.0	1.410543	Y
5	IC 320-432585/7	1000.0	1449.391785	100.0	4525374.0	1.449392	Y

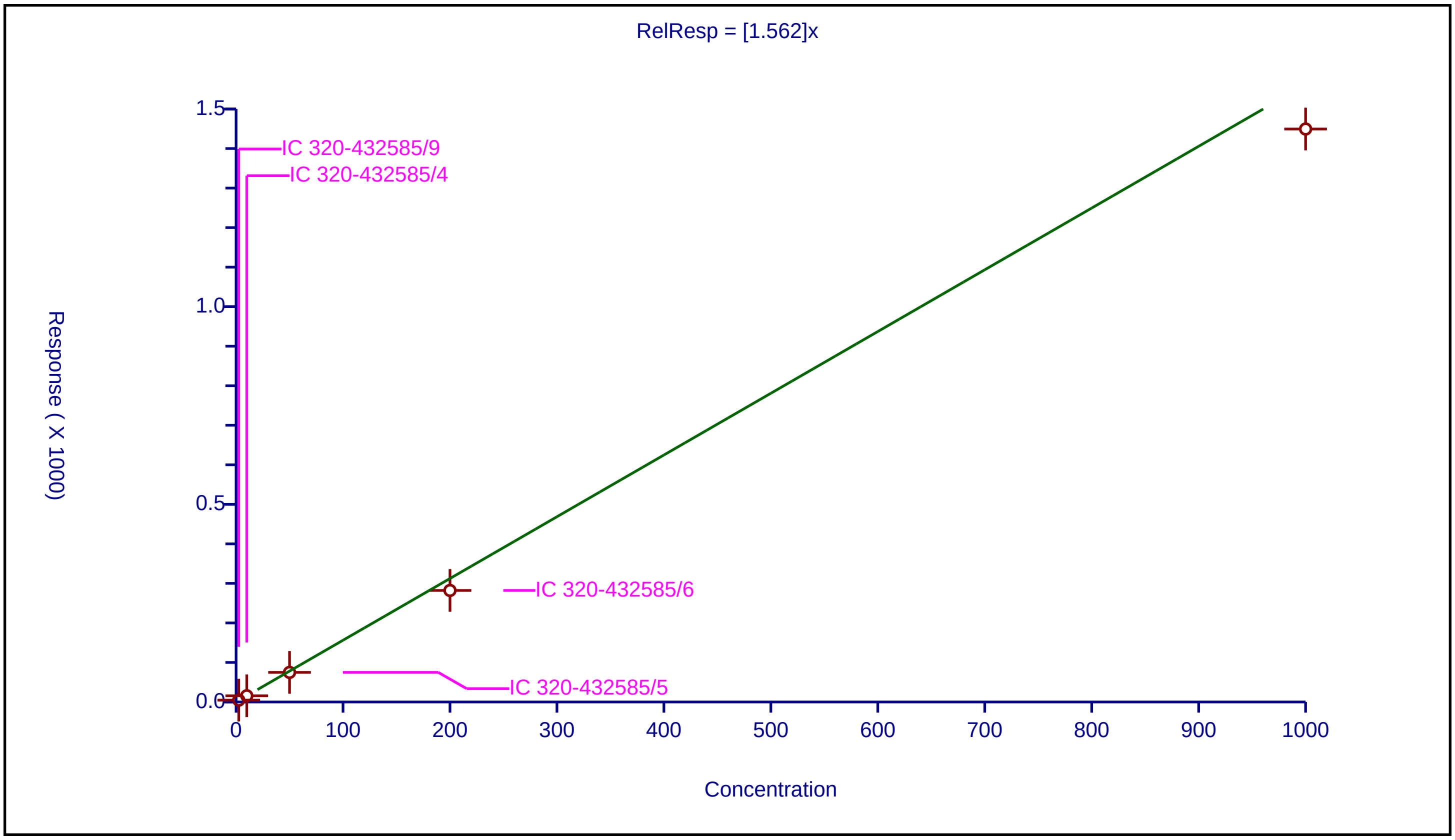

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.497

Error Coefficients

Standard Error:	27000000
Relative Standard Error:	13.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.976

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	4.607959	100.0	3027653.0	1.843183	Y
2	IC 320-432585/4	10.0	14.558953	100.0	1486611.0	1.455895	Y
3	IC 320-432585/5	50.0	71.593339	100.0	2429483.0	1.431867	Y
4	IC 320-432585/6	200.0	278.961535	100.0	3517248.0	1.394808	Y
5	IC 320-432585/7	1000.0	1361.554268	100.0	3896084.0	1.361554	Y

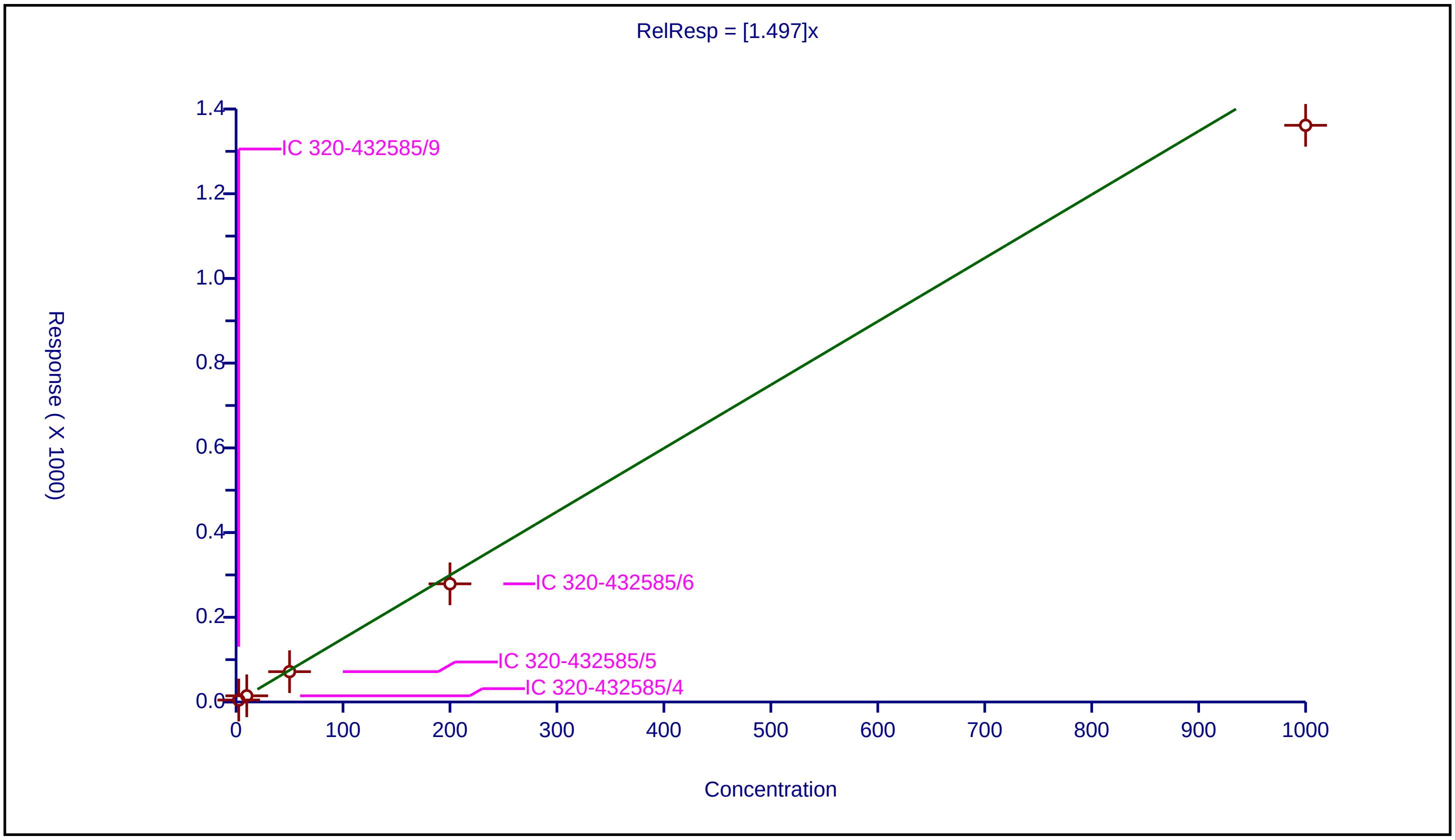

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.197

Error Coefficients

Standard Error:	22600000
Relative Standard Error:	14.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.972

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.7252	100.0	3537152.0	1.49008	Y
2	IC 320-432585/4	10.0	11.471967	100.0	1727097.0	1.147197	Y
3	IC 320-432585/5	50.0	58.698666	100.0	2680342.0	1.173973	Y
4	IC 320-432585/6	200.0	220.321662	100.0	3999855.0	1.101608	Y
5	IC 320-432585/7	1000.0	1073.095429	100.0	4136810.0	1.073095	Y

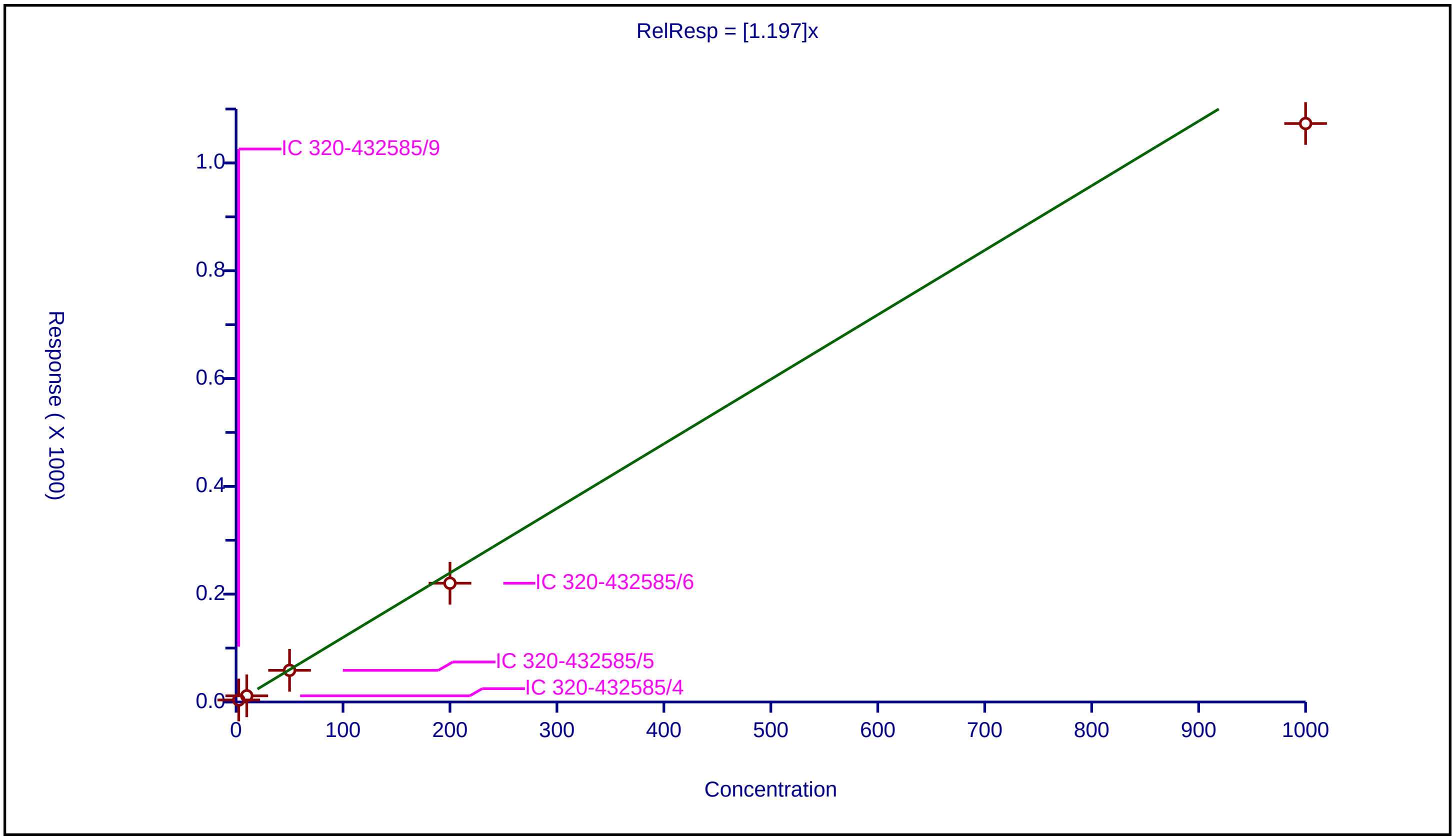

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept: 0
Slope: 1.32

Error Coefficients

Standard Error: 37300000
Relative Standard Error: 9.8
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 0.987

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.840177	100.0	5181766.0	1.536071	Y
2	IC 320-432585/4	10.0	13.299311	100.0	2523469.0	1.329931	Y
3	IC 320-432585/5	50.0	64.511984	100.0	3980989.0	1.29024	Y
4	IC 320-432585/6	200.0	248.806087	100.0	5721063.0	1.24403	Y
5	IC 320-432585/7	1000.0	1202.082121	100.0	6095612.0	1.202082	Y

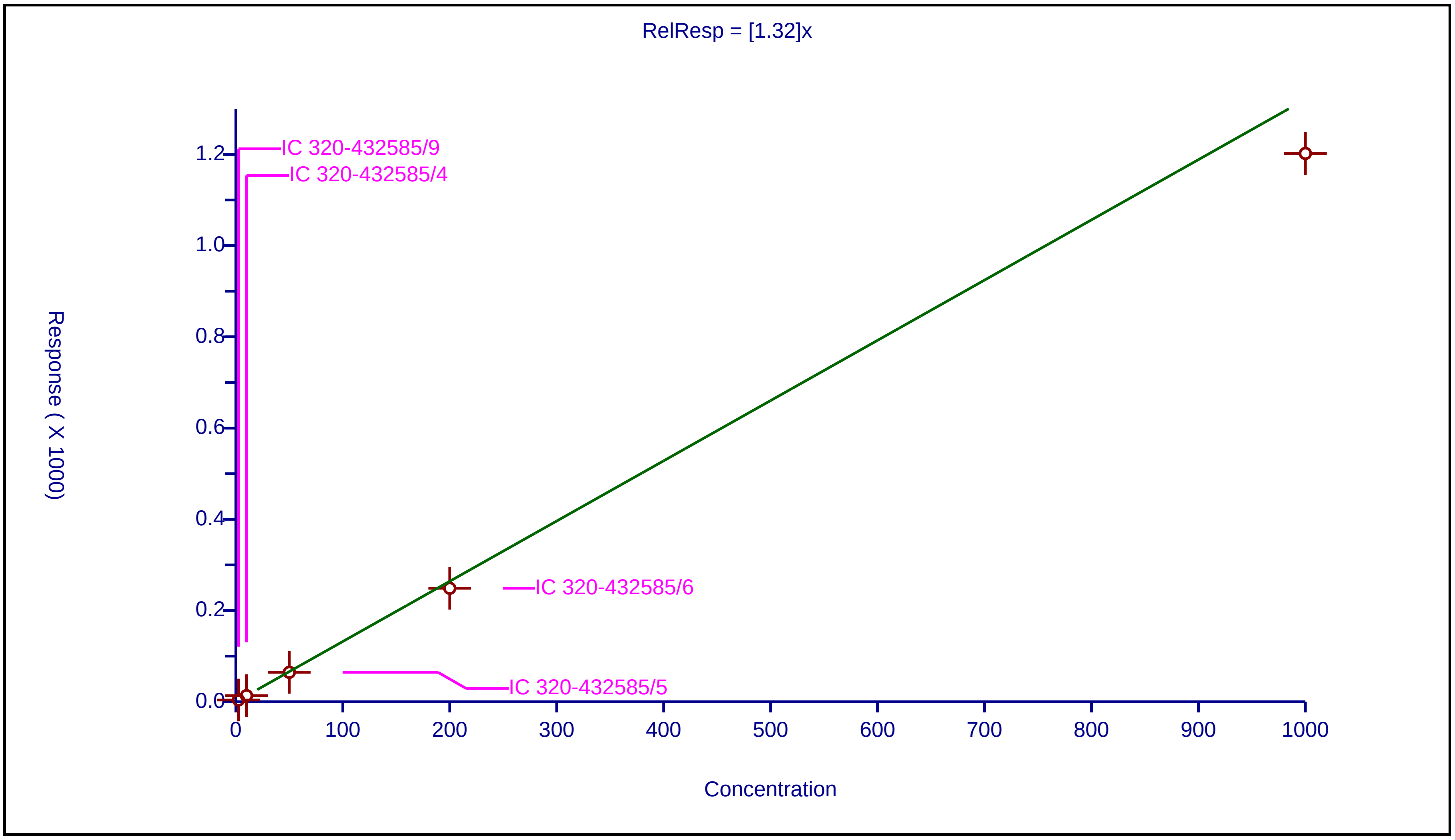

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.069

Error Coefficients

Standard Error:	24600000
Relative Standard Error:	11.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.982

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.189256	100.0	4357819.0	1.275702	Y
2	IC 320-432585/4	10.0	10.840378	100.0	2053194.0	1.084038	Y
3	IC 320-432585/5	50.0	50.674467	100.0	3353387.0	1.013489	Y
4	IC 320-432585/6	200.0	202.383039	100.0	4810874.0	1.011915	Y
5	IC 320-432585/7	1000.0	962.156005	100.0	5001351.0	0.962156	Y

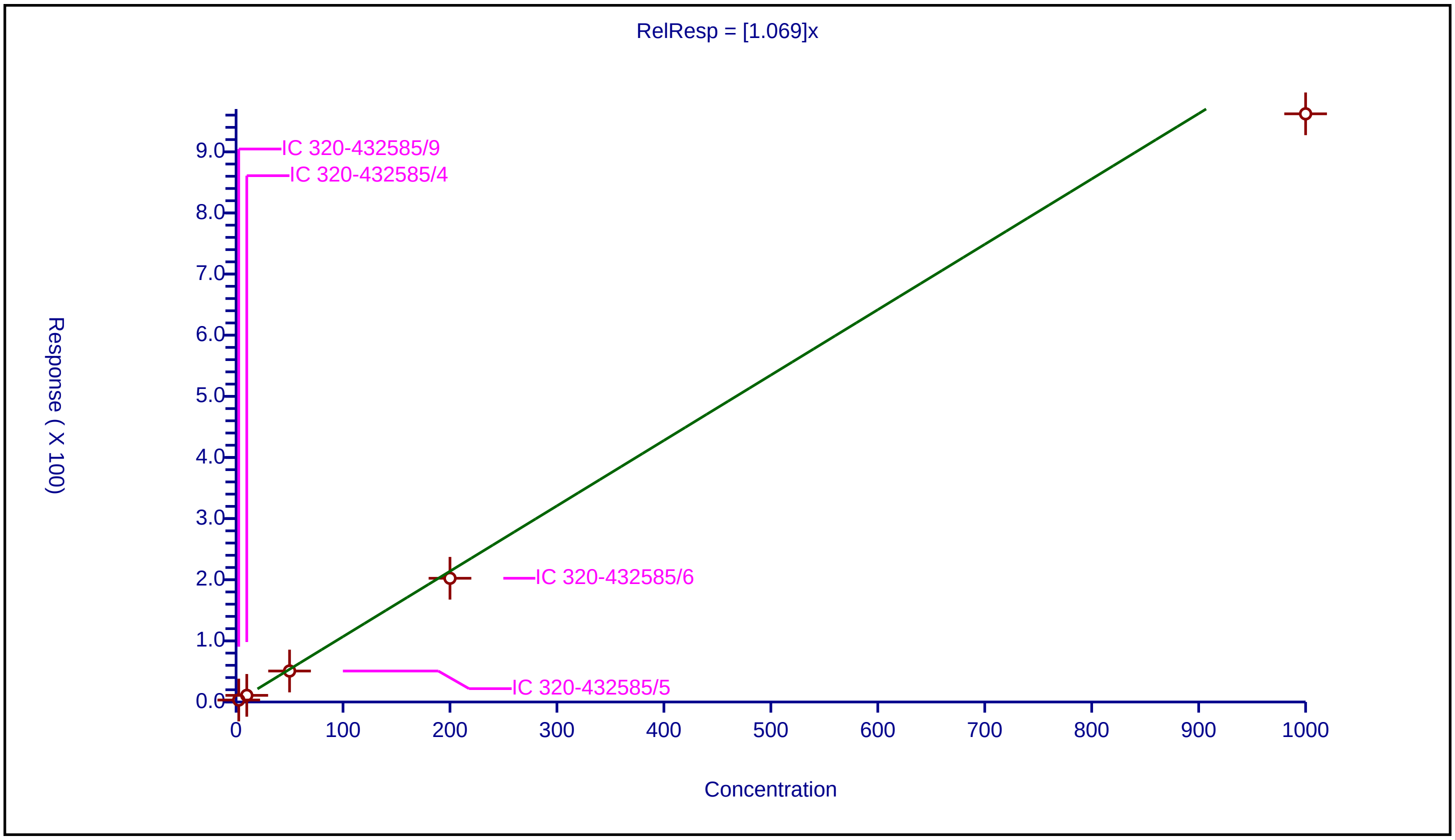

Calibration / 1,2,3,6,7,8-HxCDF

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.268

Error Coefficients

Standard Error:	40300000
Relative Standard Error:	10.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.985

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.741009	100.0	5869111.0	1.496404	Y
2	IC 320-432585/4	10.0	12.775836	100.0	2829584.0	1.277584	Y
3	IC 320-432585/5	50.0	61.18534	100.0	4640355.0	1.223707	Y
4	IC 320-432585/6	200.0	235.377197	100.0	6718059.0	1.176886	Y
5	IC 320-432585/7	1000.0	1166.224435	100.0	6778427.0	1.166224	Y

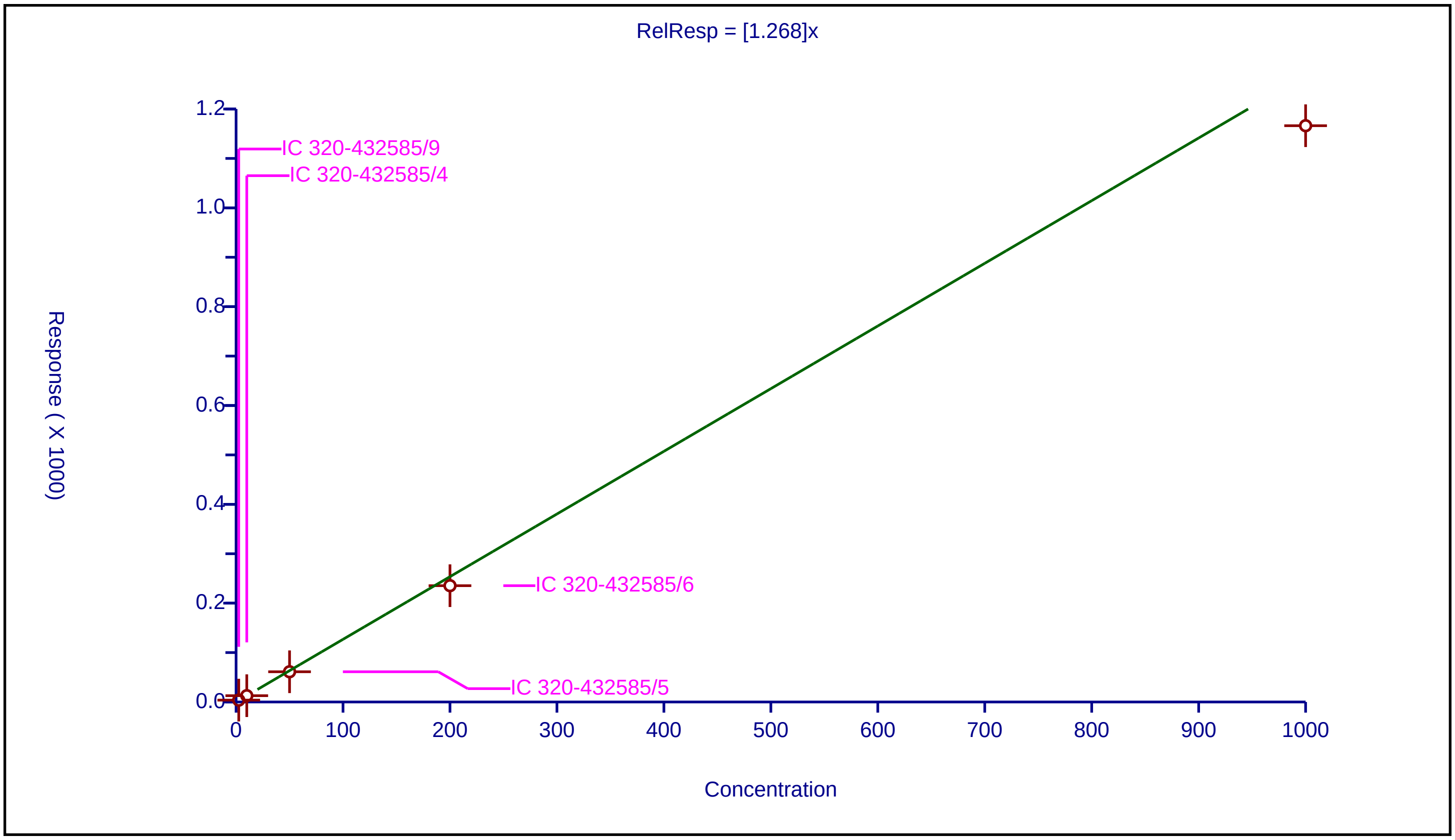

Calibration / 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.309

Error Coefficients

Standard Error:	25000000
Relative Standard Error:	13.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.976

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	4.013087	100.0	3537152.0	1.605235	Y
2	IC 320-432585/4	10.0	12.873626	100.0	1727097.0	1.287363	Y
3	IC 320-432585/5	50.0	63.29308	100.0	2680342.0	1.265862	Y
4	IC 320-432585/6	200.0	240.235384	100.0	3999855.0	1.201177	Y
5	IC 320-432585/7	1000.0	1184.935929	100.0	4136810.0	1.184936	Y

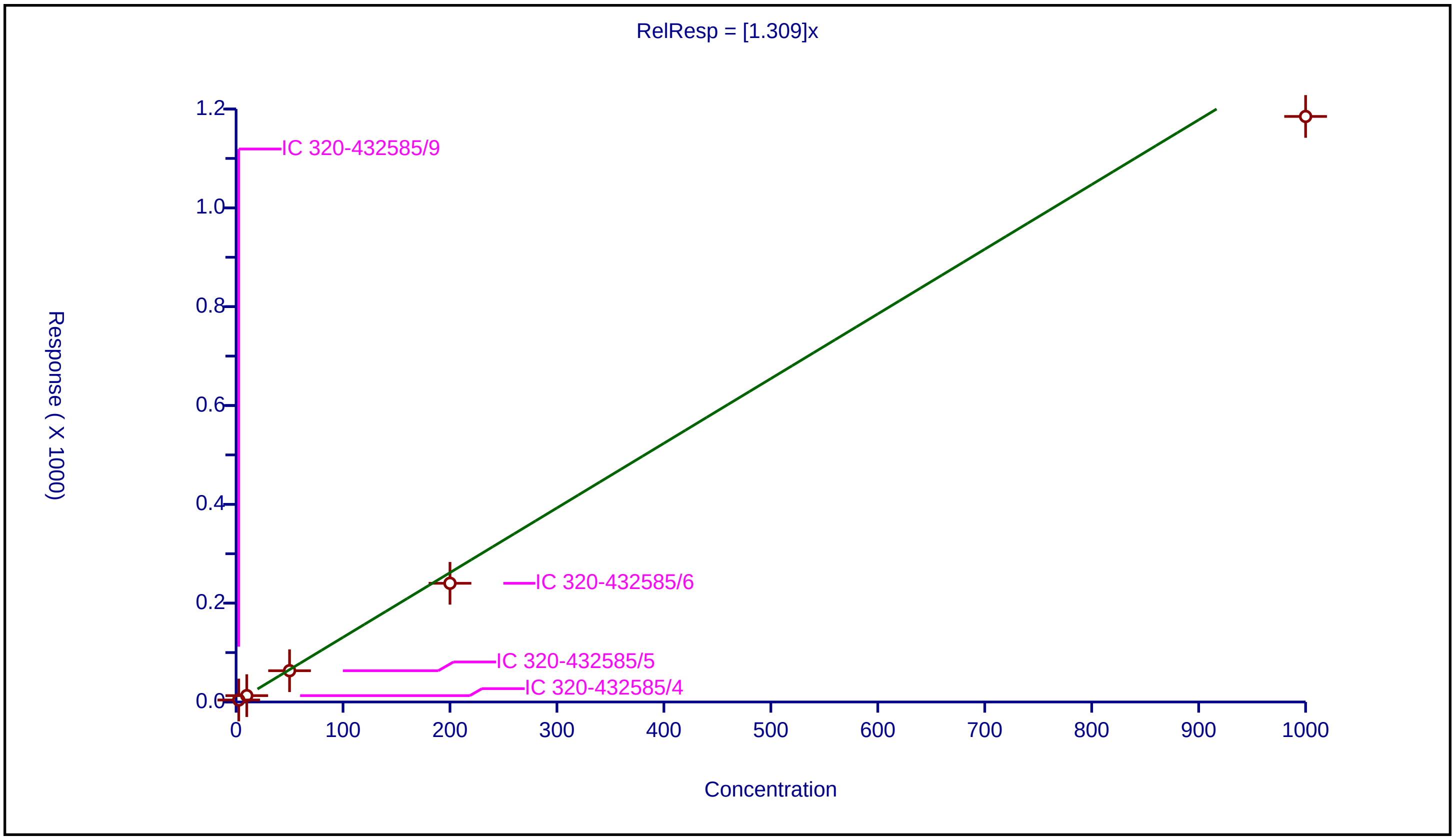

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.306

Error Coefficients

Standard Error:	32800000
Relative Standard Error:	12.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.979

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.952688	100.0	4537064.0	1.581075	Y
2	IC 320-432585/4	10.0	13.110913	100.0	2021278.0	1.311091	Y
3	IC 320-432585/5	50.0	62.146	100.0	3454092.0	1.24292	Y
4	IC 320-432585/6	200.0	240.613974	100.0	5094707.0	1.20307	Y
5	IC 320-432585/7	1000.0	1193.254221	100.0	5394247.0	1.193254	Y

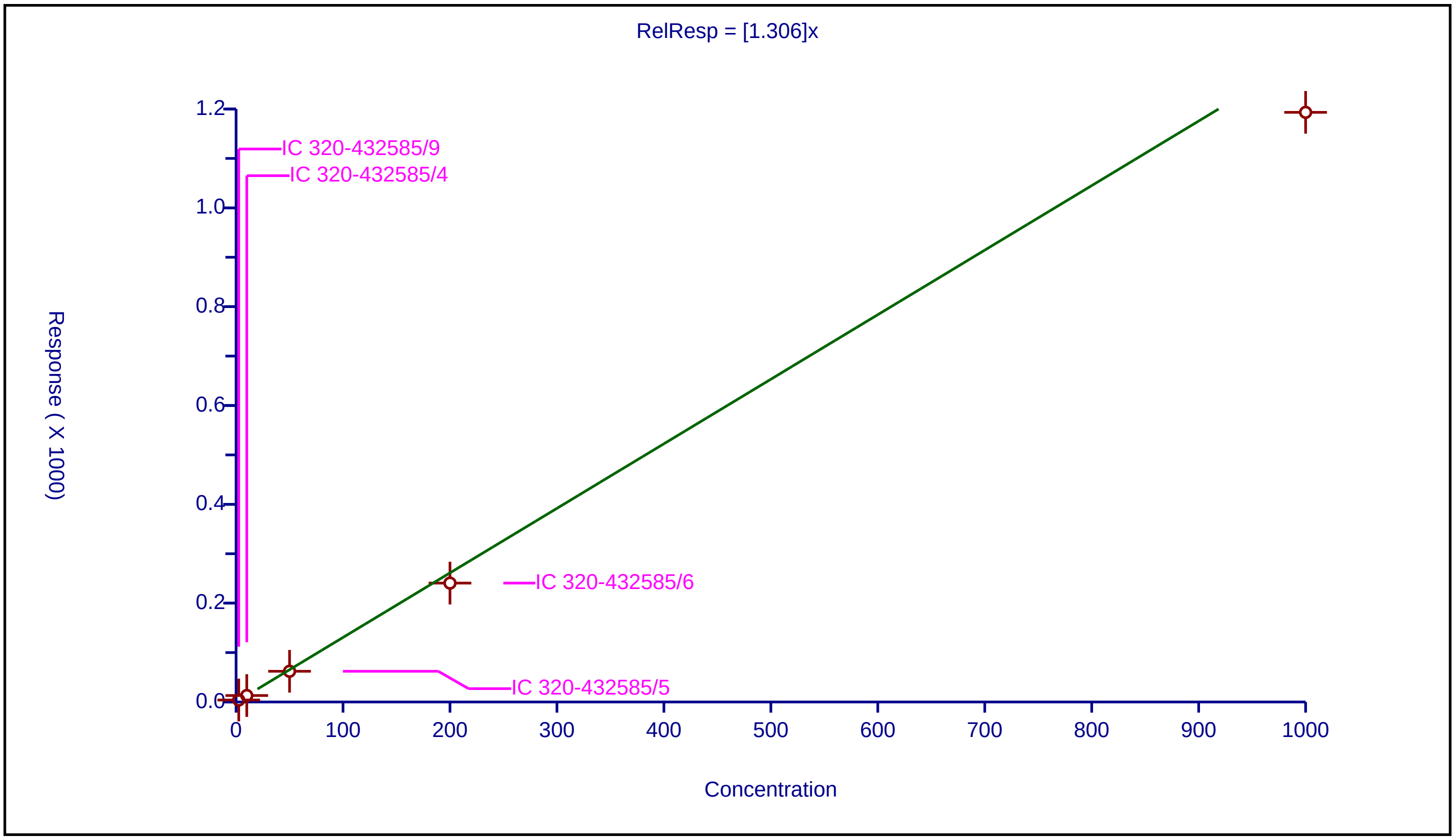

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.119

Error Coefficients

Standard Error:	21300000
Relative Standard Error:	11.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.983

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.309404	100.0	3703477.0	1.323761	Y
2	IC 320-432585/4	10.0	11.42822	100.0	1772472.0	1.142822	Y
3	IC 320-432585/5	50.0	53.243437	100.0	2899131.0	1.064869	Y
4	IC 320-432585/6	200.0	209.119774	100.0	4205499.0	1.045599	Y
5	IC 320-432585/7	1000.0	1018.365689	100.0	4093198.0	1.018366	Y

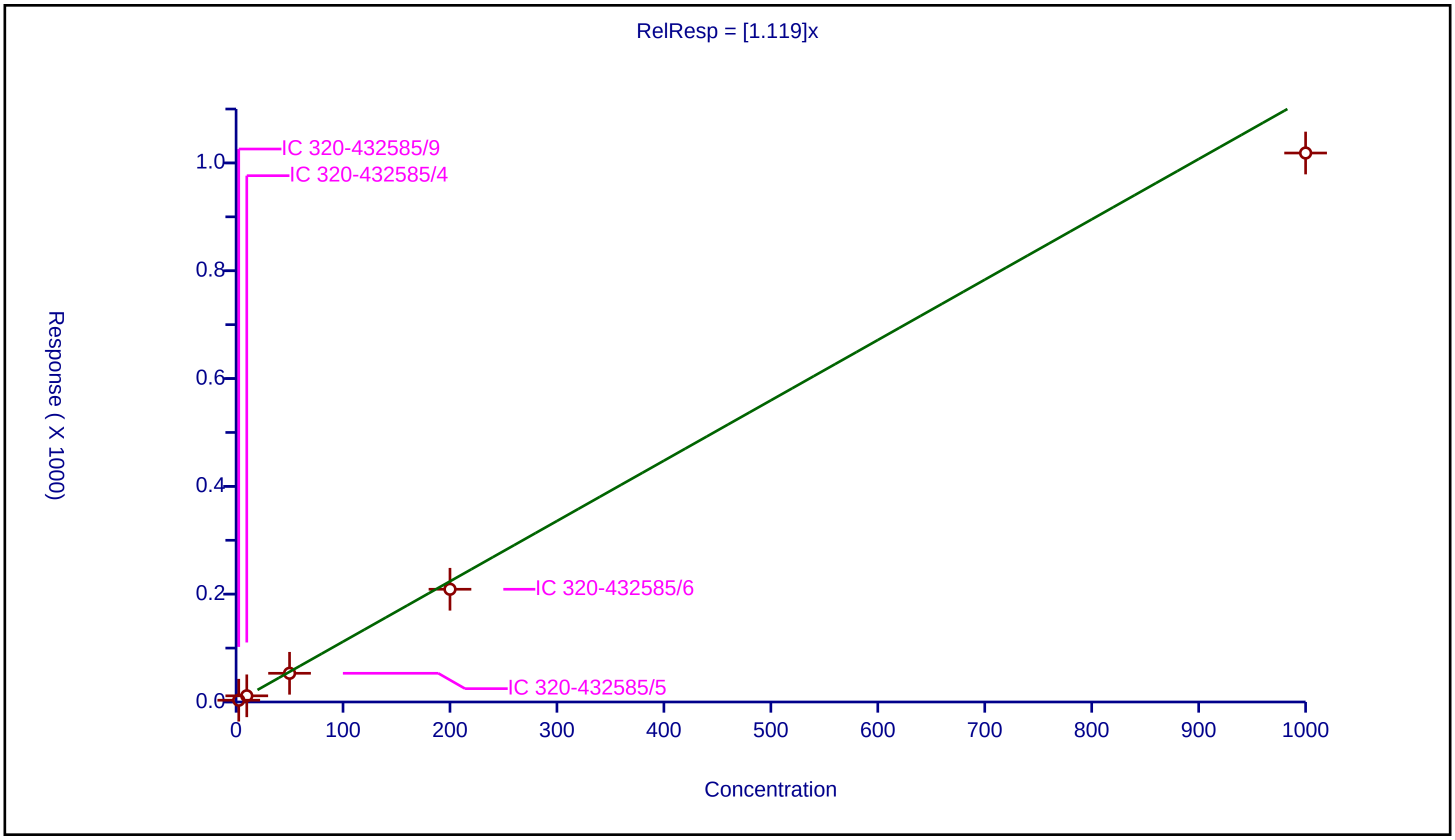

Calibration / 1,2,3,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.132

Error Coefficients

Standard Error:	36100000
Relative Standard Error:	11.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.984

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.350666	100.0	6354139.0	1.340267	Y
2	IC 320-432585/4	10.0	11.398308	100.0	2977170.0	1.139831	Y
3	IC 320-432585/5	50.0	55.243477	100.0	4756996.0	1.10487	Y
4	IC 320-432585/6	200.0	207.310032	100.0	7025605.0	1.03655	Y
5	IC 320-432585/7	1000.0	1039.457605	100.0	6789961.0	1.039458	Y

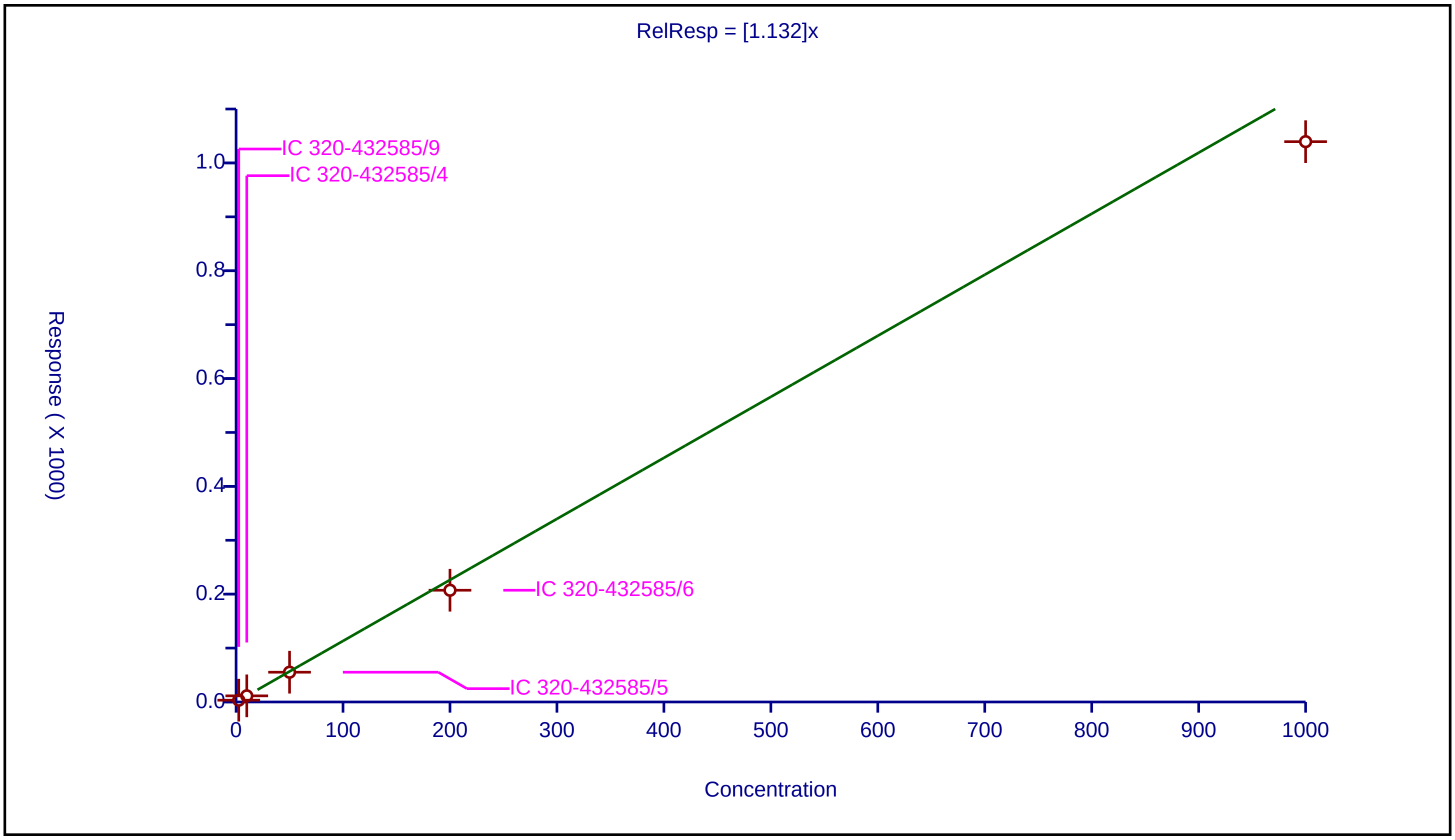

Calibration

/ 2,3,4,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.284

Error Coefficients

Standard Error:	37800000
Relative Standard Error:	9.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.721406	100.0	5395434.0	1.488562	Y
2	IC 320-432585/4	10.0	13.040062	100.0	2532810.0	1.304006	Y
3	IC 320-432585/5	50.0	61.764247	100.0	4173055.0	1.235285	Y
4	IC 320-432585/6	200.0	238.185516	100.0	6046028.0	1.190928	Y
5	IC 320-432585/7	1000.0	1199.994598	100.0	6182541.0	1.199995	Y

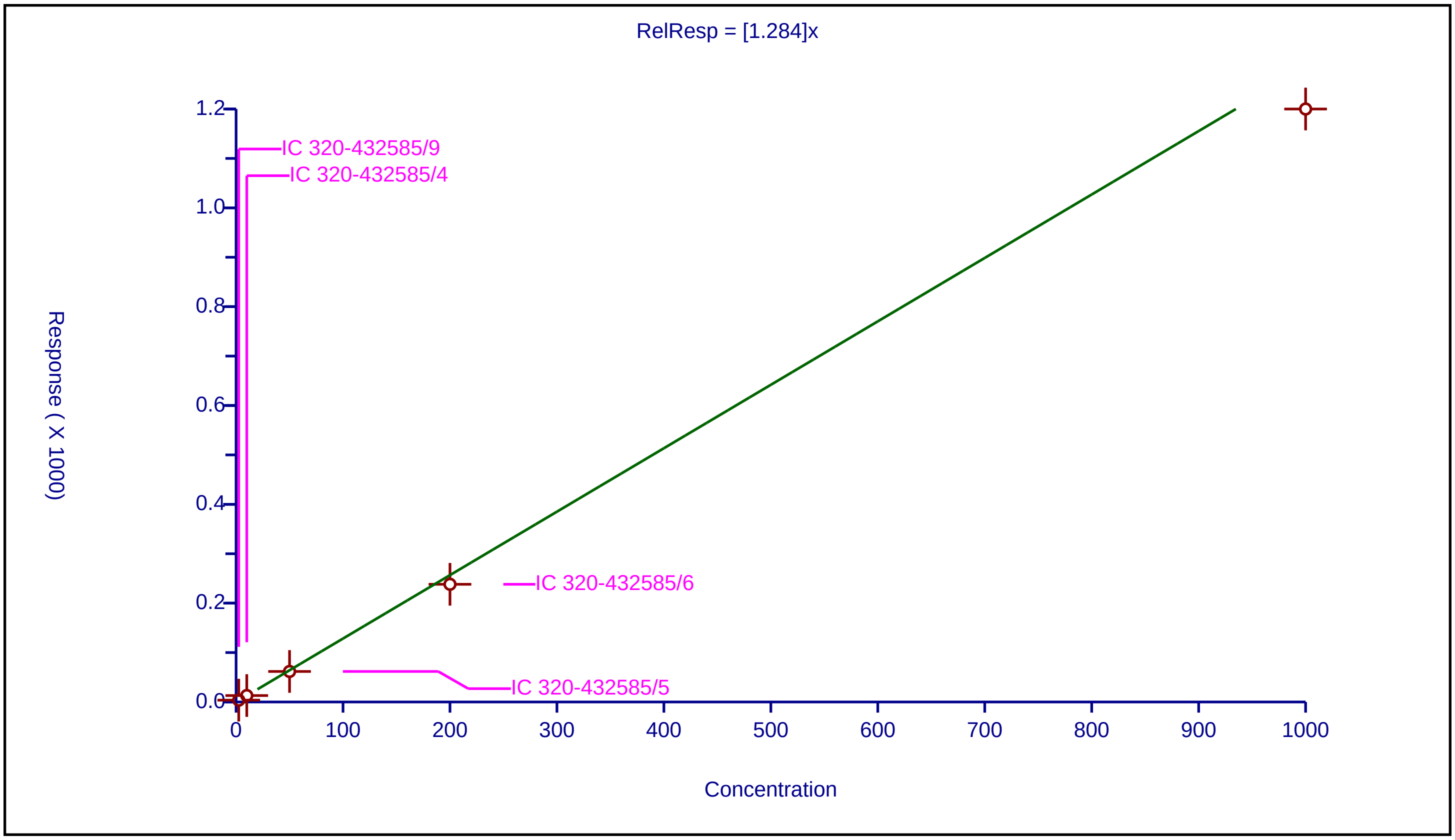

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.159

Error Coefficients

Standard Error:	34800000
Relative Standard Error:	8.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.315548	100.0	5781548.0	1.326219	Y
2	IC 320-432585/4	10.0	11.627978	100.0	2805191.0	1.162798	Y
3	IC 320-432585/5	50.0	56.818725	100.0	4407855.0	1.136374	Y
4	IC 320-432585/6	200.0	220.372591	100.0	6365852.0	1.101863	Y
5	IC 320-432585/7	1000.0	1066.689095	100.0	6380229.0	1.066689	Y

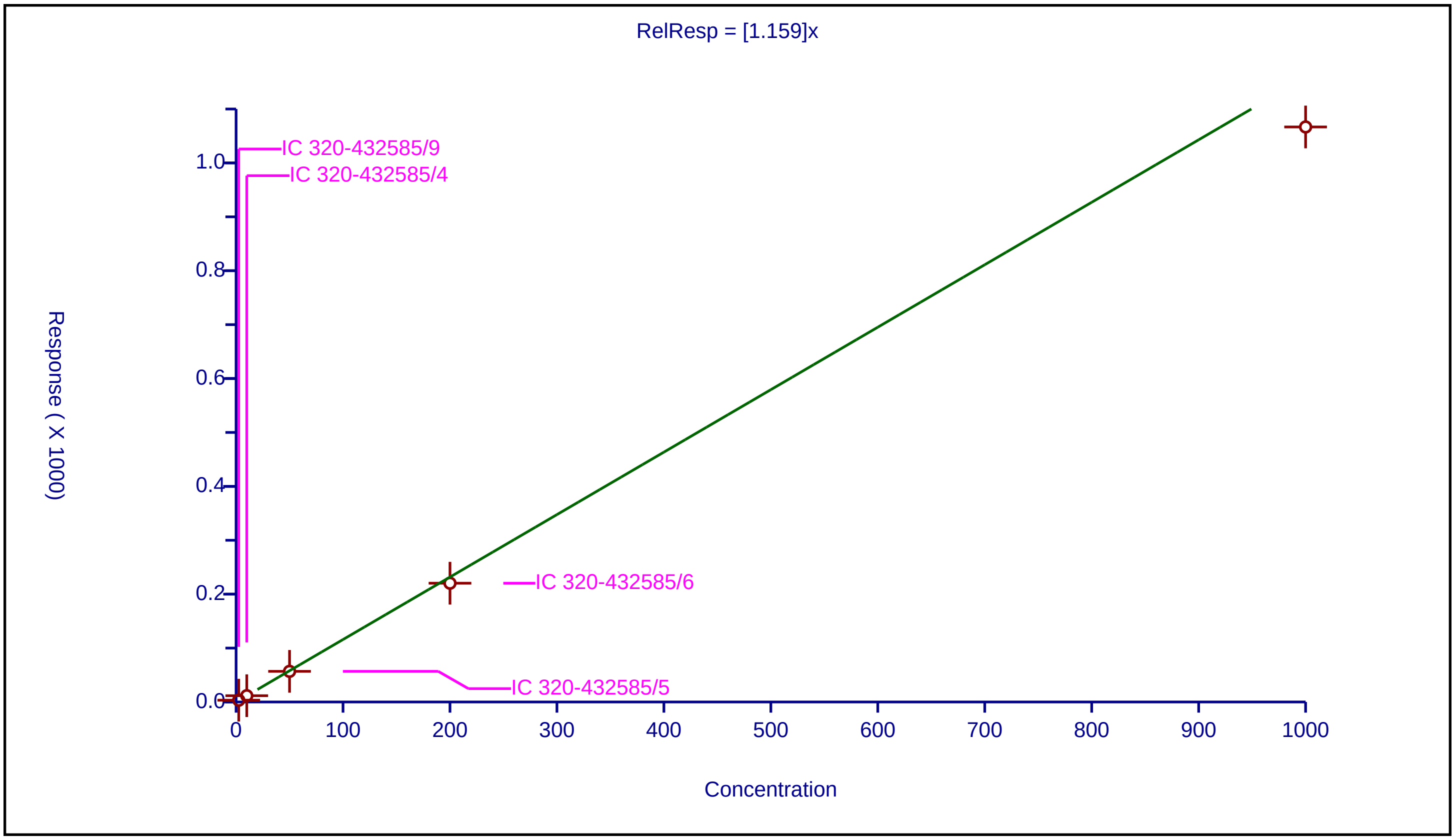

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.166

Error Coefficients

Standard Error:	5610000
Relative Standard Error:	10.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.986

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	0.5	0.686347	100.0	4584854.0	1.372694	Y
2	IC 320-432585/4	2.0	2.301316	100.0	2316674.0	1.150658	Y
3	IC 320-432585/5	10.0	11.151466	100.0	3653681.0	1.115147	Y
4	IC 320-432585/6	40.0	43.766607	100.0	5120726.0	1.094165	Y
5	IC 320-432585/7	200.0	219.381017	100.0	5011703.0	1.096905	Y

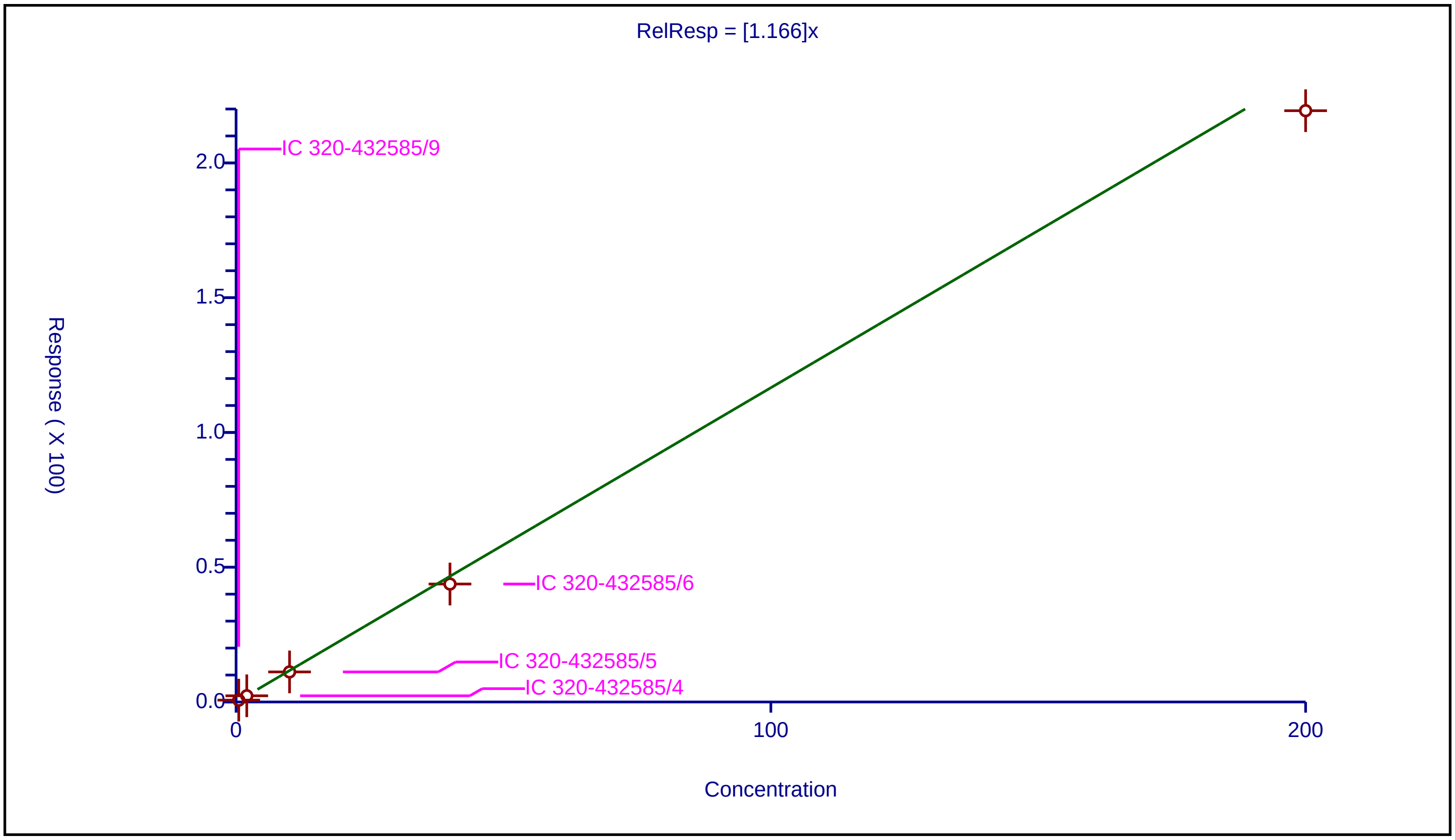

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.155

Error Coefficients

Standard Error:	8450000
Relative Standard Error:	12.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.977

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	0.5	0.709359	100.0	6843222.0	1.418718	Y
2	IC 320-432585/4	2.0	2.172221	100.0	3632320.0	1.08611	Y
3	IC 320-432585/5	10.0	11.076451	100.0	5685124.0	1.107645	Y
4	IC 320-432585/6	40.0	43.632825	100.0	8021729.0	1.090821	Y
5	IC 320-432585/7	200.0	214.010832	100.0	7723296.0	1.070054	Y

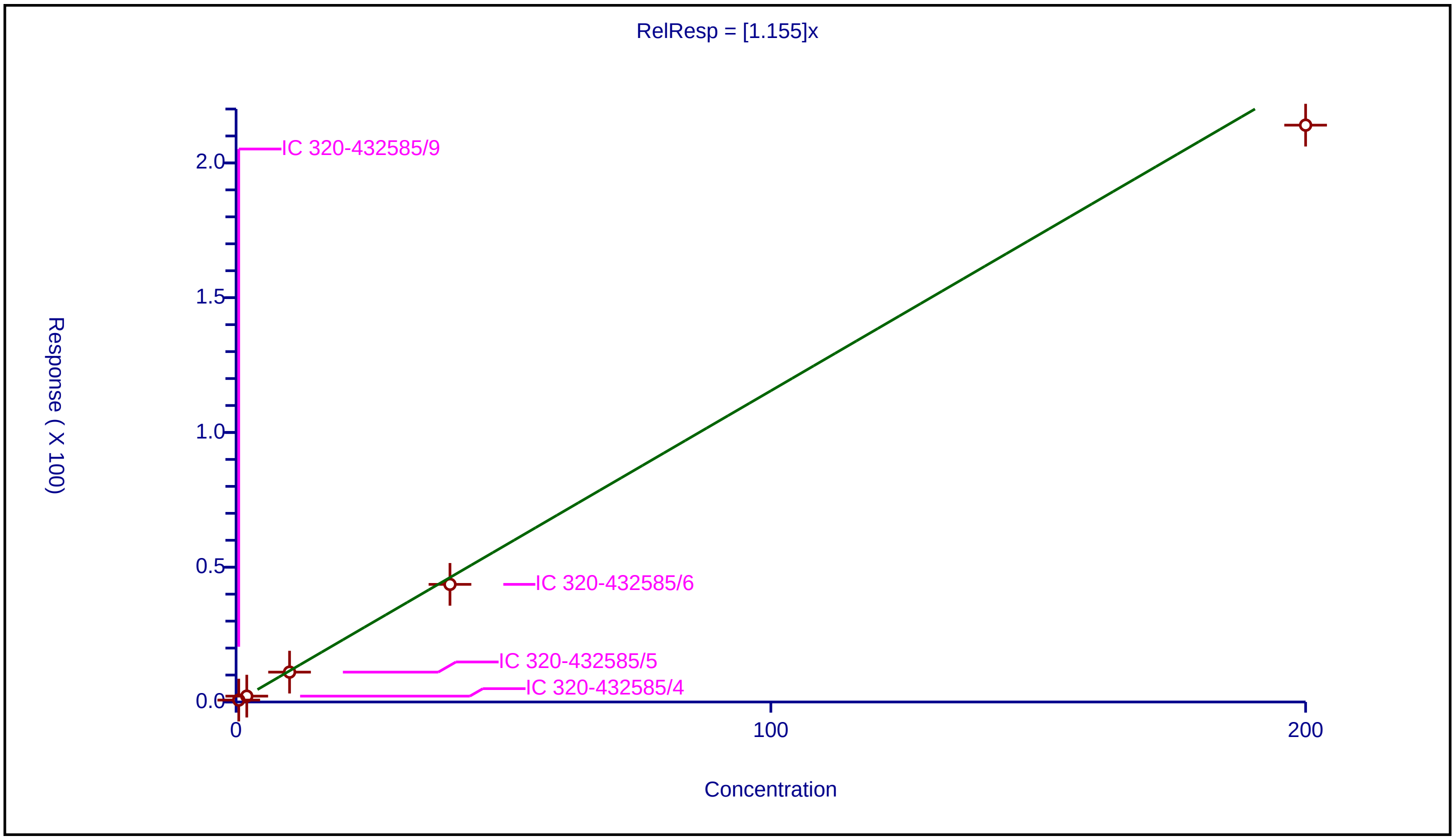

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.145

Error Coefficients

Standard Error:	5310000
Relative Standard Error:	2.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	0.5	0.589374	100.0	4241448.0	1.178748	Y
2	IC 320-432585/4	2.0	2.261839	100.0	2145599.0	1.13092	Y
3	IC 320-432585/5	10.0	11.088632	100.0	3431370.0	1.108863	Y
4	IC 320-432585/6	40.0	45.288471	100.0	4688160.0	1.132212	Y
5	IC 320-432585/7	200.0	234.387537	100.0	4433551.0	1.171938	Y

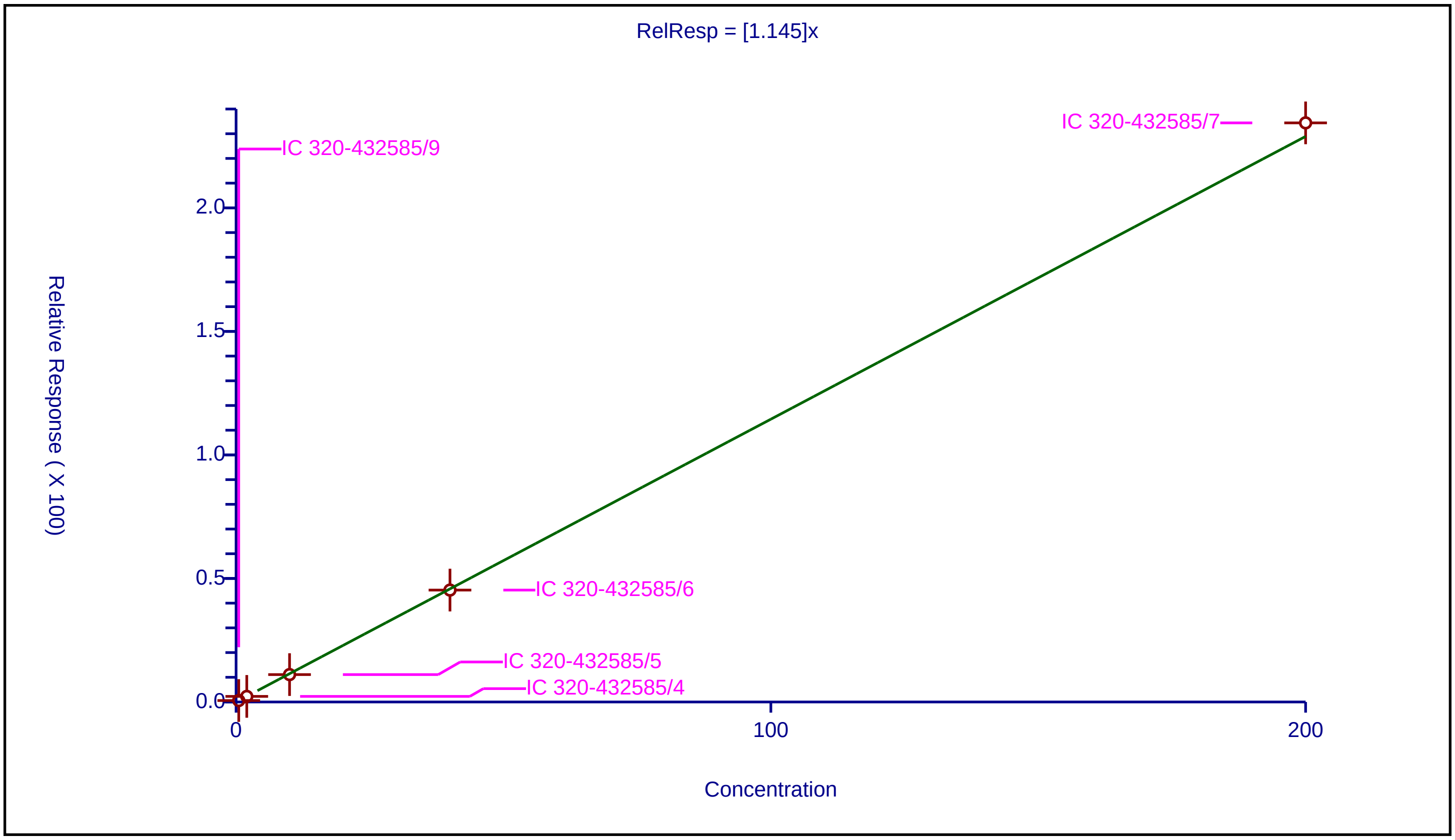

Calibration / OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.167

Error Coefficients

Standard Error:	29000000
Relative Standard Error:	14.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.970

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	5.0	7.253966	200.0	4068864.0	1.450793	Y
2	IC 320-432585/4	20.0	23.702278	200.0	1872512.0	1.185114	Y
3	IC 320-432585/5	100.0	110.03049	200.0	3323397.0	1.100305	Y
4	IC 320-432585/6	400.0	426.889969	200.0	4963784.0	1.067225	Y
5	IC 320-432585/7	2000.0	2058.754931	200.0	5545172.0	1.029377	Y

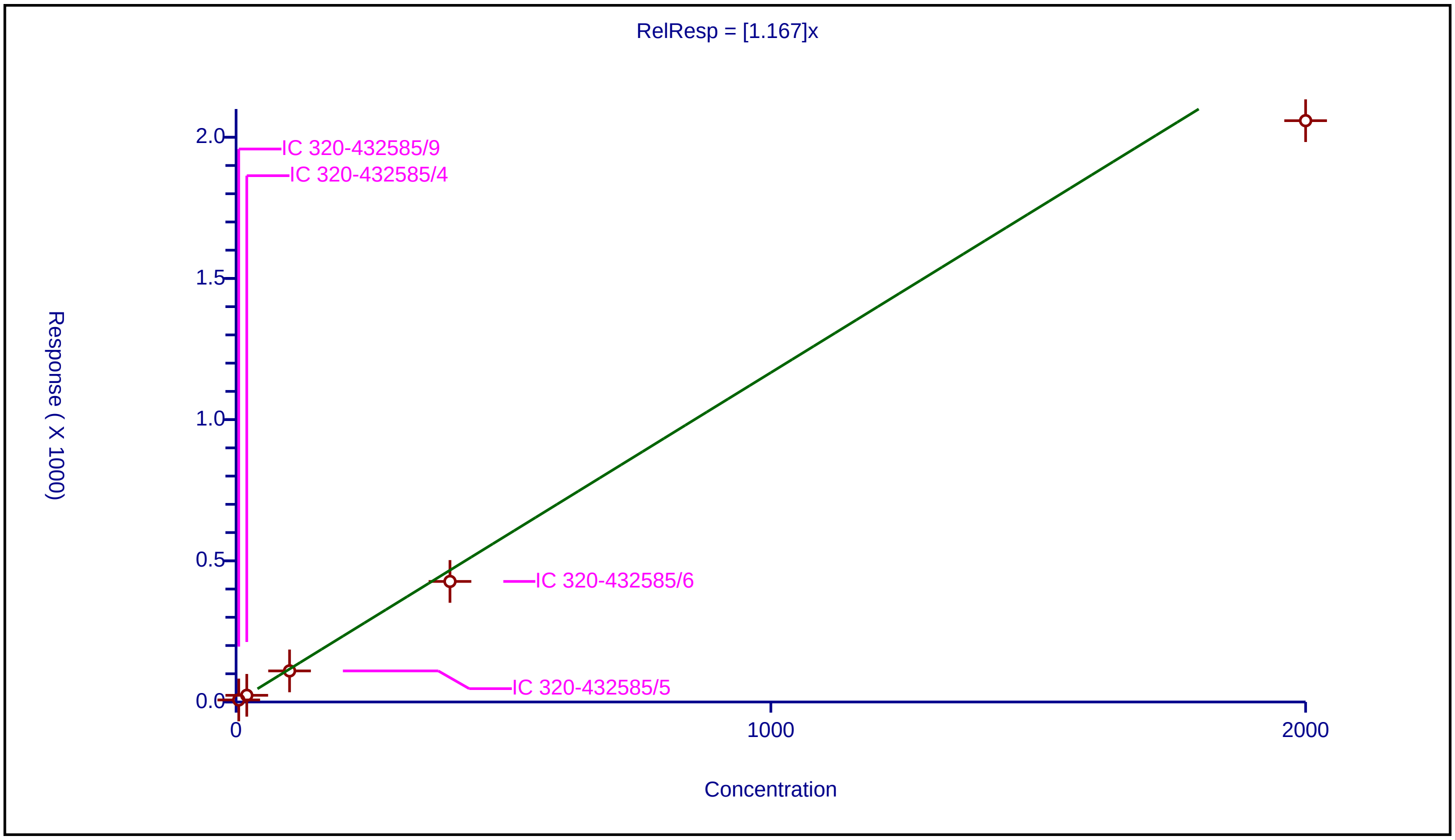

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.48

Error Coefficients

Standard Error:	39300000
Relative Standard Error:	10.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.985

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	5.0	8.754237	200.0	4068864.0	1.750847	Y
2	IC 320-432585/4	20.0	29.587527	200.0	1872512.0	1.479376	Y
3	IC 320-432585/5	100.0	137.117955	200.0	3323397.0	1.37118	Y
4	IC 320-432585/6	400.0	562.742013	200.0	4963784.0	1.406855	Y
5	IC 320-432585/7	2000.0	2785.21265	200.0	5545172.0	1.392606	Y

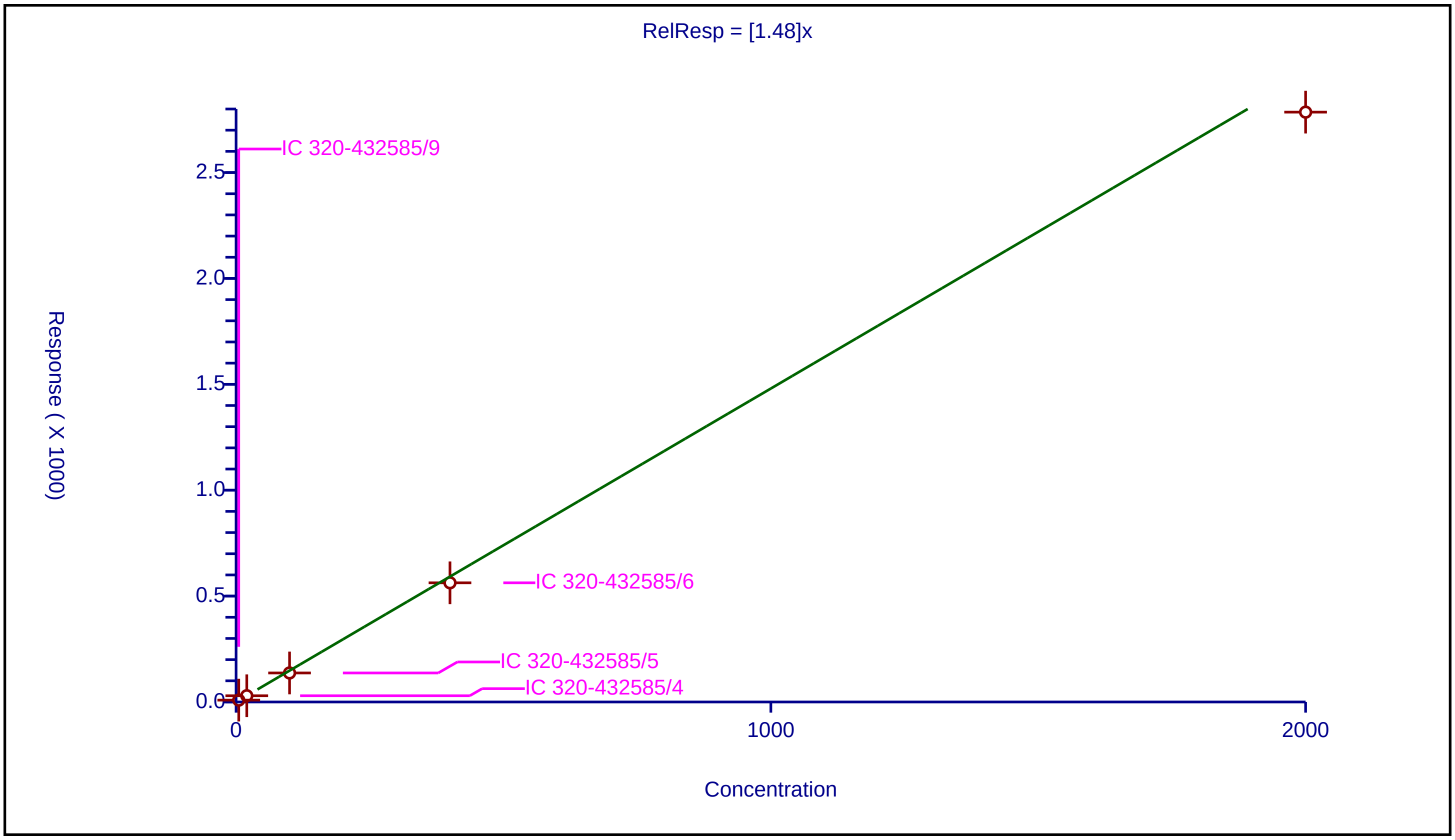

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-1

SDG No.:

Lab Sample ID (1): CPS 320-398641/1   Instrument ID (1): 11D2

GC Column (1): DB-225   ID: 0.32(mm)   Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324
H (Peak Height) = 10494443

%R = 16 <= 25
Passed

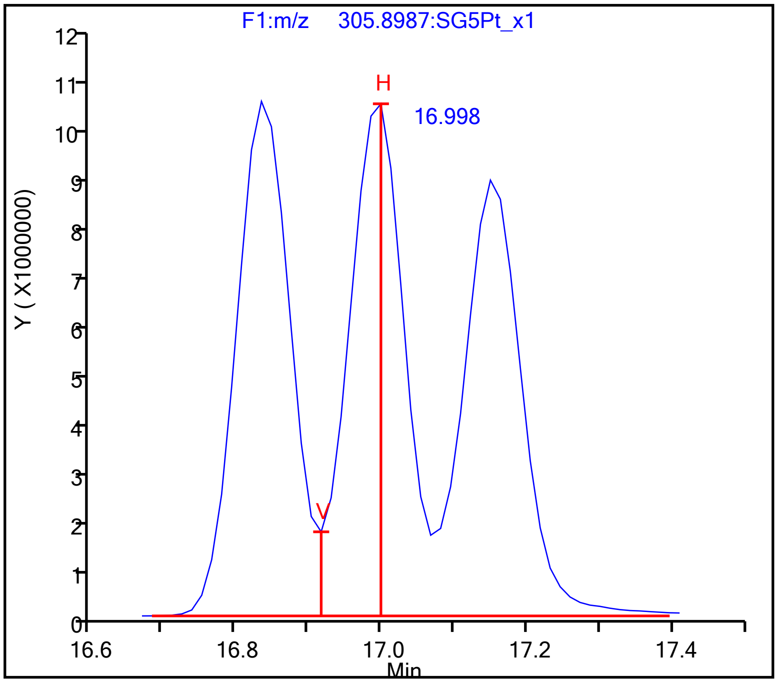

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-1

SDG No.:

Lab Sample ID (1): WDM 320-413246/1   Instrument ID (1): 10D5

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 09/17/2020 14:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.93	20

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d				
Injection Date:	17-Sep-2020 14:12:48	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1048512

H (Peak Height) = 5269614

%R = 20 <= 25

Passed

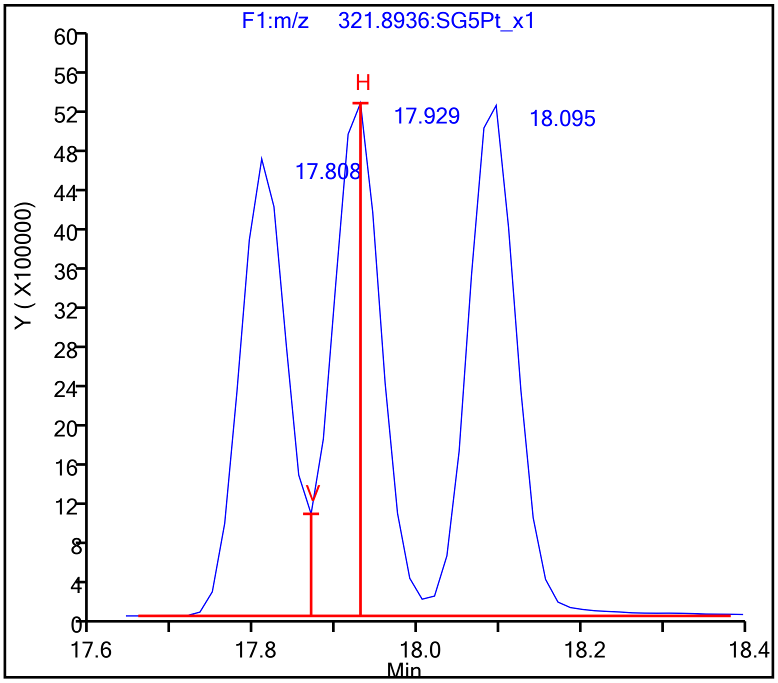

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Lab Sample ID (1): WDM 320-432585/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/17/2020 11:15

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.29	16

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d				
Injection Date:	17-Nov-2020 11:15:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 19543
H (Peak Height) = 123665

%R = 16 <= 25
Passed

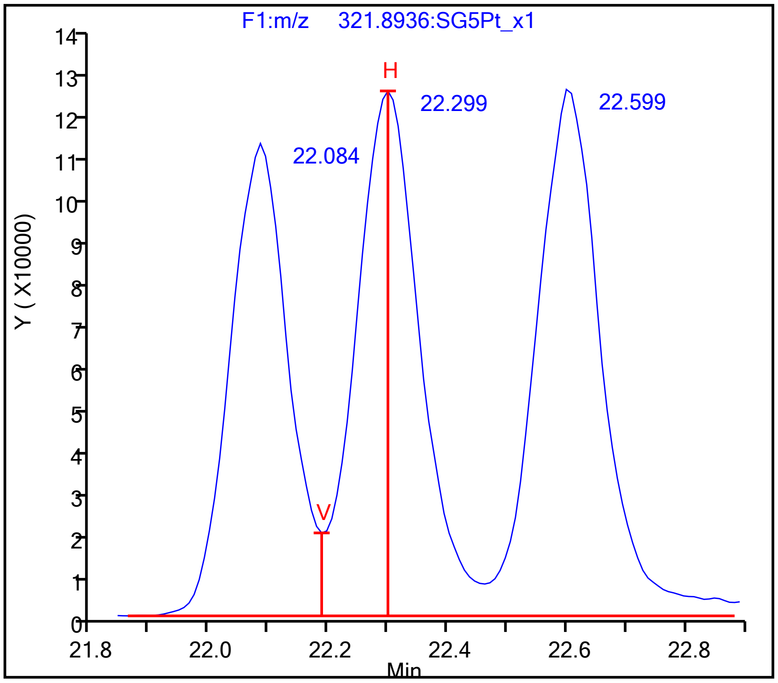

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Lab Sample ID (1): WDM 320-434777/29 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/24/2020 08:41

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.16	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d				
Injection Date:	24-Nov-2020 08:41:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 18589
H (Peak Height) = 115883

%R = 16 <= 25
Passed

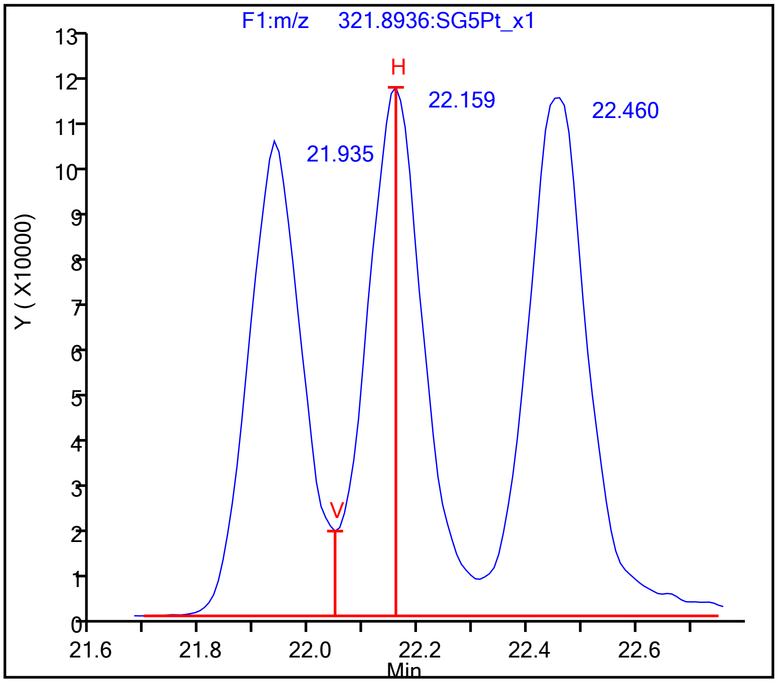

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento		Job No.: 320-66850-1	
SDG No.:			
Lab Sample ID (1): WDM 320-435203/16		Instrument ID (1): 10D5	
GC Column (1): DB-5	ID: 0.32(mm)	Date Analyzed (1): 11/24/2020 16:08	

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.05	19

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13 Instrument ID: 10D5
Lims ID: WDM
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 16
Injection Vol: 2.0 ul Column: DB-5 (0.32 mm)
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 403654
H (Peak Height) = 2110931

%R = 19 <= 25
Passed

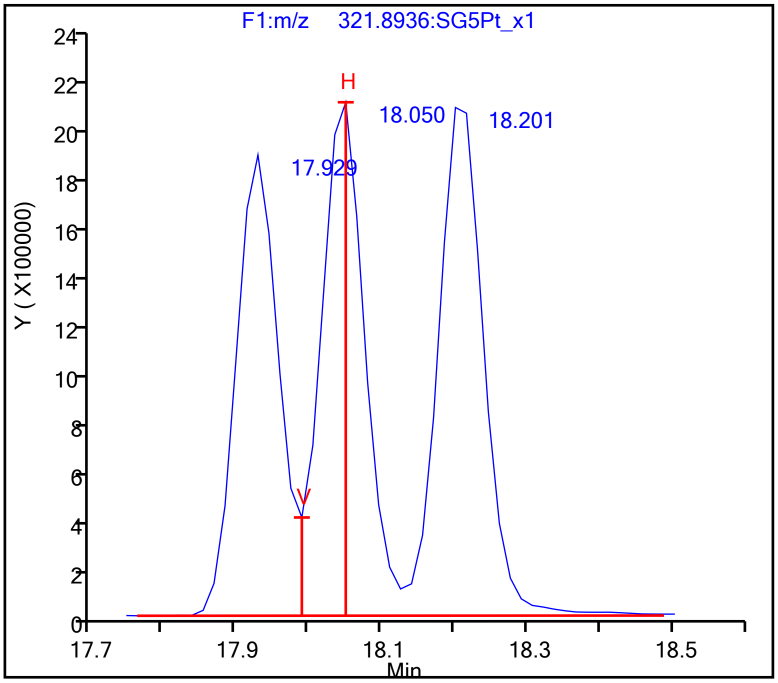

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-66850-1
SDG No.:
Lab Sample ID (1): CPS 320-436991/1
Instrument ID (1): 11D2
GC Column (1): DB-225
ID: 0.32(mm)
Date Analyzed (1): 11/30/2020 12:27

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.79	17

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d				
Injection Date:	30-Nov-2020 12:27:33	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2760458
H (Peak Height) = 16540885

%R = 17 <= 25
Passed

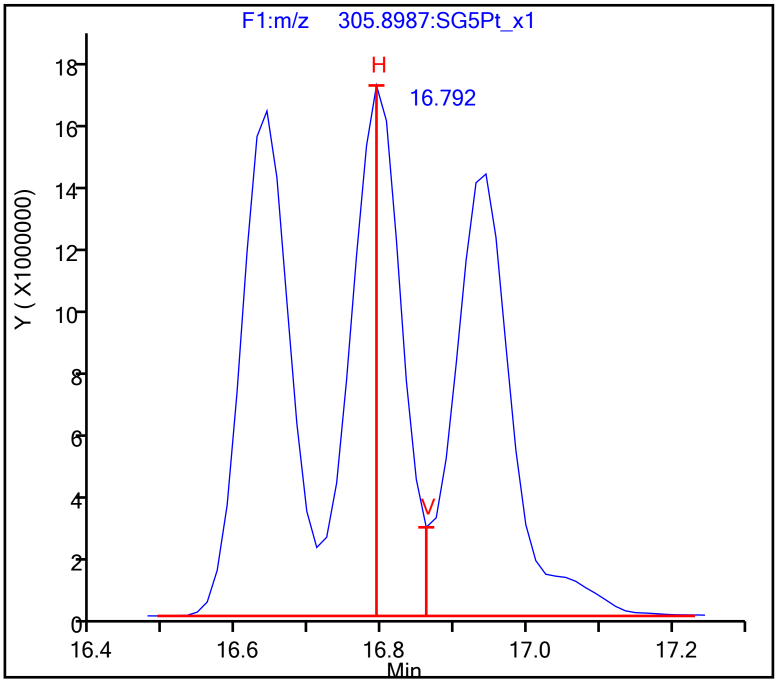

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d				
Injection Date:	30-Nov-2020 12:27:33	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Lab Sample ID: ICV 320-413246/9 Calibration Date: 09/17/2020 20:42

Instrument ID: 10D5 Calib Start Date: 09/17/2020 16:09

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 19:09

Lab File ID: 17SE2010D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9077	0.9204		40.6	40.0	101	70-130
2,3,7,8-TCDD	AveID	1.006	1.031		41.0	40.0	102	70-130
1,2,3,7,8-PeCDF	AveID	0.9147	0.8942		196	200	98	70-130
2,3,4,7,8-PeCDF	AveID	0.9508	0.999		210	200	105	70-130
1,2,3,7,8-PeCDD	AveID	0.995	0.9269		186	200	93	70-130
1,2,3,4,7,8-HxCDF	AveID	1.109	1.057		191	200	95	70-130
1,2,3,6,7,8-HxCDF	AveID	1.072	1.099		205	200	102	70-130
2,3,4,6,7,8-HxCDF	AveID	1.084	1.130		209	200	104	70-130
1,2,3,4,7,8-HxCDD	AveID	1.001	0.9597		192	200	96	70-130
1,2,3,6,7,8-HxCDD	AveID	0.8902	0.9213		207	200	104	70-130
1,2,3,7,8,9-HxCDD	AveID	1.058	1.008		191	200	95	70-130
1,2,3,7,8,9-HxCDF	AveID	1.093	1.062		194	200	97	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.360	1.393		205	200	102	70-130
1,2,3,4,6,7,8-HpCDD	AveID	0.999	1.016		203	200	102	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.321	1.243		188	200	94	70-130
OCDD	AveID	1.129	1.154		409	400	102	70-130
OCDF	AveID	1.414	1.422		402	400	101	70-130
13C-2,3,7,8-TCDF	Ave	1.360	1.344		98.8	100	99	71-140
13C-2,3,7,8-TCDD	Ave	1.054	1.059		100	100	100	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.131	1.145		101	100	101	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.054	1.128		107	100	107	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8084	0.8415		104	100	104	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9225	0.9711		105	100	105	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.034	1.010		97.7	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9773	0.9650		98.7	100	99	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7977	0.8453		106	100	106	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.001	1.002		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9153	0.9192		100	100	100	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8506	0.8661		102	100	102	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8873	0.9091		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7618	0.8178		107	100	107	77-129
13C-OCDD	Ave	0.6287	0.6727		214	200	107	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.049	1.083		41.3	40.0	103	79-127

Report Date: 18-Sep-2020 10:38:14 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	17-Sep-2020 20:42:06	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV 091720 ICV HRDXNIC_00046				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:38:11	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:20:09

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.687	70813521	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	95171212	0.77	1.3598	98.8	98.8	0.1338	0.1338	98.83	
2,3,7,8-TCDF	17.203	35038898	0.74	0.9077	40.6	40.6	0.0800	0.0800	101	
A Non-2,3,7,8-sub-TCDF	16.924	270555	0.80	0.9077	0.3132	0.3132	0.0800	0.3132		
S Total TCDF					40.9	40.9	0.0800	0.0800		
D 13C-2,3,7,8-TCDD	17.884	74962580	0.78	1.0536	100.5	100.5	0.1339	0.1339	100	
$ 37Cl4-2,3,7,8-TCDD	17.899	30678698		1.0488	41.3	41.3	0.0266	0.0266	103	
2,3,7,8-TCDD	17.899	30913194	0.77	1.0061	41.0	41.0	0.0402	0.0402	102	
A Non-2,3,7,8-sub-TCDD	17.370	540486	0.71	1.0061	0.7166	0.7166	0.0402	0.7166		
S Total TCDD					41.7	41.7	0.0402	0.0402		
D 13C-1,2,3,7,8-PeCDF	22.198	81095265	1.56	1.1306	101.3	101.3	0.2000	0.2000	101	
1,2,3,7,8-PeCDF	22.212	145038273	1.56	0.9147	195.5	195.5	0.6709	0.6709	97.76	
D 13C-2,3,4,7,8-PeCDF	23.535	79912267	1.54	1.0539	107.1	107.1	0.2145	0.2145	107	
2,3,4,7,8-PeCDF	23.562	159694882	1.54	0.9508	210.2	210.2	0.6971	0.6971	105	
A F1 PeCDFs	19.789						0.0224	0.0224		
A Non-2,3,7,8-sub-PeCDF	22.936	3337810	1.57	0.9328	4.445	4.445	0.6832	4.445		
S Total PeCDF					410.1	410.1	0.6840	0.6840		
D 13C-1,2,3,7,8-PeCDD	24.257	59587891	1.59	0.8084	104.1	104.1	0.1077	0.1077	104	
1,2,3,7,8-PeCDD	24.285	110469696	1.55	0.9955	186.2	186.2	0.1846	0.1846	93.12	
A Non-2,3,7,8-sub-PeCDD	23.187						0.1846	0.1846		
S Total PeCDD					186.2	186.2	0.1846	0.1846		
D 13C-1,2,3,4,7,8-HxCDF	30.393	55574520	0.50	0.9225	105.3	105.3	0.4673	0.4673	105	
1,2,3,4,7,8-HxCDF	30.406	117452791	1.23	1.1090	190.6	190.6	1.119	1.119	95.29	
D 13C-1,2,3,6,7,8-HxCDF	30.579	57775623	0.51	1.0336	97.7	97.7	0.4170	0.4170	97.68	
1,2,3,6,7,8-HxCDF	30.606	126977499	1.23	1.0721	205.0	205.0	1.100	1.100	102	
D 13C-2,3,4,6,7,8-HxCDF	31.444	55227270	0.51	0.9773	98.7	98.7	0.4410	0.4410	98.74	
2,3,4,6,7,8-HxCDF	31.458	124808049	1.23	1.0838	208.5	208.5	0.8662	0.8662	104	
D 13C-1,2,3,7,8,9-HxCDF	32.256	52606327	0.51	0.9153	100.4	100.4	0.4709	0.4709	100	
1,2,3,7,8,9-HxCDF	32.270	111782395	1.24	1.0931	194.4	194.4	0.8173	0.8173	97.20	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	30.073						0.9565	0.9565		
S Total HxCDF					798.5	798.5	0.9756	0.9756		
* 13C-1,2,3,7,8,9-HxCDD	32.070	57229550	1.23	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	48373444	1.24	0.7977	106.0	106.0	0.3458	0.3458	106	
1,2,3,4,7,8-HxCDD	31.644	92846754	1.23	1.0014	191.7	191.7	0.6173	0.6173	95.83	
D 13C-1,2,3,6,7,8-HxCDD	31.737	57321536	1.22	1.0010	100.1	100.1	0.2755	0.2755	100	
1,2,3,6,7,8-HxCDD	31.750	105623177	1.22	0.8902	207.0	207.0	0.6074	0.6074	104	
1,2,3,7,8,9-HxCDD	32.083	106579071	1.22	1.0579	190.6	190.6	0.5453	0.5453	95.32	
A Non-2,3,7,8-sub-HxCDD	30.739						0.5867	0.5867		
S Total HxCDD					589.3	589.3	0.5900	0.5900		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	49567572	0.42	0.8506	101.8	101.8	0.9395	0.9395	102	
1,2,3,4,6,7,8-HpCDF	33.691	138105265	1.03	1.3603	204.8	204.8	1.786	1.786	102	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	46800223	0.44	0.7618	107.3	107.3	1.049	1.049	107	
1,2,3,4,7,8,9-HpCDF	34.761	116328721	1.03	1.3207	188.2	188.2	2.169	2.169	94.11	
A Non-2,3,7,8-sub-HpCDF	34.232						1.961	1.961		
S Total HpCDF					393.0	393.0	1.978	1.978		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	52029389	1.05	0.8873	102.5	102.5	0.6043	0.6043	102	
1,2,3,4,6,7,8-HpCDD	34.481	105745635	1.05	0.9988	203.5	203.5	1.049	1.049	102	
A Non-2,3,7,8-sub-HpCDD	34.208						1.049	1.049		
S Total HpCDD					203.5	203.5	1.049	1.049		
D 13C-OCDD	36.779	76996627	0.90	0.6287	214.0	214.0	0.3391	0.3391	107	
OCDF	36.887	218936724	0.90	1.4136	402.3	402.3	0.4055	0.4055	101	
OCDD	36.791	177685171	0.89	1.1290	408.8	408.8	0.5837	0.5837	102	

QC Flag Legend

Processing Flags

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 20:42:06 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 091720 ICV HRDXNIC_00046
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:20:09

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.687	17.702	-1		31056152	7545346	5603	14007	1347		
333.9339	17.687	17.702	-1		39757369	9625734	4090	10225	2353	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.972	41252497	10124118	7380	18450	1372		
317.9389	17.188	17.203	-1	0.972	53918715	13281949	5117	12792	2596	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.234	-2	1.001	14945095	3755102	3383	8457	1110		
305.8987	17.203	17.234	-2	1.001	20093803	5020050	3417	8542	1469	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.538	16.924	-23	0.962	120192	31996	3383	8457	9		
305.8987	16.538	16.924	-23	0.962	150363	35792	3417	8542	10	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.914	-2	1.011	32795221	7790825	5603	14007	1390		
333.9339	17.884	17.914	-2	1.011	42167359	9954850	4090	10225	2434	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.899	17.914	-1	1.012	30678698	7149088	1918	4795	3727		
2,3,7,8-TCDD											
319.8965	17.899	17.929	-2	1.001	13420623	3096512	1556	3890	1990		
321.8936	17.899	17.929	-2	1.001	17492571	4045616	1312	3280	3084	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.793	17.370	25	0.995	223510	61586	1556	3890	40		
321.8936	17.793	17.370	25	0.995	316976	90101	1312	3280	69	0.71(0.65-0.89)	

Report Date: 18-Sep-2020 10:38:14 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.198	0	1.255	49395326	8782235	9260	23150	948		
353.8970	22.185	22.198	-1	1.254	31699939	5590468	6268	15670	892	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.226	-1	1.001	88302790	15725278	21396	53490	735		
341.8567	22.212	22.226	-1	1.001	56735483	10054887	13886	34715	724	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.535	0	1.331	48486367	8111877	9260	23150	876		
353.8970	23.535	23.535	0	1.331	31425900	5196410	6268	15670	829	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.562	0	1.001	96748270	16146164	21396	53490	755		
341.8567	23.562	23.562	0	1.001	62946612	10513563	13886	34715	757	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.789						451	1127			
341.8567	19.789						704	1760			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.744	22.936	-12	1.025	2036794	338358	21396	53490	16		
341.8567	22.744	22.936	-12	1.025	1301016	215952	13886	34715	16	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.257	0	1.371	36585683	5766251	3659	9147	1576		
369.8919	24.257	24.257	0	1.371	23002208	3611161	2321	5802	1556	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.285	0	1.001	67206423	10604790	4199	10497	2526		
357.8516	24.285	24.285	0	1.001	43263273	6873635	2693	6732	2552	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.187						4199	10497			
357.8516	23.187						2693	6732			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.393	0	0.948	18603781	3356313	8739	21847	384		
385.8610	30.393	30.393	0	0.948	36970739	6597696	16728	41820	394	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.419	-1	1.000	64723276	11612171	27684	69210	419		
375.8178	30.406	30.419	-1	1.000	52729515	9541987	21735	54337	439	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.592	-1	0.954	19468539	3564701	8739	21847	408		
385.8610	30.579	30.592	-1	0.954	38307084	6914958	16728	41820	413	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.606	30.606	0	1.001	70139846	12960316	27684	69210	468		
375.8178	30.606	30.606	0	1.001	56837653	10424115	21735	54337	480	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.444	0	0.980	18592979	4462323	8739	21847	511		
385.8610	31.444	31.444	0	0.980	36634291	8698712	16728	41820	520	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	68722182	16644655	27684	69210	601		
375.8178	31.458	31.458	0	1.000	56085867	13550656	21735	54337	623	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.256	0	1.006	17757554	4720457	8739	21847	540		
385.8610	32.256	32.256	0	1.006	34848773	9108161	16728	41820	544	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.270	0	1.000	61960655	16131546	27684	69210	583		
375.8178	32.270	32.270	0	1.000	49821740	12758785	21735	54337	587	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.073						27684	69210			
375.8178	30.073						21735	54337			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.070	0		31617919	8159791	9513	23782	858		
403.8529	32.070	32.070	0		25611631	6610729	6783	16957	975	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	26770897	7007533	9513	23782	737		
403.8529	31.631	31.631	0	0.986	21602547	5619172	6783	16957	828	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.644	0	1.000	51214844	13655449	18151	45377	752		
391.8127	31.644	31.644	0	1.000	41631910	11121784	13073	32682	851	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.737	0	0.990	31521917	7962363	9513	23782	837		
403.8529	31.737	31.737	0	0.990	25799619	6475648	6783	16957	955	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.750	0	1.000	58049066	14313234	18151	45377	789		
391.8127	31.750	31.750	0	1.000	47574111	11874308	13073	32682	908	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.083	0	1.014	58491693	14960613	18151	45377	824		
391.8127	32.083	32.083	0	1.014	48087378	12267095	13073	32682	938	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.739						18151	45377			
391.8127	30.739						13073	32682			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.679	0	1.050	14666185	4781275	13313	33282	359		
419.8220	33.679	33.679	0	1.050	34901387	11152388	33904	84760	329	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.703	-1	1.000	70213618	22812042	77236	193090	295		
409.7789	33.691	33.703	-1	1.000	67891647	22147695	77604	194010	285	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.748	0	1.084	14215835	4174817	13313	33282	314		
419.8220	34.748	34.748	0	1.084	32584388	9335826	33904	84760	275	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.761	0	1.000	59144894	17089390	77236	193090	221		
409.7789	34.761	34.761	0	1.000	57183827	16577392	77604	194010	214	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.232						77236	193090			
409.7789	34.232						77604	194010			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.469	0	1.075	26640350	7863762	16812	42030	468		
437.8140	34.469	34.469	0	1.075	25389039	7410105	14867	37167	498	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.481	0	1.000	54139156	15544707	33488	83720	464		
425.7737	34.469	34.481	-1	1.000	51606479	14519786	30533	76332	476	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.208						33488	83720			
425.7737	34.208						30533	76332			
13C-OCDD											
469.7779	36.779	36.779	0	1.147	36471611	8922255	6815	17037	1309		
471.7750	36.779	36.779	0	1.147	40525016	9855753	5782	14455	1705	0.90(0.76-1.02)	
OCDF											
441.7428	36.887	36.887	0	1.003	103846841	25209045	10225	25562	2465		
443.7399	36.875	36.887	-1	1.003	115089883	27702868	11303	28257	2451	0.90(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	83911792	20519960	13321	33302	1540		
459.7348	36.791	36.791	0	1.000	93773379	22817429	11426	28565	1997	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

n - Failed Sig-To-Noise Test

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Sep-2020 20:42:06 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 413246 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-TCDF, RT: 16.924

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	95171212	23406067

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	95171212	23406067

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.538	120192	31996	150363	35792	0.3132	0.80	n
Signal Totals:							
	120192	31996	150363	35792			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	270555	67788				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3132 = (270555 * 100.000) / (95171212 * 0.908)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 20:42:06	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDD, RT: 17.370

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.006	D 13C-2,3,7,8-TCDD	100.000	74962580	17745675

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	74962580	17745675

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.793	223510	61586	316976	90101	0.7166	0.71	
Signal Totals:							
	223510	61586	316976	90101			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	540486	151687				0.71	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7166 = (540486 * 100.000) / (74962580 * 1.006)

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Sep-2020 20:42:06 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 413246 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-PeCDF, RT: 22.936

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	81095265	14372703
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	79912267	13308287

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	80503766	13840495

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.744	2036794	338358	1301016	215952	4.44	1.57	
Signal Totals:							
	2036794	338358	1301016	215952			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3337810	554310				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.445 = (3337810 * 100.000) / (80503766 * 0.933)

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

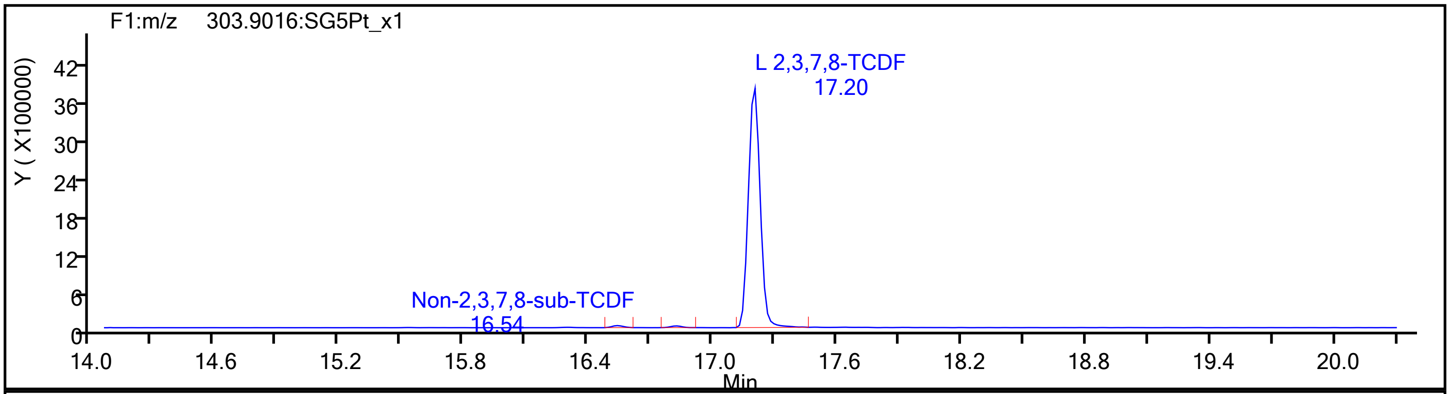

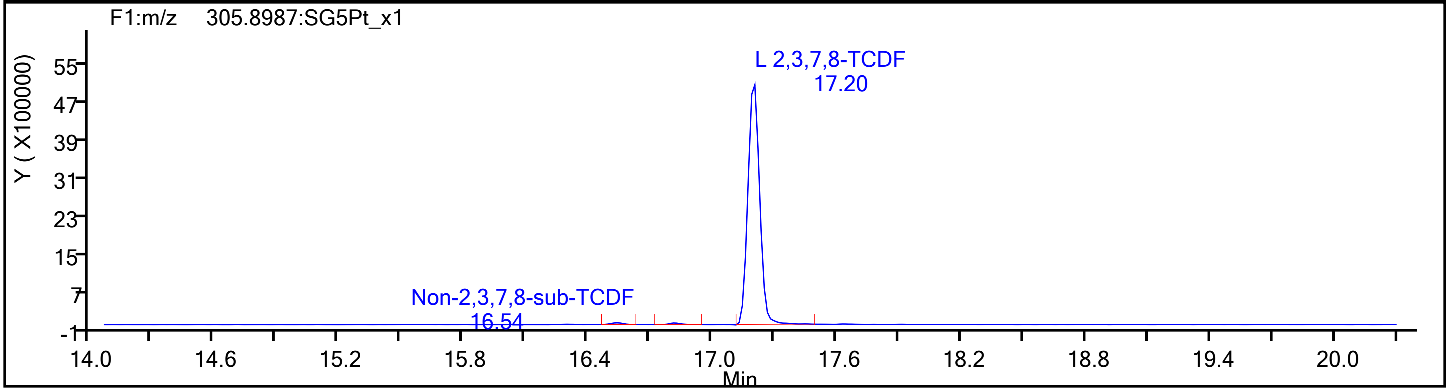

TCDF Standards

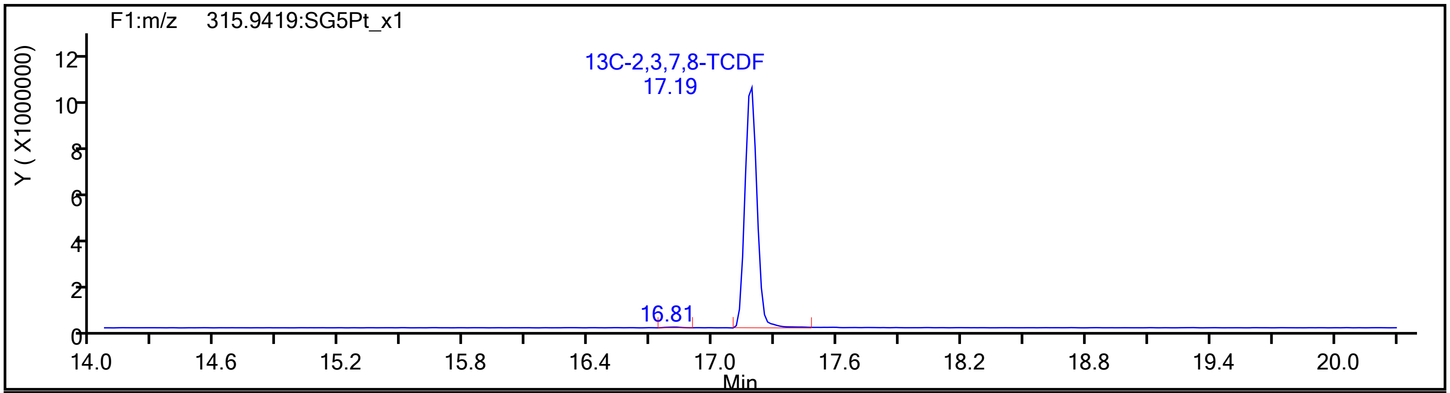

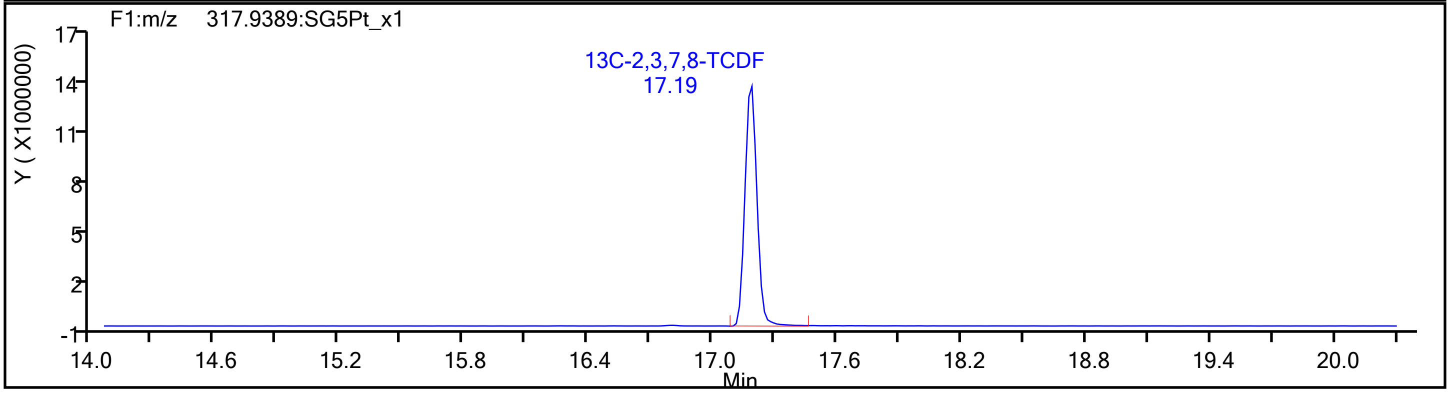

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Injection Date: 17-Sep-2020 20:42:06
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

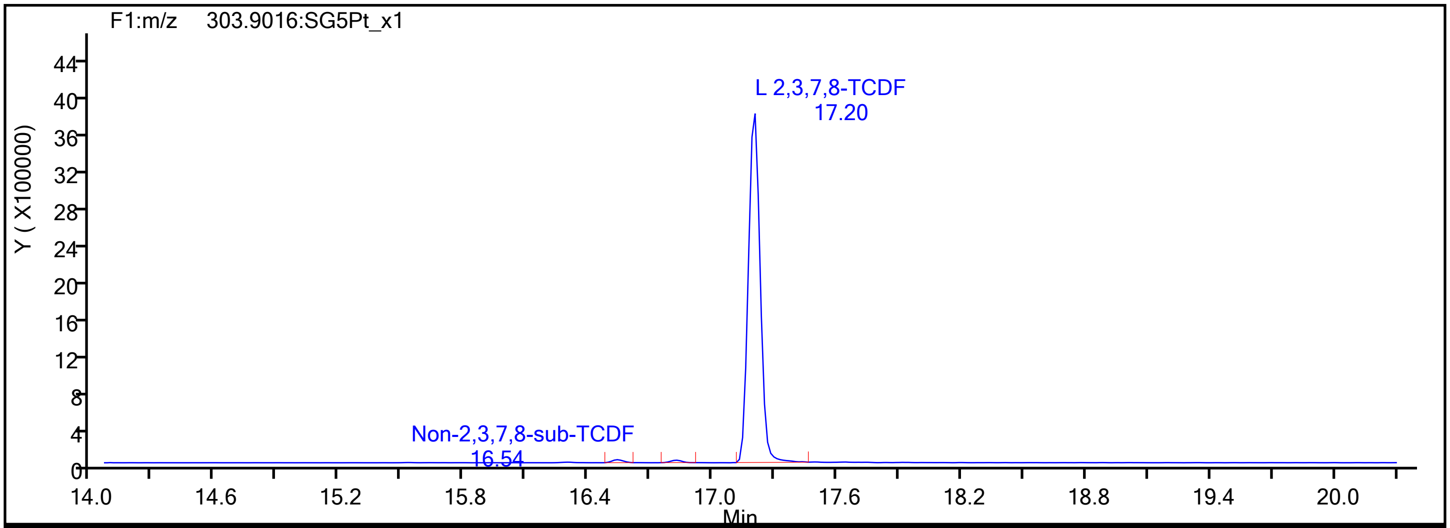

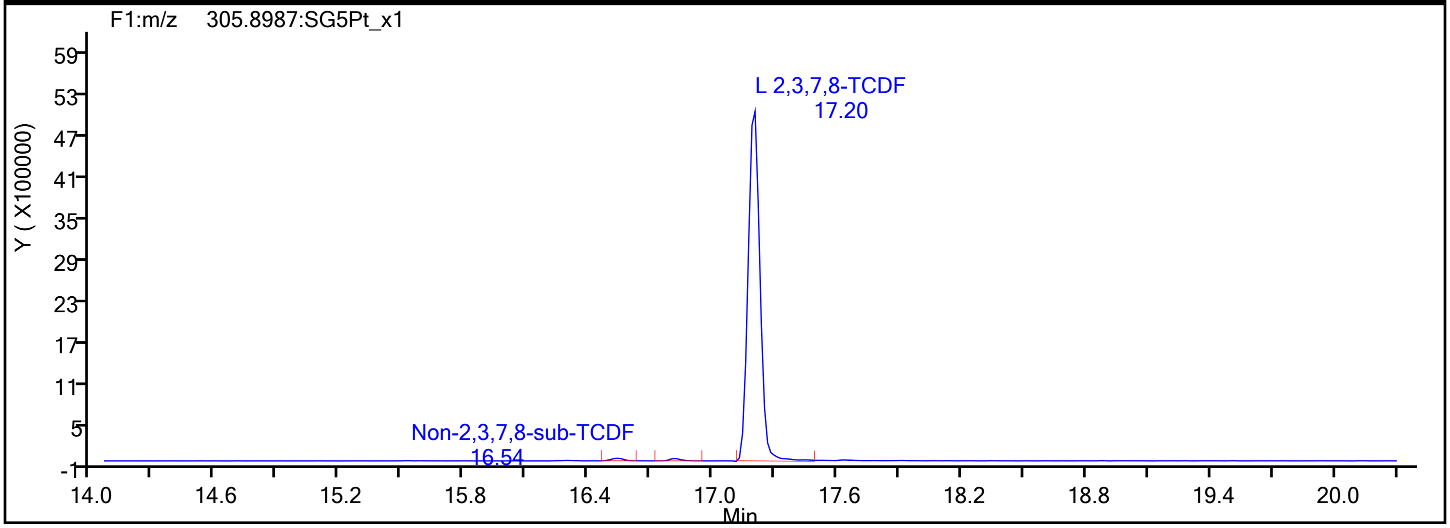

TCDF Interference Mass

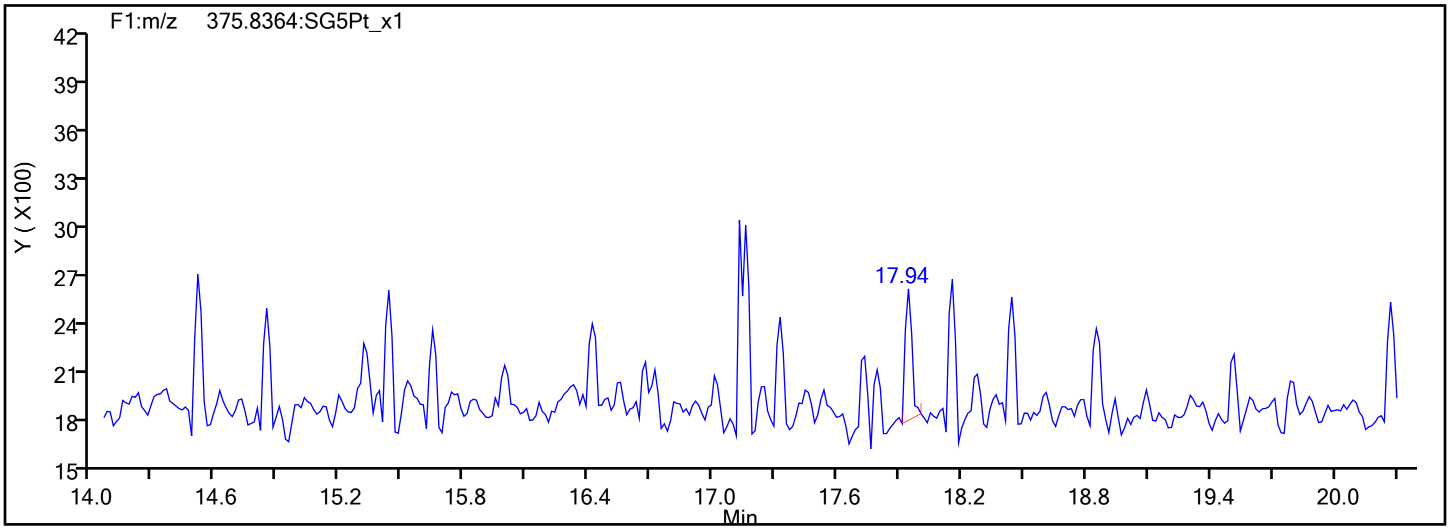

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

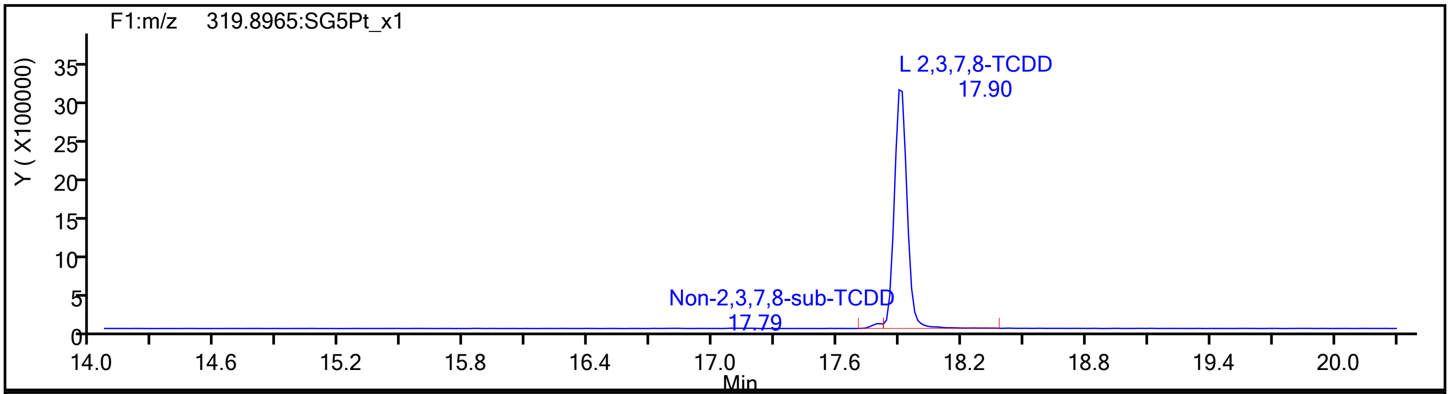

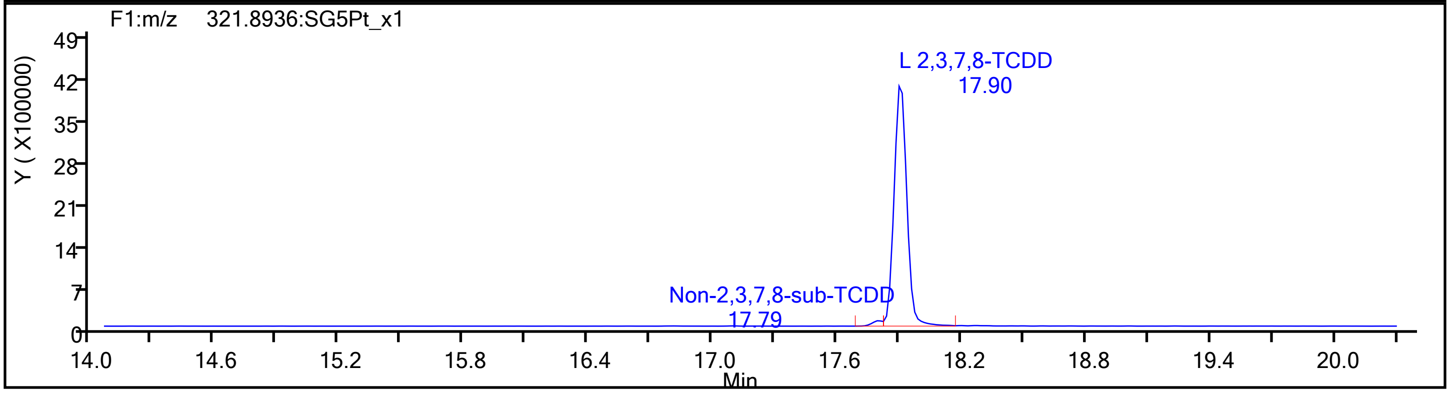

TCDD Standards

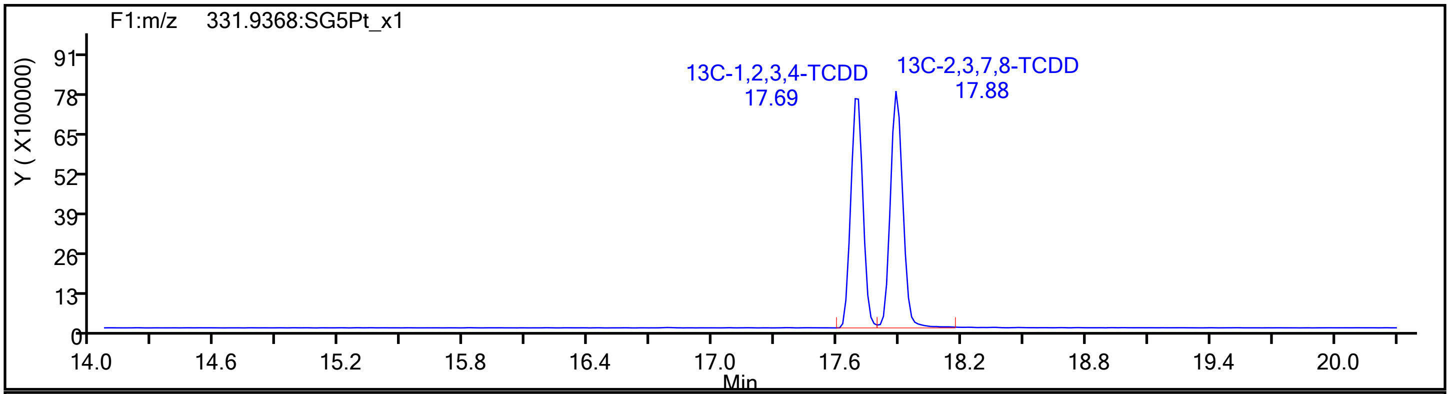

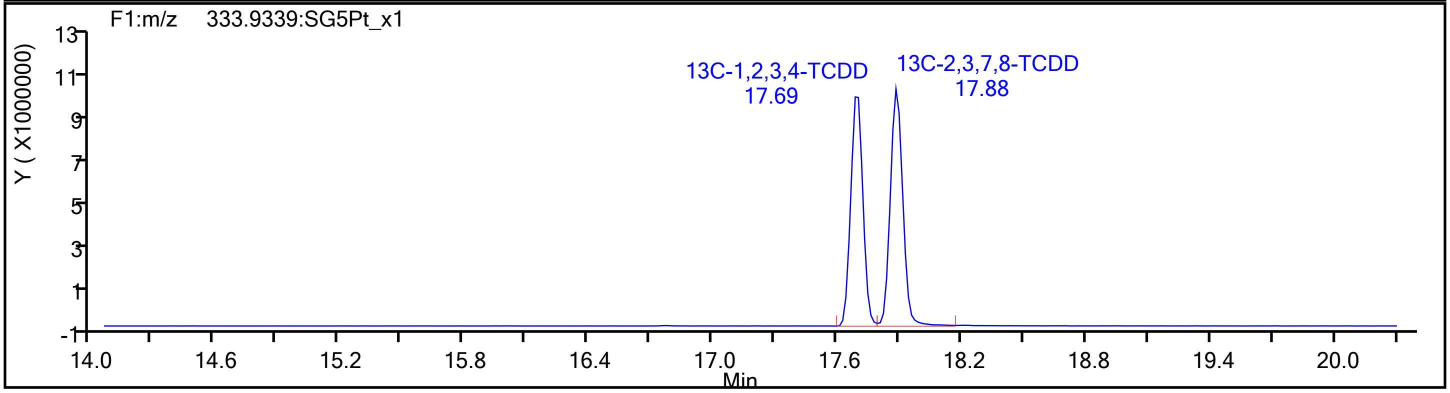

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Injection Date: 17-Sep-2020 20:42:06 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

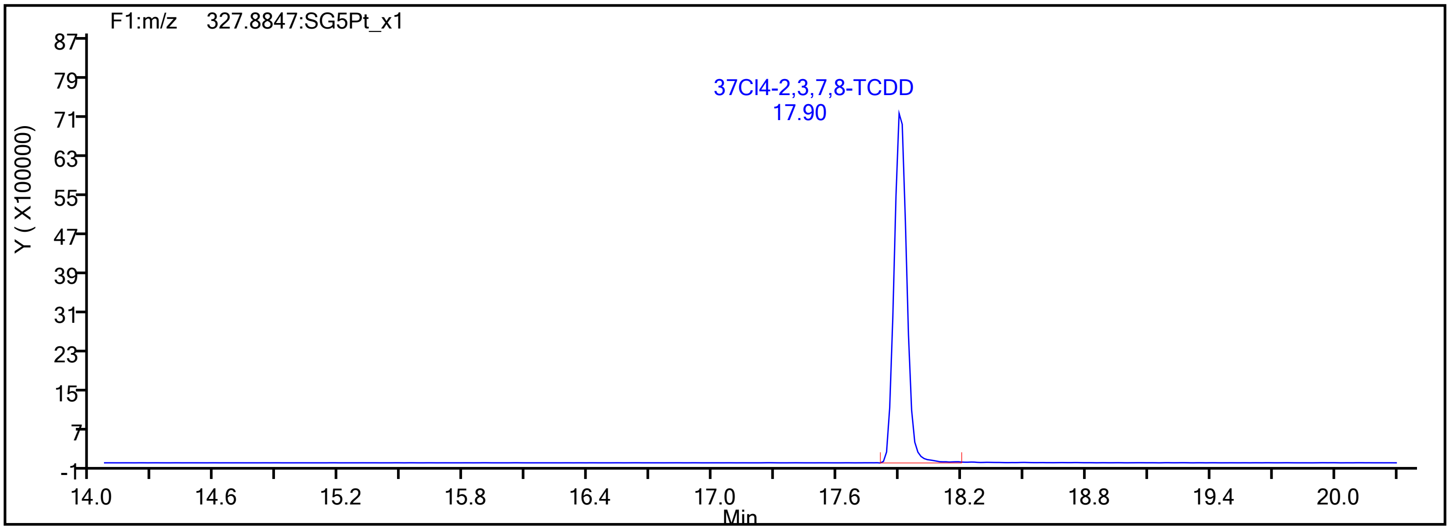

37Cl4-TCDD Standards

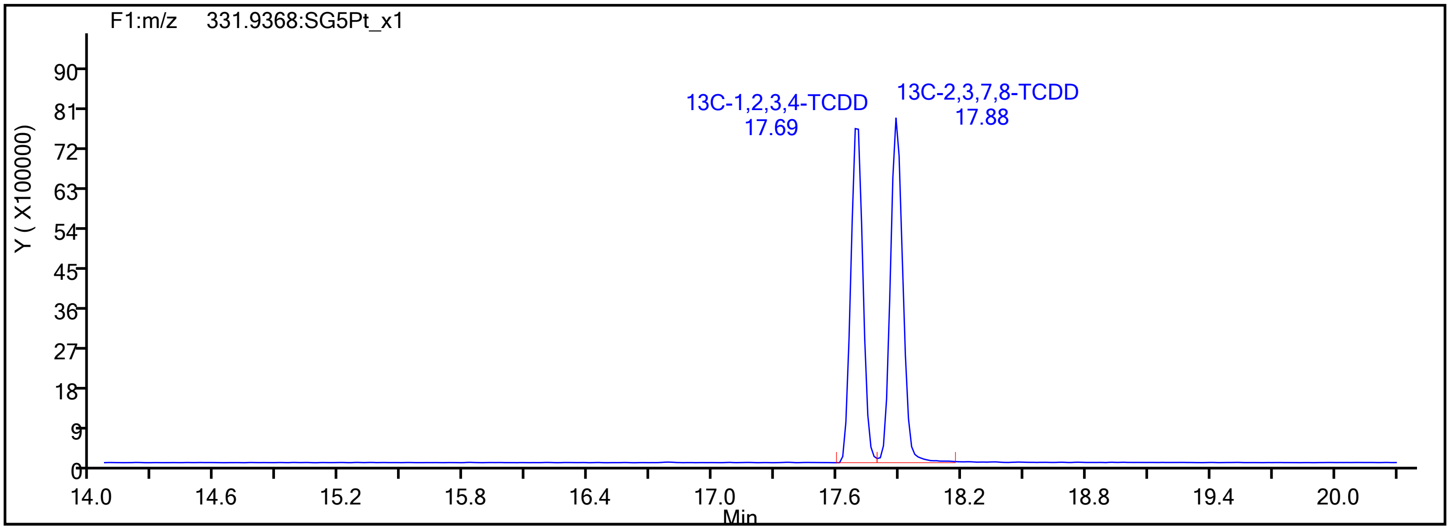

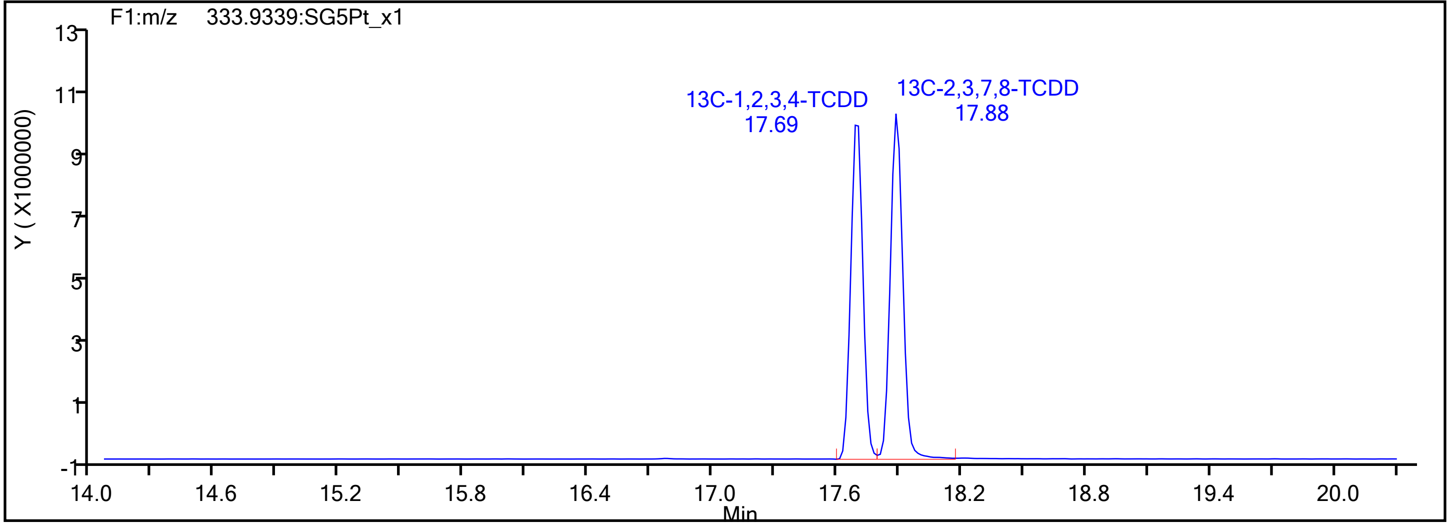

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

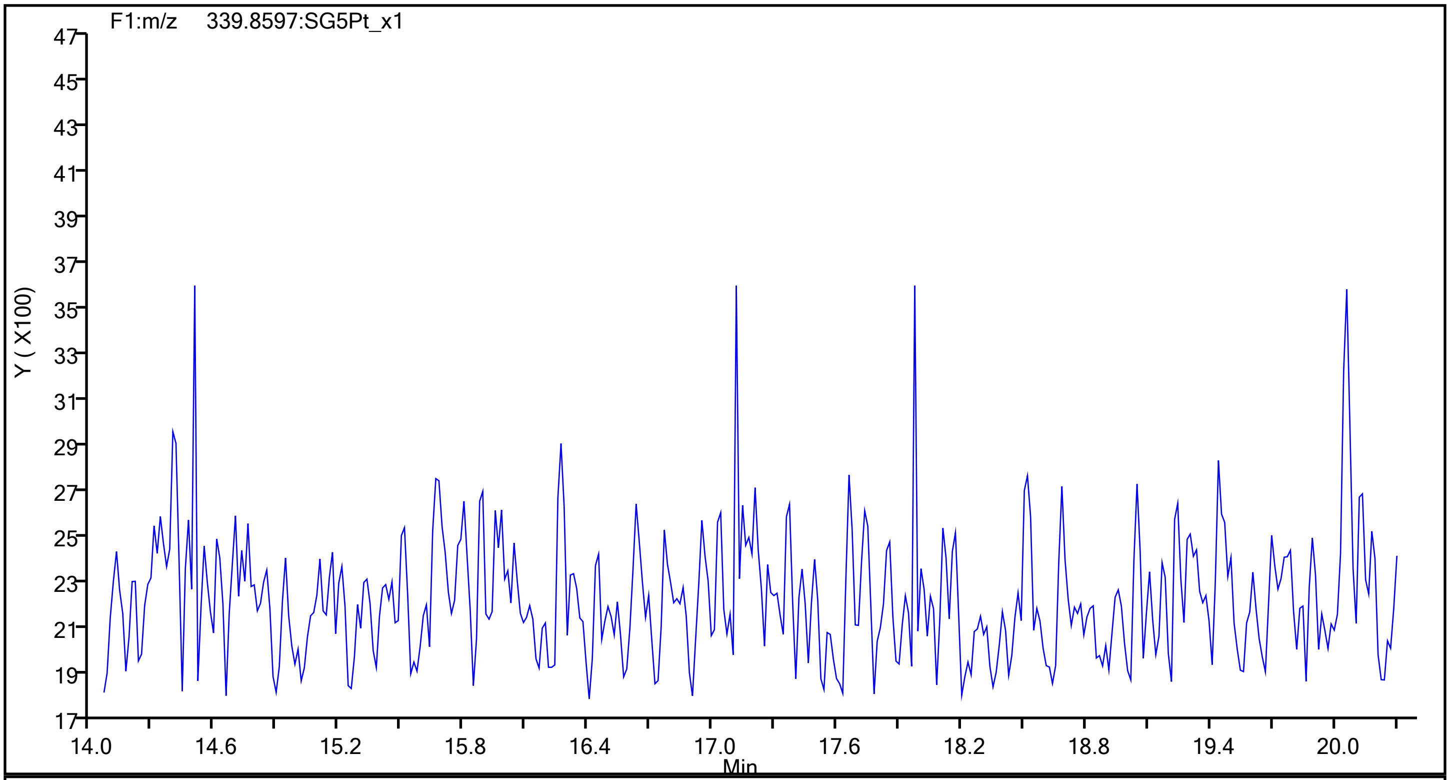

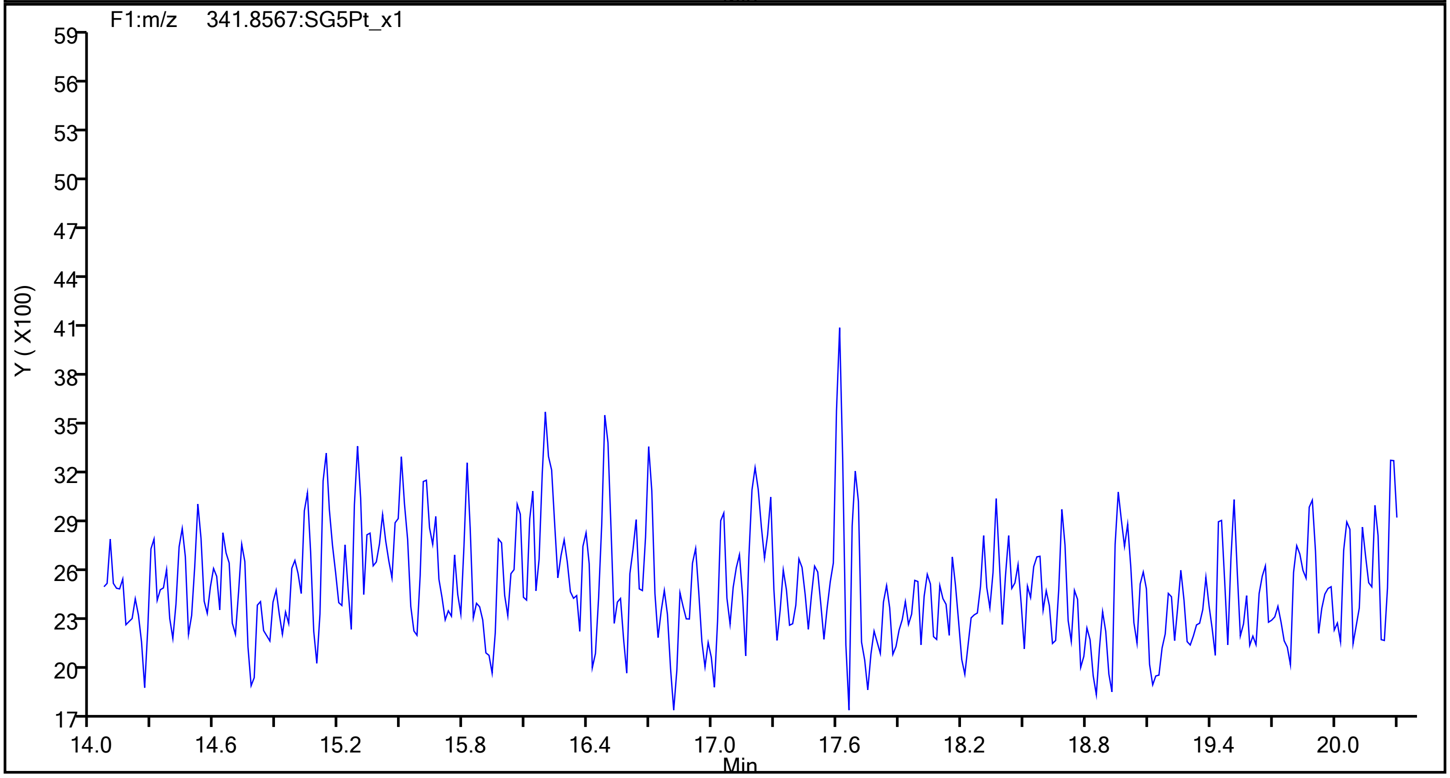

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

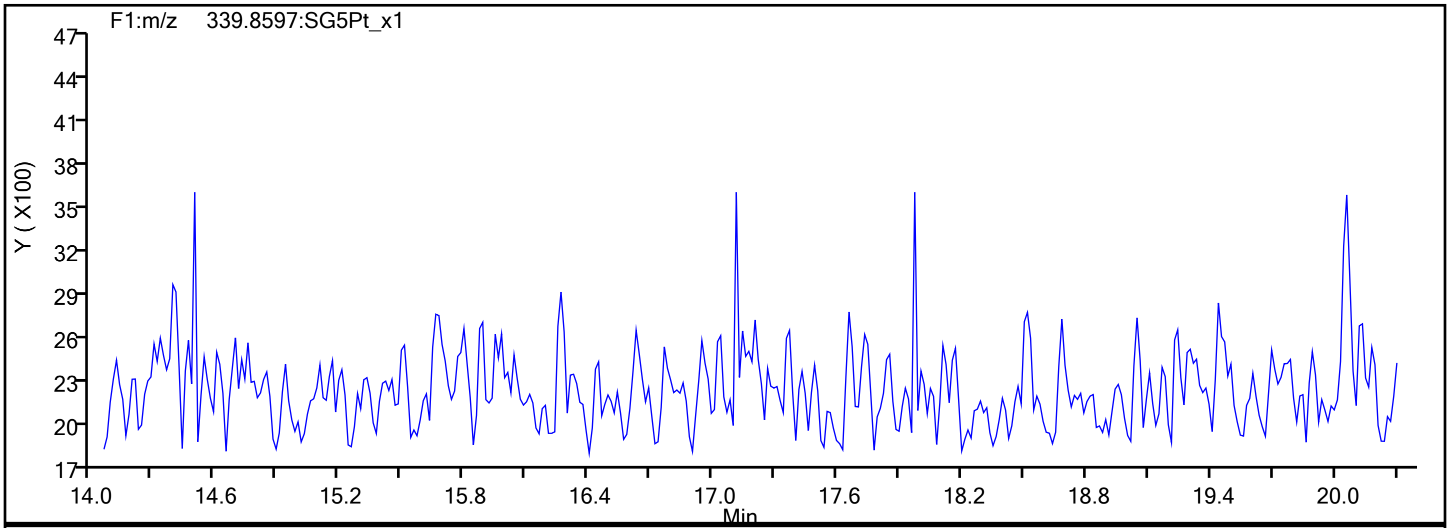

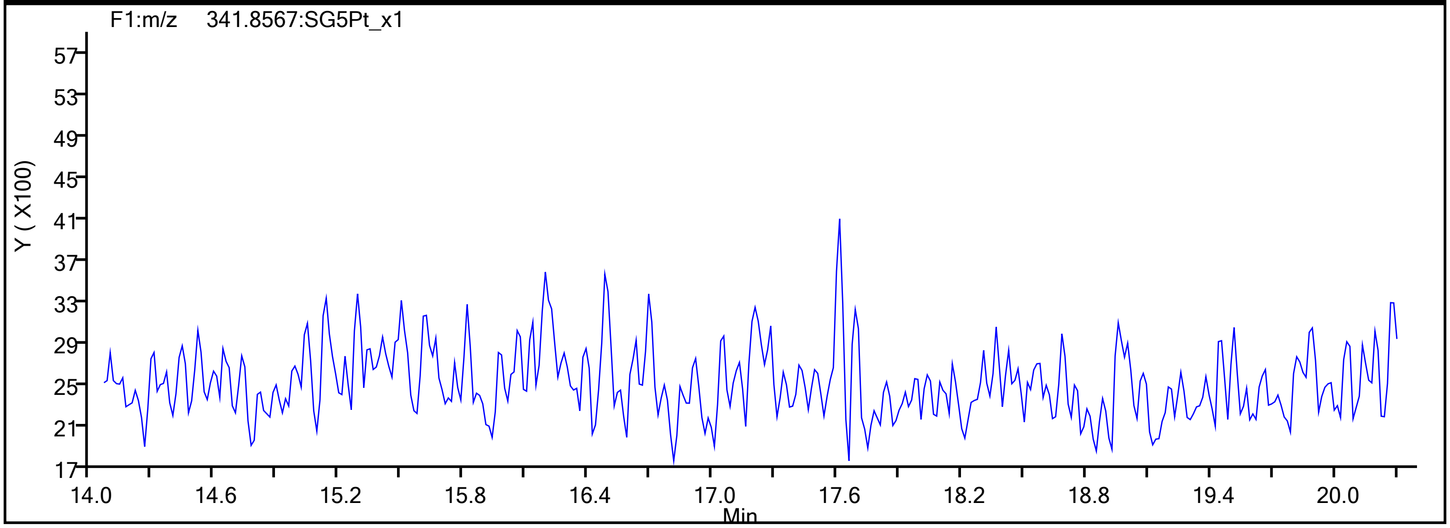

F1 PeCDFs Interference Mass

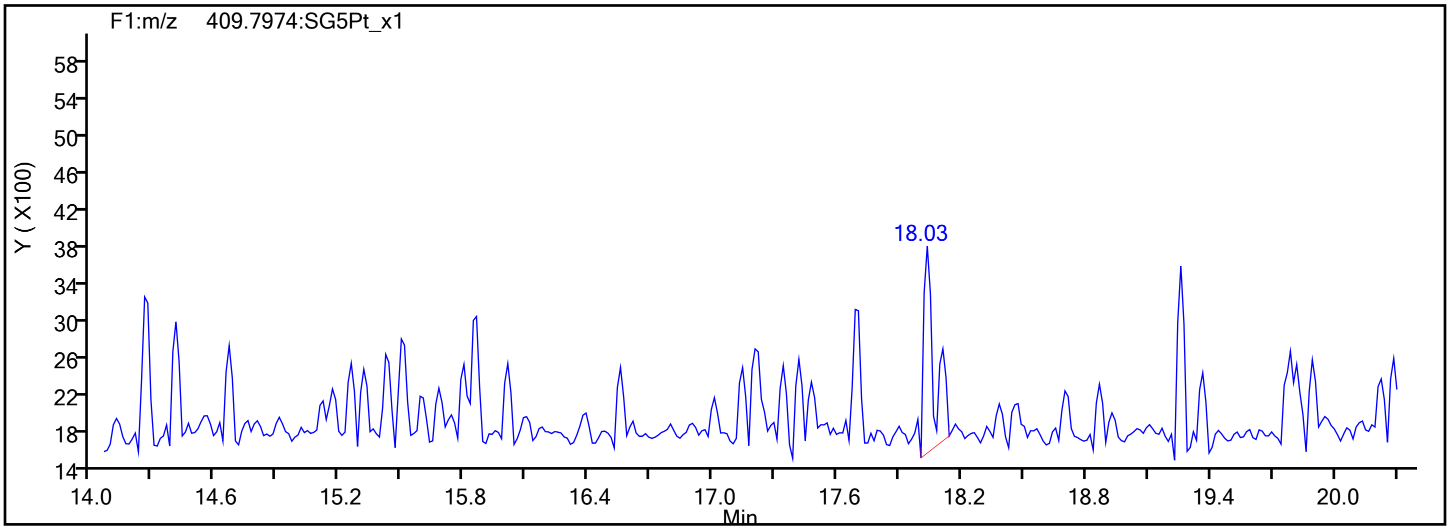

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

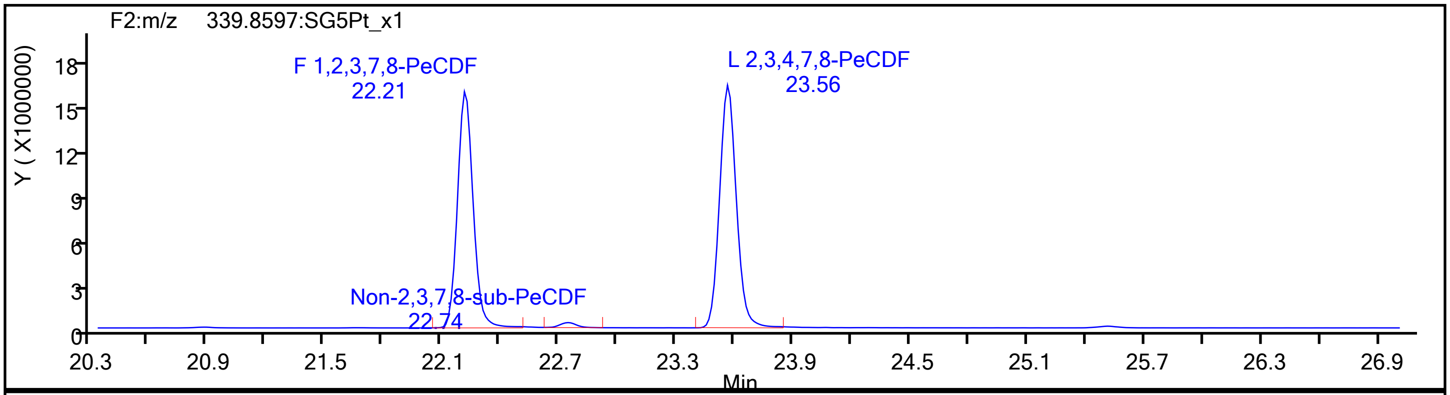

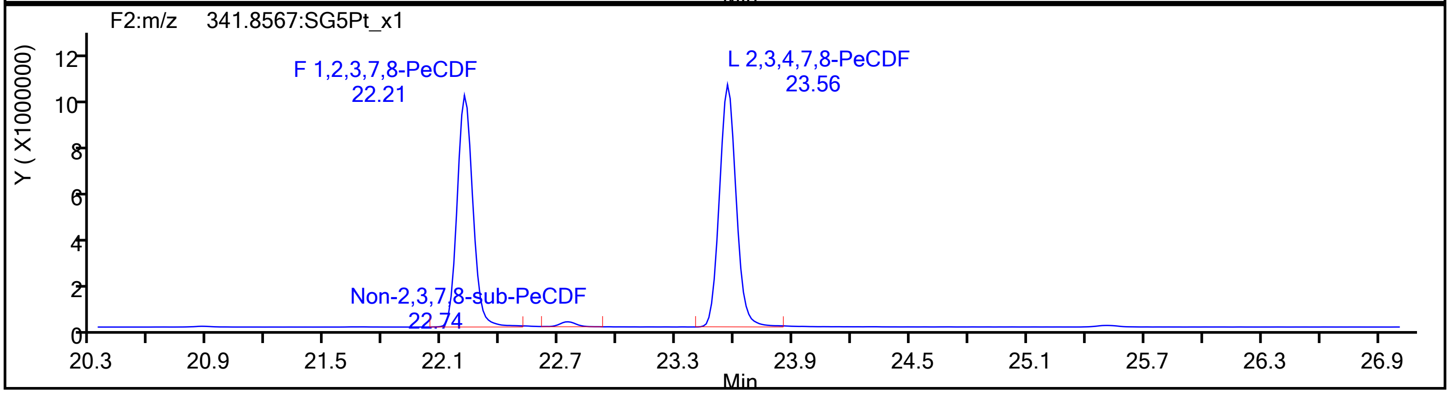

PeCDF Standards

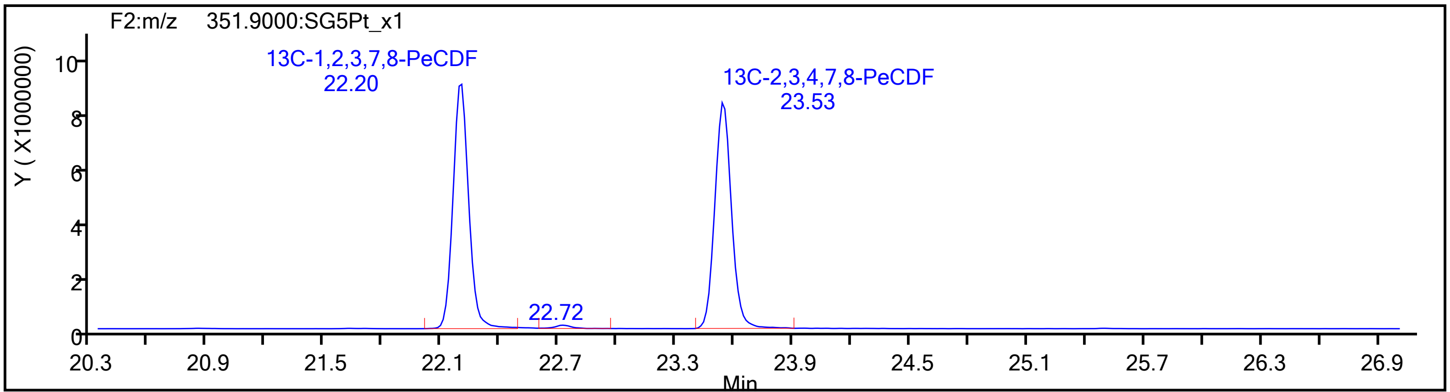

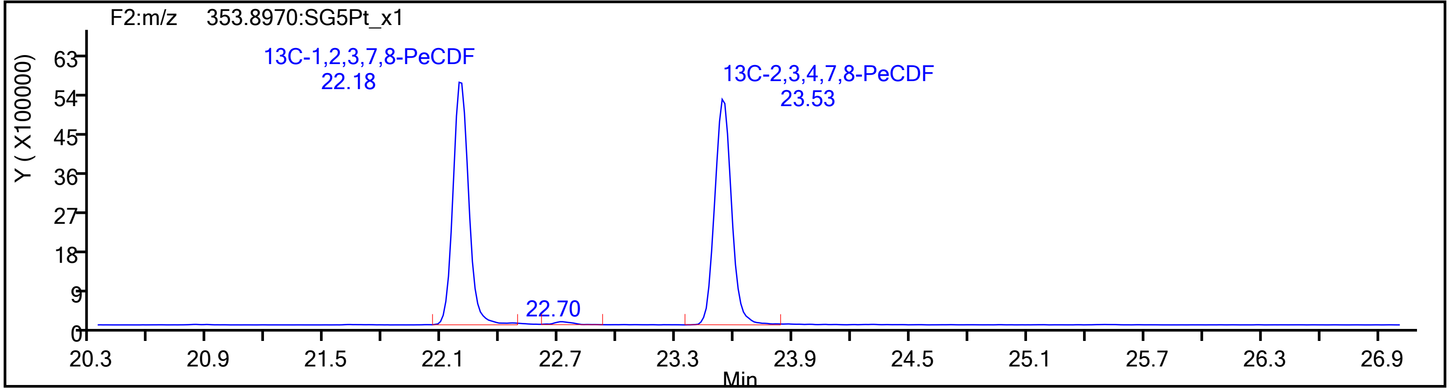

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

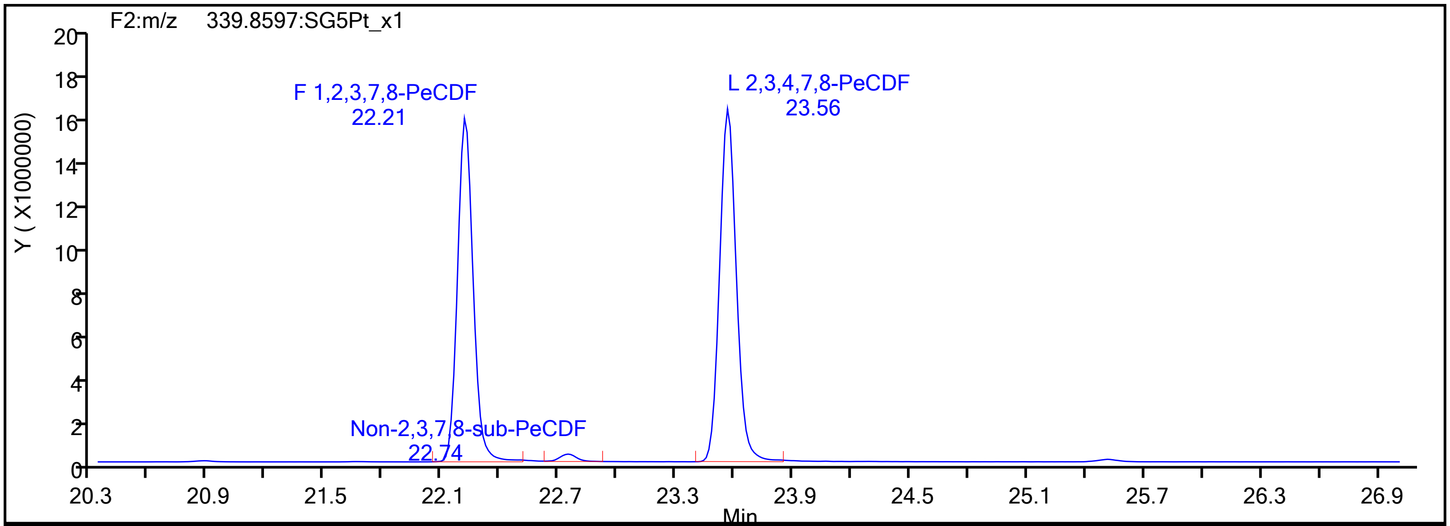

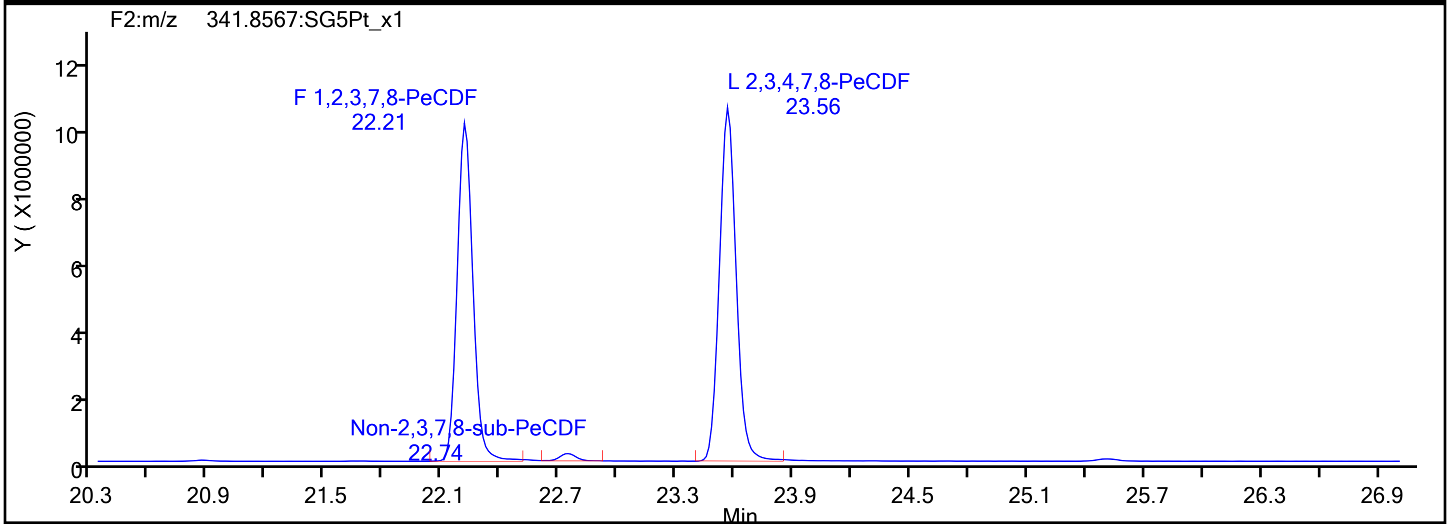

PeCDF Interference Mass

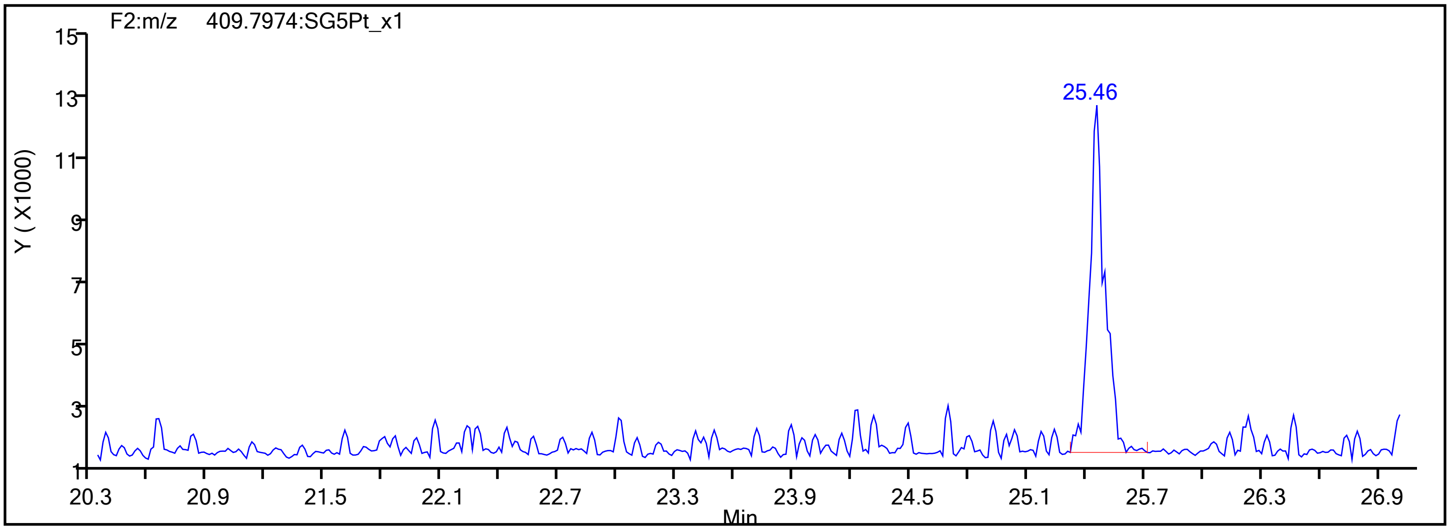

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Injection Date: 17-Sep-2020 20:42:06 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

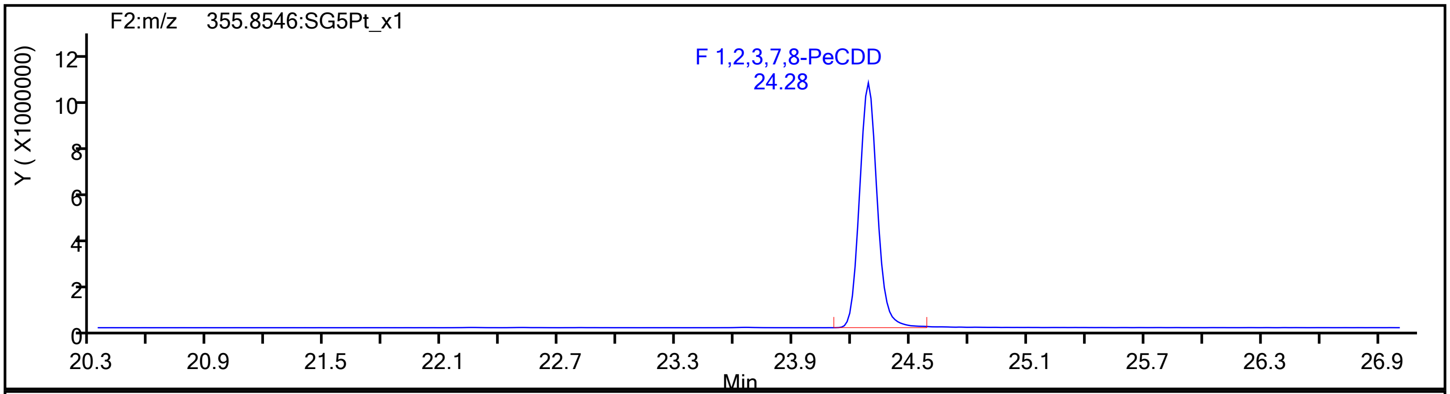

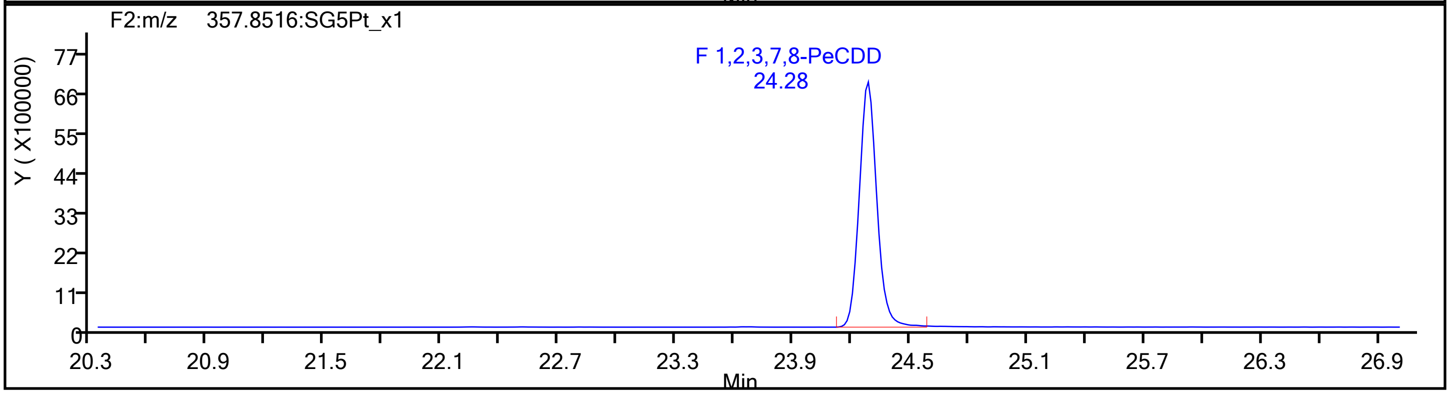

PeCDD Standards

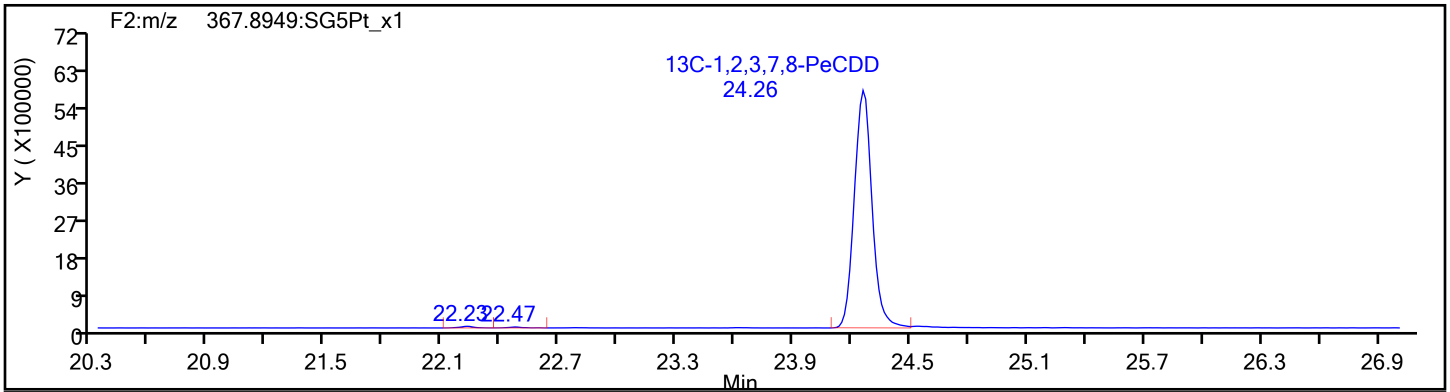

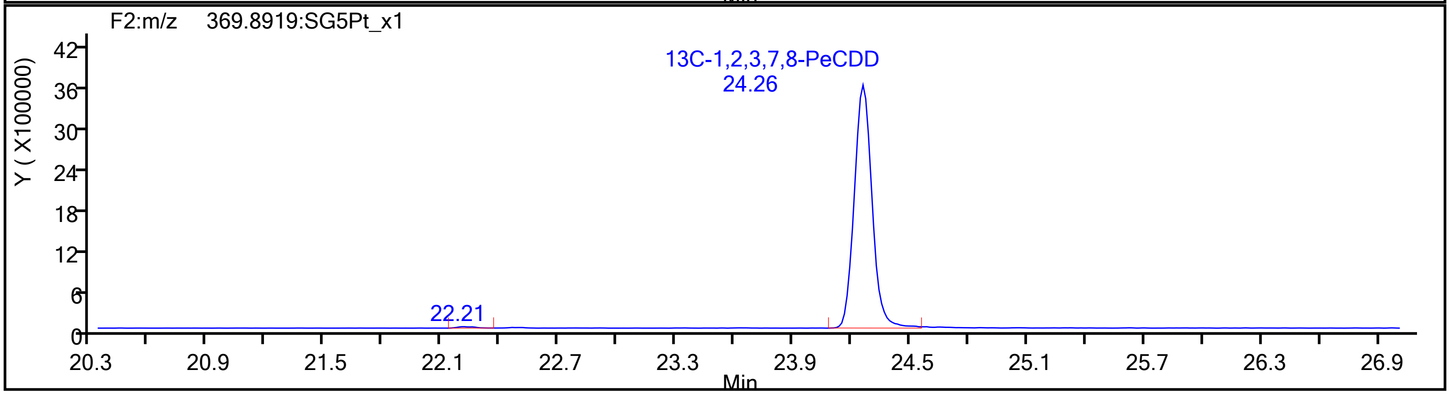

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

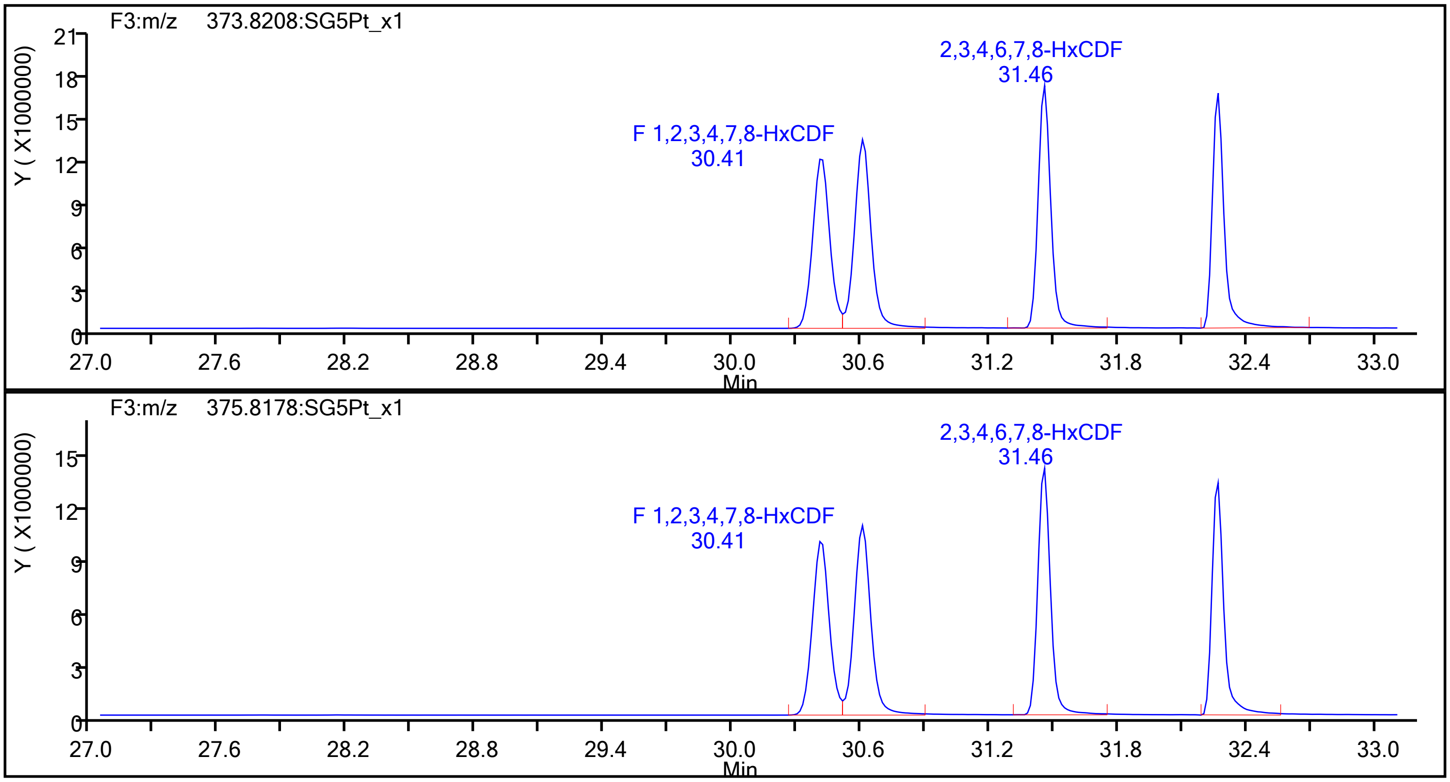

HxCDF Standards

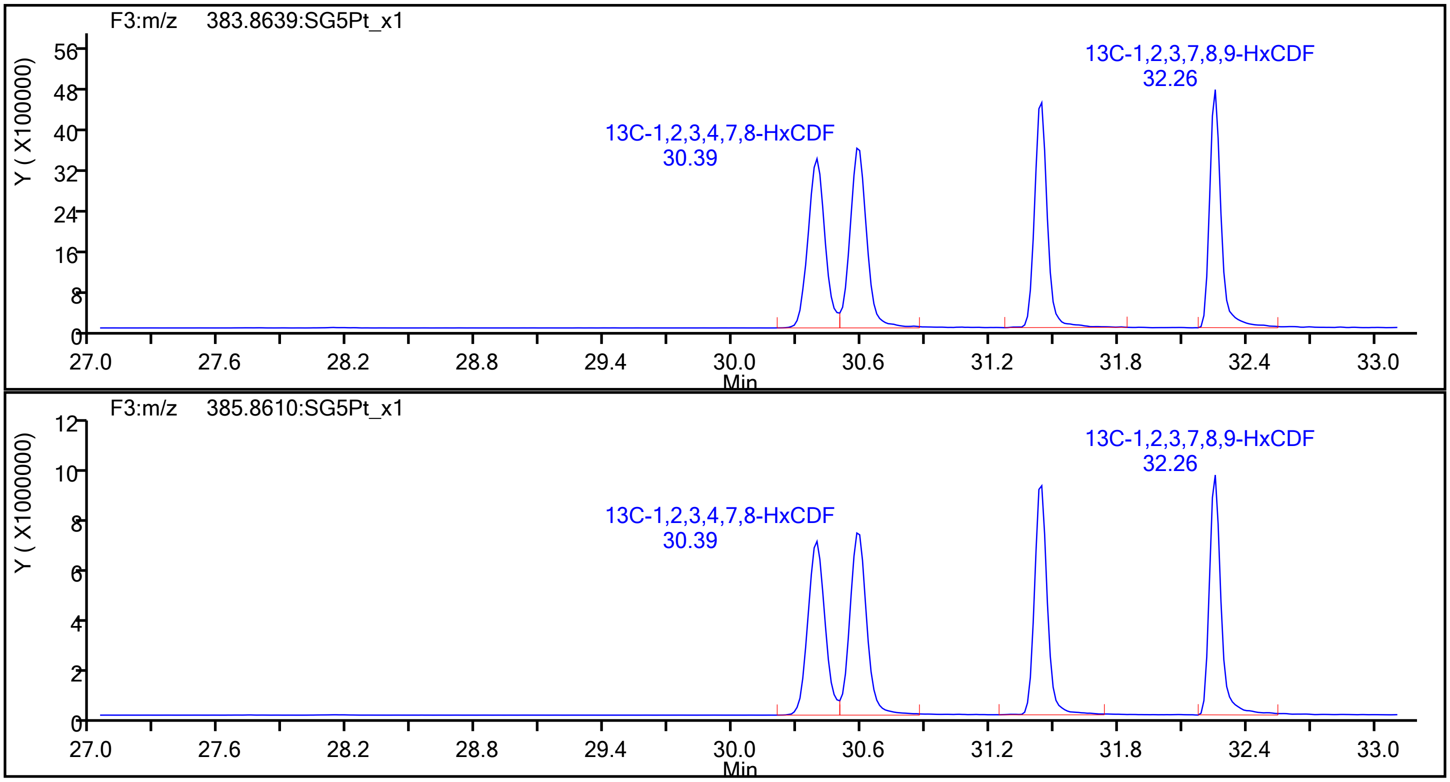

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

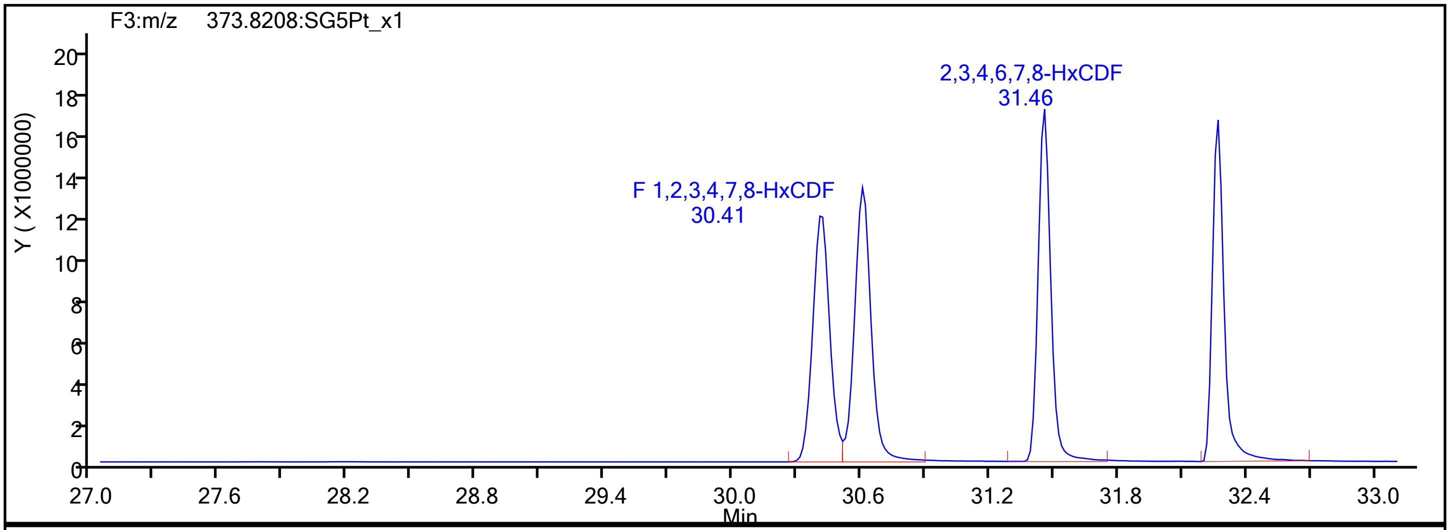

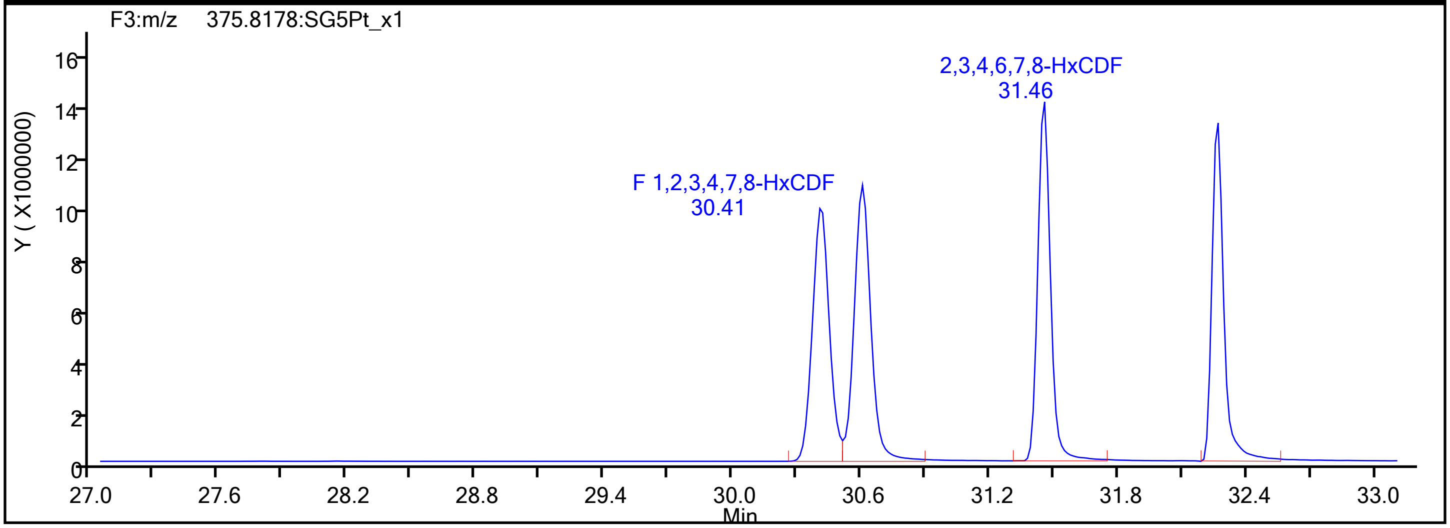

HxCDF Interference Mass

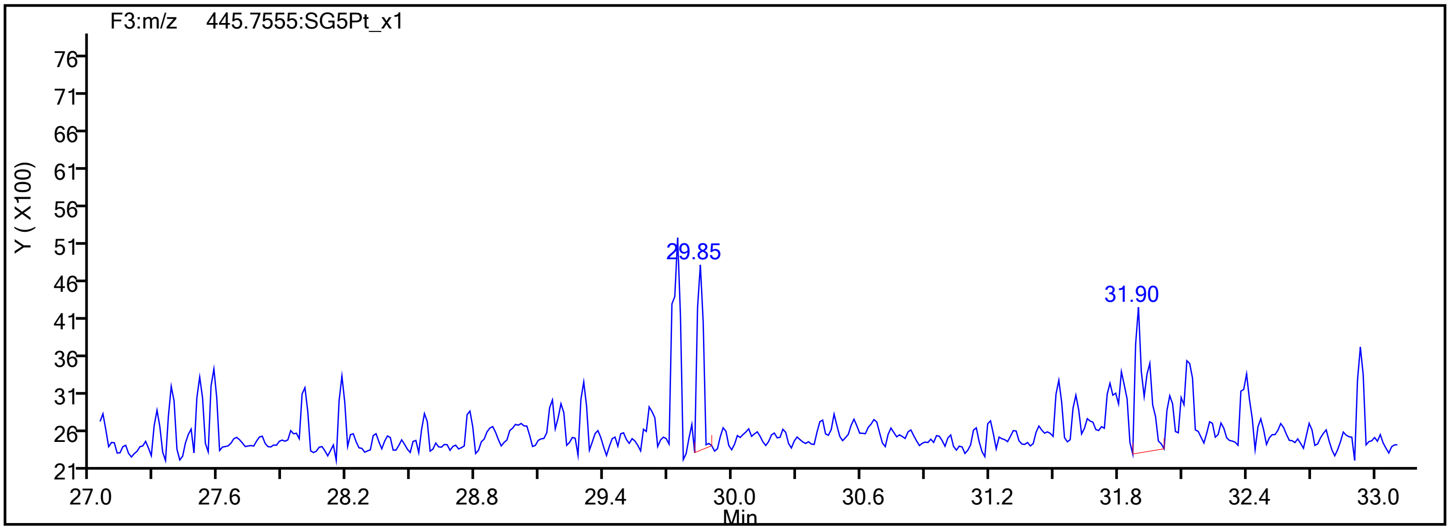

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

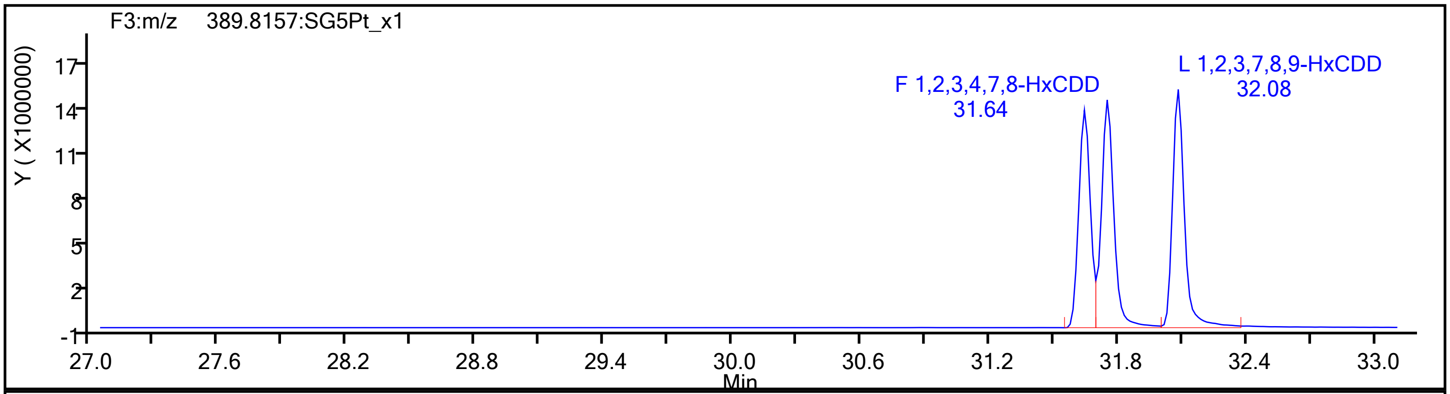

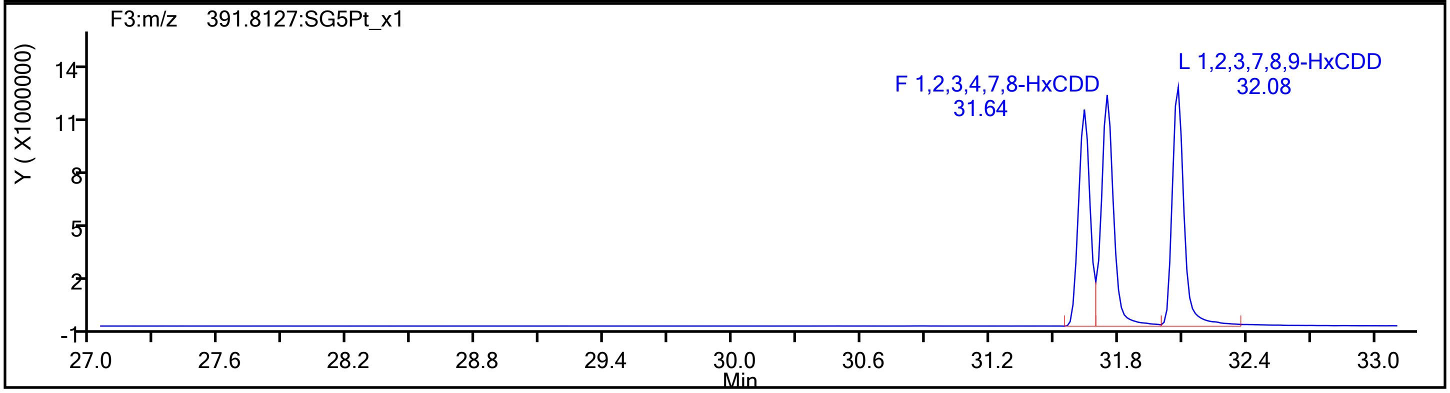

HxCDD Standards

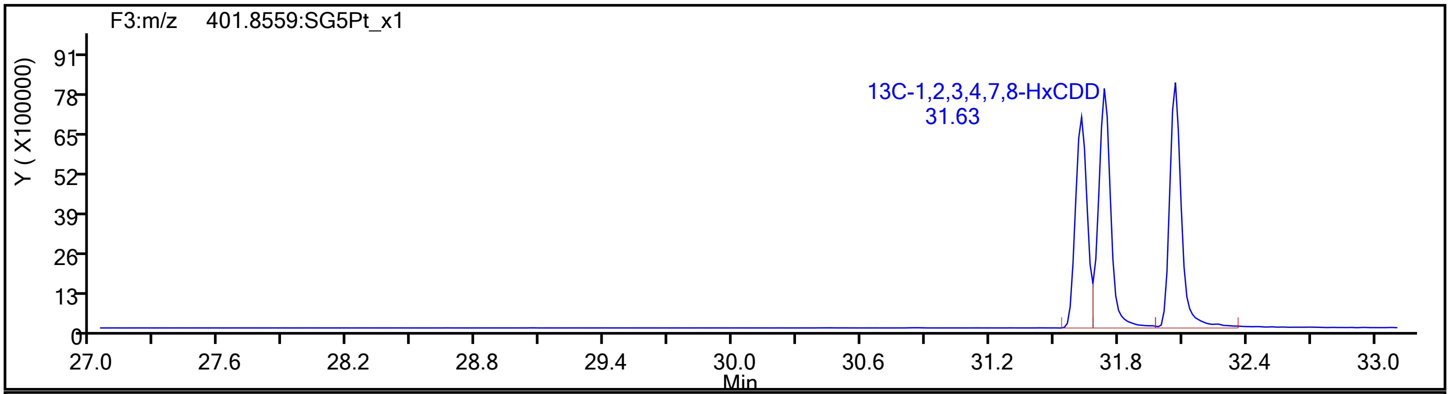

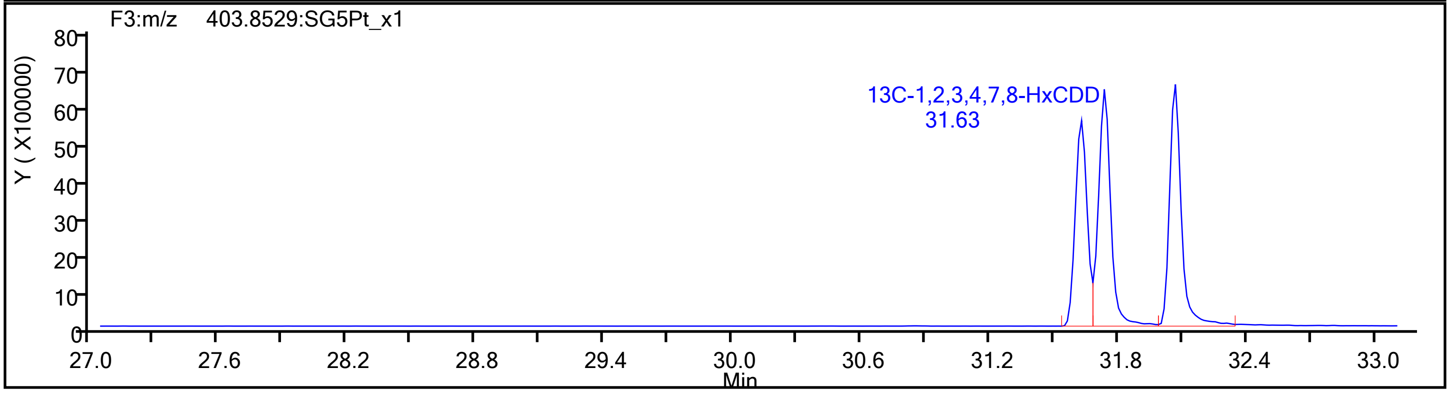

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

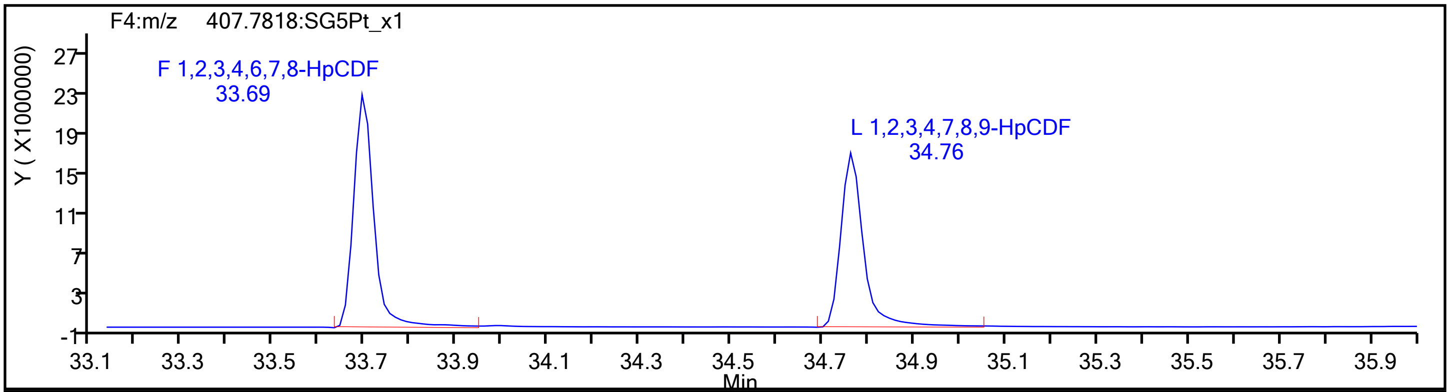

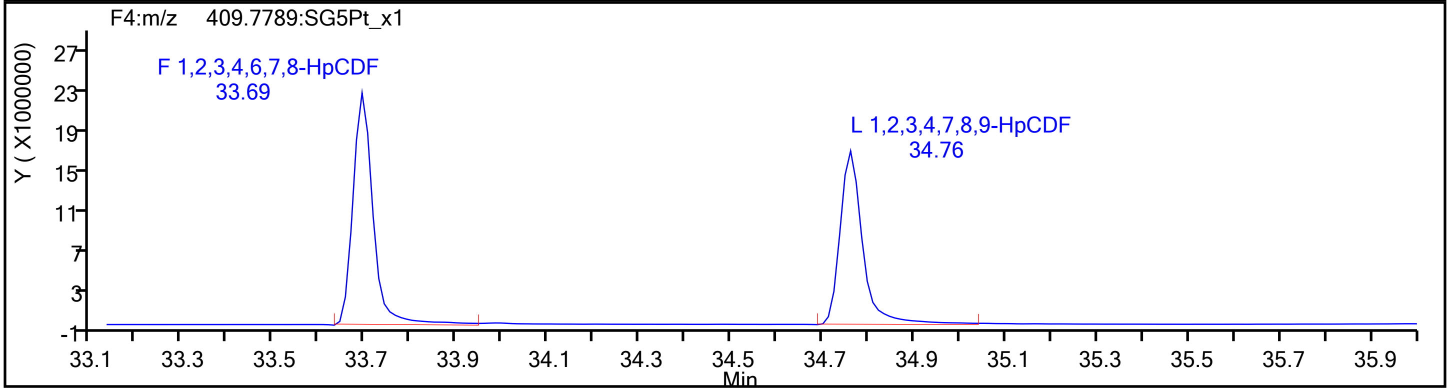

HpCDF Standards

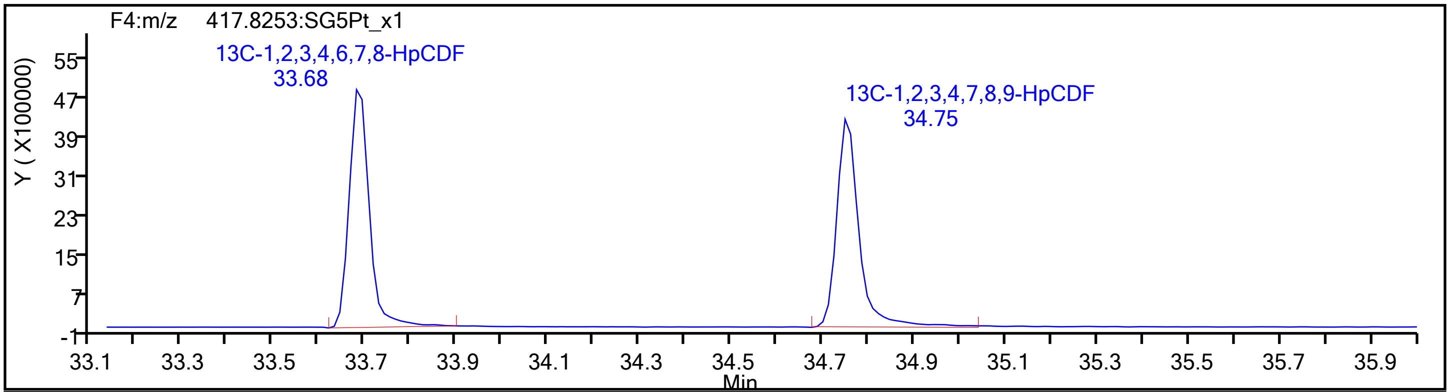

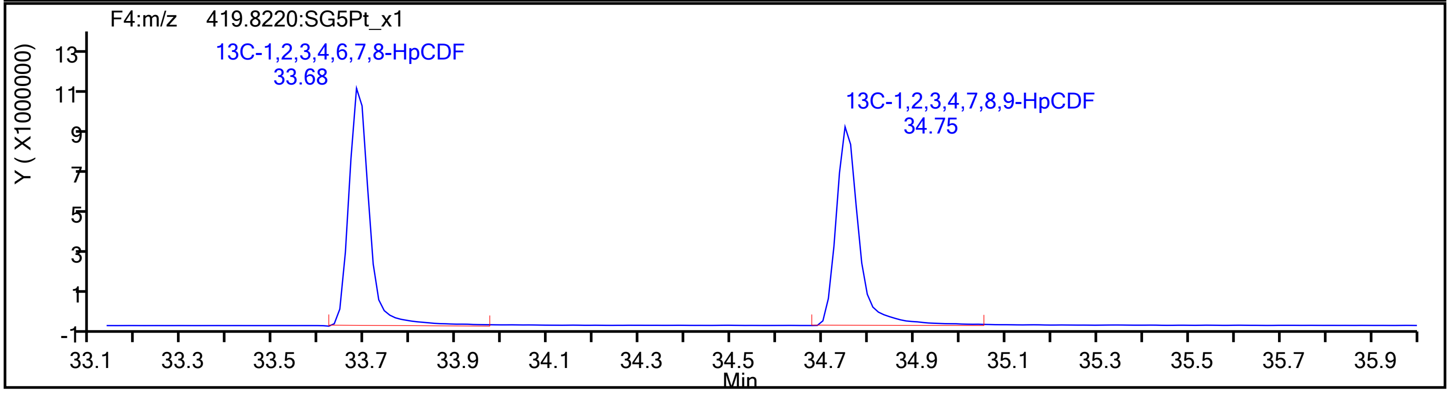

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDF

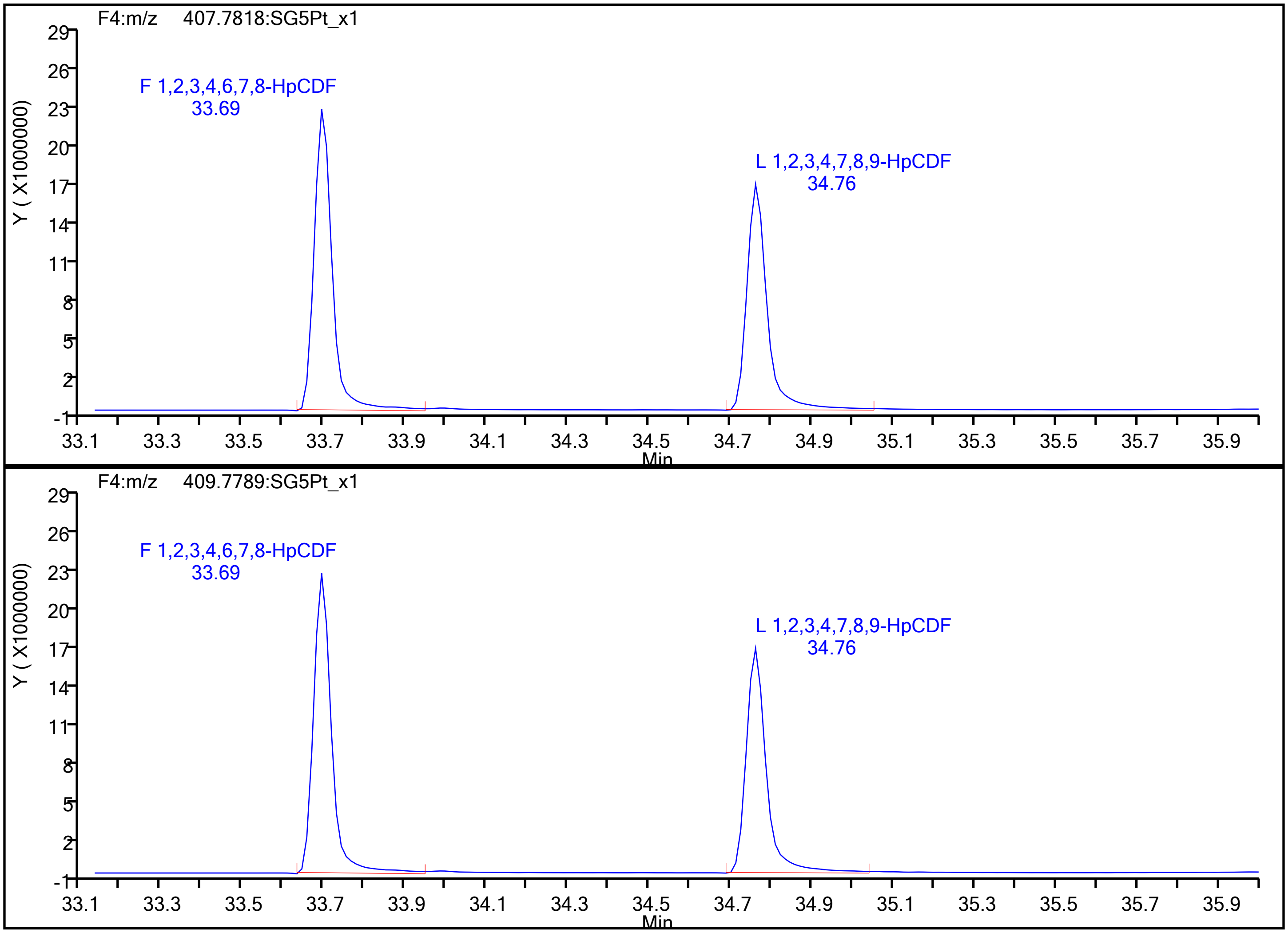

HpCDF Interference Mass

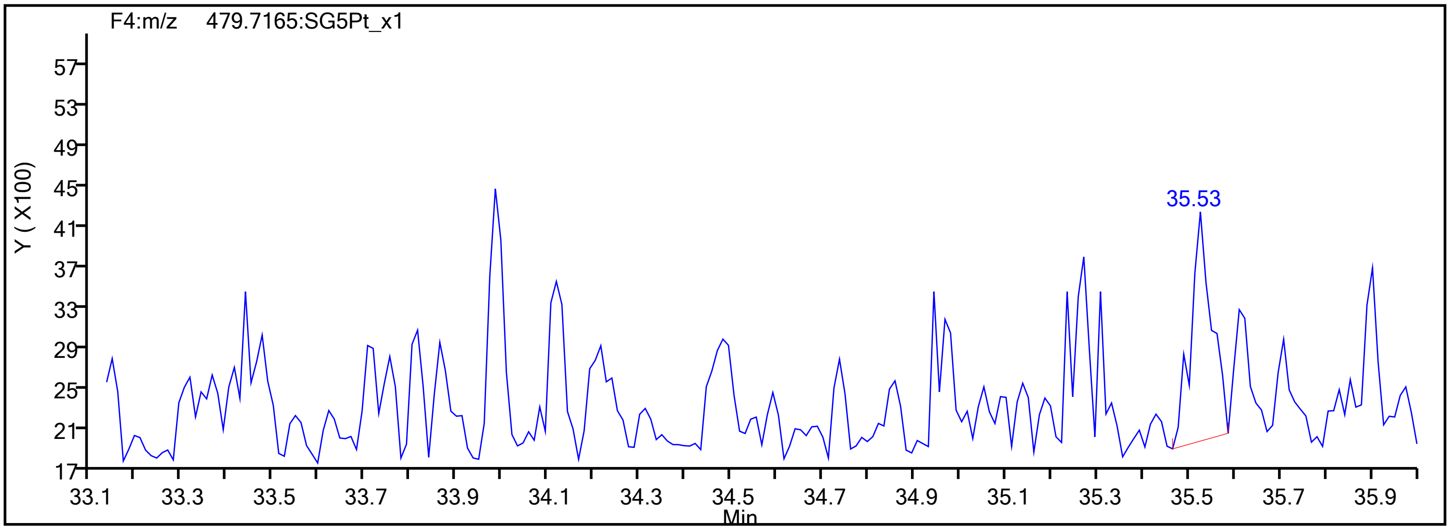

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

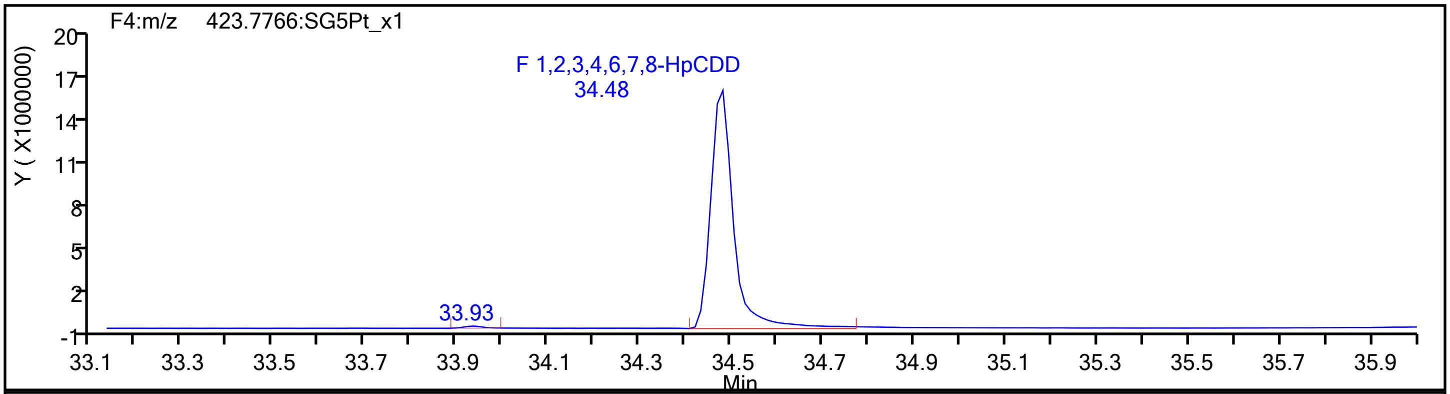

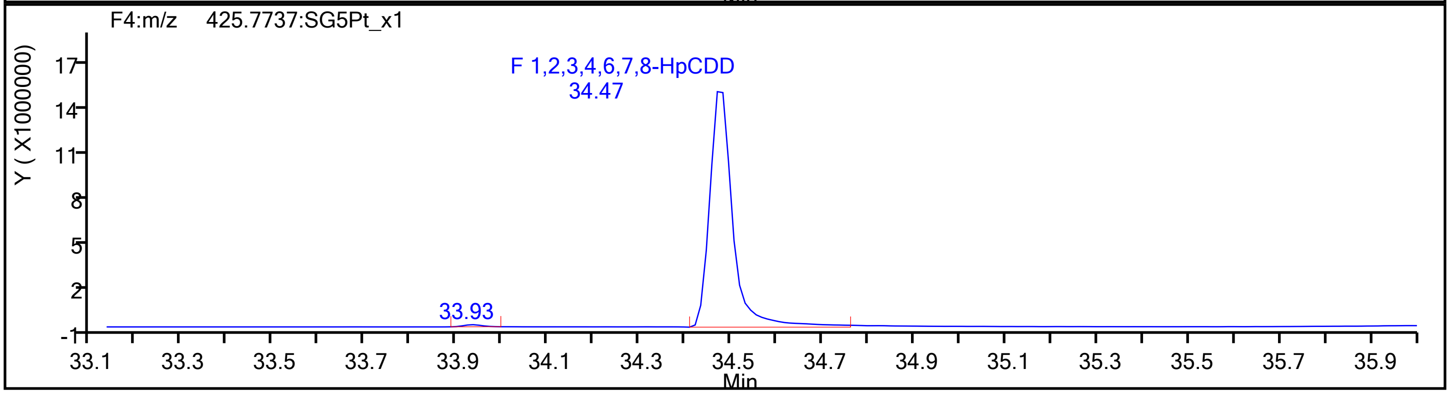

HpCDD Standards

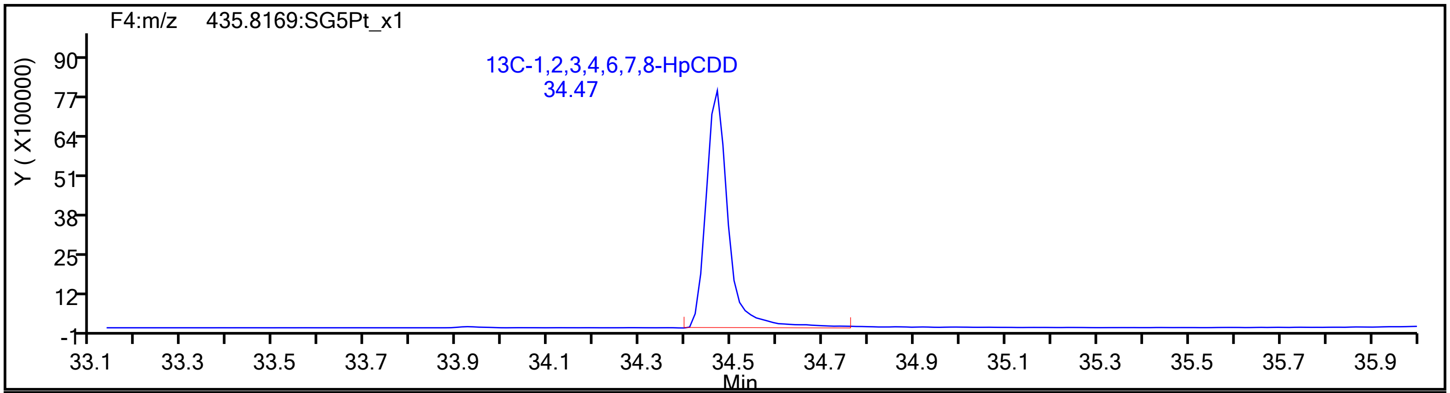

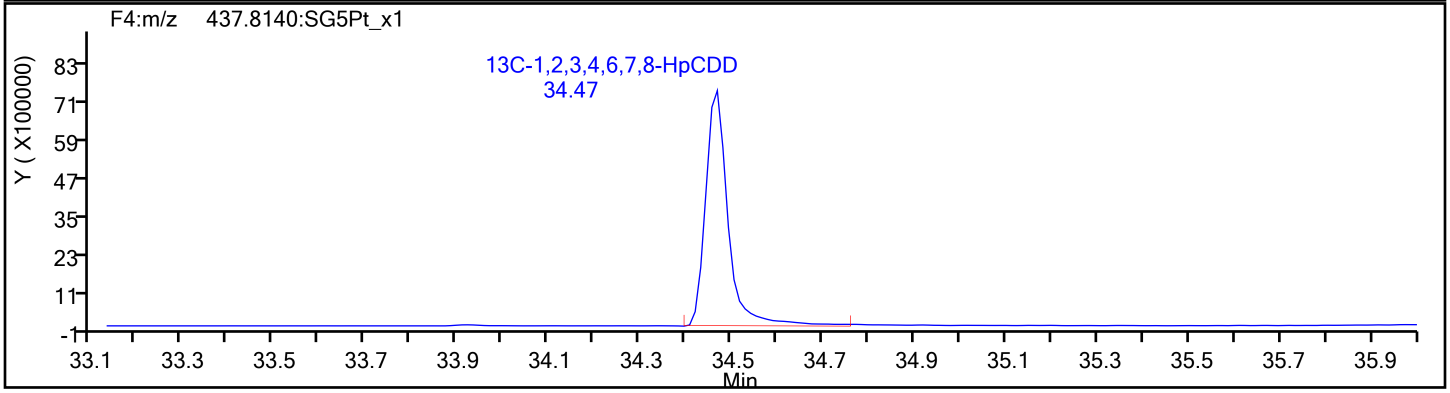

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Injection Date: 17-Sep-2020 20:42:06
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

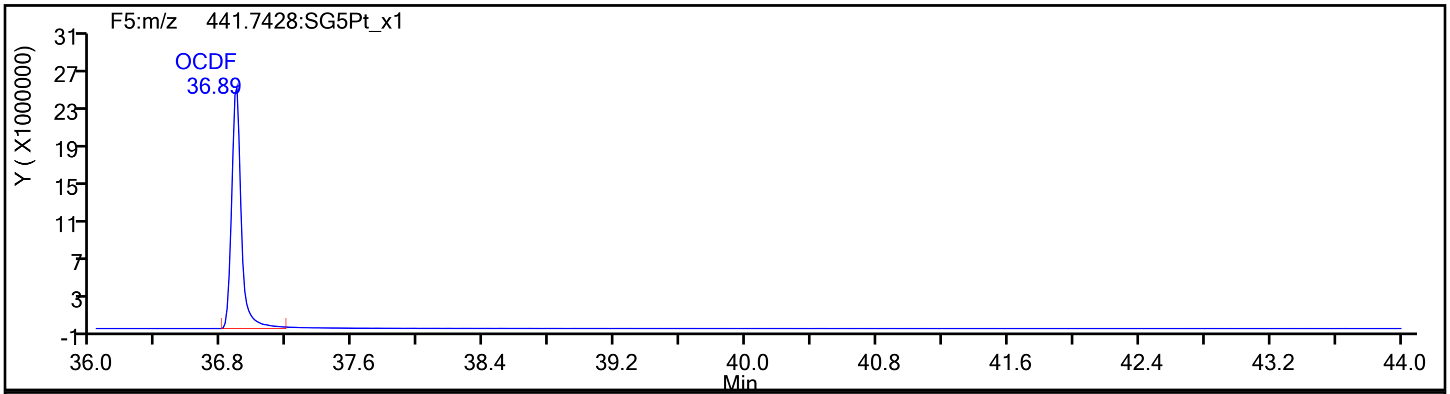

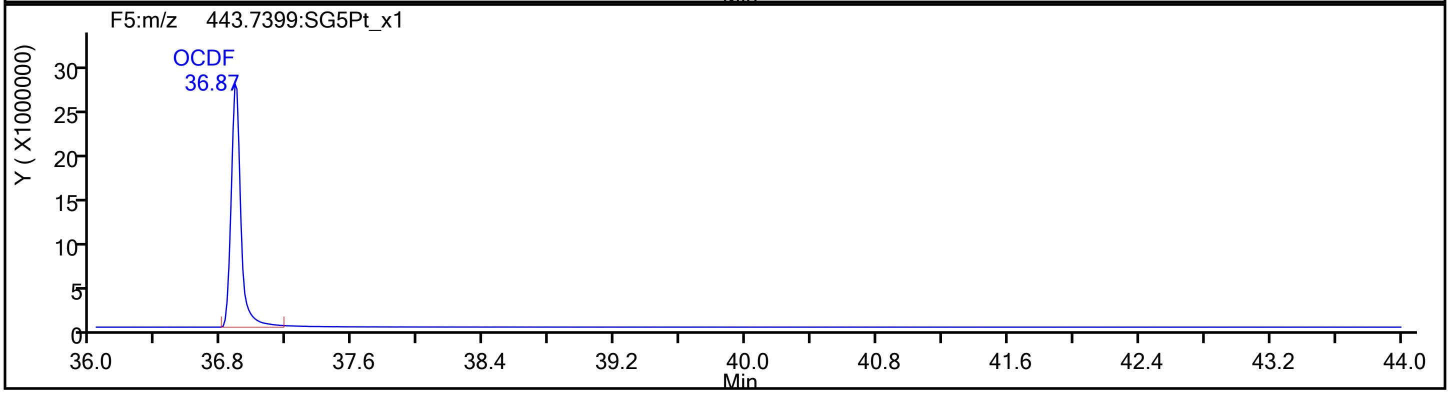

OCDF Standards

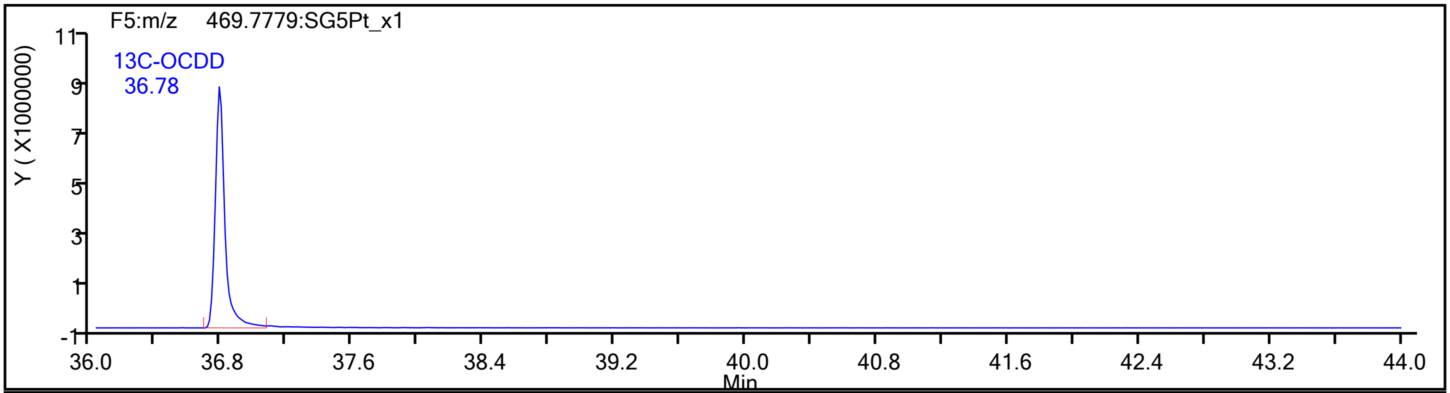

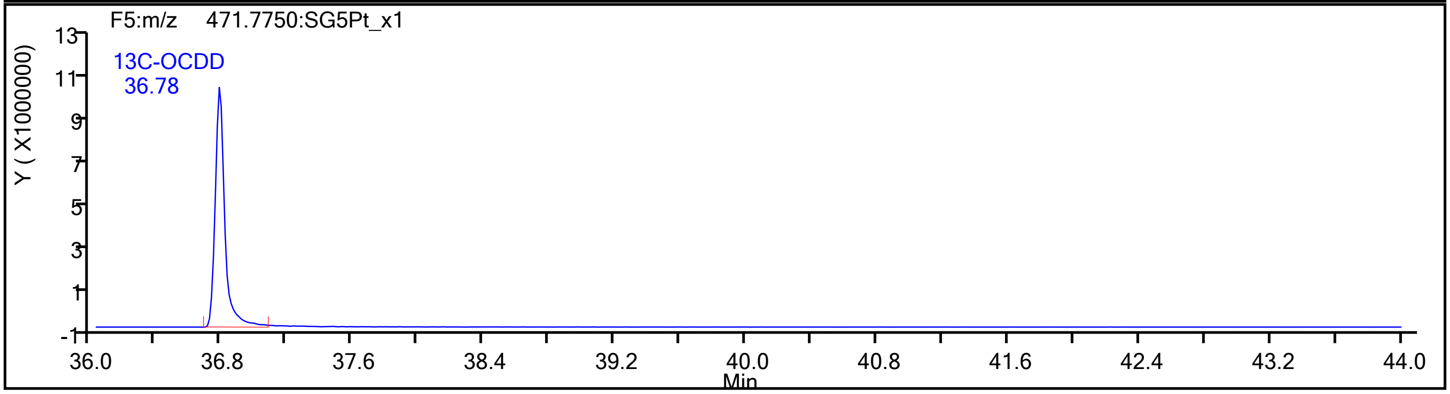

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

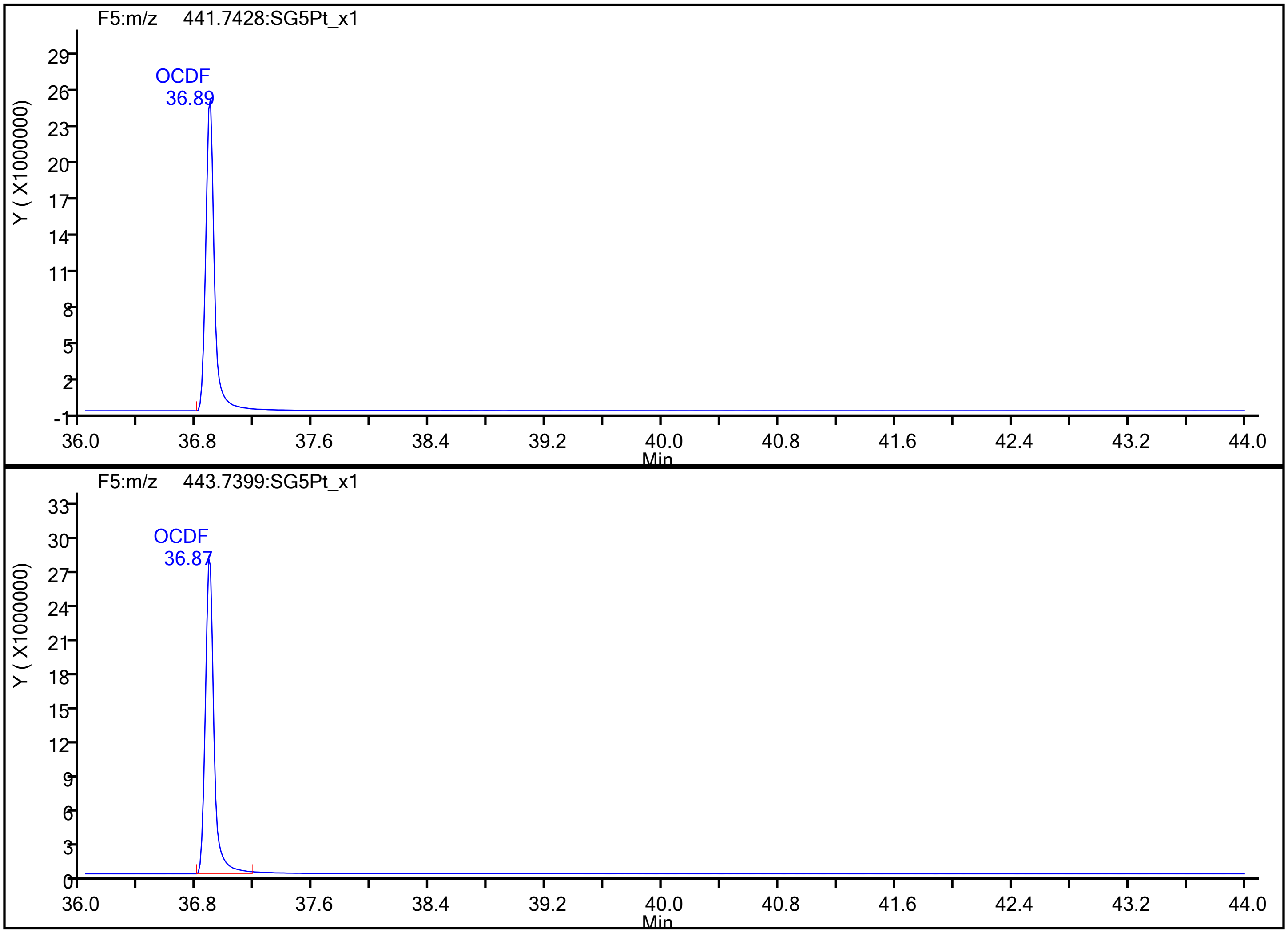

OCDF Interference Mass

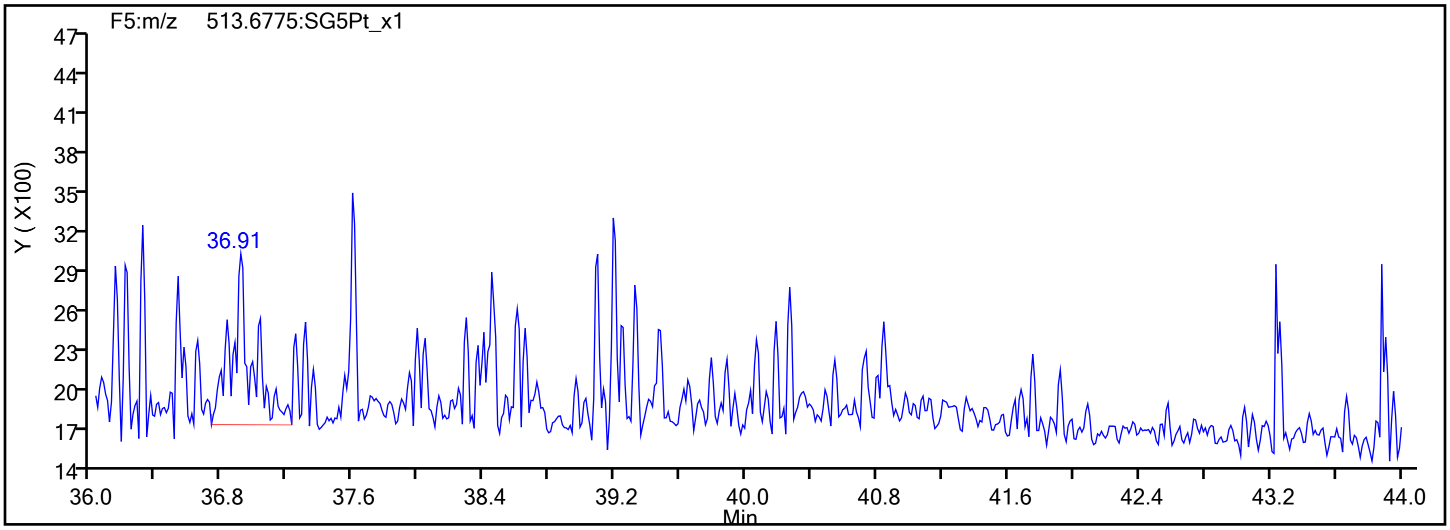

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

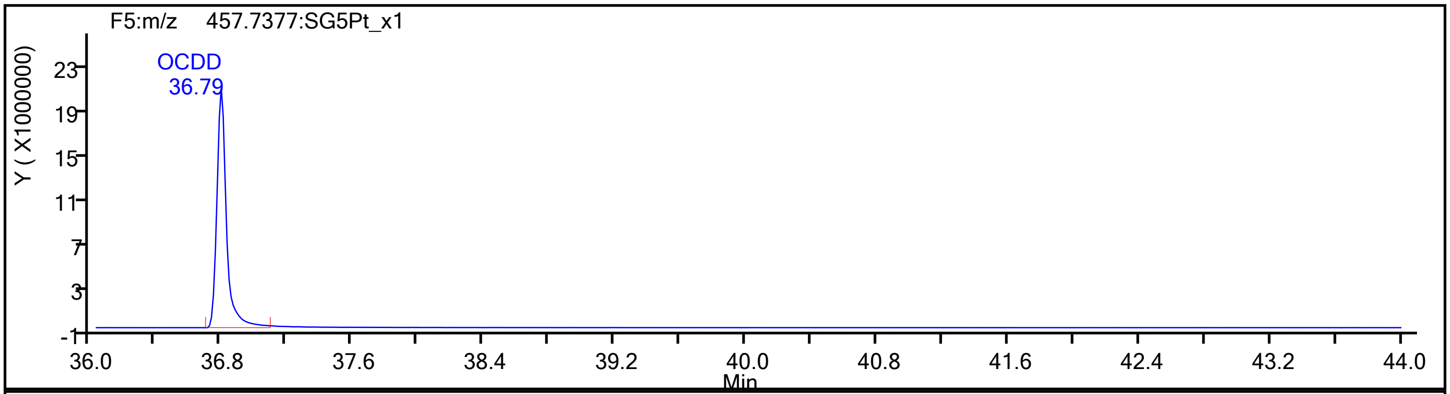

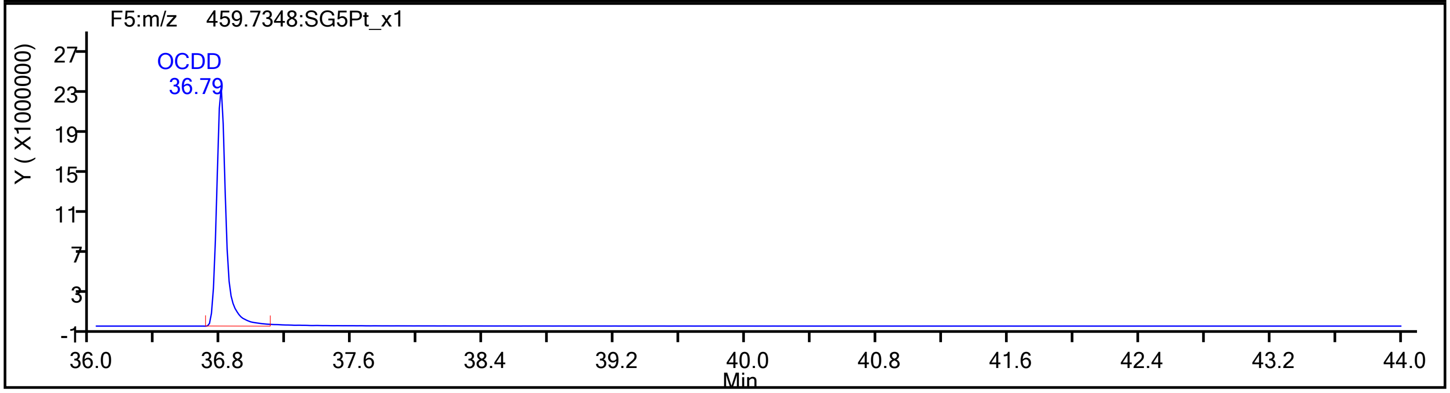

OCDD Standards

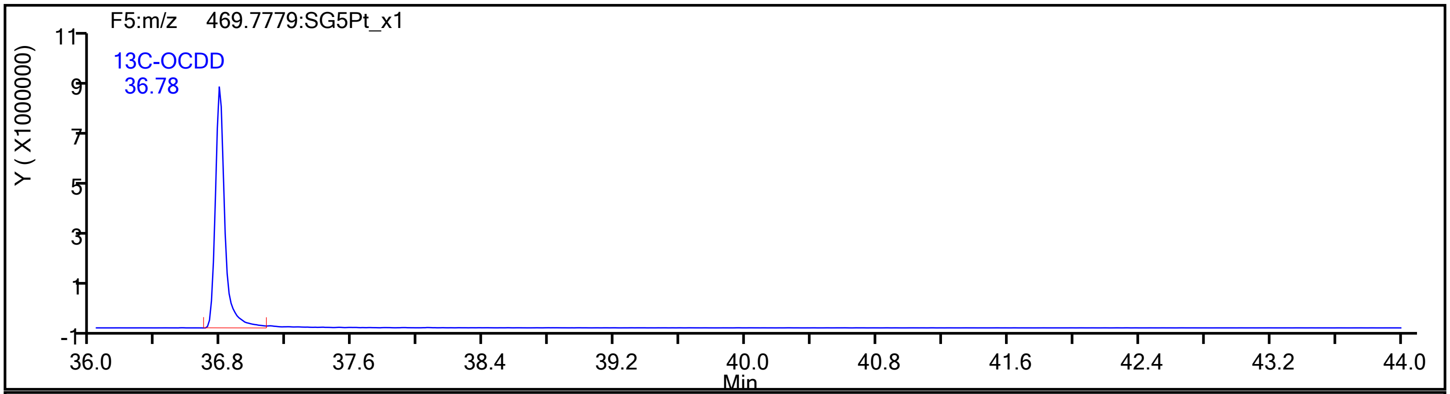

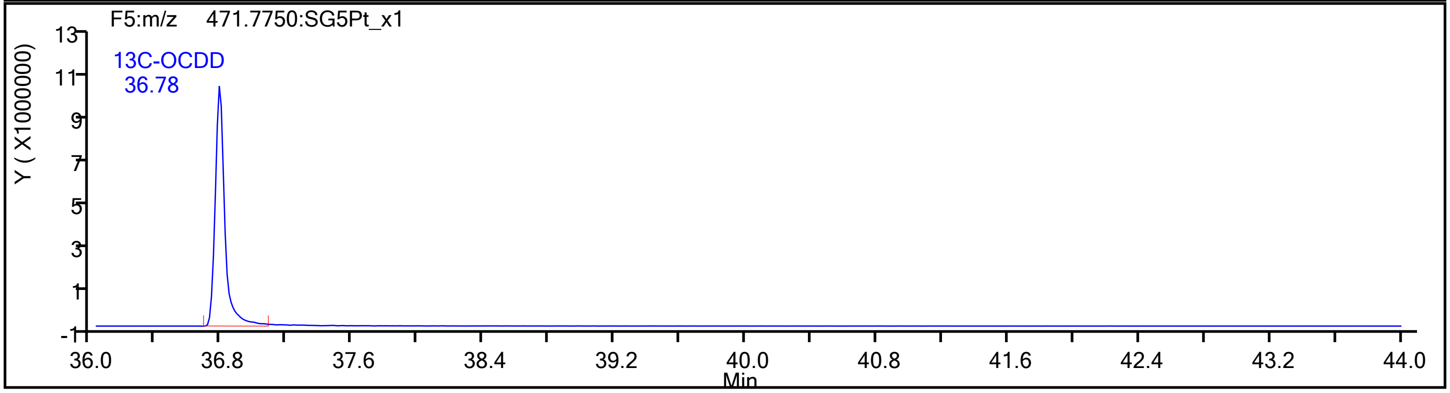

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

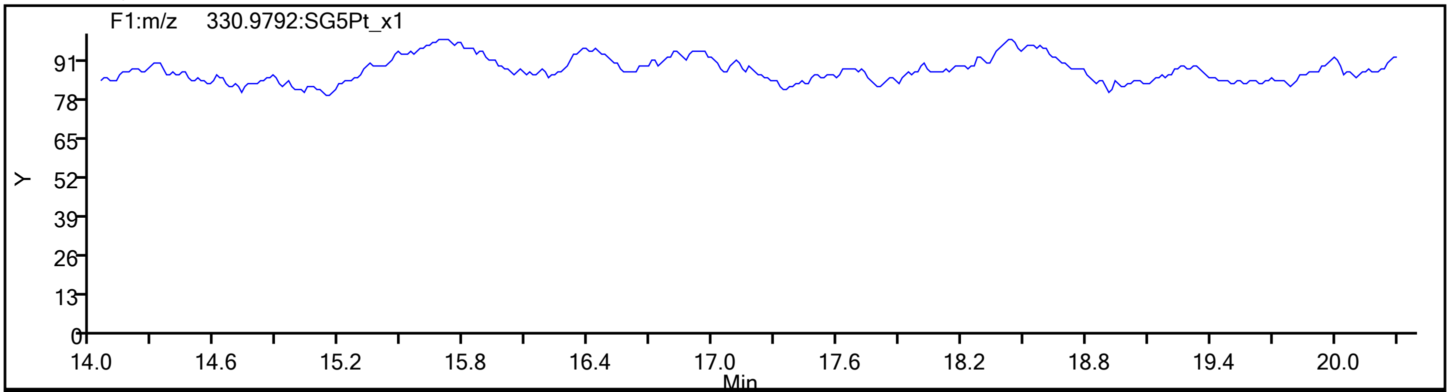

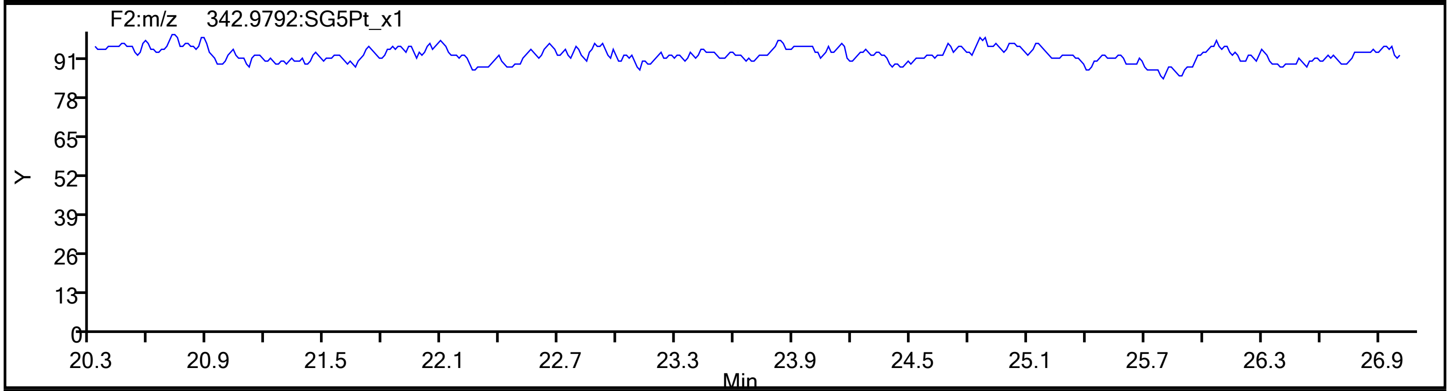

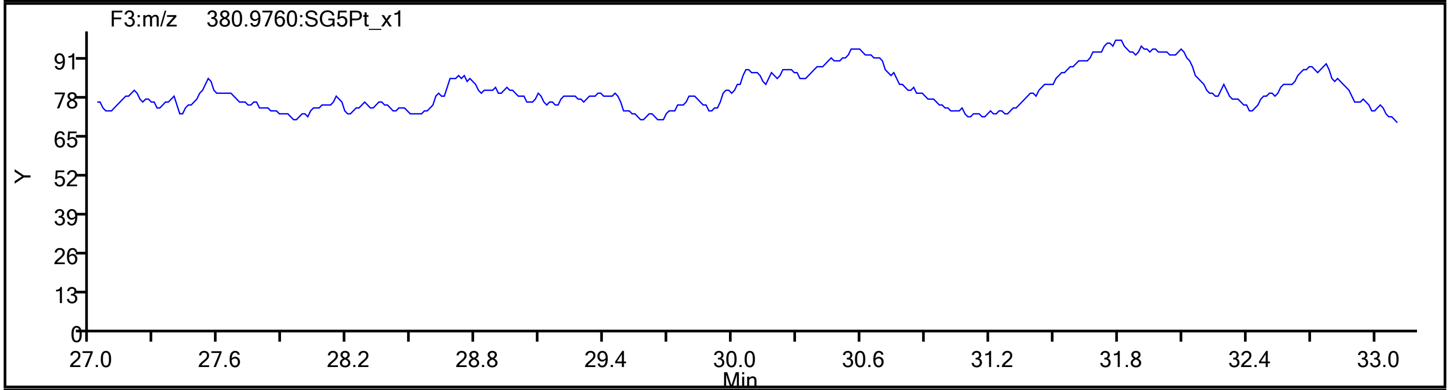

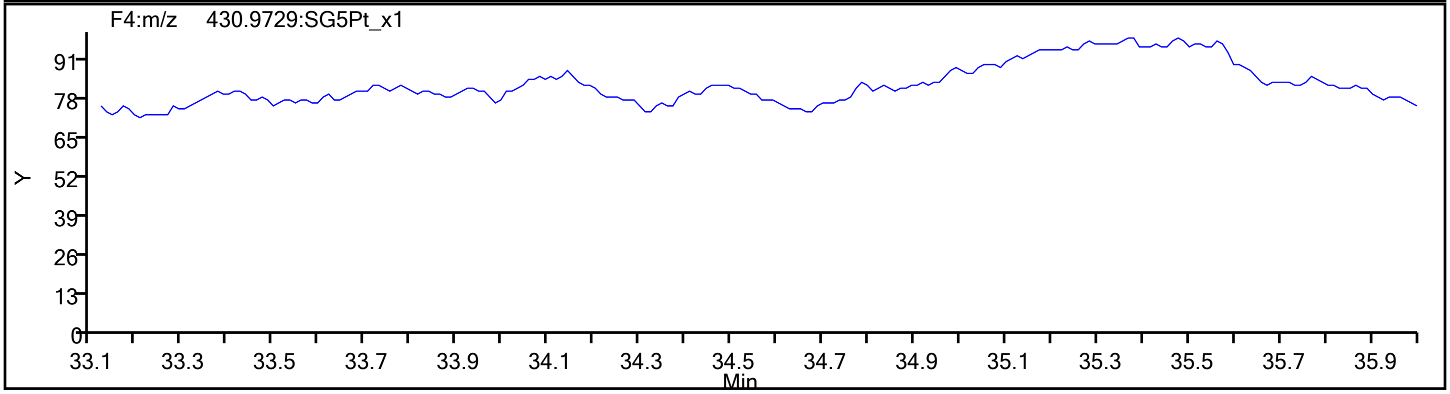

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

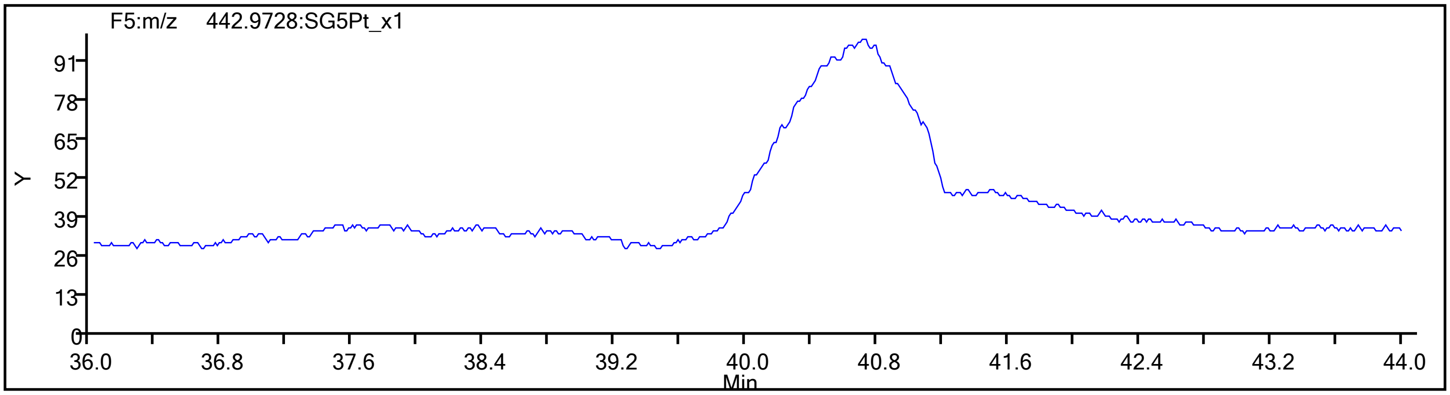

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-1

SDG No.:

Lab Sample ID: CCV 320-435203/15   Calibration Date: 11/24/2020 15:13

Instrument ID: 10D5   Calib Start Date: 09/17/2020 16:09

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 09/17/2020 19:09

Lab File ID: 23NO2010D5_40.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9077	0.999		11.0	10.0	110	84-120
2,3,7,8-TCDD	AveID	1.006	1.099		10.9	10.0	109	78-129
1,2,3,7,8-PeCDF	AveID	0.9147	0.999		54.6	50.0	109	82-120
2,3,4,7,8-PeCDF	AveID	0.9508	1.053		55.4	50.0	111	82-122
1,2,3,7,8-PeCDD	AveID	0.995	1.022		51.3	50.0	103	78-130
1,2,3,4,7,8-HxCDF	AveID	1.109	1.186		53.5	50.0	107	90-112
1,2,3,6,7,8-HxCDF	AveID	1.072	1.146		53.5	50.0	107	88-114
2,3,4,6,7,8-HxCDF	AveID	1.084	1.173		54.1	50.0	108	88-114
1,2,3,4,7,8-HxCDD	AveID	1.001	1.150		57.4	50.0	115	78-128
1,2,3,6,7,8-HxCDD	AveID	0.8902	0.9741		54.7	50.0	109	78-128
1,2,3,7,8,9-HxCDD	AveID	1.058	1.178		55.7	50.0	111	82-122
1,2,3,7,8,9-HxCDF	AveID	1.093	1.194		54.6	50.0	109	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.360	1.408		51.8	50.0	104	90-110
1,2,3,4,6,7,8-HpCDD	AveID	0.999	1.050		52.6	50.0	105	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.321	1.393		52.7	50.0	105	86-116
OCDD	AveID	1.129	1.119		99.1	100	99	79-126
OCDF	AveID	1.414	1.446		102	100	102	63-159
13C-2,3,7,8-TCDF	Ave	1.360	1.600		118	100	118	71-140
13C-2,3,7,8-TCDD	Ave	1.054	1.022		97.0	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.131	1.206		107	100	107	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.054	1.112		105	100	105	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8084	0.7611		94.1	100	94	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9225	1.088		118	100	118	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.034	1.218		118	100	118	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9773	1.163		119	100	119	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7977	0.7515		94.2	100	94	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.001	1.001		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9153	1.058		116	100	116	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8506	0.8744		103	100	103	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8873	0.8180		92.2	100	92	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7618	0.7651		100	100	100	77-129
13C-OCDD	Ave	0.6287	0.5995		191	200	95	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.049	1.117		10.7	10.0	107	79-127

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	23NO2010D5_1	WDM HRDXNCP_00042	WDM 112320	Tray01:1	Dioxin	
2	23NO2010D5_2	CS-4 HRDXNL4_00095	CCV 112320	Tray01:2	Dioxin	
3	23NO2010D5_3	Solvent Blank C-14	SB 112320	Tray01:3	---	
4	23NO2010D5_4	MB 320-432815/1-A	MB 320-432815/1-A	Tray01:4	8290/Solid	88
5	23NO2010D5_5	LCS 320-432815/2-A	LCS 320-432815/2-A	Tray01:5	8290/Solid	
6	23NO2010D5_6	280-142427-A-1-B	280-142427-A-1-B	Tray01:6	8290/Solid	
7	23NO2010D5_7	280-142427-A-2-D	280-142427-A-2-D	Tray01:7	8290/Solid	
8	23NO2010D5_8	280-142427-A-2-E MS	280-142427-A-2-E MS	Tray01:8	8290/Solid	
9	23NO2010D5_9	280-142427-A-2-F MSD	280-142427-A-2-F MSD	Tray01:9	8290/Solid	
10	23NO2010D5_10	280-142538-A-1-B	280-142538-A-1-B	Tray01:10	8290/Solid	
11	23NO2010D5_11	280-142538-A-2-B	280-142538-A-2-B	Tray01:11	---	
12	23NO2010D5_12	Solvent Blank C-14	SB 112320A	Tray01:3	---	
13	23NO2010D5_13	CS-4 HRDXNL4_00095	CCV 112320A	Tray01:2	Dioxin	
14	23NO2010D5_14	WDM HRDXNCP_00042	WDM 112320A	Tray01:1	Dioxin	
15	23NO2010D5_15	LCS 320-42854/2-A RI	LCS 320-42854/2-A RI	Tray01:15	8290A/Solid	D197
16	23NO2010D5_16	280-142427-A-3-B	280-142427-A-3-B	Tray01:16	8290/Solid	88
17	23NO2010D5_17	280-142427-A-4-B	280-142427-A-4-B	Tray01:17	8290/Solid	
18	23NO2010D5_18	280-142427-A-5-B	280-142427-A-5-B	Tray01:18	8290/Solid	
19	23NO2010D5_19	280-142427-A-6-B	280-142427-A-6-B	Tray01:19	8290/Solid	
20	23NO2010D5_20	280-142427-A-7-B	280-142427-A-7-B	Tray01:20	8290/Solid	
21	23NO2010D5_21	280-142429-A-1-L 5x	280-142429-A-1-L 5x	Tray01:21	8290/Solid	87
22	23NO2010D5_22	280-142426-A-1-E 25x	280-142426-A-1-E 25x	Tray01:22	8290/Solid	
23	23NO2010D5_23	280-142429-A-2-H 25x	280-142429-A-2-H 25x	Tray01:23	8290/Solid	
24	23NO2010D5_24	Solvent Blank C-14	SB 112320B	Tray01:3	---	
25	23NO2010D5_25	Solvent Blank C-14	SB 112320C	Tray01:3	---	
26	23NO2010D5_26	CS-4 HRDXNL4_00095	CCV 112320B	Tray01:2	Dioxin	
27	23NO2010D5_27	WDM HRDXNCP_00042	WDM 112320C	Tray01:1	Dioxin	
28	23NO2010D5_28	Solvent Blank C-14	SB 112320D	Tray01:3	---	
29	23NO2010D5_29	MB 320-433563/1-A	MB 320-433563/1-A	Tray01:29	1613B/T/Water	D199
30	23NO2010D5_30	LCS 320-433563/2-A	LCS 320-433563/2-A	Tray01:30	1613B/T/Water	
31	23NO2010D5_31	LCSD 320-433563/3-A	LCSD 320-433563/3-A	Tray01:31	1613B/T/Water	
32	23NO2010D5_32	320-66905-A-2-A	320-66905-A-2-A	Tray01:32	1613B/Water	
33	23NO2010D5_33	440-275072-G-2-A	440-275072-G-2-A	Tray01:33	1613B/Water	
34	23NO2010D5_34	280-142761-A-2-B	280-142761-A-2-B	Tray01:34	1613B/Water	
35	23NO2010D5_35	320-66671-B-1-B	320-66671-B-1-B	Tray01:35	1613B/Water	
36	23NO2010D5_36	320-66848-A-1-A	320-66848-A-1-A	Tray01:36	1613B_T/Water	
37	23NO2010D5_37	320-66853-B-1-A	320-66853-B-1-A	Tray01:37	1613B_T/Water	
38	23NO2010D5_38	320-66854-A-1-A	320-66854-A-1-A	Tray01:38	1613B_T/Water	
39	23NO2010D5_39	Solvent Blank C-14	SB 112320E	Tray01:3	---	
40	23NO2010D5_40	CS-4 HRDXNL4_00095	CCV 112320C	Tray01:2	Dioxin	
41	23NO2010D5_41	WDM HRDXNCP_00042	WDM 112320C	Tray01:1	Dioxin	
42	23NO2010D5_42	Solvent Blank C-14	SB 112320F	Tray01:3	---	
43	23NO2010D5_43	320-66855-B-1-A	320-66855-B-1-A	Tray01:43	1613B_T/Water	D199
44	23NO2010D5_44	320-66856-A-1-A	320-66856-A-1-A	Tray01:44	1613B_T/Water	
45	23NO2010D5_45	320-66905-A-1-A	320-66905-A-1-A	Tray01:45	1613B_T/Water	
46	23NO2010D5_46	MB 320-434708/1-A	MB 320-434708/1-A	Tray01:46	1613B(T)/Water	D201
47	23NO2010D5_47	LCS 320-434708/2-A	LCS 320-434708/2-A	Tray01:47	1613B(T)/Water	
48	23NO2010D5_48	LCSD 320-434708/3-A	LCSD 320-434708/3-A	Tray01:48	1613B(T)/Water	
49	23NO2010D5_49	550-153270-B-4-A	550-153270-B-4-A	Tray01:49	1613B_T/Water	
50	23NO2010D5_50	280-142970-B-2-A	280-142970-B-2-A	Tray01:50	1613B/Water	
51	23NO2010D5_51	320-66979-B-1-A	320-66979-B-1-A	Tray01:51	1613B_T/Water	
52	23NO2010D5_52	LCS 320-432973/2-A RA	LCS 320-432973/2-A	Tray01:52	1613B(T)/Water	D200
53	23NO2010D5_53	LCSD 320-432973/3-A RA	LCSD 320-432973/3-A	Tray01:53	1613B(T)/Water	
54	23NO2010D5_54	Solvent Blank C-14	SB 112320G	Tray01:3	---	
55	23NO2010D5_55	WDM HRDXNCP_00042	WDM 112320D	Tray01:1	Dioxin	
56	23NO2010D5_56	CS-4 HRDXNL4_00095	CCV 112320D	Tray01:2	Dioxin	
57	23NO2010D5_57	Solvent Blank C-14	SB 112320H	Tray01:3	---	
58	23NO2010D5_58	LCS 320-432203/2-A RA	LCS 320-432203/2-A	Tray01:57	1613B(T)/Water	D199

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
59	23NO2010D5_59	LCSD 320-432203/3-A RA	LCSD 320-432203/3-A	Tray01:58	1613B(T)/Water	
60	23NO2010D5_60	MB 320-434702/1-A	MB 320-434702/1-A	Tray01:59	8290A(_D5)/Water	D201
61	23NO2010D5_61	LCS 320-434702/2-A	LCS 320-434702/2-A	Tray01:60	8290A(_D5)/Water	
62	23NO2010D5_62	320-67042-A-1-A	320-67042-A-1-A	Tray01:61	8290A/Water	
63	23NO2010D5_63	320-67042-A-2-A	320-67042-A-2-A	Tray01:62	8290A/Water	
64	23NO2010D5_64	680-191807-P-11-A	680-191807-P-11-A	Tray01:63	8290A_D5/Water	
65	23NO2010D5_65	680-191807-Q-11-A MS	680-191807-Q-11-A MS	Tray01:64	8290A_D5/Water	
66	23NO2010D5_66	680-191807-P-11-B MSD	680-191807-P-11-B MSD	Tray01:65	8290A_D5/Water	
67	23NO2010D5_67	Solvent Blank C-14	SB 112320I	Tray01:3	---	
68	23NO2010D5_68	CS-4 HRDXNL4_00095	CCV 112320E	Tray01:2	Dioxin	
69	23NO2010D5_69	WDM HRDXNCP_00042	WDM 112320E	Tray01:1	Dioxin	
70	23NO2010D5_70	CS-4 HRDXNL4_00095	CCV 112320F	Tray01:2	Dioxin	
71	23NO2010D5_71	Solvent Blank C-14	SB 112320J	Tray01:3	---	
72	23NO2010D5_72	mb 320-433926/1-a	mb 320-433926/1-a	Tray01:71	8290A(_D5)/Water	D200
73	23NO2010D5_73	lcs 320-433926/2-a	lcs 320-433926/2-a	Tray01:72	8290A(_D5)/Water	
74	23NO2010D5_74	lcsd 320-433926/3-a	lcsd 320-433926/3-a	Tray01:73	8290A(_D5)/Water	
75	23NO2010D5_75	680-191601-k-1-a	680-191601-k-1-a	Tray01:74	8290A(_D5)/Water	
76	23NO2010D5_76	680-191601-o-2-a	680-191601-o-2-a	Tray01:75	8290A(_D5)/Water	
77	23NO2010D5_77	680-191601-c-3-a	680-191601-c-3-a	Tray01:76	8290A(_D5)/Water	
78	23NO2010D5_78	680-191601-m-4-a	680-191601-m-4-a	Tray01:77	8290A(_D5)/Water	
79	23NO2010D5_79	680-191601-g-5-a	680-191601-g-5-a	Tray01:78	8290A(_D5)/Water	
80	23NO2010D5_80	680-191736-p-1-a	680-191736-p-1-a	Tray01:79	8290A(_D5)/Water	
81	23NO2010D5_81	680-191736-p-7-a	680-191736-p-7-a	Tray01:80	8290A(_D5)/Water	
82	23NO2010D5_82	Solvent Blank C-14	SB 112320K	Tray01:3	---	
83	23NO2010D5_83	CS-4 HRDXNL4_00095	CCV 112320G	Tray01:2	Dioxin	
84	23NO2010D5_84	WDM HRDXNCP_00042	WDM 112320F	Tray01:1	Dioxin	
85	23NO2010D5_85	CS-4 HRDXNL4_00095	CCV 112320H	Tray01:2	Dioxin	
86	23NO2010D5_86	Solvent Blank C-14	SB 112320L	Tray01:3	---	
87	23NO2010D5_87	mb 320-432518/1-a	mb 320-432518/1-a	Tray01:85	8290A(_D5)/Water	D200
88	23NO2010D5_88	lcs 320-432518/2-a	lcs 320-432518/2-a	Tray01:86	8290A(_D5)/Water	
89	23NO2010D5_89	680-191736-p-9-a	680-191736-p-9-a	Tray01:87	8290A(_D5)/Water	
90	23NO2010D5_90	680-191736-q-12-a	680-191736-q-12-a	Tray01:88	8290A(_D5)/Water	
91	23NO2010D5_91	280-142750-a-9-a	280-142750-a-9-a	Tray01:89	8290A(_D5)/Water	
92	23NO2010D5_92	280-142750-b-9-a ms	280-142750-b-9-a ms	Tray01:90	8290A(_D5)/Water	
93	23NO2010D5_93	280-142750-b-9-b msd	280-142750-b-9-b msd	Tray01:91	8290A(_D5)/Water	
94	23NO2010D5_94	680-191404-c-1-a	680-191404-c-1-a	Tray01:92	8290A(_D5)/Water	
95	23NO2010D5_95	680-191404-d-2-a	680-191404-d-2-a	Tray01:93	8290A(_D5)/Water	
96	23NO2010D5_96	680-191404-d-3-a	680-191404-d-3-a	Tray01:94	8290A(_D5)/Water	
97	23NO2010D5_97	Solvent Blank C-14	SB 112320M	Tray01:3	---	
98	23NO2010D5_98	CS-4 HRDXNL4_00095	CCV 112320I	Tray01:2	Dioxin	
99	23NO2010D5_99	WDM HRDXNCP_00042	WDM 112320G	Tray01:1	Dioxin	
100	23NO2010D5_100	CS-4 HRDXNL4_00095	CCV 112320J	Tray01:2	Dioxin	
101	23NO2010D5_101	Solvent Blank C-14	SB 112320N	Tray01:3	---	
102	23NO2010D5_102	280-142750-a-1-a	280-142750-a-1-a	Tray01:4	8290A(_D5)/Water	D200
103	23NO2010D5_103	280-142750-b-2-a	280-142750-b-2-a	Tray01:5	8290A(_D5)/Water	
104	23NO2010D5_104	280-142750-b-3-a	280-142750-b-3-a	Tray01:6	8290A(_D5)/Water	
105	23NO2010D5_105	280-142750-b-4-a	280-142750-b-4-a	Tray01:7	8290A(_D5)/Water	
106	23NO2010D5_106	280-142750-b-5-a	280-142750-b-5-a	Tray01:8	8290A(_D5)/Water	
107	23NO2010D5_107	280-142750-a-6-a	280-142750-a-6-a	Tray01:9	8290A(_D5)/Water	
108	23NO2010D5_108	280-142750-b-7-a	280-142750-b-7-a	Tray01:10	8290A(_D5)/Water	
109	23NO2010D5_109	280-142750-b-8-a	280-142750-b-8-a	Tray01:11	8290A(_D5)/Water	
110	23NO2010D5_110	280-142750-b-10-a	280-142750-b-10-a	Tray01:12	8290A(_D5)/Water	
111	23NO2010D5_111	320-66517-o-9-a	320-66517-o-9-a	Tray01:15	8290A(_D5)/Water	
112	23NO2010D5_112	Solvent Blank C-14	SB 112320O	Tray01:3	---	
113	23NO2010D5_113	CS-4 HRDXNL4_00095	CCV 112320K	Tray01:2	Dioxin	

Log File Reviewed
RDR
11/25/20

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck

Process Options	Action On Error	s5
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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Process Options	Action On Error	s5
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

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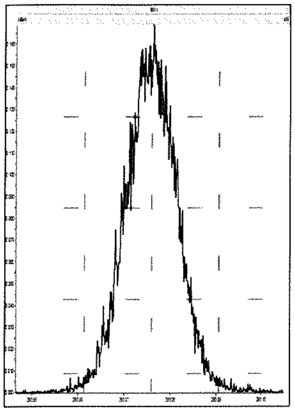

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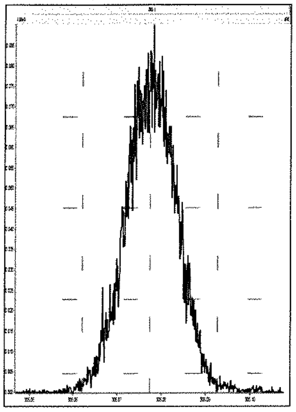

M 318.9792 R 11904
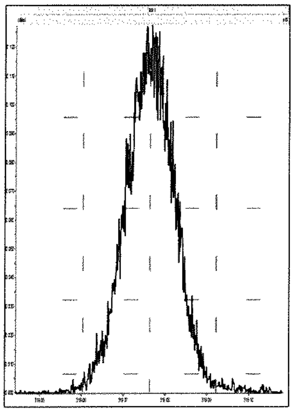

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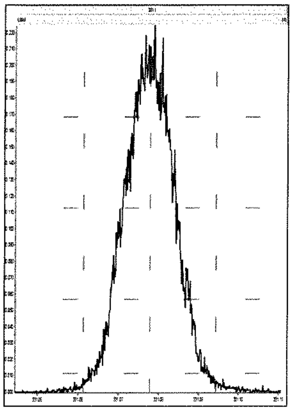

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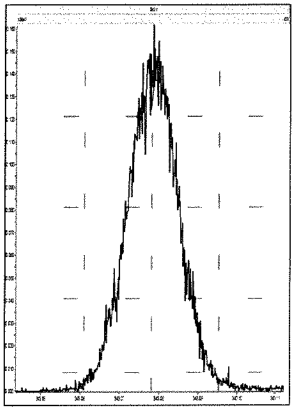

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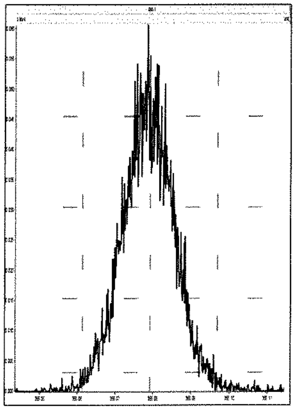

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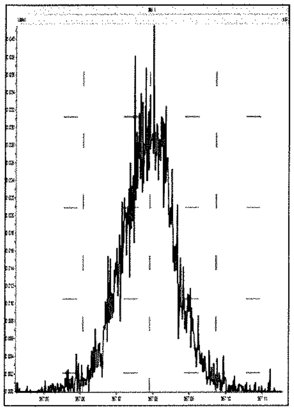

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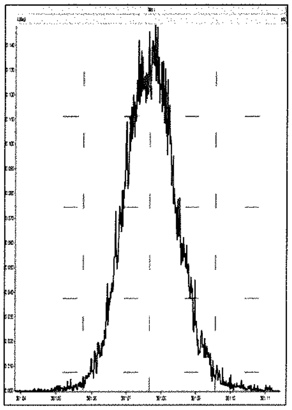

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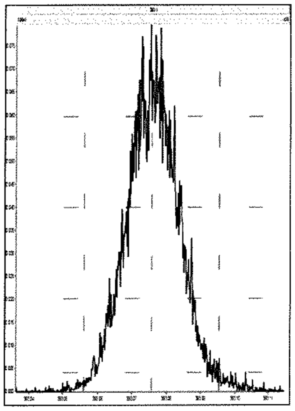

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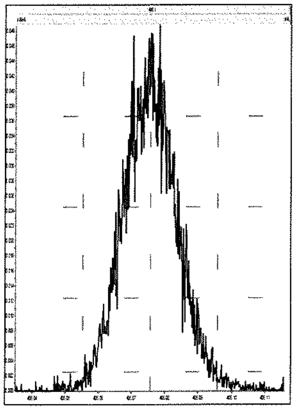

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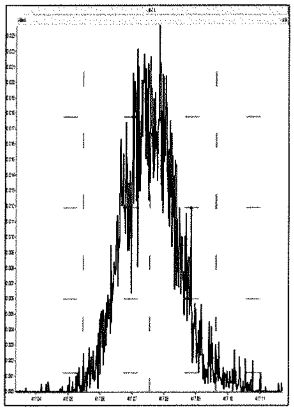

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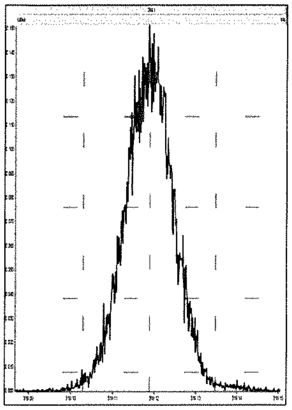

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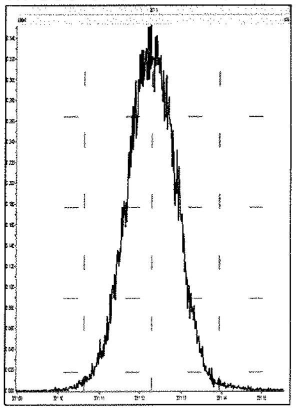

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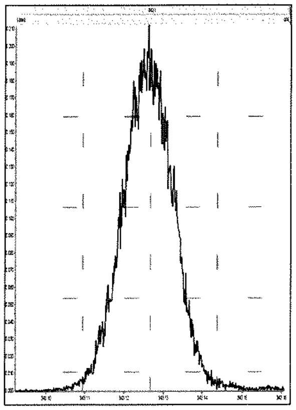

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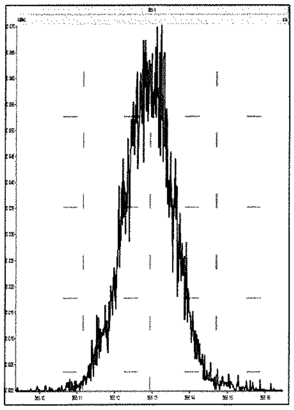

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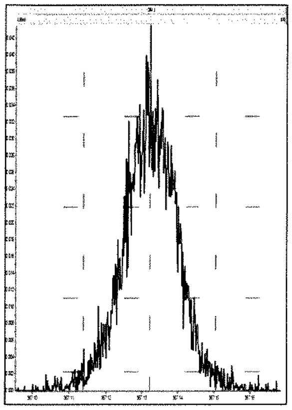

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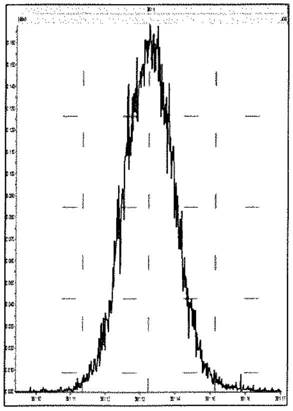

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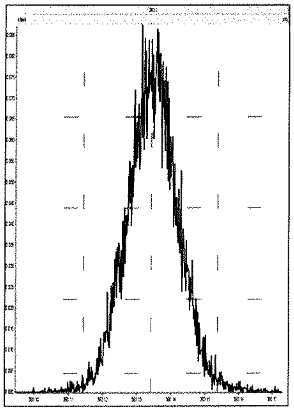

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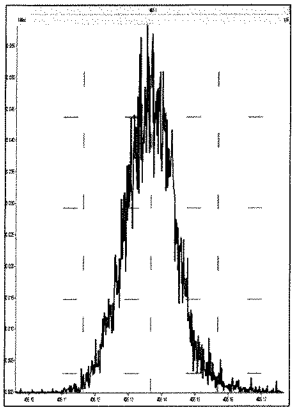

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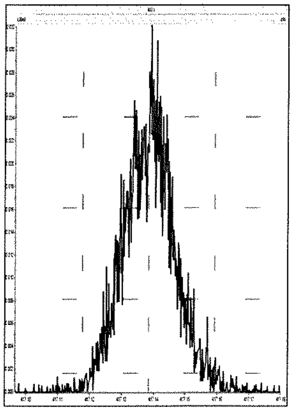

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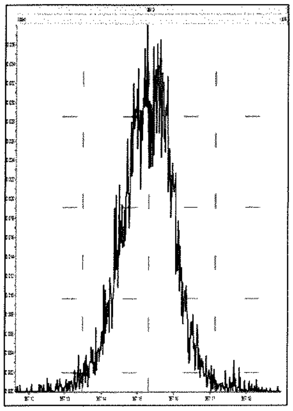

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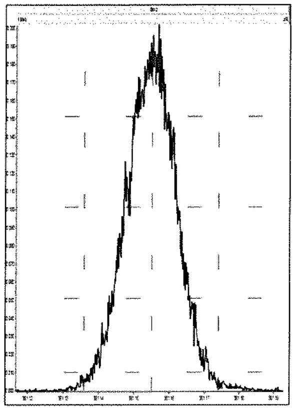

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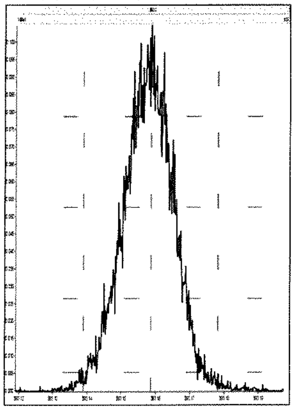

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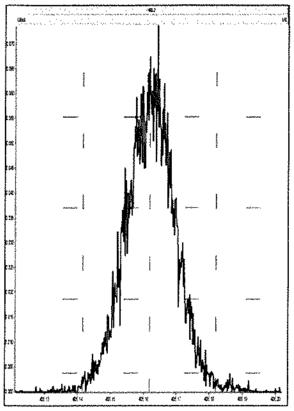

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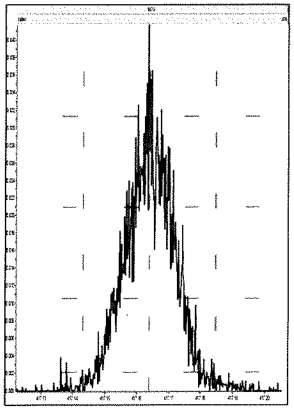

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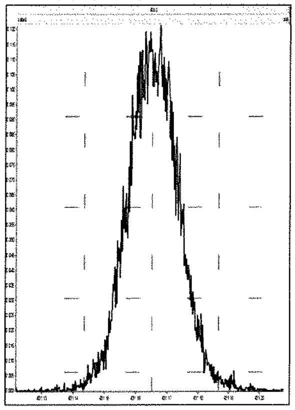

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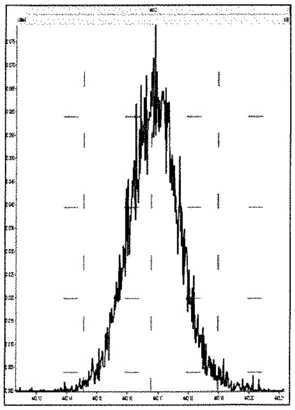

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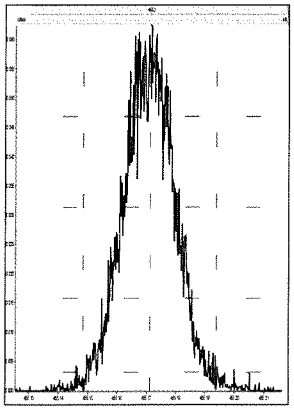

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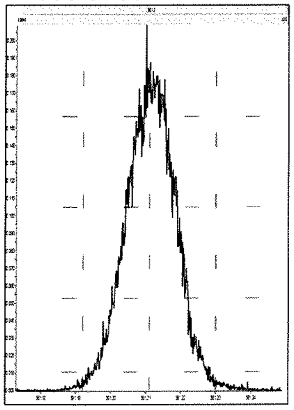

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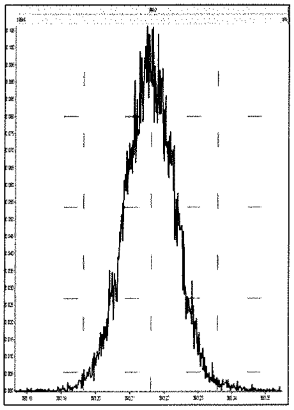

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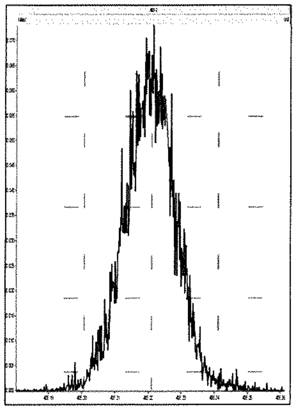

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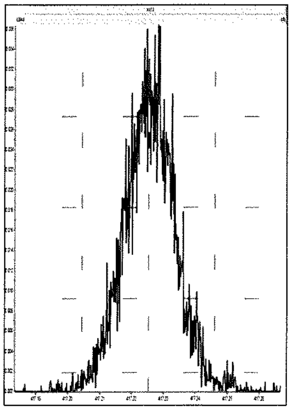

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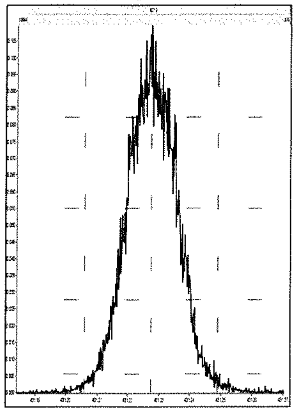

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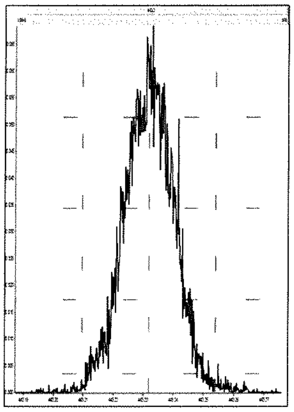

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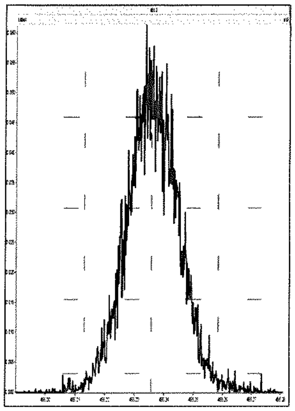

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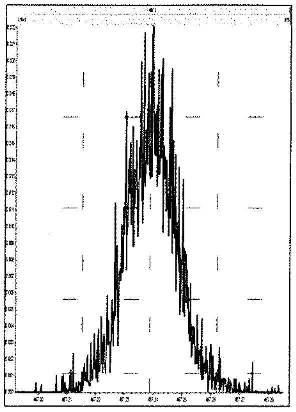

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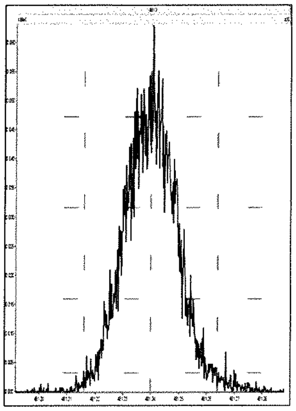

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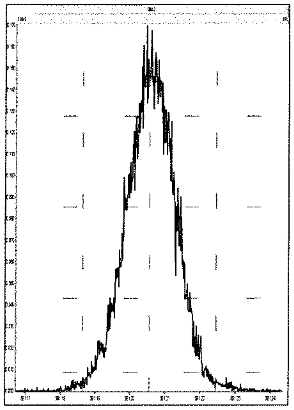

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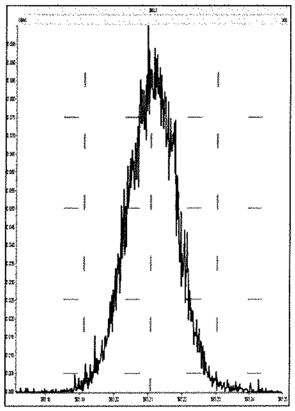

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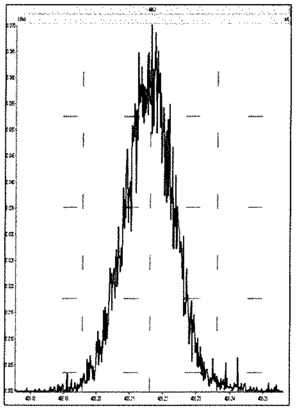

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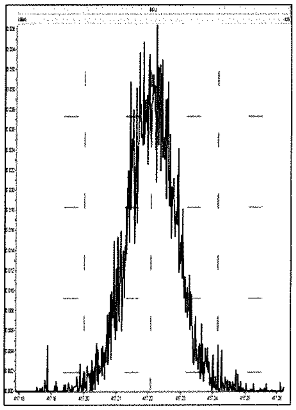

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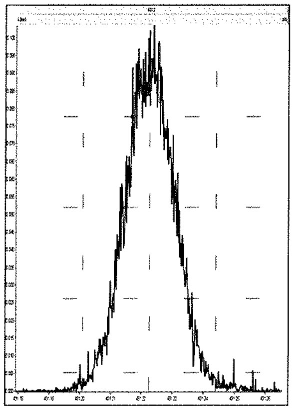

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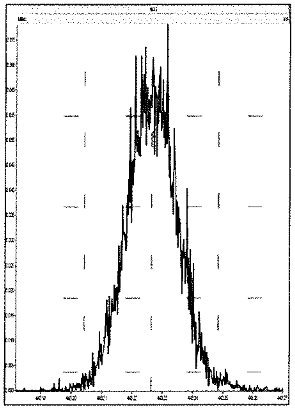

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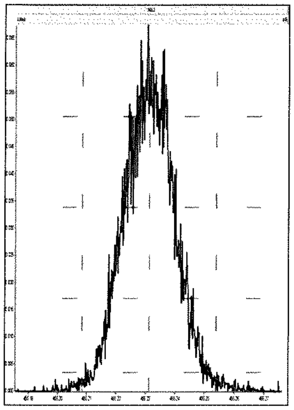

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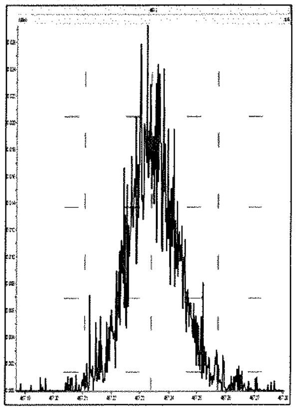

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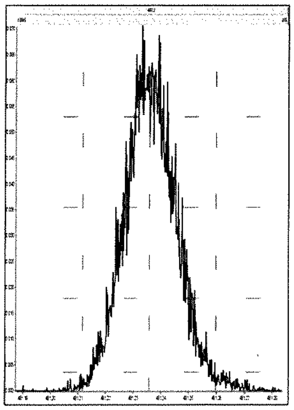

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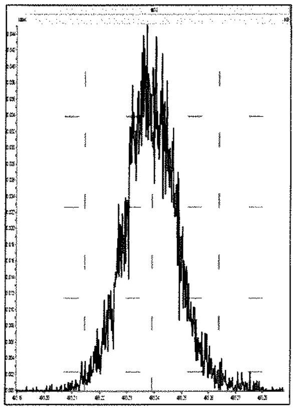

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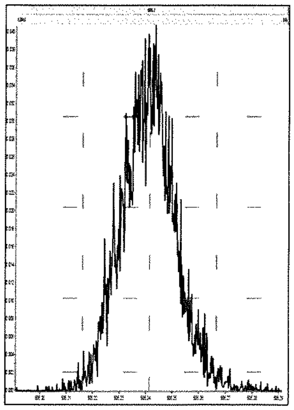

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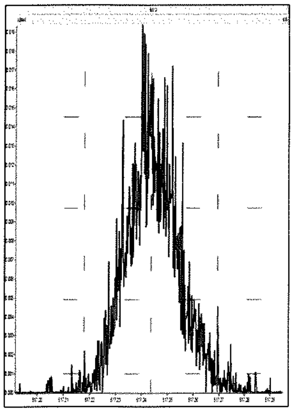

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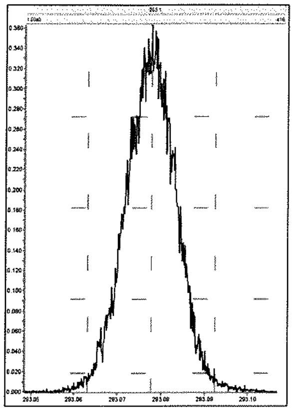

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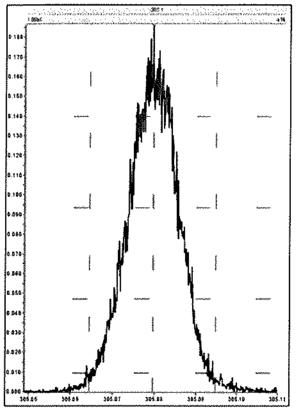

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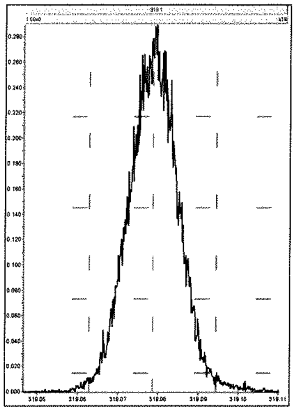

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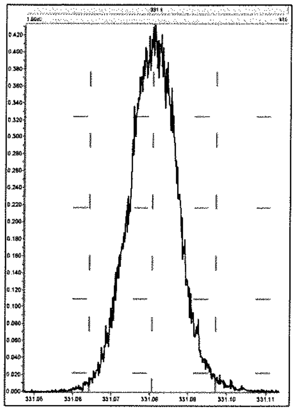

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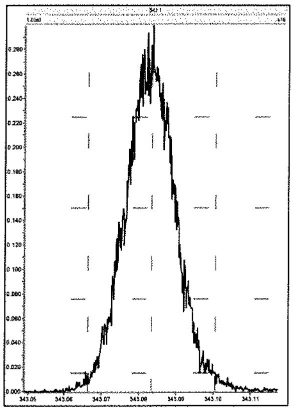

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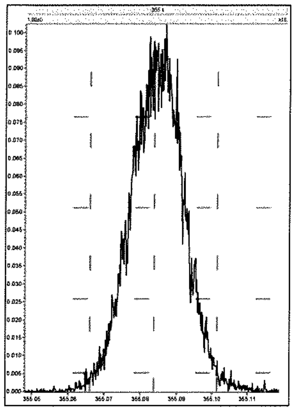

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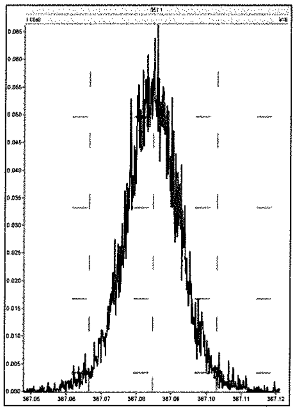

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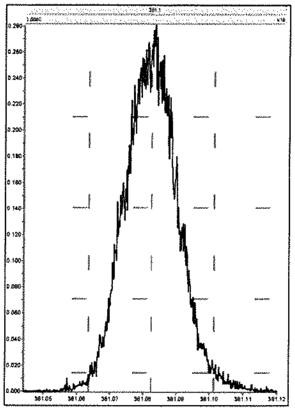

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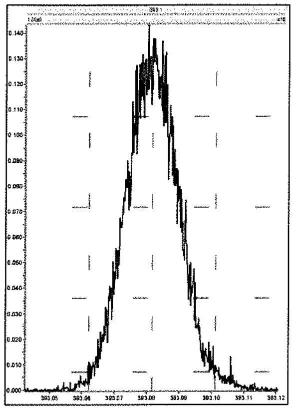

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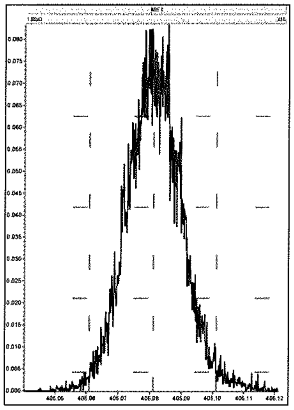

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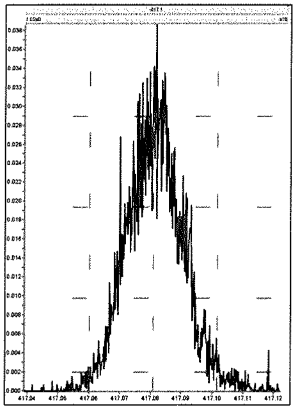

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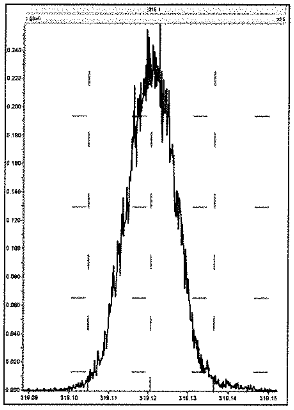

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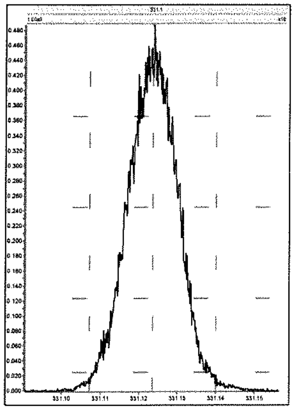

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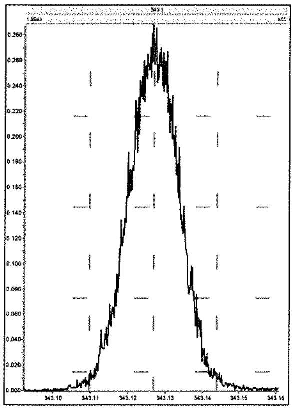

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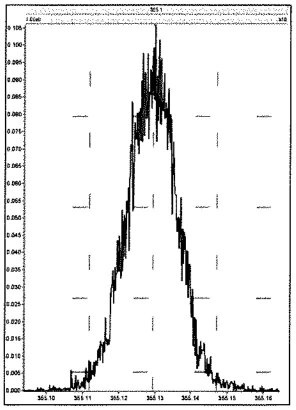

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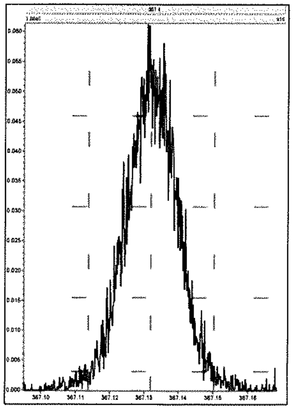

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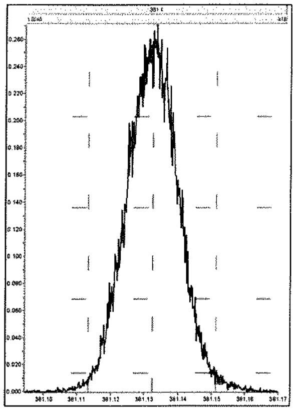

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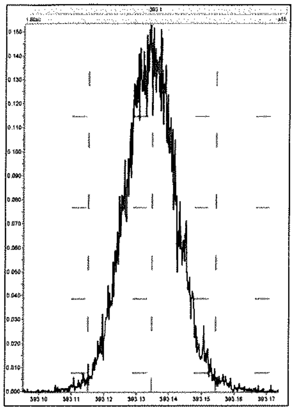

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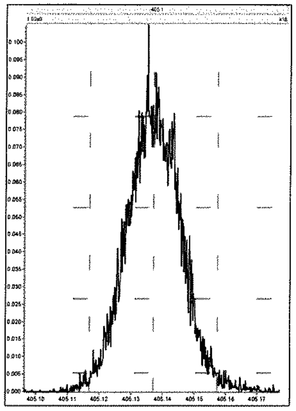

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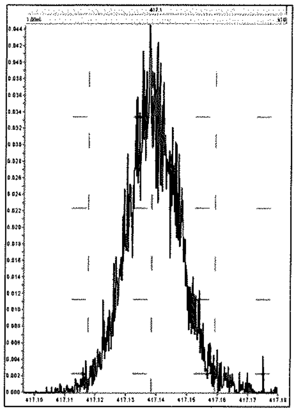

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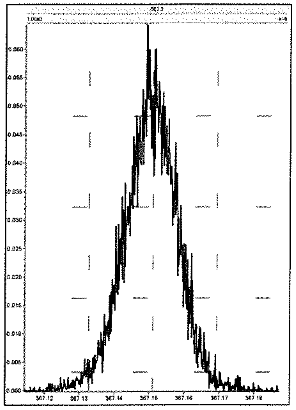

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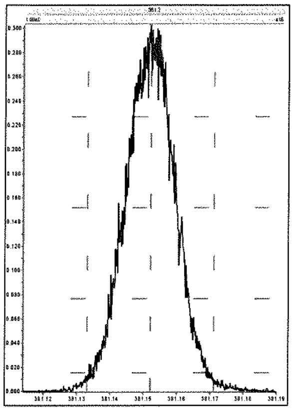

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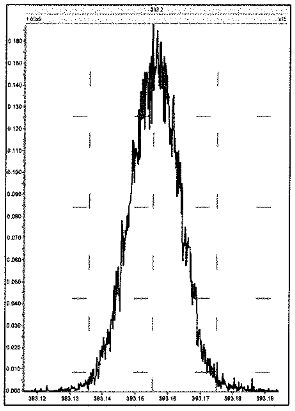

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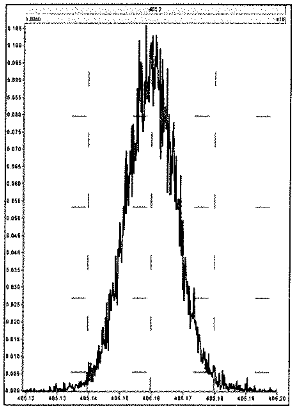

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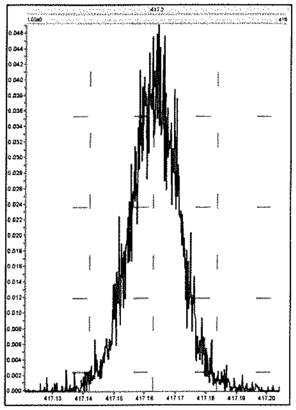

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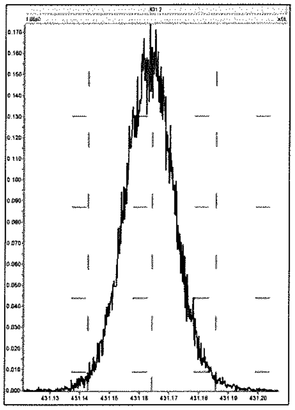

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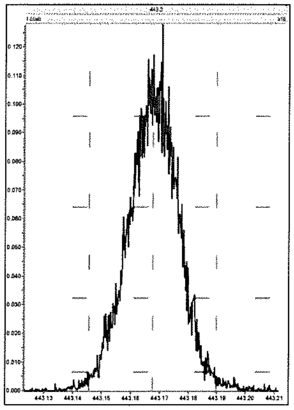

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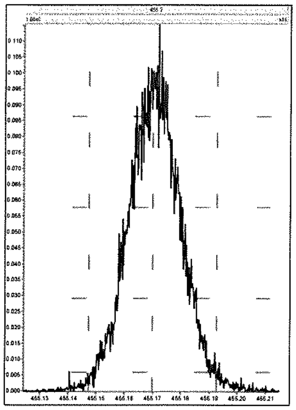

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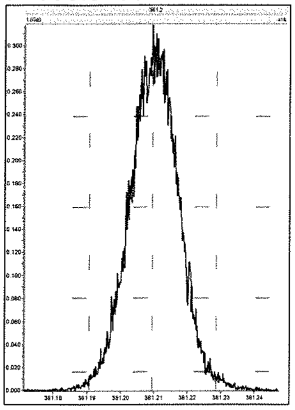

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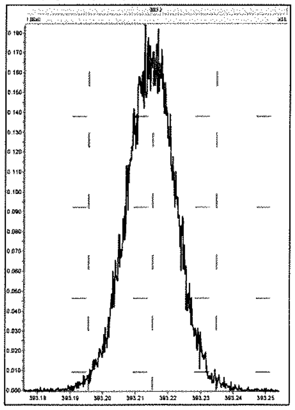

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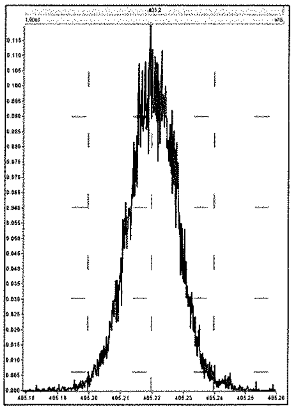

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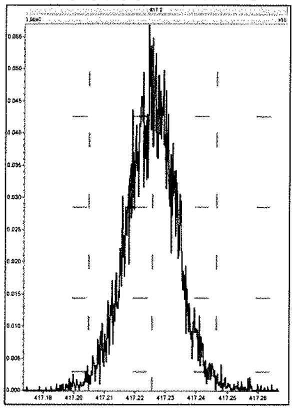

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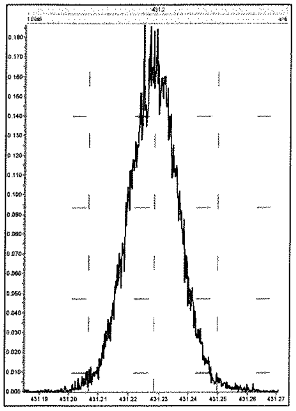

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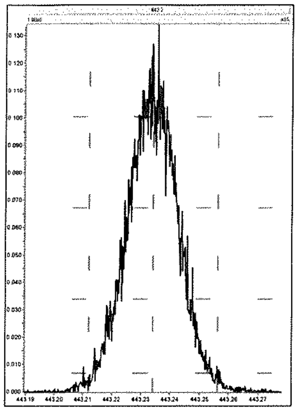

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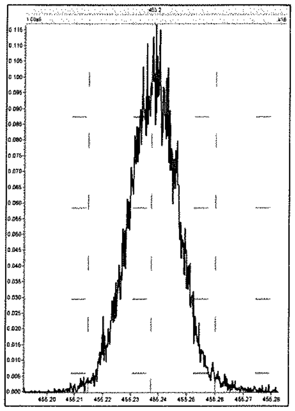

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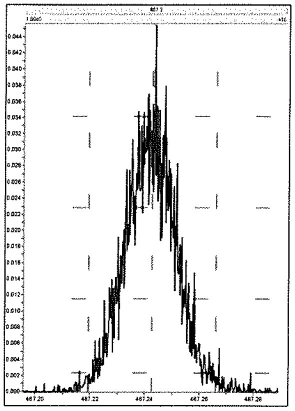

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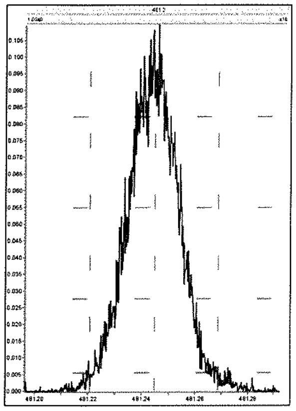

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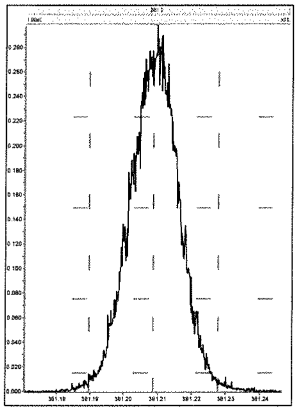

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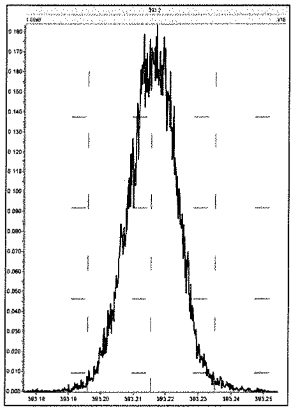

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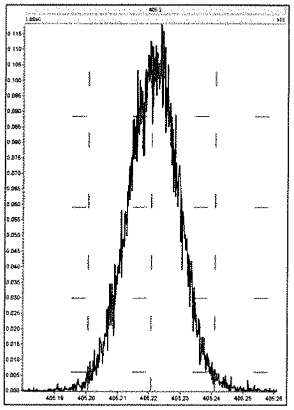

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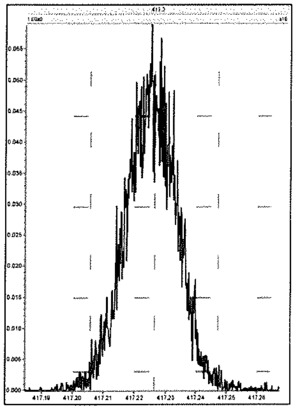

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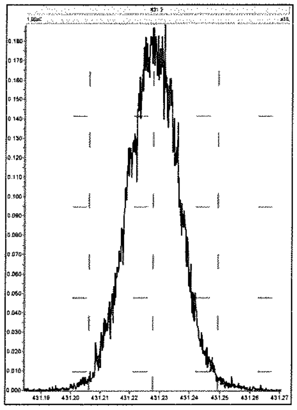

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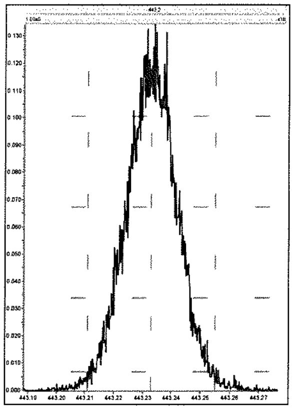

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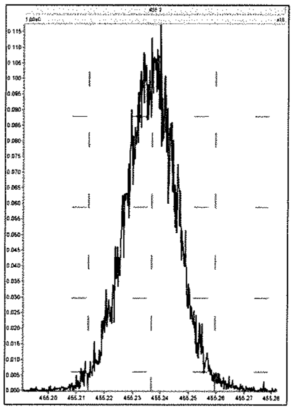

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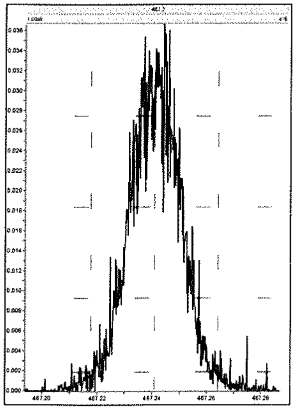

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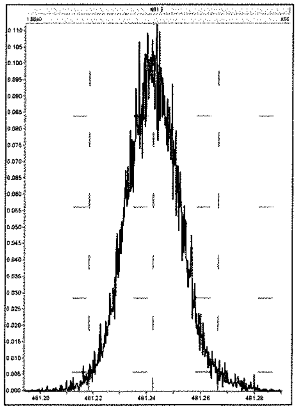

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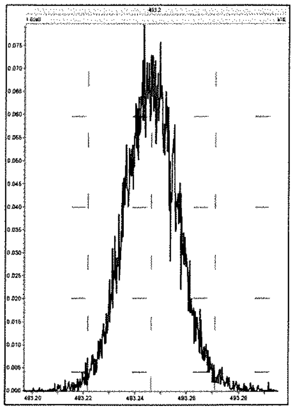

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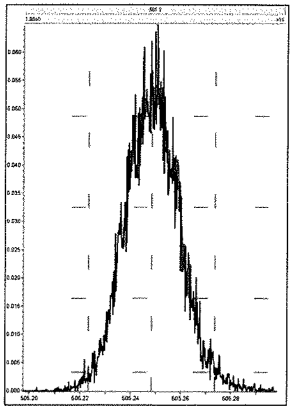

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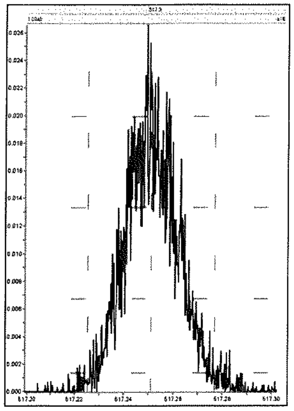

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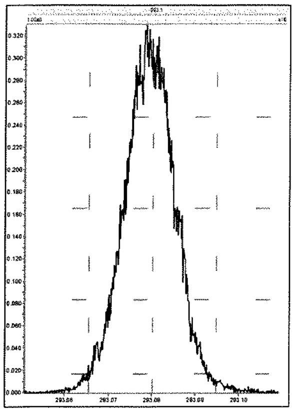

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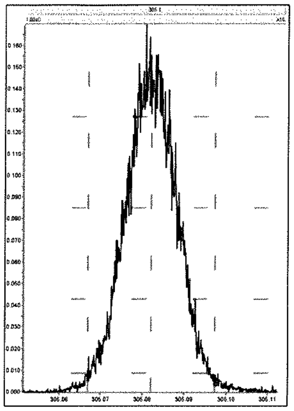

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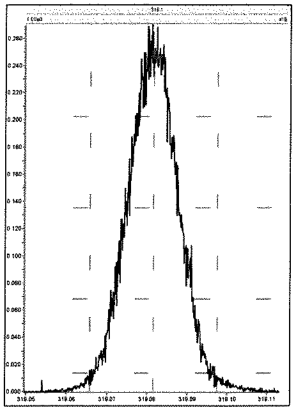

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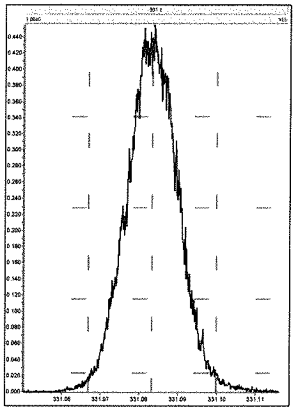

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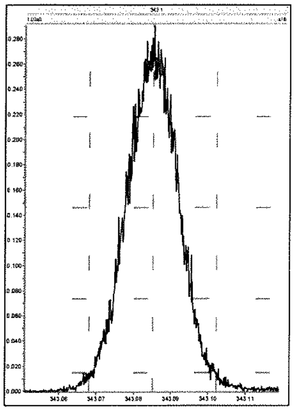

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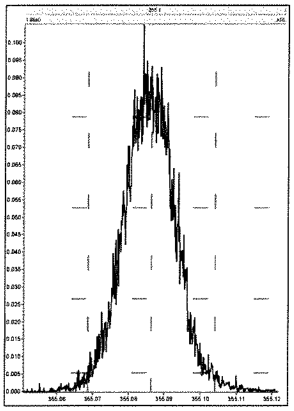

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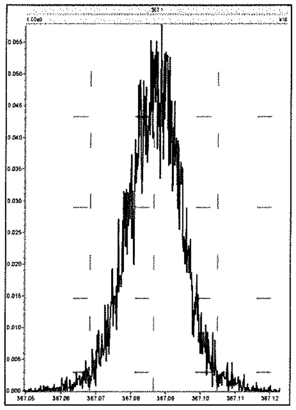

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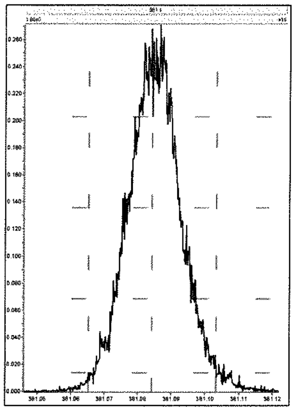

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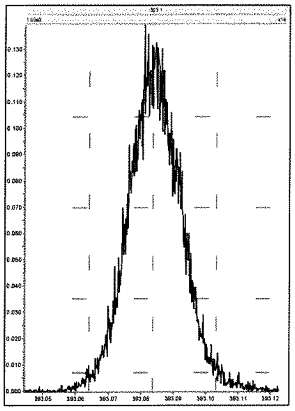

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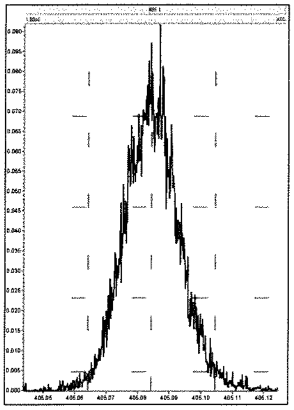

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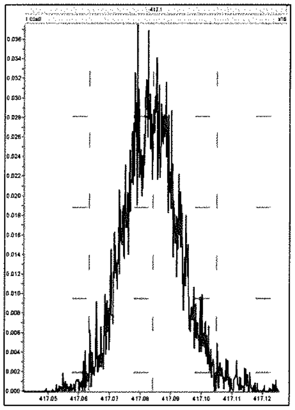

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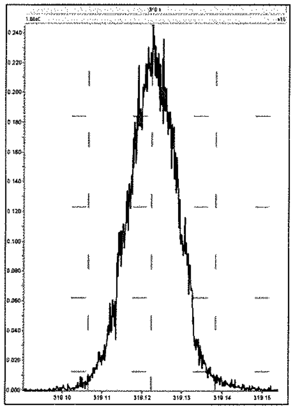

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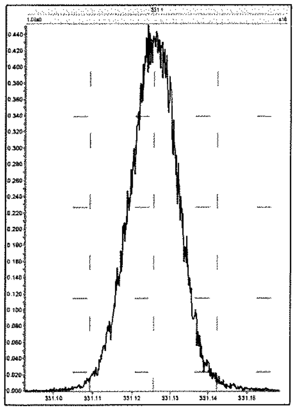

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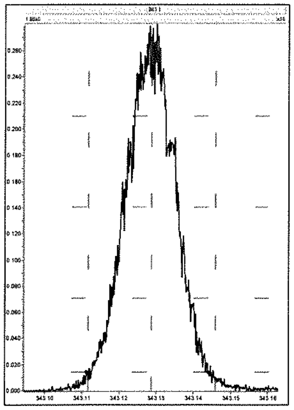

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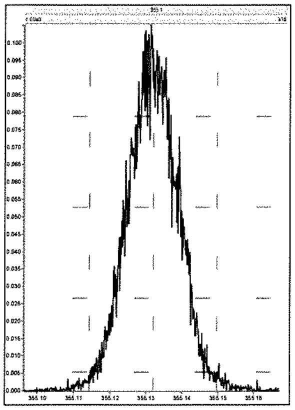

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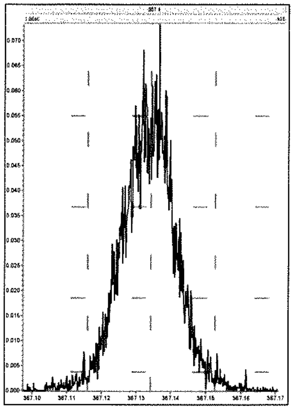

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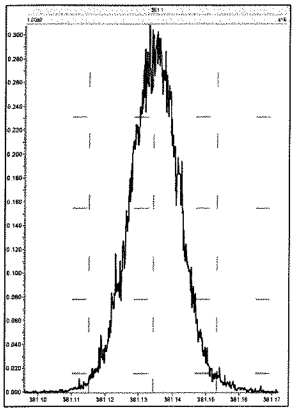

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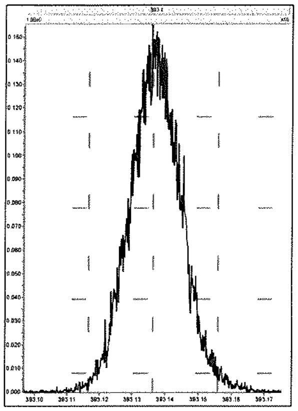

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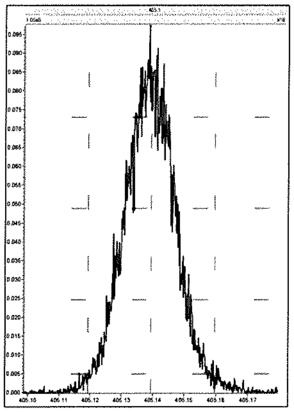

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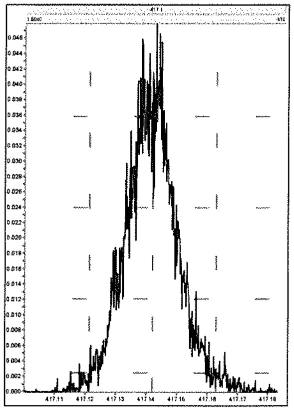

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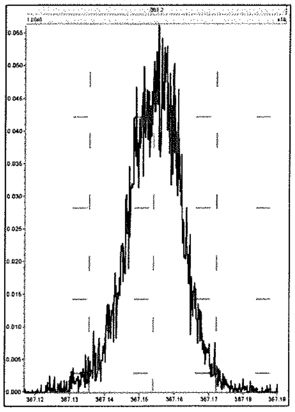

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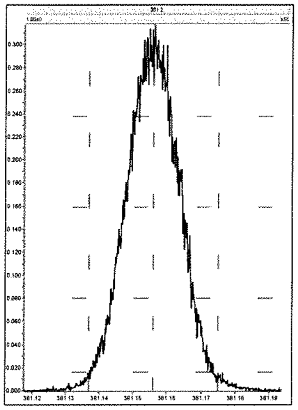

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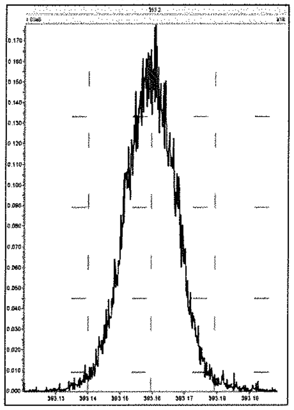

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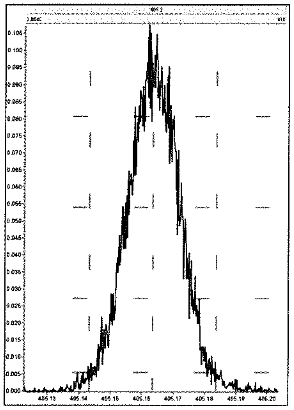

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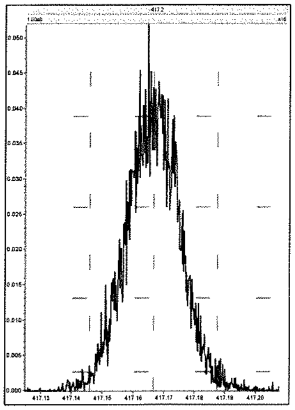

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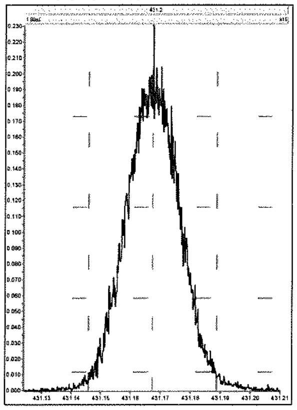

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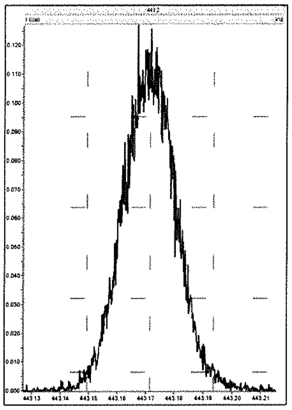

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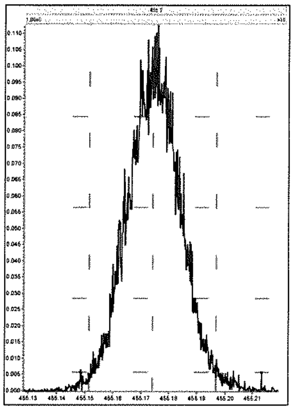

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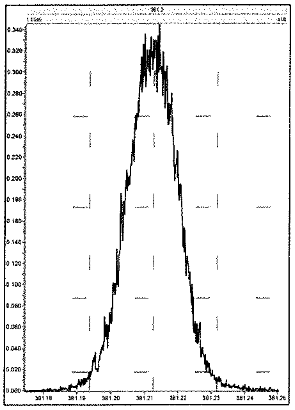

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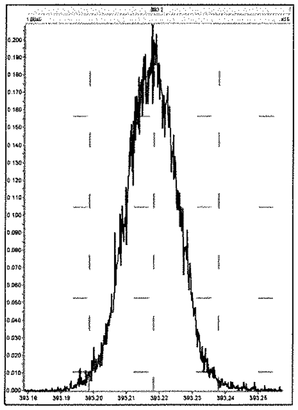

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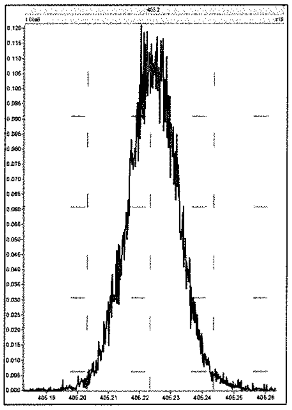

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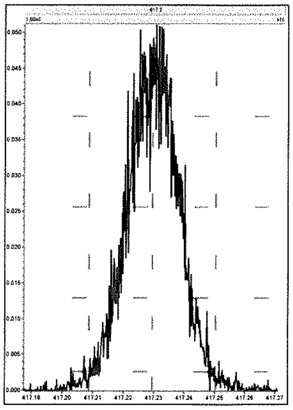

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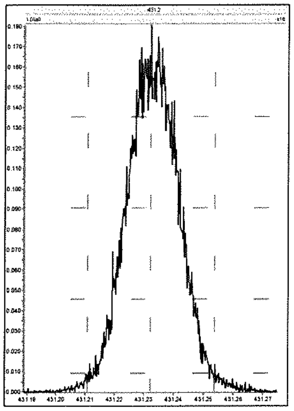

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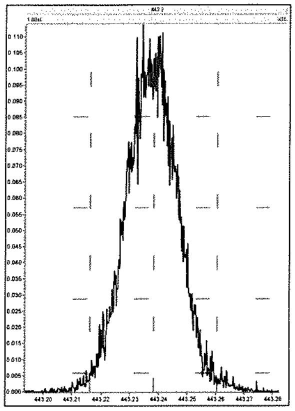

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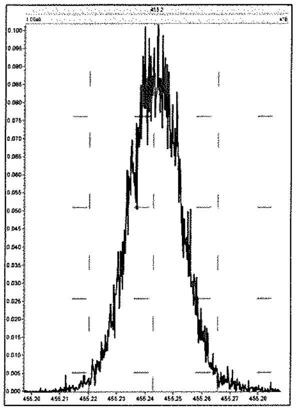

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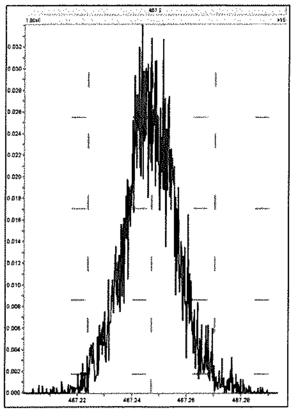

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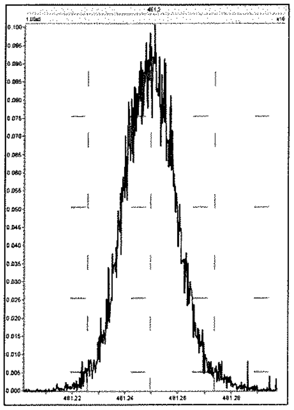

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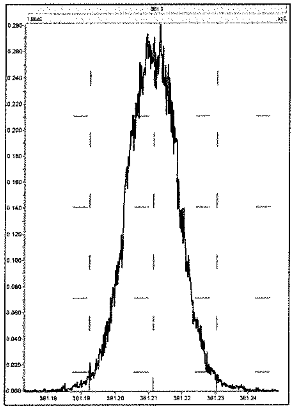

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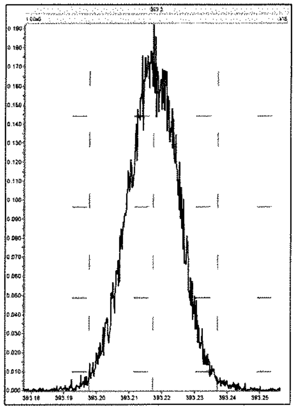

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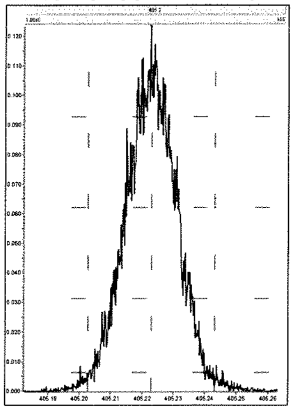

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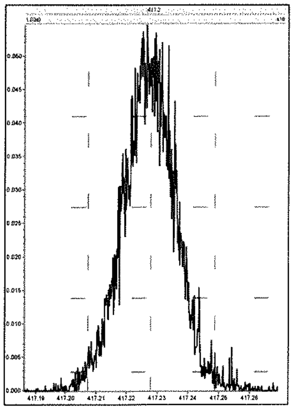

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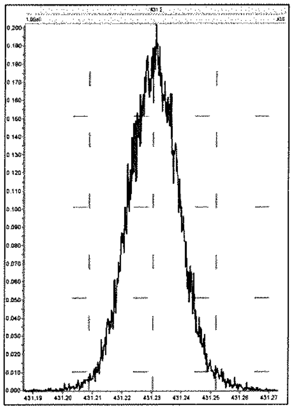

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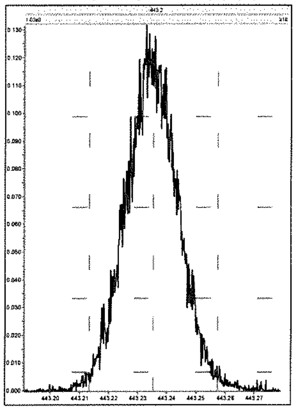

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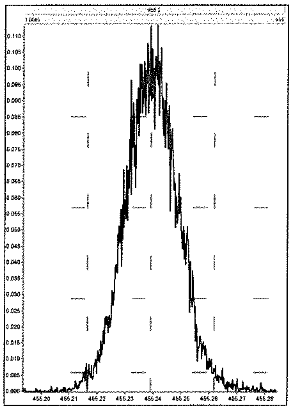

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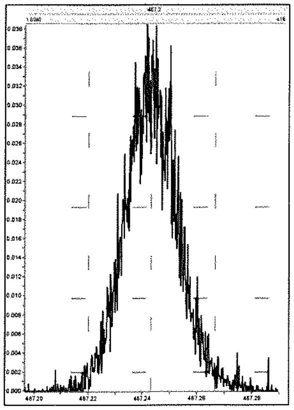

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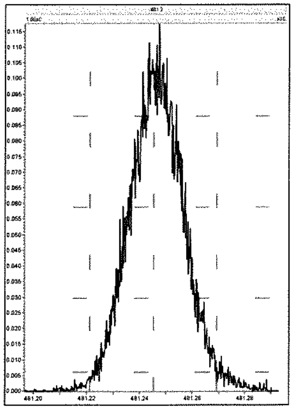

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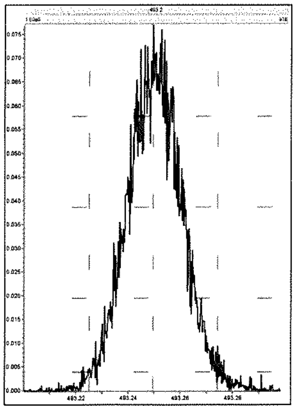

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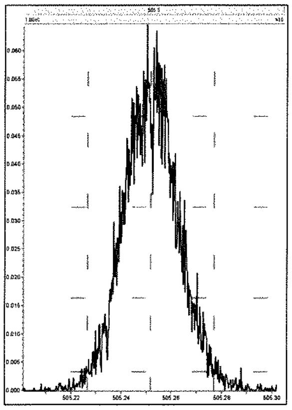

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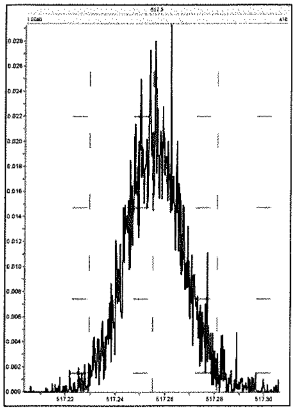

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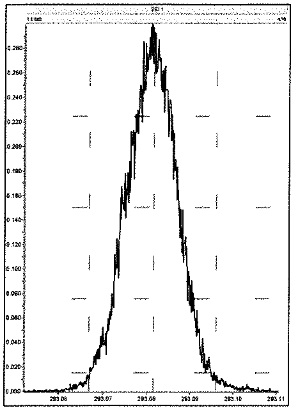

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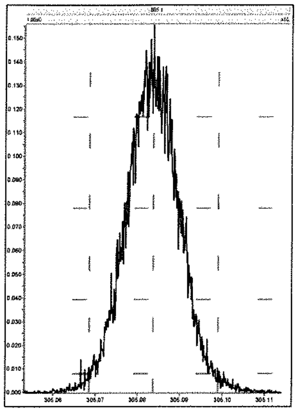

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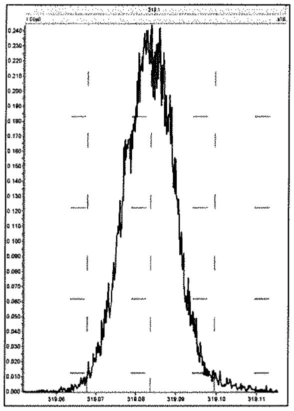

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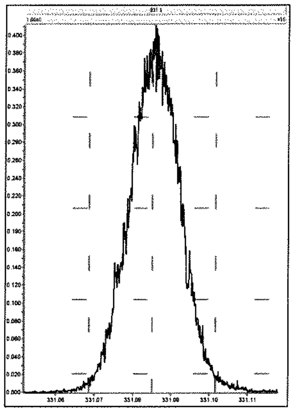

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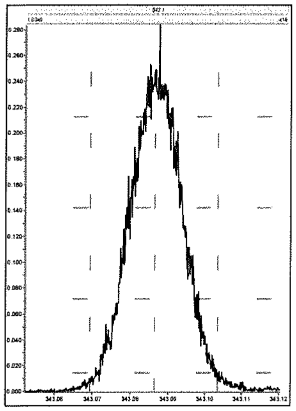

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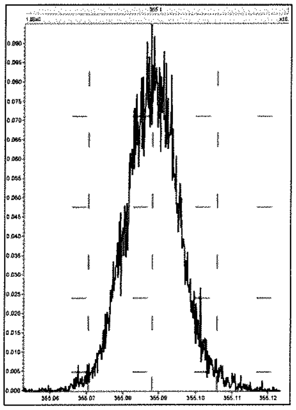

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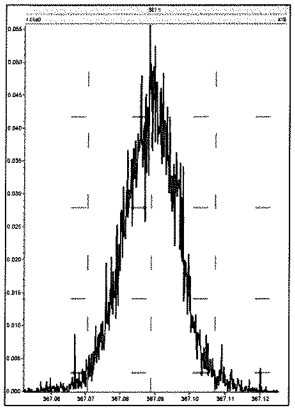

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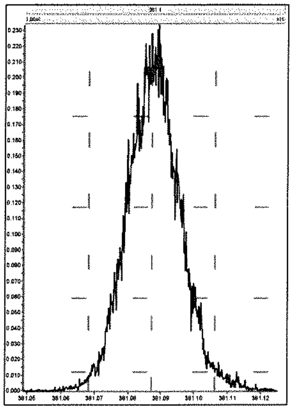

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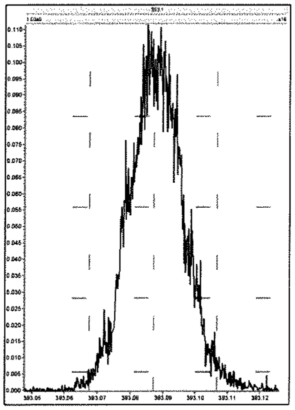

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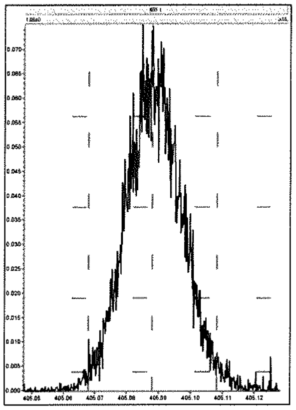

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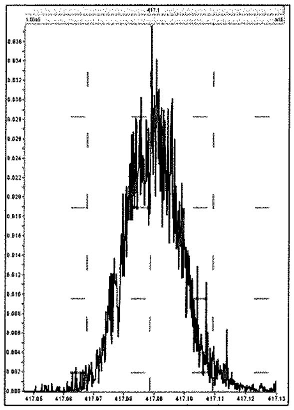

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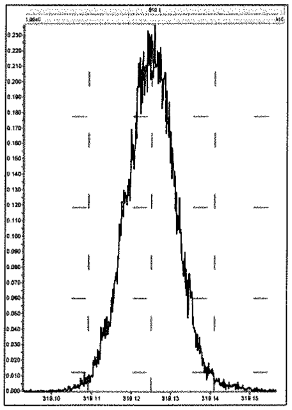

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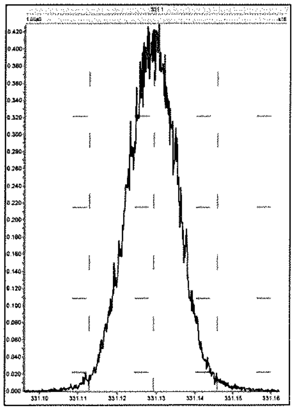

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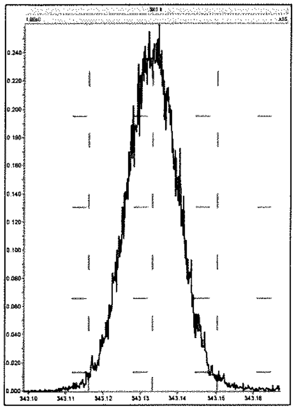

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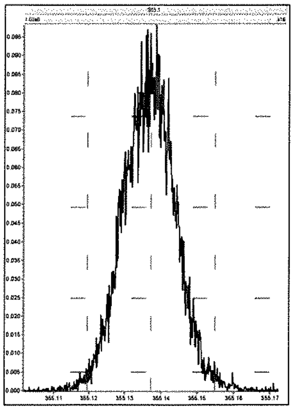

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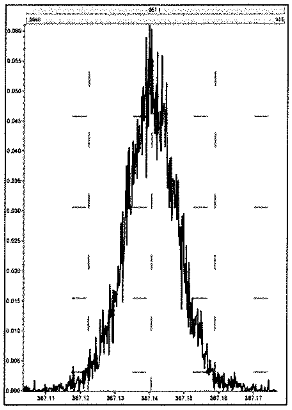

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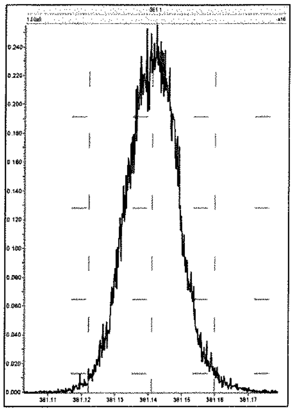

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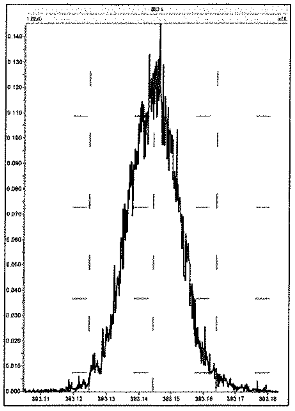

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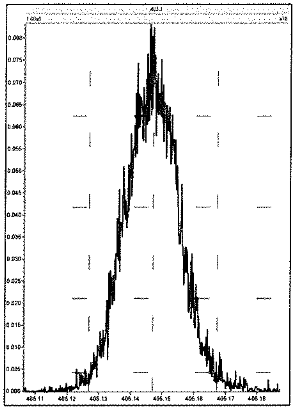

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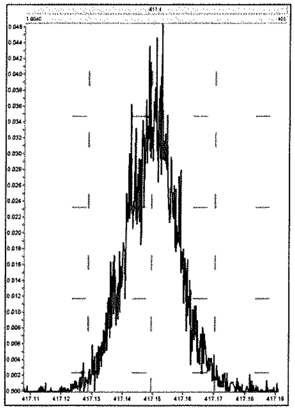

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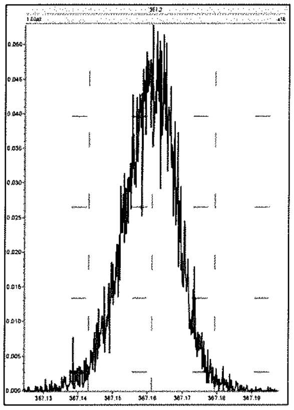

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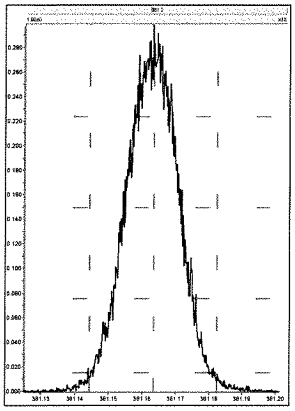

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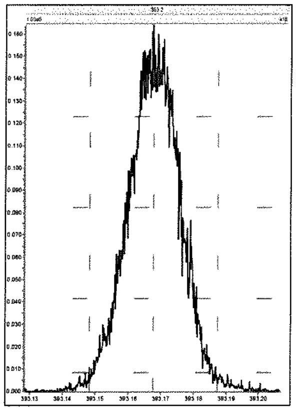

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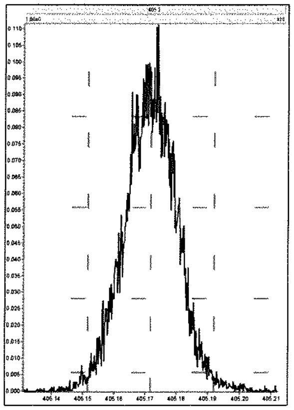

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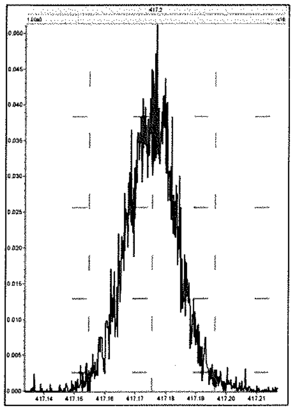

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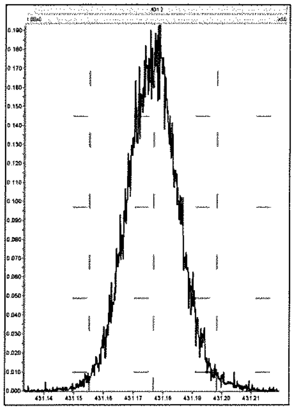

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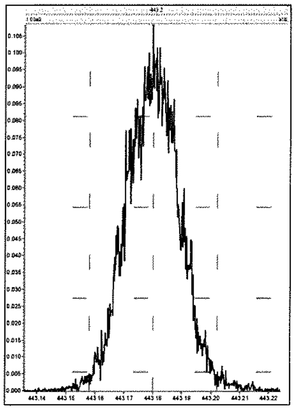

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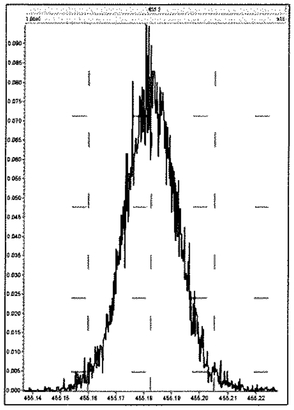

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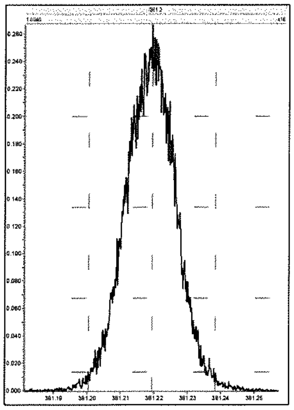

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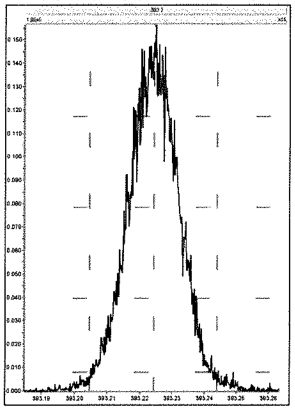

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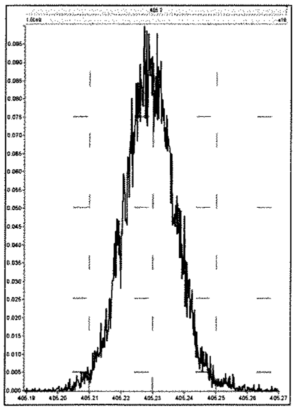

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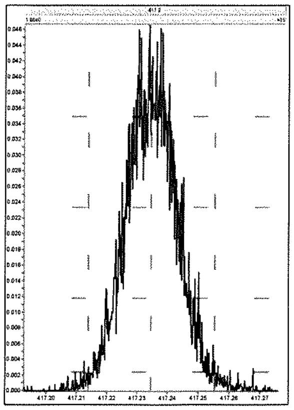

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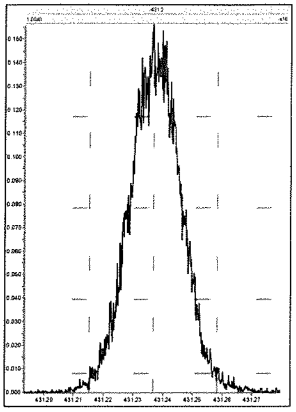

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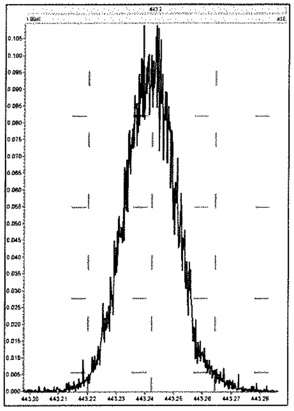

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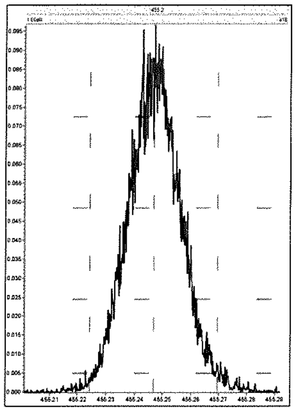

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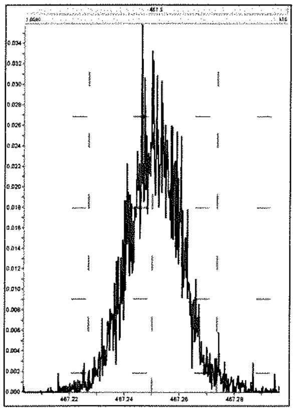

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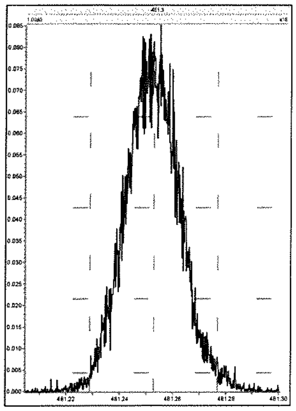

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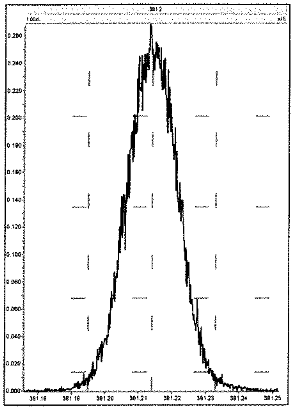

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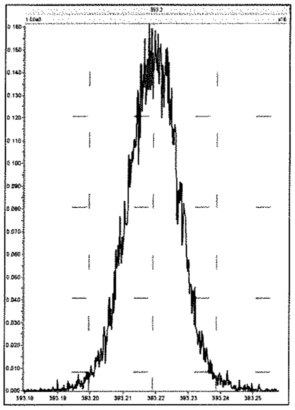

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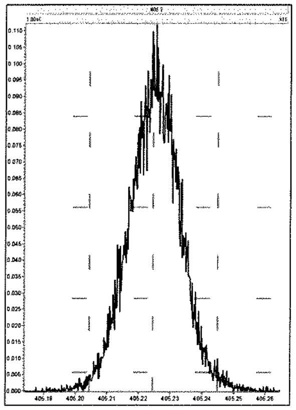

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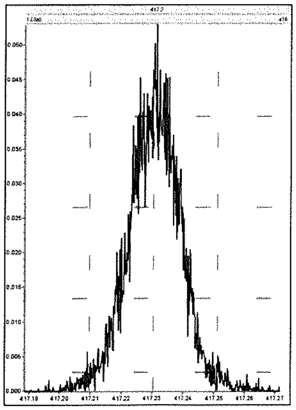

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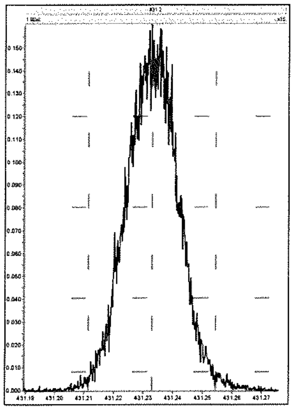

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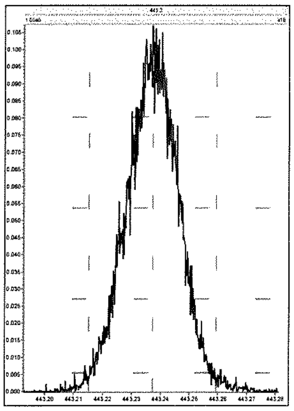

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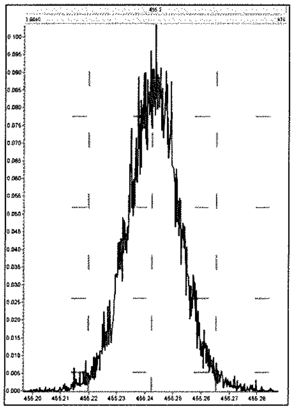

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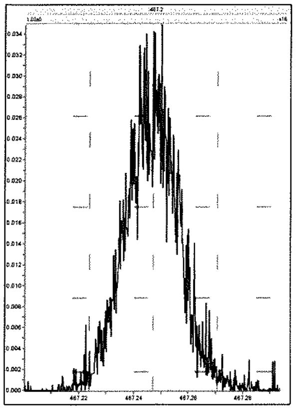

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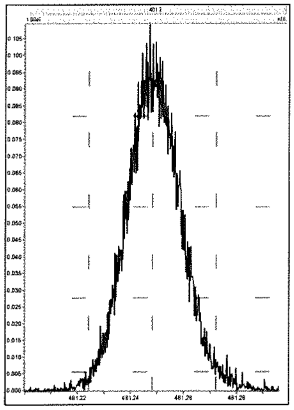

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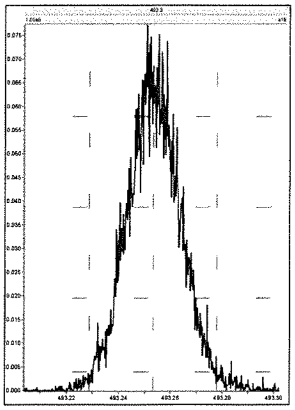

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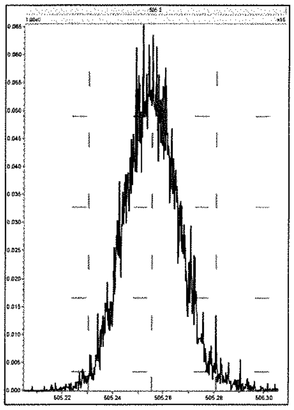

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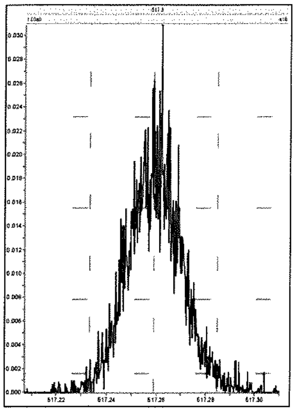

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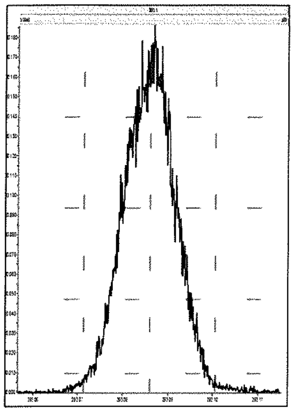

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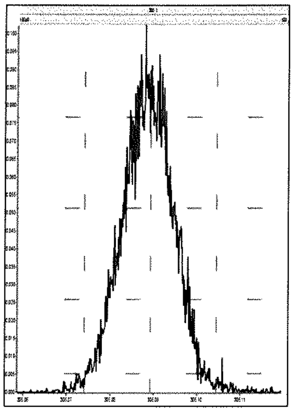

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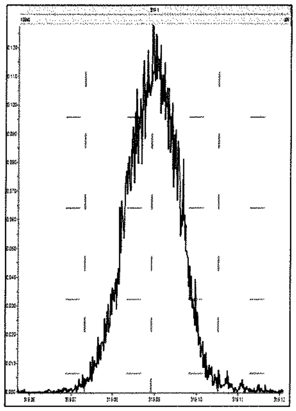

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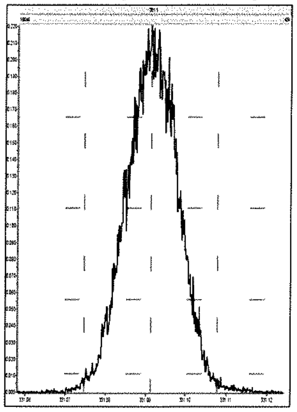

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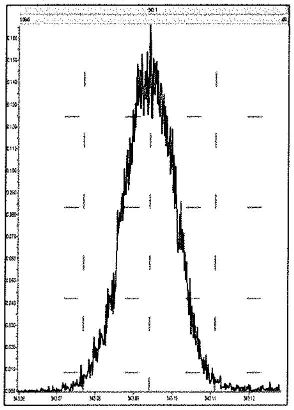

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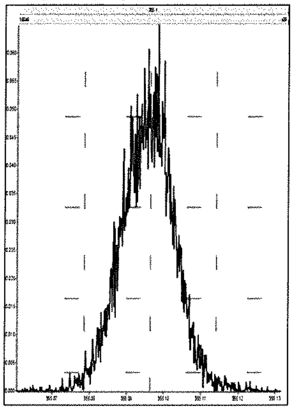

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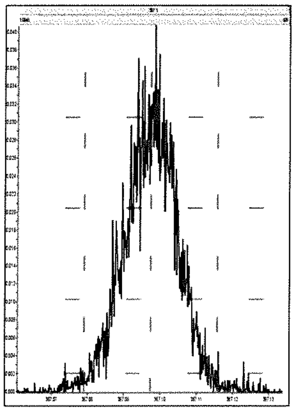

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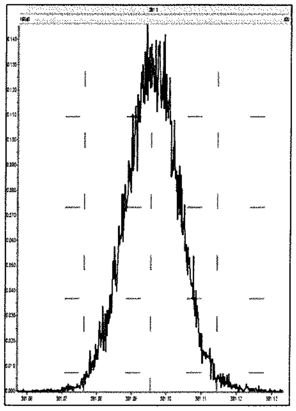

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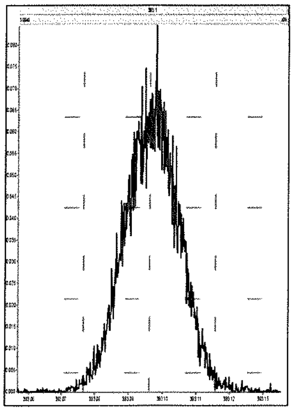

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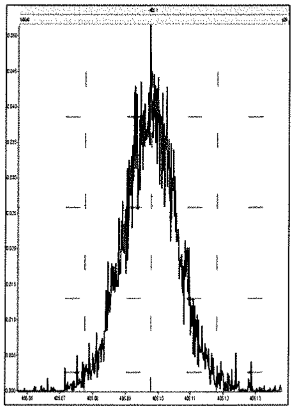

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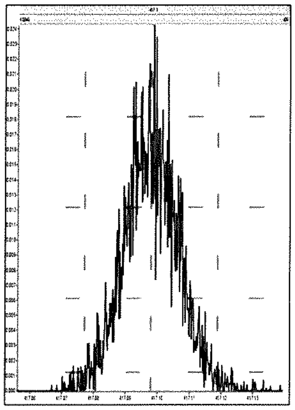

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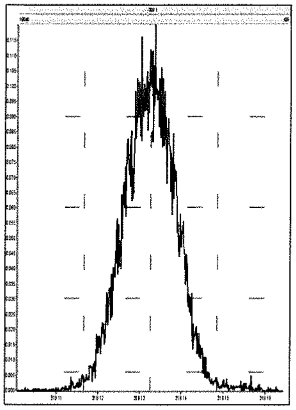

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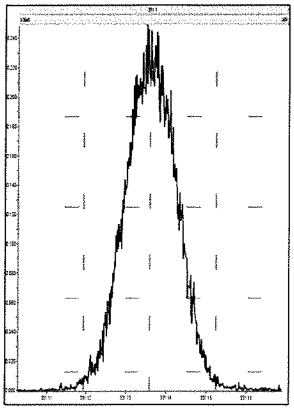

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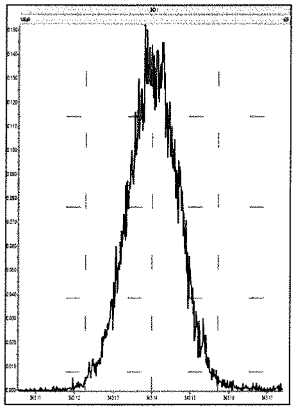

M 354.9792 R 11834

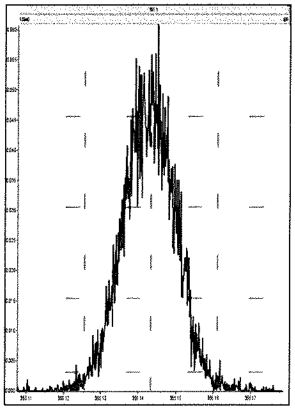

M 366.9792 R 11165

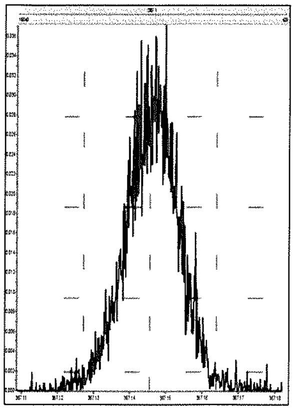

M 380.9760 R 11993

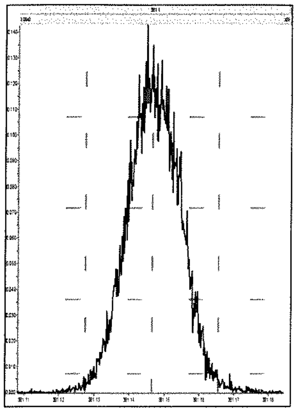

M 392.9760 R 11684

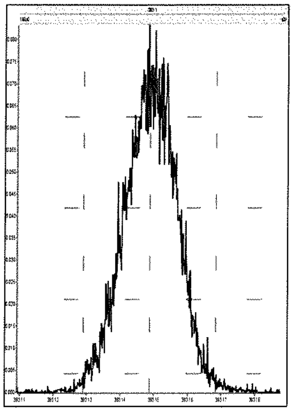

M 404.9760 R 11936

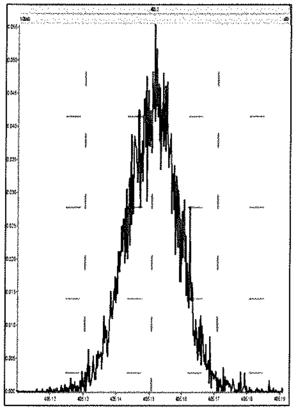

M 416.9760 R 11936

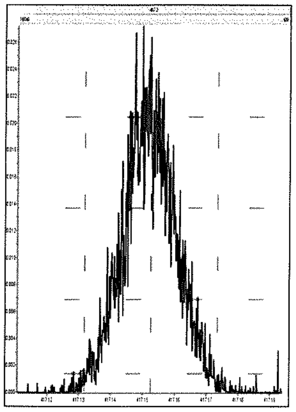

M 366.9792 R 11711

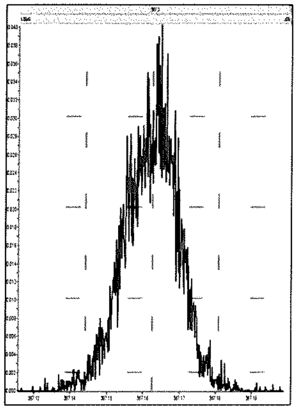

M 380.9760 R 11467

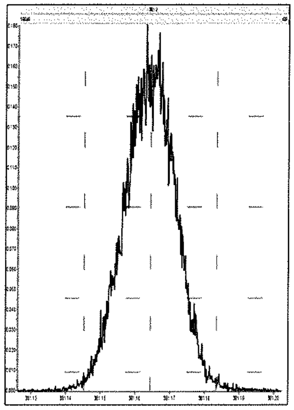

M 392.9760 R 11968

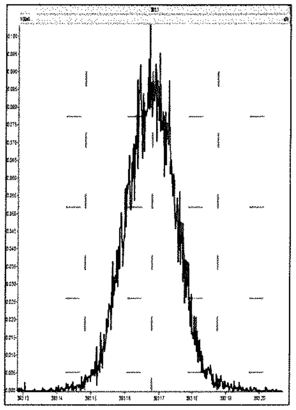

M 404.9760 R 12109

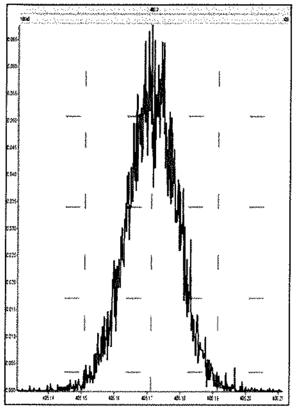

M 416.9760 R 12224

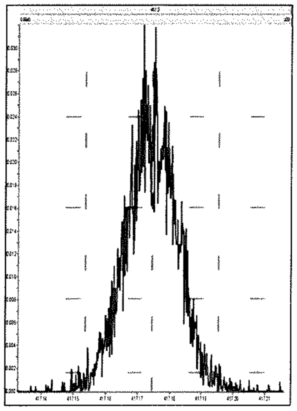

M 430.9728 R 12065

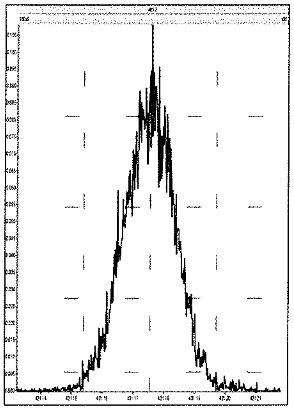

M 442.9728 R 11111

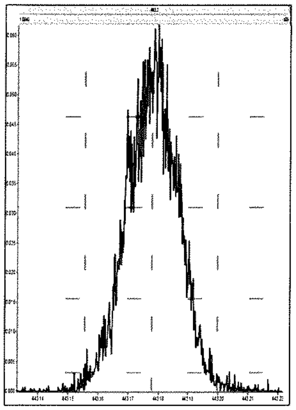

M 454.9728 R 11775

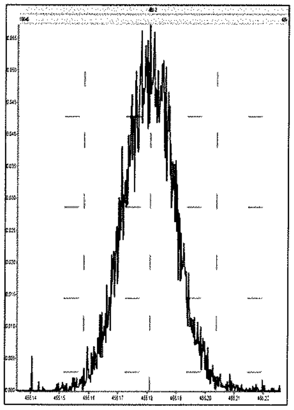

M 380.9760 R 11520

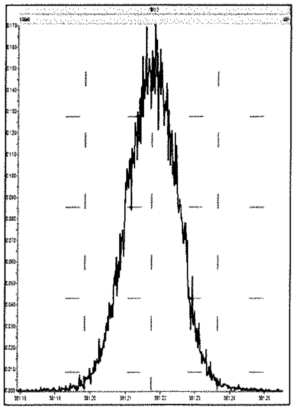

M 392.9760 R 12165

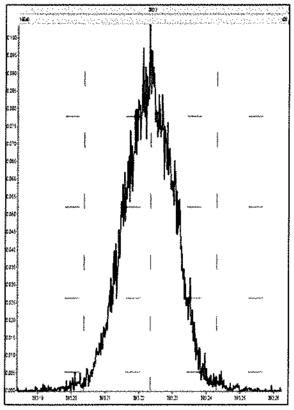

M 404.9760 R 12168

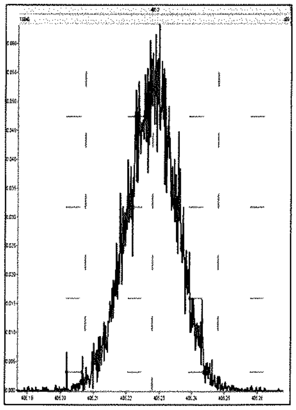

M 416.9760 R 12019

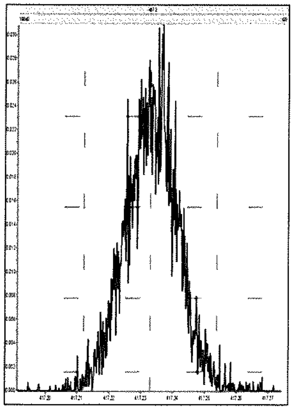

M 430.9728 R 11823

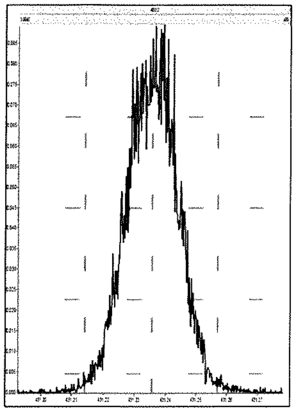

M 442.9728 R 11293

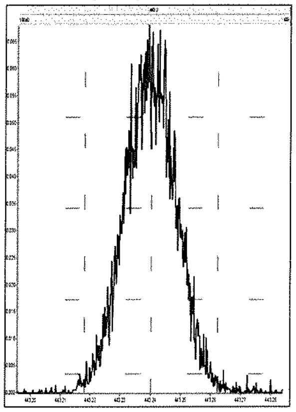

M 454.9728 R 11961

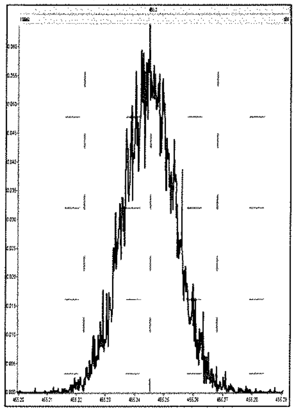

M 466.9728 R 12782

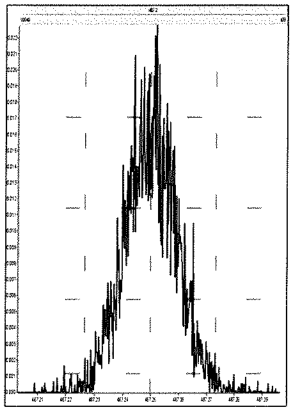

M 480.9696 R 11905

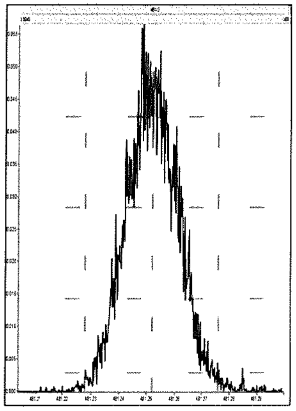

M 380.9760 R 11740

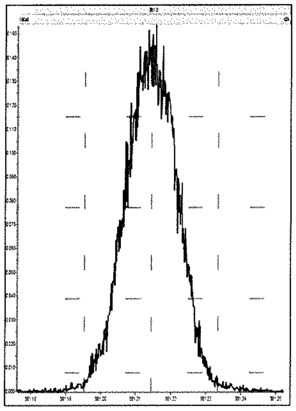

M 392.9760 R 12107

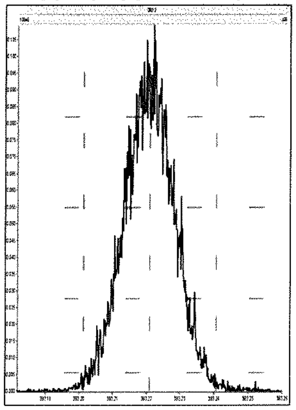

M 404.9760 R 12464

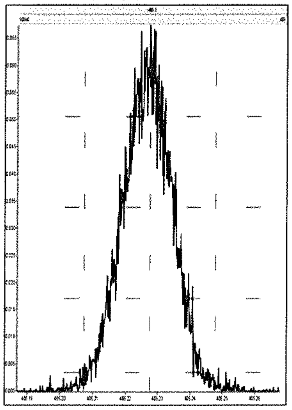

M 416.9760 R 12448

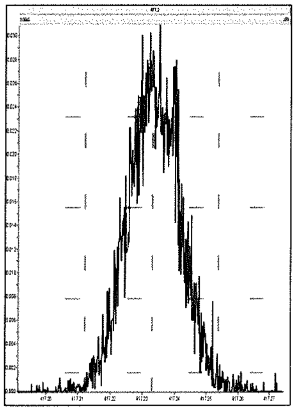

M 430.9728 R 11608

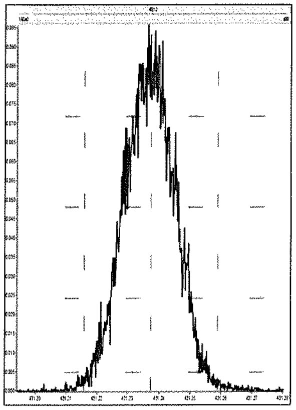

M 442.9728 R 12438

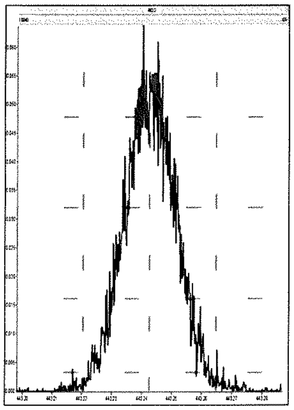

M 454.9728 R 11968

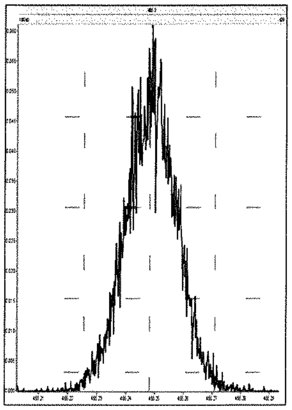

M 466.9728 R 14001

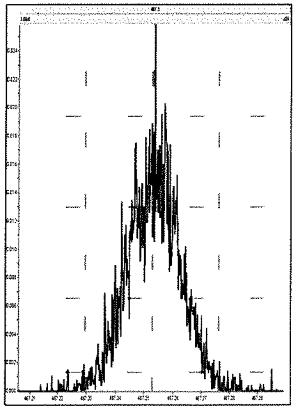

M 480.9696 R 11636

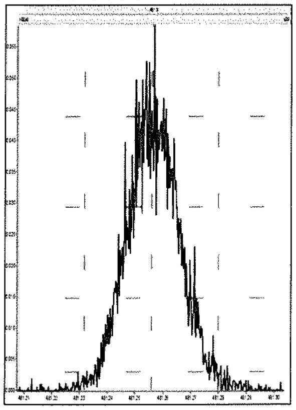

M 492.9696 R 12661

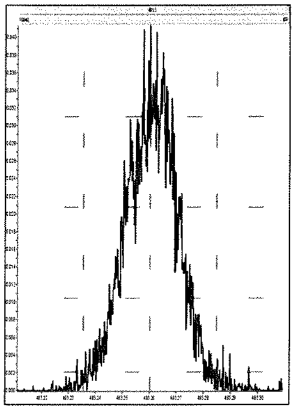

M 504.9696 R 12515

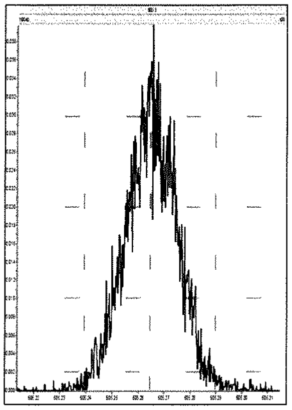

M 516.9697 R 13157

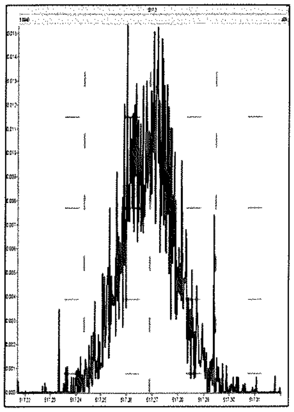

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 15:13:12 ALS Bottle#: 2 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 112320A CS-4 HRDXNL4_00095
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:44 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: arghestanis Date: 24-Nov-2020 16:18:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.854	28925610	0.74	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.339	46292449	0.78	1.3598	117.7	117.7	0.2970	0.2970	118	
2,3,7,8-TCDF	17.354	4626119	0.78	0.9077	11.0	11.0	0.0275	0.0275	110	
A Non-2,3,7,8-sub-TCDF	17.029						0.0275	0.0275		
S Total TCDF					11.0	11.0	0.0275	0.0275		
D 13C-2,3,7,8-TCDD	18.050	29562710	0.73	1.0536	97.0	97.0	0.2391	0.2391	97.01	
2,3,7,8-TCDD	18.065	3249938	0.78	1.0061	10.9	10.9	0.0462	0.0462	109	
$ 37Cl4-2,3,7,8-TCDD	18.065	3231410		1.0488	10.7	10.7	0.0194	0.0194	107	
A Non-2,3,7,8-sub-TCDD	17.491						0.0462	0.0462		
S Total TCDD					10.9	10.9	0.0462	0.0462		
D 13C-1,2,3,7,8-PeCDF	22.383	34872451	1.57	1.1306	106.6	106.6	0.2545	0.2545	107	
1,2,3,7,8-PeCDF	22.410	17426870	1.61	0.9147	54.6	54.6	0.1874	0.1874	109	
D 13C-2,3,4,7,8-PeCDF	23.746	32158952	1.60	1.0539	105.5	105.5	0.2730	0.2730	105	
2,3,4,7,8-PeCDF	23.774	16936654	1.61	0.9508	55.4	55.4	0.2091	0.2091	111	
A F1 PeCDFs	19.970						0.0278	0.0278		
A Non-2,3,7,8-sub-PeCDF	23.141						0.1974	0.1974		Rn
S Total PeCDF					110.0	110.0	0.1983	0.1983		
D 13C-1,2,3,7,8-PeCDD	24.469	22015596	1.59	0.8084	94.1	94.1	0.1288	0.1288	94.14	
1,2,3,7,8-PeCDD	24.496	11247916	1.59	0.9955	51.3	51.3	0.0852	0.0852	103	
A Non-2,3,7,8-sub-PeCDD	23.371						0.0852	0.0852		
S Total PeCDD					51.3	51.3	0.0852	0.0852		
D 13C-1,2,3,4,7,8-HxCDF	30.546	24065527	0.51	0.9225	117.9	117.9	0.6690	0.6690	118	
1,2,3,4,7,8-HxCDF	30.560	14268839	1.23	1.1090	53.5	53.5	0.3972	0.3972	107	
D 13C-1,2,3,6,7,8-HxCDF	30.719	26953564	0.52	1.0336	117.8	117.8	0.5971	0.5971	118	
1,2,3,6,7,8-HxCDF	30.746	15448892	1.26	1.0721	53.5	53.5	0.3788	0.3788	107	
D 13C-2,3,4,6,7,8-HxCDF	31.545	25743511	0.52	0.9773	119.0	119.0	0.6314	0.6314	119	
2,3,4,6,7,8-HxCDF	31.558	15103256	1.26	1.0838	54.1	54.1	0.3025	0.3025	108	
D 13C-1,2,3,7,8,9-HxCDF	32.343	23415238	0.51	0.9153	115.6	115.6	0.6742	0.6742	116	
1,2,3,7,8,9-HxCDF	32.357	13977478	1.23	1.0931	54.6	54.6	0.3198	0.3198	109	
A Non-2,3,7,8-sub-HxCDF	30.233						0.3449	0.3449		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					215.7	215.7	0.3495	0.3495		
* 13C-1,2,3,7,8,9-HxCDD	32.157	22129060	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.718	16630042	1.30	0.7977	94.2	94.2	0.4079	0.4079	94.21	
1,2,3,4,7,8-HxCDD	31.744	9560947	1.33	1.0014	57.4	57.4	0.2004	0.2004	115	
D 13C-1,2,3,6,7,8-HxCDD	31.824	22156299	1.29	1.0010	100.0	100.0	0.3250	0.3250	100	
1,2,3,6,7,8-HxCDD	31.837	10791060	1.19	0.8902	54.7	54.7	0.1926	0.1926	109	
1,2,3,7,8,9-HxCDD	32.170	11424768	1.28	1.0579	55.7	55.7	0.1748	0.1748	111	
A Non-2,3,7,8-sub-HxCDD	30.905						0.1881	0.1881		
S Total HxCDD					167.8	167.8	0.1893	0.1893		
D 13C-1,2,3,4,6,7,8-HpCDF	33.770	19350527	0.44	0.8506	102.8	102.8	1.305	1.305	103	
1,2,3,4,6,7,8-HpCDF	33.783	13623213	1.06	1.3603	51.8	51.8	0.5086	0.5086	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.864	16930363	0.44	0.7618	100.4	100.4	1.457	1.457	100	
1,2,3,4,7,8,9-HpCDF	34.876	11793439	1.05	1.3207	52.7	52.7	0.7110	0.7110	105	
A Non-2,3,7,8-sub-HpCDF	34.335						0.5943	0.5943		
S Total HpCDF					104.5	104.5	0.6098	0.6098		
D 13C-1,2,3,4,6,7,8-HpCDD	34.572	18101217	1.06	0.8873	92.2	92.2	0.4545	0.4545	92.19	
1,2,3,4,6,7,8-HpCDD	34.584	9505856	1.05	0.9988	52.6	52.6	0.2233	0.2233	105	
A Non-2,3,7,8-sub-HpCDD	34.305						0.2233	0.2233		
S Total HpCDD					52.6	52.6	0.2233	0.2233		
D 13C-OCDD	36.938	26531549	0.87	0.6287	190.7	190.7	0.2150	0.2150	95.35	
OCDF	37.034	19180604	0.91	1.4136	102.3	102.3	0.1329	0.1329	102	
OCDD	36.938	14848136	0.90	1.1290	99.1	99.1	0.1437	0.1437	99.14	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 15:13:12 ALS Bottle#: 2 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 112320A CS-4 HRDXNL4_00095
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:44 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: arghestanis Date: 24-Nov-2020 16:18:14

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.854	17.853	0		12274257	2920642	3447	8617	847		
333.9339	17.838	17.853	-1		16651353	4044170	3570	8925	1133	0.74(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.339	17.339	0	0.971	20317357	4850654	6615	16537	733		
317.9389	17.339	17.339	0	0.971	25975092	6127934	4637	11592	1322	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.354	17.339	1	1.001	2026482	477004	423	1057	1128		
305.8987	17.354	17.339	1	1.001	2599637	600649	673	1682	892	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.029						423	1057			
305.8987	17.029						673	1682			
13C-2,3,7,8-TCDD											
331.9368	18.050	18.050	0	1.011	12490863	2885866	3447	8617	837		
333.9339	18.050	18.050	0	1.011	17071847	3923015	3570	8925	1099	0.73(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.065	18.050	1	1.001	1427637	335671	861	2152	390		
321.8936	18.065	18.050	1	1.001	1822301	429125	406	1015	1057	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.065	18.065	0	1.012	3231410	776680	567	1417	1370		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.491						861	2152			
321.8936	17.491						406	1015			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.383	22.383	0	1.254	21284785	3675195	4801	12002	766		
353.8970	22.396	22.383	1	1.254	13587666	2309696	3216	8040	718	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.410	22.410	0	1.001	10760076	1847866	2447	6117	755		
341.8567	22.410	22.410	0	1.001	6666794	1136910	1658	4145	686	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.746	23.746	0	1.330	19773291	3171740	4801	12002	661		
353.8970	23.746	23.746	0	1.330	12385661	1990619	3216	8040	619	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.774	23.760	1	1.001	10441284	1663818	2447	6117	680		
341.8567	23.760	23.760	0	1.001	6495370	1036723	1658	4145	625	1.61(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.970						195	487			
341.8567	19.970						383	957			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.955	23.141	-11	1.026	108924	13785	2447	6117	6		
341.8567	22.942	23.141	-12	1.025	54636	7357	1658	4145	4	1.99(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.469	24.469	0	1.371	13506733	2086855	1778	4445	1174		
369.8919	24.469	24.469	0	1.371	8508863	1291706	1122	2805	1151	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.496	24.496	0	1.001	6900809	1046630	782	1955	1338		
357.8516	24.496	24.496	0	1.001	4347107	639838	365	912	1753	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.371						782	1955			
357.8516	23.371						365	912			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.546	30.546	0	0.950	8104553	1582329	5055	12637	313		
385.8610	30.546	30.546	0	0.950	15960974	3170212	9138	22845	347	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.560	30.573	-1	1.000	7871171	1520190	4422	11055	344		
375.8178	30.560	30.573	-1	1.000	6397668	1235384	3951	9877	313	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.719	30.719	0	0.955	9210104	1770161	5055	12637	350		
385.8610	30.719	30.719	0	0.955	17743460	3384687	9138	22845	370	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.746	30.746	0	1.001	8625630	1633621	4422	11055	369		
375.8178	30.746	30.746	0	1.001	6823262	1315219	3951	9877	333	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.545	31.545	0	0.981	8771354	2175302	5055	12637	430		
385.8610	31.545	31.545	0	0.981	16972157	4209761	9138	22845	461	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.558	31.558	0	1.000	8406397	2113051	4422	11055	478		
375.8178	31.558	31.558	0	1.000	6696859	1679809	3951	9877	425	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.343	32.343	0	1.006	7933323	2026841	5055	12637	401		
385.8610	32.343	32.343	0	1.006	15481915	3961963	9138	22845	434	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.357	32.356	0	1.000	7701800	2009815	4422	11055	455		
375.8178	32.357	32.356	0	1.000	6275678	1596280	3951	9877	404	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.233						4422	11055			
375.8178	30.233						3951	9877			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.157	32.157	0		12283695	3237409	4632	11580	699		
403.8529	32.157	32.157	0		9845365	2512275	2851	7127	881	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.718	31.718	0	0.986	9396722	2618539	4632	11580	565		
403.8529	31.718	31.718	0	0.986	7233320	2020982	2851	7127	709	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.744	31.744	0	1.001	5457715	1459994	2011	5027	726		
391.8127	31.731	31.744	-1	1.000	4103232	1143042	1713	4282	667	1.33(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.824	31.824	0	0.990	12464658	3033362	4632	11580	655		
403.8529	31.824	31.824	0	0.990	9691641	2396588	2851	7127	841	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.837	31.851	-1	1.000	5873622	1475492	2011	5027	734		
391.8127	31.837	31.851	-1	1.000	4917438	1192947	1713	4282	696	1.19(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.170	32.170	0	1.014	6421238	1671025	2011	5027	831		
391.8127	32.170	32.170	0	1.014	5003530	1308614	1713	4282	764	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						2011	5027			
391.8127	30.905						1713	4282			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.770	33.770	0	1.050	5915784	1896022	7392	18480	256		
419.8220	33.770	33.770	0	1.050	13434743	4262822	18142	45355	235	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.783	33.782	0	1.000	7010470	2202816	10015	25037	220		
409.7789	33.783	33.782	0	1.000	6612743	2054168	7030	17575	292	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.864	34.864	0	1.084	5177710	1385987	7392	18480	187		
419.8220	34.864	34.864	0	1.084	11752653	3152045	18142	45355	174	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.876	34.888	-1	1.000	6053532	1604559	10015	25037	160		
409.7789	34.876	34.888	-1	1.000	5739907	1500178	7030	17575	213	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						10015	25037			
409.7789	34.335						7030	17575			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.572	34.572	0	1.075	9304909	2615971	4317	10792	606		
437.8140	34.572	34.572	0	1.075	8796308	2509910	4957	12392	506	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.584	34.584	0	1.000	4860790	1351532	2020	5050	669		
425.7737	34.572	34.584	-1	1.000	4645066	1278839	2553	6382	501	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.305						2020	5050			
425.7737	34.305						2553	6382			
13C-OCDD											
469.7779	36.938	36.938	0	1.149	12373946	2820201	1758	4395	1604		
471.7750	36.938	36.938	0	1.149	14157603	3190570	1351	3377	2362	0.87(0.76-1.02)	
OCDF											
441.7428	37.034	37.046	-1	1.003	9145515	2056341	936	2340	2197		
443.7399	37.034	37.046	-1	1.003	10035089	2289523	1323	3307	1731	0.91(0.76-1.02)	
OCDD											
457.7377	36.938	36.950	-1	1.000	7047714	1613002	759	1897	2125		
459.7348	36.938	36.950	-1	1.000	7800422	1789008	1191	2977	1502	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 15

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

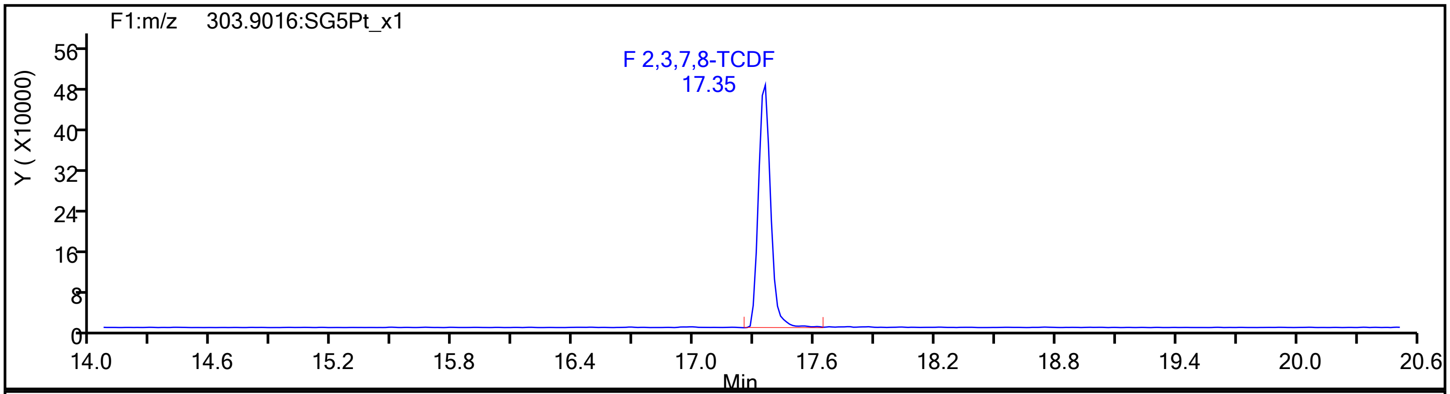

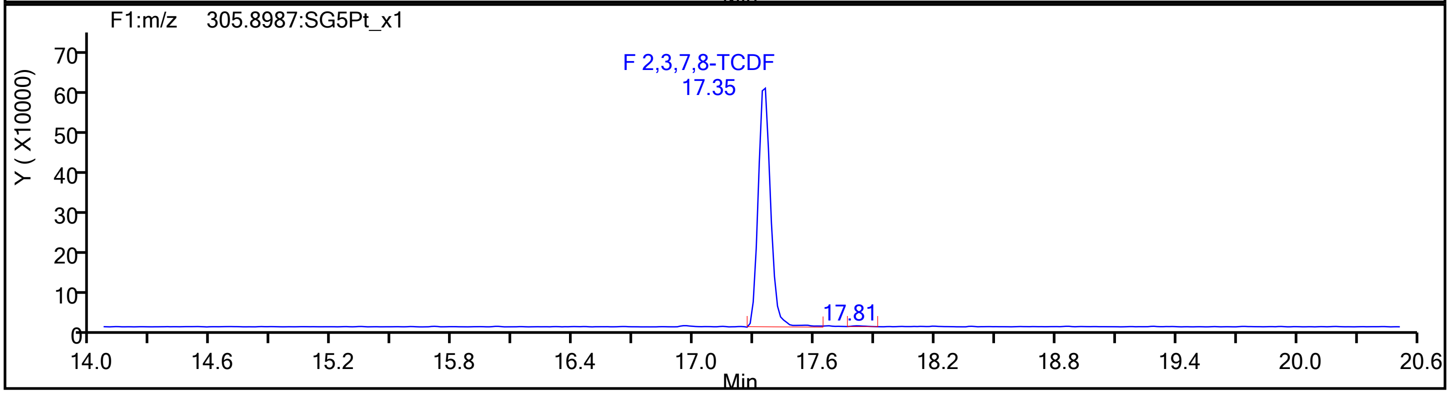

TCDF Standards

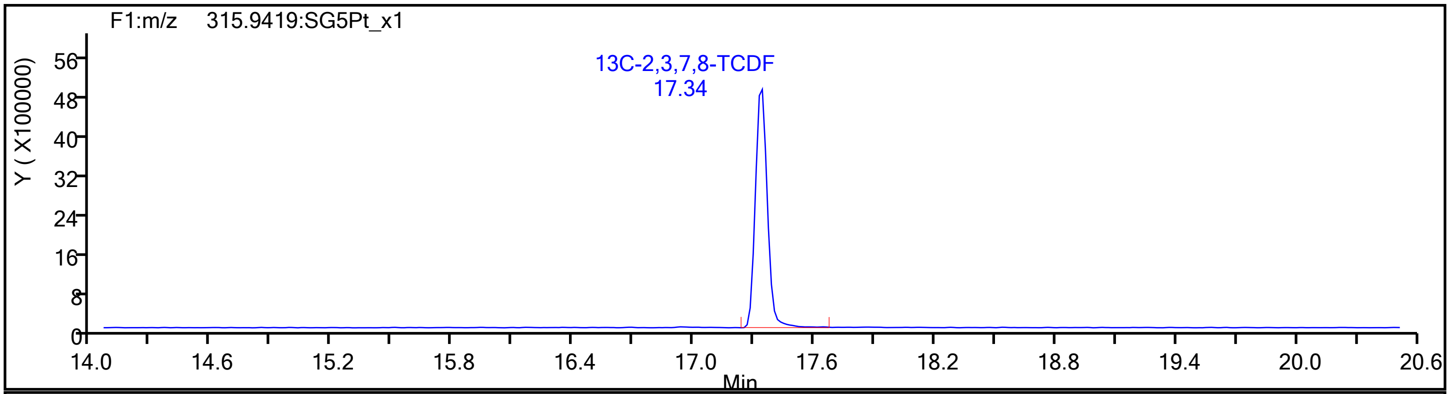

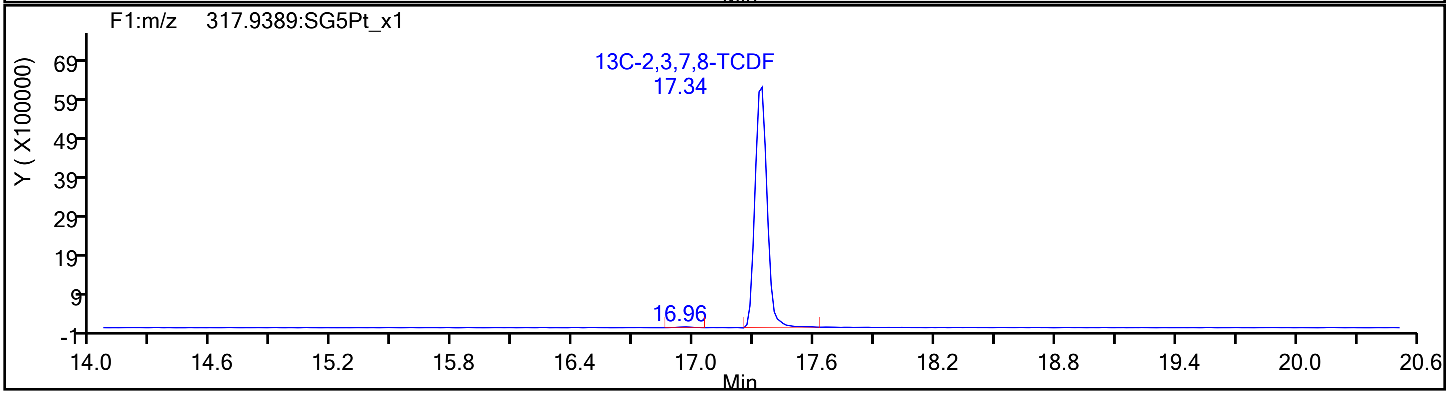

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

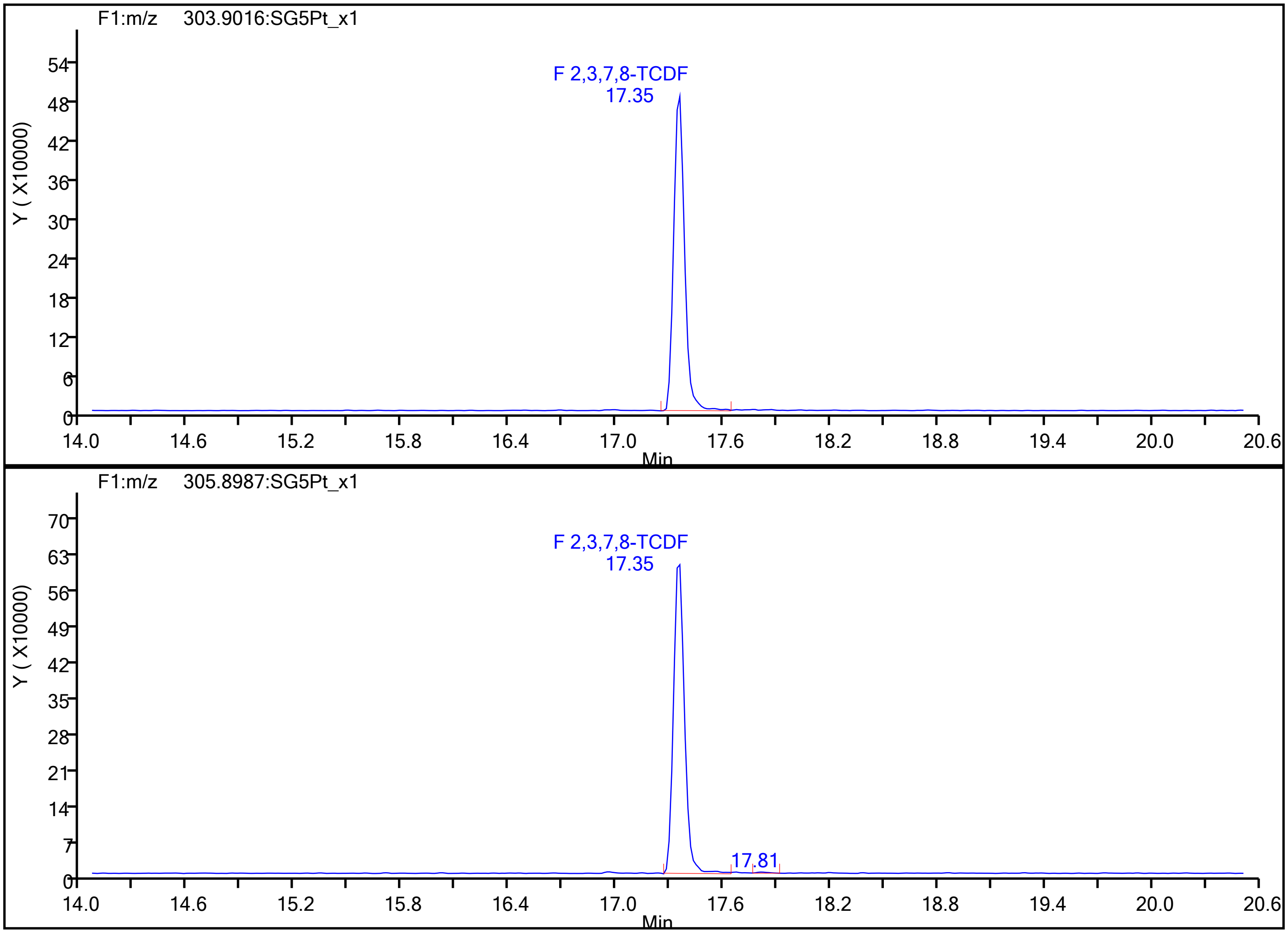

TCDF Interference Mass

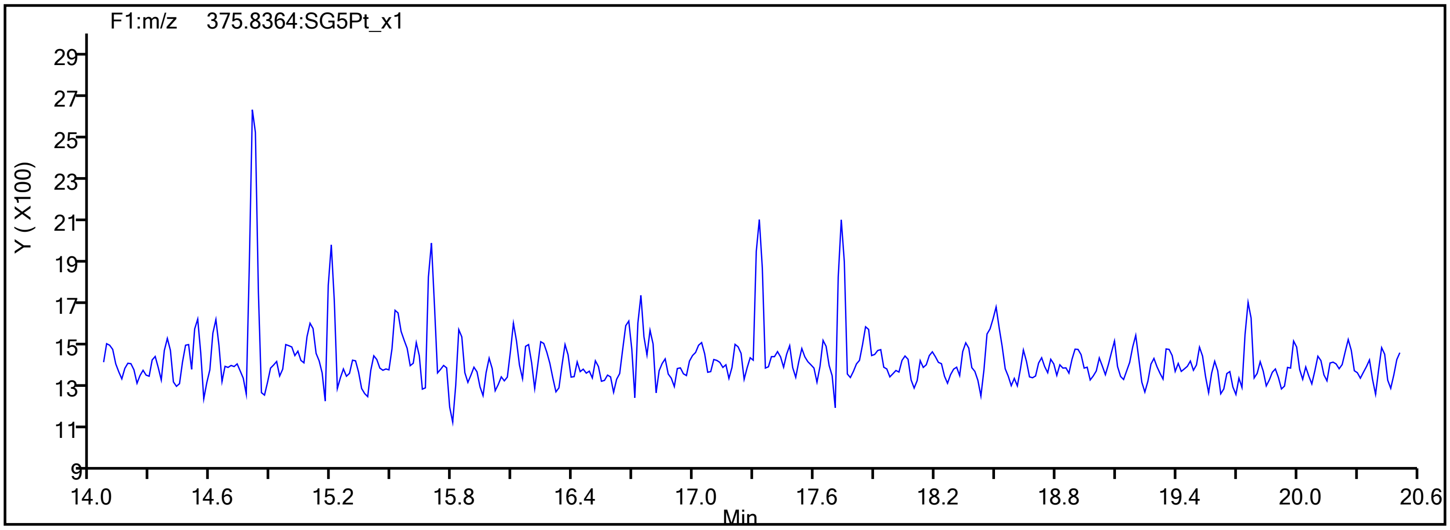

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203 Sample Line#: 15
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

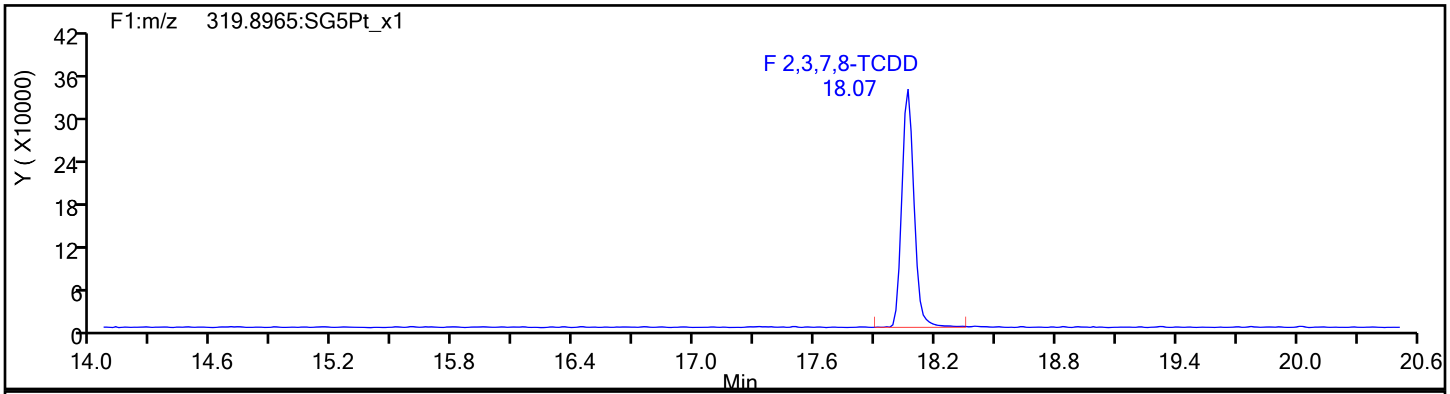

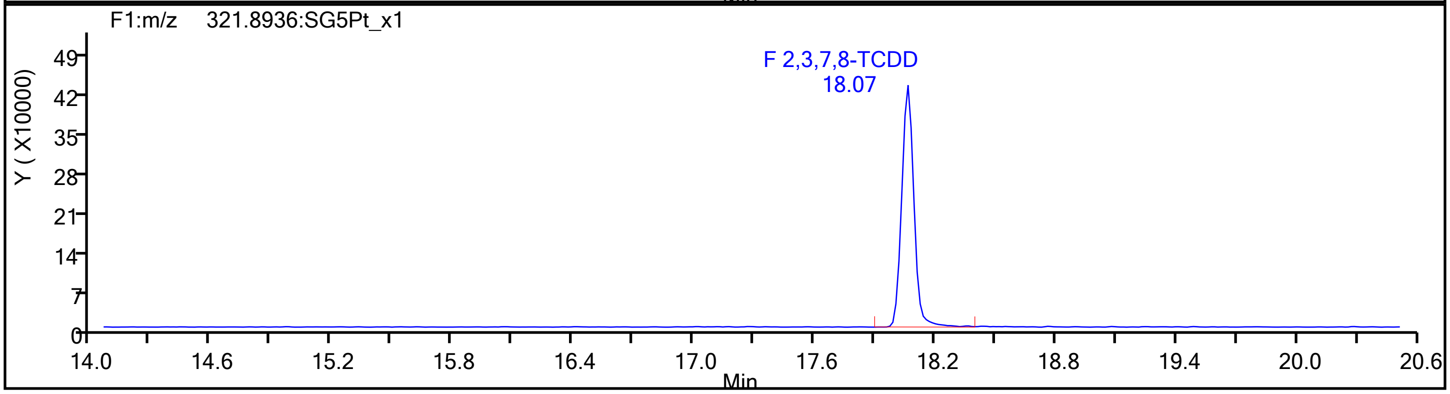

TCDD Standards

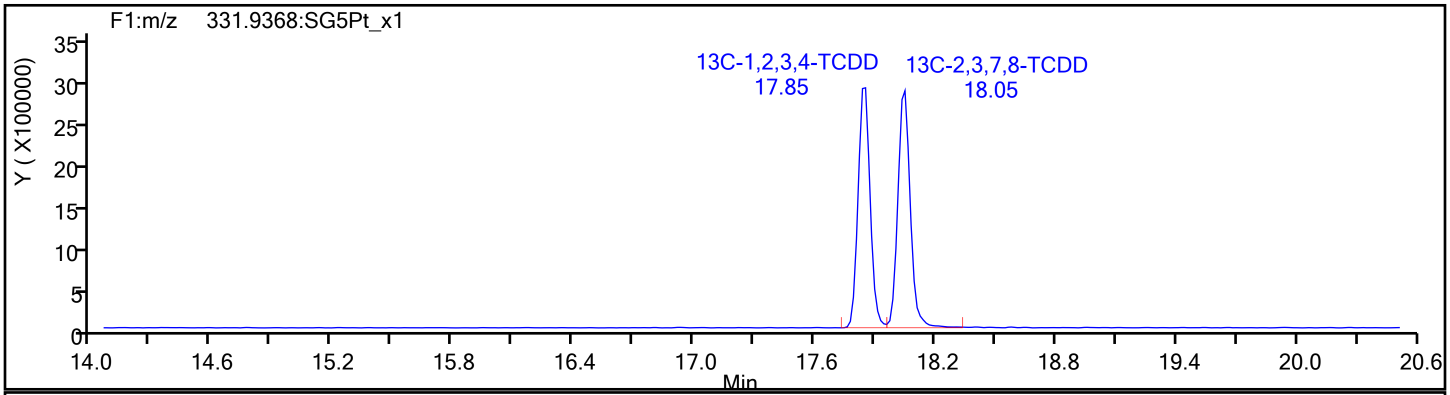

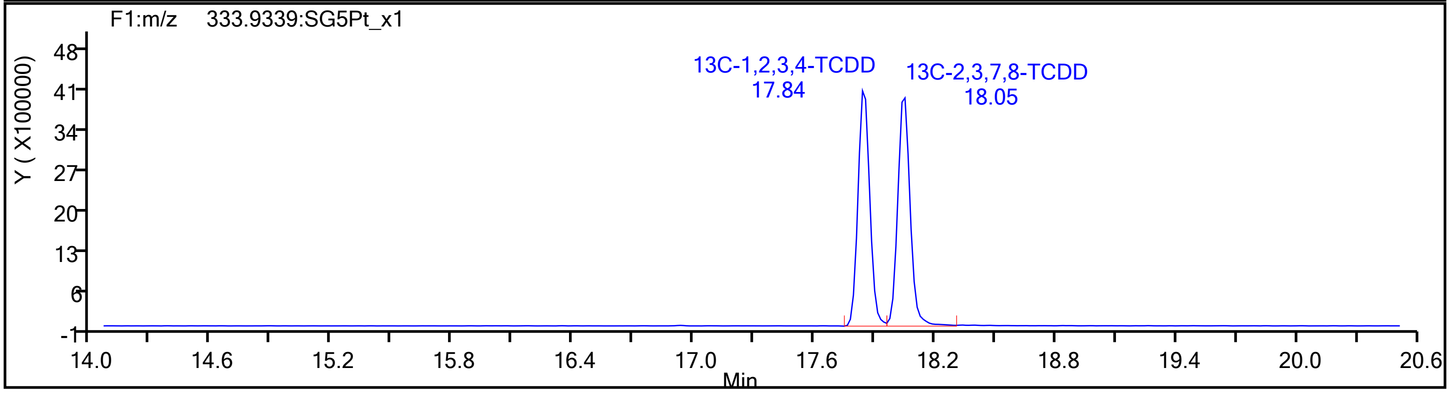

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

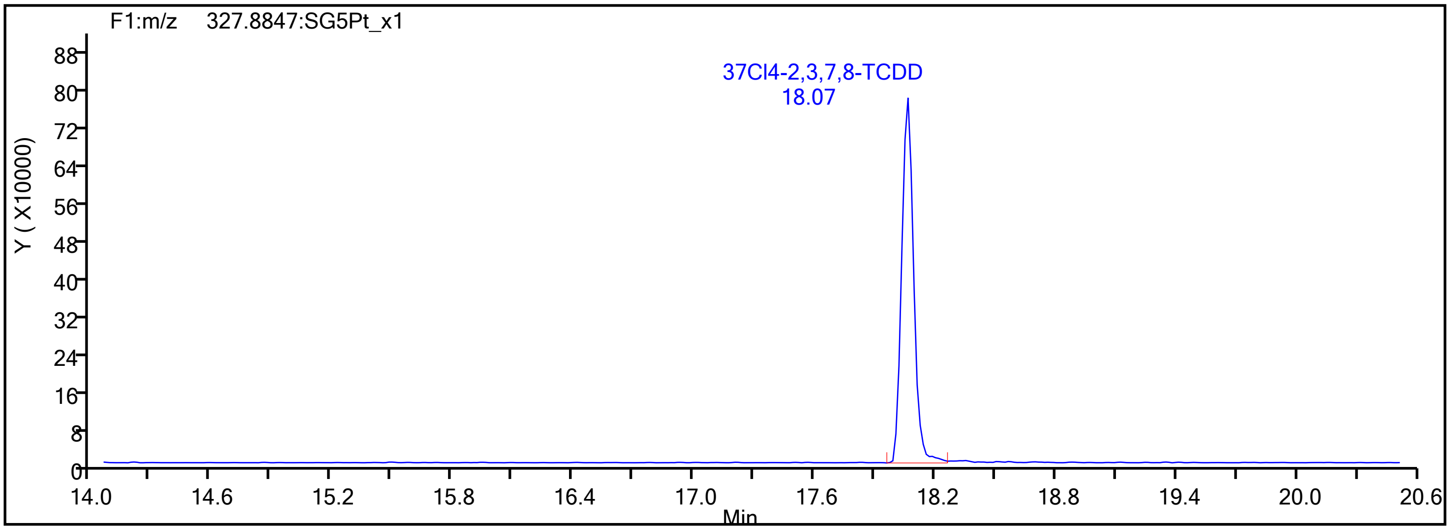

37Cl4-TCDD Standards

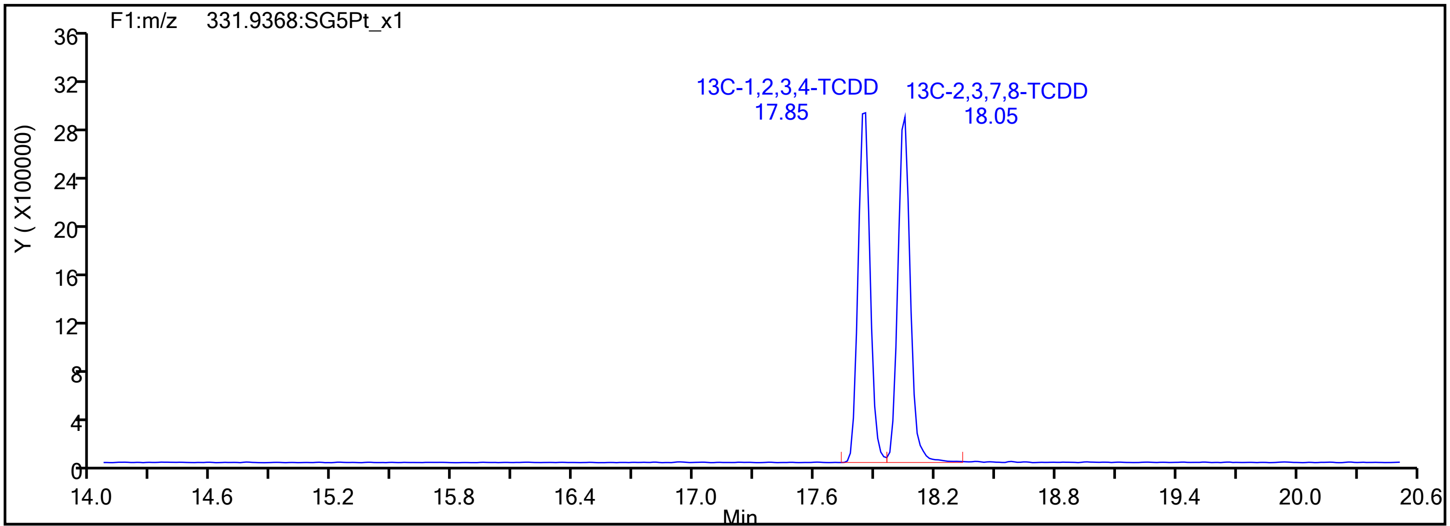

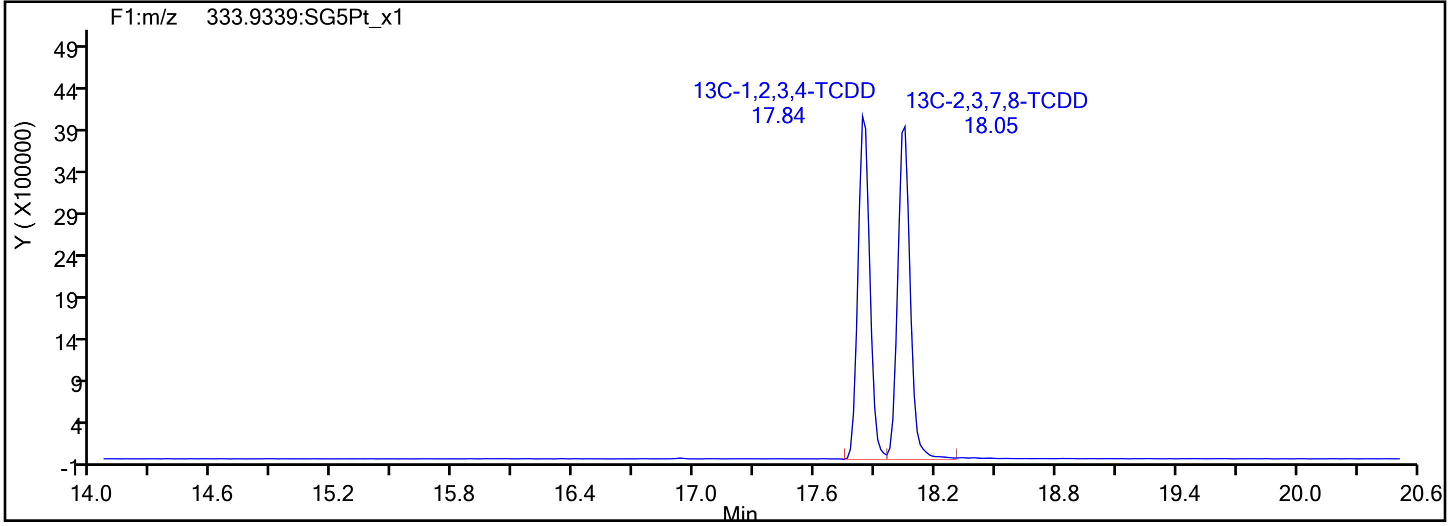

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

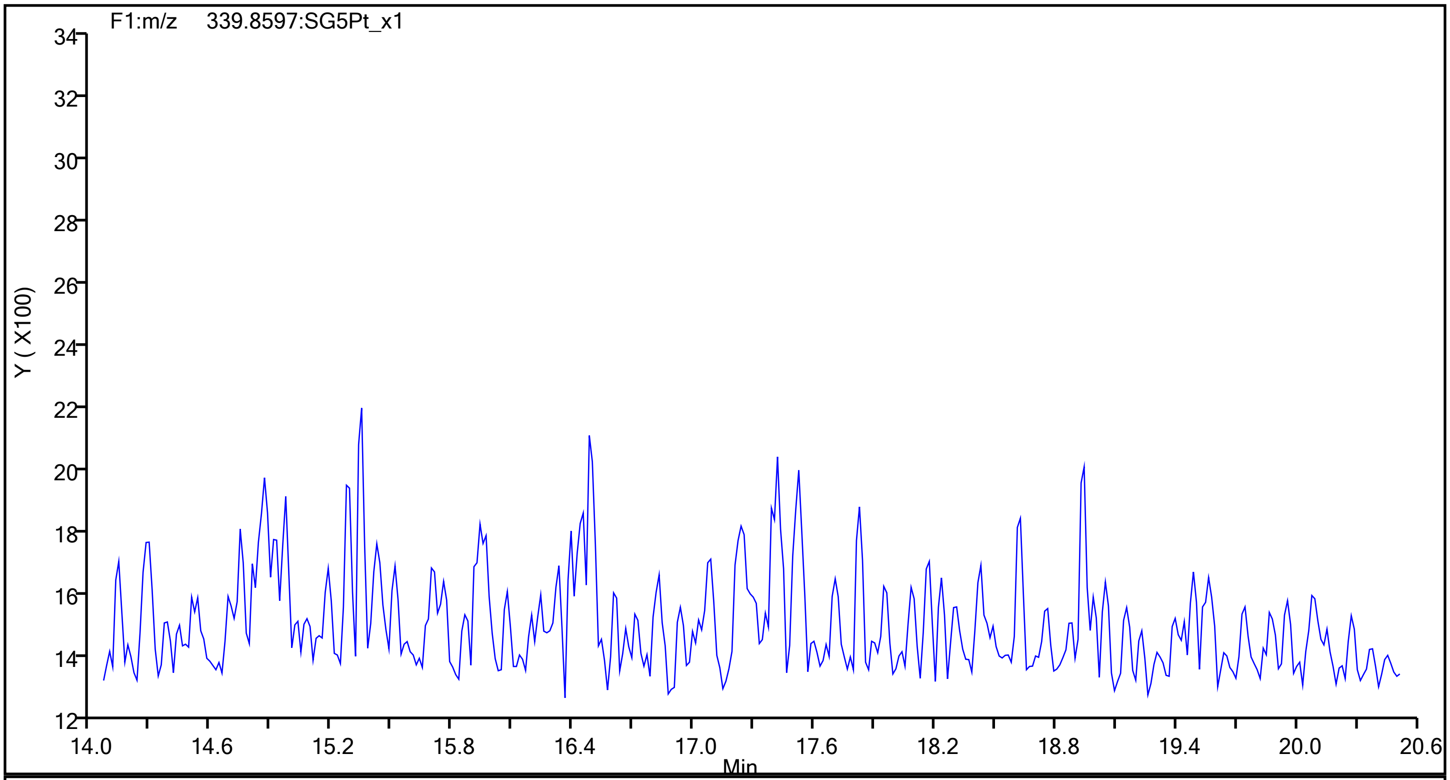

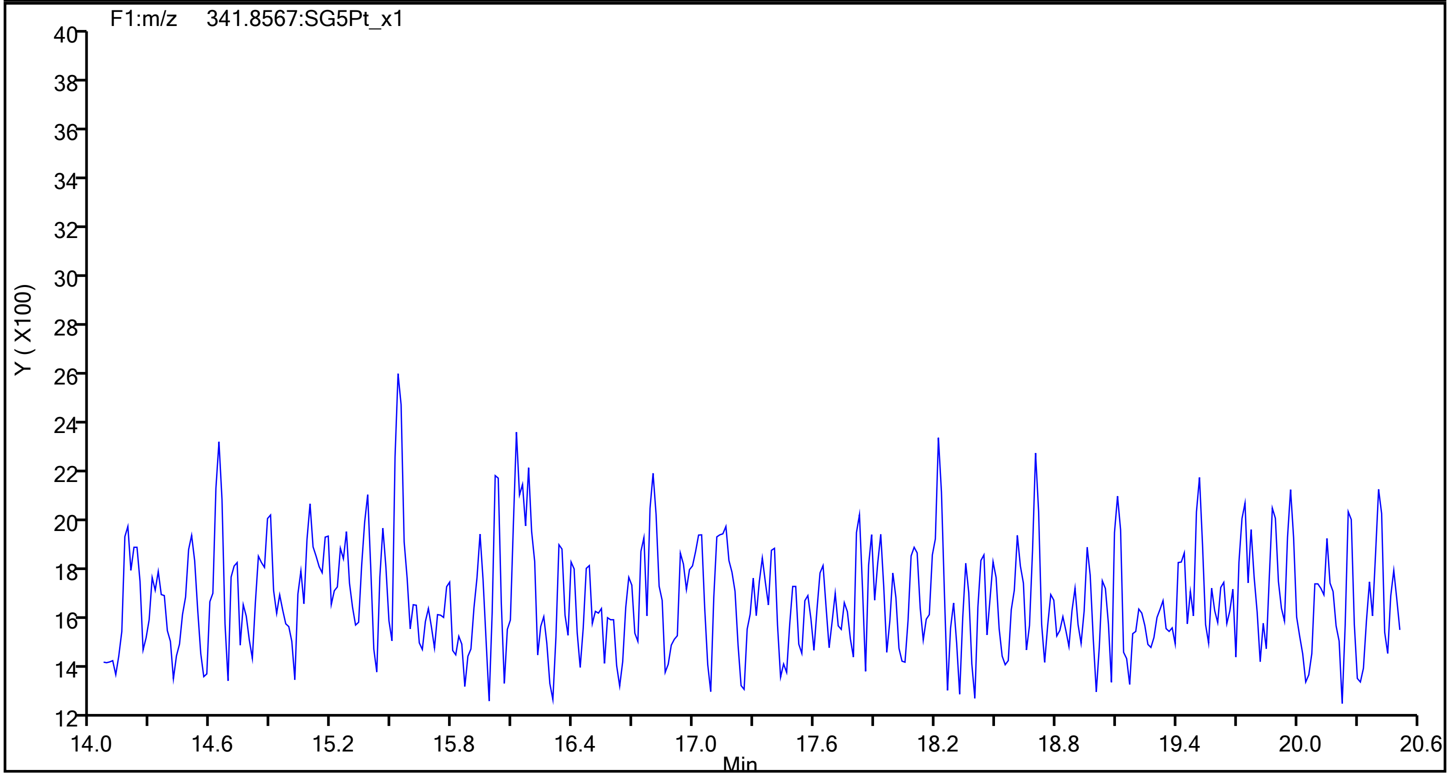

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 15

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

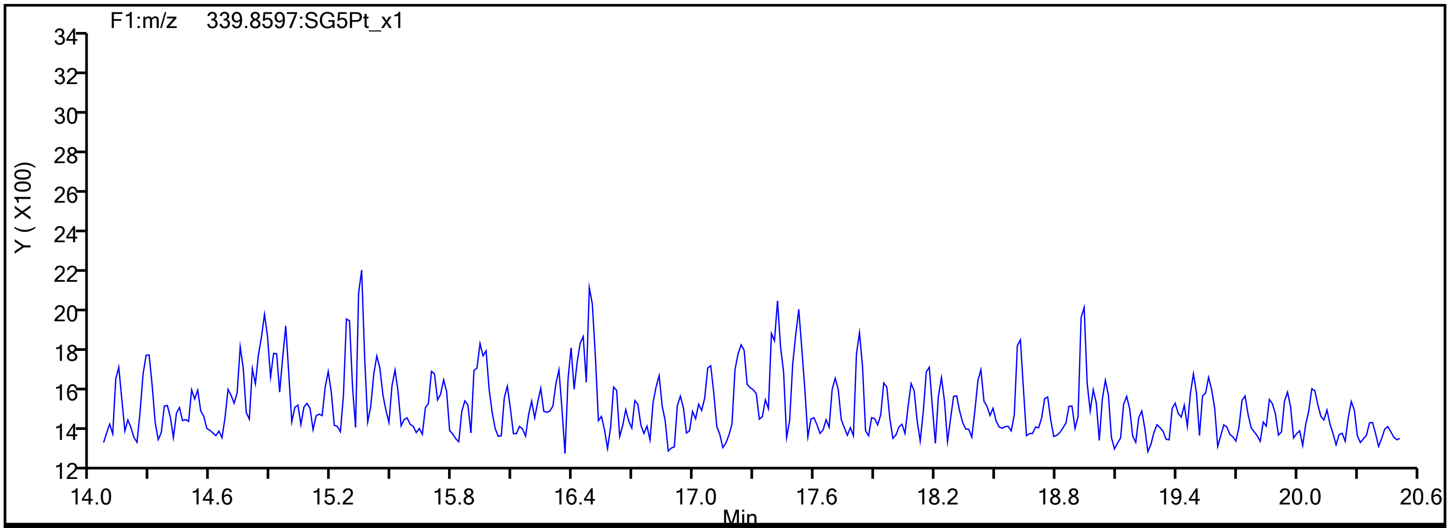

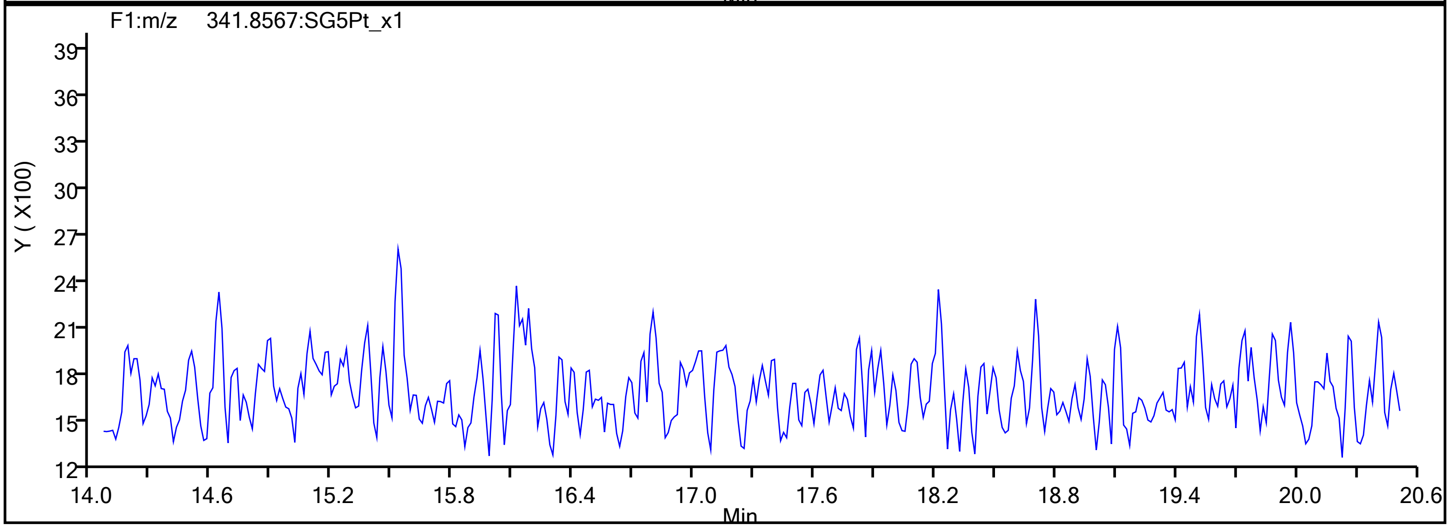

F1 PeCDFs Interference Mass

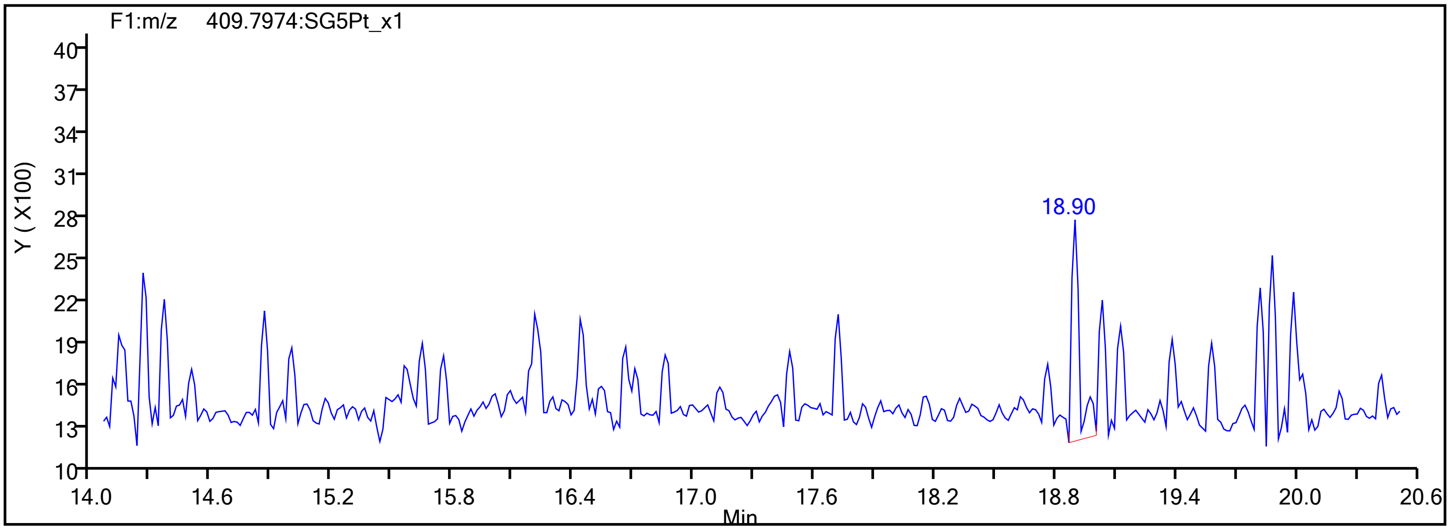

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

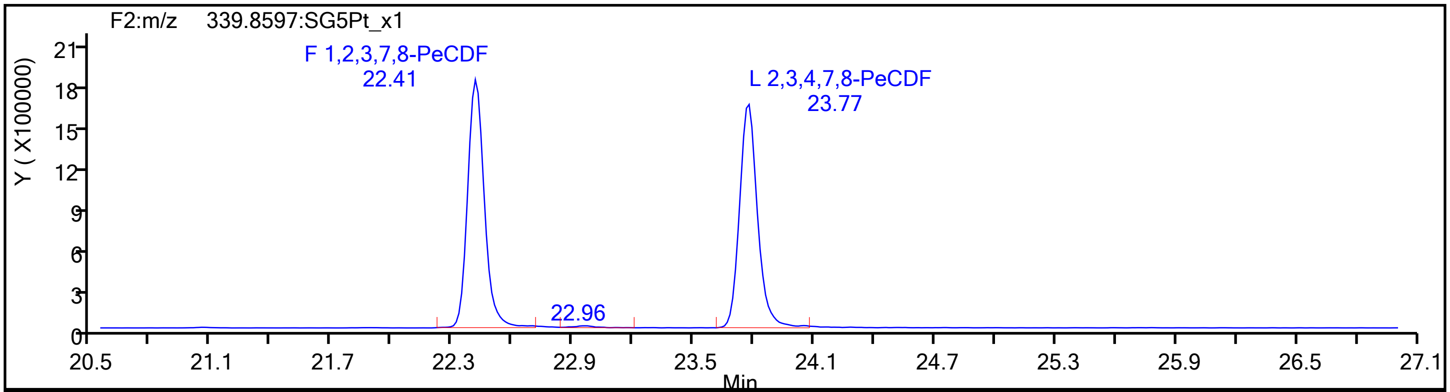

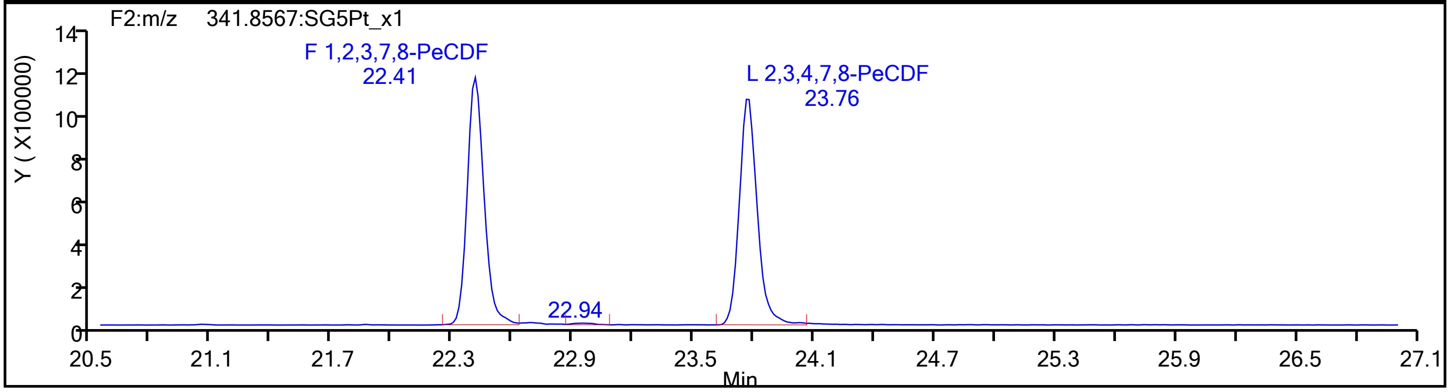

PeCDF Standards

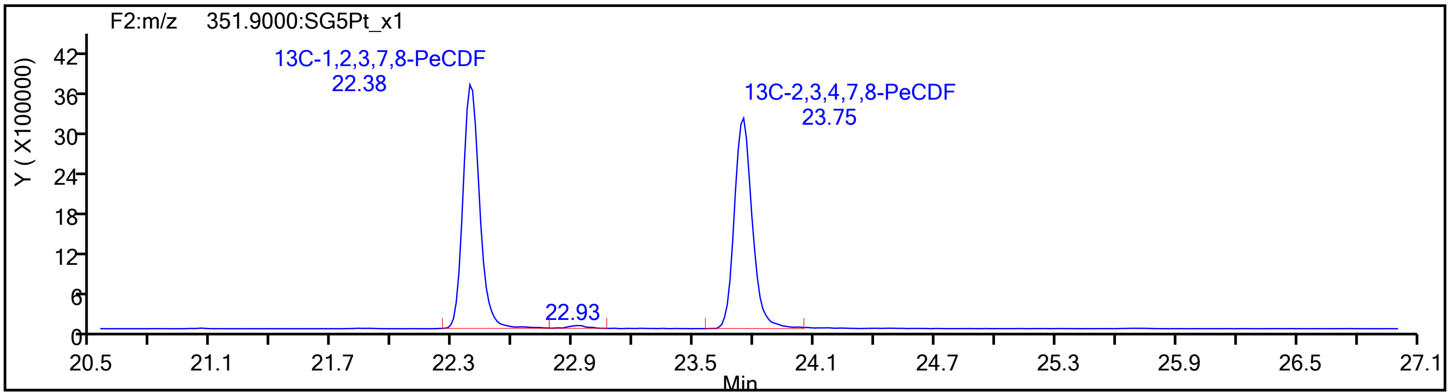

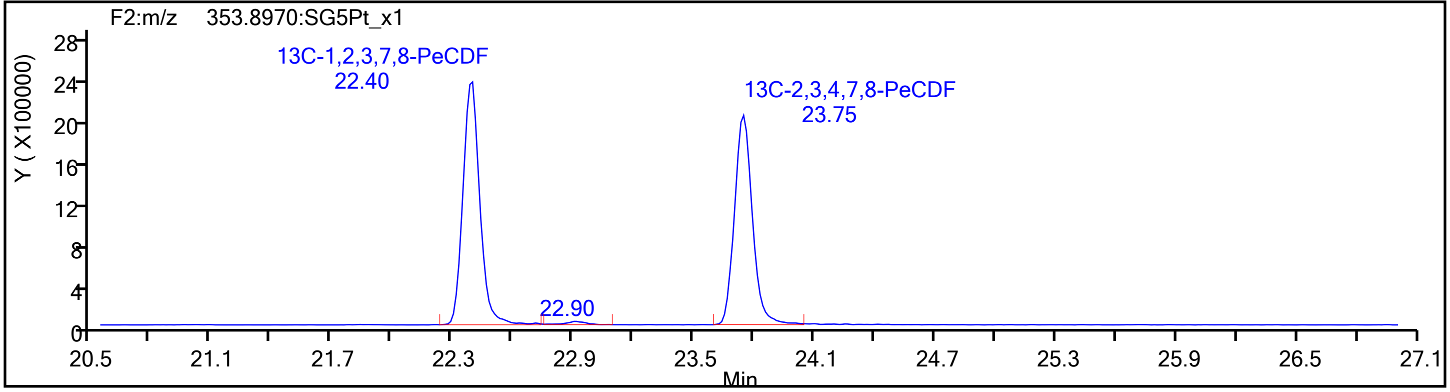

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 15

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

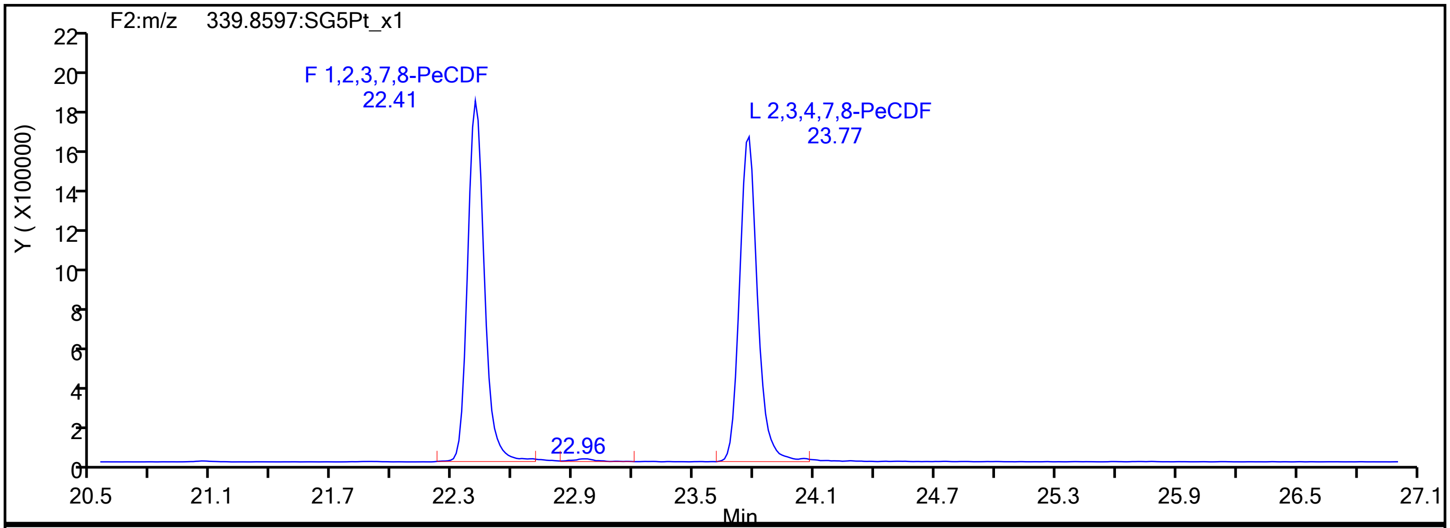

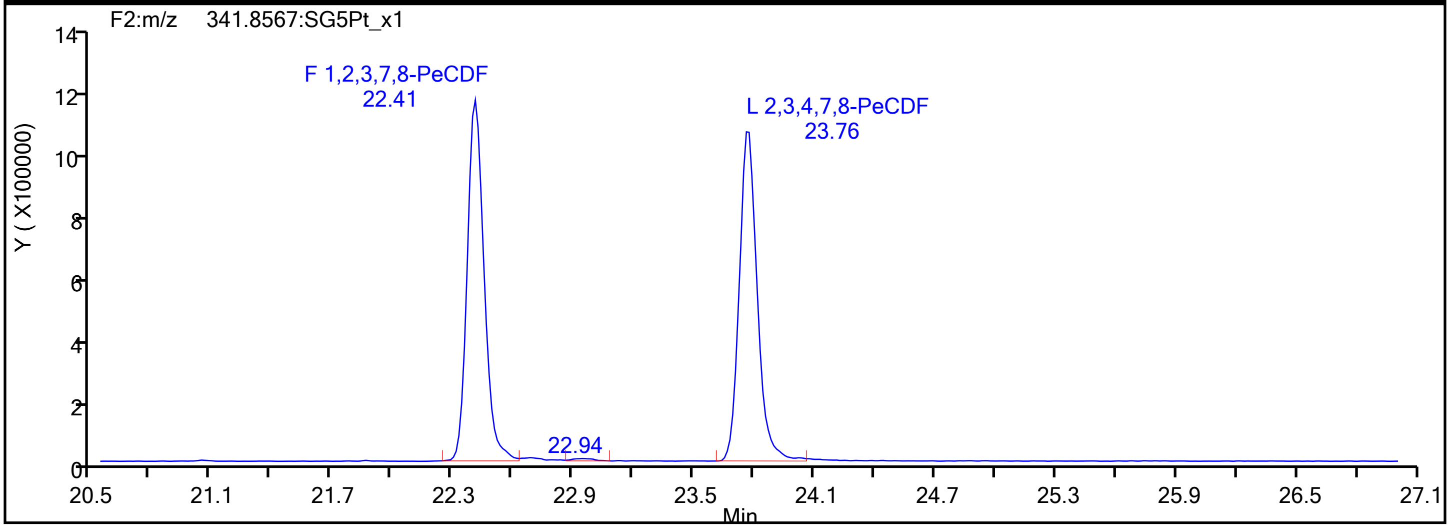

PeCDF Interference Mass

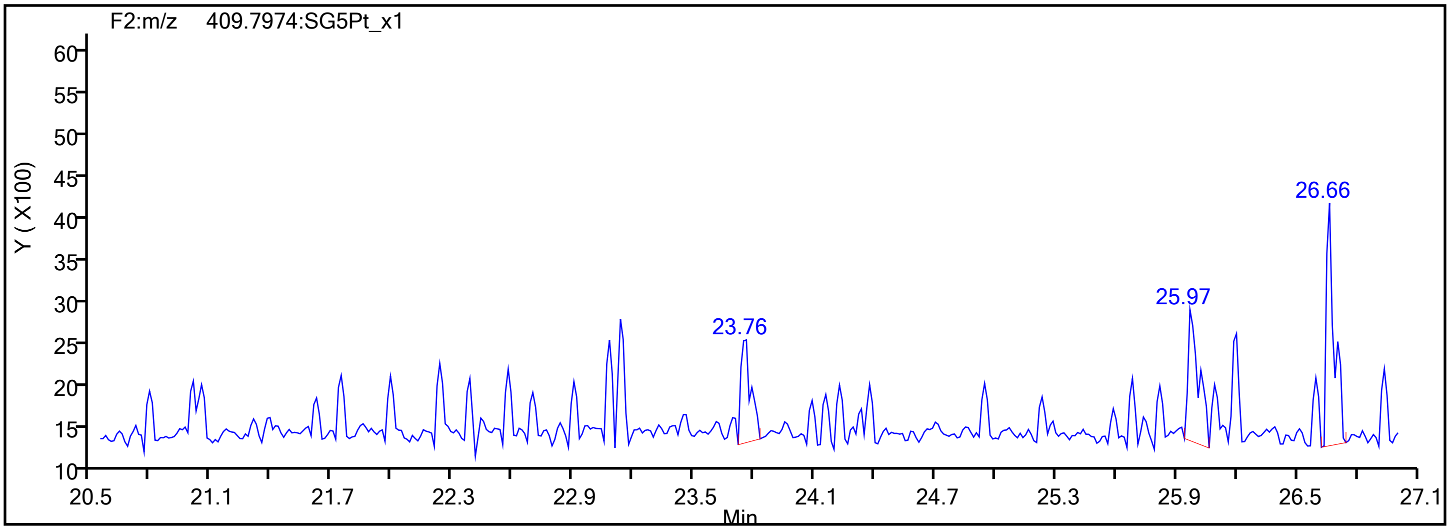

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

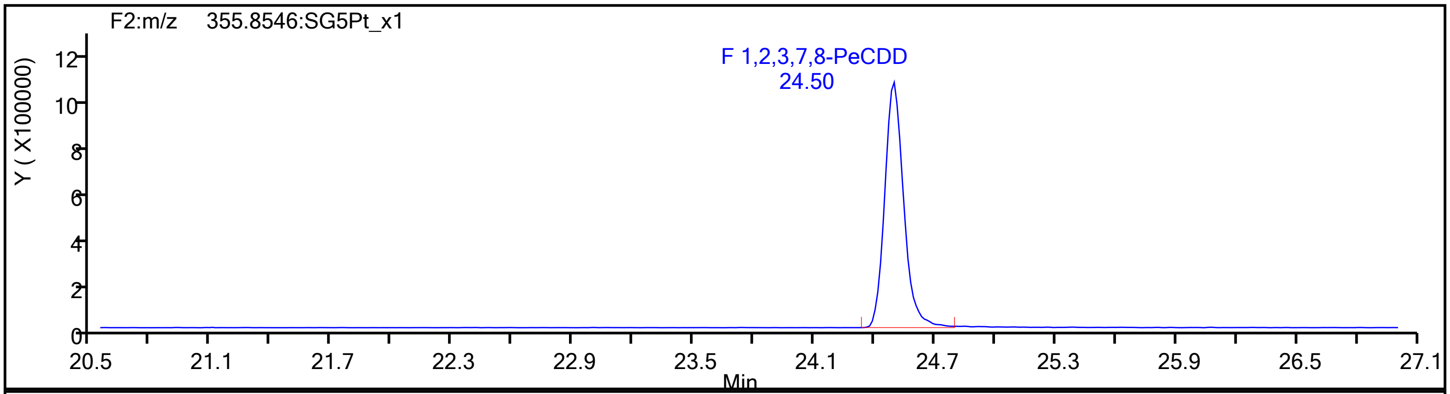

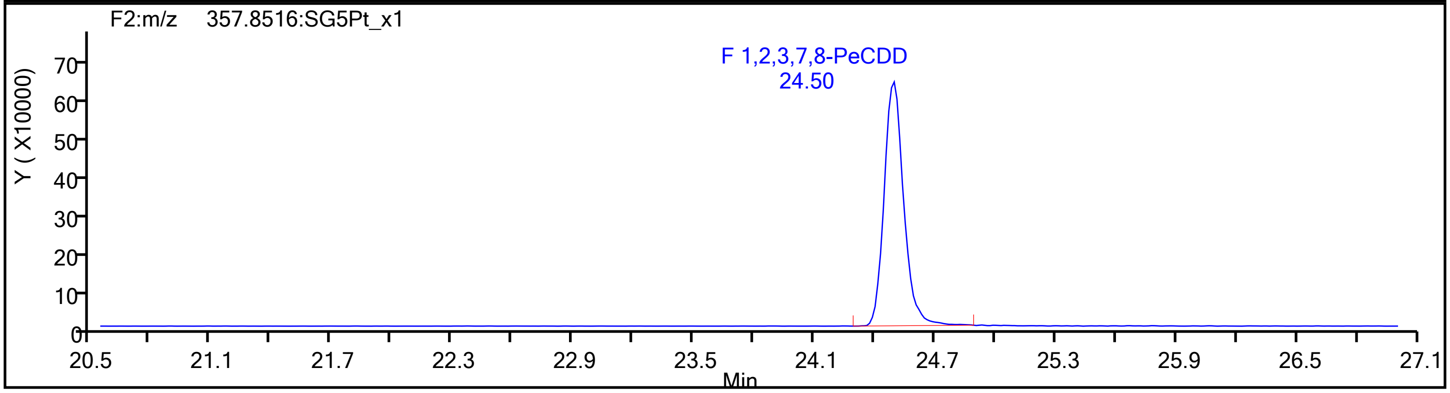

PeCDD Standards

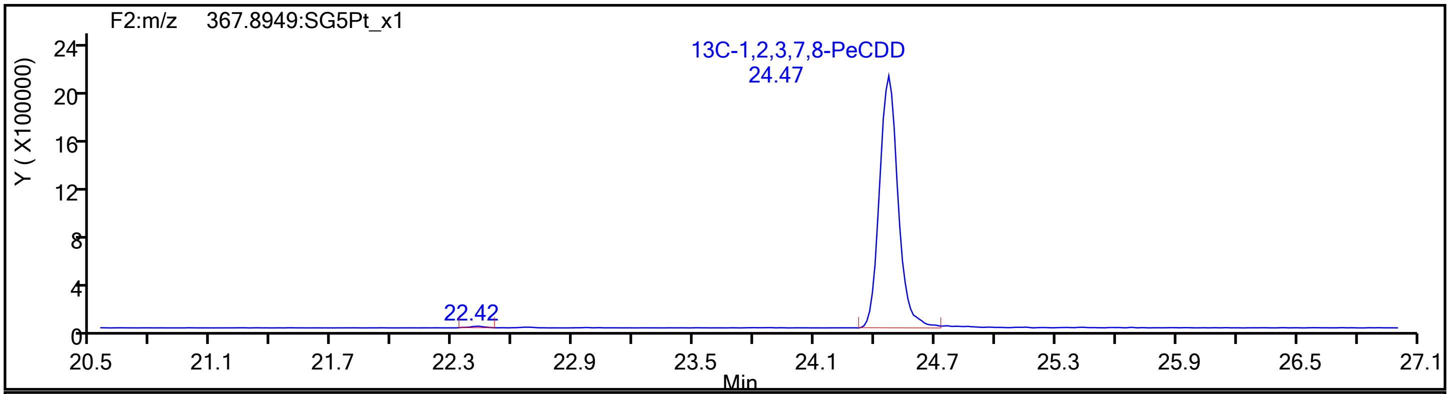

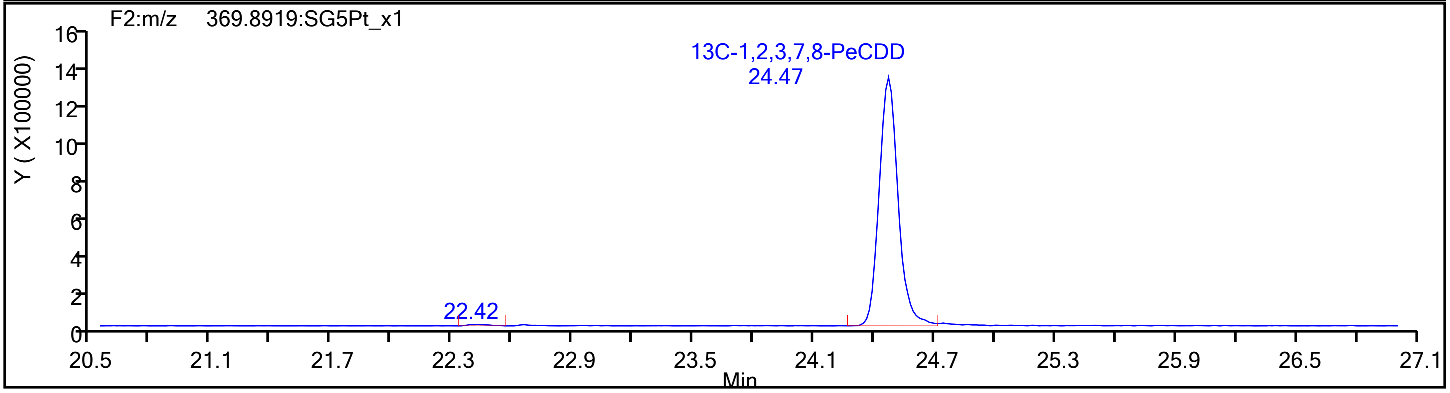

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

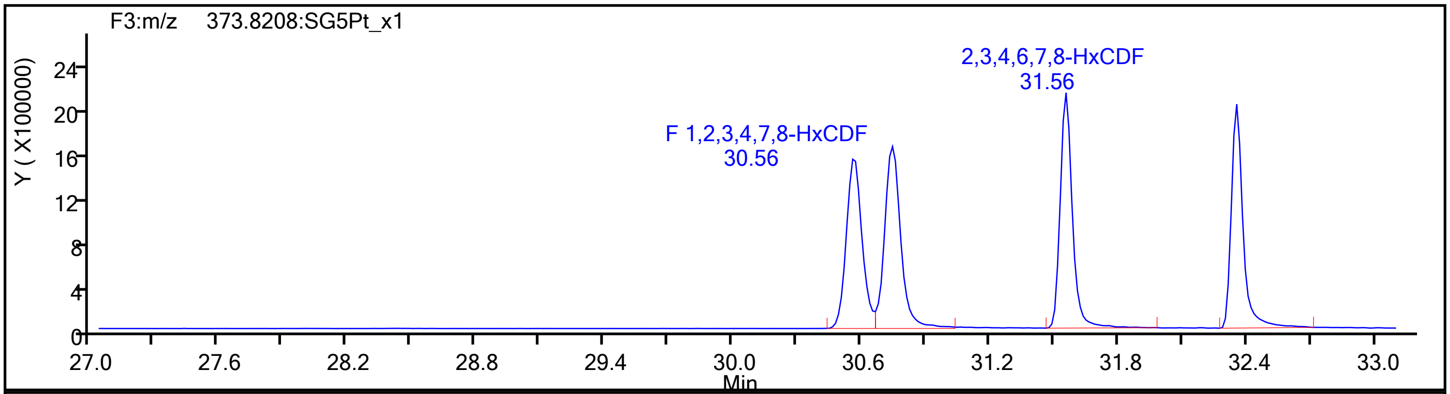

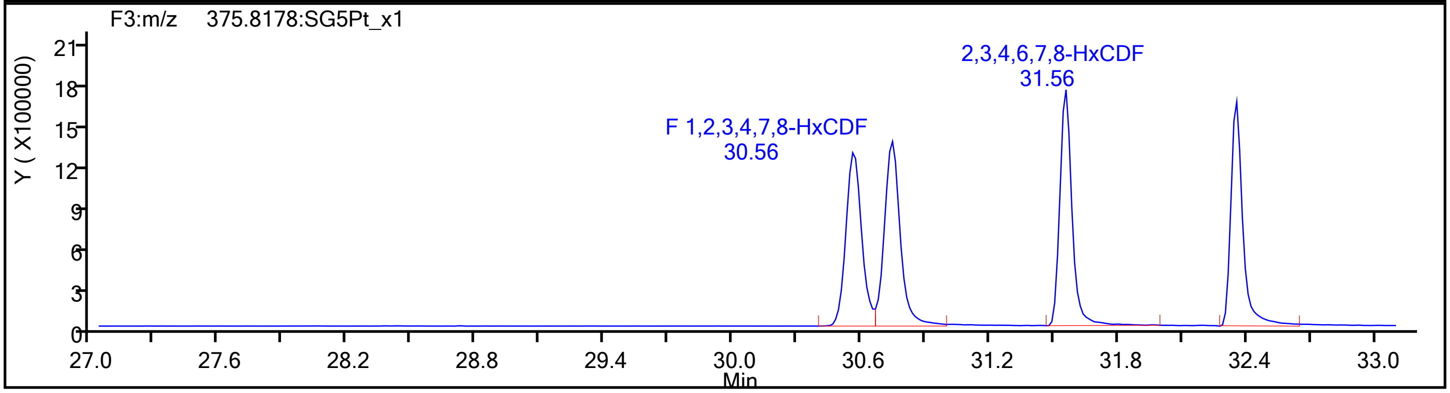

HxCDF Standards

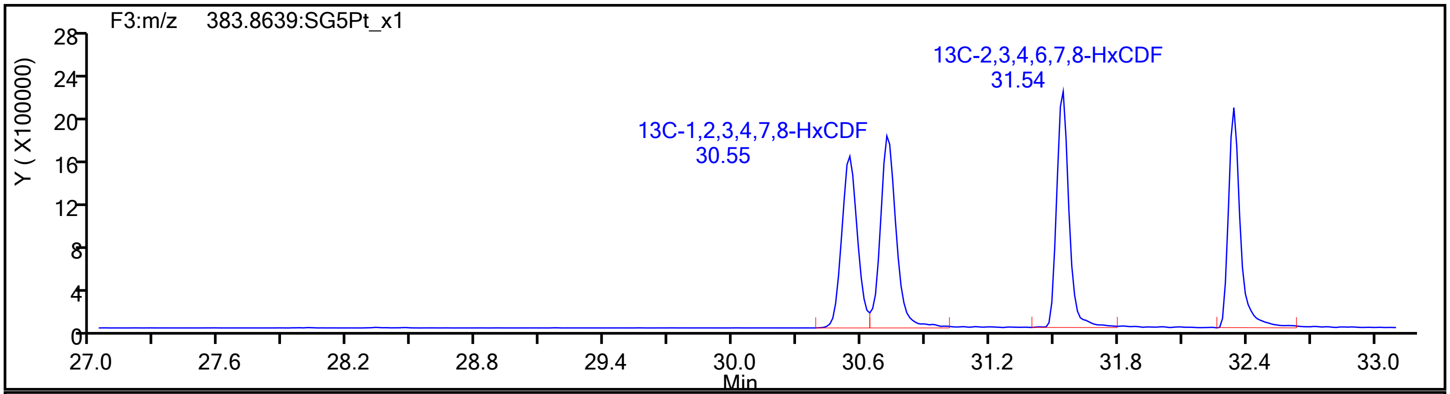

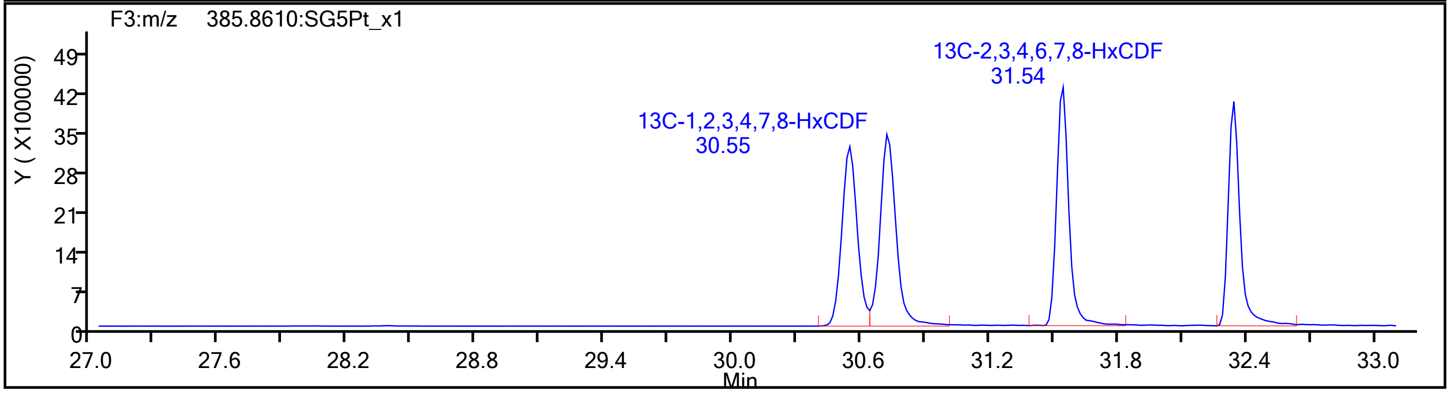

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

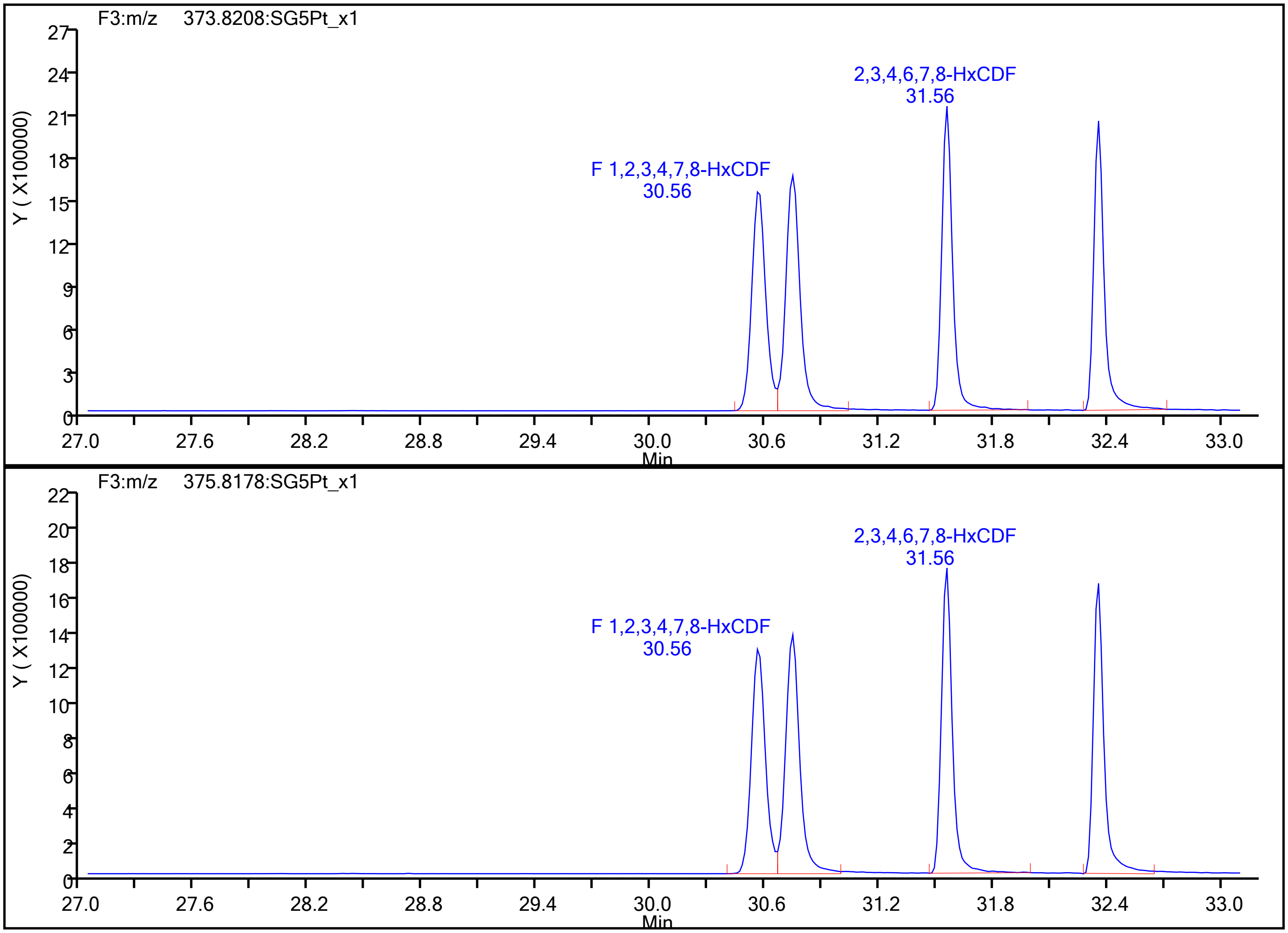

HxCDF Interference Mass

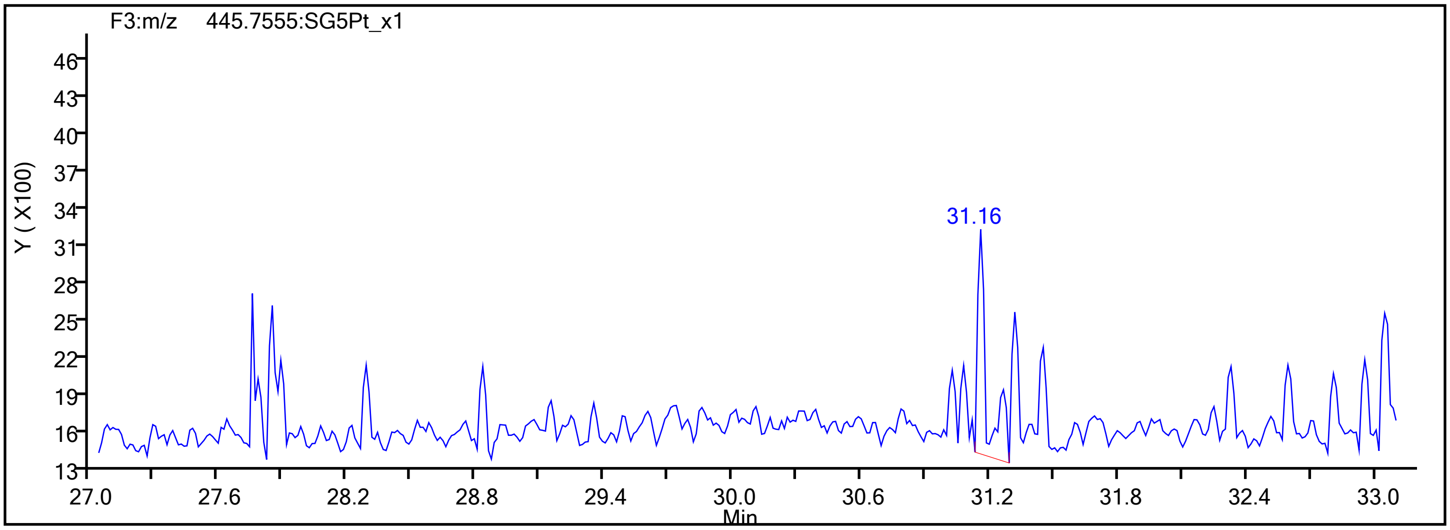

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

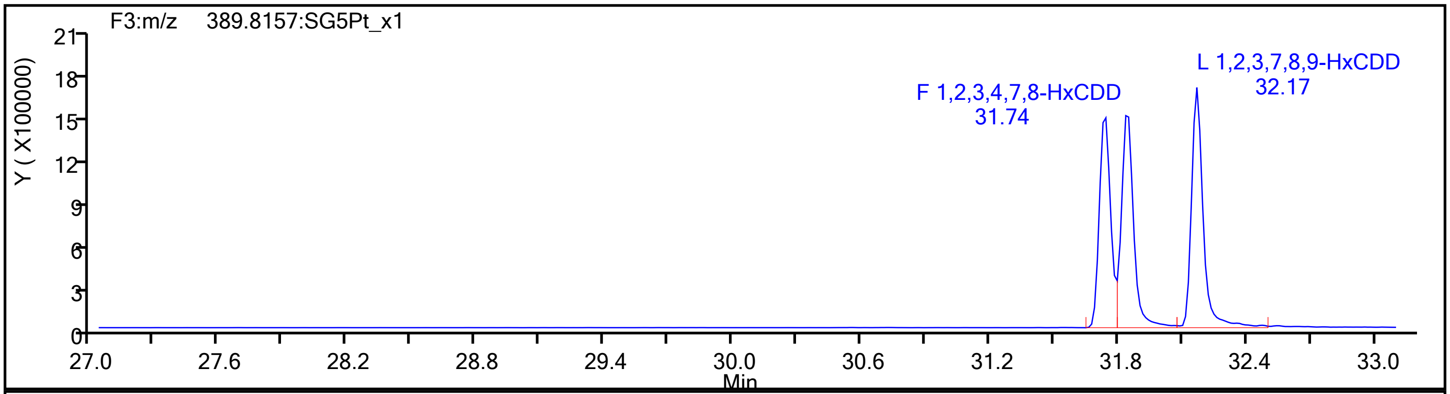

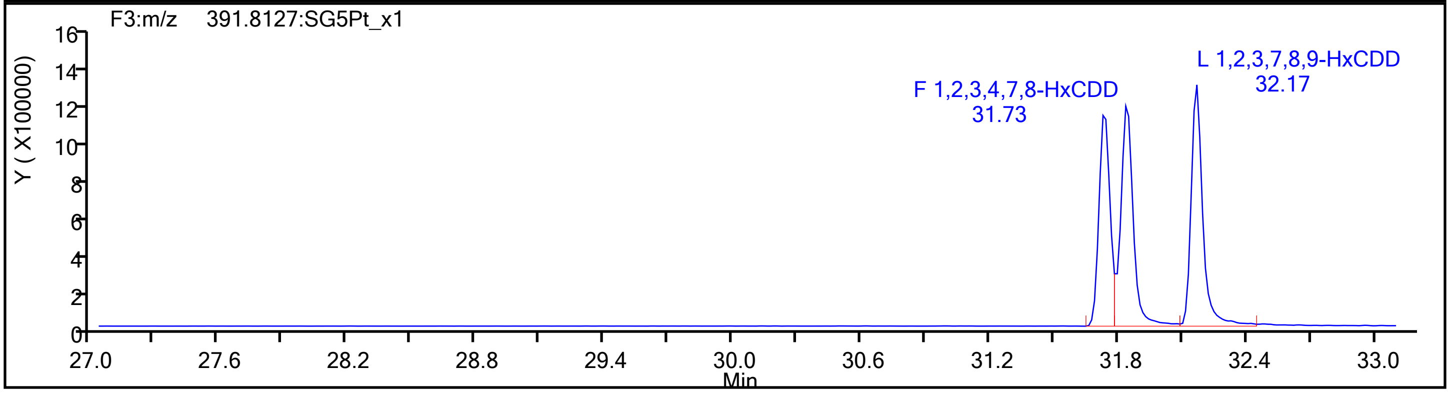

HxCDD Standards

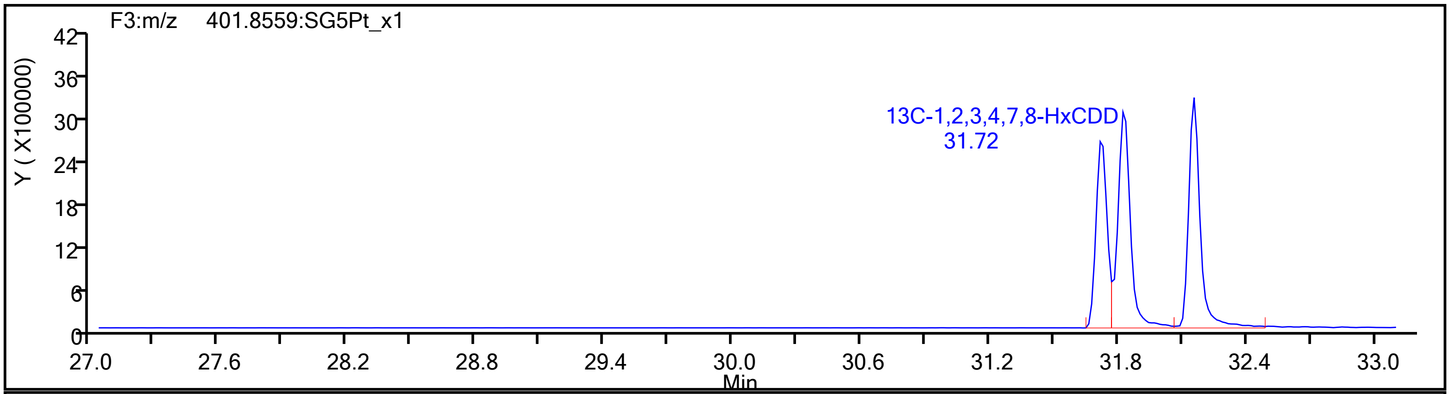

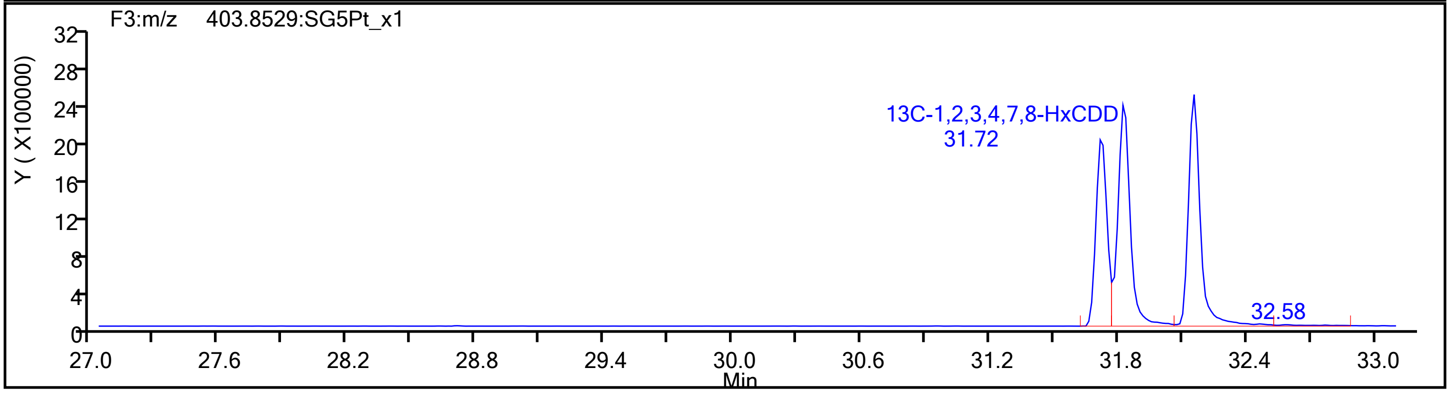

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203 Sample Line#: 15
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

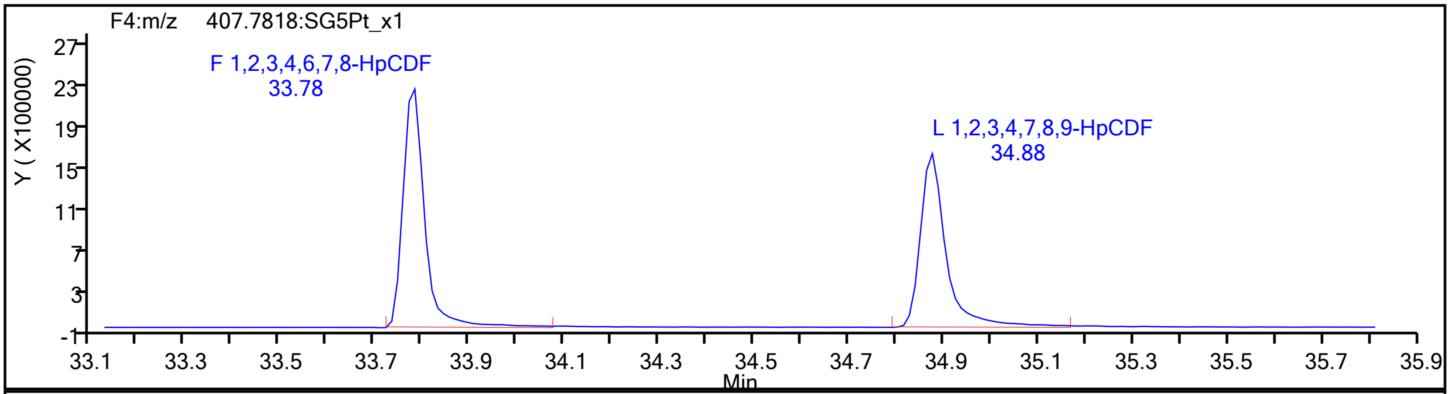

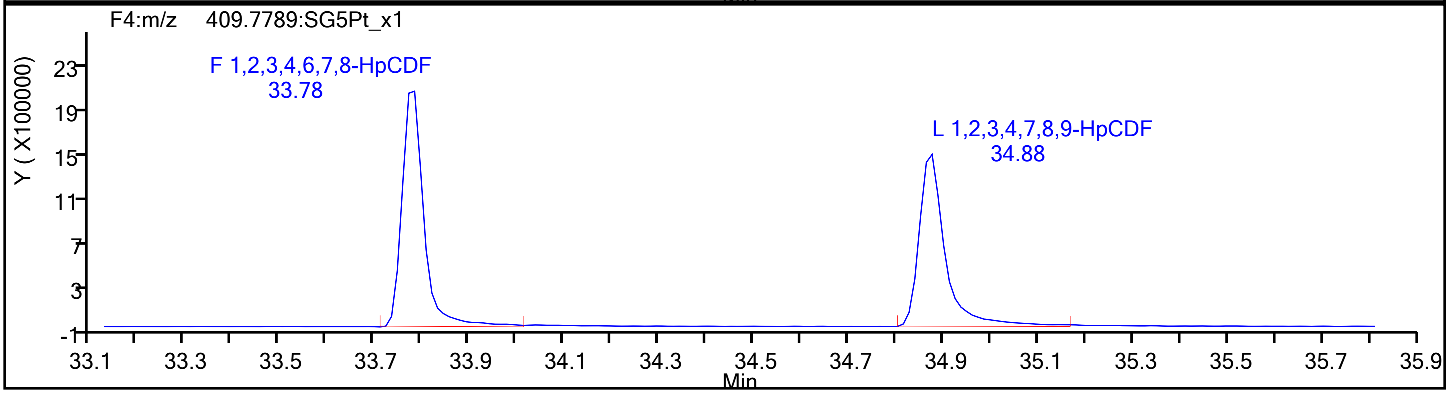

HpCDF Standards

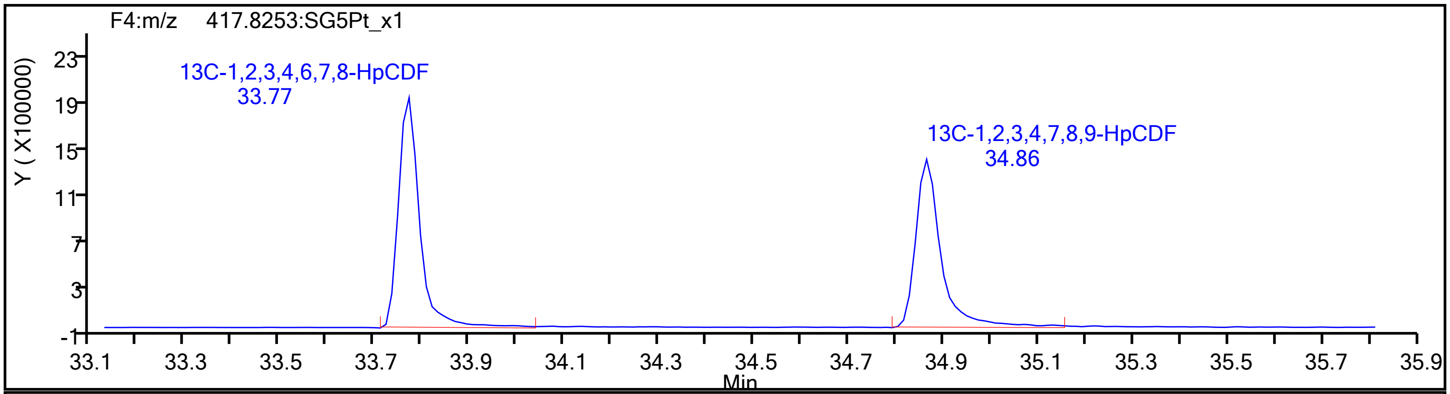

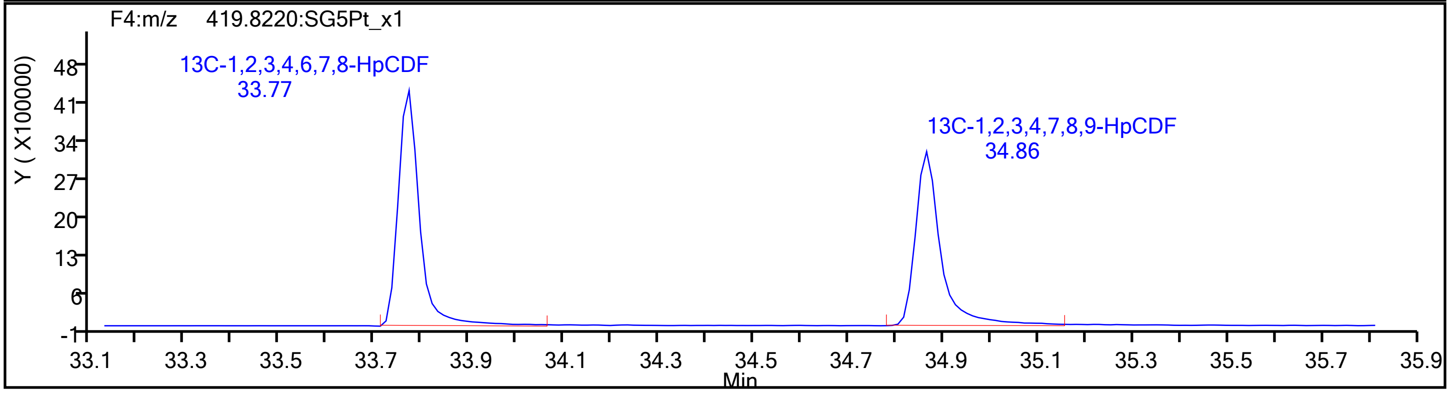

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

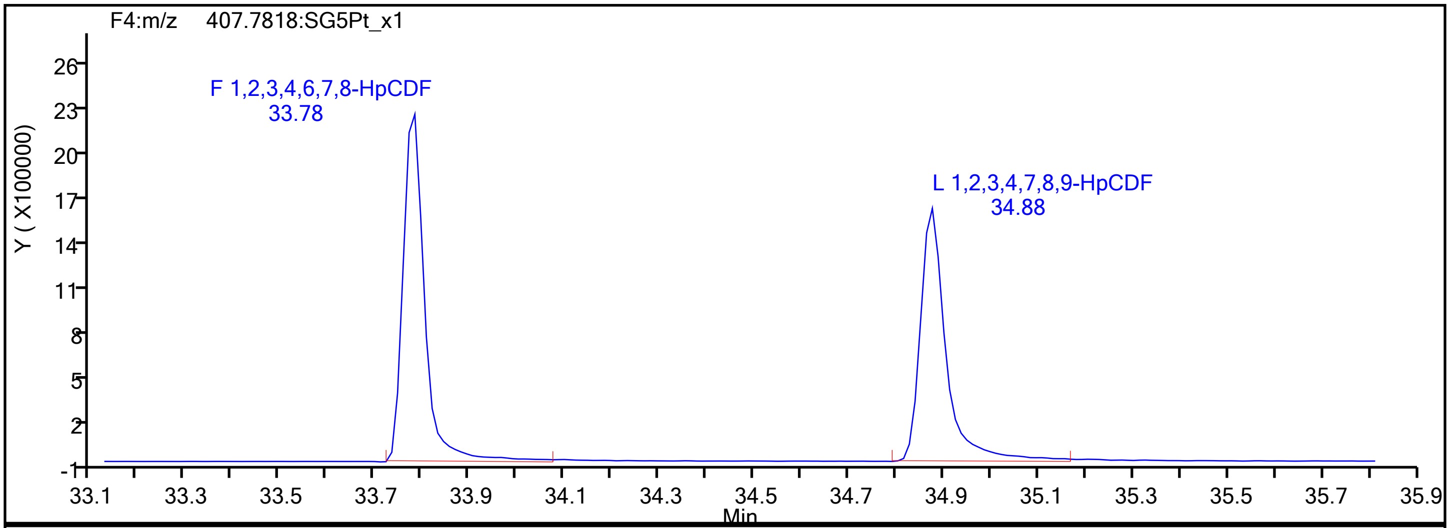

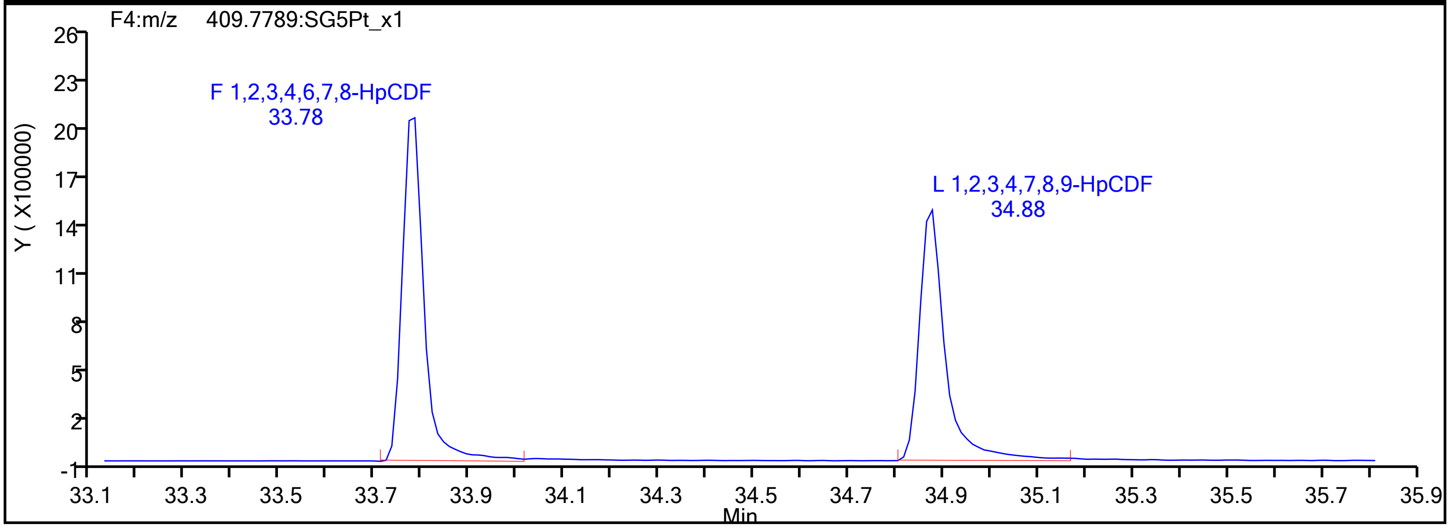

HpCDF Interference Mass

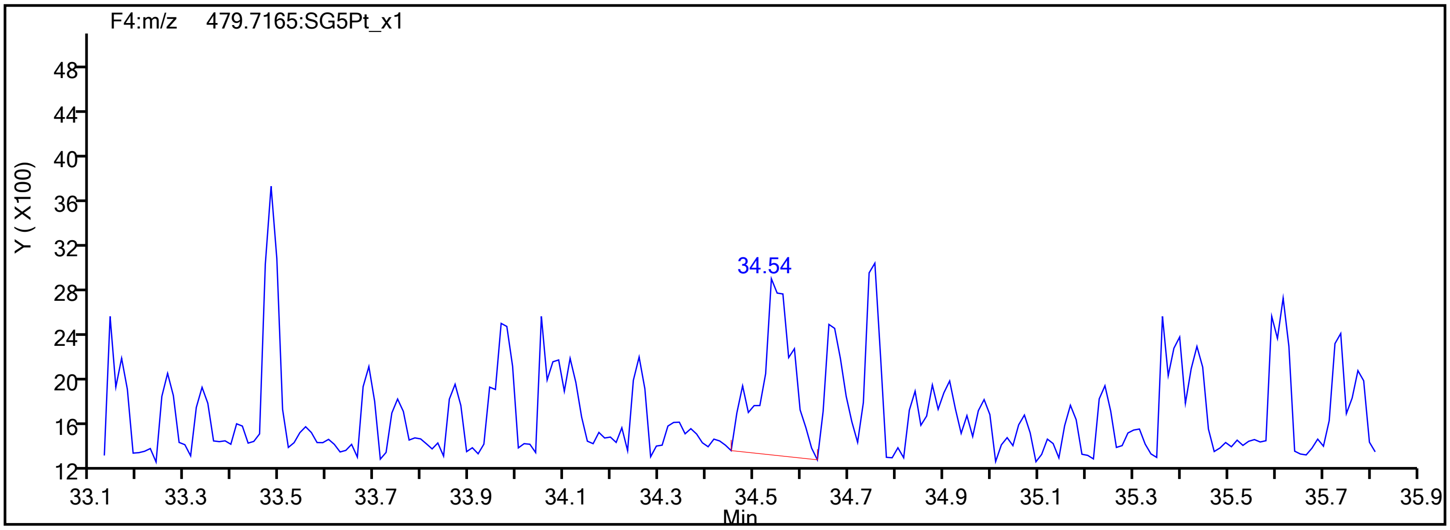

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

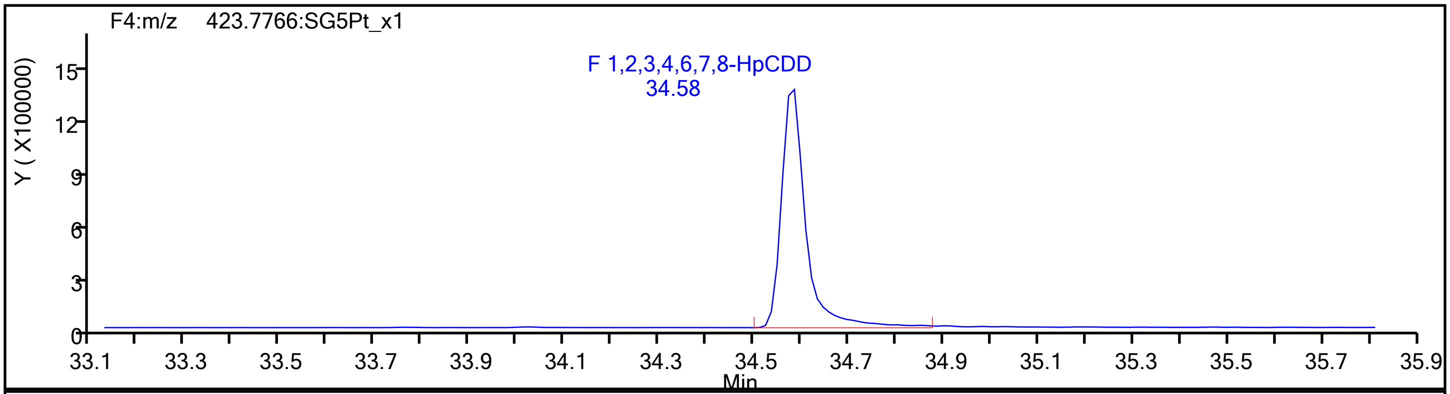

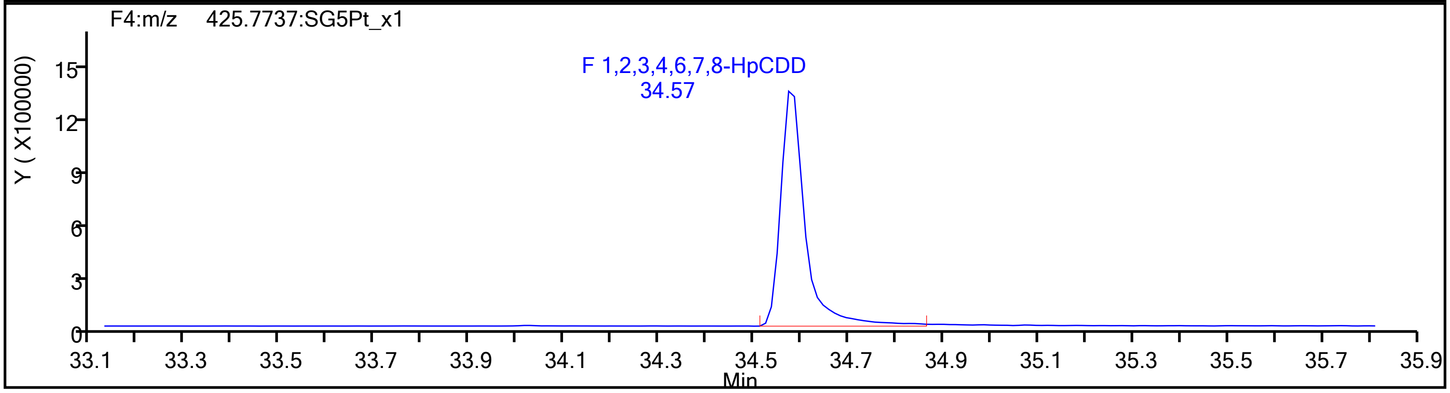

HpCDD Standards

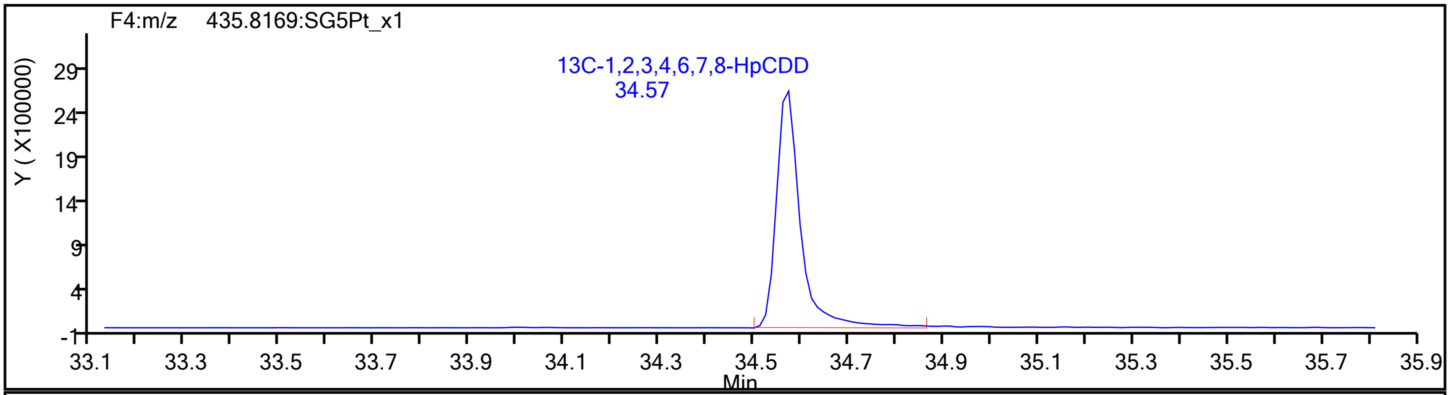

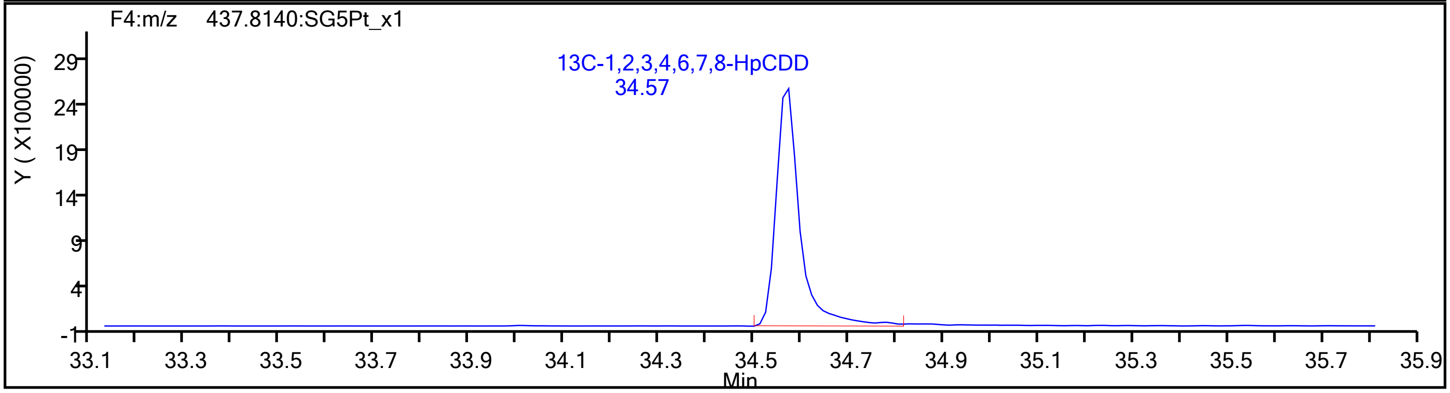

Report Date: 26-Nov-2020 00:06:44   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Injection Date: 24-Nov-2020 15:13:12   Injection Vol: 2.0 ul
Instrument ID: 10D5   Operator ID: SMA
Method: Dioxin_10D5   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203   Sample Line#: 15
Column Type: DB-5   Column Dia: 0.32 mm

OCDF

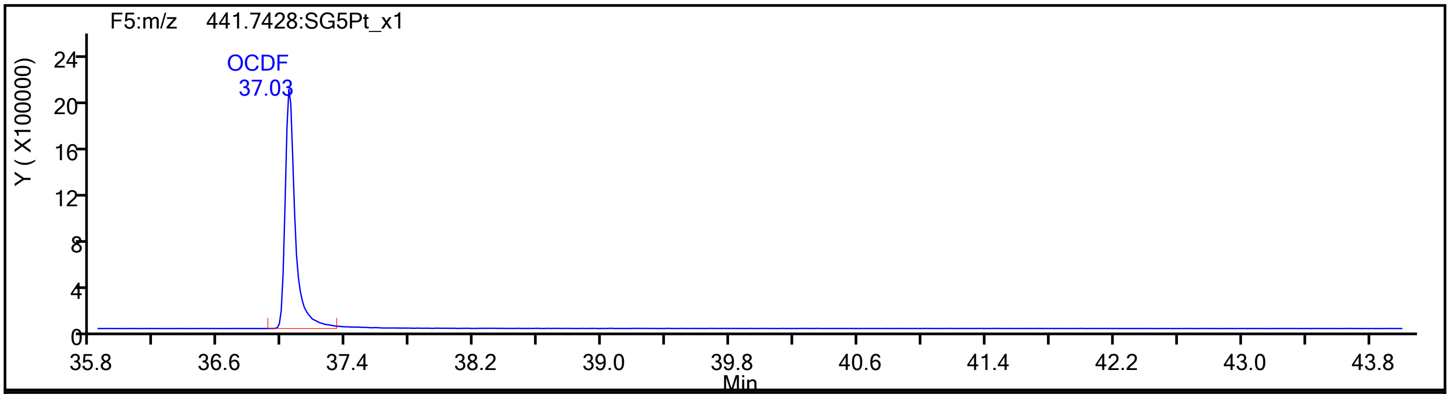

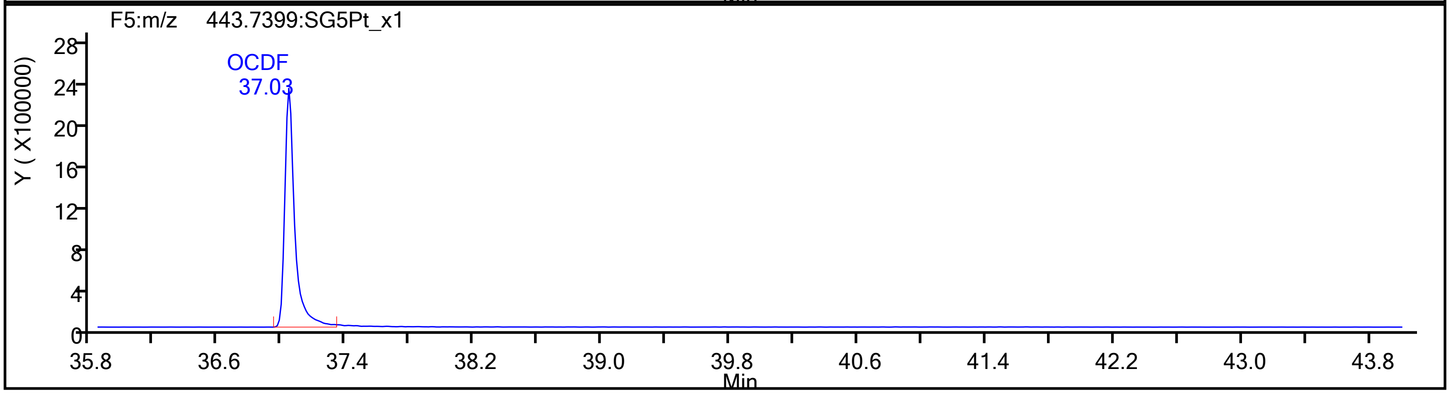

OCDF Standards

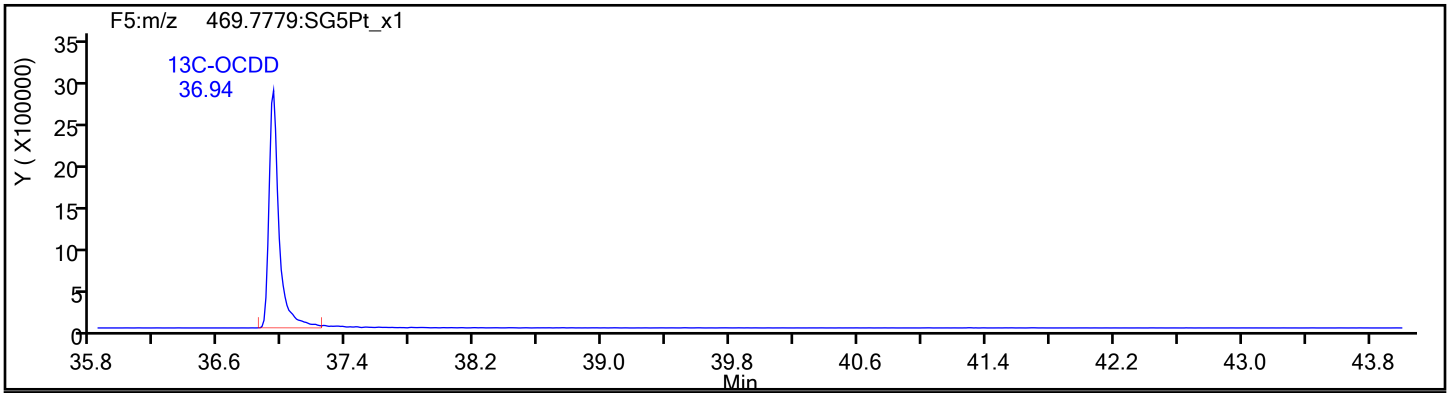

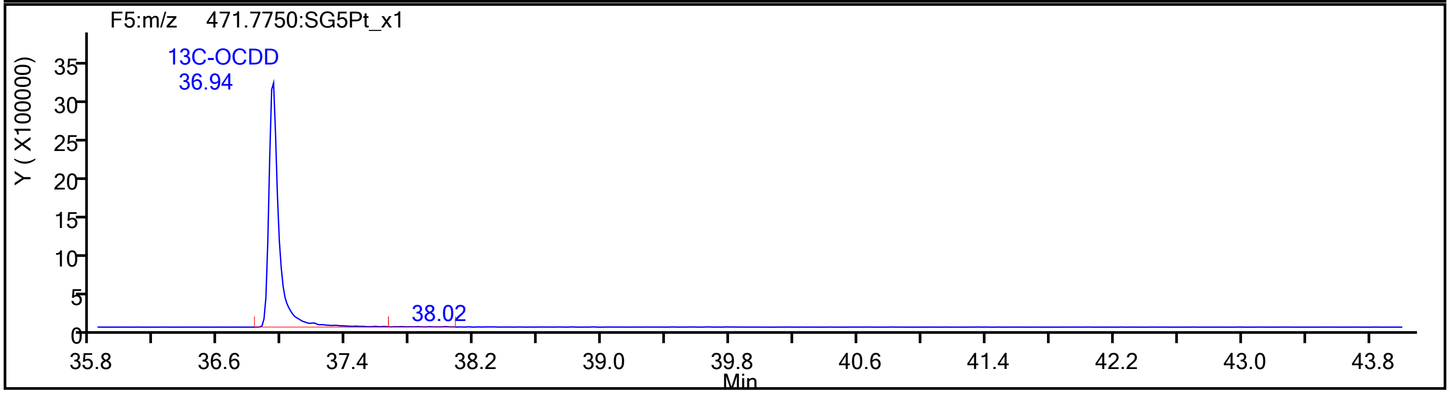

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Injection Date: 24-Nov-2020 15:13:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

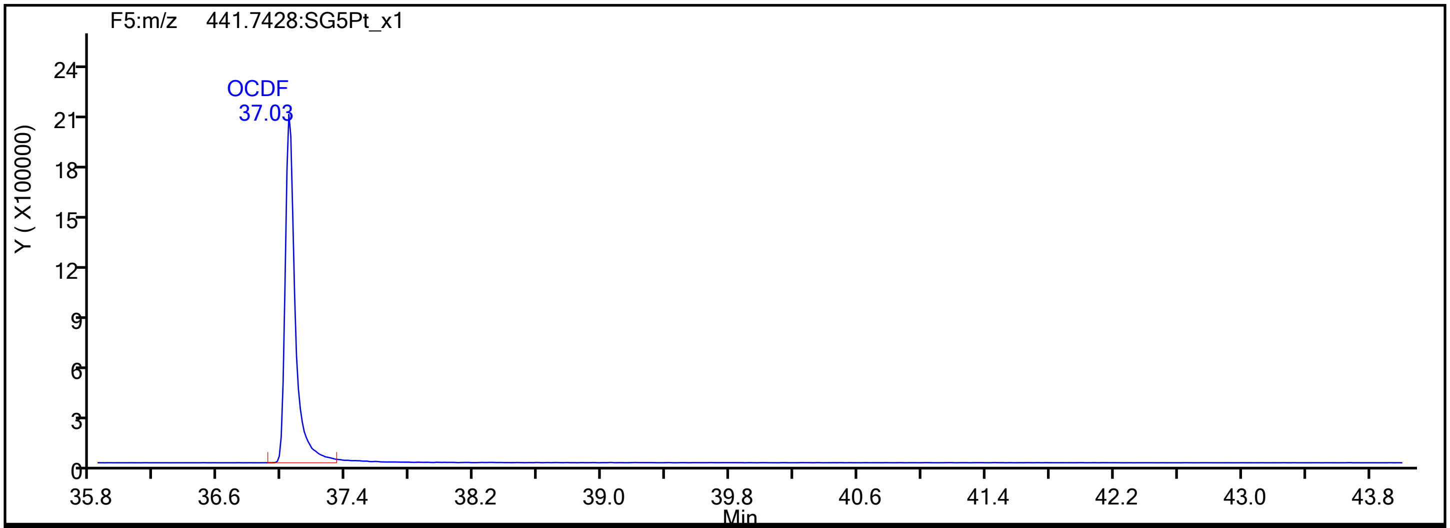

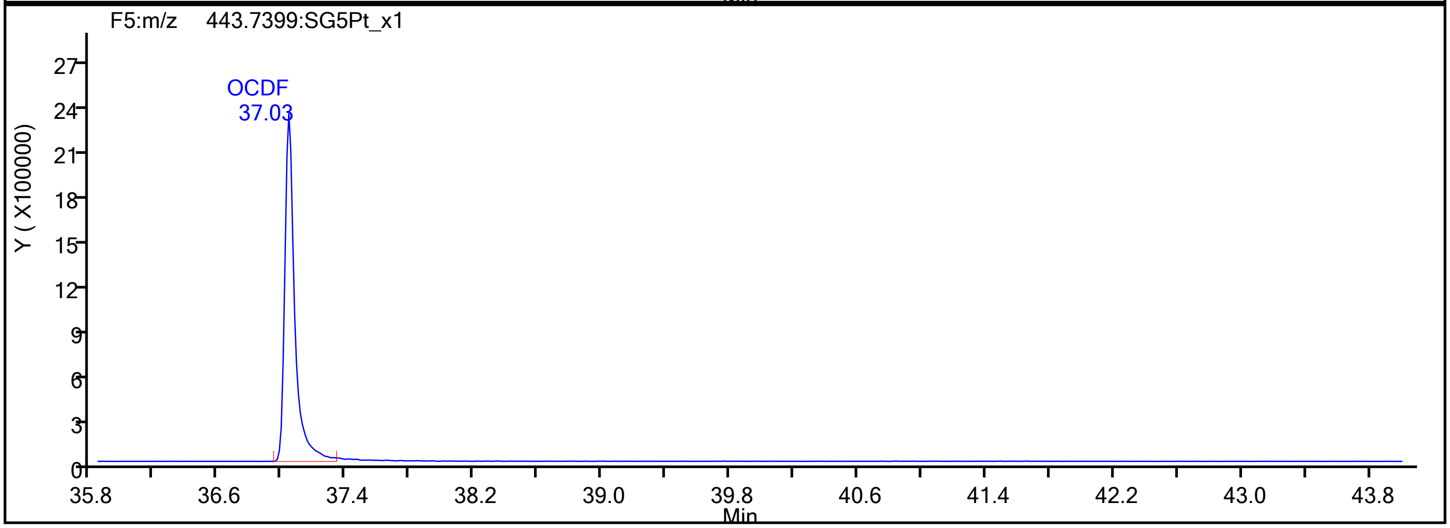

OCDF Interference Mass

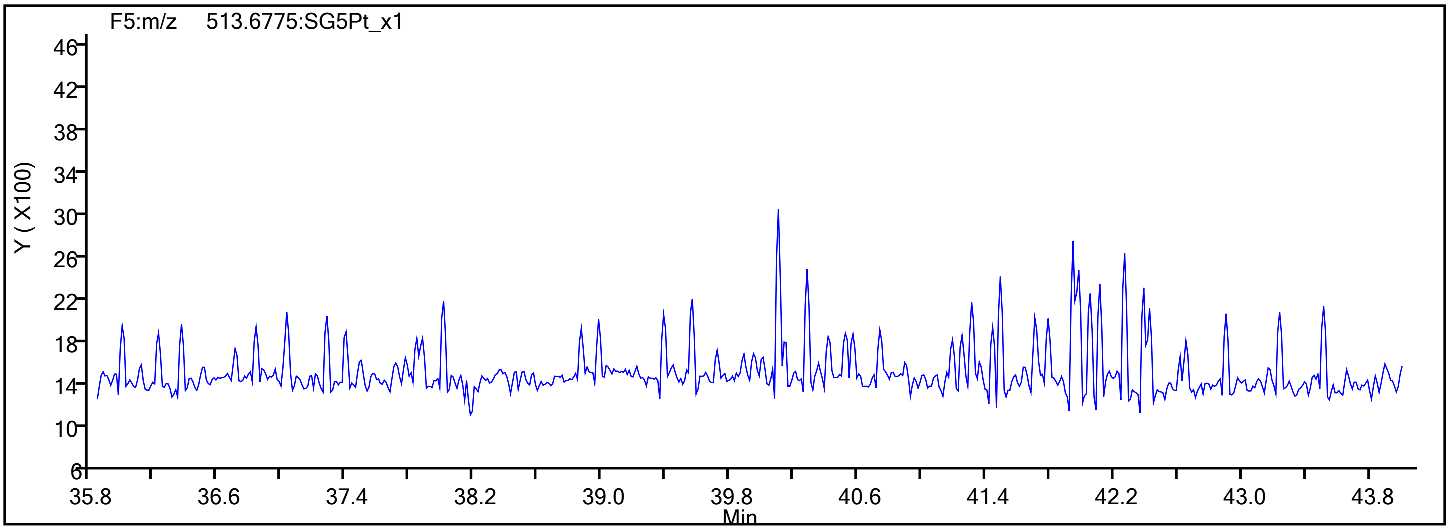

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Injection Date: 24-Nov-2020 15:13:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

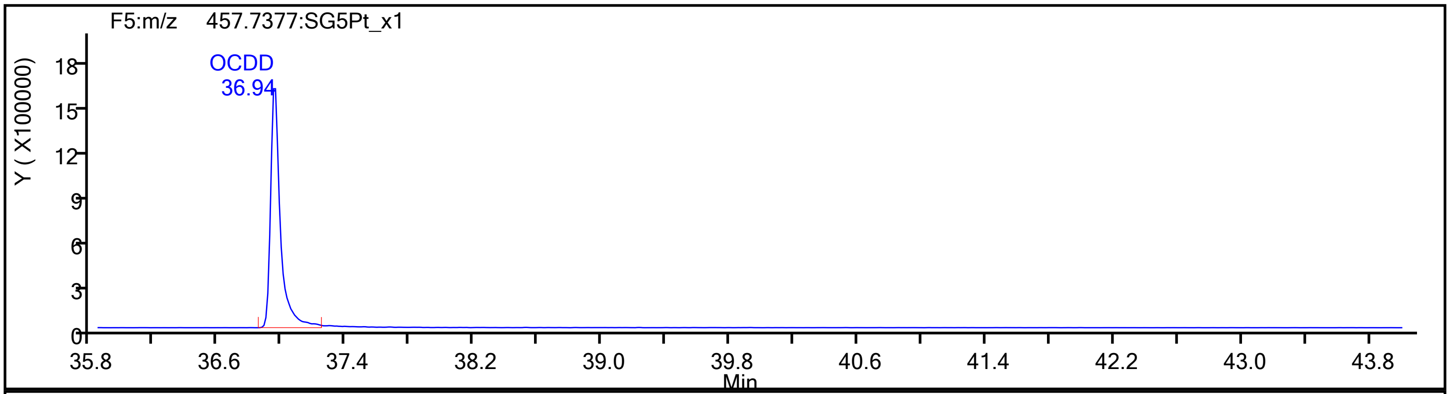

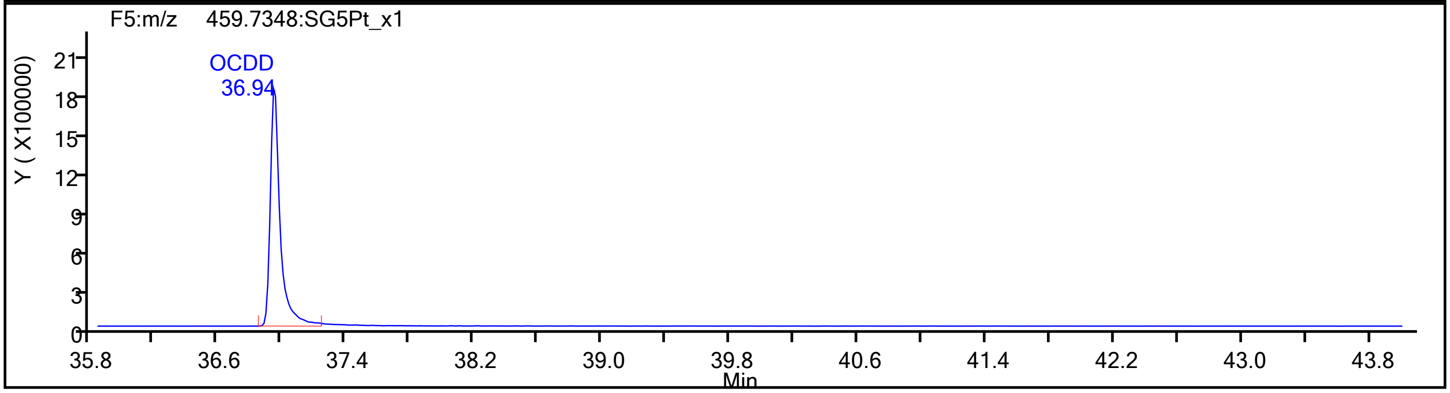

OCDD Standards

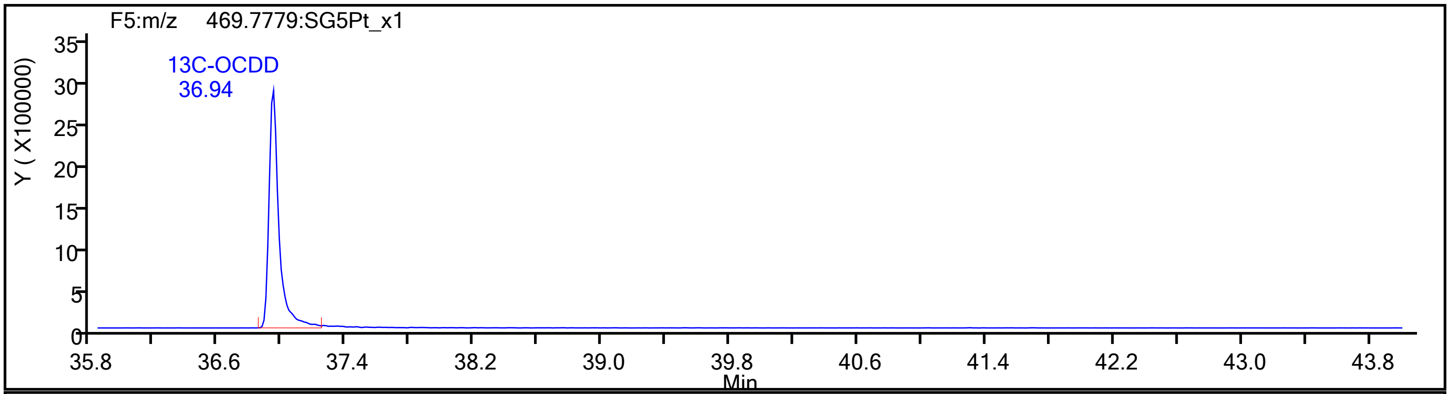

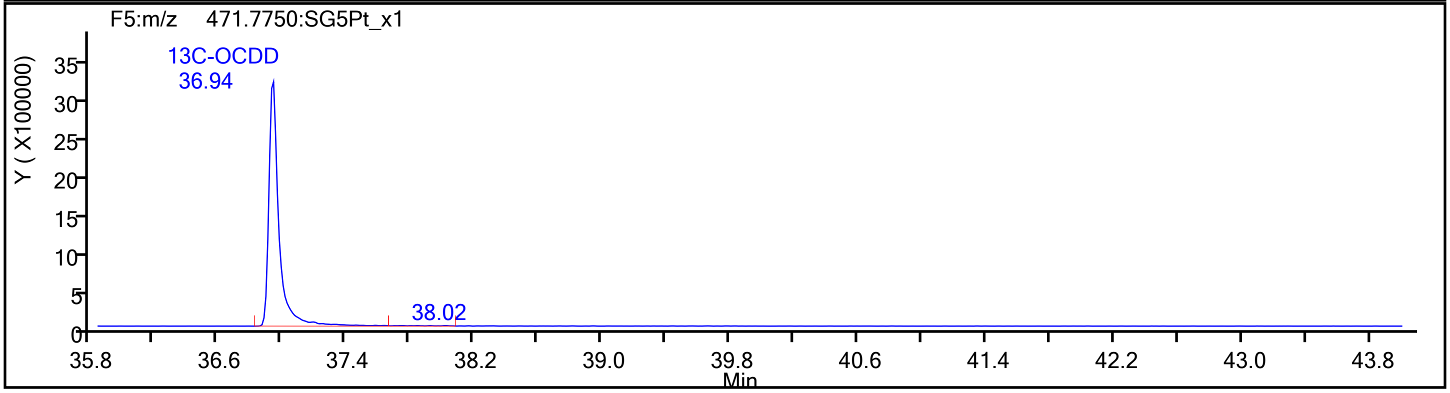

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

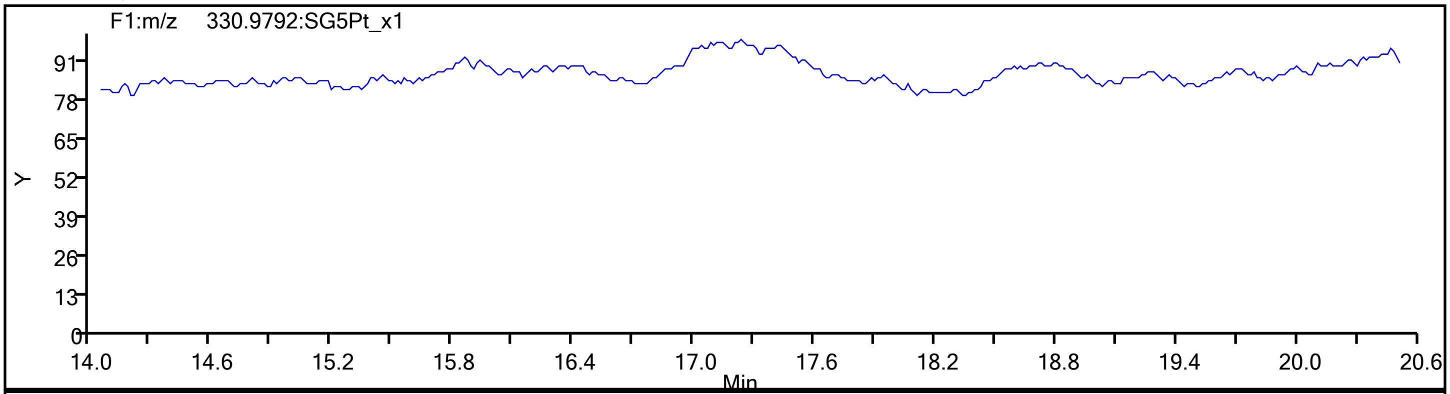

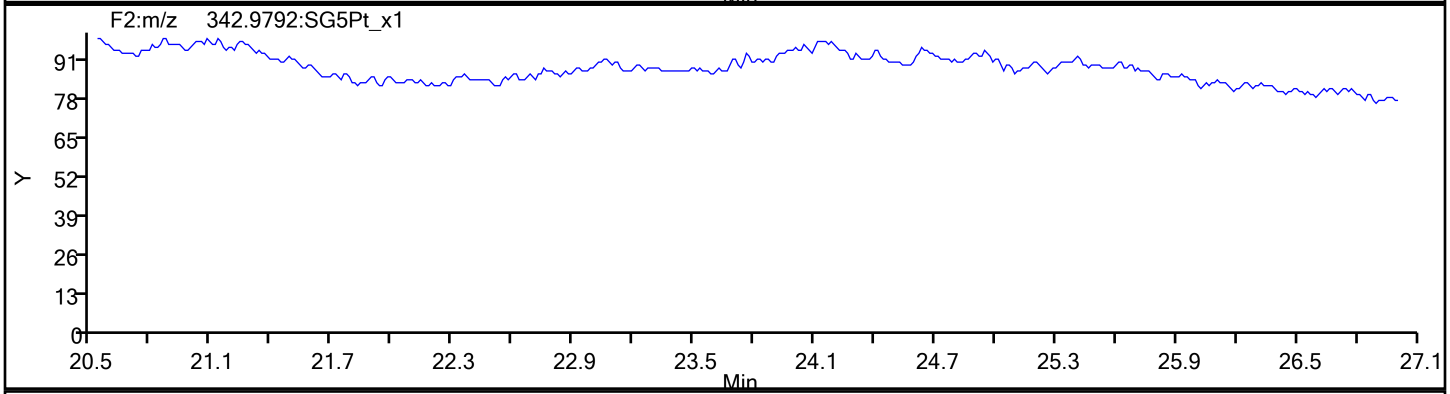

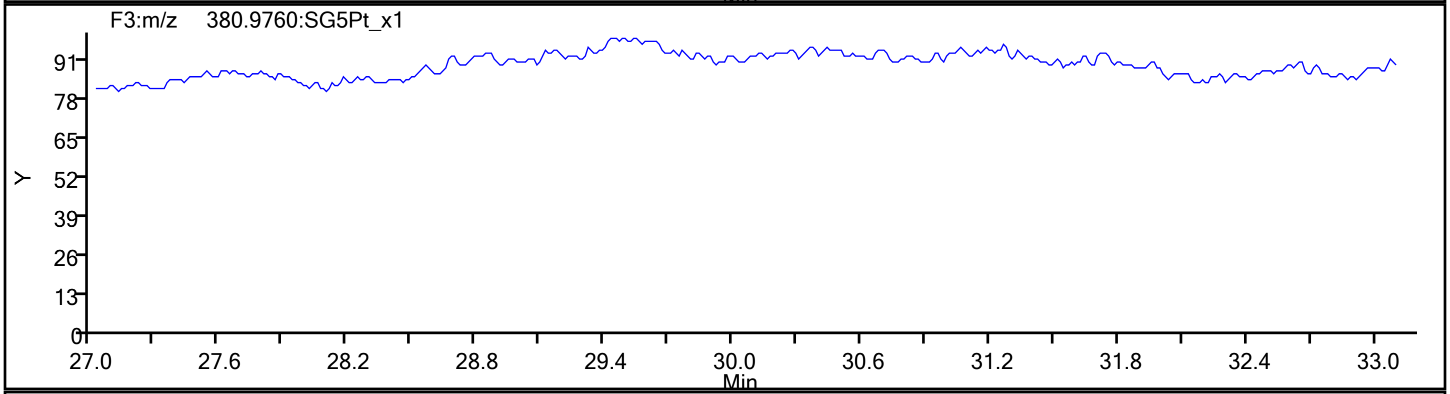

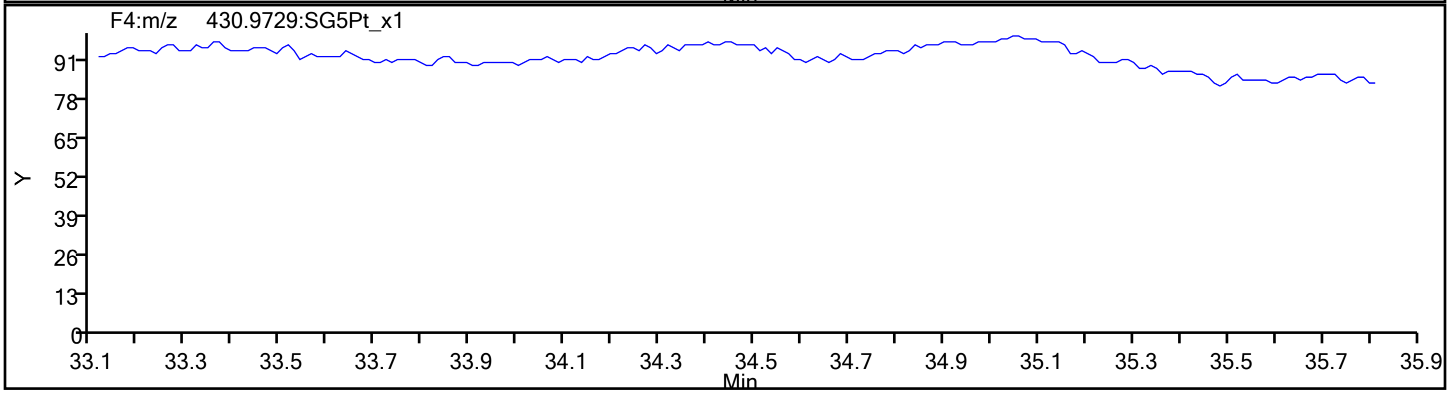

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

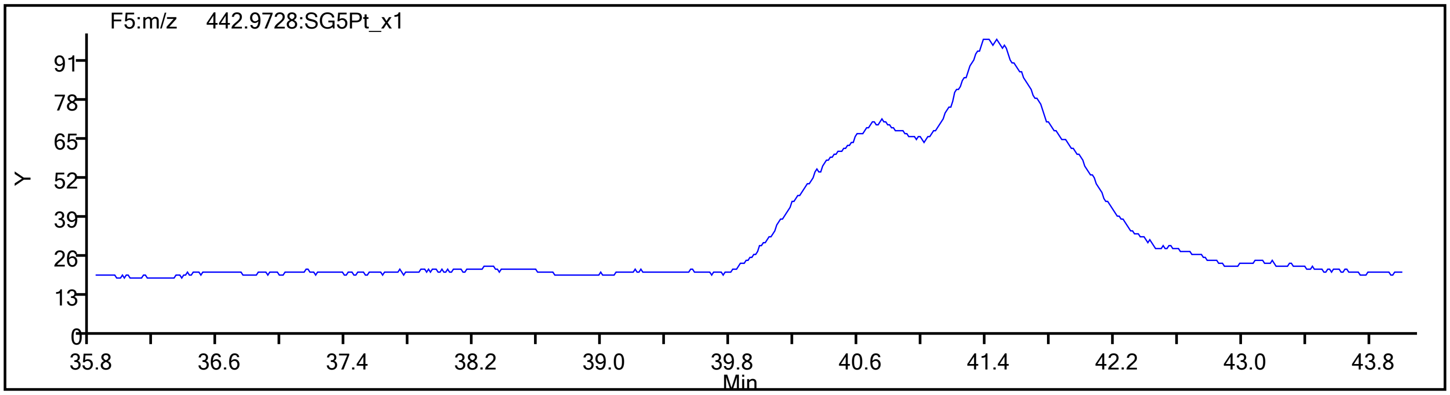

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-66850-1
SDG No.:
Lab Sample ID: ICV 320-398641/9
Calibration Date: 07/25/2020 03:40
Instrument ID: 11D2
Calib Start Date: 07/24/2020 23:50
GC Column: DB-225
ID: 0.32(mm)
Calib End Date: 07/25/2020 02:23
Lab File ID: 24JL2011D2_009.d
Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	25-Jul-2020 03:40:30	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00045				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:					
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:55:22	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:55:14		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045	Amount Added: 2.00	Units: uL

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Injection Date: 25-Jul-2020 03:40:30
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

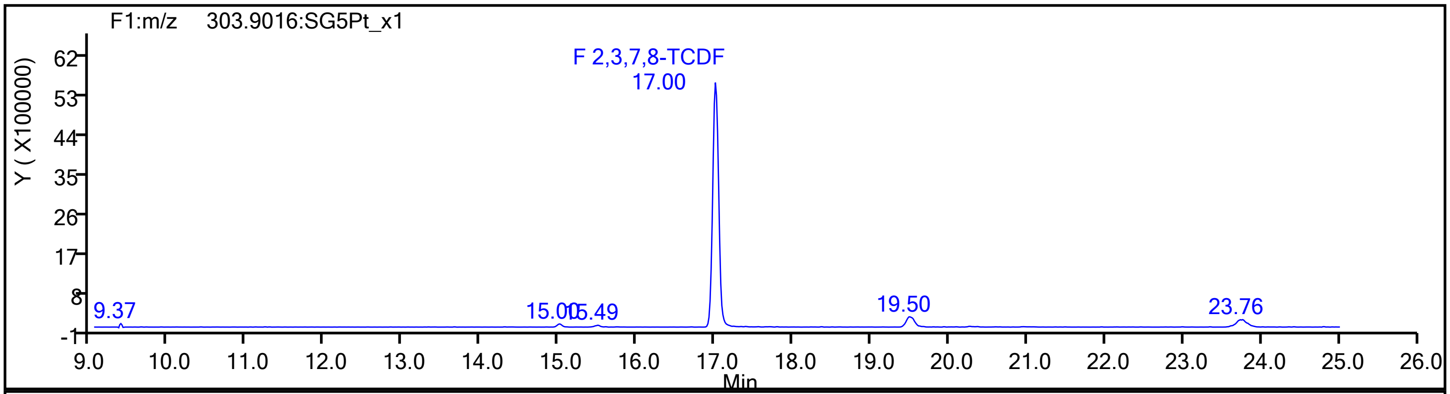

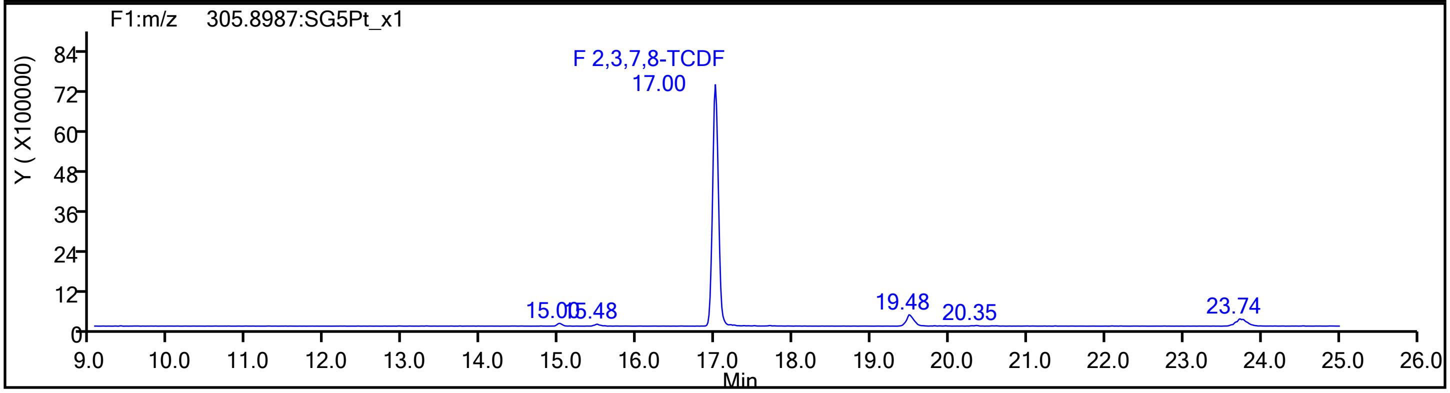

TCDF Standards

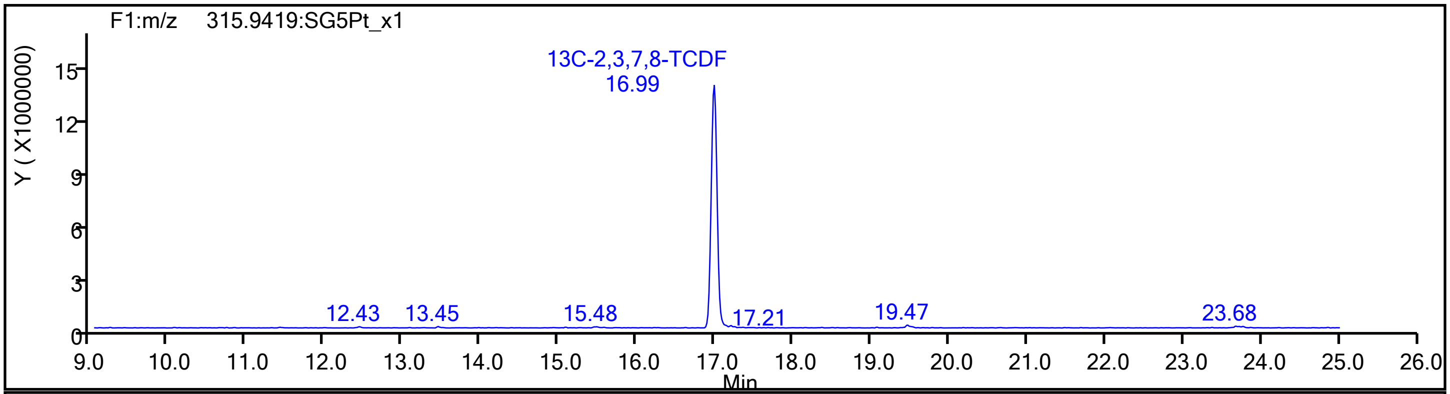

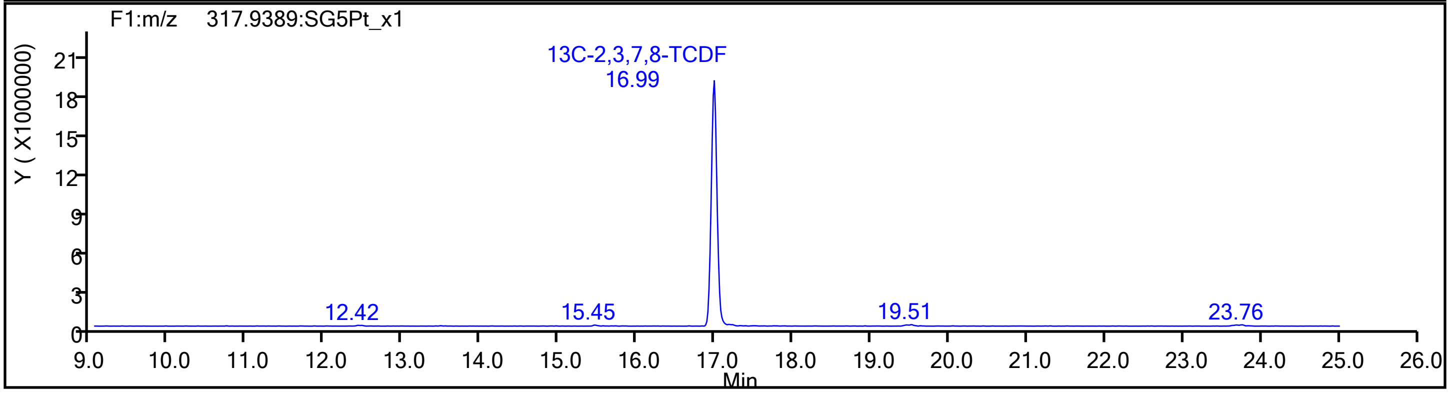

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

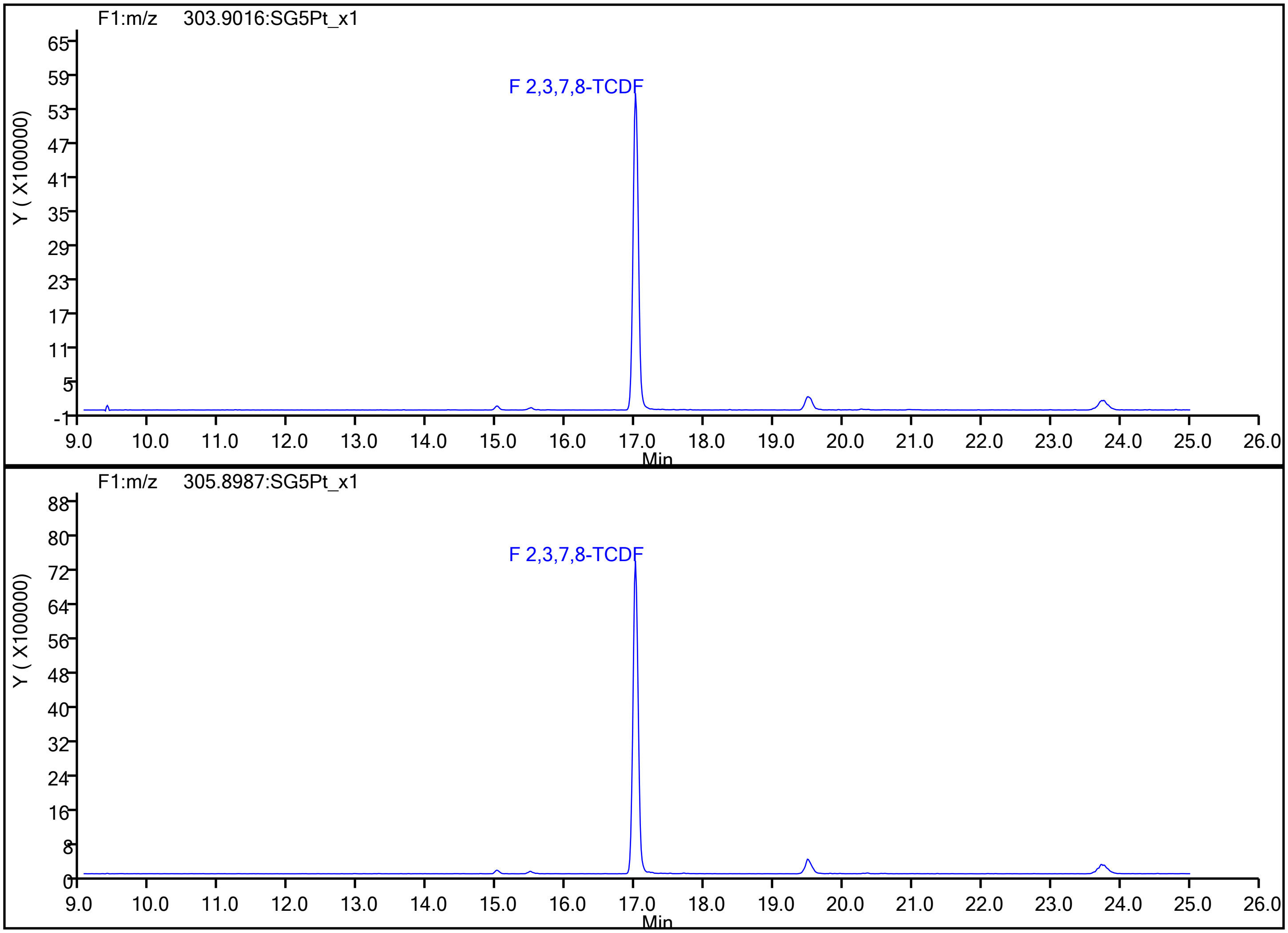

TCDF Interference Mass

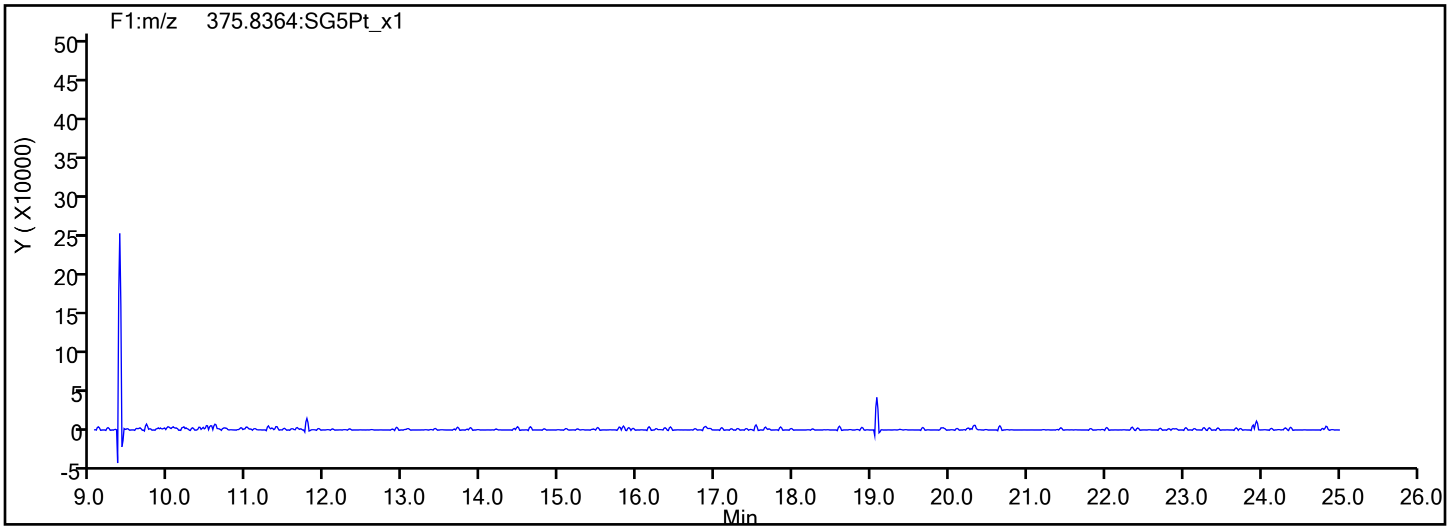

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

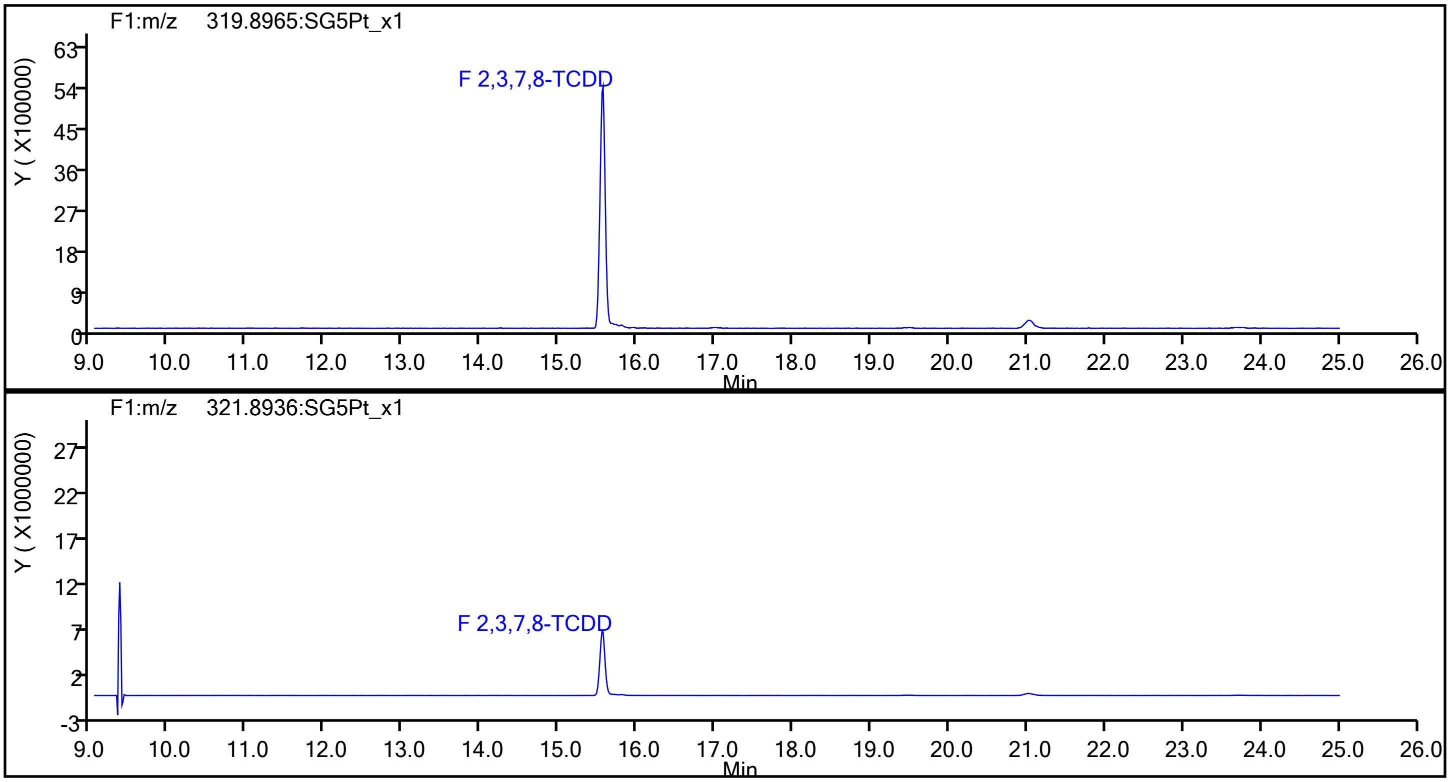

TCDD Standards

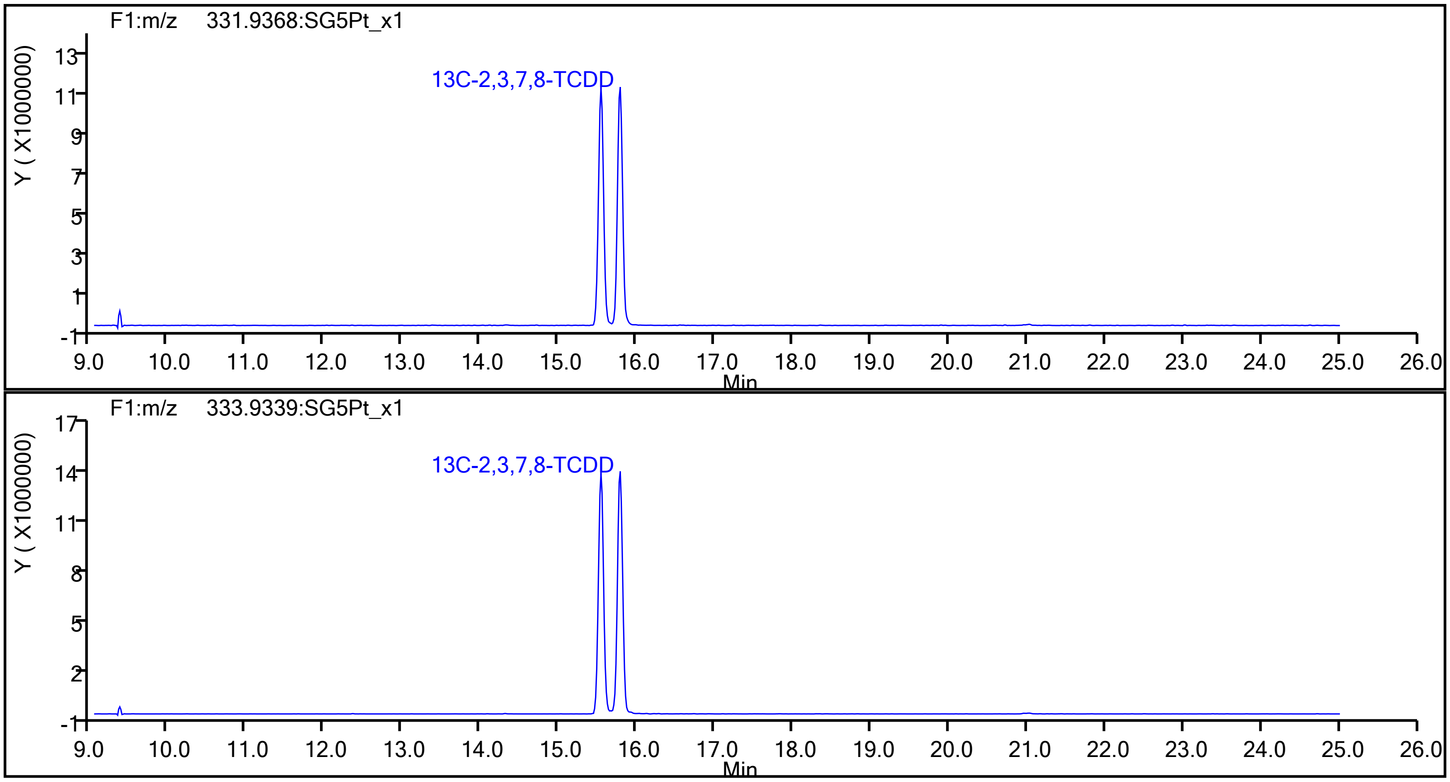

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

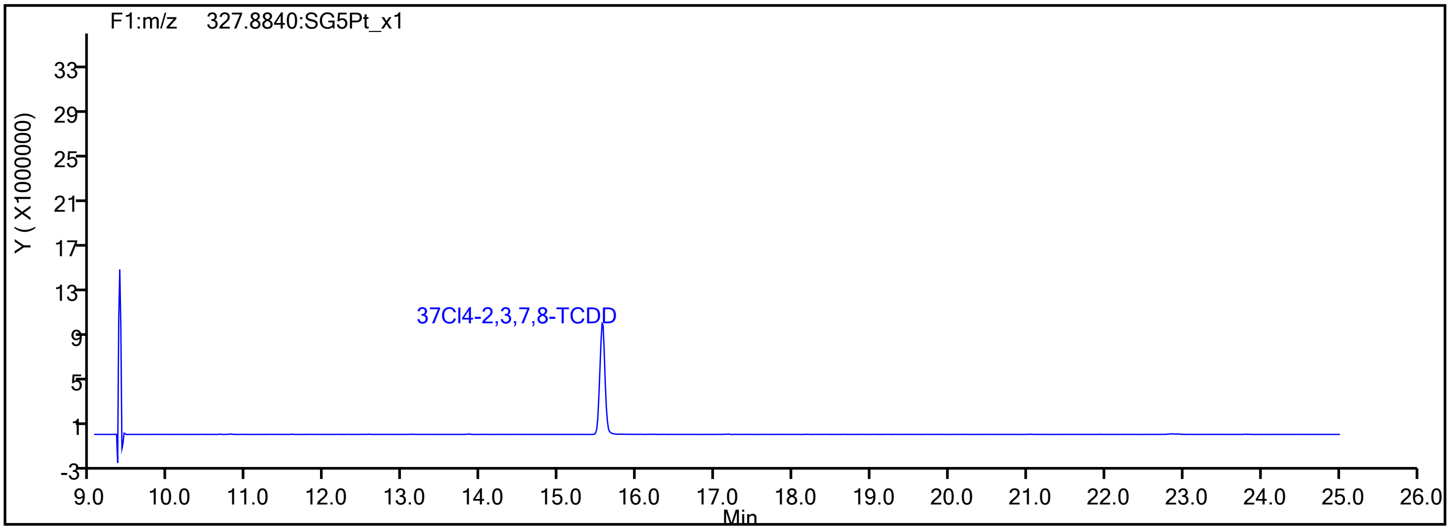

37Cl4-TCDD Standards

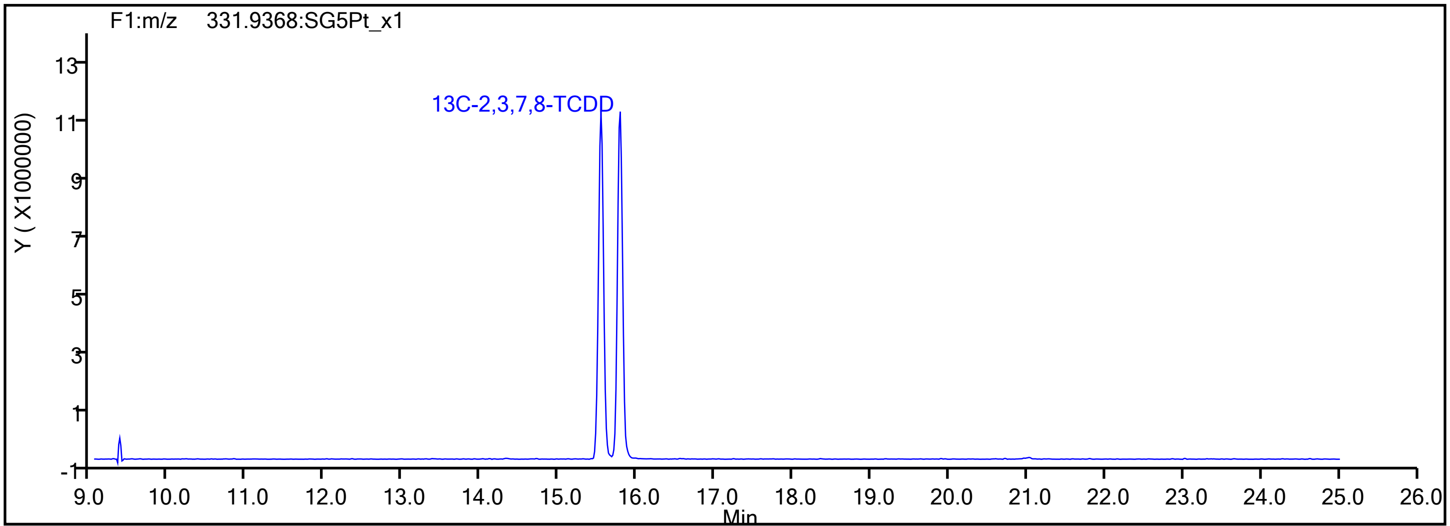

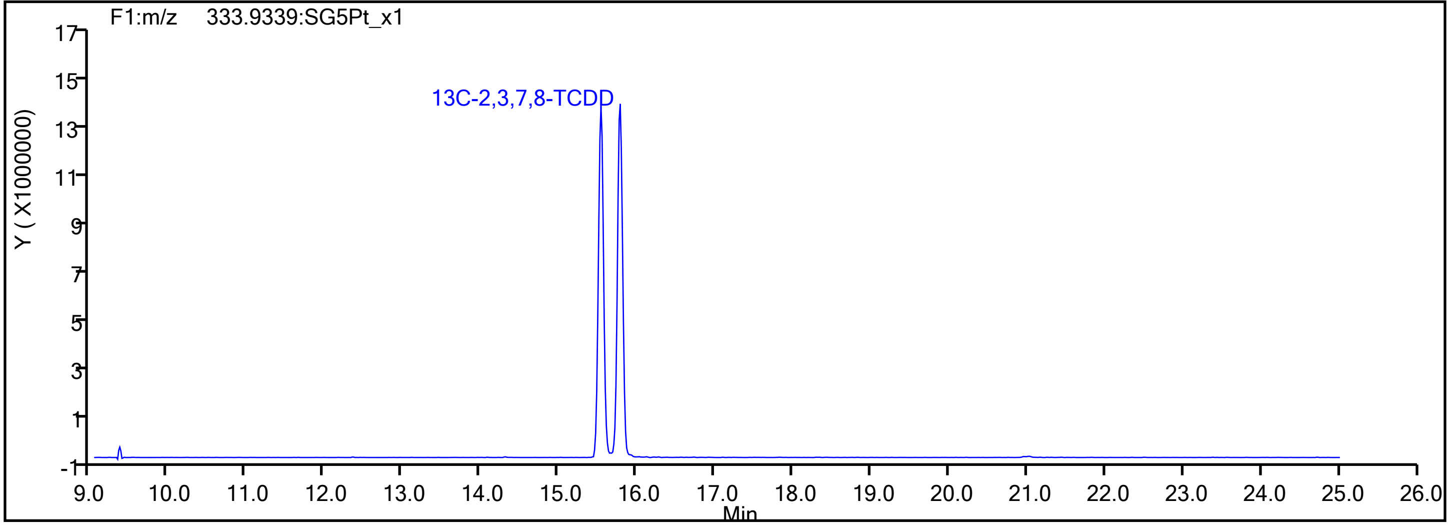

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

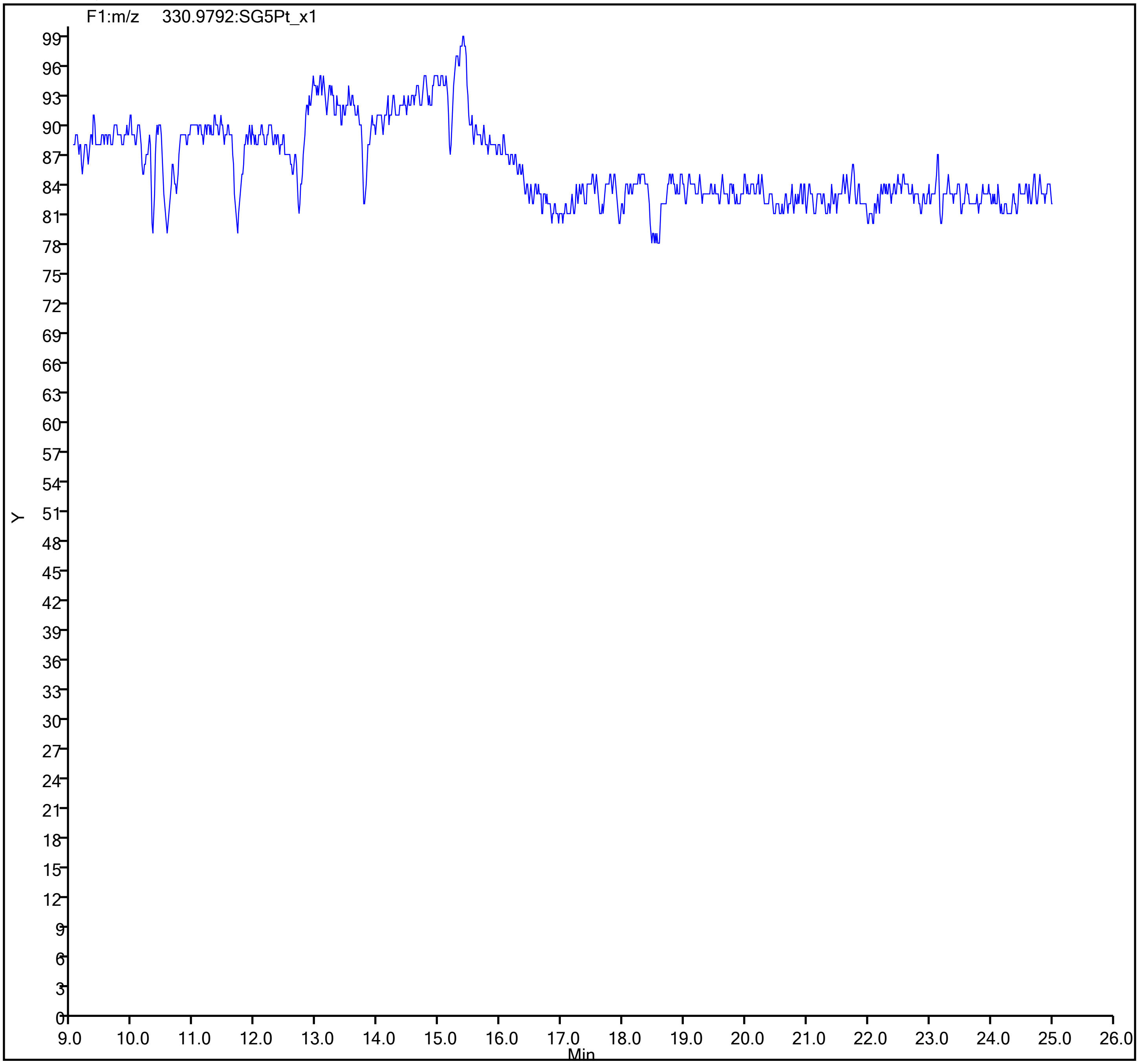

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Lab Sample ID: CCV 320-436991/2 Calibration Date: 11/30/2020 13:05

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 30NO2011D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.064		8.30	10.0	83	78-129
2,3,7,8-TCDF	AveID	0.9943	0.8459		8.51	10.0	85	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	1.059		108	100	108	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.642		105	100	105	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.053		10.6	10.0	106	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
30NO2011D2	1	CPS 113020	CPS HRDXNCP_00042				1.00000	
30NO2011D2	2	CCV 113020	CCV CS-4 HRDXNL4_00096				1.00000	
30NO2011D2	3	SU QC	QC HRDXNSU_00245	20	8290/1613B		1.00000	
30NO2011D2	4	320-432518	MB 320-432518/1-A	20	8290A_D5/Water	D200	1.00000	L
30NO2011D2	5	320-433926	680-191601-M-4-A	20	8290A_D5/Water	D200	1.00000	L
30NO2011D2	6	320-432518	680-191404-D-3-A	20	8290A_D5/Water	D200	1.00000	L
30NO2011D2	7	320-432518	280-142750-A-1-A	20	8290A_D5/Water		1.00000	L
30NO2011D2	8	320-432518	280-142750-B-2-A	20	8290A_D5/Water		1.00000	L
30NO2011D2	9	320-434333	280-142583-A-2-B	20	8290A/Solid	88	10.00000	g
30NO2011D2	10	320-434333	280-142583-A-3-B	20	8290A/Solid		10.00000	g
30NO2011D2	11	320-434333	280-142583-A-4-B	20	8290A/Solid		10.00000	g
30NO2011D2	12	320-432973	320-66850-A-2-B	20	1613B/Water	D200	1.00000	L
30NO2011D2	13	320-432973	320-66850-A-3-B	20	1613B/Water		1.00000	L
30NO2011D2	14	320-432973	320-66850-A-5-B	20	1613B/Water		1.00000	L
30NO2011D2	15	320-432973	320-66850-A-4-B	20	1613B/Water		1.00000	L
30NO2011D2	16	320-432973	320-66850-A-6-B	20	1613B/Water		1.00000	L
30NO2011D2	17	SB 113020A	SB Solvent Blank C-14				1.00000	
30NO2011D2	18	CCV 113020A	CCV CS-4 HRDXNL4_00096				1.00000	
30NO2011D2	19						1.00000	
30NO2011D2	20						1.00000	
30NO2011D2	21						1.00000	
30NO2011D2	22						1.00000	
30NO2011D2	23						1.00000	
30NO2011D2	24						1.00000	
30NO2011D2	25						1.00000	
30NO2011D2	26						1.00000	
30NO2011D2	27		KSS, ALM 11-30-20				1.00000	
30NO2011D2	28						1.00000	

logfile checked
12-01-20 ALM

Peak Locate Examination:30-NOV-2020:12:26 File:30NO2011D2
Experiment:DB225RES Function:1 Reference:PFK

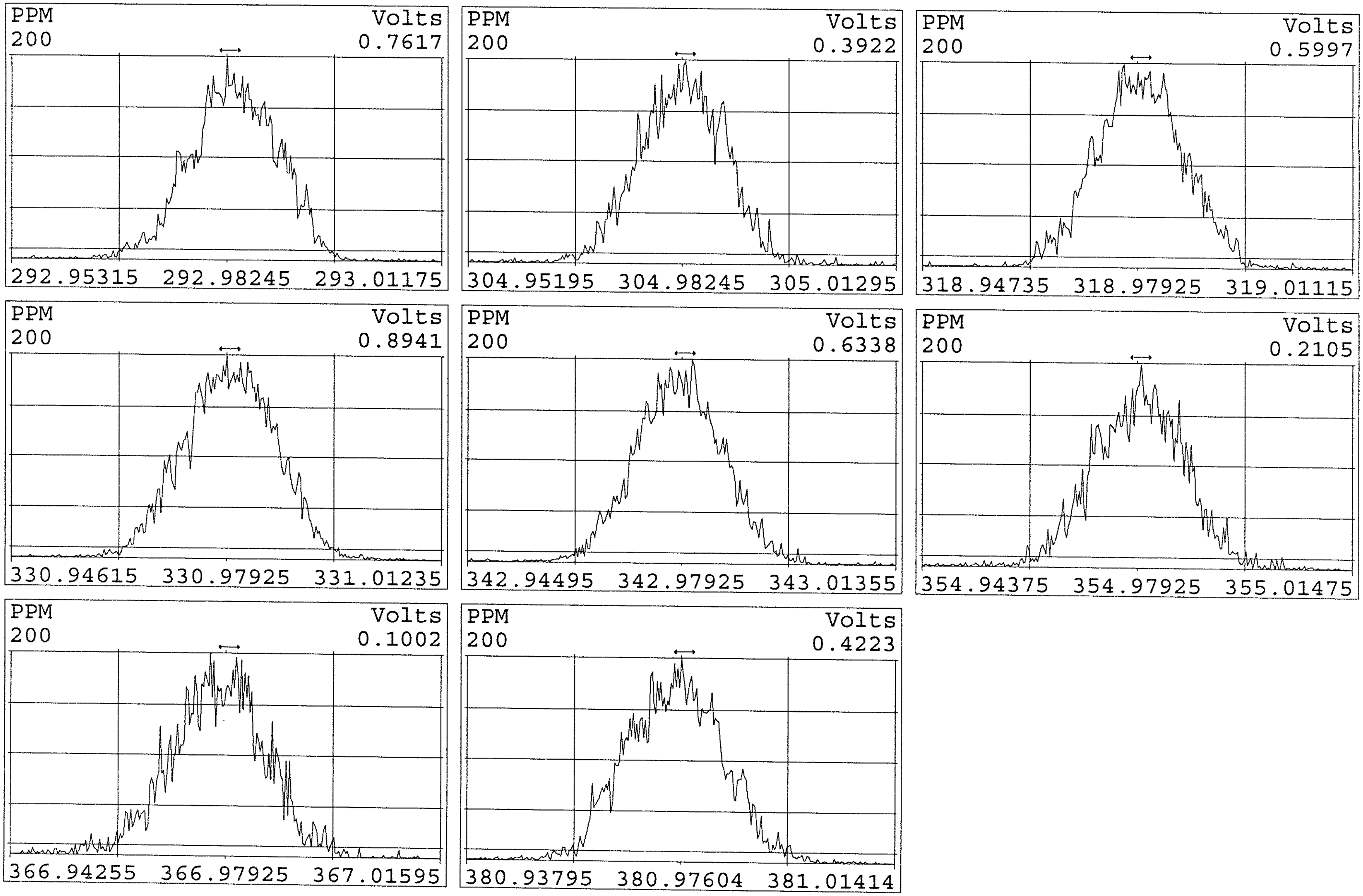

Peak Locate Examination: 1-DEC-2020:00:10 File:RESCHK30NO2011D2
Experiment:DB225RES Function:1 Reference:PFK

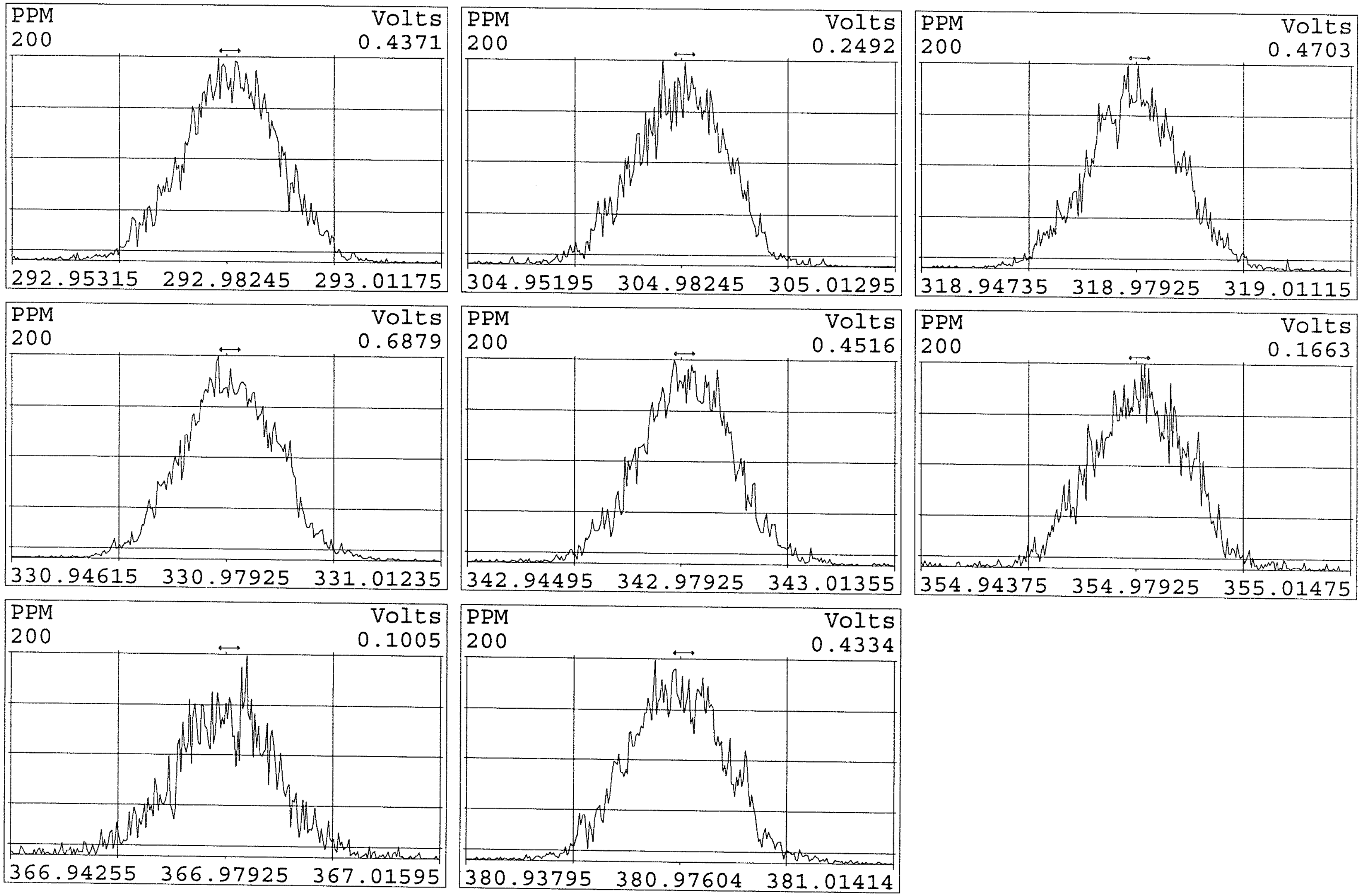

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	30-Nov-2020 13:05:55	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00096				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				

Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	01-Dec-2020 08:43:51	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR	
Process Host:	CTX1643		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.573	219183598	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.767	359823316	0.79	1.5708	104.5	104.5	0.1398	0.1398	105	
2,3,7,8-TCDF	16.780	30436027	0.75	0.9943	8.507	8.507	0.0194	0.0194	85.07	
D 13C-2,3,7,8-TCDD	15.326	232170281	0.79	0.9834	107.7	107.7	0.1491	0.1491	108	
2,3,7,8-TCDD	15.340	24705443	0.79	1.2822	8.299	8.299	0.0289	0.0289	82.99	
$ 37Cl4-2,3,7,8-TCDD	15.340	23078198		0.9945	10.6	10.6	0.0241	0.0241	106	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 30-Nov-2020 13:05:55 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00096
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:51 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.573	15.573	0		96863427	22285671	15114	37785	1475		
333.9339	15.559	15.573	-1		122320171	27707038	14208	35520	1950	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.767	16.767	0	1.077	158266458	32101022	25364	63410	1266		
317.9389	16.767	16.767	0	1.077	201556858	41294203	18544	46360	2227	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.780	16.780	0	1.001	13085023	2650222	3002	7505	883		
305.8987	16.780	16.780	0	1.001	17351004	3537919	2667	6667	1327	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.326	15.326	0	0.984	102719902	24170250	15114	37785	1599		
333.9339	15.326	15.326	0	0.984	129450379	30296549	14208	35520	2132	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.340	15.340	0	1.001	10886164	2524422	4547	11367	555		
321.8936	15.340	15.340	0	1.001	13819279	3207229	3538	8845	907	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.340	15.340	0	0.985	23078198	5454675	4792	11980	1138		

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d

Injection Date: 30-Nov-2020 13:05:55

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 436991

Sample Line#: 2

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

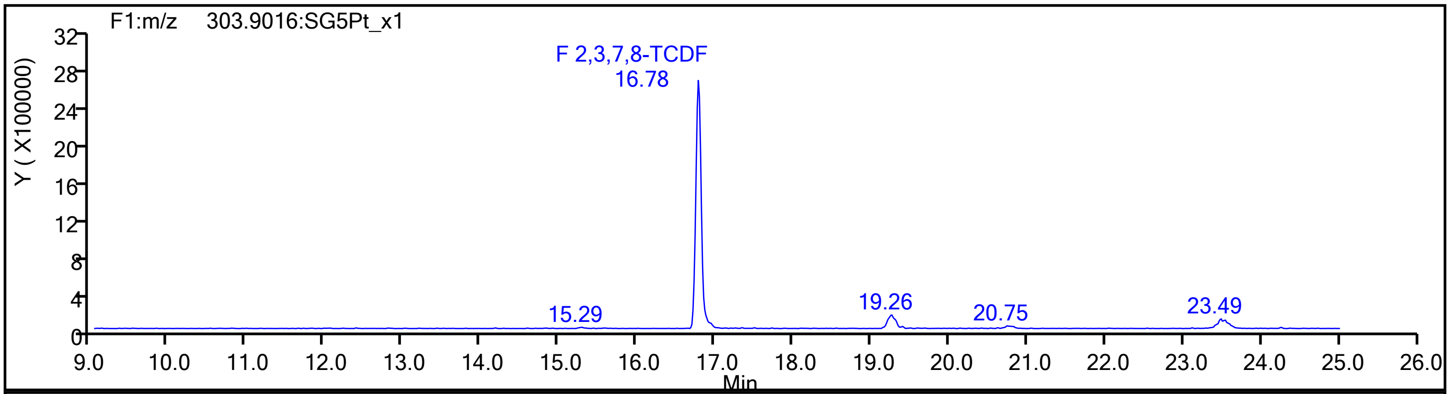

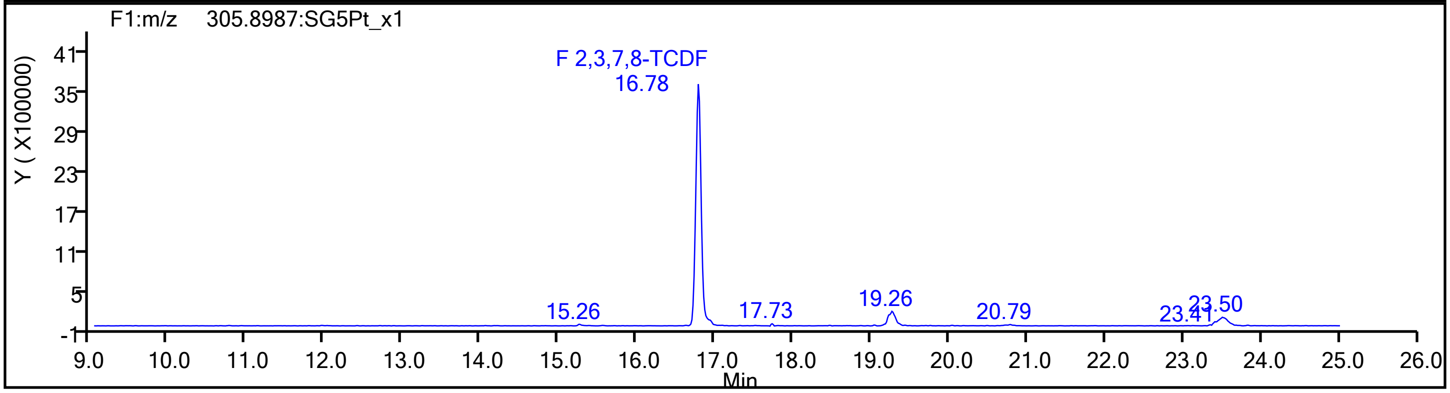

TCDF Standards

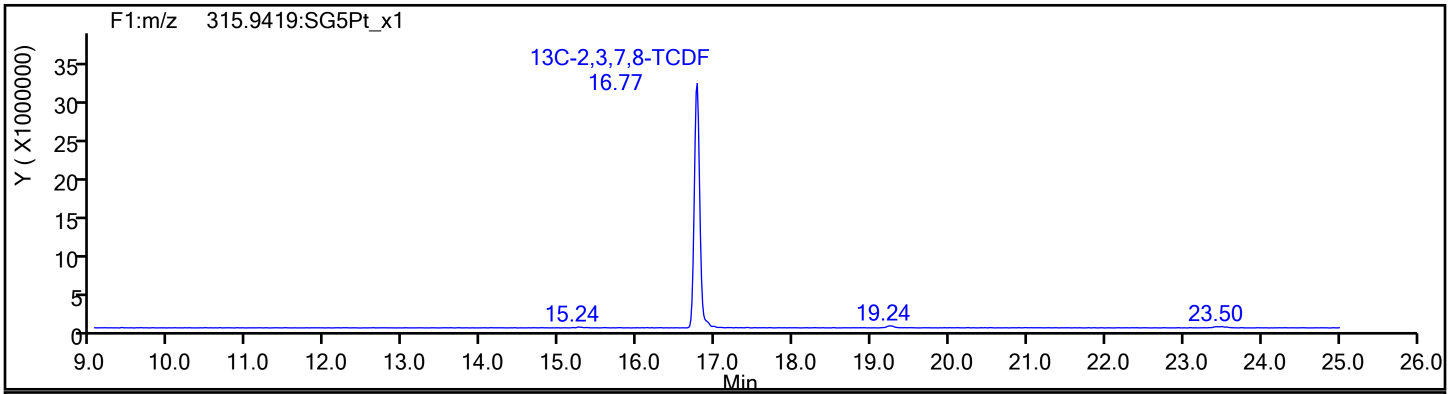

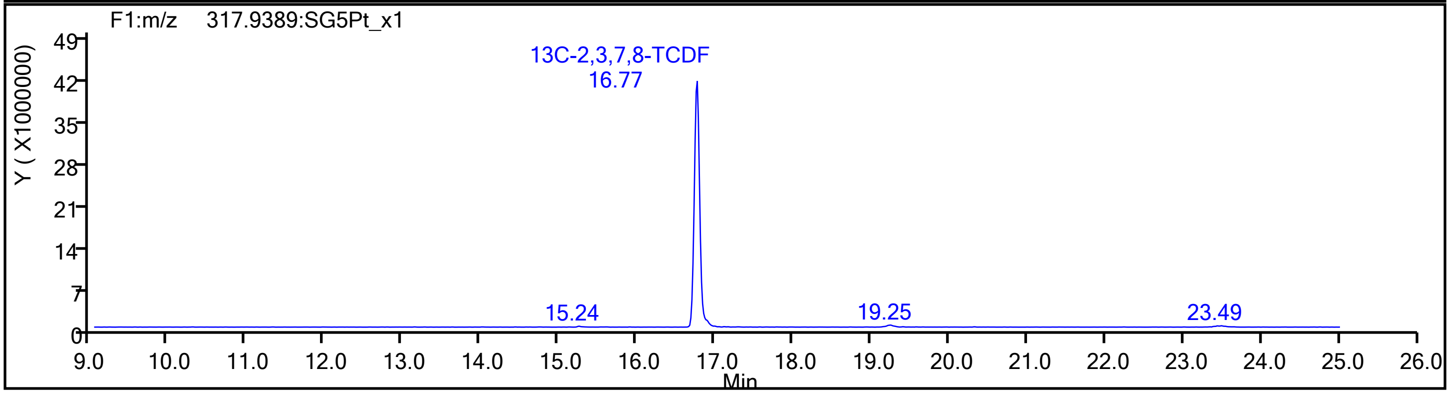

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d		
Injection Date:	30-Nov-2020 13:05:55	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

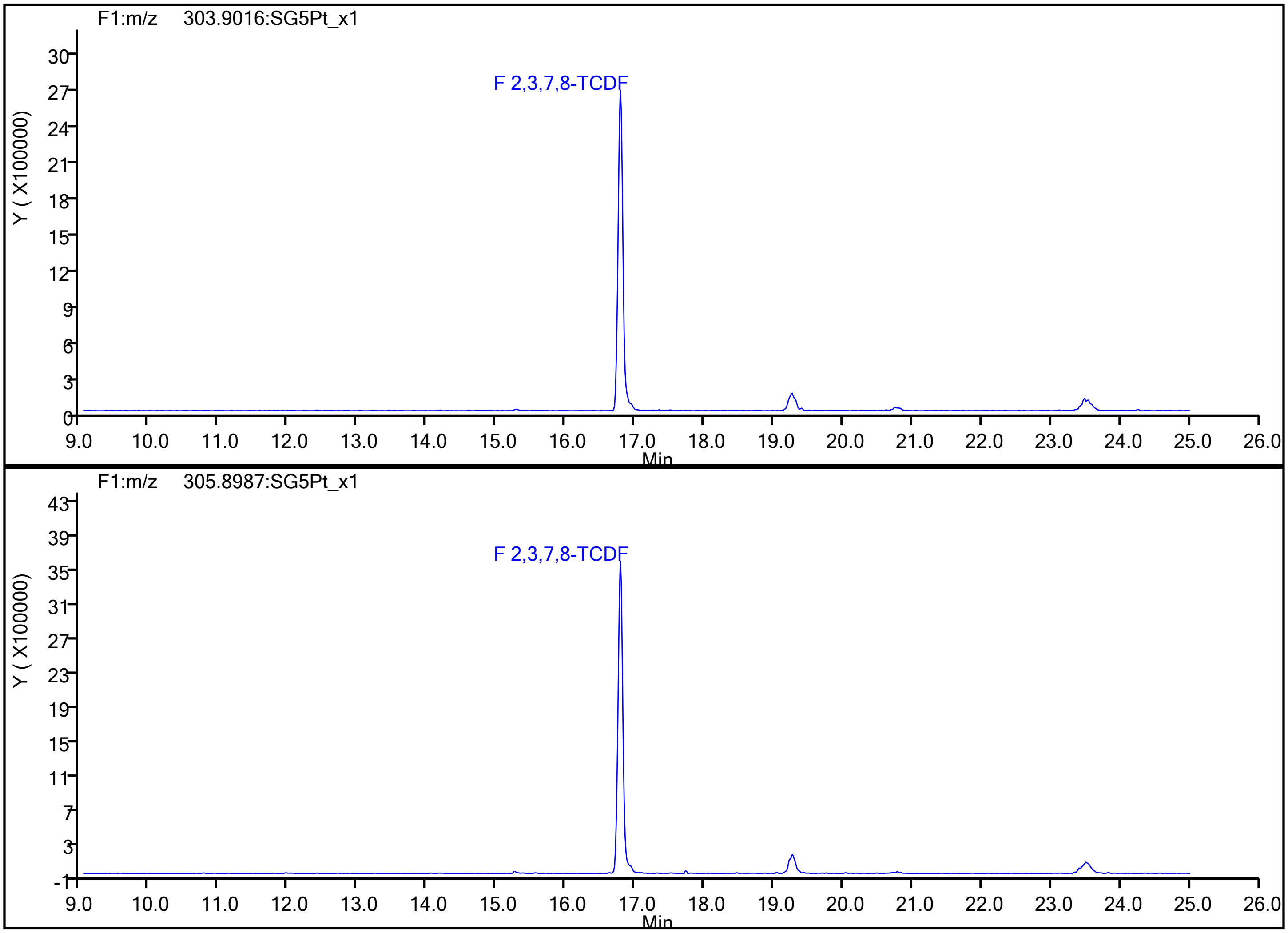

TCDF Interference Mass

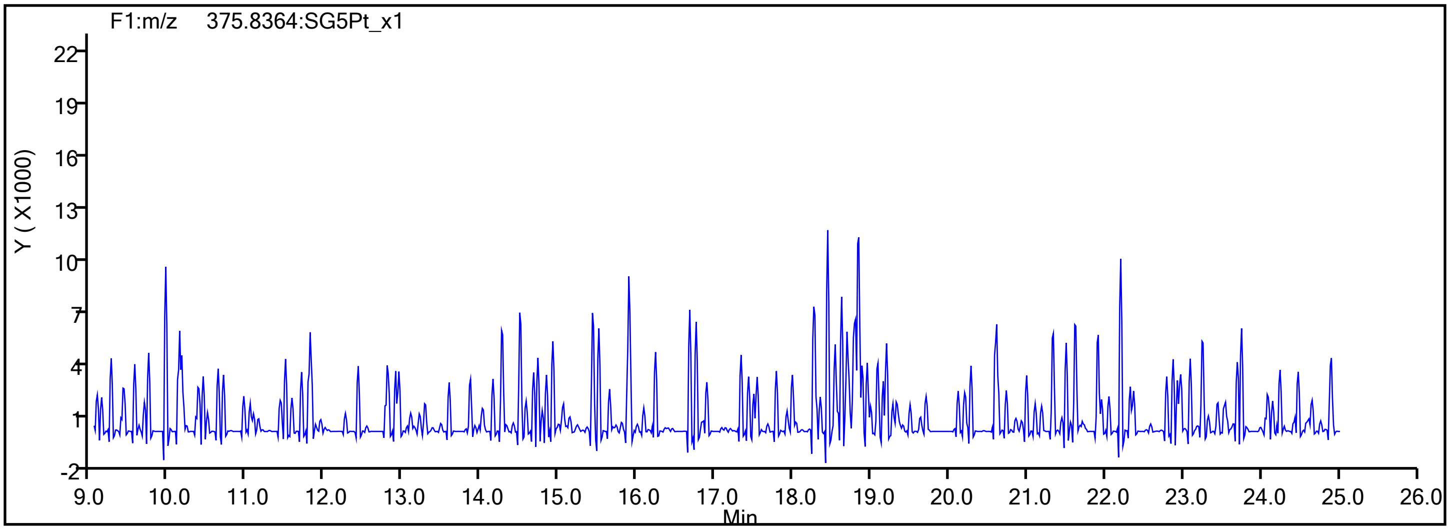

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d
Injection Date: 30-Nov-2020 13:05:55
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 436991
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

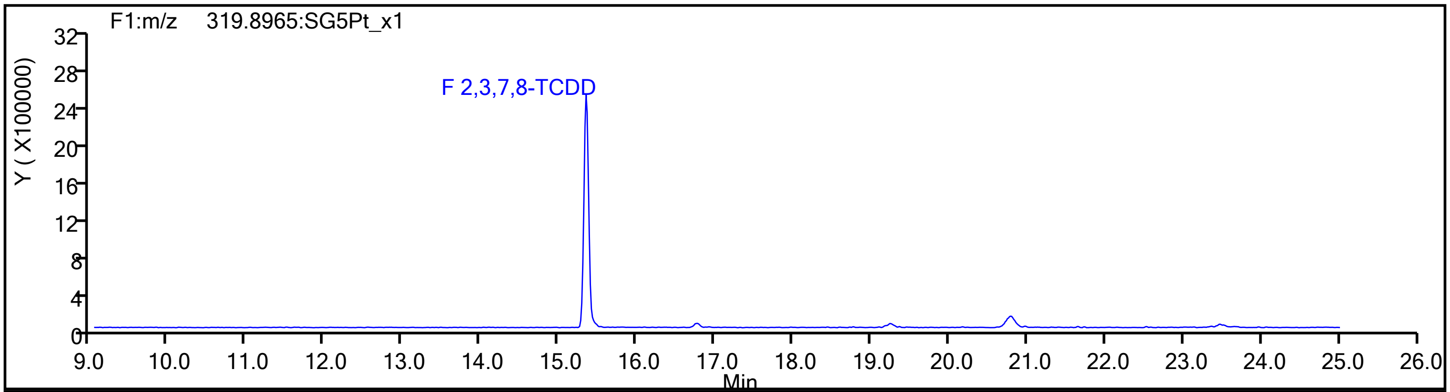

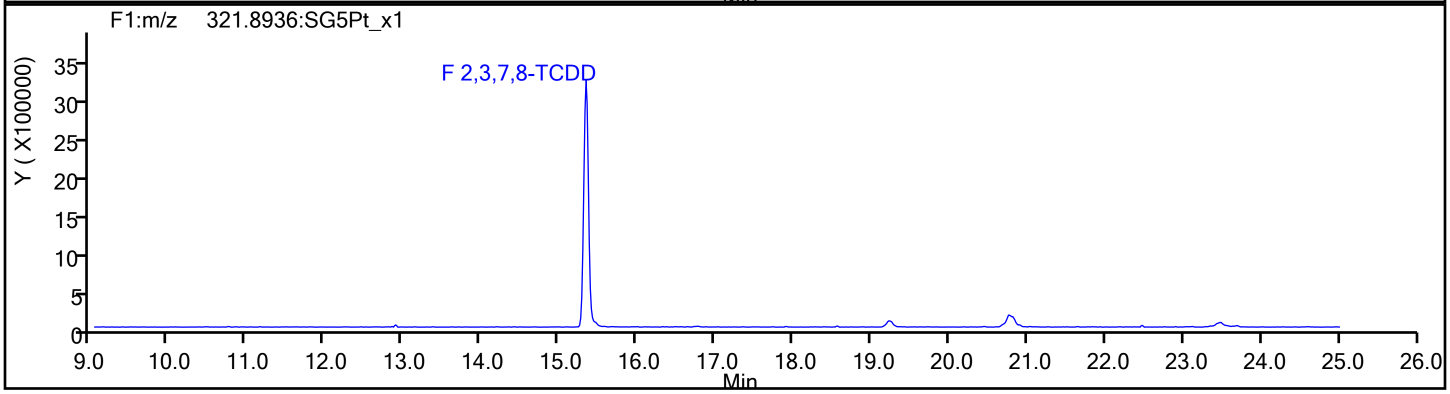

TCDD Standards

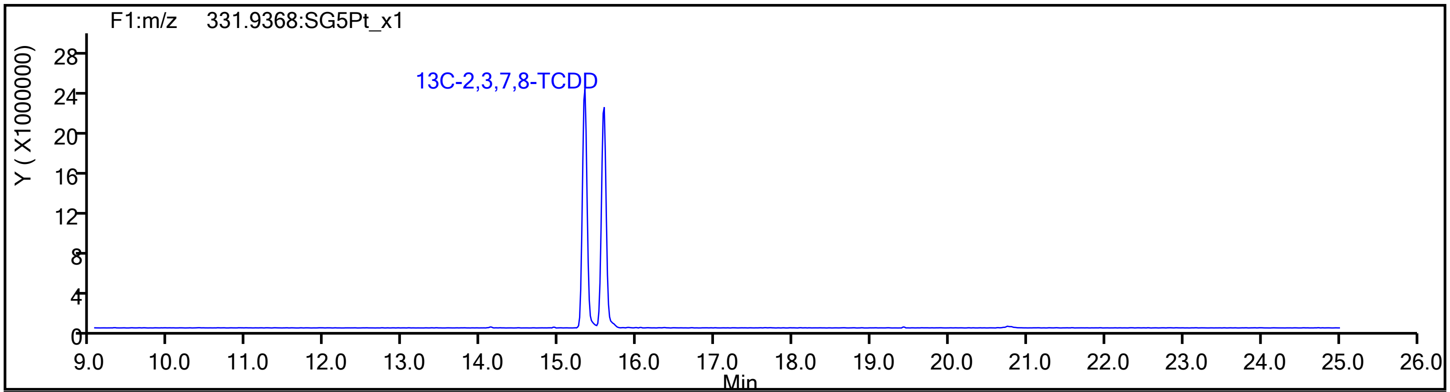

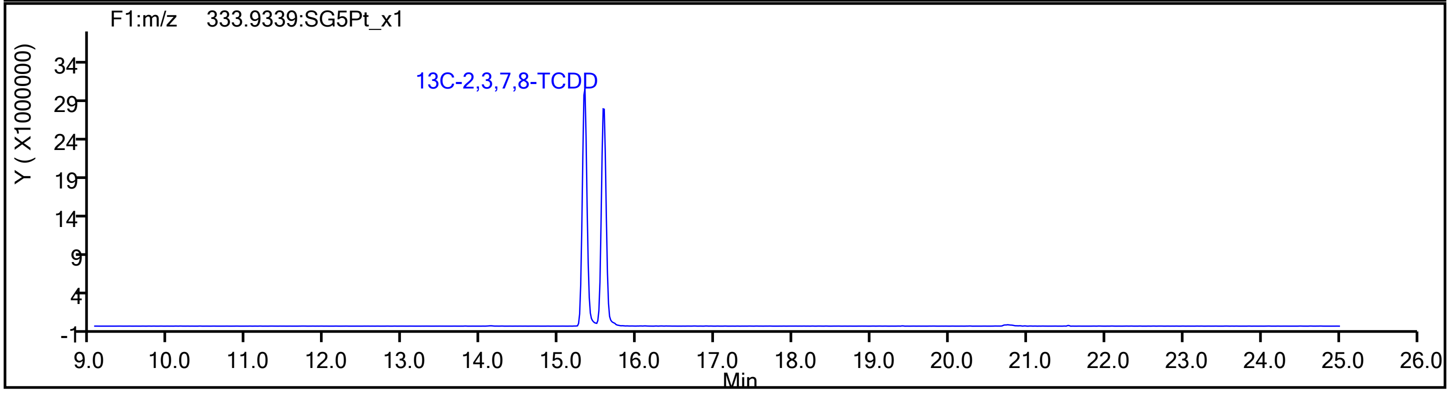

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d		
Injection Date:	30-Nov-2020 13:05:55	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

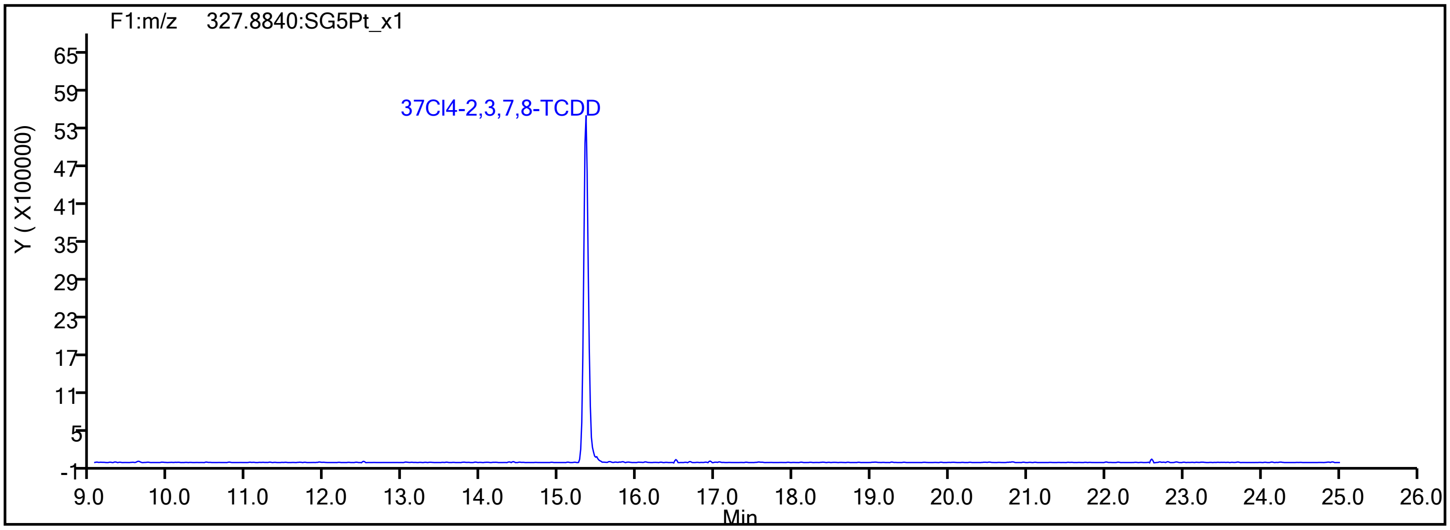

37Cl4-TCDD Standards

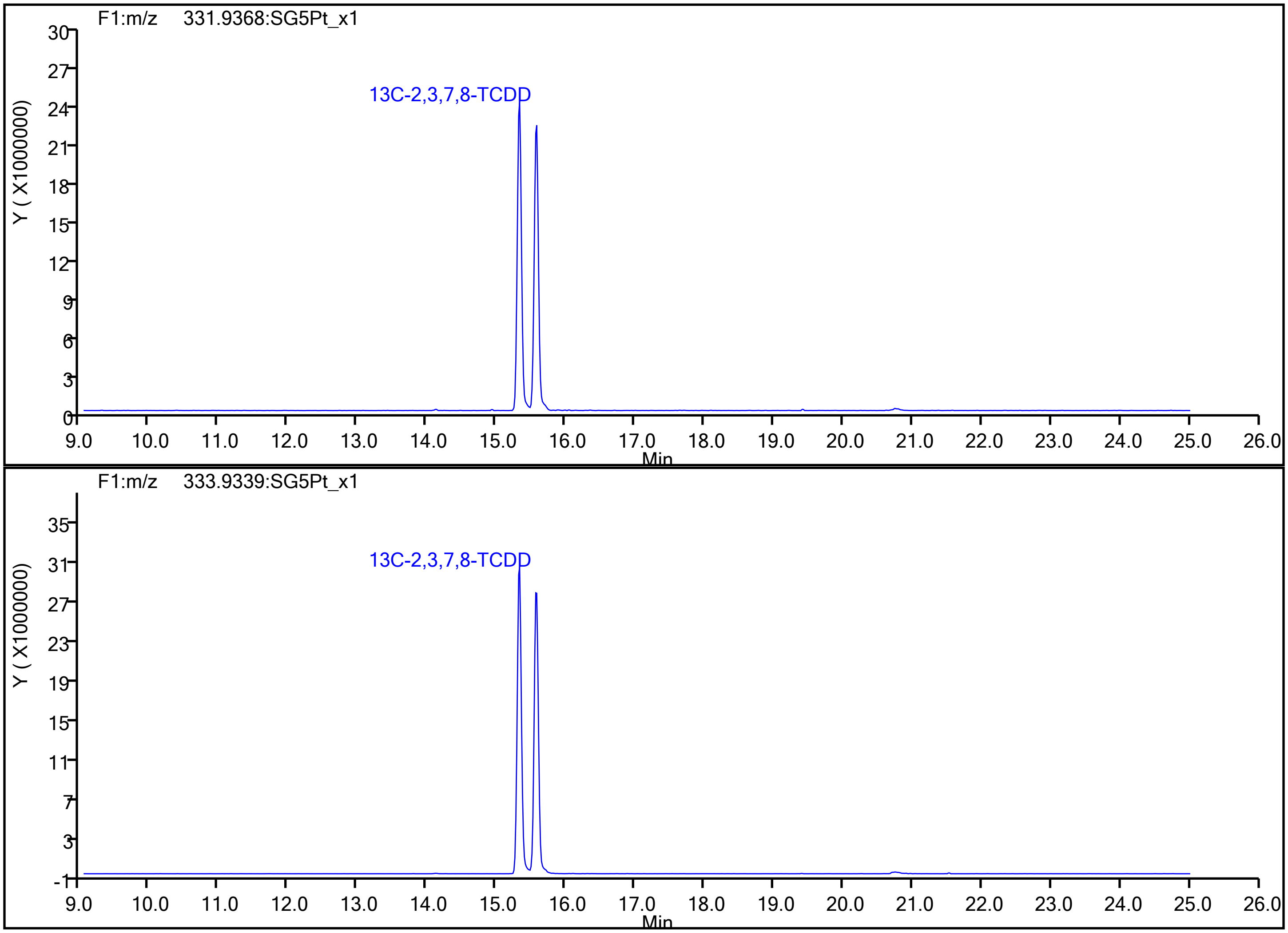

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d

Injection Date: 30-Nov-2020 13:05:55

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 436991

Sample Line#: 2

Column Type: DB-225

Column Dia: 0.32 mm

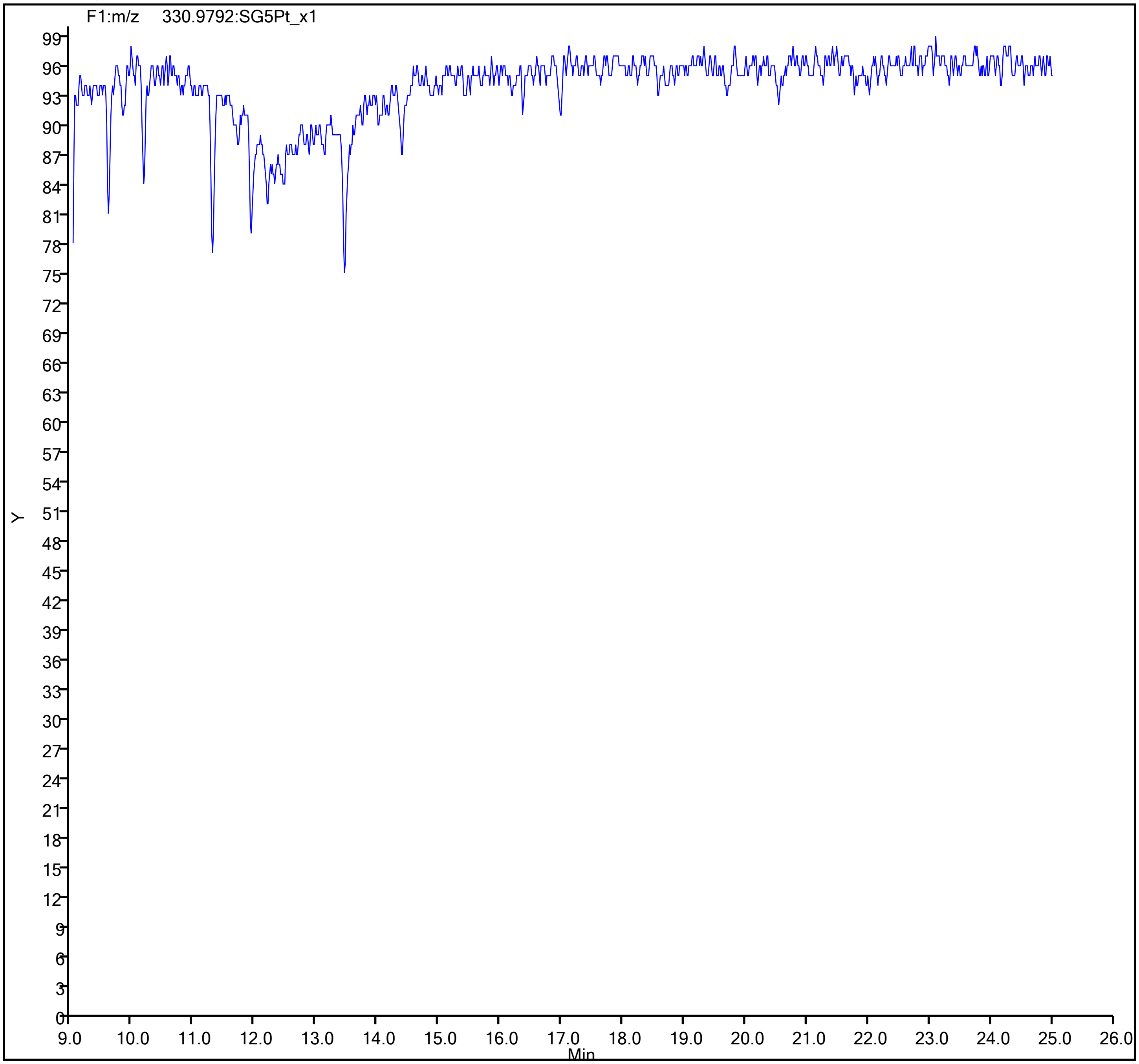

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Lab Sample ID: ICV 320-432585/10 Calibration Date: 11/17/2020 18:32

Instrument ID: DFS 1 Calib Start Date: 11/17/2020 13:38

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 11/17/2020 17:44

Lab File ID: 17no20dfs1_11.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.155	1.096		38.0	40.0	95	70-130
2,3,7,8-TCDD	AveID	1.166	1.125		38.6	40.0	97	70-130
1,2,3,7,8-PeCDF	AveID	1.132	1.018		180	200	90	70-130
2,3,4,7,8-PeCDF	AveID	1.159	1.151		199	200	99	70-130
1,2,3,7,8-PeCDD	AveID	1.119	0.998		178	200	89	70-130
1,2,3,4,7,8-HxCDF	AveID	1.320	1.207		183	200	91	70-130
1,2,3,6,7,8-HxCDF	AveID	1.268	1.185		187	200	93	70-130
2,3,4,6,7,8-HxCDF	AveID	1.284	1.272		198	200	99	70-130
1,2,3,4,7,8-HxCDD	AveID	1.197	1.053		176	200	88	70-130
1,2,3,6,7,8-HxCDD	AveID	1.069	1.037		194	200	97	70-130
1,2,3,7,8,9-HxCDD	AveID	1.181	1.041		176	200	88	70-130
1,2,3,7,8,9-HxCDF	AveID	1.306	1.119		171	200	86	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.562	1.422		182	200	91	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.108	1.034		187	200	93	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.497	1.309		175	200	87	70-130
OCDD	AveID	1.167	1.079		370	400	92	70-130
OCDF	AveID	1.480	1.264		342	400	85	70-130
13C-2,3,7,8-TCDF	Ave	1.683	1.557		92.5	100	93	71-140
13C-2,3,7,8-TCDD	Ave	1.090	1.048		96.2	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.460	1.302		89.1	100	89	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.350	1.288		95.4	100	95	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8729	0.7947		91.0	100	91	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.281	1.276		99.6	100	100	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.462	1.462		100	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.323	1.251		94.6	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8757	0.8790		100	100	100	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.065	1.070		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.106	1.036		93.6	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9521	0.8985		94.4	100	94	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8393	0.8392		100	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7782	0.7709		99.1	100	99	77-129
13C-OCDD	Ave	0.5301	0.4737		179	200	89	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.145	1.101		38.5	40.0	96	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Nov-2020 18:32:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:46 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:06:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.824	1533433	0.83	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.785	2387934	0.84	1.6832	92.5	92.5	0.6060	0.6060	92.51	
2,3,7,8-TCDF	20.811	1046837	0.84	1.1547	38.0	38.0	0.1052	0.1052	94.92	
A Non-2,3,7,8-sub-TCDF	20.216	10509	0.74	1.1547	0.3811	0.3811	0.1052	0.3811		
S Total TCDF					38.3	38.3	0.1052	0.1052		
$ 37Cl4-2,3,7,8-TCDD	22.228	675394		1.1445	38.5	38.5	0.0761	0.0761	96.21	
D 13C-2,3,7,8-TCDD	22.194	1607690	0.79	1.0896	96.2	96.2	0.5265	0.5265	96.22	
2,3,7,8-TCDD	22.228	723681	0.81	1.1659	38.6	38.6	0.1666	0.1666	96.52	
A Non-2,3,7,8-sub-TCDD	21.079						0.1666	0.1666		
S Total TCDD					38.6	38.6	0.1666	0.1666		
D 13C-1,2,3,7,8-PeCDF	27.680	1996101	1.63	1.4604	89.1	89.1	0.3670	0.3670	89.13	
1,2,3,7,8-PeCDF	27.705	4064999	1.62	1.1322	179.9	179.9	0.8750	0.8750	89.93	
D 13C-2,3,4,7,8-PeCDF	29.238	1975328	1.61	1.3504	95.4	95.4	0.3969	0.3969	95.39	
2,3,4,7,8-PeCDF	29.264	4548526	1.57	1.1588	198.7	198.7	0.9163	0.9163	99.36	
A F1 PeCDFs	24.989						0.0290	0.0290		
A Non-2,3,7,8-sub-PeCDF	28.574	102863	1.58	1.1455	4.522	4.522	0.8948	4.522		
S Total PeCDF					383.1	383.1	0.8957	0.8957		
D 13C-1,2,3,7,8-PeCDD	30.072	1218625	1.72	0.8729	91.0	91.0	0.2562	0.2562	91.04	
1,2,3,7,8-PeCDD	30.106	2433493	1.59	1.1191	178.4	178.4	0.2201	0.2201	89.22	
A Non-2,3,7,8-sub-PeCDD	28.862						0.2201	0.2201		
S Total PeCDD					178.4	178.4	0.2201	0.2201		
D 13C-1,2,3,4,7,8-HxCDF	35.206	1700222	0.53	1.2808	99.6	99.6	0.4181	0.4181	99.63	M
1,2,3,4,7,8-HxCDF	35.222	4104497	1.25	1.3205	182.8	182.8	0.7050	0.7050	91.41	
D 13C-1,2,3,6,7,8-HxCDF	35.357	1947317	0.53	1.4615	100.0	100.0	0.3664	0.3664	100	M
1,2,3,6,7,8-HxCDF	35.374	4616582	1.23	1.2682	186.9	186.9	0.6818	0.6818	93.47	
D 13C-2,3,4,6,7,8-HxCDF	36.141	1667288	0.52	1.3227	94.6	94.6	0.4049	0.4049	94.61	
2,3,4,6,7,8-HxCDF	36.158	4242564	1.25	1.2838	198.2	198.2	0.6739	0.6739	99.11	
D 13C-1,2,3,7,8,9-HxCDF	37.008	1380078	0.52	1.1062	93.6	93.6	0.4841	0.4841	93.64	
1,2,3,7,8,9-HxCDF	37.017	3089149	1.24	1.3063	171.4	171.4	0.7628	0.7628	85.68	
A Non-2,3,7,8-sub-HxCDF	35.351						0.7038	0.7038		
S Total HxCDF					739.3	739.3	0.7059	0.7059		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.806	1332342	1.26	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.343	1171086	1.21	0.8757	100.4	100.4	0.2912	0.2912	100	
1,2,3,4,7,8-HxCDD	36.360	2466366	1.24	1.1972	175.9	175.9	0.3898	0.3898	87.96	
D 13C-1,2,3,6,7,8-HxCDD	36.452	1425221	1.31	1.0651	100.4	100.4	0.2394	0.2394	100	
1,2,3,6,7,8-HxCDD	36.469	2956836	1.25	1.0695	194.0	194.0	0.3800	0.3800	97.00	
1,2,3,7,8,9-HxCDD	36.823	2702367	1.24	1.1806	176.3	176.3	0.3680	0.3680	88.17	
A Non-2,3,7,8-sub-HxCDD	35.676						0.3781	0.3781		
S Total HxCDD					546.2	546.2	0.3793	0.3793		
D 13C-1,2,3,4,6,7,8-HpCDF	38.755	1197058	0.46	0.9521	94.4	94.4	0.4975	0.4975	94.36	
1,2,3,4,6,7,8-HpCDF	38.764	3404343	1.03	1.5618	182.1	182.1	0.7864	0.7864	91.04	
D 13C-1,2,3,4,7,8,9-HpCDF	39.985	1027072	0.43	0.7782	99.1	99.1	0.6087	0.6087	99.06	
1,2,3,4,7,8,9-HpCDF	39.993	2688097	1.05	1.4975	174.8	174.8	0.8440	0.8440	87.39	
A Non-2,3,7,8-sub-HpCDF	39.385						0.8145	0.8145		
S Total HpCDF					356.9	356.9	0.8152	0.8152		
D 13C-1,2,3,4,6,7,8-HpCDD	39.682	1118064	1.10	0.8393	100.0	100.0	0.2795	0.2795	99.98	
1,2,3,4,6,7,8-HpCDD	39.690	2311053	1.05	1.1079	186.6	186.6	0.4722	0.4722	93.28	
A Non-2,3,7,8-sub-HpCDD	39.533						0.4722	0.4722		n
S Total HpCDD					186.6	186.6	0.4722	0.4722		
D 13C-OCDD	42.154	1262197	0.88	0.5301	178.7	178.7	0.3375	0.3375	89.36	
OCDF	42.255	3190856	0.89	1.4802	341.6	341.6	0.4340	0.4340	85.40	
OCDD	42.162	2723905	0.90	1.1666	370.0	370.0	0.4666	0.4666	92.50	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Nov-2020 18:32:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:46 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:06:56

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.824	21.820	0		697378	91356	349	872	262		
333.9338	21.816	21.820	0		836055	115203	125	312	922	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.785	20.873	-5	0.952	1090306	153930	532	1330	289		
317.9389	20.794	20.873	-5	0.953	1297628	179572	311	777	577	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.811	20.907	-6	1.001	476627	63535	56	140	1135		
305.8987	20.819	20.907	-5	1.002	570210	77271	106	265	729	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.531	20.216	-41	0.940	4484	730	56	140	13		
305.8987	19.574	20.216	-38	0.942	6025	877	106	265	8	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.228	22.224	0	1.019	675394	84126	72	180	1168		
13C-2,3,7,8-TCDD											
331.9368	22.194	22.256	-4	1.017	708769	92786	349	872	266		
333.9338	22.202	22.256	-3	1.017	898921	118249	125	312	946	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.228	22.290	-4	1.002	323300	42397	119	297	356		
321.8936	22.228	22.290	-4	1.002	400381	51125	45	112	1136	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.079						119	297			
321.8936	21.079						45	112			
13C-1,2,3,7,8-PeCDF											
351.9000	27.680	27.675	0	1.268	1238119	181007	267	667	678		
353.8970	27.680	27.675	0	1.268	757982	114752	176	440	652	1.63(1.32-1.78)	

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.705	27.700	0	1.001	2511646	373356	715	1787	522		
341.8567	27.696	27.700	0	1.001	1553353	237137	457	1142	519	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.238	29.234	0	1.340	1217081	169622	267	667	635		
353.8970	29.247	29.234	1	1.340	758247	106324	176	440	604	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.264	29.259	0	1.001	2777862	386025	715	1787	540		
341.8567	29.264	29.259	0	1.001	1770664	244975	457	1142	536	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.989						4	10			
341.8567	24.989						34	85			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.303	28.574	-16	1.023	62972	8944	715	1787	13		
341.8567	28.320	28.574	-15	1.023	39891	5847	457	1142	13	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.072	30.067	0	1.378	770400	105690	122	305	866		
369.8919	30.080	30.067	1	1.378	448225	62794	63	157	997	1.72(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.106	30.093	1	1.001	1494665	207053	113	282	1832		
357.8516	30.106	30.093	1	1.001	938828	128440	53	132	2423	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.862						113	282			
357.8516	28.862						53	132			
13C-1,2,3,4,7,8-HxCDF											M
383.8639	35.206	35.203	0	0.957	589976	132528	236	590	562		M
385.8610	35.206	35.203	0	0.957	1110246	246669	533	1332	463	0.53(0.43-0.59)	M
1,2,3,4,7,8-HxCDF											
373.8208	35.222	35.220	0	1.000	2282439	519172	778	1945	667		
375.8178	35.222	35.220	0	1.000	1822058	416388	634	1585	657	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											M
383.8639	35.357	35.363	0	0.961	673513	142292	236	590	603		M
385.8610	35.357	35.363	0	0.961	1273804	265950	533	1332	499	0.53(0.43-0.59)	M
1,2,3,6,7,8-HxCDF											
373.8208	35.374	35.380	0	1.000	2548014	545423	778	1945	701		
375.8178	35.374	35.380	0	1.000	2068568	435609	634	1585	687	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.141	36.146	0	0.982	573118	141808	236	590	601		
385.8610	36.141	36.146	0	0.982	1094170	266217	533	1332	499	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.158	36.155	0	1.000	2358142	564920	778	1945	726		
375.8178	36.158	36.155	0	1.000	1884422	456784	634	1585	720	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.008	37.006	0	1.005	469574	120378	236	590	510		
385.8610	37.008	37.006	0	1.005	910504	233888	533	1332	439	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	37.017	37.023	0	1.000	1708224	446974	778	1945	575		
375.8178	37.017	37.023	0	1.000	1380925	361475	634	1585	570	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.351						778	1945			
375.8178	35.351						634	1585			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.806	36.812	0		743898	197698	177	442	1117		
403.8529	36.806	36.812	0		588444	161176	189	472	853	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.343	36.340	0	0.987	640059	171546	177	442	969		
403.8529	36.343	36.340	0	0.987	531027	139605	189	472	739	1.21(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.360	36.357	0	1.000	1364754	382607	319	797	1199		
391.8127	36.360	36.357	0	1.000	1101612	306724	262	655	1171	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.452	36.458	0	0.990	807773	202091	177	442	1142		
403.8529	36.452	36.458	0	0.990	617448	155201	189	472	821	1.31(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.469	36.466	0	1.000	1645480	413253	319	797	1295		
391.8127	36.469	36.466	0	1.000	1311356	327607	262	655	1250	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.823	36.820	0	1.013	1497568	379221	319	797	1189		
391.8127	36.823	36.820	0	1.013	1204799	308436	262	655	1177	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.676						319	797			
391.8127	35.676						262	655			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.755	38.753	0	1.053	378056	115156	291	727	396		
419.8220	38.755	38.753	0	1.053	819002	245664	389	972	632	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.764	38.774	-1	1.000	1729416	515432	920	2300	560		
409.7788	38.764	38.774	-1	1.000	1674927	503540	853	2132	590	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.985	39.983	0	1.086	308448	102417	291	727	352		
419.8220	39.985	39.983	0	1.086	718624	248235	389	972	638	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.993	39.996	0	1.000	1377954	465302	920	2300	506		
409.7788	39.993	39.996	0	1.000	1310143	437513	853	2132	513	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.385						920	2300			
409.7788	39.385						853	2132			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.682	39.680	0	1.078	586486	192719	175	437	1101		
437.8140	39.682	39.680	0	1.078	531578	174680	162	405	1078	1.10(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.690	39.701	-1	1.000	1183744	390719	408	1020	958		
425.7737	39.690	39.701	-1	1.000	1127309	368865	361	902	1022	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.059	39.533	-28	0.984	9375	2750	408	1020	7		
425.7737	39.067	39.533	-28	0.985	8543	3149	361	902	9	1.10(0.88-1.20)	
13C-OCDD											
469.7780	42.154	42.160	0	1.145	590317	186641	131	327	1425		
471.7750	42.154	42.160	0	1.145	671880	200962	126	315	1595	0.88(0.76-1.02)	
OCDF											
441.7428	42.255	42.261	0	1.002	1501586	458654	209	522	2195		
443.7399	42.255	42.261	0	1.002	1689270	510907	289	722	1768	0.89(0.76-1.02)	
OCDD											
457.7377	42.162	42.168	0	1.000	1287136	392673	200	500	1963		
459.7348	42.162	42.168	0	1.000	1436769	438781	222	555	1976	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- n - Failed Sig-To-Noise Test

Review Flags
- M - Manually Integrated

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Nov-2020 18:32:00
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 432585
Lims Sample ID: 10
Sublist:

Non-2,3,7,8-sub-TCDF, RT: 20.216

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	2387934	333502

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	2387934	333502

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.531	4484	730	6025	877	0.3811	0.74	n
Signal Totals:							
	4484	730	6025	877			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10509	1607				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3811 = (10509 * 100.000) / (2387934 * 1.155)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Nov-2020 18:32:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	432585	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 28.574

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	1996101	295759
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	1975328	275946

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	1985714	285852

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
28.303	62972	8944	39891	5847	4.52	1.58	
Signal Totals:							
	62972	8944	39891	5847			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	102863	14791				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.522 = (102863 * 100.000) / (1985714 * 1.145)

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00

Instrument ID: DFS 1

Lims ID: ICV

Client ID:

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 10

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F3(33.08 :38.50)

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Processing Integration Results

RT: 35.21

Area: 598524

Amount: 101.0989

Amount Units: pg/ul

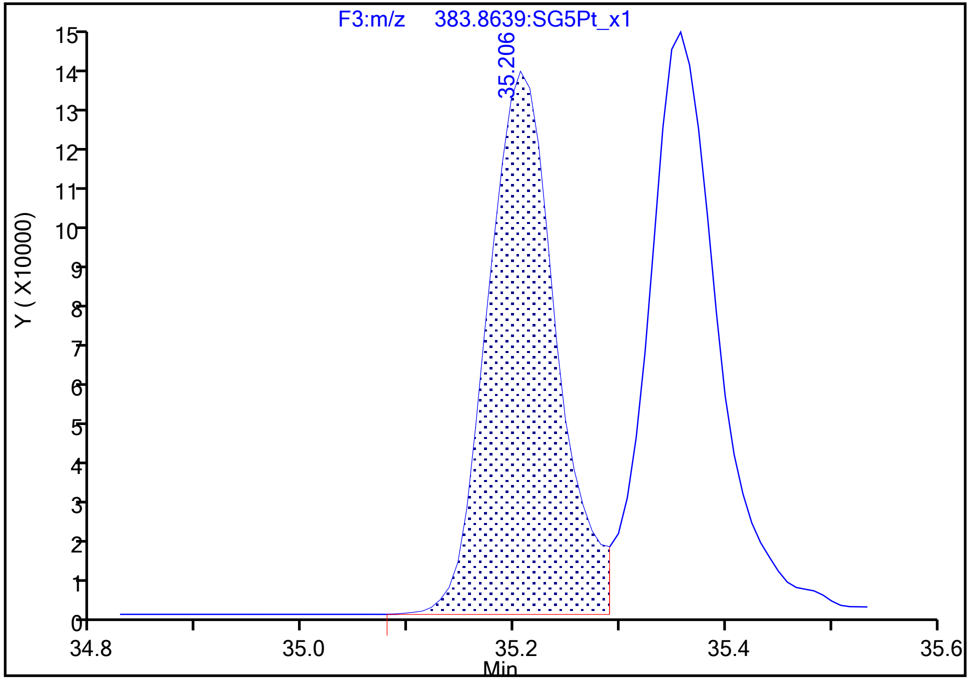

Manual Integration Results

RT: 35.21

Area: 589976

Amount: 99.633271

Amount Units: pg/ul

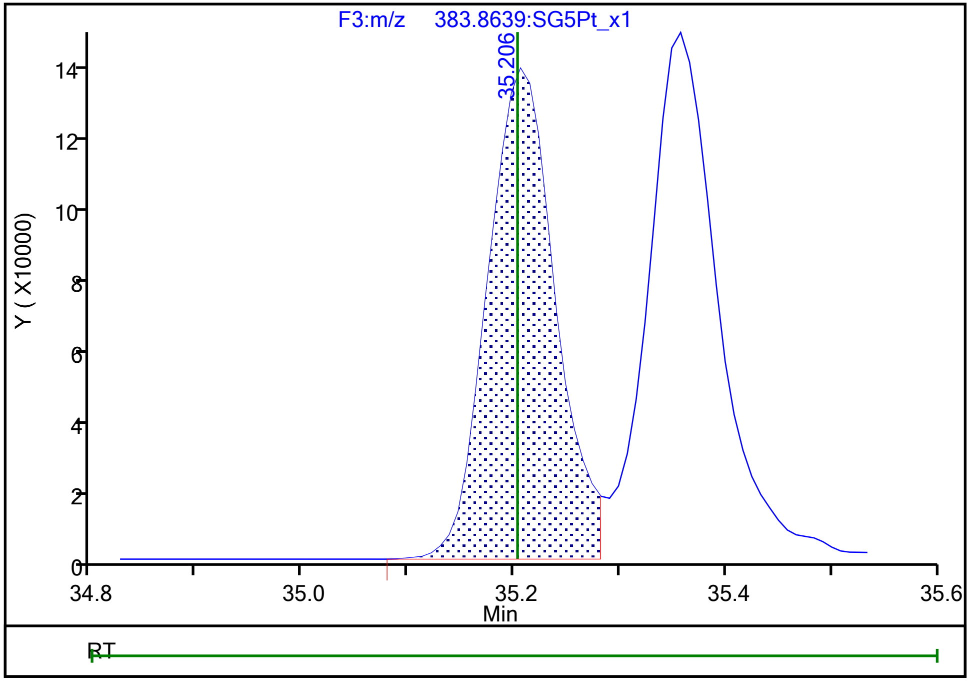

Reviewer: stephensk, 18-Nov-2020 09:10:35

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Injection Date:	17-Nov-2020 18:32:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 2

Processing Integration Results

RT: 35.21
Area: 1126708
Amount: 101.0989
Amount Units: pg/ul

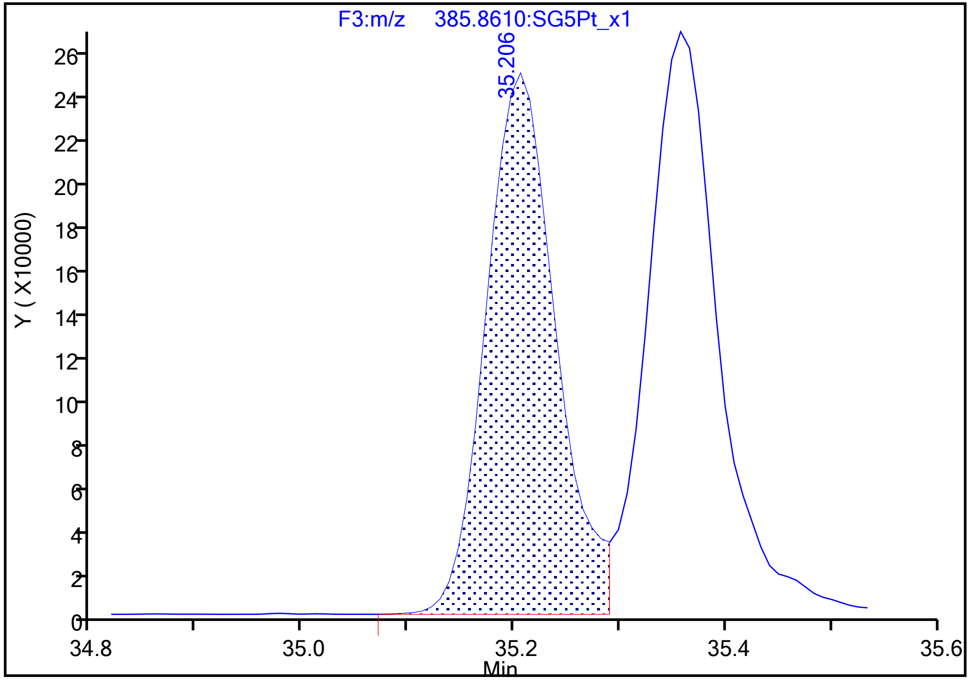

Manual Integration Results

RT: 35.21
Area: 1110246
Amount: 99.633271
Amount Units: pg/ul

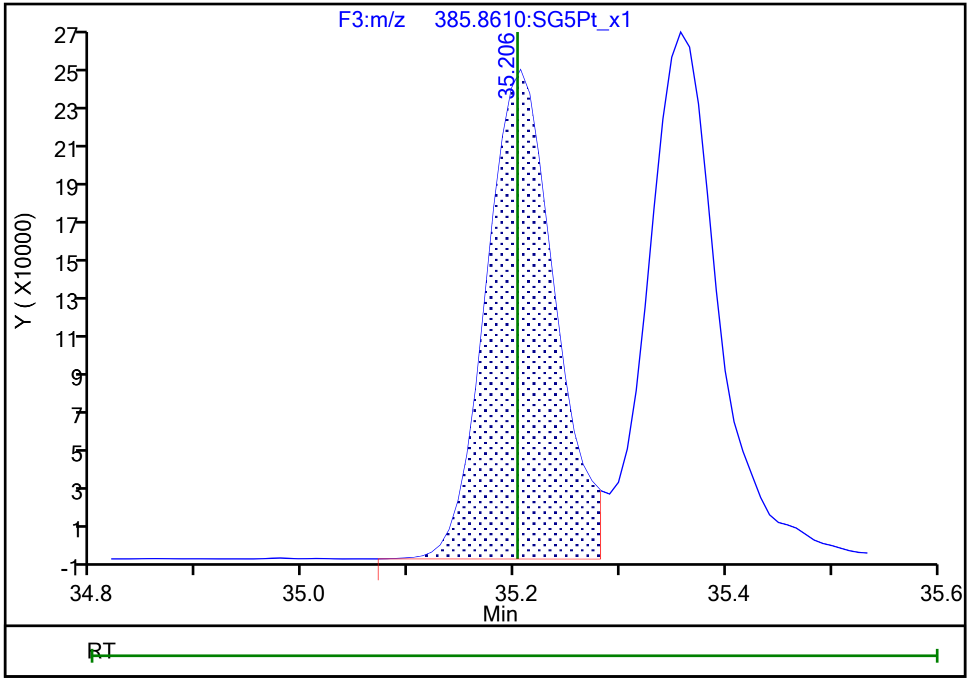

Reviewer: stephensk, 18-Nov-2020 09:10:44
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 18-Nov-2020 12:37:59

Chrom Revision: 2.3 12-Nov-2020 21:52:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Injection Date:	17-Nov-2020 18:32:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDF, CAS: 116843-03-9

Signal: 1

Processing Integration Results

RT: 35.36
Area: 669408
Amount: 0
Amount Units: pg/ul

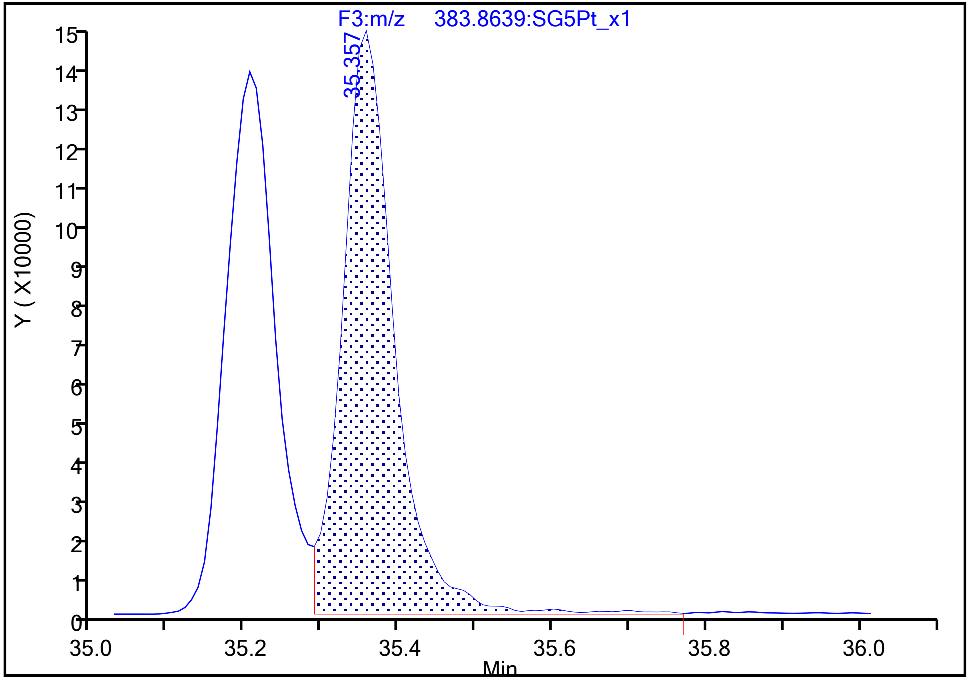

Manual Integration Results

RT: 35.36
Area: 673513
Amount: 100.0022
Amount Units: pg/ul

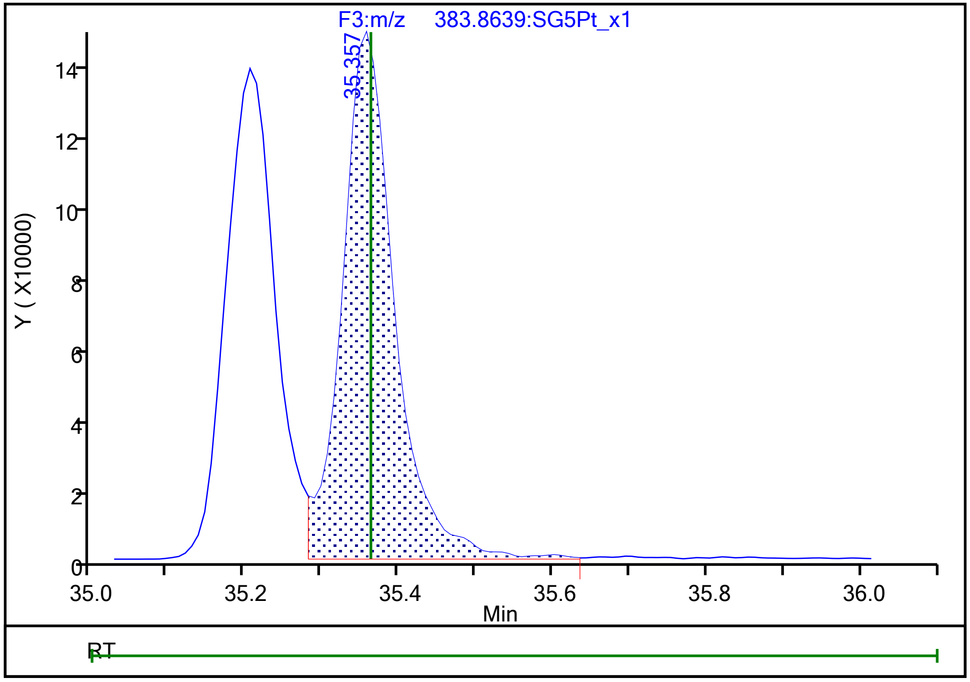

Reviewer: stephensk, 18-Nov-2020 09:10:35

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Injection Date:	17-Nov-2020 18:32:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDF, CAS: 116843-03-9

Signal: 2

RT:	35.36
Area:	1257877
Amount:	0
Amount Units:	pg/ul

Processing Integration Results

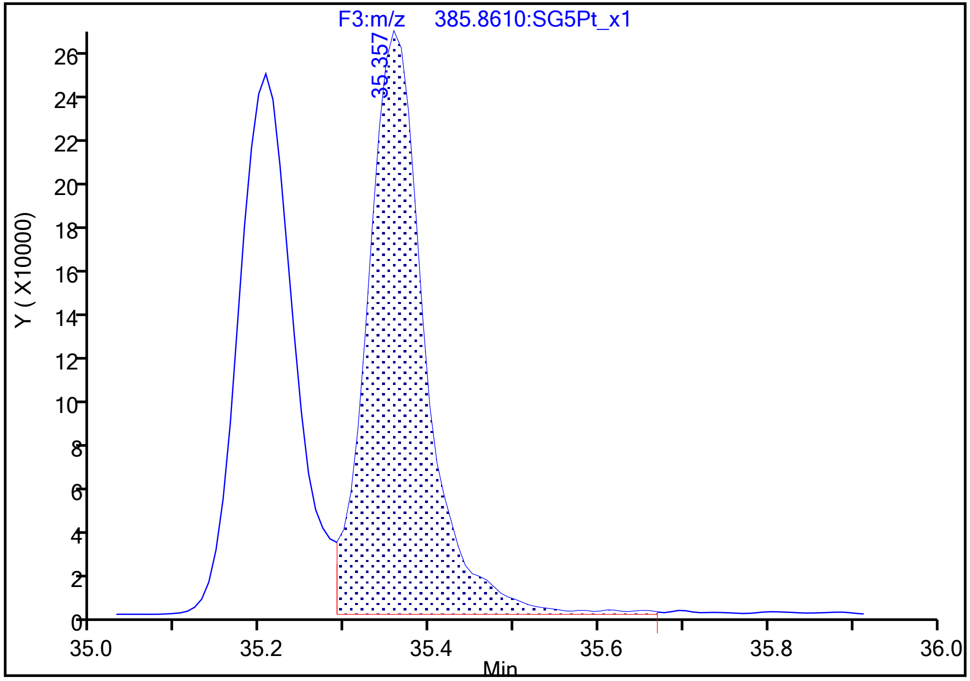

RT:	35.36
Area:	1273804
Amount:	100.0022
Amount Units:	pg/ul

Manual Integration Results

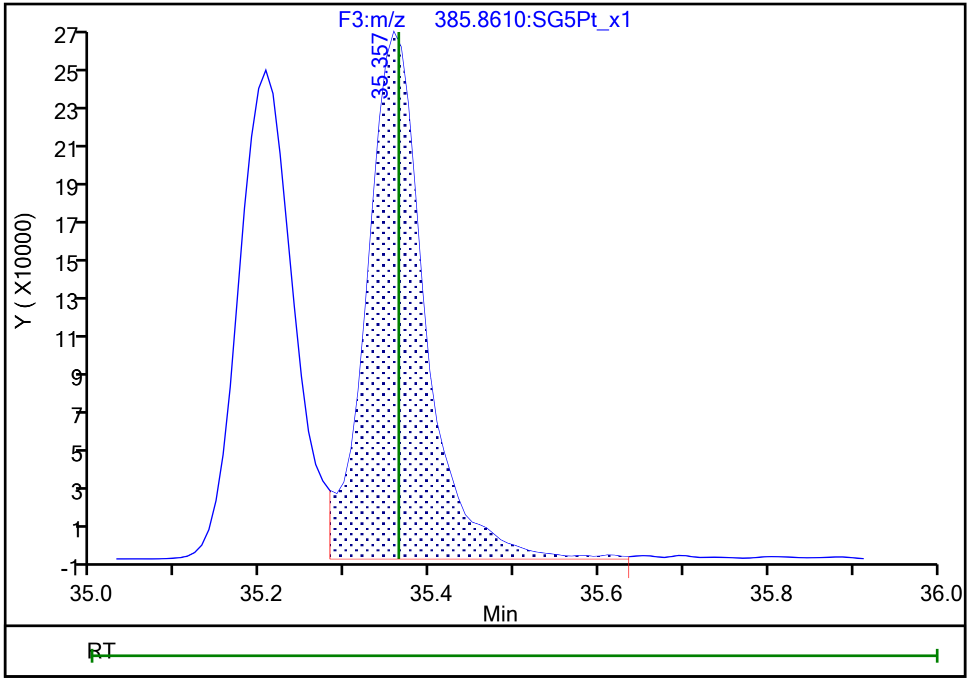

Reviewer: stephensk, 18-Nov-2020 09:10:44

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

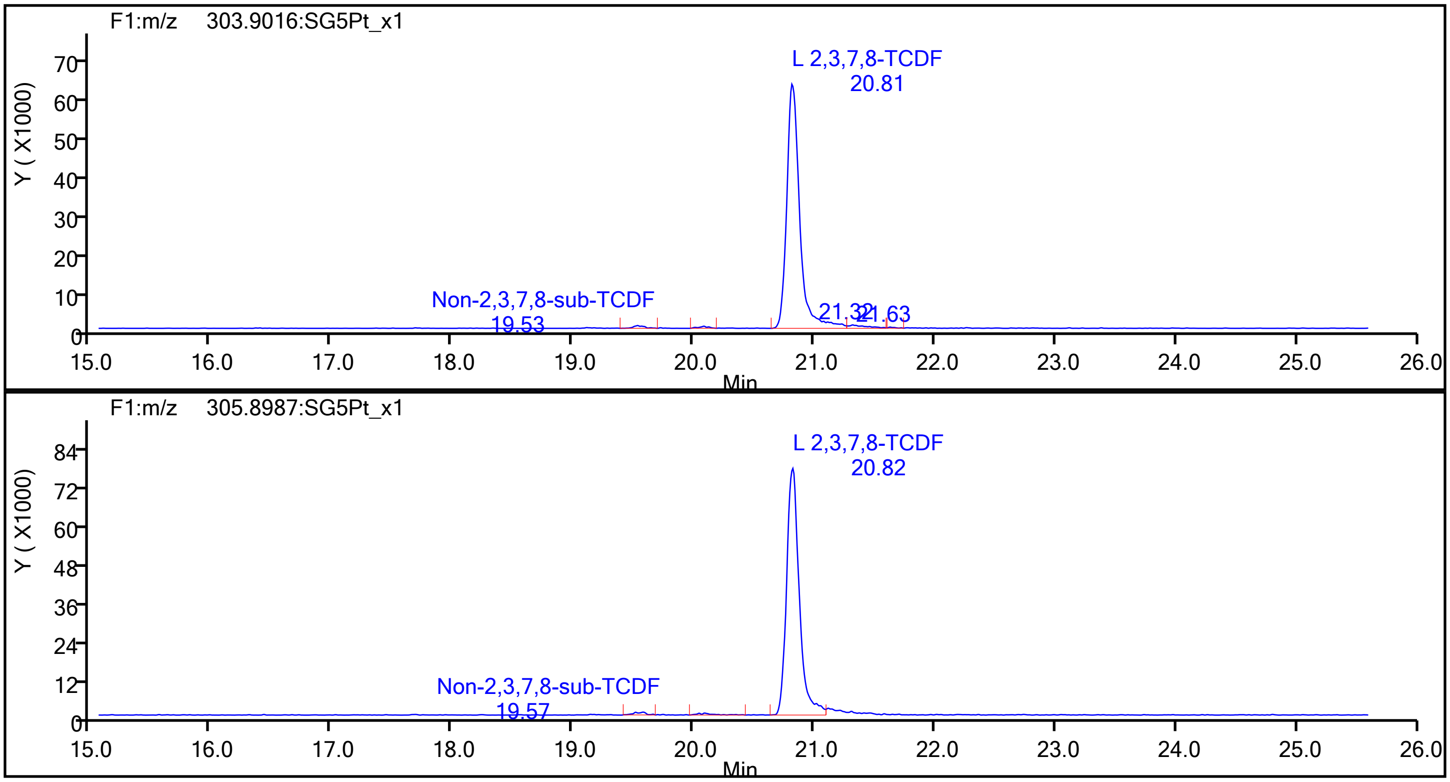

TCDF Standards

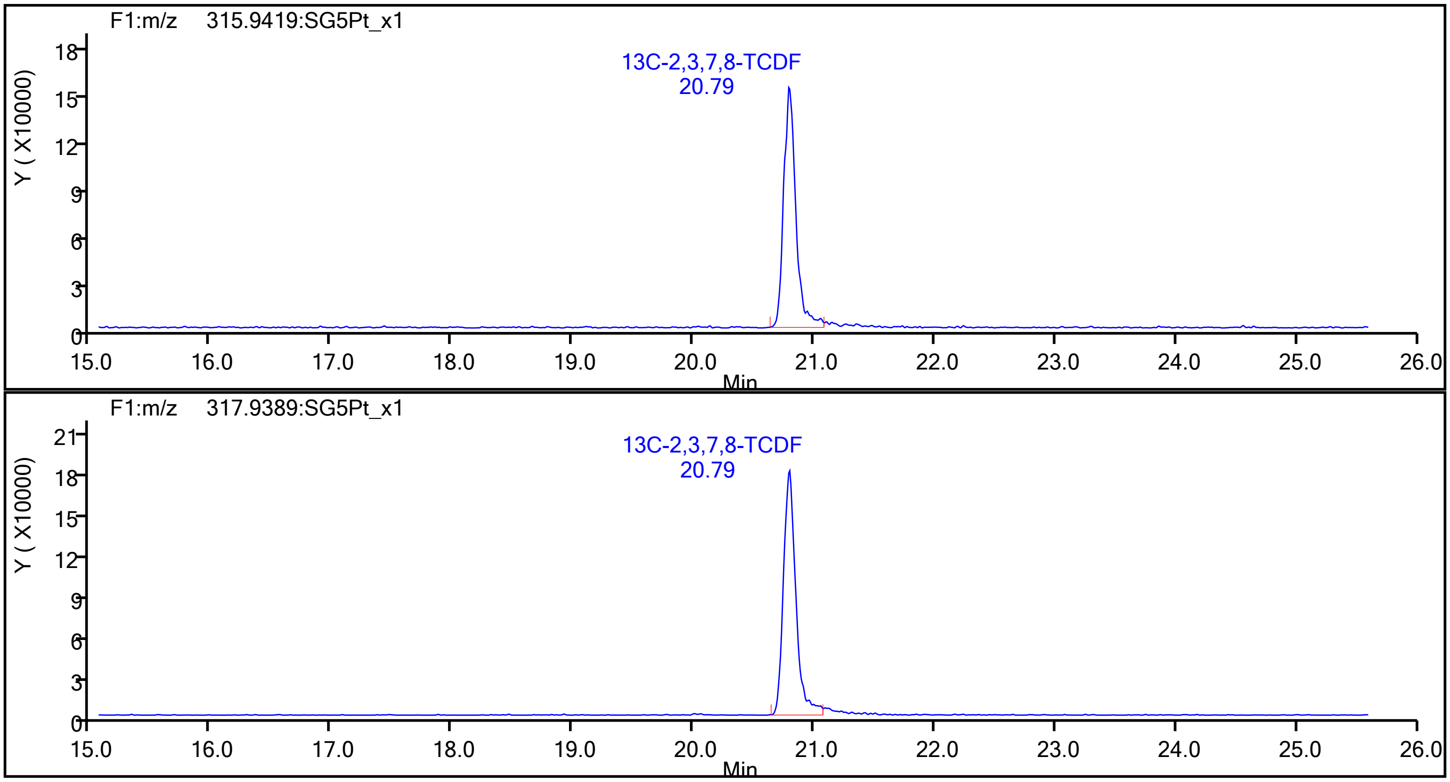

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

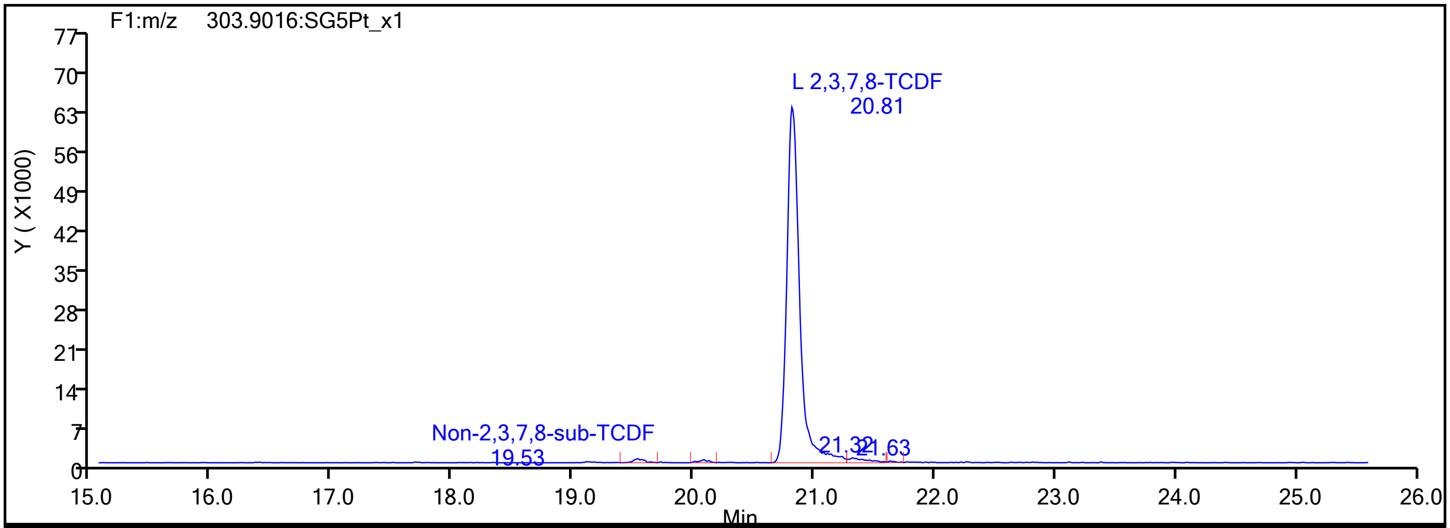

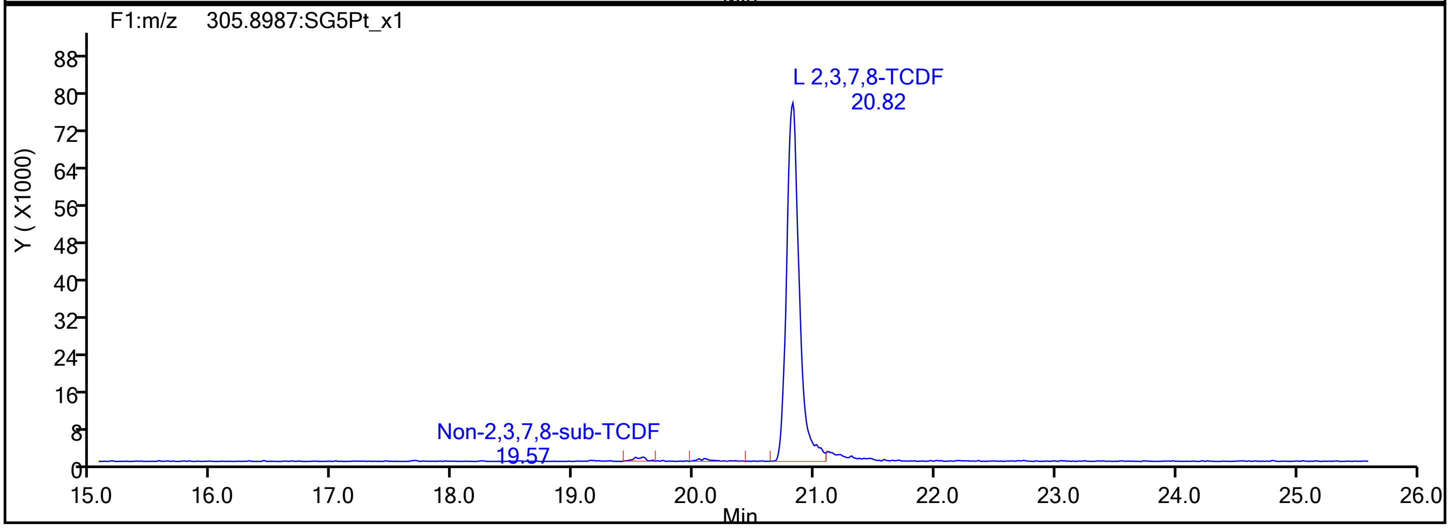

TCDF Interference Mass

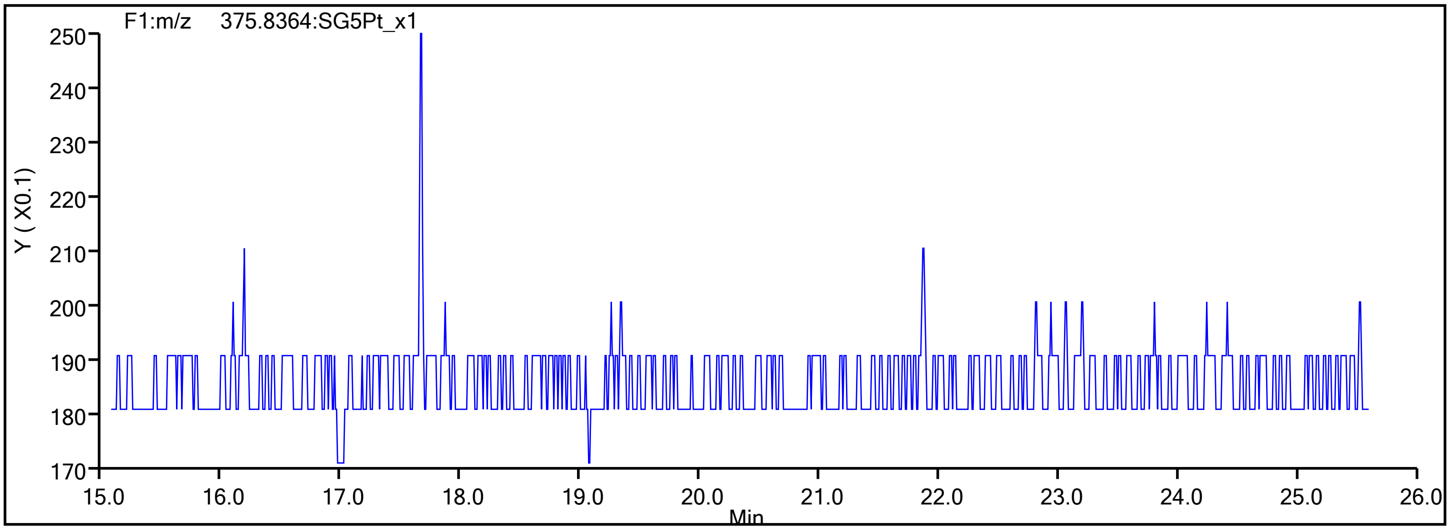

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

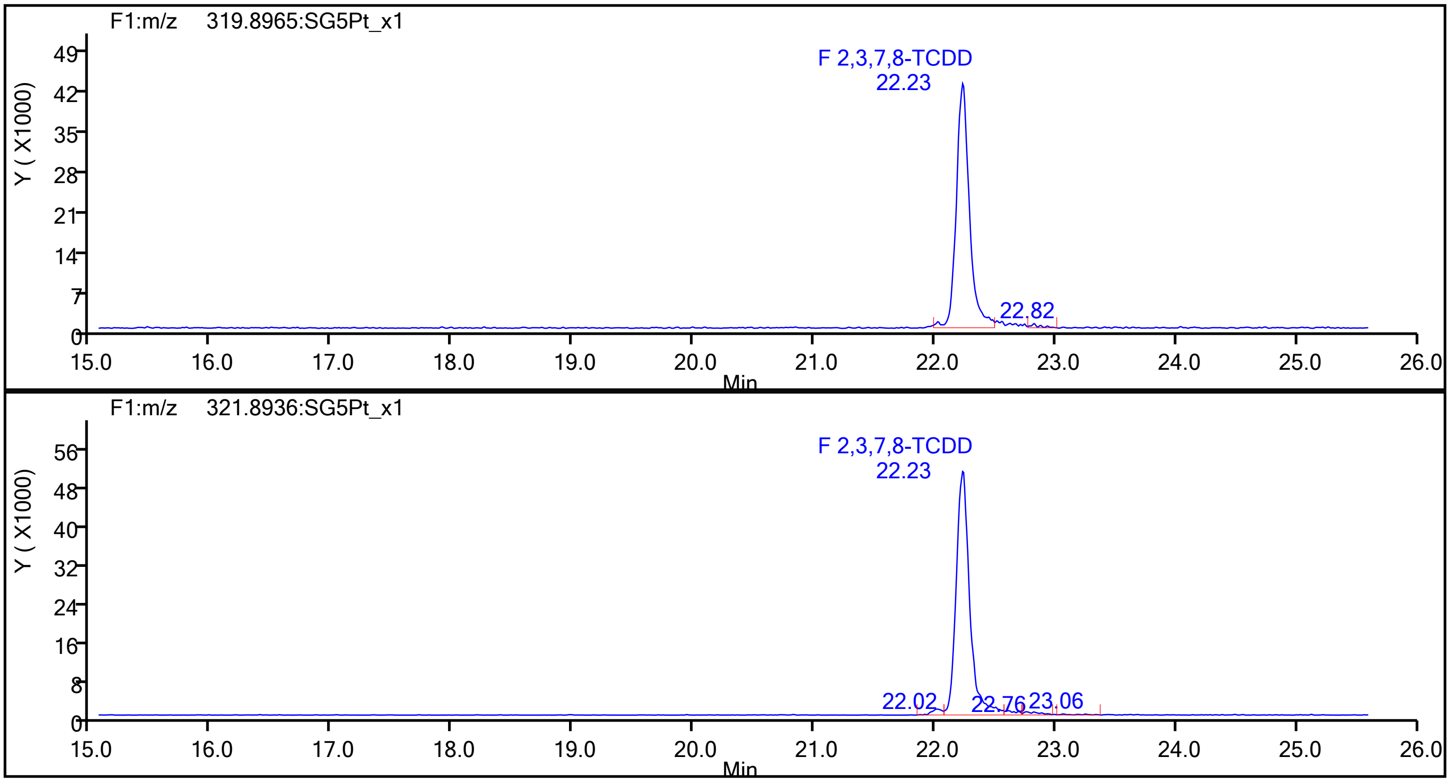

TCDD Standards

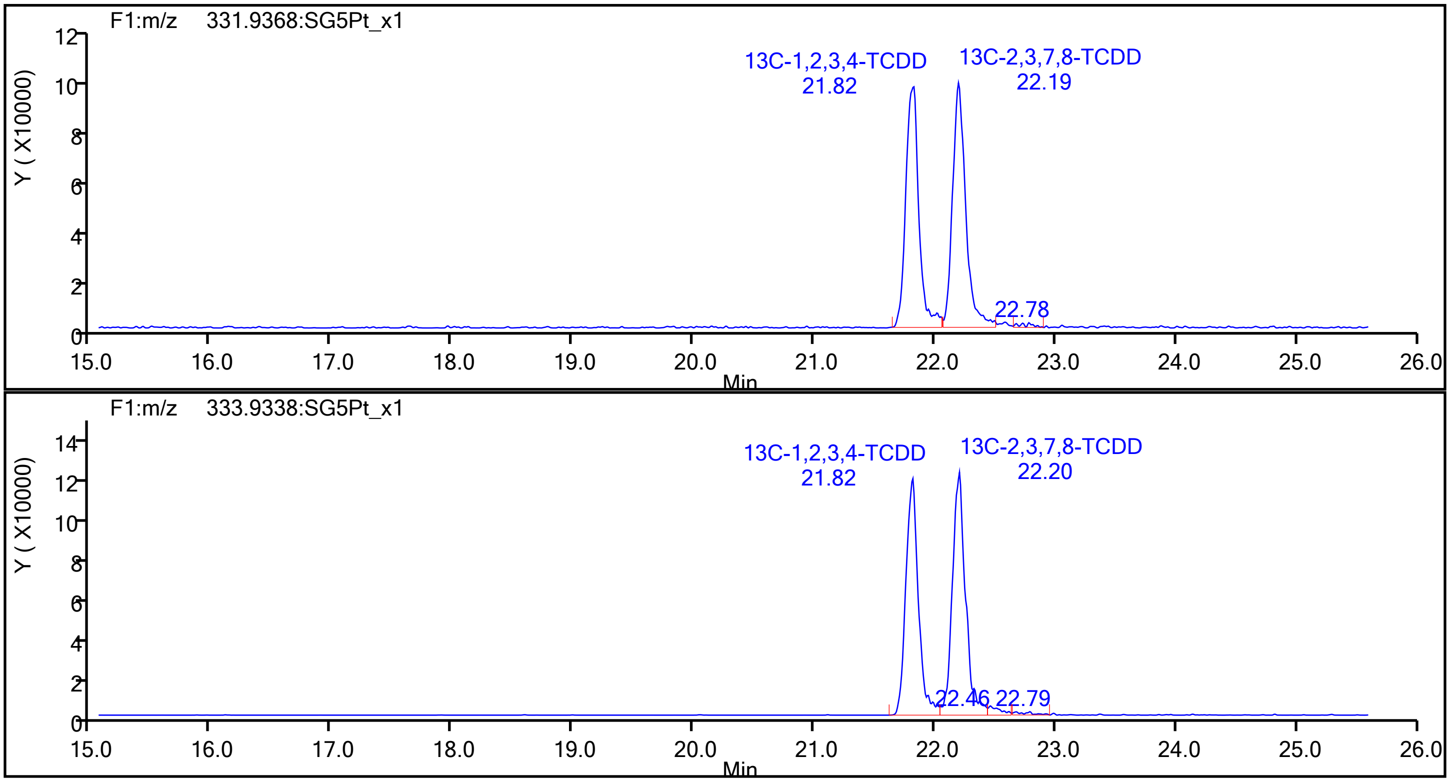

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

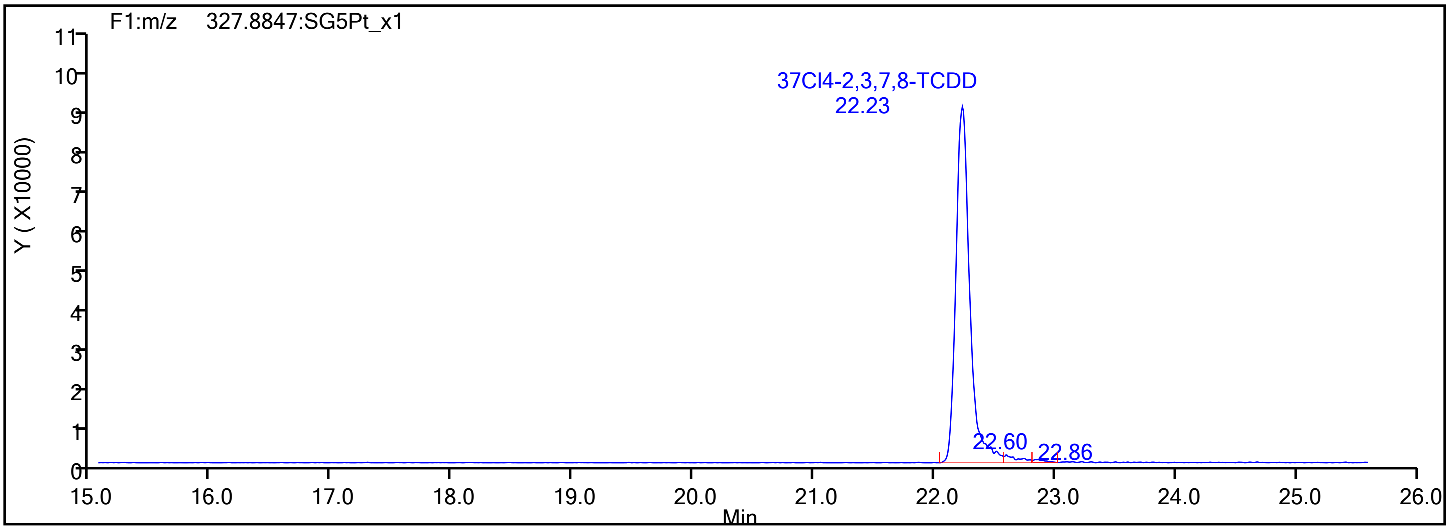

37Cl4-TCDD Standards

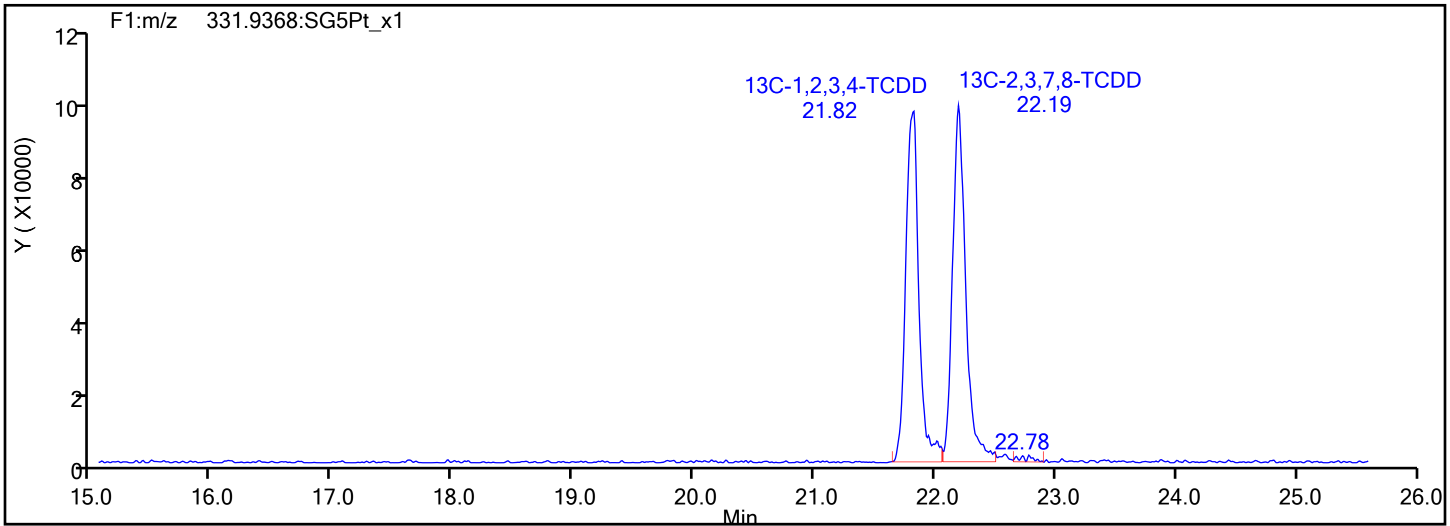

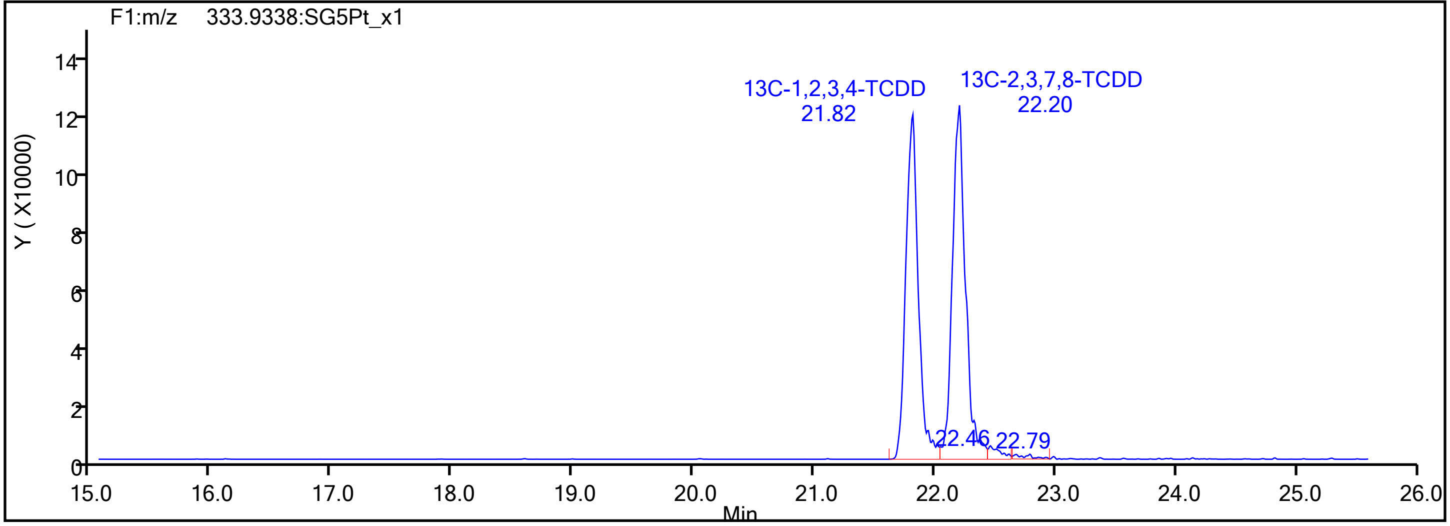

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

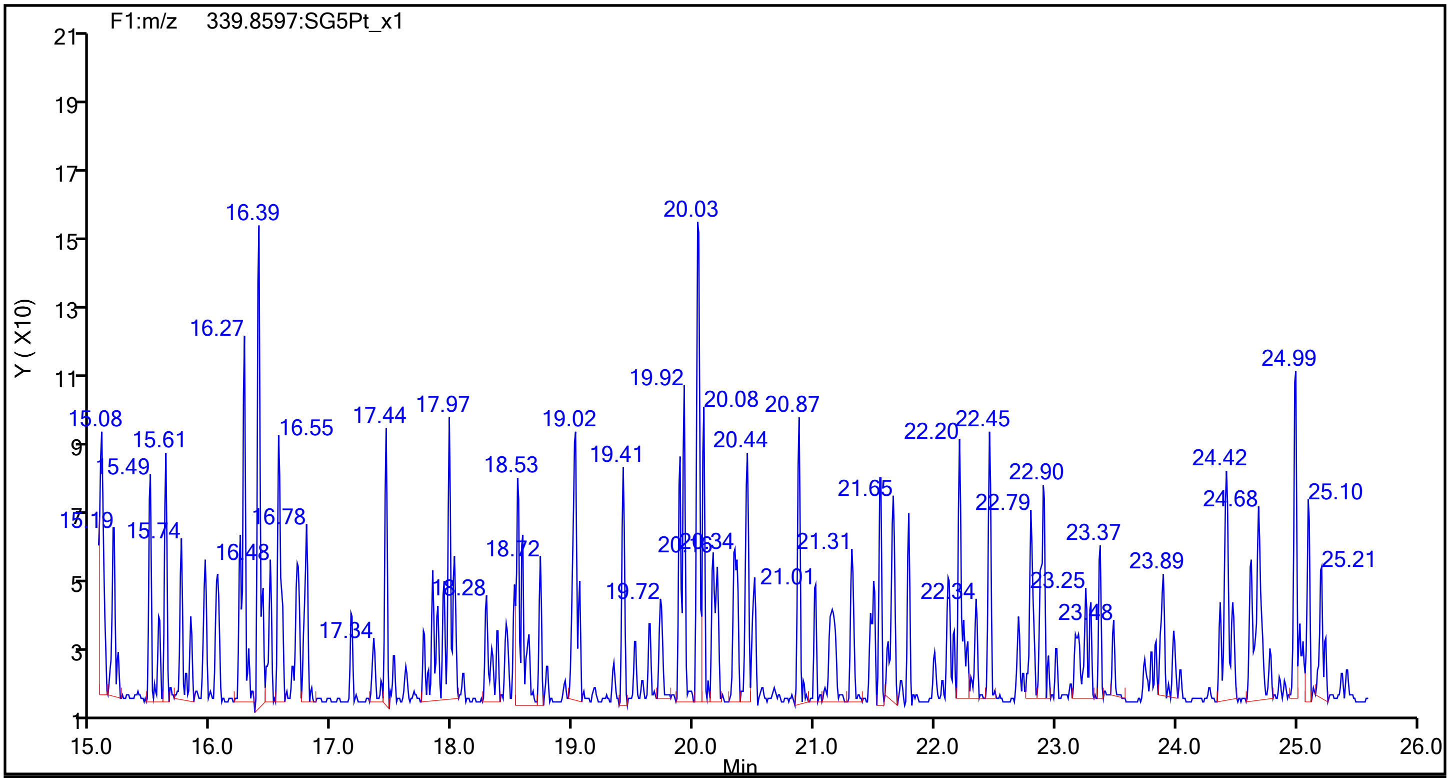

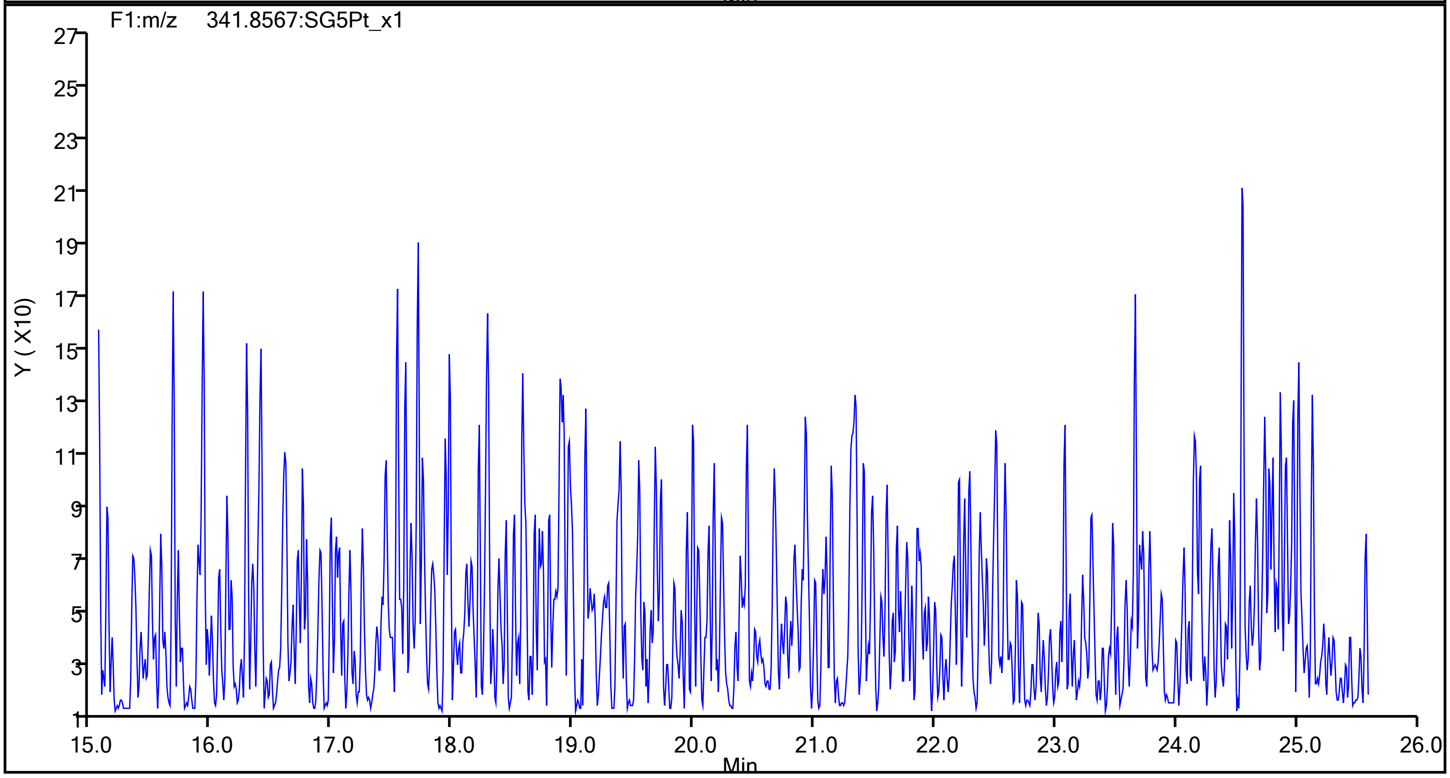

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

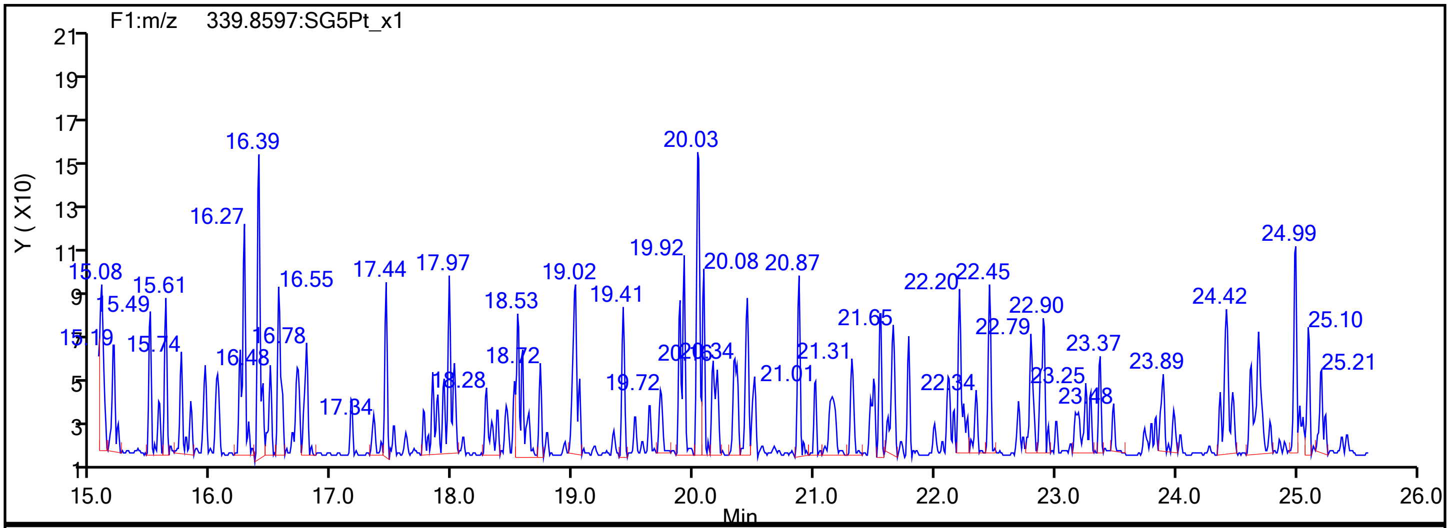

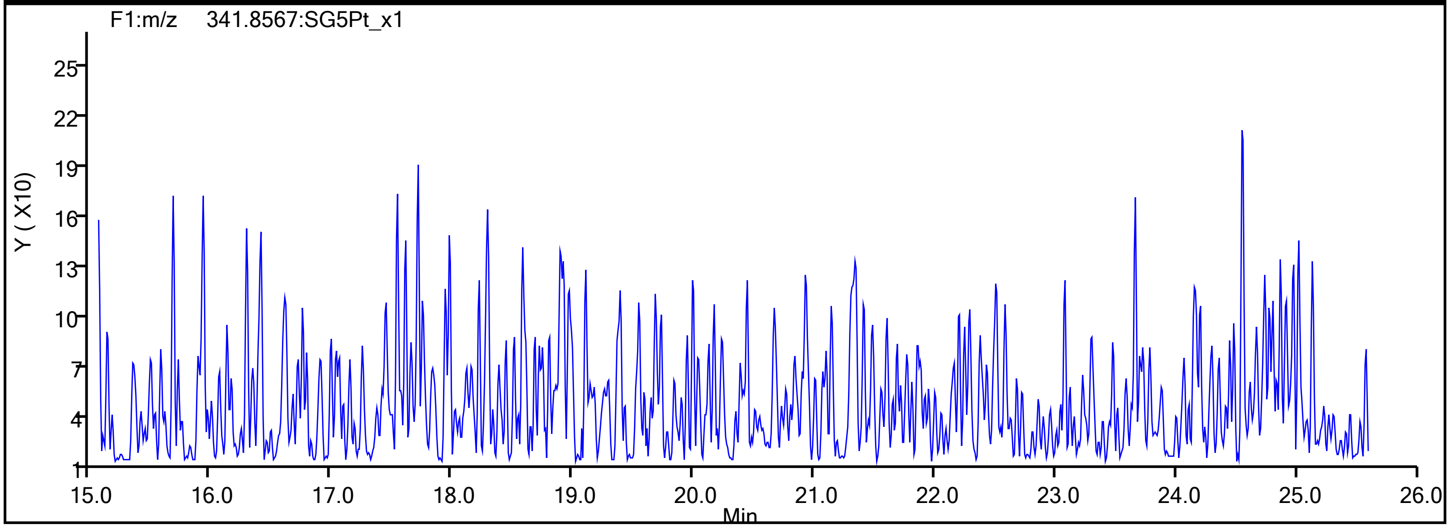

F1 PeCDFs Interference Mass

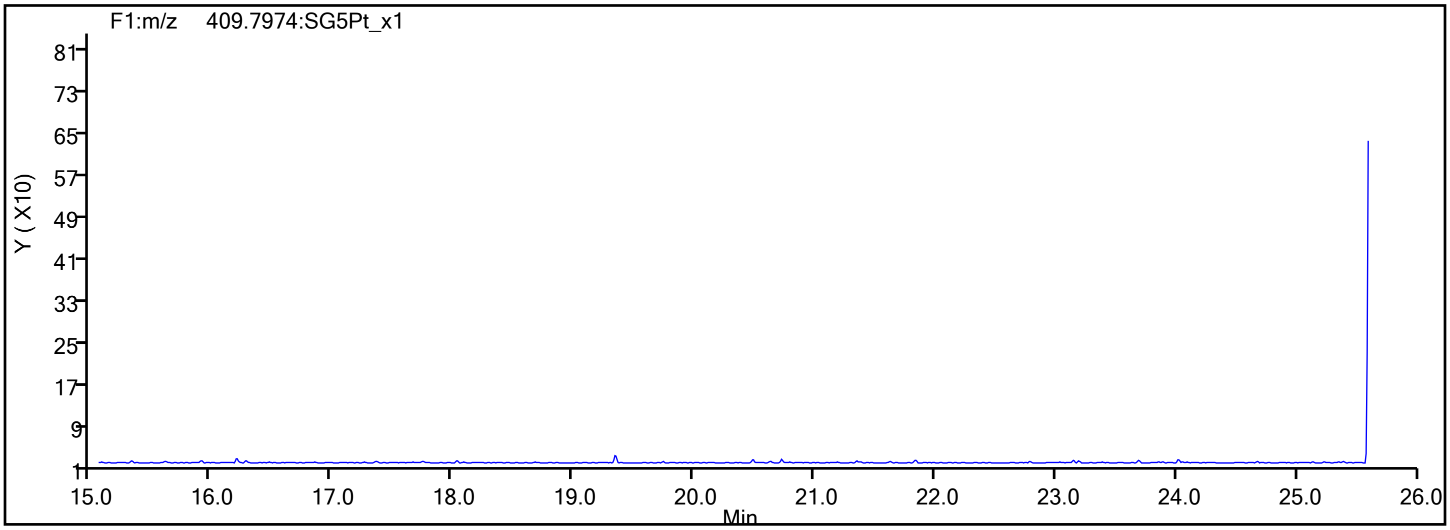

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Injection Date: 17-Nov-2020 18:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

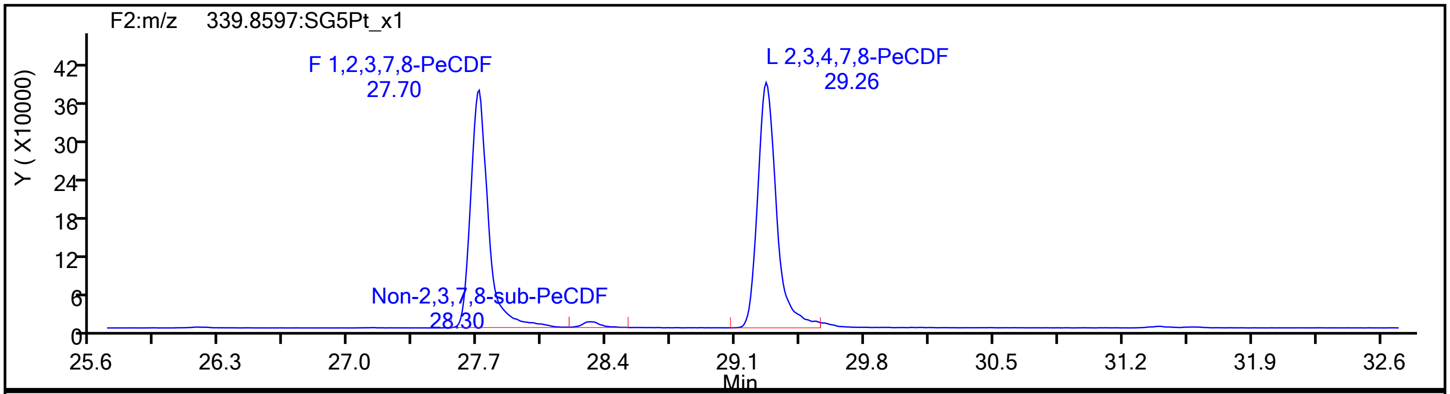

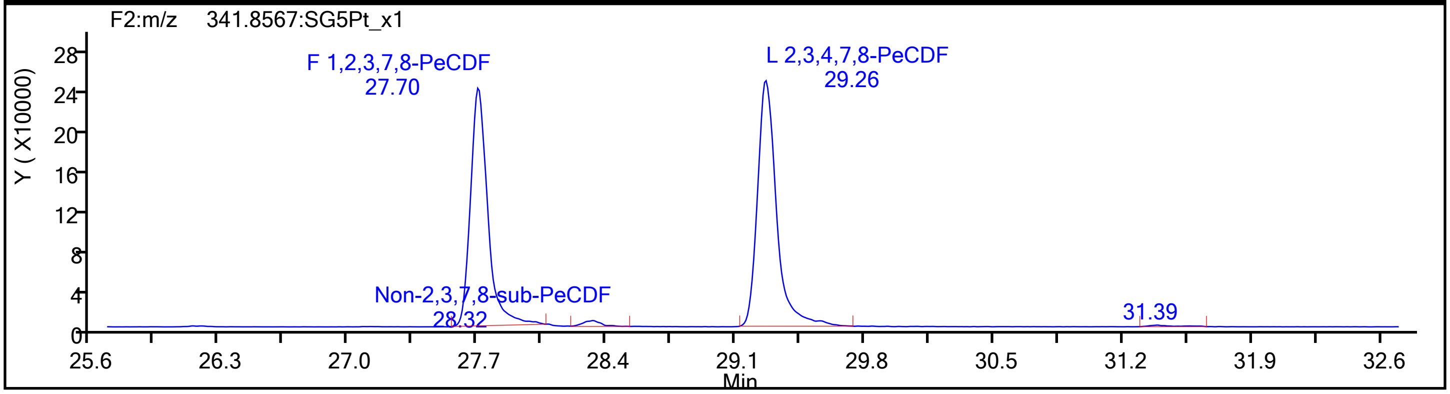

PeCDF Standards

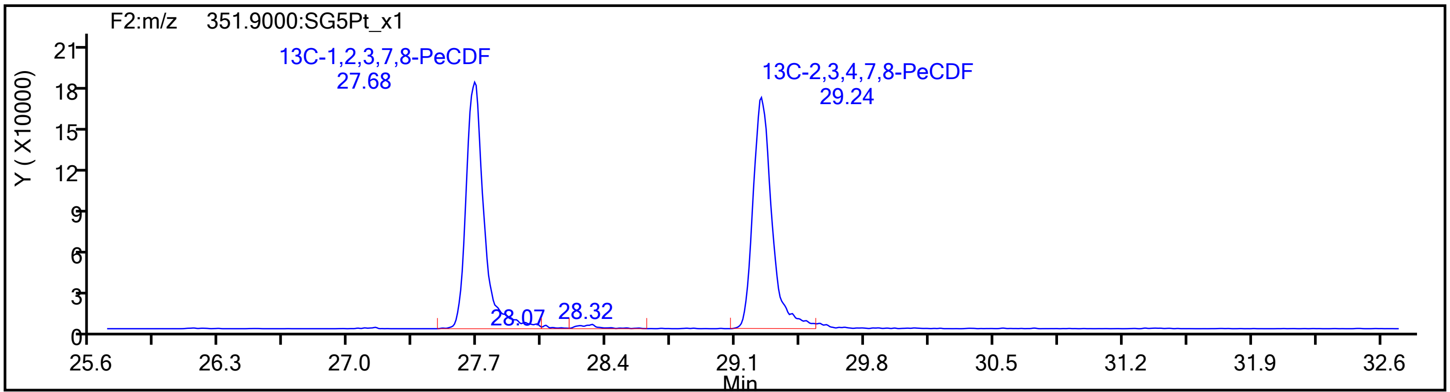

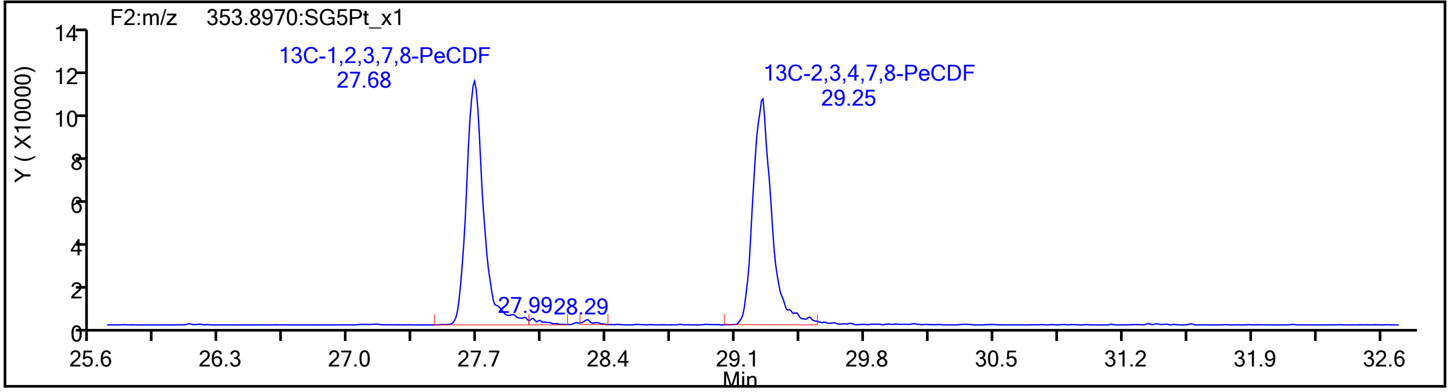

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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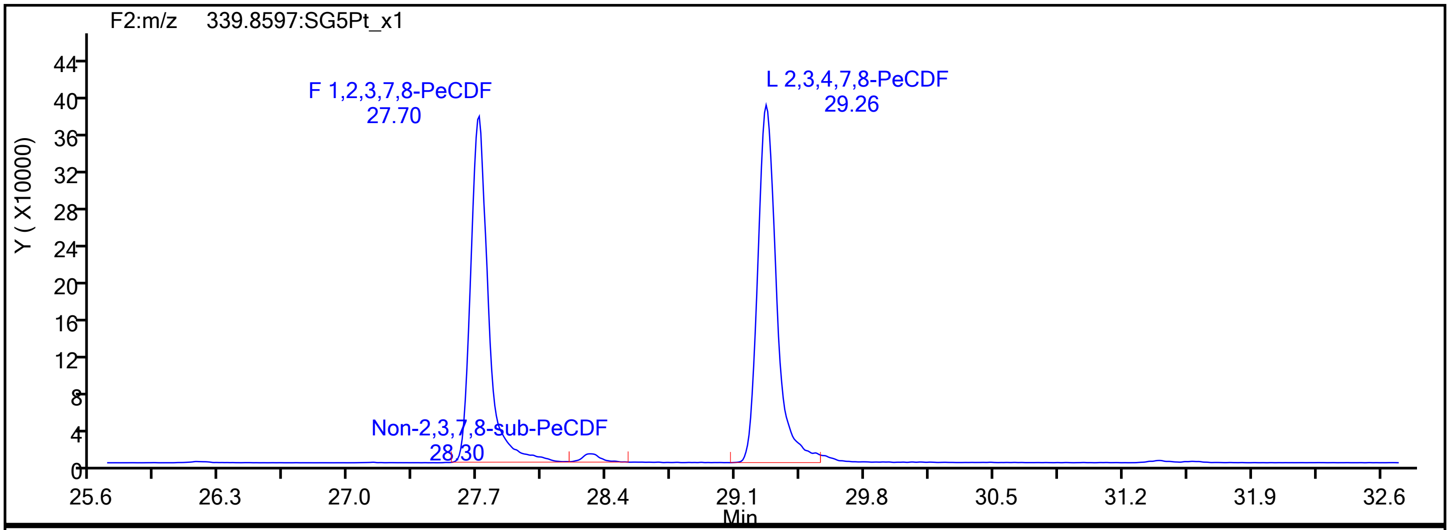

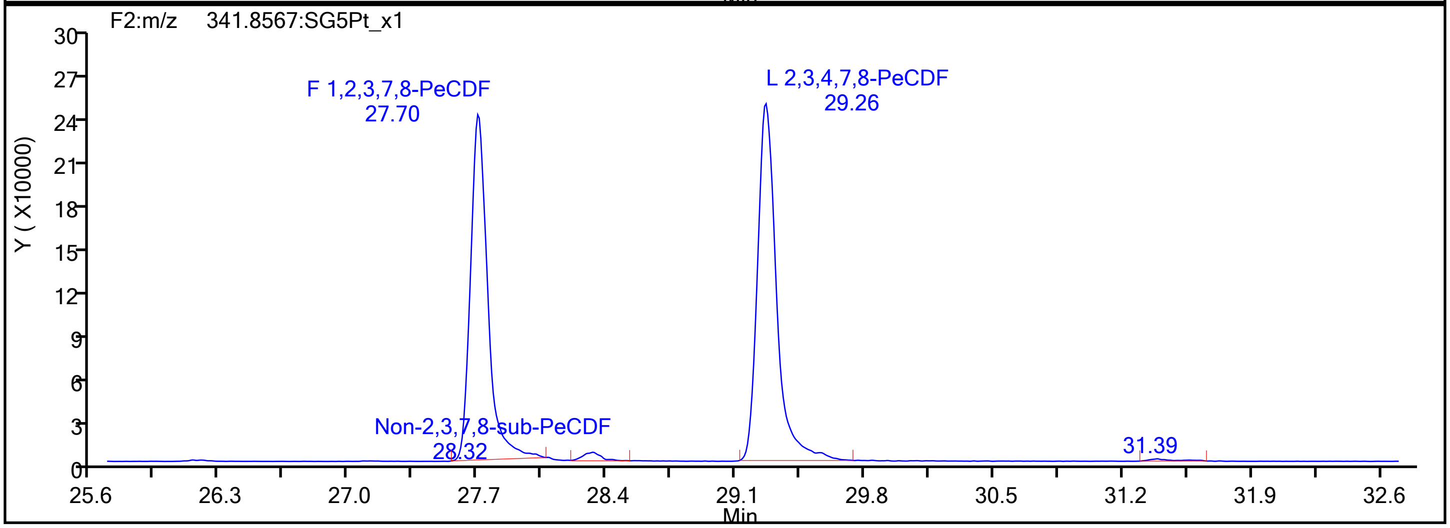

PeCDF Interference Mass

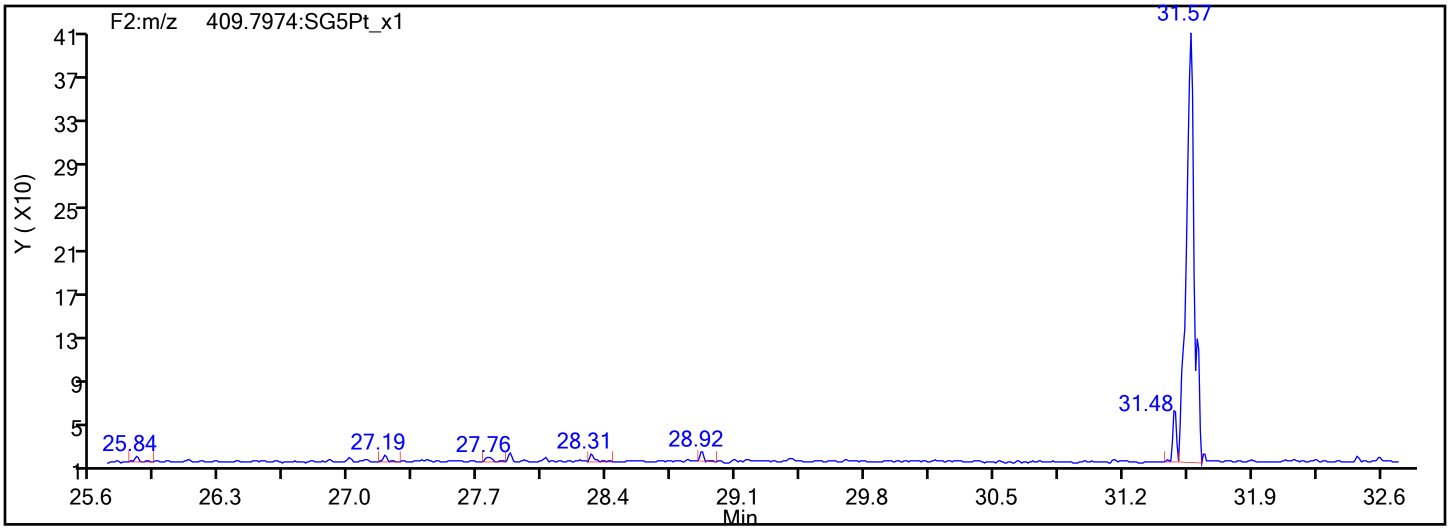

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Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDD

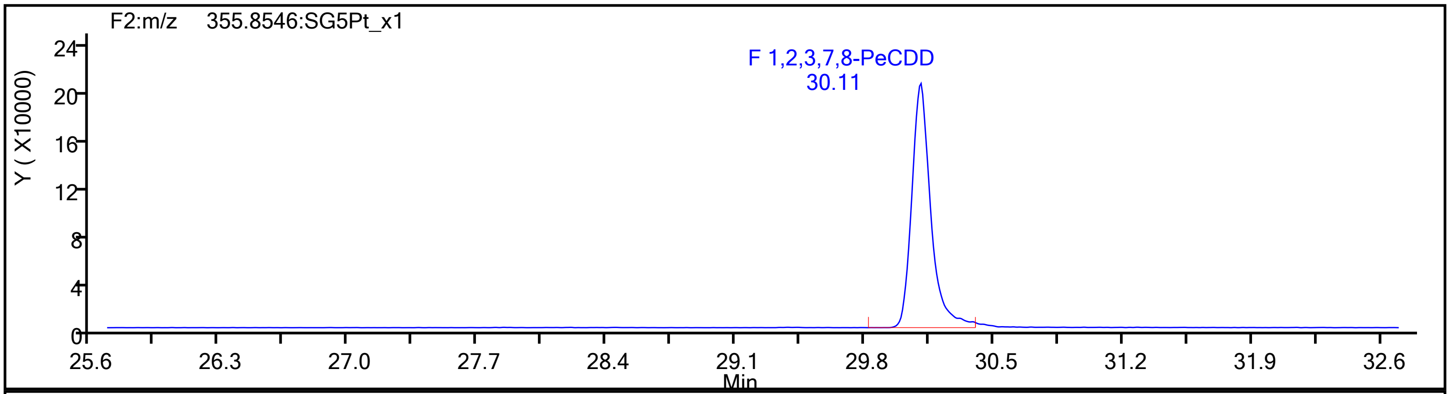

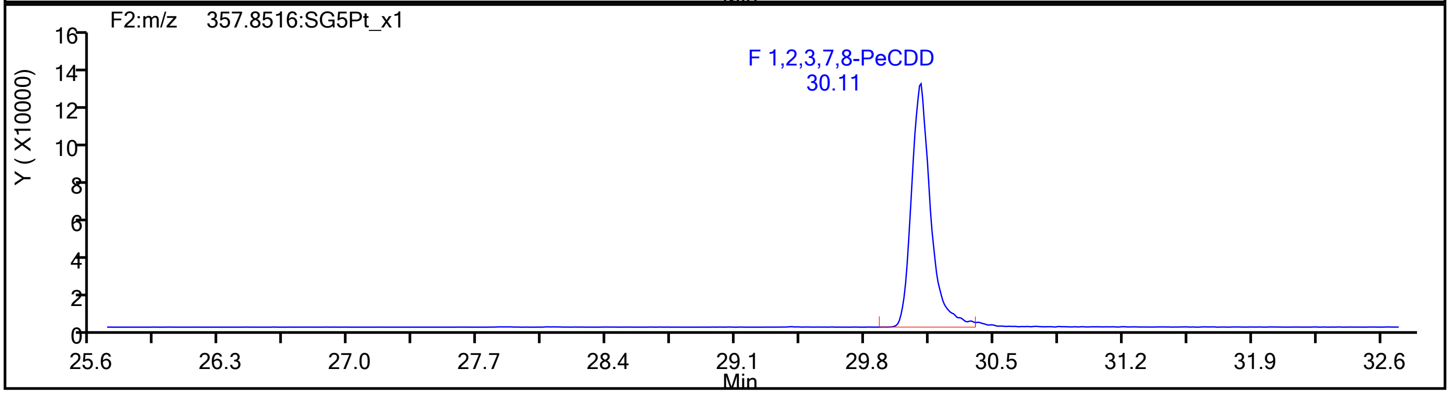

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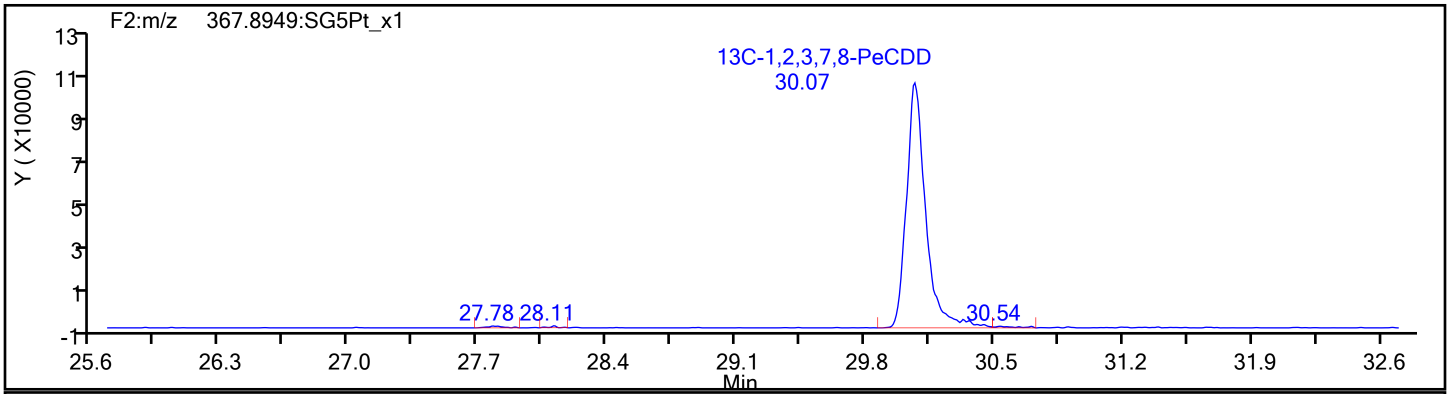

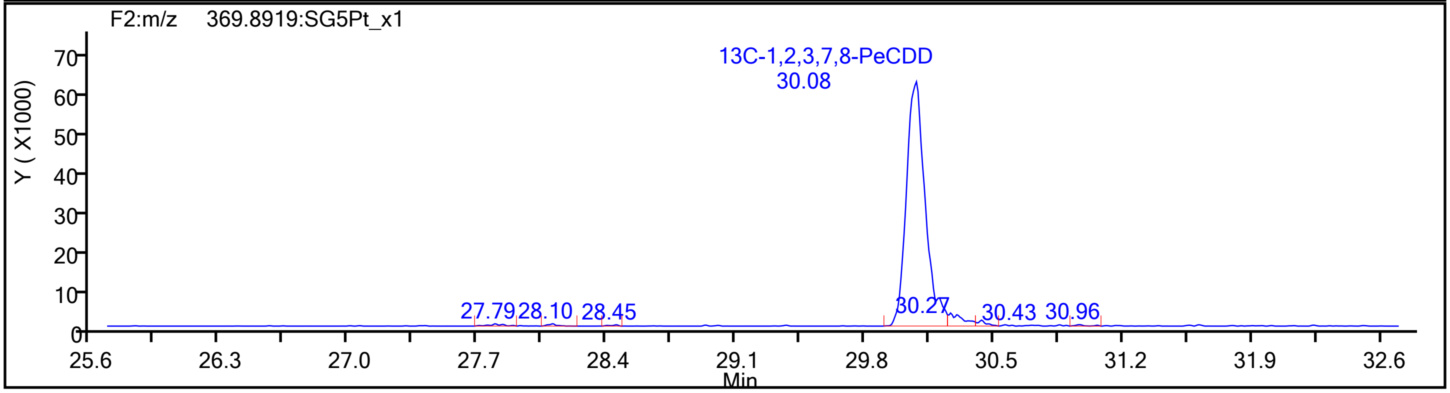

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

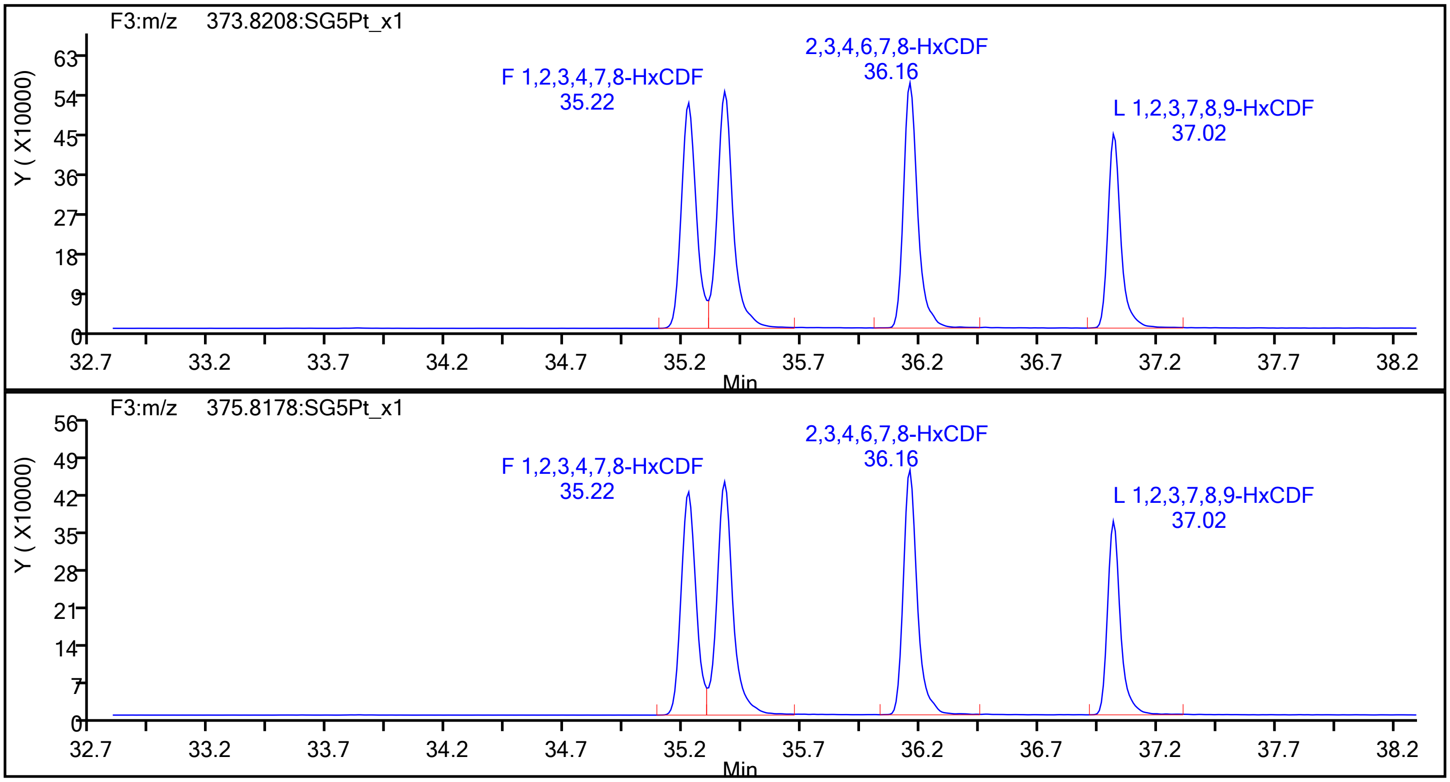

HxCDF Standards

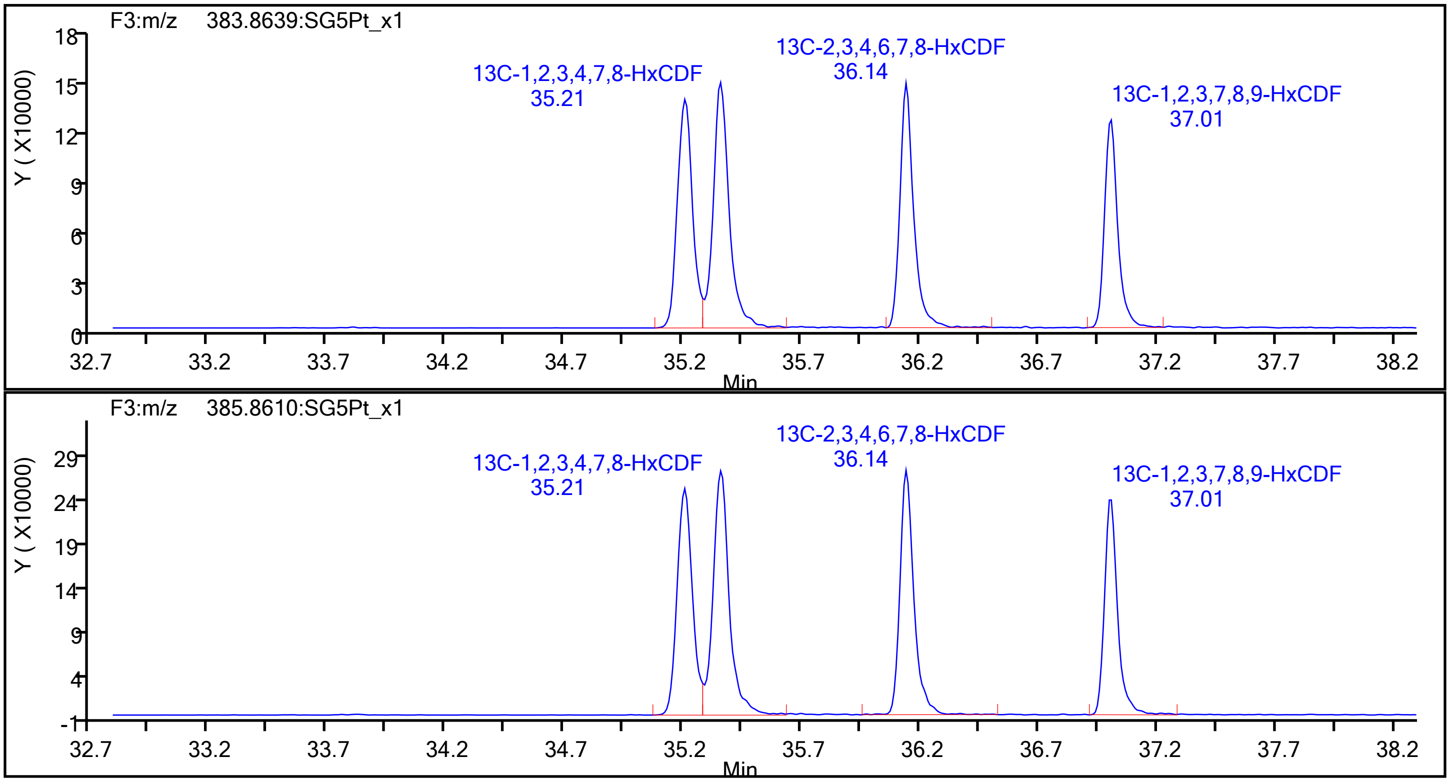

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Eurofins TestAmerica, Sacramento

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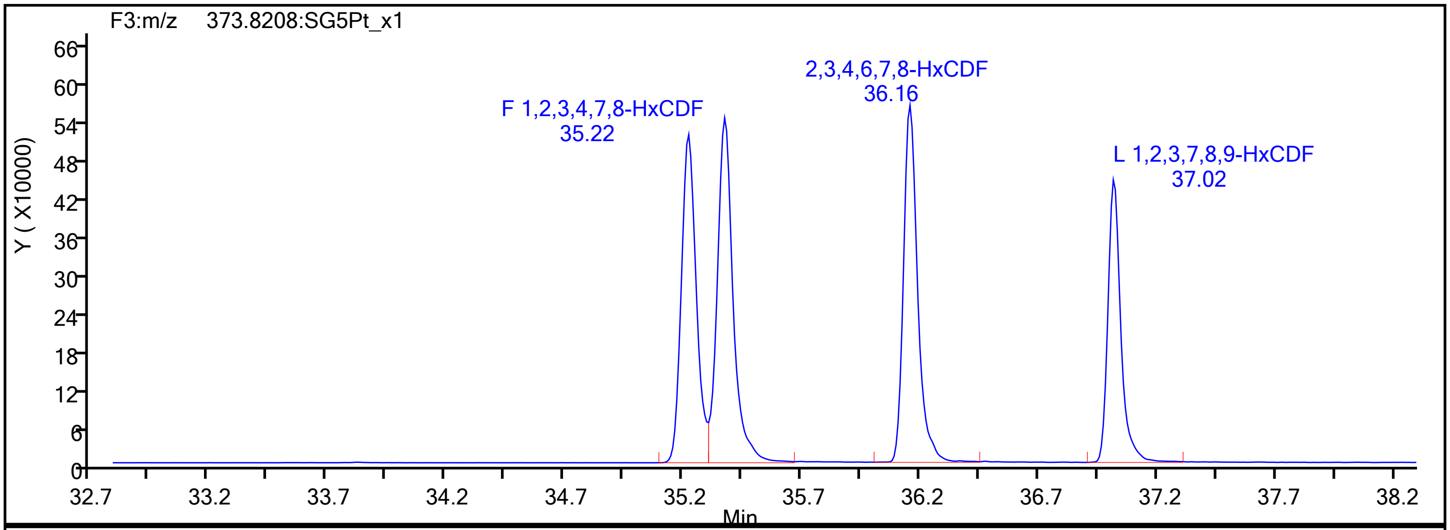

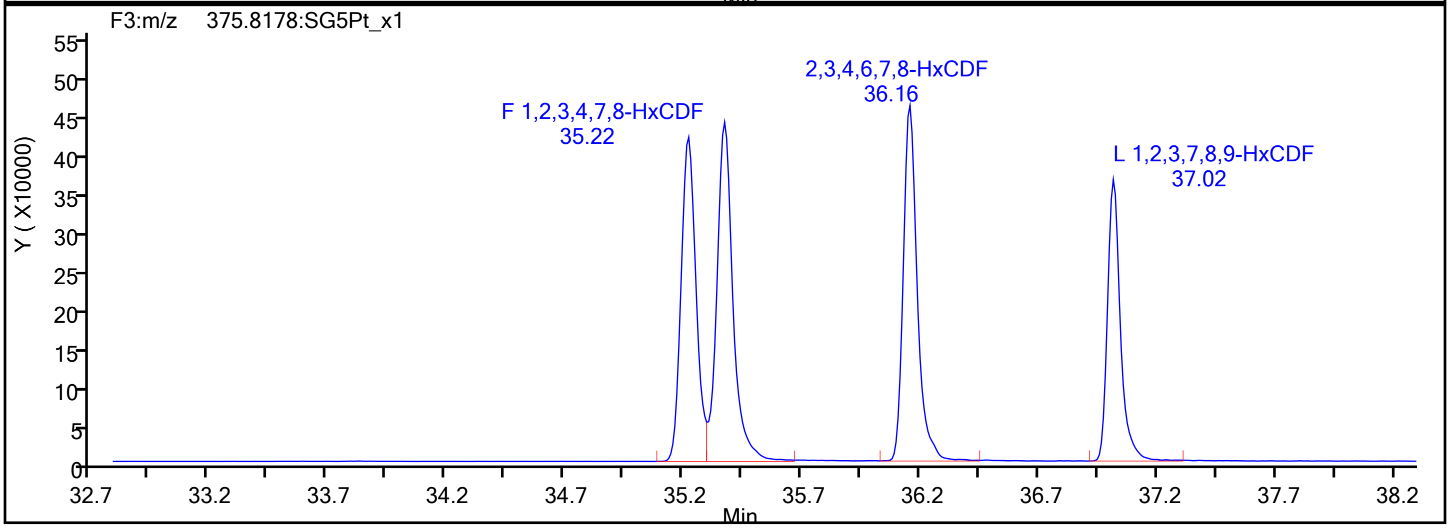

HxCDF Interference Mass

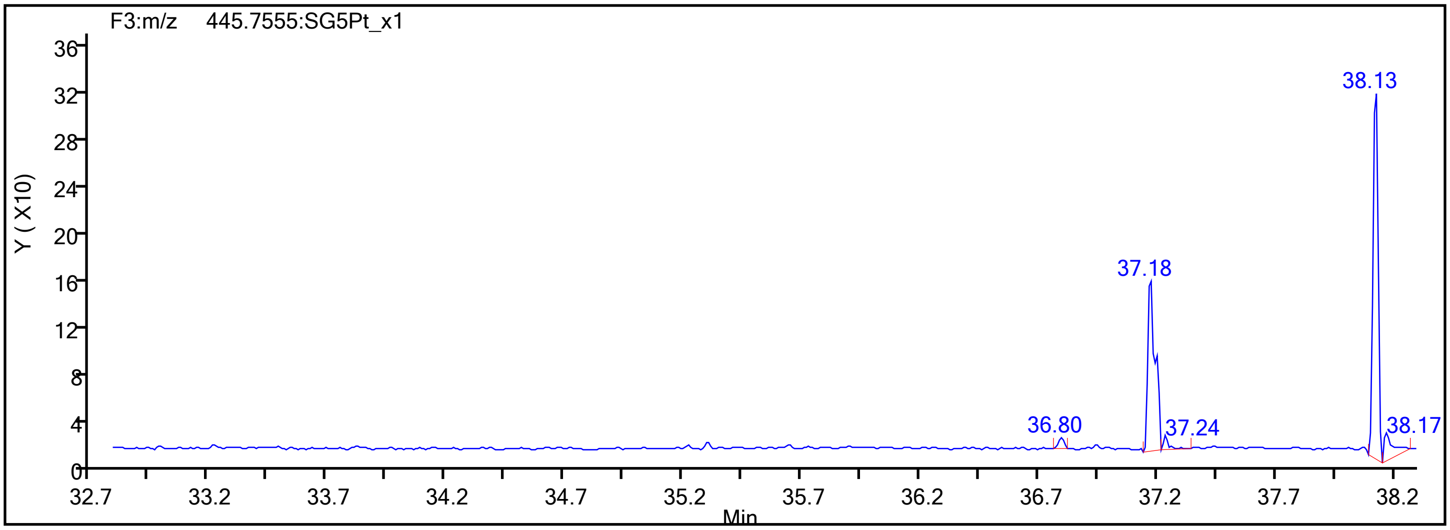

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Eurofins TestAmerica, Sacramento

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HxCDD

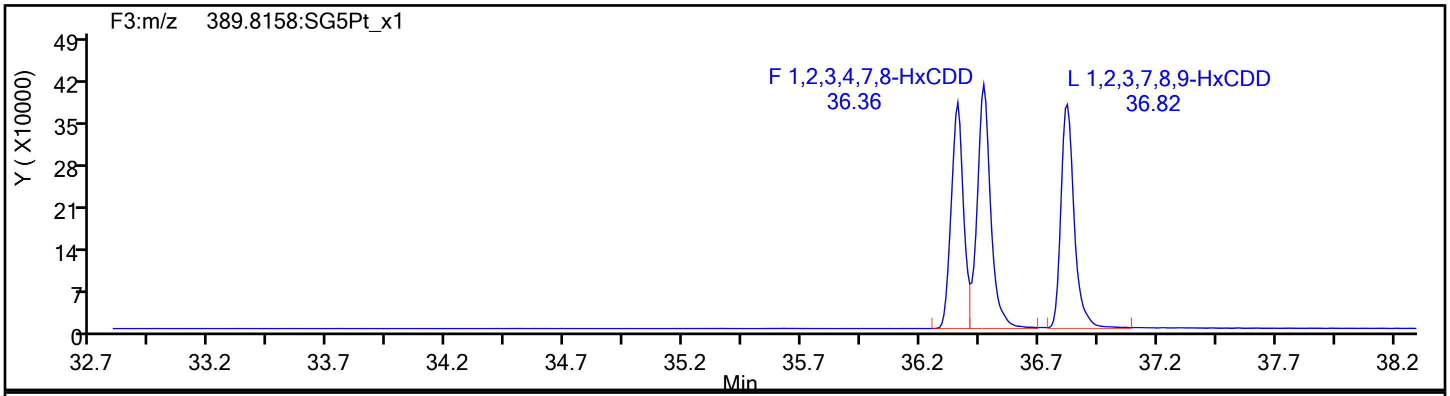

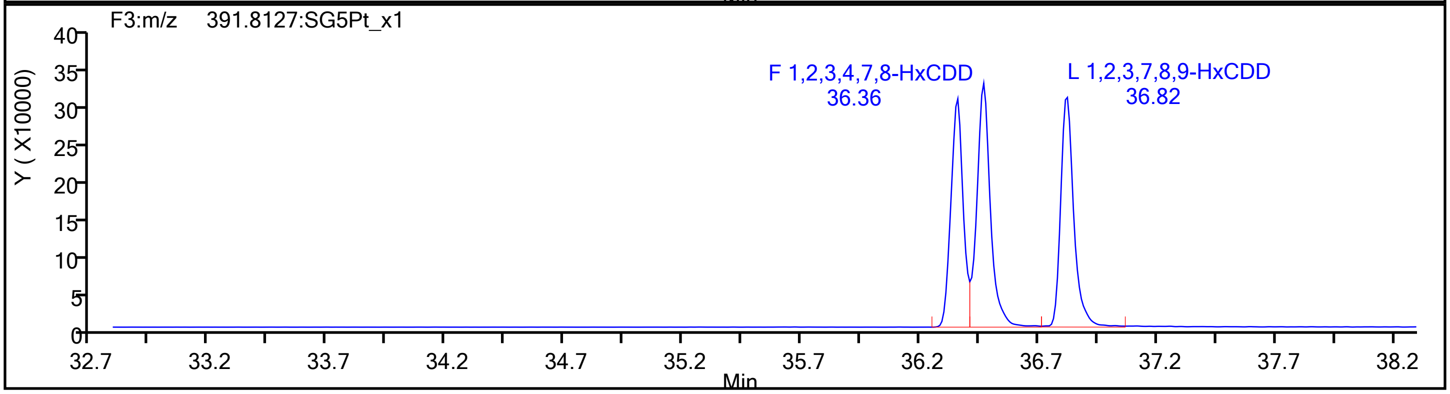

HxCDD Standards

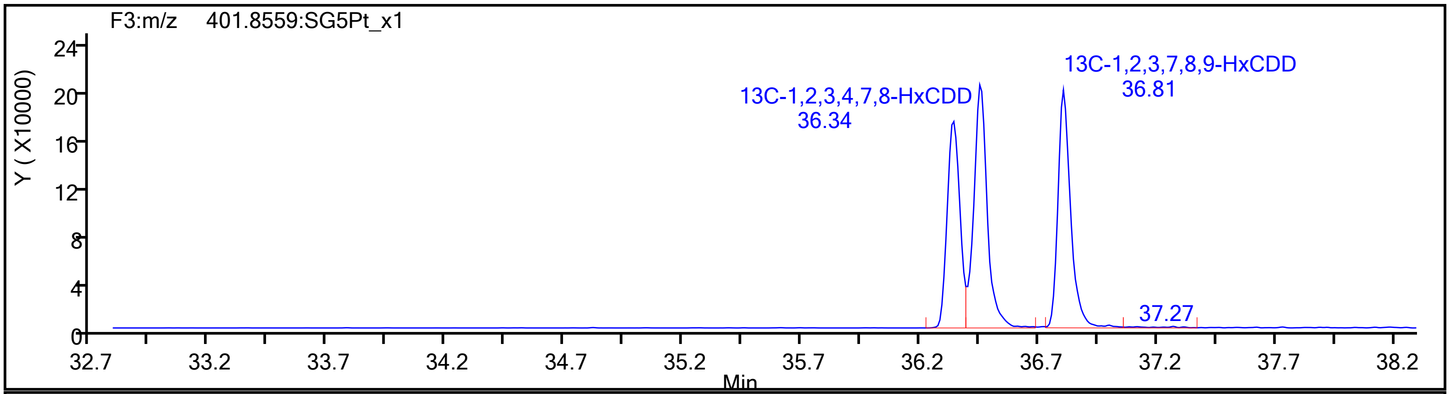

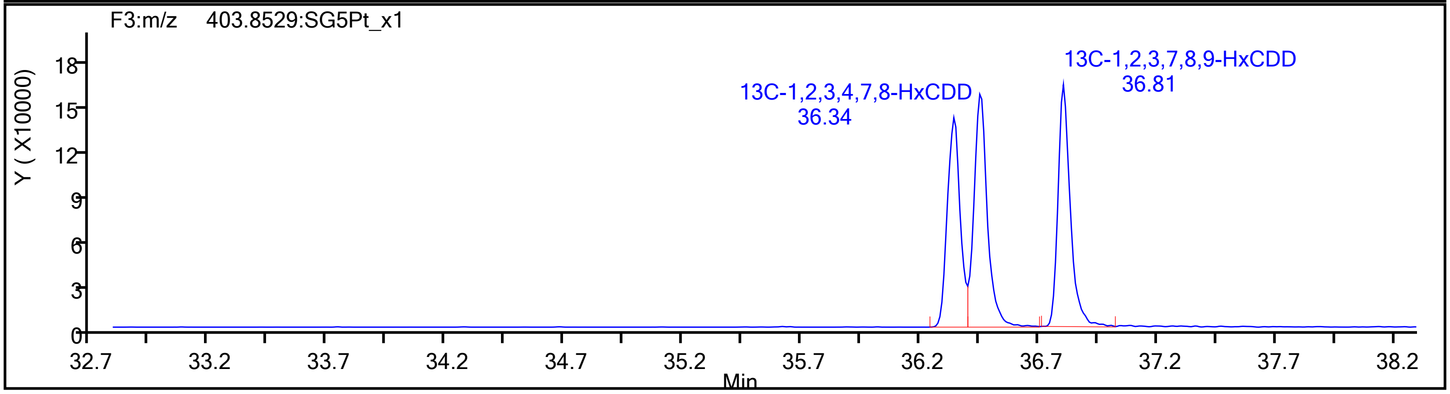

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Eurofins TestAmerica, Sacramento

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HpCDF

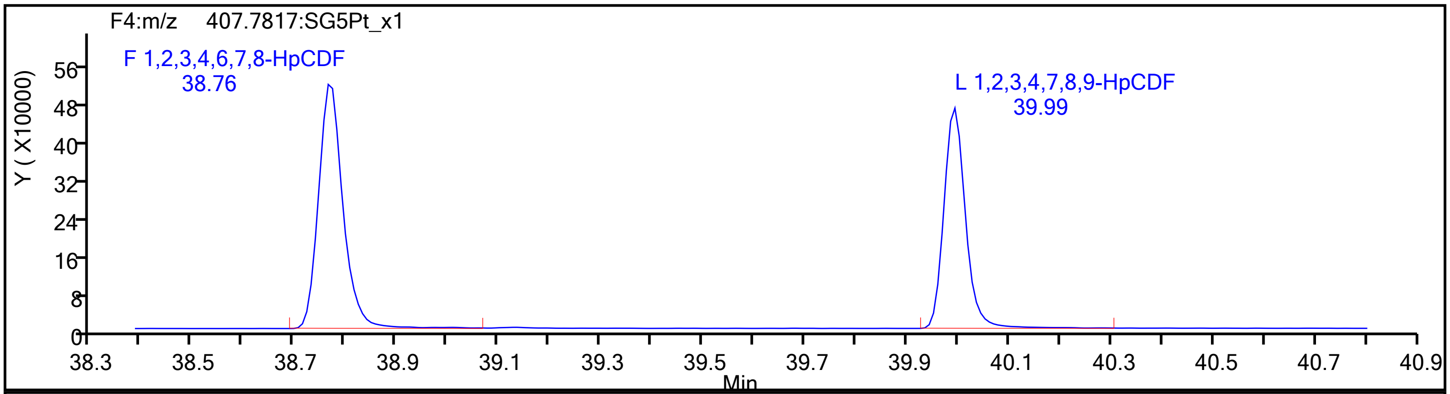

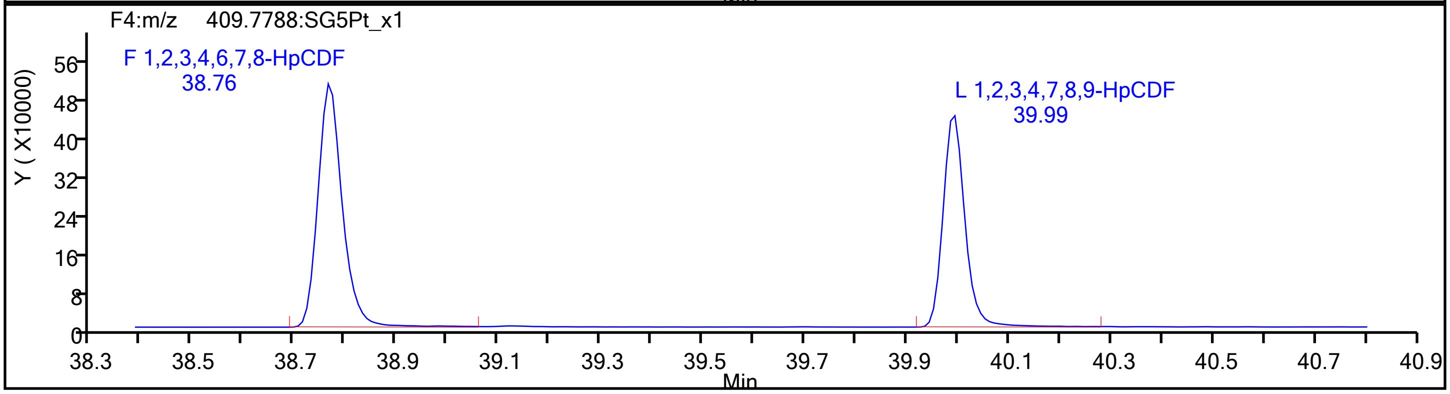

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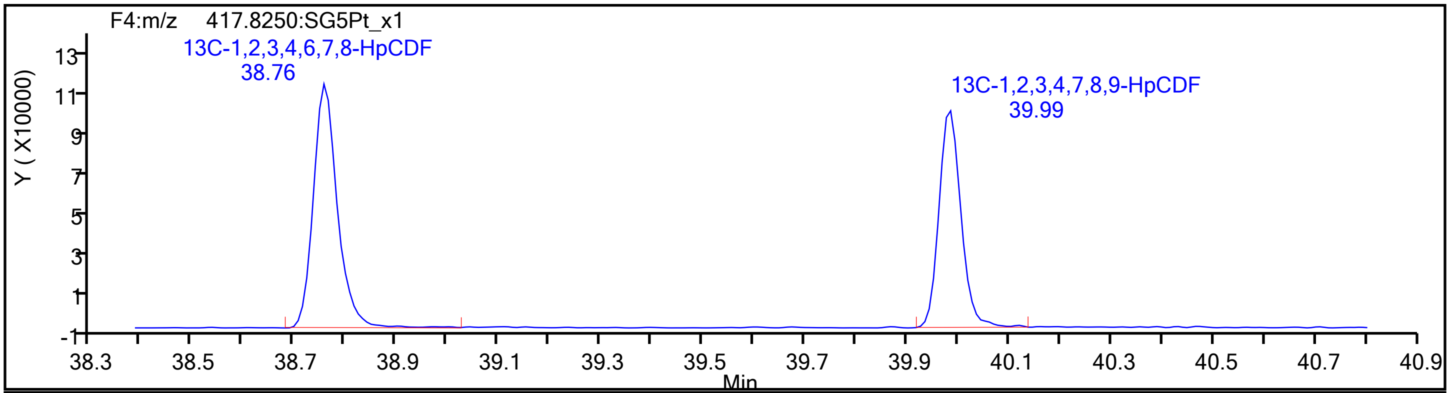

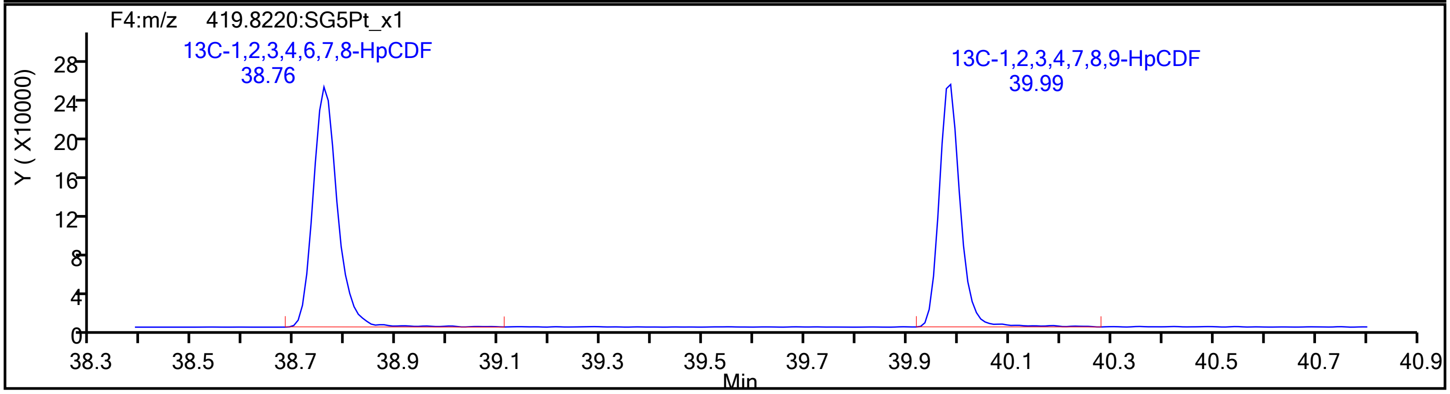

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDF

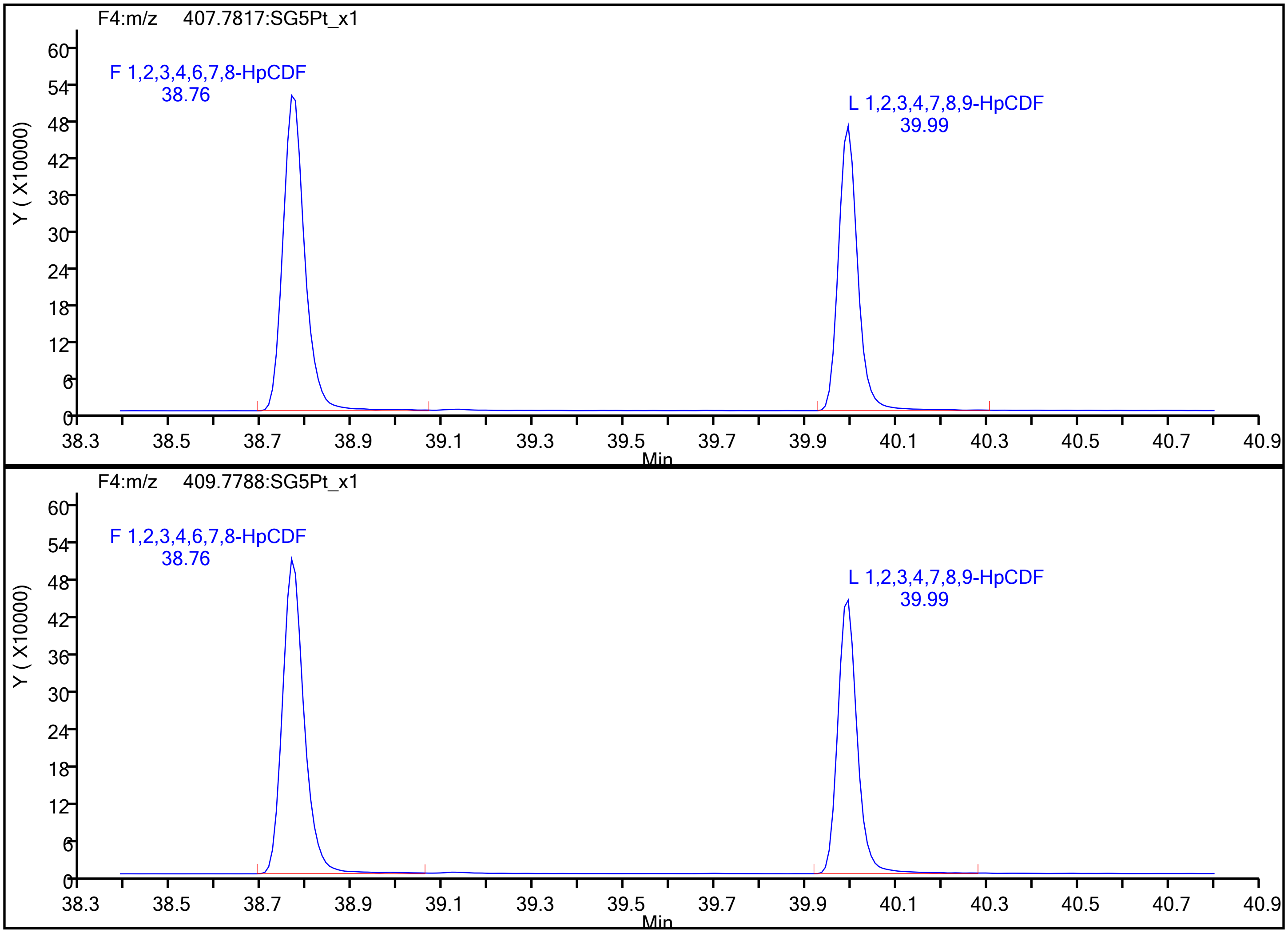

HpCDF Interference Mass

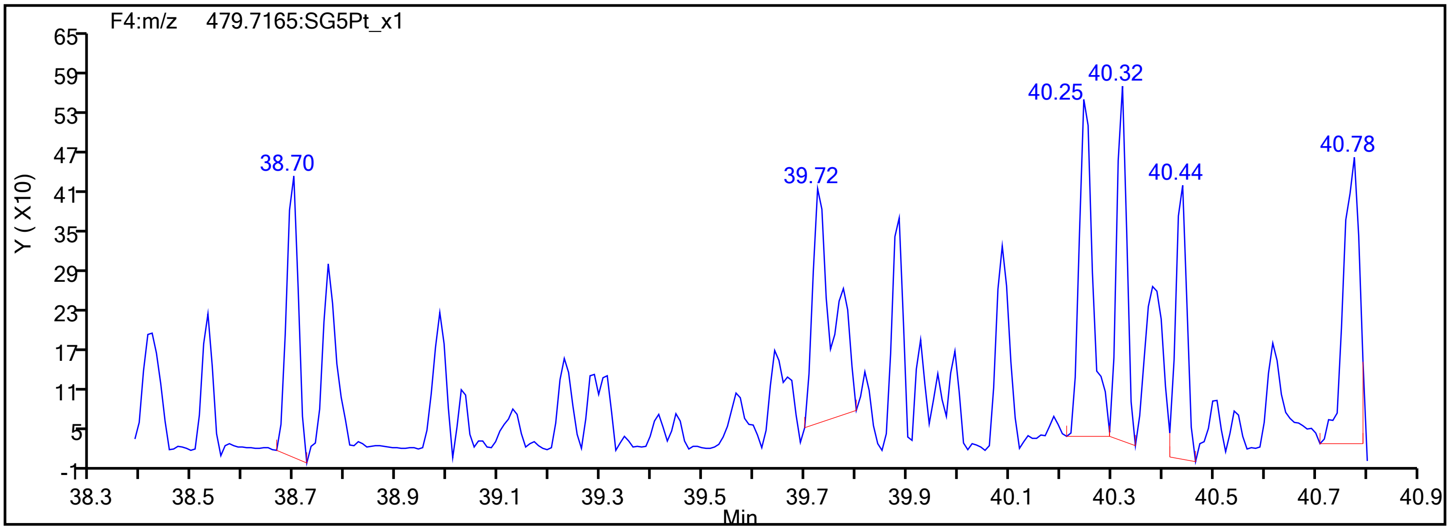

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Eurofins TestAmerica, Sacramento

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HpCDD

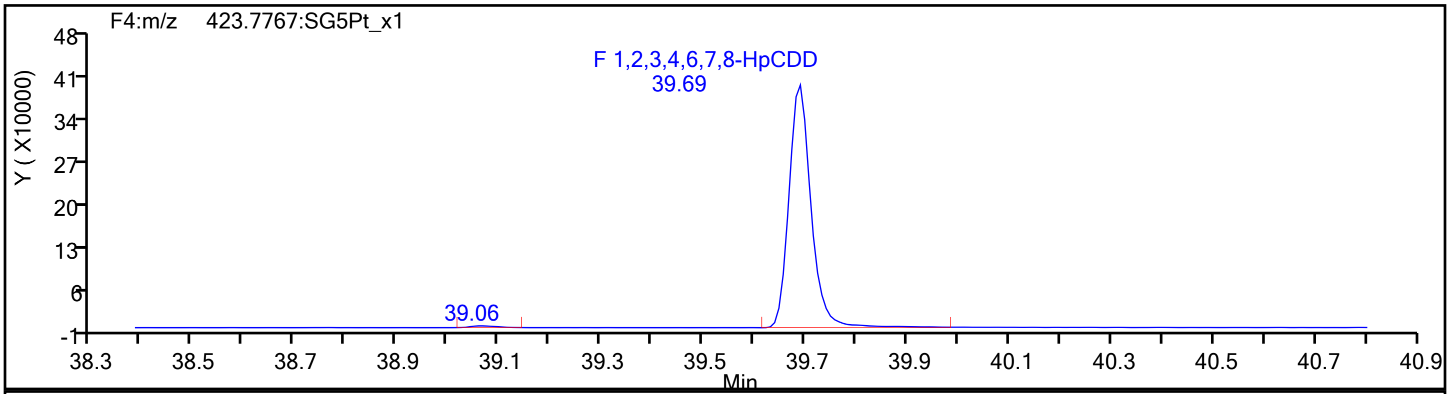

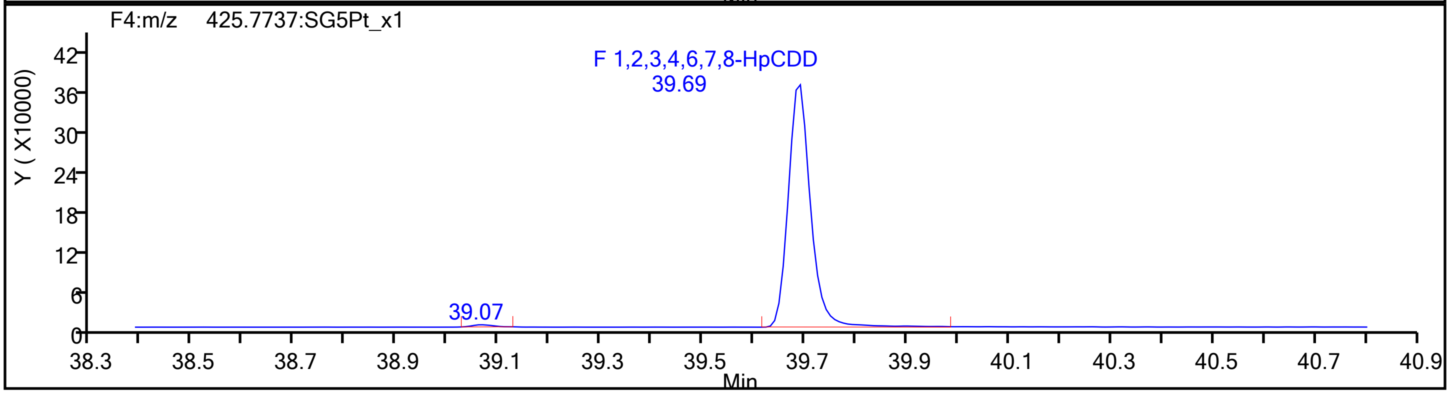

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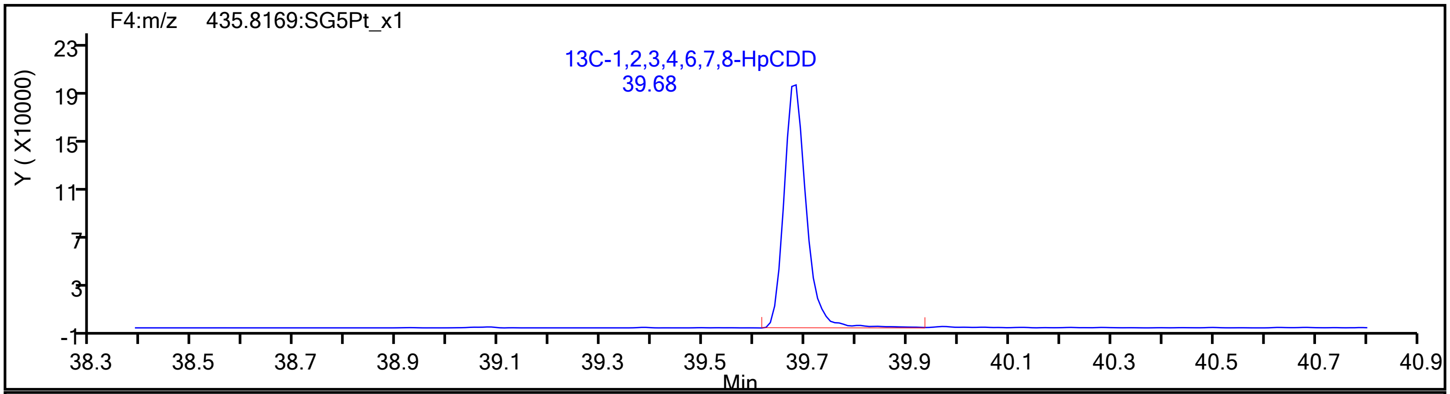

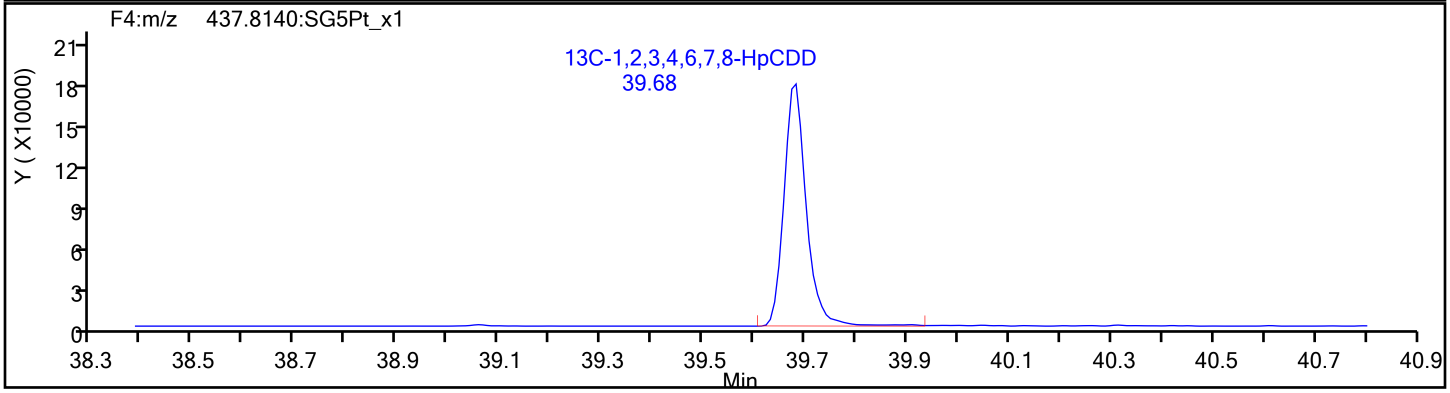

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Eurofins TestAmerica, Sacramento

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Client ID:			
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OCDF

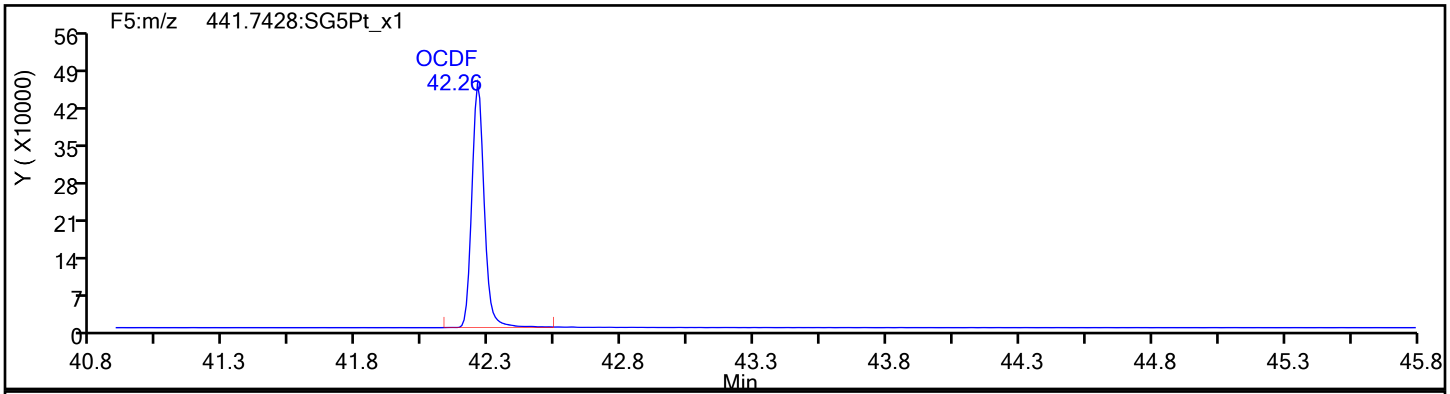

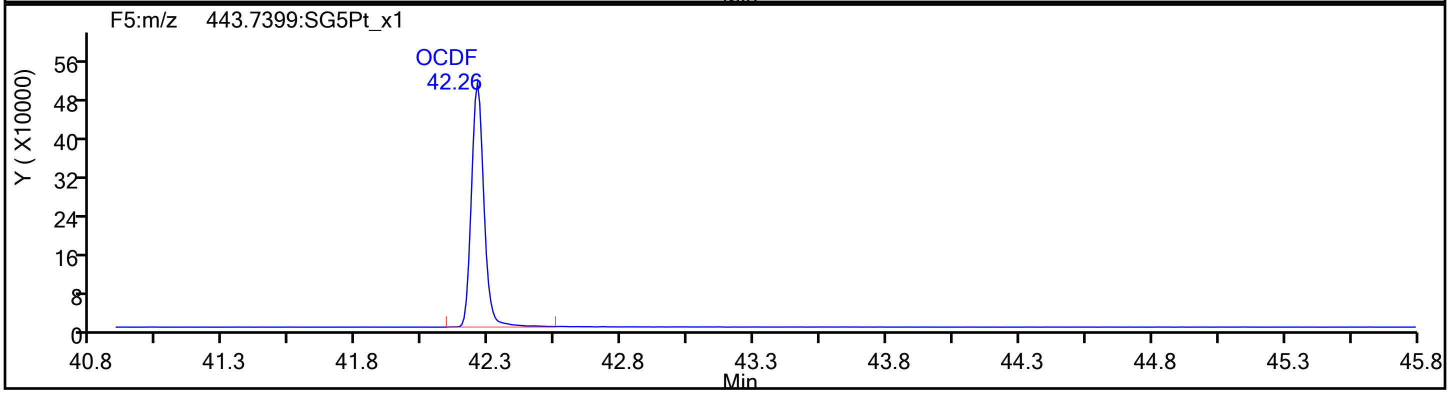

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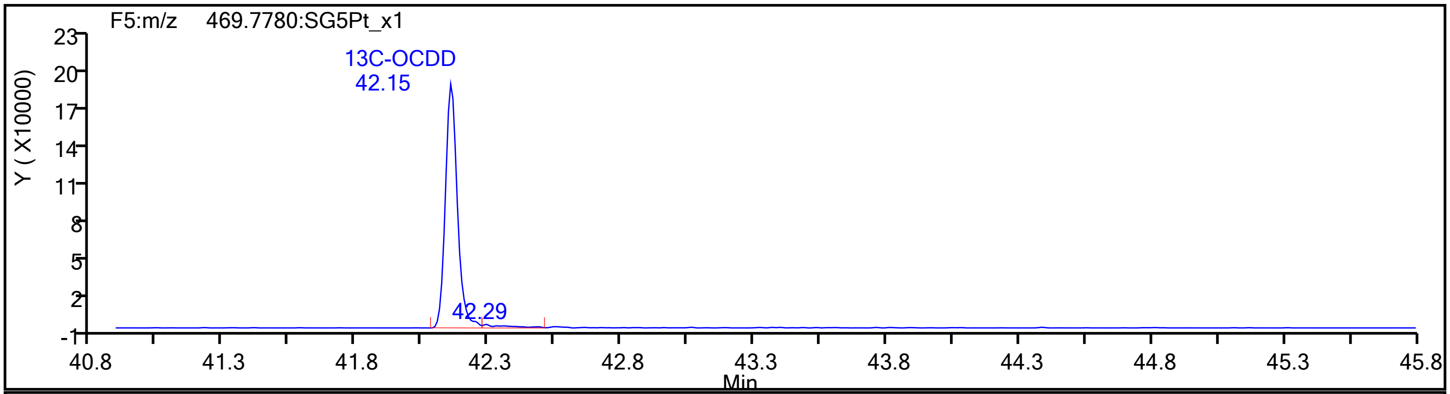

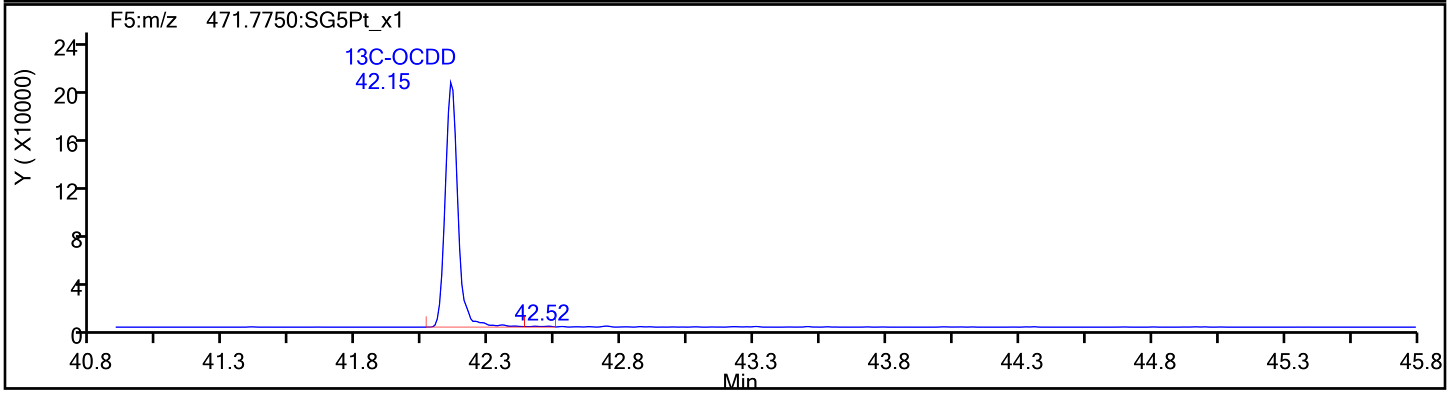

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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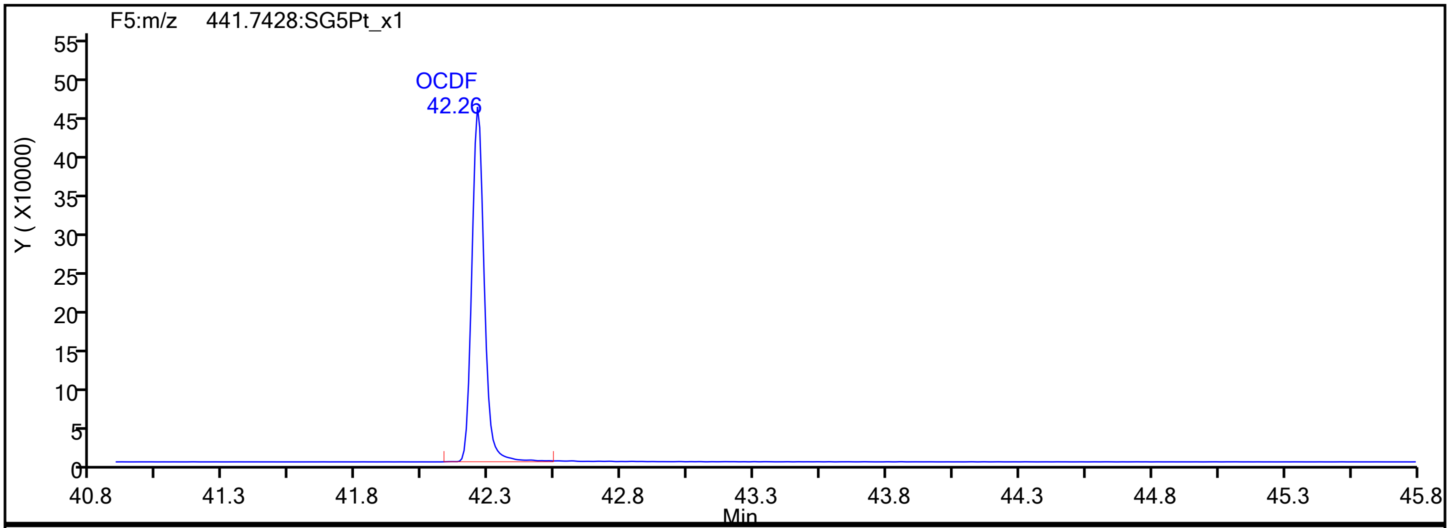

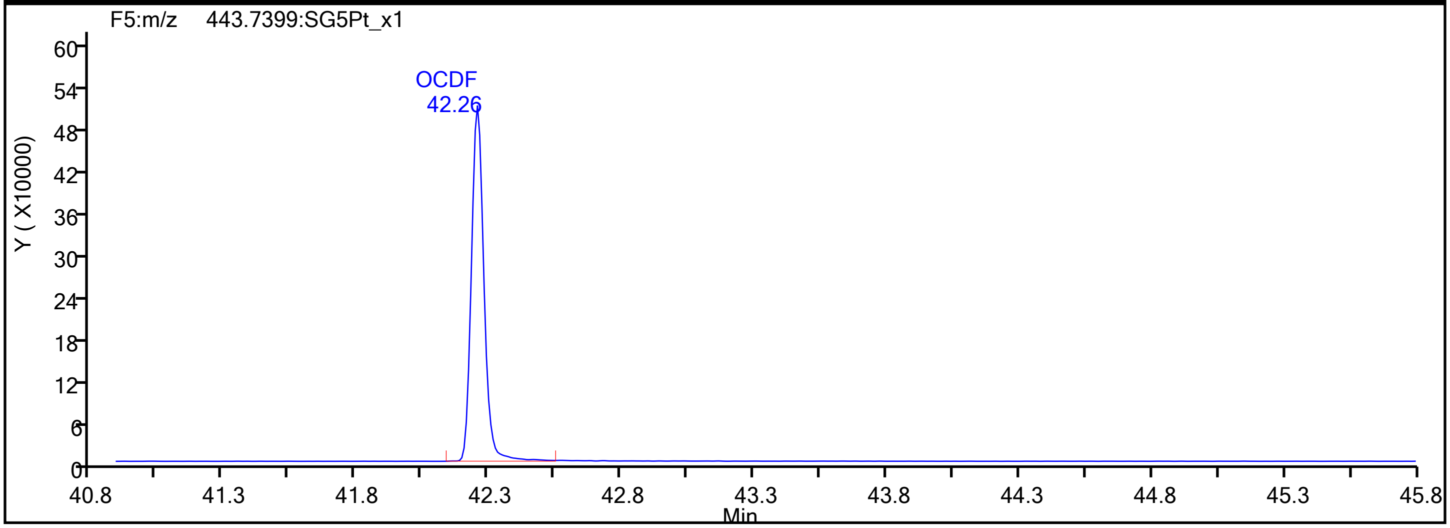

OCDF Interference Mass

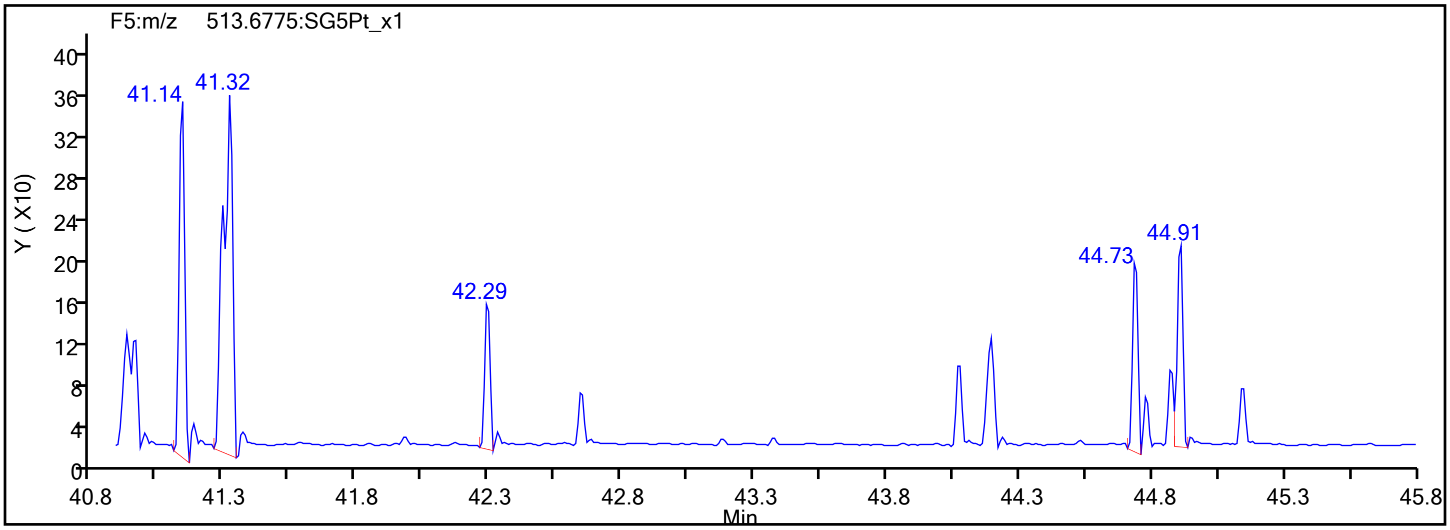

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Column Dia: 0.32 mm

OCDD

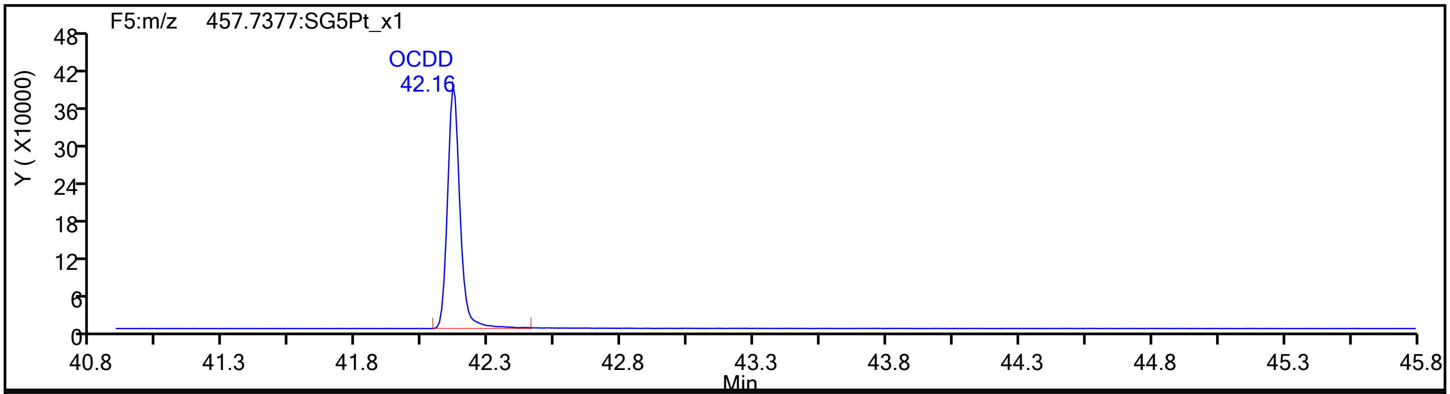

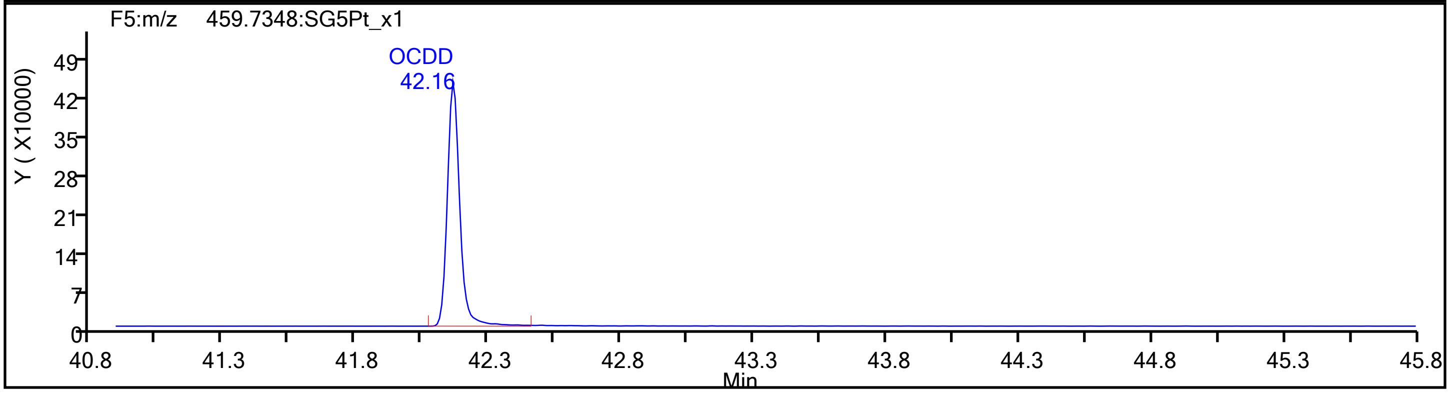

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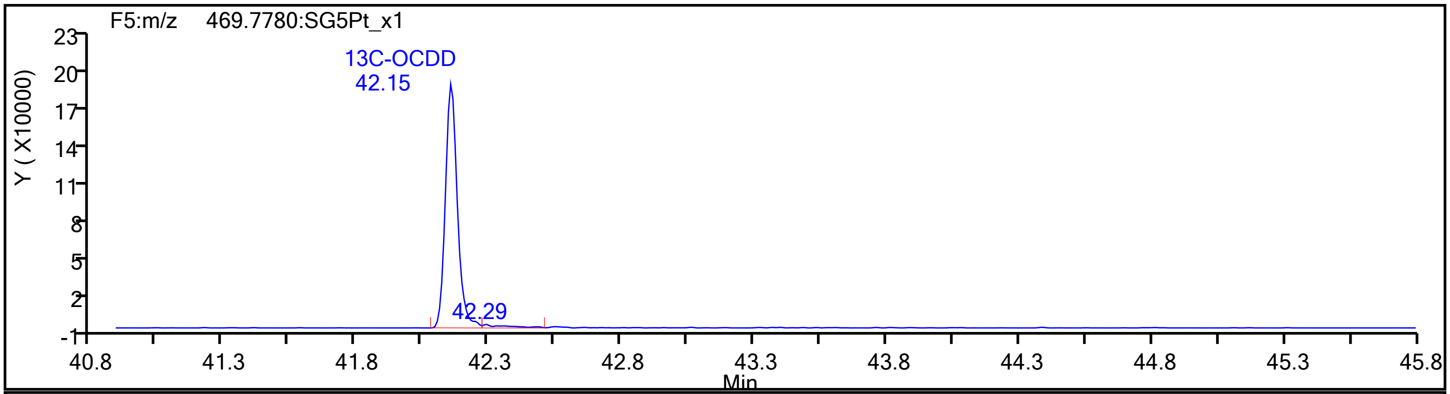

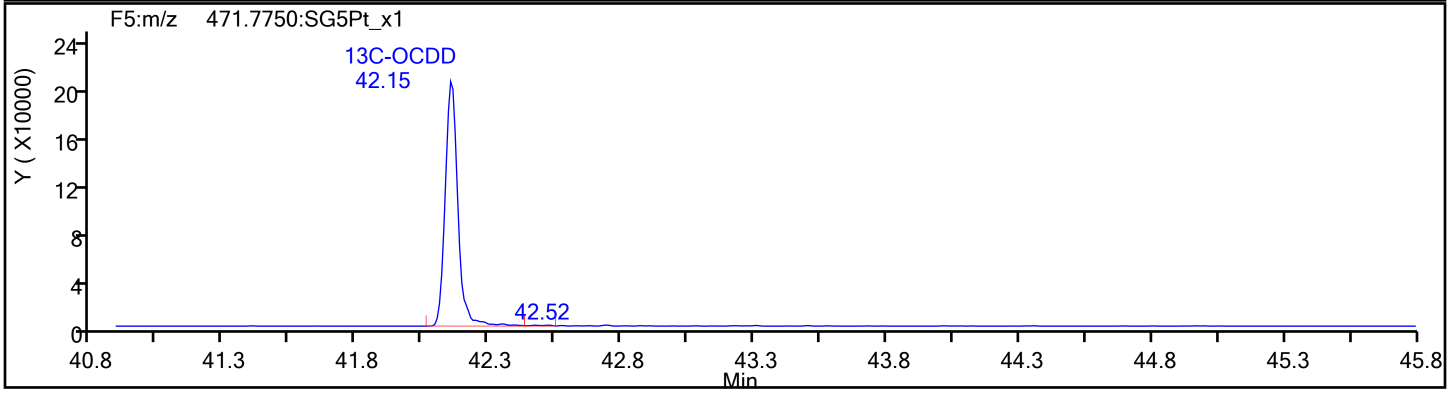

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

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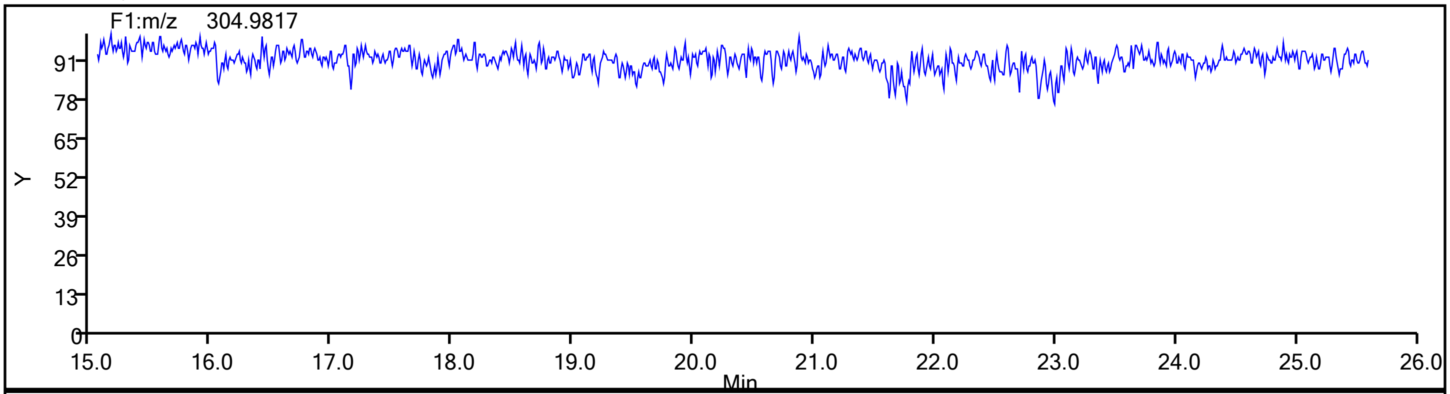

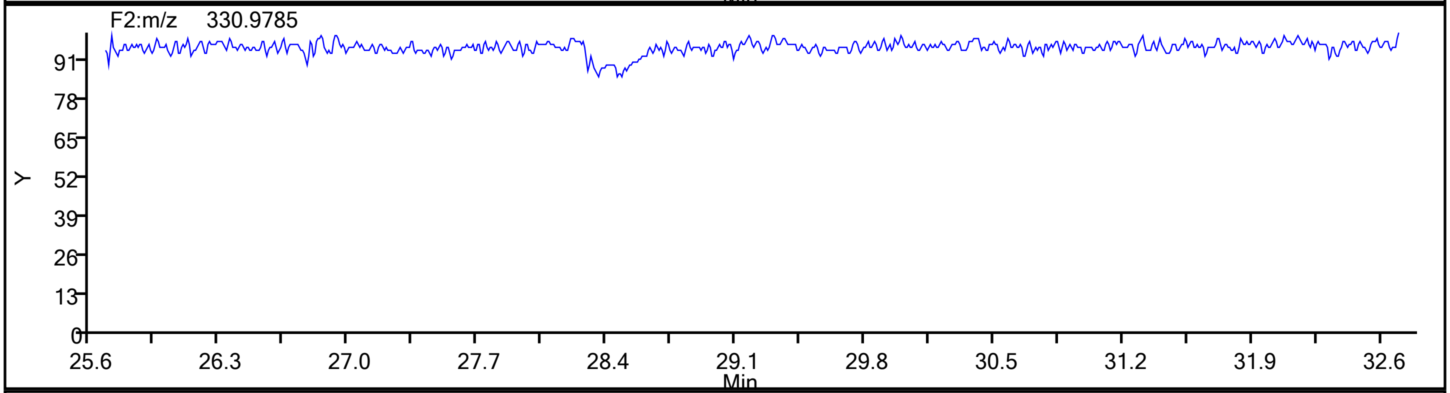

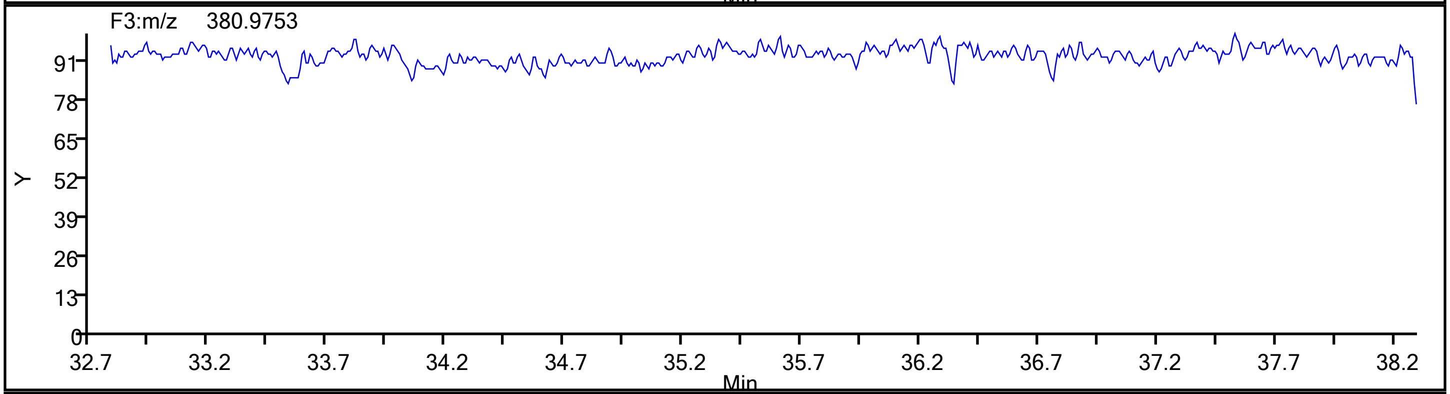

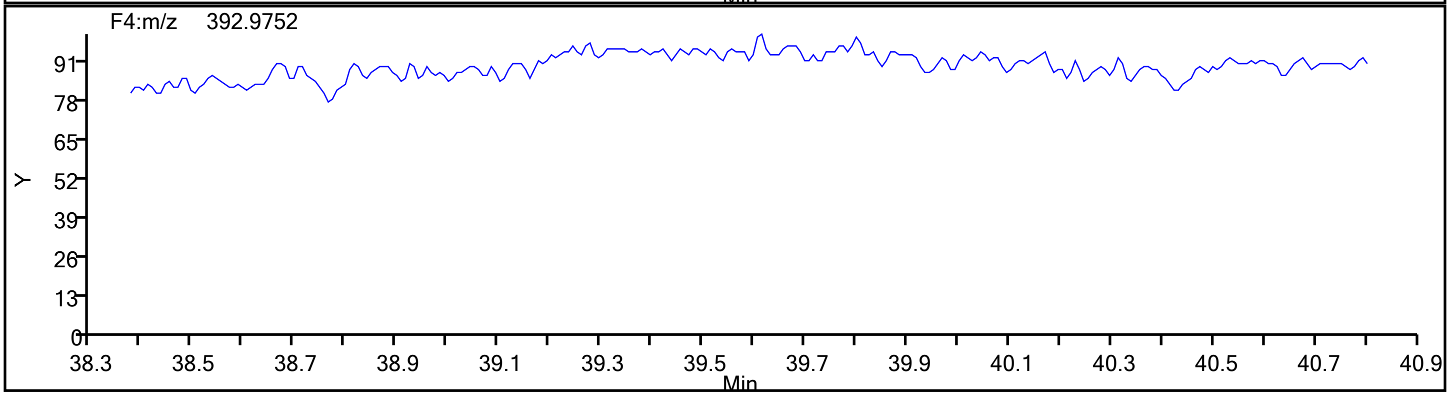

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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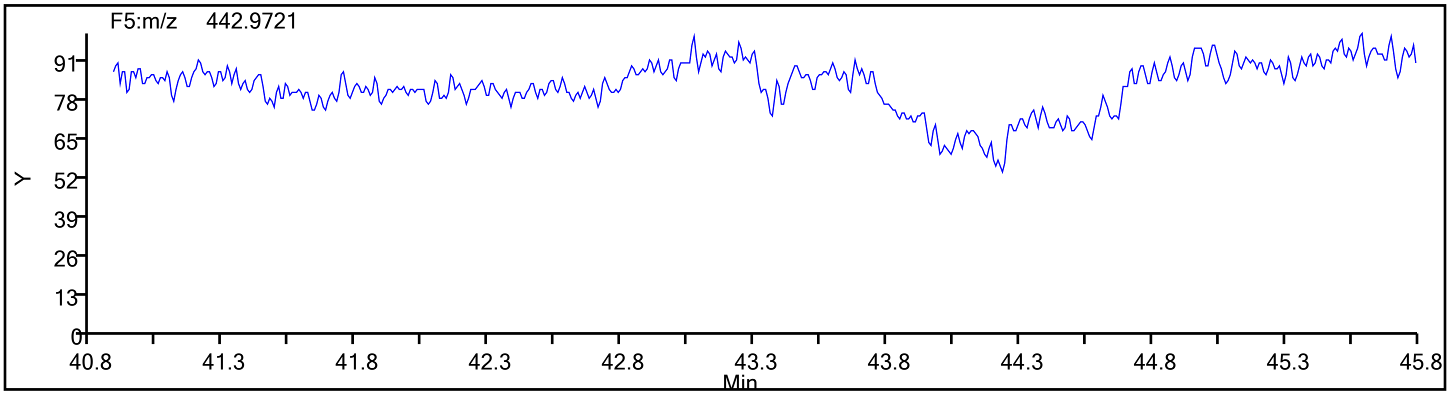

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Lab Sample ID: CCV 320-434777/28 Calibration Date: 11/24/2020 07:33

Instrument ID: DFS 1 Calib Start Date: 11/17/2020 13:38

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 11/17/2020 17:44

Lab File ID: 23no20dfs1_32.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.155	1.171		10.1	10.0	101	84-120
2,3,7,8-TCDD	AveID	1.166	1.073		9.20	10.0	92	78-129
1,2,3,7,8-PeCDF	AveID	1.132	1.092		48.2	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	1.159	1.152		49.7	50.0	99	82-122
1,2,3,7,8-PeCDD	AveID	1.119	1.059		47.3	50.0	95	78-130
1,2,3,4,7,8-HxCDF	AveID	1.320	1.312		49.7	50.0	99	90-112
1,2,3,6,7,8-HxCDF	AveID	1.268	1.236		48.7	50.0	97	88-114
2,3,4,6,7,8-HxCDF	AveID	1.284	1.271		49.5	50.0	99	88-114
1,2,3,4,7,8-HxCDD	AveID	1.197	1.154		48.2	50.0	96	78-128
1,2,3,6,7,8-HxCDD	AveID	1.069	1.031		48.2	50.0	96	78-128
1,2,3,7,8,9-HxCDD	AveID	1.181	1.137		48.1	50.0	96	82-122
1,2,3,7,8,9-HxCDF	AveID	1.306	1.281		49.0	50.0	98	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.562	1.481		47.4	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.108	1.061		47.9	50.0	96	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.497	1.447		48.3	50.0	97	86-116
OCDD	AveID	1.167	1.097		94.0	100	94	79-126
OCDF	AveID	1.480	1.443		97.5	100	97	63-159
13C-2,3,7,8-TCDF	Ave	1.683	1.628		96.7	100	97	71-140
13C-2,3,7,8-TCDD	Ave	1.090	1.077		98.8	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.460	1.411		96.6	100	97	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.350	1.298		96.1	100	96	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8729	0.8821		101	100	101	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.281	1.167		91.1	100	91	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.462	1.467		100	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.323	1.296		97.9	100	98	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8757	0.8126		92.8	100	93	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.065	1.061		99.6	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.106	1.062		96.0	100	96	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9521	0.9505		99.8	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8393	0.8537		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7782	0.7464		95.9	100	96	77-129
13C-OCDD	Ave	0.5301	0.5447		205	200	103	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.145	1.159		10.1	10.0	101	79-127

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	23NO20DFS1_1	Resolution Check	RC 112320	46			KSS	1.000	
2	23NO20DFS1_2	WDM HRDXNCP_00042	WDM 112320	1			KSS	1.000	
3	23NO20DFS1_3	CCV CS-4 HRDXNL4_00095	CCV 112320	2	8290/1613B		KSS	1.000	
4	23NO20DFS1_4	CCV CS-4 HRDXNL4_00095	CCV 112320A	2	8290/1613B		KSS	1.000	
5	23NO20DFS1_5	SB Solvent Blank C-14	SB 112320	3			KSS	1.000	
6	23NO20DFS1_6	mb 320-432203/1-a	mb 320-432203/1-a	12	1613B/T/Water	D199	KSS	10.000	g
7	23NO20DFS1_7	lcs 320-432203/2-a	lcs 320-432203/2-a	13	1613B/T/Water		KSS	1.000	L
8	23NO20DFS1_8	lcsd 320-432203/3-a	lcsd 320-432203/3-a	14	1613B/T/Water		KSS	1.000	L
9	23NO20DFS1_9	320-66707-b-1-a	320-66707-b-1-a	15	1613B/Water		KSS	1.000	L
10	23NO20DFS1_10	320-66707-b-2-a	320-66707-b-2-a	16	1613B/Water		KSS	1.000	L
11	23NO20DFS1_11	320-66707-b-3-a	320-66707-b-3-a	17	1613B/Water		KSS	1.000	L
12	23NO20DFS1_12	320-65580-a-16-a	320-65580-a-16-a	18	8290/Solid	D197	KSS	10.000	g
13	23NO20DFS1_13	320-65580-a-19-a	320-65580-a-19-a	19	8290/Solid		KSS	10.000	g
14	23NO20DFS1_14	320-65580-a-21-a	320-65580-a-21-a	20	8290/Solid		KSS	10.000	g
15	23NO20DFS1_15	SB Solvent Blank C-14	SB 112320A	3			KSS	1.000	
16	23NO20DFS1_16	Resolution Check	RC 112320A	46			KSS	1.000	
17	23NO20DFS1_17	CCV CS-4 HRDXNL4_00095	CCV 112320B	2	8290/1613B		KSS	1.000	
18	23NO20DFS1_18	Resolution Check	RC 112320B	46			KSS	1.000	
19	23NO20DFS1_19	WDM HRDXNCP_00042	WDM 112320A	1	8290/1613B		KSS	1.000	
20	23NO20DFS1_20	SB Solvent Blank C-14	SB 112320B	3			KSS	1.000	
21	23NO20DFS1_21	320-58408-a-12-d (a-12-e)	320-58408-a-12-d	21	8290/1613B/Solid	D199	KSS	10.000	g
22	23NO20DFS1_22	lcs 320-432146/2-a (432201)	lcs 320-432146/2-a	22	8290/1613B/Solid		KSS	10.000	g
23	23NO20DFS1_23	lcs 320-432146/3-a (432201)	lcs 320-432146/3-a	23	8290/1613B/Solid		KSS	10.000	g
24	23NO20DFS1_24	lcs 320-432146/4-a (432201)	lcs 320-432146/4-a	24	8290/1613B/Solid		KSS	10.000	g
25	23NO20DFS1_25	lcs 320-432146/5-a (432201)	lcs 320-432146/5-a	25	8290/1613B/Solid		KSS	10.000	g
26	23NO20DFS1_26	320-66707-b-4-a	320-66707-b-4-a	26	1613B/Water	D199	KSS	1.000	L
27	23NO20DFS1_27	320-66707-b-5-a	320-66707-b-5-a	27	1613B/Water		KSS	1.000	L
28	23NO20DFS1_28	320-66707-b-6-a	320-66707-b-6-a	28	1613B/Water		KSS	1.000	L
29	23NO20DFS1_29	480-177733-d-1-a	480-177733-d-1-a	29	1613B_T/Water		KSS	1.000	L
30	23NO20DFS1_30	SB Solvent Blank C-14	SB 112320C	3			KSS	1.000	
31	23NO20DFS1_31	Resolution Check	RC 112320C	46			KSS	1.000	
32	23NO20DFS1_32	CCV CS-4 HRDXNL4_00095	CCV 112320C	2	8290/1613B		KSS	1.000	
33	23NO20DFS1_33	Resolution Check	RC 112320D	46			KSS	1.000	
34	23NO20DFS1_34	WDM HRDXNCP_00042	WDM 112320B	1	8290/1613B		KSS	1.000	
35	23NO20DFS1_35	SB Solvent Blank C-14	SB 112320D	3			KSS	1.000	
36	23NO20DFS1_36	mb 320-432973/1-a	mb 320-432973/1-a	30	1613B/T/Water	D200	KSS	1.000	L
37	23NO20DFS1_37	lcs 320-432973/2-a	lcs 320-432973/2-a	31	1613B/T/Water		KSS	1.000	L
38	23NO20DFS1_38	lcsd 320-432973/3-a	lcsd 320-432973/3-a	32	1613B/T/Water		KSS	1.000	L
39	23NO20DFS1_39	320-66850-a-1-b	320-66850-a-1-b	33	1613B/Water		KSS	1.000	L
40	23NO20DFS1_40	320-66850-a-2-b	320-66850-a-2-b	34	1613B/Water		KSS	1.000	L
41	23NO20DFS1_41	320-66850-a-3-b	320-66850-a-3-b	35	1613B/Water		KSS	1.000	L
42	23NO20DFS1_42	320-66850-a-4-b	320-66850-a-4-b	36	1613B/Water		KSS	1.000	L
43	23NO20DFS1_43	320-66850-a-5-b	320-66850-a-5-b	37	1613B/Water		KSS	1.000	L
44	23NO20DFS1_44	320-66850-a-6-b	320-66850-a-6-b	38	1613B/Water		KSS	1.000	L
45	23NO20DFS1_45	280-142776-a-1-b	280-142776-a-1-b	39	1613B_T/Water		KSS	1.000	L
46	23NO20DFS1_46	SB Solvent Blank C-14	SB 112320E	3			KSS	1.000	
47	23NO20DFS1_47	Resolution Check	RC 112320E	46			KSS	1.000	

Log File Reviewed
RDR
11/24/2020

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date: 24 Nov 2020 07:14

MID Experiment: 5w_db5_pfk_singleGC01_RS

Target Resolution: 10000

Resolution Warning : 9500

Resolution Error : 8000

Reference: pfk

Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11834 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12266 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12302 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12273 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12305 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12424 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11695 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12306 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12028 [5%height]

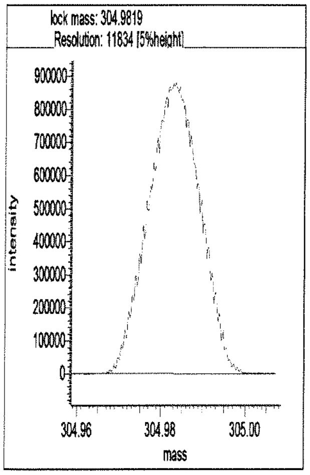
lock mass: 304.9819
Resolution: 11834 [5%height]

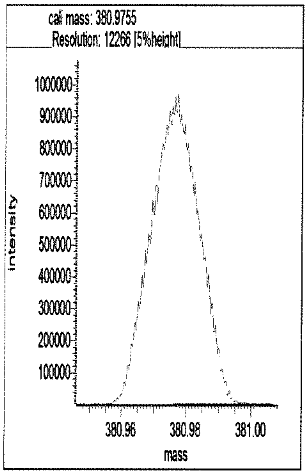
cali mass: 380.9755
Resolution: 12266 [5%height]

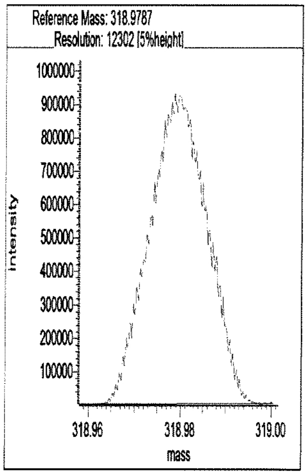
Reference Mass: 318.9787
Resolution: 12302 [5%height]

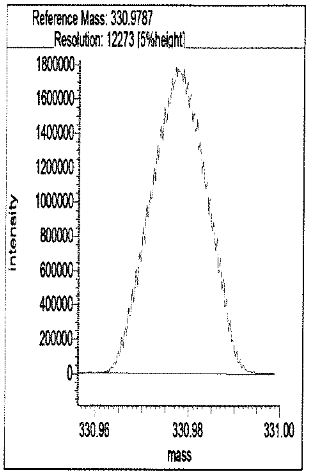
Reference Mass: 330.9787
Resolution: 12273 [5%height]

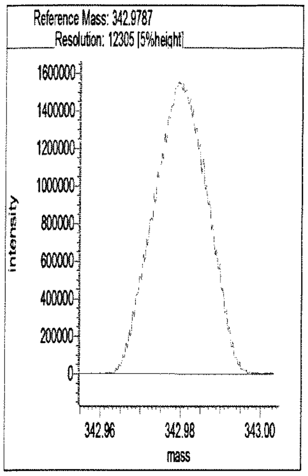

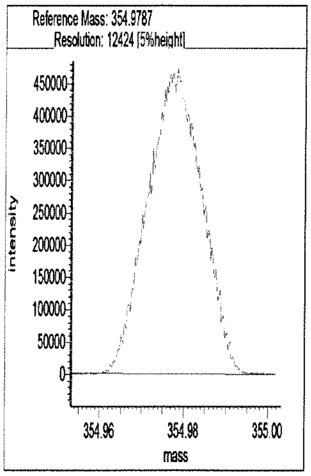

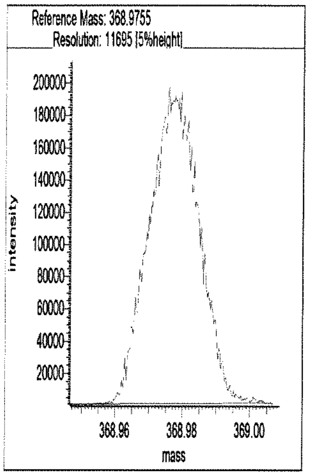

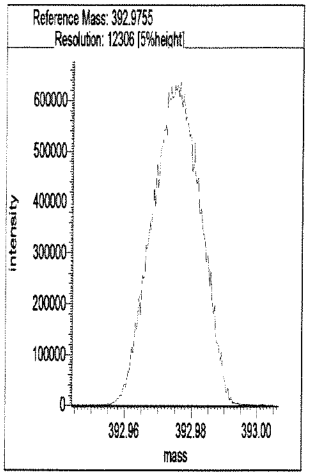

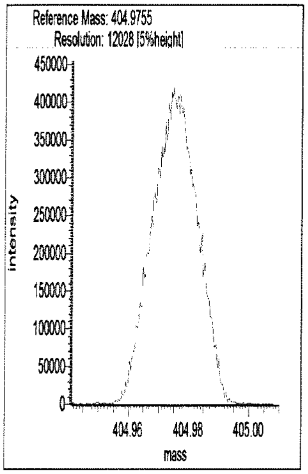

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12259 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12306 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11836 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12203 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11668 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12068 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12456 [5%height]

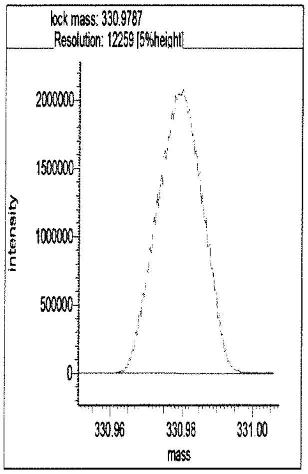

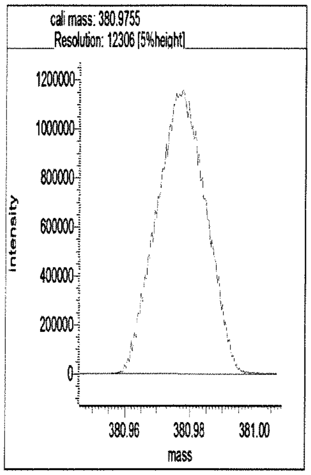

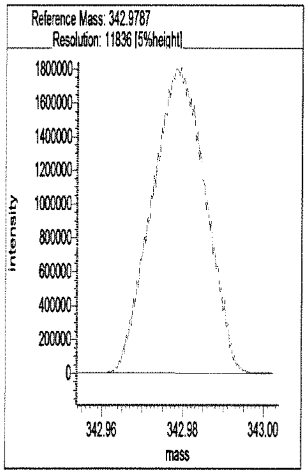

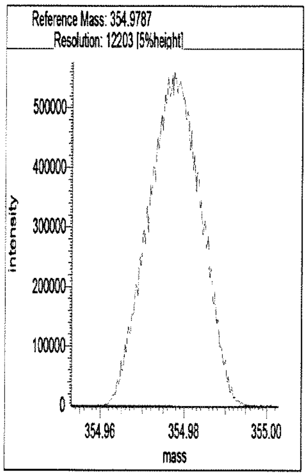

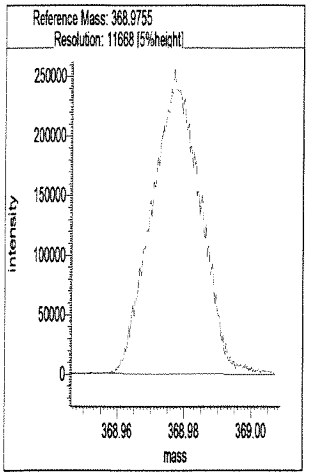

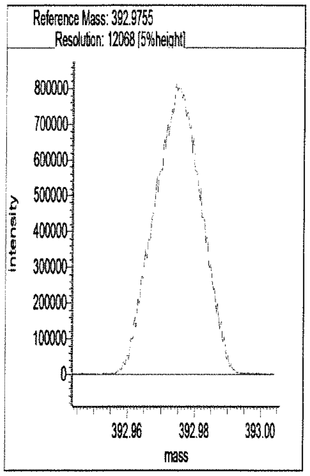

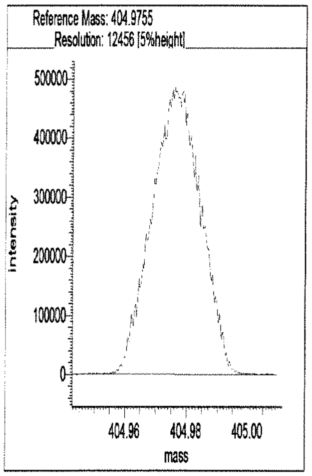

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12183 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12342 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12403 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12435 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12474 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12198 [5%height]

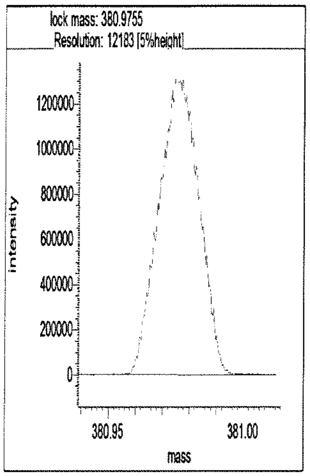

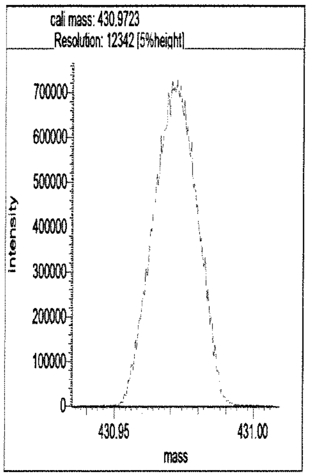

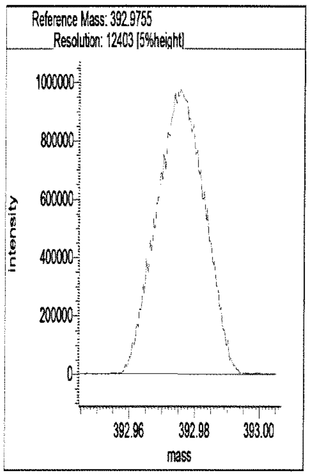

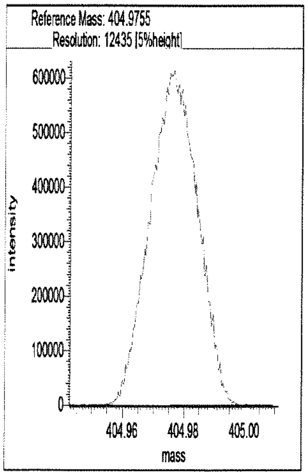

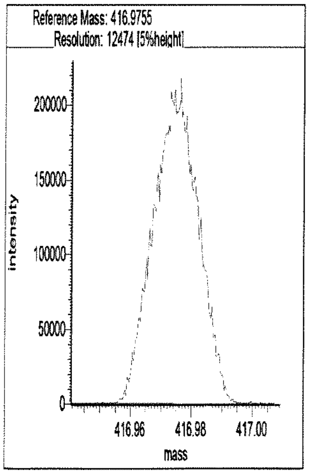

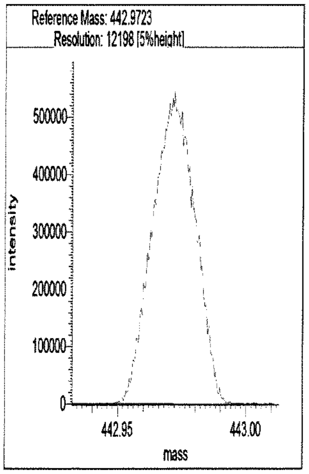

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12320 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11963 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11981 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11889 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12527 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12222 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11959 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12517 [5%height]

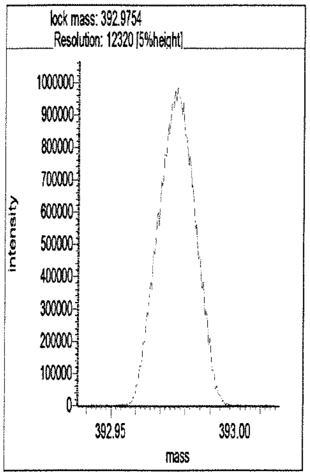

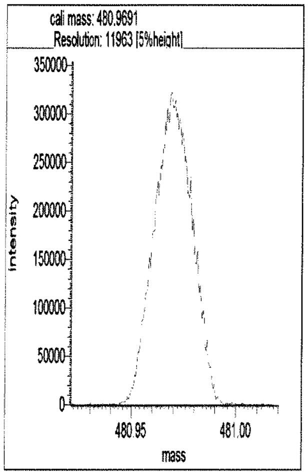

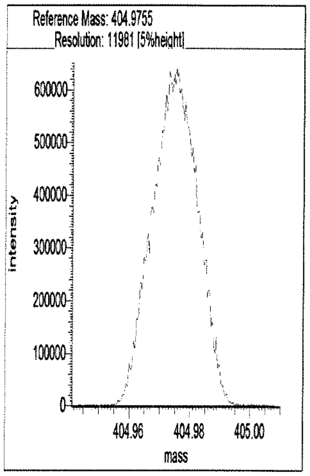

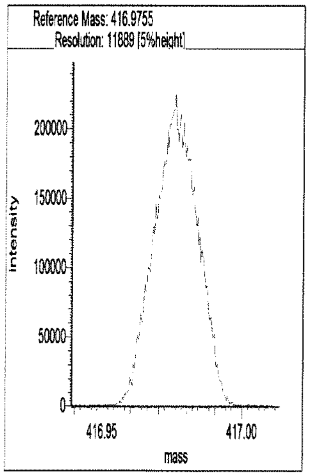

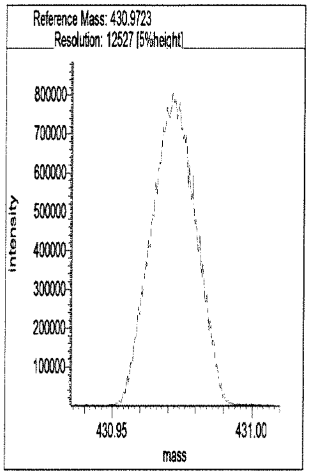

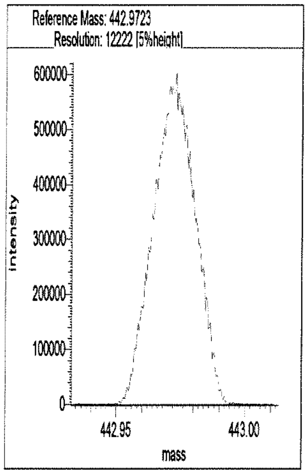

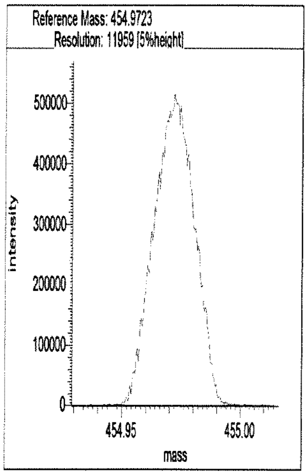

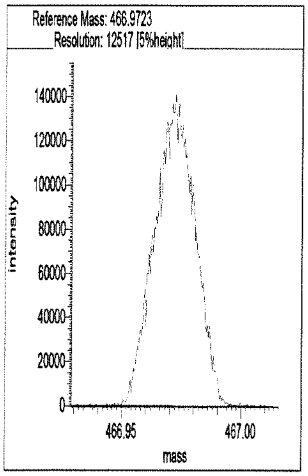

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12320 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11913 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12363 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12490 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12316 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12416 [5%height]

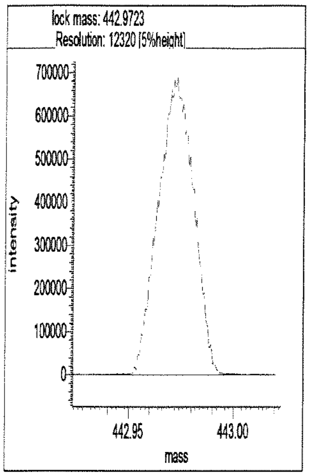
lock mass: 442.9723
Resolution: 12320 [5%height]

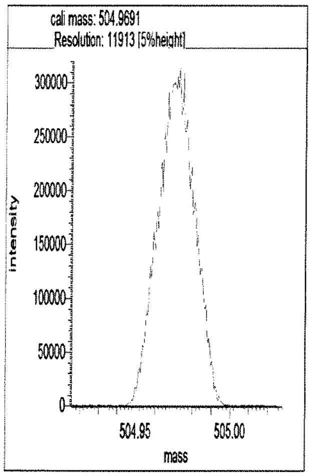
cali mass: 504.9691
Resolution: 11913 [5%height]

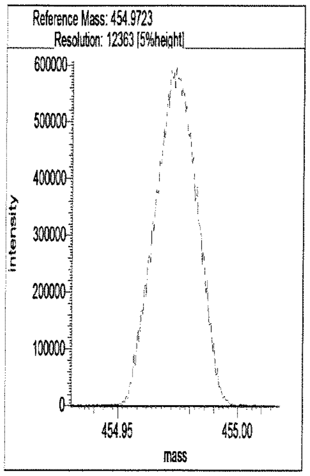
Reference Mass: 454.9723
Resolution: 12363 [5%height]

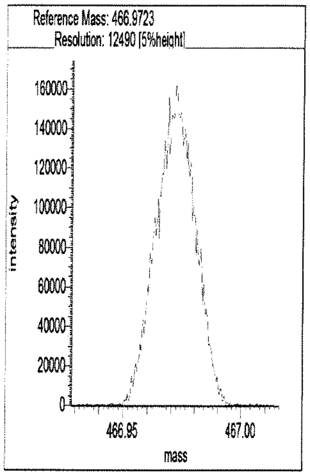
Reference Mass: 466.9723
Resolution: 12490 [5%height]

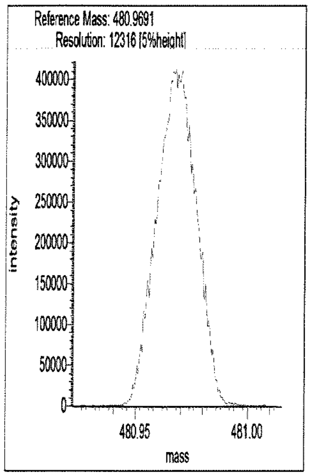
Reference Mass: 480.9691
Resolution: 12316 [5%height]

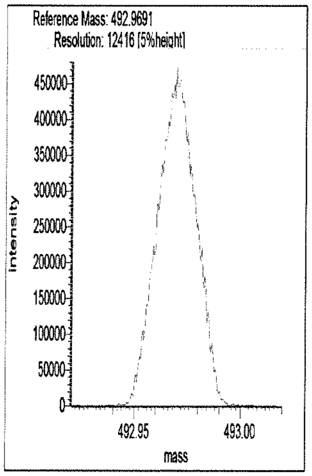
Reference Mass: 492.9691
Resolution: 12416 [5%height]

Resolution Check Report (DFS SN: 3487)

Date: 24 Nov 2020 19:04
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 16623 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 17189 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 16566 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 17060 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 16642 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 16239 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 15381 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 16227 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 15507 [5%height]

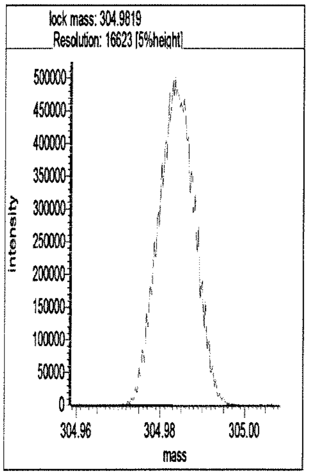

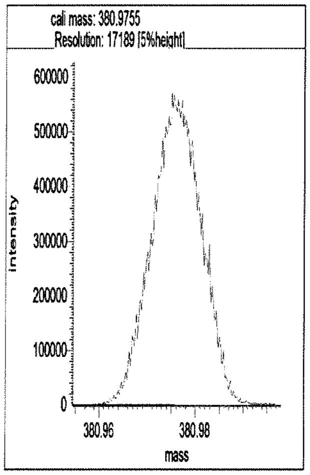

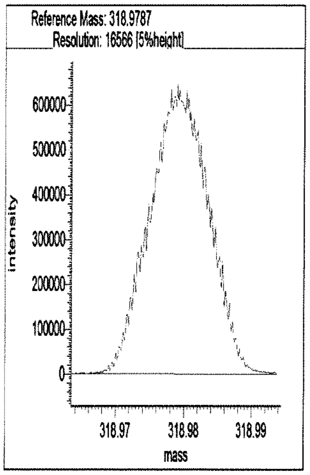

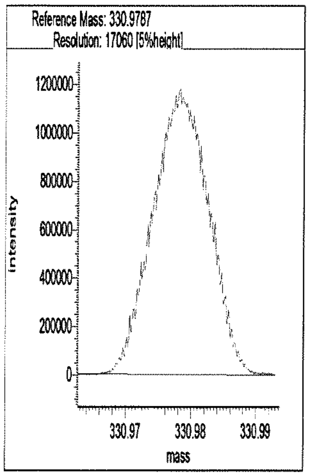

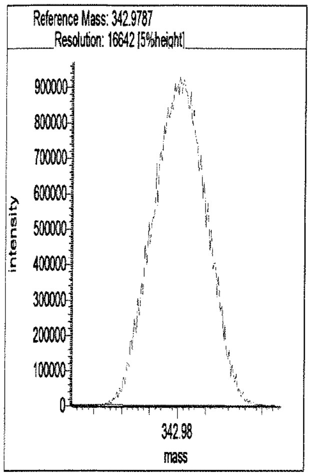

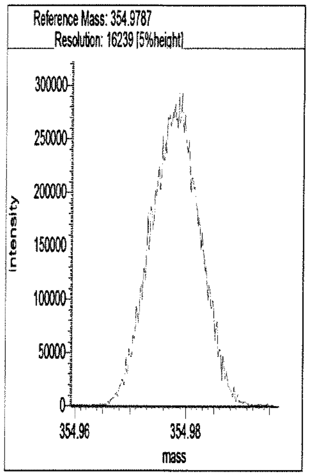

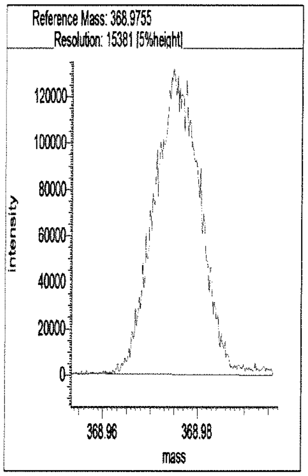

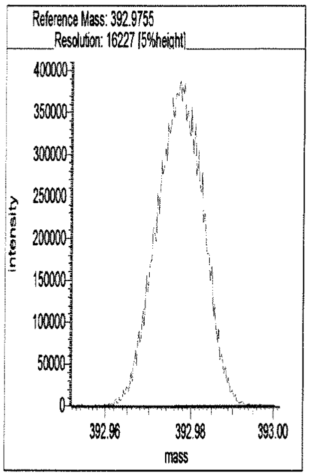

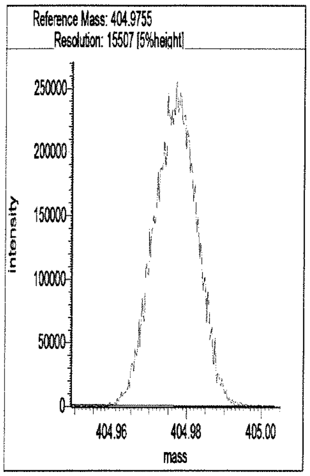

Segment 2

Lock mass 330.9787 [m/z] Resolution: 16630 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 16431 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 16717 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 16939 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 16271 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 17021 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 16588 [5%height]

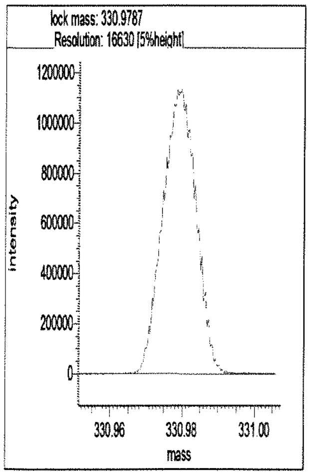

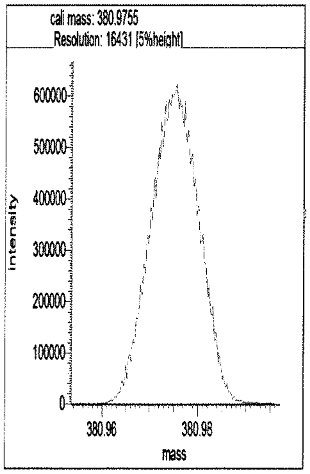

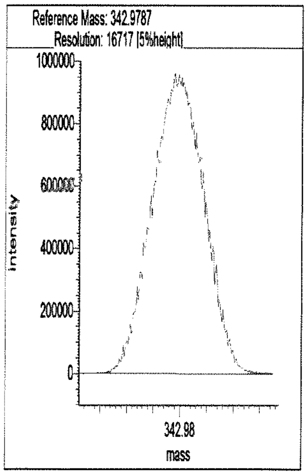

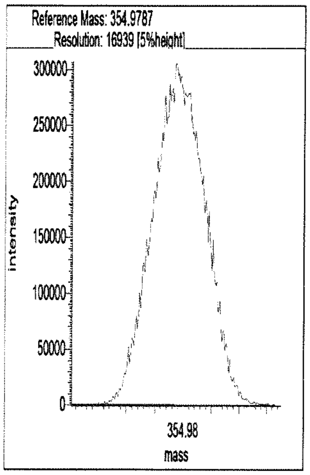

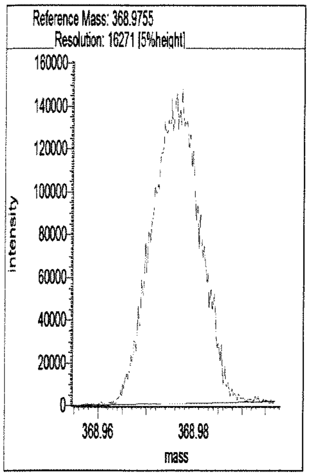

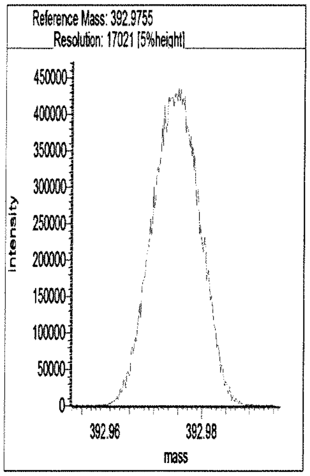

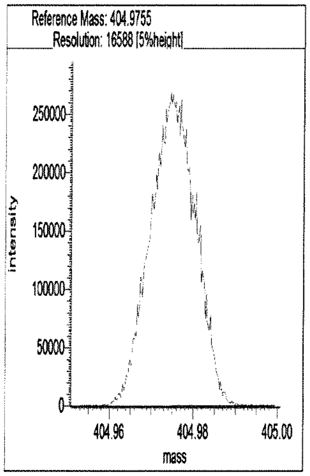

Segment 3

Lock mass 380.9755 [m/z] Resolution: 16657 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 16517 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 16665 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 16635 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 17418 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 16685 [5%height]

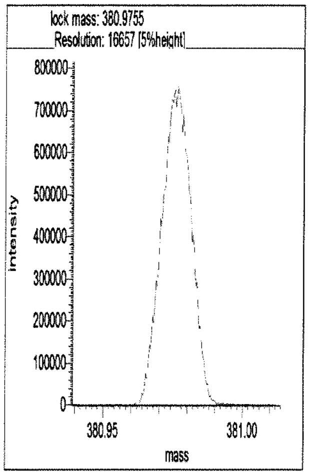

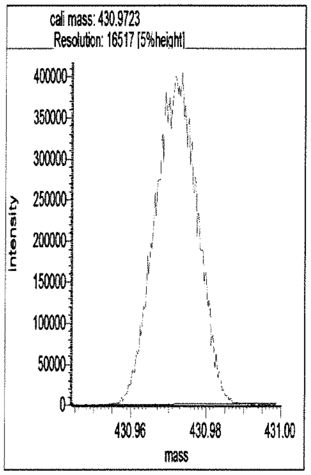

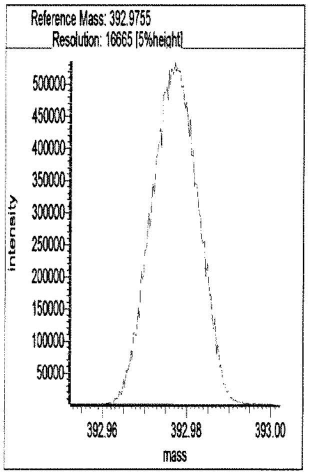

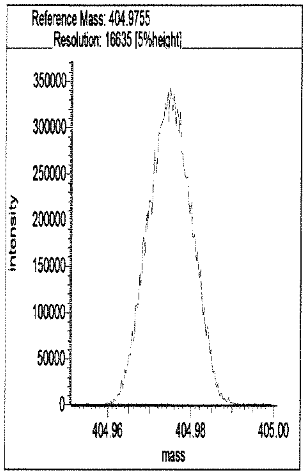

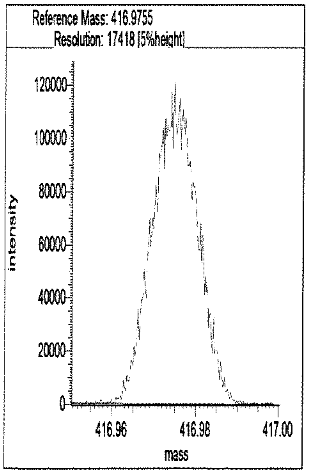

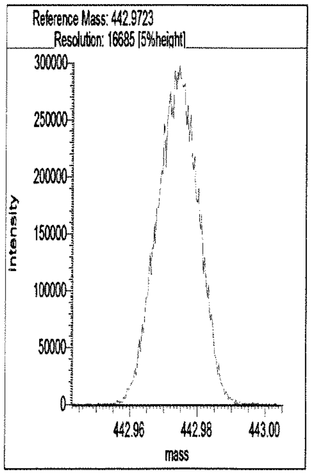

Segment 4

Lock mass 392.9754 [m/z] Resolution: 16961 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 16701 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 16587 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 16438 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 16493 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 16926 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 16722 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 16533 [5%height]

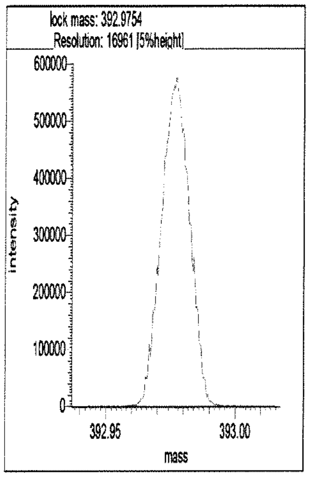

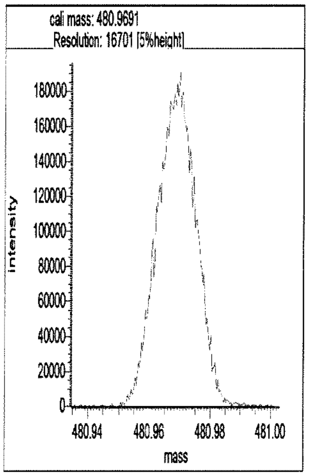

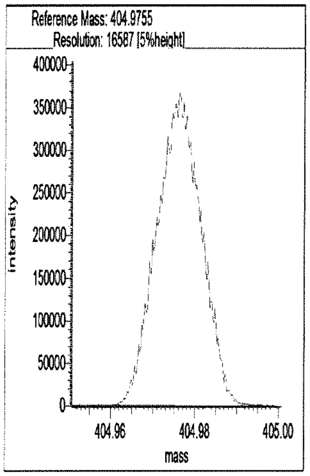

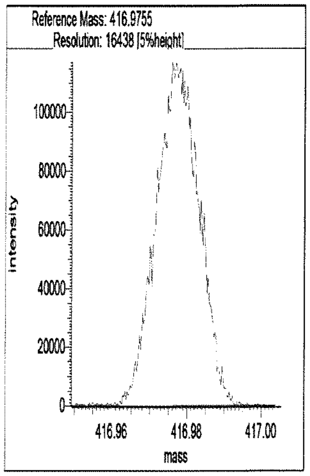

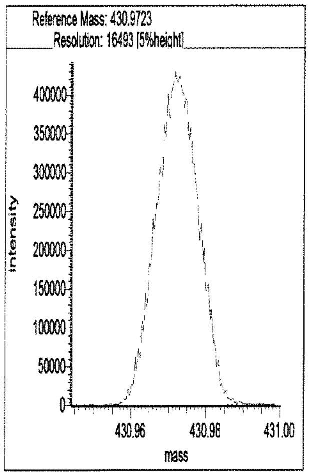

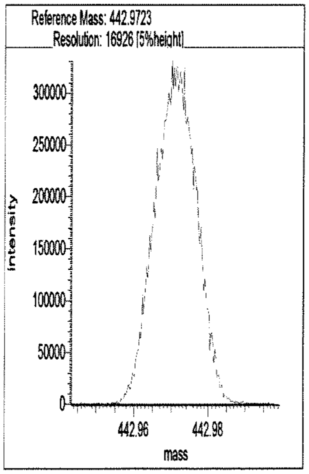

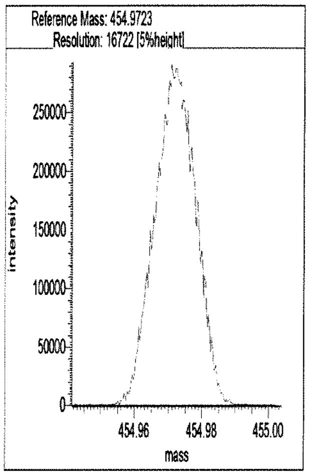

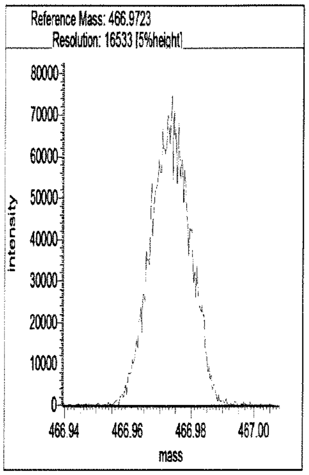

Segment 5

Lock mass 442.9723 [m/z] Resolution: 16700 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 16940 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 16633 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 16923 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 16311 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 16790 [5%height]

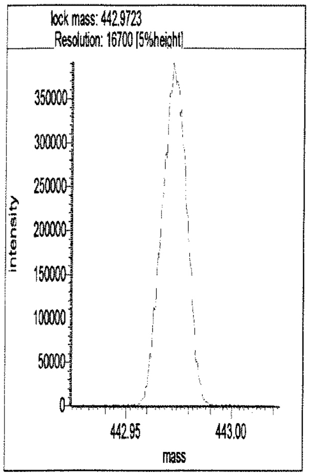
lock mass: 442.9723
Resolution: 16700 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
442.95
443.00
mass

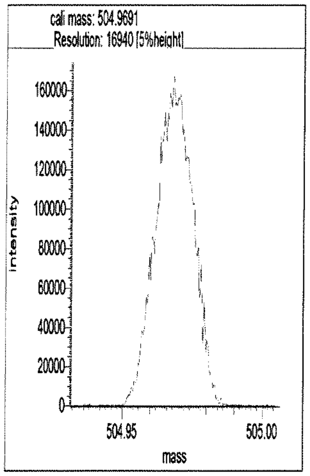
cali mass: 504.9691
Resolution: 16940 [5%height]
intensity
160000
140000
120000
100000
80000
60000
40000
20000
0
504.95
505.00
mass

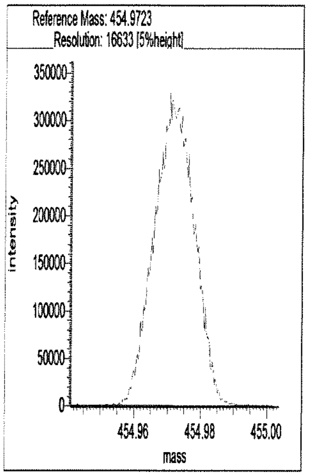
Reference Mass: 454.9723
Resolution: 16633 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
454.96
454.98
455.00
mass

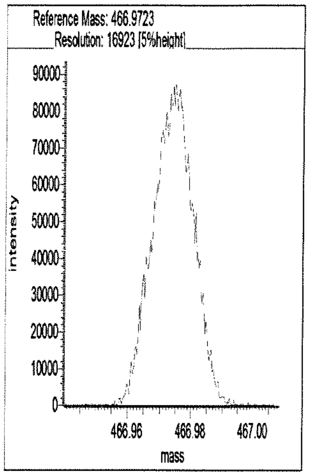
Reference Mass: 466.9723
Resolution: 16923 [5%height]
intensity
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
466.96
466.98
467.00
mass

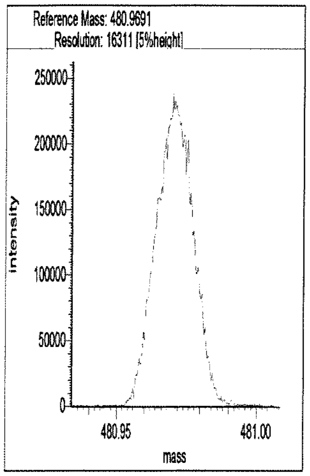
Reference Mass: 480.9691
Resolution: 16311 [5%height]
intensity
250000
200000
150000
100000
50000
0
480.95
481.00
mass

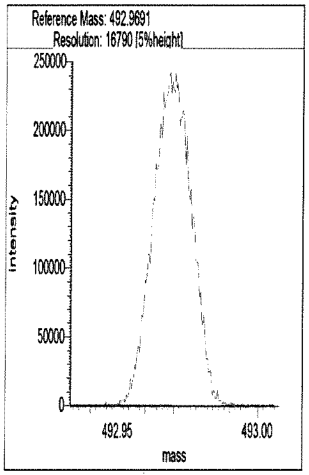
Reference Mass: 492.9691
Resolution: 16790 [5%height]
intensity
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 07:33:00 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:01:08 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

First Level Reviewer: stephensk Date: 24-Nov-2020 08:53:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.772	2050503	0.83	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.767	3338784	0.81	1.6832	96.7	96.7	0.4320	0.4320	96.73	
2,3,7,8-TCDF	20.793	390871	0.81	1.1547	10.1	10.1	0.0364	0.0364	101	
A Non-2,3,7,8-sub-TCDF	20.136						0.0364	0.0364		
S Total TCDF					10.1	10.1	0.0364	0.0364		
D 13C-2,3,7,8-TCDD	22.167	2207475	0.80	1.0896	98.8	98.8	0.2804	0.2804	98.80	
2,3,7,8-TCDD	22.201	236763	0.81	1.1659	9.199	9.199	0.0685	0.0685	91.99	
$ 37Cl4-2,3,7,8-TCDD	22.201	237563		1.1445	10.1	10.1	0.0371	0.0371	101	
A Non-2,3,7,8-sub-TCDD	20.999	1854	0.77	1.1659	0.0945	0.0720	0.0685	0.0720	0.00	RQ
S Total TCDD					9.294	9.271	0.0685	0.0685		RQ
D 13C-1,2,3,7,8-PeCDF	27.633	2892516	1.63	1.4604	96.6	96.6	0.2778	0.2778	96.59	
1,2,3,7,8-PeCDF	27.659	1578719	1.58	1.1322	48.2	48.2	0.1734	0.1734	96.41	
D 13C-2,3,4,7,8-PeCDF	29.184	2660800	1.61	1.3504	96.1	96.1	0.3004	0.3004	96.09	
2,3,4,7,8-PeCDF	29.217	1532267	1.58	1.1588	49.7	49.7	0.1954	0.1954	99.39	
A F1 PeCDFs	24.944						0.0148	0.0148		
A Non-2,3,7,8-sub-PeCDF	28.514						0.1836	0.1836		
S Total PeCDF					97.9	97.9	0.1844	0.1844		
D 13C-1,2,3,7,8-PeCDD	30.017	1808711	1.57	0.8729	101.1	101.1	0.1564	0.1564	101	
1,2,3,7,8-PeCDD	30.051	957852	1.52	1.1191	47.3	47.3	0.0845	0.0845	94.64	
A Non-2,3,7,8-sub-PeCDD	28.777						0.0845	0.0845		
S Total PeCDD					47.3	47.3	0.0845	0.0845		
D 13C-1,2,3,4,7,8-HxCDF	35.175	2437862	0.53	1.2808	91.1	91.1	0.4402	0.4402	91.09	
1,2,3,4,7,8-HxCDF	35.200	1598881	1.27	1.3205	49.7	49.7	0.2827	0.2827	99.34	
D 13C-1,2,3,6,7,8-HxCDF	35.335	3064343	0.54	1.4615	100.3	100.3	0.3858	0.3858	100	
1,2,3,6,7,8-HxCDF	35.351	1893081	1.27	1.2682	48.7	48.7	0.2561	0.2561	97.43	
D 13C-2,3,4,6,7,8-HxCDF	36.118	2706977	0.53	1.3227	97.9	97.9	0.4263	0.4263	97.95	
2,3,4,6,7,8-HxCDF	36.135	1720170	1.26	1.2838	49.5	49.5	0.2443	0.2443	99.00	
D 13C-1,2,3,7,8,9-HxCDF	36.986	2219945	0.54	1.1062	96.0	96.0	0.5097	0.5097	96.04	
1,2,3,7,8,9-HxCDF	37.003	1422134	1.26	1.3063	49.0	49.0	0.2932	0.2932	98.08	
A Non-2,3,7,8-sub-HxCDF	35.291						0.2673	0.2673		
S Total HxCDF					196.9	196.9	0.2691	0.2691		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.792	2089500	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.320	1697826	1.29	0.8757	92.8	92.8	0.3725	0.3725	92.79	
1,2,3,4,7,8-HxCDD	36.337	979385	1.26	1.1972	48.2	48.2	0.1531	0.1531	96.37	
D 13C-1,2,3,6,7,8-HxCDD	36.438	2216327	1.28	1.0651	99.6	99.6	0.3062	0.3062	99.59	
1,2,3,6,7,8-HxCDD	36.446	1142118	1.26	1.0695	48.2	48.2	0.1573	0.1573	96.37	
1,2,3,7,8,9-HxCDD	36.809	1112130	1.27	1.1806	48.1	48.1	0.1486	0.1486	96.27	
A Non-2,3,7,8-sub-HxCDD	35.623						0.1527	0.1527		
S Total HxCDD					144.5	144.5	0.1530	0.1530		
D 13C-1,2,3,4,6,7,8-HpCDF	38.749	1986075	0.46	0.9521	99.8	99.8	0.8086	0.8086	99.83	
1,2,3,4,6,7,8-HpCDF	38.758	1470441	1.04	1.5618	47.4	47.4	0.3537	0.3537	94.81	
D 13C-1,2,3,4,7,8,9-HpCDF	39.979	1559609	0.45	0.7782	95.9	95.9	0.9893	0.9893	95.92	
1,2,3,4,7,8,9-HpCDF	39.988	1128292	1.06	1.4975	48.3	48.3	0.4252	0.4252	96.62	
A Non-2,3,7,8-sub-HpCDF	39.358						0.3867	0.3867		
S Total HpCDF					95.7	95.7	0.3894	0.3894		
D 13C-1,2,3,4,6,7,8-HpCDD	39.676	1783879	1.08	0.8393	101.7	101.7	0.4144	0.4144	102	
1,2,3,4,6,7,8-HpCDD	39.684	946503	1.04	1.1079	47.9	47.9	0.1704	0.1704	95.78	
A Non-2,3,7,8-sub-HpCDD	40.007						0.1704	0.1704		
S Total HpCDD					47.9	47.9	0.1704	0.1704		
D 13C-OCDD	42.158	2276134	0.96	0.5301	205.5	205.5	0.4083	0.4083	103	
OCDF	42.251	1641943	0.92	1.4802	97.5	97.5	0.2125	0.2125	97.47	
OCDD	42.167	1248619	0.90	1.1666	94.0	94.0	0.2616	0.2616	94.05	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 07:33:00 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:01:08 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

First Level Reviewer: stephensk Date: 24-Nov-2020 08:53:55

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.772	21.772	0		929095	133270	213	532	626		a
333.9338	21.772	21.772	0		1121408	161269	147	367	1097	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.767	20.767	0	0.954	1491258	219219	551	1377	398		
317.9389	20.767	20.767	0	0.954	1847526	261767	306	765	855	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.793	20.793	0	1.001	175254	25229	25	62	1009		
305.8987	20.793	20.793	0	1.001	215617	29025	56	140	518	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	20.136						25	62			
305.8987	20.136						56	140			
13C-2,3,7,8-TCDD											
331.9368	22.167	22.167	0	1.018	979487	120011	213	532	563		
333.9338	22.149	22.167	-1	1.017	1227988	149363	147	367	1016	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.201	22.201	0	1.002	105964	14009	65	162	216		
321.8936	22.184	22.201	-1	1.001	130799	18353	21	52	874	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.201	22.201	0	1.020	237563	30983	50	125	620		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	22.682	20.999	101	1.023	1384	255	65	162	4		
	Empc Correction				806	199	65	162	3		
321.8936	22.750	20.999	105	1.026	1048	259	21	52	12	1.32(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.633	27.633	0	1.269	1791777	251614	256	640	983		
353.8970	27.633	27.633	0	1.269	1100739	158349	222	555	713	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.659	27.659	0	1.001	967063	140172	199	497	704		
341.8567	27.659	27.659	0	1.001	611656	86900	123	307	707	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.184	29.184	0	1.340	1640260	216974	256	640	848		
353.8970	29.184	29.184	0	1.340	1020540	138464	222	555	624	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.217	29.217	0	1.001	939336	127983	199	497	643		
341.8567	29.209	29.217	-1	1.001	592931	81192	123	307	660	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.944						1	2			
341.8567	24.944						25	62			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.514						199	497			
341.8567	28.514						123	307			
13C-1,2,3,7,8-PeCDD											
367.8949	30.017	30.017	0	1.379	1103615	143047	94	235	1522		
369.8919	30.017	30.017	0	1.379	705096	89623	67	167	1338	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.051	30.051	0	1.001	578483	74774	64	160	1168		
357.8516	30.043	30.051	-1	1.001	379369	48708	24	60	2030	1.52(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.777						64	160			
357.8516	28.777						24	60			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.175	35.175	0	0.956	845156	172204	406	1015	424		
385.8610	35.183	35.175	1	0.956	1592706	330627	636	1590	520	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.200	35.200	0	1.001	895016	187199	416	1040	450		
375.8178	35.191	35.200	-1	1.000	703865	148597	335	837	444	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.335	35.335	0	0.960	1078717	203690	406	1015	502		
385.8610	35.335	35.335	0	0.960	1985626	374204	636	1590	588	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.351	35.351	0	1.000	1057425	201906	416	1040	485		
375.8178	35.351	35.351	0	1.000	835656	157969	335	837	472	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.118	36.118	0	0.982	932193	207932	406	1015	512		
385.8610	36.118	36.118	0	0.982	1774784	390667	636	1590	614	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.135	36.135	0	1.000	959024	207259	416	1040	498		
375.8178	36.135	36.135	0	1.000	761146	168613	335	837	503	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.986	36.986	0	1.005	777071	174570	406	1015	430		
385.8610	36.986	36.986	0	1.005	1442874	315507	636	1590	496	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.003	37.003	0	1.000	792365	170828	416	1040	411		
375.8178	37.003	37.003	0	1.000	629769	137446	335	837	410	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.291						416	1040			
375.8178	35.291						335	837			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.792	36.792	0		1172535	261364	347	867	753		
403.8529	36.792	36.792	0		916965	200667	256	640	784	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.320	36.320	0	0.987	955758	249043	347	867	718		
403.8529	36.320	36.320	0	0.987	742068	193932	256	640	758	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.337	36.337	0	1.000	546683	133895	184	460	728		
391.8127	36.329	36.337	-1	1.000	432702	107495	141	352	762	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.438	36.438	0	0.990	1243971	270716	347	867	780		
403.8529	36.438	36.438	0	0.990	972356	211824	256	640	827	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.446	36.446	0	1.000	637797	141695	184	460	770		
391.8127	36.446	36.446	0	1.000	504321	113664	141	352	806	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.809	36.809	0	1.013	622133	135352	184	460	736		
391.8127	36.809	36.809	0	1.013	489997	108168	141	352	767	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.623						184	460			
391.8127	35.623						141	352			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.749	38.749	0	1.053	629505	157918	472	1180	335		
419.8220	38.749	38.749	0	1.053	1356570	345361	951	2377	363	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.758	38.758	0	1.000	748655	187810	591	1477	318		
409.7788	38.758	38.758	0	1.000	721786	181024	521	1302	347	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.979	39.979	0	1.087	481221	136599	472	1180	289		
419.8220	39.979	39.979	0	1.087	1078388	300020	951	2377	315	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.988	39.988	0	1.000	579439	159033	591	1477	269		
409.7788	39.988	39.988	0	1.000	548853	152501	521	1302	293	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.358						591	1477			
409.7788	39.358						521	1302			

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.676	39.676	0	1.078	926679	249573	299	747	835		
437.8140	39.676	39.676	0	1.078	857200	237844	344	860	691	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.684	39.684	0	1.000	482997	132785	189	472	703		
425.7737	39.684	39.684	0	1.000	463506	126844	179	447	709	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	40.007						189	472			
425.7737	40.007						179	447			
13C-OCDD											
469.7780	42.158	42.158	0	1.146	1114554	255690	181	452	1413		
471.7750	42.150	42.158	-1	1.146	1161580	276557	219	547	1263	0.96(0.76-1.02)	
OCDF											
441.7428	42.251	42.251	0	1.002	784798	193817	145	362	1337		
443.7399	42.251	42.251	0	1.002	857145	209187	190	475	1101	0.92(0.76-1.02)	
OCDD											
457.7377	42.167	42.167	0	1.000	591229	137536	190	475	724		
459.7348	42.158	42.167	-1	1.000	657390	153908	135	337	1140	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- n - Failed Sig-To-Noise Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Lims ID: CCV
Client ID:
Inject. Date: 24-Nov-2020 07:33:00 Dil. Factor: 1.0000
Sample Type: CCV, Cal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 434777 Lims Sample ID: 28
Sublist: chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDD, RT: 20.999

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	2207475	269374

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	2207475	269374

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
22.682	1384	255	1048	259	0.0945	1.32	RnQ
22.682	806	199	1048	259	0.0720		Empc Correction
Signal Totals:							
	806	199	1048	259			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2432	514				1.32	RQ
	1854	458					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0945 = (2432 * 100.000) / (2207475 * 1.166)
Empc Amount: 0.0720 = (1854 * 100.000) / (2207475 * 1.166)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d				
Injection Date:	24-Nov-2020 07:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	28
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.77

Processing Integration Results

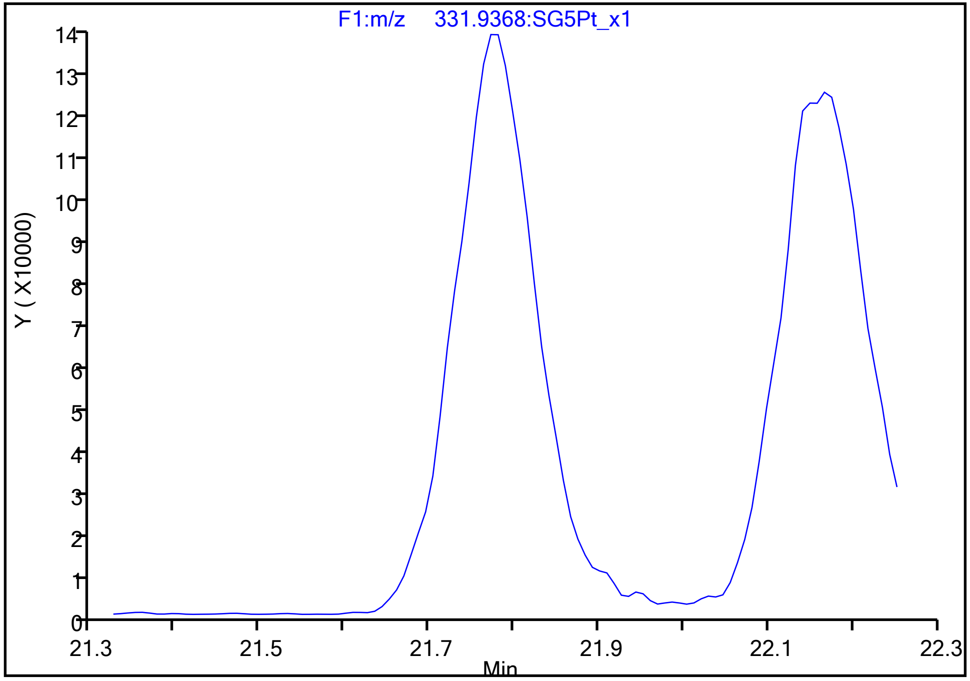

RT: 21.77
Area: 929095
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

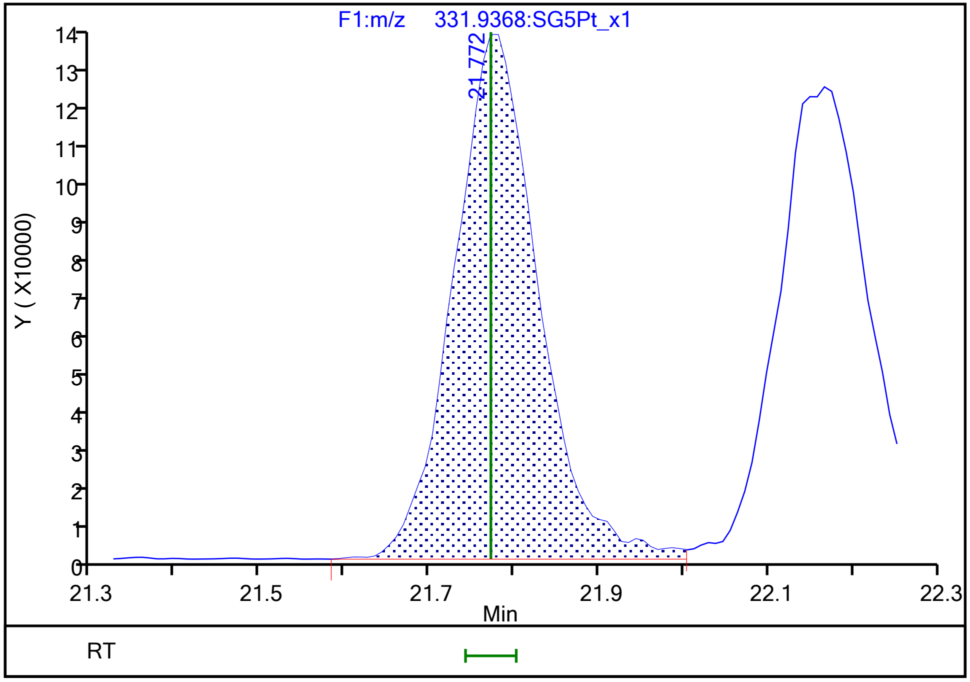

Reviewer: stephensk, 24-Nov-2020 08:53:37
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date: 24-Nov-2020 07:33:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 28

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

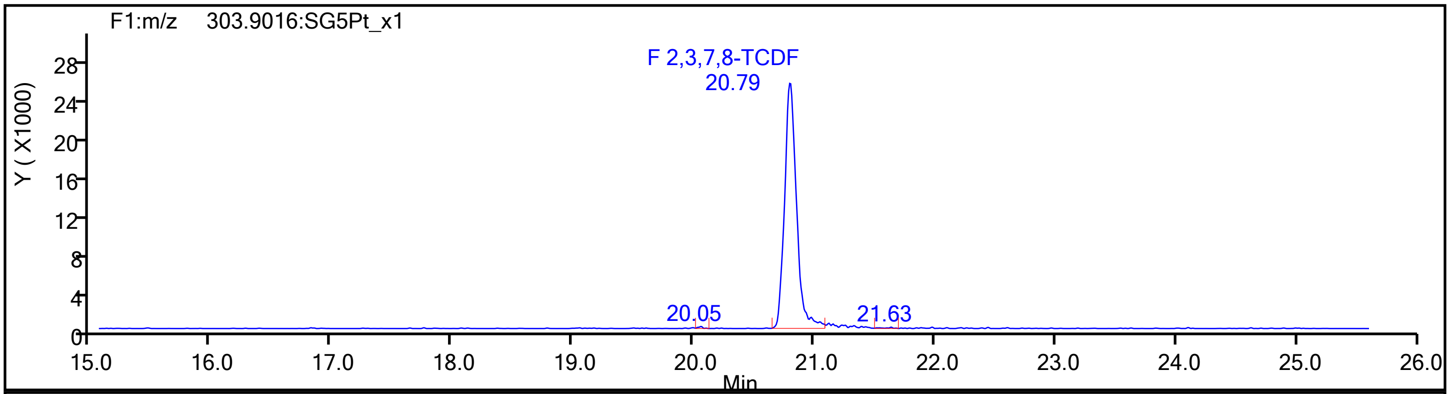

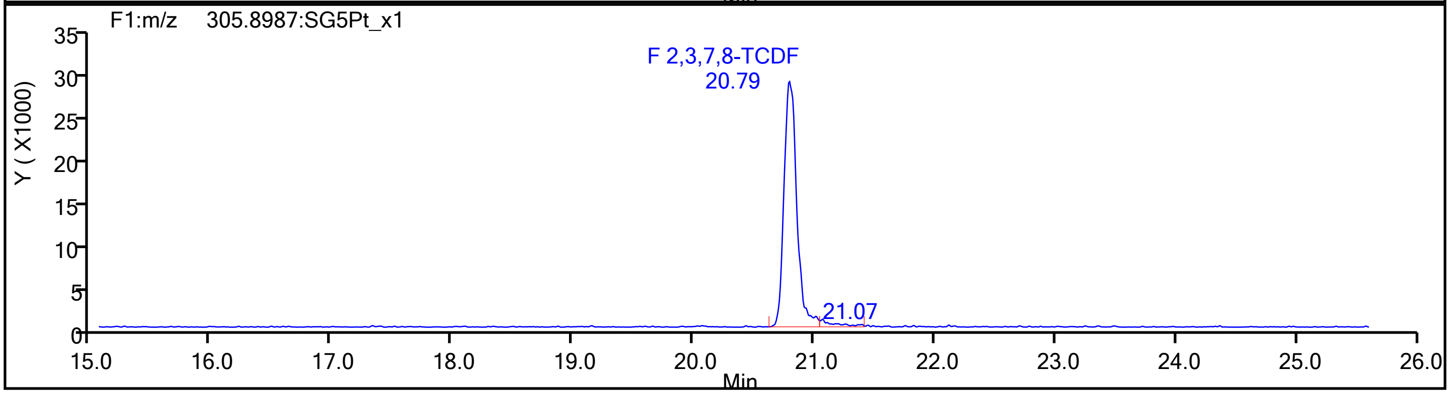

TCDF Standards

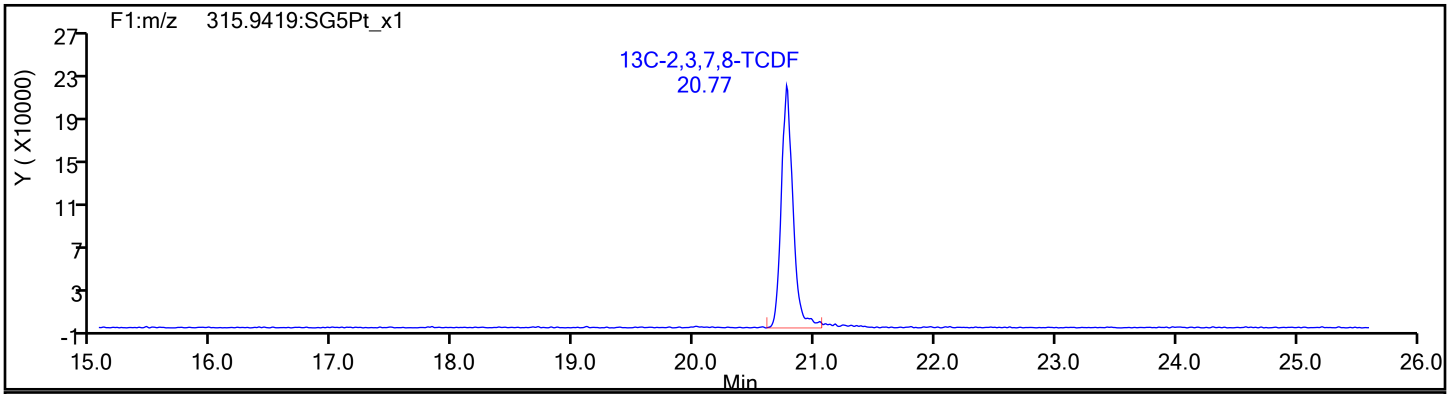

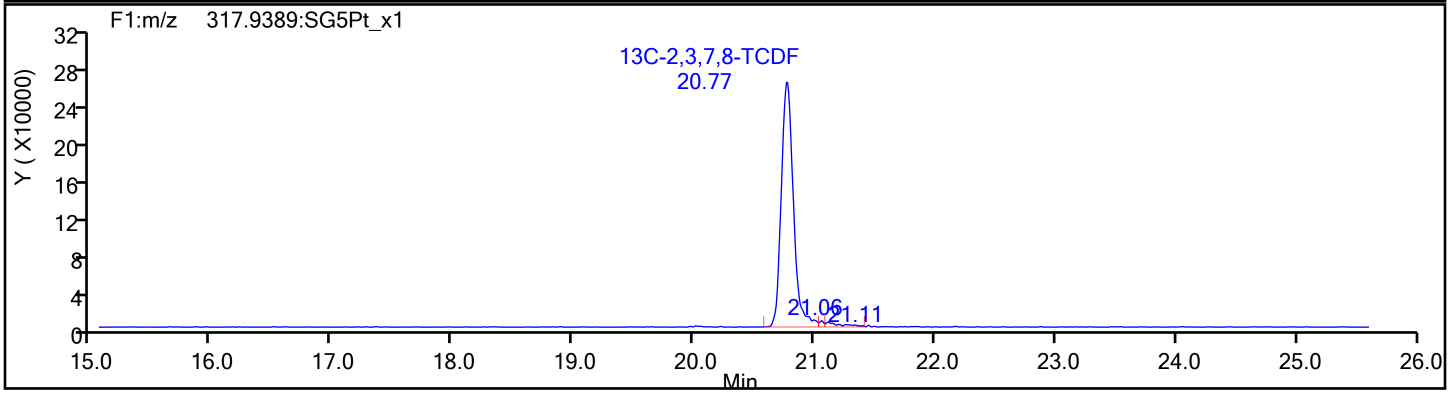

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

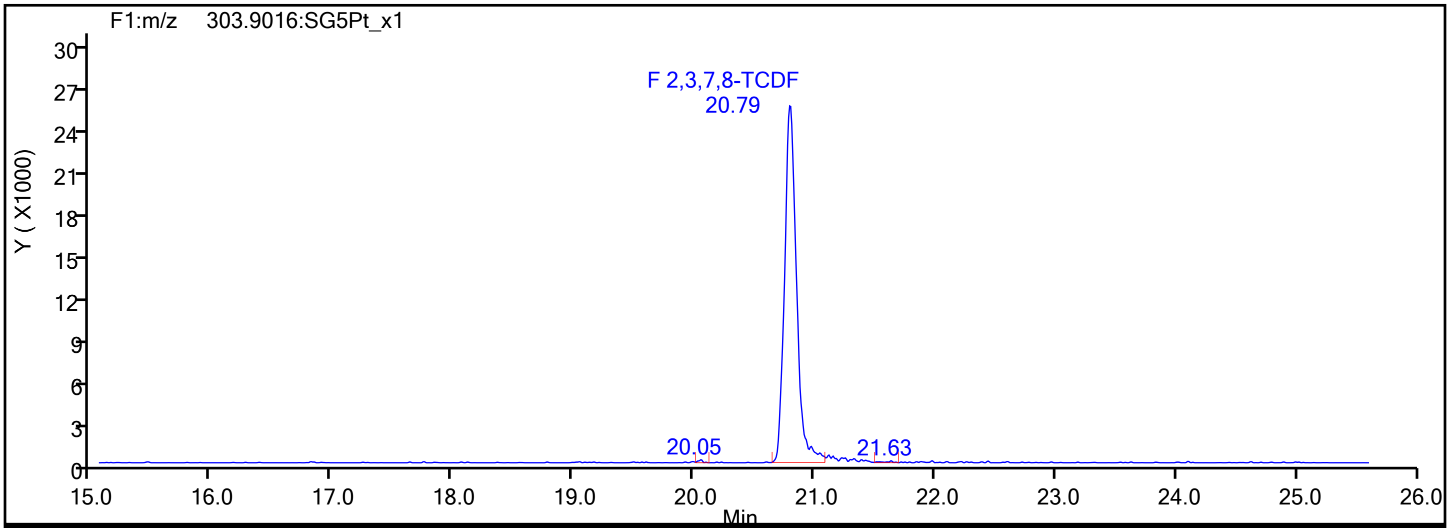

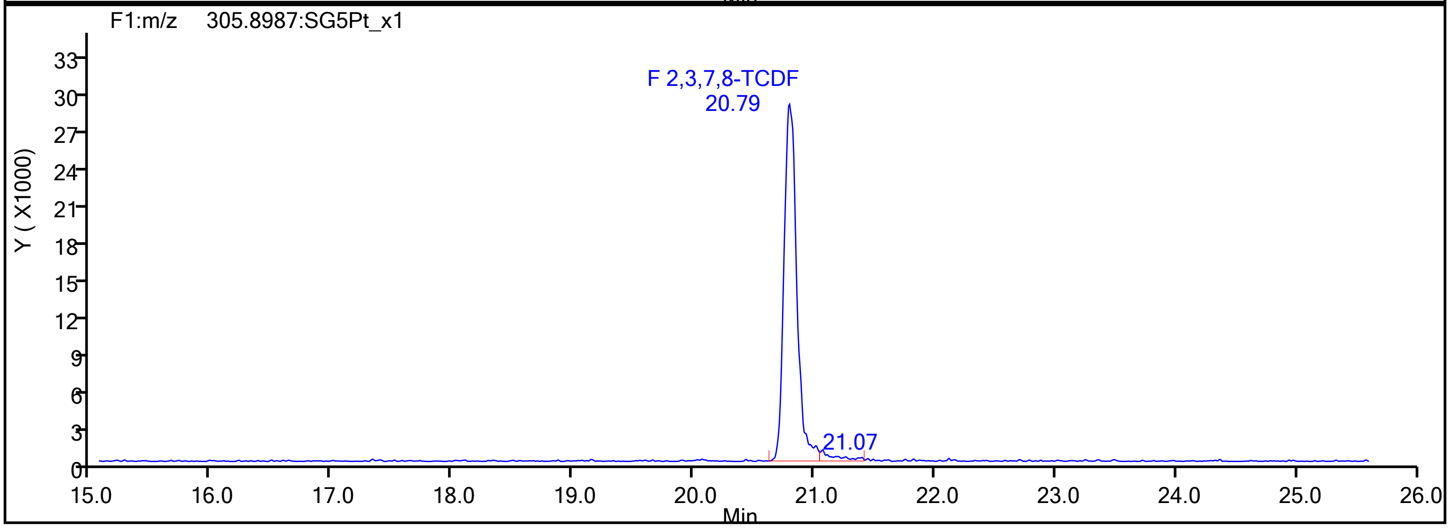

TCDF Interference Mass

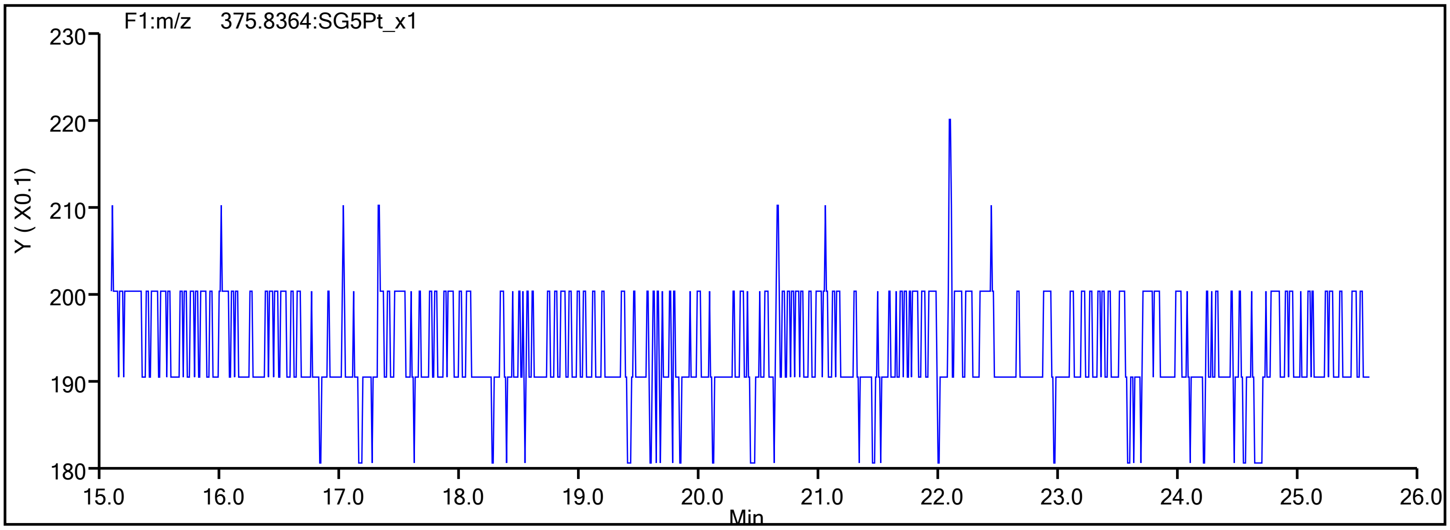

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date: 24-Nov-2020 07:33:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777

Sample Line#: 28

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

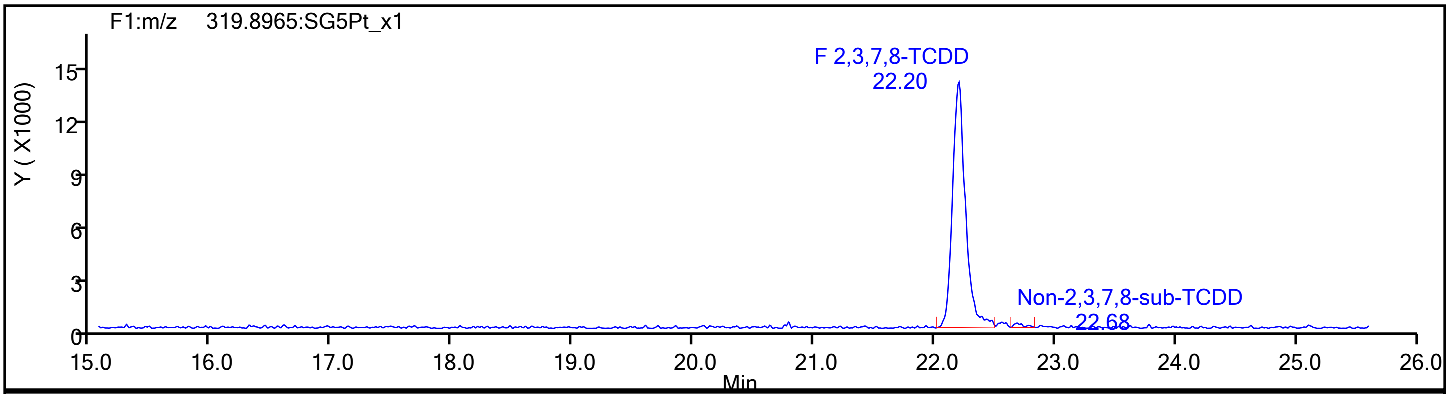

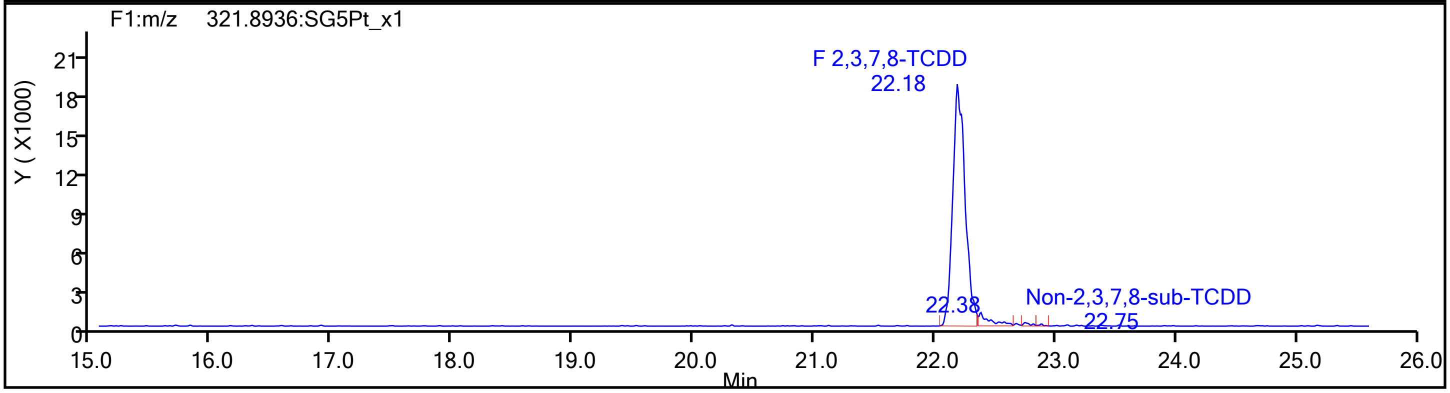

TCDD Standards

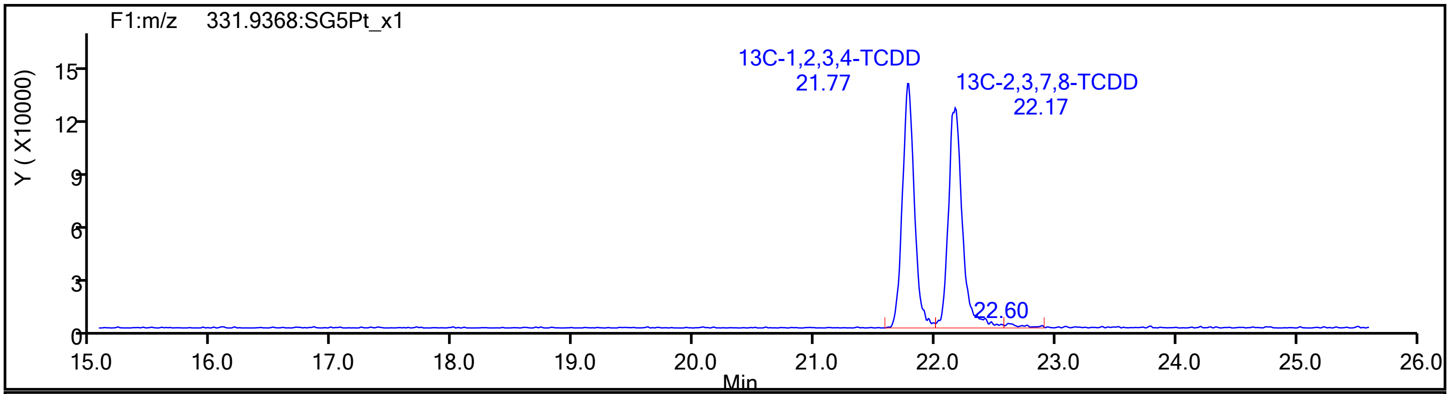

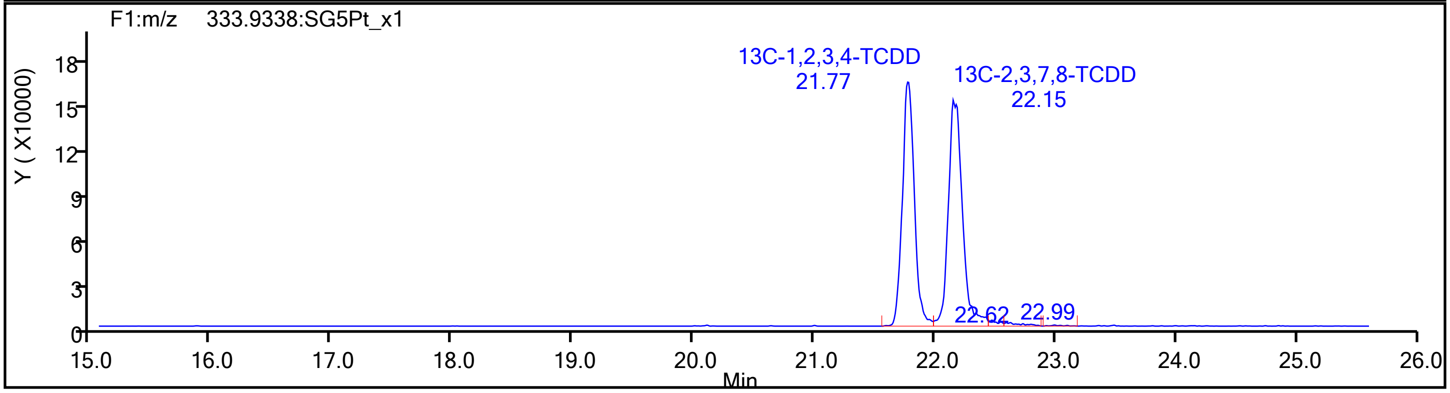

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

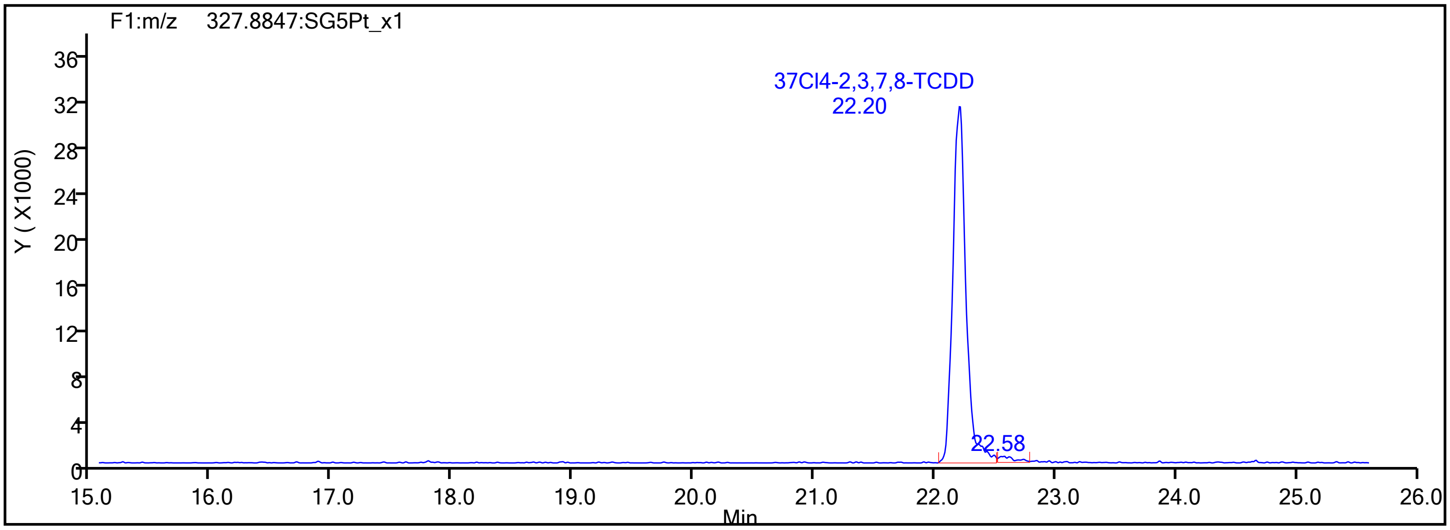

37Cl4-TCDD Standards

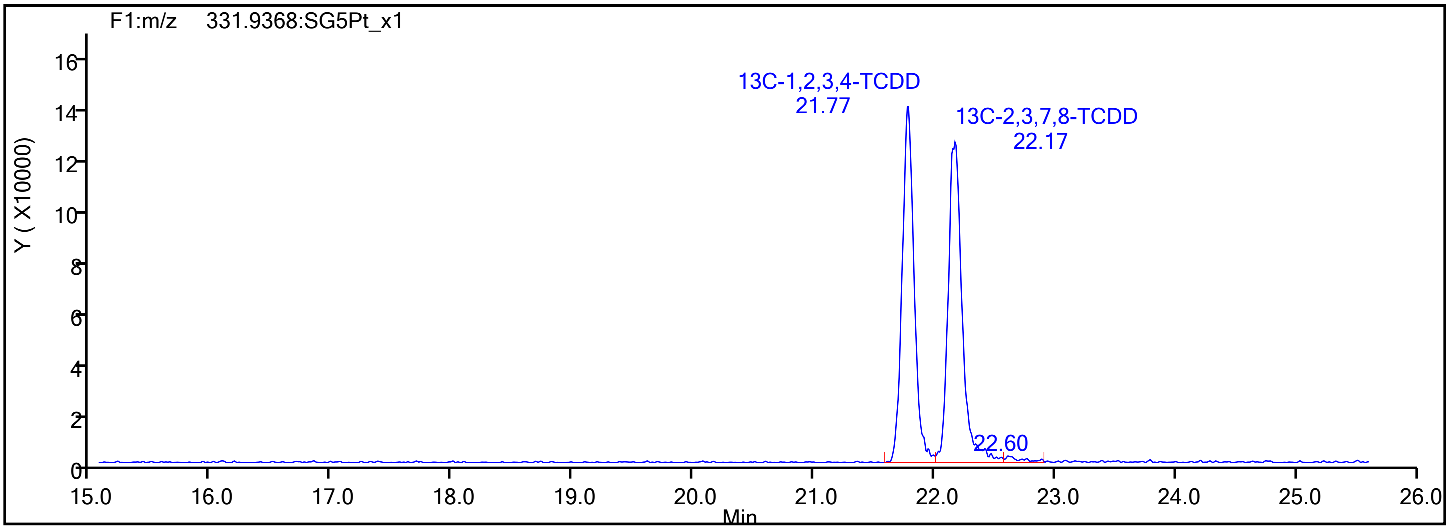

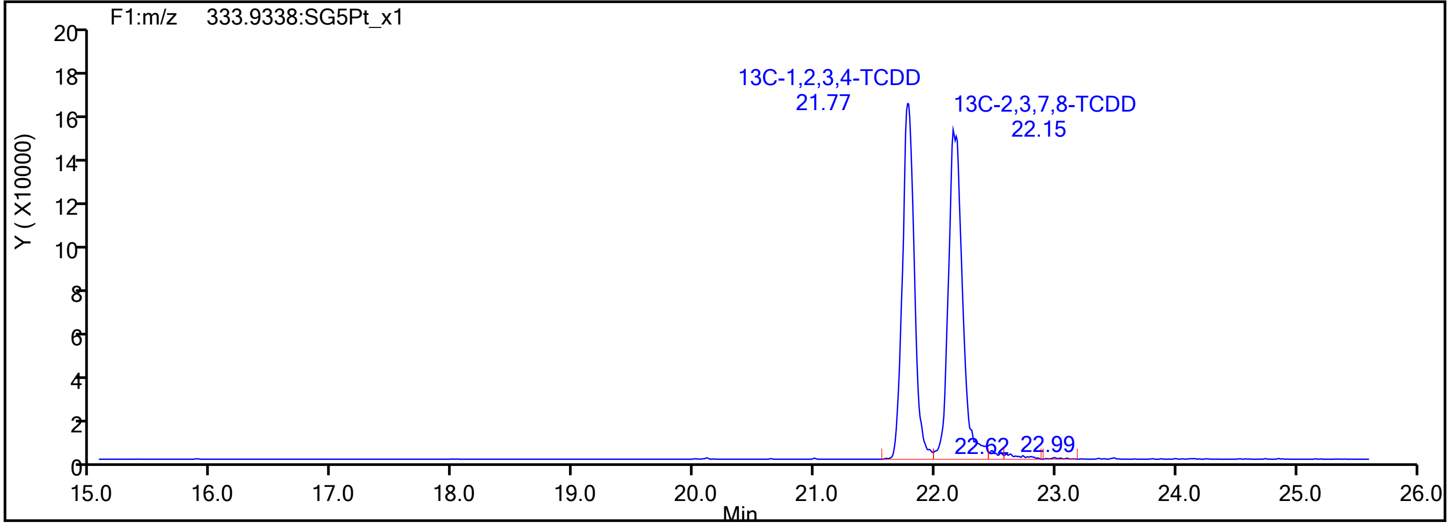

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F1 PeCDFs

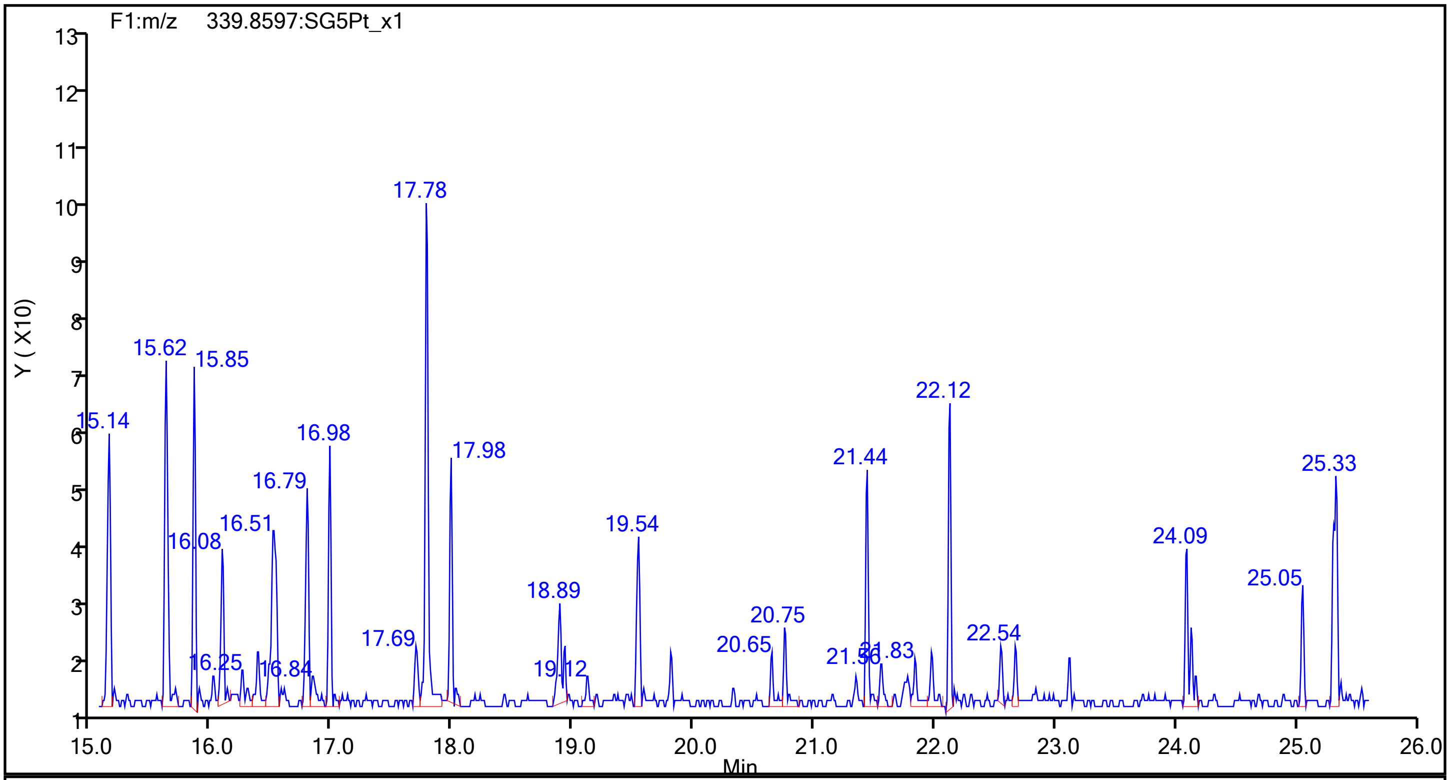

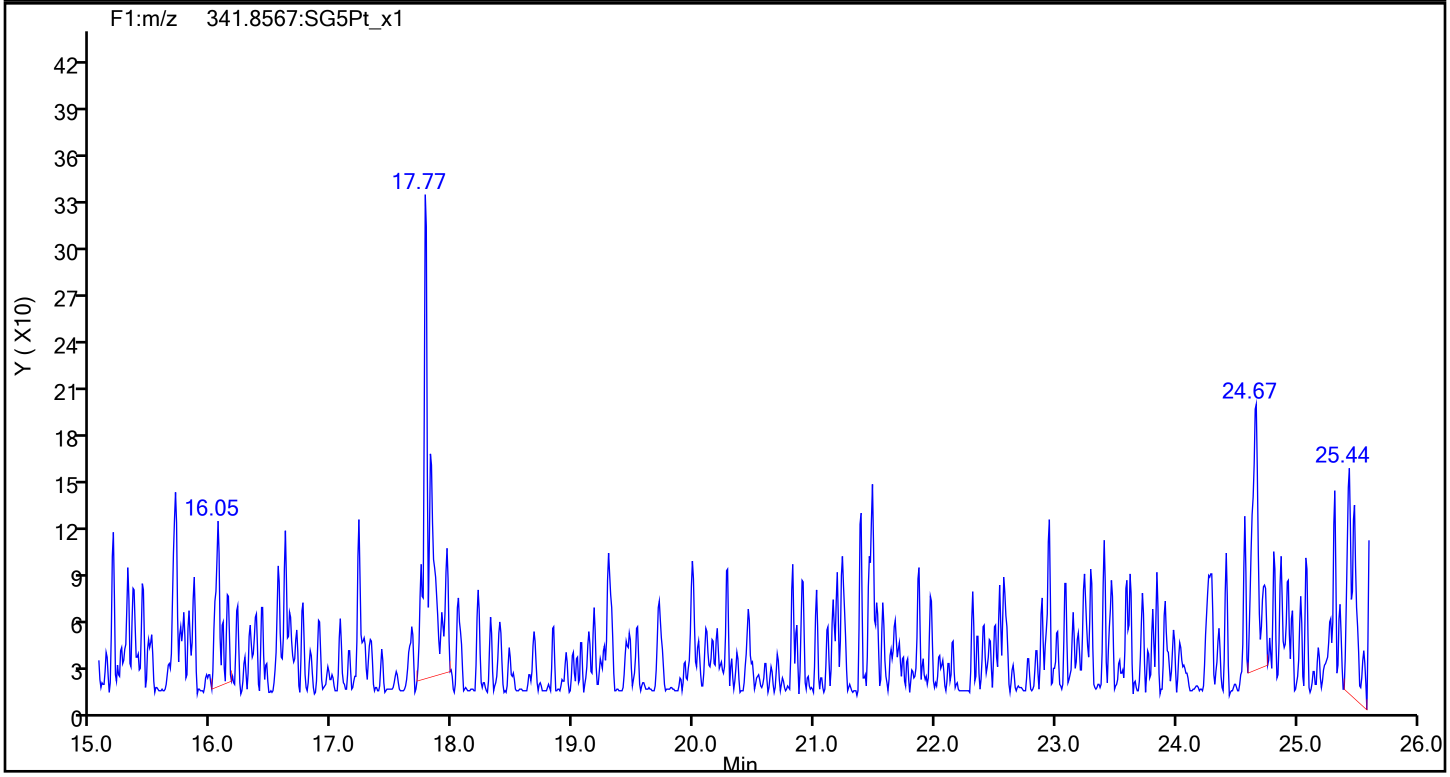

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Eurofins TestAmerica, Sacramento

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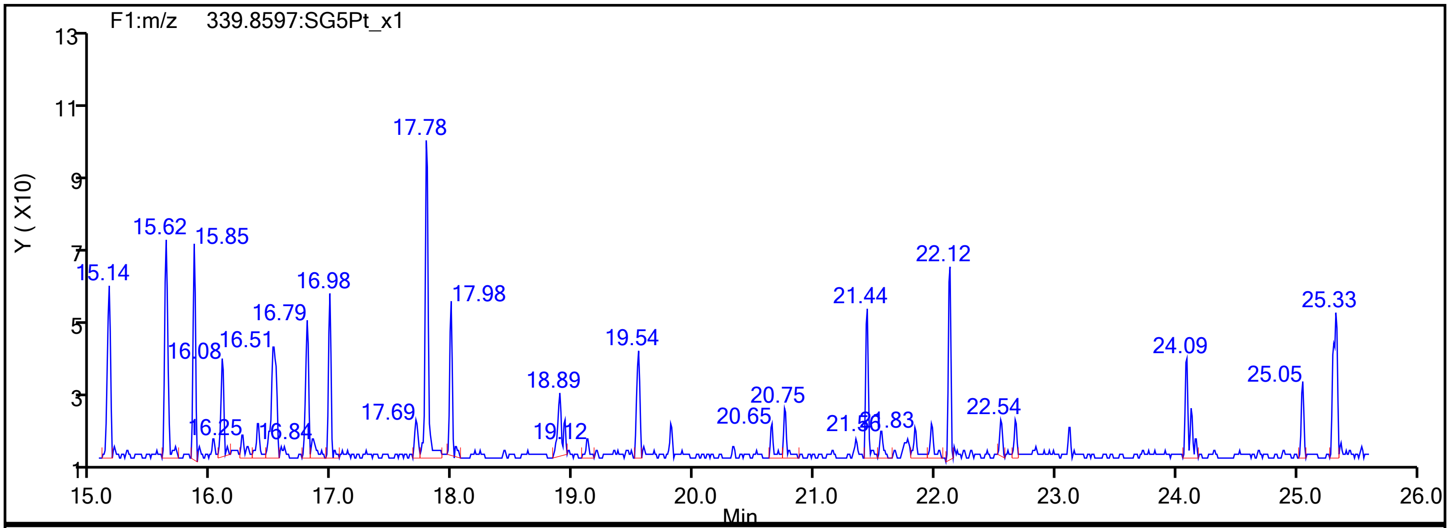

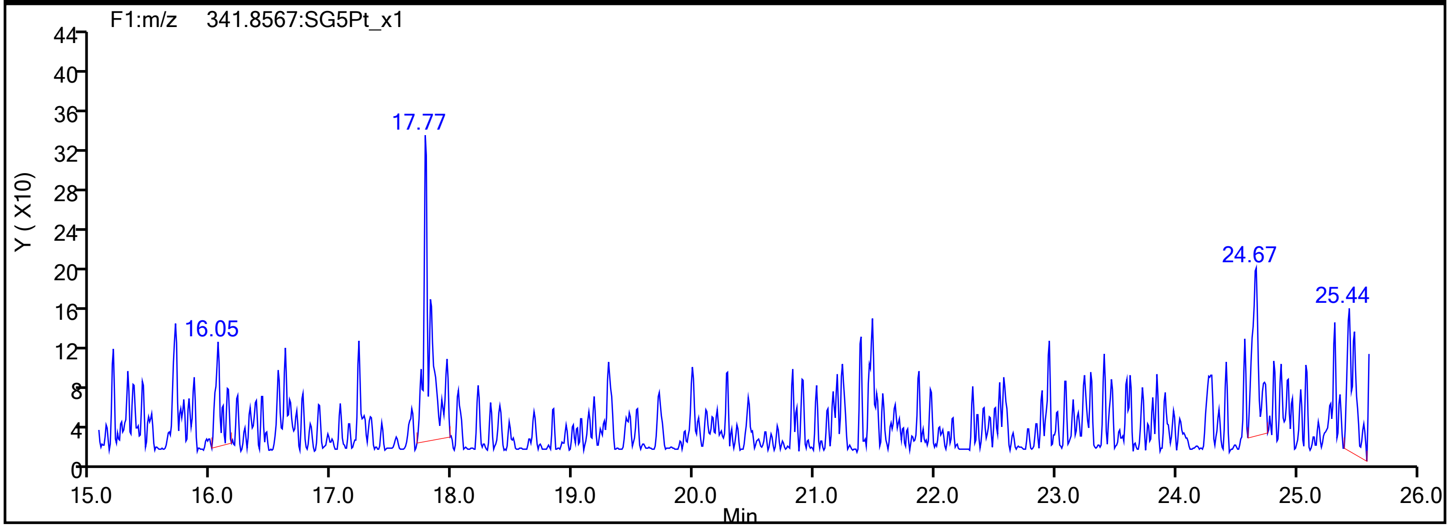

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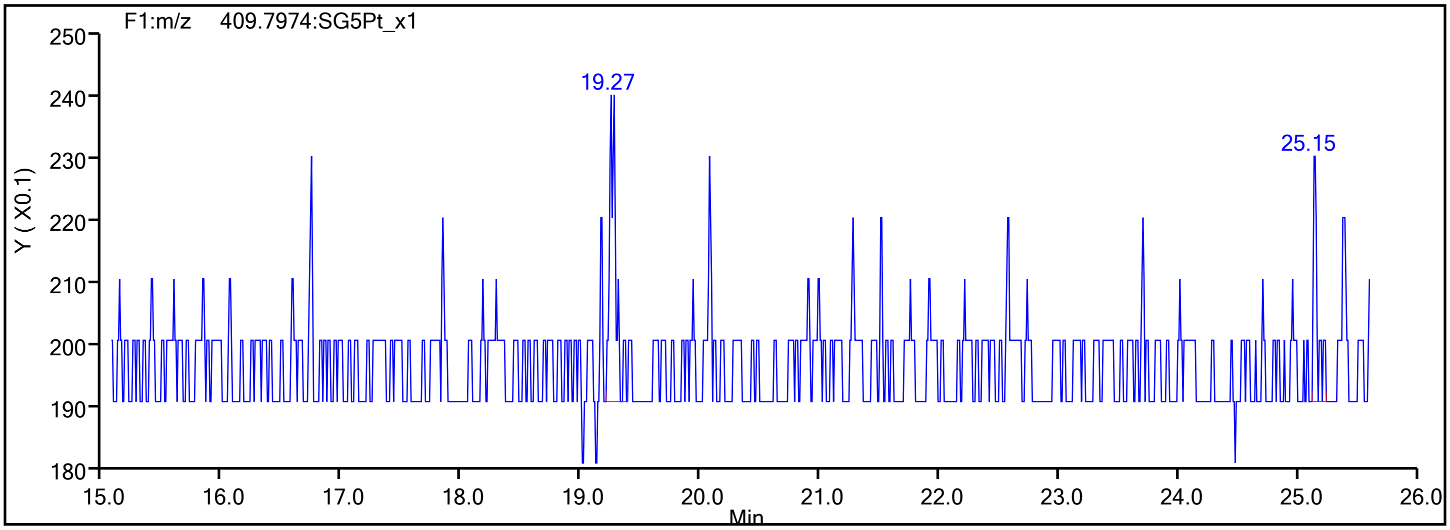

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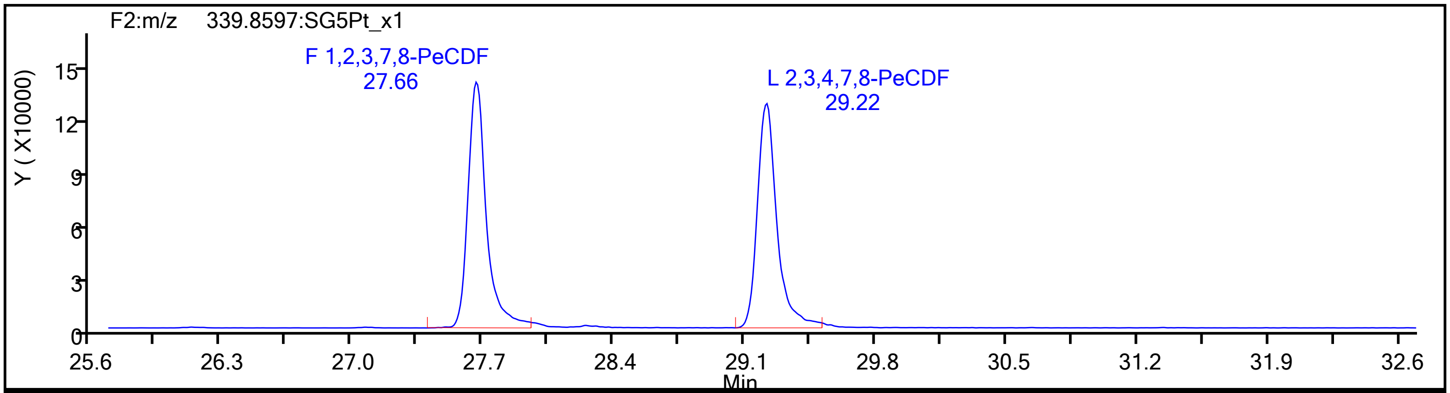

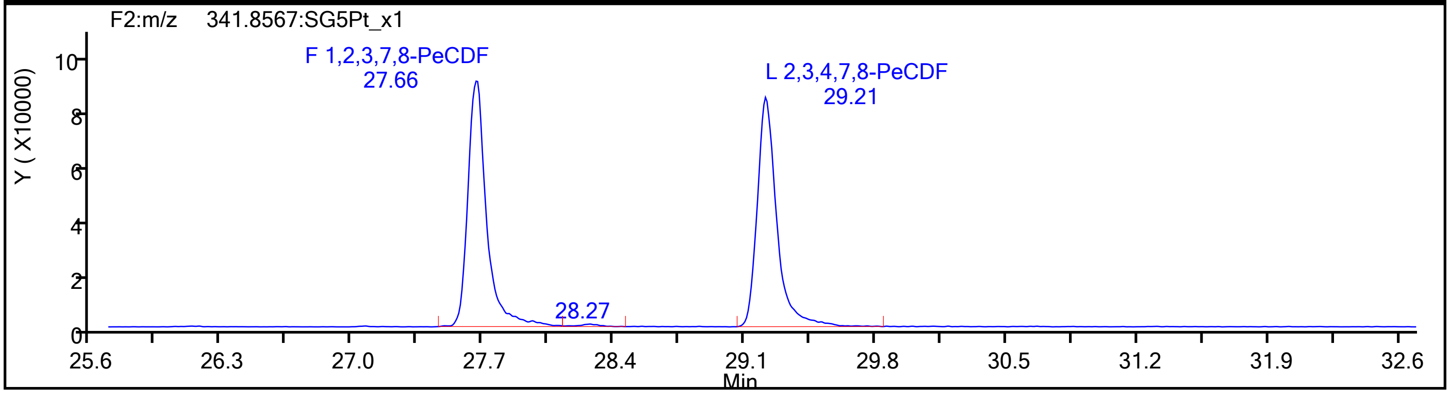

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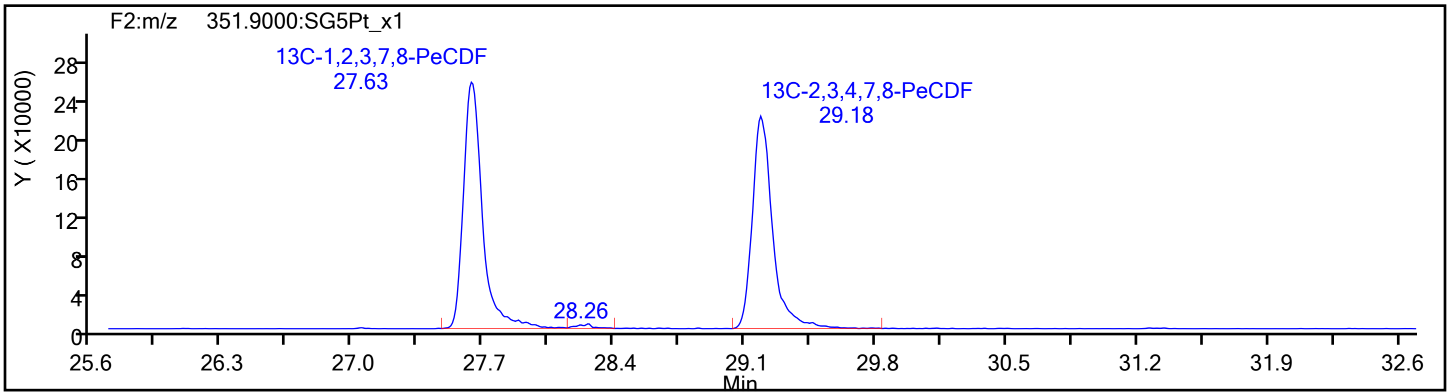

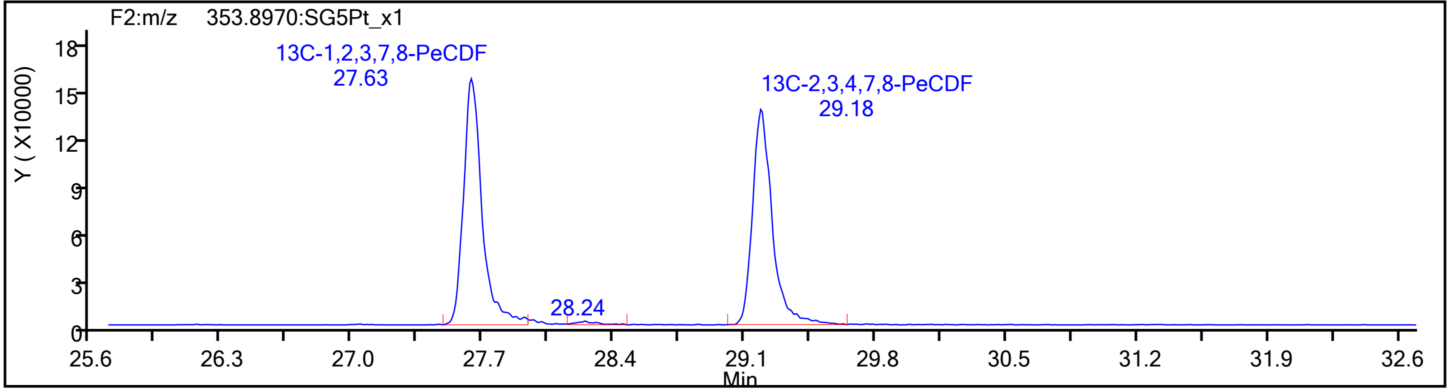

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Eurofins TestAmerica, Sacramento

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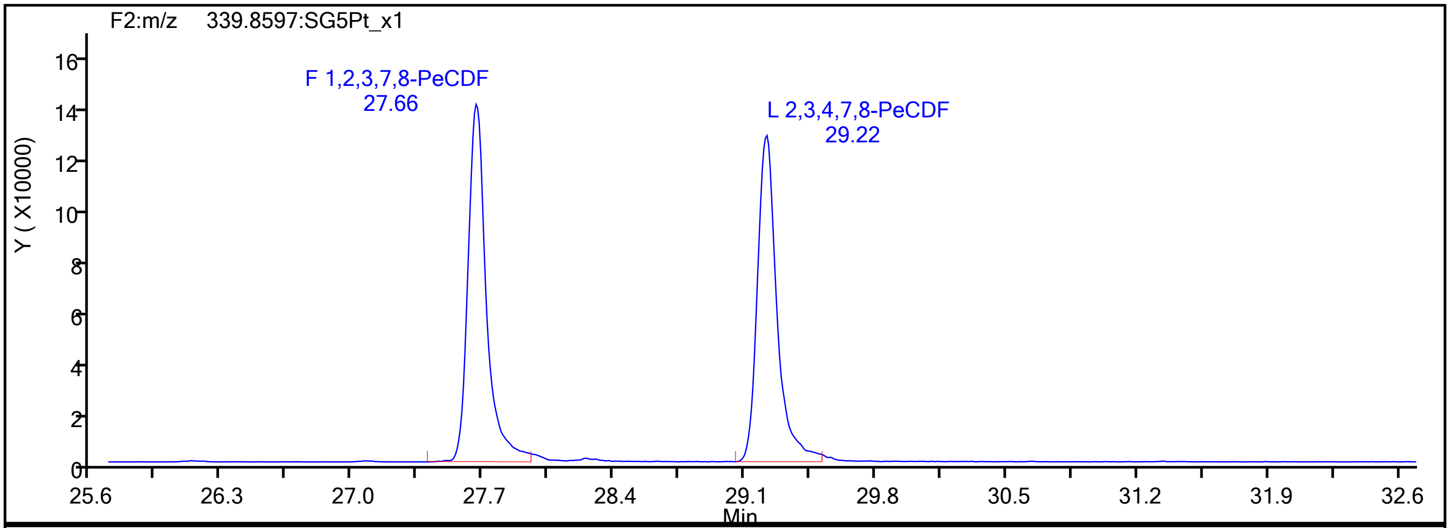

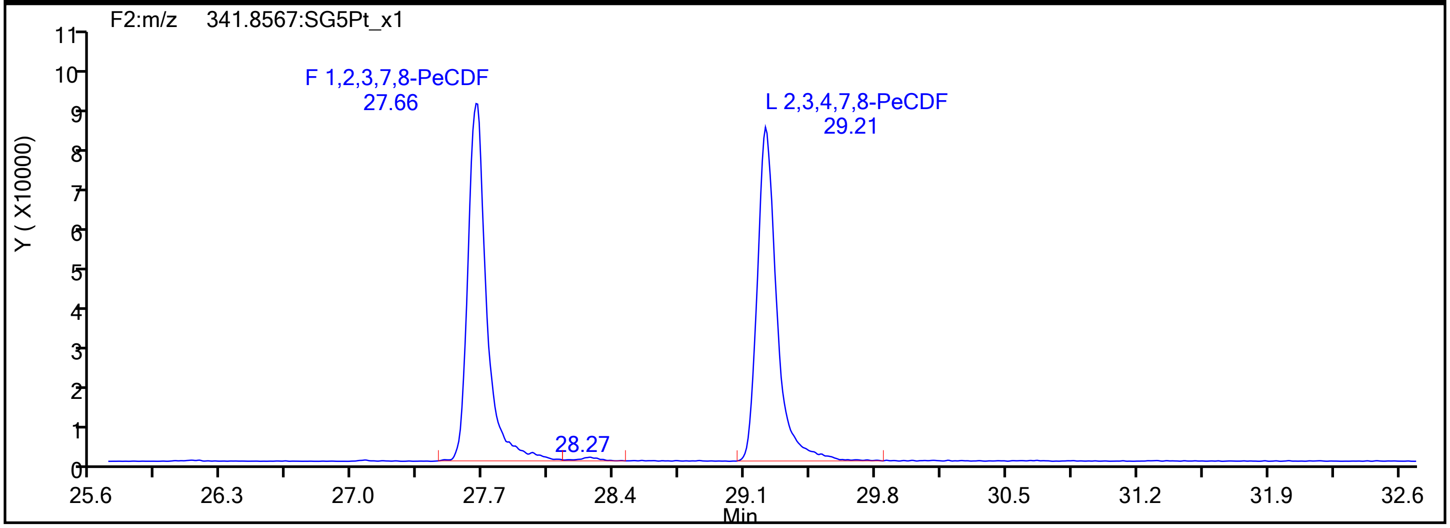

PeCDF Interference Mass

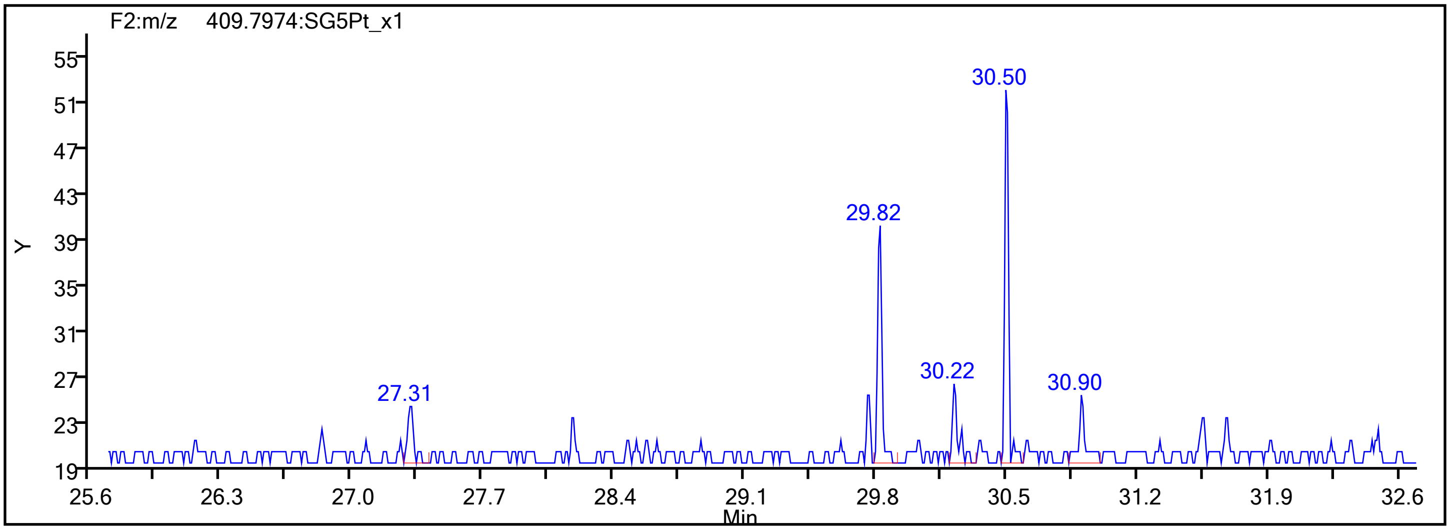

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Eurofins TestAmerica, Sacramento

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PeCDD

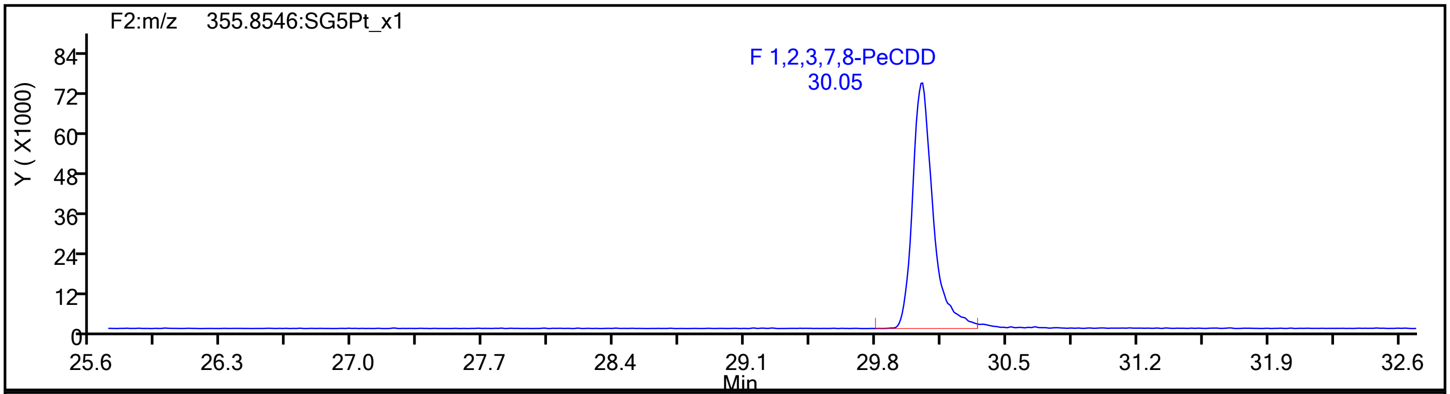

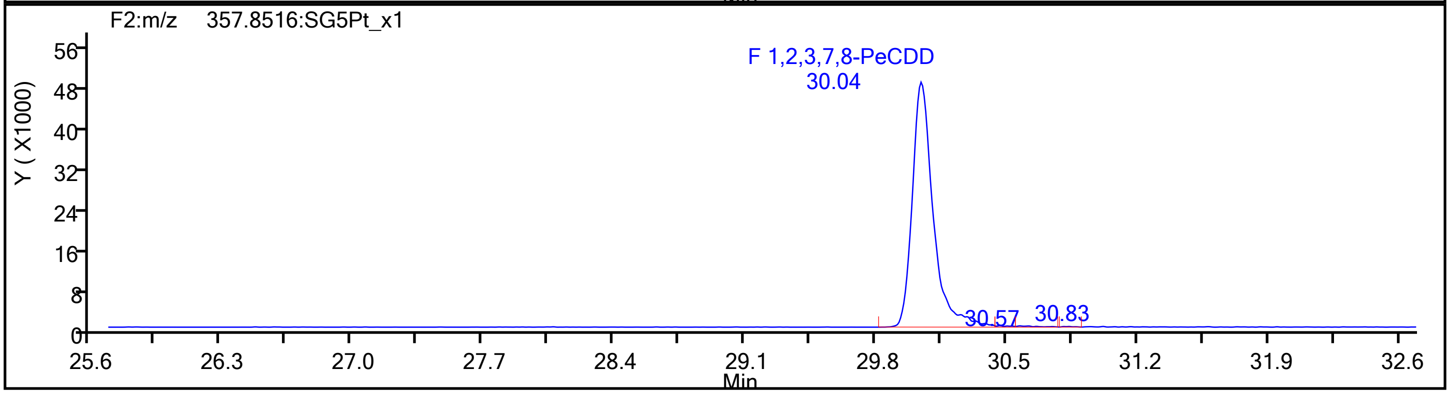

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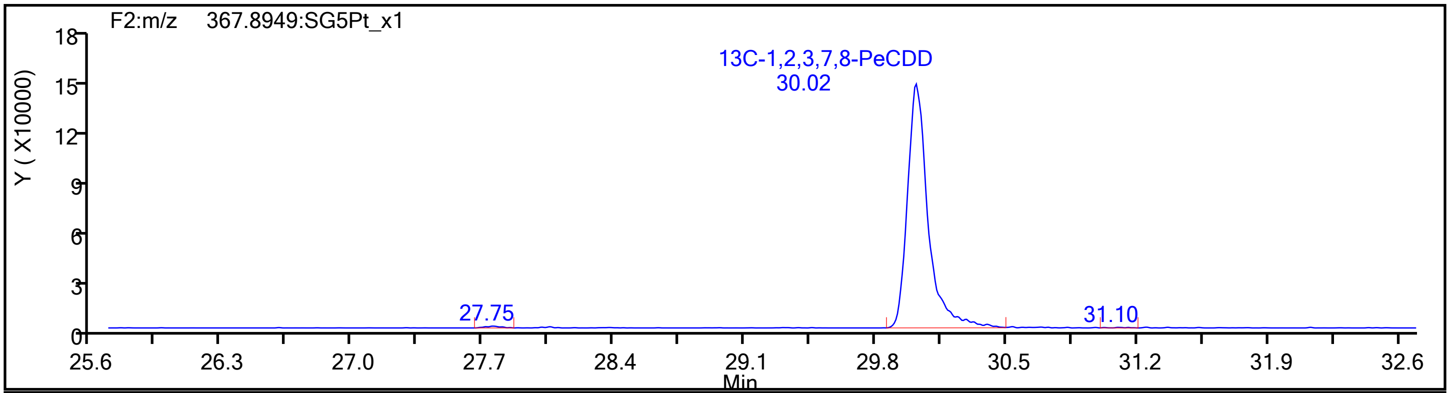

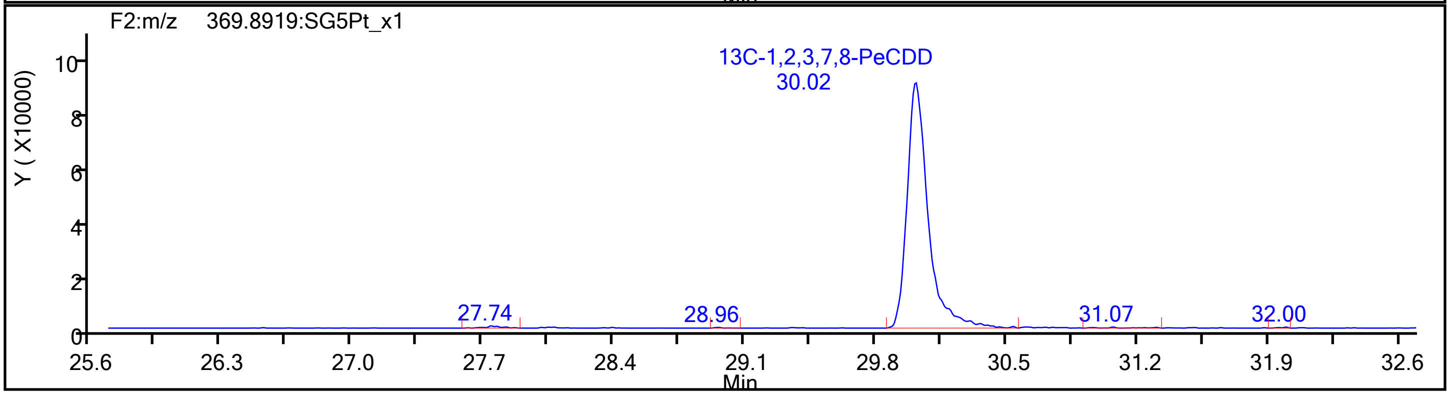

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Eurofins TestAmerica, Sacramento

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HxCDF

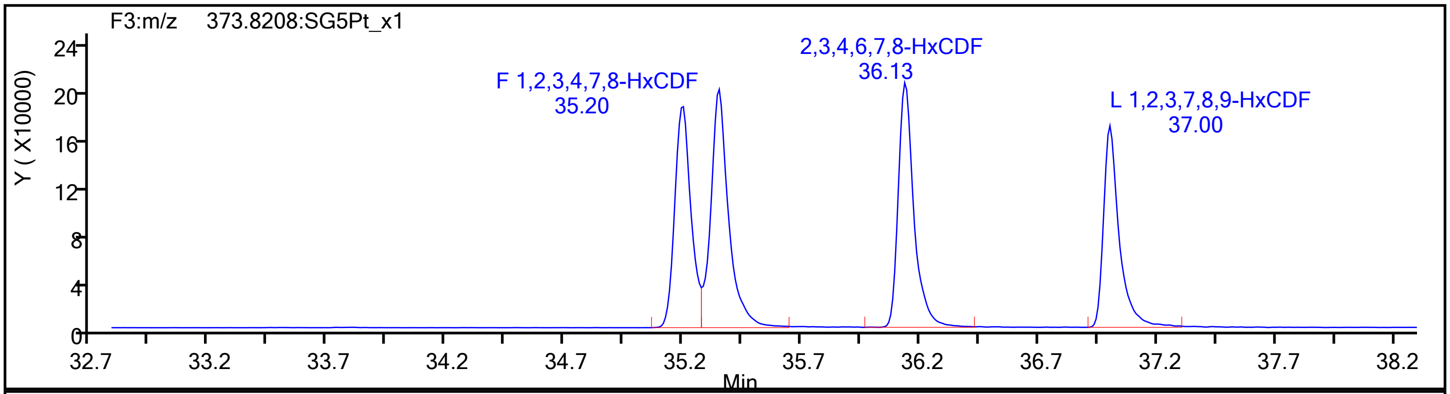

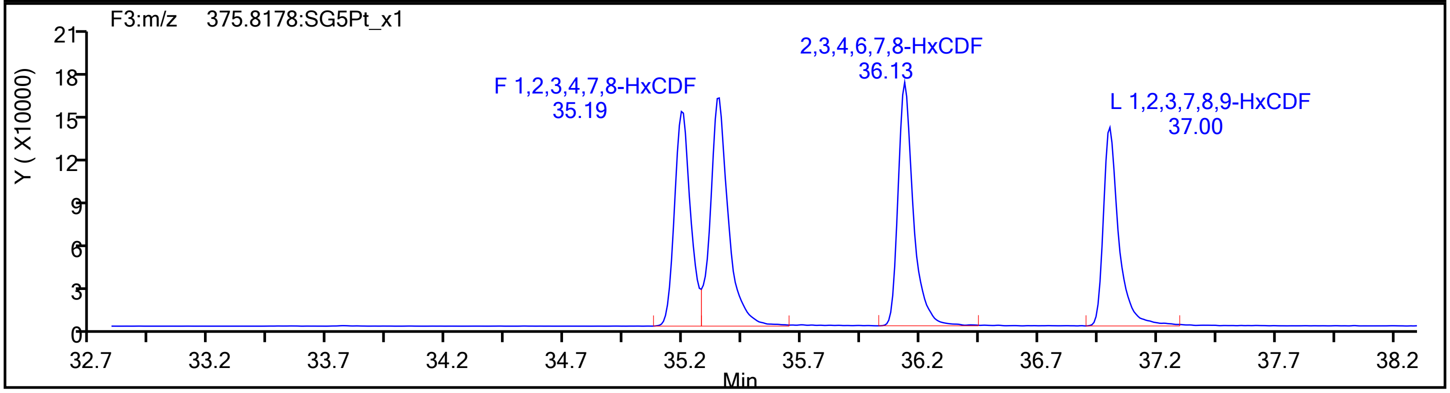

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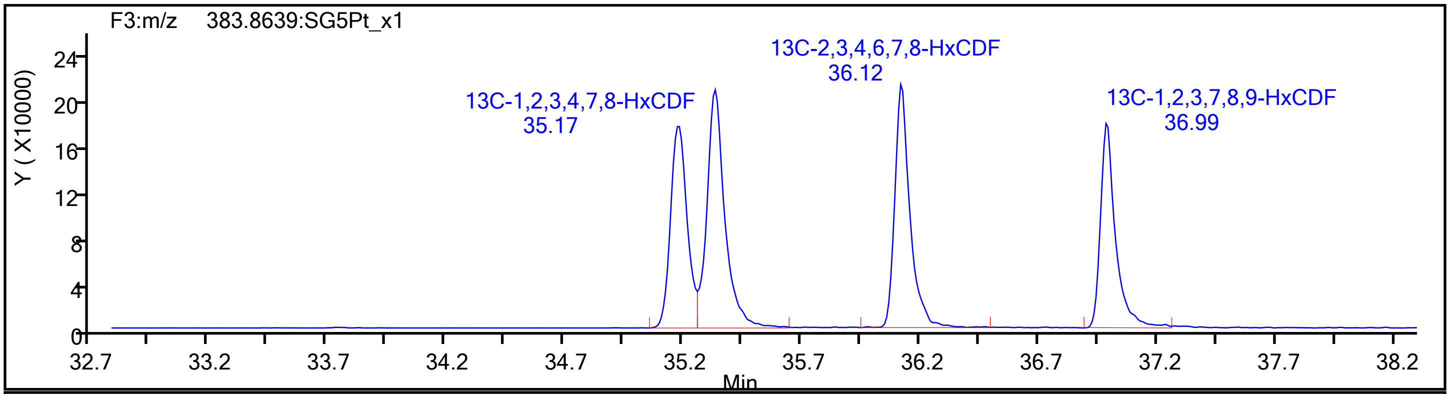

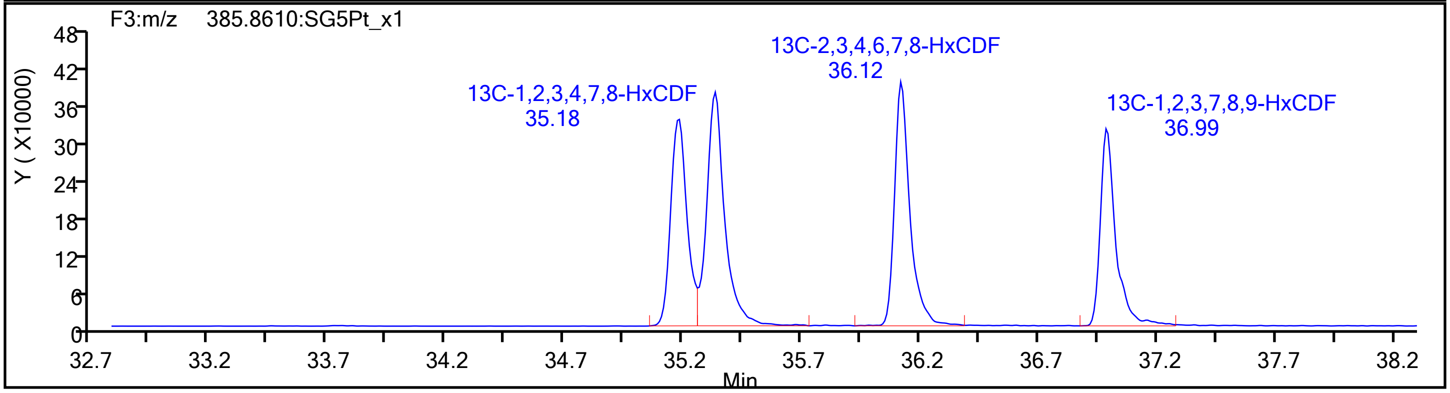

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Eurofins TestAmerica, Sacramento

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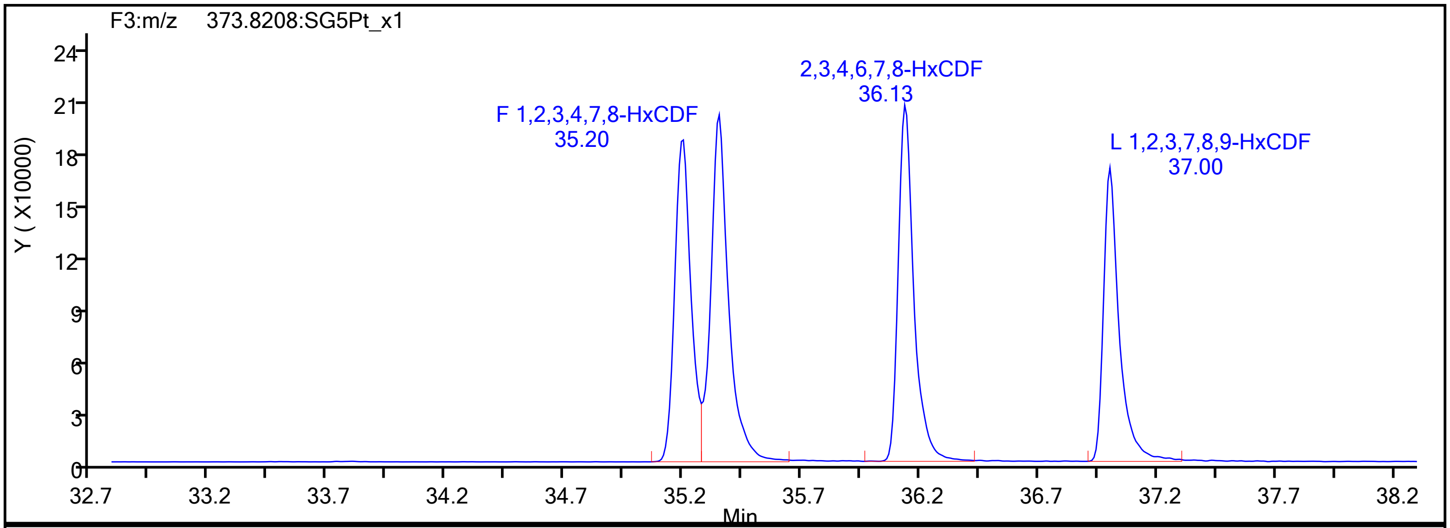

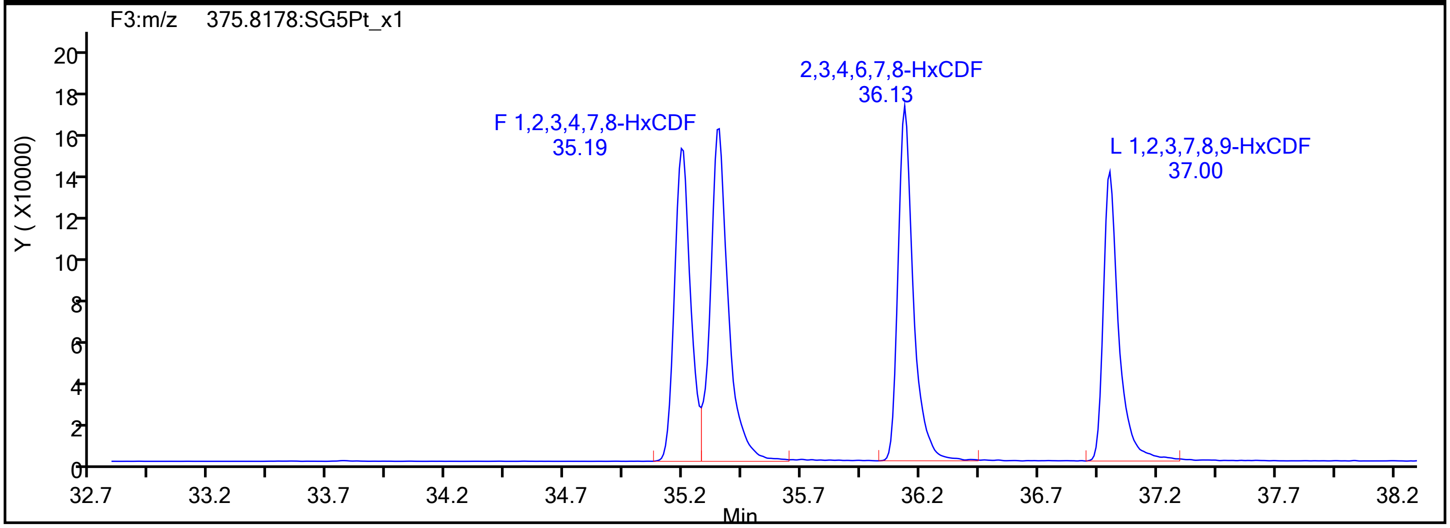

HxCDF Interference Mass

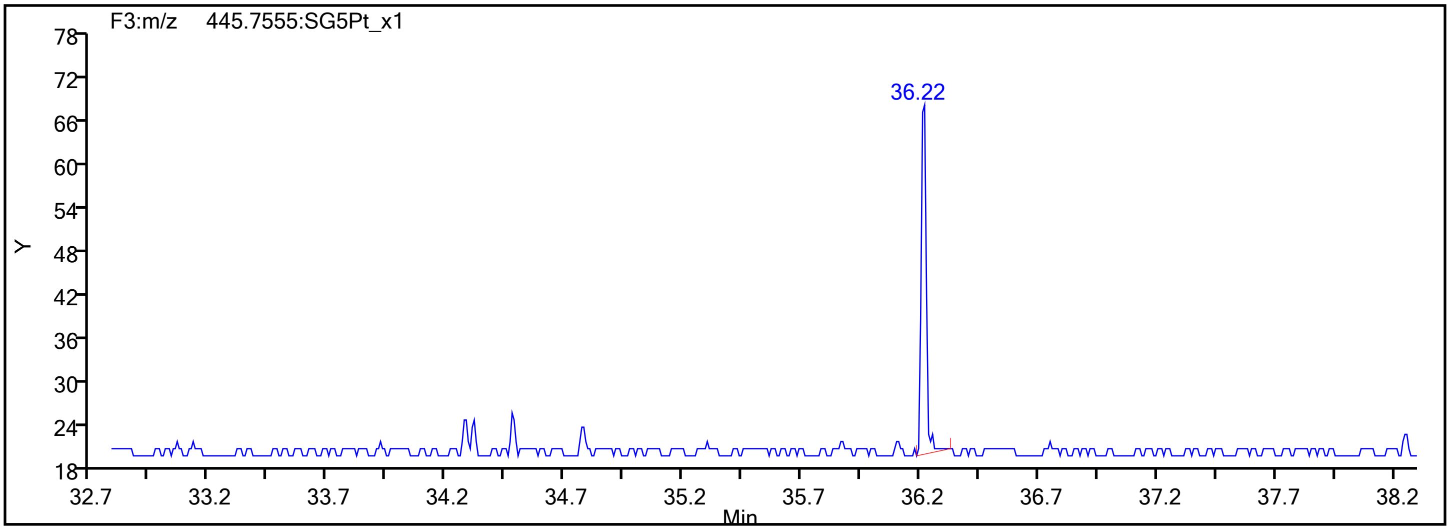

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HxCDD

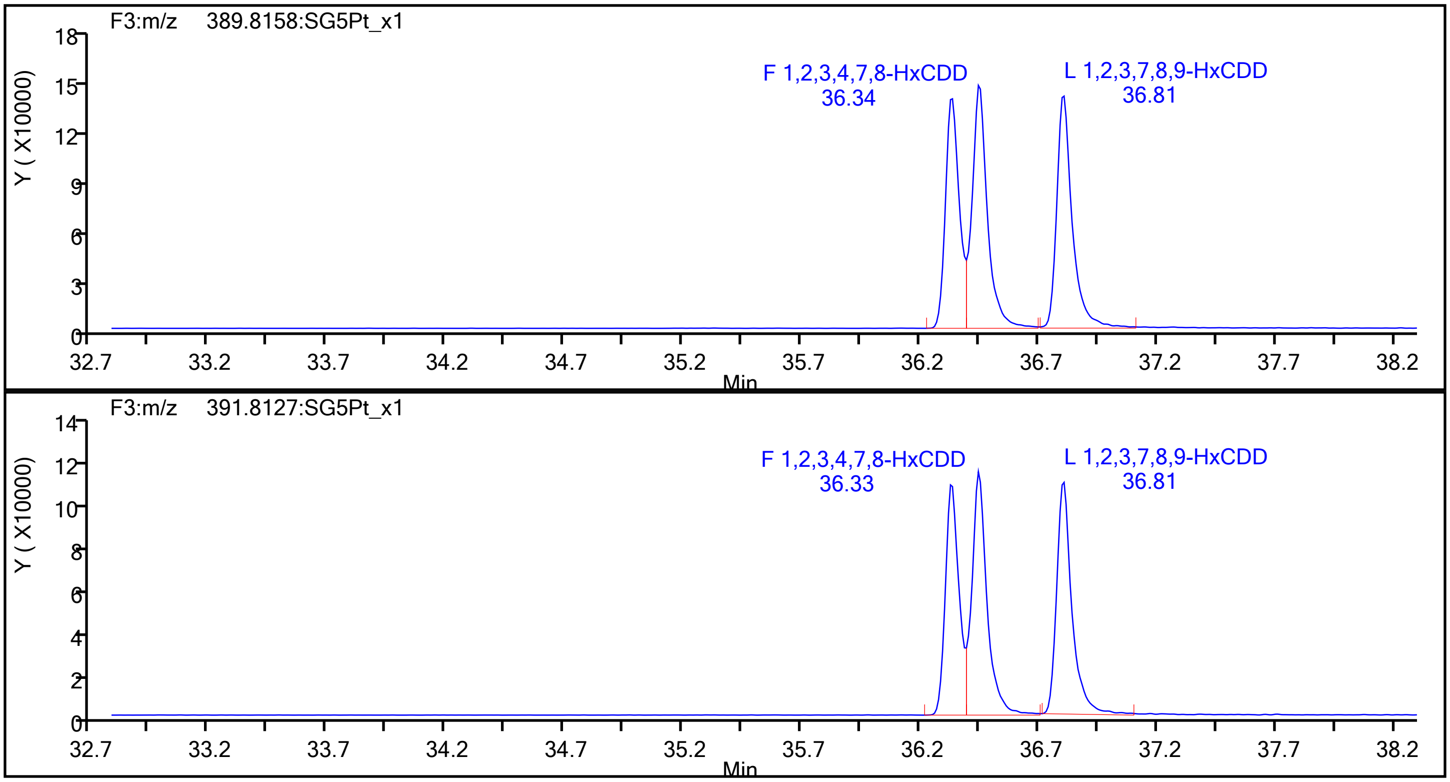

HxCDD Standards

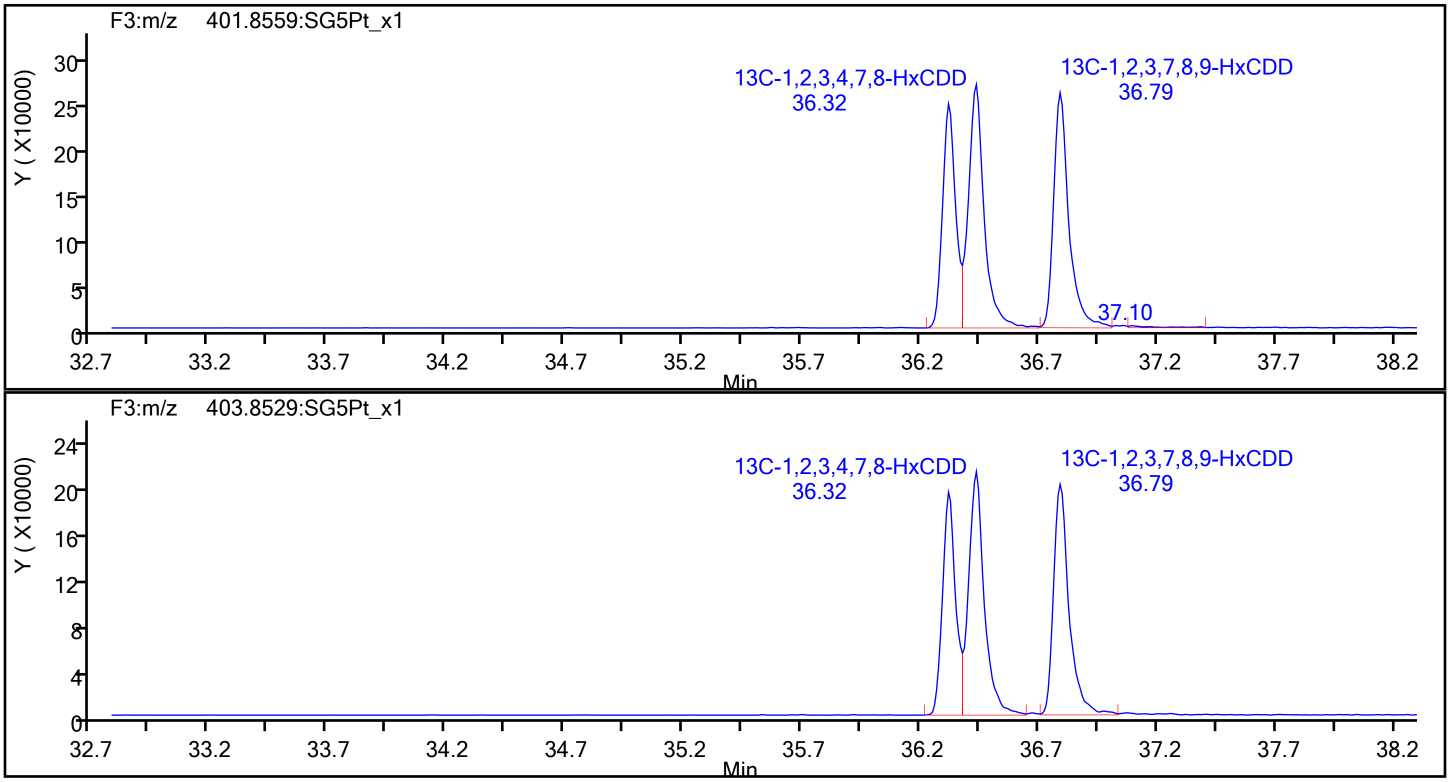

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Eurofins TestAmerica, Sacramento

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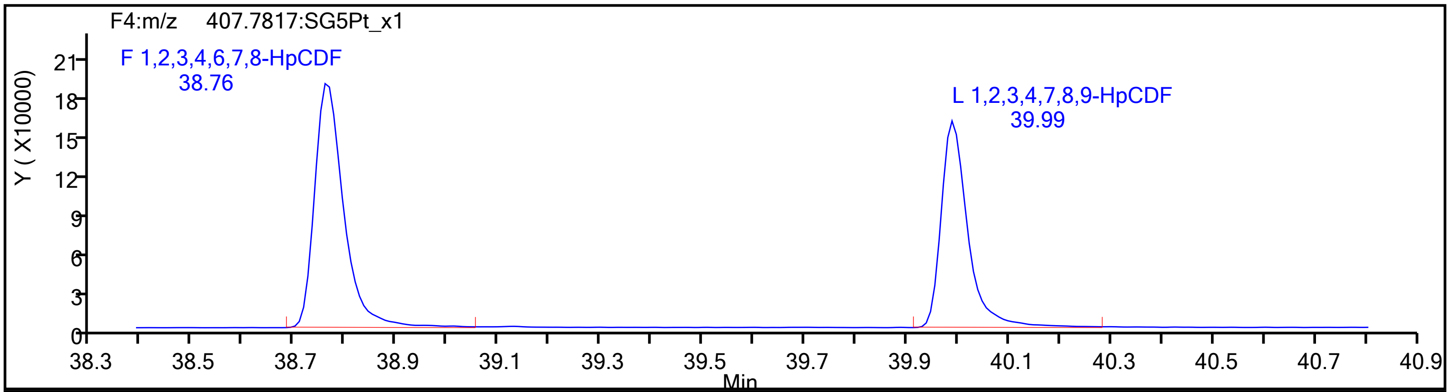

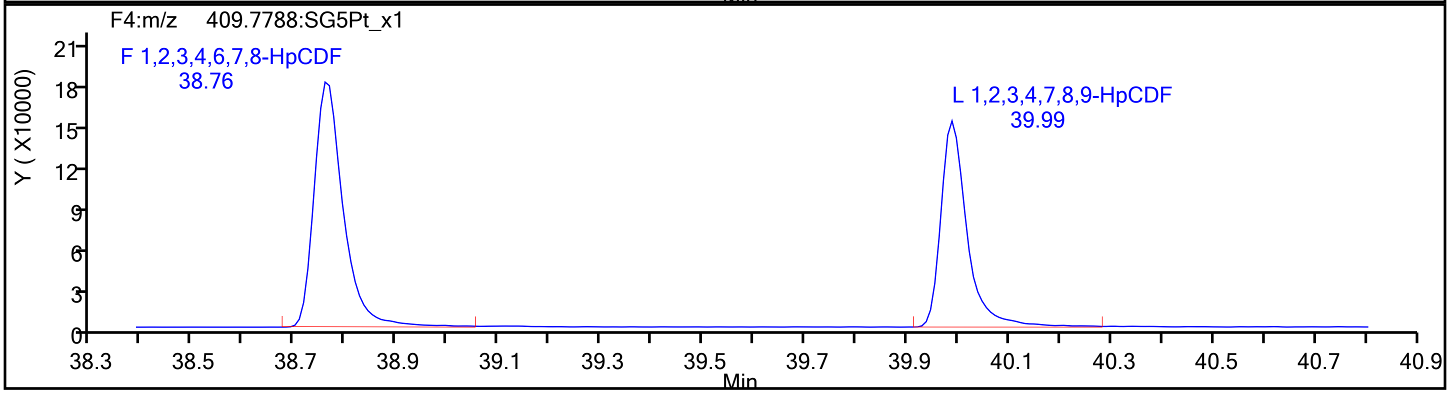

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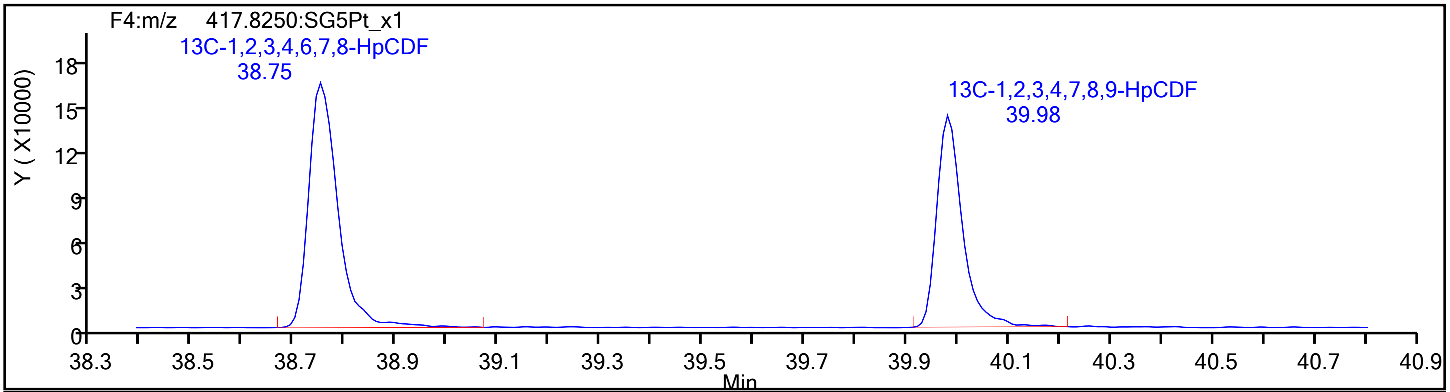

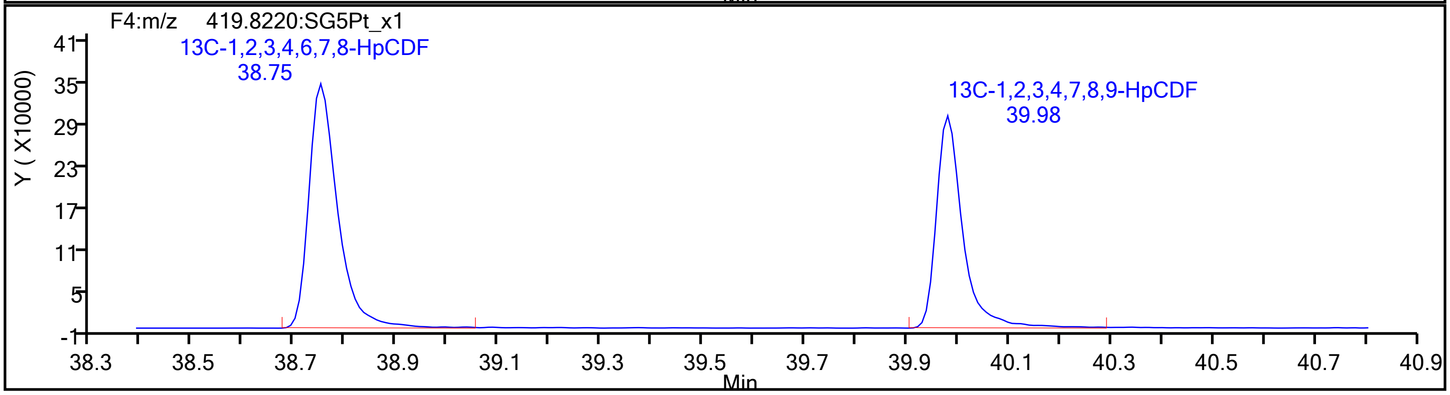

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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HpCDF

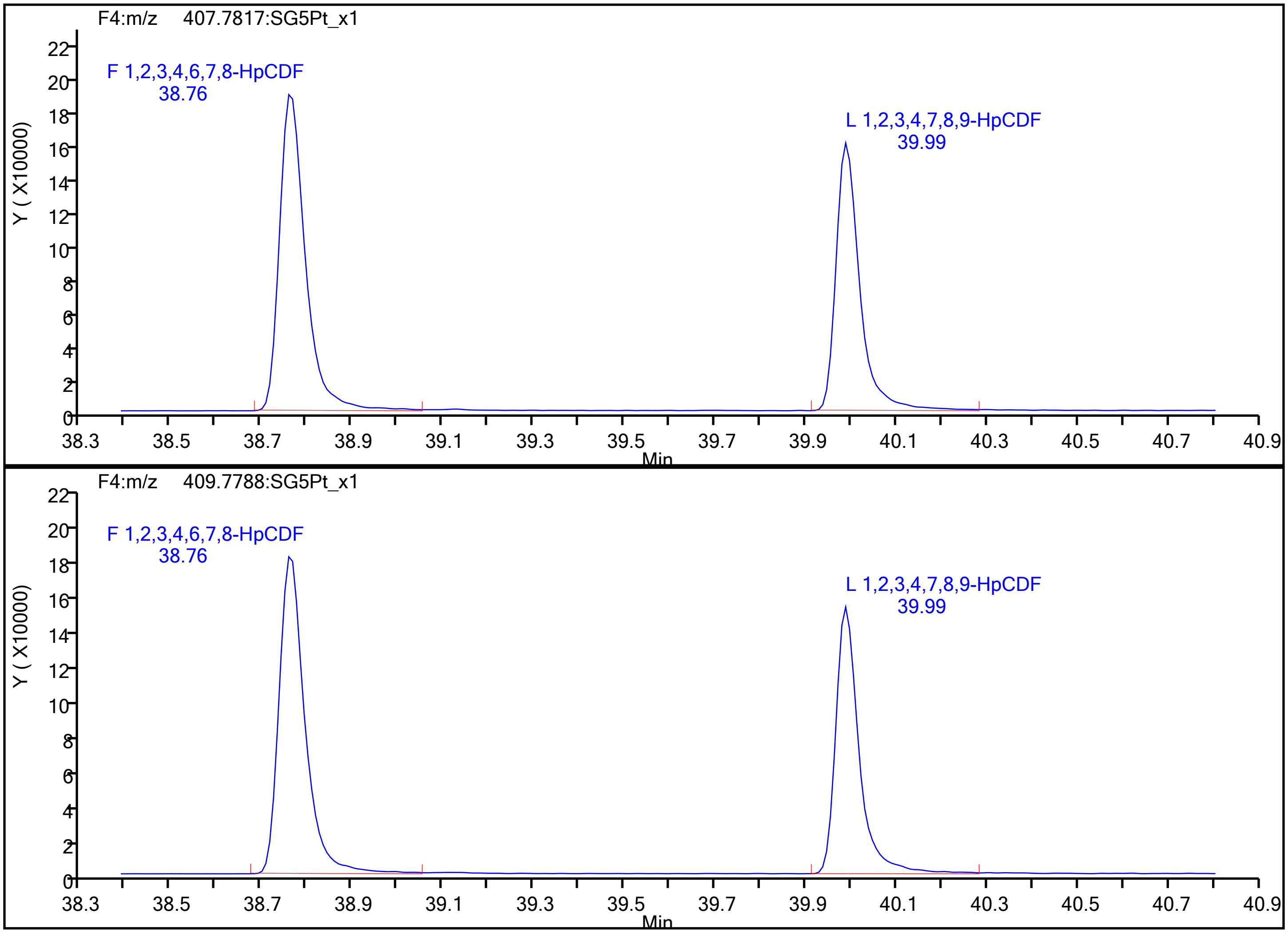

HpCDF Interference Mass

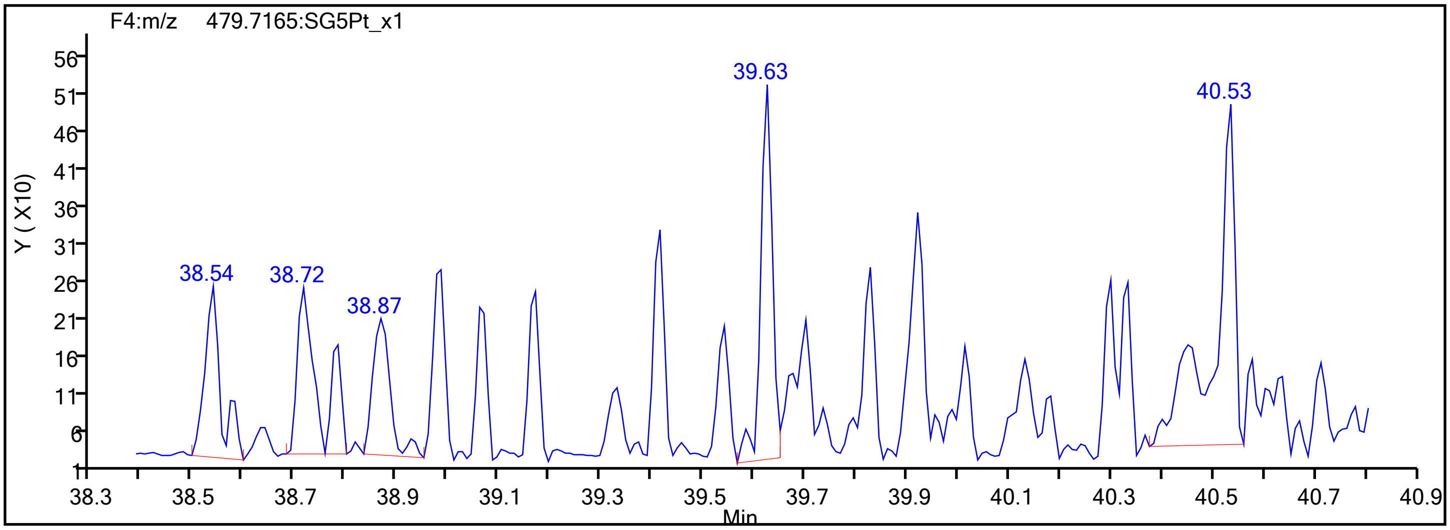

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Eurofins TestAmerica, Sacramento

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HpCDD

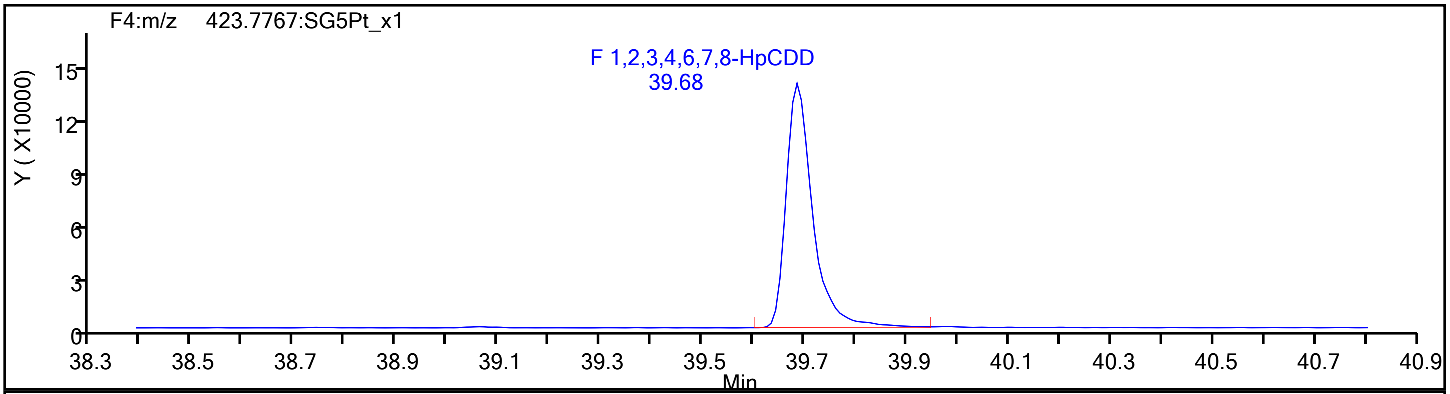

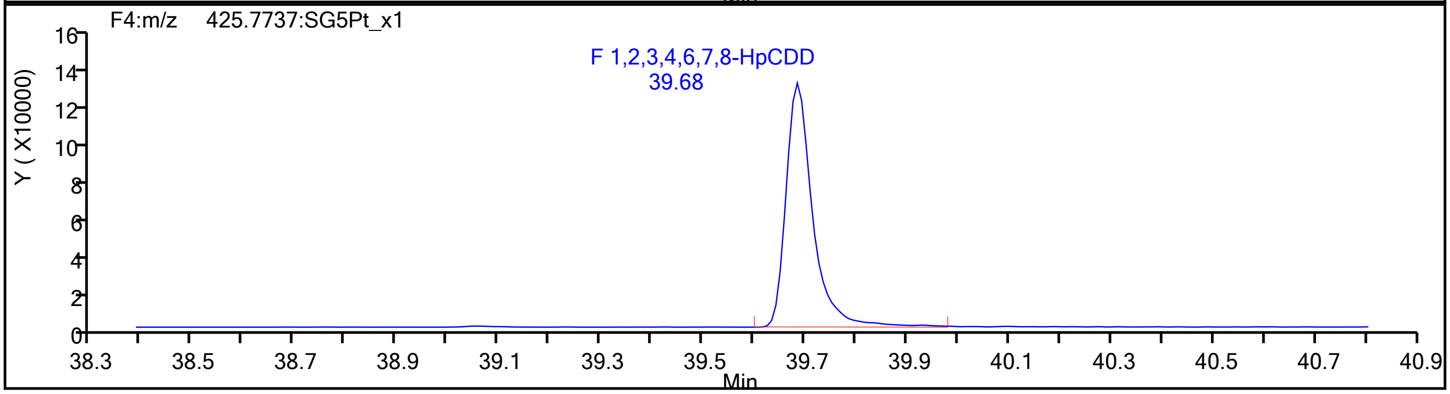

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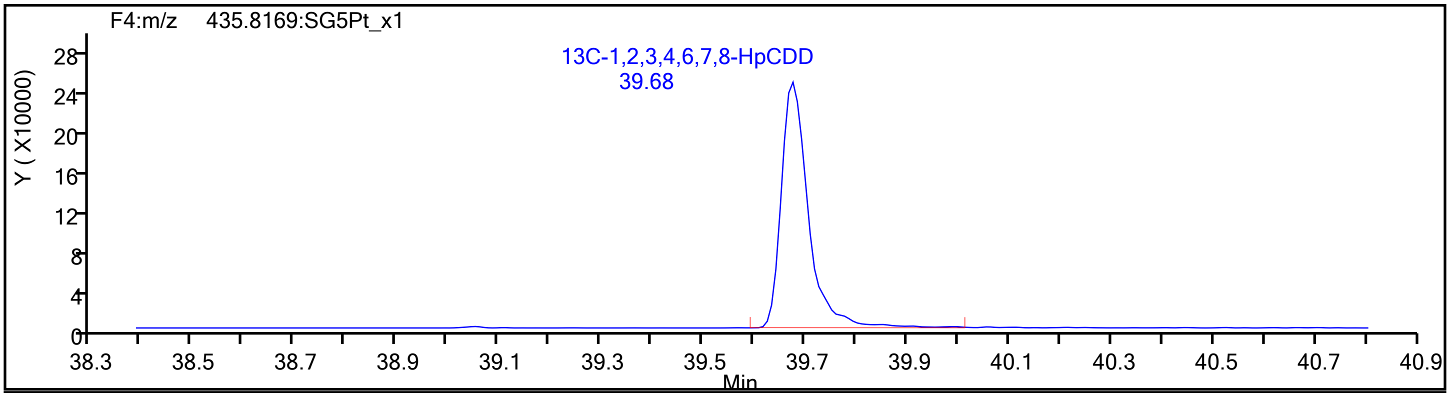

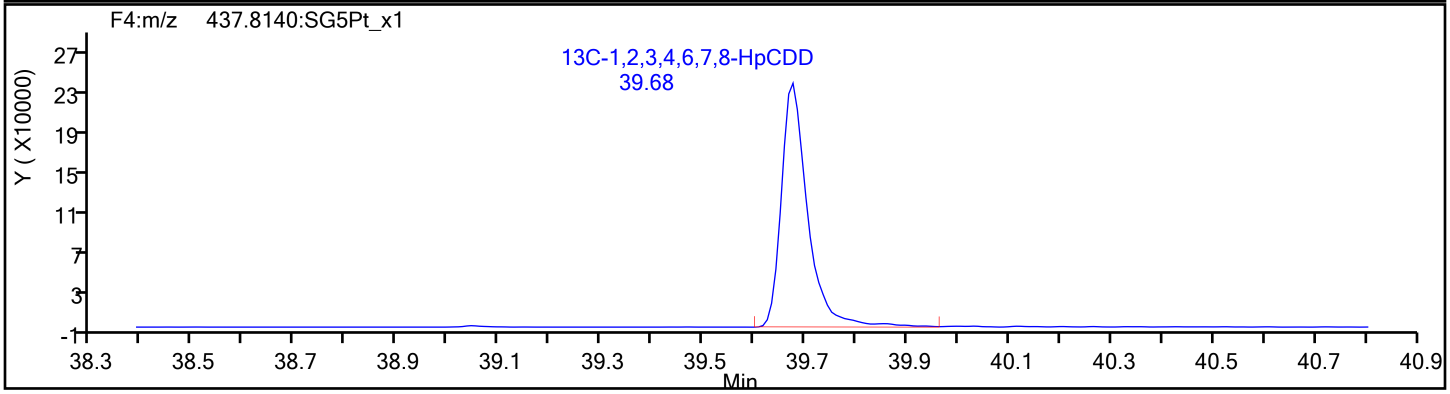

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Eurofins TestAmerica, Sacramento

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OCDF

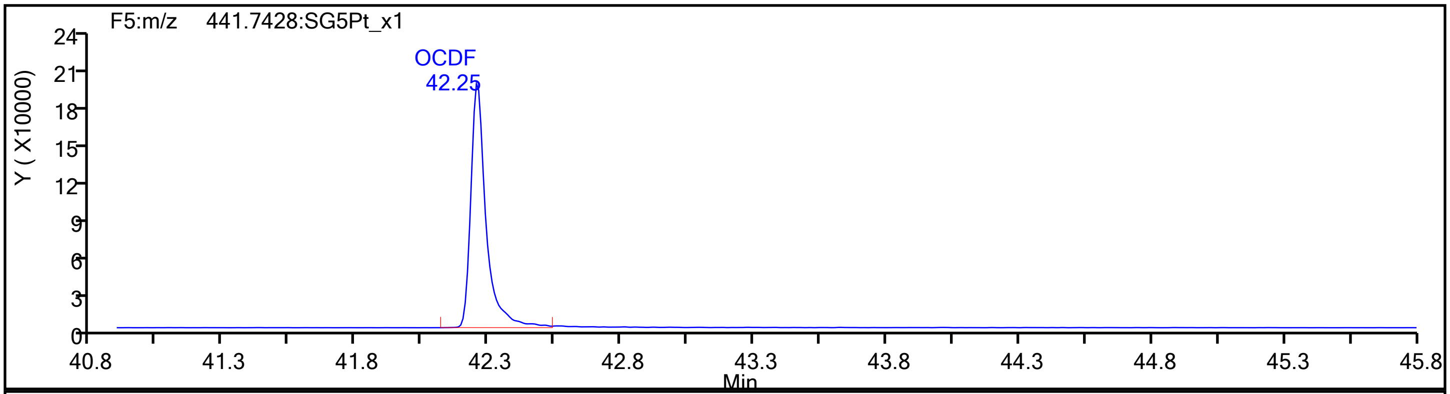

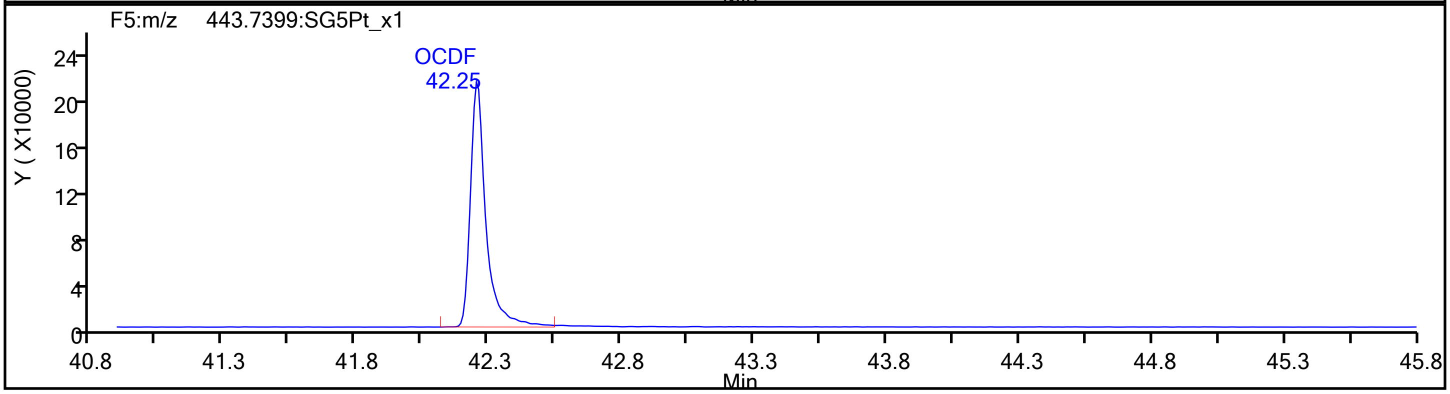

OCDF Standards

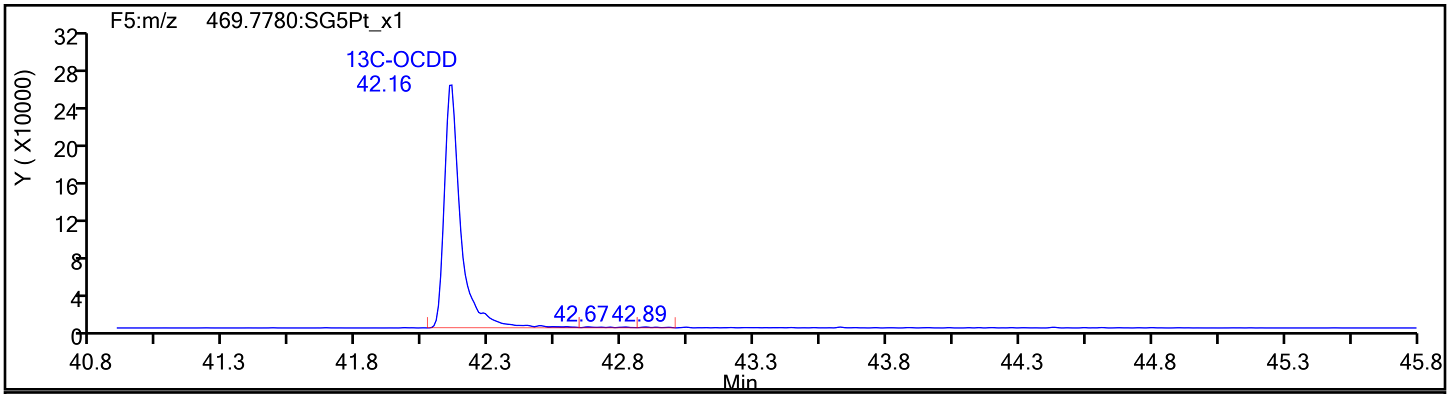

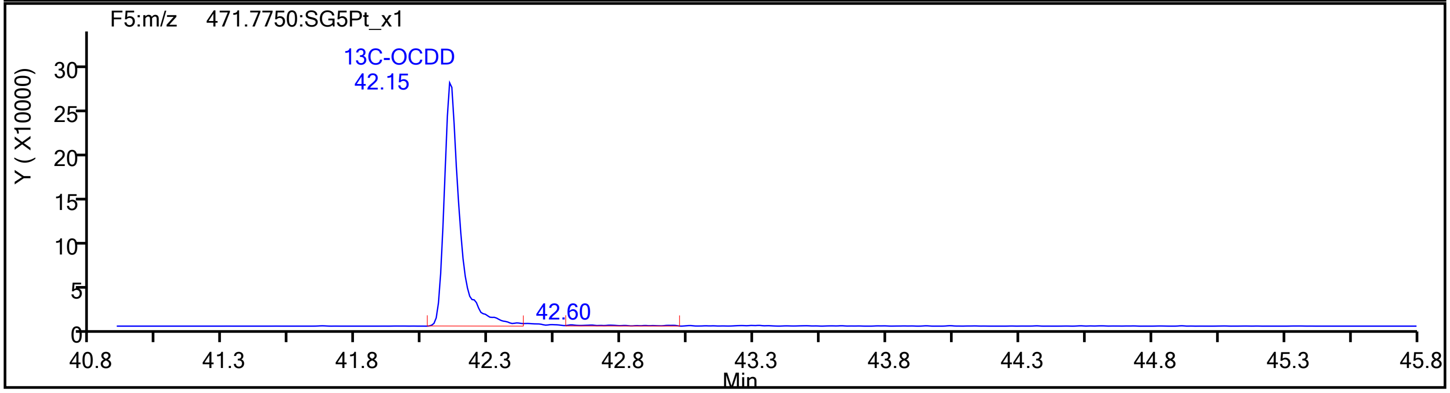

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OCDF

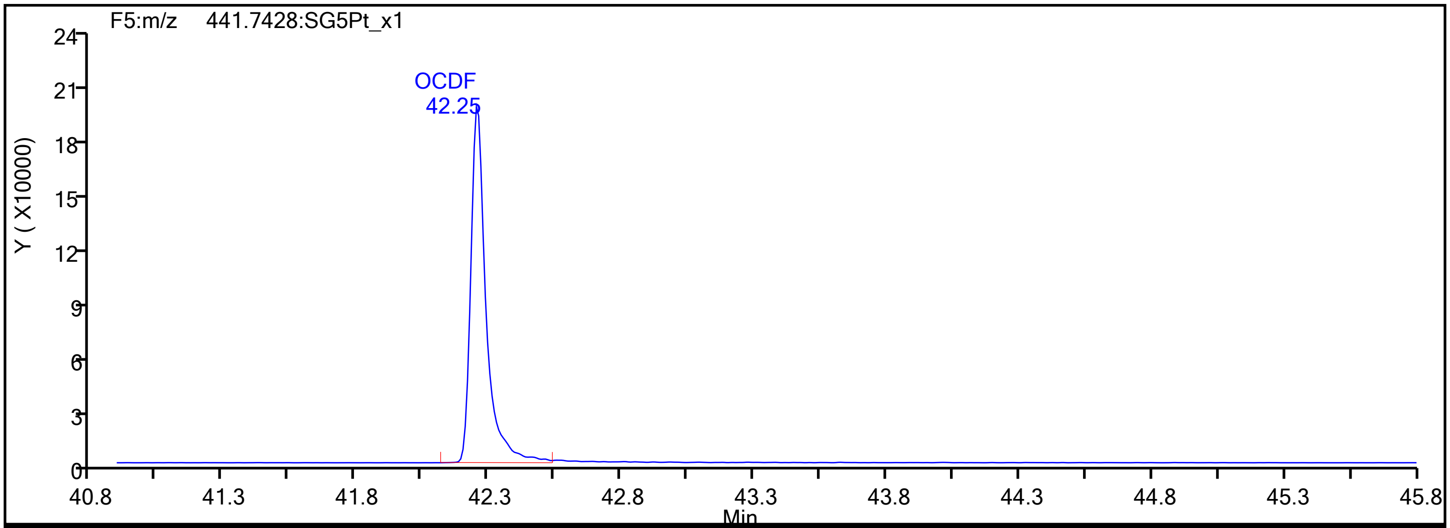

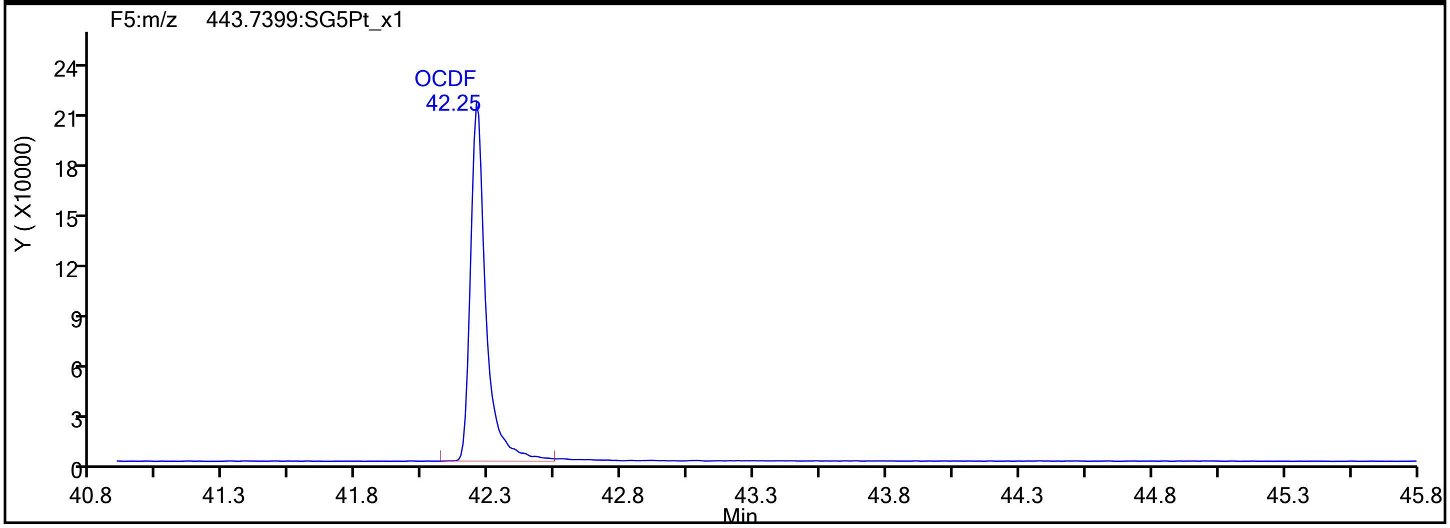

OCDF Interference Mass

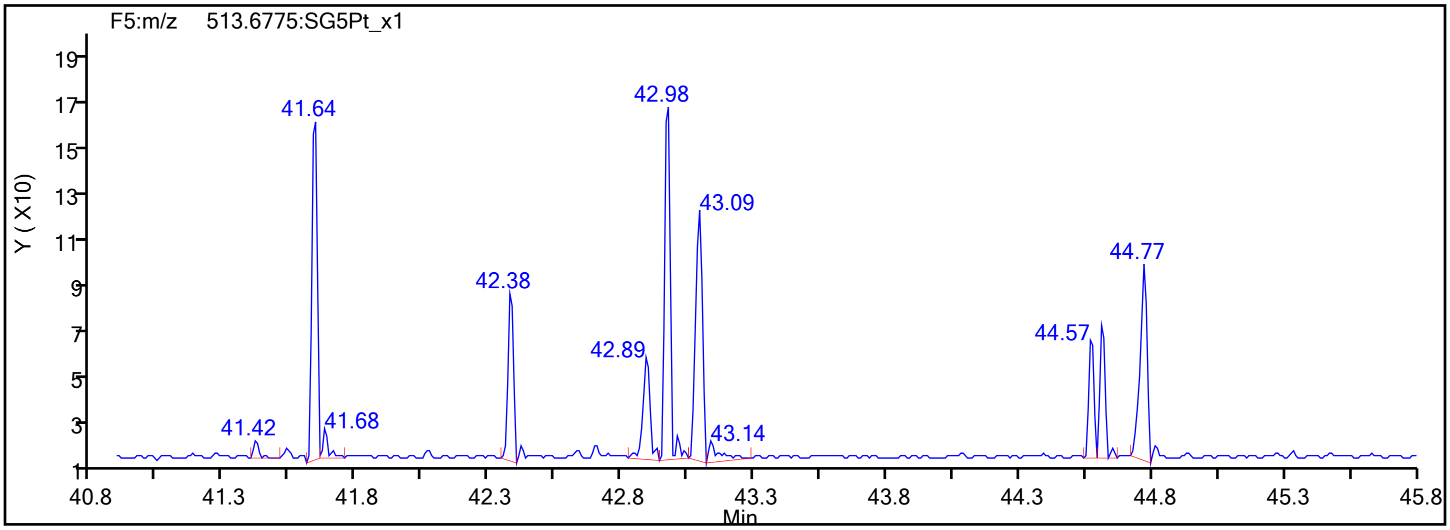

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OCDD

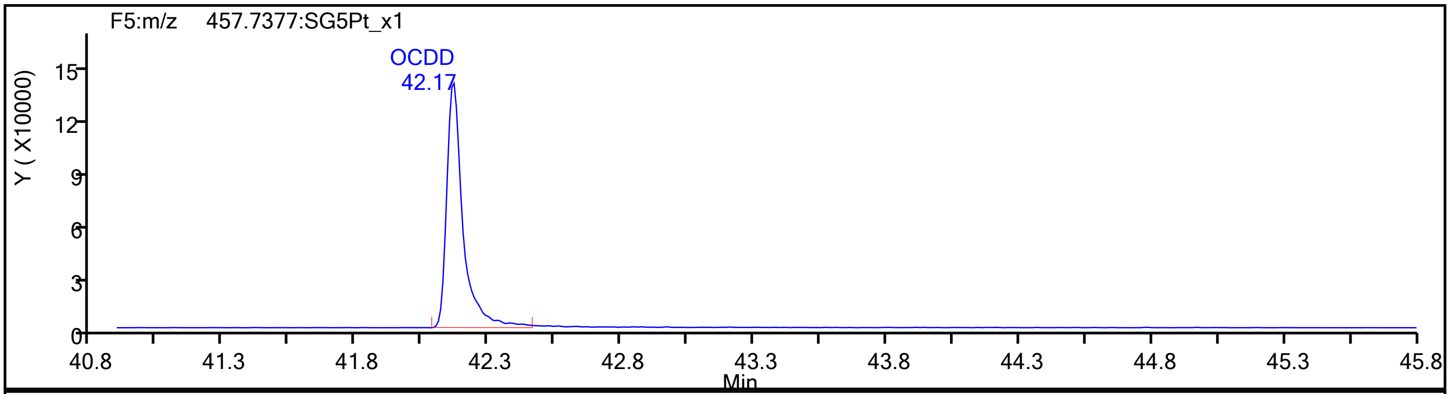

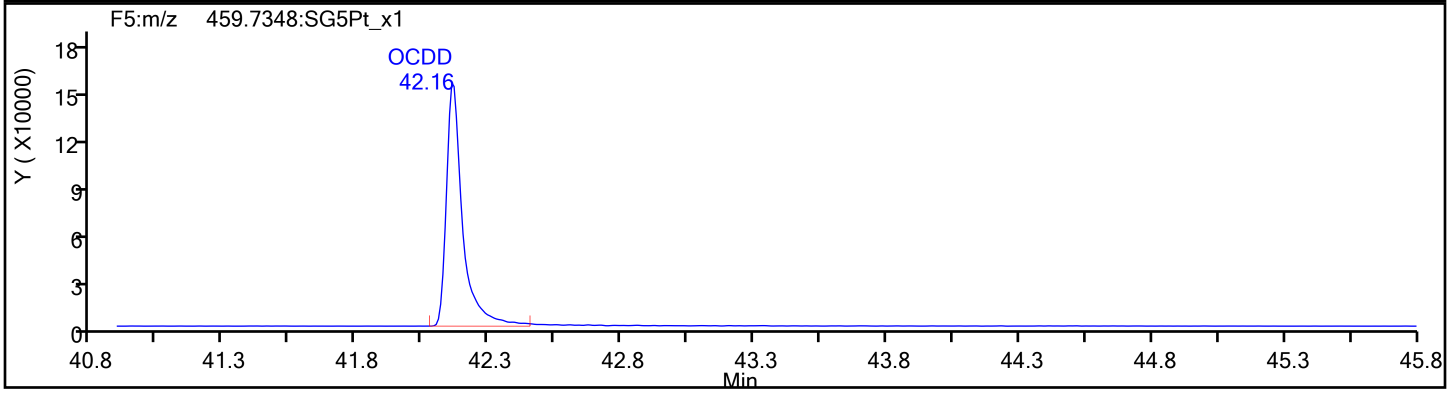

OCDD Standards

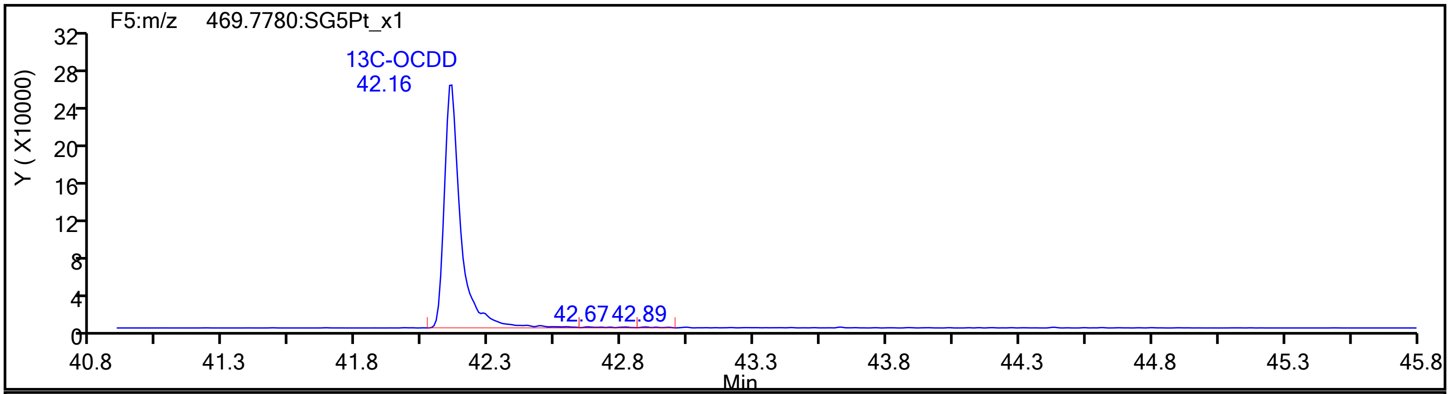

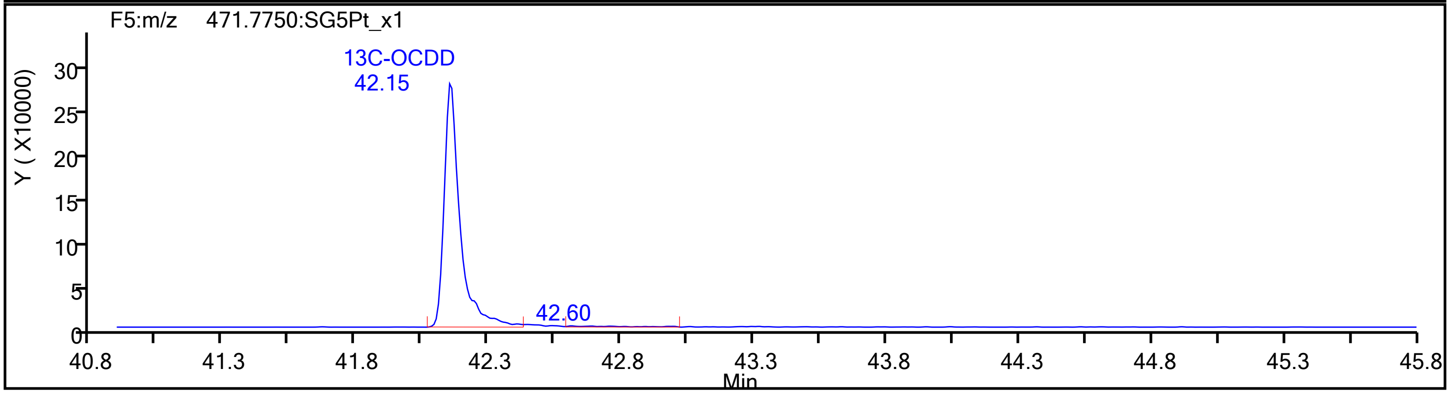

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Injection Date: 24-Nov-2020 07:33:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

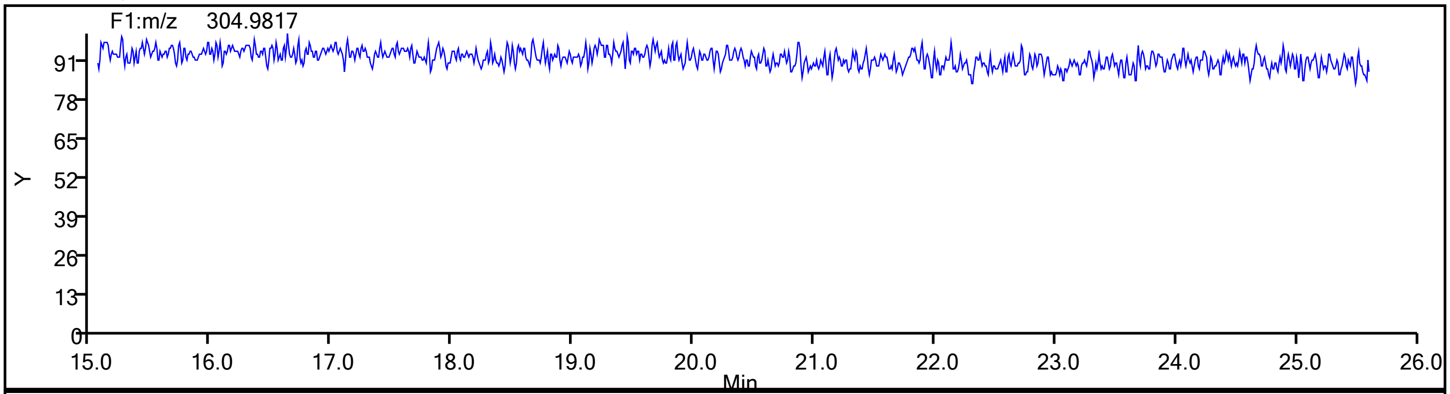

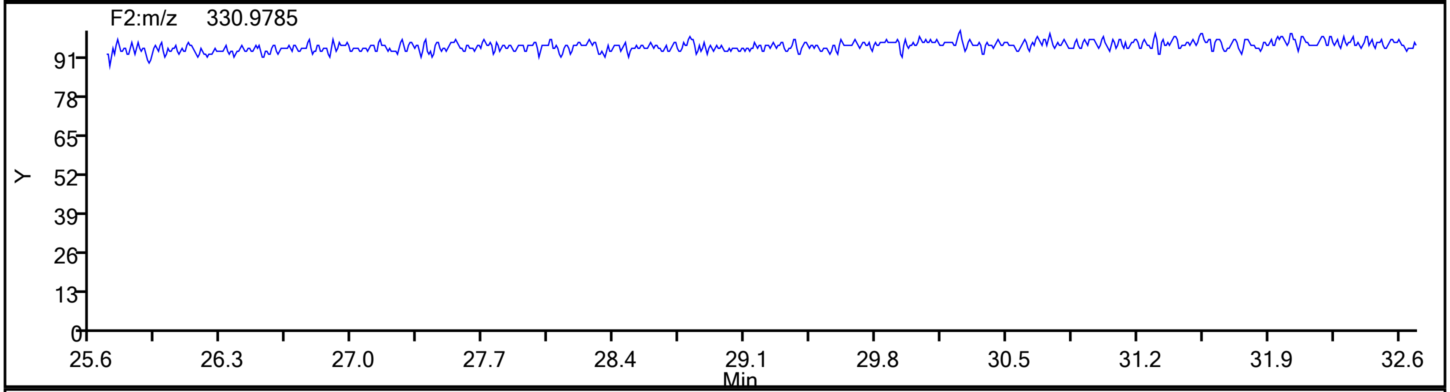

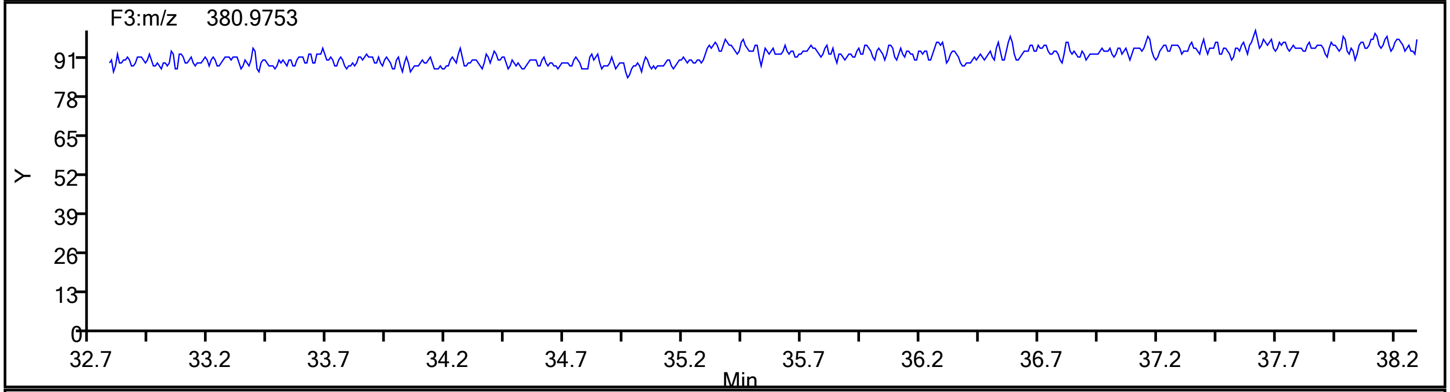

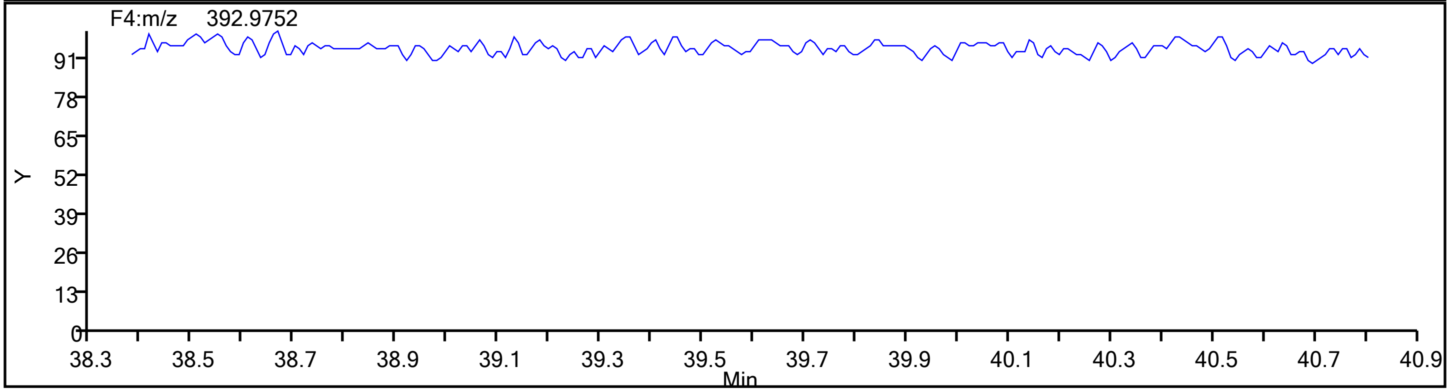

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

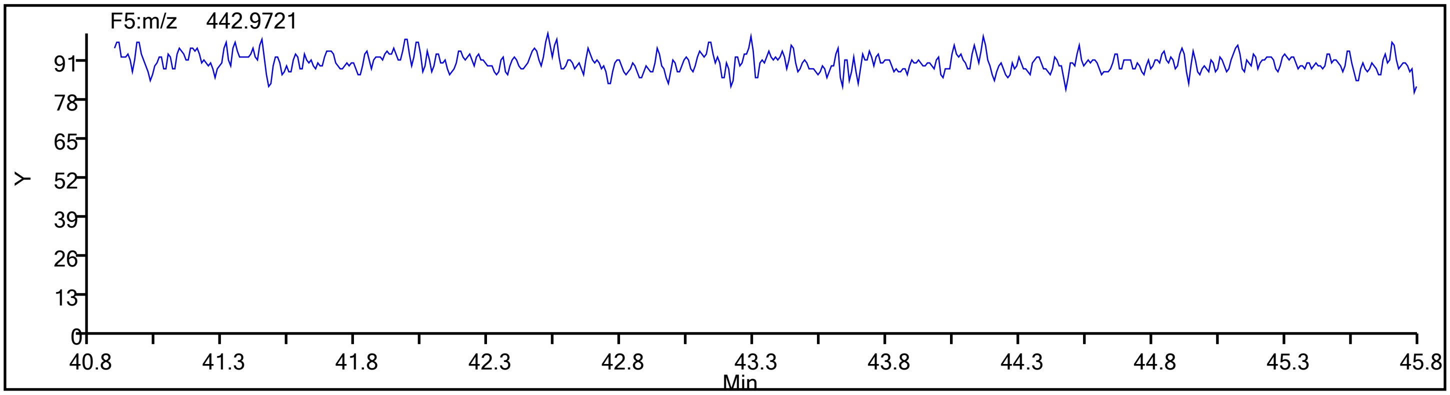

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 14:12:48 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 091720 WDM HRDXNCP_00042
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:03 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 15:04:13

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.203	49250871	0.76	1.3598					0.00	
2,3,7,8-TCDF	17.234	94619925	0.76	0.9077	84.7	84.7	0.3823	0.3823		
A Non-2,3,7,8-sub-TCDF	16.924						0.3823	0.3823		
S Total TCDF					84.7	84.7	0.3823	0.3823		
D 13C-2,3,7,8-TCDD	17.914	36781250	0.77	1.0536					0.00	
2,3,7,8-TCDD	17.929	38351069	0.76	1.0061	41.5	41.5	0.1547	0.1547		
A Non-2,3,7,8-sub-TCDD	17.370						0.1547	0.1547		
S Total TCDD					41.5	41.5	0.1547	0.1547		
A F1 PeCDFs	19.789						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.936	640258	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.187						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.073						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.739	284758	1.14	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.703	30782578	1.03	1.3603						
1,2,3,4,7,8,9-HpCDF	34.761	26162379	1.03	1.3207						
A Non-2,3,7,8-sub-HpCDF	34.232						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.481	23543258	1.03	0.9988						
A Non-2,3,7,8-sub-HpCDD	34.208						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.799	52685451	0.78							
1,3,6,8-TCDD	15.707	38886052	0.75							
2,3,4,7-TCDF	17.234	94619925	0.76							
1,2,3,7-TCDD	17.808	33726511	0.76							
1,2,3,9-TCDF	18.095	40906666	0.75							
1,2,3,9-TCDD	18.095	39676870	0.77							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.033	15863837								
1,2,8,9-TCDF	19.048	42747067	0.76							
1,3,4,6,8-PeCDF	19.305	49971187	1.57							
1,2,4,7,9-PeCDD	21.080	32106370	1.58							
1,2,3,8,9-PeCDD	25.294	29558915	1.56							
1,2,3,8,9-PeCDF	25.525	32468714	1.55							
1,2,3,4,6,8-HxCDF	27.784	30591446	1.24							
1,2,4,6,7,9-HxCDD	29.368	25005964	1.23							
1,2,3,4,6,7-HxCDD	32.043	24127463	1.23							
1,2,3,4,8,9-HxCDF	32.363	27025417	1.24							
1,2,3,4,6,7,9-HpCDD	33.934	26010589	1.01							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	17-Sep-2020 14:12:48	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM 091720 WDM HRDXNCP_00042				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		

Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	18-Sep-2020 10:38:03	Calib Date:	17-Sep-2020 19:09:42
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		

Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR
Process Host:	CTX1014		

First Level Reviewer: shardaa Date: 17-Sep-2020 15:04:13

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	1.000	21193368	5354066	6881	17202	778		
317.9389	17.203	17.203	0	1.000	28057503	7203342	4698	11745	1533	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.234	17.218	1	1.002	40861480	9454804	17414	43535	543		
305.8987	17.234	17.218	1	1.002	53758445	12423371	26167	65417	475	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.924						17414	43535			
305.8987	16.924						26167	65417			
13C-2,3,7,8-TCDD											
331.9368	17.914	17.914	0	1.000	16059124	3776944	4960	12400	761		
333.9339	17.899	17.914	-1	1.000	20722126	4827538	3609	9022	1338	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	16551747	4039033	6220	15550	649		
321.8936	17.929	17.920	1	1.001	21799322	5268055	7172	17930	735	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.370						6220	15550			
321.8936	17.370						7172	17930			
A F1 PeCDFs											
339.8597	19.789						1673	4182			
341.8567	19.789						1070	2675			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	20.834	22.936	-126	1.000	59520	9829	2726	6815	4		
341.8567	20.821	22.936	-127	1.000	62266	9241	2187	5467	4	0.96(1.32-1.78)	
339.8597	21.666	22.936	-76	1.000	76538	13329	2726	6815	5		
341.8567	21.666	22.936	-76	1.000	71982	10240	2187	5467	5	1.06(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	22.239	22.936	-42	1.000	149800	18486	2726	6815	7		
341.8567	22.226	22.936	-43	1.000	104574	15321	2187	5467	7	1.43(1.32-1.78)	
339.8597	22.798	22.936	-8	1.000	96518	14757	2726	6815	5		
341.8567	22.771	22.936	-10	1.000	65529	9587	2187	5467	4	1.47(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.187						3279	8197			
357.8516	23.187						2096	5240			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.073						4012	10030			
375.8178	30.073						3098	7745			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.872	30.739	8	1.000	151698	26301	3698	9245	7		
391.8127	30.885	30.739	9	1.000	133060	26685	3064	7660	9	1.14(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.703	33.694	1	1.000	15628584	4803341	15156	37890	317		
409.7789	33.691	33.694	0	1.000	15153994	4733366	15833	39582	299	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	13275657	3644471	15156	37890	240		
409.7789	34.761	34.763	0	1.000	12886722	3595180	15833	39582	227	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.232						15156	37890			
409.7789	34.232						15833	39582			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	11962711	3539015	11522	28805	307		
425.7737	34.481	34.474	0	1.000	11580547	3380922	10862	27155	311	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.208						11522	28805			
425.7737	34.208						10862	27155			
1,3,6,8-TCDF											
303.9016	14.799	14.799	0		23019498	7225498	17414	43535	415		
305.8987	14.799	14.799	0		29665953	9356851	26167	65417	358	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.707	15.707	0		16676016	4870129	6220	15550	783		
321.8936	15.707	15.707	0		22210036	6470444	7172	17930	902	0.75(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.234	17.234	0		40861480	9454804	17414	43535	543		
305.8987	17.234	17.234	0		53758445	12423371	26167	65417	475	0.76(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.808	17.808	0		14613924	3629930	6220	15550	584		
321.8936	17.808	17.808	0		19112587	4695816	7172	17930	655	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.095	18.095	0		17582733	4186088	17414	43535	240		
305.8987	18.095	18.095	0		23323933	5427889	26167	65417	207	0.75(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.095	18.095	0		17277087	4050603	6220	15550	651		
321.8936	18.095	18.095	0		22399783	5245387	7172	17930	731	0.77(0.65-0.89)	

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	19.033	19.033	0		15863837	3560576	6220	15550	572		
1,2,8,9-TCDF											
303.9016	19.048	19.048	0		18481374	4024176	17414	43535	231		
305.8987	19.033	19.048	-1		24265693	5222787	26167	65417	200	0.76(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.305	19.305	0		30553599	6679807	1673	4182	3993		
341.8567	19.305	19.305	0		19417588	4276637	1070	2675	3997	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.080	21.080	0		19679913	3485372	3279	8197	1063		
357.8516	21.066	21.080	-1		12426457	2201634	2096	5240	1050	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.294	25.294	0		18021612	2589278	3279	8197	790		
357.8516	25.294	25.294	0		11537303	1672342	2096	5240	798	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.525	25.525	0		19715754	2822450	2726	6815	1035		
341.8567	25.512	25.525	-1		12752960	1811480	2187	5467	828	1.55(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.784	27.784	0		16954112	2203906	4012	10030	549		
375.8178	27.771	27.784	-1		13637334	1756070	3098	7745	567	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.368	29.368	0		13810229	1614262	3698	9245	437		
391.8127	29.354	29.368	-1		11195735	1300766	3064	7660	425	1.23(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.043	32.043	0		13319375	3548465	3698	9245	960		
391.8127	32.043	32.043	0		10808088	2862819	3064	7660	934	1.23(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.363	32.363	0		14977762	4045058	4012	10030	1008		
375.8178	32.363	32.363	0		12047655	3303867	3098	7745	1066	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.934	33.934	0		13068820	4207944	11522	28805	365		
425.7737	33.934	33.934	0		12941769	4085568	10862	27155	376	1.01(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 14:12:48	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 22.936

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915				
2,3,4,7,8-PeCDF	0.951				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.834	59520	9829	62266	9241		0.96	R
21.666	76538	13329	71982	10240		1.06	R
22.239	149800	18486	104574	15321		1.43	
22.798	96518	14757	65529	9587		1.47	
Signal Totals:							
	382376	56401	304351	44389			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	686727	100790				1.26	RQ
	640258	96249					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (686727 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (640258 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Sep-2020 14:12:48 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 413246 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 30.739

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.001				
1,2,3,6,7,8-HxCDD	0.890				
1,2,3,7,8,9-HxCDD	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.872	151698	26301	133060	26685		1.14	
Signal Totals:							
	151698	26301	133060	26685			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	284758	52986				1.14	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (284758 * 0.0) / (0 * 0.000)

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

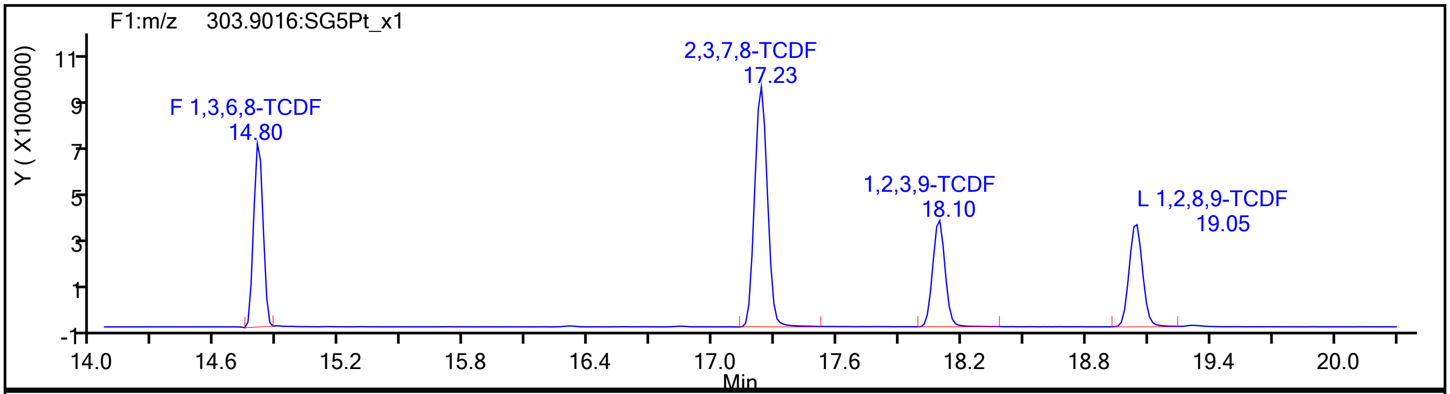

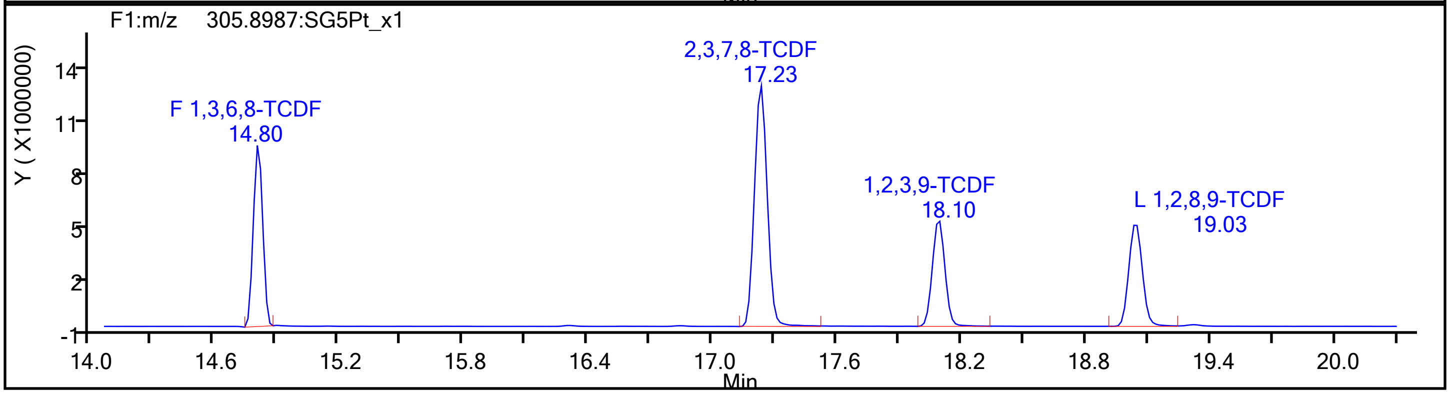

TCDF Standards

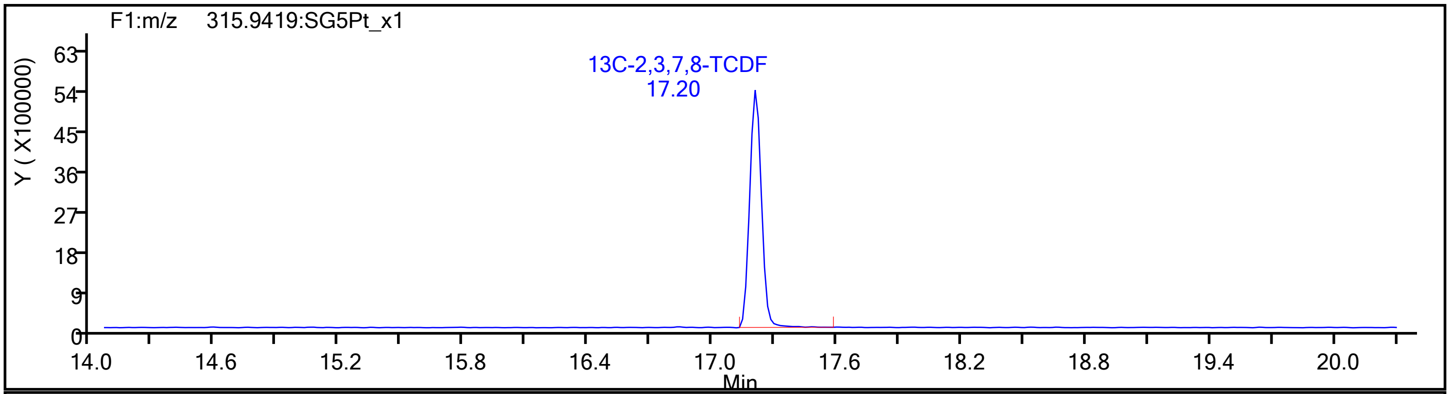

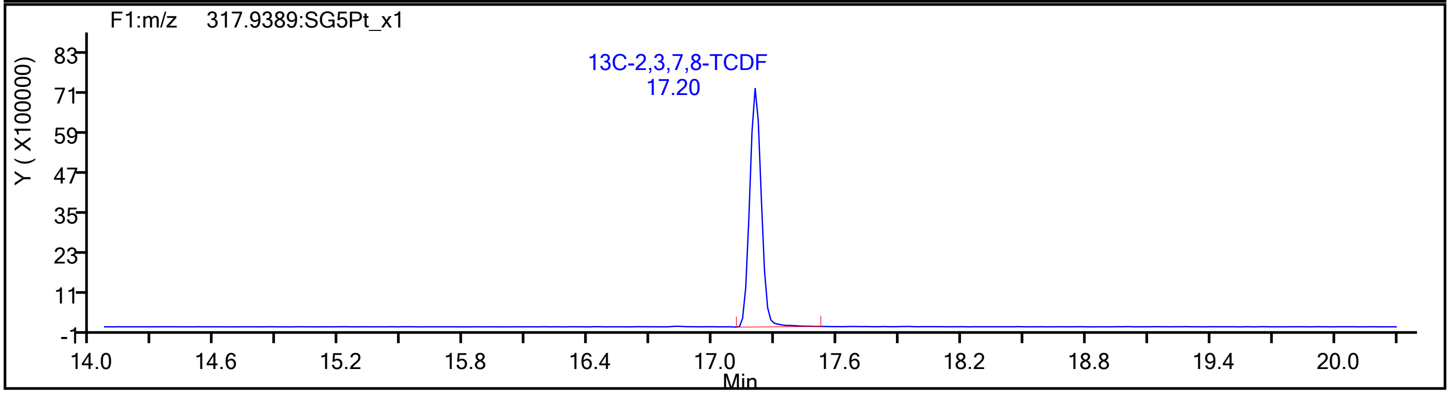

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

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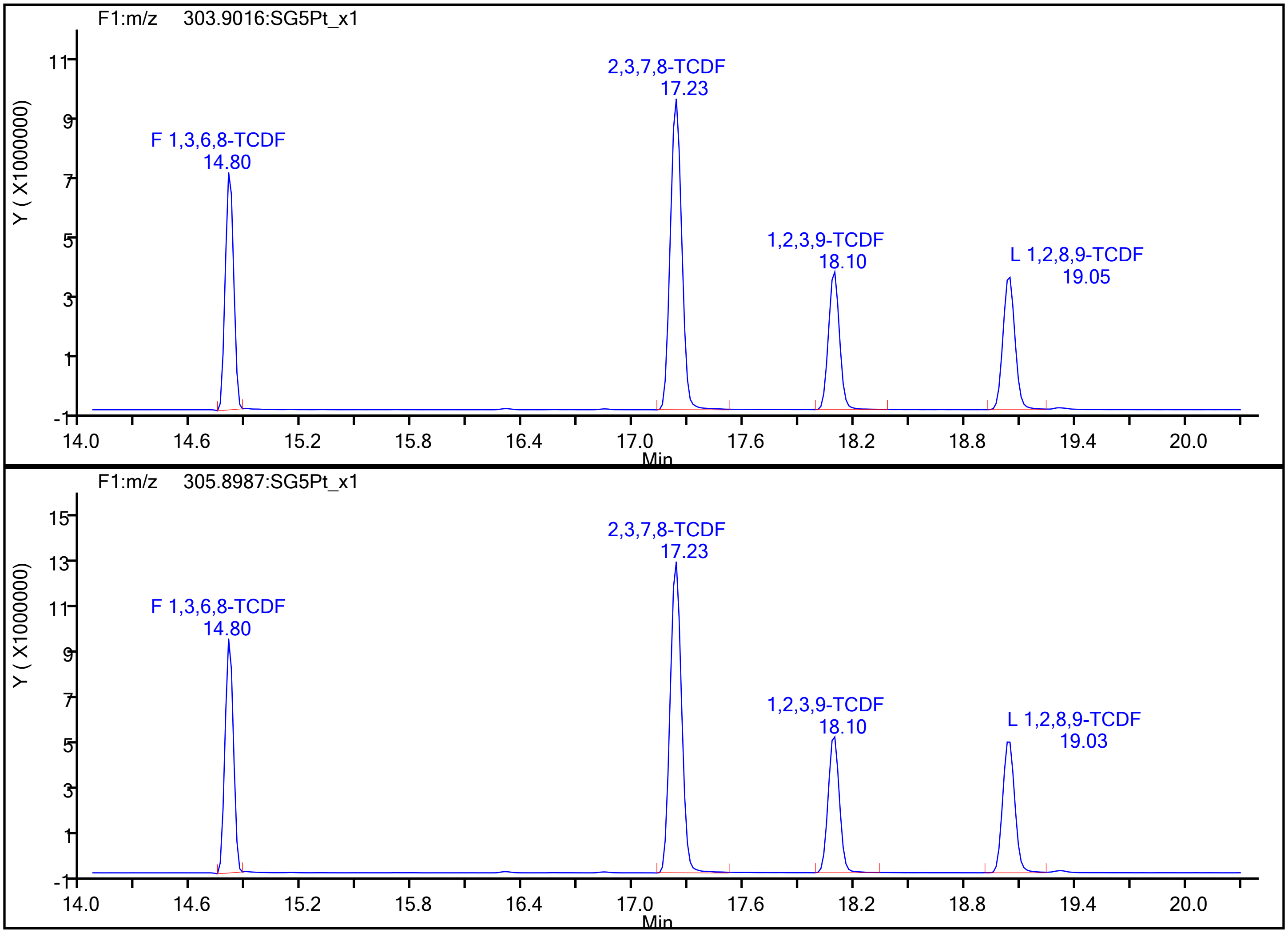

TCDF Interference Mass

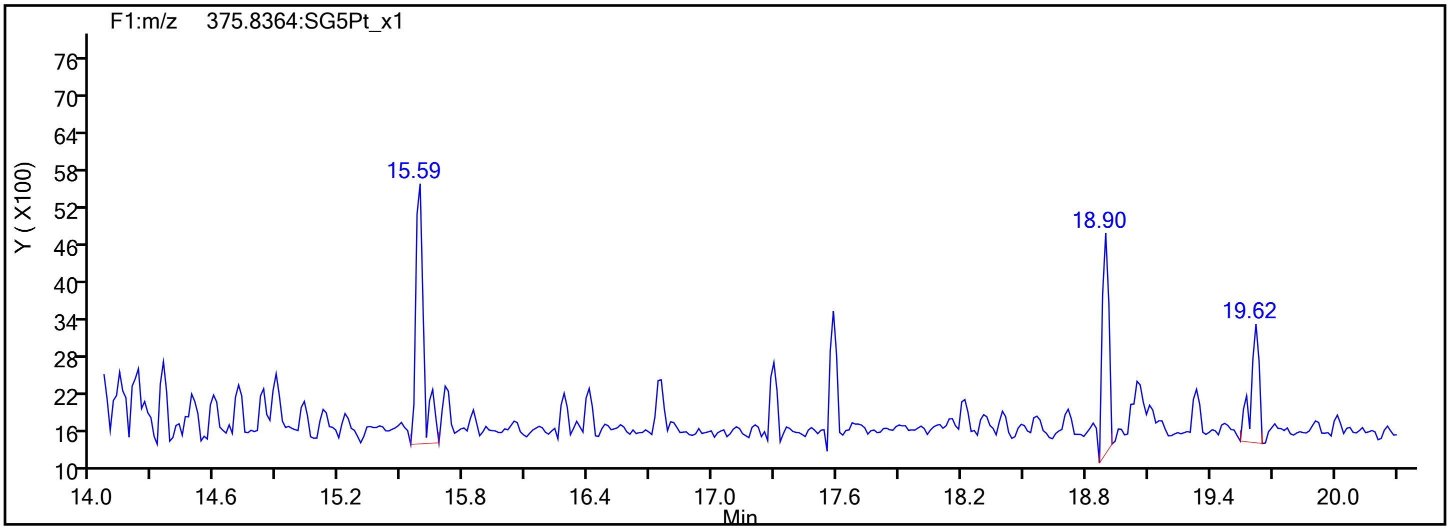

Report Date: 18-Sep-2020 10:38:07
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 14:12:48
Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Column Dia: 0.32 mm

TCDD

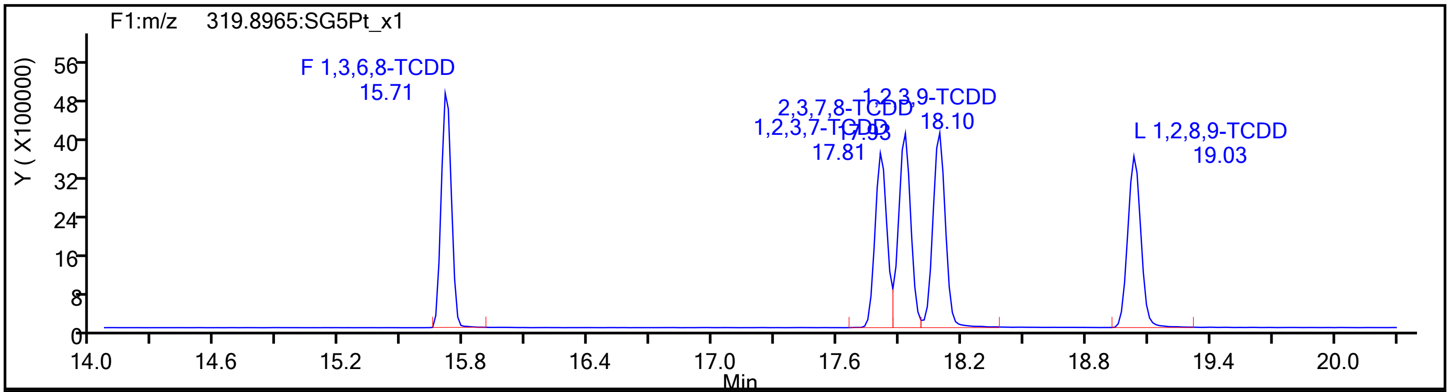

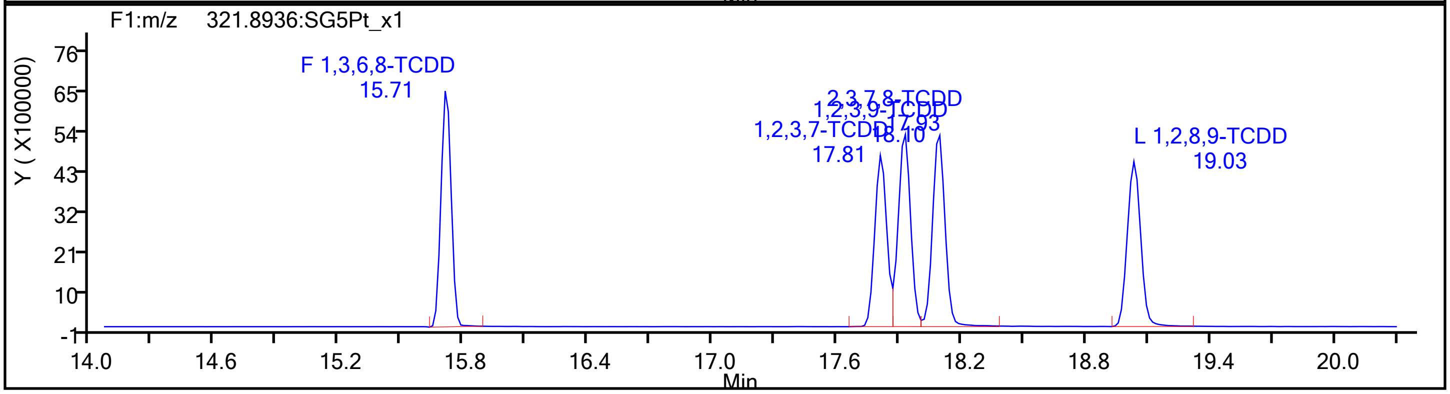

TCDD Standards

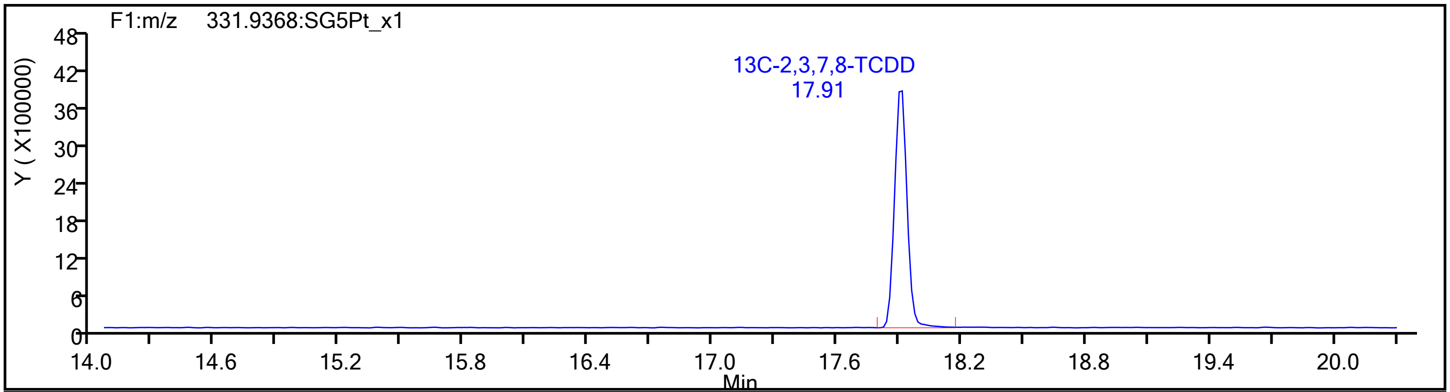

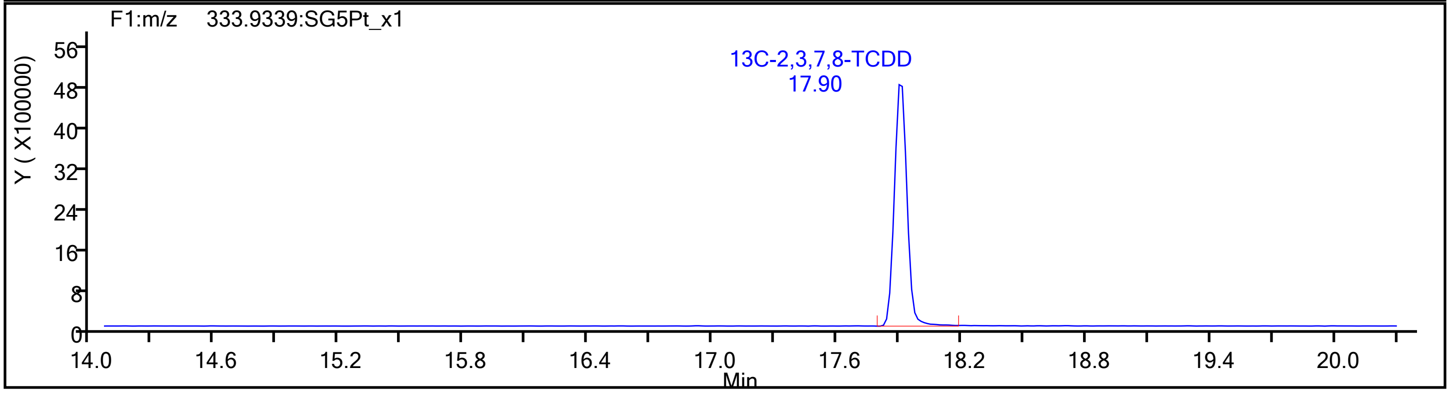

Report Date: 18-Sep-2020 10:38:07   Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

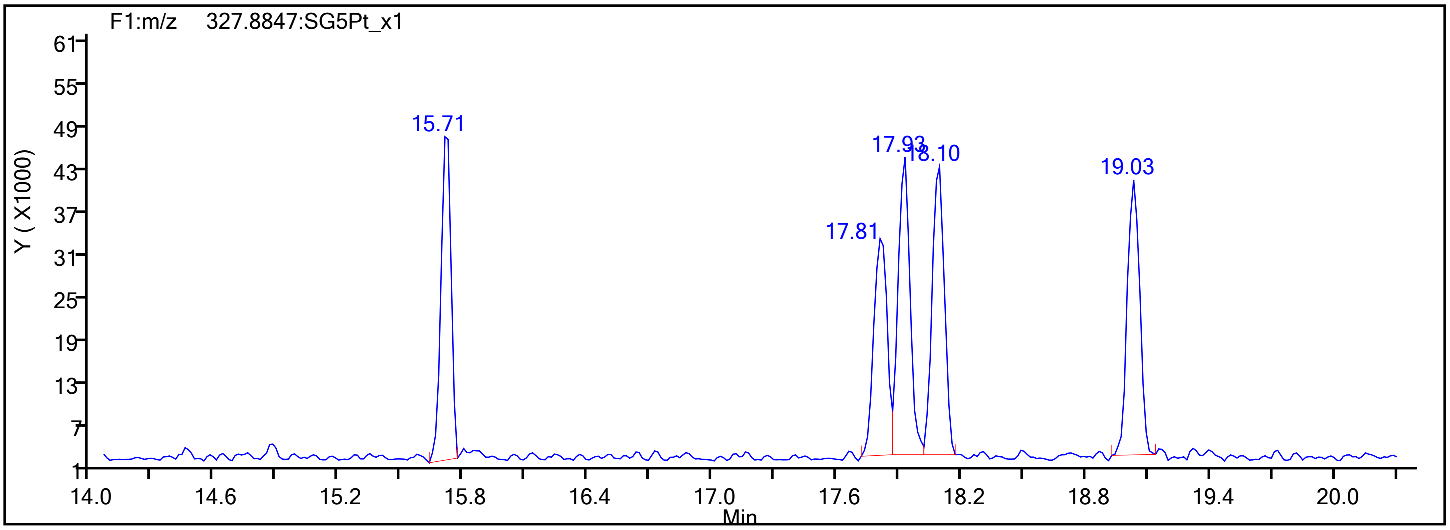

37Cl4-TCDD Standards

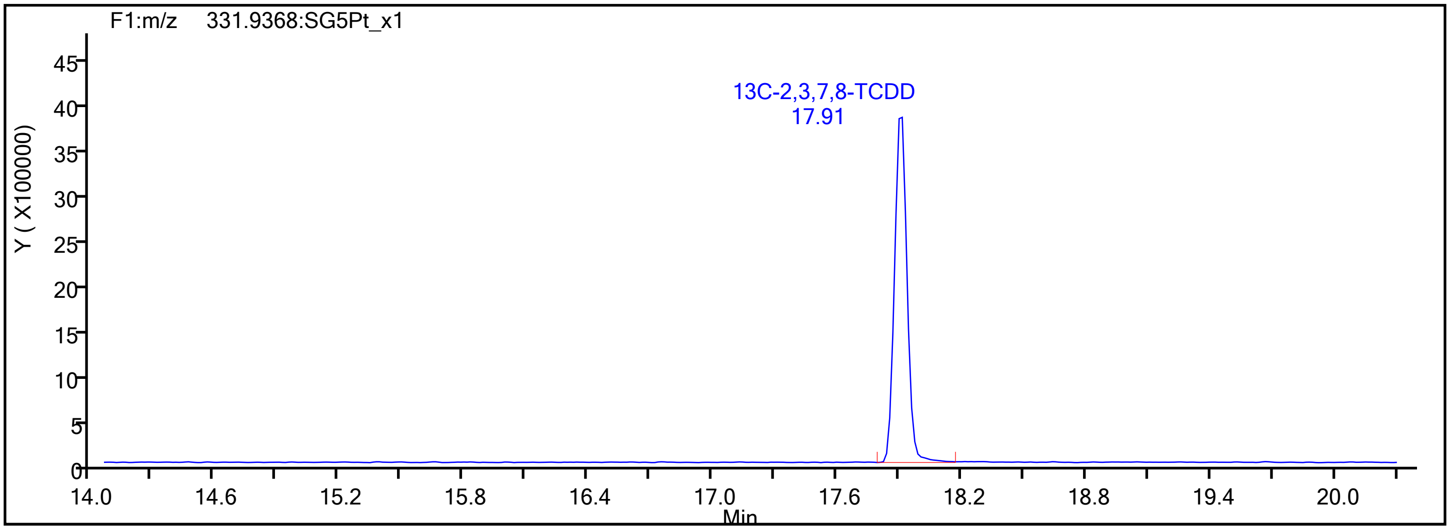

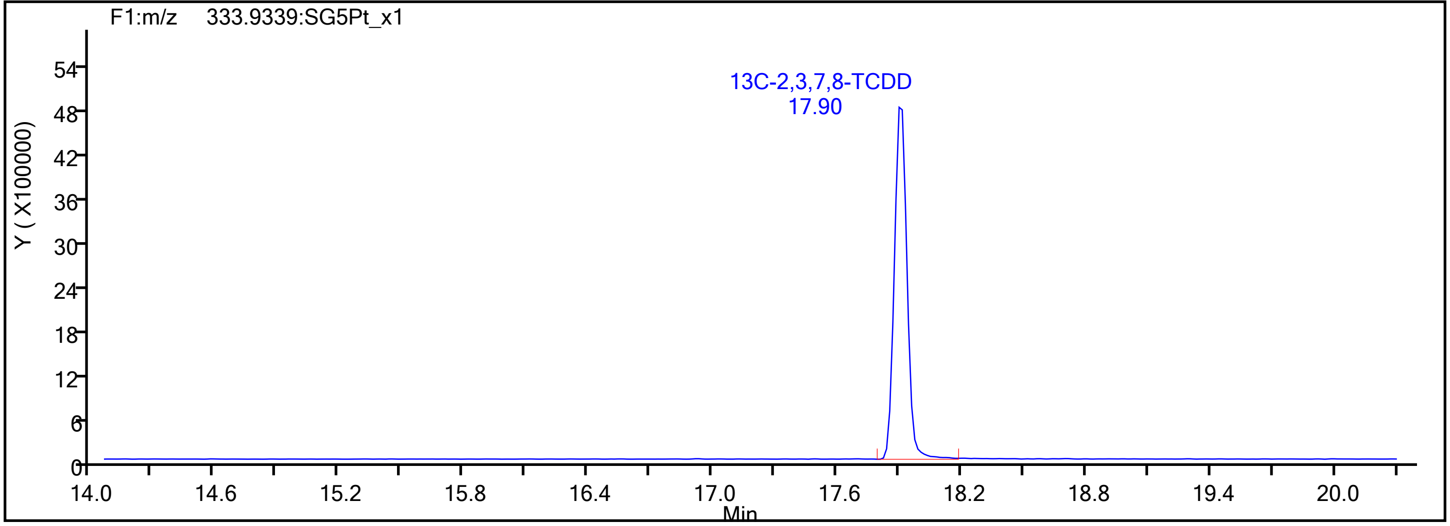

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 14:12:48

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

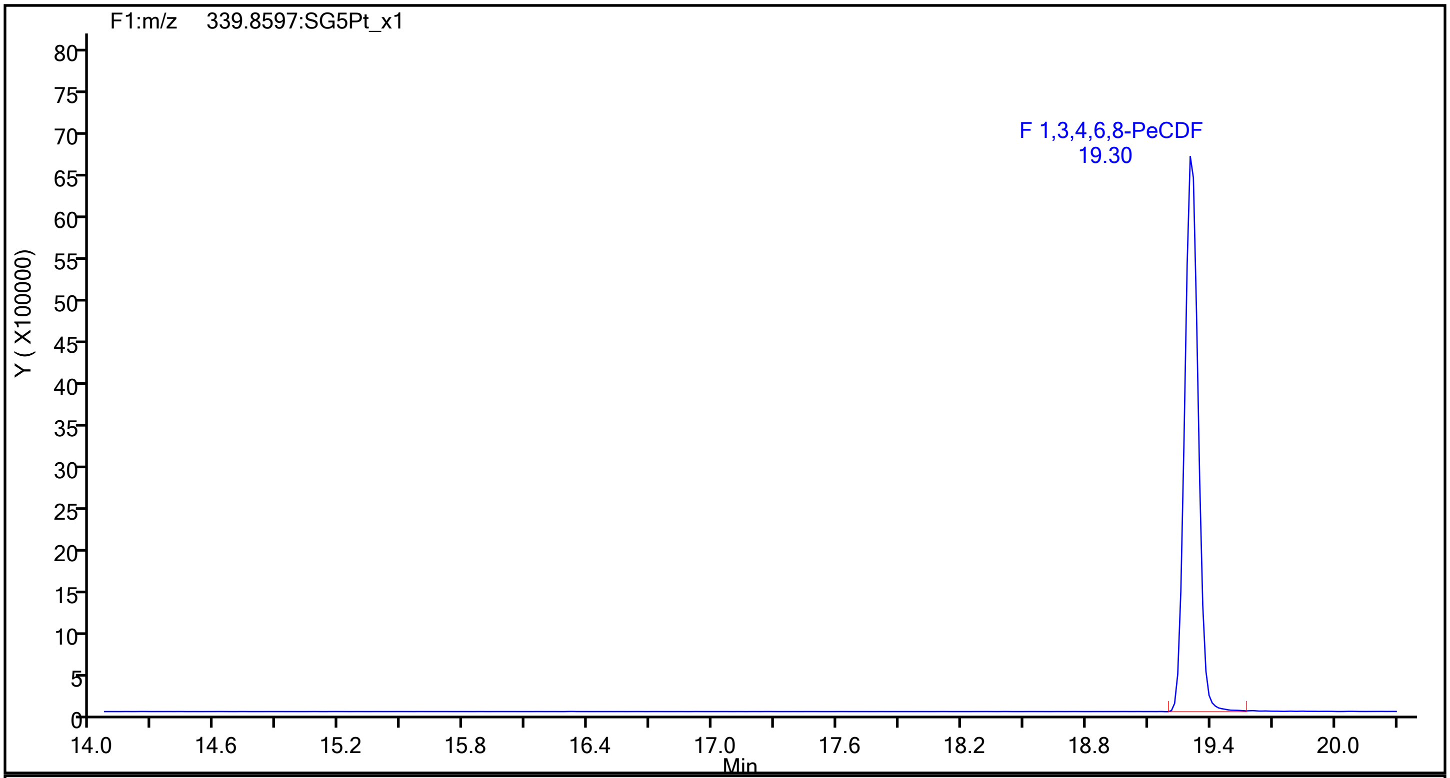

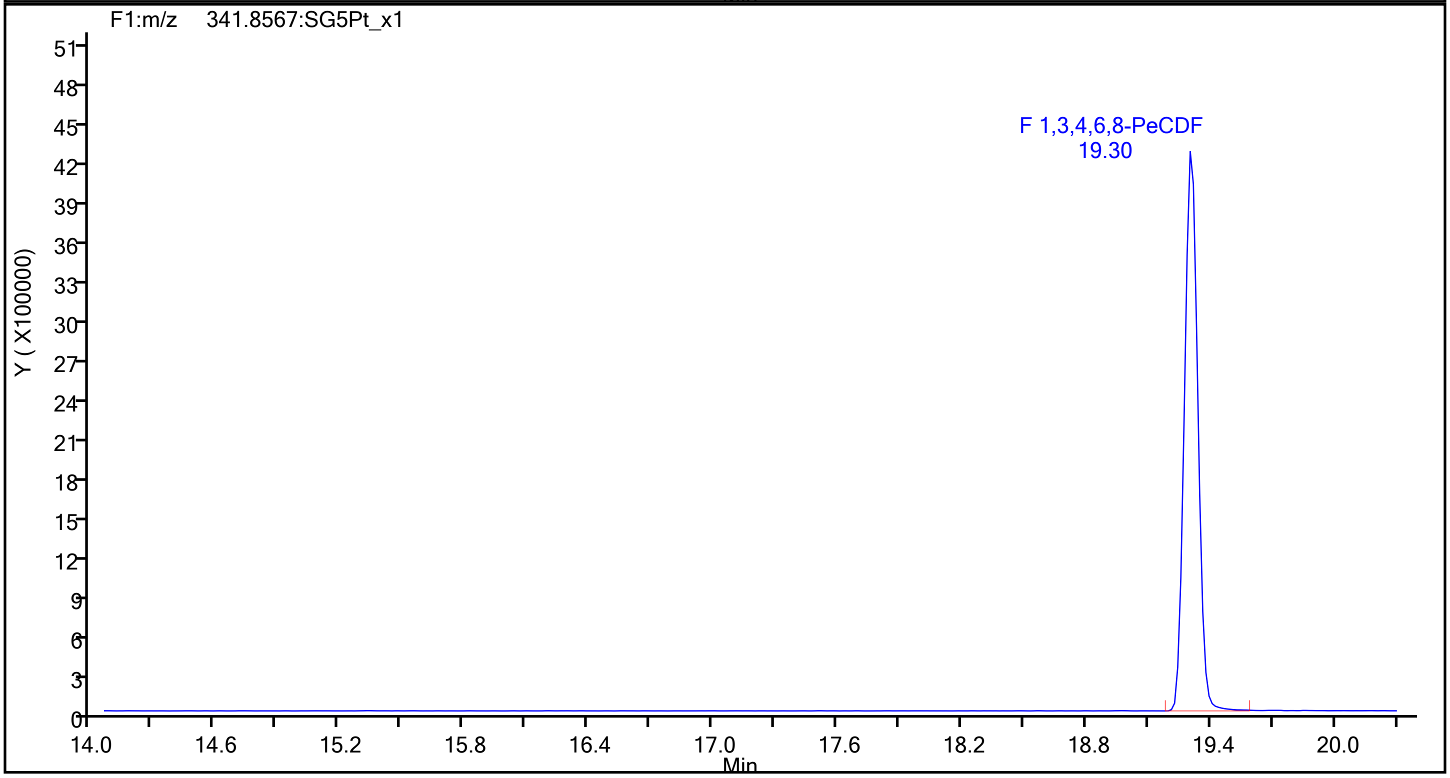

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: AJS
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Client ID:
Worklist#: 413246
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

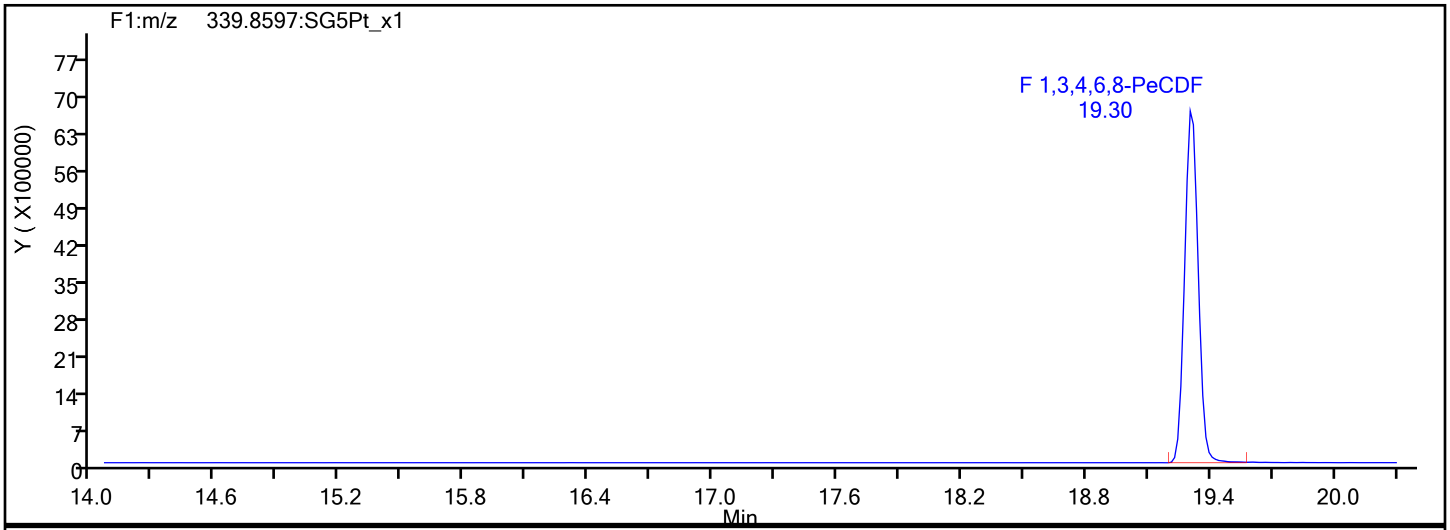

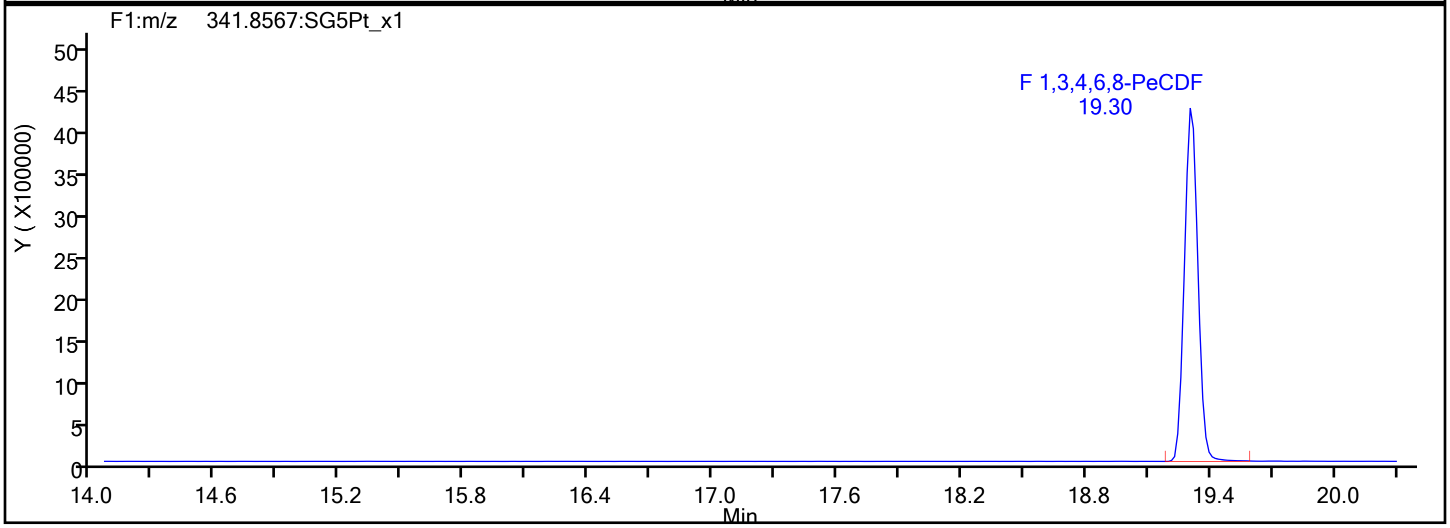

F1 PeCDFs Interference Mass

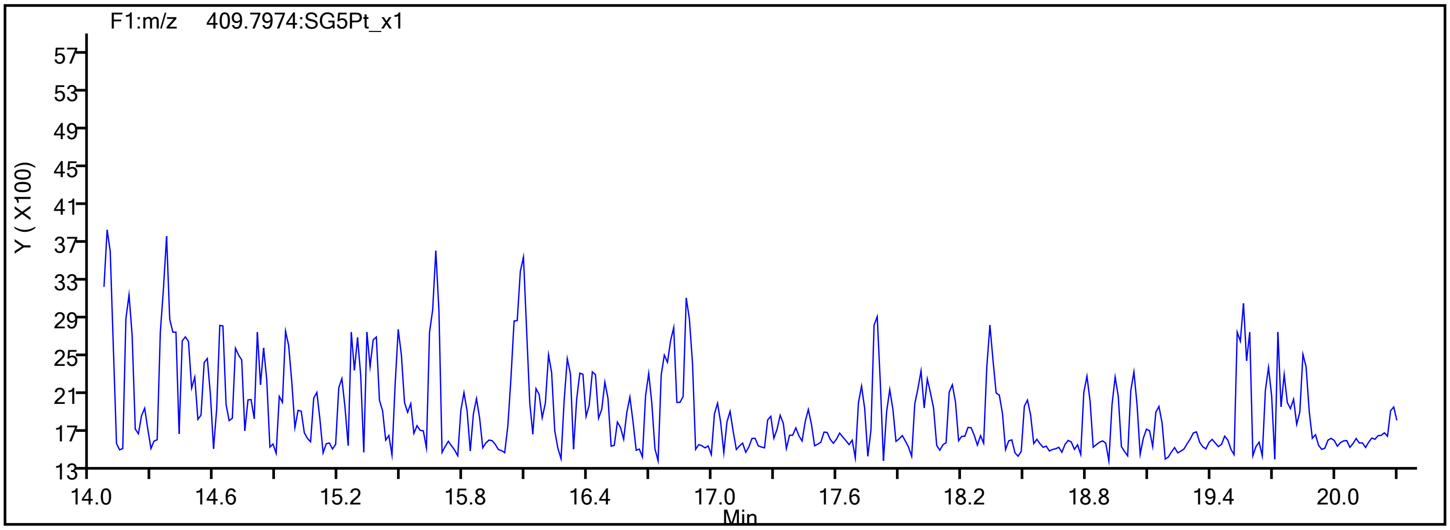

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Eurofins TestAmerica, Sacramento

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PeCDF

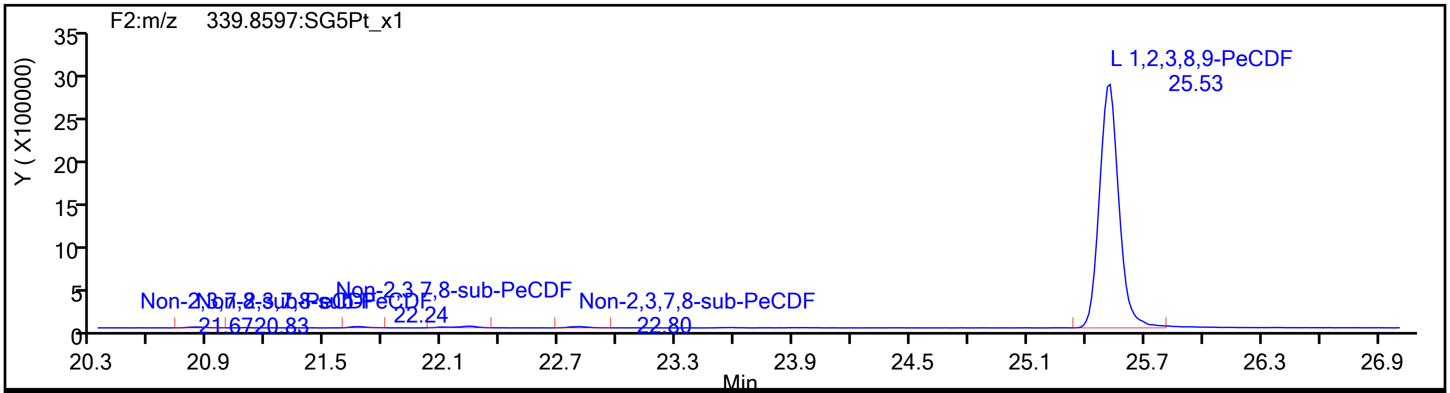

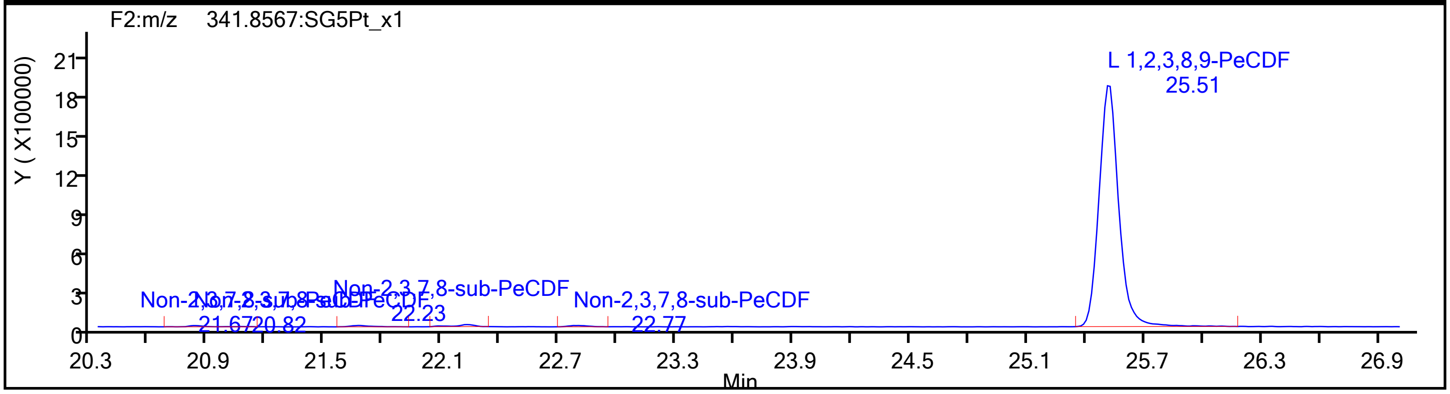

PeCDF Standards

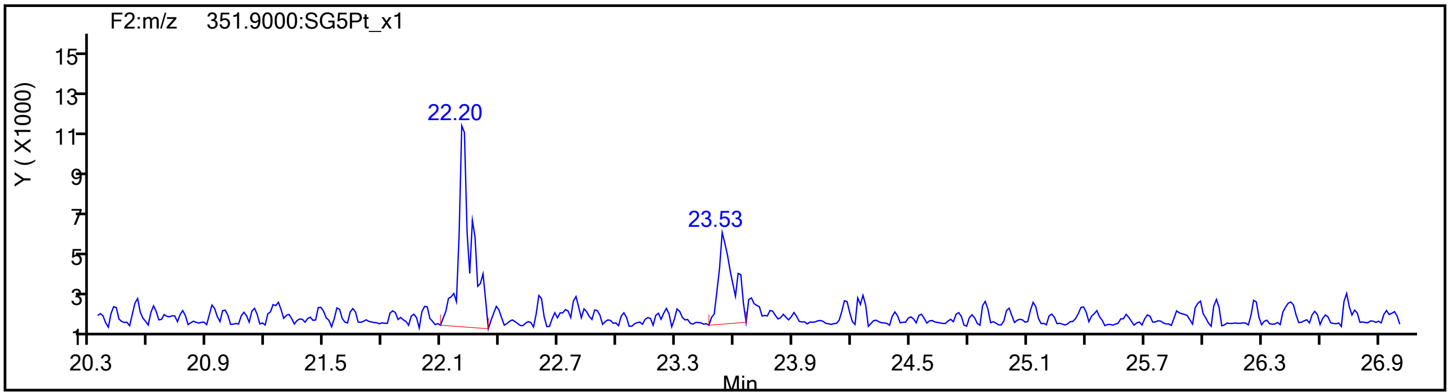

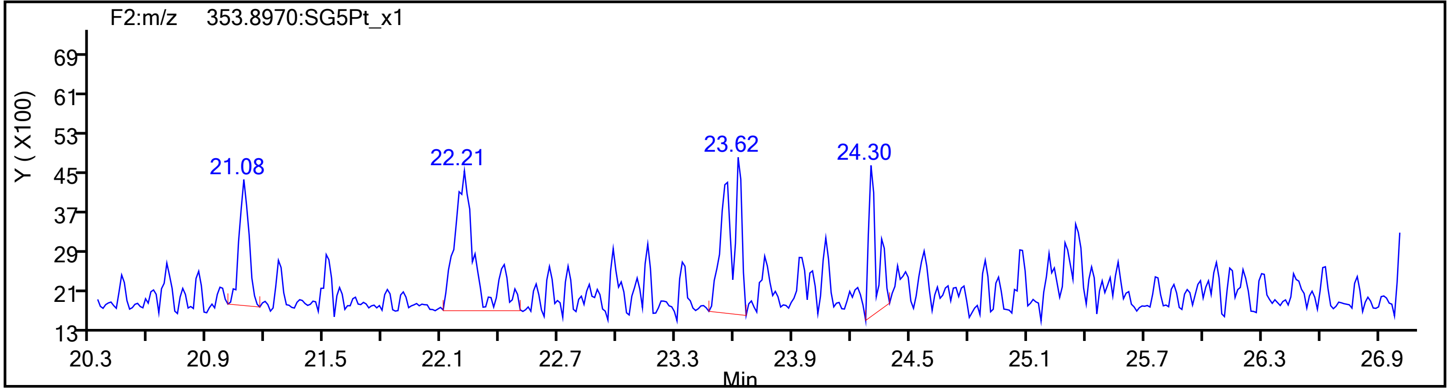

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Eurofins TestAmerica, Sacramento

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Client ID:			
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PeCDF

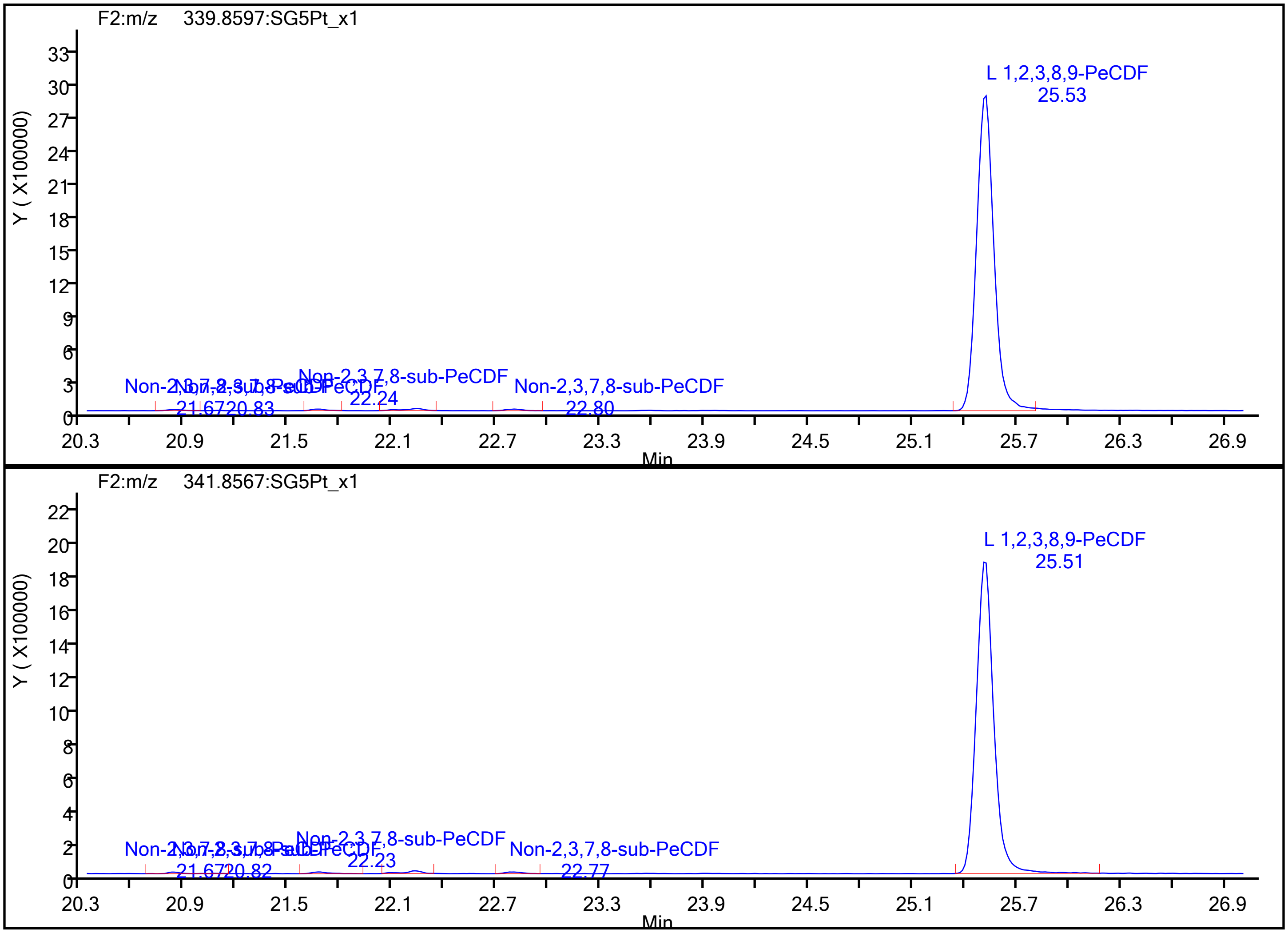

PeCDF Interference Mass

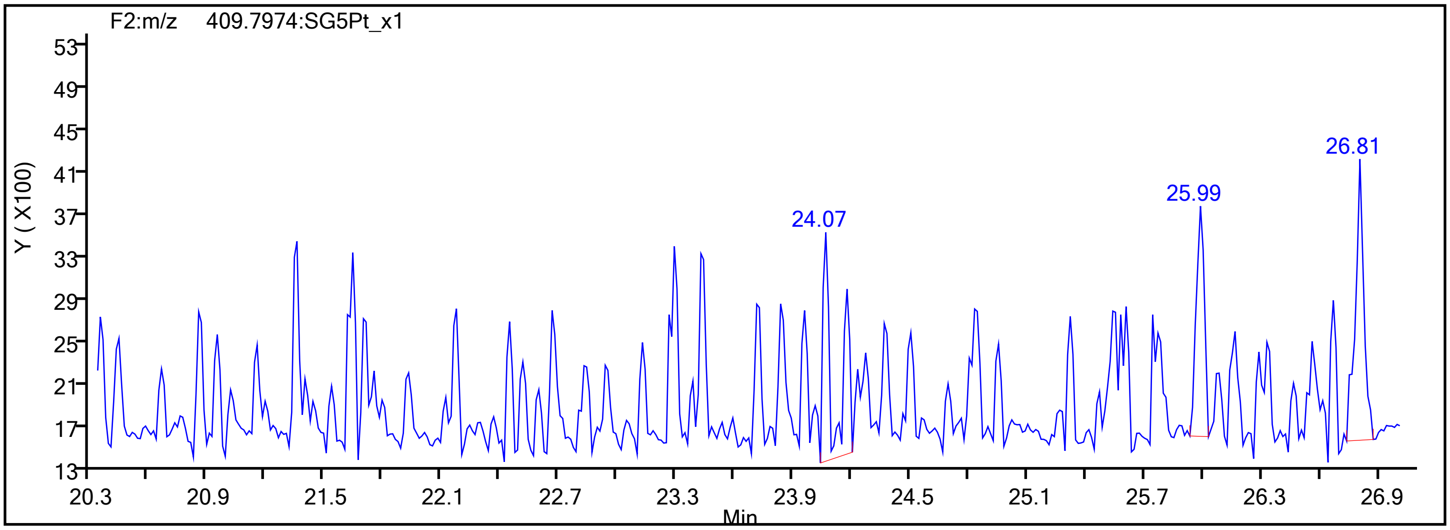

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 1

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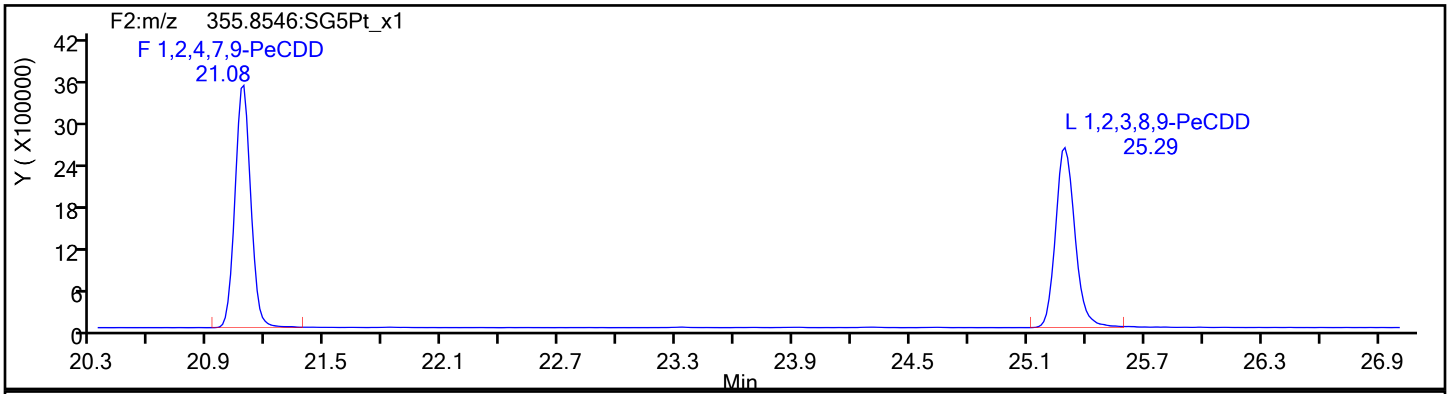

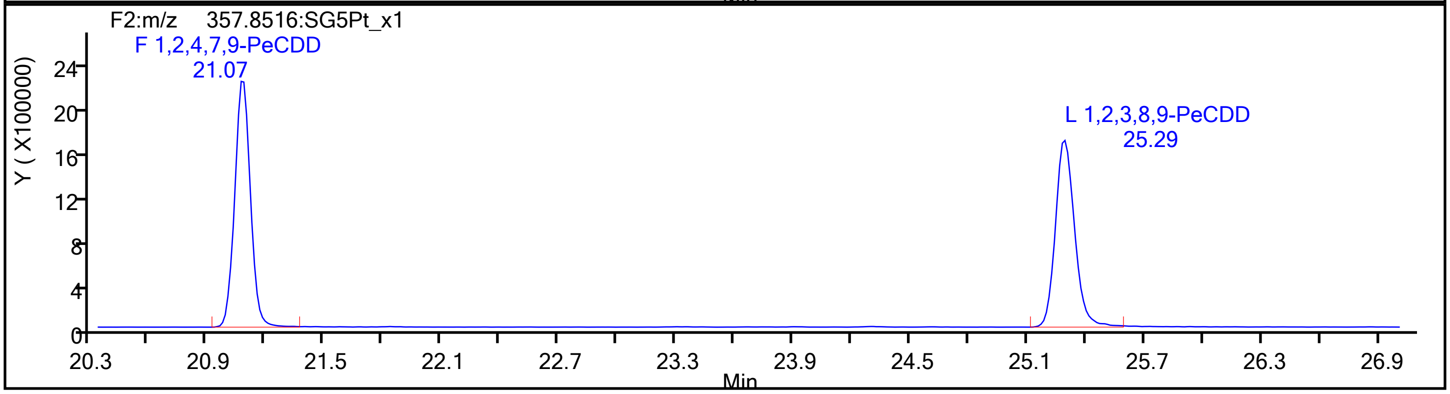

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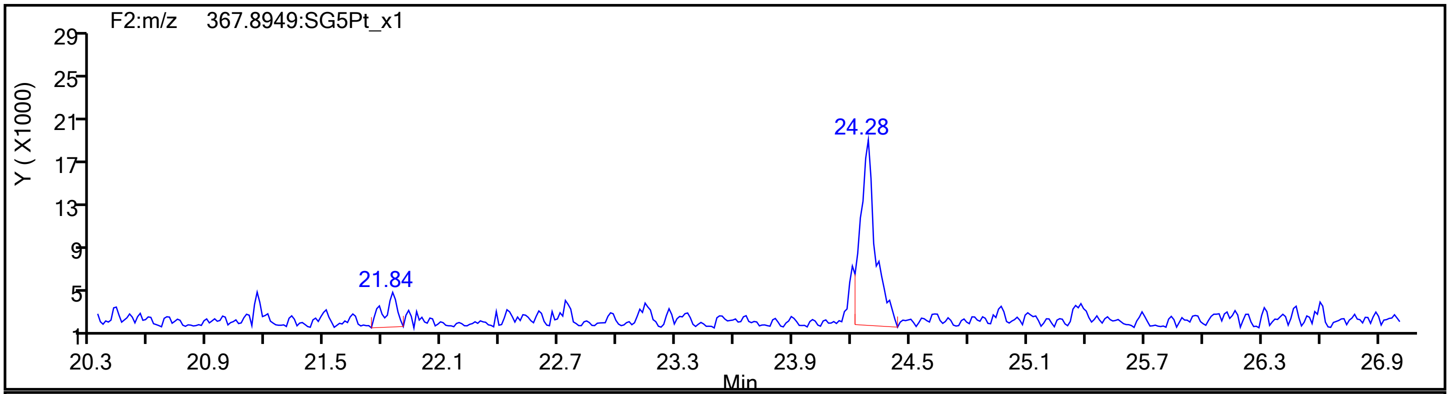

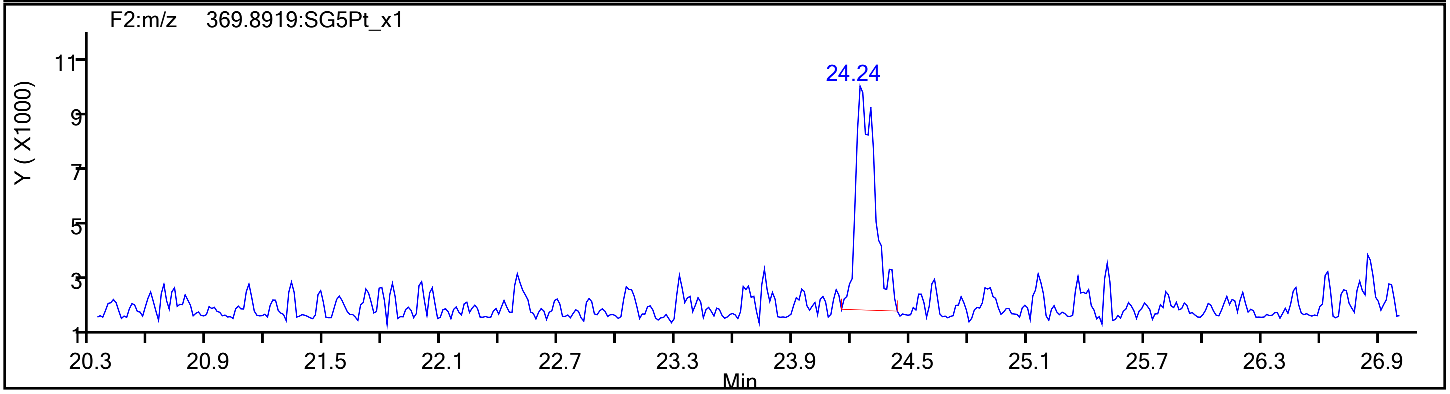

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Client ID:
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Column Dia: 0.32 mm

HxCDF

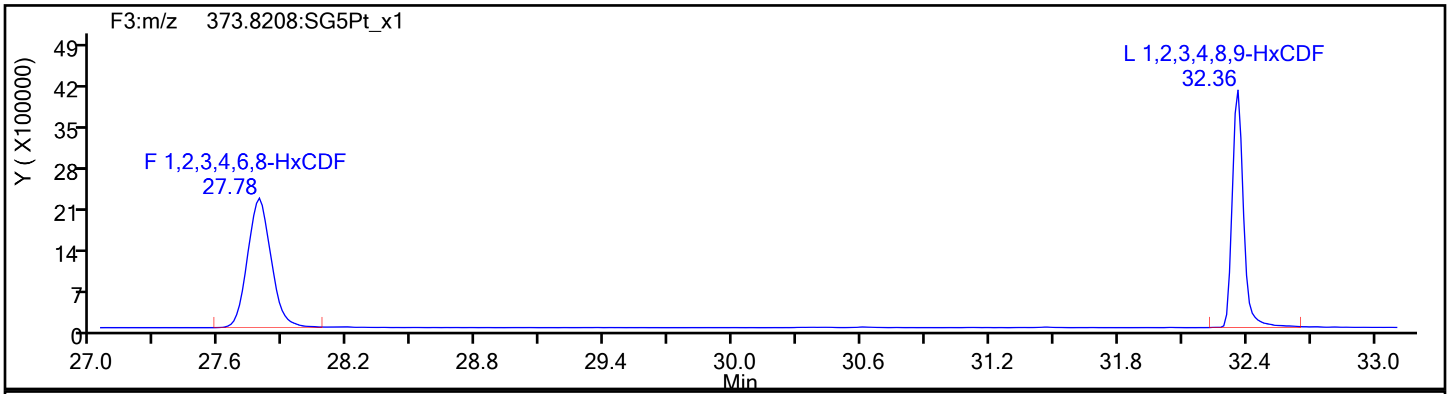

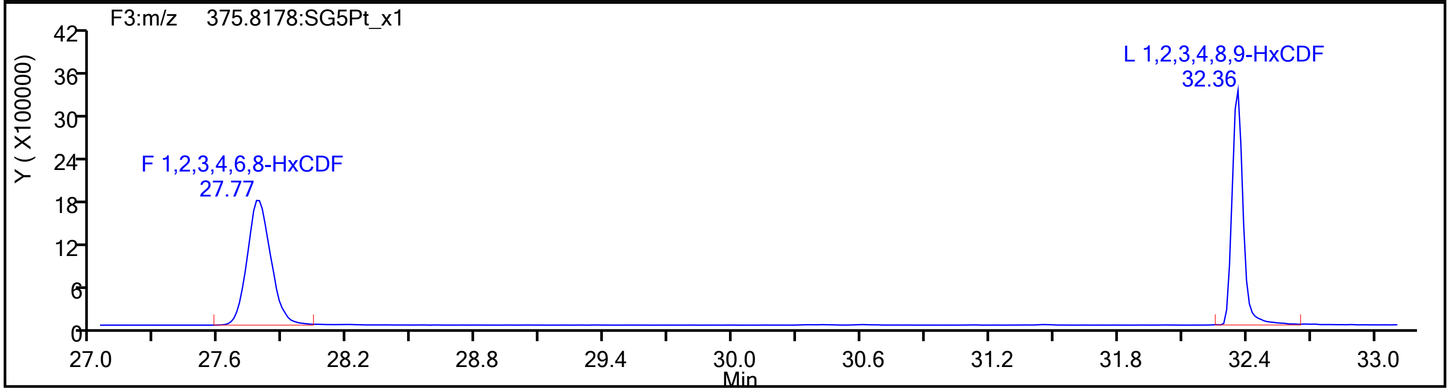

HxCDF Standards

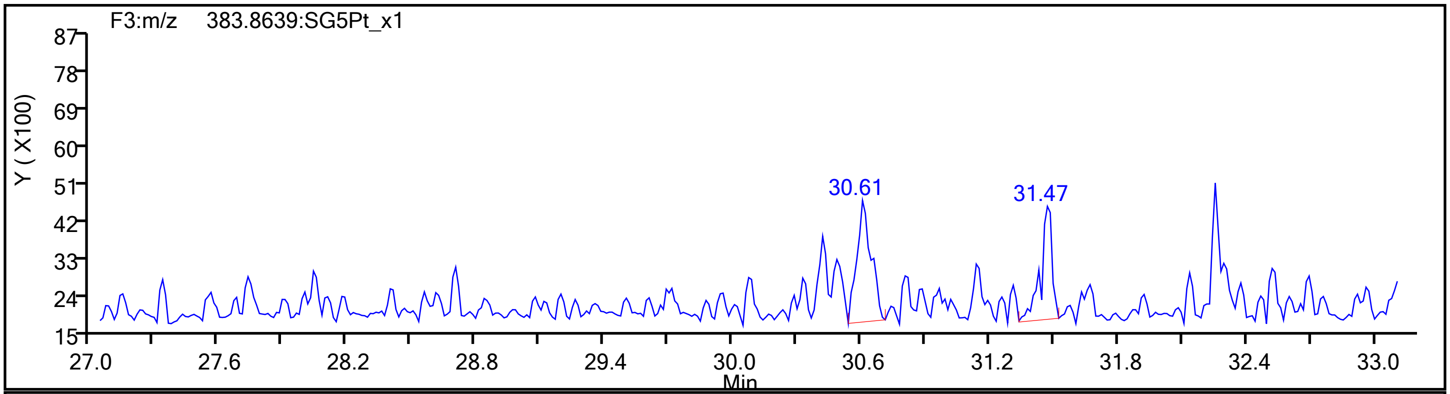

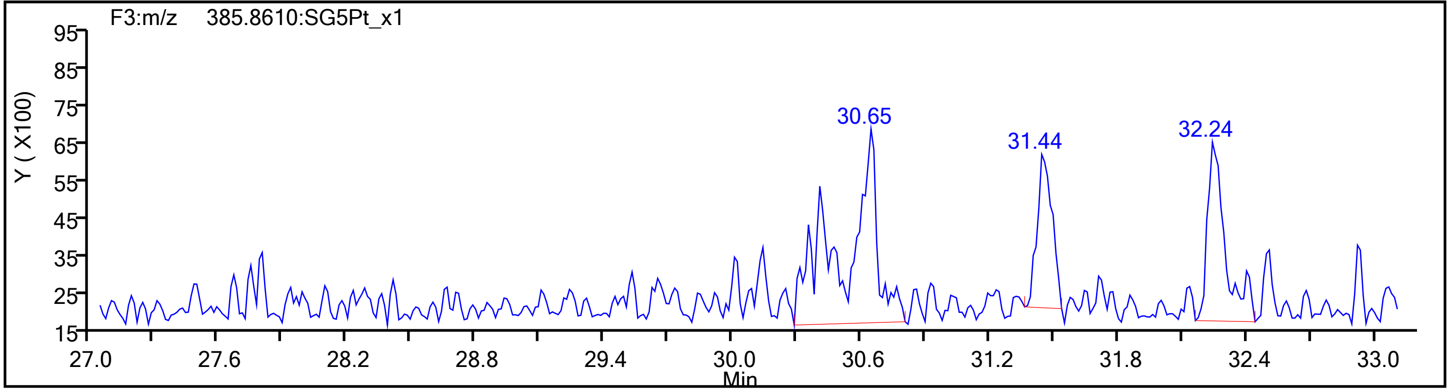

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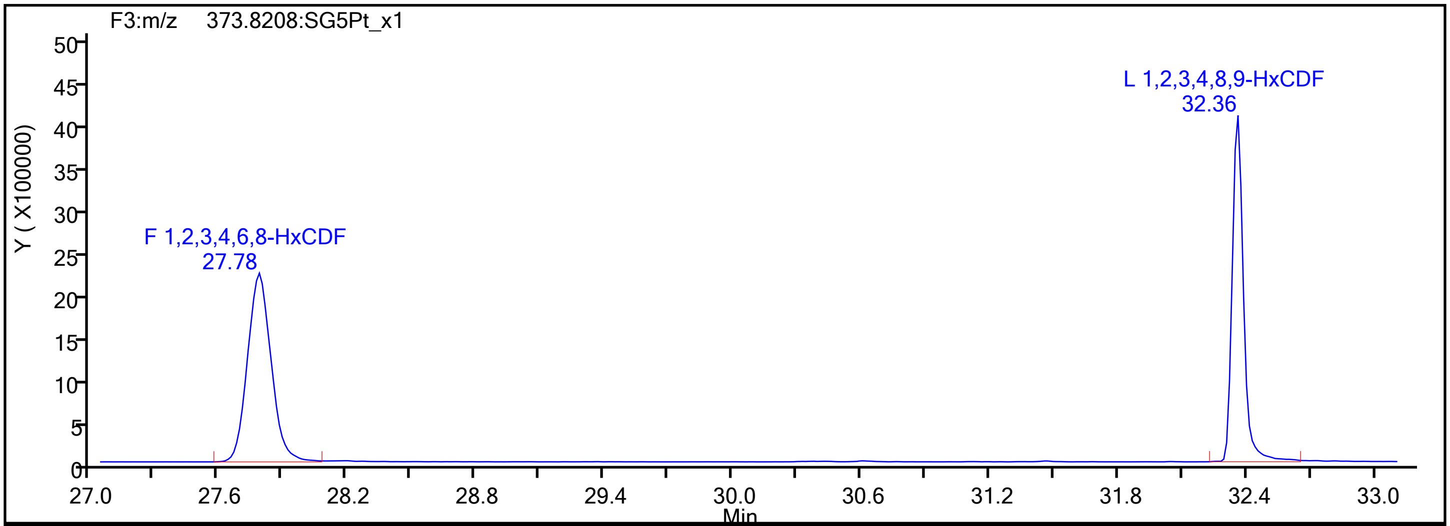

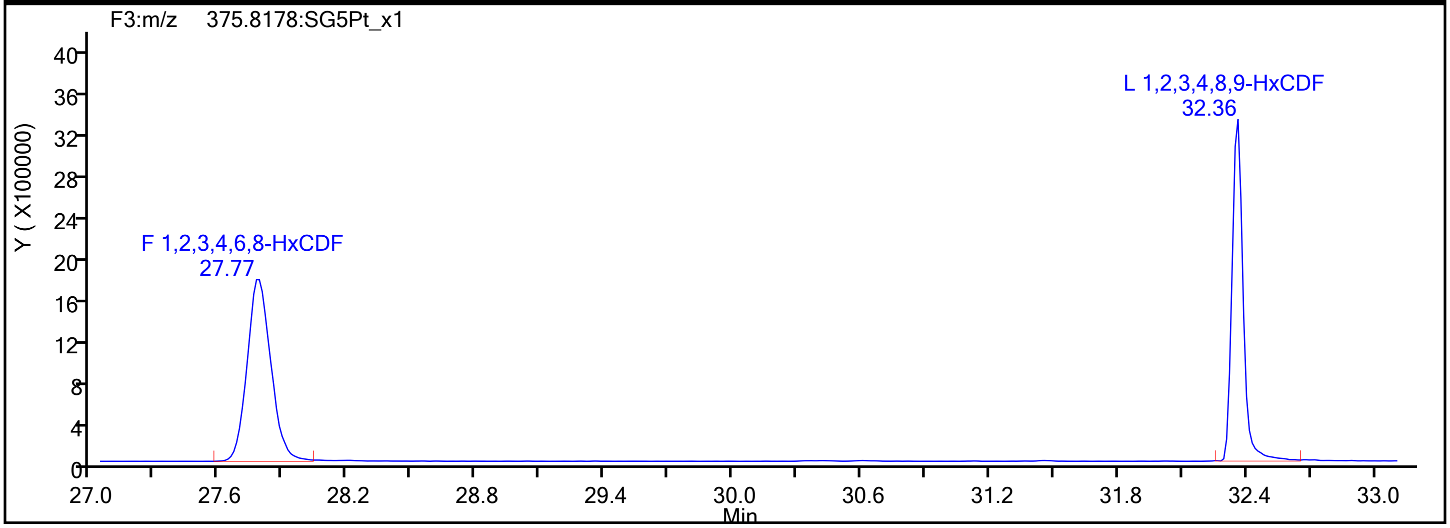

HxCDF Interference Mass

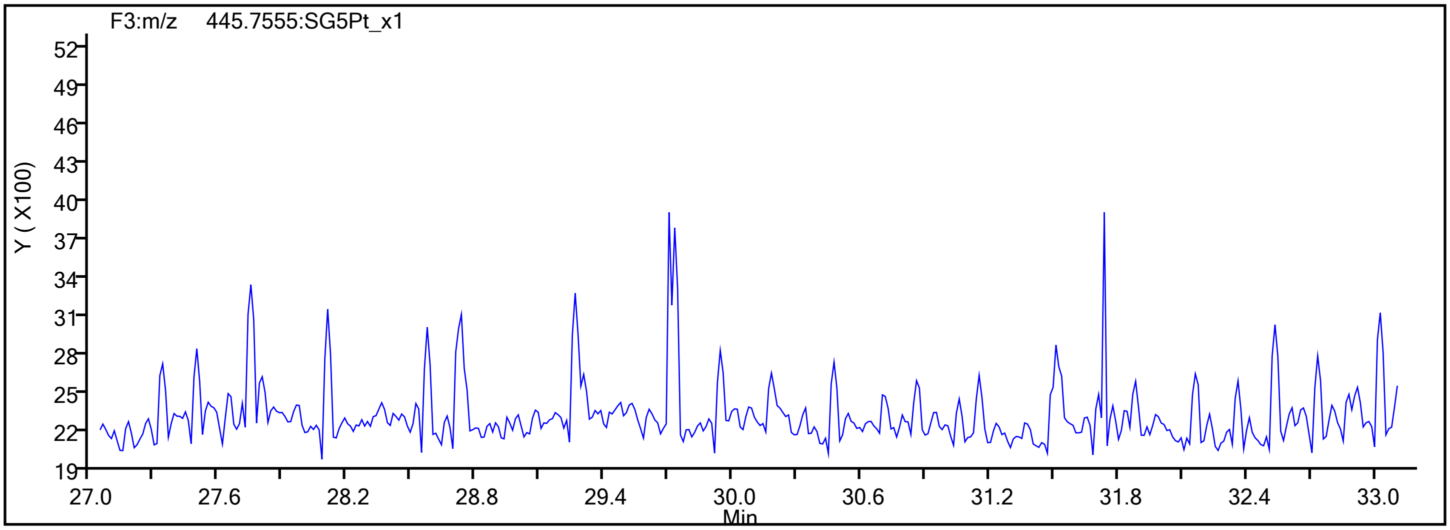

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Eurofins TestAmerica, Sacramento

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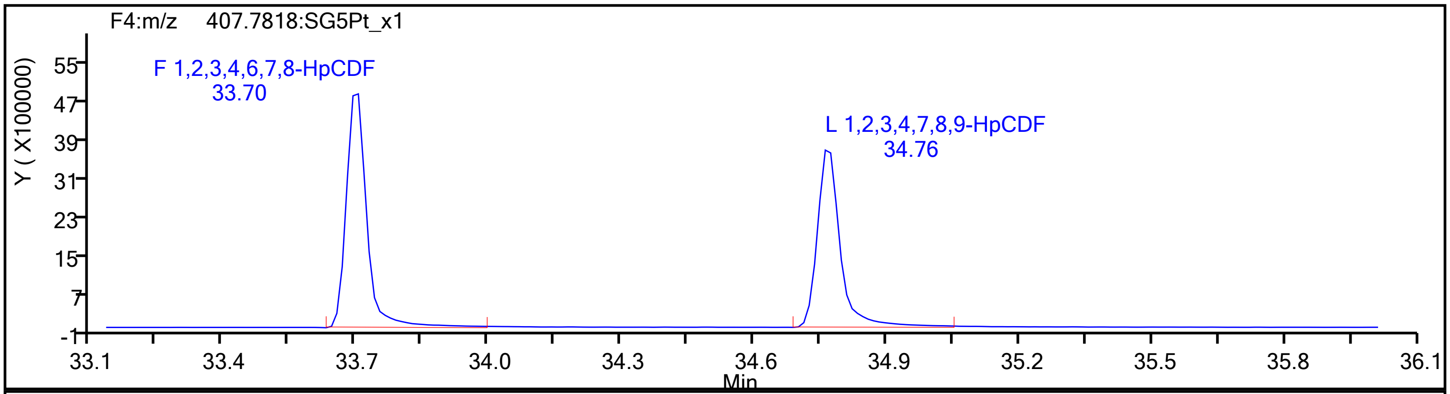

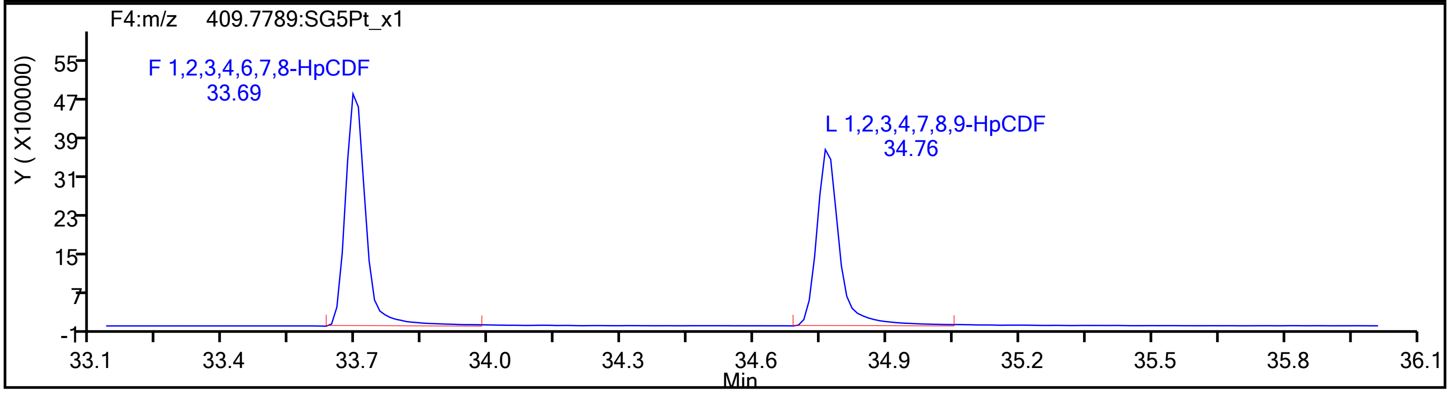

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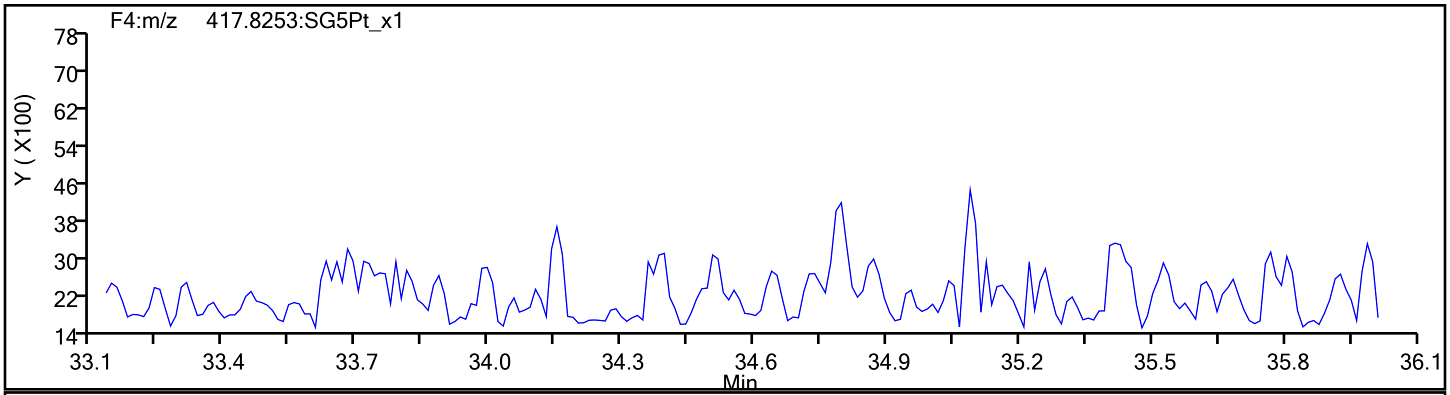

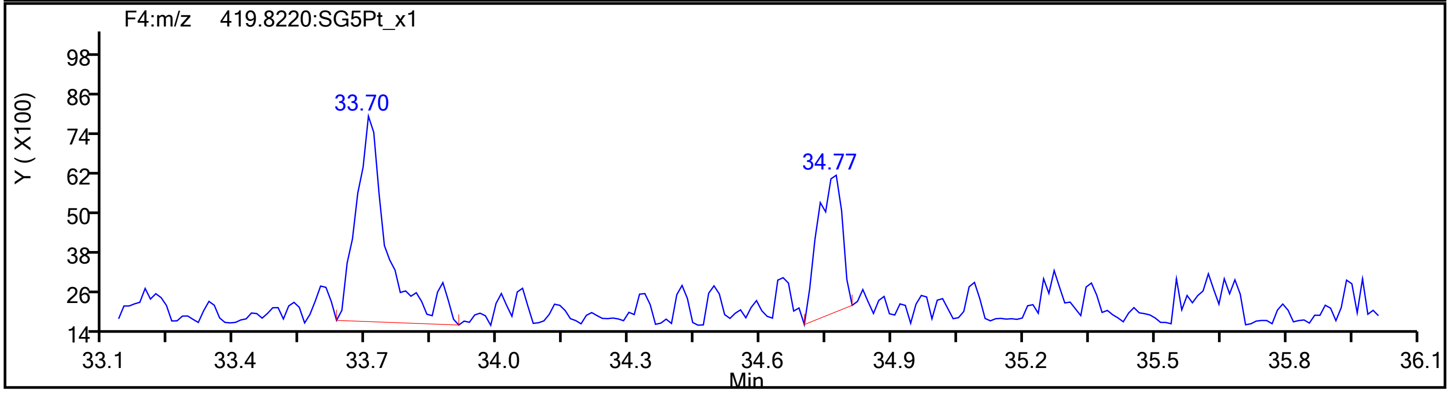

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HpCDF

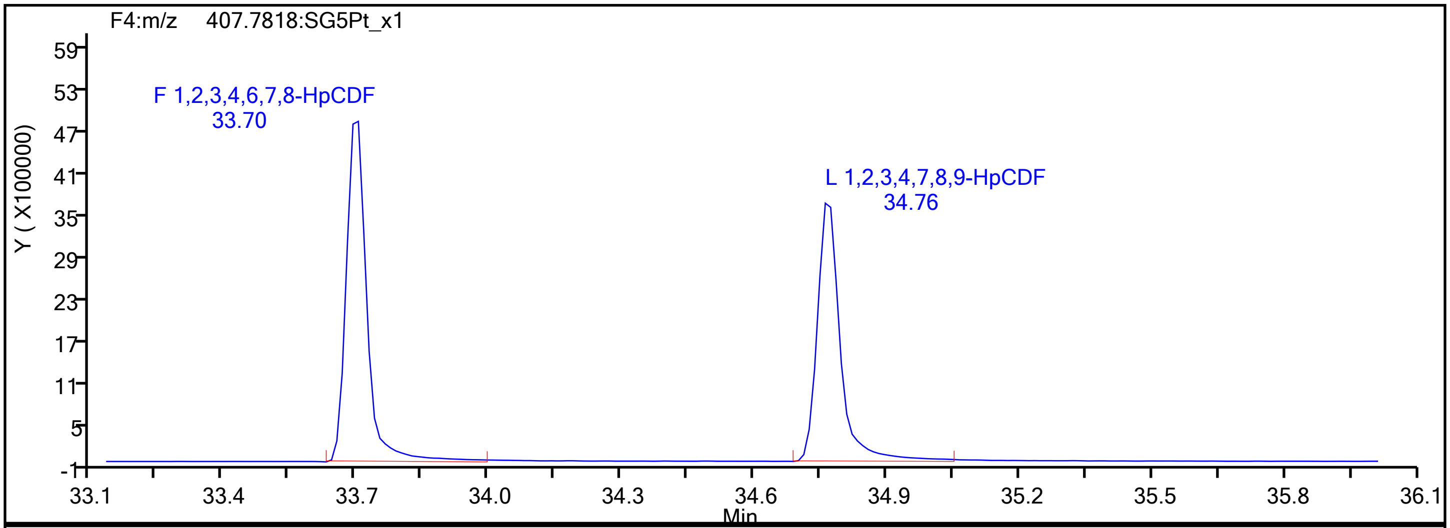

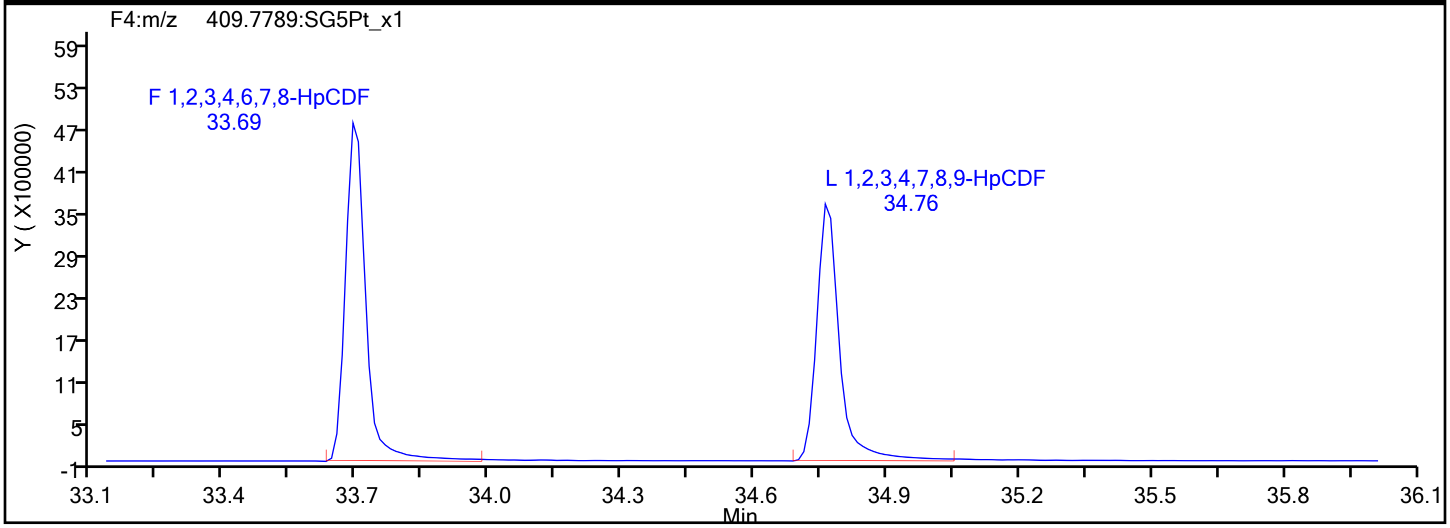

HpCDF Interference Mass

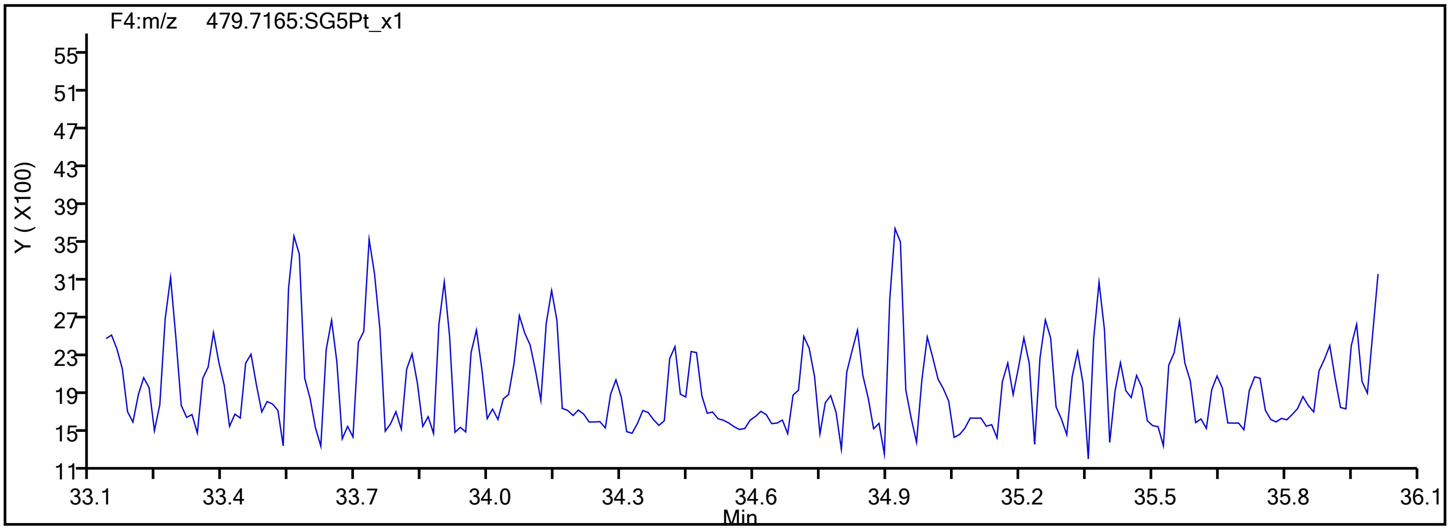

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Eurofins TestAmerica, Sacramento

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Column Type: DB-5   Column Dia: 0.32 mm

HpCDD

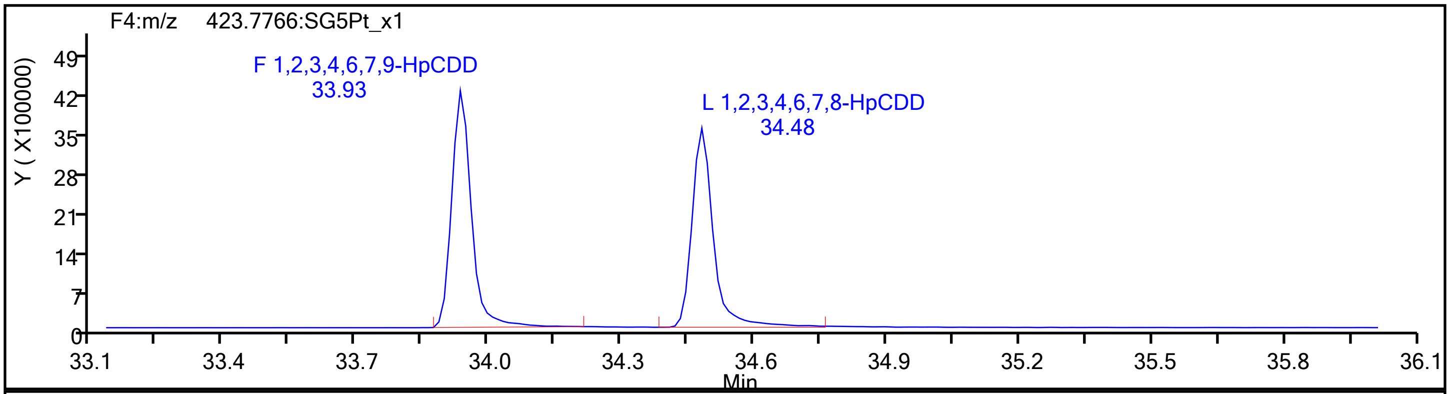

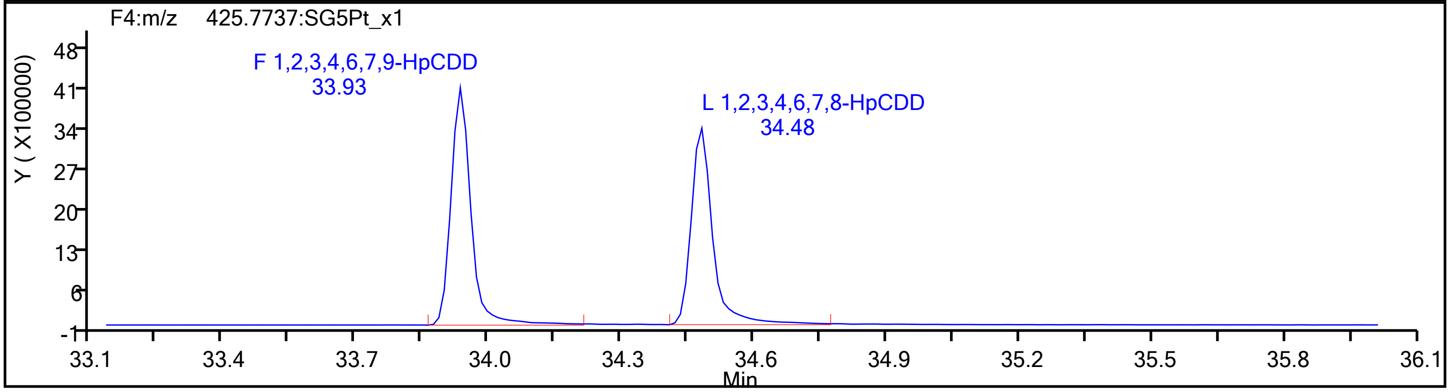

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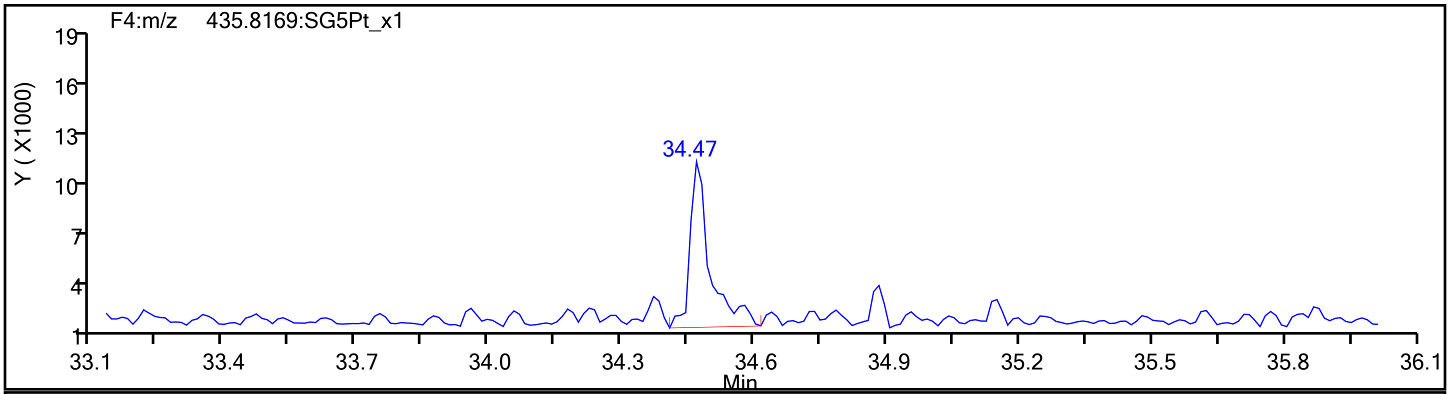

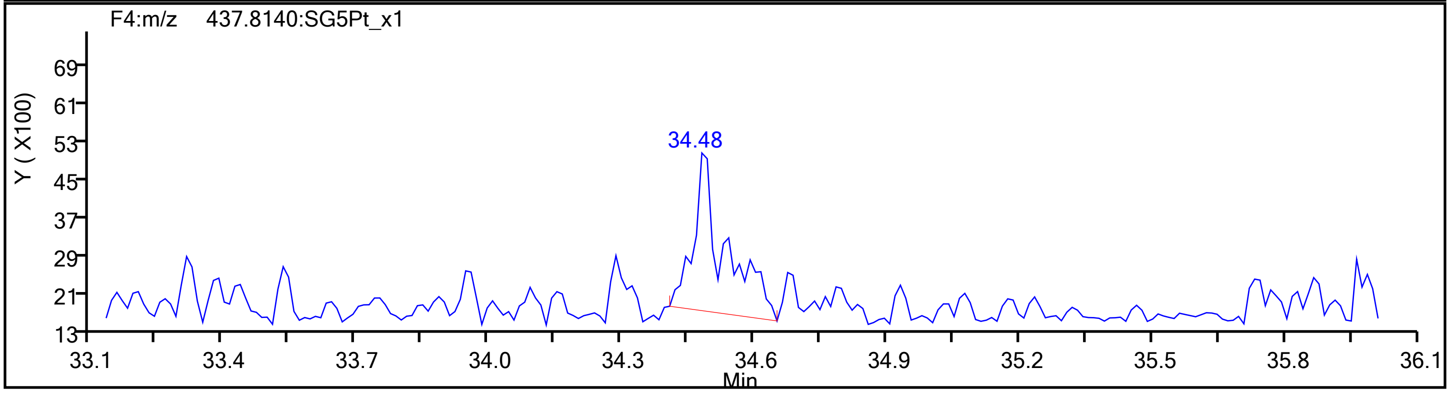

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Injection Date: 17-Sep-2020 14:12:48

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

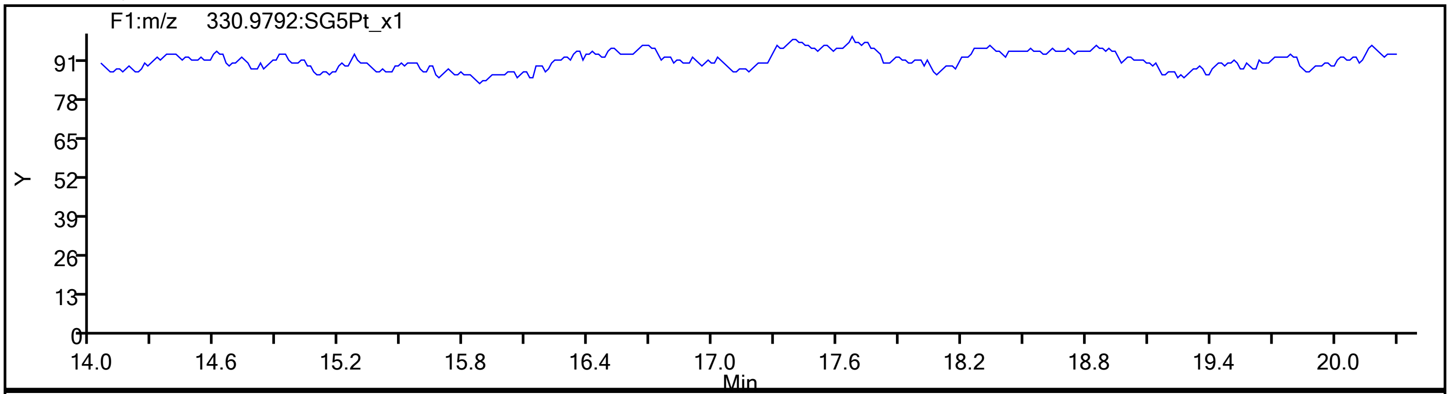

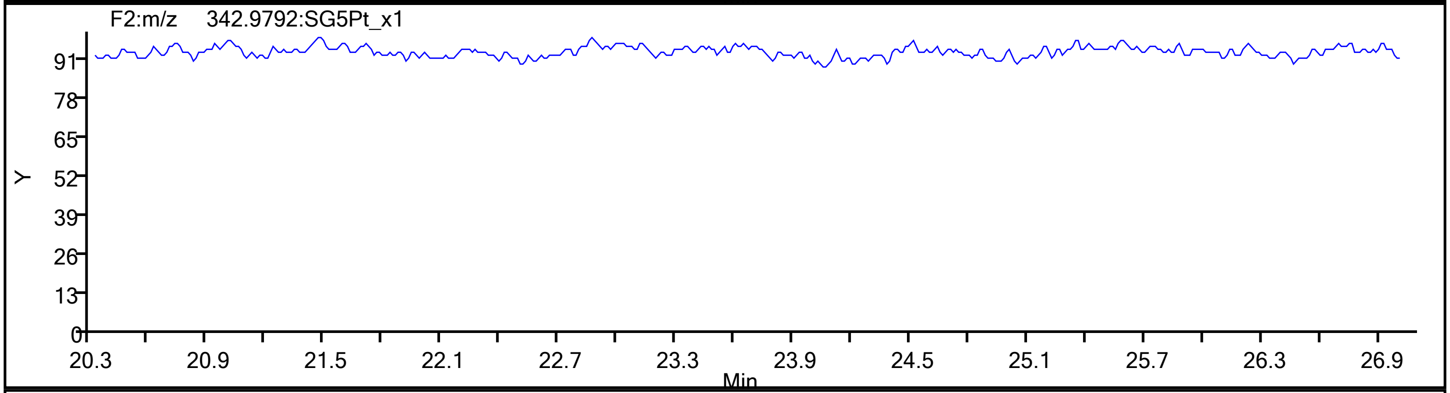

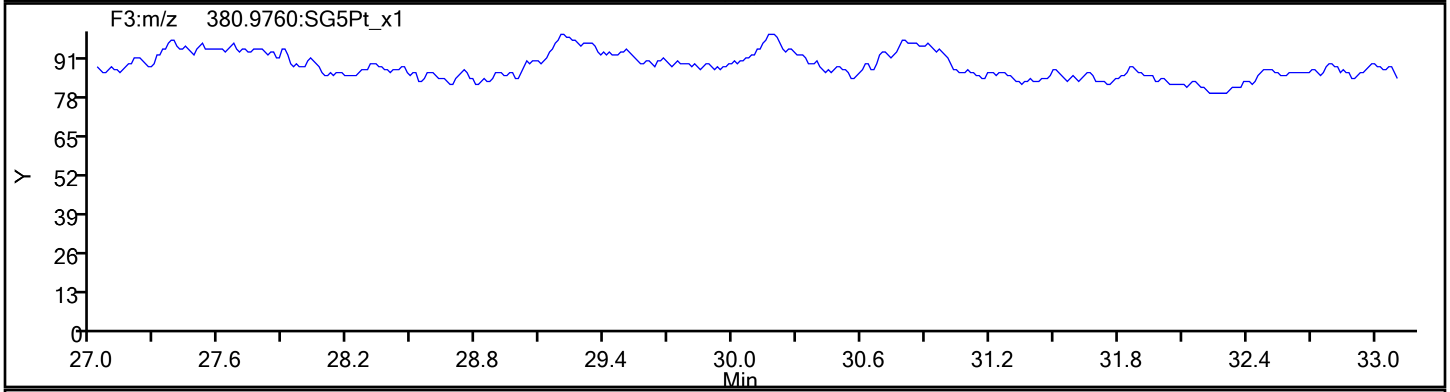

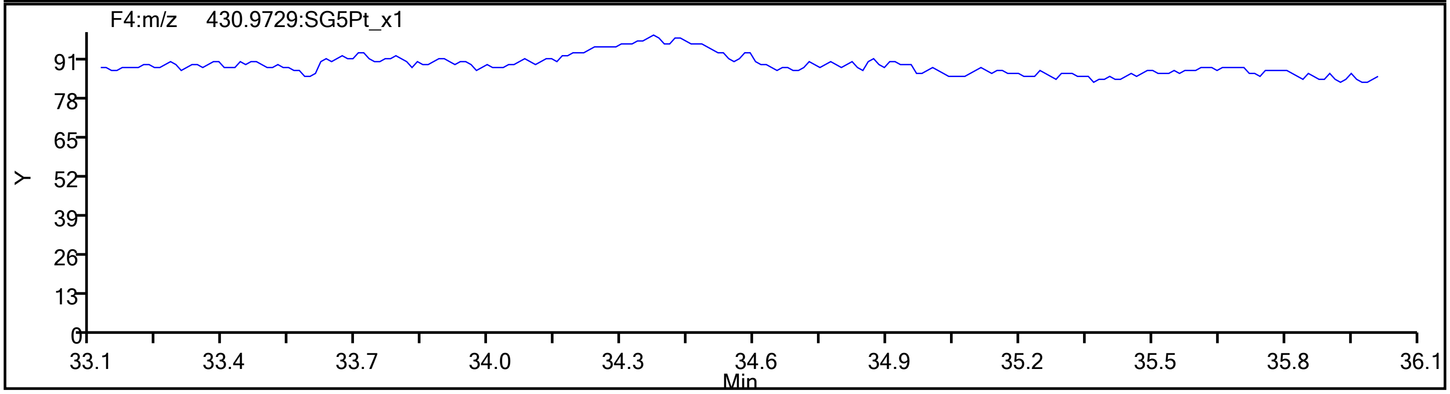

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

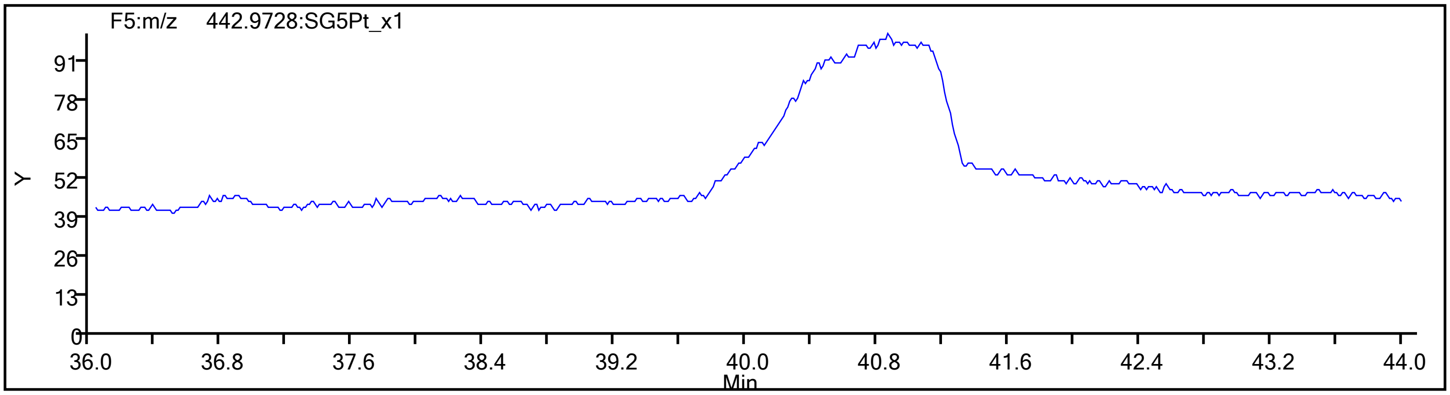

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 16:08:13 ALS Bottle#: 1 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 112020C WDM HRDXNCP_00042
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.324	21602135	0.80	1.3598					0.00	
2,3,7,8-TCDF	17.339	47578652	0.78	0.9077	97.1	97.1	0.2677	0.2677		
A Non-2,3,7,8-sub-TCDF	17.029						0.2677	0.2677		
S Total TCDF					97.1	97.1	0.2677	0.2677		
D 13C-2,3,7,8-TCDD	18.035	13197735	0.73	1.0536					0.00	
2,3,7,8-TCDD	18.050	15609784	0.79	1.0061	47.0	47.0	0.1537	0.1537		
A Non-2,3,7,8-sub-TCDD	17.483						0.1537	0.1537		
S Total TCDD					47.0	47.0	0.1537	0.1537		
A F1 PeCDFs	19.963						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	23.127	259733	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.351						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.227						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.905						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.782	11484209	1.03	1.3603						
1,2,3,4,7,8,9-HpCDF	34.888	8694725	1.06	1.3207						
A Non-2,3,7,8-sub-HpCDF	34.335						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.596	7203414	1.07	0.9988						
A Non-2,3,7,8-sub-HpCDD	34.311						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.890	26920888	0.79							
1,3,6,8-TCDD	15.812	16085591	0.78							
2,3,4,7-TCDF	17.339	47578652	0.78							
1,2,3,7-TCDD	17.929	13651872	0.76							
1,2,3,9-TCDF	18.201	19971980	0.78							
1,2,3,9-TCDD	18.216	16429376	0.78							
1,2,8,9-TCDD	19.154	6530128								
1,2,8,9-TCDF	19.169	20688560	0.76							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,3,4,6,8-PeCDF	19.441	18553381	1.60							
1,2,4,7,9-PeCDD	21.223	12197372	1.58							
1,2,3,8,9-PeCDD	25.478	10835288	1.56							
1,2,3,8,9-PeCDF	25.696	13757939	1.59							
1,2,3,4,6,8-HxCDF	28.004	14827928	1.25							
1,2,4,6,7,9-HxCDD	29.601	10583483	1.26							
1,2,3,4,6,7-HxCDD	32.130	9700725	1.27							
1,2,3,4,8,9-HxCDF	32.450	12731638	1.25							
1,2,3,4,6,7,9-HpCDD	34.025	8526905	1.05							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 16:08:13 ALS Bottle#: 1 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 112020C WDM HRDXNCP_00042
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.324	17.324	0	1.000	9603876	2316513	7431	18577	312		
317.9389	17.324	17.324	0	1.000	11998259	2956123	3344	8360	884	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.339	17.354	-1	1.001	20789286	4793104	5656	14140	847		
305.8987	17.339	17.354	-1	1.001	26789366	6227901	7157	17892	870	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.029						5656	14140			
305.8987	17.029						7157	17892			
13C-2,3,7,8-TCDD											
331.9368	18.035	18.035	0	1.000	5569999	1290512	2821	7052	457		
333.9339	18.035	18.035	0	1.000	7627736	1790984	1320	3300	1357	0.73(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.050	18.065	-1	1.001	6867841	1644997	2238	5595	735		
321.8936	18.050	18.065	-1	1.001	8741943	2110741	2528	6320	835	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.483						2238	5595			
321.8936	17.483						2528	6320			
A F1 PeCDFs											
339.8597	19.963						596	1490			
341.8567	19.963						588	1470			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	21.823	23.127	-78	1.000	41667	7919	1548	3870	5		
341.8567	21.823	23.127	-78	1.000	29984	4761	1215	3037	4	1.39(1.32-1.78)	
339.8597	22.396	23.127	-44	1.000	74454	10627	1548	3870	7		
341.8567	22.383	23.127	-45	1.000	43530	8169	1215	3037	7	1.71(1.32-1.78)	
339.8597	22.955	23.127	-10	1.000	42609	8771	1548	3870	6		
341.8567	22.983	23.127	-9	1.000	40393	5297	1215	3037	4	1.05(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.351						1811	4527			
357.8516	23.351						1000	2500			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.227						2769	6922			
375.8178	30.227						2291	5727			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						3689	9222			
391.8127	30.905						2772	6930			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.782	33.783	0	1.000	5833787	1702651	8802	22005	193		
409.7789	33.782	33.783	0	1.000	5650422	1660171	8454	21135	196	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.888	34.876	1	1.000	4469136	893377	8802	22005	101		
409.7789	34.888	34.876	1	1.000	4225589	844401	8454	21135	100	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						8802	22005			
409.7789	34.335						8454	21135			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.596	34.584	1	1.000	3720475	848252	6379	15947	133		
425.7737	34.596	34.584	1	1.000	3482939	802814	5594	13985	144	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.311						6379	15947			
425.7737	34.311						5594	13985			
1,3,6,8-TCDF											
303.9016	14.890	14.890	0		11860194	3649543	5656	14140	645		
305.8987	14.890	14.890	0		15060694	4651203	7157	17892	650	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.812	15.812	0		7043127	2060287	2238	5595	921		
321.8936	15.812	15.812	0		9042464	2595999	2528	6320	1027	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.339	17.339	0		20789286	4793104	5656	14140	847		
305.8987	17.339	17.339	0		26789366	6227901	7157	17892	870	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.929	17.929	0		5913041	1458632	2238	5595	652		
321.8936	17.929	17.929	0		7738831	1894015	2528	6320	749	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.201	18.201	0		8762582	2055841	5656	14140	363		
305.8987	18.201	18.201	0		11209398	2646772	7157	17892	370	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.216	18.216	0		7190036	1620913	2238	5595	724		
321.8936	18.201	18.216	-1		9239340	2089087	2528	6320	826	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	19.154	19.154	0		6530128	1415337	2238	5595	632		
1,2,8,9-TCDF											
303.9016	19.169	19.169	0		8920116	1959198	5656	14140	346		
305.8987	19.169	19.169	0		11768444	2548266	7157	17892	356	0.76(0.65-0.89)	

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	19.441	19.441	0		11423192	2456717	596	1490	4122		
341.8567	19.441	19.441	0		7130189	1511458	588	1470	2571	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.223	21.223	0		7469505	1305635	1811	4527	721		
357.8516	21.223	21.223	0		4727867	831705	1000	2500	832	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.478	25.478	0		6610095	923705	1811	4527	510		
357.8516	25.478	25.478	0		4225193	581882	1000	2500	582	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.696	25.696	0		8441918	1143031	1548	3870	738		
341.8567	25.710	25.696	1		5316021	725777	1215	3037	597	1.59(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	28.004	28.004	0		8234118	995339	2769	6922	359		
375.8178	27.990	28.004	-1		6593810	801905	2291	5727	350	1.25(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.601	29.601	0		5891008	695071	3689	9222	188		
391.8127	29.601	29.601	0		4692475	551145	2772	6930	199	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.130	32.130	0		5433209	1386602	3689	9222	376		
391.8127	32.130	32.130	0		4267516	1063153	2772	6930	384	1.27(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.450	32.450	0		7075943	1743248	2769	6922	630		
375.8178	32.436	32.450	-1		5655695	1408535	2291	5727	615	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	34.025	34.025	0		4376825	1167102	6379	15947	183		
425.7737	34.025	34.025	0		4150080	1142392	5594	13985	204	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Nov-2020 16:08:13	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	435203	Lims Sample ID:	16

Non-2,3,7,8-sub-PeCDF, RT: 23.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915				
2,3,4,7,8-PeCDF	0.951				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.823	41667	7919	29984	4761		1.39	
22.396	74454	10627	43530	8169		1.71	
22.955	42609	8771	40393	5297		1.05	R
Signal Totals:							
	158730	27317	113907	18227			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	272637	45544				1.39	RQ
	259733	45905					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (272637 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (259733 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

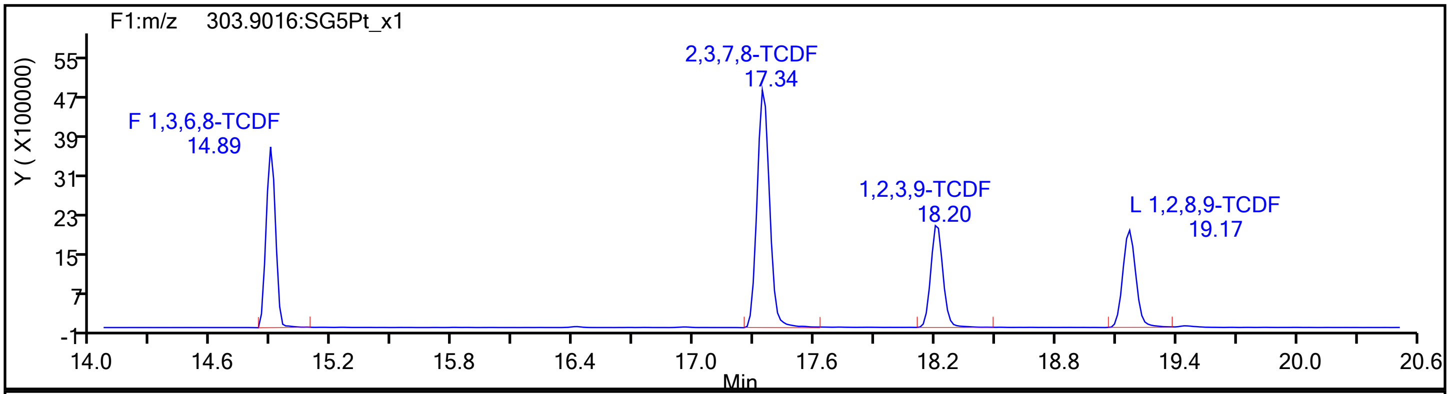

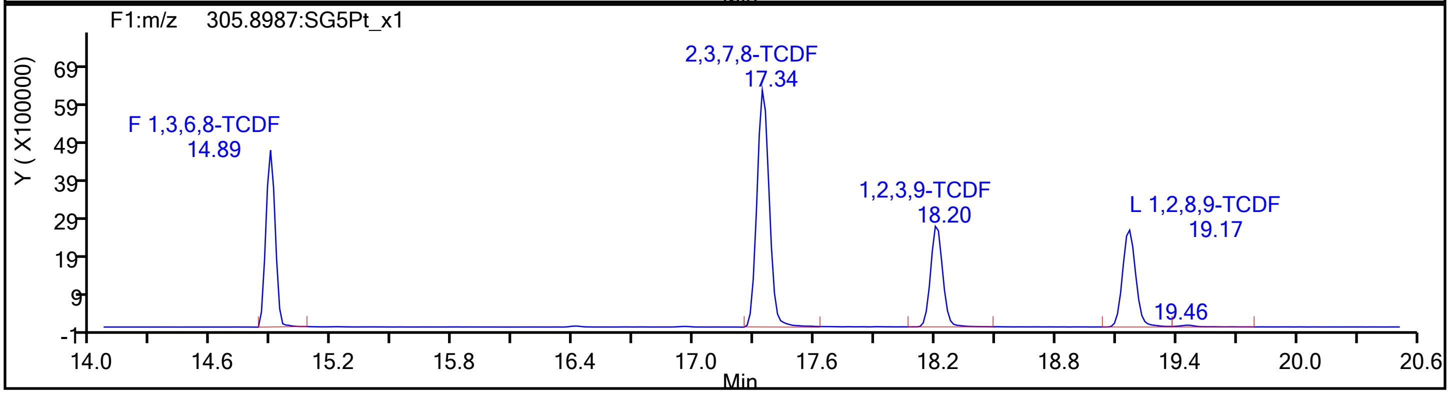

TCDF Standards

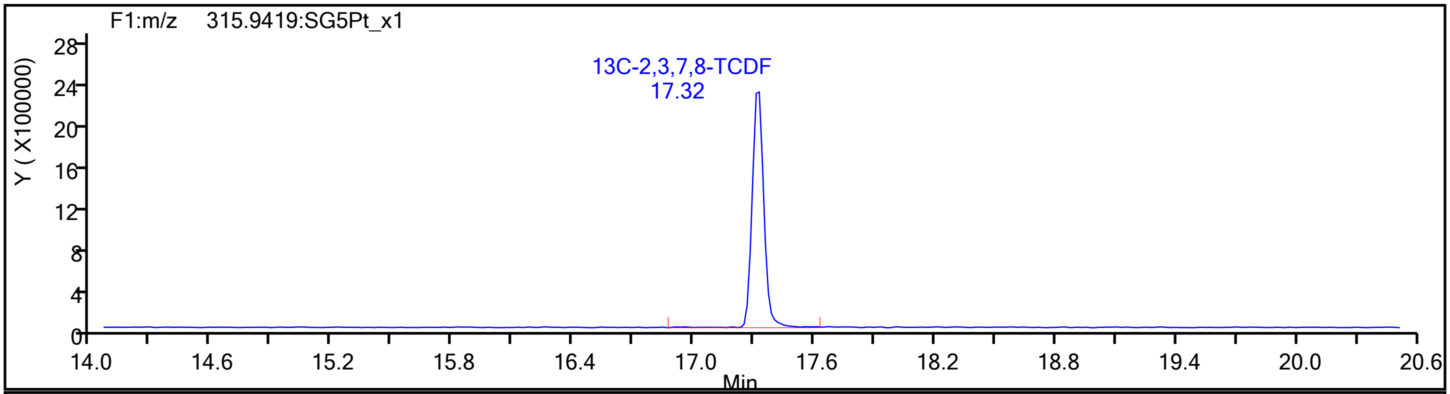

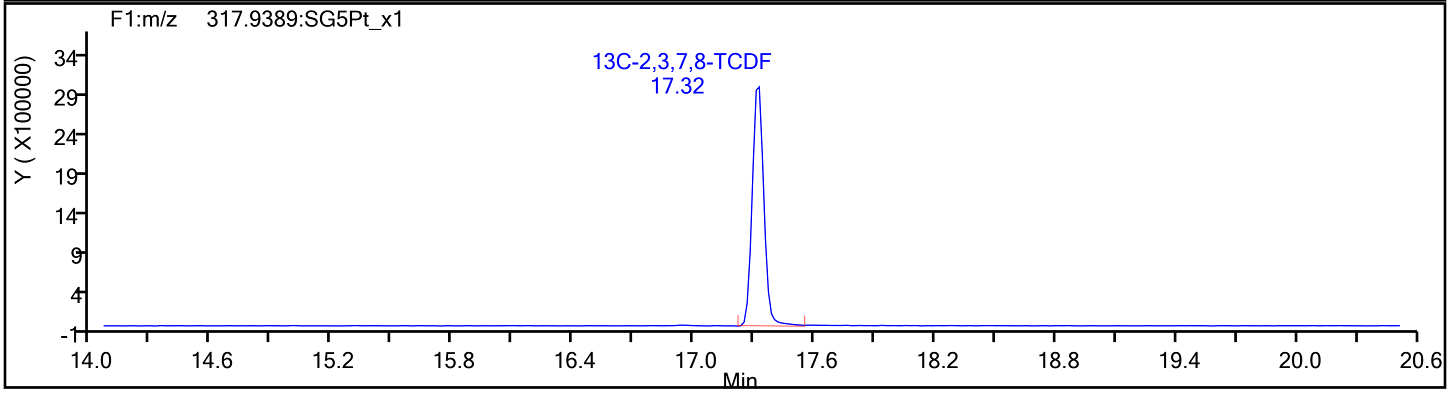

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

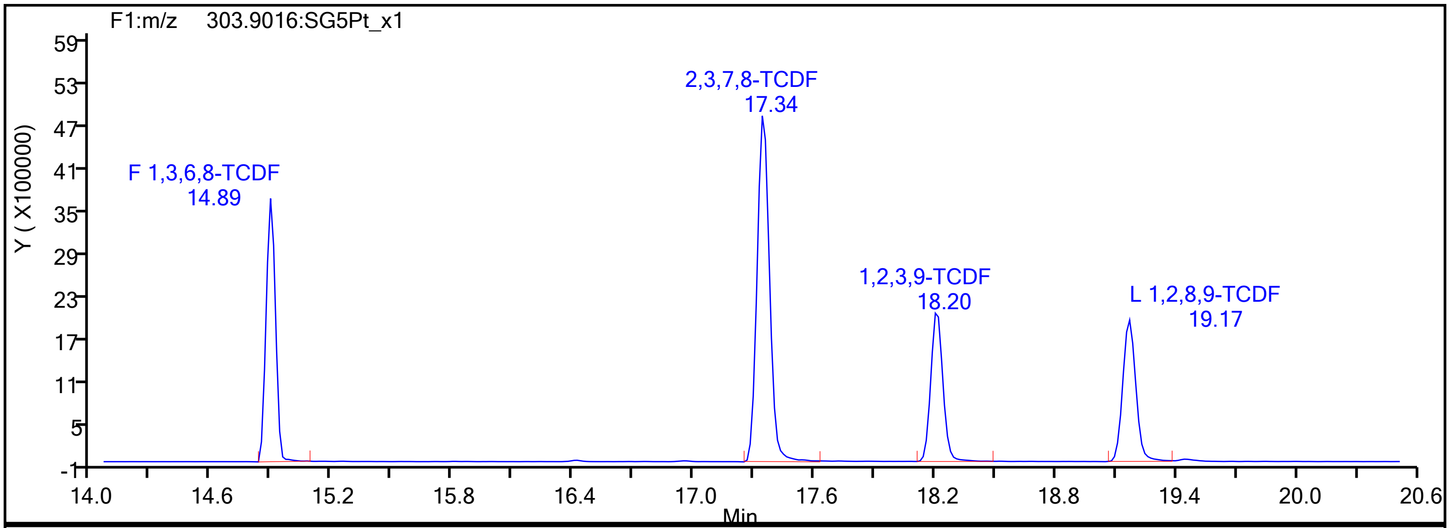

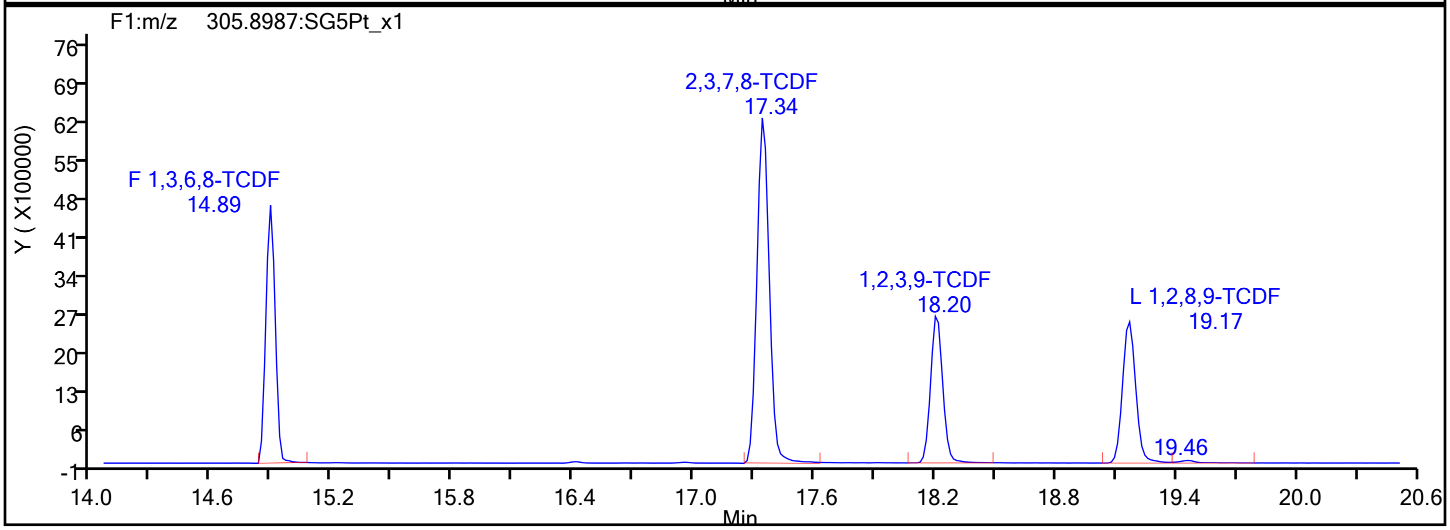

TCDF Interference Mass

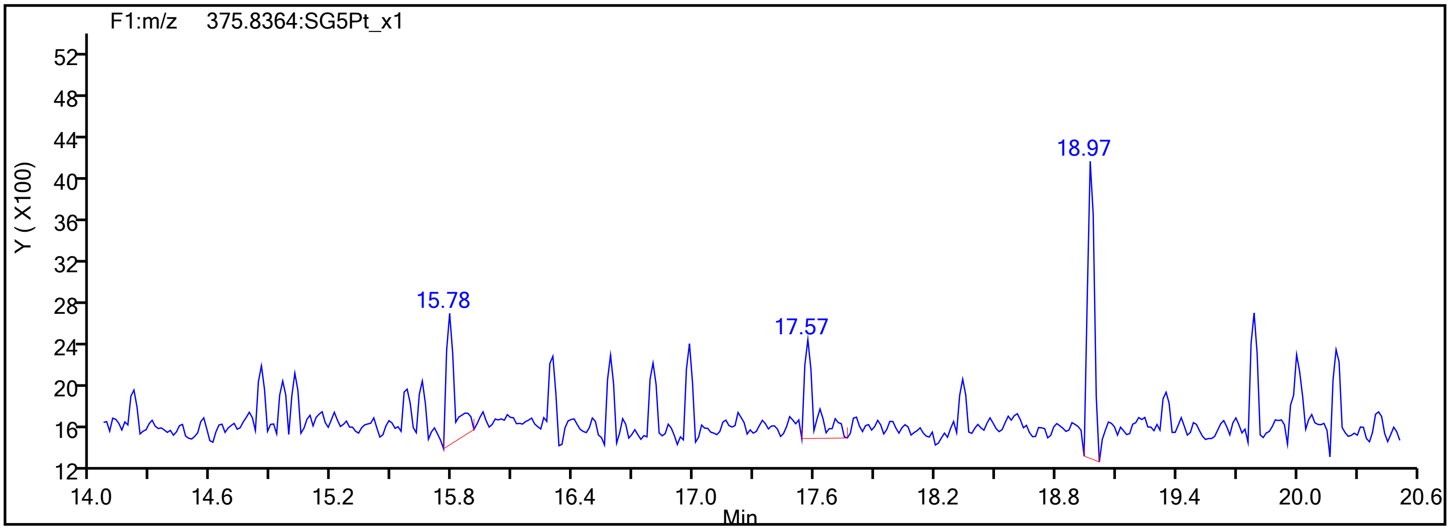

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203 Sample Line#: 16
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

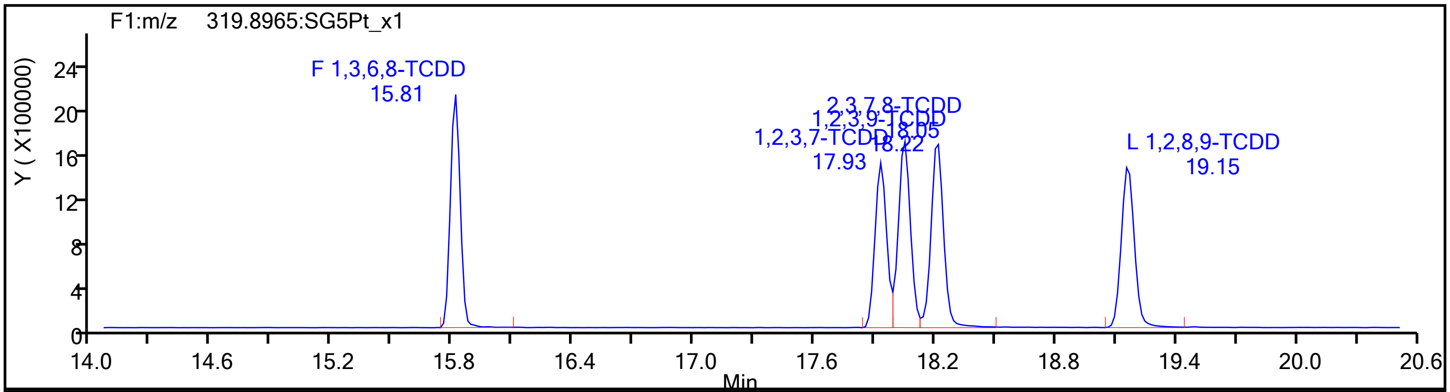

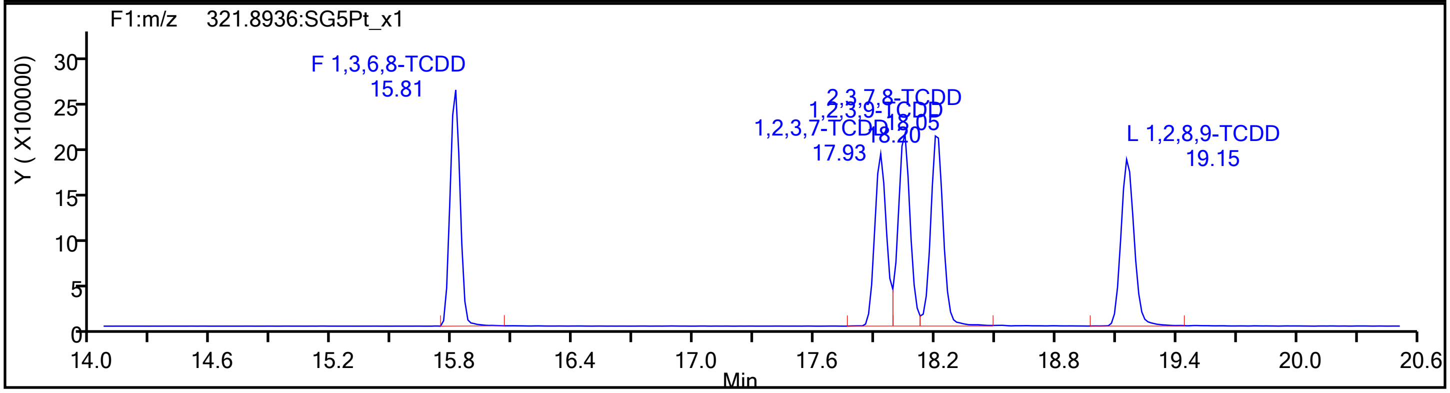

TCDD Standards

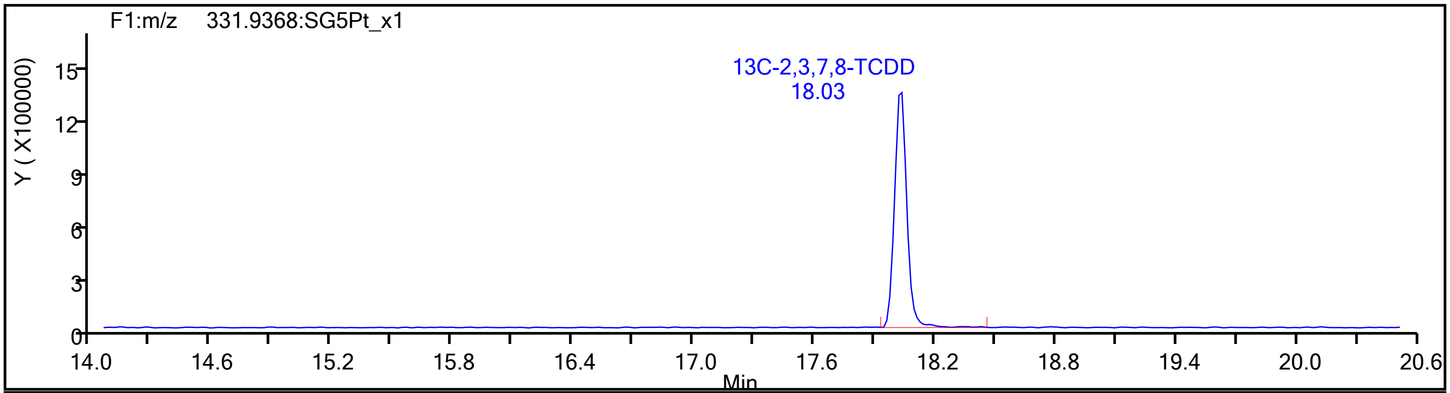

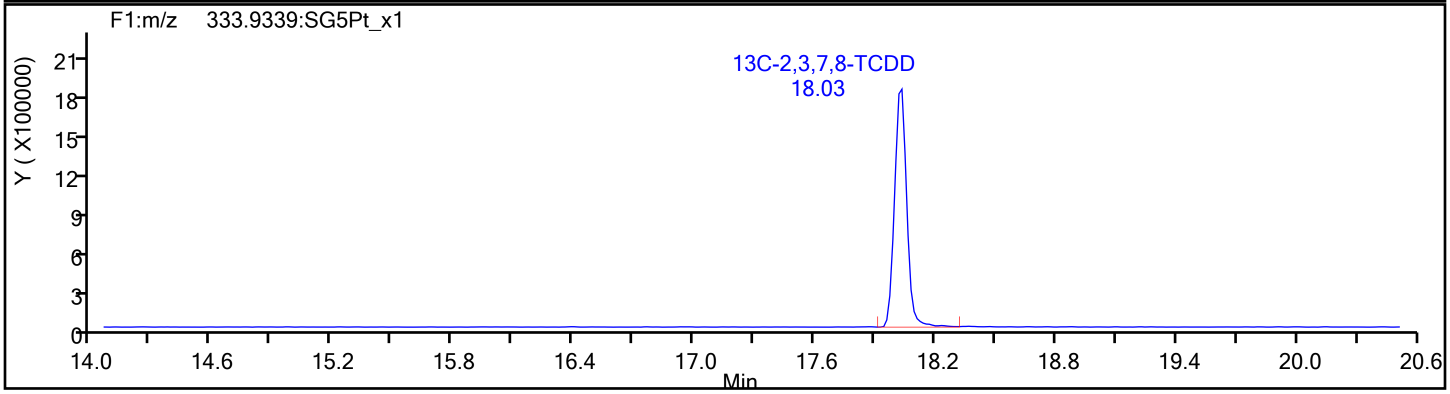

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

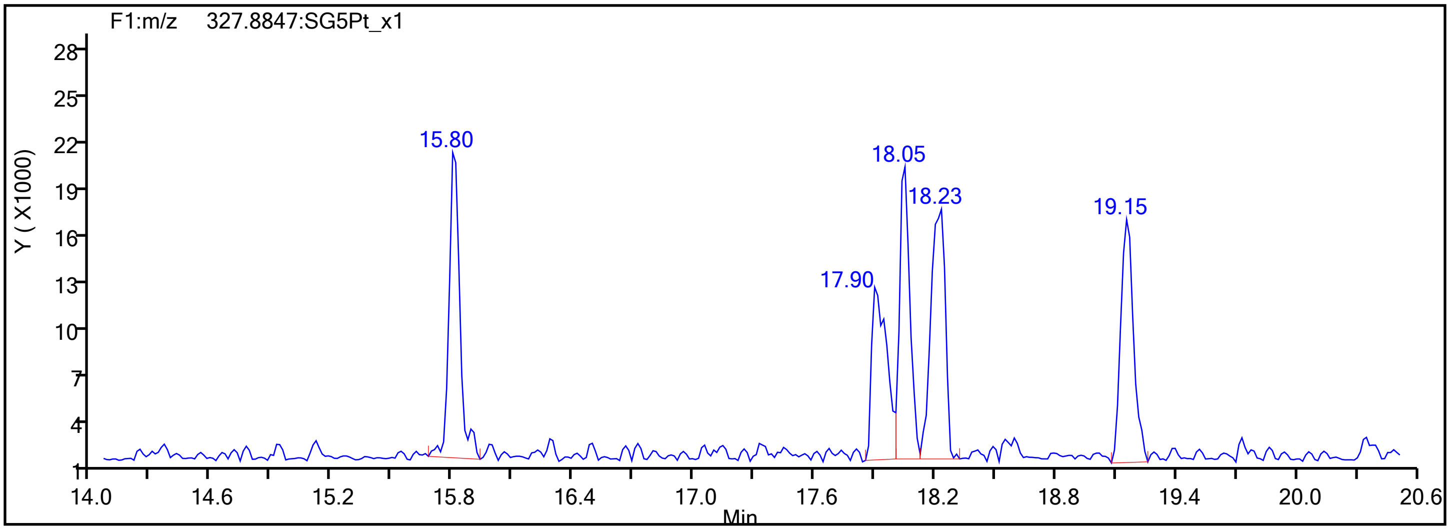

37Cl4-TCDD Standards

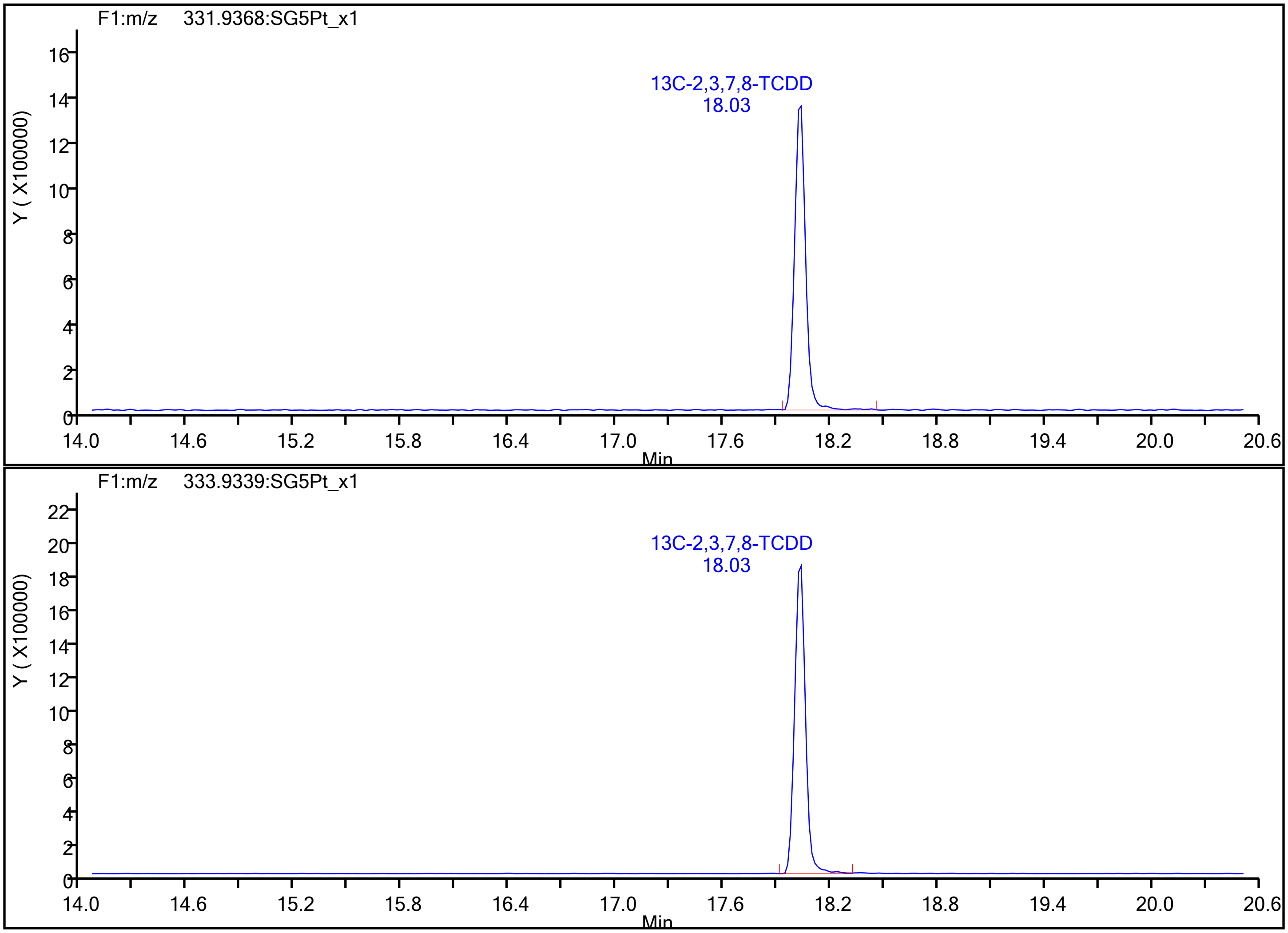

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

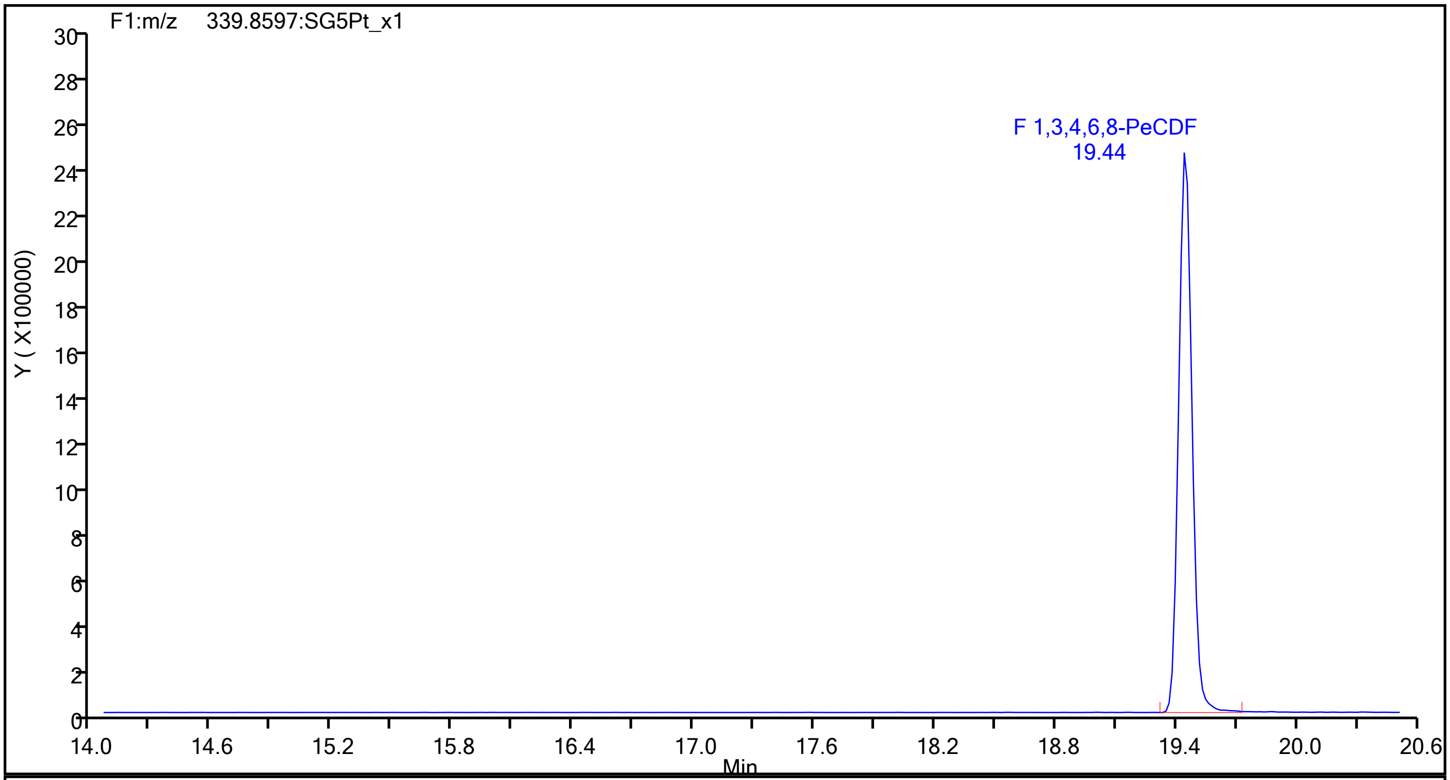

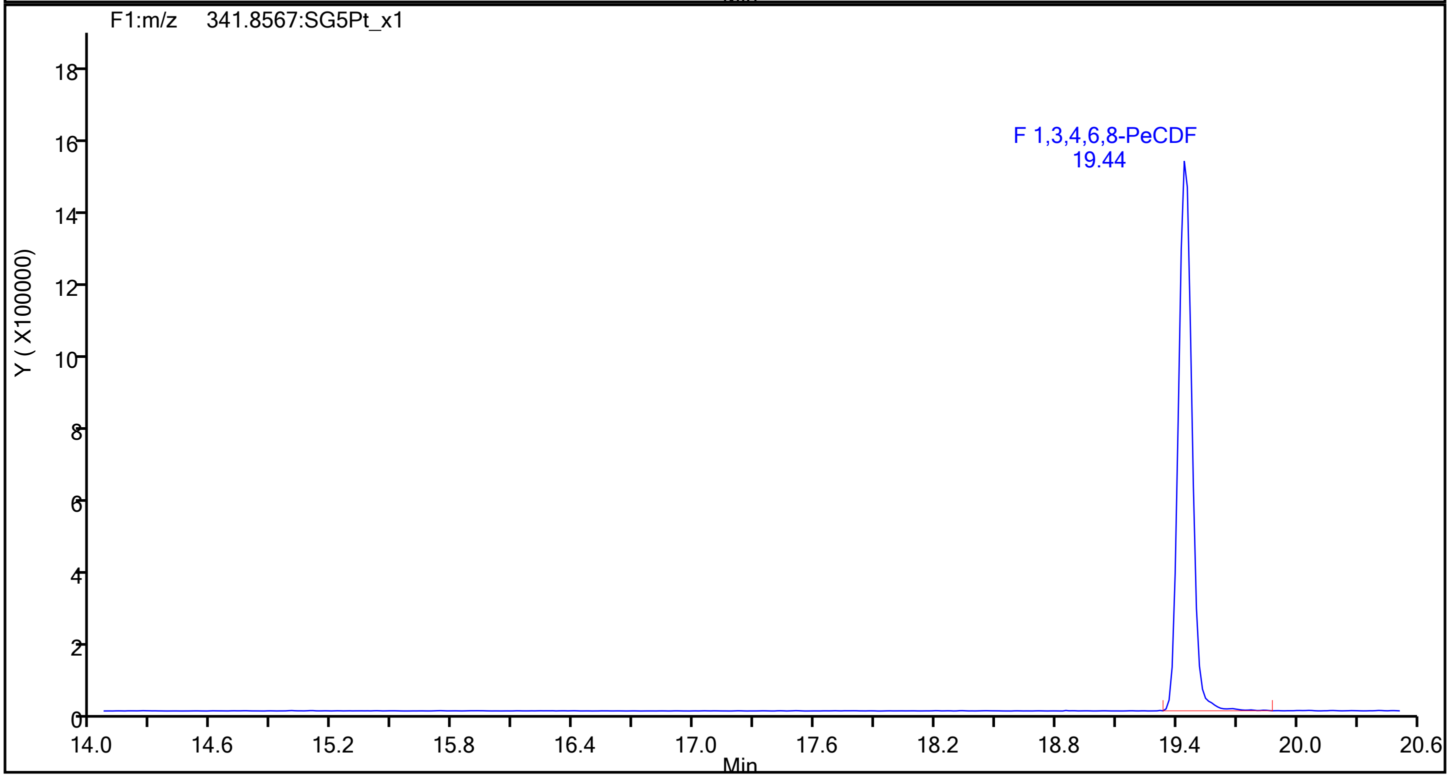

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

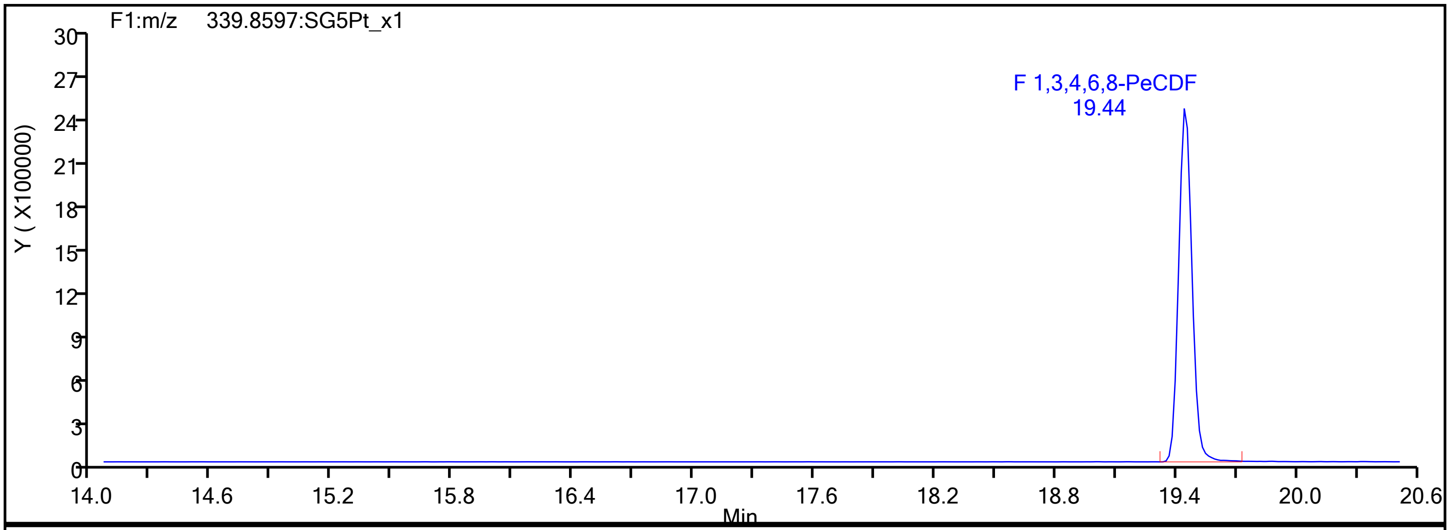

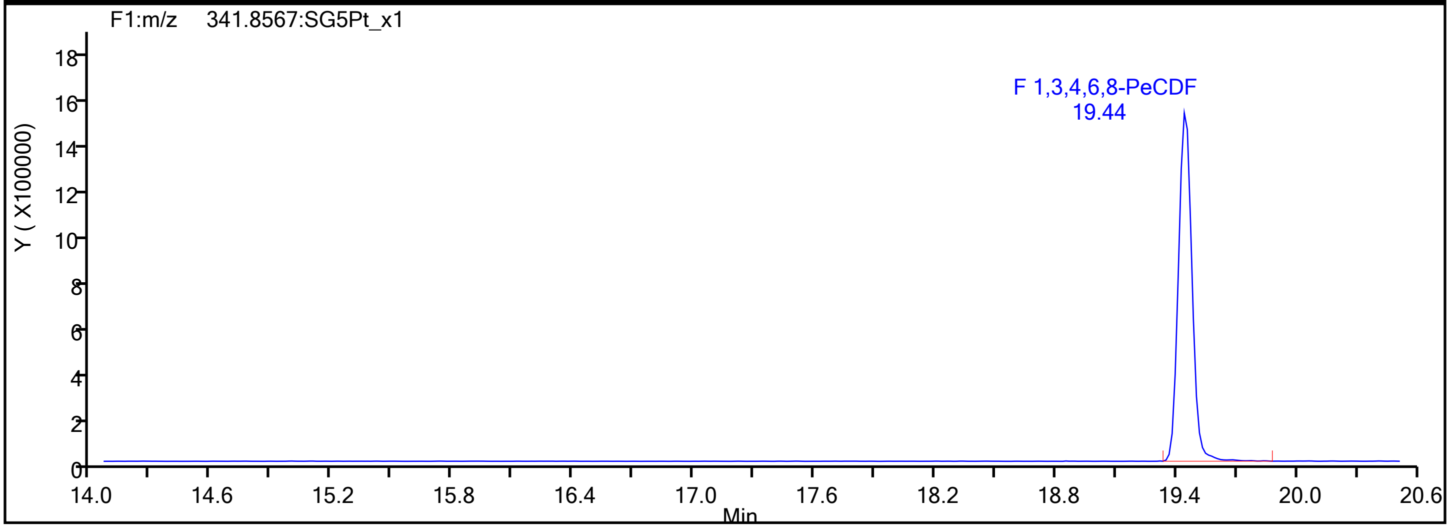

F1 PeCDFs Interference Mass

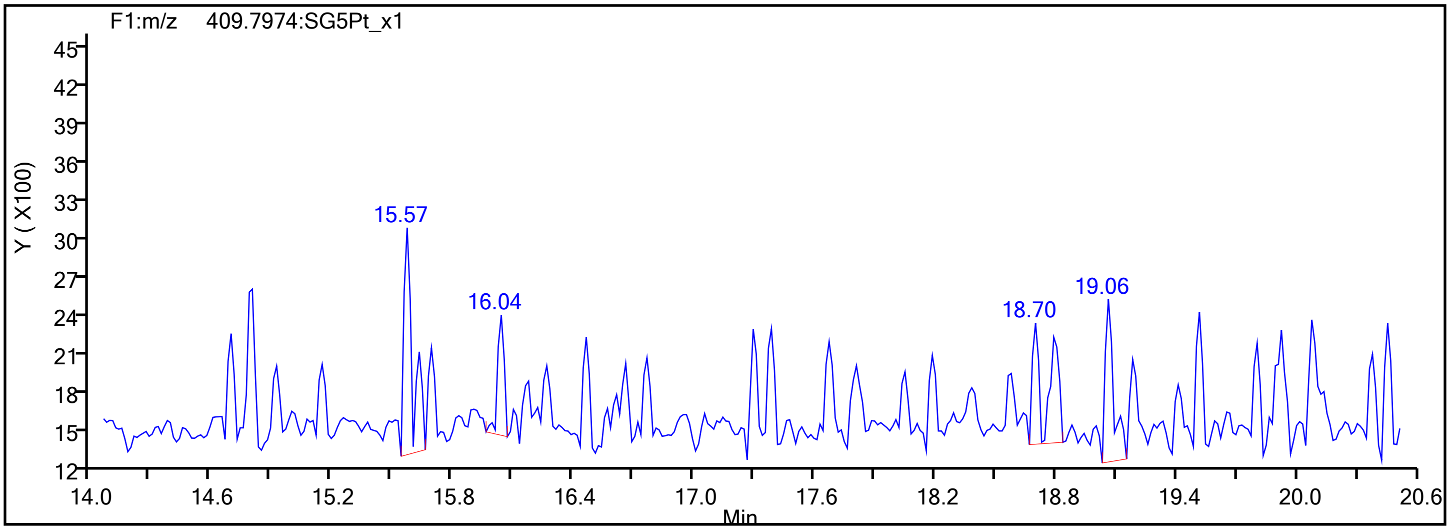

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

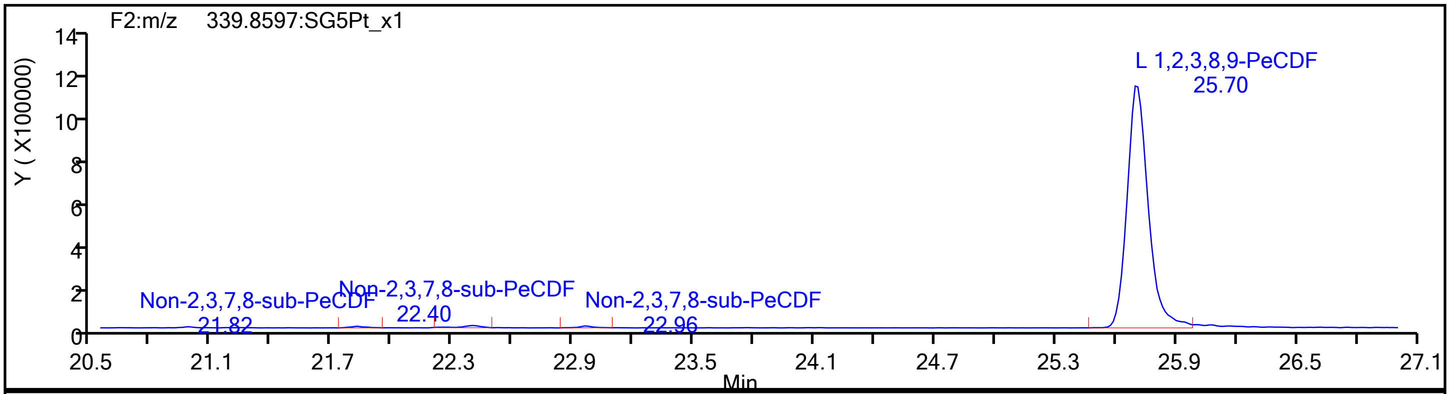

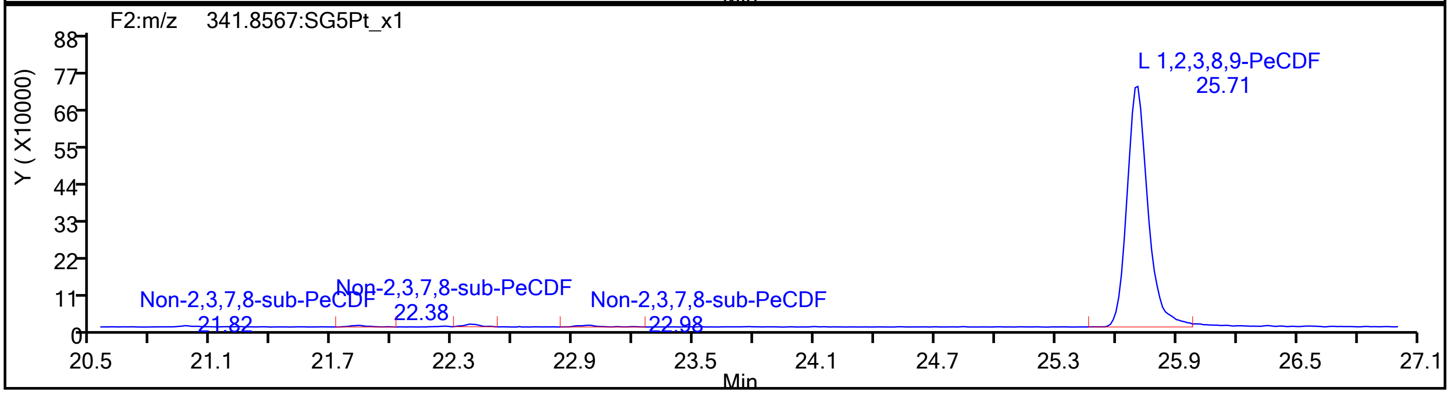

PeCDF Standards

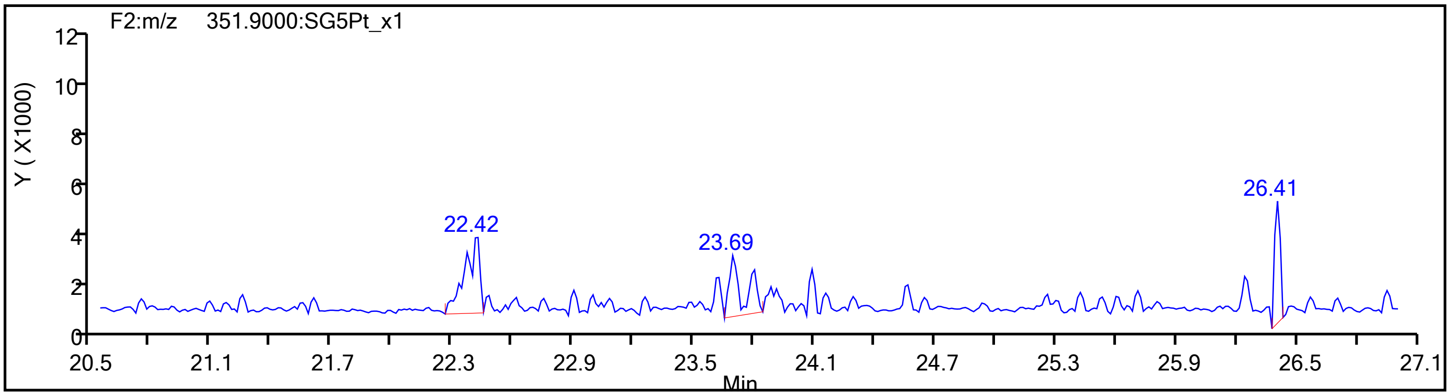

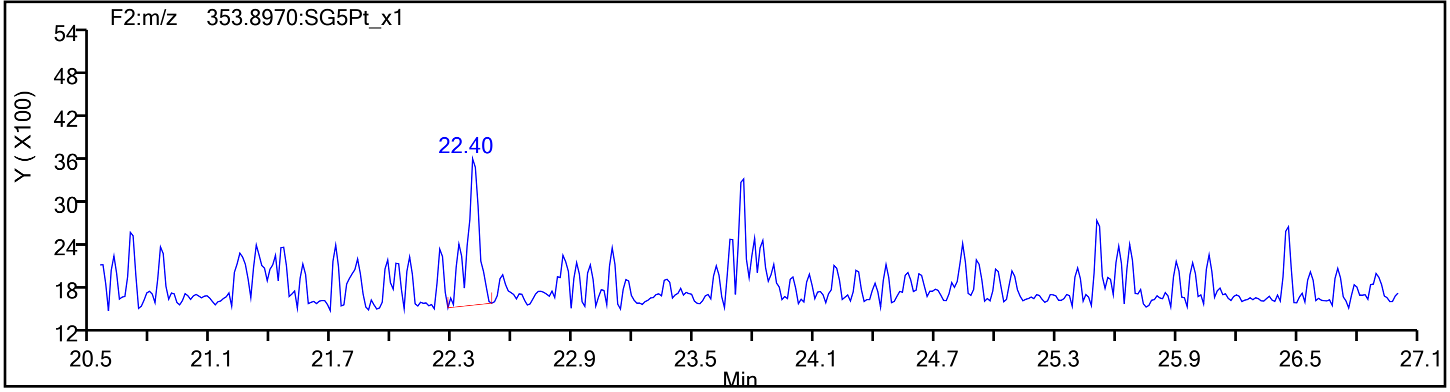

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

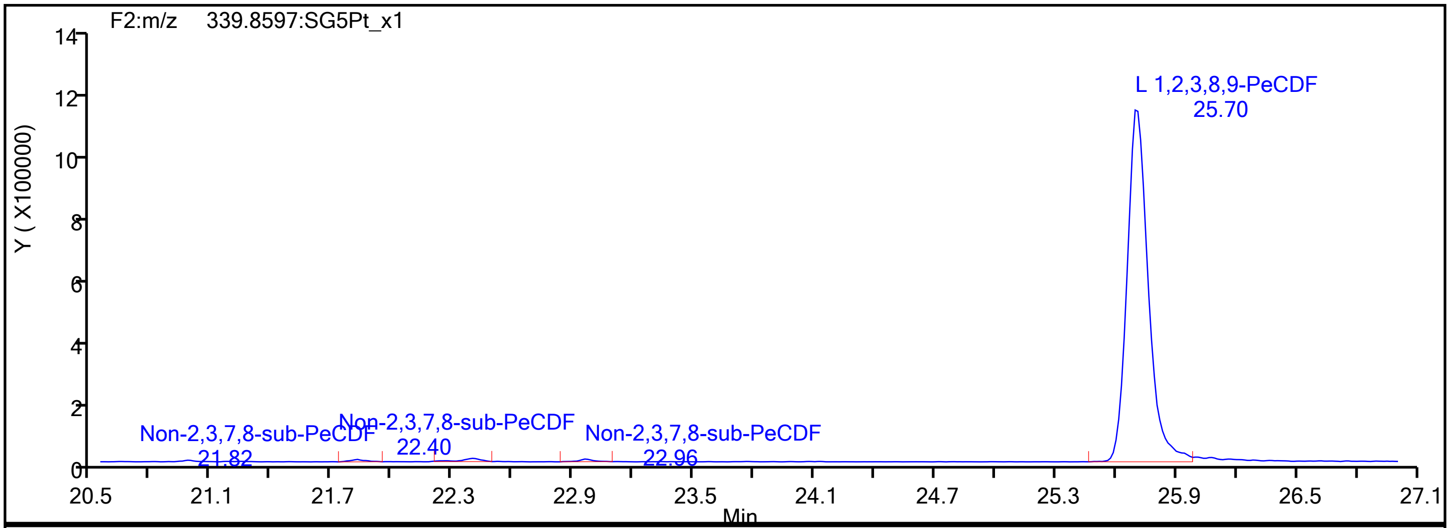

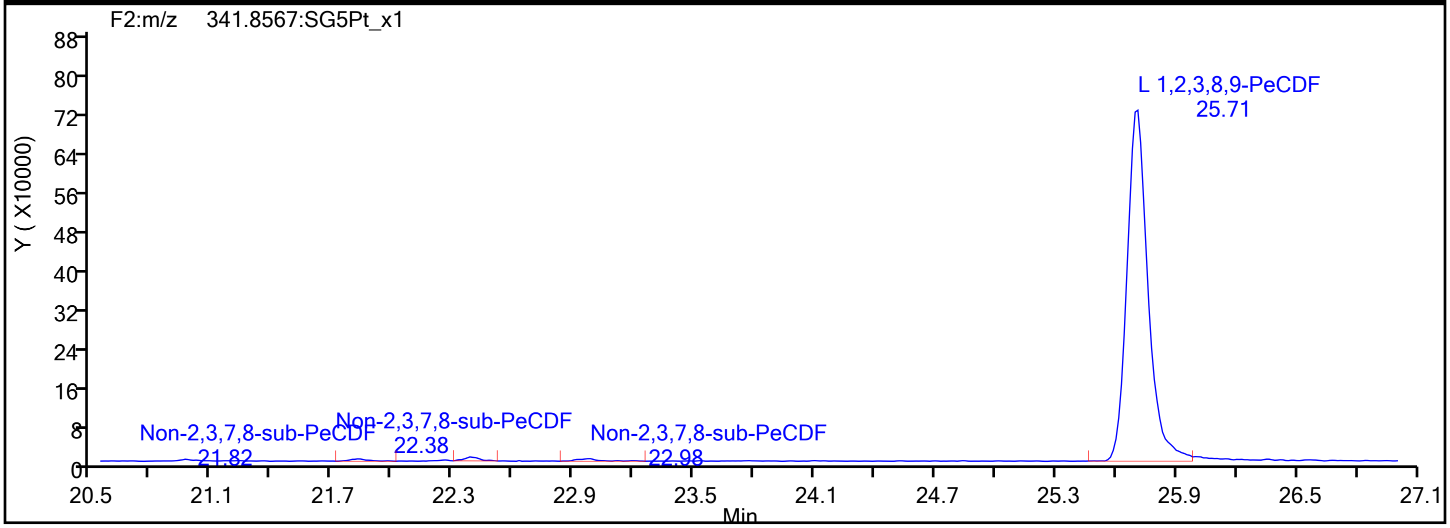

PeCDF Interference Mass

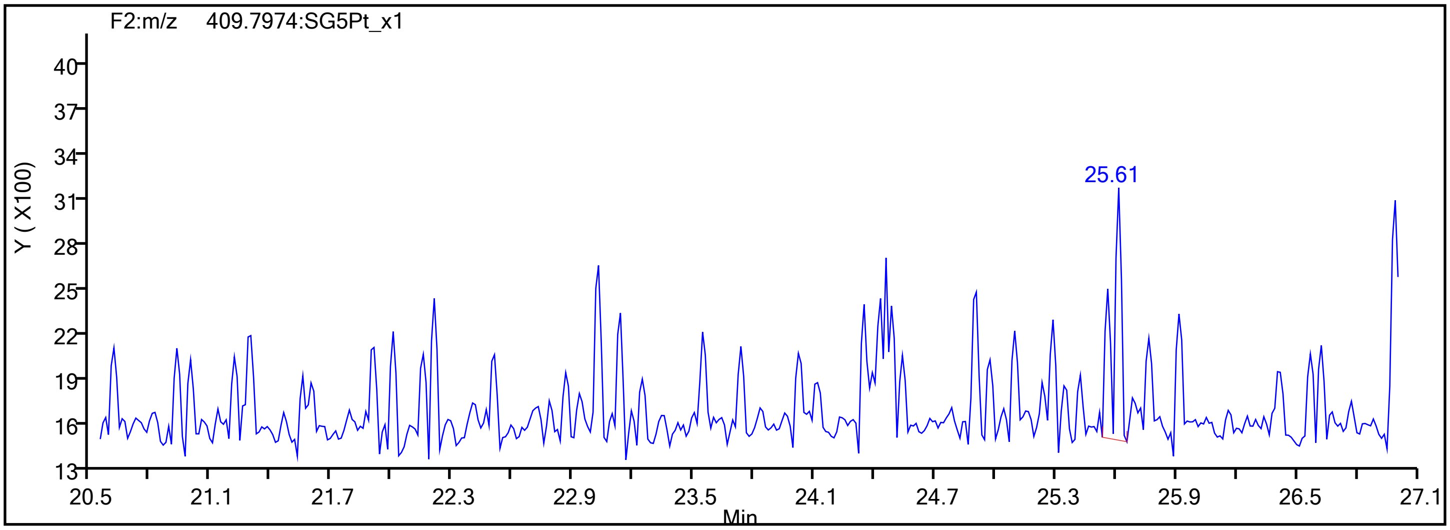

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203
Sample Line#: 16

Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

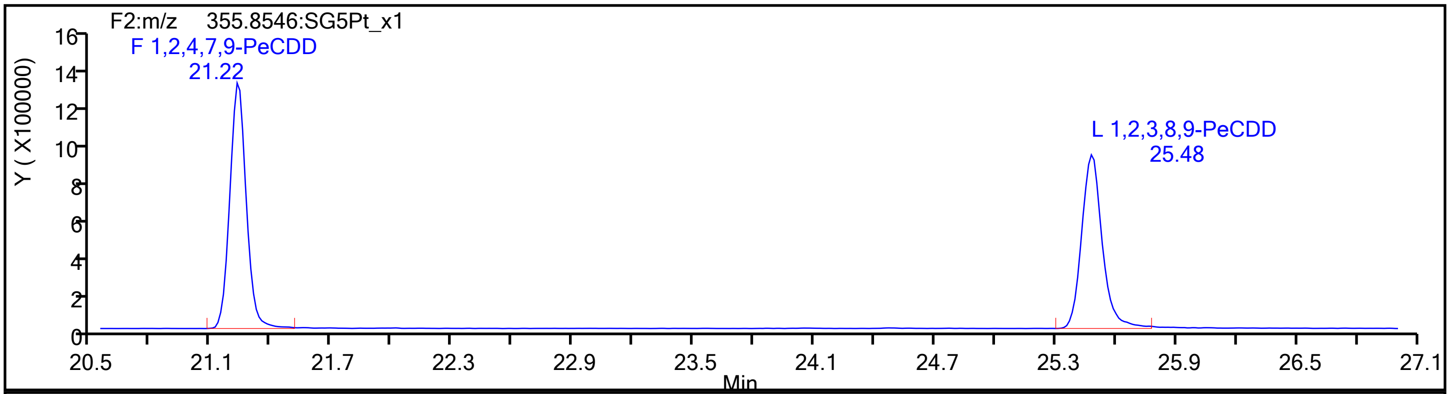

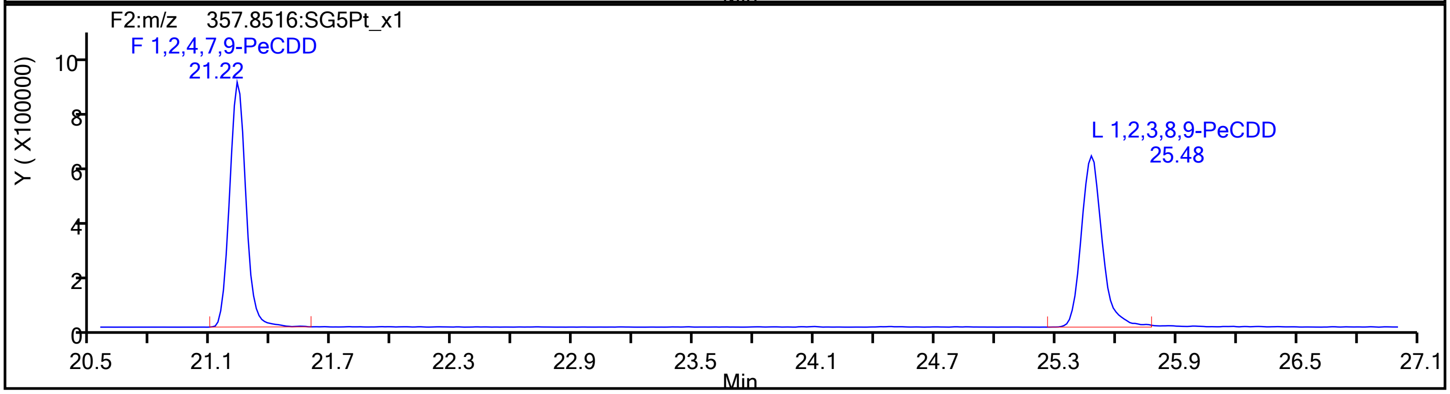

PeCDD Standards

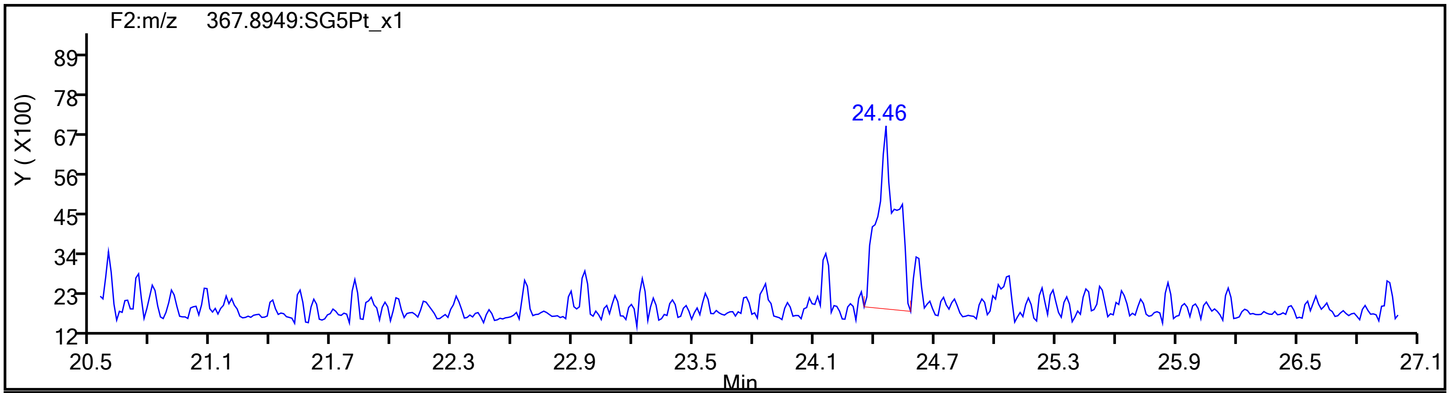

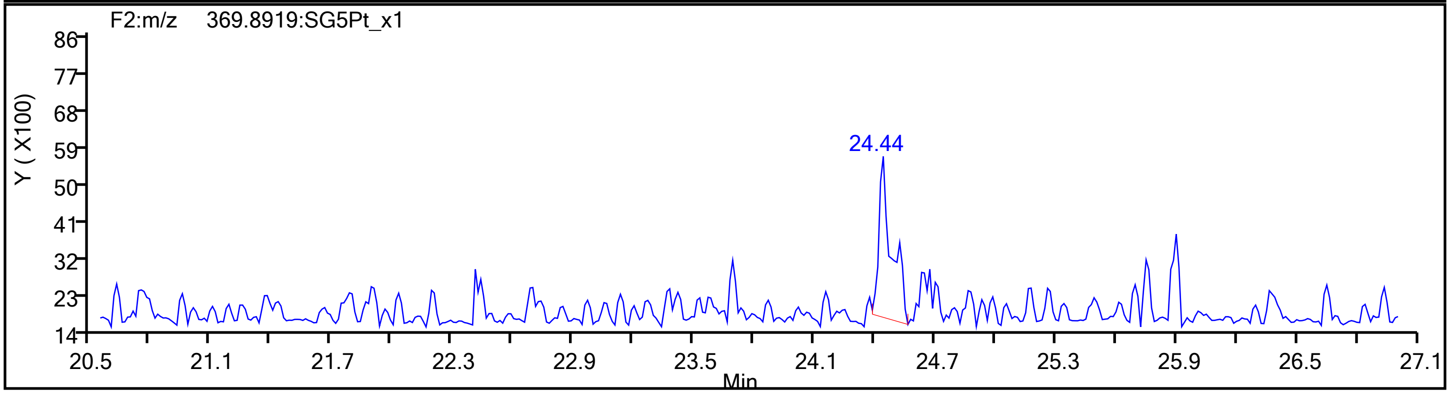

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

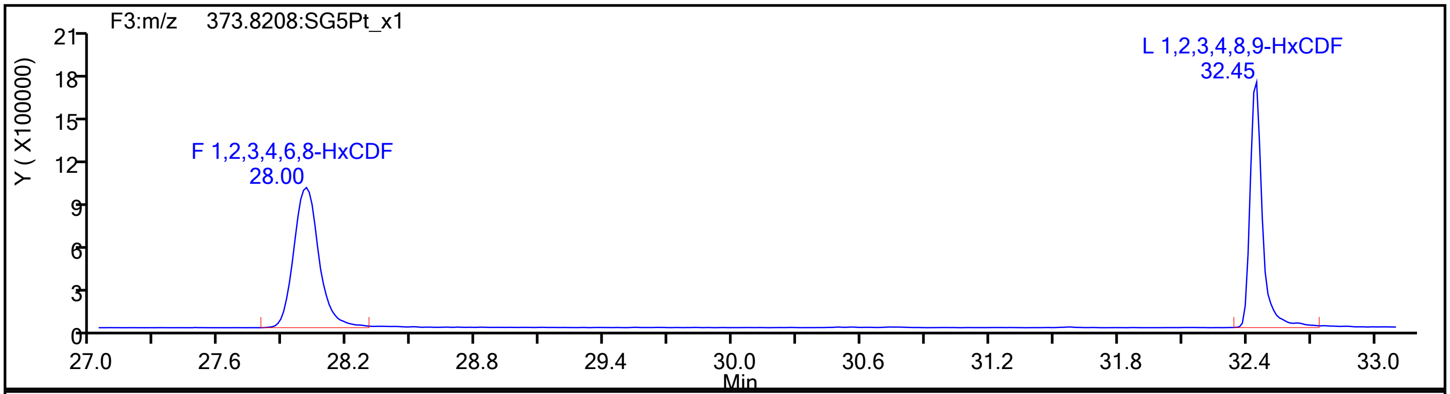

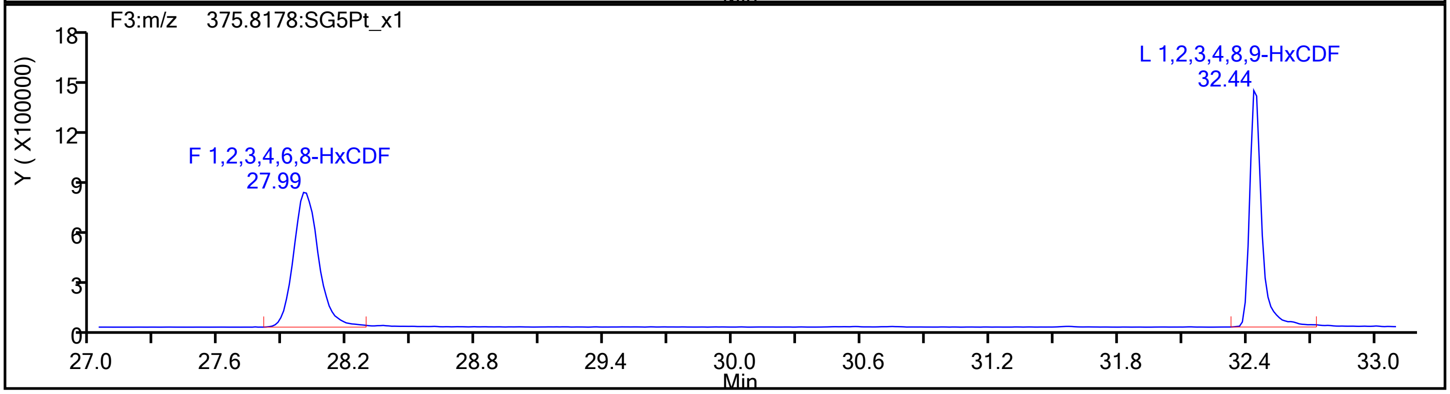

HxCDF Standards

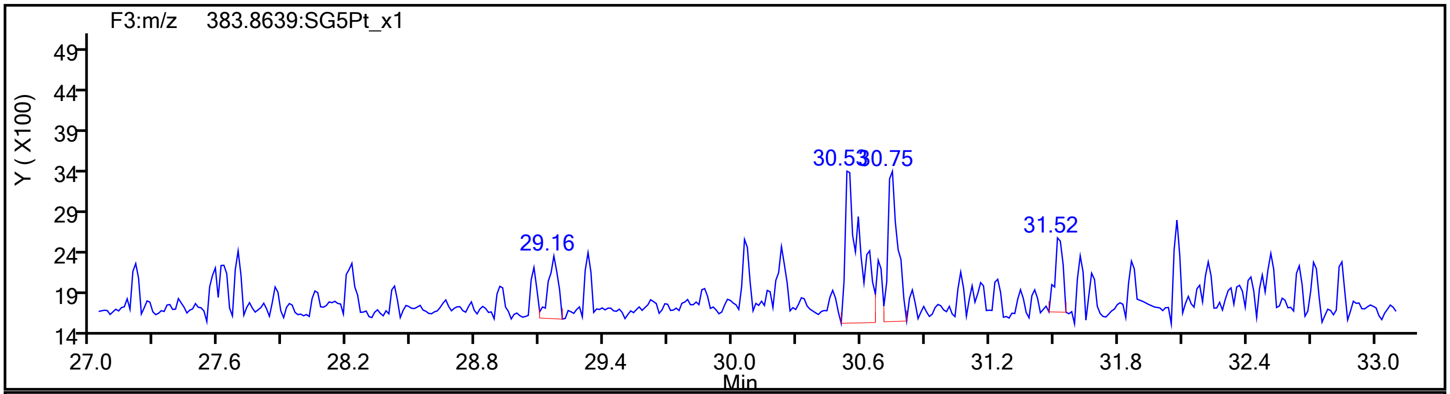

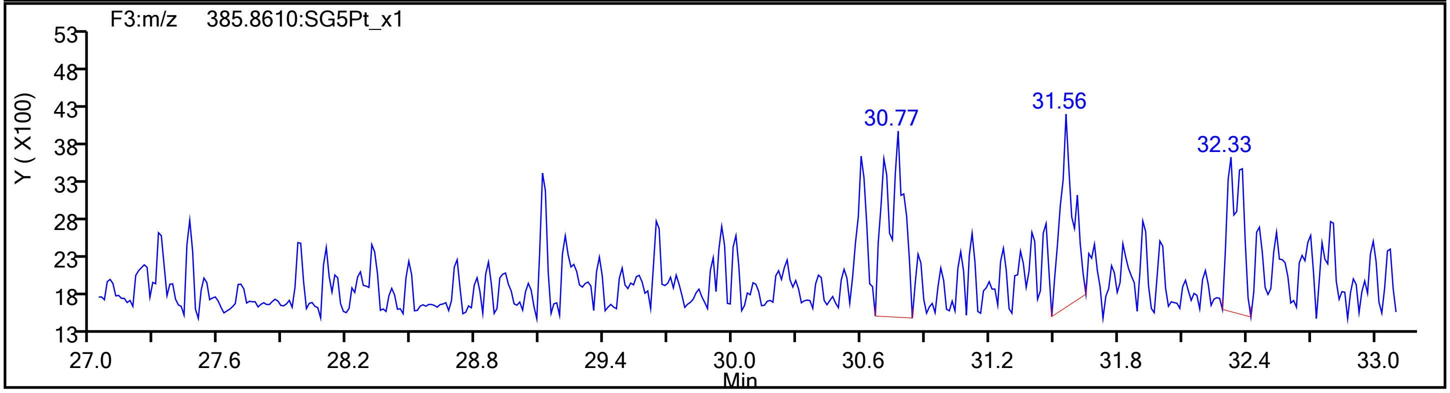

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

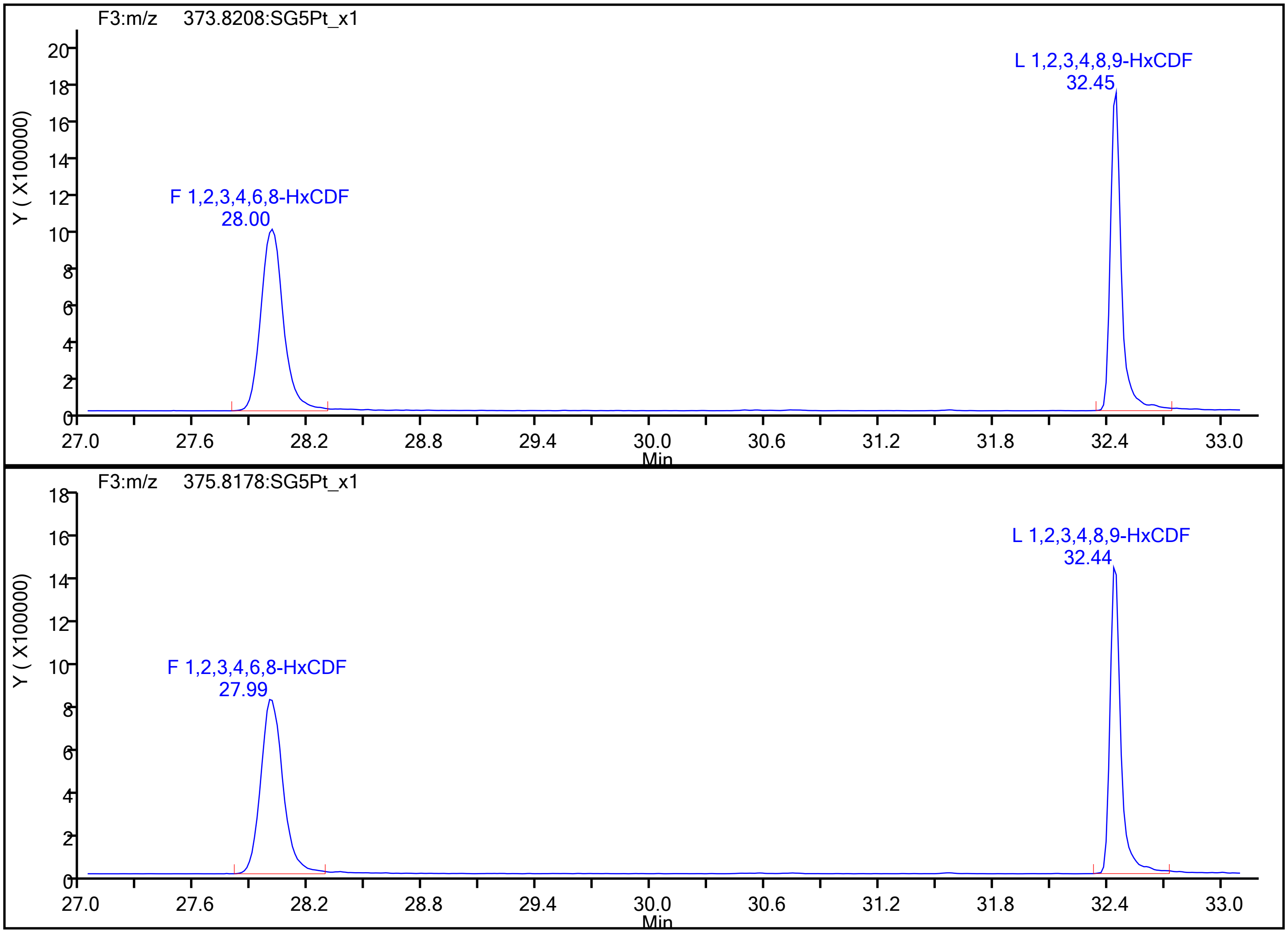

HxCDF Interference Mass

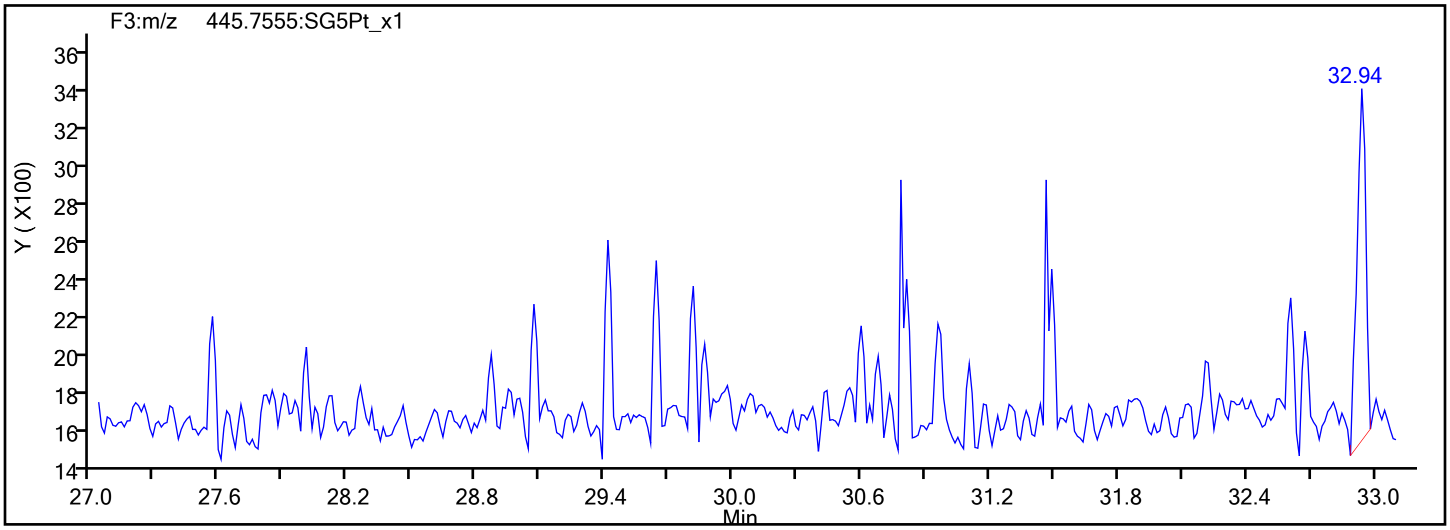

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

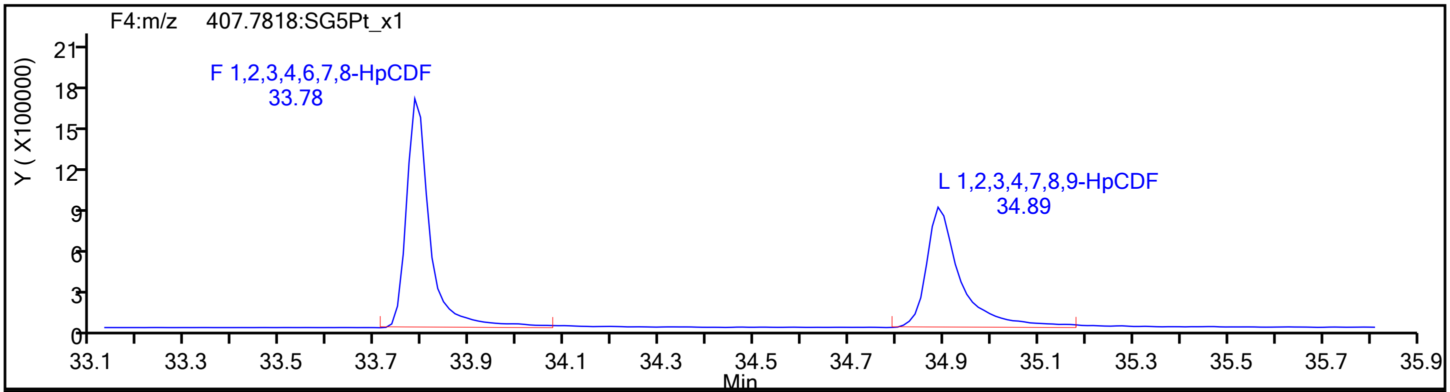

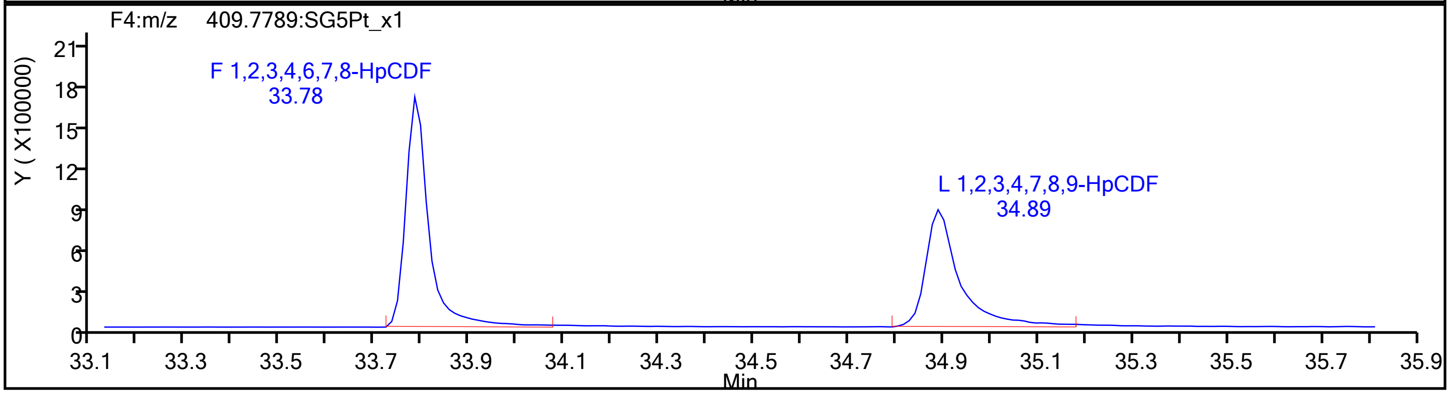

HpCDF Standards

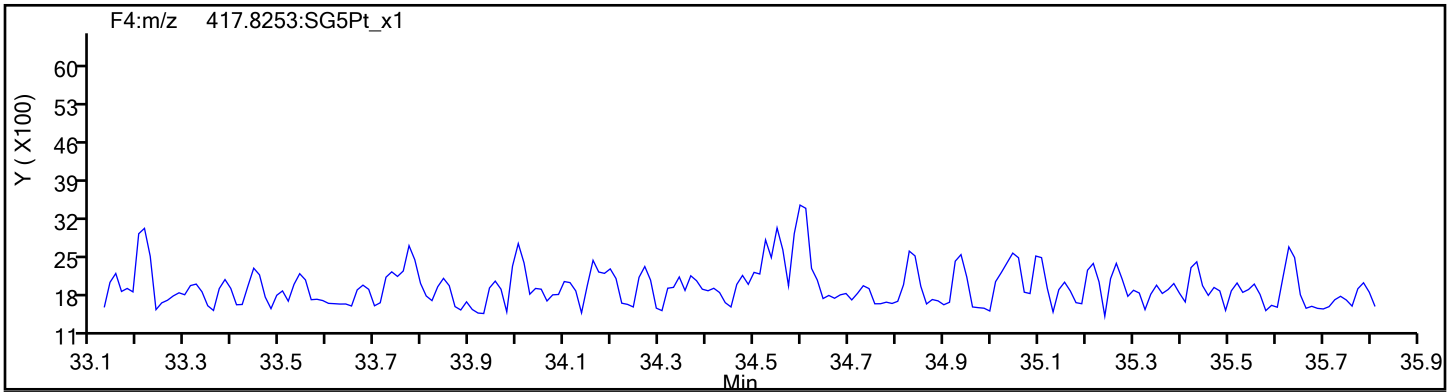

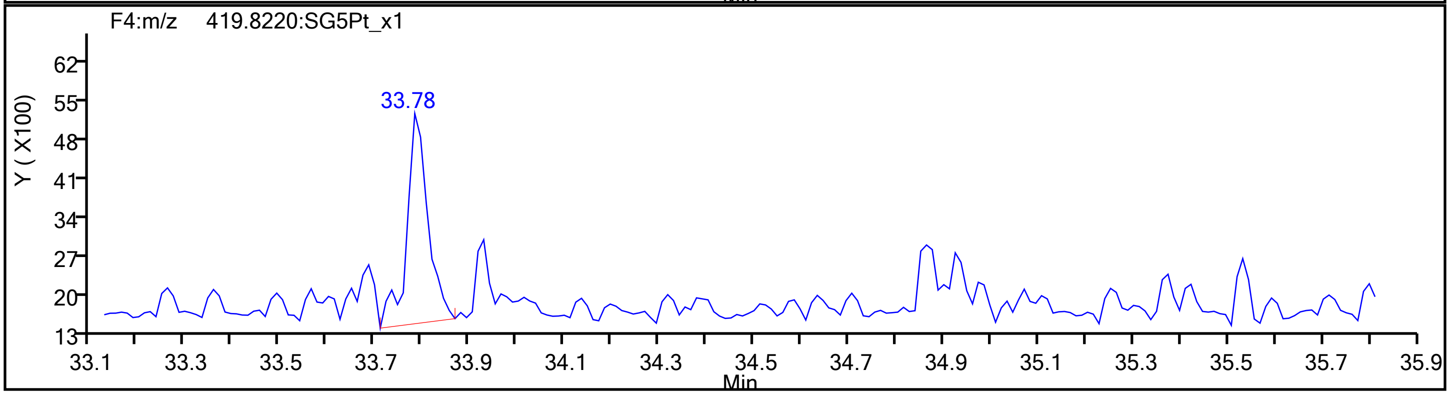

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

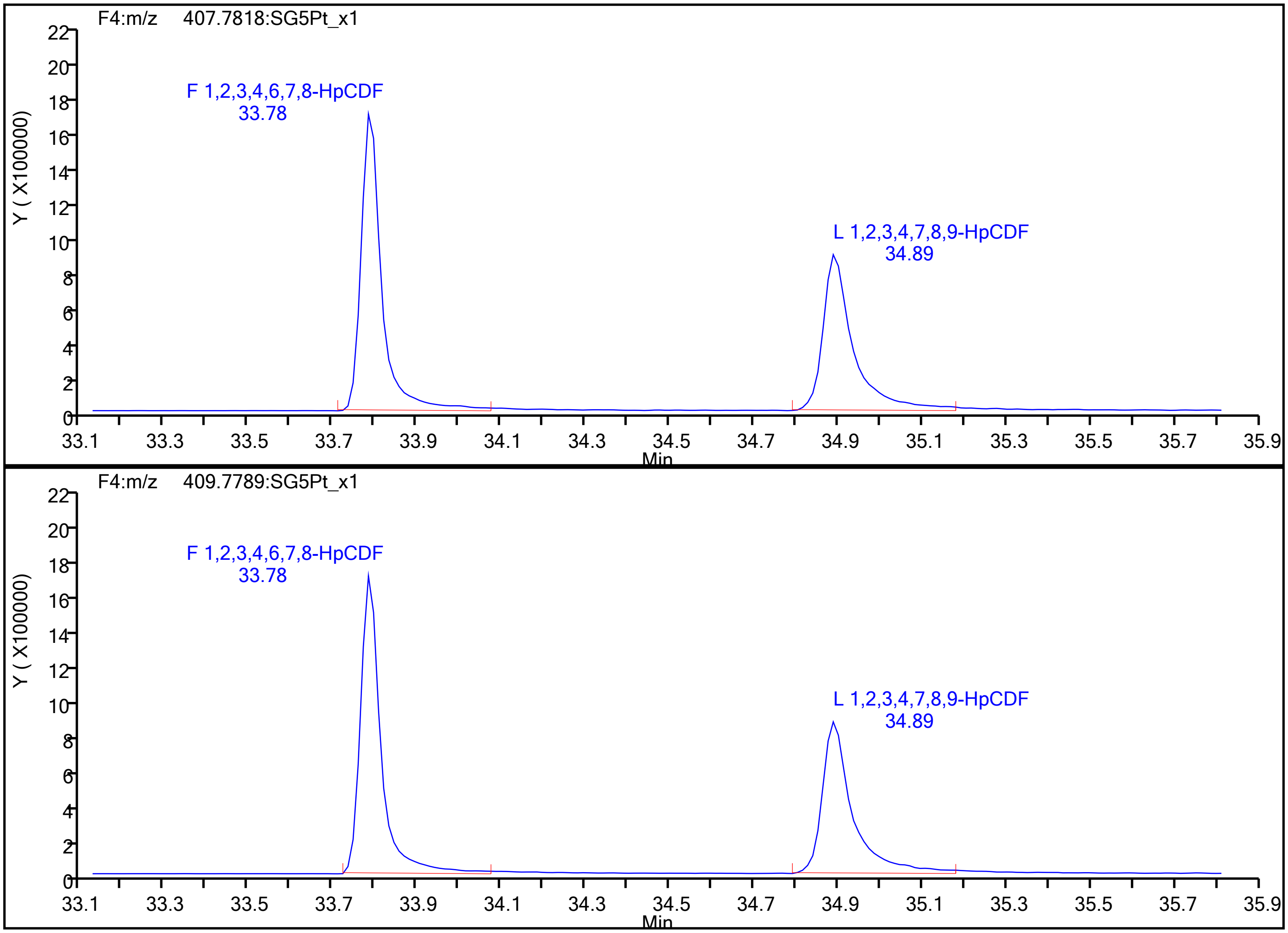

HpCDF Interference Mass

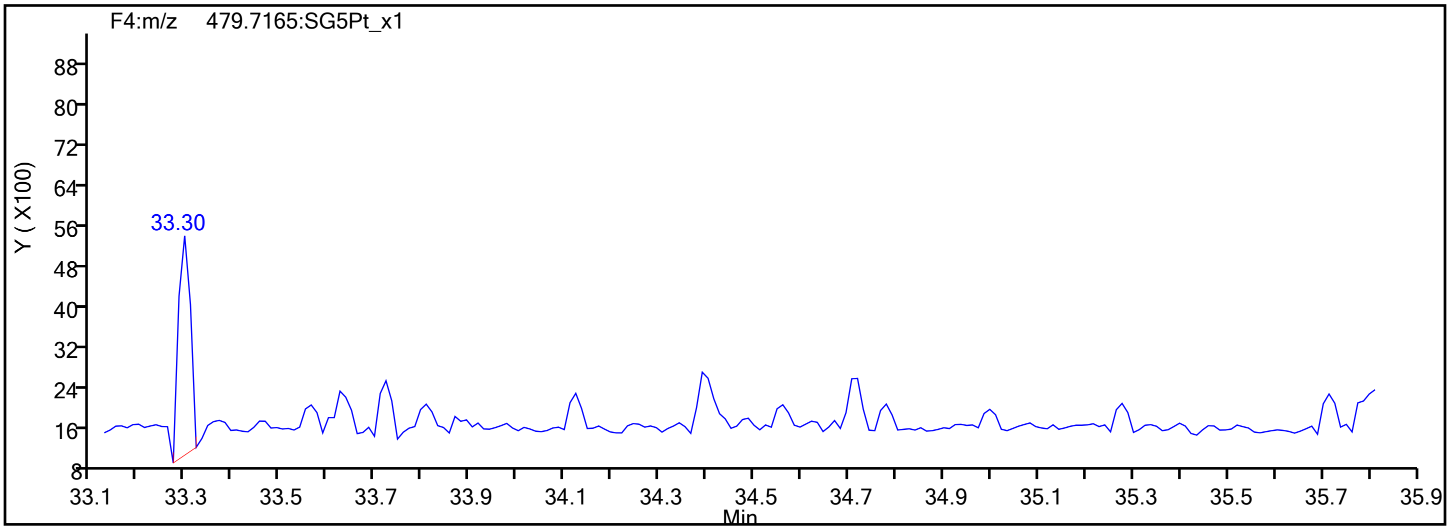

Report Date: 26-Nov-2020 00:06:46
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Column Dia: 0.32 mm

HpCDD

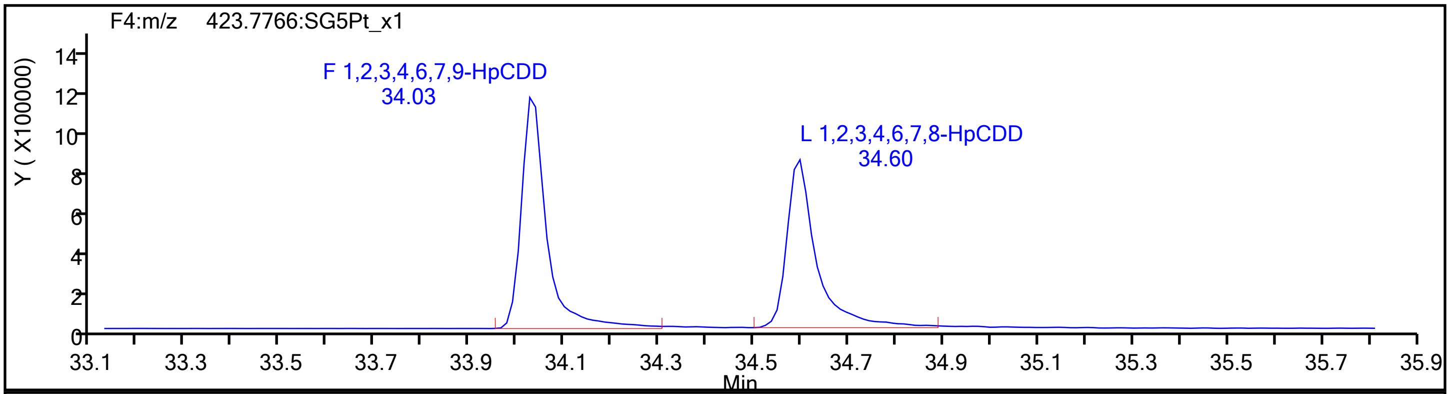

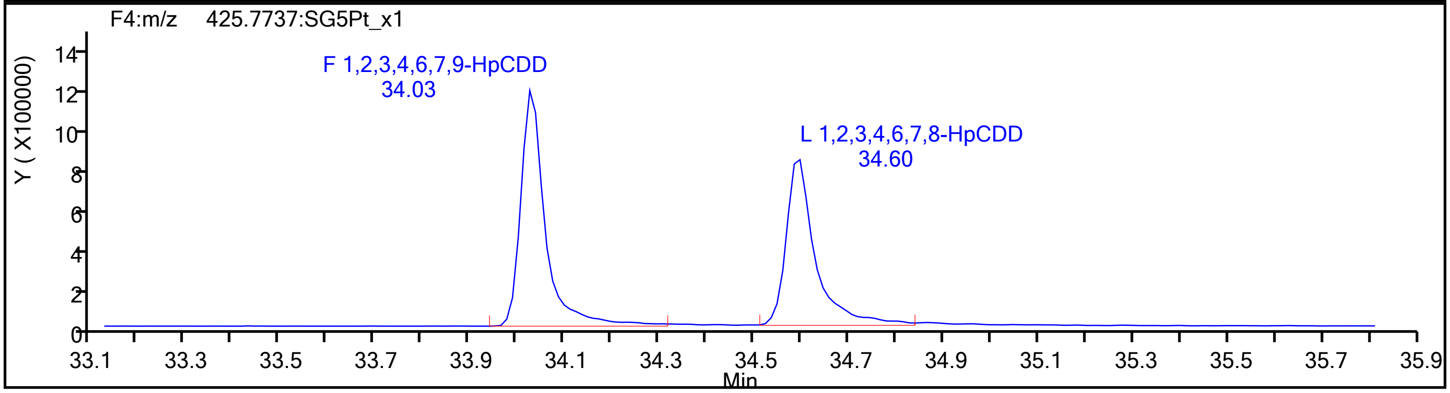

HpCDD Standards

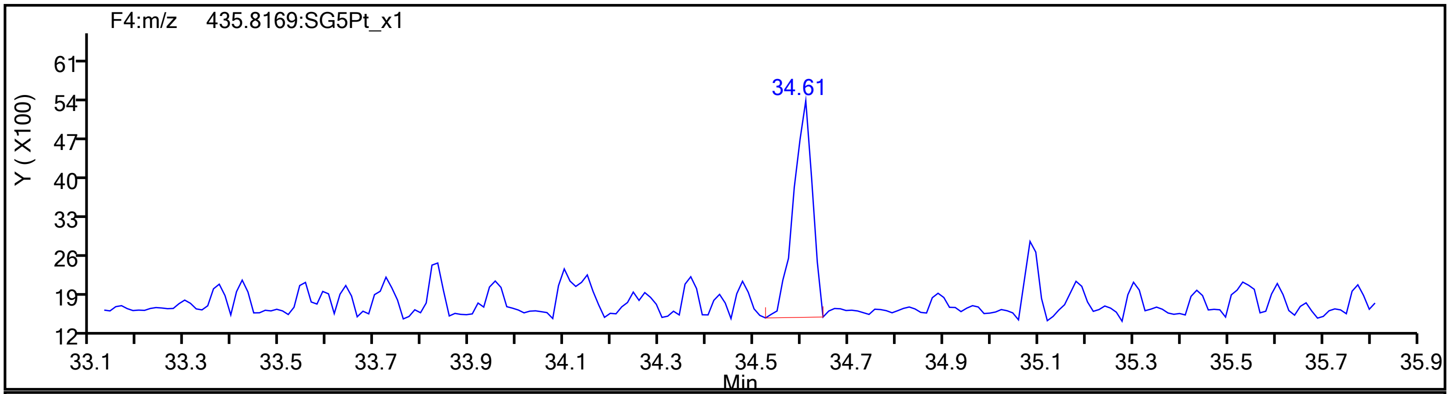

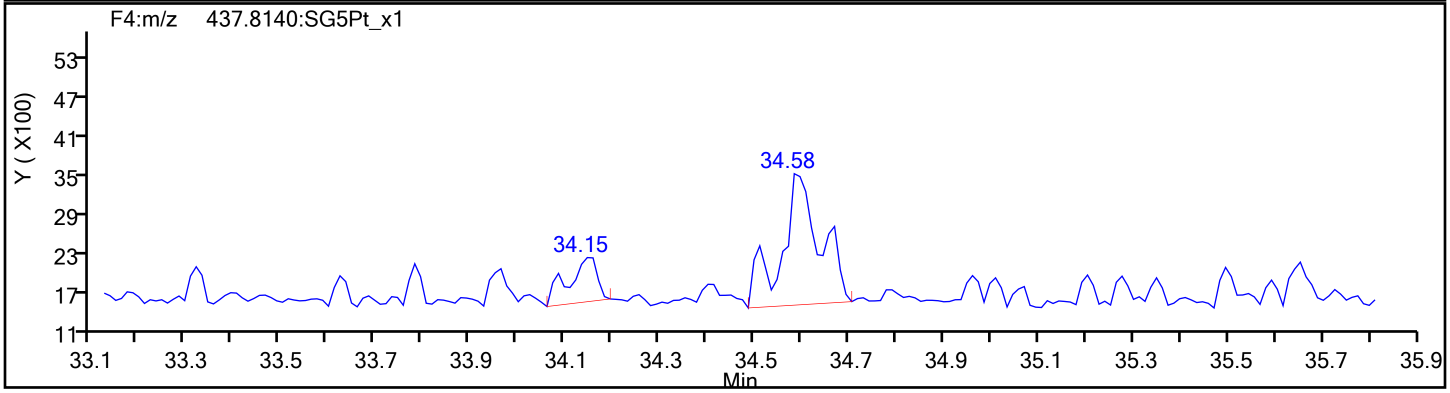

Report Date: 26-Nov-2020 00:06:46
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

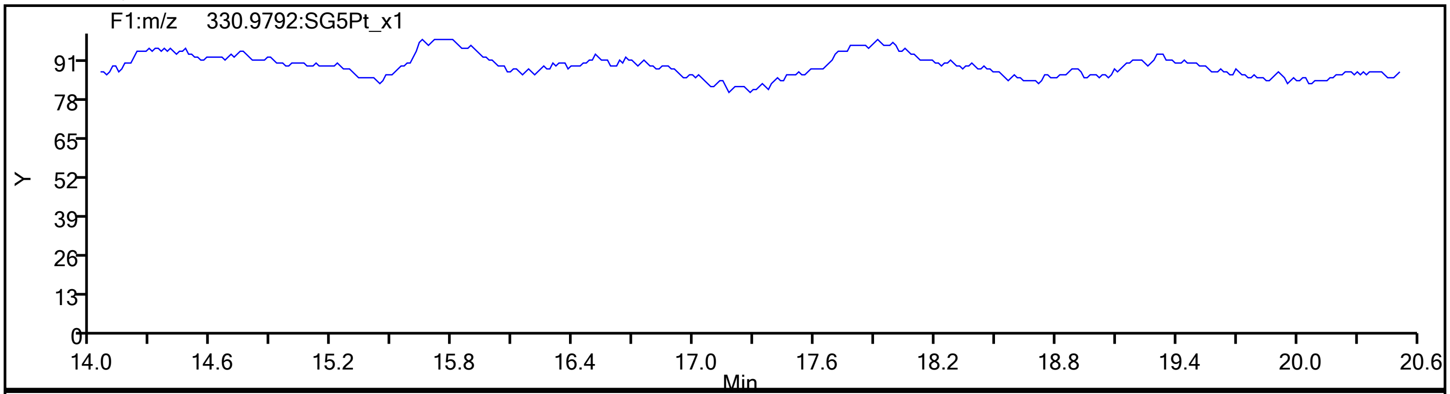

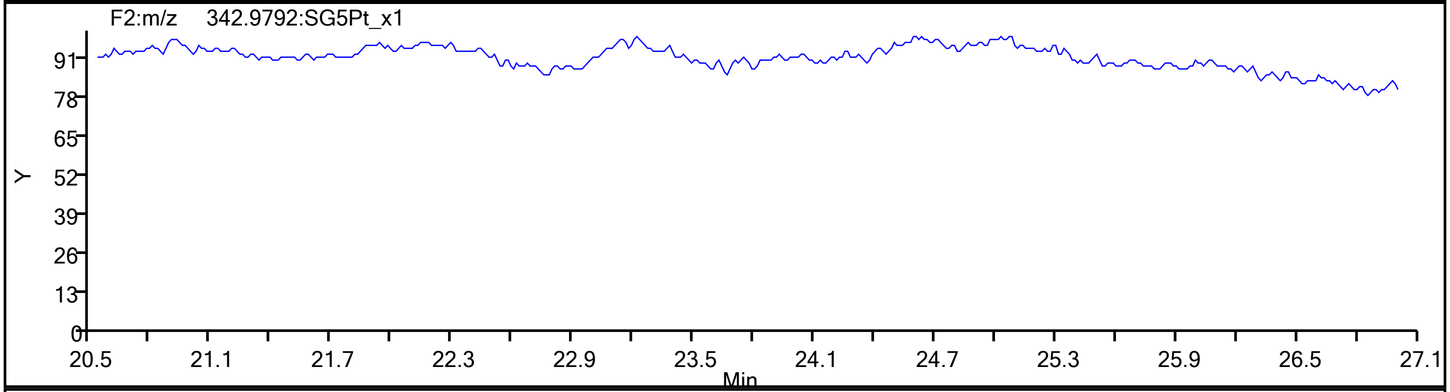

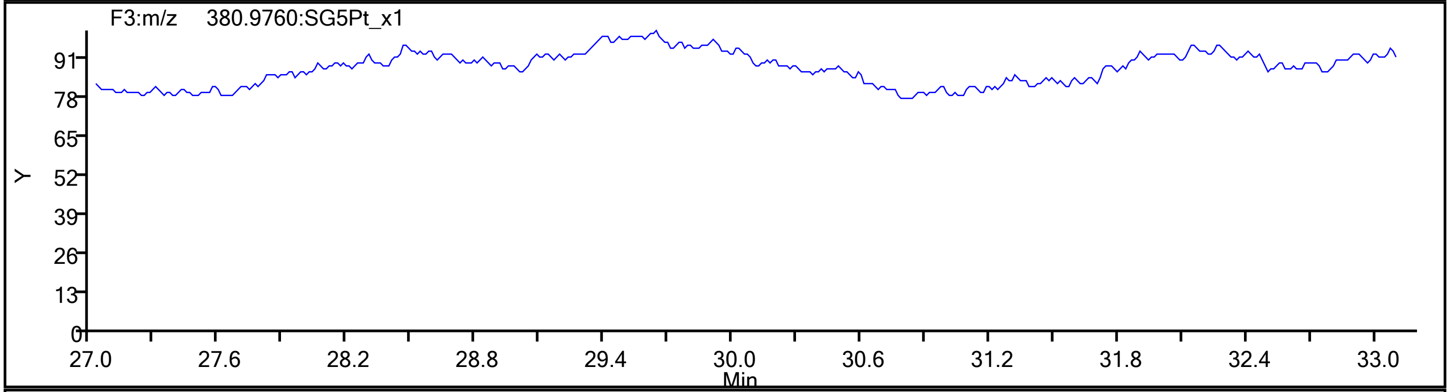

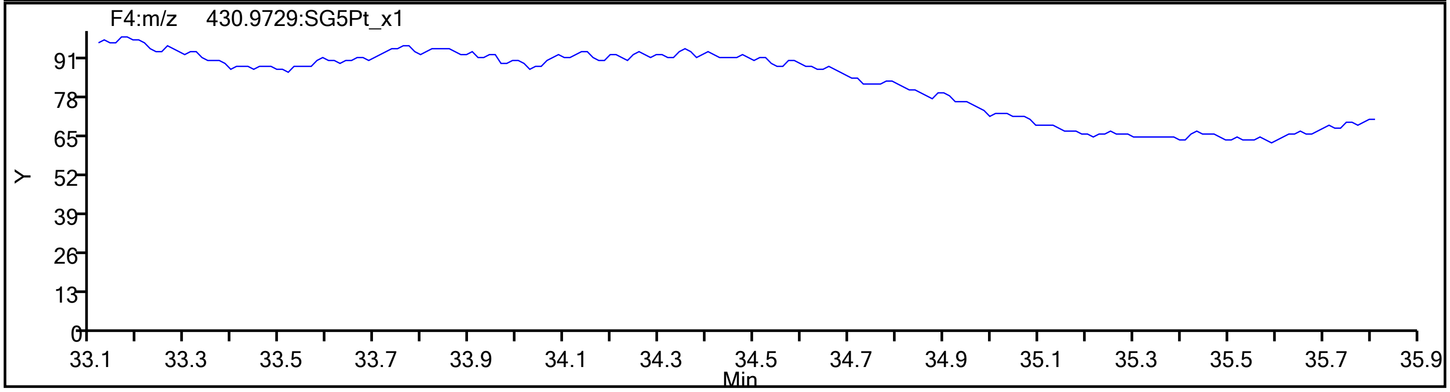

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203 Sample Line#: 16
Column Type: DB-5 Column Dia: 0.32 mm

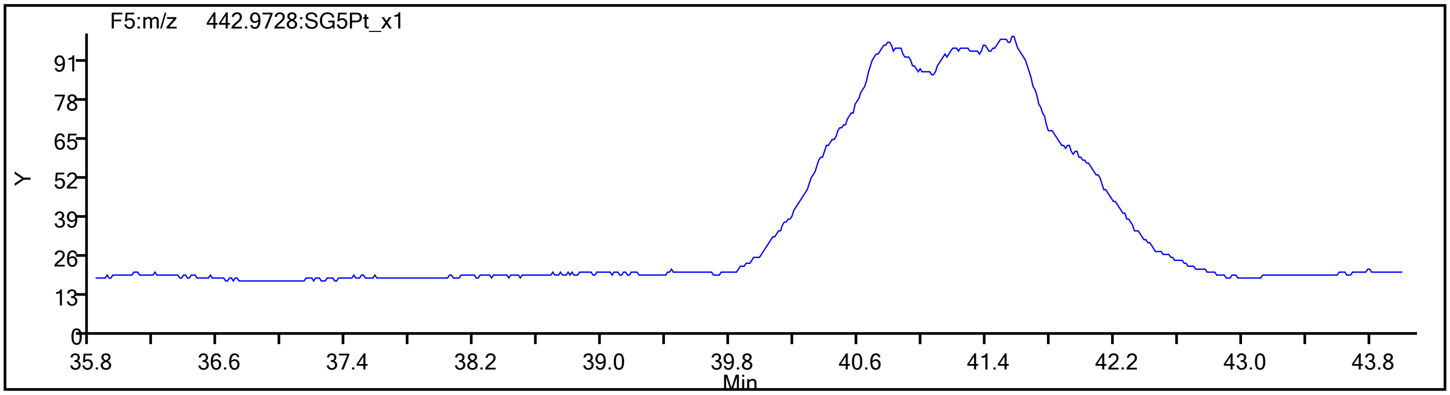

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:33 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 24-Jul-2020 22:33:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

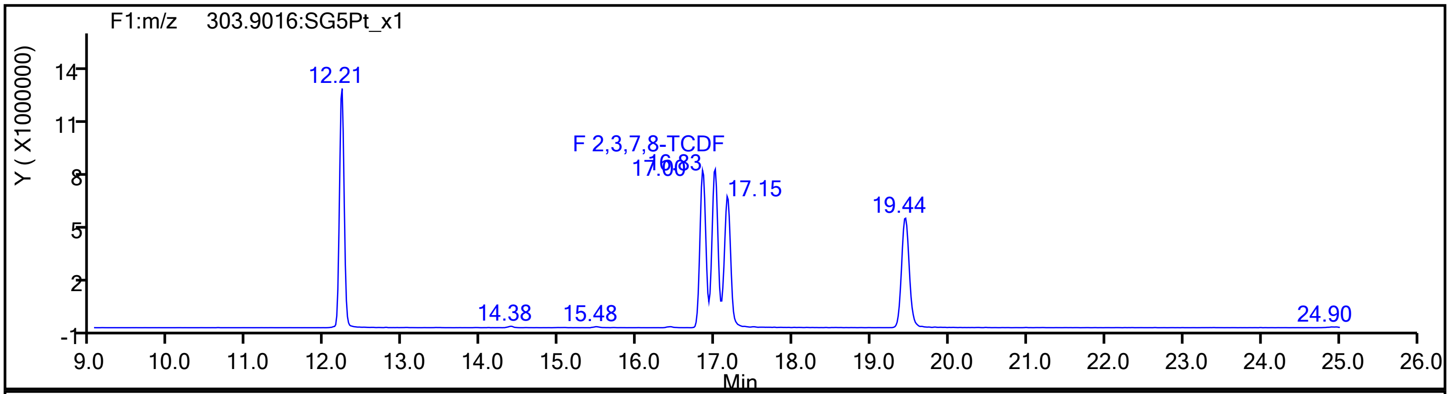

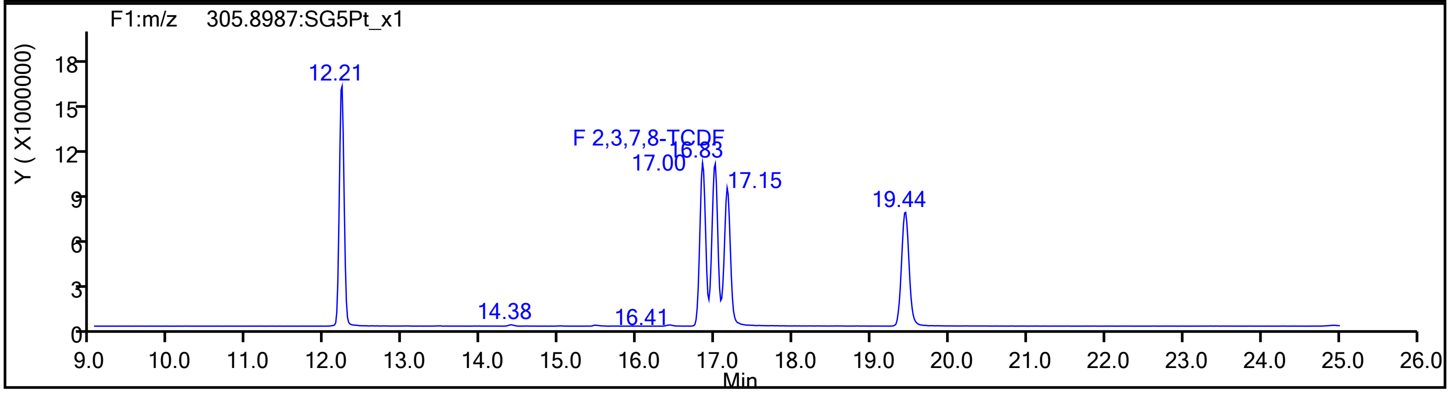

TCDF Standards

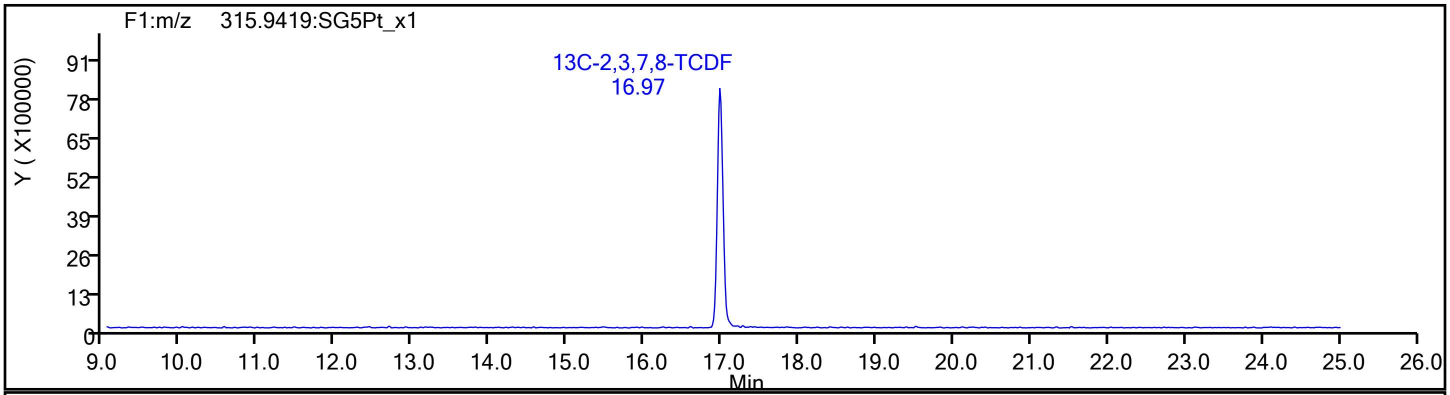

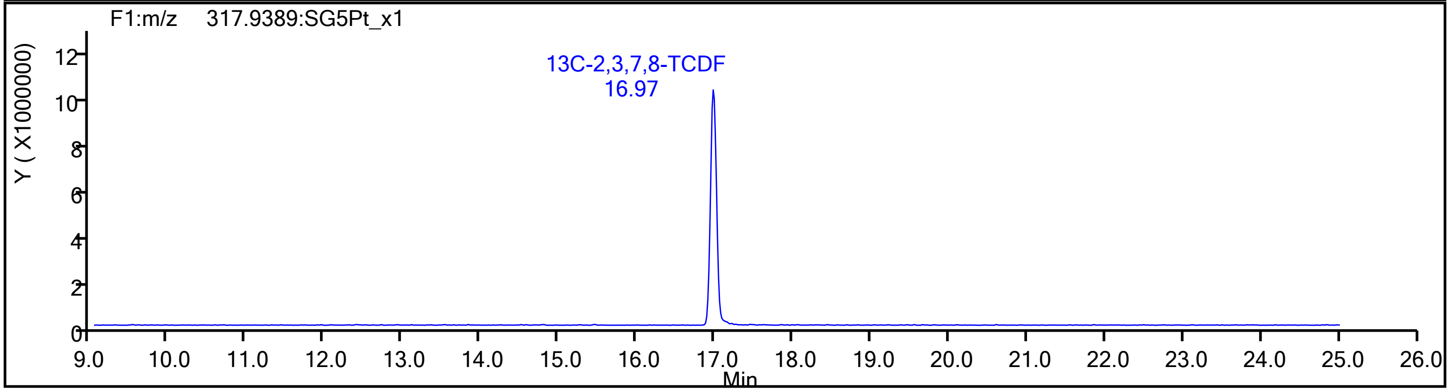

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

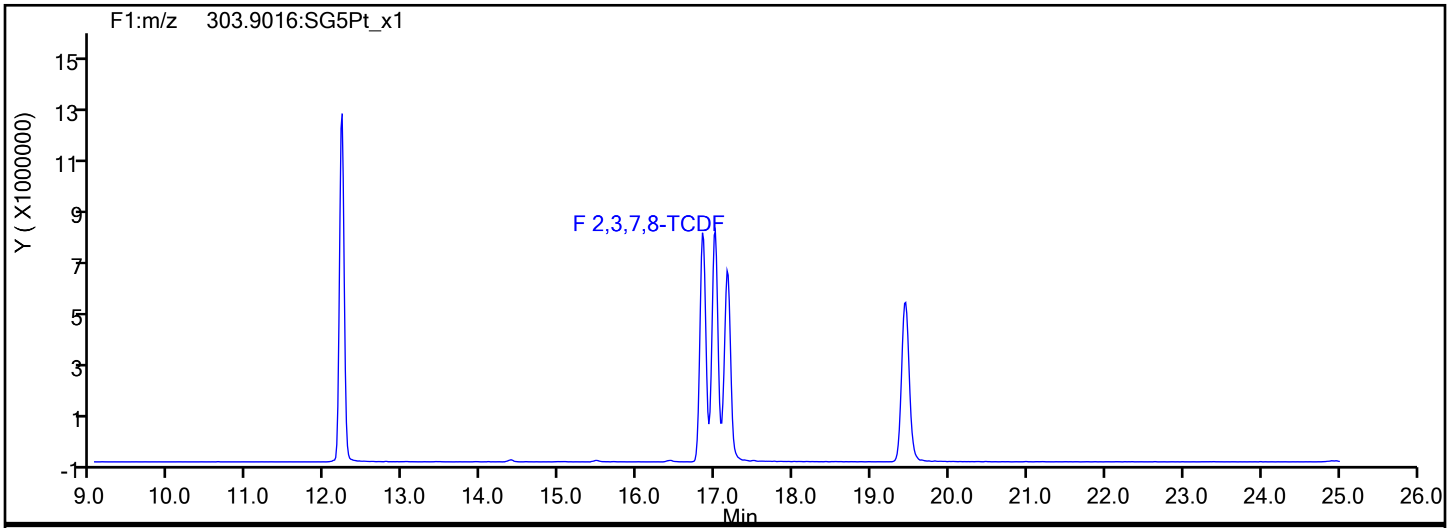

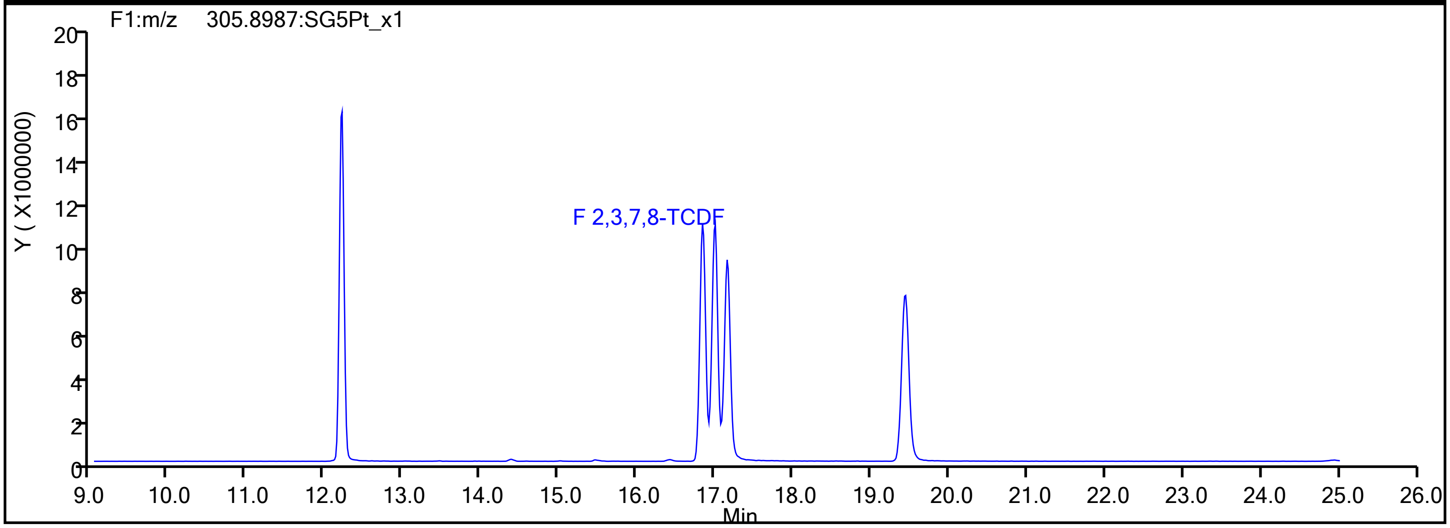

TCDF Interference Mass

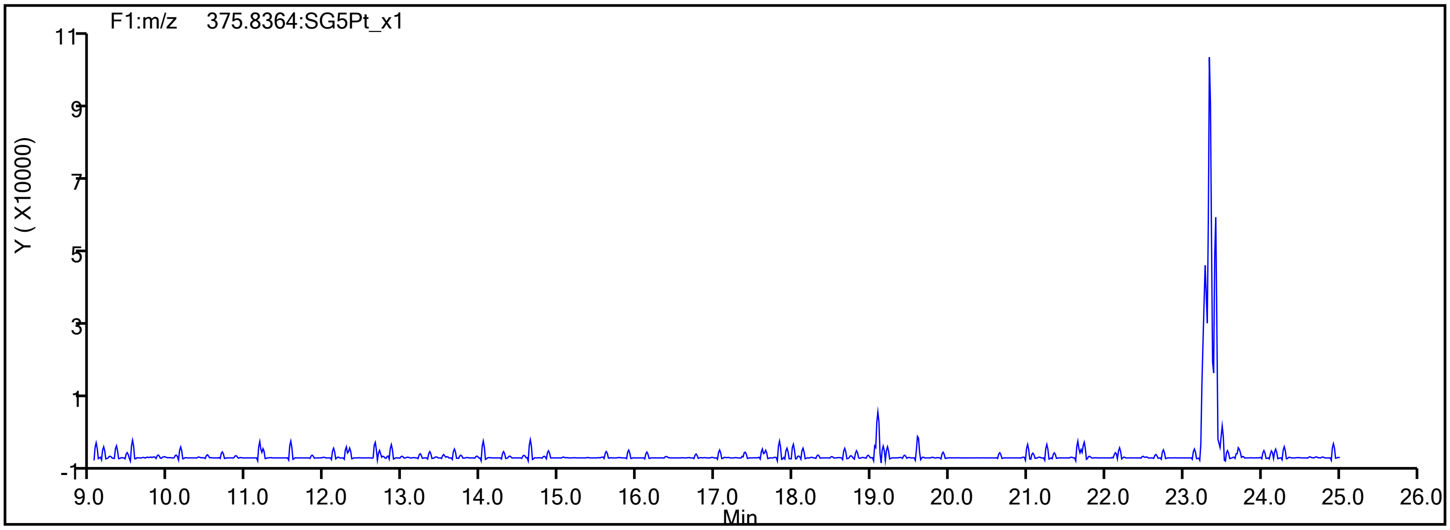

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

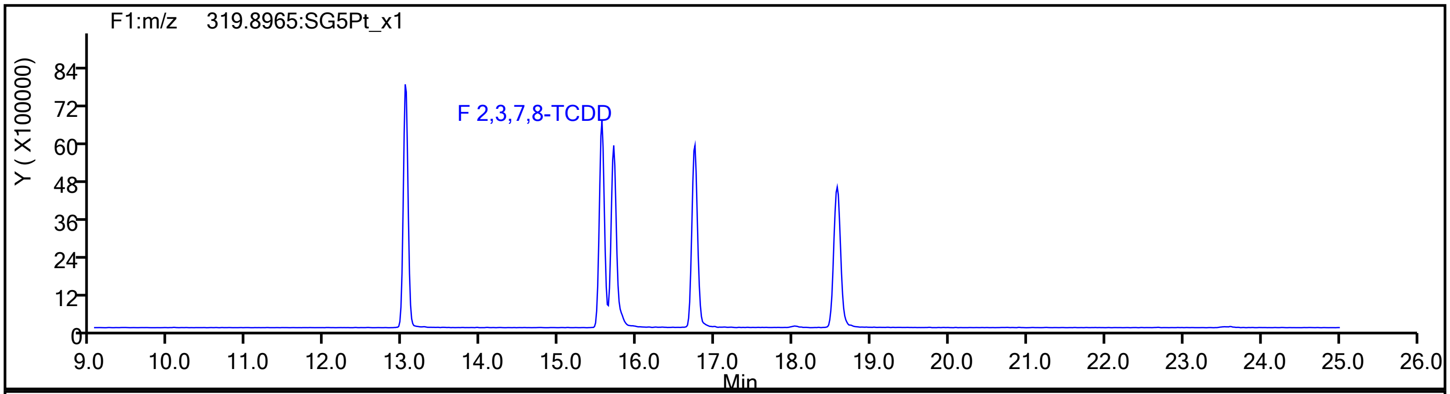

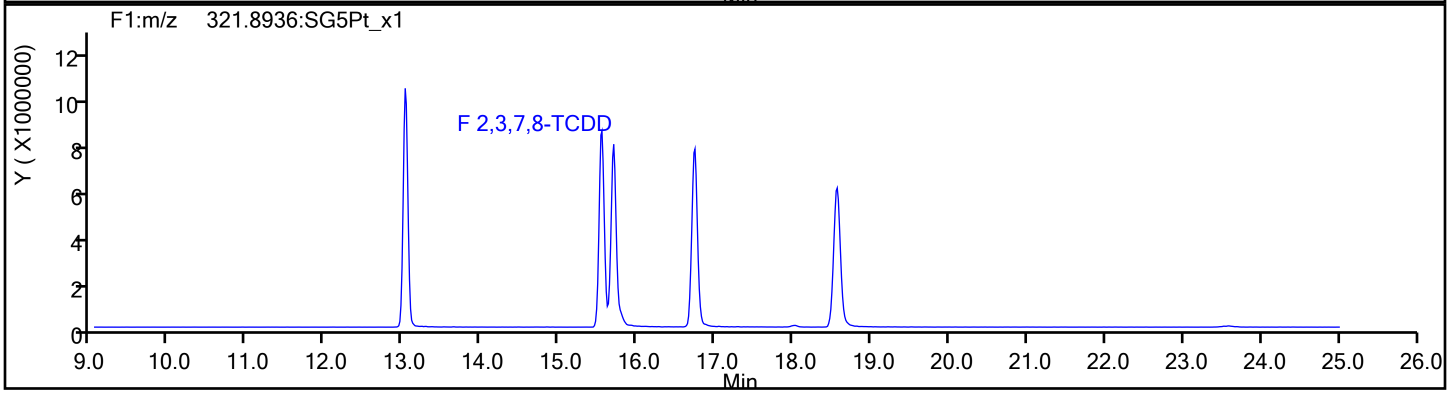

TCDD Standards

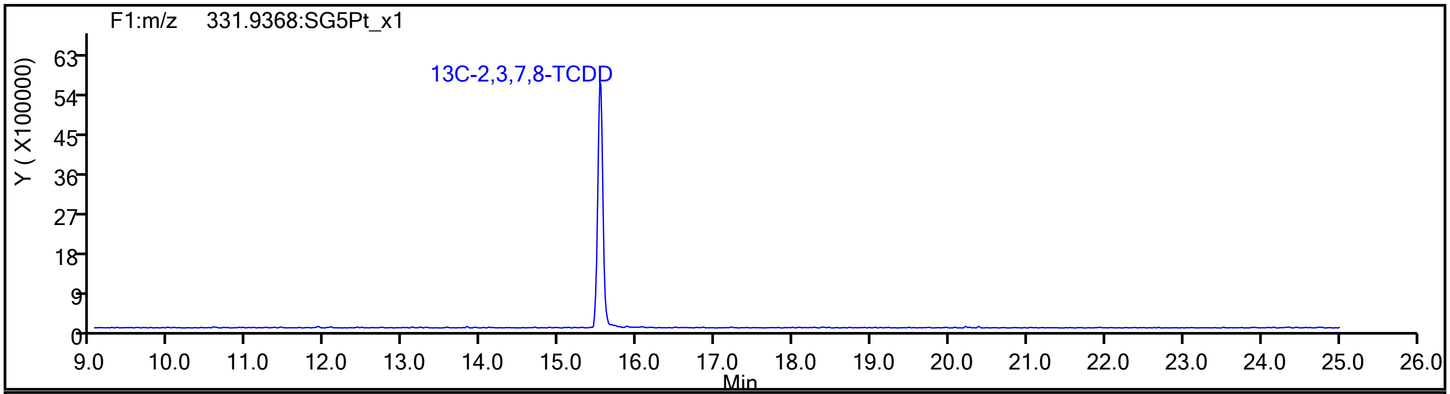

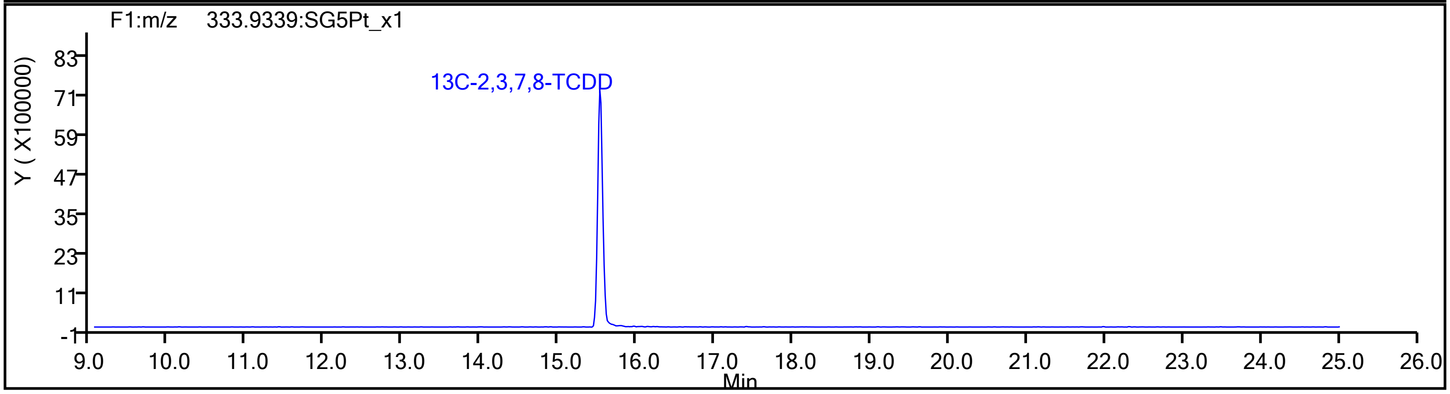

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

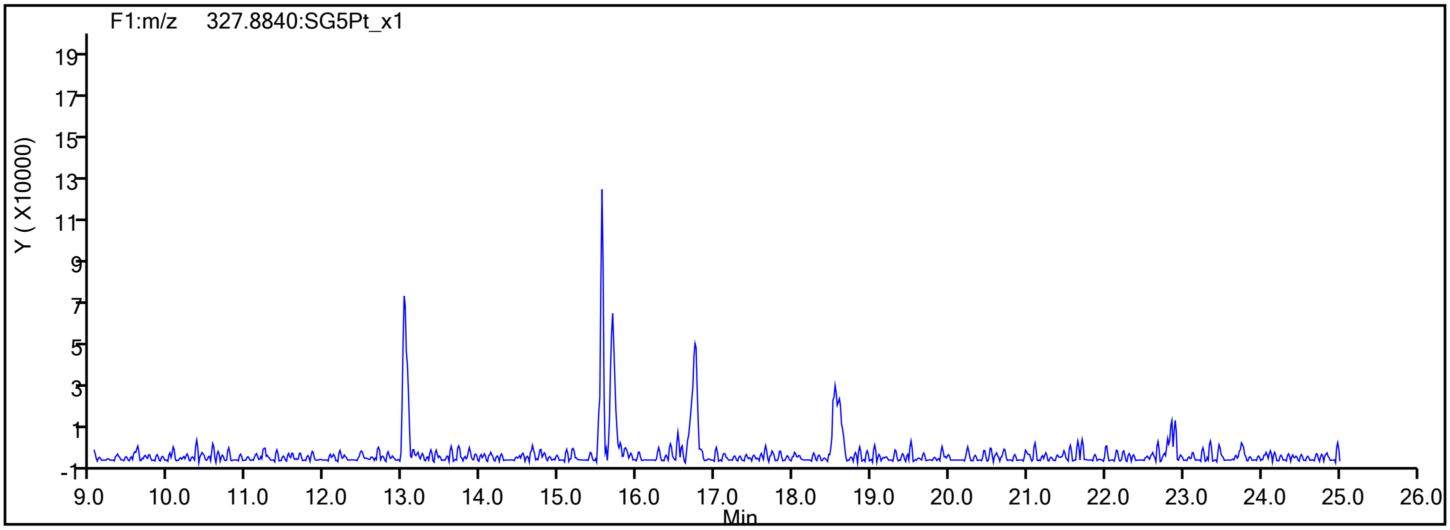

37Cl4-TCDD Standards

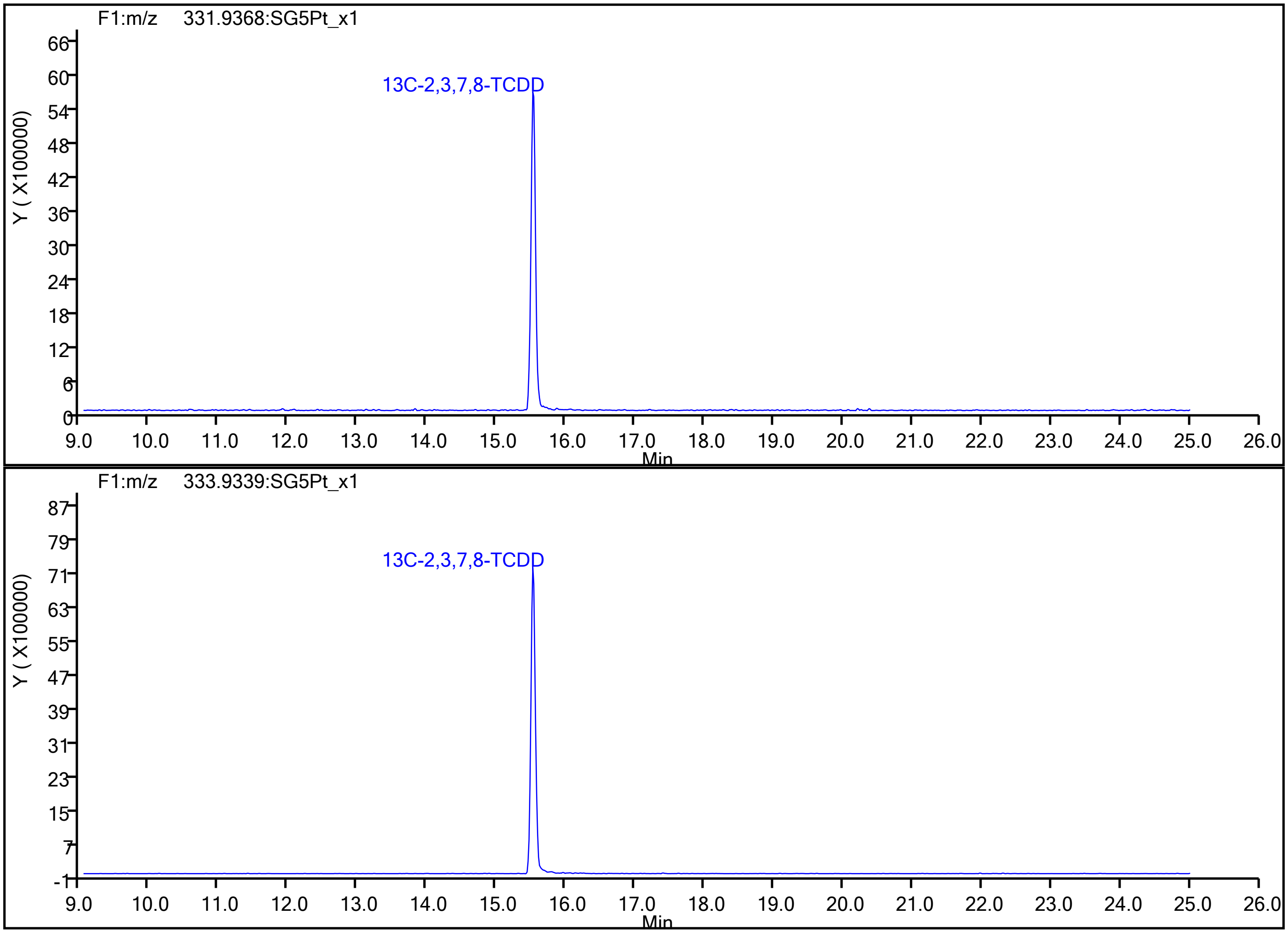

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

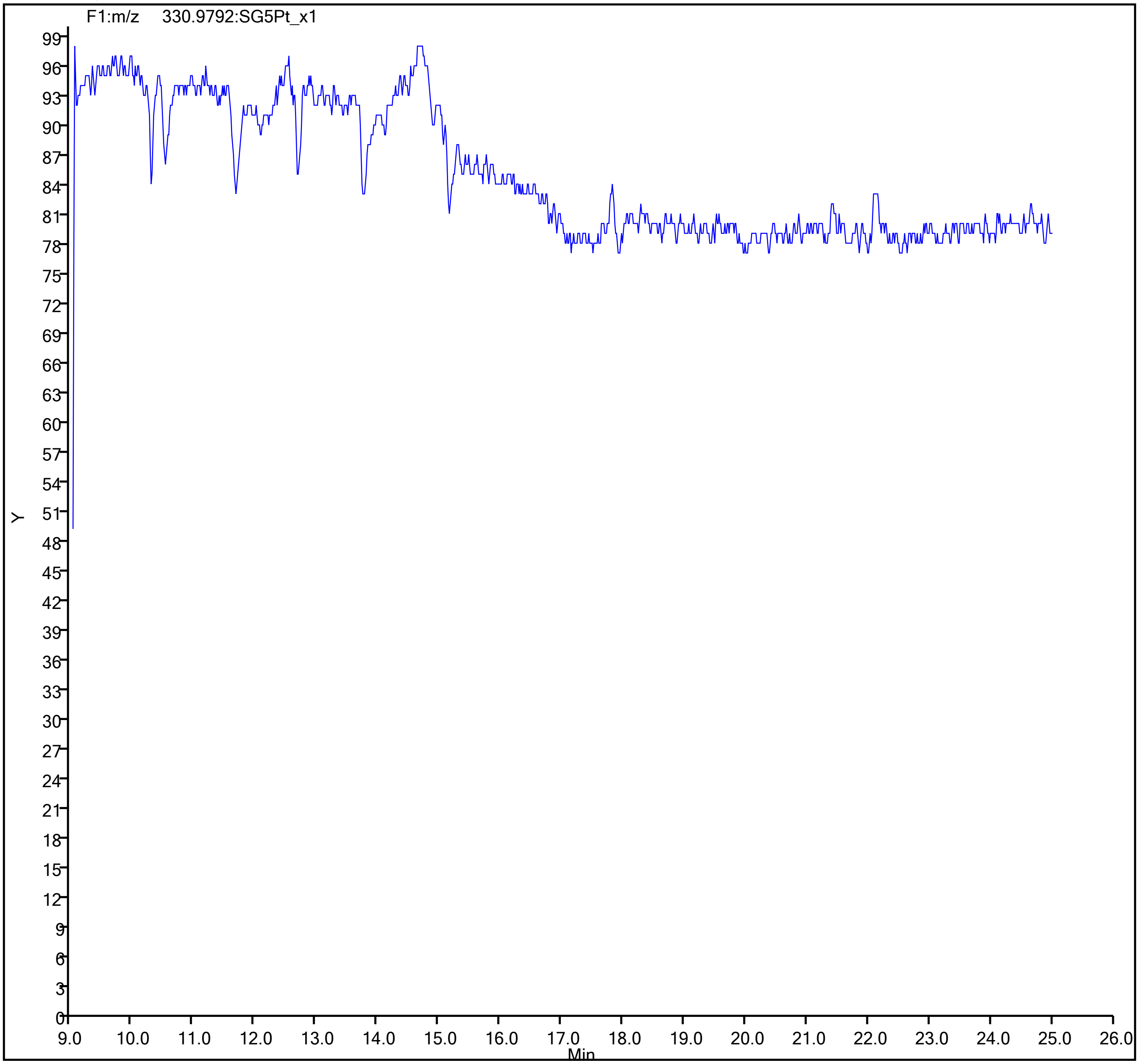

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 30-Nov-2020 12:27:33 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.779	147049597	0.78	1.5708					0.00	
2,3,7,8-TCDF	16.792	141743195	0.76	0.9943	38.8	38.8	0.0899	0.0899		
D 13C-2,3,7,8-TCDD	15.324	86771505	0.81	0.9834					0.00	
2,3,7,8-TCDD	15.352	98757471	0.77	1.2822	35.5	35.5	0.0622	0.0622		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 30-Nov-2020 12:27:33 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.779	16.779	0	1.000	64664180	12500599	17772	44430	703		
317.9389	16.779	16.779	0	1.000	82385417	15822296	12512	31280	1265	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.792	16.792	0	1.001	61383109	12691773	13097	32742	969		
305.8987	16.792	16.792	0	1.001	80360086	16542947	12229	30572	1353	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.324	15.324	0	1.000	38745630	8650137	11289	28222	766		
333.9339	15.324	15.324	0	1.000	48025875	11139362	5181	12952	2150	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.352	15.352	0	1.002	43057378	10315882	7031	17577	1467		
321.8936	15.338	15.352	-1	1.001	55700093	13338822	8750	21875	1524	0.77(0.65-0.89)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d
Injection Date: 30-Nov-2020 12:27:33
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 436991
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

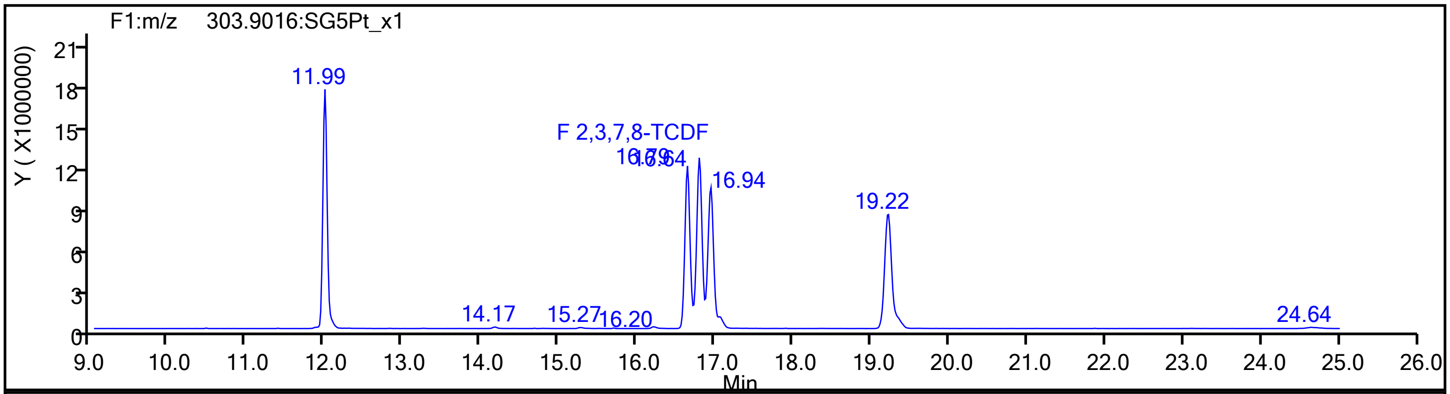

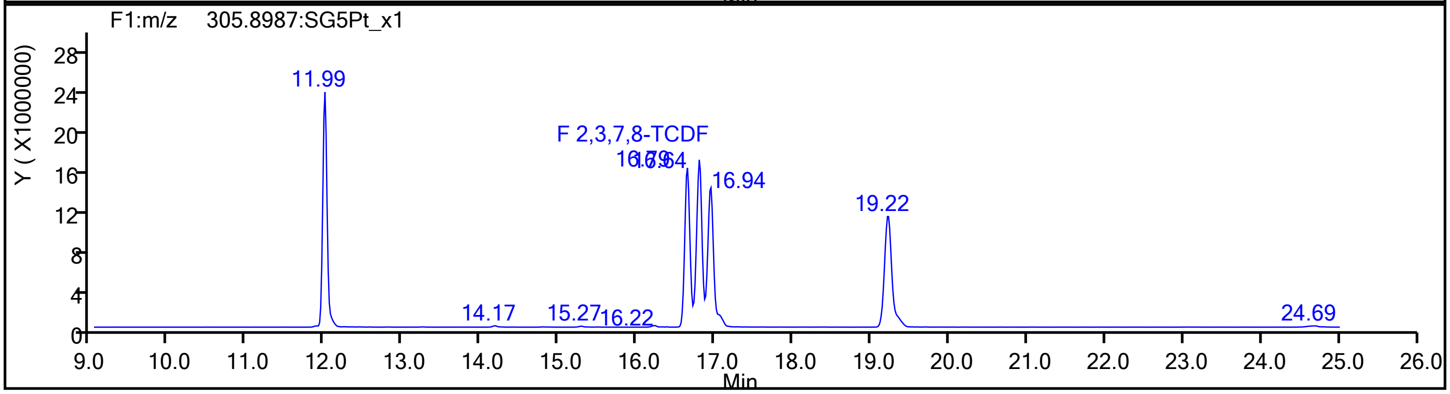

TCDF Standards

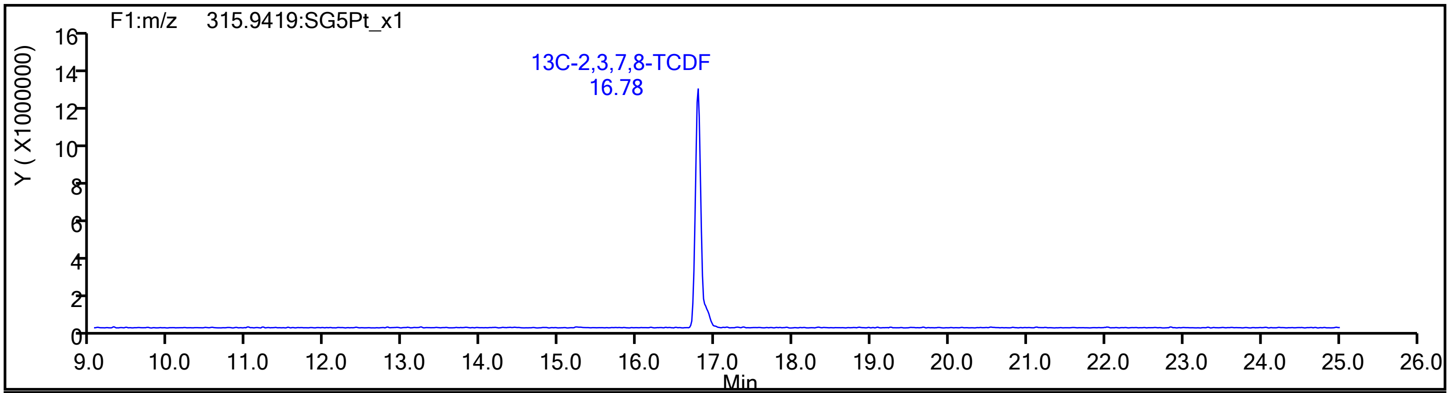

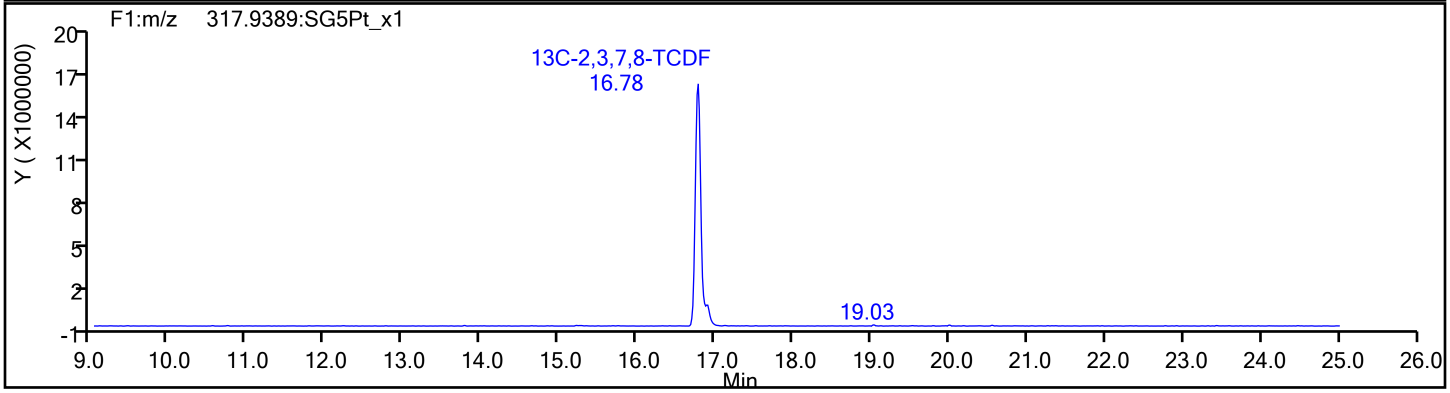

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

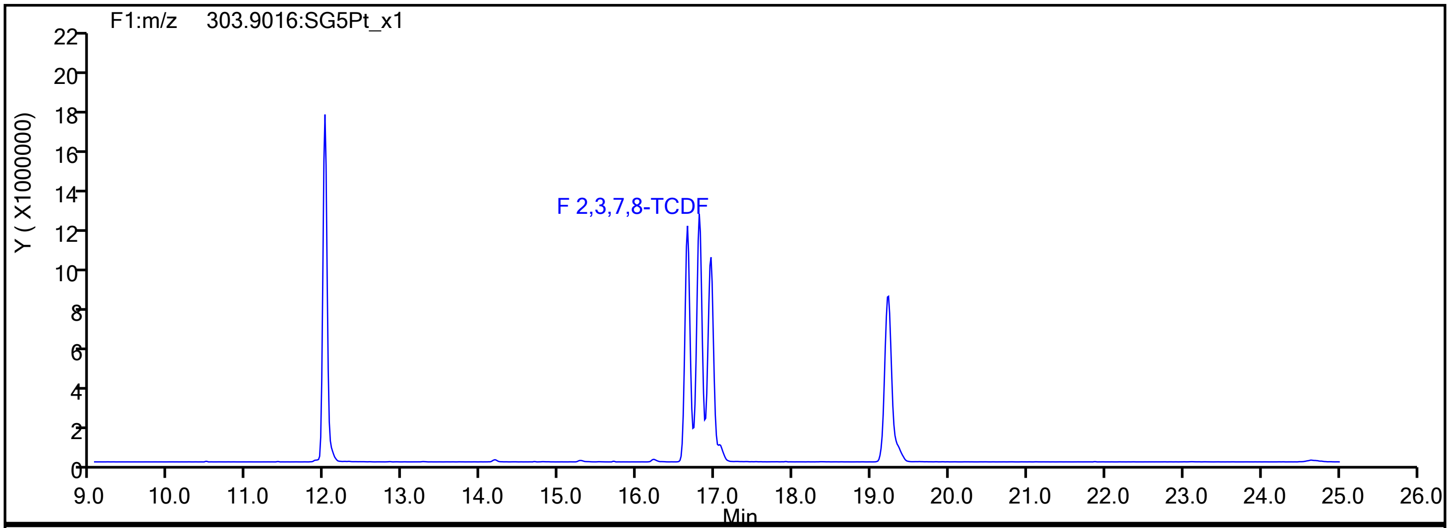

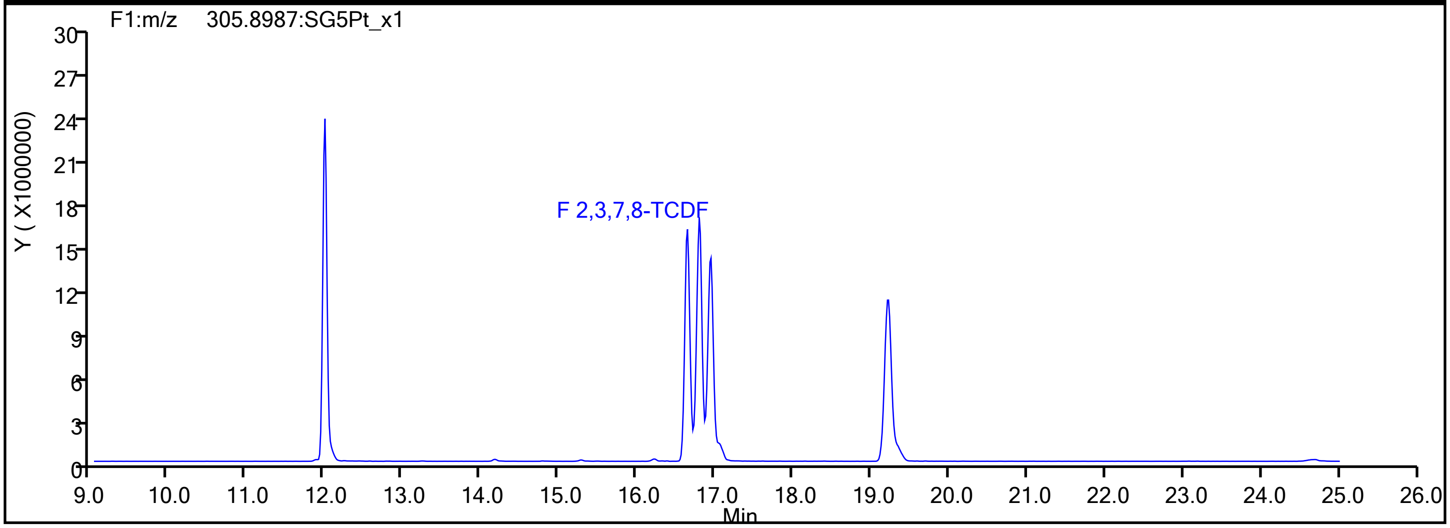

TCDF Interference Mass

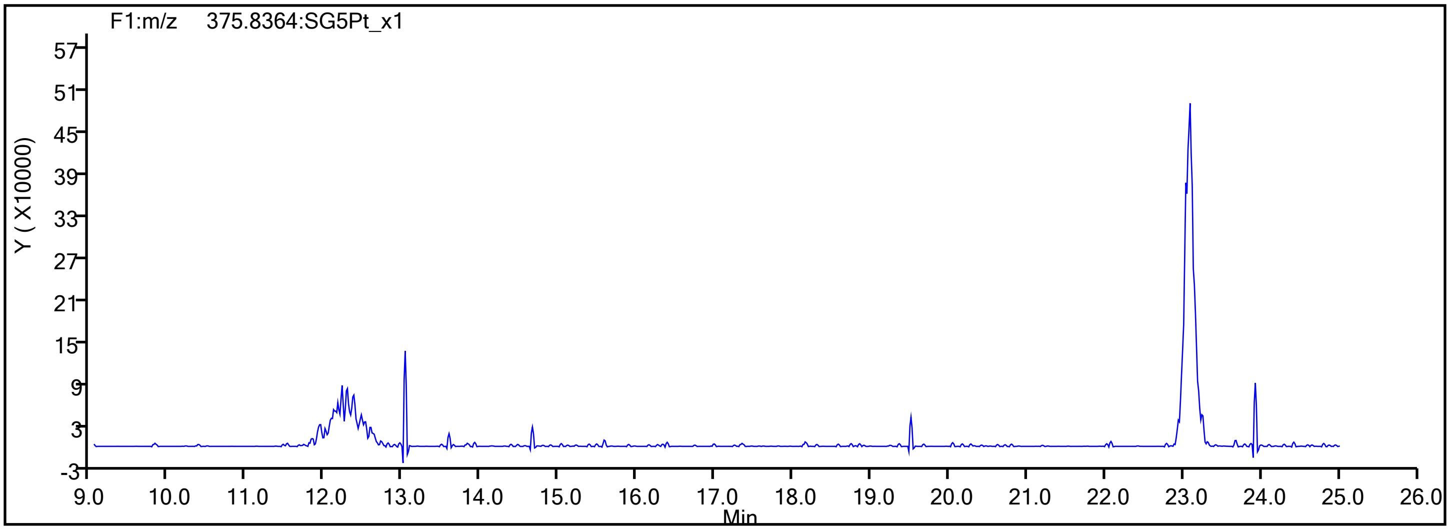

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

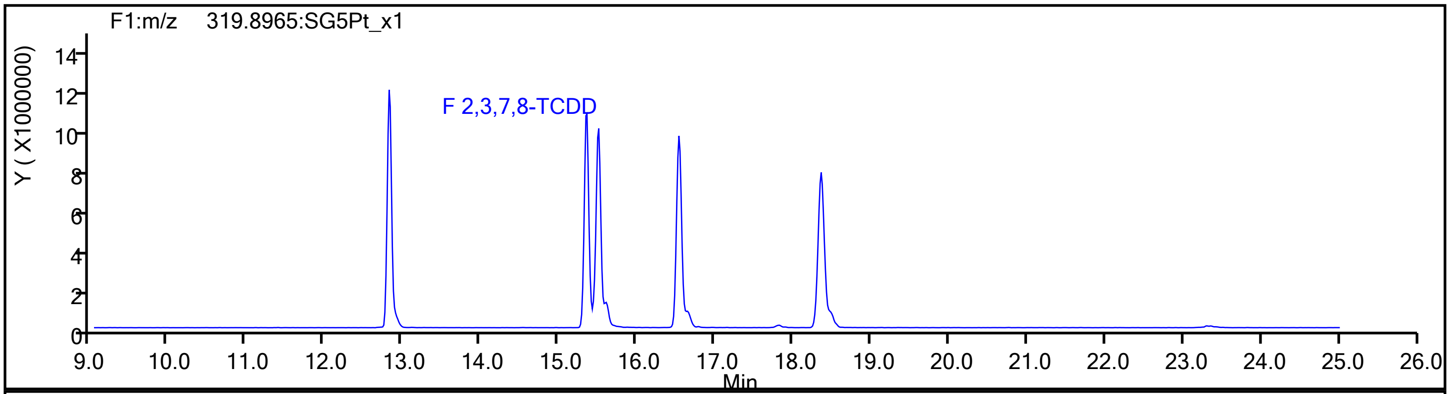

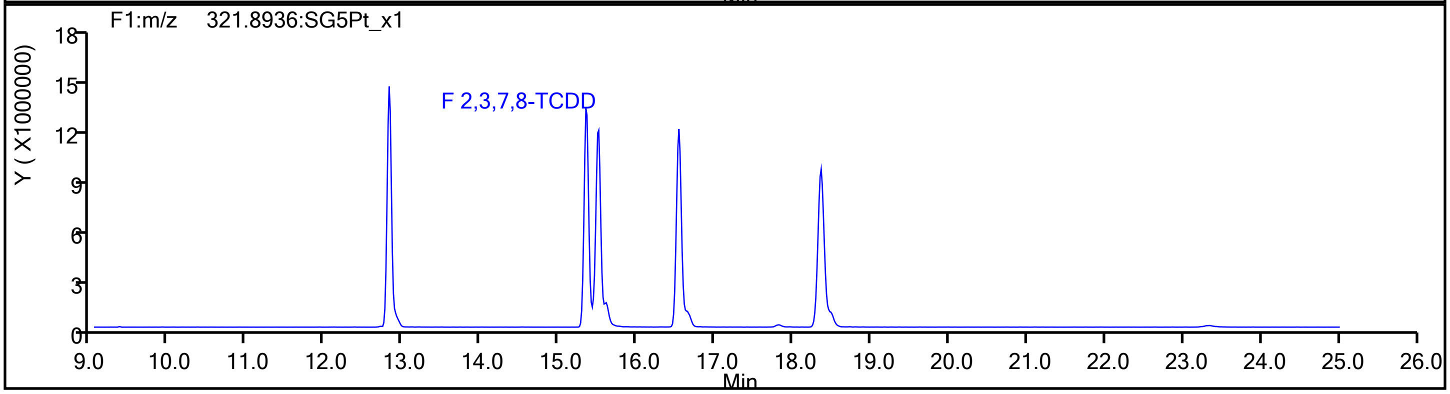

TCDD Standards

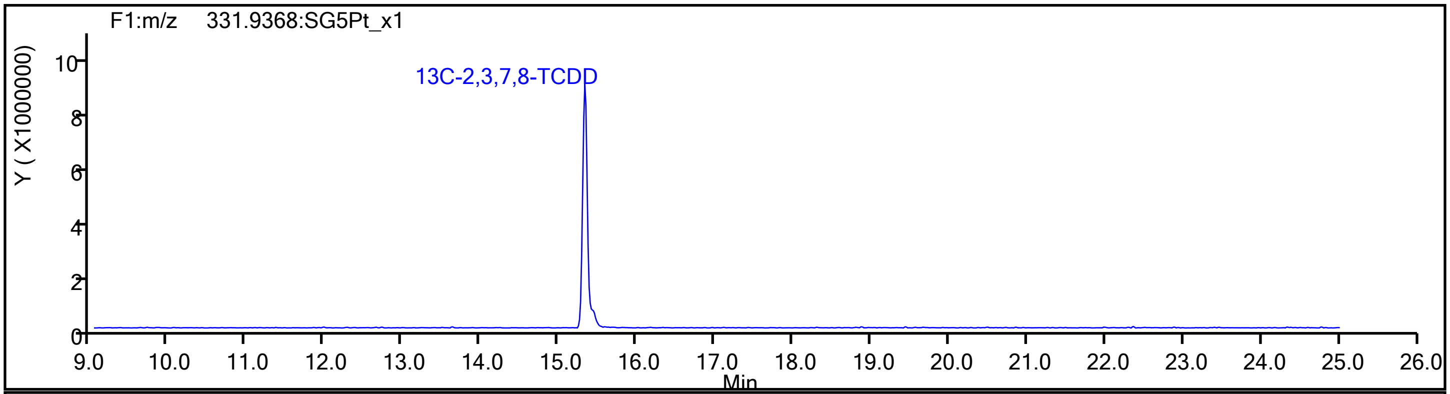

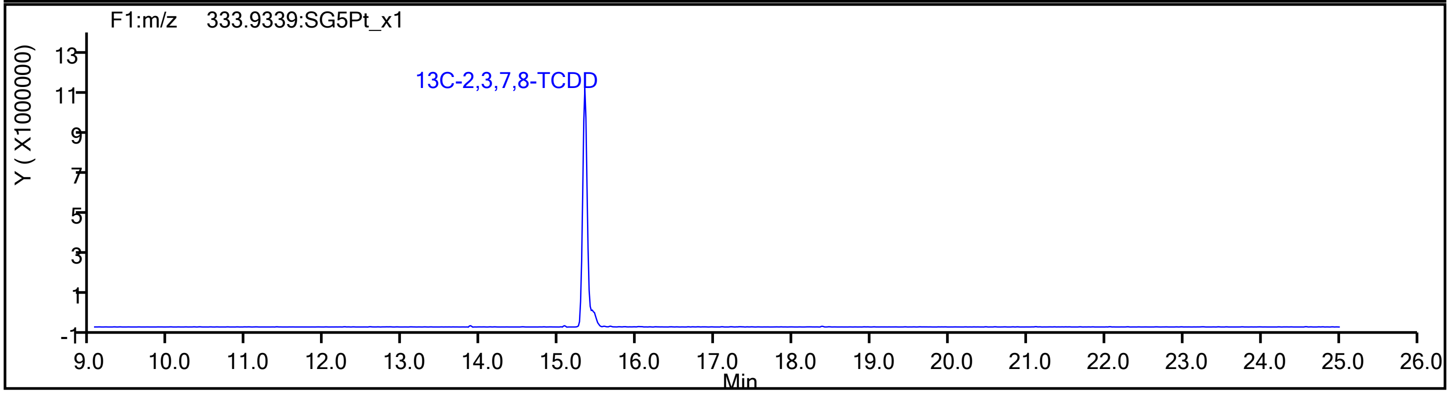

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

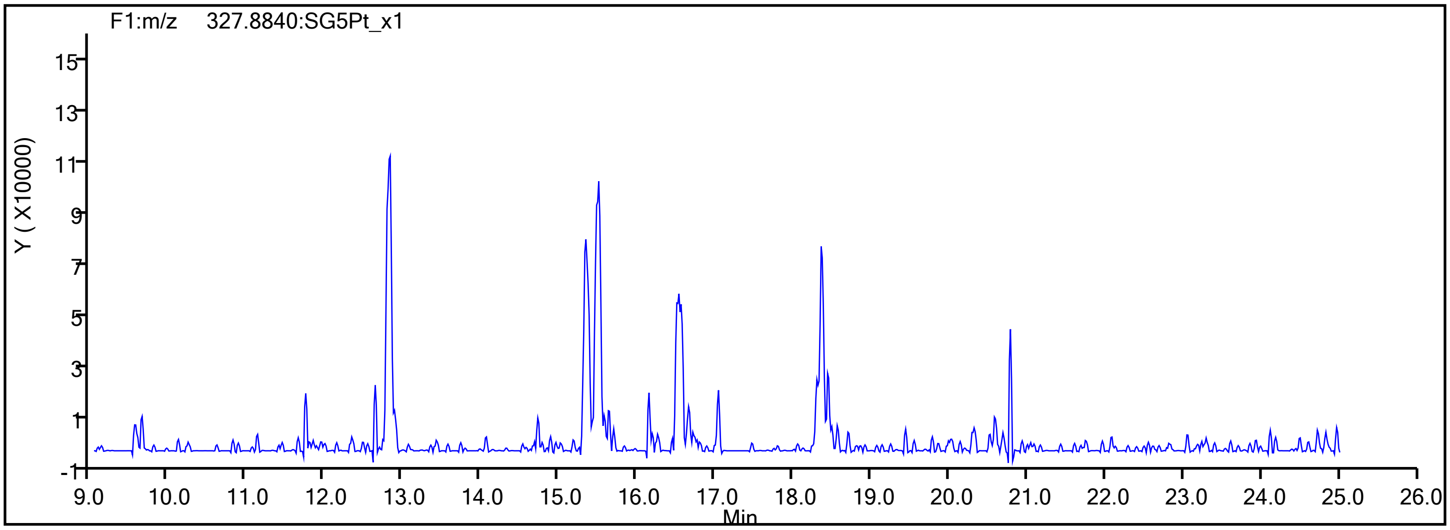

37Cl4-TCDD Standards

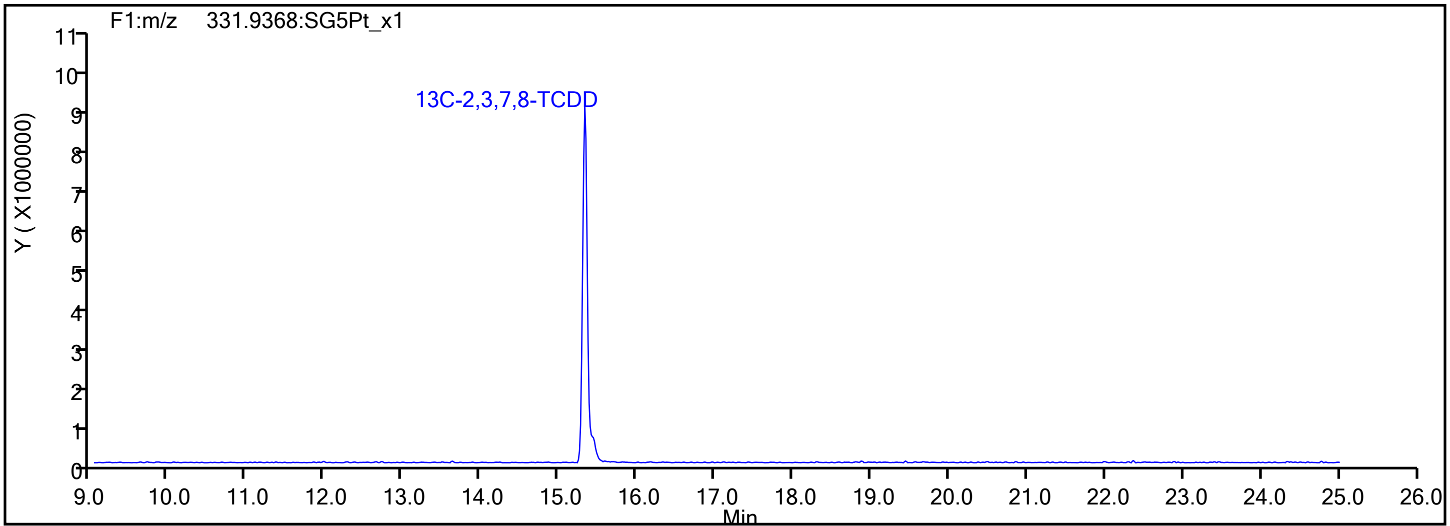

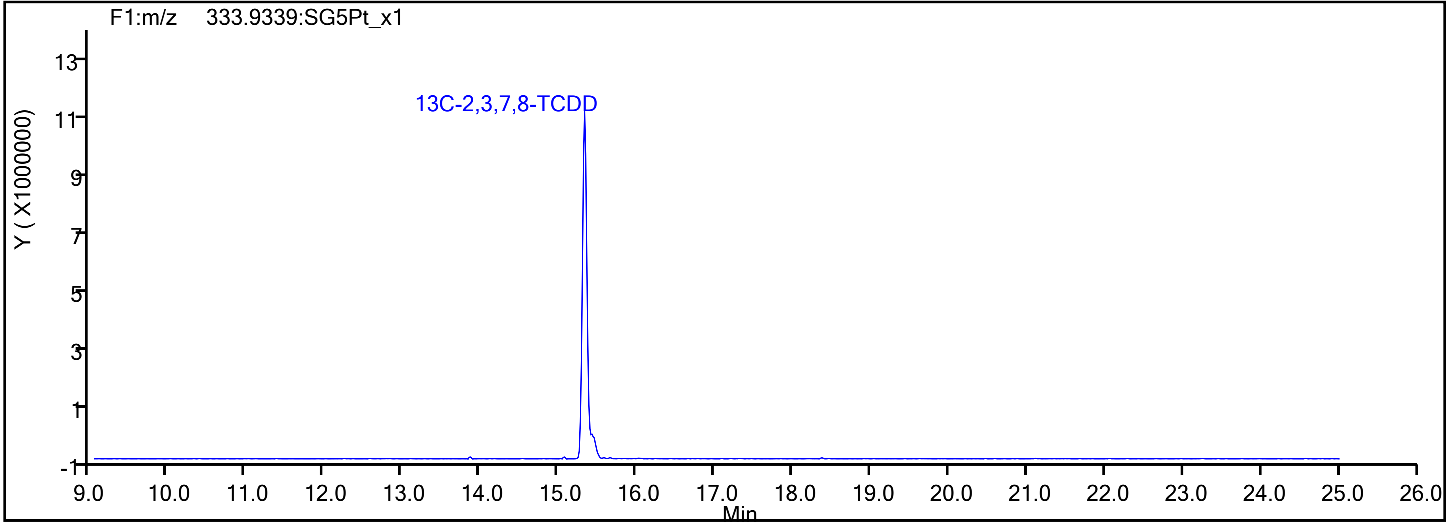

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

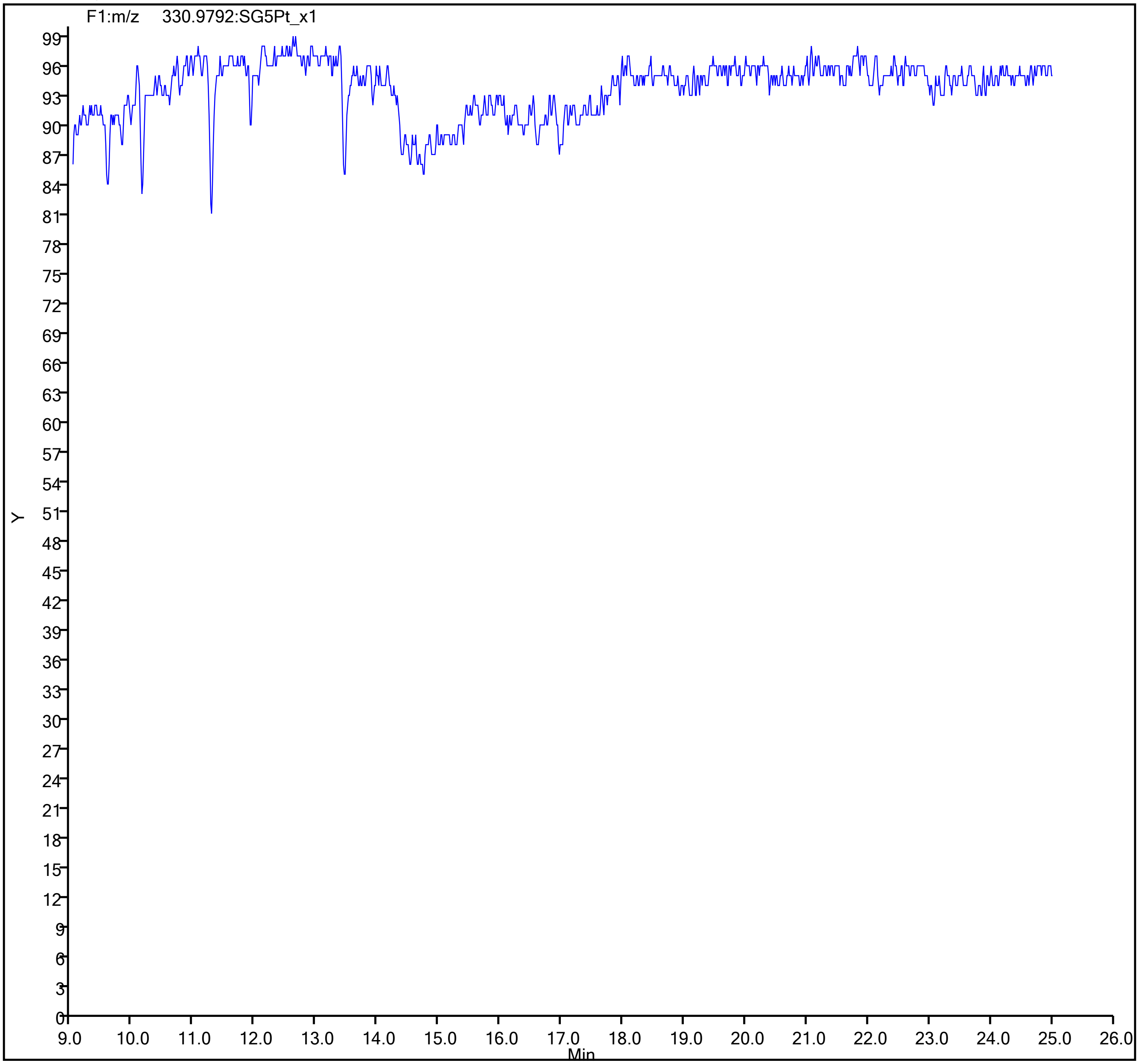

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Nov-2020 11:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:28 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	20.907	5110655	0.80	1.1547	78.3	78.3	0.3438	0.3438		
D 13C-2,3,7,8-TCDF	20.873	2260212	0.83	1.6832					0.00	
A Non-2,3,7,8-sub-TCDF	20.216	47778	0.70	1.1547	0.7323	0.7323	0.3438	0.7323		
S Total TCDF					79.1	79.1	0.3438	0.3438		
2,3,7,8-TCDD	22.290	1664355	0.78	1.1659	40.9	40.9	0.2356	0.2356		
D 13C-2,3,7,8-TCDD	22.256	1394850	0.82	1.0896					0.00	
A Non-2,3,7,8-sub-TCDD	21.079						0.2356	0.2356		
S Total TCDD					40.9	40.9	0.2356	0.2356		
A F1 PeCDFs	24.989						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.574	28059	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.862						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.351	12746	1.32	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.676	15638	1.22	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.774	1507187	1.03	1.5618						
1,2,3,4,7,8,9-HpCDF	39.996	1213335	1.02	1.4975						
A Non-2,3,7,8-sub-HpCDF	39.385						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.701	990507	1.06	1.1079						
A Non-2,3,7,8-sub-HpCDD	39.533						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.441	3276061	0.80							
1,3,6,8-TCDD	18.116	1739293	0.79							
2,3,4,7-TCDF	20.907	5110655	0.80							
1,2,3,7-TCDD	22.075	1365068	0.79							
1,2,3,9-TCDF	22.505	2196911	0.80							
1,2,3,9-TCDD	22.608	1753286	0.81							
1,2,8,9-TCDF	23.991	2334076	0.80							
1,2,8,9-TCDD	24.043	705501								
1,3,4,6,8-PeCDF	24.395	2052538	1.59							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	26.487	1404266	1.56							
1,2,3,8,9-PeCDD	31.238	1225247	1.54							
1,2,3,8,9-PeCDF	31.424	1629169	1.56							
1,2,3,4,6,8-HxCDF	33.566	2118566	1.27							
1,2,4,6,7,9-HxCDD	34.568	1490162	1.28							
1,2,3,4,6,7-HxCDD	36.784	1357310	1.25							
1,2,3,4,8,9-HxCDF	37.137	1681220	1.24							
1,2,3,4,6,7,9-HpCDD	39.069	1154294	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Nov-2020 11:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:28 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	20.907	20.834	4	1.002	2267125	297561	600	1500	496		
305.8987	20.907	20.834	4	1.002	2843530	378651	712	1780	532	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.873	20.873	0	1.000	1025204	144323	682	1705	212		
317.9389	20.864	20.873	-1	1.000	1235008	186181	357	892	522	0.83(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	24.403	20.216	251	1.169	19719	3263	600	1500	5		
305.8987	24.403	20.216	251	1.169	28059	3939	712	1780	6	0.70(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.290	22.239	3	1.002	731359	96478	247	617	391		
321.8936	22.299	22.239	4	1.002	932996	123585	283	707	437	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.256	22.256	0	1.000	627509	85616	309	772	277		
333.9338	22.265	22.256	1	1.000	767341	107330	77	192	1394	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.079						247	617			
321.8936	21.079						283	707			
A F1 PeCDFs											
339.8597	24.989						18	45			
341.8567	24.989						54	135			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.149	28.574	-145	1.000	2916	656	118	295	6		
341.8567	26.141	28.574	-146	1.000	2444	500	118	295	4	1.19(1.32-1.78)	
339.8597	27.751	28.574	-49	1.000	8636	1454	118	295	12		
341.8567	27.751	28.574	-49	1.000	7782	1020	118	295	9	1.11(1.32-1.78)	
339.8597	28.357	28.574	-13	1.000	6510	1152	118	295	10		
341.8567	28.366	28.574	-12	1.000	3551	574	118	295	5	1.83(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.862						202	505			
357.8516	28.862						82	205			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.385	35.351	2	1.000	7260	1525	317	792	5		
375.8178	35.402	35.351	3	1.000	5486	1345	249	622	5	1.32(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.629	35.676	-3	1.000	8594	1831	223	557	8		
391.8127	35.629	35.676	-3	1.000	7044	1611	190	475	8	1.22(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.774	38.769	0	1.000	764728	230402	504	1260	457		
409.7788	38.774	38.769	0	1.000	742459	226597	435	1087	521	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.996	39.994	0	1.000	612797	205660	504	1260	408		
409.7788	39.996	39.994	0	1.000	600538	201880	435	1087	464	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.385						504	1260			
409.7788	39.385						435	1087			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.701	39.689	1	1.000	509226	166108	423	1057	393		
425.7737	39.701	39.689	1	1.000	481281	154802	355	887	436	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.533						423	1057			
425.7737	39.533						355	887			
1,3,6,8-TCDF											
303.9016	16.441	16.441	0		1457286	277522	600	1500	463		
305.8987	16.441	16.441	0		1818775	346540	712	1780	487	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.116	18.116	0		766334	127384	247	617	516		
321.8936	18.116	18.116	0		972959	165146	283	707	584	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.907	20.907	0		2267125	297561	600	1500	496		
305.8987	20.907	20.907	0		2843530	378651	712	1780	532	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	22.075	22.075	0		603775	87465	247	617	354		
321.8936	22.084	22.075	1		761293	111297	283	707	393	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.505	22.505	0		976898	133973	600	1500	223		
305.8987	22.505	22.505	0		1220013	163299	712	1780	229	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.608	22.608	0		787092	99410	247	617	402		
321.8936	22.599	22.608	-1		966194	124030	283	707	438	0.81(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.991	23.991	0		1038431	200731	600	1500	335		
305.8987	23.991	23.991	0		1295645	253119	712	1780	356	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	24.043	24.043	0		705501	133864	247	617	542		

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	24.395	24.395	0		1260675	242287	18	45	13460		
341.8567	24.395	24.395	0		791863	149771	54	135	2774	1.59(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.487	26.487	0		856189	128300	202	505	635		
357.8516	26.487	26.487	0		548077	80590	82	205	983	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.238	31.238	0		742873	95987	202	505	475		
357.8516	31.238	31.238	0		482374	59929	82	205	731	1.54(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.424	31.424	0		991670	125549	118	295	1064		
341.8567	31.424	31.424	0		637499	79837	118	295	677	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.566	33.566	0		1185896	196352	317	792	619		
375.8178	33.566	33.566	0		932670	151415	249	622	608	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.568	34.568	0		836120	170337	223	557	764		
391.8127	34.568	34.568	0		654042	132193	190	475	696	1.28(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.784	36.784	0		752837	197162	223	557	884		
391.8127	36.784	36.784	0		604473	161853	190	475	852	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.137	37.137	0		929560	246561	317	792	778		
375.8178	37.137	37.137	0		751660	195840	249	622	787	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.069	39.069	0		588795	187490	423	1057	443		
425.7737	39.069	39.069	0		565499	184941	355	887	521	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Nov-2020 11:15:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 432585 Lims Sample ID: 1

Non-2,3,7,8-sub-TCDF, RT: 20.216

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	40.000	2260212	330504

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		40.000	2260212	330504

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.403	19719	3263	28059	3939	0.7323	0.70	
Signal Totals:							
	19719	3263	28059	3939			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	47778	7202				0.70	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7323 = (47778 * 40.000) / (2260212 * 1.155)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Nov-2020 11:15:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 432585
Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 28.574

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132				
2,3,4,7,8-PeCDF	1.159				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.149	2916	656	2444	500		1.19	R
27.751	8636	1454	7782	1020		1.11	R
28.357	6510	1152	3551	574		1.83	R
Signal Totals:							
	18062	3262	13777	2094			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	31839	5356				1.31	RQ
	28059	4934					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (31839 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (28059 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Nov-2020 11:15:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 432585
Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDF, RT: 35.351

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320				
1,2,3,6,7,8-HxCDF	1.268				
2,3,4,6,7,8-HxCDF	1.284				
1,2,3,7,8,9-HxCDF	1.306				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.385	7260	1525	5486	1345		1.32	
Signal Totals:							
	7260	1525	5486	1345			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12746	2870				1.32	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (12746 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Nov-2020 11:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	432585	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 35.676

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197				
1,2,3,6,7,8-HxCDD	1.069				
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.629	8594	1831	7044	1611		1.22	
Signal Totals:							
	8594	1831	7044	1611			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15638	3442				1.22	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15638 * 0.0) / (0 * 0.000)

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585   Sample Line#: 1
Column Type: DB-5   Column Dia: 0.32 mm

TCDF

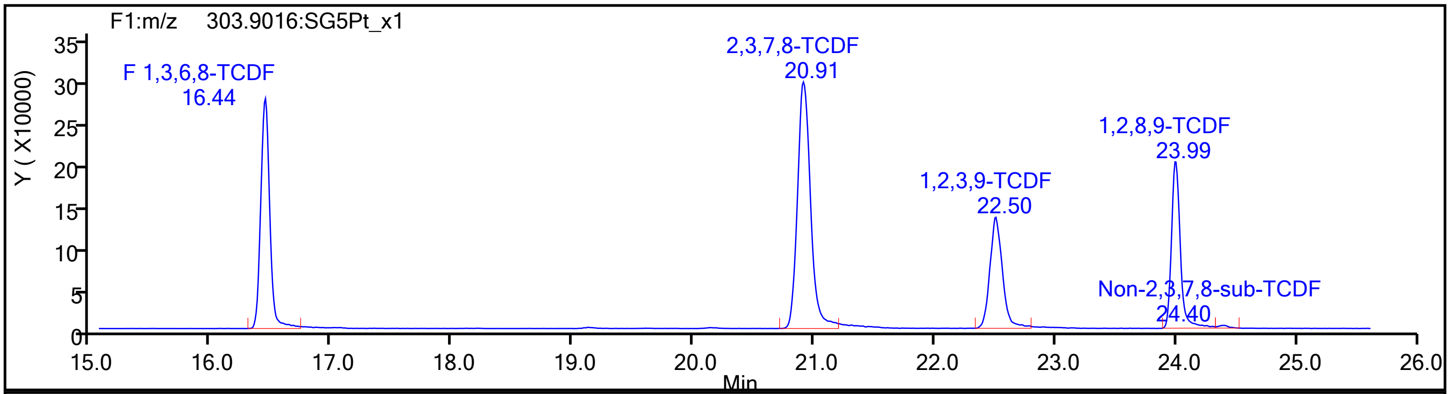

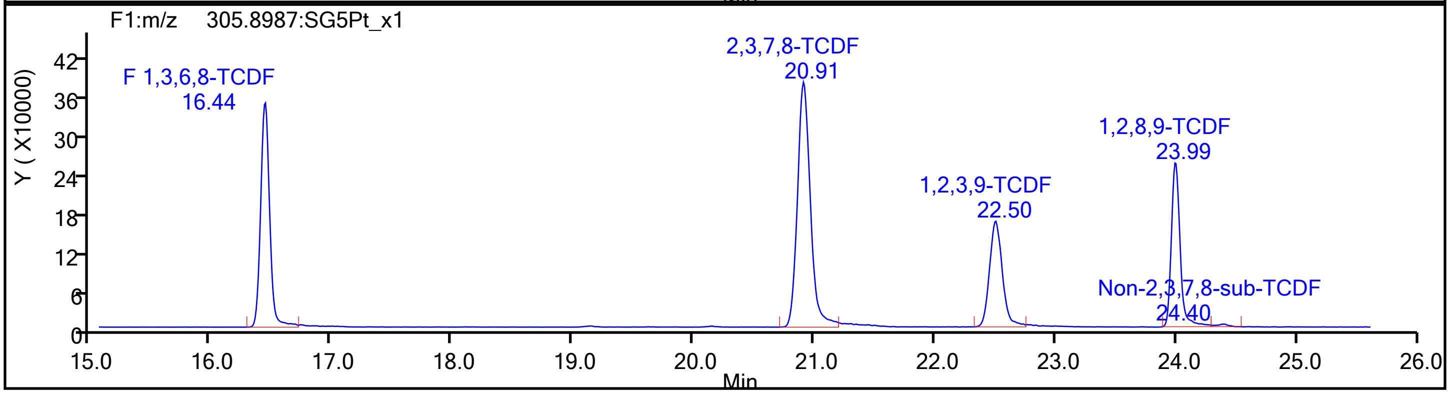

TCDF Standards

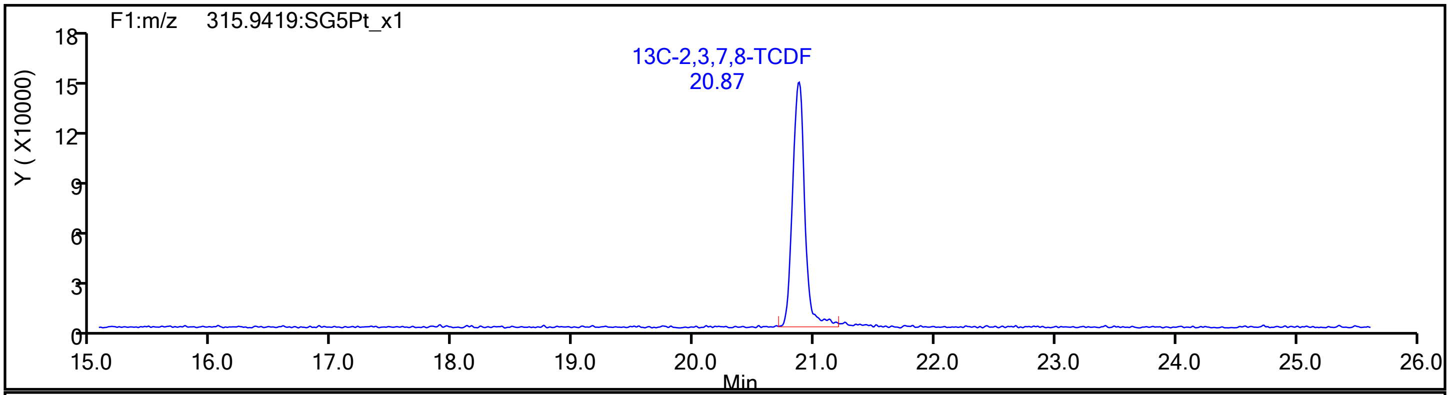

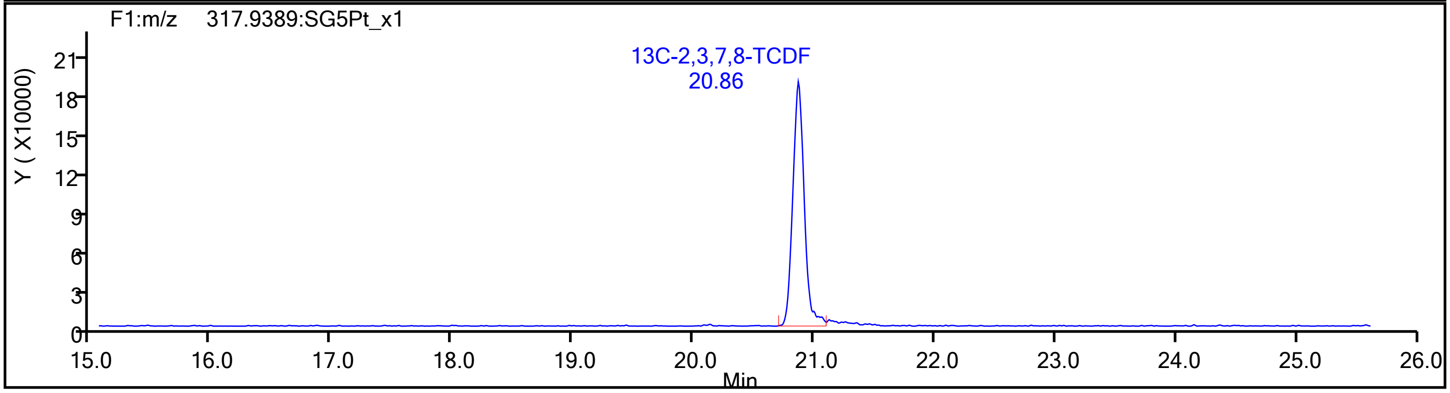

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

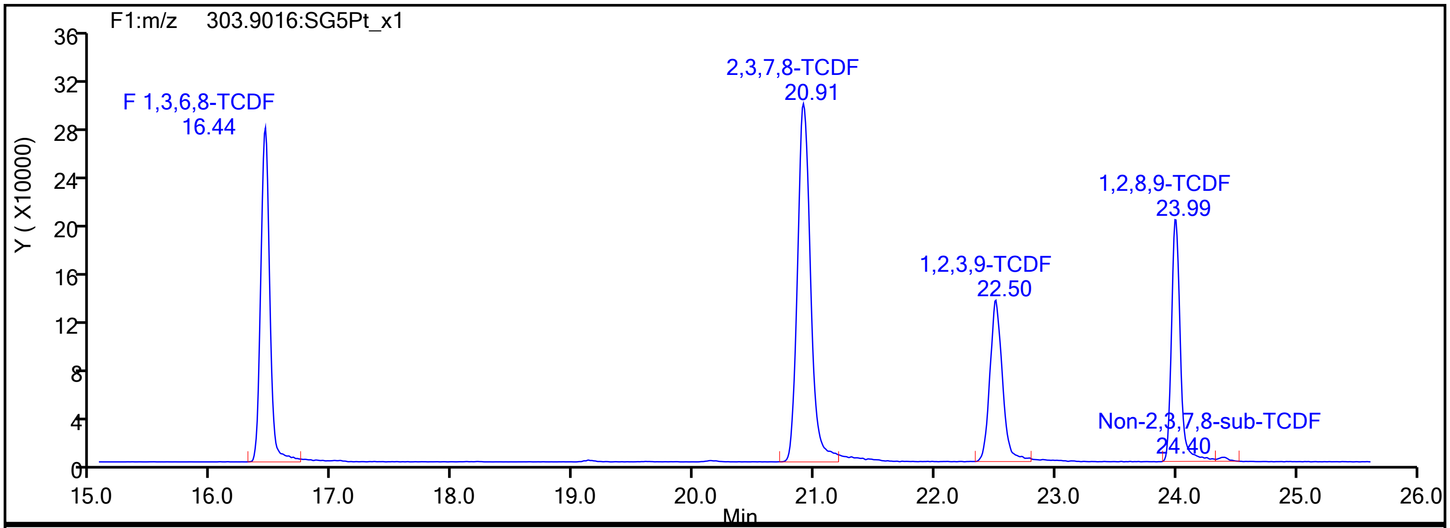

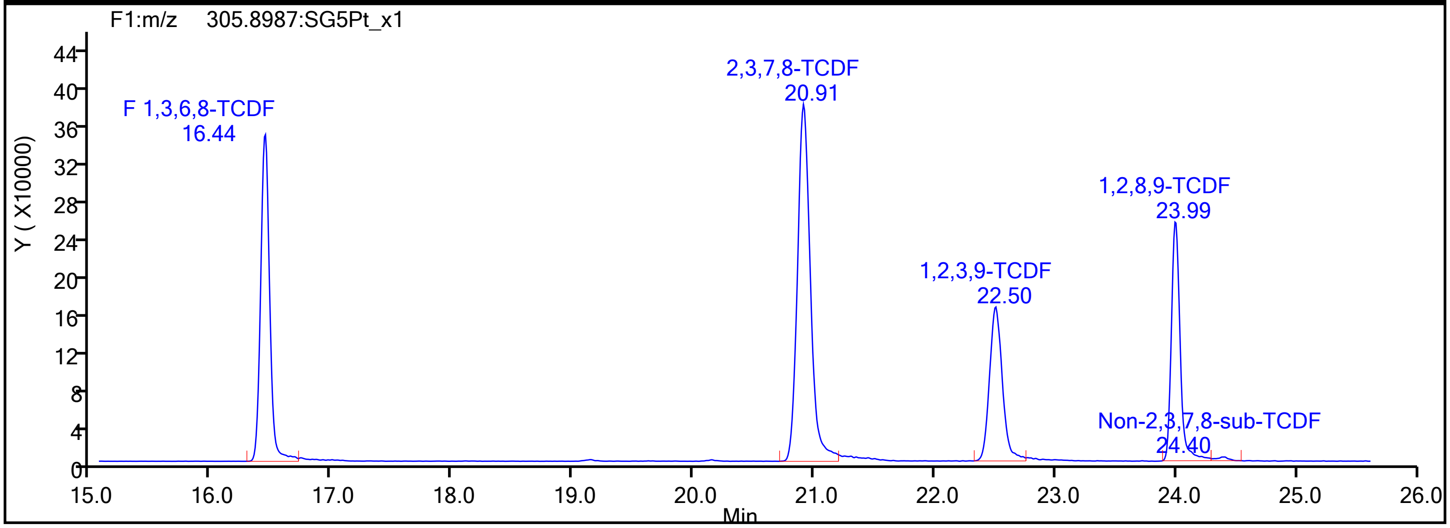

TCDF Interference Mass

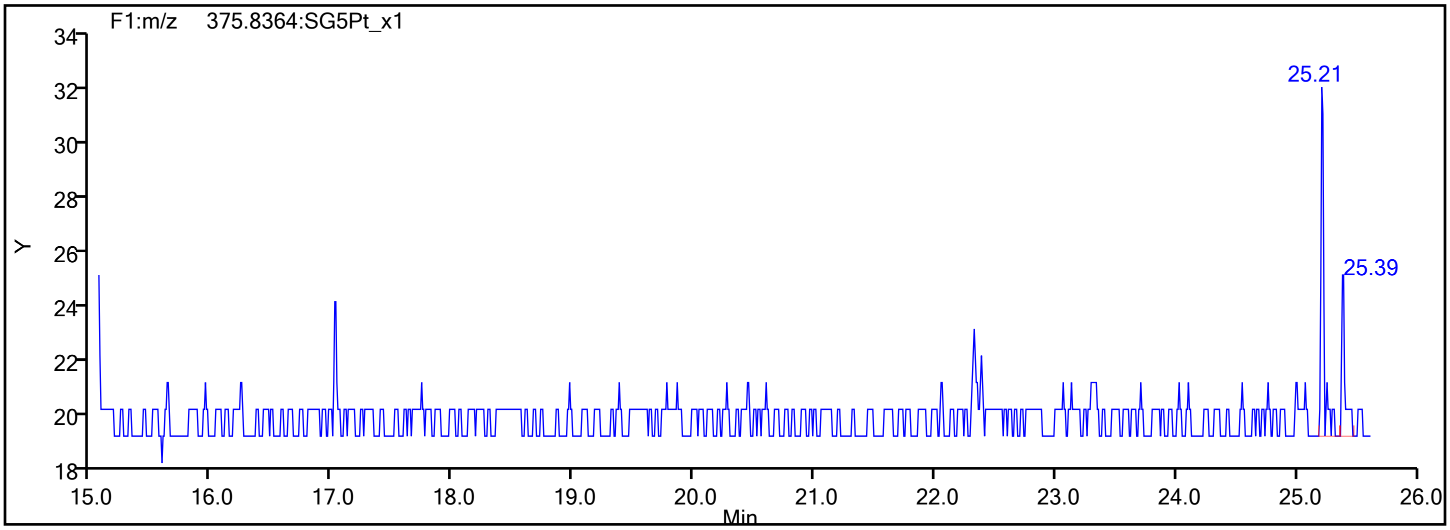

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

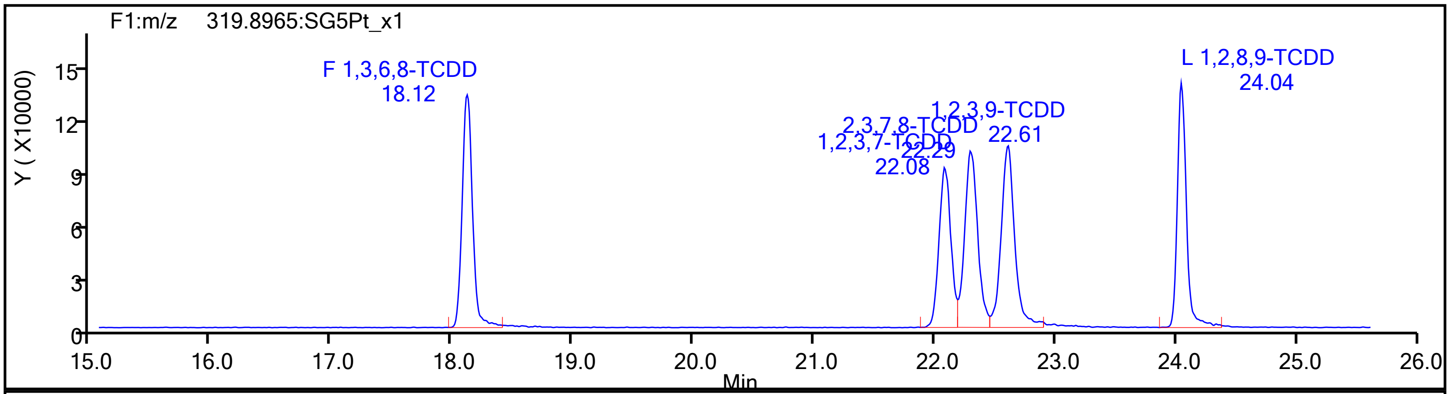

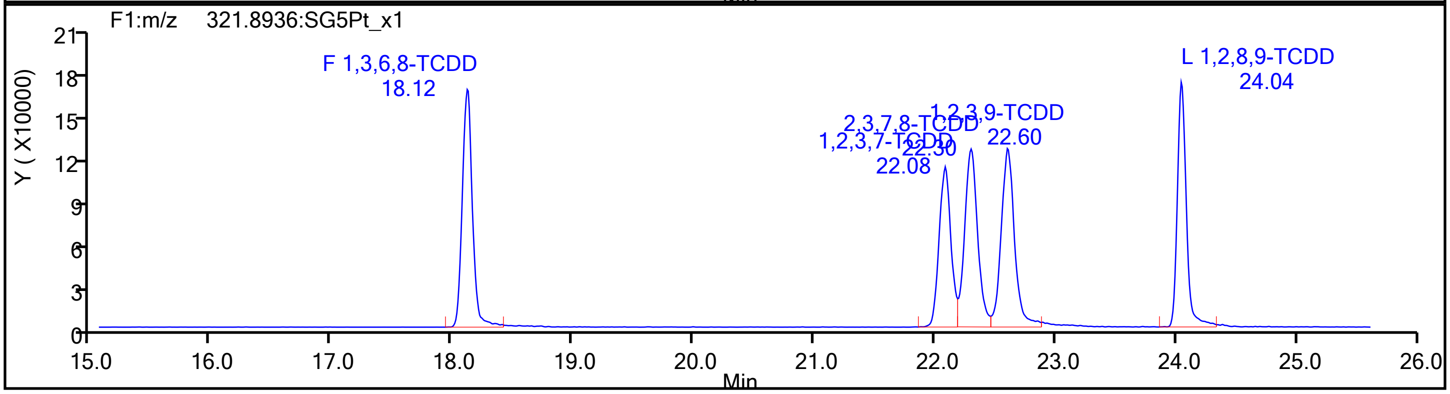

TCDD Standards

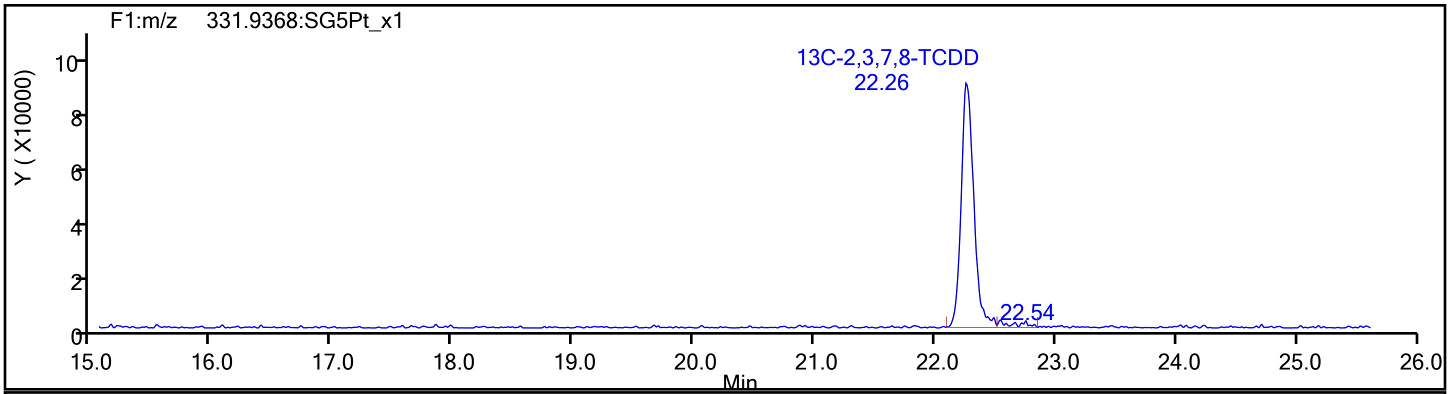

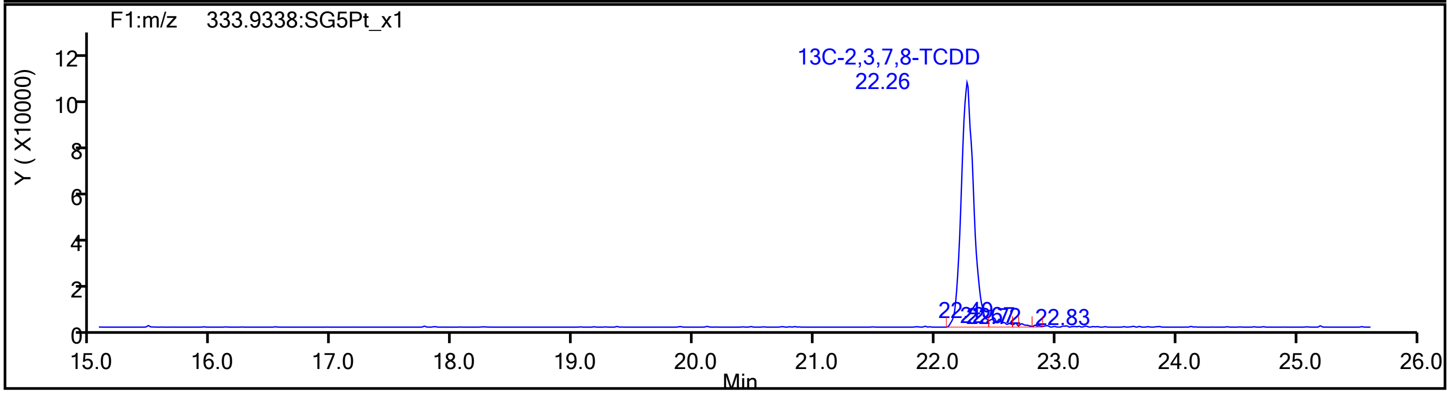

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

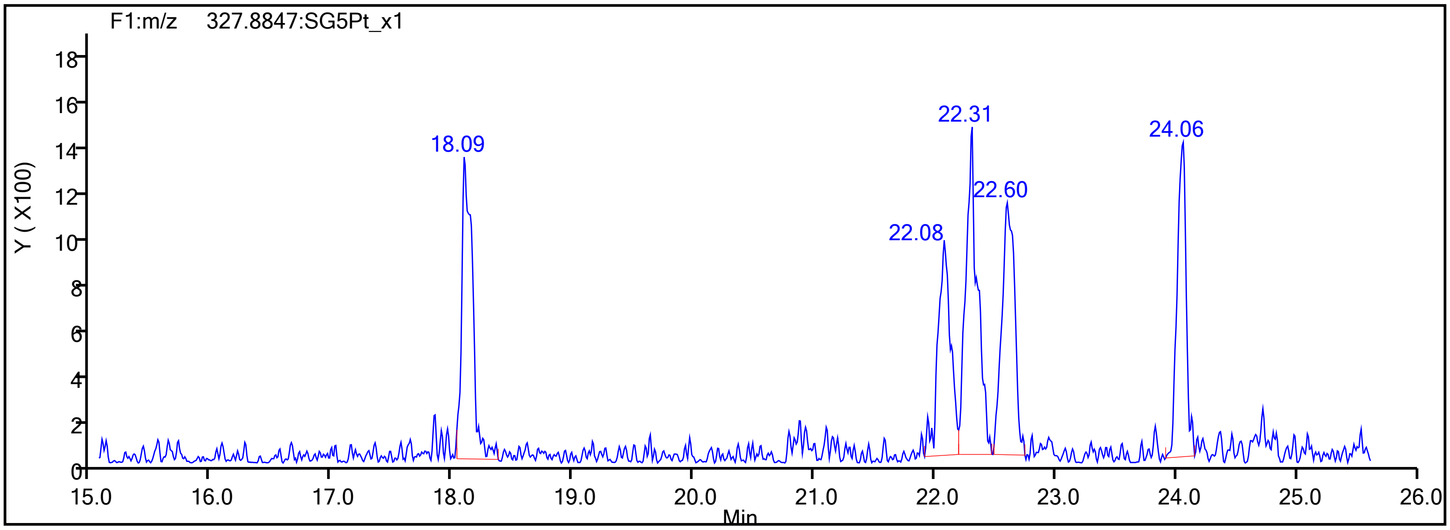

37Cl4-TCDD Standards

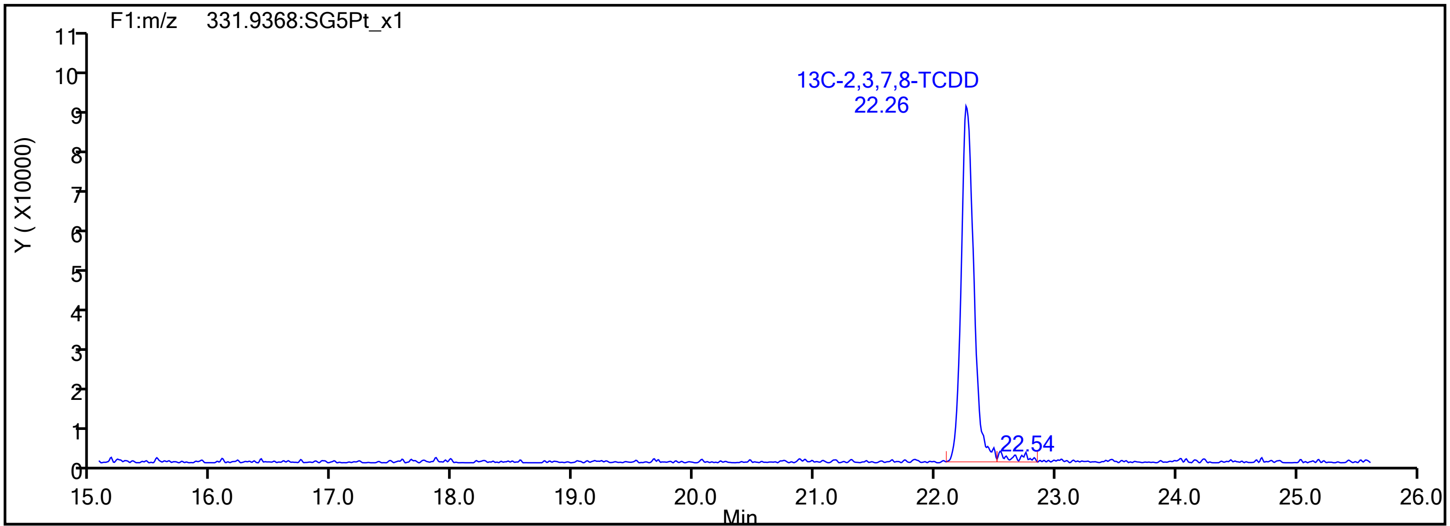

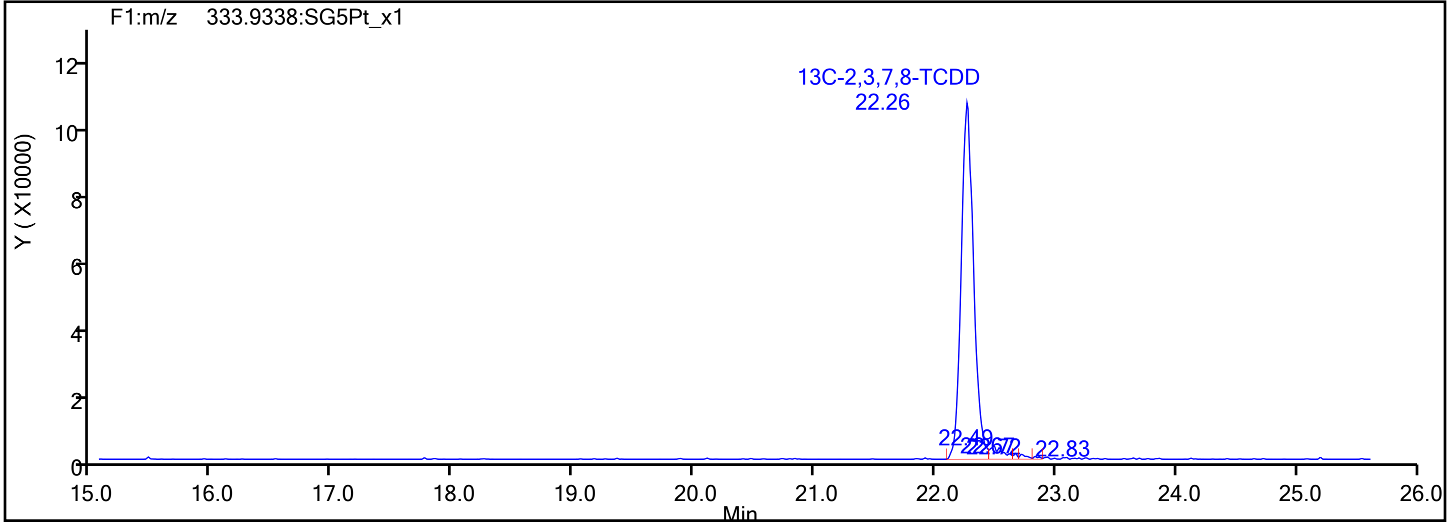

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

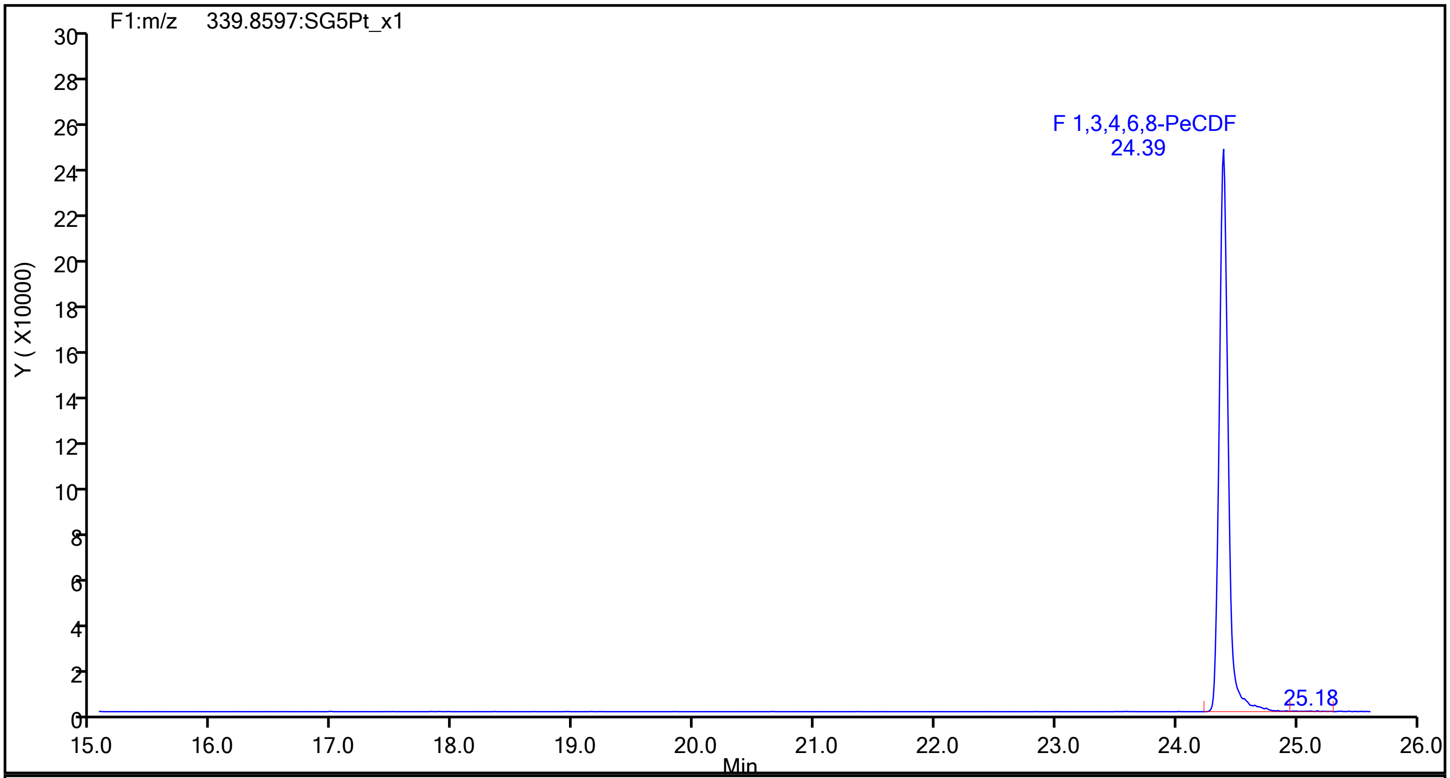

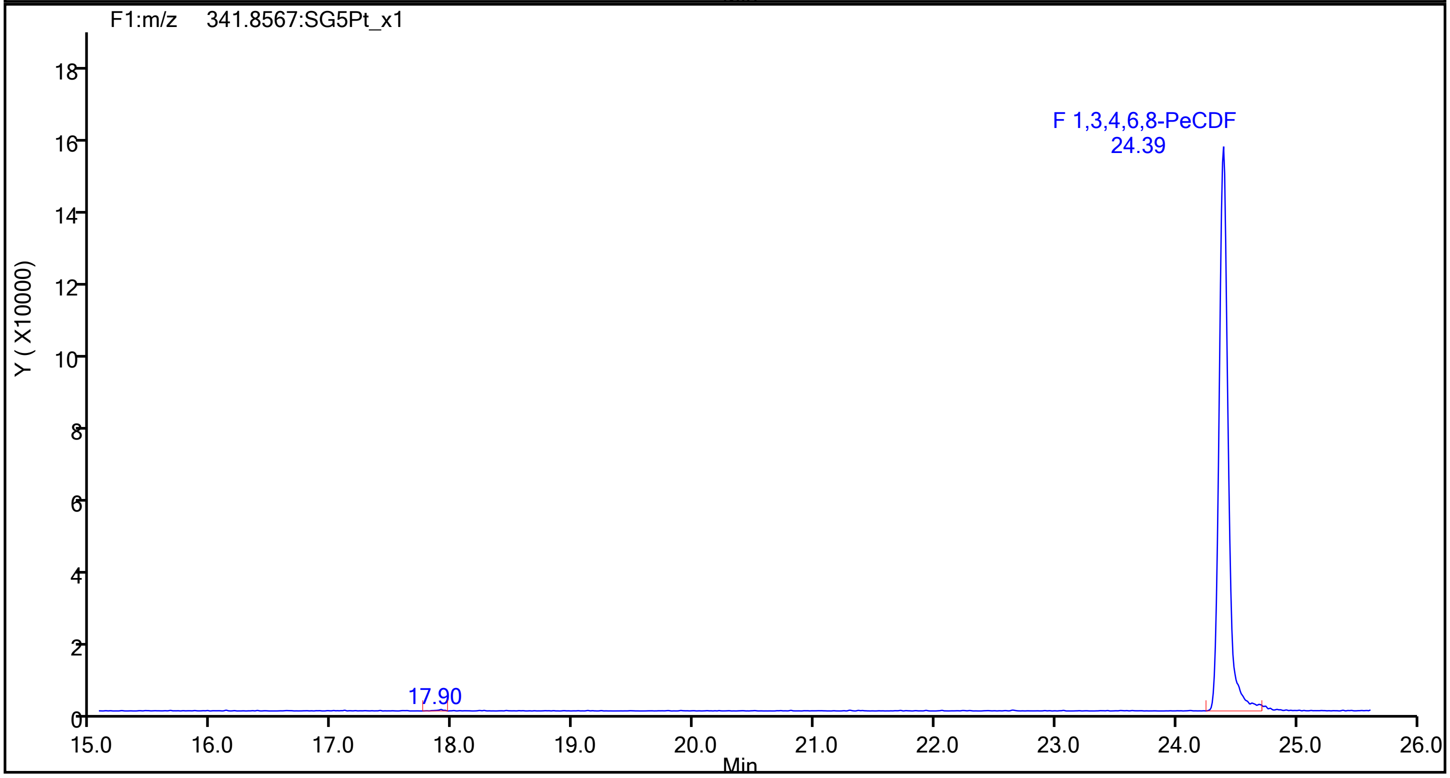

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

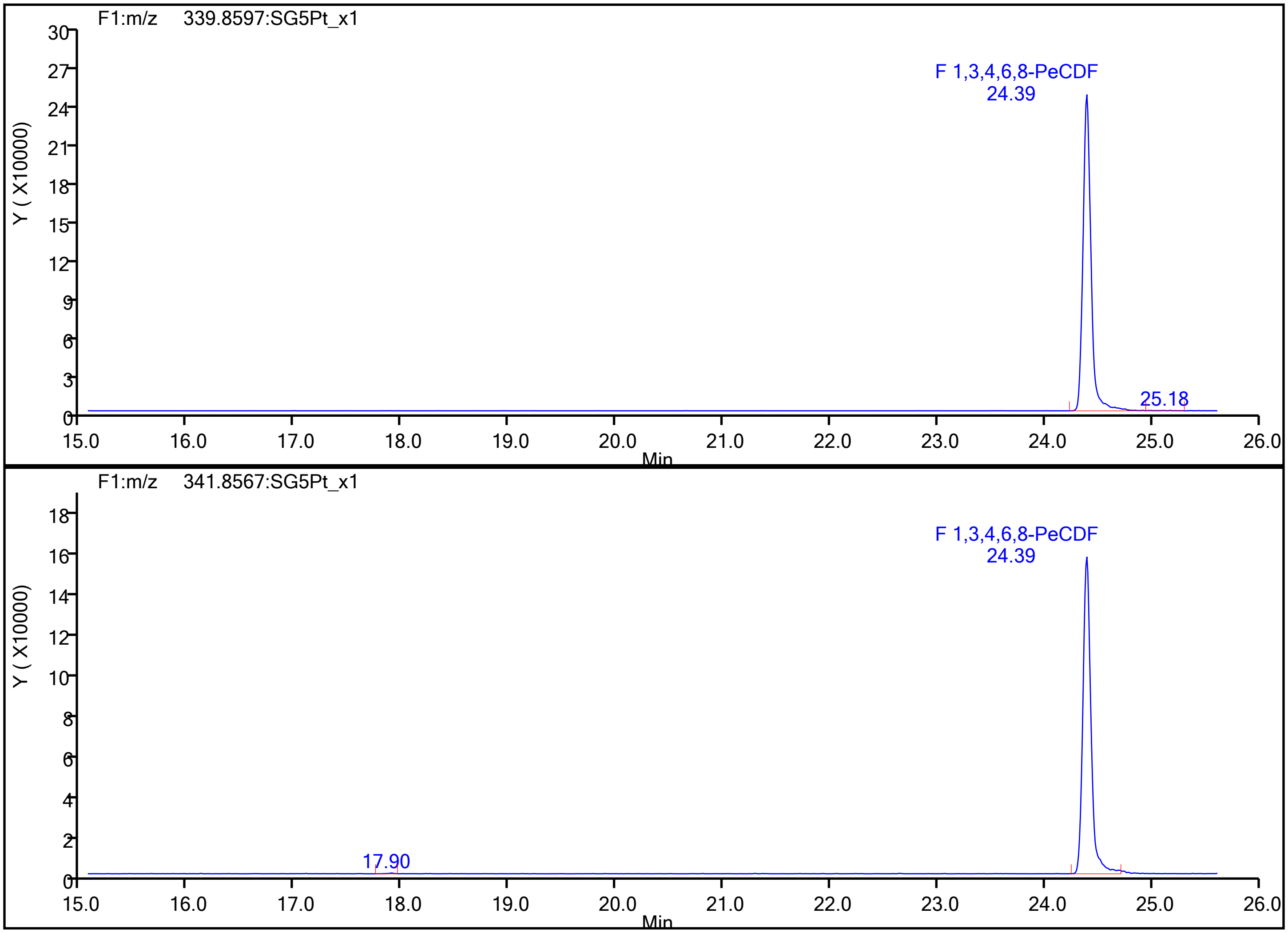

F1 PeCDFs Interference Mass

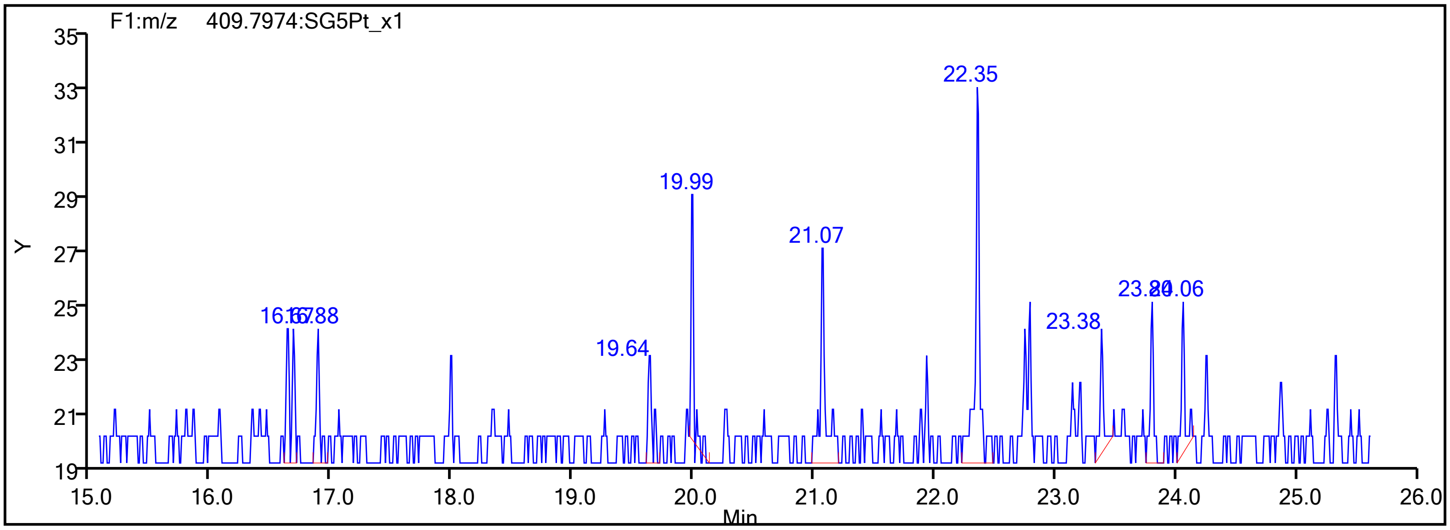

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

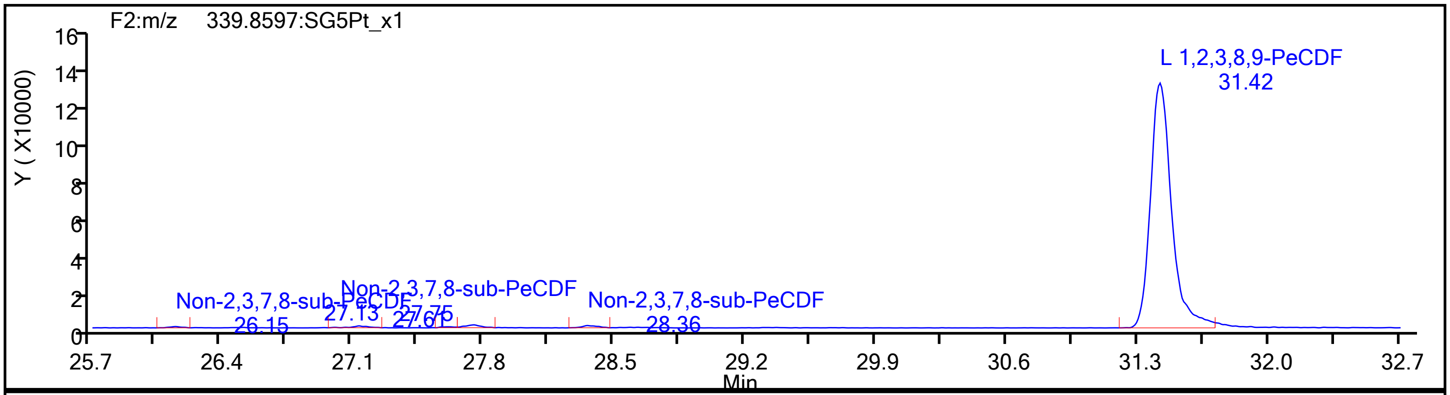

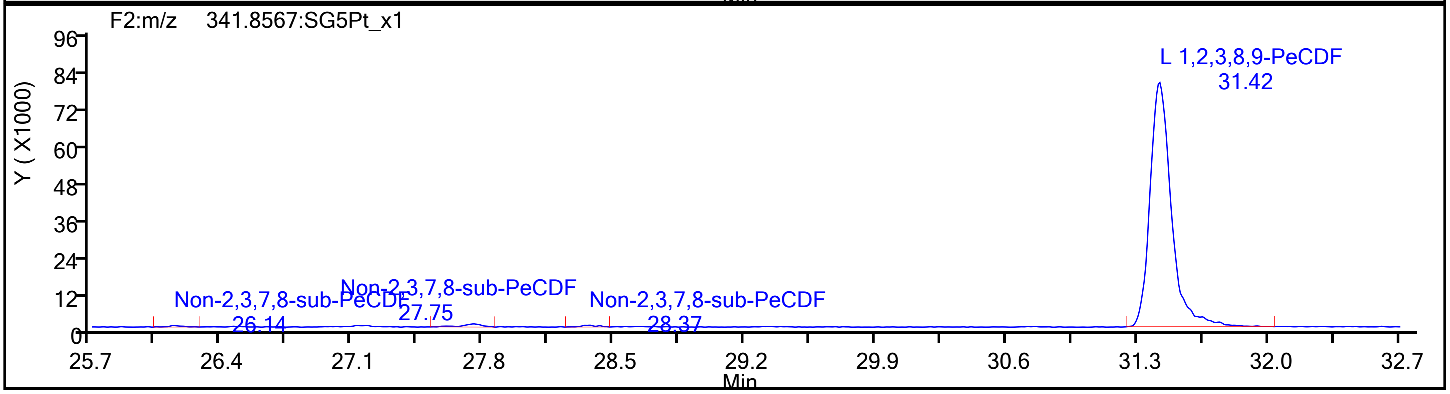

PeCDF Standards

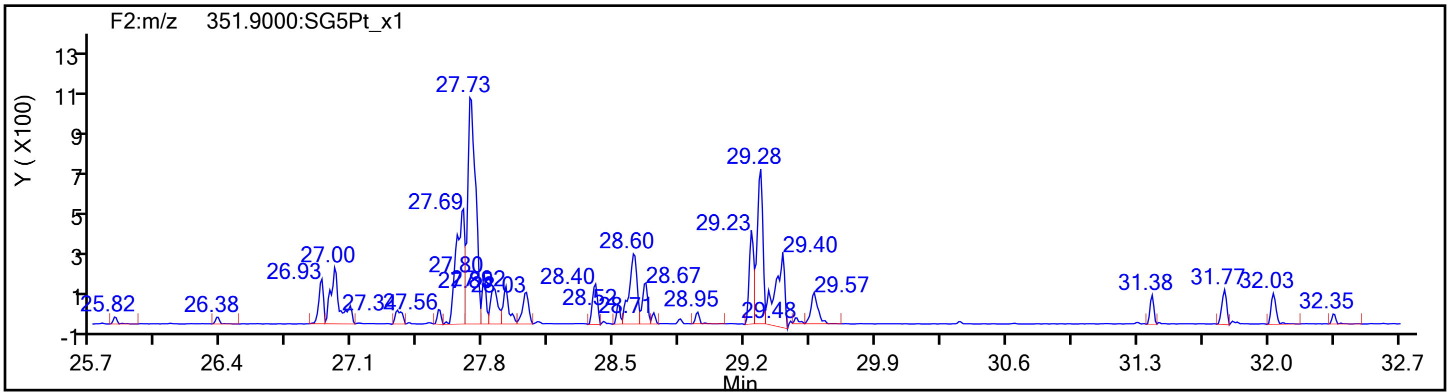

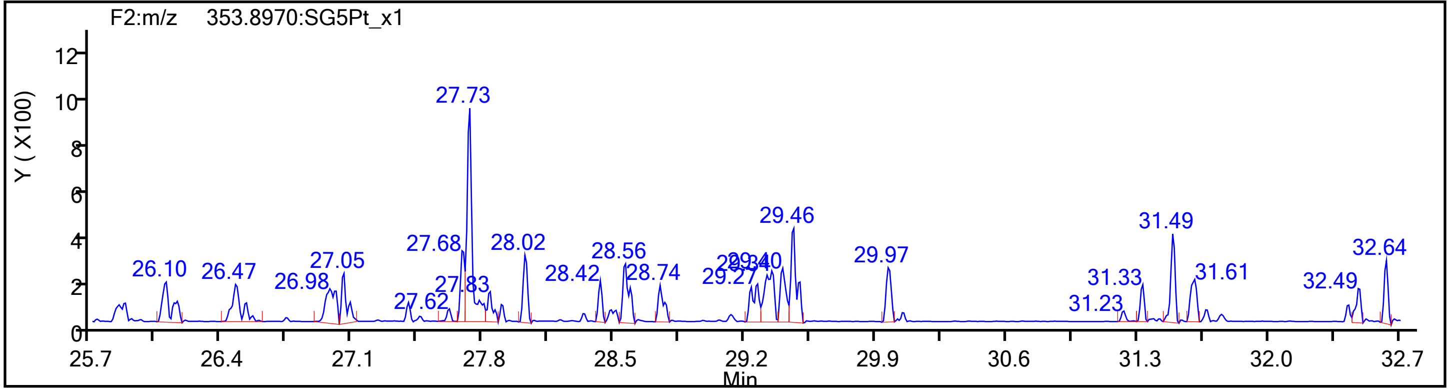

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

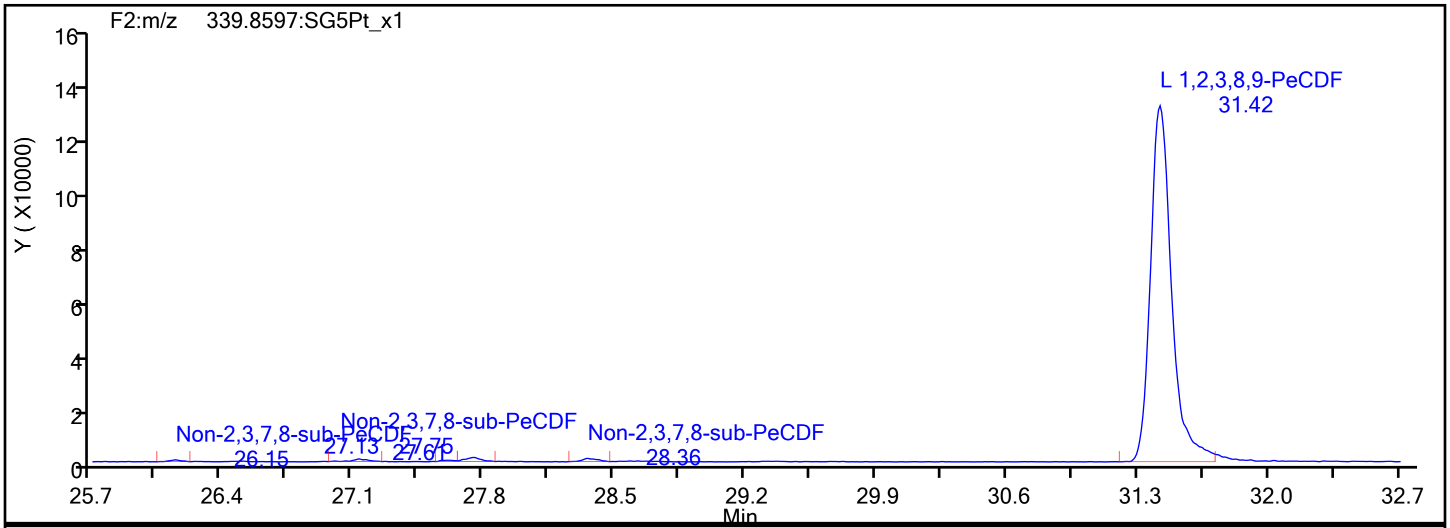

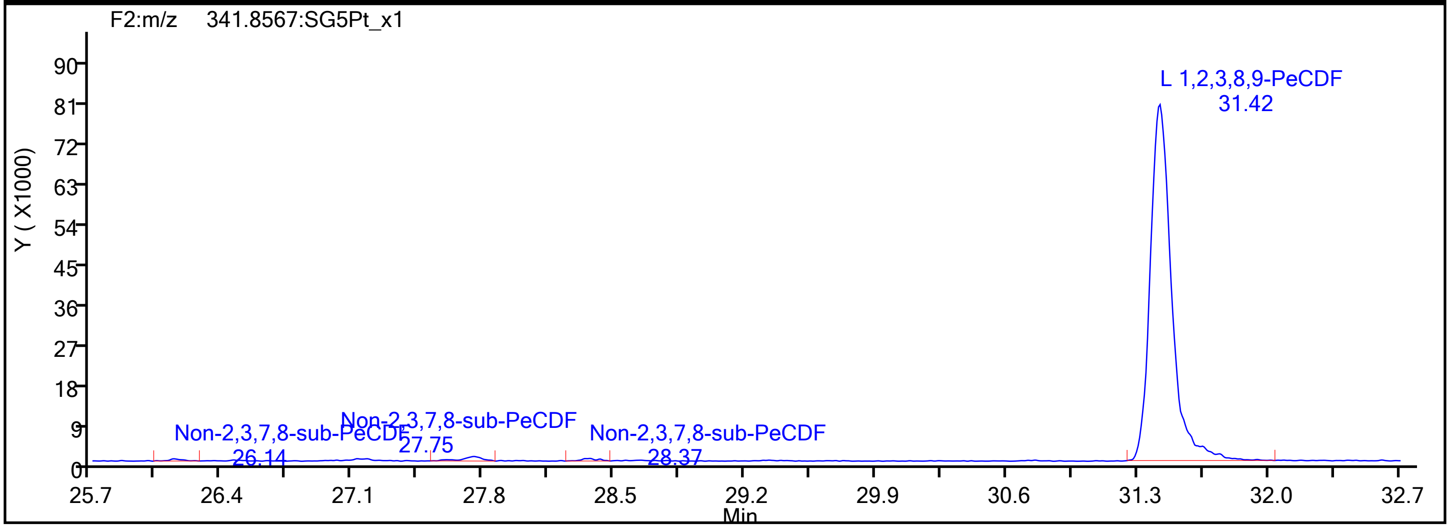

PeCDF Interference Mass

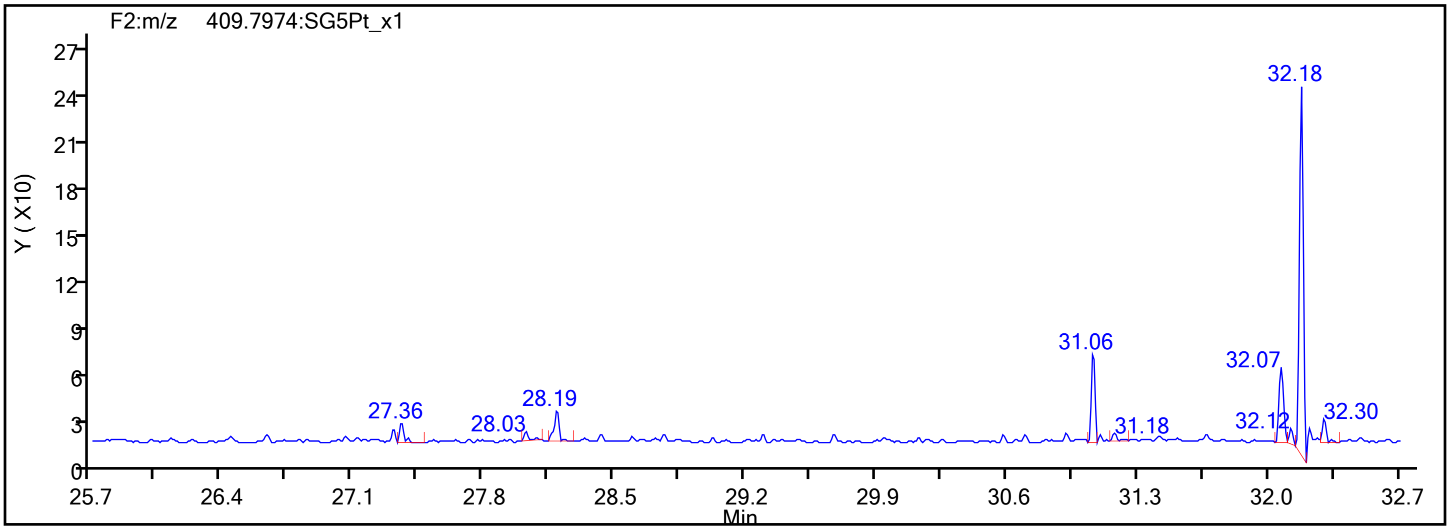

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date: 17-Nov-2020 11:15:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

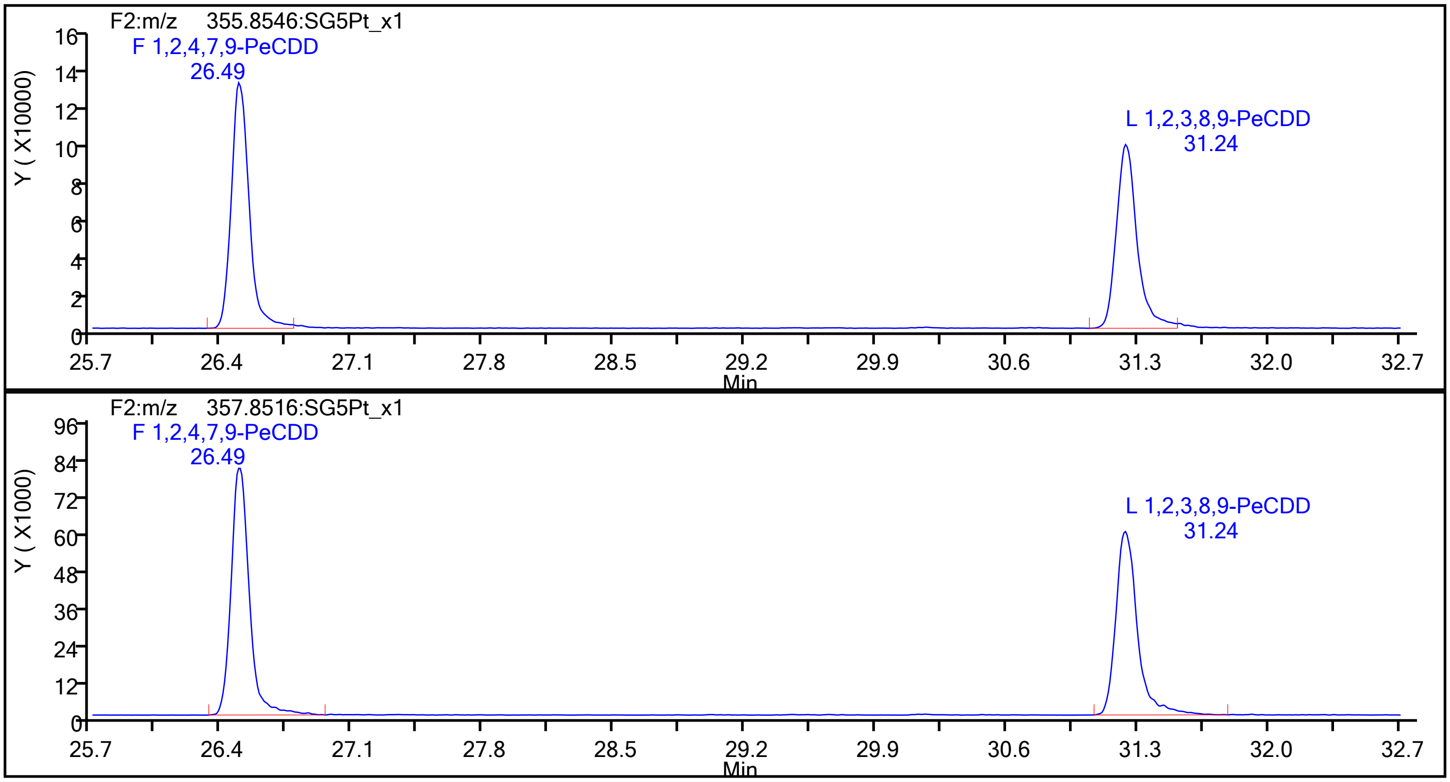

PeCDD Standards

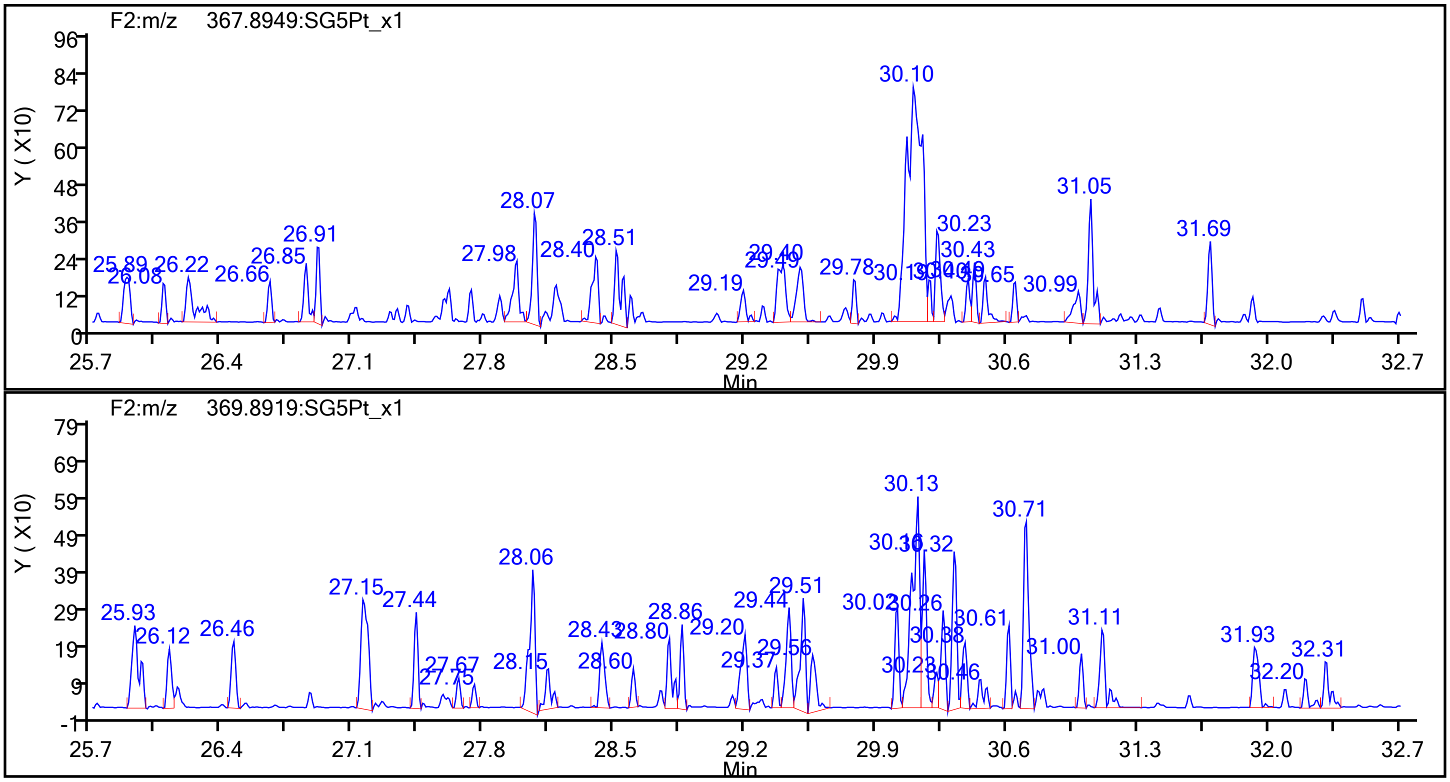

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

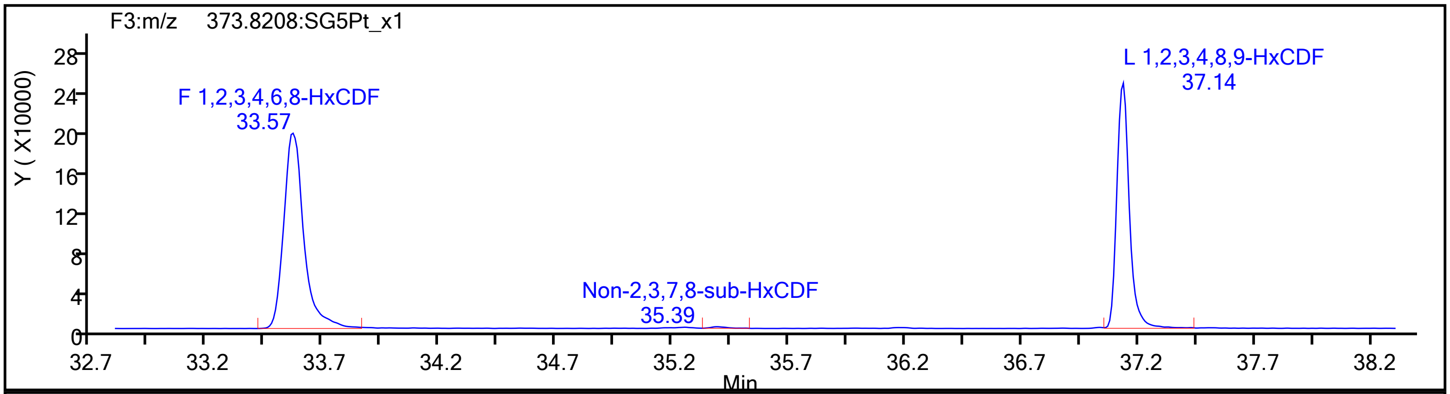

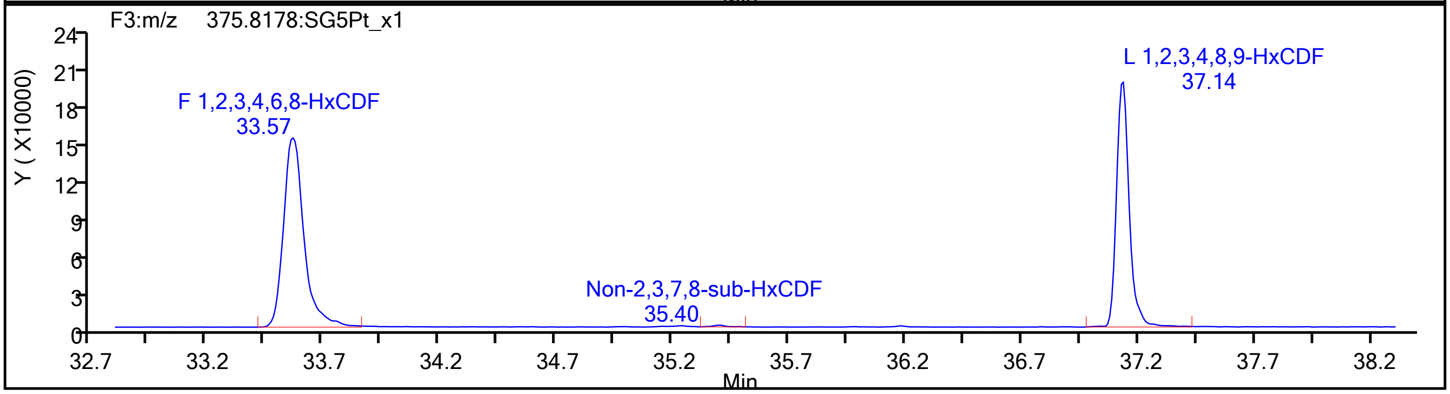

HxCDF Standards

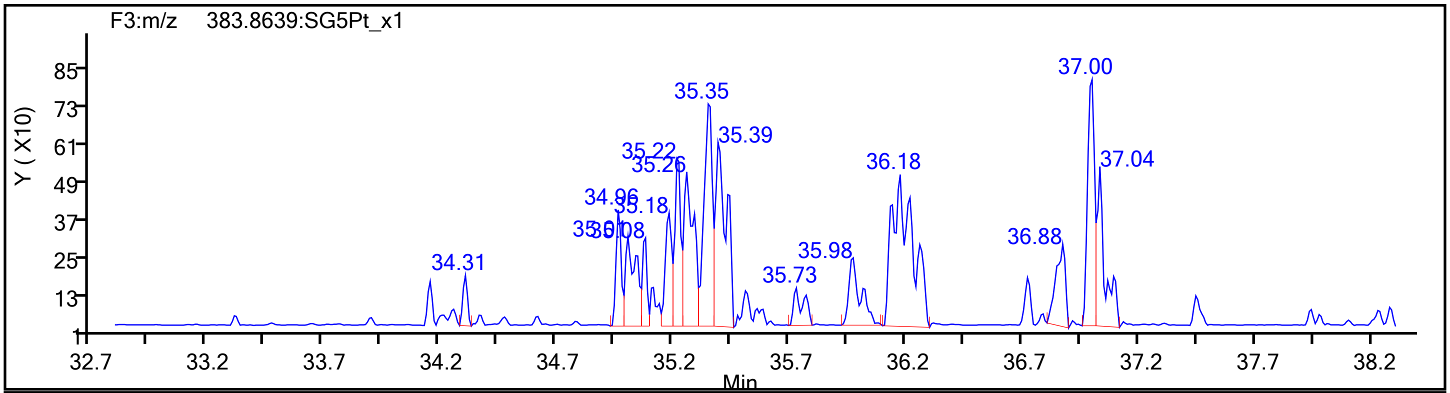

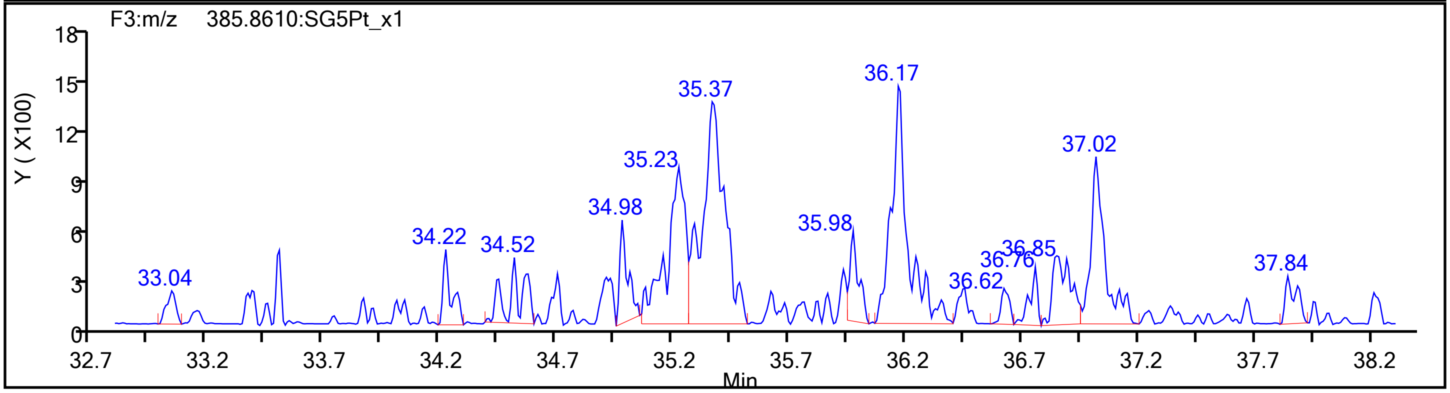

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

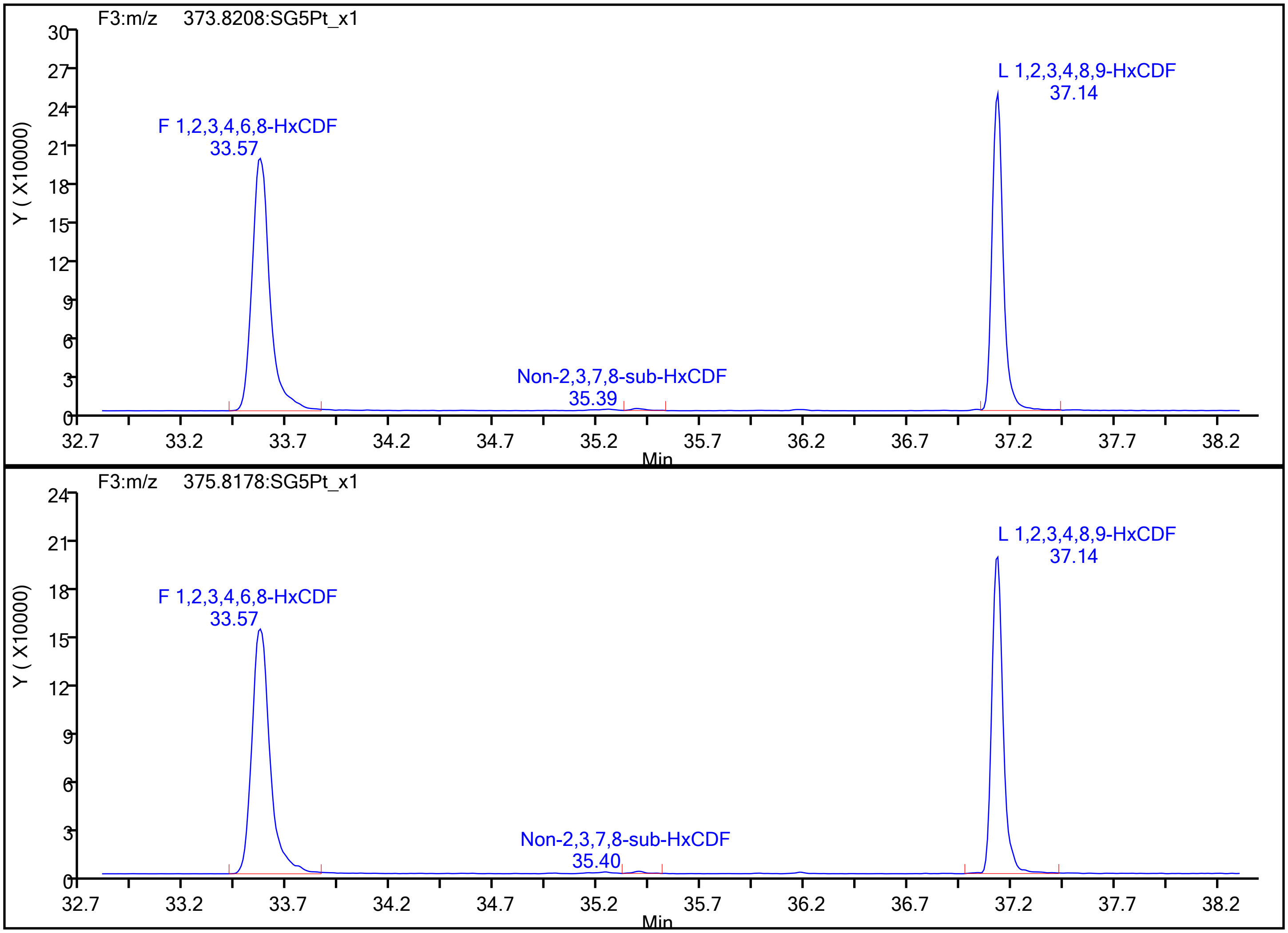

HxCDF Interference Mass

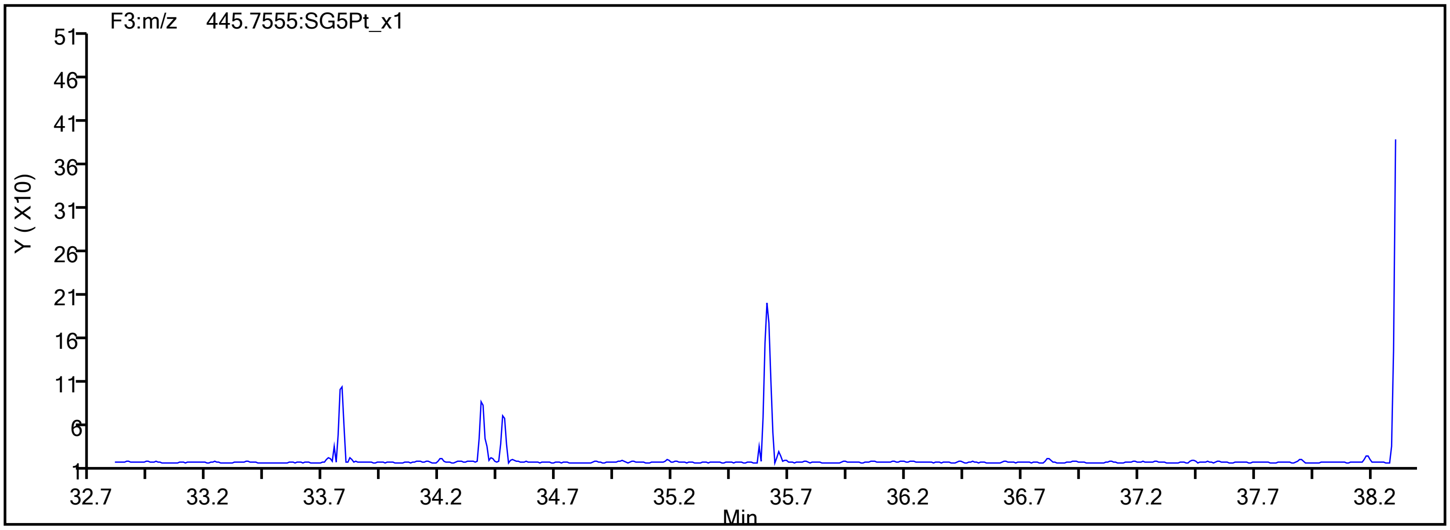

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date: 17-Nov-2020 11:15:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

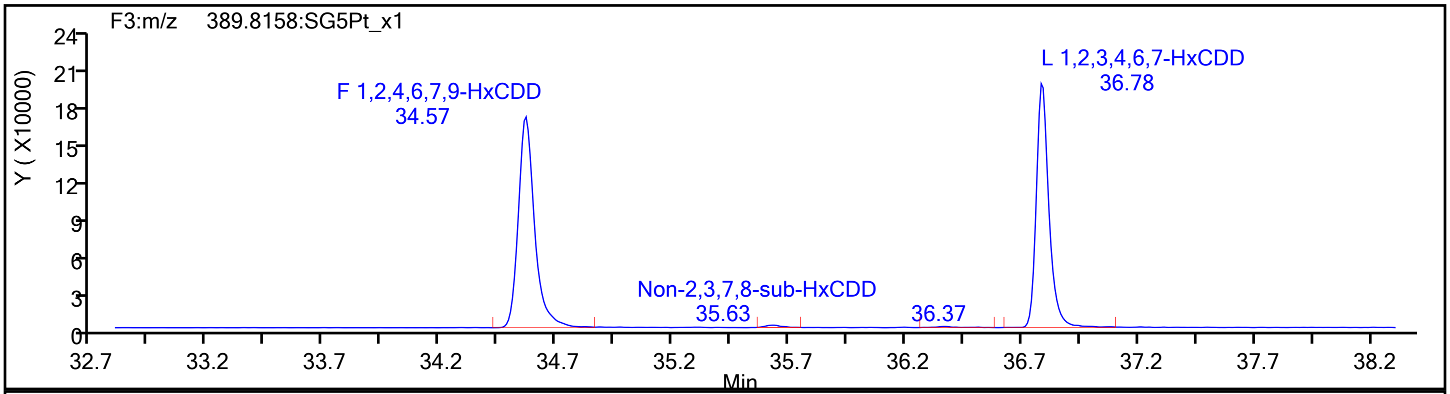

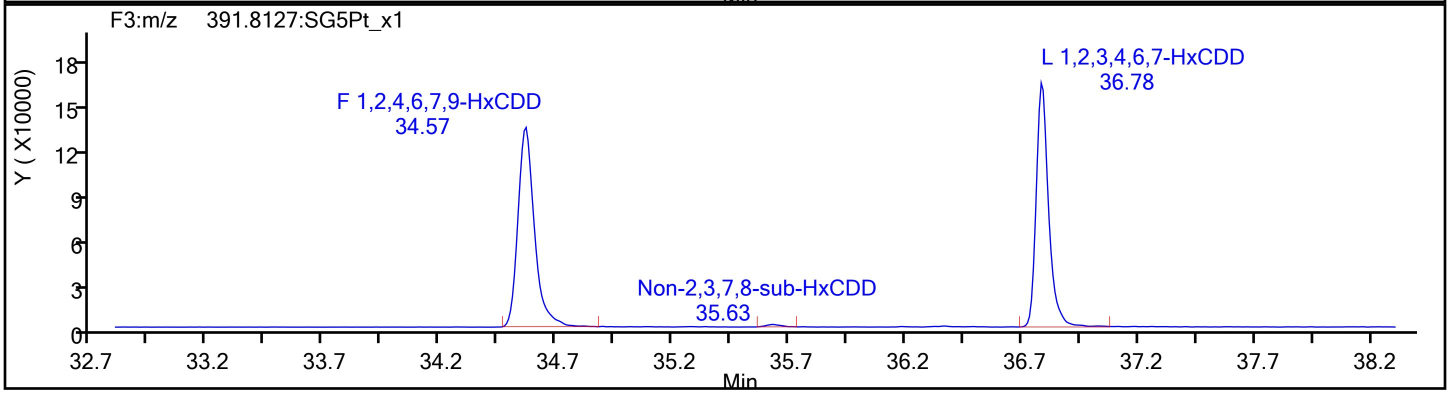

HxCDD Standards

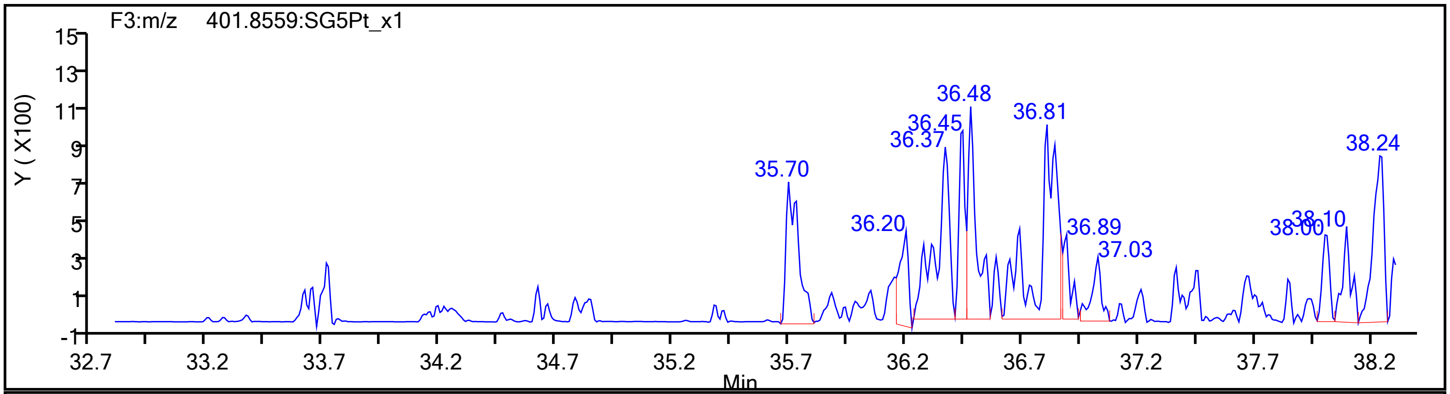

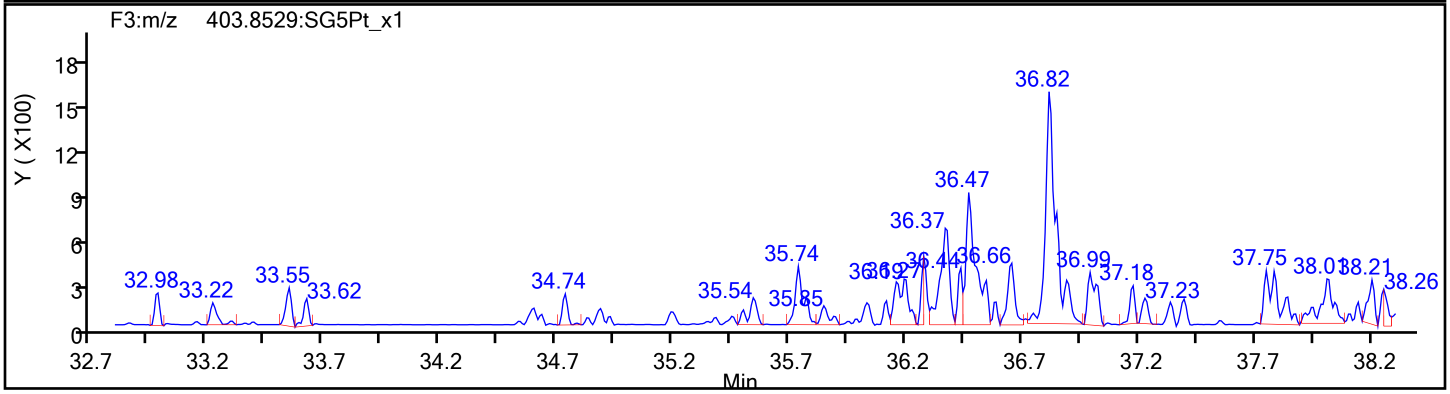

Report Date: 18-Nov-2020 12:37:42　　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

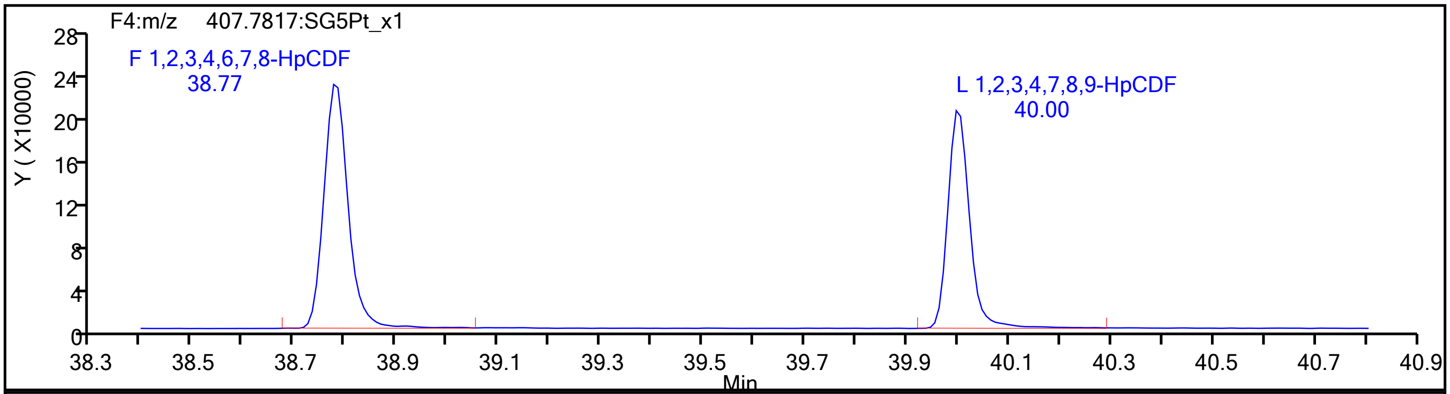

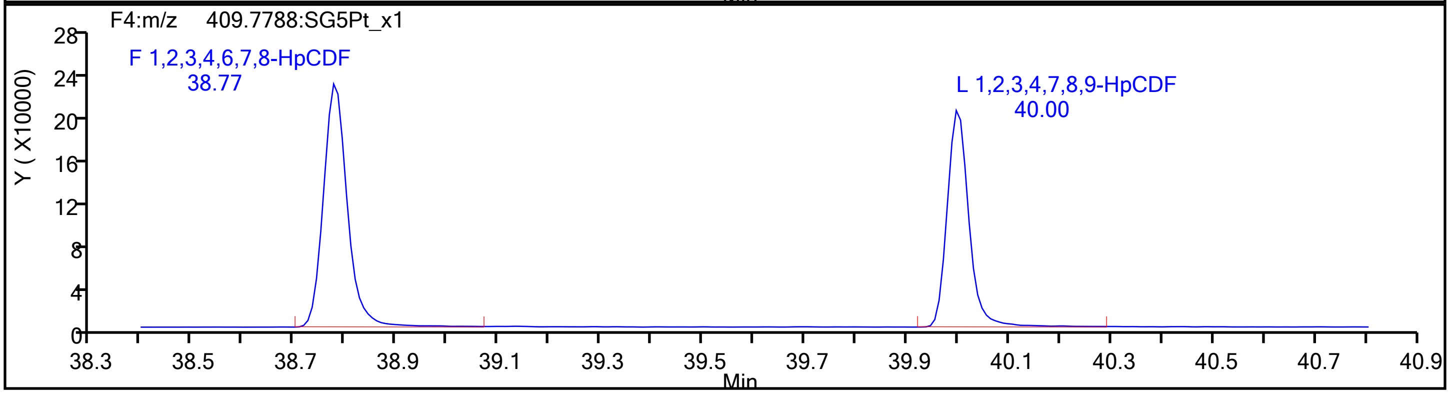

HpCDF Standards

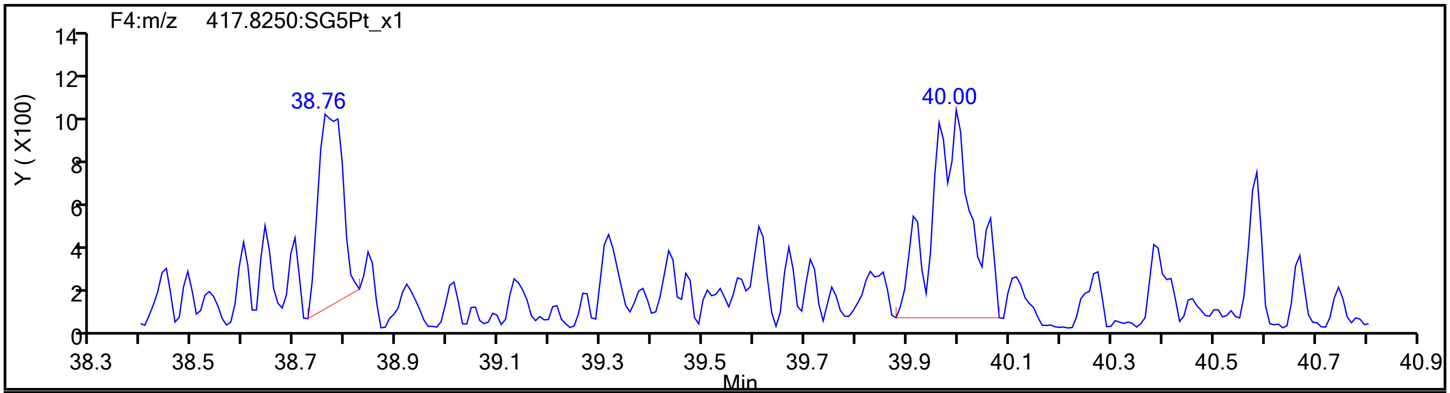

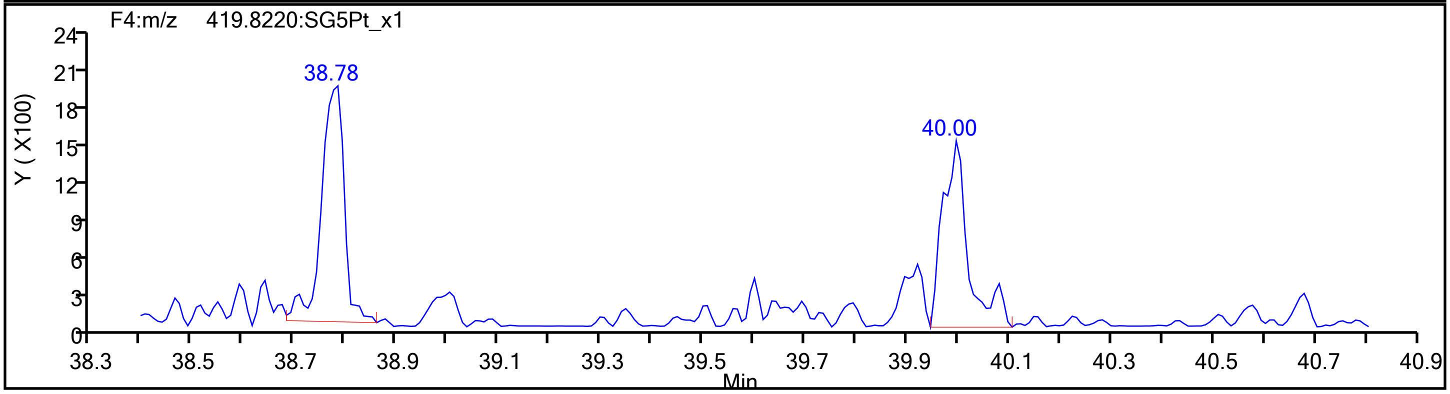

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

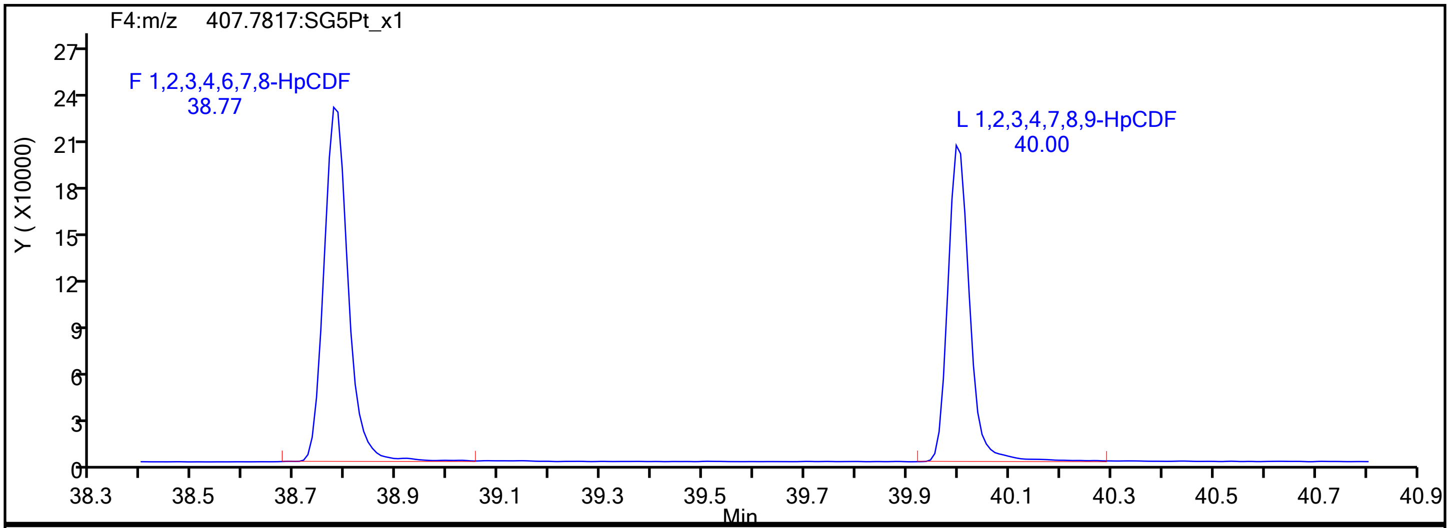

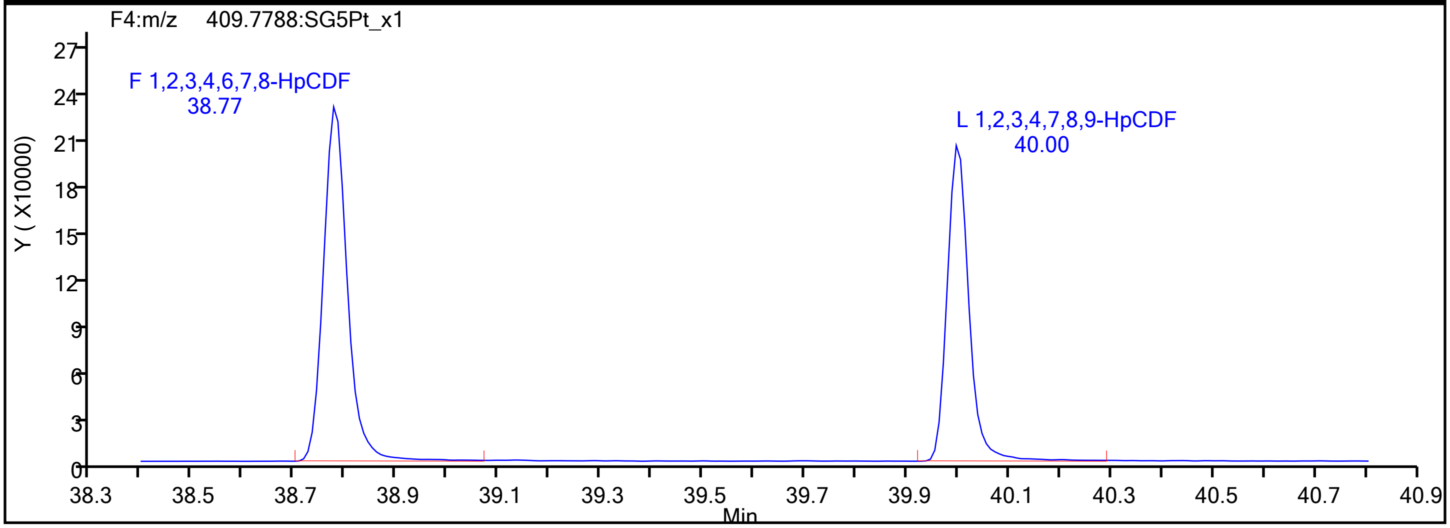

HpCDF Interference Mass

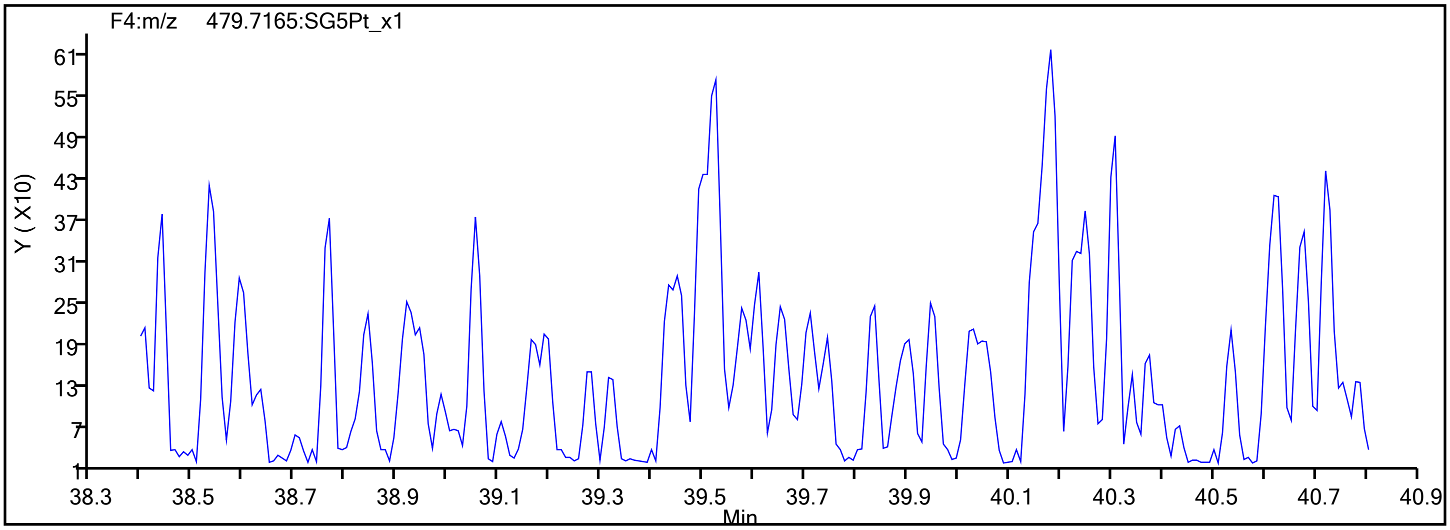

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

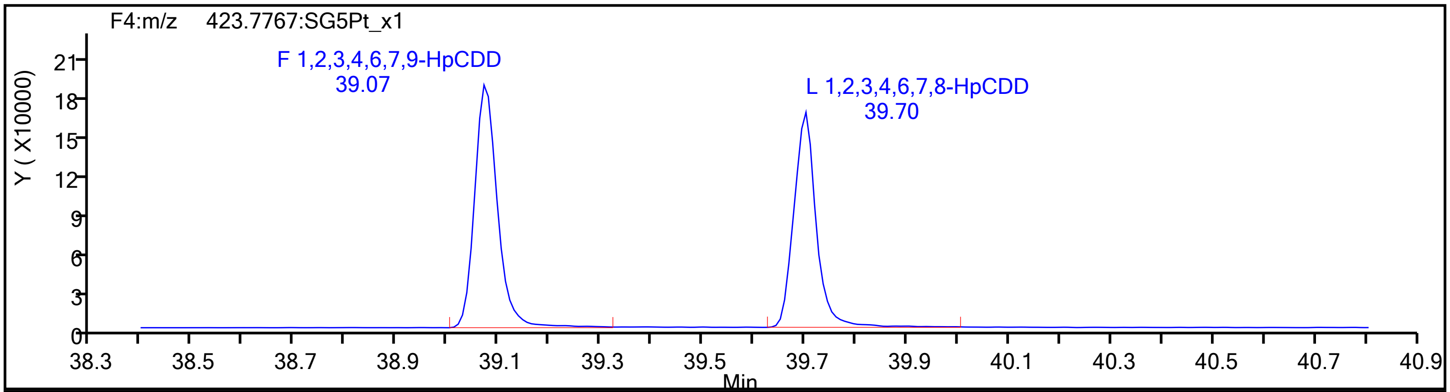

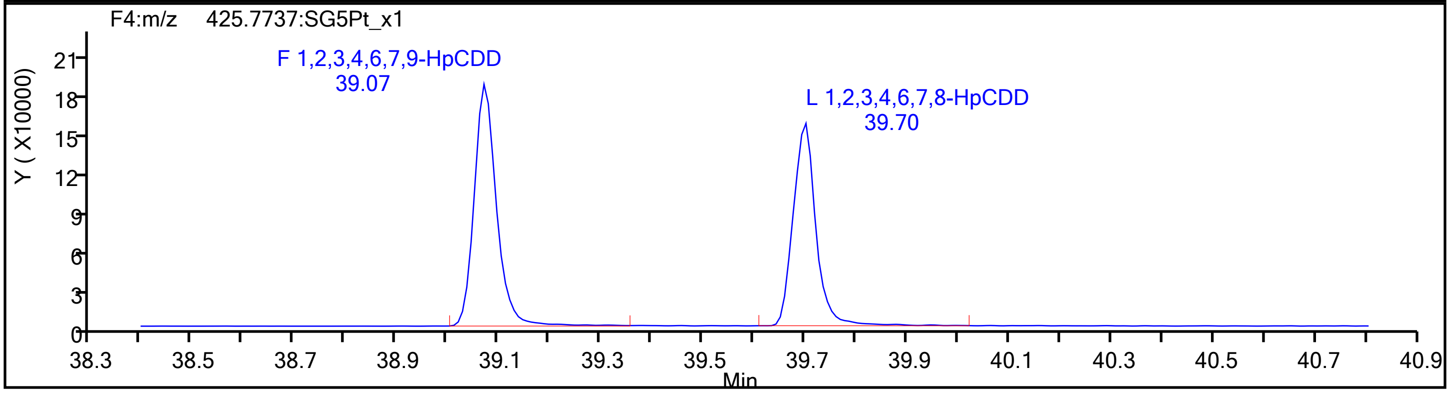

HpCDD Standards

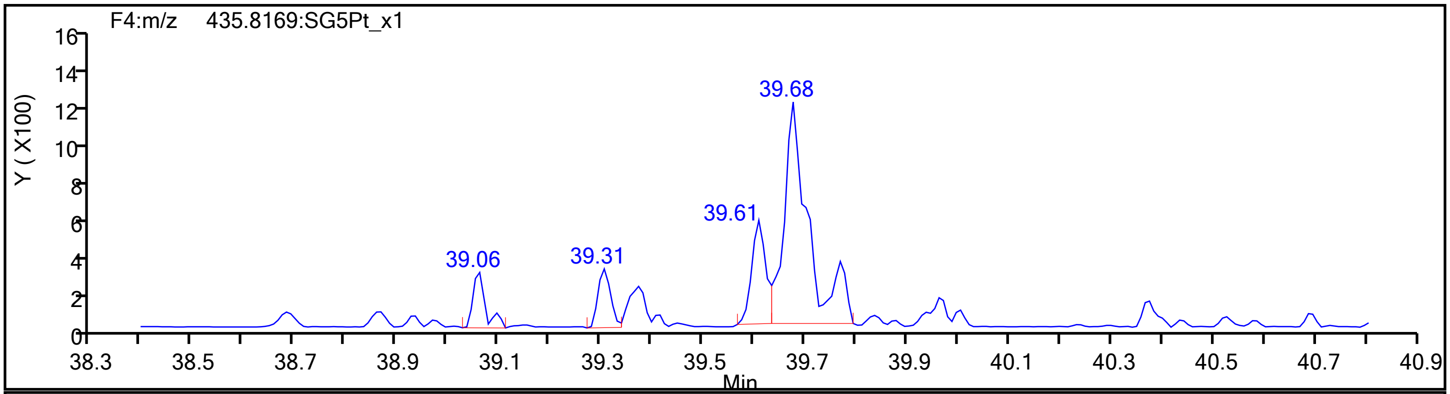

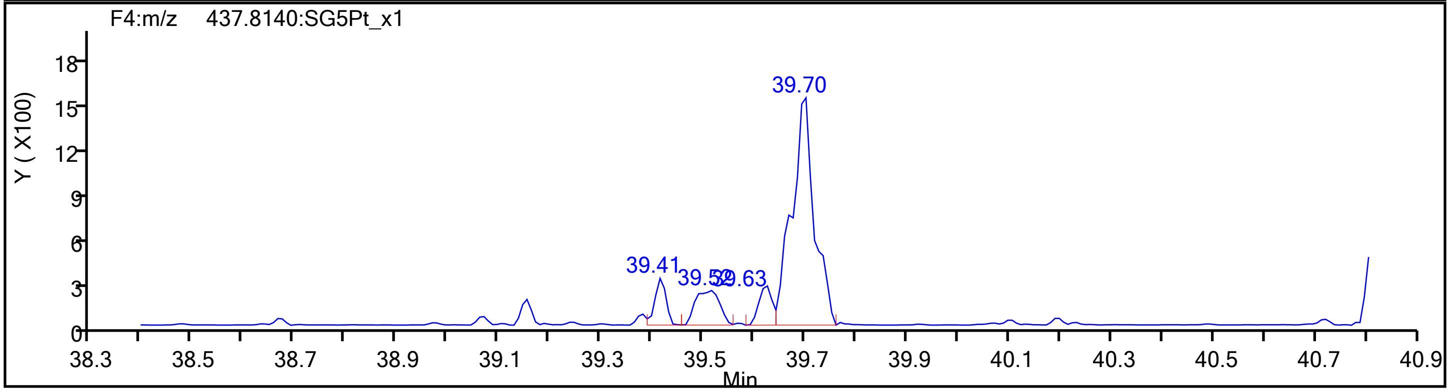

Report Date: 18-Nov-2020 12:37:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

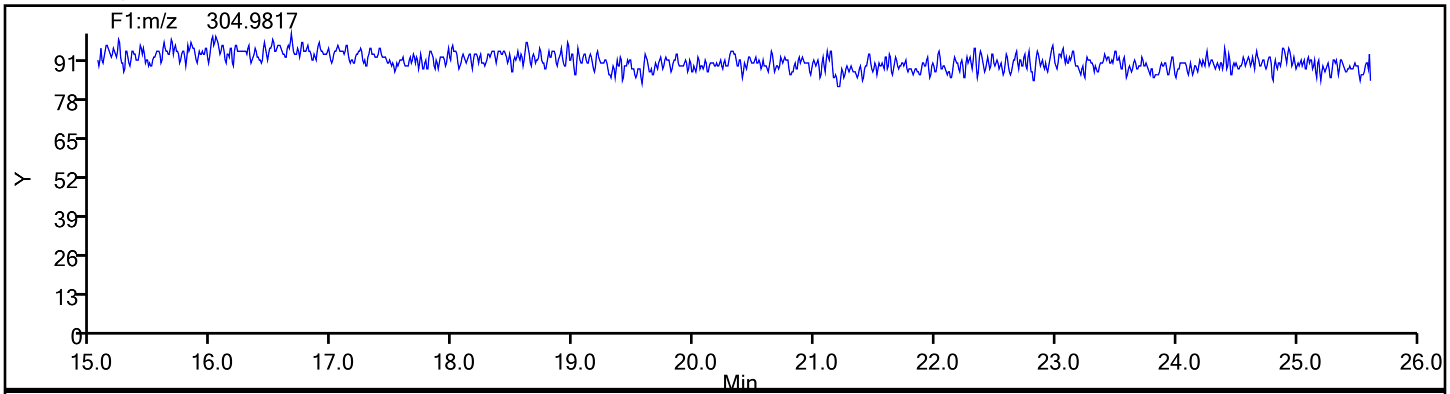

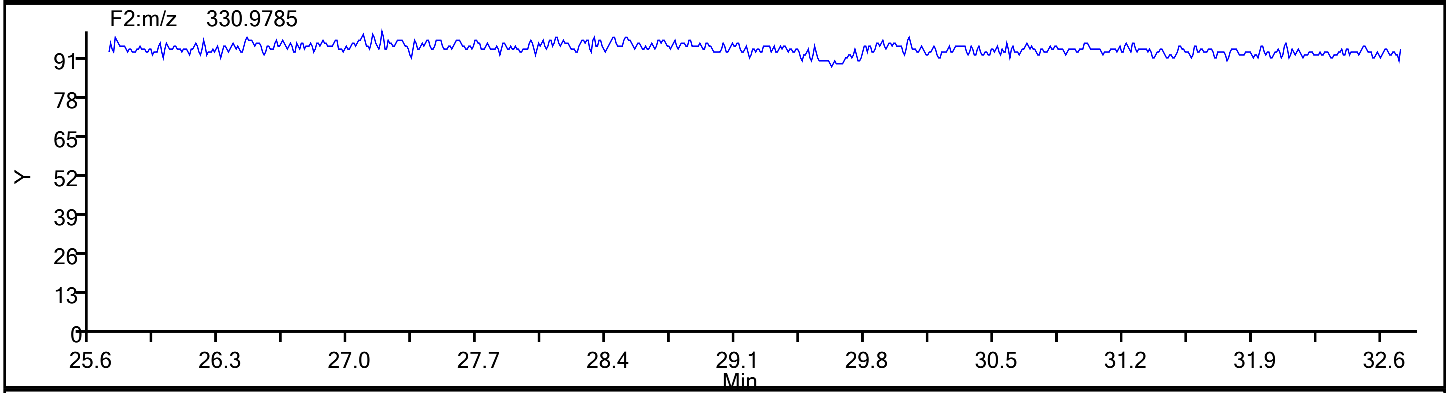

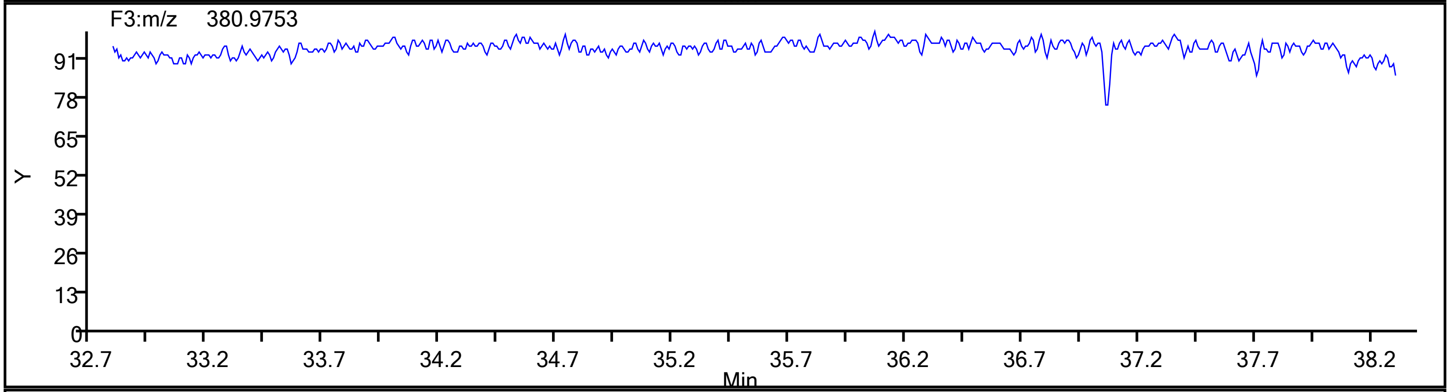

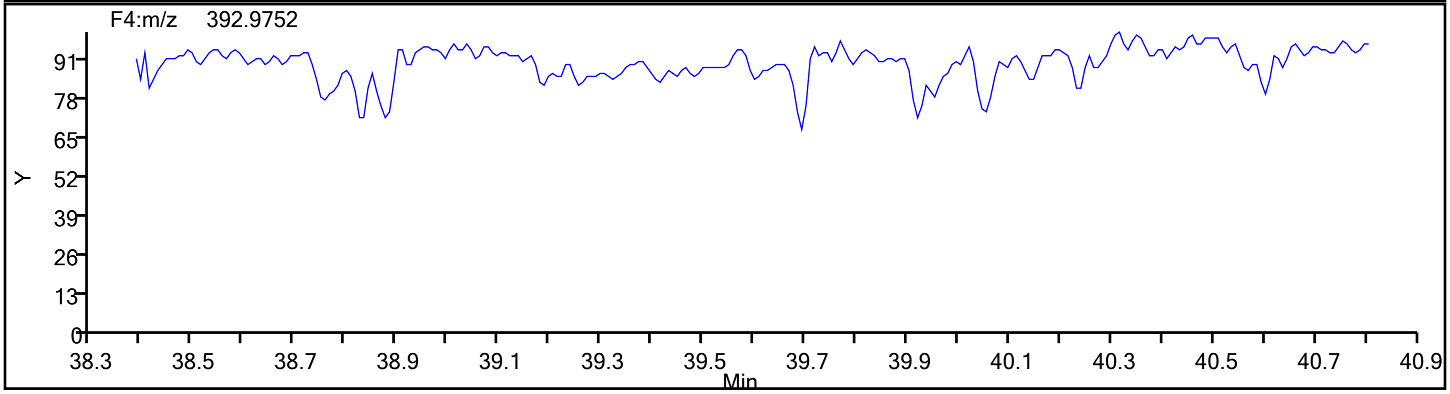

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

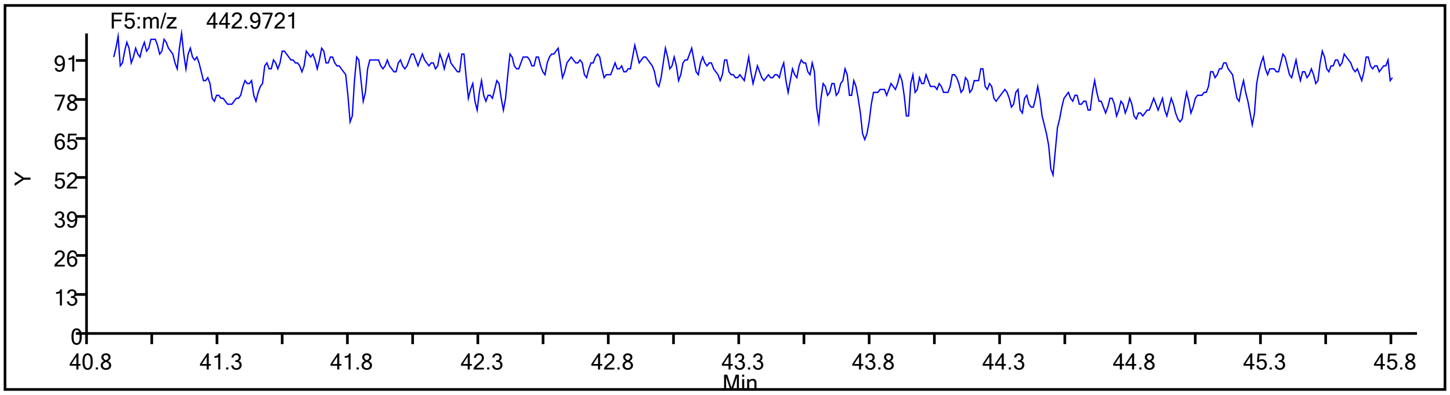

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 08:41:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:24:01 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.725	2056319	0.81	1.6832					0.00	
2,3,7,8-TCDF	20.776	4825674	0.81	1.1547	81.3	81.3	0.3365	0.3365		
A Non-2,3,7,8-sub-TCDF	20.119	37494	0.77	1.1547	0.7336	0.6316	0.3365	0.6316		RQ
S Total TCDF					82.0	81.9	0.3365	0.3365		RQ
D 13C-2,3,7,8-TCDD	22.124	1293394	0.83	1.0896					0.00	
2,3,7,8-TCDD	22.159	1534349	0.80	1.1659	40.7	40.7	0.2019	0.2019		
A Non-2,3,7,8-sub-TCDD	20.973						0.2019	0.2019		
S Total TCDD					40.7	40.7	0.2019	0.2019		
A F1 PeCDFs	24.940						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.506	32976	1.51	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	28.748						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.280						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.613	13321	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	38.745	1676643	1.06	1.5618						
1,2,3,4,7,8,9-HpCDF	39.975	1295612	1.05	1.4975						
A Non-2,3,7,8-sub-HpCDF	39.360						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.672	1060928	1.05	1.1079						
A Non-2,3,7,8-sub-HpCDD	40.007						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.336	2980154	0.82							
1,3,6,8-TCDD	18.001	1542814	0.80							
2,3,4,7-TCDF	20.776	4825674	0.81							
1,2,3,7-TCDD	21.935	1273656	0.77							
1,2,3,9-TCDF	22.348	2122872	0.80							
1,2,3,9-TCDD	22.451	1631557	0.78							
1,2,8,9-TCDF	23.902	2249675	0.81							
1,2,8,9-TCDD	23.945	653579								
1,3,4,6,8-PeCDF	24.298	1902110	1.60							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	26.389	1312708	1.58							
1,2,3,8,9-PeCDD	31.107	1205470	1.61							
1,2,3,8,9-PeCDF	31.293	1630316	1.56							
1,2,3,4,6,8-HxCDF	33.477	2115317	1.26							
1,2,4,6,7,9-HxCDD	34.488	1429821	1.25							
1,2,3,4,6,7-HxCDD	36.737	1343431	1.26							
1,2,3,4,8,9-HxCDF	37.082	1805219	1.24							
1,2,3,4,6,7,9-HpCDD	39.040	1201872	1.05							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 08:41:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:24:01 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.725	20.725	0	1.000	918191	130106	449	1122	290		
317.9389	20.733	20.725	1	1.000	1138128	161206	191	477	844	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.776	20.776	0	1.002	2154762	281484	482	1205	584		
305.8987	20.776	20.776	0	1.002	2670912	352135	650	1625	542	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	24.289	20.119	250	1.172	16311	2555	482	1205	5		
305.8987	24.298	20.119	250	1.172	27234	3932	650	1625	6	0.60(0.65-0.89)	
	Empc Correction				21183	3318	650	1625	5		
13C-2,3,7,8-TCDD											
331.9368	22.124	22.124	0	1.000	585923	80072	232	580	345		
333.9338	22.124	22.124	0	1.000	707471	94124	67	167	1405	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.159	22.159	0	1.002	681795	89586	214	535	419		
321.8936	22.159	22.159	0	1.002	852554	115824	196	490	591	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.973						214	535			
321.8936	20.973						196	490			
A F1 PeCDFs											
339.8597	24.940						23	57			
341.8567	24.940						32	80			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.021	28.506	-89	1.000	5560	975	96	240	10		
341.8567	27.021	28.506	-89	1.000	3238	544	114	285	5	1.72(1.32-1.78)	
339.8597	27.636	28.506	-52	1.000	8506	1346	96	240	14		
341.8567	27.636	28.506	-52	1.000	5532	687	114	285	6	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	28.260	28.506	-15	1.000	5773	807	96	240	8		
341.8567	28.260	28.506	-15	1.000	4367	590	114	285	5	1.32(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.748						122	305			
357.8516	28.748						81	202			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.280						282	705			
375.8178	35.280						215	537			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	35.558	35.613	-3	1.000	8597	1748	201	502	9		
391.8127	35.567	35.613	-3	1.000	5947	1220	170	425	7	1.45(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.745	38.745	0	1.000	864183	210680	751	1877	281		
409.7788	38.745	38.745	0	1.000	812460	197608	712	1780	278	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.975	39.975	0	1.000	664952	177876	751	1877	237		
409.7788	39.966	39.975	-1	1.000	630660	167303	712	1780	235	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.360						751	1877			
409.7788	39.360						712	1780			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.672	39.672	0	1.000	543540	140963	615	1537	229		
425.7737	39.663	39.672	-1	1.000	517388	136697	542	1355	252	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	40.007						615	1537			
425.7737	40.007						542	1355			
1,3,6,8-TCDF											
303.9016	16.336	16.336	0		1338940	262098	482	1205	544		
305.8987	16.336	16.336	0		1641214	316436	650	1625	487	0.82(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.001	18.001	0		687093	120530	214	535	563		
321.8936	18.001	18.001	0		855721	148779	196	490	759	0.80(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.776	20.776	0		2154762	281484	482	1205	584		
305.8987	20.776	20.776	0		2670912	352135	650	1625	542	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.935	21.935	0		553605	79693	214	535	372		
321.8936	21.935	21.935	0		720051	104112	196	490	531	0.77(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.348	22.348	0		943234	126180	482	1205	262		
305.8987	22.348	22.348	0		1179638	153820	650	1625	237	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.451	22.451	0		713274	90885	214	535	425		
321.8936	22.460	22.451	1		918283	113588	196	490	580	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.902	23.902	0		1009706	192261	482	1205	399		
305.8987	23.902	23.902	0		1239969	237441	650	1625	365	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	23.945	23.945	0		653579	128040	214	535	598		
1,3,4,6,8-PeCDF											
339.8597	24.298	24.298	0		1169174	222308	23	57	9666		
341.8567	24.298	24.298	0		732936	143255	32	80	4477	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.389	26.389	0		804533	116638	122	305	956		
357.8516	26.389	26.389	0		508175	75042	81	202	926	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.107	31.107	0		742879	85188	122	305	698		
357.8516	31.099	31.107	-1		462591	55248	81	202	682	1.61(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.293	31.293	0		992635	117224	96	240	1221		
341.8567	31.301	31.293	1		637681	71896	114	285	631	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.477	33.477	0		1179707	178022	282	705	631		
375.8178	33.477	33.477	0		935610	141605	215	537	659	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.488	34.488	0		793350	139967	201	502	696		
391.8127	34.488	34.488	0		636471	112243	170	425	660	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.737	36.737	0		749836	173822	201	502	865		
391.8127	36.737	36.737	0		593595	137108	170	425	807	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.082	37.082	0		1000106	227917	282	705	808		
375.8178	37.082	37.082	0		805113	182856	215	537	850	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.040	39.040	0		615607	156422	615	1537	254		
425.7737	39.040	39.040	0		586265	146731	542	1355	271	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Lims ID: WDM
Client ID:
Inject. Date: 24-Nov-2020 08:41:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 434777 Lims Sample ID: 29

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	40.000	2056319	291312

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		40.000	2056319	291312

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.289	16311	2555	27234	3932	0.7336	0.60	RQ
24.289	16311	2555	21183	3318	0.6316		Empc Correction
Signal Totals:							
	16311	2555	21183	3318			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	43545	6487				0.60	RQ
	37494	5873					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7336 = (43545 * 40.000) / (2056319 * 1.155)
Empc Amount: 0.6316 = (37494 * 40.000) / (2056319 * 1.155)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Nov-2020 08:41:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	29

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132				
2,3,4,7,8-PeCDF	1.159				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.021	5560	975	3238	544		1.72	
27.636	8506	1346	5532	687		1.54	
28.260	5773	807	4367	590		1.32	
Signal Totals:							
	19839	3128	13137	1821			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	32976	4949				1.51	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (32976 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Nov-2020 08:41:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	29

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197				
1,2,3,6,7,8-HxCDD	1.069				
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.558	8597	1748	5947	1220		1.45	R
Signal Totals:							
	8597	1748	5947	1220			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14544	2968				1.45	RQ
	13321	2732					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (14544 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (13321 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

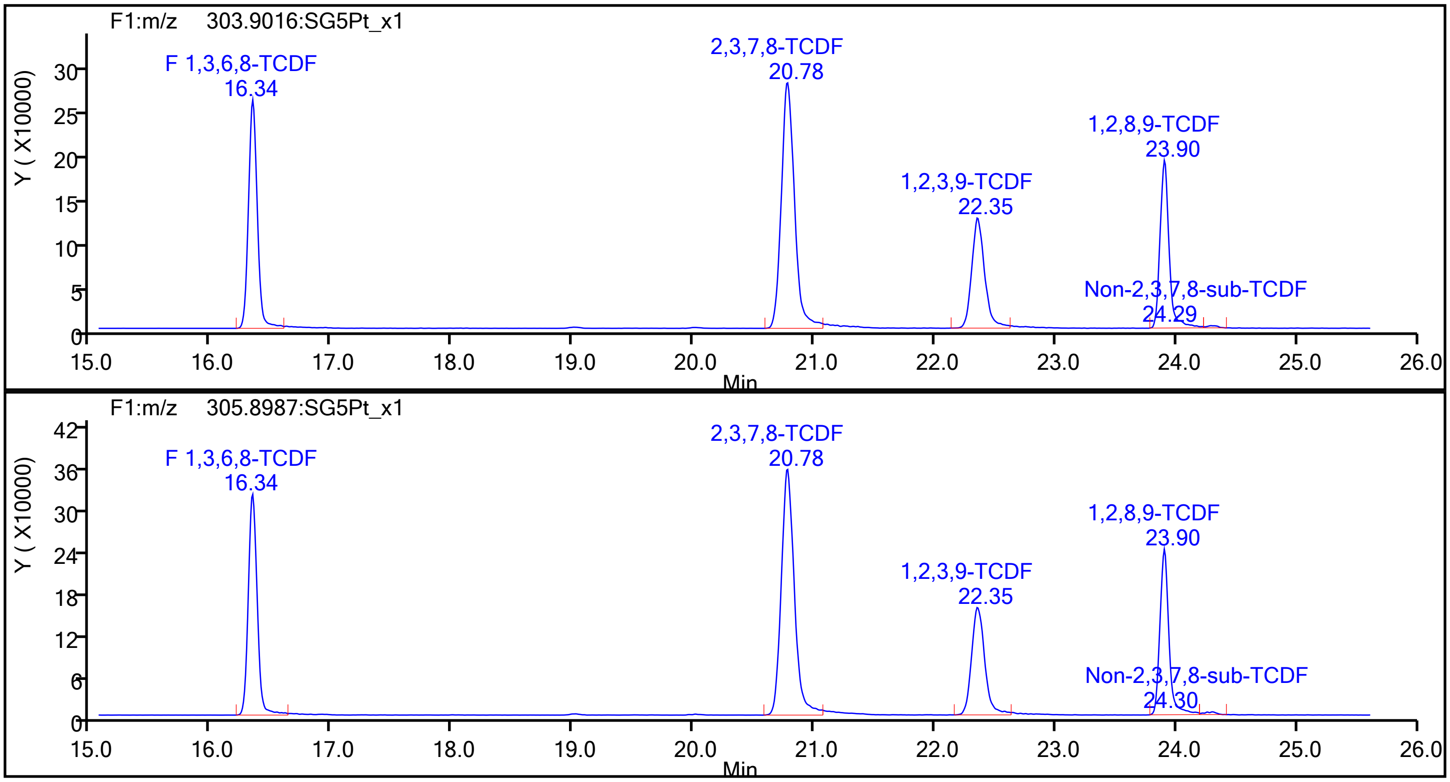

TCDF Standards

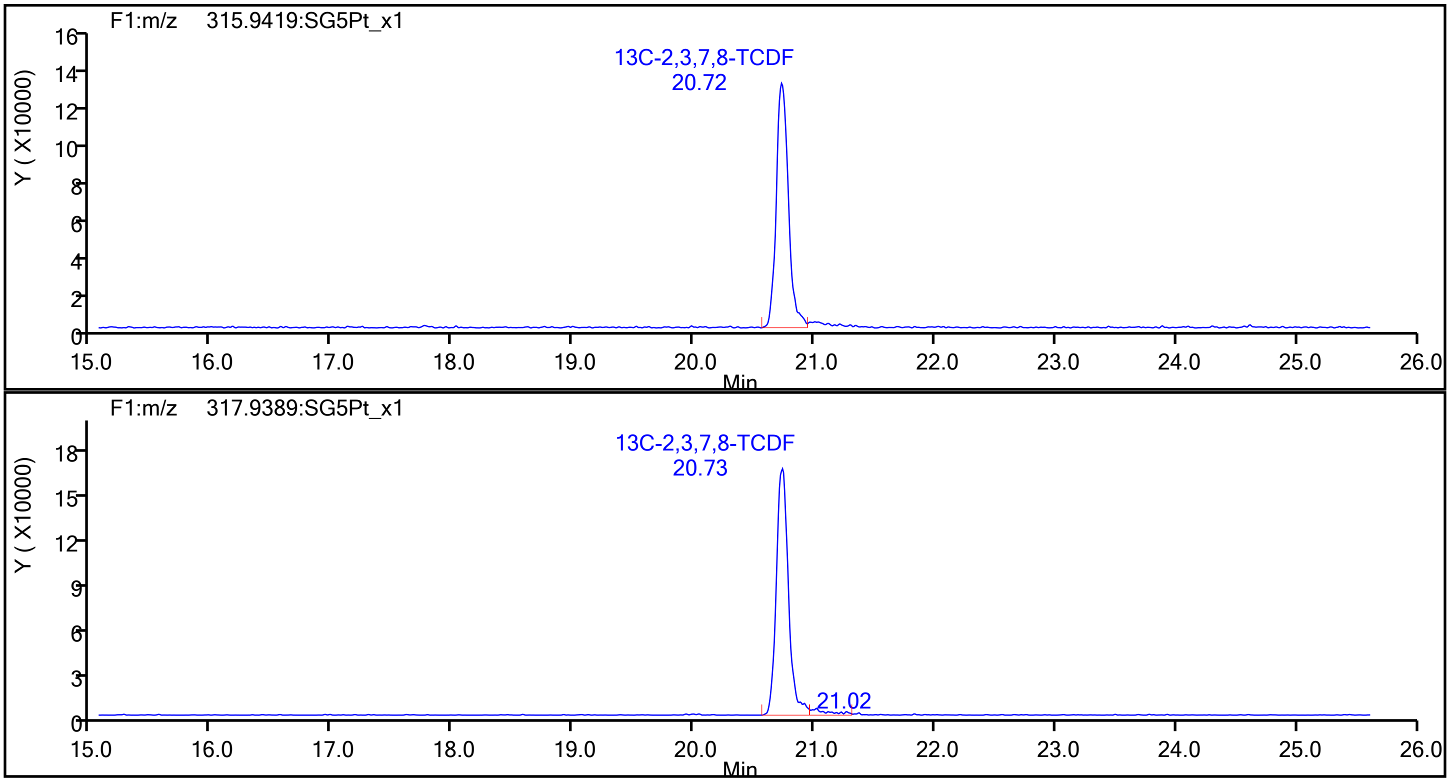

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

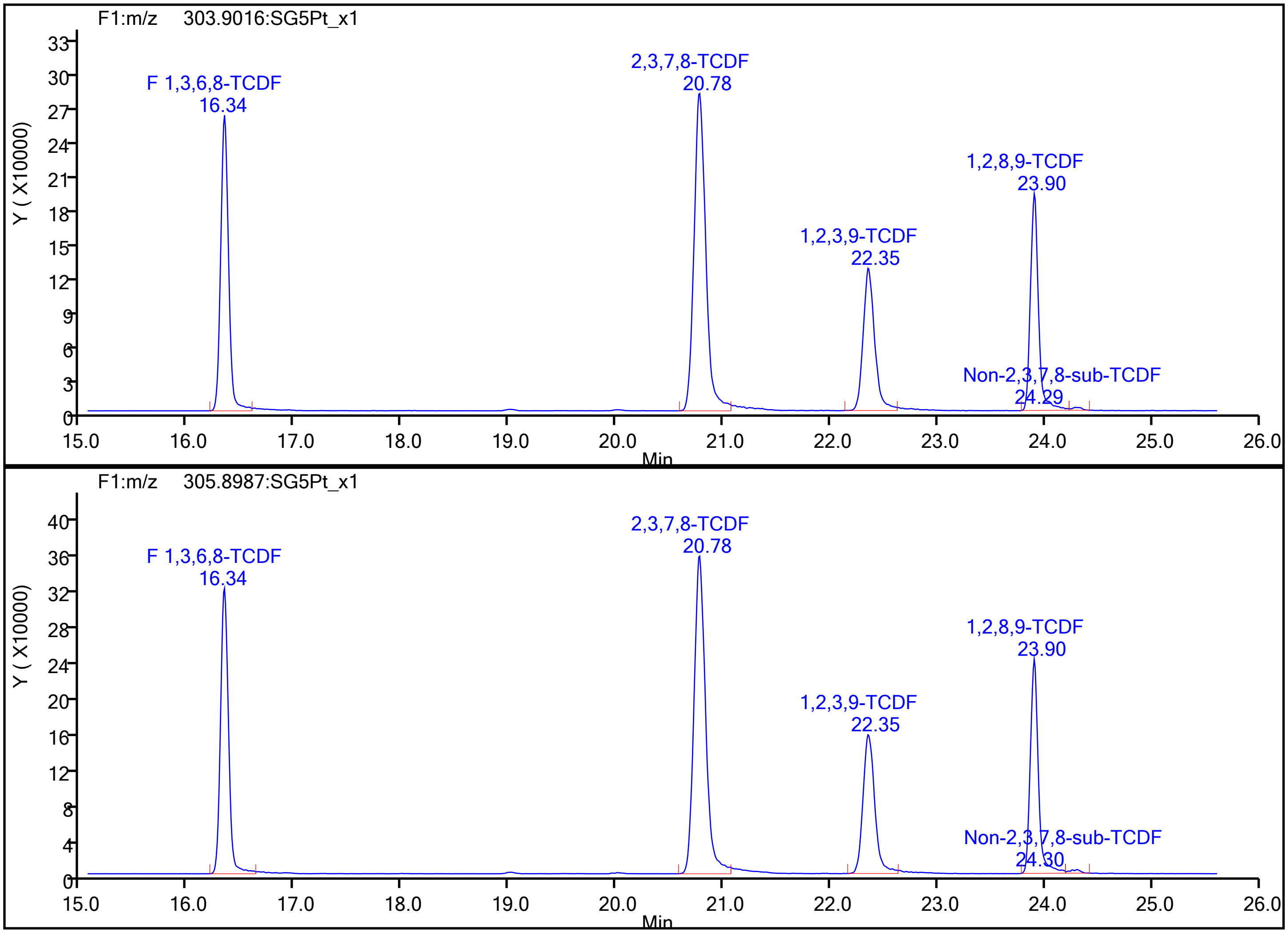

TCDF Interference Mass

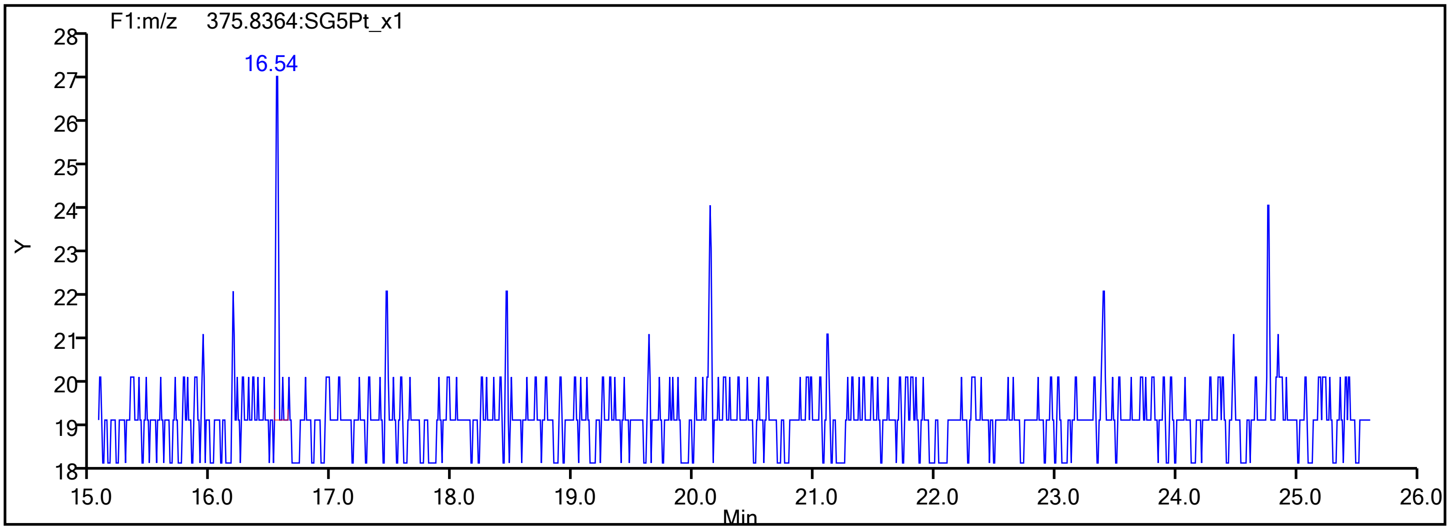

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Injection Date: 24-Nov-2020 08:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 29
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

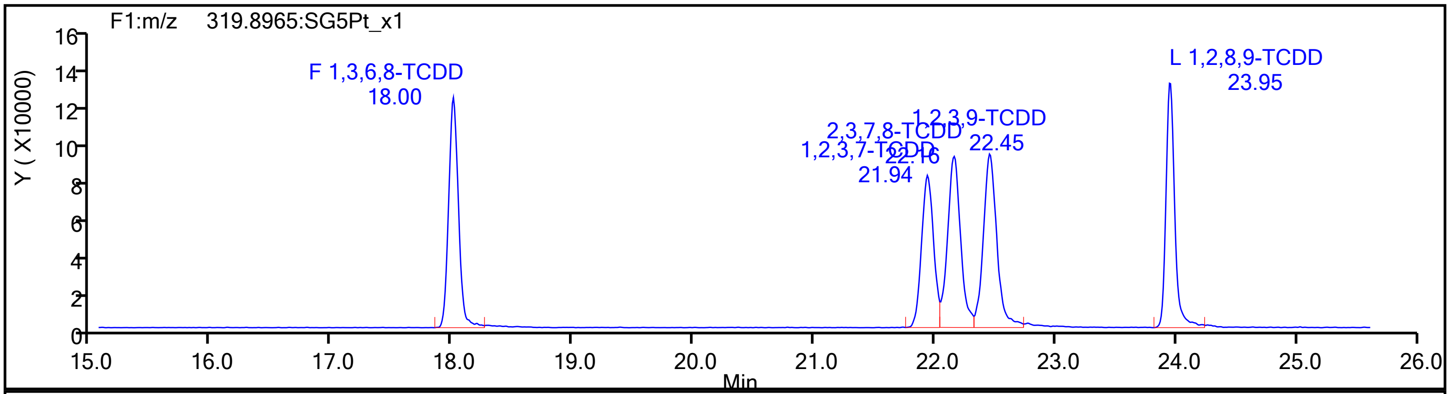

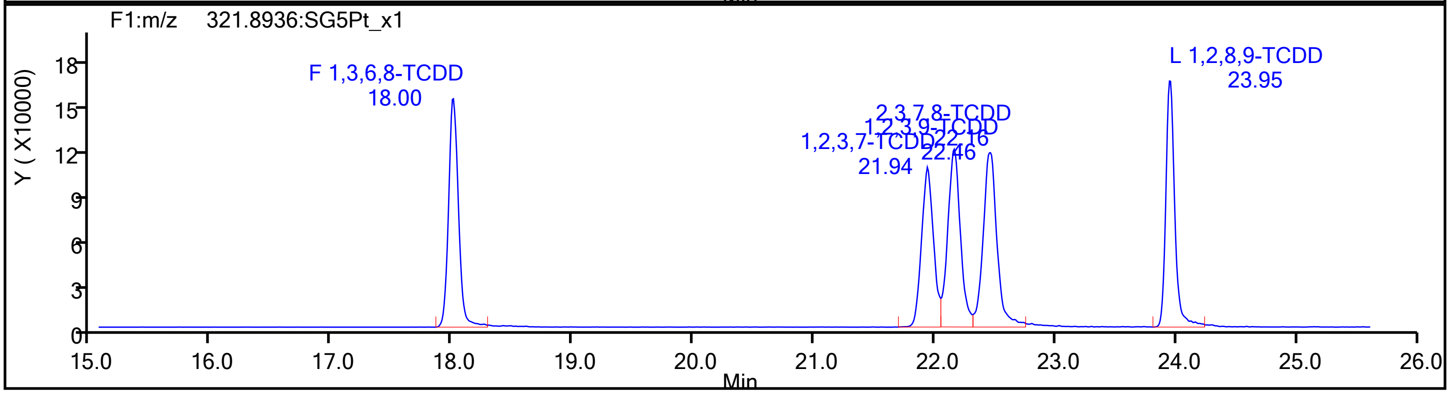

TCDD Standards

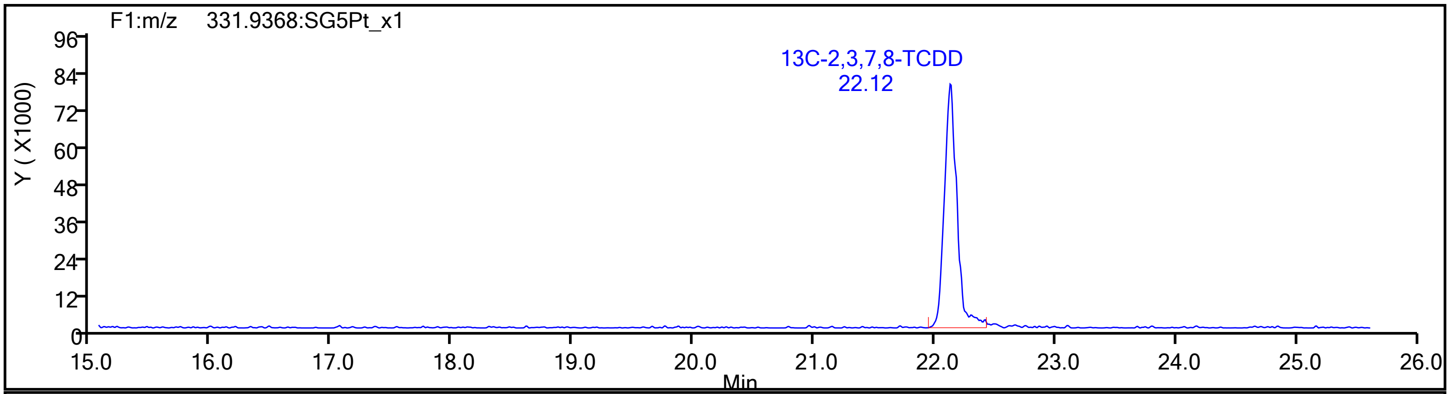

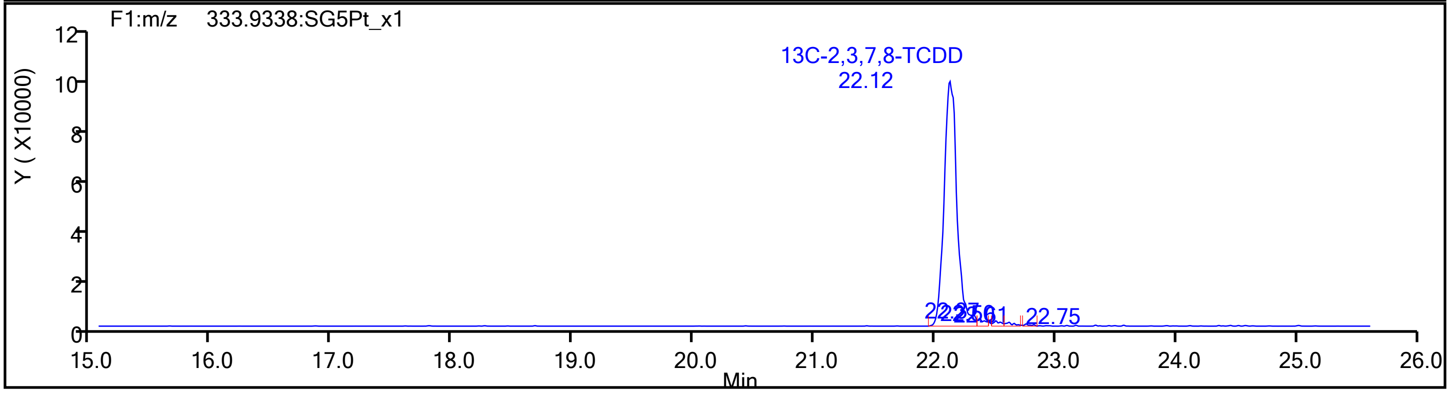

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

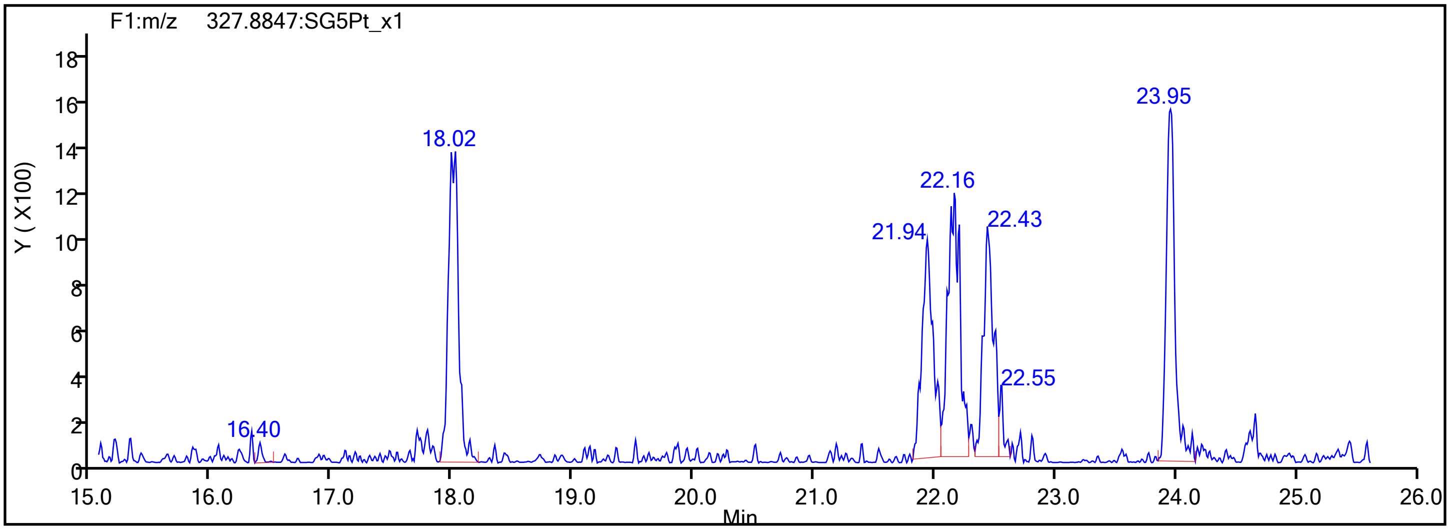

37Cl4-TCDD Standards

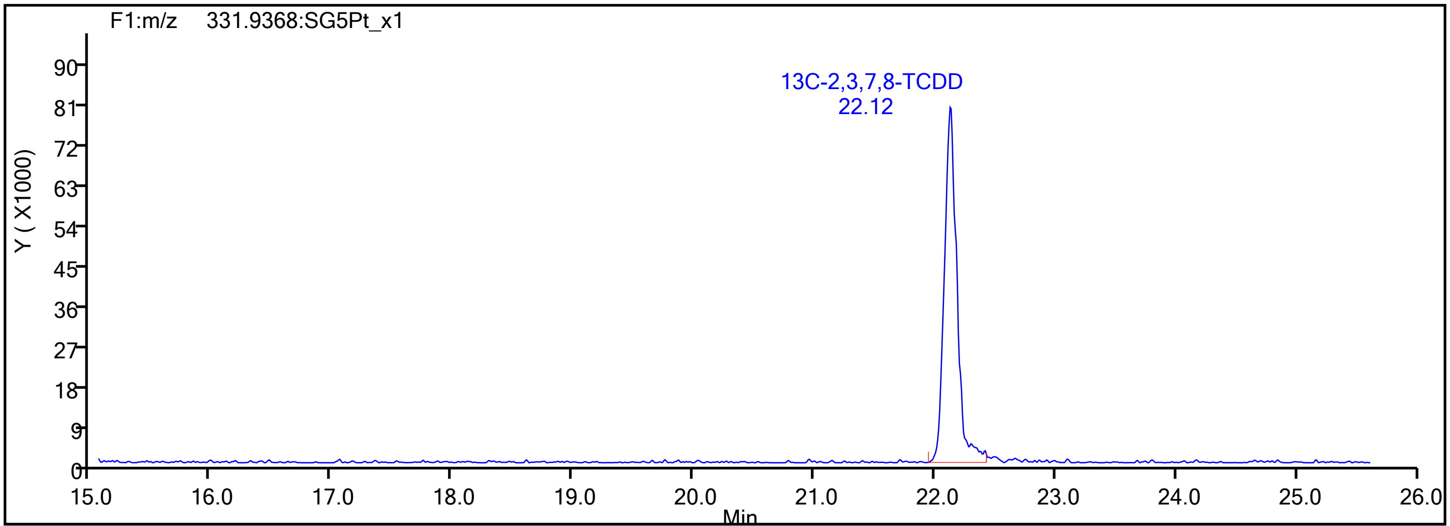

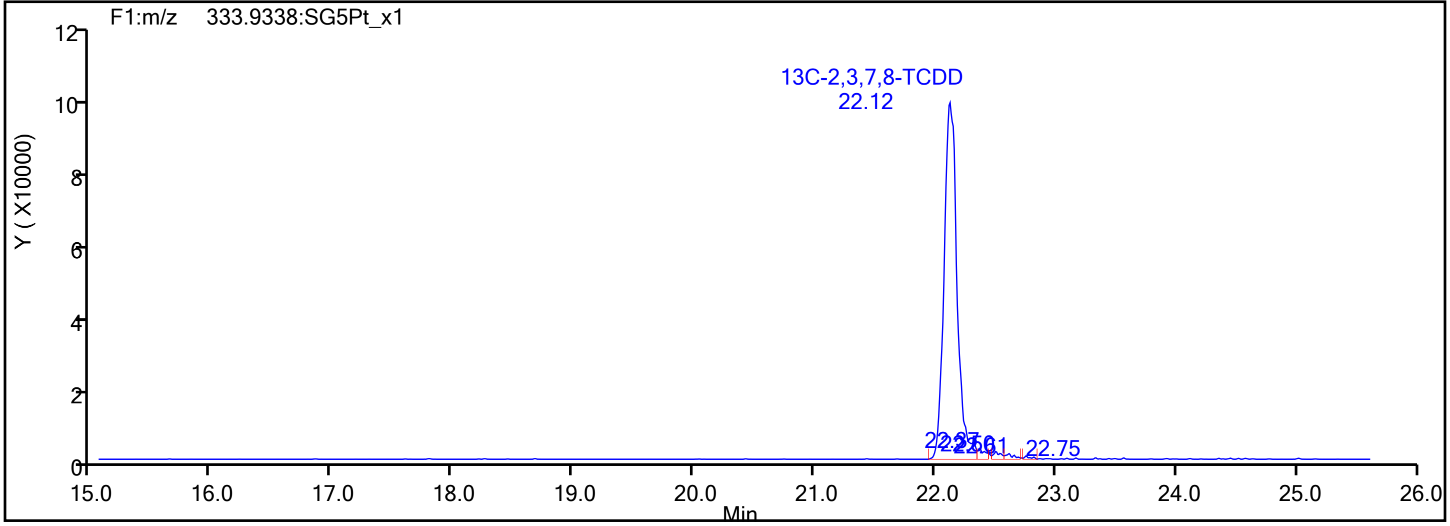

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

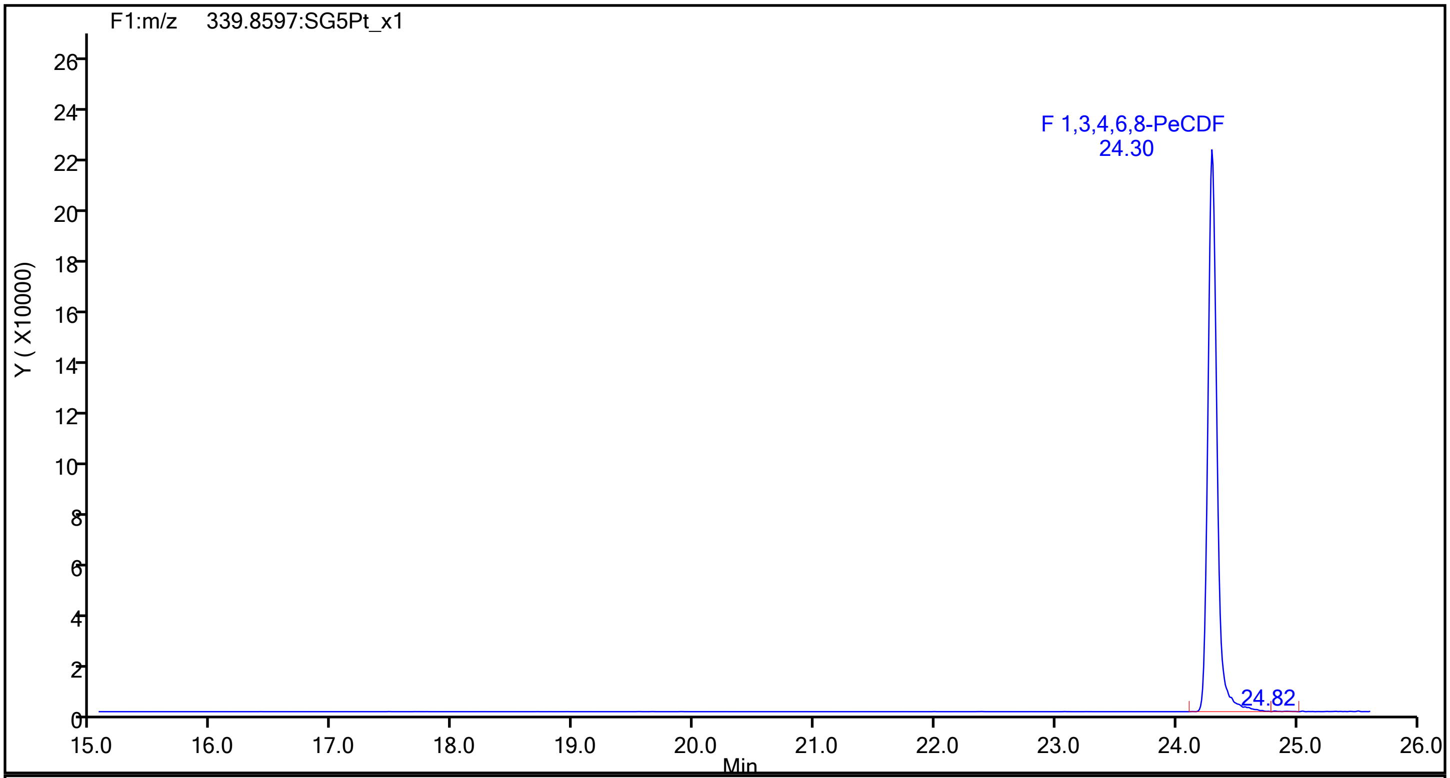

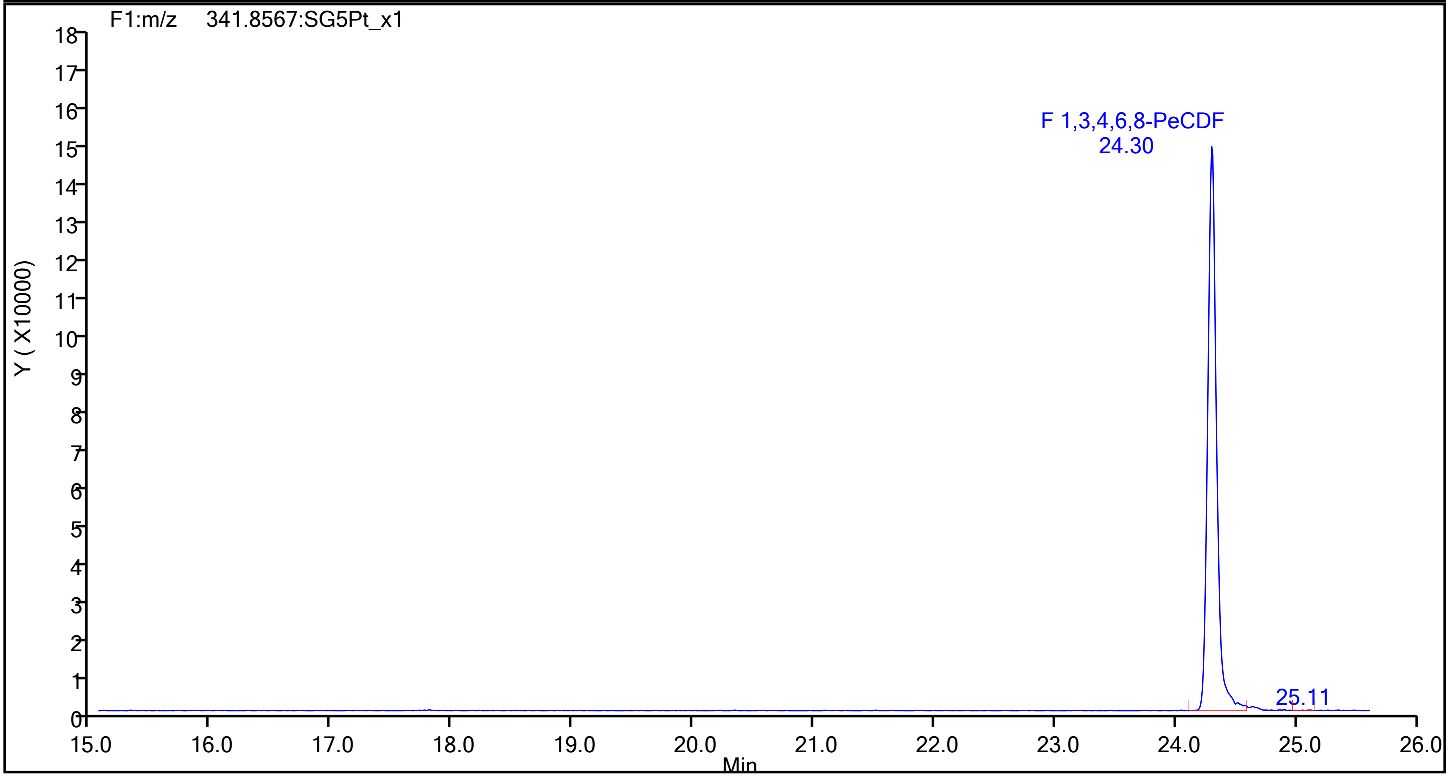

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

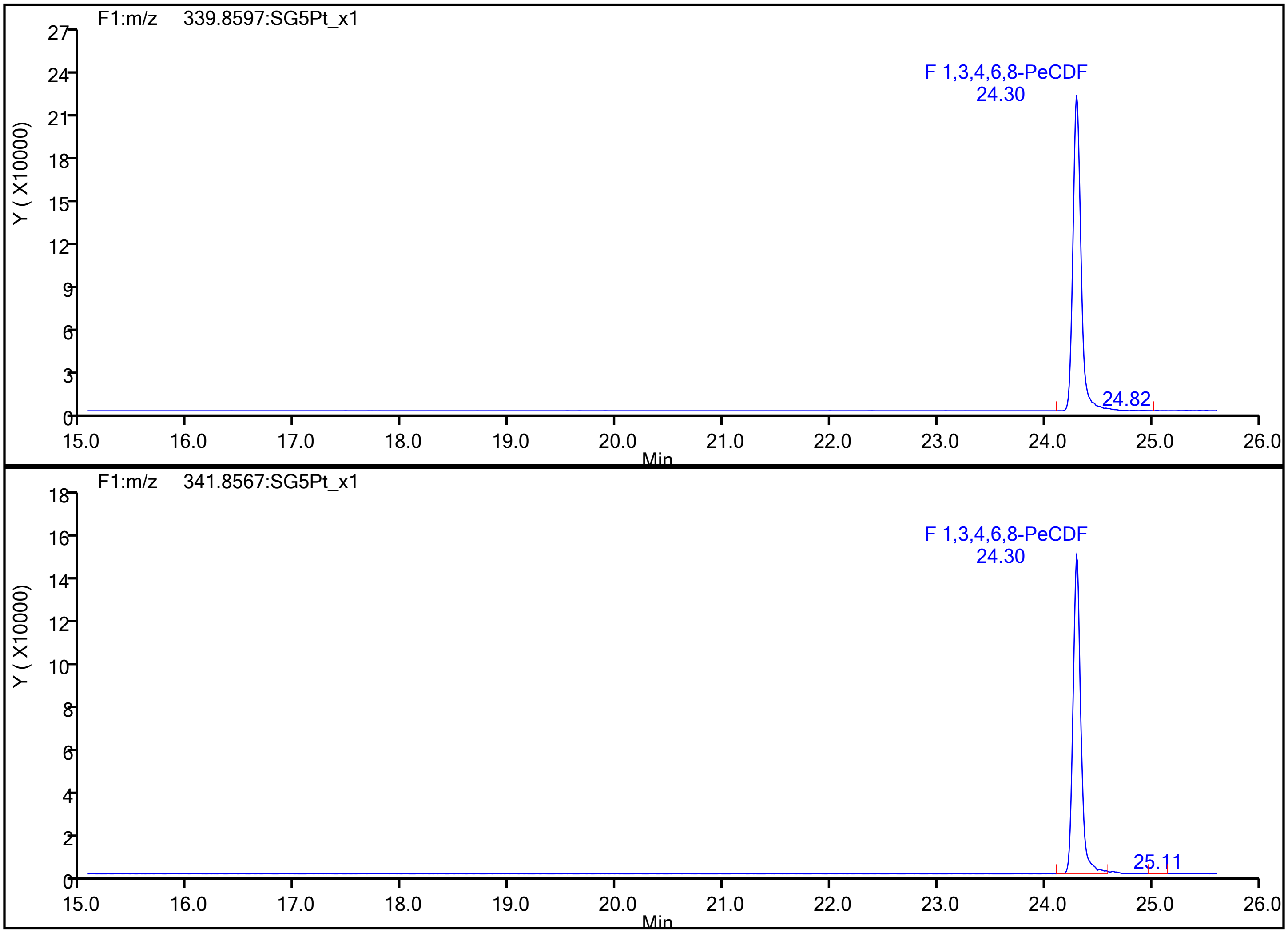

F1 PeCDFs Interference Mass

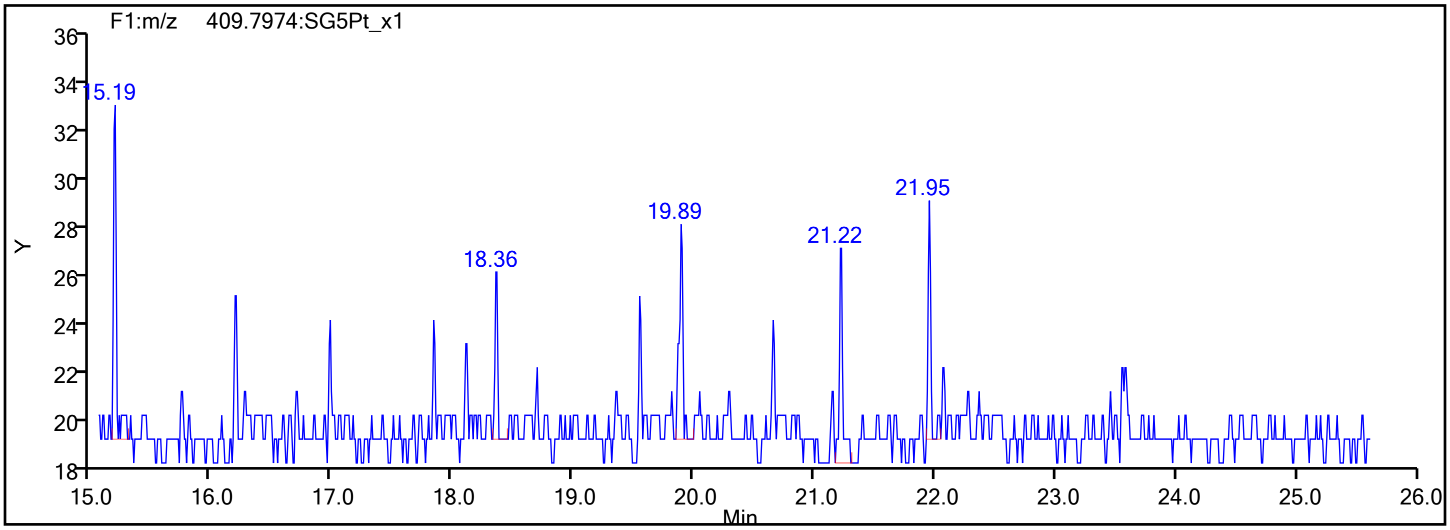

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

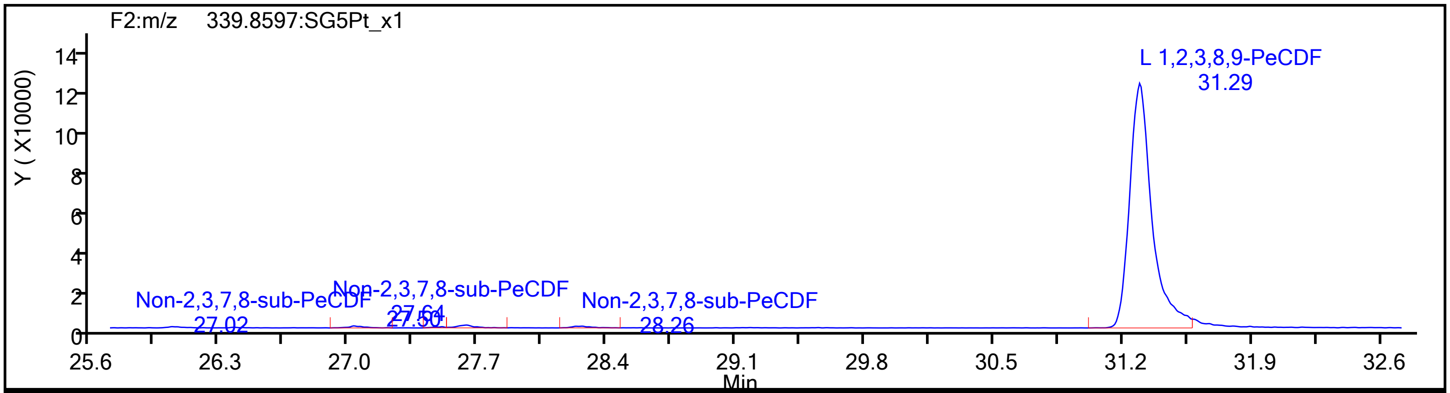

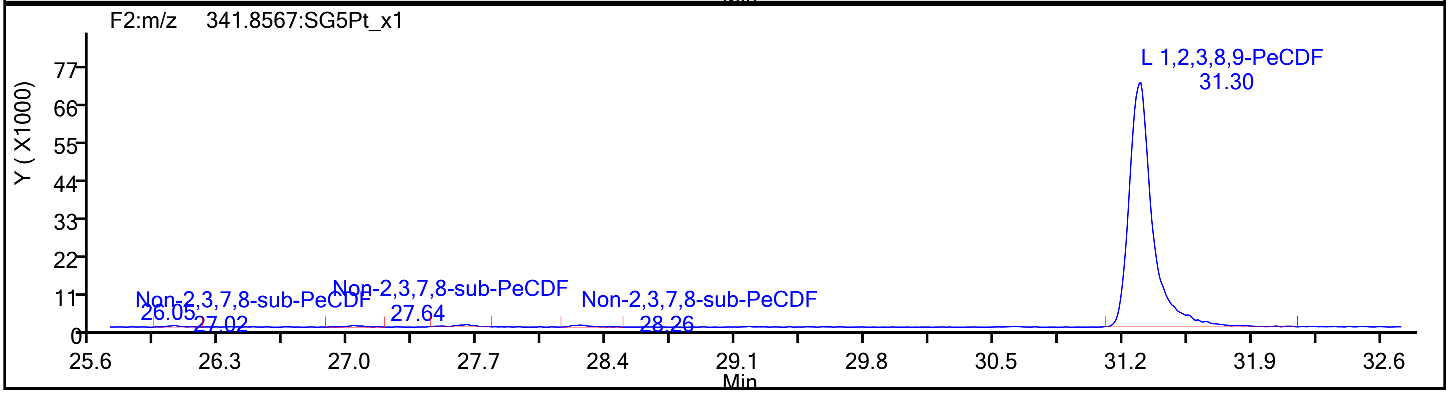

PeCDF Standards

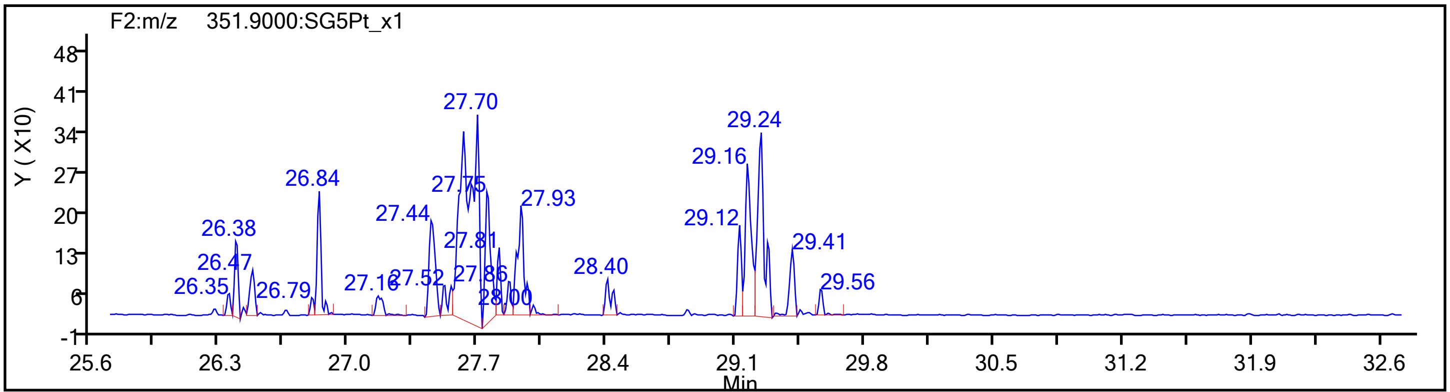

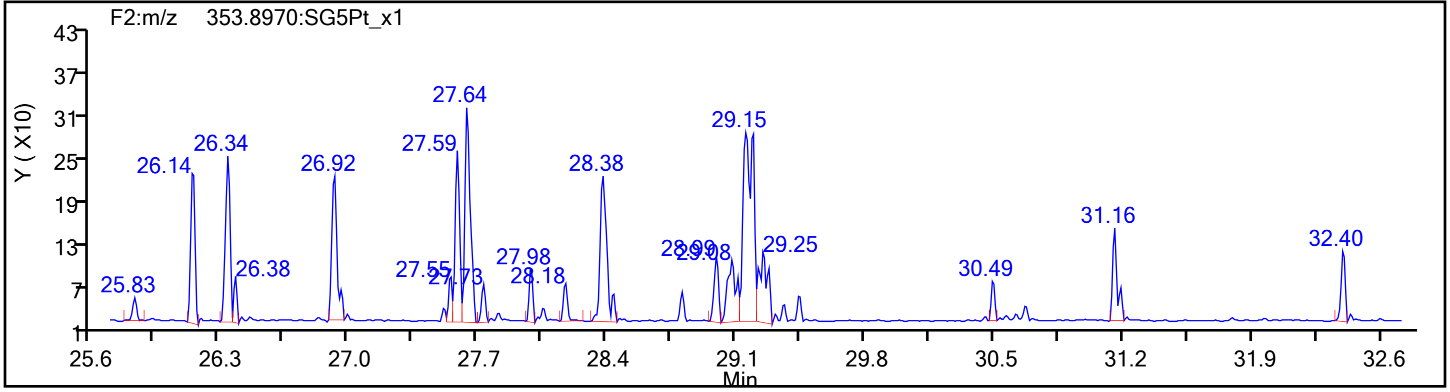

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

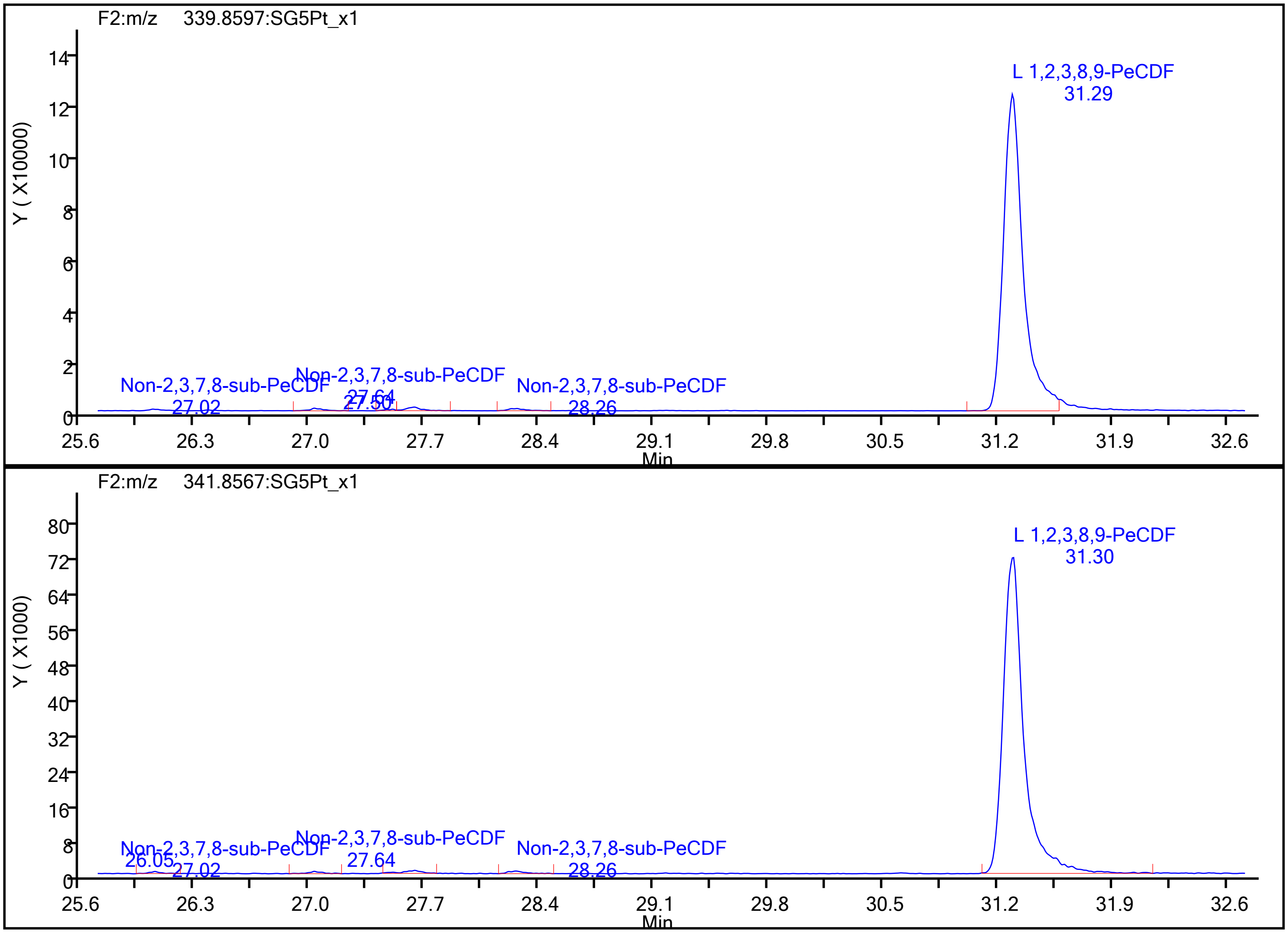

PeCDF Interference Mass

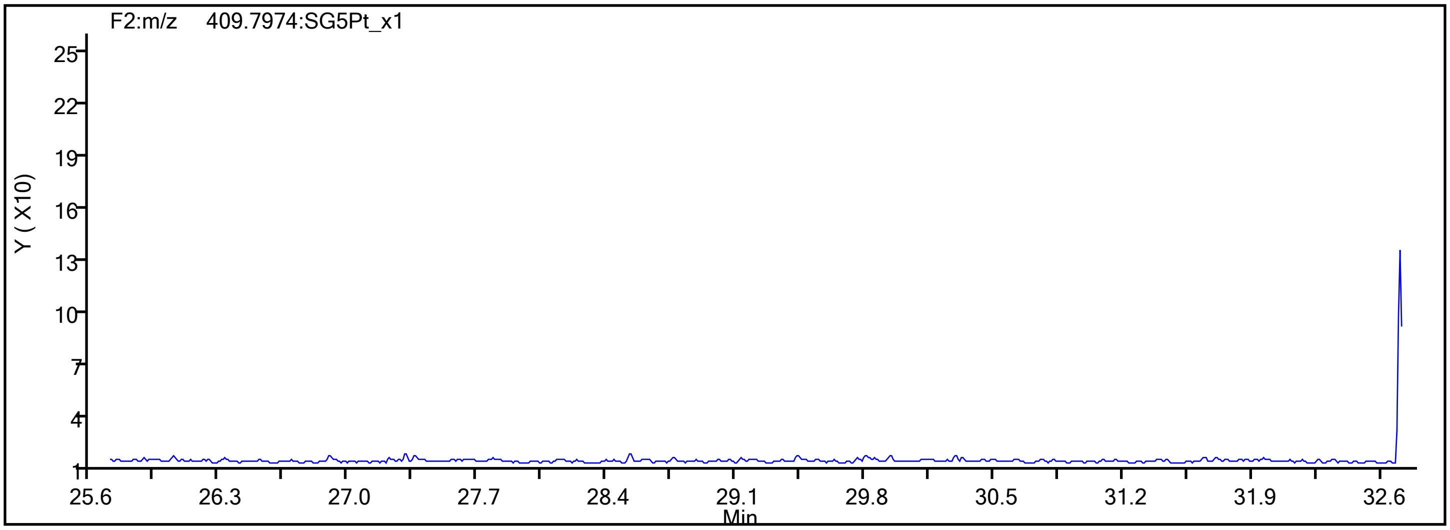

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

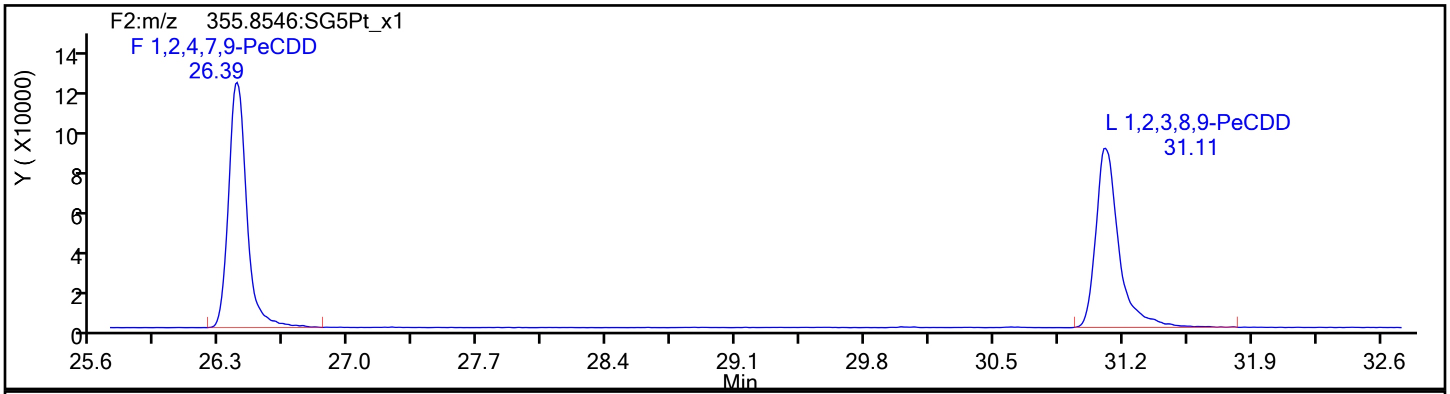

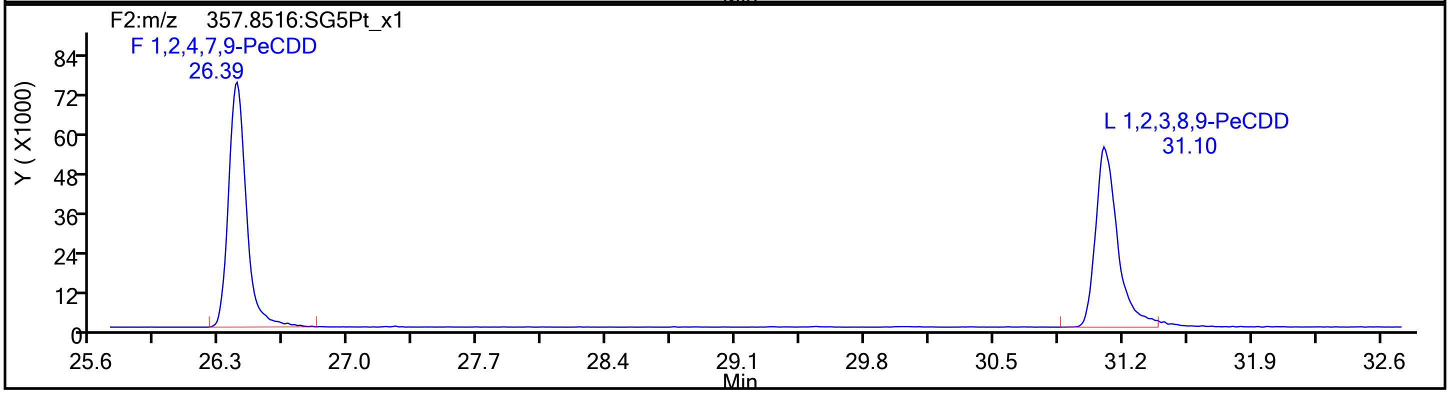

PeCDD Standards

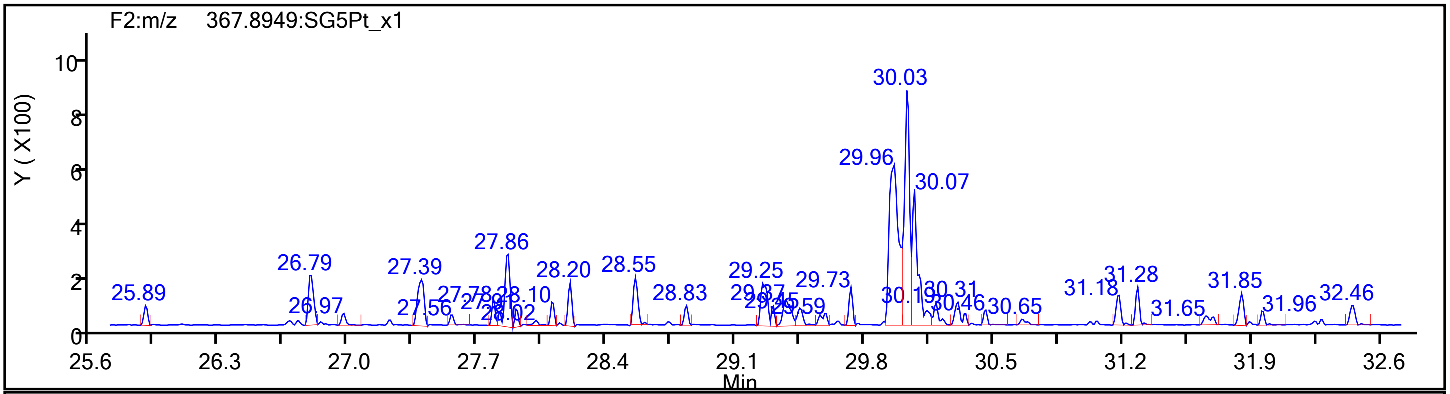

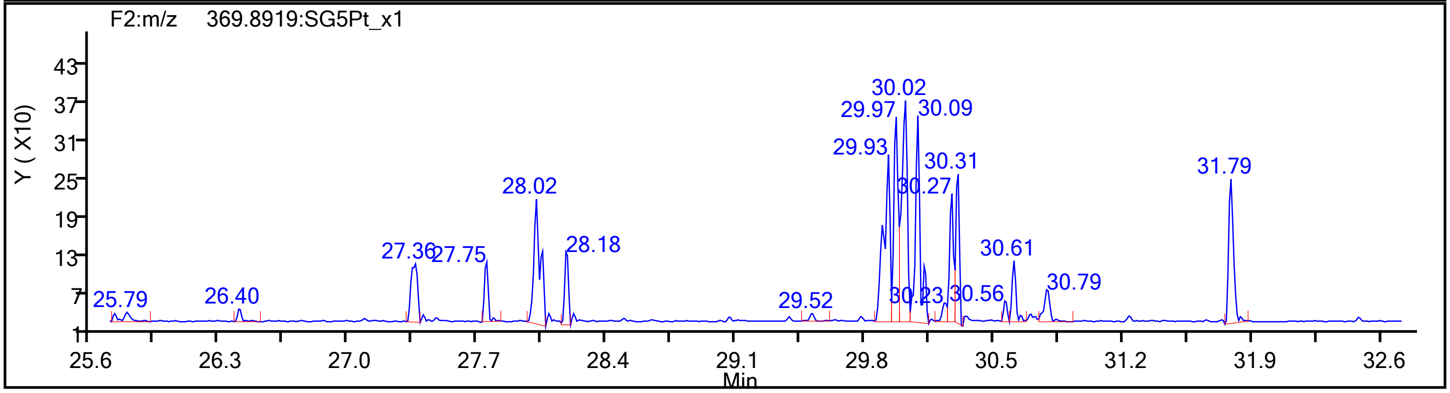

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date: 24-Nov-2020 08:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 29

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

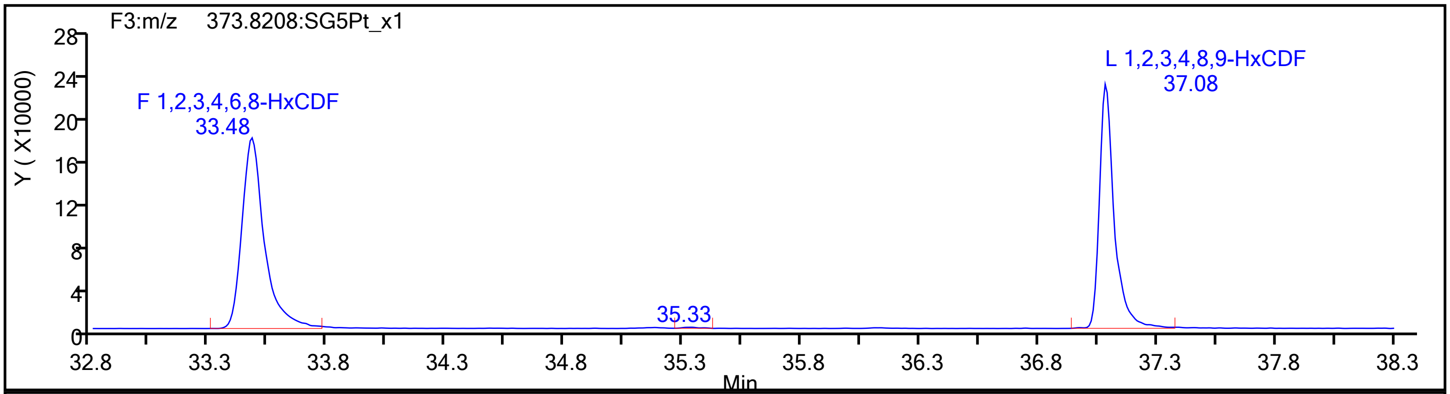

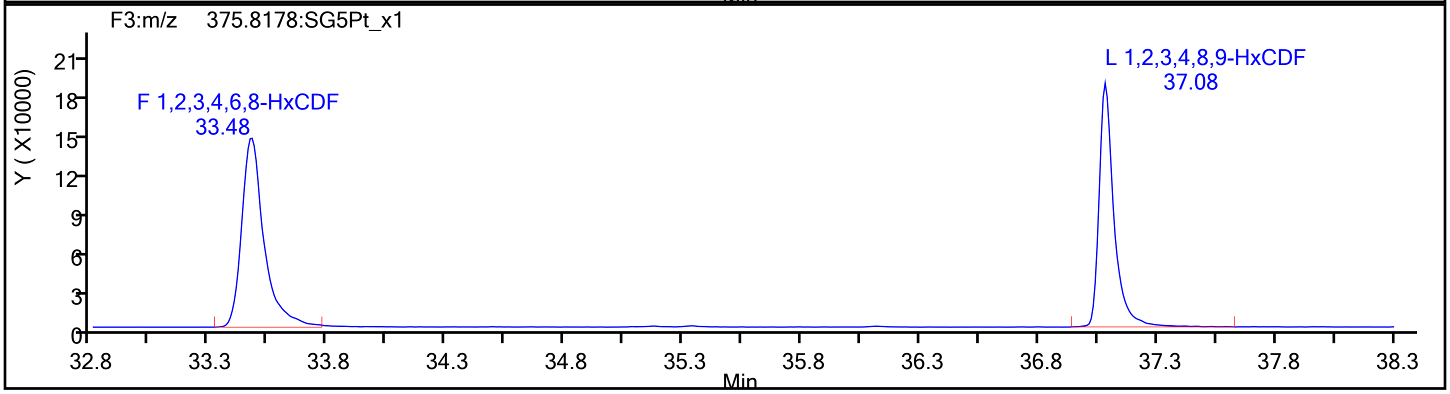

HxCDF Standards

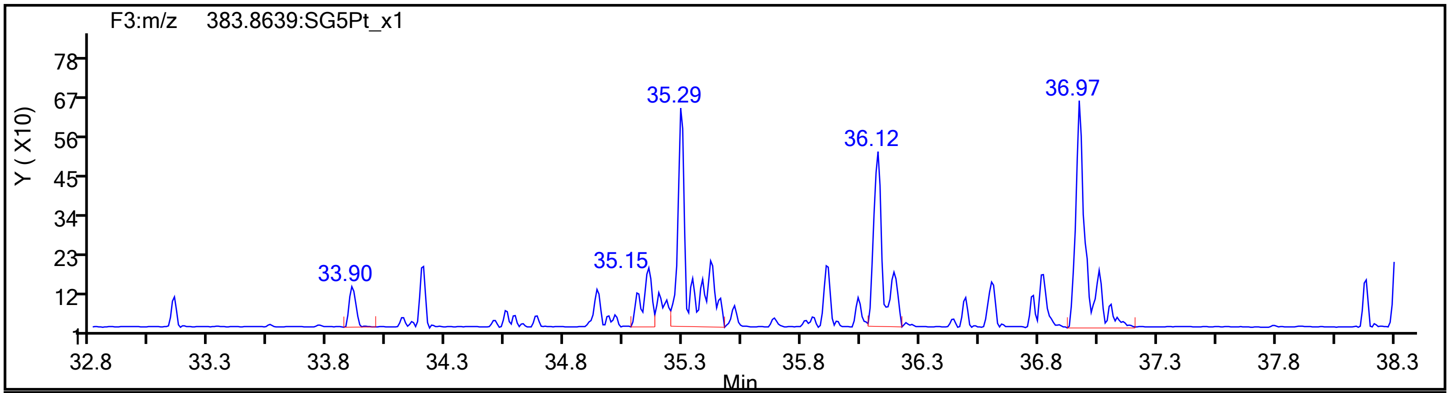

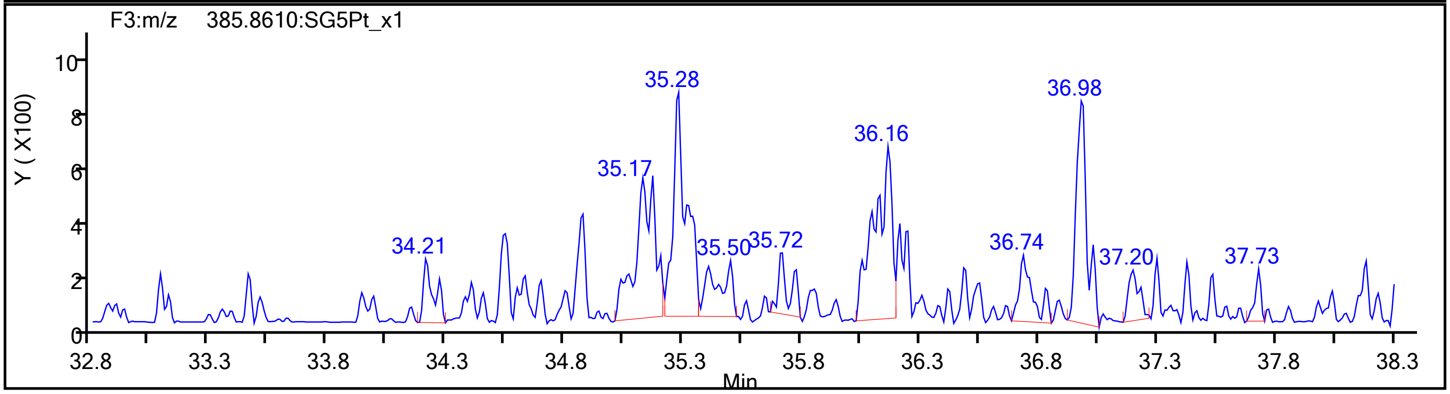

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Injection Date: 24-Nov-2020 08:41:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777 Sample Line#: 29
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

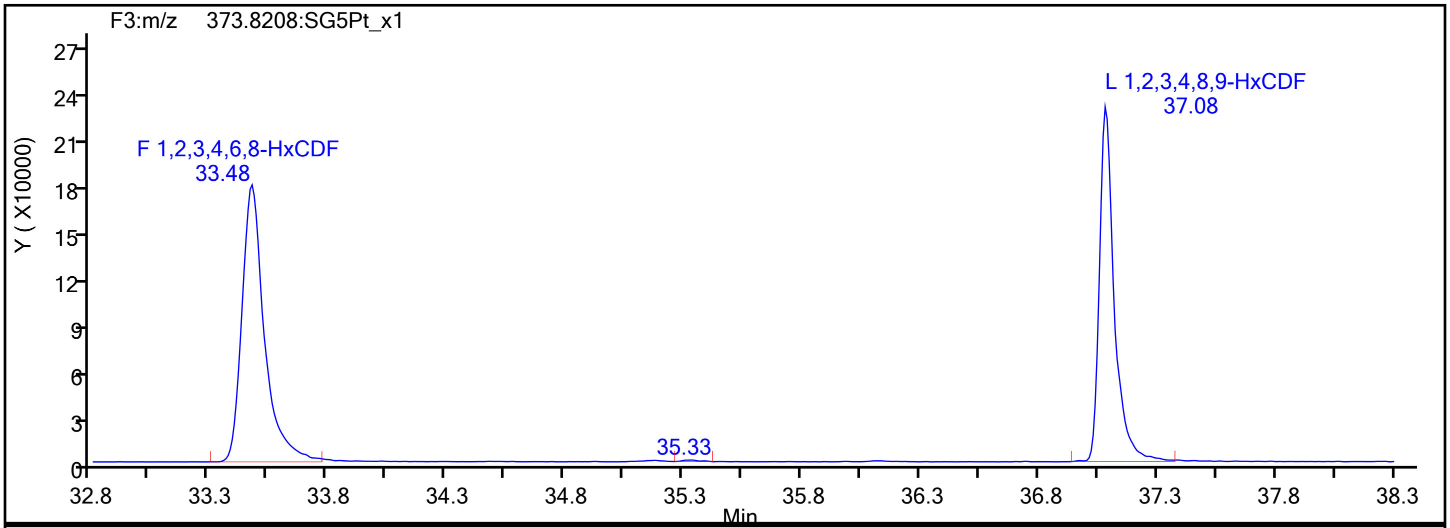

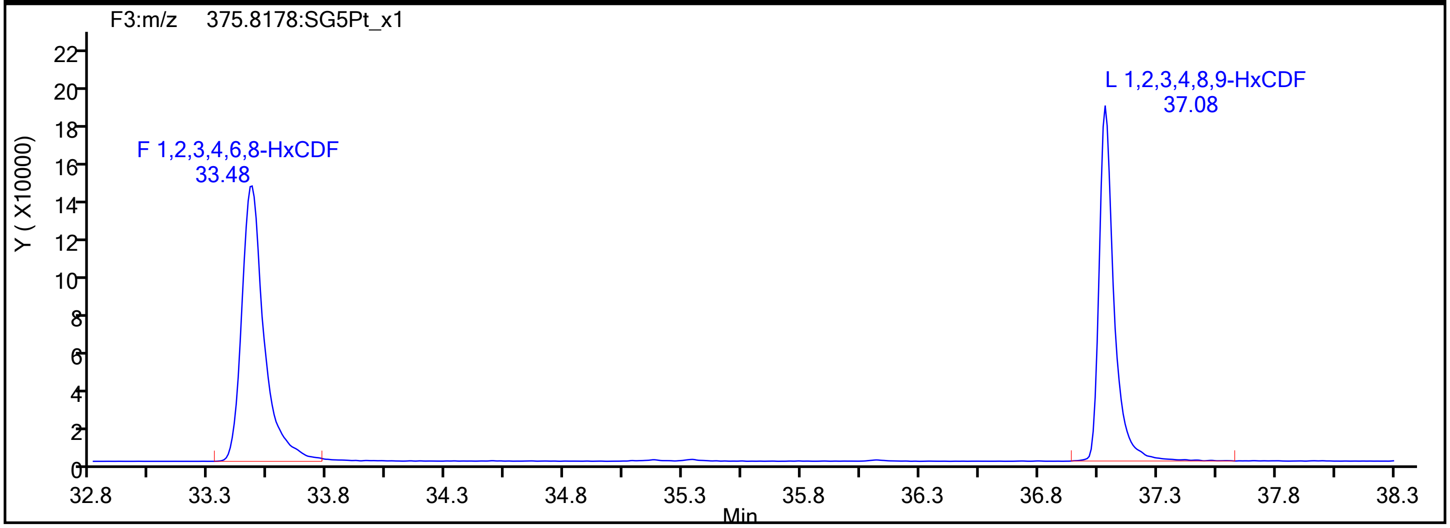

HxCDF Interference Mass

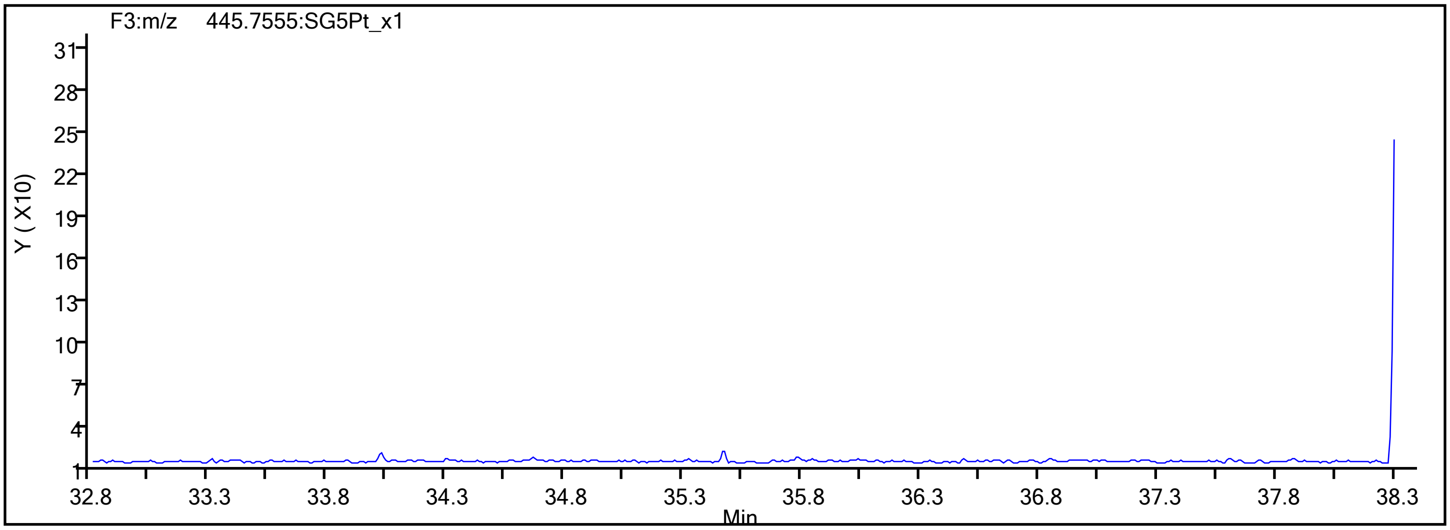

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date: 24-Nov-2020 08:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 29

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

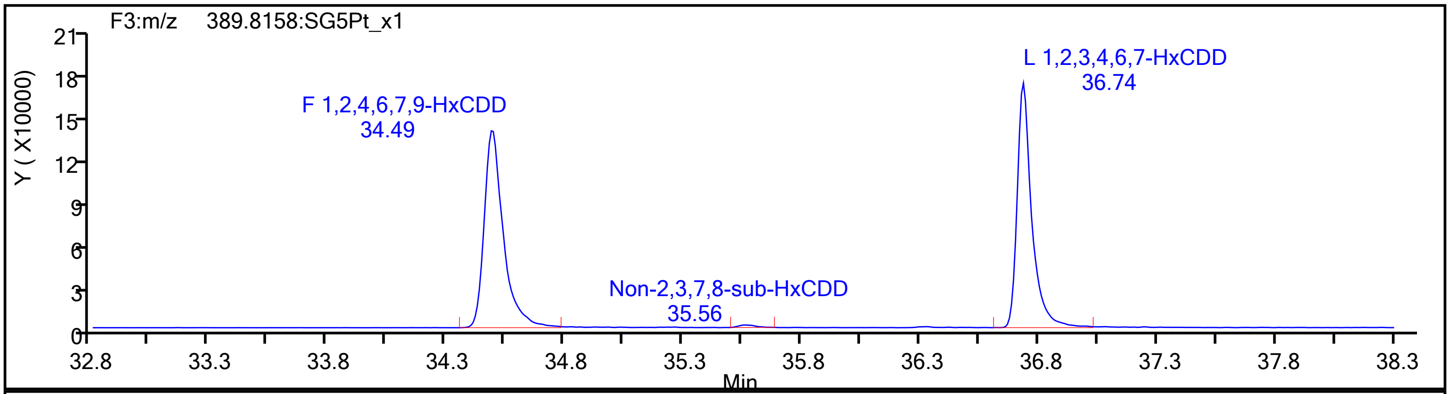

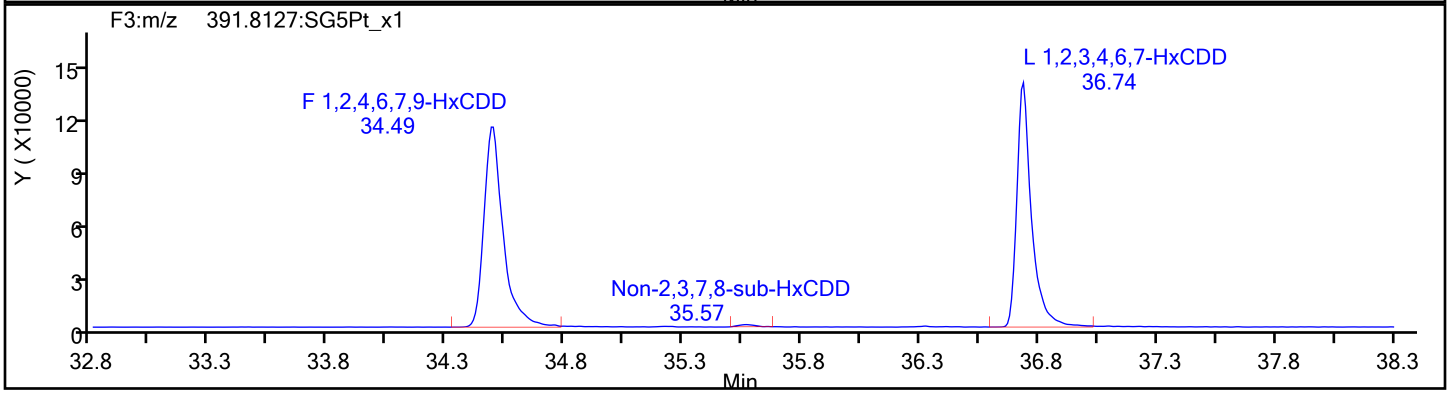

HxCDD Standards

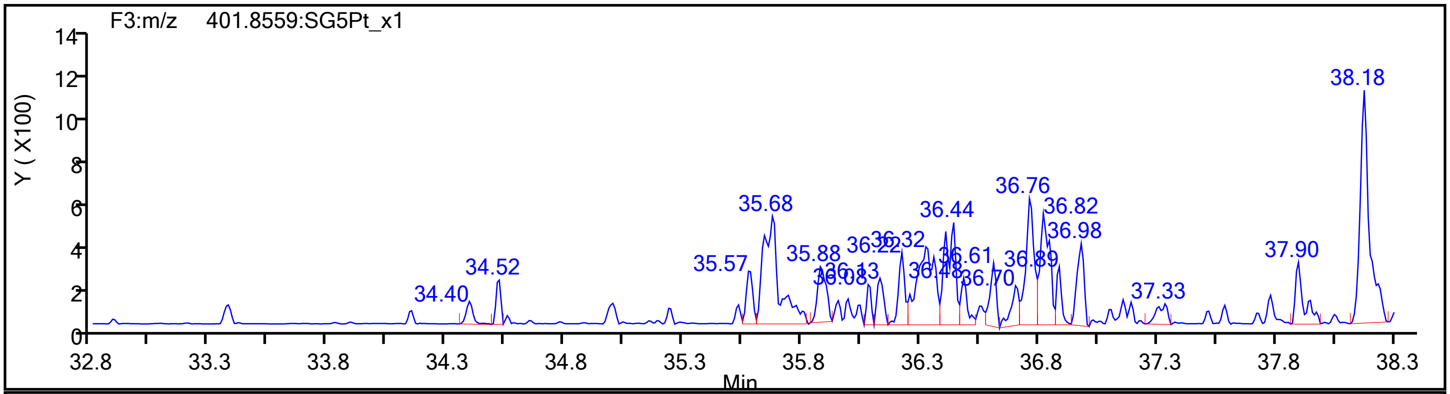

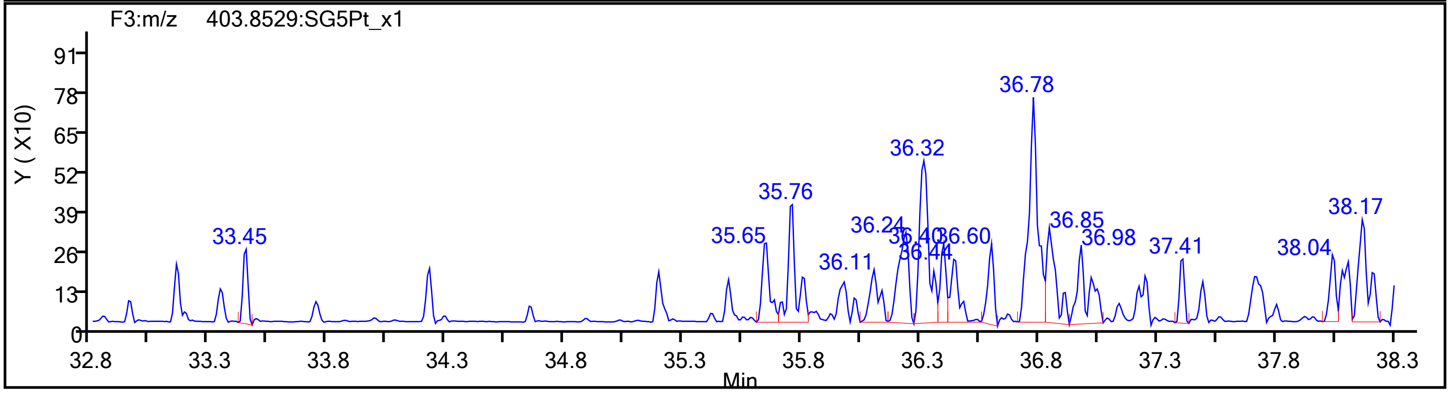

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

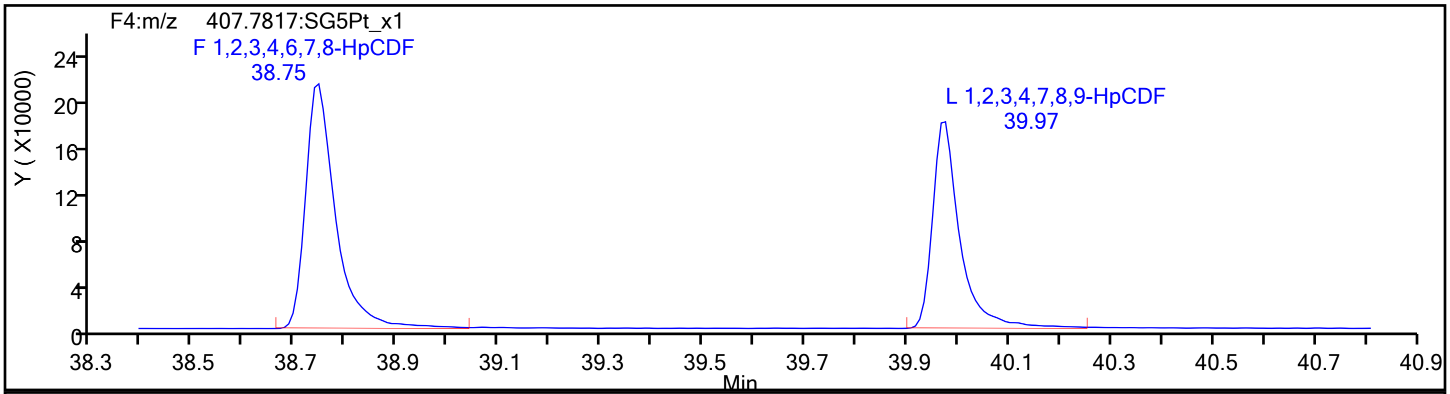

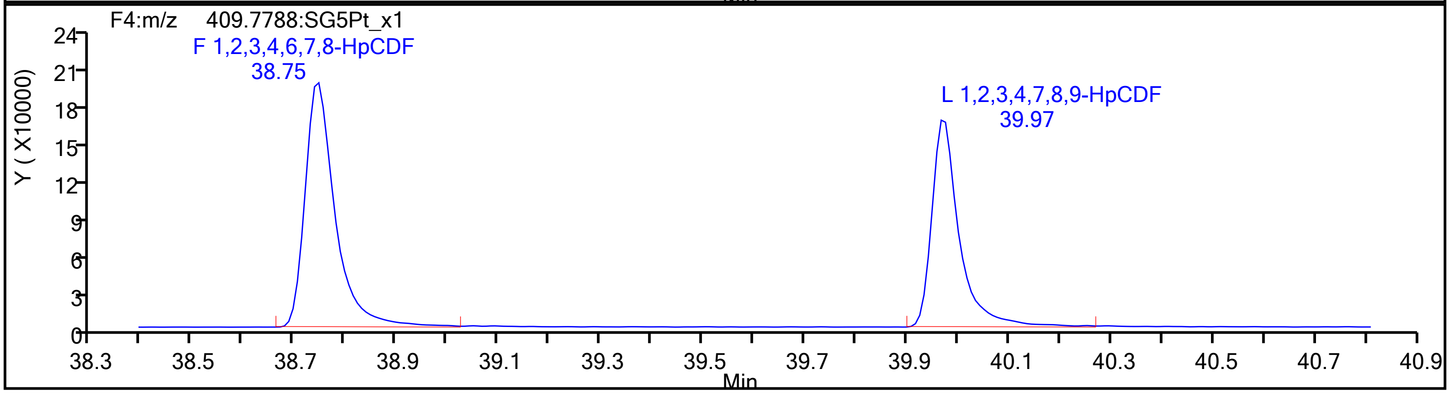

HpCDF Standards

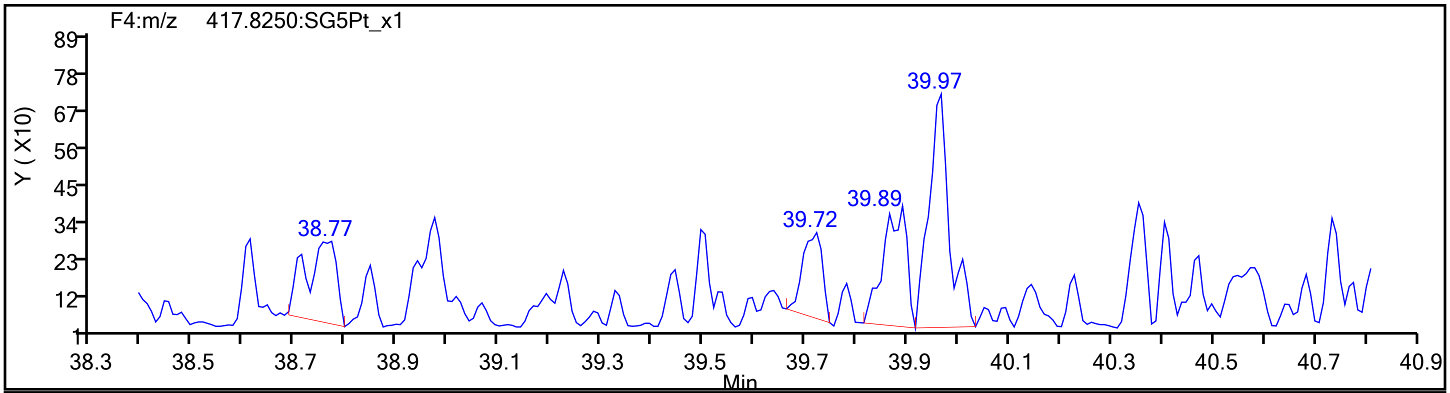

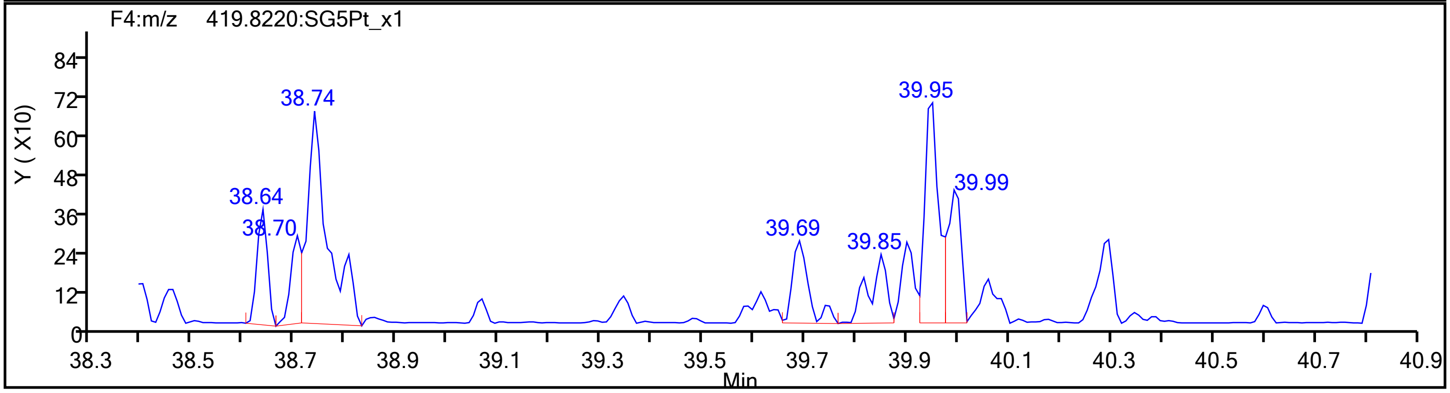

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

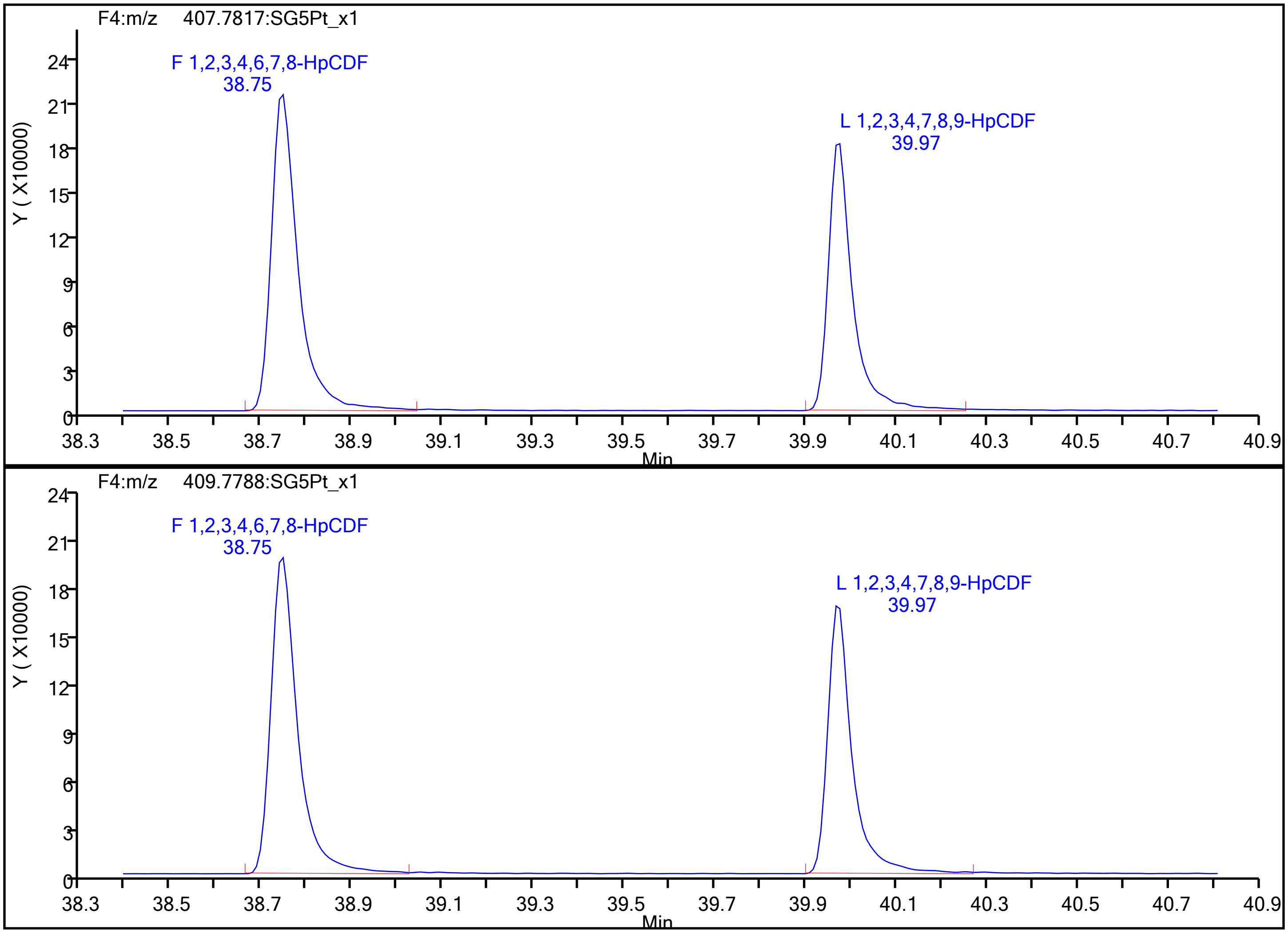

HpCDF Interference Mass

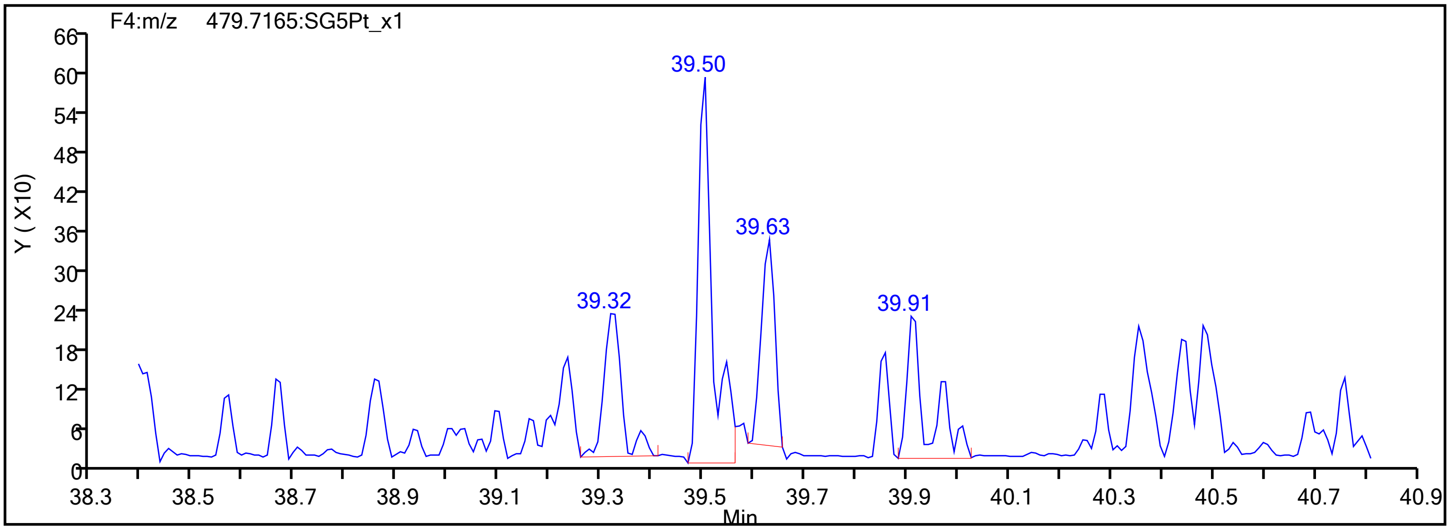

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

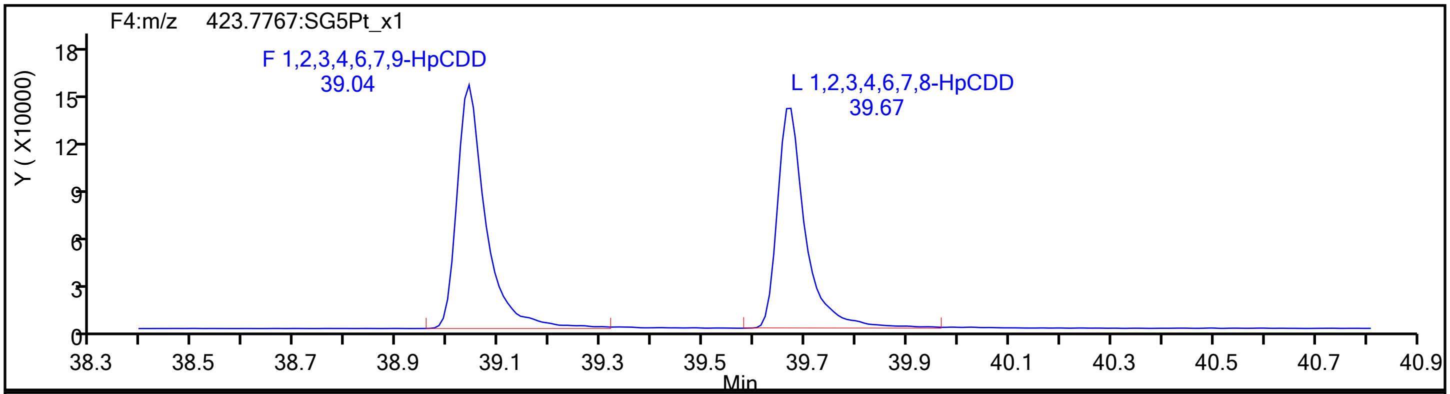

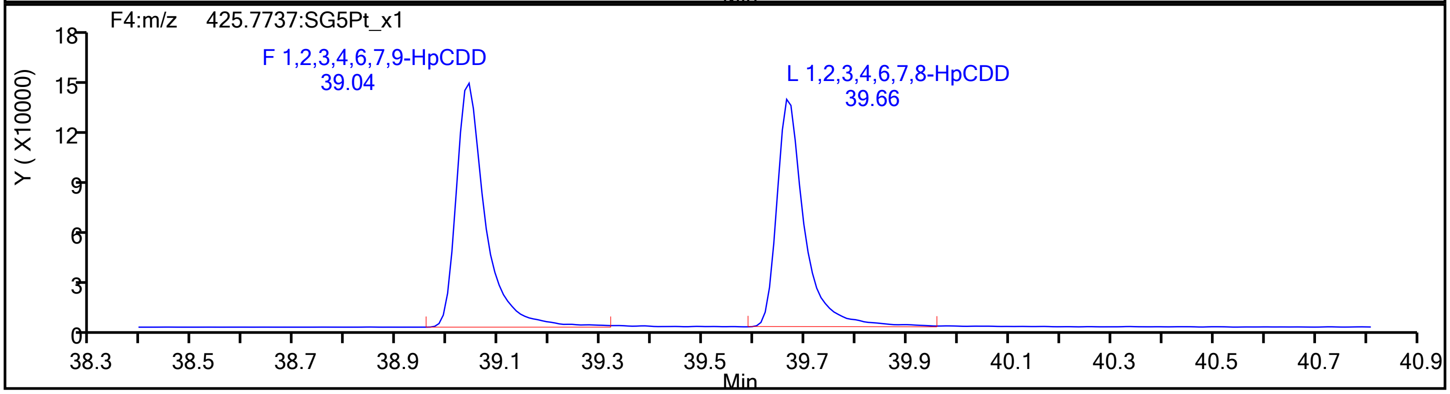

HpCDD Standards

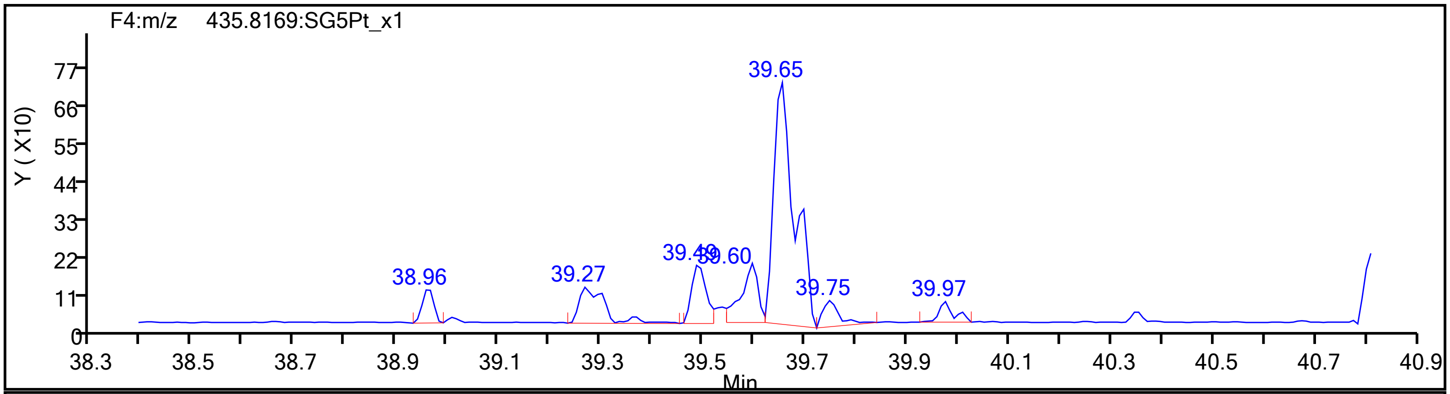

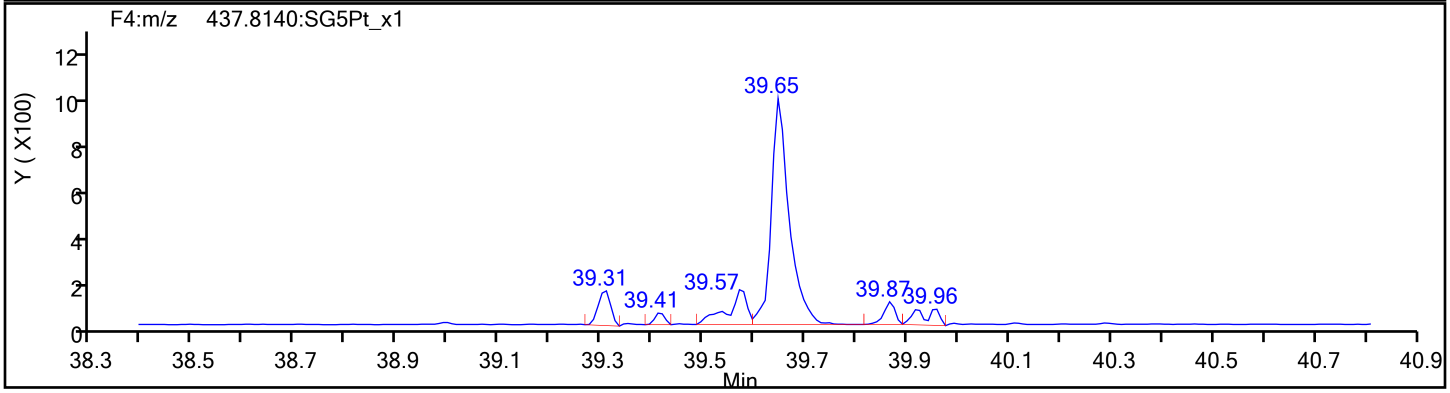

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Injection Date: 24-Nov-2020 08:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 29
Column Type: DB-5
Column Dia: 0.32 mm

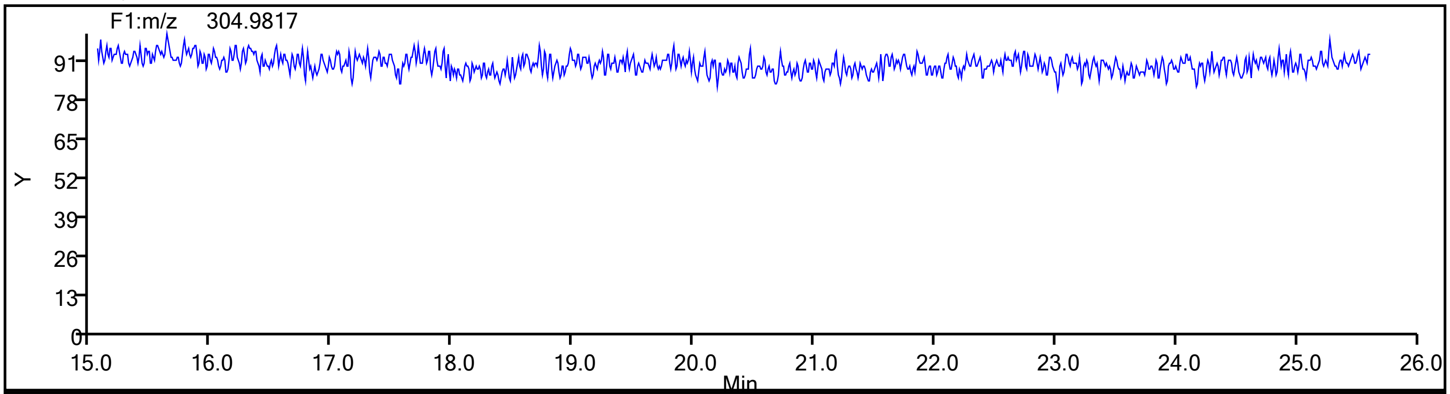

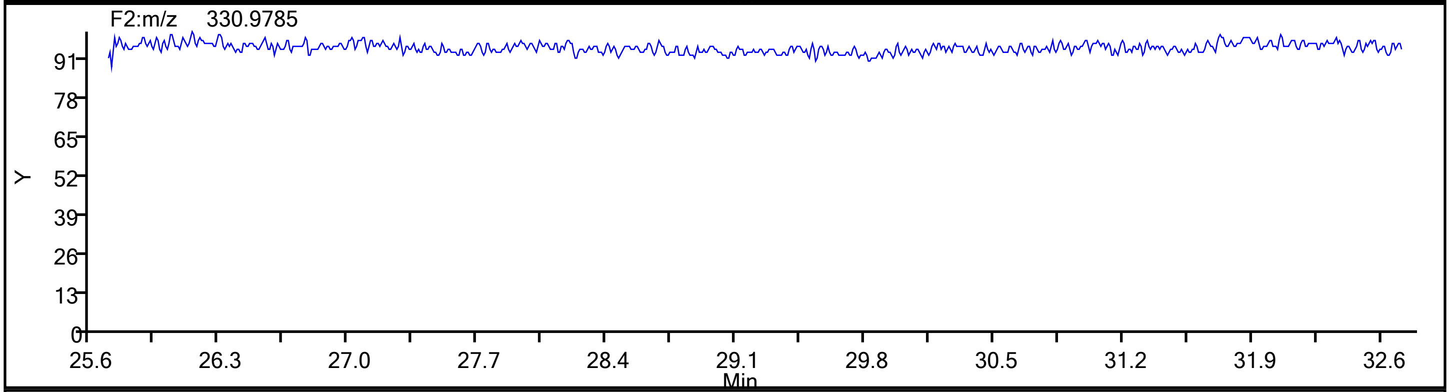

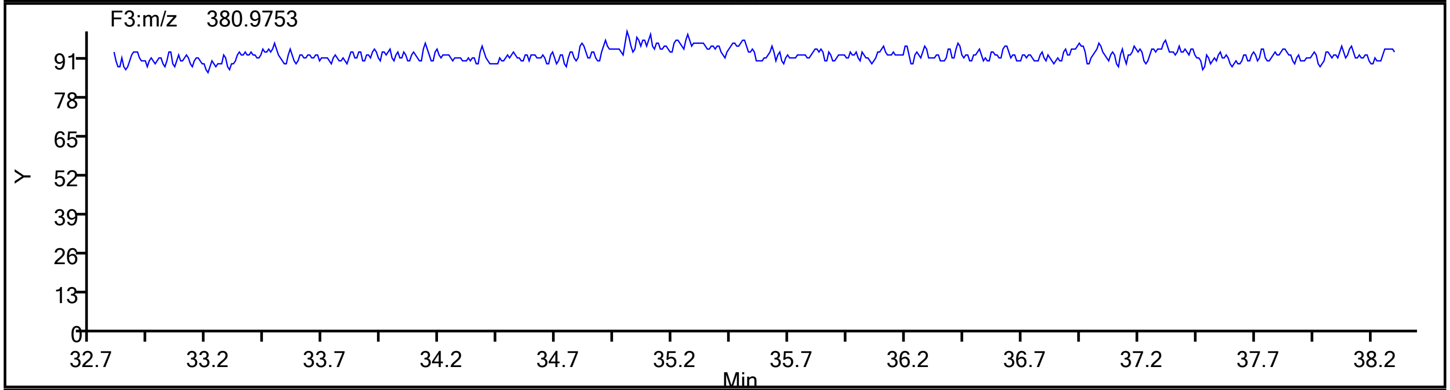

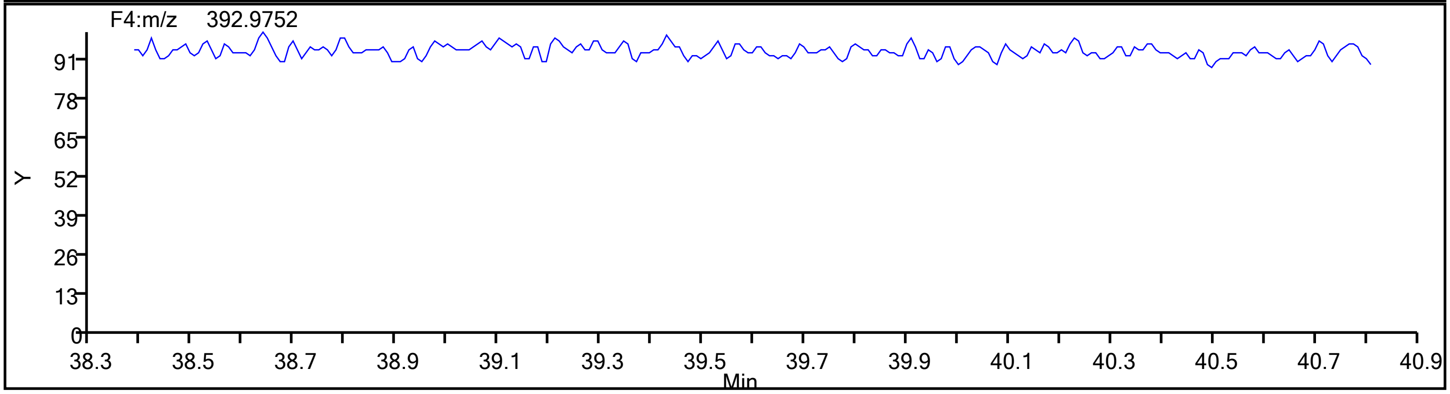

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

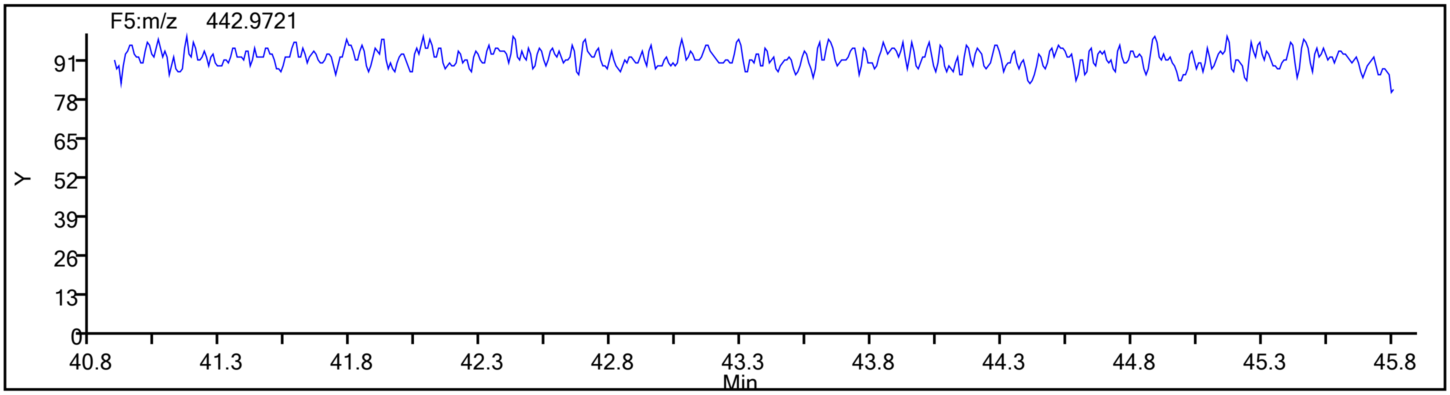

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-66850-1
SDG No.:			
Client Sample ID:		Lab Sample ID:	MB 320-432973/1-A
Matrix:	Water	Lab File ID:	23no20dfs1_36.d
Analysis Method:	1613B	Date Collected:	
Extract. Method:	1613B	Date Extracted:	11/18/2020 11:29
Sample wt/vol:	1000(mL)	Date Analyzed:	11/24/2020 10:17
Con. Extract Vol.:	20.0(uL)	Dilution Factor:	1
Injection Volume:	1(uL)	Level: (low/med)	Low
% Moisture:		GPC Cleanup:(Y/N)	N
Analysis Batch No.:	434777	Units:	pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.62
51207-31-9	2,3,7,8-TCDF	1.70	J	10	0.27
40321-76-4	1,2,3,7,8-PeCDD	19.9	J	50	0.66
57117-41-6	1,2,3,7,8-PeCDF	15.0	J	50	0.45
57117-31-4	2,3,4,7,8-PeCDF	20.3	J	50	0.49
39227-28-6	1,2,3,4,7,8-HxCDD	28.3	J	50	0.55
57653-85-7	1,2,3,6,7,8-HxCDD	24.7	J	50	0.54
19408-74-3	1,2,3,7,8,9-HxCDD	28.3	J	50	0.52
70648-26-9	1,2,3,4,7,8-HxCDF	23.2	J	50	0.50
57117-44-9	1,2,3,6,7,8-HxCDF	24.4	J	50	0.48
72918-21-9	1,2,3,7,8,9-HxCDF	28.7	J	50	0.51
60851-34-5	2,3,4,6,7,8-HxCDF	29.5	J	50	0.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	25.7	J	50	0.41
67562-39-4	1,2,3,4,6,7,8-HpCDF	25.1	J	50	0.47
55673-89-7	1,2,3,4,7,8,9-HpCDF	26.4	J	50	0.59
3268-87-9	OCDD	58.0	J	100	0.64
39001-02-0	OCDF	49.9	J	100	1.0
41903-57-5	Total TCDD	ND		10	0.62
30402-14-3	Total TCDF	1.70	J	10	0.27
36088-22-9	Total PeCDD	19.9	J	50	0.66
30402-15-4	Total PeCDF	35.3	J	50	0.47
34465-46-8	Total HxCDD	81.3		50	0.54
55684-94-1	Total HxCDF	106		50	0.48
37871-00-4	Total HpCDD	25.7	J	50	0.41
38998-75-3	Total HpCDF	51.6		50	0.53

FORM I 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-66850-1

SDG No.:

Client Sample ID:

Lab Sample ID: MB 320-432973/1-A

Matrix: Water

Lab File ID: 23no20dfs1_36.d

Analysis Method: 1613B

Date Collected:

Extract. Method: 1613B

Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1000(mL)

Date Analyzed: 11/24/2020 10:17

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 1

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 434777

Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		25-164
89059-46-1	13C-2,3,7,8-TCDF	80		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	85		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	83		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	80		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	78		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	81		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	85		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	85		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		26-138
114423-97-1	13C-OCDD	83		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	88		35-197

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Sample Type: MB
Inject. Date: 24-Nov-2020 10:17:00 ALS Bottle#: 0 Worklist Smp#: 31
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-432973/1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 14:44:34 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1644

First Level Reviewer: stephensk Date: 25-Nov-2020 14:42:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.700	3478648	0.81	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.687	4675755	0.82	1.6832	79.9	79.9	0.2684	0.2684	79.85	
2,3,7,8-TCDF	20.739	4579	0.77	1.1547	0.0977	0.0848	0.0133	0.0133		RQM
A Non-2,3,7,8-sub-TCDF	20.119						0.0133	0.0133		RQU
S Total TCDF					0.0977	0.0848	0.0133	0.0133		RQ
D 13C-2,3,7,8-TCDD	22.087	3148429	0.78	1.0896	83.1	83.1	0.2107	0.2107	83.06	
2,3,7,8-TCDD	22.159						0.0309	0.0309		
$ 37Cl4-2,3,7,8-TCDD	22.121	1397330		1.1445	35.1	35.1	0.0290	0.0290	87.74	
A Non-2,3,7,8-sub-TCDD	20.973						0.0309	0.0309		RQU
S Total TCDD							0.0309	0.0309		
D 13C-1,2,3,7,8-PeCDF	27.576	4232619	1.58	1.4604	83.3	83.3	0.2802	0.2802	83.31	
1,2,3,7,8-PeCDF	27.610	35947	1.60	1.1322	0.7501	0.7501	0.0224	0.0224		
D 13C-2,3,4,7,8-PeCDF	29.125	3770147	1.60	1.3504	80.3	80.3	0.3030	0.3030	80.26	
2,3,4,7,8-PeCDF	29.151	44257	1.64	1.1588	1.013	1.013	0.0247	0.0247		
A F1 PeCDFs	24.940						0.006722	0.006722		
A Non-2,3,7,8-sub-PeCDF	28.506						0.0235	0.0235		
S Total PeCDF					1.763	1.763	0.0235	0.0235		
D 13C-1,2,3,7,8-PeCDD	29.959	2590858	1.62	0.8729	85.3	85.3	0.1028	0.1028	85.32	
1,2,3,7,8-PeCDD	30.001	28802	1.51	1.1191	0.993	0.993	0.0329	0.0329		
A Non-2,3,7,8-sub-PeCDD	28.748						0.0329	0.0329		
S Total PeCDD					0.993	0.993	0.0329	0.0329		
D 13C-1,2,3,4,7,8-HxCDF	35.142	3341878	0.54	1.2808	78.8	78.8	0.3664	0.3664	78.78	
1,2,3,4,7,8-HxCDF	35.159	51226	1.19	1.3205	1.161	1.161	0.0248	0.0248		
D 13C-1,2,3,6,7,8-HxCDF	35.302	3929281	0.53	1.4615	81.2	81.2	0.3211	0.3211	81.17	
1,2,3,6,7,8-HxCDF	35.319	60862	1.28	1.2682	1.221	1.221	0.0240	0.0240		
D 13C-2,3,4,6,7,8-HxCDF	36.093	3719586	0.53	1.3227	84.9	84.9	0.3548	0.3548	84.91	
2,3,4,6,7,8-HxCDF	36.110	70503	1.25	1.2838	1.476	1.476	0.0219	0.0219		
D 13C-1,2,3,7,8,9-HxCDF	36.969	3129364	0.53	1.1062	85.4	85.4	0.4243	0.4243	85.41	
1,2,3,7,8,9-HxCDF	36.977	58721	1.21	1.3063	1.436	1.436	0.0257	0.0257		
A Non-2,3,7,8-sub-HxCDF	35.280						0.0240	0.0240		
S Total HxCDF					5.295	5.295	0.0241	0.0241		
* 13C-1,2,3,7,8,9-HxCDD	36.767	3312092	1.27	3.7E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.295	2274446	1.26	0.8757	78.4	78.4	0.3137	0.3137	78.42	
1,2,3,4,7,8-HxCDD	36.304	38582	1.27	1.1972	1.417	1.417	0.0277	0.0277		
D 13C-1,2,3,6,7,8-HxCDD	36.413	3029543	1.26	1.0651	85.9	85.9	0.2579	0.2579	85.88	
1,2,3,6,7,8-HxCDD	36.421	39968	1.16	1.0695	1.234	1.234	0.0268	0.0268		
1,2,3,7,8,9-HxCDD	36.775	44256	1.38	1.1806	1.414	1.414	0.0261	0.0261		
A Non-2,3,7,8-sub-HxCDD	35.613						0.0268	0.0268		RQU
S Total HxCDD					4.064	4.064	0.0269	0.0269		
1,2,3,4,6,7,8-HpCDF	38.743	51300	1.03	1.5618	1.257	1.257	0.0235	0.0235		
D 13C-1,2,3,4,6,7,8-HpCDF	38.735	2612160	0.45	0.9521	82.8	82.8	0.6505	0.6505	82.83	
1,2,3,4,7,8,9-HpCDF	39.973	40662	1.04	1.4975	1.322	1.322	0.0296	0.0296		
D 13C-1,2,3,4,7,8,9-HpCDF	39.965	2053722	0.45	0.7782	79.7	79.7	0.7959	0.7959	79.68	
A Non-2,3,7,8-sub-HpCDF	39.360						0.0262	0.0262		
S Total HpCDF					2.580	2.580	0.0265	0.0265		
1,2,3,4,6,7,8-HpCDD	39.670	34147	1.06	1.1079	1.286	1.286	0.0204	0.0204		
D 13C-1,2,3,4,6,7,8-HpCDD	39.661	2397394	1.06	0.8393	86.2	86.2	0.3225	0.3225	86.24	
A Non-2,3,7,8-sub-HpCDD	40.007						0.0204	0.0204		RQU
S Total HpCDD					1.286	1.286	0.0204	0.0204		
D 13C-OCDD	42.140	2915444	0.90	0.5301	166.1	166.1	0.4915	0.4915	83.03	
OCDF	42.241	53797	0.82	1.4802	2.493	2.493	0.0513	0.0513		
OCDD	42.148	49329	0.95	1.1666	2.901	2.901	0.0318	0.0318		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d				
Lims ID:	MB 320-432973/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	24-Nov-2020 10:17:00	ALS Bottle#:	0	Worklist Smp#:	31
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	mb 320-432973/1-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Nov-2020 14:44:34	Calib Date:	17-Nov-2020 17:44:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1644				

First Level Reviewer: stephensk Date: 25-Nov-2020 14:42:40

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.700	21.772	-4		1553893	215150	279	697	771		a
333.9338	21.692	21.772	-5		1924755	266237	163	407	1633	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.687	20.725	-2	0.953	2108403	303257	587	1467	517		
317.9389	20.687	20.725	-2	0.953	2567352	362068	283	707	1279	0.82(0.65-0.89)	
2,3,7,8-TCDF											RQM
303.9016	20.739	20.776	-2	1.002	1992	432	4	10	108		M
305.8987	20.696	20.776	-5	1.000	3283	591	37	92	16	0.61(0.65-0.89)	M
	Empc Correction				2587	561	37	92	15		
A Non-2,3,7,8-sub-TCDF											U
303.9016	20.119	20.119	0	0.973	98	48	4	10			
305.8987	20.119	20.119	0	0.973	321	153	37	92		0.31(0.65-0.89)	
	Empc Correction				127	62	37	92	0		
13C-2,3,7,8-TCDD											
331.9368	22.087	22.124	-2	1.018	1378425	179170	279	697	642		
333.9338	22.087	22.124	-2	1.018	1770004	222970	163	407	1368	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.159						53	132			
321.8936	22.159						5	12			
37Cl4-2,3,7,8-TCDD											
327.8847	22.121	22.201	-5	1.019	1397330	189522	64	160	2961		
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.687	20.973	-17	0.937	677	251	53	132	5		
	Empc Correction				203	46	53	132	0		
321.8936	20.730	20.973	-15	0.939	264	60	5	12	12	2.56(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.576	27.633	-3	1.271	2594320	378619	440	1100	860		
353.8970	27.584	27.633	-3	1.271	1638299	240649	348	870	692	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.610	27.659	-3	1.001	22129	3331	24	60	139		
341.8567	27.610	27.659	-3	1.001	13818	2151	39	97	55	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.125	29.184	-3	1.342	2322231	339994	440	1100	773		
353.8970	29.125	29.184	-3	1.342	1447916	209622	348	870	602	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.151	29.217	-4	1.001	27494	4161	24	60	173		
341.8567	29.168	29.217	-3	1.001	16763	2221	39	97	57	1.64(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.940						1	2			
341.8567	24.940						17	42			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.506						24	60			
341.8567	28.506						39	97			
13C-1,2,3,7,8-PeCDD											
367.8949	29.959	30.017	-3	1.381	1600887	213395	89	222	2398		
369.8919	29.959	30.017	-3	1.381	989971	139234	84	210	1658	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.001	30.051	-3	1.001	17340	2362	45	112	52		
357.8516	29.984	30.051	-4	1.001	11462	1653	7	17	236	1.51(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.748						45	112			
357.8516	28.748						7	17			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.142	35.175	-2	0.956	1174142	248163	405	1012	613		
385.8610	35.142	35.175	-2	0.956	2167736	453015	987	2467	459	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.159	35.200	-2	1.000	27851	5677	58	145	98		
375.8178	35.159	35.200	-2	1.000	23375	4915	34	85	145	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.302	35.335	-2	0.960	1364567	264929	405	1012	654		
385.8610	35.302	35.335	-2	0.960	2564714	491783	987	2467	498	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.319	35.351	-2	1.000	34155	6485	58	145	112		
375.8178	35.319	35.351	-2	1.000	26707	5367	34	85	158	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.093	36.118	-2	0.982	1287290	279144	405	1012	689		
385.8610	36.093	36.118	-2	0.982	2432296	539453	987	2467	547	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.110	36.135	-2	1.000	39100	9097	58	145	157		
375.8178	36.110	36.135	-2	1.000	31403	6716	34	85	198	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.969	36.986	-1	1.005	1088116	233163	405	1012	576		
385.8610	36.969	36.986	-1	1.005	2041248	450968	987	2467	457	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.977	37.003	-2	1.000	32118	6658	58	145	115		
375.8178	36.977	37.003	-2	1.000	26603	5782	34	85	170	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.280						58	145			
375.8178	35.280						34	85			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.767	36.792	-2		1854146	406172	426	1065	953		
403.8529	36.767	36.792	-2		1457946	335279	389	972	862	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.295	36.320	-2	0.987	1269347	325114	426	1065	763		
403.8529	36.295	36.320	-2	0.987	1005099	253418	389	972	651	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.304	36.337	-2	1.000	21555	5226	42	105	124		
391.8127	36.312	36.337	-2	1.000	17027	4211	35	87	120	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.413	36.438	-1	0.990	1691442	378326	426	1065	888		
403.8529	36.413	36.438	-1	0.990	1338101	291493	389	972	749	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.421	36.446	-1	1.000	21476	4953	42	105	118		
391.8127	36.421	36.446	-1	1.000	18492	4508	35	87	129	1.16(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.775	36.809	-2	1.013	25657	5288	42	105	126		
391.8127	36.783	36.809	-2	1.013	18599	4374	35	87	125	1.38(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											U
389.8158	35.277	35.613	-20	0.969	1792	193	42	105	5		
391.8127	35.235	35.613	-23	0.968	367	173	35	87	5	4.88(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.743	38.745	0	1.000	26053	6459	67	167	96		
409.7788	38.743	38.745	0	1.000	25247	6583	33	82	199	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.735	38.749	-1	1.054	812745	212271	633	1582	335		
419.8220	38.735	38.749	-1	1.054	1799415	468887	1204	3010	389	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.973	39.975	0	1.000	20689	5616	67	167	84		
409.7788	39.973	39.975	0	1.000	19973	5866	33	82	178	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.965	39.979	-1	1.087	641658	175995	633	1582	278		
419.8220	39.965	39.979	-1	1.087	1412064	388488	1204	3010	323	0.45(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.360						67	167			
409.7788	39.360						33	82			

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.670	39.672	0	1.000	17541	4751	36	90	132		
425.7737	39.670	39.672	0	1.000	16606	4636	23	57	202	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.661	39.676	-1	1.079	1232262	337166	461	1152	731		
437.8140	39.661	39.676	-1	1.079	1165132	312967	342	855	915	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											U
423.7767	39.956	40.007	-3	1.007	630	233	36	90	6		
425.7737	39.998	40.007	-1	1.008	396	108	23	57	5	1.59(0.88-1.20)	
13C-OCDD											
469.7780	42.140	42.158	-1	1.146	1382342	311774	372	930	838		
471.7750	42.140	42.158	-1	1.146	1533102	346835	401	1002	865	0.90(0.76-1.02)	
OCDF											
441.7428	42.241	42.251	-1	1.002	24244	6097	26	65	235		
443.7399	42.241	42.251	-1	1.002	29553	7092	74	185	96	0.82(0.76-1.02)	
OCDD											
457.7377	42.148	42.167	-1	1.000	24095	5175	23	57	225		
459.7348	42.148	42.167	-1	1.000	25234	5727	26	65	220	0.95(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Lims ID:	MB 320-432973/1-A		
Client ID:			
Inject. Date:	24-Nov-2020 10:17:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	31

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	4675755	665325

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	4675755	665325

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
22.336	98	48	321	153	0.007761	0.31	RQ
22.336	98	48	127	62			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Lims ID:	MB 320-432973/1-A		
Client ID:			
Inject. Date:	24-Nov-2020 10:17:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	31

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	3148429	402140

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	3148429	402140

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.687	677	251	264	60	0.0256	2.56	RQ
20.687	203	46	264	60			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Lims ID:	MB 320-432973/1-A		
Client ID:			
Inject. Date:	24-Nov-2020 10:17:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	31

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	2274446	578532
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	3029543	669819
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2651994	624175

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.277	1792	193	367	173		4.88	R

Compound is Marked ND

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID:	MB 320-432973/1-A
Client ID:	

Inject. Date:	24-Nov-2020 10:17:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	31

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2397394	650133

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	2397394	650133

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.956	630	233	396	108		1.59	R

Compound is Marked ND

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00 Instrument ID: DFS 1
Lims ID: MB 320-432973/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 31
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 20.74
Area: 1626
Amount: 0.101075
Amount Units: pg/ul

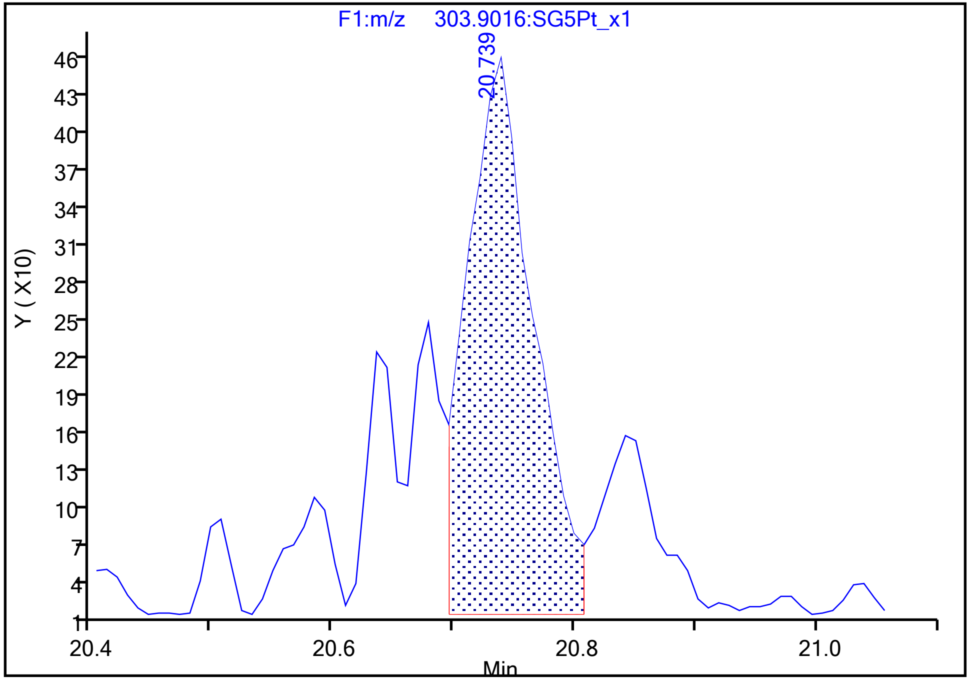

Manual Integration Results

RT: 20.74
Area: 1992
Amount: 0.097704
Amount Units: pg/ul

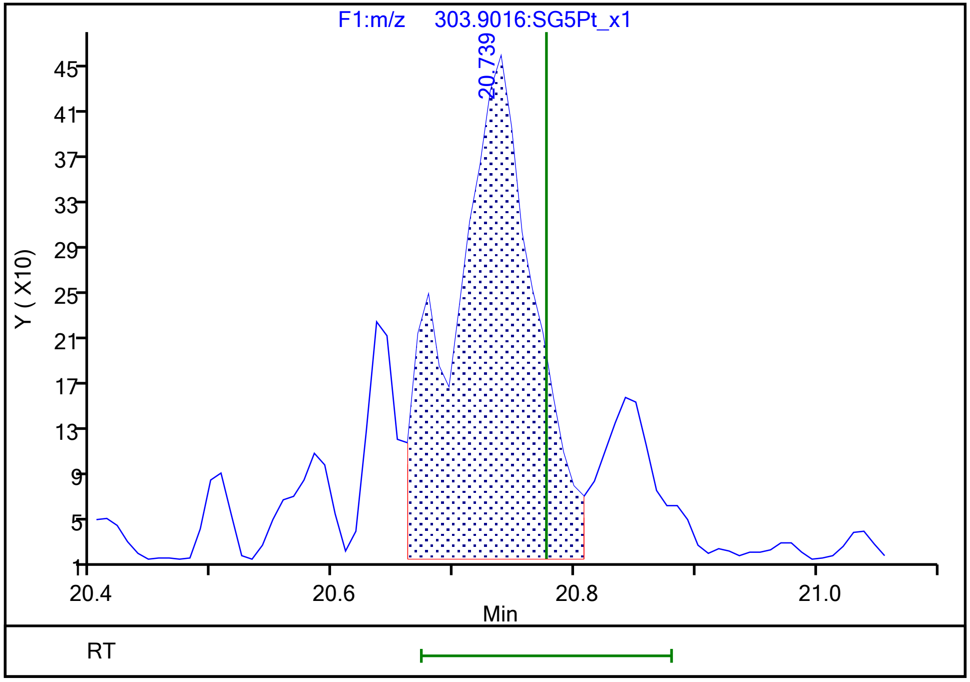

Reviewer: stephensk, 25-Nov-2020 14:40:49
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d				
Injection Date:	24-Nov-2020 10:17:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-432973/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	31
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT:	20.70
Area:	3831
Amount:	0.101075
Amount Units:	pg/ul

Processing Integration Results

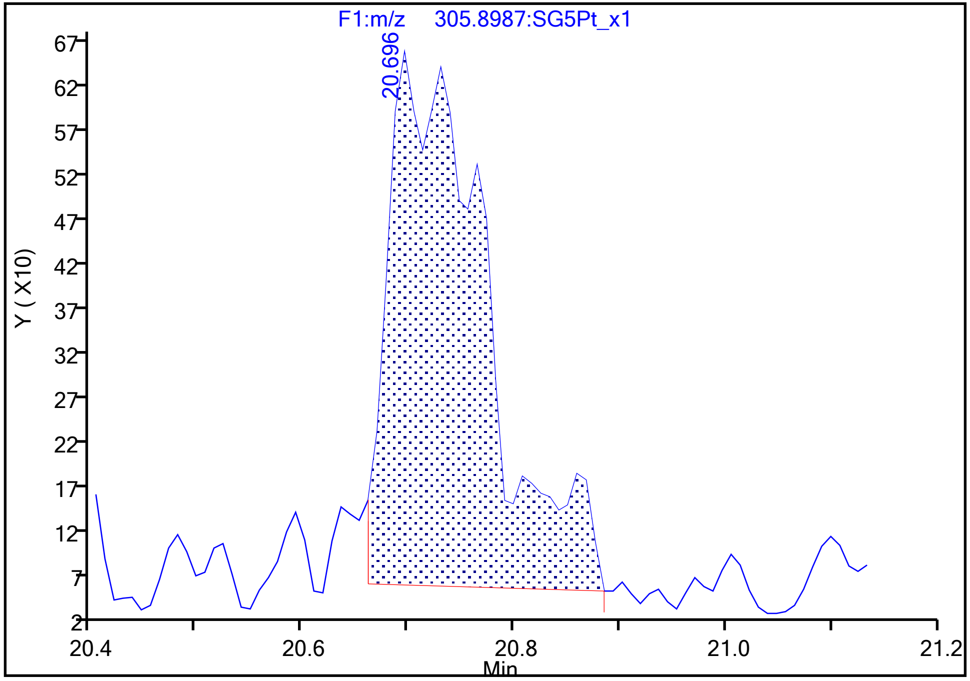

RT:	20.70
Area:	3283
Amount:	0.097704
Amount Units:	pg/ul

Manual Integration Results

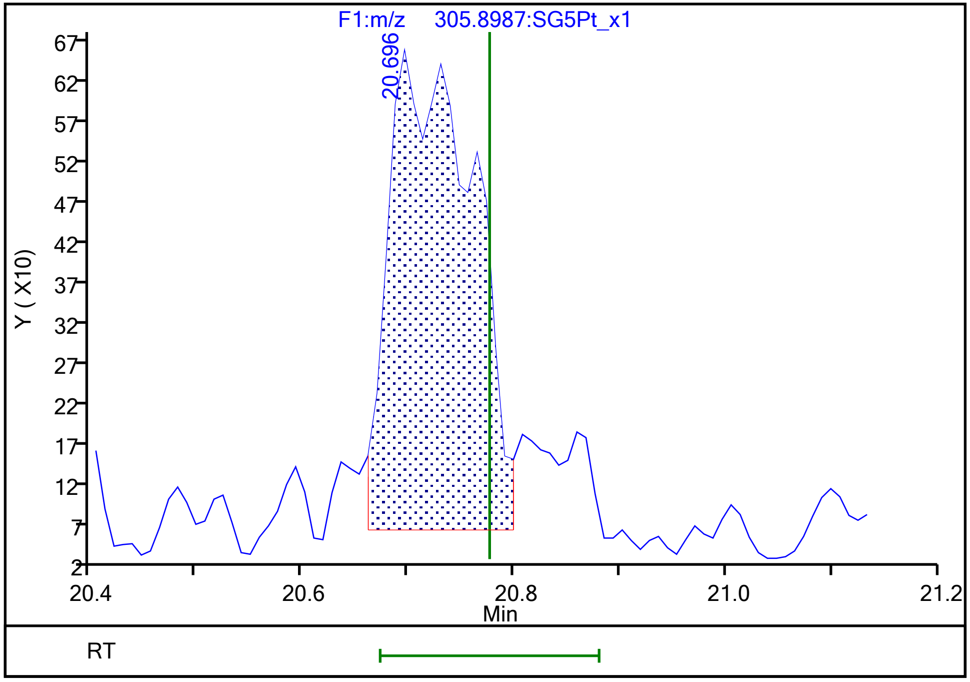

Reviewer: stephensk, 25-Nov-2020 14:41:43

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

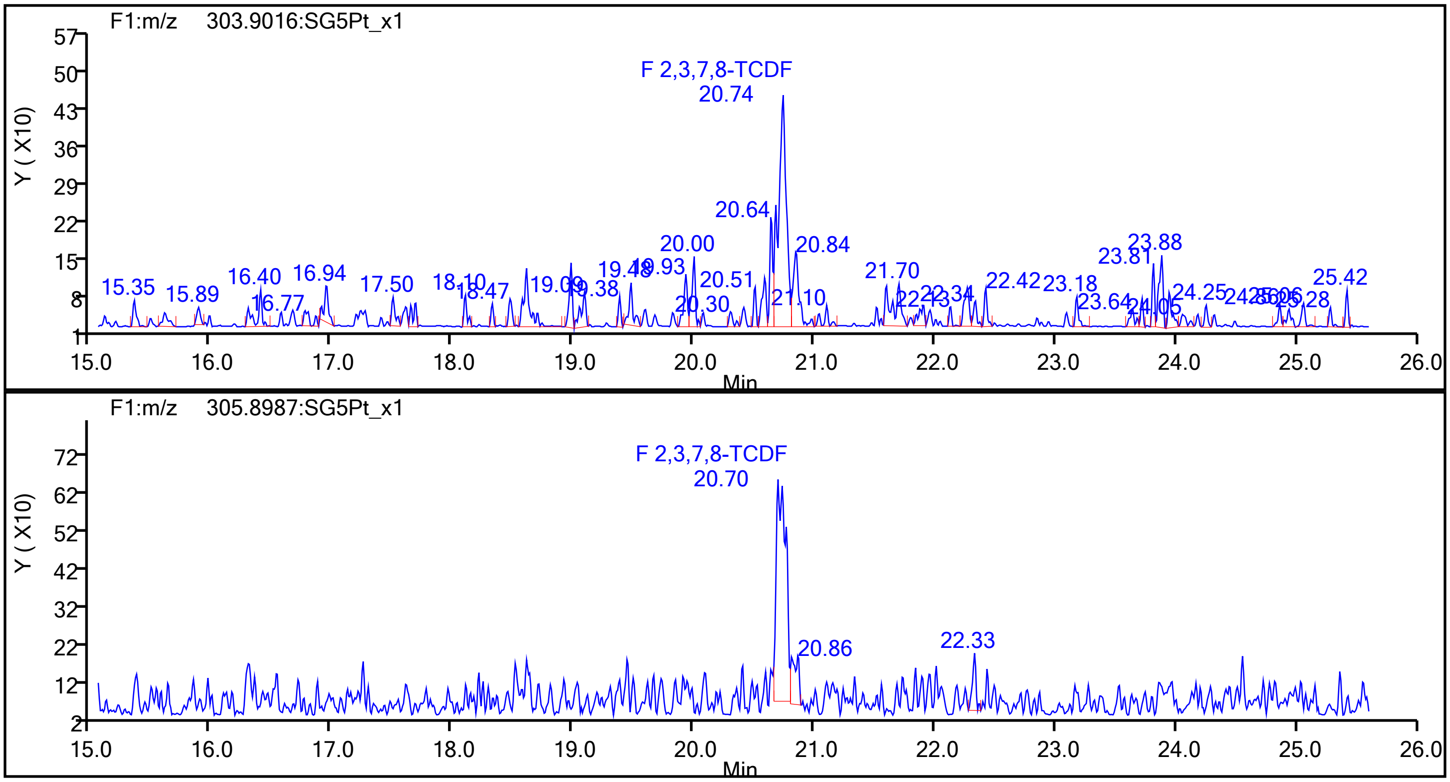

TCDF Standards

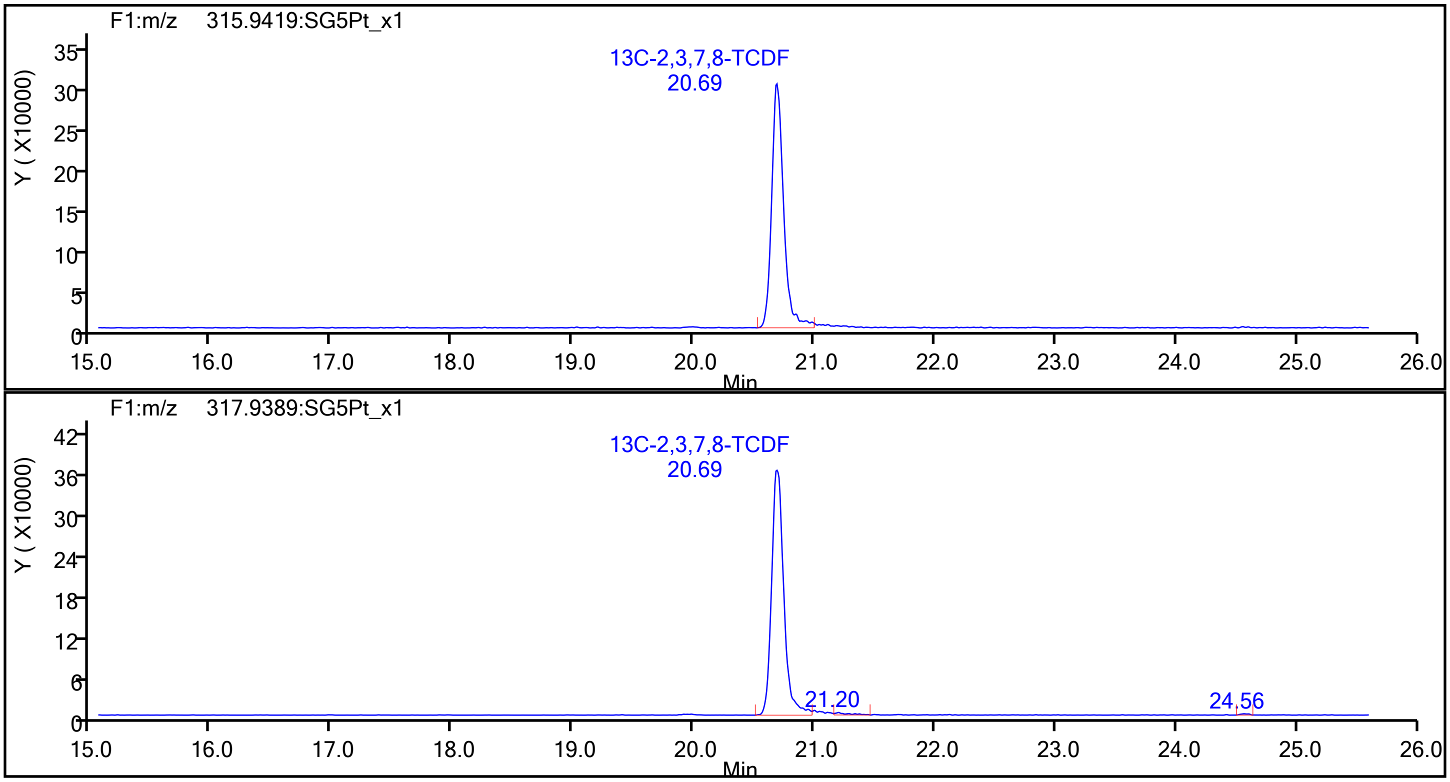

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 31
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

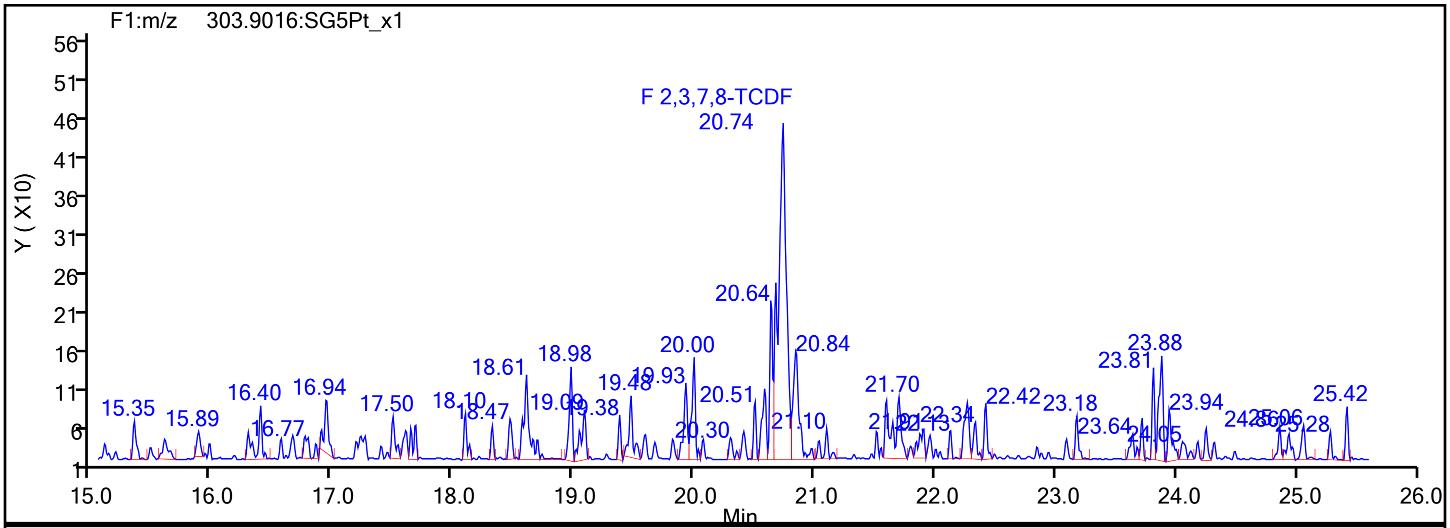

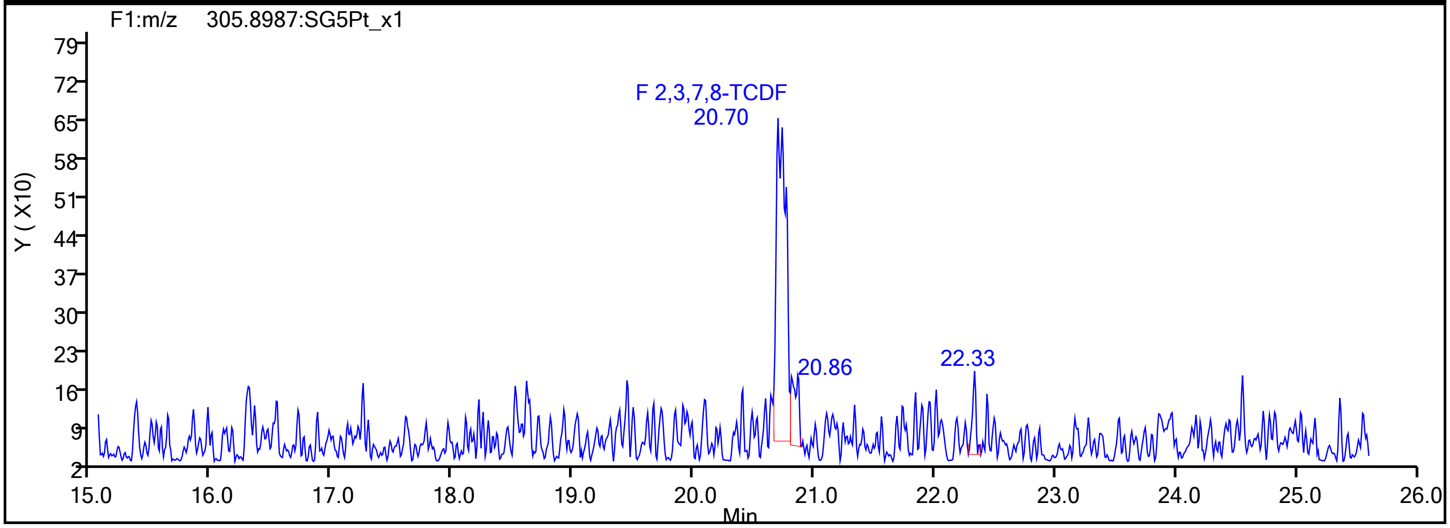

TCDF Interference Mass

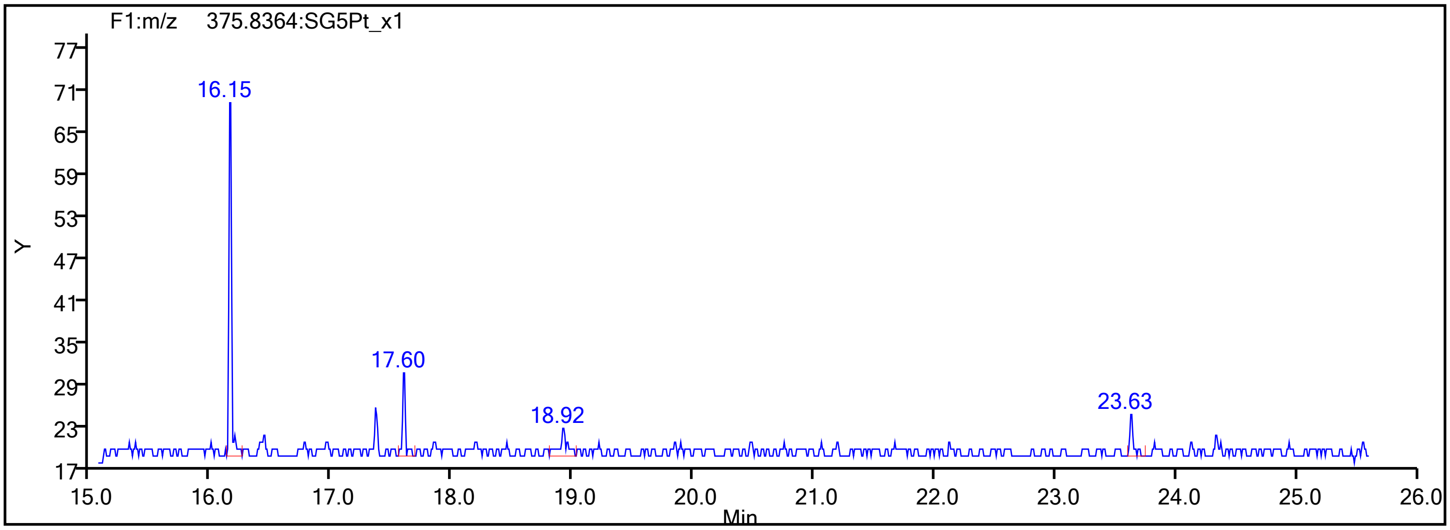

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d

Injection Date: 24-Nov-2020 10:17:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 31

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

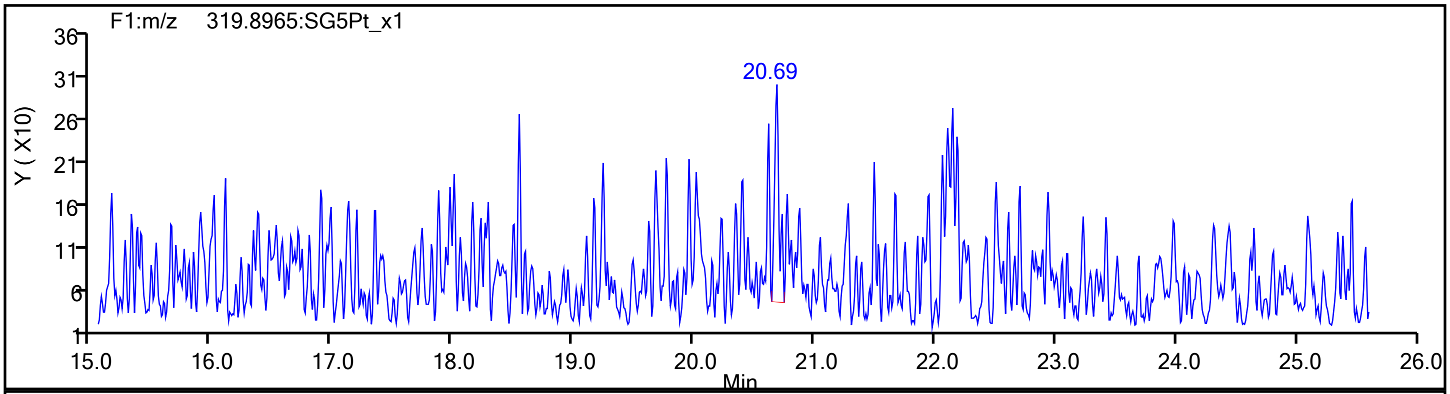

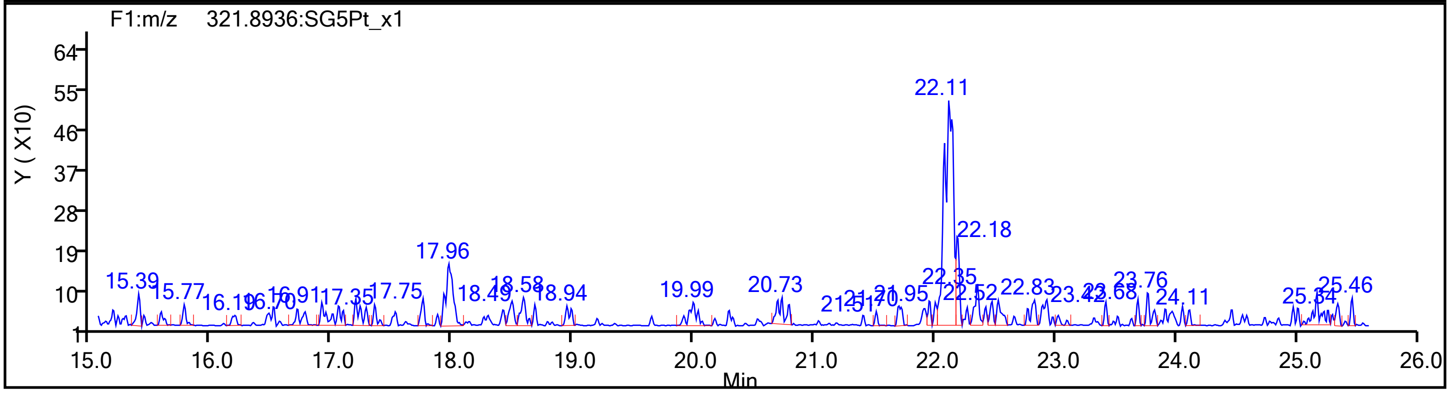

TCDD Standards

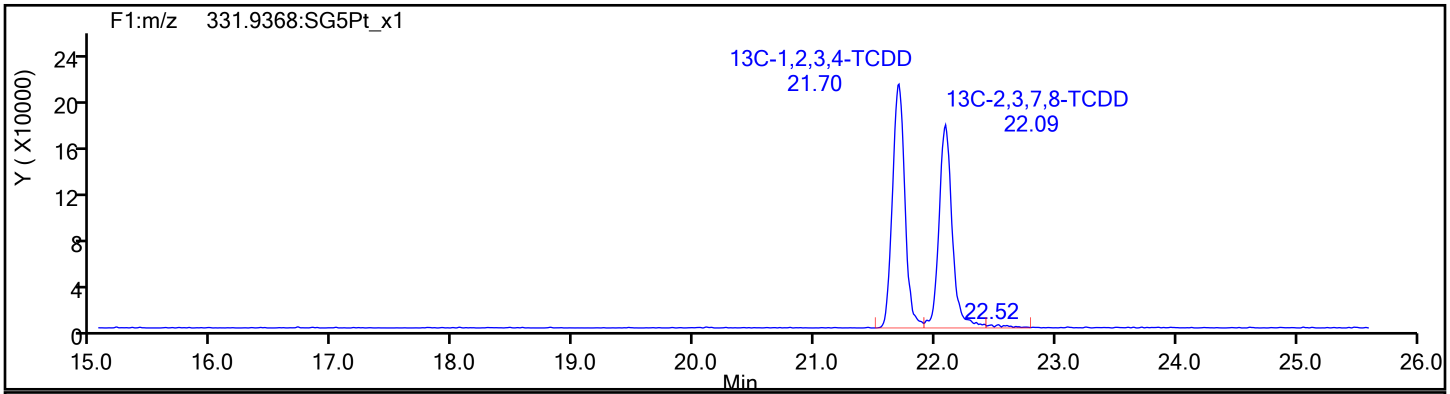

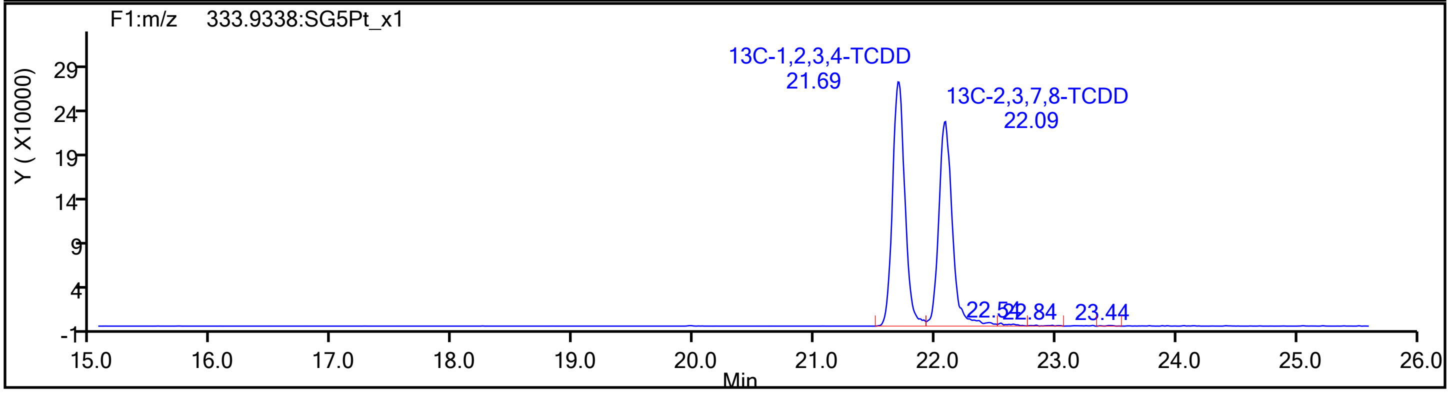

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

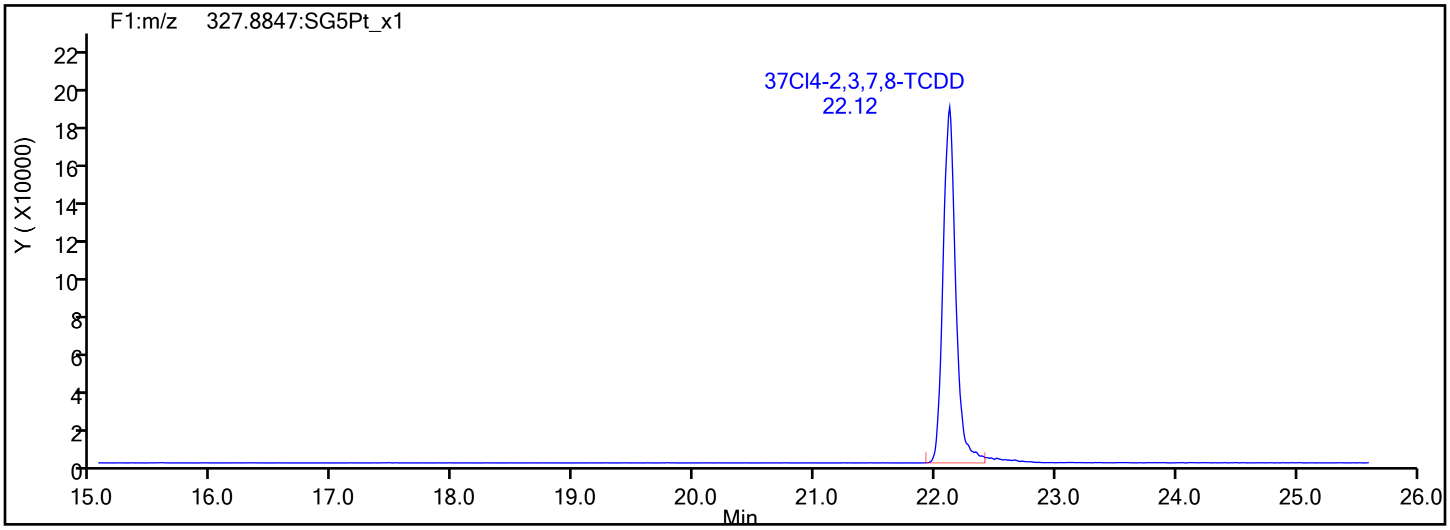

37Cl4-TCDD Standards

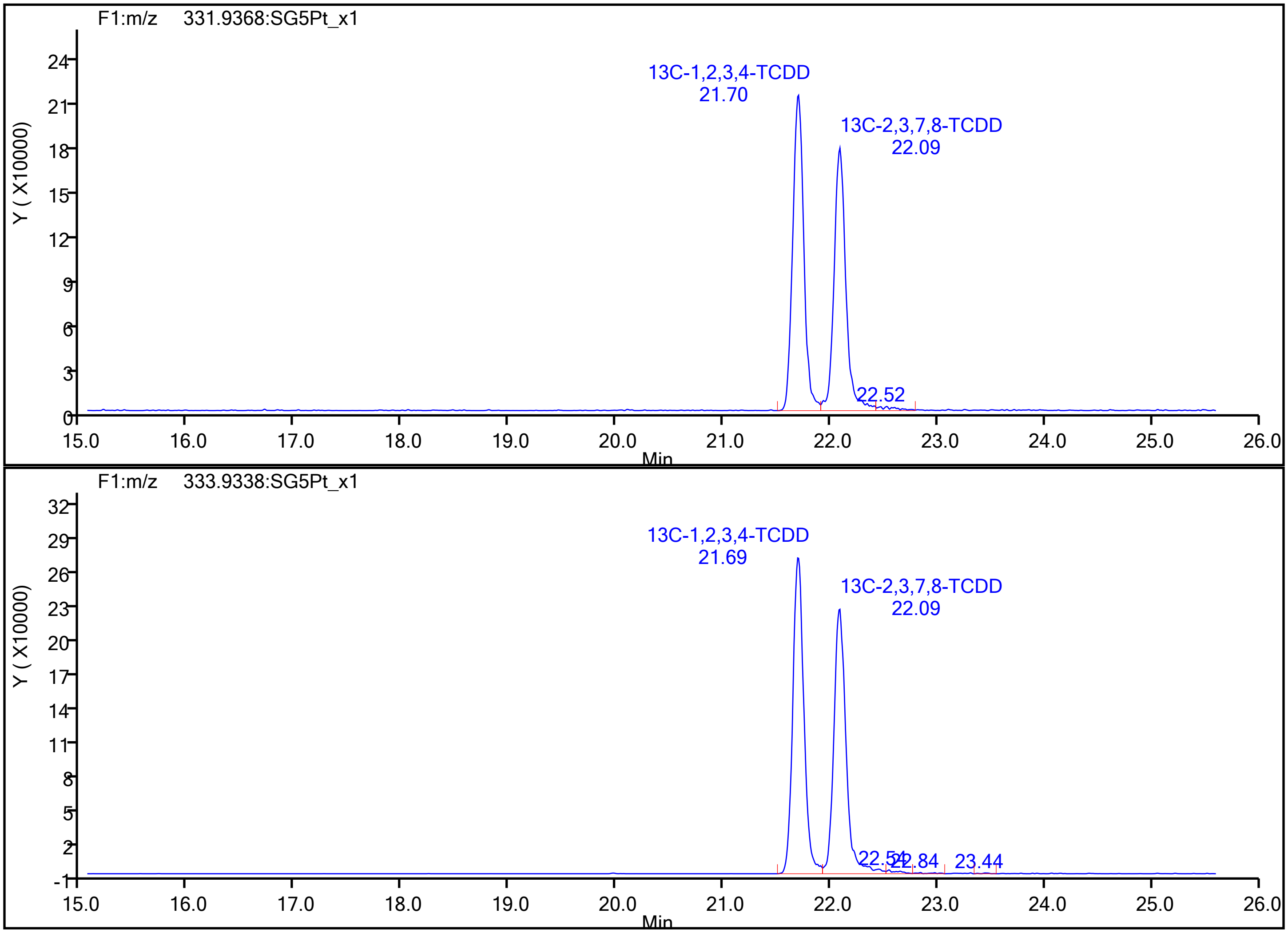

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

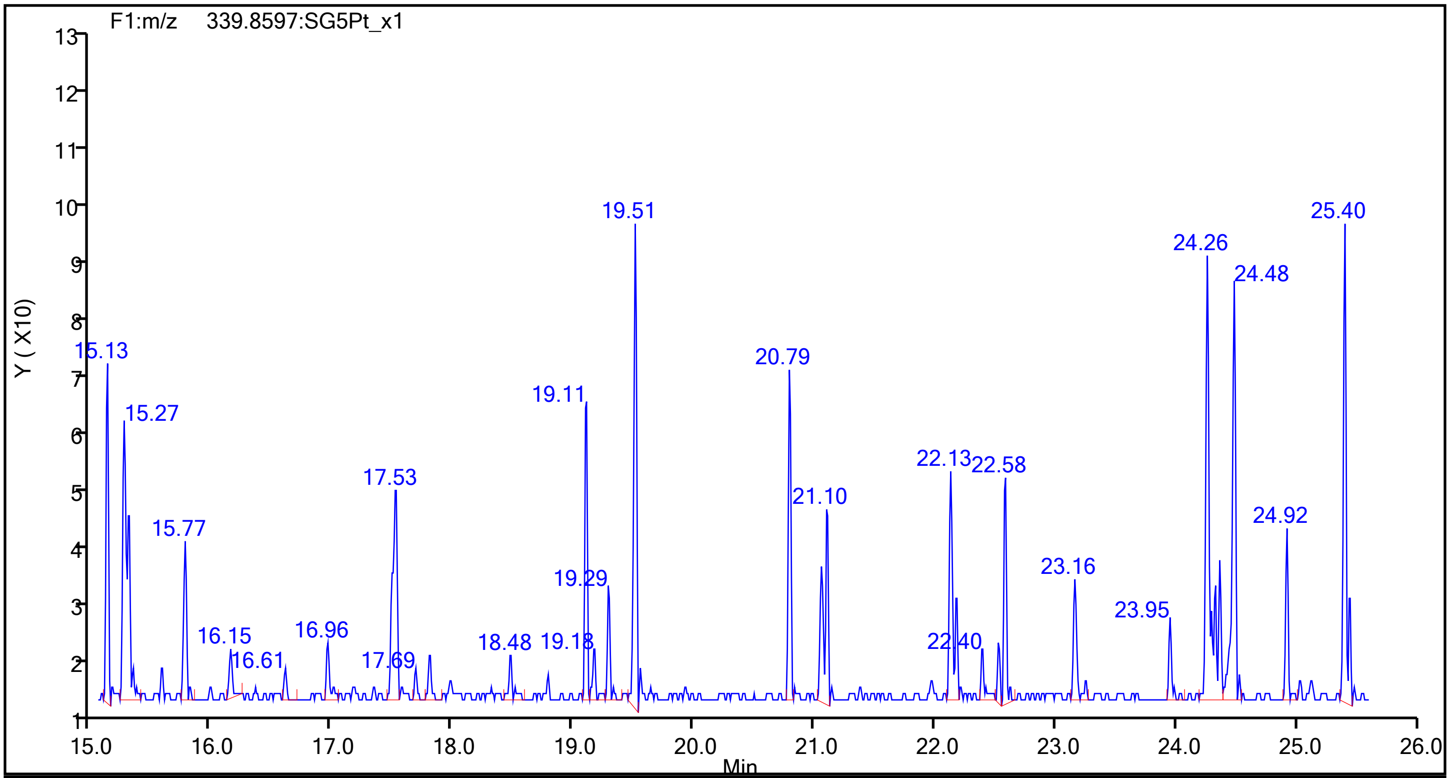

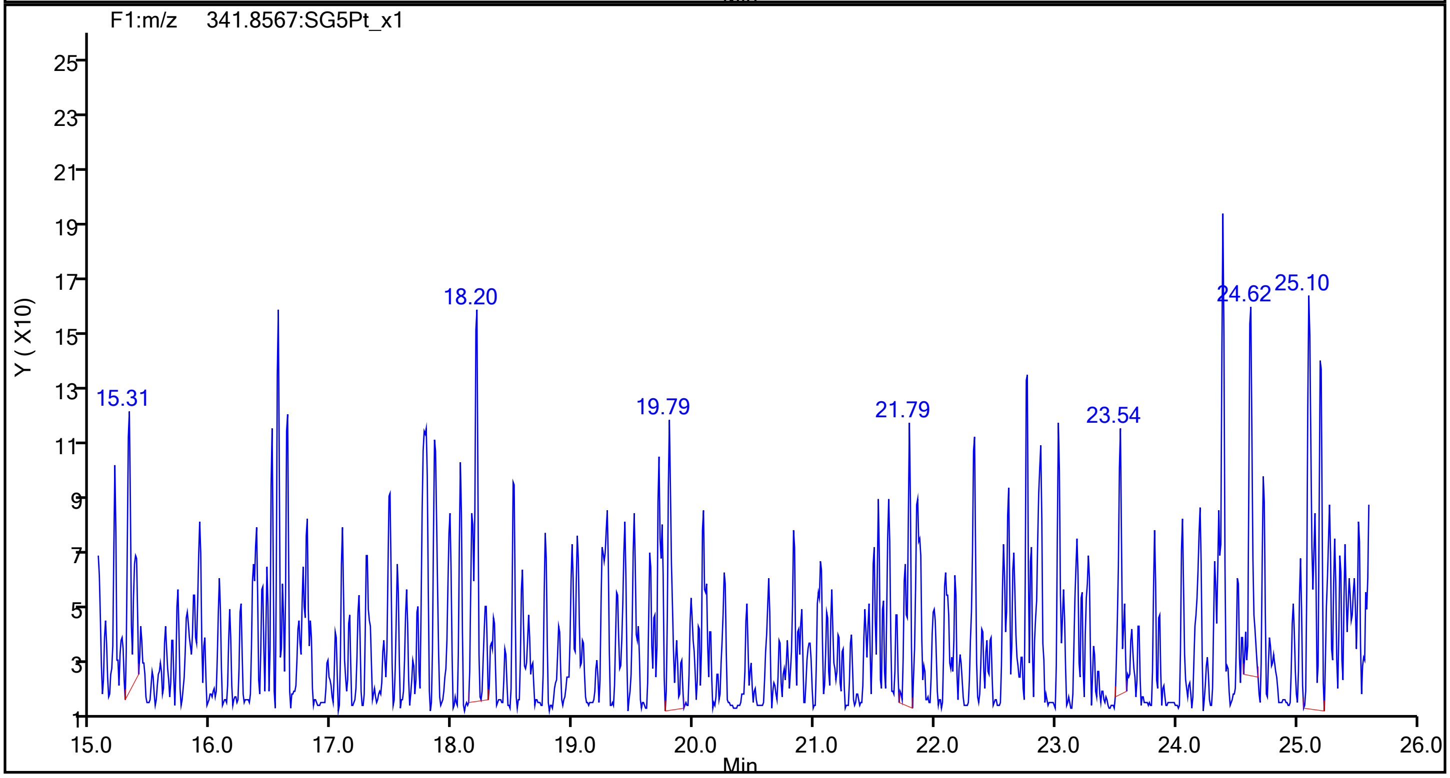

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

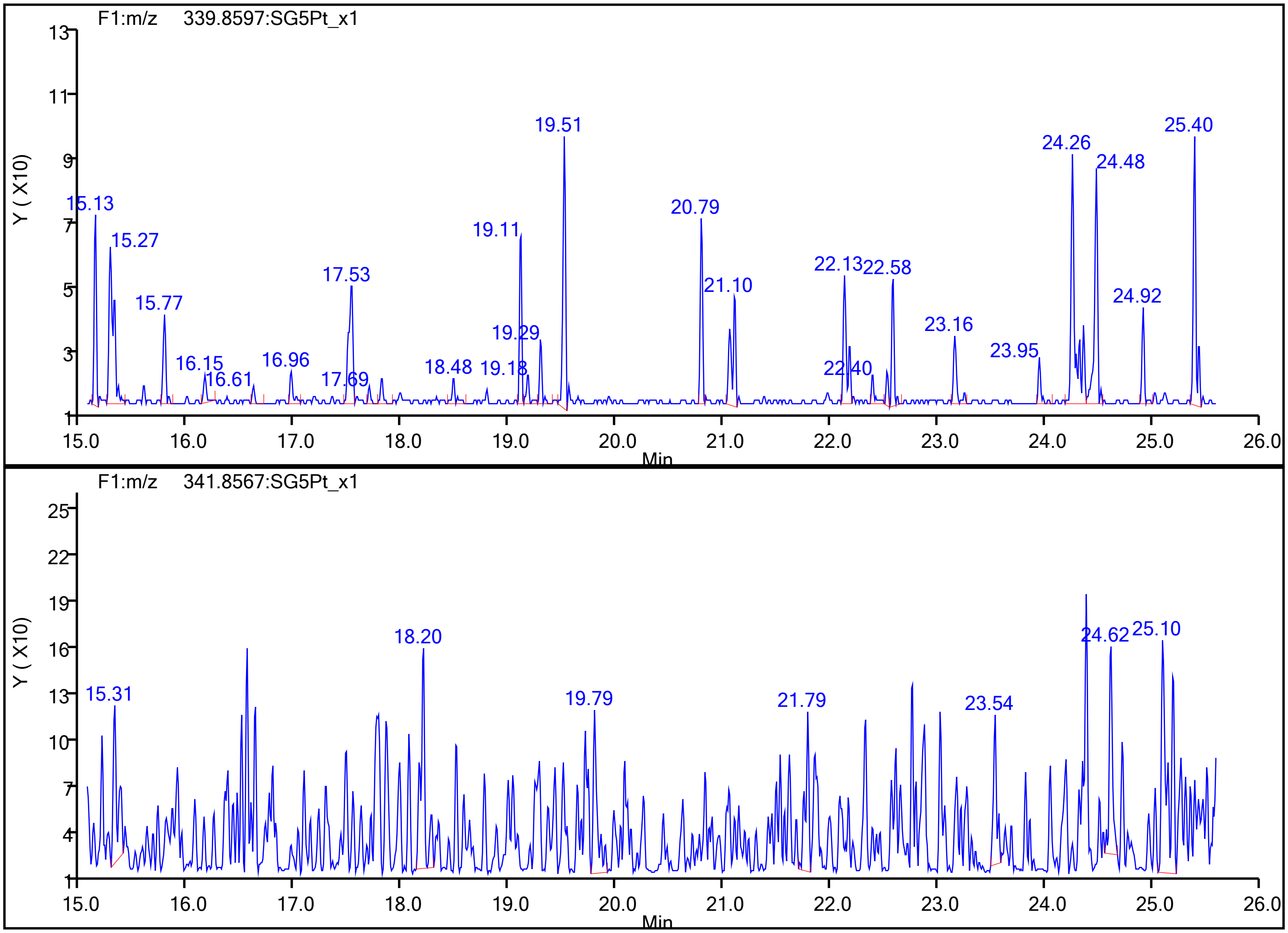

F1 PeCDFs Interference Mass

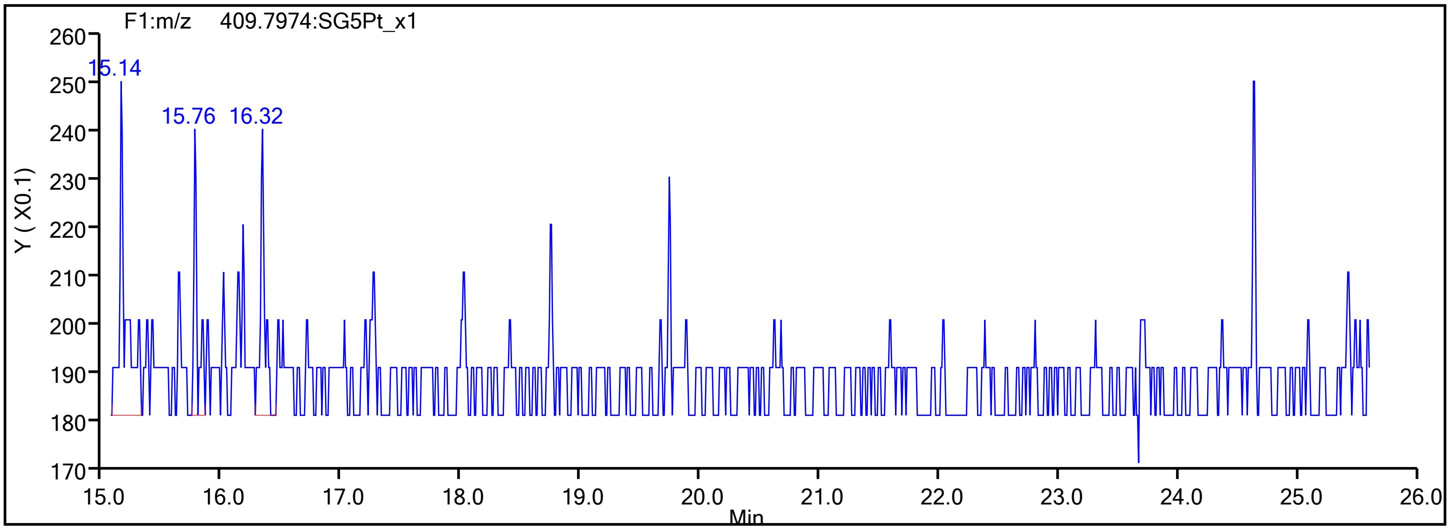

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

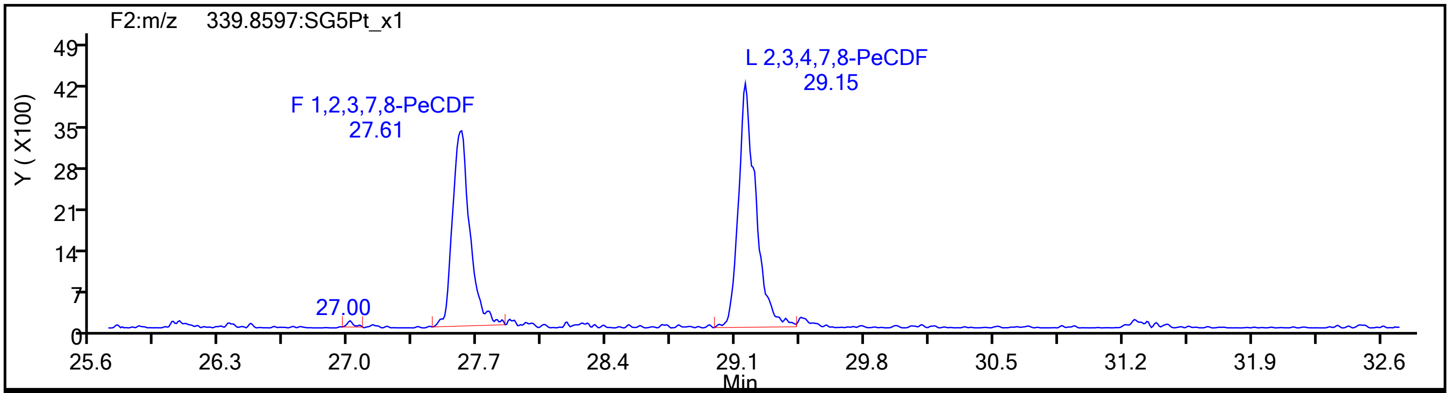

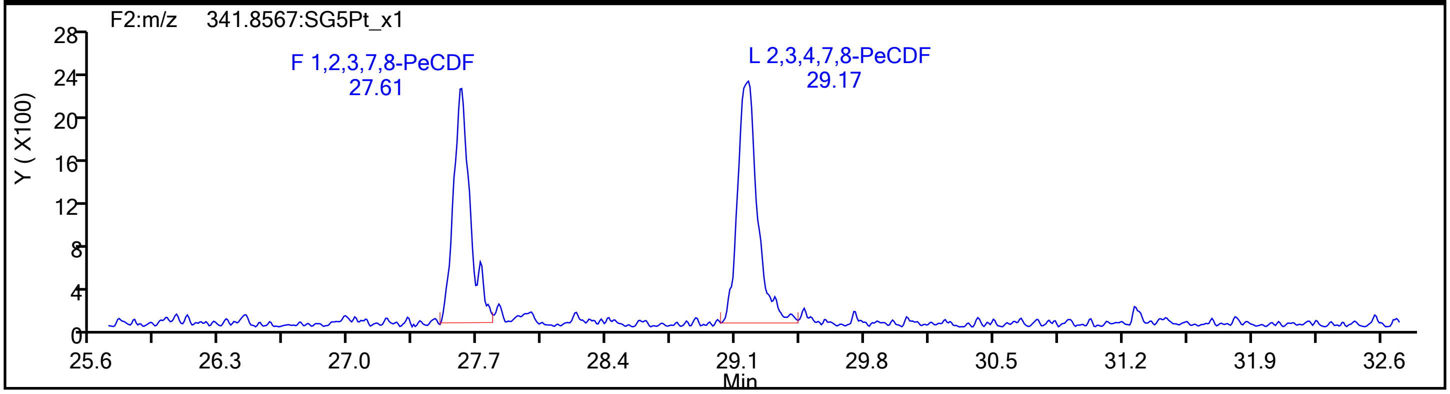

PeCDF Standards

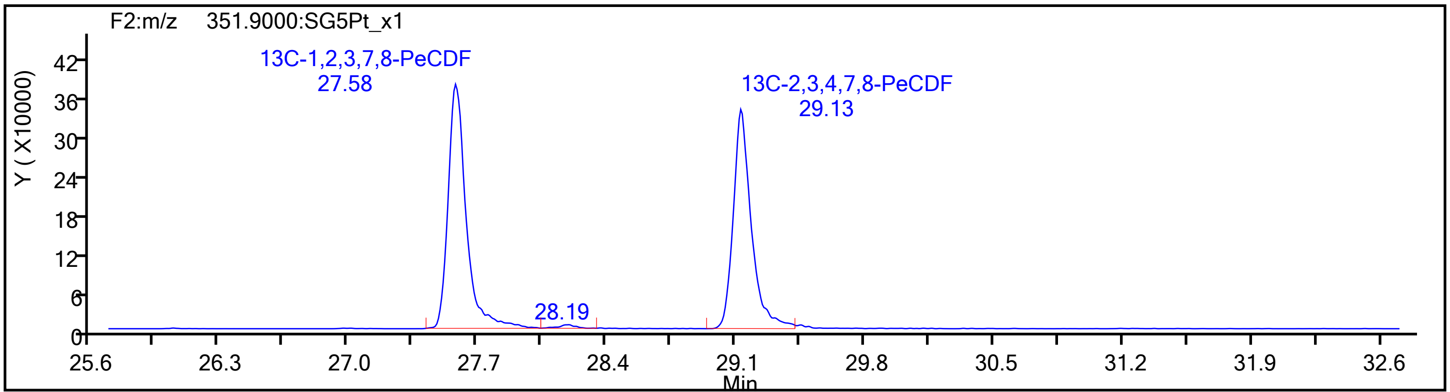

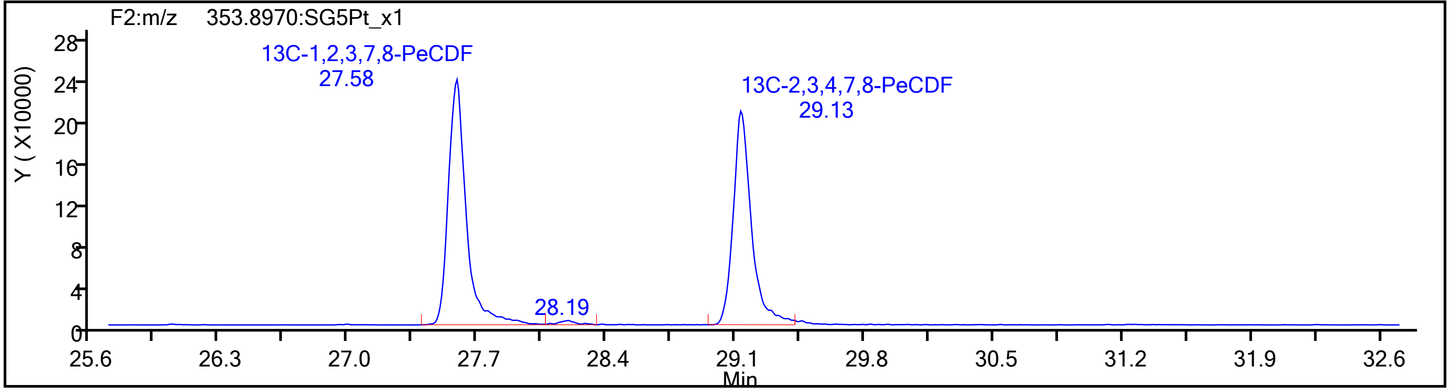

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

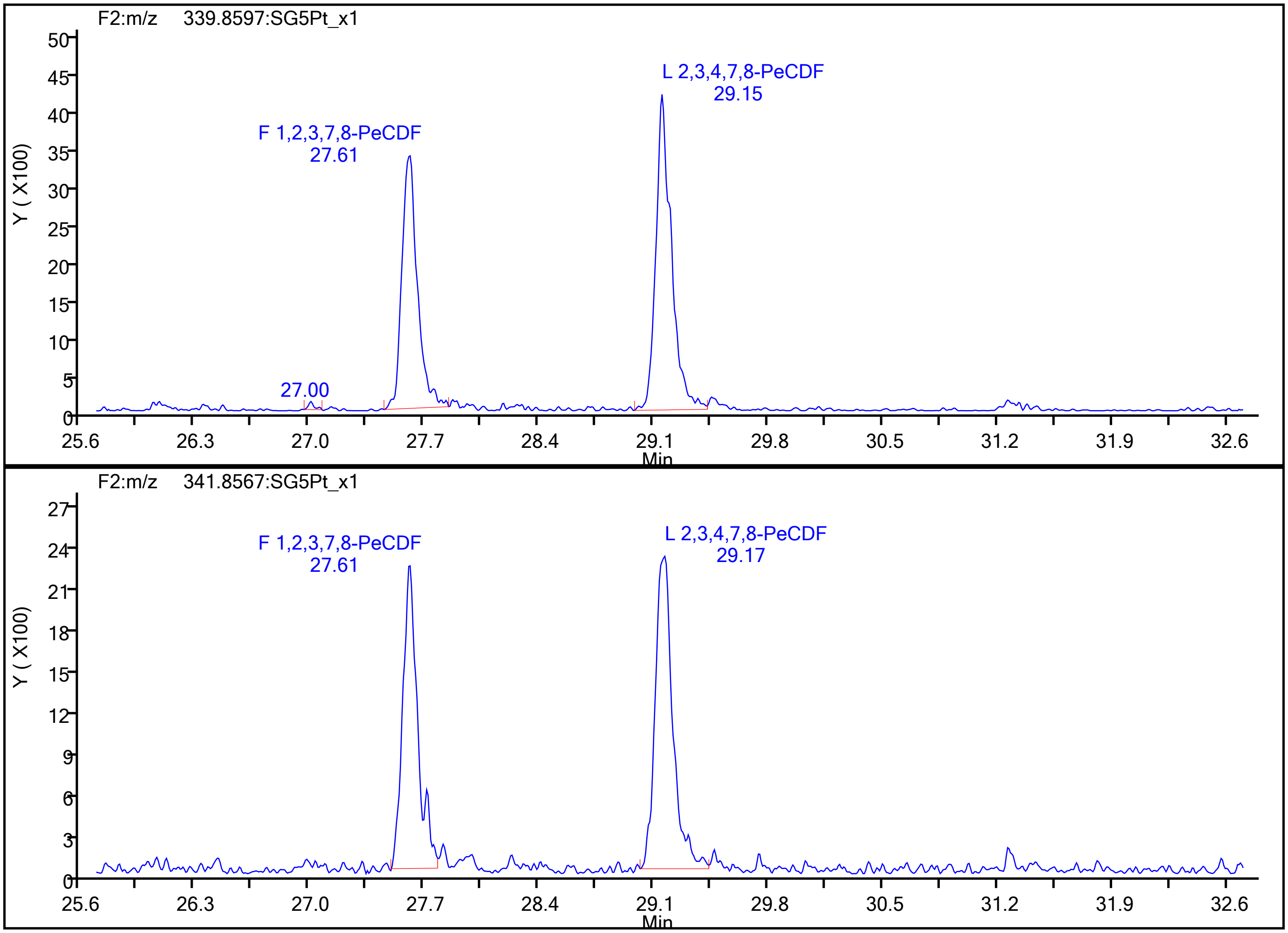

PeCDF Interference Mass

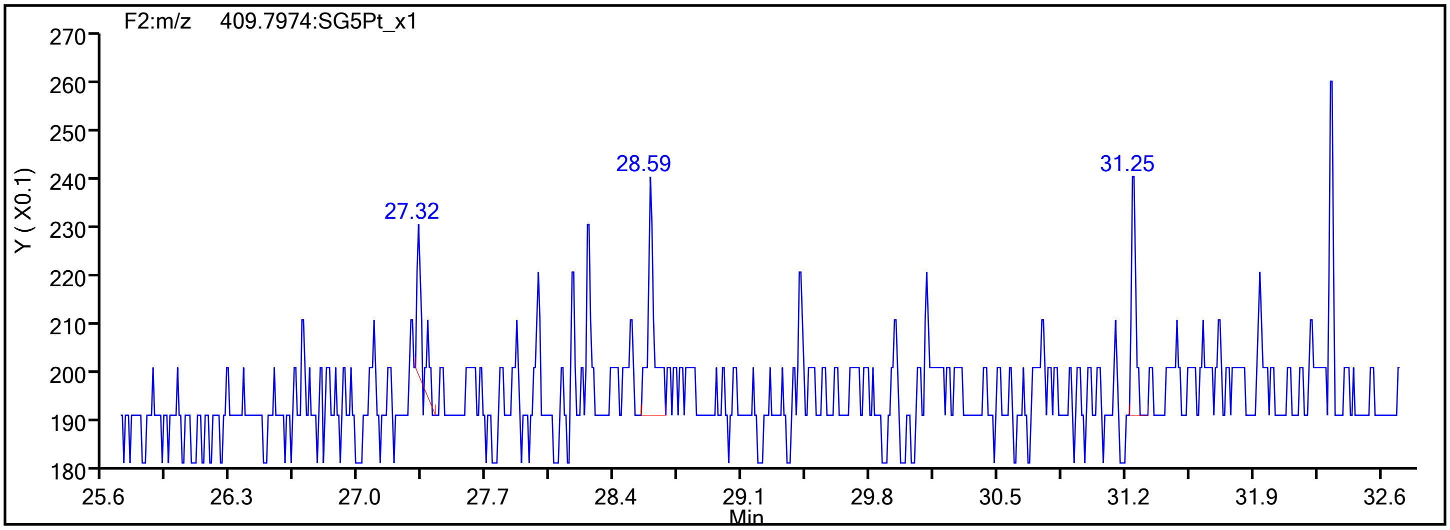

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777 Sample Line#: 31
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

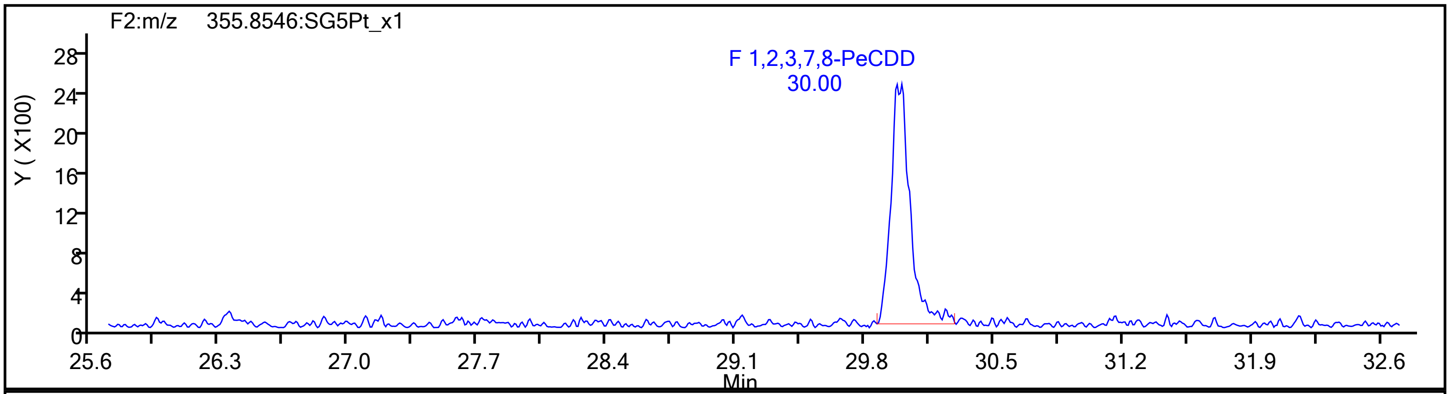

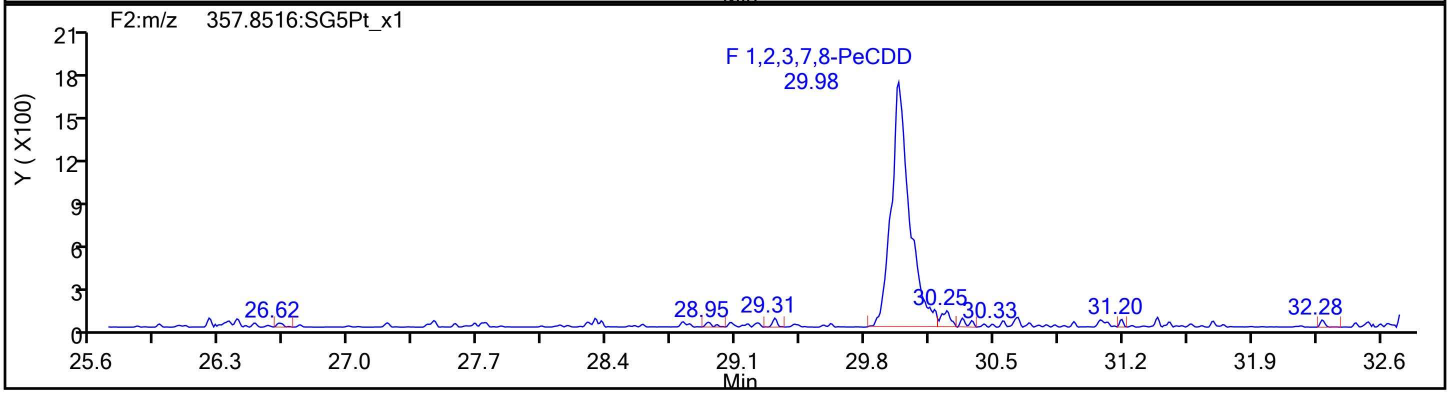

PeCDD Standards

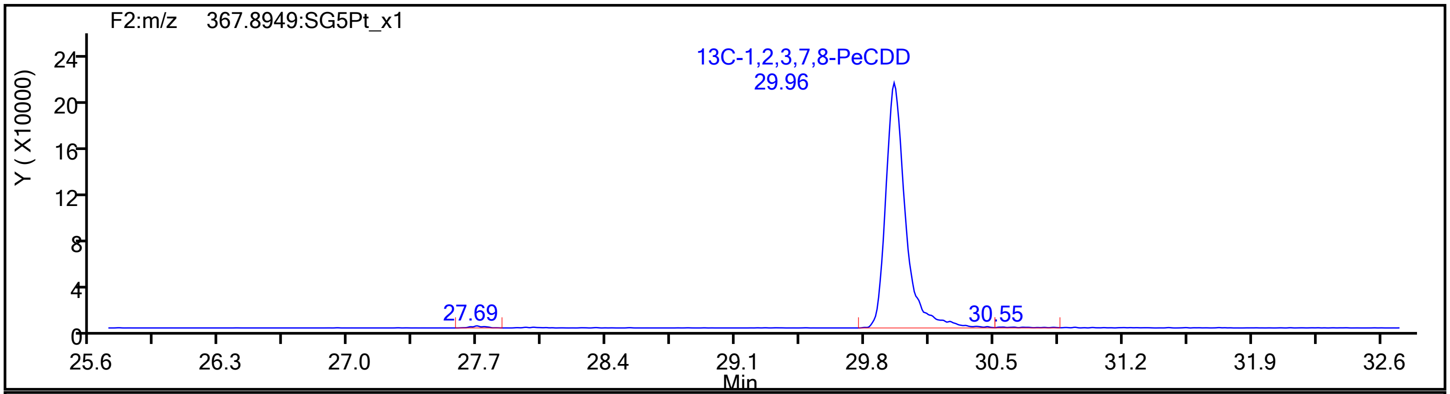

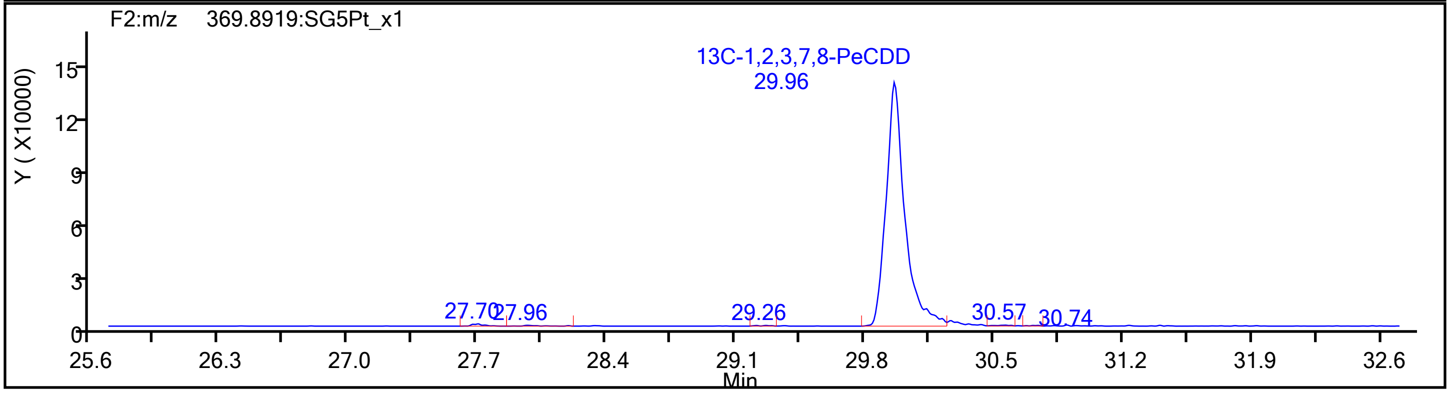

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777 Sample Line#: 31
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

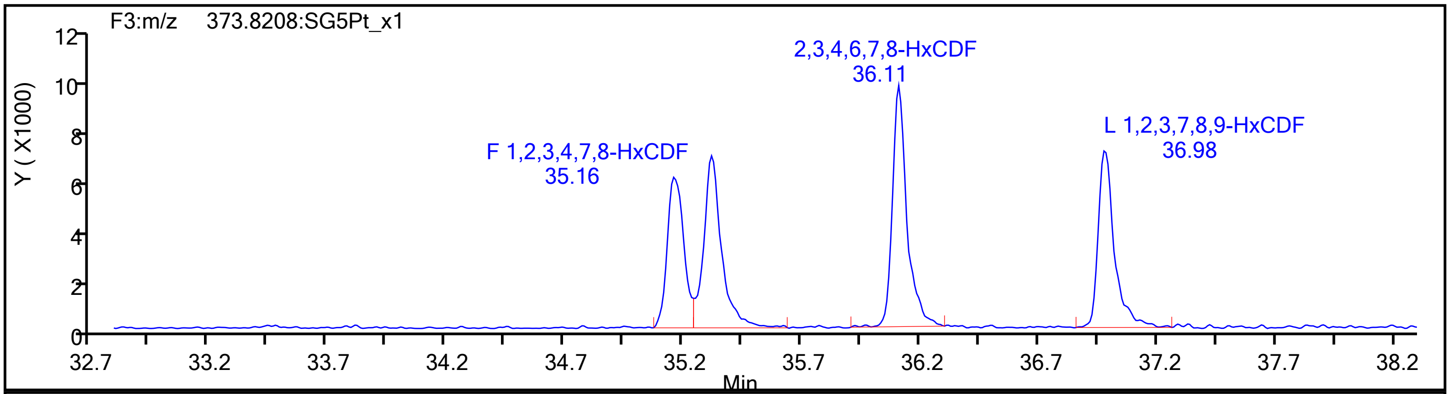

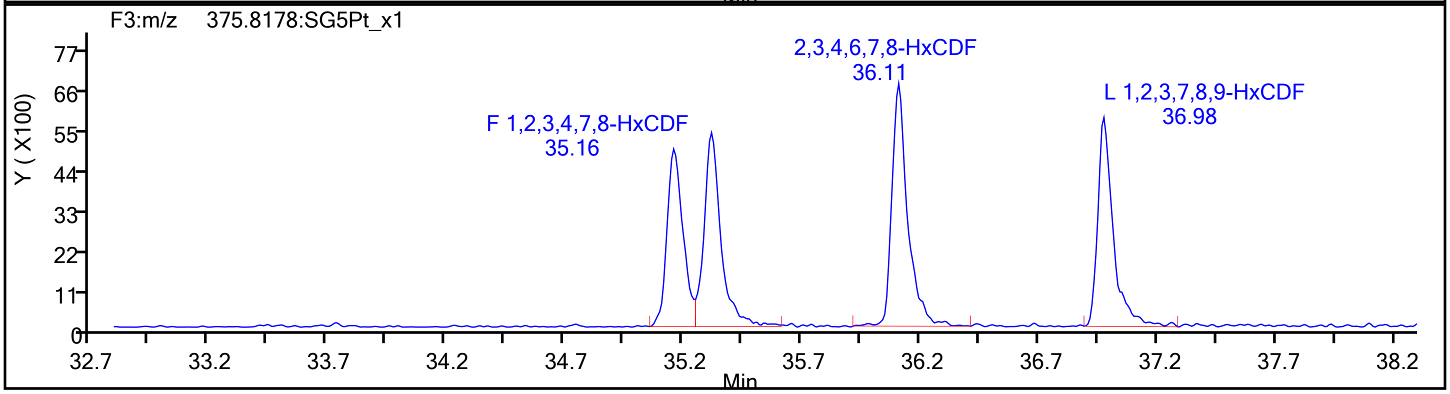

HxCDF Standards

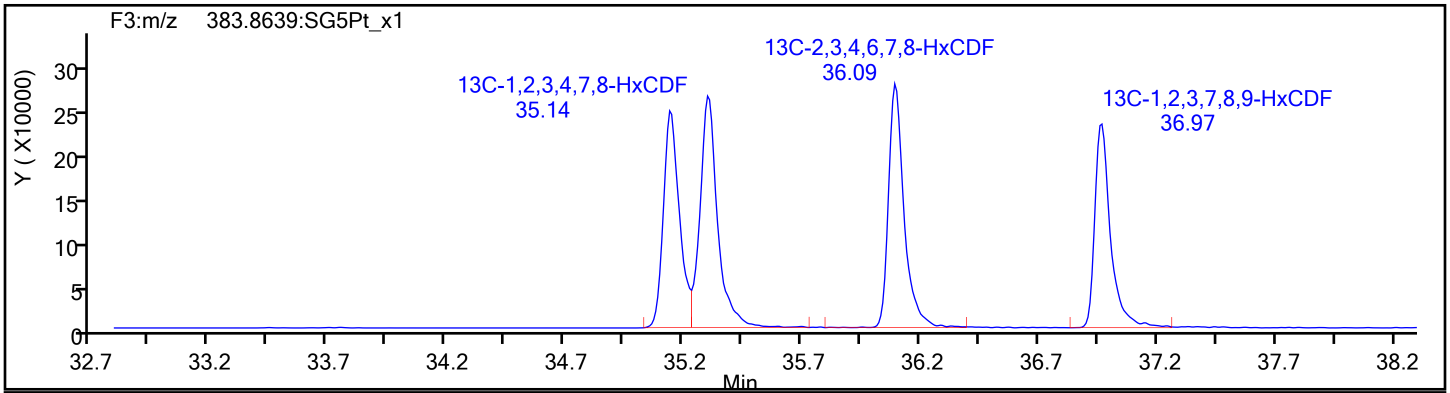

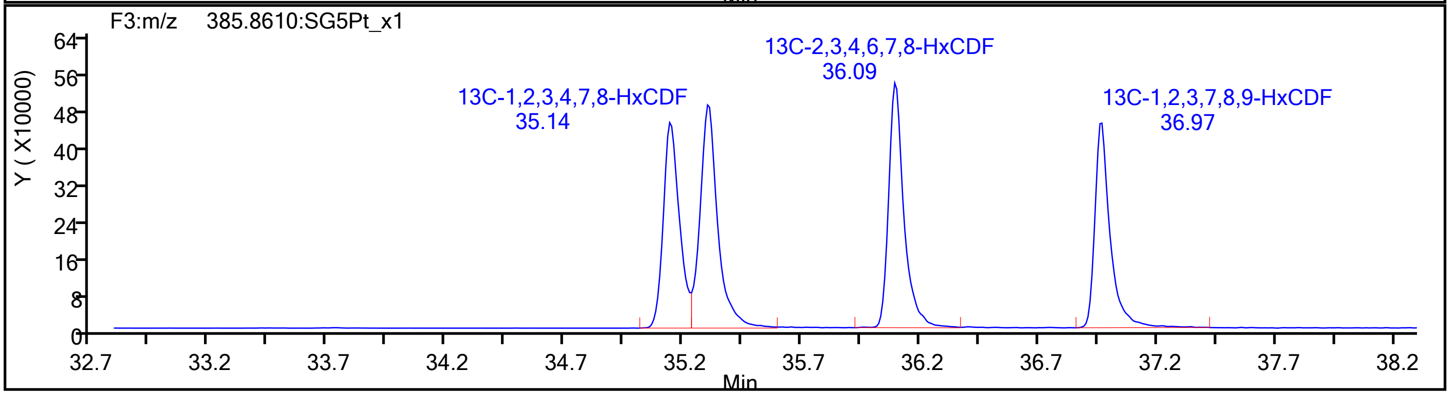

Report Date: 25-Nov-2020 14:44:46

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

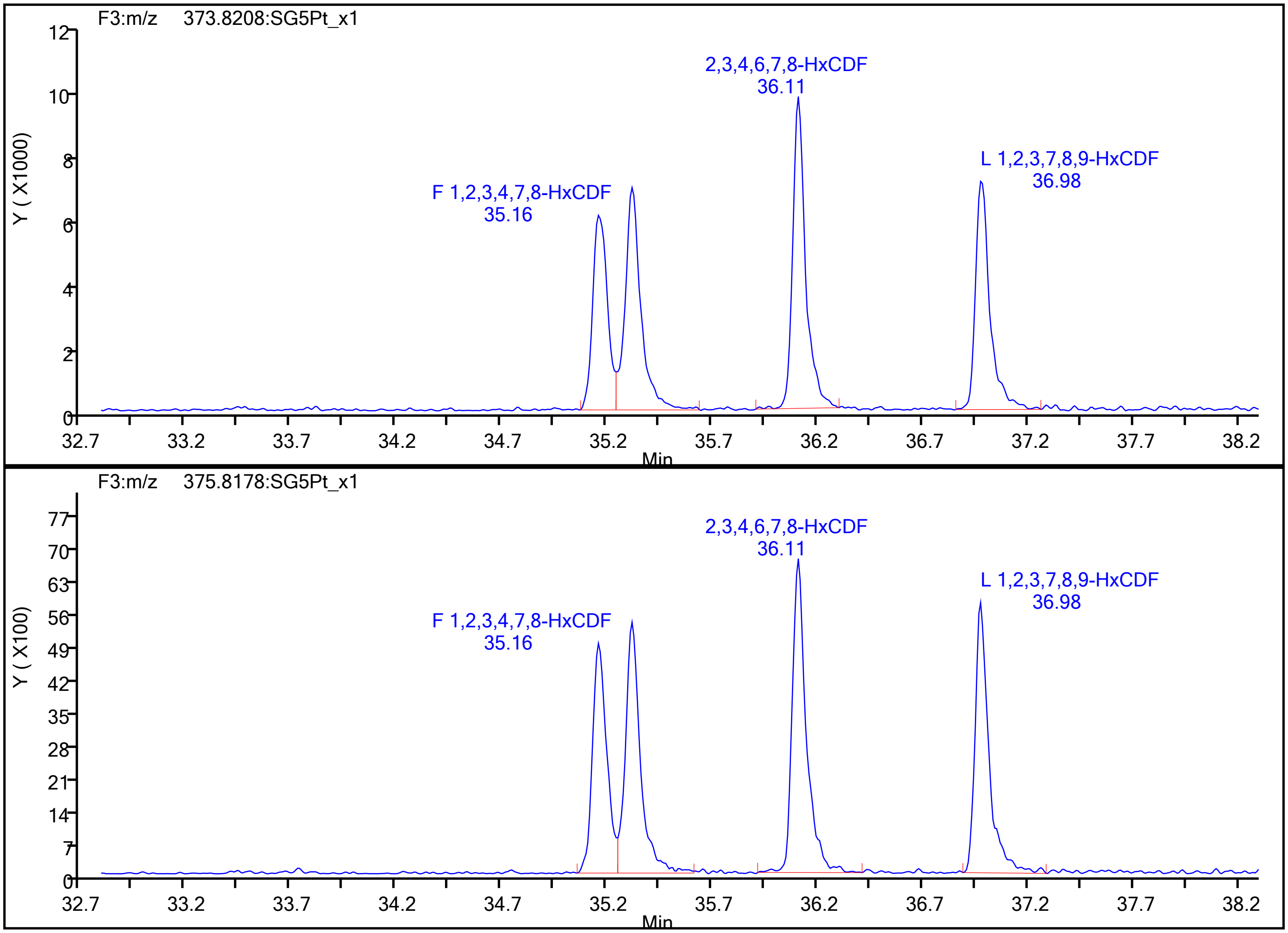

HxCDF Interference Mass

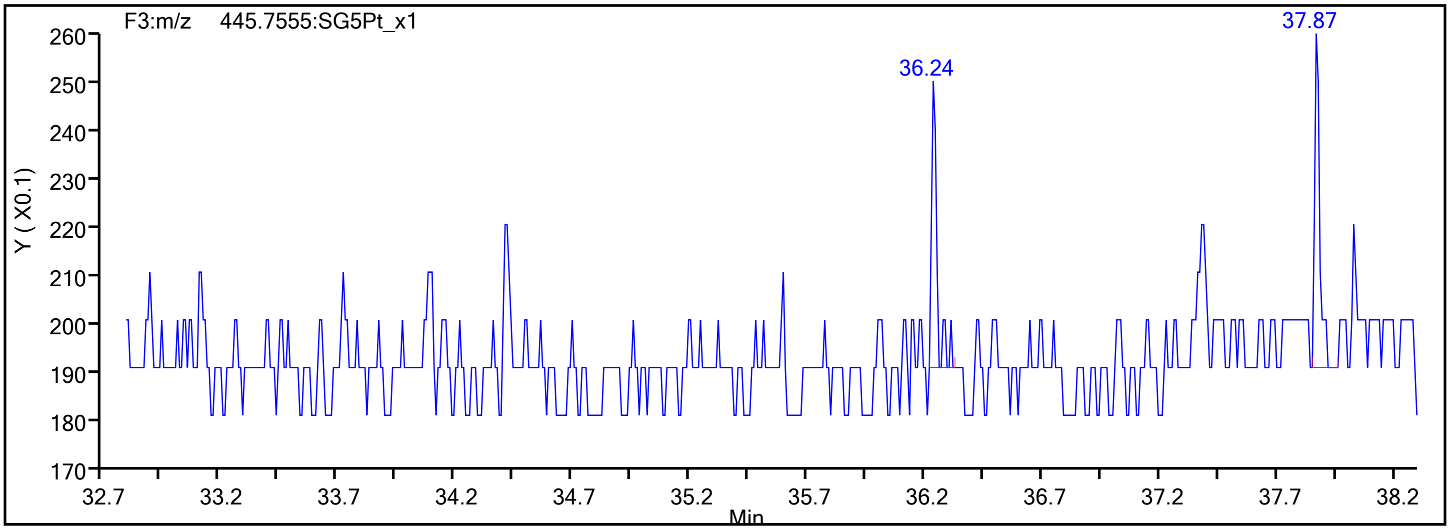

Report Date: 25-Nov-2020 14:44:46		Chrom Revision: 2.3 12-Nov-2020 21:52:08	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

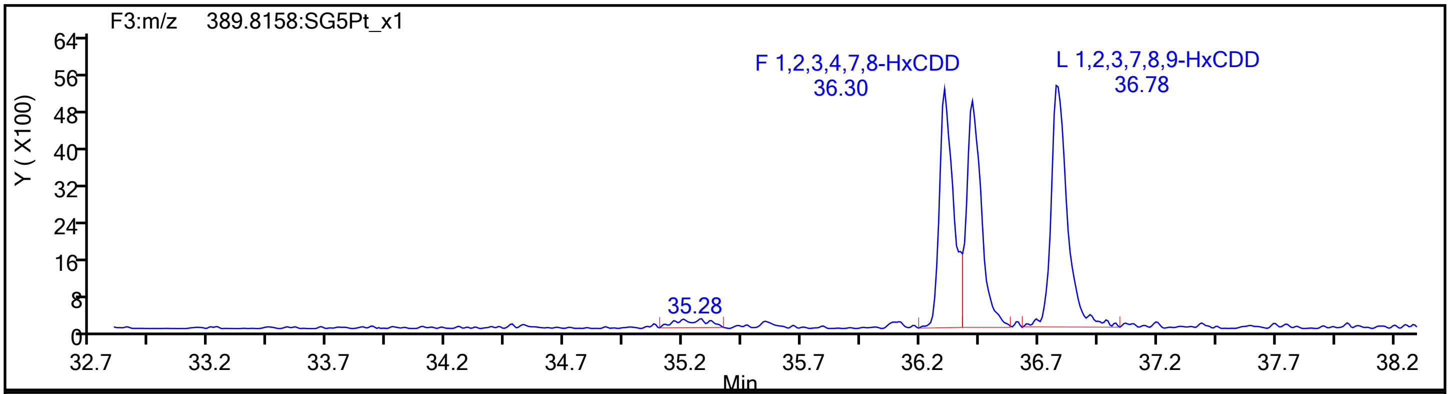

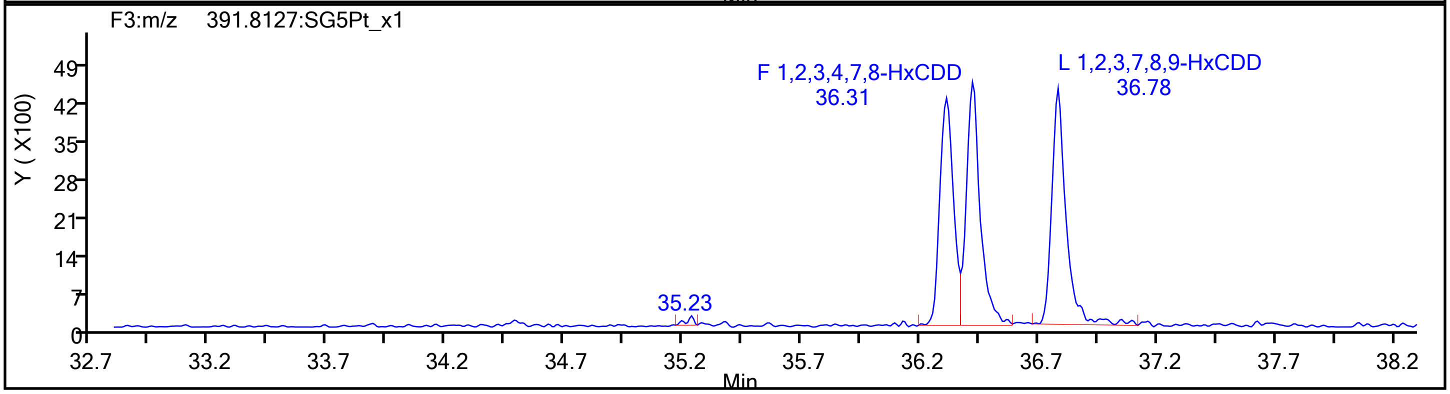

HxCDD Standards

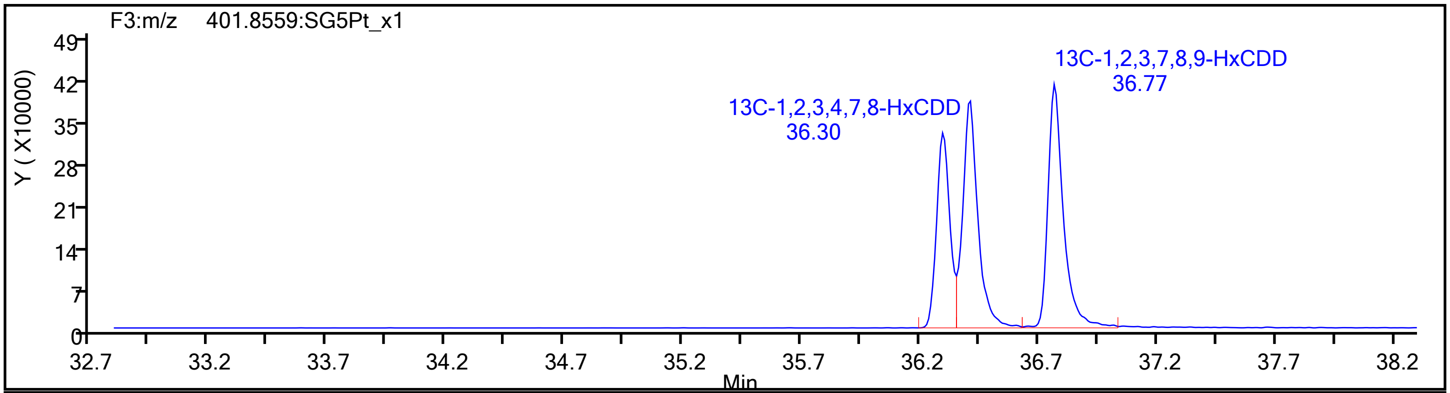

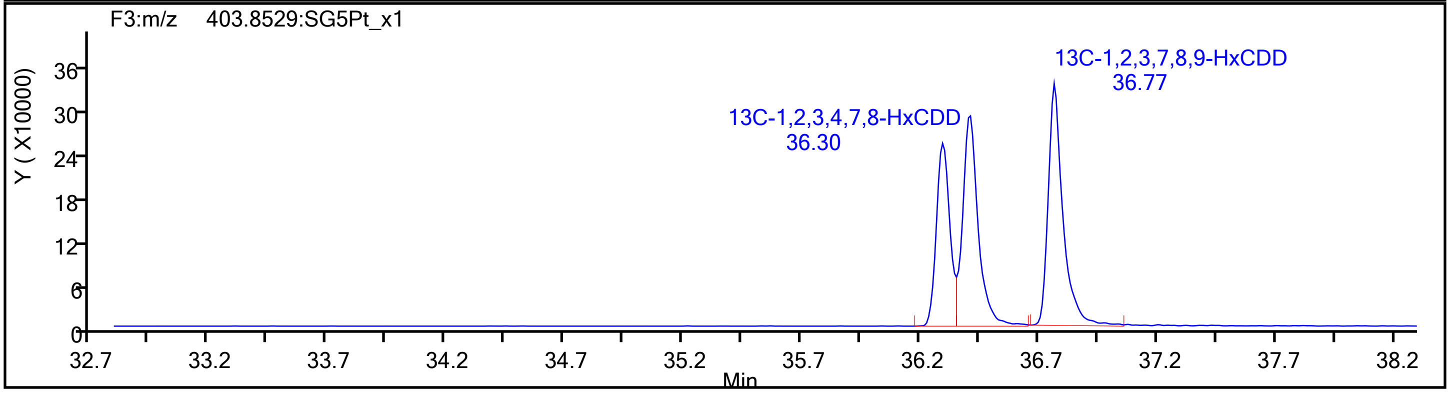

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777 Sample Line#: 31
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

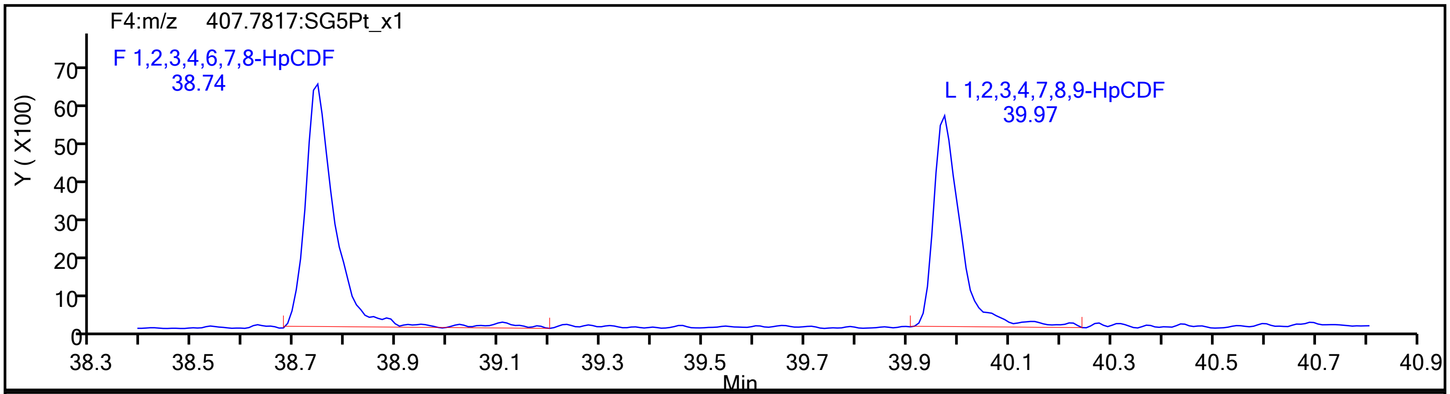

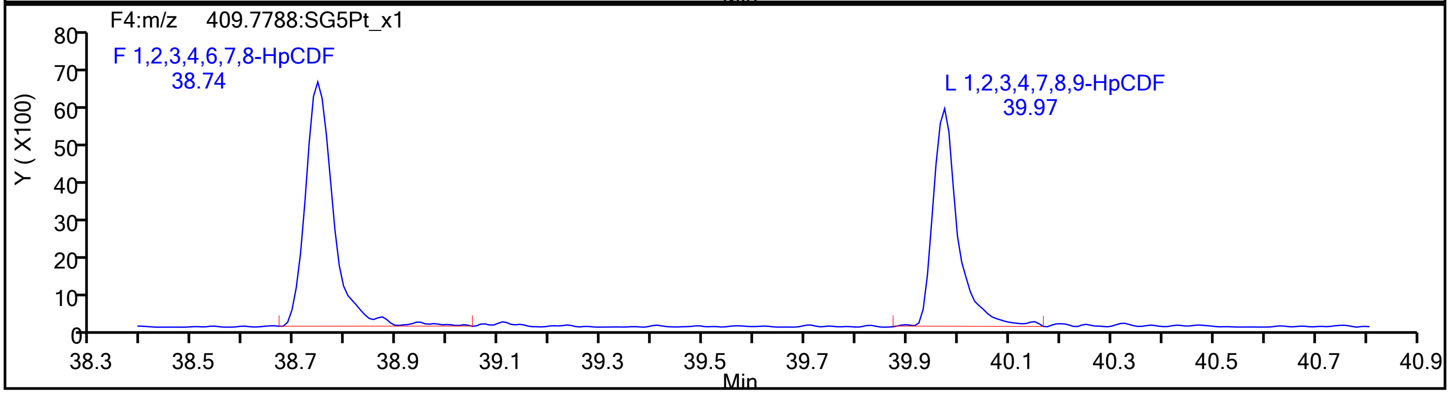

HpCDF Standards

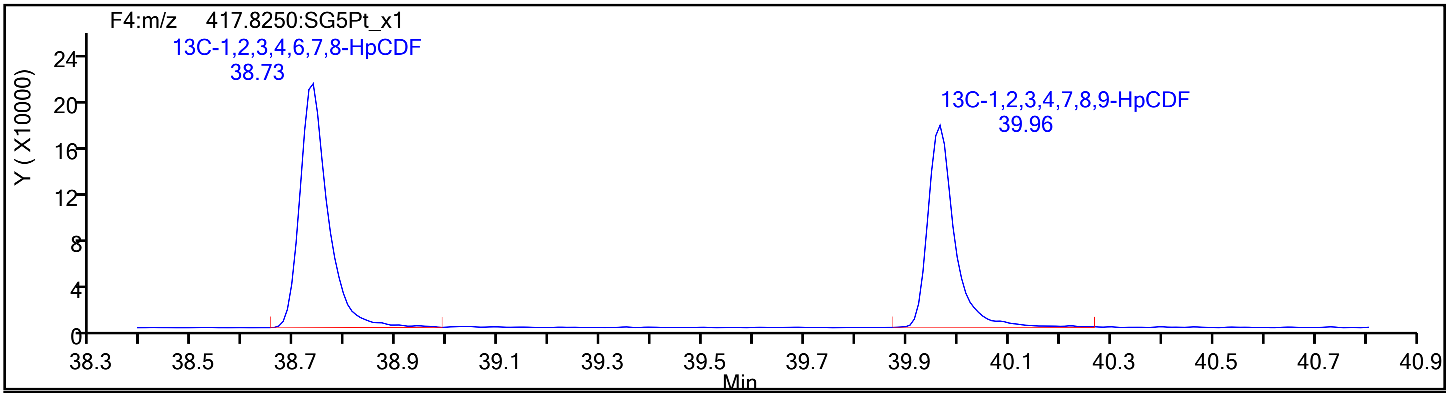

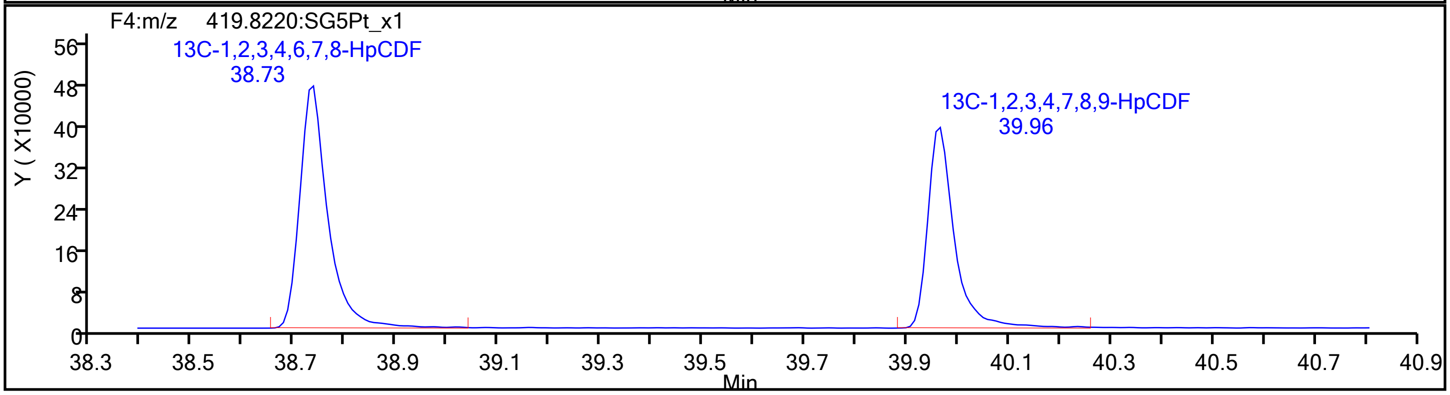

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

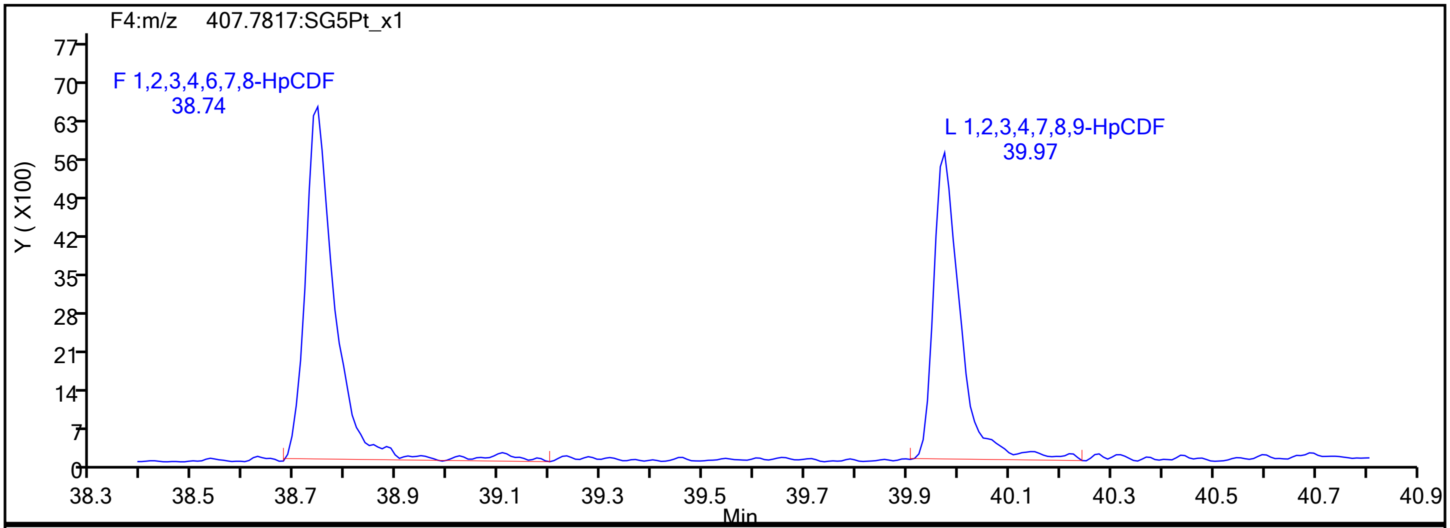

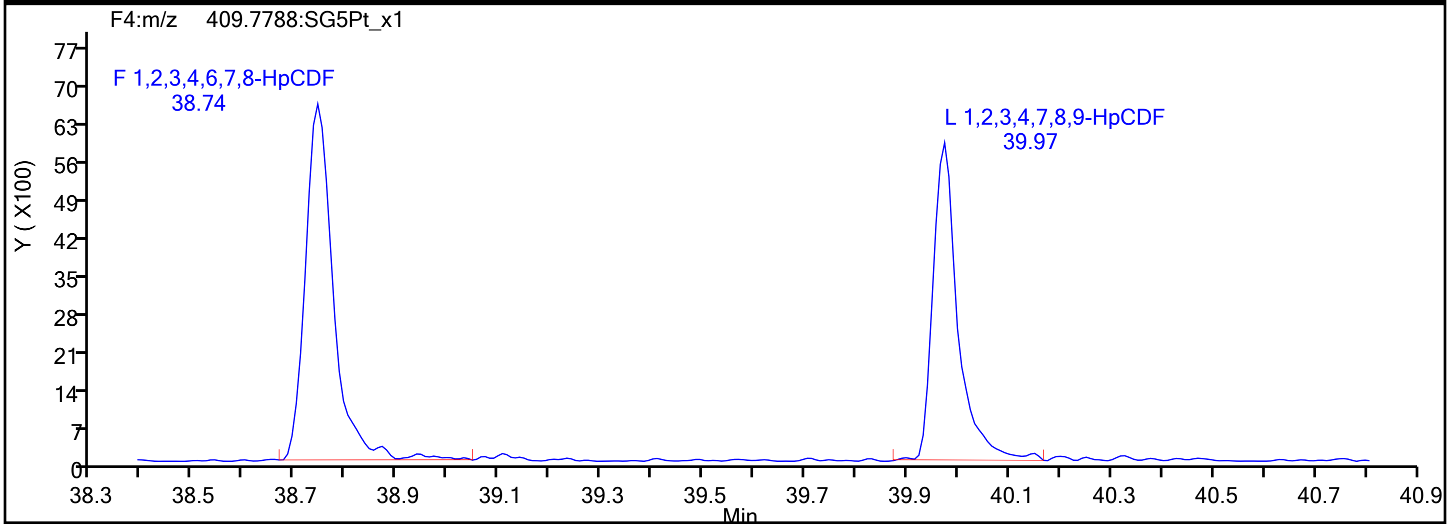

HpCDF Interference Mass

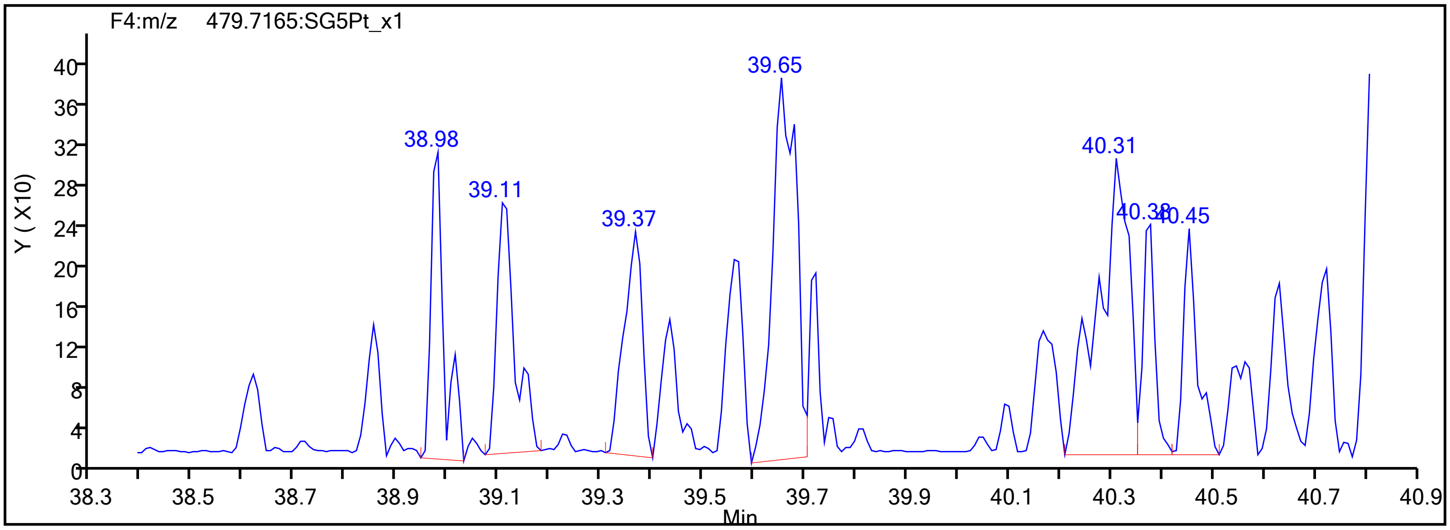

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777 Sample Line#: 31
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

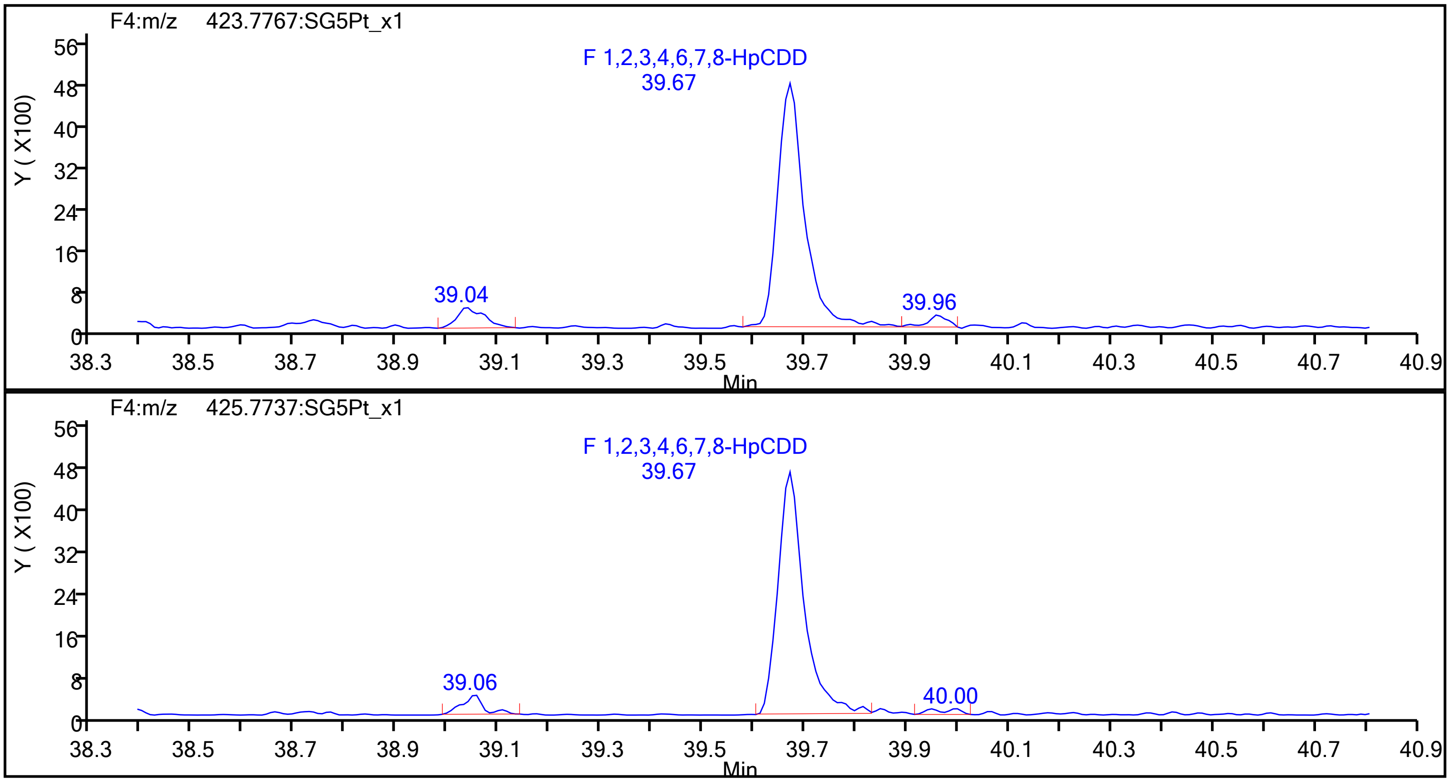

HpCDD Standards

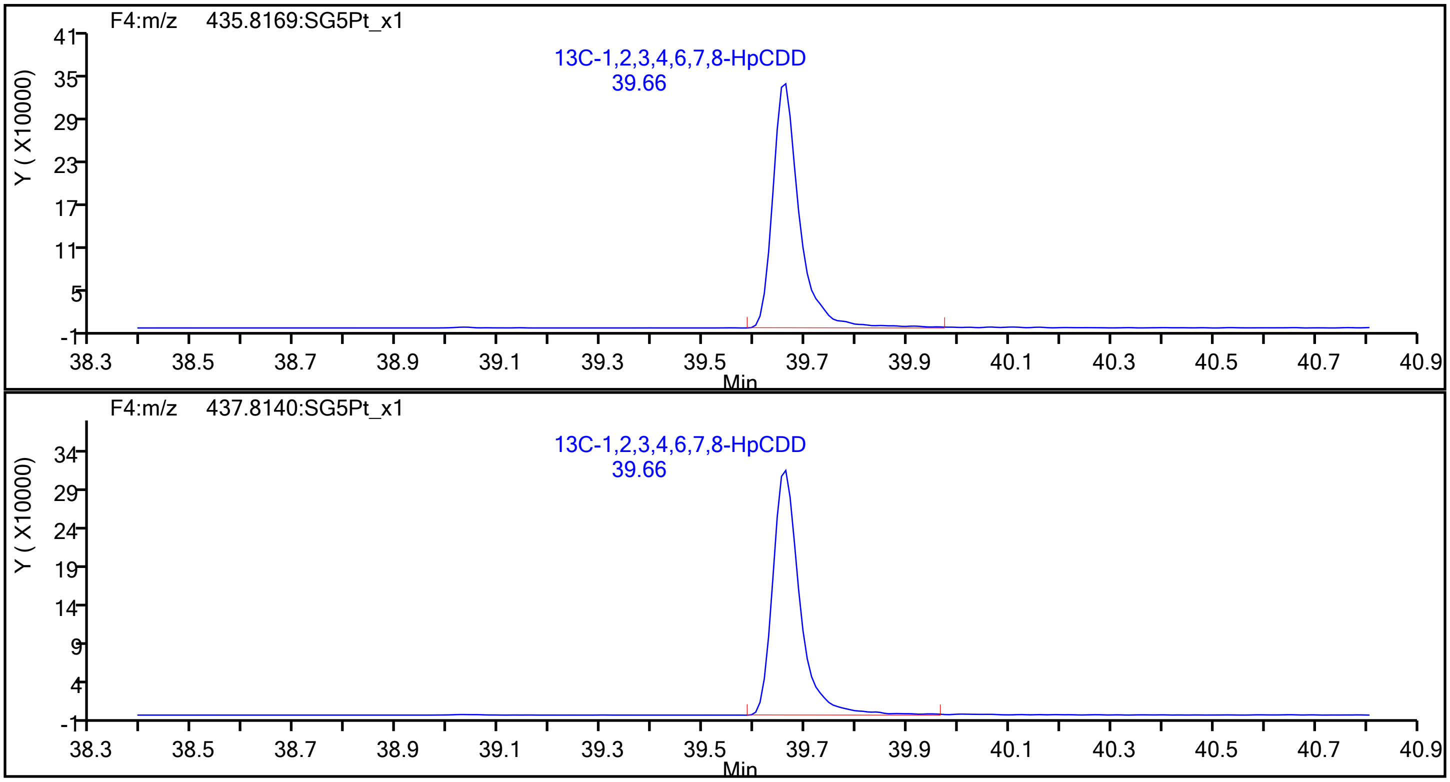

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

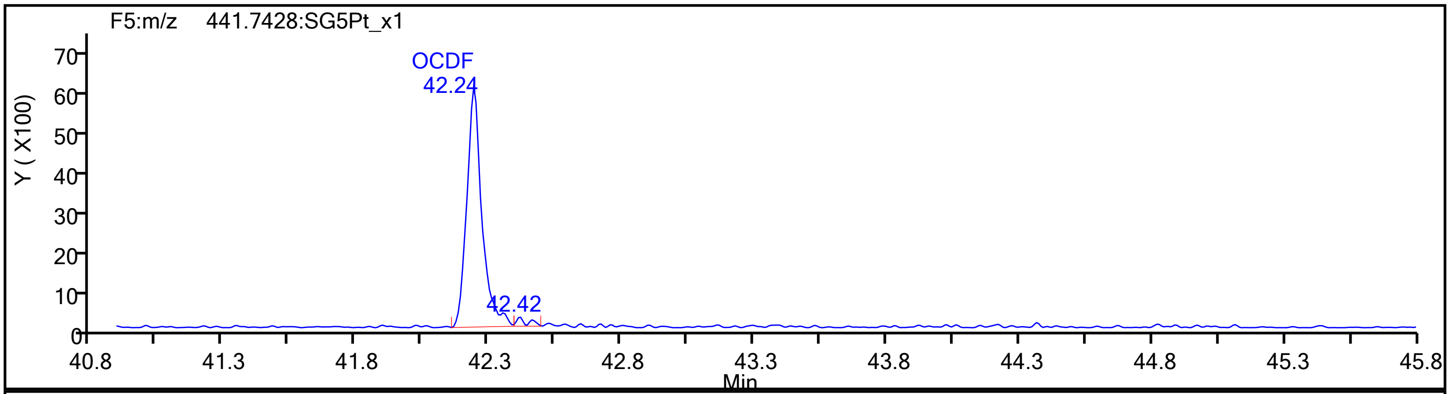

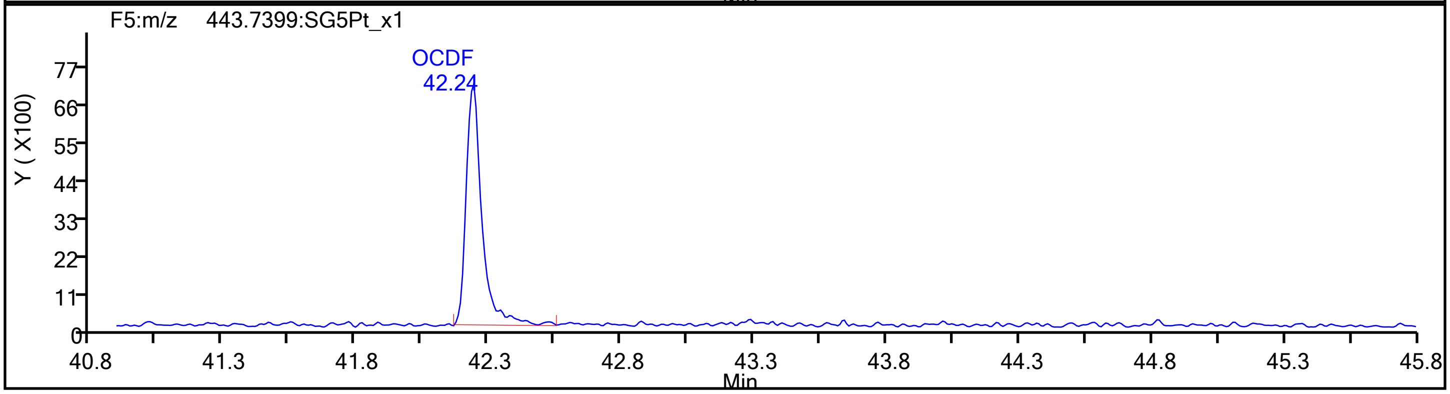

OCDF Standards

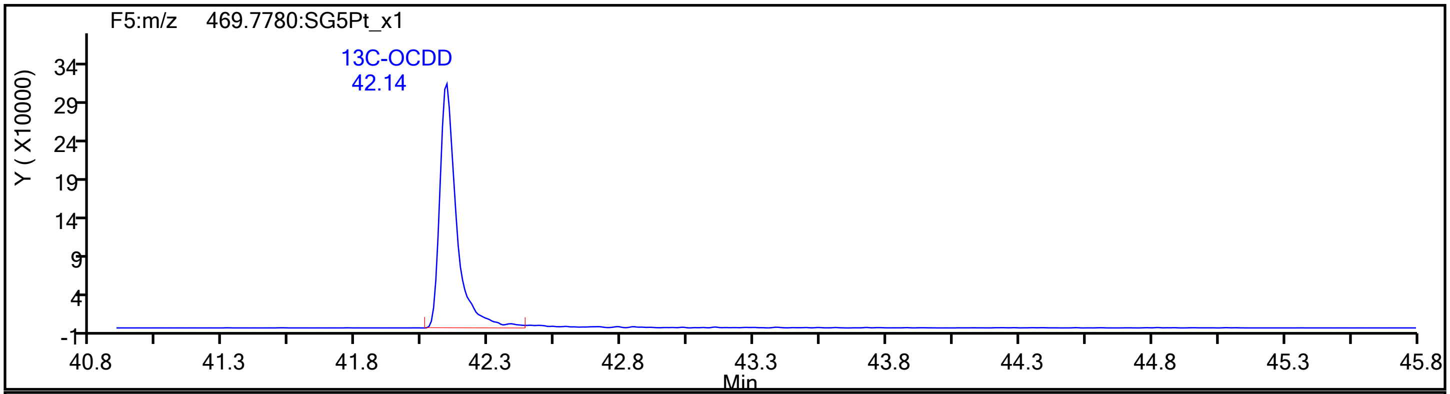

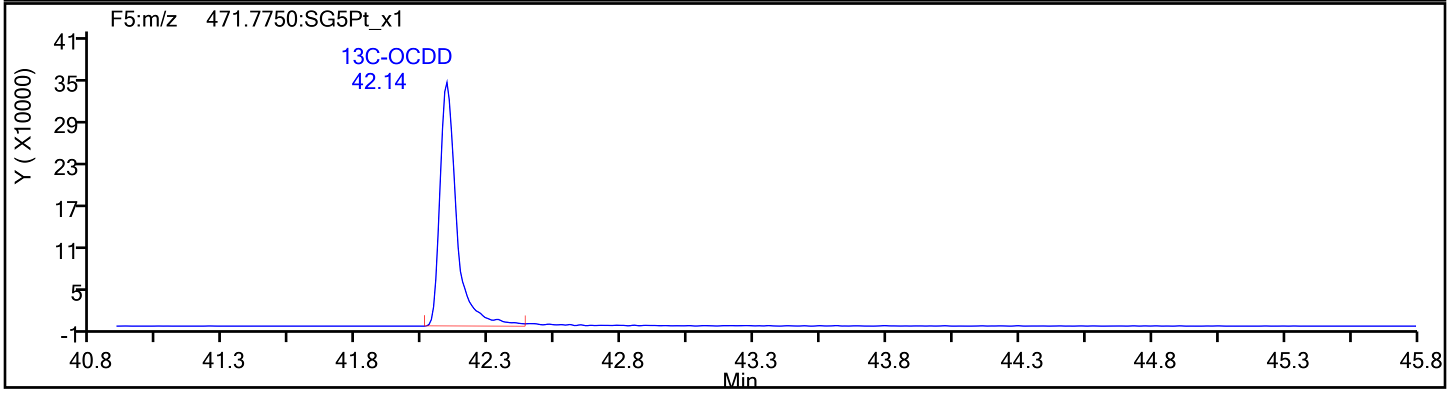

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

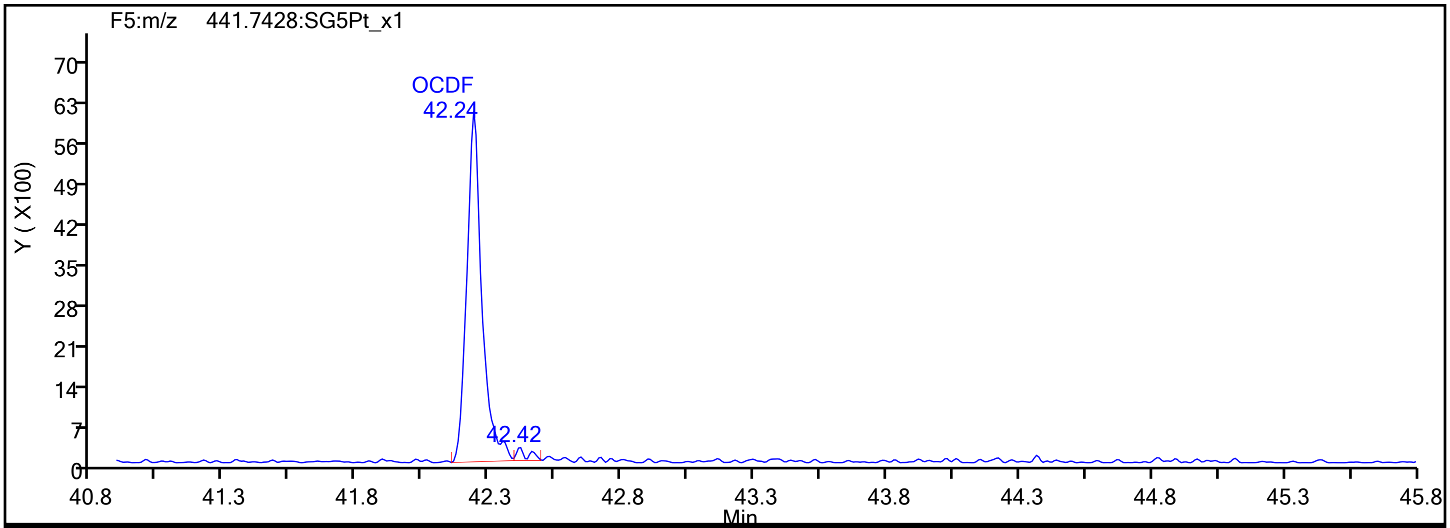

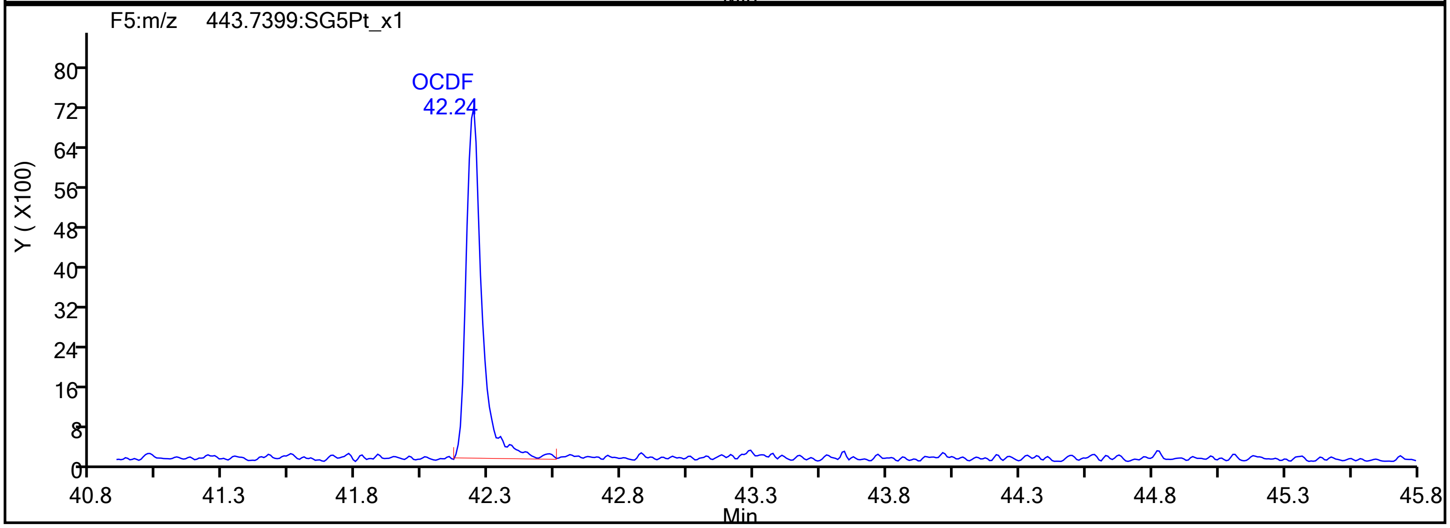

OCDF Interference Mass

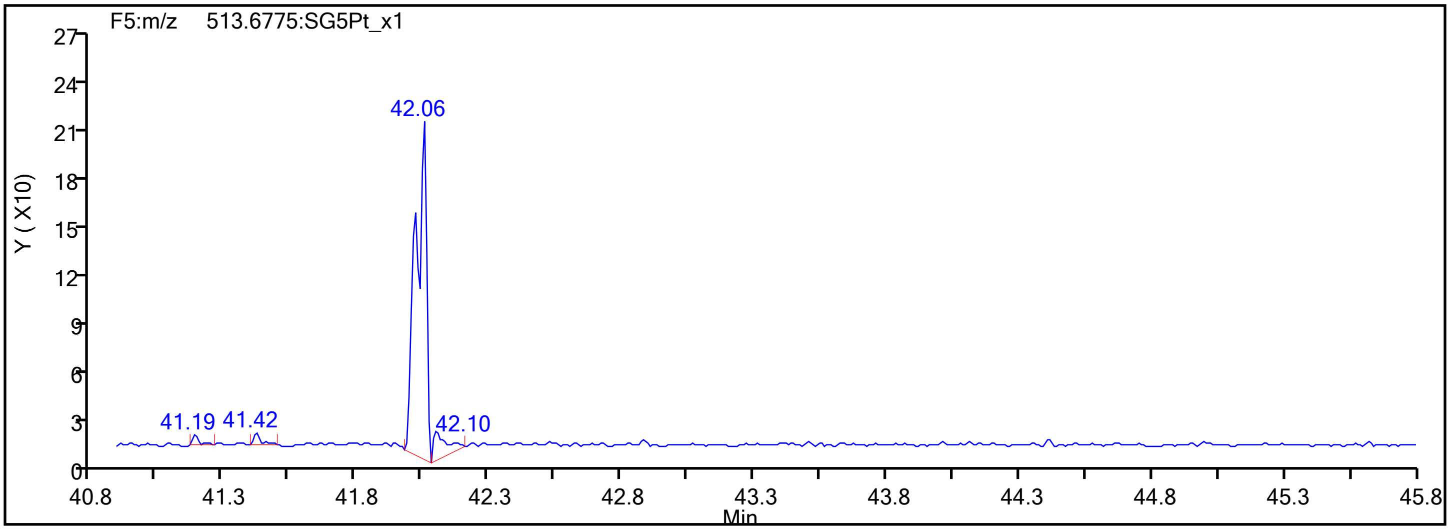

Report Date: 25-Nov-2020 14:44:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d

Injection Date: 24-Nov-2020 10:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 31
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

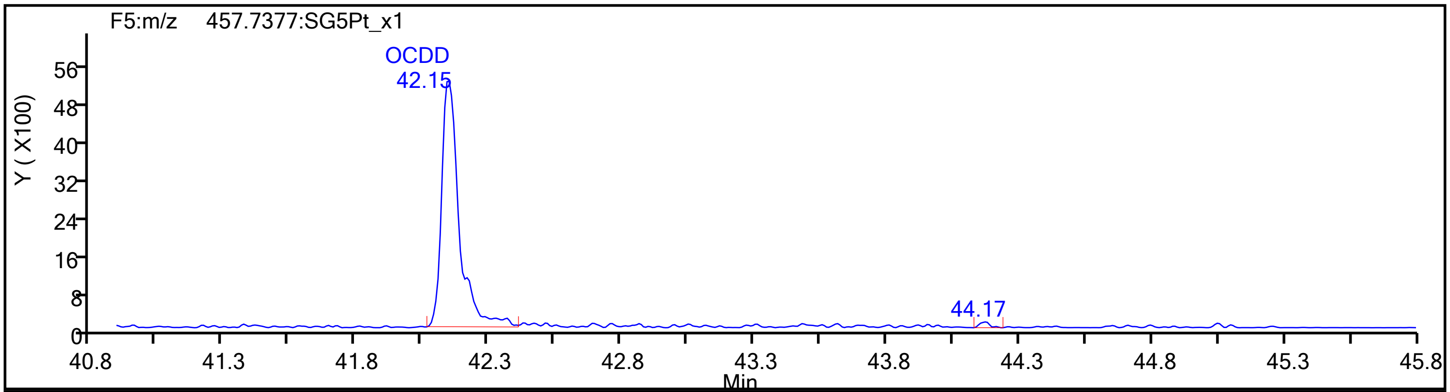

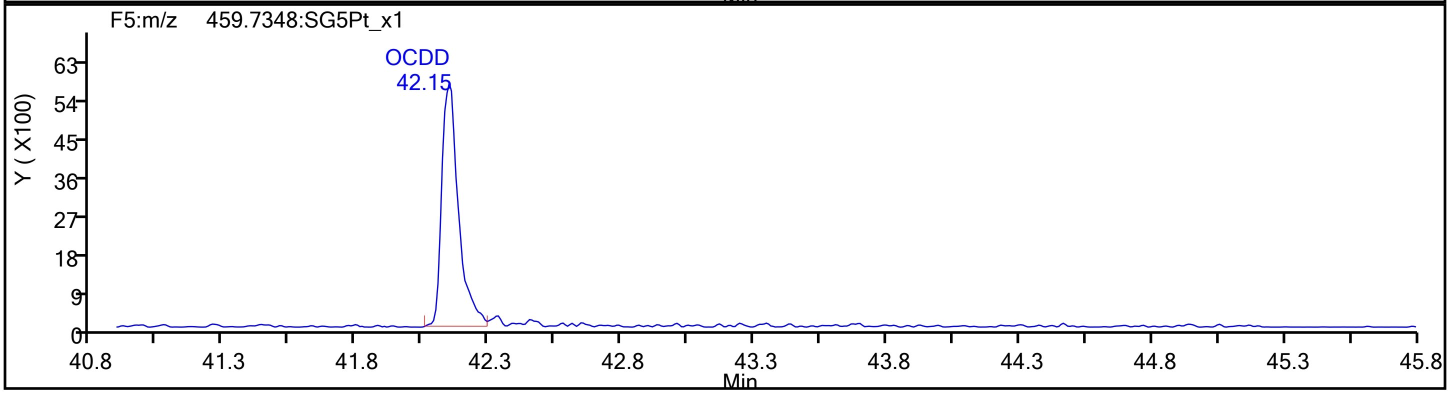

OCDD Standards

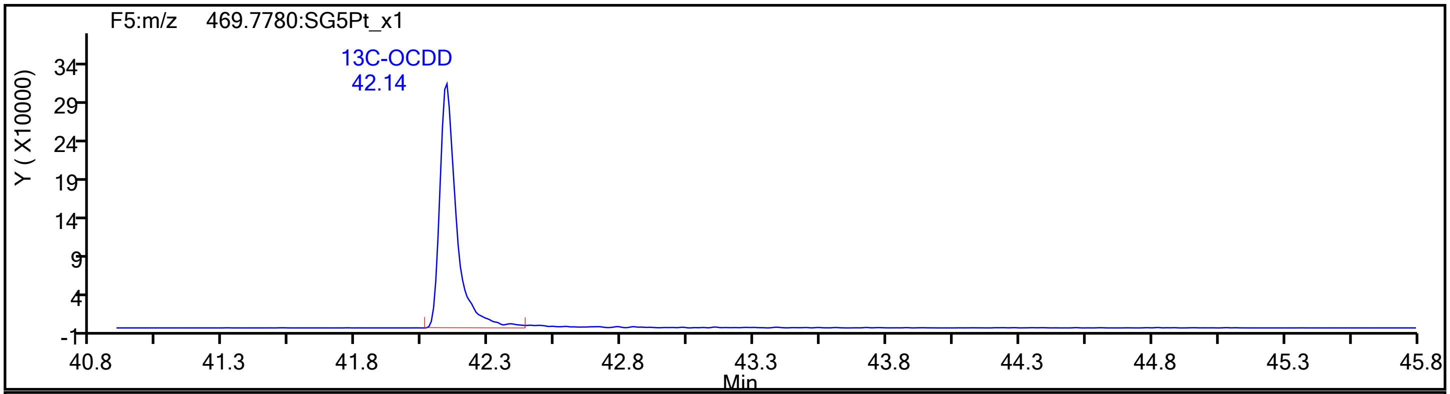

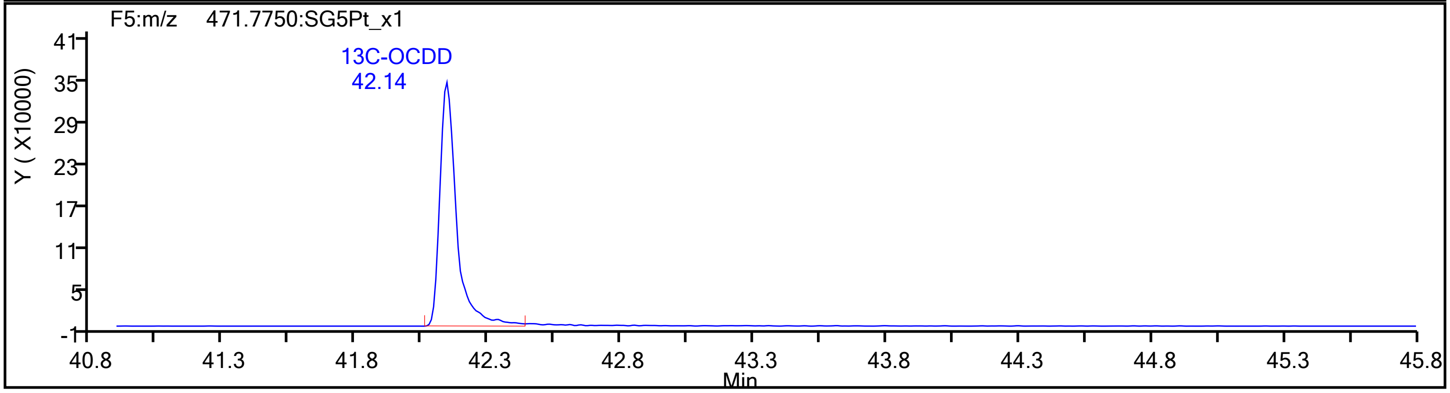

Report Date: 25-Nov-2020 14:44:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

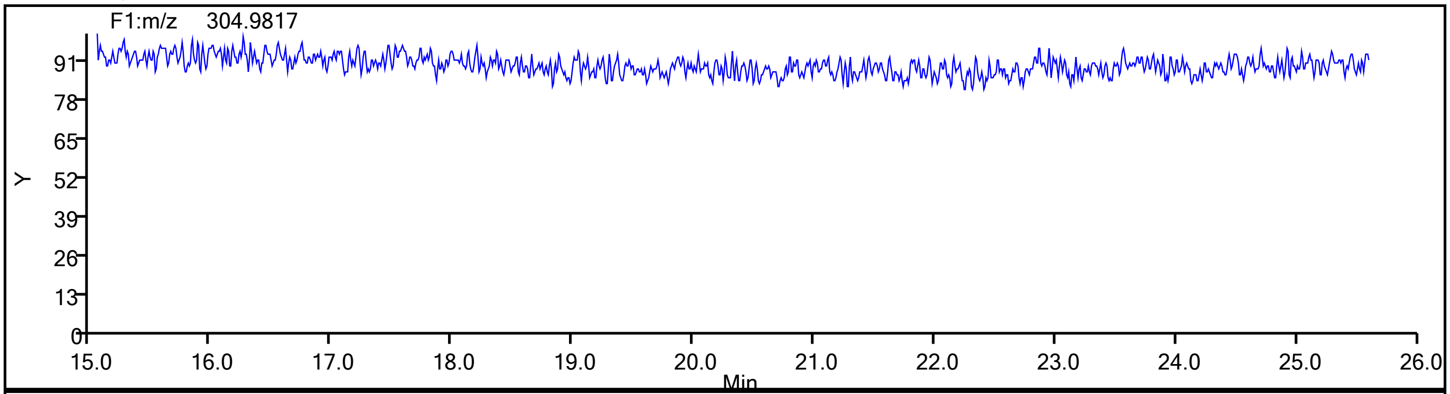

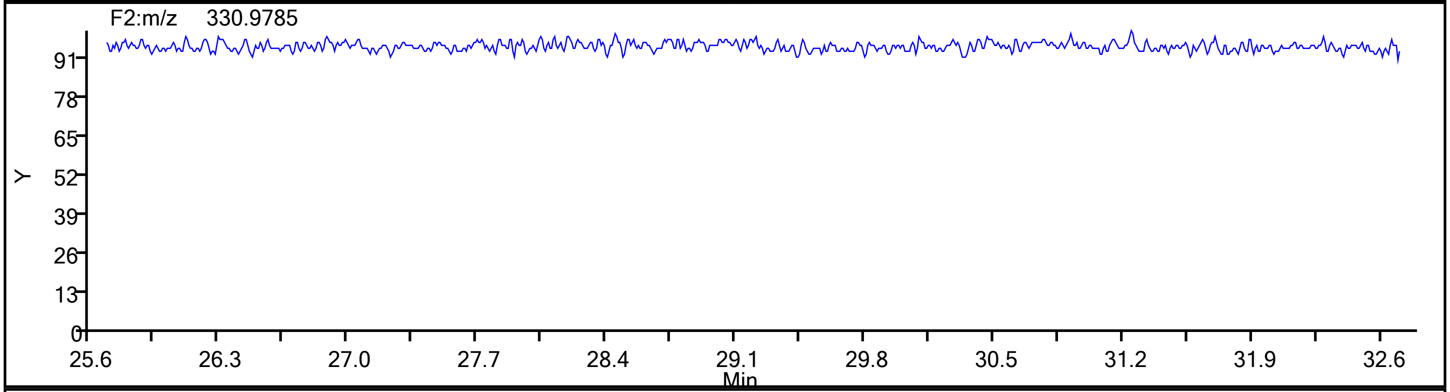

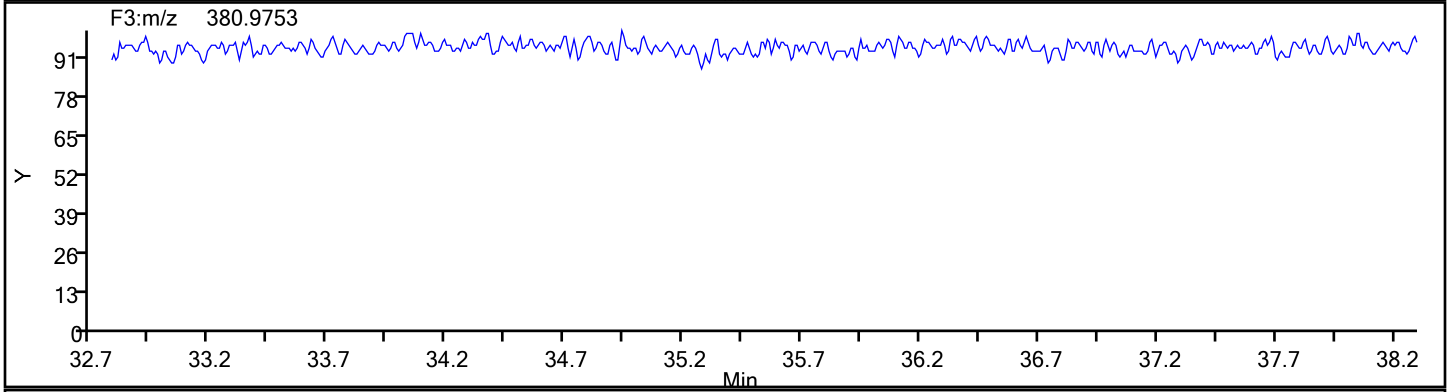

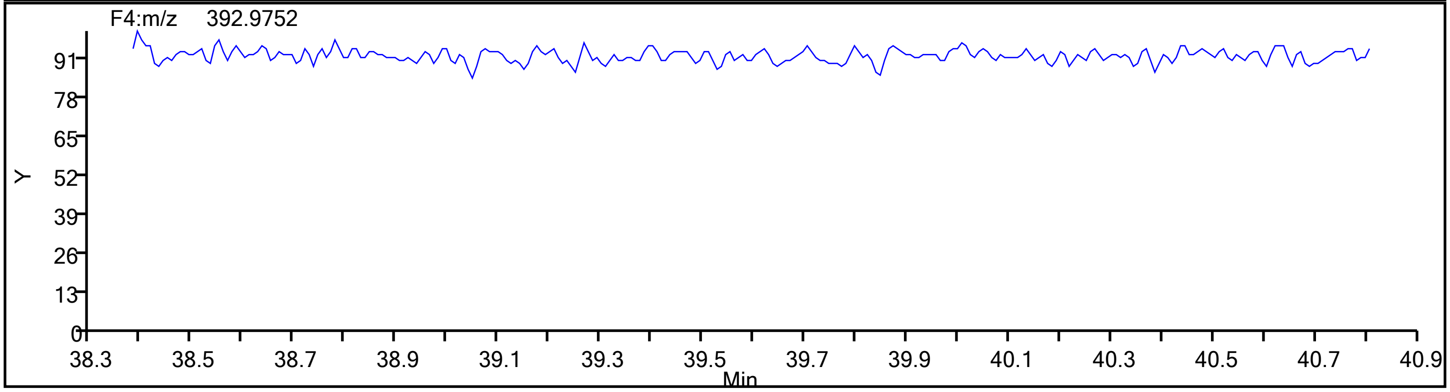

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Injection Date: 24-Nov-2020 10:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 31
Column Type: DB-5
Column Dia: 0.32 mm

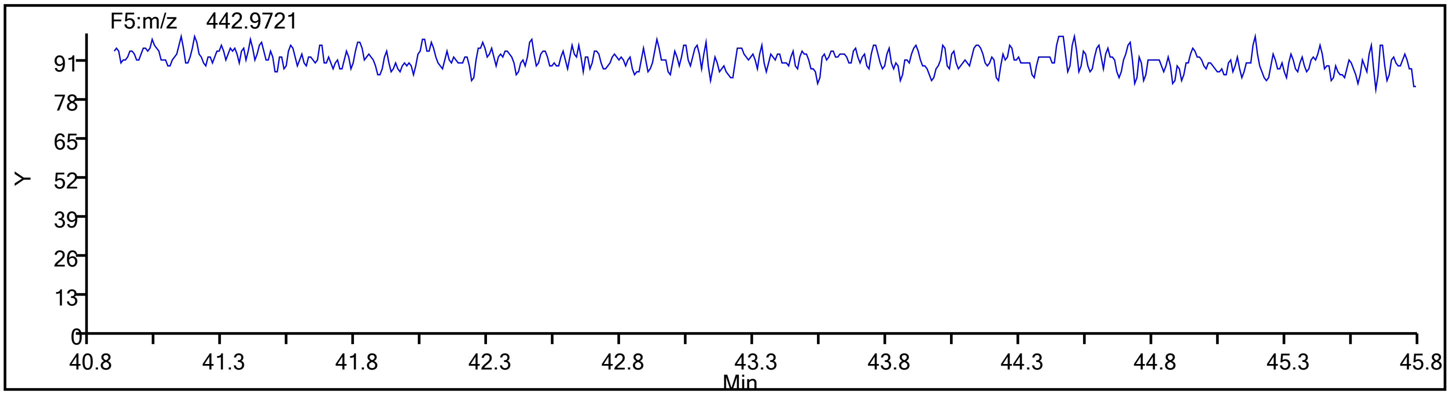

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-432973/2-A

Matrix: Water   Lab File ID: 23NO2010D5_52.d

Analysis Method: 1613B   Date Collected:

Extract. Method: 1613B   Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1000(mL)   Date Analyzed: 11/25/2020 01:18

Con. Extract Vol.: 20.0(uL)   Dilution Factor: 1

Injection Volume: 2(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 435203   Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	184		10	1.5
51207-31-9	2,3,7,8-TCDF	184		10	0.86
40321-76-4	1,2,3,7,8-PeCDD	823		50	2.1
57117-41-6	1,2,3,7,8-PeCDF	857		50	3.8
57117-31-4	2,3,4,7,8-PeCDF	903		50	4.4
39227-28-6	1,2,3,4,7,8-HxCDD	892		50	4.0
57653-85-7	1,2,3,6,7,8-HxCDD	887		50	3.7
19408-74-3	1,2,3,7,8,9-HxCDD	896		50	3.4
70648-26-9	1,2,3,4,7,8-HxCDF	873		50	6.5
57117-44-9	1,2,3,6,7,8-HxCDF	848		50	6.0
72918-21-9	1,2,3,7,8,9-HxCDF	853		50	4.7
60851-34-5	2,3,4,6,7,8-HxCDF	854		50	4.6
35822-46-9	1,2,3,4,6,7,8-HpCDD	859		50	3.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	851		50	8.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	875		50	12
3268-87-9	OCDD	1610		100	3.1
39001-02-0	OCDF	1670		100	2.7
41903-57-5	Total TCDD	184		10	1.5
30402-14-3	Total TCDF	184		10	0.86
36088-22-9	Total PeCDD	823		50	2.1
30402-15-4	Total PeCDF	1760		50	4.1
34465-46-8	Total HxCDD	2680		50	3.7
55684-94-1	Total HxCDF	3430		50	5.4
37871-00-4	Total HpCDD	859		50	3.4
38998-75-3	Total HpCDF	1730		50	10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-432973/2-A
Matrix: Water	Lab File ID: 23NO2010D5_52.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1000(mL)	Date Analyzed: 11/25/2020 01:18
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 435203	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		20-175
89059-46-1	13C-2,3,7,8-TCDF	98		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	80		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	88		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	86		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	74		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	88		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	91		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	92		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	96		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	75		20-186
114423-97-1	13C-OCDD	73		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		31-191

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Lims ID: LCS 320-432973/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Nov-2020 01:18:50 ALS Bottle#: 52 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-432973/2-A LCS 320-432973/2-A RA
Misc. Info.: 23NO2010D5
Operator ID: SMA, ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Nov-2020 08:07:24 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1603

First Level Reviewer: dadunj Date: 27-Nov-2020 08:08:24

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.854	29385994	0.73	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.340	39354341	0.80	1.3598	98.5	98.5	0.3935	0.3935	98.48	
2,3,7,8-TCDF	17.354	3282866	0.74	0.9077	9.190	9.190	0.0430	0.0430	91.90	
A Non-2,3,7,8-sub-TCDF	17.029						0.0430	0.0430		
S Total TCDF					9.190	9.190	0.0430	0.0430		
D 13C-2,3,7,8-TCDD	18.050	25063281	0.74	1.0536	81.0	81.0	0.2320	0.2320	80.95	
2,3,7,8-TCDD	18.065	2320658	0.78	1.0061	9.203	9.203	0.0757	0.0757	92.03	
$ 37Cl4-2,3,7,8-TCDD	18.065	12582092		1.0488	40.8	40.8	0.0566	0.0566	102	
A Non-2,3,7,8-sub-TCDD	17.483						0.0757	0.0757		
S Total TCDD					9.203	9.203	0.0757	0.0757		
D 13C-1,2,3,7,8-PeCDF	22.383	29272774	1.60	1.1306	88.1	88.1	0.2212	0.2212	88.11	
1,2,3,7,8-PeCDF	22.410	11473466	1.59	0.9147	42.8	42.8	0.1919	0.1919	85.70	
D 13C-2,3,4,7,8-PeCDF	23.733	26636072	1.60	1.0539	86.0	86.0	0.2372	0.2372	86.01	
2,3,4,7,8-PeCDF	23.760	11435253	1.60	0.9508	45.2	45.2	0.2199	0.2199	90.30	
A F1 PeCDFs	19.963						0.0490	0.0490		
A Non-2,3,7,8-sub-PeCDF	23.127						0.2046	0.2046		
S Total PeCDF					88.0	88.0	0.2059	0.2059		
D 13C-1,2,3,7,8-PeCDD	24.455	19010017	1.60	0.8084	80.0	80.0	0.1426	0.1426	80.02	
1,2,3,7,8-PeCDD	24.483	7789982	1.57	0.9955	41.2	41.2	0.1051	0.1051	82.33	
A Non-2,3,7,8-sub-PeCDD	23.351						0.1051	0.1051		
S Total PeCDD					41.2	41.2	0.1051	0.1051		
D 13C-1,2,3,4,7,8-HxCDF	30.533	19772814	0.53	0.9225	87.8	87.8	0.5232	0.5232	87.79	
1,2,3,4,7,8-HxCDF	30.559	9566432	1.25	1.1090	43.6	43.6	0.3250	0.3250	87.26	
D 13C-1,2,3,6,7,8-HxCDF	30.719	22904128	0.51	1.0336	90.8	90.8	0.4669	0.4669	90.77	
1,2,3,6,7,8-HxCDF	30.746	10416893	1.27	1.0721	42.4	42.4	0.2998	0.2998	84.84	
D 13C-2,3,4,6,7,8-HxCDF	31.545	22815073	0.50	0.9773	95.6	95.6	0.4938	0.4938	95.62	
2,3,4,6,7,8-HxCDF	31.558	10556049	1.23	1.0838	42.7	42.7	0.2290	0.2290	85.38	
D 13C-1,2,3,7,8,9-HxCDF	32.343	20478550	0.53	0.9153	91.6	91.6	0.5273	0.5273	91.64	
1,2,3,7,8,9-HxCDF	32.356	9544677	1.23	1.0931	42.6	42.6	0.2329	0.2329	85.28	
A Non-2,3,7,8-sub-HxCDF	30.227						0.2652	0.2652		
S Total HxCDF					171.4	171.4	0.2717	0.2717		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.157	24414327	1.26	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.718	14461656	1.27	0.7977	74.3	74.3	0.3282	0.3282	74.26	
1,2,3,4,7,8-HxCDD	31.744	6455934	1.25	1.0014	44.6	44.6	0.1978	0.1978	89.15	
D 13C-1,2,3,6,7,8-HxCDD	31.824	18981575	1.27	1.0010	77.7	77.7	0.2615	0.2615	77.67	
1,2,3,6,7,8-HxCDD	31.837	7494747	1.29	0.8902	44.4	44.4	0.1865	0.1865	88.71	
1,2,3,7,8,9-HxCDD	32.170	7927883	1.28	1.0579	44.8	44.8	0.1707	0.1707	89.63	
A Non-2,3,7,8-sub-HxCDD	30.905						0.1837	0.1837		
S Total HxCDD					133.8	133.8	0.1850	0.1850		
D 13C-1,2,3,4,6,7,8-HpCDF	33.770	16293893	0.43	0.8506	78.5	78.5	0.6589	0.6589	78.46	
1,2,3,4,6,7,8-HpCDF	33.782	9426019	1.06	1.3603	42.5	42.5	0.4176	0.4176	85.05	
D 13C-1,2,3,4,7,8,9-HpCDF	34.864	13937071	0.43	0.7618	74.9	74.9	0.7358	0.7358	74.93	
1,2,3,4,7,8,9-HpCDF	34.876	8053709	1.05	1.3207	43.8	43.8	0.5955	0.5955	87.51	
A Non-2,3,7,8-sub-HpCDF	34.335						0.4921	0.4921		
S Total HpCDF					86.3	86.3	0.5065	0.5065		
D 13C-1,2,3,4,6,7,8-HpCDD	34.572	15212968	1.05	0.8873	70.2	70.2	0.2651	0.2651	70.23	
1,2,3,4,6,7,8-HpCDD	34.572	6523005	1.04	0.9988	42.9	42.9	0.1685	0.1685	85.86	
A Non-2,3,7,8-sub-HpCDD	34.311						0.1685	0.1685		
S Total HpCDD					42.9	42.9	0.1685	0.1685		
D 13C-OCDD	36.938	22409692	0.91	0.6287	146.0	146.0	0.1651	0.1651	73.00	
OCDF	37.034	13188652	0.90	1.4136	83.3	83.3	0.1340	0.1340	83.27	
OCDD	36.938	10189570	0.92	1.1290	80.6	80.6	0.1548	0.1548	80.55	

QC Flag Legend

Processing Flags

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Lims ID: LCS 320-432973/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Nov-2020 01:18:50 ALS Bottle#: 52 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-432973/2-A LCS 320-432973/2-A RA
Misc. Info.: 23NO2010D5
Operator ID: SMA, ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Nov-2020 08:07:24 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1603

First Level Reviewer: dadunj Date: 27-Nov-2020 08:08:24

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.854	17.854	0		12443850	2984842	3988	9970	748		
333.9339	17.838	17.854	-1		16942144	4037049	2876	7190	1404	0.73(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.340	17.324	1	0.971	17523855	4276992	10656	26640	401		
317.9389	17.340	17.324	1	0.971	21830486	5402894	4375	10937	1235	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.354	17.339	1	1.001	1396120	340806	618	1545	551		
305.8987	17.354	17.339	1	1.001	1886746	451524	893	2232	506	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.029						618	1545			
305.8987	17.029						893	2232			
13C-2,3,7,8-TCDD											
331.9368	18.050	18.035	1	1.011	10633635	2494437	3988	9970	625		
333.9339	18.050	18.035	1	1.011	14429646	3337920	2876	7190	1161	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.065	18.050	1	1.001	1020174	234383	1069	2672	219		
321.8936	18.065	18.050	1	1.001	1300484	305833	709	1772	431	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.065	18.065	0	1.012	12582092	3001838	1668	4170	1800		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.483						1069	2672			
321.8936	17.483						709	1772			
13C-1,2,3,7,8-PeCDF											
351.9000	22.383	22.383	0	1.254	18027525	3187561	4052	10130	787		
353.8970	22.383	22.383	0	1.254	11245249	1984876	2971	7427	668	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.410	22.410	0	1.001	7046133	1200765	2237	5592	537		
341.8567	22.396	22.410	-1	1.001	4427333	750879	1395	3487	538	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.733	23.746	-1	1.329	16393874	2677986	4052	10130	661		
353.8970	23.733	23.746	-1	1.329	10242198	1663948	2971	7427	560	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.760	23.774	-1	1.001	7035384	1145446	2237	5592	512		
341.8567	23.760	23.774	-1	1.001	4399869	701639	1395	3487	503	1.60(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.963						353	882			
341.8567	19.963						517	1292			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.127						2237	5592			
341.8567	23.127						1395	3487			
13C-1,2,3,7,8-PeCDD											
367.8949	24.455	24.469	-1	1.370	11686241	1762374	1788	4470	986		
369.8919	24.455	24.469	-1	1.370	7323776	1153244	1450	3625	795	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.483	24.496	-1	1.001	4759526	707783	764	1910	926		
357.8516	24.483	24.496	-1	1.001	3030456	447472	456	1140	981	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.351						764	1910			
357.8516	23.351						456	1140			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.533	30.546	-1	0.950	6833240	1317781	5375	13437	245		
385.8610	30.533	30.546	-1	0.950	12939574	2489988	7168	17920	347	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.559	30.560	0	1.001	5314510	1005111	3077	7692	327		
375.8178	30.559	30.560	0	1.001	4251922	799149	2412	6030	331	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.719	30.719	0	0.955	7733250	1468949	5375	13437	273		
385.8610	30.719	30.719	0	0.955	15170878	2800546	7168	17920	391	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.746	30.746	0	1.001	5823399	1083645	3077	7692	352		
375.8178	30.733	30.746	-1	1.000	4593494	867428	2412	6030	360	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.545	31.545	0	0.981	7652566	1829964	5375	13437	340		
385.8610	31.545	31.545	0	0.981	15162507	3699044	7168	17920	516	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.558	31.558	0	1.000	5826813	1457314	3077	7692	474		
375.8178	31.558	31.558	0	1.000	4729236	1155478	2412	6030	479	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.343	32.343	0	1.006	7069633	1845777	5375	13437	343		
385.8610	32.343	32.343	0	1.006	13408917	3543810	7168	17920	494	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.356	32.357	0	1.000	5271699	1413930	3077	7692	460		
375.8178	32.356	32.357	0	1.000	4272978	1119064	2412	6030	464	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.227						3077	7692			
375.8178	30.227						2412	6030			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.157	32.157	0		13593160	3633040	4074	10185	892		
403.8529	32.157	32.157	0		10821167	2864195	2730	6825	1049	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.718	31.718	0	0.986	8080291	2249855	4074	10185	552		
403.8529	31.718	31.718	0	0.986	6381365	1803743	2730	6825	661	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.744	31.744	0	1.001	3592394	993965	1747	4367	569		
391.8127	31.731	31.744	-1	1.000	2863540	798323	1465	3662	545	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.824	31.824	0	0.990	10606086	2690164	4074	10185	660		
403.8529	31.824	31.824	0	0.990	8375489	2147984	2730	6825	787	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.837	31.837	0	1.000	4217205	1047058	1747	4367	599		
391.8127	31.837	31.837	0	1.000	3277542	841598	1465	3662	574	1.29(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.170	32.170	0	1.014	4446702	1173509	1747	4367	672		
391.8127	32.170	32.170	0	1.014	3481181	911834	1465	3662	622	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						1747	4367			
391.8127	30.905						1465	3662			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.770	33.770	0	1.050	4912465	1650974	4486	11215	368		
419.8220	33.770	33.770	0	1.050	11381428	3761263	10081	25202	373	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.782	33.782	0	1.000	4852598	1535040	7379	18447	208		
409.7789	33.770	33.782	-1	1.000	4573421	1439590	4920	12300	293	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.864	34.864	0	1.084	4207639	1190997	4486	11215	265		
419.8220	34.864	34.864	0	1.084	9729432	2718783	10081	25202	270	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.876	34.888	-1	1.000	4116819	1127181	7379	18447	153		
409.7789	34.876	34.888	-1	1.000	3936890	1052983	4920	12300	214	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						7379	18447			
409.7789	34.335						4920	12300			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.572	34.572	0	1.075	7788927	2268651	3222	8055	704		
437.8140	34.572	34.572	0	1.075	7424041	2133502	2890	7225	738	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.572	34.596	-1	1.000	3319792	956681	1508	3770	634		
425.7737	34.572	34.596	-1	1.000	3203213	927128	1456	3640	637	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.311						1508	3770			
425.7737	34.311						1456	3640			
13C-OCDD											
469.7779	36.938	36.938	0	1.149	10707486	2618637	1334	3335	1963		
471.7750	36.926	36.938	-1	1.148	11702206	2801107	1364	3410	2054	0.91(0.76-1.02)	
OCDF											
441.7428	37.034	37.034	0	1.003	6263006	1475469	1039	2597	1420		
443.7399	37.034	37.034	0	1.003	6925646	1630111	1014	2535	1608	0.90(0.76-1.02)	
OCDD											
457.7377	36.938	36.938	0	1.000	4887860	1202081	838	2095	1434		
459.7348	36.938	36.938	0	1.000	5301710	1350235	1056	2640	1279	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

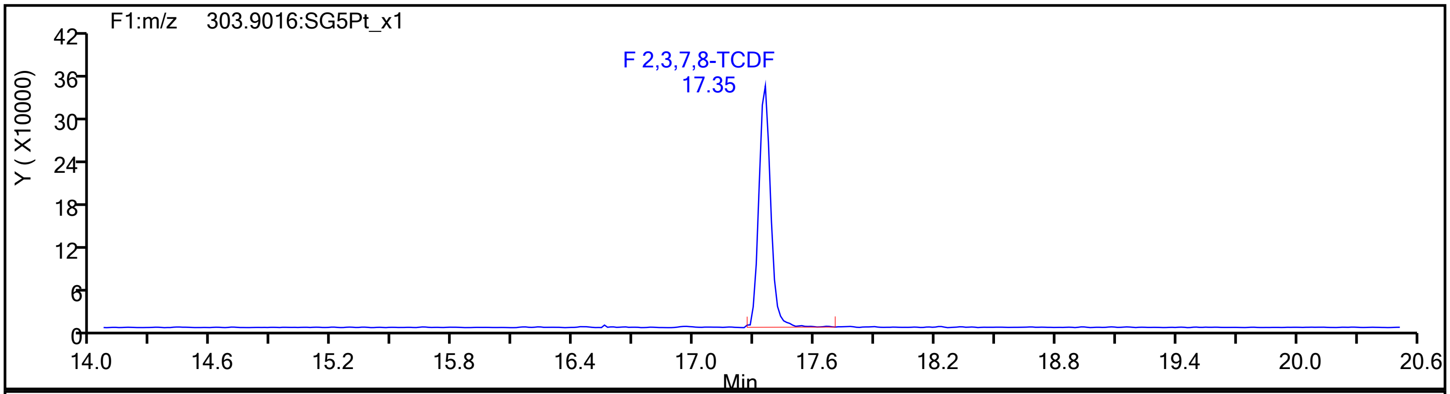

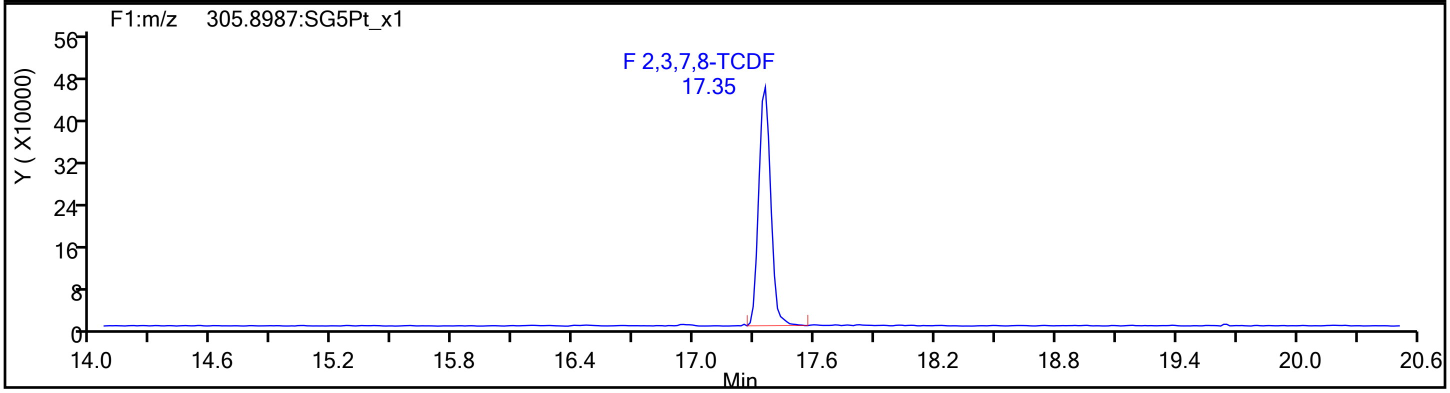

TCDF Standards

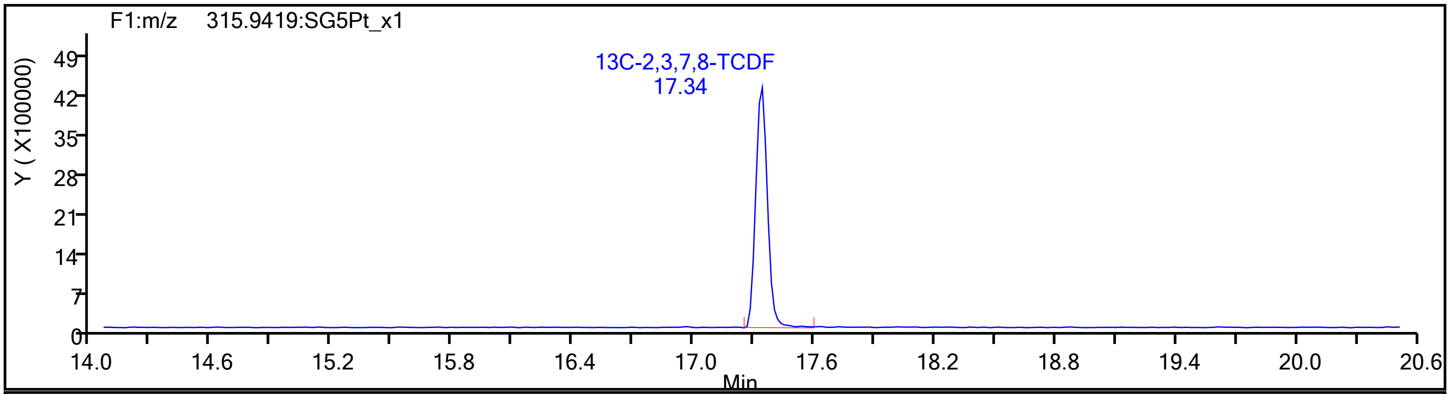

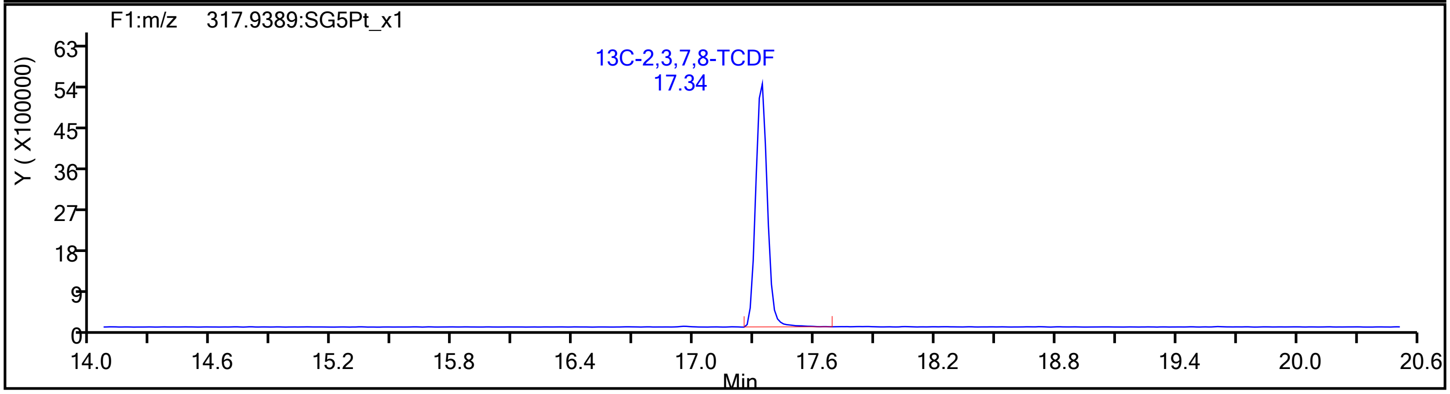

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

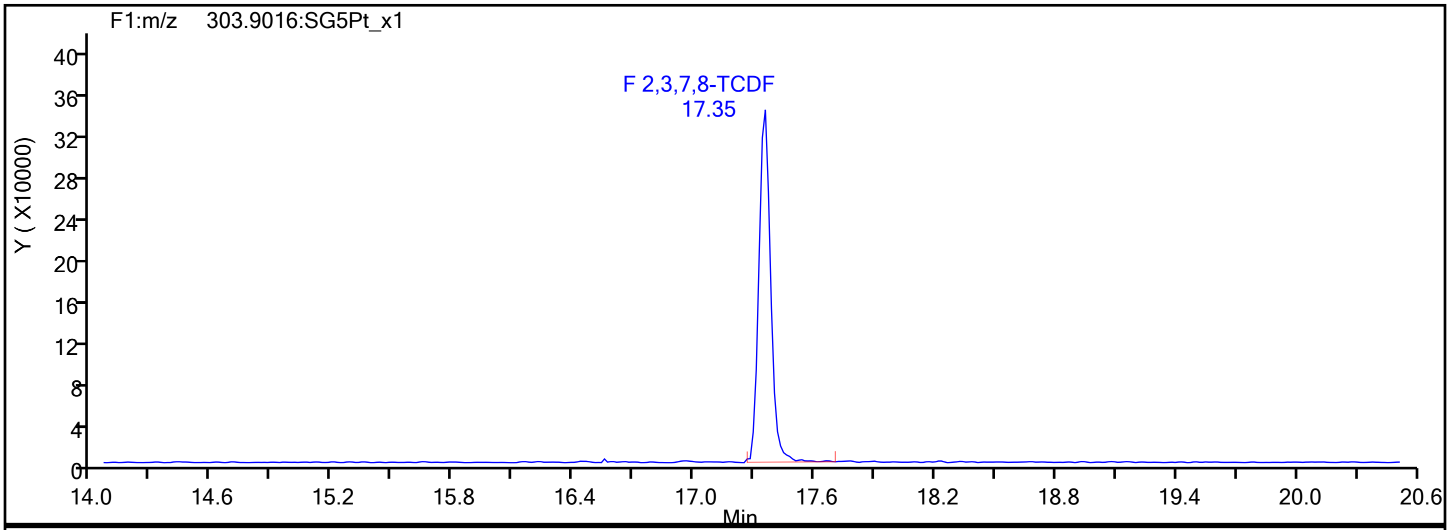

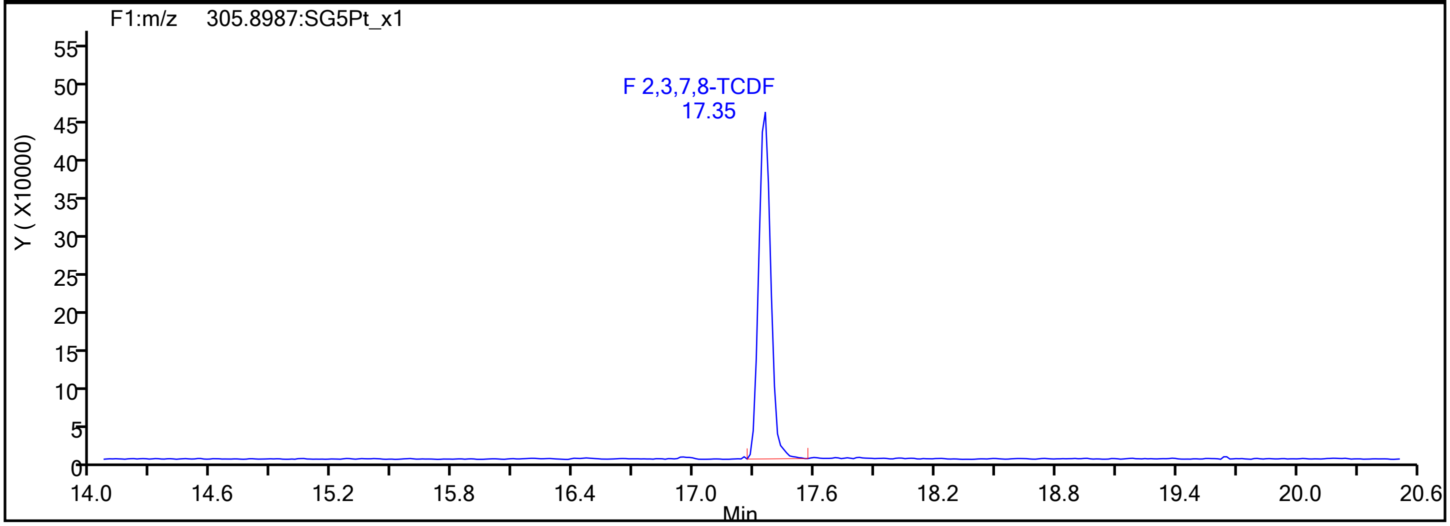

TCDF Interference Mass

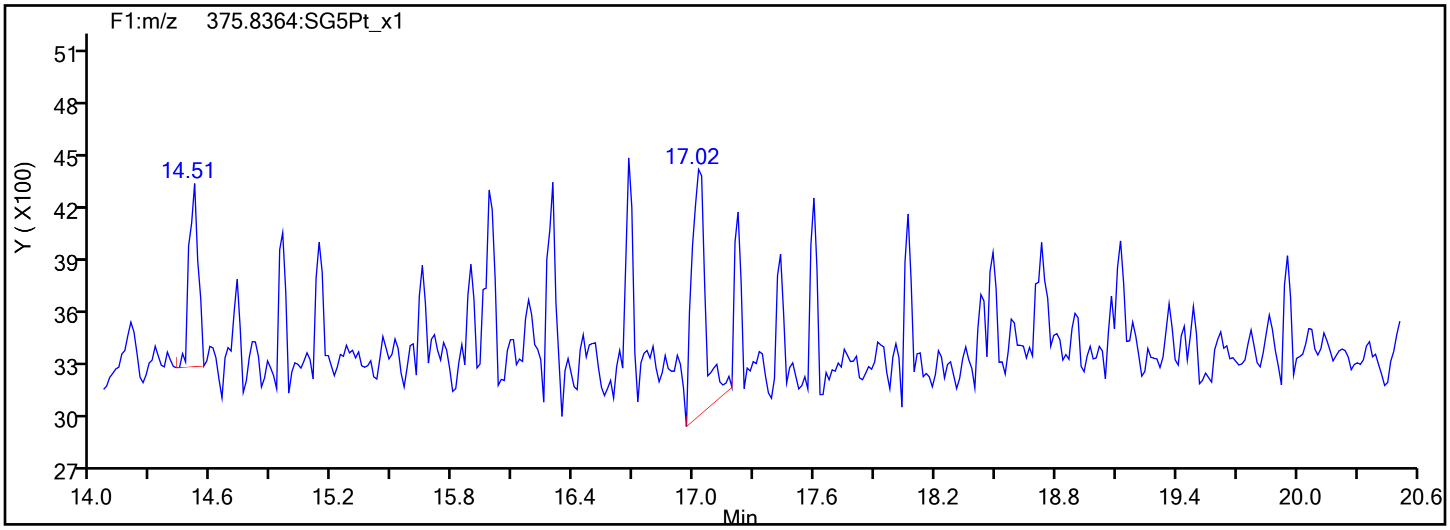

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Injection Date: 25-Nov-2020 01:18:50
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 27
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

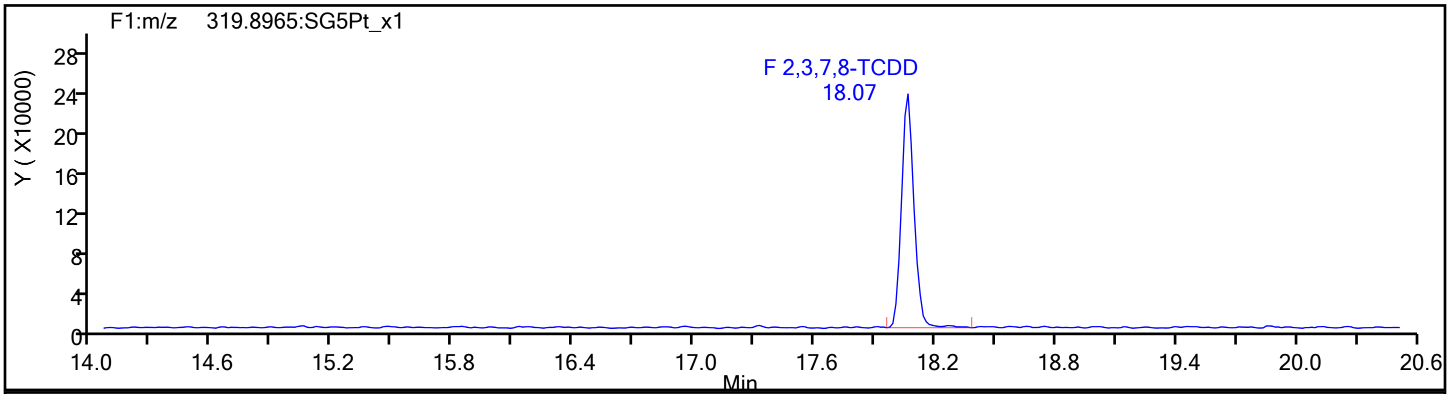

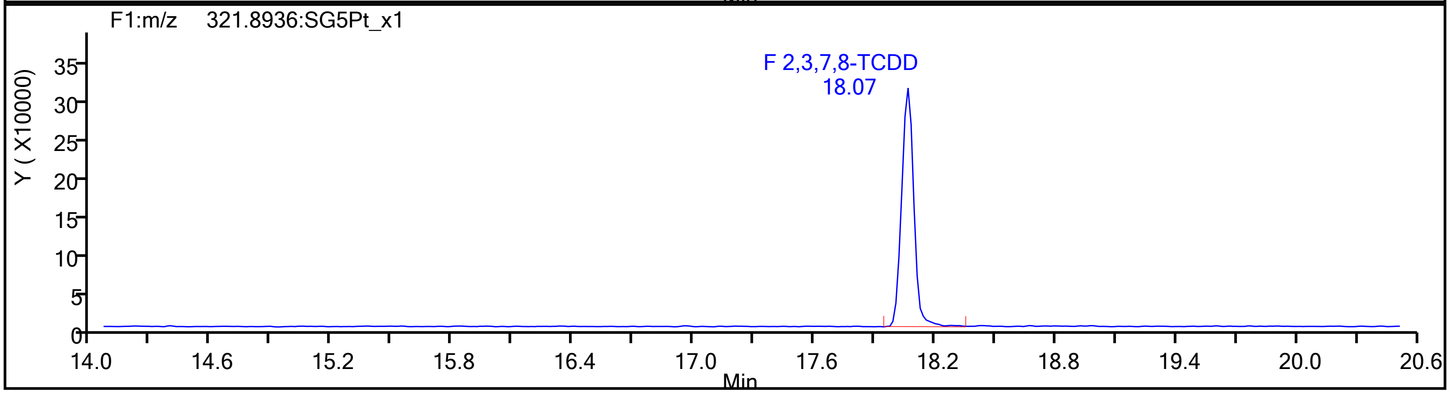

TCDD Standards

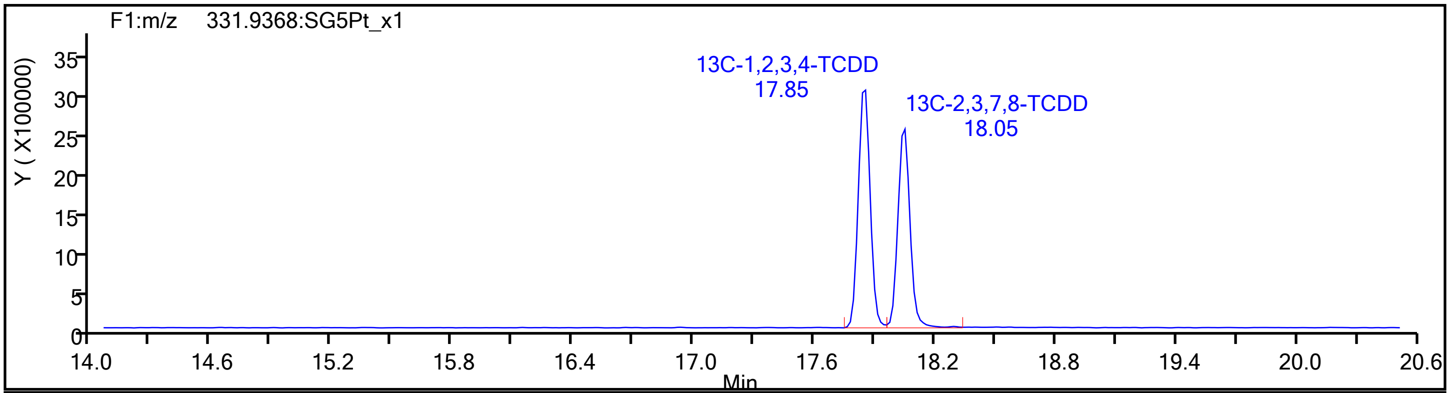

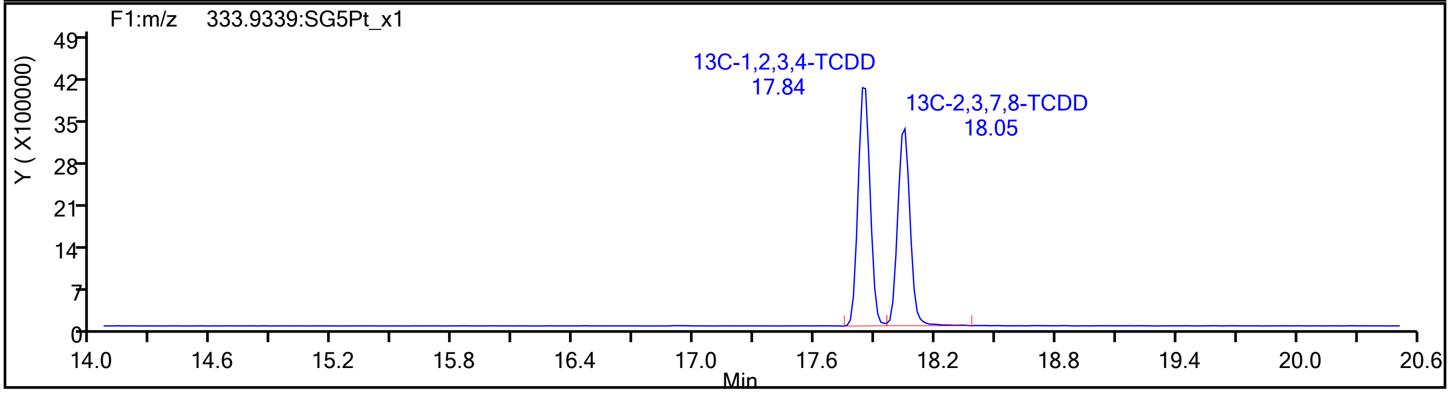

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

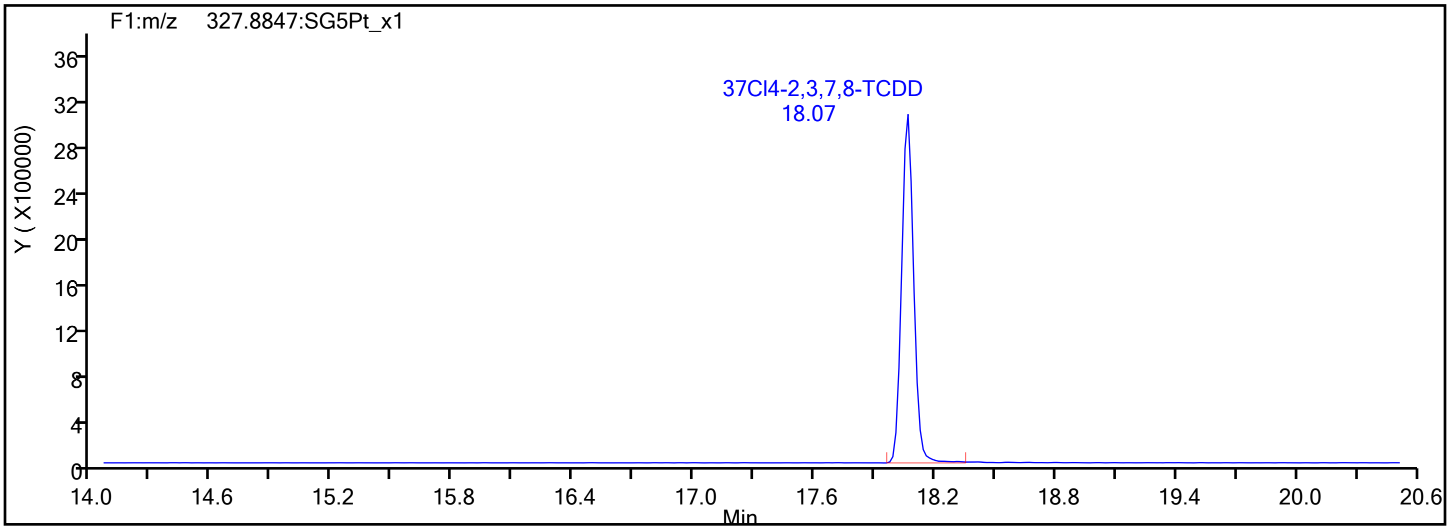

37Cl4-TCDD Standards

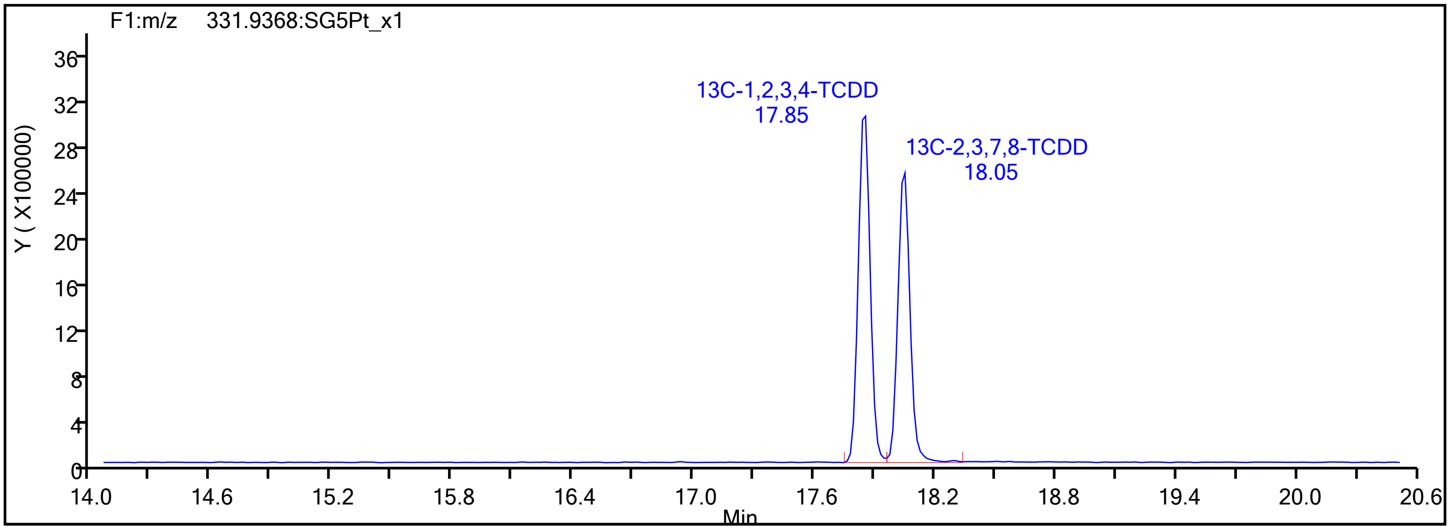

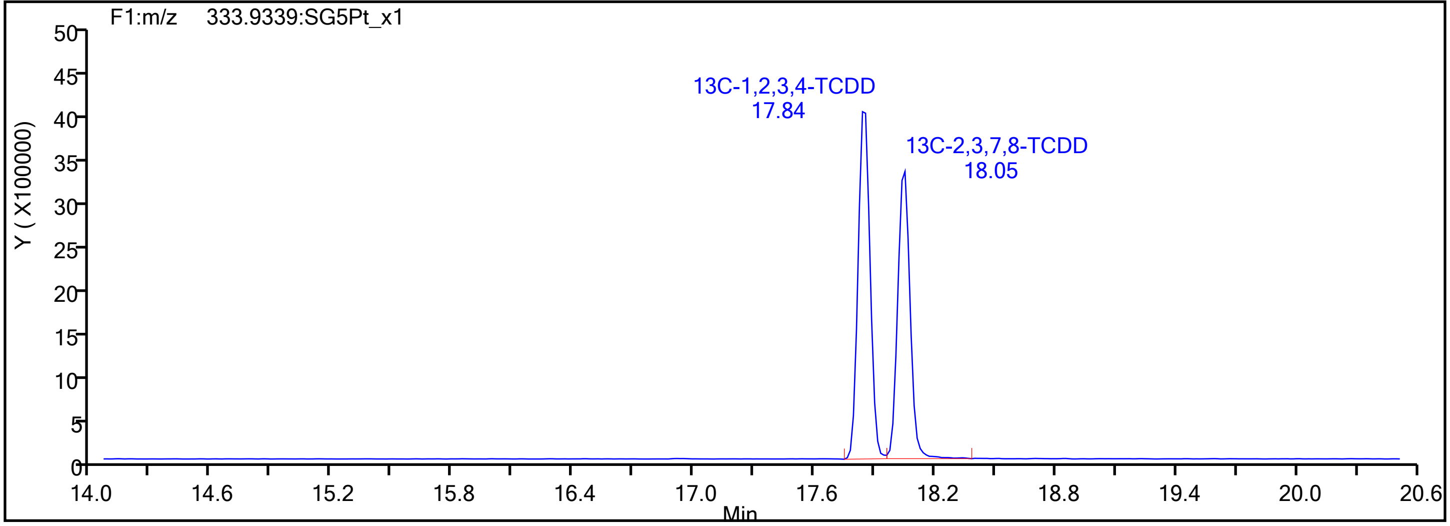

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

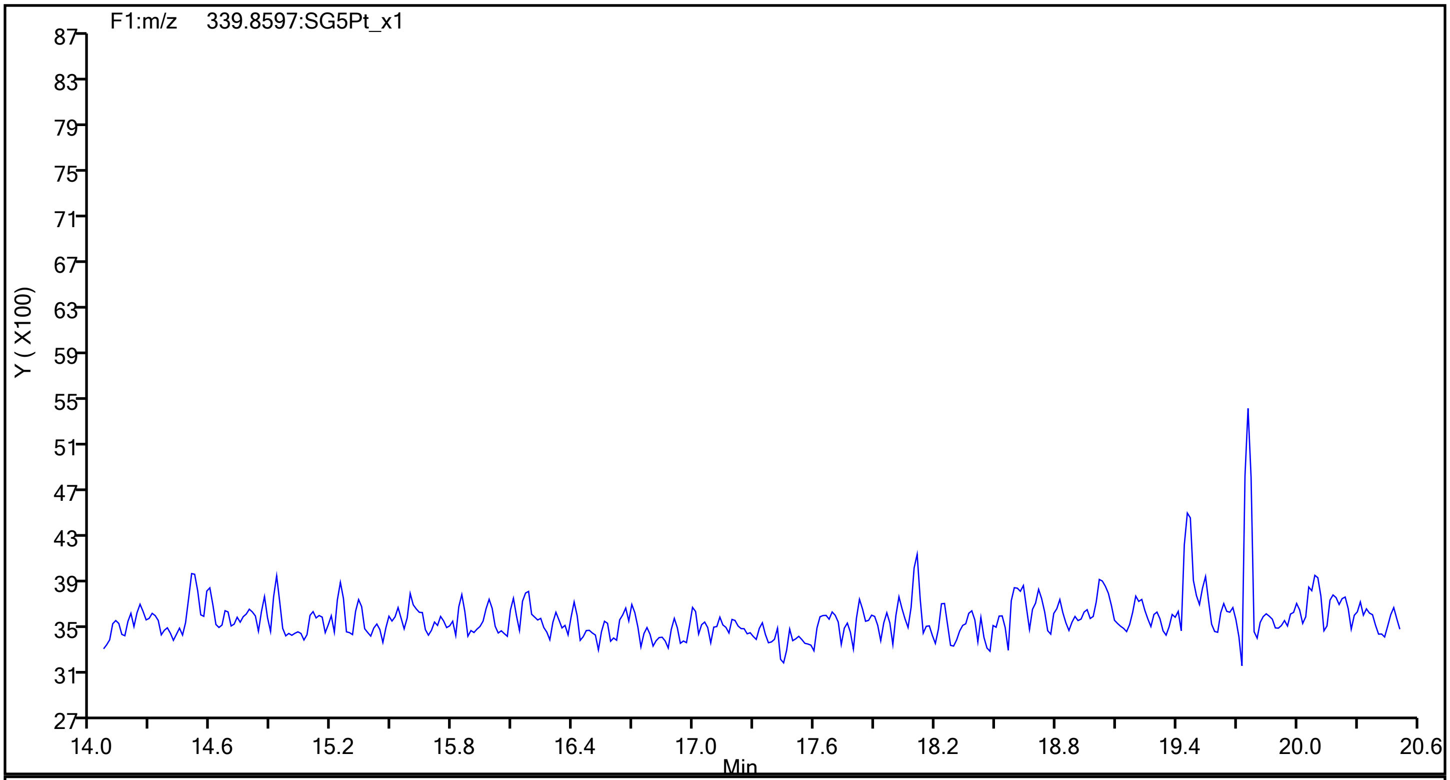

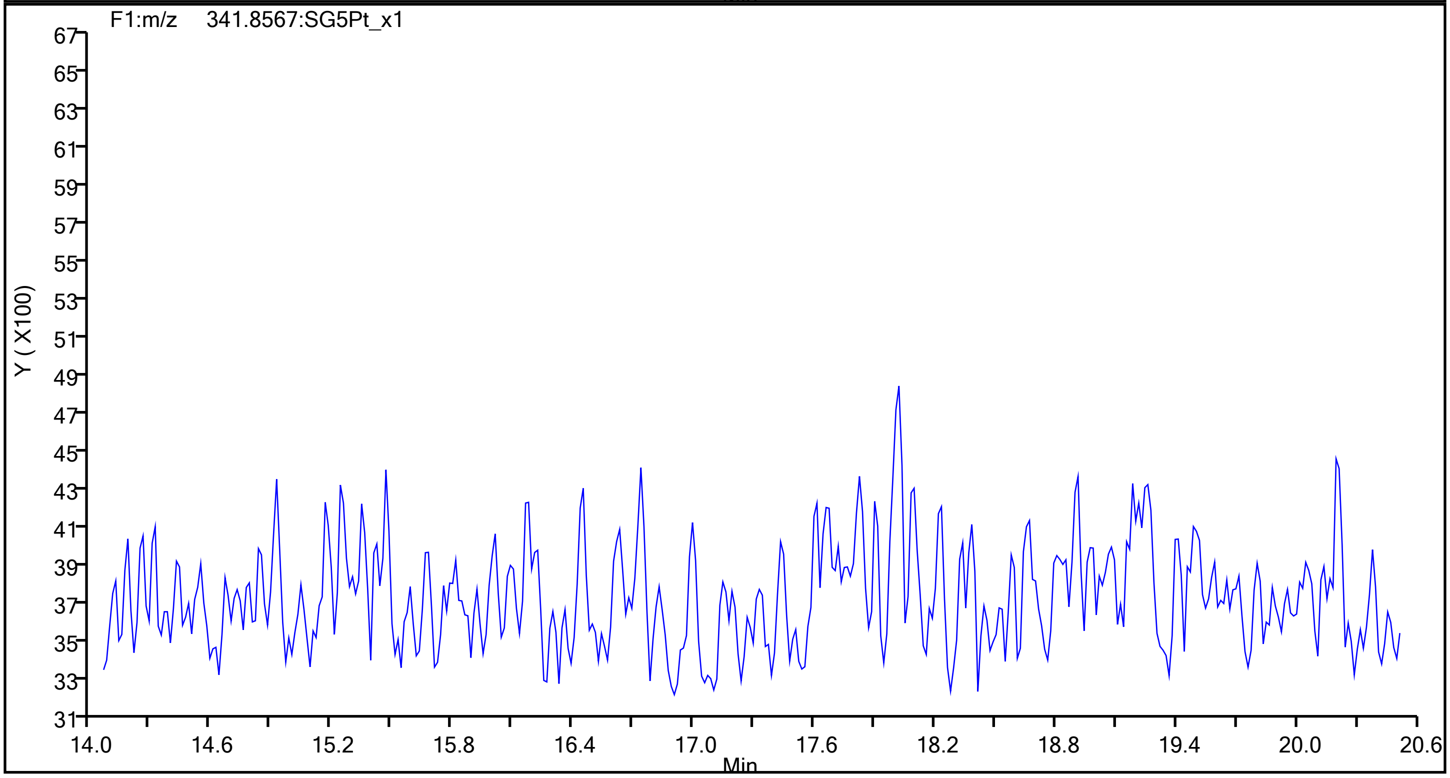

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

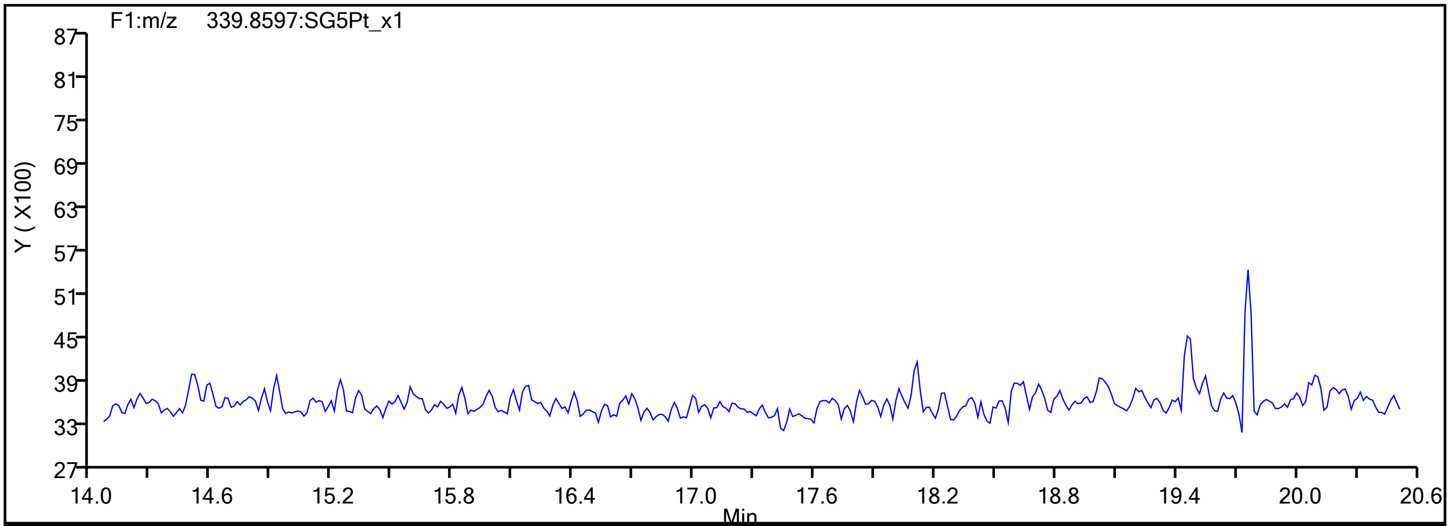

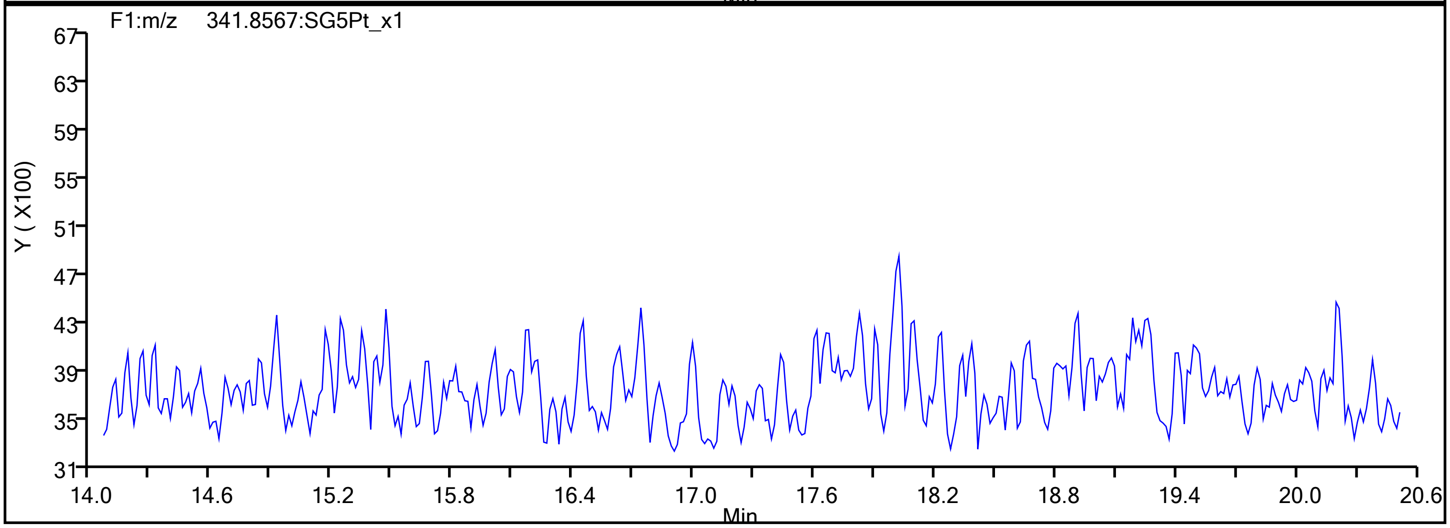

F1 PeCDFs Interference Mass

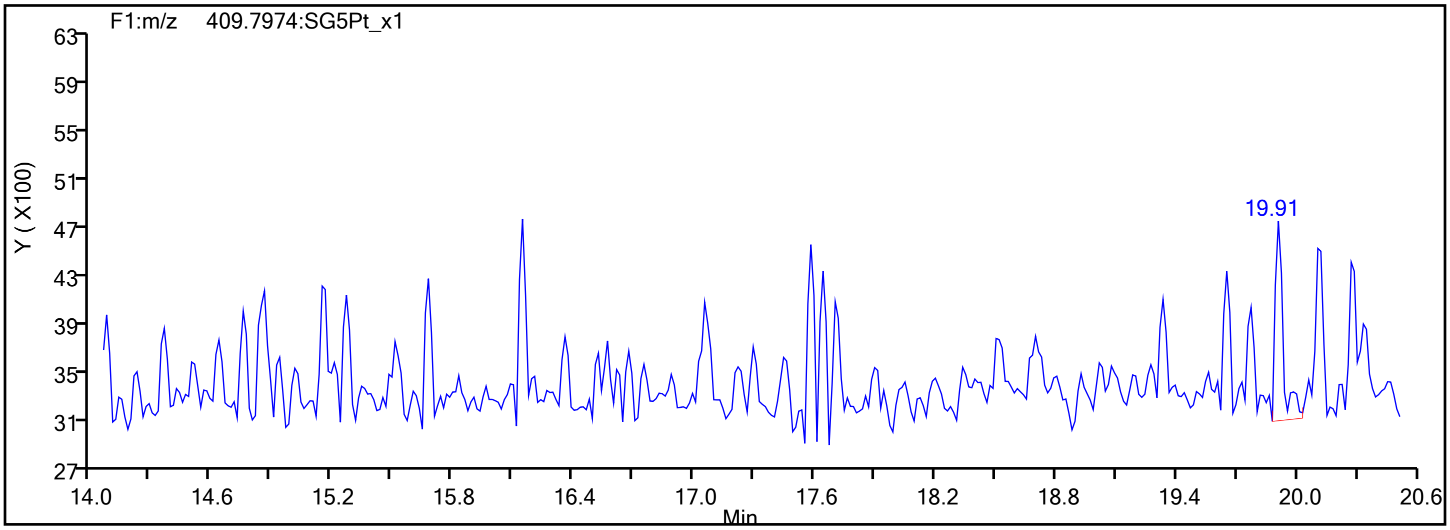

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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PeCDF

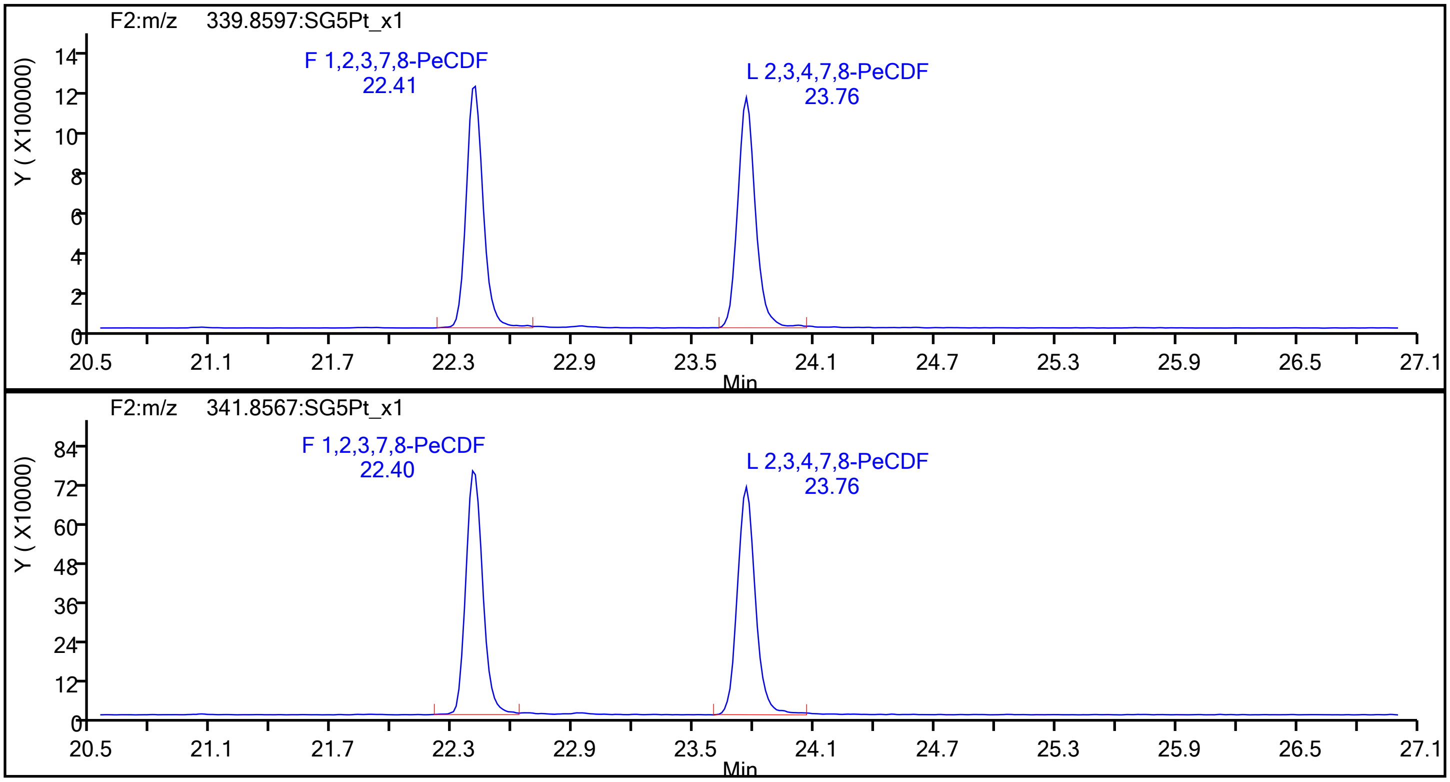

PeCDF Standards

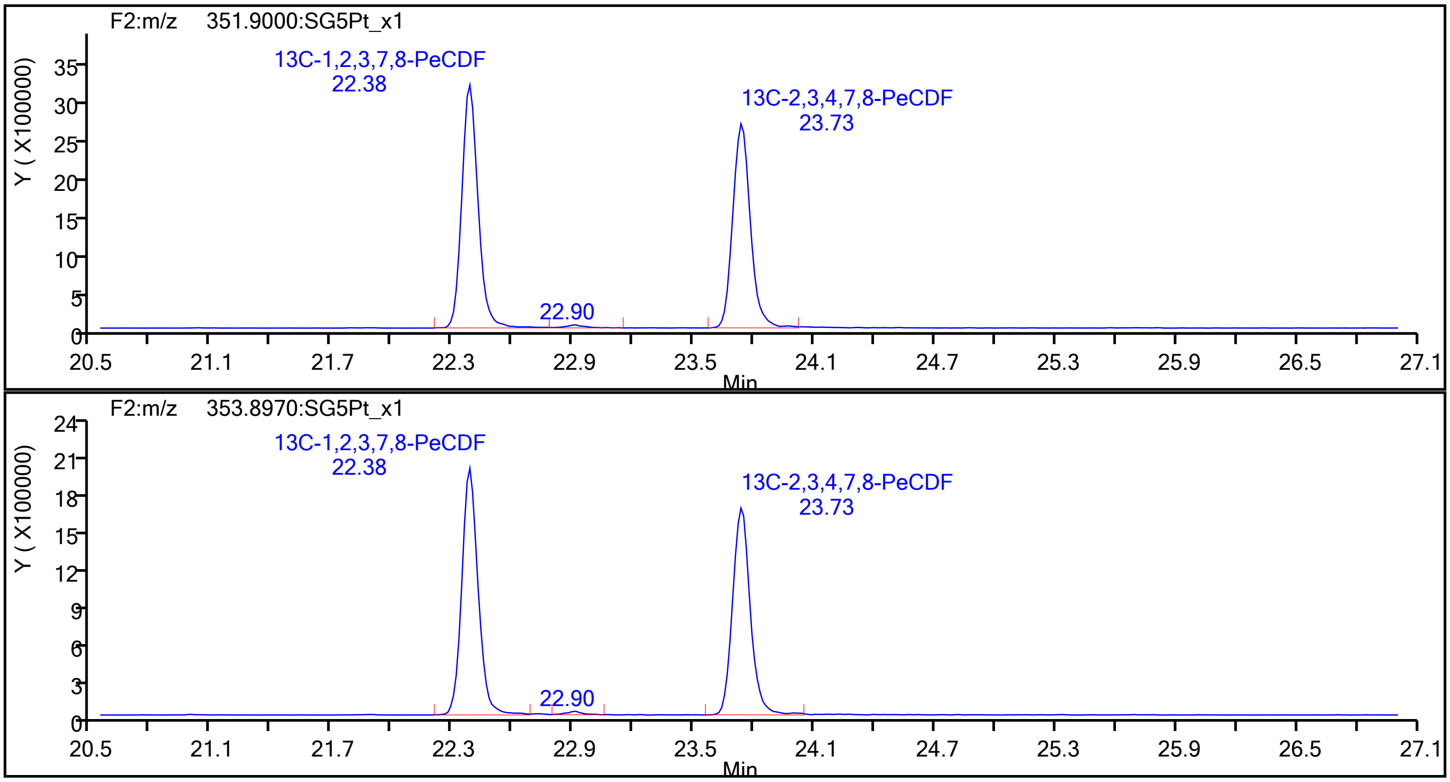

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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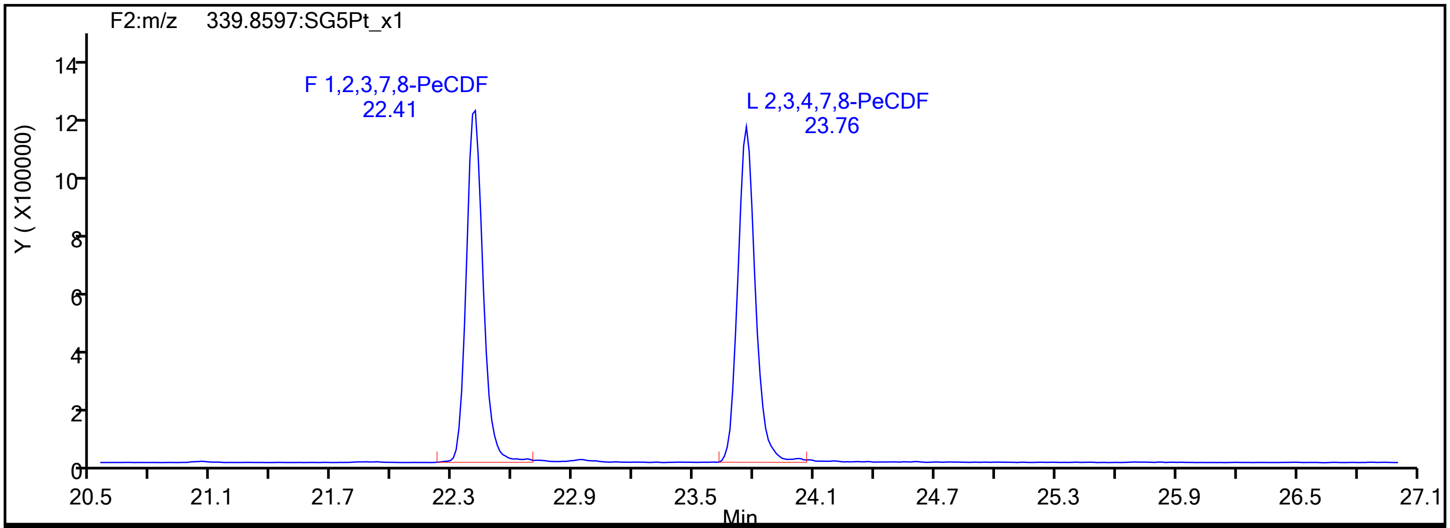

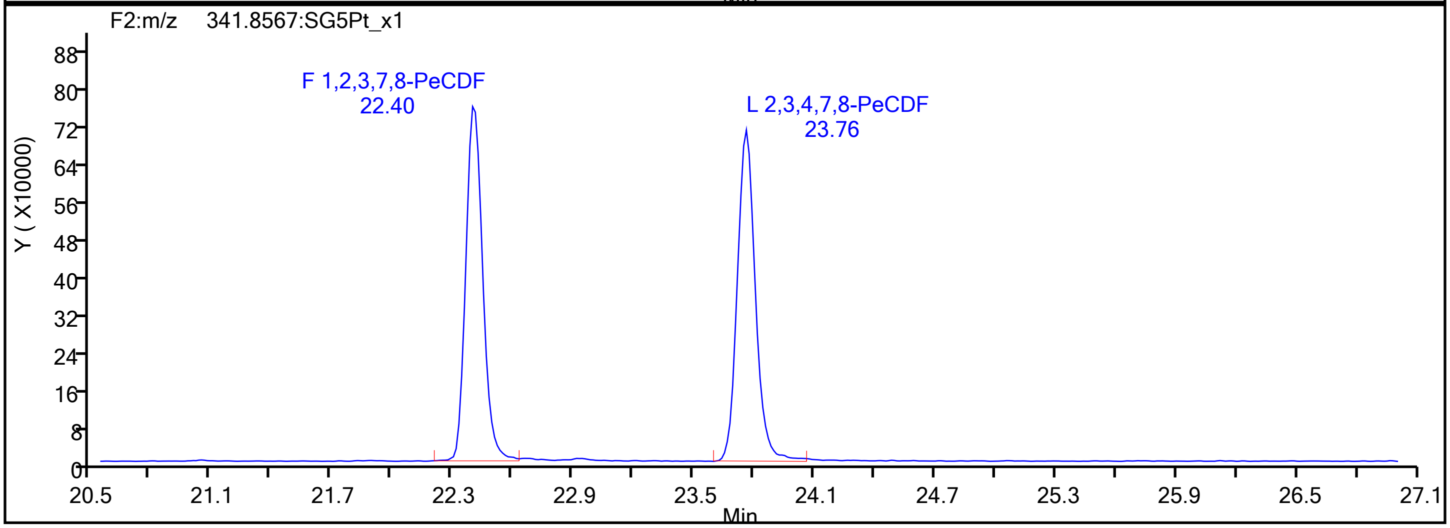

PeCDF Interference Mass

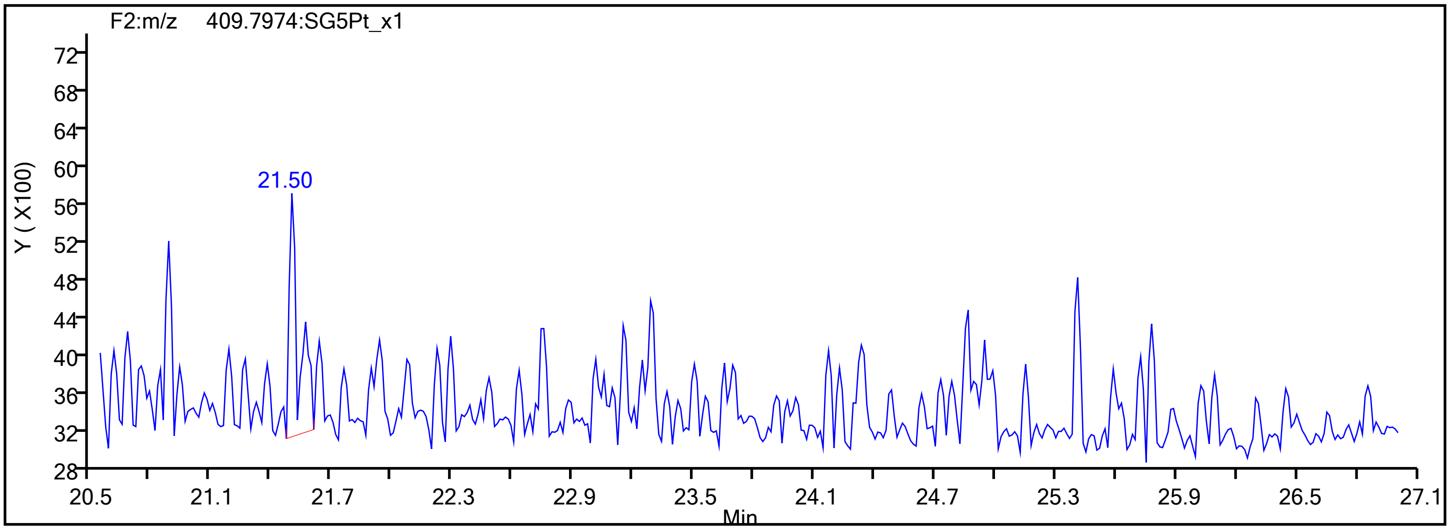

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Eurofins TestAmerica, Sacramento

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PeCDD

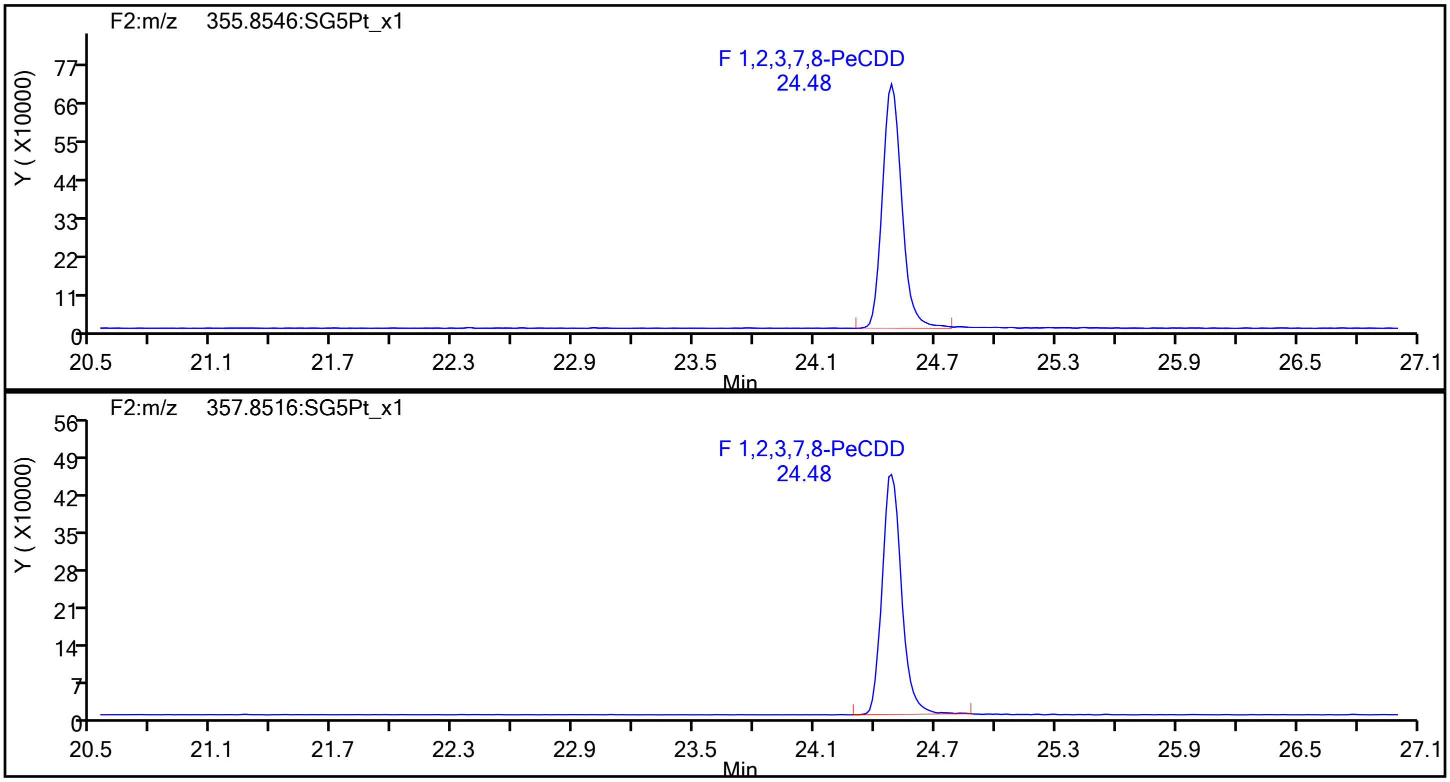

PeCDD Standards

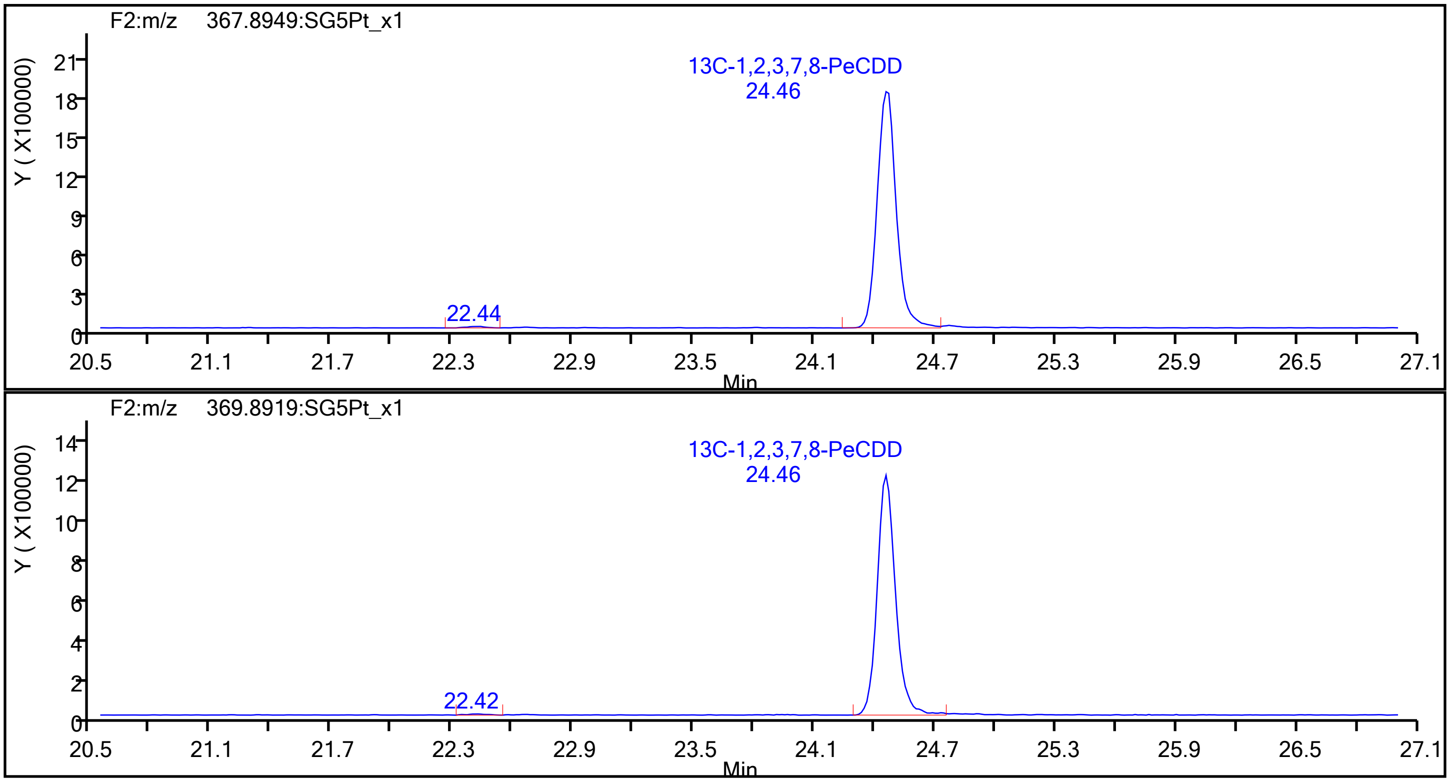

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Eurofins TestAmerica, Sacramento

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HxCDF

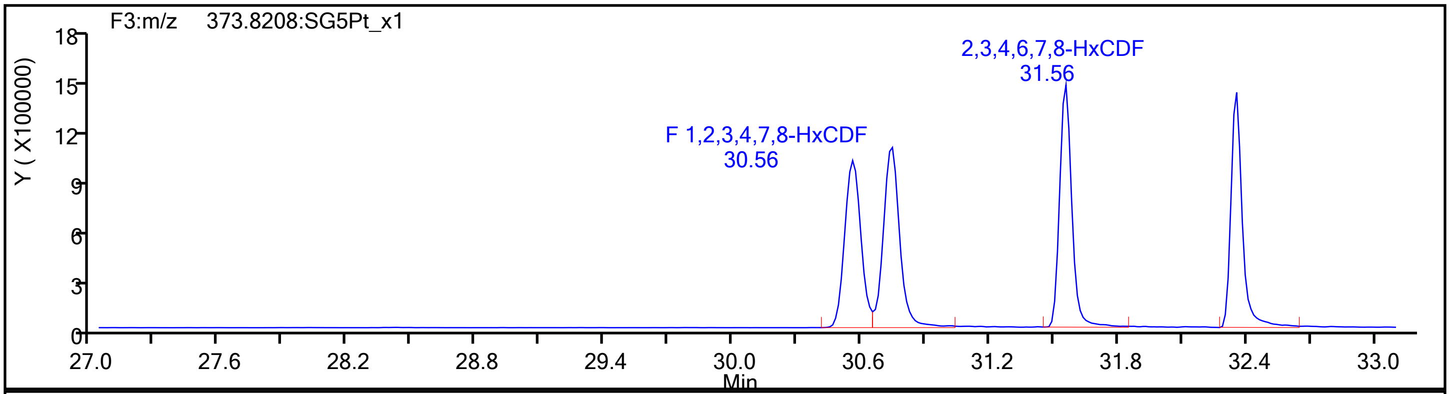

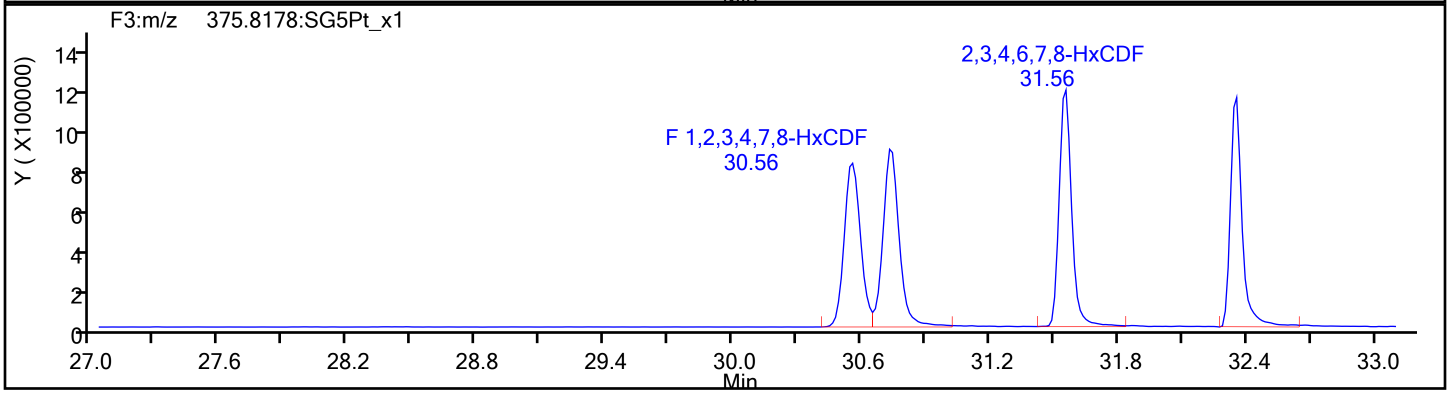

HxCDF Standards

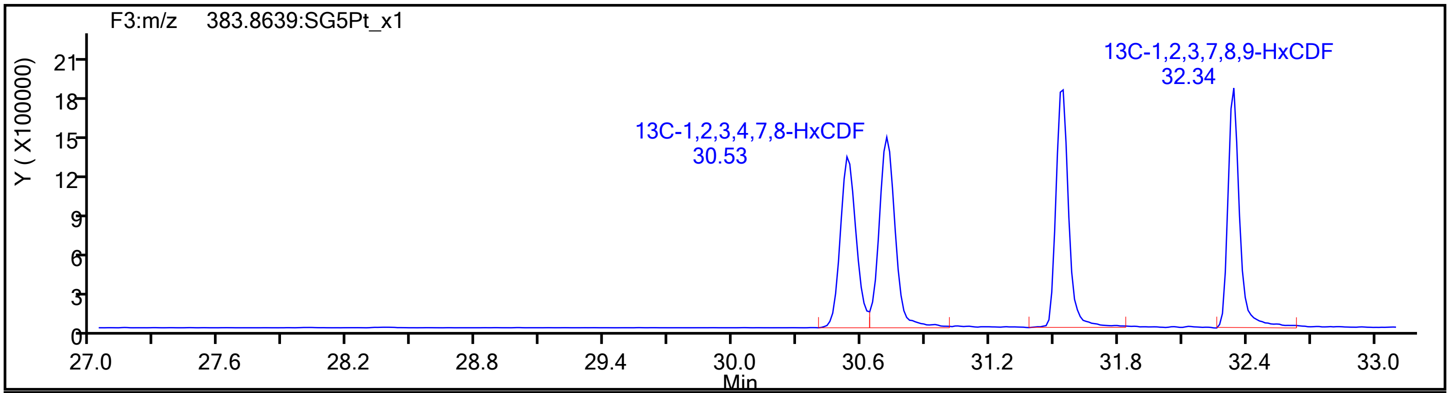

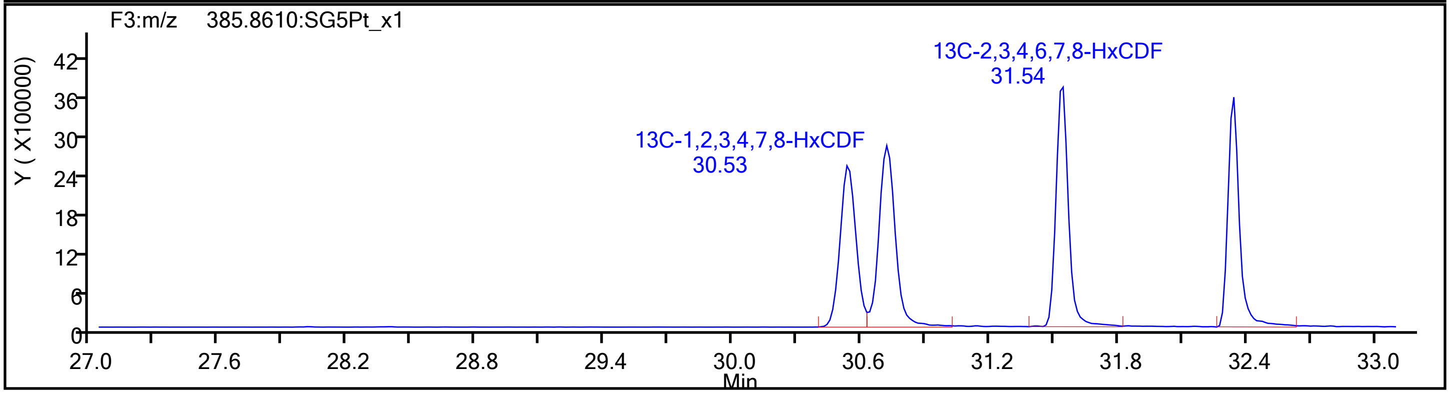

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Eurofins TestAmerica, Sacramento

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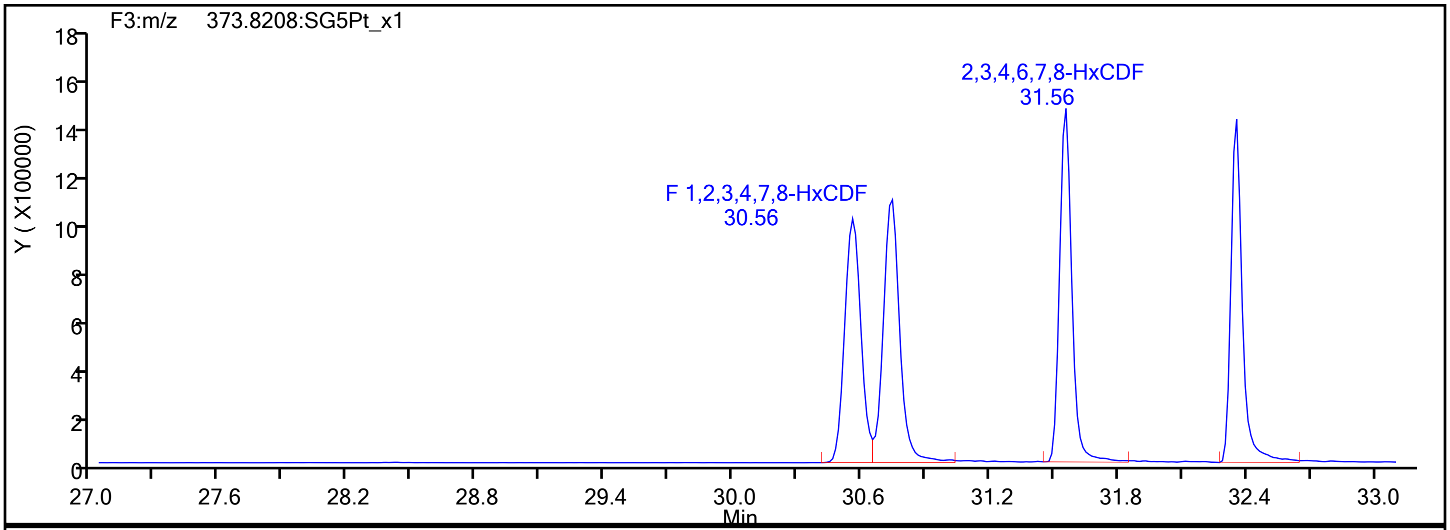

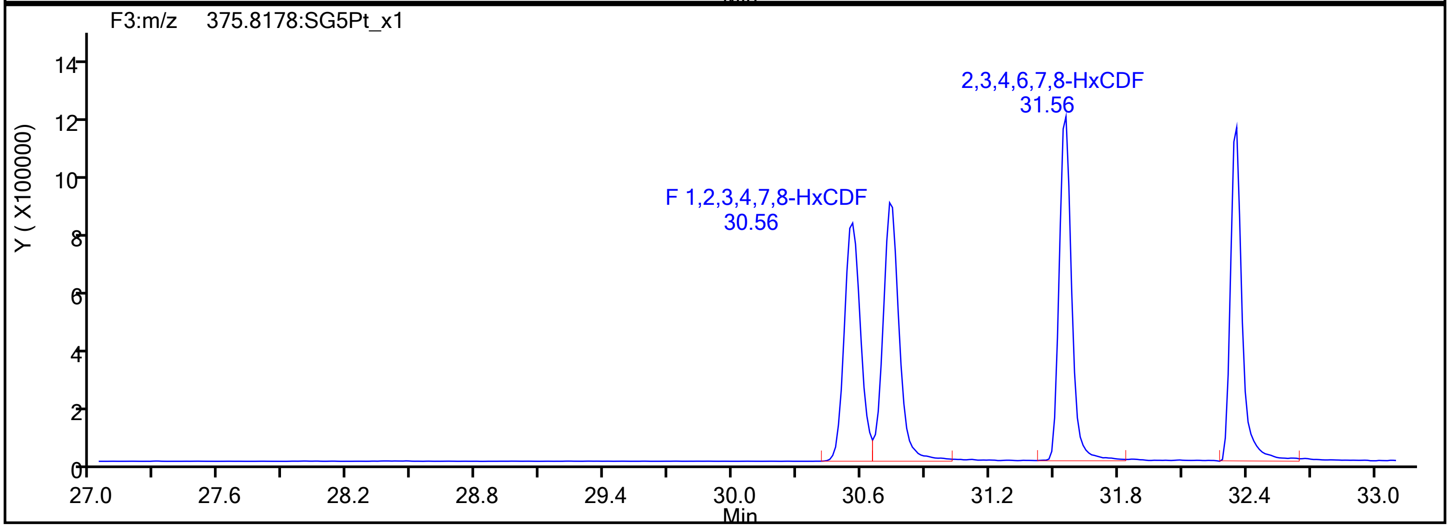

HxCDF Interference Mass

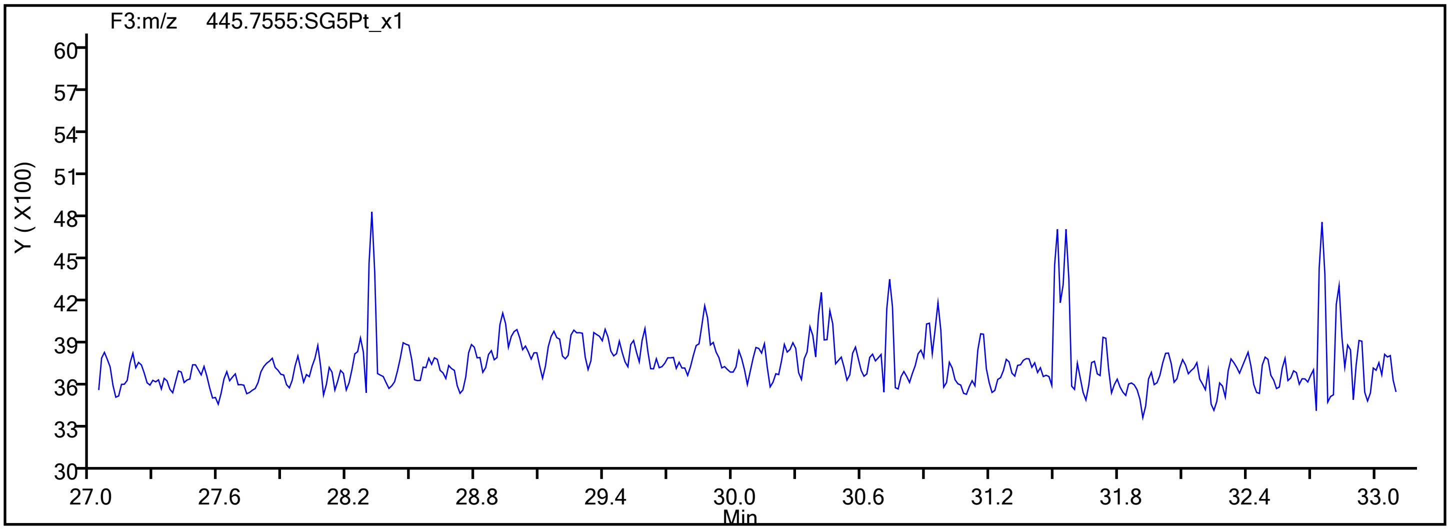

Eurofins TestAmerica, Sacramento

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HxCDD

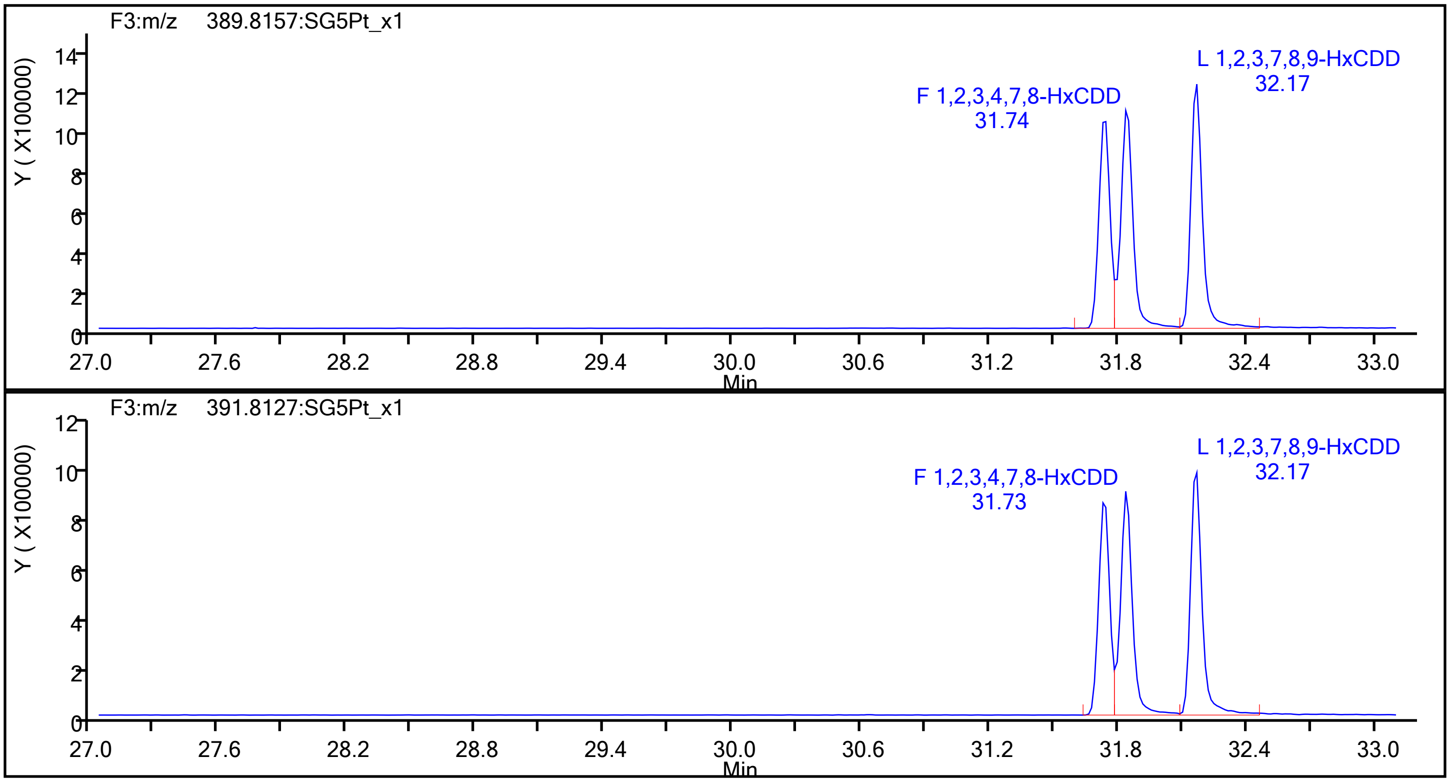

HxCDD Standards

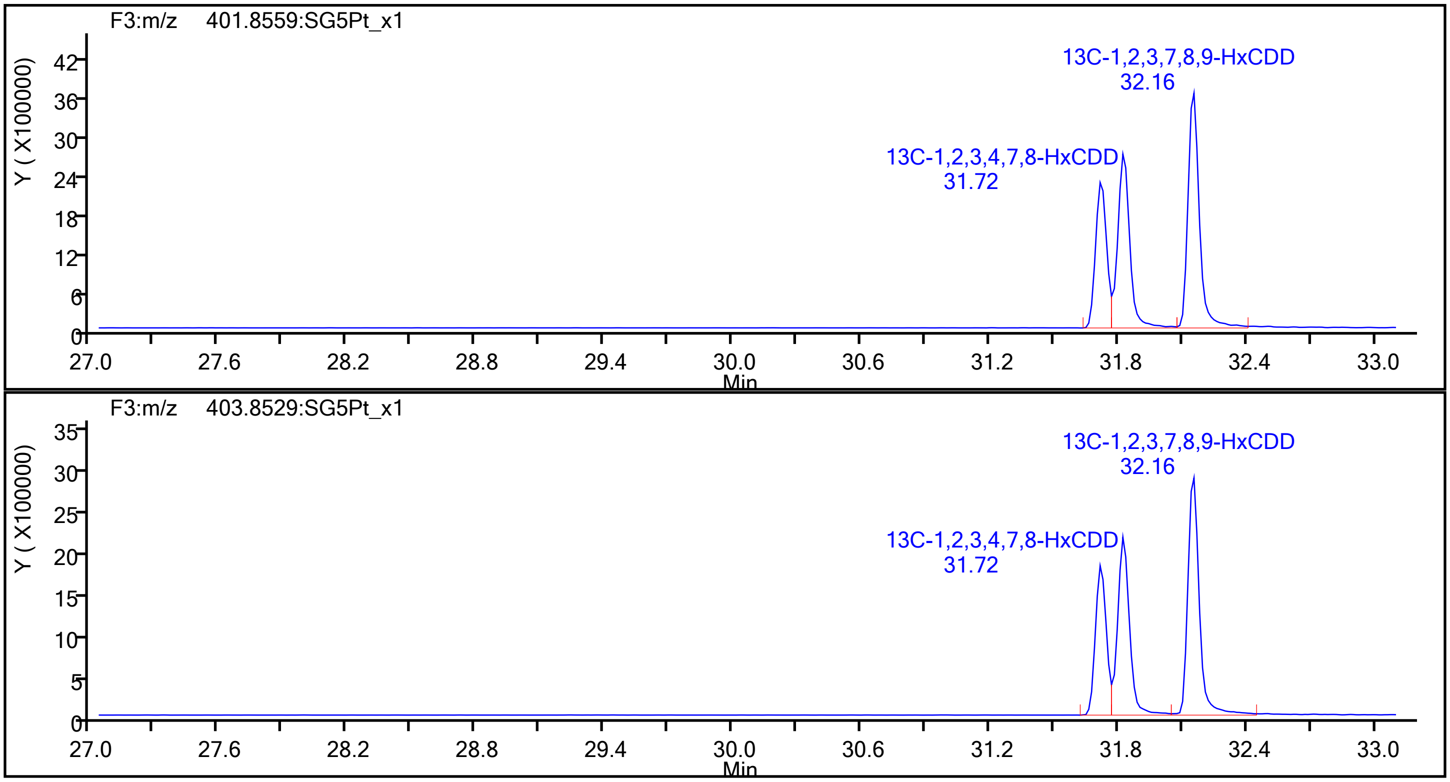

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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HpCDF

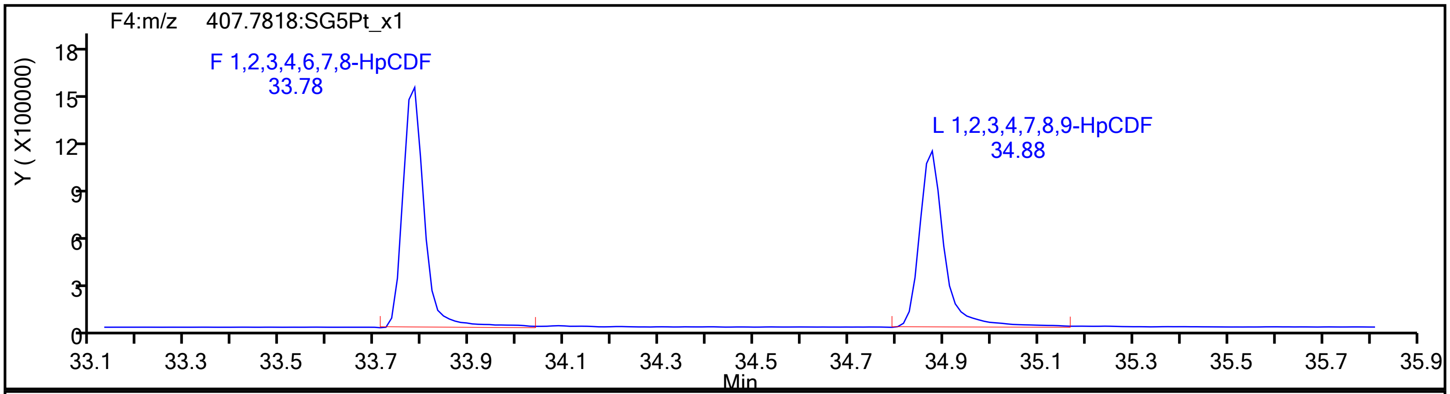

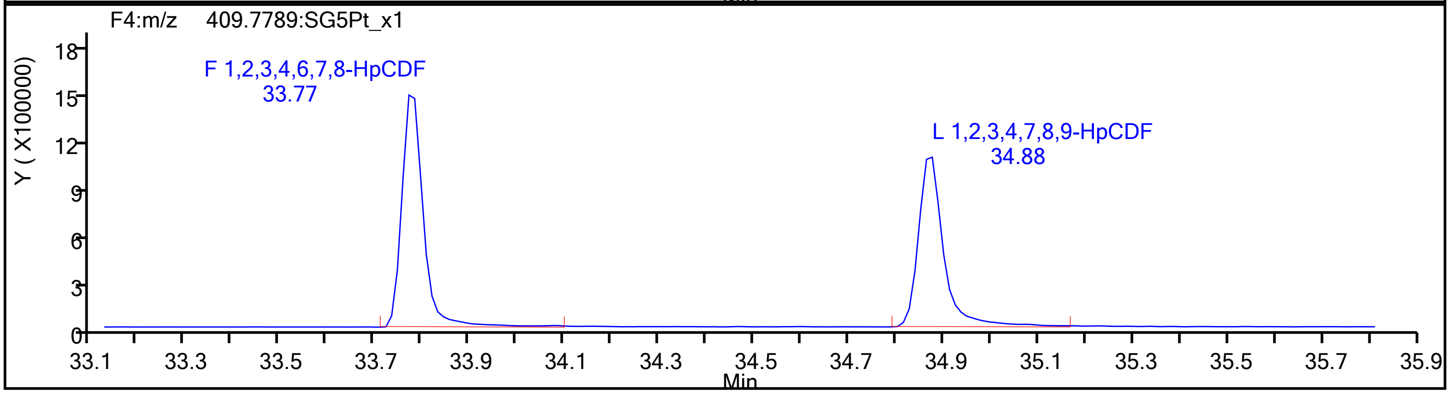

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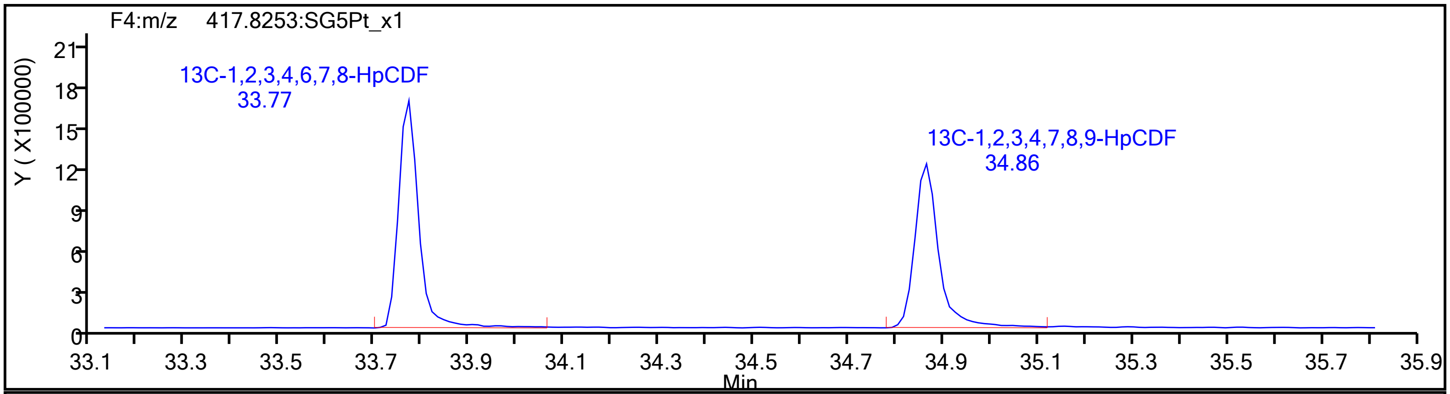

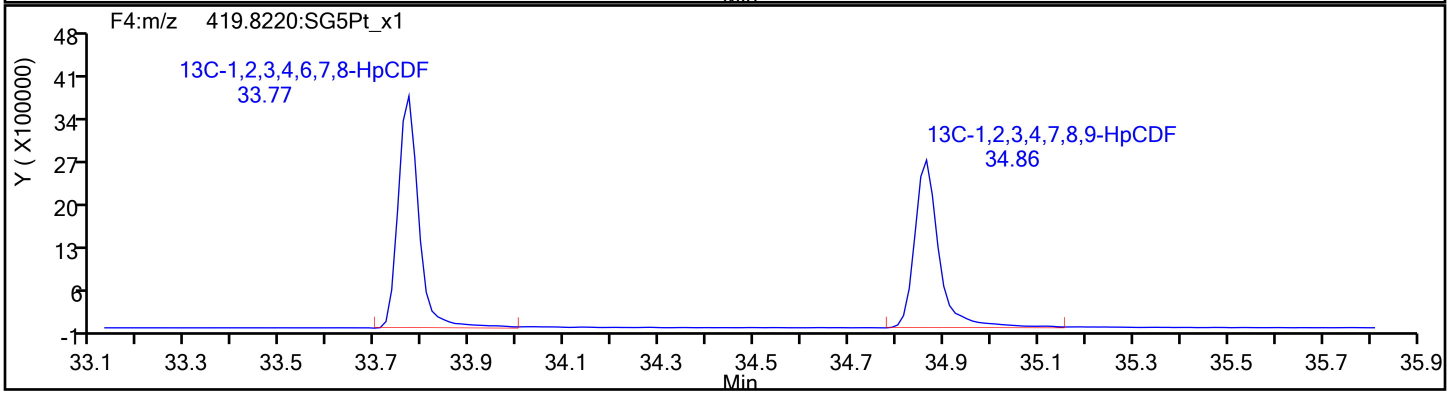

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Eurofins TestAmerica, Sacramento

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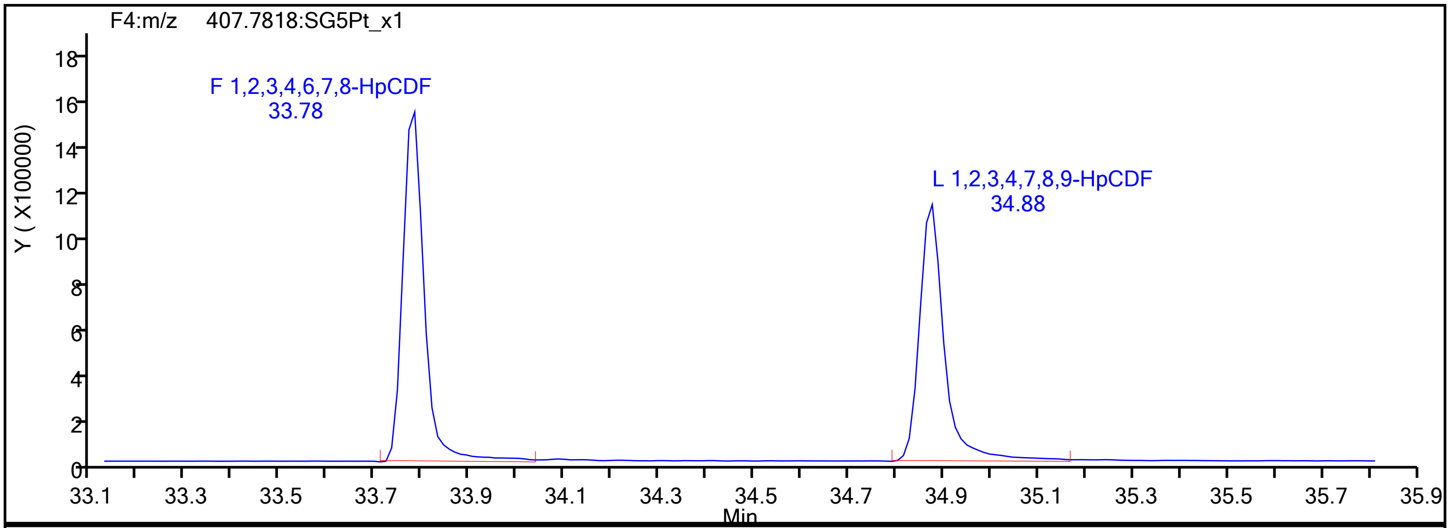

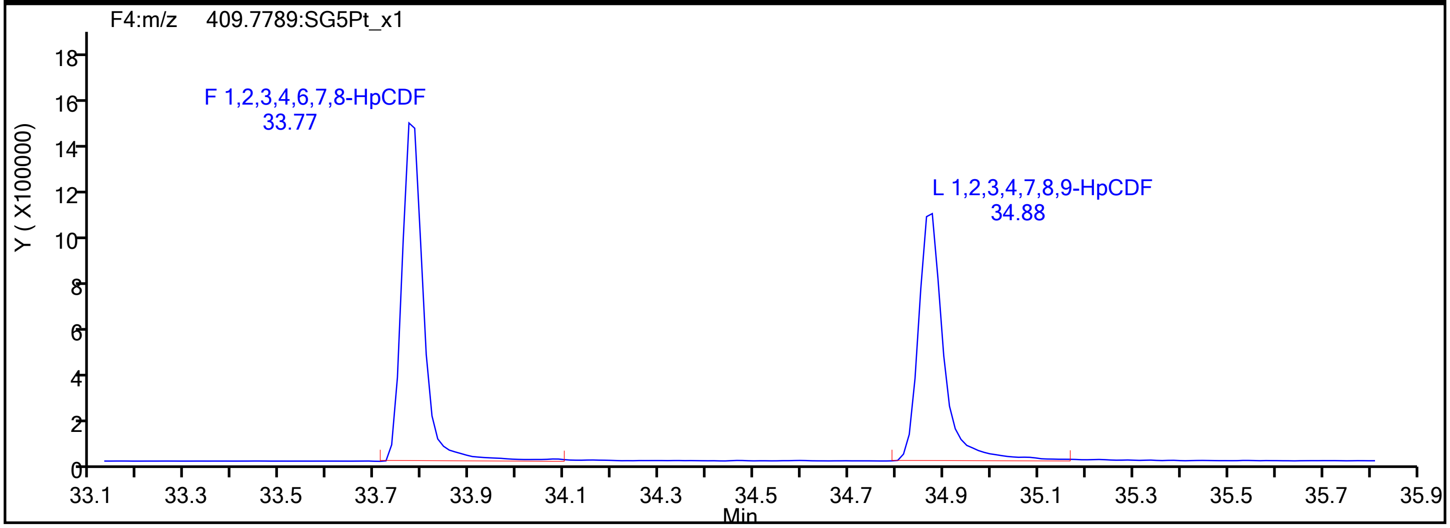

HpCDF Interference Mass

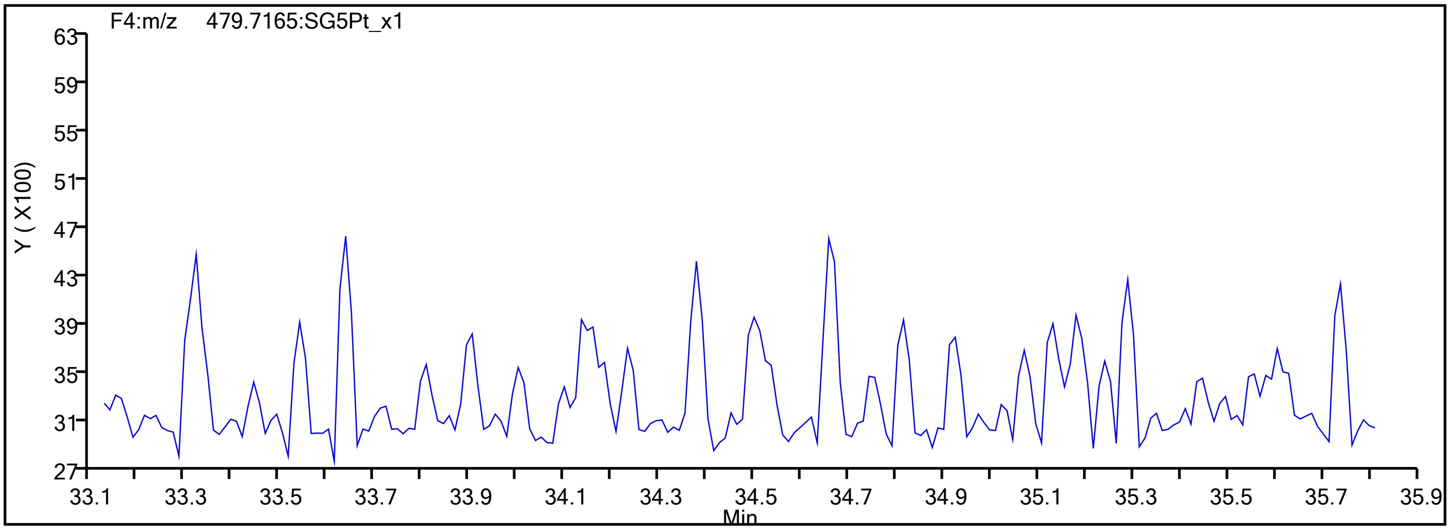

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Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

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HpCDD

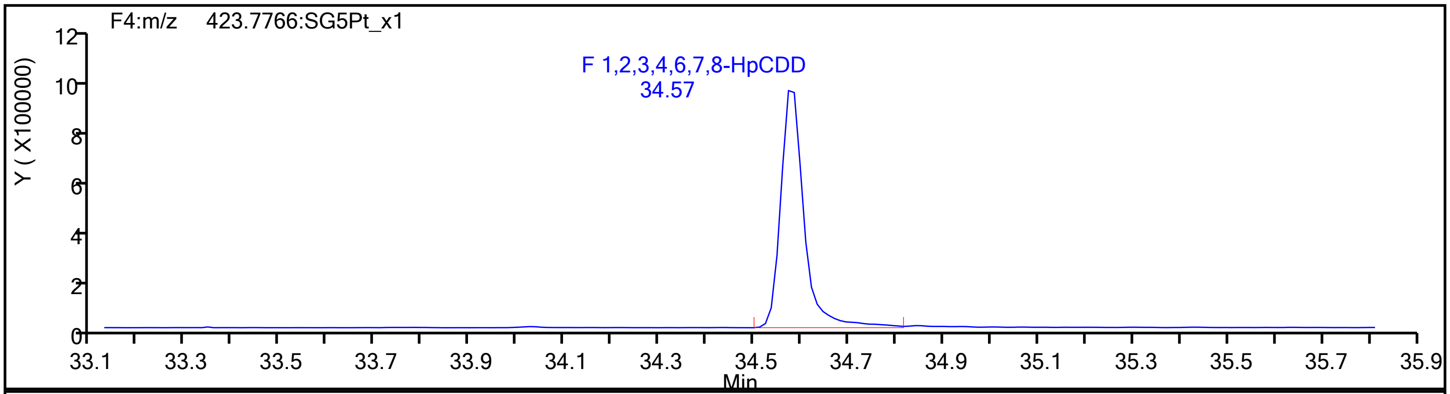

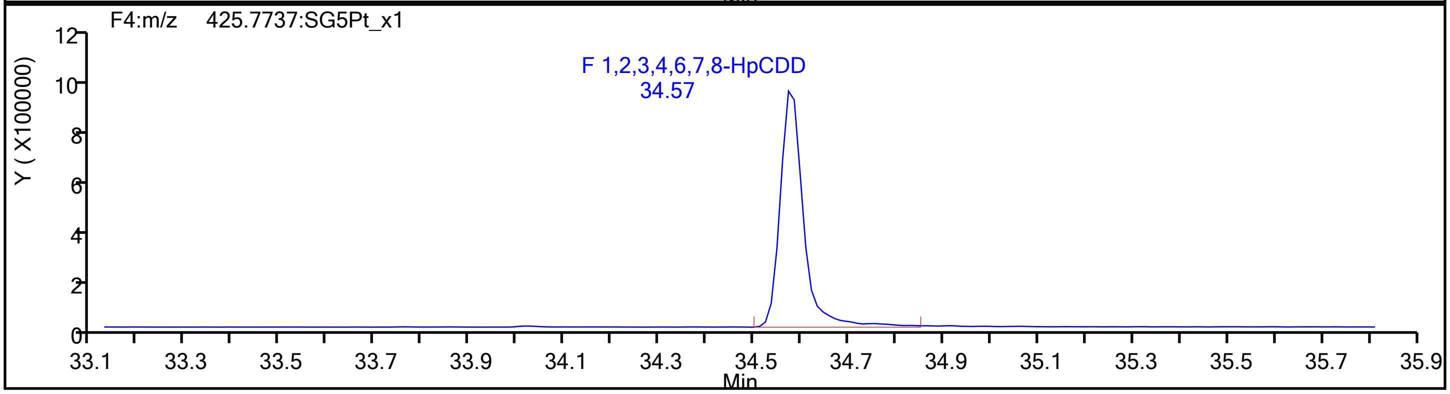

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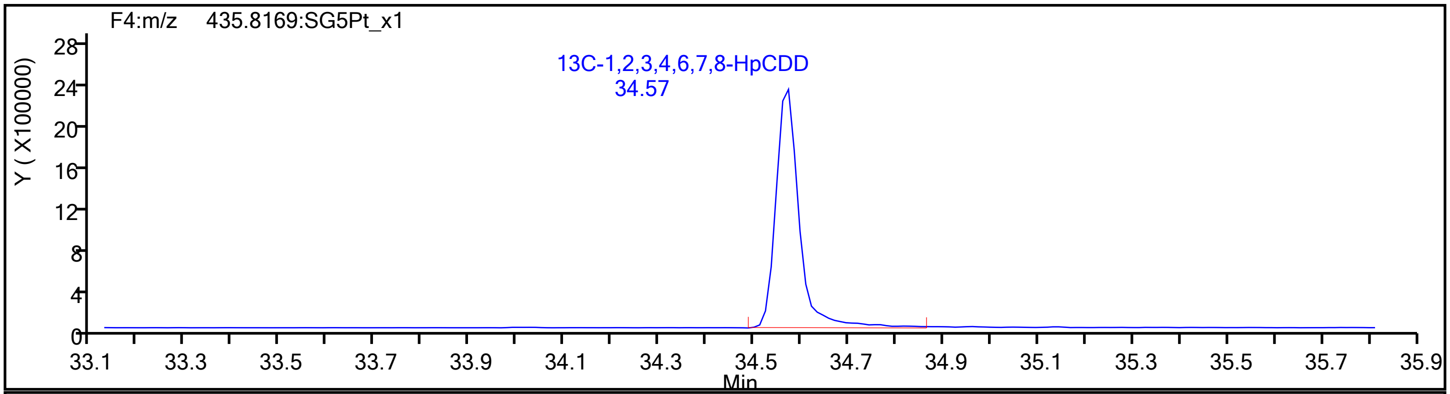

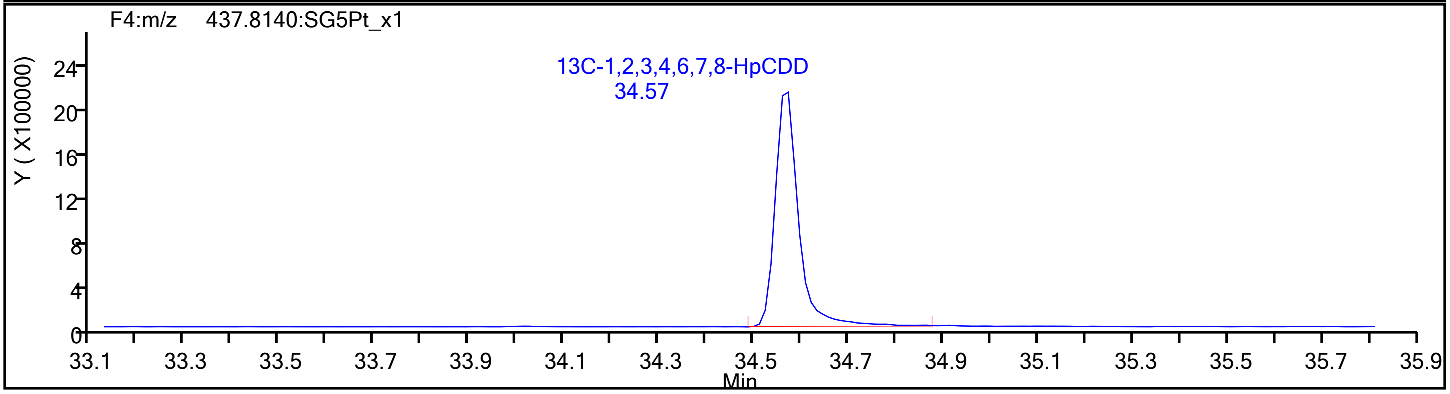

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

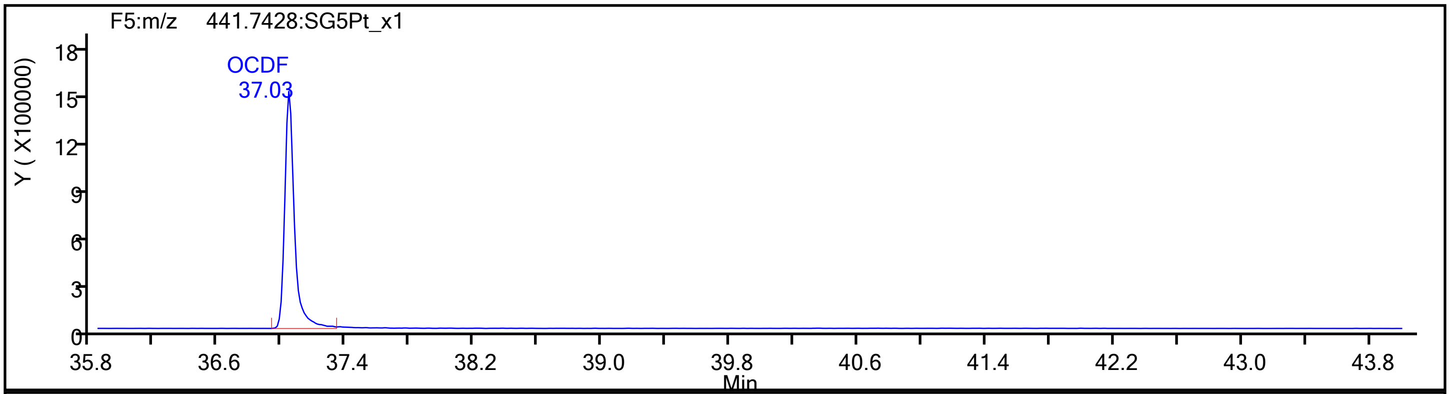

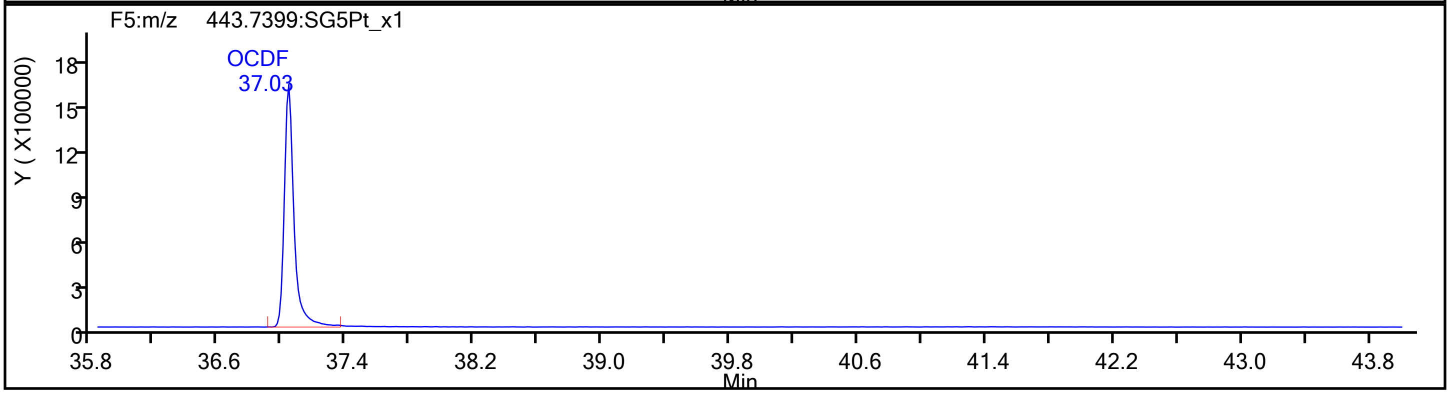

OCDF Standards

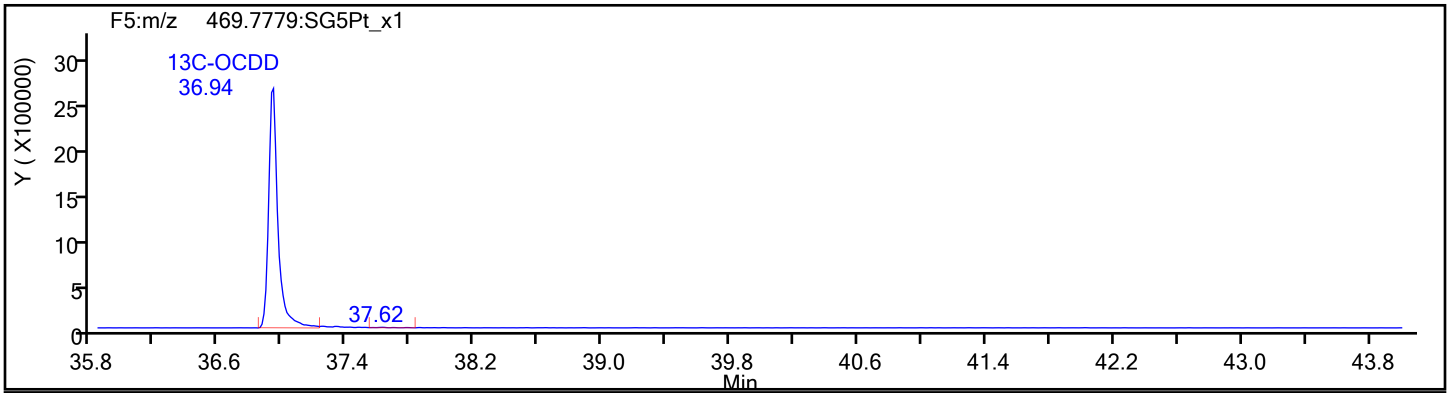

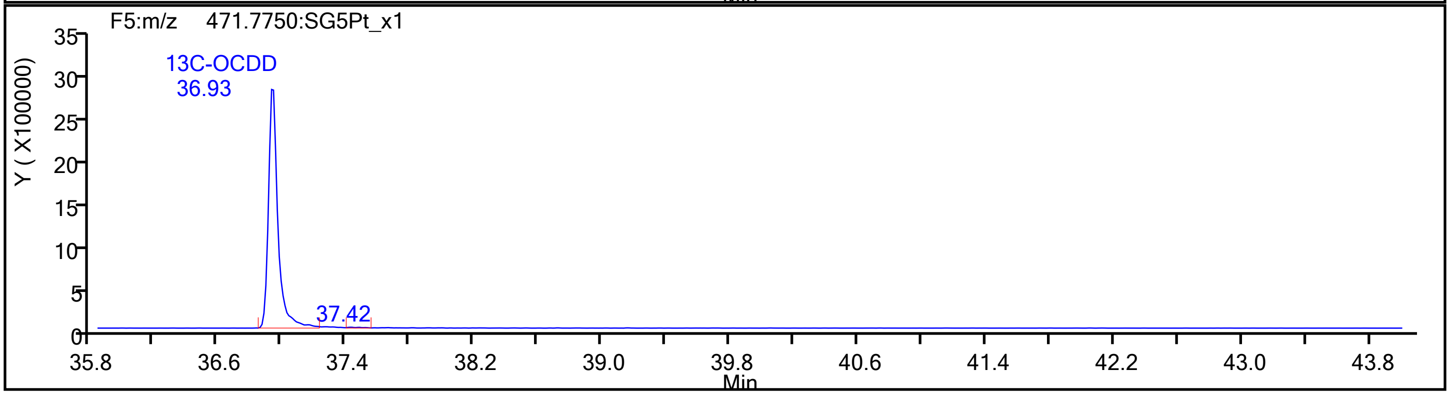

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Eurofins TestAmerica, Sacramento

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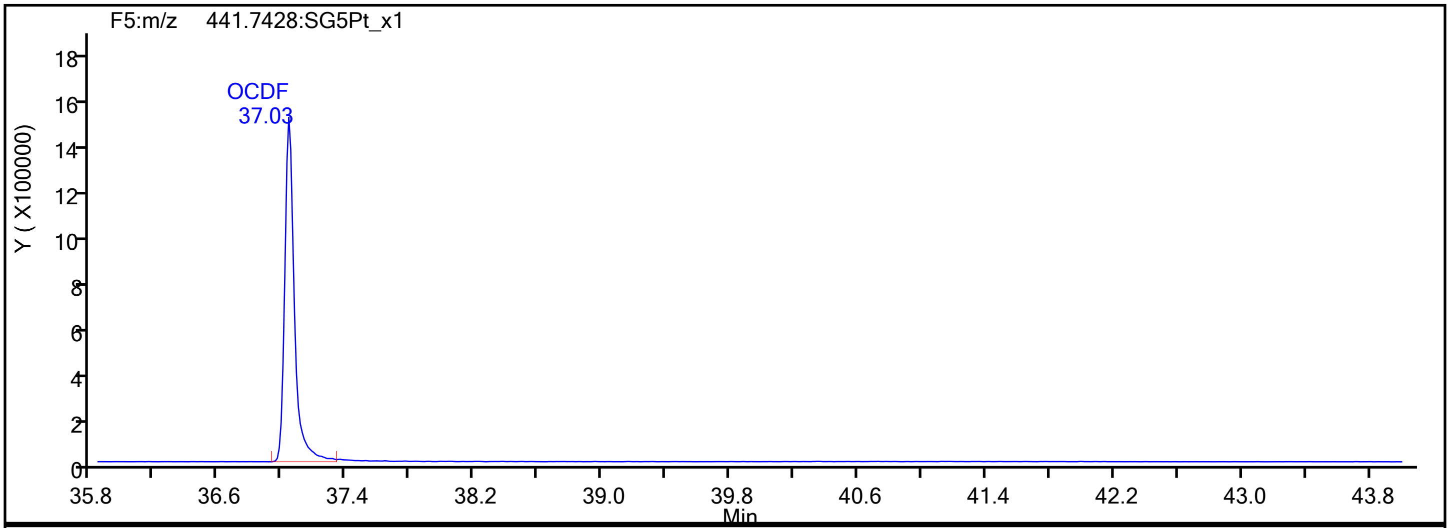

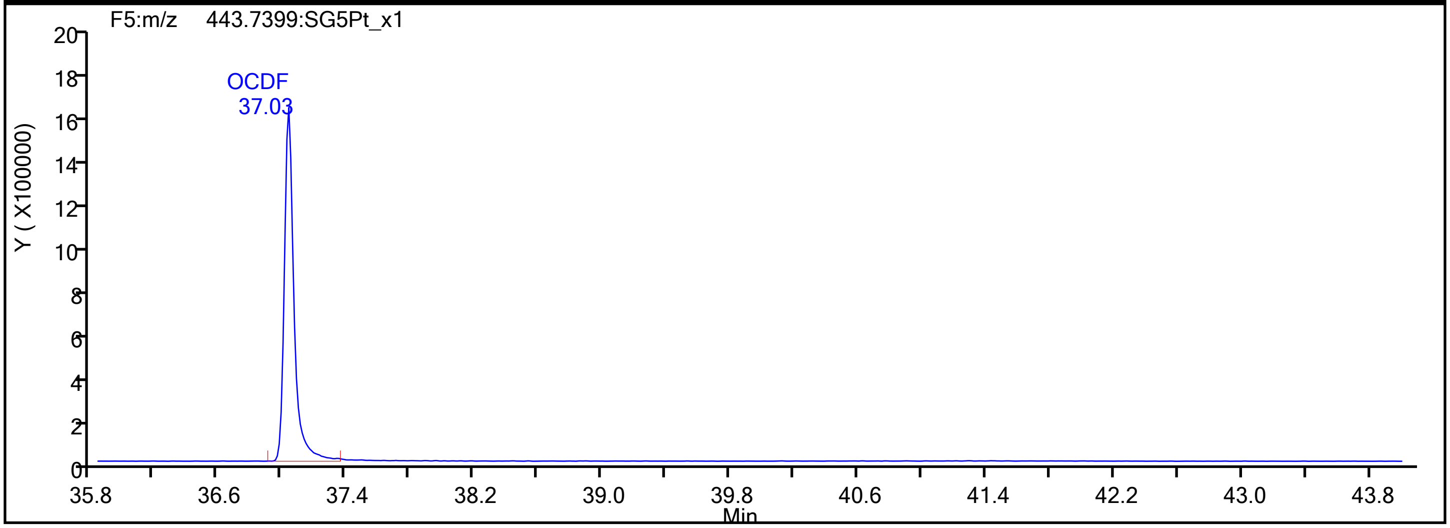

OCDF Interference Mass

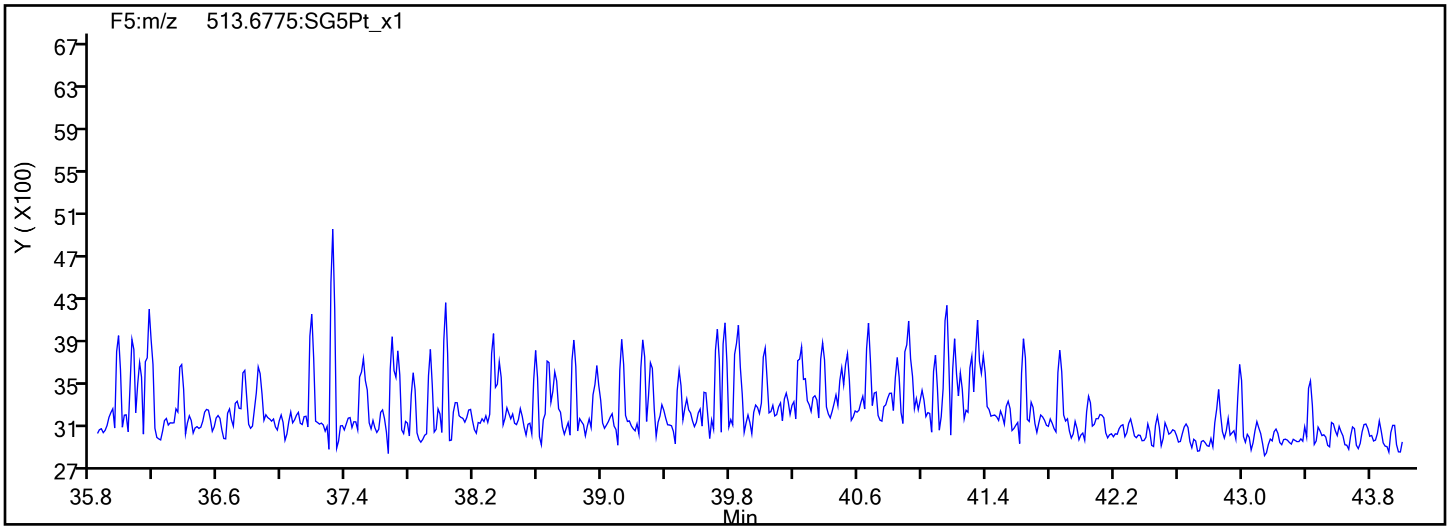

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Eurofins TestAmerica, Sacramento

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OCDD

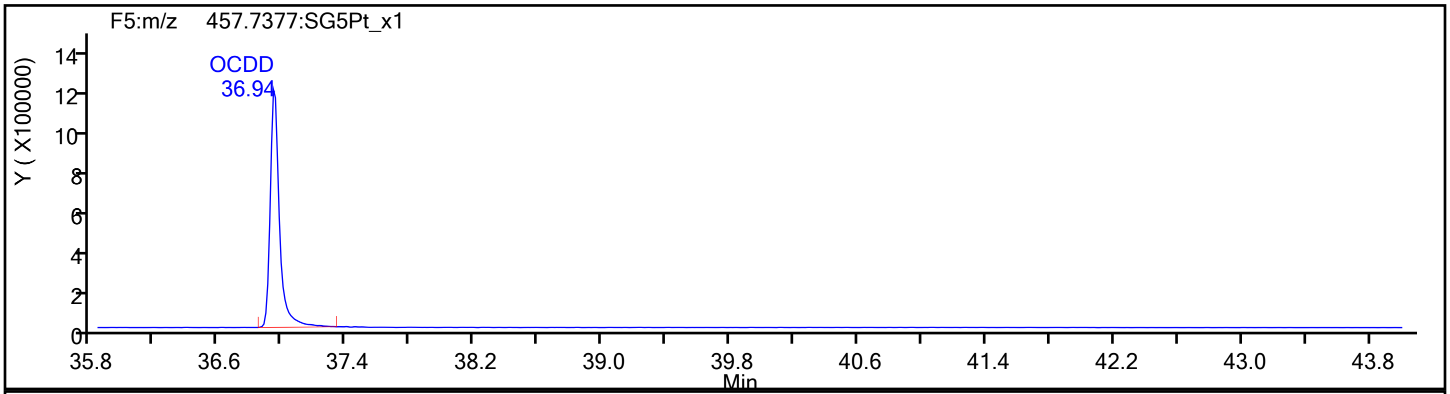

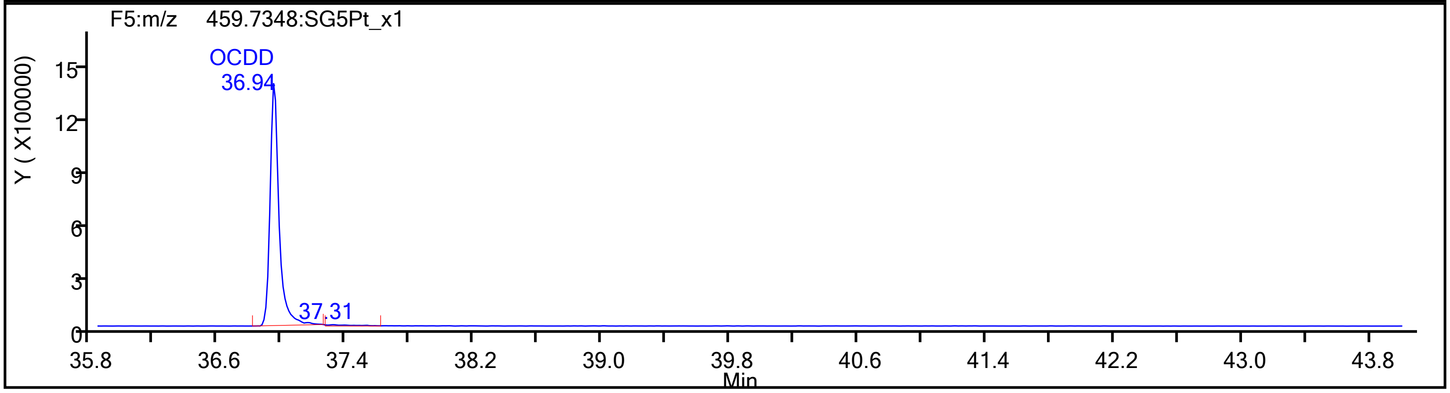

OCDD Standards

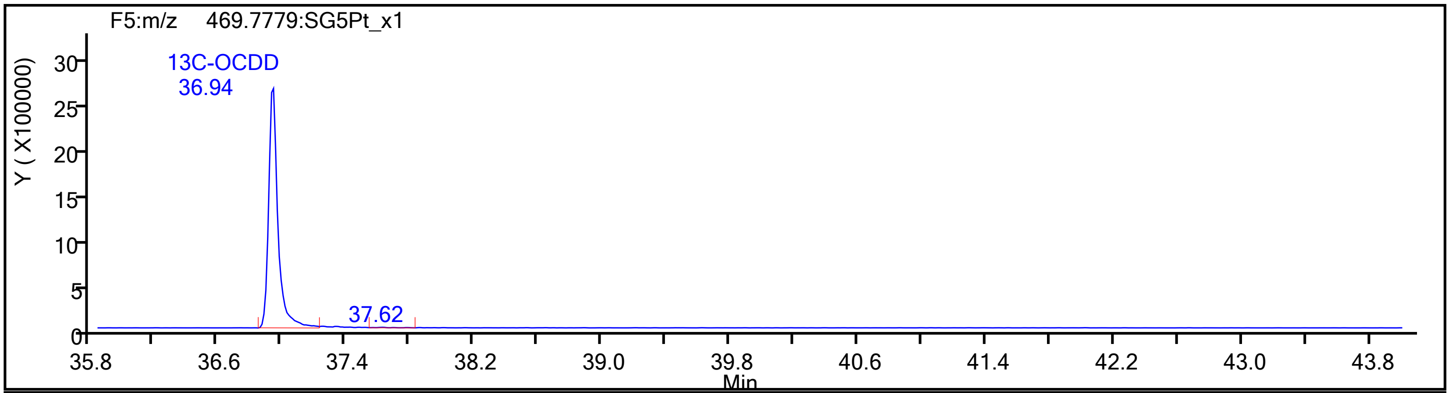

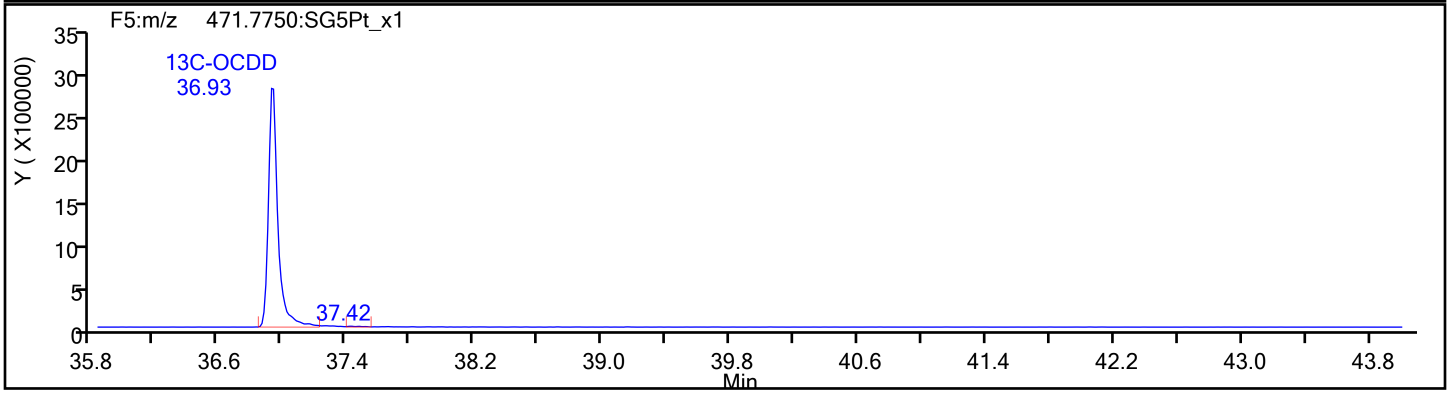

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

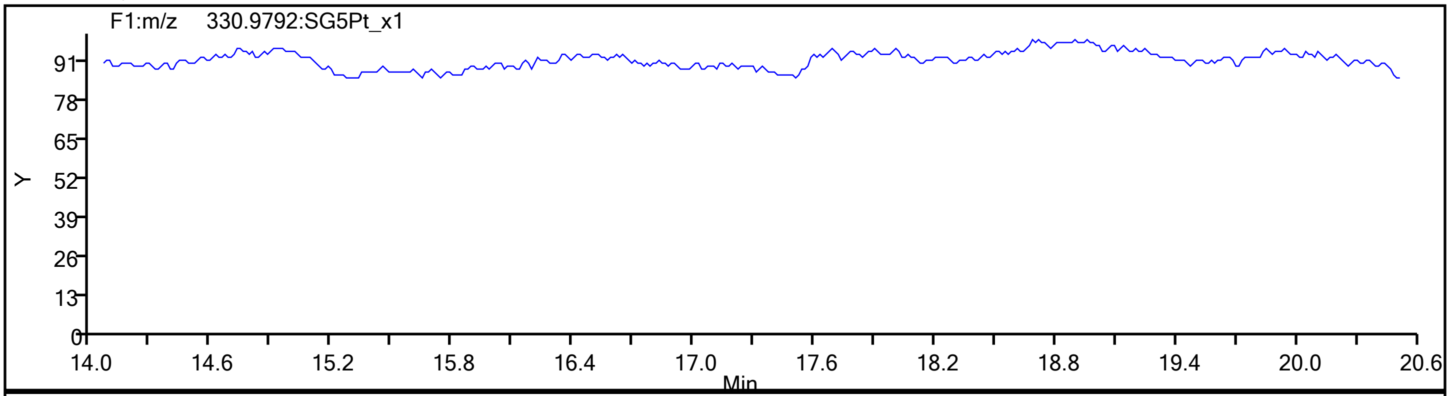

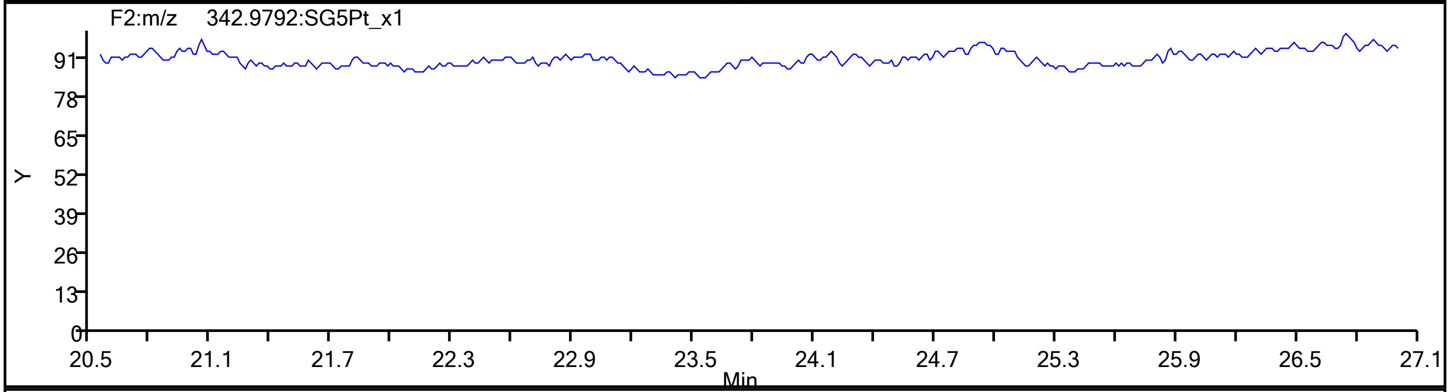

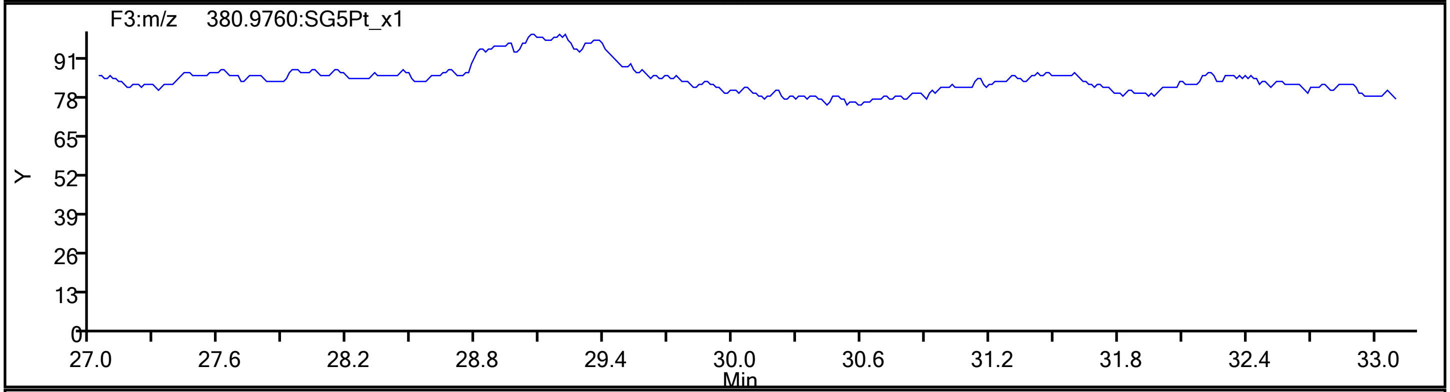

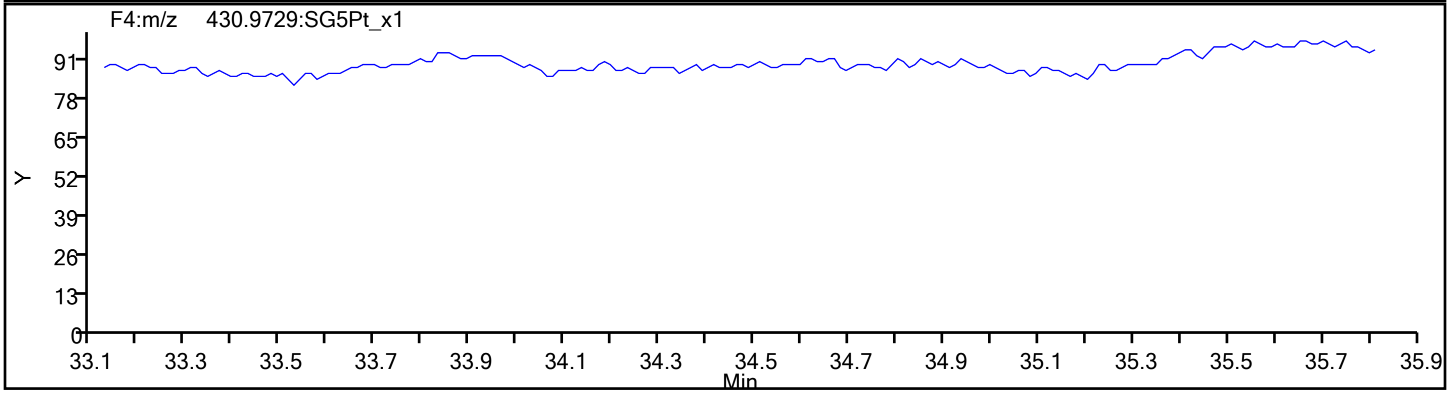

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

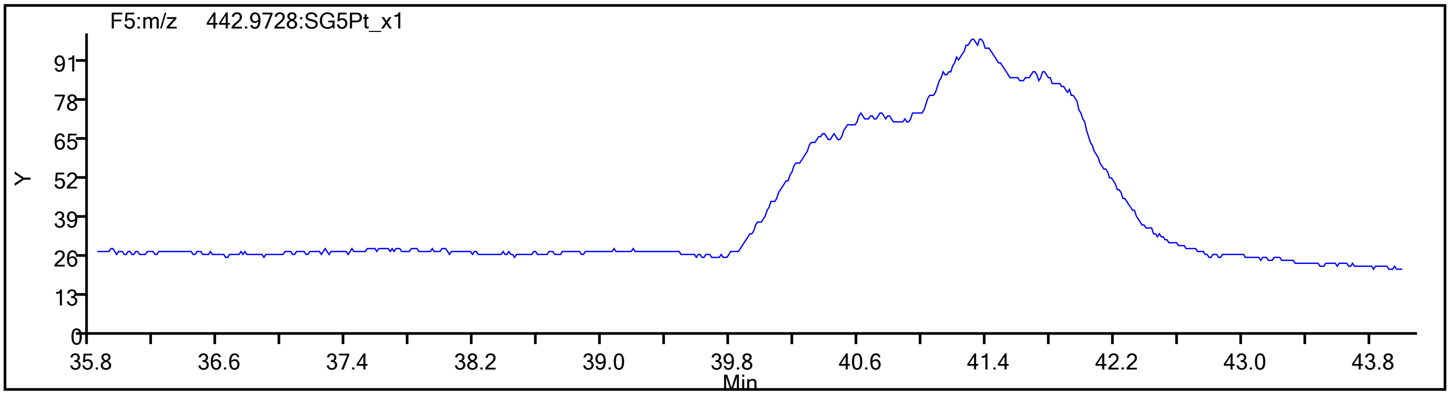

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-432973/3-A

Matrix: Water Lab File ID: 23NO2010D5_53.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1000(mL) Date Analyzed: 11/25/2020 02:03

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 435203 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	164		10	1.5
51207-31-9	2,3,7,8-TCDF	163		10	0.75
40321-76-4	1,2,3,7,8-PeCDD	747		50	2.0
57117-41-6	1,2,3,7,8-PeCDF	802		50	3.2
57117-31-4	2,3,4,7,8-PeCDF	812		50	3.9
39227-28-6	1,2,3,4,7,8-HxCDD	854		50	3.7
57653-85-7	1,2,3,6,7,8-HxCDD	807		50	3.6
19408-74-3	1,2,3,7,8,9-HxCDD	847		50	3.2
70648-26-9	1,2,3,4,7,8-HxCDF	790		50	5.7
57117-44-9	1,2,3,6,7,8-HxCDF	801		50	5.2
72918-21-9	1,2,3,7,8,9-HxCDF	787		50	4.2
60851-34-5	2,3,4,6,7,8-HxCDF	778		50	4.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	785		50	3.5
67562-39-4	1,2,3,4,6,7,8-HpCDF	775		50	7.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	794		50	11
3268-87-9	OCDD	1500		100	2.7
39001-02-0	OCDF	1530		100	2.8
41903-57-5	Total TCDD	164		10	1.5
30402-14-3	Total TCDF	163		10	0.75
36088-22-9	Total PeCDD	747		50	2.0
30402-15-4	Total PeCDF	1610		50	3.6
34465-46-8	Total HxCDD	2510		50	3.5
55684-94-1	Total HxCDF	3160		50	4.9
37871-00-4	Total HpCDD	785		50	3.5
38998-75-3	Total HpCDF	1570		50	9.4

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-432973/3-A

Matrix: Water Lab File ID: 23NO2010D5_53.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1000(mL) Date Analyzed: 11/25/2020 02:03

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 435203 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		20-175
89059-46-1	13C-2,3,7,8-TCDF	96		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	81		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	89		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	85		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	78		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	98		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	99		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	97		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	99		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	84		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		20-186
114423-97-1	13C-OCDD	75		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	103		31-191

Report Date: 27-Nov-2020 08:08:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d				
Lims ID:	LCSD 320-432973/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	25-Nov-2020 02:03:48	ALS Bottle#:	53	Worklist Smp#:	28
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 320-432973/3-A LCSD 320-432973/3-A RA				
Misc. Info.:	23NO2010D5				
Operator ID:	SMA, ALM	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Nov-2020 08:08:59	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1603				

First Level Reviewer: stephensk Date: 25-Nov-2020 11:52:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.838	29571159	0.77	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.324	38715035	0.80	1.3598	96.3	96.3	0.3292	0.3292	96.28	
2,3,7,8-TCDF	17.339	2858251	0.79	0.9077	8.133	8.133	0.0374	0.0374	81.33	
A Non-2,3,7,8-sub-TCDF	17.029						0.0374	0.0496		RQU
S Total TCDF					8.133	8.133	0.0374	0.0374		
D 13C-2,3,7,8-TCDD	18.035	25446498	0.74	1.0536	81.7	81.7	0.1955	0.1955	81.68	
2,3,7,8-TCDD	18.050	2100217	0.76	1.0061	8.203	8.203	0.0750	0.0750	82.03	
$ 37Cl4-2,3,7,8-TCDD	18.050	12793747		1.0488	41.3	41.3	0.0386	0.0386	103	
A Non-2,3,7,8-sub-TCDD	17.483						0.0750	0.0750		
S Total TCDD					8.203	8.203	0.0750	0.0750		
D 13C-1,2,3,7,8-PeCDF	22.369	29744534	1.56	1.1306	89.0	89.0	0.2307	0.2307	88.97	
1,2,3,7,8-PeCDF	22.396	10912036	1.63	0.9147	40.1	40.1	0.1618	0.1618	80.21	
D 13C-2,3,4,7,8-PeCDF	23.719	26620629	1.59	1.0539	85.4	85.4	0.2475	0.2475	85.42	
2,3,4,7,8-PeCDF	23.746	10273018	1.58	0.9508	40.6	40.6	0.1954	0.1954	81.17	
A F1 PeCDFs	19.963						0.0373	0.0373		
A Non-2,3,7,8-sub-PeCDF	23.127						0.1766	0.3466		U
S Total PeCDF					80.7	80.7	0.1786	0.1786		
D 13C-1,2,3,7,8-PeCDD	24.442	19377191	1.62	0.8084	81.1	81.1	0.1366	0.1366	81.05	
1,2,3,7,8-PeCDD	24.469	7209321	1.56	0.9955	37.4	37.4	0.1009	0.1009	74.75	
A Non-2,3,7,8-sub-PeCDD	23.351						0.1009	0.1009		
S Total PeCDD					37.4	37.4	0.1009	0.1009		
D 13C-1,2,3,4,7,8-HxCDF	30.532	21379441	0.51	0.9225	98.0	98.0	0.5028	0.5028	97.96	
1,2,3,4,7,8-HxCDF	30.546	9359738	1.25	1.1090	39.5	39.5	0.2848	0.2848	78.95	
D 13C-1,2,3,6,7,8-HxCDF	30.706	24180412	0.52	1.0336	98.9	98.9	0.4488	0.4488	98.89	
1,2,3,6,7,8-HxCDF	30.732	10381443	1.26	1.0721	40.0	40.0	0.2596	0.2596	80.09	
D 13C-2,3,4,6,7,8-HxCDF	31.531	23000282	0.52	0.9773	99.5	99.5	0.4746	0.4746	99.47	
2,3,4,6,7,8-HxCDF	31.544	9694204	1.26	1.0838	38.9	38.9	0.2136	0.2136	77.78	
D 13C-1,2,3,7,8,9-HxCDF	32.329	21022173	0.54	0.9153	97.1	97.1	0.5068	0.5068	97.08	
1,2,3,7,8,9-HxCDF	32.343	9039895	1.27	1.0931	39.3	39.3	0.2124	0.2124	78.68	
A Non-2,3,7,8-sub-HxCDF	30.227						0.2386	0.2386		
S Total HxCDF					157.8	157.8	0.2426	0.2426		

Report Date: 27-Nov-2020 08:08:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.143	23658433	1.27	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.704	14781754	1.27	0.7977	78.3	78.3	0.3243	0.3243	78.33	
1,2,3,4,7,8-HxCDD	31.730	6324150	1.33	1.0014	42.7	42.7	0.1843	0.1843	85.44	
D 13C-1,2,3,6,7,8-HxCDD	31.810	19246537	1.26	1.0010	81.3	81.3	0.2585	0.2585	81.27	
1,2,3,6,7,8-HxCDD	31.824	6913223	1.21	0.8902	40.4	40.4	0.1778	0.1778	80.70	
1,2,3,7,8,9-HxCDD	32.156	7619294	1.28	1.0579	42.3	42.3	0.1611	0.1611	84.66	
A Non-2,3,7,8-sub-HxCDD	30.905						0.1733	0.1733		
S Total HxCDD					125.4	125.4	0.1744	0.1744		
D 13C-1,2,3,4,6,7,8-HpCDF	33.757	16814269	0.44	0.8506	83.6	83.6	0.8993	0.8993	83.55	
1,2,3,4,6,7,8-HpCDF	33.770	8867317	1.04	1.3603	38.8	38.8	0.3893	0.3893	77.54	
D 13C-1,2,3,4,7,8,9-HpCDF	34.851	14363957	0.44	0.7618	79.7	79.7	1.004	1.004	79.70	
1,2,3,4,7,8,9-HpCDF	34.863	7532436	1.07	1.3207	39.7	39.7	0.5497	0.5497	79.41	
A Non-2,3,7,8-sub-HpCDF	34.335						0.4569	0.4569		
S Total HpCDF					78.5	78.5	0.4695	0.4695		
D 13C-1,2,3,4,6,7,8-HpCDD	34.560	15538604	1.05	0.8873	74.0	74.0	0.3598	0.3598	74.02	
1,2,3,4,6,7,8-HpCDD	34.560	6093376	1.01	0.9988	39.3	39.3	0.1749	0.1749	78.53	
A Non-2,3,7,8-sub-HpCDD	34.311						0.1749	0.1749		
S Total HpCDD					39.3	39.3	0.1749	0.1749		
D 13C-OCDD	36.914	22209718	0.91	0.6287	149.3	149.3	0.1809	0.1809	74.66	
OCDF	37.021	12020179	0.91	1.4136	76.6	76.6	0.1416	0.1416	76.57	
OCDD	36.925	9378148	0.91	1.1290	74.8	74.8	0.1332	0.1332	74.80	

QC Flag Legend

Processing Flags
Review Flags
U - Marked Undetected

Report Date: 27-Nov-2020 08:08:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d
Lims ID: LCSD 320-432973/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 25-Nov-2020 02:03:48 ALS Bottle#: 53 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-432973/3-A LCSD 320-432973/3-A RA
Misc. Info.: 23NO2010D5
Operator ID: SMA, ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Nov-2020 08:08:59 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1603

First Level Reviewer: stephensk Date: 25-Nov-2020 11:52:52

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.838	17.854	-1		12826475	3103765	3391	8477	915		
333.9339	17.838	17.854	-1		16744684	4061690	2514	6285	1616	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.324	17.324	0	0.971	17178285	4198503	8704	21760	482		
317.9389	17.324	17.324	0	0.971	21536750	5251529	4127	10317	1272	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.339	17.339	0	1.001	1258076	301662	510	1275	591		
305.8987	17.339	17.339	0	1.001	1600175	383853	773	1932	497	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	16.946	17.029	-5	0.978	10117	3007	510	1275	6		
	Empc Correction				7587	2397	510	1275	5		
305.8987	16.946	17.029	-5	0.978	9854	3113	773	1932	4	1.03(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.035	18.035	0	1.011	10863459	2563865	3391	8477	756		
333.9339	18.035	18.035	0	1.011	14583039	3431314	2514	6285	1365	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.050	18.050	0	1.001	904290	198941	1161	2902	171		
321.8936	18.050	18.050	0	1.001	1195927	285094	648	1620	440	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.050	18.065	-1	1.012	12793747	3009484	1161	2902	2592		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.483						1161	2902			
321.8936	17.483						648	1620			

Report Date: 27-Nov-2020 08:08:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.369	22.383	-1	1.254	18122511	3243805	4552	11380	713		
353.8970	22.369	22.383	-1	1.254	11622023	2095421	2924	7310	717	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.396	22.410	-1	1.001	6763878	1166542	1797	4492	649		
341.8567	22.396	22.410	-1	1.001	4148158	712706	1363	3407	523	1.63(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.719	23.746	-2	1.330	16335937	2629792	4552	11380	578		
353.8970	23.719	23.746	-2	1.330	10284692	1622057	2924	7310	555	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.746	23.774	-2	1.001	6295273	1011964	1797	4492	563		
341.8567	23.746	23.774	-2	1.001	3977745	633828	1363	3407	465	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.963						273	682			
341.8567	19.963						394	985			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	22.914	23.127	-13	1.024	52379	9339	1797	4492	5		
341.8567	22.942	23.127	-11	1.026	38736	6106	1363	3407	4	1.35(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.442	24.469	-2	1.370	11979433	1811656	1955	4887	927		
369.8919	24.442	24.469	-2	1.370	7397758	1141377	1210	3025	943	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.469	24.496	-2	1.001	4398217	641477	729	1822	880		
357.8516	24.469	24.496	-2	1.001	2811104	420608	458	1145	918	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.351						729	1822			
357.8516	23.351						458	1145			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.532	30.546	-1	0.950	7198979	1370589	4046	10115	339		
385.8610	30.532	30.546	-1	0.950	14180462	2763094	7477	18692	370	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.546	30.560	-1	1.000	5203623	1021084	2885	7212	354		
375.8178	30.546	30.560	-1	1.000	4156115	806662	2338	5845	345	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.706	30.719	-1	0.955	8275796	1586765	4046	10115	392		
385.8610	30.706	30.719	-1	0.955	15904616	3104508	7477	18692	415	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.732	30.746	-1	1.001	5781936	1094249	2885	7212	379		
375.8178	30.732	30.746	-1	1.001	4599507	883091	2338	5845	378	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.531	31.545	-1	0.981	7837047	1891486	4046	10115	467		
385.8610	31.531	31.545	-1	0.981	15163235	3747915	7477	18692	501	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.544	31.558	-1	1.000	5400105	1361521	2885	7212	472		
375.8178	31.544	31.558	-1	1.000	4294099	1053831	2338	5845	451	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.329	32.343	-1	1.006	7333000	1985174	4046	10115	491		
385.8610	32.329	32.343	-1	1.006	13689173	3639631	7477	18692	487	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.343	32.357	-1	1.000	5060139	1332584	2885	7212	462		
375.8178	32.343	32.357	-1	1.000	3979756	1039499	2338	5845	445	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.227						2885	7212			
375.8178	30.227						2338	5845			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.143	32.157	-1		13214204	3421011	3389	8472	1009		
403.8529	32.143	32.157	-1		10444229	2789202	3038	7595	918	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.704	31.718	-1	0.986	8263333	2332524	3389	8472	688		
403.8529	31.704	31.718	-1	0.986	6518421	1819194	3038	7595	599	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.730	31.744	-1	1.001	3606391	976061	1742	4355	560		
391.8127	31.717	31.744	-2	1.000	2717759	757815	1323	3307	573	1.33(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.810	31.824	-1	0.990	10720555	2711261	3389	8472	800		
403.8529	31.810	31.824	-1	0.990	8525982	2129205	3038	7595	701	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.824	31.837	-1	1.000	3781864	970155	1742	4355	557		
391.8127	31.824	31.837	-1	1.000	3131359	775009	1323	3307	586	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.156	32.170	-1	1.014	4283699	1142828	1742	4355	656		
391.8127	32.156	32.170	-1	1.014	3335595	872714	1323	3307	660	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						1742	4355			
391.8127	30.905						1323	3307			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.757	33.770	-1	1.050	5168742	1708769	7558	18895	226		
419.8220	33.757	33.770	-1	1.050	11645527	3832851	11444	28610	335	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.770	33.782	-1	1.000	4513651	1450728	5560	13900	261		
409.7789	33.757	33.782	-1	1.000	4353666	1380777	6180	15450	223	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.851	34.864	-1	1.084	4377434	1244577	7558	18895	165		
419.8220	34.851	34.864	-1	1.084	9986523	2798155	11444	28610	245	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.863	34.888	-1	1.000	3896708	1071128	5560	13900	193		
409.7789	34.863	34.888	-1	1.000	3635728	980983	6180	15450	159	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						5560	13900			
409.7789	34.335						6180	15450			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.560	34.572	-1	1.075	7977097	2392887	4677	11692	512		
437.8140	34.560	34.572	-1	1.075	7561507	2180983	3253	8132	670	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.560	34.596	-2	1.000	3062008	894126	1710	4275	523		
425.7737	34.560	34.596	-2	1.000	3031368	898360	1486	3715	605	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.311						1710	4275			
425.7737	34.311						1486	3715			
13C-OCDD											
469.7779	36.914	36.938	-1	1.148	10553315	2646602	1454	3635	1820		
471.7750	36.914	36.938	-1	1.148	11656403	2872679	1371	3427	2095	0.91(0.76-1.02)	
OCDF											
441.7428	37.021	37.034	-1	1.003	5735508	1403309	1162	2905	1208		
443.7399	37.021	37.034	-1	1.003	6284671	1515533	1048	2620	1446	0.91(0.76-1.02)	
OCDD											
457.7377	36.925	36.938	-1	1.000	4468986	1113252	762	1905	1461		
459.7348	36.925	36.938	-1	1.000	4909162	1216730	898	2245	1355	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Lims ID:	LCSD 320-432973/3-A		
Client ID:			
Inject. Date:	25-Nov-2020 02:03:48	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	10D5	Operator:	SMA, ALM
Lims Batch ID:	435203	Lims Sample ID:	28

Non-2,3,7,8-sub-TCDF, RT: 17.029

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	38715035	9450032

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	38715035	9450032

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.946	10117	3007	9854	3113	0.0568	1.03	RQ
16.946	7587	2397	9854	3113	0.0496		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d
Lims ID: LCSD 320-432973/3-A
Client ID:
Inject. Date: 25-Nov-2020 02:03:48 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: 10D5 Operator: SMA, ALM
Lims Batch ID: 435203 Lims Sample ID: 28

Non-2,3,7,8-sub-PeCDF, RT: 23.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	29744534	5339226
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	26620629	4251849

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	28182581	4795537

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.914	52379	9339	38736	6106	0.3466	1.35	

Compound is Marked ND

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

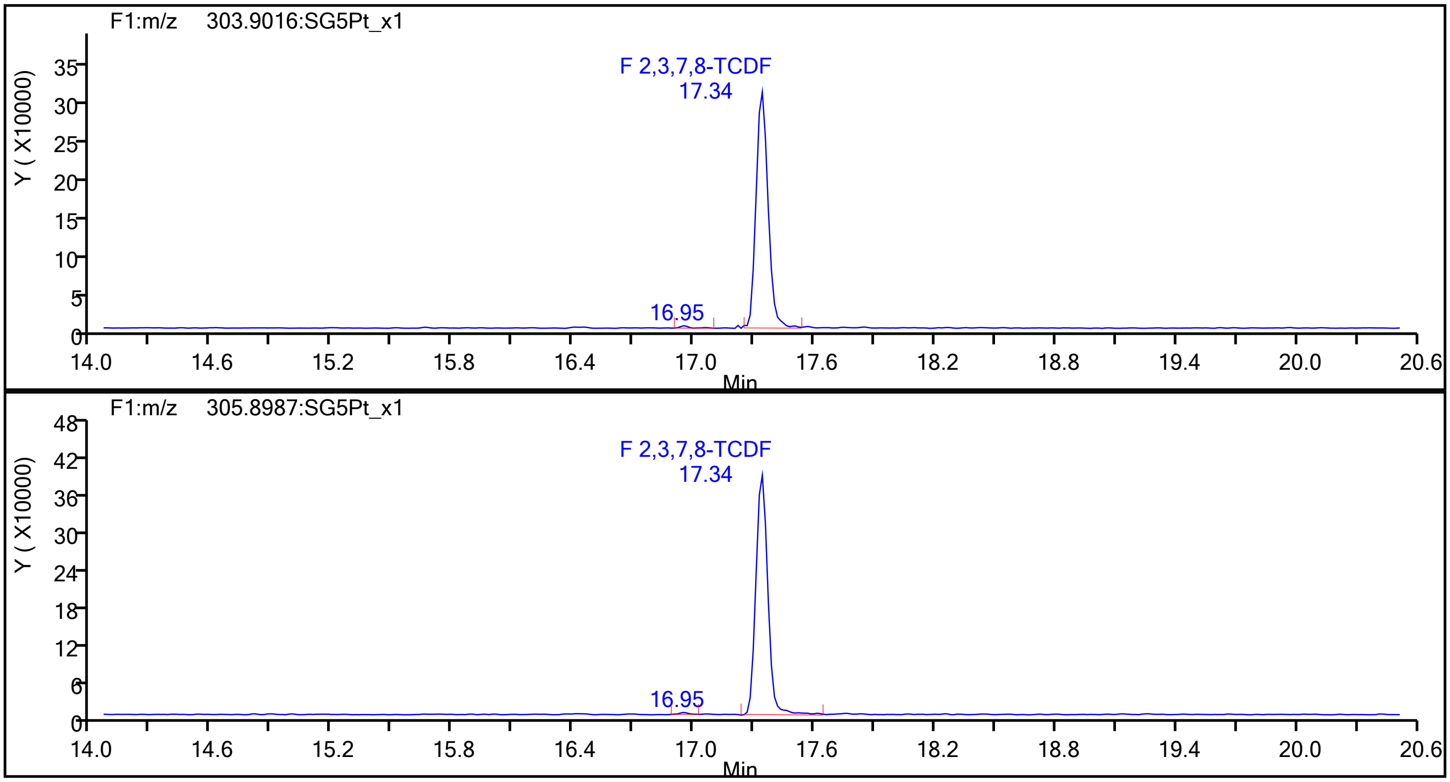

TCDF Standards

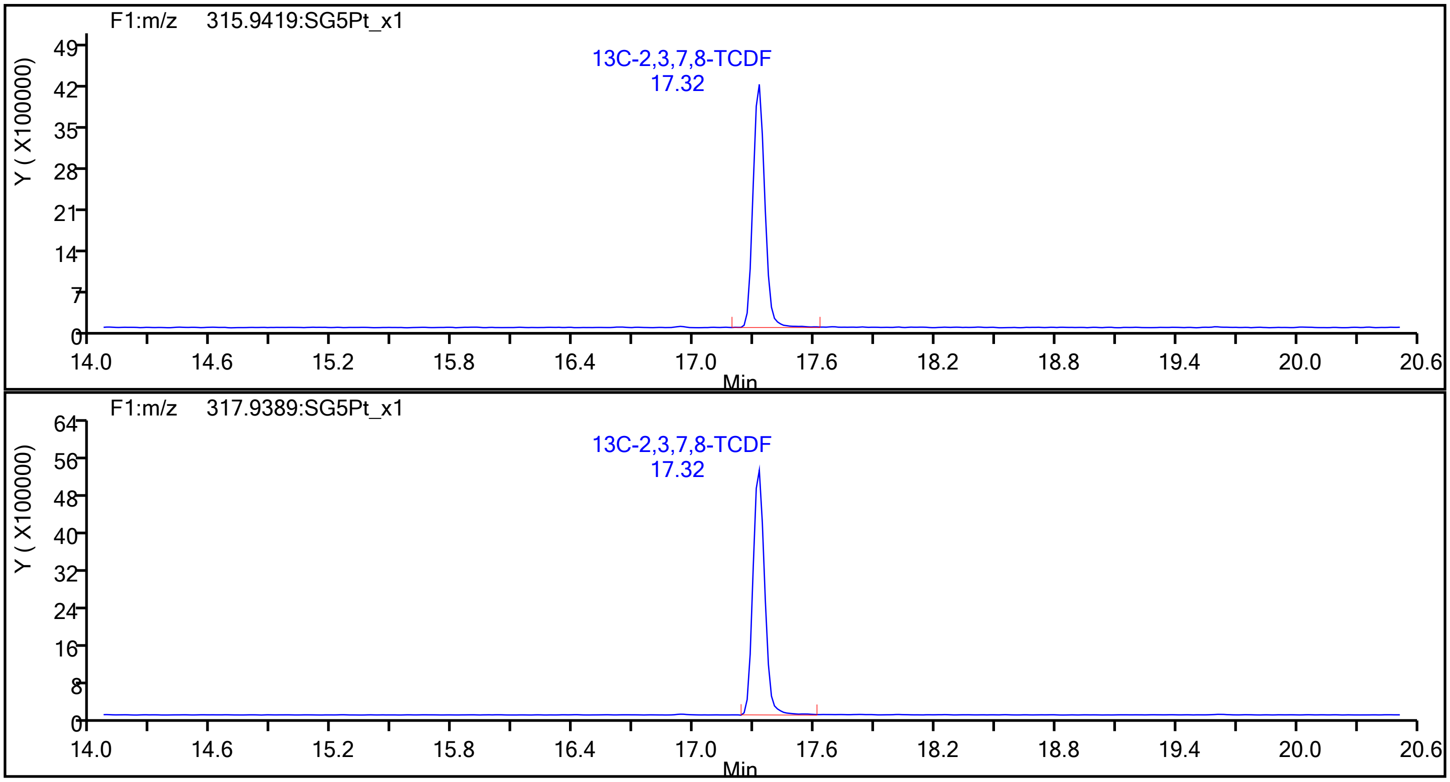

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

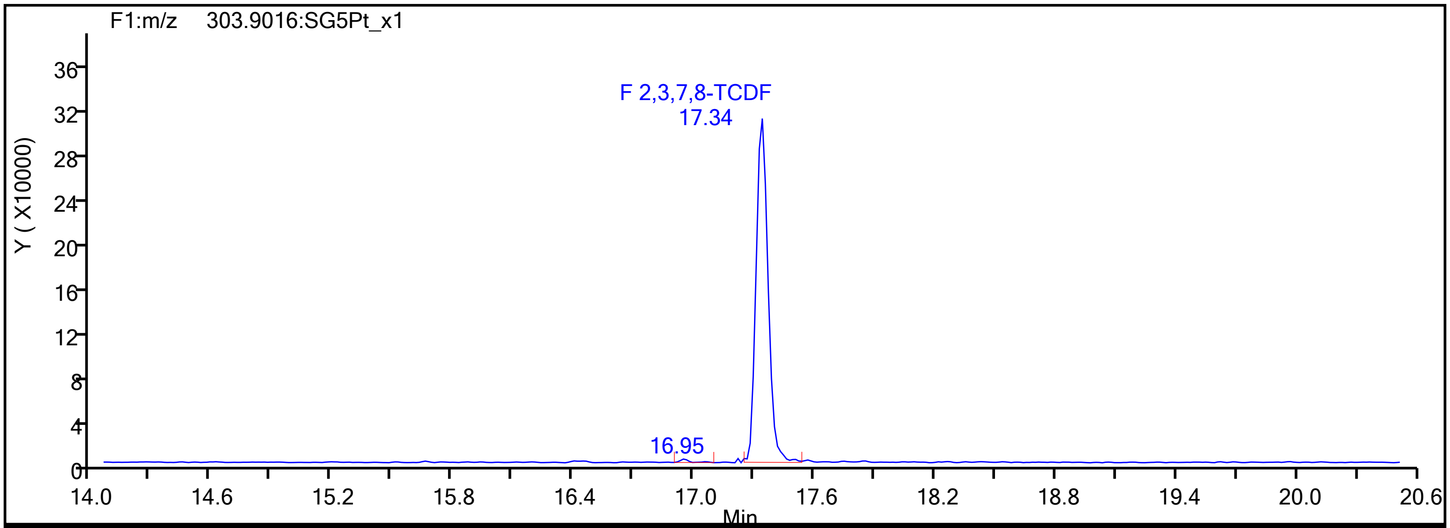

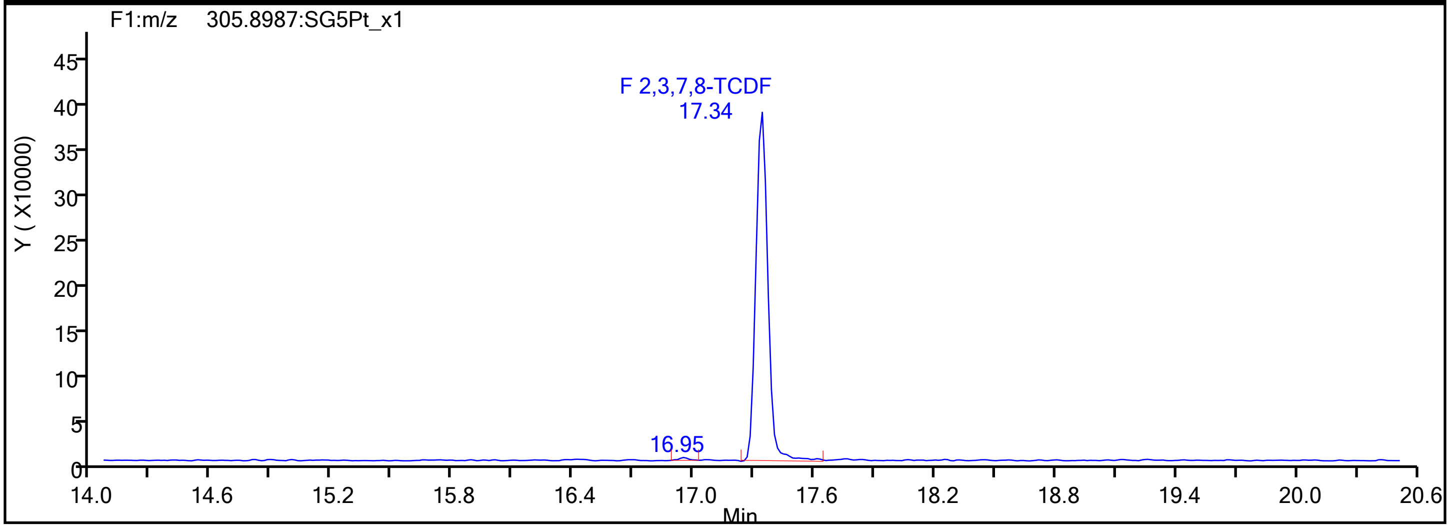

TCDF Interference Mass

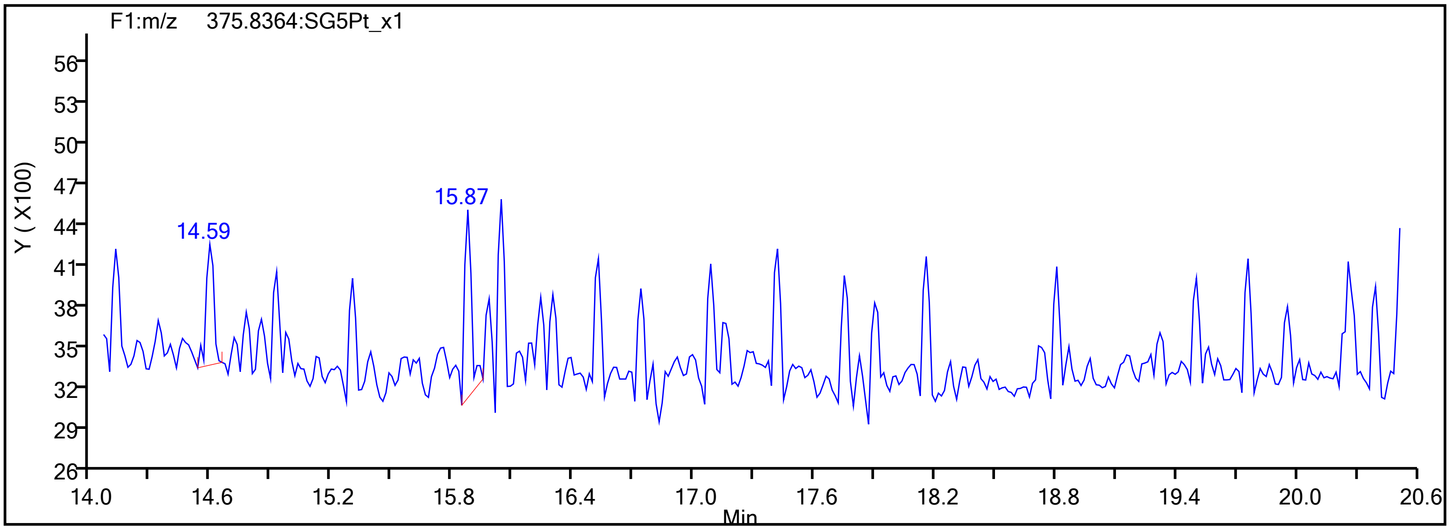

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

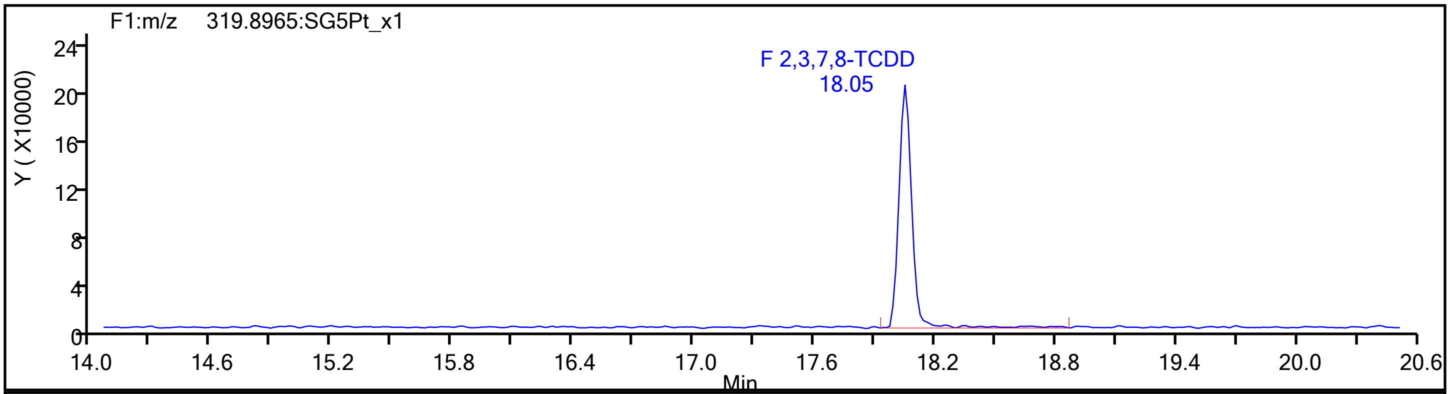

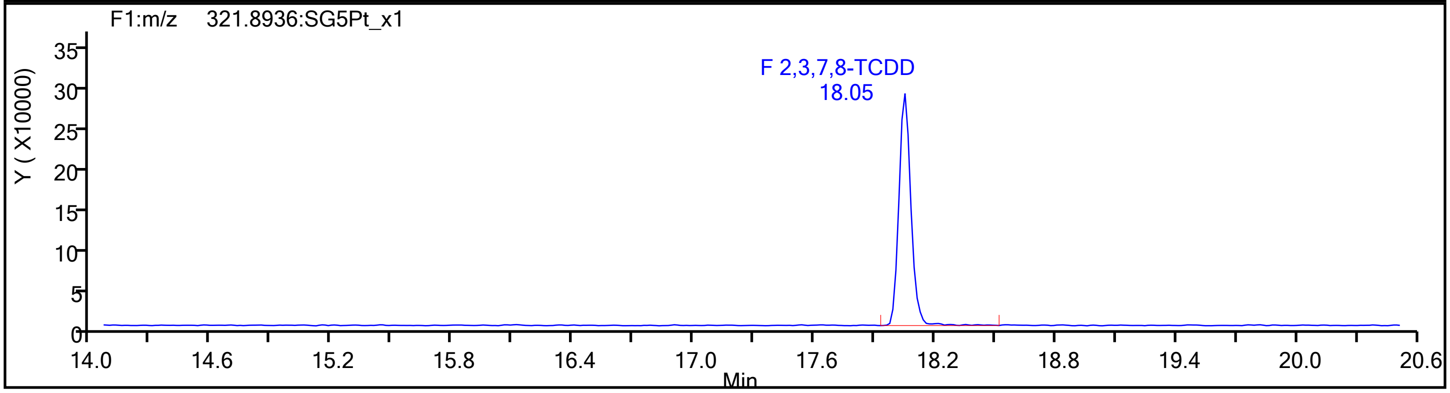

TCDD Standards

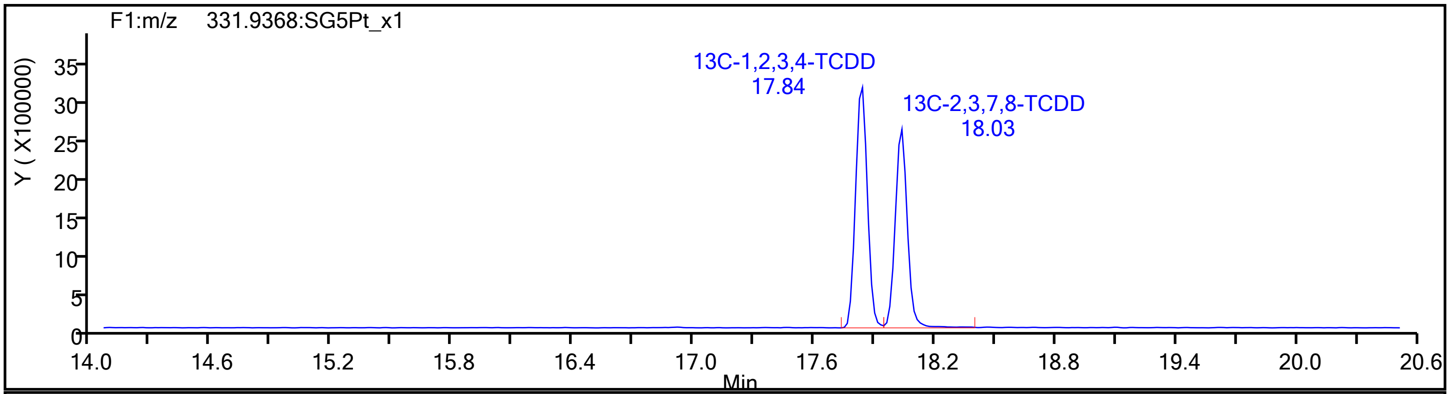

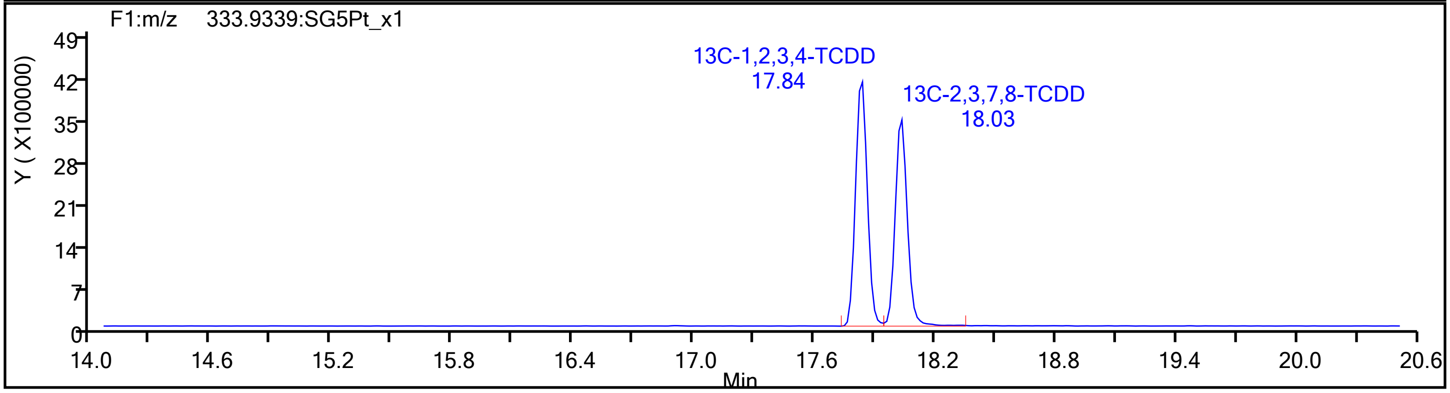

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d
Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

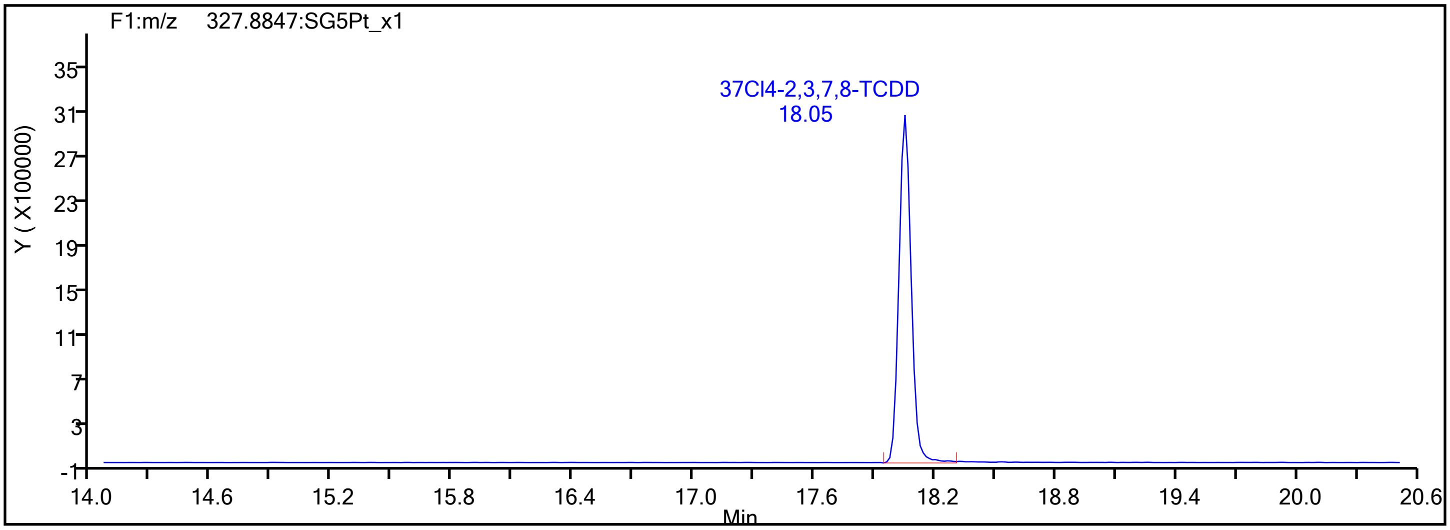

37Cl4-TCDD Standards

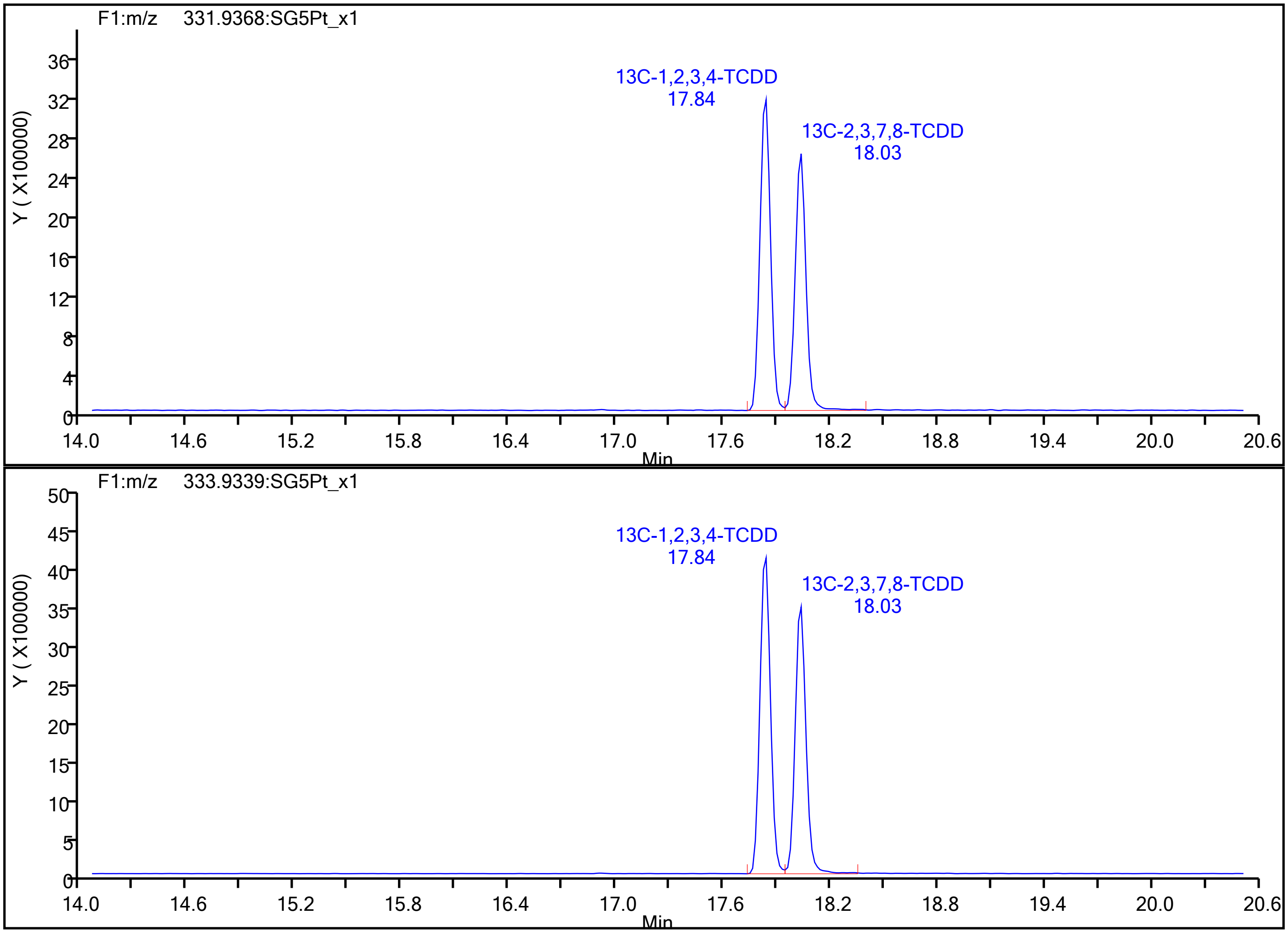

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

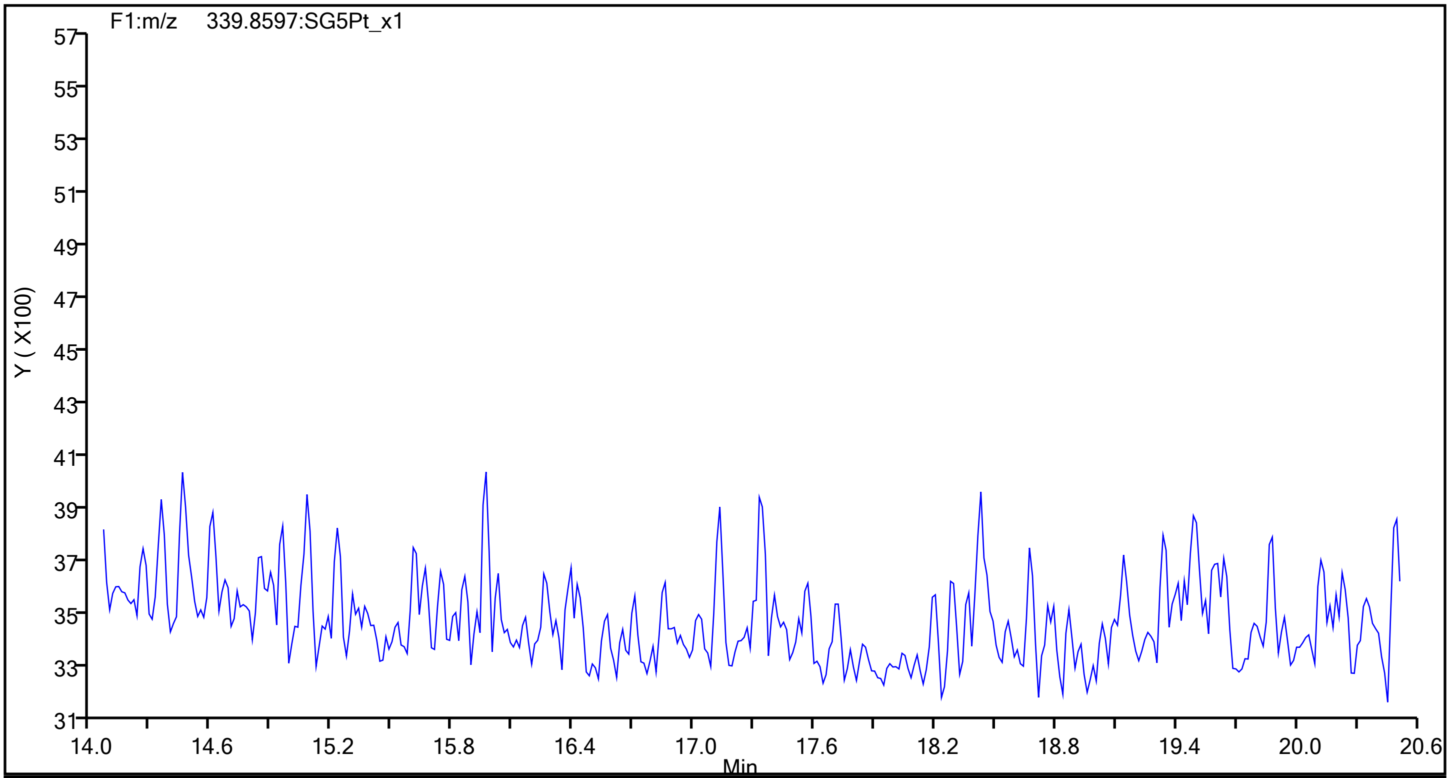

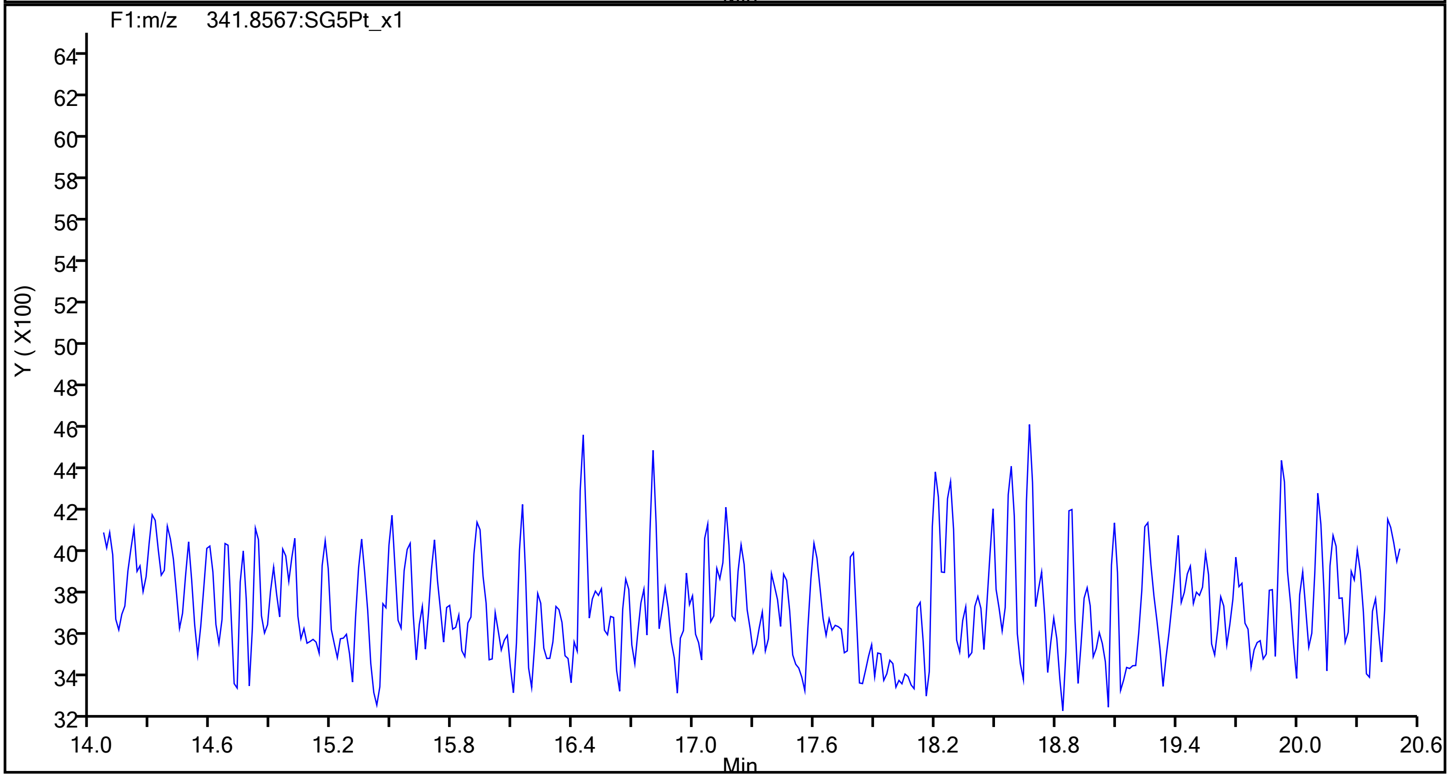

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

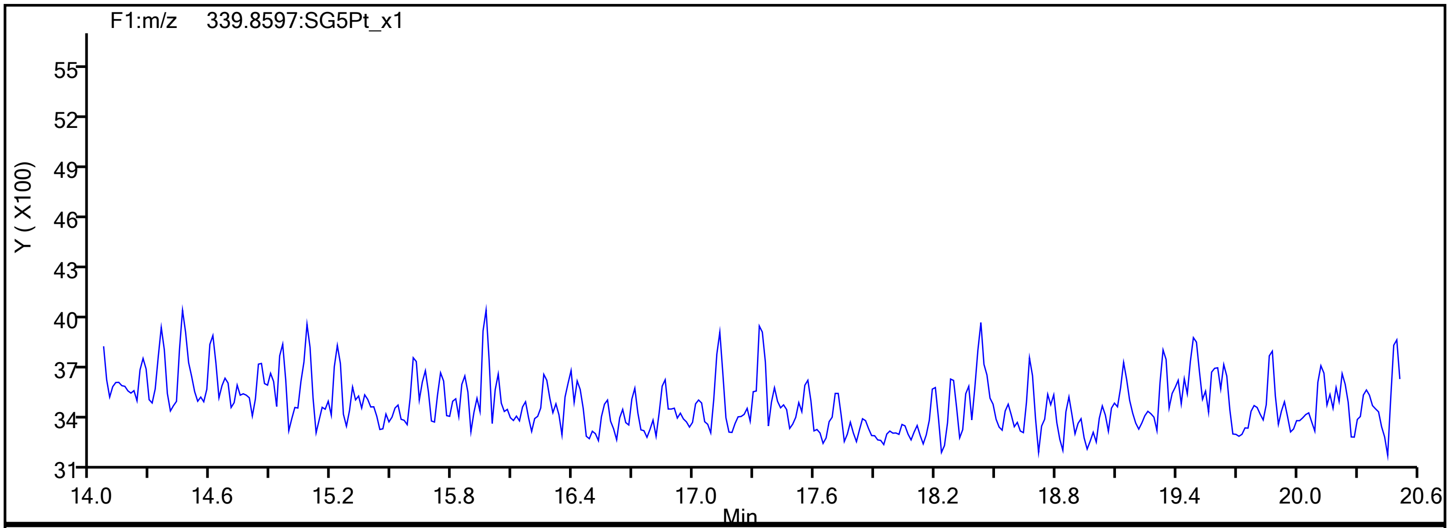

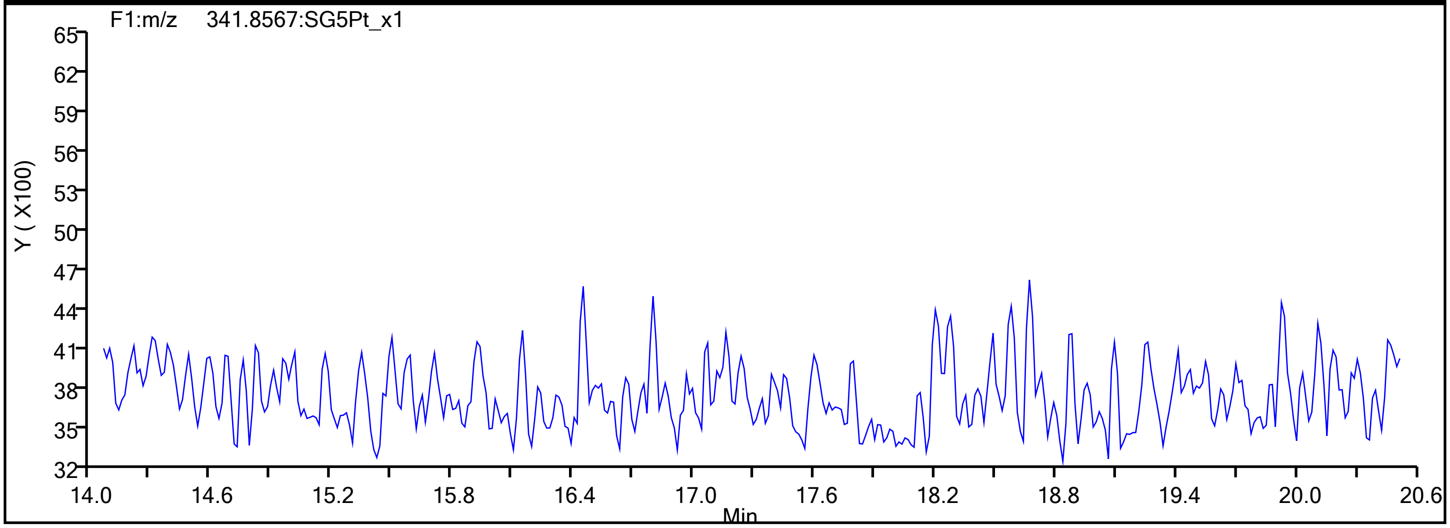

F1 PeCDFs Interference Mass

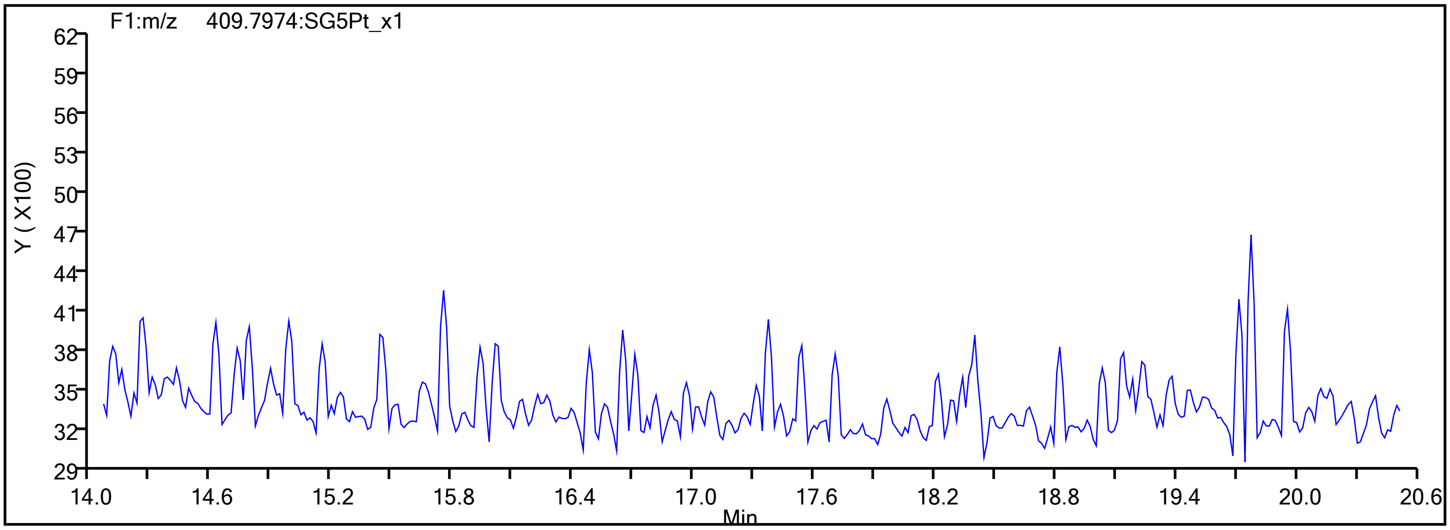

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

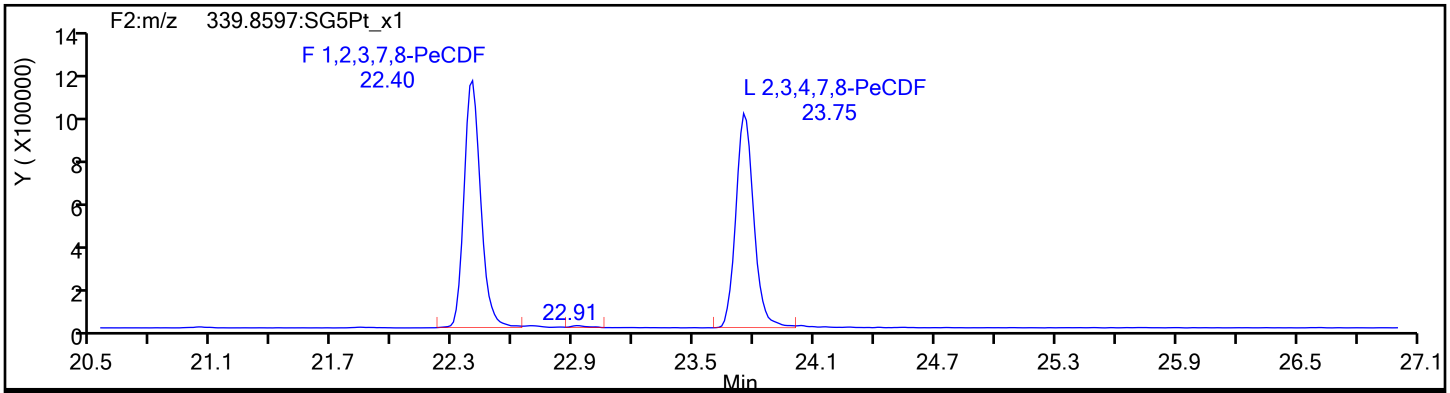

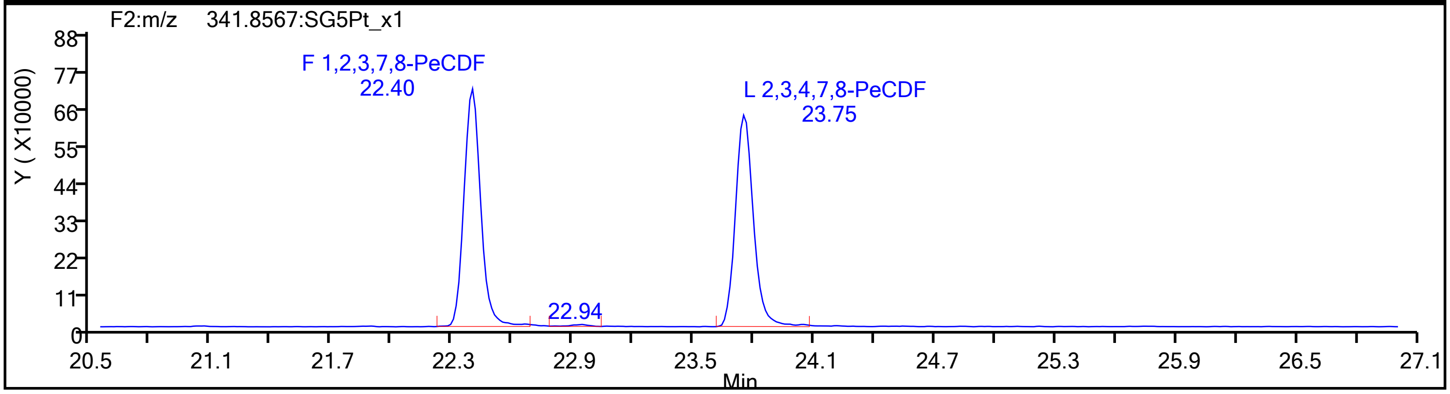

PeCDF Standards

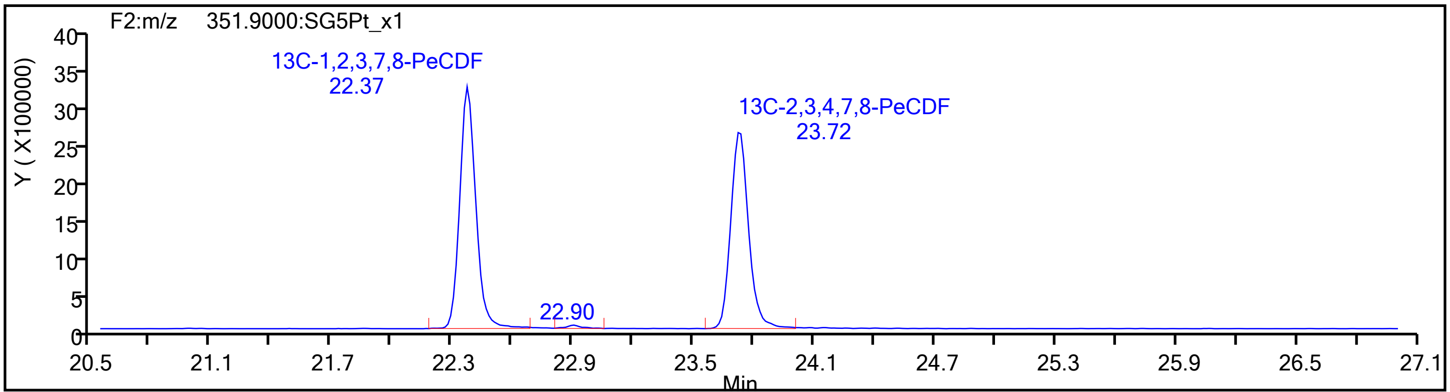

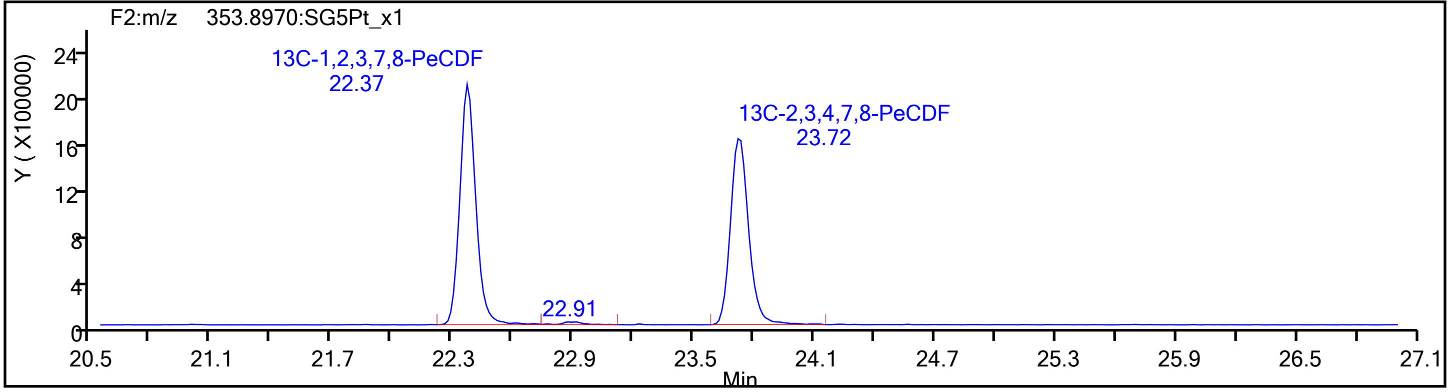

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

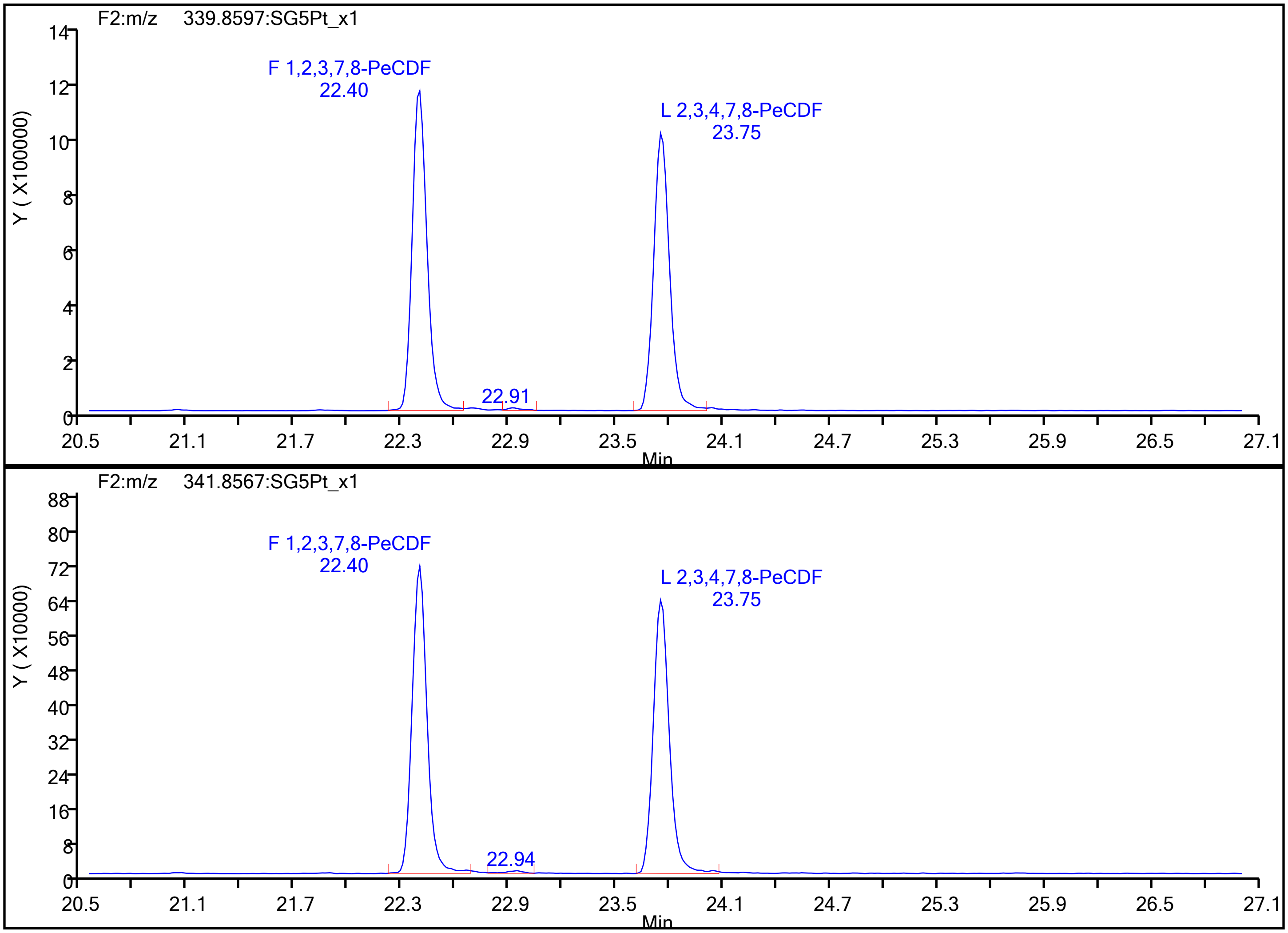

PeCDF Interference Mass

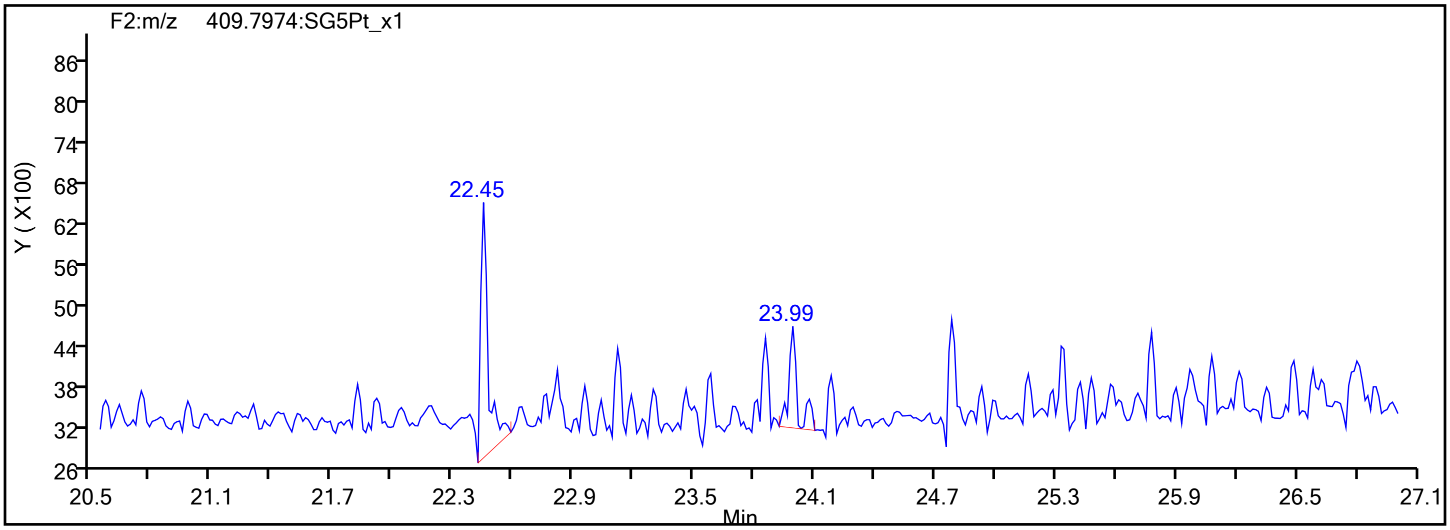

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

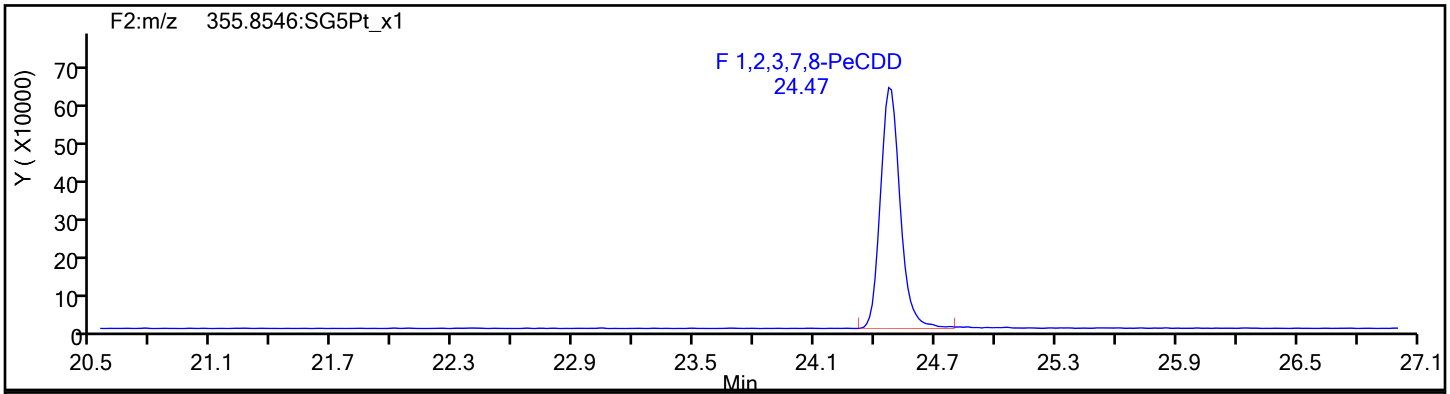

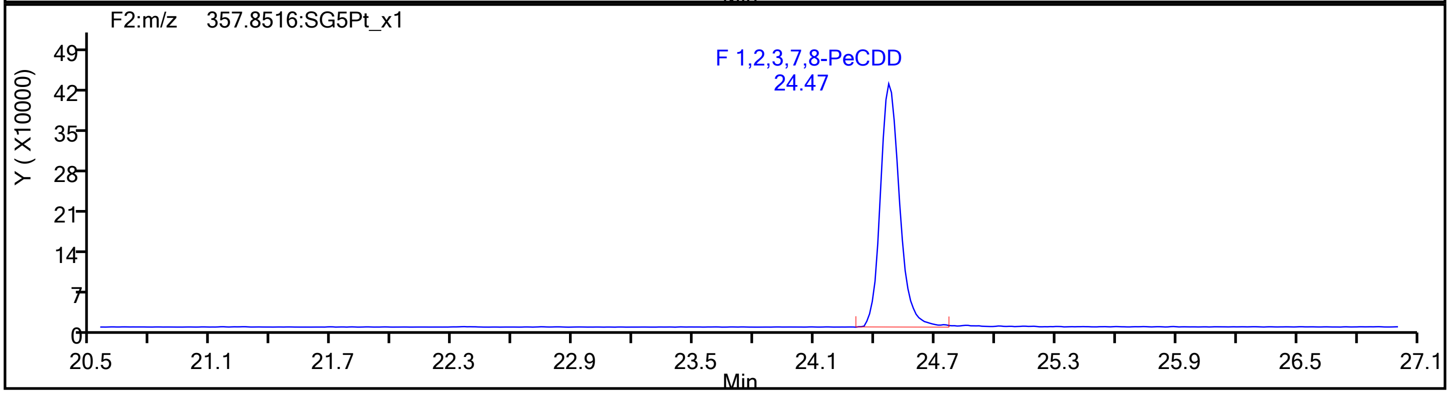

PeCDD Standards

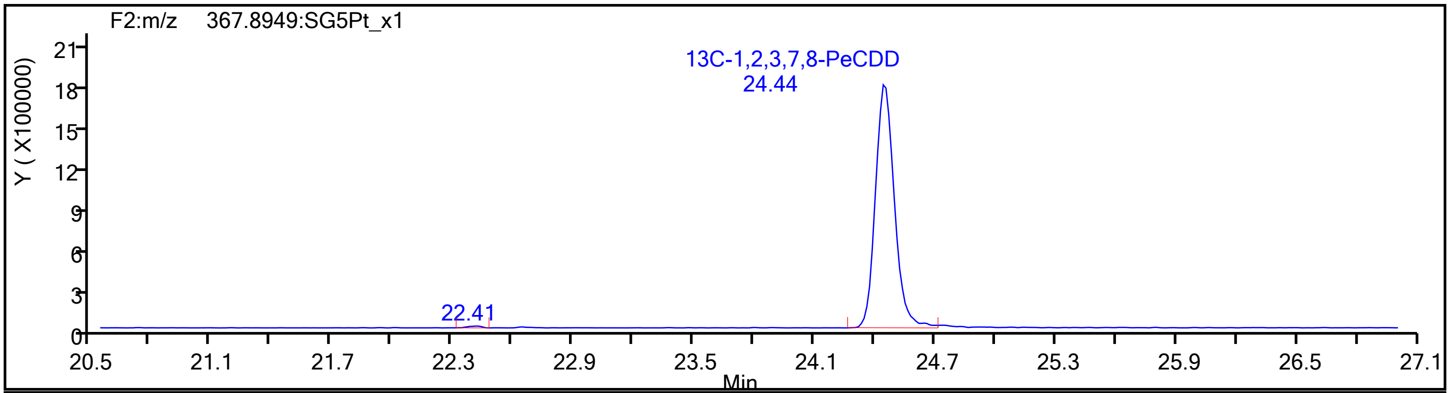

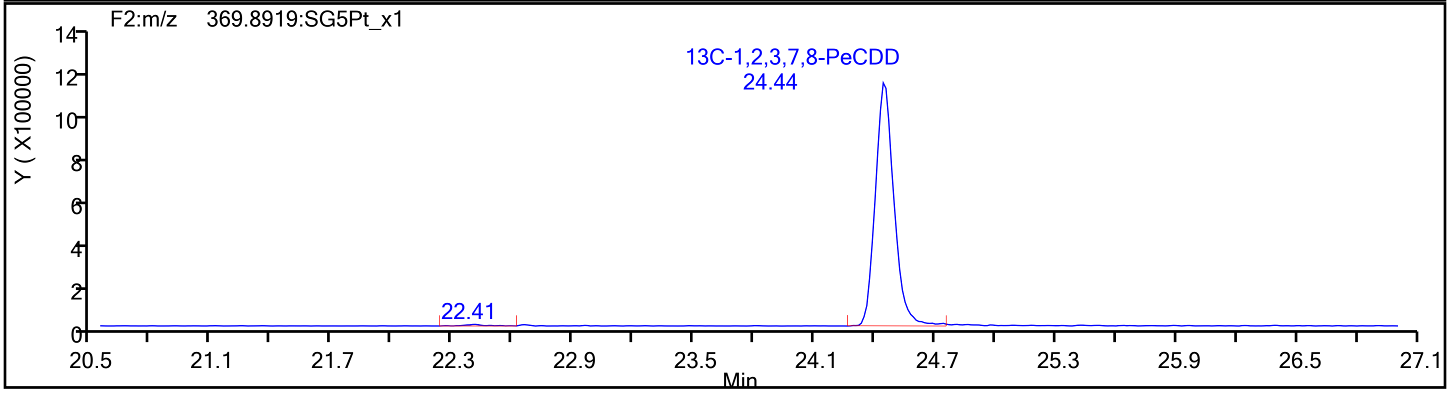

Report Date: 27-Nov-2020 08:09:00　　Chrom Revision: 2.3　12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

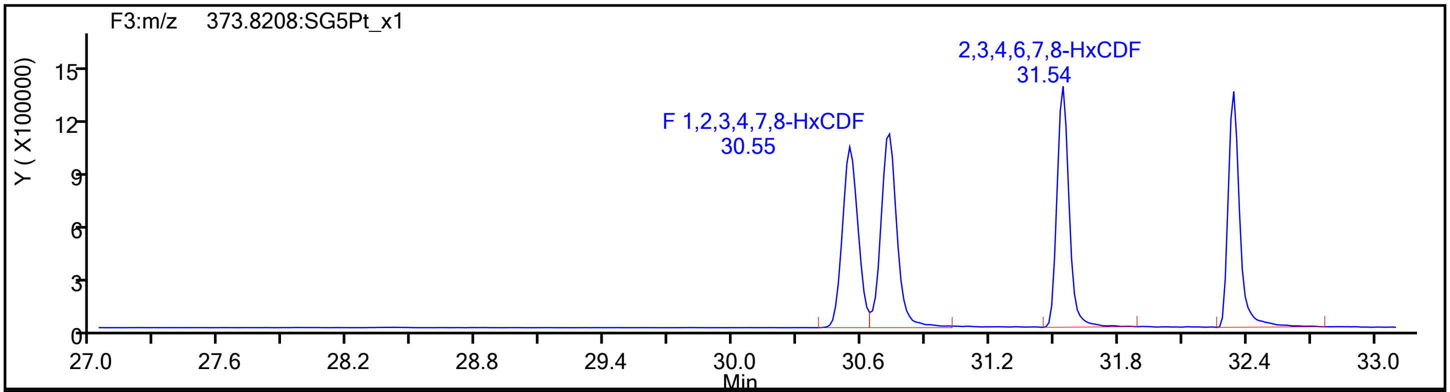

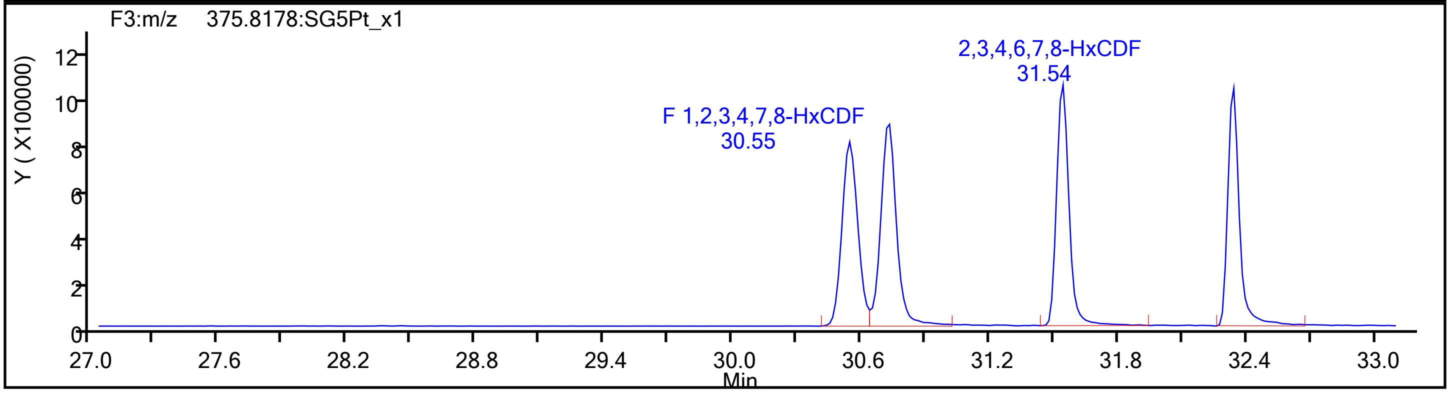

HxCDF Standards

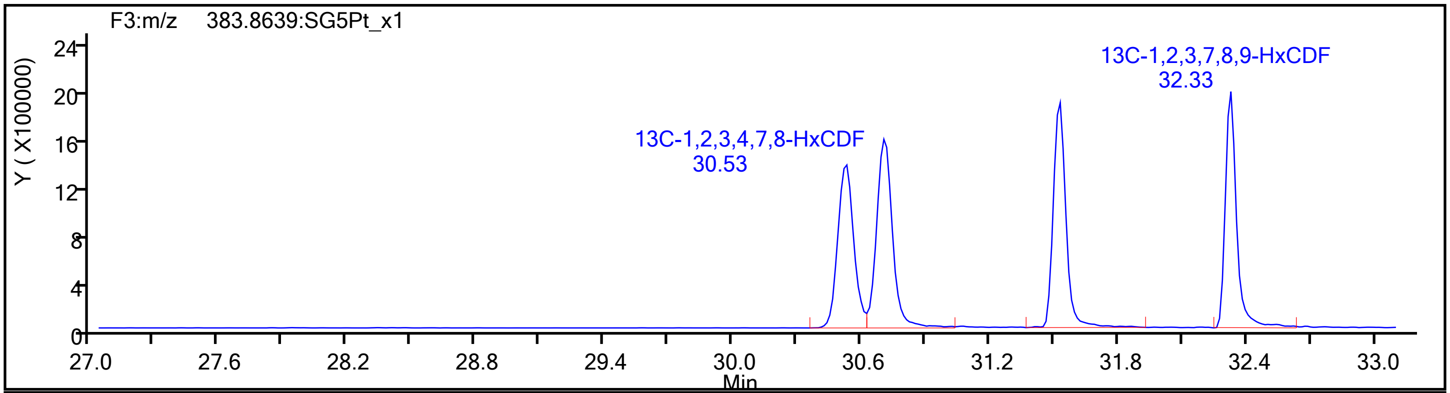

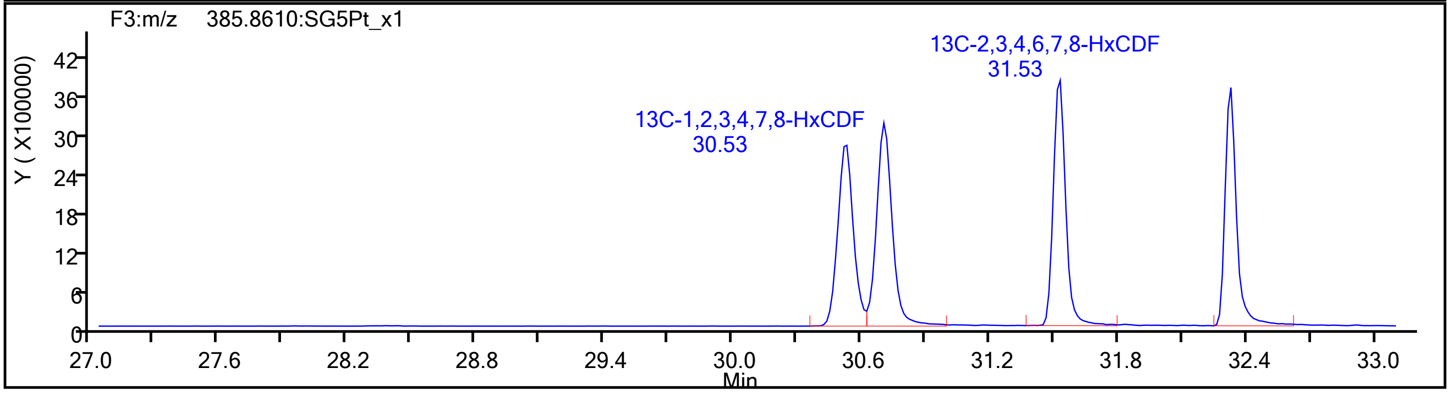

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

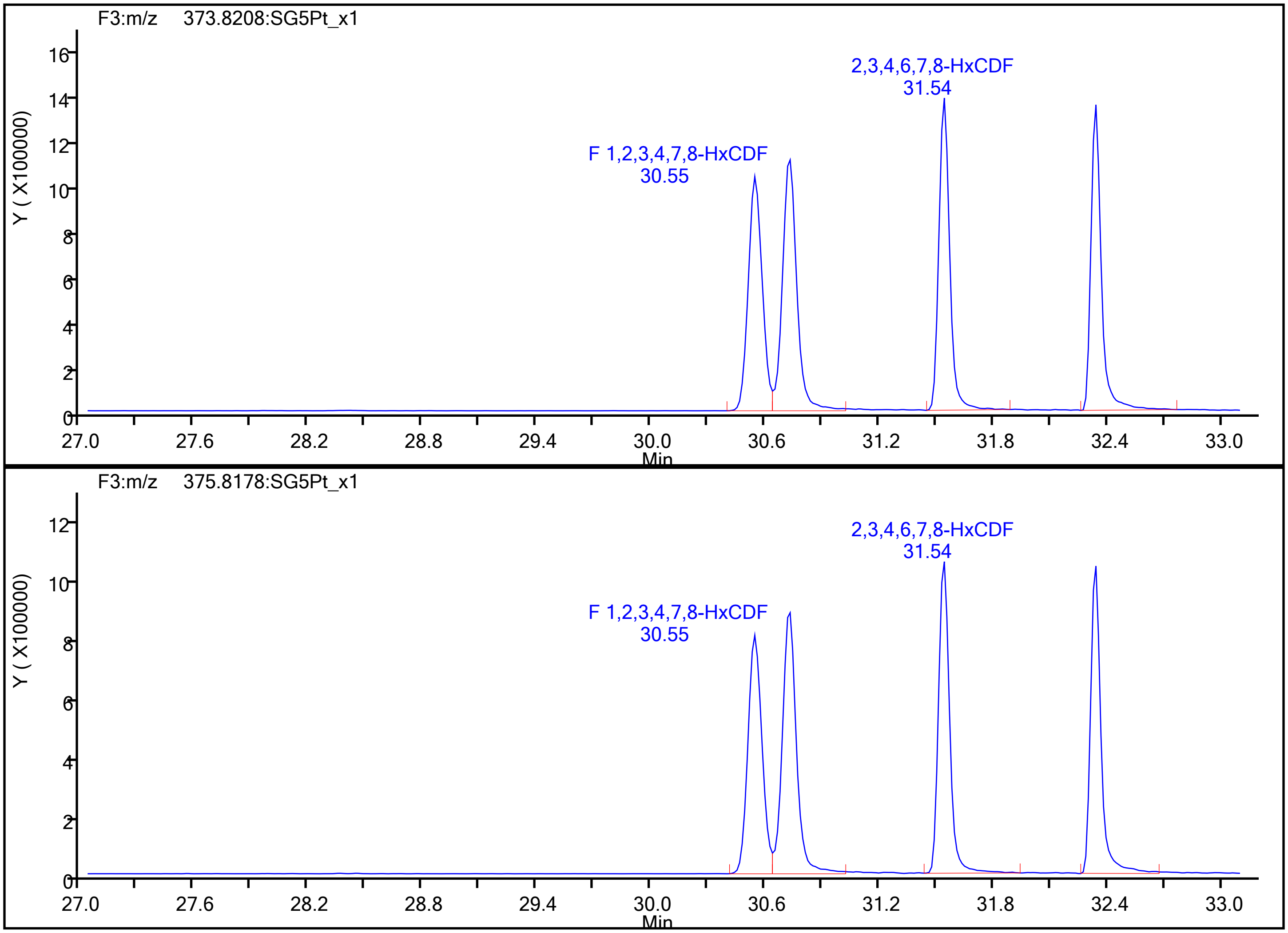

HxCDF Interference Mass

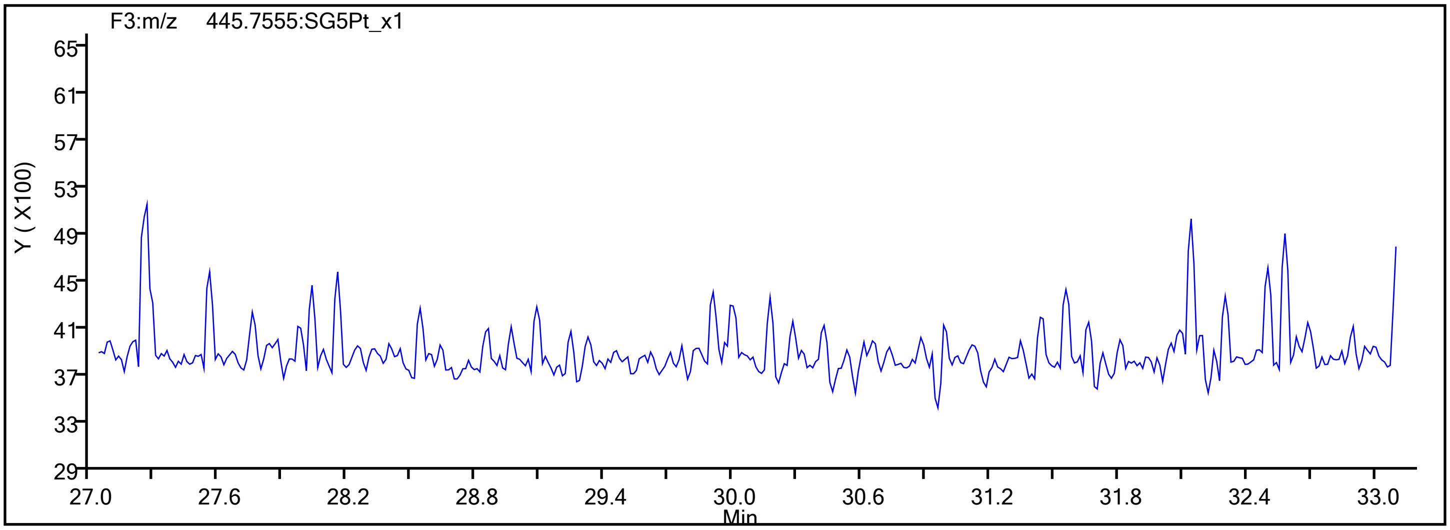

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
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HxCDD

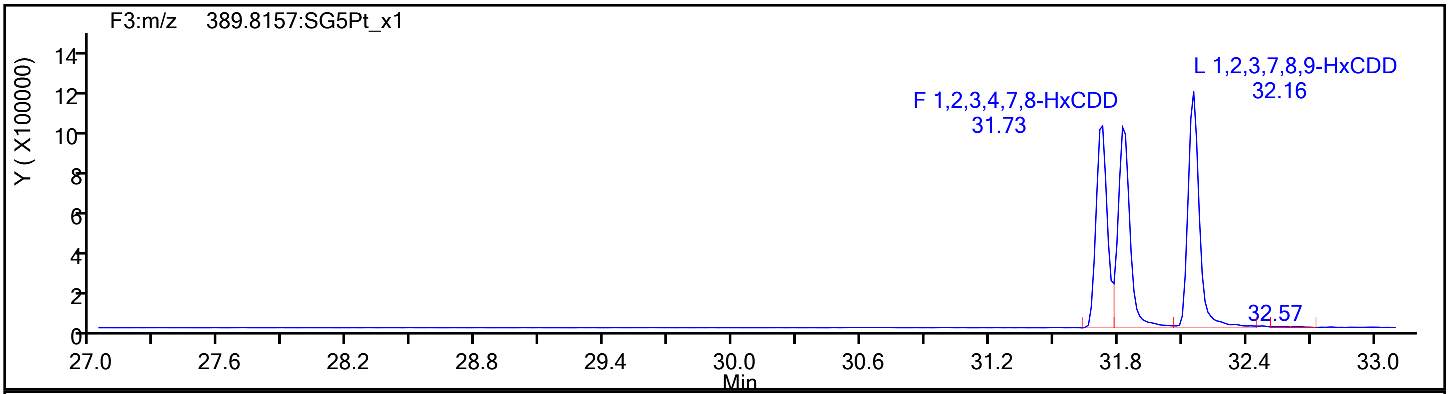

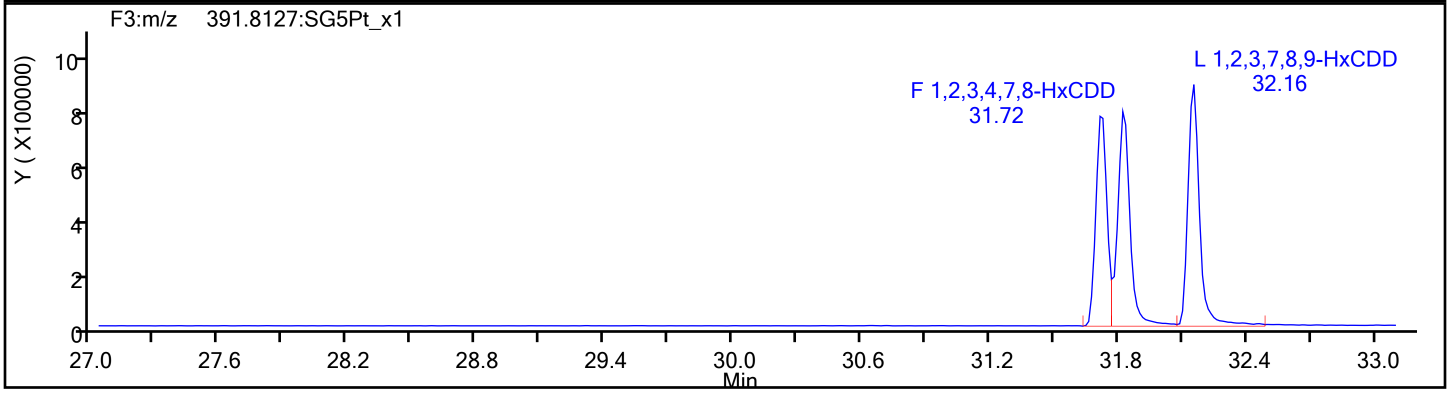

HxCDD Standards

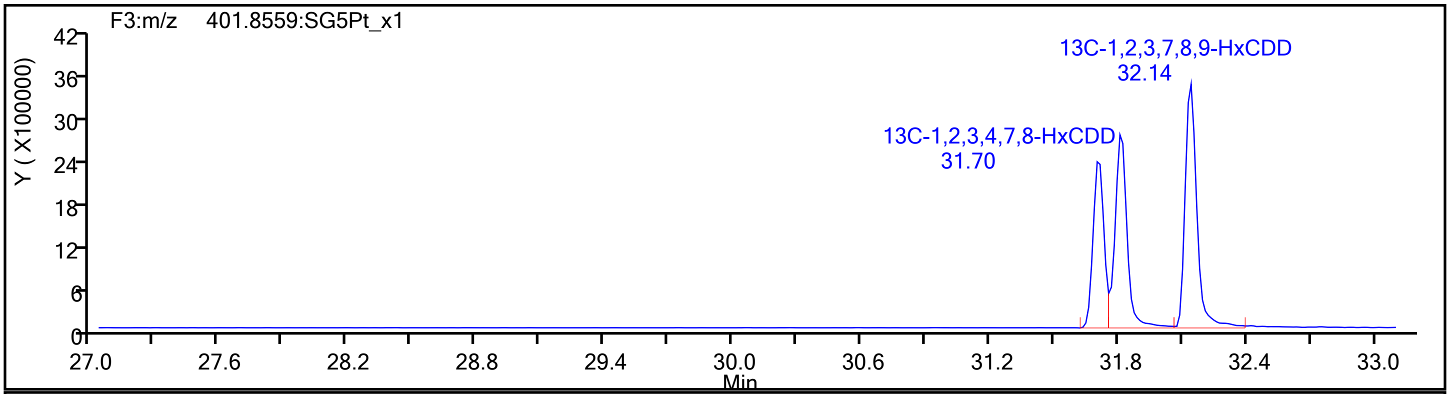

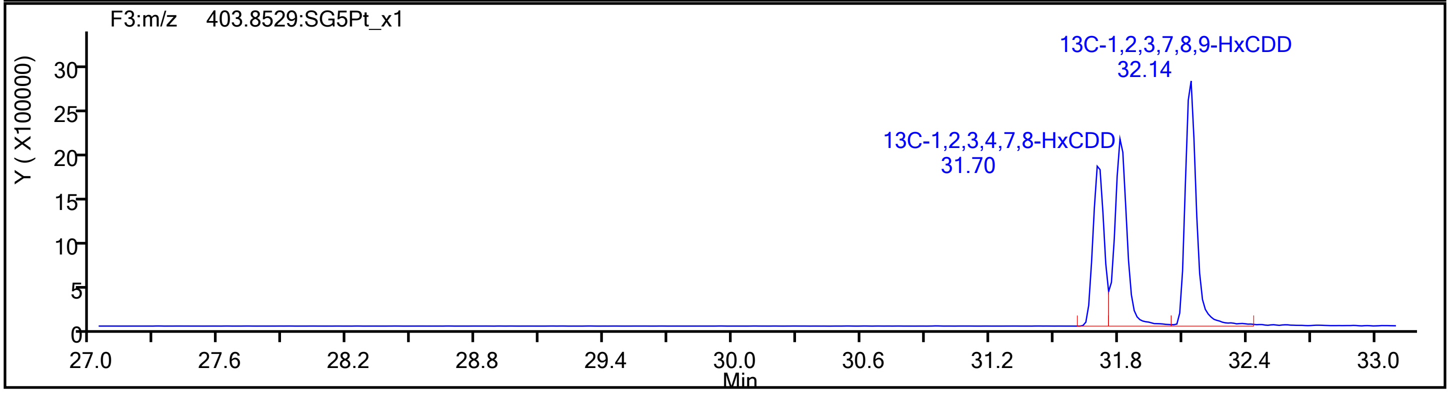

Report Date: 27-Nov-2020 08:09:00
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

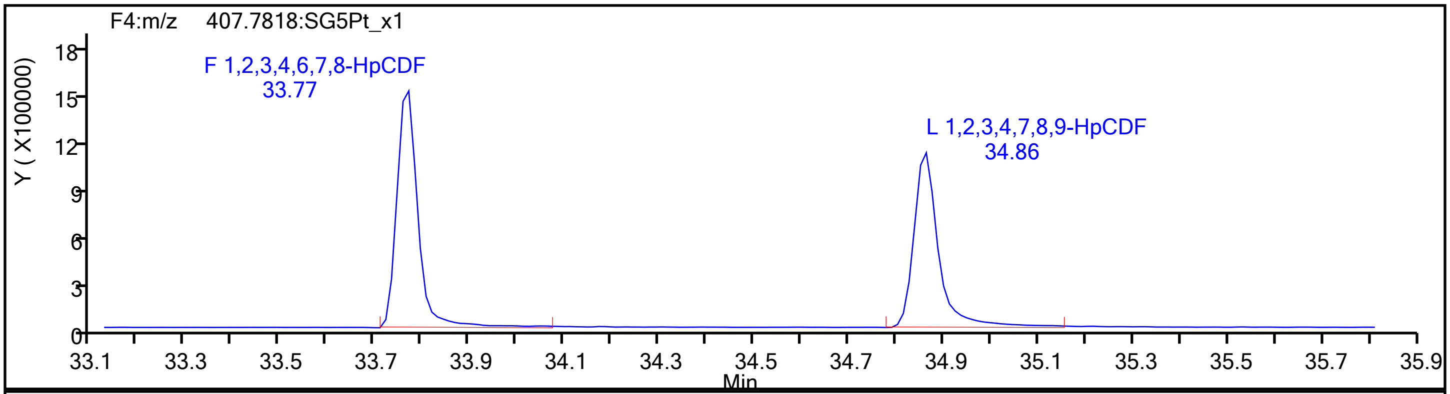

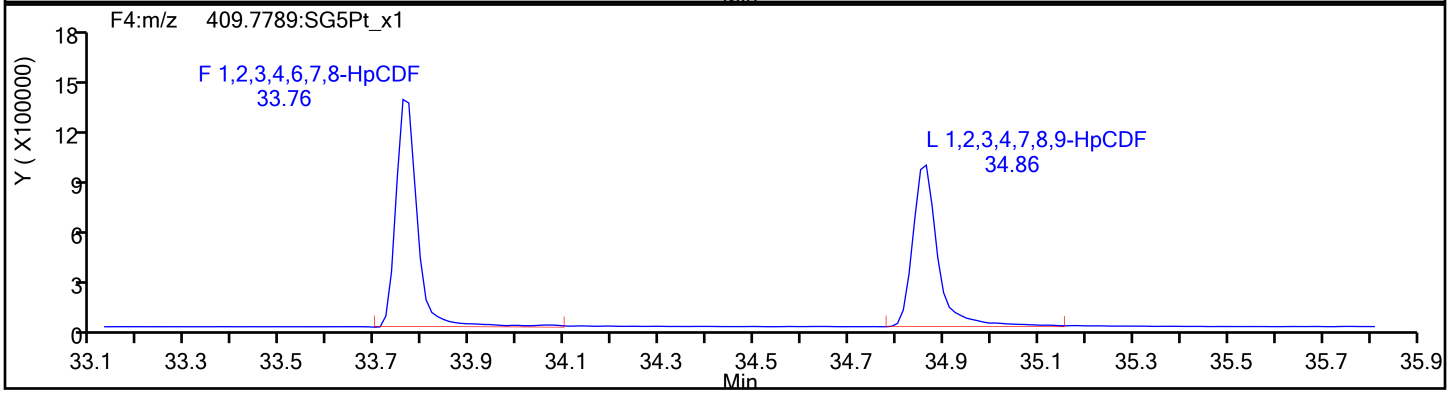

HpCDF Standards

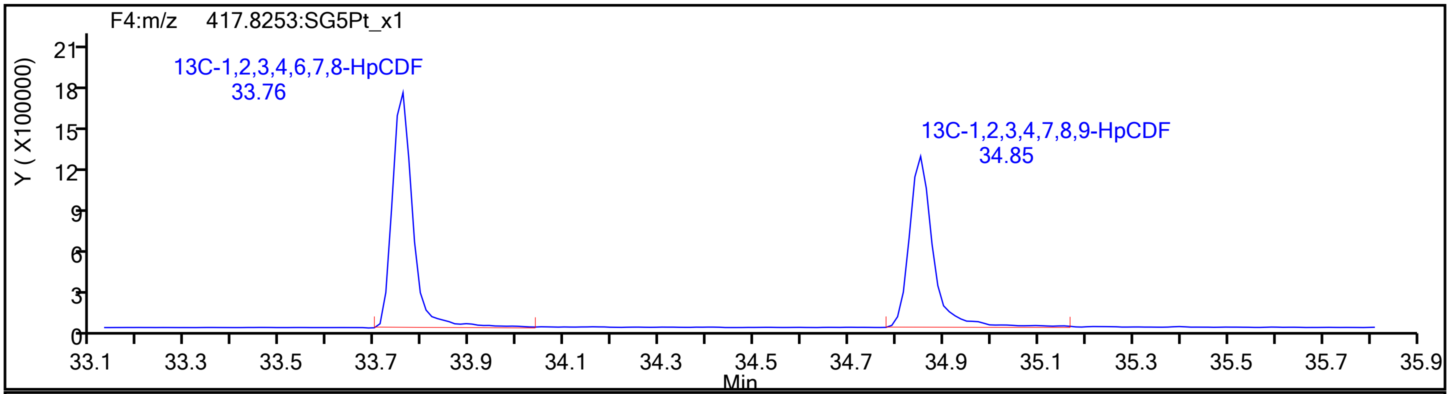

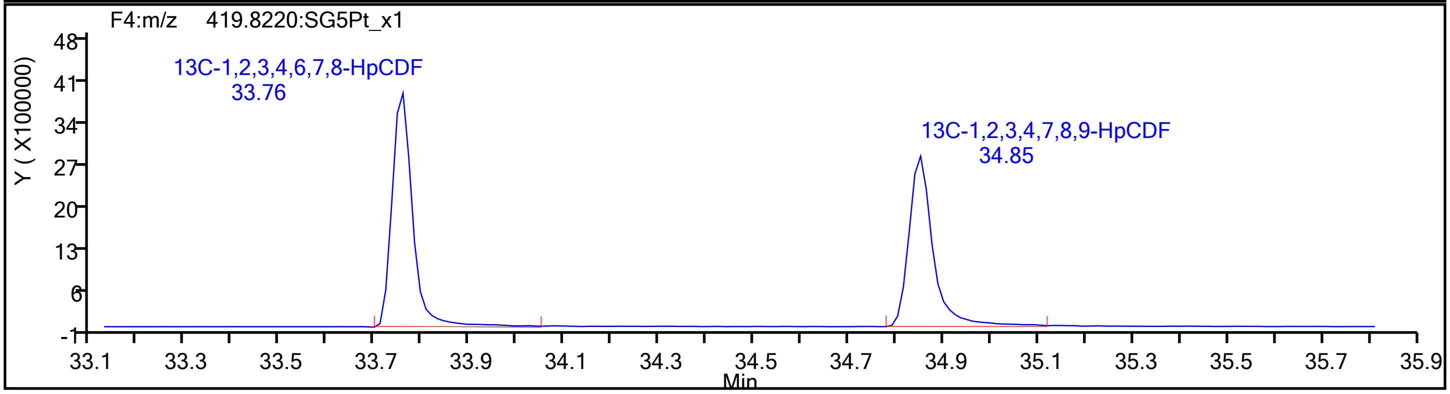

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

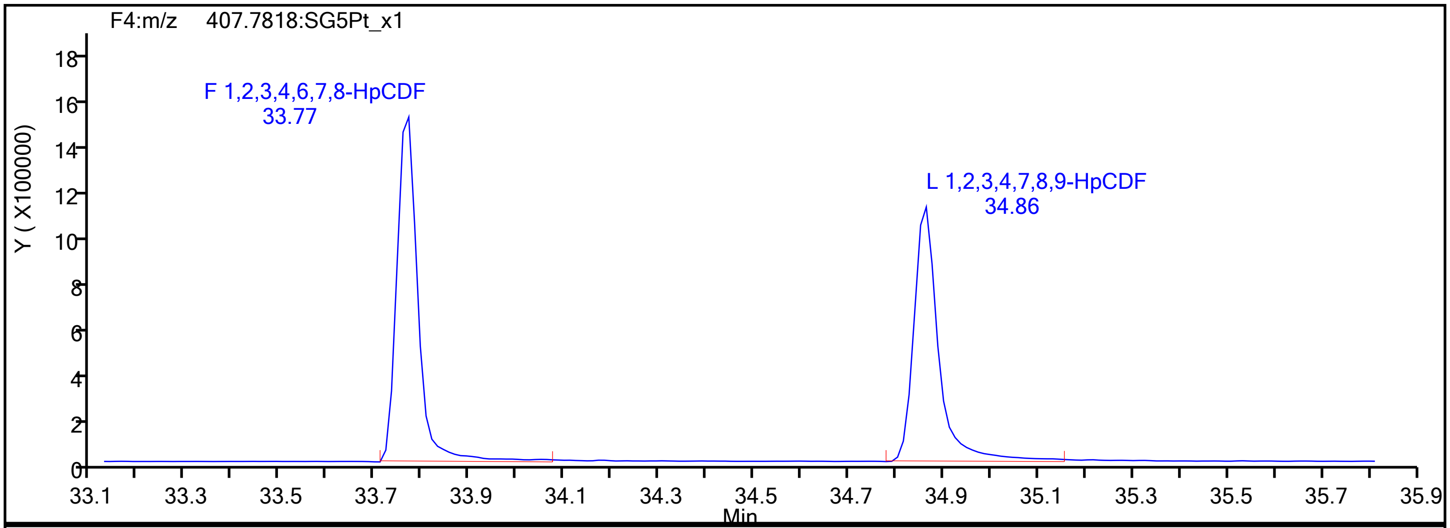

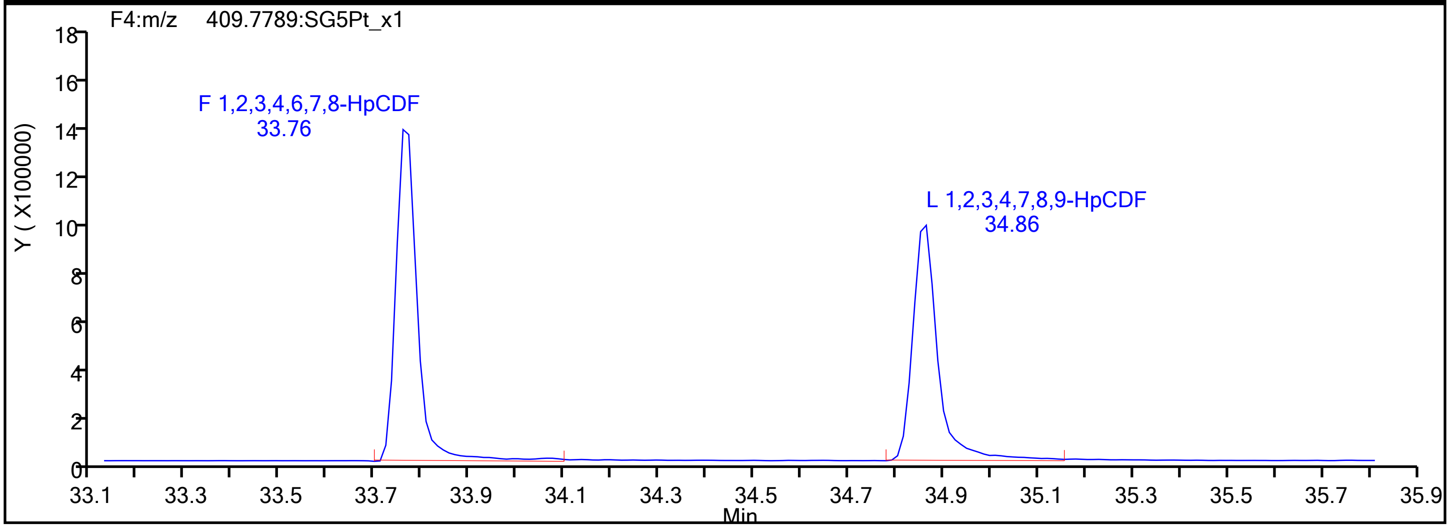

HpCDF Interference Mass

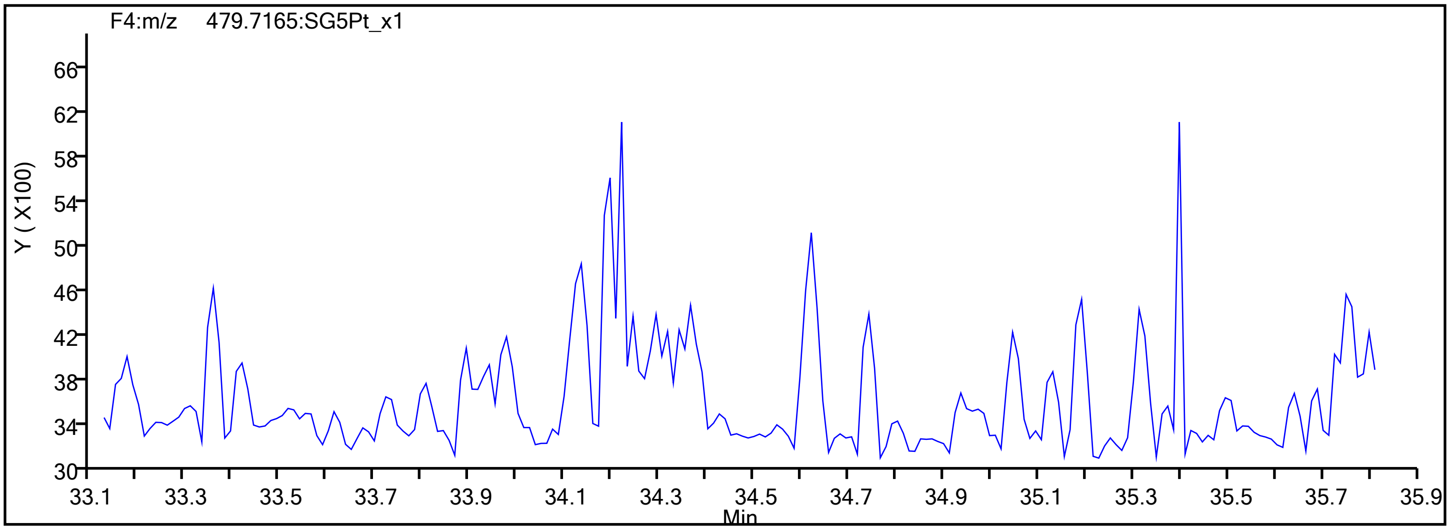

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

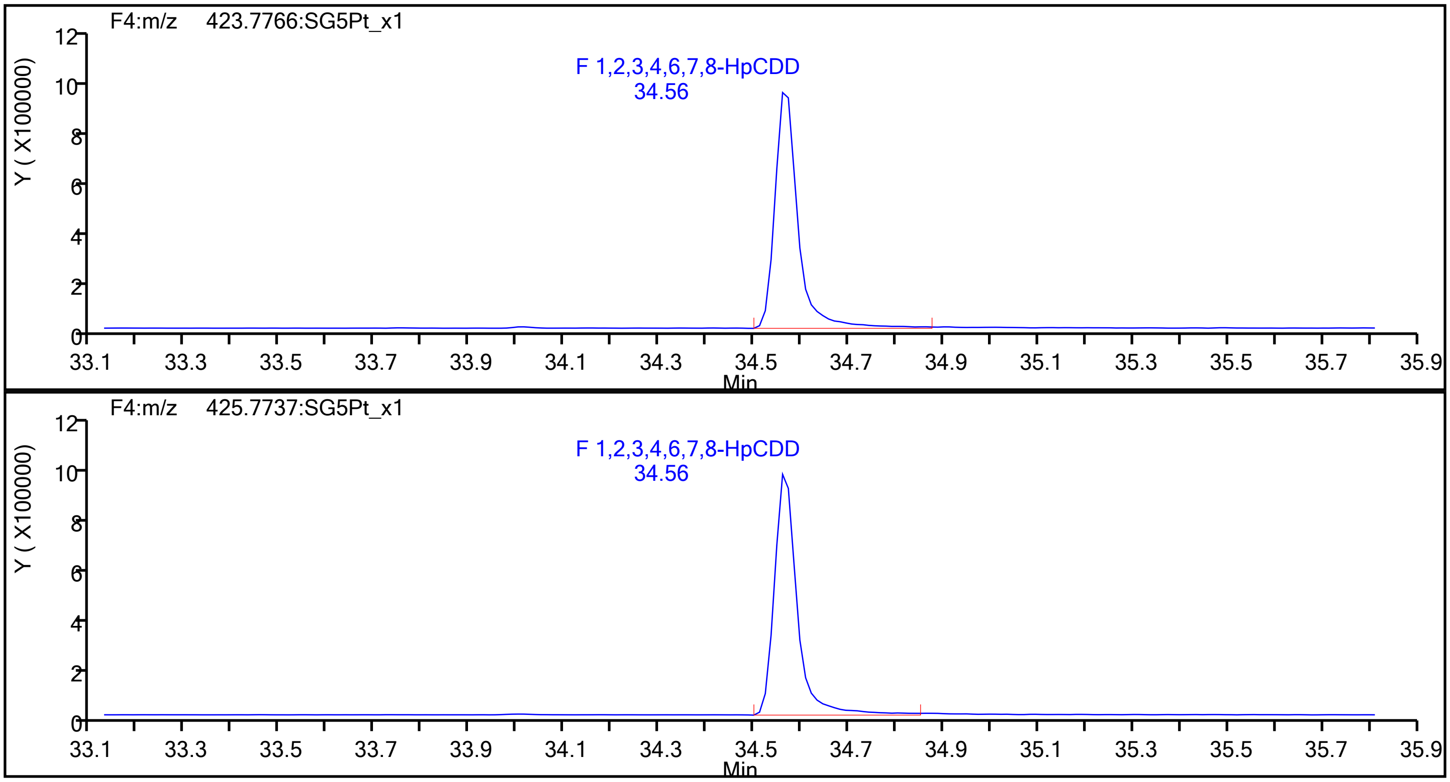

HpCDD Standards

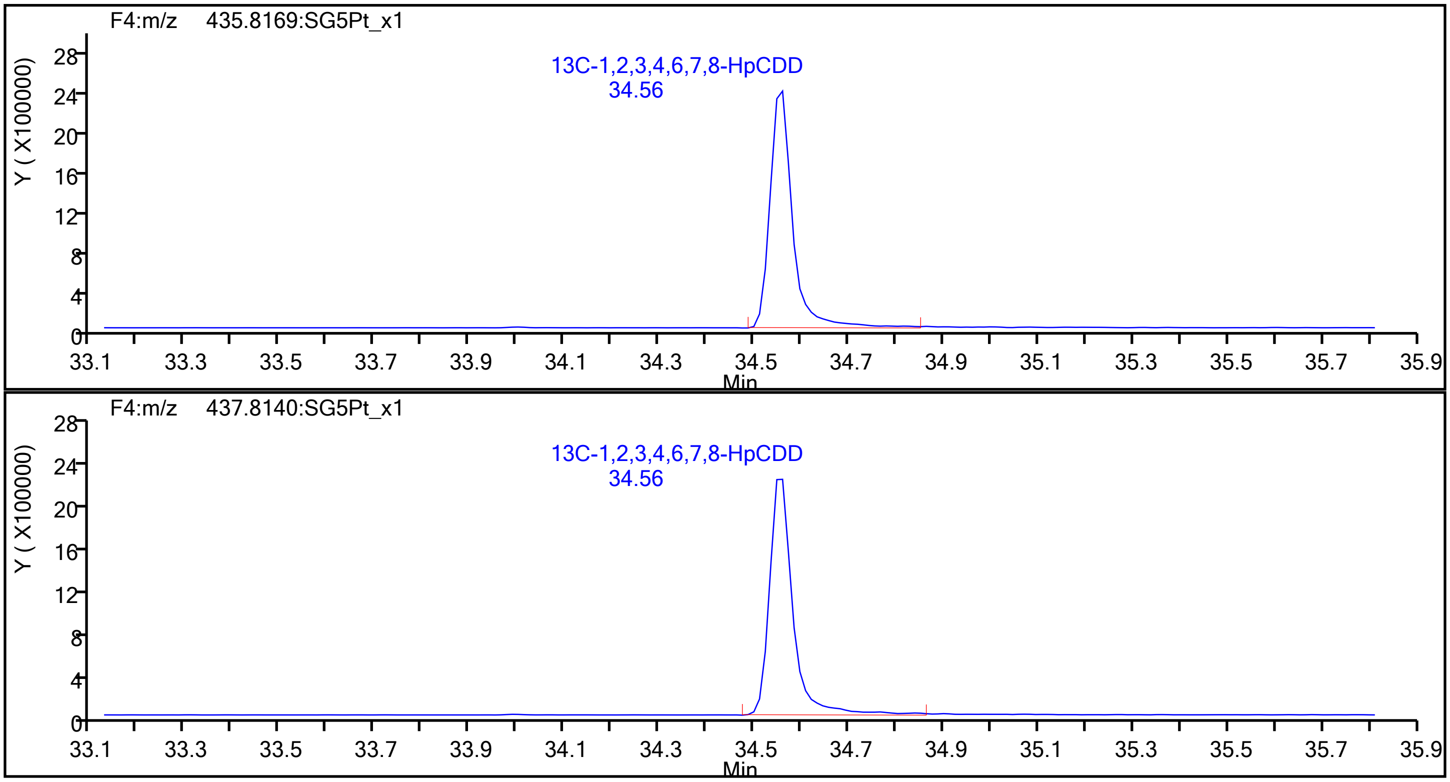

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d

Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

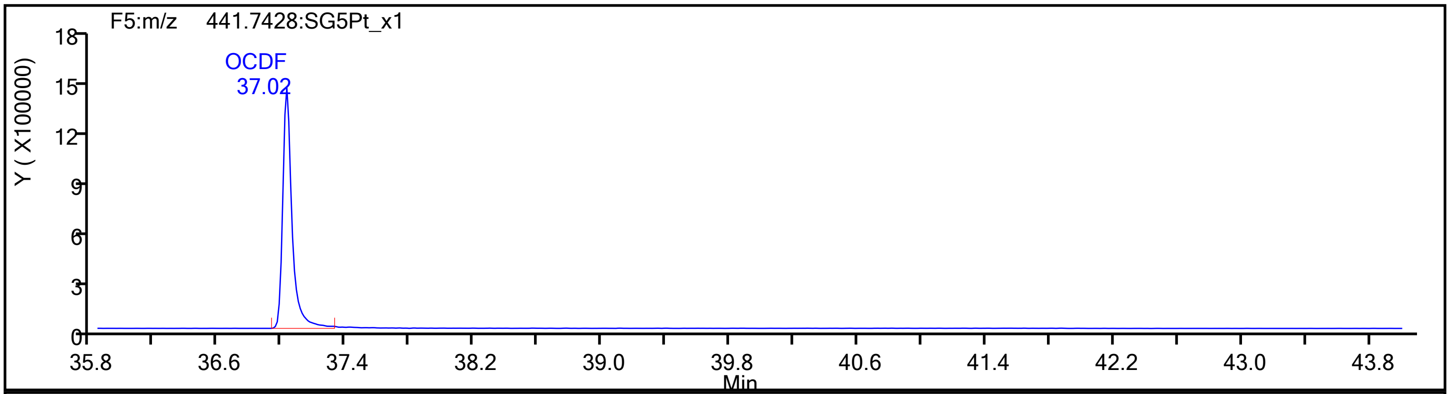

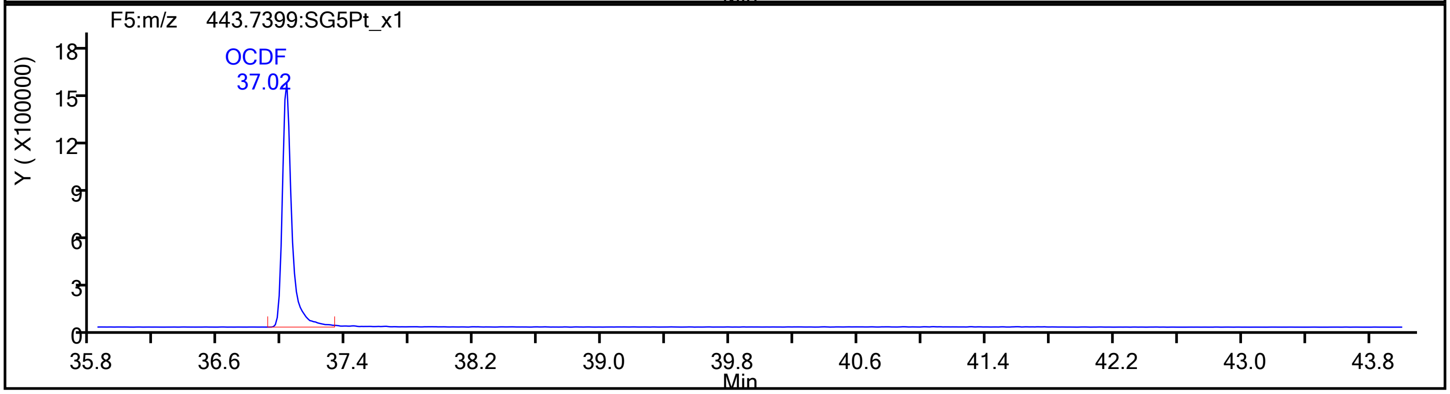

OCDF Standards

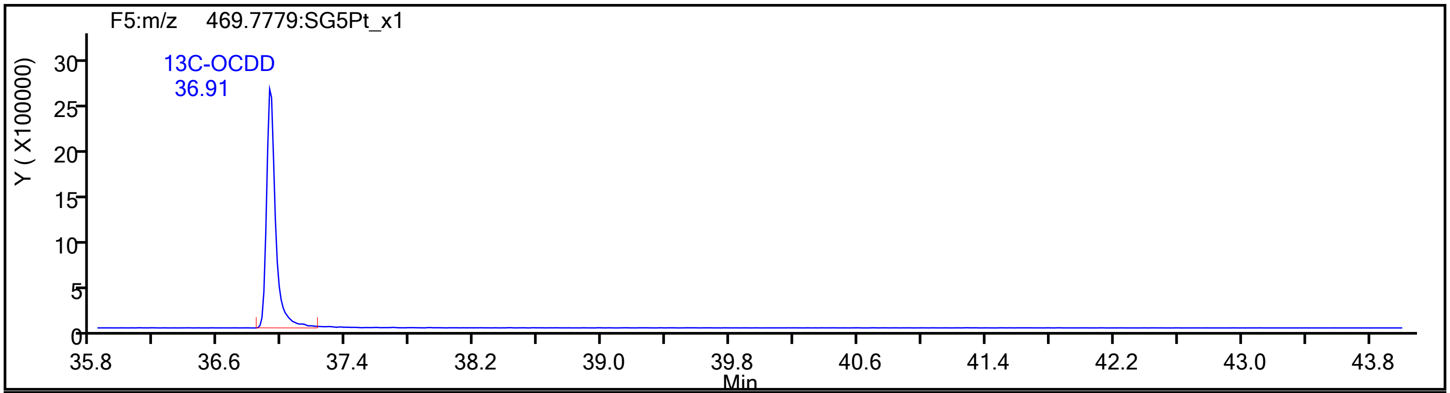

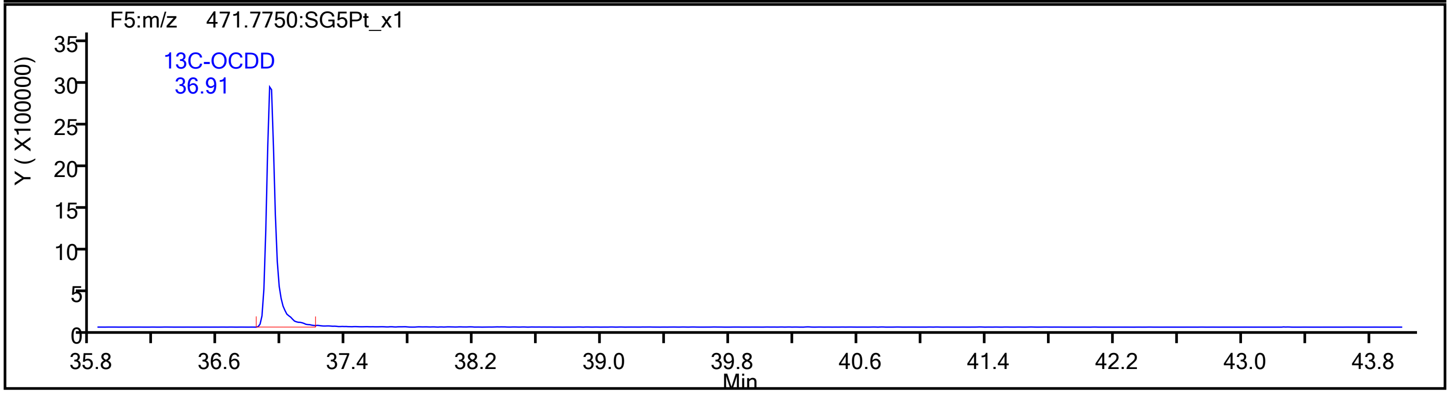

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

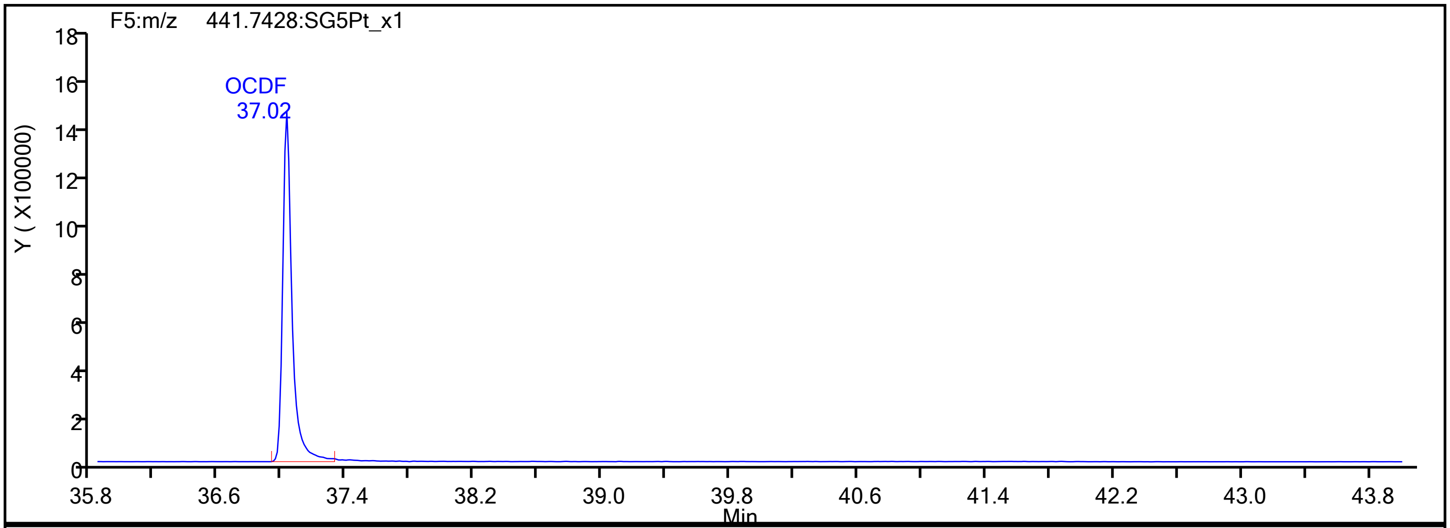

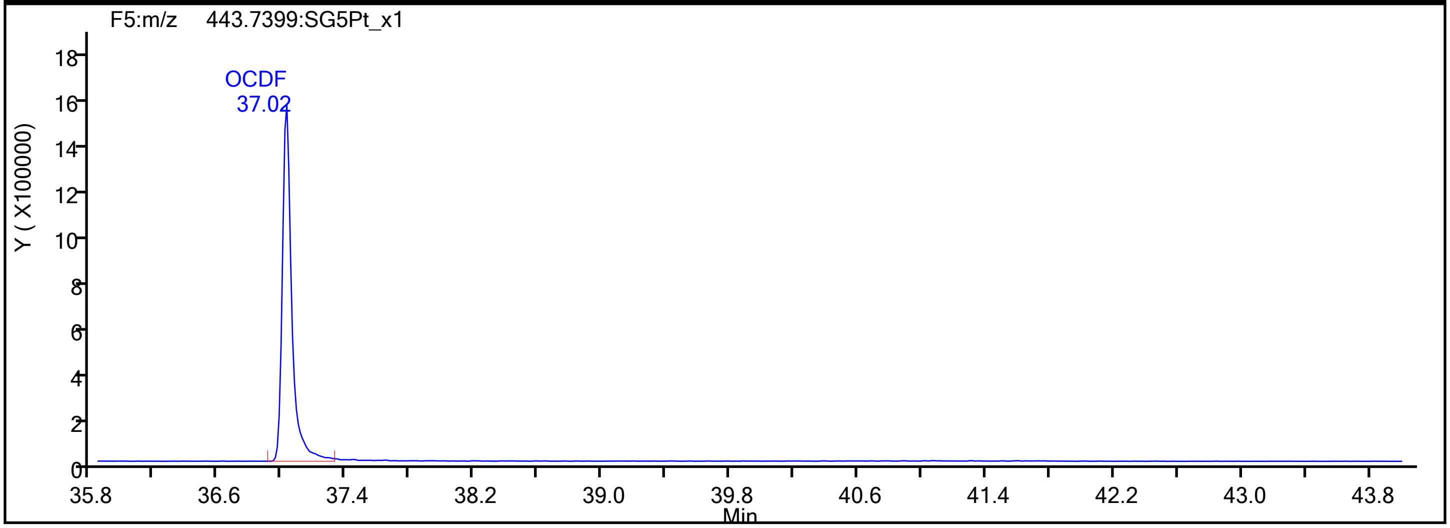

OCDF Interference Mass

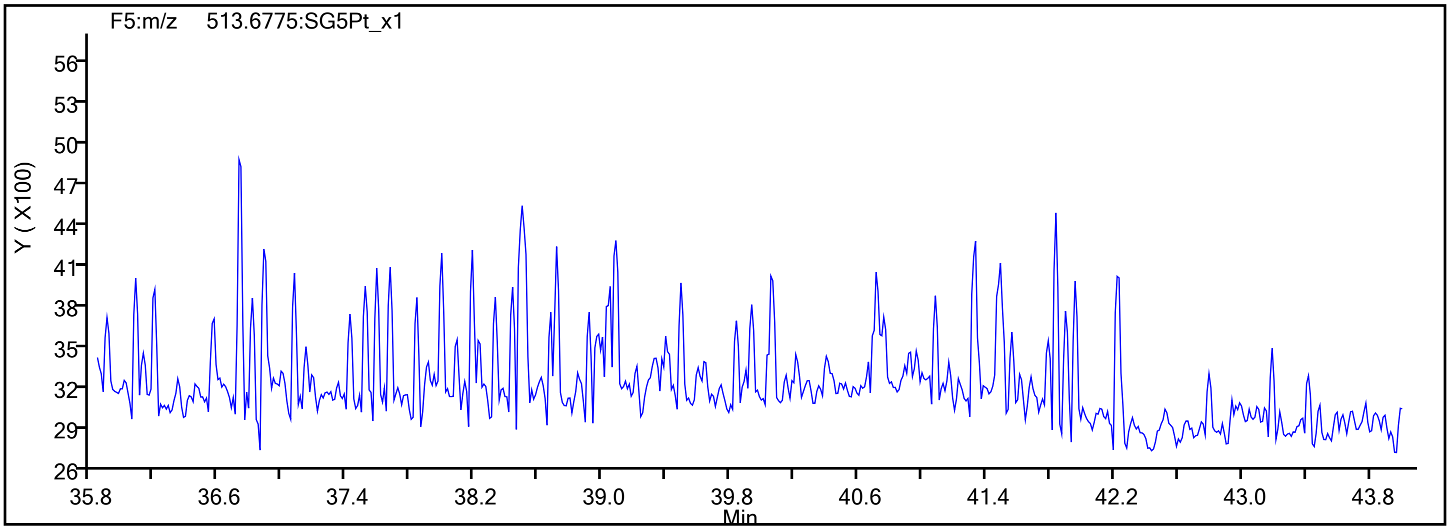

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

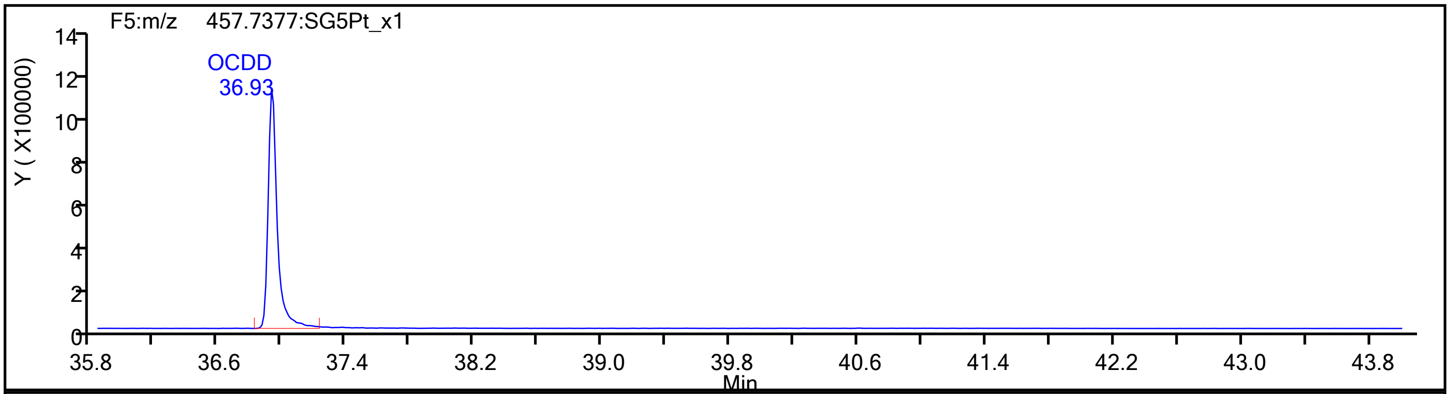

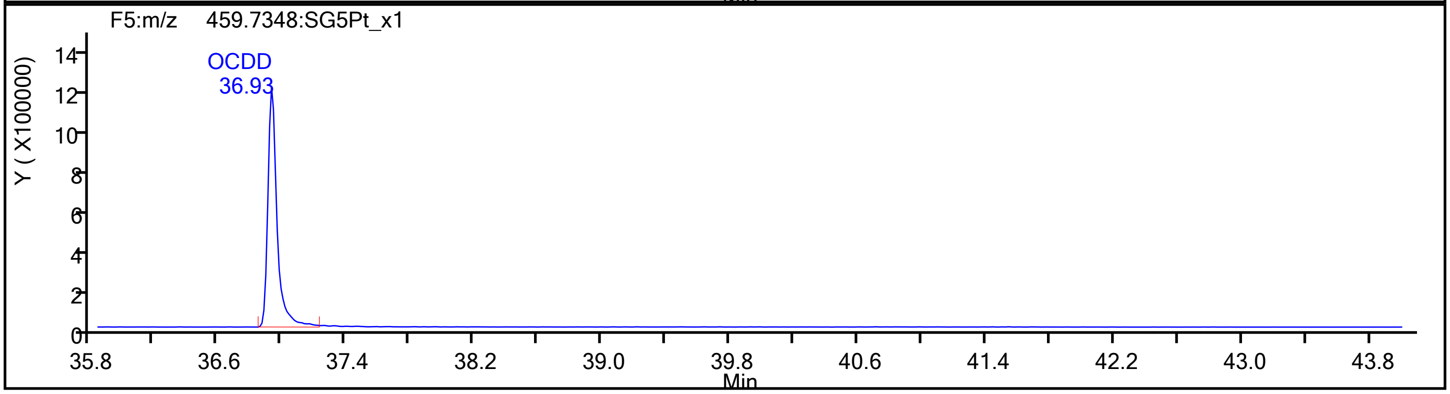

OCDD Standards

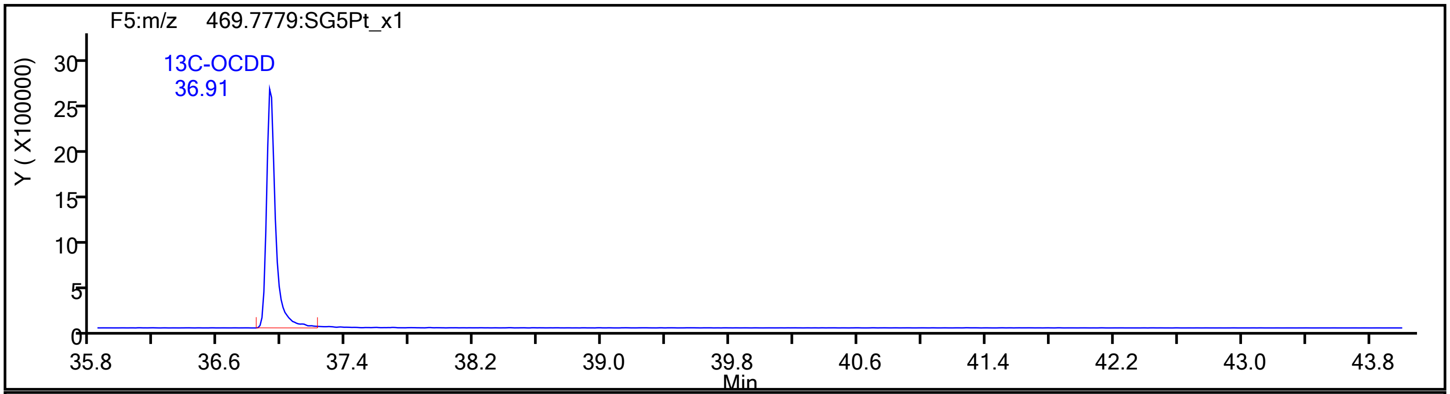

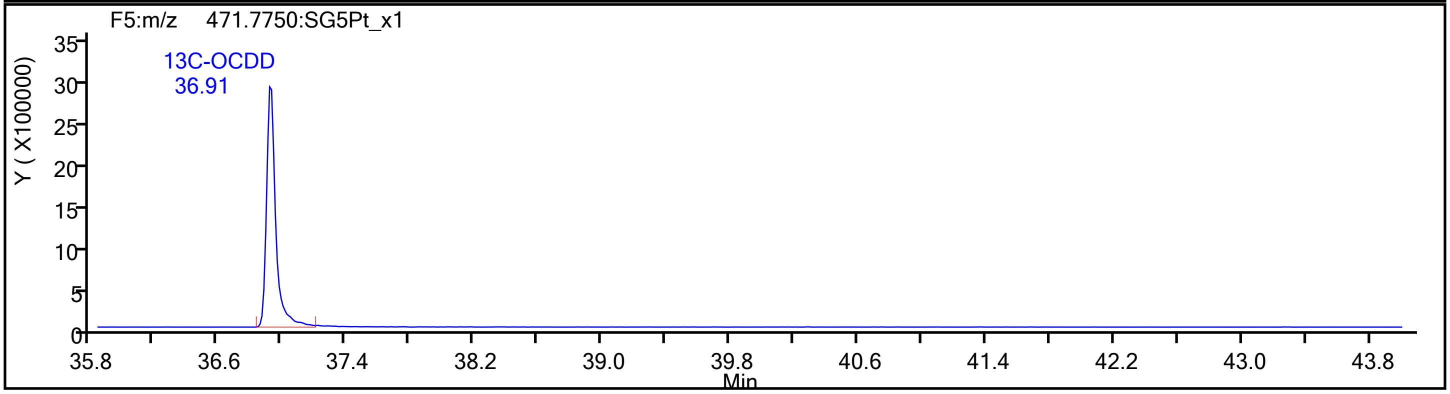

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
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Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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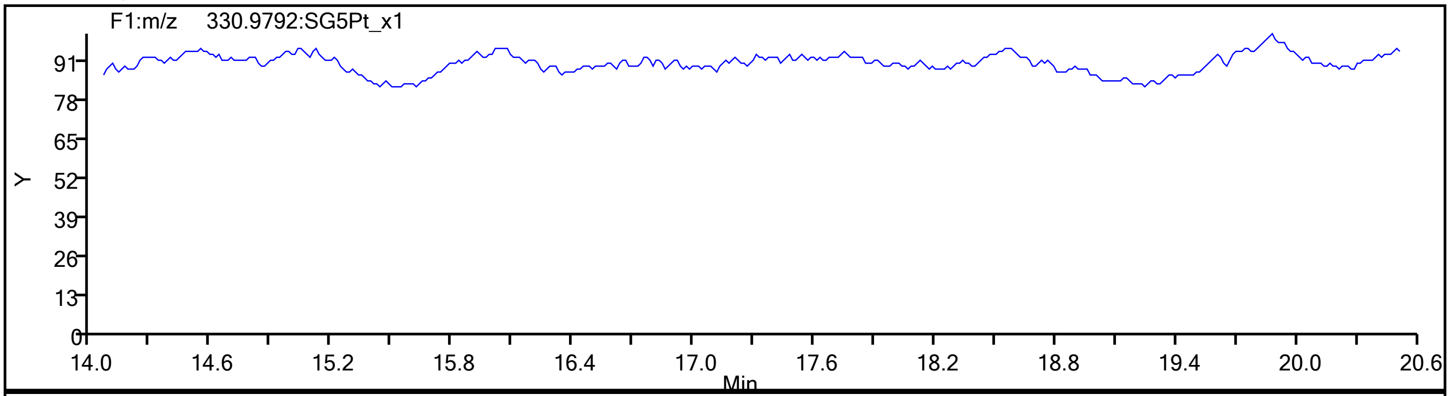

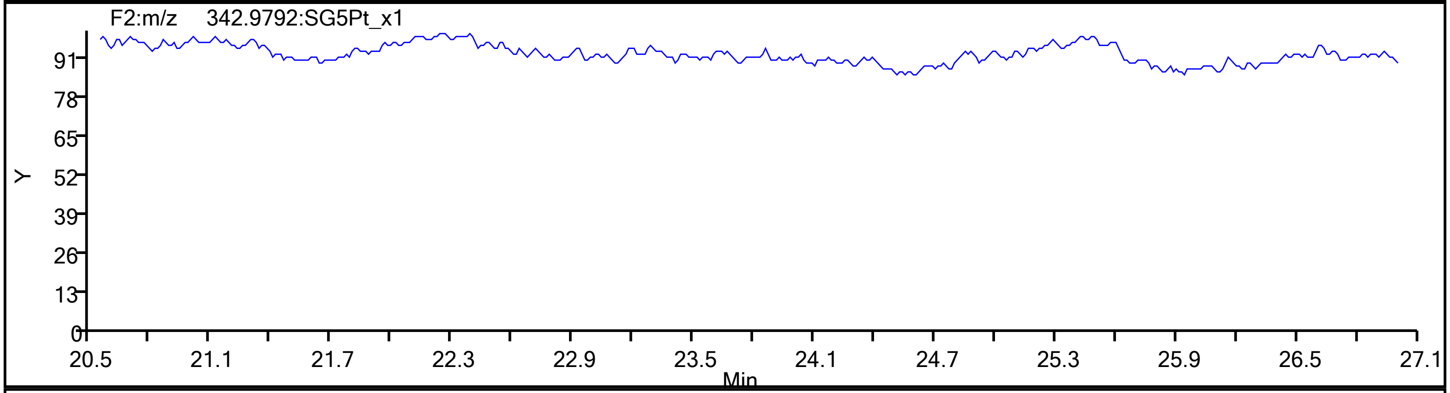

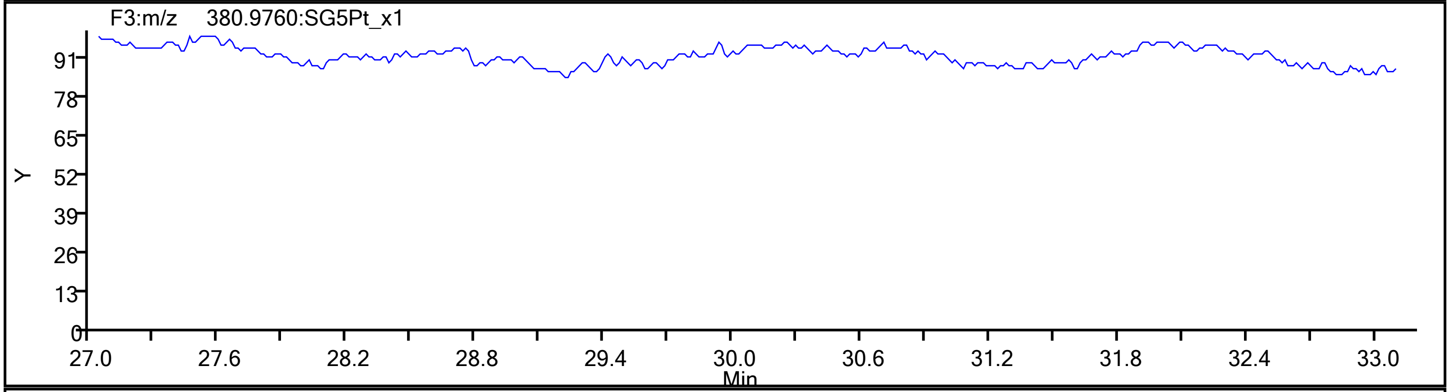

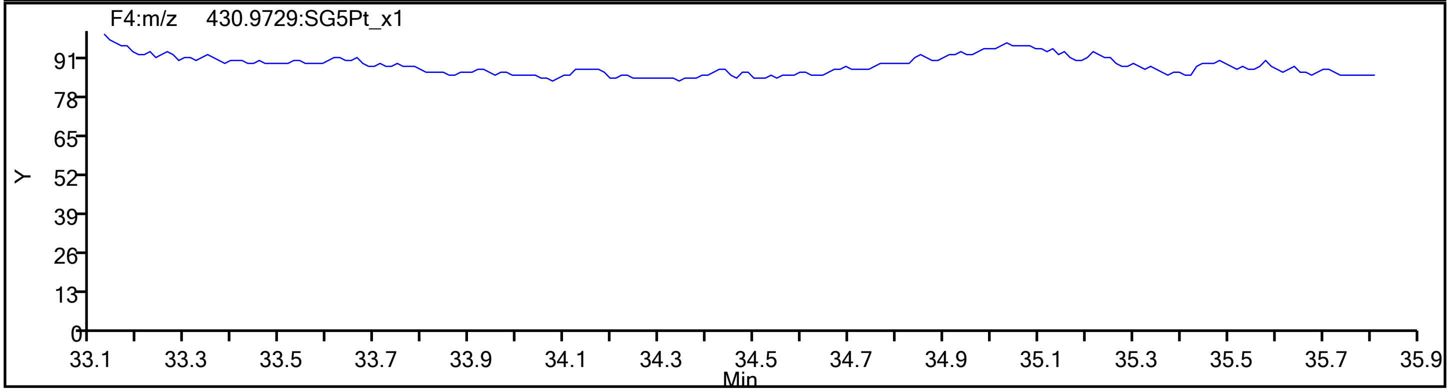

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d
Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

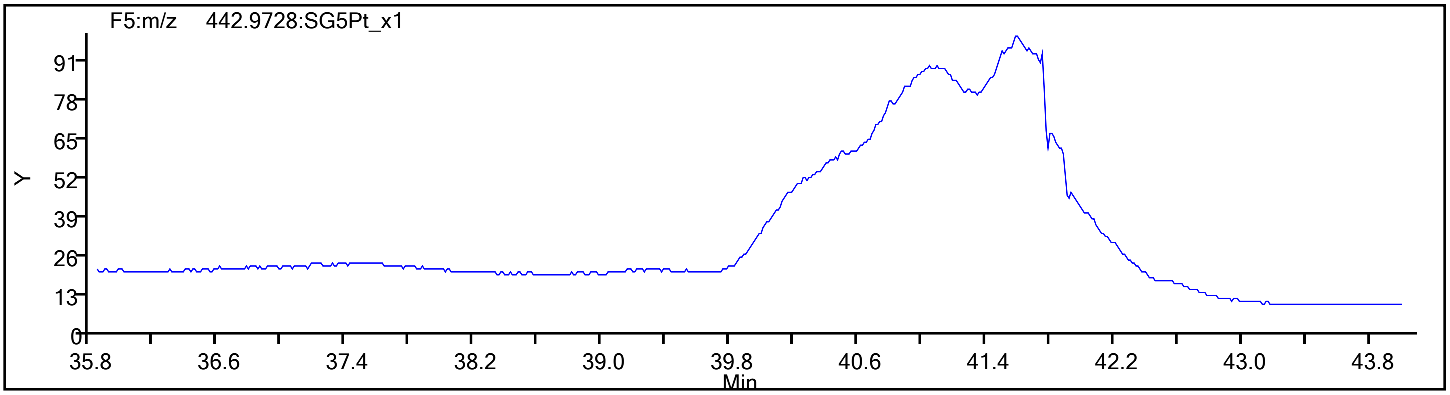

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Instrument ID: 10D5 Start Date: 09/17/2020 14:12

Analysis Batch Number: 413246 End Date: 09/17/2020 20:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-413246/1		09/17/2020 14:12	1	17SE2010D5_1.d	DB-5 0.32(mm)
IC 320-413246/3		09/17/2020 16:09	1	17SE2010D5_3.d	DB-5 0.32(mm)
IC 320-413246/4		09/17/2020 16:54	1	17SE2010D5_4.d	DB-5 0.32(mm)
IC 320-413246/5		09/17/2020 17:39	1	17SE2010D5_5.d	DB-5 0.32(mm)
IC 320-413246/6		09/17/2020 18:24	1	17SE2010D5_6.d	DB-5 0.32(mm)
IC 320-413246/7		09/17/2020 19:09	1	17SE2010D5_7.d	DB-5 0.32(mm)
ICV 320-413246/9		09/17/2020 20:42	1	17SE2010D5_9.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Instrument ID: DFS 1 Start Date: 11/17/2020 11:15

Analysis Batch Number: 432585 End Date: 11/17/2020 18:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-432585/1		11/17/2020 11:15	1	17no20dfs1_2.d	DB-5 0.32(mm)
IC 320-432585/4		11/17/2020 13:38	1	17no20dfs1_5.d	DB-5 0.32(mm)
IC 320-432585/5		11/17/2020 14:27	1	17no20dfs1_6.d	DB-5 0.32(mm)
IC 320-432585/6		11/17/2020 15:14	1	17no20dfs1_7.d	DB-5 0.32(mm)
IC 320-432585/7		11/17/2020 16:08	1	17no20dfs1_8.d	DB-5 0.32(mm)
IC 320-432585/9		11/17/2020 17:44	1	17no20dfs1_10.d	DB-5 0.32(mm)
ICV 320-432585/10		11/17/2020 18:32	1	17no20dfs1_11.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Instrument ID: DFS 1 Start Date: 11/24/2020 07:33

Analysis Batch Number: 434777 End Date: 11/24/2020 16:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-434777/28		11/24/2020 07:33	1	23no20dfs1_32.d	DB-5 0.32(mm)
WDM 320-434777/29		11/24/2020 08:41	1	23no20dfs1_34.d	DB-5 0.32(mm)
MB 320-432973/1-A		11/24/2020 10:17	1	23no20dfs1_36.d	DB-5 0.32(mm)
ZZZZZ		11/24/2020 11:05	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 11:53	1		DB-5 0.32(mm)
320-66850-1	11215702-Tank #1-1um	11/24/2020 12:41	1	23no20dfs1_39.d	DB-5 0.32(mm)
320-66850-2	11215702-Tank #2 1um	11/24/2020 13:29	1	23no20dfs1_40.d	DB-5 0.32(mm)
ZZZZZ		11/24/2020 14:17	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 15:04	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 15:53	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 16:40	1		DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Instrument ID: 10D5 Start Date: 11/24/2020 15:13

Analysis Batch Number: 435203 End Date: 11/25/2020 02:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-435203/15		11/24/2020 15:13	1	23NO2010D5_40.d	DB-5 0.32(mm)
WDM 320-435203/16		11/24/2020 16:08	1	23NO2010D5_41.d	DB-5 0.32(mm)
ZZZZZ		11/24/2020 20:13	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 21:03	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 21:48	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 23:48	1		DB-5 0.32(mm)
LCS 320-432973/2-A		11/25/2020 01:18	1	23NO2010D5_52.d	DB-5 0.32(mm)
LCSD 320-432973/3-A		11/25/2020 02:03	1	23NO2010D5_53.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-1

SDG No.:

Instrument ID: 11D2 Start Date: 11/30/2020 12:27

Analysis Batch Number: 436991 End Date: 11/30/2020 22:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-436991/1		11/30/2020 12:27	1	30NO2011D2_001.d	DB-225 0.32(mm)
CCV 320-436991/2		11/30/2020 13:05	1	30NO2011D2_002.d	DB-225 0.32(mm)
320-66850-2 RA	11215702-Tank #2 1um RA	11/30/2020 19:29	1	30NO2011D2_012.d	DB-225 0.32(mm)
ZZZZZ		11/30/2020 20:07	1		DB-225 0.32(mm)
ZZZZZ		11/30/2020 20:46	1		DB-225 0.32(mm)
ZZZZZ		11/30/2020 21:24	1		DB-225 0.32(mm)
ZZZZZ		11/30/2020 22:03	1		DB-225 0.32(mm)

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-66850-1

SDG No.:

Batch Number: 432973 Batch Start Date: 11/18/20 11:29 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 11/19/20 09:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-432973/1		1613B, 1613B				1000 mL	20.0 uL	A1	4
LCS 320-432973/2		1613B, 1613B				1000 mL	20.0 uL	2	6
LCSD 320-432973/3		1613B, 1613B				1000 mL	20.0 uL	3	4
320-66850-A-1	11215702-Tank #1-1um	1613B, 1613B	T	1571.9 g	513.67 g	1058.2 mL	20.0 uL	4	6
320-66850-A-2	11215702-Tank #2 1um	1613B, 1613B	T	1572.3 g	513.74 g	1058.6 mL	20.0 uL	5	4

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00445	HRDXNIS 00129	HRDXNSU 00244	HRDXNTA 00123		
MB 320-432973/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-432973/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-432973/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-66850-A-1	11215702-Tank #1-1um	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-66850-A-2	11215702-Tank #2 1um	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-66850-1

SDG No.:

Batch Number: 432973 Batch Start Date: 11/18/20 11:29 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 11/19/20 09:00

Batch Notes	
20% DCM:Hexane ID	DH28_00178 mL
65% DCM:Hexane ID	DH6535_00500 mL
Acid Silica Gel ID	SA5644_00668
Acid Alumina ID	Acid_Alumina_00011
Balance ID	QA-070
C14 ID	2191187
Hexane ID	Hexane_00258 mL
IFB Clean Up	GLB 11-19-20
MeCL2 ID	2224921 mL
Na2SO4 ID	2162899
Analyst ID - IDA Reagent Drop	NR 11/18/20 HD05018 HRDXNIDA_00445 B-4/4 1.00 mL
Analyst ID - IDA Reagent Drop Witness	11/18/20 SR
Analyst ID - IS Reagent Drop	GLB 11-19-20 20uL HRDXNIS00129 B 3/4 DB15270
Analyst ID - IS Reagent Drop Witness	FC 11-19-20
Analyst ID - SU Reagent Drop	GLB 11-19-20 1.0mL HRDXNSU0024 B 2/4 HD05018
Analyst ID - SU Reagent Drop Witness	FC 11-19-20
Analyst ID - TA Reagent Drop	NR 11/18/20 DB15270 HRDXNTA_00123 B-1/4 50.0 uL
Analyst ID - TA Reagent Drop Witness	11/18/20 SR
Silica Gel ID	SilicaGel_00350
Soxhlet/Soxtherm End	11/18/20 NR 1700
Soxhlet/Soxtherm Start	11/18/20 NR 1300
Storage Box ID	DXN 200
Toluene ID	2228738 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

GHD

CHAIN OF CUSTODY RECORD

COC NO.: 59864

Address: 2055 Niagara Falls Blvd
Phone: 716-297-6150
Fax:
PAGE ___ OF ___

Project No/ Phase/Task Code: 11215702-	**Laboratory Name:** Eurofin/Test America	**Lab Location:** Sacramento	**SSOW ID:** 11187072-2019-002
Project Name: San Jacinto	**Lab Contact:** Carrie Gamber/Beth Hill		**Cooler No:**
Project Location: Texas			**Carrier:**
GHD Chemistry Contact: Debbie Brennan			**Airbill No:**
Sampler(s): Dan Pope			**Total # of Containers:** 6

ANALYSIS REQUESTED (See Back of COC for Definitions)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins/Furans	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)									
1	11215702-Tank#1-1um	11/10/20	10:00	WG			X			Attn to: Carrie Gamber
2	11215702-Tank#2-1um	11/10/20	11:00	WG			X			412-963-2428
3	11215702-Tank#1 Drum	11/9/20	12:00	WG			X			
4	11215702-Tank#2 Drum	11/9/20	12:00	WG			X			* Samples
5	11215702-Tank#1 Tank	11/9/20	13:00	WG			X			11215702-Tank#1-1um and
6	11215702-Tank#2 Tank	11/9/20	13:00	WG			X			11215702-Tank#2-1um
7										on an expedited TAT
8										
9										
10										
11										
12										

320-66850 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☐2Week Other:

Notes/ Special Requirements:

3.5°C

	RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1.	Dan Pope	GHD	11/16/20	10:15		ET AWS	11/17/20	1010
2.								
3.								

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

eurofins | **Environment Testing**
TestAmerica

Sacramento
Sample Receiving Notes

320-66850 Field Sheet

Job:

Tracking # : 9379 3045 0119

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: L-02 Corr. Factor: (+ / -) 0 °C

Ice ✓ Wet ✓ Gel Other

Cooler Custody Seal: –

Cooler ID: –

Temp Observed: 3.5 °C Corrected: 3.5 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐

Initials: Date: 11/17/20

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: Date: 11/17/20

Notes:

1 A6B Each

18020662

Trizma Lot #(s):

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☑	☐	☐

Initials: DH Date: 11/17/20

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 16NOV20
ACTWGT: 40.00 LB MAN
CAD: 68417/CAFE3407

BILL SENDER

TO **SAMPLE RECEIVING**
EUROFINS/TEST AMERICA
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215702 - NI0411 GEB (POPE)

56DC5/BAB9/05A2

FedEx
Express

E

J201101011U601uv

TUE - 17 NOV 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **9379 3045 0119**

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/20

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-66850-1

Login Number: 66850
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Environment Testing
America

ANALYTICAL REPORT

Job Number: 320-66850-2

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
12/2/2020 2:43 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
12/02/2020

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

NELAP ACCREDITED TNI LABORATORY

Table of Contents

Table of Contents

Qualifiers

Dioxin

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-66850-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 11/17/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.5 C.

DIOXINS

The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 11215702-Tank #1 Drum (320-66850-3), 11215702-Tank #2 Drum (320-66850-4), 11215702-Tank #1 Tank (320-66850-5) and 11215702-Tank #2 Tank (320-66850-6) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

The concentration of 2,3,7,8-TCDF associated with the following samples exceeded the instrument calibration range: 11215702-Tank #1 Drum (320-66850-3), 11215702-Tank #2 Drum (320-66850-4), 11215702-Tank #1 Tank (320-66850-5) and 11215702-Tank #2 Tank (320-66850-6). The analyte has been qualified; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The concentration of 2,3,7,8-TCDD associated with the following sample exceeded the instrument calibration range: 11215702-Tank #2 Tank (320-66850-6). The analyte has been qualified; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

Total HpCDF, Total HxCDD and Total HxCDF were detected in method blank MB 320-432973/1-A at levels exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes were detected in method blank MB 320-432973/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

The laboratory control sample duplicate (LCSD) for preparation batch 320-432973 and analytical batch 320-434777 recovered outside acceptance limits low for 1,2,3,4,6,7,8-HpCDF, 1,2,3,6,7,8-HxCDF, and OCDD and was confirmed by reanalysis. There was insufficient sample to perform re-extraction; therefore, the data have been reported.

Detection Summary

Client Sample ID: 11215702-Tank #1 Drum

Lab Sample ID: 320-66850-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1900		9.5	3.6	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	21	J B	47	1.2	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	250	B	47	3.1	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	150	B	47	3.5	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.7	J q B	47	0.66	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	5.3	J B	47	0.68	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	530	B	47	1.5	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	130	B *	47	1.5	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	11	J B	47	1.4	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	17	J B	47	1.3	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	190	B	47	1.5	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	180	B *	47	1.5	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	69	B	47	1.9	pg/L	1		1613B	Total/NA
OCDD	3500	B *	95	4.4	pg/L	1		1613B	Total/NA
OCDF	130	B	95	1.2	pg/L	1		1613B	Total/NA
Total TCDD	2100		9.5	3.6	pg/L	1		1613B	Total/NA
Total TCDF	10000	G B	14	14	pg/L	1		1613B	Total/NA
Total PeCDD	21	J B	47	1.2	pg/L	1		1613B	Total/NA
Total PeCDF	650	q B	47	3.3	pg/L	1		1613B	Total/NA
Total HxCDD	35	J q B	47	0.66	pg/L	1		1613B	Total/NA
Total HxCDF	790	B	47	1.4	pg/L	1		1613B	Total/NA
Total HpCDD	390	B	47	1.5	pg/L	1		1613B	Total/NA
Total HpCDF	320	B	47	1.7	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	4800	E B	9.5	6.0	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank #2 Drum

Lab Sample ID: 320-66850-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	3300		9.5	6.0	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	37	J B	48	1.3	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	400	B	48	3.5	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	270	B	48	3.9	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.5	J q B	48	0.53	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	5.1	J B	48	0.51	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.6	J B	48	0.50	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	820	B	48	2.1	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	200	B *	48	1.9	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	14	J B	48	2.0	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	24	J B	48	1.9	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	140	B	48	0.93	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	290	B *	48	1.7	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	100	B	48	1.9	pg/L	1		1613B	Total/NA
OCDD	3000	B *	95	3.1	pg/L	1		1613B	Total/NA
OCDF	210	B	95	1.0	pg/L	1		1613B	Total/NA
Total TCDD	3700		9.5	6.0	pg/L	1		1613B	Total/NA
Total TCDF	21000	G B	36	36	pg/L	1		1613B	Total/NA
Total PeCDD	37	J B	48	1.3	pg/L	1		1613B	Total/NA
Total PeCDF	1100	q B	48	3.7	pg/L	1		1613B	Total/NA
Total HxCDD	37	J q B	48	0.51	pg/L	1		1613B	Total/NA
Total HxCDF	1200	B	48	2.0	pg/L	1		1613B	Total/NA
Total HpCDD	310	B	48	0.93	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank #2 Drum (Continued) Lab Sample ID: 320-66850-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HpCDF	480	B	48	1.8	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	8400	G E B	11	11	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank #1 Tank Lab Sample ID: 320-66850-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	2800		9.5	4.4	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	36	J B	47	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	380	B	47	2.5	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	230	B	47	2.9	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	8.5	J B	47	0.56	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	11	J B	47	0.57	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	8.4	J q B	47	0.54	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	720	B	47	2.1	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	180	B *	47	2.0	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	20	J B	47	2.0	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	28	J B	47	1.9	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	170	B	47	1.2	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	240	B *	47	1.6	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	94	B	47	1.9	pg/L	1		1613B	Total/NA
OCDD	2800	B *	95	4.3	pg/L	1		1613B	Total/NA
OCDF	160	B	95	1.2	pg/L	1		1613B	Total/NA
Total TCDD	3100	q	9.5	4.4	pg/L	1		1613B	Total/NA
Total TCDF	15000	G B	21	21	pg/L	1		1613B	Total/NA
Total PeCDD	36	J B	47	1.1	pg/L	1		1613B	Total/NA
Total PeCDF	970	q B	47	2.7	pg/L	1		1613B	Total/NA
Total HxCDD	61	q B	47	0.56	pg/L	1		1613B	Total/NA
Total HxCDF	1100	B	47	2.0	pg/L	1		1613B	Total/NA
Total HpCDD	340	B	47	1.2	pg/L	1		1613B	Total/NA
Total HpCDF	430	B	47	1.7	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	6600	E B	9.5	7.6	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank #2 Tank Lab Sample ID: 320-66850-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	7700	G E	11	11	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	84	B	48	1.6	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1300	B	48	8.2	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	660	B	48	8.7	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	5.8	J q B	48	0.57	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	11	J q B	48	0.56	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	8.5	J B	48	0.54	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	5900	B	48	18	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	1400	B *	48	17	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	100	B	48	17	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	110	B	48	16	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	240	B	48	1.4	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1500	B *	48	5.4	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	770	B	48	5.7	pg/L	1		1613B	Total/NA
OCDD	4200	B *	95	4.7	pg/L	1		1613B	Total/NA
OCDF	650	B	95	1.4	pg/L	1		1613B	Total/NA
Total TCDD	8500	G	11	11	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank #2 Tank (Continued) Lab Sample ID: 320-66850-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total TCDF	44000	G B	75	75	pg/L	1		1613B	Total/NA
Total PeCDD	84	B	48	1.6	pg/L	1		1613B	Total/NA
Total PeCDF	3100	q B	48	8.5	pg/L	1		1613B	Total/NA
Total HxCDD	74	q B	48	0.56	pg/L	1		1613B	Total/NA
Total HxCDF	8400	B	48	17	pg/L	1		1613B	Total/NA
Total HpCDD	510	B	48	1.4	pg/L	1		1613B	Total/NA
Total HpCDF	2700	B	48	5.6	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	19000	G E B	24	24	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-66850-2

Client Sample ID: 11215702-Tank #1 Drum

Lab Sample ID: 320-66850-3

Date Collected: 11/09/20 12:00
Date Received: 11/17/20 10:10

Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1900**		9.5	3.6	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,7,8-PeCDD	**21**	**J B**	47	1.2	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,7,8-PeCDF	**250**	**B**	47	3.1	pg/L		11/18/20 11:29	11/24/20 14:17	1
2,3,4,7,8-PeCDF	**150**	**B**	47	3.5	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,4,7,8-HxCDD	**2.7**	**J q B**	47	0.66	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,6,7,8-HxCDD	**5.3**	**J B**	47	0.68	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,7,8,9-HxCDD	ND		47	0.64	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,4,7,8-HxCDF	**530**	**B**	47	1.5	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,6,7,8-HxCDF	**130**	**B ***	47	1.5	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,7,8,9-HxCDF	**11**	**J B**	47	1.4	pg/L		11/18/20 11:29	11/24/20 14:17	1
2,3,4,6,7,8-HxCDF	**17**	**J B**	47	1.3	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,4,6,7,8-HpCDD	**190**	**B**	47	1.5	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,4,6,7,8-HpCDF	**180**	**B ***	47	1.5	pg/L		11/18/20 11:29	11/24/20 14:17	1
1,2,3,4,7,8,9-HpCDF	**69**	**B**	47	1.9	pg/L		11/18/20 11:29	11/24/20 14:17	1
OCDD	**3500**	**B ***	95	4.4	pg/L		11/18/20 11:29	11/24/20 14:17	1
OCDF	**130**	**B**	95	1.2	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total TCDD	**2100**		9.5	3.6	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total TCDF	**10000**	**G B**	14	14	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total PeCDD	**21**	**J B**	47	1.2	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total PeCDF	**650**	**q B**	47	3.3	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total HxCDD	**35**	**J q B**	47	0.66	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total HxCDF	**790**	**B**	47	1.4	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total HpCDD	**390**	**B**	47	1.5	pg/L		11/18/20 11:29	11/24/20 14:17	1
Total HpCDF	**320**	**B**	47	1.7	pg/L		11/18/20 11:29	11/24/20 14:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*57*		*25 - 164*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-2,3,7,8-TCDF	*56*		*24 - 169*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,7,8-PeCDD	*51*		*25 - 181*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,7,8-PeCDF	*52*		*24 - 185*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-2,3,4,7,8-PeCDF	*50*		*21 - 178*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,4,7,8-HxCDD	*48*		*32 - 141*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,6,7,8-HxCDD	*50*		*28 - 130*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,4,7,8-HxCDF	*47*		*26 - 152*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,6,7,8-HxCDF	*48*		*26 - 123*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,7,8,9-HxCDF	*53*		*29 - 147*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-2,3,4,6,7,8-HxCDF	*50*		*28 - 136*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*51*		*23 - 140*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*49*		*28 - 143*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*46*		*26 - 138*	*11/18/20 11:29*	*11/24/20 14:17*	*1*
13C-OCDD	*51*		*17 - 157*	*11/18/20 11:29*	*11/24/20 14:17*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*11/18/20 11:29*	*11/24/20 14:17*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**4800**	**E B**	9.5	6.0	pg/L		11/18/20 11:29	11/30/20 20:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*56*		*24 - 169*	*11/18/20 11:29*	*11/30/20 20:07*	*1*

Client Sample Results

Client Sample ID: 11215702-Tank #1 Drum

Lab Sample ID: 320-66850-3

Date Collected: 11/09/20 12:00
Matrix: Water
Date Received: 11/17/20 10:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*11/18/20 11:29*	*11/30/20 20:07*	*1*

Client Sample ID: 11215702-Tank #2 Drum

Lab Sample ID: 320-66850-4

Date Collected: 11/09/20 12:00
Matrix: Water
Date Received: 11/17/20 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**3300**		9.5	6.0	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,7,8-PeCDD	**37**	**J B**	48	1.3	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,7,8-PeCDF	**400**	**B**	48	3.5	pg/L		11/18/20 11:29	11/24/20 15:04	1
2,3,4,7,8-PeCDF	**270**	**B**	48	3.9	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,4,7,8-HxCDD	**2.5**	**J q B**	48	0.53	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,6,7,8-HxCDD	**5.1**	**J B**	48	0.51	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,7,8,9-HxCDD	**2.6**	**J B**	48	0.50	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,4,7,8-HxCDF	**820**	**B**	48	2.1	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,6,7,8-HxCDF	**200**	**B ***	48	1.9	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,7,8,9-HxCDF	**14**	**J B**	48	2.0	pg/L		11/18/20 11:29	11/24/20 15:04	1
2,3,4,6,7,8-HxCDF	**24**	**J B**	48	1.9	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,4,6,7,8-HpCDD	**140**	**B**	48	0.93	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,4,6,7,8-HpCDF	**290**	**B ***	48	1.7	pg/L		11/18/20 11:29	11/24/20 15:04	1
1,2,3,4,7,8,9-HpCDF	**100**	**B**	48	1.9	pg/L		11/18/20 11:29	11/24/20 15:04	1
OCDD	**3000**	**B ***	95	3.1	pg/L		11/18/20 11:29	11/24/20 15:04	1
OCDF	**210**	**B**	95	1.0	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total TCDD	**3700**		9.5	6.0	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total TCDF	**21000**	**G B**	36	36	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total PeCDD	**37**	**J B**	48	1.3	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total PeCDF	**1100**	**q B**	48	3.7	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total HxCDD	**37**	**J q B**	48	0.51	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total HxCDF	**1200**	**B**	48	2.0	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total HpCDD	**310**	**B**	48	0.93	pg/L		11/18/20 11:29	11/24/20 15:04	1
Total HpCDF	**480**	**B**	48	1.8	pg/L		11/18/20 11:29	11/24/20 15:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,7,8-PeCDD	*68*		*25 - 181*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,7,8-PeCDF	*65*		*24 - 185*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-2,3,4,7,8-PeCDF	*67*		*21 - 178*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,4,7,8-HxCDD	*64*		*32 - 141*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,6,7,8-HxCDD	*67*		*28 - 130*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,4,7,8-HxCDF	*65*		*26 - 152*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,6,7,8-HxCDF	*63*		*26 - 123*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 147*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-2,3,4,6,7,8-HxCDF	*64*		*28 - 136*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*23 - 140*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*28 - 143*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*68*		*26 - 138*	*11/18/20 11:29*	*11/24/20 15:04*	*1*
13C-OCDD	*72*		*17 - 157*	*11/18/20 11:29*	*11/24/20 15:04*	*1*

Client Sample ID: 11215702-Tank #2 Drum Lab Sample ID: 320-66850-4

Date Collected: 11/09/20 12:00 **Matrix: Water**
Date Received: 11/17/20 10:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*11/18/20 11:29*	*11/24/20 15:04*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**8400**	**G E B**	11	11	pg/L		11/18/20 11:29	11/30/20 21:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*11/18/20 11:29*	*11/30/20 21:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*105*		*35 - 197*	*11/18/20 11:29*	*11/30/20 21:24*	*1*

Client Sample ID: 11215702-Tank #1 Tank Lab Sample ID: 320-66850-5

Date Collected: 11/09/20 13:00 **Matrix: Water**
Date Received: 11/17/20 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**2800**		9.5	4.4	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,7,8-PeCDD	**36**	**J B**	47	1.1	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,7,8-PeCDF	**380**	**B**	47	2.5	pg/L		11/18/20 11:29	11/24/20 15:53	1
2,3,4,7,8-PeCDF	**230**	**B**	47	2.9	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,4,7,8-HxCDD	**8.5**	**J B**	47	0.56	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,6,7,8-HxCDD	**11**	**J B**	47	0.57	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,7,8,9-HxCDD	**8.4**	**J q B**	47	0.54	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,4,7,8-HxCDF	**720**	**B**	47	2.1	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,6,7,8-HxCDF	**180**	**B ***	47	2.0	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,7,8,9-HxCDF	**20**	**J B**	47	2.0	pg/L		11/18/20 11:29	11/24/20 15:53	1
2,3,4,6,7,8-HxCDF	**28**	**J B**	47	1.9	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,4,6,7,8-HpCDD	**170**	**B**	47	1.2	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,4,6,7,8-HpCDF	**240**	**B ***	47	1.6	pg/L		11/18/20 11:29	11/24/20 15:53	1
1,2,3,4,7,8,9-HpCDF	**94**	**B**	47	1.9	pg/L		11/18/20 11:29	11/24/20 15:53	1
OCDD	**2800**	**B ***	95	4.3	pg/L		11/18/20 11:29	11/24/20 15:53	1
OCDF	**160**	**B**	95	1.2	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total TCDD	**3100**	**q**	9.5	4.4	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total TCDF	**15000**	**G B**	21	21	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total PeCDD	**36**	**J B**	47	1.1	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total PeCDF	**970**	**q B**	47	2.7	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total HxCDD	**61**	**q B**	47	0.56	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total HxCDF	**1100**	**B**	47	2.0	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total HpCDD	**340**	**B**	47	1.2	pg/L		11/18/20 11:29	11/24/20 15:53	1
Total HpCDF	**430**	**B**	47	1.7	pg/L		11/18/20 11:29	11/24/20 15:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,7,8-PeCDF	*58*		*24 - 185*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,6,7,8-HxCDD	*59*		*28 - 130*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,4,7,8-HxCDF	*57*		*26 - 152*	*11/18/20 11:29*	*11/24/20 15:53*	*1*

Client Sample ID: 11215702-Tank #1 Tank — Lab Sample ID: 320-66850-5

Date Collected: 11/09/20 13:00 — **Matrix: Water**
Date Received: 11/17/20 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDF	*58*		*26 - 123*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,7,8,9-HxCDF	*62*		*29 - 147*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-2,3,4,6,7,8-HxCDF	*57*		*28 - 136*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*63*		*23 - 140*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*57*		*28 - 143*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*59*		*26 - 138*	*11/18/20 11:29*	*11/24/20 15:53*	*1*
13C-OCDD	*62*		*17 - 157*	*11/18/20 11:29*	*11/24/20 15:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*11/18/20 11:29*	*11/24/20 15:53*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**6600**	**E B**	9.5	7.6	pg/L		11/18/20 11:29	11/30/20 20:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*11/18/20 11:29*	*11/30/20 20:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*11/18/20 11:29*	*11/30/20 20:46*	*1*

Client Sample ID: 11215702-Tank #2 Tank — Lab Sample ID: 320-66850-6

Date Collected: 11/09/20 13:00 — **Matrix: Water**
Date Received: 11/17/20 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**7700**	**G E**	11	11	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,7,8-PeCDD	**84**	**B**	48	1.6	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,7,8-PeCDF	**1300**	**B**	48	8.2	pg/L		11/18/20 11:29	11/24/20 16:40	1
2,3,4,7,8-PeCDF	**660**	**B**	48	8.7	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,4,7,8-HxCDD	**5.8**	**J q B**	48	0.57	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,6,7,8-HxCDD	**11**	**J q B**	48	0.56	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,7,8,9-HxCDD	**8.5**	**J B**	48	0.54	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,4,7,8-HxCDF	**5900**	**B**	48	18	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,6,7,8-HxCDF	**1400**	**B ***	48	17	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,7,8,9-HxCDF	**100**	**B**	48	17	pg/L		11/18/20 11:29	11/24/20 16:40	1
2,3,4,6,7,8-HxCDF	**110**	**B**	48	16	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,4,6,7,8-HpCDD	**240**	**B**	48	1.4	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,4,6,7,8-HpCDF	**1500**	**B ***	48	5.4	pg/L		11/18/20 11:29	11/24/20 16:40	1
1,2,3,4,7,8,9-HpCDF	**770**	**B**	48	5.7	pg/L		11/18/20 11:29	11/24/20 16:40	1
OCDD	**4200**	**B ***	95	4.7	pg/L		11/18/20 11:29	11/24/20 16:40	1
OCDF	**650**	**B**	95	1.4	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total TCDD	**8500**	**G**	11	11	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total TCDF	**44000**	**G B**	75	75	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total PeCDD	**84**	**B**	48	1.6	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total PeCDF	**3100**	**q B**	48	8.5	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total HxCDD	**74**	**q B**	48	0.56	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total HxCDF	**8400**	**B**	48	17	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total HpCDD	**510**	**B**	48	1.4	pg/L		11/18/20 11:29	11/24/20 16:40	1
Total HpCDF	**2700**	**B**	48	5.6	pg/L		11/18/20 11:29	11/24/20 16:40	1

Client Sample ID: 11215702-Tank #2 Tank

Lab Sample ID: 320-66850-6

Date Collected: 11/09/20 13:00
Matrix: Water
Date Received: 11/17/20 10:10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,7,8-PeCDD	*71*		*25 - 181*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,4,7,8-HxCDD	*64*		*32 - 141*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,6,7,8-HxCDD	*65*		*28 - 130*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,4,7,8-HxCDF	*63*		*26 - 152*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,6,7,8-HxCDF	*62*		*26 - 123*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,7,8,9-HxCDF	*69*		*29 - 147*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-2,3,4,6,7,8-HxCDF	*63*		*28 - 136*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*63*		*23 - 140*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*62*		*28 - 143*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*66*		*26 - 138*	*11/18/20 11:29*	*11/24/20 16:40*	*1*
13C-OCDD	*75*		*17 - 157*	*11/18/20 11:29*	*11/24/20 16:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*100*		*35 - 197*	*11/18/20 11:29*	*11/24/20 16:40*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**19000**	**G E B**	24	24	pg/L		11/18/20 11:29	11/30/20 22:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*74*		*24 - 169*	*11/18/20 11:29*	*11/30/20 22:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*103*		*35 - 197*	*11/18/20 11:29*	*11/30/20 22:03*	*1*

Toxicity Summary

Client Sample ID: 11215702-Tank #1 Drum

Lab Sample ID: 320-66850-3

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	1900		9.5	3.6	pg/L	1	1900	1613B
1,2,3,7,8-PeCDD	21	J B	47	1.2	pg/L	1	21	1613B
1,2,3,7,8-PeCDF	250	B	47	3.1	pg/L	0.03	7.5	1613B
2,3,4,7,8-PeCDF	150	B	47	3.5	pg/L	0.3	45	1613B
1,2,3,4,7,8-HxCDD	2.7	J q B	47	0.66	pg/L	0.1	0.27	1613B
1,2,3,6,7,8-HxCDD	5.3	J B	47	0.68	pg/L	0.1	0.53	1613B
1,2,3,7,8,9-HxCDD	ND		47	0.64	pg/L	0.1	0.032	1613B
1,2,3,4,7,8-HxCDF	530	B	47	1.5	pg/L	0.1	53	1613B
1,2,3,6,7,8-HxCDF	130	B *	47	1.5	pg/L	0.1	13	1613B
1,2,3,7,8,9-HxCDF	11	J B	47	1.4	pg/L	0.1	1.1	1613B
2,3,4,6,7,8-HxCDF	17	J B	47	1.3	pg/L	0.1	1.7	1613B
1,2,3,4,6,7,8-HpCDD	190	B	47	1.5	pg/L	0.01	1.9	1613B
1,2,3,4,6,7,8-HpCDF	180	B *	47	1.5	pg/L	0.01	1.8	1613B
1,2,3,4,7,8,9-HpCDF	69	B	47	1.9	pg/L	0.01	0.69	1613B
OCDD	3500	B *	95	4.4	pg/L	0.0003	1.1	1613B
OCDF	130	B	95	1.2	pg/L	0.0003	0.039	1613B
2,3,7,8-TCDF - RA	4800	E B	9.5	6.0	pg/L	0.1	480	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		2500	TEQ

Client Sample ID: 11215702-Tank #2 Drum

Lab Sample ID: 320-66850-4

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	3300		9.5	6.0	pg/L	1	3300	1613B
1,2,3,7,8-PeCDD	37	J B	48	1.3	pg/L	1	37	1613B
1,2,3,7,8-PeCDF	400	B	48	3.5	pg/L	0.03	12	1613B
2,3,4,7,8-PeCDF	270	B	48	3.9	pg/L	0.3	81	1613B
1,2,3,4,7,8-HxCDD	2.5	J q B	48	0.53	pg/L	0.1	0.25	1613B
1,2,3,6,7,8-HxCDD	5.1	J B	48	0.51	pg/L	0.1	0.51	1613B
1,2,3,7,8,9-HxCDD	2.6	J B	48	0.50	pg/L	0.1	0.26	1613B
1,2,3,4,7,8-HxCDF	820	B	48	2.1	pg/L	0.1	82	1613B
1,2,3,6,7,8-HxCDF	200	B *	48	1.9	pg/L	0.1	20	1613B
1,2,3,7,8,9-HxCDF	14	J B	48	2.0	pg/L	0.1	1.4	1613B
2,3,4,6,7,8-HxCDF	24	J B	48	1.9	pg/L	0.1	2.4	1613B
1,2,3,4,6,7,8-HpCDD	140	B	48	0.93	pg/L	0.01	1.4	1613B
1,2,3,4,6,7,8-HpCDF	290	B *	48	1.7	pg/L	0.01	2.9	1613B
1,2,3,4,7,8,9-HpCDF	100	B	48	1.9	pg/L	0.01	1.0	1613B
OCDD	3000	B *	95	3.1	pg/L	0.0003	0.90	1613B
OCDF	210	B	95	1.0	pg/L	0.0003	0.063	1613B
2,3,7,8-TCDF - RA	8400	G E B	11	11	pg/L	0.1	840	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client: GHD Services Inc.　Job ID: 320-66850-2
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank #2 Drum (Continued)　Lab Sample ID: 320-66850-4

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		4400	TEQ

Client Sample ID: 11215702-Tank #1 Tank　Lab Sample ID: 320-66850-5

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	2800		9.5	4.4	pg/L	1	2800	1613B
1,2,3,7,8-PeCDD	36	J B	47	1.1	pg/L	1	36	1613B
1,2,3,7,8-PeCDF	380	B	47	2.5	pg/L	0.03	11	1613B
2,3,4,7,8-PeCDF	230	B	47	2.9	pg/L	0.3	69	1613B
1,2,3,4,7,8-HxCDD	8.5	J B	47	0.56	pg/L	0.1	0.85	1613B
1,2,3,6,7,8-HxCDD	11	J B	47	0.57	pg/L	0.1	1.1	1613B
1,2,3,7,8,9-HxCDD	8.4	J q B	47	0.54	pg/L	0.1	0.84	1613B
1,2,3,4,7,8-HxCDF	720	B	47	2.1	pg/L	0.1	72	1613B
1,2,3,6,7,8-HxCDF	180	B *	47	2.0	pg/L	0.1	18	1613B
1,2,3,7,8,9-HxCDF	20	J B	47	2.0	pg/L	0.1	2.0	1613B
2,3,4,6,7,8-HxCDF	28	J B	47	1.9	pg/L	0.1	2.8	1613B
1,2,3,4,6,7,8-HpCDD	170	B	47	1.2	pg/L	0.01	1.7	1613B
1,2,3,4,6,7,8-HpCDF	240	B *	47	1.6	pg/L	0.01	2.4	1613B
1,2,3,4,7,8,9-HpCDF	94	B	47	1.9	pg/L	0.01	0.94	1613B
OCDD	2800	B *	95	4.3	pg/L	0.0003	0.84	1613B
OCDF	160	B	95	1.2	pg/L	0.0003	0.048	1613B
2,3,7,8-TCDF - RA	6600	E B	9.5	7.6	pg/L	0.1	660	1613B

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		3700	TEQ

Client Sample ID: 11215702-Tank #2 Tank　Lab Sample ID: 320-66850-6

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	7700	G E	11	11	pg/L	1	7700	1613B
1,2,3,7,8-PeCDD	84	B	48	1.6	pg/L	1	84	1613B
1,2,3,7,8-PeCDF	1300	B	48	8.2	pg/L	0.03	39	1613B
2,3,4,7,8-PeCDF	660	B	48	8.7	pg/L	0.3	200	1613B
1,2,3,4,7,8-HxCDD	5.8	J q B	48	0.57	pg/L	0.1	0.58	1613B
1,2,3,6,7,8-HxCDD	11	J q B	48	0.56	pg/L	0.1	1.1	1613B
1,2,3,7,8,9-HxCDD	8.5	J B	48	0.54	pg/L	0.1	0.85	1613B
1,2,3,4,7,8-HxCDF	5900	B	48	18	pg/L	0.1	590	1613B
1,2,3,6,7,8-HxCDF	1400	B *	48	17	pg/L	0.1	140	1613B
1,2,3,7,8,9-HxCDF	100	B	48	17	pg/L	0.1	10	1613B
2,3,4,6,7,8-HxCDF	110	B	48	16	pg/L	0.1	11	1613B
1,2,3,4,6,7,8-HpCDD	240	B	48	1.4	pg/L	0.01	2.4	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank #2 Tank (Continued)

Lab Sample ID: 320-66850-6

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,6,7,8-HpCDF	**1500**	**B ***	48	5.4	pg/L	0.01	**15**	1613B
1,2,3,4,7,8,9-HpCDF	**770**	**B**	48	5.7	pg/L	0.01	**7.7**	1613B
OCDD	**4200**	**B ***	95	4.7	pg/L	0.0003	**1.3**	1613B
OCDF	**650**	**B**	95	1.4	pg/L	0.0003	**0.20**	1613B
2,3,7,8-TCDF - RA	**19000**	**G E B**	24	24	pg/L	0.1	**1900**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		11000	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc. Job ID: 320-66850-2

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL	Units
1,2,3,4,6,7,8-HpCDD	50	pg/L
1,2,3,4,6,7,8-HpCDF	50	pg/L
1,2,3,4,7,8,9-HpCDF	50	pg/L
1,2,3,4,7,8-HxCDD	50	pg/L
1,2,3,4,7,8-HxCDF	50	pg/L
1,2,3,6,7,8-HxCDD	50	pg/L
1,2,3,6,7,8-HxCDF	50	pg/L
1,2,3,7,8,9-HxCDD	50	pg/L
1,2,3,7,8,9-HxCDF	50	pg/L
1,2,3,7,8-PeCDD	50	pg/L
1,2,3,7,8-PeCDF	50	pg/L
2,3,4,6,7,8-HxCDF	50	pg/L
2,3,4,7,8-PeCDF	50	pg/L
2,3,7,8-TCDD	10	pg/L
2,3,7,8-TCDF	10	pg/L
OCDD	100	pg/L
OCDF	100	pg/L
Total HpCDD	50	pg/L
Total HpCDF	50	pg/L
Total HxCDD	50	pg/L
Total HxCDF	50	pg/L
Total PeCDD	50	pg/L
Total PeCDF	50	pg/L
Total TCDD	10	pg/L
Total TCDF	10	pg/L

Surrogate Summary

Client: GHD Services Inc.
Job ID: 320-66850-2
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-66850-3	11215702-Tank #1 Drum	94
320-66850-3 - RA	11215702-Tank #1 Drum	100
320-66850-4	11215702-Tank #2 Drum	94
320-66850-4 - RA	11215702-Tank #2 Drum	105
320-66850-5	11215702-Tank #1 Tank	93
320-66850-5 - RA	11215702-Tank #1 Tank	97
320-66850-6	11215702-Tank #2 Tank	100
320-66850-6 - RA	11215702-Tank #2 Tank	103
MB 320-432973/1-A	Method Blank	88

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-432973/2-A	Lab Control Sample	102
LCSD 320-432973/3-A	Lab Control Sample Dup	103

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc. Job ID: 320-66850-2
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
320-66850-3	11215702-Tank #1 Drum	57	56	51	52	50	48	50	47
320-66850-3 - RA	11215702-Tank #1 Drum		56						
320-66850-4	11215702-Tank #2 Drum	69	68	68	65	67	64	67	65
320-66850-4 - RA	11215702-Tank #2 Drum		76						
320-66850-5	11215702-Tank #1 Tank	63	64	58	58	57	59	59	57
320-66850-5 - RA	11215702-Tank #1 Tank		67						
320-66850-6	11215702-Tank #2 Tank	69	69	71	67	66	64	65	63
320-66850-6 - RA	11215702-Tank #2 Tank		74						
MB 320-432973/1-A	Method Blank	83	80	85	83	80	78	86	79

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-66850-3	11215702-Tank #1 Drum	48	53	50	51	49	46	51
320-66850-3 - RA	11215702-Tank #1 Drum							
320-66850-4	11215702-Tank #2 Drum	63	71	64	67	66	68	72
320-66850-4 - RA	11215702-Tank #2 Drum							
320-66850-5	11215702-Tank #1 Tank	58	62	57	63	57	59	62
320-66850-5 - RA	11215702-Tank #1 Tank							
320-66850-6	11215702-Tank #2 Tank	62	69	63	63	62	66	75
320-66850-6 - RA	11215702-Tank #2 Tank							
MB 320-432973/1-A	Method Blank	81	85	85	86	83	80	83

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-432973/2-A	Lab Control Sample	81	98	80	88	86	74	78	88
LCSD 320-432973/3-A	Lab Control Sample Dup	82	96	81	89	85	78	81	98

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	**Client Sample ID**	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)
LCS 320-432973/2-A	Lab Control Sample	91	92	96	70	78	75	73
LCSD 320-432973/3-A	Lab Control Sample Dup	99	97	99	74	84	80	75

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-432973/1-A
Matrix: Water
Analysis Batch: 434777

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 432973

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.62	pg/L		11/18/20 11:29	11/24/20 10:17	1
2,3,7,8-TCDF	1.70	J q	10	0.27	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8-PeCDD	19.9	J	50	0.66	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8-PeCDF	15.0	J	50	0.45	pg/L		11/18/20 11:29	11/24/20 10:17	1
2,3,4,7,8-PeCDF	20.3	J	50	0.49	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,7,8-HxCDD	28.3	J	50	0.55	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,6,7,8-HxCDD	24.7	J	50	0.54	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8,9-HxCDD	28.3	J	50	0.52	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,7,8-HxCDF	23.2	J	50	0.50	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,6,7,8-HxCDF	24.4	J	50	0.48	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,7,8,9-HxCDF	28.7	J	50	0.51	pg/L		11/18/20 11:29	11/24/20 10:17	1
2,3,4,6,7,8-HxCDF	29.5	J	50	0.44	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,6,7,8-HpCDD	25.7	J	50	0.41	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,6,7,8-HpCDF	25.1	J	50	0.47	pg/L		11/18/20 11:29	11/24/20 10:17	1
1,2,3,4,7,8,9-HpCDF	26.4	J	50	0.59	pg/L		11/18/20 11:29	11/24/20 10:17	1
OCDD	58.0	J	100	0.64	pg/L		11/18/20 11:29	11/24/20 10:17	1
OCDF	49.9	J	100	1.0	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total TCDD	ND		10	0.62	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total TCDF	1.70	J q	10	0.27	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total PeCDD	19.9	J	50	0.66	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total PeCDF	35.3	J	50	0.47	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HxCDD	81.3		50	0.54	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HxCDF	106		50	0.48	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HpCDD	25.7	J	50	0.41	pg/L		11/18/20 11:29	11/24/20 10:17	1
Total HpCDF	51.6		50	0.53	pg/L		11/18/20 11:29	11/24/20 10:17	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*25 - 164*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*24 - 185*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*21 - 178*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*32 - 141*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*26 - 152*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,6,7,8-HxCDF	*81*		*26 - 123*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*		*29 - 147*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-2,3,4,6,7,8-HxCDF	*85*		*28 - 136*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*23 - 140*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*26 - 138*	*11/18/20 11:29*	*11/24/20 10:17*	*1*
13C-OCDD	*83*		*17 - 157*	*11/18/20 11:29*	*11/24/20 10:17*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*88*		*35 - 197*	*11/18/20 11:29*	*11/24/20 10:17*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-432973/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 435203 **Prep Batch: 432973**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	184		pg/L		92	67 - 158
2,3,7,8-TCDF	200	184		pg/L		92	75 - 158
1,2,3,7,8-PeCDD	1000	823		pg/L		82	70 - 142
1,2,3,7,8-PeCDF	1000	857		pg/L		86	80 - 134
2,3,4,7,8-PeCDF	1000	903		pg/L		90	68 - 160
1,2,3,4,7,8-HxCDD	1000	892		pg/L		89	70 - 164
1,2,3,6,7,8-HxCDD	1000	887		pg/L		89	76 - 134
1,2,3,7,8,9-HxCDD	1000	896		pg/L		90	64 - 162
1,2,3,4,7,8-HxCDF	1000	873		pg/L		87	72 - 134
1,2,3,6,7,8-HxCDF	1000	848		pg/L		85	84 - 130
1,2,3,7,8,9-HxCDF	1000	853		pg/L		85	78 - 130
2,3,4,6,7,8-HxCDF	1000	854		pg/L		85	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	859		pg/L		86	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	851		pg/L		85	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	875		pg/L		88	78 - 138
OCDD	2000	1610		pg/L		81	78 - 144
OCDF	2000	1670		pg/L		83	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*81*		*20 - 175*
13C-2,3,7,8-TCDF	*98*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*80*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*88*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*86*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*74*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*78*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*88*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*91*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*92*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*96*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*20 - 186*
13C-OCDD	*73*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*102*		*31 - 191*

Lab Sample ID: LCSD 320-432973/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 435203 **Prep Batch: 432973**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	164		pg/L		82	67 - 158	11	50
2,3,7,8-TCDF	200	163		pg/L		81	75 - 158	12	50
1,2,3,7,8-PeCDD	1000	747		pg/L		75	70 - 142	10	50
1,2,3,7,8-PeCDF	1000	802		pg/L		80	80 - 134	7	50
2,3,4,7,8-PeCDF	1000	812		pg/L		81	68 - 160	11	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-432973/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435203
Prep Batch: 432973

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	854		pg/L		85	70 - 164	4	50
1,2,3,6,7,8-HxCDD	1000	807		pg/L		81	76 - 134	9	50
1,2,3,7,8,9-HxCDD	1000	847		pg/L		85	64 - 162	6	50
1,2,3,4,7,8-HxCDF	1000	790		pg/L		79	72 - 134	10	50
1,2,3,6,7,8-HxCDF	1000	801	*	pg/L		80	84 - 130	6	50
1,2,3,7,8,9-HxCDF	1000	787		pg/L		79	78 - 130	8	50
2,3,4,6,7,8-HxCDF	1000	778		pg/L		78	70 - 156	9	50
1,2,3,4,6,7,8-HpCDD	1000	785		pg/L		79	70 - 140	9	50
1,2,3,4,6,7,8-HpCDF	1000	775	*	pg/L		78	82 - 122	9	50
1,2,3,4,7,8,9-HpCDF	1000	794		pg/L		79	78 - 138	10	50
OCDD	2000	1500	*	pg/L		75	78 - 144	7	50
OCDF	2000	1530		pg/L		77	63 - 170	8	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*82*		*20 - 175*
13C-2,3,7,8-TCDF	*96*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*81*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*89*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*85*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*78*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*81*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*98*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*99*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*97*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*99*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*74*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*20 - 186*
13C-OCDD	*75*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*103*		*31 - 191*

Specialty Organics

Prep Batch: 432973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-66850-3 - RA	11215702-Tank #1 Drum	Total/NA	Water	1613B	
320-66850-3	11215702-Tank #1 Drum	Total/NA	Water	1613B	
320-66850-4 - RA	11215702-Tank #2 Drum	Total/NA	Water	1613B	
320-66850-4	11215702-Tank #2 Drum	Total/NA	Water	1613B	
320-66850-5 - RA	11215702-Tank #1 Tank	Total/NA	Water	1613B	
320-66850-5	11215702-Tank #1 Tank	Total/NA	Water	1613B	
320-66850-6 - RA	11215702-Tank #2 Tank	Total/NA	Water	1613B	
320-66850-6	11215702-Tank #2 Tank	Total/NA	Water	1613B	
MB 320-432973/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-432973/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-432973/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 434777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-66850-3	11215702-Tank #1 Drum	Total/NA	Water	1613B	432973
320-66850-4	11215702-Tank #2 Drum	Total/NA	Water	1613B	432973
320-66850-5	11215702-Tank #1 Tank	Total/NA	Water	1613B	432973
320-66850-6	11215702-Tank #2 Tank	Total/NA	Water	1613B	432973
MB 320-432973/1-A	Method Blank	Total/NA	Water	1613B	432973

Analysis Batch: 435203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-432973/2-A	Lab Control Sample	Total/NA	Water	1613B	432973
LCSD 320-432973/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	432973

Analysis Batch: 436991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-66850-3 - RA	11215702-Tank #1 Drum	Total/NA	Water	1613B	432973
320-66850-4 - RA	11215702-Tank #2 Drum	Total/NA	Water	1613B	432973
320-66850-5 - RA	11215702-Tank #1 Tank	Total/NA	Water	1613B	432973
320-66850-6 - RA	11215702-Tank #2 Tank	Total/NA	Water	1613B	432973

Client Sample ID: 11215702-Tank #1 Drum Lab Sample ID: 320-66850-3

Date Collected: 11/09/20 12:00 **Matrix: Water**

Date Received: 11/17/20 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	436991	11/30/20 20:07	KSS	TAL SAC
Total/NA	Prep	1613B			432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B		1	434777	11/24/20 14:17	ALM	TAL SAC

Client Sample ID: 11215702-Tank #2 Drum Lab Sample ID: 320-66850-4

Date Collected: 11/09/20 12:00 **Matrix: Water**

Date Received: 11/17/20 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	436991	11/30/20 21:24	KSS	TAL SAC
Total/NA	Prep	1613B			432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B		1	434777	11/24/20 15:04	ALM	TAL SAC

Client Sample ID: 11215702-Tank #1 Tank Lab Sample ID: 320-66850-5

Date Collected: 11/09/20 13:00 **Matrix: Water**

Date Received: 11/17/20 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	436991	11/30/20 20:46	KSS	TAL SAC
Total/NA	Prep	1613B			432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B		1	434777	11/24/20 15:53	ALM	TAL SAC

Client Sample ID: 11215702-Tank #2 Tank Lab Sample ID: 320-66850-6

Date Collected: 11/09/20 13:00 **Matrix: Water**

Date Received: 11/17/20 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	436991	11/30/20 22:03	KSS	TAL SAC
Total/NA	Prep	1613B			432973	11/18/20 11:29	NR	TAL SAC
Total/NA	Analysis	1613B		1	434777	11/24/20 16:40	ALM	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 320-66850-2
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc.
Job ID: 320-66850-2
Project/Site: San Jacinto River Waste Pits Superfund

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-66850-2
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-66850-3	11215702-Tank #1 Drum	Water	11/09/20 12:00	11/17/20 10:10	
320-66850-4	11215702-Tank #2 Drum	Water	11/09/20 12:00	11/17/20 10:10	
320-66850-5	11215702-Tank #1 Tank	Water	11/09/20 13:00	11/17/20 10:10	
320-66850-6	11215702-Tank #2 Tank	Water	11/09/20 13:00	11/17/20 10:10	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-2

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 413246

Lab Sample ID: IC 320-413246/3 Client Sample ID:

Date Analyzed: 09/17/20 16:09 Lab File ID: 17SE2010D5_3.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	17.91	Poor chromatography	shardaa	09/17/20 17:16

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-2

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 432585

Lab Sample ID: IC 320-432585/5 Client Sample ID:

Date Analyzed: 11/17/20 14:27 Lab File ID: 17no20dfs1_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.80	Peak assignment corrected	stephensk	11/17/20 16:09

Lab Sample ID: IC 320-432585/6 Client Sample ID:

Date Analyzed: 11/17/20 15:14 Lab File ID: 17no20dfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.79	Peak assignment corrected	stephensk	11/17/20 16:09

Lab Sample ID: IC 320-432585/7 Client Sample ID:

Date Analyzed: 11/17/20 16:08 Lab File ID: 17no20dfs1_8.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.85	Peak assignment corrected	stephensk	11/18/20 08:59

Lab Sample ID: ICV 320-432585/10 Client Sample ID:

Date Analyzed: 11/17/20 18:32 Lab File ID: 17no20dfs1_11.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4,7,8-HxCDF	35.21	Poor chromatography	stephensk	11/18/20 09:10
13C-1,2,3,6,7,8-HxCDF	35.36	Poor chromatography	stephensk	11/18/20 09:10

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-2

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 434777

Lab Sample ID: CCV 320-434777/28 Client Sample ID:

Date Analyzed: 11/24/20 07:33 Lab File ID: 23no20dfs1_32.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.77	Peak assignment corrected	stephensk	11/24/20 08:53

Lab Sample ID: MB 320-432973/1-A Client Sample ID:

Date Analyzed: 11/24/20 10:17 Lab File ID: 23no20dfs1_36.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	20.74	Poor chromatography	stephensk	11/25/20 14:40

Lab Sample ID: 320-66850-3 Client Sample ID: 11215702-Tank #1 Drum

Date Analyzed: 11/24/20 14:17 Lab File ID: 23no20dfs1_41.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	27.62	Split Peak	dadunj	11/30/20 10:50
1,2,3,7,8-PeCDD	30.02	Split Peak	dadunj	11/30/20 10:51
2,3,4,6,7,8-HxCDF	36.11	Split Peak	dadunj	11/30/20 10:52
1,2,3,7,8,9-HxCDF	36.98	Split Peak	dadunj	11/30/20 10:52

Lab Sample ID: 320-66850-4 Client Sample ID: 11215702-Tank #2 Drum

Date Analyzed: 11/24/20 15:04 Lab File ID: 23no20dfs1_42.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDD	36.33	Split Peak	dadunj	11/30/20 10:56
13C-1,2,3,6,7,8-HxCDD	36.43	Split Peak	dadunj	11/30/20 10:56
1,2,3,6,7,8-HxCDD	36.45	Split Peak	dadunj	11/30/20 10:56
1,2,3,7,8,9-HxCDD	36.83	Split Peak	dadunj	11/30/20 10:56
1,2,3,4,6,7,8-HpCDF	38.76	Split Peak	dadunj	11/30/20 10:56

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-66850-2

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 434777

Lab Sample ID: 320-66850-5 Client Sample ID: 11215702-Tank #1 Tank

Date Analyzed: 11/24/20 15:53 Lab File ID: 23no20dfs1_43.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,4,6,7,8-HxCDF	36.12	Split Peak	dadunj	11/30/20 10:59
1,2,3,7,8,9-HxCDD	36.80	Baseline	dadunj	11/30/20 10:59
1,2,3,7,8,9-HxCDF	36.99	Invalid Compound ID	dadunj	11/30/20 10:59

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25	Wellington Labs, Lot 13PAR0418			(Purchased Reagent)		2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
HRDXNIC_00046	01/31/21	09/11/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00445	01/31/21	10/21/20	Acetone, Lot 0000242180	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL2_00030	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00122	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL3_00028	01/31/21	09/11/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00122	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00095	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00096	01/31/21	11/24/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL5_00031	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL6_00027	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00244	11/02/21	11/02/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00123	10/02/21	11/02/20	Acetone, Lot 00000242180	10 mL	HRDXNTA_00111	0.1 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 KSS

(pg 1/6)

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
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Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/MS
Column:	DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min
Injector Temp:	Cool-on-Column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

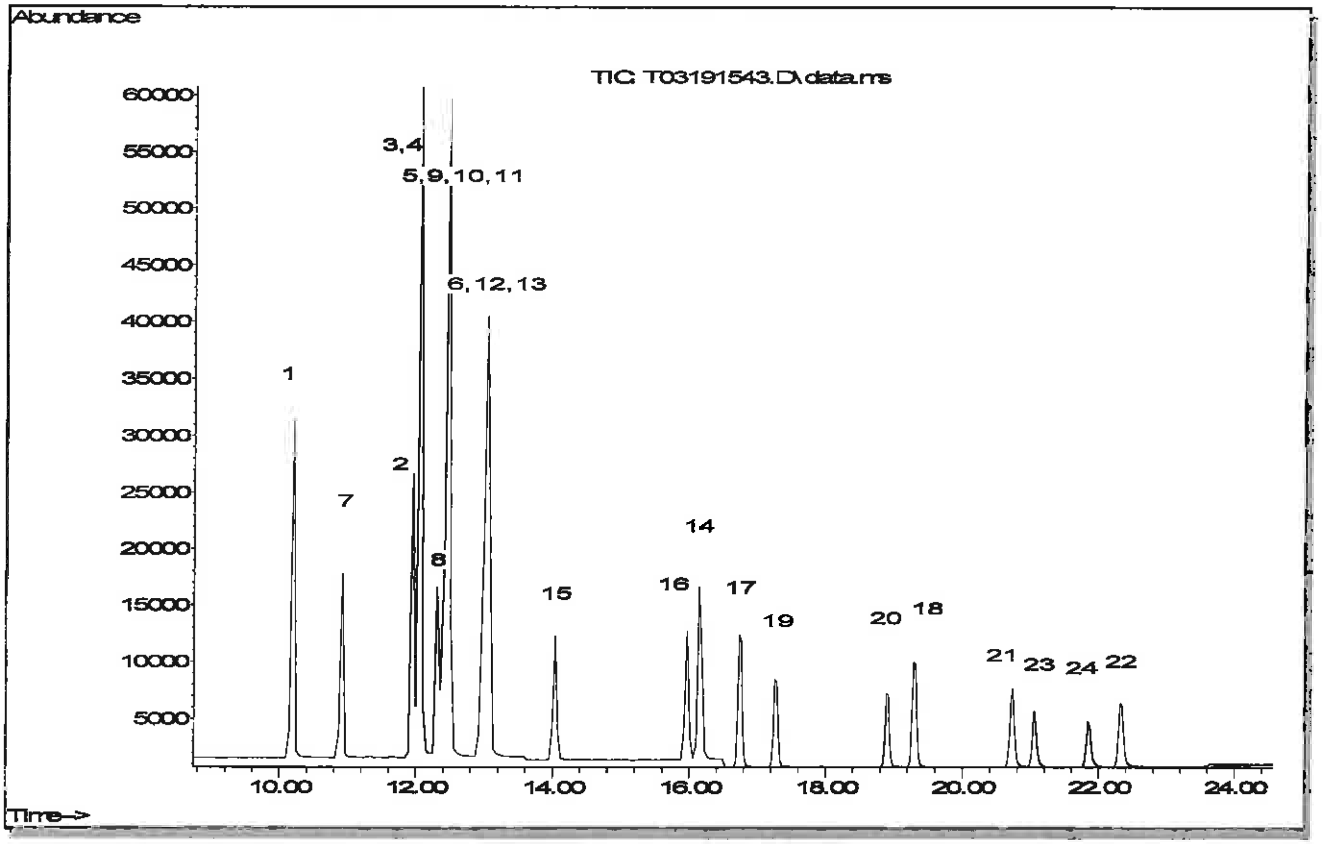

1	1,3,6,8-Tetrachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5	1,2,3,9-Tetrachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin
13	1,3,4,6,8-Pentachlorodibenzofuran
14	1,2,3,8,9-Pentachlorodibenzofuran
15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17	1,2,3,4,6,8-Hexachlorodibenzofuran
18	1,2,3,4,8,9-Hexachlorodibenzofuran
19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNCP_00041

rec 7/29/20 skv

Cerilliant®
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

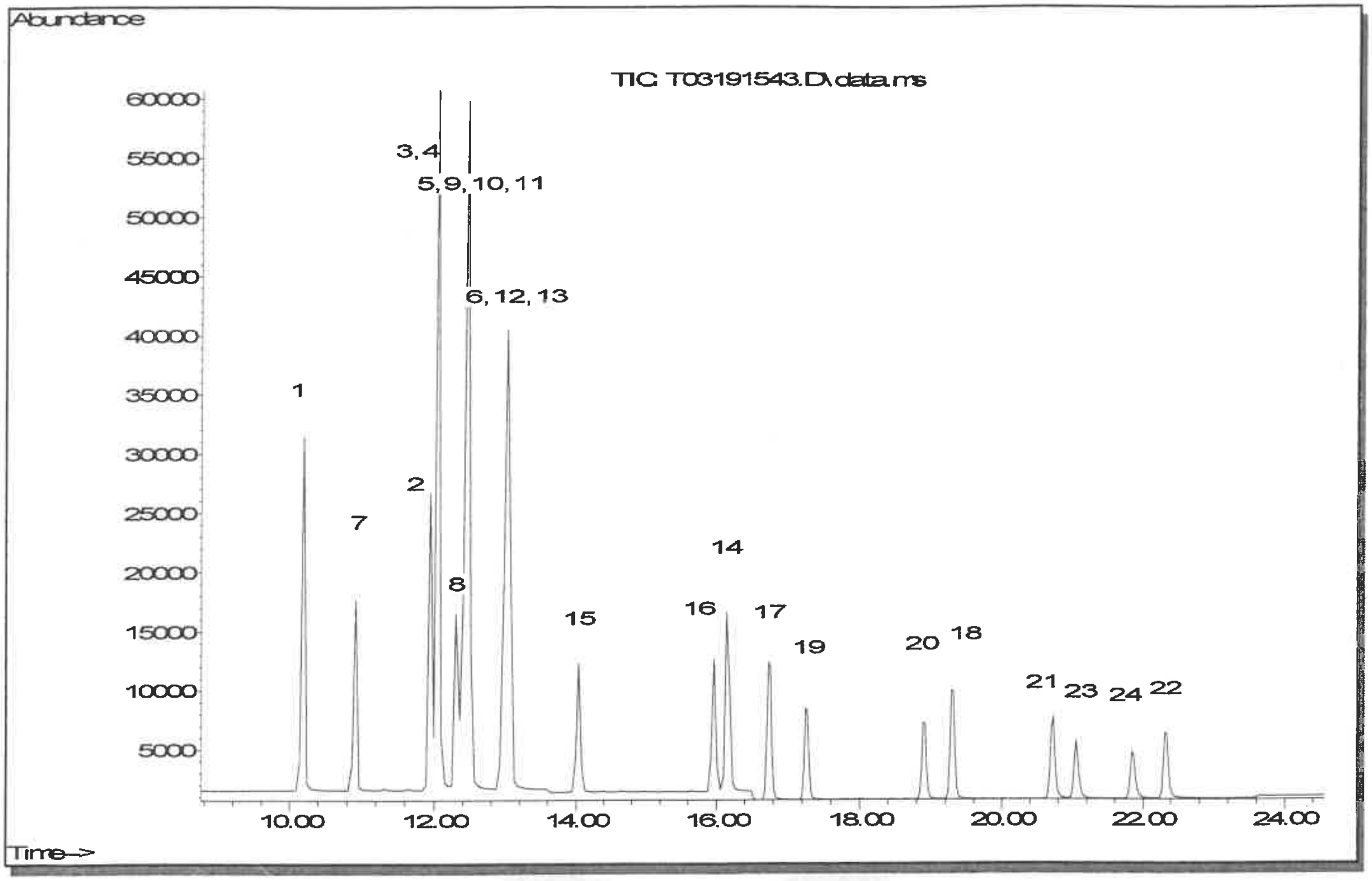

1	1,3,6,8-Tetrachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5	1,2,3,9-Tetrachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin
13	1,3,4,6,8-Pentachlorodibenzofuran
14	1,2,3,8,9-Pentachlorodibenzofuran
15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17	1,2,3,4,6,8-Hexachlorodibenzofuran
18	1,2,3,4,8,9-Hexachlorodibenzofuran
19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00398

9280 I#24
Verified 11-14-19
GWS

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

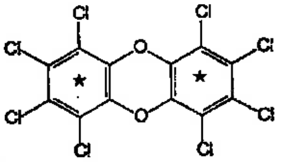

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (μg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

[illegible]

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	70°C to 200°C at 40°C/min 200°C to 280°C at 10°C/min hold 15 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	3
Linearity (r):	0.997

Neat Material Data

Compound Name:	Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER04041601
Chemical Formula:	$^{13}C_{12}Cl_8O_2$
CAS Number:	114423-97-1
Molecular Weight:	471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

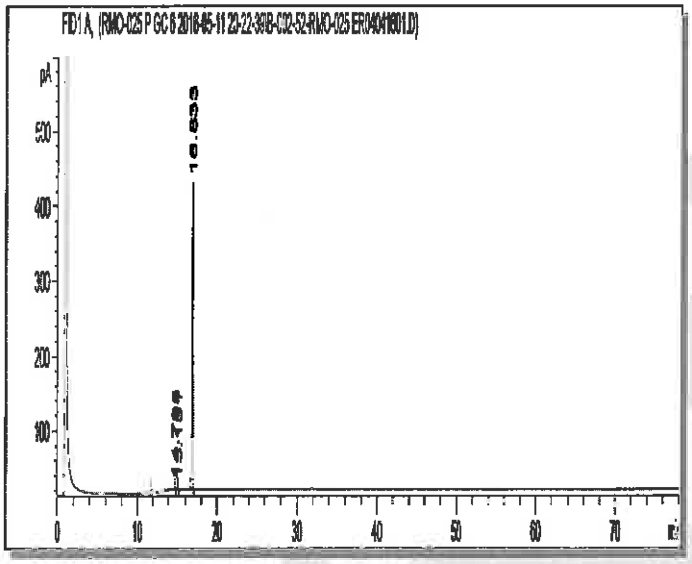

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14 80	12 12	3.62	0.61
2	15 15	4 72	1.32	0.24
3	16 83	1980 56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

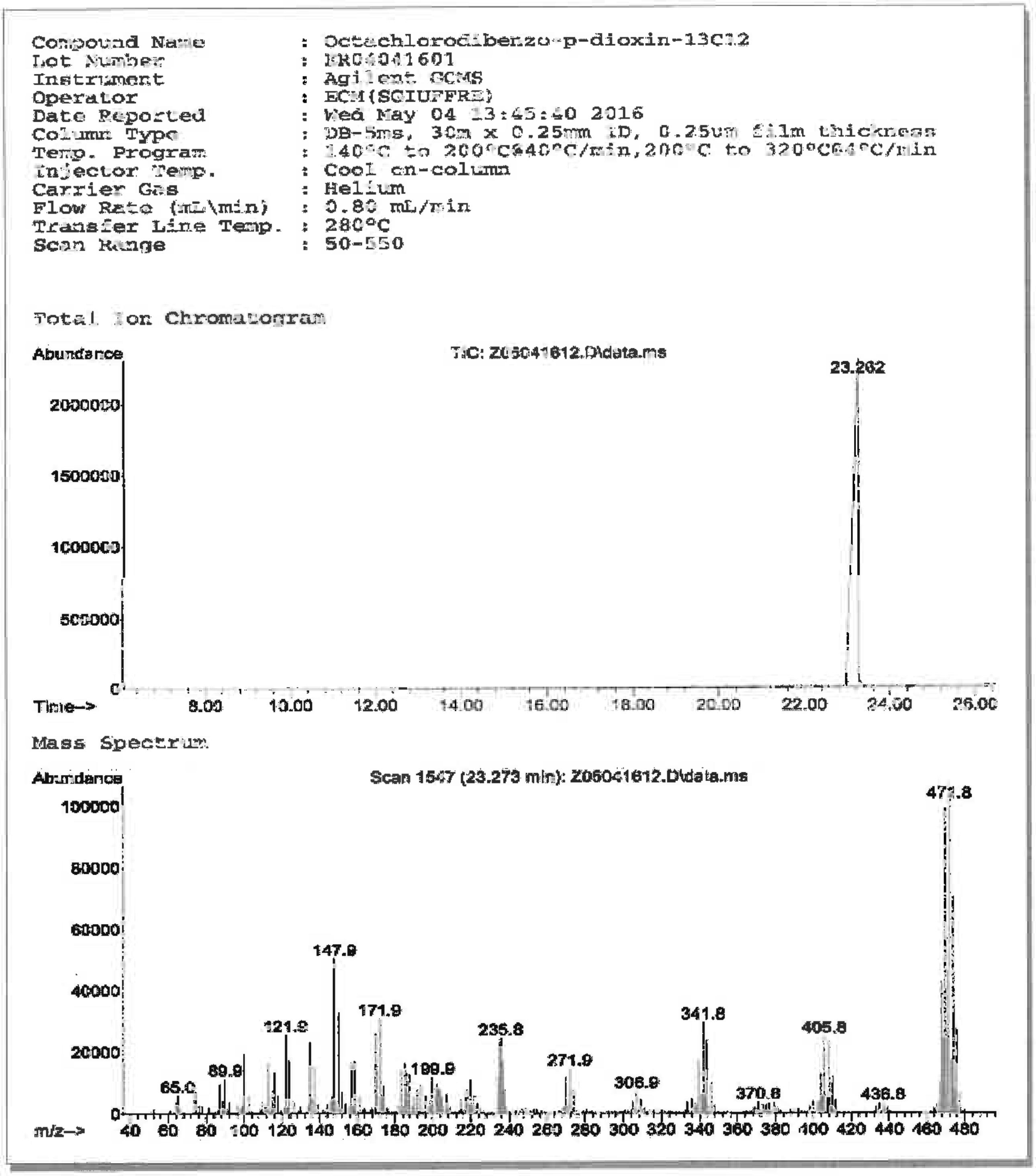

```
Compound Name           : Octachlorodibenzo-p-dioxin-13C12
Lot Number              : ER04041601
Instrument              : Agilent GCMS
Operator                : ECM(SCIUFFRE)
Date Reported           : Wed May 04 13:45:40 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00407

Received 11-26-19

Cerilliant
Analytical Reference Standards
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Revision 00
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

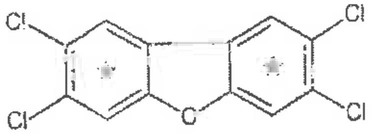

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

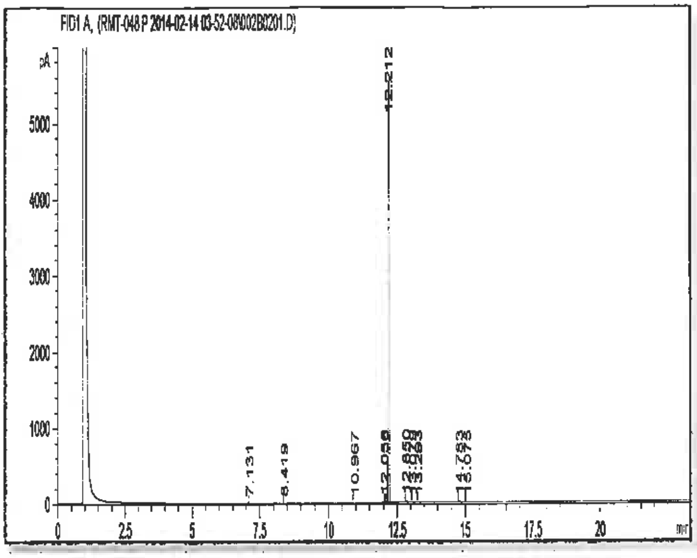

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

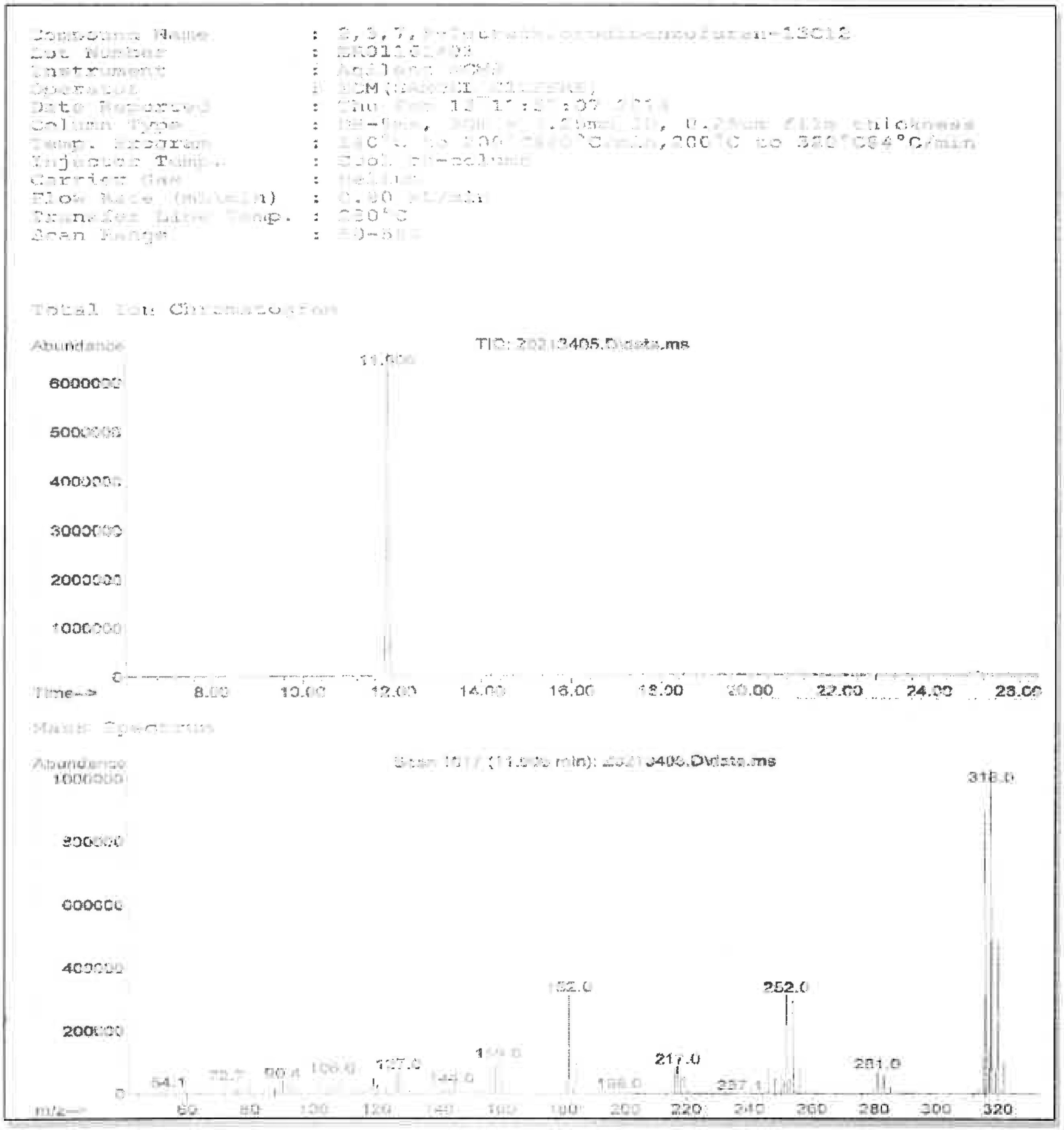

Compound Name : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number : ER0113[illegible]03
Instrument : Agilent [illegible]
Operator : ECM([illegible])
Date Reported : Thu Feb 13 11:5[illegible]:07 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-18

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
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ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

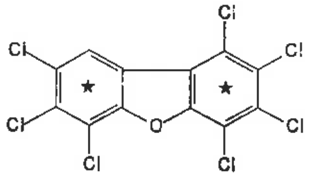

Catalog Number: EF-974
Solution Lot: ER08101404
Expiration Date: November 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER020507-02

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-84-8
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

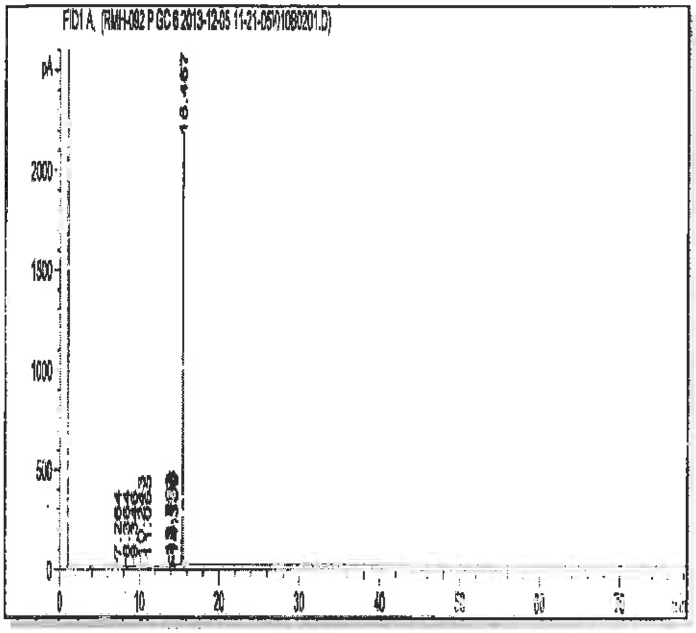

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\01080201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

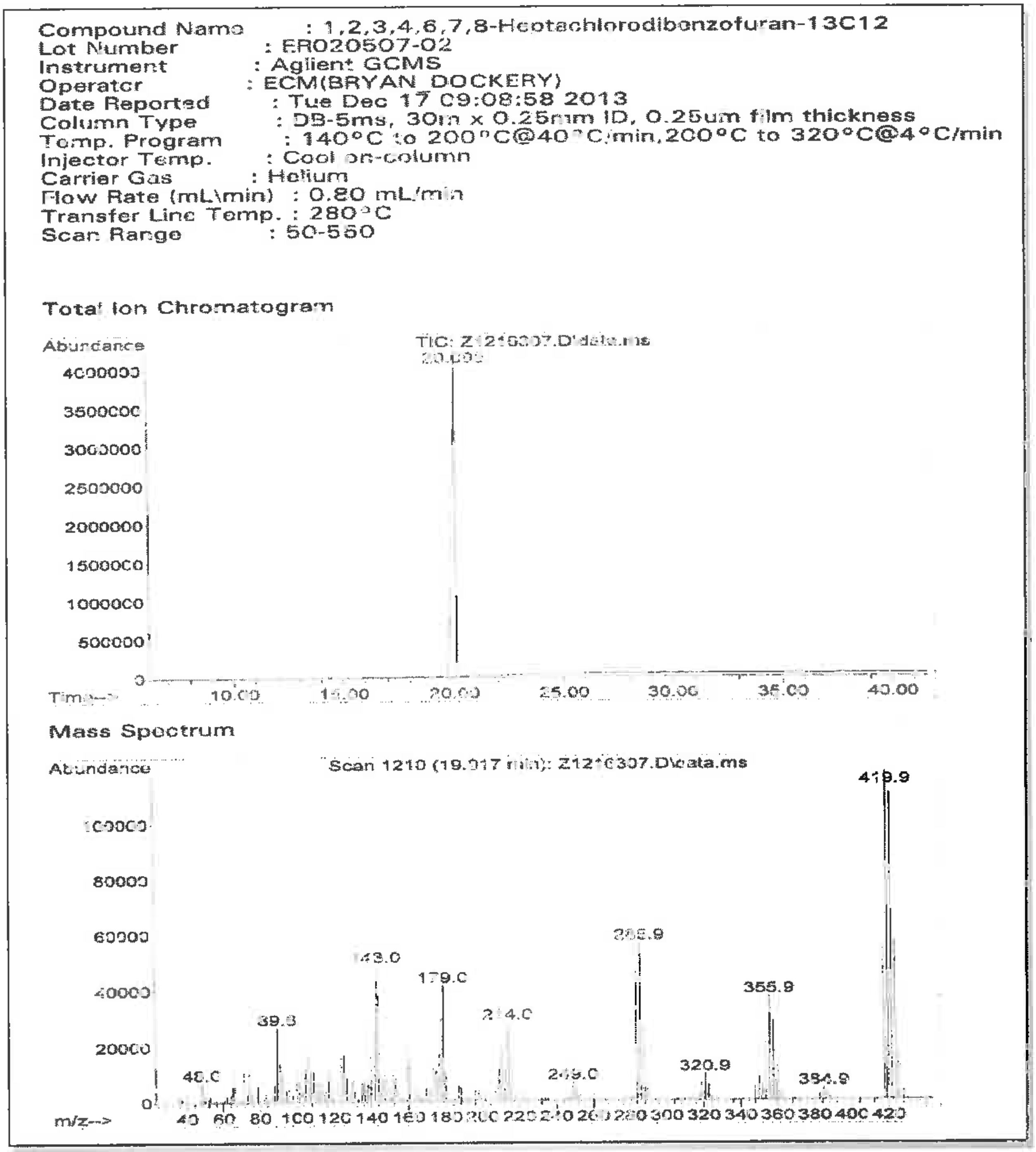

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Rec'ed 11-2[illegible]

Cerilliant
Analytical Reference Standards
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Revision 0
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

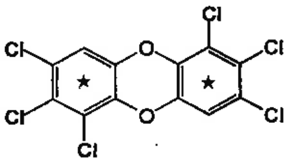

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

April 19, 2018

Darron Ellsworth, Quality Assurance Manager   Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802

Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

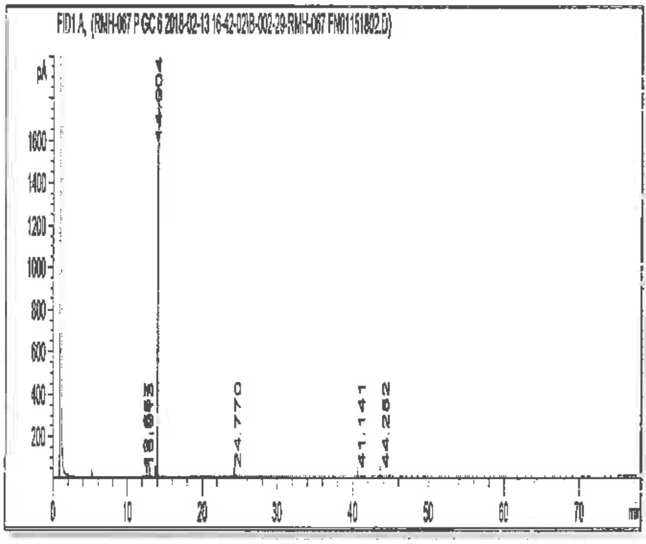

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument:	GC#6
Sample Name:	FN01151802
Acquired:	February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

Spectral and Physical Data (cont.)

GC/MS

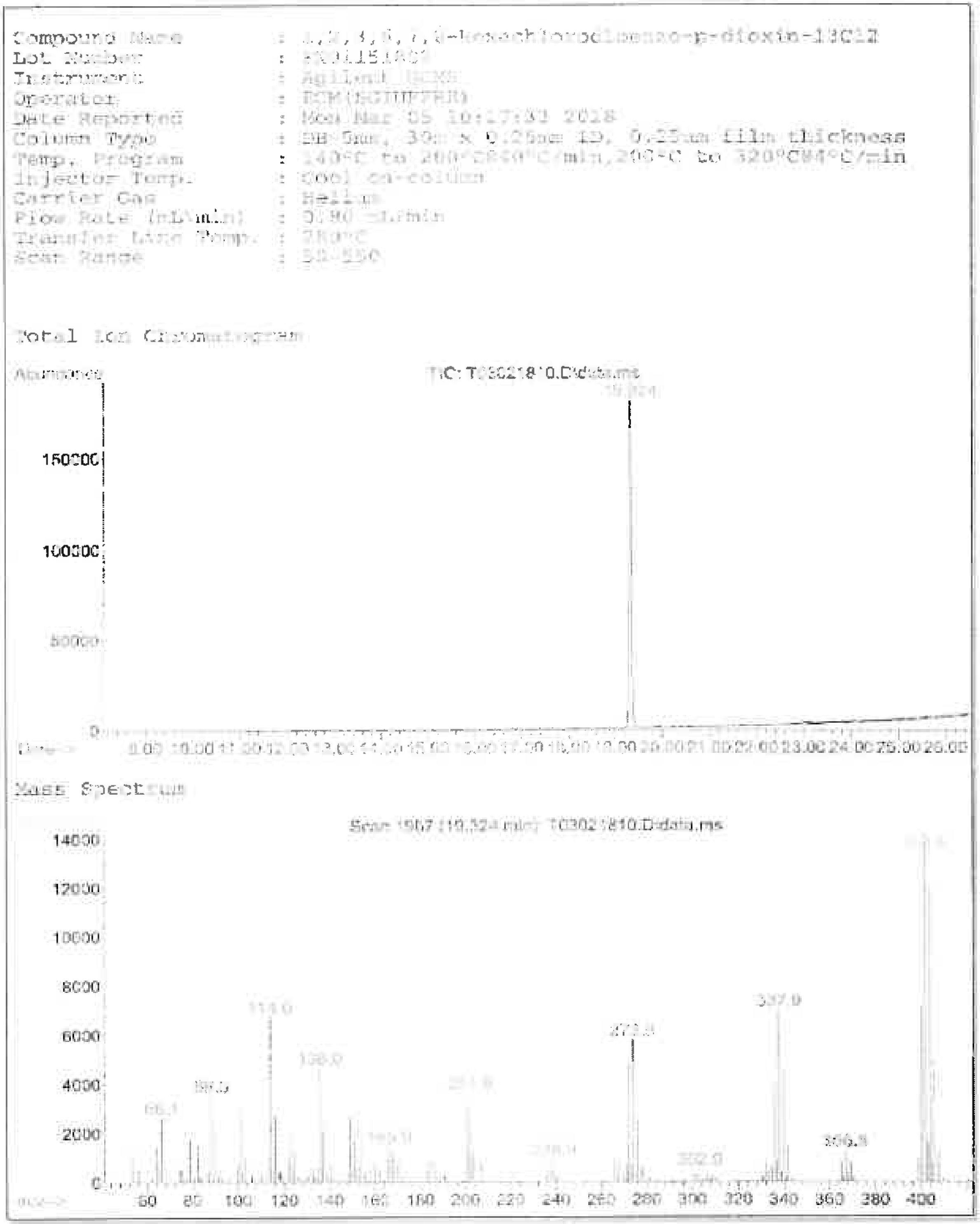

```
Compound Name           : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number              : [illegible]
Instrument              : Agilent GCMS
Operator                : ECM(SCHUFFER)
Date Reported           : Mon Mar 05 10:17:33 2018
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.90 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00410

Rec'd 11-21-16

Cerilliant
Analytical Reference Standards
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CIL

Revision 0
Page 1 of 4

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

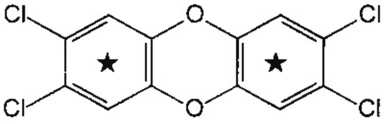

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER01201405
Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 76523-40-5
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

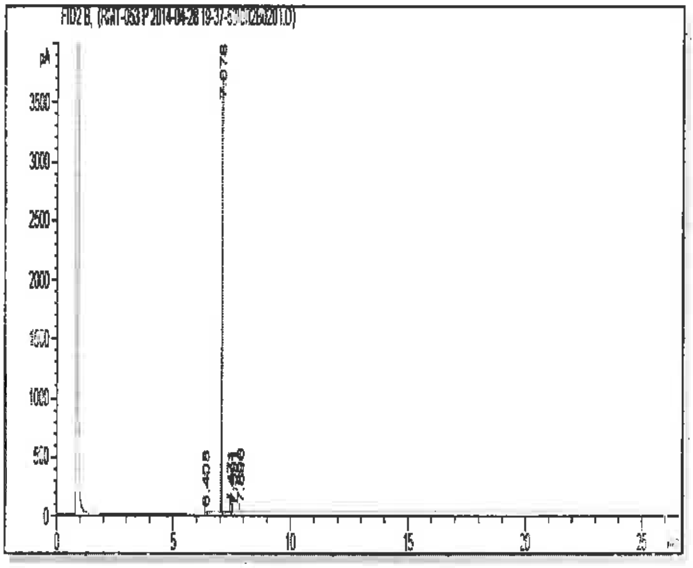

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

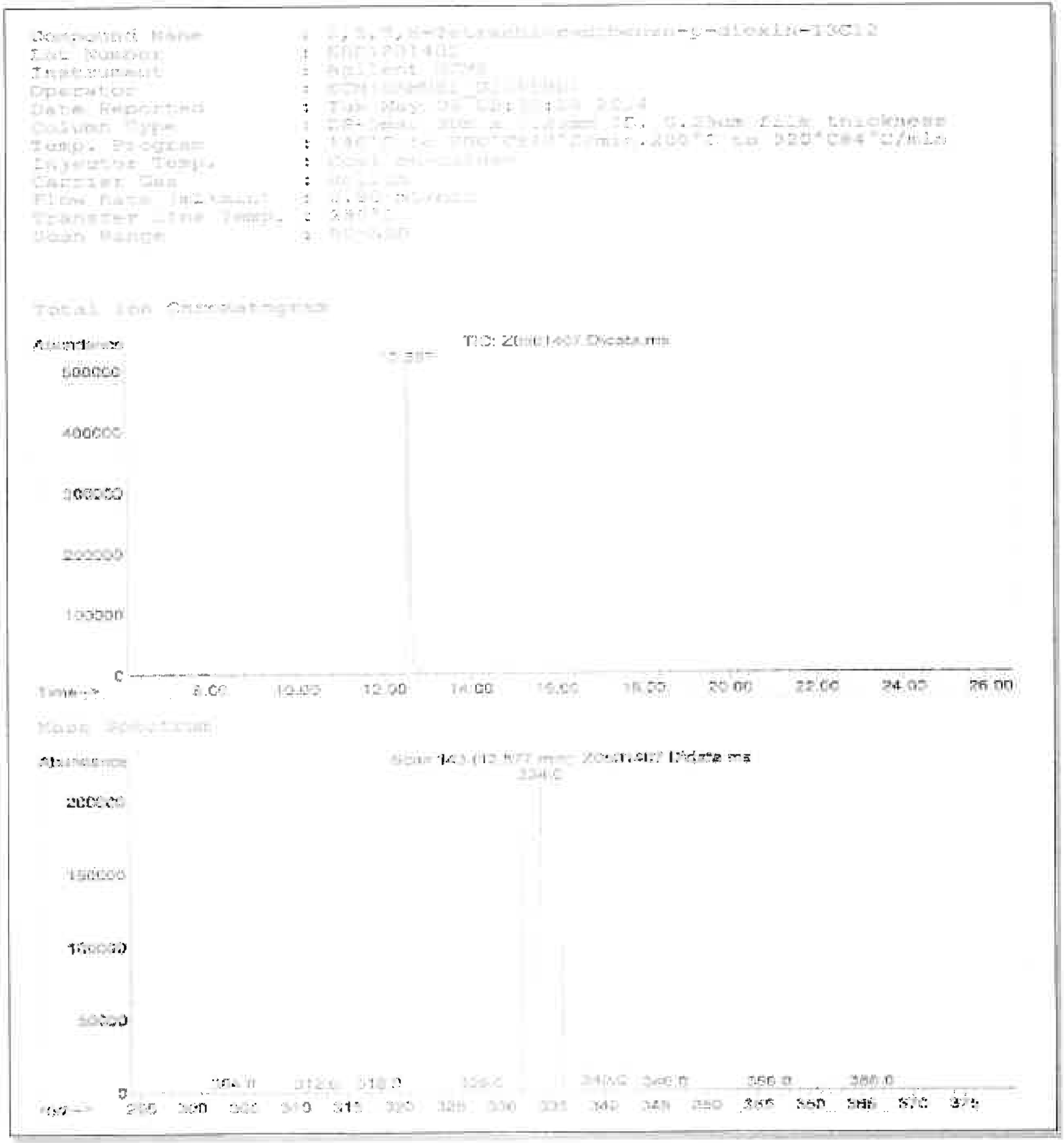

Compound Name : [illegible]-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent [illegible]
Operator : [illegible]
Date Reported : [illegible] 2014
Column Type : [illegible] 0.25um film thickness
Temp. Program : [illegible] 200°C to 320°C@4°C/min
Injector Temp. : [illegible]
Carrier Gas : [illegible]
Flow Rate (Constant) : [illegible]
Transfer Line Temp. : [illegible]
Scan Range : [illegible]

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00417

r: 3/30/20

Cerilliant
Analytical Reference Standards
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CIL

Certificate of Analysis

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

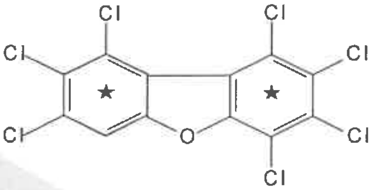

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

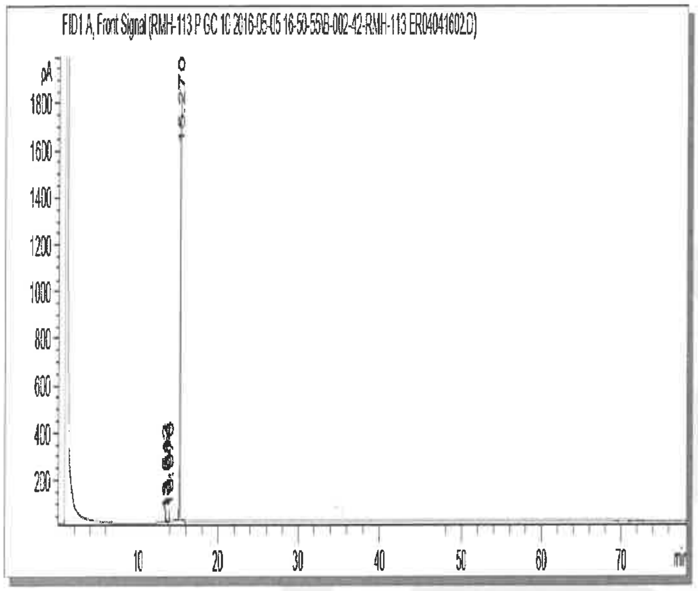

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument:	GC#10
Sample Name:	ER04041602
Acquired:	May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

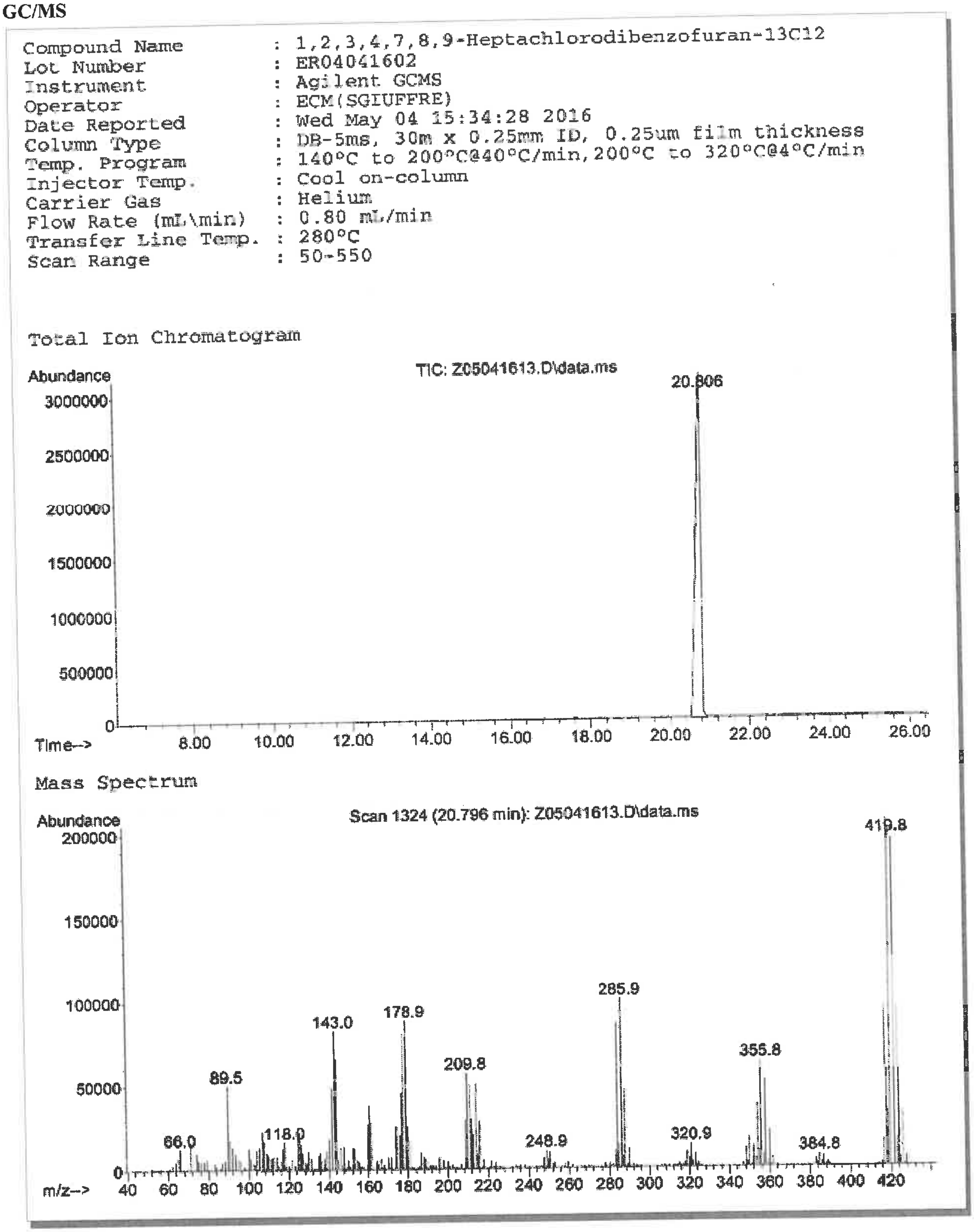

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/20/20 SAD

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

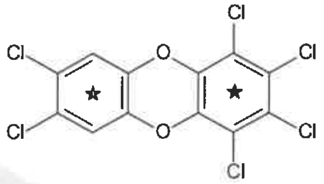

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager	***August 11, 2016*** Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01
Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

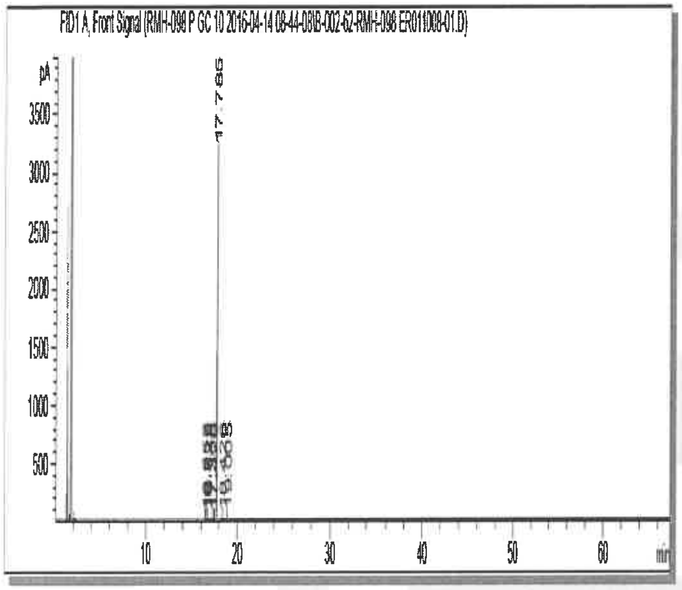

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

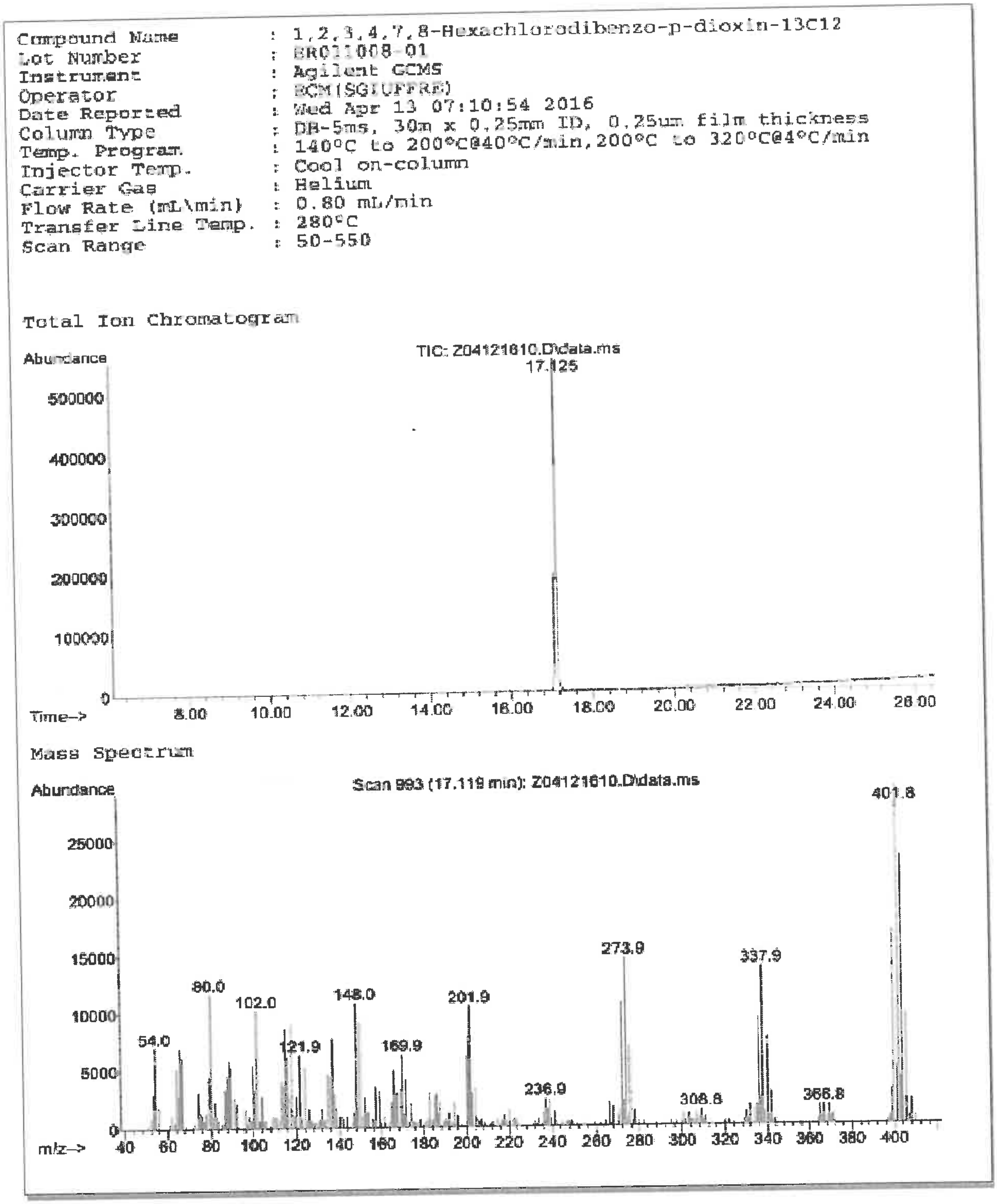

```
Compound Name              : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number                 : BR011008-01
Instrument                 : Agilent GCMS
Operator                   : BCM(SGIUFFRE)
Date Reported              : Wed Apr 13 07:10:54 2016
Column Type                : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program              : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.             : Cool on-column
Carrier Gas                : Helium
Flow Rate (mL\min)         : 0.80 mL/min
Transfer Line Temp.        : 280°C
Scan Range                 : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SK✓

Cerilliant®
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

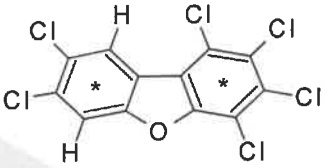

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601
Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

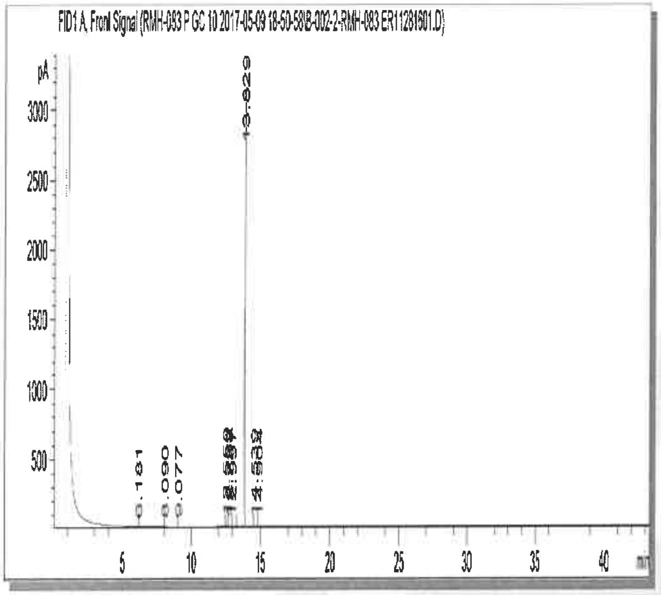

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 30 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument:	GC#10
Sample Name:	ER11281601
Acquired:	May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

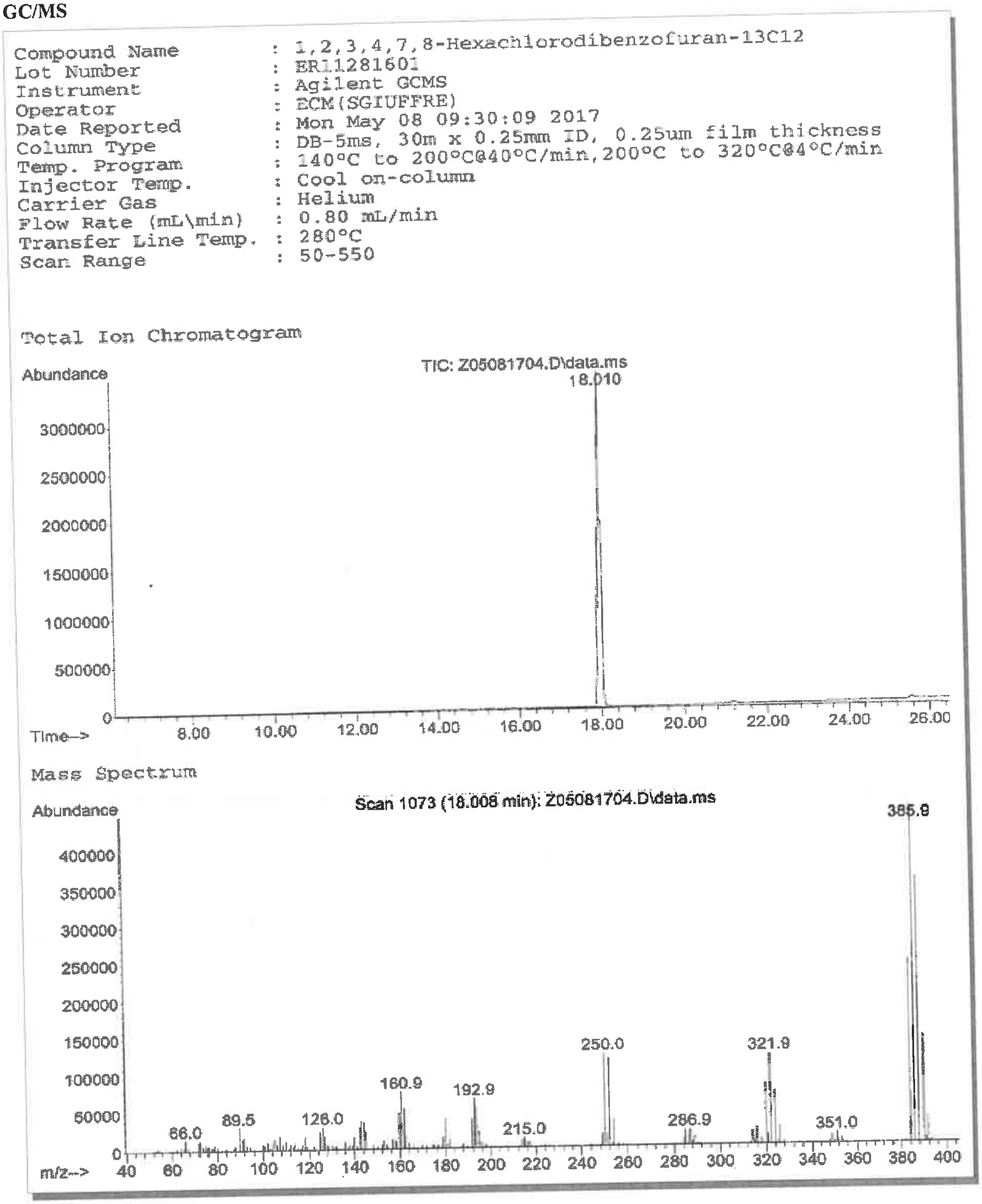

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

Cerilliant
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Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

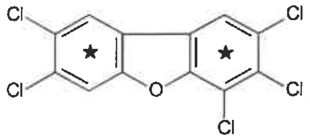

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

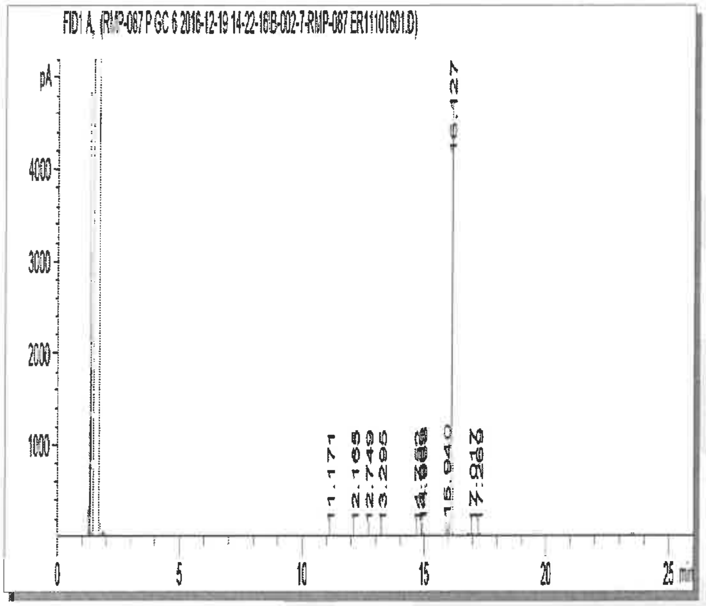

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

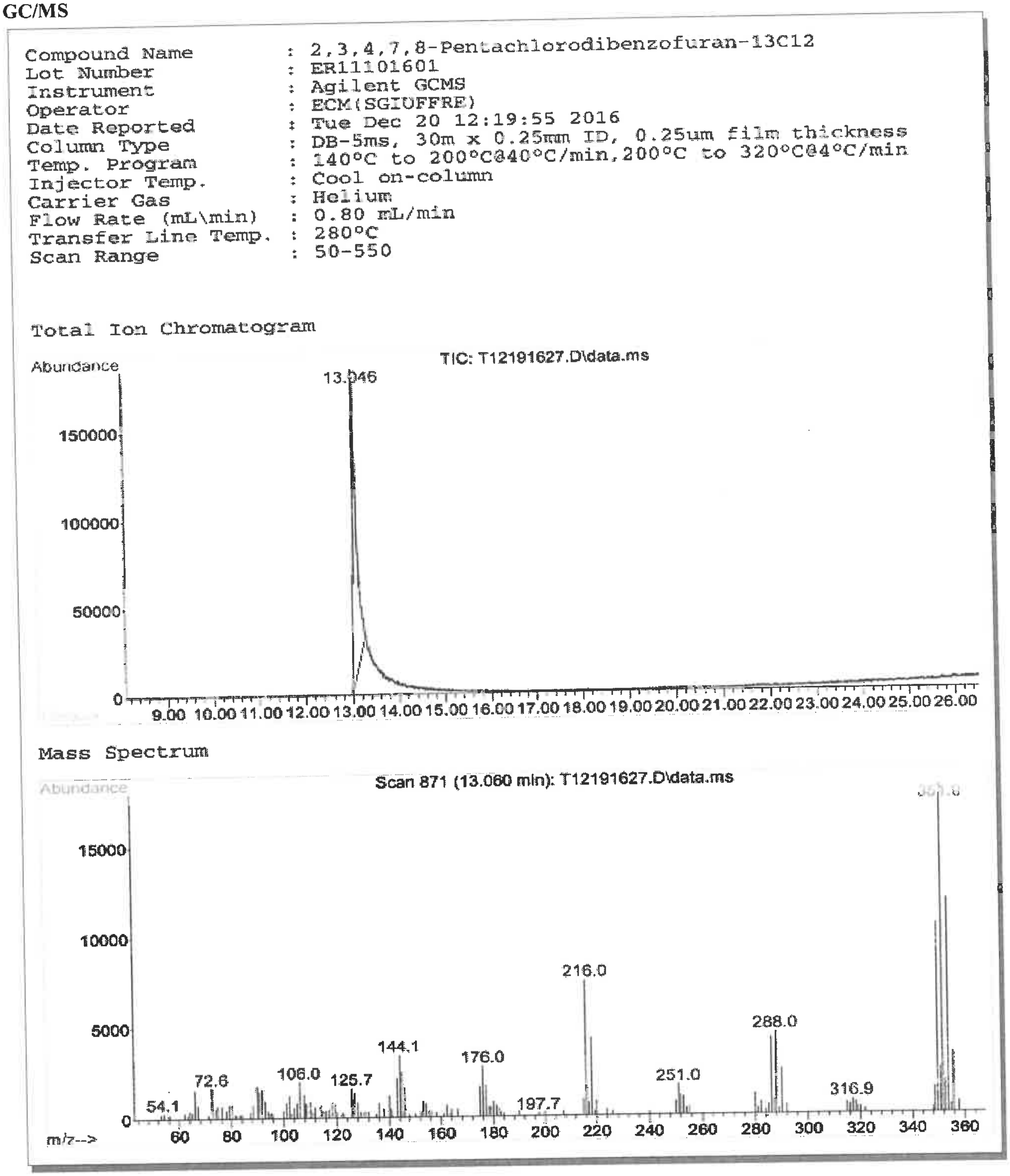

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

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Revision 02
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Cerilliant Quality
ISO GUIDE 34 CERTIFICATE AR1353
ISO/IEC 17025 CERTIFICATE AT1352
ISO 9001:2008 CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number:	EF-952
Solution Lot:	ER012111-01
Expiration Date:	January 2021
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

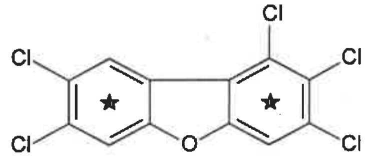

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER090110-01
Chemical Formula:	$^{13}C_{12}H_3OCl_5$
CAS Number:	109719-77-9
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

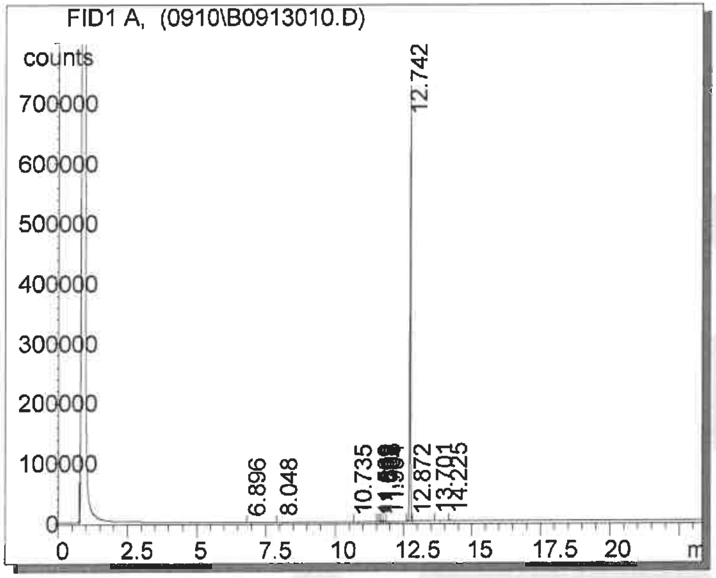

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

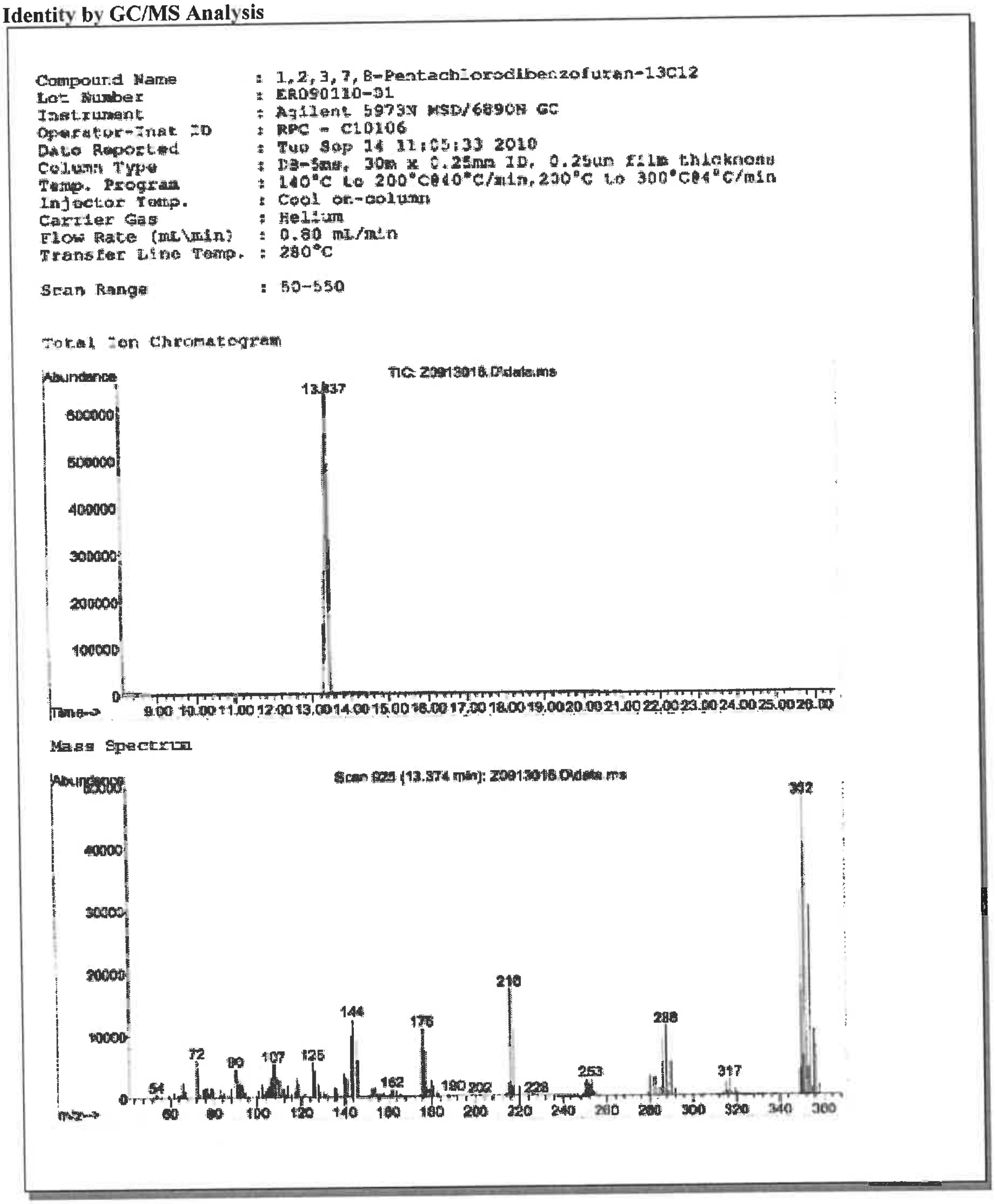

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number             : ER090110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Tue Sep 14 11:05:33 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,230°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKJ

Cerilliant
Analytical Reference Standards
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

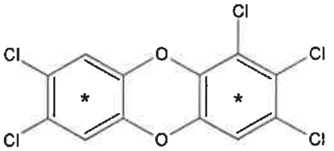

Catalog Number: ED-955
Solution Lot: ER08041401
Expiration Date: August 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

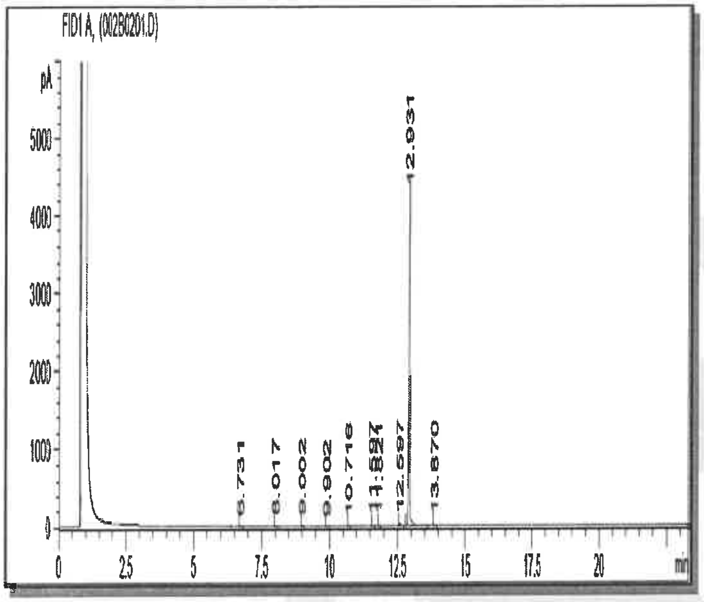

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min, hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Data File Name:	RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument:	GC#6
Sample Name:	ER06241403
Acquired:	July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

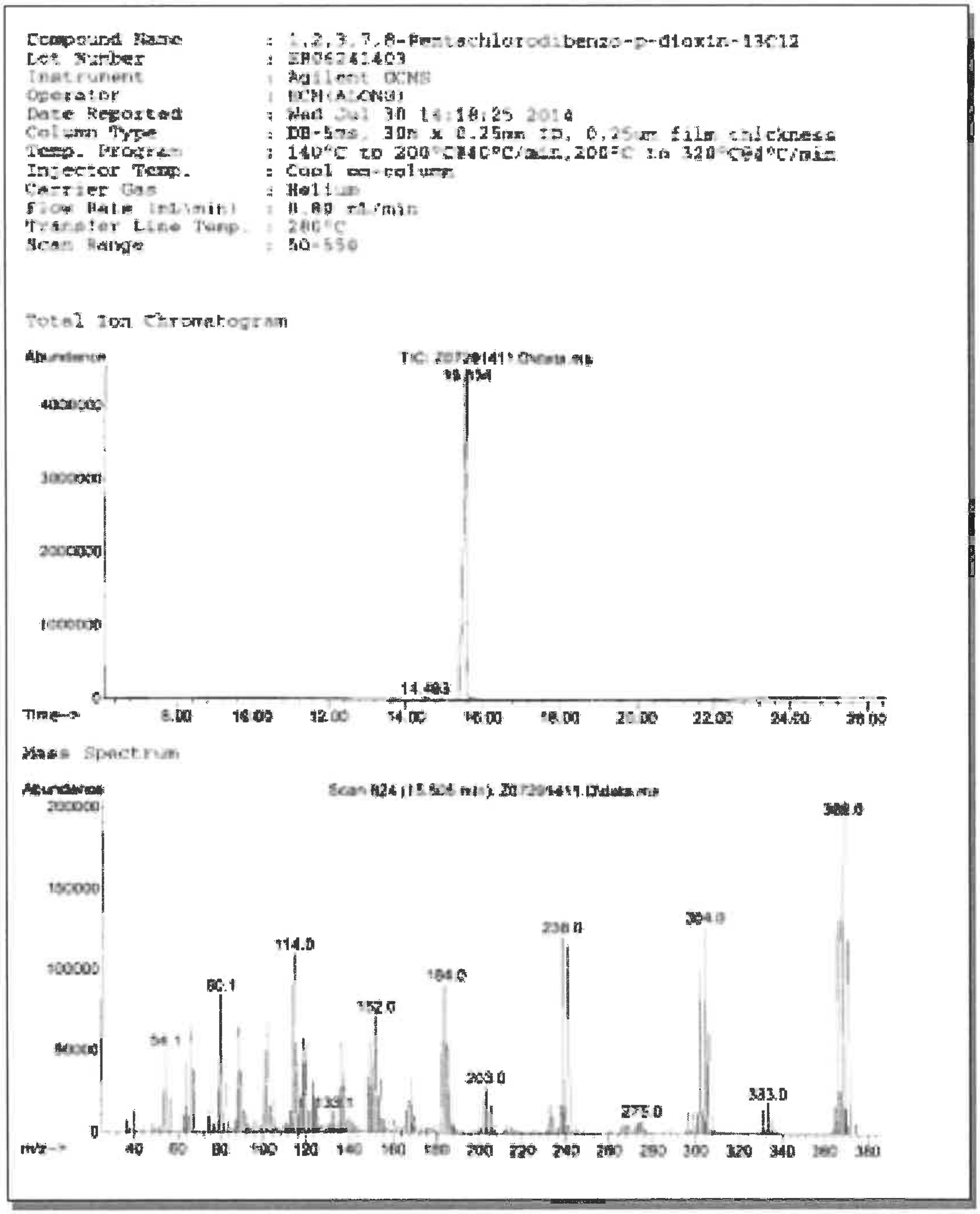

```
Compound Name            : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number               : ER06241403
Instrument               : Agilent GCMS
Operator                 : HCM(ALONG)
Date Reported            : Wed Jul 30 14:18:25 2014
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (ml/min)       : 0.80 ml/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

Cerilliant
Analytical Reference Standards
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CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

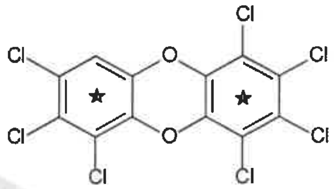

Catalog Number: ED-972
Solution Lot: ER09271601
Expiration Date: October 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 0.999

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER100110-01

Chemical Formula: $^{13}C_{12}HCl_7O_2$
CAS Number: 109719-83-7
Molecular Weight: 437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

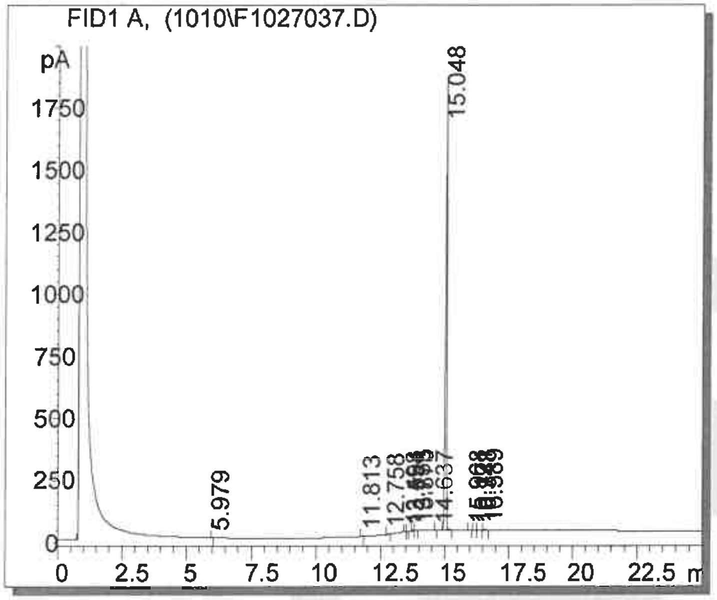

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

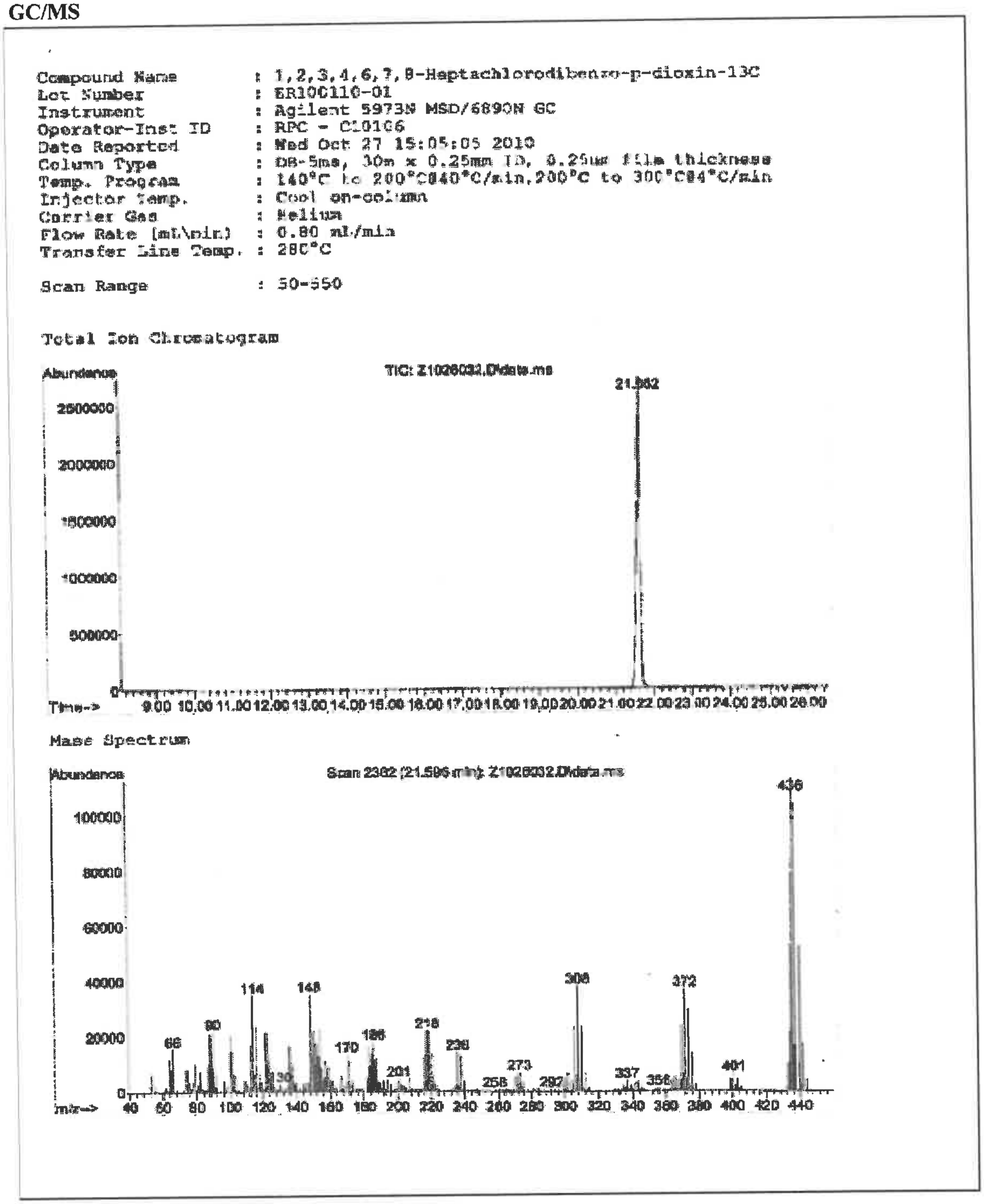

```
Compound Name         : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number            : ER10C110-01
Instrument            : Agilent 5973N MSD/6890N GC
Operator-Inst ID      : RPC - C10106
Date Reported         : Wed Oct 27 15:05:05 2010
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C

Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

r: 4/21/20 SW

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Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

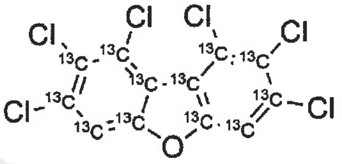

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03
Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

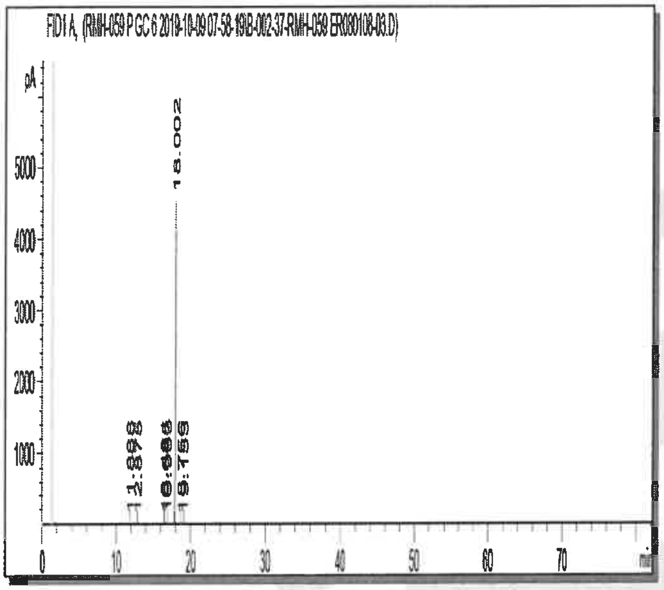

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER080108-03
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

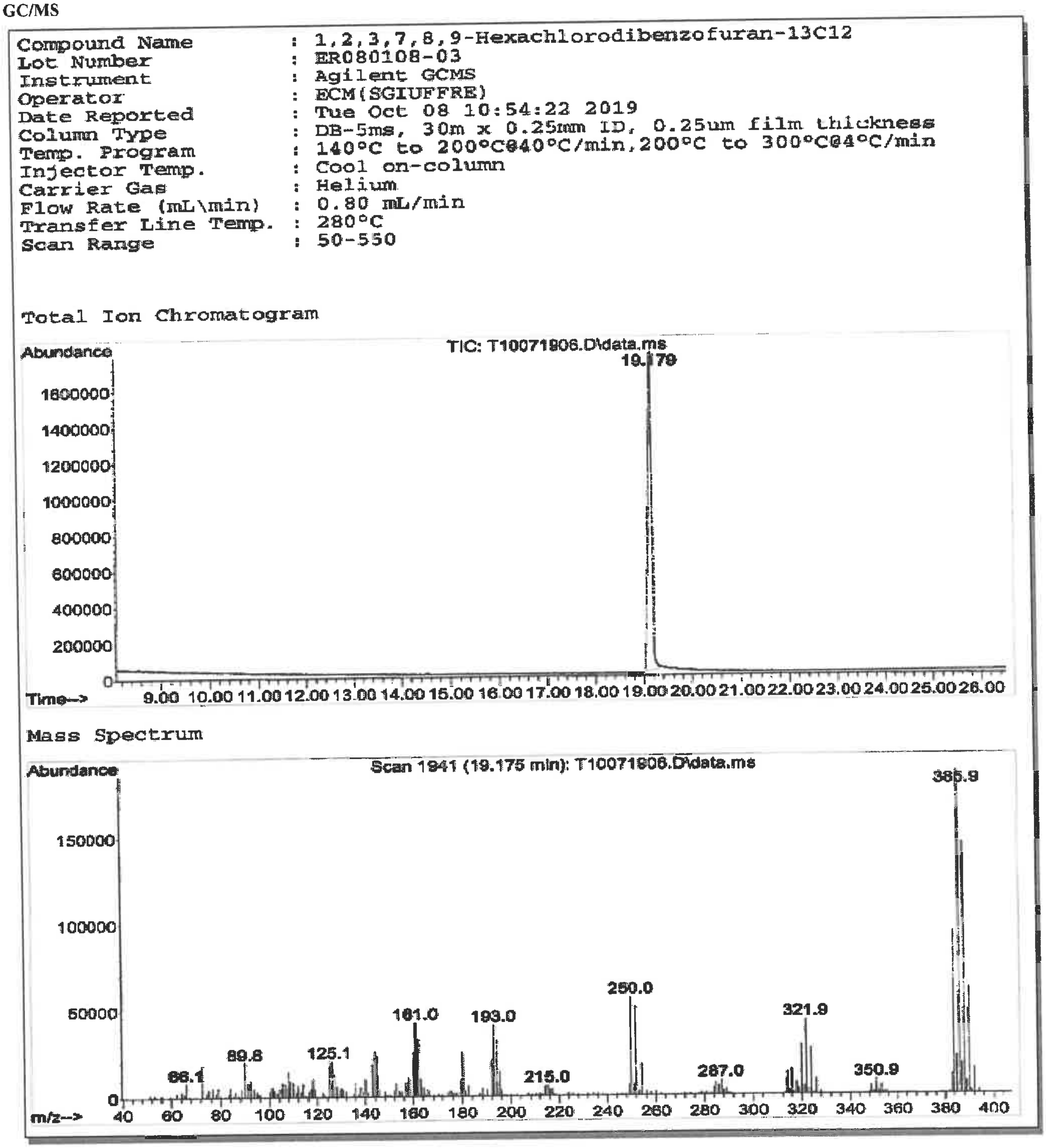

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number : ER080108-03
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Oct 08 10:54:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skw

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Revision 0
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

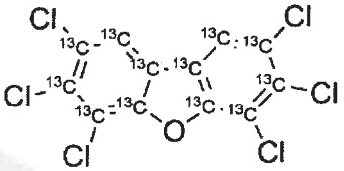

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

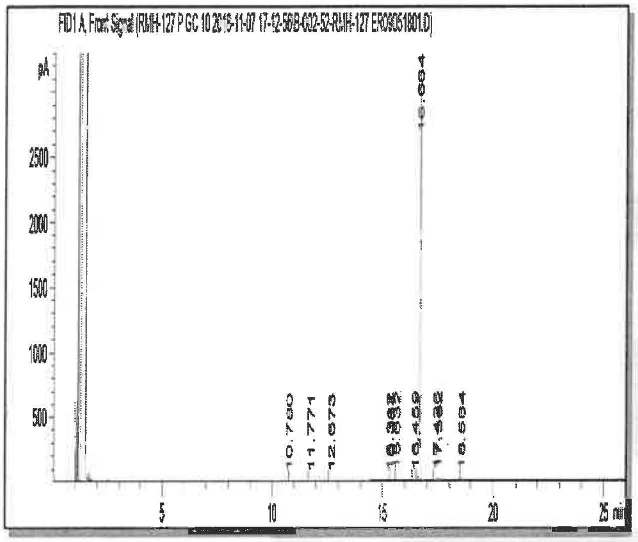

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

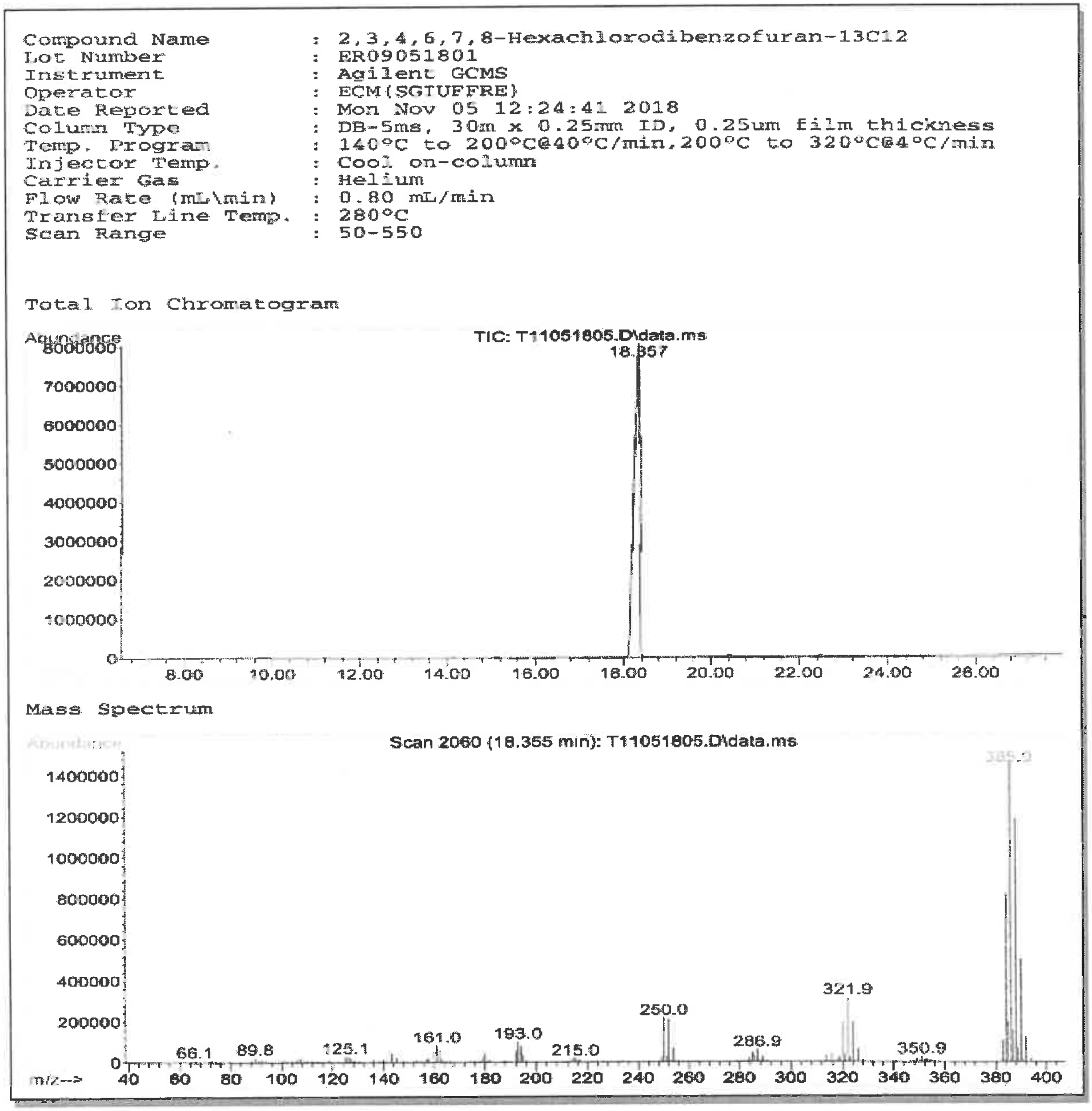

```
Compound Name          : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER09051801
Instrument             : Agilent GCMS
Operator               : ECM(SGTUFFRE)
Date Reported          : Mon Nov 05 12:24:41 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

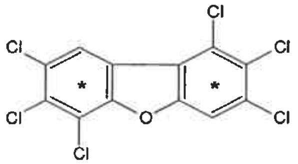

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

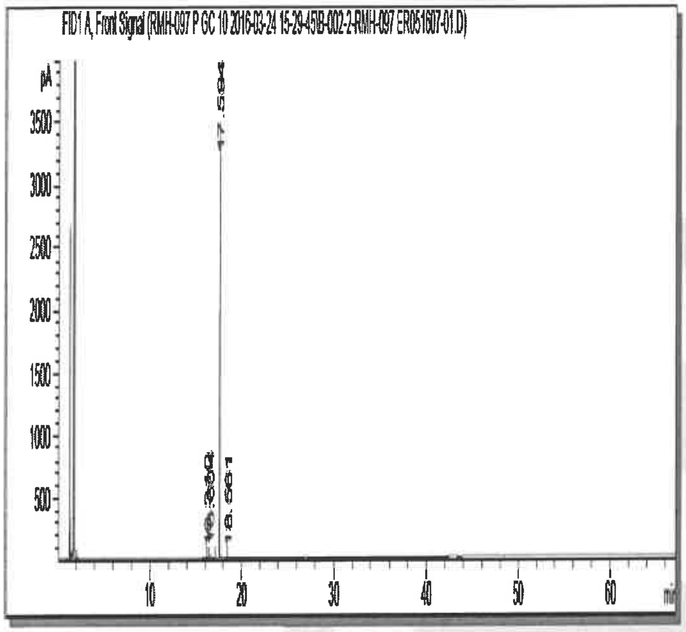

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER051607-01
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Mar 18 07:08:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

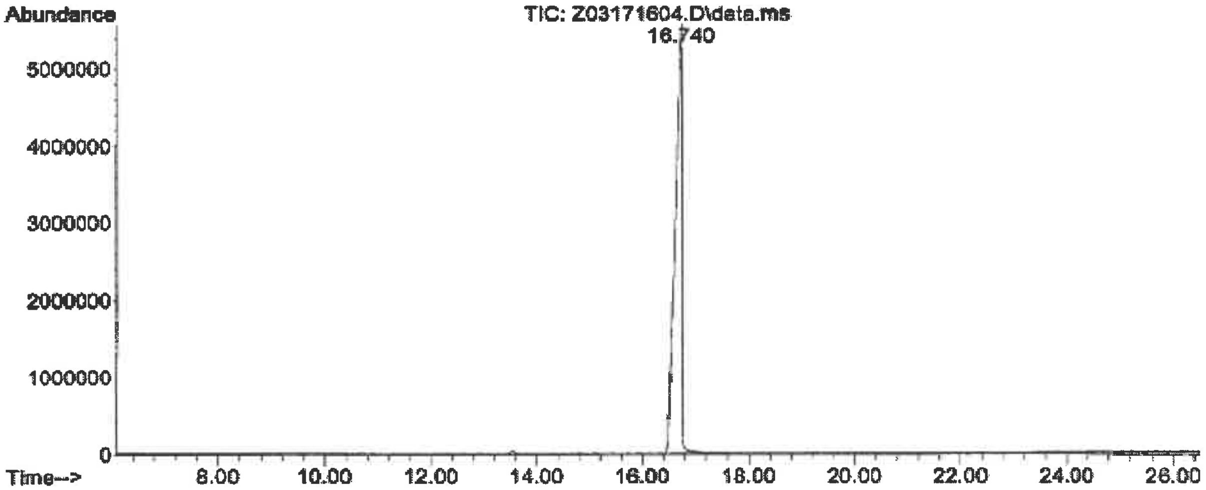

Mass Spectrum

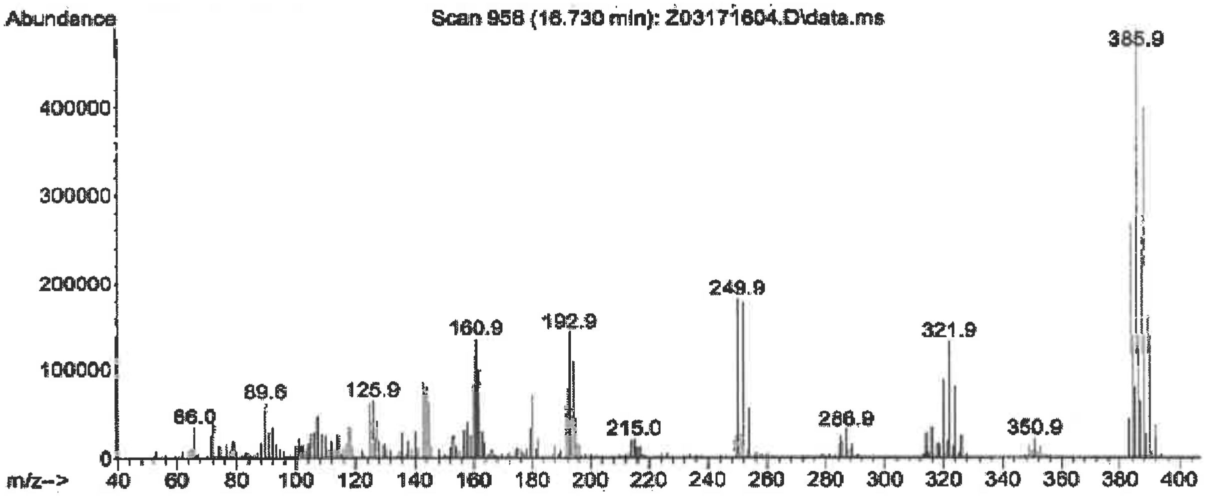

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

rec'. 3/26/20 SKW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

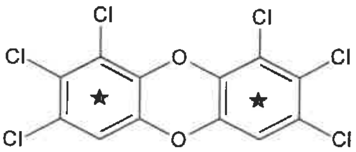

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER110510-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-82-6
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

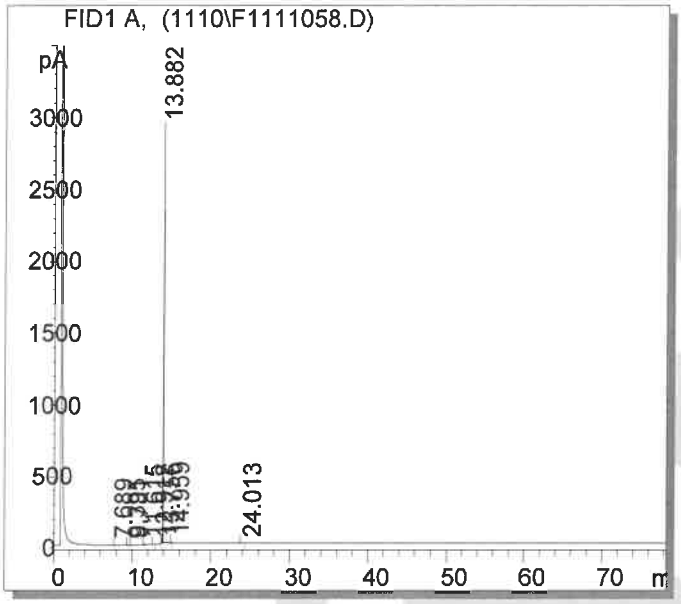

Column:	DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-column
Detector Temp:	325°C
Data File Name:	S:\GC\GC6\2010\1110\F1111058.D
Instrument:	GC#6
Sample Name:	ER110510-01
Acquired:	November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

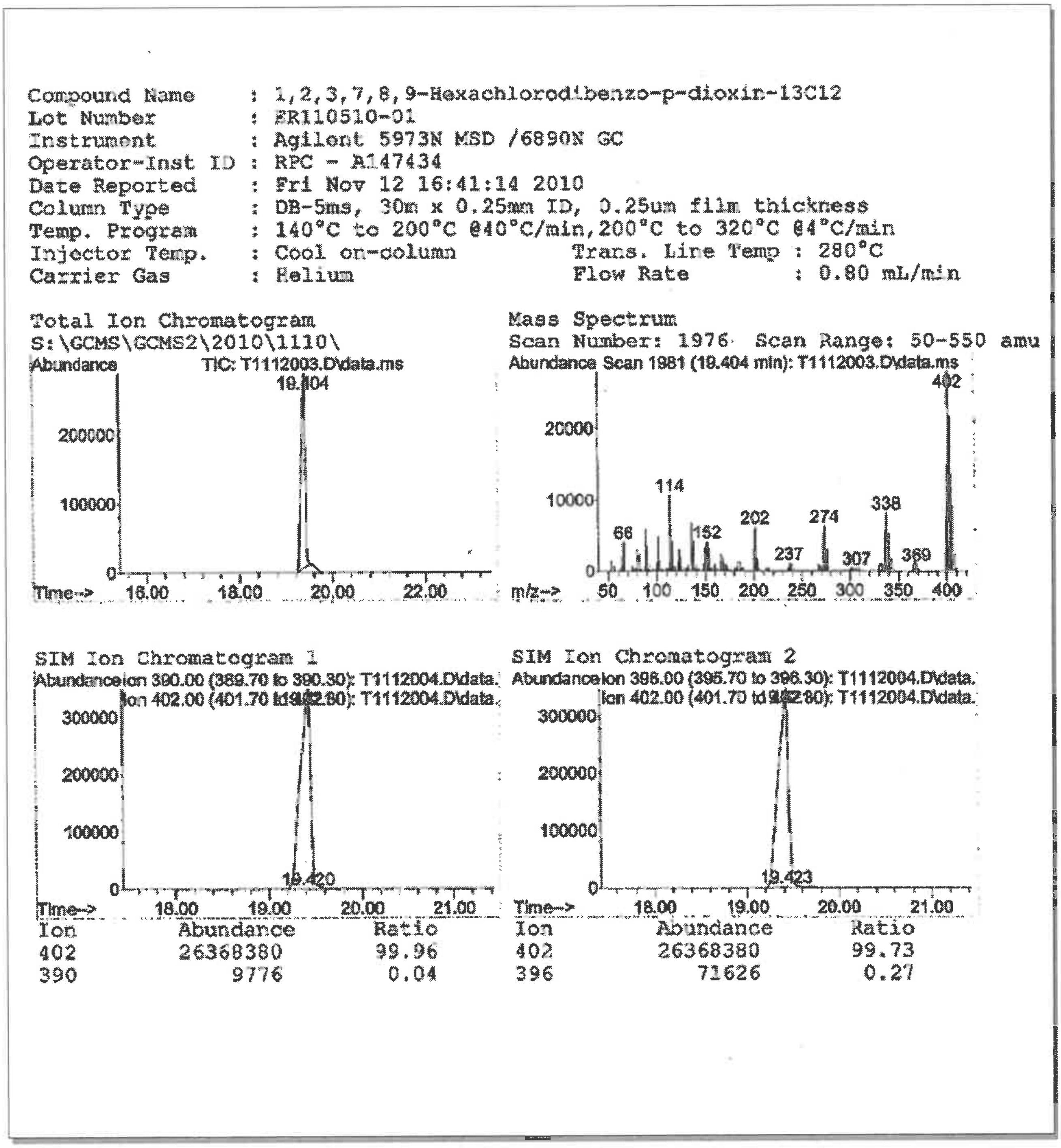

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : FR110510-01
Instrument : Agilent 5973N MSD /6890N GC
Operator-Inst ID : RPC - A147434
Date Reported : Fri Nov 12 16:41:14 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp. : Cool on-column Trans. Line Temp : 280°C
Carrier Gas : Helium Flow Rate : 0.80 mL/min

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	**Date**	**Reason for Revision**
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKV

Cerilliant
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CIL

Revision 00
Page 1 of 4

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

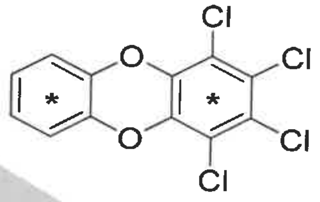

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

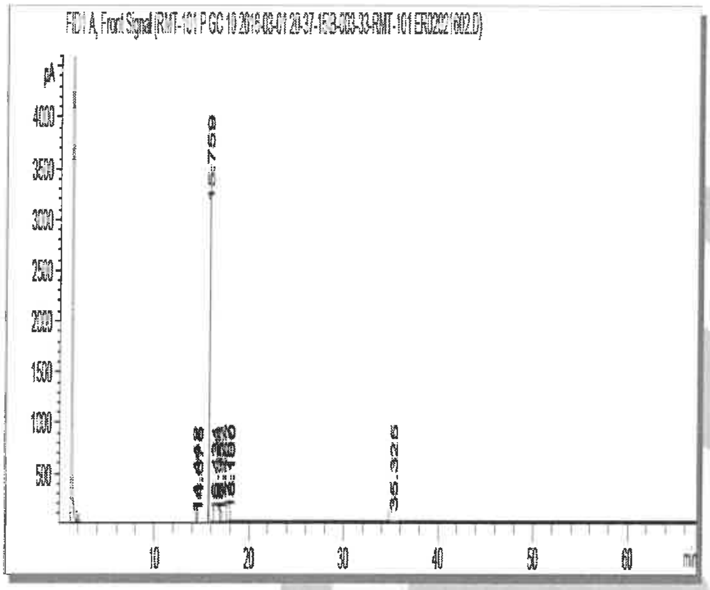

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

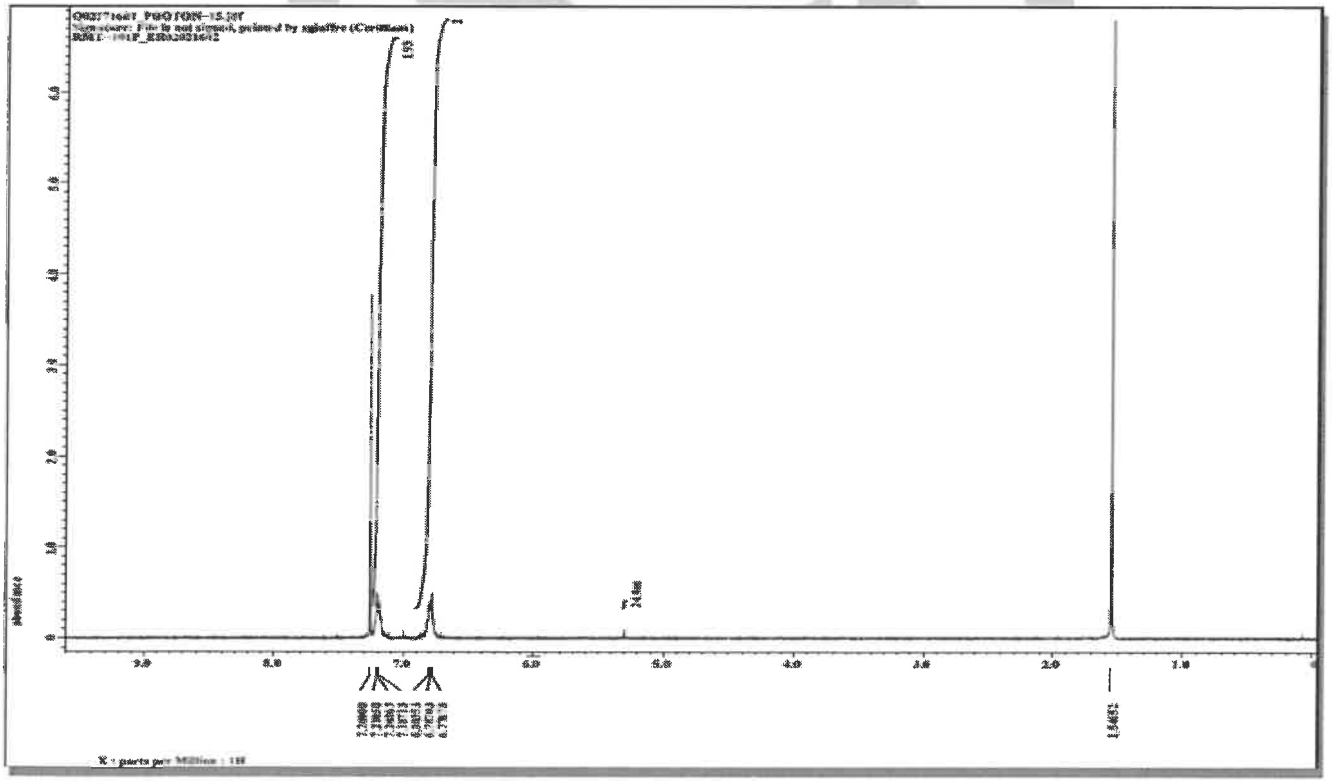

Spectral and Physical Data (cont.)

GC/MS

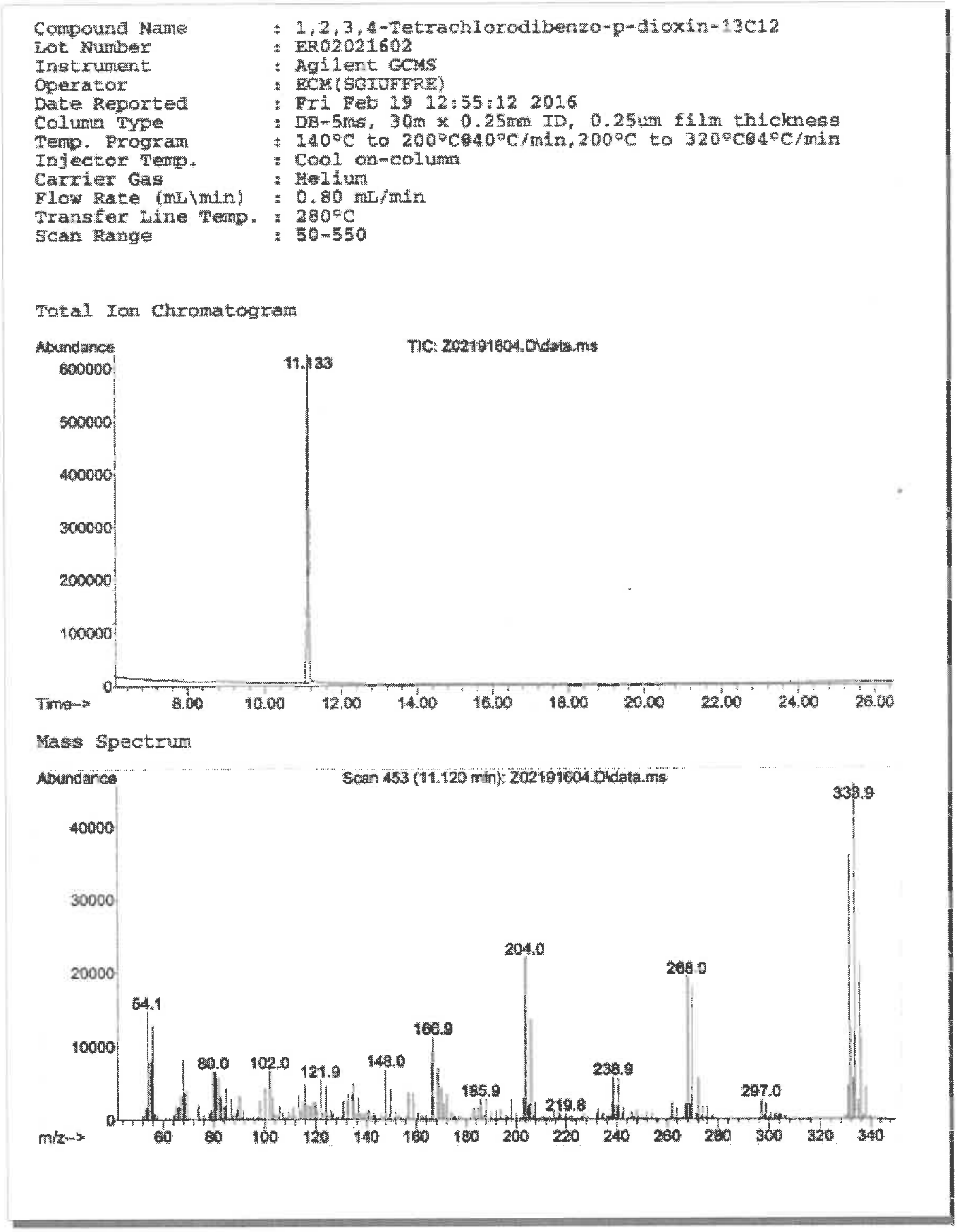

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

⑦ P: 4/23/19 SKJ

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)

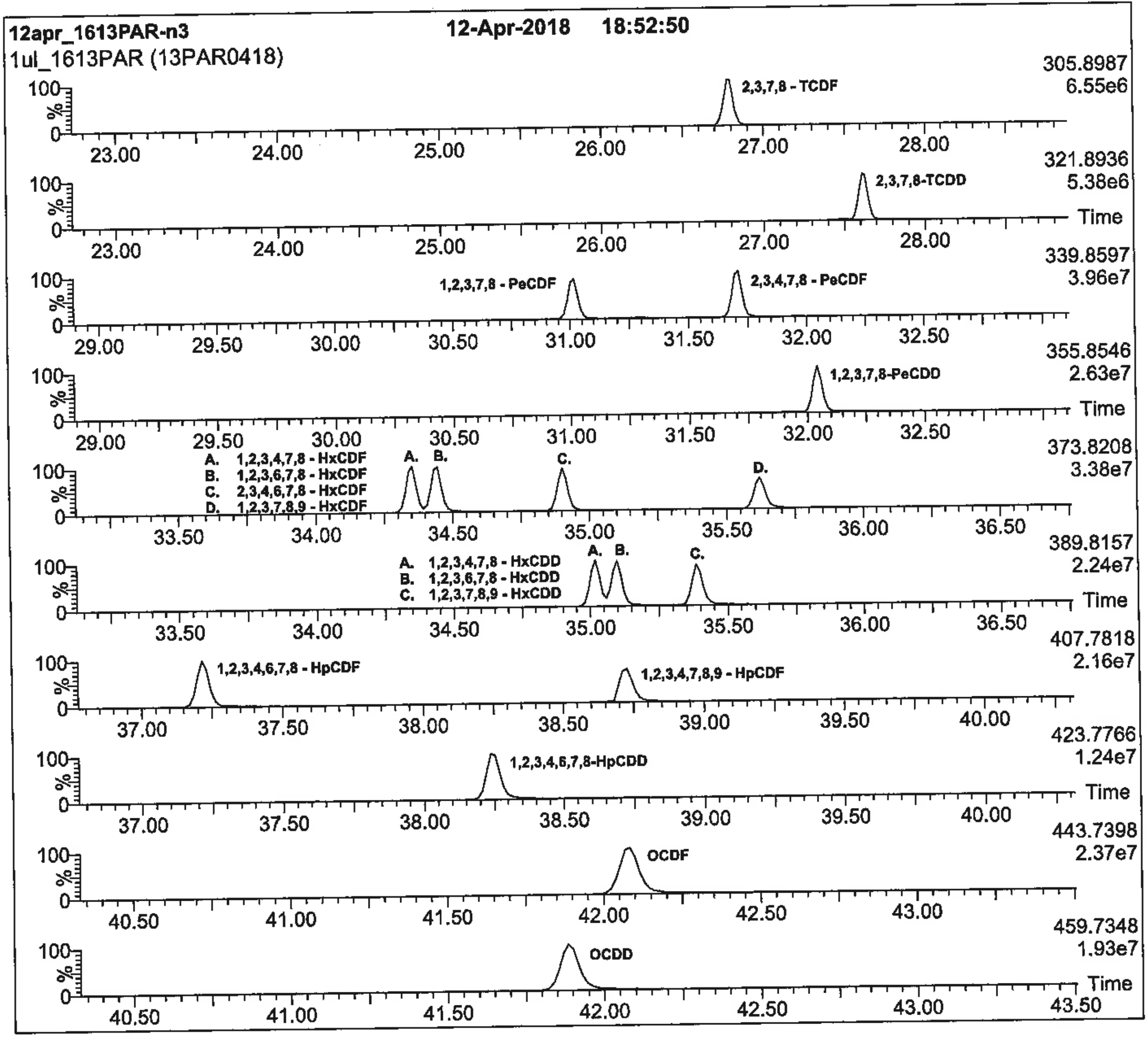

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min
Injector: 280 °C (Splitless Injection)
Ionization: EI+
Detector: 280 °C
SIR at 10,000 mass resolving power

Oven:
150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00110

③

R: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/ECD
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

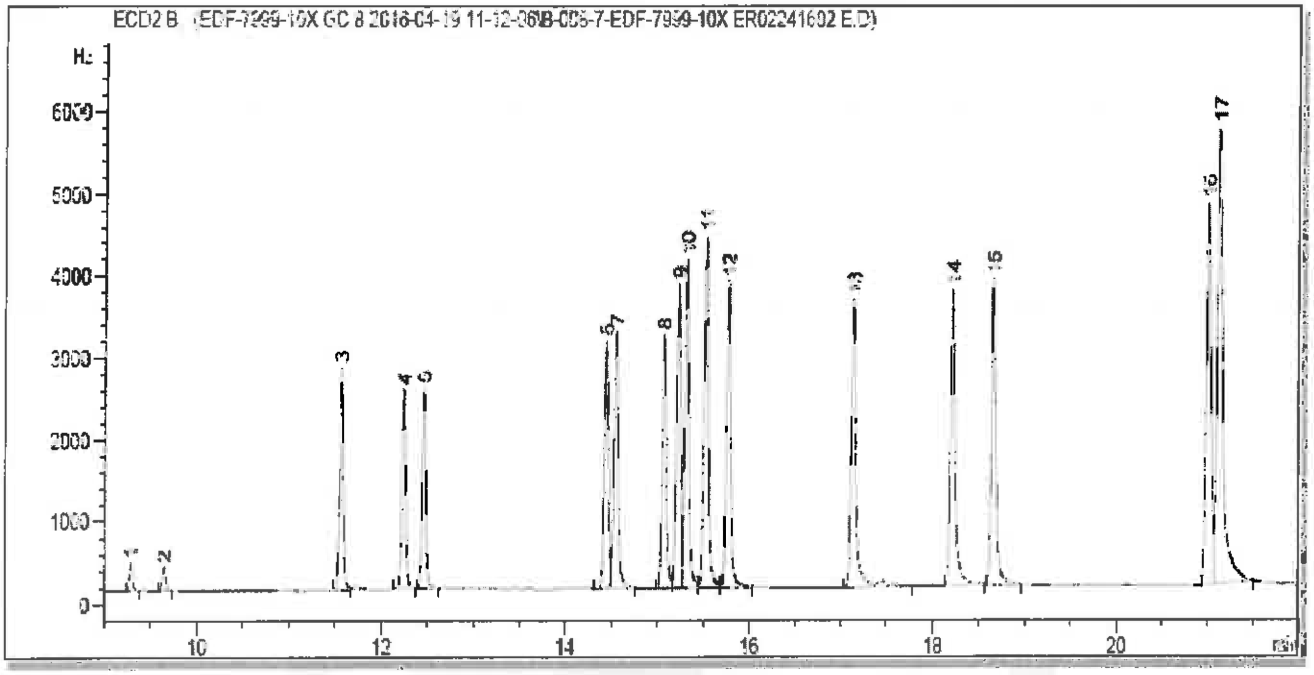

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
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9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

R: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

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1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
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1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

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Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

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Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
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1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
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OCDF	3906	± 10%	0.9	≤ 5%

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- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

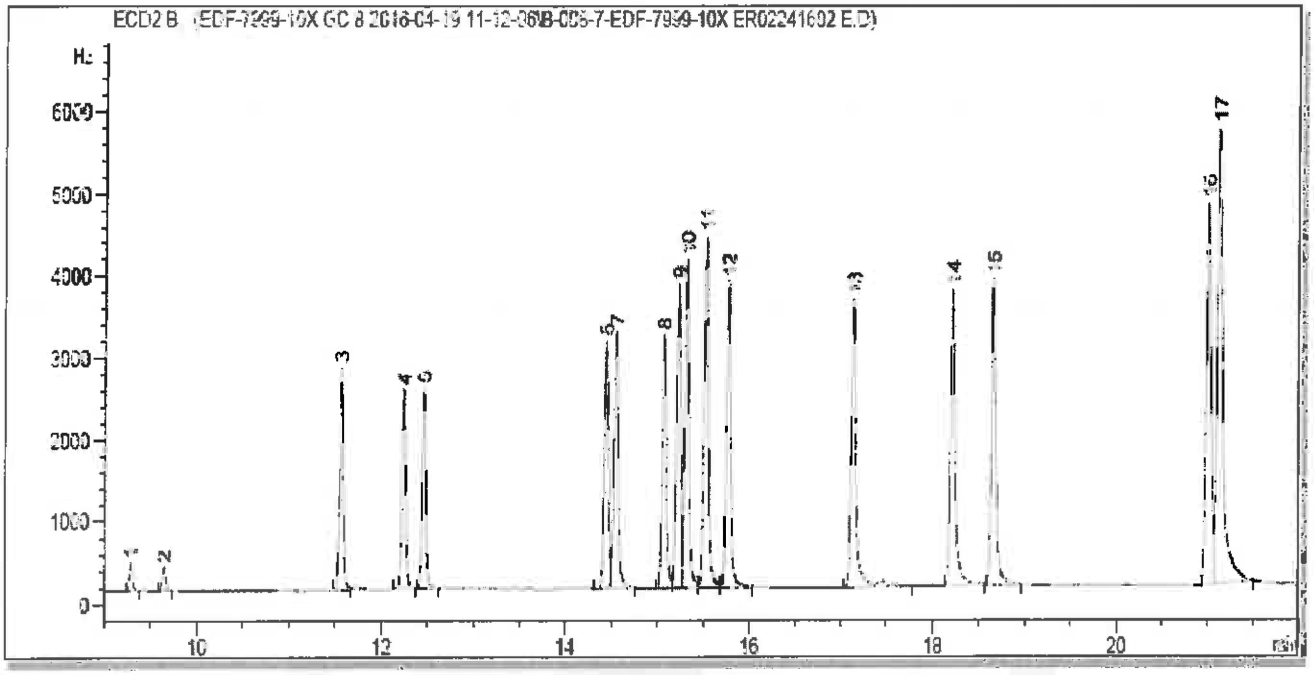

Peak:	Analyte:
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13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-432973/2-A	98	81	102	88	86	80	88	91
	LCSD 320-432973/3-A	96	82	103	89	85	81	98	99

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-432973/2-A	96	74	78	92	78	70	75	73
	LCSD 320-432973/3-A	99	78	81	97	84	74	80	75

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Tank #1 Drum RA	320-66850-3 RA	56	100
11215702-Tank #2 Drum RA	320-66850-4 RA	76	105
11215702-Tank #1 Tank RA	320-66850-5 RA	67	97
11215702-Tank #2 Tank RA	320-66850-6 RA	74	103

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Tank #1 Drum	320-66850-3	56	57	94	52	50	51	47	48
11215702-Tank #2 Drum	320-66850-4	68	69	94	65	67	68	65	63
11215702-Tank #1 Tank	320-66850-5	64	63	93	58	57	58	57	58
11215702-Tank #2 Tank	320-66850-6	69	69	100	67	66	71	63	62
	MB 320-432973/1-A	80	83	88	83	80	85	79	81

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank #1 Drum	320-66850-3	50	48	50	53	49	51	46	51
11215702-Tank #2 Drum	320-66850-4	64	64	67	71	66	67	68	72
11215702-Tank #1 Tank	320-66850-5	57	59	59	62	57	63	59	62
11215702-Tank #2 Tank	320-66850-6	63	64	65	69	62	63	66	75
	MB 320-432973/1-A	85	78	86	85	83	86	80	83

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Matrix: Water Level: Low Lab File ID: 23NO2010D5_52.d

Lab ID: LCS 320-432973/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	184	92	67-158	
2,3,7,8-TCDF	200	184	92	75-158	
1,2,3,7,8-PeCDD	1000	823	82	70-142	
1,2,3,7,8-PeCDF	1000	857	86	80-134	
2,3,4,7,8-PeCDF	1000	903	90	68-160	
1,2,3,4,7,8-HxCDD	1000	892	89	70-164	
1,2,3,6,7,8-HxCDD	1000	887	89	76-134	
1,2,3,7,8,9-HxCDD	1000	896	90	64-162	
1,2,3,4,7,8-HxCDF	1000	873	87	72-134	
1,2,3,6,7,8-HxCDF	1000	848	85	84-130	
1,2,3,7,8,9-HxCDF	1000	853	85	78-130	
2,3,4,6,7,8-HxCDF	1000	854	85	70-156	
1,2,3,4,6,7,8-HpCDD	1000	859	86	70-140	
1,2,3,4,6,7,8-HpCDF	1000	851	85	82-122	
1,2,3,4,7,8,9-HpCDF	1000	875	88	78-138	
OCDD	2000	1610	81	78-144	
OCDF	2000	1670	83	63-170	
13C-2,3,7,8-TCDD	2000	1620	81	20-175	
13C-2,3,7,8-TCDF	2000	1970	98	22-152	
13C-1,2,3,7,8-PeCDD	2000	1600	80	21-227	
13C-1,2,3,7,8-PeCDF	2000	1760	88	21-192	
13C-2,3,4,7,8-PeCDF	2000	1720	86	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1490	74	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1550	78	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1760	88	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1820	91	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1830	92	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1910	96	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1400	70	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1570	78	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1500	75	20-186	
13C-OCDD	4000	2920	73	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Matrix: Water Level: Low Lab File ID: 23NO2010D5_53.d

Lab ID: LCSD 320-432973/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	164	82	11	50	67-158	
2,3,7,8-TCDF	200	163	81	12	50	75-158	
1,2,3,7,8-PeCDD	1000	747	75	10	50	70-142	
1,2,3,7,8-PeCDF	1000	802	80	7	50	80-134	
2,3,4,7,8-PeCDF	1000	812	81	11	50	68-160	
1,2,3,4,7,8-HxCDD	1000	854	85	4	50	70-164	
1,2,3,6,7,8-HxCDD	1000	807	81	9	50	76-134	
1,2,3,7,8,9-HxCDD	1000	847	85	6	50	64-162	
1,2,3,4,7,8-HxCDF	1000	790	79	10	50	72-134	
1,2,3,6,7,8-HxCDF	1000	801	80	6	50	84-130	*
1,2,3,7,8,9-HxCDF	1000	787	79	8	50	78-130	
2,3,4,6,7,8-HxCDF	1000	778	78	9	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	785	79	9	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	775	78	9	50	82-122	*
1,2,3,4,7,8,9-HpCDF	1000	794	79	10	50	78-138	
OCDD	2000	1500	75	7	50	78-144	*
OCDF	2000	1530	77	8	50	63-170	
13C-2,3,7,8-TCDD	2000	1630	82			20-175	
13C-2,3,7,8-TCDF	2000	1930	96			22-152	
13C-1,2,3,7,8-PeCDD	2000	1620	81			21-227	
13C-1,2,3,7,8-PeCDF	2000	1780	89			21-192	
13C-2,3,4,7,8-PeCDF	2000	1710	85			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1570	78			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1630	81			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1960	98			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1980	99			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1940	97			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1990	99			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1480	74			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1670	84			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1590	80			20-186	
13C-OCDD	4000	2990	75			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab File ID: 23no20dfs1_36.d Lab Sample ID: MB 320-432973/1-A

Matrix: Water Date Extracted: 11/18/2020 11:29

Instrument ID: DFS 1 Date Analyzed: 11/24/2020 10:17

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Tank #1 Drum	320-66850-3	23no20dfs1_41.d	11/24/2020 14:17
11215702-Tank #2 Drum	320-66850-4	23no20dfs1_42.d	11/24/2020 15:04
11215702-Tank #1 Tank	320-66850-5	23no20dfs1_43.d	11/24/2020 15:53
11215702-Tank #2 Tank	320-66850-6	23no20dfs1_44.d	11/24/2020 16:40
	LCS 320-432973/2-A	23NO2010D5_52.d	11/25/2020 01:18
	LCSD 320-432973/3-A	23NO2010D5_53.d	11/25/2020 02:03
11215702-Tank #1 Drum RA	320-66850-3 RA	30NO2011D2_013.d	11/30/2020 20:07
11215702-Tank #1 Tank RA	320-66850-5 RA	30NO2011D2_014.d	11/30/2020 20:46
11215702-Tank #2 Drum RA	320-66850-4 RA	30NO2011D2_015.d	11/30/2020 21:24
11215702-Tank #2 Tank RA	320-66850-6 RA	30NO2011D2_016.d	11/30/2020 22:03

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #1 Drum	Lab Sample ID: 320-66850-3
Matrix: Water	Lab File ID: 23no20dfs1_41.d
Analysis Method: 1613B	Date Collected: 11/09/2020 12:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1053(mL)	Date Analyzed: 11/24/2020 14:17
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1900		9.5	3.6
40321-76-4	1,2,3,7,8-PeCDD	21	J B	47	1.2
57117-41-6	1,2,3,7,8-PeCDF	250	B	47	3.1
57117-31-4	2,3,4,7,8-PeCDF	150	B	47	3.5
39227-28-6	1,2,3,4,7,8-HxCDD	2.7	J q B	47	0.66
57653-85-7	1,2,3,6,7,8-HxCDD	5.3	J B	47	0.68
19408-74-3	1,2,3,7,8,9-HxCDD	ND		47	0.64
70648-26-9	1,2,3,4,7,8-HxCDF	530	B	47	1.5
57117-44-9	1,2,3,6,7,8-HxCDF	130	B *	47	1.5
72918-21-9	1,2,3,7,8,9-HxCDF	11	J B	47	1.4
60851-34-5	2,3,4,6,7,8-HxCDF	17	J B	47	1.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	190	B	47	1.5
67562-39-4	1,2,3,4,6,7,8-HpCDF	180	B *	47	1.5
55673-89-7	1,2,3,4,7,8,9-HpCDF	69	B	47	1.9
3268-87-9	OCDD	3500	B *	95	4.4
39001-02-0	OCDF	130	B	95	1.2
41903-57-5	Total TCDD	2100		9.5	3.6
30402-14-3	Total TCDF	10000	G B	14	14
36088-22-9	Total PeCDD	21	J B	47	1.2
30402-15-4	Total PeCDF	650	q B	47	3.3
34465-46-8	Total HxCDD	35	J q B	47	0.66
55684-94-1	Total HxCDF	790	B	47	1.4
37871-00-4	Total HpCDD	390	B	47	1.5
38998-75-3	Total HpCDF	320	B	47	1.7

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #1 Drum	Lab Sample ID: 320-66850-3
Matrix: Water	Lab File ID: 23no20dfs1_41.d
Analysis Method: 1613B	Date Collected: 11/09/2020 12:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1053(mL)	Date Analyzed: 11/24/2020 14:17
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	57		25-164
89059-46-1	13C-2,3,7,8-TCDF	56		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	51		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	52		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	50		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	48		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	50		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	47		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	48		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	53		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	50		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	49		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	46		26-138
114423-97-1	13C-OCDD	51		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Lims ID: 320-66850-A-3-B
Client ID: 11215702-Tank #1 Drum
Sample Type: Client
Inject. Date: 24-Nov-2020 14:17:00 ALS Bottle#: 0 Worklist Smp#: 36
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-3-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:50:27 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: krenns Date: 01-Dec-2020 13:50:27

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.718	3172753	0.80	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.704	2985383	0.81	1.6832	55.9	55.9	0.2084	0.2084	55.90	
2,3,7,8-TCDF	20.730	10619290	0.81	1.1547	308.1	308.1	0.7591	0.7591		E
A Non-2,3,7,8-sub-TCDF	20.119	8348736	0.81	1.1547	242.2	242.2	0.7591	131.4		
S Total TCDF					550.3	550.3	0.7591	0.7591		
D 13C-2,3,7,8-TCDD	22.104	1986159	0.80	1.0896	57.5	57.5	0.2633	0.2633	57.45	
2,3,7,8-TCDD	22.138	2296725	0.79	1.1659	99.2	99.2	0.1897	0.1897		
$ 37Cl4-2,3,7,8-TCDD	22.138	1361467		1.1445	37.5	37.5	0.0819	0.0819	93.73	
A Non-2,3,7,8-sub-TCDD	20.973	212122	0.78	1.1659	9.160	9.160	0.1897	8.136		
S Total TCDD					108.3	108.3	0.1897	0.1897		
D 13C-1,2,3,7,8-PeCDF	27.590	2392549	1.61	1.4604	51.6	51.6	0.1458	0.1458	51.64	
1,2,3,7,8-PeCDF	27.624	358341	1.63	1.1322	13.2	13.2	0.1620	0.1620		M
D 13C-2,3,4,7,8-PeCDF	29.141	2157775	1.59	1.3504	50.4	50.4	0.1577	0.1577	50.36	
2,3,4,7,8-PeCDF	29.175	201835	1.57	1.1588	8.072	8.072	0.1836	0.1836		
A F1 PeCDFs	24.940	4420	1.55	1.1455	0.1918	0.1696	0.0109	0.1696		RQ
A Non-2,3,7,8-sub-PeCDF	28.506	336900	1.58	1.1455	12.9	12.9	0.1720	5.754		Ma
S Total PeCDF					34.4	34.4	0.1728	0.1728		RQ
D 13C-1,2,3,7,8-PeCDD	29.975	1423012	1.57	0.8729	51.4	51.4	0.2720	0.2720	51.38	
1,2,3,7,8-PeCDD	30.017	17575	1.69	1.1191	1.104	1.104	0.0614	0.0614		M
A Non-2,3,7,8-sub-PeCDD	28.748						0.0614	1.249		RQU
S Total PeCDD					1.104	1.104	0.0614	0.0614		
D 13C-1,2,3,4,7,8-HxCDF	35.143	1821448	0.53	1.2808	46.8	46.8	0.1855	0.1855	46.81	
1,2,3,4,7,8-HxCDF	35.168	674787	1.27	1.3205	28.1	28.1	0.0804	0.0804		
D 13C-1,2,3,6,7,8-HxCDF	35.303	2131537	0.53	1.4615	48.0	48.0	0.1625	0.1625	48.01	
1,2,3,6,7,8-HxCDF	35.320	187043	1.27	1.2682	6.919	6.919	0.0771	0.0771		
D 13C-2,3,4,6,7,8-HxCDF	36.094	1994243	0.53	1.3227	49.6	49.6	0.1796	0.1796	49.63	
2,3,4,6,7,8-HxCDF	36.111	23470	1.32	1.2838	0.9168	0.9168	0.0687	0.0687		M
D 13C-1,2,3,7,8,9-HxCDF	36.962	1796122	0.52	1.1062	53.4	53.4	0.2147	0.2147	53.45	
1,2,3,7,8,9-HxCDF	36.979	14117	1.10	1.3063	0.6017	0.6017	0.0740	0.0740		M
A Non-2,3,7,8-sub-HxCDF	35.280	129578	1.25	1.2947	5.170	5.170	0.0748	1.883		Ma
S Total HxCDF					41.7	41.7	0.0751	0.0751		

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.768	3037761	1.29	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.297	1268917	1.26	0.8757	47.7	47.7	0.1886	0.1886	47.70	
1,2,3,4,7,8-HxCDD	36.322	2196	1.24	1.1972	0.1720	0.1446	0.0348	0.0348		RQ
D 13C-1,2,3,6,7,8-HxCDD	36.406	1630302	1.26	1.0651	50.4	50.4	0.1551	0.1551	50.39	
1,2,3,6,7,8-HxCDD	36.423	4866	1.30	1.0695	0.2791	0.2791	0.0356	0.0356		
1,2,3,7,8,9-HxCDD	36.809						0.0337	0.0337		
A Non-2,3,7,8-sub-HxCDD	35.613	23801	1.24	1.1491	1.466	1.429	0.0346	0.7189		RQM
S Total HxCDD					1.917	1.853	0.0347	0.0347		RQ
1,2,3,4,6,7,8-HpCDF	38.736	210490	1.07	1.5618	9.550	9.550	0.0782	0.0782		
D 13C-1,2,3,4,6,7,8-HpCDF	38.728	1411242	0.46	0.9521	48.8	48.8	0.2615	0.2615	48.79	
1,2,3,4,7,8,9-HpCDF	39.975	59410	1.06	1.4975	3.638	3.638	0.0999	0.0999		
D 13C-1,2,3,4,7,8,9-HpCDF	39.958	1090499	0.44	0.7782	46.1	46.1	0.3200	0.3200	46.13	
A Non-2,3,7,8-sub-HpCDF	39.360	71147	1.07	1.5297	3.718	3.718	0.0879	3.718		
S Total HpCDF					16.9	16.9	0.0891	0.0891		
1,2,3,4,6,7,8-HpCDD	39.663	143259	1.03	1.1079	9.850	9.850	0.0781	0.0781		
D 13C-1,2,3,4,6,7,8-HpCDD	39.654	1312726	1.05	0.8393	51.5	51.5	0.1566	0.1566	51.49	
A Non-2,3,7,8-sub-HpCDD	40.007	156574	1.04	1.1079	10.8	10.8	0.0781	10.8		
S Total HpCDD					20.6	20.6	0.0781	0.0781		
D 13C-OCDD	42.136	1653261	0.91	0.5301	102.7	102.7	0.1895	0.1895	51.33	
OCDF	42.237	80658	0.93	1.4802	6.592	6.592	0.0634	0.0634		
OCDD	42.144	1781545	0.89	1.1666	184.7	184.7	0.2314	0.2314		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Lims ID: 320-66850-A-3-B
Client ID: 11215702-Tank #1 Drum
Sample Type: Client
Inject. Date: 24-Nov-2020 14:17:00 ALS Bottle#: 0 Worklist Smp#: 36
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-3-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:50:27 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: krenns Date: 01-Dec-2020 13:50:27

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.718	21.772	-3		1406122	210074	295	737	712		a
333.9338	21.718	21.772	-3		1766631	259514	244	610	1064	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.704	20.725	-1	0.953	1333690	202320	328	820	617		
317.9389	20.704	20.725	-1	0.953	1651693	242260	331	827	732	0.81(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.730	20.776	-3	1.001	4737572	648875	584	1460	1111		
305.8987	20.730	20.776	-3	1.001	5881718	813705	975	2437	835	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.646	20.119	-148	0.852	33423	5556	584	1460	10		
305.8987	17.629	20.119	-149	0.851	42721	8269	975	2437	8	0.78(0.65-0.89)	
303.9016	18.119	20.119	-120	0.875	179528	31347	584	1460	54		
305.8987	18.110	20.119	-120	0.875	217102	36435	975	2437	37	0.83(0.65-0.89)	
303.9016	18.626	20.119	-89	0.900	245804	31111	584	1460	53		
305.8987	18.617	20.119	-90	0.899	295578	38479	975	2437	39	0.83(0.65-0.89)	
303.9016	19.055	20.119	-64	0.920	177843	24213	584	1460	41		
305.8987	19.064	20.119	-63	0.921	217575	29204	975	2437	30	0.82(0.65-0.89)	
303.9016	19.458	20.119	-40	0.940	222322	32803	584	1460	56		
305.8987	19.458	20.119	-40	0.940	281233	39064	975	2437	40	0.79(0.65-0.89)	
303.9016	19.983	20.119	-8	0.965	2018861	310877	584	1460	532		
305.8987	19.983	20.119	-8	0.965	2512341	387261	975	2437	397	0.80(0.65-0.89)	
303.9016	20.412	20.119	18	0.986	123632	16184	584	1460	28		
305.8987	20.404	20.119	17	0.985	149150	19347	975	2437	20	0.83(0.65-0.89)	
303.9016	21.554	20.119	86	1.041	323593	46280	584	1460	79		
305.8987	21.554	20.119	86	1.041	393722	60554	975	2437	62	0.82(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	21.984	20.119	112	1.062	78086	9660	584	1460	17		
305.8987	22.001	20.119	113	1.063	90741	12156	975	2437	12	0.86(0.65-0.89)	
303.9016	23.882	20.119	225	1.153	334554	65394	584	1460	112		
305.8987	23.882	20.119	225	1.153	410927	82874	975	2437	85	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.104	22.124	-1	1.018	880156	117526	295	737	398		
333.9338	22.104	22.124	-1	1.018	1106003	149195	244	610	611	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.138	22.159	-1	1.002	1010309	134399	158	395	851		
321.8936	22.130	22.159	-2	1.001	1286416	169676	78	195	2175	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.138	22.201	-4	1.019	1361467	184278	176	440	1047		
A Non-2,3,7,8-sub-TCDD											
319.8965	21.932	20.973	57	0.992	9981	1591	158	395	10		
321.8936	21.932	20.973	57	0.992	13727	2689	78	195	34	0.73(0.65-0.89)	
319.8965	22.834	20.973	111	1.033	82958	10520	158	395	67		
321.8936	22.834	20.973	111	1.033	105456	13273	78	195	170	0.79(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.590	27.633	-3	1.270	1474688	222295	240	600	926		
353.8970	27.590	27.633	-3	1.270	917861	138691	160	400	867	1.61(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	27.624	27.659	-2	1.001	221896	33509	155	387	216		
341.8567	27.616	27.659	-3	1.001	136445	21146	110	275	192	1.63(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	29.141	29.184	-3	1.342	1324792	190870	240	600	795		
353.8970	29.141	29.184	-3	1.342	832983	120259	160	400	752	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.175	29.217	-3	1.001	123347	17395	155	387	112		
341.8567	29.166	29.217	-3	1.001	78488	11073	110	275	101	1.57(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	24.311	24.940	-38	0.881	2687	800	2	5	400		
341.8567	24.294	24.940	-39	0.881	2312	454	15	37	30	1.16(1.32-1.78)	
	Empc Correction				1733	516	15	37	34		
A Non-2,3,7,8-sub-PeCDF											Ma
339.8597	26.100	28.506	-144	0.946	91730	15981	155	387	103		
341.8567	26.100	28.506	-144	0.946	58234	9953	110	275	90	1.58(1.32-1.78)	M
339.8597	27.026	28.506	-89	0.980	8070	1309	155	387	8		
341.8567	27.035	28.506	-88	0.980	5344	1063	110	275	10	1.51(1.32-1.78)	
339.8597	27.472	28.506	-62	0.996	15039	3343	155	387	22		M
341.8567	27.456	28.506	-63	0.995	9364	1900	110	275	17	1.61(1.32-1.78)	
339.8597	28.214	28.506	-18	1.023	59419	9511	155	387	61		a
341.8567	28.214	28.506	-18	1.023	36622	5821	110	275	53	1.62(1.32-1.78)	
339.8597	29.512	28.506	60	1.070	31835	4232	155	387	27		
341.8567	29.512	28.506	60	1.070	21243	3061	110	275	28	1.50(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	29.975	30.017	-3	1.380	870130	124759	120	300	1040		
369.8919	29.958	30.017	-4	1.379	552882	71603	326	815	220	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	30.017	30.051	-2	1.001	11032	1665	31	77	54		M
357.8516	30.017	30.051	-2	1.001	6543	954	23	57	41	1.69(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.378	28.748	-142	0.880	1370	252	31	77	8		
357.8516	26.454	28.748	-137	0.883	18514	2989	23	57	130	0.07(1.32-1.78)	
	Empc Correction				883	162	23	57	0		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.143	35.175	-2	0.956	632716	135722	246	615	552		
385.8610	35.143	35.175	-2	0.956	1188732	257110	459	1147	560	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.168	35.200	-2	1.001	377887	81602	92	230	887		
375.8178	35.168	35.200	-2	1.001	296900	63875	75	187	852	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.303	35.335	-2	0.960	742296	147558	246	615	600		
385.8610	35.303	35.335	-2	0.960	1389241	278964	459	1147	608	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.320	35.351	-2	1.000	104620	19557	92	230	213		
375.8178	35.320	35.351	-2	1.000	82423	16082	75	187	214	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.094	36.118	-1	0.982	691495	165258	246	615	672		
385.8610	36.094	36.118	-1	0.982	1302748	307295	459	1147	669	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	36.111	36.135	-1	1.000	13355	3020	92	230	33		M
375.8178	36.111	36.135	-1	1.000	10115	2414	75	187	32	1.32(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.962	36.986	-1	1.005	616846	147203	246	615	598		
385.8610	36.962	36.986	-1	1.005	1179276	283987	459	1147	619	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	36.979	37.003	-1	1.000	7394	2146	92	230	23		M
375.8178	36.962	37.003	-2	1.000	6723	1767	75	187	24	1.10(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	33.744	35.280	-92	0.960	27107	4920	92	230	53		
375.8178	33.727	35.280	-93	0.960	20095	3255	75	187	43	1.35(1.05-1.43)	
373.8208	34.561	35.280	-43	0.983	14105	2965	92	230	32		
375.8178	34.561	35.280	-43	0.983	12167	2339	75	187	31	1.16(1.05-1.43)	
373.8208	35.977	35.280	42	1.024	10771	2857	92	230	31		M
375.8178	35.977	35.280	42	1.024	7991	1892	75	187	25	1.35(1.05-1.43)	
373.8208	37.080	35.280	108	1.055	19878	5112	92	230	56		M
375.8178	37.080	35.280	108	1.055	17464	4597	75	187	61	1.14(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.768	36.792	-1		1710095	422344	280	700	1508		
403.8529	36.768	36.792	-1		1327666	319440	210	525	1521	1.29(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.297	36.320	-1	0.987	706258	194527	280	700	695		
403.8529	36.297	36.320	-1	0.987	562659	153299	210	525	730	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8158	36.322	36.337	-1	1.001	1216	343	30	75	11		
391.8127	36.314	36.337	-1	1.000	1397	426	28	70	15	0.87(1.05-1.43)	
	Empc Correction				980	276	28	70	10		
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.406	36.438	-2	0.990	910455	209529	280	700	748		
403.8529	36.415	36.438	-1	0.990	719847	171130	210	525	815	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.423	36.446	-1	1.000	2747	605	30	75	20		
391.8127	36.431	36.446	-1	1.001	2119	523	28	70	19	1.30(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.809						30	75			
391.8127	36.809						28	70			
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	34.486	35.613	-67	0.947	6858	1405	30	75	47		M
391.8127	34.477	35.613	-68	0.947	5117	1038	28	70	37	1.34(1.05-1.43)	M
389.8158	35.218	35.613	-24	0.967	1848	397	30	75	13		
	Empc Correction				1235	319	30	75	11		
391.8127	35.218	35.613	-24	0.967	996	258	28	70	9	1.86(1.05-1.43)	
389.8158	35.555	35.613	-3	0.977	5545	1304	30	75	43		M
391.8127	35.555	35.613	-3	0.977	4050	992	28	70	35	1.37(1.05-1.43)	M
1,2,3,4,6,7,8-HpCDF											
407.7817	38.736	38.745	-1	1.000	108573	31471	112	280	281		
409.7788	38.736	38.745	-1	1.000	101917	28762	88	220	327	1.07(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.728	38.749	-1	1.053	442020	124489	261	652	477		
419.8220	38.728	38.749	-1	1.053	969222	284943	478	1195	596	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.975	39.975	0	1.000	30638	9338	112	280	83		
409.7788	39.966	39.975	-1	1.000	28772	8832	88	220	100	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.958	39.979	-1	1.087	335702	103289	261	652	396		
419.8220	39.958	39.979	-1	1.087	754797	230857	478	1195	483	0.44(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.098	39.360	-16	1.010	36845	10343	112	280	92		
409.7788	39.098	39.360	-16	1.010	34302	9936	88	220	113	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.663	39.672	-1	1.000	72548	21647	73	182	297		
425.7737	39.663	39.672	-1	1.000	70711	21237	64	160	332	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.654	39.676	-1	1.078	673869	202079	254	635	796		
437.8140	39.654	39.676	-1	1.078	638857	193403	136	340	1422	1.05(0.88-1.20)	

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.031	40.007	-58	0.984	80002	22721	73	182	311		
425.7737	39.031	40.007	-58	0.984	76572	22252	64	160	348	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.136	42.158	-1	1.146	785768	199082	182	455	1094		
471.7750	42.136	42.158	-1	1.146	867493	226892	116	290	1956	0.91(0.76-1.02)	
OCDF											
441.7428	42.237	42.251	-1	1.002	38960	9968	27	67	369		
443.7399	42.228	42.251	-1	1.002	41698	11641	53	132	220	0.93(0.76-1.02)	
OCDD											
457.7377	42.144	42.167	-1	1.000	840650	211635	119	297	1778		
459.7348	42.144	42.167	-1	1.000	940895	233617	111	277	2105	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	2985383	444580

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	2985383	444580

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.646	33423	5556	42721	8269	2.21	0.78	
18.119	179528	31347	217102	36435	11.5	0.83	
18.626	245804	31111	295578	38479	15.7	0.83	
19.055	177843	24213	217575	29204	11.5	0.82	
19.458	222322	32803	281233	39064	14.6	0.79	
19.983	2018861	310877	2512341	387261	131.4	0.80	
20.412	123632	16184	149150	19347	7.91	0.83	
21.554	323593	46280	393722	60554	20.8	0.82	
21.984	78086	9660	90741	12156	4.90	0.86	
23.882	334554	65394	410927	82874	21.6	0.81	
Signal Totals:							
	3737646	573425	4611090	713643			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8348736	1287068				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 242.194 = (8348736 * 100.000) / (2985383 * 1.155)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	1986159	266721

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	1986159	266721

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.932	9981	1591	13727	2689	1.02	0.73	
22.834	82958	10520	105456	13273	8.14	0.79	
Signal Totals:							
	92939	12111	119183	15962			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	212122	28073				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 9.160 = (212122 * 100.000) / (1986159 * 1.166)

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

F1 PeCDFs, RT: 24.940

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2392549	360986
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2157775	311129

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2275162	336057

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.311	2687	800	2312	454	0.1918	1.16	RQ
24.311	2687	800	1733	516	0.1696		Empc Correction
Signal Totals:							
	2687	800	1733	516			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4999	1254				1.16	RQ
	4420	1316					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1918 = (4999 * 100.000) / (2275162 * 1.145)
Empc Amount: 0.1696 = (4420 * 100.000) / (2275162 * 1.145)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2392549	360986
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2157775	311129

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2275162	336057

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.100	91730	15981	58234	9953	5.75	1.58	M
27.026	8070	1309	5344	1063	0.5147	1.51	
27.472	15039	3343	9364	1900	0.9364	1.61	Ma
28.214	59419	9511	36622	5821	3.69	1.62	a
29.512	31835	4232	21243	3061	2.04	1.50	
Signal Totals:							
	206093	34376	130807	21798			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	336900	56174				1.58	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.927 = (336900 * 100.000) / (2275162 * 1.145)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-PeCDD, RT: 28.748

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.119	D 13C-1,2,3,7,8-PeCDD	100.000	1423012	196362

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	1423012	196362

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.378	1370	252	18514	2989	1.25	0.07	RQ
26.378	1370	252	883	162			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-HxCDF, RT: 35.280

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320	D 13C-1,2,3,4,7,8-HxCDF	100.000	1821448	392832
1,2,3,6,7,8-HxCDF	1.268	D 13C-1,2,3,6,7,8-HxCDF	100.000	2131537	426522
2,3,4,6,7,8-HxCDF	1.284	D 13C-2,3,4,6,7,8-HxCDF	100.000	1994243	472553
1,2,3,7,8,9-HxCDF	1.306	D 13C-1,2,3,7,8,9-HxCDF	100.000	1796122	431190

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.295		100.000	1935837	430774

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.744	27107	4920	20095	3255	1.88	1.35	
34.561	14105	2965	12167	2339	1.05	1.16	
35.977	10771	2857	7991	1892	0.7486	1.35	Ma
37.080	19878	5112	17464	4597	1.49	1.14	Ma
Signal Totals:							
	71861	15854	57717	12083			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	129578	27937				1.25	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.170 = (129578 * 100.000) / (1935837 * 1.295)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	1268917	347826
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	1630302	380659
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1449609	364242

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.486	6858	1405	5117	1038	0.7189	1.34	M
35.218	1848	397	996	258	0.1707	1.86	RQ
35.218	1235	319	996	258	0.1339		Empc Correction
35.555	5545	1304	4050	992	0.5760	1.37	M
Signal Totals:							
	13638	3028	10163	2288			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24414	5394				1.40	RQM
	23801	5316					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1.466 = (24414 * 100.000) / (1449609 * 1.149)

Empc Amount: 1.429 = (23801 * 100.000) / (1449609 * 1.149)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Lims ID:	320-66850-A-3-B		
Client ID:	11215702-Tank #1 Drum		
Inject. Date:	24-Nov-2020 14:17:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	36

Non-2,3,7,8-sub-HpCDF, RT: 39.360

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.562	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1411242	409432
1,2,3,4,7,8,9-HpCDF	1.497	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1090499	334146

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.530		100.000	1250870	371789

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.098	36845	10343	34302	9936	3.72	1.07	
Signal Totals:							
	36845	10343	34302	9936			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	71147	20279				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.718 = (71147 * 100.000) / (1250870 * 1.530)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Lims ID: 320-66850-A-3-B
Client ID: 11215702-Tank #1 Drum
Inject. Date: 24-Nov-2020 14:17:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 36

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1312726	395482

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	1312726	395482

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.031	80002	22721	76572	22252	10.8	1.04	
Signal Totals:							
	80002	22721	76572	22252			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	156574	44973				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 10.765 = (156574 * 100.000) / (1312726 * 1.108)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3
Client ID:	11215702-Tank #1 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT: 27.62
Area: 120500
Amount: 12.639987
Amount Units: pg/ul

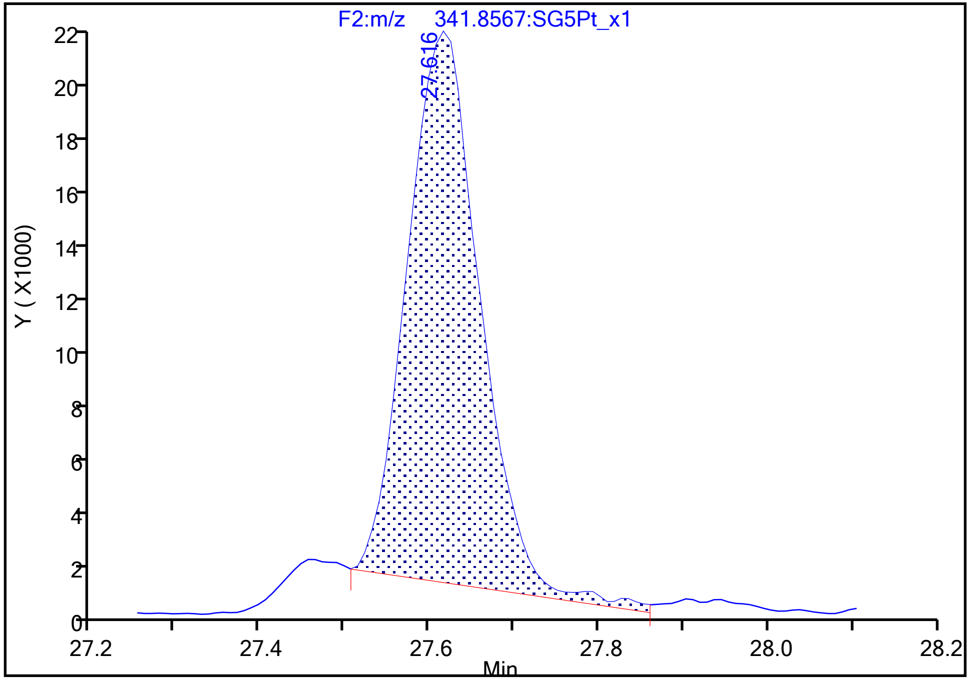

Manual Integration Results

RT: 27.62
Area: 136445
Amount: 13.228617
Amount Units: pg/ul

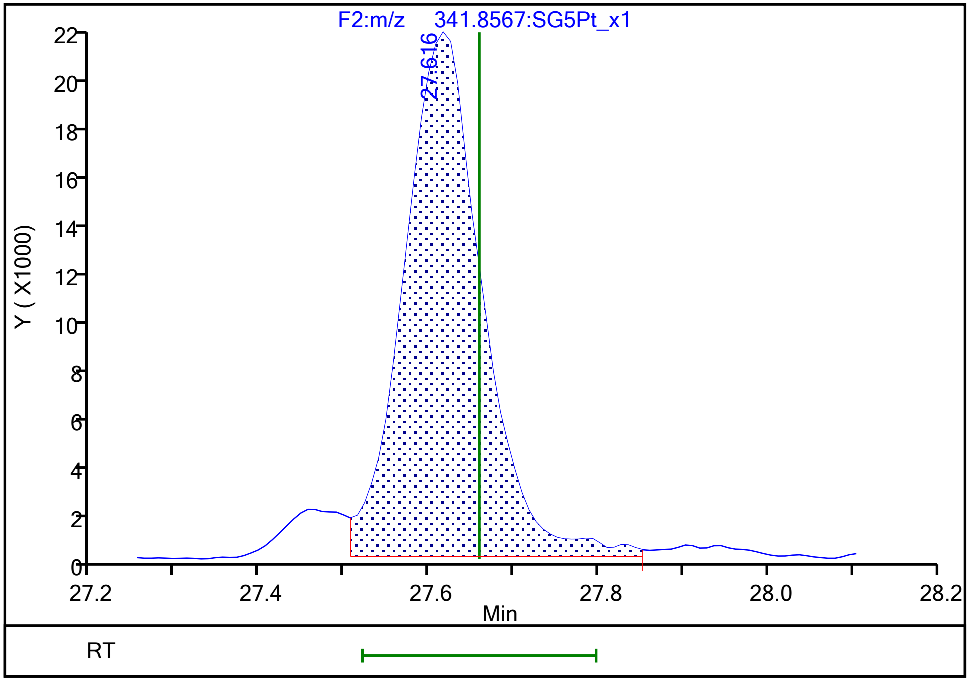

Reviewer: dadunj, 30-Nov-2020 10:50:57

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3
Client ID:	11215702-Tank #1 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (25.69- 31.32)

Signal: 2

Processing Integration Results

RT = 26.100 Area = 59951

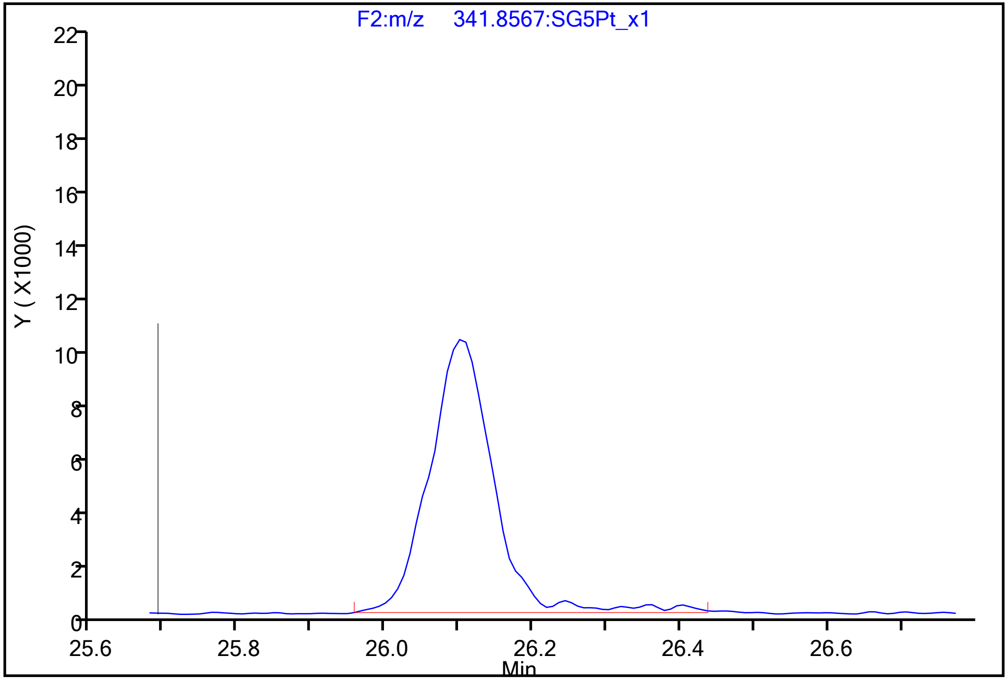

Manual Integration Results

RT = 26.100 Area = 58234 M

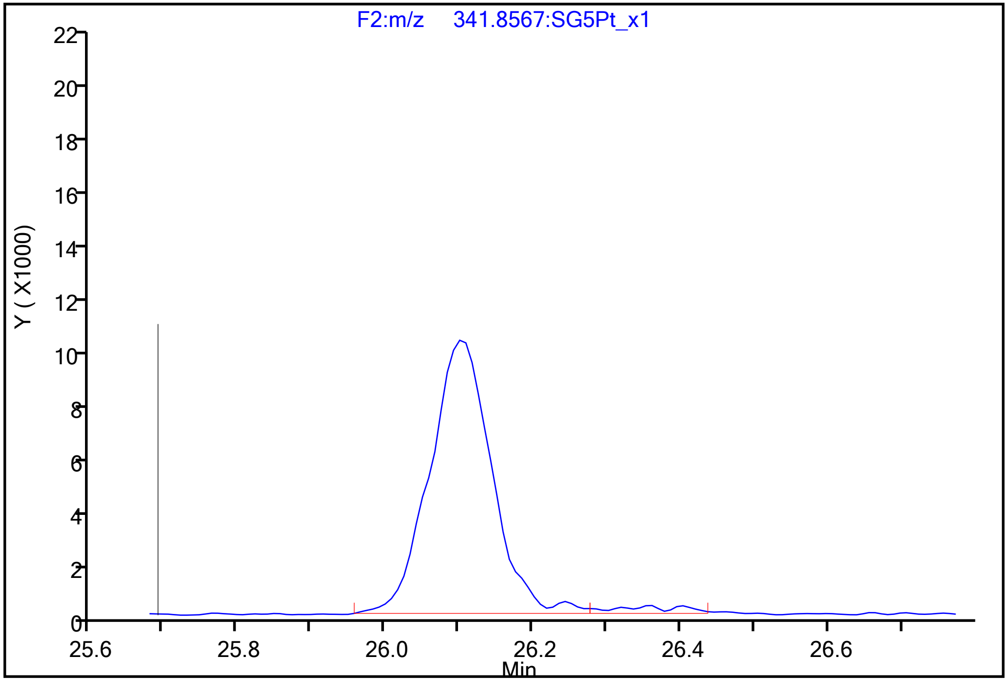

Reviewer: dadunj, 30-Nov-2020 10:51:40

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d				
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3		
Client ID:	11215702-Tank #1 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (25.69- 31.32)

Signal: 1

Processing Integration Results

RT = 27.472 Area = 15039

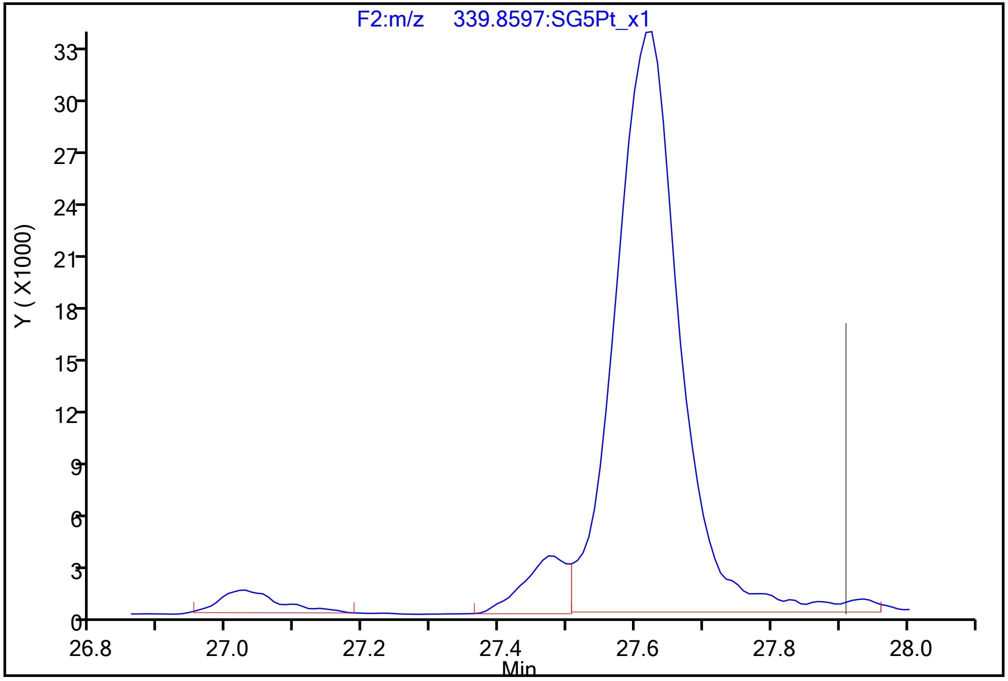

Manual Integration Results

RT = 27.472 Area = 15039

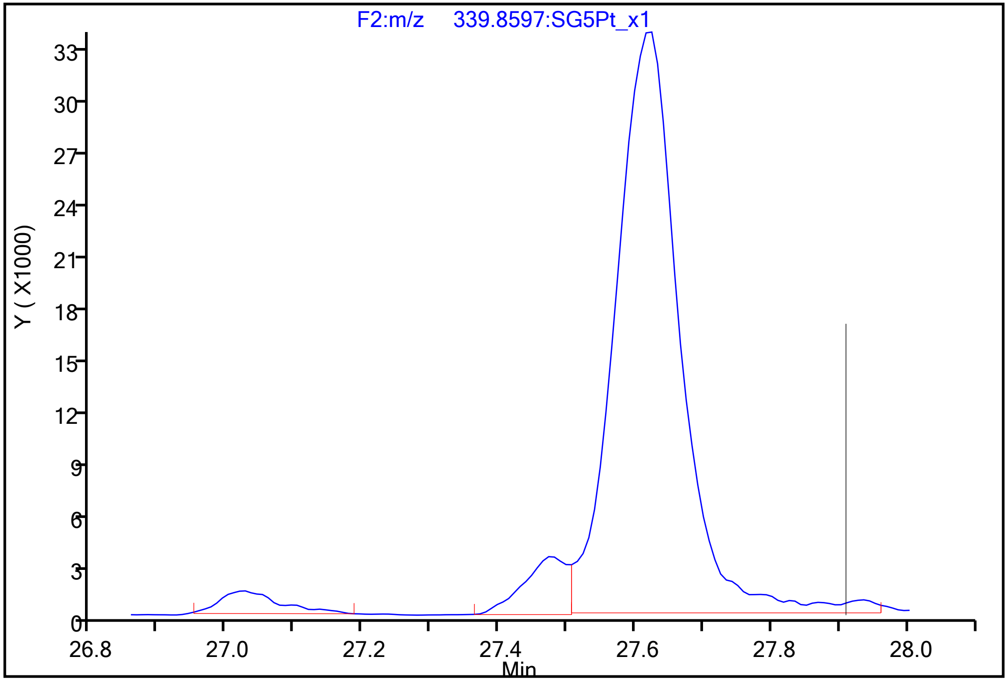

Reviewer: krenns, 01-Dec-2020 13:49:39

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Injection Date: 24-Nov-2020 14:17:00
Instrument ID: DFS 1
Lims ID: 320-66850-A-3-B
Lab Sample ID: 320-66850-3
Client ID: 11215702-Tank #1 Drum
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 36
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT: 30.02
Area: 11817
Amount: 1.152927
Amount Units: pg/ul

Processing Integration Results

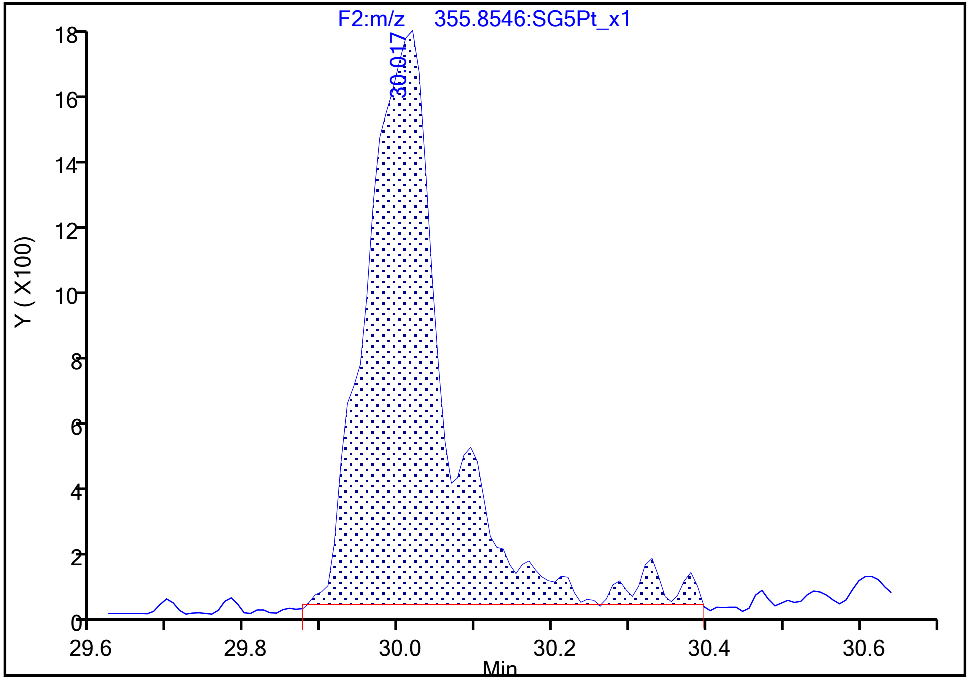

RT: 30.02
Area: 11032
Amount: 1.103632
Amount Units: pg/ul

Manual Integration Results

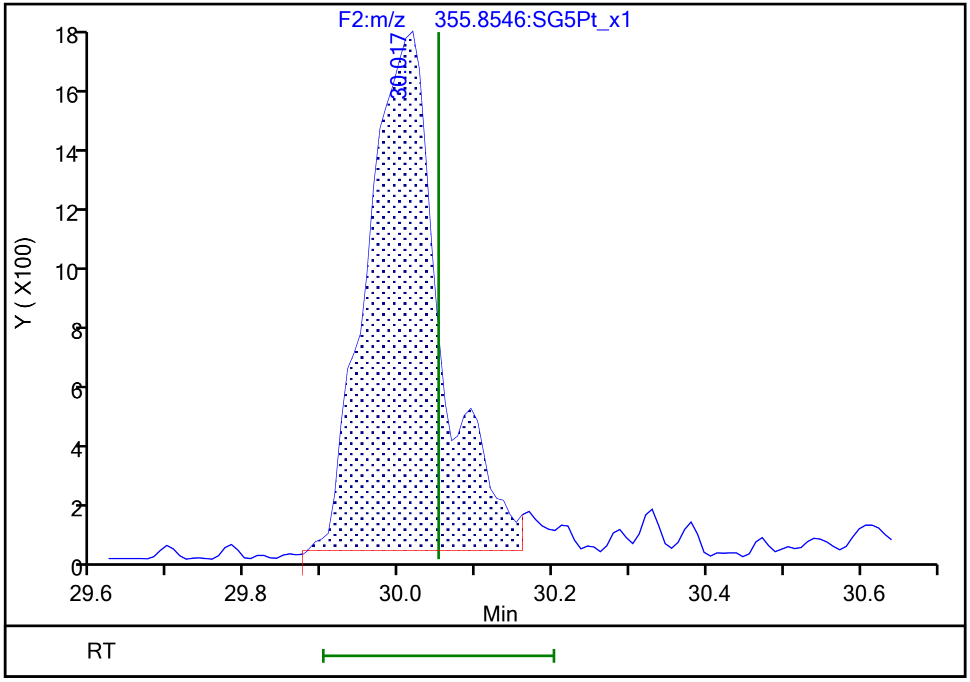

Reviewer: dadunj, 30-Nov-2020 10:51:52
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d				
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3		
Client ID:	11215702-Tank #1 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	36.11
Area:	24127
Amount:	1.337516
Amount Units:	pg/ul

Processing Integration Results

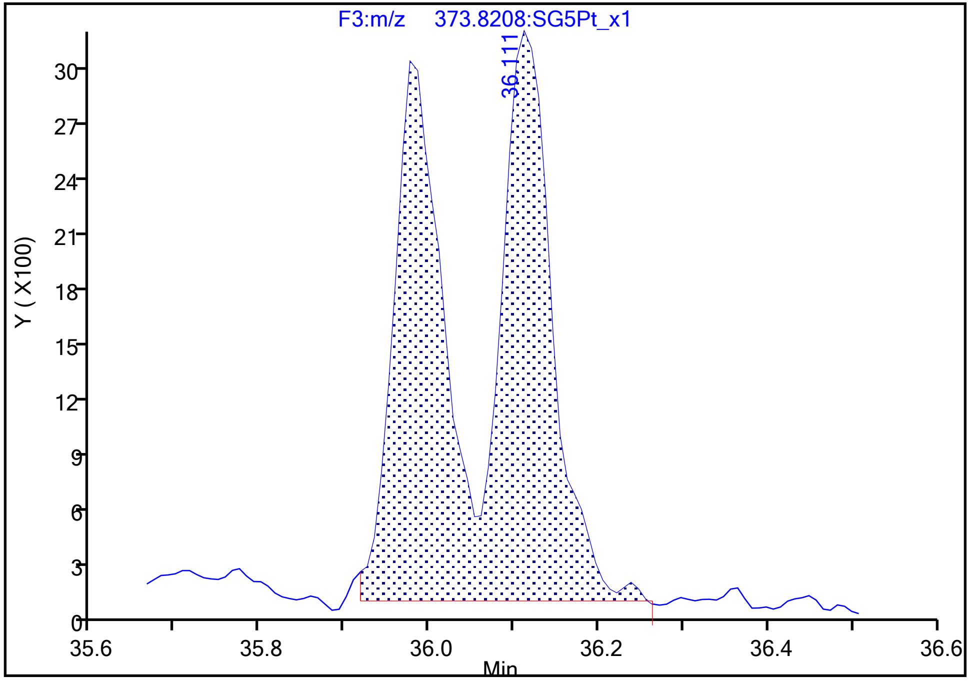

RT:	36.11
Area:	13355
Amount:	0.916754
Amount Units:	pg/ul

Manual Integration Results

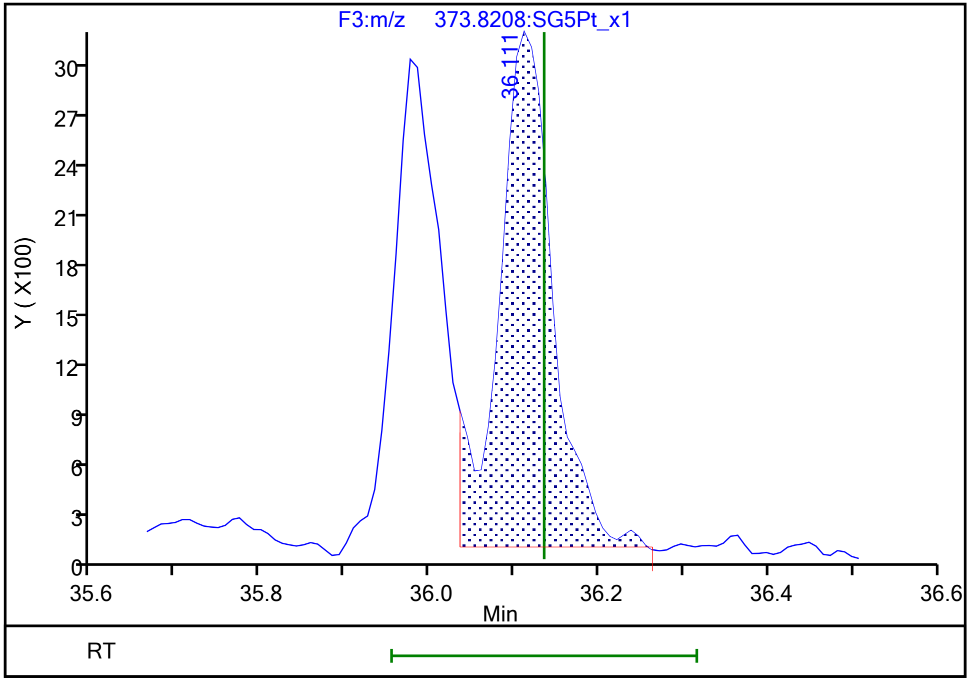

Reviewer: dadunj, 30-Nov-2020 10:52:12

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d				
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3		
Client ID:	11215702-Tank #1 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	37.08
Area:	27273
Amount:	2.193295
Amount Units:	pg/ul

Processing Integration Results

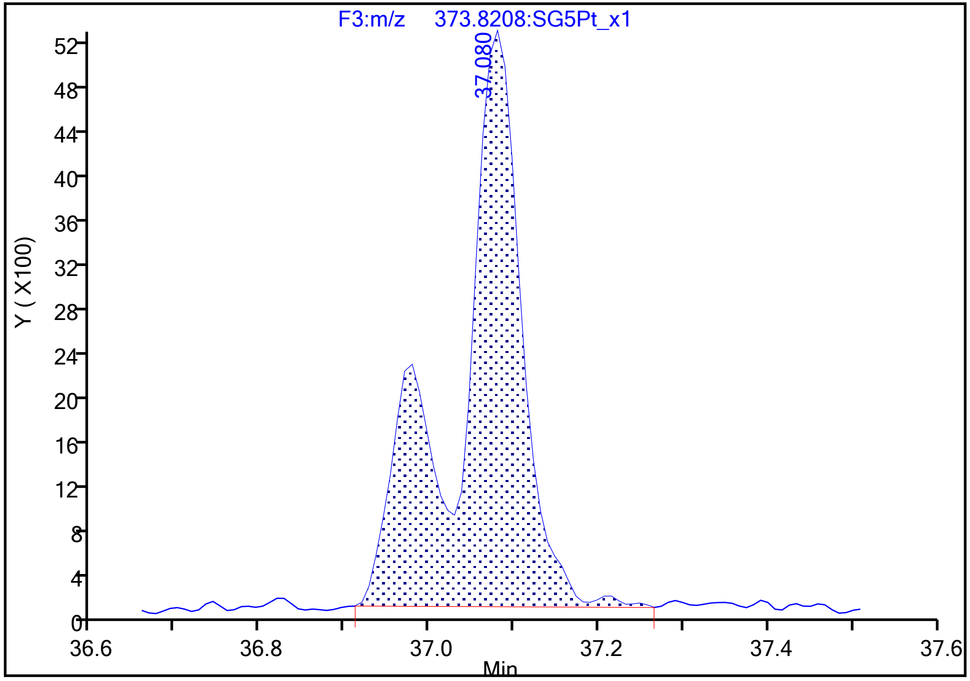

RT:	36.98
Area:	7394
Amount:	0.601686
Amount Units:	pg/ul

Manual Integration Results

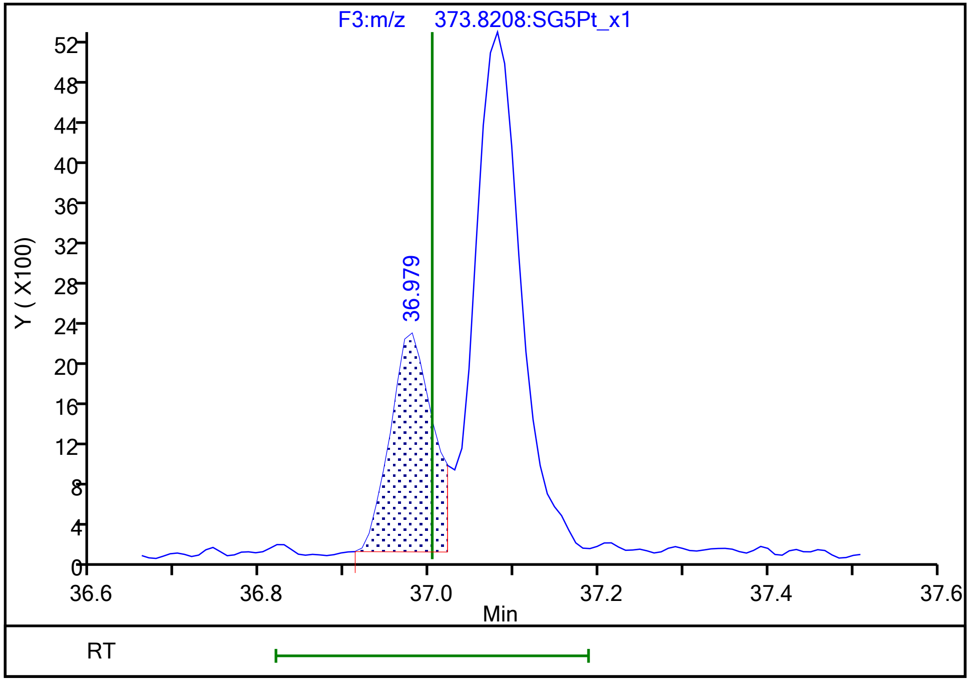

Reviewer: dadunj, 30-Nov-2020 10:52:18

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:50:28

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3
Client ID:	11215702-Tank #1 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT: 37.08
Area: 24187
Amount: 2.193295
Amount Units: pg/ul

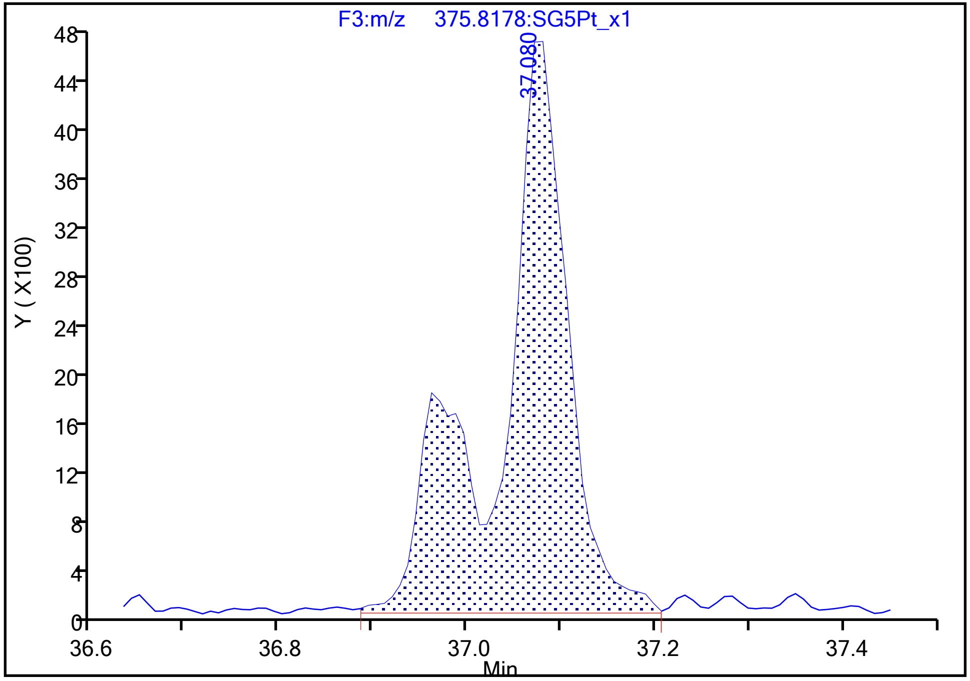

Manual Integration Results

RT: 36.96
Area: 6723
Amount: 0.601686
Amount Units: pg/ul

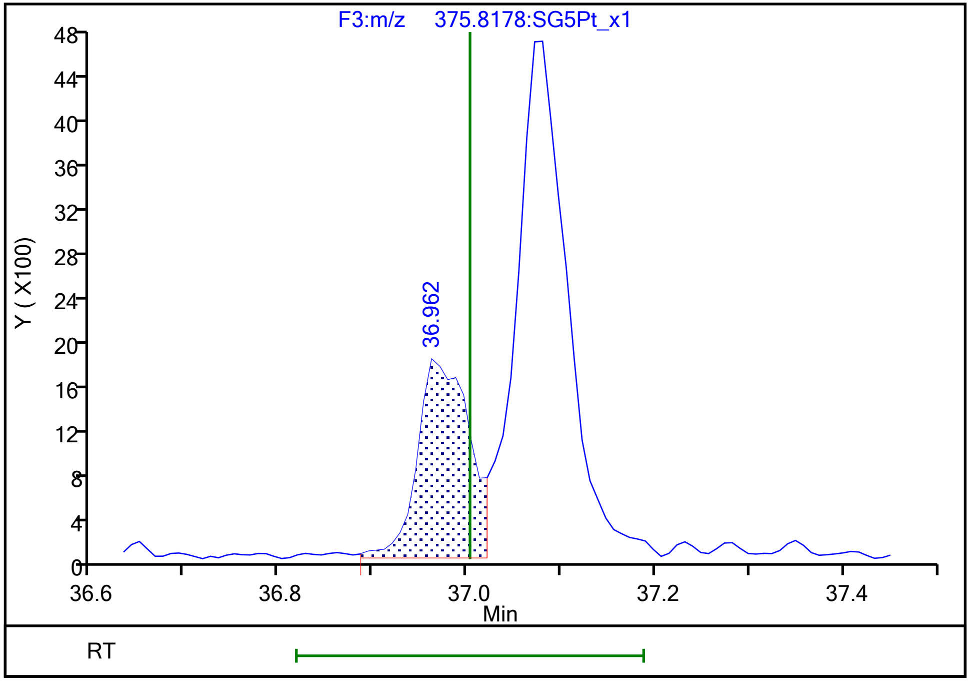

Reviewer: dadunj, 30-Nov-2020 10:52:20

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d				
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3		
Client ID:	11215702-Tank #1 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.45- 37.11)

Signal: 1

Processing Integration Results

Not Detected
RT: 33.45- 37.11

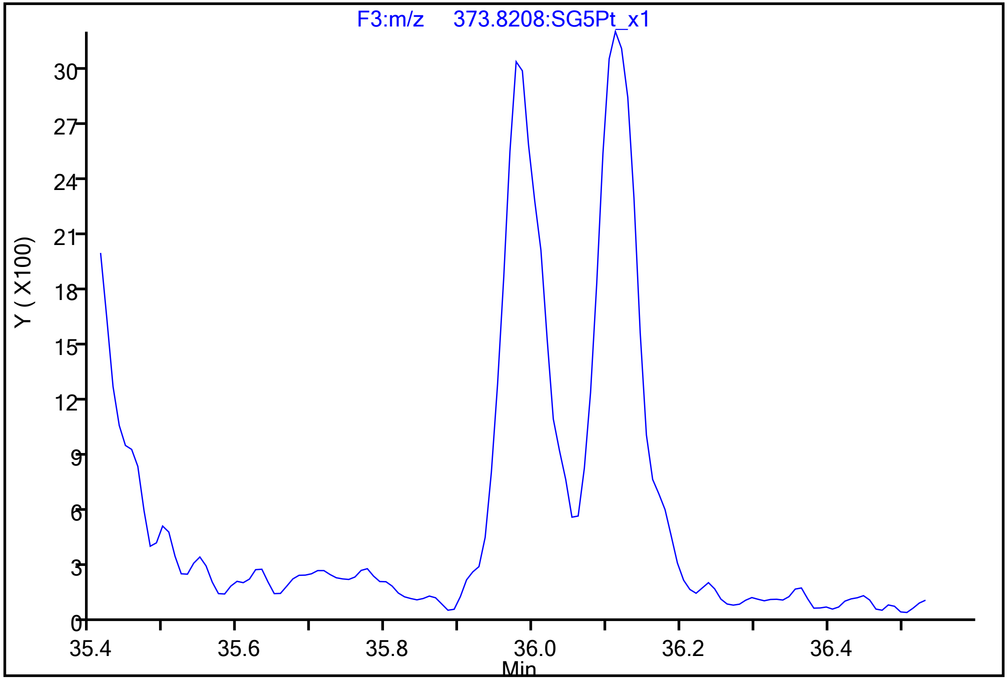

Manual Integration Results

RT = 35.977 Area = 10771 M

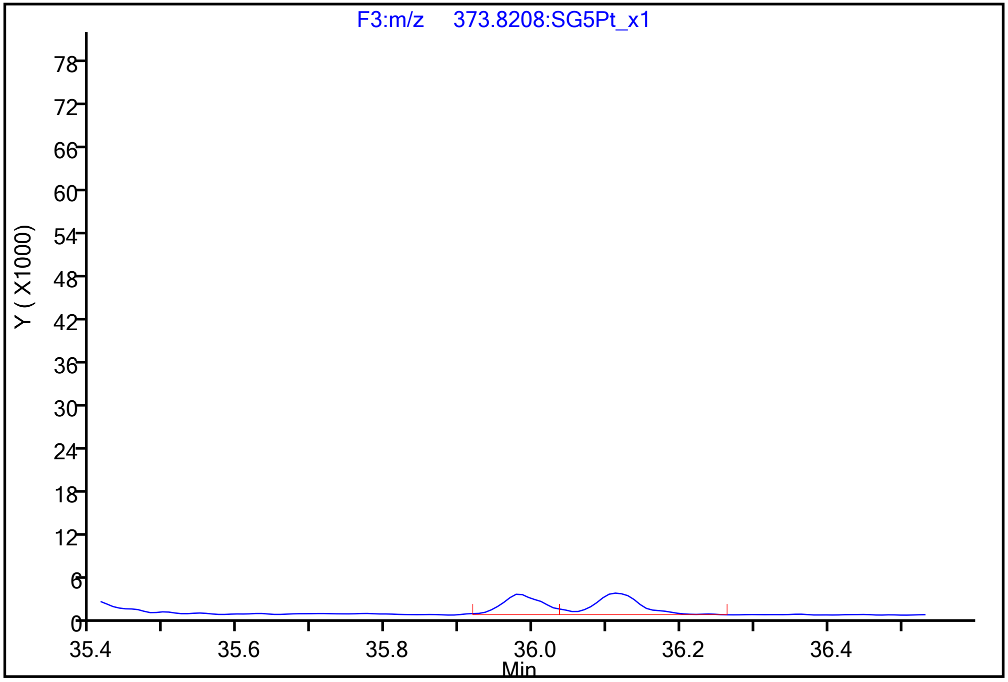

Reviewer: krenns, 01-Dec-2020 13:50:12
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3
Client ID:	11215702-Tank #1 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.45- 37.11)

Signal: 1

Processing Integration Results

RT = 37.080 Area = 27273

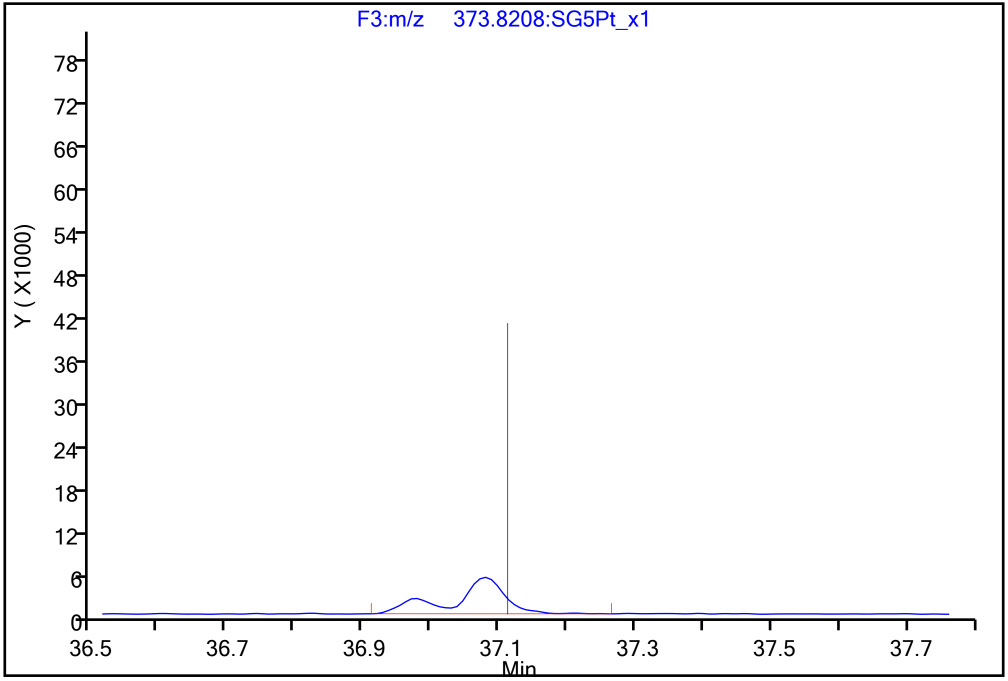

Manual Integration Results

RT = 37.080 Area = 19878 M

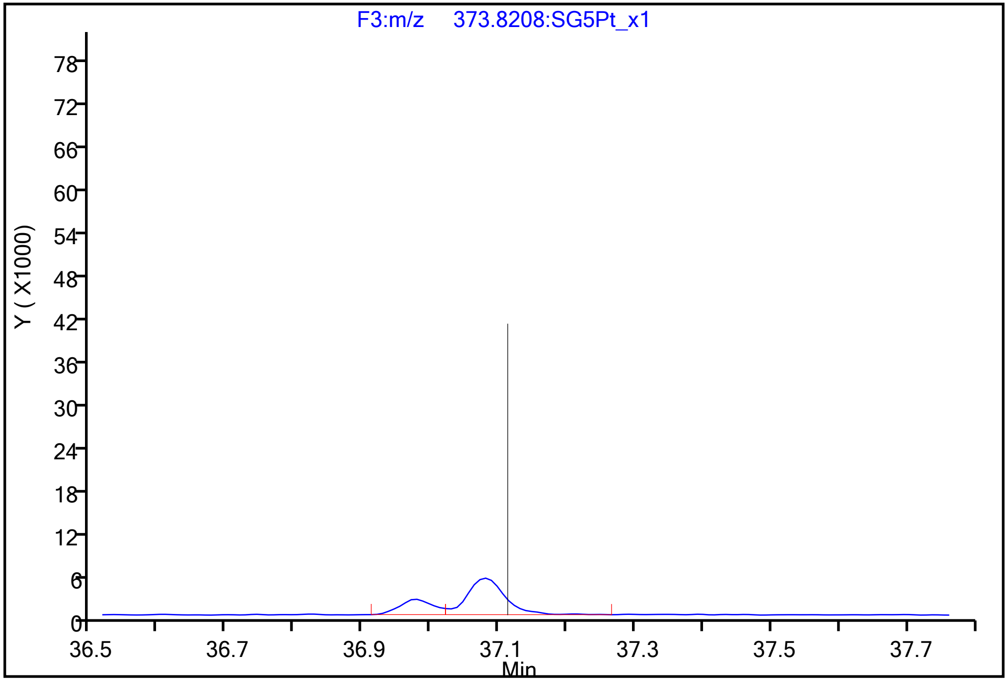

Reviewer: krenns, 01-Dec-2020 13:50:12

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3
Client ID:	11215702-Tank #1 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (34.46- 36.77)

Signal: 1

Processing Integration Results

RT = 34.486 Area = 7170

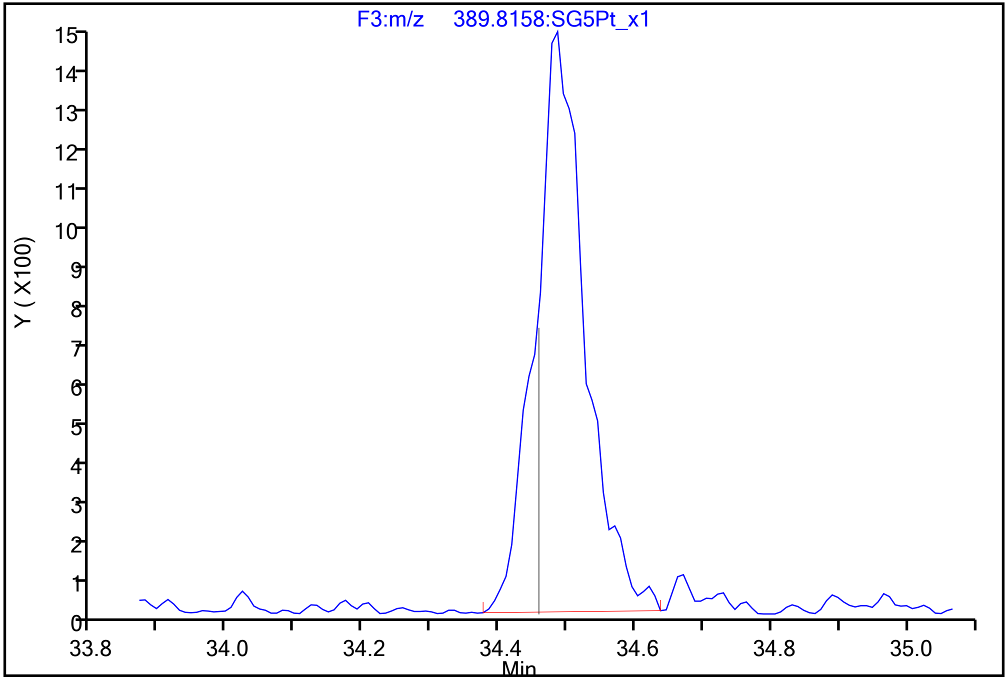

Manual Integration Results

RT = 34.486 Area = 6858 M

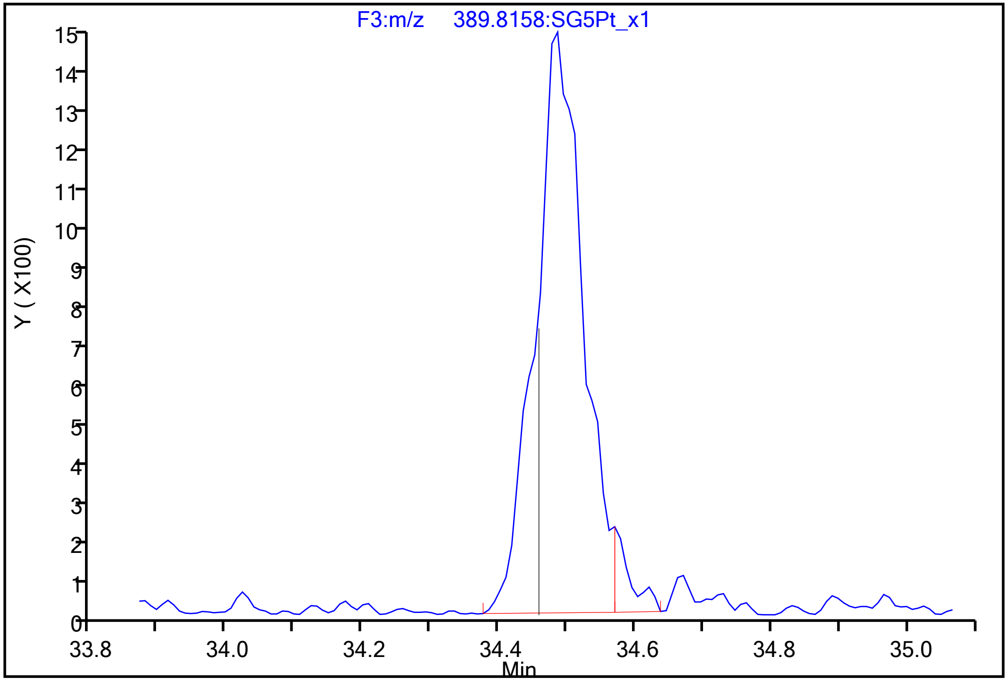

Reviewer: dadunj, 30-Nov-2020 10:52:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3
Client ID:	11215702-Tank #1 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (34.46- 36.77)

Signal: 2

Processing Integration Results

RT = 34.477 Area = 5628

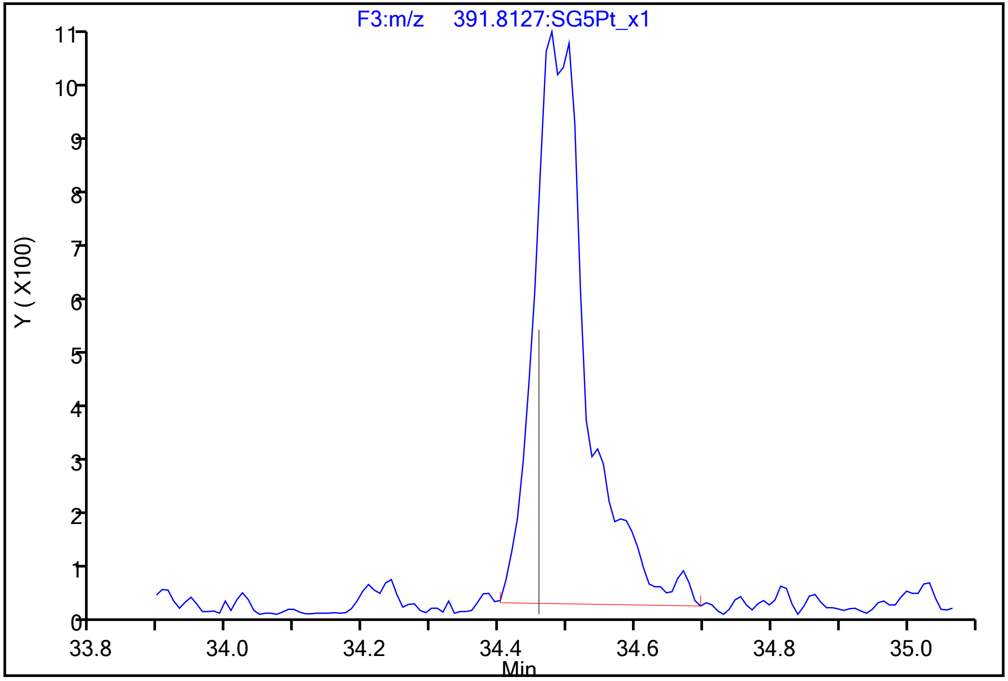

Manual Integration Results

RT = 34.477 Area = 5117 M

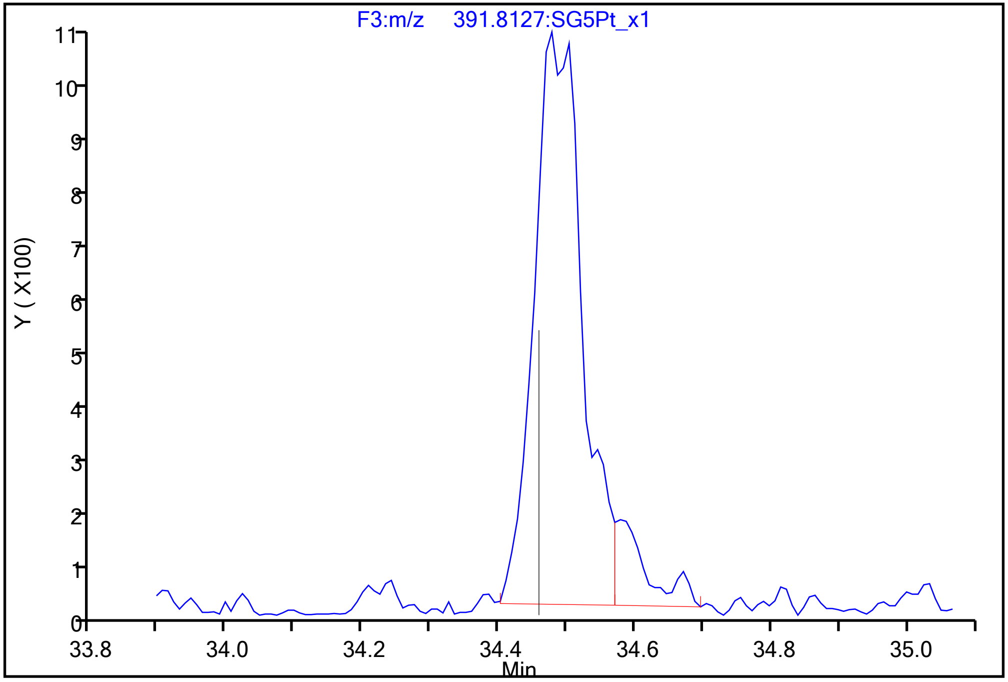

Reviewer: dadunj, 30-Nov-2020 10:52:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d				
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3		
Client ID:	11215702-Tank #1 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (34.46- 36.77)

Signal: 1

Processing Integration Results

RT = 35.555 Area = 5888

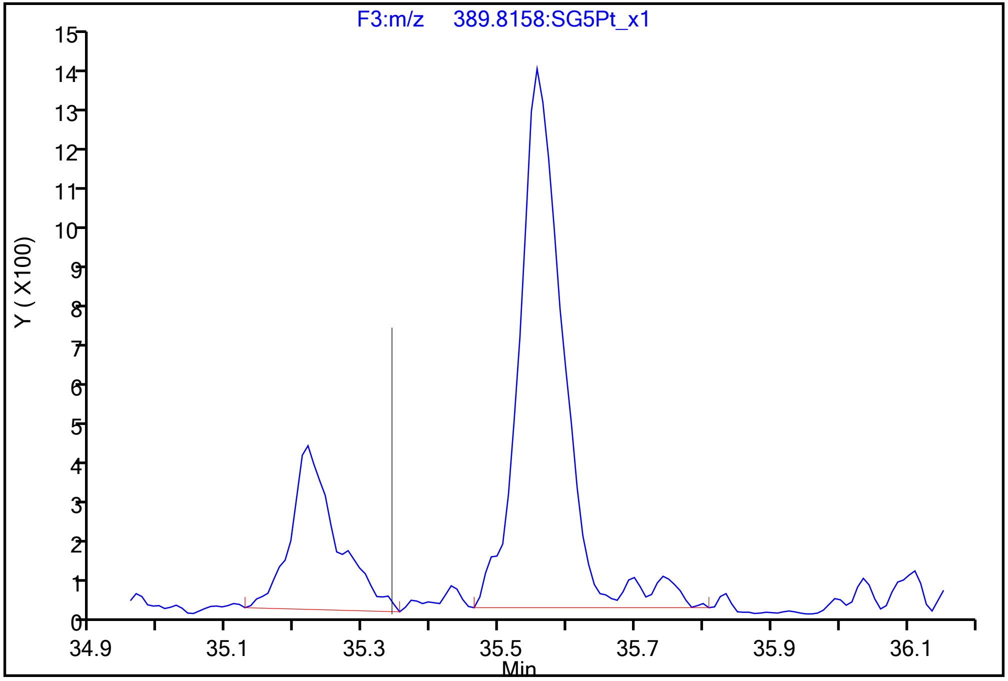

Manual Integration Results

RT = 35.555 Area = 5545 M

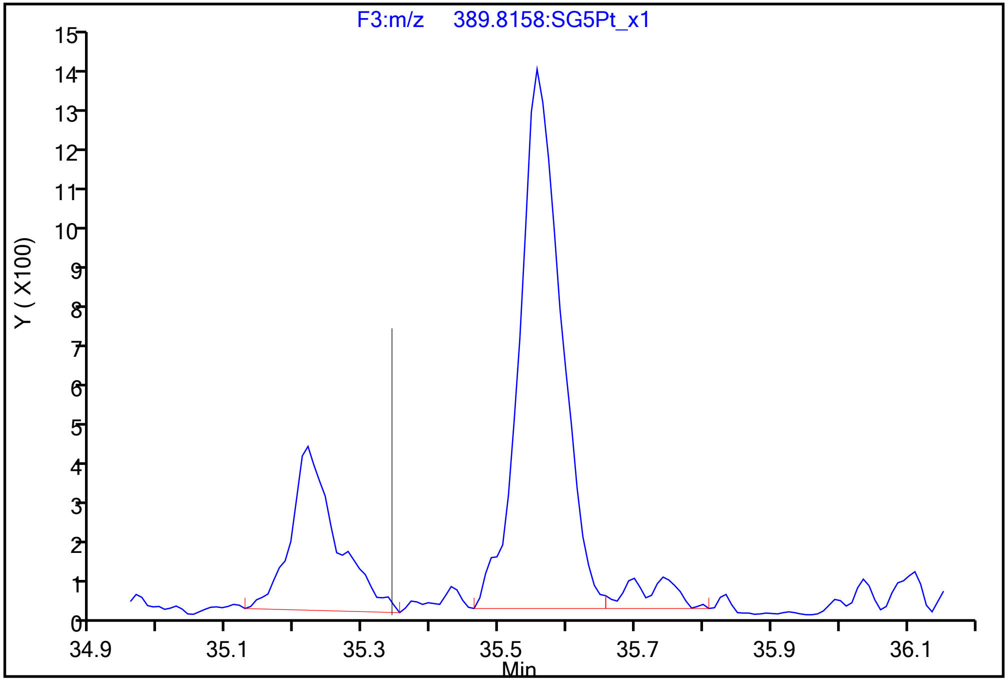

Reviewer: dadunj, 30-Nov-2020 10:52:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d				
Injection Date:	24-Nov-2020 14:17:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-3-B	Lab Sample ID:	320-66850-3		
Client ID:	11215702-Tank #1 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	36
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (34.46- 36.77)

Signal: 2

Processing Integration Results

RT = 35.555 Area = 4233

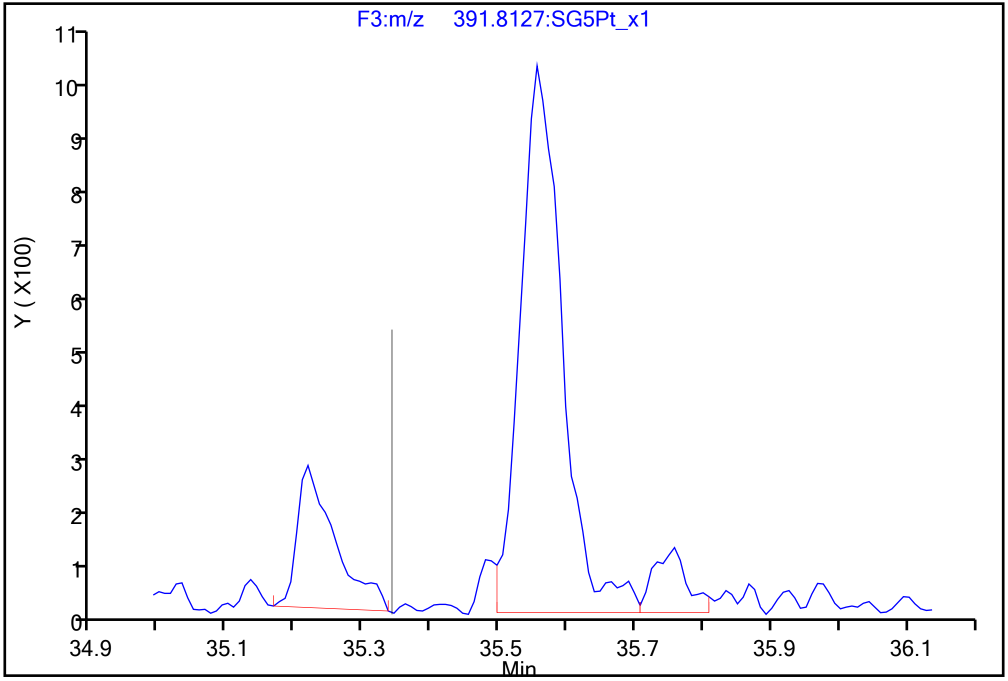

Manual Integration Results

RT = 35.555 Area = 4050 M

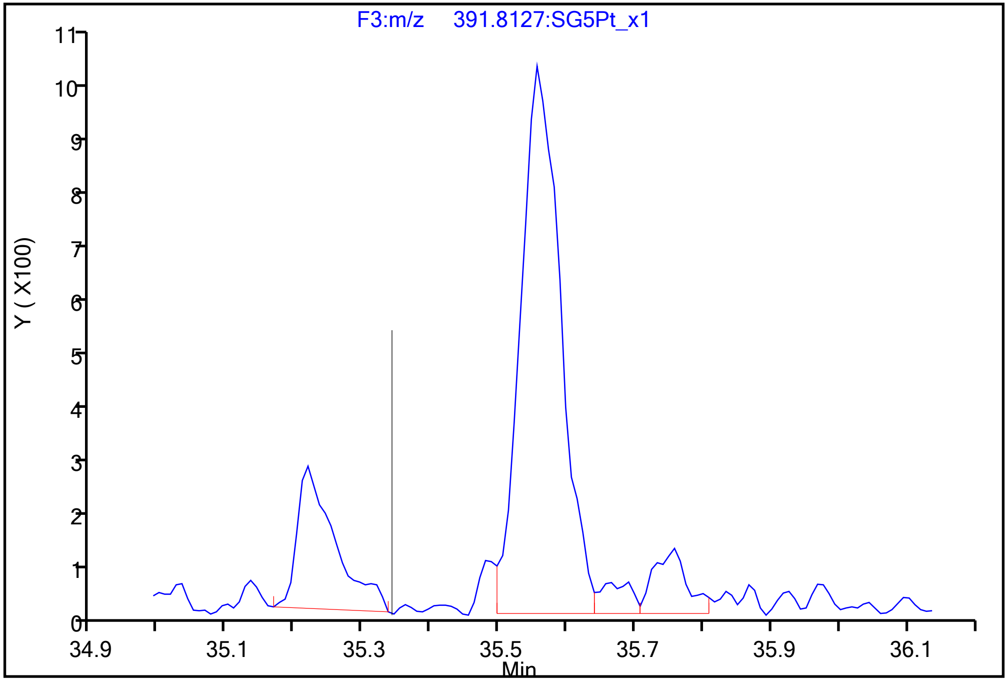

Reviewer: dadunj, 30-Nov-2020 10:52:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Injection Date: 24-Nov-2020 14:17:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Drum

Worklist#: 434777
Sample Line#: 36

Column Type: DB-5
Column Dia: 0.32 mm

TCDF

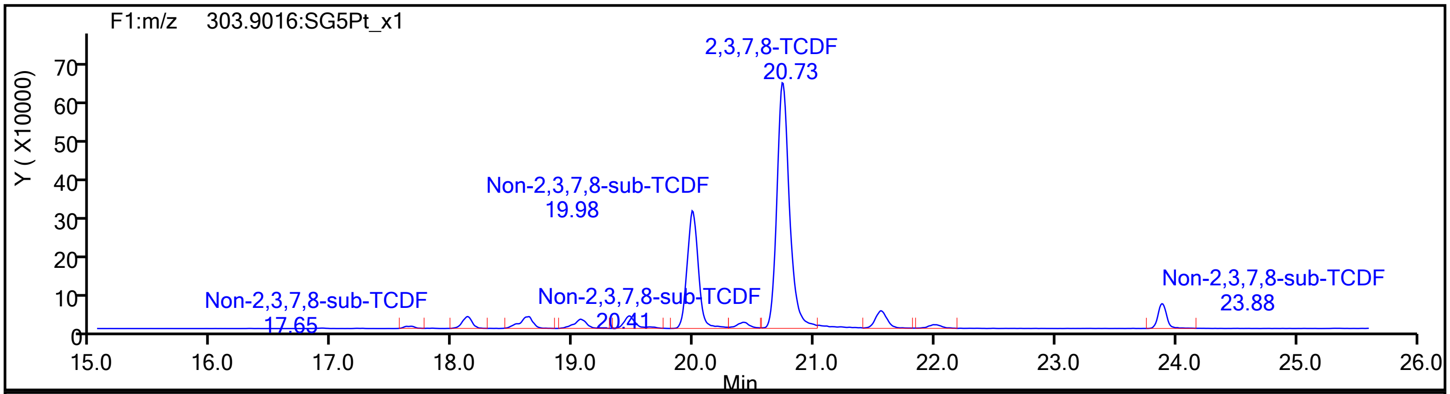

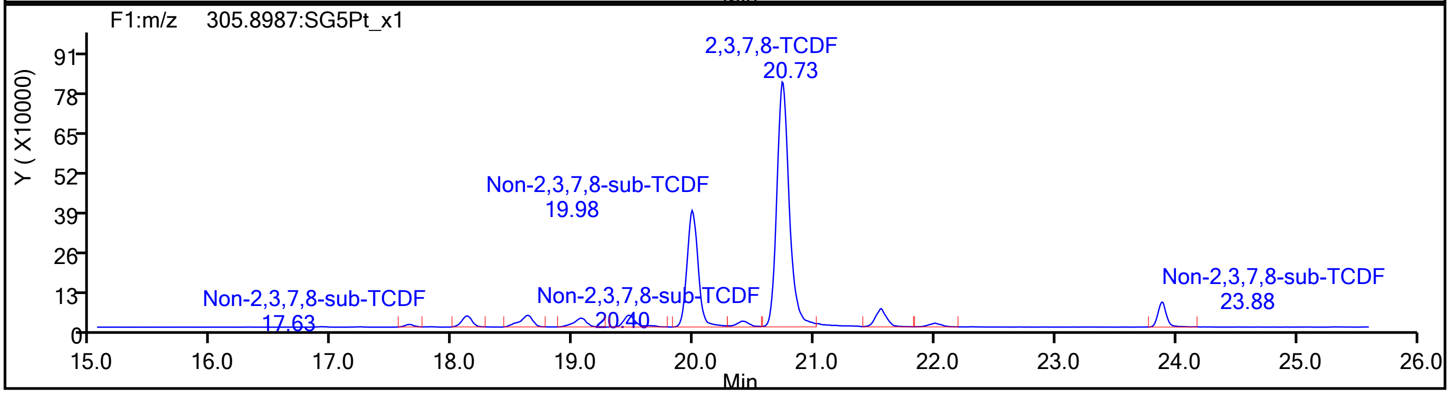

TCDF Standards

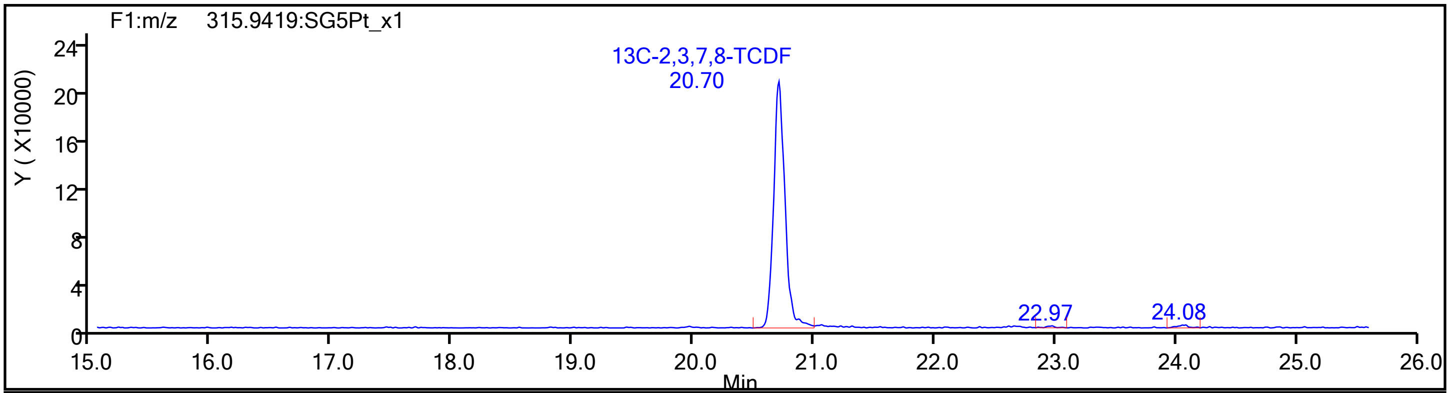

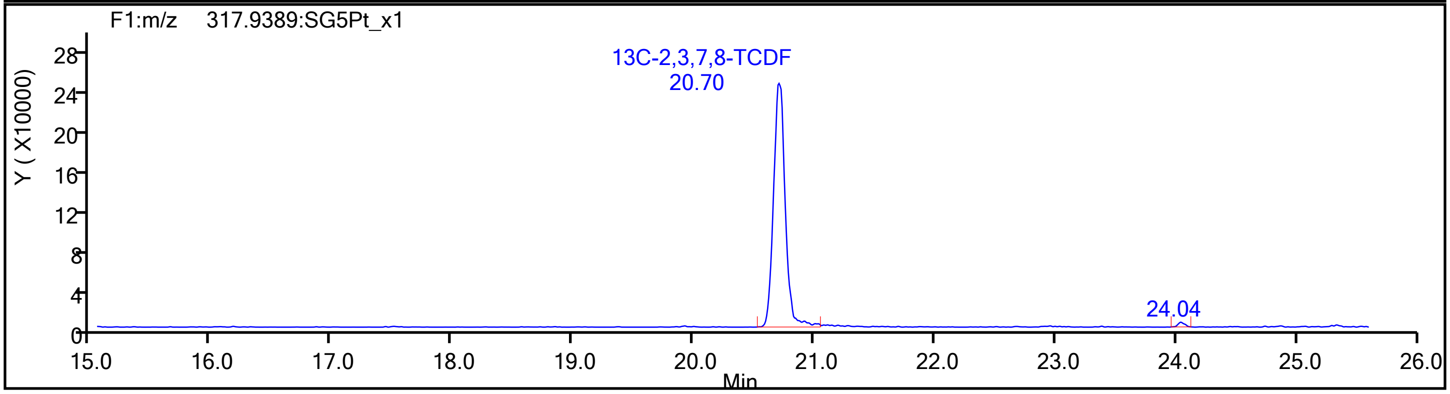

Report Date: 01-Dec-2020 13:50:28 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

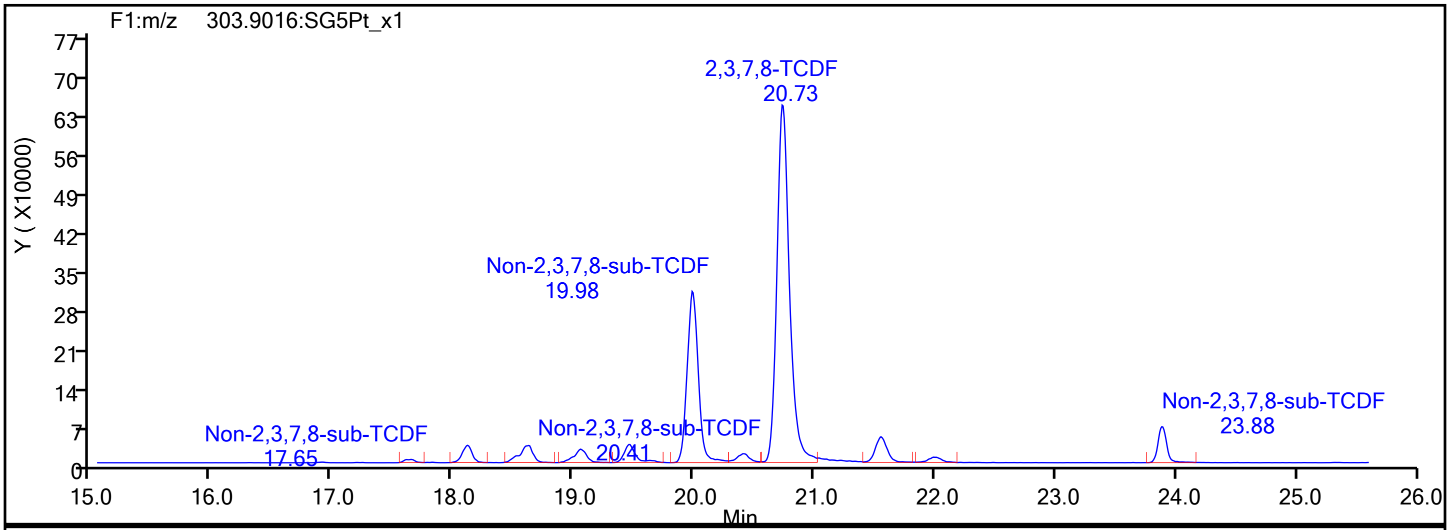

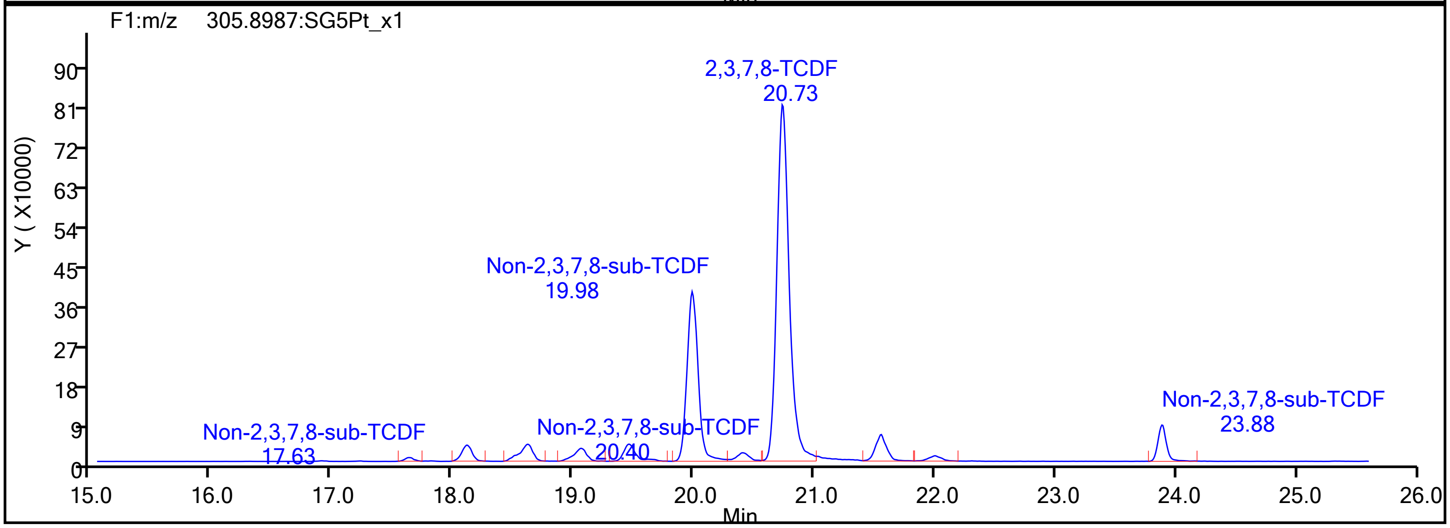

TCDF Interference Mass

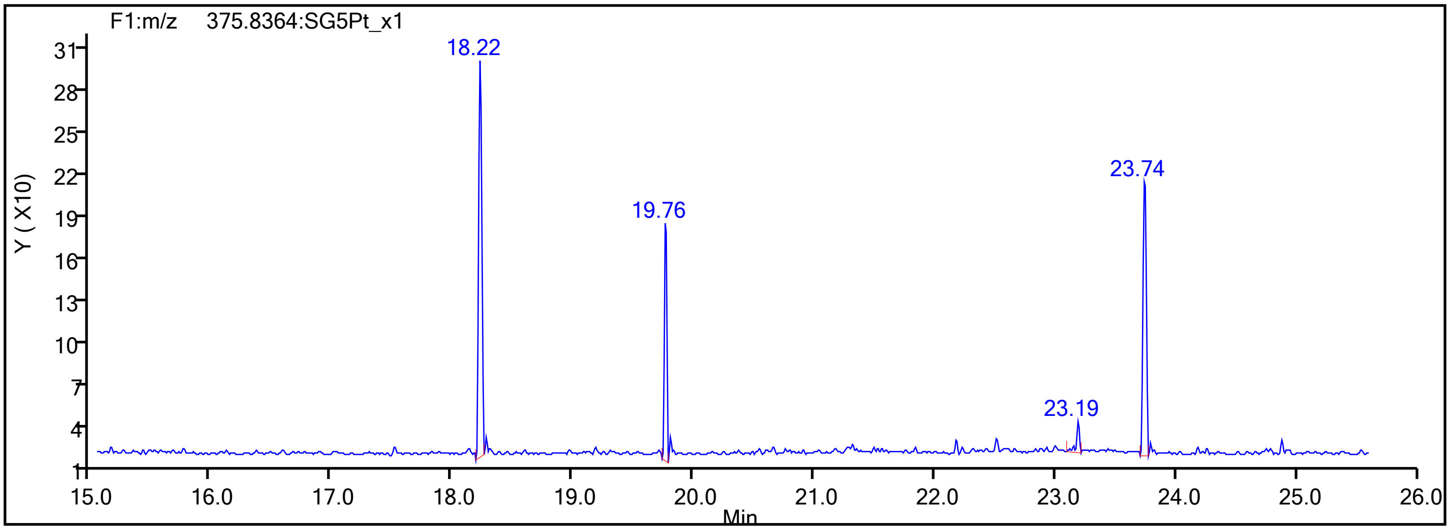

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

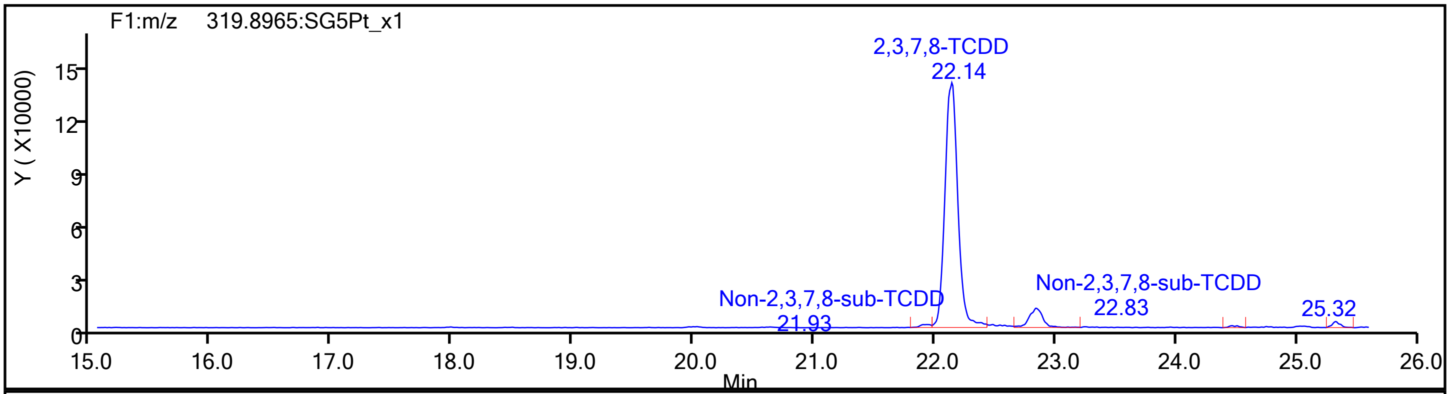

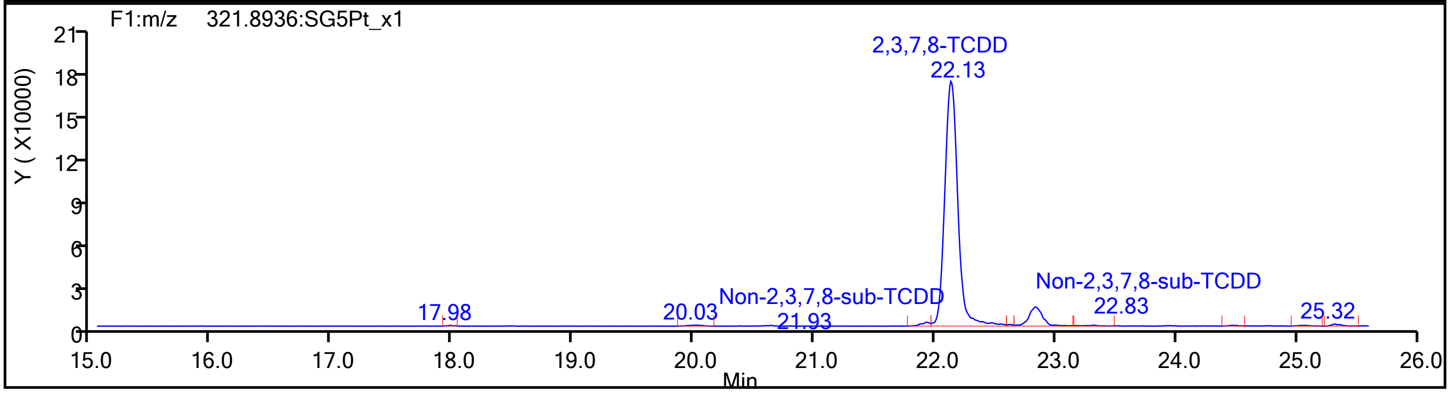

TCDD Standards

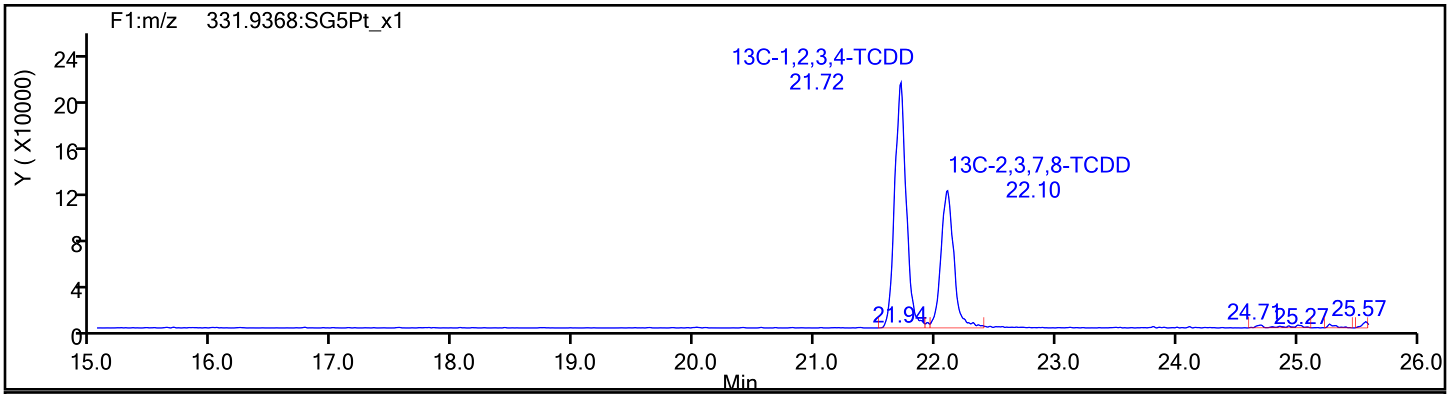

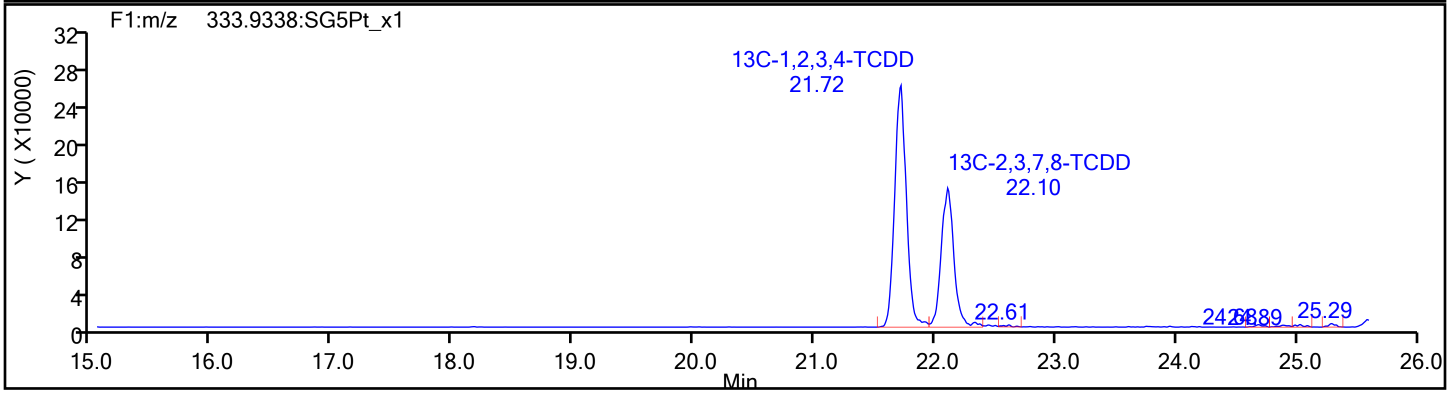

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

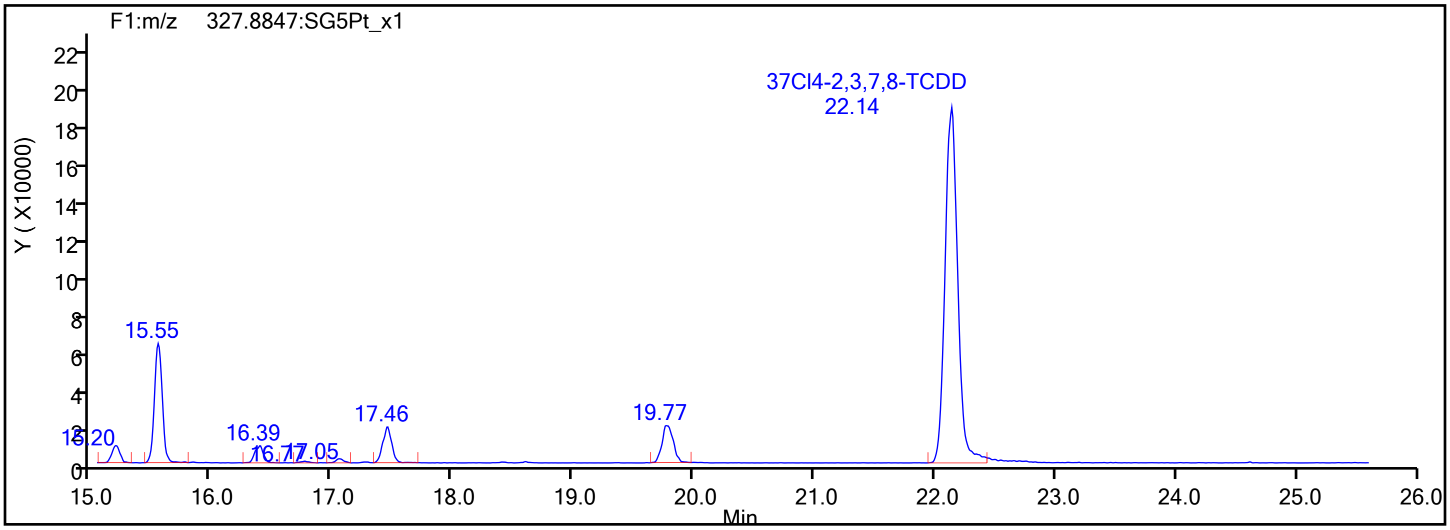

37Cl4-TCDD Standards

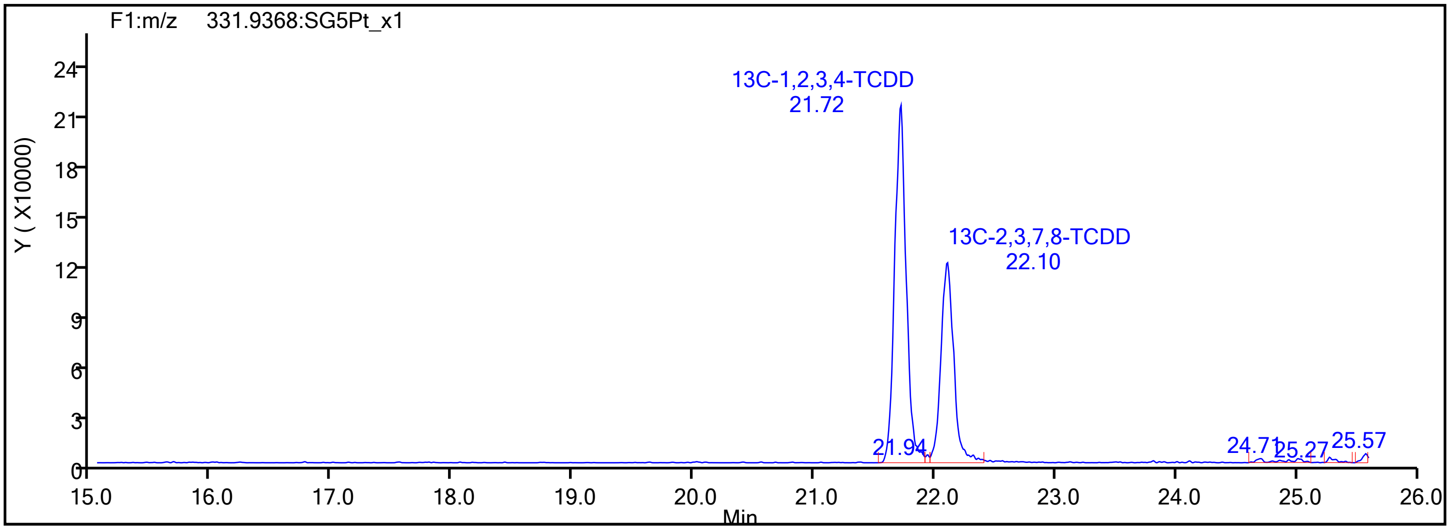

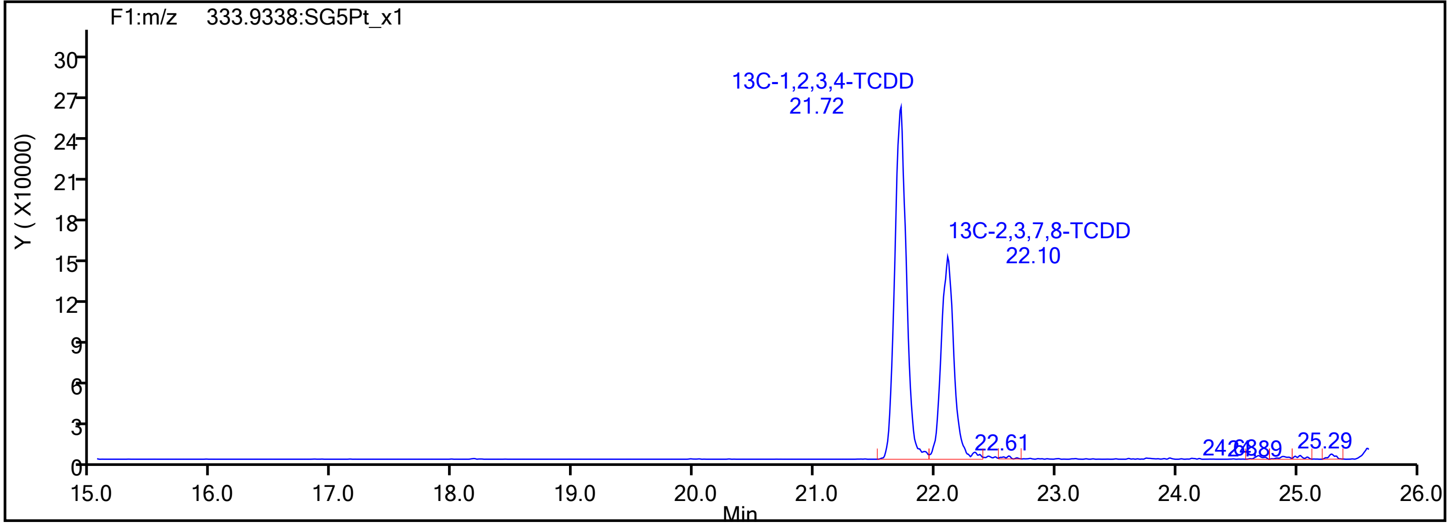

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

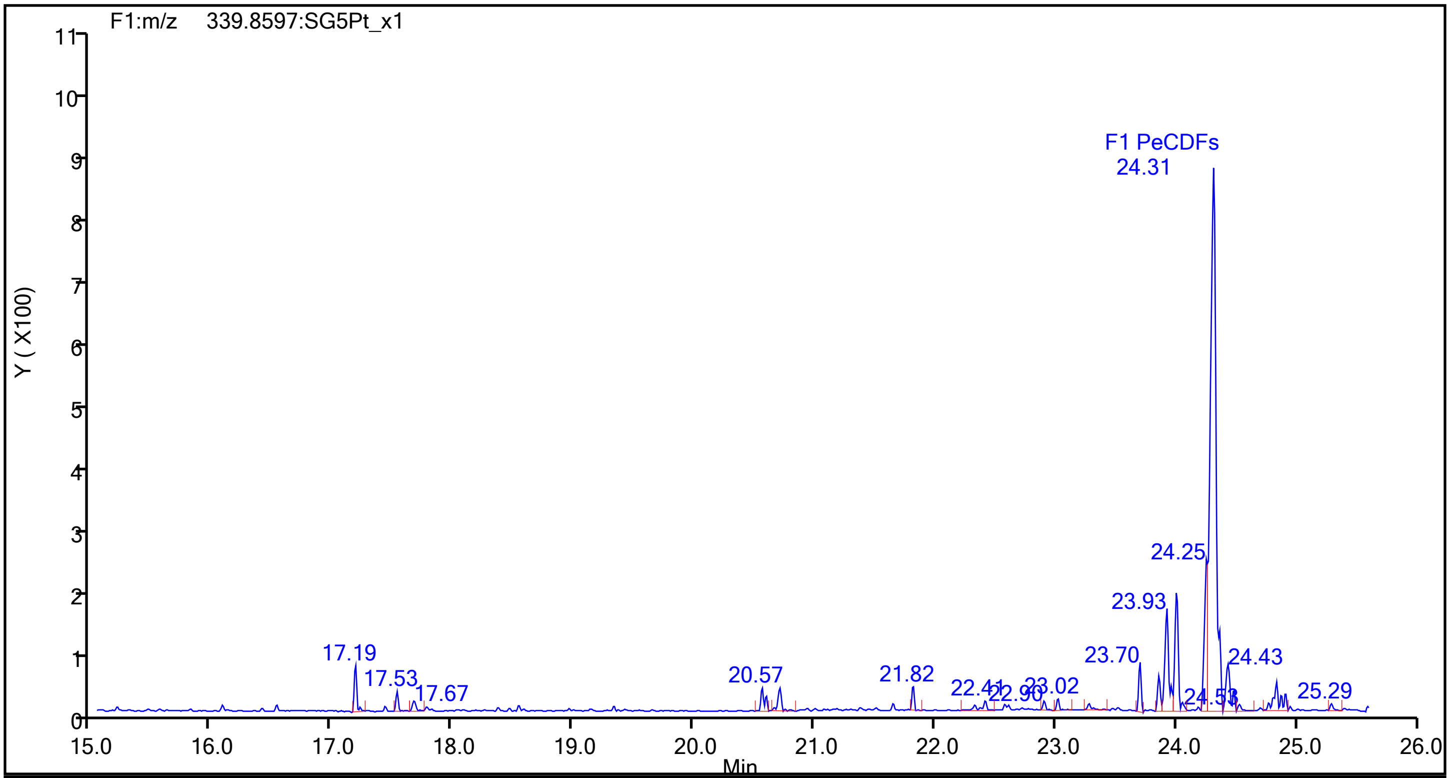

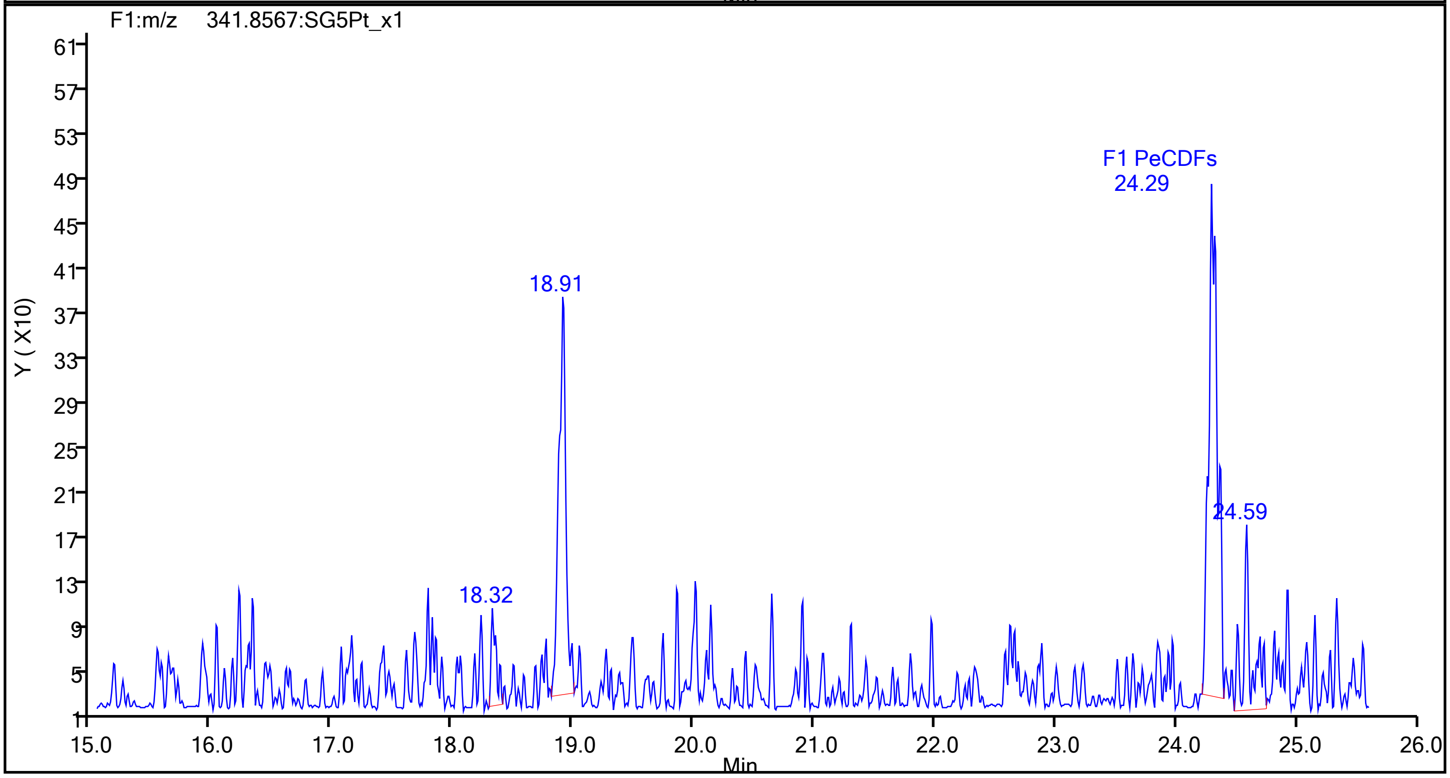

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

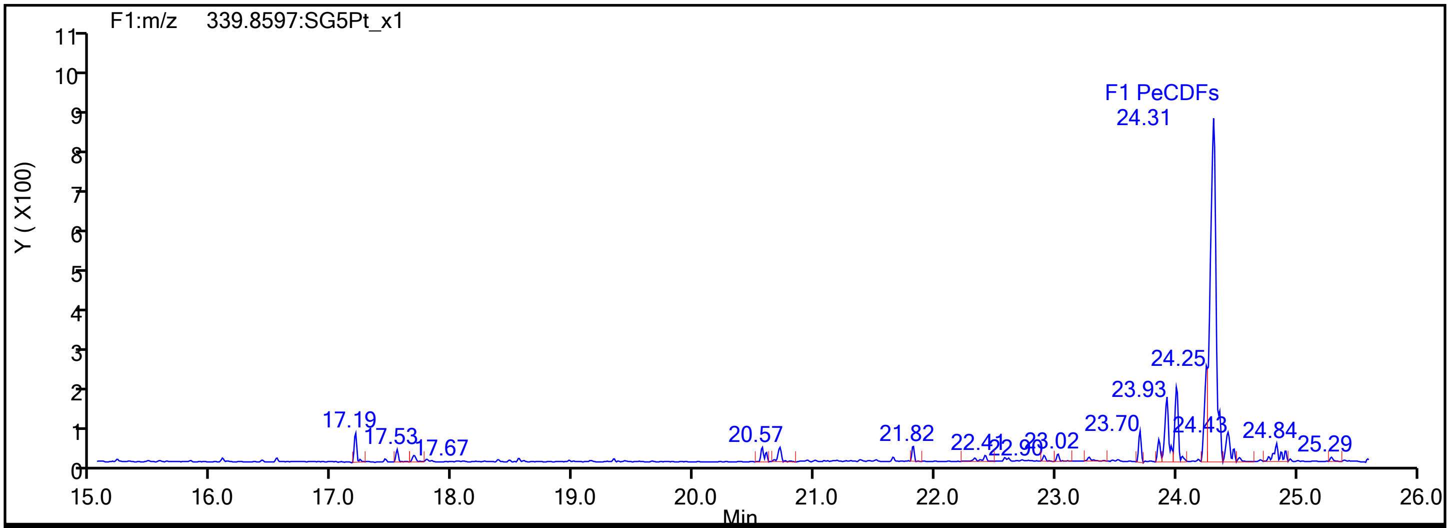

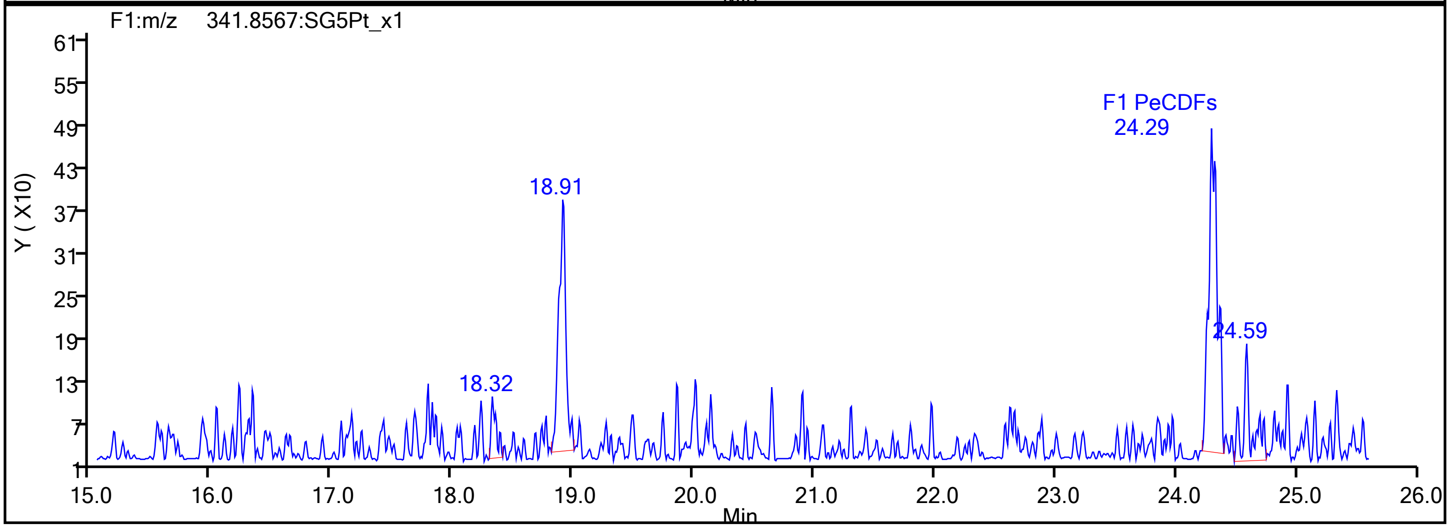

F1 PeCDFs Interference Mass

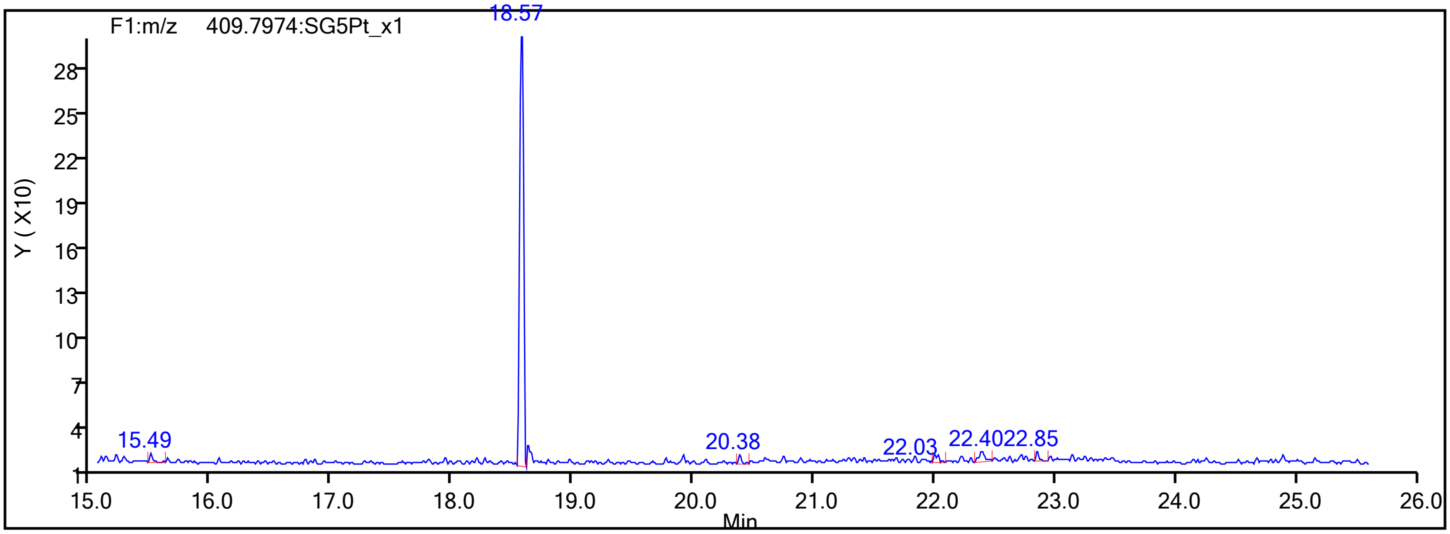

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Injection Date: 24-Nov-2020 14:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777 Sample Line#: 36
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

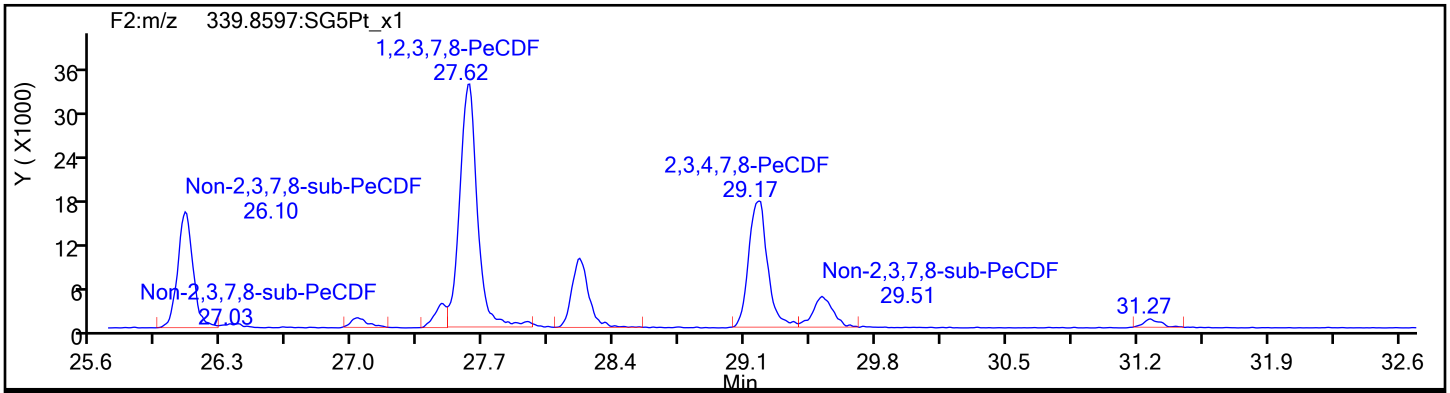

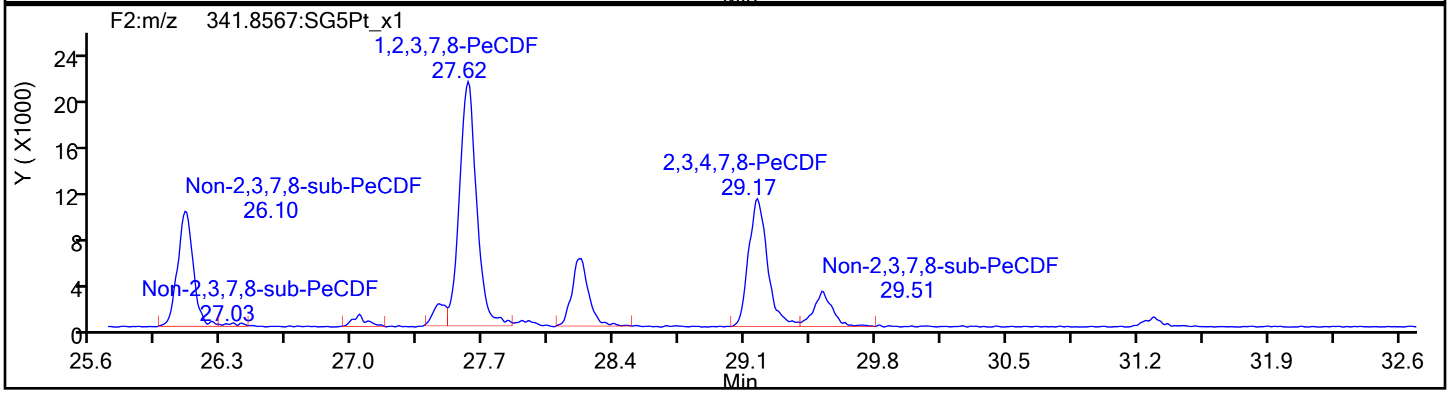

PeCDF Standards

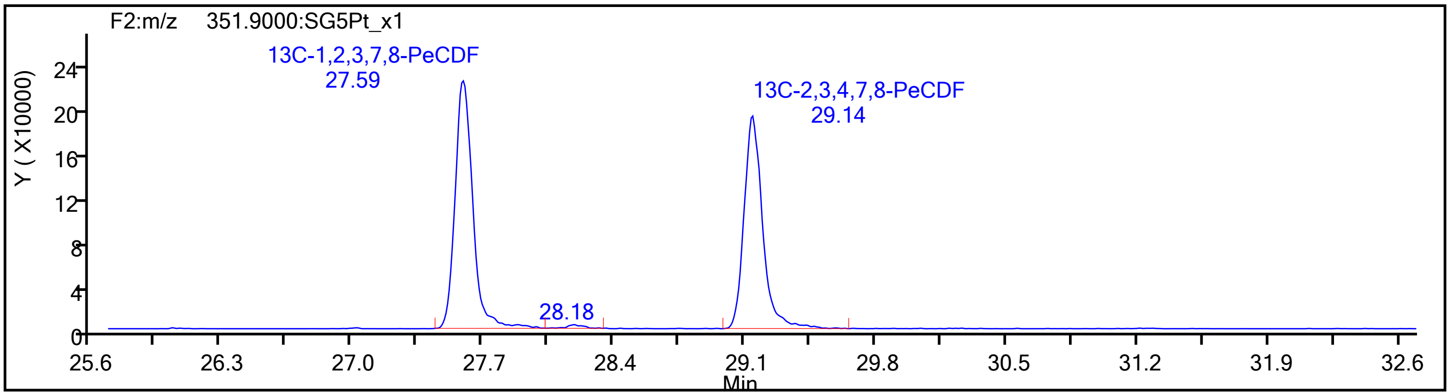

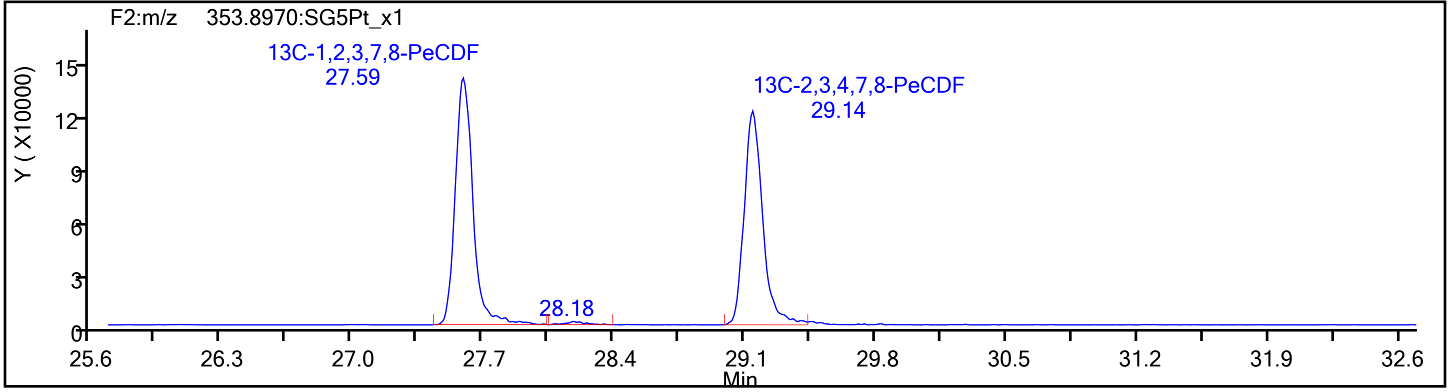

Report Date: 01-Dec-2020 13:50:29　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Injection Date: 24-Nov-2020 14:17:00　Injection Vol: 1.0 ul

Instrument ID: DFS 1　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Drum

Worklist#: 434777　Sample Line#: 36

Column Type: DB-5　Column Dia: 0.32 mm

PeCDF

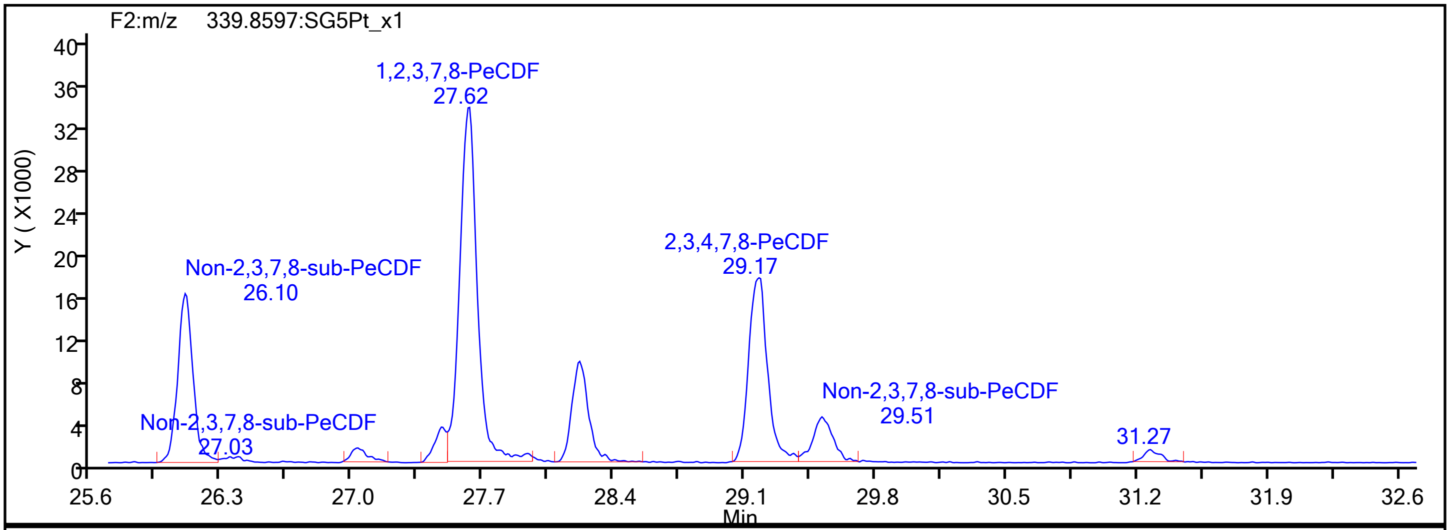

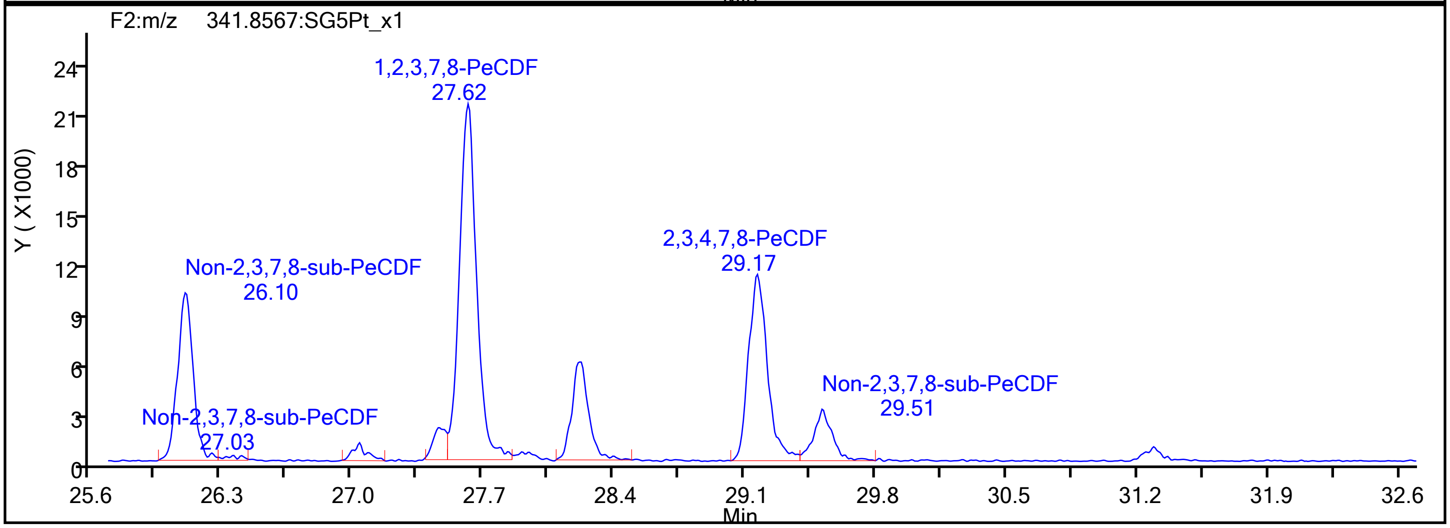

PeCDF Interference Mass

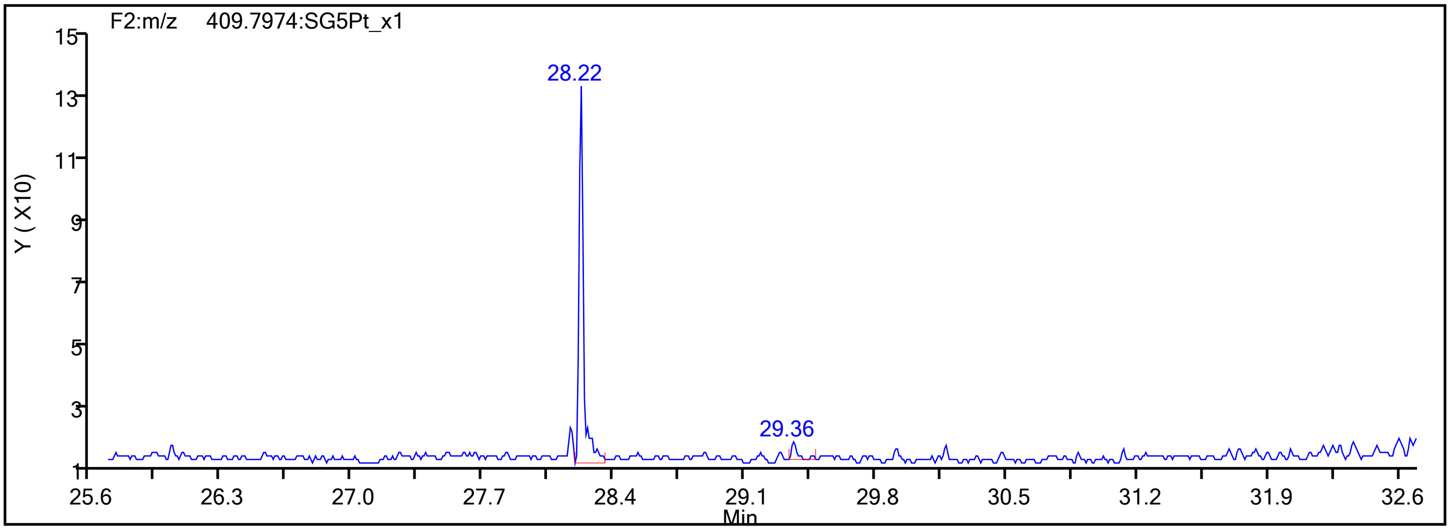

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Injection Date: 24-Nov-2020 14:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777
Sample Line#: 36
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

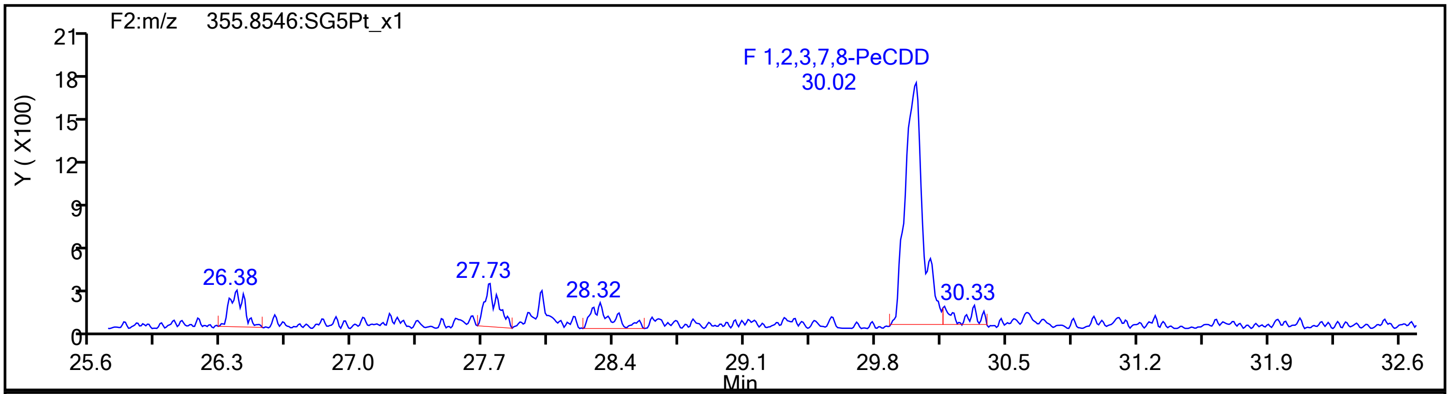

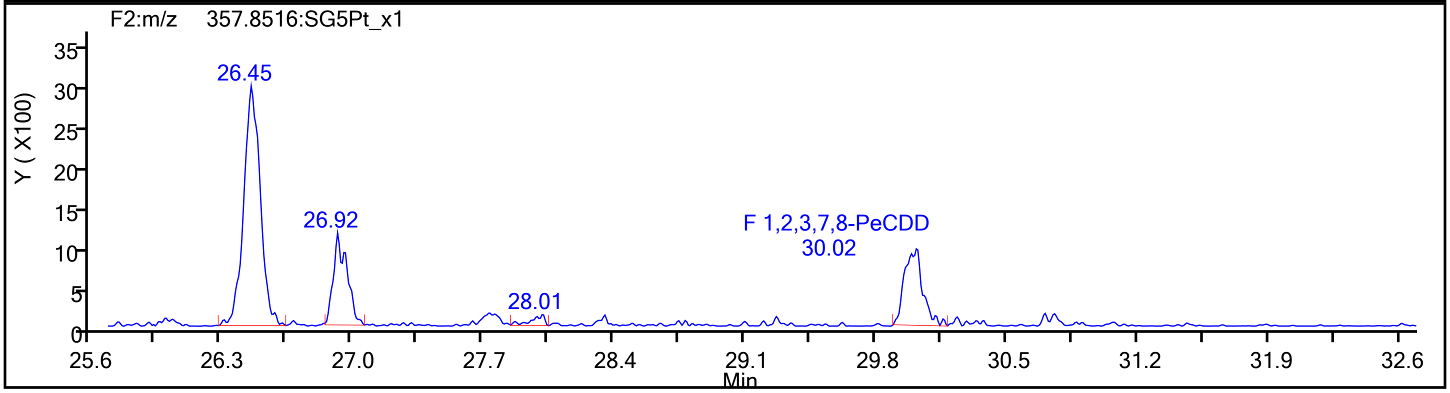

PeCDD Standards

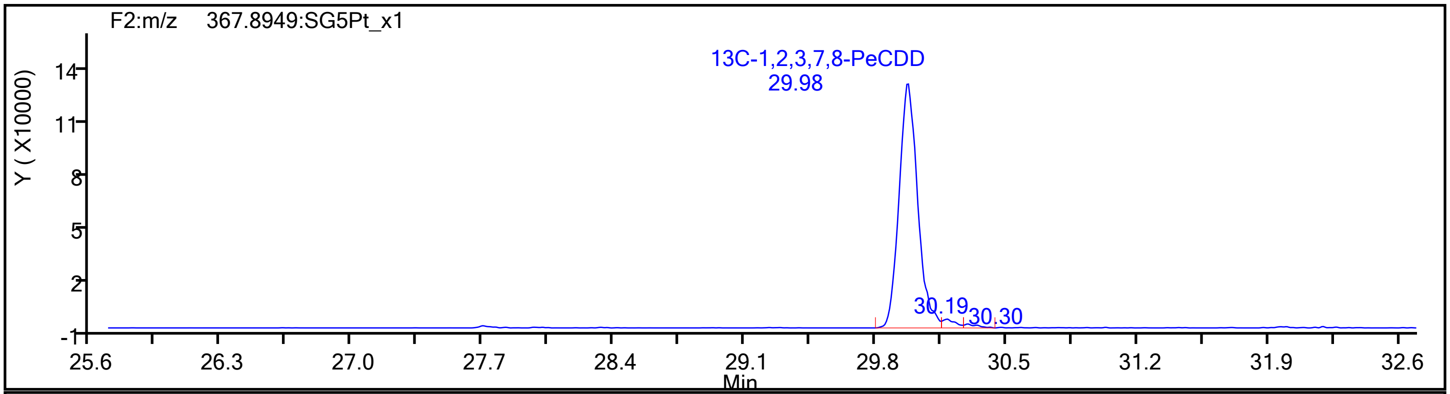

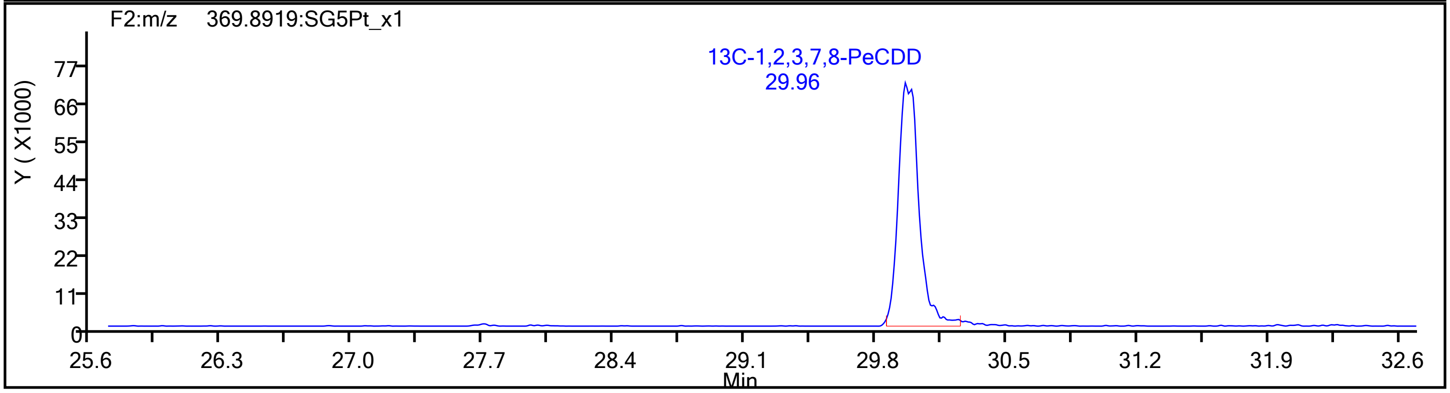

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Injection Date: 24-Nov-2020 14:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777 Sample Line#: 36
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

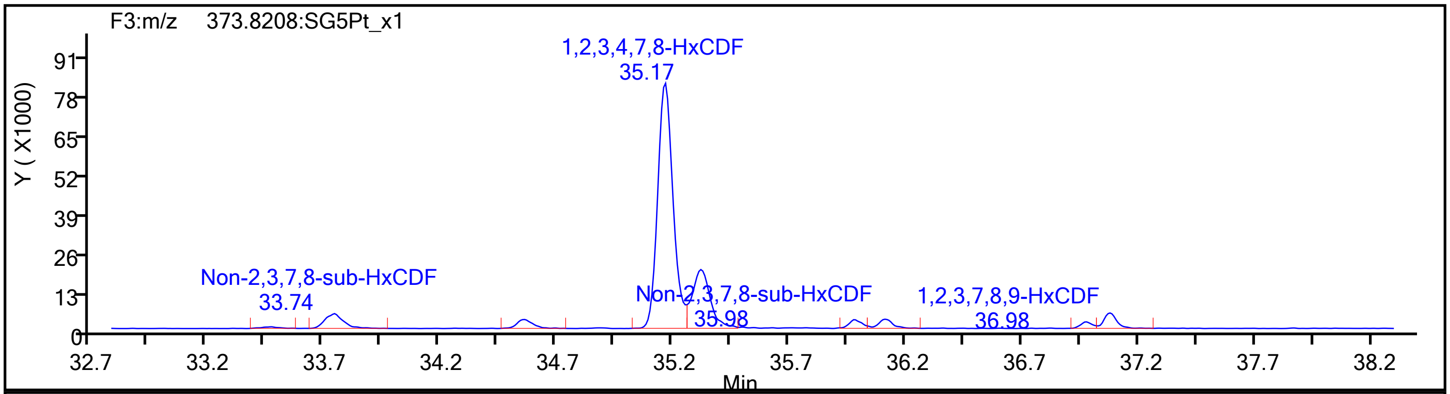

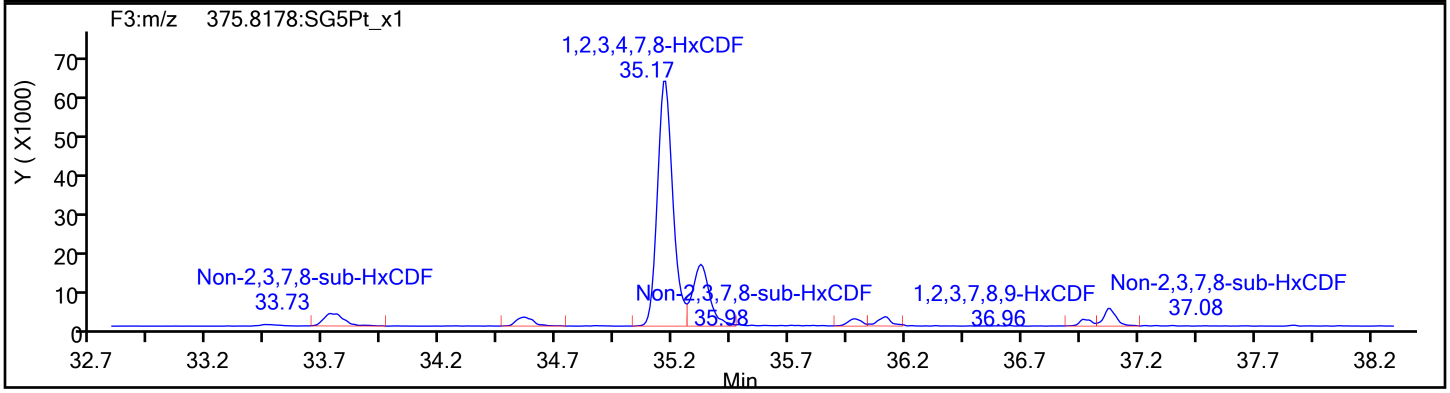

HxCDF Standards

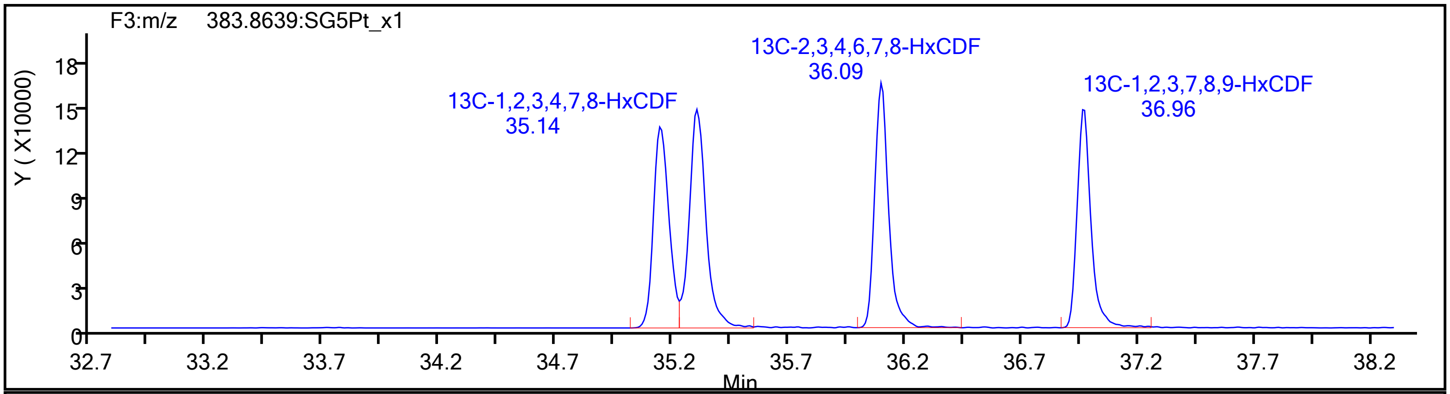

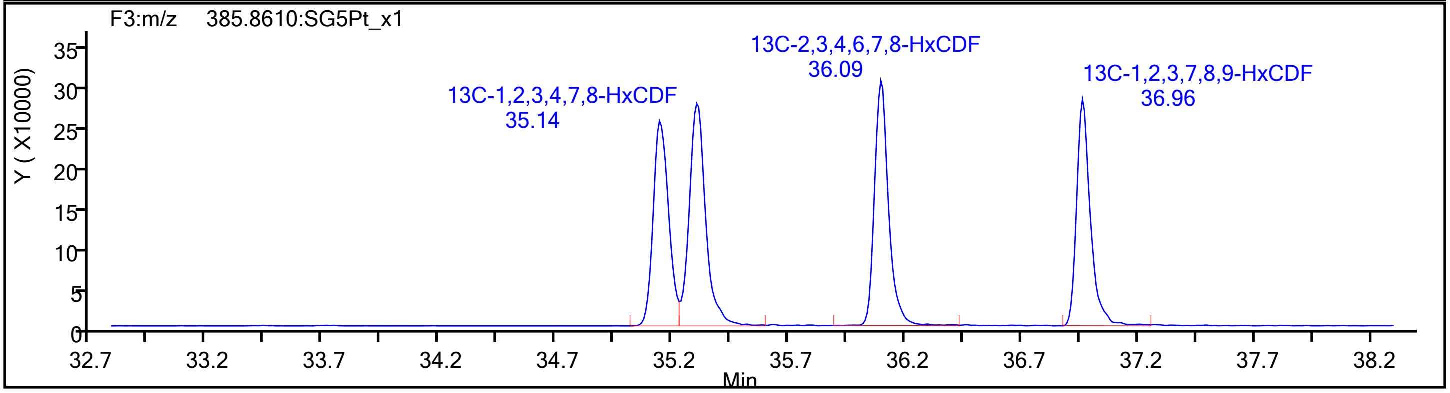

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Injection Date: 24-Nov-2020 14:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777
Sample Line#: 36
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

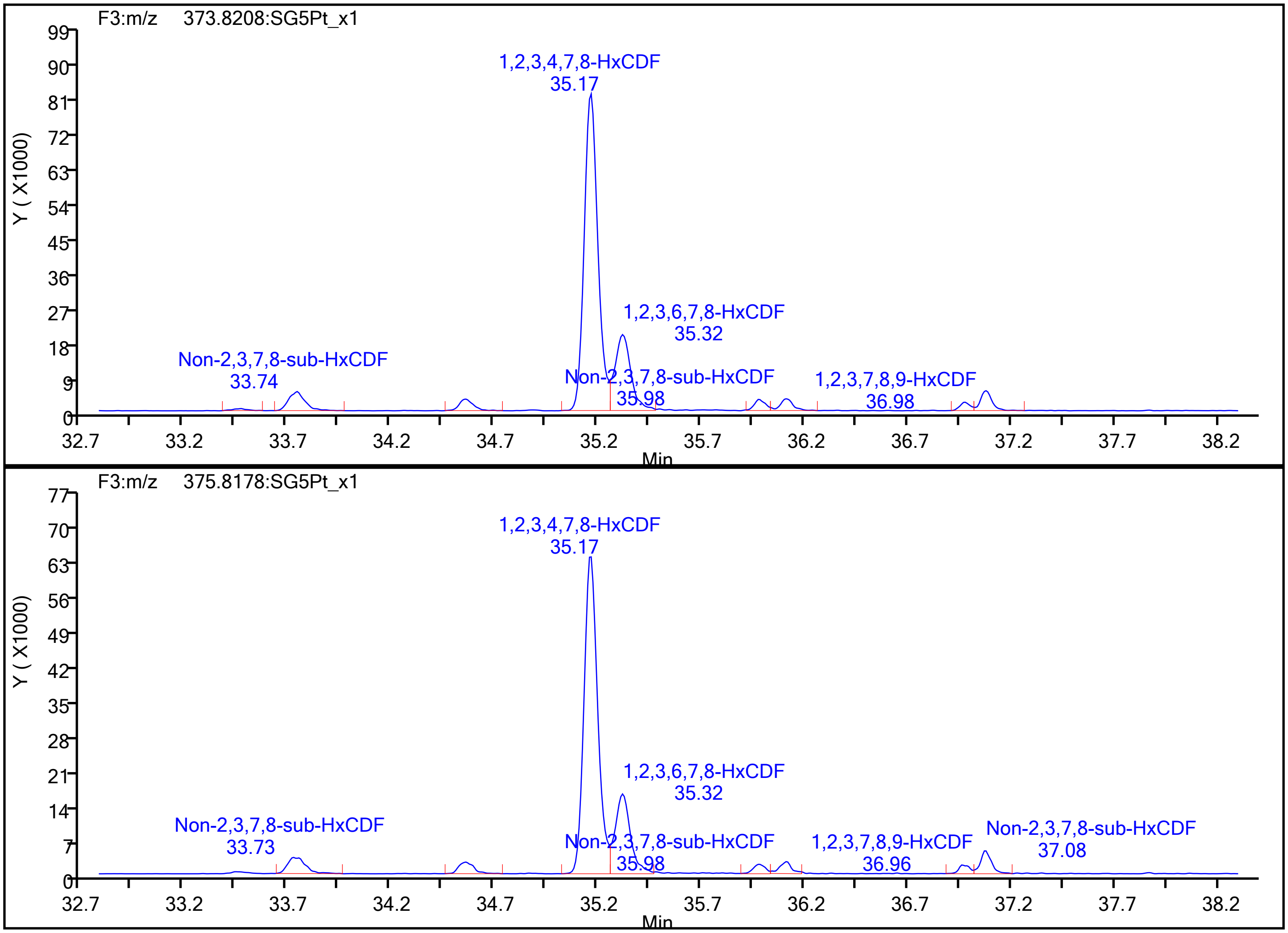

HxCDF Interference Mass

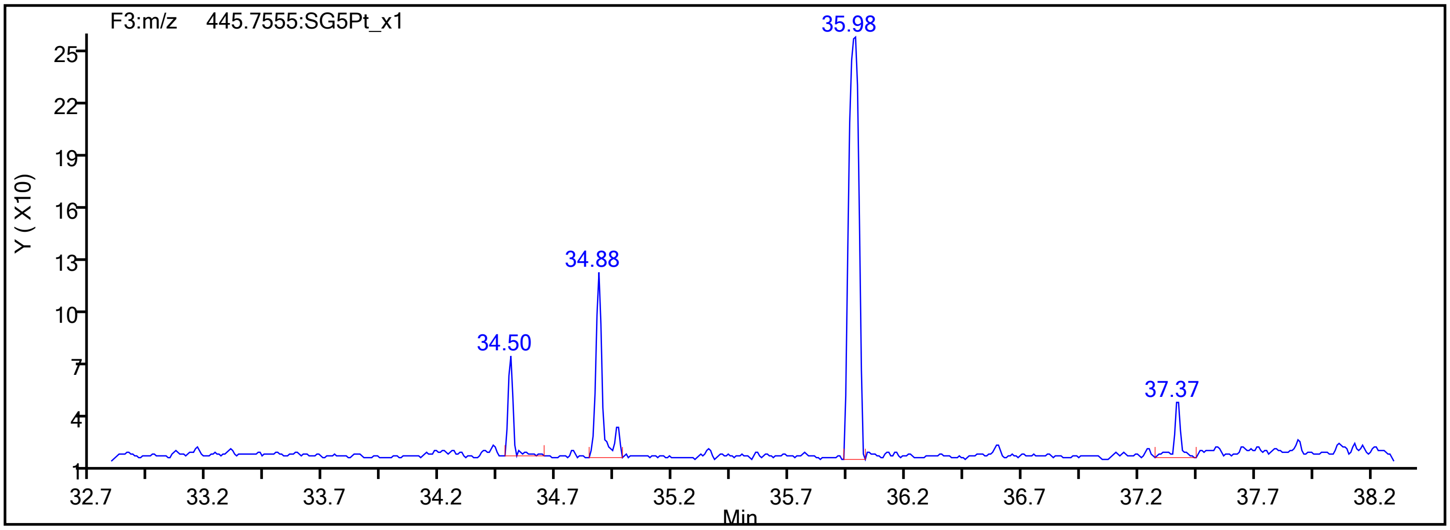

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Injection Date: 24-Nov-2020 14:17:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Drum

Worklist#: 434777

Sample Line#: 36

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

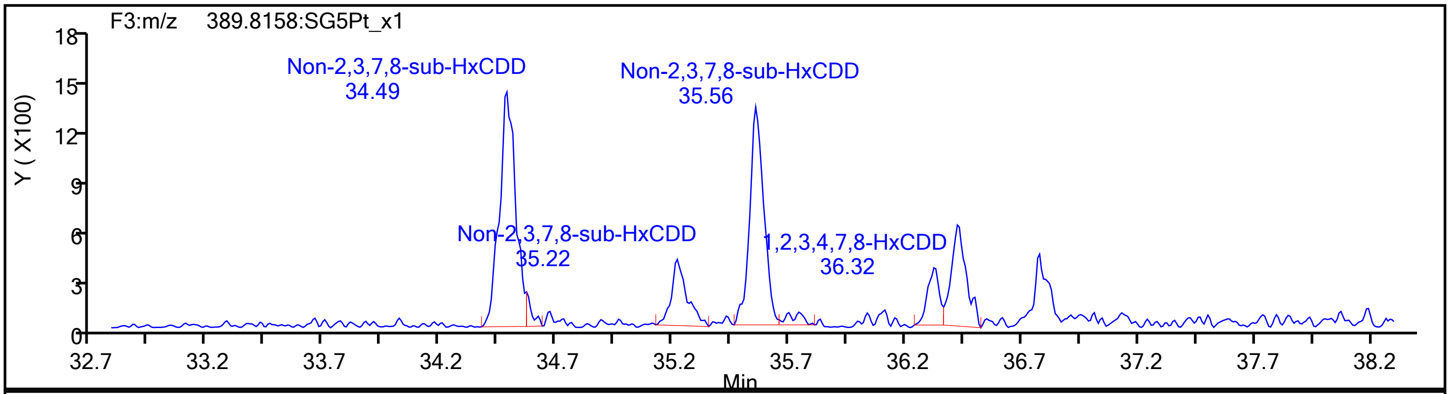

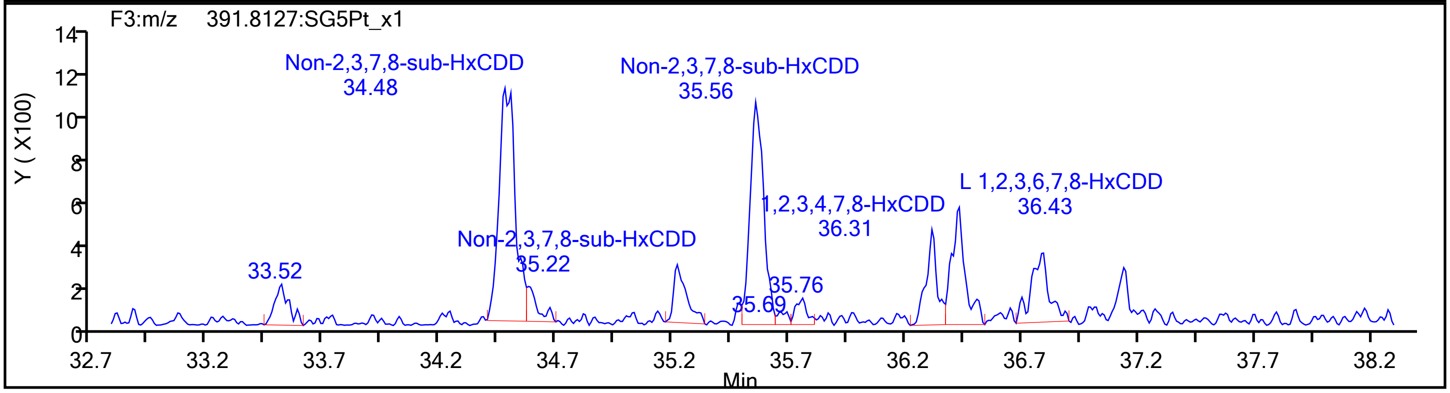

HxCDD Standards

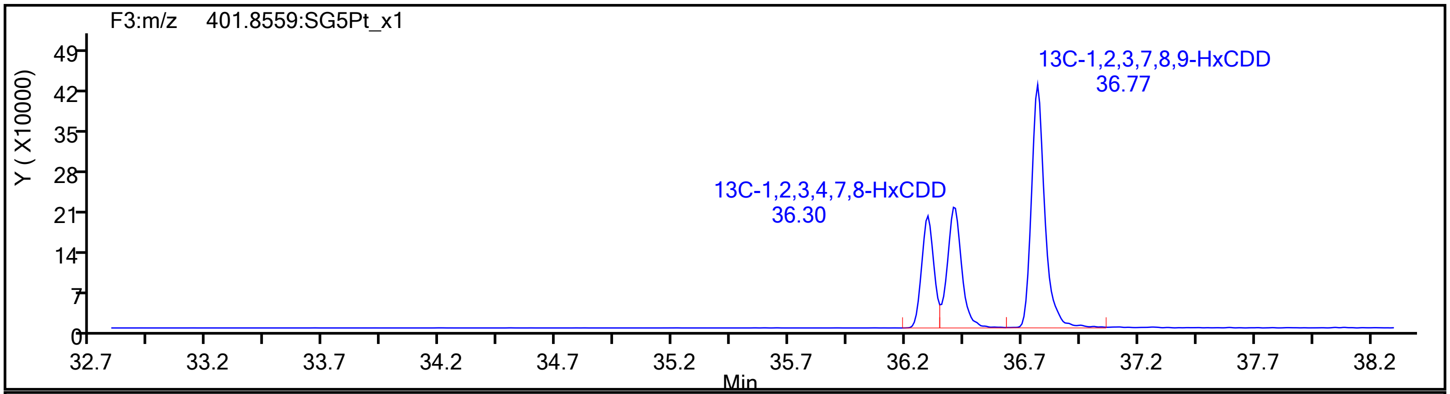

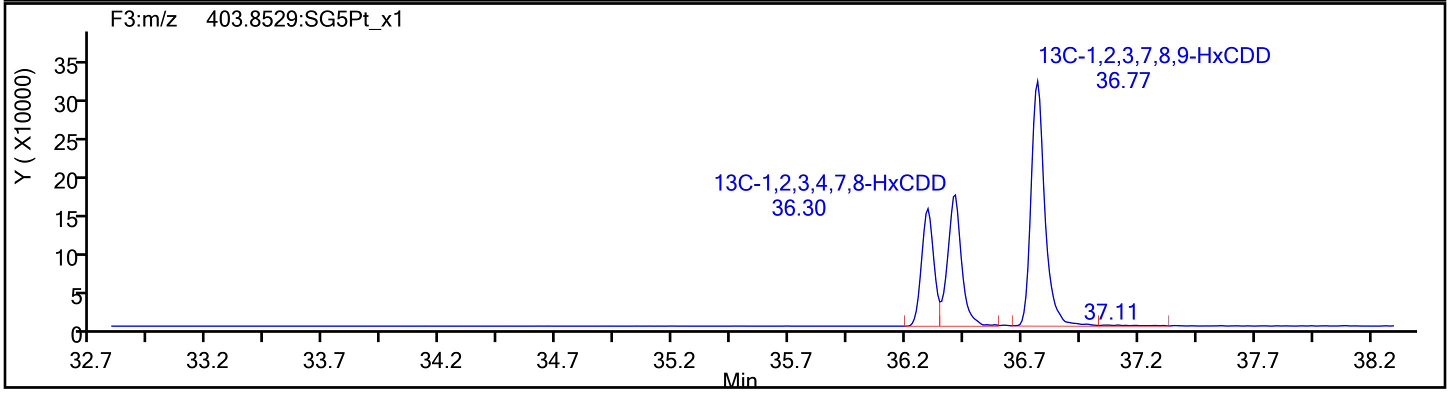

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d

Injection Date: 24-Nov-2020 14:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777
Sample Line#: 36
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

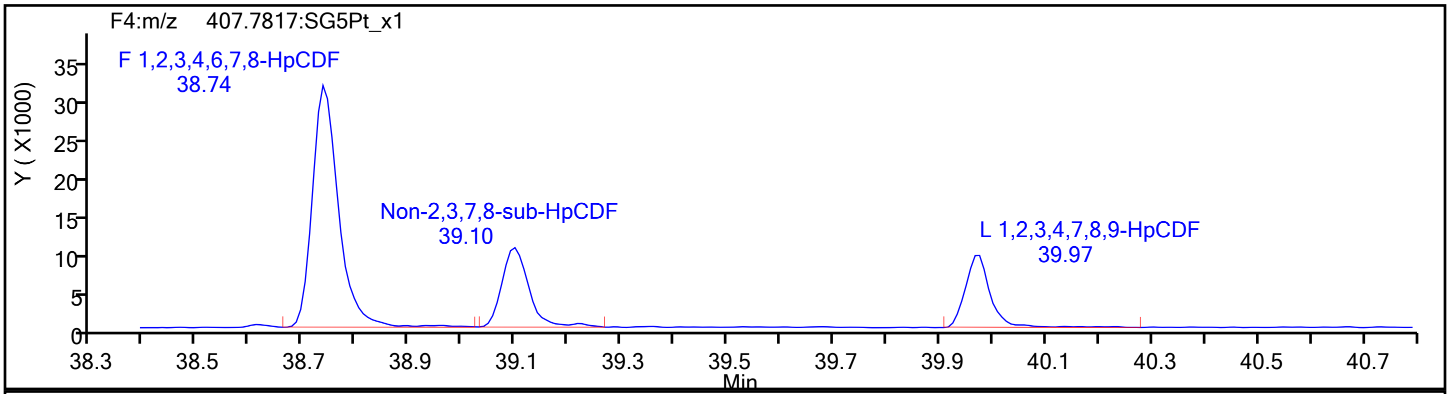

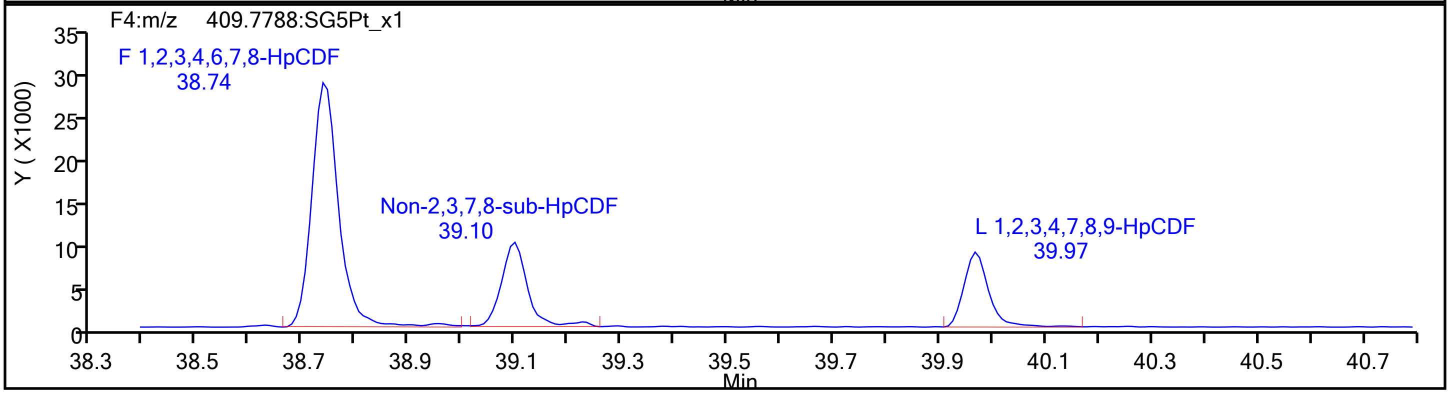

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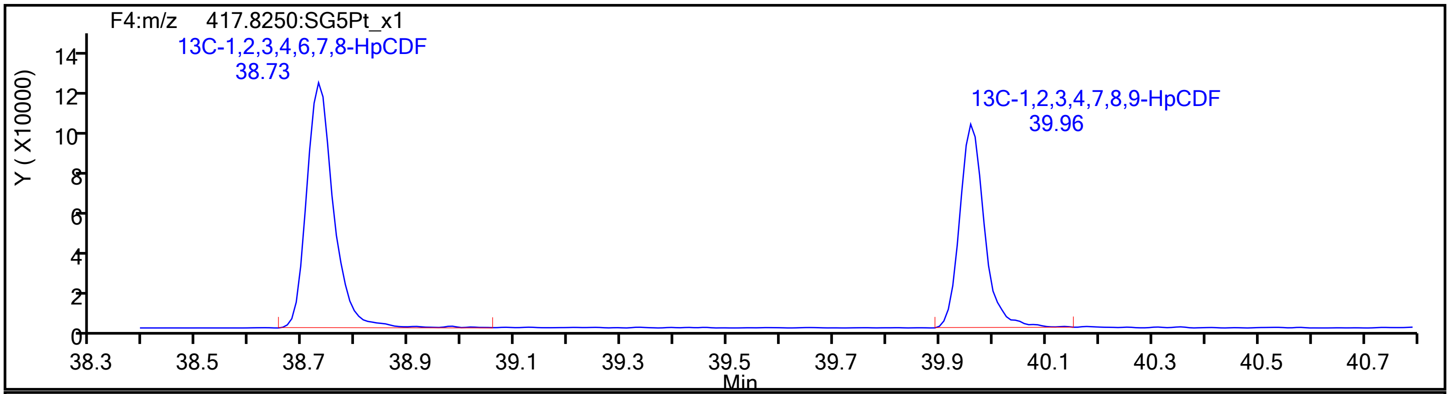

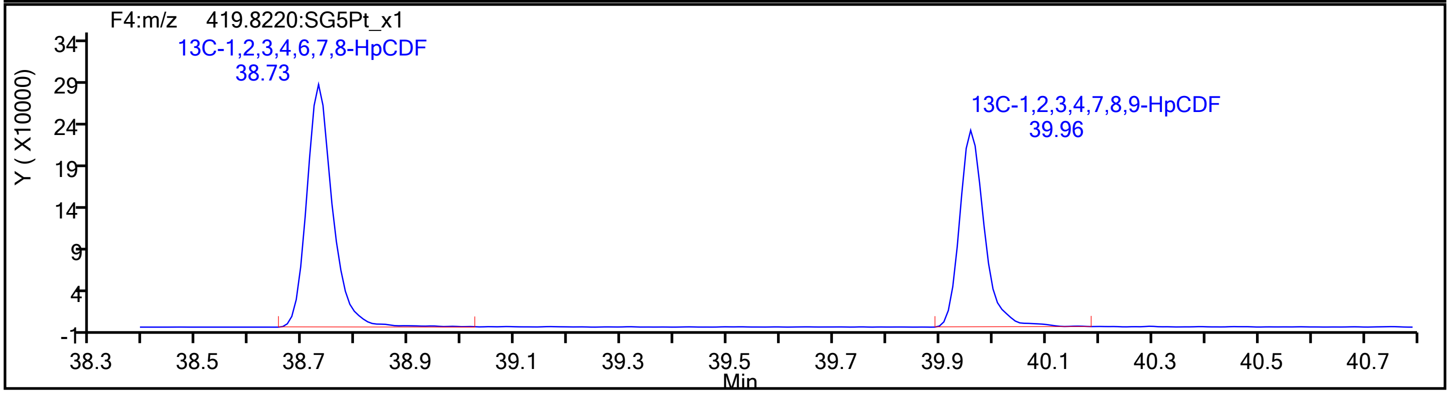

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

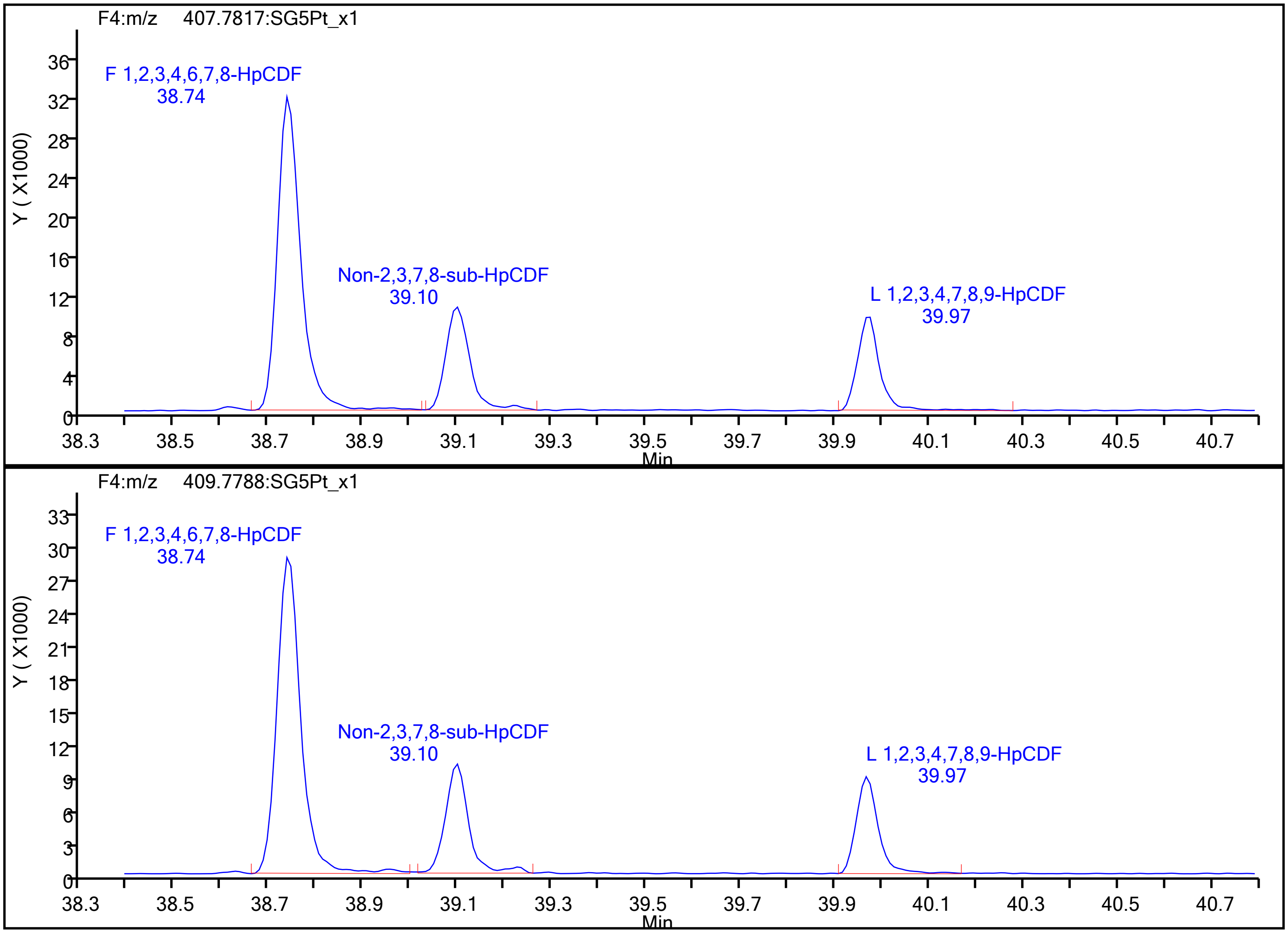

HpCDF Interference Mass

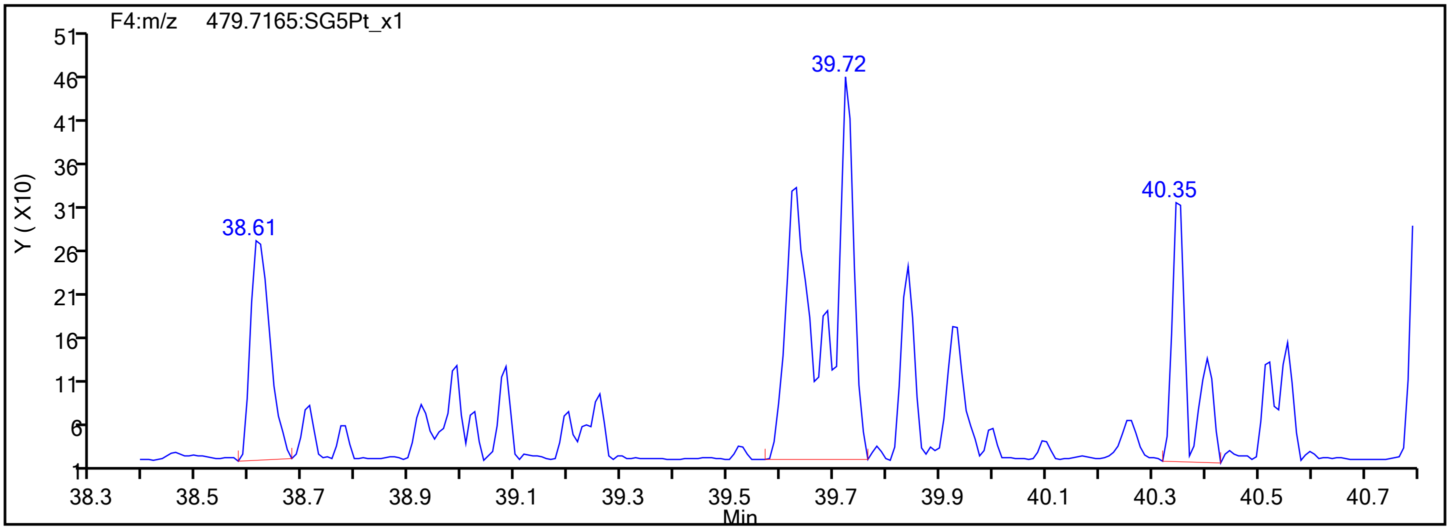

Report Date: 01-Dec-2020 13:50:29 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

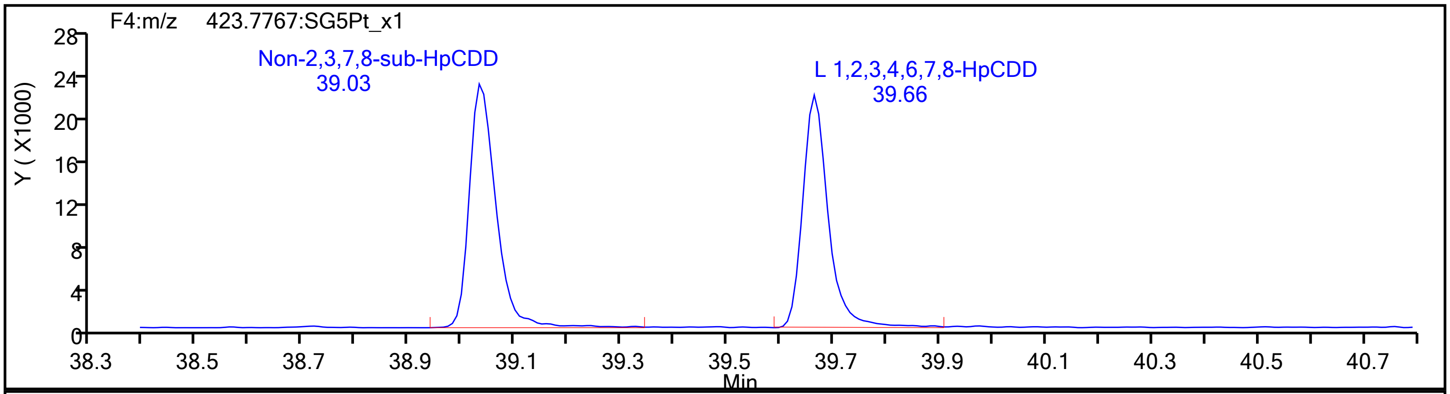

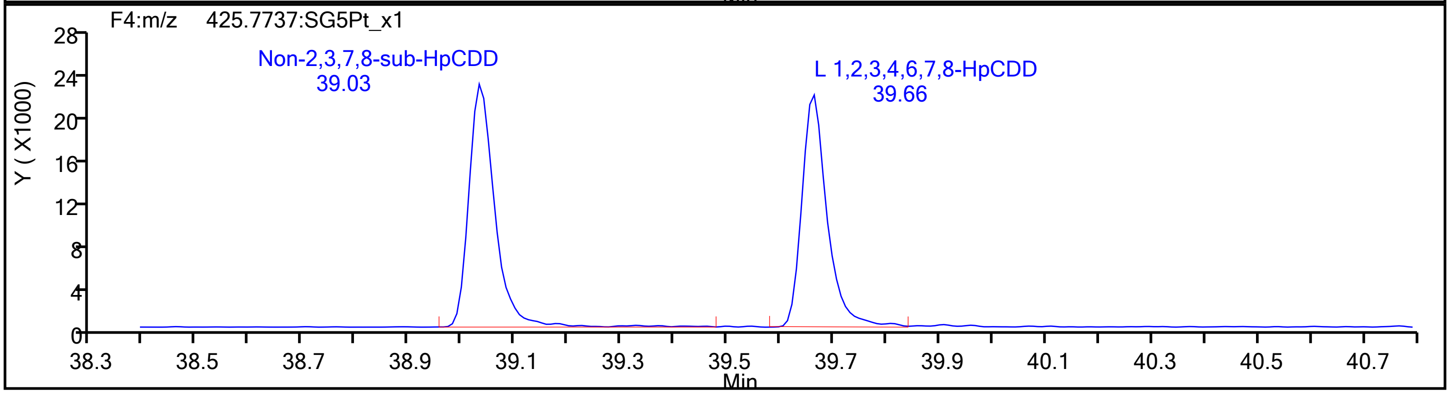

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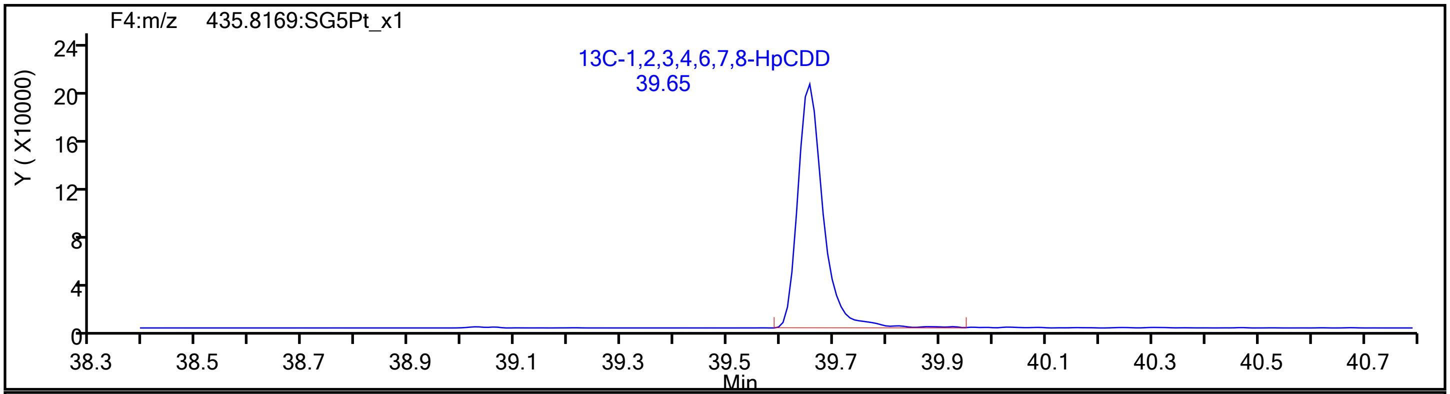

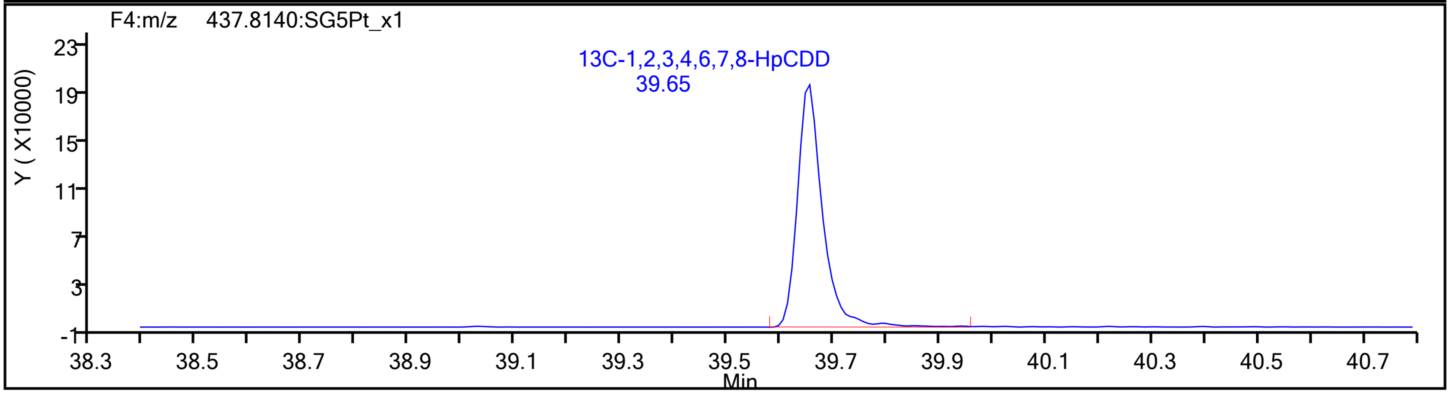

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d		
Injection Date:	24-Nov-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

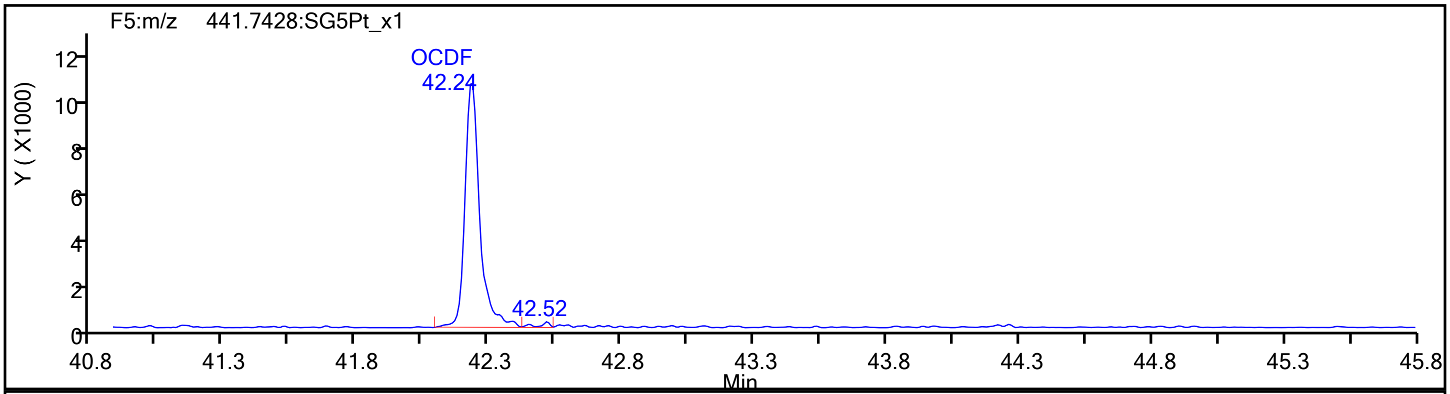

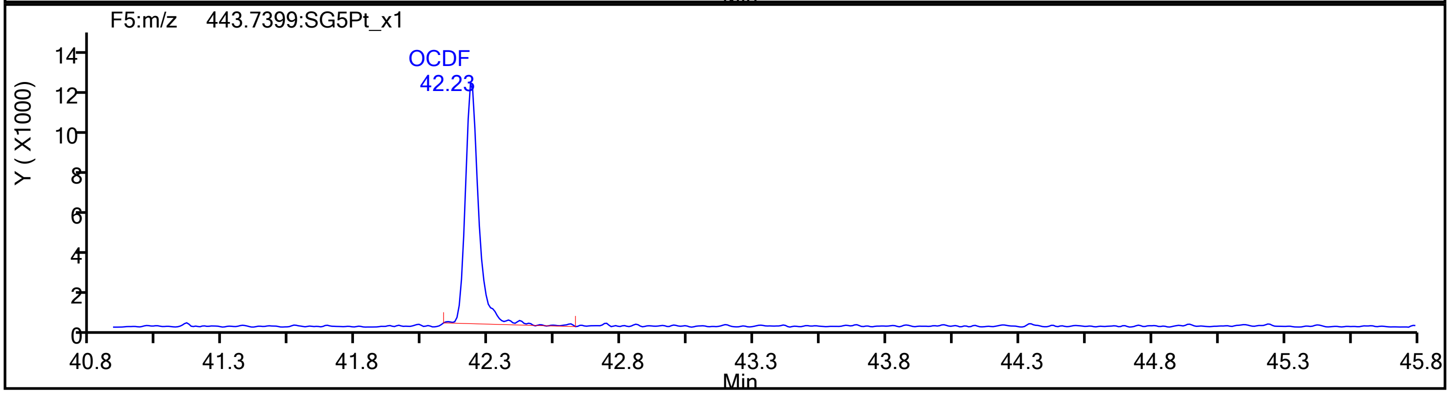

OCDF Standards

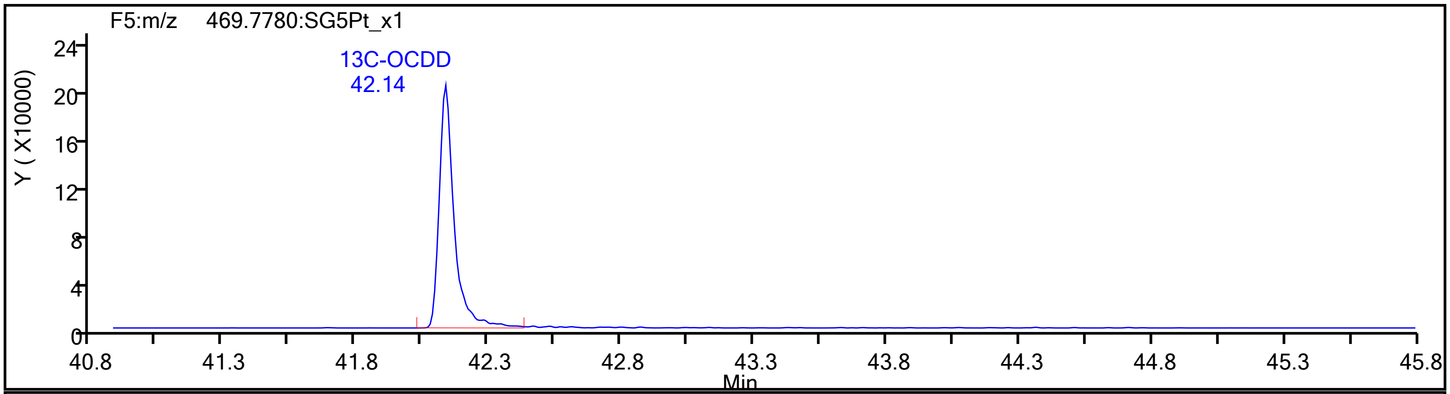

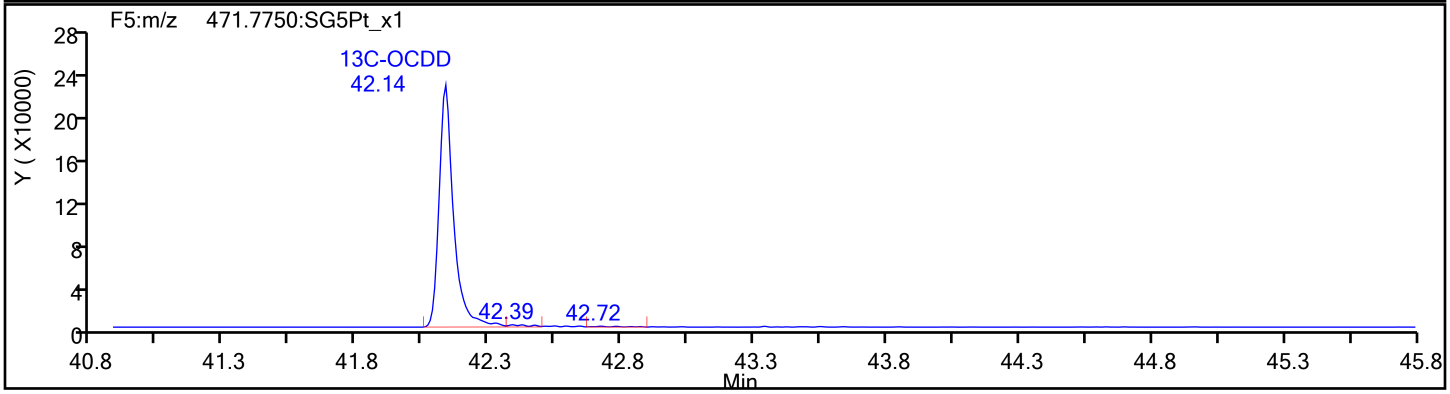

Report Date: 01-Dec-2020 13:50:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

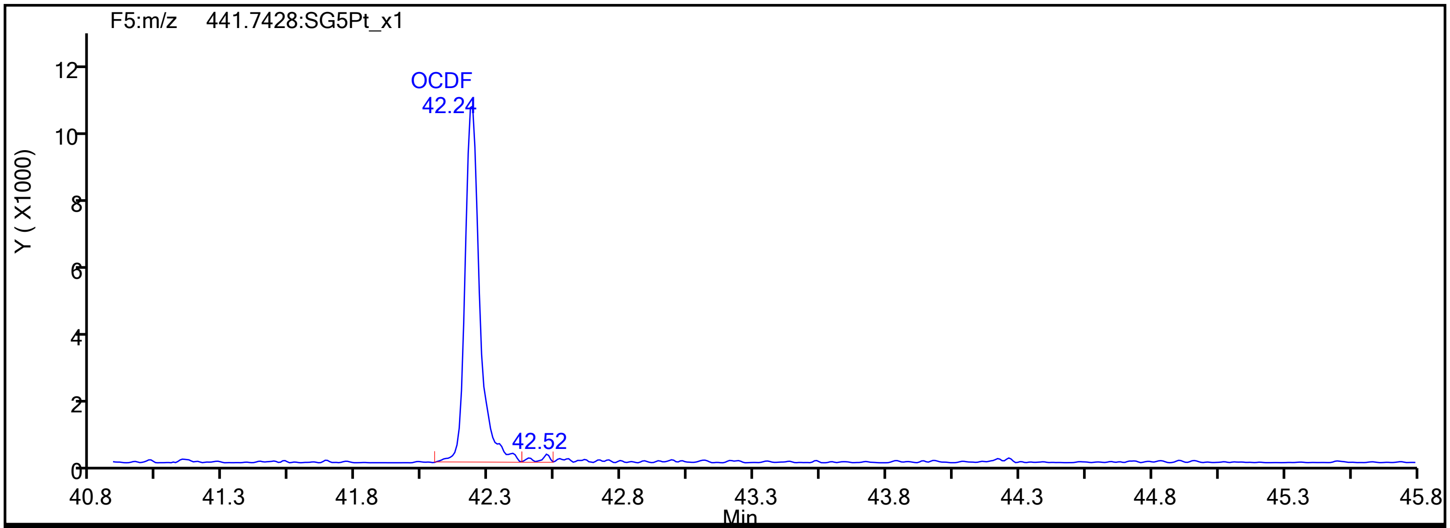

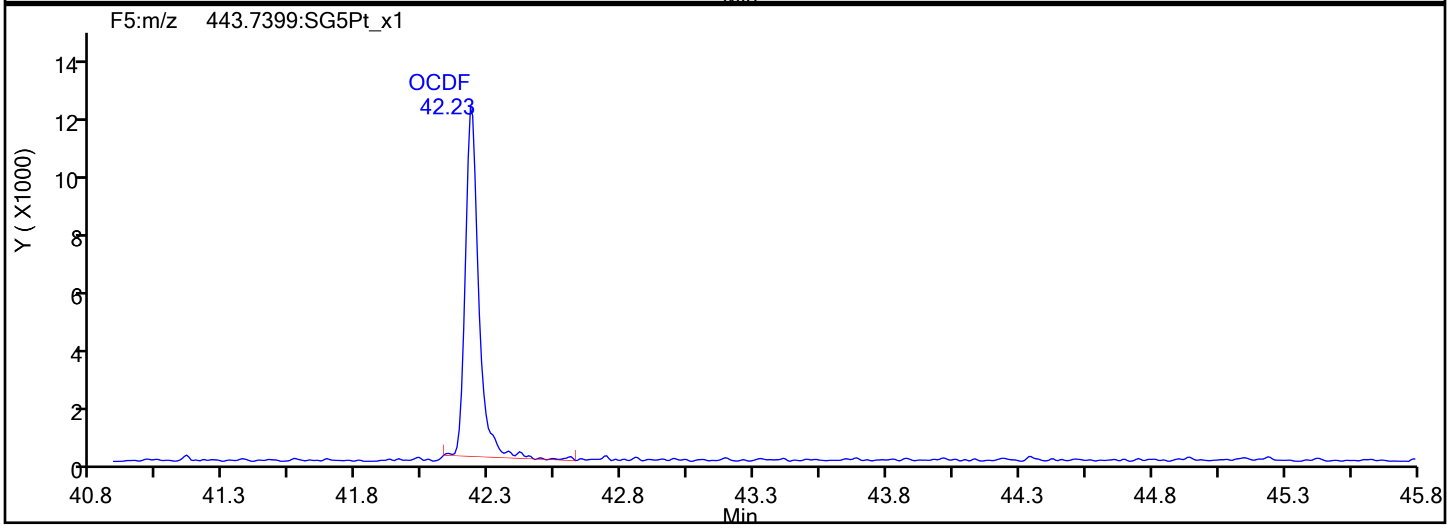

OCDF Interference Mass

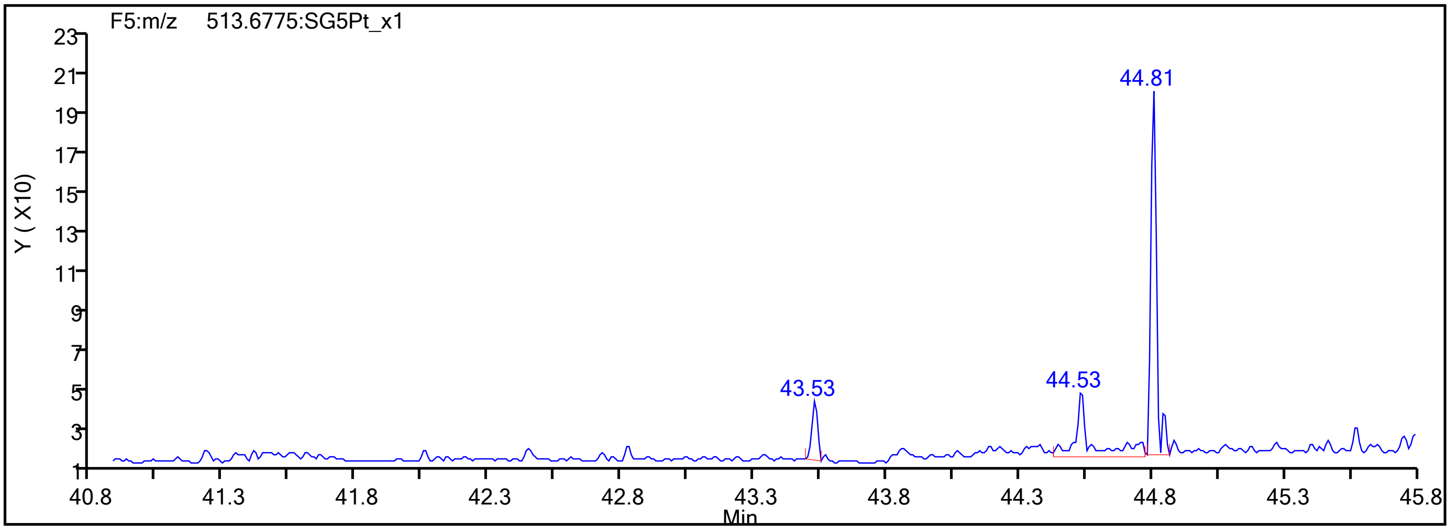

Report Date: 01-Dec-2020 13:50:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	434777	Sample Line#:	36
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

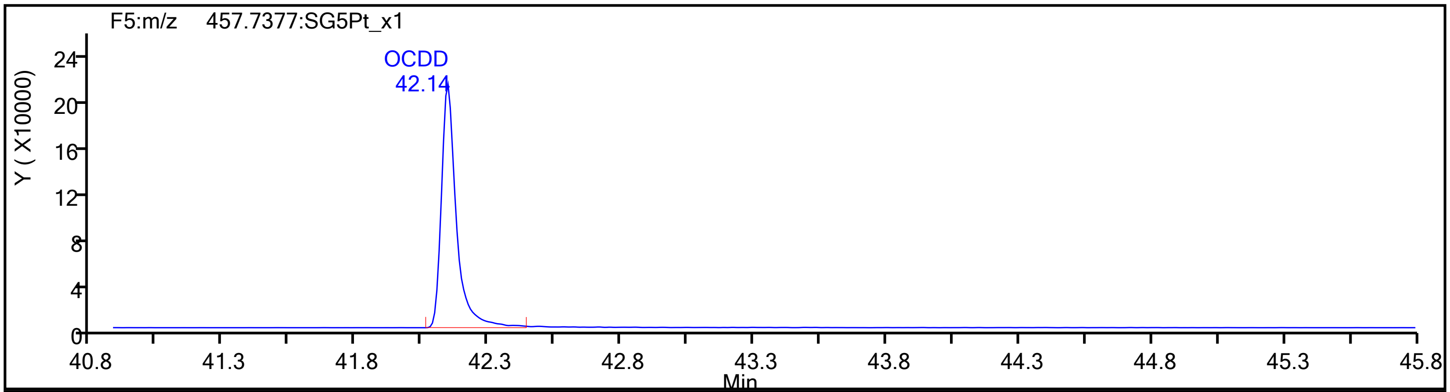

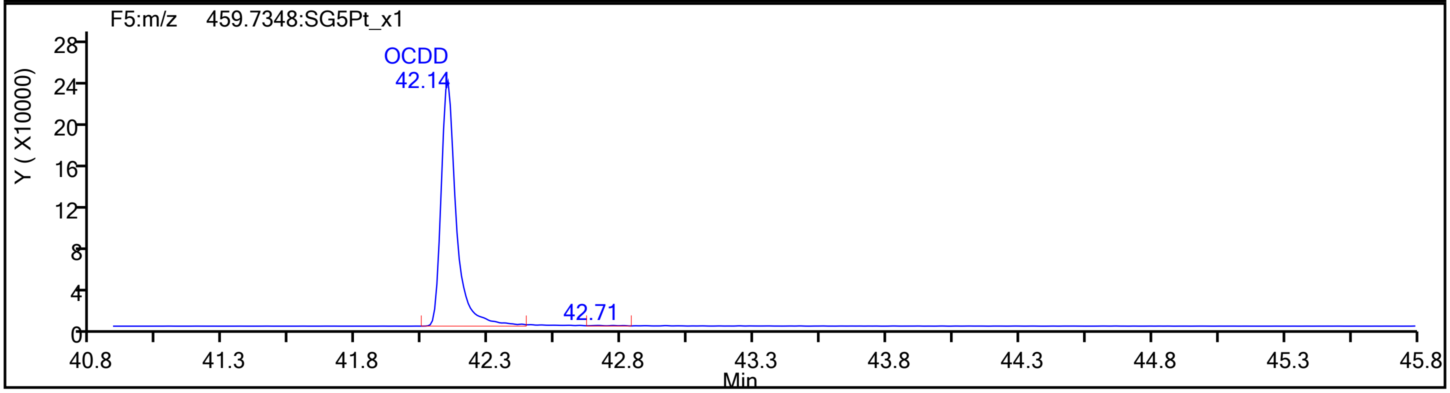

OCDD Standards

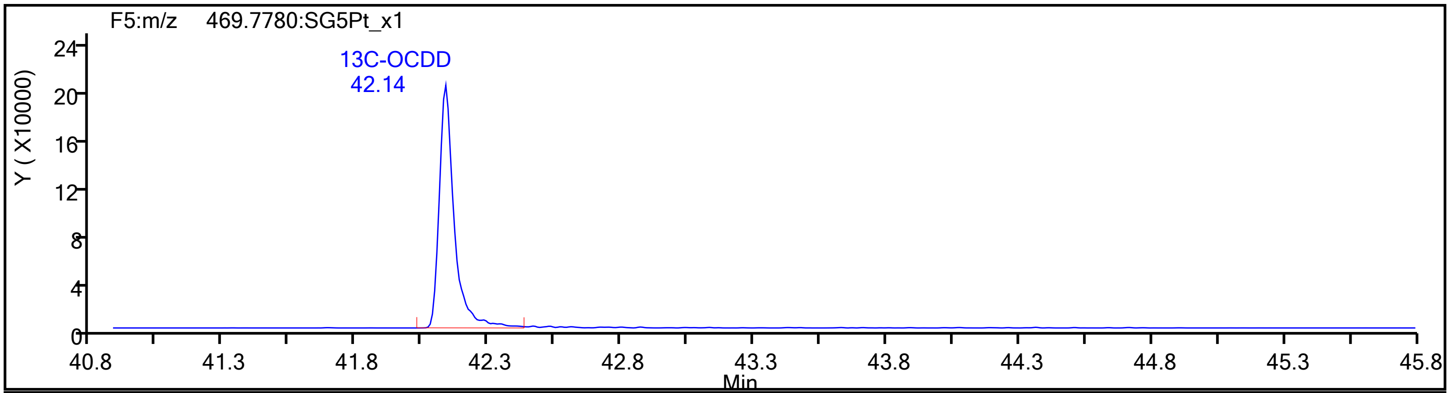

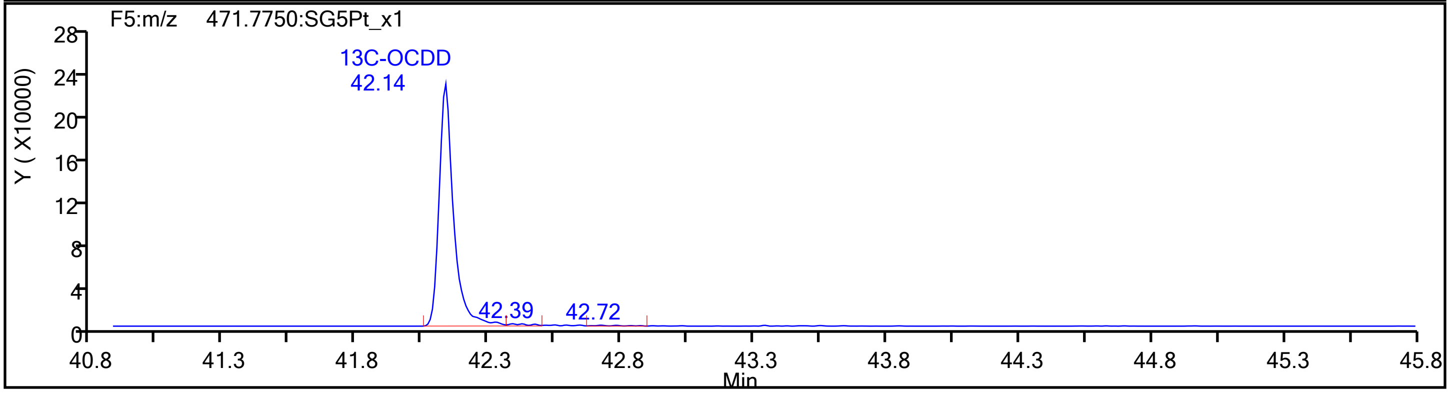

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 14:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777
Sample Line#: 36
Column Type: DB-5
Column Dia: 0.32 mm

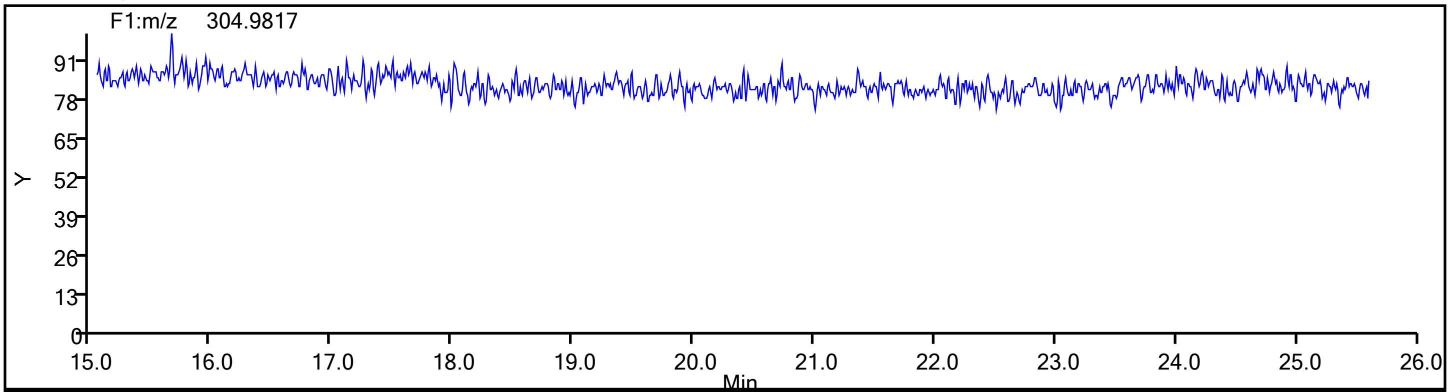

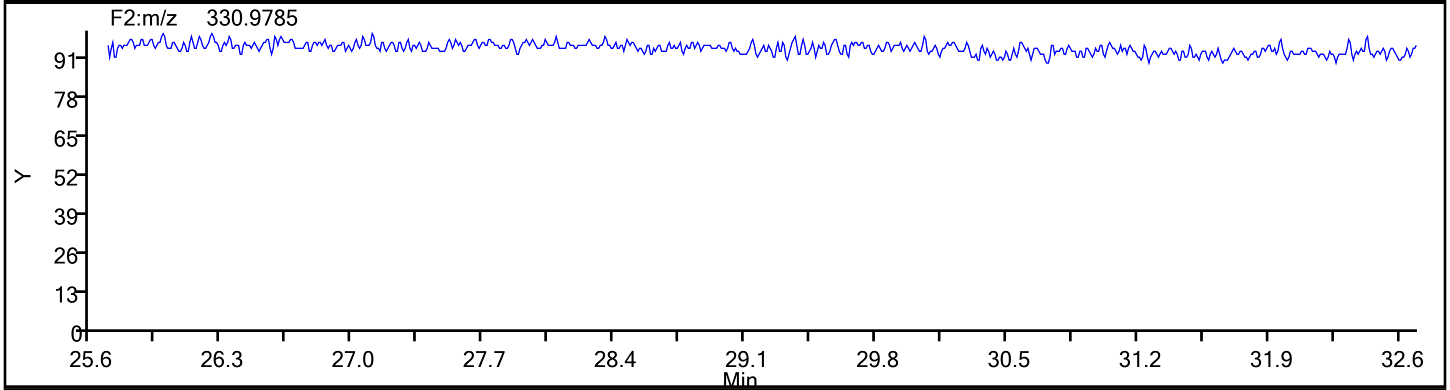

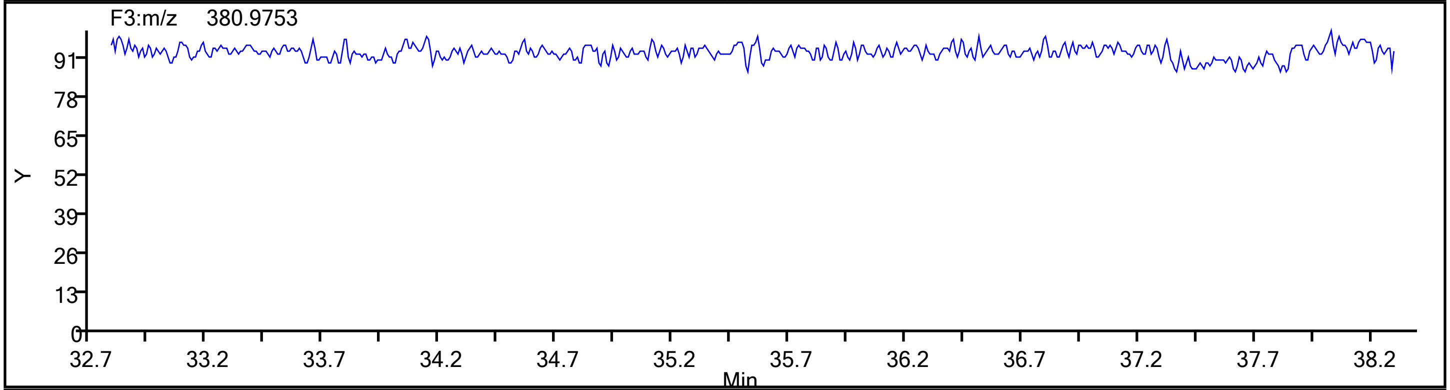

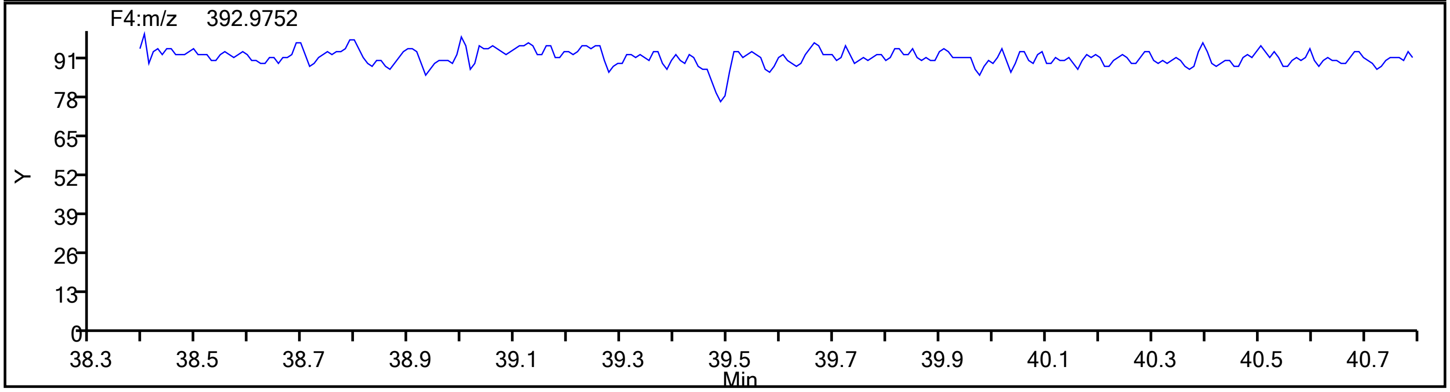

Report Date: 01-Dec-2020 13:50:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_41.d
Injection Date: 24-Nov-2020 14:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 434777 Sample Line#: 36
Column Type: DB-5 Column Dia: 0.32 mm

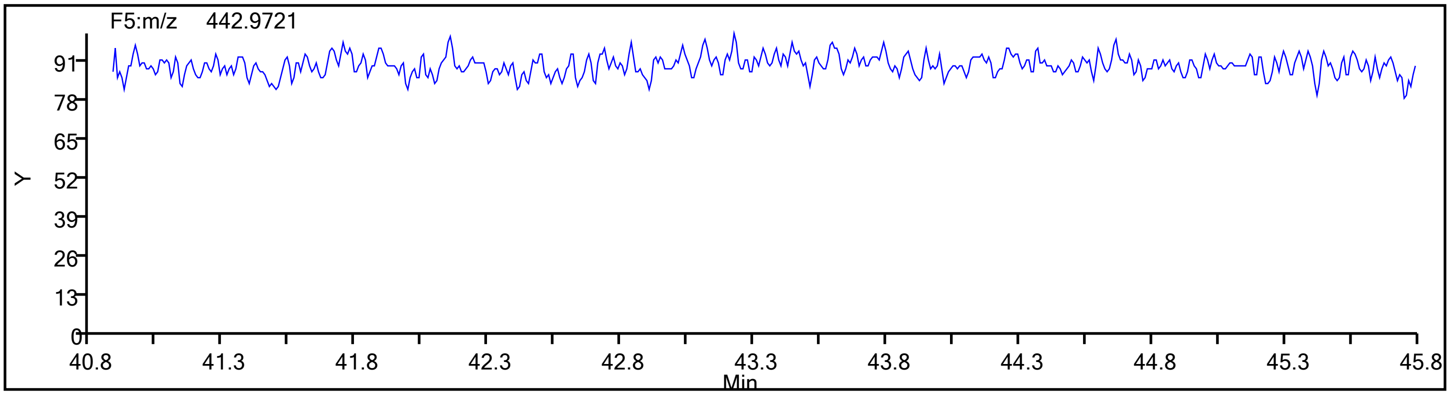

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-66850-2

SDG No.:

Client Sample ID: 11215702-Tank #1 Drum RA

Lab Sample ID: 320-66850-3 RA

Matrix: Water

Lab File ID: 30NO2011D2_013.d

Analysis Method: 1613B

Date Collected: 11/09/2020 12:00

Extract. Method: 1613B

Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1053(mL)

Date Analyzed: 11/30/2020 20:07

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 436991

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	4800	E B	9.5	6.0

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	56		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_013.d				
Lims ID:	320-66850-A-3-B				
Client ID:	11215702-Tank #1 Drum				
Sample Type:	Client				
Inject. Date:	30-Nov-2020 20:07:57	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-66850-A-3-B				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:38	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.559	214672548	0.77	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.766	189273550	0.77	1.5708	56.1	56.1	0.4878	0.4878	56.13	
2,3,7,8-TCDF	16.780	478263521	0.76	0.9943	254.1	254.1	0.3161	0.3161		E
D 13C-2,3,7,8-TCDD	15.325	116297418	0.78	0.9834	55.1	55.1	3.926	3.926	55.09	
$ 37Cl4-2,3,7,8-TCDD	15.339	85112153		0.9945	39.9	39.9	0.1449	0.1449	99.67	
2,3,7,8-TCDD	15.339	145103162	0.77	1.2822	97.3	97.3	0.5227	0.5227		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Report Date: 01-Dec-2020 08:43:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_013.d				
Lims ID:	320-66850-A-3-B				
Client ID:	11215702-Tank #1 Drum				
Sample Type:	Client				
Inject. Date:	30-Nov-2020 20:07:57	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-66850-A-3-B				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:38	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.559	15.560	0		93108810	21781338	335114	837785	65		
333.9339	15.559	15.560	0		121563738	27800881	430520	1076300	65	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.766	16.779	-1	1.078	82501171	16551495	70746	176865	234		
317.9389	16.766	16.779	-1	1.078	106772379	19875433	81233	203082	245	0.77(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	16.780	16.792	-1	1.001	206452852	42092324	20723	51807	2031		
305.8987	16.780	16.792	-1	1.001	271810669	55292402	25065	62662	2206	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.325	15.324	0	0.985	50994815	12063383	335114	837785	36		
333.9339	15.312	15.324	-1	0.984	65302603	15511492	430520	1076300	36	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.339	15.340	0	0.986	85112153	20164692	28579	71447	706		
2,3,7,8-TCDD											
319.8965	15.339	15.352	-1	1.001	63303343	14871345	42238	105595	352		
321.8936	15.339	15.352	-1	1.001	81799819	19458638	31682	79205	614	0.77(0.65-0.89)	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Report Date: 01-Dec-2020 08:43:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_013.d
Injection Date: 30-Nov-2020 20:07:57 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Drum
Worklist#: 436991 Sample Line#: 13
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

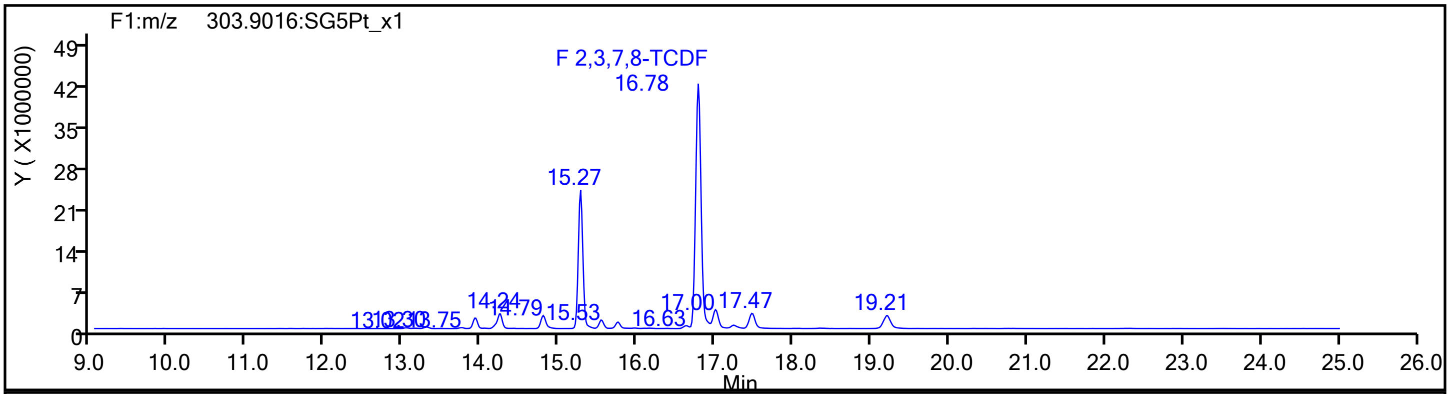

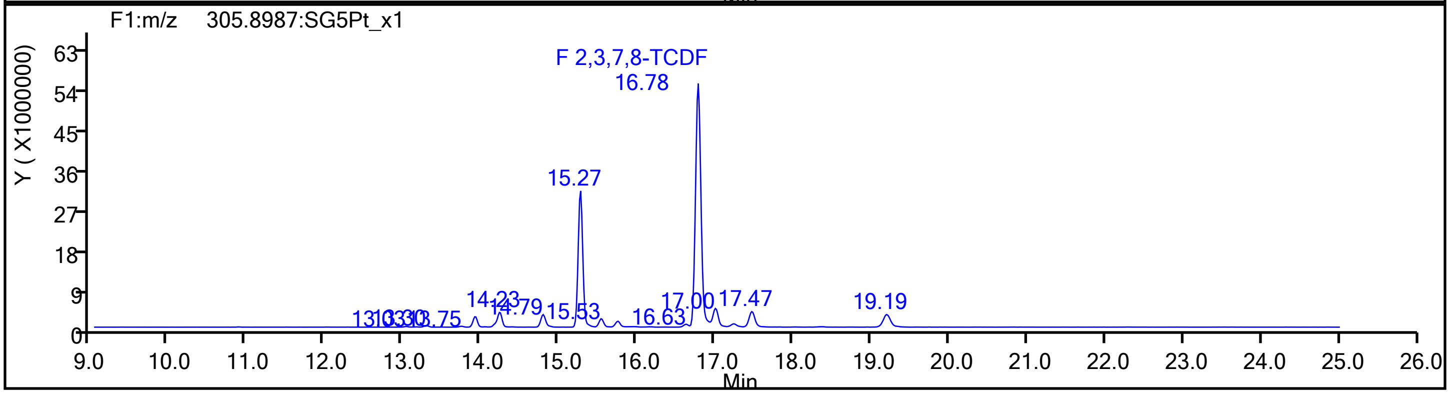

TCDF Standards

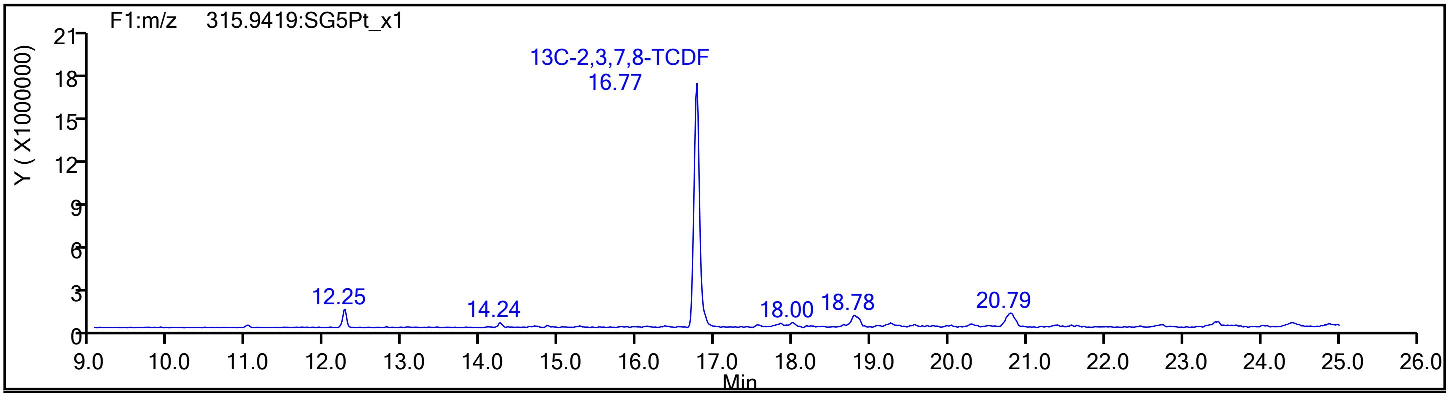

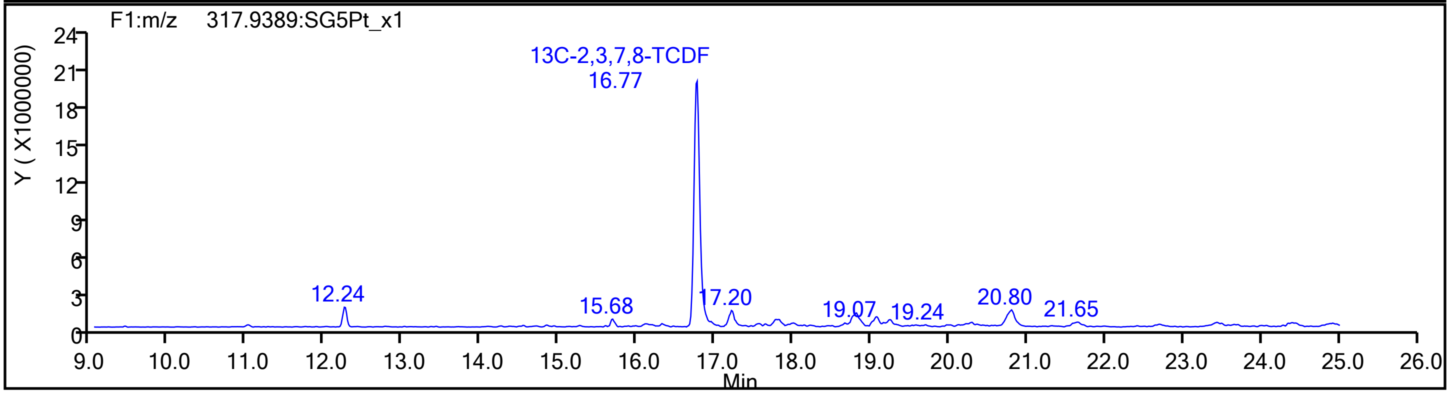

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_013.d		
Injection Date:	30-Nov-2020 20:07:57	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	436991	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

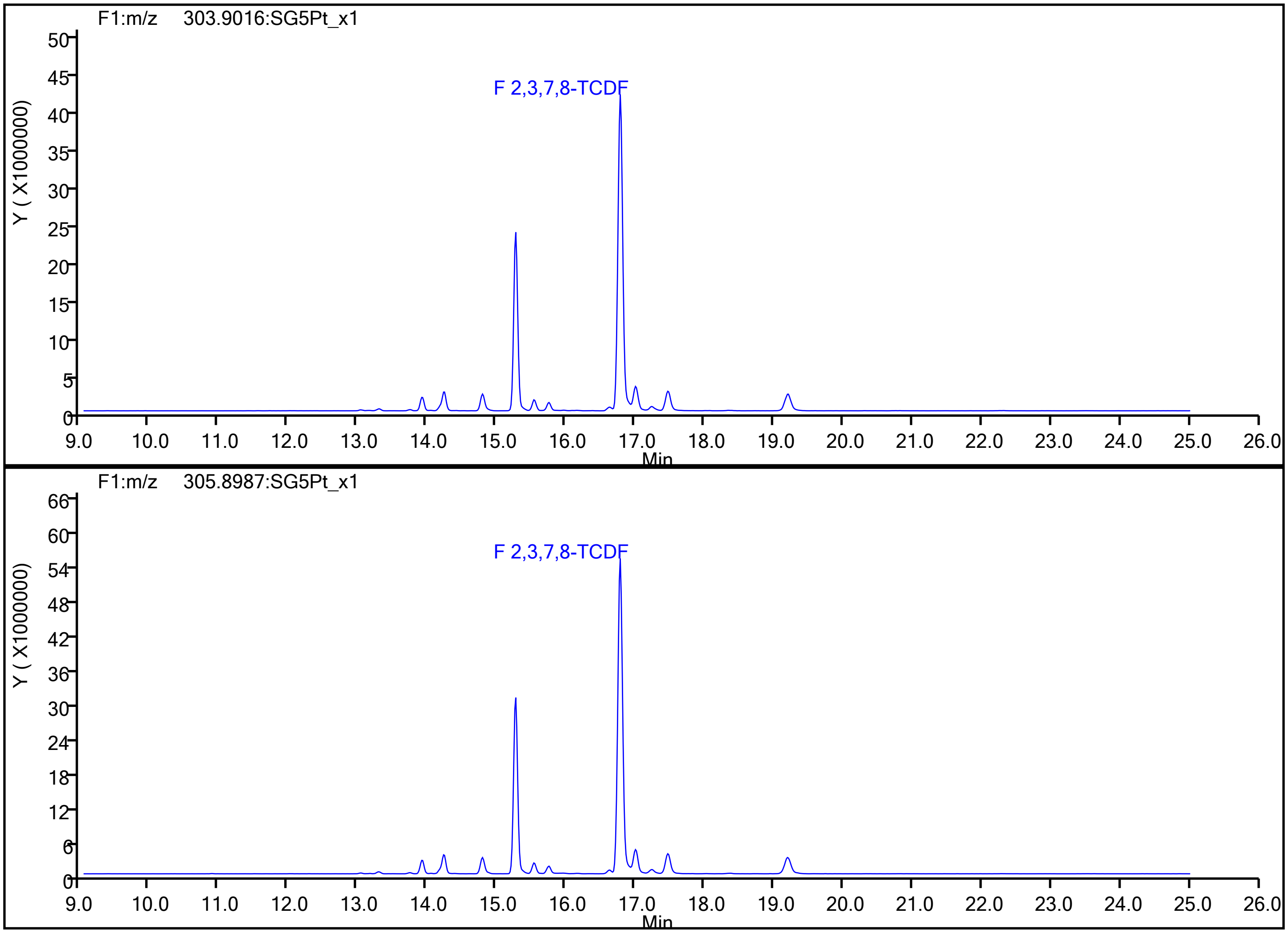

TCDF Interference Mass

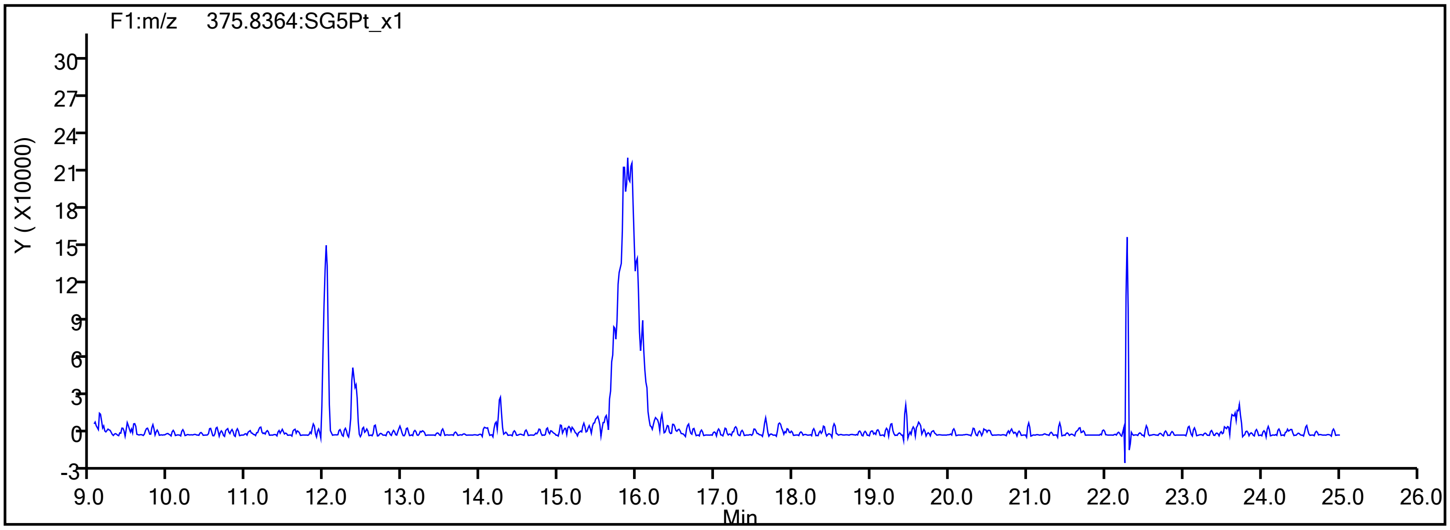

Report Date: 01-Dec-2020 08:43:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_013.d		
Injection Date:	30-Nov-2020 20:07:57	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	436991	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

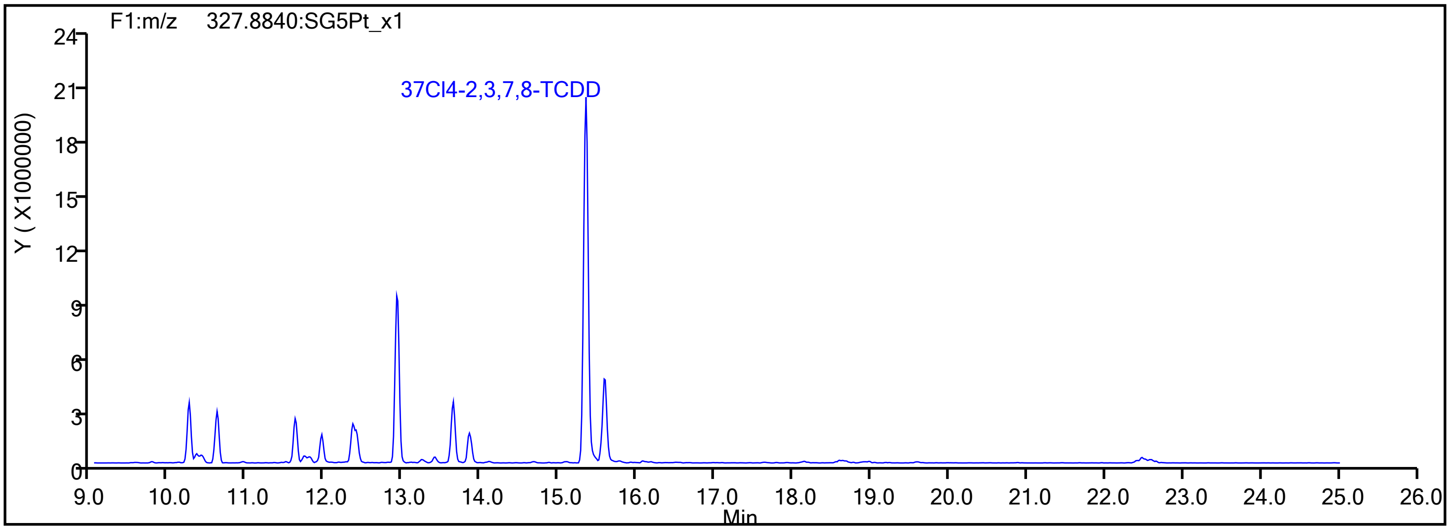

37Cl4-TCDD Standards

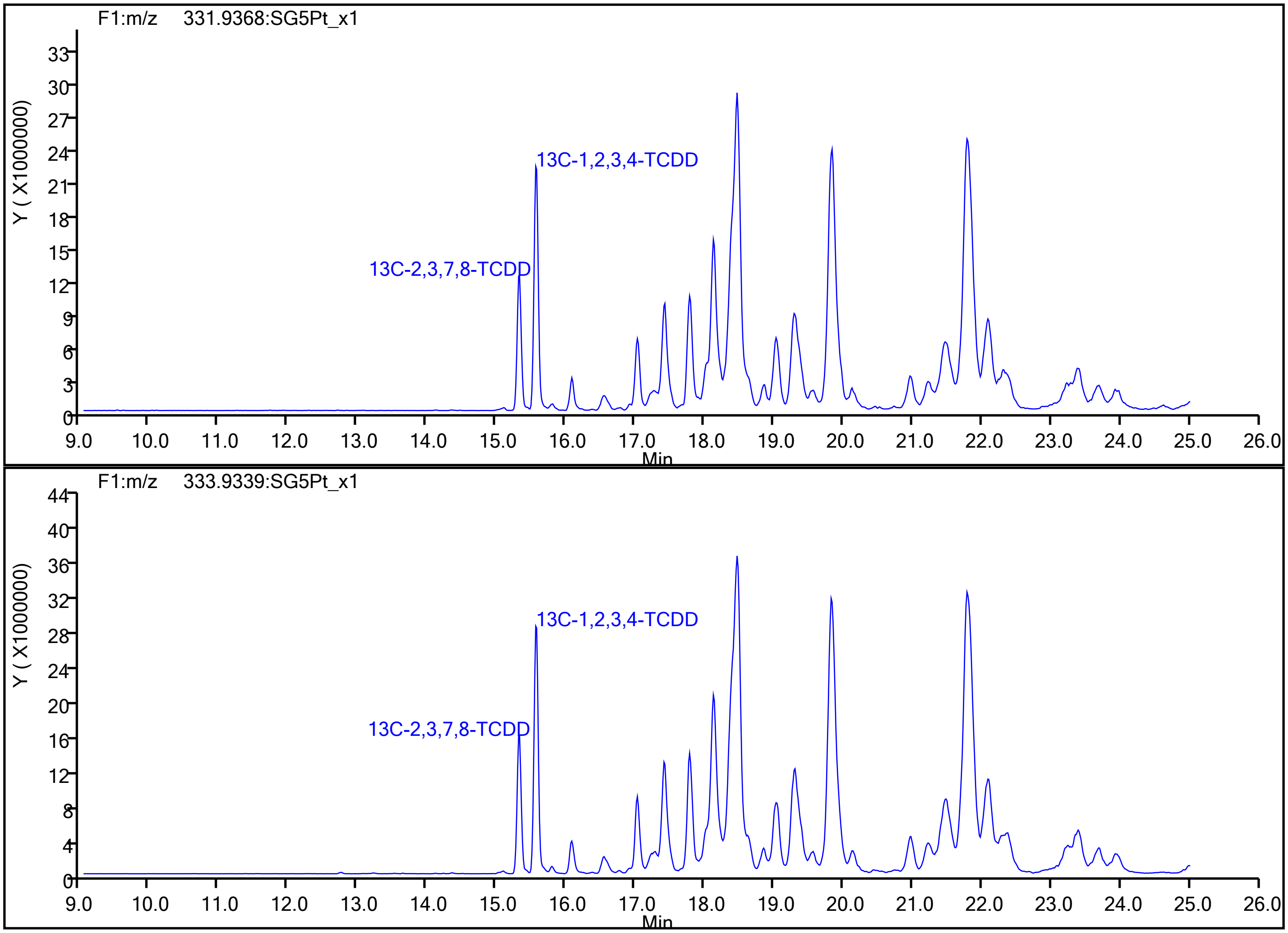

Report Date: 01-Dec-2020 08:43:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_013.d		
Injection Date:	30-Nov-2020 20:07:57	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Drum		
Worklist#:	436991	Sample Line#:	13
Column Type:	DB-225	Column Dia:	0.32 mm

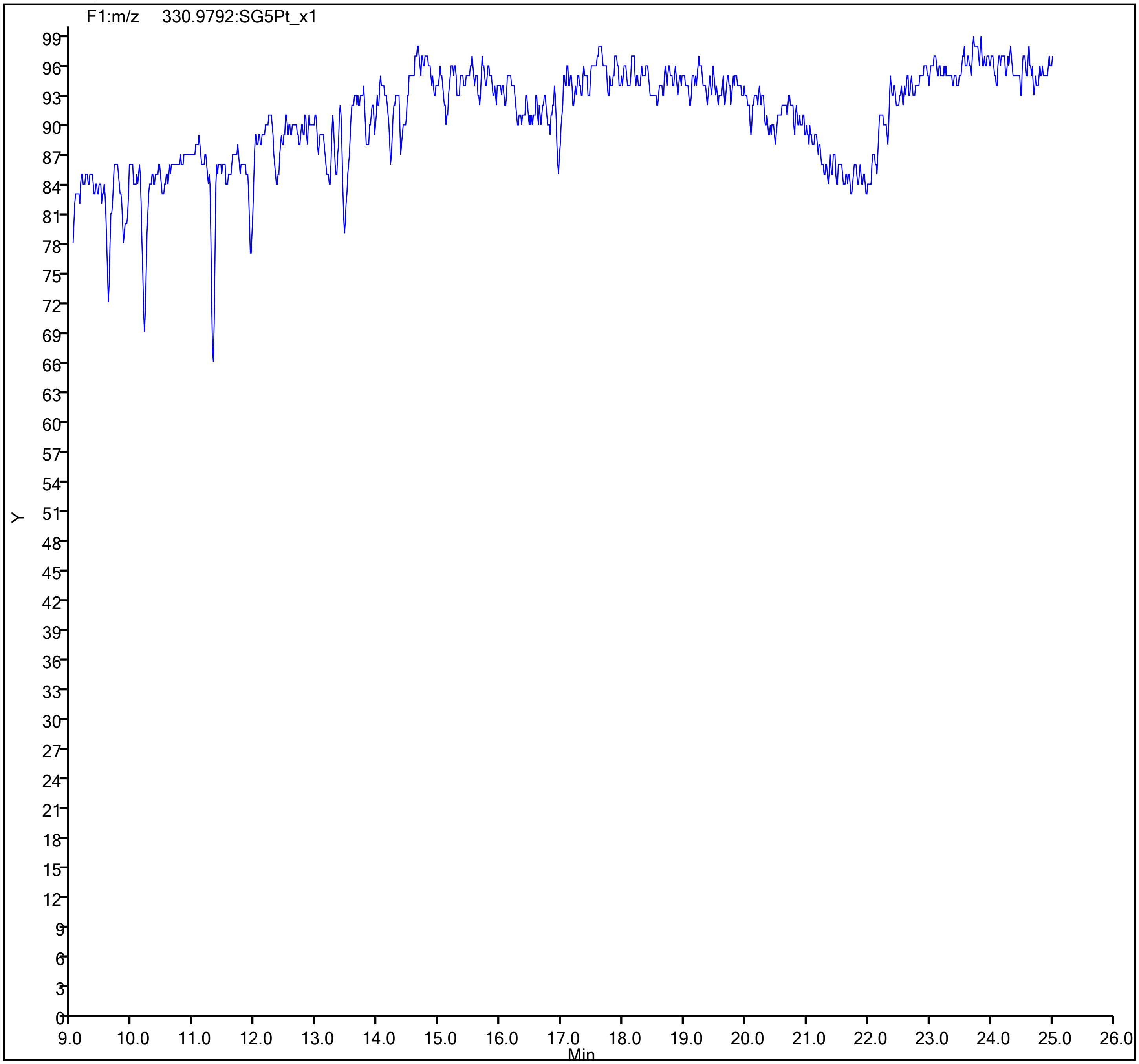

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-66850-2
SDG No.:
Client Sample ID: 11215702-Tank #2 Drum
Lab Sample ID: 320-66850-4
Matrix: Water
Lab File ID: 23no20dfs1_42.d
Analysis Method: 1613B
Date Collected: 11/09/2020 12:00
Extract. Method: 1613B
Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1049.2(mL)
Date Analyzed: 11/24/2020 15:04
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	3300		9.5	6.0
40321-76-4	1,2,3,7,8-PeCDD	37	J B	48	1.3
57117-41-6	1,2,3,7,8-PeCDF	400	B	48	3.5
57117-31-4	2,3,4,7,8-PeCDF	270	B	48	3.9
39227-28-6	1,2,3,4,7,8-HxCDD	2.5	J q B	48	0.53
57653-85-7	1,2,3,6,7,8-HxCDD	5.1	J B	48	0.51
19408-74-3	1,2,3,7,8,9-HxCDD	2.6	J B	48	0.50
70648-26-9	1,2,3,4,7,8-HxCDF	820	B	48	2.1
57117-44-9	1,2,3,6,7,8-HxCDF	200	B *	48	1.9
72918-21-9	1,2,3,7,8,9-HxCDF	14	J B	48	2.0
60851-34-5	2,3,4,6,7,8-HxCDF	24	J B	48	1.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	140	B	48	0.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	290	B *	48	1.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	100	B	48	1.9
3268-87-9	OCDD	3000	B *	95	3.1
39001-02-0	OCDF	210	B	95	1.0
41903-57-5	Total TCDD	3700		9.5	6.0
30402-14-3	Total TCDF	21000	G B	36	36
36088-22-9	Total PeCDD	37	J B	48	1.3
30402-15-4	Total PeCDF	1100	q B	48	3.7
34465-46-8	Total HxCDD	37	J q B	48	0.51
55684-94-1	Total HxCDF	1200	B	48	2.0
37871-00-4	Total HpCDD	310	B	48	0.93
38998-75-3	Total HpCDF	480	B	48	1.8

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #2 Drum	Lab Sample ID: 320-66850-4
Matrix: Water	Lab File ID: 23no20dfs1_42.d
Analysis Method: 1613B	Date Collected: 11/09/2020 12:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1049.2(mL)	Date Analyzed: 11/24/2020 15:04
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	69		25-164
89059-46-1	13C-2,3,7,8-TCDF	68		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	68		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	65		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	67		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	65		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	63		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	71		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	64		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	68		26-138
114423-97-1	13C-OCDD	72		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 01-Dec-2020 13:51:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Lims ID: 320-66850-A-4-B
Client ID: 11215702-Tank #2 Drum
Sample Type: Client
Inject. Date: 24-Nov-2020 15:04:00 ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-4-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:51:43 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: stephensk Date: 24-Nov-2020 16:59:38

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.754	2964466	0.81	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.741	3381347	0.80	1.6832	67.8	67.8	0.4775	0.4775	67.76	
2,3,7,8-TCDF	20.784	23238253	0.81	1.1547	595.2	595.2	1.910	1.910		E
A Non-2,3,7,8-sub-TCDF	20.119	18978593	0.80	1.1547	486.1	486.1	1.910	263.9		Ma
S Total TCDF					1081.3	1081.3	1.910	1.910		
D 13C-2,3,7,8-TCDD	22.141	2212890	0.81	1.0896	68.5	68.5	0.4045	0.4045	68.51	
2,3,7,8-TCDD	22.184	4523207	0.80	1.1659	175.3	175.3	0.3149	0.3149		
$ 37Cl4-2,3,7,8-TCDD	22.184	1279372		1.1445	37.7	37.7	0.2184	0.2184	94.27	
A Non-2,3,7,8-sub-TCDD	20.973	424388	0.75	1.1659	16.4	16.4	0.3149	14.6		
S Total TCDD					191.8	191.8	0.3149	0.3149		
D 13C-1,2,3,7,8-PeCDF	27.635	2824371	1.58	1.4604	65.2	65.2	0.2015	0.2015	65.24	
1,2,3,7,8-PeCDF	27.652	674134	1.61	1.1322	21.1	21.1	0.1857	0.1857		
D 13C-2,3,4,7,8-PeCDF	29.185	2668684	1.60	1.3504	66.7	66.7	0.2179	0.2179	66.66	
2,3,4,7,8-PeCDF	29.202	445292	1.63	1.1588	14.4	14.4	0.2049	0.2049		
A F1 PeCDFs	24.940	10740	1.75	1.1455	0.3414	0.3414	0.0104	0.3414		M
A Non-2,3,7,8-sub-PeCDF	28.506	724171	1.55	1.1455	23.1	23.0	0.1947	10.3		RQa
S Total PeCDF					59.0	58.8	0.1953	0.1953		RQ
D 13C-1,2,3,7,8-PeCDD	30.011	1758667	1.56	0.8729	68.0	68.0	0.1222	0.1222	67.96	
1,2,3,7,8-PeCDD	30.020	38065	1.50	1.1191	1.934	1.934	0.0707	0.0707		
A Non-2,3,7,8-sub-PeCDD	28.748						0.0707	2.806		RQU
S Total PeCDD					1.934	1.934	0.0707	0.0707		
D 13C-1,2,3,4,7,8-HxCDF	35.174	2358563	0.53	1.2808	65.2	65.2	0.2186	0.2186	65.21	
1,2,3,4,7,8-HxCDF	35.182	1346882	1.25	1.3205	43.2	43.2	0.1119	0.1119		
D 13C-1,2,3,6,7,8-HxCDF	35.325	2616181	0.52	1.4615	63.4	63.4	0.1916	0.1916	63.39	
1,2,3,6,7,8-HxCDF	35.342	355193	1.31	1.2682	10.7	10.7	0.1021	0.1021		
D 13C-2,3,4,6,7,8-HxCDF	36.118	2409027	0.53	1.3227	64.5	64.5	0.2117	0.2117	64.50	
2,3,4,6,7,8-HxCDF	36.134	38553	1.13	1.2838	1.247	1.247	0.0996	0.0996		
D 13C-1,2,3,7,8,9-HxCDF	36.985	2221262	0.53	1.1062	71.1	71.1	0.2531	0.2531	71.11	
1,2,3,7,8,9-HxCDF	36.994	21628	1.25	1.3063	0.7454	0.7454	0.1027	0.1027		
A Non-2,3,7,8-sub-HxCDF	35.280	218267	1.29	1.2947	7.021	7.021	0.1038	3.070		
S Total HxCDF					63.0	63.0	0.1041	0.1041		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.783	2823950	1.29	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.320	1582173	1.30	0.8757	64.0	64.0	0.1857	0.1857	63.98	
1,2,3,4,7,8-HxCDD	36.328	2455	1.24	1.1972	0.1555	0.1296	0.0278	0.0278		RQM
D 13C-1,2,3,6,7,8-HxCDD	36.429	2003348	1.27	1.0651	66.6	66.6	0.1527	0.1527	66.61	a
1,2,3,6,7,8-HxCDD	36.446	5688	1.27	1.0695	0.2655	0.2655	0.0267	0.0267		M
1,2,3,7,8,9-HxCDD	36.825	2839	1.08	1.1806	0.1341	0.1341	0.0260	0.0260		M
A Non-2,3,7,8-sub-HxCDD	35.613	28899	1.24	1.1491	1.448	1.403	0.0267	0.6605		RQ
S Total HxCDD					2.003	1.932	0.0268	0.0268		RQ
1,2,3,4,6,7,8-HpCDF	38.758	415087	1.03	1.5618	15.0	15.0	0.0899	0.0899		M
D 13C-1,2,3,4,6,7,8-HpCDF	38.741	1768216	0.45	0.9521	65.8	65.8	0.3058	0.3058	65.76	
1,2,3,4,7,8,9-HpCDF	39.980	122769	1.06	1.4975	5.473	5.473	0.0996	0.0996		
D 13C-1,2,3,4,7,8,9-HpCDF	39.971	1497967	0.46	0.7782	68.2	68.2	0.3742	0.3742	68.17	
A Non-2,3,7,8-sub-HpCDF	39.360	119908	1.07	1.5297	4.800	4.800	0.0945	4.800		
S Total HpCDF					25.3	25.3	0.0947	0.0947		
1,2,3,4,6,7,8-HpCDD	39.685	128682	1.08	1.1079	7.279	7.279	0.0488	0.0488		
D 13C-1,2,3,4,6,7,8-HpCDD	39.668	1595674	1.06	0.8393	67.3	67.3	0.1611	0.1611	67.32	
A Non-2,3,7,8-sub-HpCDD	40.007	154292	1.05	1.1079	8.727	8.727	0.0488	8.727		
S Total HpCDD					16.0	16.0	0.0488	0.0488		
D 13C-OCDD	42.148	2152088	0.88	0.5301	143.8	143.8	0.2511	0.2511	71.88	
OCDF	42.249	173941	0.88	1.4802	10.9	10.9	0.0528	0.0528		
OCDD	42.156	1970167	0.90	1.1666	157.0	157.0	0.1619	0.1619		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 01-Dec-2020 13:51:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Lims ID: 320-66850-A-4-B
Client ID: 11215702-Tank #2 Drum
Sample Type: Client
Inject. Date: 24-Nov-2020 15:04:00 ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-4-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:51:43 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: stephensk Date: 24-Nov-2020 16:59:38

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.754	21.772	-1		1329456	186210	420	1050	443		
333.9338	21.754	21.772	-1		1635010	235796	324	810	728	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.741	20.725	1	0.953	1504727	231541	612	1530	378		
317.9389	20.749	20.725	1	0.954	1876620	292927	745	1862	393	0.80(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.784	20.776	0	1.002	10393063	1446340	2520	6300	574		
305.8987	20.775	20.776	0	1.002	12845190	1793251	2107	5267	851	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											Ma
303.9016	17.675	20.119	-146	0.852	74701	14775	2520	6300	6		
305.8987	17.675	20.119	-146	0.852	104525	21395	2107	5267	10	0.71(0.65-0.89)	
303.9016	18.155	20.119	-118	0.875	474148	79644	2520	6300	32		
305.8987	18.155	20.119	-118	0.875	586184	103119	2107	5267	49	0.81(0.65-0.89)	
303.9016	18.654	20.119	-88	0.899	510077	79242	2520	6300	31		M
305.8987	18.662	20.119	-87	0.900	611838	101772	2107	5267	48	0.83(0.65-0.89)	M
303.9016	19.109	20.119	-60	0.921	416284	59756	2520	6300	24		
305.8987	19.109	20.119	-60	0.921	508245	71552	2107	5267	34	0.82(0.65-0.89)	M
303.9016	19.495	20.119	-37	0.940	491360	68952	2520	6300	27		
305.8987	19.504	20.119	-37	0.940	631137	90402	2107	5267	43	0.78(0.65-0.89)	
303.9016	20.028	20.119	-5	0.966	4593847	695772	2520	6300	276		
305.8987	20.028	20.119	-5	0.966	5710271	860878	2107	5267	409	0.80(0.65-0.89)	
303.9016	20.440	20.119	19	0.985	251243	35697	2520	6300	14		
305.8987	20.449	20.119	20	0.986	349063	47537	2107	5267	23	0.72(0.65-0.89)	
303.9016	21.599	20.119	89	1.041	727632	104708	2520	6300	42		
305.8987	21.591	20.119	88	1.041	912478	132410	2107	5267	63	0.80(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	22.063	20.119	116	1.064	159492	23023	2520	6300	9		
305.8987	22.046	20.119	115	1.063	213126	29519	2107	5267	14	0.75(0.65-0.89)	
303.9016	23.918	20.119	227	1.153	730798	151098	2520	6300	60		
305.8987	23.918	20.119	227	1.153	922144	189171	2107	5267	90	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.141	22.124	1	1.018	987716	128107	420	1050	305		
333.9338	22.149	22.124	1	1.018	1225174	167419	324	810	517	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.184	22.159	1	1.002	2005346	274893	283	707	971		
321.8936	22.184	22.159	1	1.002	2517861	340096	151	377	2252	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.184	22.201	-1	1.020	1279372	175667	422	1055	416		
A Non-2,3,7,8-sub-TCDD											
319.8965	21.969	20.973	60	0.992	20250	3883	283	707	14		
321.8936	21.986	20.973	61	0.993	26587	4624	151	377	31	0.76(0.65-0.89)	
319.8965	22.879	20.973	114	1.033	161391	21388	283	707	76		
321.8936	22.888	20.973	115	1.034	216160	28211	151	377	187	0.75(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.635	27.633	0	1.270	1730012	272035	308	770	883		
353.8970	27.626	27.633	0	1.270	1094359	175120	189	472	927	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.652	27.659	0	1.001	415694	63622	196	490	325		
341.8567	27.652	27.659	0	1.001	258440	40183	180	450	223	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.185	29.184	0	1.342	1642968	241840	308	770	785		
353.8970	29.185	29.184	0	1.342	1025716	154094	189	472	815	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.202	29.217	-1	1.001	276052	42938	196	490	219		
341.8567	29.211	29.217	0	1.001	169240	26319	180	450	146	1.63(1.32-1.78)	
A F1 PeCDFs											M
339.8597	24.339	24.940	-36	0.881	6829	1401	4	10	350		M
341.8567	24.331	24.940	-36	0.880	3911	782	16	40	49	1.75(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDF											RQa
339.8597	26.135	28.506	-142	0.946	200751	34857	196	490	178		
341.8567	26.135	28.506	-142	0.946	124680	21344	180	450	119	1.61(1.32-1.78)	
339.8597	27.070	28.506	-86	0.980	19304	2753	196	490	14		
	Empc Correction				15523	2586	196	490	13		
341.8567	27.070	28.506	-86	0.980	10015	1669	180	450	9	1.93(1.32-1.78)	
339.8597	27.508	28.506	-60	0.995	32953	7706	196	490	39		
341.8567	27.508	28.506	-60	0.995	22000	4600	180	450	26	1.50(1.32-1.78)	
339.8597	28.258	28.506	-15	1.023	118780	19629	196	490	100		a
341.8567	28.258	28.506	-15	1.023	73275	11765	180	450	65	1.62(1.32-1.78)	
339.8597	29.548	28.506	62	1.069	64337	9572	196	490	49		a
341.8567	29.548	28.506	62	1.069	38799	5715	180	450	32	1.66(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	31.309	28.506	168	1.133	13532	2102	196	490	11		
341.8567	31.292	28.506	167	1.132	9526	1324	180	450	7	1.42(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.011	30.017	0	1.380	1071878	151269	124	310	1220		
369.8919	30.003	30.017	-1	1.379	686789	97776	56	140	1746	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.020	30.051	-2	1.000	22841	3377	36	90	94		
357.8516	30.037	30.051	-1	1.001	15224	2319	43	107	54	1.50(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.421	28.748	-139	0.880	1617	374	36	90	10		
357.8516	26.472	28.748	-136	0.882	53608	9308	43	107	216	0.03(1.32-1.78)	
	Empc Correction				1043	241	43	107	0		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.174	35.175	0	0.956	817753	179432	295	737	608		
385.8610	35.165	35.175	-1	0.956	1540810	336288	502	1255	670	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.182	35.200	-1	1.000	748736	163628	153	382	1069		
375.8178	35.182	35.200	-1	1.000	598146	131438	152	380	865	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.325	35.335	-1	0.960	898771	203155	295	737	689		
385.8610	35.325	35.335	-1	0.960	1717410	385389	502	1255	768	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.342	35.351	-1	1.000	201205	43260	153	382	283		
375.8178	35.342	35.351	-1	1.000	153988	34076	152	380	224	1.31(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.118	36.118	0	0.982	830097	205986	295	737	698		
385.8610	36.118	36.118	0	0.982	1578930	389821	502	1255	777	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.134	36.135	0	1.000	20451	4745	153	382	31		
375.8178	36.134	36.135	0	1.000	18102	4612	152	380	30	1.13(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.985	36.986	0	1.005	766913	195879	295	737	664		
385.8610	36.985	36.986	0	1.005	1454349	372122	502	1255	741	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.994	37.003	-1	1.000	12025	3716	153	382	24		
375.8178	36.994	37.003	-1	1.000	9603	2626	152	380	17	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.775	35.280	-90	0.960	52837	9996	153	382	65		
375.8178	33.775	35.280	-90	0.960	42602	7905	152	380	52	1.24(1.05-1.43)	
373.8208	34.584	35.280	-42	0.983	27457	5839	153	382	38		
375.8178	34.592	35.280	-41	0.983	19612	4228	152	380	28	1.40(1.05-1.43)	
373.8208	37.095	35.280	109	1.055	42617	11209	153	382	73		
375.8178	37.095	35.280	109	1.055	33142	8728	152	380	57	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.783	36.792	-1		1591344	402772	283	707	1423		
403.8529	36.783	36.792	-1		1232606	308759	180	450	1715	1.29(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.320	36.320	0	0.987	895420	241013	283	707	852		
403.8529	36.320	36.320	0	0.987	686753	186312	180	450	1035	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	36.328	36.337	-1	1.000	1849	481	28	70	17		M
	Empc Correction				1359	363	28	70	13		
391.8127	36.337	36.337	0	1.000	1096	293	29	72	10	1.69(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											a
401.8559	36.429	36.438	-1	0.990	1122597	283560	283	707	1002		a
403.8529	36.429	36.438	-1	0.990	880751	214566	180	450	1192	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	36.446	36.446	0	1.000	3186	837	28	70	30		M
391.8127	36.446	36.446	0	1.000	2502	590	29	72	20	1.27(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8158	36.825	36.809	1	1.014	1475	308	28	70	11		M
391.8127	36.809	36.809	0	1.013	1364	419	29	72	14	1.08(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	34.508	35.613	-66	0.947	6997	1487	28	70	53		
391.8127	34.500	35.613	-67	0.947	6610	1429	29	72	49	1.06(1.05-1.43)	
389.8158	35.266	35.613	-21	0.968	2533	424	28	70	15		
	Empc Correction				1612	341	28	70	12		
391.8127	35.241	35.613	-22	0.967	1300	275	29	72	9	1.95(1.05-1.43)	
389.8158	35.587	35.613	-2	0.977	6336	1512	28	70	54		
391.8127	35.578	35.613	-2	0.977	6044	1467	29	72	51	1.05(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.758	38.745	1	1.000	210662	63084	156	390	404		M
409.7788	38.758	38.745	1	1.000	204425	60340	135	337	447	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.741	38.749	0	1.053	550958	164282	332	830	495		
419.8220	38.741	38.749	0	1.053	1217258	353550	497	1242	711	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.980	39.975	0	1.000	63068	20435	156	390	131		
409.7788	39.980	39.975	0	1.000	59701	19419	135	337	144	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.971	39.979	0	1.087	469523	155437	332	830	468		
419.8220	39.971	39.979	0	1.087	1028444	332121	497	1242	668	0.46(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.112	39.360	-15	1.010	62046	18622	156	390	119		
409.7788	39.112	39.360	-15	1.010	57862	17445	135	337	129	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.685	39.672	1	1.000	66735	20828	60	150	347		
425.7737	39.677	39.672	0	1.000	61947	19418	52	130	373	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.668	39.676	0	1.078	822048	266686	208	520	1282		
437.8140	39.668	39.676	0	1.078	773626	250653	177	442	1416	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.053	40.007	-57	0.984	79024	24029	60	150	400		
425.7737	39.053	40.007	-57	0.984	75268	23301	52	130	448	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.148	42.158	-1	1.146	1010392	293149	179	447	1638		
471.7750	42.148	42.158	-1	1.146	1141696	321218	200	500	1606	0.88(0.76-1.02)	
OCDF											
441.7428	42.249	42.251	0	1.002	81416	22829	33	82	692		
443.7399	42.249	42.251	0	1.002	92525	25806	63	157	410	0.88(0.76-1.02)	
OCDD											
457.7377	42.156	42.167	-1	1.000	935694	261808	97	242	2699		
459.7348	42.156	42.167	-1	1.000	1034473	289578	135	337	2145	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 01-Dec-2020 13:51:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	3381347	524468

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	3381347	524468

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.675	74701	14775	104525	21395	4.59	0.71	
18.155	474148	79644	586184	103119	27.2	0.81	
18.654	510077	79242	611838	101772	28.7	0.83	M
19.109	416284	59756	508245	71552	23.7	0.82	M
19.495	491360	68952	631137	90402	28.7	0.78	
20.028	4593847	695772	5710271	860878	263.9	0.80	
20.440	251243	35697	349063	47537	15.4	0.72	
21.599	727632	104708	912478	132410	42.0	0.80	
22.063	159492	23023	213126	29519	9.54	0.75	
23.918	730798	151098	922144	189171	42.3	0.79	
Signal Totals:							
	8429582	1312667	10549011	1647755			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18978593	2960422				0.80	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 486.090 = (18978593 * 100.000) / (3381347 * 1.155)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	2212890	295526

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	2212890	295526

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.969	20250	3883	26587	4624	1.82	0.76	
22.879	161391	21388	216160	28211	14.6	0.75	
Signal Totals:							
	181641	25271	242747	32835			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	424388	58106				0.75	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 16.449 = (424388 * 100.000) / (2212890 * 1.166)

Report Date: 01-Dec-2020 13:51:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

F1 PeCDFs, RT: 24.940

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2824371	447155
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2668684	395934

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2746527	421544

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.339	6829	1401	3911	782	0.3414	1.75	M
Signal Totals:							
	6829	1401	3911	782			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10740	2183				1.75	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3414 = (10740 * 100.000) / (2746527 * 1.145)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Lims ID: 320-66850-A-4-B
Client ID: 11215702-Tank #2 Drum
Inject. Date: 24-Nov-2020 15:04:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 37

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2824371	447155
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2668684	395934

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2746527	421544

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.135	200751	34857	124680	21344	10.3	1.61	
27.070	19304	2753	10015	1669	0.9319	1.93	RQ
27.070	15523	2586	10015	1669	0.8117		Empc Correction
27.508	32953	7706	22000	4600	1.75	1.50	
28.258	118780	19629	73275	11765	6.10	1.62	a
29.548	64337	9572	38799	5715	3.28	1.66	a
31.309	13532	2102	9526	1324	0.7329	1.42	
Signal Totals:							
	445876	76452	278295	46417			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	727952	123036				1.62	RQa
	724171	122869					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 23.138 = (727952 * 100.000) / (2746527 * 1.145)
Empc Amount: 23.018 = (724171 * 100.000) / (2746527 * 1.145)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

Non-2,3,7,8-sub-PeCDD, RT: 28.748

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.119	D 13C-1,2,3,7,8-PeCDD	100.000	1758667	249045

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	1758667	249045

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.421	1617	374	53608	9308	2.81	0.03	RQ
26.421	1617	374	1043	241			Empc Correction
28.056	1025	228	656	206	0.0854	1.56	

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

Non-2,3,7,8-sub-HxCDF, RT: 35.280

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320	D 13C-1,2,3,4,7,8-HxCDF	100.000	2358563	515720
1,2,3,6,7,8-HxCDF	1.268	D 13C-1,2,3,6,7,8-HxCDF	100.000	2616181	588544
2,3,4,6,7,8-HxCDF	1.284	D 13C-2,3,4,6,7,8-HxCDF	100.000	2409027	595807
1,2,3,7,8,9-HxCDF	1.306	D 13C-1,2,3,7,8,9-HxCDF	100.000	2221262	568001

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.295		100.000	2401258	567018

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.775	52837	9996	42602	7905	3.07	1.24	
34.584	27457	5839	19612	4228	1.51	1.40	
37.095	42617	11209	33142	8728	2.44	1.29	
Signal Totals:							
	122911	27044	95356	20861			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	218267	47905				1.29	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 7.021 = (218267 * 100.000) / (2401258 * 1.295)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	1582173	427325
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	2003348	498126
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1792760	462725

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.508	6997	1487	6610	1429	0.6605	1.06	
35.266	2533	424	1300	275	0.1861	1.95	RQ
35.266	1612	341	1300	275	0.1414		Empc Correction
35.587	6336	1512	6044	1467	0.6010	1.05	
Signal Totals:							
	14945	3340	13954	3171			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	29820	6594				1.14	RQ
	28899	6511					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.448 = (29820 * 100.000) / (1792760 * 1.149)
Empc Amount: 1.403 = (28899 * 100.000) / (1792760 * 1.149)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Lims ID:	320-66850-A-4-B		
Client ID:	11215702-Tank #2 Drum		
Inject. Date:	24-Nov-2020 15:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	37

Non-2,3,7,8-sub-HpCDF, RT: 39.360

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.562	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1768216	517832
1,2,3,4,7,8,9-HpCDF	1.497	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1497967	487558

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.530		100.000	1633091	502695

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.112	62046	18622	57862	17445	4.80	1.07	
Signal Totals:							
	62046	18622	57862	17445			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	119908	36067				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.800 = (119908 * 100.000) / (1633091 * 1.530)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Lims ID: 320-66850-A-4-B
Client ID: 11215702-Tank #2 Drum
Inject. Date: 24-Nov-2020 15:04:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 434777 Lims Sample ID: 37

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1595674	517339

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	1595674	517339

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.053	79024	24029	75268	23301	8.73	1.05	
Signal Totals:							
	79024	24029	75268	23301			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	154292	47330				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.727 = (154292 * 100.000) / (1595674 * 1.108)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (16.31- 23.93)

Signal: 1

Processing Integration Results

RT = 18.654 Area = 510077

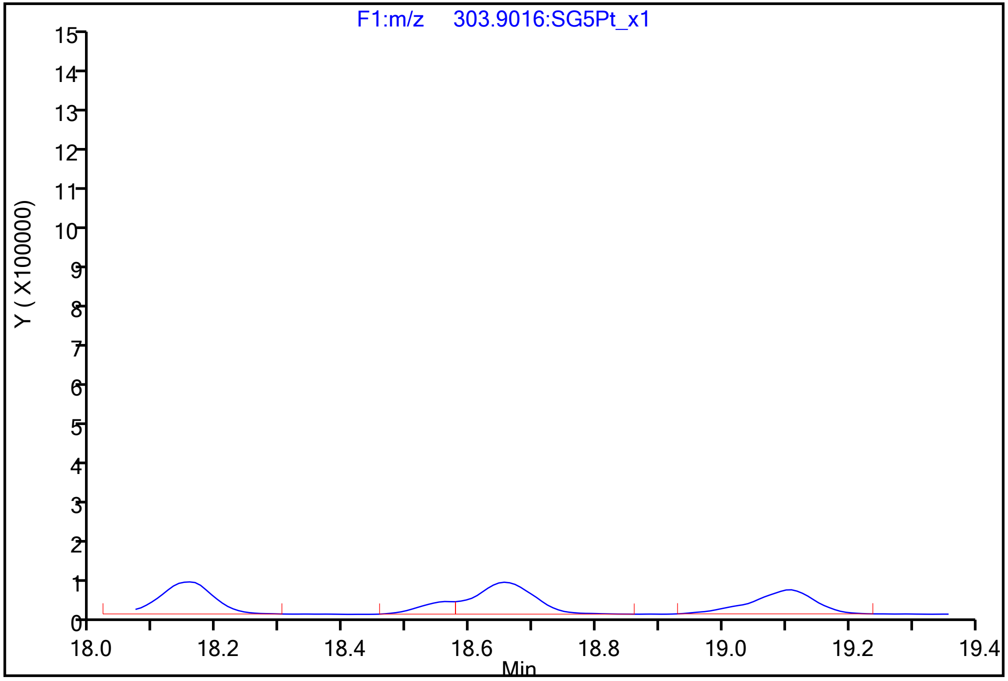

Manual Integration Results

RT = 18.654 Area = 510077

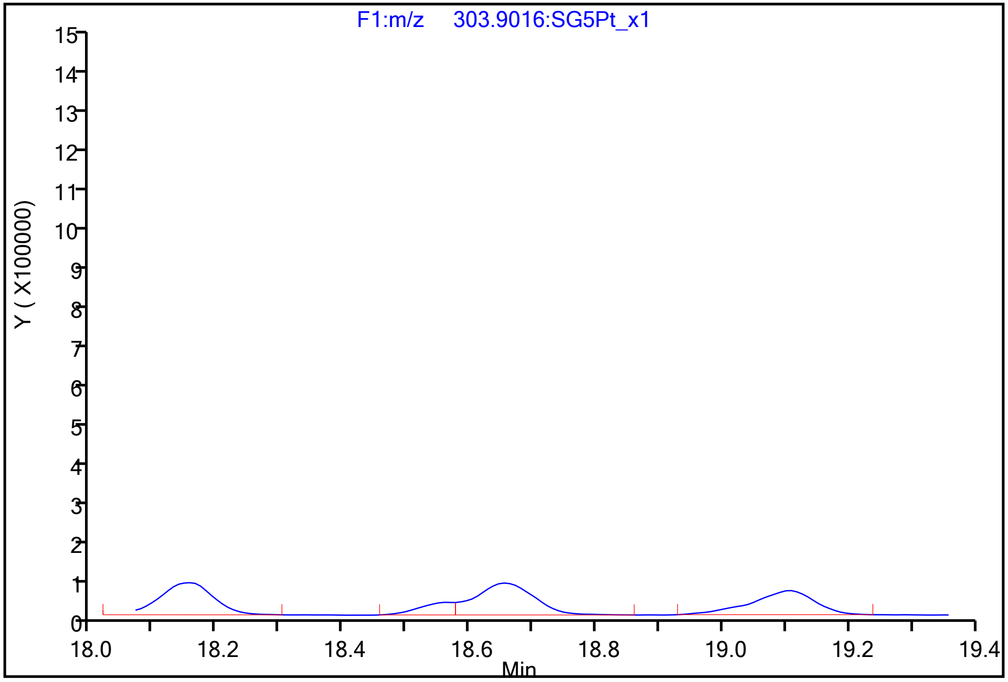

Reviewer: dadunj, 30-Nov-2020 10:54:19

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (16.31- 23.93)

Signal: 2

Processing Integration Results

RT = 18.662 Area = 794112

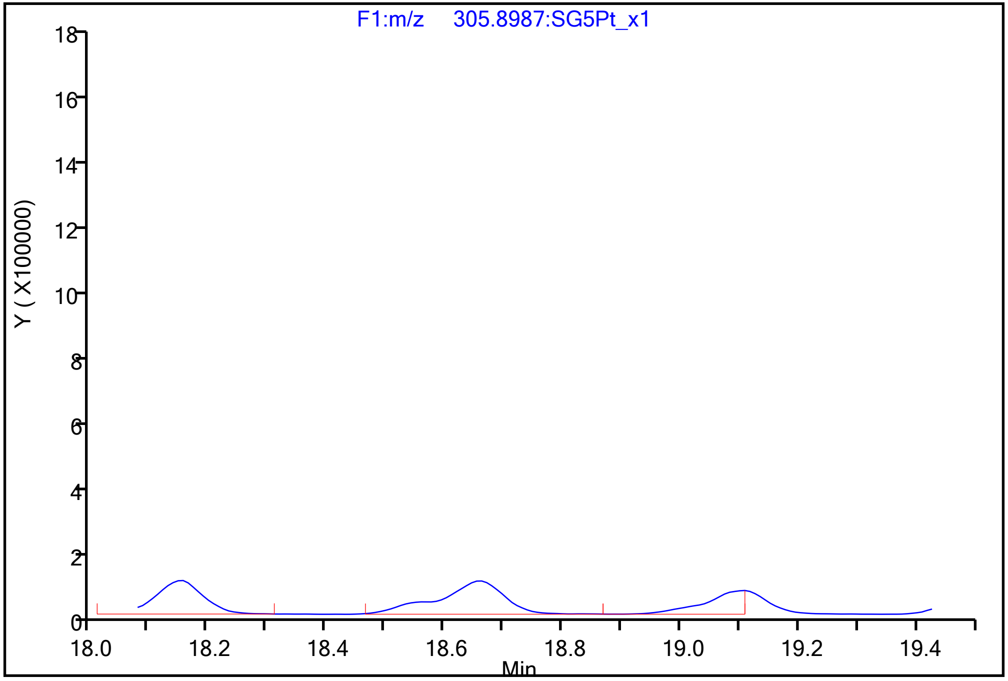

Manual Integration Results

RT = 18.662 Area = 611838 M

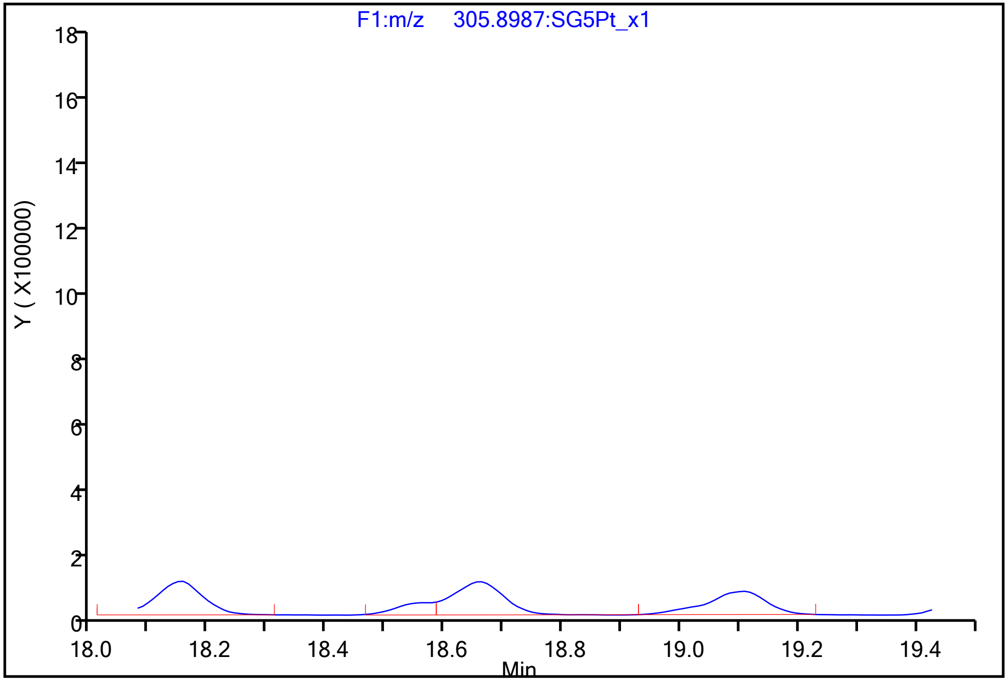

Reviewer: dadunj, 30-Nov-2020 10:54:26

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Injection Date: 24-Nov-2020 15:04:00 Instrument ID: DFS 1
Lims ID: 320-66850-A-4-B Lab Sample ID: 320-66850-4
Client ID: 11215702-Tank #2 Drum
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (16.31- 23.93)

Signal: 2

Processing Integration Results

RT = 19.100 Area = 335361

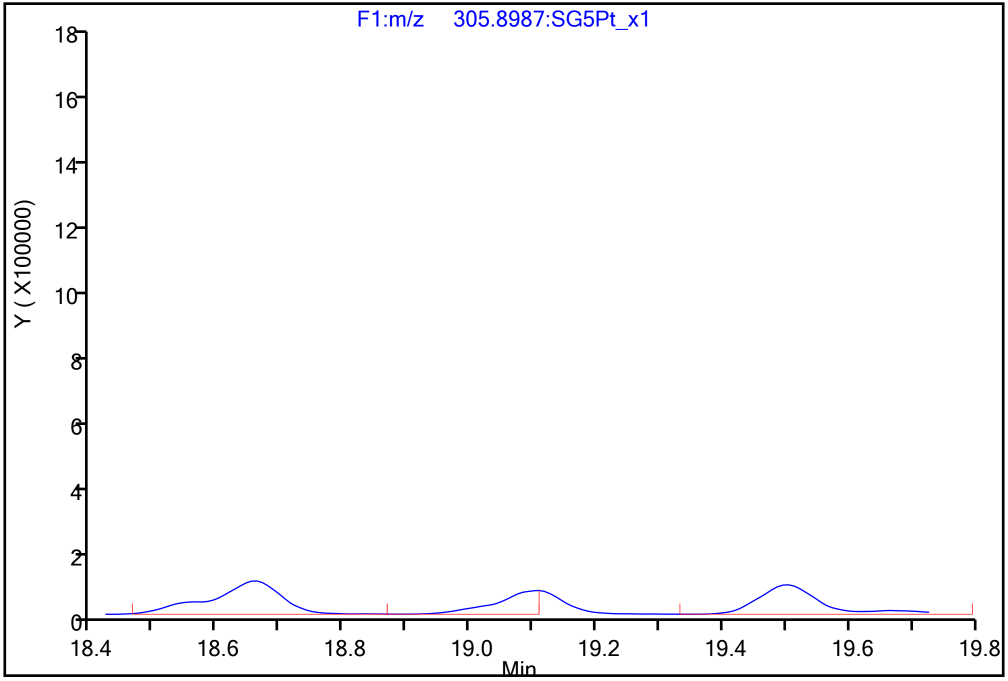

Manual Integration Results

RT = 19.109 Area = 508245 M

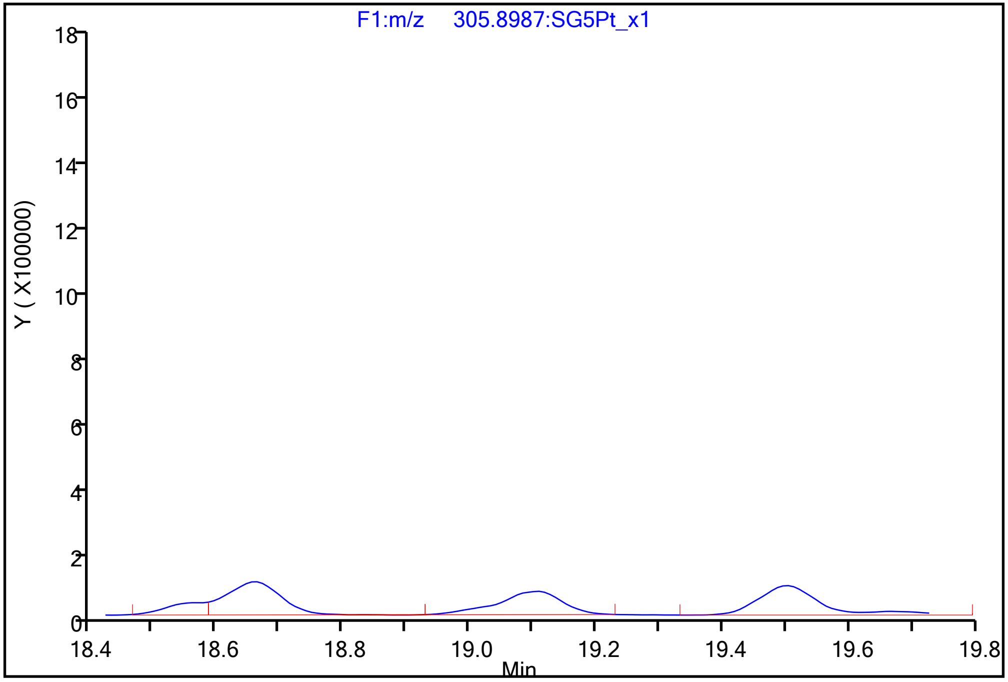

Reviewer: dadunj, 30-Nov-2020 10:54:26
Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Report Date: 01-Dec-2020 13:51:43

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4
Client ID:	11215702-Tank #2 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (24.27- 25.61)

Signal: 1

Processing Integration Results

RT = 24.339 Area = 7023

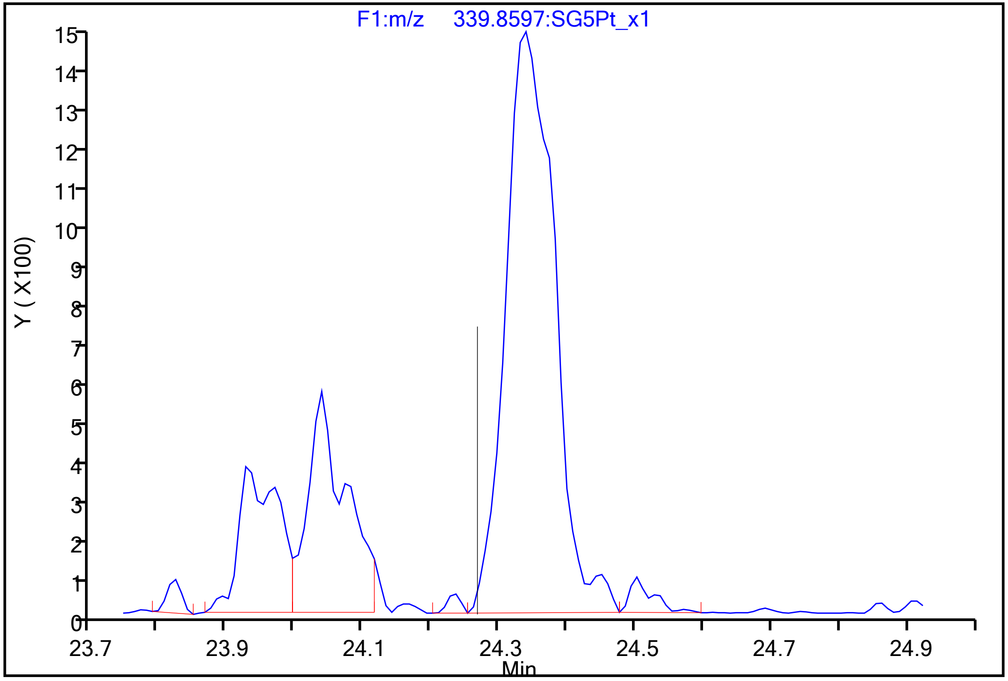

Manual Integration Results

RT = 24.339 Area = 6829 M

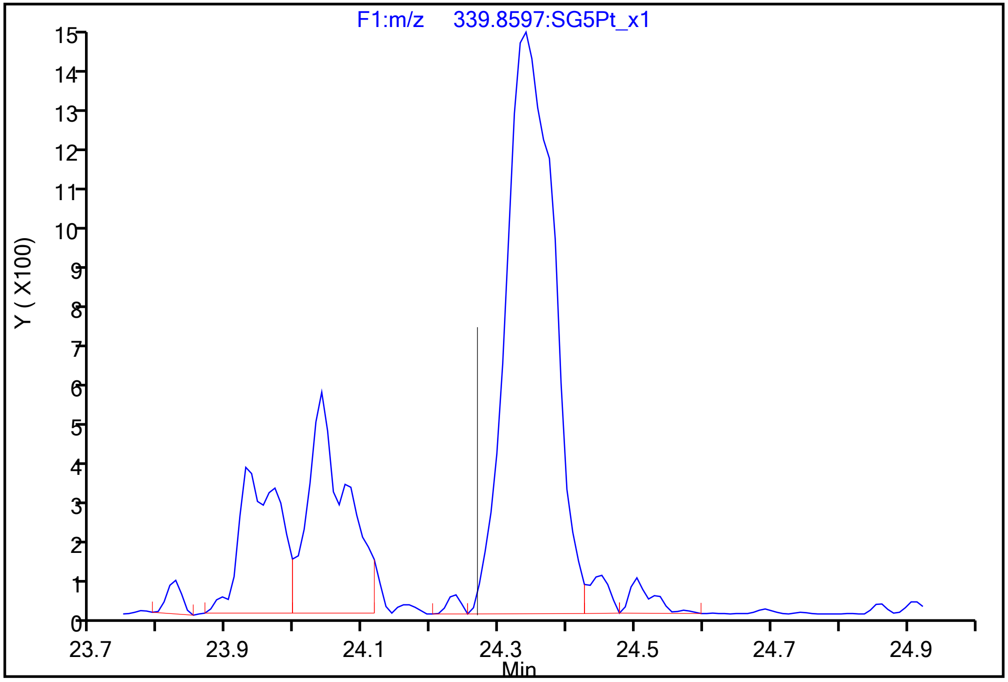

Reviewer: dadunj, 30-Nov-2020 10:54:54

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 2, m/z: 341.8567, RT: (24.27- 25.61)

Signal: 2

RT = 24.331 Area = 4074

Processing Integration Results

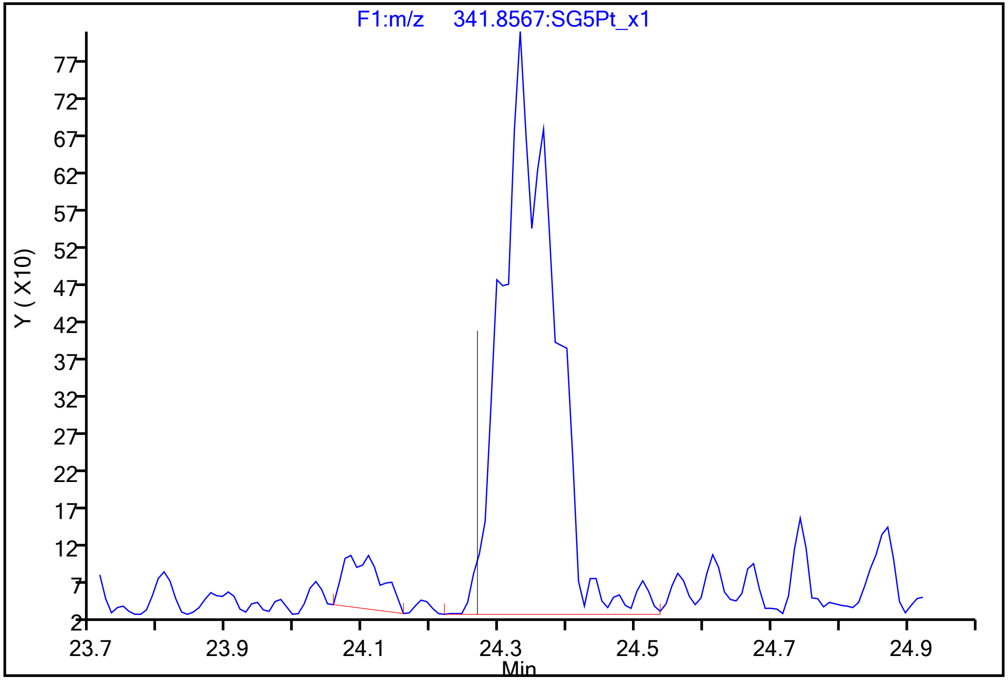

RT = 24.331 Area = 3911 M

Manual Integration Results

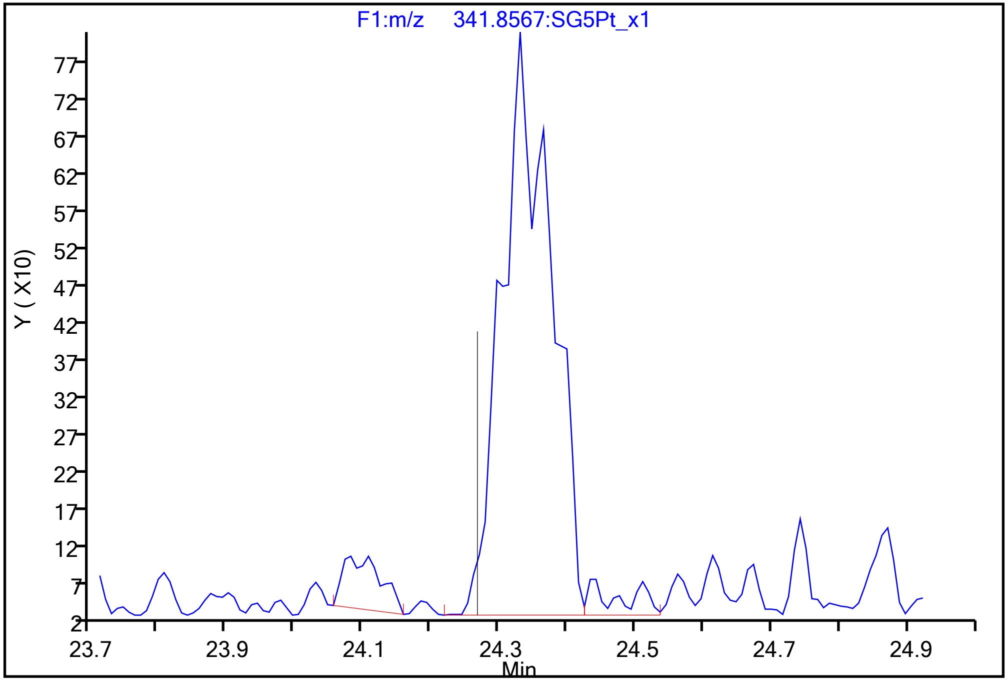

Reviewer: dadunj, 30-Nov-2020 10:54:52

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	36.45
Area:	5029
Amount:	0.389776
Amount Units:	pg/ul

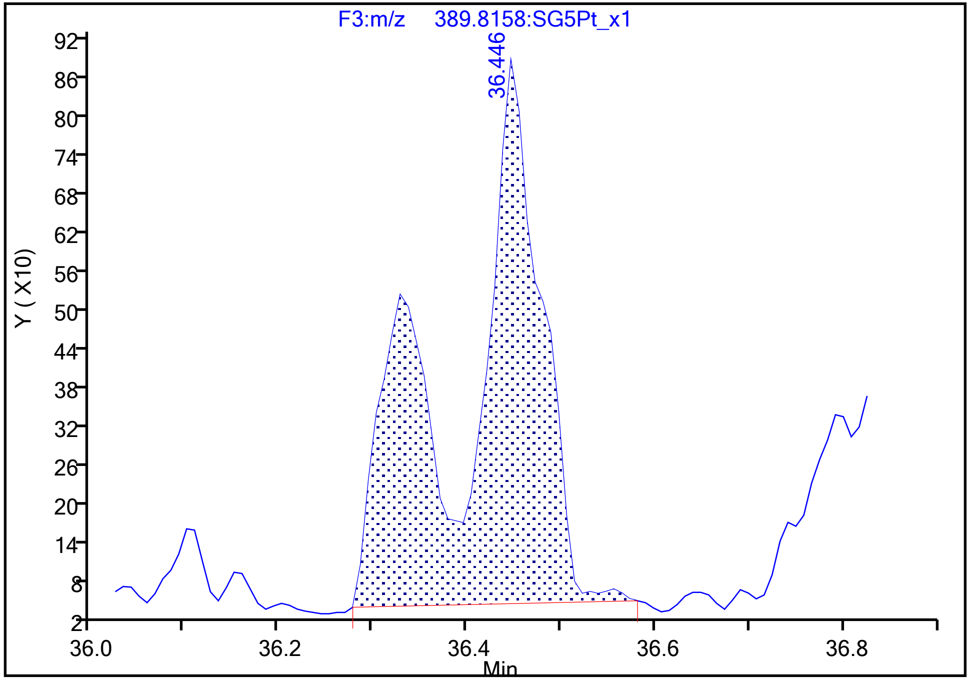

Manual Integration Results

RT:	36.33
Area:	1849
Amount:	0.155478
Amount Units:	pg/ul

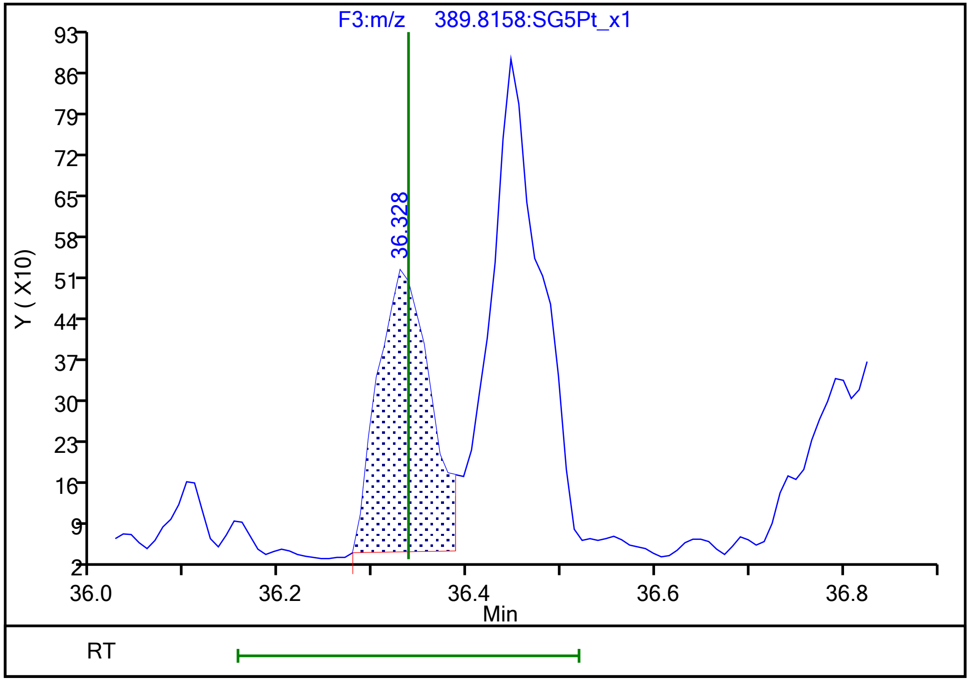

Reviewer: dadunj, 30-Nov-2020 10:56:19

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	36.45
Area:	2354
Amount:	0.389776
Amount Units:	pg/ul

Processing Integration Results

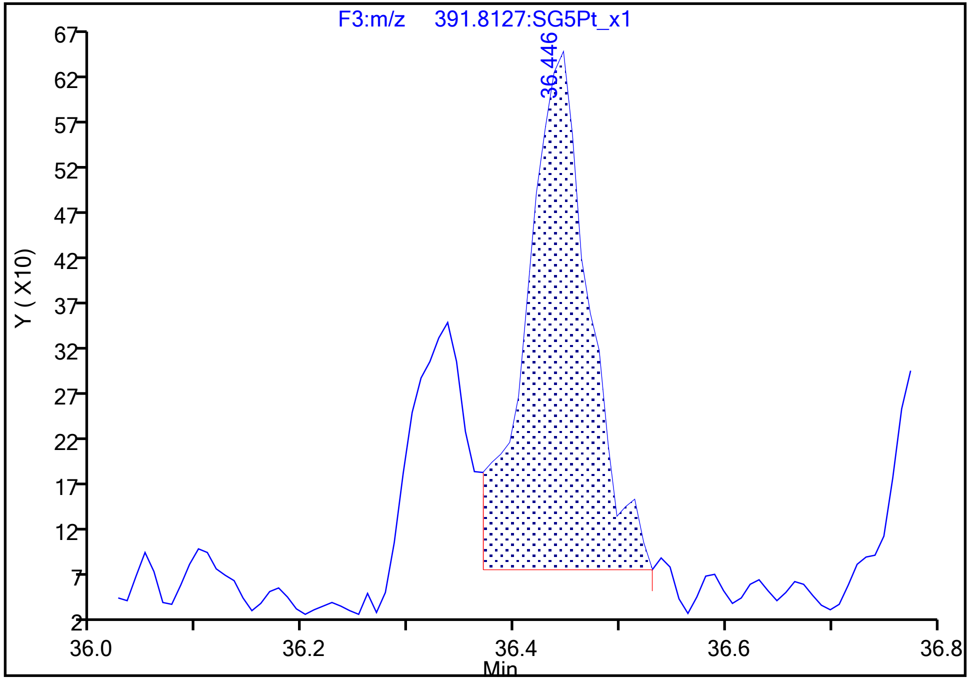

RT:	36.34
Area:	1096
Amount:	0.155478
Amount Units:	pg/ul

Manual Integration Results

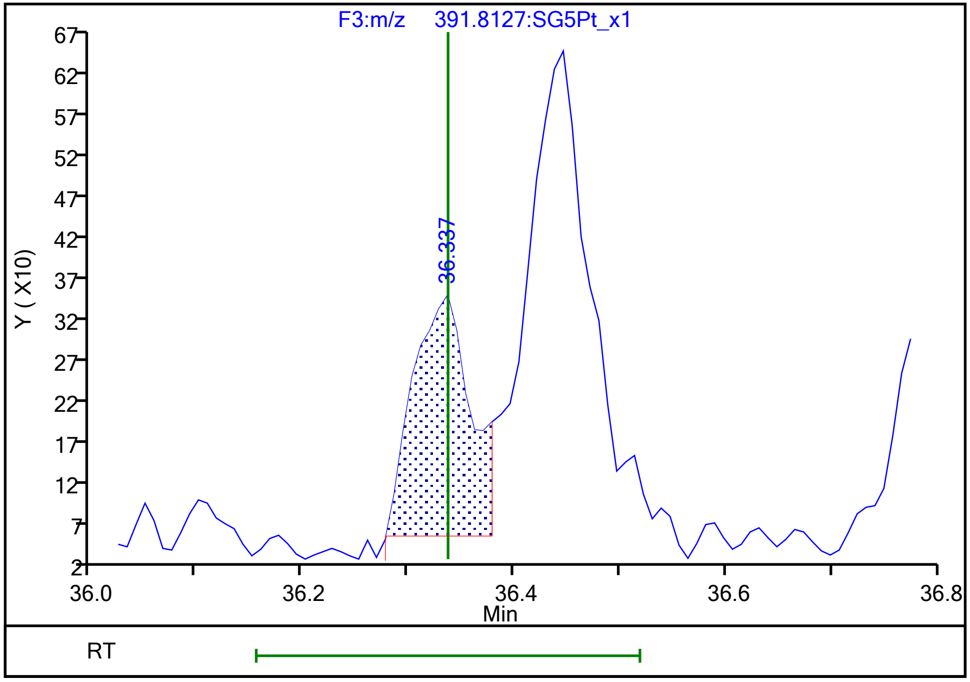

Reviewer: dadunj, 30-Nov-2020 10:56:21

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 1

Processing Integration Results

RT: 36.43
Area: 1122597
Amount: 66.607682
Amount Units: pg/ul

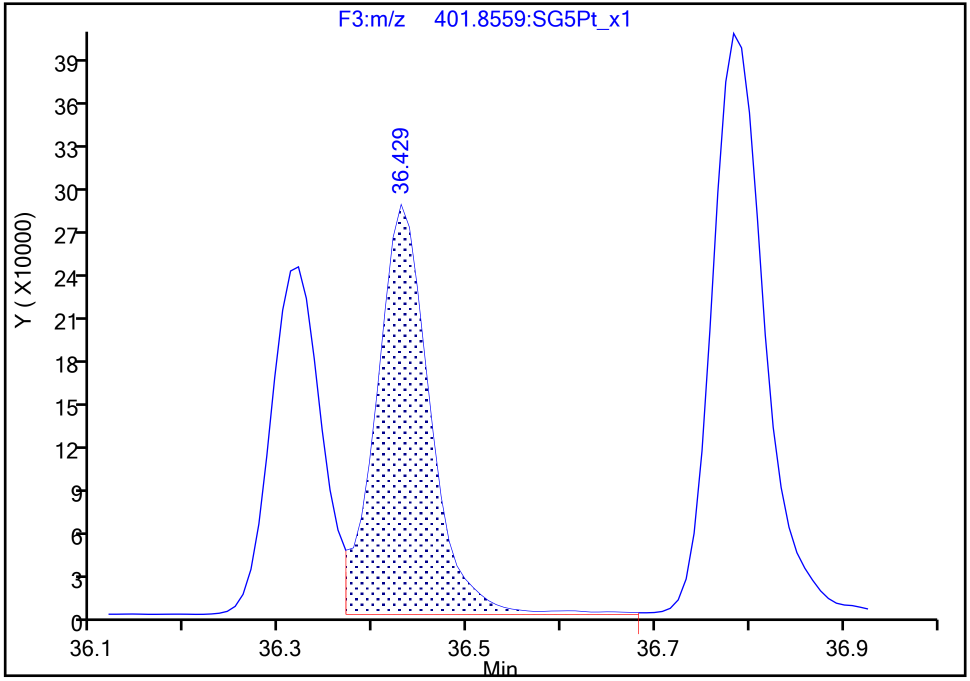

Manual Integration Results

RT: 36.43
Area: 1122597
Amount: 66.607682
Amount Units: pg/ul

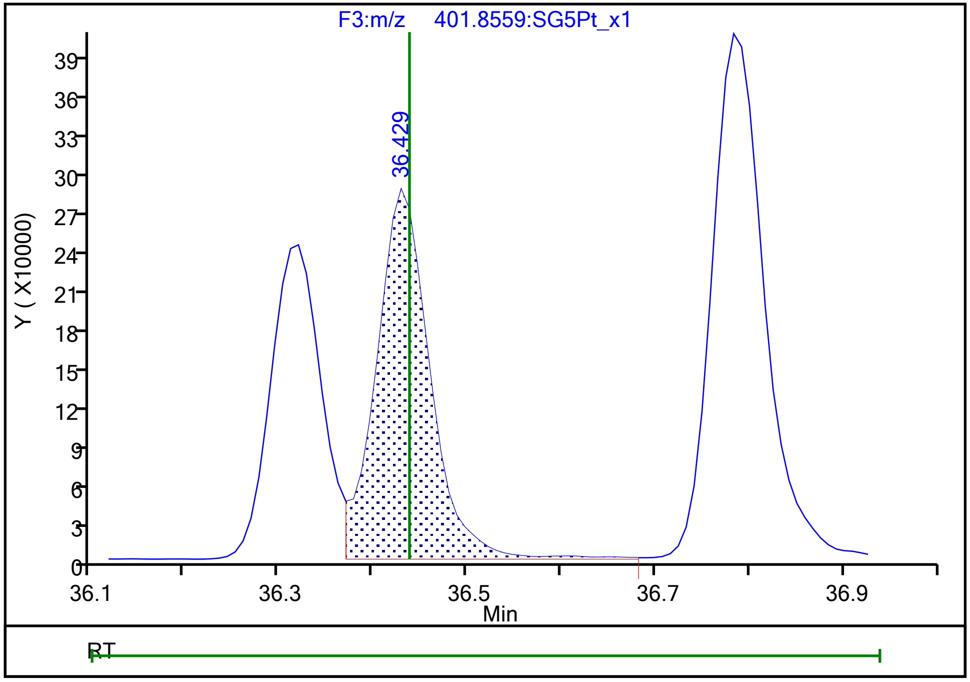

Reviewer: dadunj, 30-Nov-2020 10:56:23

Audit Action: Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT:	36.45
Area:	5029
Amount:	0.344597
Amount Units:	pg/ul

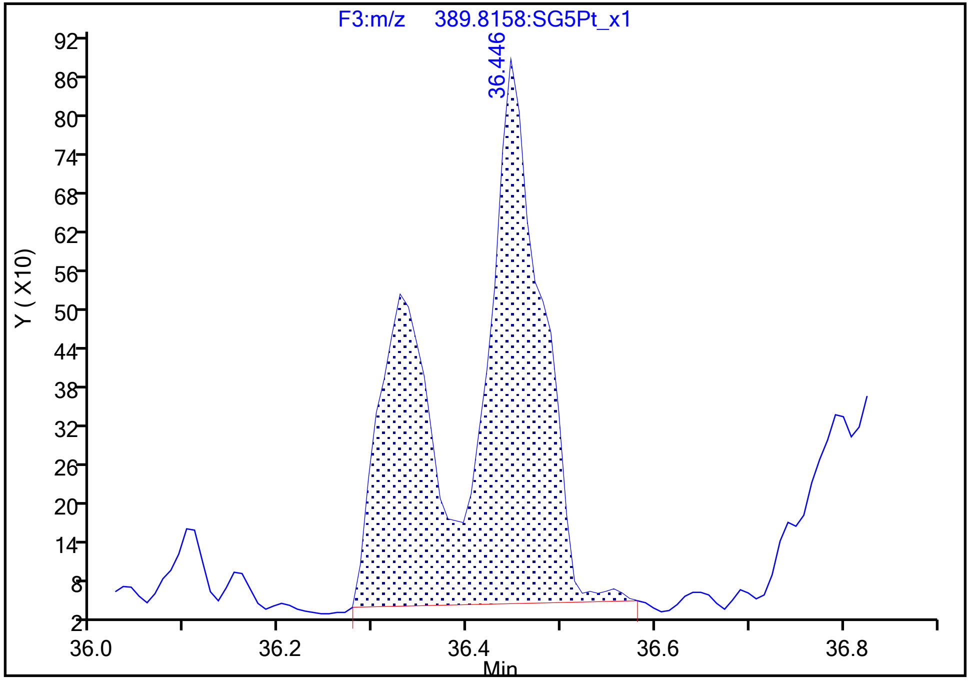

Manual Integration Results

RT:	36.45
Area:	3186
Amount:	0.265484
Amount Units:	pg/ul

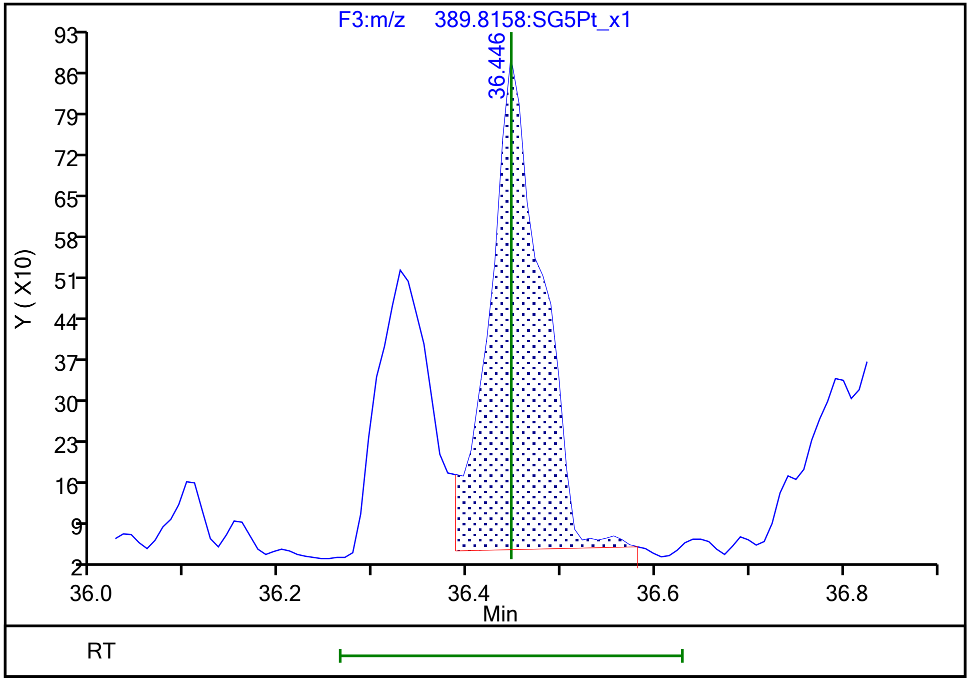

Reviewer: dadunj, 30-Nov-2020 10:56:19

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4
Client ID:	11215702-Tank #2 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT: 36.45
Area: 2354
Amount: 0.344597
Amount Units: pg/ul

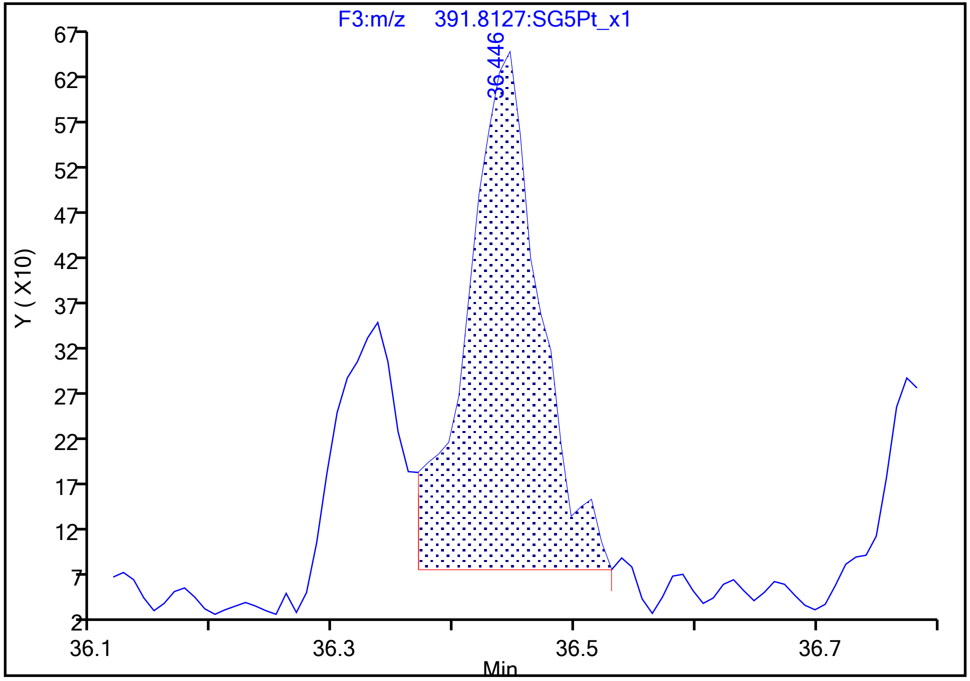

Manual Integration Results

RT: 36.45
Area: 2502
Amount: 0.265484
Amount Units: pg/ul

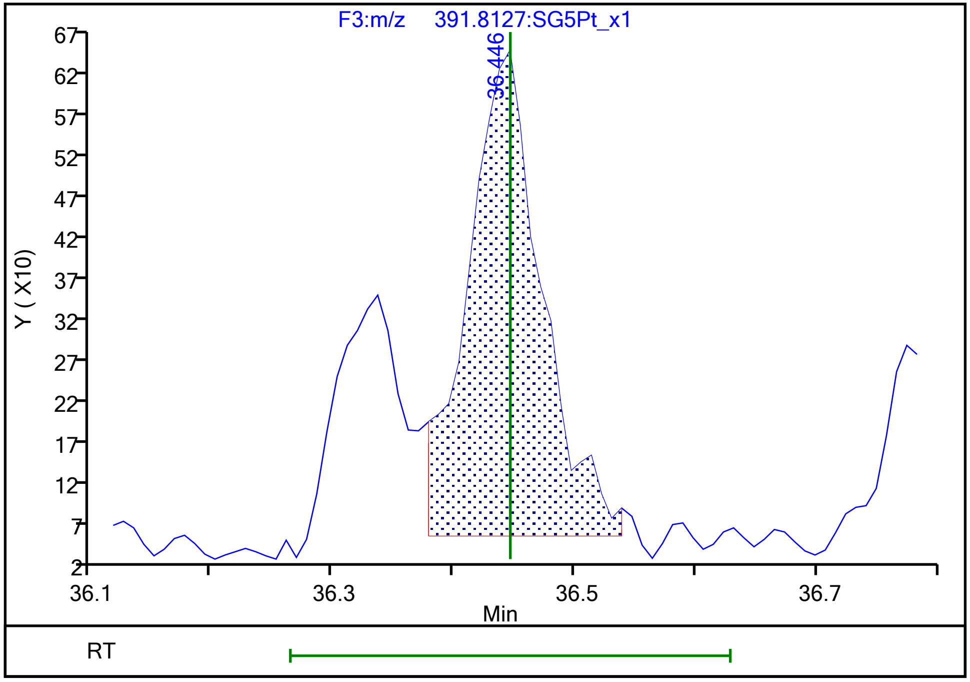

Reviewer: dadunj, 30-Nov-2020 10:56:21

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4
Client ID:	11215702-Tank #2 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Processing Integration Results

RT:	36.83
Area:	1285
Amount:	0.131824
Amount Units:	pg/ul

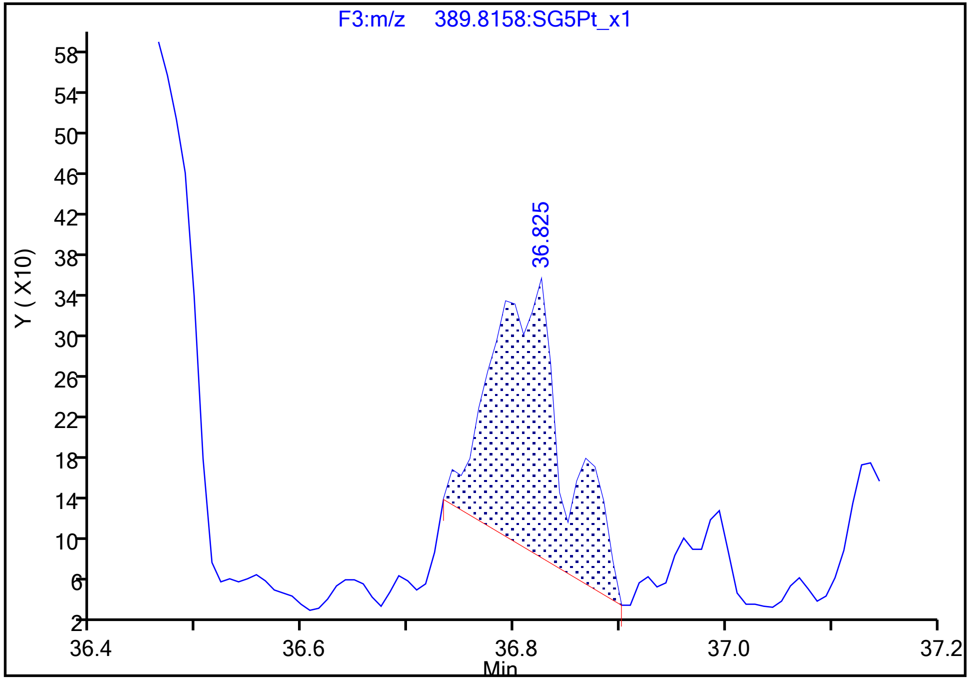

Manual Integration Results

RT:	36.83
Area:	1475
Amount:	0.134139
Amount Units:	pg/ul

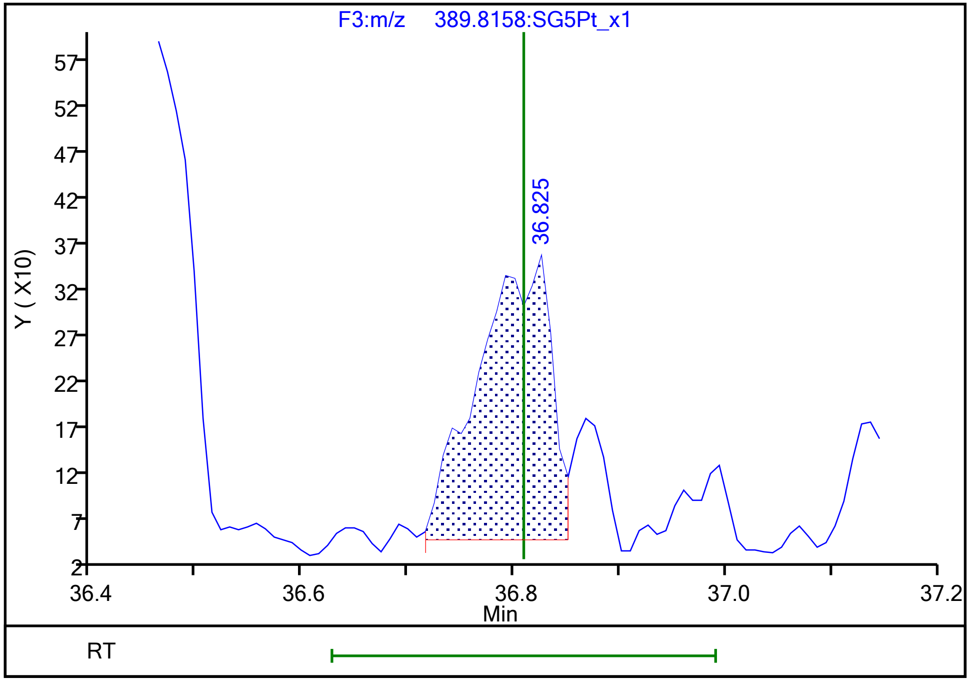

Reviewer: dadunj, 30-Nov-2020 10:56:35

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d				
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4		
Client ID:	11215702-Tank #2 Drum				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT:	36.81
Area:	1505
Amount:	0.131824
Amount Units:	pg/ul

Processing Integration Results

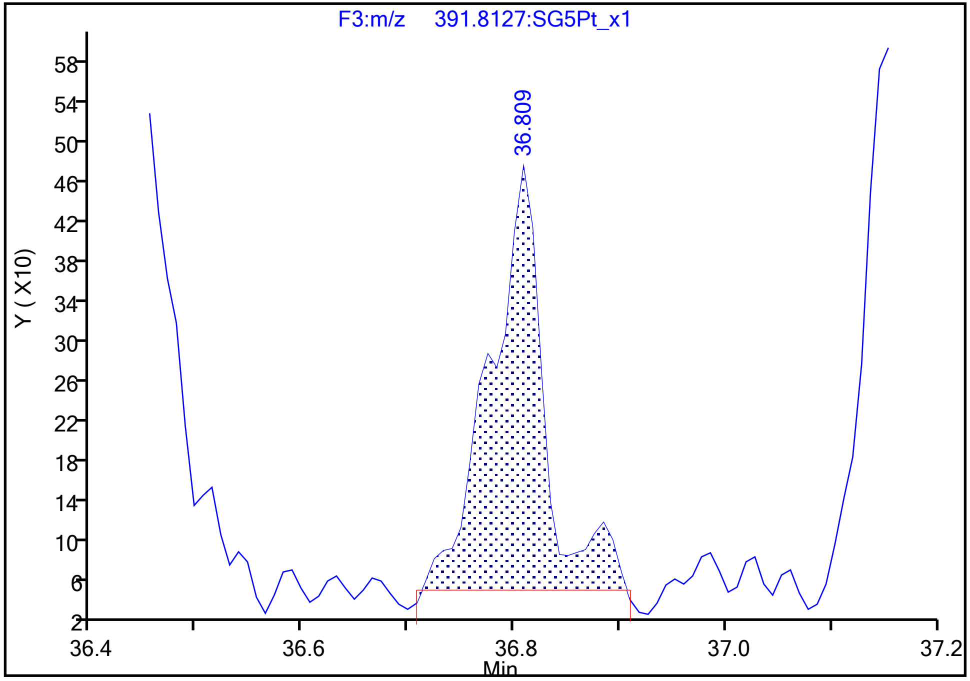

RT:	36.81
Area:	1364
Amount:	0.134139
Amount Units:	pg/ul

Manual Integration Results

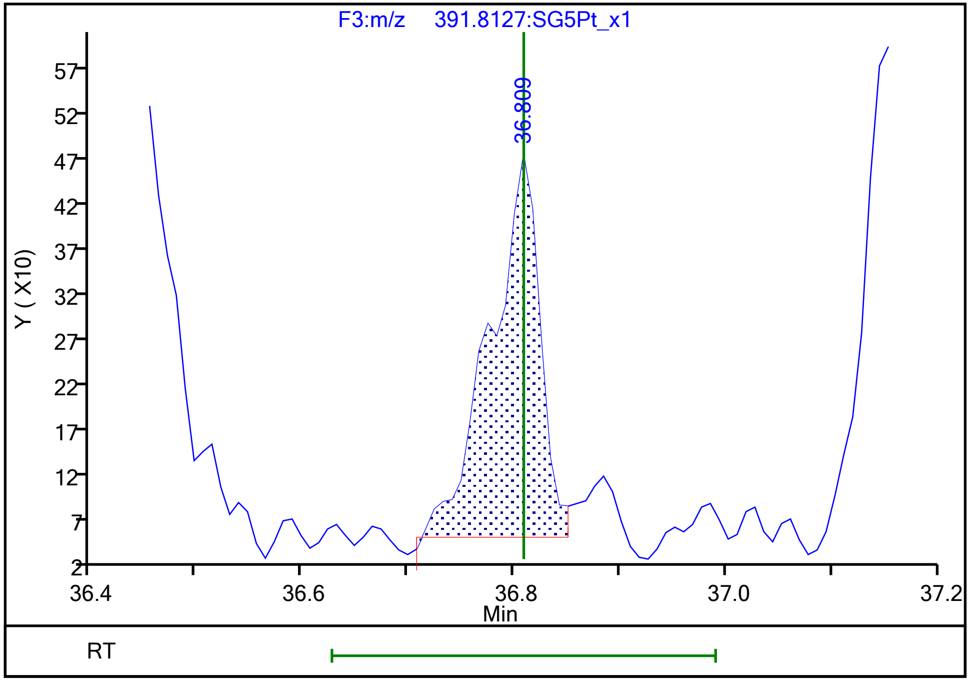

Reviewer: dadunj, 30-Nov-2020 10:56:37

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-4-B	Lab Sample ID:	320-66850-4
Client ID:	11215702-Tank #2 Drum		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 37
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT:	38.76
Area:	212893
Amount:	15.111012
Amount Units:	pg/ul

Processing Integration Results

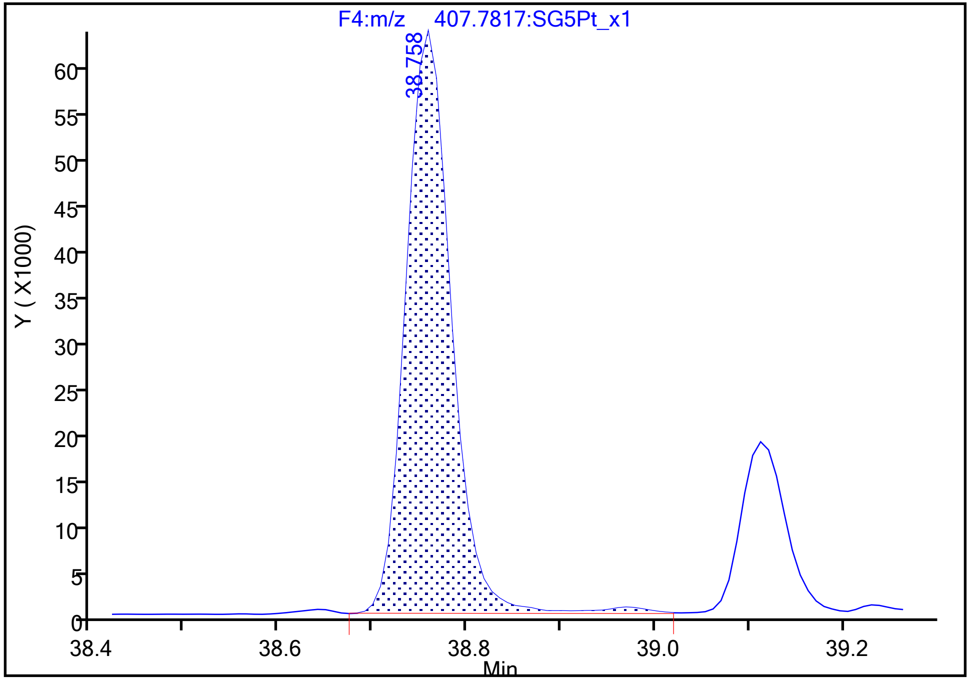

RT:	38.76
Area:	210662
Amount:	15.030227
Amount Units:	pg/ul

Manual Integration Results

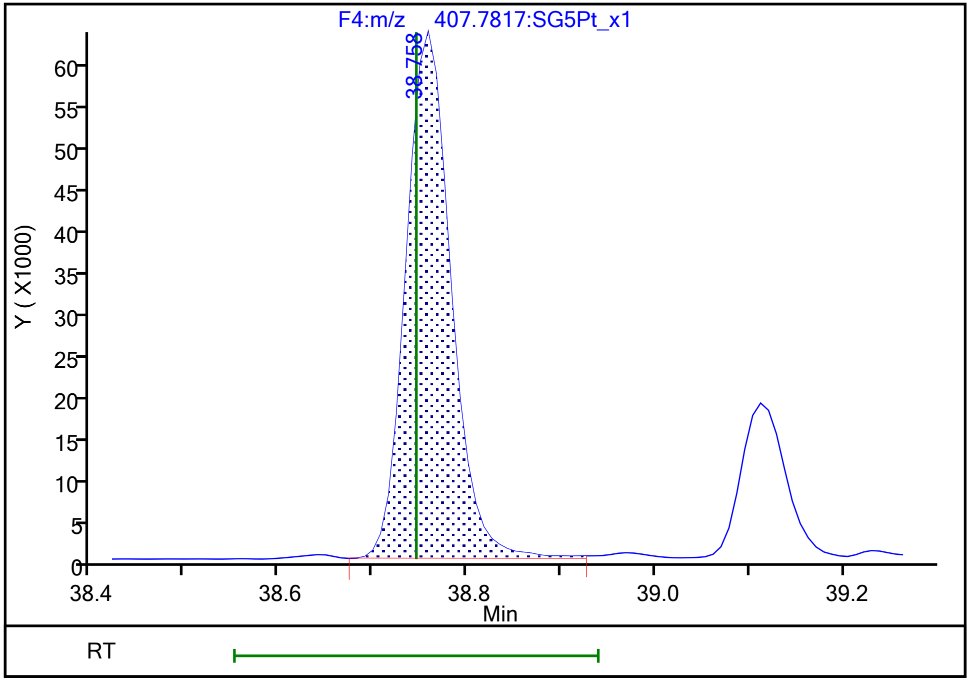

Reviewer: dadunj, 30-Nov-2020 10:56:51

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date: 24-Nov-2020 15:04:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 434777
Sample Line#: 37

Column Type: DB-5
Column Dia: 0.32 mm

TCDF

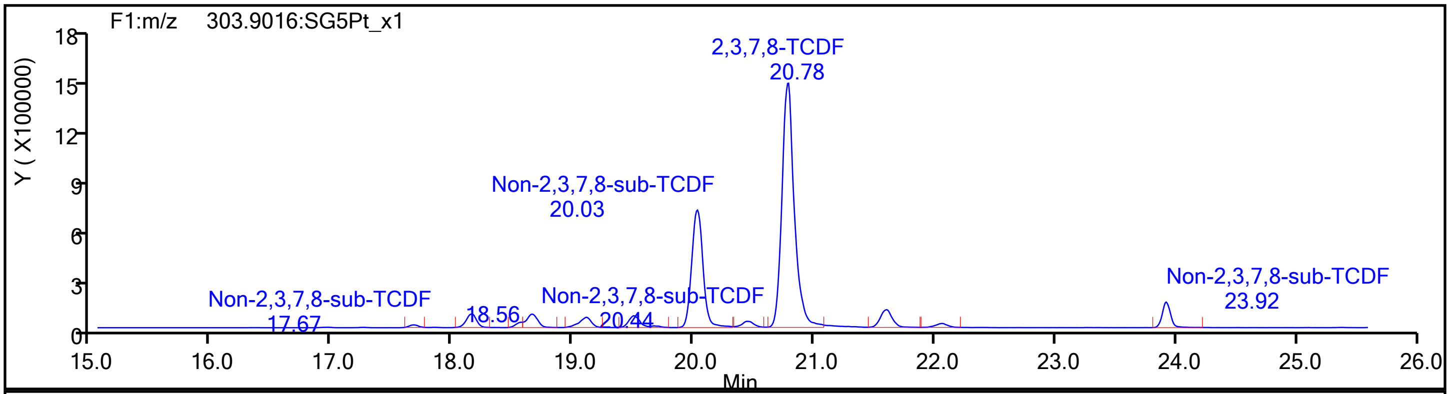

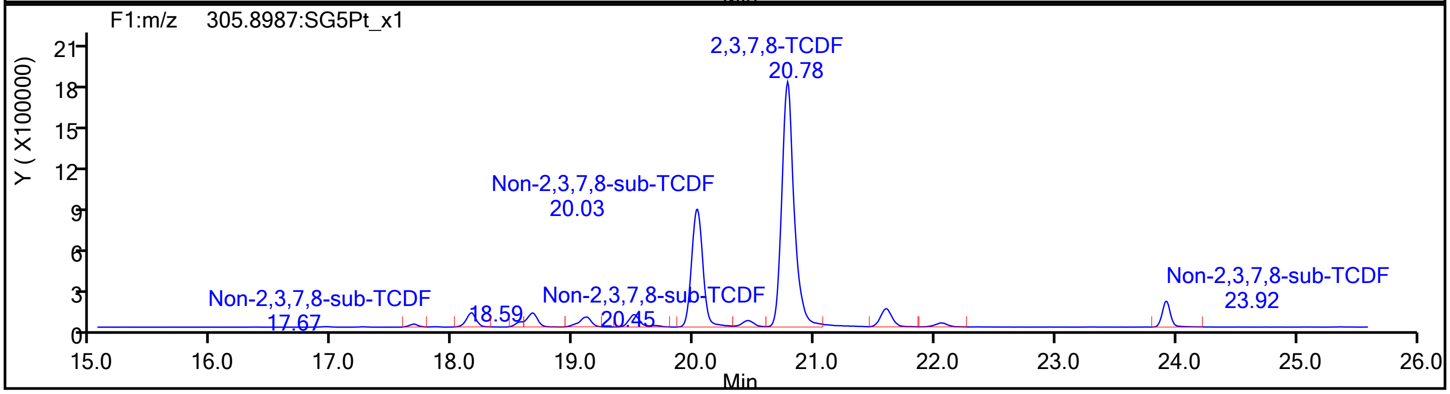

TCDF Standards

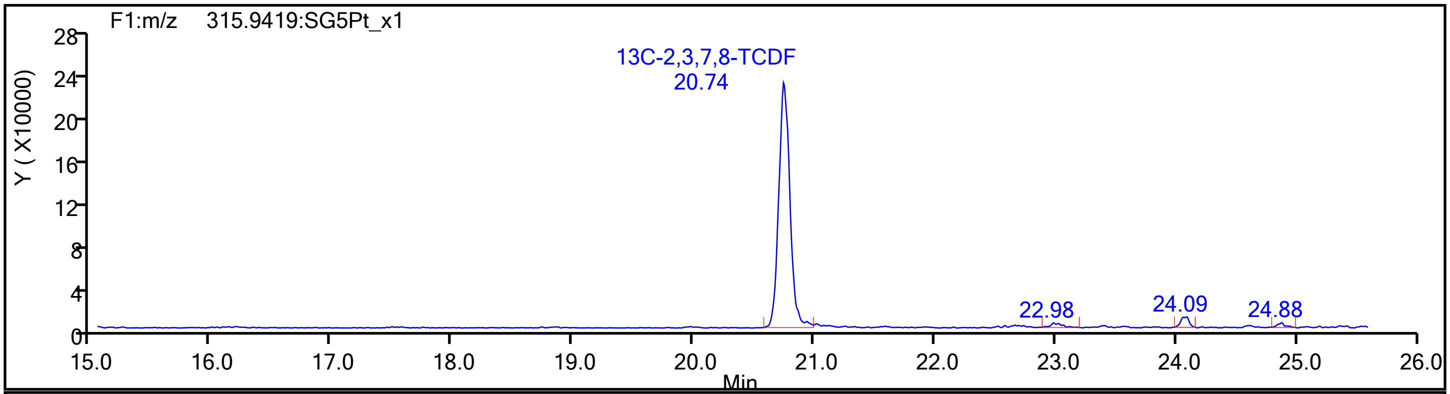

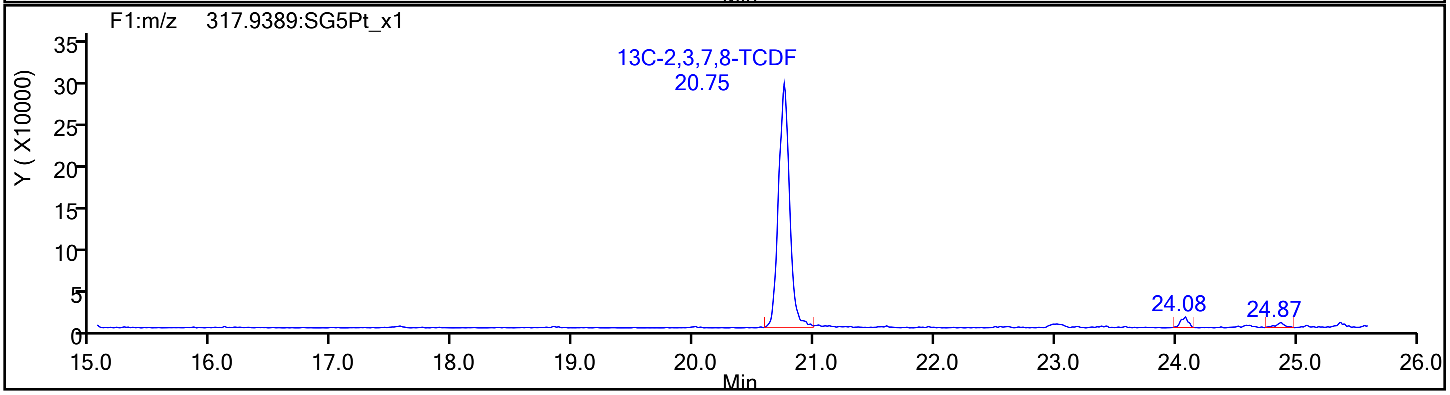

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date: 24-Nov-2020 15:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 434777

Sample Line#: 37

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

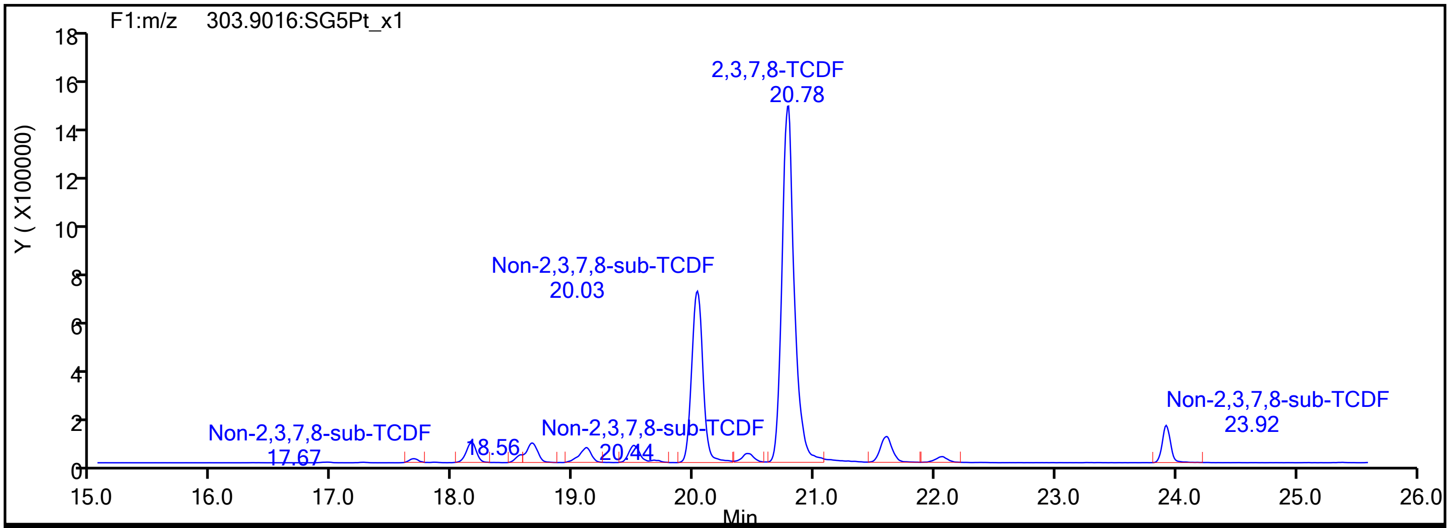

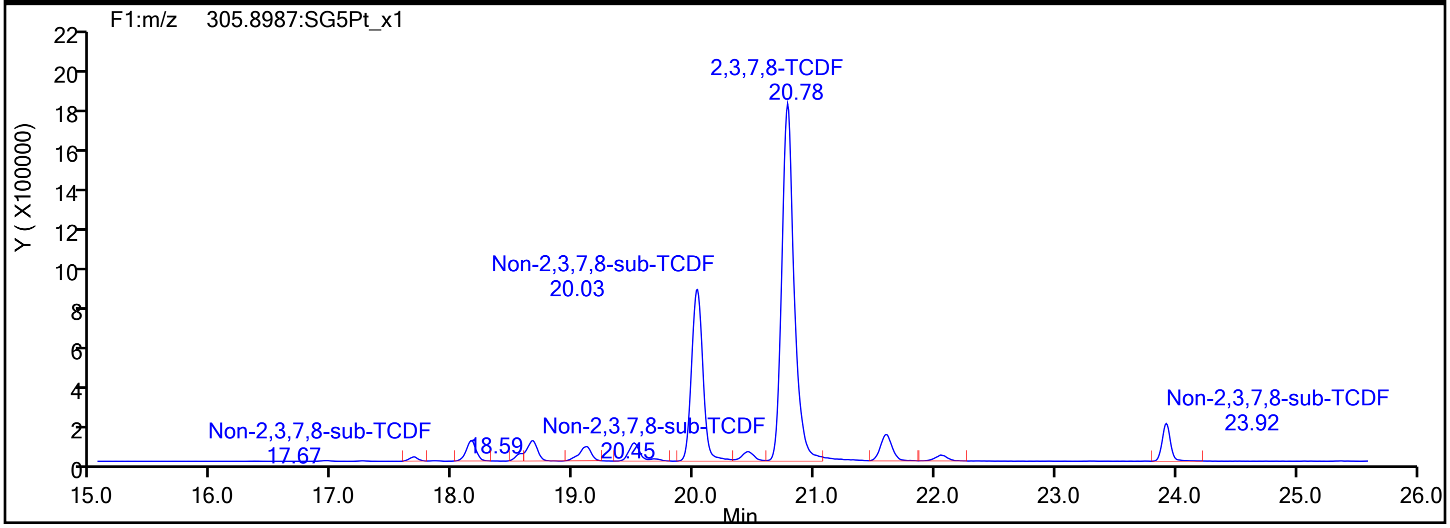

TCDF Interference Mass

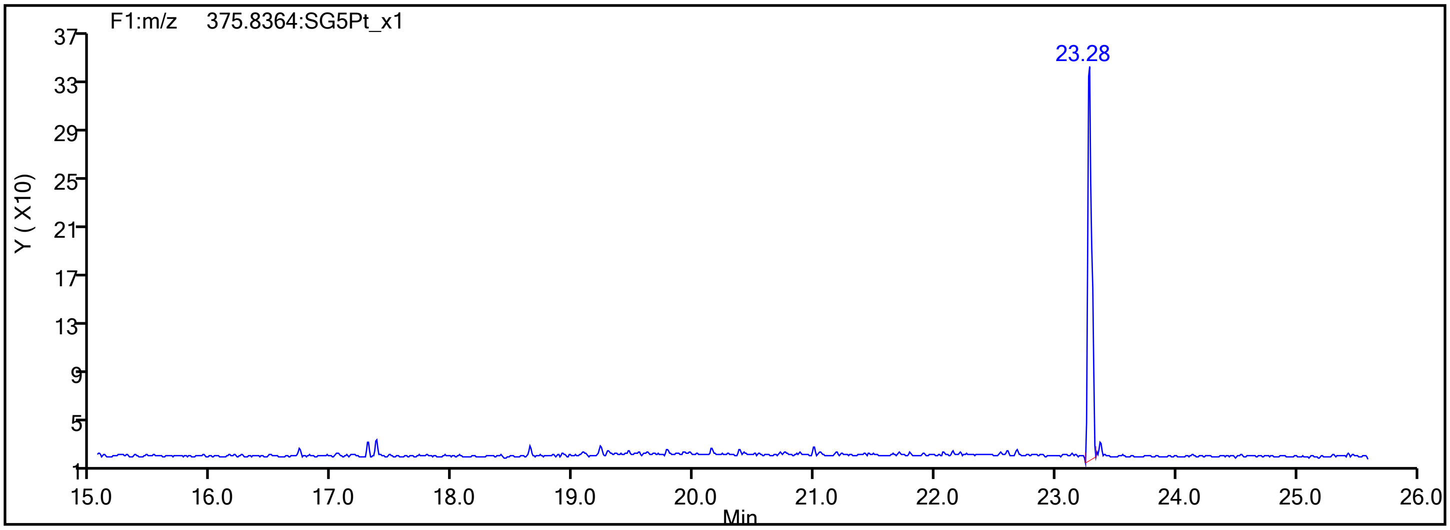

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Injection Date: 24-Nov-2020 15:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Drum
Worklist#: 434777
Sample Line#: 37
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

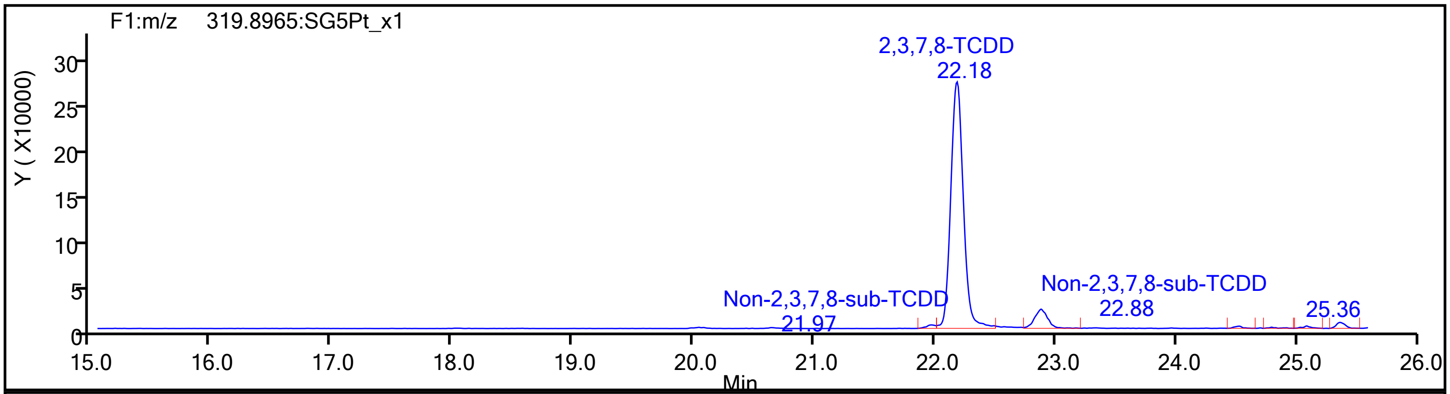

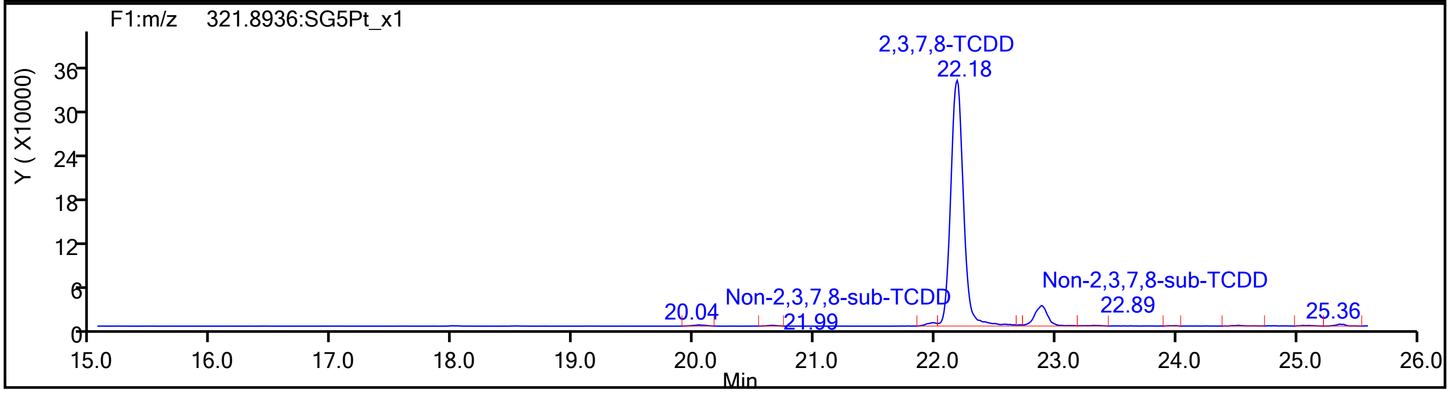

TCDD Standards

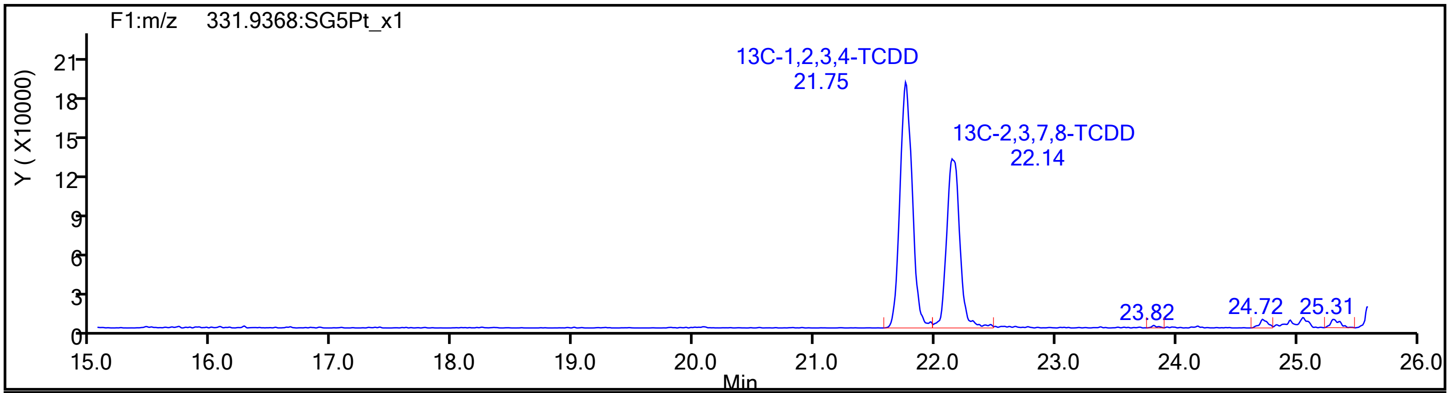

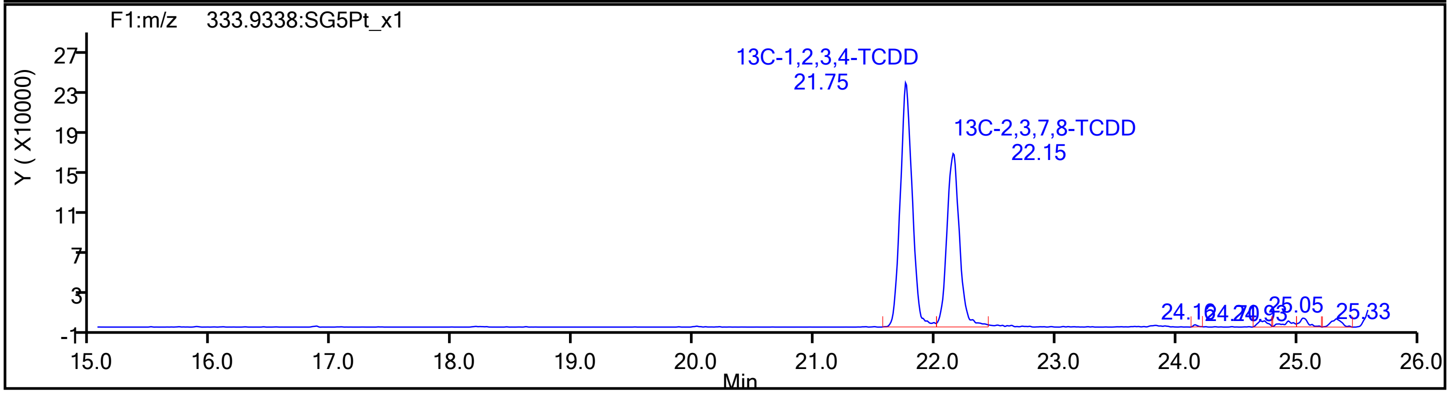

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date: 24-Nov-2020 15:04:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 434777 Sample Line#: 37

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

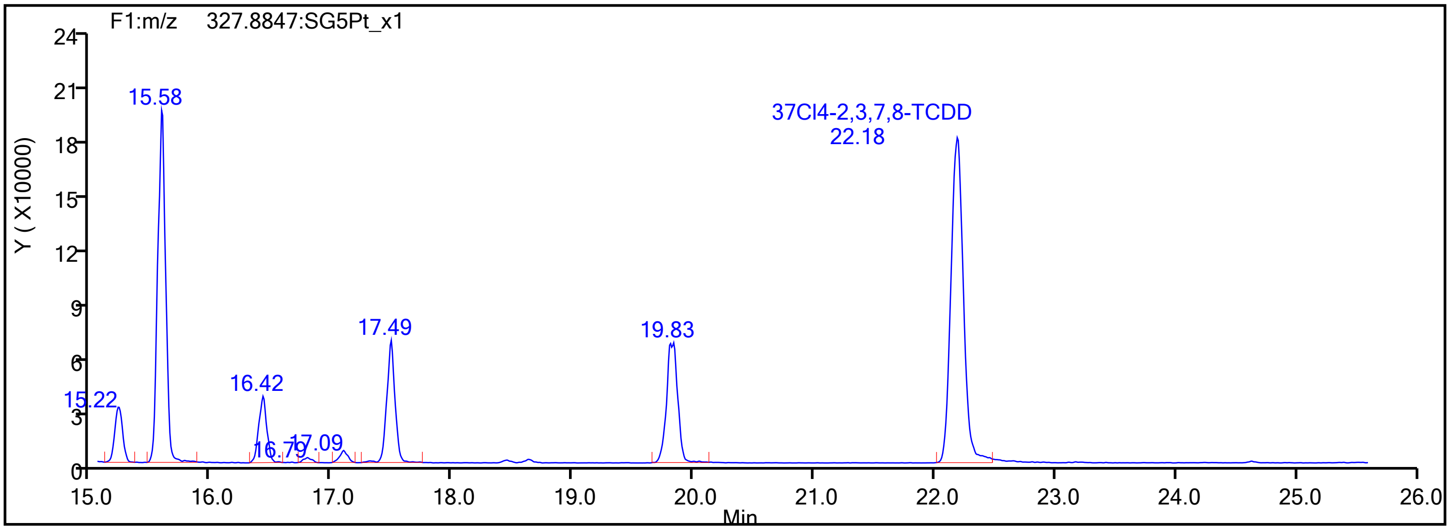

37Cl4-TCDD Standards

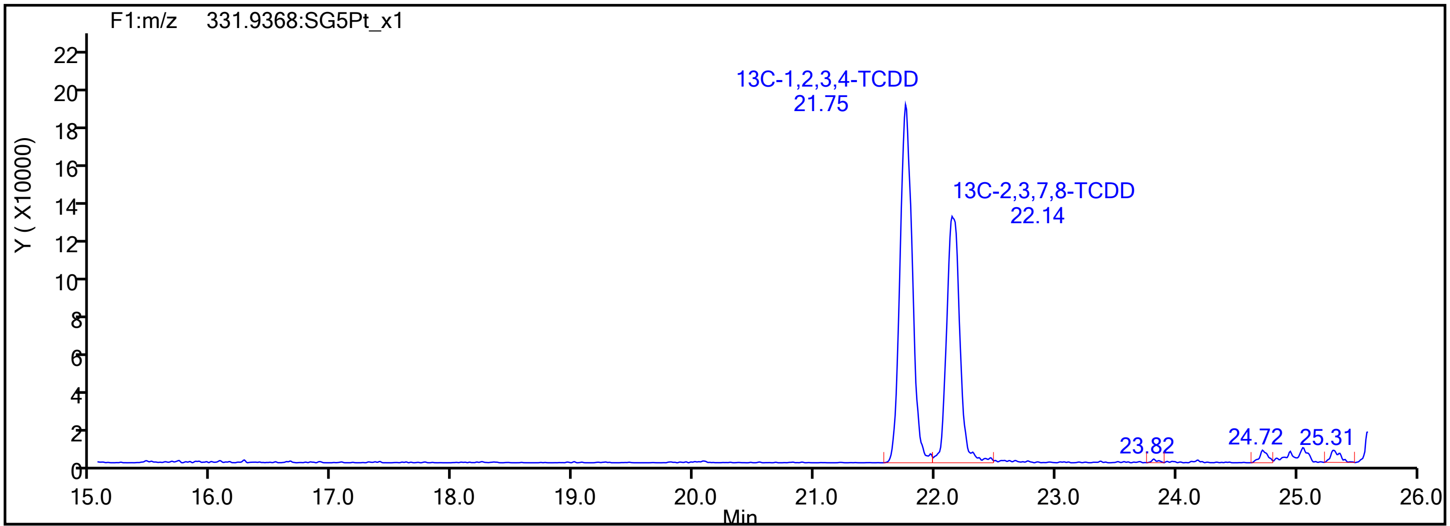

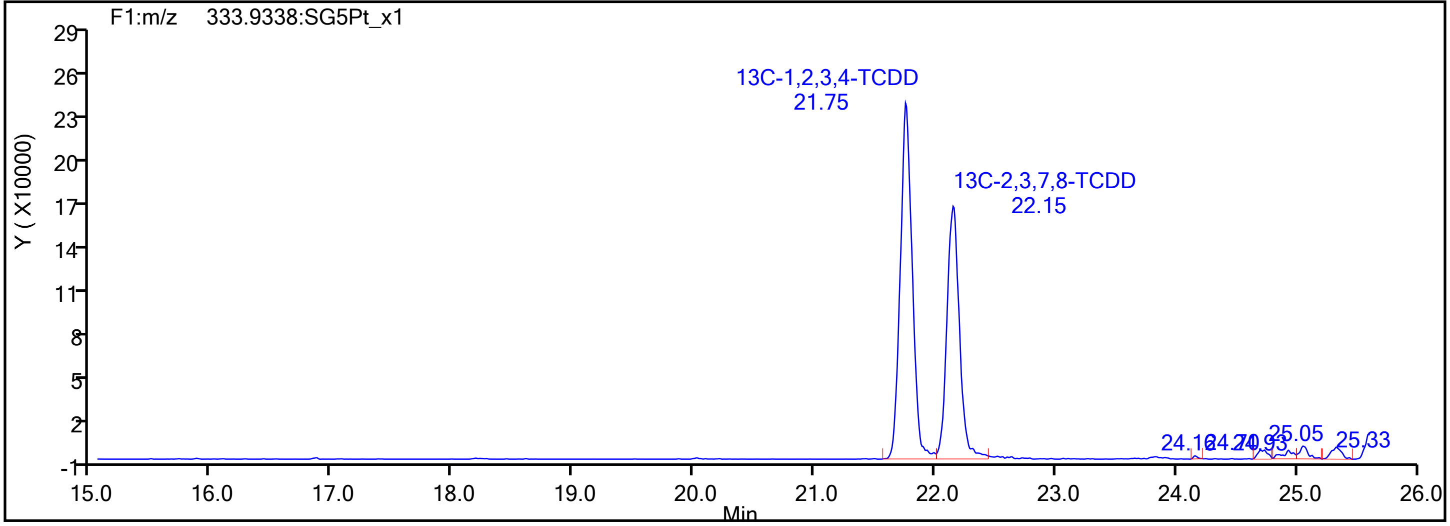

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

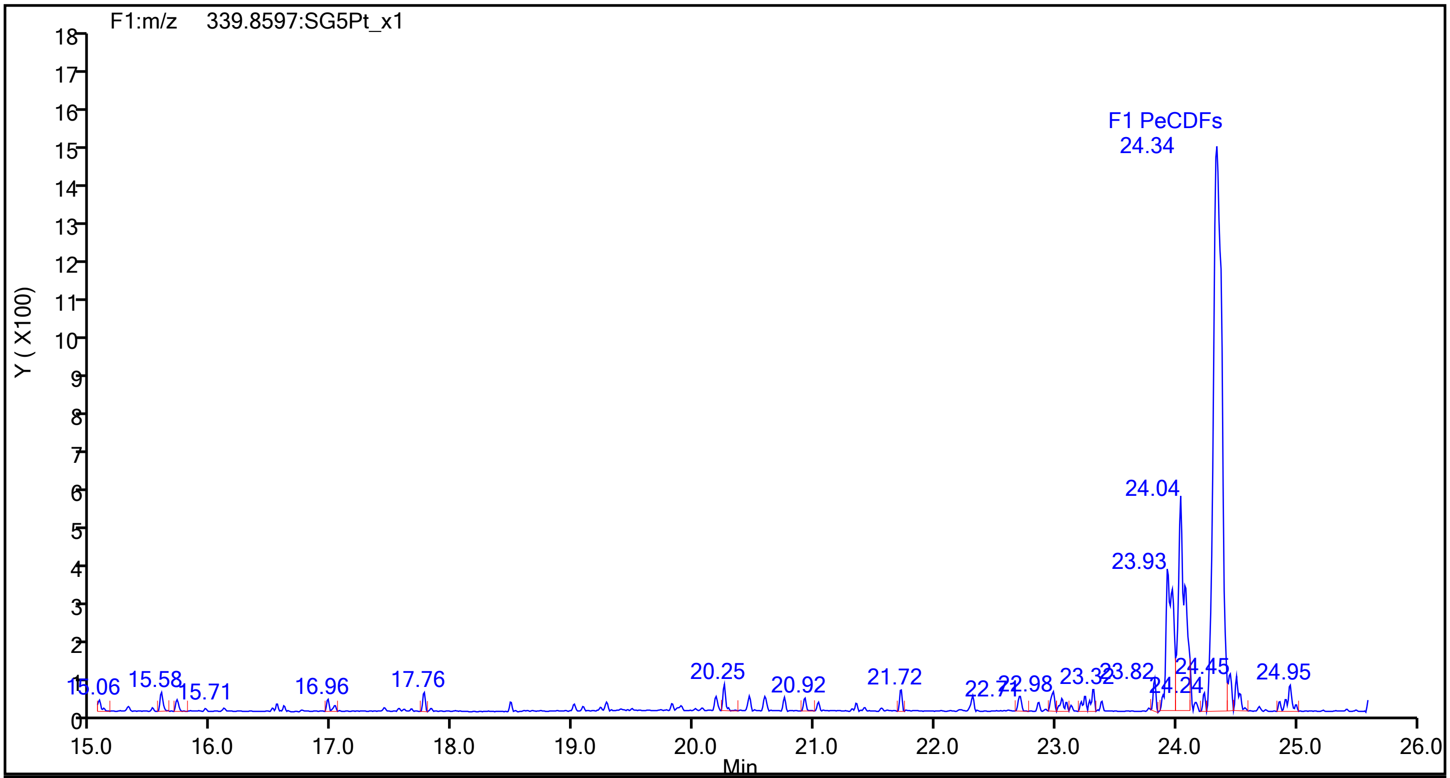

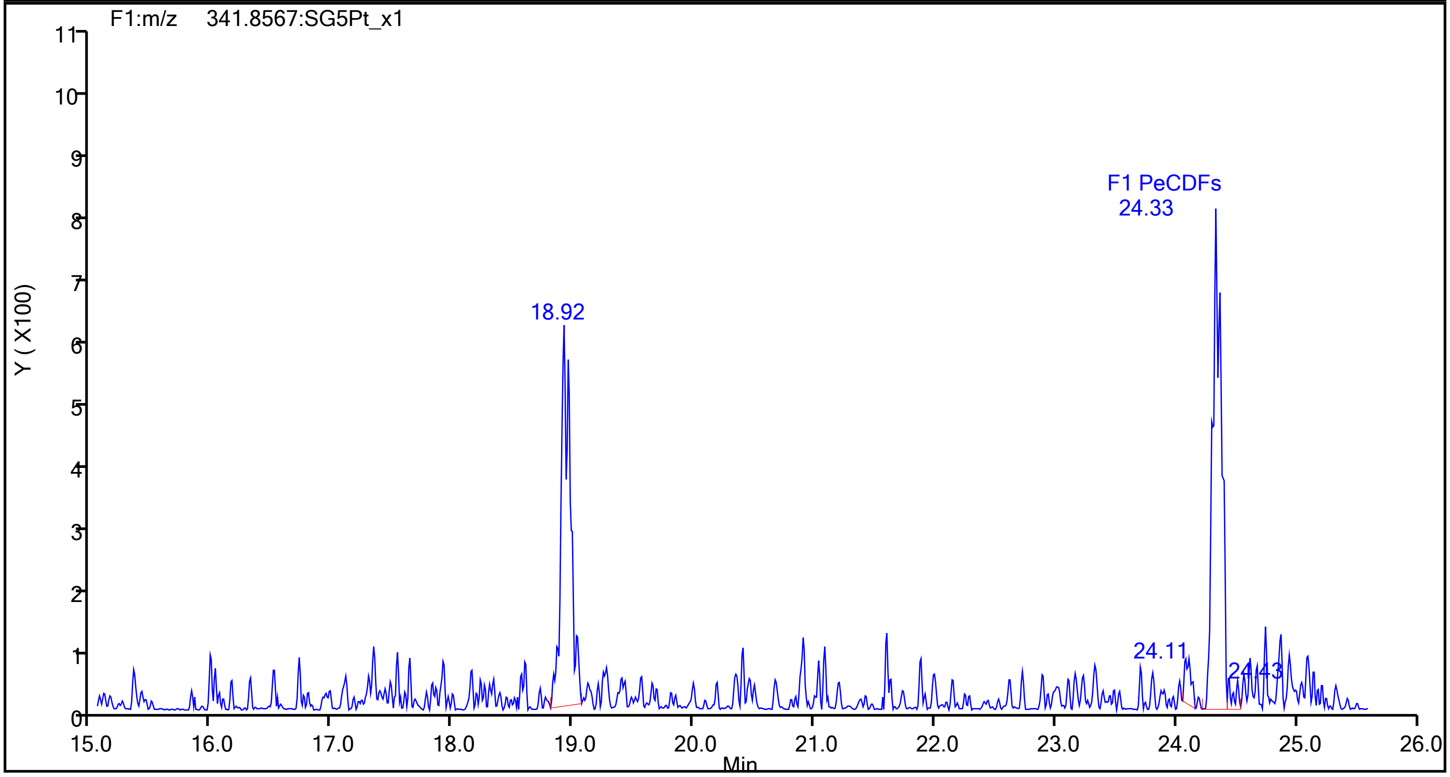

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

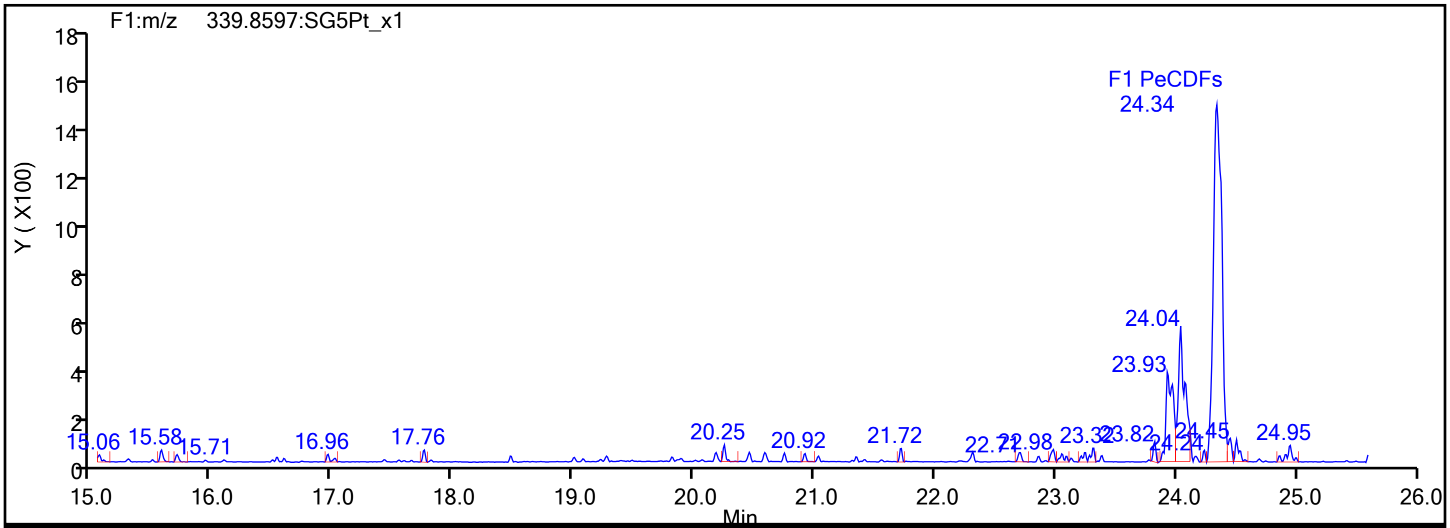

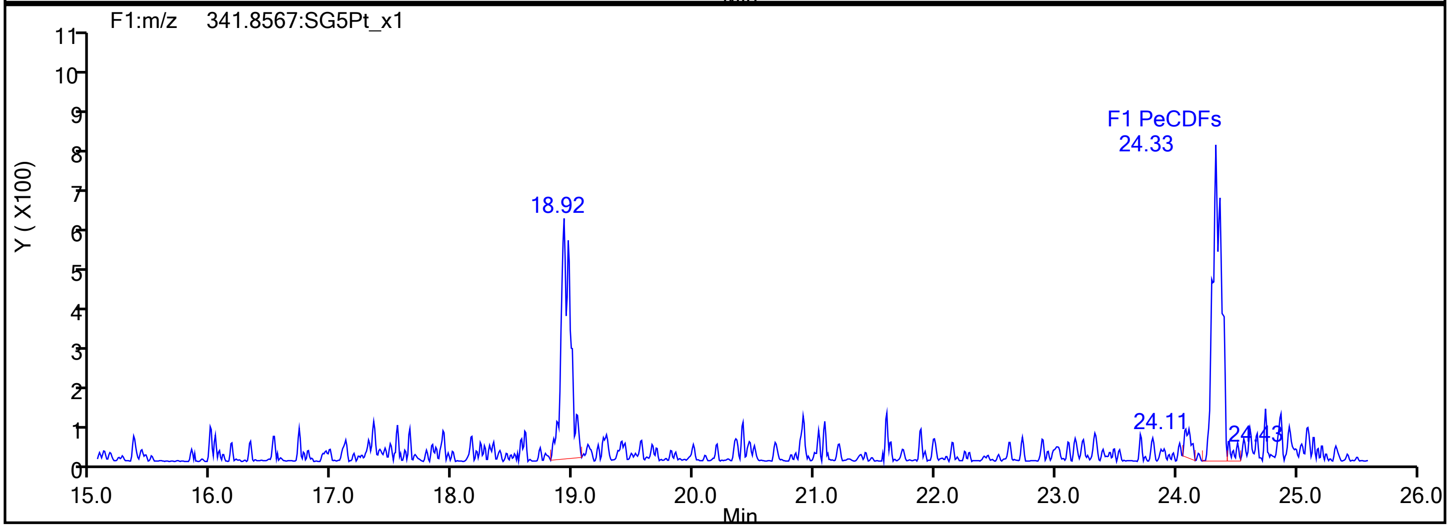

F1 PeCDFs Interference Mass

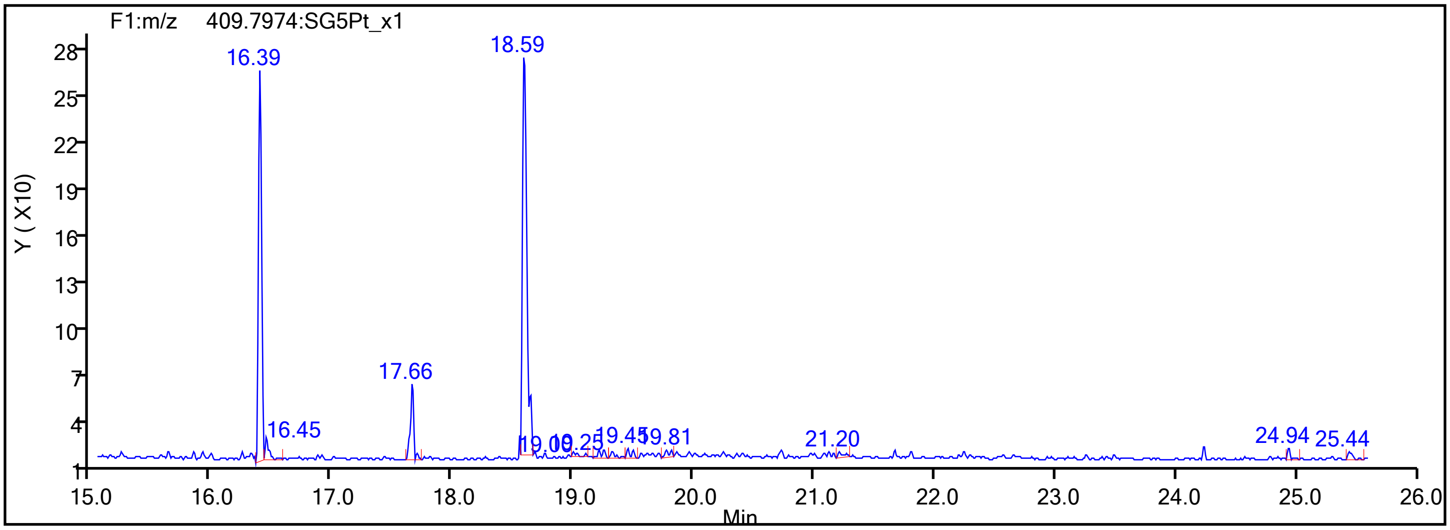

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

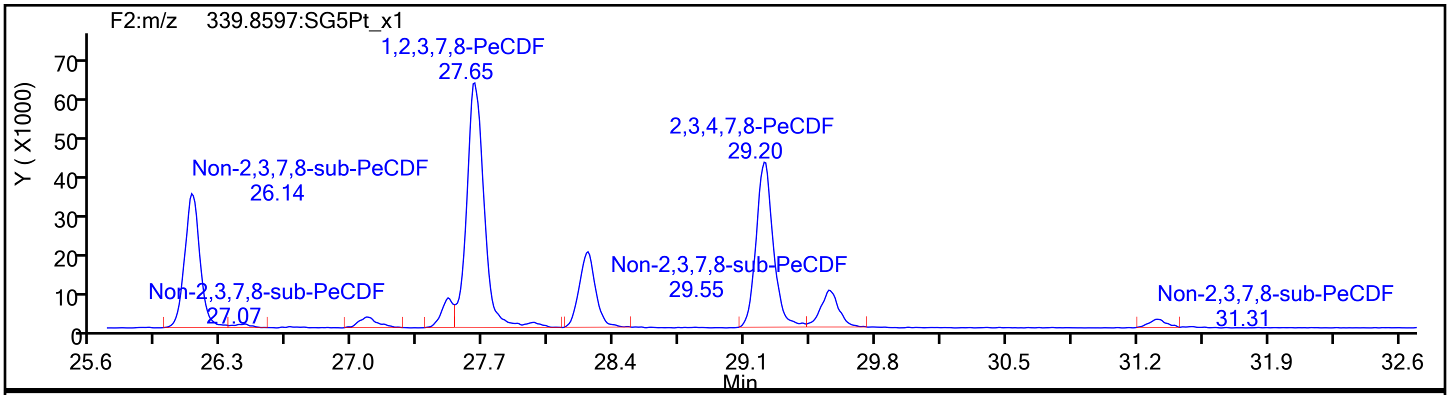

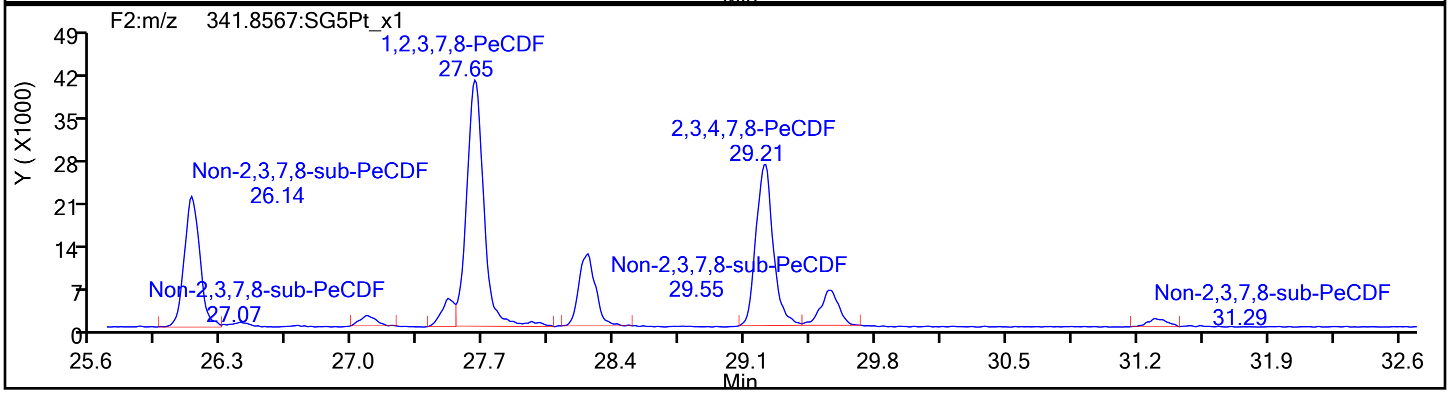

PeCDF Standards

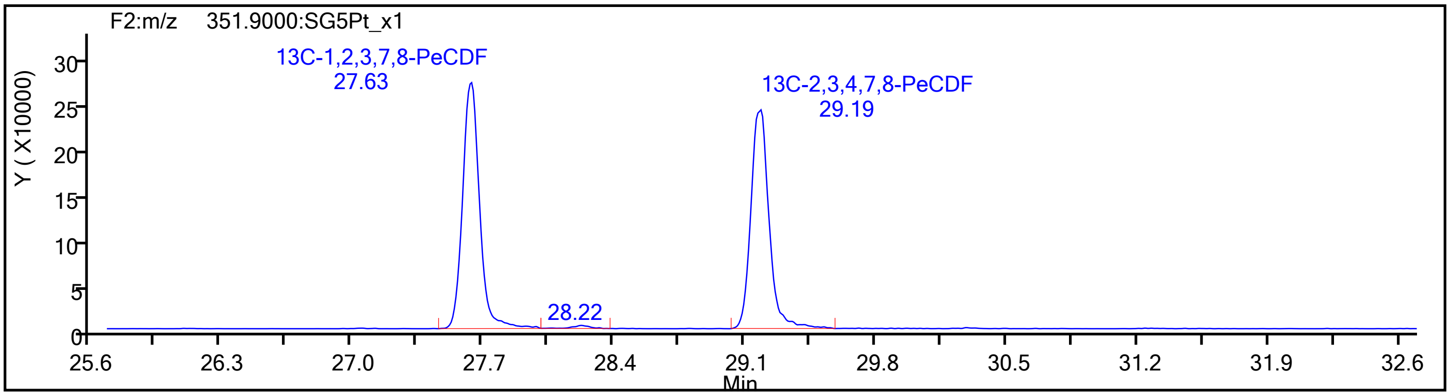

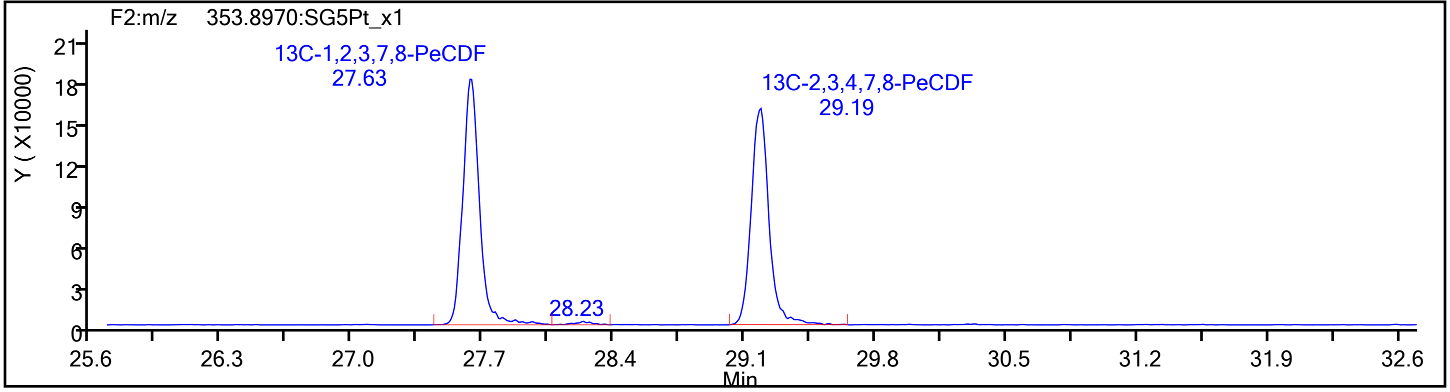

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

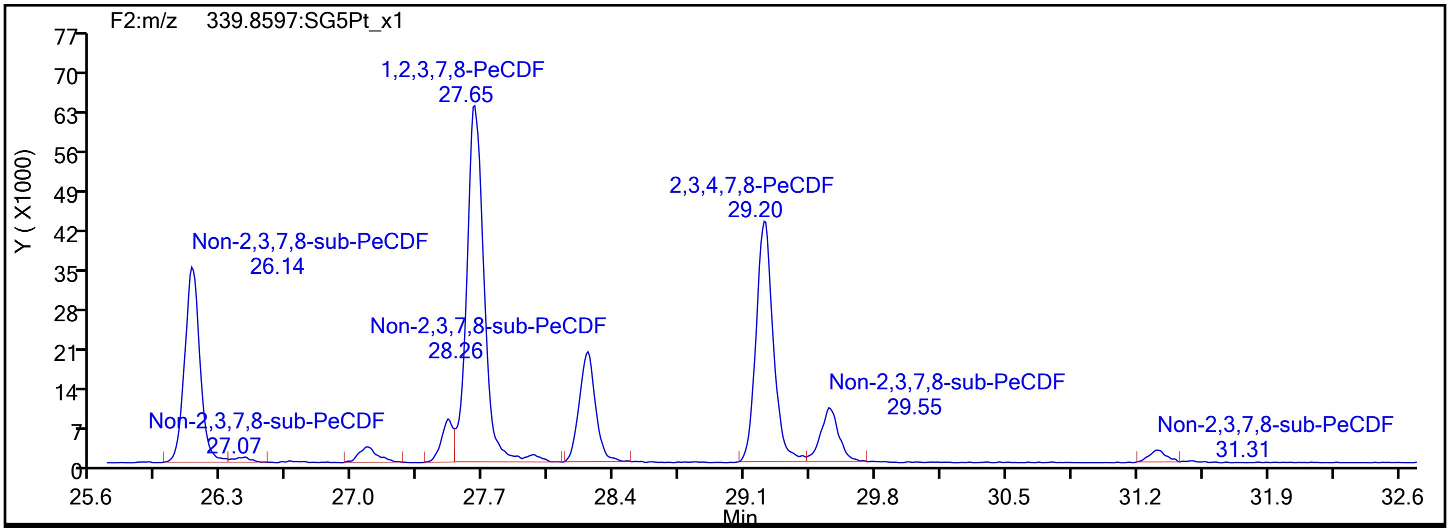

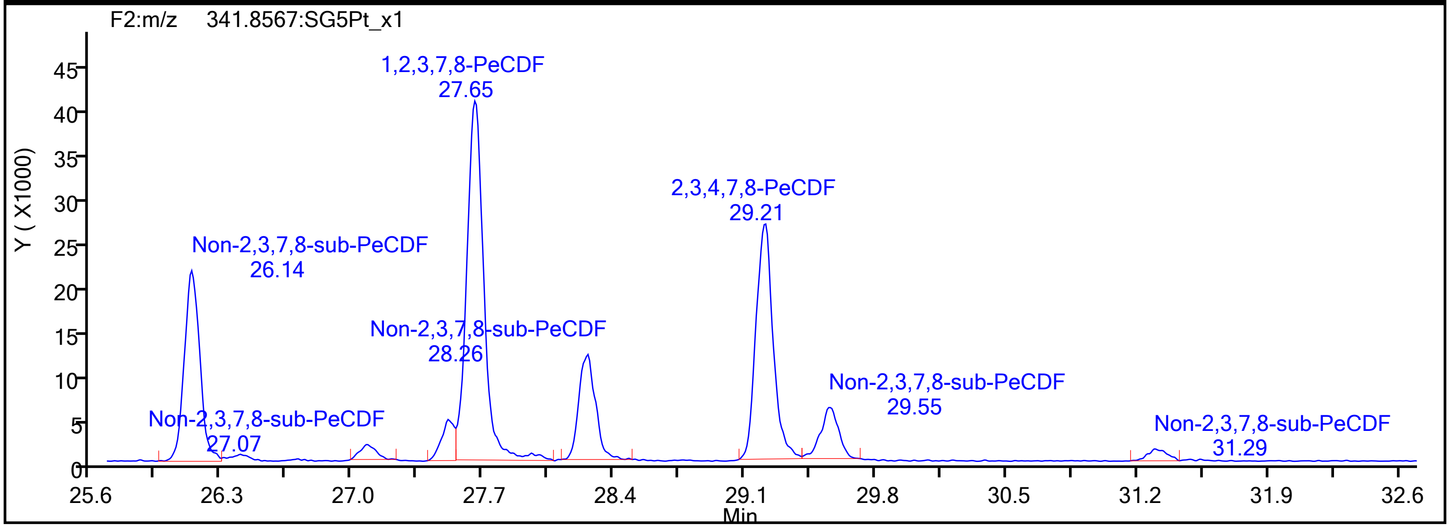

PeCDF Interference Mass

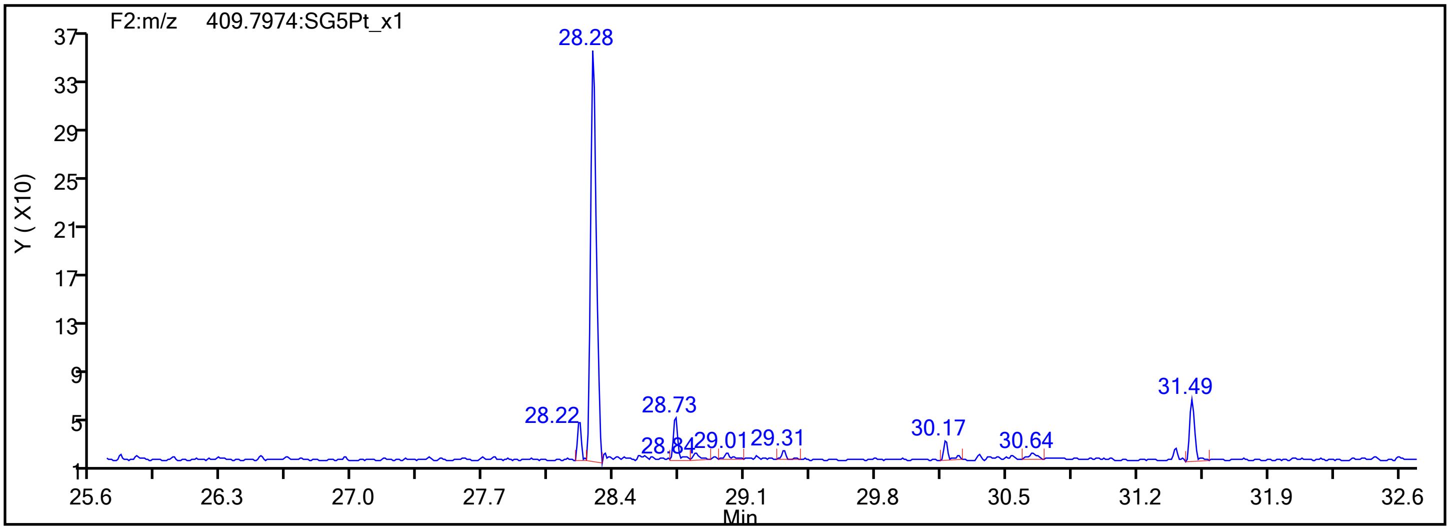

Report Date: 01-Dec-2020 13:51:44		Chrom Revision: 2.3 12-Nov-2020 21:52:08	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

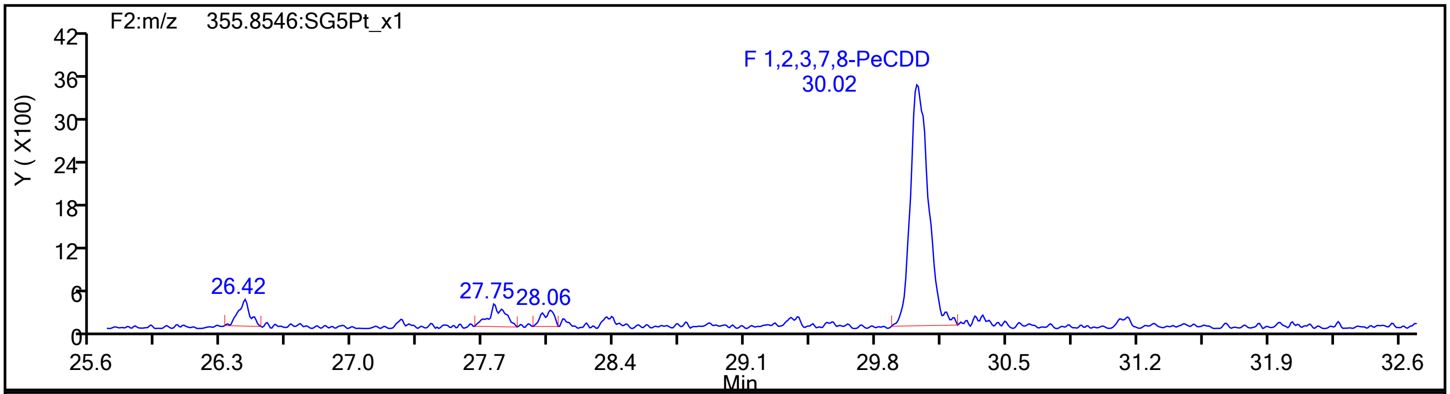

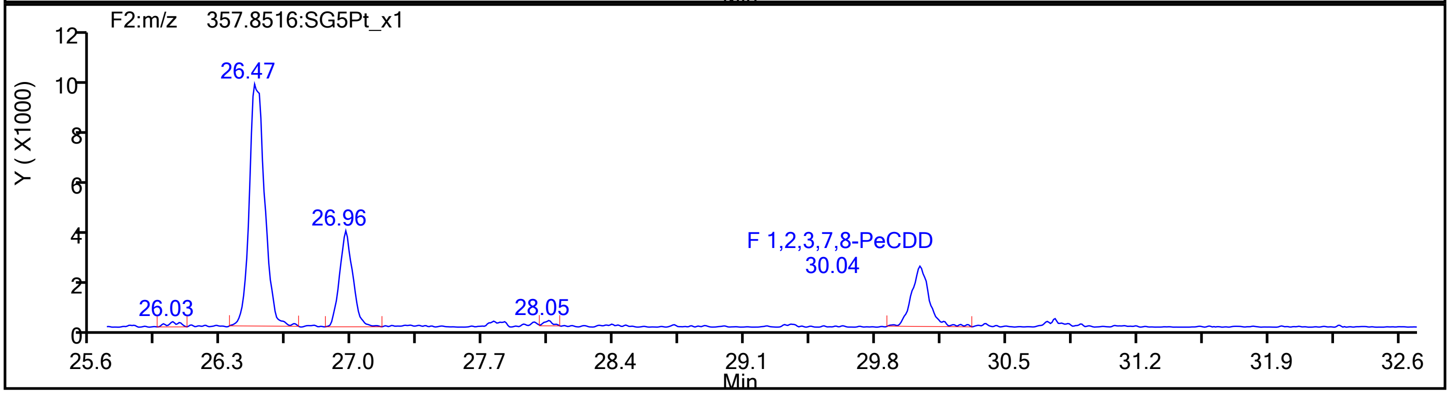

PeCDD Standards

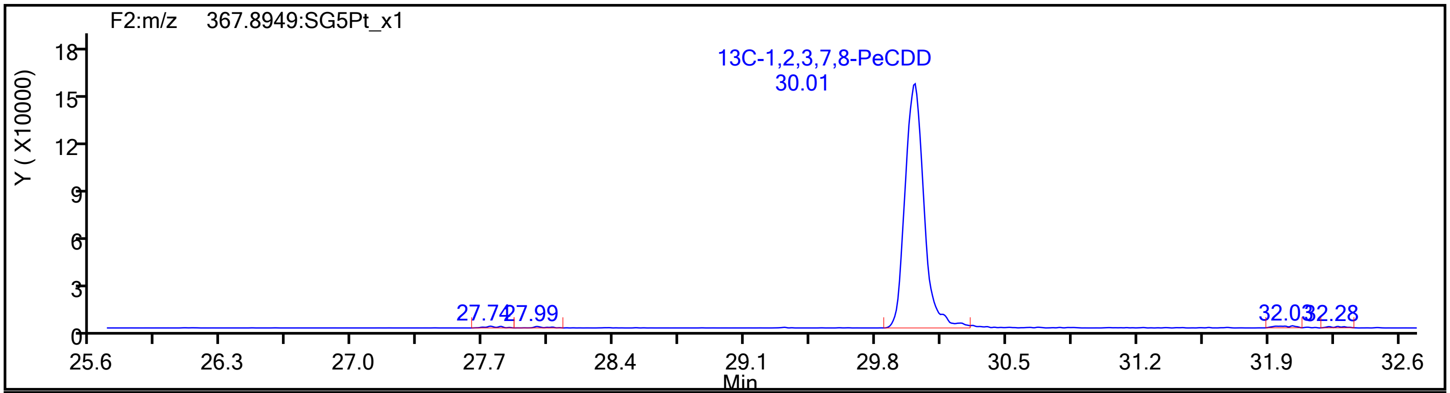

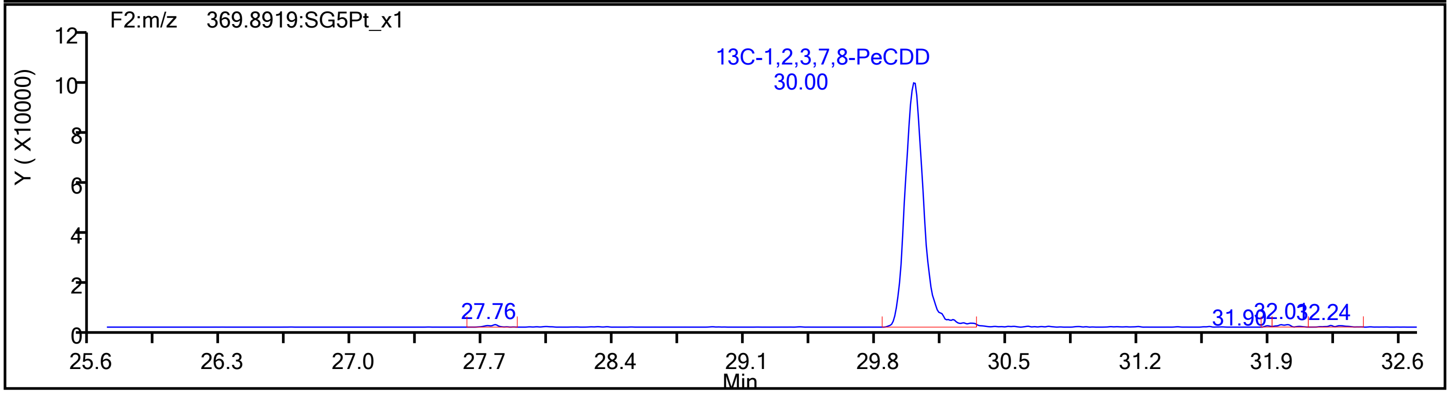

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Injection Date: 24-Nov-2020 15:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Drum
Worklist#: 434777
Sample Line#: 37
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

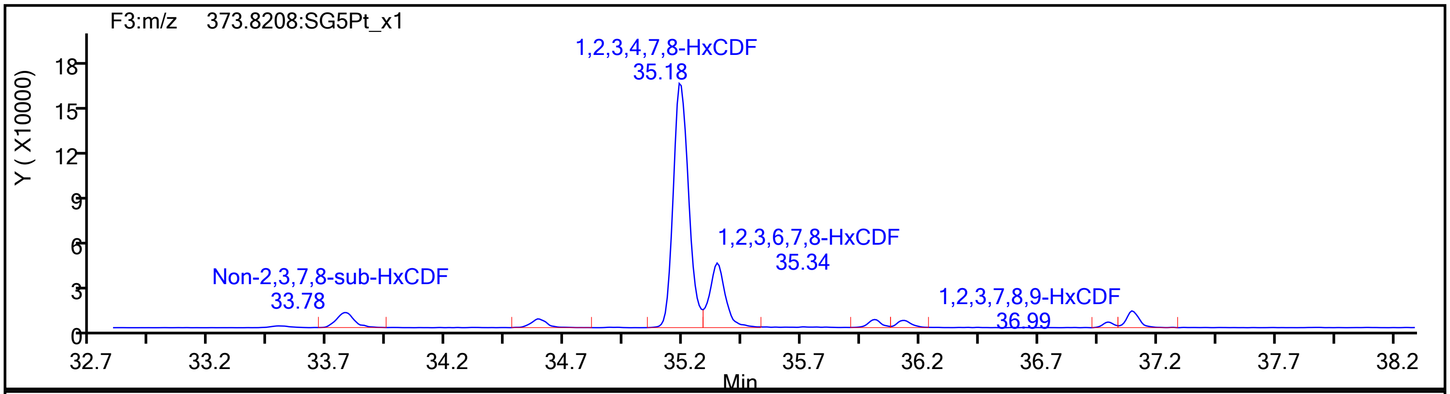

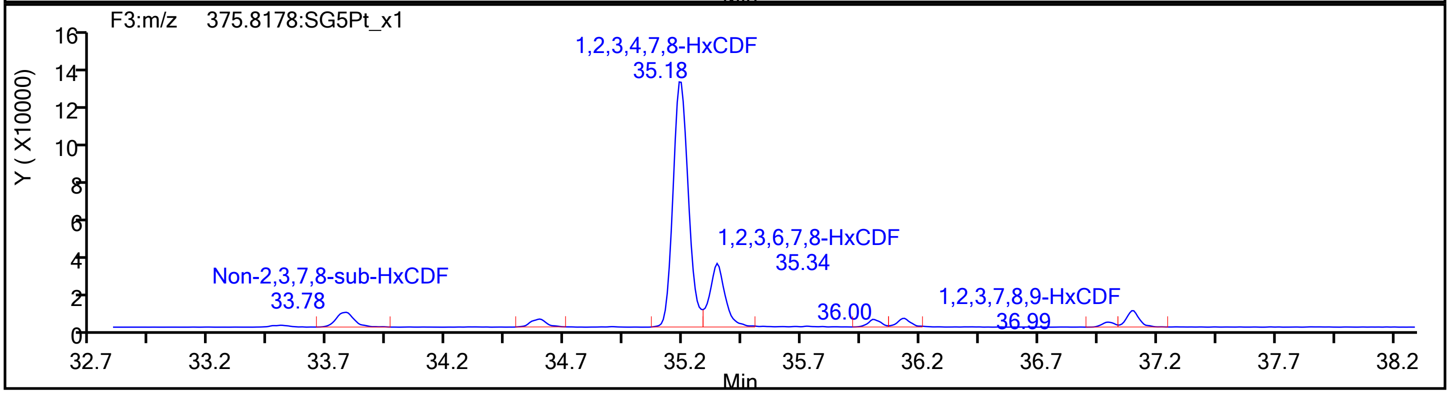

HxCDF Standards

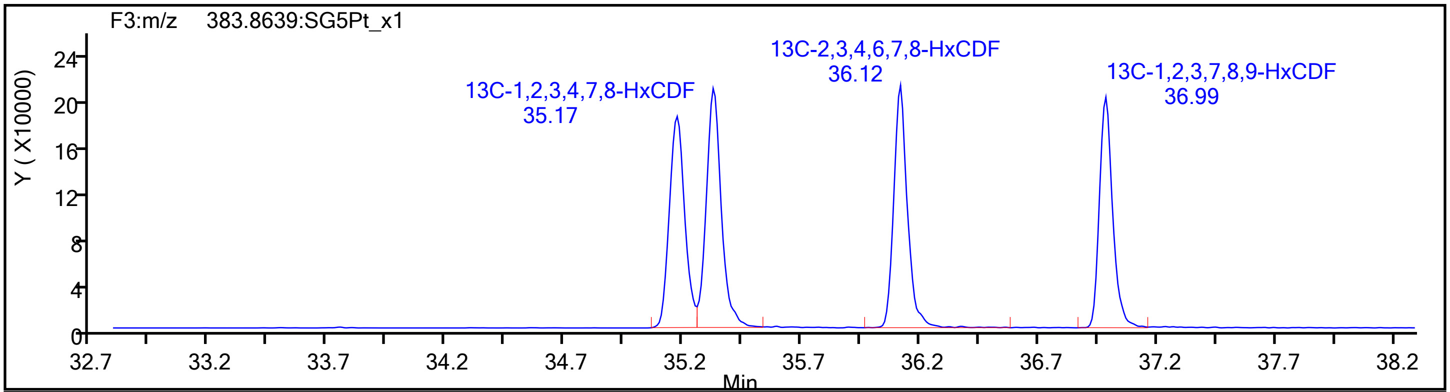

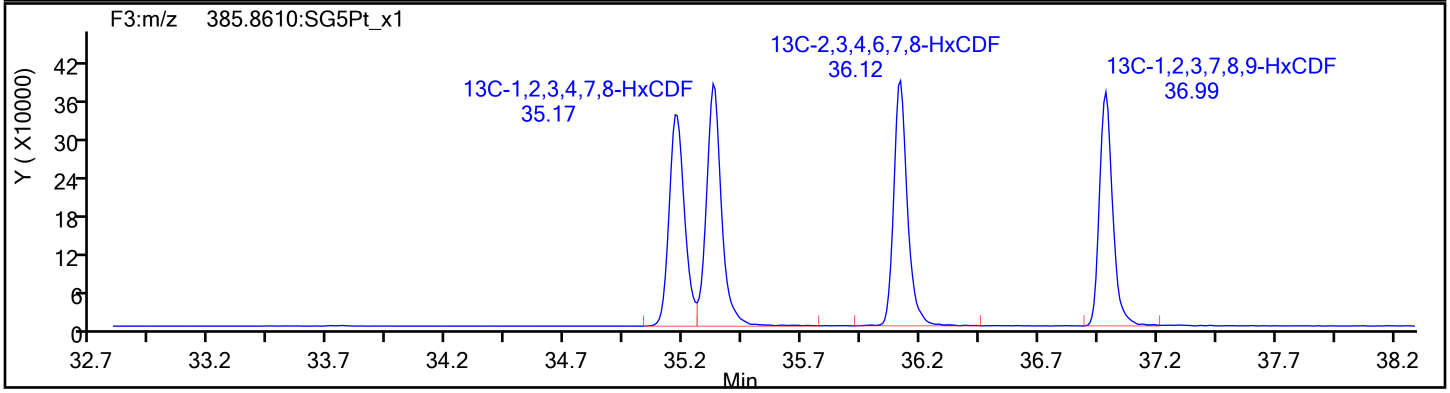

Report Date: 01-Dec-2020 13:51:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

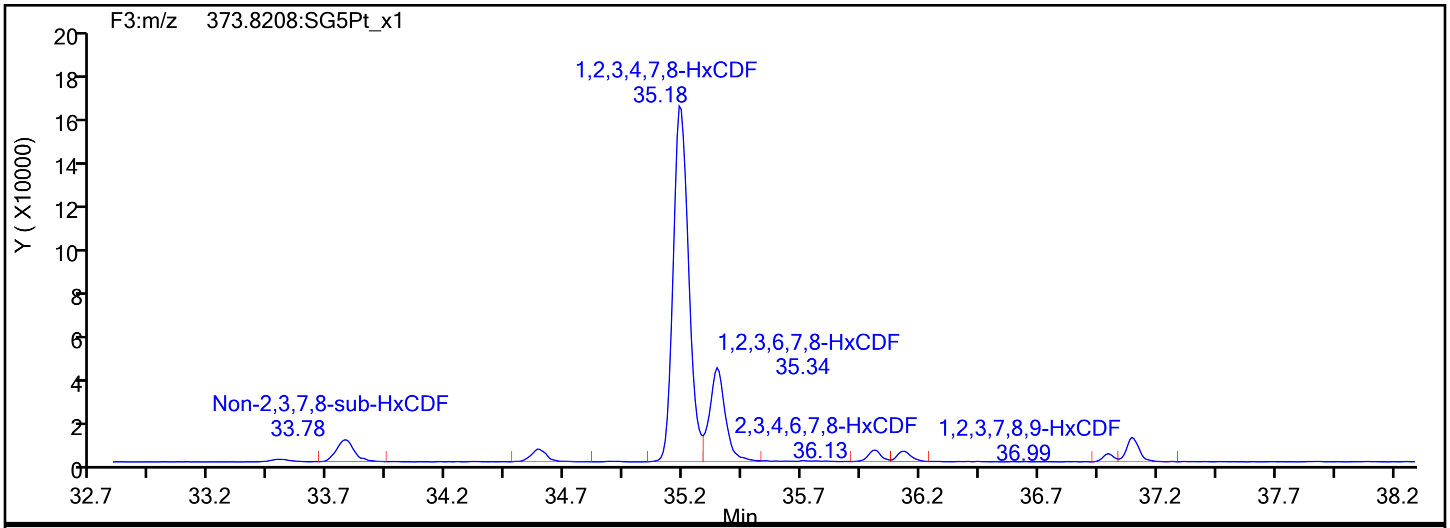

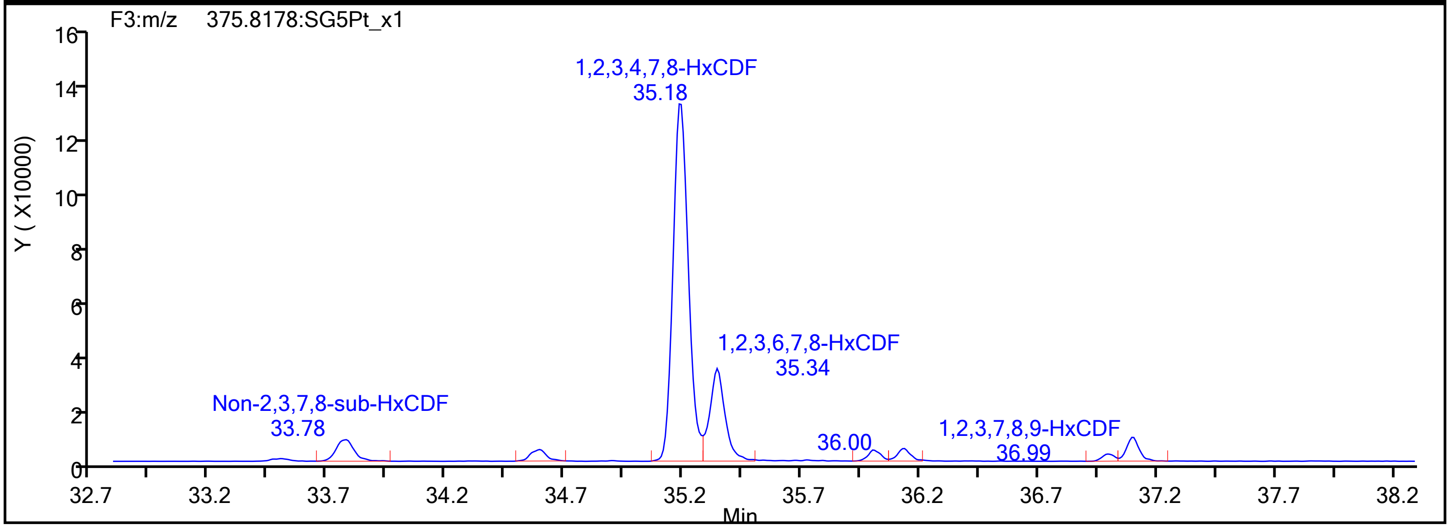

HxCDF Interference Mass

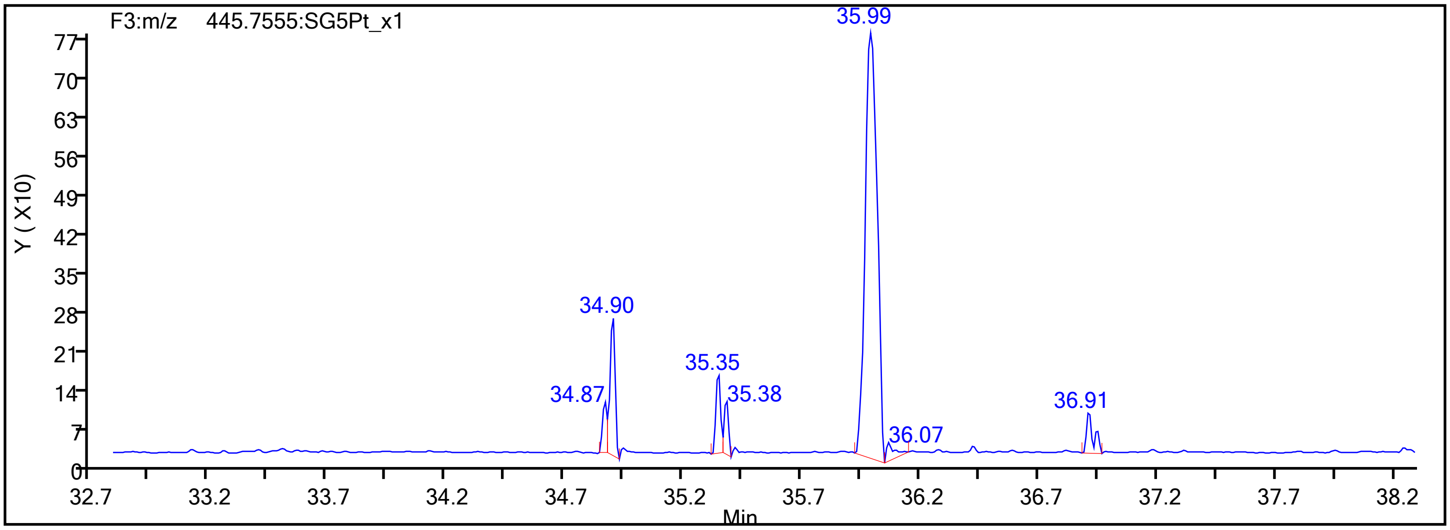

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date: 24-Nov-2020 15:04:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 434777 Sample Line#: 37

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

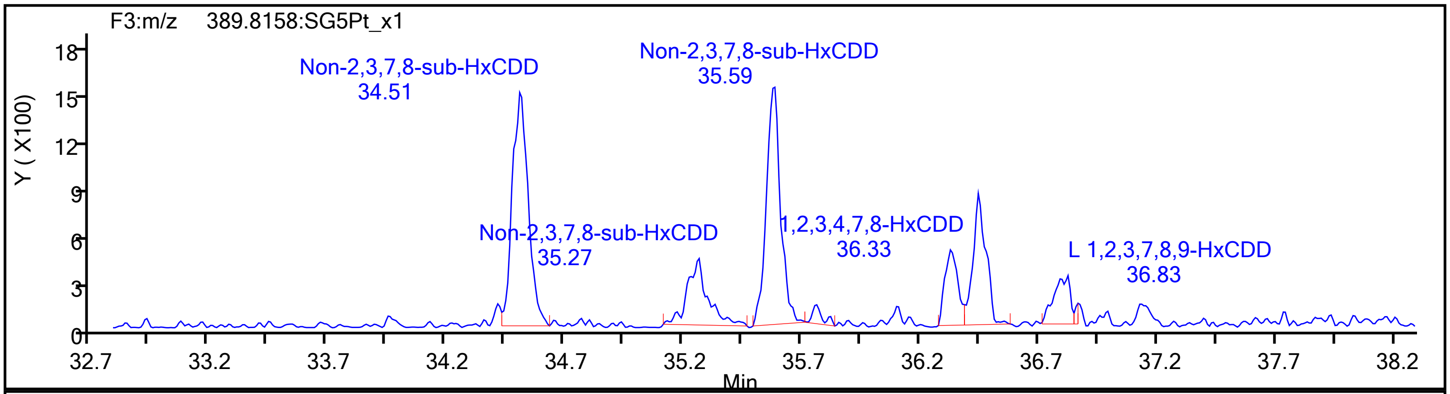

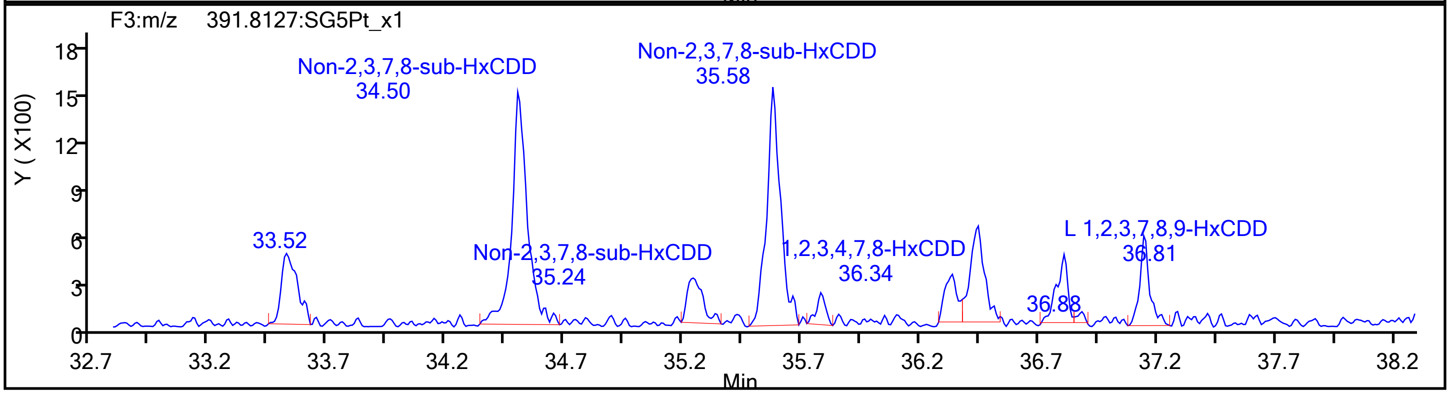

HxCDD Standards

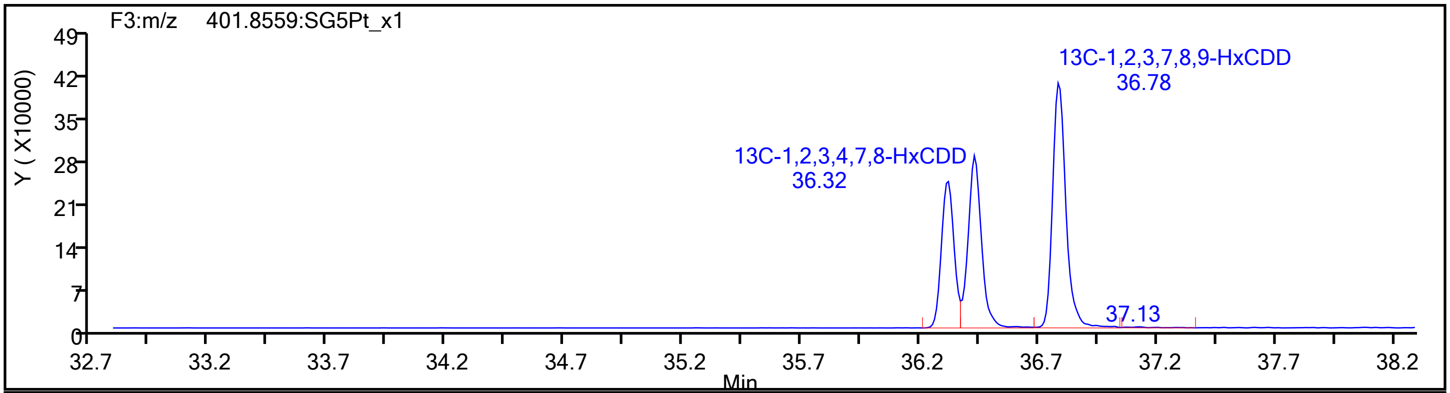

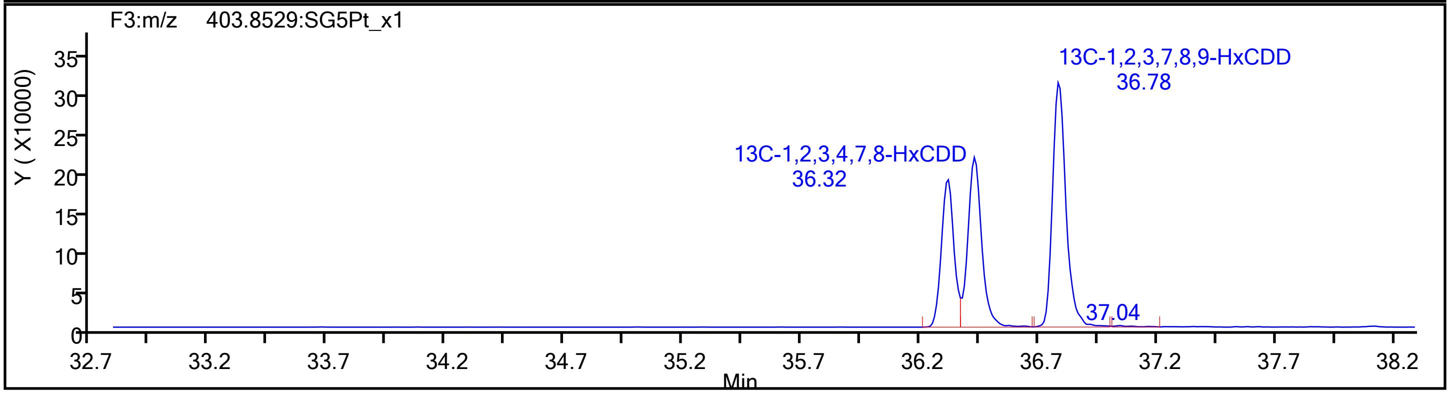

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date: 24-Nov-2020 15:04:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 434777 Sample Line#: 37

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

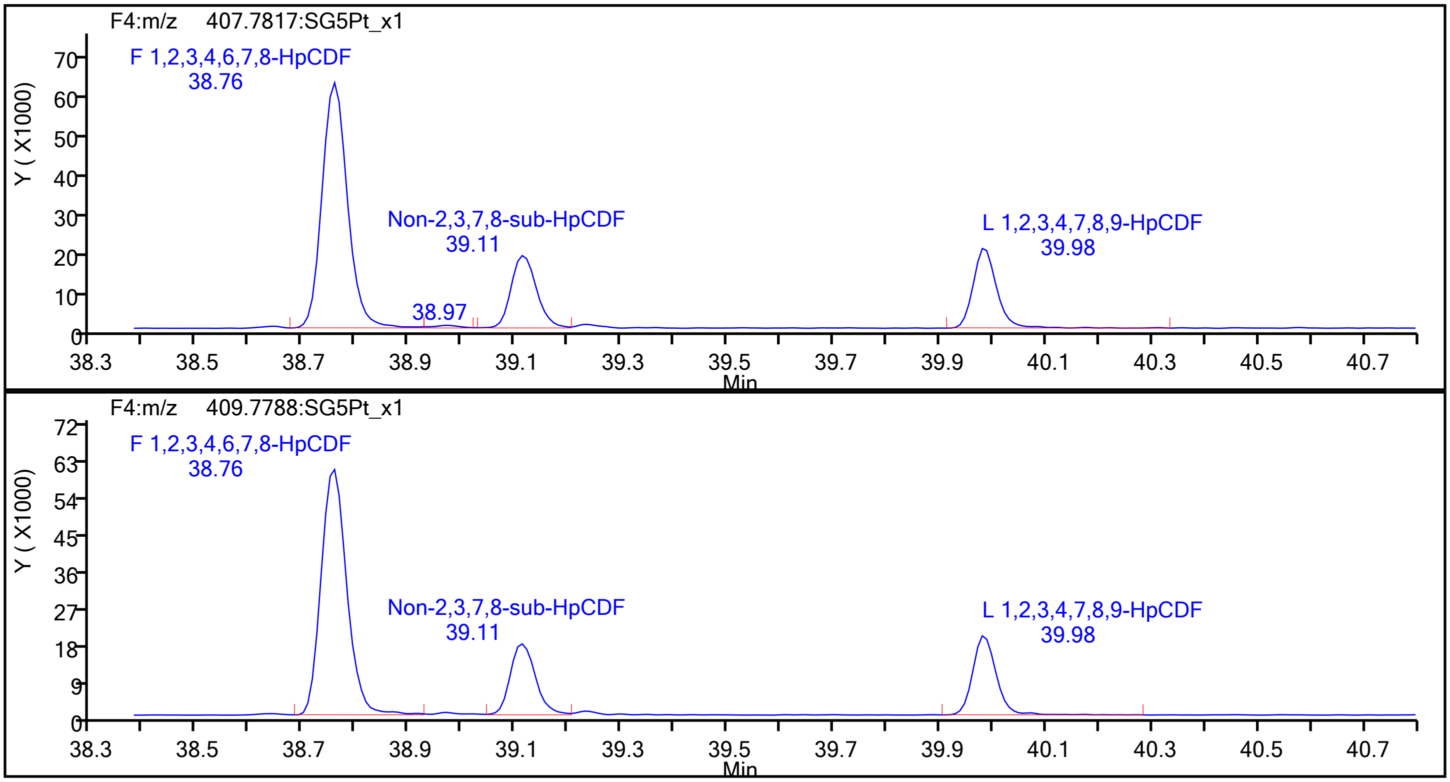

HpCDF Standards

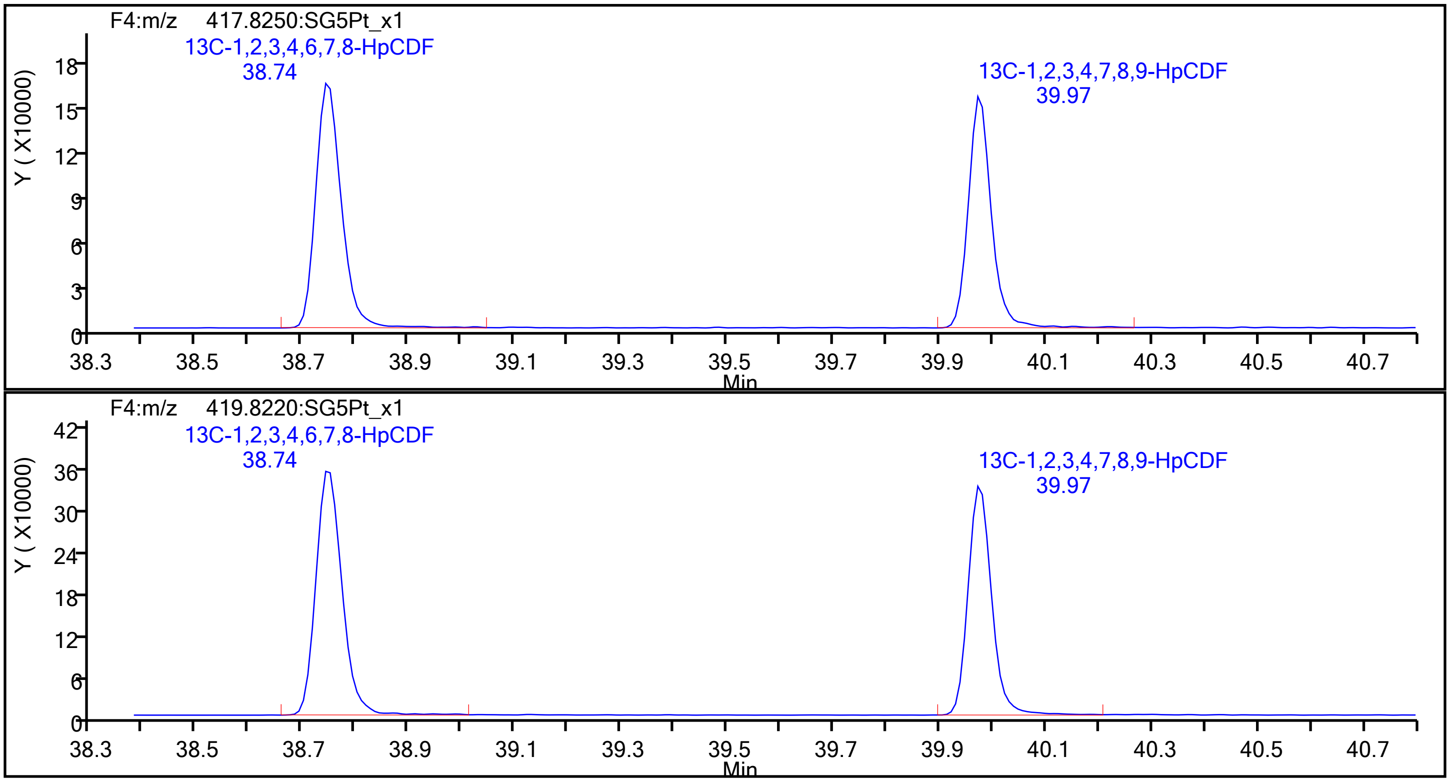

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

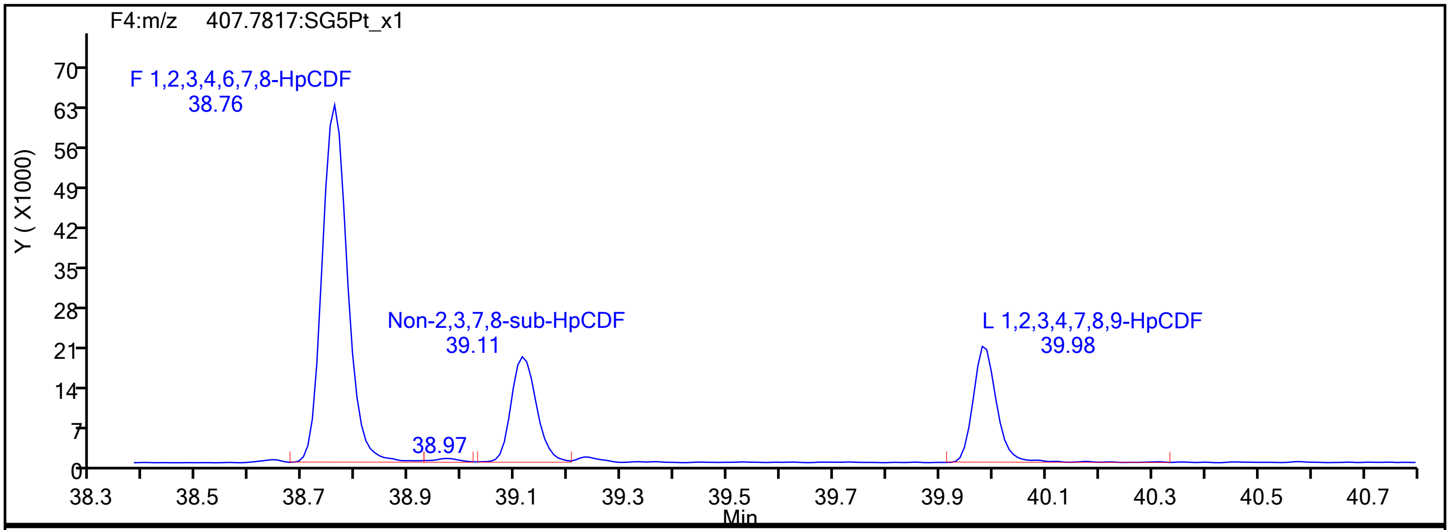

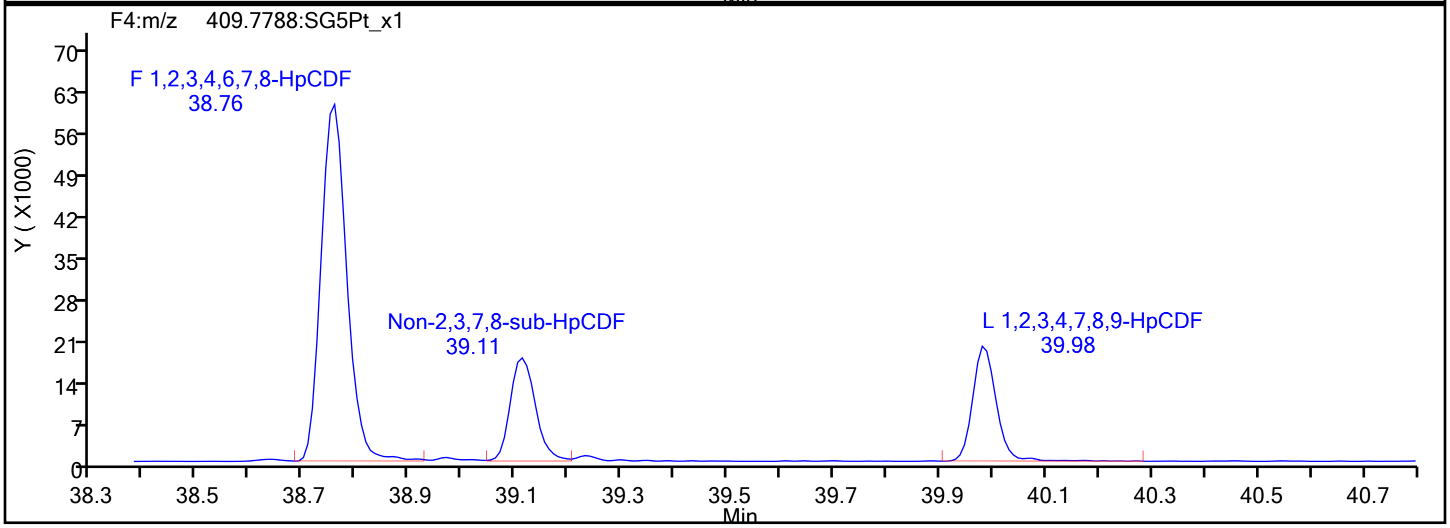

HpCDF Interference Mass

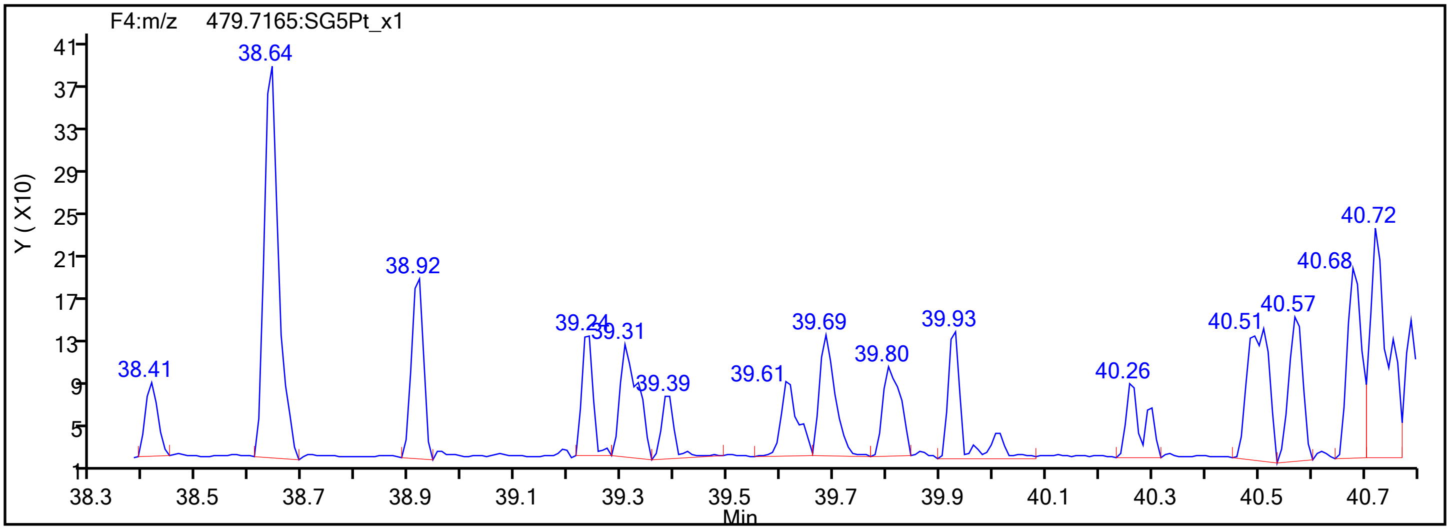

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d
Injection Date: 24-Nov-2020 15:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Drum
Worklist#: 434777
Sample Line#: 37
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

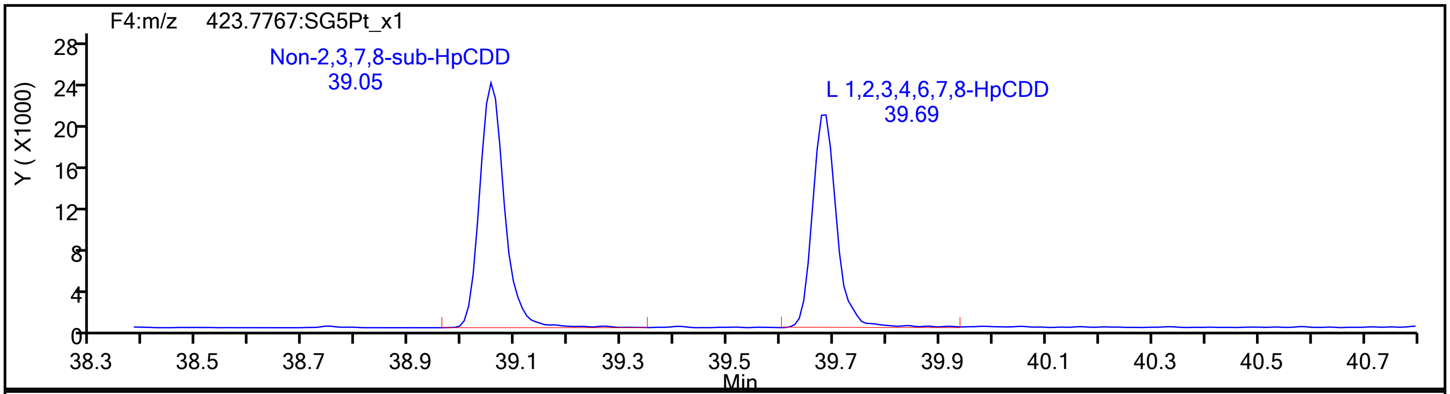

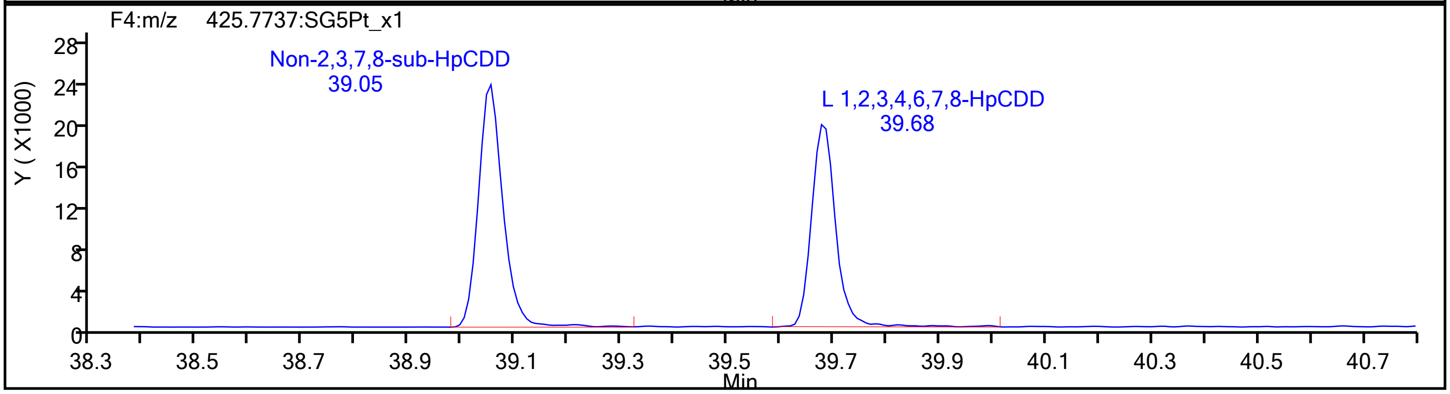

HpCDD Standards

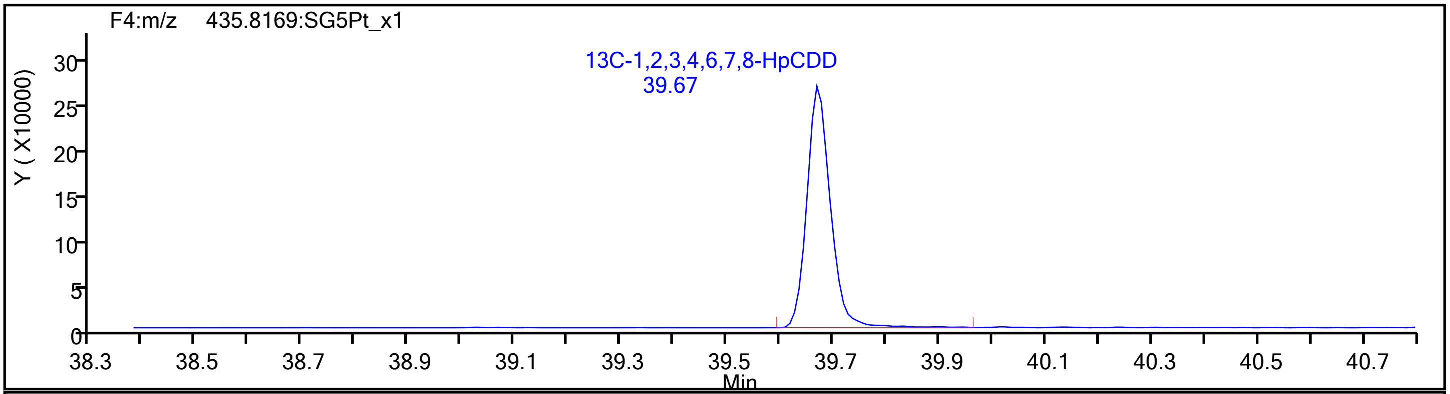

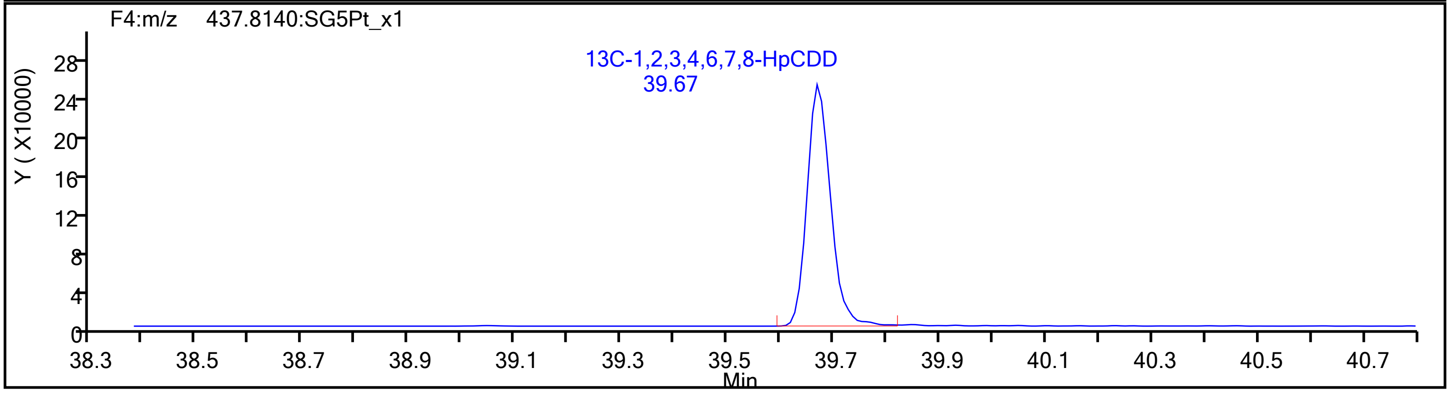

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

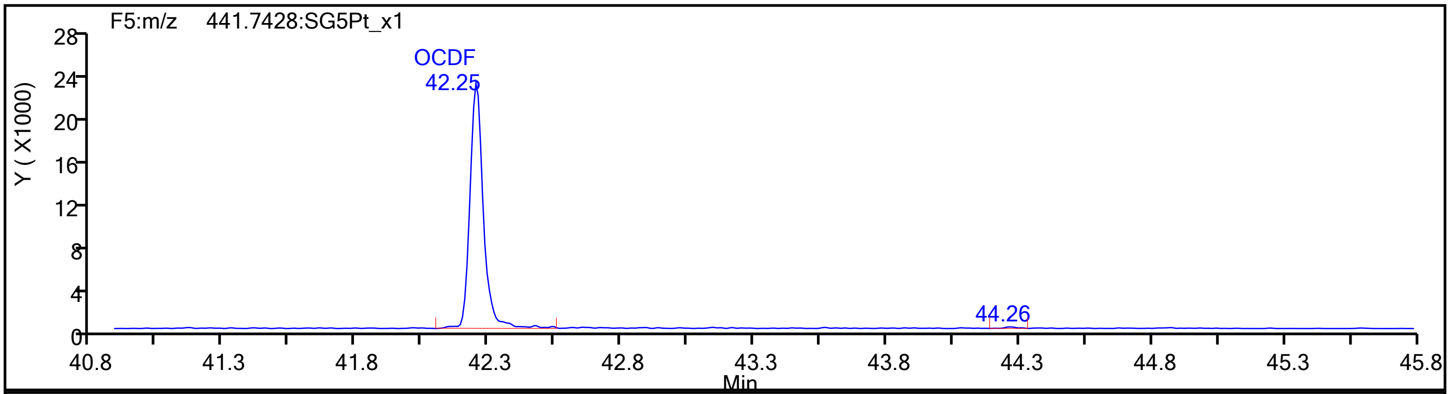

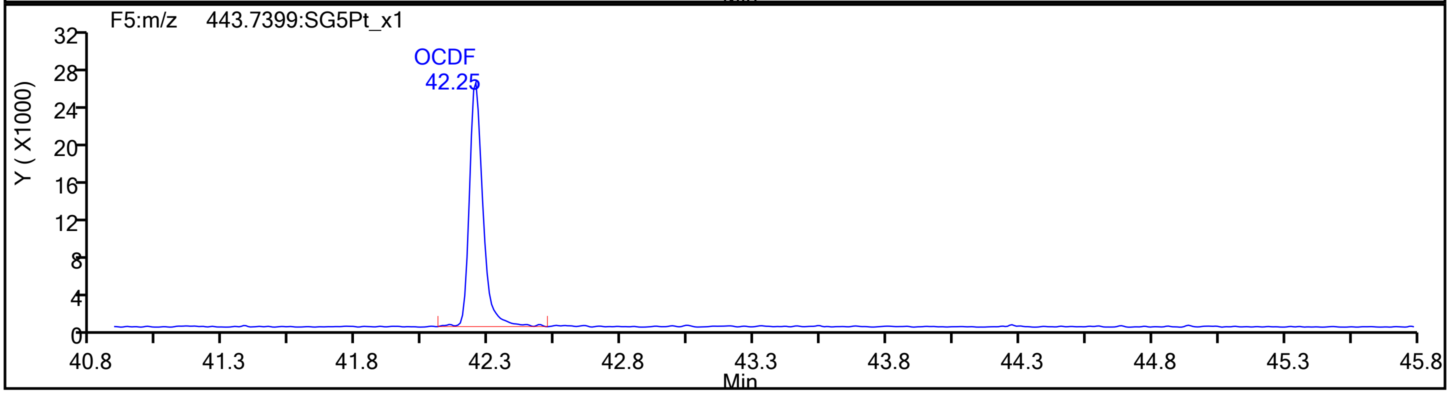

OCDF Standards

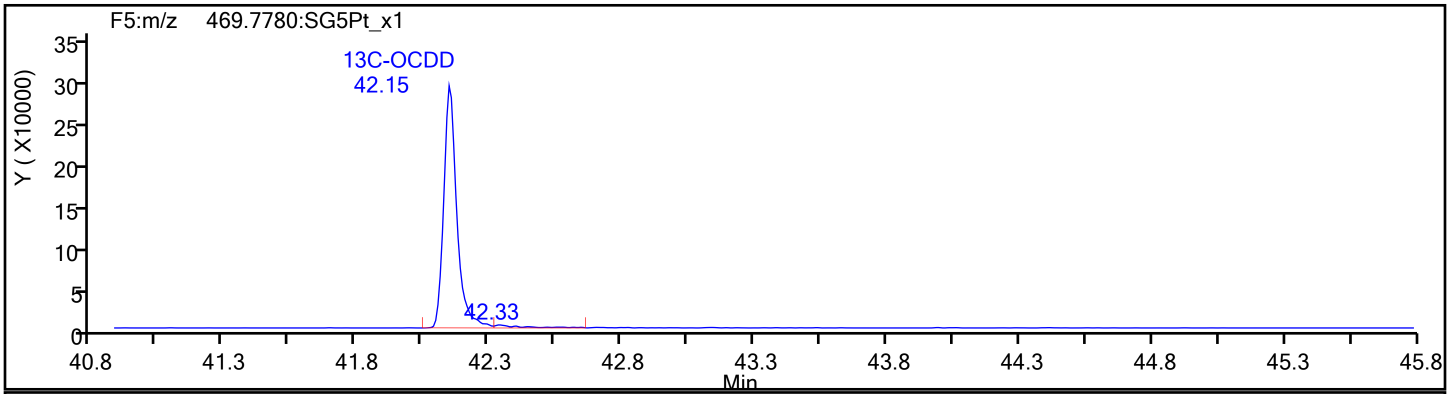

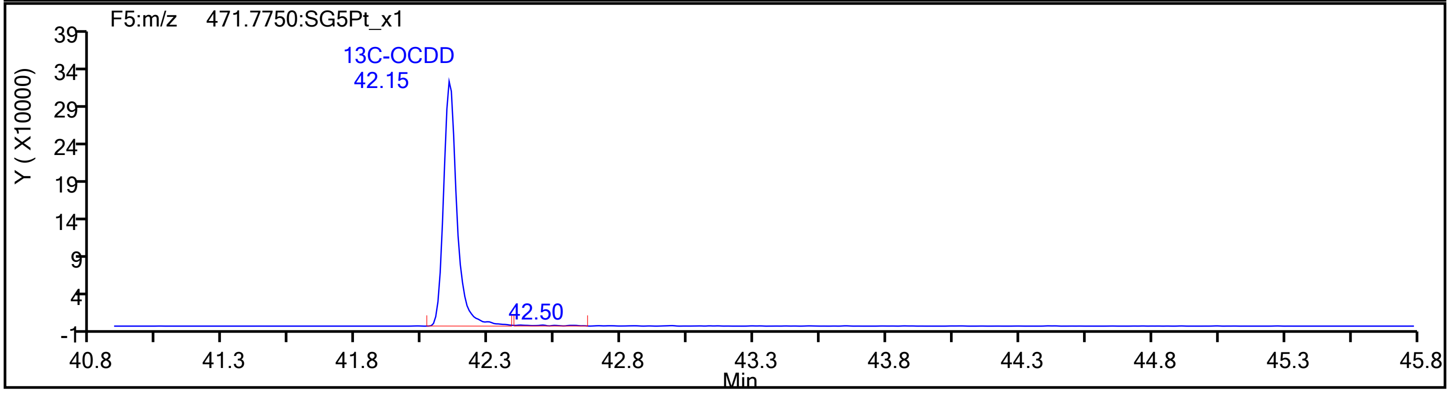

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

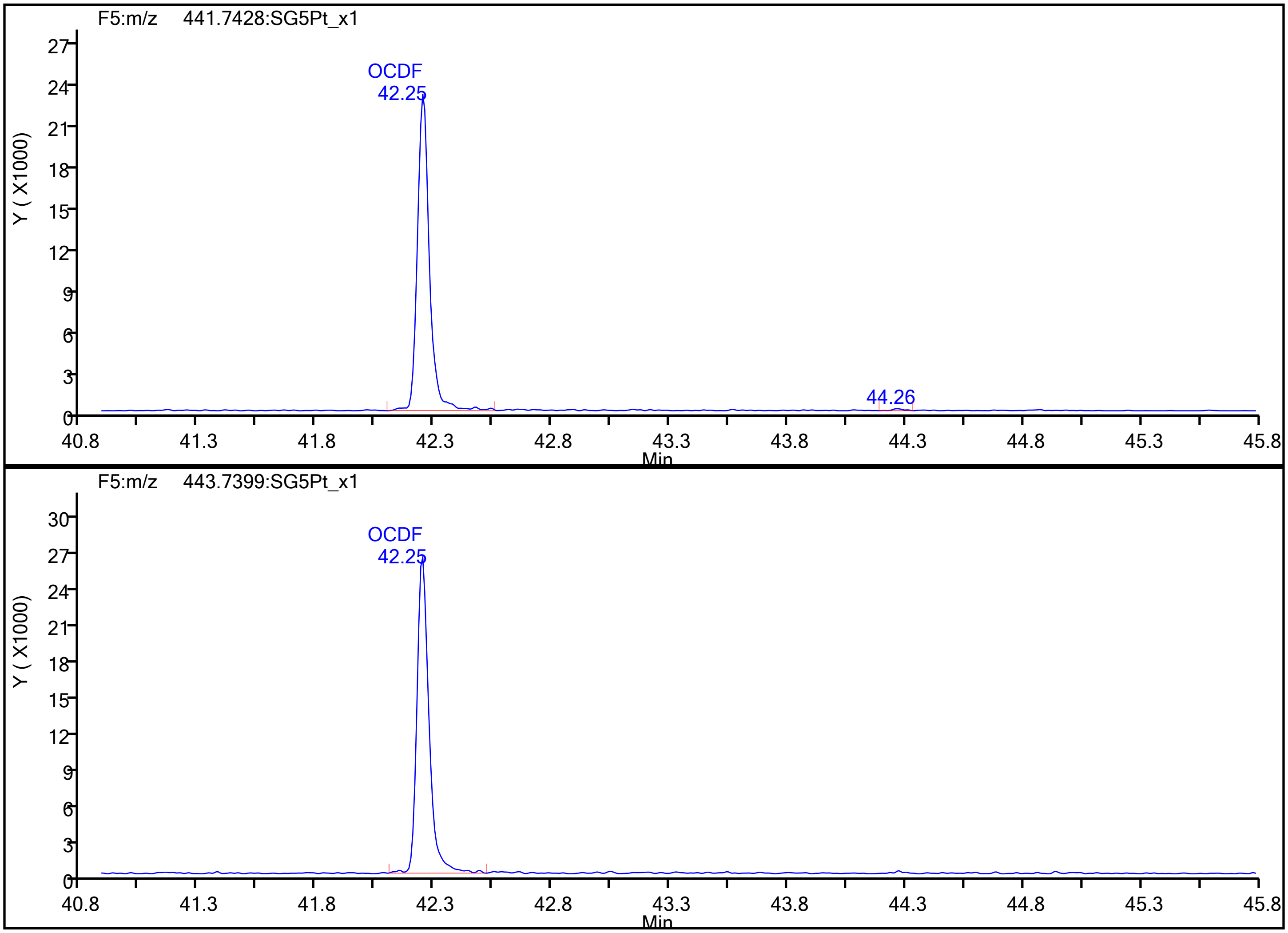

OCDF Interference Mass

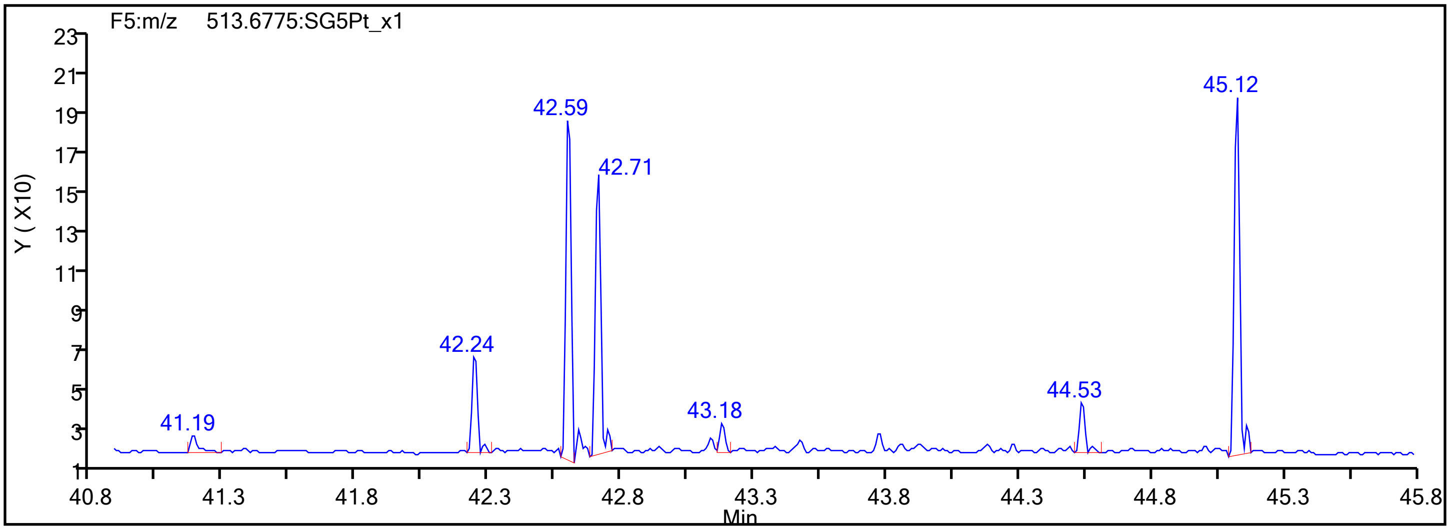

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d		
Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

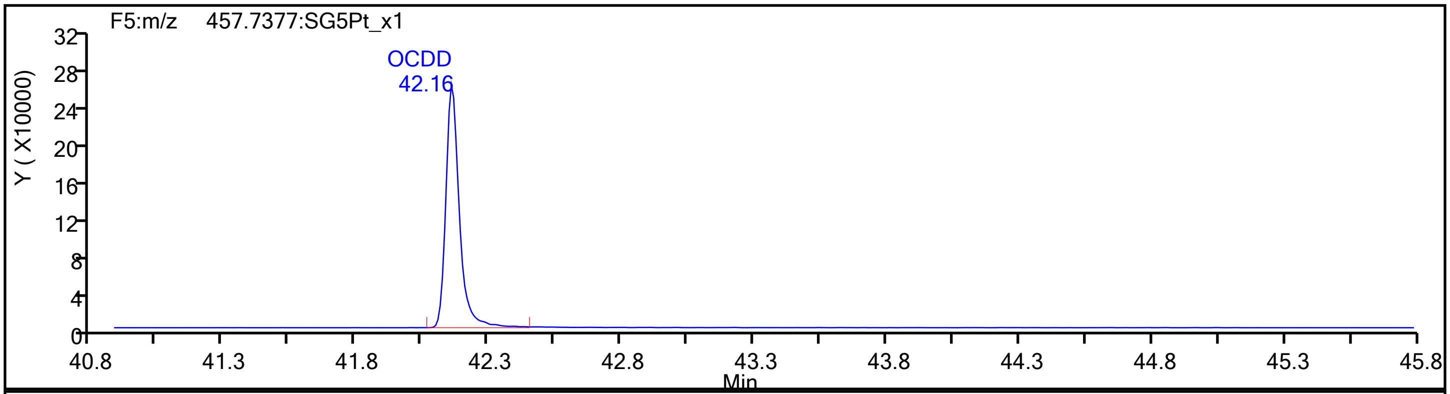

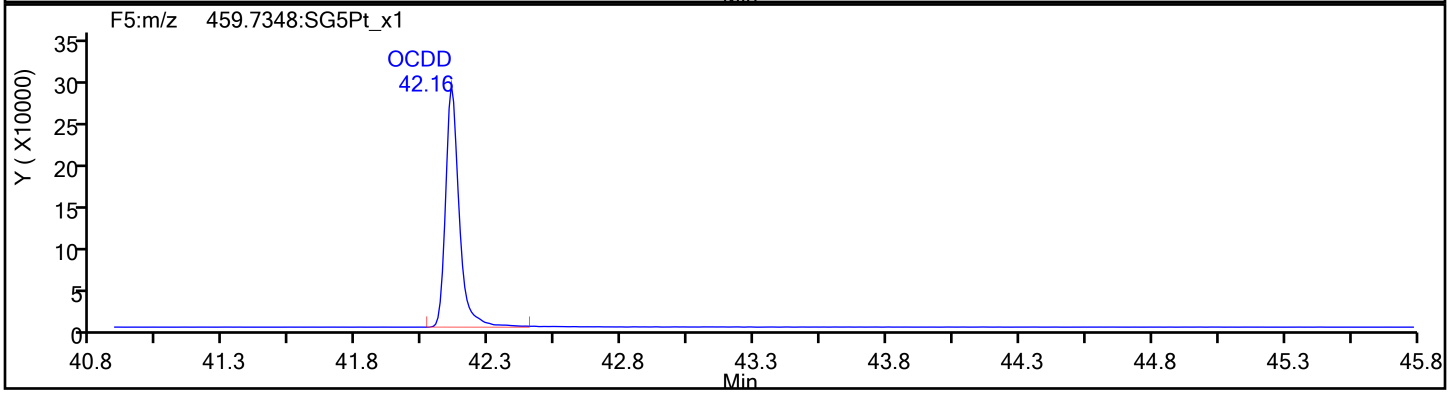

OCDD Standards

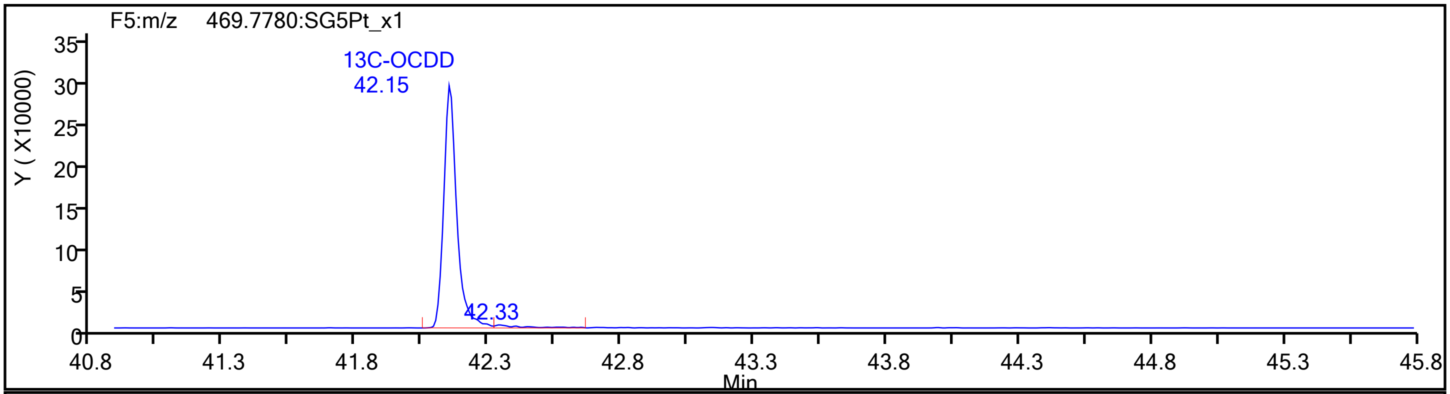

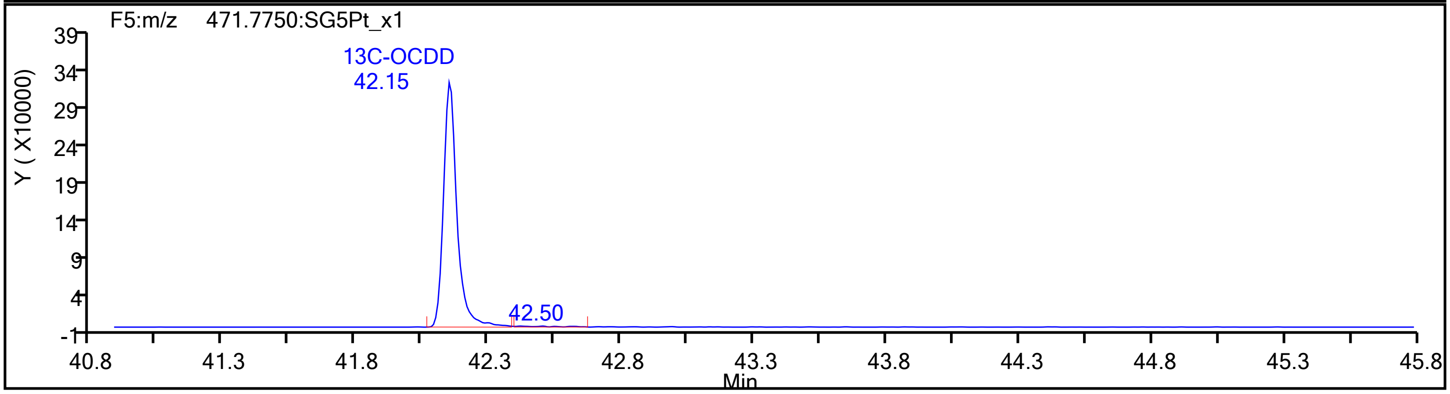

Report Date: 01-Dec-2020 13:51:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date: 24-Nov-2020 15:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 434777

Sample Line#: 37

Column Type: DB-5

Column Dia: 0.32 mm

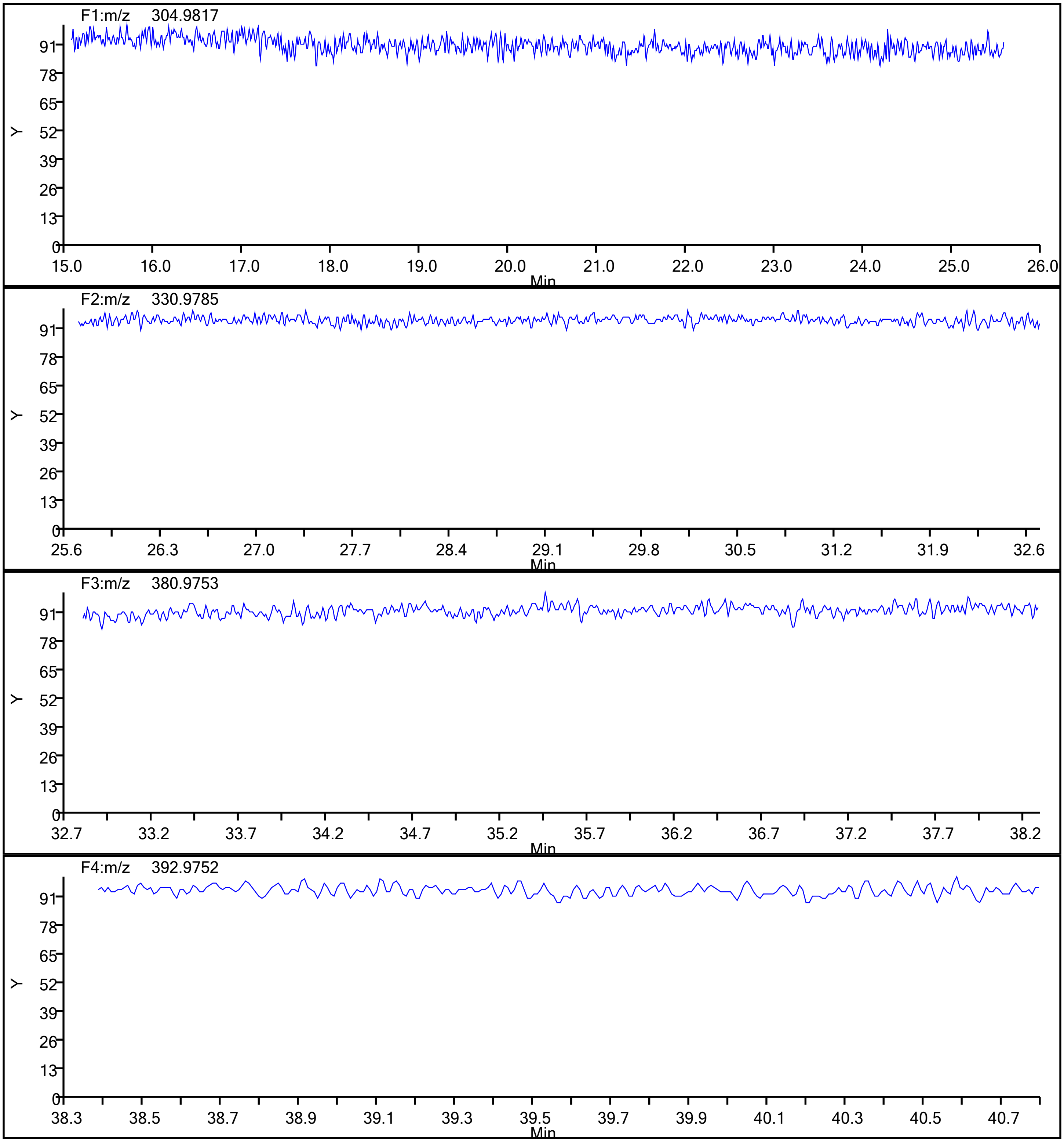

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_42.d

Injection Date:	24-Nov-2020 15:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	434777	Sample Line#:	37
Column Type:	DB-5	Column Dia:	0.32 mm

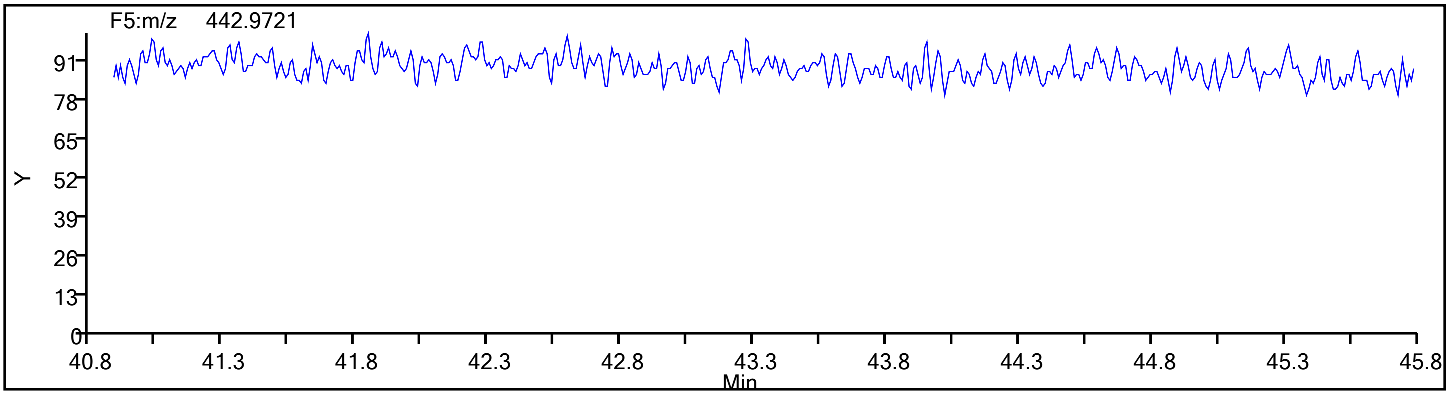

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Client Sample ID: 11215702-Tank #2 Drum RA Lab Sample ID: 320-66850-4 RA

Matrix: Water Lab File ID: 30NO2011D2_015.d

Analysis Method: 1613B Date Collected: 11/09/2020 12:00

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1049.2(mL) Date Analyzed: 11/30/2020 21:24

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 436991 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	8400	G E B	11	11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	105		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_015.d
Lims ID: 320-66850-A-4-B
Client ID: 11215702-Tank #2 Drum
Sample Type: Client
Inject. Date: 30-Nov-2020 21:24:41 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-A-4-B
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.585	173469616	0.78	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.779	206547278	0.74	1.5708	75.8	75.8	1.153	1.153	75.80	
2,3,7,8-TCDF	16.793	900432498	0.77	0.9943	438.5	438.5	0.5957	0.5957		E
D 13C-2,3,7,8-TCDD	15.338	117136996	0.85	0.9834	68.7	68.7	10.5	10.5	68.67	
$ 37Cl4-2,3,7,8-TCDD	15.352	72165358		0.9945	41.8	41.8	0.7154	0.7154	105	
2,3,7,8-TCDD	15.352	258676429	0.78	1.2822	172.2	172.2	1.024	1.024		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_015.d
Lims ID: 320-66850-A-4-B
Client ID: 11215702-Tank #2 Drum
Sample Type: Client
Inject. Date: 30-Nov-2020 21:24:41 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-A-4-B
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.585	15.560	2		76015523	18411348	808321	2020802	23		
333.9339	15.585	15.560	2		97454093	23123504	911525	2278812	25	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.779	16.779	0	1.077	87500948	15877568	135939	339847	117		
317.9389	16.779	16.779	0	1.077	119046330	20587532	165044	412610	125	0.74(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	16.793	16.792	0	1.001	390278437	77310266	36227	90567	2134		
305.8987	16.793	16.792	0	1.001	510154061	101295013	50167	125417	2019	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.338	15.324	1	0.984	53694345	13016931	808321	2020802	16		
333.9339	15.338	15.324	1	0.984	63442651	15938899	911525	2278812	17	0.85(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.352	15.340	1	0.985	72165358	17495793	118199	295497	148		
2,3,7,8-TCDD											
319.8965	15.352	15.352	0	1.001	113411099	27104221	91326	228315	297		
321.8936	15.352	15.352	0	1.001	145265330	34631842	60803	152007	570	0.78(0.65-0.89)	

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Report Date: 01-Dec-2020 08:43:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_015.d		
Injection Date:	30-Nov-2020 21:24:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	436991	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

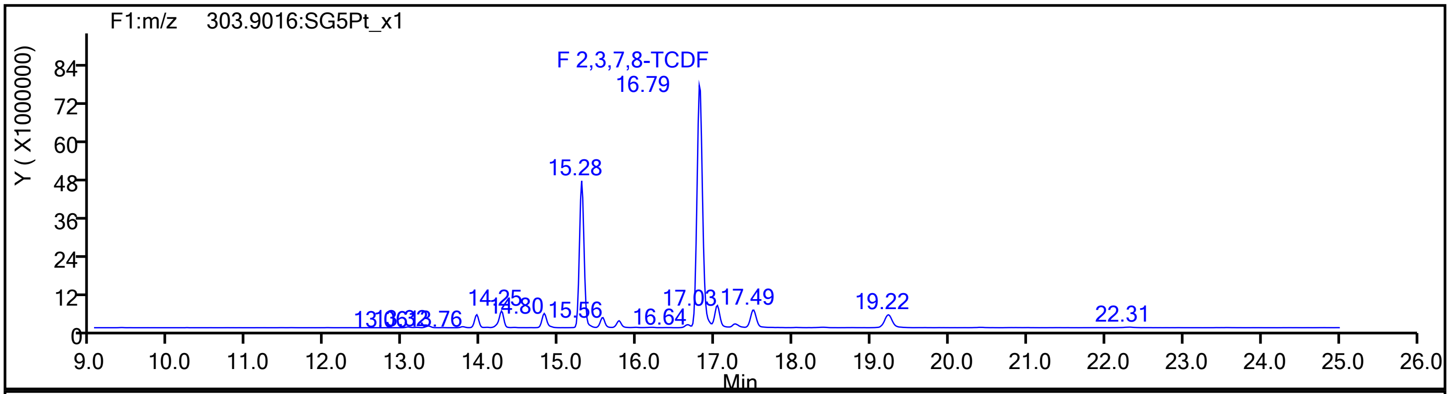
F1:m/z 303.9016:SG5Pt_x1

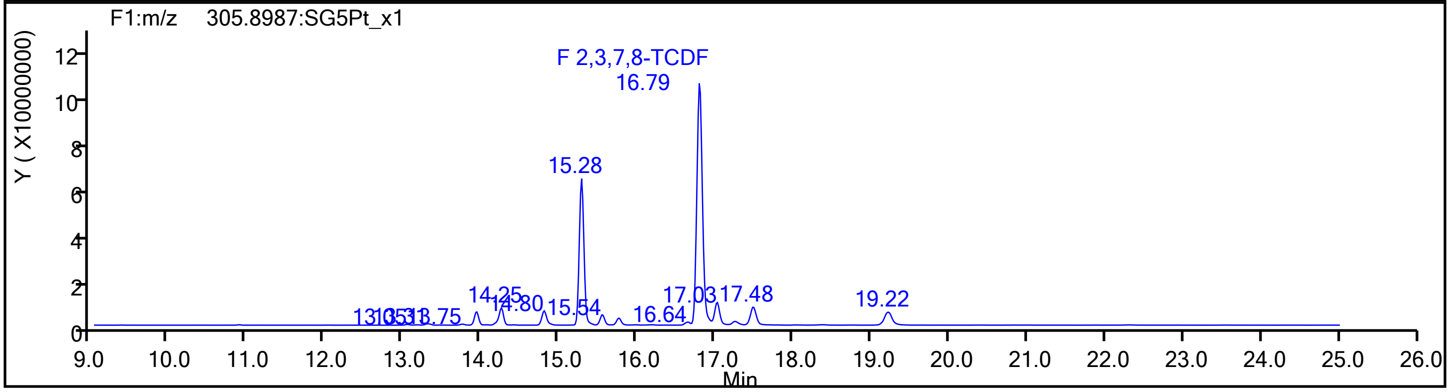
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TCDF Standards

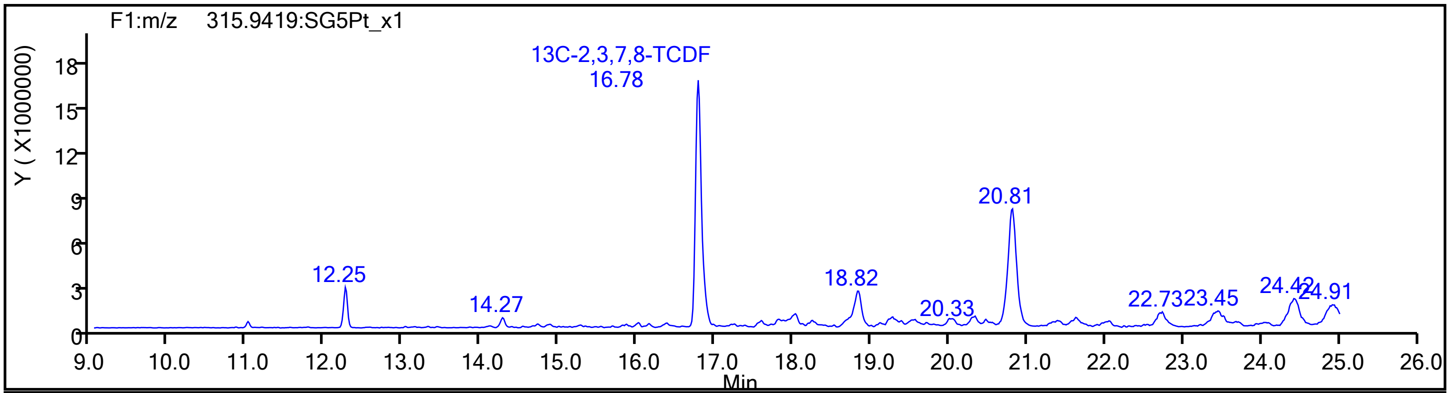
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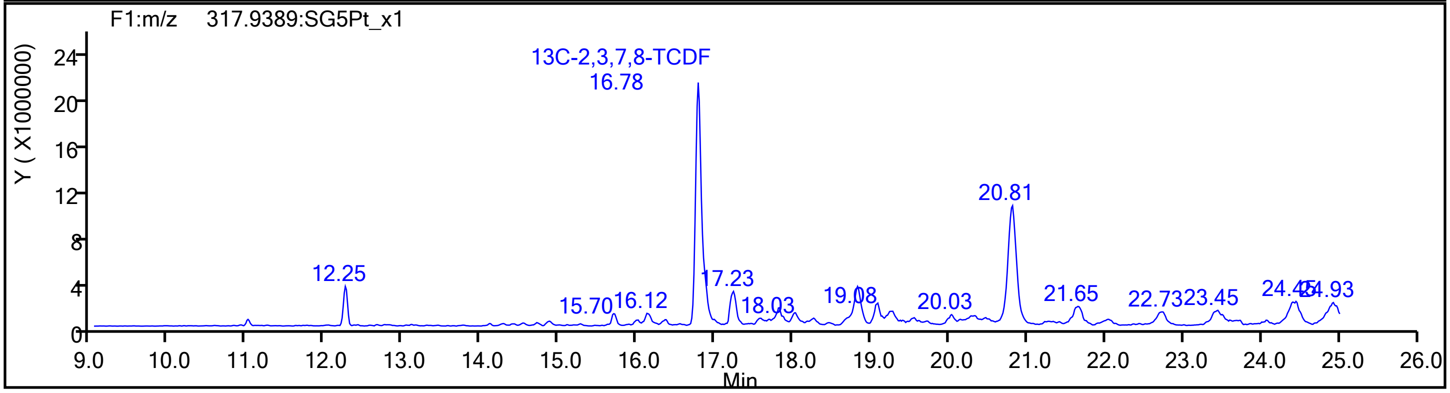
F1:m/z 317.9389:SG5Pt_x1

Report Date: 01-Dec-2020 08:43:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_015.d		
Injection Date:	30-Nov-2020 21:24:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	436991	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

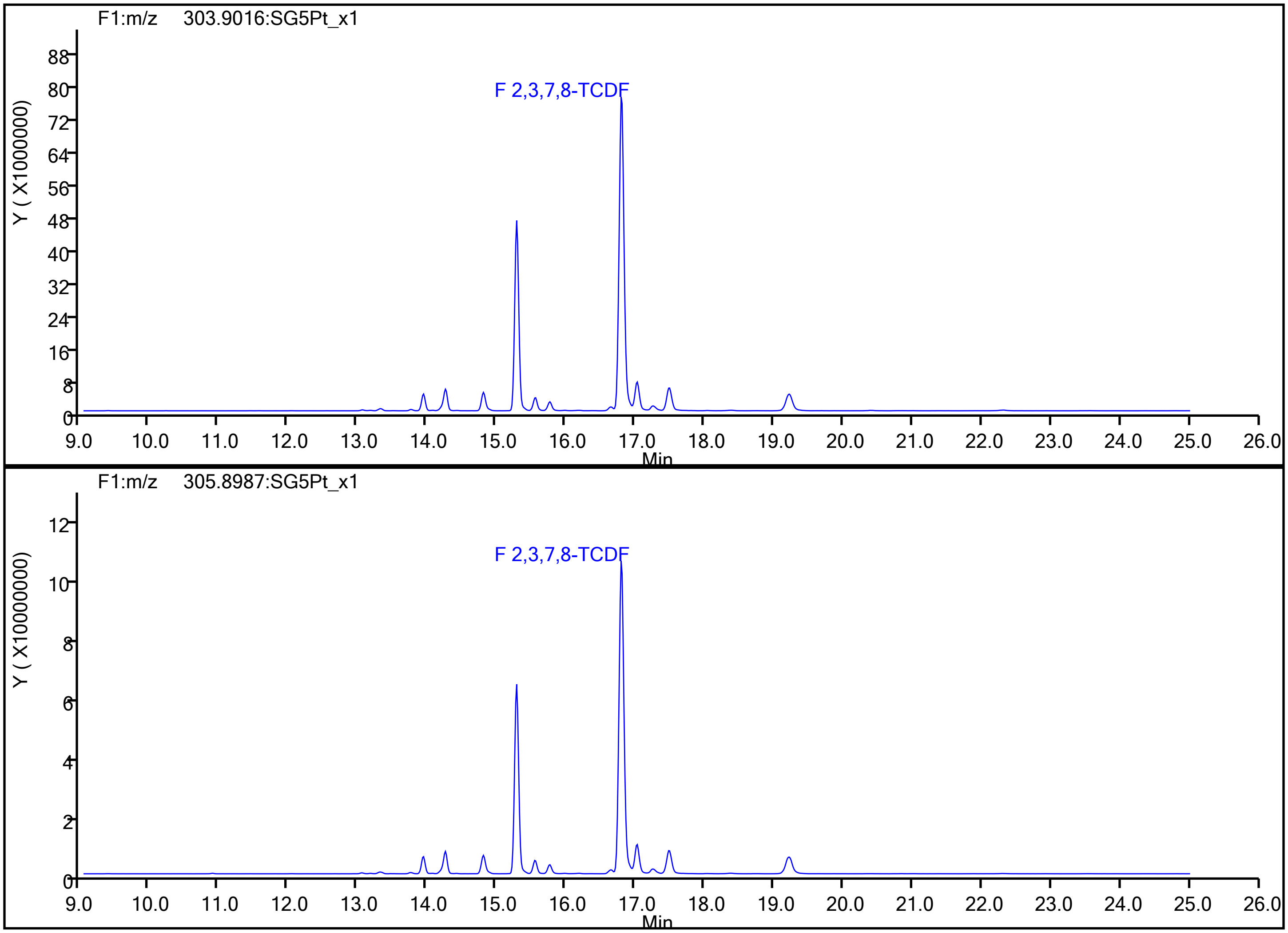

TCDF Interference Mass

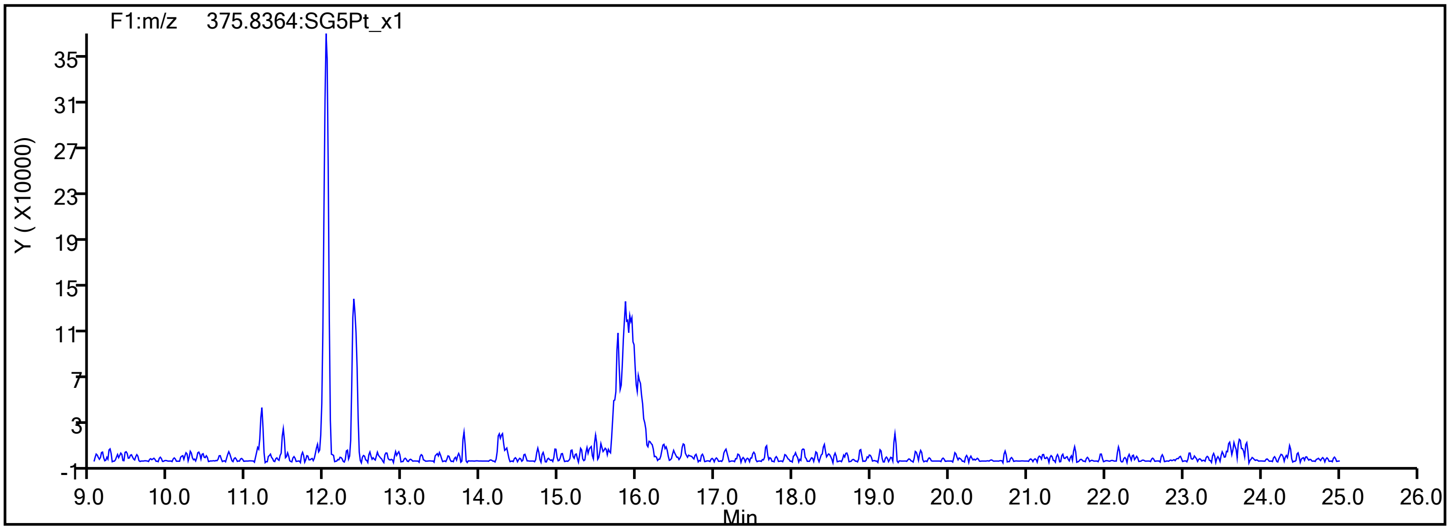

Report Date: 01-Dec-2020 08:43:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_015.d

Injection Date: 30-Nov-2020 21:24:41

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Drum

Worklist#: 436991

Sample Line#: 15

Column Type: DB-225

Column Dia: 0.32 mm

37Cl4-TCDD

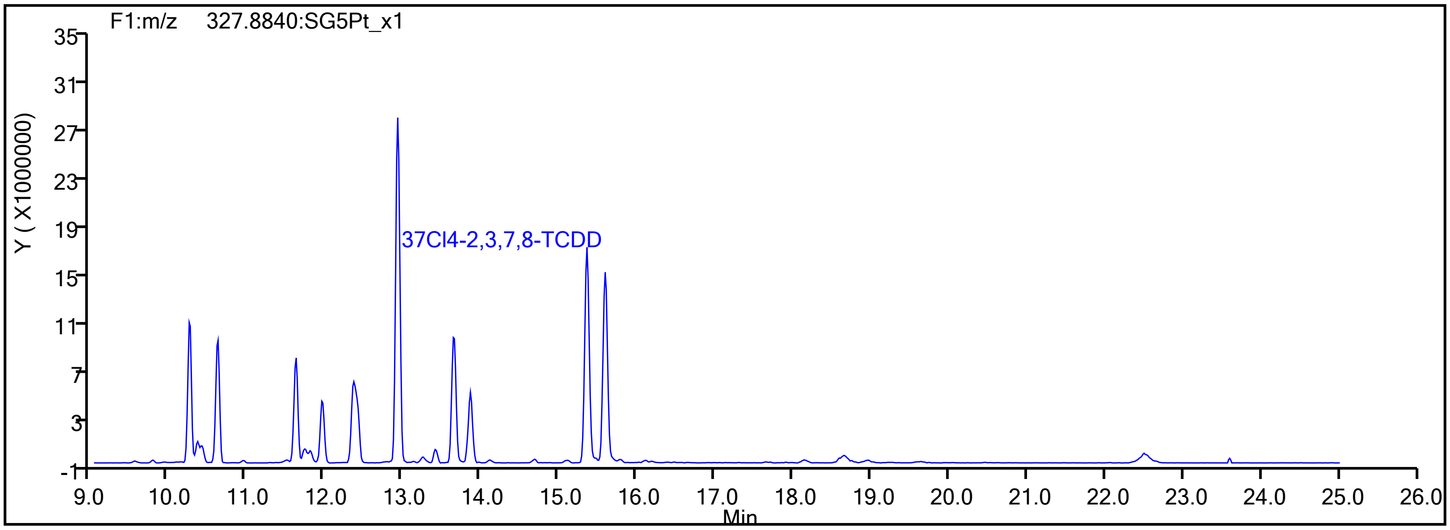

37Cl4-TCDD Standards

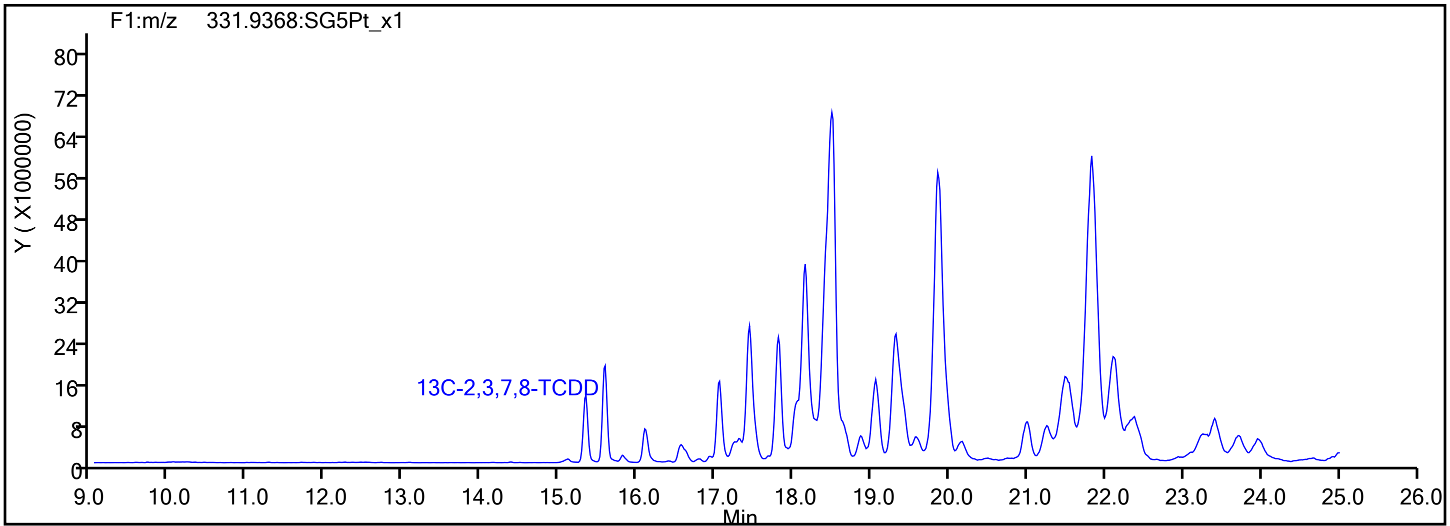

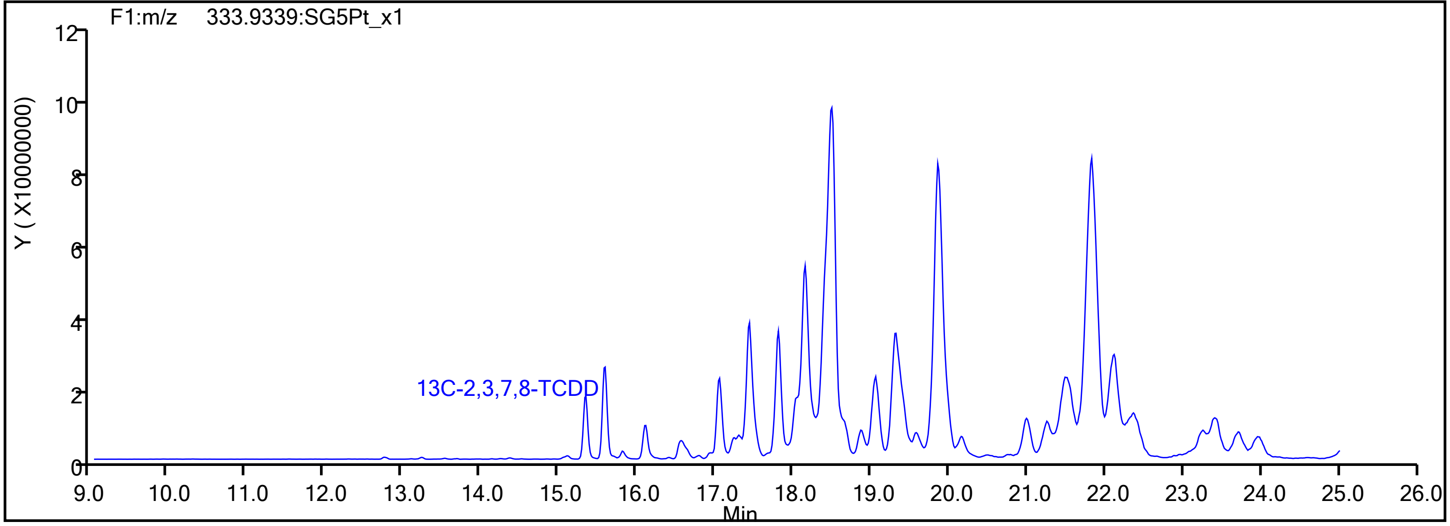

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_015.d

Injection Date:	30-Nov-2020 21:24:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Drum		
Worklist#:	436991	Sample Line#:	15
Column Type:	DB-225	Column Dia:	0.32 mm

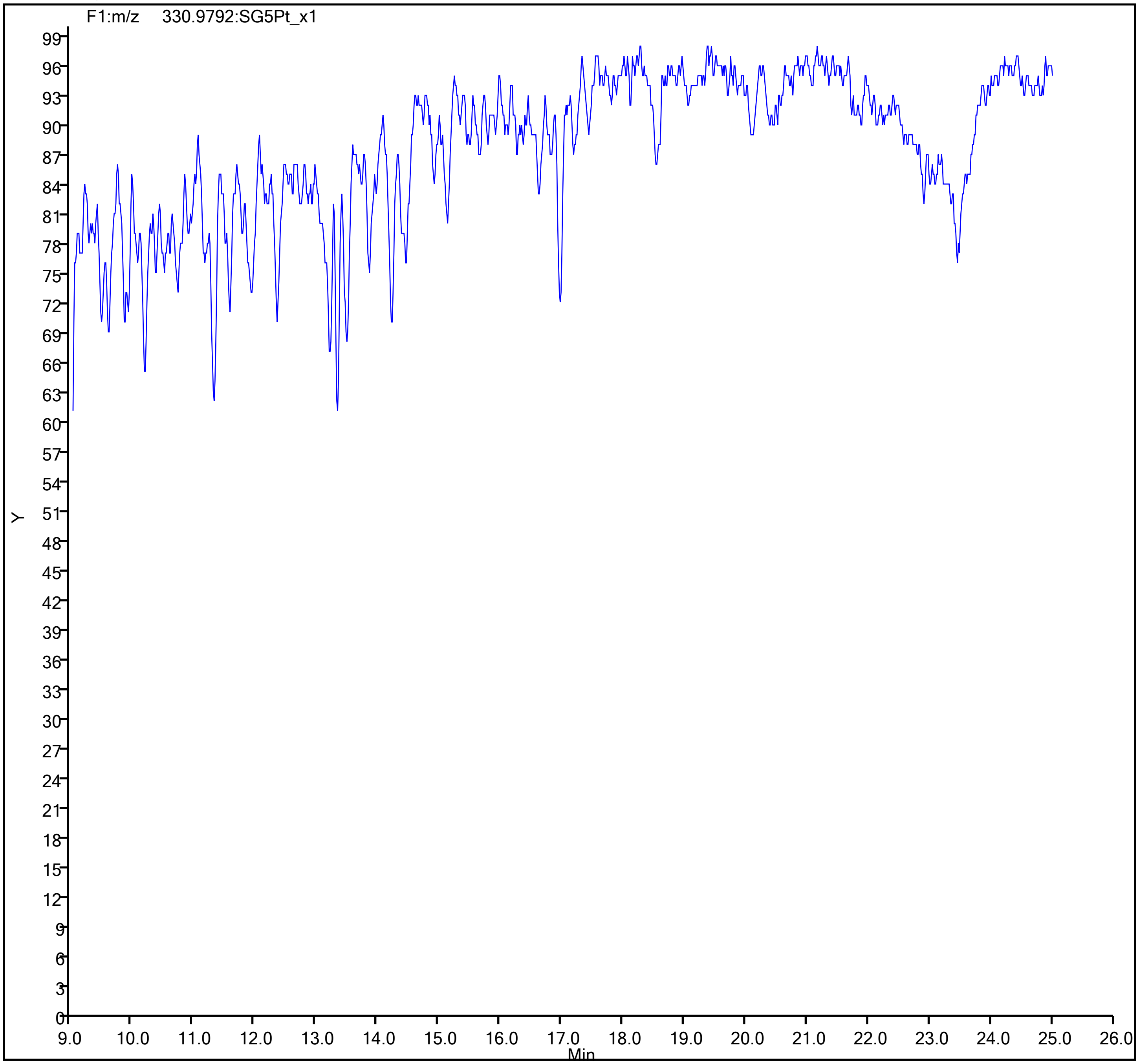

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #1 Tank	Lab Sample ID: 320-66850-5
Matrix: Water	Lab File ID: 23no20dfs1_43.d
Analysis Method: 1613B	Date Collected: 11/09/2020 13:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1053.3(mL)	Date Analyzed: 11/24/2020 15:53
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	2800		9.5	4.4
40321-76-4	1,2,3,7,8-PeCDD	36	J B	47	1.1
57117-41-6	1,2,3,7,8-PeCDF	380	B	47	2.5
57117-31-4	2,3,4,7,8-PeCDF	230	B	47	2.9
39227-28-6	1,2,3,4,7,8-HxCDD	8.5	J B	47	0.56
57653-85-7	1,2,3,6,7,8-HxCDD	11	J B	47	0.57
19408-74-3	1,2,3,7,8,9-HxCDD	8.4	J q B	47	0.54
70648-26-9	1,2,3,4,7,8-HxCDF	720	B	47	2.1
57117-44-9	1,2,3,6,7,8-HxCDF	180	B *	47	2.0
72918-21-9	1,2,3,7,8,9-HxCDF	20	J B	47	2.0
60851-34-5	2,3,4,6,7,8-HxCDF	28	J B	47	1.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	170	B	47	1.2
67562-39-4	1,2,3,4,6,7,8-HpCDF	240	B *	47	1.6
55673-89-7	1,2,3,4,7,8,9-HpCDF	94	B	47	1.9
3268-87-9	OCDD	2800	B *	95	4.3
39001-02-0	OCDF	160	B	95	1.2
41903-57-5	Total TCDD	3100	q	9.5	4.4
30402-14-3	Total TCDF	15000	G B	21	21
36088-22-9	Total PeCDD	36	J B	47	1.1
30402-15-4	Total PeCDF	970	q B	47	2.7
34465-46-8	Total HxCDD	61	q B	47	0.56
55684-94-1	Total HxCDF	1100	B	47	2.0
37871-00-4	Total HpCDD	340	B	47	1.2
38998-75-3	Total HpCDF	430	B	47	1.7

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #1 Tank	Lab Sample ID: 320-66850-5
Matrix: Water	Lab File ID: 23no20dfs1_43.d
Analysis Method: 1613B	Date Collected: 11/09/2020 13:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1053.3(mL)	Date Analyzed: 11/24/2020 15:53
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		25-164
89059-46-1	13C-2,3,7,8-TCDF	64		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	58		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	58		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	57		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	59		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	58		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	62		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	57		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	57		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	59		26-138
114423-97-1	13C-OCDD	62		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		35-197

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Lims ID: 320-66850-A-5-B
Client ID: 11215702-Tank #1 Tank
Sample Type: Client
Inject. Date: 24-Nov-2020 15:53:00 ALS Bottle#: 0 Worklist Smp#: 38
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-5-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:52:55 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: stephensk Date: 24-Nov-2020 17:00:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.730	2694247	0.80	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.724	2889783	0.82	1.6832	63.7	63.7	0.2350	0.2350	63.72	
2,3,7,8-TCDF	20.750	14472510	0.80	1.1547	433.7	433.7	1.106	1.106		E
A Non-2,3,7,8-sub-TCDF	20.119	11105065	0.80	1.1547	332.8	332.8	1.106	183.0		
S Total TCDF					766.5	766.5	1.106	1.106		
D 13C-2,3,7,8-TCDD	22.107	1835515	0.74	1.0896	62.5	62.5	0.3026	0.3026	62.52	
2,3,7,8-TCDD	22.150	3161413	0.81	1.1659	147.7	147.7	0.2294	0.2294		
$ 37Cl4-2,3,7,8-TCDD	22.150	1144098		1.1445	37.1	37.1	0.0715	0.0715	92.75	
A Non-2,3,7,8-sub-TCDD	20.973	298036	0.77	1.1659	14.0	13.9	0.2294	12.0		RQ
S Total TCDD					161.7	161.7	0.2294	0.2294		RQ
D 13C-1,2,3,7,8-PeCDF	27.602	2285681	1.62	1.4604	58.1	58.1	0.2143	0.2143	58.09	
1,2,3,7,8-PeCDF	27.636	511119	1.58	1.1322	19.8	19.8	0.1328	0.1328		
D 13C-2,3,4,7,8-PeCDF	29.160	2085381	1.59	1.3504	57.3	57.3	0.2317	0.2317	57.32	
2,3,4,7,8-PeCDF	29.186	293593	1.61	1.1588	12.1	12.1	0.1520	0.1520		
A F1 PeCDFs	24.940	6261	1.40	1.1455	0.2501	0.2501	0.009228	0.2501		
A Non-2,3,7,8-sub-PeCDF	28.506	471143	1.55	1.1455	18.9	18.8	0.1416	7.986		RQ
S Total PeCDF					51.0	51.0	0.1424	0.1424		RQ
D 13C-1,2,3,7,8-PeCDD	29.986	1355336	1.66	0.8729	57.6	57.6	0.1225	0.1225	57.63	
1,2,3,7,8-PeCDD	30.003	28762	1.57	1.1191	1.896	1.896	0.0562	0.0562		
A Non-2,3,7,8-sub-PeCDD	28.748						0.0562	0.7851		RQU
S Total PeCDD					1.896	1.896	0.0562	0.0562		
D 13C-1,2,3,4,7,8-HxCDF	35.161	1817785	0.53	1.2808	56.7	56.7	0.2217	0.2217	56.74	
1,2,3,4,7,8-HxCDF	35.178	903963	1.26	1.3205	37.7	37.7	0.1107	0.1107		
D 13C-1,2,3,6,7,8-HxCDF	35.321	2113470	0.54	1.4615	57.8	57.8	0.1943	0.1943	57.81	
1,2,3,6,7,8-HxCDF	35.329	256434	1.22	1.2682	9.568	9.568	0.1037	0.1037		
D 13C-2,3,4,6,7,8-HxCDF	36.105	1898058	0.54	1.3227	57.4	57.4	0.2147	0.2147	57.37	
2,3,4,6,7,8-HxCDF	36.122	35695	1.26	1.2838	1.465	1.465	0.1001	0.1001		M
D 13C-1,2,3,7,8,9-HxCDF	36.973	1726289	0.54	1.1062	62.4	62.4	0.2567	0.2567	62.39	
1,2,3,7,8,9-HxCDF	36.990	23582	1.36	1.3063	1.046	1.046	0.1057	0.1057		Ma
A Non-2,3,7,8-sub-HxCDF	35.280	136143	1.25	1.2947	5.567	5.567	0.1048	2.643		Ma
S Total HxCDF					55.3	55.3	0.1050	0.1050		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.779	2501279	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.307	1294107	1.28	0.8757	59.1	59.1	0.2006	0.2006	59.08	
1,2,3,4,7,8-HxCDD	36.315	6925	1.18	1.1972	0.4470	0.4470	0.0296	0.0296		
D 13C-1,2,3,6,7,8-HxCDD	36.425	1572470	1.25	1.0651	59.0	59.0	0.1650	0.1650	59.03	
1,2,3,6,7,8-HxCDD	36.433	9944	1.18	1.0695	0.5913	0.5913	0.0301	0.0301		
1,2,3,7,8,9-HxCDD	36.804	7490	1.24	1.1806	0.4948	0.4427	0.0286	0.0286		RQM
A Non-2,3,7,8-sub-HxCDD	35.613	28204	1.23	1.1491	1.713	1.713	0.0294	0.7622		M
S Total HxCDD					3.246	3.193	0.0294	0.0294		RQ
1,2,3,4,6,7,8-HpCDF	38.753	274040	1.05	1.5618	12.9	12.9	0.0829	0.0829		
D 13C-1,2,3,4,6,7,8-HpCDF	38.736	1359938	0.45	0.9521	57.1	57.1	0.3509	0.3509	57.10	
1,2,3,4,7,8,9-HpCDF	39.975	84050	1.05	1.4975	4.925	4.925	0.0978	0.0978		
D 13C-1,2,3,4,7,8,9-HpCDF	39.966	1139639	0.44	0.7782	58.6	58.6	0.4293	0.4293	58.55	
A Non-2,3,7,8-sub-HpCDF	39.360	87985	1.08	1.5297	4.602	4.602	0.0899	4.602		
S Total HpCDF					22.4	22.4	0.0904	0.0904		
1,2,3,4,6,7,8-HpCDD	39.672	128247	1.05	1.1079	8.776	8.776	0.0617	0.0617		
D 13C-1,2,3,4,6,7,8-HpCDD	39.663	1318886	1.06	0.8393	62.8	62.8	0.1926	0.1926	62.82	
A Non-2,3,7,8-sub-HpCDD	40.007	132076	1.04	1.1079	9.039	9.039	0.0617	9.039		
S Total HpCDD					17.8	17.8	0.0617	0.0617		
D 13C-OCDD	42.144	1639051	0.90	0.5301	123.6	123.6	0.2287	0.2287	61.81	
OCDF	42.245	100121	0.90	1.4802	8.254	8.254	0.0626	0.0626		
OCDD	42.153	1433387	0.89	1.1666	149.9	149.9	0.2257	0.2257		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 01-Dec-2020 13:52:56　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Lims ID: 320-66850-A-5-B
Client ID: 11215702-Tank #1 Tank
Sample Type: Client
Inject. Date: 24-Nov-2020 15:53:00　ALS Bottle#: 0　Worklist Smp#: 38
Injection Vol: 1.0 ul　Dil. Factor: 1.0000
Sample Info: 320-66850-a-5-b
Operator ID: Xcalibur_System　Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:52:55　Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution　Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm)　Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: stephensk　Date: 24-Nov-2020 17:00:55

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.730	21.772	-3		1196237	181179	329	822	551		a
333.9338	21.730	21.772	-3		1498010	218249	198	495	1102	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.724	20.725	0	0.954	1305458	196769	325	812	605		
317.9389	20.733	20.725	0	0.954	1584325	237237	307	767	773	0.82(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.750	20.776	-2	1.001	6438796	912925	955	2387	956		
305.8987	20.750	20.776	-2	1.001	8033714	1137459	1262	3155	901	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.650	20.119	-148	0.852	41248	7783	955	2387	8		
305.8987	17.658	20.119	-147	0.852	60774	9575	1262	3155	8	0.68(0.65-0.89)	
303.9016	18.131	20.119	-119	0.875	234682	40168	955	2387	42		
305.8987	18.131	20.119	-119	0.875	291181	50547	1262	3155	40	0.81(0.65-0.89)	
303.9016	18.629	20.119	-89	0.899	309481	40298	955	2387	42		
305.8987	18.638	20.119	-89	0.899	379929	50374	1262	3155	40	0.81(0.65-0.89)	
303.9016	19.076	20.119	-62	0.920	225548	29987	955	2387	31		
305.8987	19.084	20.119	-62	0.921	272970	37130	1262	3155	29	0.83(0.65-0.89)	
303.9016	19.488	20.119	-38	0.940	297670	41897	955	2387	44		
305.8987	19.471	20.119	-39	0.940	369622	50521	1262	3155	40	0.81(0.65-0.89)	
303.9016	20.003	20.119	-7	0.965	2709782	416776	955	2387	436		
305.8987	20.003	20.119	-7	0.965	3397906	518619	1262	3155	411	0.80(0.65-0.89)	
303.9016	20.432	20.119	19	0.986	153455	20387	955	2387	21		
305.8987	20.432	20.119	19	0.986	192735	24989	1262	3155	20	0.80(0.65-0.89)	
303.9016	21.575	20.119	87	1.041	414560	59399	955	2387	62		
305.8987	21.566	20.119	87	1.041	522190	74555	1262	3155	59	0.79(0.65-0.89)	

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	22.021	20.119	114	1.063	92861	12550	955	2387	13		
305.8987	22.021	20.119	114	1.063	117867	15499	1262	3155	12	0.79(0.65-0.89)	
303.9016	23.903	20.119	227	1.153	458698	91972	955	2387	96		
305.8987	23.903	20.119	227	1.153	561906	117939	1262	3155	93	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.107	22.124	-1	1.017	783079	110378	329	822	335		
333.9338	22.124	22.124	0	1.018	1052436	144629	198	495	730	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.150	22.159	-1	1.002	1416311	188783	147	367	1284		
321.8936	22.150	22.159	-1	1.002	1745102	237814	126	315	1887	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.150	22.201	-3	1.019	1144098	156928	131	327	1198		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	20.020	20.973	-57	0.906	3958	704	147	367	5		
321.8936	20.029	20.973	-57	0.906	6674	1049	126	315	8	0.59(0.65-0.89)	
	Empc Correction				5140	914	126	315	7		
319.8965	21.953	20.973	59	0.993	14672	2859	147	367	19		
321.8936	21.944	20.973	58	0.993	17659	3268	126	315	26	0.83(0.65-0.89)	
319.8965	22.863	20.973	113	1.034	118528	13736	147	367	93		
321.8936	22.855	20.973	113	1.034	138079	17557	126	315	139	0.86(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.602	27.633	-2	1.270	1411922	217759	304	760	716		
353.8970	27.602	27.633	-2	1.270	873759	139482	196	490	712	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.636	27.659	-1	1.001	312795	49936	112	280	446		
341.8567	27.636	27.659	-1	1.001	198324	31560	103	257	306	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.160	29.184	-1	1.342	1279376	185924	304	760	612		
353.8970	29.160	29.184	-1	1.342	806005	119023	196	490	607	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.186	29.217	-2	1.001	181278	27531	112	280	246		
341.8567	29.186	29.217	-2	1.001	112315	17156	103	257	167	1.61(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.306	24.940	-38	0.881	3649	828	2	5	414		
341.8567	24.332	24.940	-36	0.882	2612	480	12	30	40	1.40(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.128	28.506	-142	0.947	122297	20761	112	280	185		
341.8567	26.111	28.506	-143	0.946	77632	12574	103	257	122	1.58(1.32-1.78)	
339.8597	27.063	28.506	-86	0.980	9773	1540	112	280	14		
341.8567	27.029	28.506	-88	0.979	6669	877	103	257	9	1.47(1.32-1.78)	
339.8597	27.501	28.506	-60	0.996	21698	4536	112	280	41		
341.8567	27.493	28.506	-61	0.996	12899	2808	103	257	27	1.68(1.32-1.78)	
339.8597	28.234	28.506	-16	1.023	81626	12794	112	280	114		
341.8567	28.234	28.506	-16	1.023	50122	7940	103	257	77	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	29.548	28.506	62	1.070	44393	5970	112	280	53		
341.8567	29.539	28.506	62	1.070	27122	3949	103	257	38	1.64(1.32-1.78)	
339.8597	31.300	28.506	167	1.134	10280	1369	112	280	12		
341.8567	31.275	28.506	166	1.133	8081	955	103	257	9	1.27(1.32-1.78)	
	Empc Correction				6632	883	103	257	9		
13C-1,2,3,7,8-PeCDD											
367.8949	29.986	30.017	-2	1.380	846340	121719	104	260	1170		
369.8919	29.986	30.017	-2	1.380	508996	72131	67	167	1077	1.66(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.003	30.051	-3	1.001	17591	2623	28	70	94		
357.8516	30.003	30.051	-3	1.001	11171	1603	21	52	76	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.389	28.748	-141	0.880	1684	241	28	70	9		
357.8516	26.465	28.748	-137	0.883	10224	1834	21	52	87	0.16(1.32-1.78)	
	Empc Correction				1086	155	21	52	0		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.161	35.175	-1	0.956	626019	138422	225	562	615		
385.8610	35.161	35.175	-1	0.956	1191766	259755	478	1195	543	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.178	35.200	-1	1.000	504625	109805	154	385	713		
375.8178	35.178	35.200	-1	1.000	399338	87097	79	197	1102	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.321	35.335	-1	0.960	739151	156674	225	562	696		
385.8610	35.321	35.335	-1	0.960	1374319	285751	478	1195	598	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.329	35.351	-1	1.000	141164	29230	154	385	190		
375.8178	35.338	35.351	-1	1.000	115270	22319	79	197	283	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.105	36.118	-1	0.982	663200	162000	225	562	720		
385.8610	36.105	36.118	-1	0.982	1234858	291004	478	1195	609	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	36.122	36.135	-1	1.000	19917	4517	154	385	29		
375.8178	36.122	36.135	-1	1.000	15778	4037	79	197	51	1.26(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.973	36.986	-1	1.005	607104	149862	225	562	666		
385.8610	36.973	36.986	-1	1.005	1119185	271841	478	1195	569	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	36.990	37.003	-1	1.000	13603	3709	154	385	24		M
375.8178	36.981	37.003	-1	1.000	9979	2528	79	197	32	1.36(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	33.754	35.280	-91	0.960	36632	6112	154	385	40		
375.8178	33.754	35.280	-91	0.960	28014	4569	79	197	58	1.31(1.05-1.43)	
373.8208	35.995	35.280	43	1.024	10754	2559	154	385	17		M
375.8178	35.995	35.280	43	1.024	9520	2189	79	197	28	1.13(1.05-1.43)	
373.8208	37.091	35.280	108	1.055	28144	7813	154	385	51		M
375.8178	37.091	35.280	108	1.055	23079	5831	79	197	74	1.22(1.05-1.43)	

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.779	36.792	-1		1403095	343925	256	640	1343		
403.8529	36.779	36.792	-1		1098184	274778	179	447	1535	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.307	36.320	-1	0.987	726255	193607	256	640	756		
403.8529	36.307	36.320	-1	0.987	567852	150633	179	447	842	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.315	36.337	-1	1.000	3750	1014	25	62	41		
391.8127	36.315	36.337	-1	1.000	3175	748	24	60	31	1.18(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.425	36.438	-1	0.990	874125	209644	256	640	819		
403.8529	36.425	36.438	-1	0.990	698345	168785	179	447	943	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.433	36.446	-1	1.000	5384	1230	25	62	49		
391.8127	36.450	36.446	0	1.001	4560	1026	24	60	43	1.18(1.05-1.43)	
1,2,3,7,8,9-HxCDD											RQM
389.8158	36.804	36.809	0	1.014	5028	1208	25	62	48		
	Empc Correction				4146	1039	25	62	42		
391.8127	36.787	36.809	-1	1.013	3344	838	24	60	35	1.50(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											M
389.8158	34.487	35.613	-67	0.947	6838	1373	25	62	55		
391.8127	34.495	35.613	-67	0.947	5299	1297	24	60	54	1.29(1.05-1.43)	
389.8158	35.245	35.613	-22	0.968	2026	373	25	62	15		
391.8127	35.254	35.613	-21	0.968	1488	281	24	60	12	1.36(1.05-1.43)	
389.8158	35.582	35.613	-2	0.977	6699	1429	25	62	57		M
391.8127	35.565	35.613	-3	0.976	5854	1154	24	60	48	1.14(1.05-1.43)	M
1,2,3,4,6,7,8-HpCDF											
407.7817	38.753	38.745	0	1.000	140197	39991	120	300	333		
409.7788	38.753	38.745	0	1.000	133843	39193	81	202	484	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.736	38.749	-1	1.053	424743	120267	264	660	456		
419.8220	38.736	38.749	-1	1.053	935195	267518	563	1407	475	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.975	39.975	0	1.000	43017	13391	120	300	112		
409.7788	39.975	39.975	0	1.000	41033	12524	81	202	155	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.966	39.979	-1	1.087	345573	103960	264	660	394		
419.8220	39.966	39.979	-1	1.087	794066	238752	563	1407	424	0.44(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.107	39.360	-15	1.010	45604	13489	120	300	112		
409.7788	39.107	39.360	-15	1.010	42381	12318	81	202	152	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.672	39.672	0	1.000	65802	20137	58	145	347		
425.7737	39.672	39.672	0	1.000	62445	18966	51	127	372	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.663	39.676	-1	1.078	677397	203122	206	515	986		
437.8140	39.663	39.676	-1	1.078	641489	194864	194	485	1004	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.048	40.007	-57	0.984	67420	20626	58	145	356		
425.7737	39.048	40.007	-57	0.984	64656	19084	51	127	374	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.144	42.158	-1	1.146	777981	194083	177	442	1097		
471.7750	42.144	42.158	-1	1.146	861070	216193	123	307	1758	0.90(0.76-1.02)	
OCDF											
441.7428	42.245	42.251	0	1.002	47409	12738	24	60	531		
443.7399	42.245	42.251	0	1.002	52712	13906	52	130	267	0.90(0.76-1.02)	
OCDD											
457.7377	42.153	42.167	-1	1.000	675381	169581	101	252	1679		
459.7348	42.153	42.167	-1	1.000	758006	189799	115	287	1650	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	2889783	434006

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	2889783	434006

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.650	41248	7783	60774	9575	3.06	0.68	
18.131	234682	40168	291181	50547	15.8	0.81	
18.629	309481	40298	379929	50374	20.7	0.81	
19.076	225548	29987	272970	37130	14.9	0.83	
19.488	297670	41897	369622	50521	20.0	0.81	
20.003	2709782	416776	3397906	518619	183.0	0.80	
20.432	153455	20387	192735	24989	10.4	0.80	
21.575	414560	59399	522190	74555	28.1	0.79	
22.021	92861	12550	117867	15499	6.32	0.79	
23.903	458698	91972	561906	117939	30.6	0.82	
Signal Totals:							
	4937985	761217	6167080	949748			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11105065	1710965				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 332.811 = (11105065 * 100.000) / (2889783 * 1.155)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	1835515	255007

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	1835515	255007

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.020	3958	704	6674	1049	0.4968	0.59	RQ
20.020	3958	704	5140	914	0.4251		Empc Correction
21.953	14672	2859	17659	3268	1.51	0.83	
22.863	118528	13736	138079	17557	12.0	0.86	
Signal Totals:							
	137158	17299	160878	21739			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	299570	39173				0.84	RQ
	298036	39038					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 13.998 = (299570 * 100.000) / (1835515 * 1.166)
Empc Amount: 13.927 = (298036 * 100.000) / (1835515 * 1.166)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

F1 PeCDFs, RT: 24.940

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2285681	357241
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2085381	304947

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2185531	331094

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.306	3649	828	2612	480	0.2501	1.40	
Signal Totals:							
	3649	828	2612	480			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6261	1308				1.40	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2501 = (6261 * 100.000) / (2185531 * 1.145)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Lims ID: 320-66850-A-5-B

Client ID: 11215702-Tank #1 Tank

Inject. Date: 24-Nov-2020 15:53:00 Dil. Factor: 1.0000

Sample Type: Client Sample

Instrument ID: DFS 1 Operator: Xcalibur_System

Lims Batch ID: 434777 Lims Sample ID: 38

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2285681	357241
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2085381	304947

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2185531	331094

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.128	122297	20761	77632	12574	7.99	1.58	
27.063	9773	1540	6669	877	0.6568	1.47	
27.501	21698	4536	12899	2808	1.38	1.68	
28.234	81626	12794	50122	7940	5.26	1.63	
29.548	44393	5970	27122	3949	2.86	1.64	
31.300	10280	1369	8081	955	0.7334	1.27	RQ
31.300	10280	1369	6632	883	0.6755		Empc Correction
Signal Totals:							
	290067	46970	181076	29031			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	472592	76073				1.59	RQ
	471143	76001					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 18.877 = (472592 * 100.000) / (2185531 * 1.145)

Empc Amount: 18.819 = (471143 * 100.000) / (2185531 * 1.145)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Lims ID: 320-66850-A-5-B
Client ID: 11215702-Tank #1 Tank
Inject. Date: 24-Nov-2020 15:53:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 434777 Lims Sample ID: 38

Non-2,3,7,8-sub-PeCDD, RT: 28.748

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.119	D 13C-1,2,3,7,8-PeCDD	100.000	1355336	193850

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	1355336	193850

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.389	1684	241	10224	1834	0.7851	0.16	RQ
26.389	1684	241	1086	155			Empc Correction
27.754	2222	357	940	223	0.2085	2.36	RQ
27.754	1456	345	940	223			Empc Correction

Compound is Marked ND

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

Non-2,3,7,8-sub-HxCDF, RT: 35.280

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320	D 13C-1,2,3,4,7,8-HxCDF	100.000	1817785	398177
1,2,3,6,7,8-HxCDF	1.268	D 13C-1,2,3,6,7,8-HxCDF	100.000	2113470	442425
2,3,4,6,7,8-HxCDF	1.284	D 13C-2,3,4,6,7,8-HxCDF	100.000	1898058	453004
1,2,3,7,8,9-HxCDF	1.306	D 13C-1,2,3,7,8,9-HxCDF	100.000	1726289	421703

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.295		100.000	1888900	428827

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.754	36632	6112	28014	4569	2.64	1.31	
35.995	10754	2559	9520	2189	0.8290	1.13	Ma
37.091	28144	7813	23079	5831	2.09	1.22	Ma
Signal Totals:							
	75530	16484	60613	12589			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	136143	29073				1.25	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.567 = (136143 * 100.000) / (1888900 * 1.295)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	1294107	344240
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	1572470	378429
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1433288	361334

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.487	6838	1373	5299	1297	0.7369	1.29	
35.245	2026	373	1488	281	0.2134	1.36	
35.582	6699	1429	5854	1154	0.7622	1.14	M
Signal Totals:							
	15563	3175	12641	2732			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	28204	5907				1.23	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.713 = (28204 * 100.000) / (1433288 * 1.149)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

Non-2,3,7,8-sub-HpCDF, RT: 39.360

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.562	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1359938	387785
1,2,3,4,7,8,9-HpCDF	1.497	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1139639	342712

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.530		100.000	1249788	365248

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.107	45604	13489	42381	12318	4.60	1.08	
Signal Totals:							
	45604	13489	42381	12318			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	87985	25807				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.602 = (87985 * 100.000) / (1249788 * 1.530)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Lims ID:	320-66850-A-5-B		
Client ID:	11215702-Tank #1 Tank		
Inject. Date:	24-Nov-2020 15:53:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	38

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1318886	397986

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	1318886	397986

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.048	67420	20626	64656	19084	9.04	1.04	
Signal Totals:							
	67420	20626	64656	19084			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	132076	39710				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 9.039 = (132076 * 100.000) / (1318886 * 1.108)

Report Date: 01-Dec-2020 13:52:56

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT:	36.12
Area:	25298
Amount:	1.855628
Amount Units:	pg/ul

Processing Integration Results

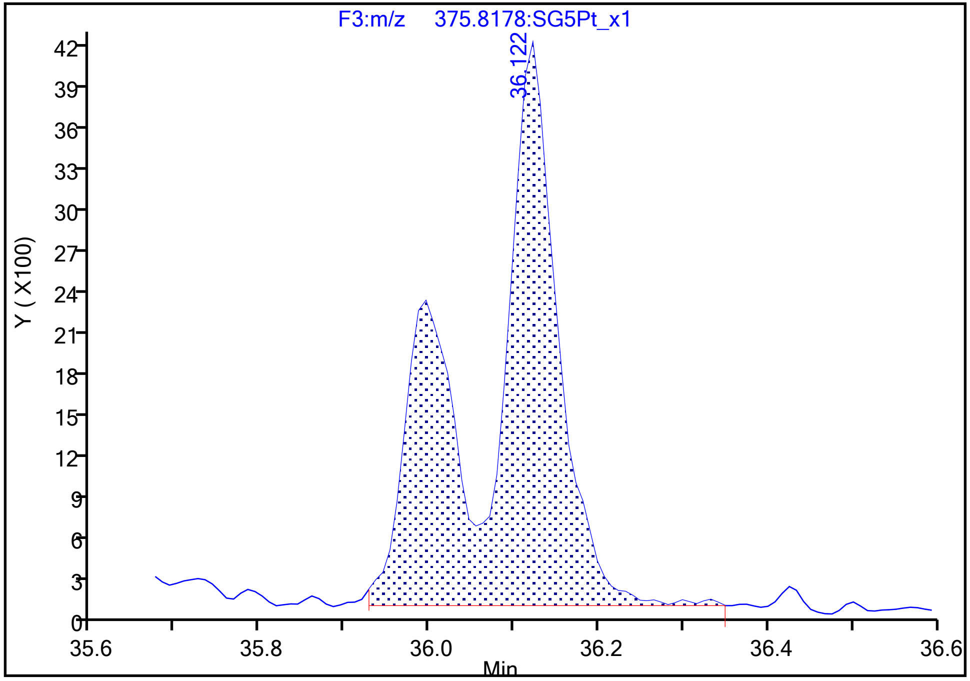

RT:	36.12
Area:	15778
Amount:	1.464926
Amount Units:	pg/ul

Manual Integration Results

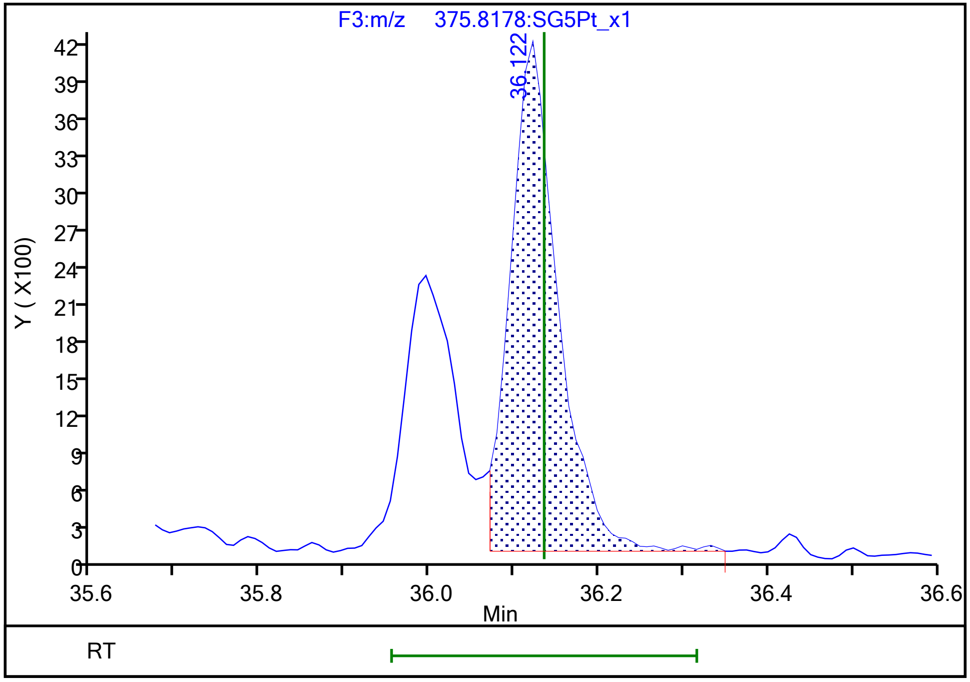

Reviewer: dadunj, 30-Nov-2020 10:59:04

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:52:56

Chrom Revision: 2.3 12-Nov-2020 21:52:08
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT: 37.09
Area: 33054
Amount: 2.713856
Amount Units: pg/ul

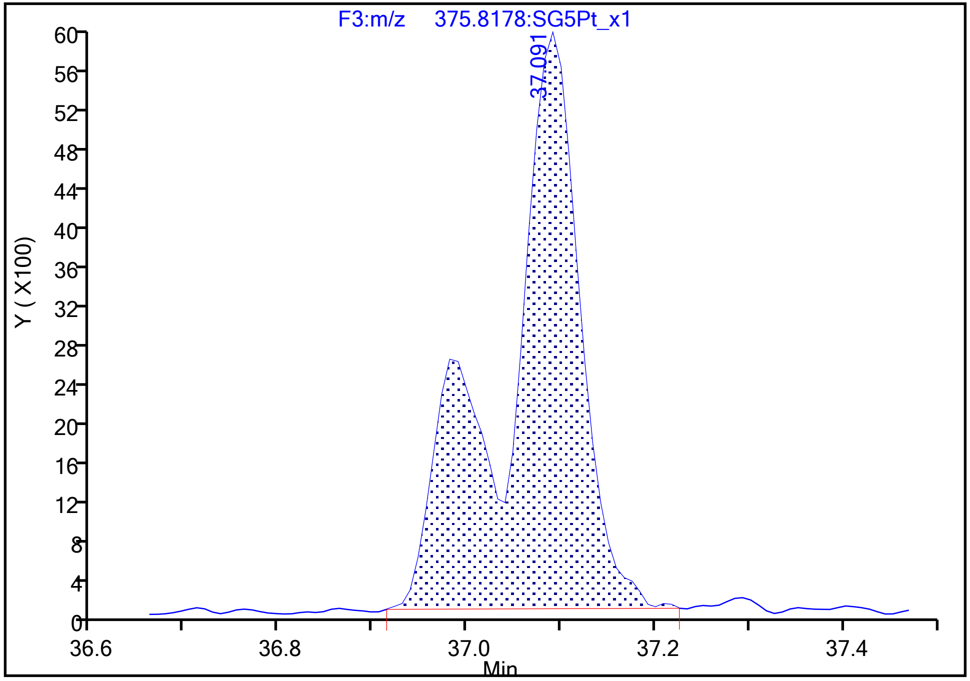

Manual Integration Results

RT: 36.98
Area: 9979
Amount: 1.045755
Amount Units: pg/ul

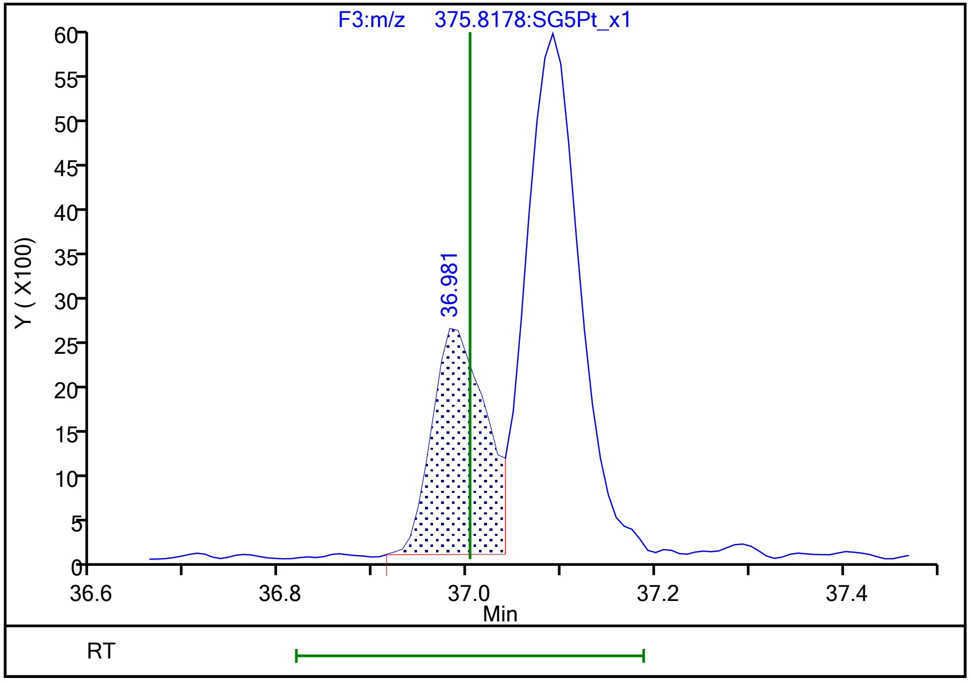

Reviewer: dadunj, 30-Nov-2020 10:59:10

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 3

Processing Integration Results

RT:	37.09
Area:	61198
Amount:	2.713856
Amount Units:	pg/ul

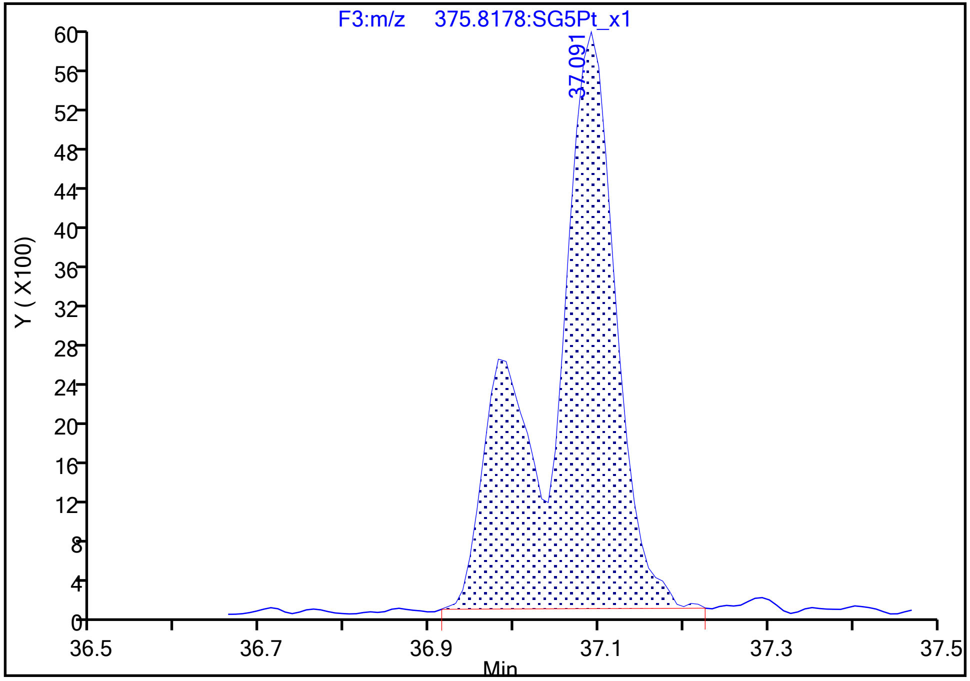

Manual Integration Results

RT:	36.99
Area:	23582
Amount:	1.045755
Amount Units:	pg/ul

Reviewer: dadunj, 30-Nov-2020 10:59:10

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5
Client ID:	11215702-Tank #1 Tank		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT: 37.09
Area: 28144
Amount: 2.713856
Amount Units: pg/ul

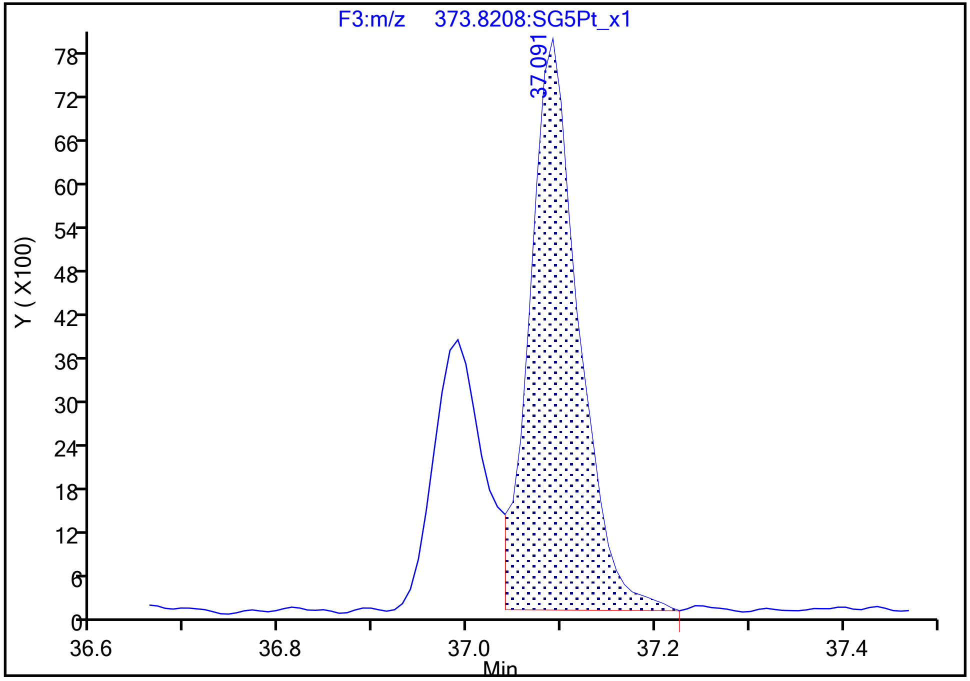

Manual Integration Results

RT: 36.99
Area: 13603
Amount: 1.045755
Amount Units: pg/ul

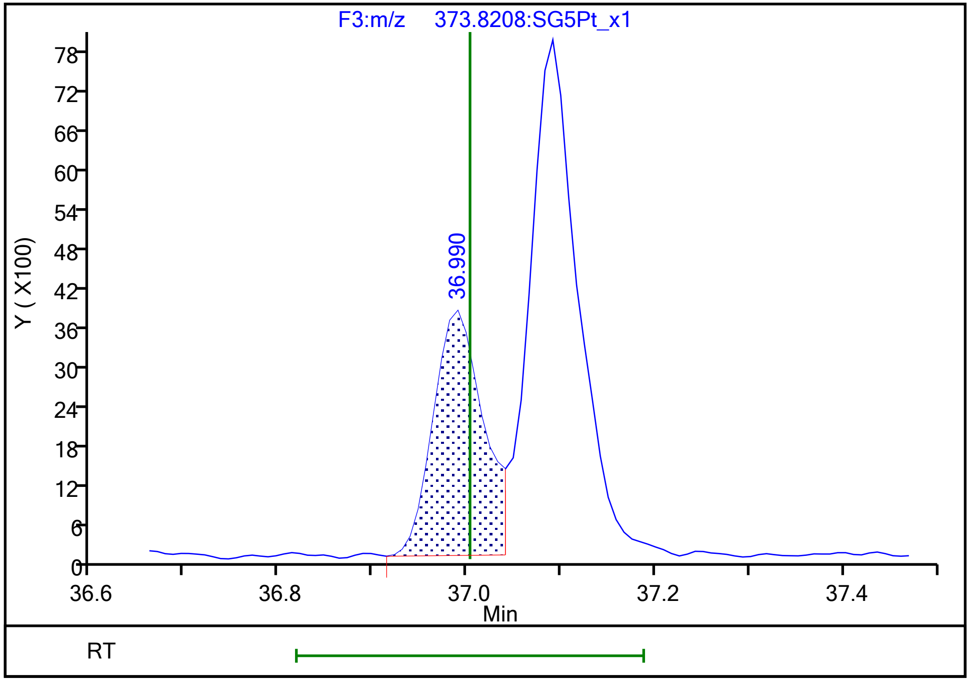

Reviewer: dadunj, 30-Nov-2020 10:59:11

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.45- 37.11)

Signal: 1

Processing Integration Results

RT = 35.995 Area = 10754

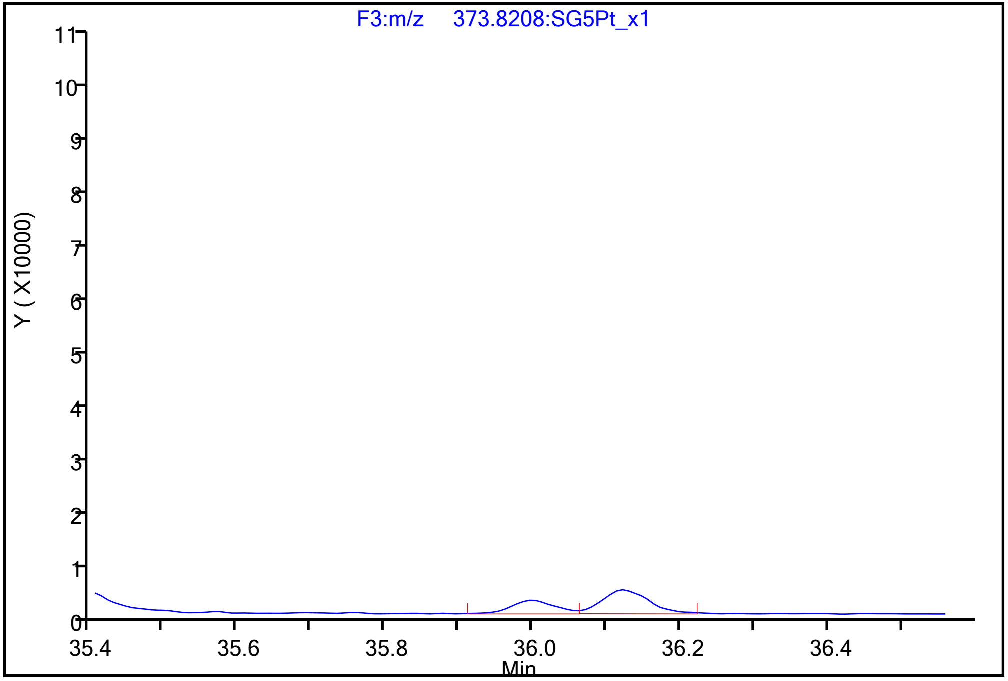

Manual Integration Results

RT = 35.995 Area = 10754

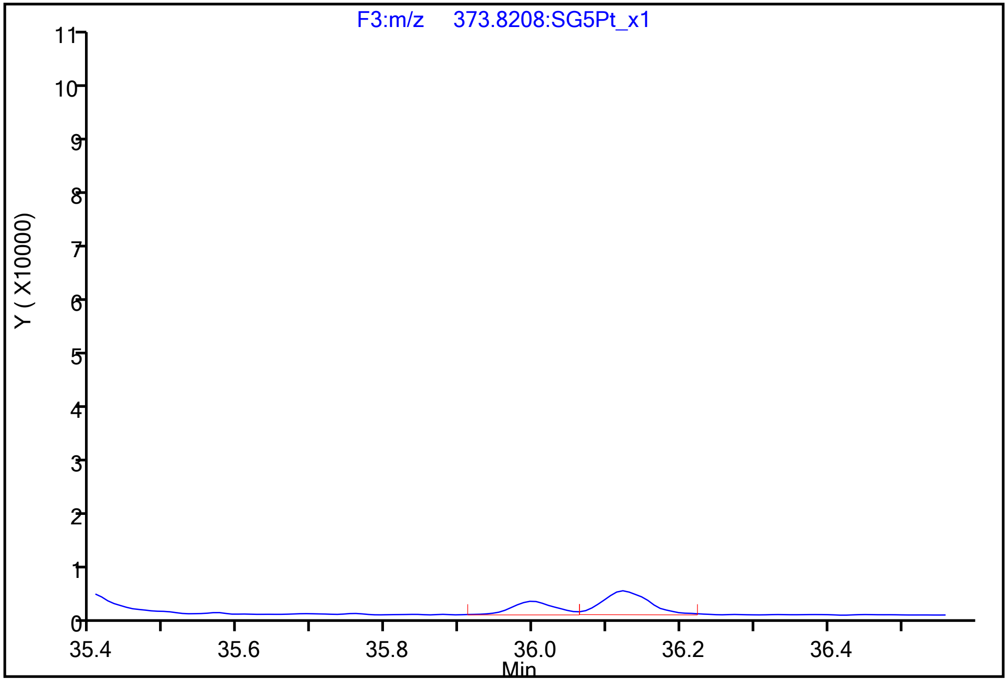

Reviewer: krenns, 01-Dec-2020 13:52:42

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5
Client ID:	11215702-Tank #1 Tank		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.45- 37.11)

Signal: 1

Processing Integration Results

RT = 37.091 Area = 28144

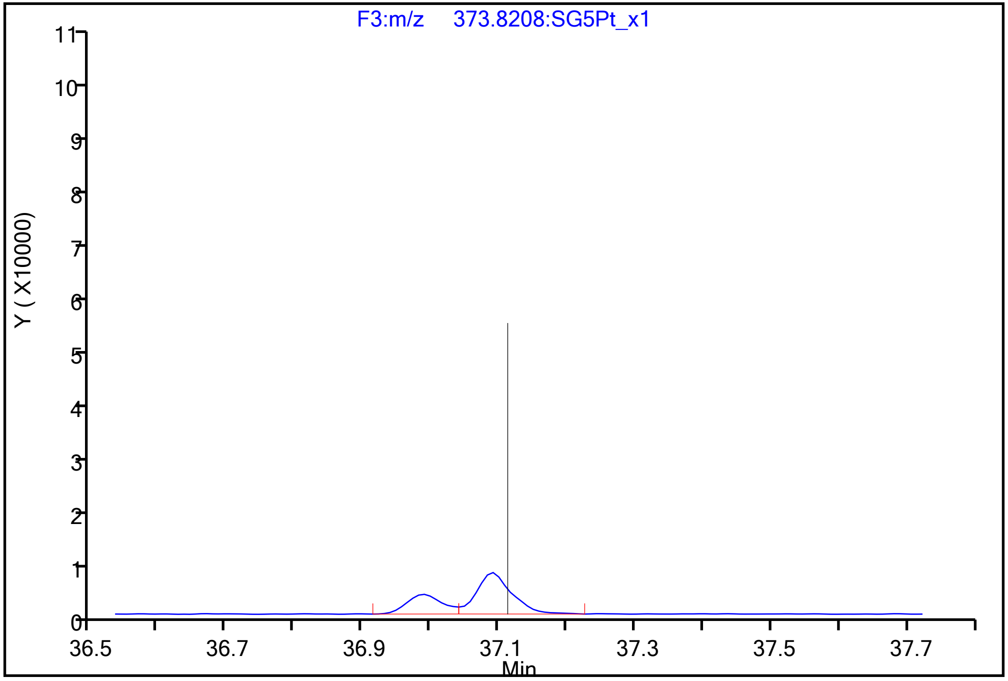

Manual Integration Results

RT = 37.091 Area = 28144

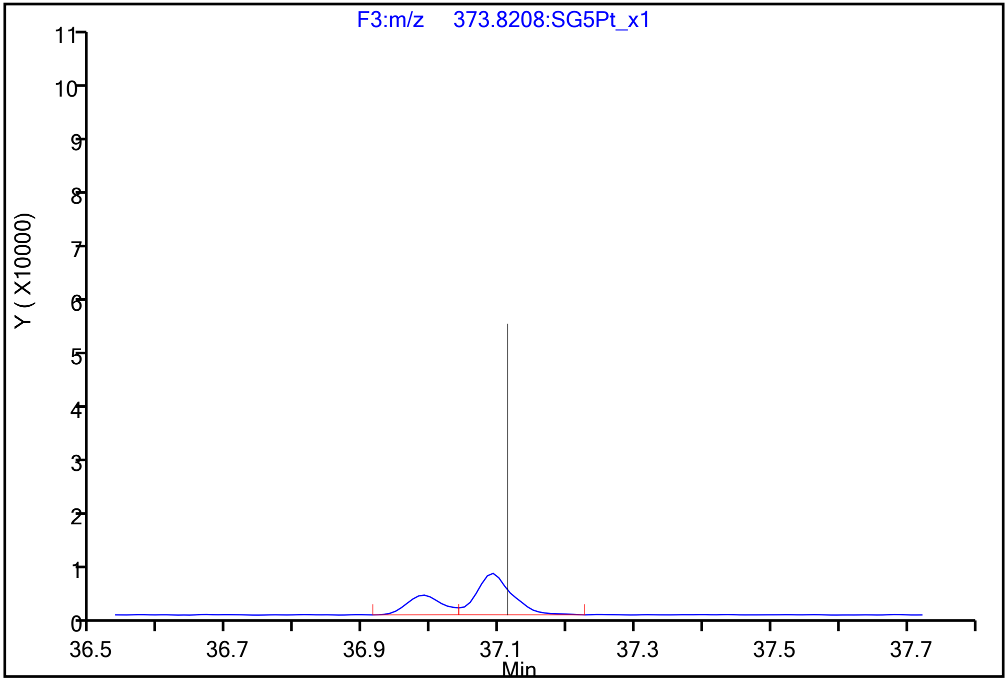

Reviewer: krenns, 01-Dec-2020 13:52:42

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT: 36.79
Area: 3148
Amount: 0.483193
Amount Units: pg/ul

Processing Integration Results

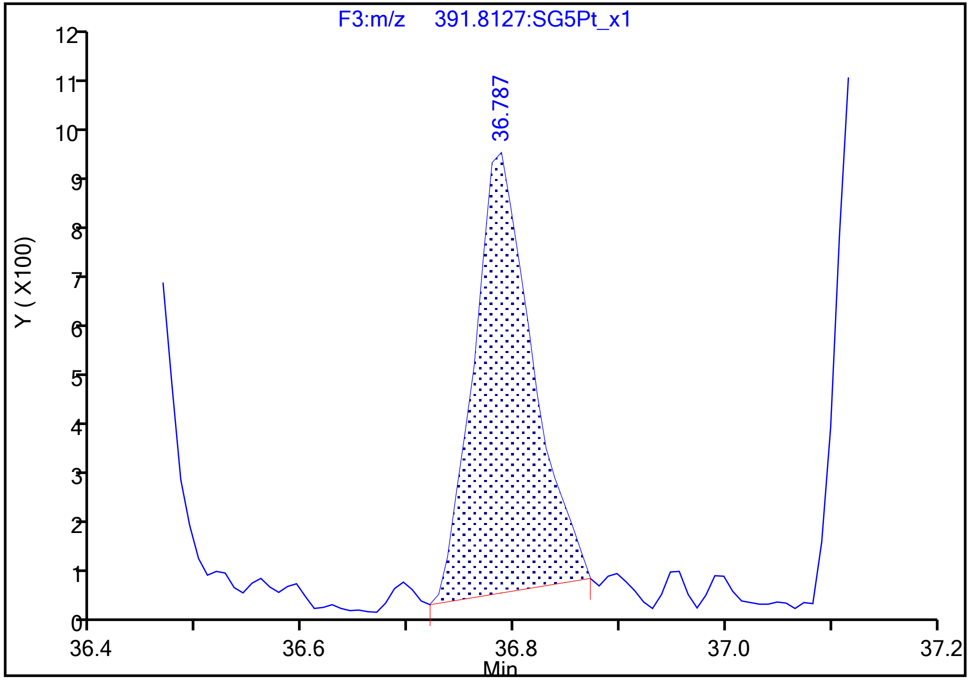

RT: 36.79
Area: 3344
Amount: 0.494776
Amount Units: pg/ul

Manual Integration Results

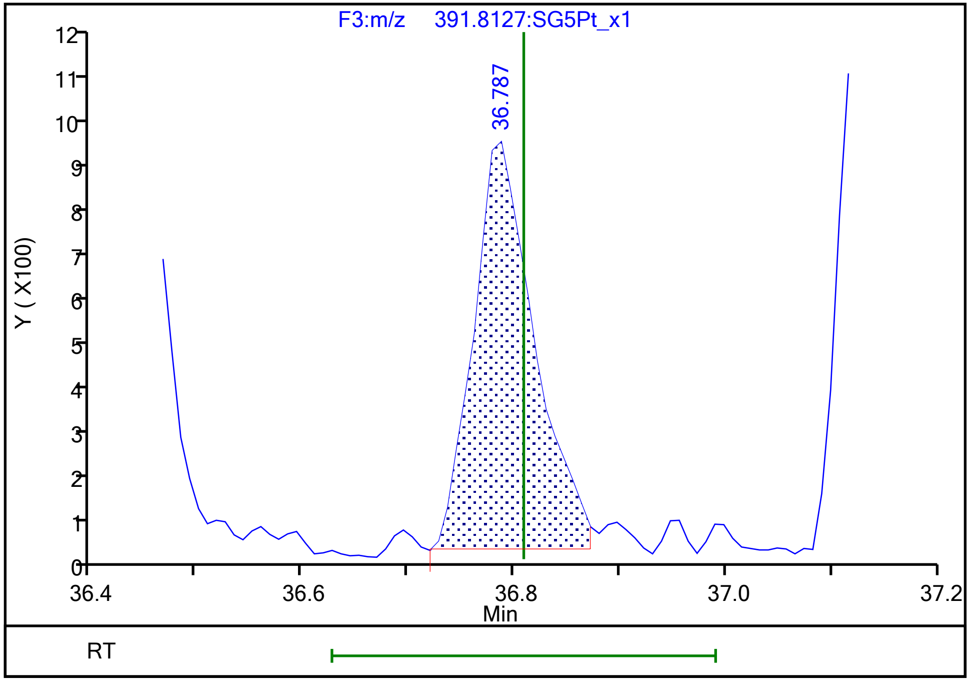

Reviewer: dadunj, 30-Nov-2020 10:59:37

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (34.46- 36.77)

Signal: 1

Processing Integration Results

RT = 35.582 Area = 7181

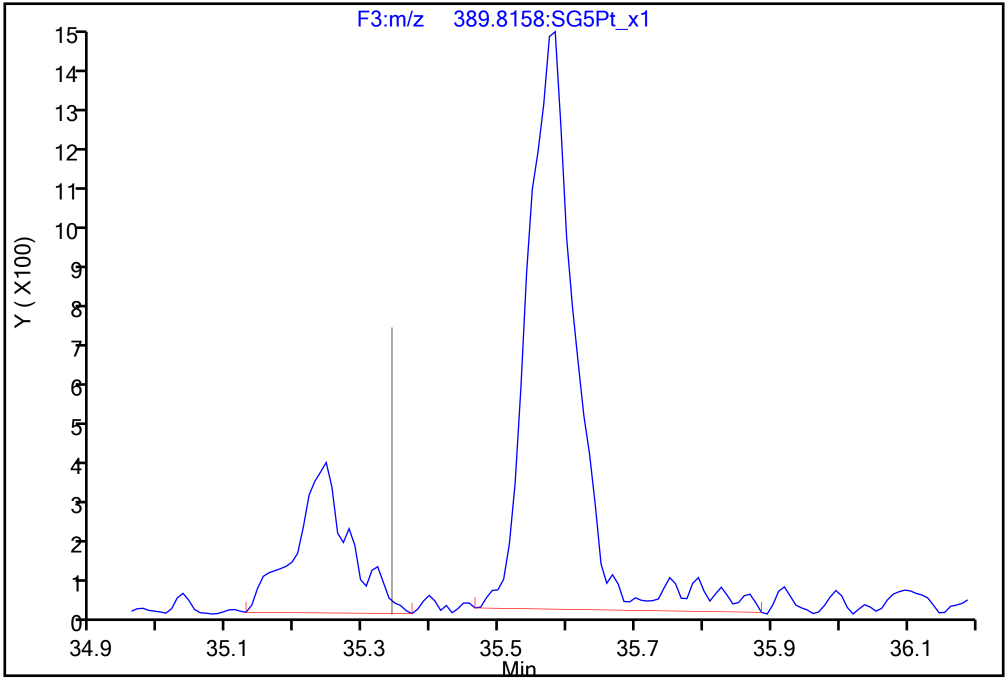

Manual Integration Results

RT = 35.582 Area = 6699 M

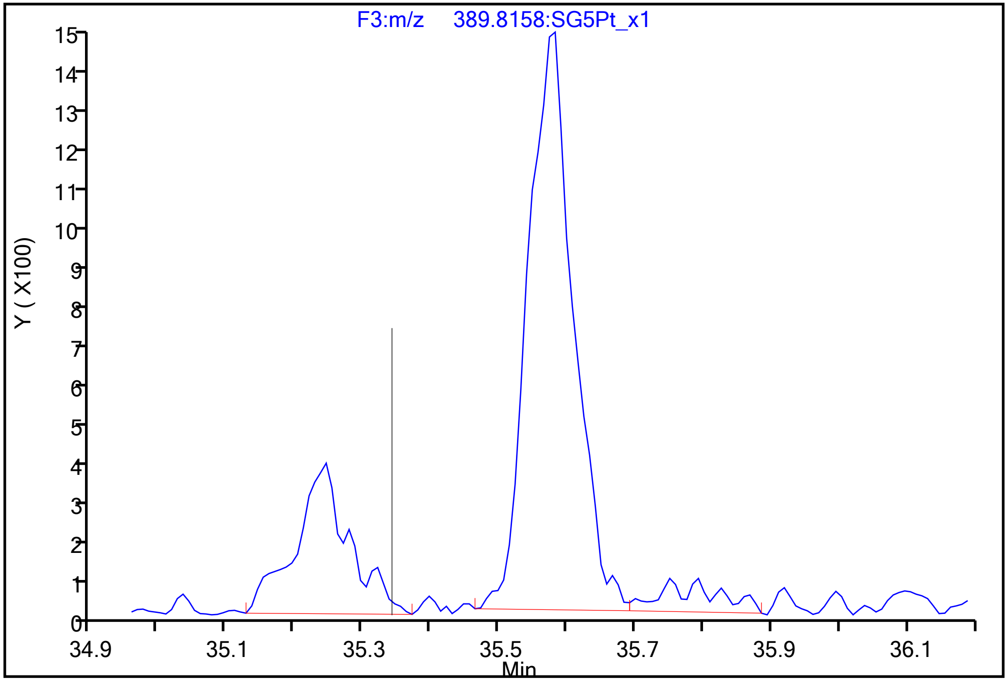

Reviewer: dadunj, 30-Nov-2020 10:59:44

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d				
Injection Date:	24-Nov-2020 15:53:00	Instrument ID:	DFS 1		
Lims ID:	320-66850-A-5-B	Lab Sample ID:	320-66850-5		
Client ID:	11215702-Tank #1 Tank				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	38
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (34.46- 36.77)

Signal: 2

Processing Integration Results

RT = 35.565 Area = 6410

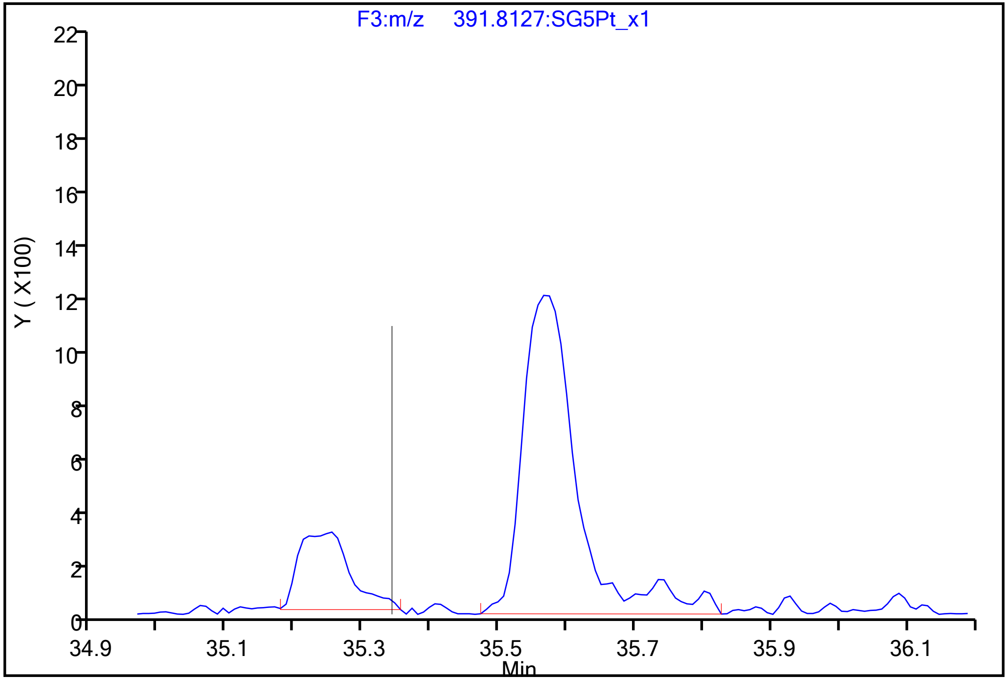

Manual Integration Results

RT = 35.565 Area = 5854 M

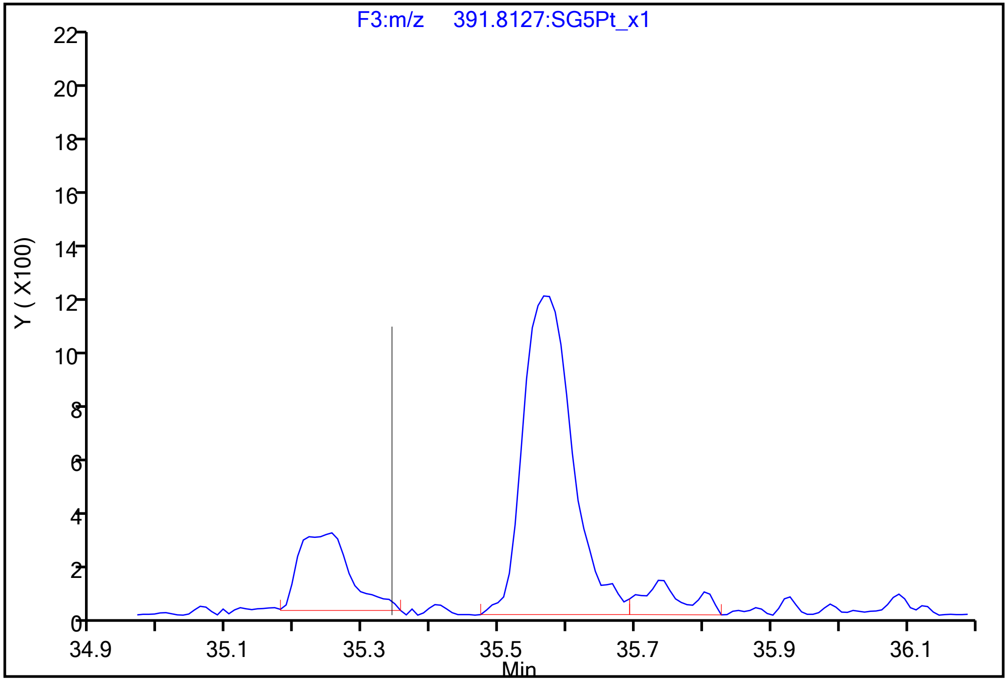

Reviewer: dadunj, 30-Nov-2020 10:59:46

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Injection Date: 24-Nov-2020 15:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Tank
Worklist#: 434777 Sample Line#: 38
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

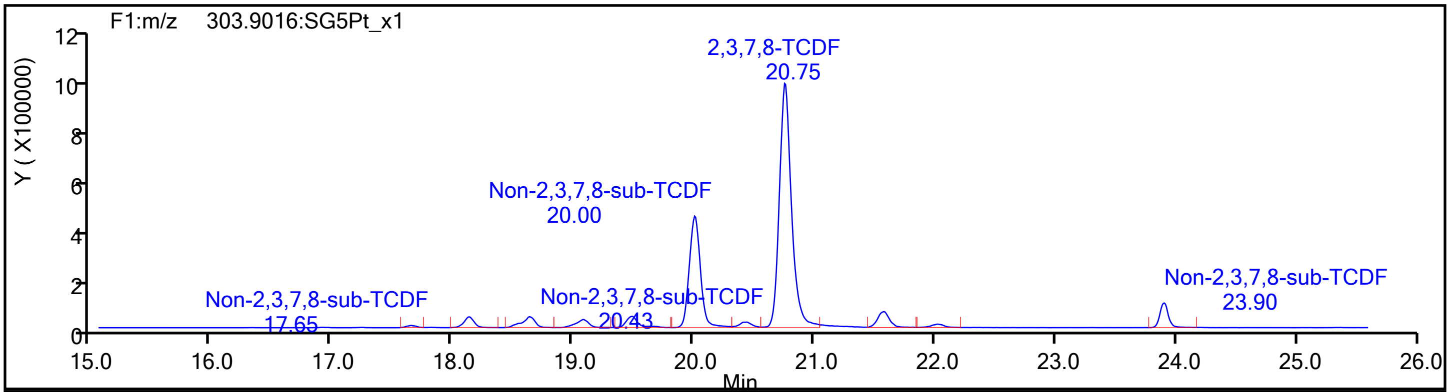

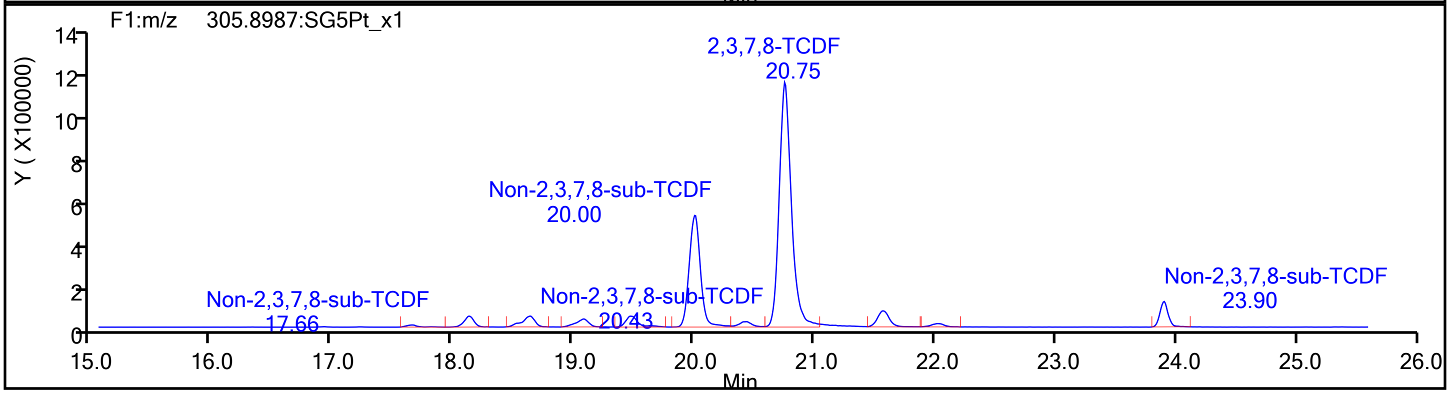

TCDF Standards

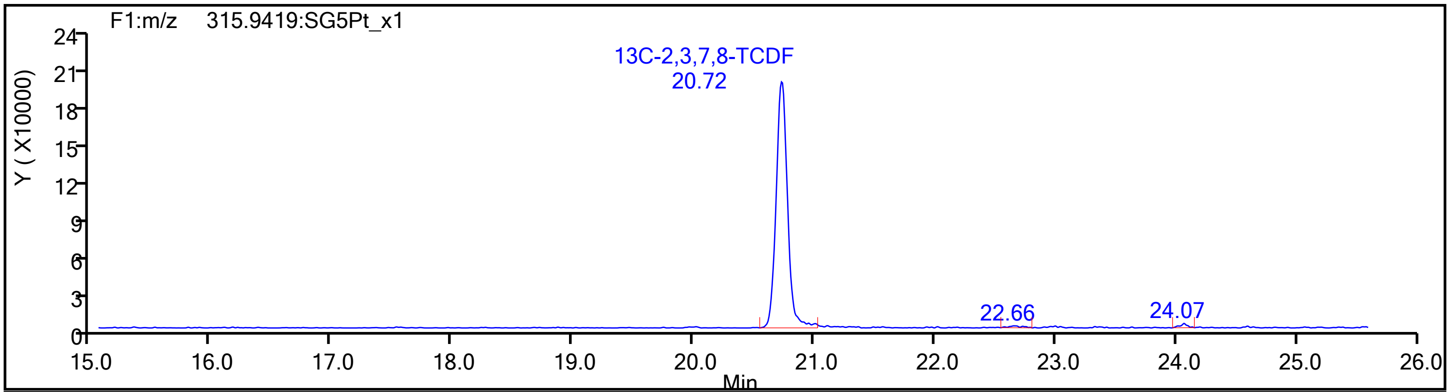

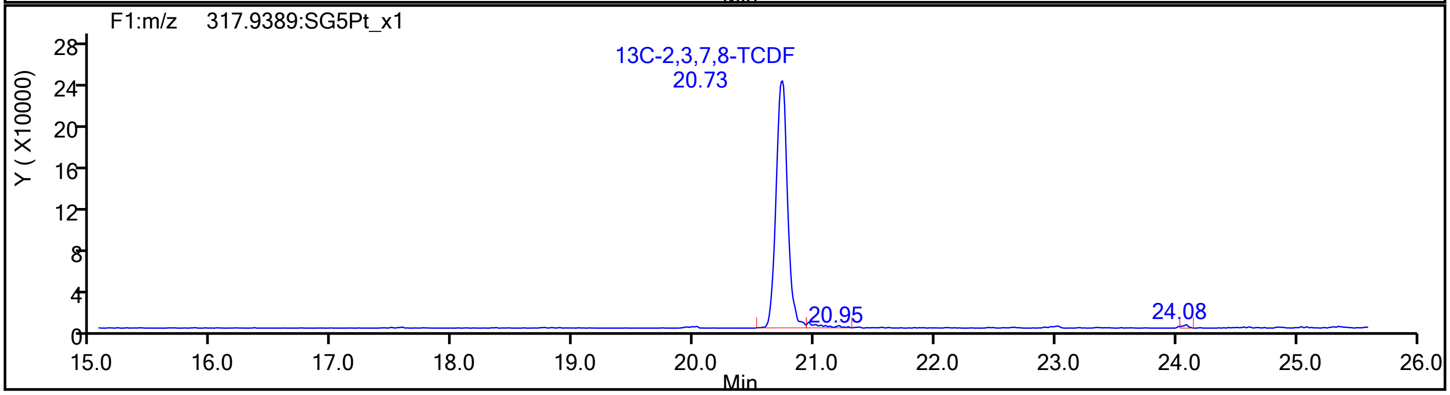

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

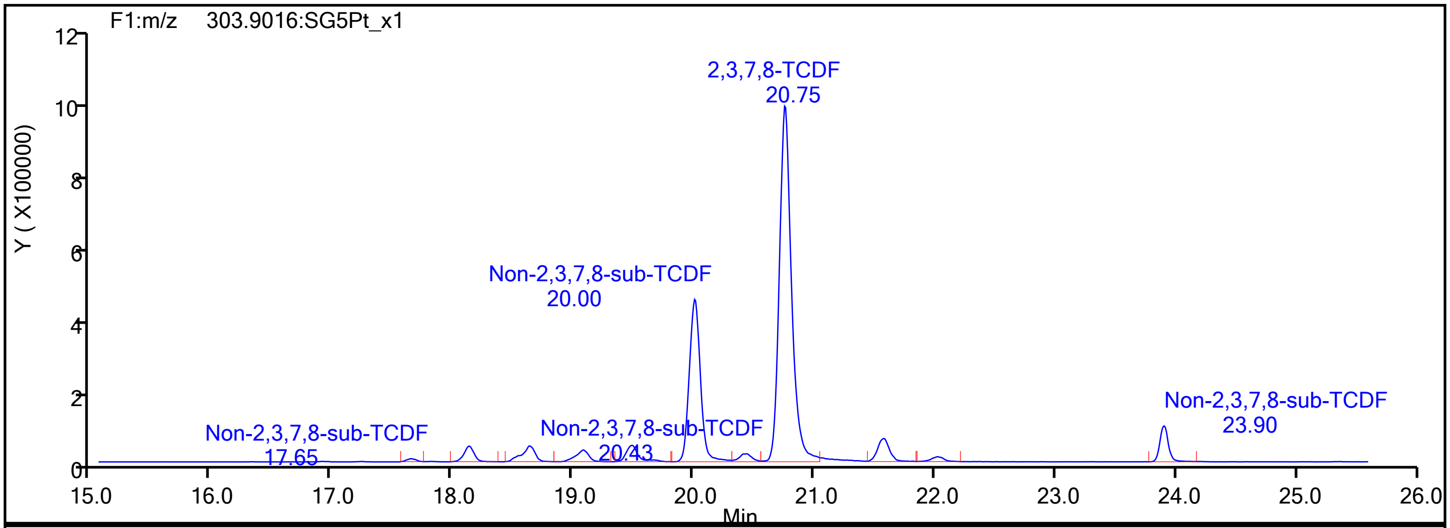

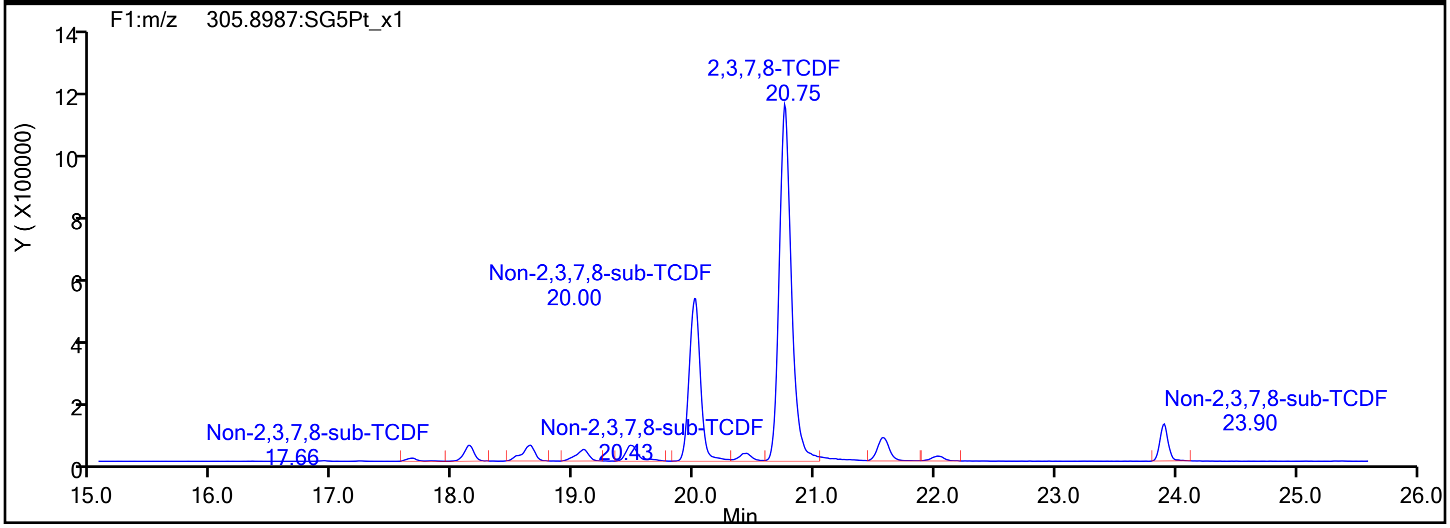

TCDF Interference Mass

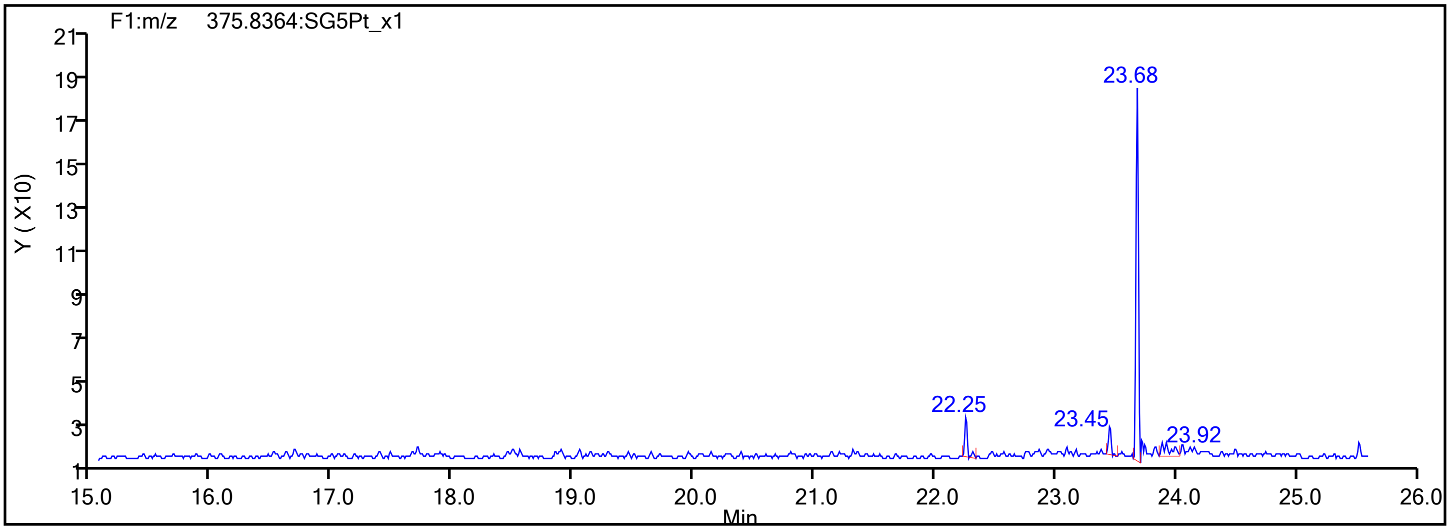

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

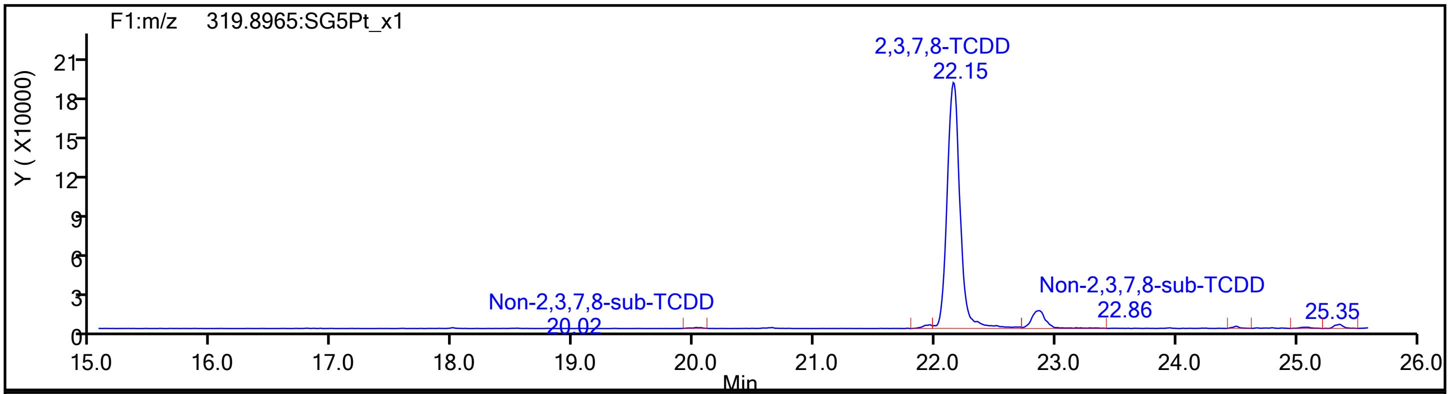

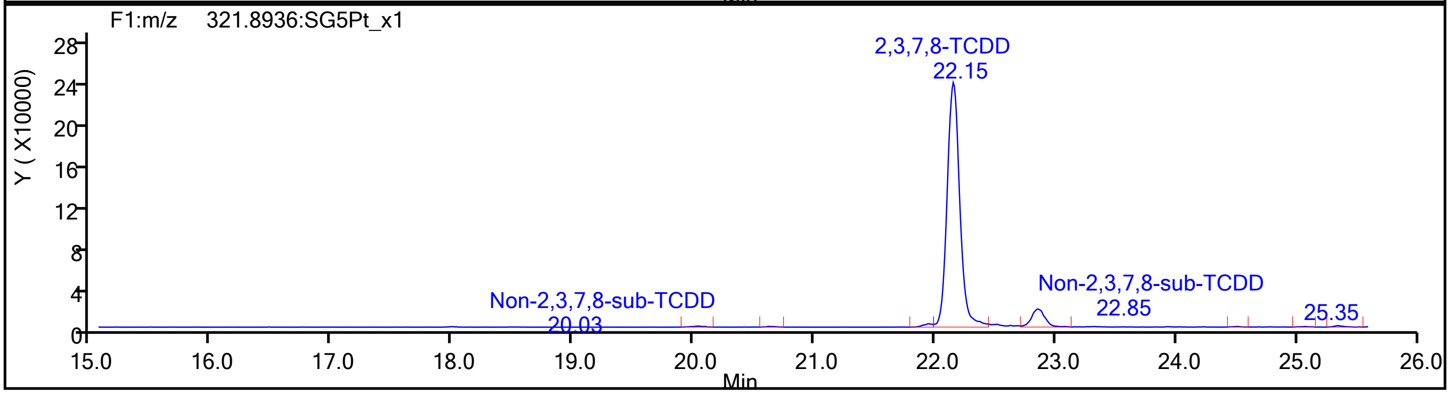

TCDD Standards

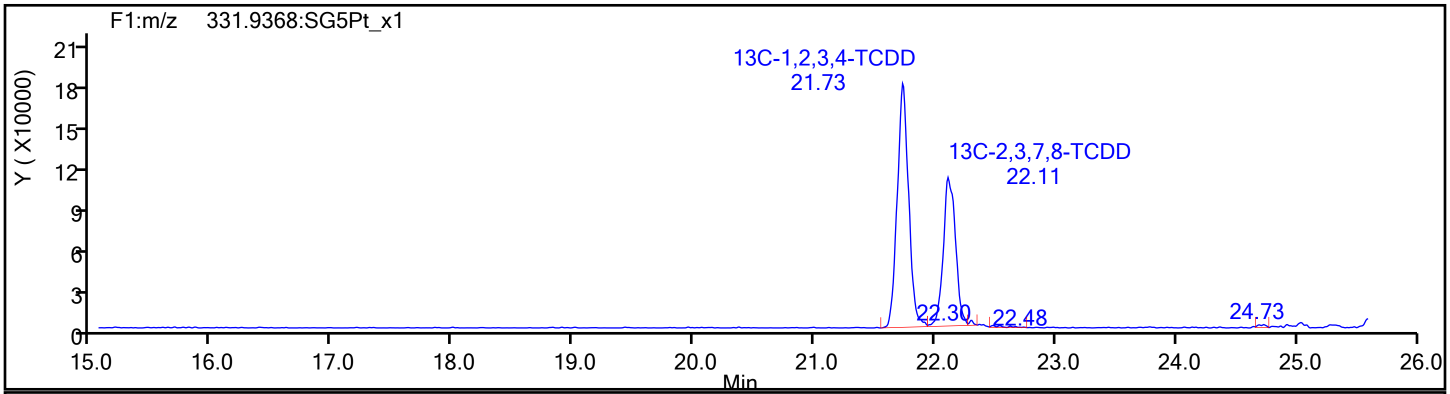

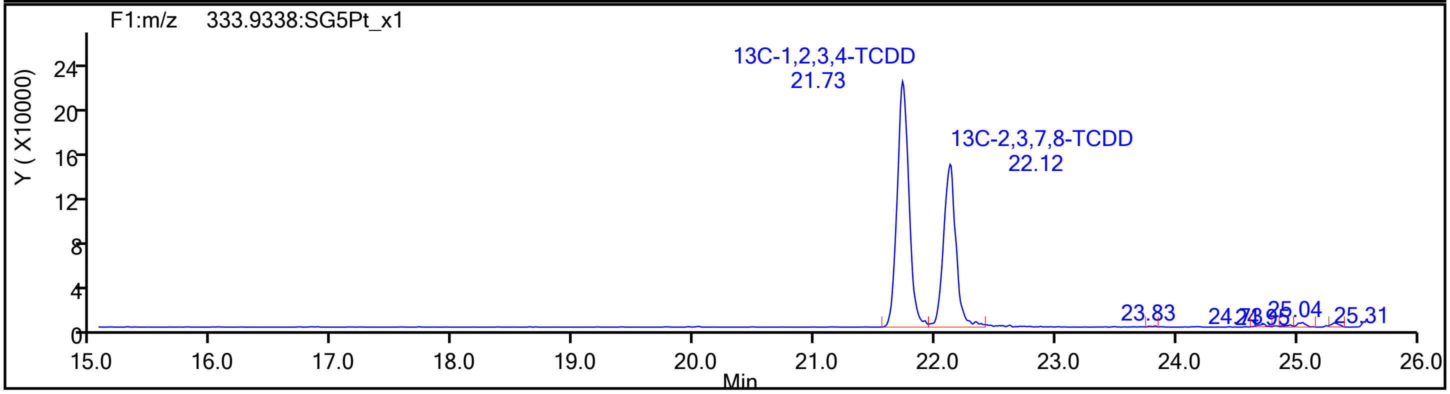

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

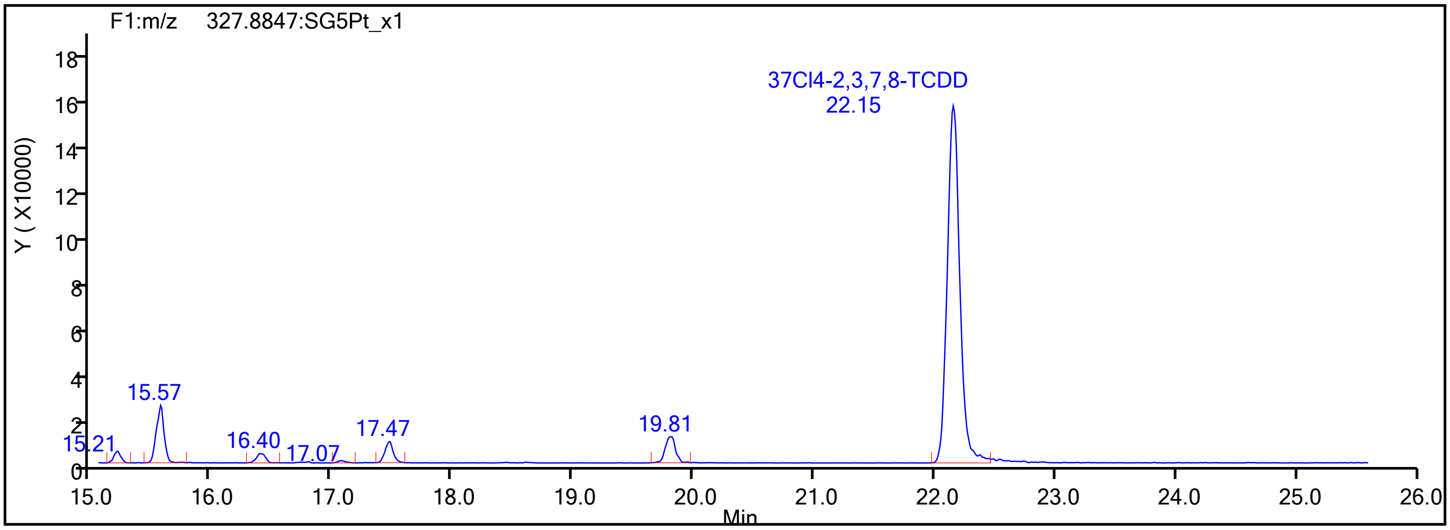

37Cl4-TCDD Standards

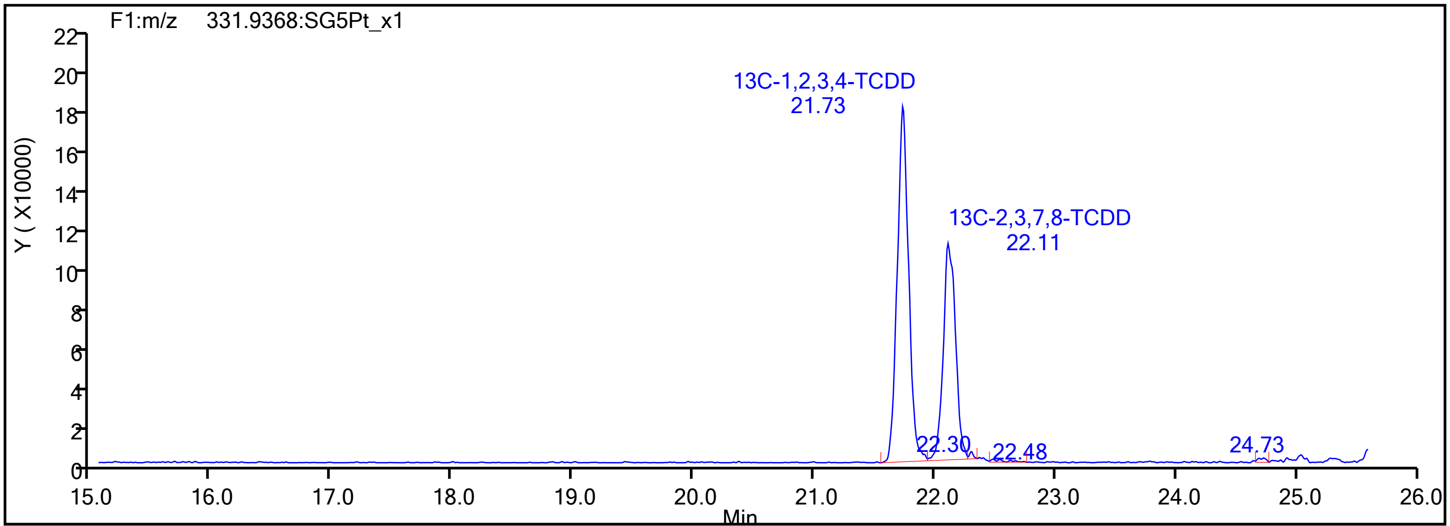

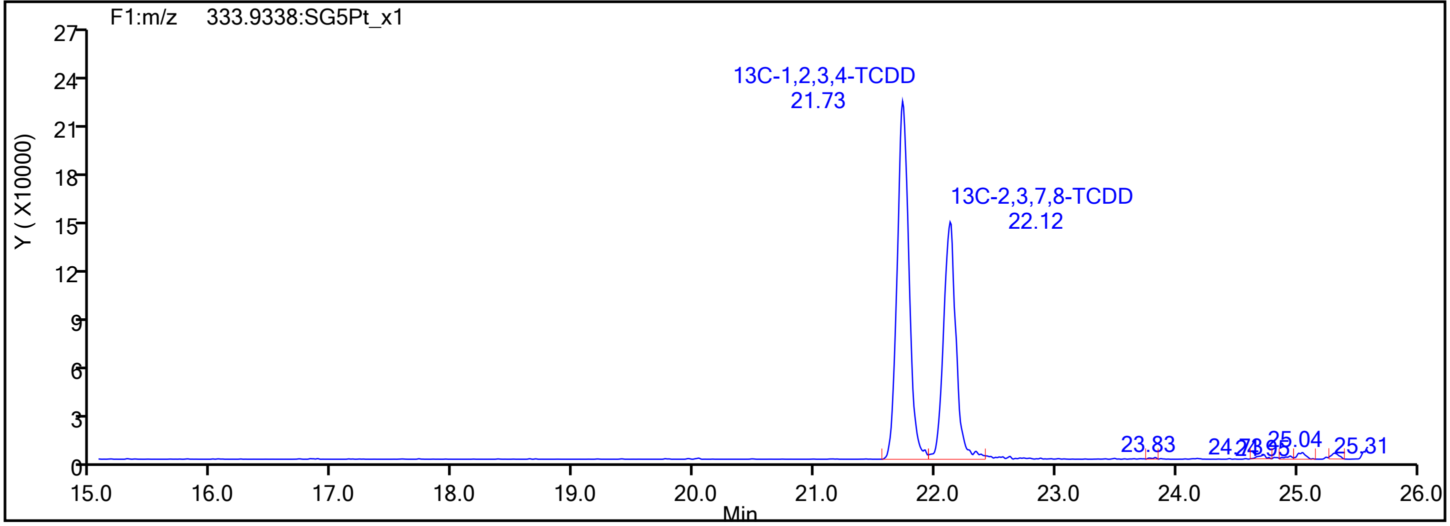

Report Date: 01-Dec-2020 13:52:56　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Injection Date: 24-Nov-2020 15:53:00　Injection Vol: 1.0 ul

Instrument ID: DFS 1　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Tank

Worklist#: 434777　Sample Line#: 38

Column Type: DB-5　Column Dia: 0.32 mm

F1 PeCDFs

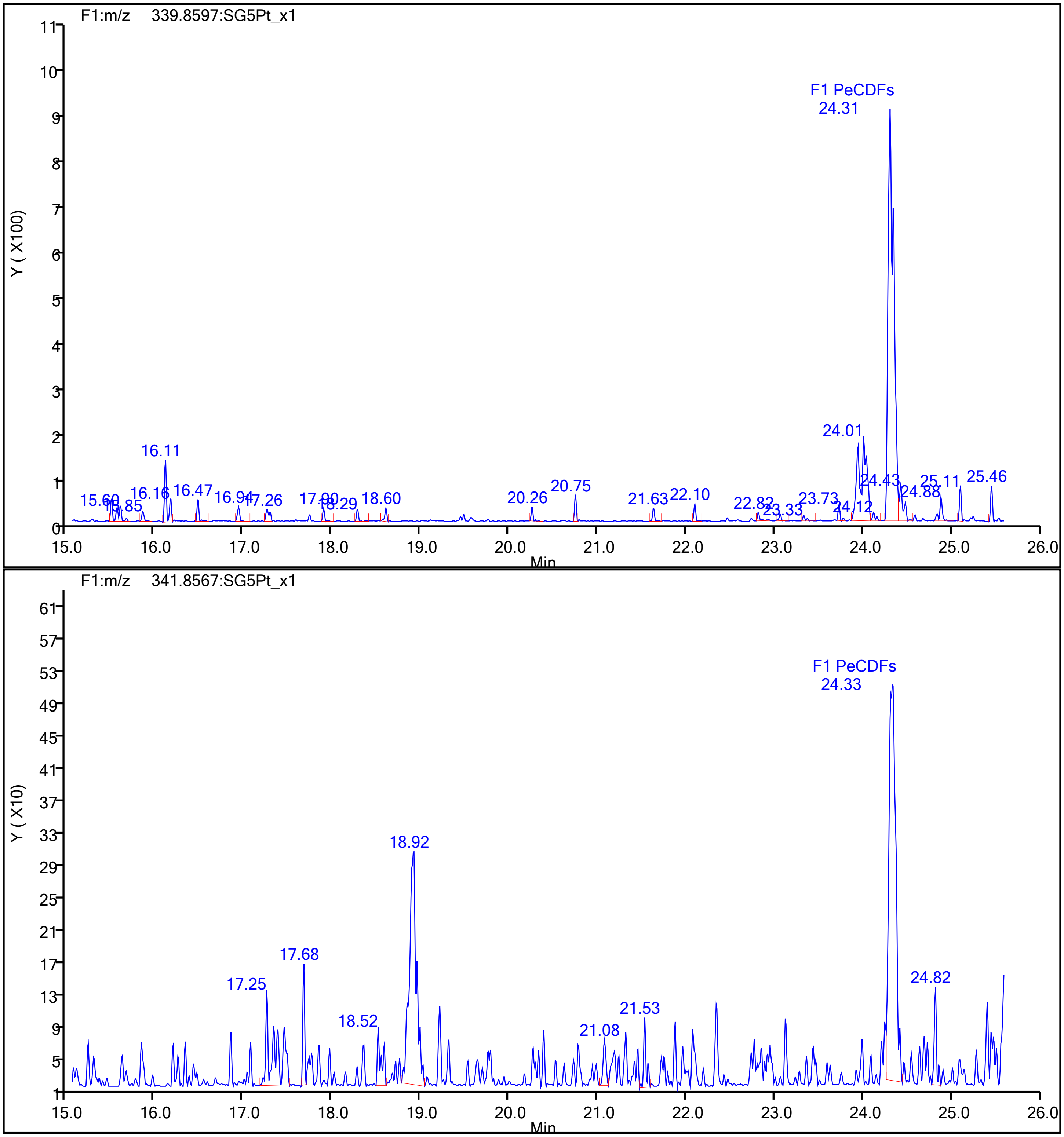

Report Date: 01-Dec-2020 13:52:56 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

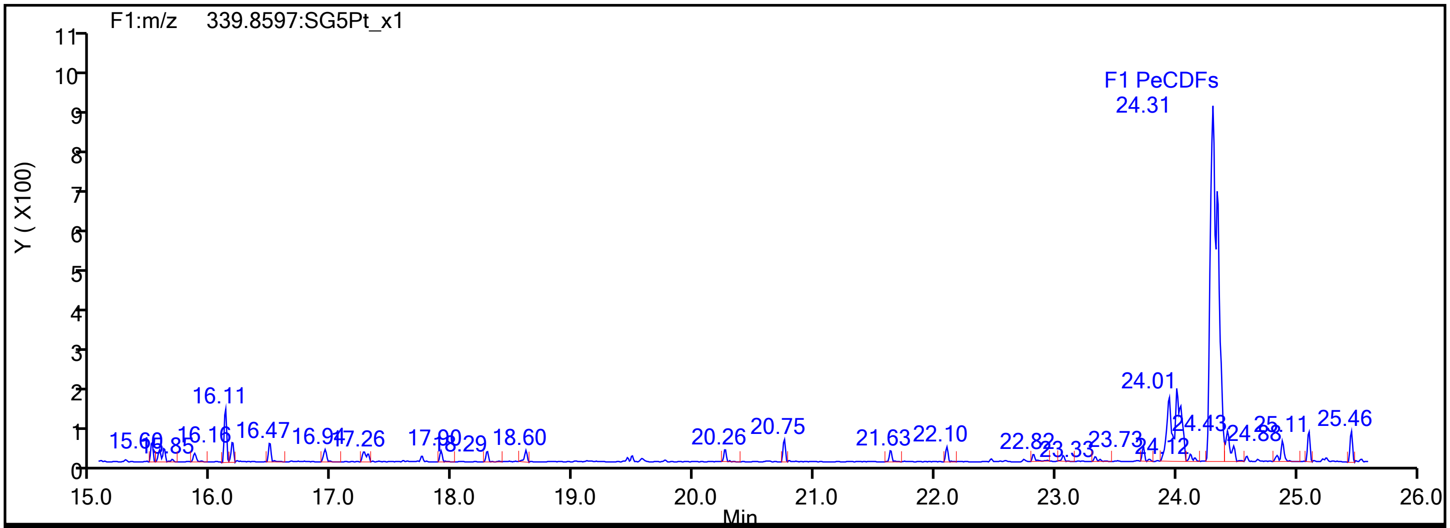

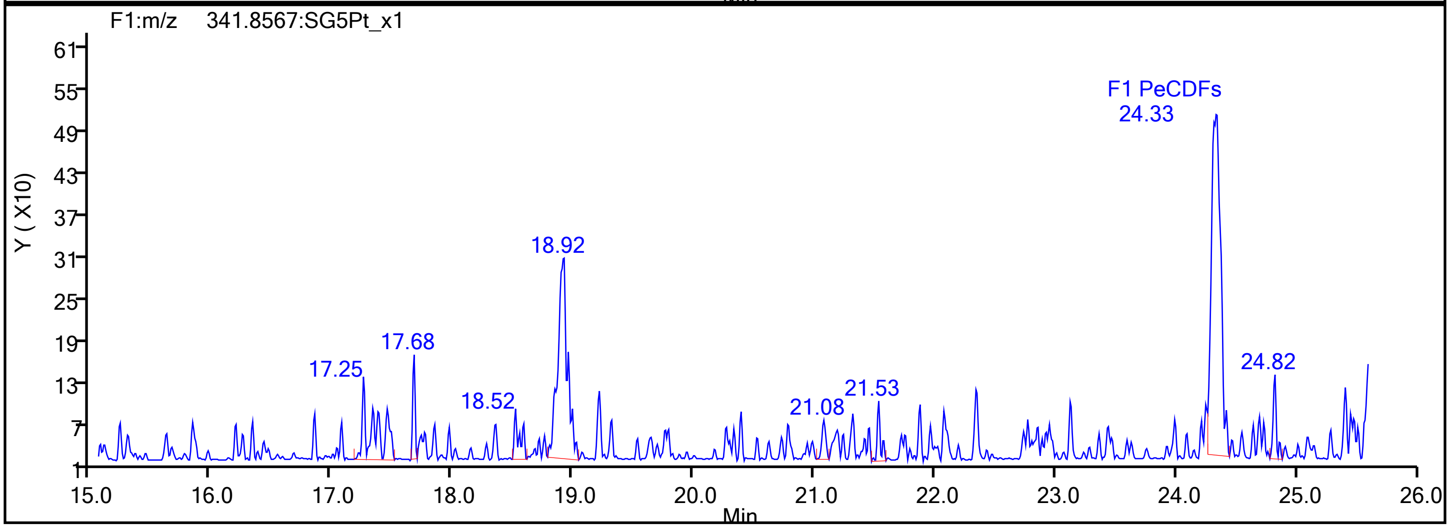

F1 PeCDFs Interference Mass

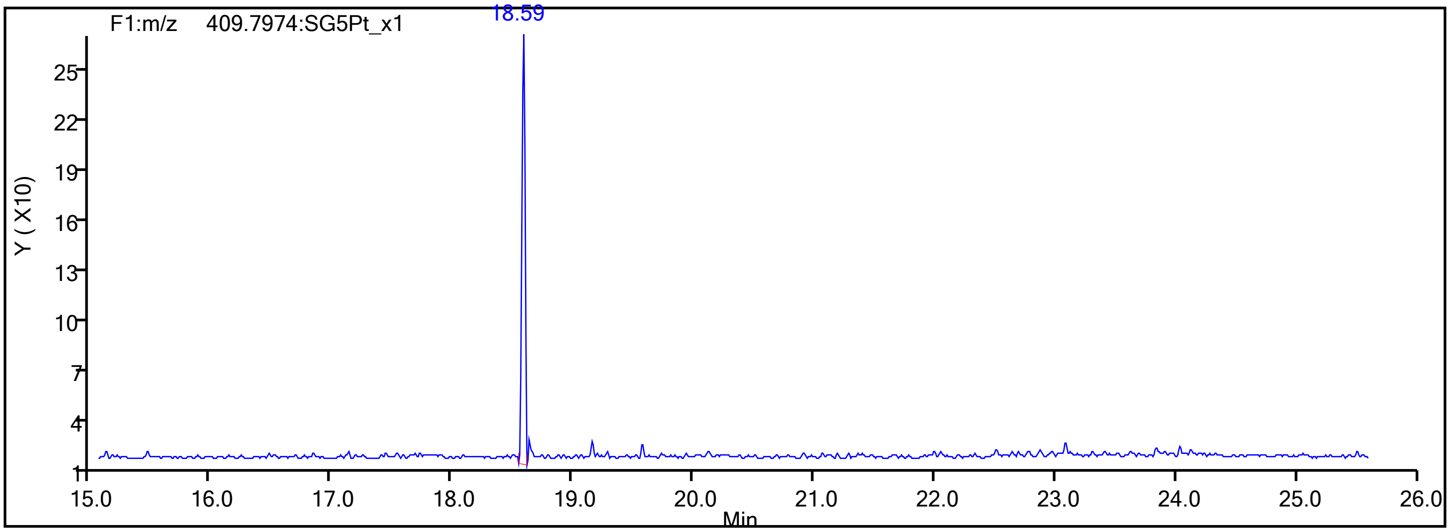

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

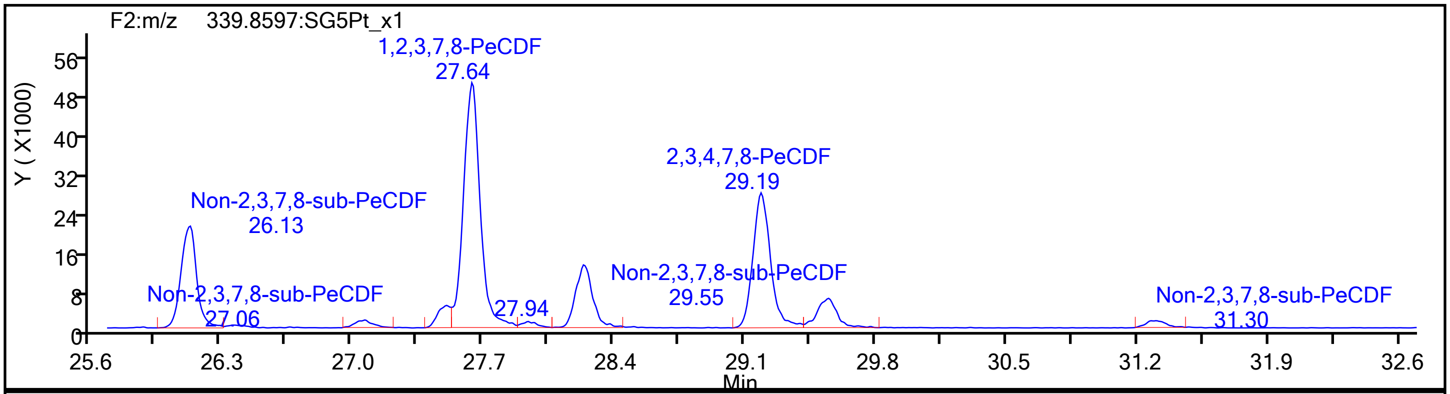

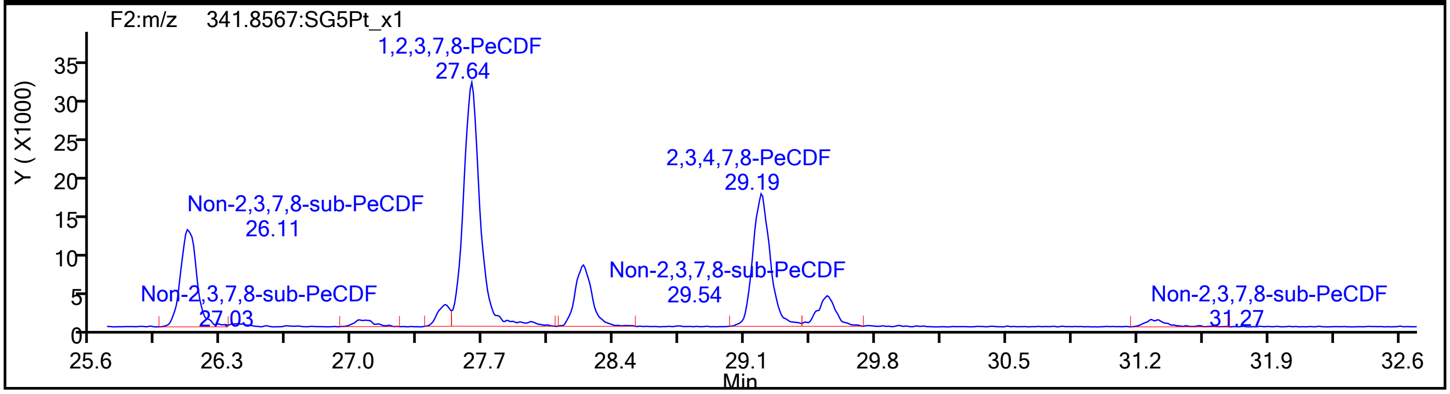

PeCDF Standards

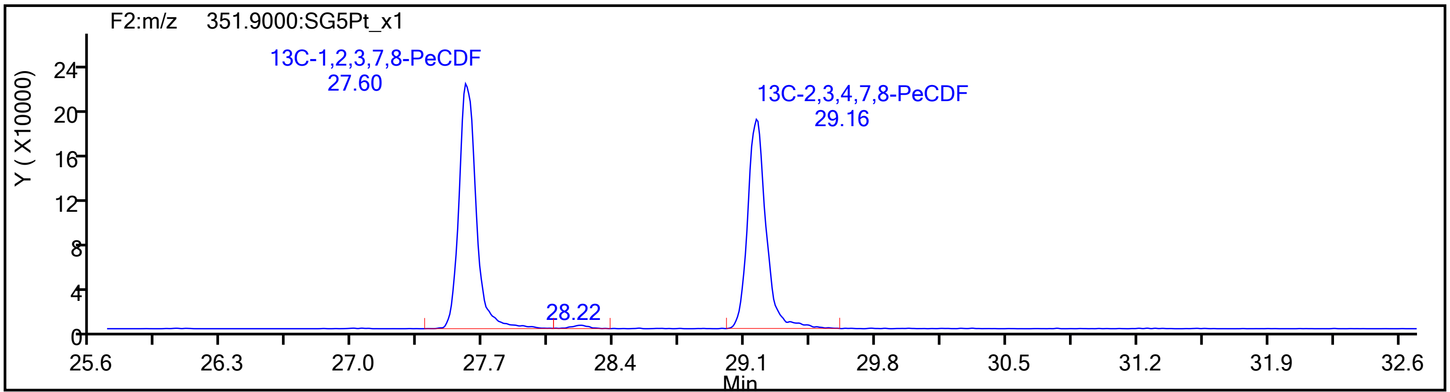

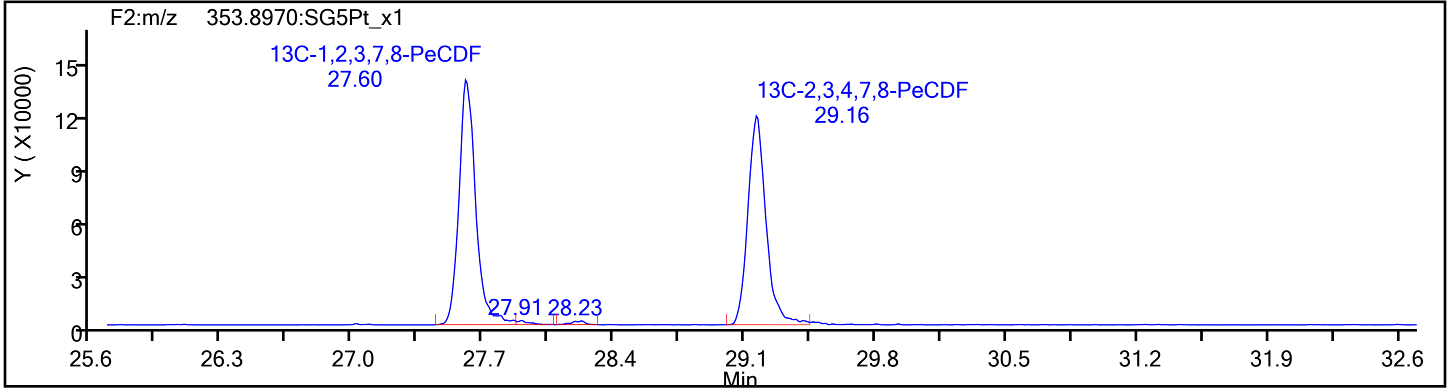

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

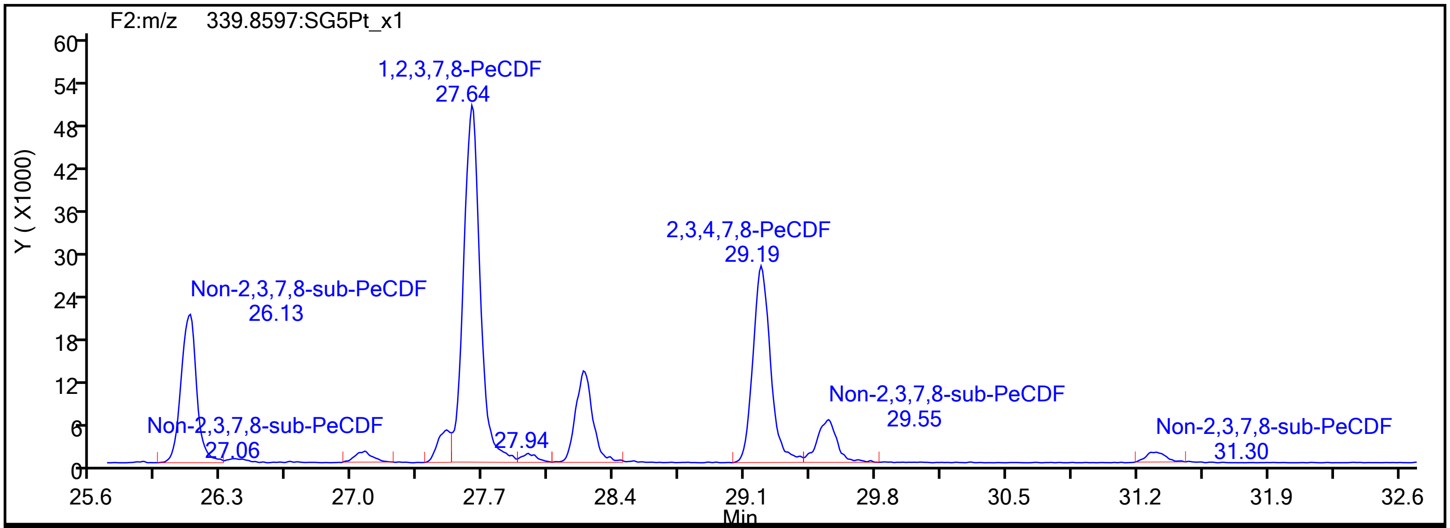

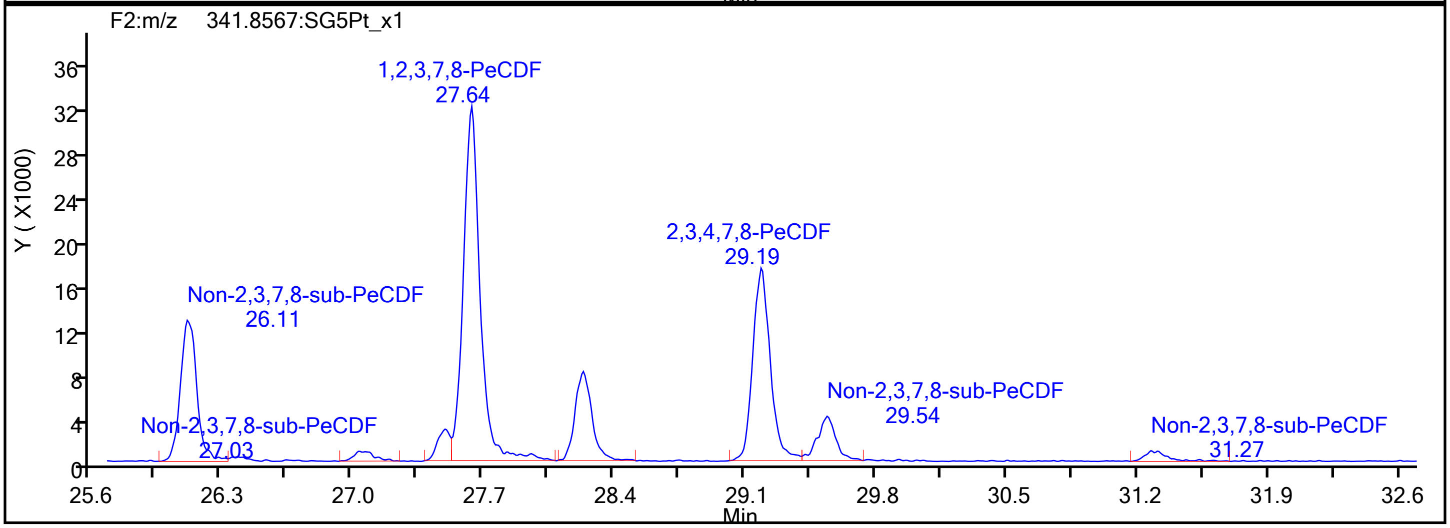

PeCDF Interference Mass

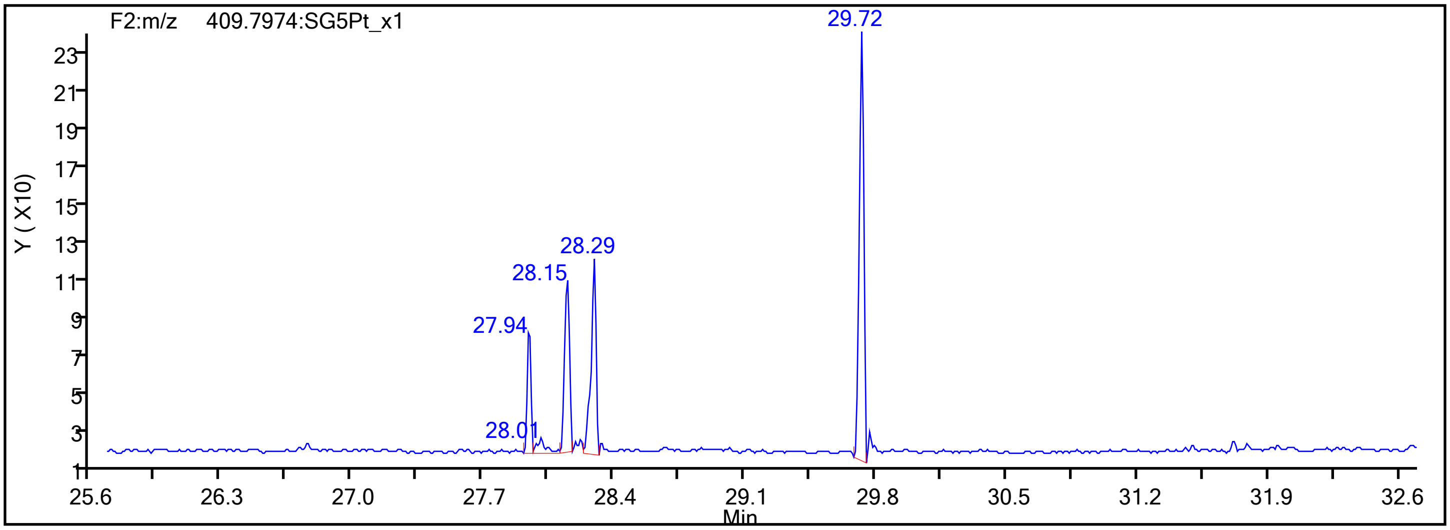

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

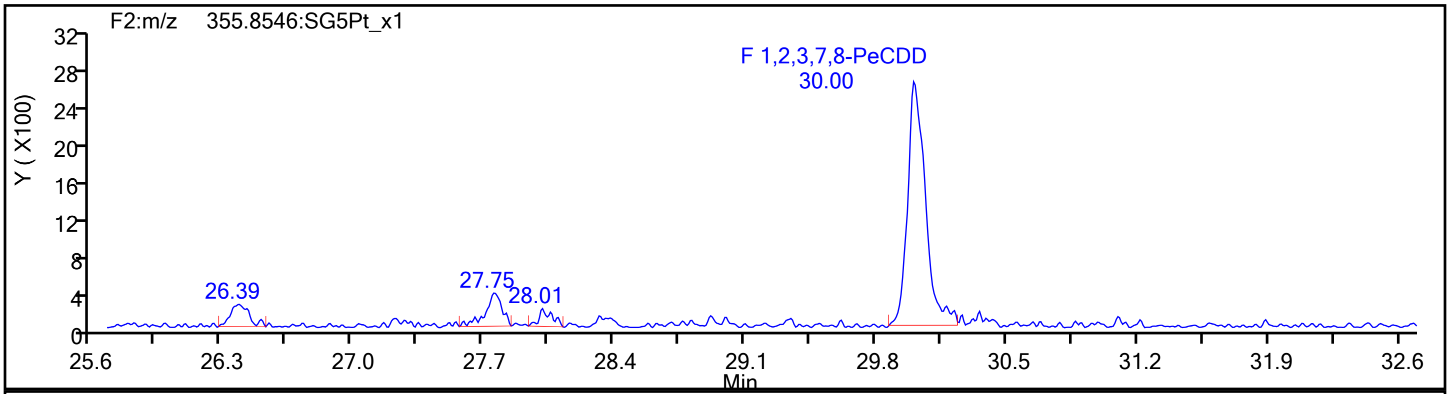

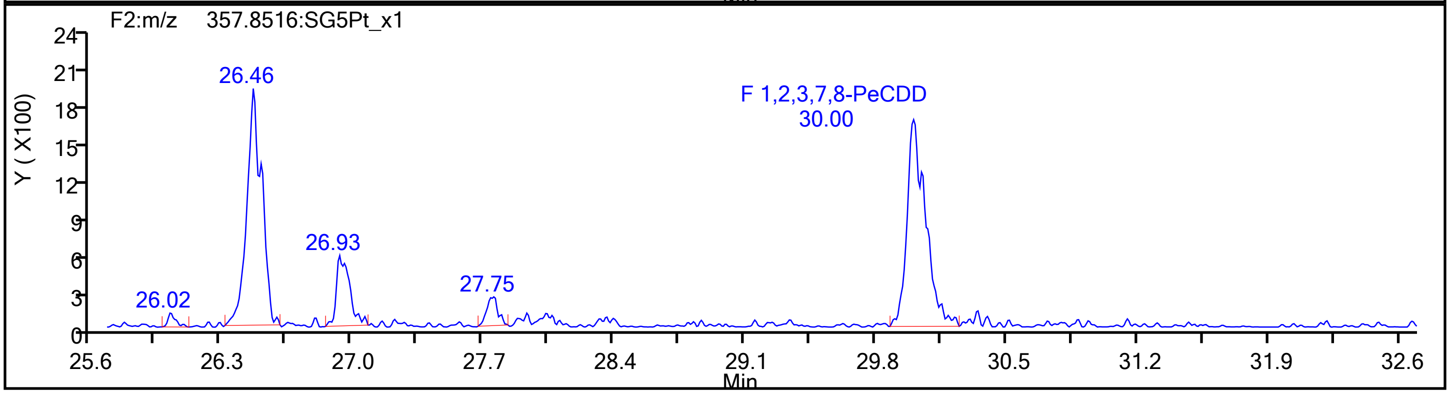

PeCDD Standards

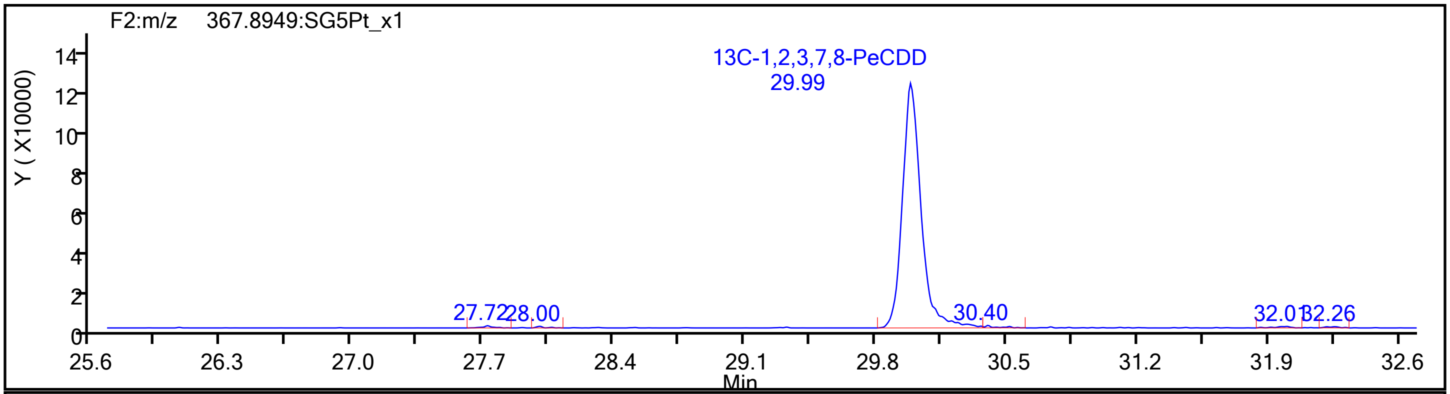

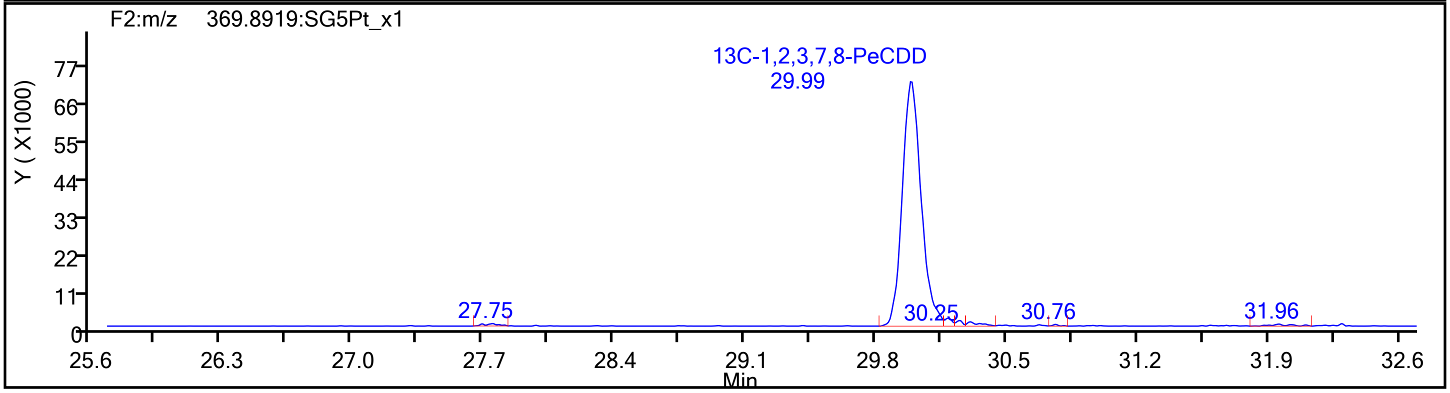

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

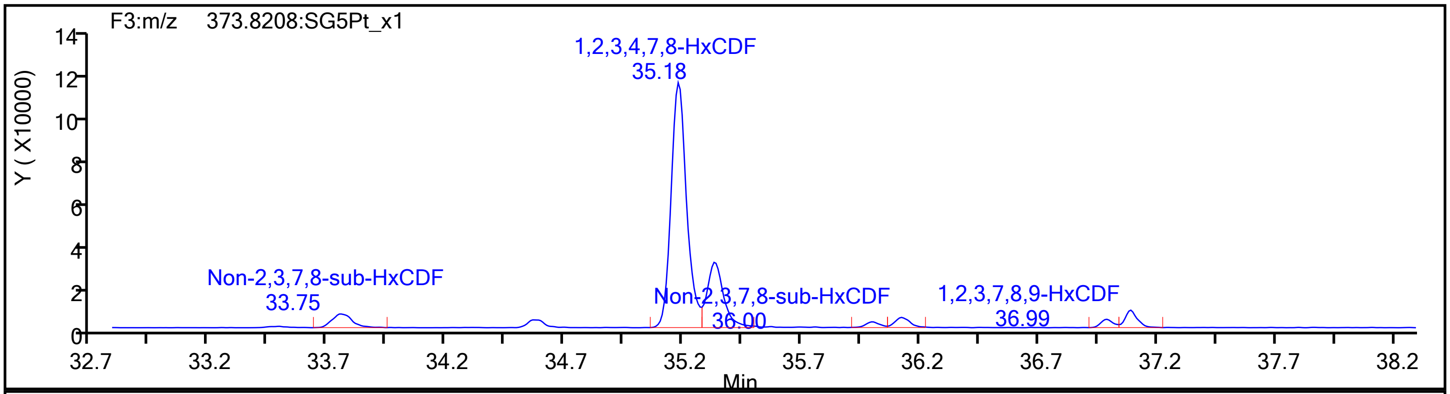

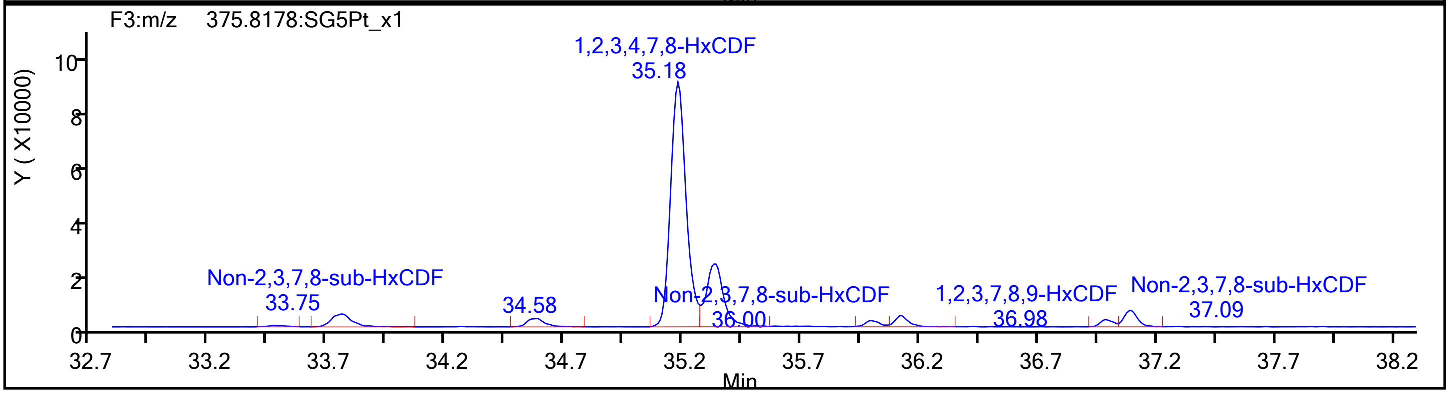

HxCDF Standards

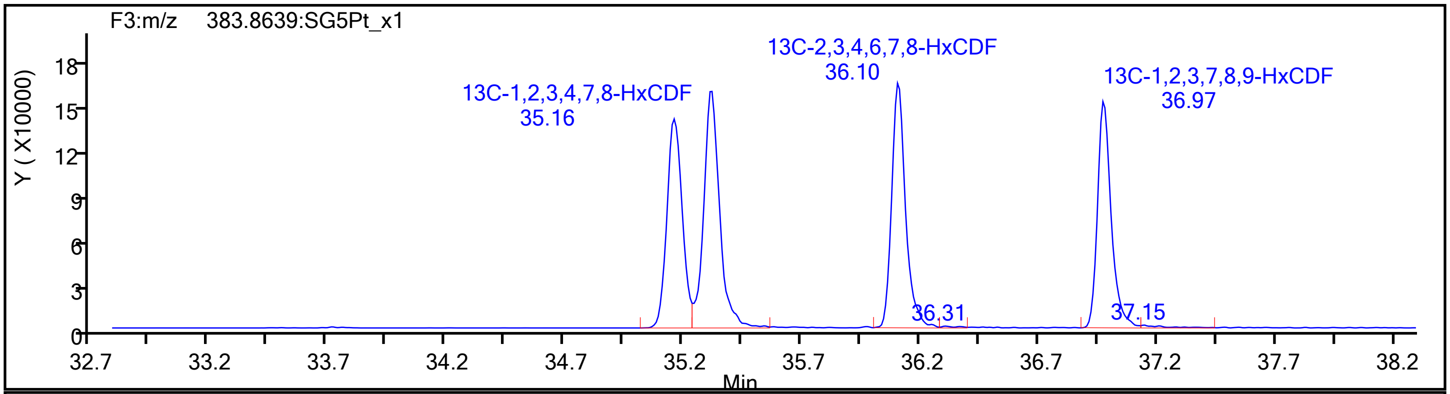

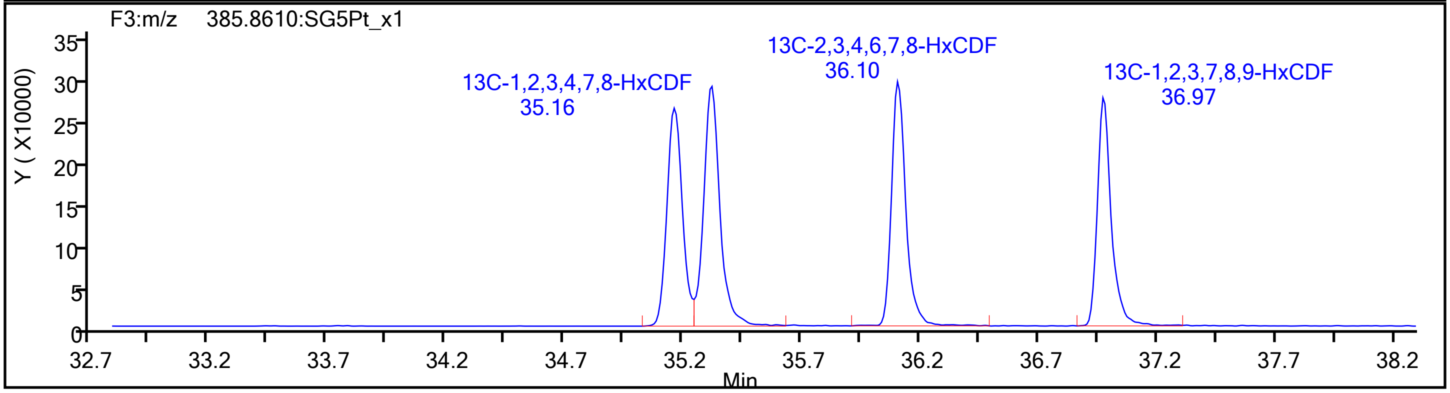

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

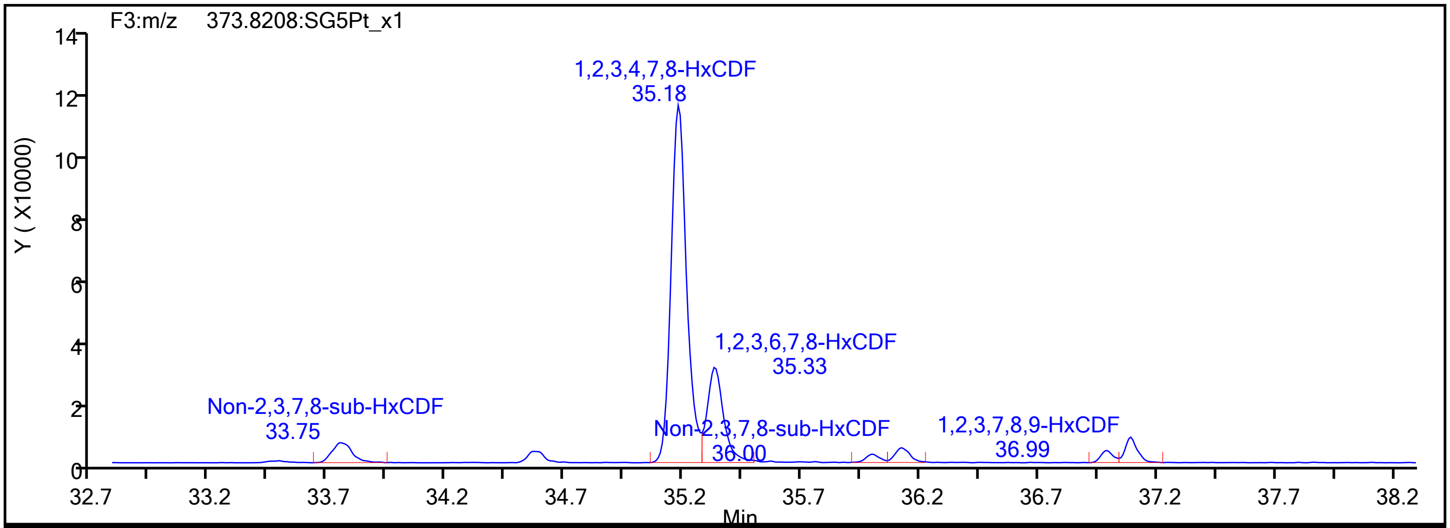

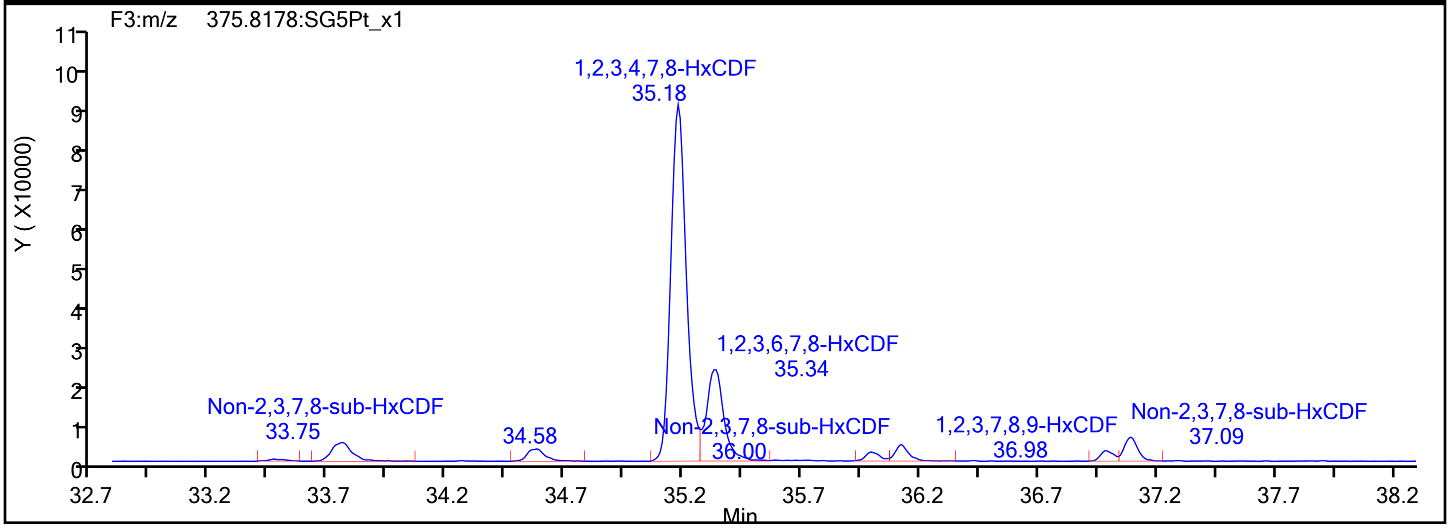

HxCDF Interference Mass

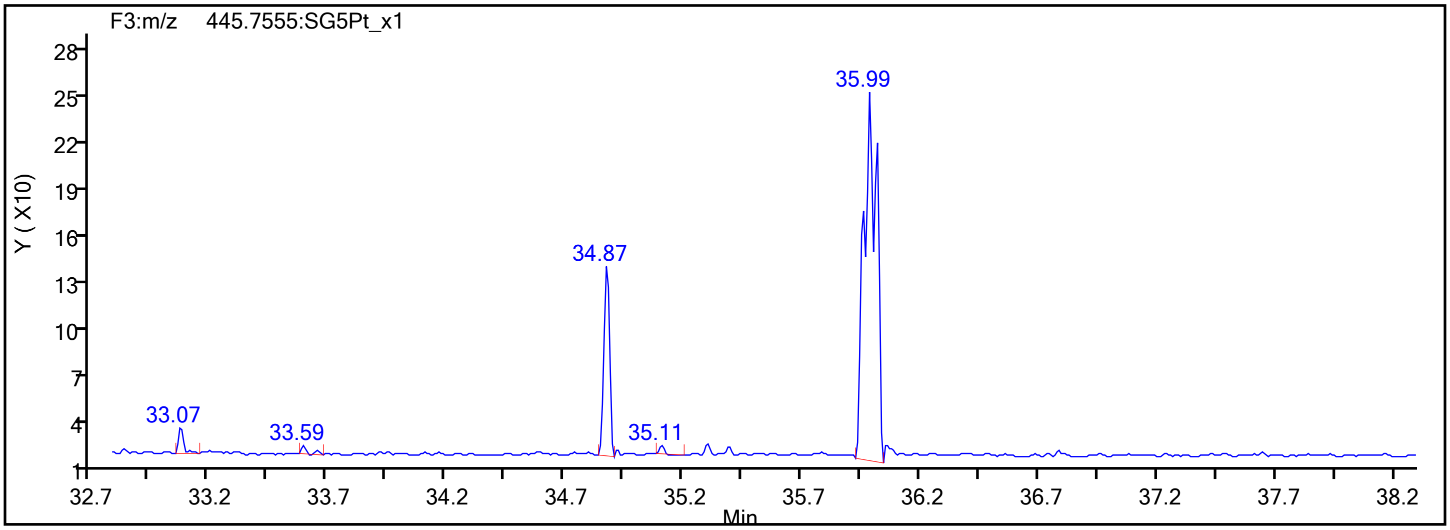

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Injection Date: 24-Nov-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Tank
Worklist#: 434777
Sample Line#: 38
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

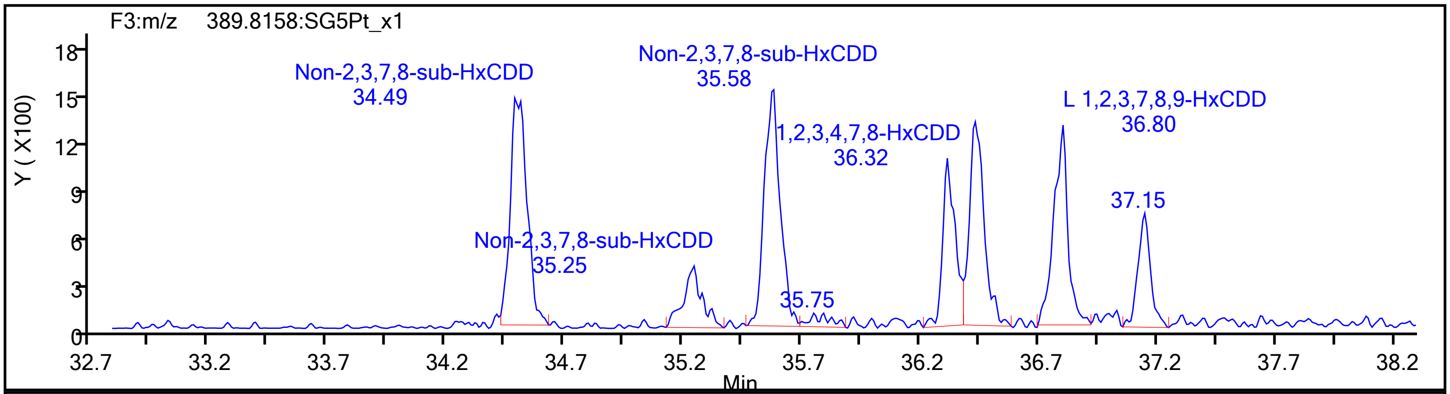

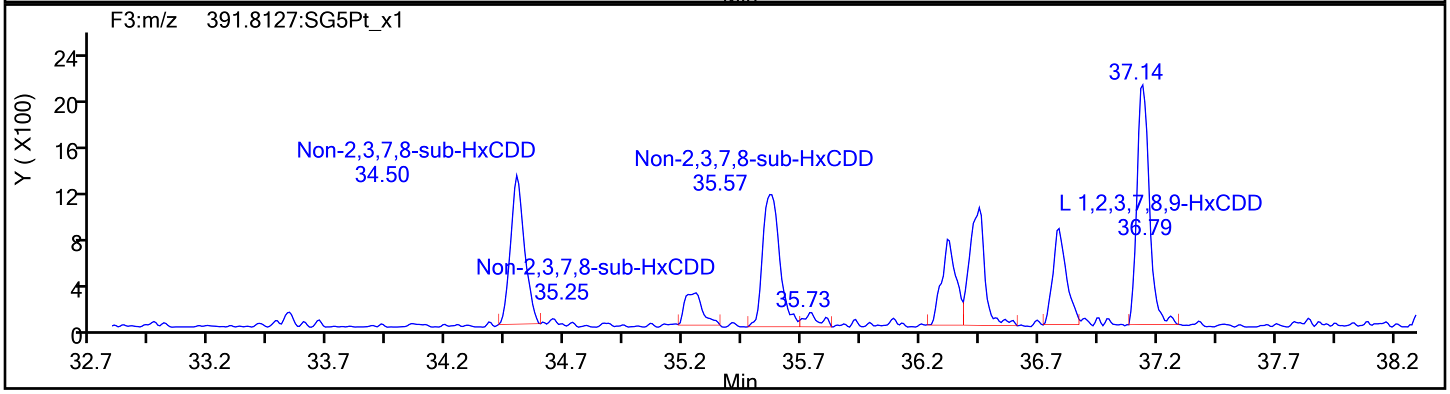

HxCDD Standards

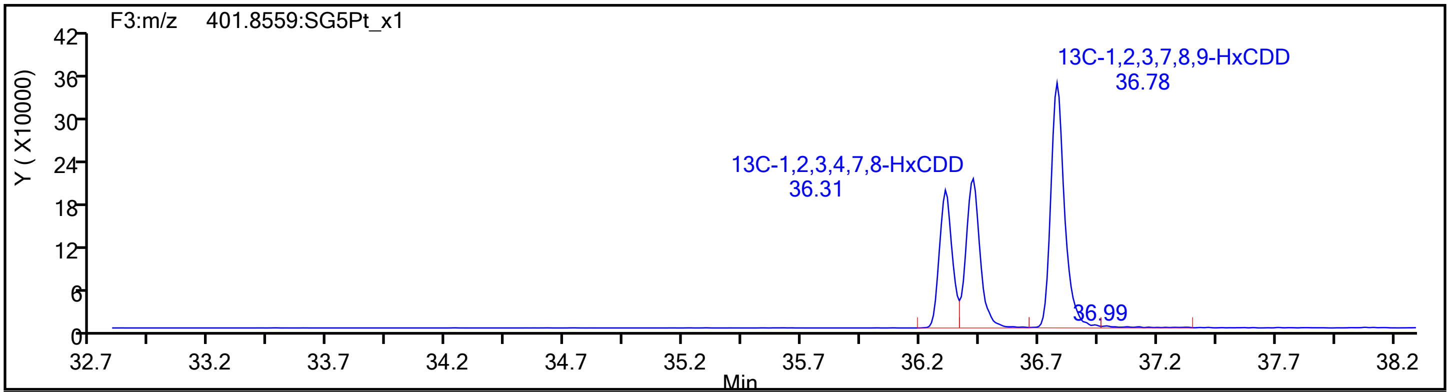

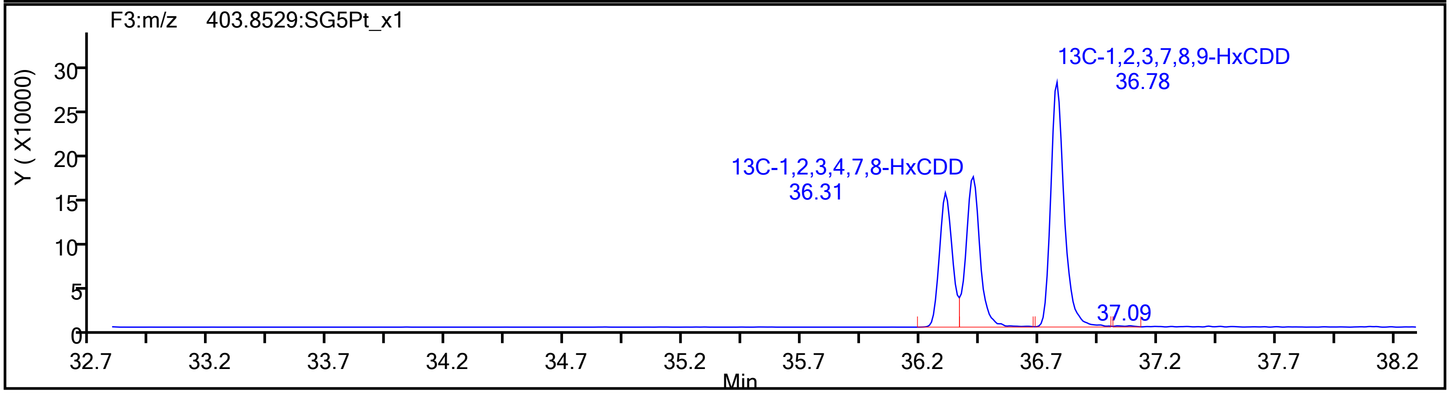

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d

Injection Date: 24-Nov-2020 15:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Tank

Worklist#: 434777 Sample Line#: 38

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

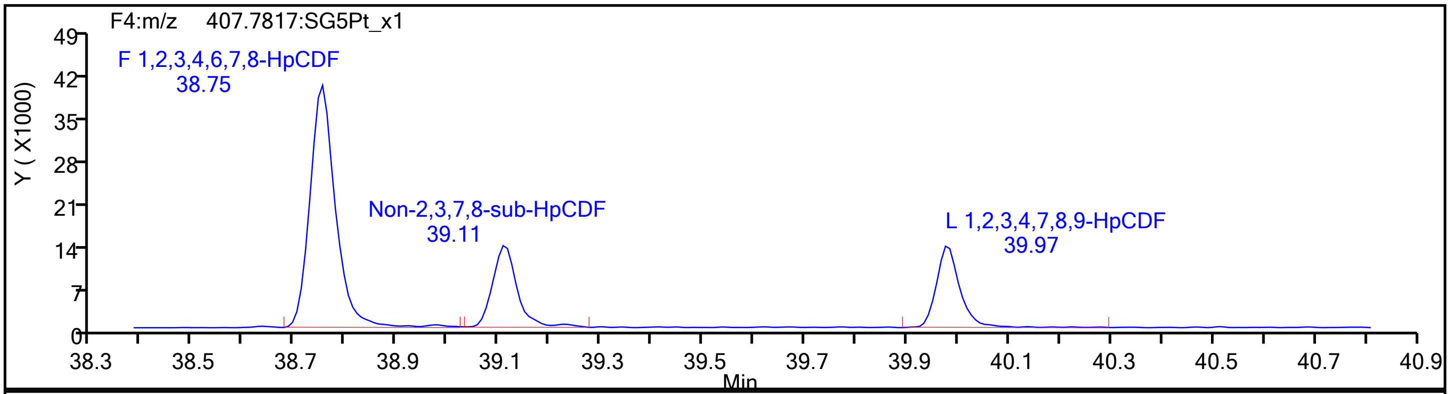

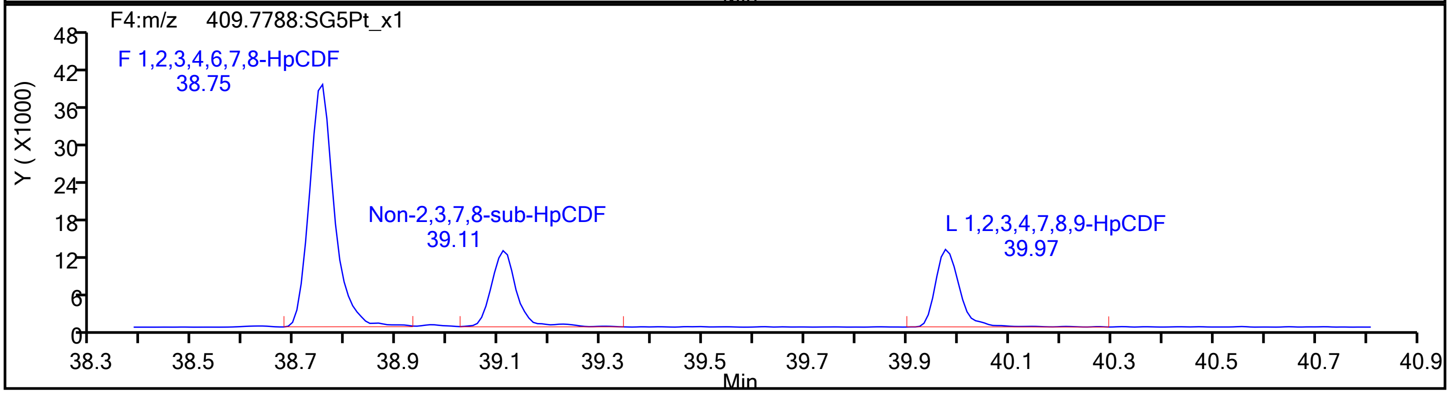

HpCDF Standards

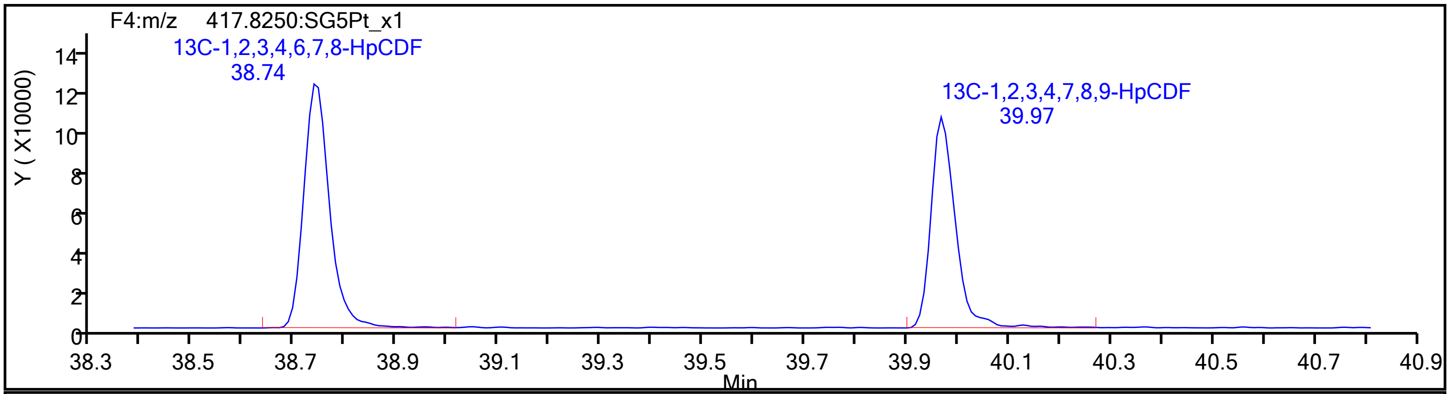

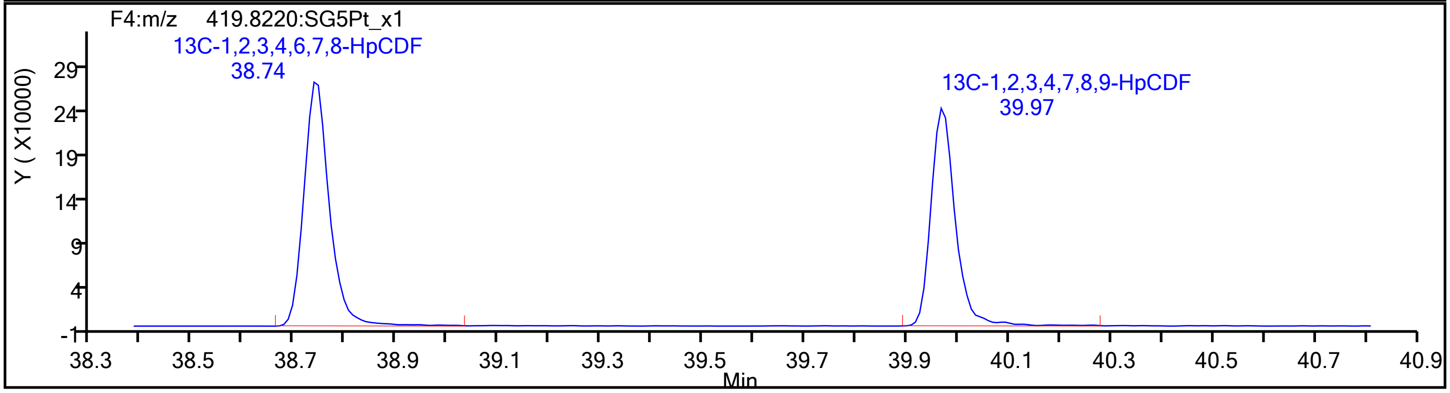

Report Date: 01-Dec-2020 13:52:57　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Injection Date: 24-Nov-2020 15:53:00　　Injection Vol: 1.0 ul
Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Tank
Worklist#: 434777　　Sample Line#: 38
Column Type: DB-5　　Column Dia: 0.32 mm

HpCDF

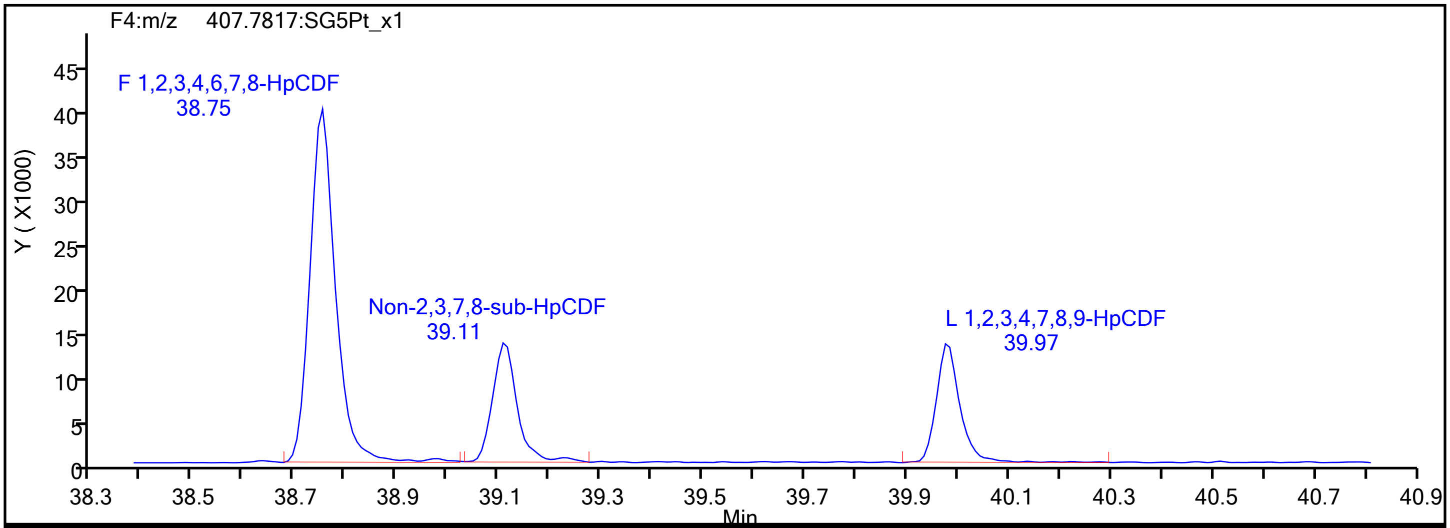

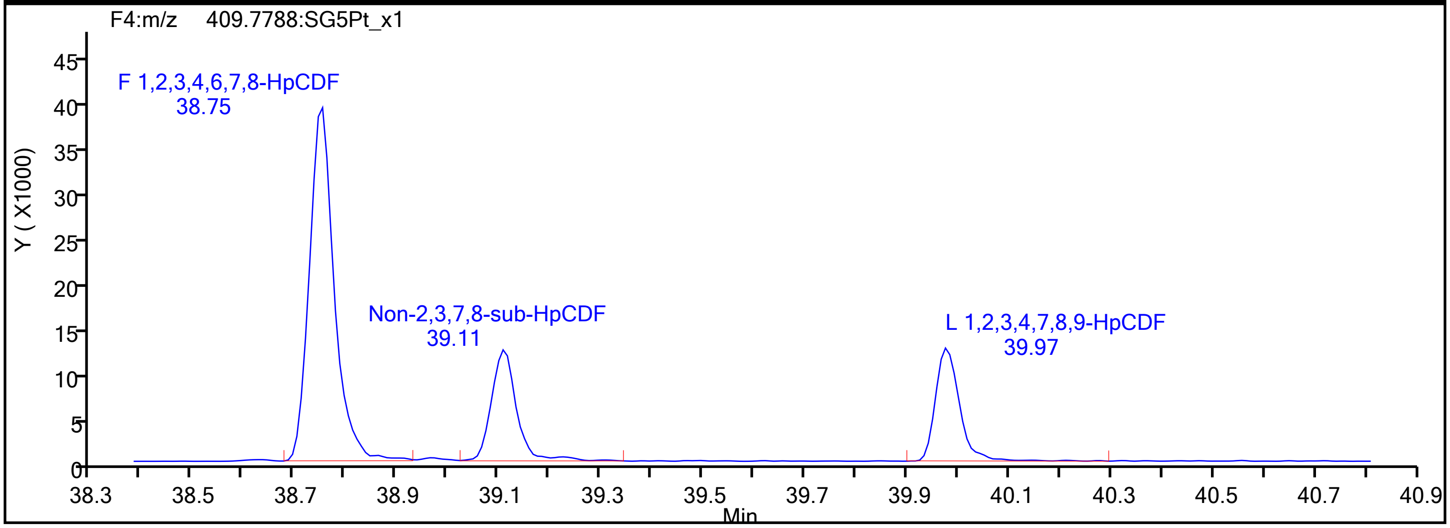

HpCDF Interference Mass

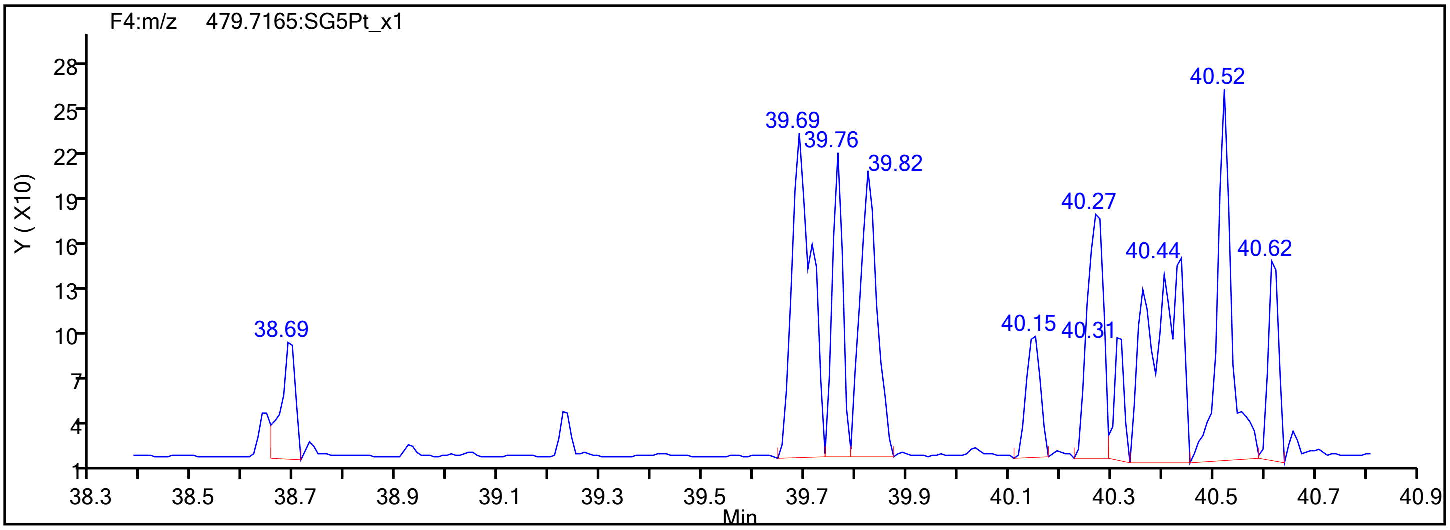

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

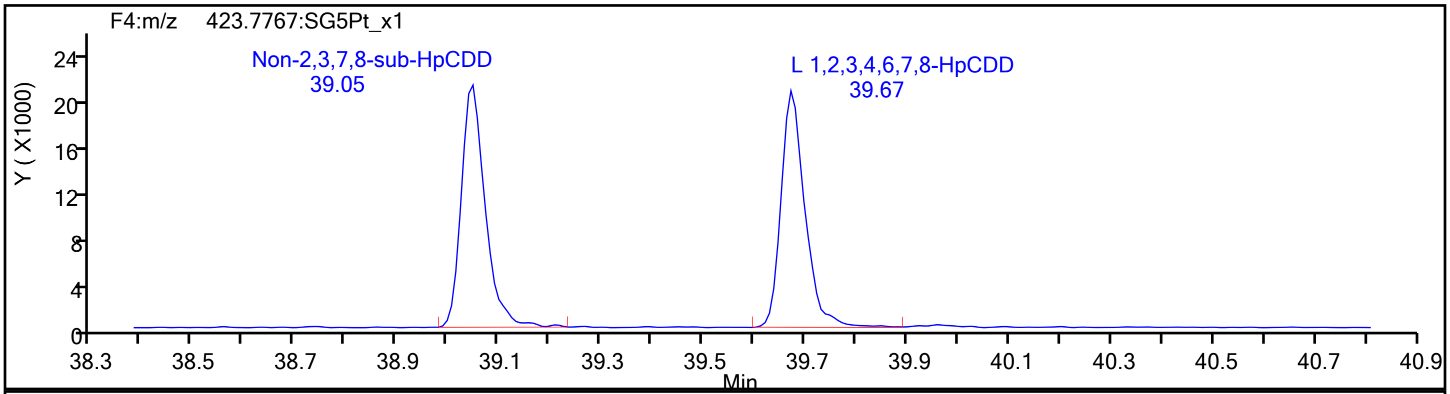

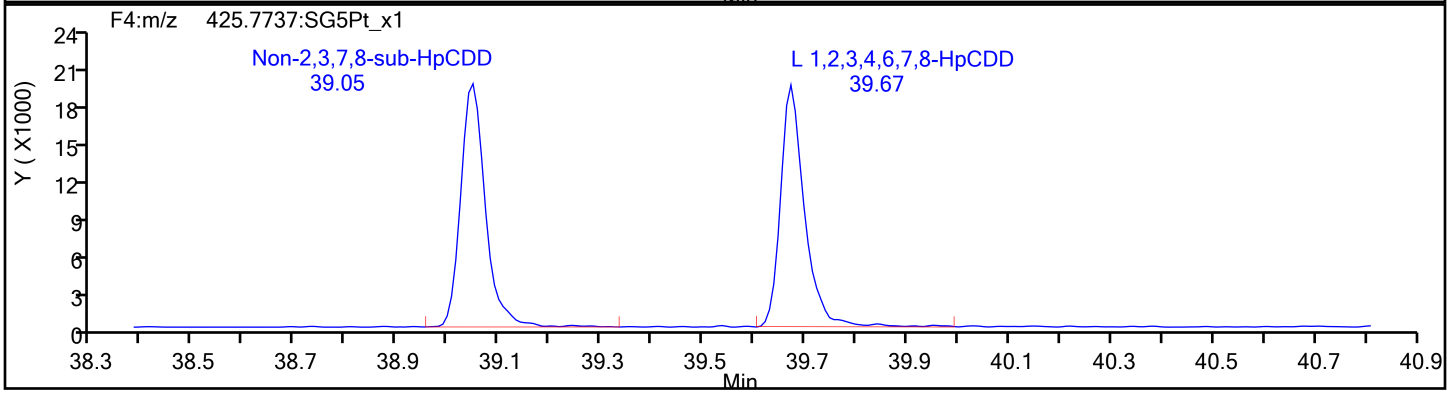

HpCDD Standards

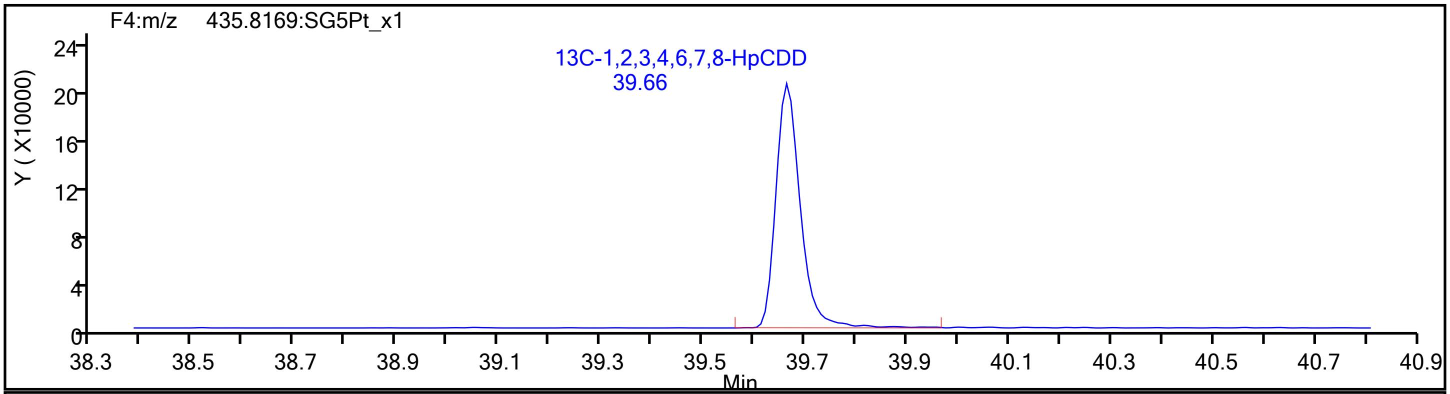

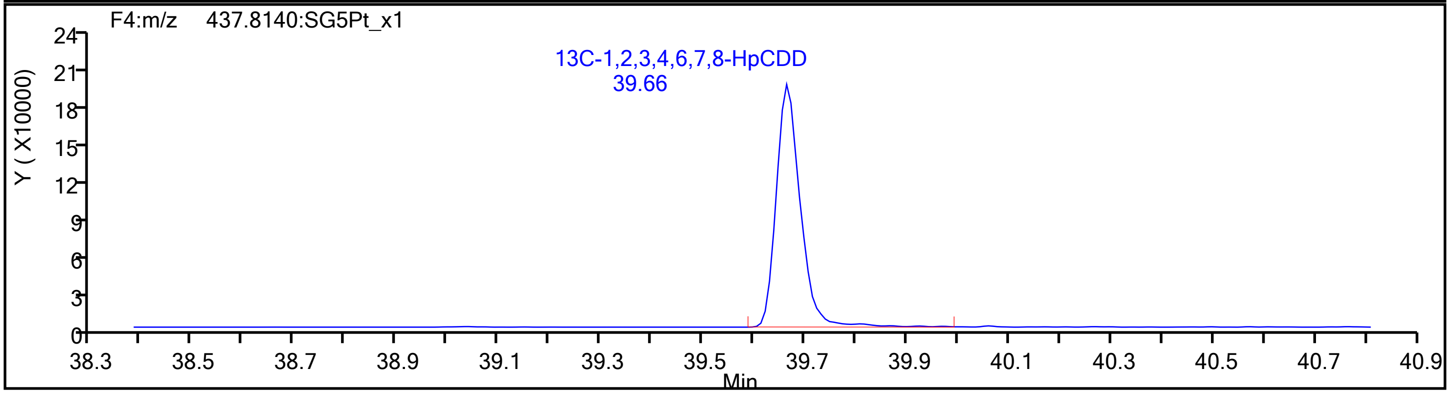

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

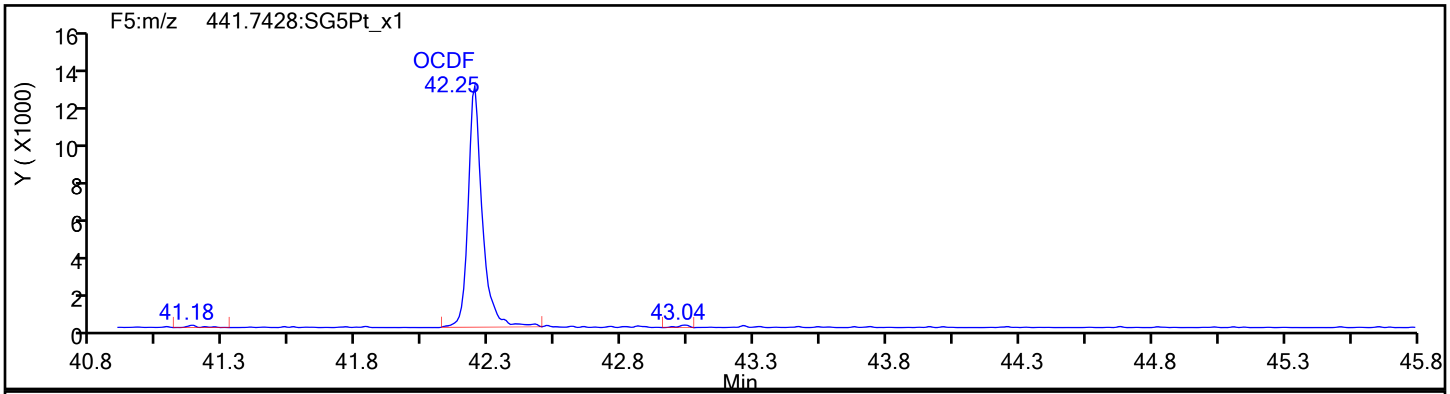

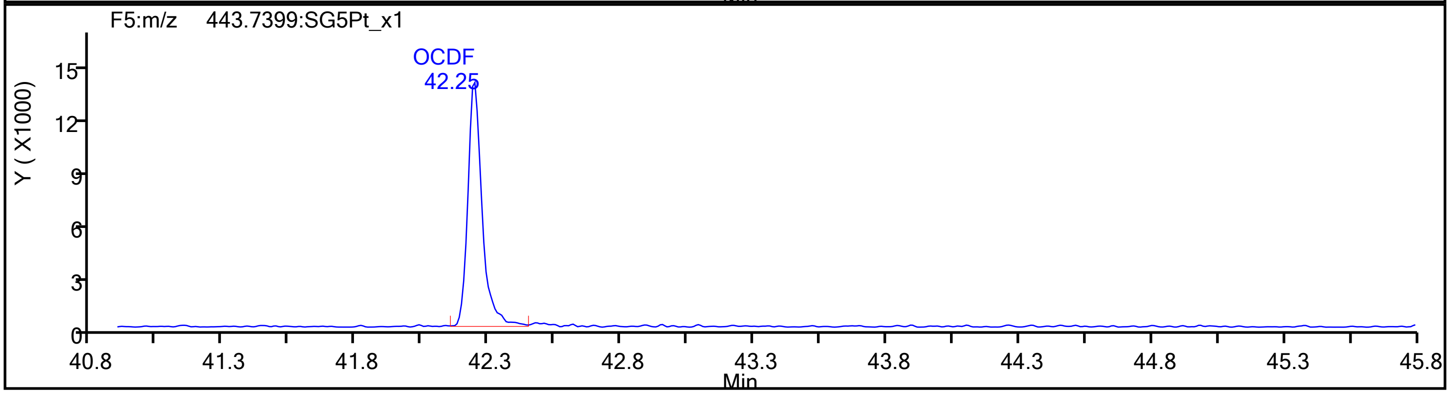

OCDF Standards

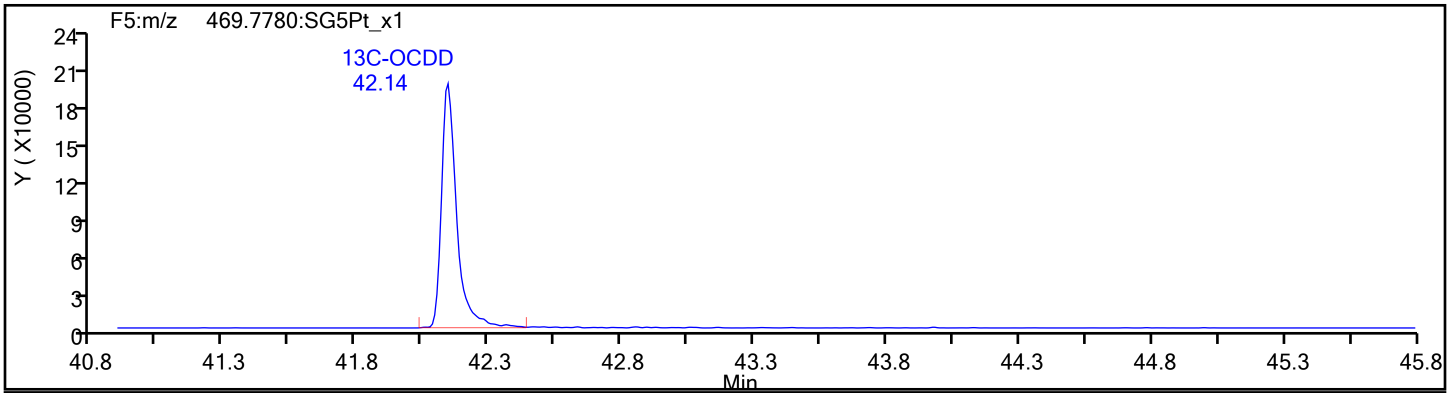

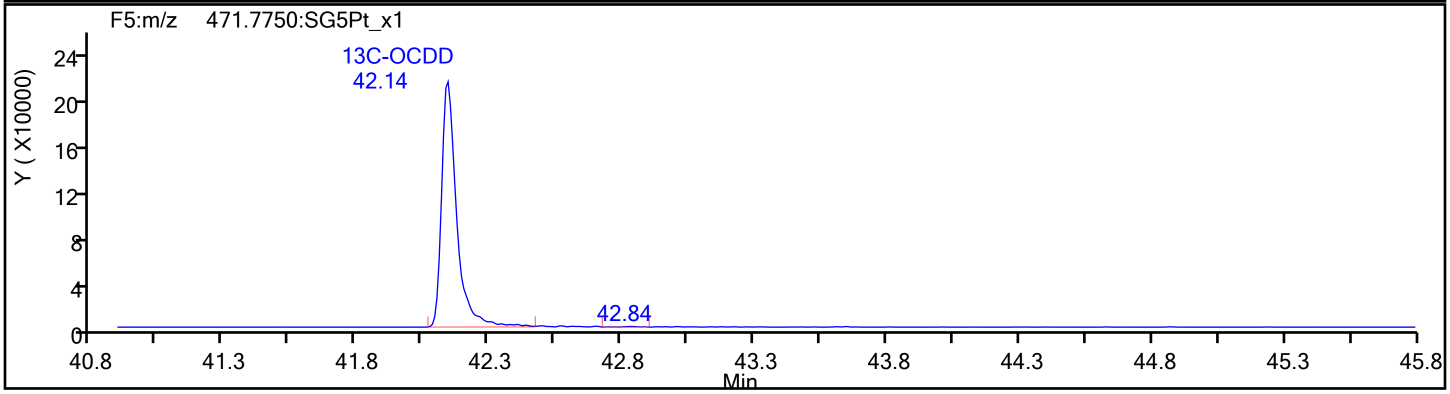

Report Date: 01-Dec-2020 13:52:57
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Injection Date: 24-Nov-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Tank
Worklist#: 434777
Sample Line#: 38
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

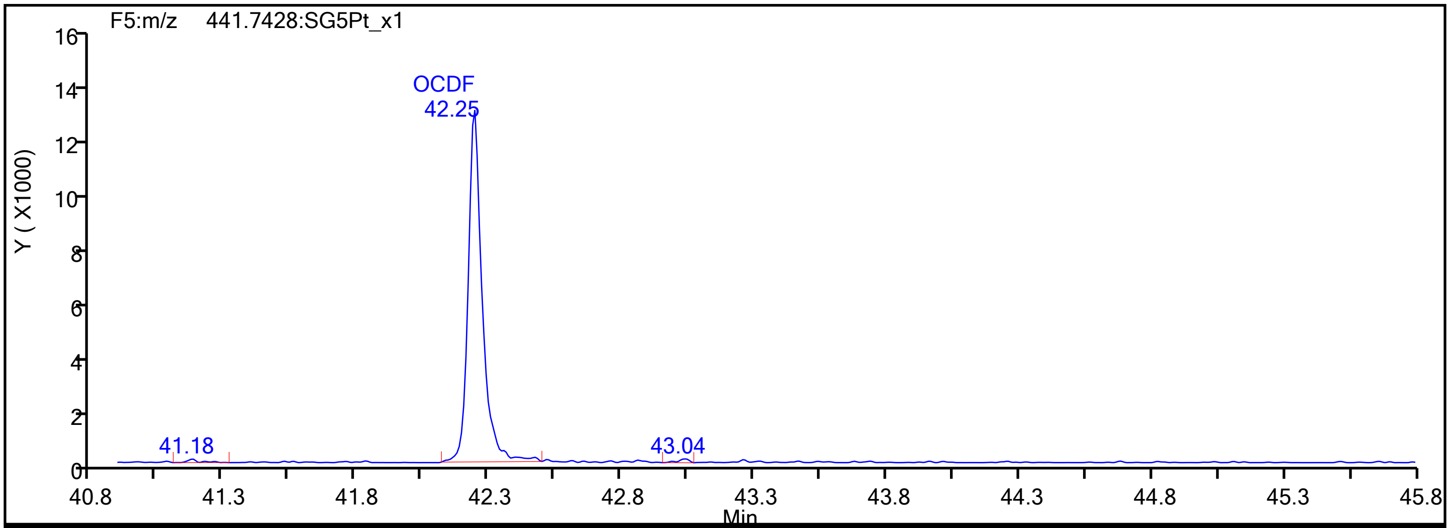

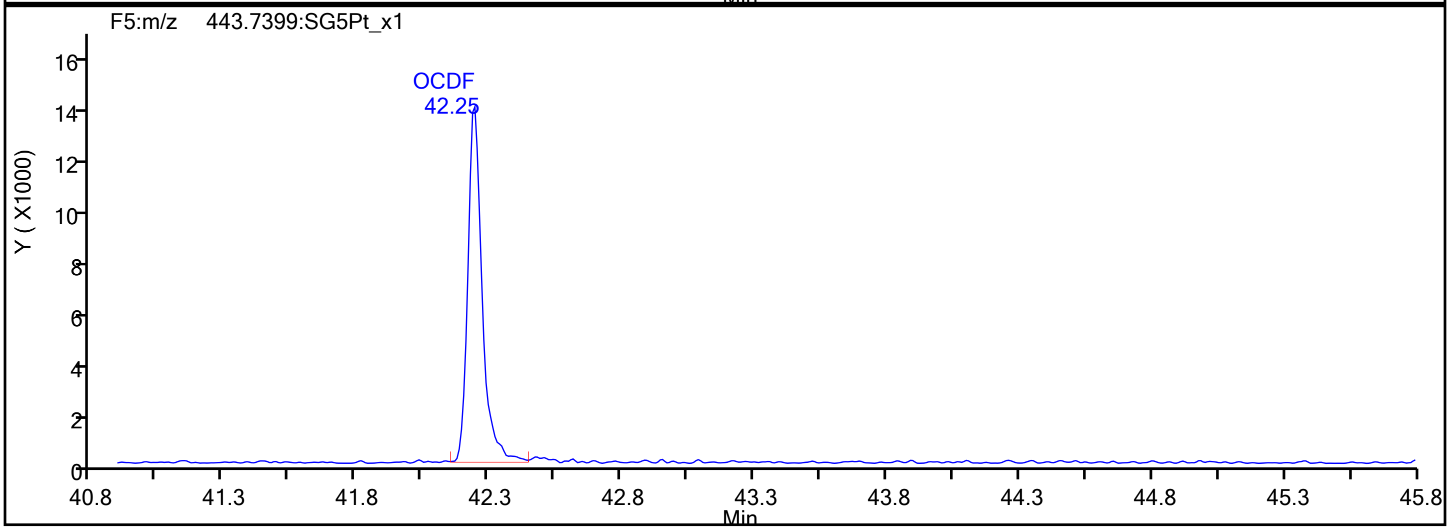

OCDF Interference Mass

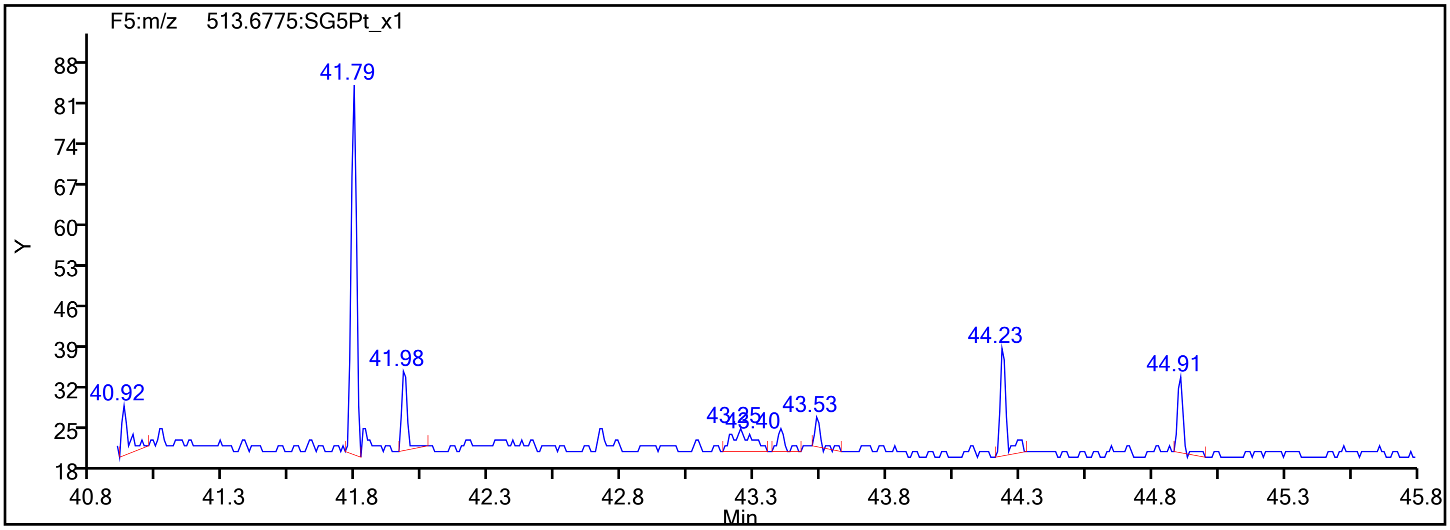

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

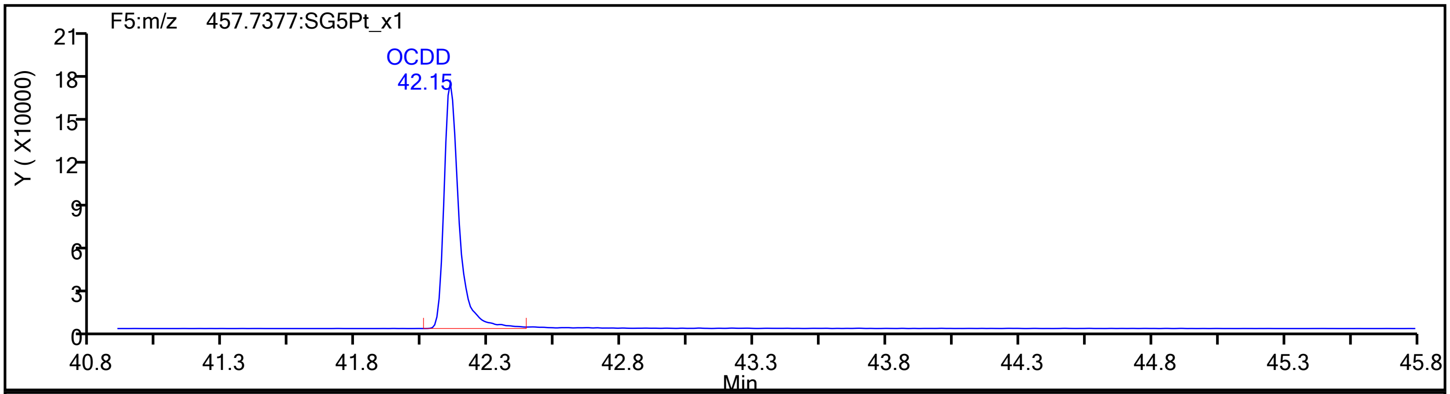

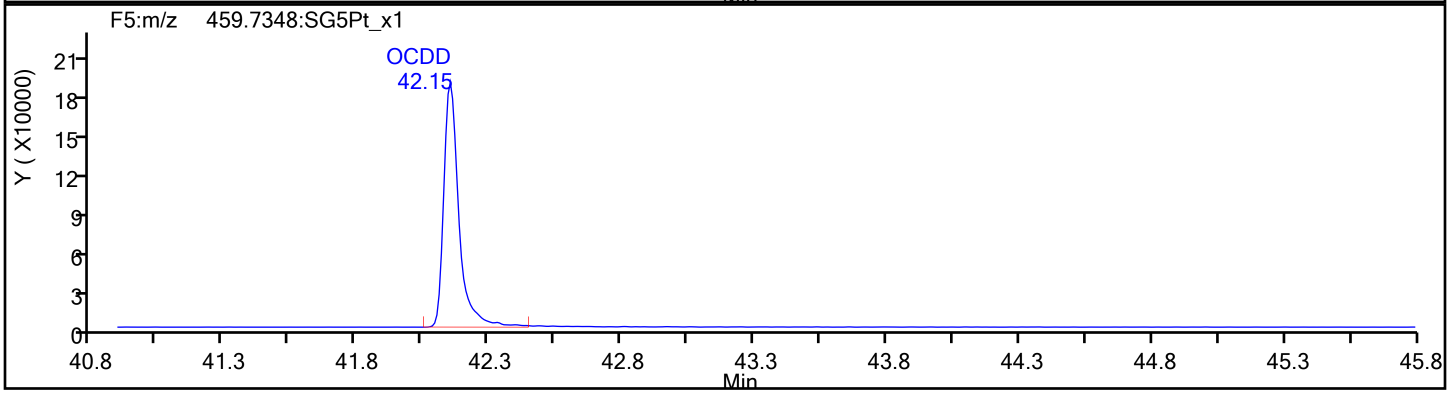

OCDD Standards

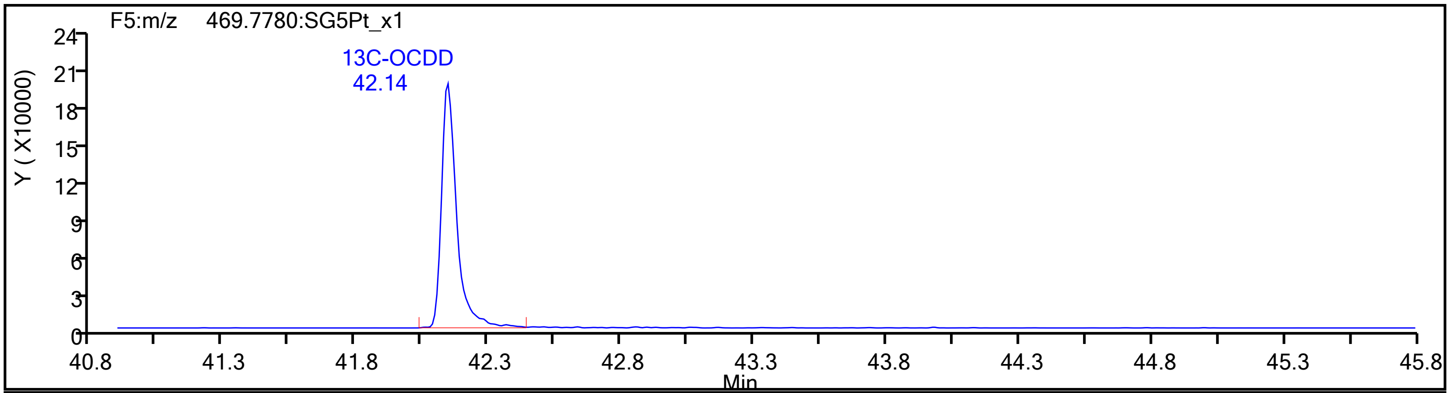

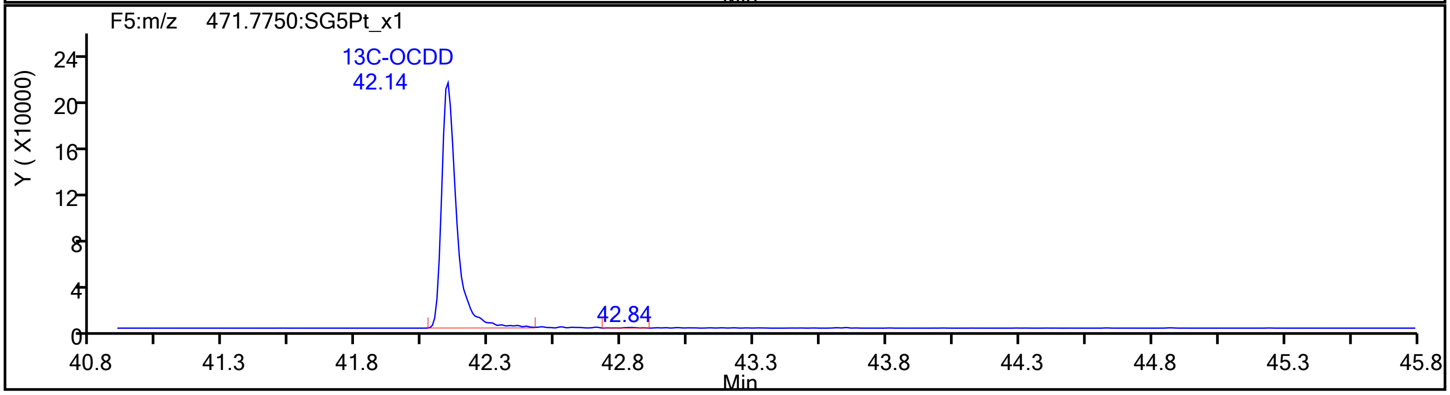

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d
Injection Date: 24-Nov-2020 15:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Tank
Worklist#: 434777 Sample Line#: 38
Column Type: DB-5 Column Dia: 0.32 mm

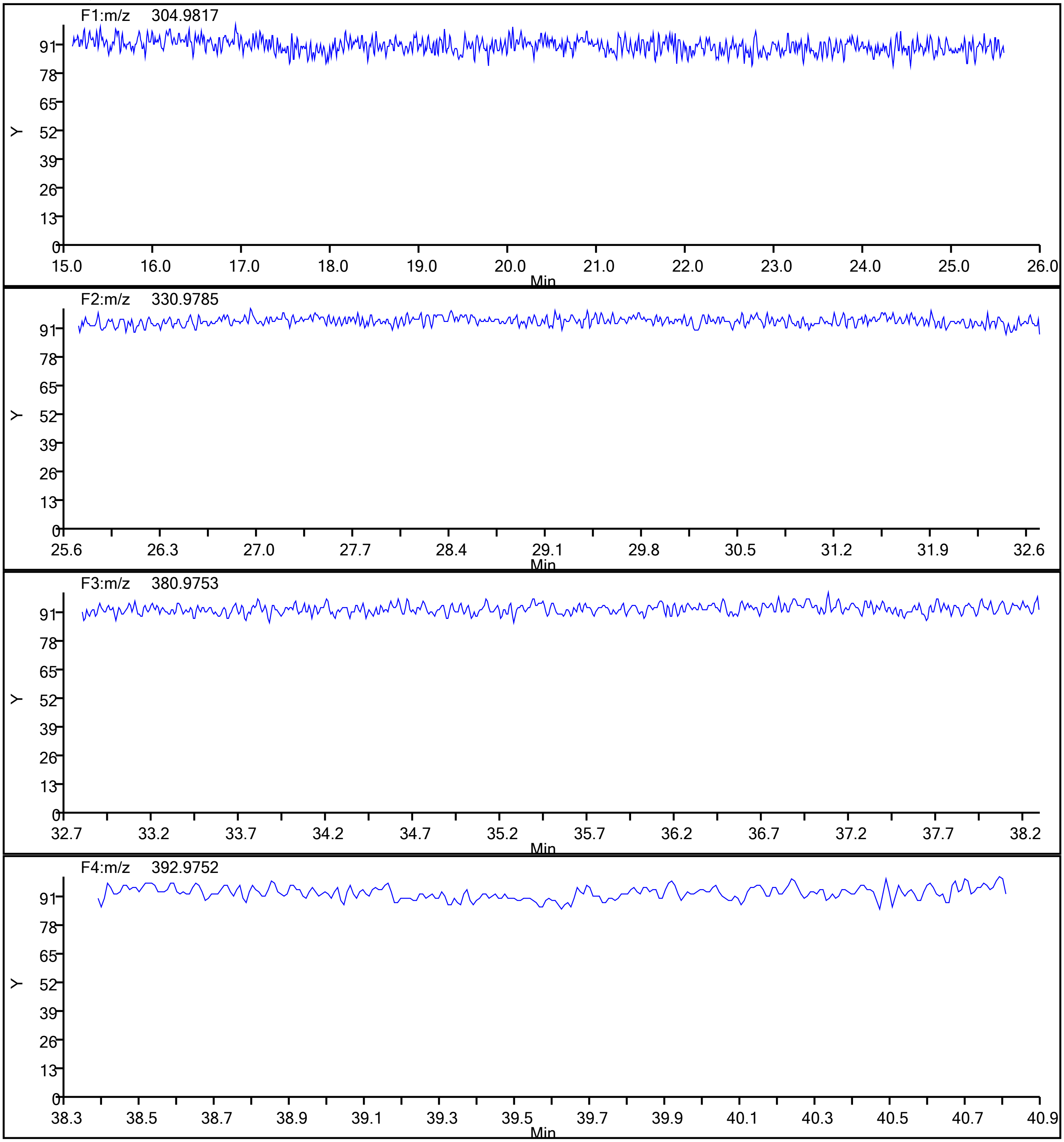

Report Date: 01-Dec-2020 13:52:57 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_43.d		
Injection Date:	24-Nov-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #1 Tank		
Worklist#:	434777	Sample Line#:	38
Column Type:	DB-5	Column Dia:	0.32 mm

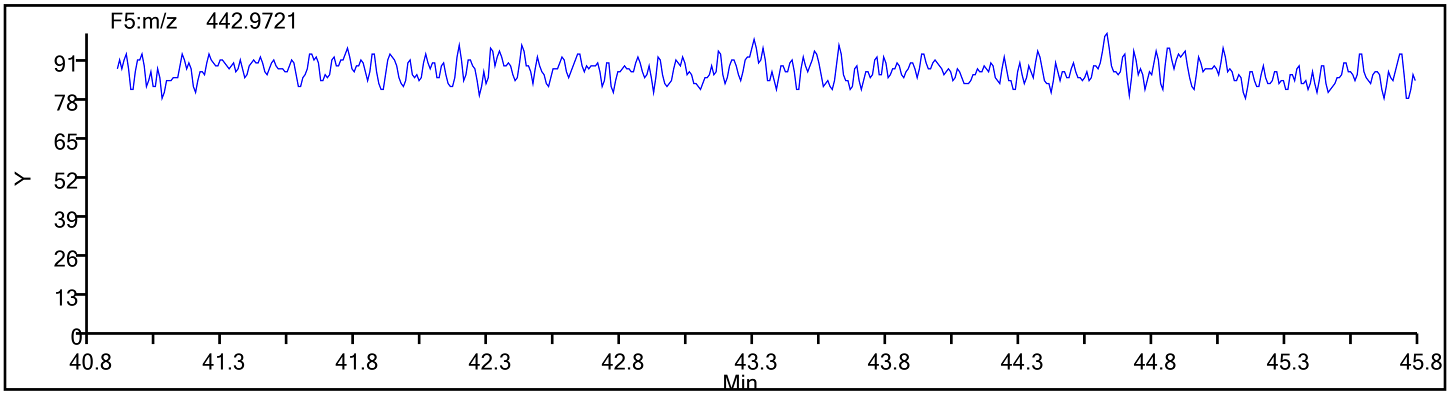

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-66850-2

SDG No.:

Client Sample ID: 11215702-Tank #1 Tank RA

Lab Sample ID: 320-66850-5 RA

Matrix: Water

Lab File ID: 30NO2011D2_014.d

Analysis Method: 1613B

Date Collected: 11/09/2020 13:00

Extract. Method: 1613B

Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1053.3(mL)

Date Analyzed: 11/30/2020 20:46

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 436991

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	6600	E B	9.5	7.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	67		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	97		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_014.d				
Lims ID:	320-66850-A-5-B				
Client ID:	11215702-Tank #1 Tank				
Sample Type:	Client				
Inject. Date:	30-Nov-2020 20:46:19	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-66850-A-5-B				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:38	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.573	192659320	0.75	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.767	203780246	0.75	1.5708	67.3	67.3	0.6440	0.6440	67.34	
2,3,7,8-TCDF	16.781	709299076	0.76	0.9943	350.1	350.1	0.4023	0.4023		E
D 13C-2,3,7,8-TCDD	15.326	114840543	0.82	0.9834	60.6	60.6	5.390	5.390	60.62	
$ 37Cl4-2,3,7,8-TCDD	15.340	74606731		0.9945	38.9	38.9	0.1484	0.1484	97.35	
2,3,7,8-TCDD	15.340	212259163	0.76	1.2822	144.1	144.1	0.6883	0.6883		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Report Date: 01-Dec-2020 08:43:47　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_014.d
Lims ID: 320-66850-A-5-B
Client ID: 11215702-Tank #1 Tank
Sample Type: Client
Inject. Date: 30-Nov-2020 20:46:19　ALS Bottle#: 0　Worklist Smp#: 14
Injection Vol: 2.0 ul　Dil. Factor: 1.0000
Sample Info: 320-66850-A-5-B
Misc. Info.: DB225RES
Operator ID:　Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38　Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution　Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)　Det: F1:HRSIR
Process Host: CTX1643

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.573	15.560	1		82777317	19789982	441886	1104715	45		
333.9339	15.573	15.560	1		109882003	25101785	509958	1274895	49	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.767	16.779	-1	1.077	87647422	17472696	81406	203515	215		
317.9389	16.767	16.779	-1	1.077	116132824	22482510	100249	250622	224	0.75(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	16.781	16.792	-1	1.001	305553606	62413141	26461	66152	2359		
305.8987	16.781	16.792	-1	1.001	403745470	82589988	37466	93665	2204	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.326	15.324	0	0.984	51895038	12481308	441886	1104715	28		
333.9339	15.326	15.324	0	0.984	62945505	15494535	509958	1274895	30	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.340	15.340	0	0.985	74606731	17236304	26501	66252	650		
2,3,7,8-TCDD											
319.8965	15.340	15.352	-1	1.001	91821503	21415385	59479	148697	360		
321.8936	15.340	15.352	-1	1.001	120437660	28123619	39279	98197	716	0.76(0.65-0.89)	

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Report Date: 01-Dec-2020 08:43:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_014.d

Injection Date: 30-Nov-2020 20:46:19
Injection Vol: 2.0 ul

Instrument ID: 11D2
Operator ID:

Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Tank

Worklist#: 436991
Sample Line#: 14

Column Type: DB-225
Column Dia: 0.32 mm

TCDF

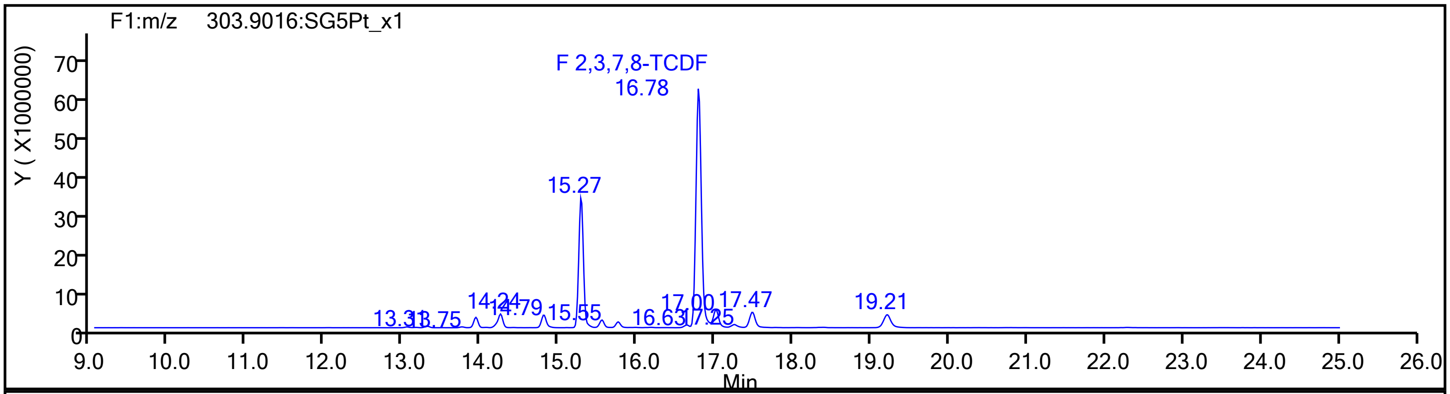

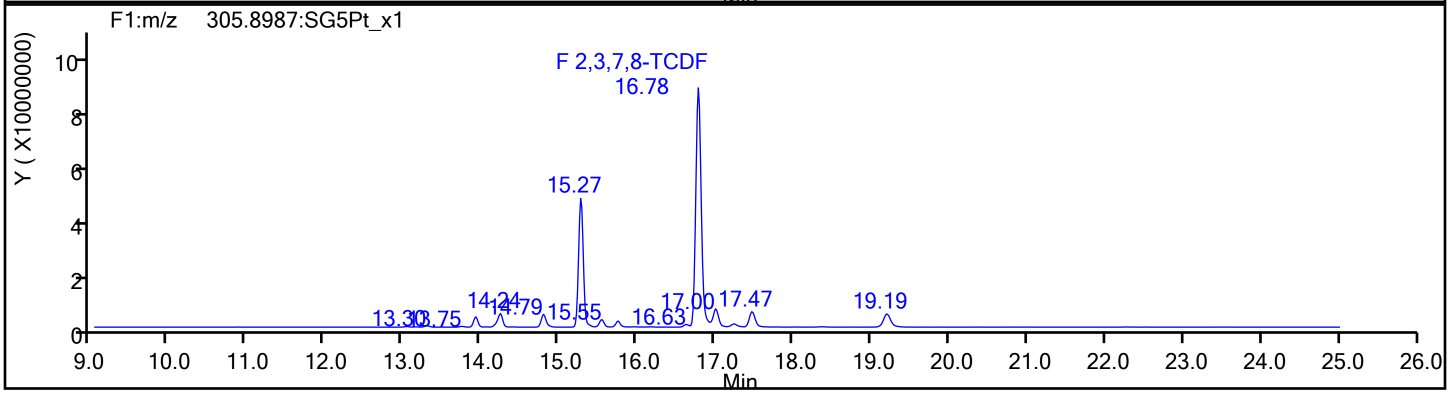

TCDF Standards

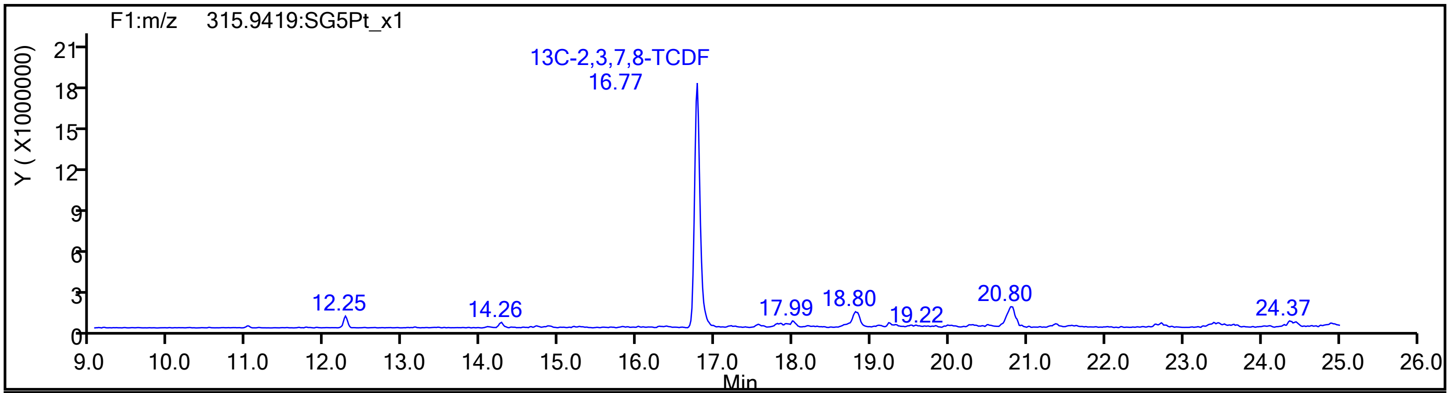

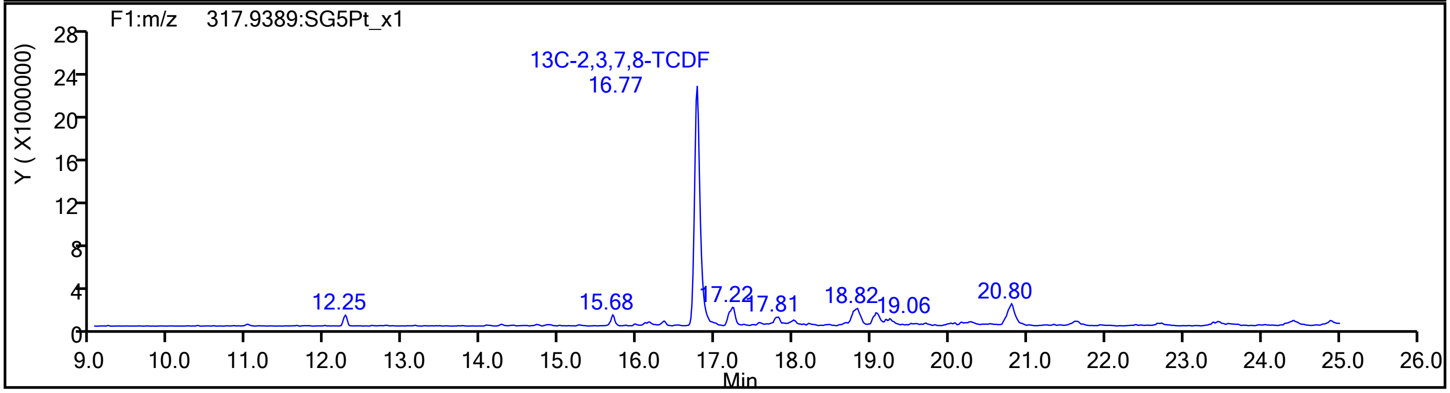

Report Date: 01-Dec-2020 08:43:47　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_014.d
Injection Date: 30-Nov-2020 20:46:19　Injection Vol: 2.0 ul
Instrument ID: 11D2　Operator ID:
Method: DXN_DB225_11D2　Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #1 Tank
Worklist#: 436991　Sample Line#: 14
Column Type: DB-225　Column Dia: 0.32 mm

TCDF

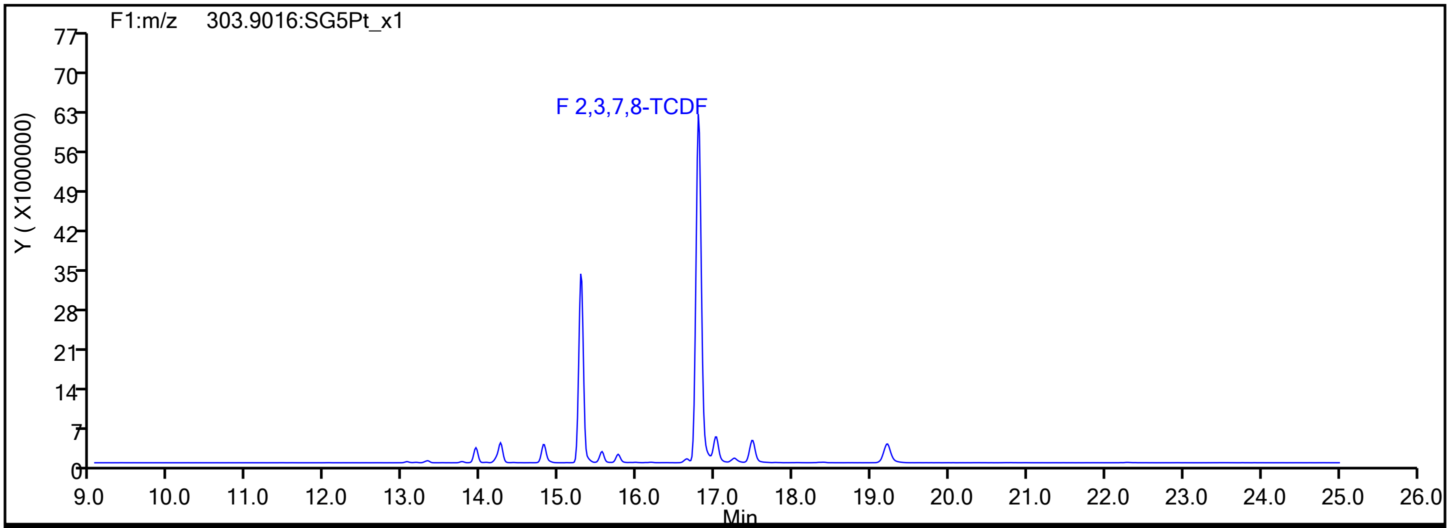

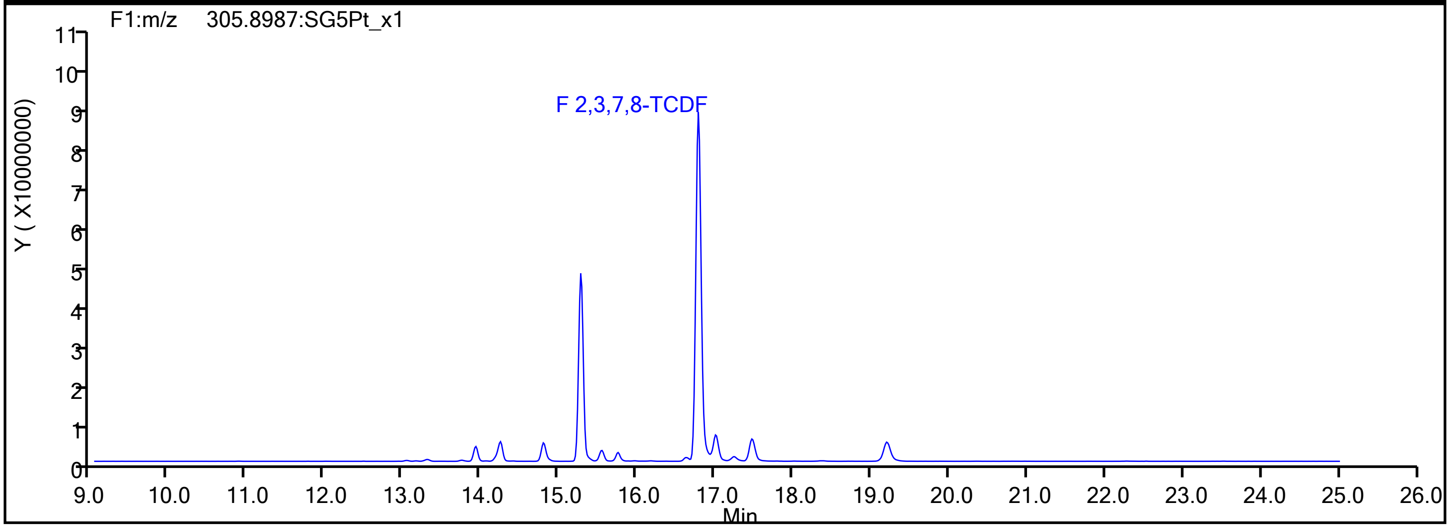

TCDF Interference Mass

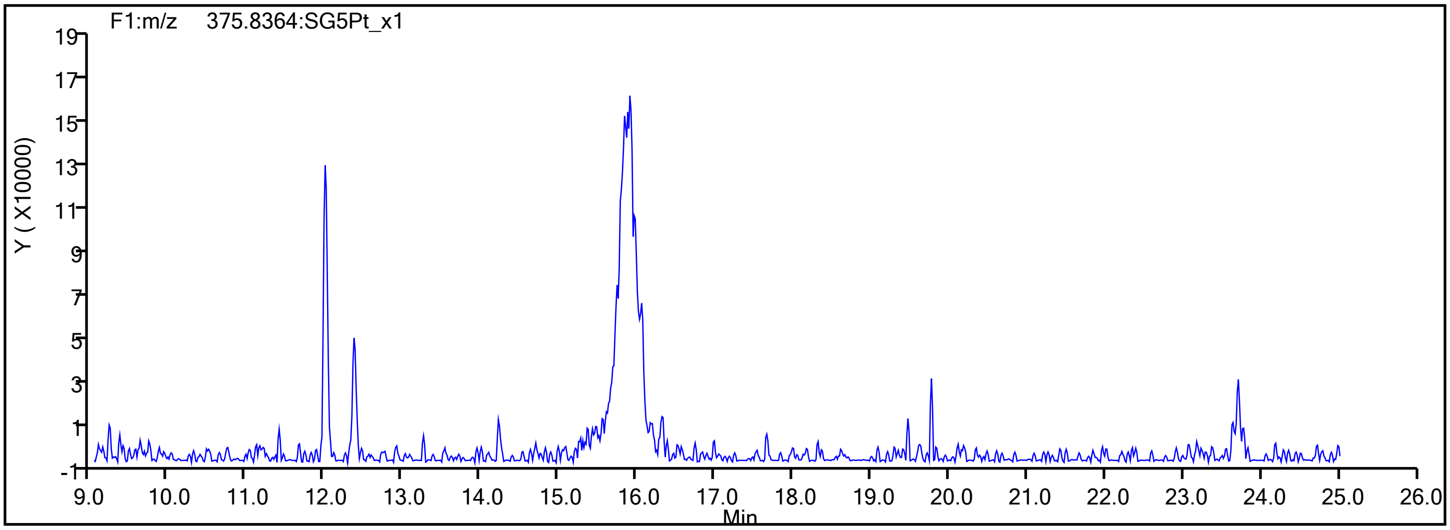

Report Date: 01-Dec-2020 08:43:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_014.d

Injection Date: 30-Nov-2020 20:46:19 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Tank

Worklist#: 436991 Sample Line#: 14

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

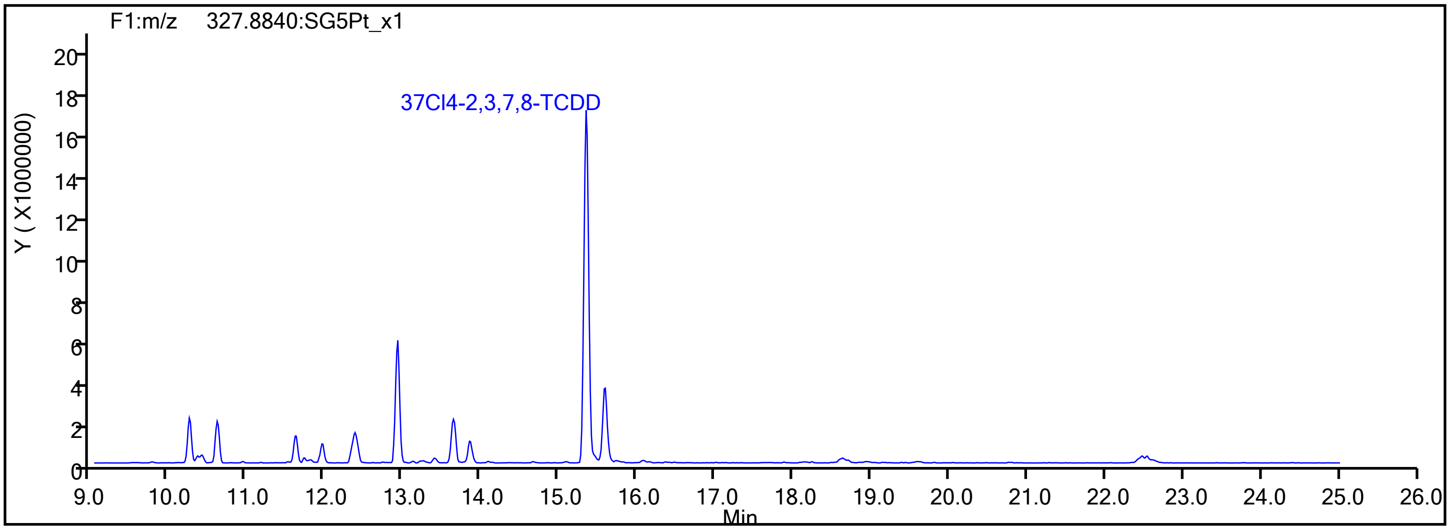

37Cl4-TCDD Standards

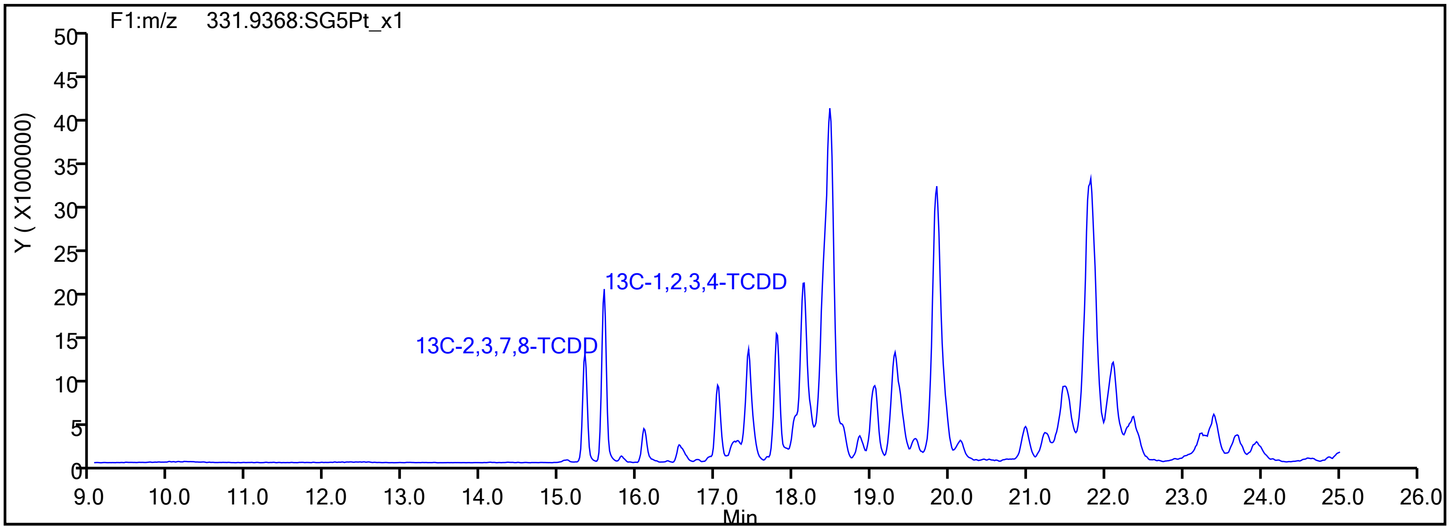

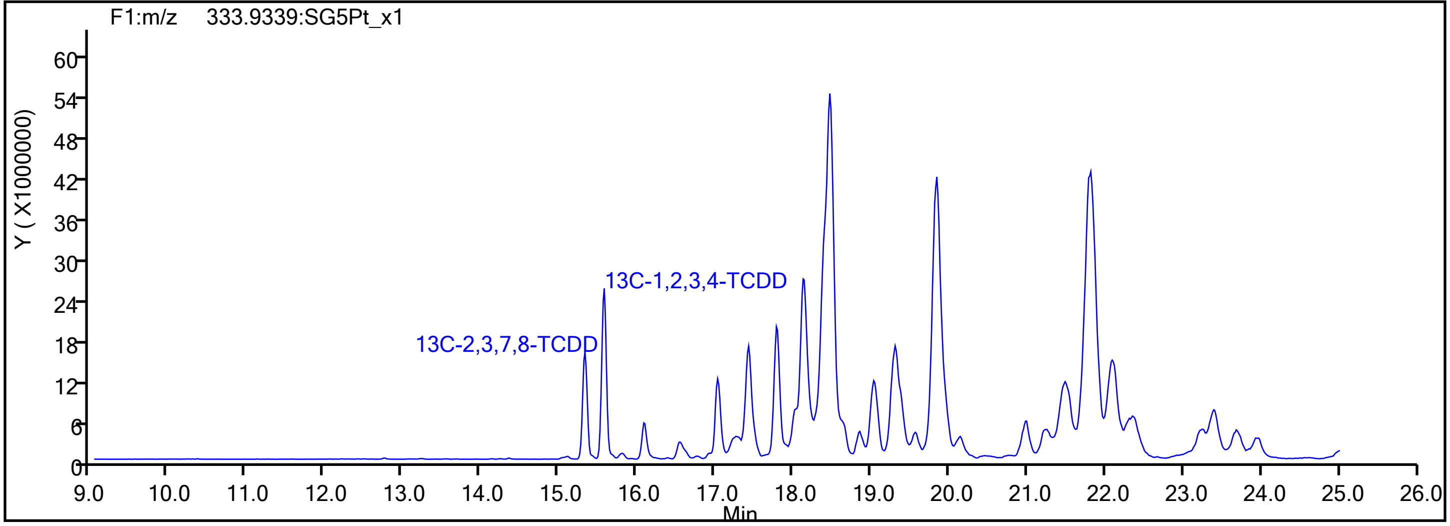

Report Date: 01-Dec-2020 08:43:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_014.d

Injection Date: 30-Nov-2020 20:46:19 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #1 Tank

Worklist#: 436991 Sample Line#: 14

Column Type: DB-225 Column Dia: 0.32 mm

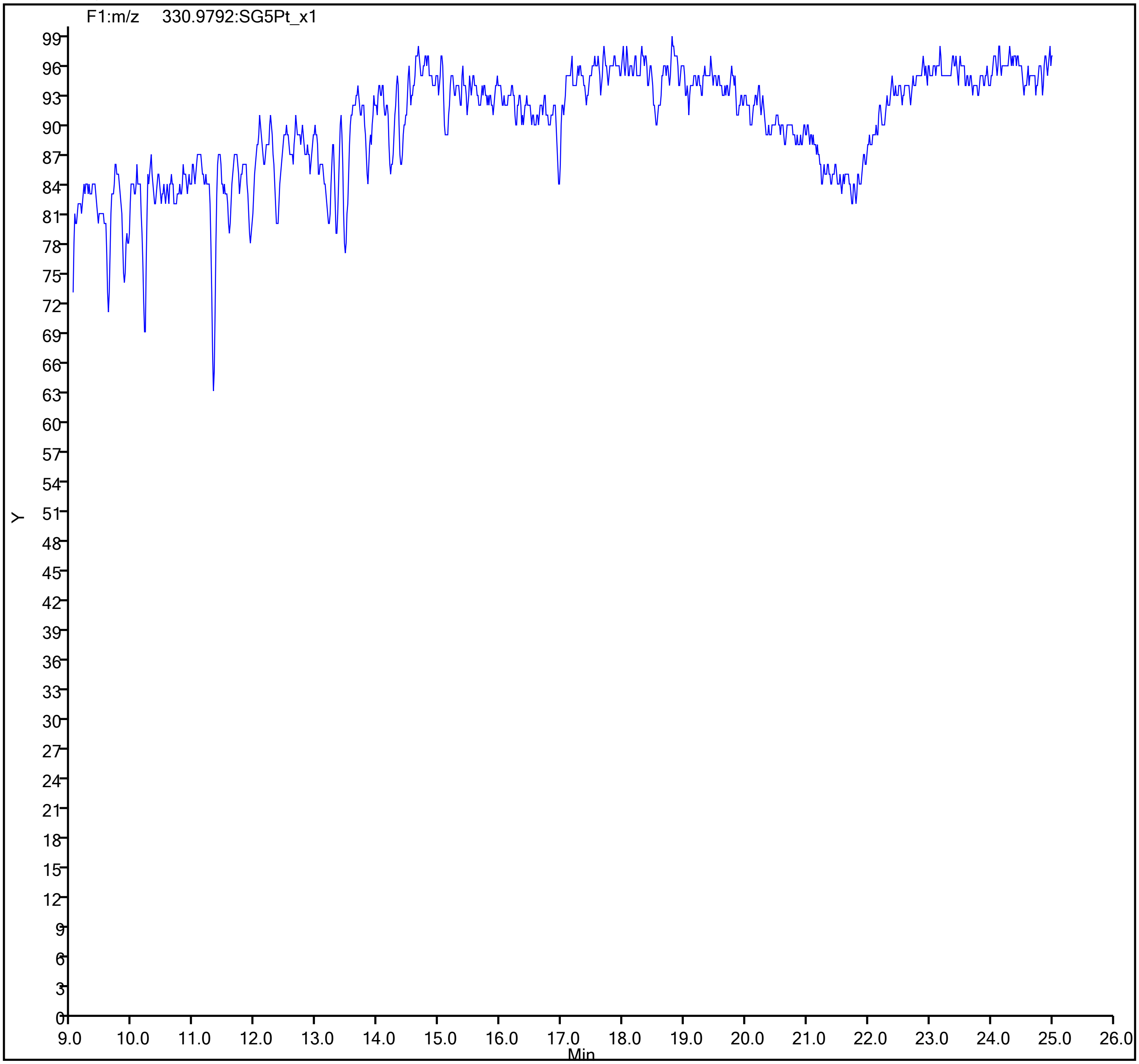

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #2 Tank	Lab Sample ID: 320-66850-6
Matrix: Water	Lab File ID: 23no20dfs1_44.d
Analysis Method: 1613B	Date Collected: 11/09/2020 13:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1049.1(mL)	Date Analyzed: 11/24/2020 16:40
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	7700	G E	11	11
40321-76-4	1,2,3,7,8-PeCDD	84	B	48	1.6
57117-41-6	1,2,3,7,8-PeCDF	1300	B	48	8.2
57117-31-4	2,3,4,7,8-PeCDF	660	B	48	8.7
39227-28-6	1,2,3,4,7,8-HxCDD	5.8	J q B	48	0.57
57653-85-7	1,2,3,6,7,8-HxCDD	11	J q B	48	0.56
19408-74-3	1,2,3,7,8,9-HxCDD	8.5	J B	48	0.54
70648-26-9	1,2,3,4,7,8-HxCDF	5900	B	48	18
57117-44-9	1,2,3,6,7,8-HxCDF	1400	B *	48	17
72918-21-9	1,2,3,7,8,9-HxCDF	100	B	48	17
60851-34-5	2,3,4,6,7,8-HxCDF	110	B	48	16
35822-46-9	1,2,3,4,6,7,8-HpCDD	240	B	48	1.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	1500	B *	48	5.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	770	B	48	5.7
3268-87-9	OCDD	4200	B *	95	4.7
39001-02-0	OCDF	650	B	95	1.4
41903-57-5	Total TCDD	8500	G	11	11
30402-14-3	Total TCDF	44000	G B	75	75
36088-22-9	Total PeCDD	84	B	48	1.6
30402-15-4	Total PeCDF	3100	q B	48	8.5
34465-46-8	Total HxCDD	74	q B	48	0.56
55684-94-1	Total HxCDF	8400	B	48	17
37871-00-4	Total HpCDD	510	B	48	1.4
38998-75-3	Total HpCDF	2700	B	48	5.6

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID: 11215702-Tank #2 Tank	Lab Sample ID: 320-66850-6
Matrix: Water	Lab File ID: 23no20dfs1_44.d
Analysis Method: 1613B	Date Collected: 11/09/2020 13:00
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1049.1(mL)	Date Analyzed: 11/24/2020 16:40
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	69		25-164
89059-46-1	13C-2,3,7,8-TCDF	69		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	71		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	67		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	66		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	63		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	62		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	69		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	63		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	66		26-138
114423-97-1	13C-OCDD	75		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d				
Lims ID:	320-66850-A-6-B				
Client ID:	11215702-Tank #2 Tank				
Sample Type:	Client				
Inject. Date:	24-Nov-2020 16:40:00	ALS Bottle#:	0	Worklist Smp#:	39
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-66850-a-6-b				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 13:55:18	Calib Date:	17-Nov-2020 17:44:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1641				
First Level Reviewer: messecara		Date:	24-Nov-2020 19:49:41		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.804	2684707	0.77	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.773	3127312	0.81	1.6832	69.2	69.2	0.4245	0.4245	69.20	
2,3,7,8-TCDF	20.808	47081719	0.79	1.1547	1303.8	1303.8	3.918	3.918		E
A Non-2,3,7,8-sub-TCDF	20.119	37075267	0.78	1.1547	1026.7	1026.7	3.918	576.9		a
S Total TCDF					2330.6	2330.6	3.918	3.918		
D 13C-2,3,7,8-TCDD	22.182	2010296	0.78	1.0896	68.7	68.7	0.4328	0.4328	68.72	
2,3,7,8-TCDD	22.216	9461942	0.80	1.1659	403.7	403.7	0.5582	0.5582		E
$ 37Cl4-2,3,7,8-TCDD	22.216	1232106		1.1445	40.1	40.1	0.1115	0.1115	100	
A Non-2,3,7,8-sub-TCDD	20.973	984987	0.79	1.1659	42.0	42.0	0.5582	34.7		
S Total TCDD					445.7	445.7	0.5582	0.5582		
D 13C-1,2,3,7,8-PeCDF	27.660	2613702	1.58	1.4604	66.7	66.7	0.1989	0.1989	66.66	
1,2,3,7,8-PeCDF	27.693	2038055	1.60	1.1322	68.9	68.9	0.4322	0.4322		
D 13C-2,3,4,7,8-PeCDF	29.201	2399588	1.53	1.3504	66.2	66.2	0.2151	0.2151	66.19	
2,3,4,7,8-PeCDF	29.235	963207	1.58	1.1588	34.6	34.6	0.4584	0.4584		
A F1 PeCDFs	24.940	13736	1.56	1.1455	0.4784	0.4784	0.005998	0.4784		
A Non-2,3,7,8-sub-PeCDF	28.506	1670265	1.55	1.1455	58.3	58.2	0.4447	26.3		RQ
S Total PeCDF					162.3	162.2	0.4453	0.4453		RQ
D 13C-1,2,3,7,8-PeCDD	30.035	1661093	1.59	0.8729	70.9	70.9	0.1415	0.1415	70.88	
1,2,3,7,8-PeCDD	30.052	82010	1.52	1.1191	4.412	4.412	0.0861	0.0861		
A Non-2,3,7,8-sub-PeCDD	28.748						0.0861	1.372		RQU
S Total PeCDD					4.412	4.412	0.0861	0.0861		
D 13C-1,2,3,4,7,8-HxCDF	35.185	2176119	0.54	1.2808	63.1	63.1	0.1888	0.1888	63.08	
1,2,3,4,7,8-HxCDF	35.202	8941439	1.24	1.3205	311.2	311.2	0.9652	0.9652		
D 13C-1,2,3,6,7,8-HxCDF	35.345	2444456	0.54	1.4615	62.1	62.1	0.1655	0.1655	62.10	
1,2,3,6,7,8-HxCDF	35.362	2336286	1.24	1.2682	75.4	75.4	0.9084	0.9084		
D 13C-2,3,4,6,7,8-HxCDF	36.128	2241415	0.53	1.3227	62.9	62.9	0.1829	0.1829	62.92	
2,3,4,6,7,8-HxCDF	36.145	161279	1.16	1.2838	5.605	5.605	0.8420	0.8420		
D 13C-1,2,3,7,8,9-HxCDF	36.996	2064790	0.53	1.1062	69.3	69.3	0.2186	0.2186	69.30	
1,2,3,7,8,9-HxCDF	37.005	145046	1.29	1.3063	5.378	5.378	0.8795	0.8795		
A Non-2,3,7,8-sub-HxCDF	35.280	1197087	1.21	1.2947	41.4	41.4	0.8960	15.7		a
S Total HxCDF					438.9	438.9	0.8988	0.8988		

Report Date: 01-Dec-2020 13:55:18 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.802	2693275	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.331	1503604	1.24	0.8757	63.8	63.8	0.1609	0.1609	63.76	
1,2,3,4,7,8-HxCDD	36.339	5488	1.24	1.1972	0.3614	0.3049	0.0298	0.0298		RQ
D 13C-1,2,3,6,7,8-HxCDD	36.440	1877048	1.26	1.0651	65.4	65.4	0.1322	0.1322	65.44	
1,2,3,6,7,8-HxCDD	36.457	11412	1.24	1.0695	0.6290	0.5685	0.0295	0.0295		RQ
1,2,3,7,8,9-HxCDD	36.811	8920	1.20	1.1806	0.4470	0.4470	0.0284	0.0284		
A Non-2,3,7,8-sub-HxCDD	35.613	49682	1.30	1.1491	2.558	2.558	0.0292	1.221		
S Total HxCDD					3.995	3.878	0.0292	0.0292		RQ
1,2,3,4,6,7,8-HpCDF	38.762	1948294	1.04	1.5618	78.0	78.0	0.2838	0.2838		
D 13C-1,2,3,4,6,7,8-HpCDF	38.754	1599389	0.45	0.9521	62.4	62.4	0.2678	0.2678	62.37	
1,2,3,4,7,8,9-HpCDF	39.992	844522	1.05	1.4975	40.6	40.6	0.3000	0.3000		
D 13C-1,2,3,4,7,8,9-HpCDF	39.984	1388440	0.45	0.7782	66.2	66.2	0.3277	0.3277	66.25	
A Non-2,3,7,8-sub-HpCDF	39.360	478755	1.07	1.5297	21.0	21.0	0.2917	21.0		
S Total HpCDF					139.6	139.6	0.2919	0.2919		
1,2,3,4,6,7,8-HpCDD	39.689	198494	1.05	1.1079	12.6	12.6	0.0727	0.0727		
D 13C-1,2,3,4,6,7,8-HpCDD	39.681	1419001	1.07	0.8393	62.8	62.8	0.1591	0.1591	62.77	
A Non-2,3,7,8-sub-HpCDD	40.007	219936	1.03	1.1079	14.0	14.0	0.0727	14.0		
S Total HpCDD					26.6	26.6	0.0727	0.0727		
D 13C-OCDD	42.161	2136776	0.90	0.5301	149.7	149.7	0.1439	0.1439	74.83	
OCDF	42.254	543028	0.90	1.4802	34.3	34.3	0.0737	0.0737		
OCDD	42.170	2725641	0.91	1.1666	218.7	218.7	0.2461	0.2461		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Lims ID: 320-66850-A-6-B
Client ID: 11215702-Tank #2 Tank
Sample Type: Client
Inject. Date: 24-Nov-2020 16:40:00 ALS Bottle#: 0 Worklist Smp#: 39
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-a-6-b
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 13:55:18 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1641

First Level Reviewer: messecara Date: 24-Nov-2020 19:49:41

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.804	21.772	2		1164579	165355	398	995	415		a
333.9338	21.787	21.772	1		1520128	202970	297	742	683	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.773	20.725	3	0.953	1399724	217300	582	1455	373		
317.9389	20.782	20.725	3	0.953	1727588	262082	471	1177	556	0.81(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.808	20.776	2	1.002	20808982	2929463	4996	12490	586		
305.8987	20.808	20.776	2	1.002	26272737	3764877	3679	9197	1023	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											a
303.9016	18.179	20.119	-116	0.875	615126	108406	4996	12490	22		
305.8987	18.179	20.119	-116	0.875	796138	136286	3679	9197	37	0.77(0.65-0.89)	
303.9016	18.686	20.119	-86	0.900	973241	128105	4996	12490	26		
305.8987	18.686	20.119	-86	0.900	1314164	164121	3679	9197	45	0.74(0.65-0.89)	
303.9016	19.133	20.119	-59	0.921	771378	111189	4996	12490	22		
305.8987	19.133	20.119	-59	0.921	966162	136453	3679	9197	37	0.80(0.65-0.89)	
303.9016	19.528	20.119	-35	0.940	984013	142074	4996	12490	28		
305.8987	19.528	20.119	-35	0.940	1267622	183071	3679	9197	50	0.78(0.65-0.89)	
303.9016	20.052	20.119	-4	0.965	9235659	1408094	4996	12490	282		
305.8987	20.052	20.119	-4	0.965	11596655	1785631	3679	9197	485	0.80(0.65-0.89)	
303.9016	20.473	20.119	21	0.986	457781	65809	4996	12490	13		
305.8987	20.473	20.119	21	0.986	645307	86055	3679	9197	23	0.71(0.65-0.89)	
303.9016	21.624	20.119	90	1.041	1457130	216913	4996	12490	43		
305.8987	21.624	20.119	90	1.041	1864349	271427	3679	9197	74	0.78(0.65-0.89)	
303.9016	22.096	20.119	118	1.064	268594	41218	4996	12490	8		
305.8987	22.105	20.119	119	1.064	411440	57415	3679	9197	16	0.65(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	23.951	20.119	229	1.153	1524921	316557	4996	12490	63		a
305.8987	23.943	20.119	229	1.153	1925587	403349	3679	9197	110	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.182	22.124	3	1.017	882534	127129	398	995	319		
333.9338	22.191	22.124	4	1.018	1127762	155606	297	742	524	0.78(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	22.216	22.159	3	1.002	4195373	567285	389	972	1458		
321.8936	22.216	22.159	3	1.002	5266569	723761	347	867	2086	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.216	22.201	1	1.019	1232106	167851	188	470	893		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.087	20.973	-53	0.906	20306	2821	389	972	7		
321.8936	20.087	20.973	-53	0.906	23807	3832	347	867	11	0.85(0.65-0.89)	
319.8965	20.679	20.973	-18	0.932	10769	1717	389	972	4		
321.8936	20.696	20.973	-17	0.933	13902	2320	347	867	7	0.77(0.65-0.89)	
319.8965	22.036	20.973	64	0.993	45364	7562	389	972	19		
321.8936	22.027	20.973	63	0.993	58240	9224	347	867	27	0.78(0.65-0.89)	
319.8965	22.904	20.973	116	1.033	357263	47762	389	972	123		
321.8936	22.904	20.973	116	1.033	455336	59122	347	867	170	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.660	27.633	2	1.269	1601890	249547	251	627	994		
353.8970	27.651	27.633	1	1.268	1011812	159560	177	442	901	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.693	27.659	2	1.001	1252994	189462	476	1190	398		
341.8567	27.685	27.659	2	1.001	785061	123873	325	812	381	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.201	29.184	1	1.339	1451042	227966	251	627	908		
353.8970	29.210	29.184	2	1.340	948546	148943	177	442	841	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.235	29.217	1	1.001	590011	93034	476	1190	195		
341.8567	29.235	29.217	1	1.001	373196	58048	325	812	179	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.363	24.940	-35	0.881	8365	1669	2	5	835		
341.8567	24.372	24.940	-34	0.881	5371	1386	9	22	154	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.169	28.506	-140	0.946	464079	83748	476	1190	176		
341.8567	26.169	28.506	-140	0.946	291718	52902	325	812	163	1.59(1.32-1.78)	
339.8597	27.104	28.506	-84	0.980	31985	4944	476	1190	10		
	Empc Correction				27760	4484	476	1190	9		
341.8567	27.112	28.506	-83	0.980	17910	2893	325	812	9	1.79(1.32-1.78)	
339.8597	27.542	28.506	-58	0.996	62552	14567	476	1190	31		
341.8567	27.533	28.506	-58	0.995	41729	9862	325	812	30	1.50(1.32-1.78)	
339.8597	28.283	28.506	-13	1.023	283297	45305	476	1190	95		
341.8567	28.283	28.506	-13	1.023	187277	29972	325	812	92	1.51(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	29.581	28.506	64	1.069	148647	21515	476	1190	45		
341.8567	29.572	28.506	64	1.069	91739	12957	325	812	40	1.62(1.32-1.78)	
339.8597	31.316	28.506	168	1.132	32628	4589	476	1190	10		
341.8567	31.341	28.506	170	1.133	20929	3150	325	812	10	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.035	30.017	1	1.378	1020051	143553	130	325	1104		
369.8919	30.044	30.017	2	1.378	641042	95185	52	130	1830	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.052	30.051	0	1.001	49406	7158	55	137	130		
357.8516	30.069	30.051	1	1.001	32604	4643	37	92	125	1.52(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.413	28.748	-140	0.879	2112	401	55	137	7		
357.8516	26.514	28.748	-134	0.883	23388	4225	37	92	114	0.09(1.32-1.78)	
	Empc Correction				1362	258	37	92	0		
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.185	35.175	1	0.956	762722	173825	237	592	733		
385.8610	35.185	35.175	1	0.956	1413397	316941	448	1120	707	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.202	35.200	0	1.000	4951615	1119358	1523	3807	735		
375.8178	35.202	35.200	0	1.000	3989824	910026	979	2447	930	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.345	35.335	1	0.960	856135	185079	237	592	781		
385.8610	35.345	35.335	1	0.960	1588321	357866	448	1120	799	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.362	35.351	1	1.000	1293498	279430	1523	3807	183		
375.8178	35.362	35.351	1	1.000	1042788	223547	979	2447	228	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.128	36.118	1	0.982	772778	196877	237	592	831		
385.8610	36.128	36.118	1	0.982	1468637	381787	448	1120	852	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.145	36.135	1	1.000	86581	22768	1523	3807	15		
375.8178	36.137	36.135	0	1.000	74698	19727	979	2447	20	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.996	36.986	1	1.005	717423	191278	237	592	807		
385.8610	36.996	36.986	1	1.005	1347367	353150	448	1120	788	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.005	37.003	0	1.000	81838	24097	1523	3807	16		
375.8178	37.005	37.003	0	1.000	63208	19319	979	2447	20	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											a
373.8208	33.795	35.280	-89	0.960	249742	53513	1523	3807	35		
375.8178	33.795	35.280	-89	0.960	202527	42369	979	2447	43	1.23(1.05-1.43)	
373.8208	34.604	35.280	-40	0.983	106699	23508	1523	3807	15		
375.8178	34.604	35.280	-40	0.983	90450	20097	979	2447	21	1.18(1.05-1.43)	
373.8208	36.027	35.280	45	1.024	77906	19933	1523	3807	13		
375.8178	36.019	35.280	44	1.024	66475	17299	979	2447	18	1.17(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
373.8208	37.114	35.280	110	1.055	221972	60663	1523	3807	40		a
375.8178	37.106	35.280	109	1.055	181316	45724	979	2447	47	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.802	36.792	1		1511315	394726	224	560	1762		
403.8529	36.802	36.792	1		1181960	313120	175	437	1789	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.331	36.320	1	0.987	832309	237414	224	560	1060		
403.8529	36.331	36.320	1	0.987	671295	183064	175	437	1046	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQ
389.8158	36.339	36.337	0	1.000	4055	1230	34	85	36		
	Empc Correction				3038	985	34	85	29		
391.8127	36.339	36.337	0	1.000	2450	795	26	65	31	1.66(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.440	36.438	0	0.990	1045003	264239	224	560	1180		
403.8529	36.440	36.438	0	0.990	832045	210769	175	437	1204	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQ
389.8158	36.457	36.446	1	1.000	7531	1918	34	85	56		
	Empc Correction				6317	1726	34	85	51		
391.8127	36.457	36.446	1	1.000	5095	1392	26	65	54	1.48(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.811	36.809	0	1.013	4862	1051	34	85	31		
391.8127	36.802	36.809	0	1.013	4058	898	26	65	35	1.20(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.536	35.613	-64	0.948	11696	2497	34	85	73		
391.8127	34.528	35.613	-65	0.948	9670	2087	26	65	80	1.21(1.05-1.43)	
389.8158	35.244	35.613	-22	0.967	2653	411	34	85	12		
391.8127	35.269	35.613	-21	0.968	1953	433	26	65	17	1.36(1.05-1.43)	
389.8158	35.598	35.613	-1	0.977	13729	3194	34	85	94		
391.8127	35.589	35.613	-1	0.977	9981	2328	26	65	90	1.38(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.762	38.745	1	1.000	990933	294952	438	1095	673		
409.7788	38.762	38.745	1	1.000	957361	289309	407	1017	711	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.754	38.749	0	1.053	495676	147460	238	595	620		
419.8220	38.754	38.749	0	1.053	1103713	329013	484	1210	680	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.992	39.975	1	1.000	433174	144864	438	1095	331		
409.7788	39.992	39.975	1	1.000	411348	137217	407	1017	337	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.984	39.979	0	1.086	430402	148104	238	595	622		
419.8220	39.984	39.979	0	1.086	958038	322095	484	1210	665	0.45(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.125	39.360	-14	1.010	247150	79768	438	1095	182		
409.7788	39.125	39.360	-14	1.010	231605	71908	407	1017	177	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.689	39.672	1	1.000	101682	33612	82	205	410		
425.7737	39.689	39.672	1	1.000	96812	30649	67	167	457	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.681	39.676	0	1.078	733109	242562	199	497	1219		
437.8140	39.681	39.676	0	1.078	685892	219560	179	447	1227	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.066	40.007	-56	0.984	111808	35952	82	205	438		
425.7737	39.057	40.007	-57	0.984	108128	34448	67	167	514	1.03(0.88-1.20)	
13C-OCDD											
469.7780	42.161	42.158	0	1.146	1013987	290785	137	342	2123		
471.7750	42.161	42.158	0	1.146	1122789	323662	79	197	4097	0.90(0.76-1.02)	
OCDF											
441.7428	42.254	42.251	0	1.002	256729	71496	58	145	1233		
443.7399	42.254	42.251	0	1.002	286299	80916	76	190	1065	0.90(0.76-1.02)	
OCDD											
457.7377	42.170	42.167	0	1.000	1298235	365698	167	417	2190		
459.7348	42.161	42.167	0	1.000	1427406	407311	186	465	2190	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
E - Exceeded Maximum Amount
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	3127312	479382

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	3127312	479382

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.179	615126	108406	796138	136286	39.1	0.77	
18.686	973241	128105	1314164	164121	63.3	0.74	
19.133	771378	111189	966162	136453	48.1	0.80	
19.528	984013	142074	1267622	183071	62.4	0.78	
20.052	9235659	1408094	11596655	1785631	576.9	0.80	
20.473	457781	65809	645307	86055	30.5	0.71	
21.624	1457130	216913	1864349	271427	92.0	0.78	
22.096	268594	41218	411440	57415	18.8	0.65	
23.951	1524921	316557	1925587	403349	95.6	0.79	a
Signal Totals:							
	16287843	2538365	20787424	3223808			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	37075267	5762173				0.78	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1026.7 = (37075267 * 100.000) / (3127312 * 1.155)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	2010296	282735

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	2010296	282735

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.087	20306	2821	23807	3832	1.88	0.85	
20.679	10769	1717	13902	2320	1.05	0.77	
22.036	45364	7562	58240	9224	4.42	0.78	
22.904	357263	47762	455336	59122	34.7	0.78	
Signal Totals:							
	433702	59862	551285	74498			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	984987	134360				0.79	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 42.025 = (984987 * 100.000) / (2010296 * 1.166)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Lims ID: 320-66850-A-6-B
Client ID: 11215702-Tank #2 Tank
Inject. Date: 24-Nov-2020 16:40:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 39

F1 PeCDFs, RT: 24.940

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2613702	409107
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2399588	376909

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2506645	393008

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.363	8365	1669	5371	1386	0.4784	1.56	
Signal Totals:							
	8365	1669	5371	1386			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13736	3055				1.56	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4784 = (13736 * 100.000) / (2506645 * 1.145)

Report Date: 01-Dec-2020 13:55:18 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	2613702	409107
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	2399588	376909

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	2506645	393008

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.169	464079	83748	291718	52902	26.3	1.59	
27.104	31985	4944	17910	2893	1.74	1.79	RQ
27.104	27760	4484	17910	2893	1.59		Empc Correction
27.542	62552	14567	41729	9862	3.63	1.50	
28.283	283297	45305	187277	29972	16.4	1.51	
29.581	148647	21515	91739	12957	8.37	1.62	
31.316	32628	4589	20929	3150	1.87	1.56	
Signal Totals:							
	1018963	174208	651302	111736			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1674490	286404				1.57	RQ
	1670265	285944					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 58.317 = (1674490 * 100.000) / (2506645 * 1.145)
Empc Amount: 58.170 = (1670265 * 100.000) / (2506645 * 1.145)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-PeCDD, RT: 28.748

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.119	D 13C-1,2,3,7,8-PeCDD	100.000	1661093	238738

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	1661093	238738

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
26.413	2112	401	23388	4225	1.37	0.09	RQ
26.413	2112	401	1362	258			Empc Correction
27.828	3084	565	1782	303	0.2618	1.73	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-HxCDF, RT: 35.280

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320	D 13C-1,2,3,4,7,8-HxCDF	100.000	2176119	490766
1,2,3,6,7,8-HxCDF	1.268	D 13C-1,2,3,6,7,8-HxCDF	100.000	2444456	542945
2,3,4,6,7,8-HxCDF	1.284	D 13C-2,3,4,6,7,8-HxCDF	100.000	2241415	578664
1,2,3,7,8,9-HxCDF	1.306	D 13C-1,2,3,7,8,9-HxCDF	100.000	2064790	544428

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.295		100.000	2231695	539200

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.795	249742	53513	202527	42369	15.7	1.23	
34.604	106699	23508	90450	20097	6.82	1.18	
36.027	77906	19933	66475	17299	5.00	1.17	
37.114	221972	60663	181316	45724	14.0	1.22	a
Signal Totals:							
	656319	157617	540768	125489			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1197087	283106				1.21	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 41.432 = (1197087 * 100.000) / (2231695 * 1.295)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	1503604	420478
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	1877048	475008
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1690326	447743

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.536	11696	2497	9670	2087	1.10	1.21	
35.244	2653	411	1953	433	0.2371	1.36	
35.598	13729	3194	9981	2328	1.22	1.38	
Signal Totals:							
	28078	6102	21604	4848			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	49682	10950				1.30	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.558 = (49682 * 100.000) / (1690326 * 1.149)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Lims ID: 320-66850-A-6-B
Client ID: 11215702-Tank #2 Tank
Inject. Date: 24-Nov-2020 16:40:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 434777 Lims Sample ID: 39

Non-2,3,7,8-sub-HpCDF, RT: 39.360

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.562	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1599389	476473
1,2,3,4,7,8,9-HpCDF	1.497	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1388440	470199

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.530		100.000	1493914	473336

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
39.125	247150	79768	231605	71908	21.0	1.07	
Signal Totals:							
	247150	79768	231605	71908			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	478755	151676				1.07	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 20.951 = (478755 * 100.000) / (1493914 * 1.530)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Lims ID:	320-66850-A-6-B		
Client ID:	11215702-Tank #2 Tank		
Inject. Date:	24-Nov-2020 16:40:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	39

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1419001	462122

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	1419001	462122

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.066	111808	35952	108128	34448	14.0	1.03	
Signal Totals:							
	111808	35952	108128	34448			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	219936	70400				1.03	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 13.989 = (219936 * 100.000) / (1419001 * 1.108)

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777 Sample Line#: 39
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

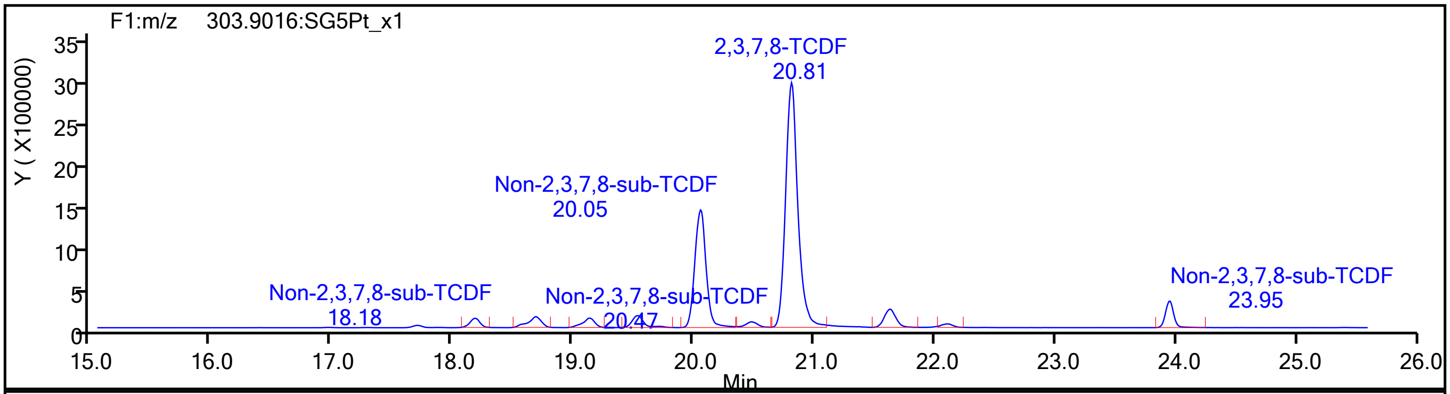

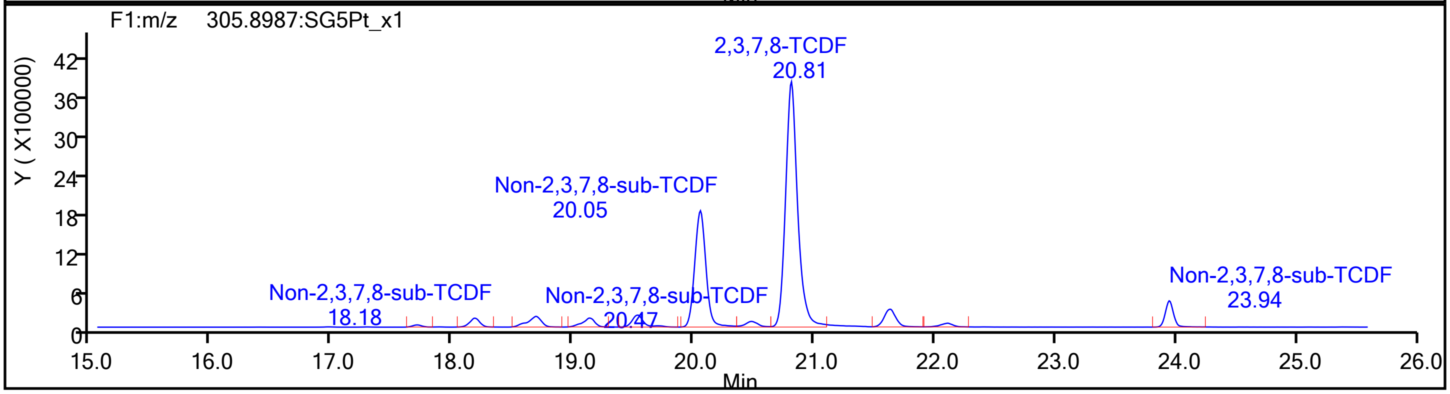

TCDF Standards

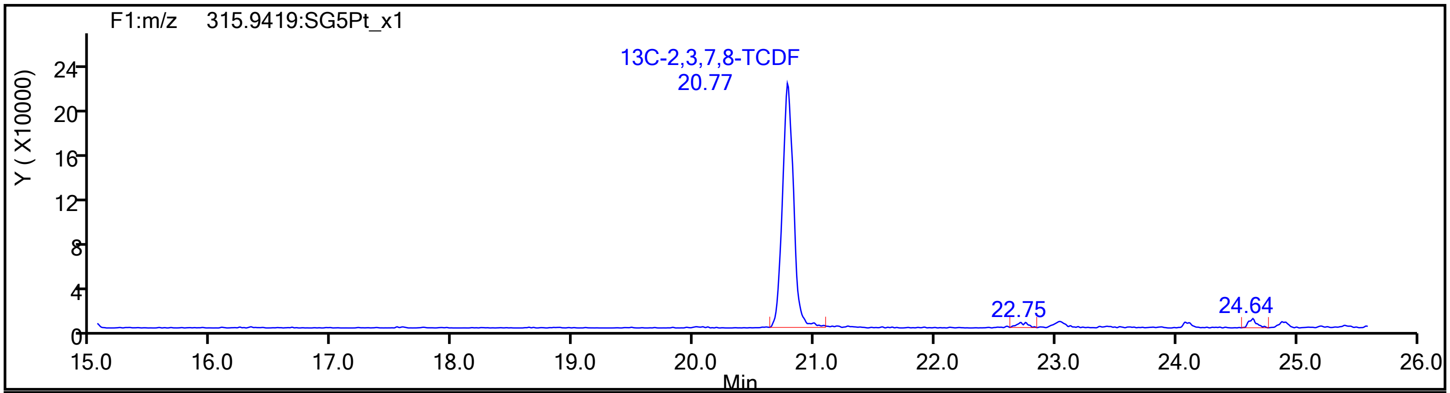

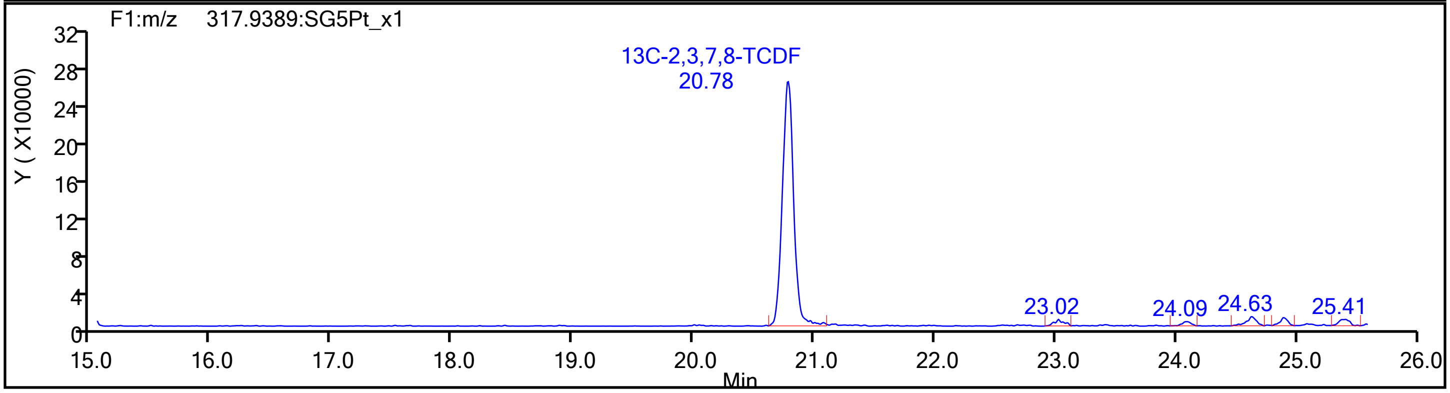

Report Date: 01-Dec-2020 13:55:19 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Nov-2020 16:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

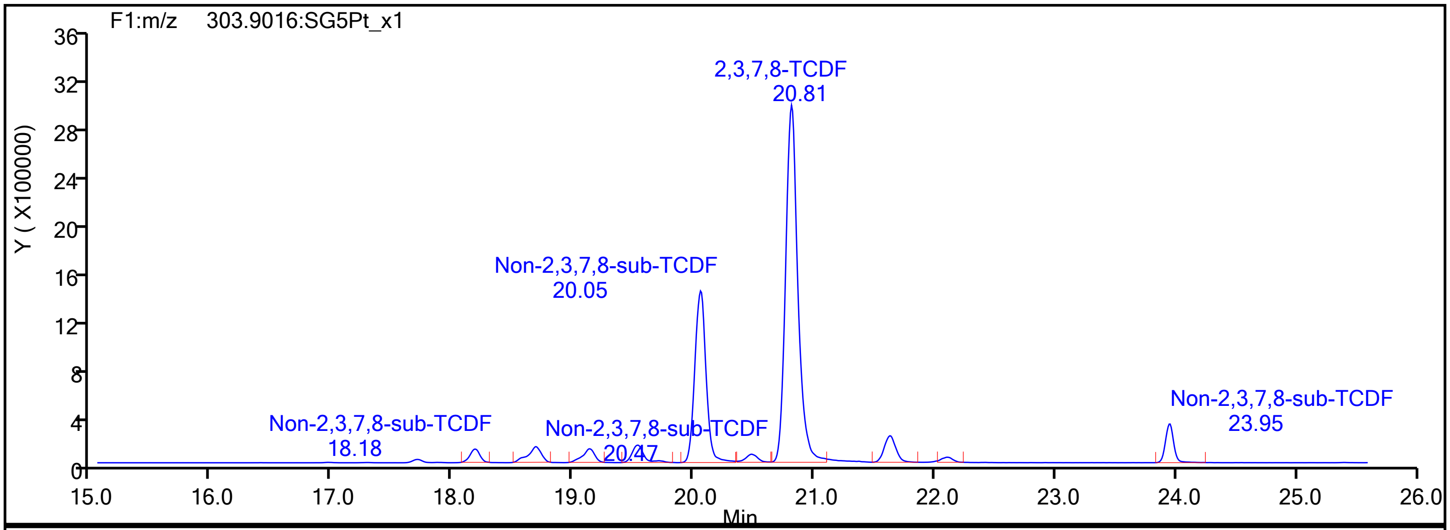

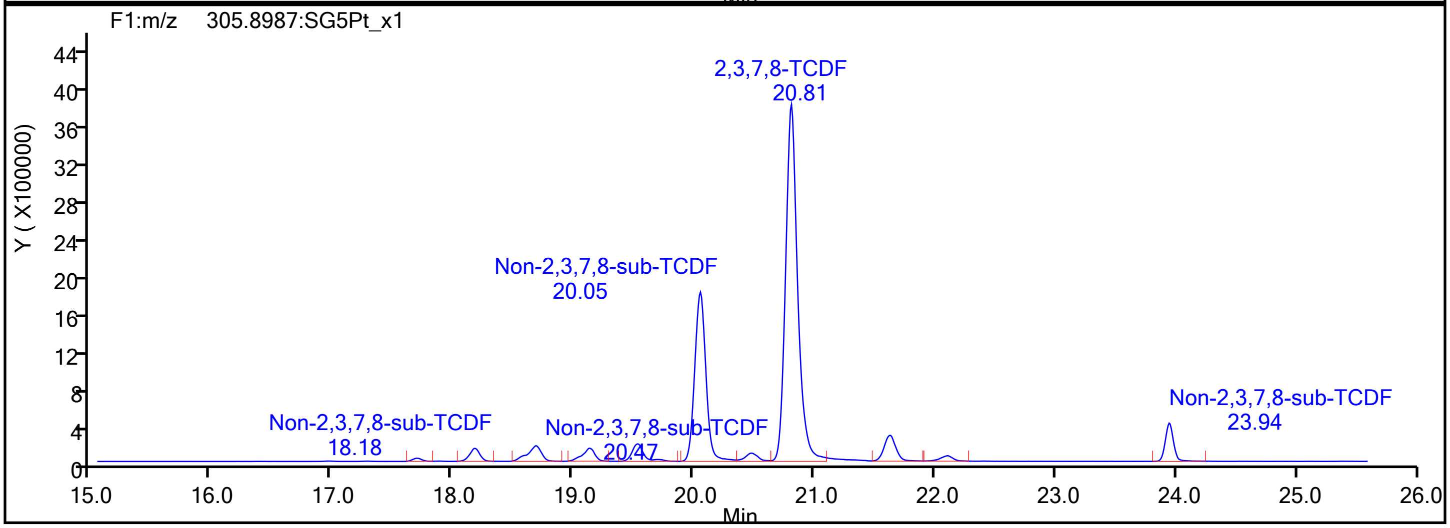

TCDF Interference Mass

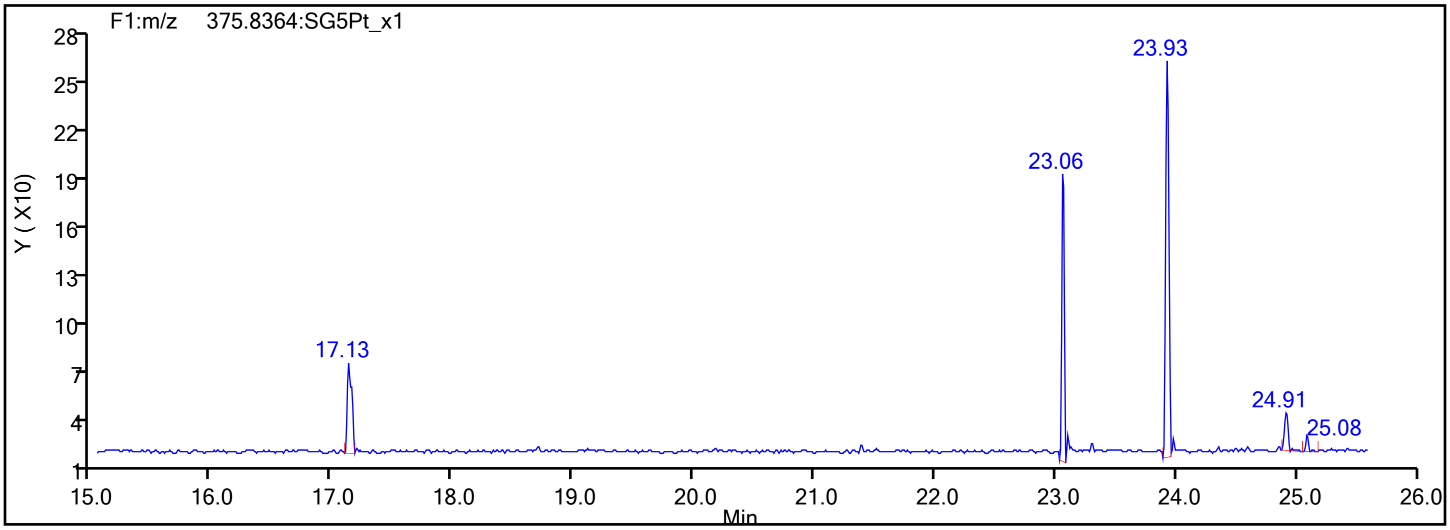

Report Date: 01-Dec-2020 13:55:19
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777
Sample Line#: 39
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

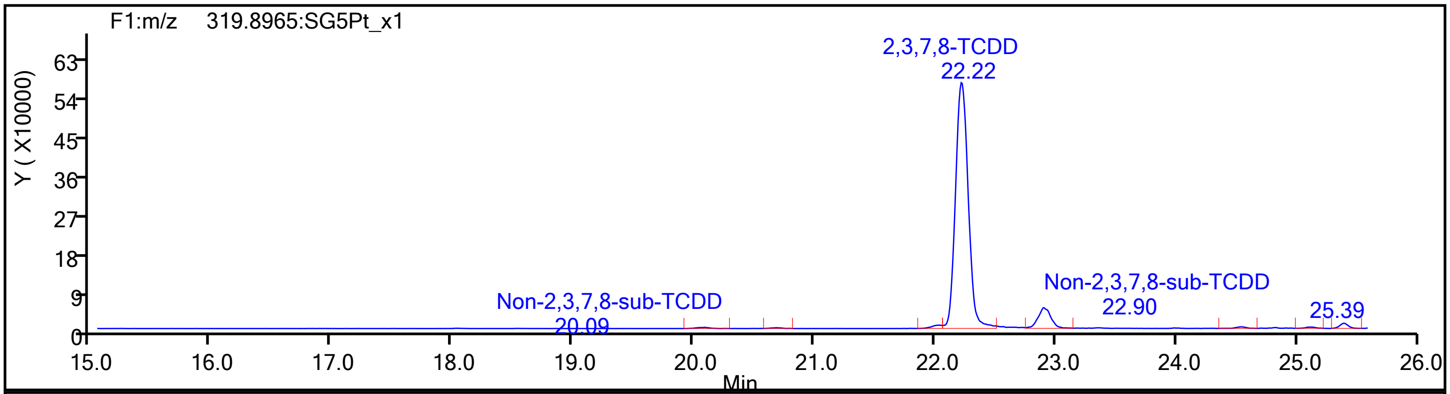

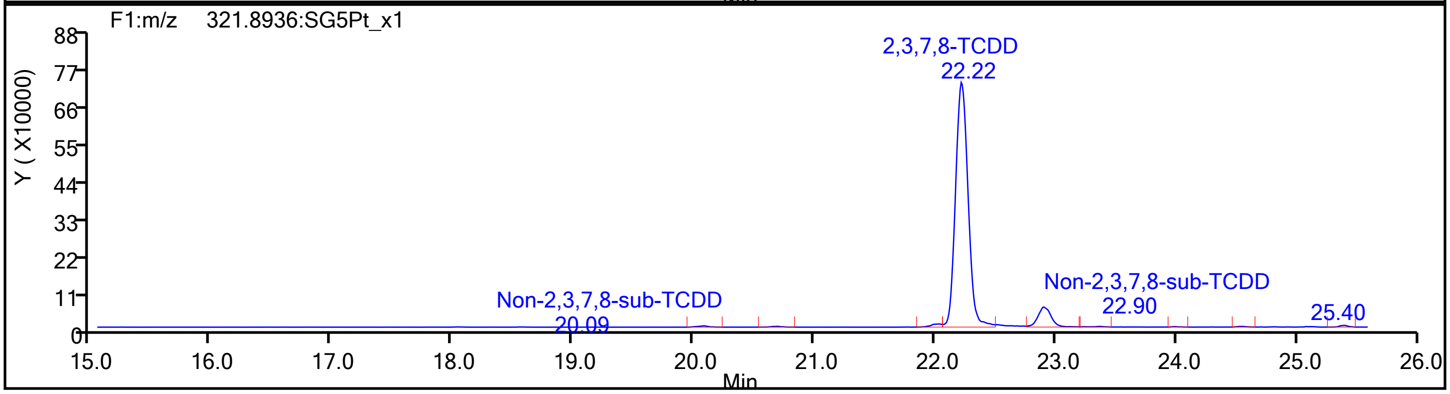

TCDD Standards

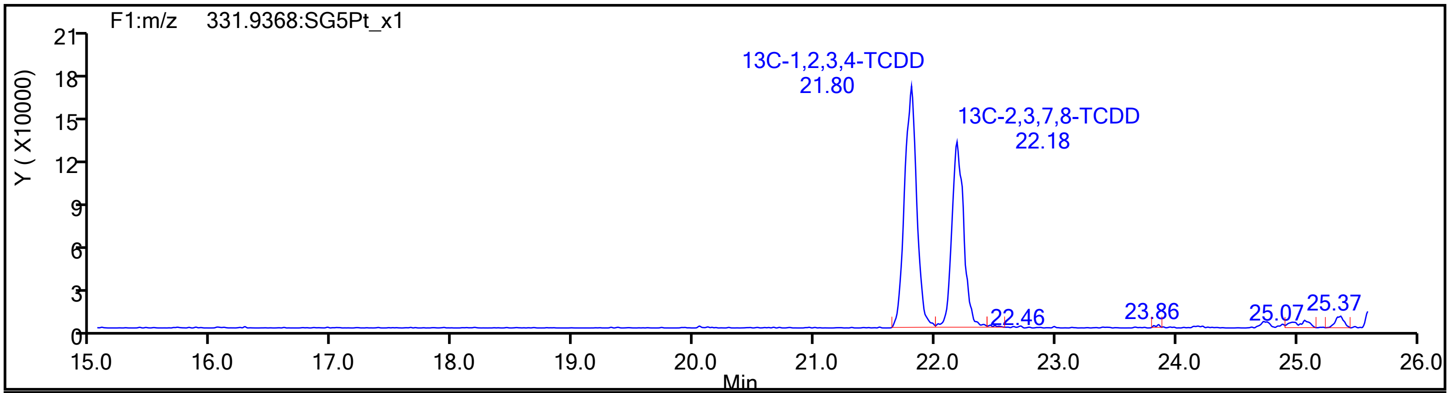

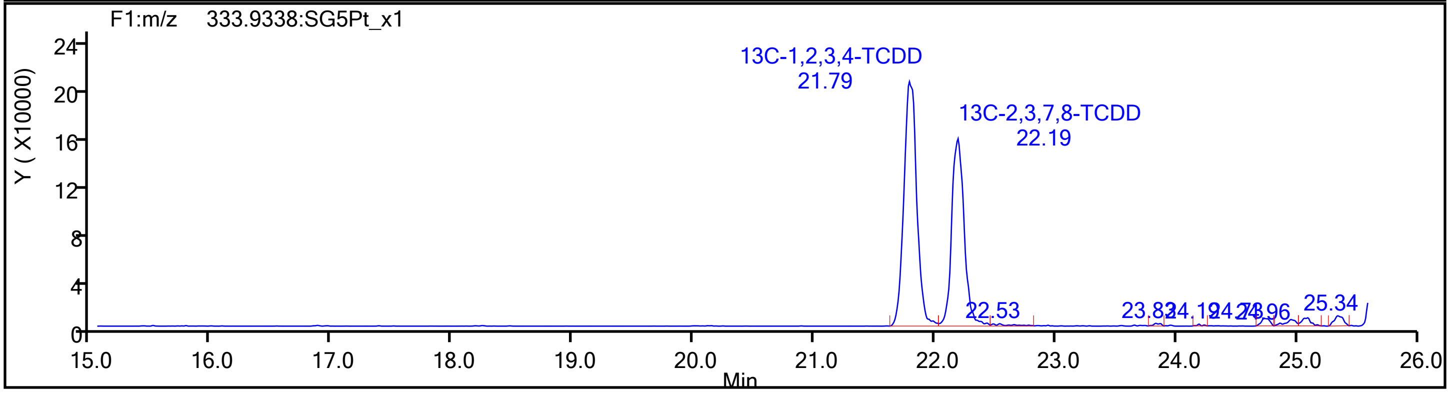

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

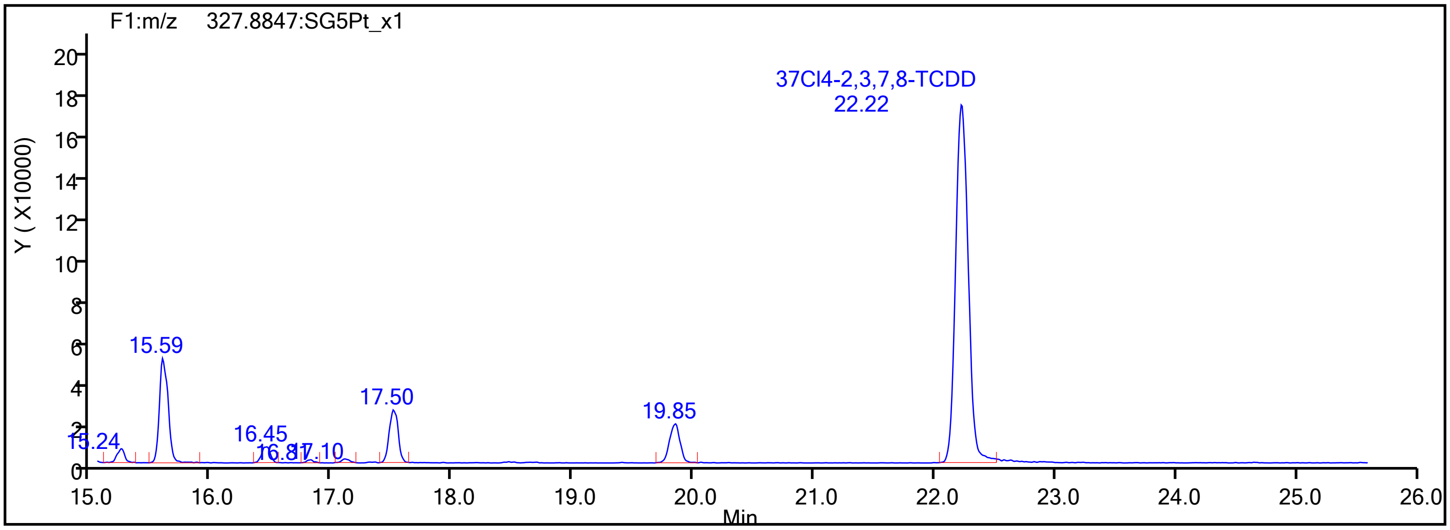

37Cl4-TCDD Standards

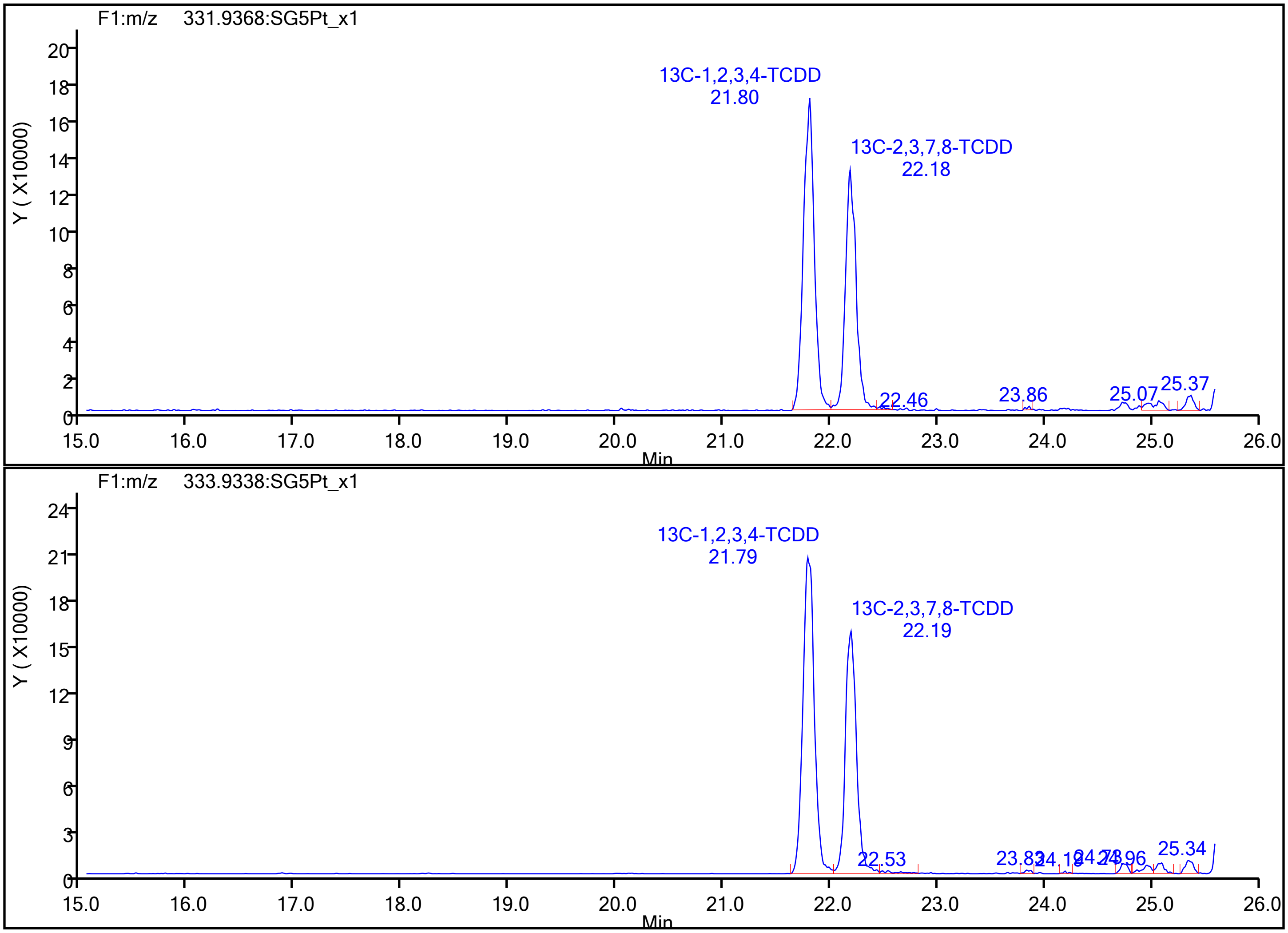

Report Date: 01-Dec-2020 13:55:19 Chrom Revision: 2.3 12-Nov-2020 21:52:08

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

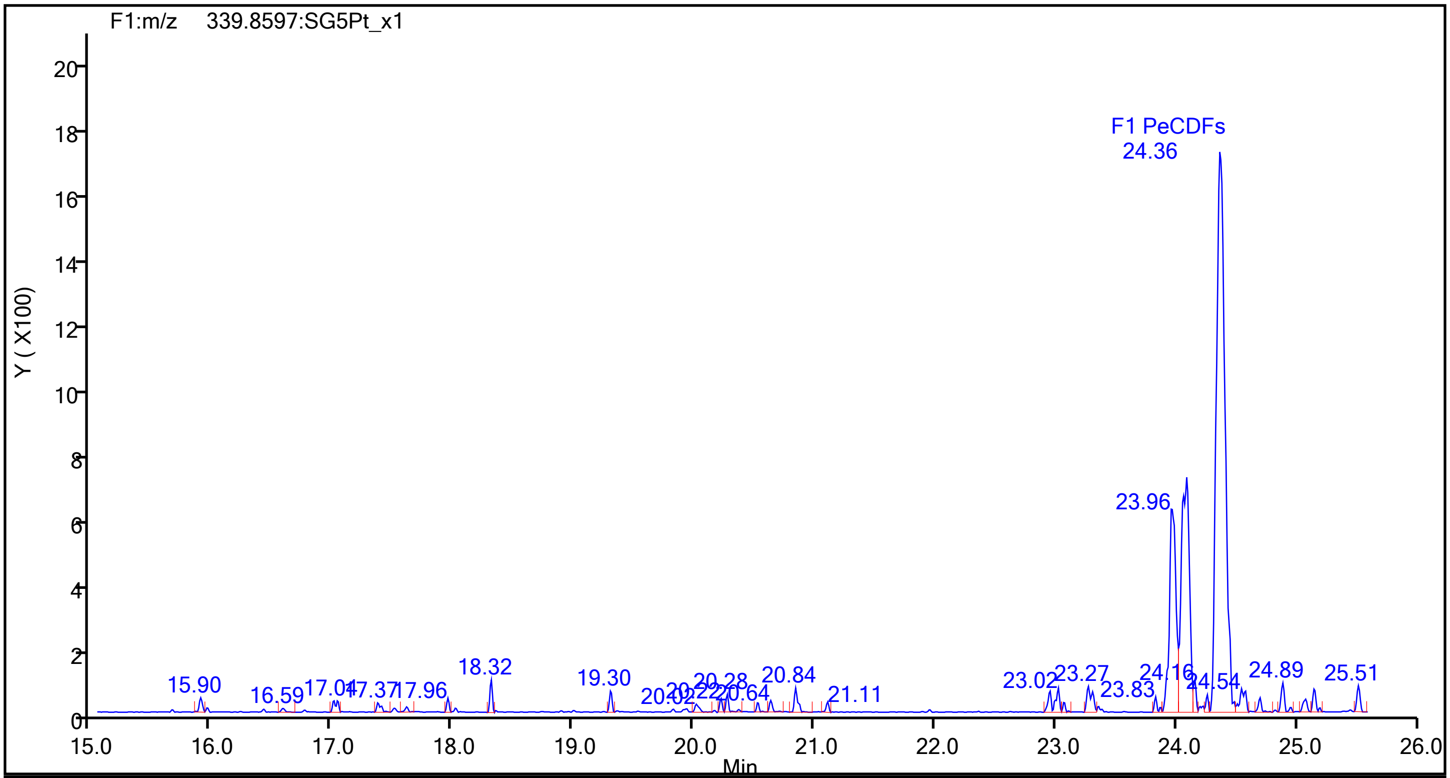

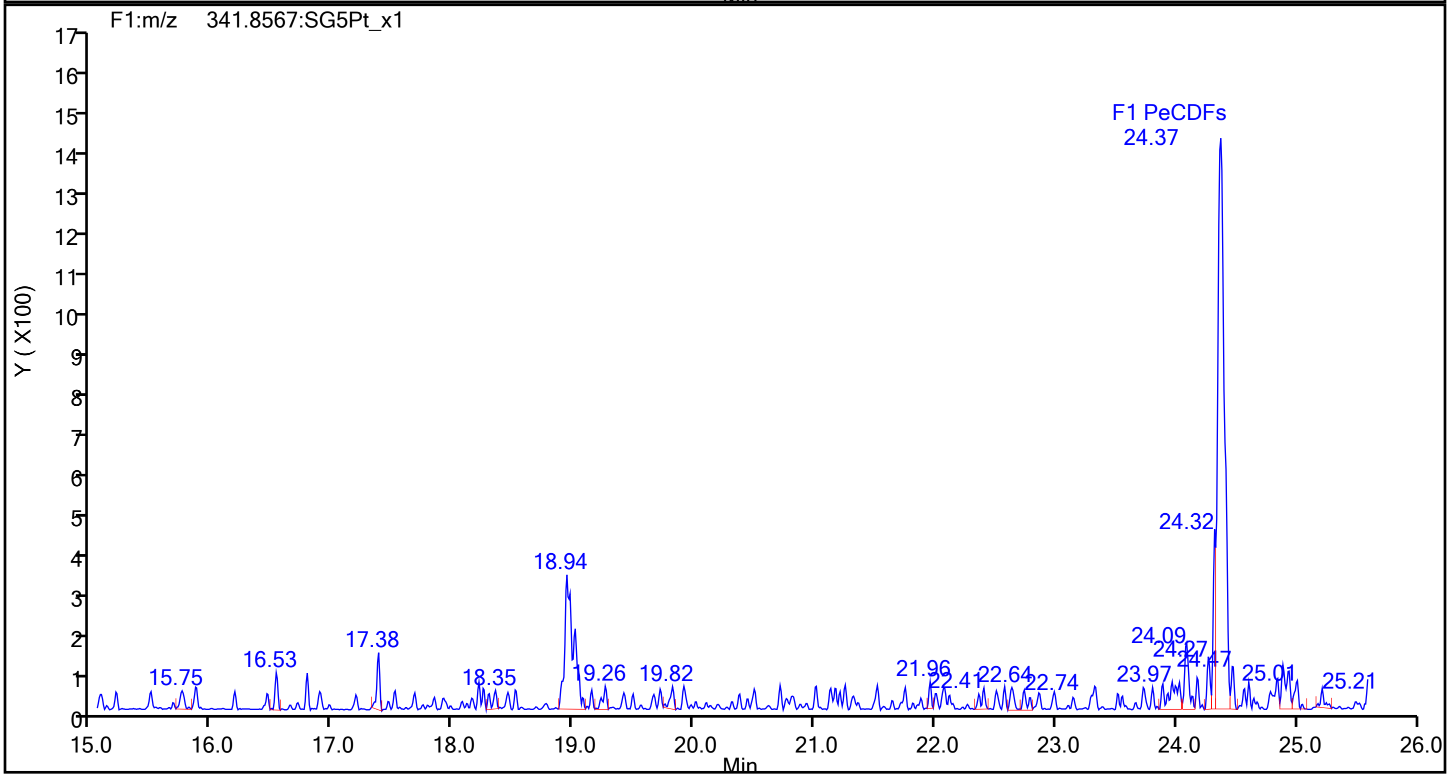

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

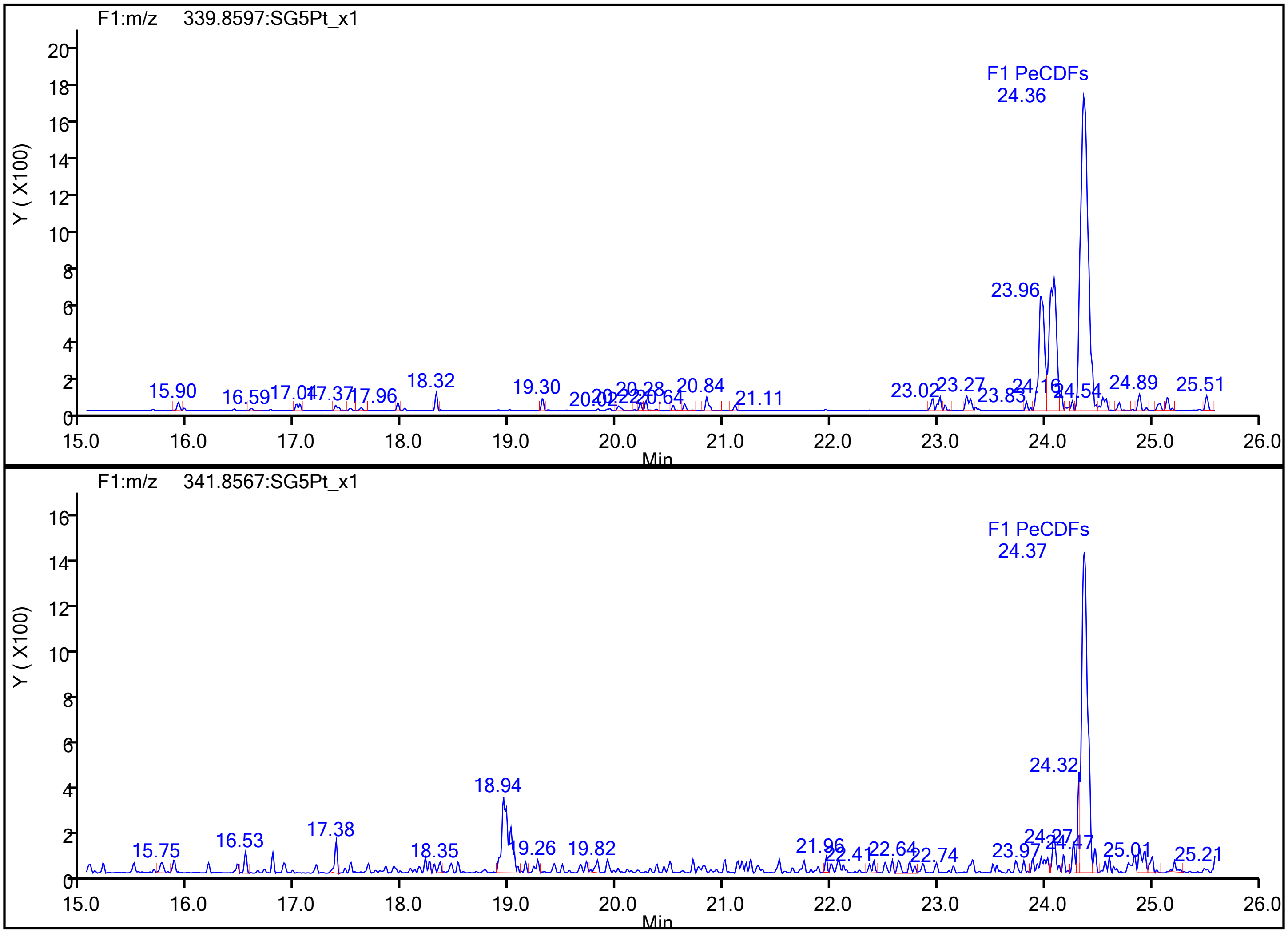

F1 PeCDFs Interference Mass

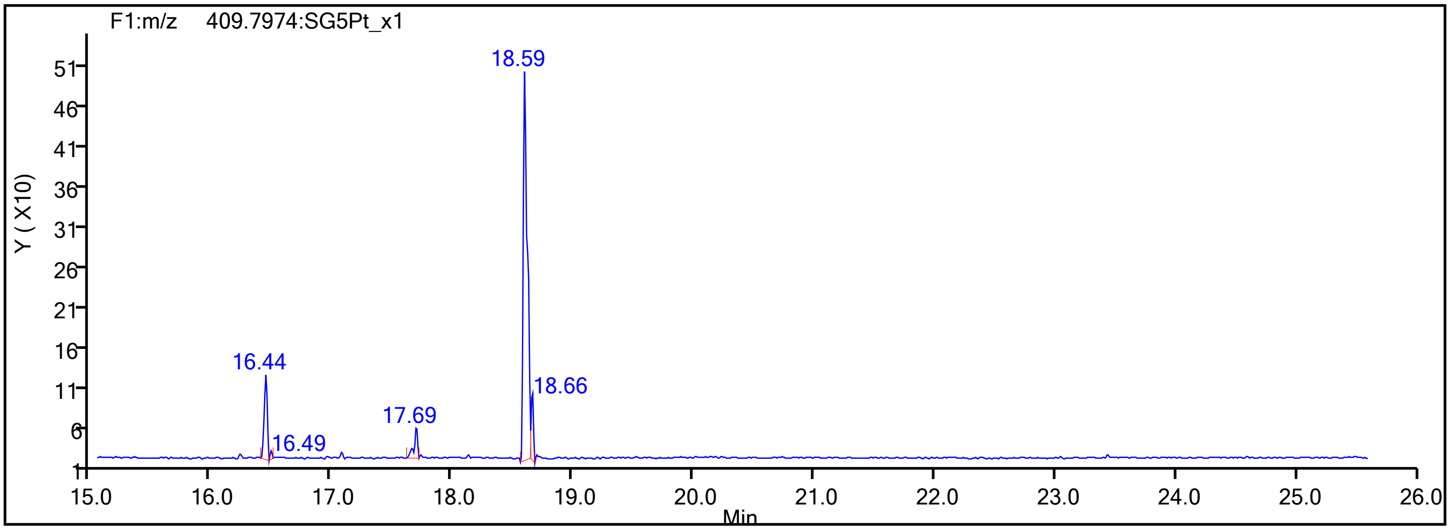

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

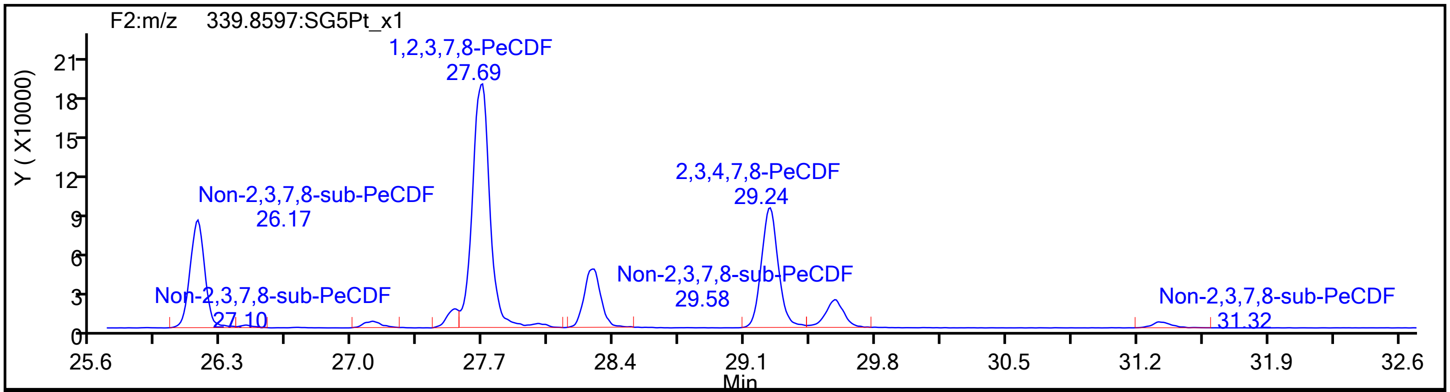

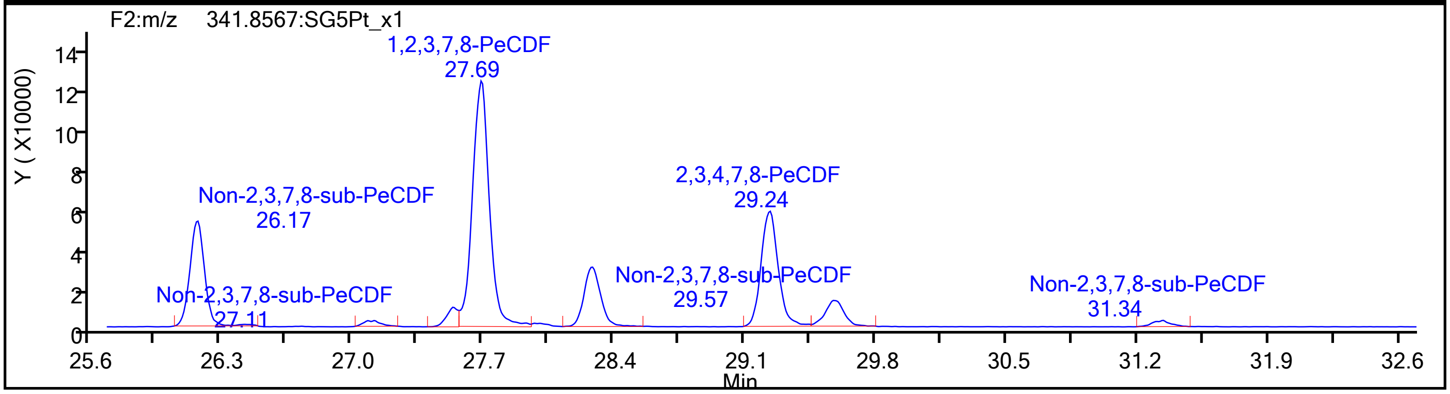

PeCDF Standards

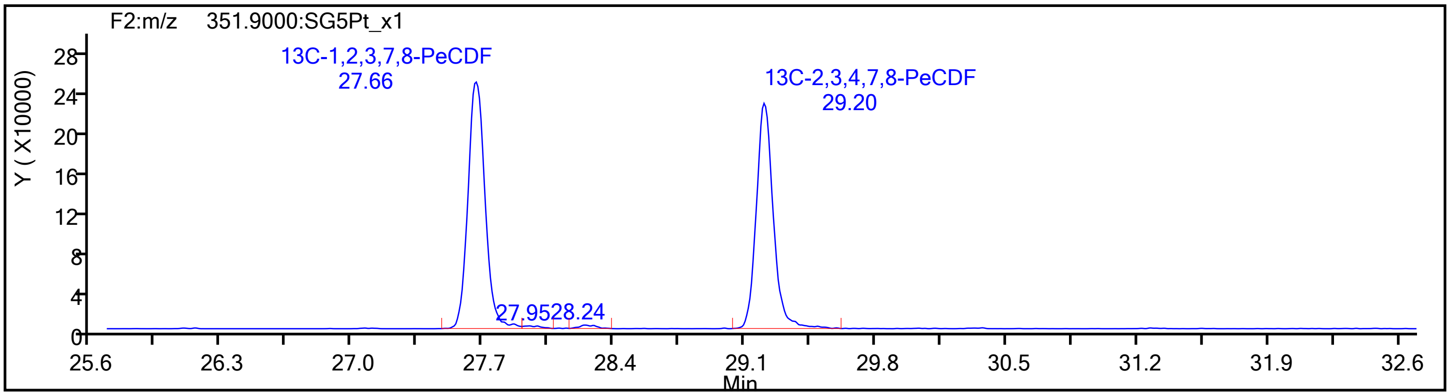

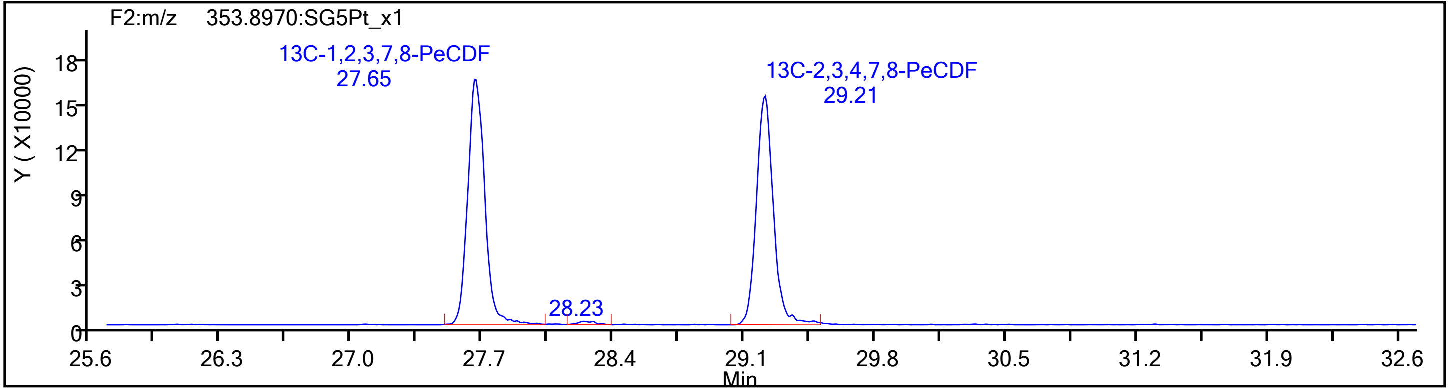

Report Date: 01-Dec-2020 13:55:19 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d

Injection Date: 24-Nov-2020 16:40:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Tank

Worklist#: 434777

Sample Line#: 39

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

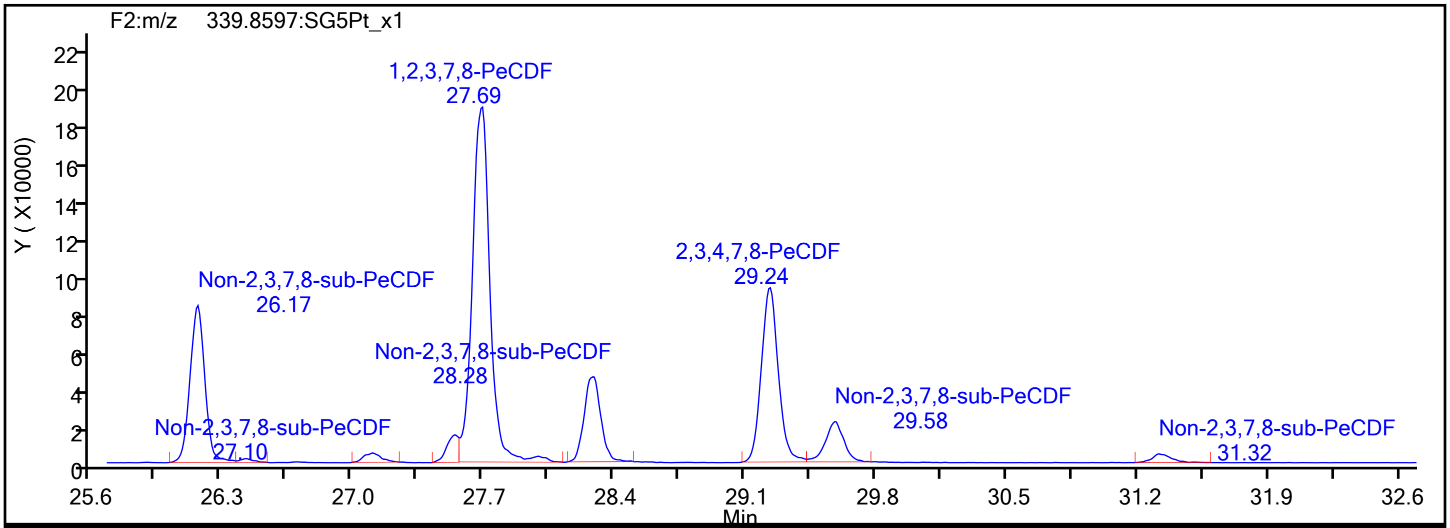

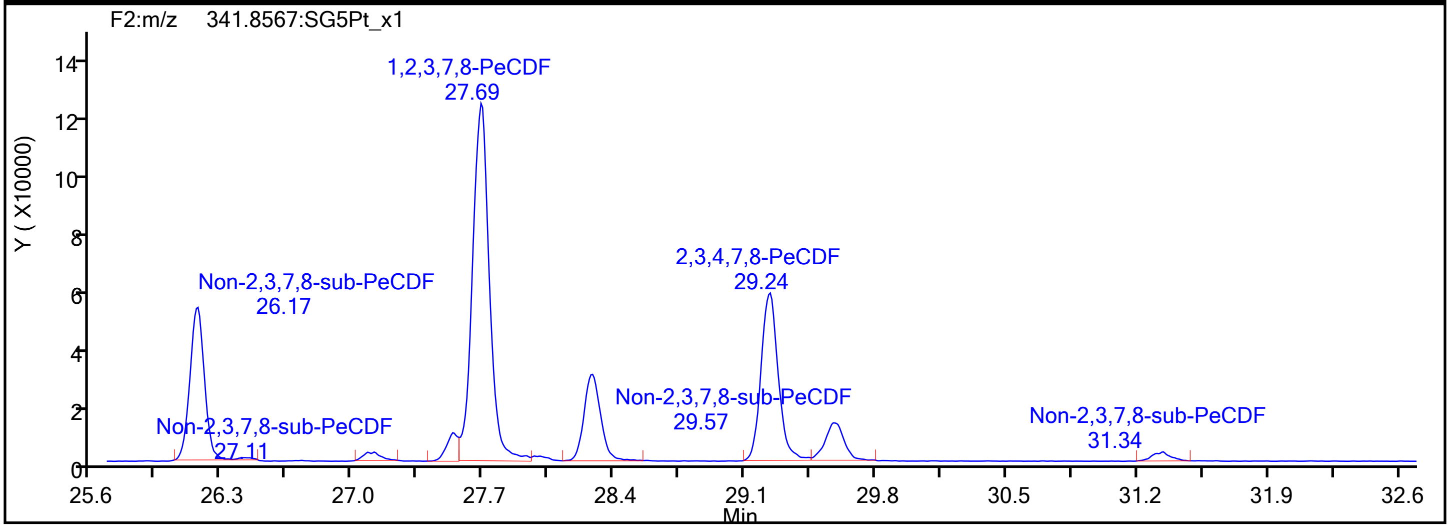

PeCDF Interference Mass

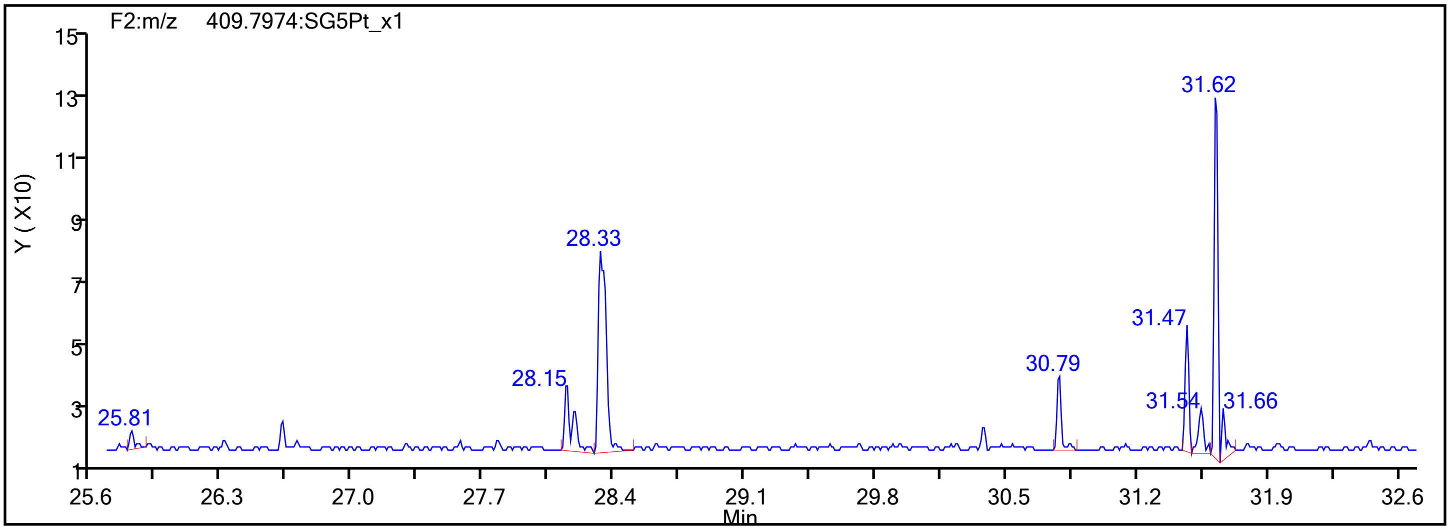

Report Date: 01-Dec-2020 13:55:19 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Injection Date:	24-Nov-2020 16:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

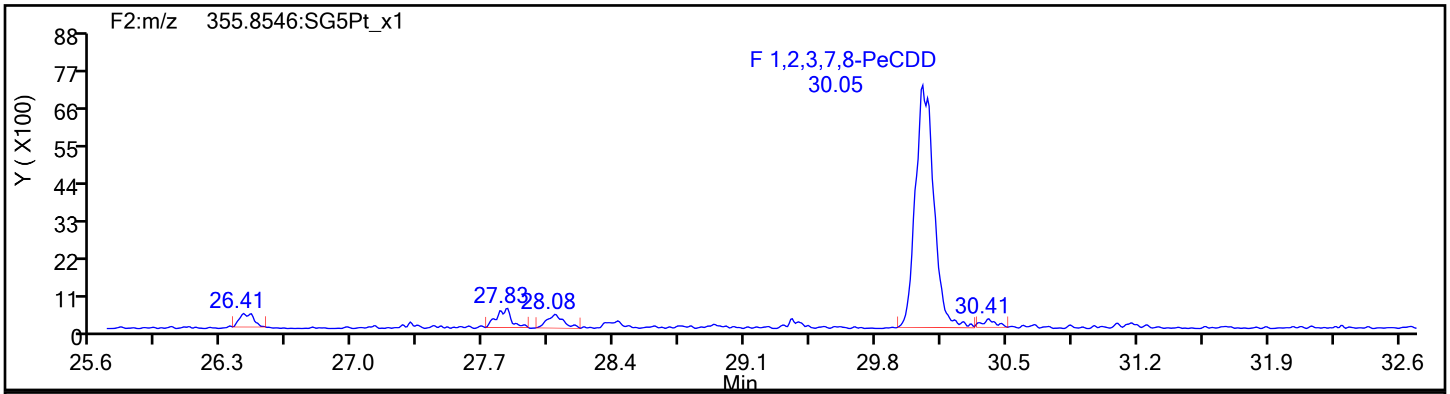

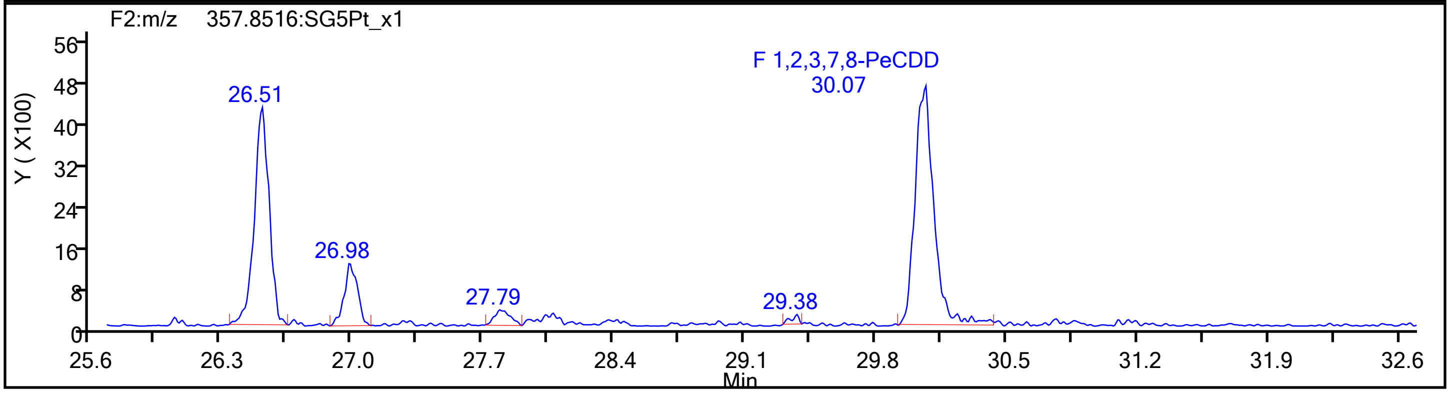

PeCDD Standards

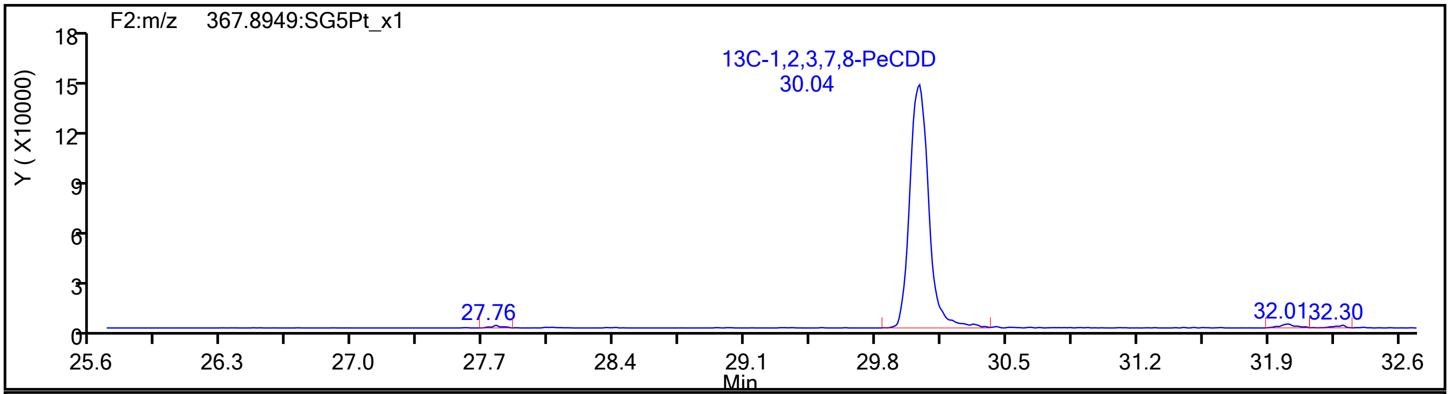

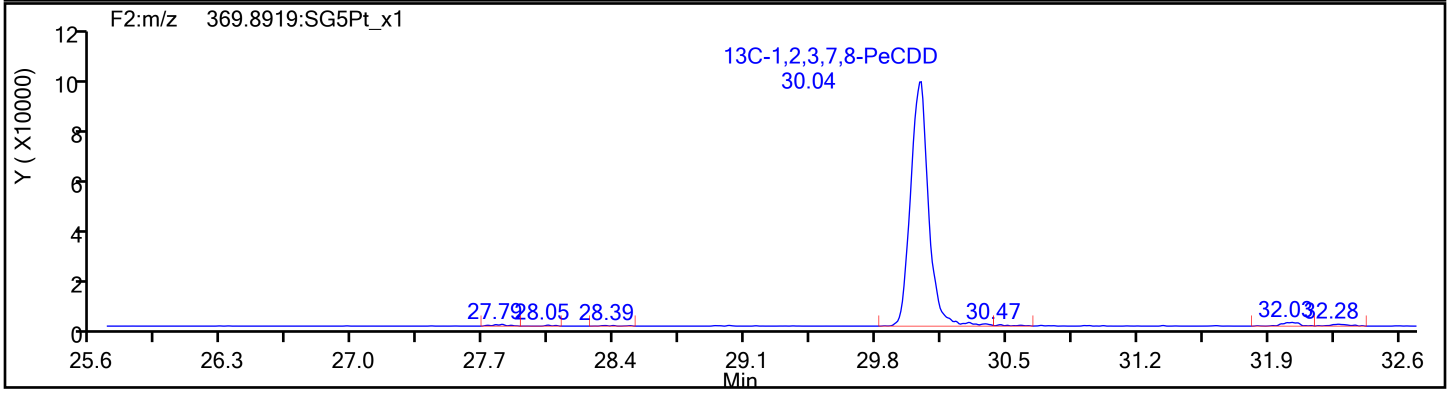

Report Date: 01-Dec-2020 13:55:19   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Injection Date:	24-Nov-2020 16:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

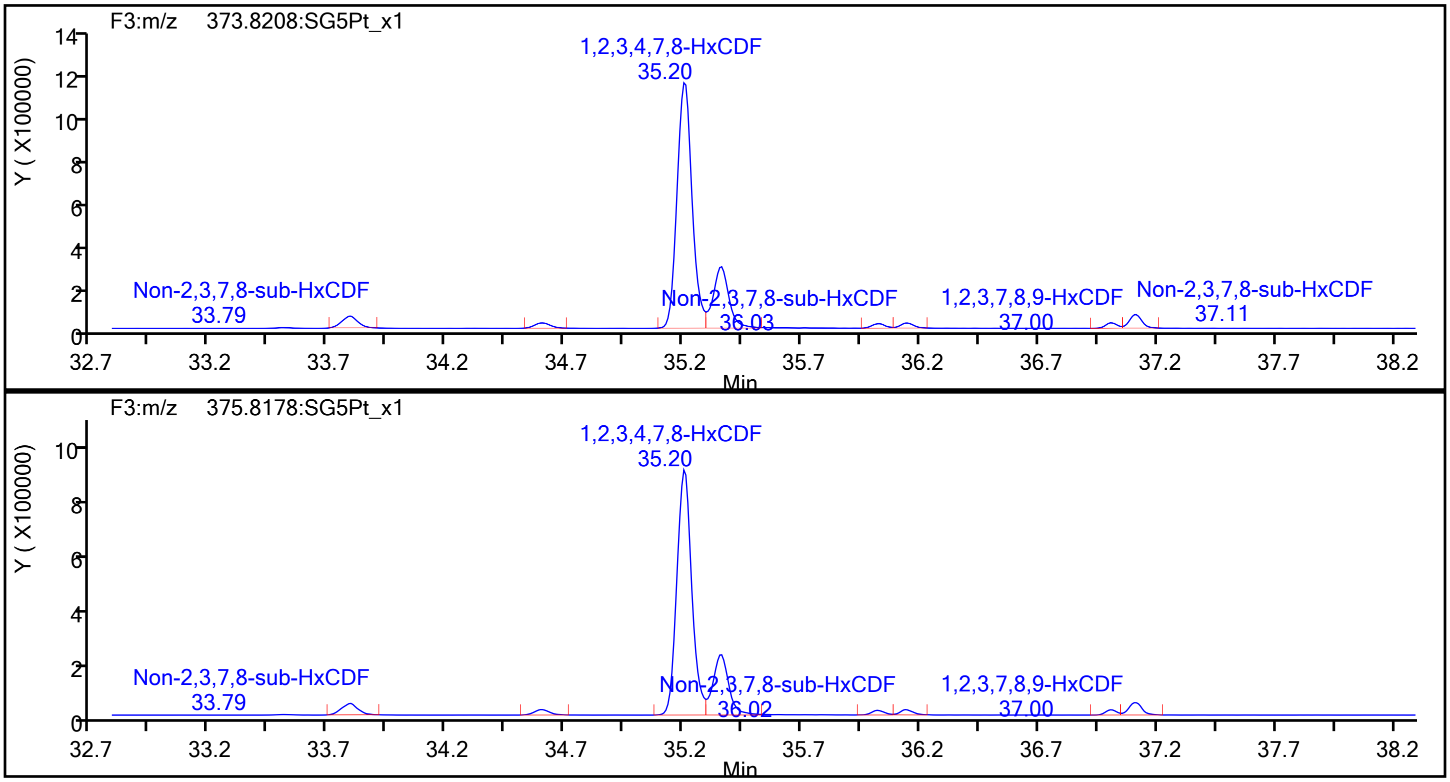

HxCDF Standards

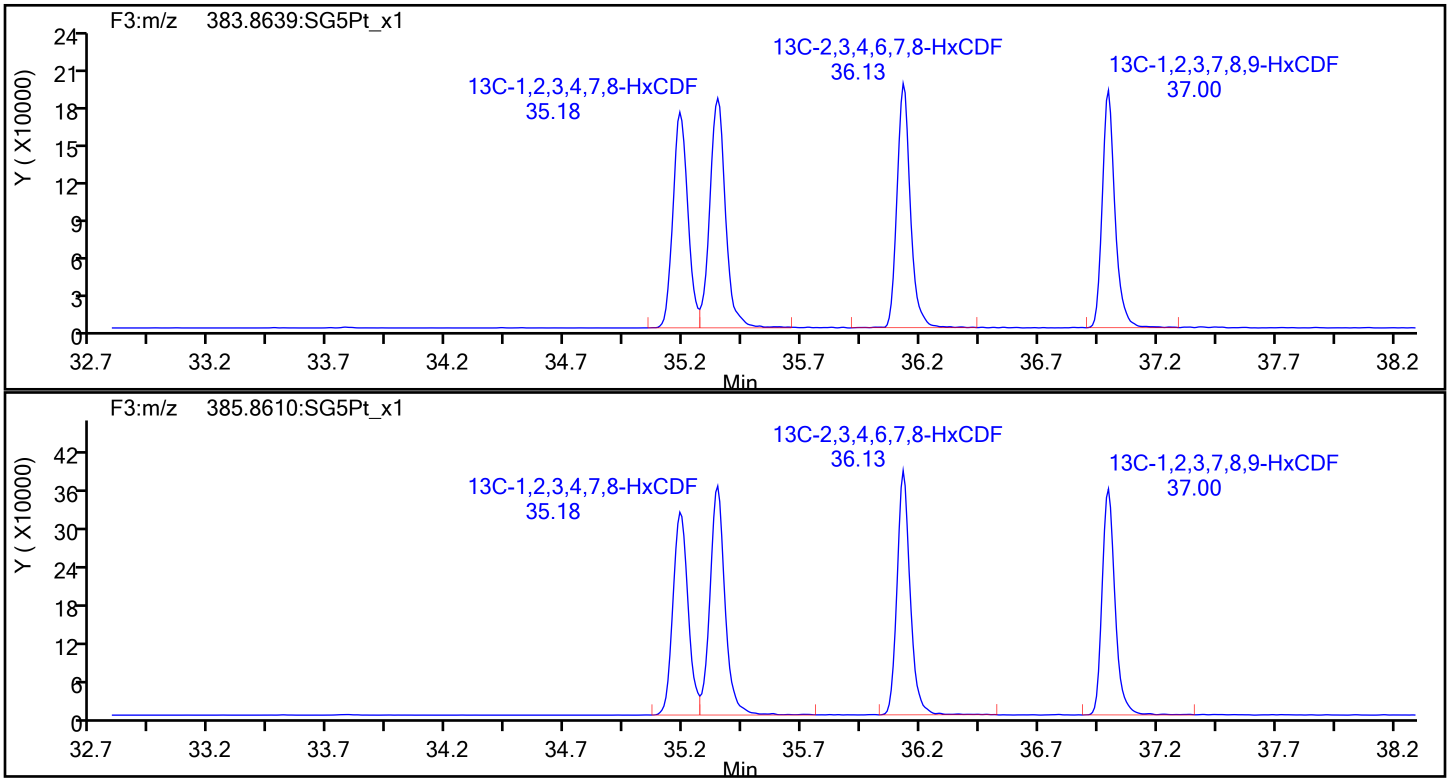

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

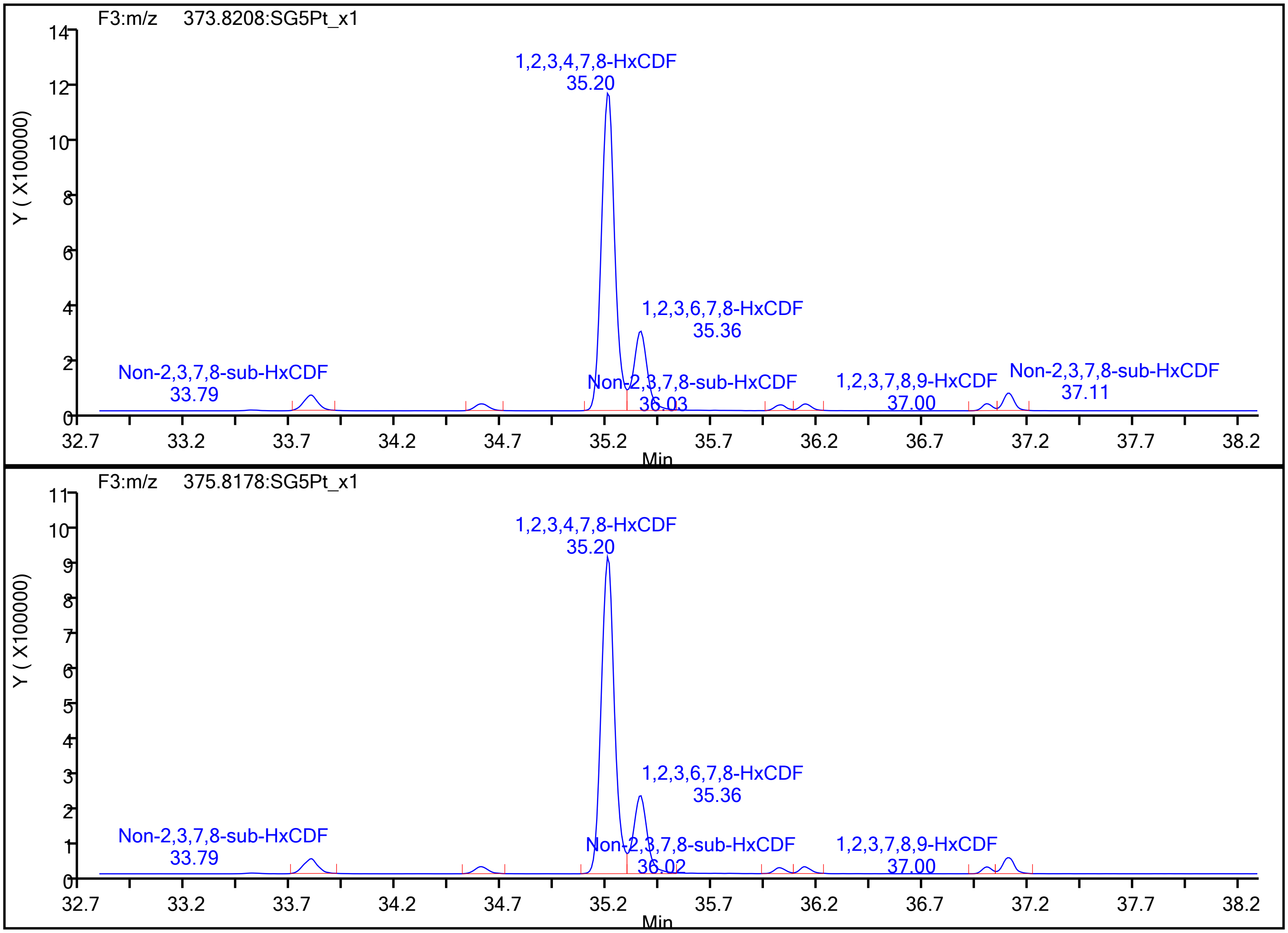

HxCDF Interference Mass

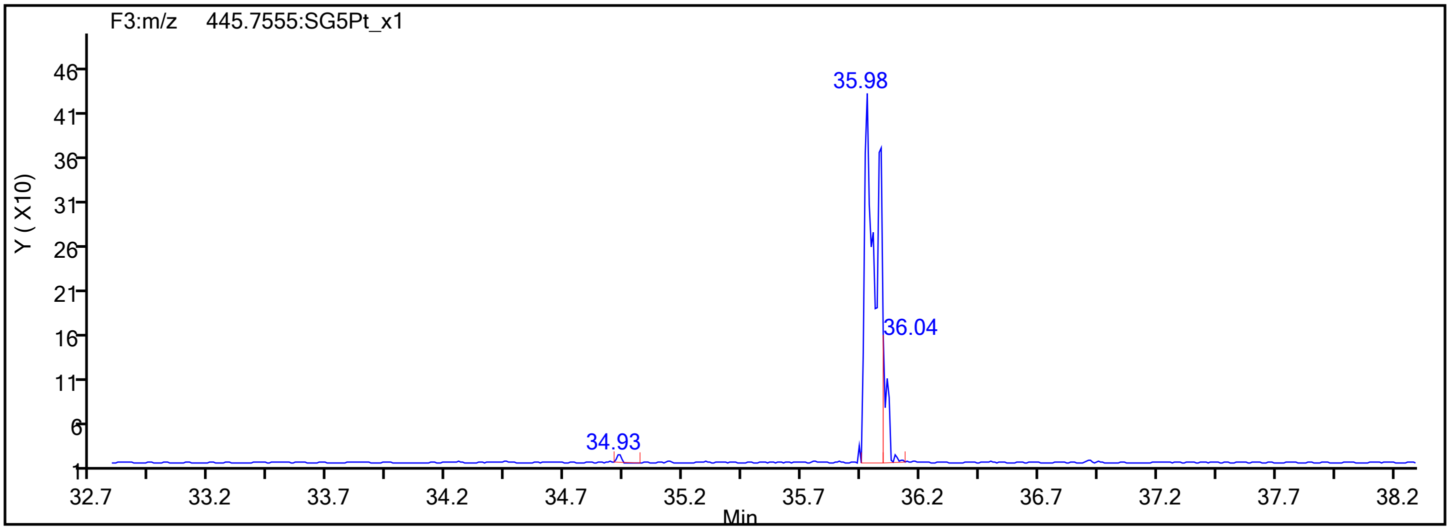

Report Date: 01-Dec-2020 13:55:19　　Chrom Revision: 2.3　12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d

Injection Date: 24-Nov-2020 16:40:00　　Injection Vol: 1.0 ul

Instrument ID: DFS 1　　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Tank

Worklist#: 434777　　Sample Line#: 39

Column Type: DB-5　　Column Dia: 0.32 mm

HxCDD

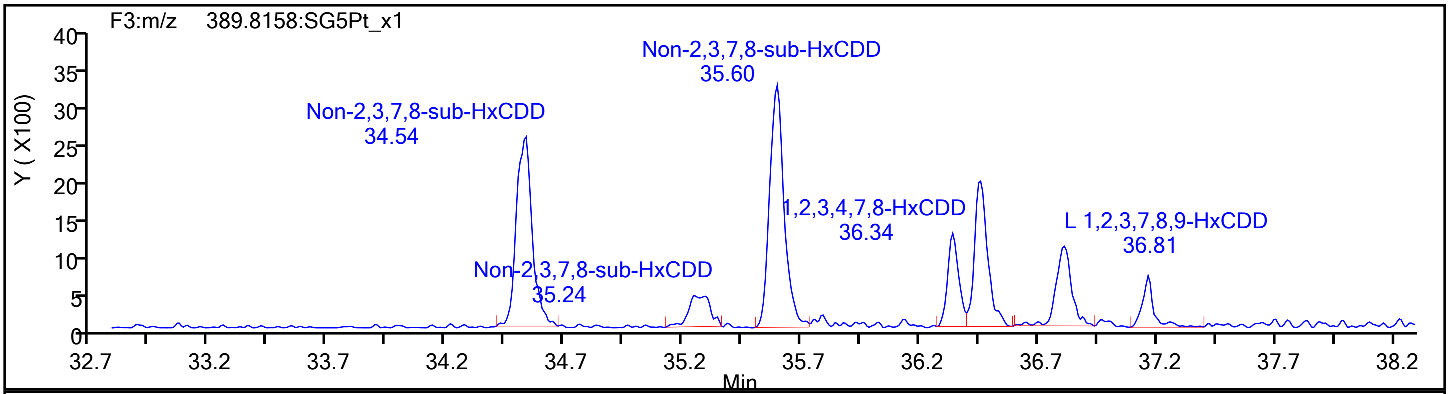

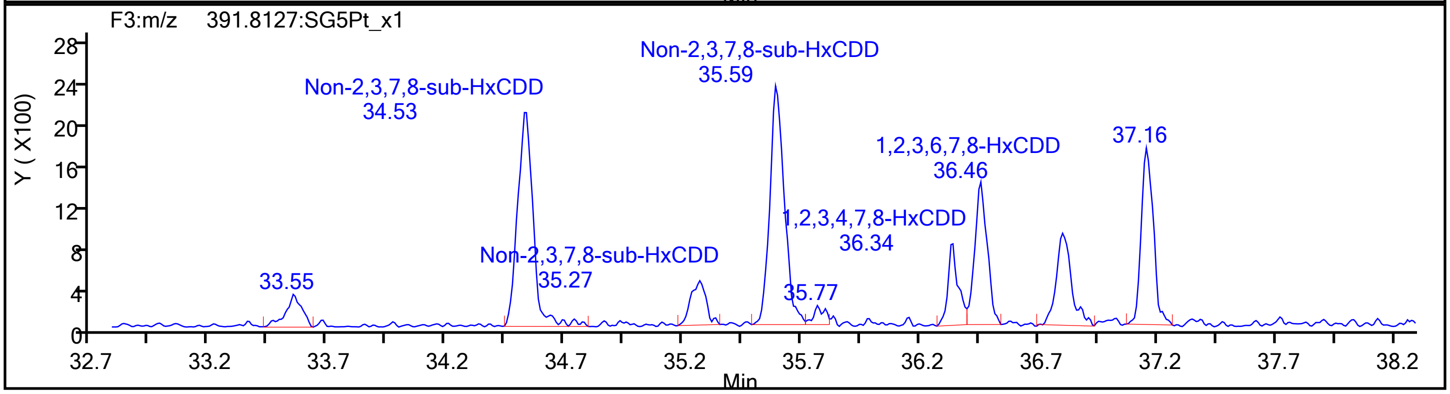

HxCDD Standards

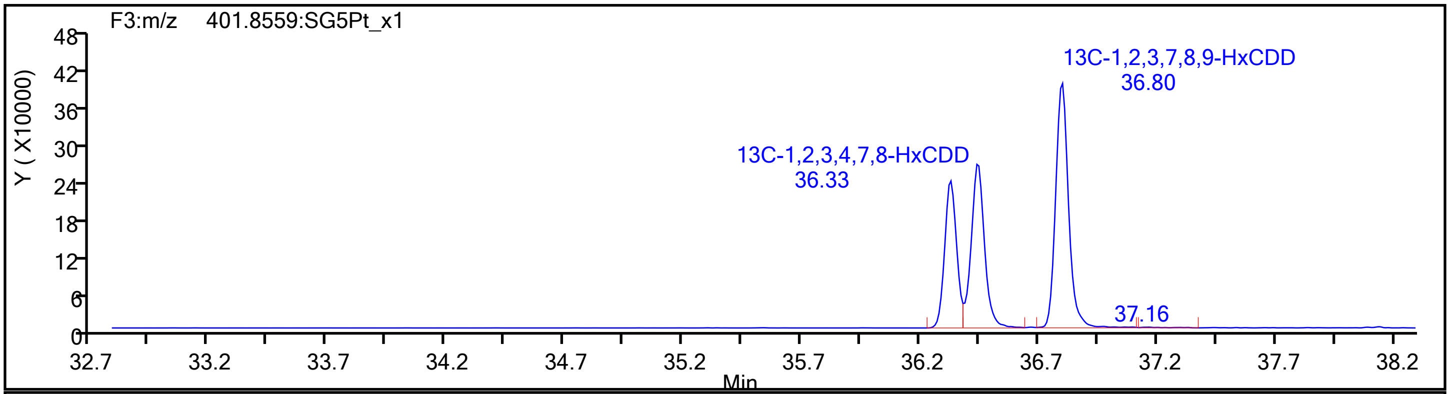

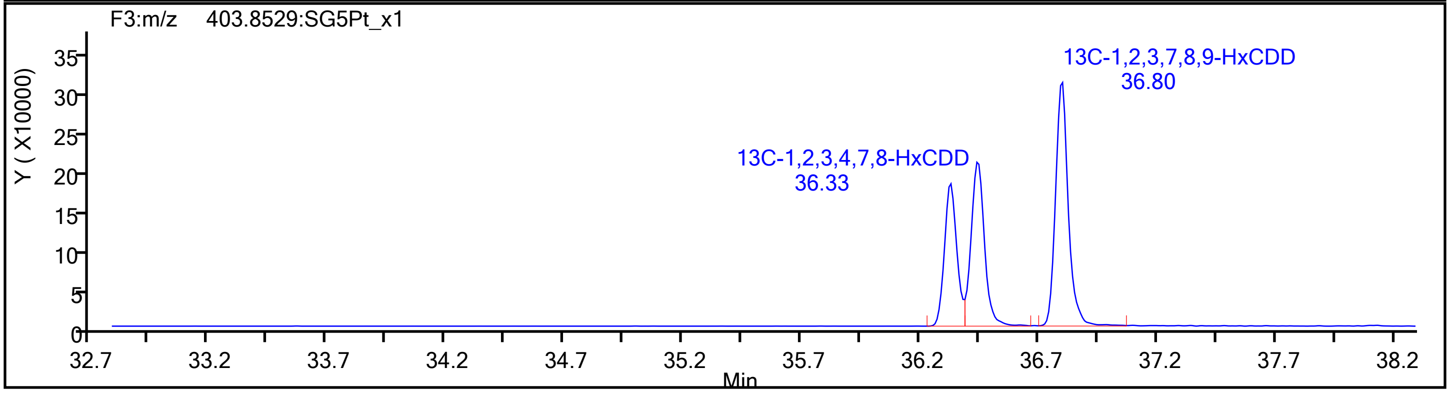

Report Date: 01-Dec-2020 13:55:20 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777 Sample Line#: 39
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

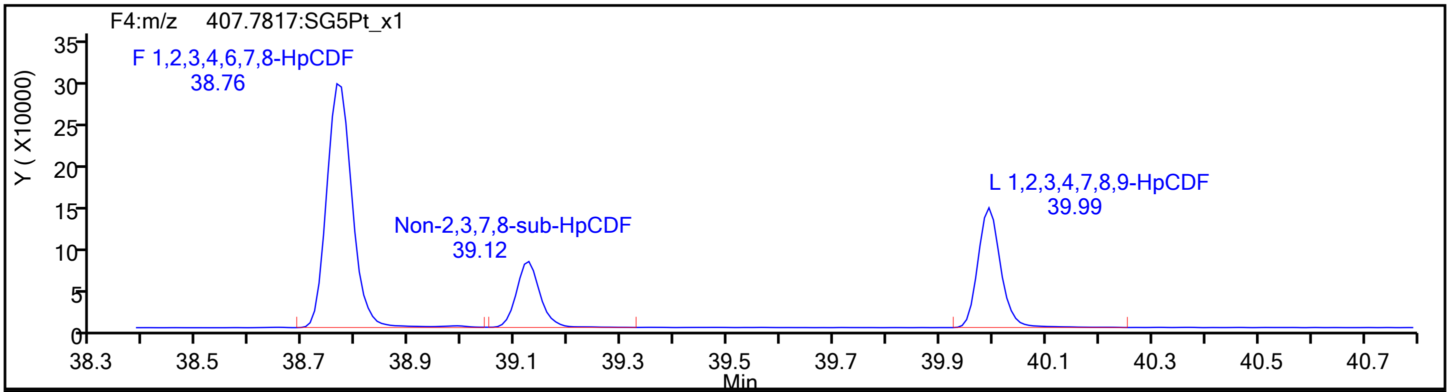

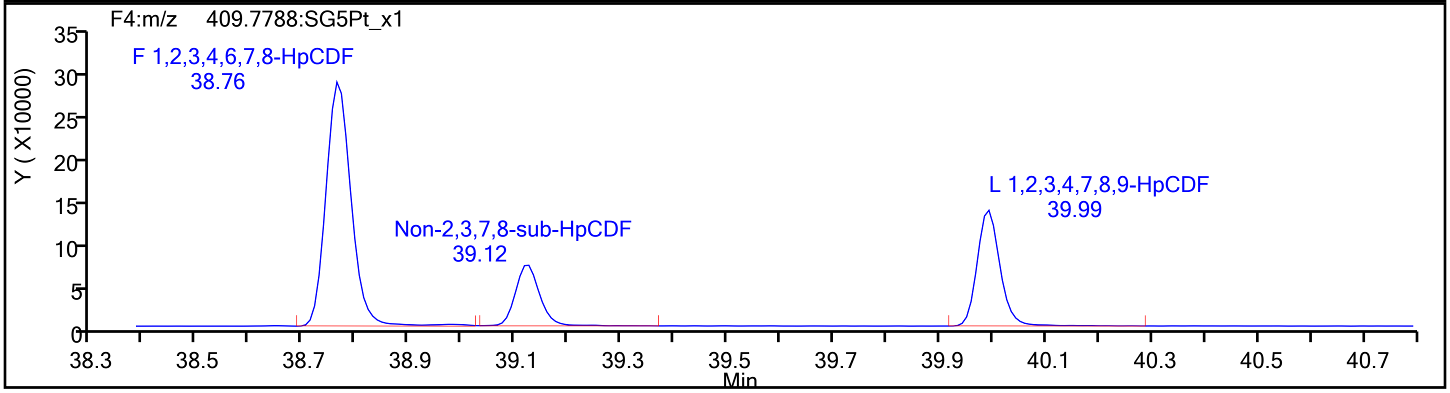

HpCDF Standards

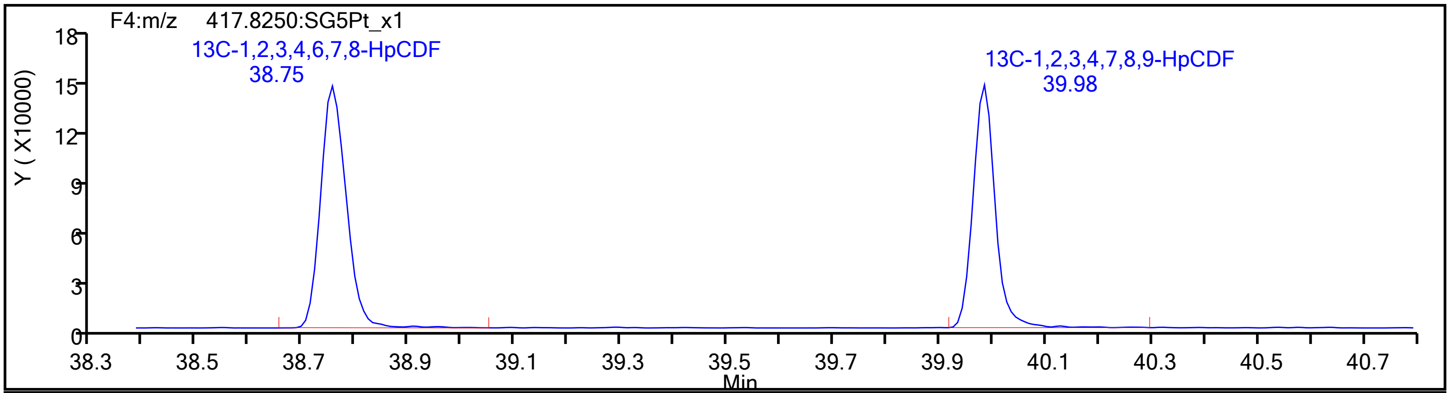

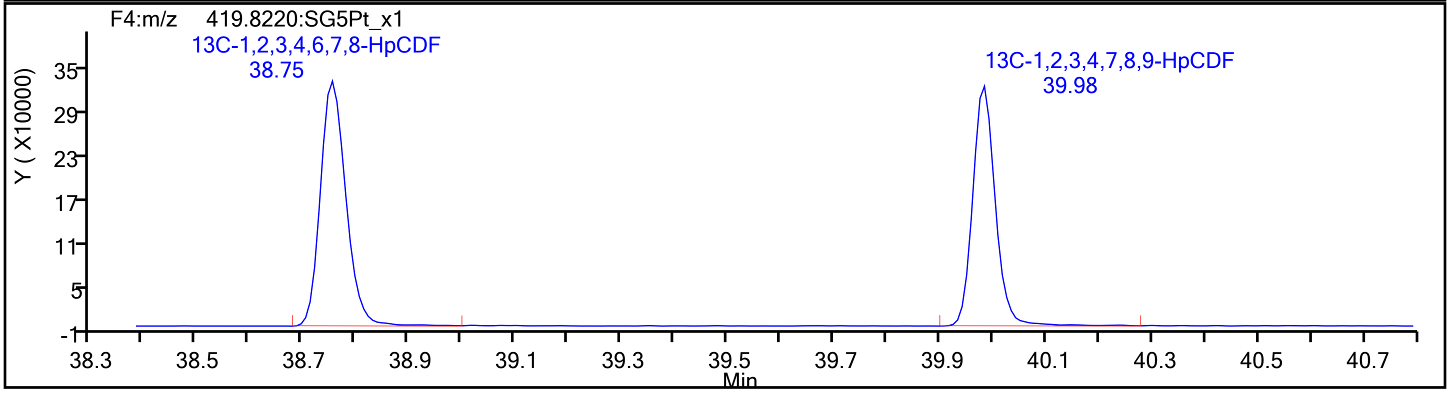

Report Date: 01-Dec-2020 13:55:20
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777
Sample Line#: 39
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

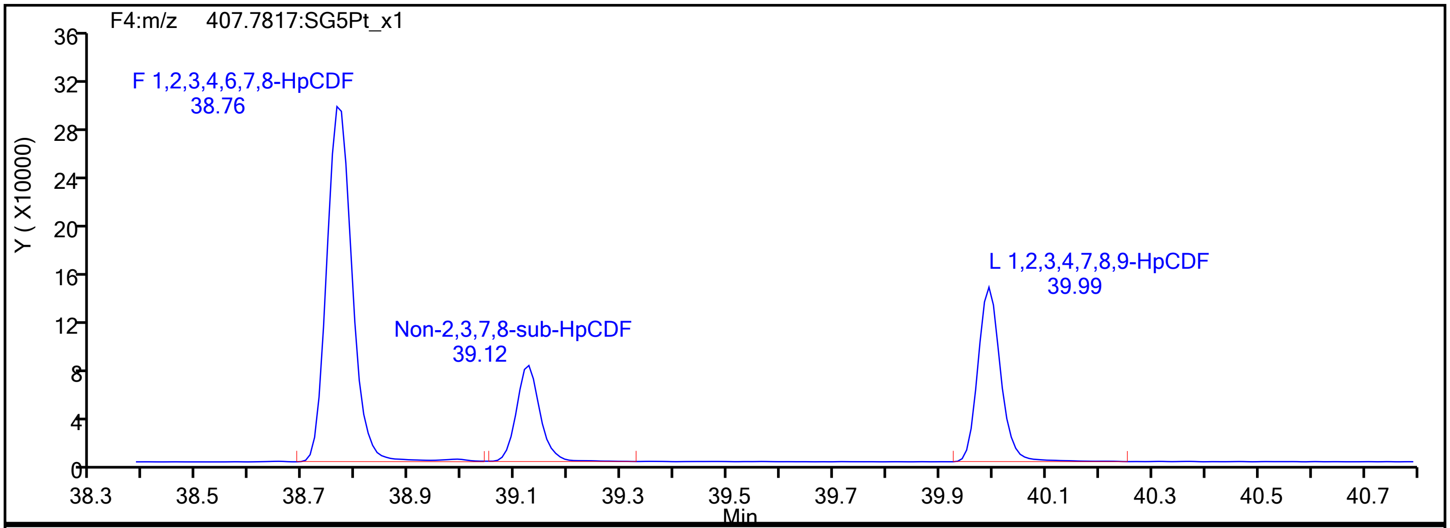

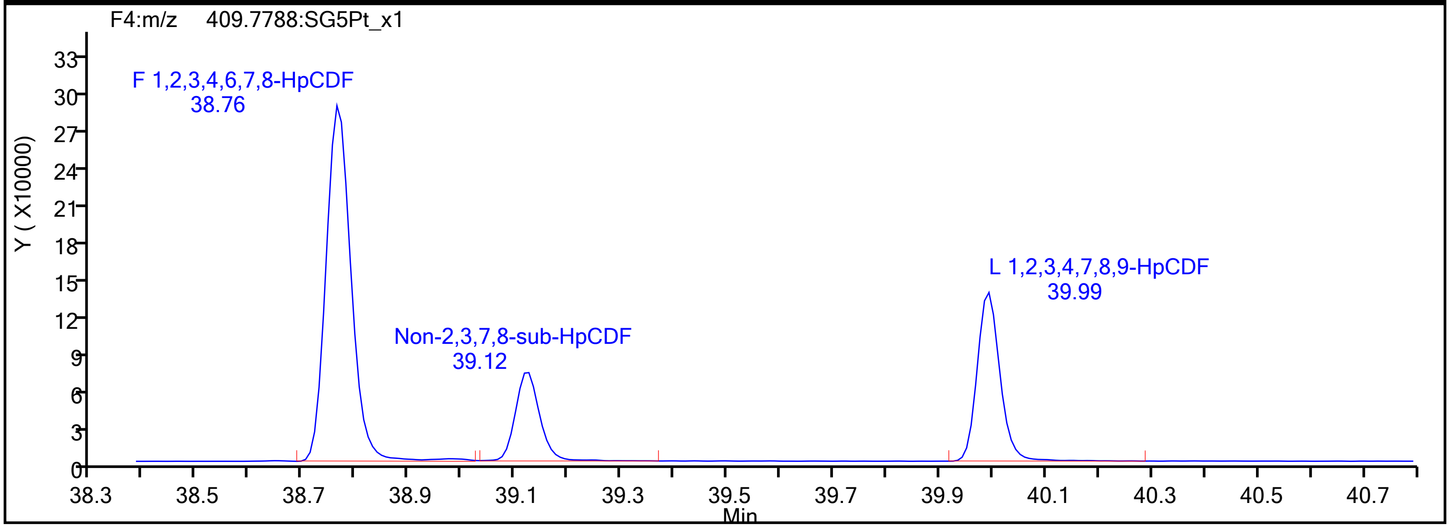

HpCDF Interference Mass

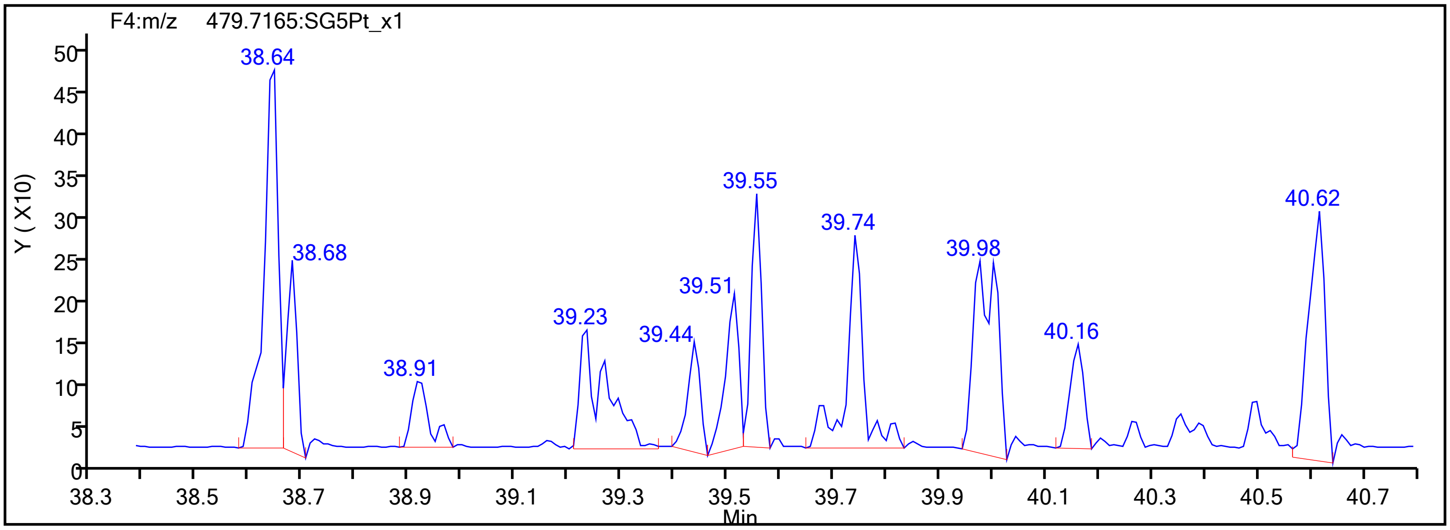

Report Date: 01-Dec-2020 13:55:20 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777 Sample Line#: 39
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

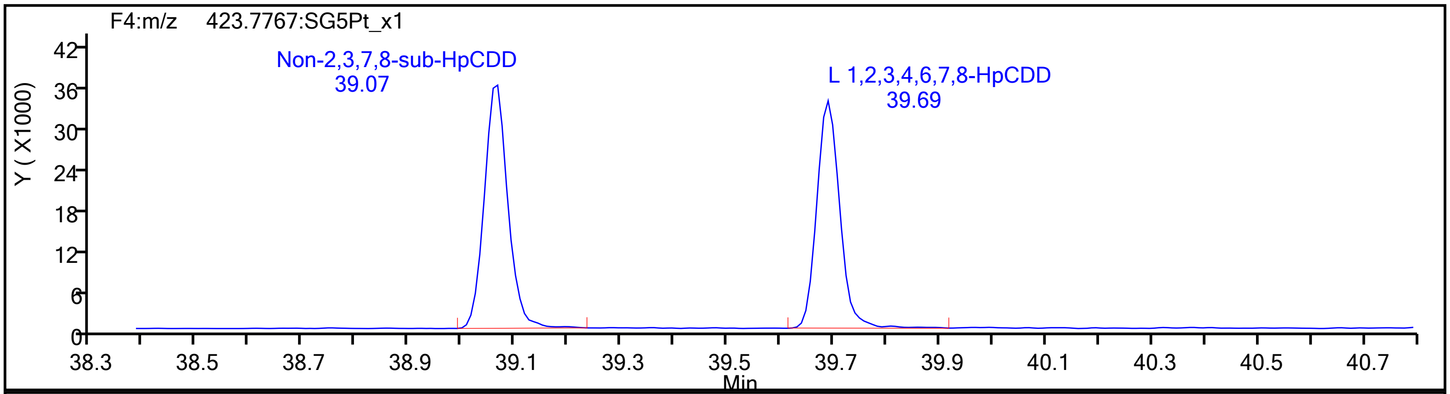

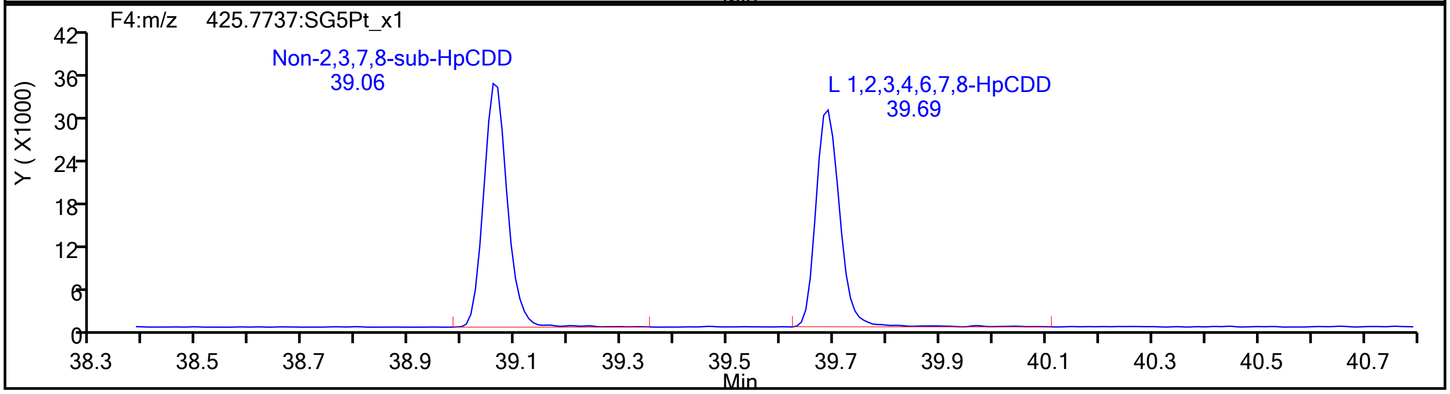

HpCDD Standards

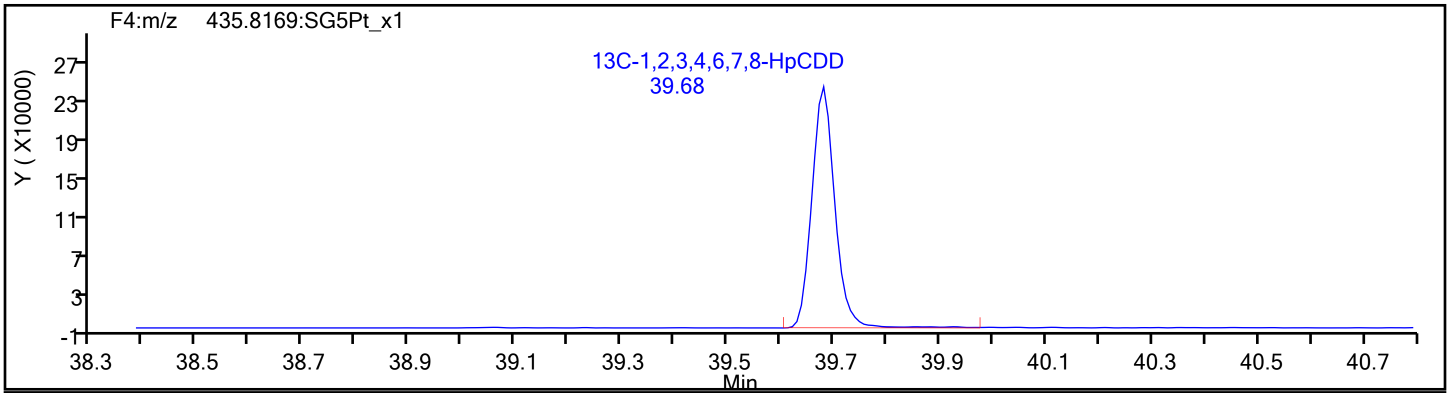

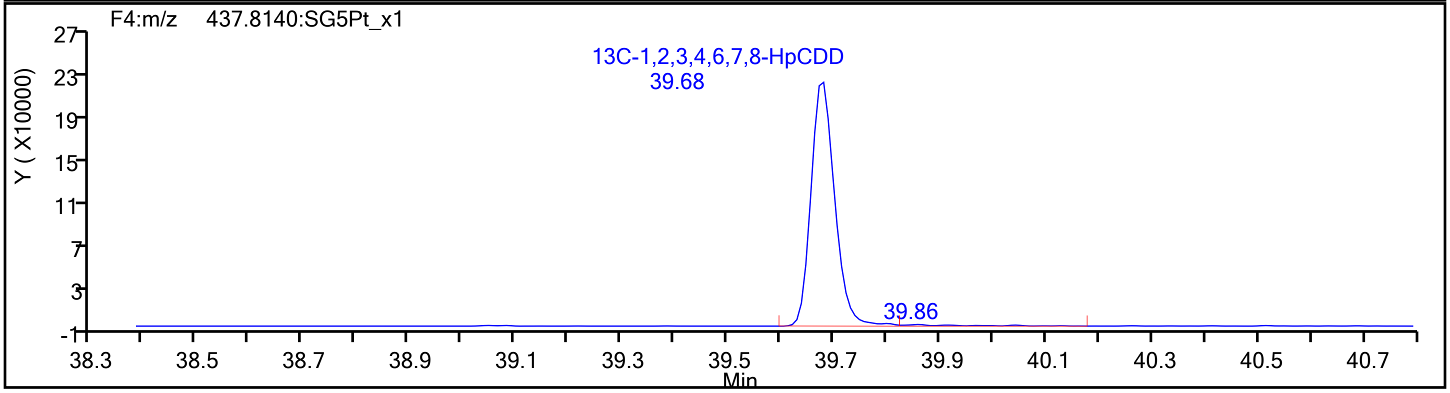

Report Date: 01-Dec-2020 13:55:20 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Injection Date:	24-Nov-2020 16:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

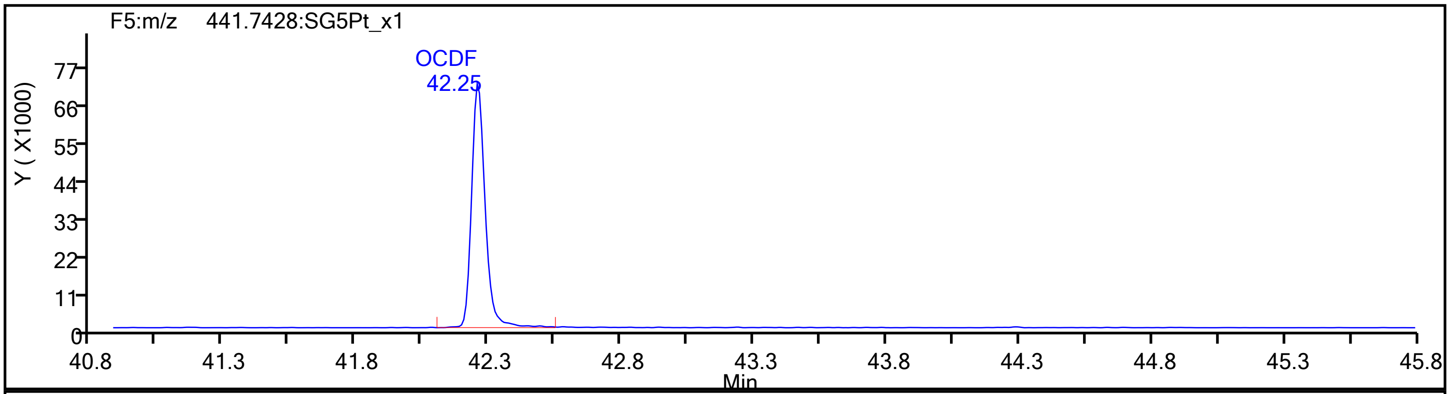

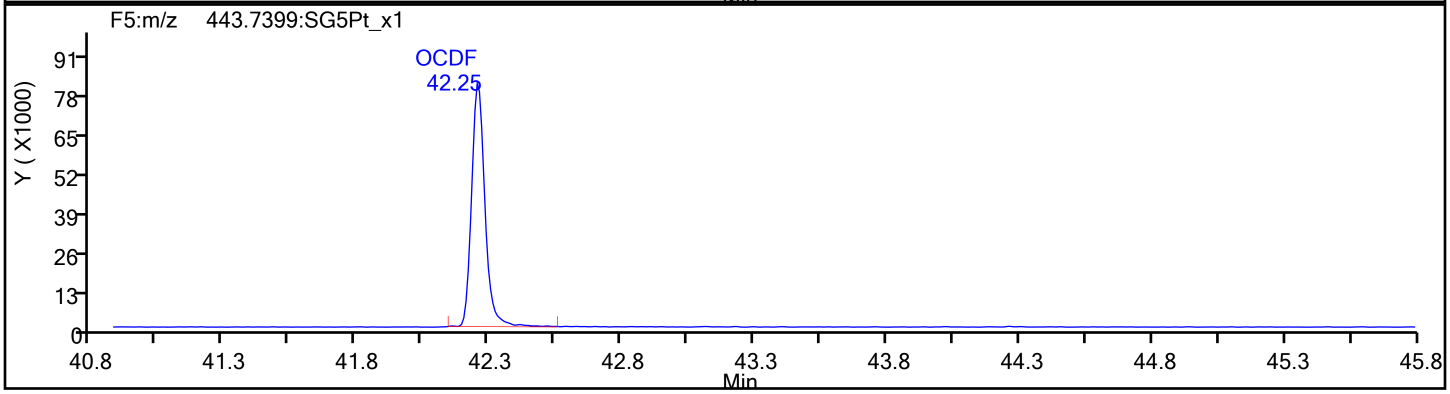

OCDF Standards

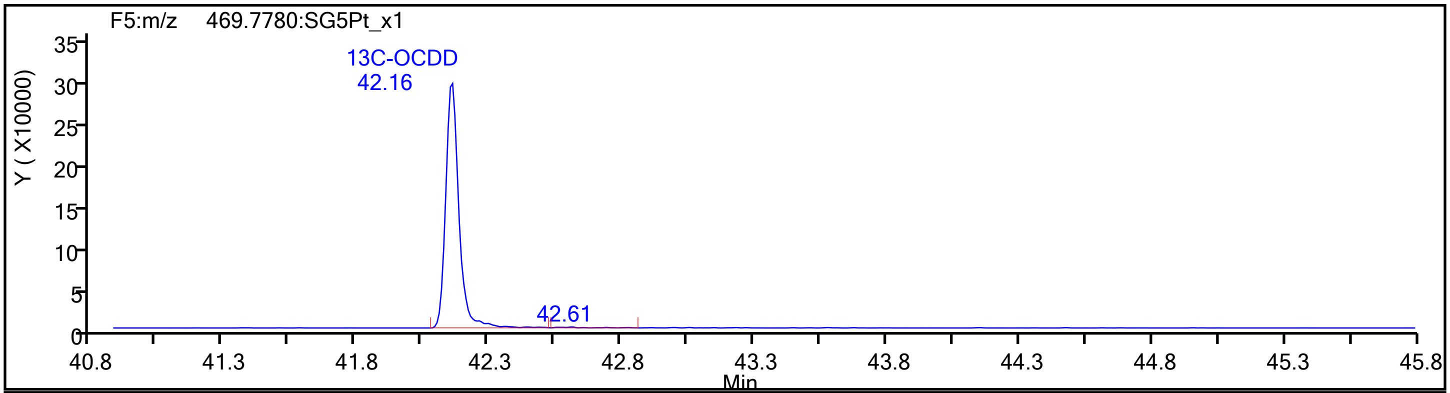

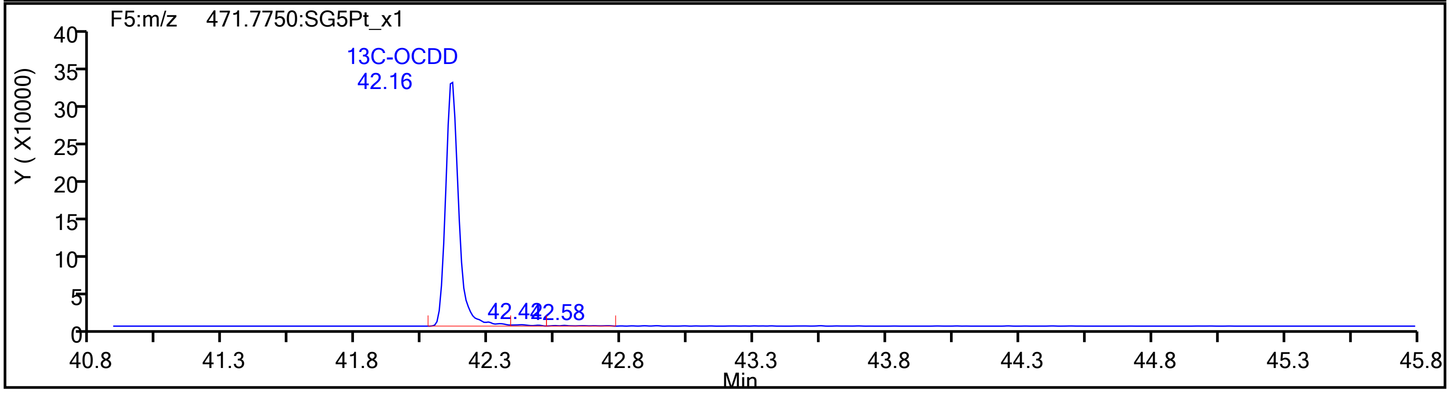

Report Date: 01-Dec-2020 13:55:20 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777
Sample Line#: 39
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

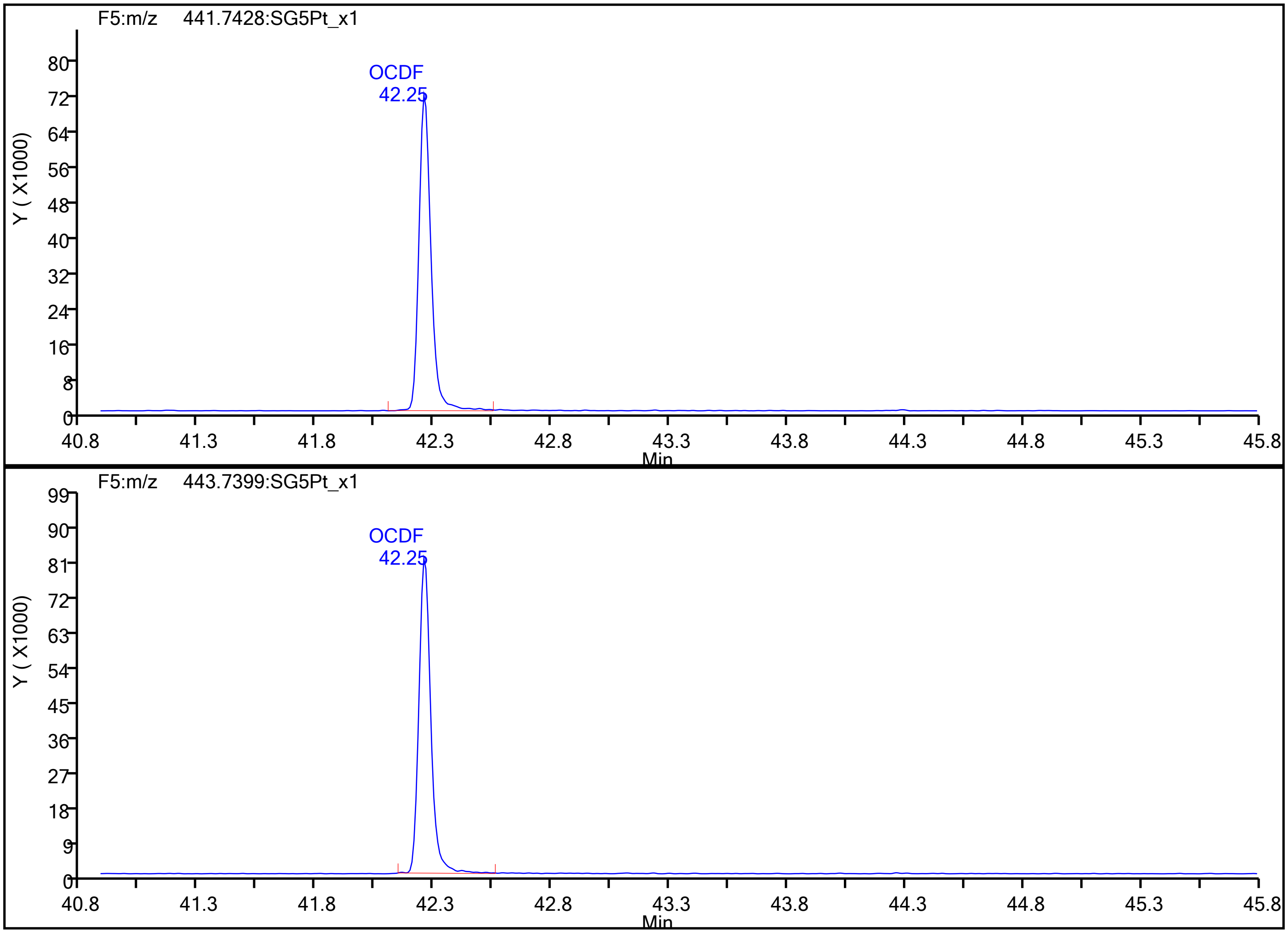

OCDF Interference Mass

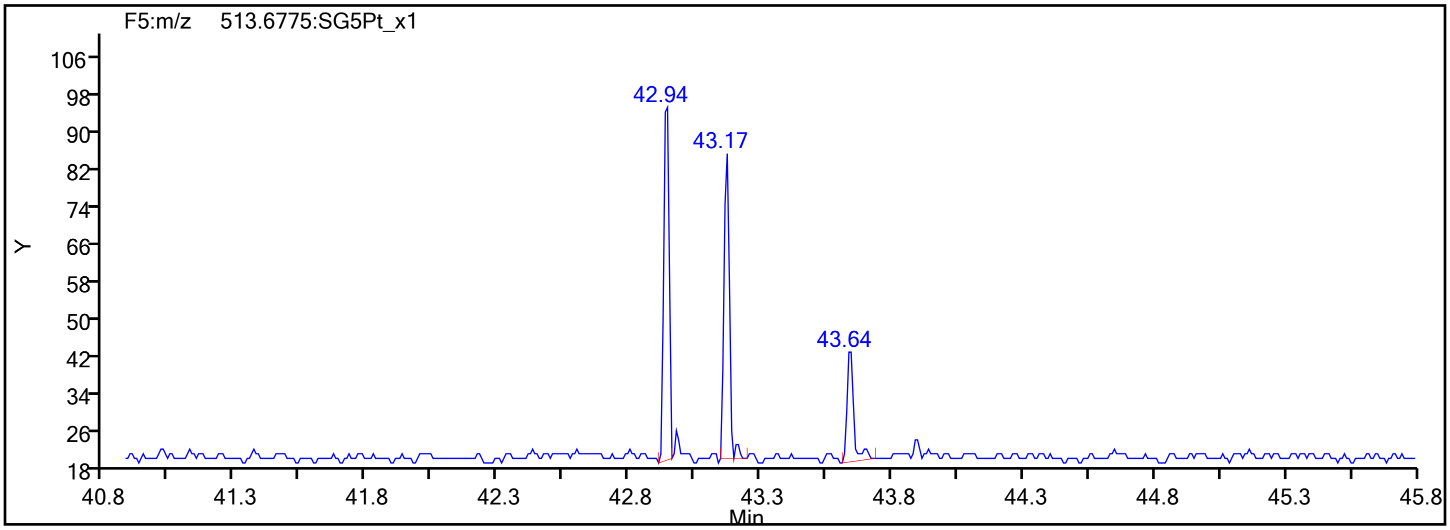

Report Date: 01-Dec-2020 13:55:20　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Injection Date:	24-Nov-2020 16:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

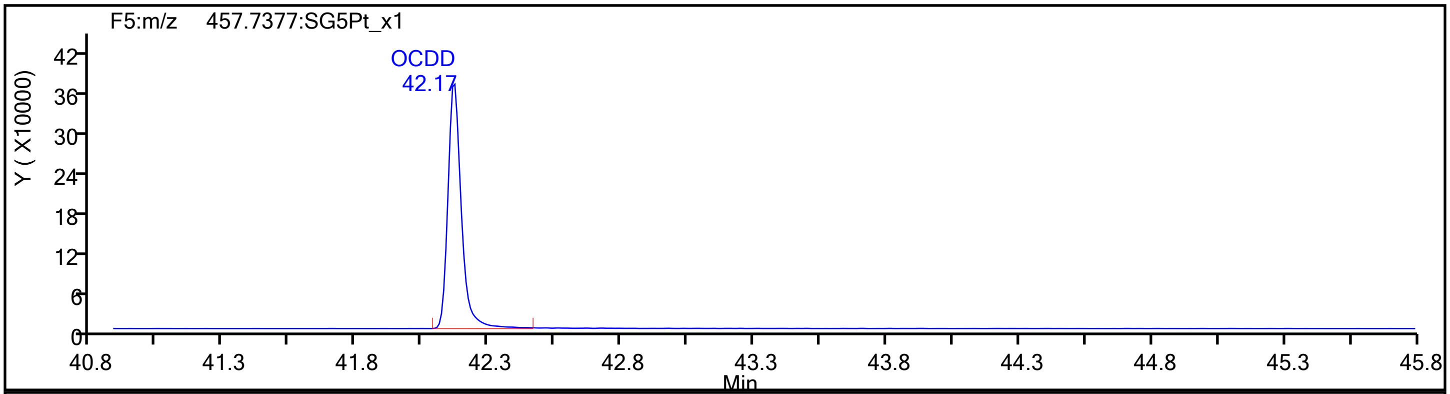

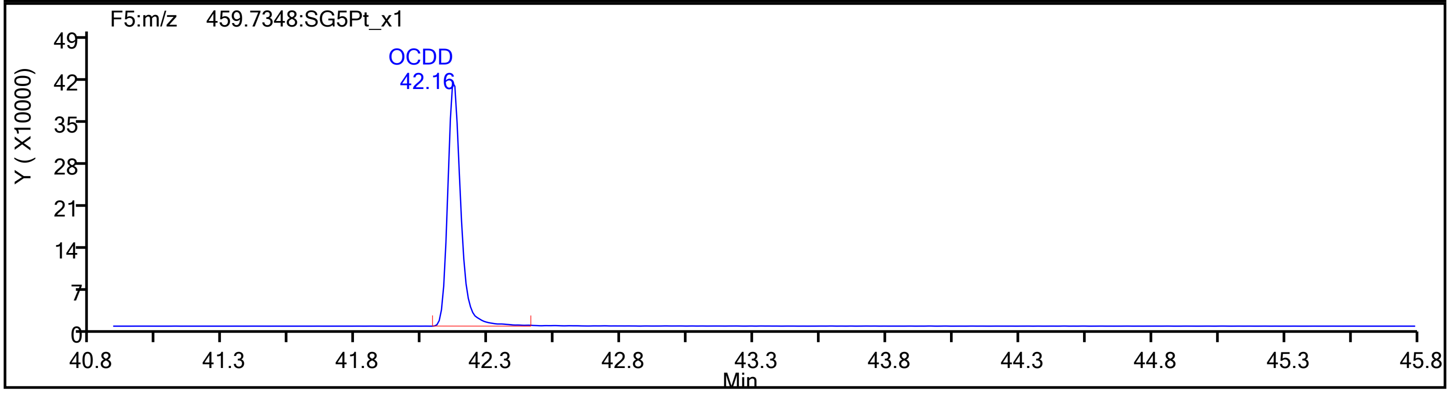

OCDD Standards

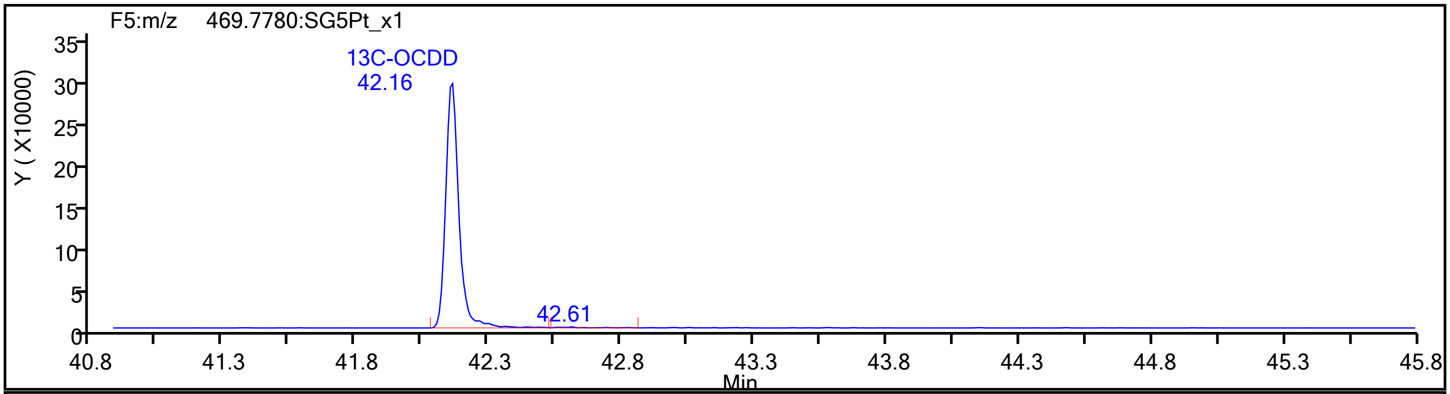

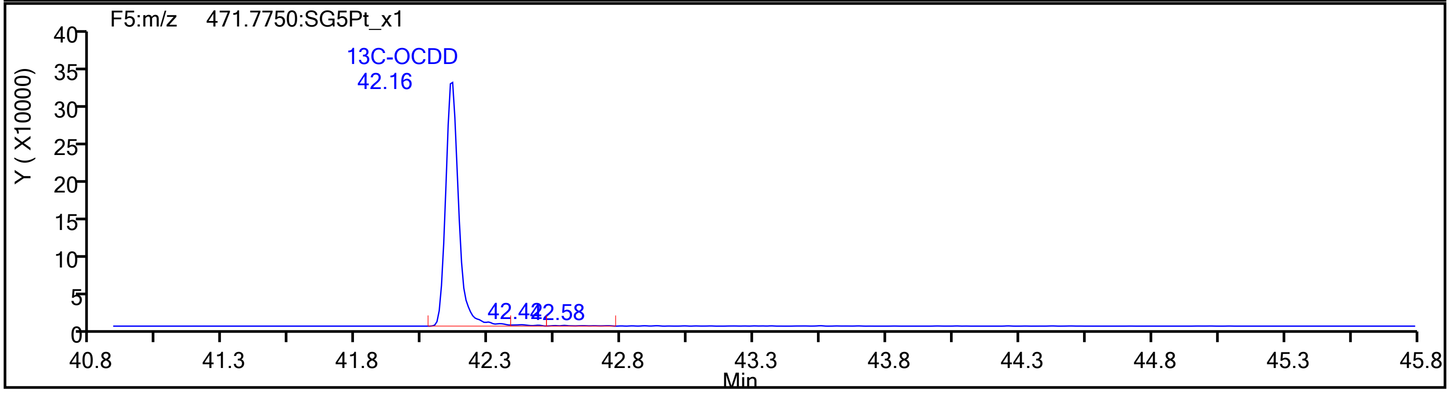

Report Date: 01-Dec-2020 13:55:20
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d
Injection Date: 24-Nov-2020 16:40:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank #2 Tank
Worklist#: 434777
Sample Line#: 39
Column Type: DB-5
Column Dia: 0.32 mm

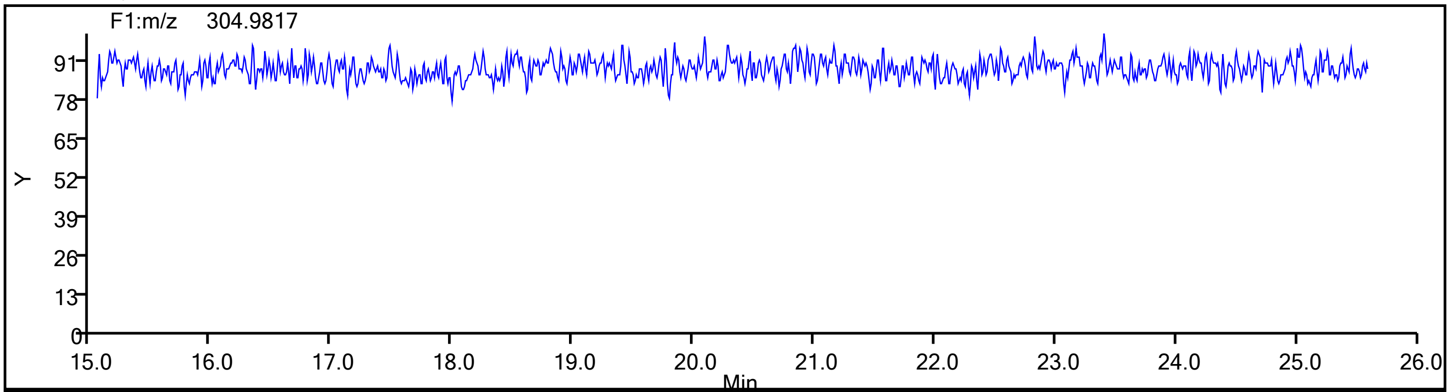

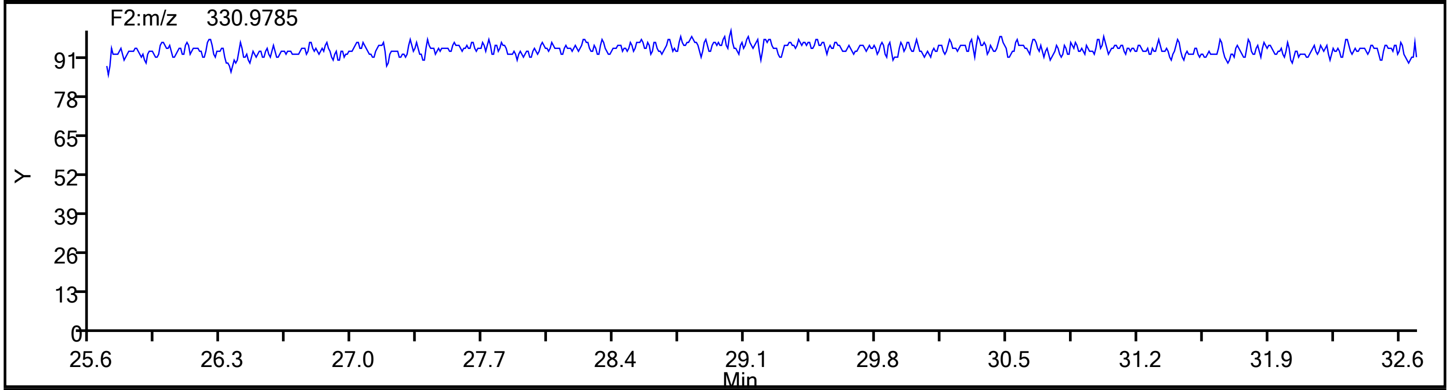

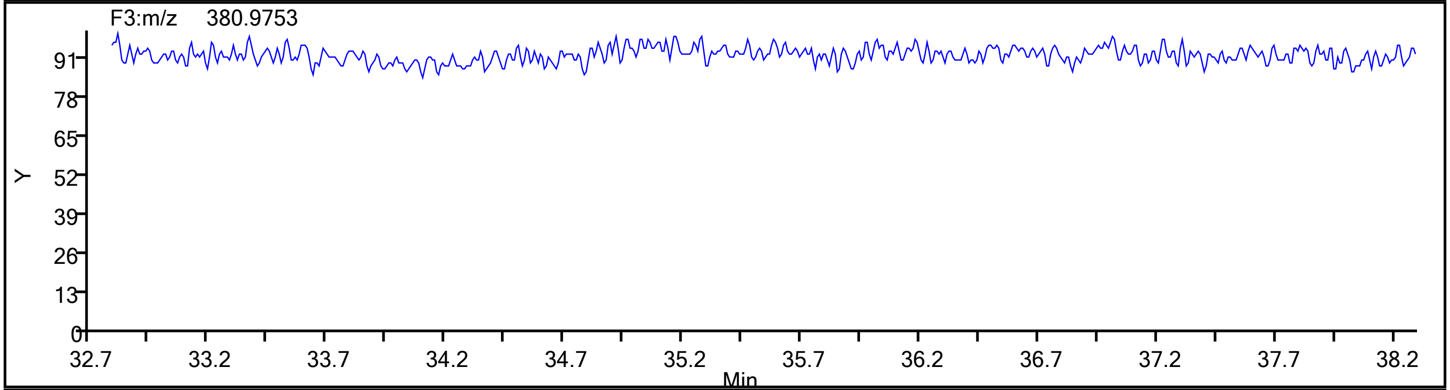

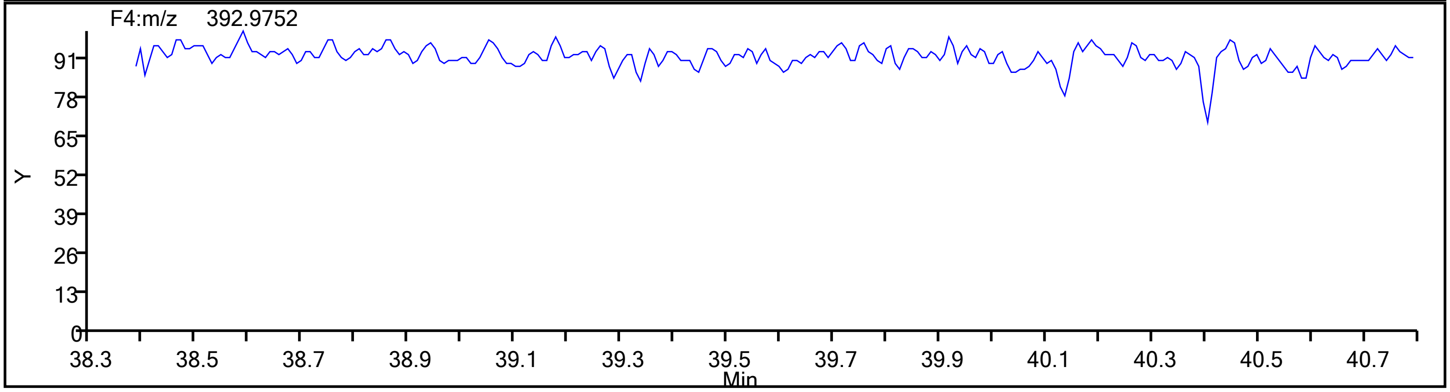

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_44.d		
Injection Date:	24-Nov-2020 16:40:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	434777	Sample Line#:	39
Column Type:	DB-5	Column Dia:	0.32 mm

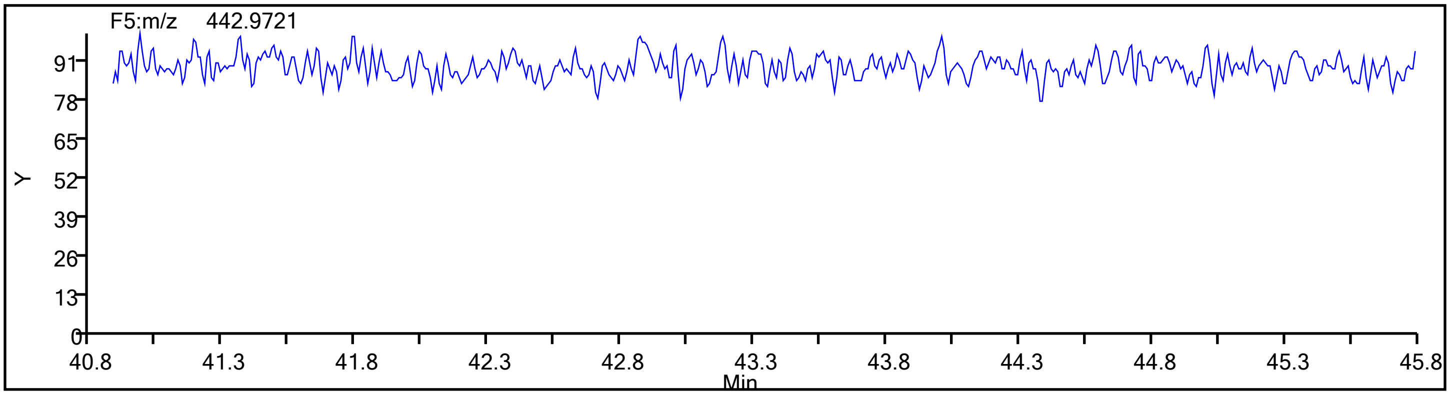

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Client Sample ID: 11215702-Tank #2 Tank RA Lab Sample ID: 320-66850-6 RA

Matrix: Water Lab File ID: 30NO2011D2_016.d

Analysis Method: 1613B Date Collected: 11/09/2020 13:00

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1049.1(mL) Date Analyzed: 11/30/2020 22:03

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 436991 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	19000	G E B	24	24

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	103		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_016.d
Lims ID: 320-66850-A-6-B
Client ID: 11215702-Tank #2 Tank
Sample Type: Client
Inject. Date: 30-Nov-2020 22:03:03 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-A-6-B
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.600	153909158	0.77	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.807	178106547	0.70	1.5708	73.7	73.7	1.698	1.698	73.67	
2,3,7,8-TCDF	16.821	1738301750	0.76	0.9943	981.6	981.6	1.267	1.267		E
D 13C-2,3,7,8-TCDD	15.353	99170964	0.78	0.9834	65.5	65.5	18.3	18.3	65.53	
$ 37Cl4-2,3,7,8-TCDD	15.367	63201860		0.9945	41.3	41.3	0.2009	0.2009	103	
2,3,7,8-TCDD	15.367	506619837	0.77	1.2822	398.4	398.4	1.631	1.631		E
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags
E - Exceeded Maximum Amount

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_016.d
Lims ID: 320-66850-A-6-B
Client ID: 11215702-Tank #2 Tank
Sample Type: Client
Inject. Date: 30-Nov-2020 22:03:03 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-66850-A-6-B
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.600	15.560	2		66889345	15774190	1210175	3025437	13		
333.9339	15.600	15.560	2		87019813	20775814	1417566	3543915	15	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.807	16.779	2	1.077	73308112	12468673	168441	421102	74		
317.9389	16.807	16.779	2	1.077	104798435	16428887	221550	553875	74	0.70(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	16.821	16.792	2	1.001	753373070	145313440	66812	167030	2175		
305.8987	16.821	16.792	2	1.001	984928680	189567007	78748	196870	2407	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.353	15.324	2	0.984	43519944	11019693	1210175	3025437	9		
333.9339	15.353	15.324	2	0.984	55651020	13515673	1417566	3543915	10	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.367	15.340	2	0.985	63201860	14763560	29209	73022	505		
2,3,7,8-TCDD											E
319.8965	15.367	15.352	1	1.001	220994270	50365339	121345	303362	415		
321.8936	15.367	15.352	1	1.001	285625567	65100101	83936	209840	776	0.77(0.65-0.89)	

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Report Date: 01-Dec-2020 08:43:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_016.d		
Injection Date:	30-Nov-2020 22:03:03	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	436991	Sample Line#:	16
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

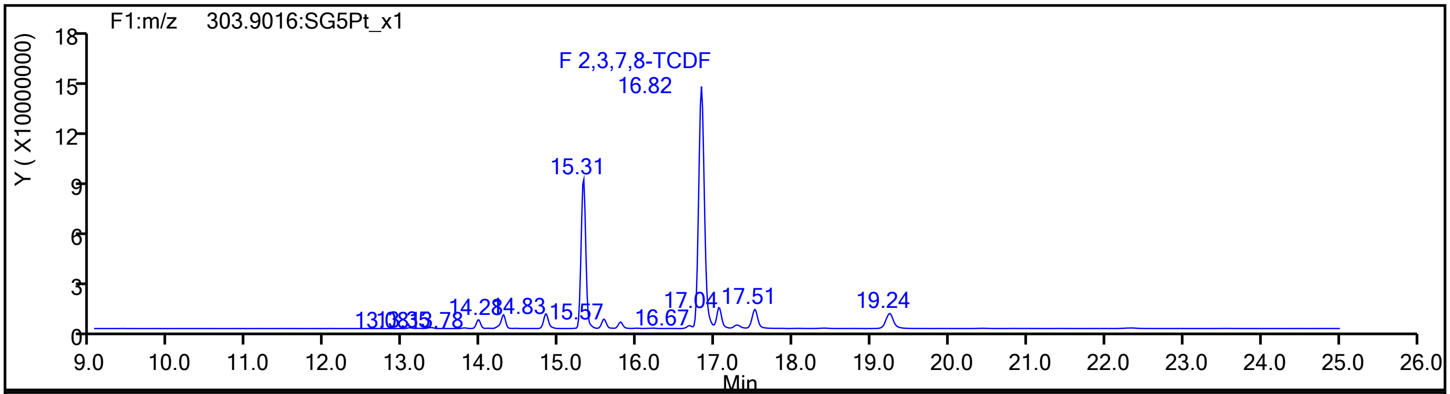

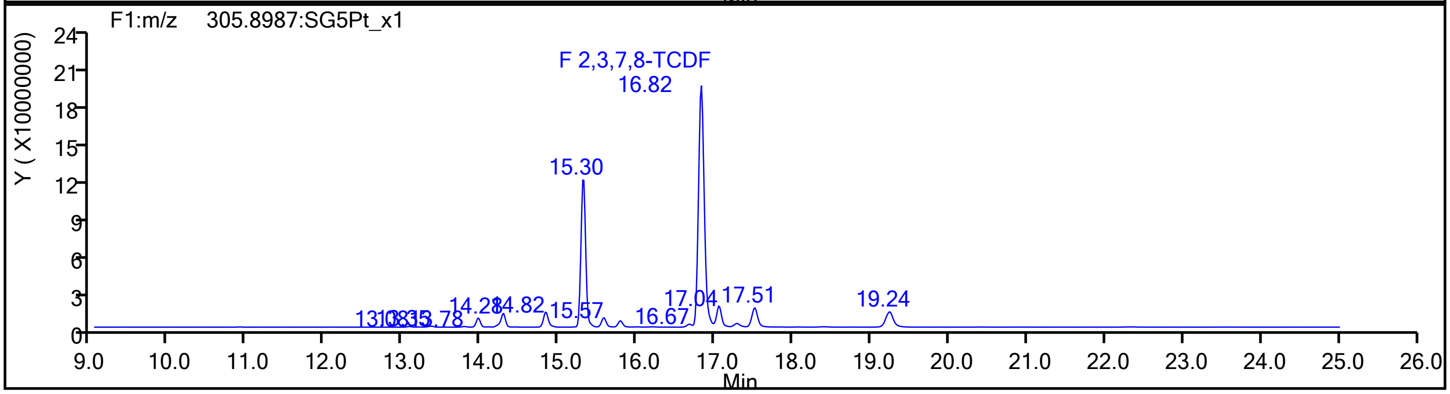

TCDF Standards

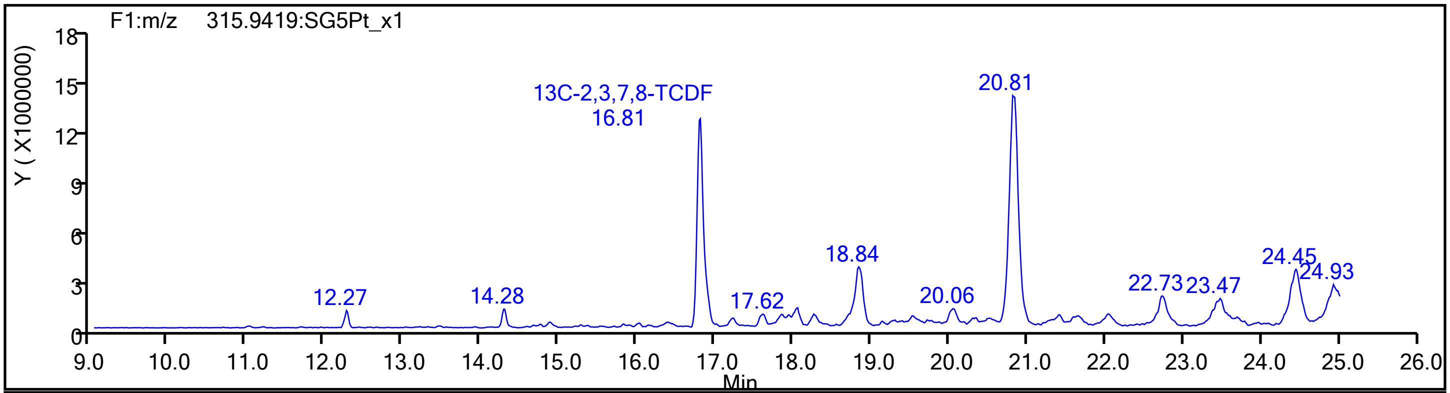

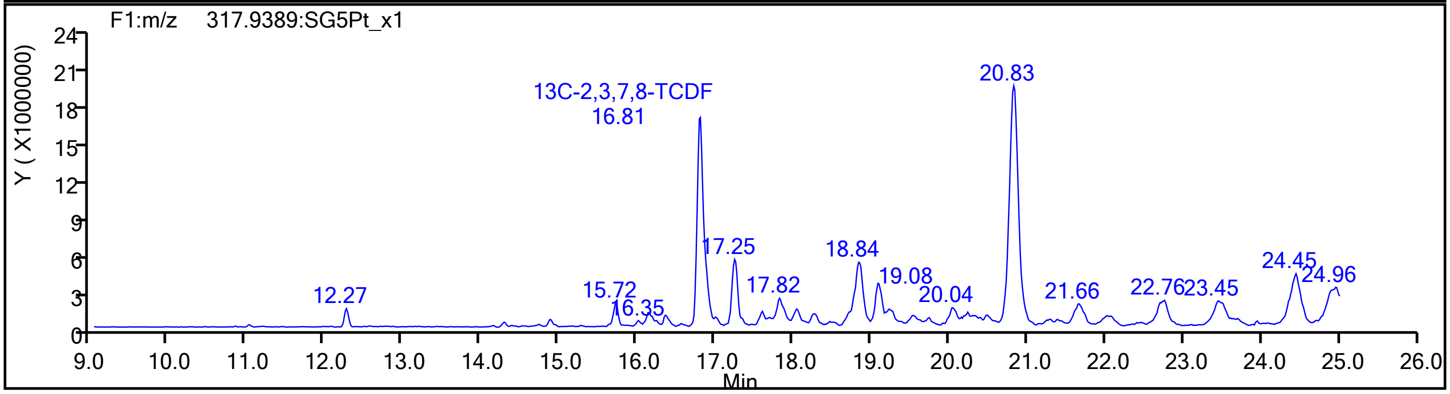

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_016.d		
Injection Date:	30-Nov-2020 22:03:03	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	436991	Sample Line#:	16
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

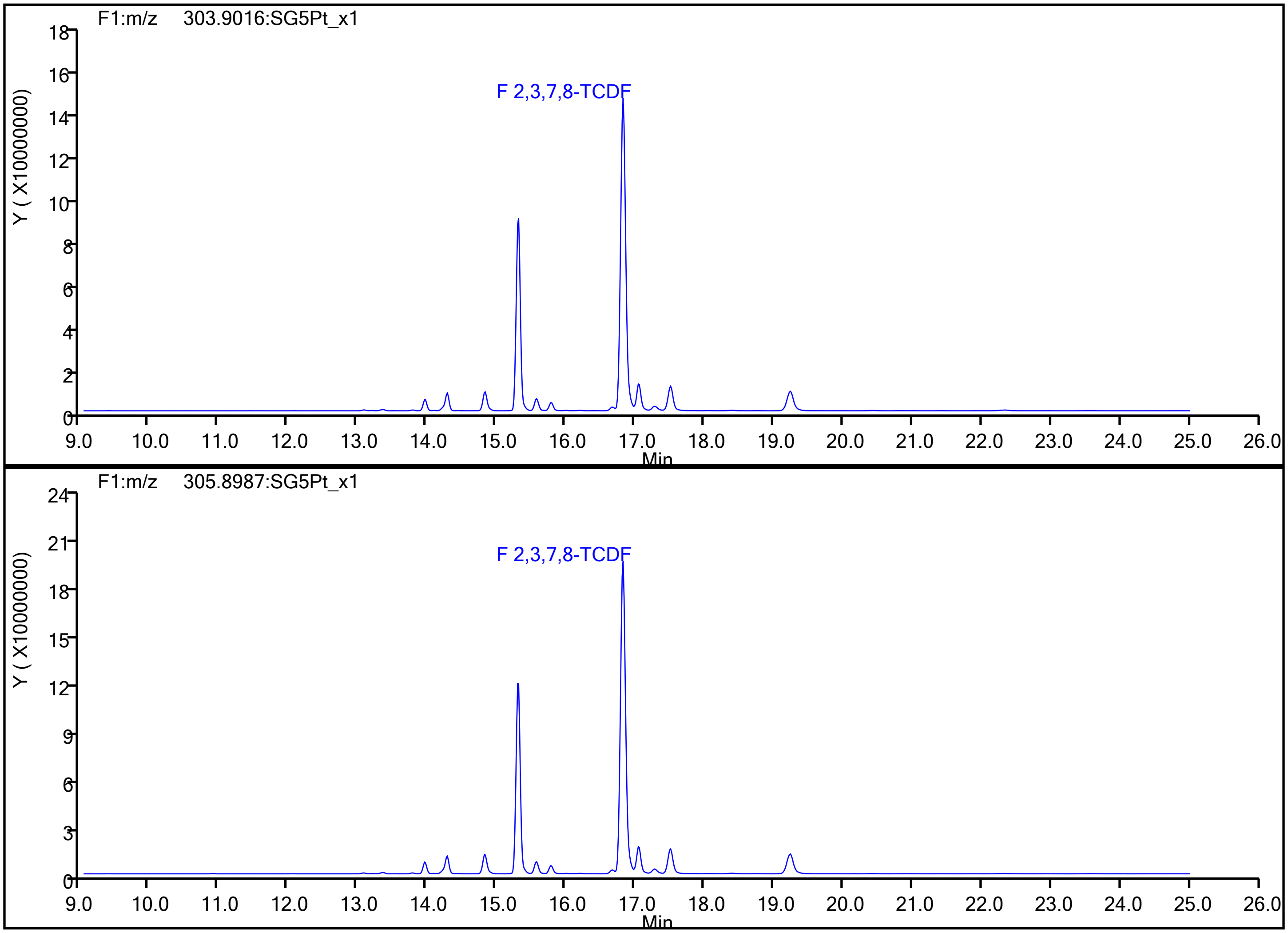

TCDF Interference Mass

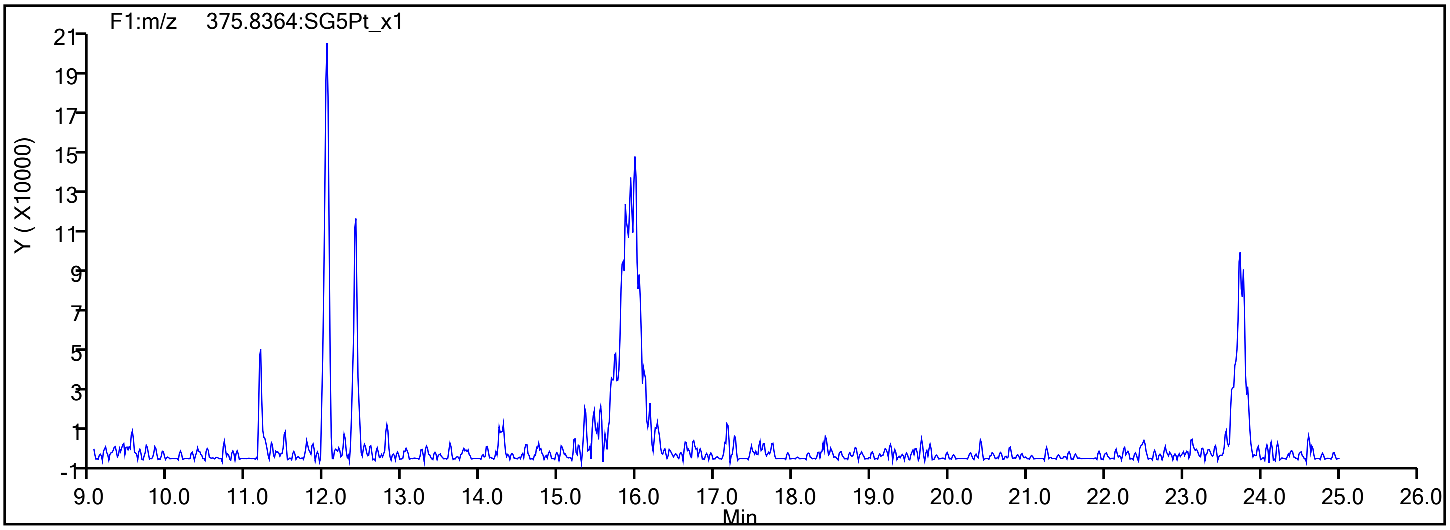

Report Date: 01-Dec-2020 08:43:49 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_016.d

Injection Date: 30-Nov-2020 22:03:03

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank #2 Tank

Worklist#: 436991

Sample Line#: 16

Column Type: DB-225

Column Dia: 0.32 mm

37Cl4-TCDD

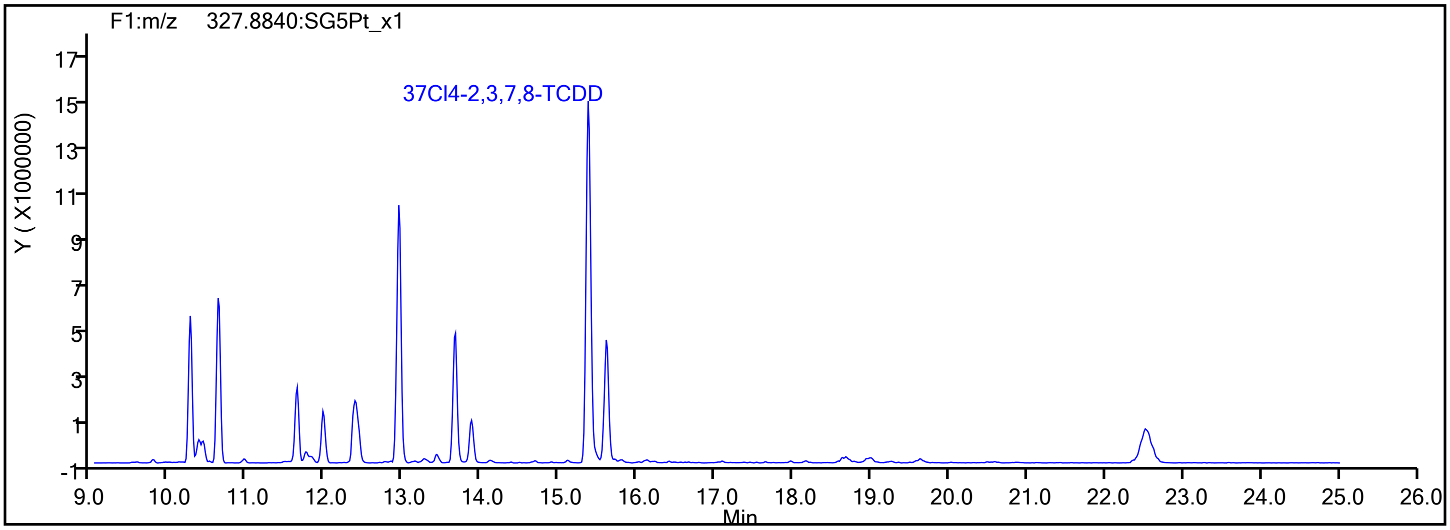

37Cl4-TCDD Standards

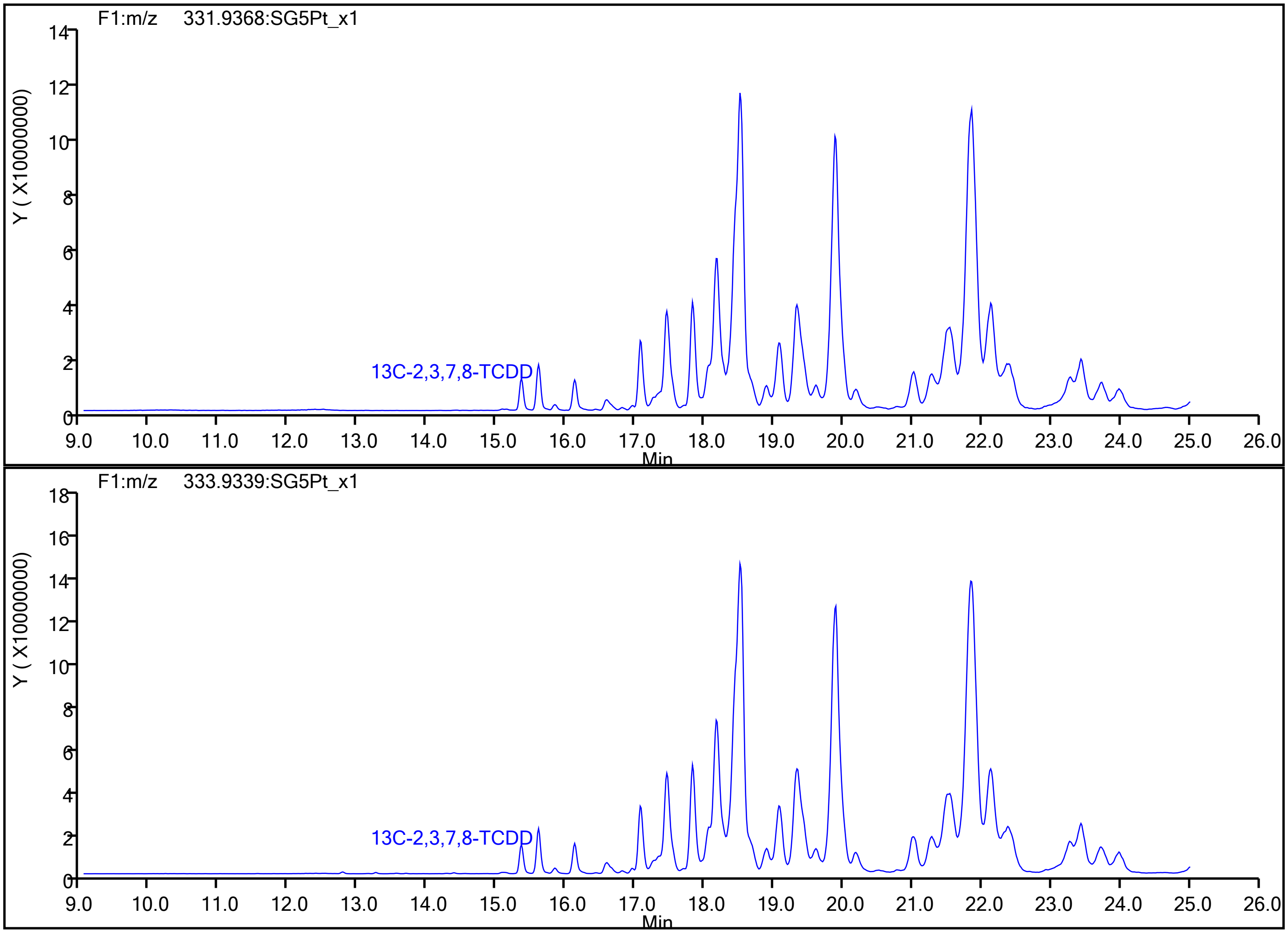

Report Date: 01-Dec-2020 08:43:49 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_016.d		
Injection Date:	30-Nov-2020 22:03:03	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank #2 Tank		
Worklist#:	436991	Sample Line#:	16
Column Type:	DB-225	Column Dia:	0.32 mm

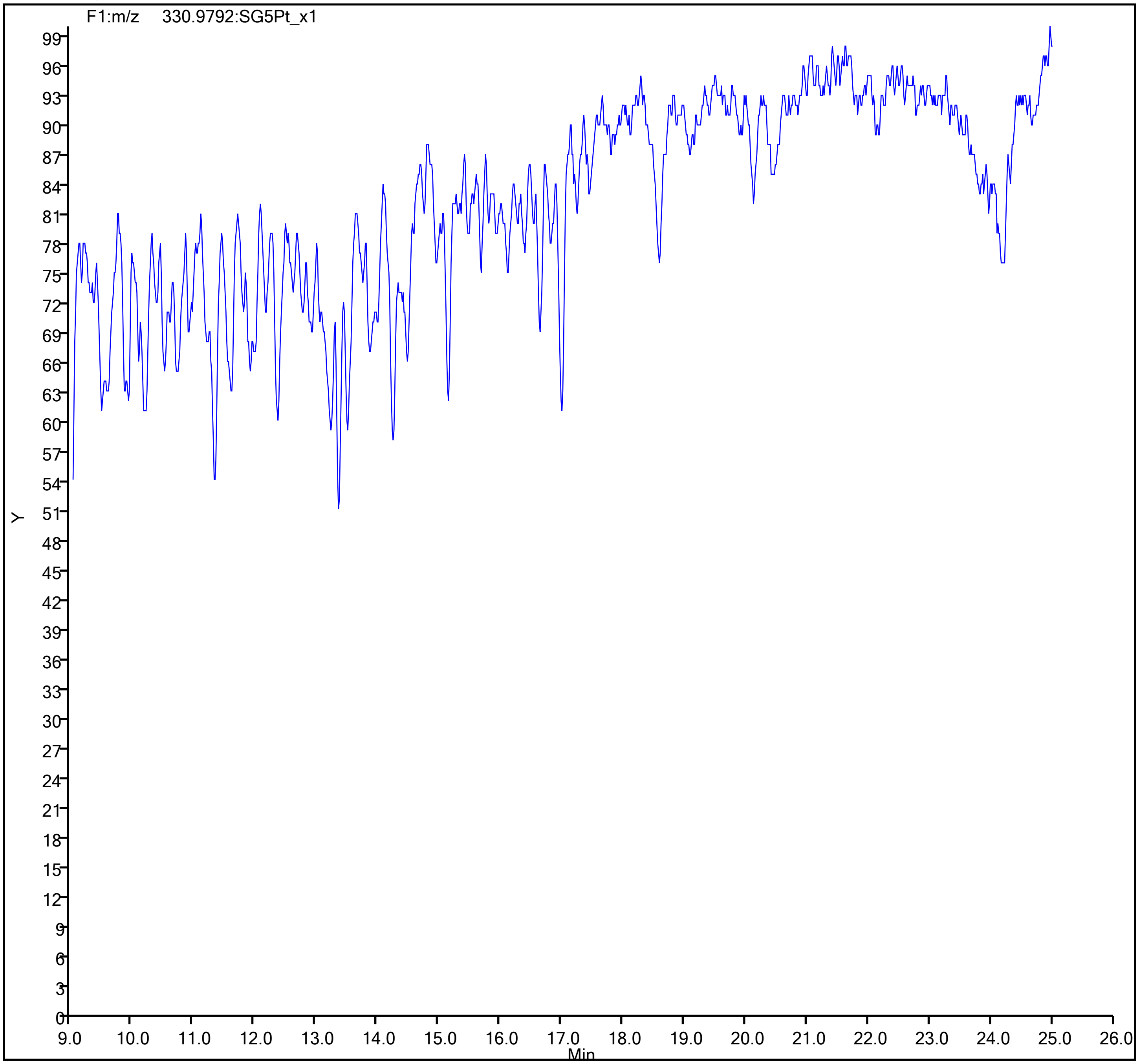

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413246/3	17SE2010D5_3.d
Level 2	IC 320-413246/4	17SE2010D5_4.d
Level 3	IC 320-413246/5	17SE2010D5_5.d
Level 4	IC 320-413246/6	17SE2010D5_6.d
Level 5	IC 320-413246/7	17SE2010D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9215	0.9157	0.8702	0.9028	0.9285	AveID		0.9077				2.5		20.0			
2,3,7,8-TCDD	1.0304	1.0156	0.9803	0.9998	1.0048	AveID		1.0061				1.9		20.0			
1,2,3,7,8-PeCDF	0.9425	0.9098	0.9005	0.9094	0.9115	AveID		0.9147				1.8		20.0			
2,3,4,7,8-PeCDF	1.0017	0.9125	0.9443	0.9536	0.9420	AveID		0.9508				3.4		20.0			
1,2,3,7,8-PeCDD	1.0735	0.9769	0.9618	0.9846	0.9805	AveID		0.9955				4.5		20.0			
1,2,3,4,7,8-HxCDF	1.1432	1.0765	1.0960	1.1207	1.1086	AveID		1.1090				2.3		20.0			
1,2,3,6,7,8-HxCDF	1.1160	1.0662	1.0537	1.0660	1.0588	AveID		1.0721				2.3		20.0			
2,3,4,6,7,8-HxCDF	1.1336	1.0735	1.0607	1.0765	1.0747	AveID		1.0838				2.6		20.0			
1,2,3,4,7,8-HxCDD	1.0496	0.9283	1.0423	1.0084	0.9788	AveID		1.0014				5.0		20.0			
1,2,3,6,7,8-HxCDD	0.9504	0.8671	0.8363	0.8998	0.8972	AveID		0.8902				4.8		20.0			
1,2,3,7,8,9-HxCDD	1.1027	1.0520	1.0426	1.0576	1.0346	AveID		1.0579				2.5		20.0			
1,2,3,7,8,9-HxCDF	1.1588	1.0659	1.0664	1.1010	1.0732	AveID		1.0931				3.6		20.0			
1,2,3,4,6,7,8-HpCDF	1.4212	1.3501	1.3425	1.3603	1.3276	AveID		1.3603				2.6		20.0			
1,2,3,4,6,7,8-HpCDD	1.0332	0.9625	0.9911	1.0116	0.9954	AveID		0.9988				2.6		20.0			
1,2,3,4,7,8,9-HpCDF	1.3865	1.2937	1.3119	1.3185	1.2928	AveID		1.3207				2.9		20.0			
OCDD	1.1948	1.1232	1.1051	1.1253	1.0965	AveID		1.1290				3.4		20.0			
OCDF	1.4223	1.3889	1.3942	1.4424	1.4201	AveID		1.4136				1.6		20.0			
13C-2,3,7,8-TCDF	1.3615	1.3523	1.3350	1.3918	1.3585	Ave		1.3598				1.5		35.0			
13C-2,3,7,8-TCDD	1.0423	1.0161	1.0367	1.0800	1.0927	Ave		1.0536				3.0		35.0			
13C-1,2,3,7,8-PeCDF	1.1189	1.0762	1.1110	1.1519	1.1947	Ave		1.1306				4.0		35.0			
13C-2,3,4,7,8-PeCDF	1.0269	1.0416	1.0237	1.0477	1.1296	Ave		1.0539				4.1		35.0			
13C-1,2,3,7,8-PeCDD	0.8028	0.7562	0.7970	0.8255	0.8607	Ave		0.8084				4.8		35.0			
13C-1,2,3,4,7,8-HxCDF	0.8906	0.9258	0.9204	0.9429	0.9327	Ave		0.9225				2.1		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0270	1.0141	1.0262	1.0567	1.0438	Ave		1.0336				1.6		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9589	0.9509	0.9792	1.0084	0.9894	Ave		0.9773				2.4		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7818	0.8165	0.7577	0.7974	0.8350	Ave		0.7977				3.8		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9690	0.9720	1.0222	1.0401	1.0019	Ave		1.0010				3.1		35.0			
13C-1,2,3,7,8,9-HxCDF	0.8903	0.9031	0.9138	0.9282	0.9412	Ave		0.9153				2.2		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8344	0.8296	0.8494	0.8655	0.8742	Ave		0.8506				2.3		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8770	0.8586	0.8797	0.9047	0.9163	Ave		0.8873				2.6		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7298	0.7458	0.7430	0.7948	0.7956	Ave		0.7618				4.1		35.0			
13C-OCDD	0.6076	0.5869	0.6272	0.6389	0.6831	Ave		0.6287				5.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	0.9314	0.9786	1.0629	1.1339	1.1371	Ave		1.0488				8.8					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09 Calibration End Date: 09/17/2020 19:09 Calibration ID: 51933

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-413246/3	17SE2010D5_3.d
Level 2	IC 320-413246/4	17SE2010D5_4.d
Level 3	IC 320-413246/5	17SE2010D5_5.d
Level 4	IC 320-413246/6	17SE2010D5_6.d
Level 5	IC 320-413246/7	17SE2010D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	435861	1708632	8215614	34873455	208980759	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	373087	1423835	7186766	29967613	181906530	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1831854	6755406	35377066	145371529	902066653	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1786782	6557191	34181205	138637753	881532861	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1497052	5096638	27105714	112792500	699080341	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	1347531	5051863	26528941	112104497	708040990	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	1516975	5480754	28435765	119502715	756804000	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	1438567	5174349	27314505	115165865	728098205	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1086110	3841879	20769529	85297387	559642002	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1218876	4272300	22482418	99286402	615512540	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1277610	4768543	24401221	103076569	650702045	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	1365563	4879551	25630034	108414785	691727822	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1569431	5677563	29988985	124894209	794756968	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1199192	4188952	22930767	97091283	624600336	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	1339219	4890701	25636290	111173202	704300587	2.50	10.0	50.0	200	1000
OCDD		AveID	1921704	6682705	36458371	152532525	1025752146	5.00	20.0	100	400	2000
OCDF		AveID	2287654	8263927	45999109	195516483	1328467600	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	94597447	93295703	94412734	96572003	112538942	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	72418737	70100427	73314161	74937692	90520287	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	77742057	74247718	78572668	79929046	98967595	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	71348405	71861705	72394702	72693510	93576375	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	55779906	52169753	56361860	57281119	71300628	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	47151495	46927290	48411968	50016942	63870758	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	54372821	51405634	53975320	56052859	71480069	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	50763245	48201659	51503814	53491599	67749621	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	41391638	41387059	39854770	42294958	57179178	100	100	100	100	100

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2   Analy Batch No.: 413246

SDG No.:

Instrument ID: 10D5   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 09/17/2020 16:09   Calibration End Date: 09/17/2020 19:09   Calibration ID: 51933

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	51300838	49272149	53764731	55171129	68606469	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	47135979	45779728	48067141	49233772	64454067	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	44172724	42054304	44675630	45908363	59864107	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	46427849	43522391	46274068	47987052	62747060	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	38635465	37805388	39083845	42158862	54480485	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	64335649	59498409	65984325	67776385	93549216	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	323571	1350233	7516852	31470753	188393047	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\17SE2010D5.SPL

Last Modified: Thursday, September 17, 2020 12:52:57 Pacific Daylight Time

Printed: Thursday, September 17, 2020 14:13:36 Pacific Daylight Time

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User	Sample Size
1	17SE2010D5_1	WDM HRDXNCP_00042	WDM 091720	Tray01:1	Dioxin		AJS	1.000000
2	17SE2010D5_2	Solvent Blank C-14	SB 091720	Tray01:3	---		AJS	1.000000
3	17SE2010D5_3	CS-2 HRDXNL2_00030	IC 091720	Tray01:4	Dioxin		AJS	1.000000
4	17SE2010D5_4	CS-3 HRDXNL3_00028	IC 091720A	Tray01:5	Dioxin		AJS	1.000000
5	17SE2010D5_5	CS-4 HRDXNL4_00095	IC 091720B	Tray01:2	Dioxin		AJS	1.000000
6	17SE2010D5_6	CS-5 HRDXNL5_00031	IC 091720C	Tray01:6	Dioxin		AJS	1.000000
7	17SE2010D5_7	CS-6 HRDXNL6_00027	IC 091720D	Tray01:7	Dioxin		AJS	1.000000
8	17SE2010D5_8	Solvent Blank C-14	SB 091720A	Tray01:3	---		AJS	1.000000
9	17SE2010D5_9	ICV HRDXNIC_00046	ICV 091720	Tray01:8	Dioxin		AJS	1.000000

logfile checked
9-17-20 ALM

Units	MS File	Inlet File	Inject Volume	Process
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck

Process Options	Action On Error	s5
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:09:06 Pacific Daylight Time

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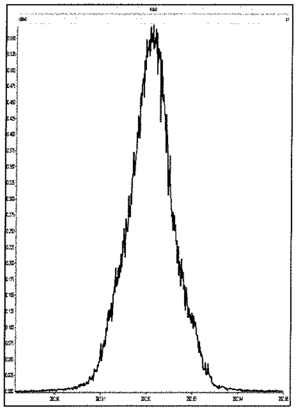

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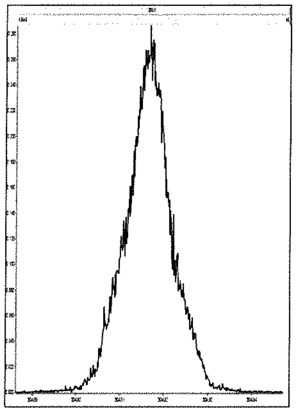

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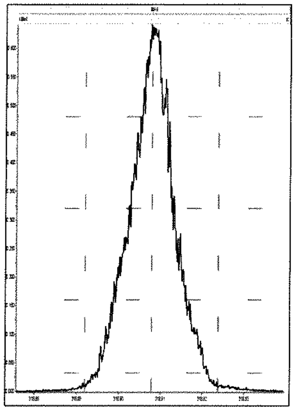

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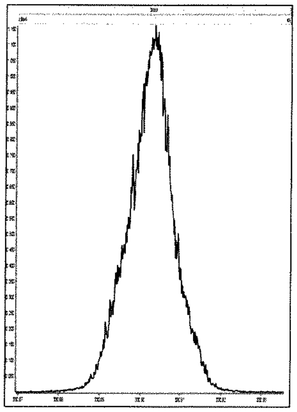

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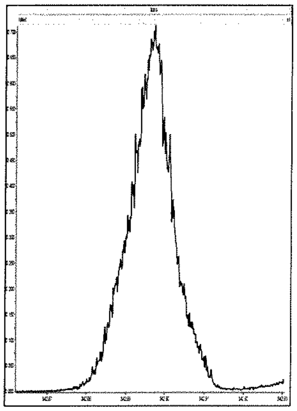

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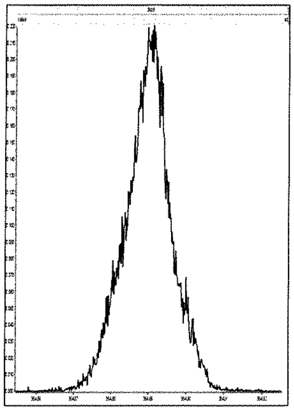

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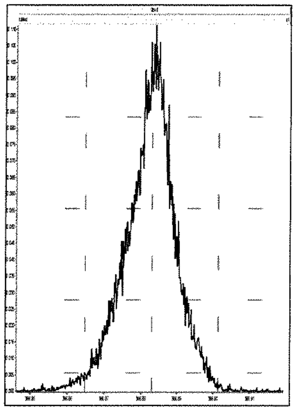

M 380.9760 R 11261

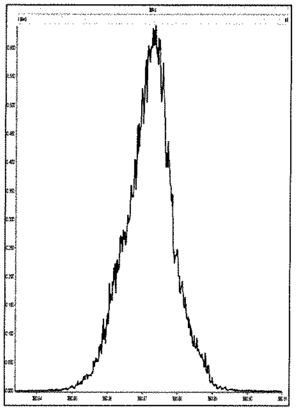

M 392.9760 R 11466

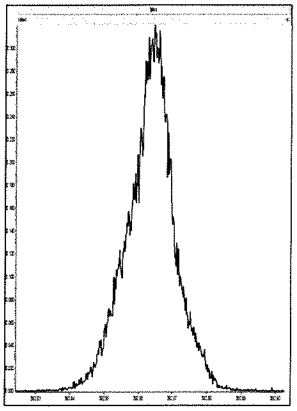

M 404.9760 R 11521

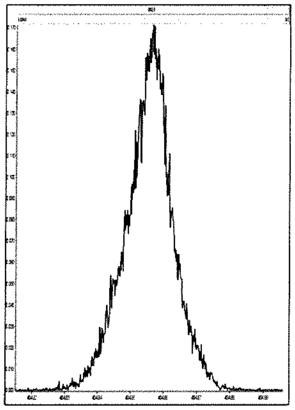

M 416.9760 R 11467

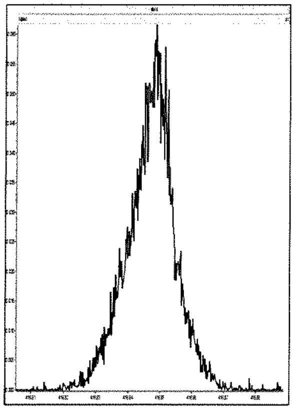

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:09:26 Pacific Daylight Time

M 318.9792 R 12371

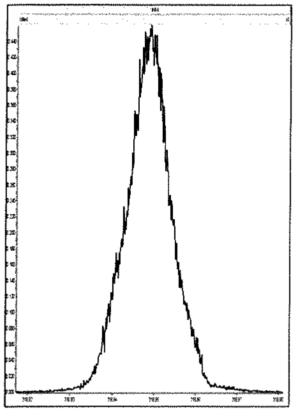

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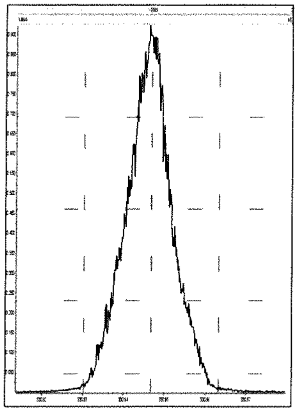

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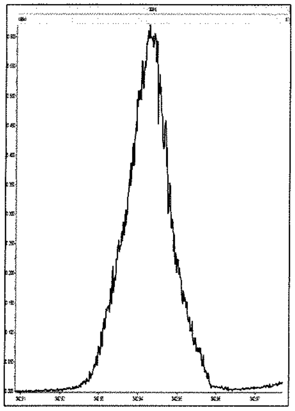

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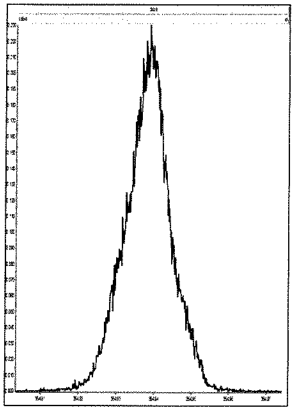

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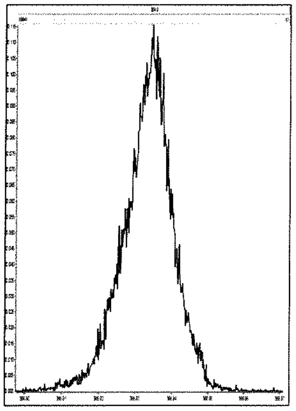

M 380.9760 R 11571

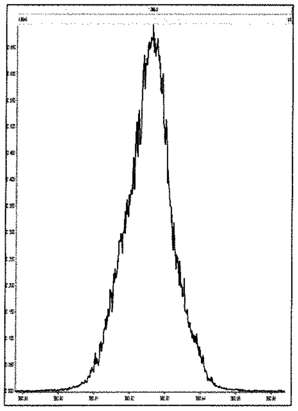

M 392.9760 R 11682

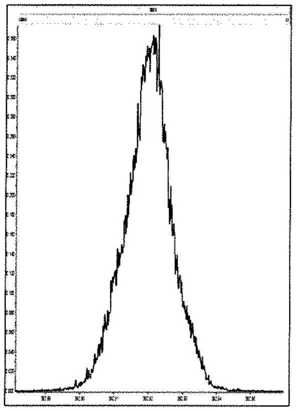

M 404.9760 R 11846

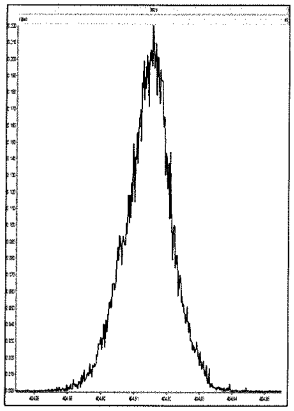

M 416.9760 R 12196

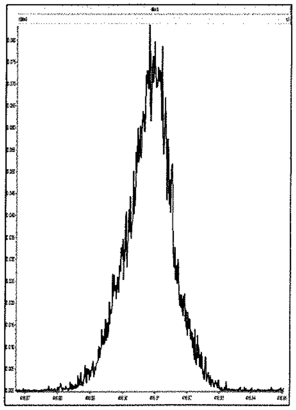

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:10:05 Pacific Daylight Time

M 366.9792 R 11631

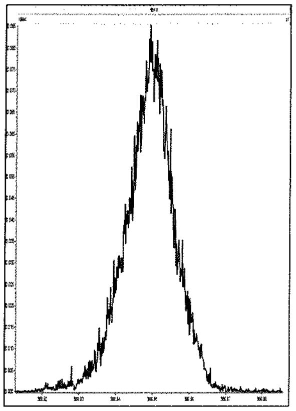

M 380.9760 R 11907

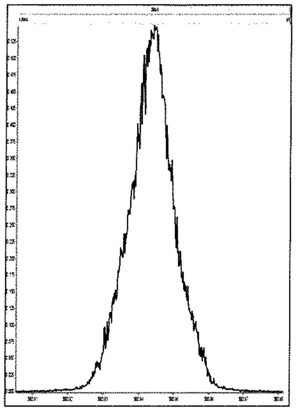

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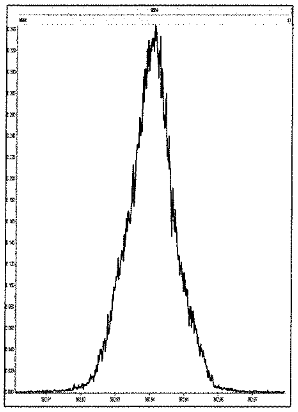

M 404.9760 R 11847

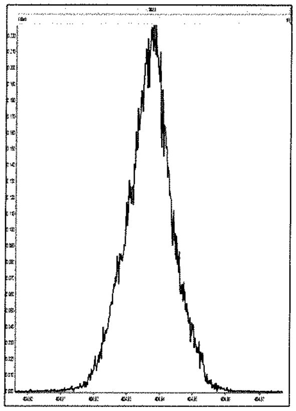

M 416.9760 R 12079

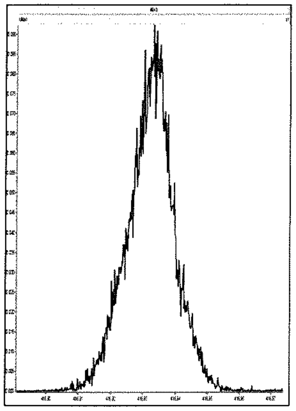

M 430.9728 R 11574

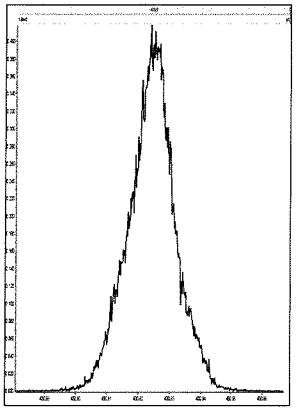

M 442.9728 R 11847

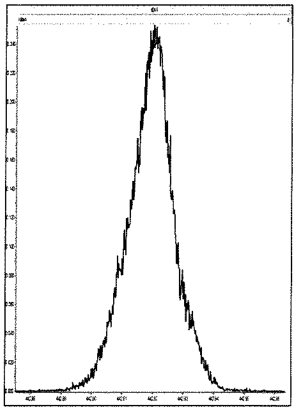

M 454.9728 R 11789

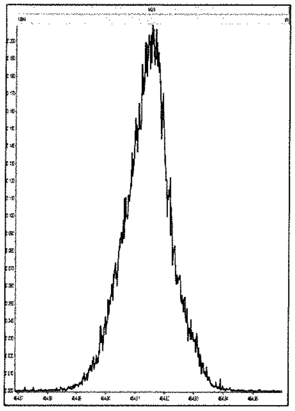

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:10:33 Pacific Daylight Time

M 380.9760 R 11904

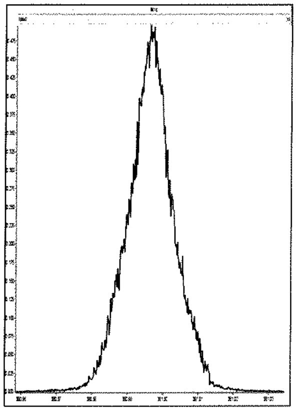

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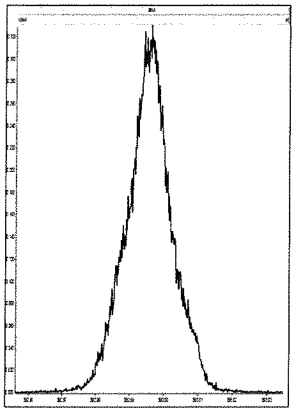

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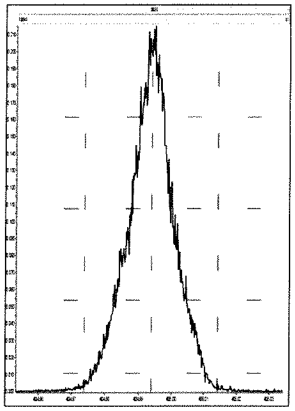

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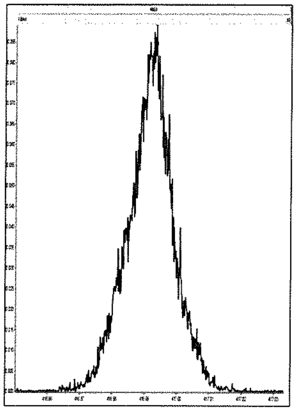

M 430.9728 R 12197

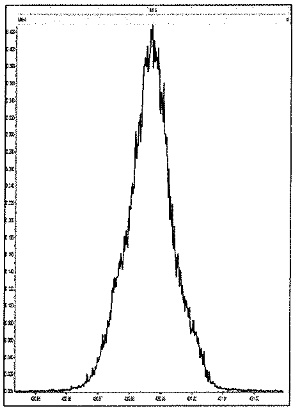

M 442.9728 R 11468

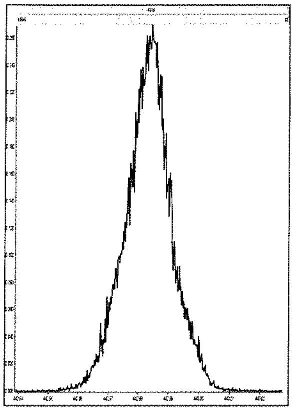

M 454.9728 R 12022

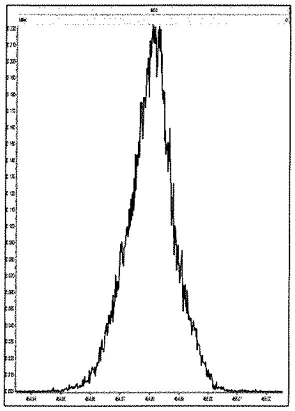

M 466.9728 R 12316

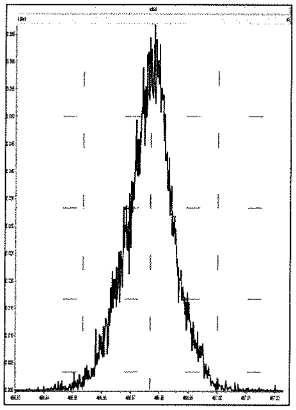

M 480.9696 R 11308

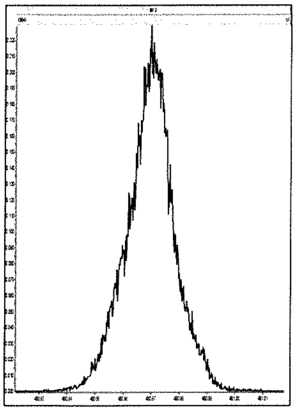

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, September 17, 2020 14:11:09 Pacific Daylight Time

M 380.9760 R 12018

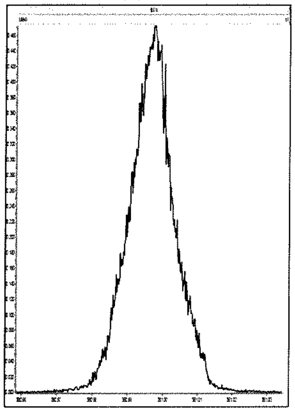

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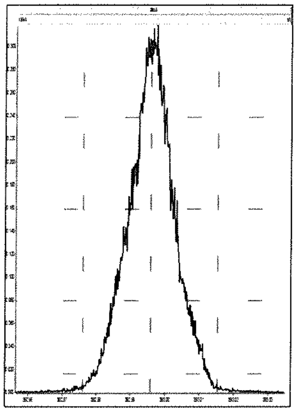

M 404.9760 R 12255

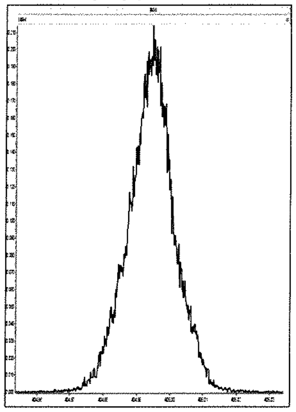

M 416.9760 R 12076

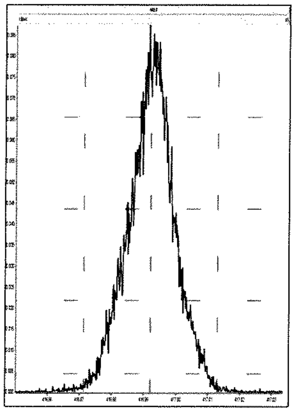

M 430.9728 R 11959

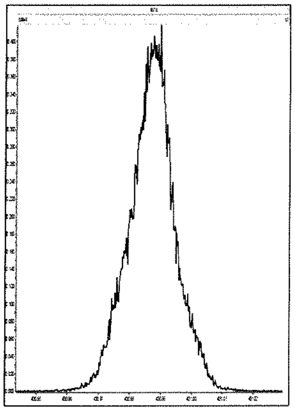

M 442.9728 R 12255

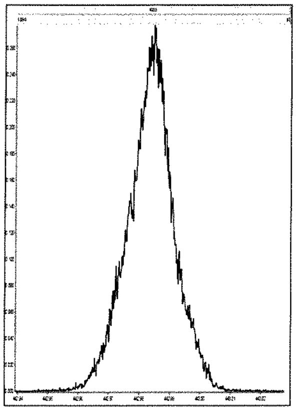

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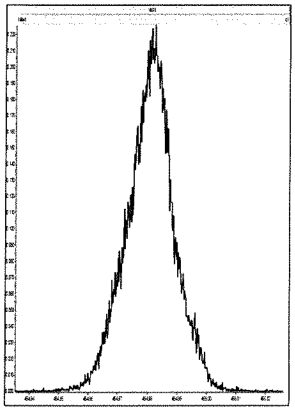

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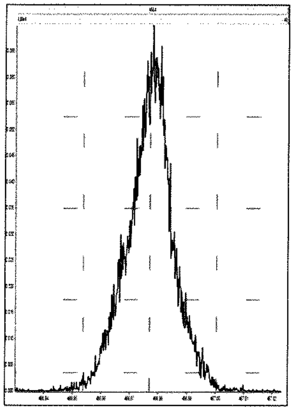

M 480.9696 R 11792

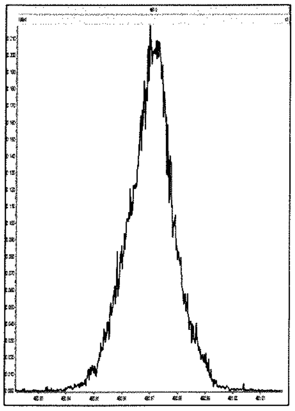

M 492.9696 R 11960

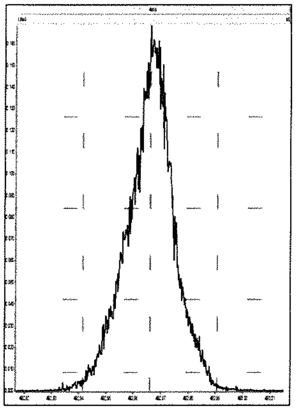

M 504.9696 R 11364

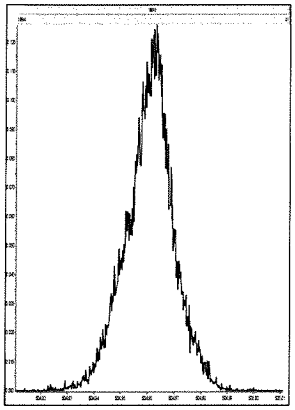

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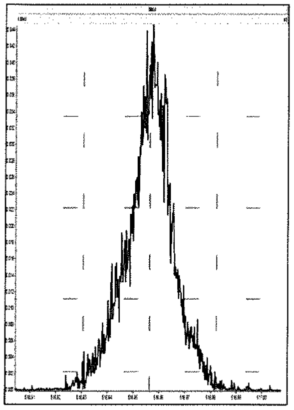

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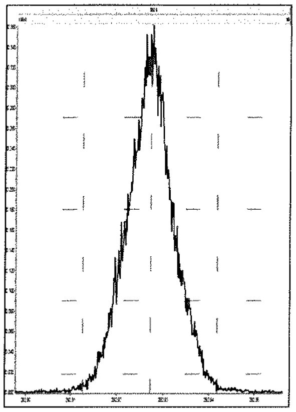

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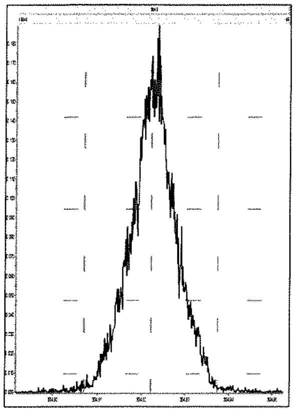

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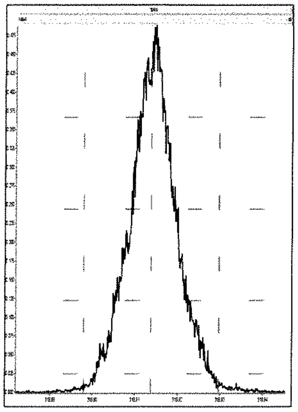

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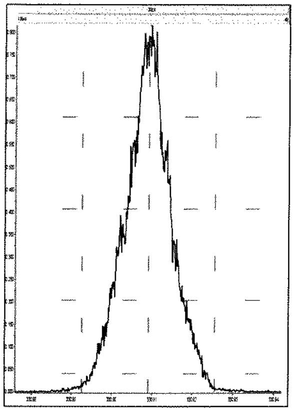

M 342.9792 R 11961

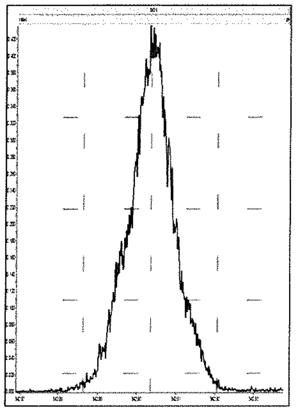

M 354.9792 R 12079

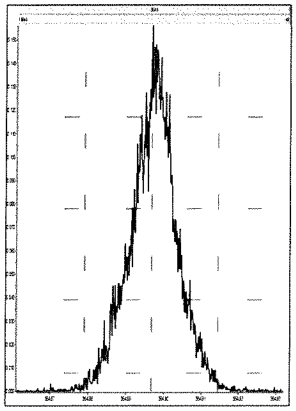

M 366.9792 R 11672

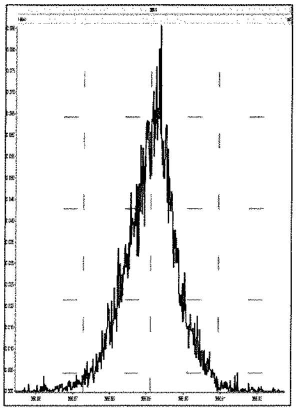

M 380.9760 R 11441

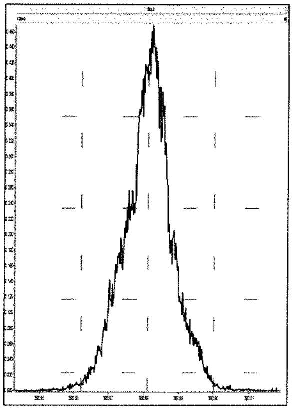

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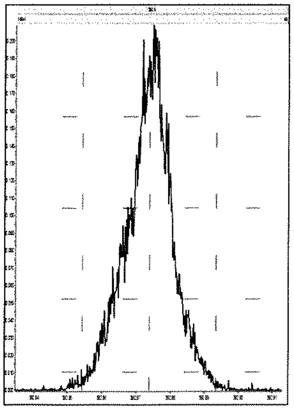

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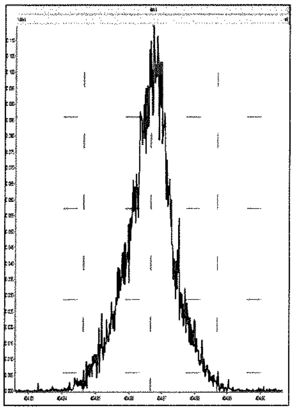

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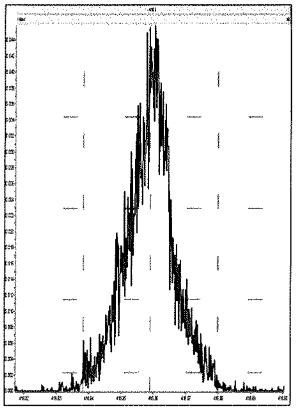

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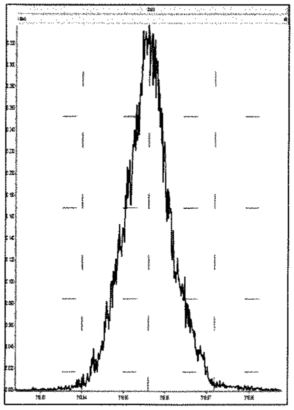

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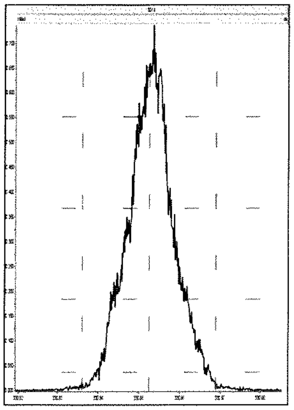

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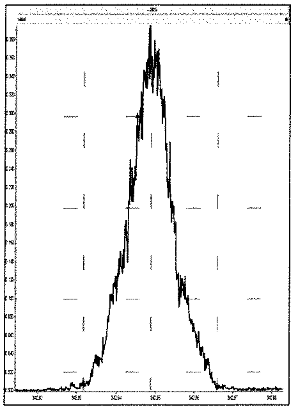

M 354.9792 R 12345

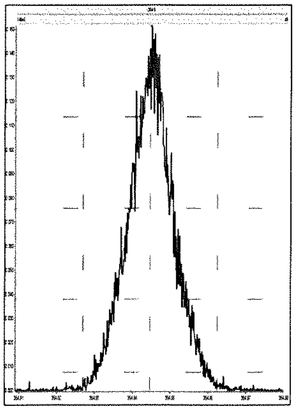

M 366.9792 R 12469

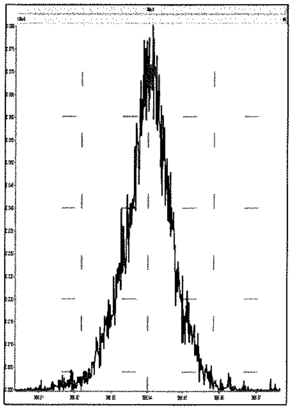

M 380.9760 R 11737

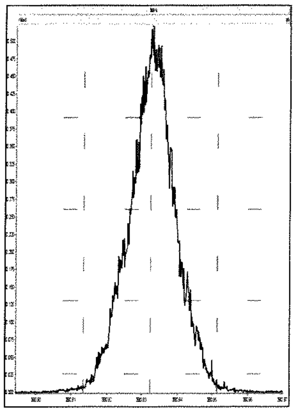

M 392.9760 R 12048

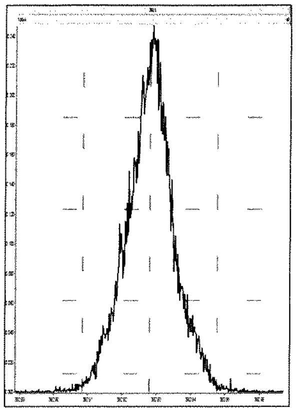

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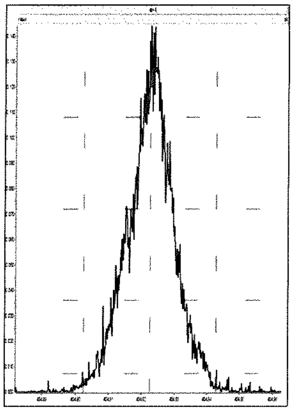

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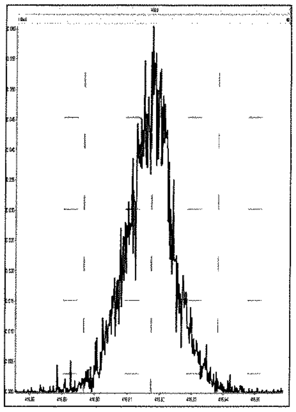

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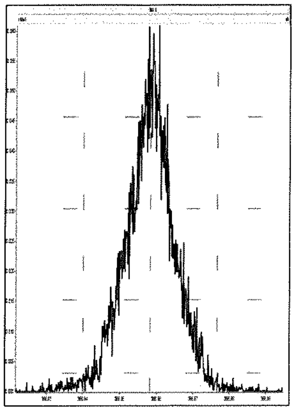

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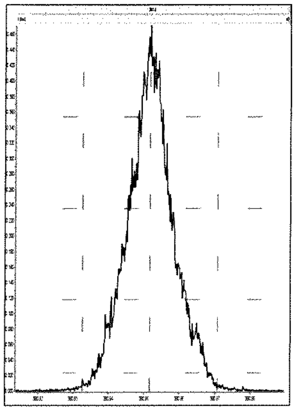

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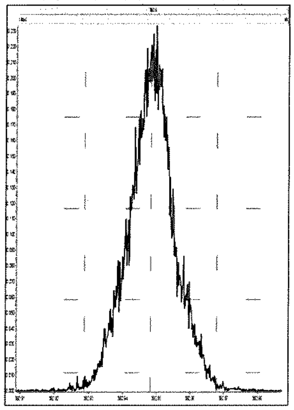

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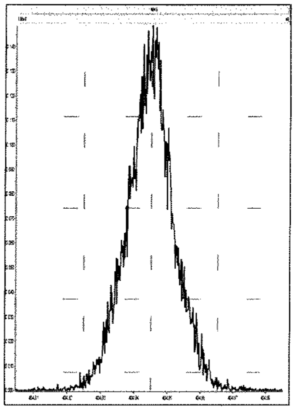

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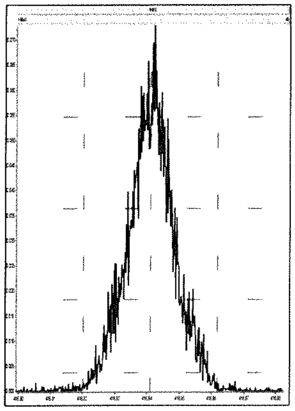

M 430.9728 R 11737

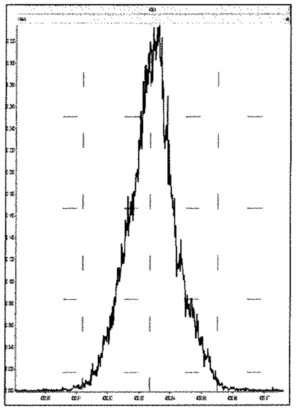

M 442.9728 R 11961

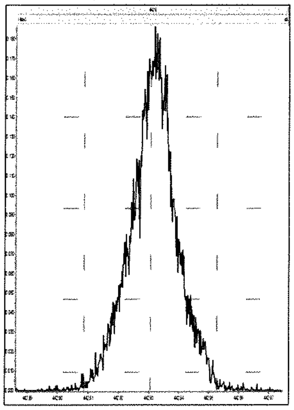

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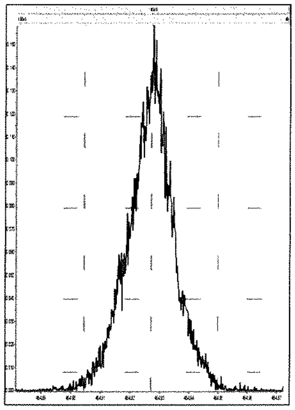

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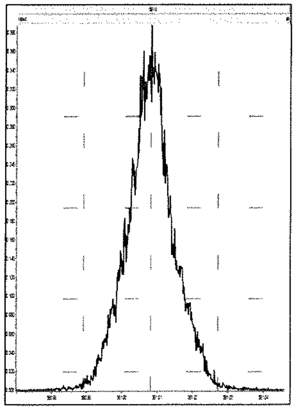

M 392.9760 R 11794

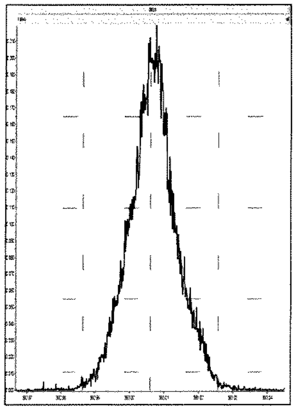

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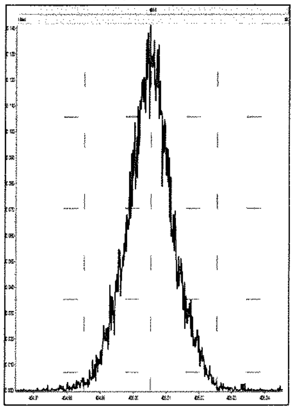

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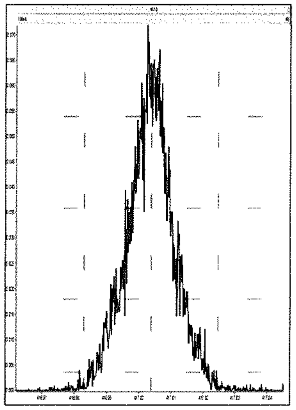

M 430.9728 R 11801

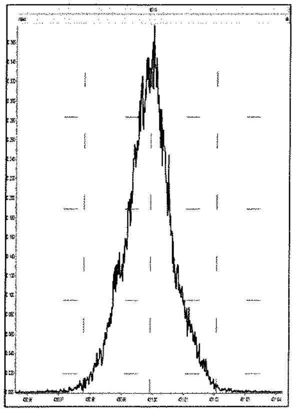

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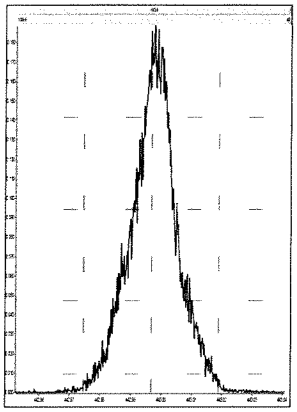

M 454.9728 R 12026

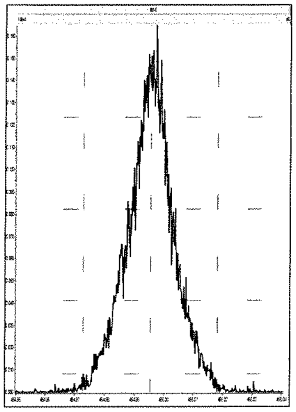

M 466.9728 R 12535

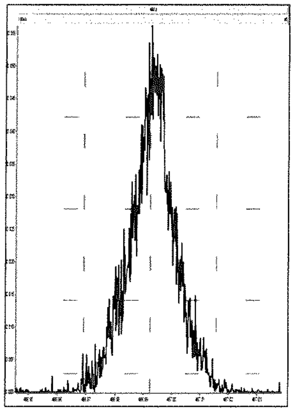

M 480.9696 R 11712

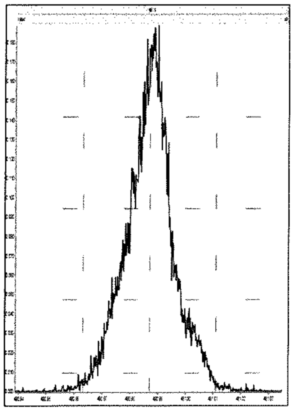

M 380.9760 R 12348

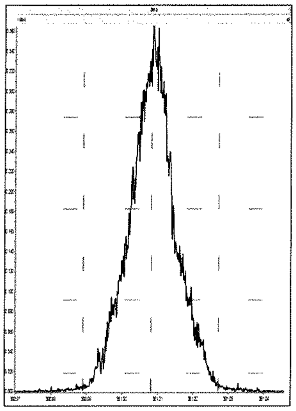

M 392.9760 R 12077

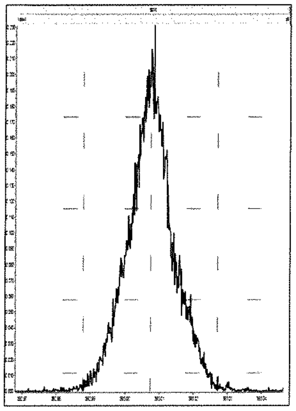

M 404.9760 R 12628

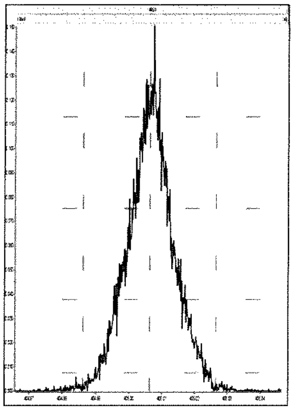

M 416.9760 R 12698

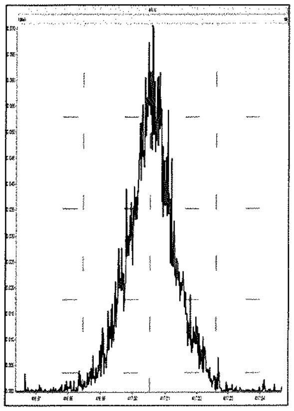

M 430.9728 R 12196

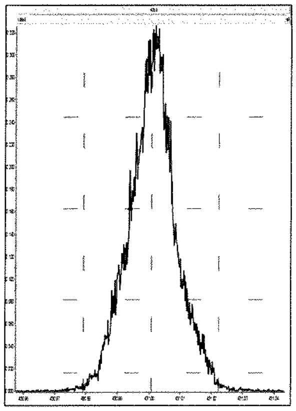

M 442.9728 R 11769

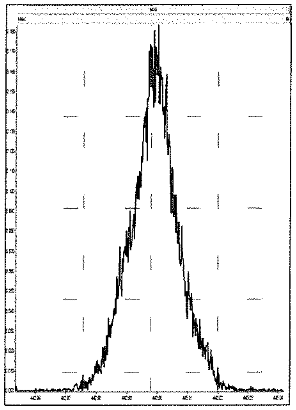

M 454.9728 R 11820

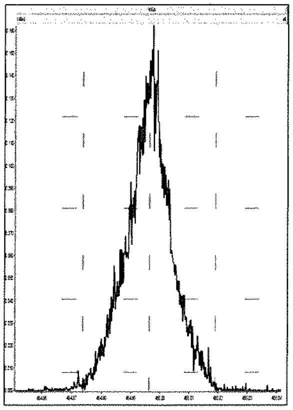

M 466.9728 R 11849

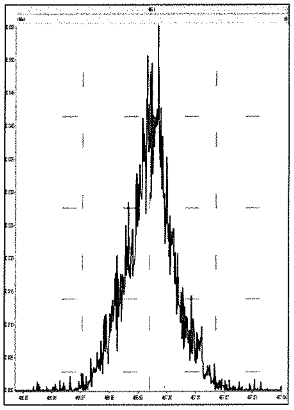

M 480.9696 R 11263

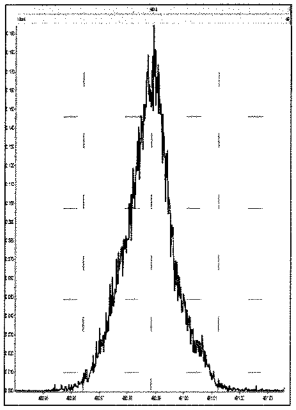

M 492.9696 R 11737

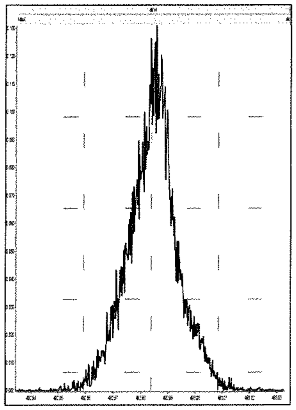

M 504.9696 R 11908

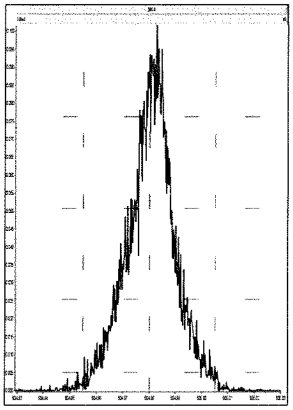

M 516.9697 R 12789

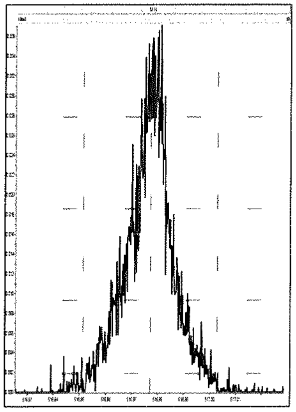

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 16:09:46 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720 CS-2 HRDXNL2_00030
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:36 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 17:19:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.717	69479316	0.77	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	94597447	0.78	1.3598	100.1	100.1	0.1646	0.1646	100	
2,3,7,8-TCDF	17.219	435861	0.70	0.9077	0.5076	0.5076	0.0130	0.0130	102	
S Total TCDF					0.5076	0.5076	0.0130	0.0130		
D 13C-2,3,7,8-TCDD	17.899	72418737	0.77	1.0536	98.9	98.9	0.1503	0.1503	98.93	
2,3,7,8-TCDD	17.914	373087	0.68	1.0061	0.5120	0.5120	0.0182	0.0182	102	M
$ 37Cl4-2,3,7,8-TCDD	17.929	323571		1.0488	0.4441	0.4441	0.009651	0.009651	88.81	
S Total TCDD					0.5120	0.5120	0.0182	0.0182		
D 13C-1,2,3,7,8-PeCDF	22.198	77742057	1.57	1.1306	99.0	99.0	0.2250	0.2250	98.97	
1,2,3,7,8-PeCDF	22.212	1831854	1.53	0.9147	2.576	2.576	0.0264	0.0264	103	
D 13C-2,3,4,7,8-PeCDF	23.535	71348405	1.53	1.0539	97.4	97.4	0.2414	0.2414	97.44	
2,3,4,7,8-PeCDF	23.562	1786782	1.53	0.9508	2.634	2.634	0.0300	0.0300	105	
S Total PeCDF					5.210	5.210	0.0282	0.0282		
D 13C-1,2,3,7,8-PeCDD	24.257	55779906	1.62	0.8084	99.3	99.3	0.1303	0.1303	99.31	
1,2,3,7,8-PeCDD	24.285	1497052	1.52	0.9955	2.696	2.696	0.0246	0.0246	108	
S Total PeCDD					2.696	2.696	0.0246	0.0246		
D 13C-1,2,3,4,7,8-HxCDF	30.393	47151495	0.51	0.9225	96.5	96.5	0.5646	0.5646	96.55	
1,2,3,4,7,8-HxCDF	30.406	1347531	1.16	1.1090	2.577	2.577	0.0330	0.0330	103	
D 13C-1,2,3,6,7,8-HxCDF	30.579	54372821	0.50	1.0336	99.4	99.4	0.5039	0.5039	99.37	
1,2,3,6,7,8-HxCDF	30.593	1516975	1.27	1.0721	2.602	2.602	0.0297	0.0297	104	
D 13C-2,3,4,6,7,8-HxCDF	31.431	50763245	0.51	0.9773	98.1	98.1	0.5329	0.5329	98.11	
2,3,4,6,7,8-HxCDF	31.458	1438567	1.29	1.0838	2.615	2.615	0.0247	0.0247	105	
D 13C-1,2,3,7,8,9-HxCDF	32.256	47135979	0.51	0.9153	97.3	97.3	0.5690	0.5690	97.27	
1,2,3,7,8,9-HxCDF	32.270	1365563	1.23	1.0931	2.650	2.650	0.0245	0.0245	106	
S Total HxCDF					10.4	10.4	0.0280	0.0280		
* 13C-1,2,3,7,8,9-HxCDD	32.070	52941411	1.21	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	41391638	1.24	0.7977	98.0	98.0	0.4078	0.4078	98.02	
1,2,3,4,7,8-HxCDD	31.644	1086110	1.27	1.0014	2.620	2.620	0.0316	0.0316	105	
D 13C-1,2,3,6,7,8-HxCDD	31.737	51300838	1.26	1.0010	96.8	96.8	0.3249	0.3249	96.80	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	1218876	1.25	0.8902	2.669	2.669	0.0297	0.0297	107	
1,2,3,7,8,9-HxCDD	32.083	1277610	1.20	1.0579	2.606	2.606	0.0272	0.0272	104	
S Total HxCDD					7.895	7.895	0.0295	0.0295		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	44172724	0.42	0.8506	98.1	98.1	1.306	1.306	98.09	
1,2,3,4,6,7,8-HpCDF	33.691	1569431	1.05	1.3603	2.612	2.612	0.0343	0.0343	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.749	38635465	0.44	0.7618	95.8	95.8	1.458	1.458	95.80	
1,2,3,4,7,8,9-HpCDF	34.761	1339219	1.04	1.3207	2.625	2.625	0.0454	0.0454	105	
S Total HpCDF					5.237	5.237	0.0399	0.0399		
D 13C-1,2,3,4,6,7,8-HpCDD	34.457	46427849	1.05	0.8873	98.8	98.8	0.6222	0.6222	98.84	
1,2,3,4,6,7,8-HpCDD	34.469	1199192	1.01	0.9988	2.586	2.586	0.0322	0.0322	103	
S Total HpCDD					2.586	2.586	0.0322	0.0322		
D 13C-OCDD	36.779	64335649	0.90	0.6287	193.3	193.3	0.3370	0.3370	96.64	
OCDF	36.875	2287654	0.88	1.4136	5.031	5.031	0.0347	0.0347	101	
OCDD	36.791	1921704	0.89	1.1290	5.292	5.292	0.0254	0.0254	106	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Sep-2020 16:09:46 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720 CS-2 HRDXNL2_00030
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:36 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 17:19:26

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.717	17.711	0		30177552	7479139	6207	15517	1205		
333.9339	17.717	17.711	0		39301764	9633030	4631	11577	2080	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.971	41352489	10455241	7584	18960	1379		
317.9389	17.203	17.203	0	0.971	53244958	13402215	7733	19332	1733	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	179767	45403	406	1015	112		
305.8987	17.219	17.218	0	1.001	256094	65363	718	1795	91	0.70(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.010	31528479	7573809	6207	15517	1220		
333.9339	17.899	17.905	0	1.010	40890258	9620747	4631	11577	2077	0.77(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	17.914	17.920	0	1.001	150442	34466	820	2050	42		M
321.8936	17.914	17.920	0	1.001	222645	52312	437	1092	120	0.68(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	323571	77695	693	1732	112		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.253	47523565	8332657	10134	25335	822		
353.8970	22.198	22.204	0	1.253	30218492	5332333	7281	18202	732	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.220	0	1.001	1108293	183113	533	1332	344		
341.8567	22.226	22.220	0	1.001	723561	128260	787	1967	163	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.328	43182296	6970287	10134	25335	688		
353.8970	23.535	23.540	0	1.328	28166109	4598648	7281	18202	632	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	1080869	170226	533	1332	319		
341.8567	23.562	23.567	0	1.001	705913	114123	787	1967	145	1.53(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.369	34452671	5322945	4183	10457	1273		
369.8919	24.257	24.263	0	1.369	21327235	3275530	3030	7575	1081	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	902673	137221	561	1402	245		
357.8516	24.285	24.290	0	1.001	594379	94491	282	705	335	1.52(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	15907677	2787175	8771	21927	318		
385.8610	30.393	30.398	0	0.948	31243818	5538607	17428	43570	318	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.414	0	1.000	724407	124761	657	1642	190		
375.8178	30.406	30.414	0	1.000	623124	108921	562	1405	194	1.16(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.587	0	0.954	18219024	3190920	8771	21927	364		
385.8610	30.579	30.587	0	0.954	36153797	6377045	17428	43570	366	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.593	30.608	-1	1.000	847853	146794	657	1642	223		
375.8178	30.606	30.608	0	1.001	669122	114984	562	1405	205	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.431	31.439	0	0.980	17206437	3856341	8771	21927	440		
385.8610	31.431	31.439	0	0.980	33556808	7542406	17428	43570	433	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.001	810783	196014	657	1642	298		
375.8178	31.458	31.458	0	1.001	627784	140674	562	1405	250	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	15820168	3819576	8771	21927	435		
385.8610	32.243	32.254	-1	1.005	31315811	7580727	17428	43570	435	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	753629	188592	657	1642	287		
375.8178	32.270	32.267	0	1.000	611934	139615	562	1405	248	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		29016794	6898053	7532	18830	916		
403.8529	32.070	32.067	0		23924617	5677861	8830	22075	643	1.21(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	22935871	5591026	7532	18830	742		
403.8529	31.631	31.631	0	0.986	18455767	4566751	8830	22075	517	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	606908	163932	725	1812	226		
391.8127	31.644	31.647	0	1.000	479202	120418	561	1402	215	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	28568934	6776183	7532	18830	900		
403.8529	31.737	31.740	0	0.990	22731904	5391682	8830	22075	611	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	678278	161129	725	1812	222		
391.8127	31.750	31.756	0	1.000	540598	129703	561	1402	231	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	698192	166908	725	1812	230		
391.8127	32.083	32.081	0	1.014	579418	129354	561	1402	231	1.20(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.050	13076522	4036860	17282	43205	234		
419.8220	33.679	33.684	0	1.050	31096202	9610968	38605	96512	249	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	803164	241501	1368	3420	177		
409.7789	33.691	33.694	0	1.000	766267	228291	1181	2952	193	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.749	34.751	0	1.084	11792323	3269167	17282	43205	189		
419.8220	34.749	34.751	0	1.084	26843142	7361380	38605	96512	191	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	684290	181563	1368	3420	133		
409.7789	34.761	34.763	0	1.000	654929	178452	1181	2952	151	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.457	34.464	0	1.074	23767396	6568207	14181	35452	463		
437.8140	34.457	34.464	0	1.074	22660453	6275329	13587	33967	462	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	603635	174404	958	2395	182		
425.7737	34.469	34.474	0	1.000	595557	174022	692	1730	251	1.01(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	30510995	7267643	4698	11745	1547		
471.7750	36.779	36.784	0	1.147	33824654	7894909	5961	14902	1324	0.90(0.76-1.02)	
OCDF											
441.7428	36.875	36.882	0	1.003	1073527	253448	666	1665	381		
443.7399	36.875	36.882	0	1.003	1214127	284662	820	2050	347	0.88(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	905814	204726	430	1075	476		
459.7348	36.791	36.791	0	1.000	1015890	236753	439	1097	539	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d				
Injection Date:	17-Sep-2020 16:09:46	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT:	17.91
Area:	145499
Amount:	0.500000
Amount Units:	pg/ul

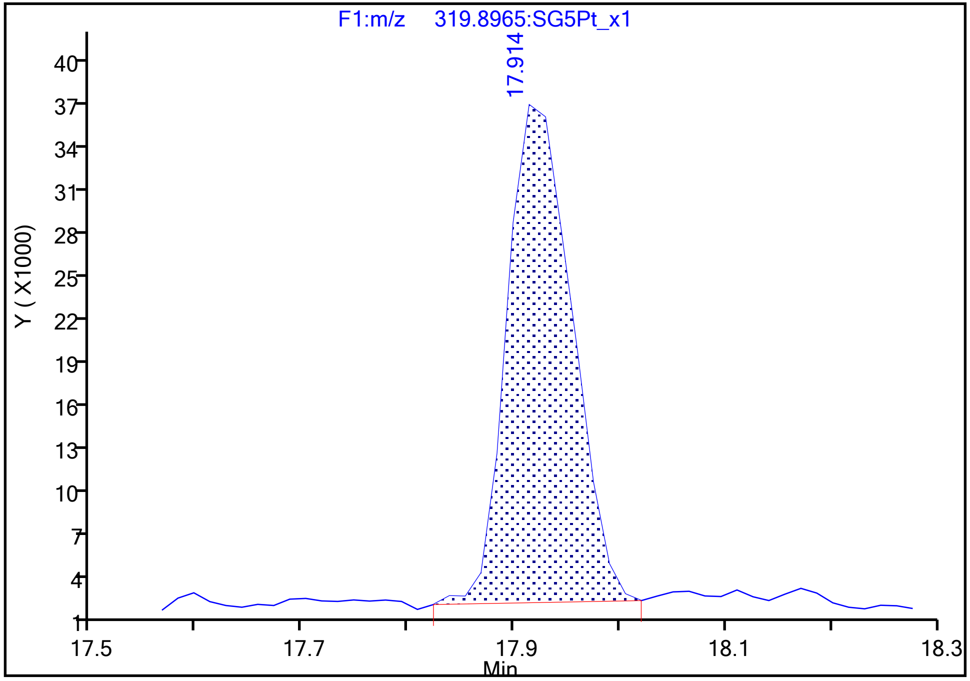

Manual Integration Results

RT:	17.91
Area:	150442
Amount:	0.512033
Amount Units:	pg/ul

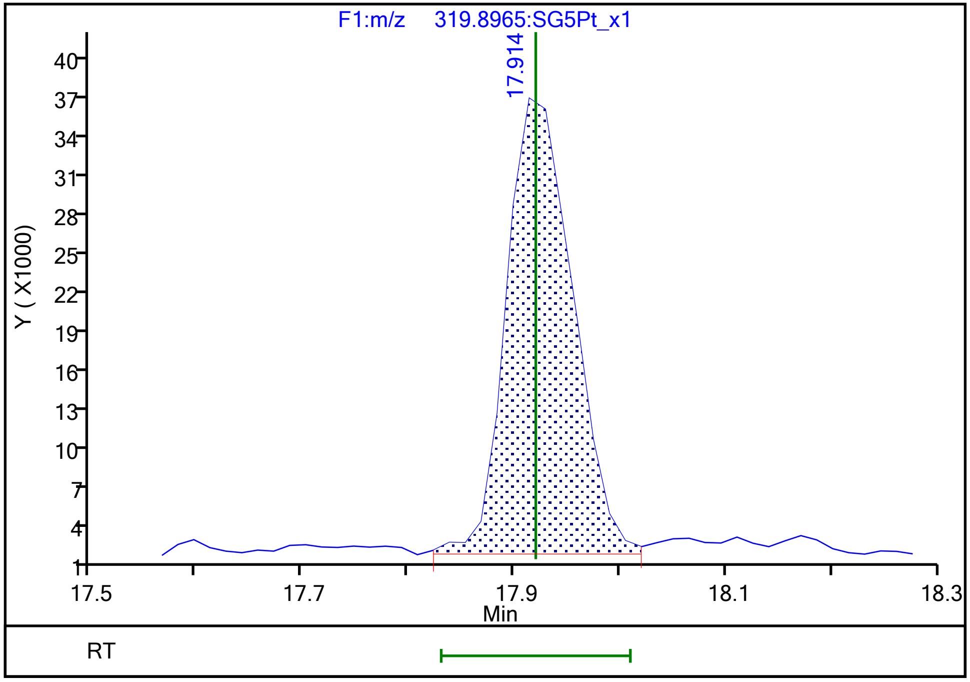

Reviewer: shardaa, 17-Sep-2020 17:16:26

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d				
Injection Date:	17-Sep-2020 16:09:46	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT: 17.91
Area: 227601
Amount: 0.500000
Amount Units: pg/ul

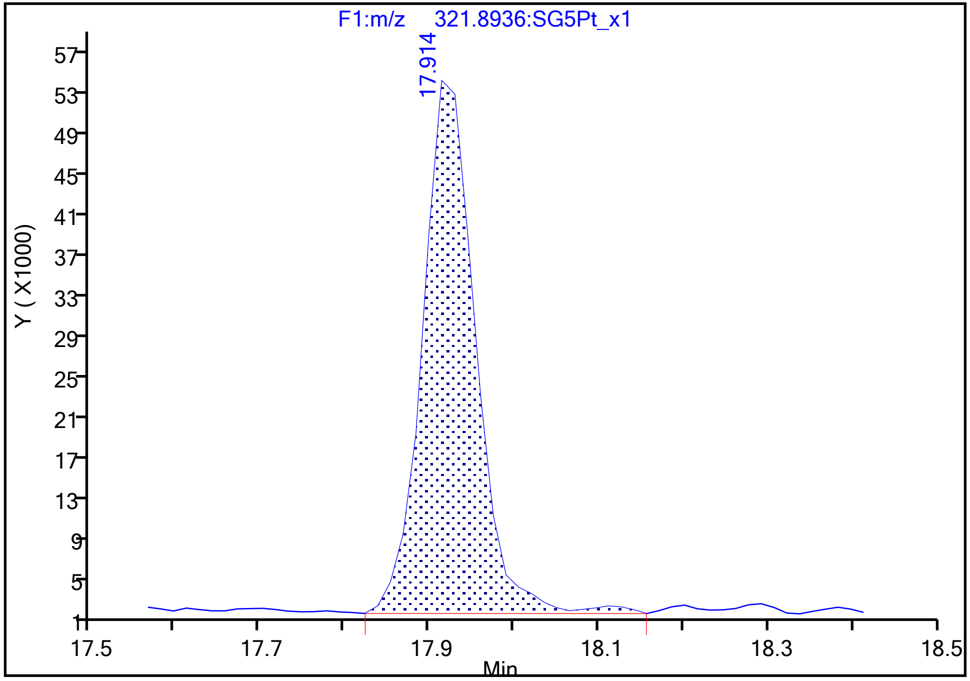

Manual Integration Results

RT: 17.91
Area: 222645
Amount: 0.512033
Amount Units: pg/ul

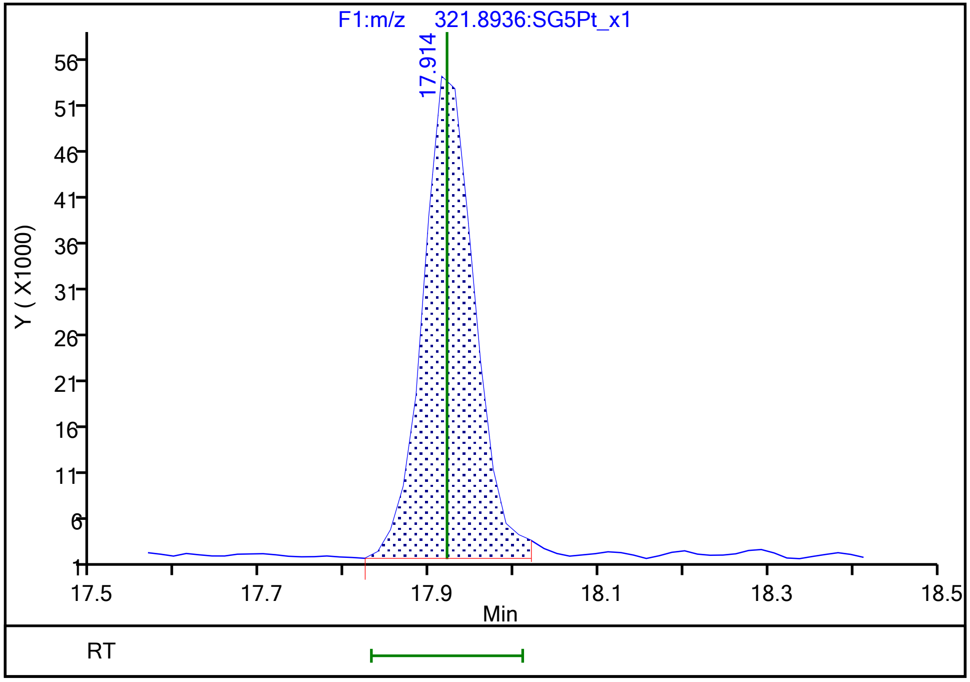

Reviewer: shardaa, 17-Sep-2020 17:16:37

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

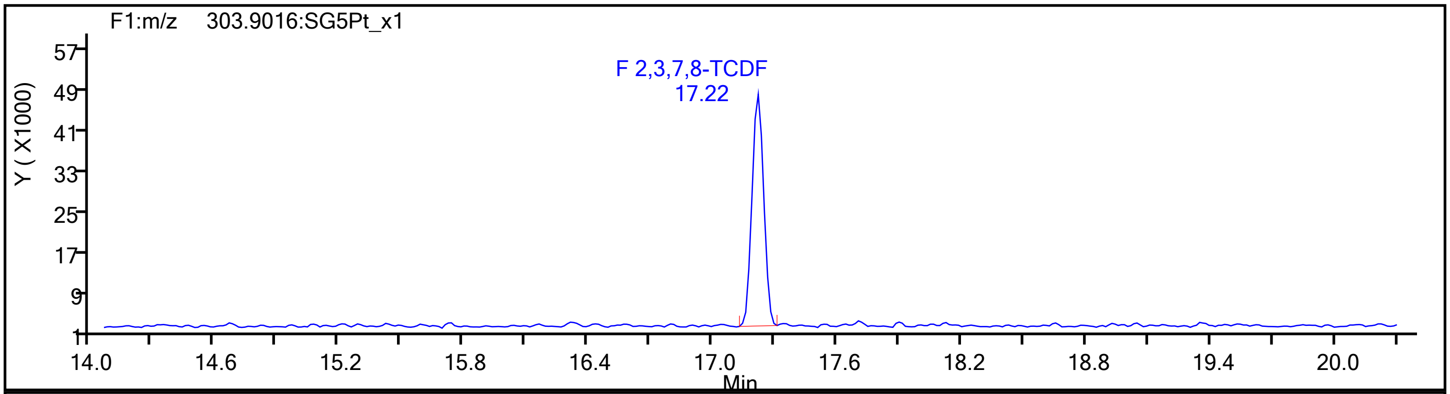

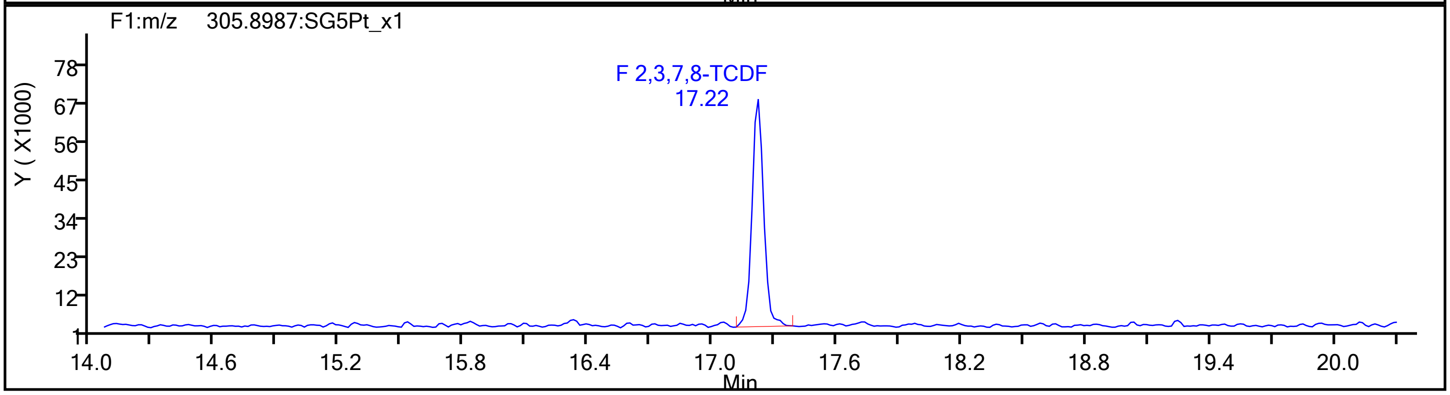

TCDF Standards

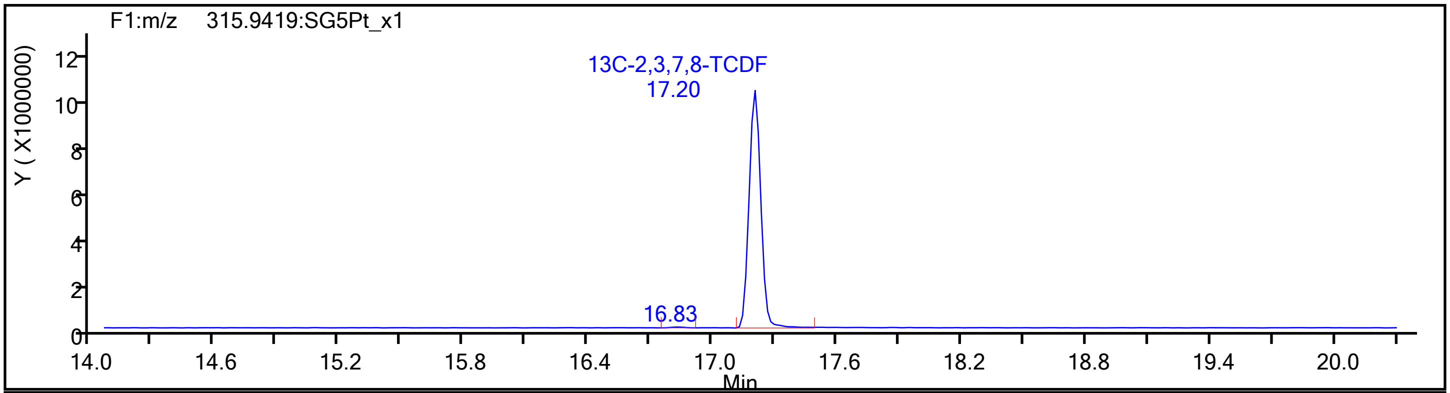

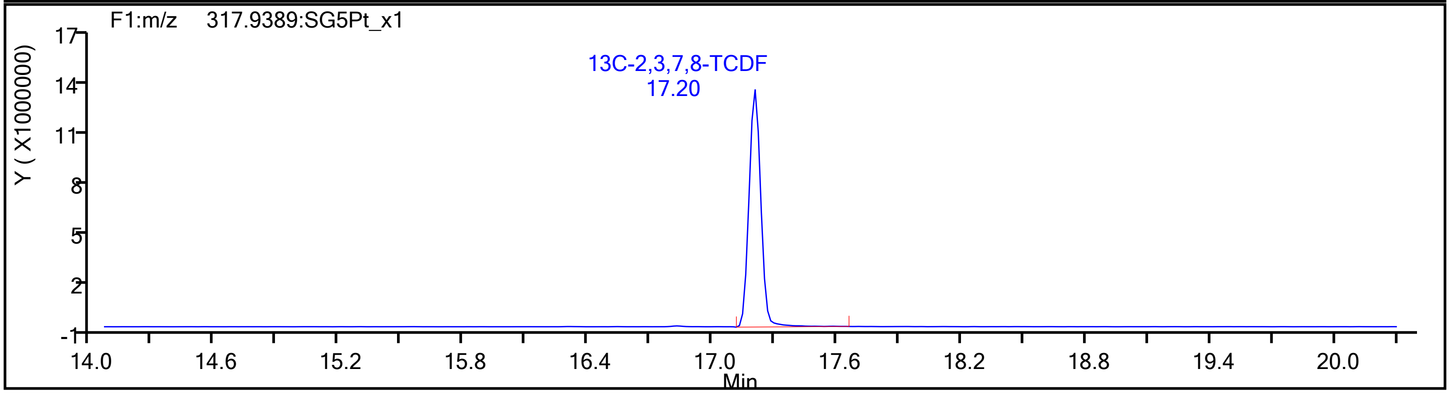

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

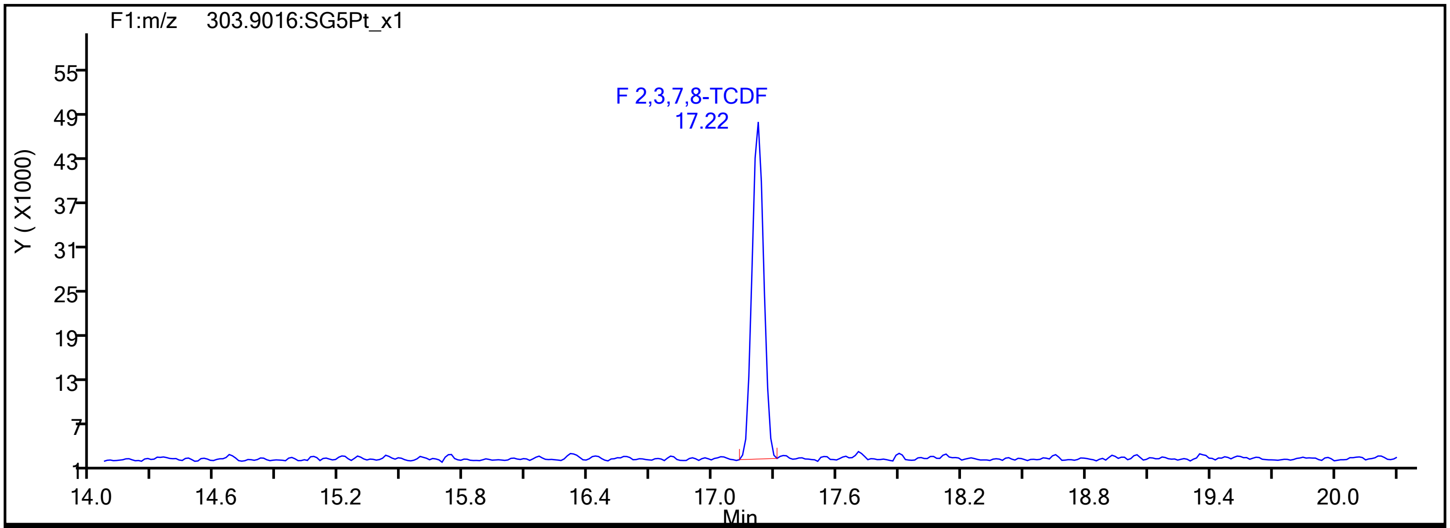

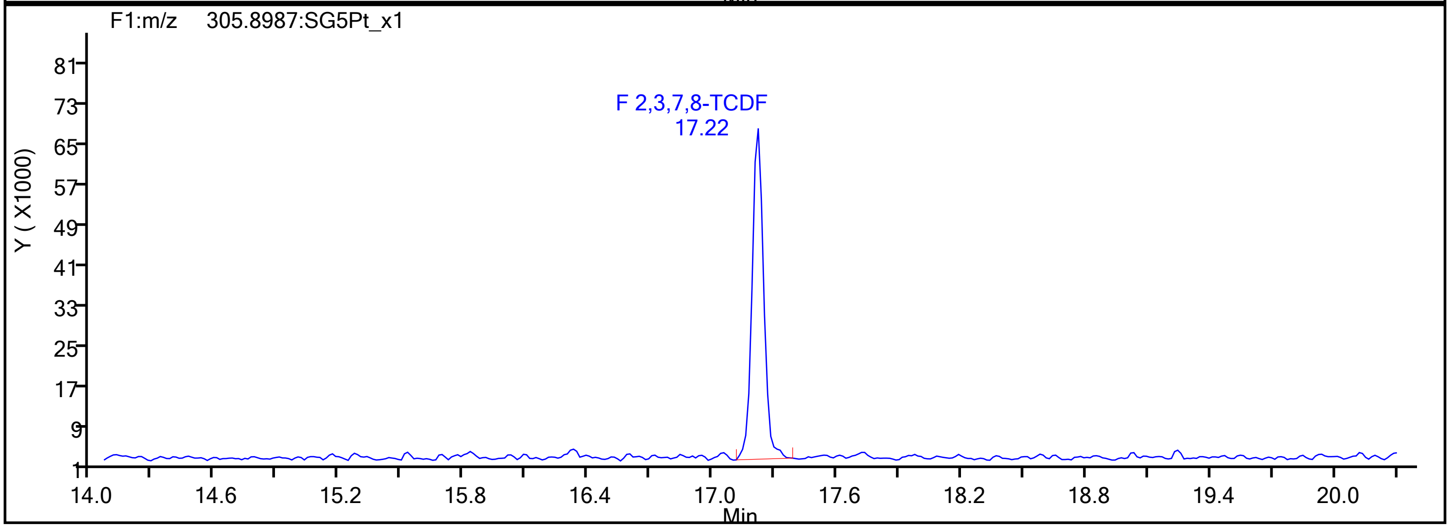

TCDF Interference Mass

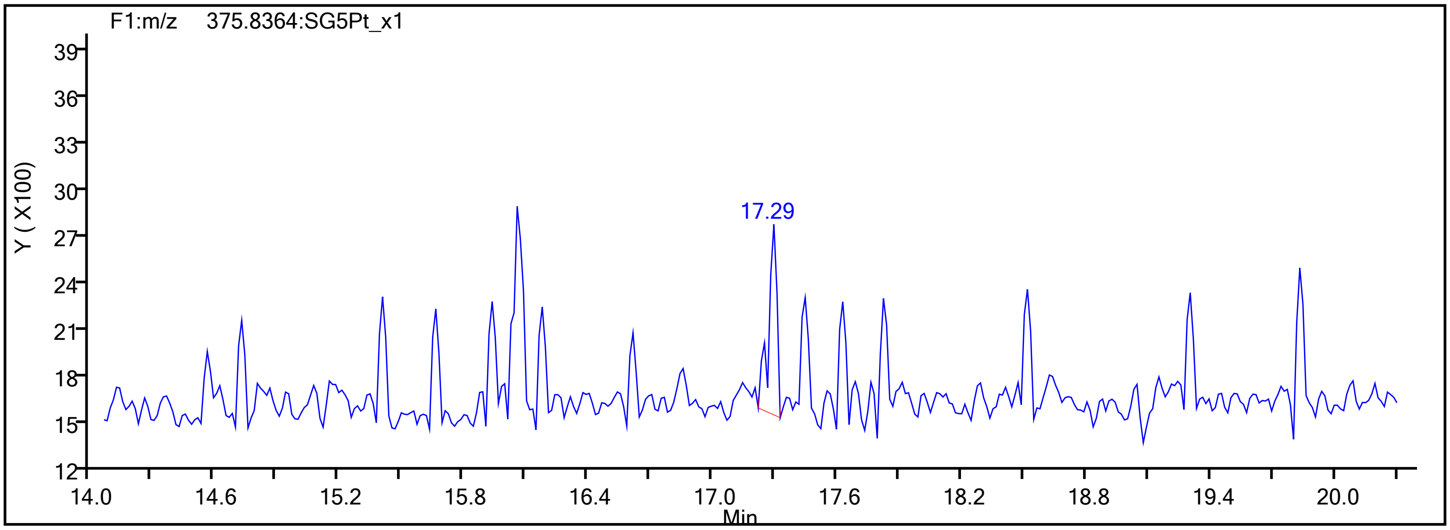

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

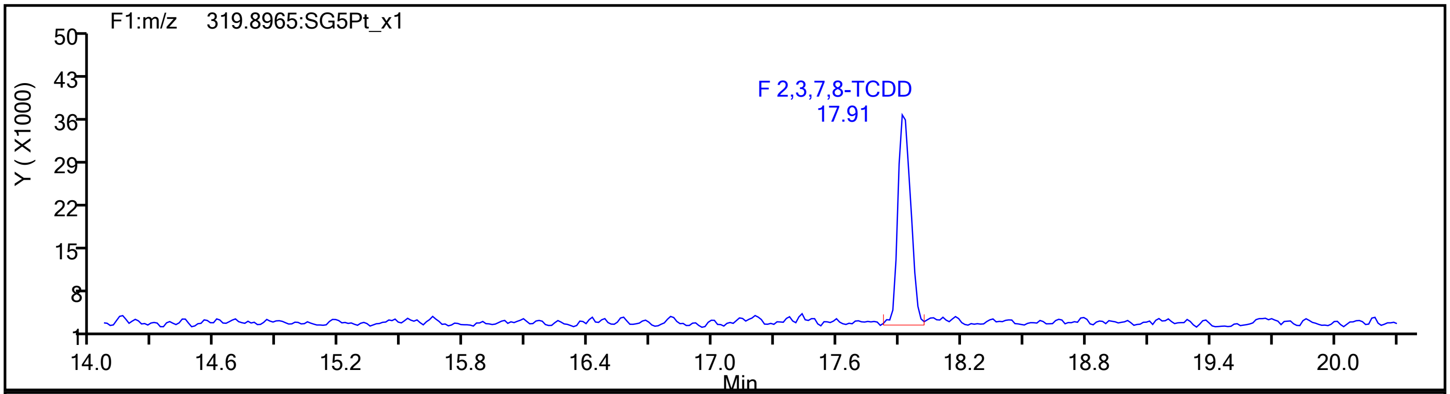

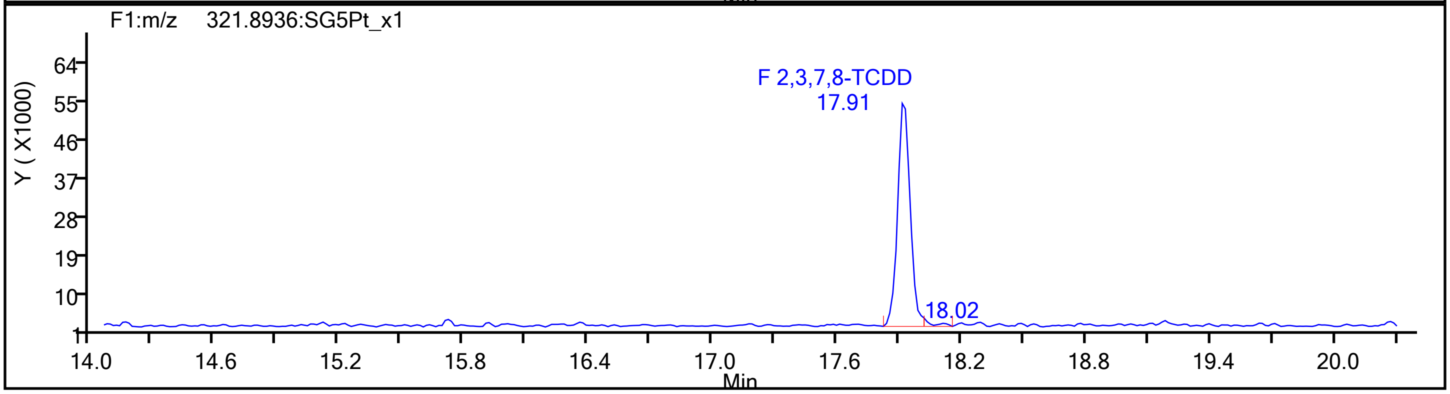

TCDD Standards

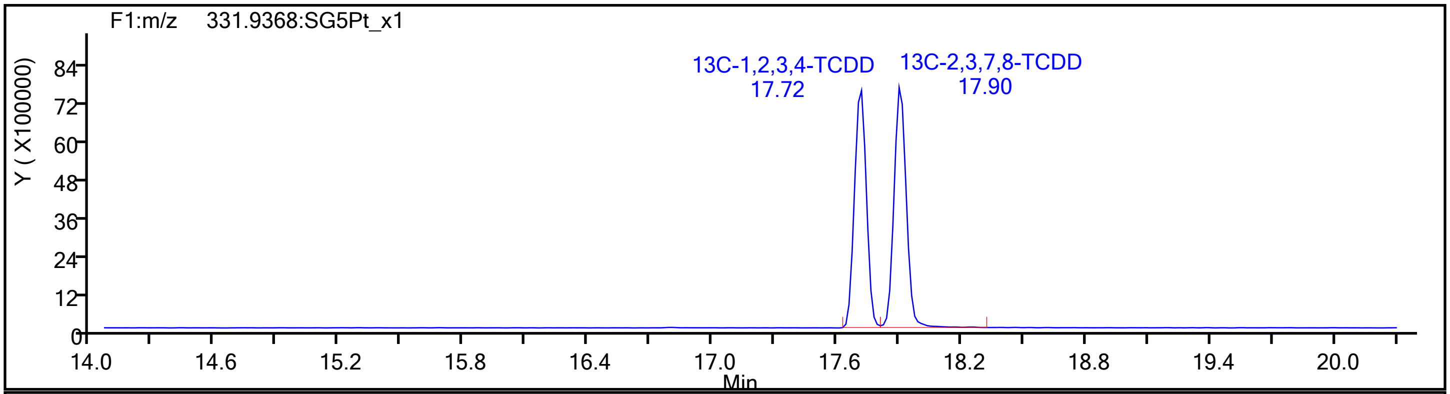

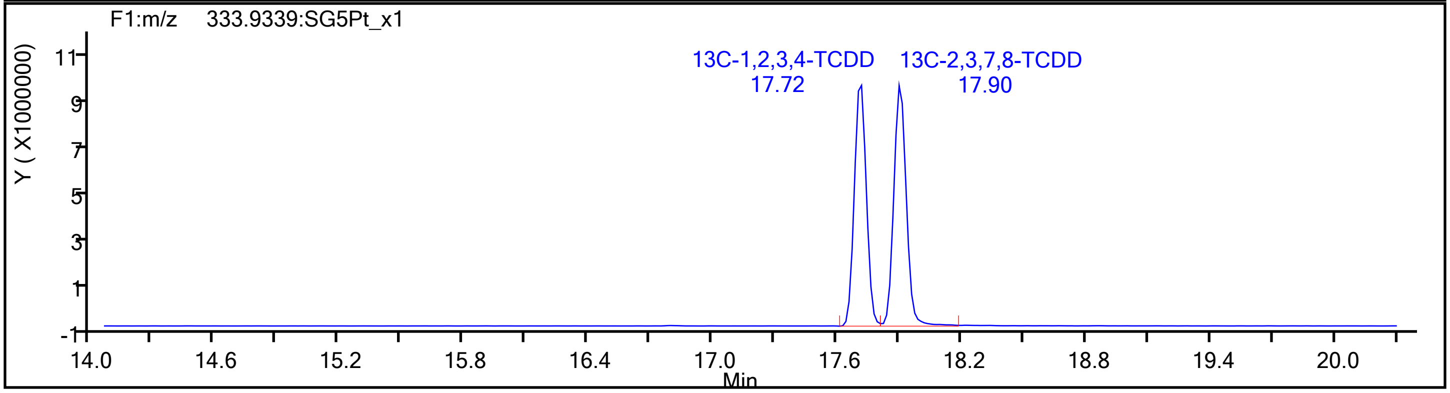

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

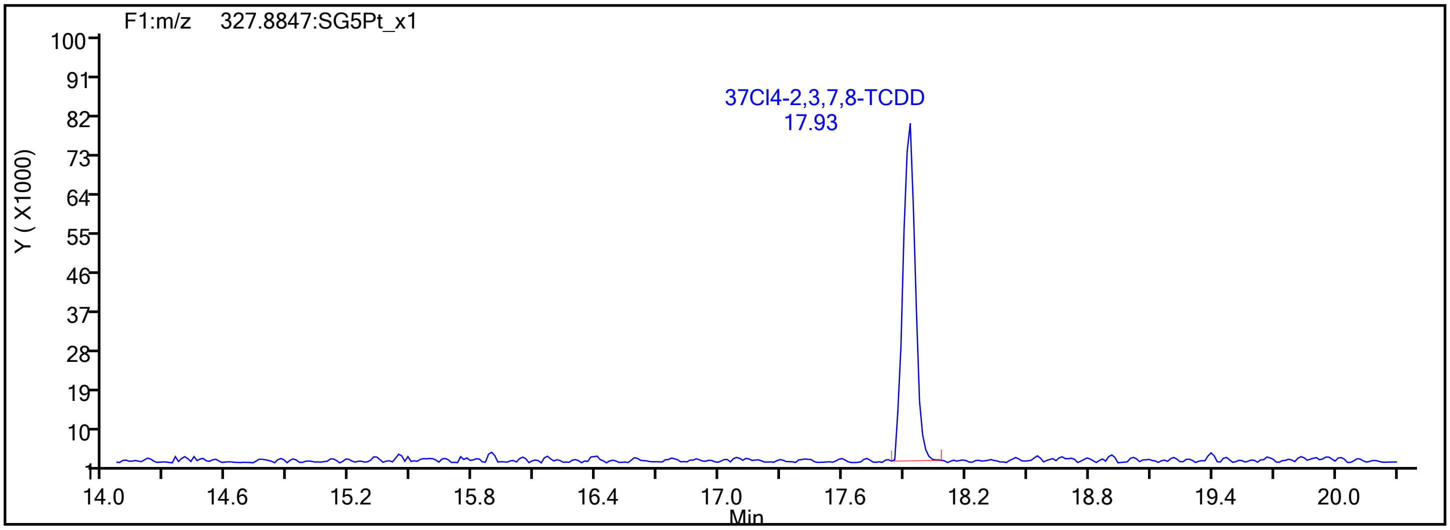

37Cl4-TCDD Standards

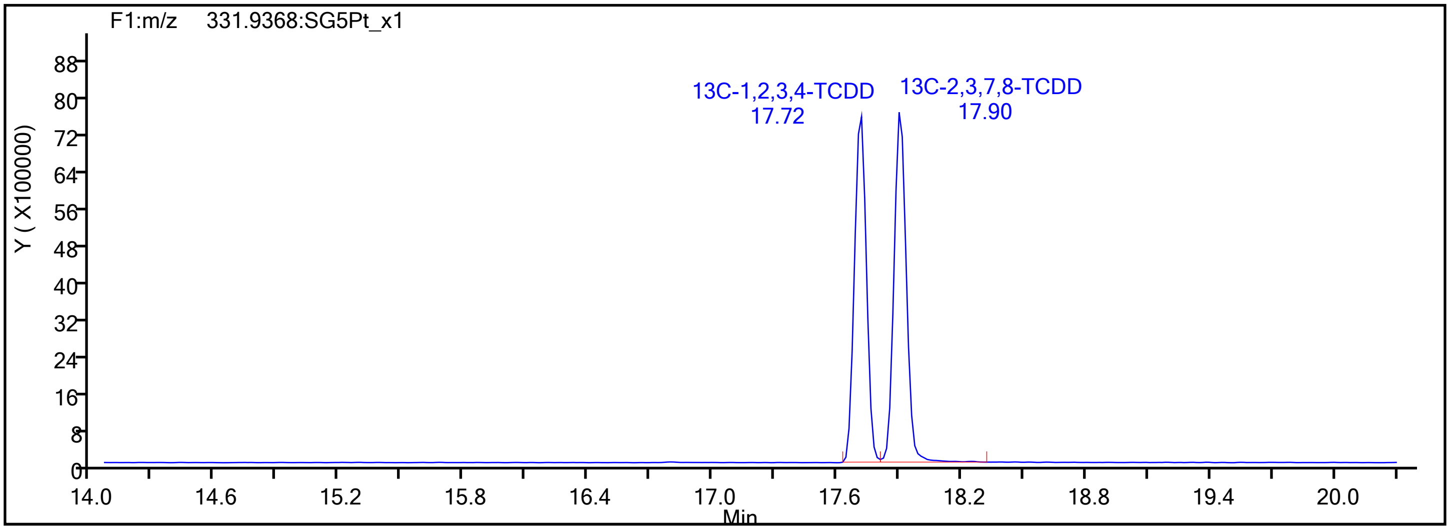

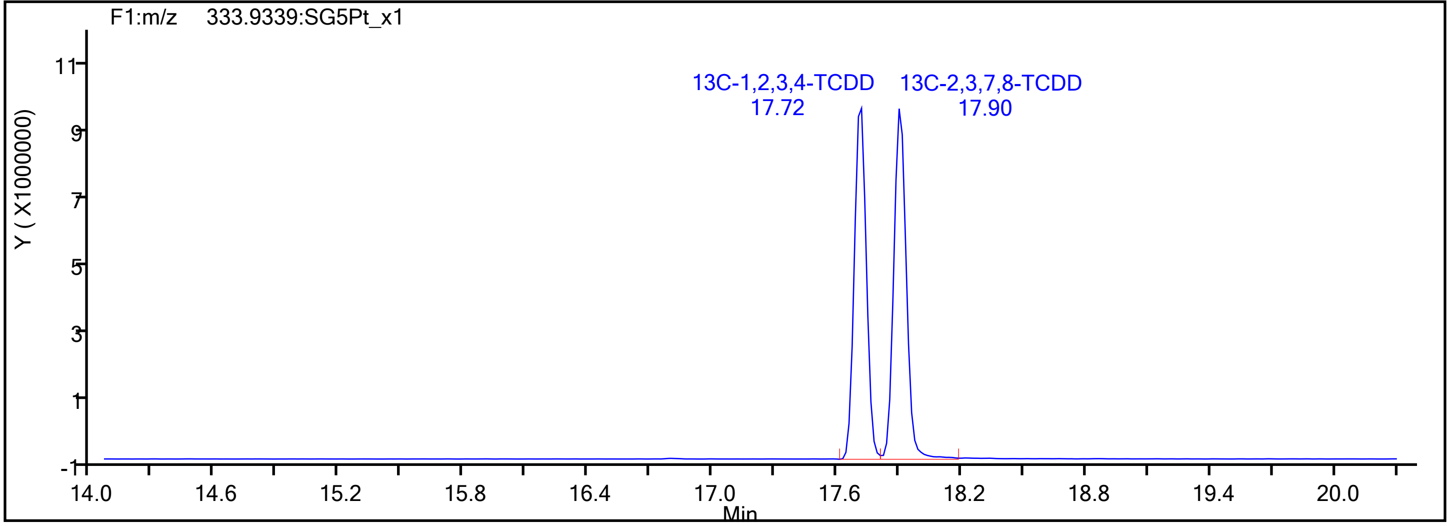

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

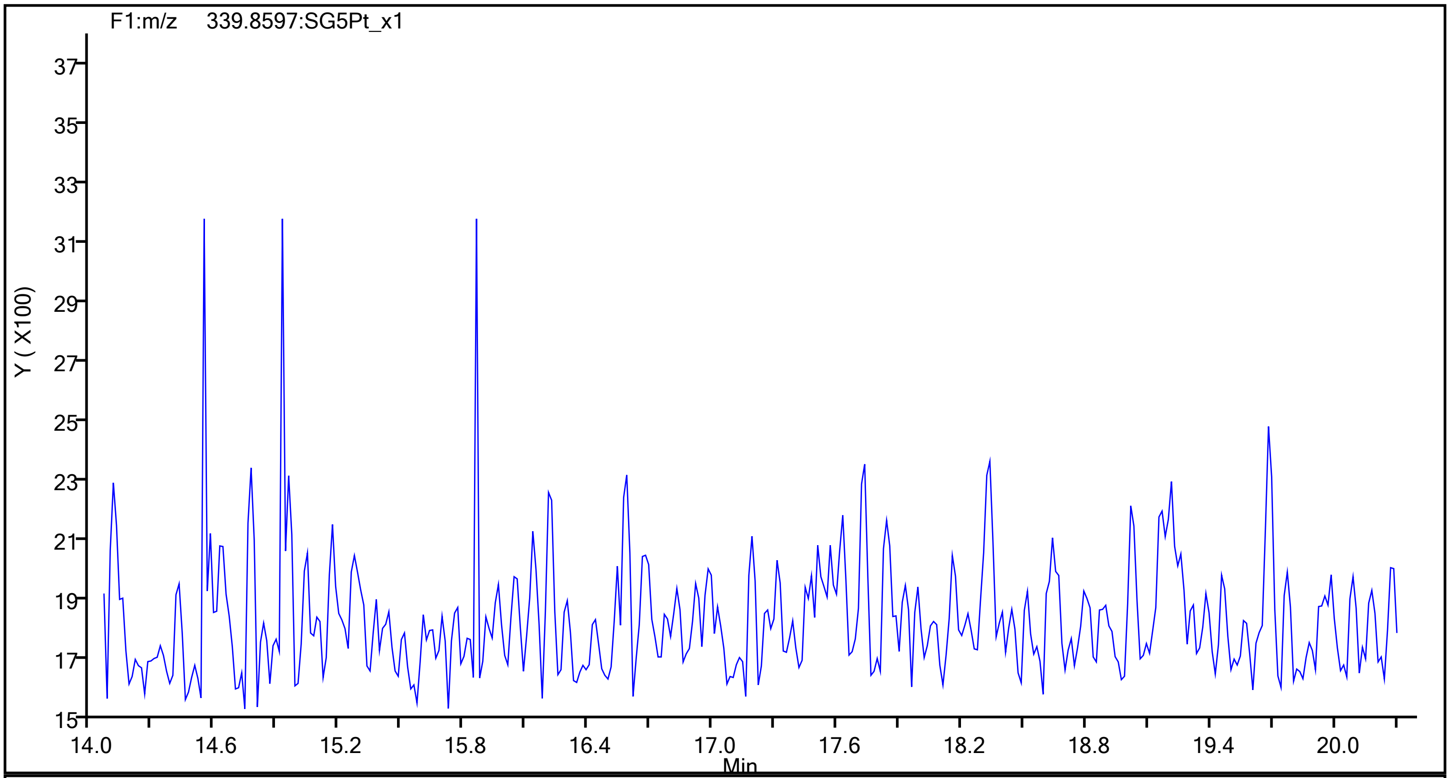

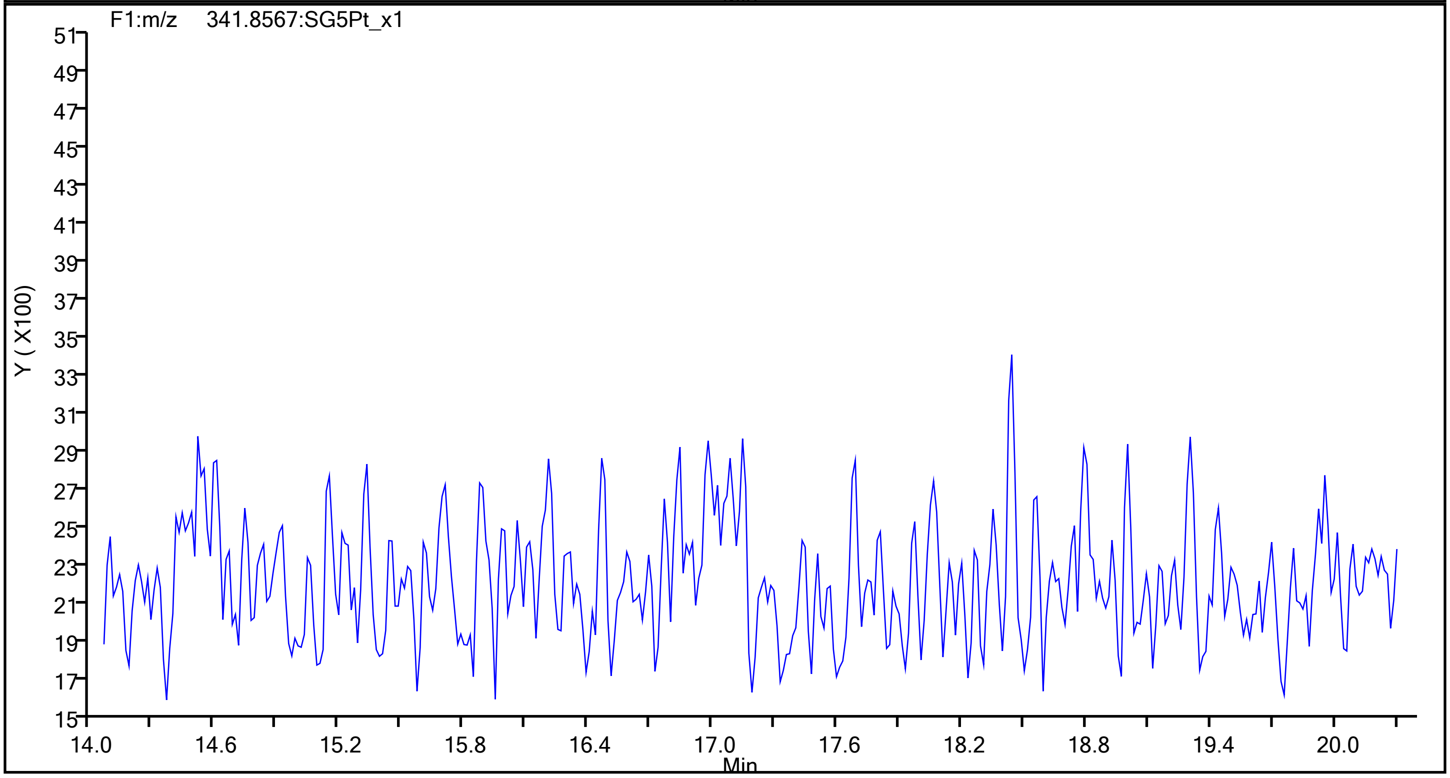

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 3
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Column Dia: 0.32 mm

F1 PeCDFs

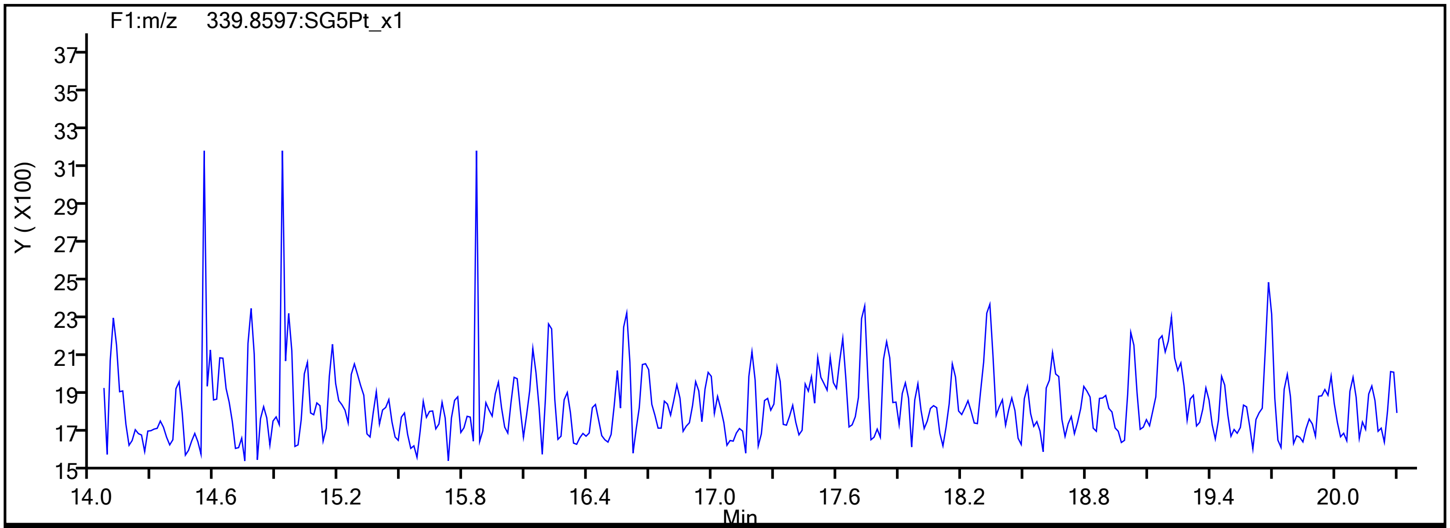

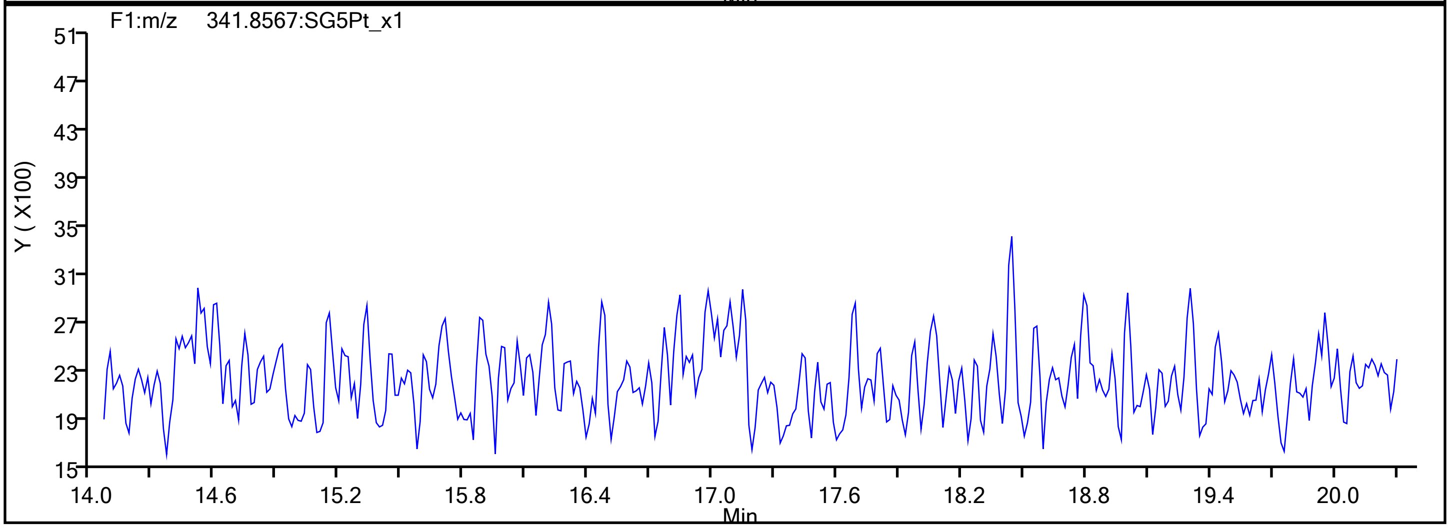

F1 PeCDFs Interference Mass

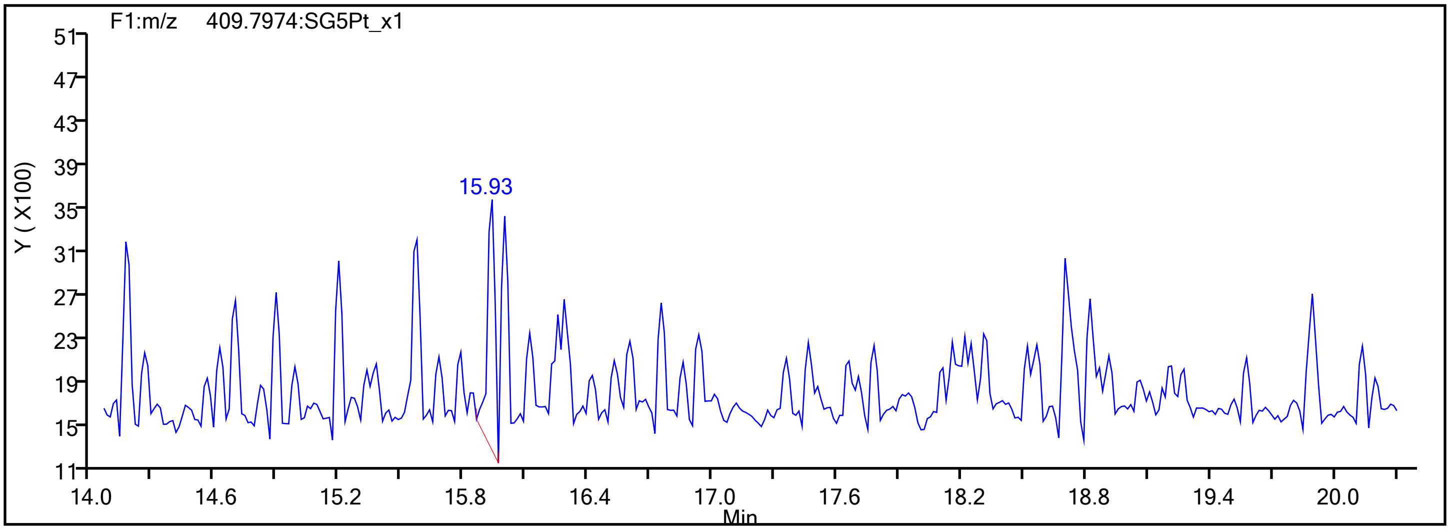

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

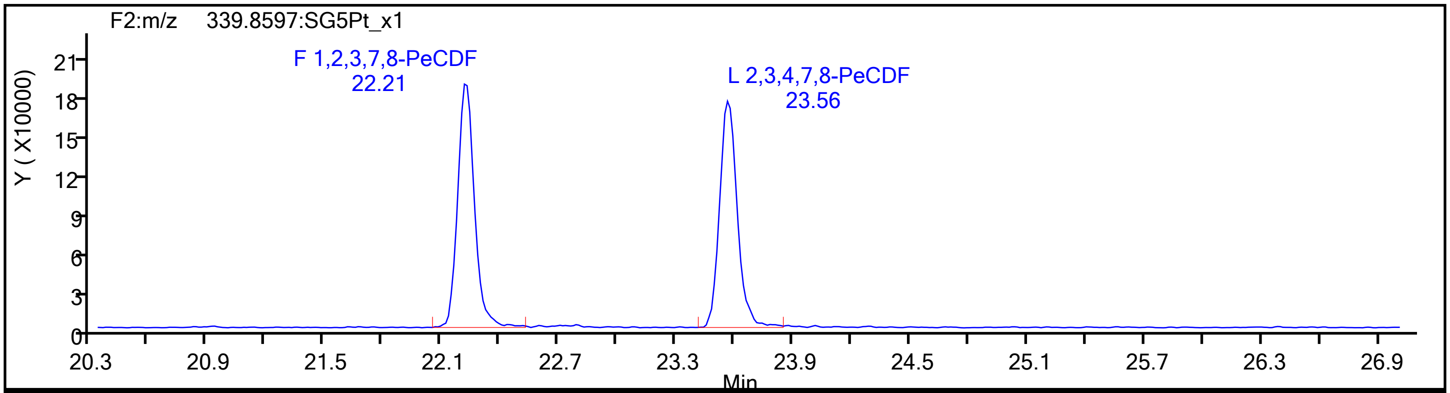

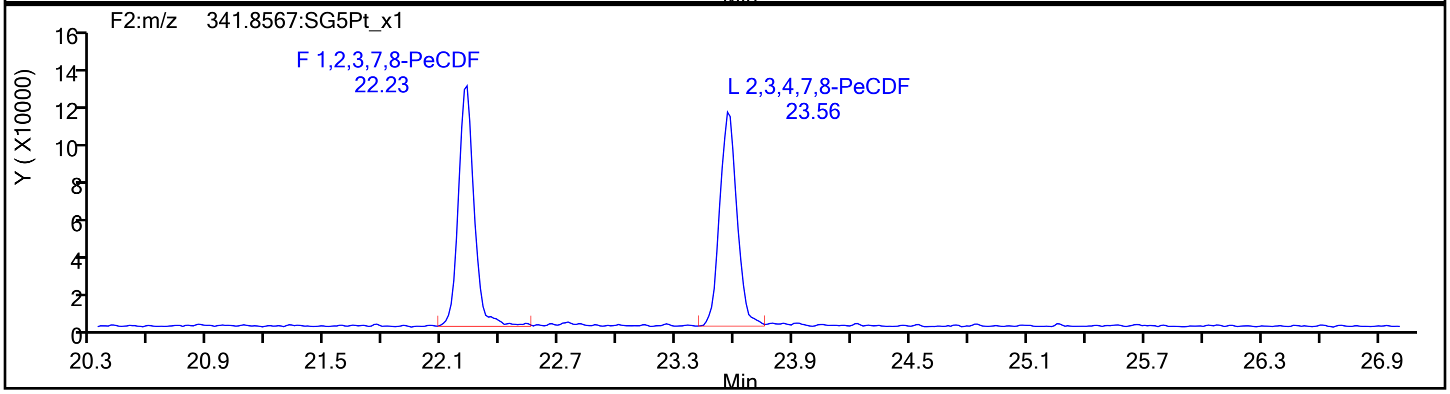

PeCDF Standards

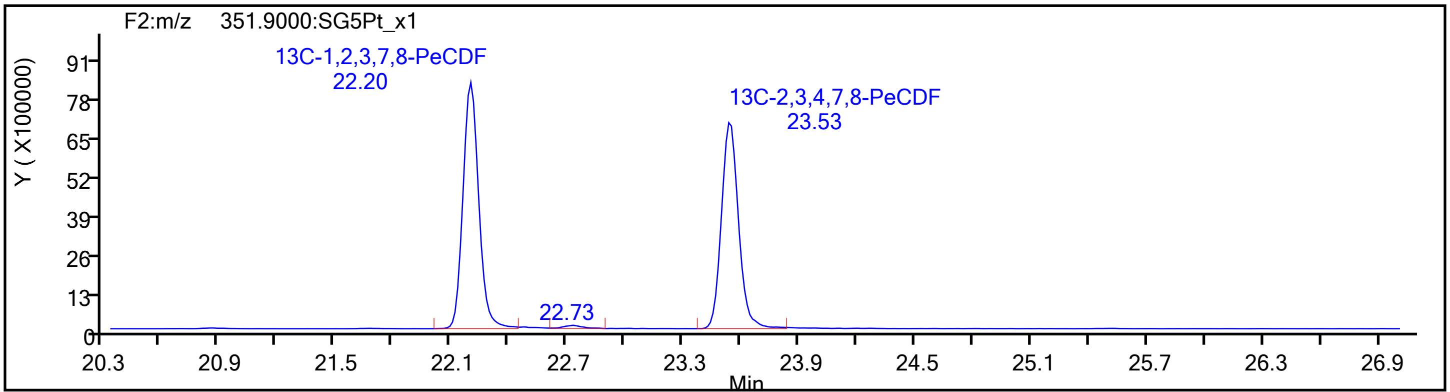

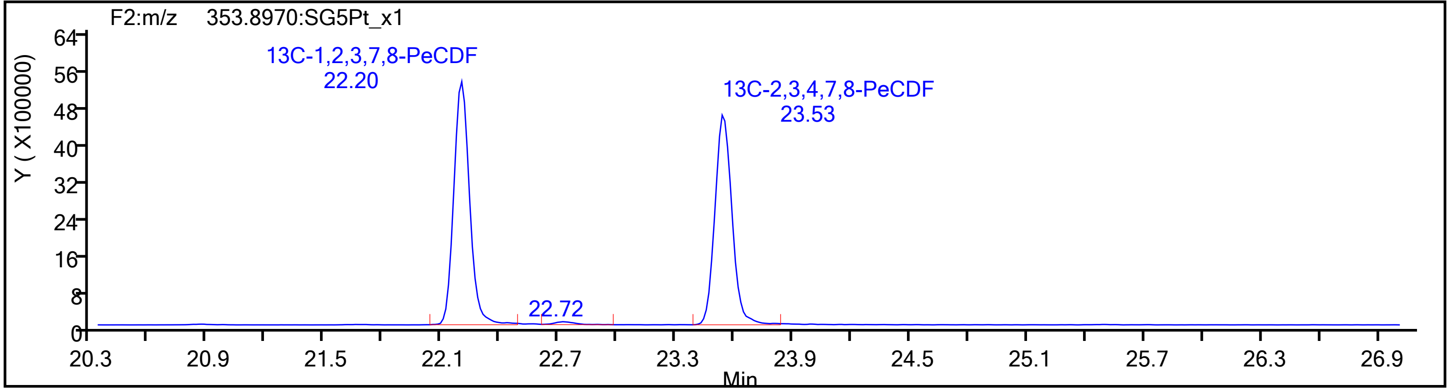

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

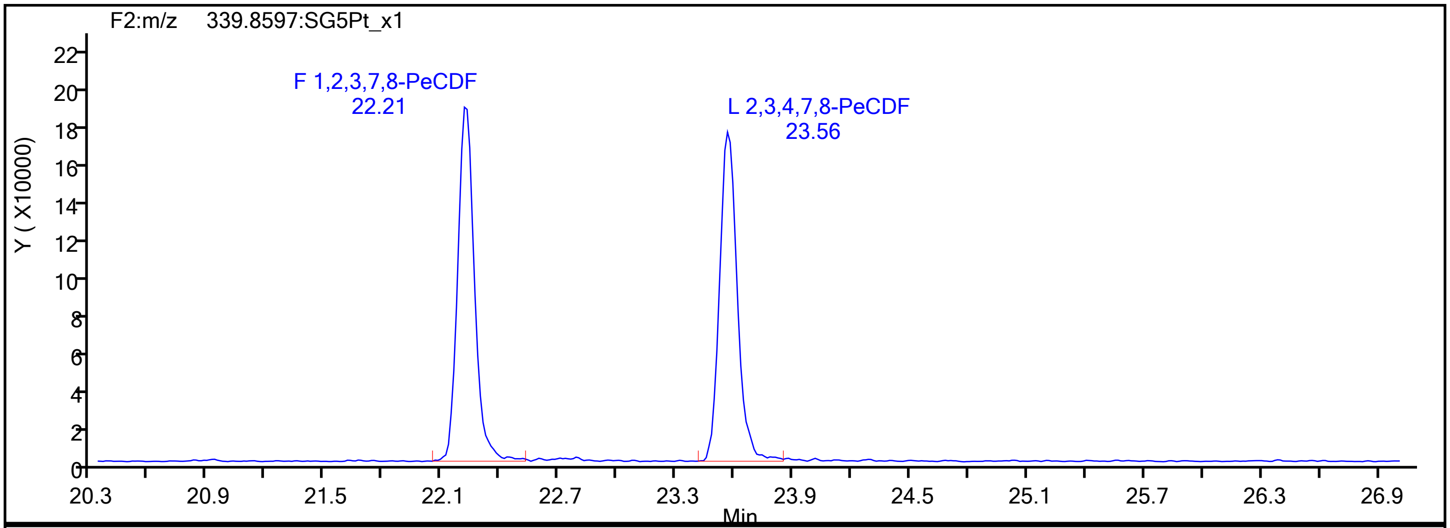

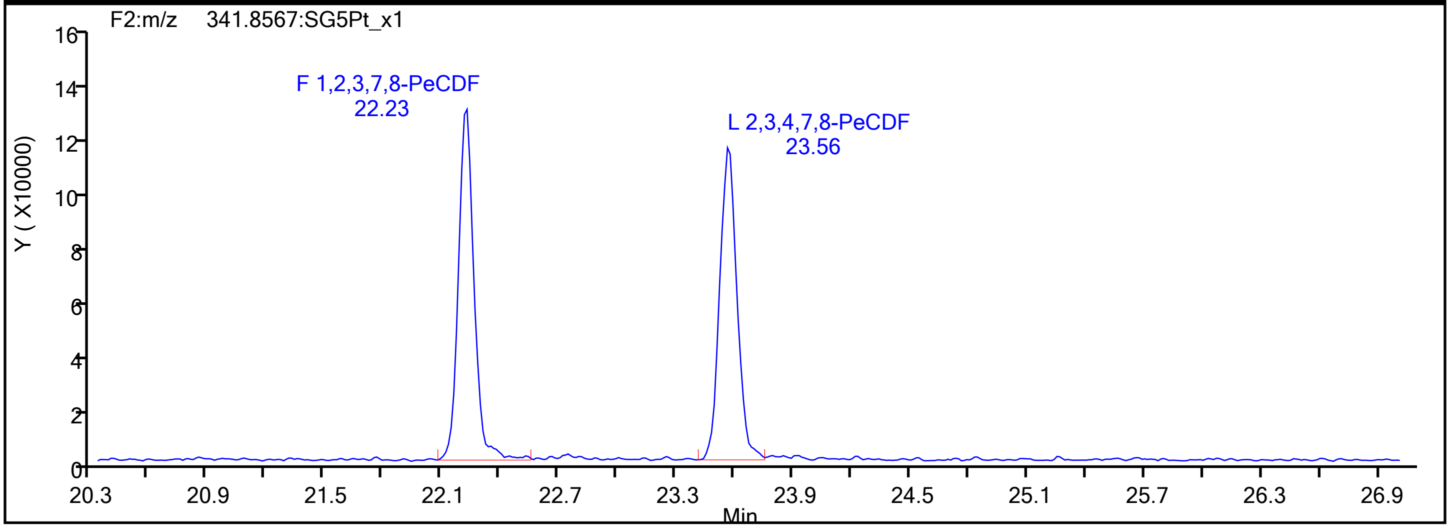

PeCDF Interference Mass

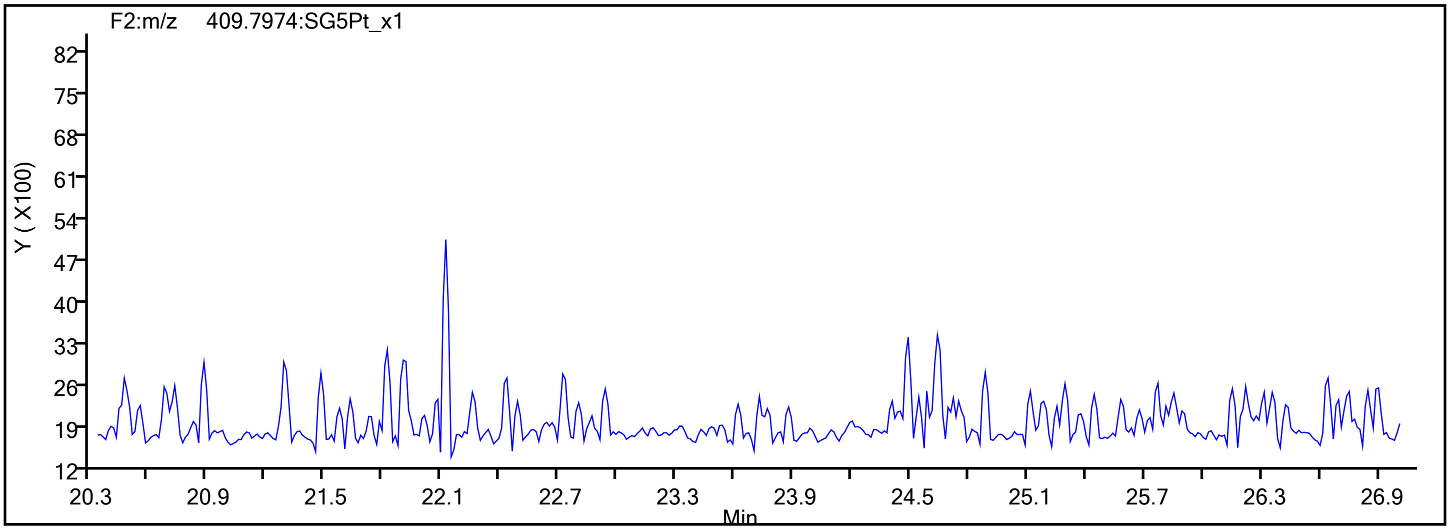

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 413246
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

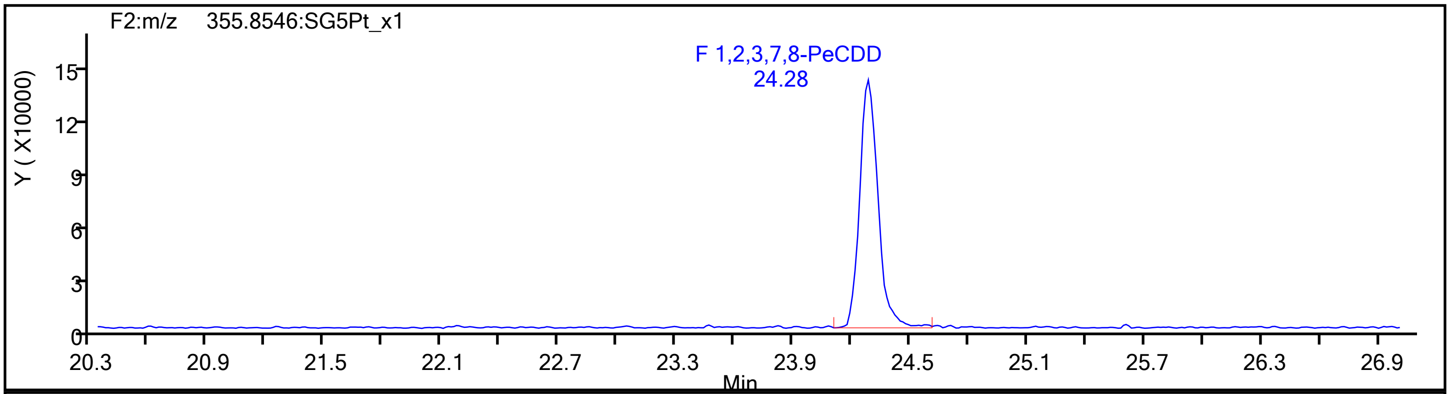

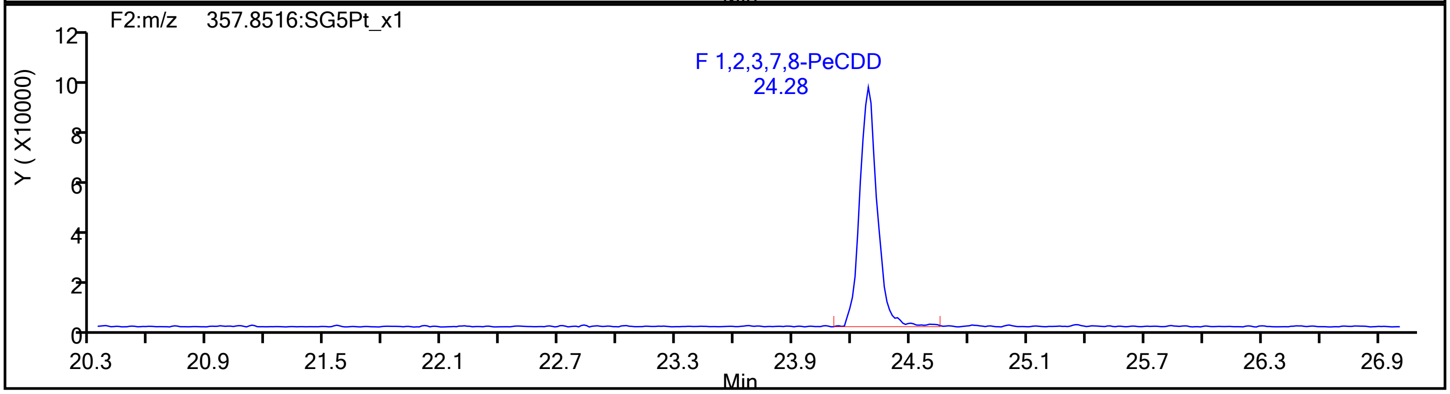

PeCDD Standards

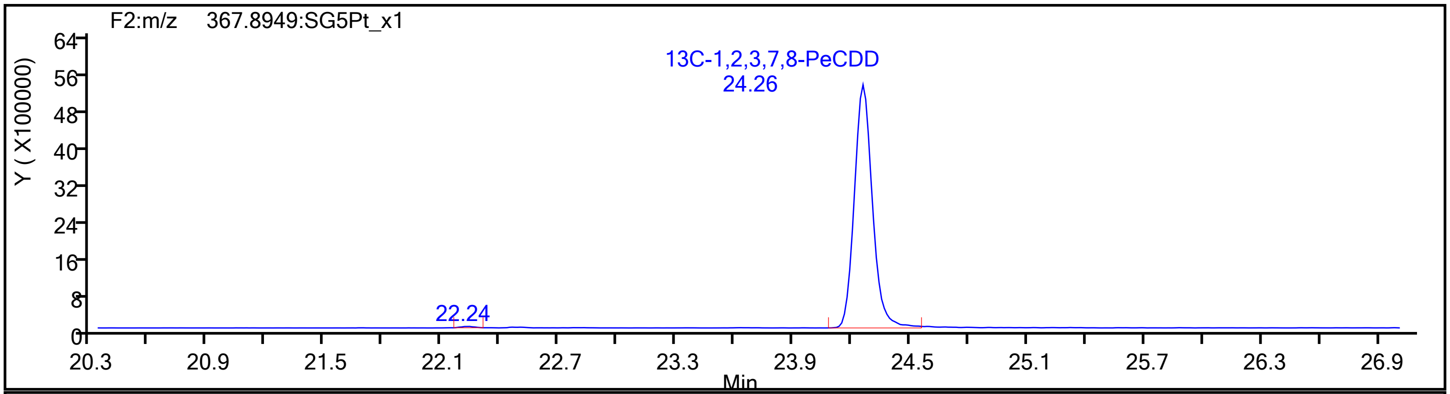

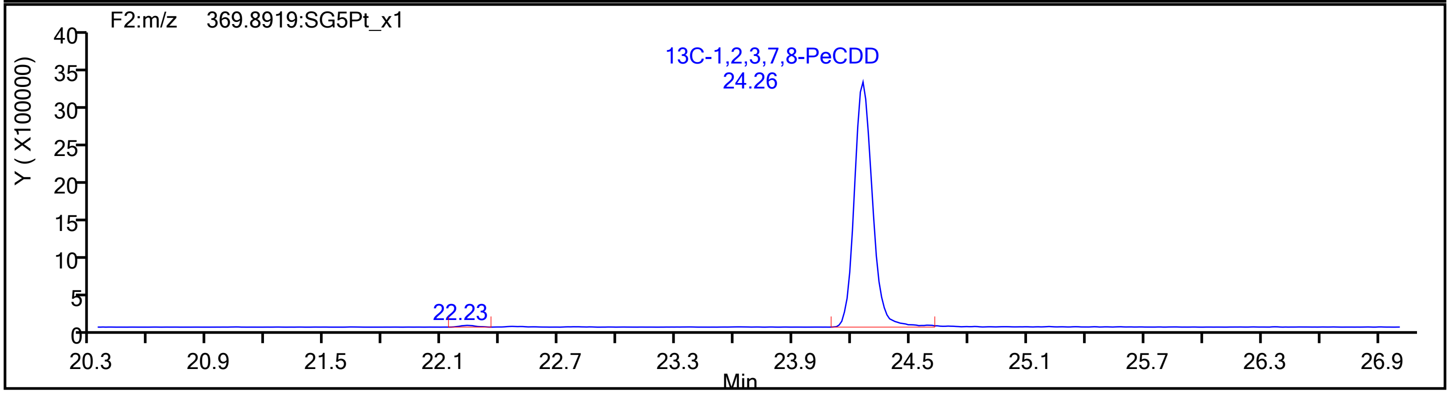

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

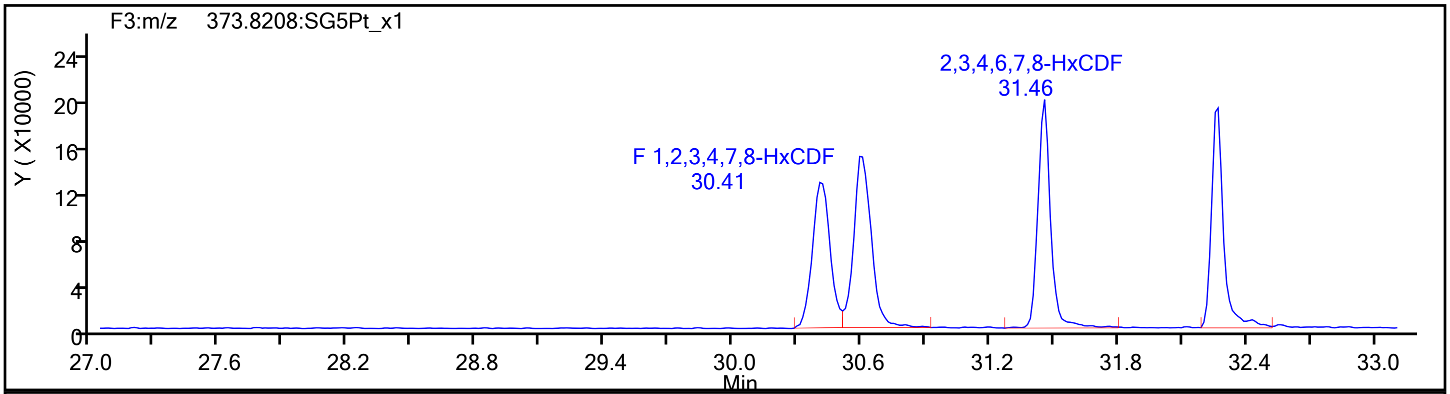

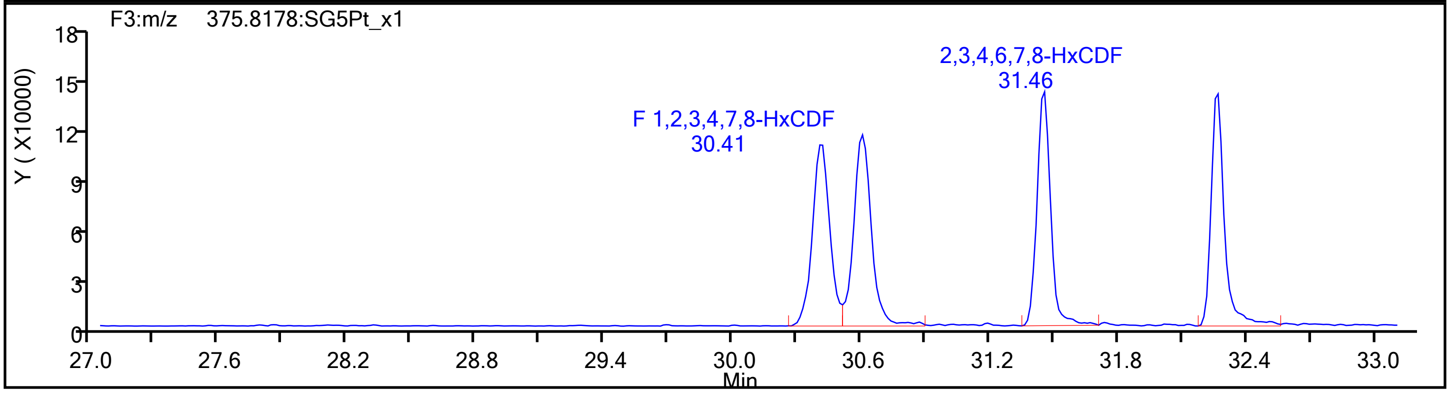

HxCDF Standards

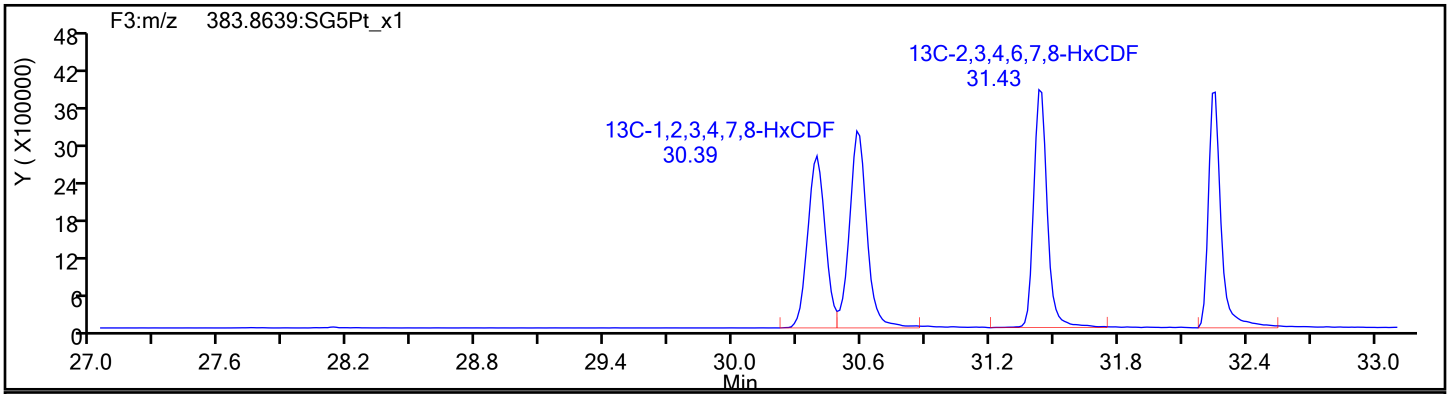

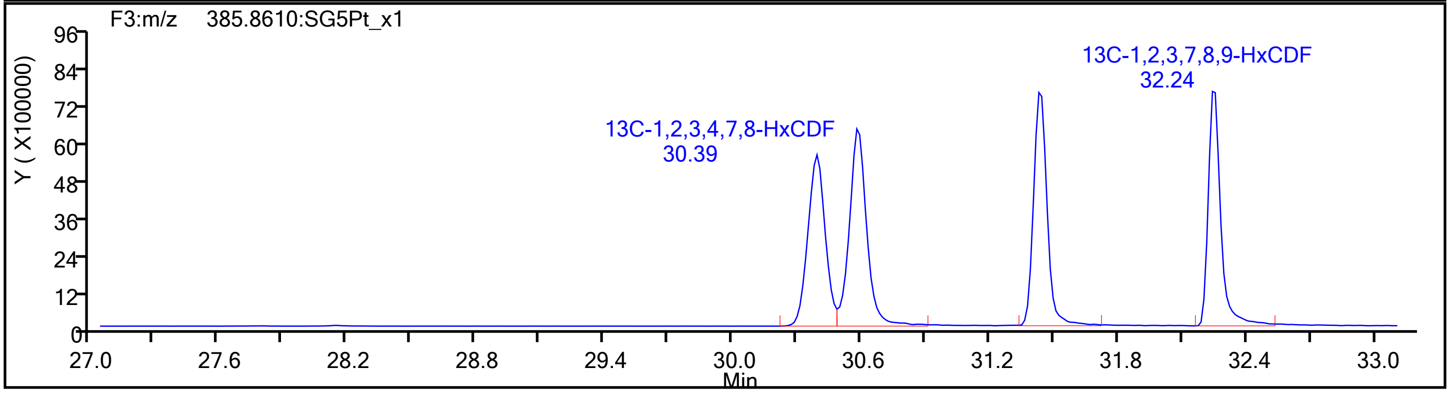

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

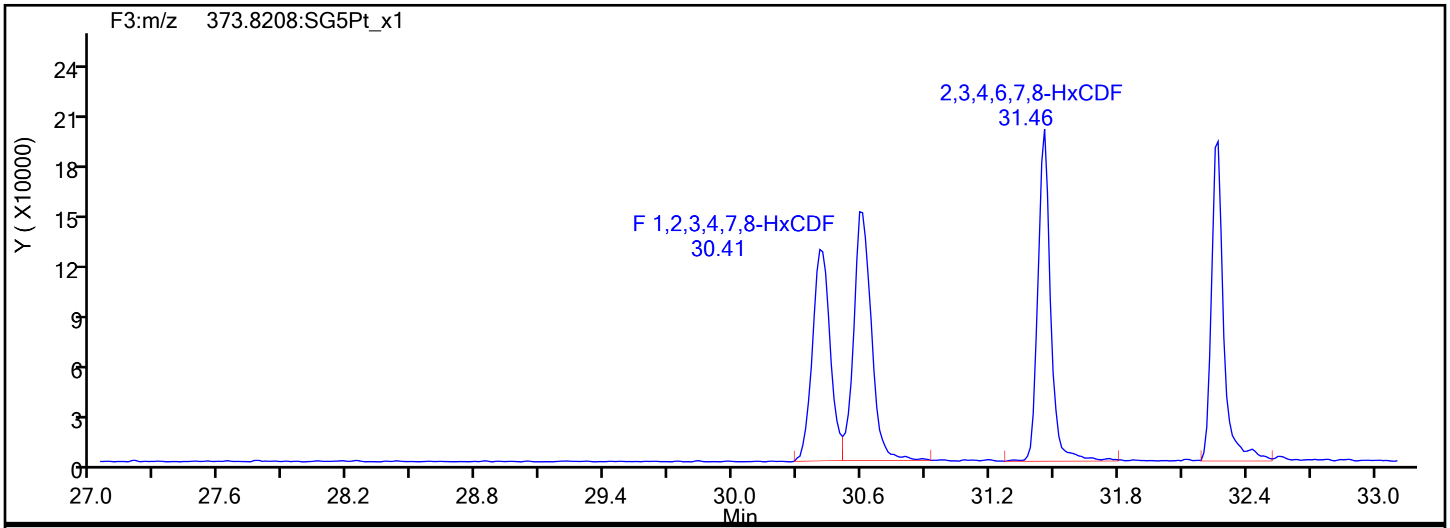

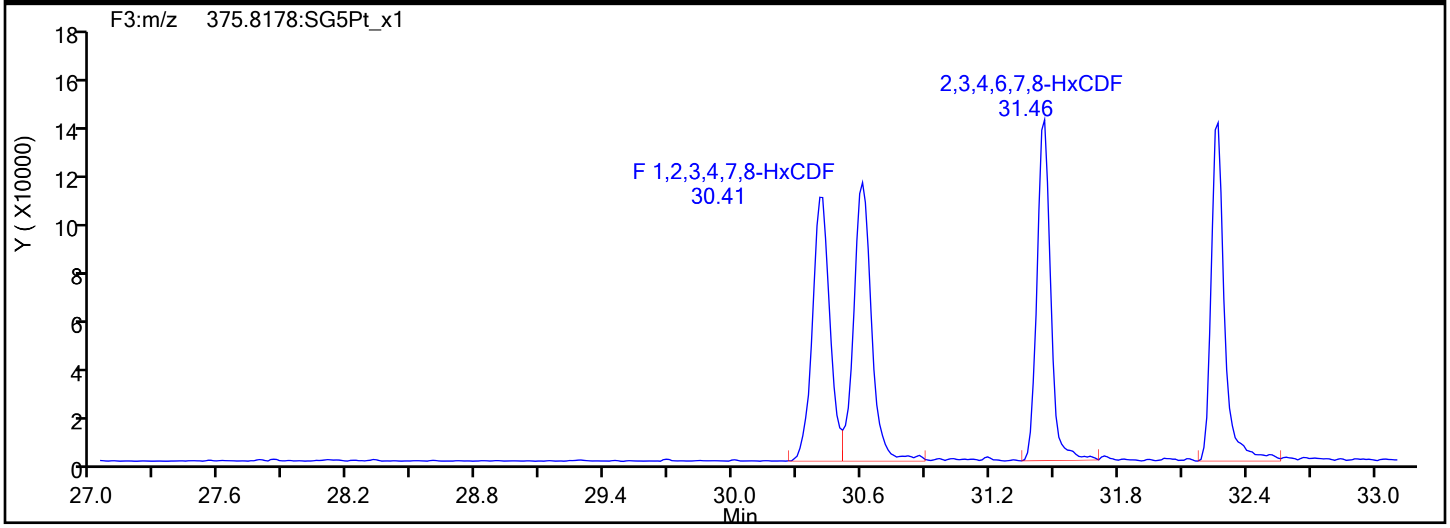

HxCDF Interference Mass

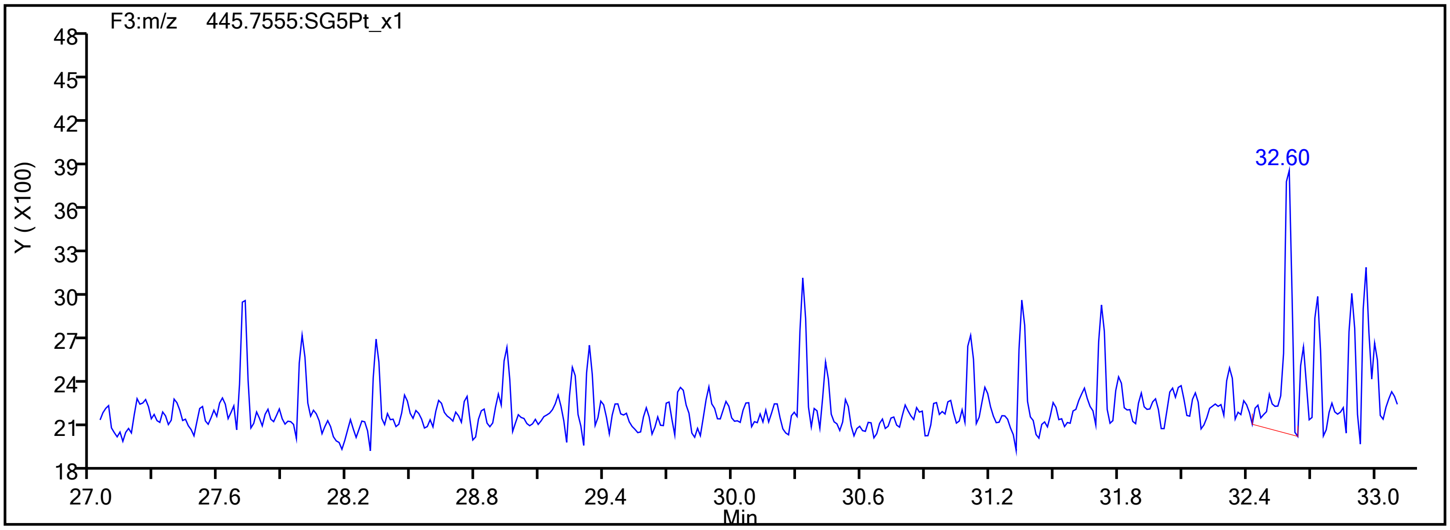

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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HxCDD

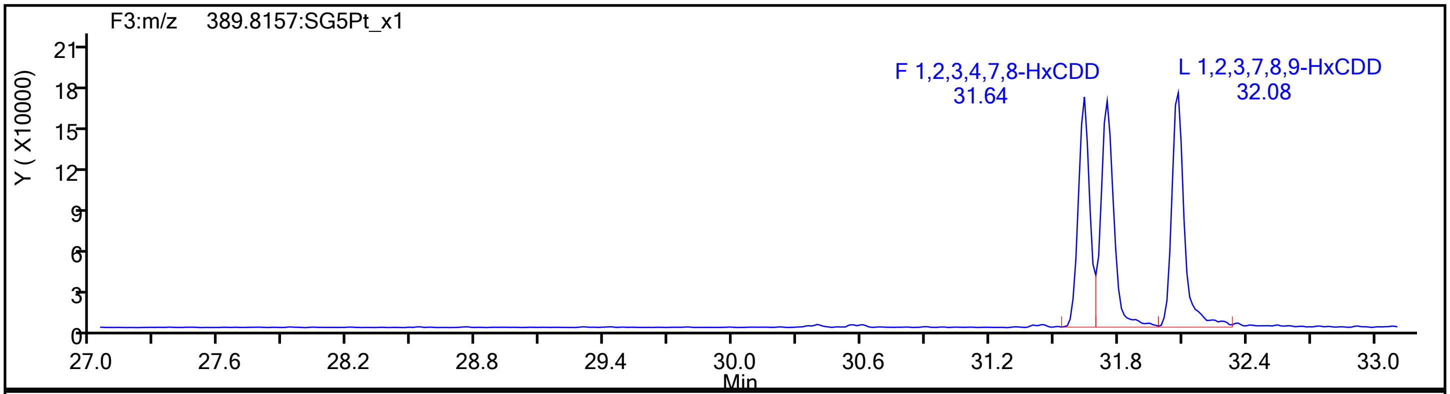

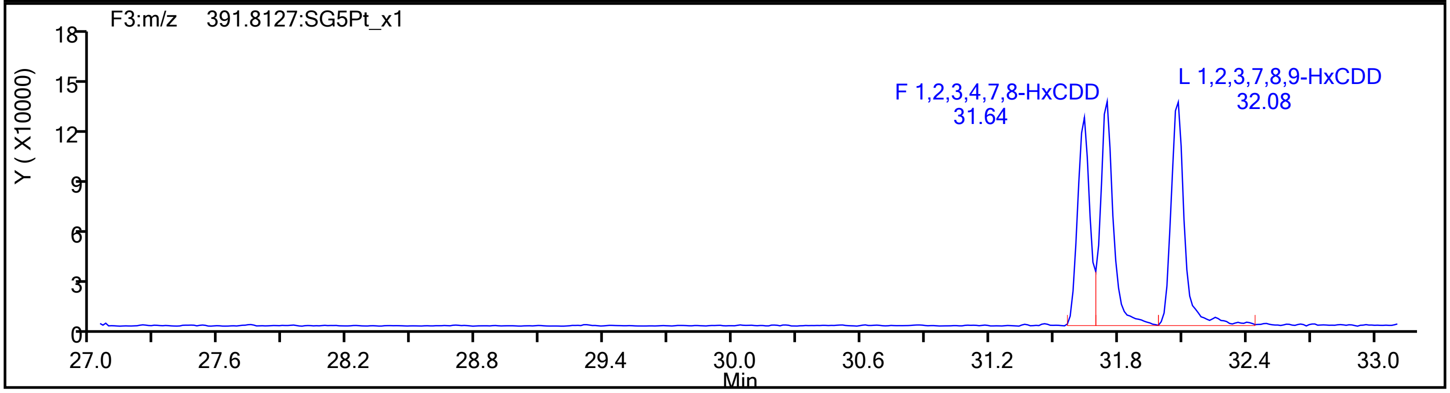

HxCDD Standards

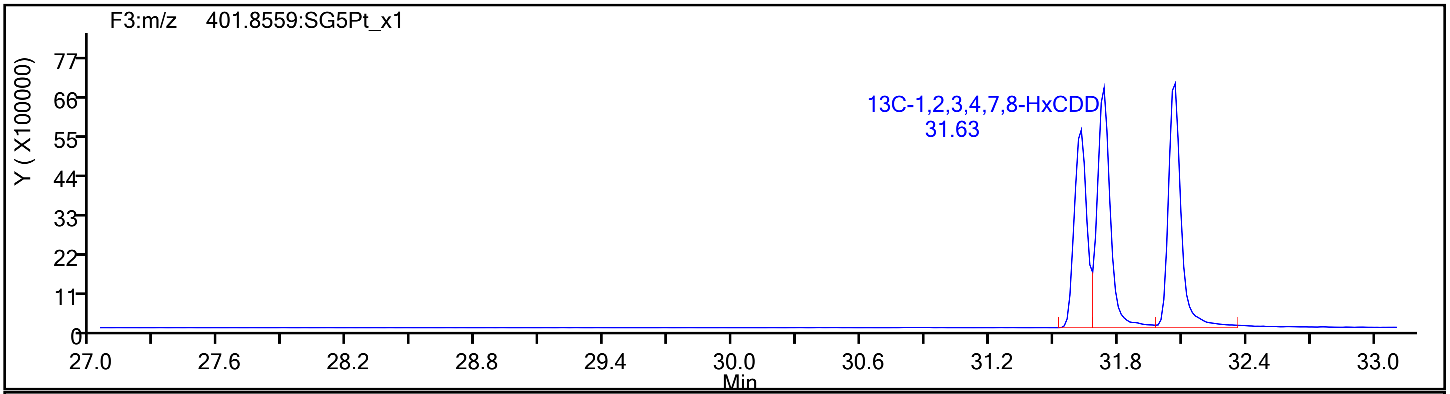

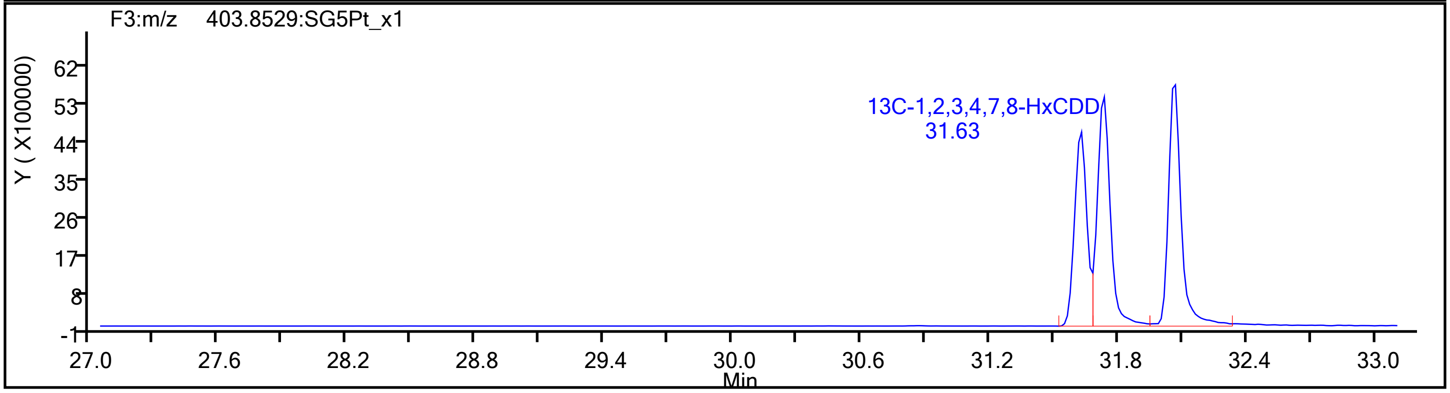

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

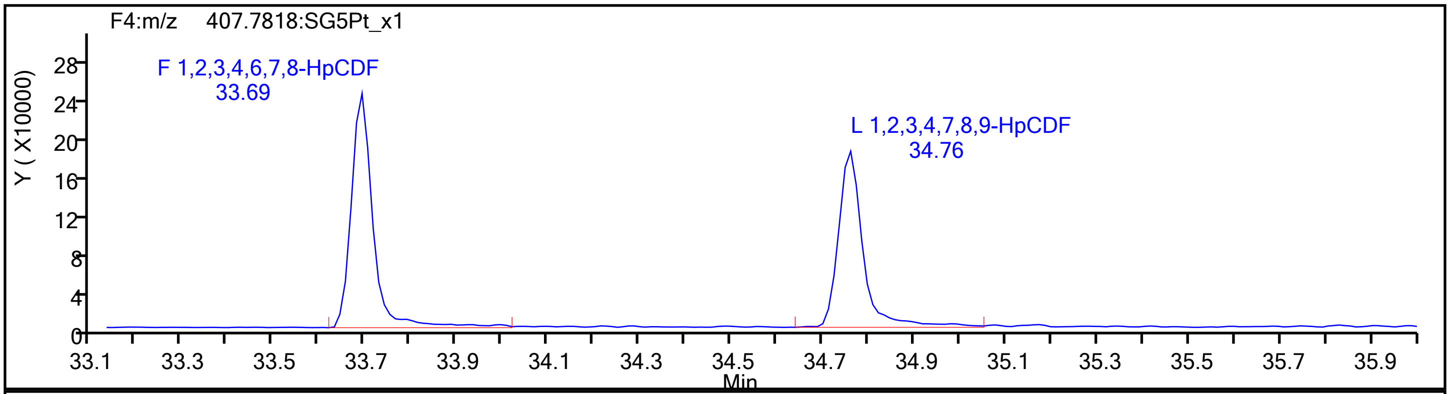

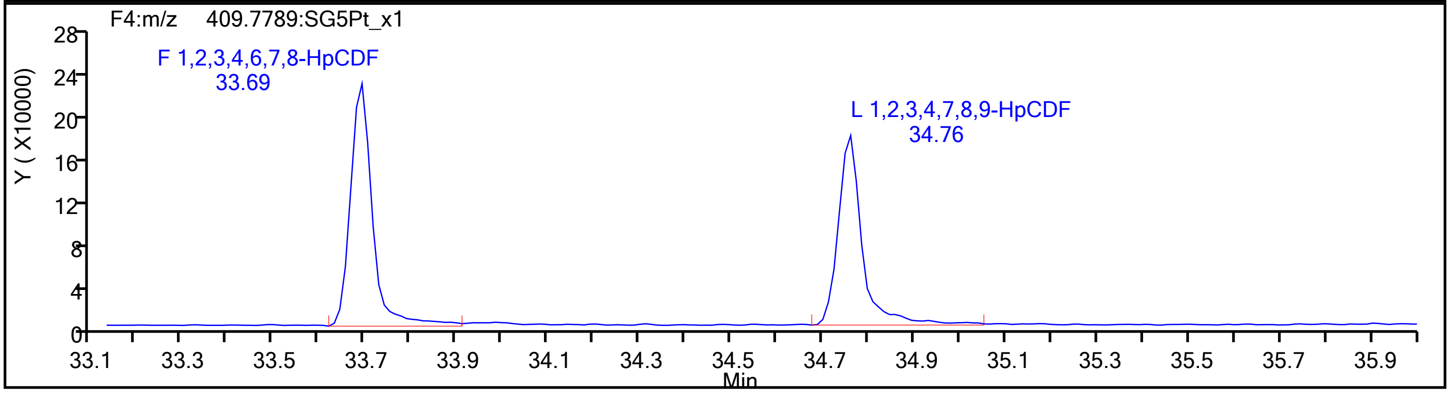

HpCDF Standards

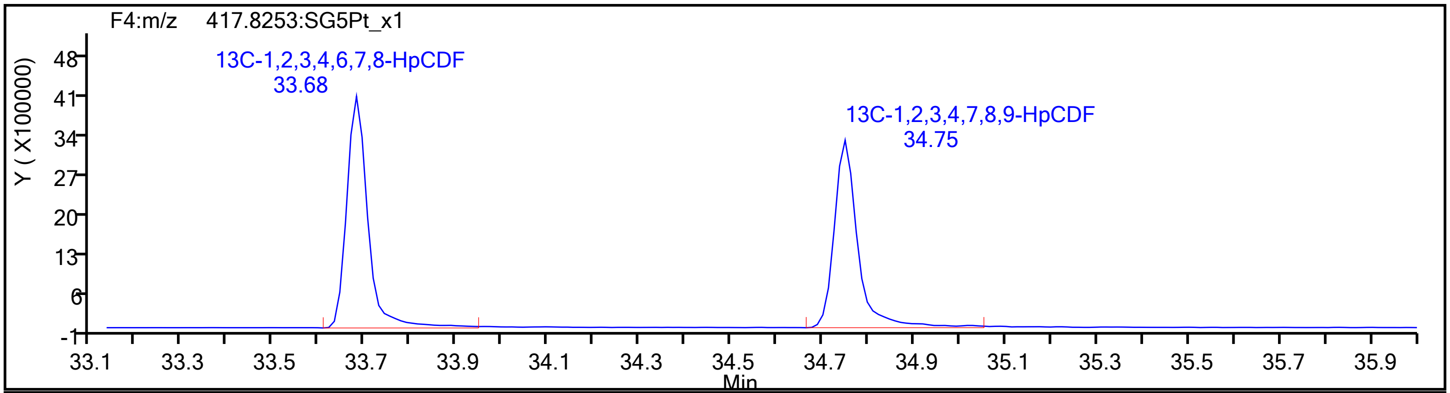

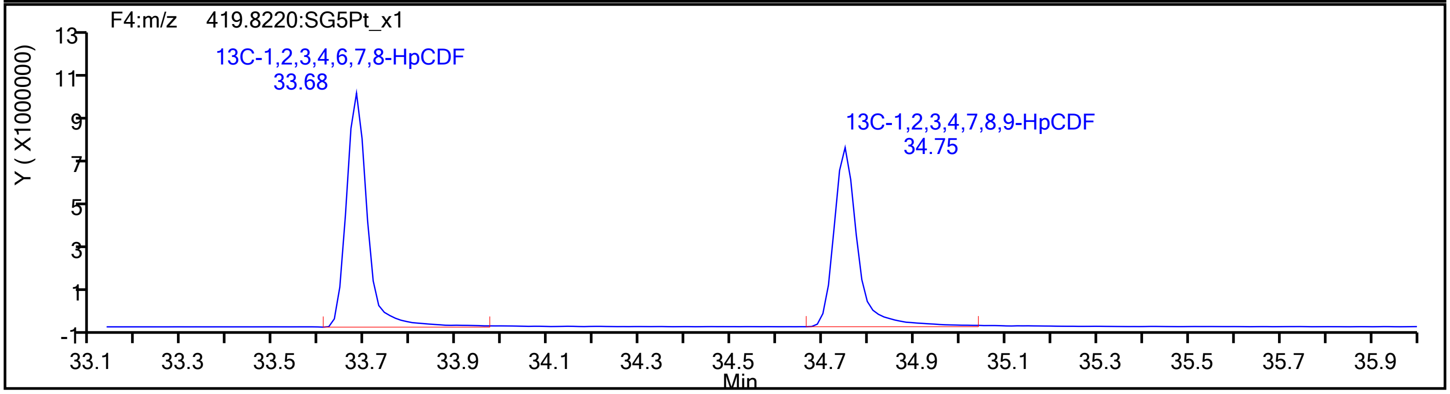

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

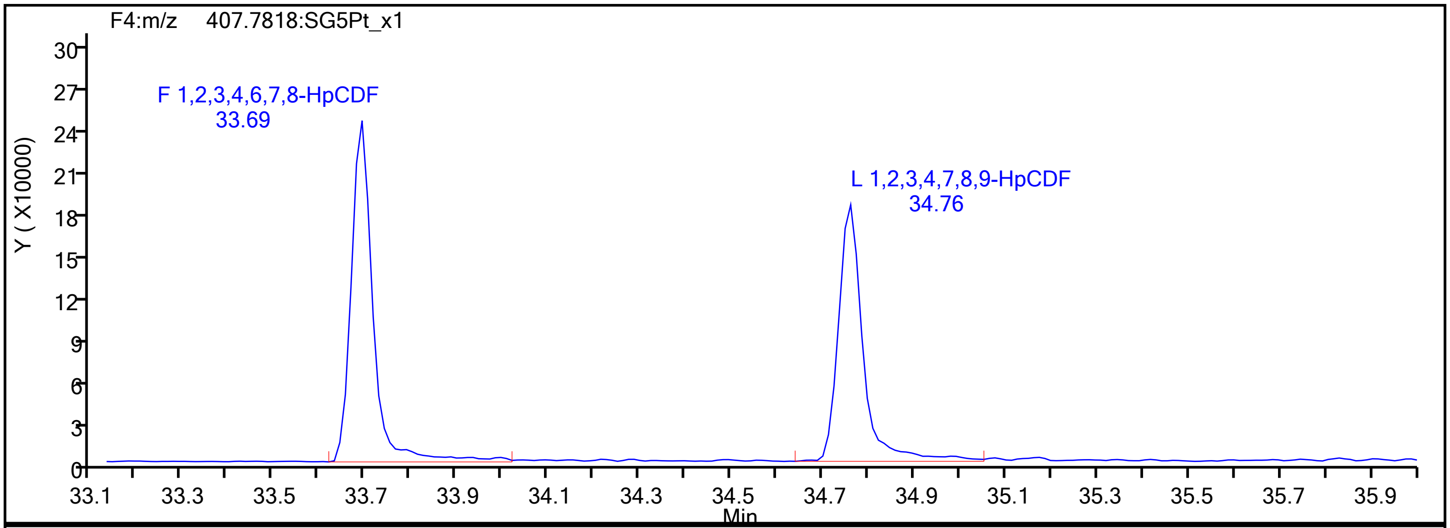

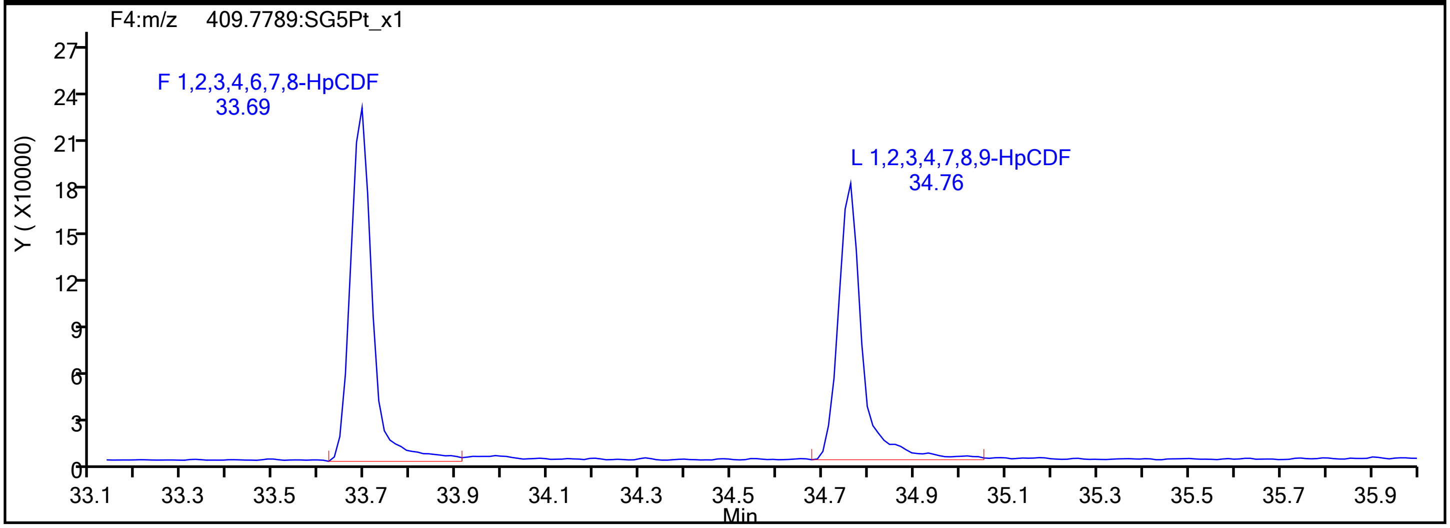

HpCDF Interference Mass

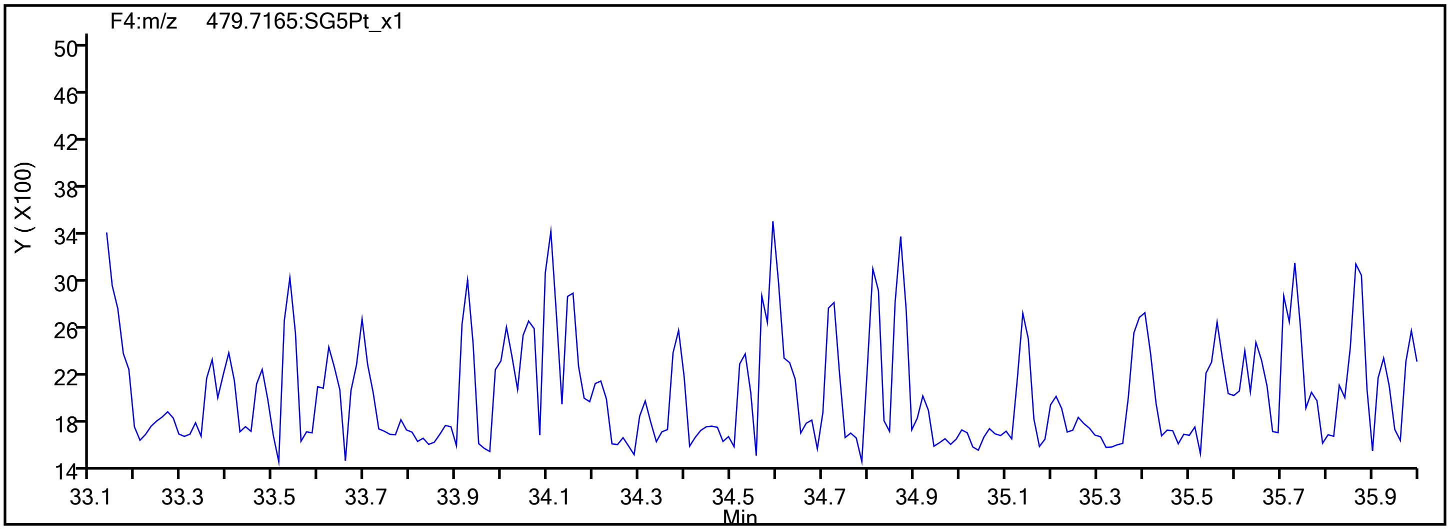

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

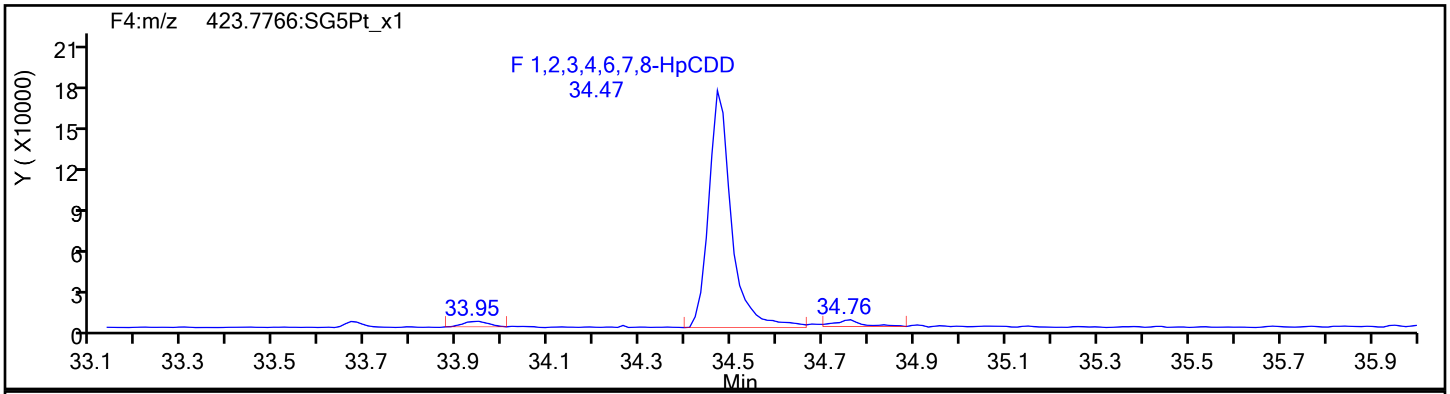

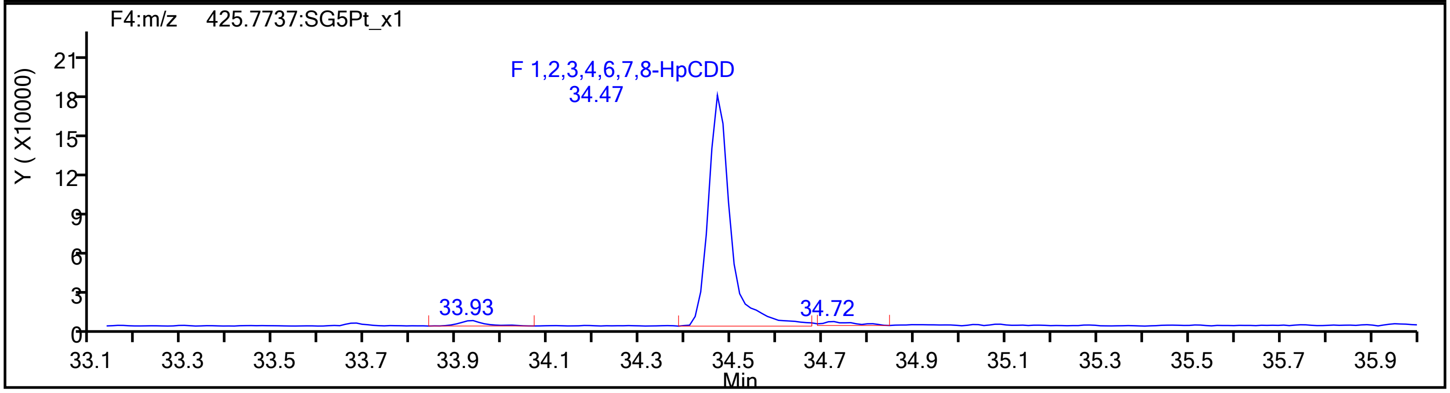

HpCDD Standards

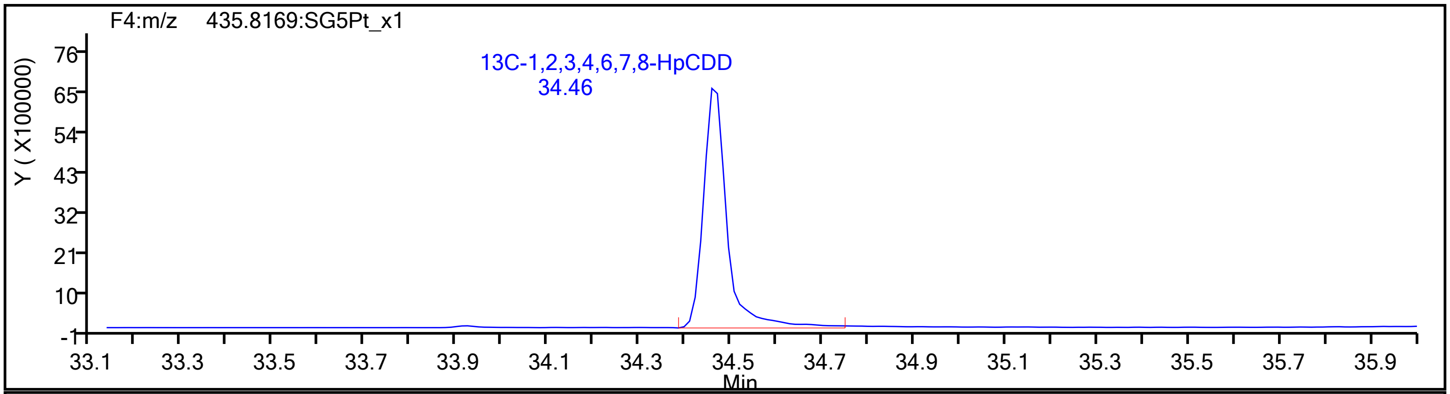

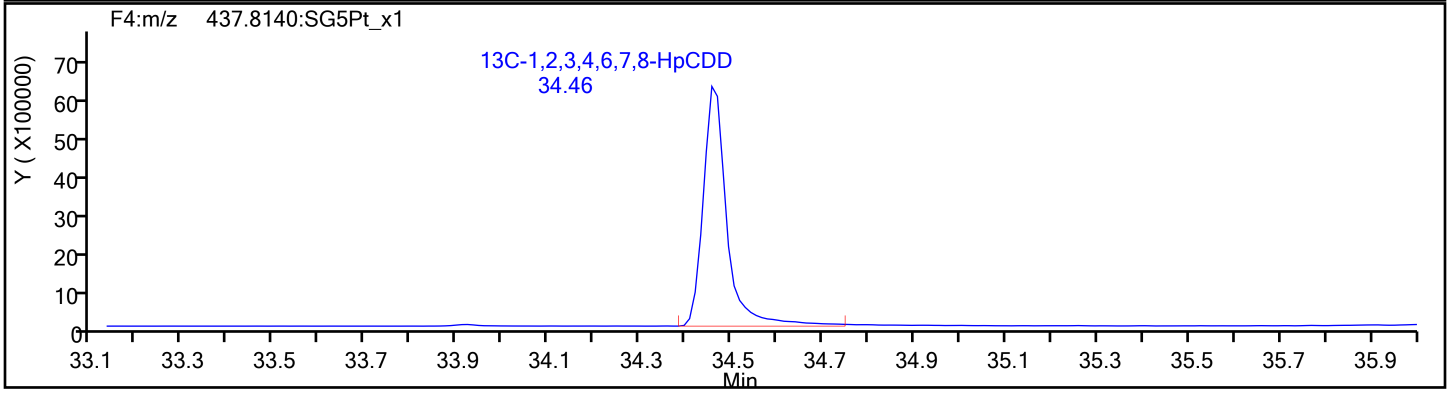

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

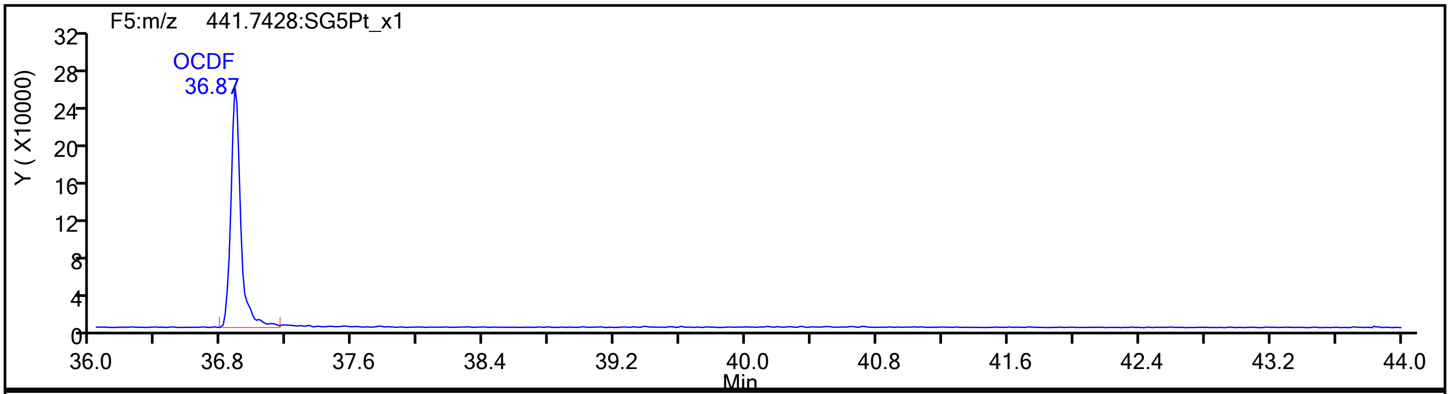

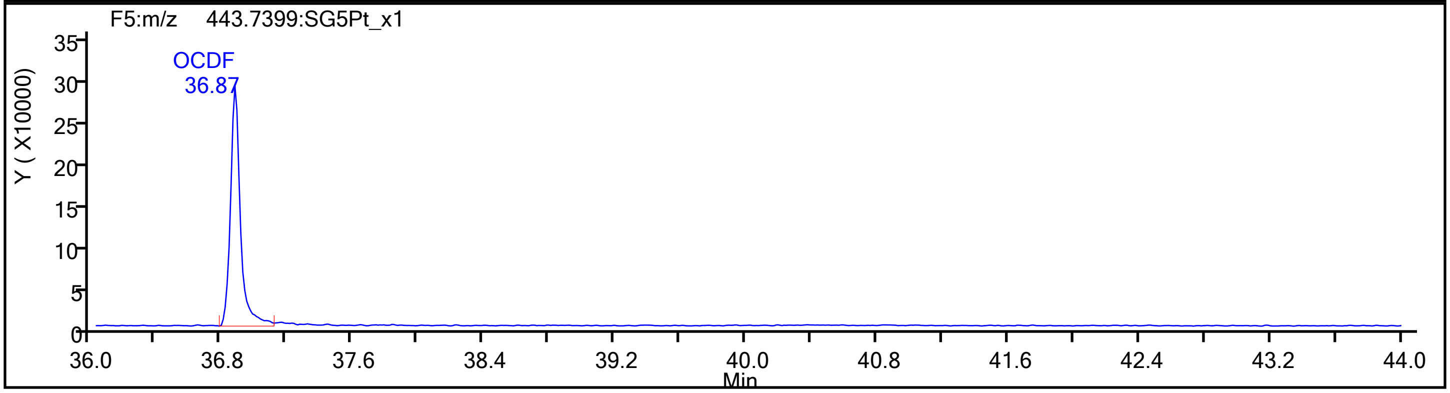

OCDF Standards

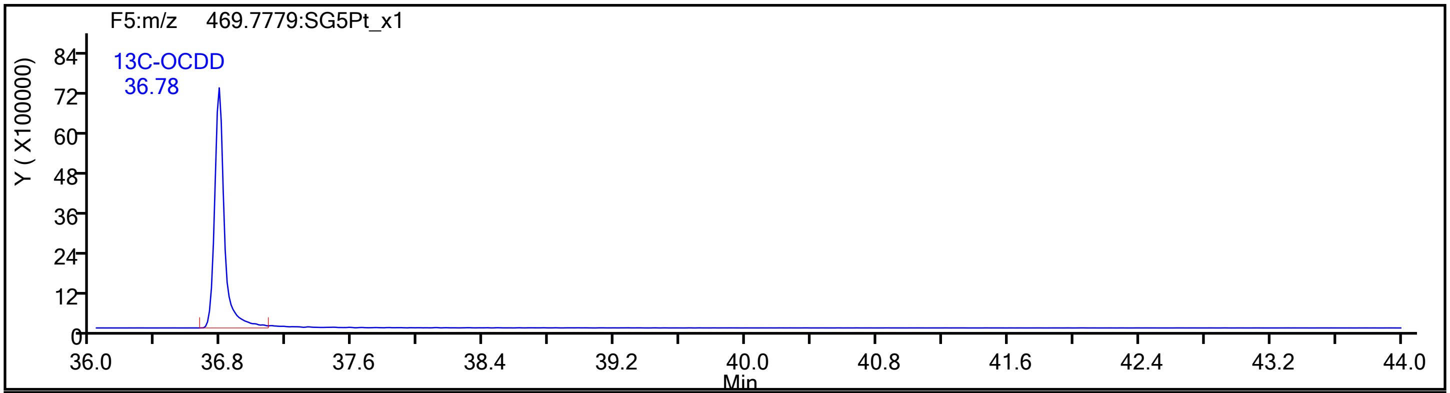

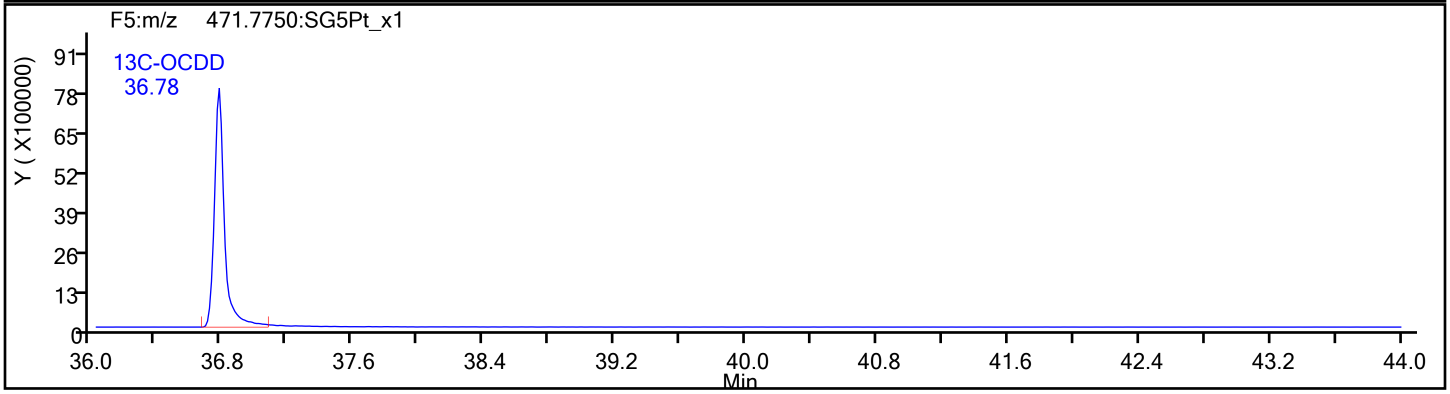

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d
Injection Date: 17-Sep-2020 16:09:46
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

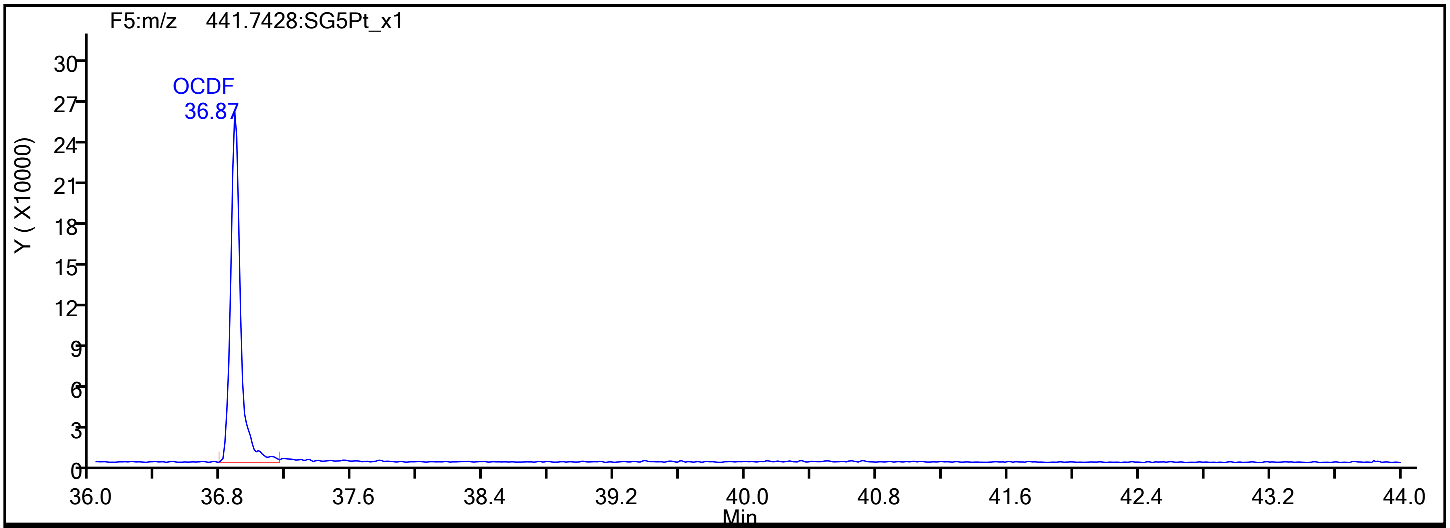

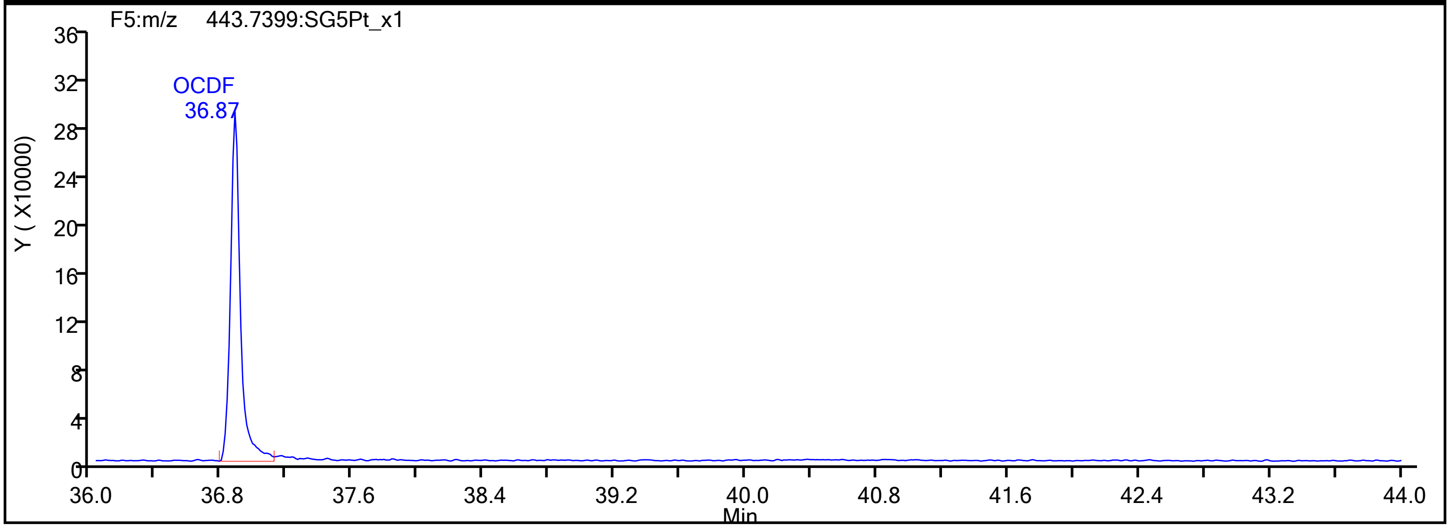

OCDF Interference Mass

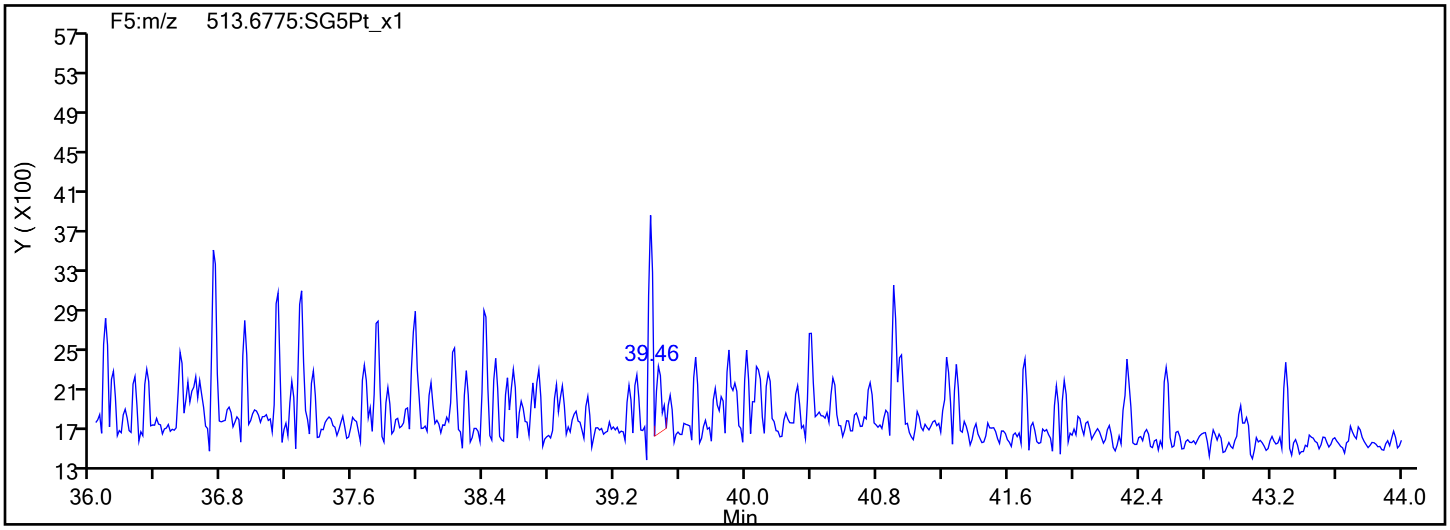

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date: 17-Sep-2020 16:09:46 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

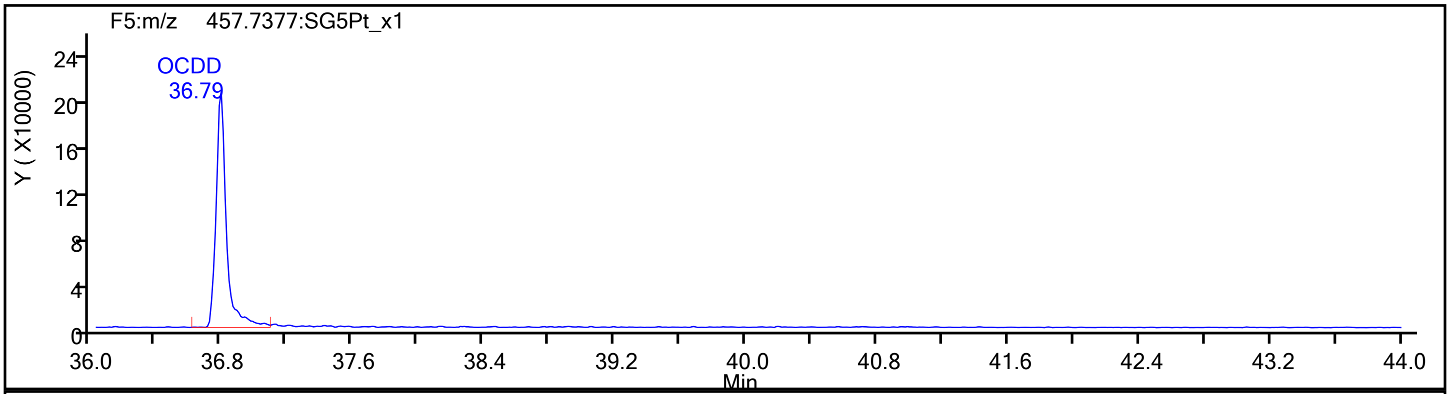

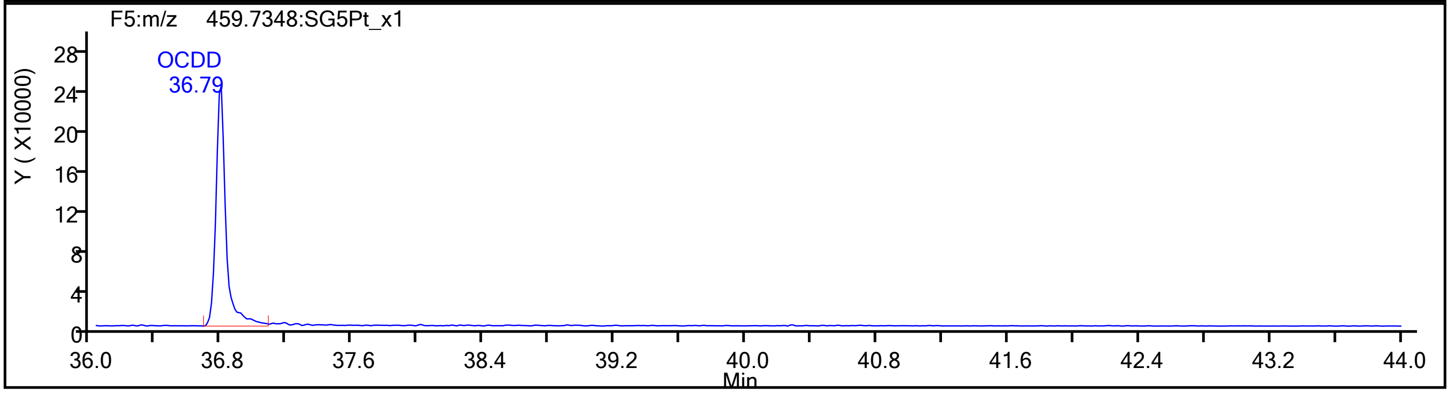

OCDD Standards

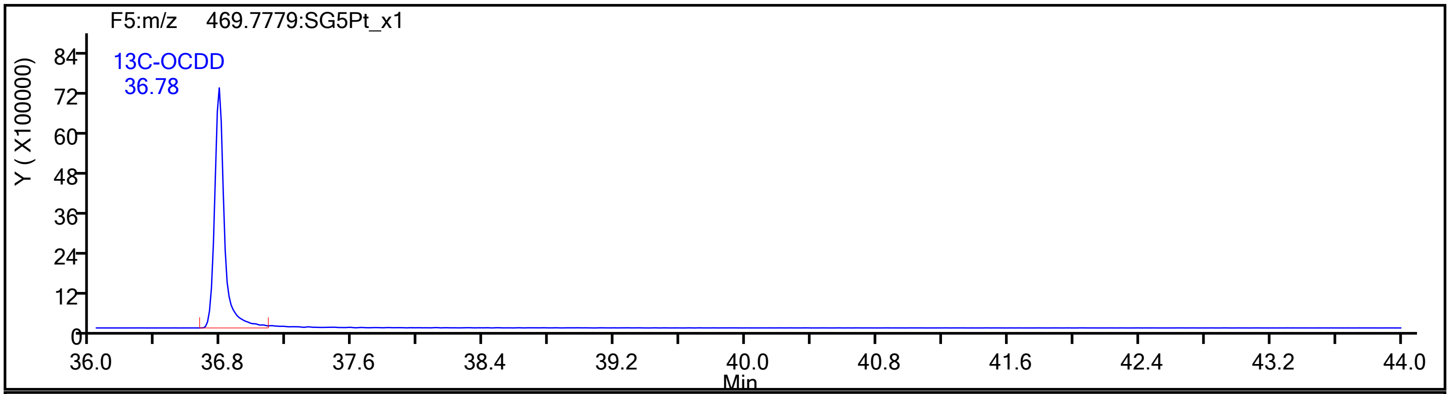

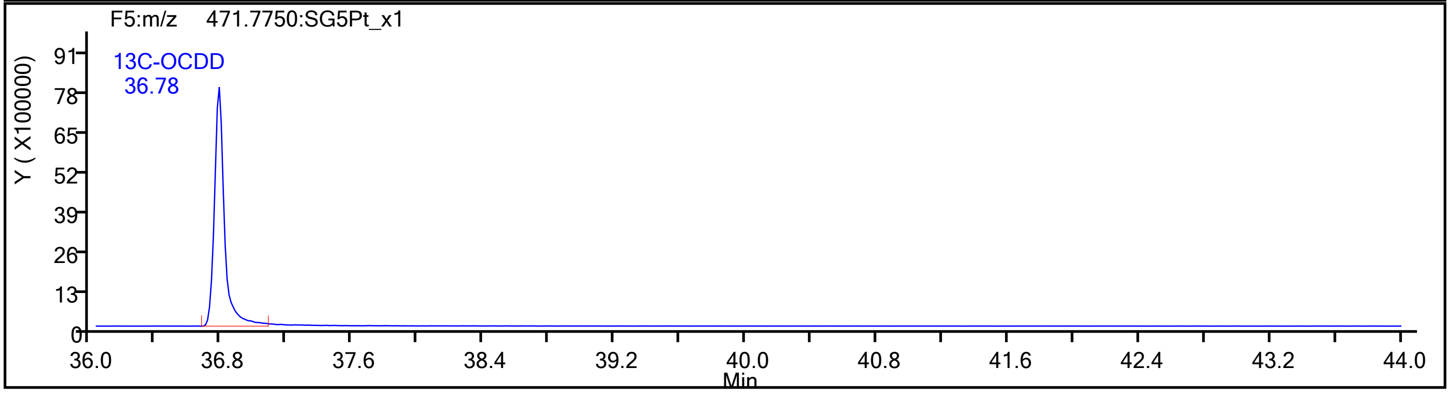

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d		
Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

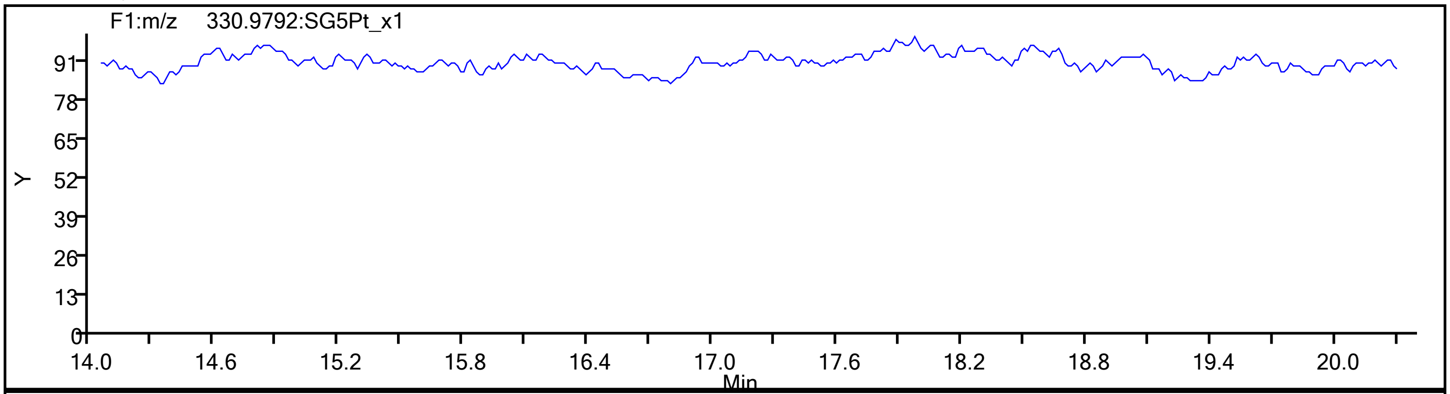

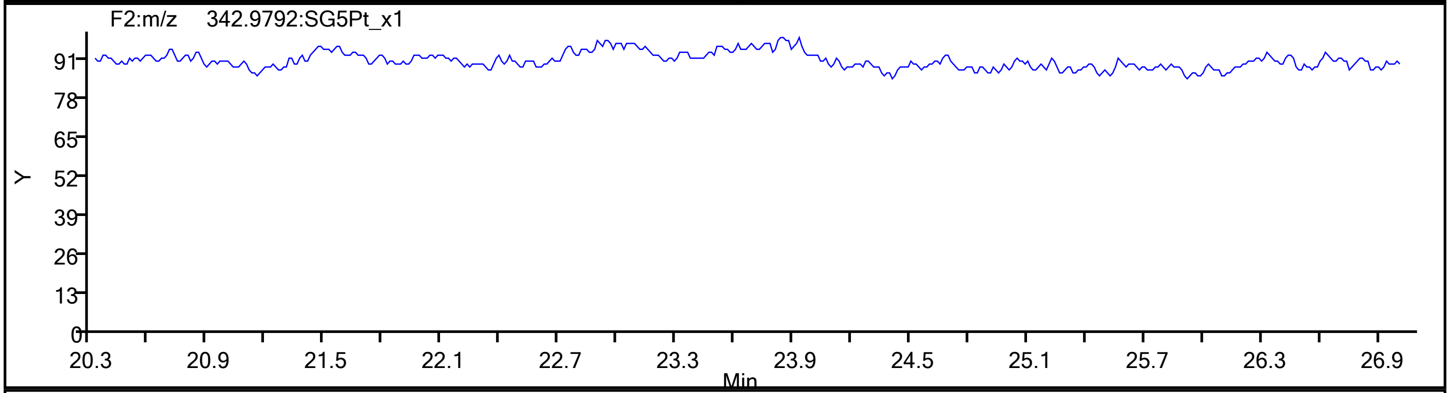

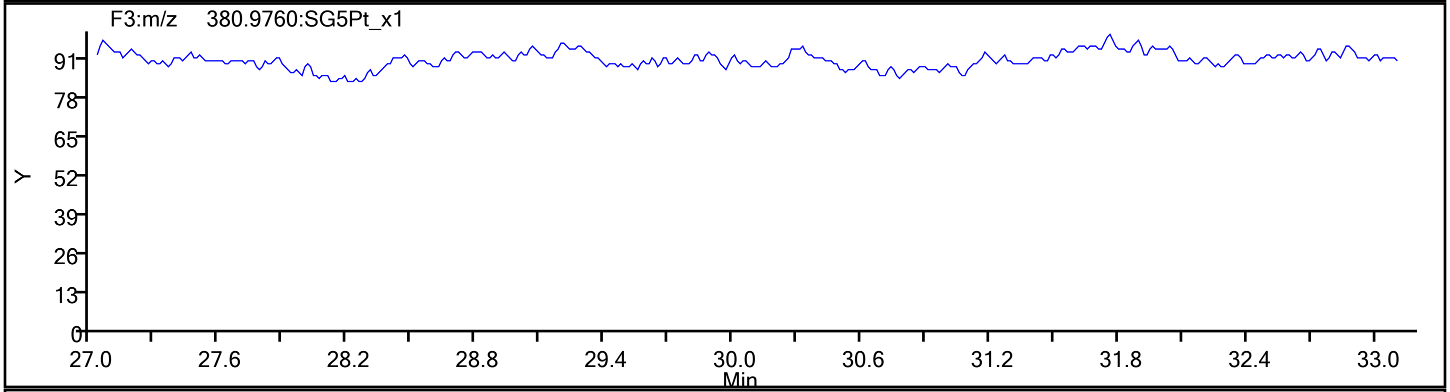

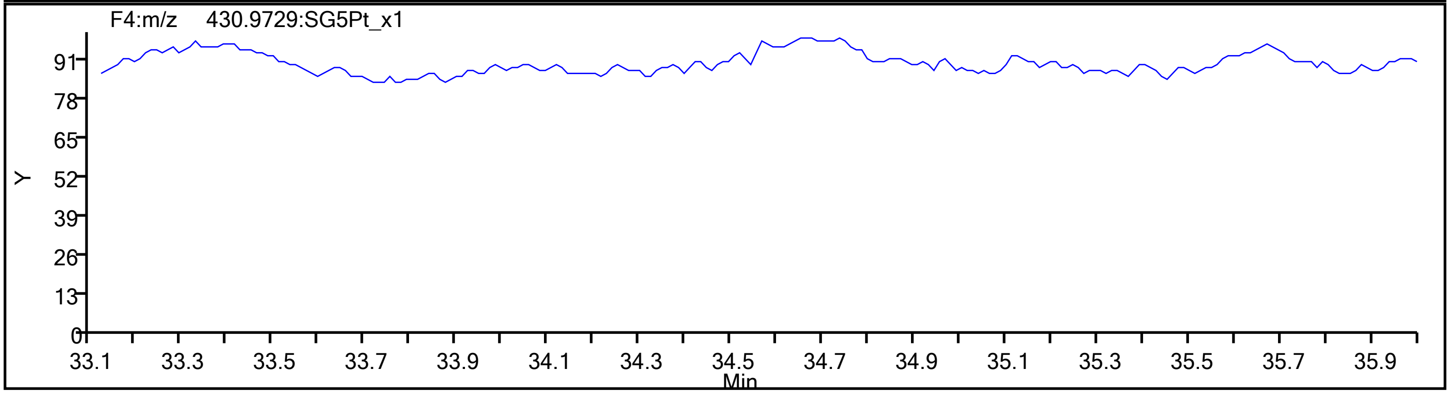

Report Date: 18-Sep-2020 10:35:40 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_3.d

Injection Date:	17-Sep-2020 16:09:46	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

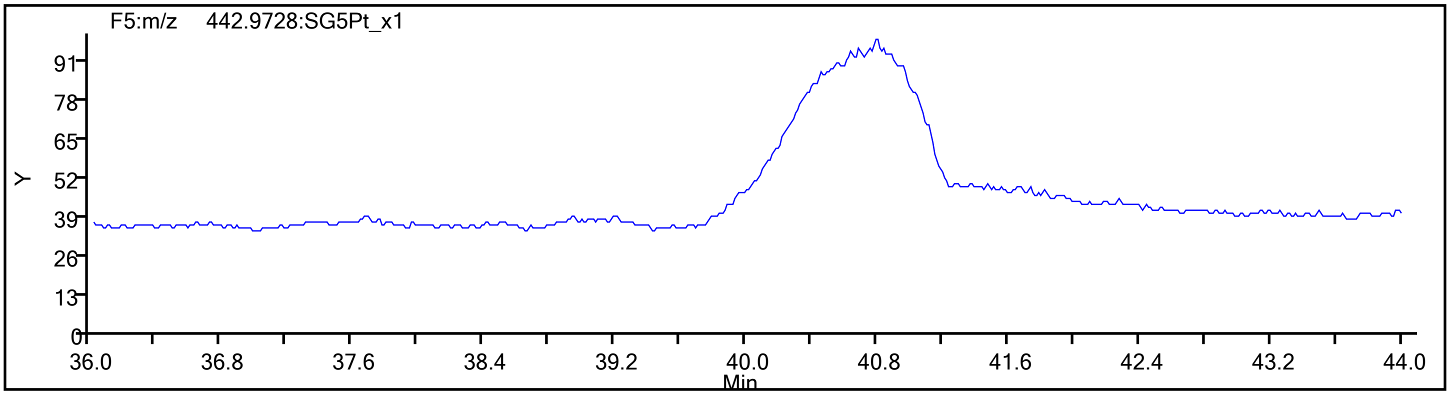

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 16:54:45 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720A CS-3 HRDXNL3_00028
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:16:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.717	68990527	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.219	93295703	0.75	1.3598	99.4	99.4	0.1693	0.1693	99.45	
2,3,7,8-TCDF	17.233	1708632	0.76	0.9077	2.018	2.018	0.0137	0.0137	101	
S Total TCDF					2.018	2.018	0.0137	0.0137		
D 13C-2,3,7,8-TCDD	17.914	70100427	0.78	1.0536	96.4	96.4	0.1596	0.1596	96.44	
2,3,7,8-TCDD	17.929	1423835	0.77	1.0061	2.019	2.019	0.0244	0.0244	101	
$ 37Cl4-2,3,7,8-TCDD	17.929	1350233		1.0488	1.866	1.866	0.009519	0.009519	93.31	
S Total TCDD					2.019	2.019	0.0244	0.0244		
D 13C-1,2,3,7,8-PeCDF	22.212	74247718	1.57	1.1306	95.2	95.2	0.2302	0.2302	95.19	
1,2,3,7,8-PeCDF	22.226	6755406	1.55	0.9147	9.946	9.946	0.0471	0.0471	99.46	
D 13C-2,3,4,7,8-PeCDF	23.548	71861705	1.55	1.0539	98.8	98.8	0.2470	0.2470	98.84	
2,3,4,7,8-PeCDF	23.576	6557191	1.58	0.9508	9.597	9.597	0.0491	0.0491	95.97	
S Total PeCDF					19.5	19.5	0.0481	0.0481		
D 13C-1,2,3,7,8-PeCDD	24.271	52169753	1.60	0.8084	93.5	93.5	0.1193	0.1193	93.54	
1,2,3,7,8-PeCDD	24.298	5096638	1.58	0.9955	9.814	9.814	0.0330	0.0330	98.14	
S Total PeCDD					9.814	9.814	0.0330	0.0330		
D 13C-1,2,3,4,7,8-HxCDF	30.406	46927290	0.51	0.9225	100.4	100.4	0.5382	0.5382	100	
1,2,3,4,7,8-HxCDF	30.419	5051863	1.24	1.1090	9.707	9.707	0.0959	0.0959	97.07	
D 13C-1,2,3,6,7,8-HxCDF	30.592	51405634	0.51	1.0336	98.1	98.1	0.4803	0.4803	98.12	
1,2,3,6,7,8-HxCDF	30.619	5480754	1.24	1.0721	9.945	9.945	0.0909	0.0909	99.45	
D 13C-2,3,4,6,7,8-HxCDF	31.444	48201659	0.51	0.9773	97.3	97.3	0.5080	0.5080	97.29	
2,3,4,6,7,8-HxCDF	31.471	5174349	1.21	1.0838	9.905	9.905	0.0711	0.0711	99.05	
D 13C-1,2,3,7,8,9-HxCDF	32.256	45779728	0.51	0.9153	98.7	98.7	0.5424	0.5424	98.66	
1,2,3,7,8,9-HxCDF	32.269	4879551	1.26	1.0931	9.751	9.751	0.0713	0.0713	97.51	
S Total HxCDF					39.3	39.3	0.0823	0.0823		
* 13C-1,2,3,7,8,9-HxCDD	32.070	50690907	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.644	41387059	1.24	0.7977	102.4	102.4	0.3954	0.3954	102	
1,2,3,4,7,8-HxCDD	31.657	3841879	1.28	1.0014	9.269	9.269	0.0485	0.0485	92.69	
D 13C-1,2,3,6,7,8-HxCDD	31.750	49272149	1.24	1.0010	97.1	97.1	0.3151	0.3151	97.10	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.764	4272300	1.24	0.8902	9.741	9.741	0.0464	0.0464	97.41	
1,2,3,7,8,9-HxCDD	32.083	4768543	1.26	1.0579	9.944	9.944	0.0422	0.0422	99.44	
S Total HxCDD					29.0	29.0	0.0457	0.0457		
D 13C-1,2,3,4,6,7,8-HpCDF	33.691	42054304	0.43	0.8506	97.5	97.5	1.042	1.042	97.53	
1,2,3,4,6,7,8-HpCDF	33.703	5677563	0.97	1.3603	9.925	9.925	0.1057	0.1057	99.25	
D 13C-1,2,3,4,7,8,9-HpCDF	34.760	37805388	0.43	0.7618	97.9	97.9	1.164	1.164	97.90	
1,2,3,4,7,8,9-HpCDF	34.772	4890701	1.03	1.3207	9.796	9.796	0.1339	0.1339	97.96	
S Total HpCDF					19.7	19.7	0.1198	0.1198		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	43522391	1.07	0.8873	96.8	96.8	0.6526	0.6526	96.77	
1,2,3,4,6,7,8-HpCDD	34.481	4188952	1.03	0.9988	9.637	9.637	0.0752	0.0752	96.37	
S Total HpCDD					9.637	9.637	0.0752	0.0752		
D 13C-OCDD	36.791	59498409	0.88	0.6287	186.7	186.7	0.3244	0.3244	93.34	
OCDF	36.887	8263927	0.92	1.4136	19.7	19.7	0.0507	0.0507	98.26	
OCDD	36.803	6682705	0.89	1.1290	19.9	19.9	0.0499	0.0499	99.49	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Sep-2020 16:54:45 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720A CS-3 HRDXNL3_00028
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:16:40

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.717	17.711	0		30271867	7391555	5698	14245	1297		
333.9339	17.717	17.711	0		38718660	9456382	5635	14087	1678	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.219	17.203	1	0.972	39965916	9954863	7261	18152	1371		
317.9389	17.219	17.203	1	0.972	53329787	13099748	8258	20645	1586	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.233	17.218	1	1.001	736716	185710	484	1210	384		
305.8987	17.233	17.218	1	1.001	971916	239970	666	1665	360	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.011	30806430	7295166	5698	14245	1280		
333.9339	17.914	17.905	1	1.011	39293997	9240658	5635	14087	1640	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	620615	143049	1087	2717	132		
321.8936	17.929	17.920	1	1.001	803220	187057	537	1342	348	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	1350233	319770	673	1682	475		
13C-1,2,3,7,8-PeCDF											
351.9000	22.212	22.204	0	1.254	45338036	7837437	10489	26222	747		
353.8970	22.212	22.204	0	1.254	28909682	5088739	7051	17627	722	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	4106763	692324	1176	2940	589		
341.8567	22.226	22.220	0	1.001	2648643	443559	1050	2625	422	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.548	23.540	0	1.329	43677378	7227444	10489	26222	689		
353.8970	23.548	23.540	0	1.329	28184327	4693729	7051	17627	666	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.576	23.567	0	1.001	4019655	644235	1176	2940	548		
341.8567	23.576	23.567	0	1.001	2537536	409798	1050	2625	390	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.271	24.263	0	1.370	32084051	4948303	3931	9827	1259		
369.8919	24.271	24.263	0	1.370	20085702	3074322	2571	6427	1196	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.298	24.290	0	1.001	3120498	479916	664	1660	723		
357.8516	24.298	24.290	0	1.001	1976140	296292	390	975	760	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.406	30.398	0	0.948	15862738	2738964	8063	20157	340		
385.8610	30.406	30.398	0	0.948	31064552	5354365	15450	38625	347	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.419	30.414	0	1.000	2797700	487863	1850	4625	264		
375.8178	30.419	30.414	0	1.000	2254163	396525	1594	3985	249	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.592	30.587	0	0.954	17471478	3040203	8063	20157	377		
385.8610	30.592	30.587	0	0.954	33934156	5790019	15450	38625	375	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.619	30.608	1	1.001	3037205	542821	1850	4625	293		
375.8178	30.619	30.608	1	1.001	2443549	421125	1594	3985	264	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	16300349	3763985	8063	20157	467		
385.8610	31.444	31.439	0	0.980	31901310	7412832	15450	38625	480	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.471	31.458	1	1.001	2835641	630077	1850	4625	341		
375.8178	31.458	31.458	0	1.000	2338708	540139	1594	3985	339	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	15449991	3673540	8063	20157	456		
385.8610	32.256	32.254	0	1.006	30329737	7376877	15450	38625	477	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.269	32.267	0	1.000	2716071	637876	1850	4625	345		
375.8178	32.269	32.267	0	1.000	2163480	533593	1594	3985	335	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		28150092	6518580	8160	20400	799		
403.8529	32.070	32.067	0		22540815	5321978	6779	16947	785	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.644	31.631	1	0.987	22922425	5554603	8160	20400	681		
403.8529	31.631	31.631	0	0.986	18464634	4491856	6779	16947	663	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.657	31.647	1	1.000	2158558	540045	1123	2807	481		
391.8127	31.657	31.647	1	1.000	1683321	419033	830	2075	505	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.750	31.740	1	0.990	27299257	6605372	8160	20400	809		
403.8529	31.750	31.740	1	0.990	21972892	5219049	6779	16947	770	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.764	31.756	0	1.000	2360992	557234	1123	2807	496		
391.8127	31.764	31.756	0	1.000	1911308	451570	830	2075	544	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	2659612	628709	1123	2807	560		
391.8127	32.083	32.081	0	1.014	2108931	495604	830	2075	597	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.691	33.684	0	1.051	12556838	3909769	12847	32117	304		
419.8220	33.691	33.684	0	1.051	29497466	9034077	29146	72865	310	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.703	33.694	1	1.000	2797163	852978	4040	10100	211		
409.7789	33.703	33.694	1	1.000	2880400	868985	3407	8517	255	0.97(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.760	34.751	1	1.084	11322959	3174646	12847	32117	247		
419.8220	34.760	34.751	1	1.084	26482429	7353625	29146	72865	252	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.772	34.763	1	1.000	2482073	658836	4040	10100	163		
409.7789	34.772	34.763	1	1.000	2408628	635338	3407	8517	186	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	22520525	6337080	13670	34175	464		
437.8140	34.469	34.464	0	1.075	21001866	5882126	13754	34385	428	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	2124201	612915	1929	4822	318		
425.7737	34.481	34.474	0	1.000	2064751	594538	1742	4355	341	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.791	36.784	0	1.147	27863400	6692110	4873	12182	1373		
471.7750	36.791	36.784	0	1.147	31635009	7478443	4787	11967	1562	0.88(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	3963678	938447	902	2255	1040		
443.7399	36.887	36.882	0	1.003	4300249	1047583	1129	2822	928	0.92(0.76-1.02)	
OCDD											
457.7377	36.803	36.791	1	1.000	3139043	744024	661	1652	1126		
459.7348	36.791	36.791	0	1.000	3543662	826318	935	2337	884	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:48 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

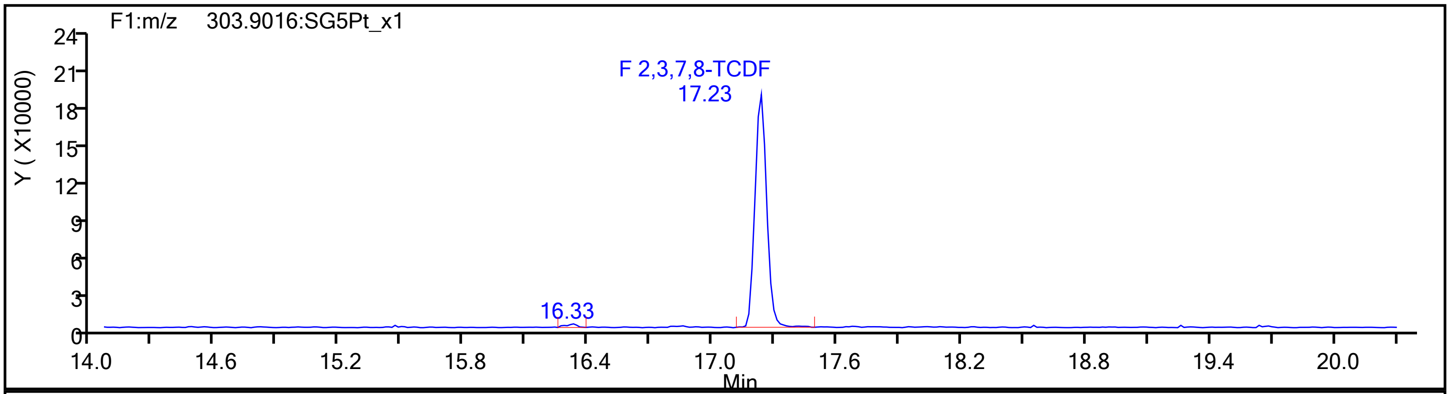

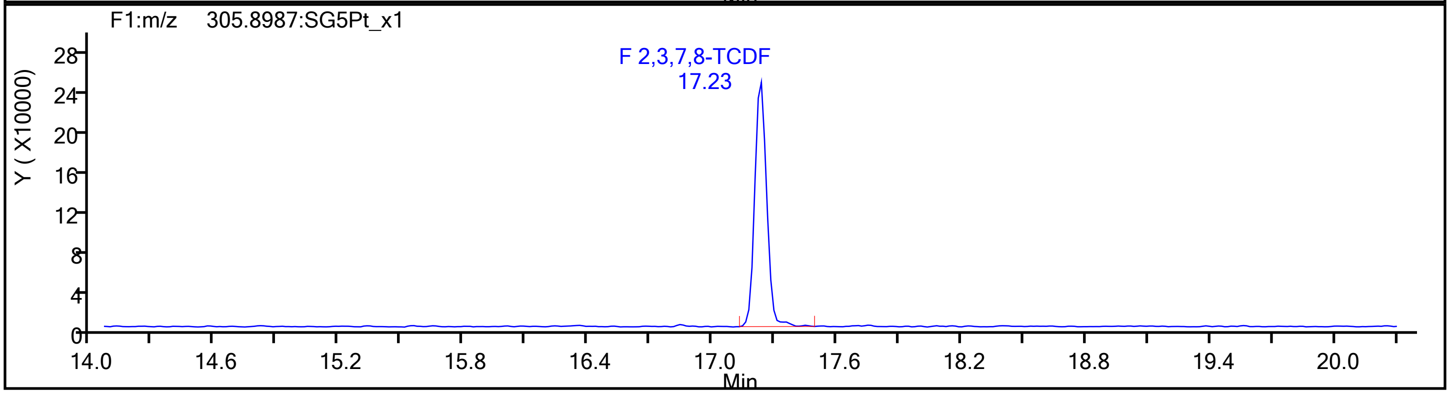

TCDF Standards

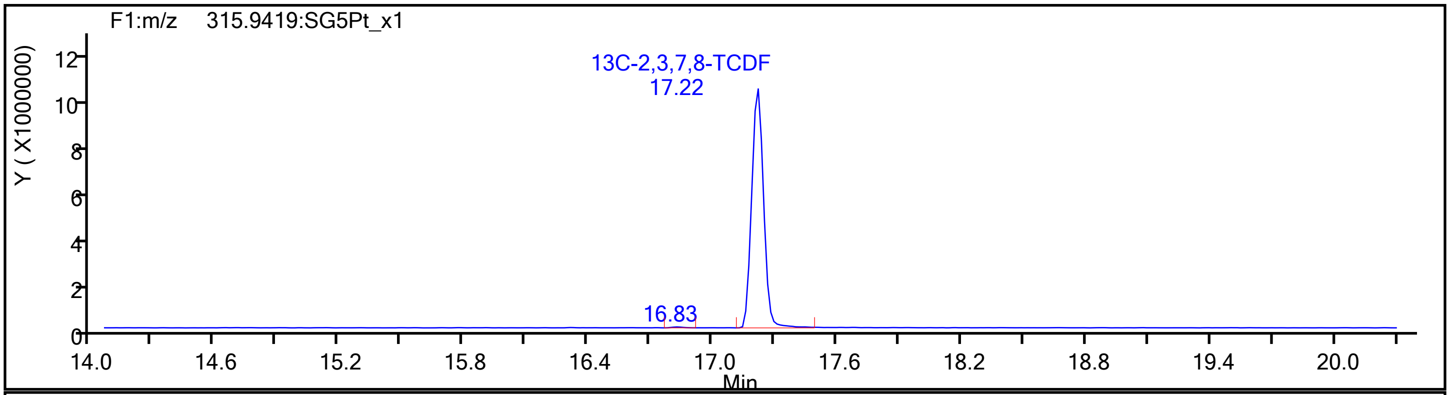

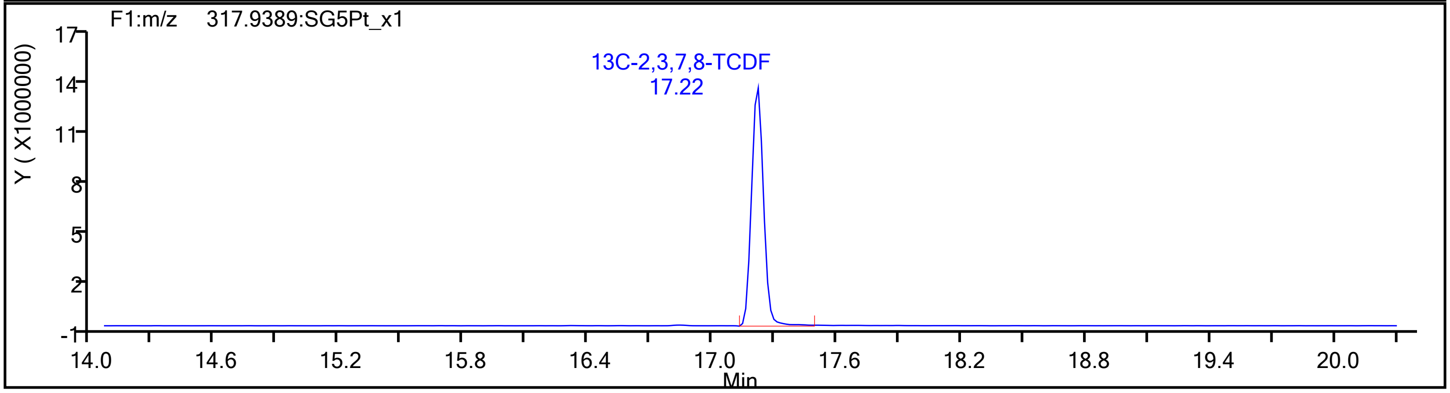

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

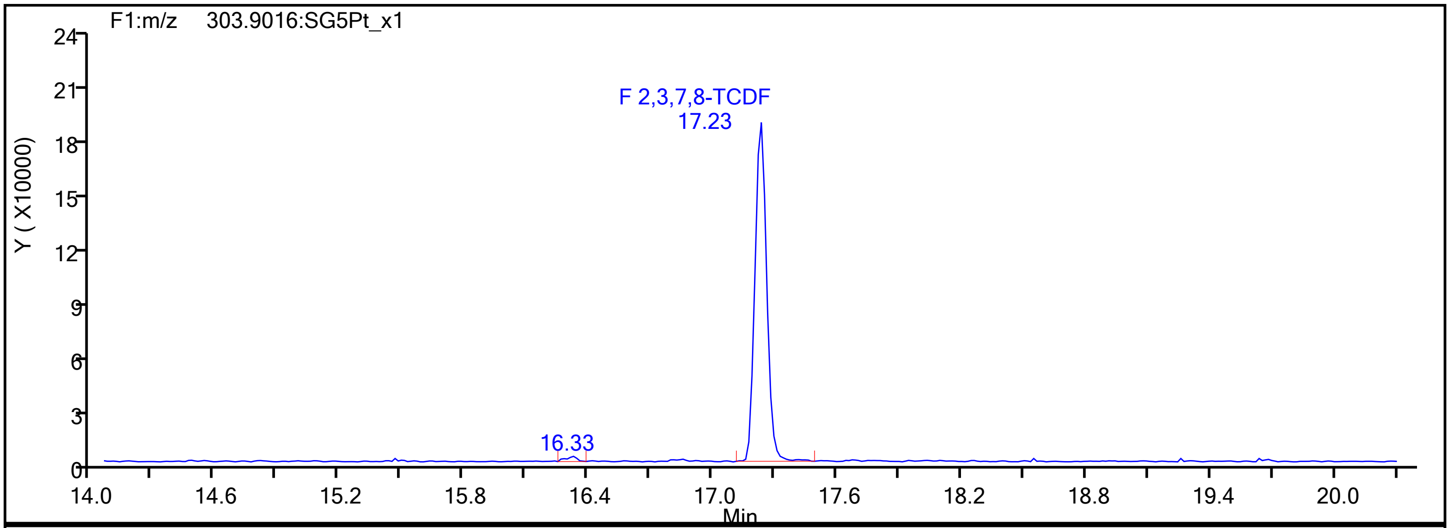

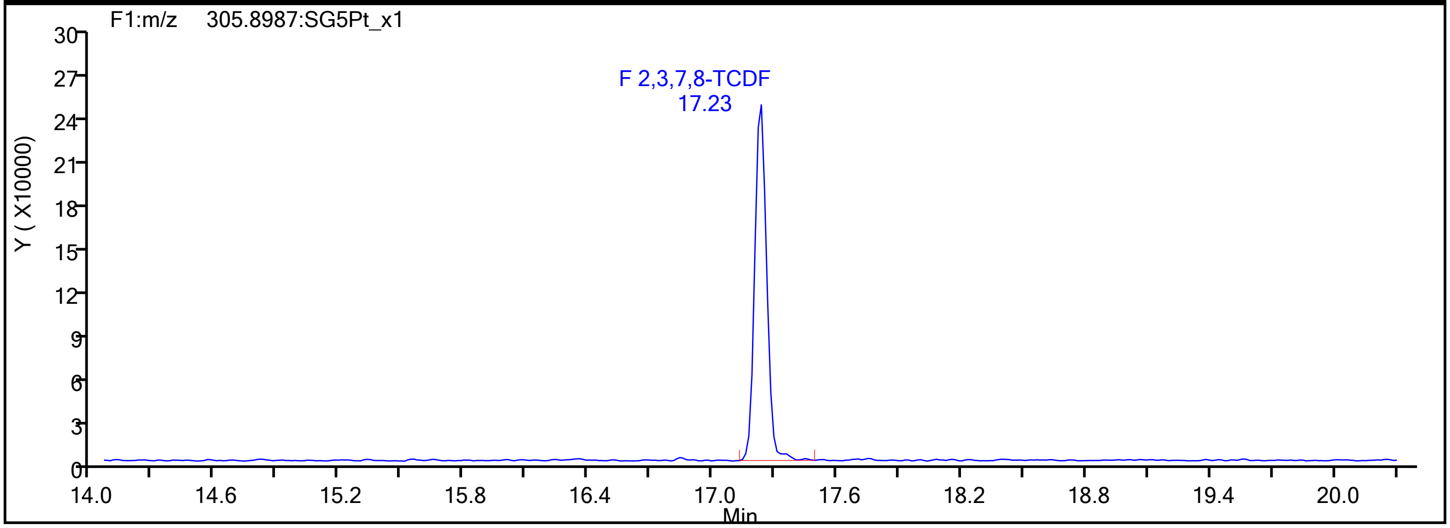

TCDF Interference Mass

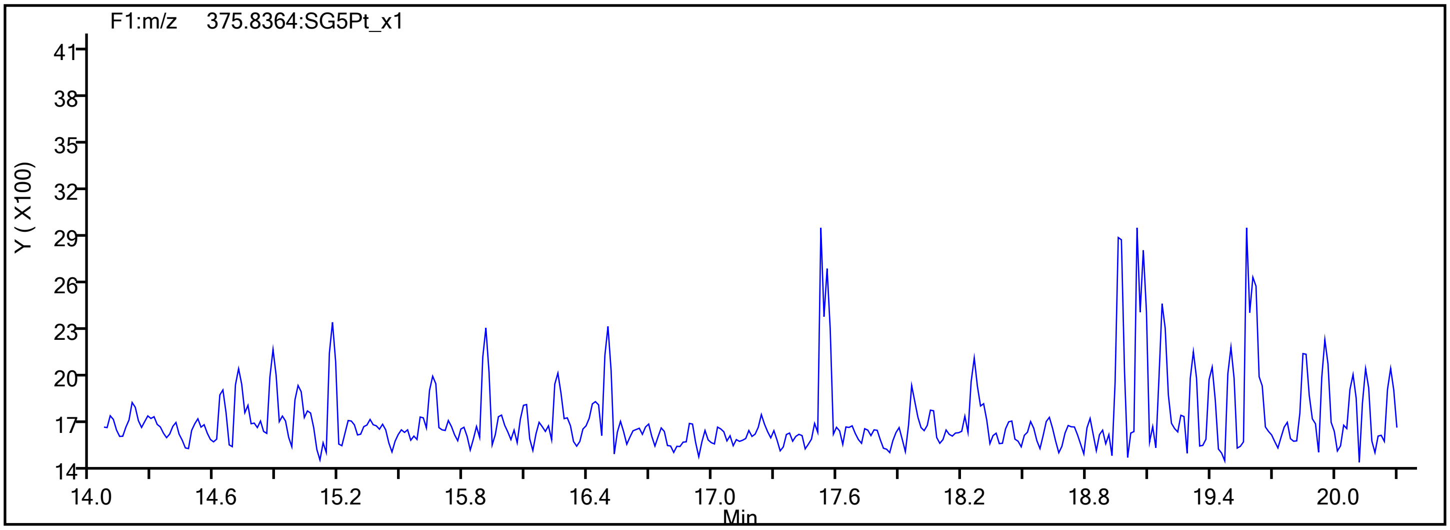

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

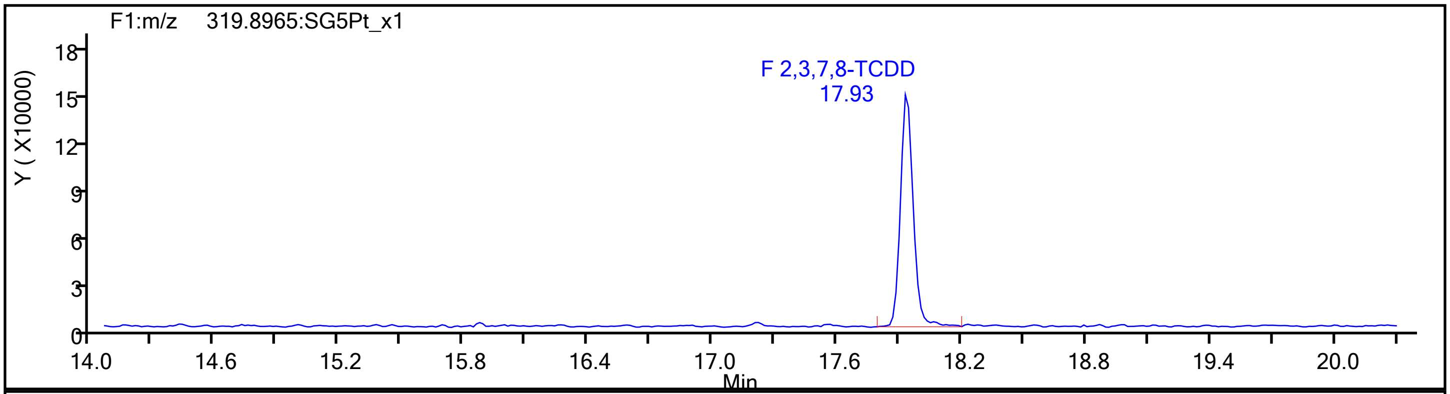

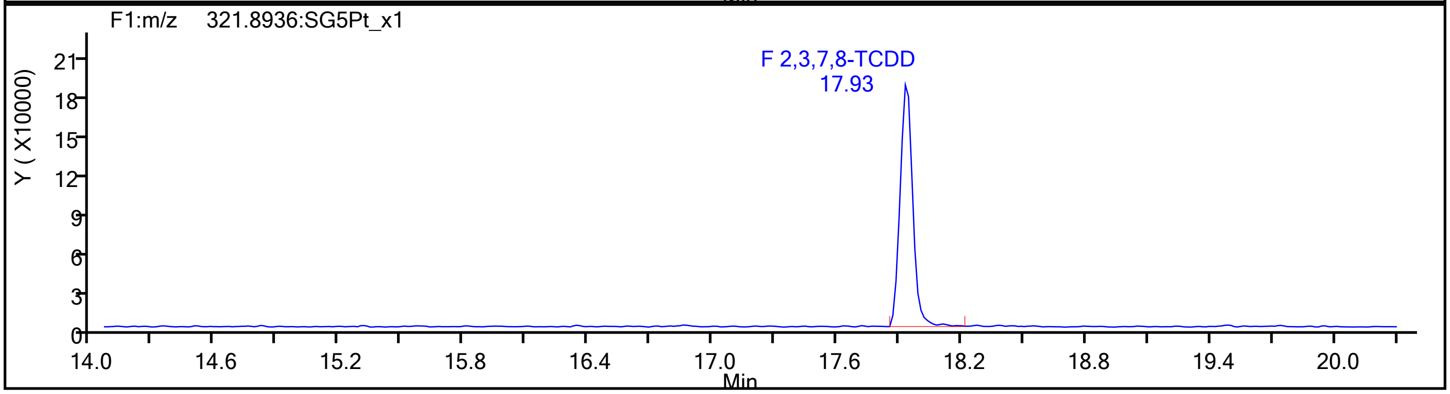

TCDD Standards

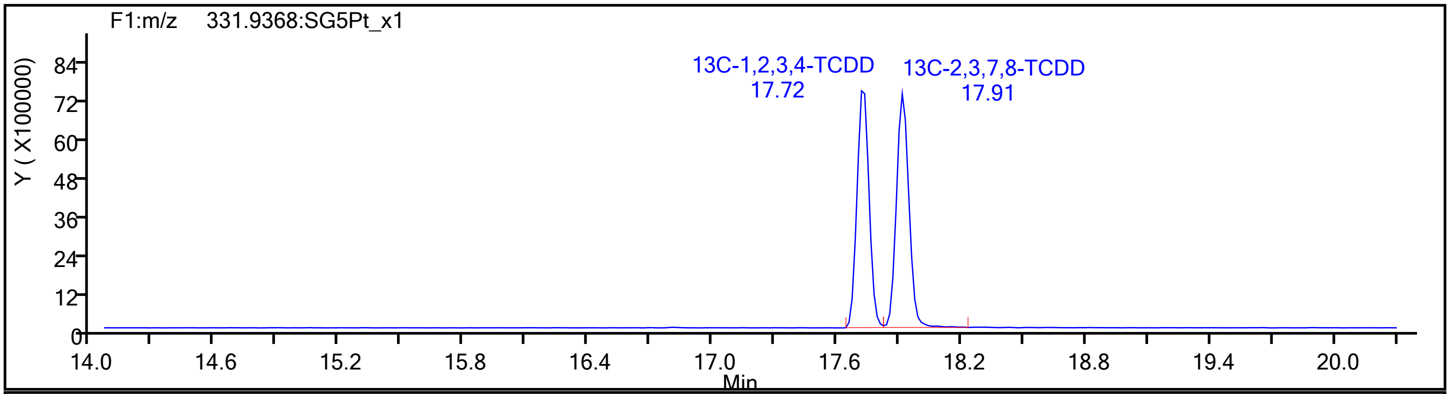

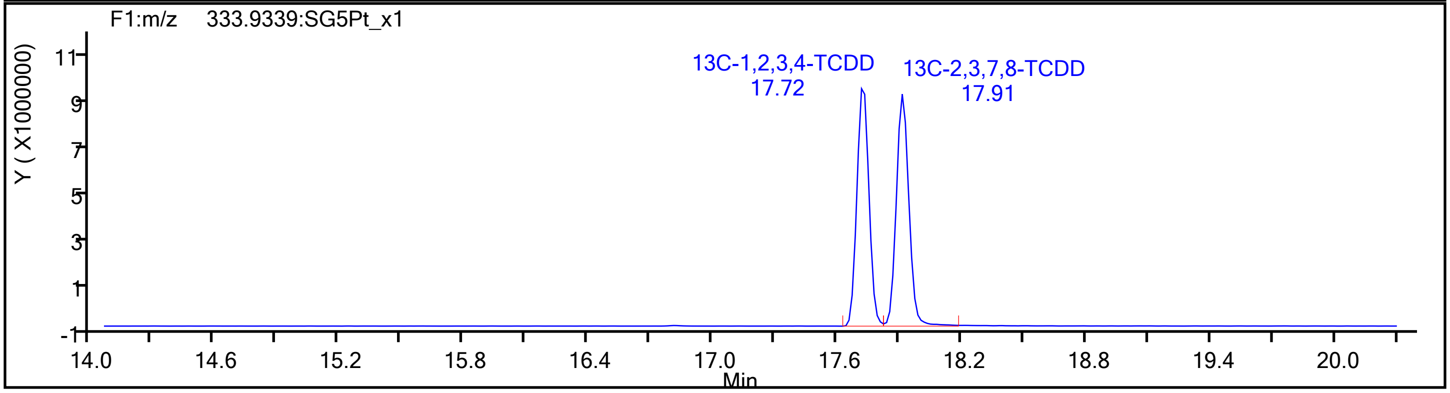

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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37Cl4-TCDD

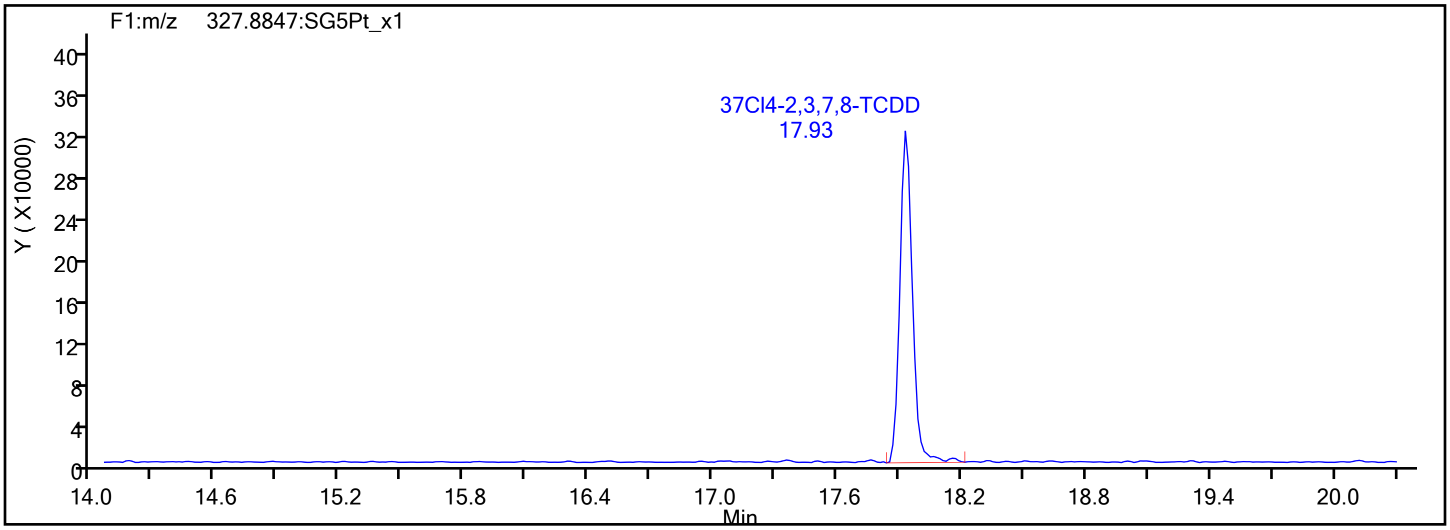

37Cl4-TCDD Standards

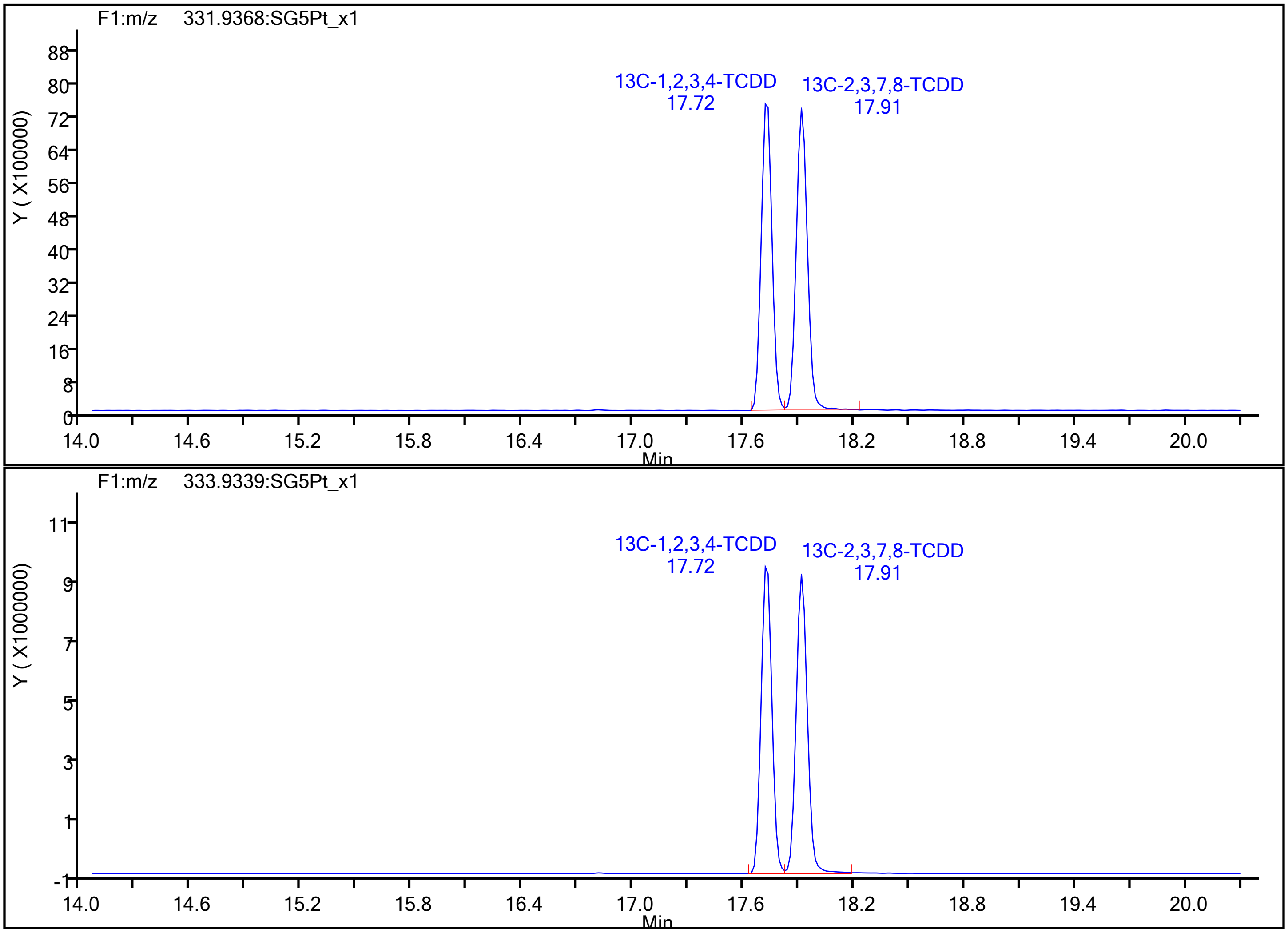

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

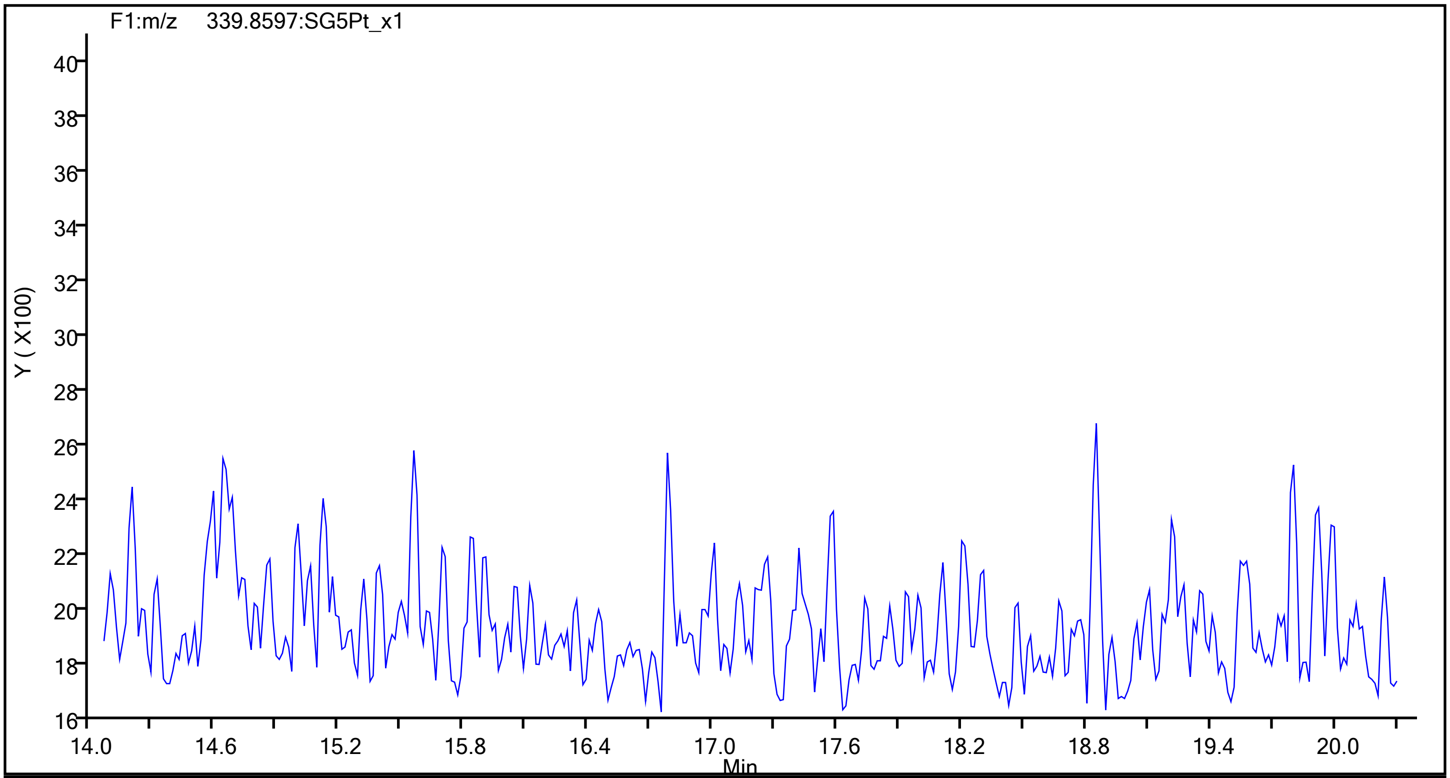

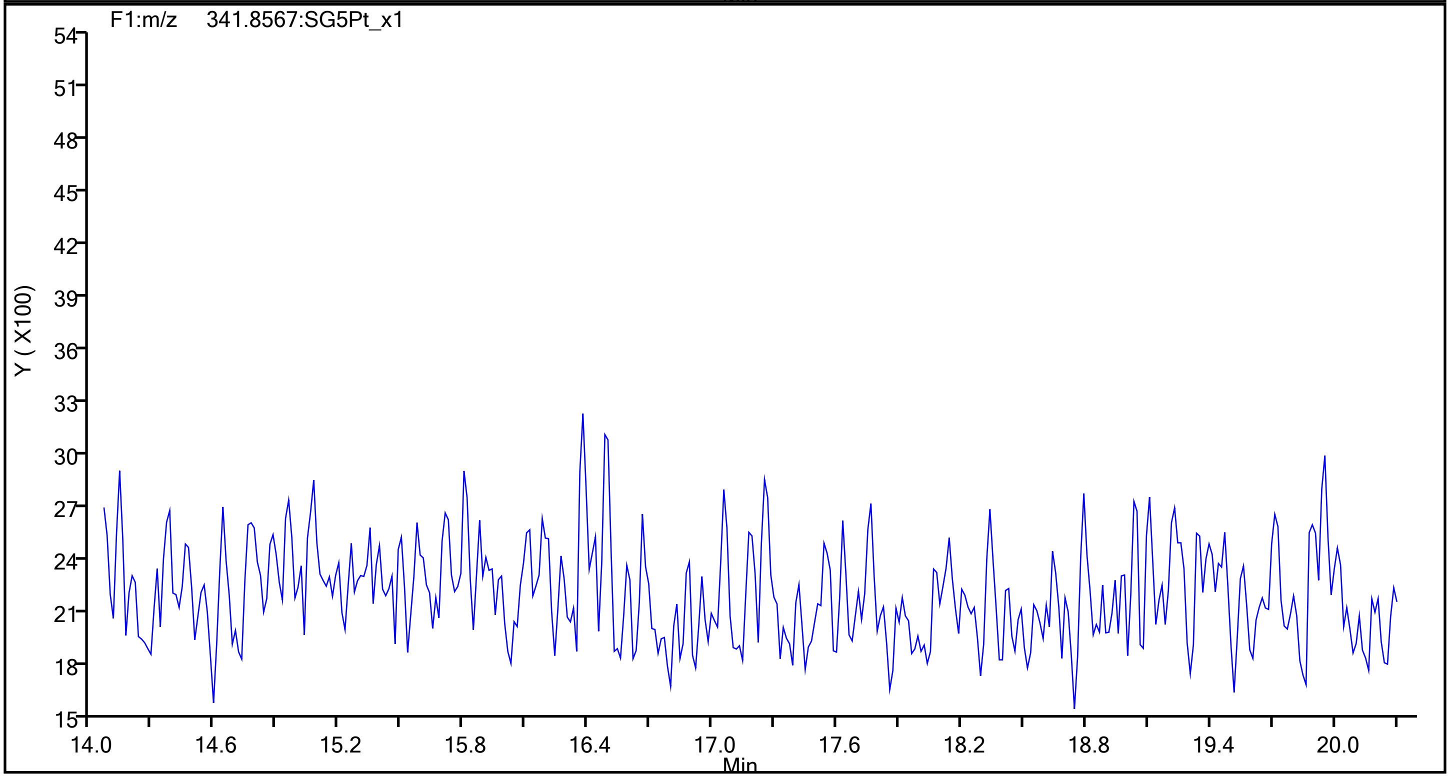

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

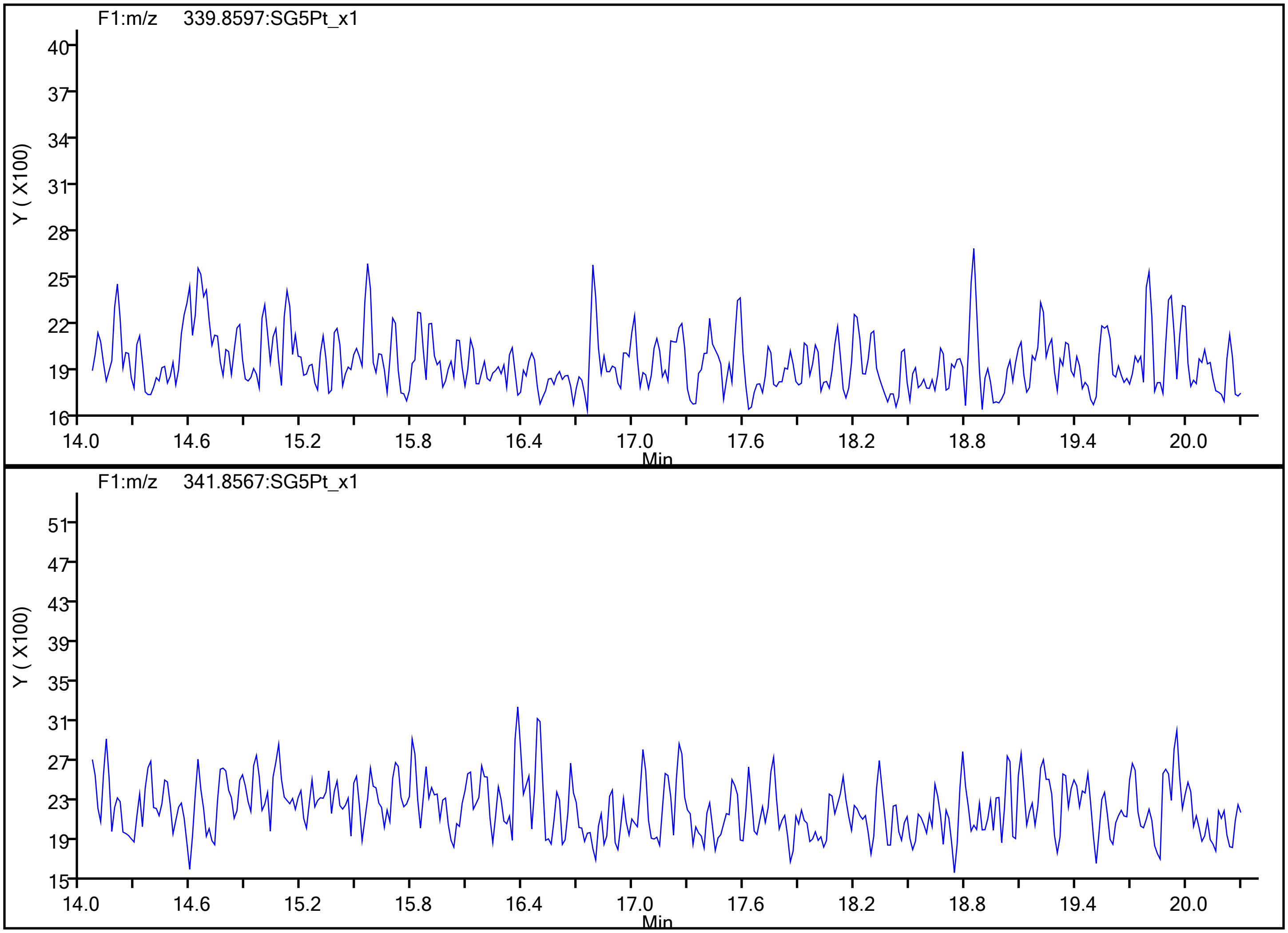

F1 PeCDFs Interference Mass

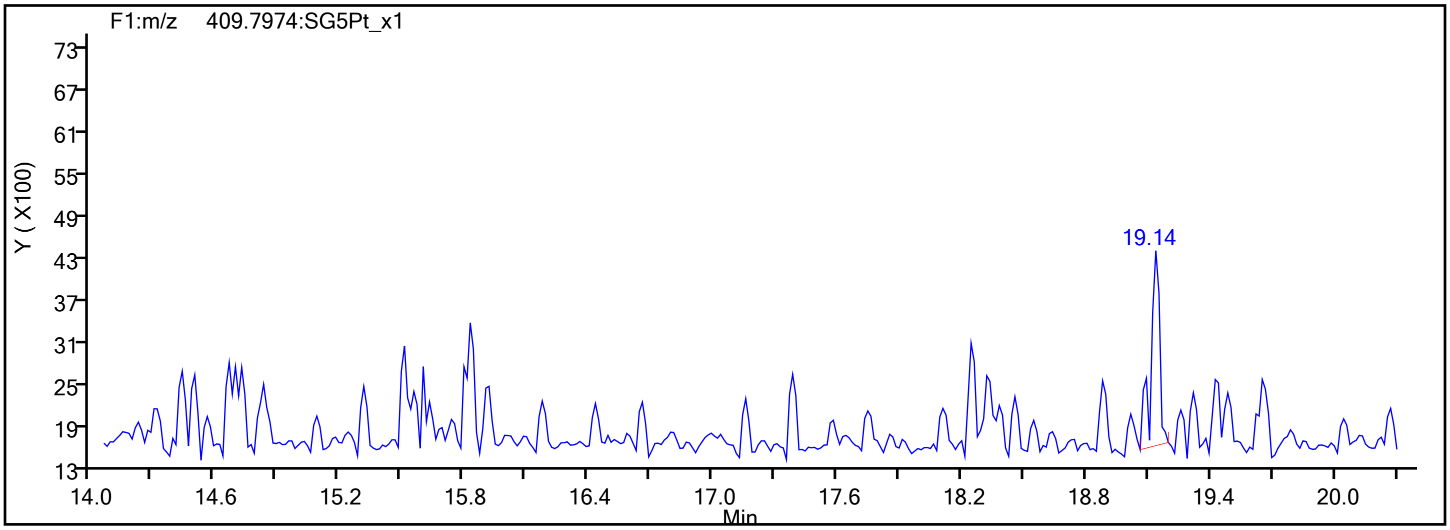

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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PeCDF

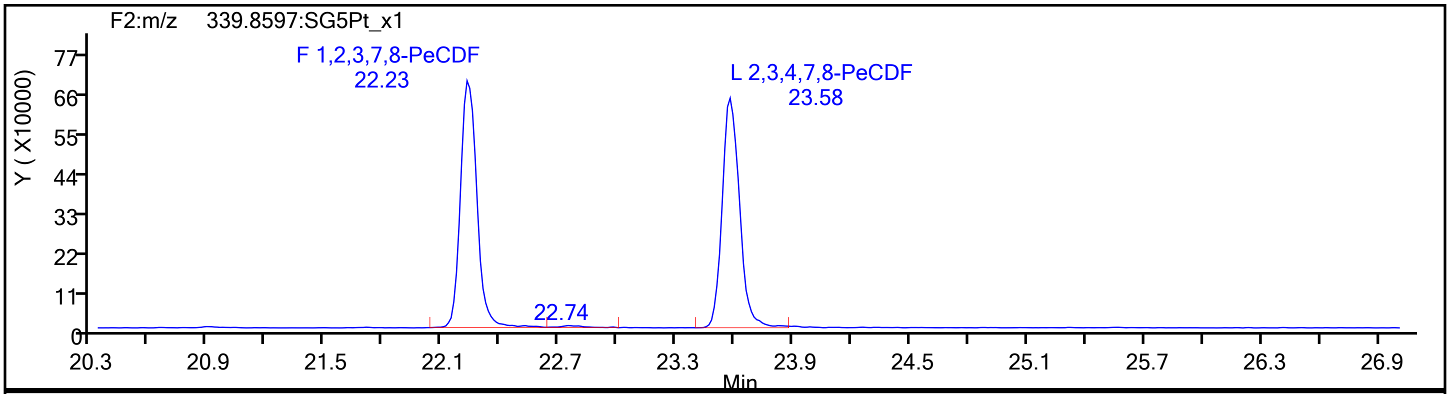

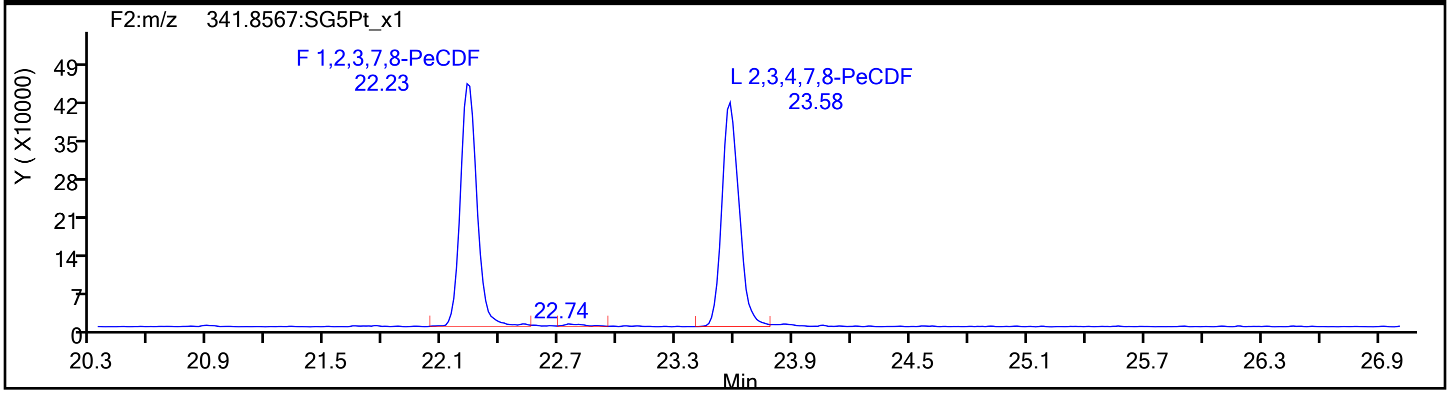

PeCDF Standards

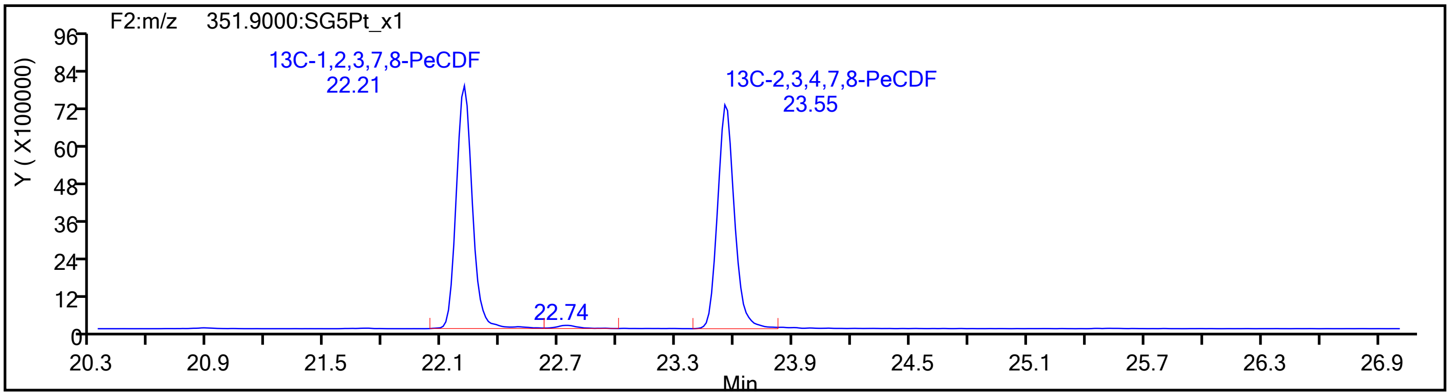

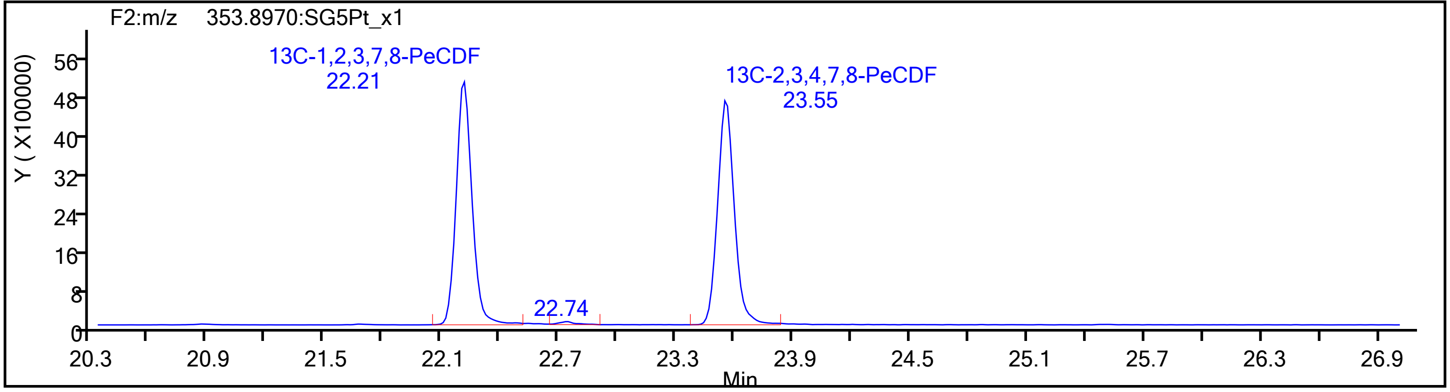

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

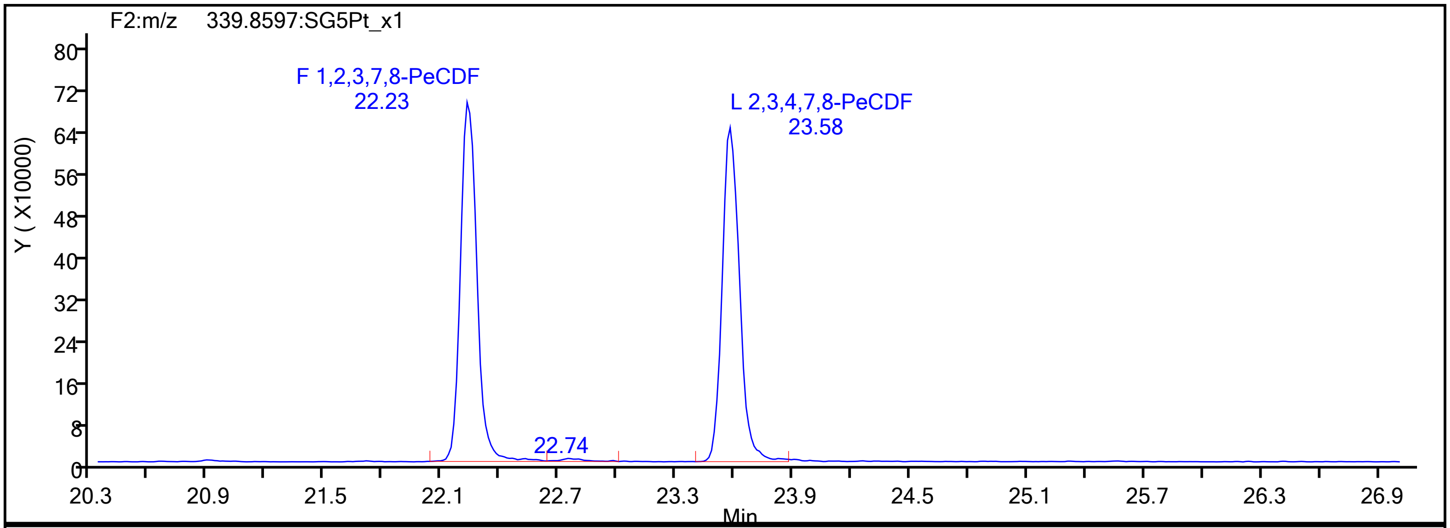

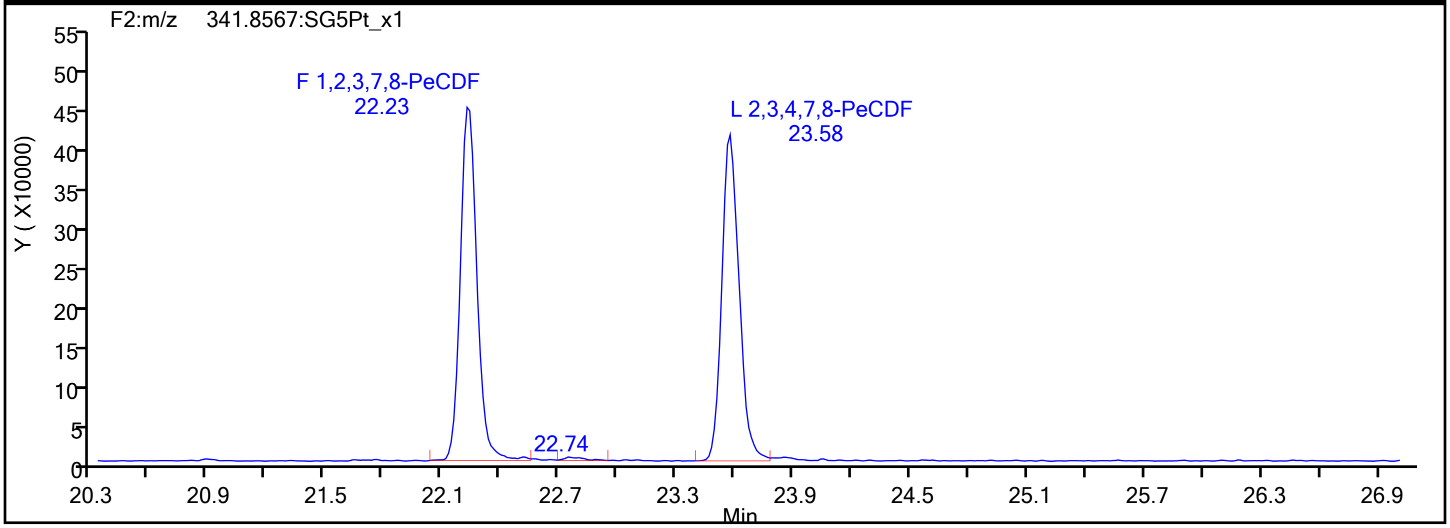

PeCDF Interference Mass

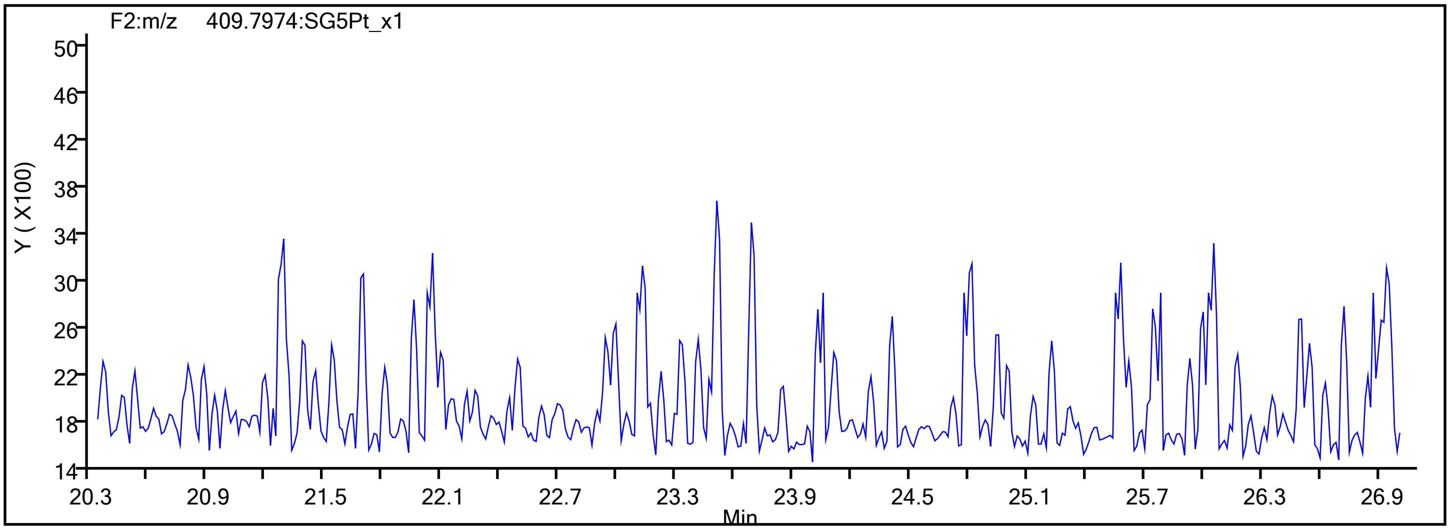

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

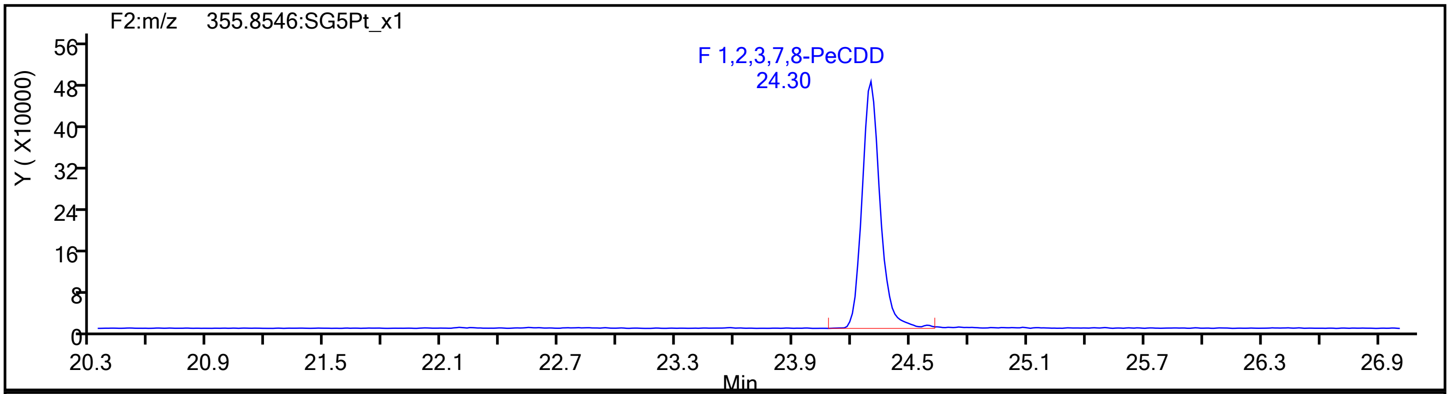

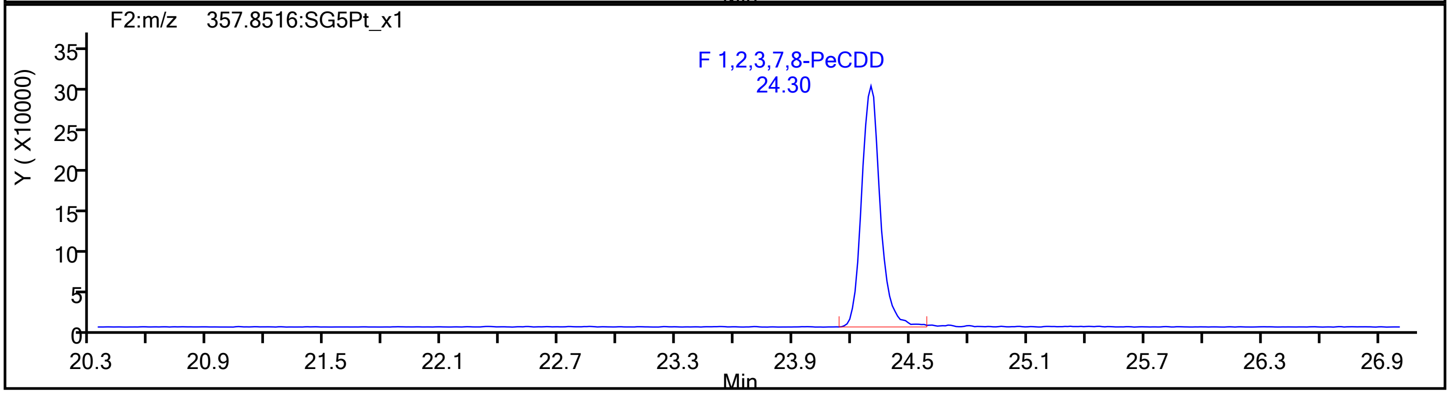

PeCDD Standards

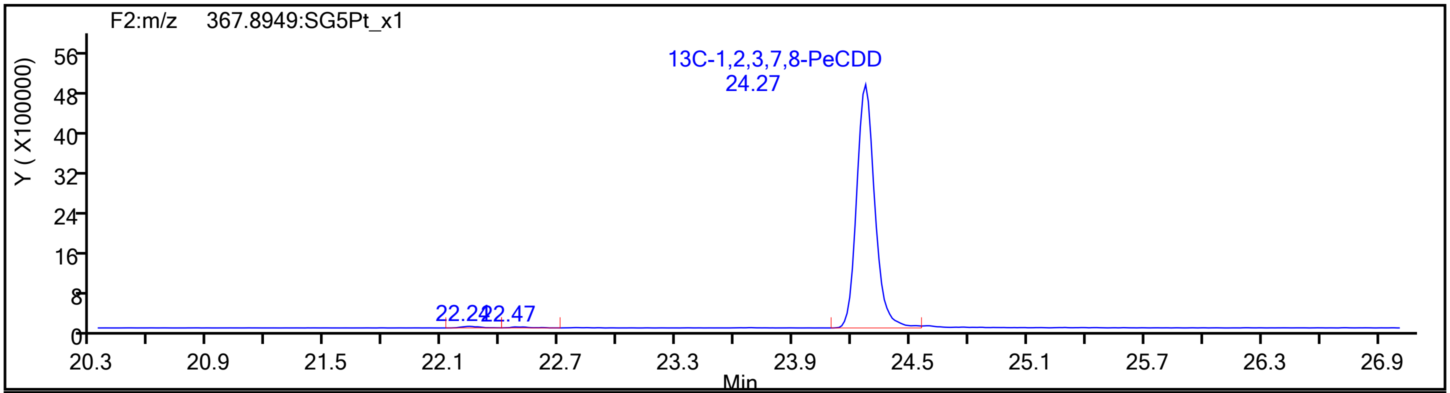

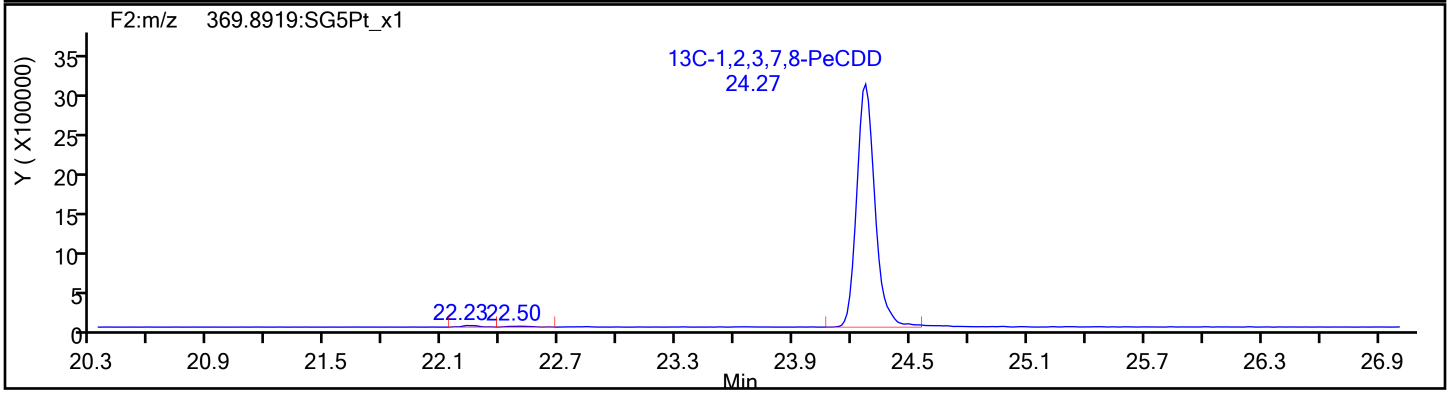

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Injection Date: 17-Sep-2020 16:54:45

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

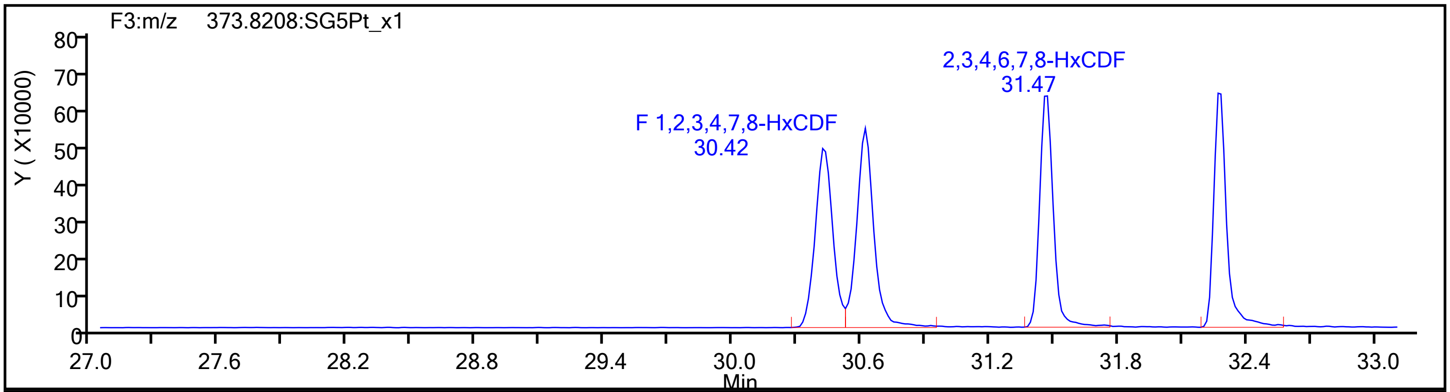

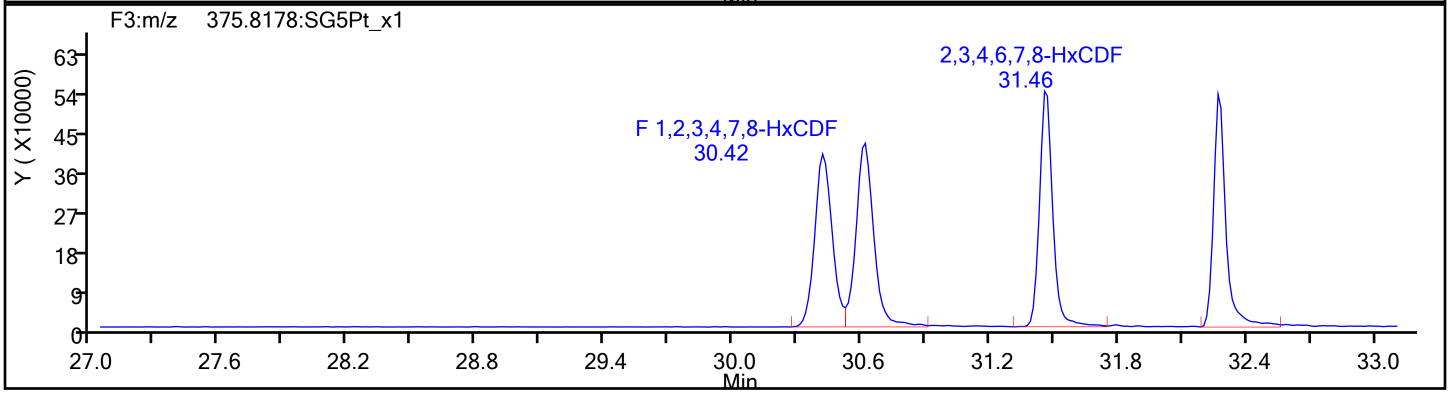

HxCDF Standards

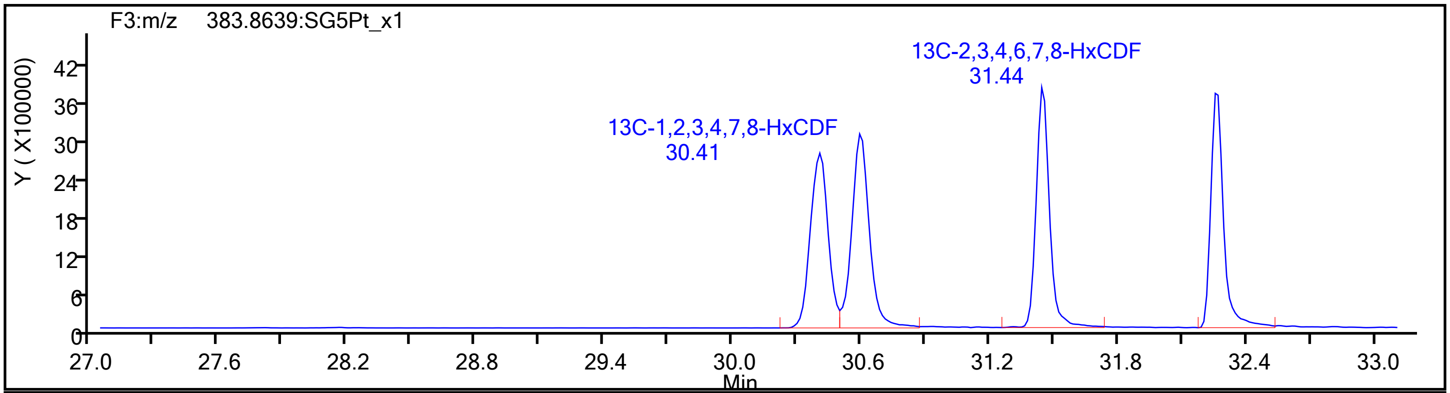

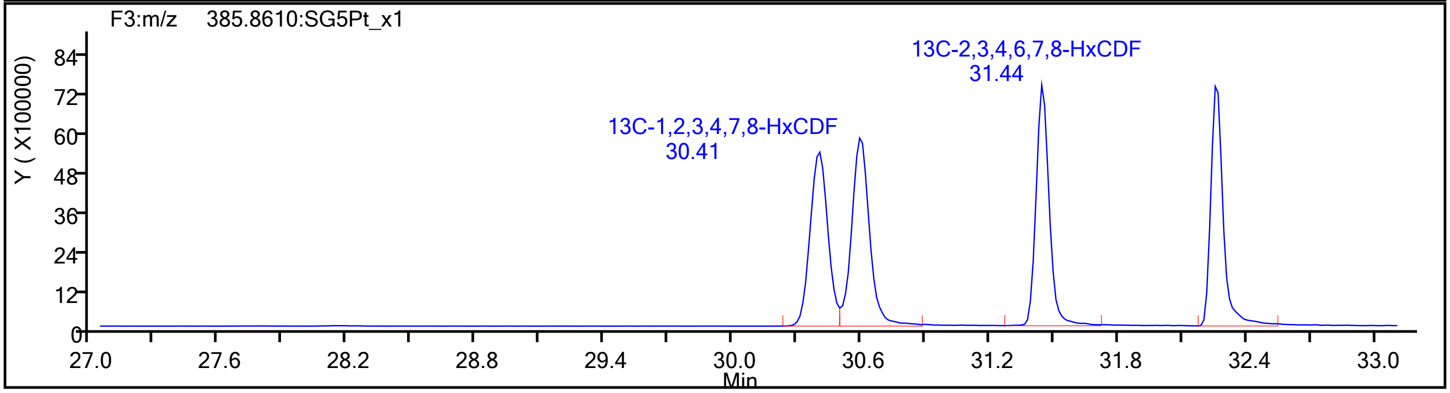

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

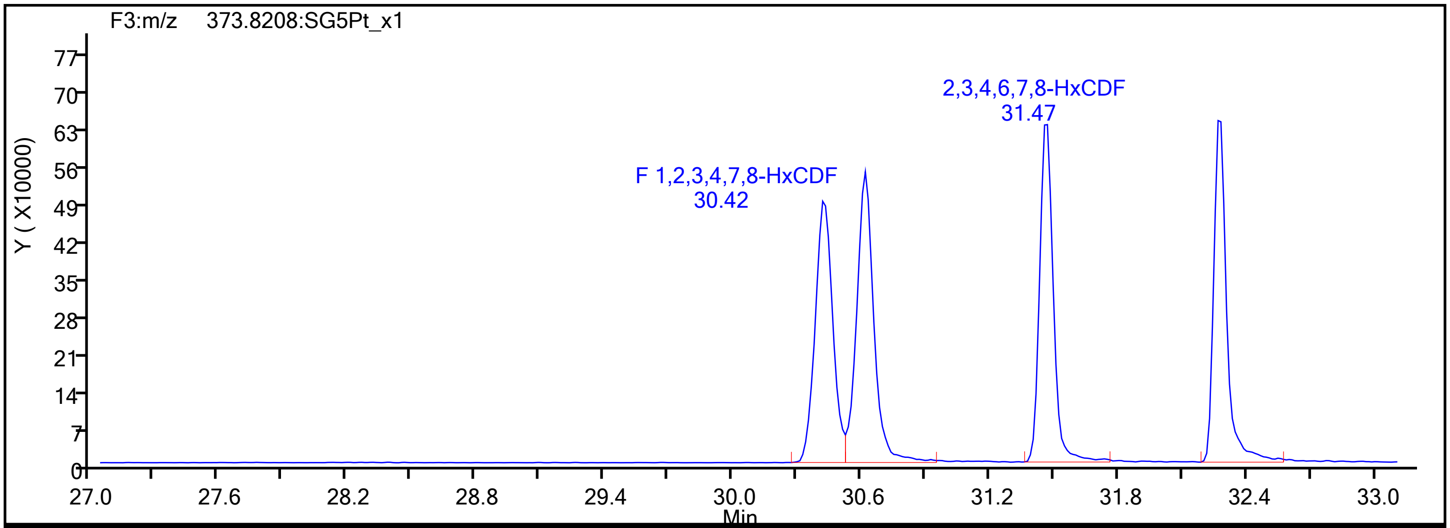

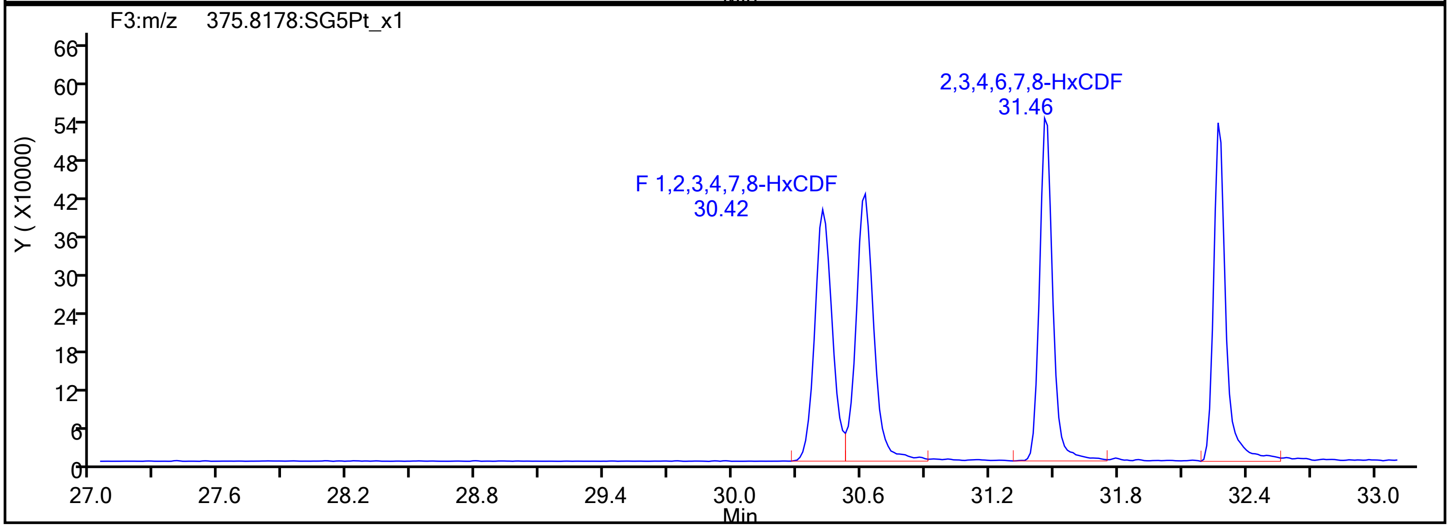

HxCDF Interference Mass

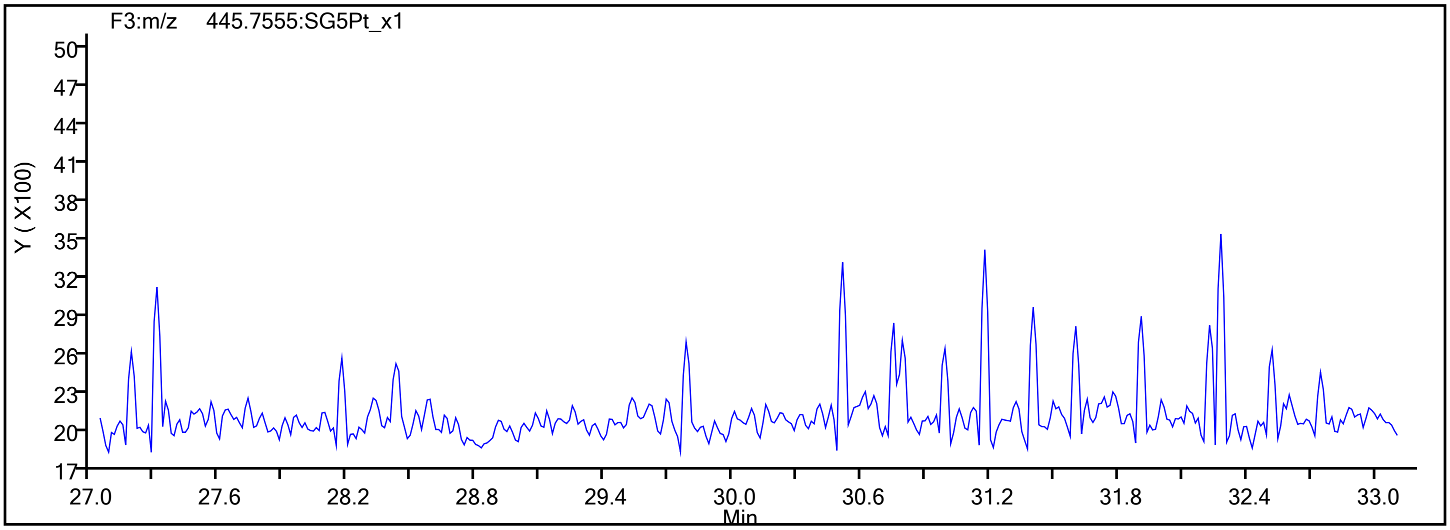

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

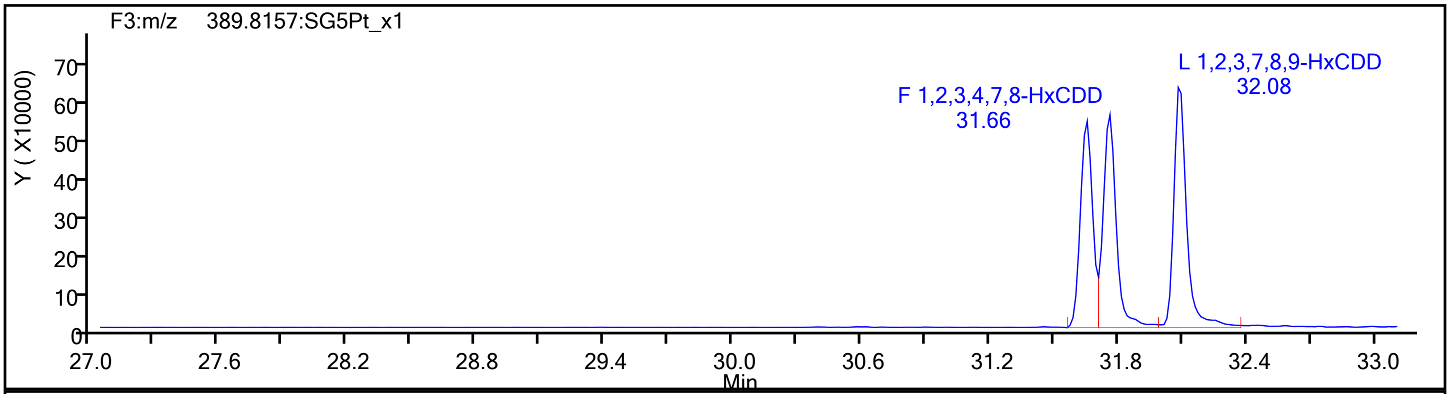

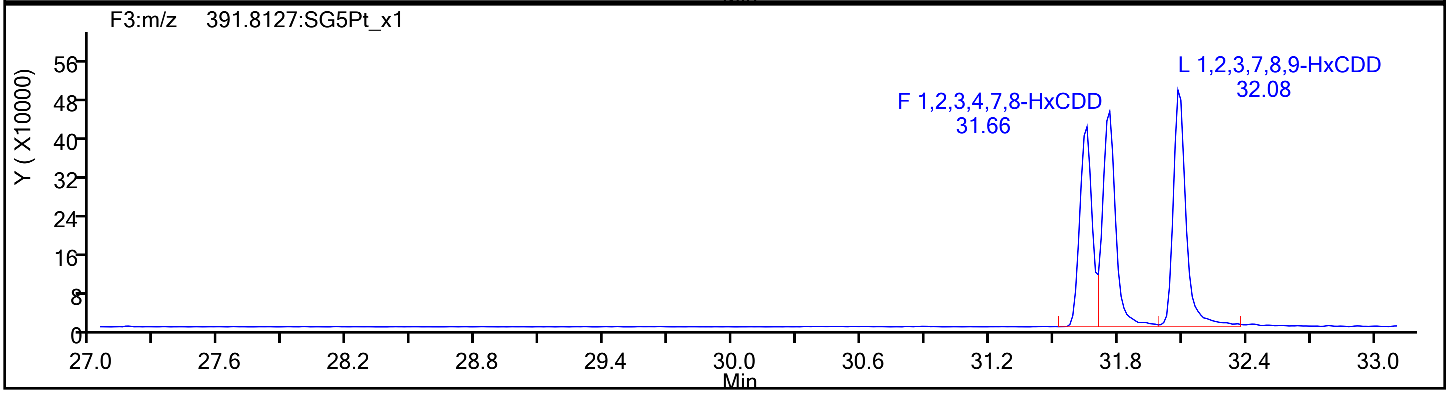

HxCDD Standards

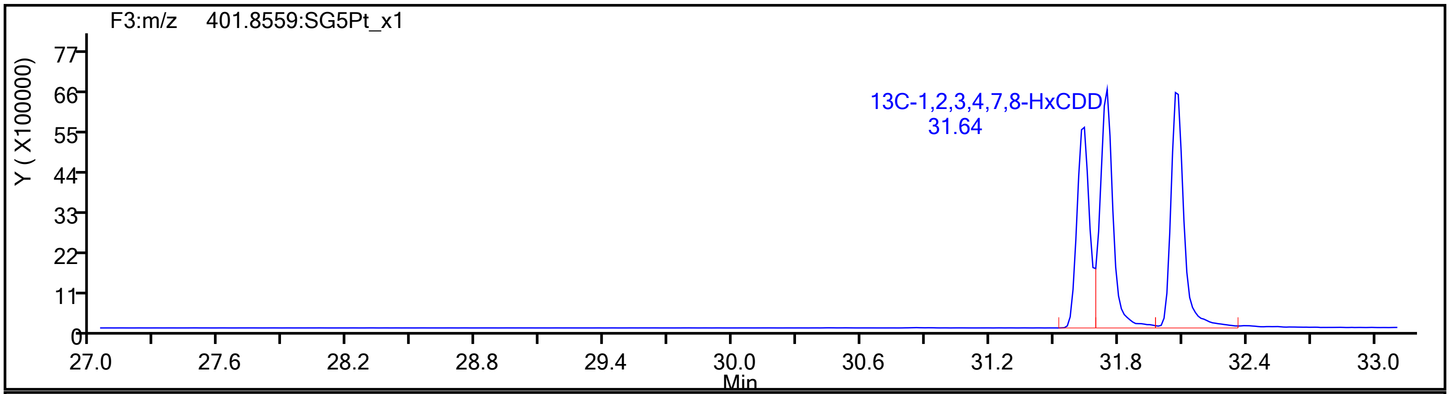

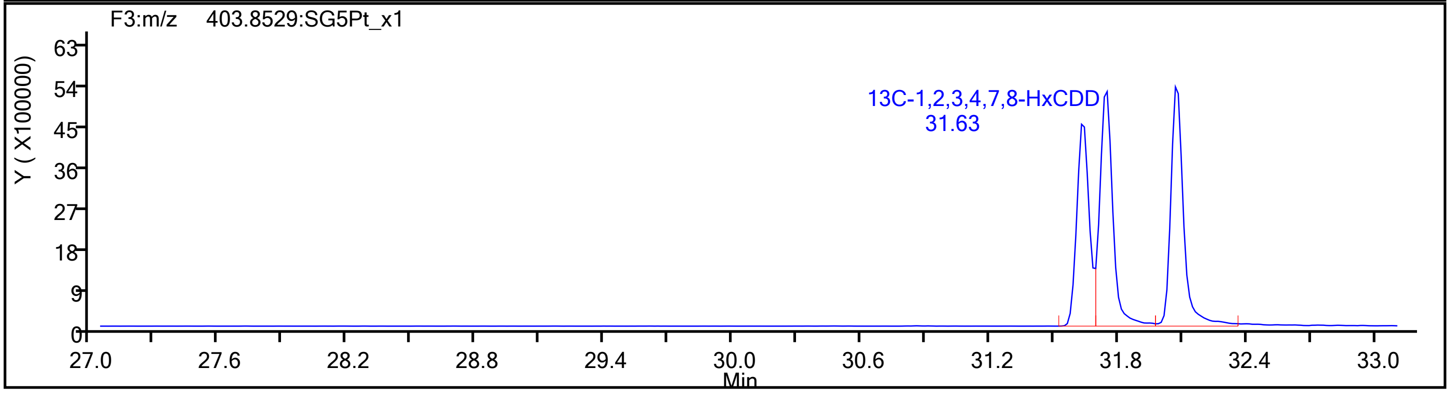

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

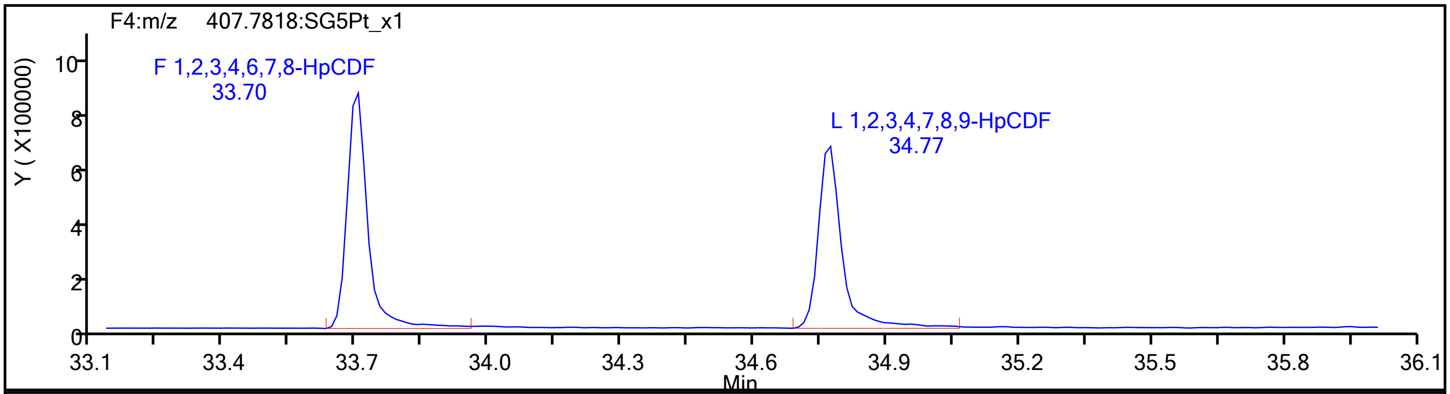

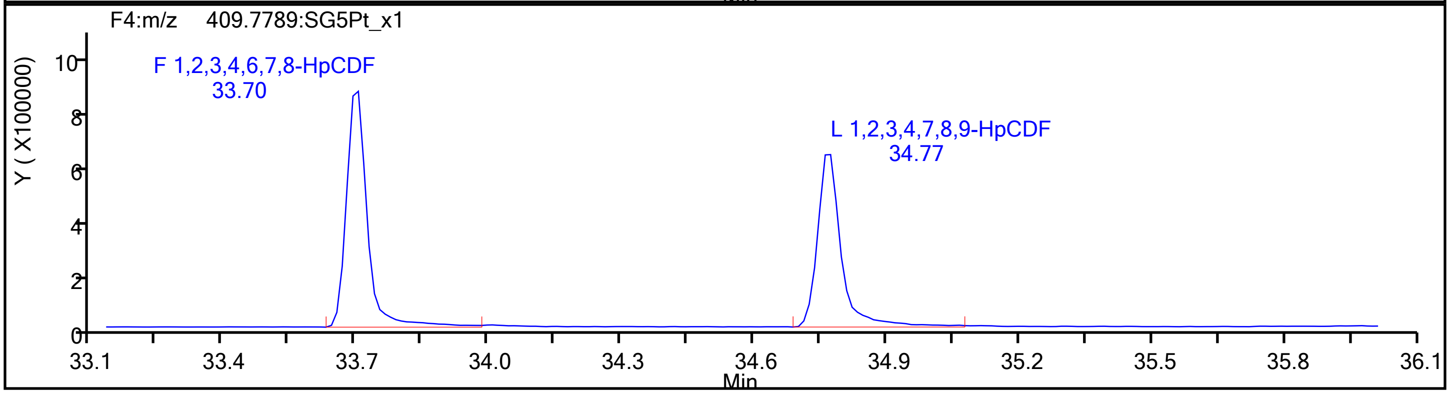

HpCDF Standards

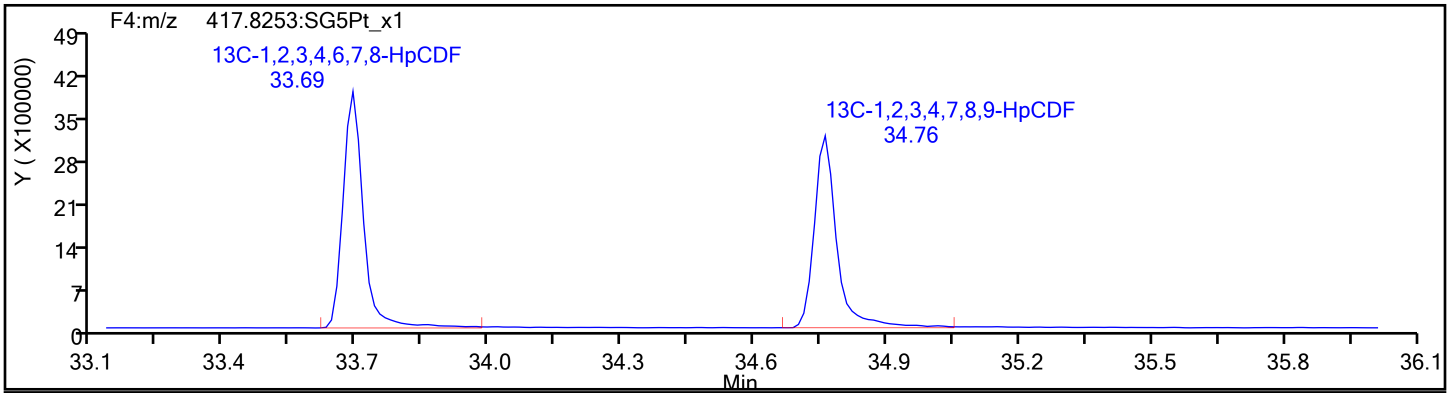

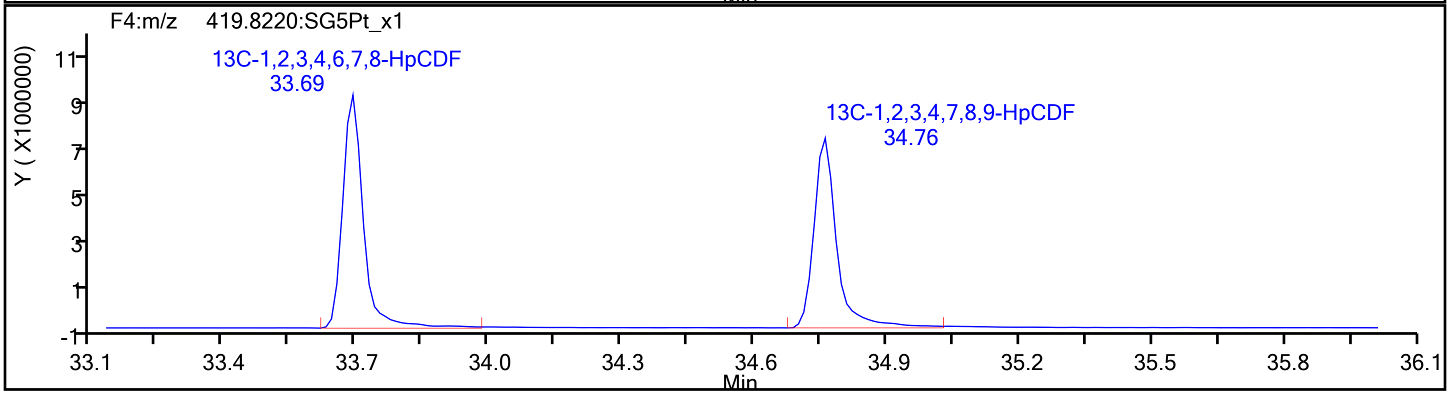

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

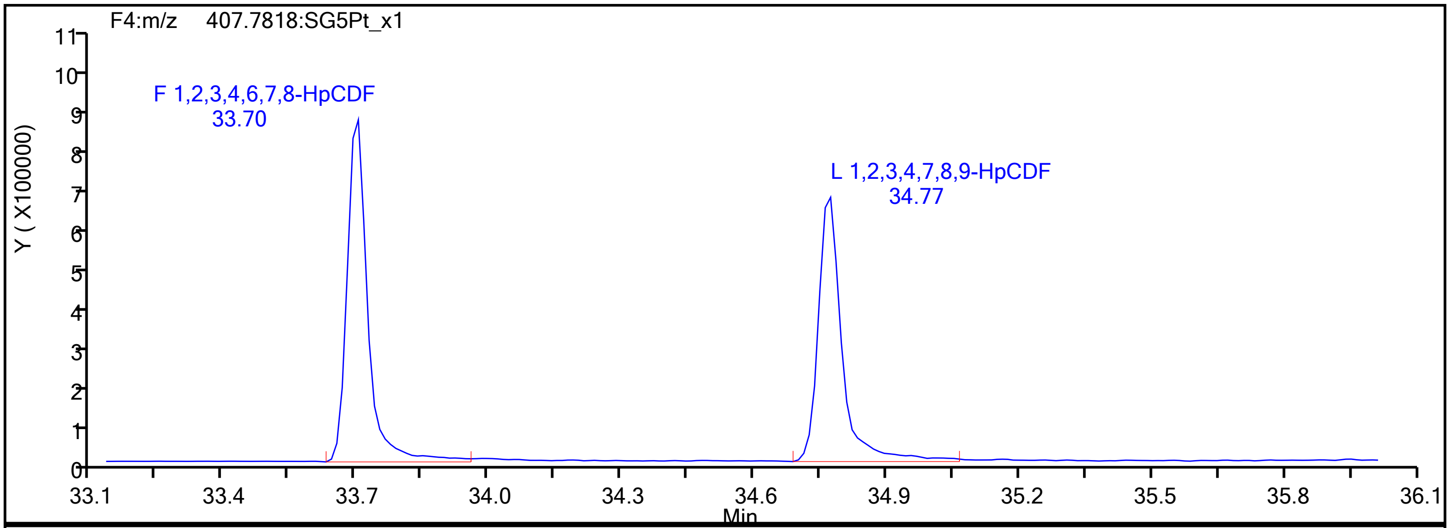

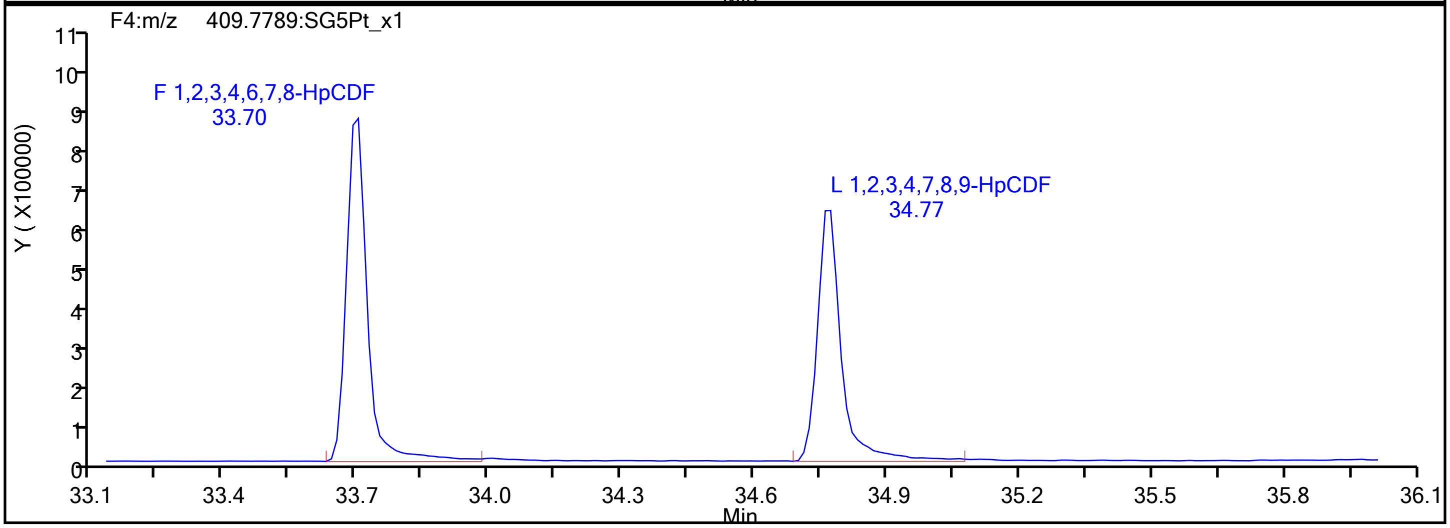

HpCDF Interference Mass

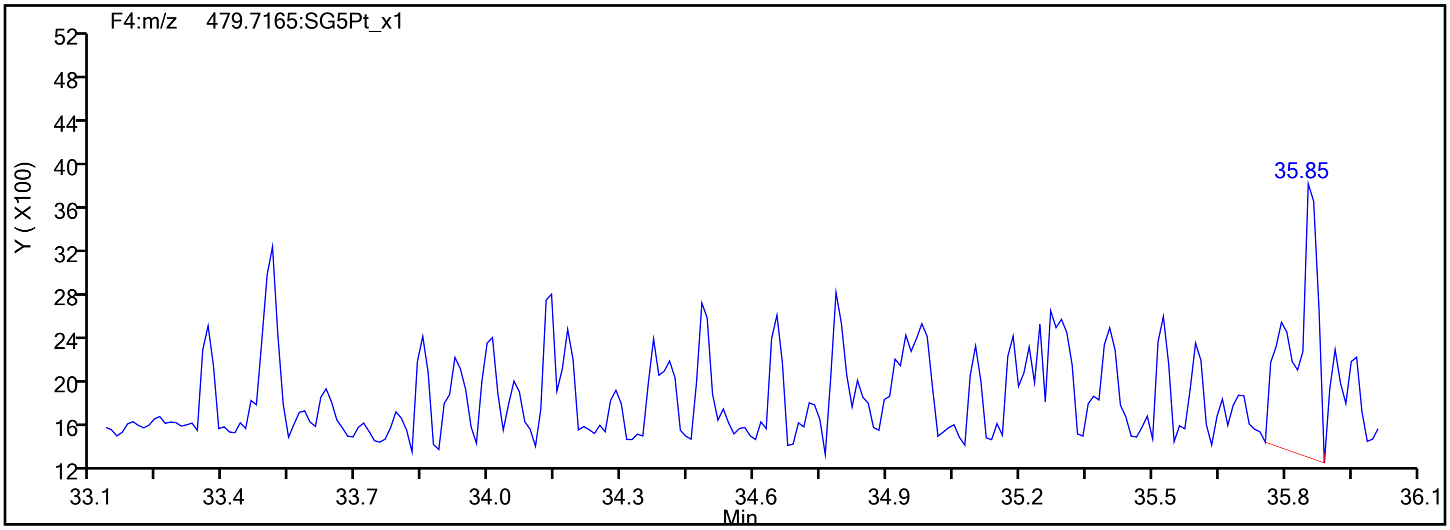

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

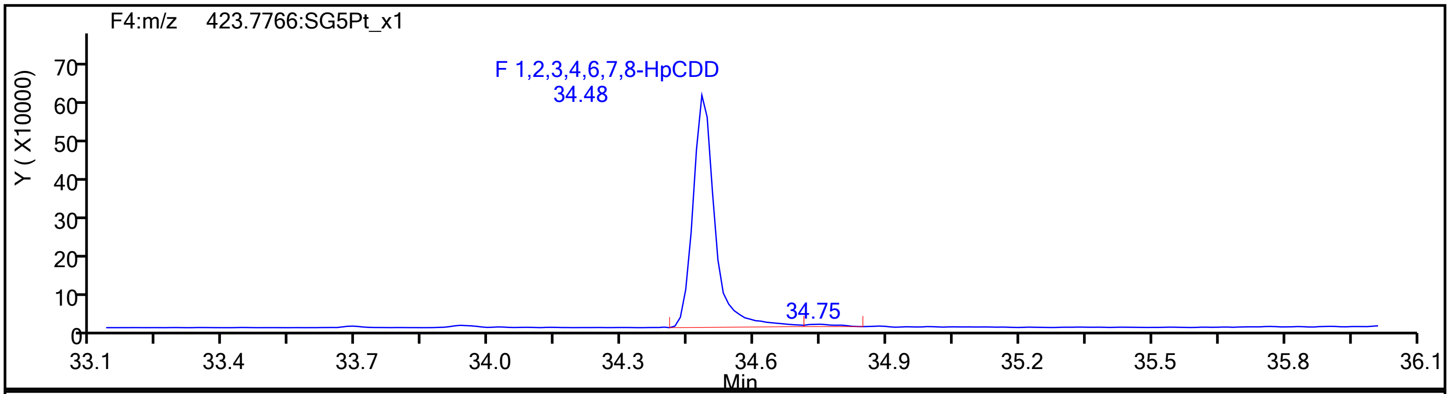

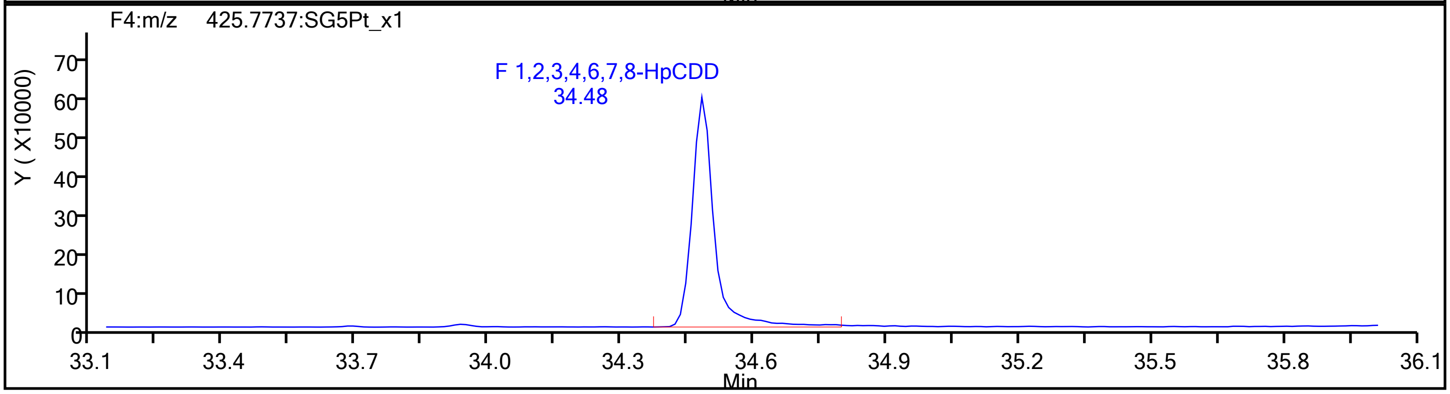

HpCDD Standards

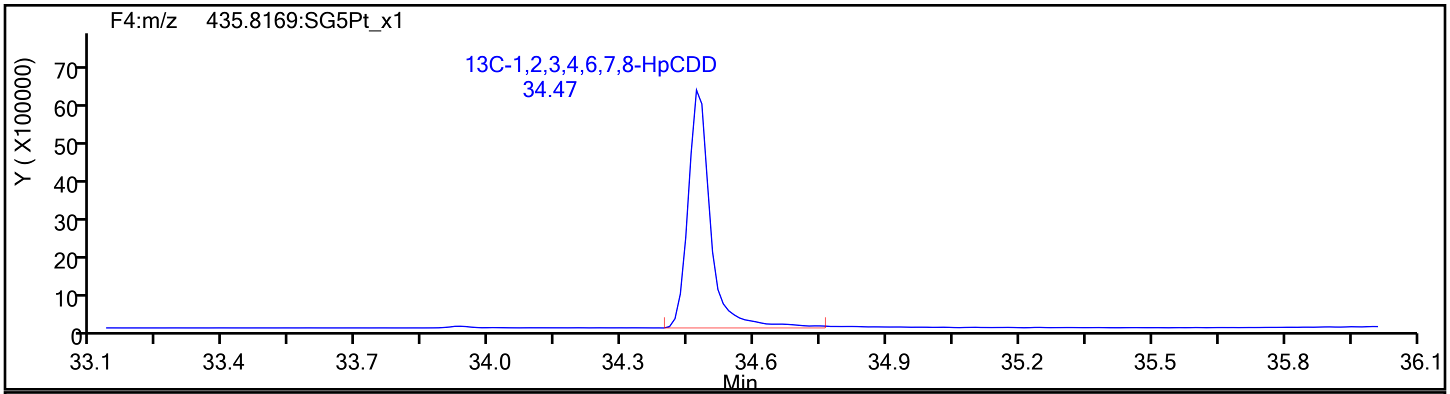

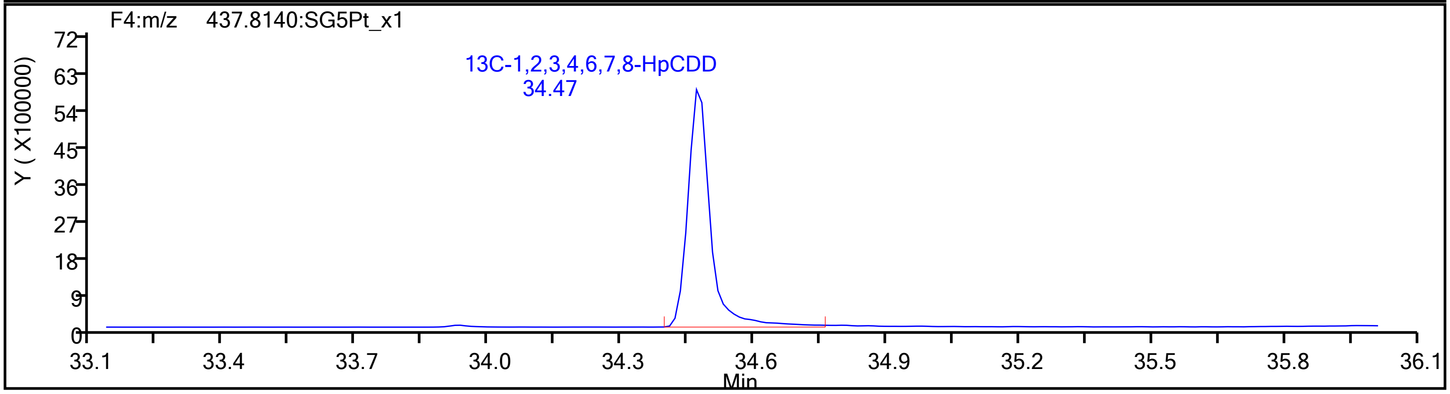

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

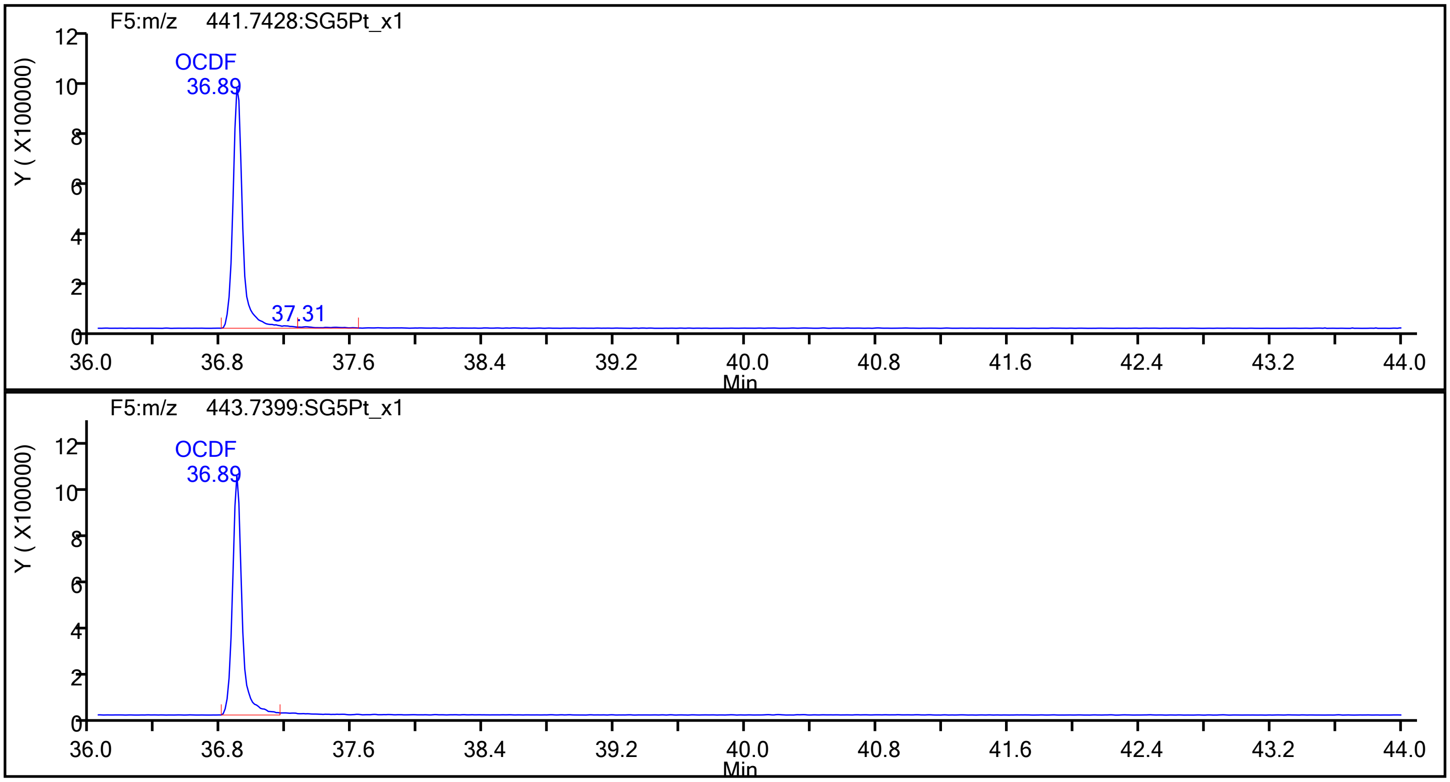

OCDF Standards

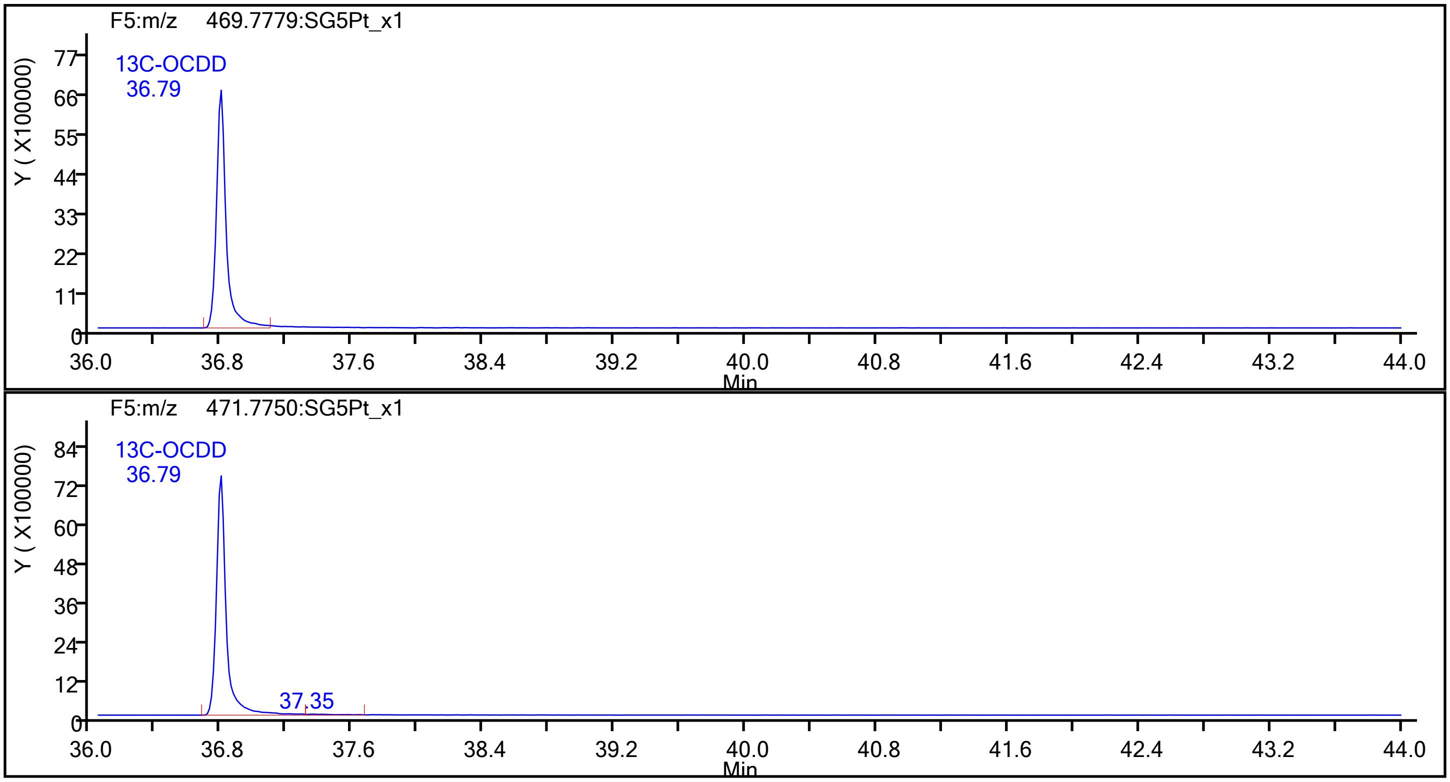

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d
Injection Date: 17-Sep-2020 16:54:45
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

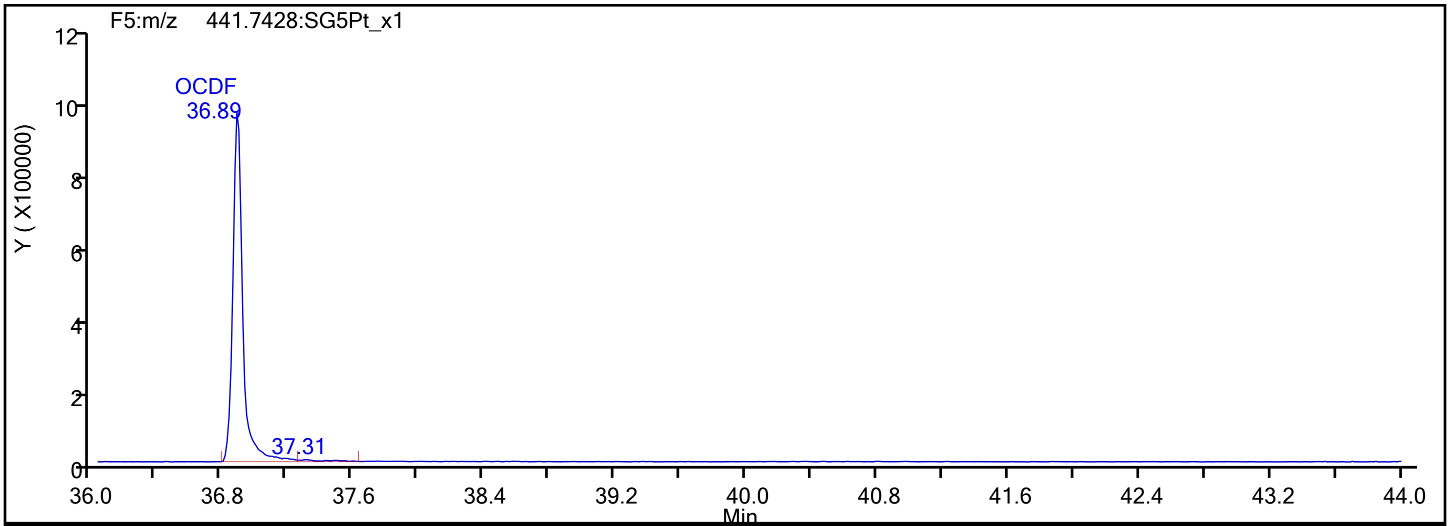

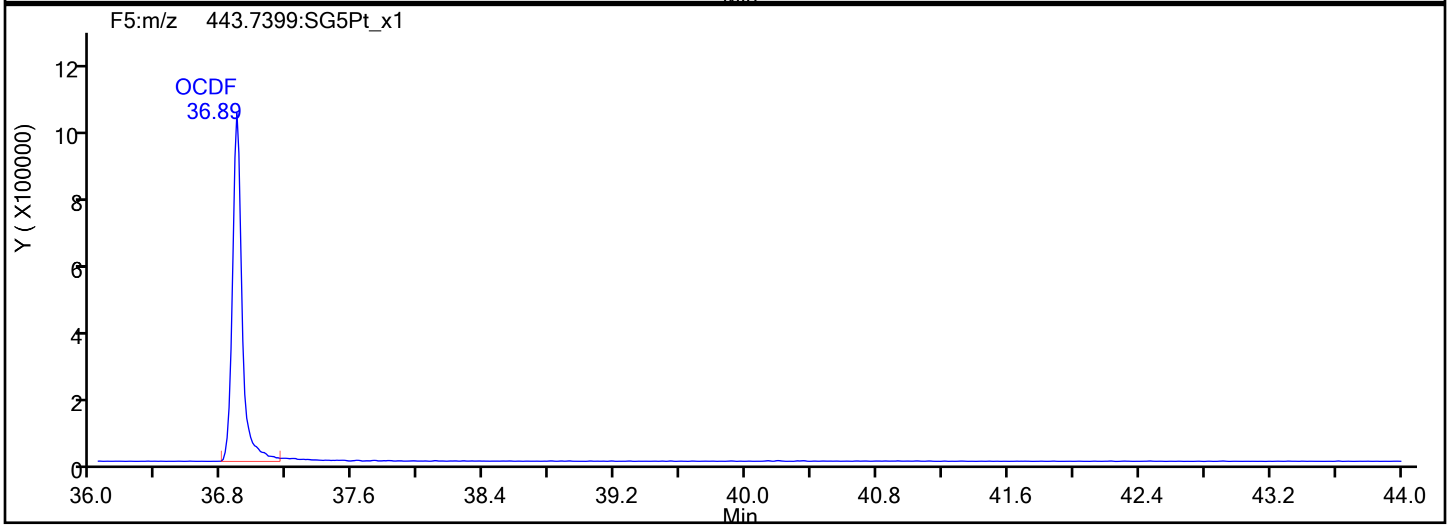

OCDF Interference Mass

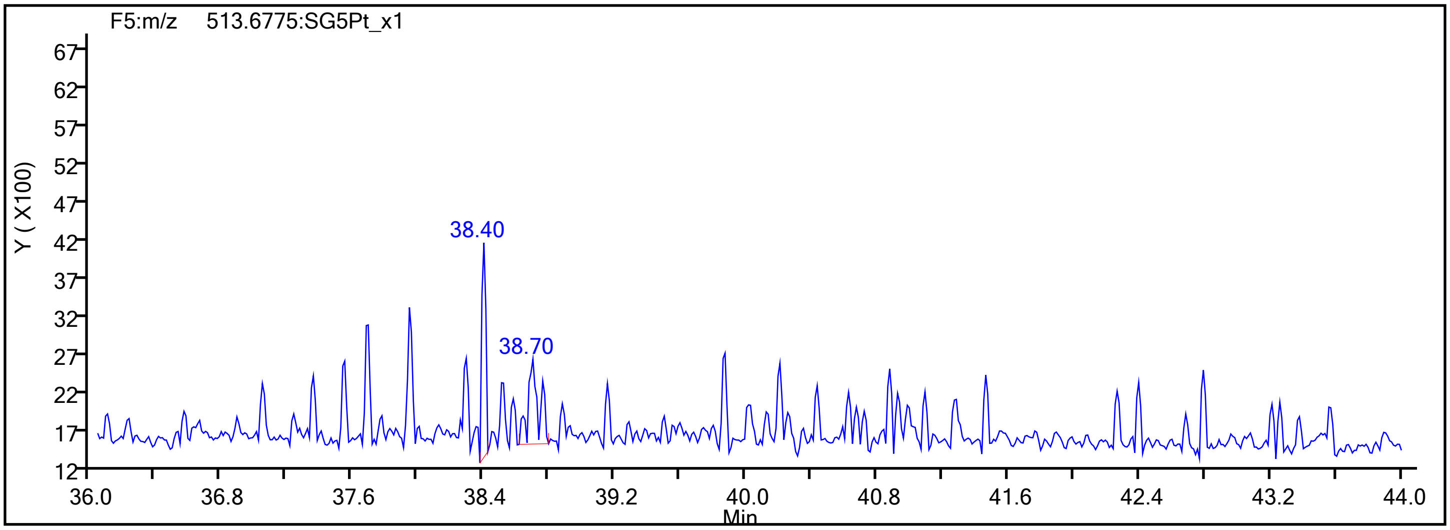

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

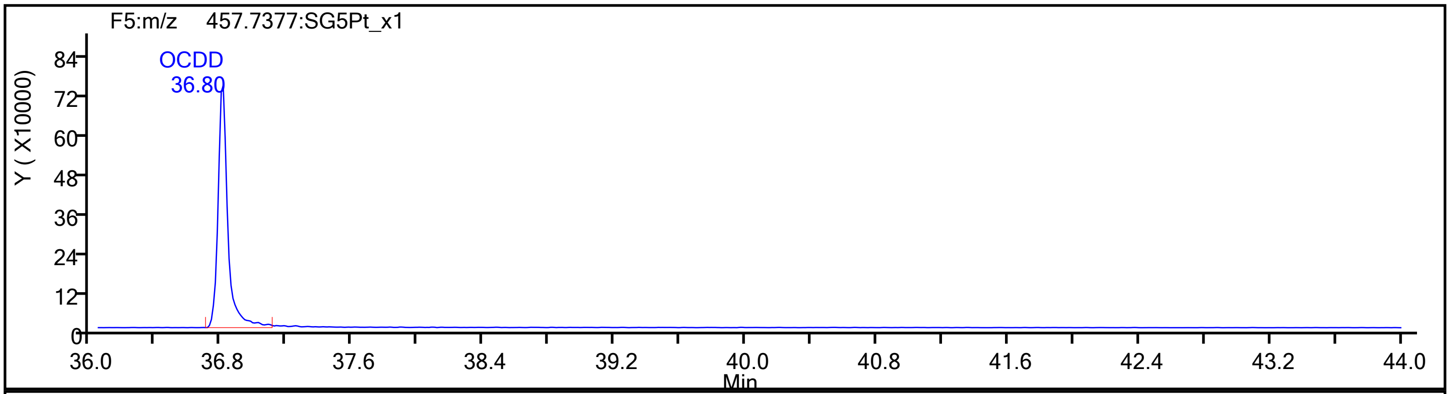

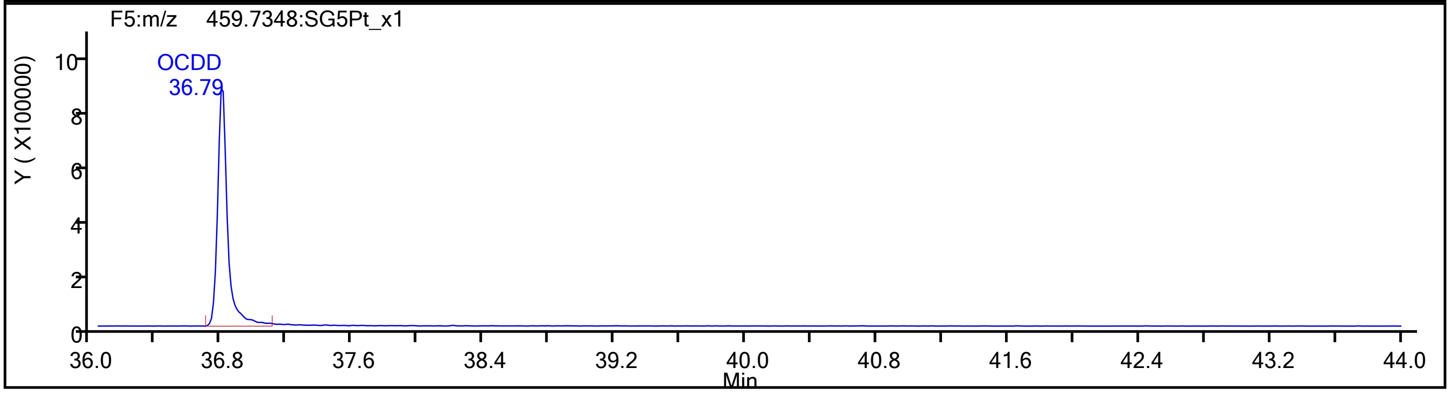

OCDD Standards

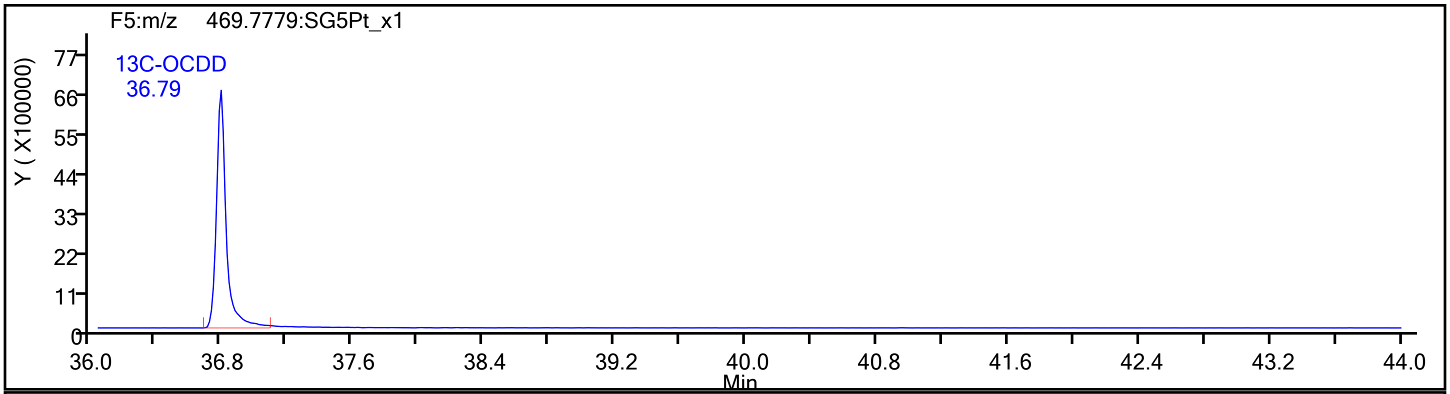

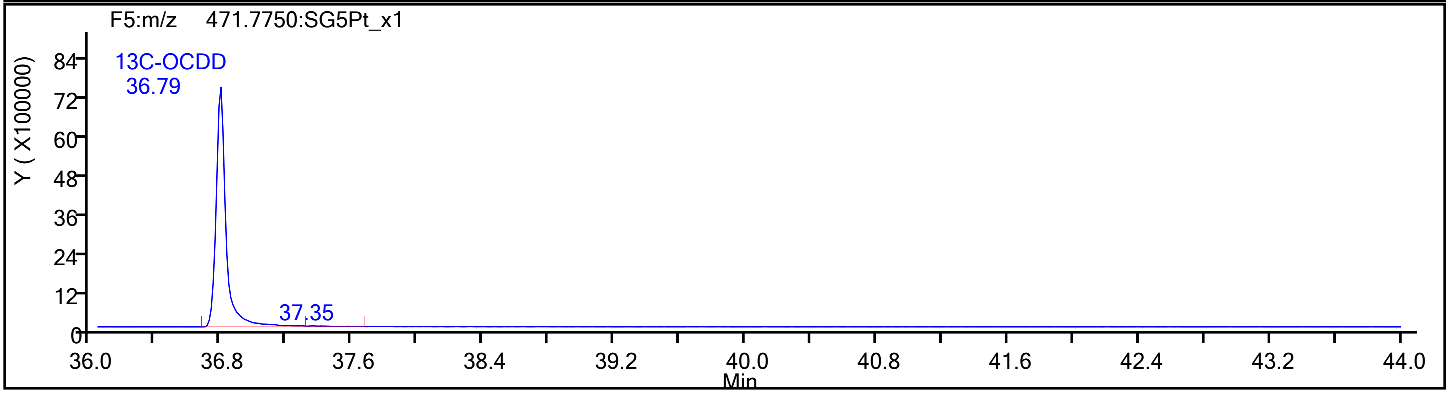

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d

Injection Date: 17-Sep-2020 16:54:45 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

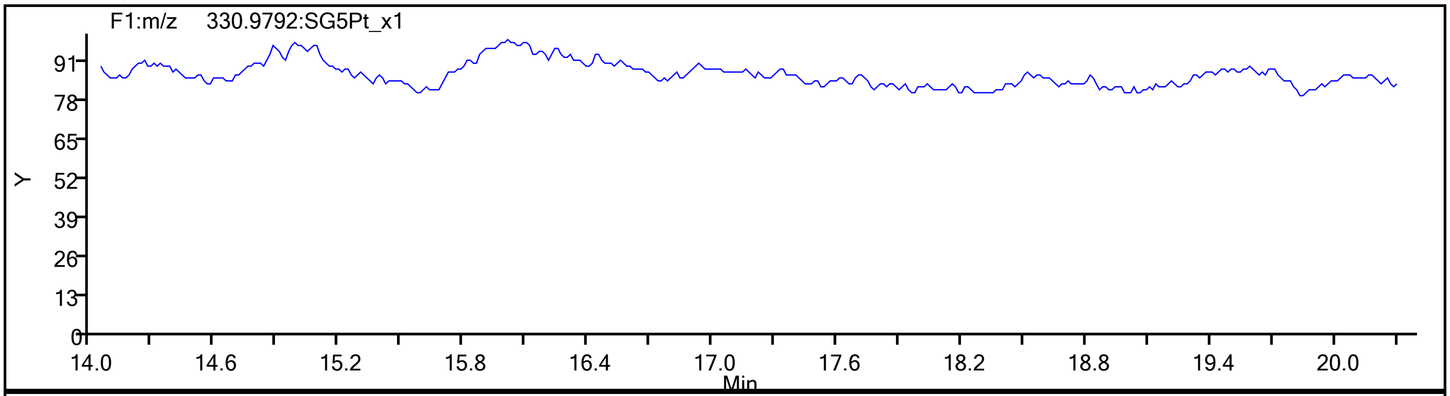

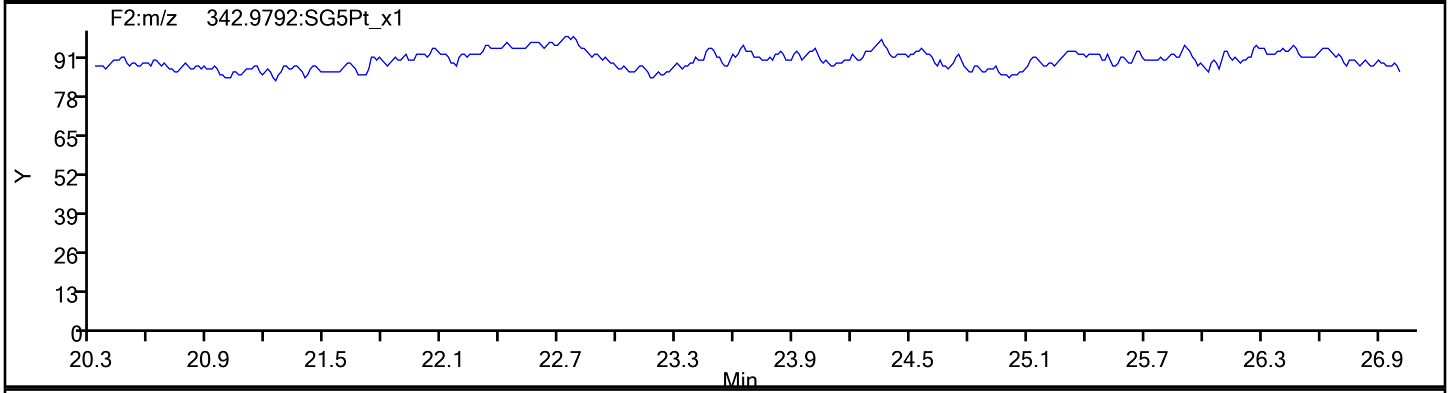

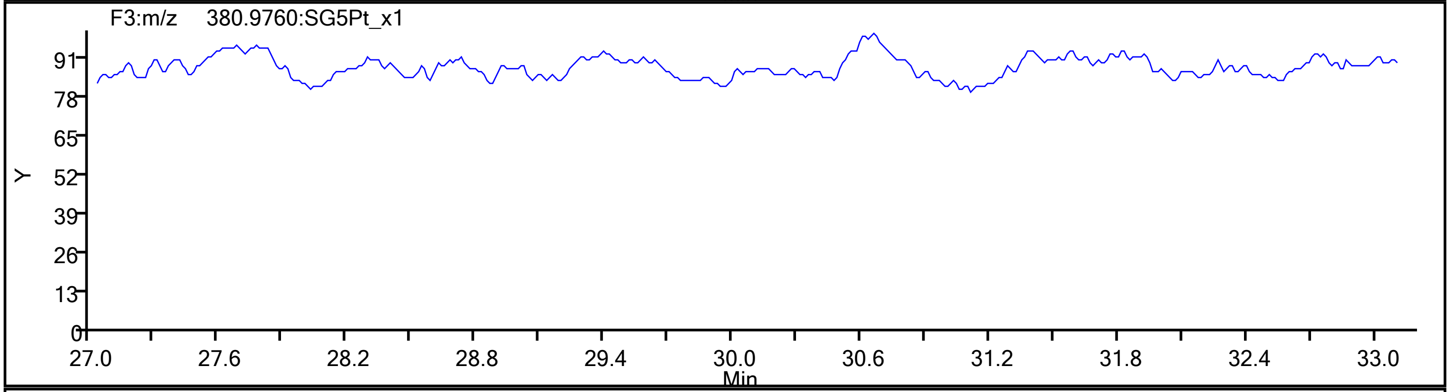

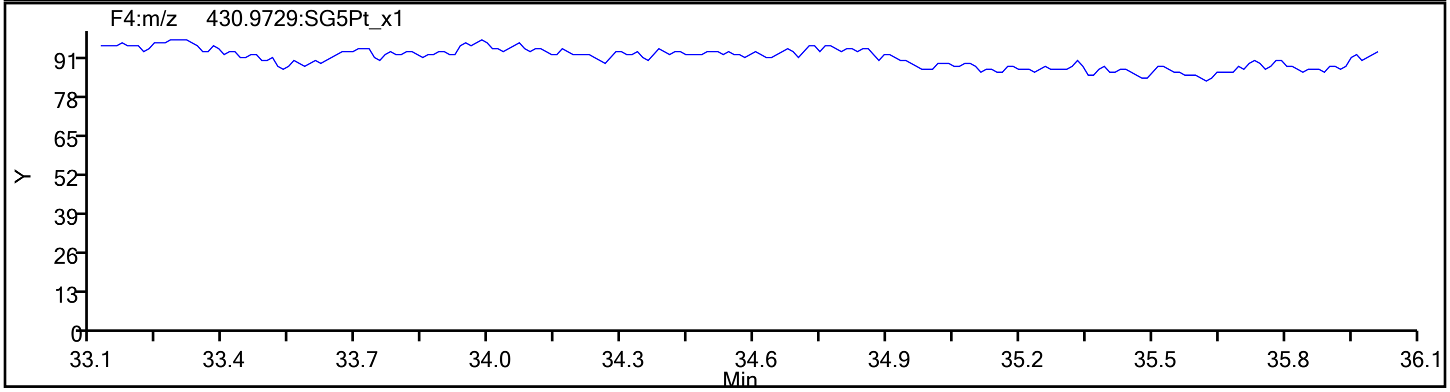

Report Date: 18-Sep-2020 10:35:49 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_4.d		
Injection Date:	17-Sep-2020 16:54:45	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

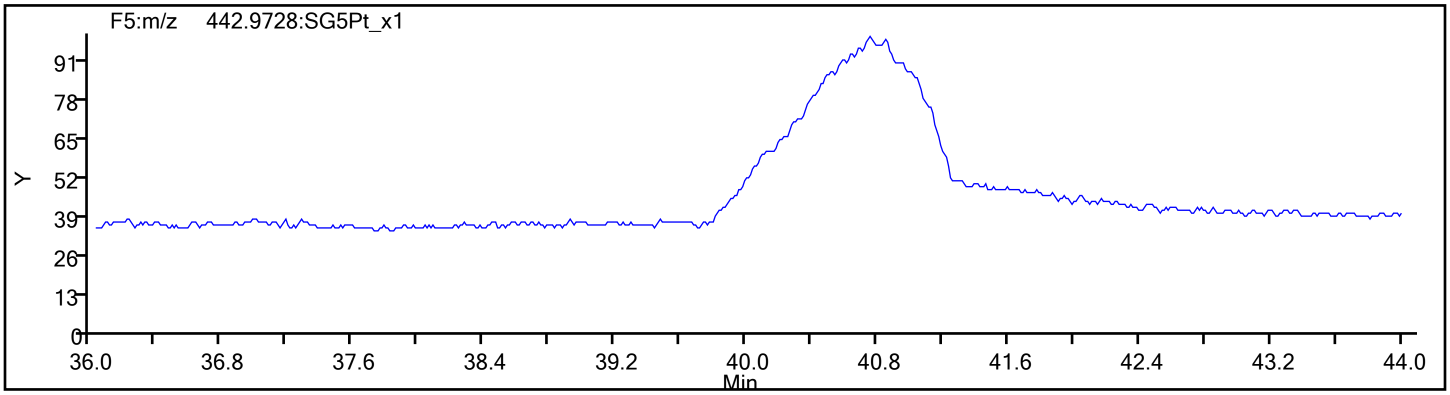

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 17:39:44 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720B CS-4 HRDXNL4_00095
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:52 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	70720595	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	94412734	0.77	1.3598	98.2	98.2	0.1474	0.1474	98.17	
2,3,7,8-TCDF	17.219	8215614	0.77	0.9077	9.586	9.586	0.0248	0.0248	95.86	
S Total TCDF					9.586	9.586	0.0248	0.0248		
D 13C-2,3,7,8-TCDD	17.899	73314161	0.77	1.0536	98.4	98.4	0.1717	0.1717	98.40	
2,3,7,8-TCDD	17.914	7186766	0.79	1.0061	9.743	9.743	0.0278	0.0278	97.43	
$ 37Cl4-2,3,7,8-TCDD	17.914	7516852		1.0488	10.1	10.1	0.0107	0.0107	101	
S Total TCDD					9.743	9.743	0.0278	0.0278		
D 13C-1,2,3,7,8-PeCDF	22.198	78572668	1.53	1.1306	98.3	98.3	0.2168	0.2168	98.27	
1,2,3,7,8-PeCDF	22.212	35377066	1.53	0.9147	49.2	49.2	0.1606	0.1606	98.44	
D 13C-2,3,4,7,8-PeCDF	23.535	72394702	1.55	1.0539	97.1	97.1	0.2325	0.2325	97.13	
2,3,4,7,8-PeCDF	23.562	34181205	1.57	0.9508	49.7	49.7	0.1780	0.1780	99.31	
S Total PeCDF					98.9	98.9	0.1693	0.1693		
D 13C-1,2,3,7,8-PeCDD	24.257	56361860	1.58	0.8084	98.6	98.6	0.1209	0.1209	98.58	
1,2,3,7,8-PeCDD	24.285	27105714	1.55	0.9955	48.3	48.3	0.0763	0.0763	96.62	
S Total PeCDD					48.3	48.3	0.0763	0.0763		
D 13C-1,2,3,4,7,8-HxCDF	30.393	48411968	0.51	0.9225	99.8	99.8	0.5508	0.5508	99.77	
1,2,3,4,7,8-HxCDF	30.406	26528941	1.24	1.1090	49.4	49.4	0.3476	0.3476	98.83	
D 13C-1,2,3,6,7,8-HxCDF	30.579	53975320	0.50	1.0336	99.3	99.3	0.4916	0.4916	99.28	
1,2,3,6,7,8-HxCDF	30.605	28435765	1.22	1.0721	49.1	49.1	0.3230	0.3230	98.28	
D 13C-2,3,4,6,7,8-HxCDF	31.431	51503814	0.51	0.9773	100.2	100.2	0.5199	0.5199	100	
2,3,4,6,7,8-HxCDF	31.444	27314505	1.24	1.0838	48.9	48.9	0.2532	0.2532	97.87	
D 13C-1,2,3,7,8,9-HxCDF	32.243	48067141	0.51	0.9153	99.8	99.8	0.5551	0.5551	99.84	
1,2,3,7,8,9-HxCDF	32.256	25630034	1.24	1.0931	48.8	48.8	0.2530	0.2530	97.56	
S Total HxCDF					196.3	196.3	0.2942	0.2942		
* 13C-1,2,3,7,8,9-HxCDD	32.056	52599435	1.22	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.617	39854770	1.22	0.7977	95.0	95.0	0.3444	0.3444	94.99	
1,2,3,4,7,8-HxCDD	31.644	20769529	1.23	1.0014	52.0	52.0	0.1645	0.1645	104	
D 13C-1,2,3,6,7,8-HxCDD	31.737	53764731	1.23	1.0010	102.1	102.1	0.2744	0.2744	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	22482418	1.27	0.8902	47.0	47.0	0.1521	0.1521	93.95	
1,2,3,7,8,9-HxCDD	32.070	24401221	1.25	1.0579	49.3	49.3	0.1405	0.1405	98.55	
S Total HxCDD					148.3	148.3	0.1524	0.1524		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	44675630	0.43	0.8506	99.9	99.9	0.9835	0.9835	99.85	
1,2,3,4,6,7,8-HpCDF	33.691	29988985	1.04	1.3603	49.3	49.3	0.4595	0.4595	98.69	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	39083845	0.43	0.7618	97.5	97.5	1.098	1.098	97.54	
1,2,3,4,7,8,9-HpCDF	34.761	25636290	1.03	1.3207	49.7	49.7	0.6020	0.6020	99.33	
S Total HpCDF					99.0	99.0	0.5308	0.5308		
D 13C-1,2,3,4,6,7,8-HpCDD	34.457	46274068	1.03	0.8873	99.2	99.2	0.5830	0.5830	99.15	
1,2,3,4,6,7,8-HpCDD	34.469	22930767	1.04	0.9988	49.6	49.6	0.2747	0.2747	99.23	
S Total HpCDD					49.6	49.6	0.2747	0.2747		
D 13C-OCDD	36.779	65984325	0.90	0.6287	199.5	199.5	0.2284	0.2284	99.76	
OCDF	36.875	45999109	0.91	1.4136	98.6	98.6	0.1285	0.1285	98.63	
OCDD	36.779	36458371	0.89	1.1290	97.9	97.9	0.1218	0.1218	97.88	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Sep-2020 17:39:44 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720B CS-4 HRDXNL4_00095
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:35:52 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:23

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.711	-1		31112804	7733116	6224	15560	1242		
333.9339	17.702	17.711	-1		39607791	9816368	6478	16195	1515	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.972	41030020	10154846	7855	19637	1293		
317.9389	17.203	17.203	0	0.972	53382714	13133900	6218	15545	2112	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	3561888	894232	983	2457	910		
305.8987	17.219	17.218	0	1.001	4653726	1157857	1112	2780	1041	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	31968779	7718913	6224	15560	1240		
333.9339	17.899	17.905	0	1.011	41345382	9900999	6478	16195	1528	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.920	0	1.001	3174976	757094	1105	2762	685		
321.8936	17.914	17.920	0	1.001	4011790	981191	870	2175	1128	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	7516852	1794624	791	1977	2269		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.254	47497432	8216899	10419	26047	789		
353.8970	22.198	22.204	0	1.254	31075236	5302735	6785	16962	782	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.220	0	1.001	21398670	3762258	4666	11665	806		
341.8567	22.212	22.220	0	1.001	13978396	2405130	3277	8192	734	1.53(1.32-1.78)	

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.329	44029183	7101834	10419	26047	682		
353.8970	23.535	23.540	0	1.329	28365519	4629716	6785	16962	682	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	20877521	3397982	4666	11665	728		
341.8567	23.562	23.567	0	1.001	13303684	2199628	3277	8192	671	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.370	34503673	5302158	4255	10637	1246		
369.8919	24.257	24.263	0	1.370	21858187	3302460	2605	6512	1268	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	16467085	2528070	1607	4017	1573		
357.8516	24.285	24.290	0	1.001	10638629	1635439	1007	2517	1624	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	16384882	2900679	8887	22217	326		
385.8610	30.393	30.398	0	0.948	32027086	5699628	17116	42790	333	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.414	0	1.000	14665484	2592019	7313	18282	354		
375.8178	30.406	30.414	0	1.000	11863457	2111122	5948	14870	355	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.587	0	0.954	17889731	3184718	8887	22217	358		
385.8610	30.579	30.587	0	0.954	36085589	6387733	17116	42790	373	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.605	30.608	0	1.001	15646365	2747883	7313	18282	376		
375.8178	30.605	30.608	0	1.001	12789400	2231277	5948	14870	375	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.431	31.439	0	0.980	17351960	4081309	8887	22217	459		
385.8610	31.431	31.439	0	0.980	34151854	7997923	17116	42790	467	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.444	31.458	-1	1.000	15135925	3506180	7313	18282	479		
375.8178	31.444	31.458	-1	1.000	12178580	2839003	5948	14870	477	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.243	32.254	-1	1.006	16215735	4033898	8887	22217	454		
385.8610	32.243	32.254	-1	1.006	31851406	7952589	17116	42790	465	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.256	32.267	-1	1.000	14177856	3484841	7313	18282	477		
375.8178	32.256	32.267	-1	1.000	11452178	2906201	5948	14870	489	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.056	32.067	-1		28868385	7036881	7771	19427	906		
403.8529	32.056	32.067	-1		23731050	5756704	6286	15715	916	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.617	31.631	-1	0.986	21933952	5608002	7771	19427	722		
403.8529	31.617	31.631	-1	0.986	17920818	4605232	6286	15715	733	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.001	11456611	2920731	3765	9412	776		
391.8127	31.644	31.647	0	1.001	9312918	2314083	2966	7415	780	1.23(1.05-1.43)	

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	29688232	6940958	7771	19427	893		
403.8529	31.737	31.740	0	0.990	24076499	5485435	6286	15715	873	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	12569862	3058042	3765	9412	812		
391.8127	31.750	31.756	0	1.000	9912556	2352065	2966	7415	793	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.070	32.081	-1	1.014	13561068	3292948	3765	9412	875		
391.8127	32.070	32.081	-1	1.014	10840153	2666284	2966	7415	899	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.051	13393731	4211850	13505	33762	312		
419.8220	33.679	33.684	0	1.051	31281899	9685953	29305	73262	331	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	15279832	4726569	17863	44657	265		
409.7789	33.679	33.694	-1	1.000	14709153	4492869	16886	42215	266	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.751	0	1.084	11797708	3362255	13505	33762	249		
419.8220	34.748	34.751	0	1.084	27286137	7564178	29305	73262	258	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	13006303	3556686	17863	44657	199		
409.7789	34.748	34.763	-1	1.000	12629987	3473252	16886	42215	206	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.457	34.464	0	1.075	23465448	6729742	13575	33937	496		
437.8140	34.457	34.464	0	1.075	22808620	6552009	12896	32240	508	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	11701156	3397612	7315	18287	464		
425.7737	34.469	34.474	0	1.000	11229611	3229876	7260	18150	445	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	31180213	7357720	3942	9855	1866		
471.7750	36.779	36.784	0	1.147	34804112	8192437	3407	8517	2405	0.90(0.76-1.02)	
OCDF											
441.7428	36.875	36.882	0	1.003	21919771	5421255	2520	6300	2151		
443.7399	36.875	36.882	0	1.003	24079338	5903685	3129	7822	1887	0.91(0.76-1.02)	
OCDD											
457.7377	36.779	36.791	-1	1.000	17204055	4070324	1648	4120	2470		
459.7348	36.779	36.791	-1	1.000	19254316	4623817	2627	6567	1760	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Injection Date: 17-Sep-2020 17:39:44 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

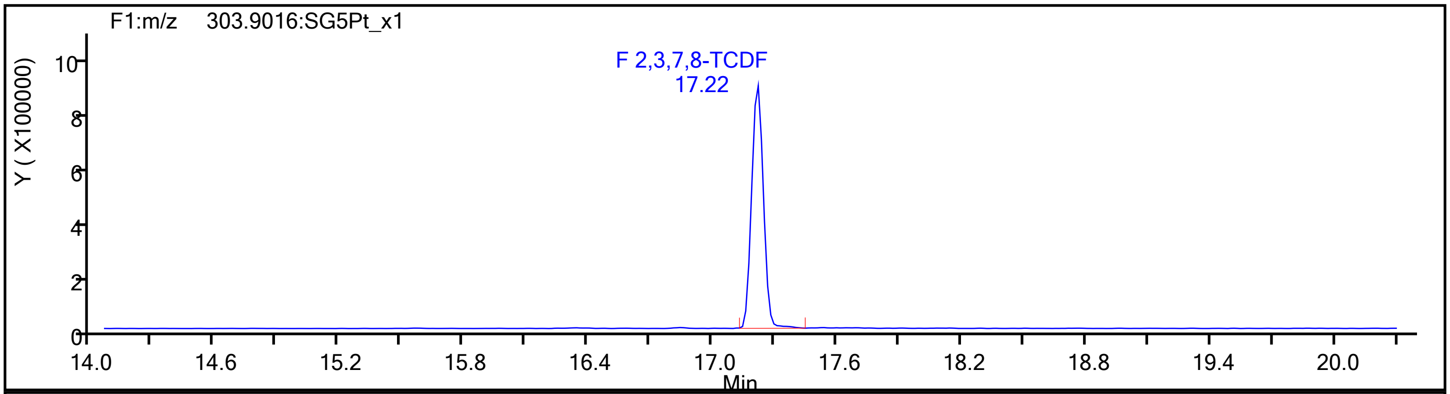

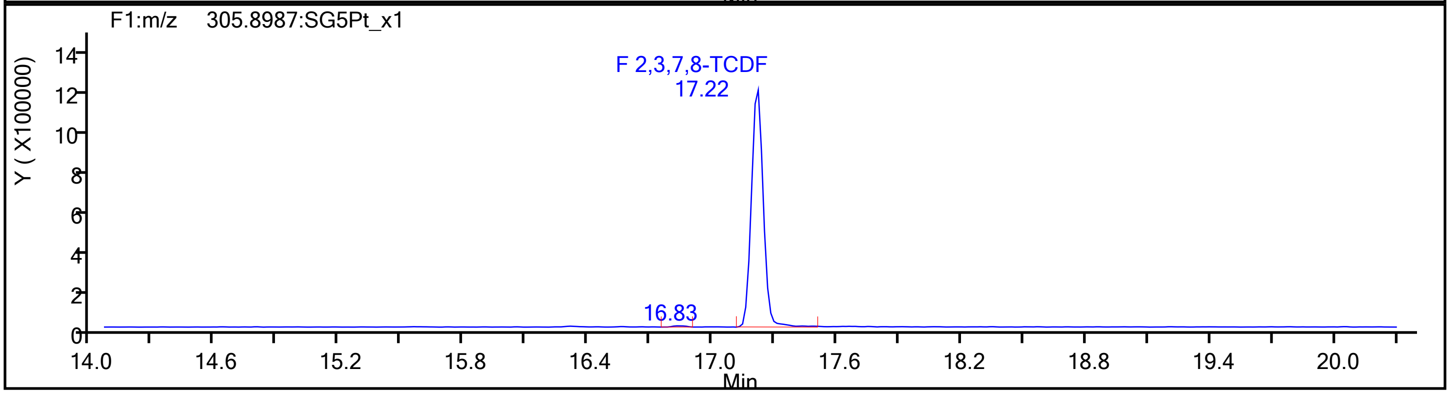

TCDF Standards

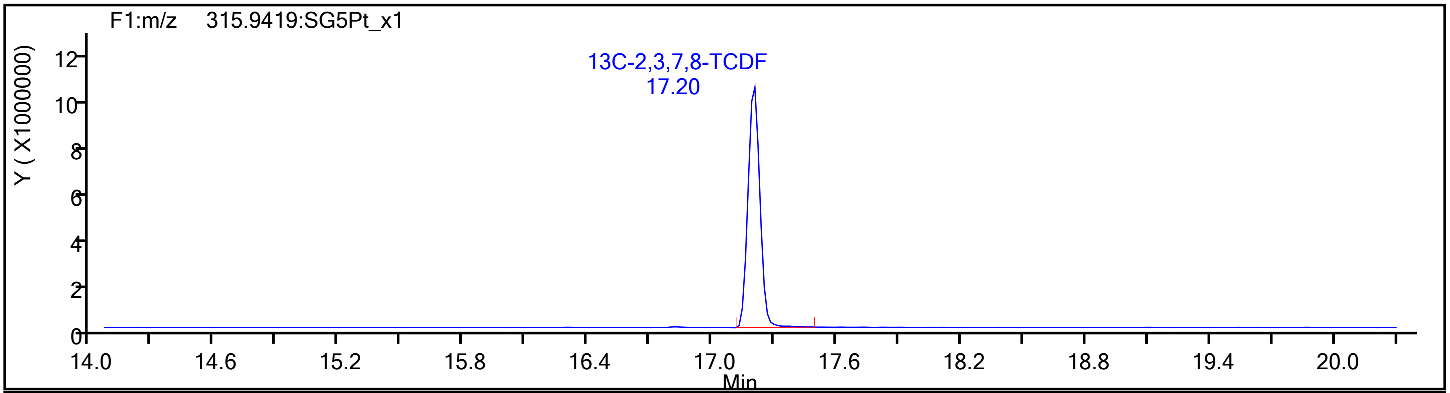

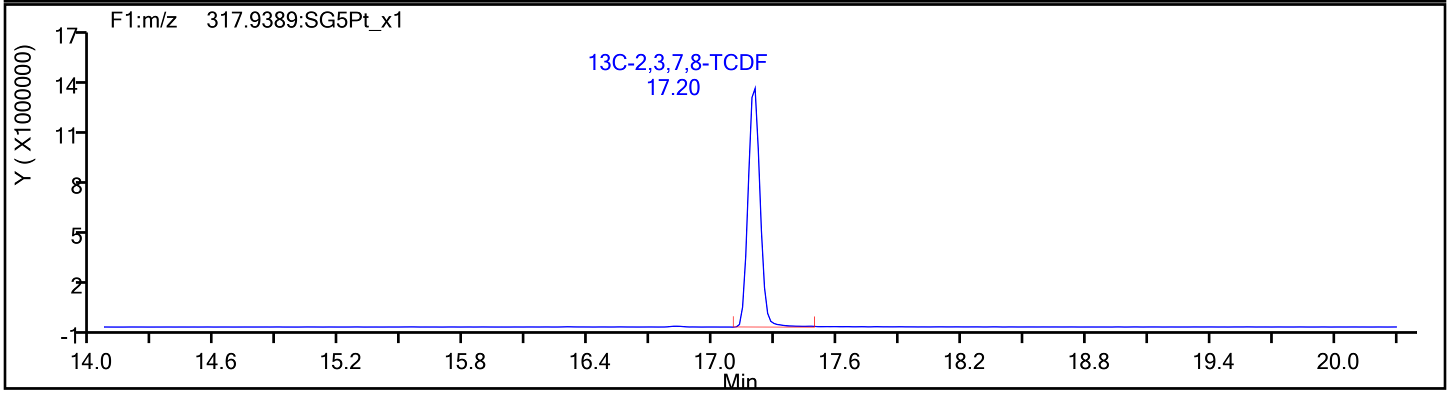

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

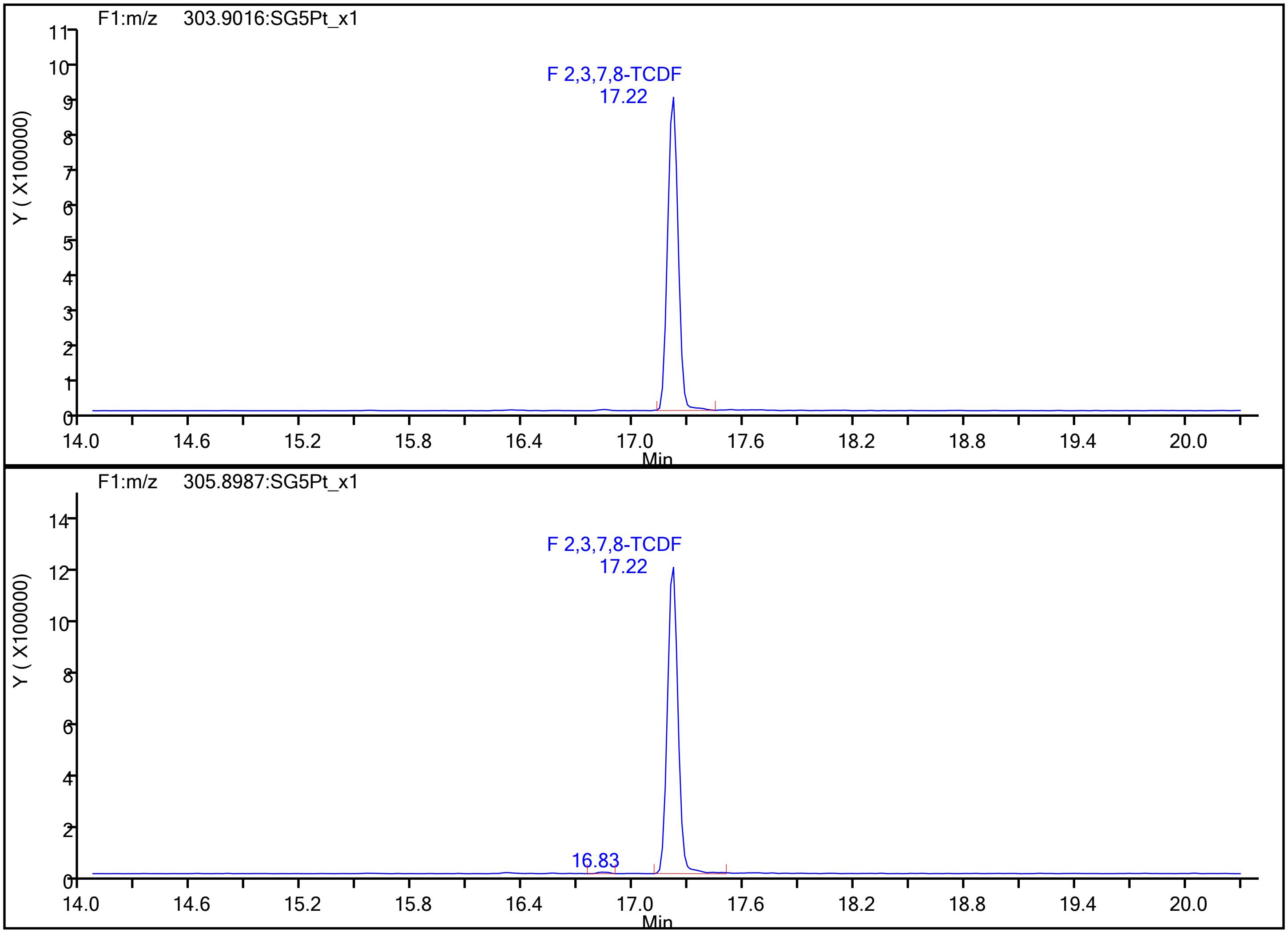

TCDF Interference Mass

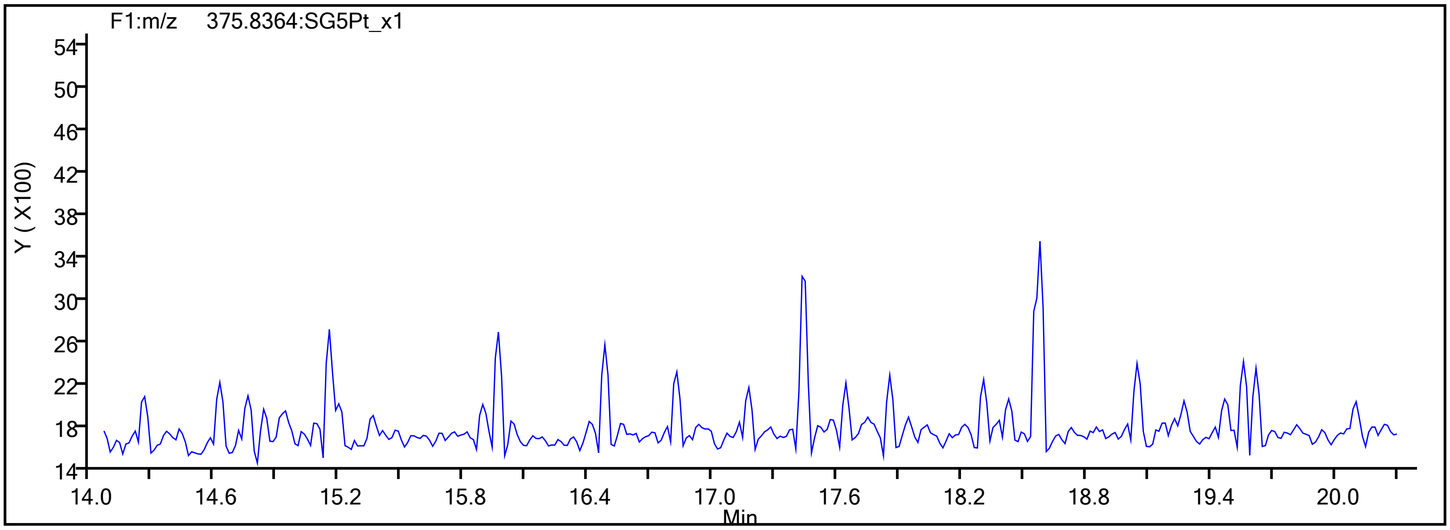

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

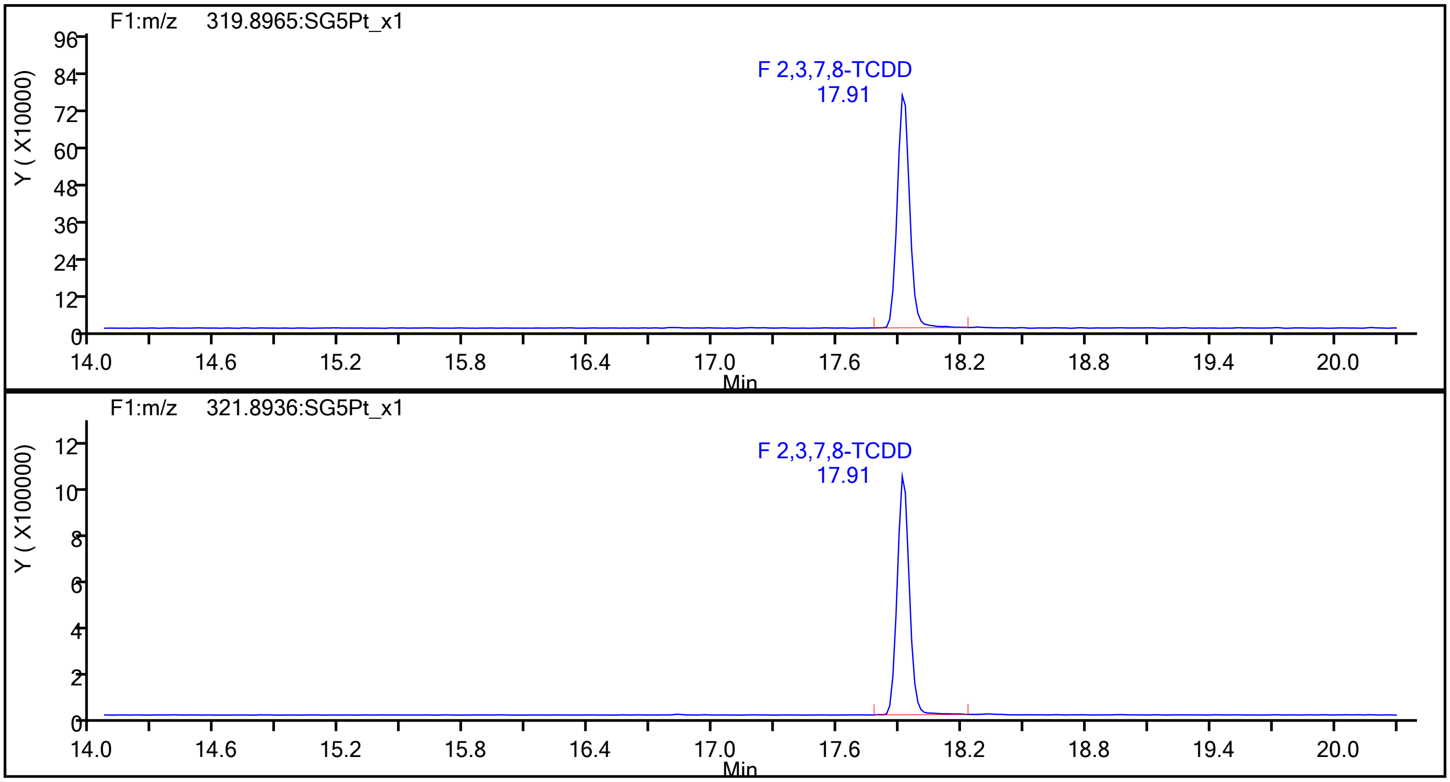

TCDD Standards

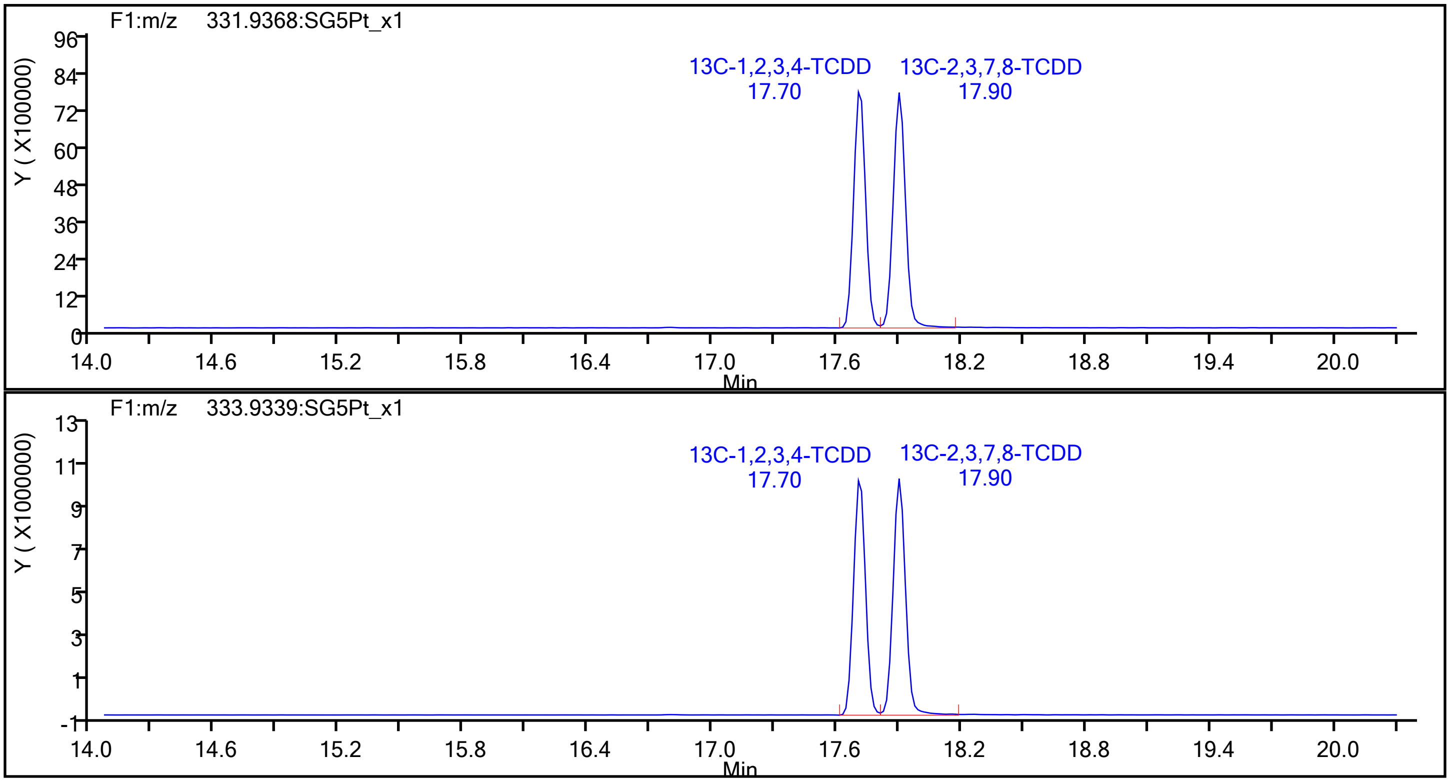

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

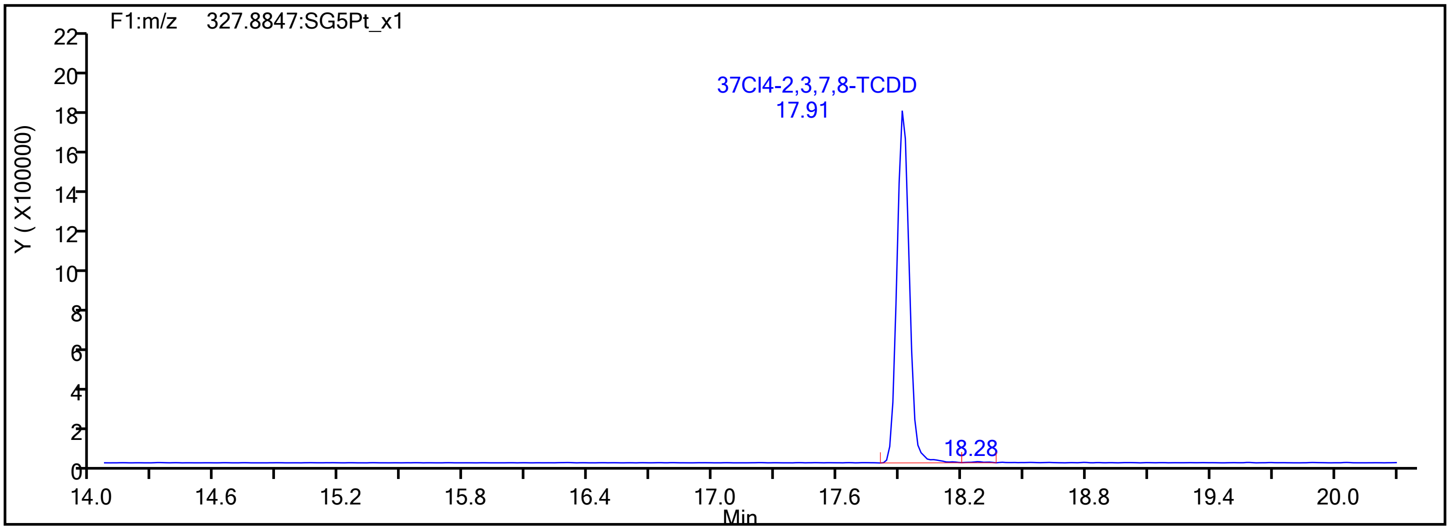

37Cl4-TCDD Standards

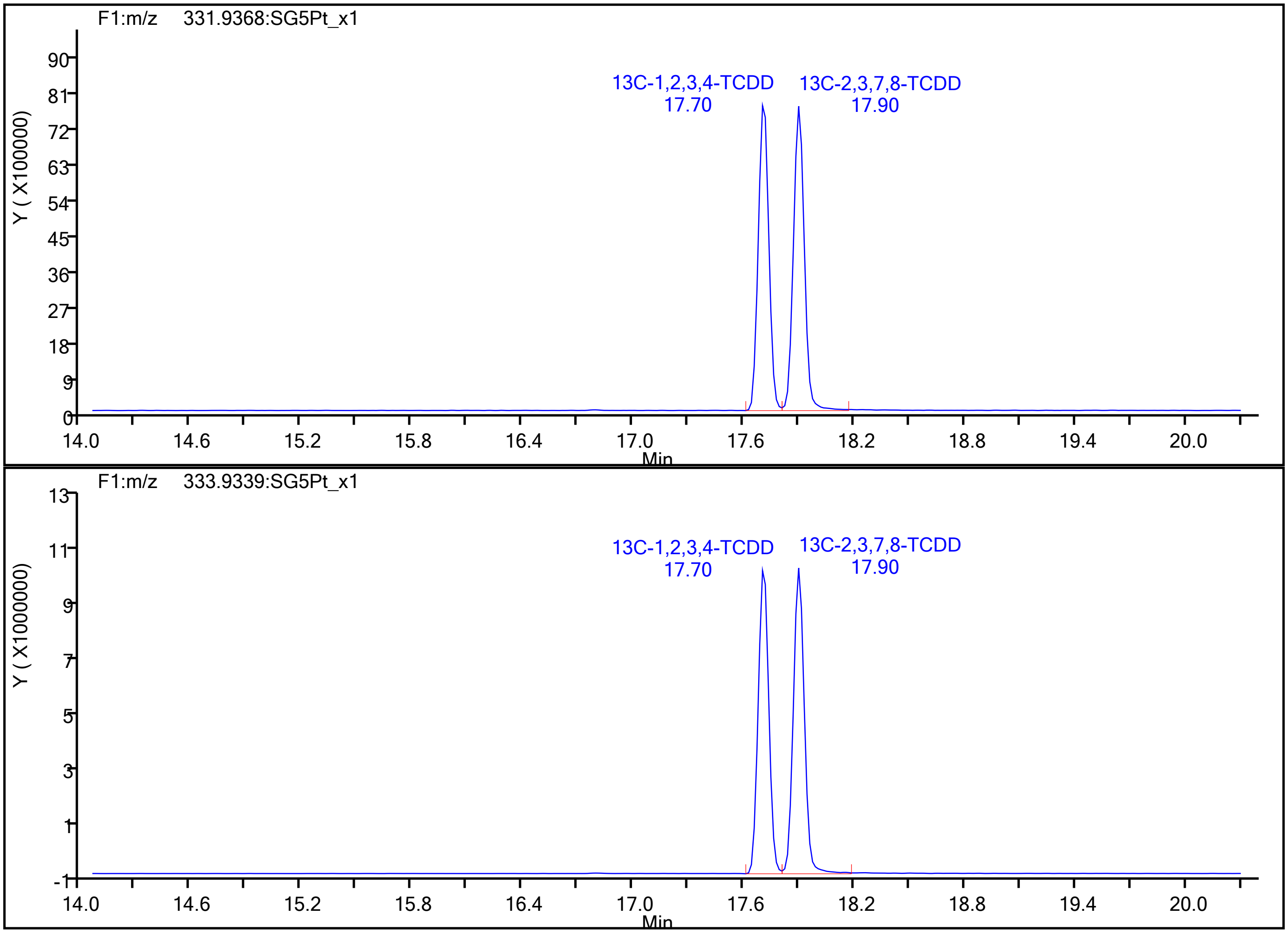

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

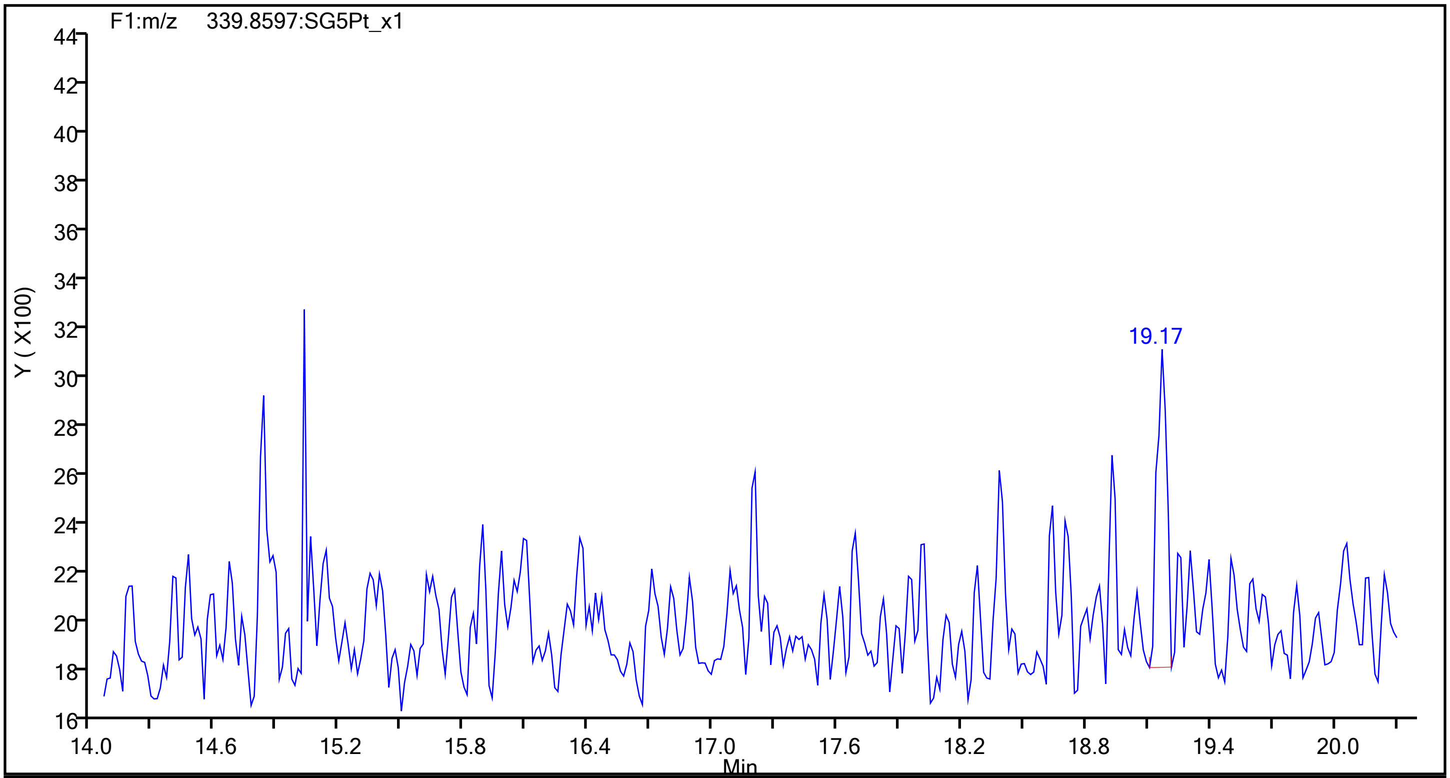

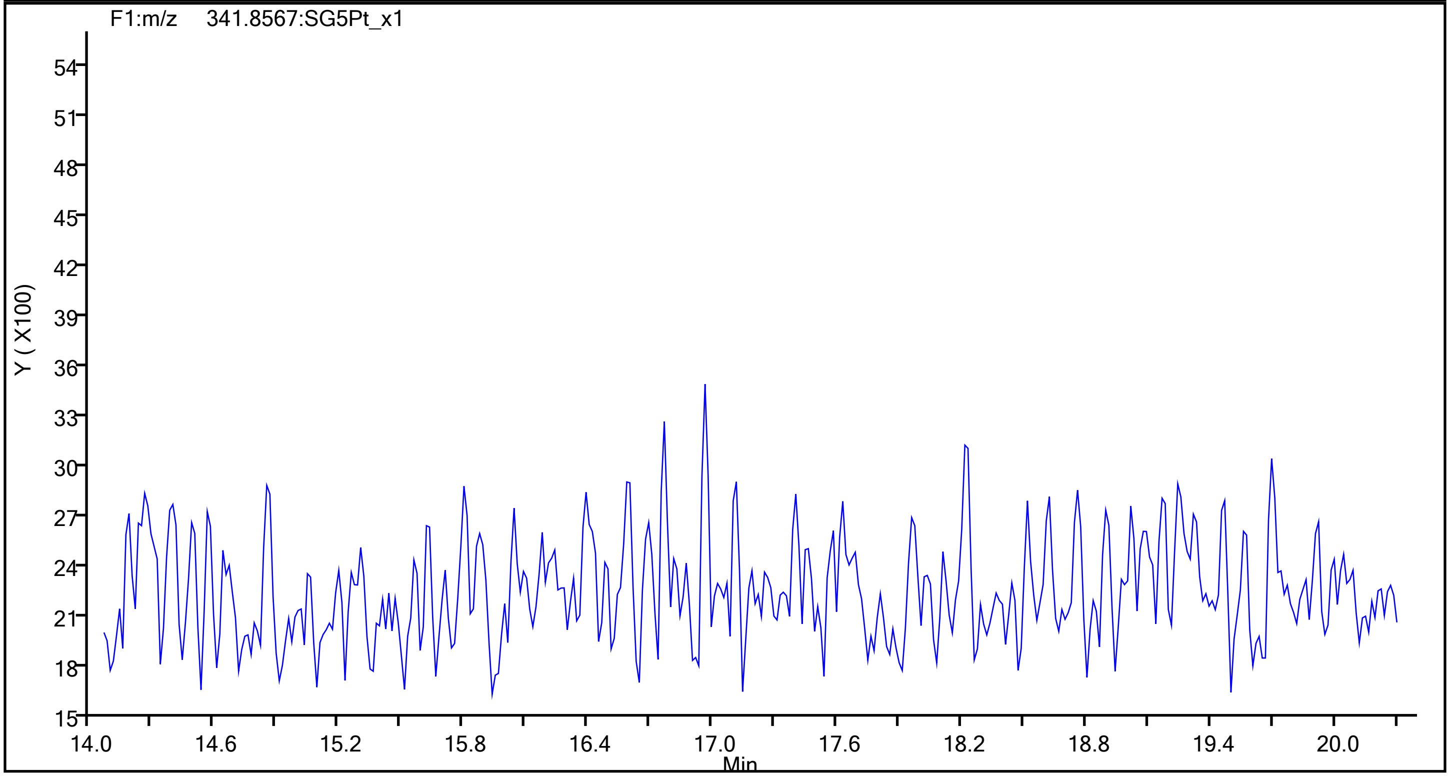

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

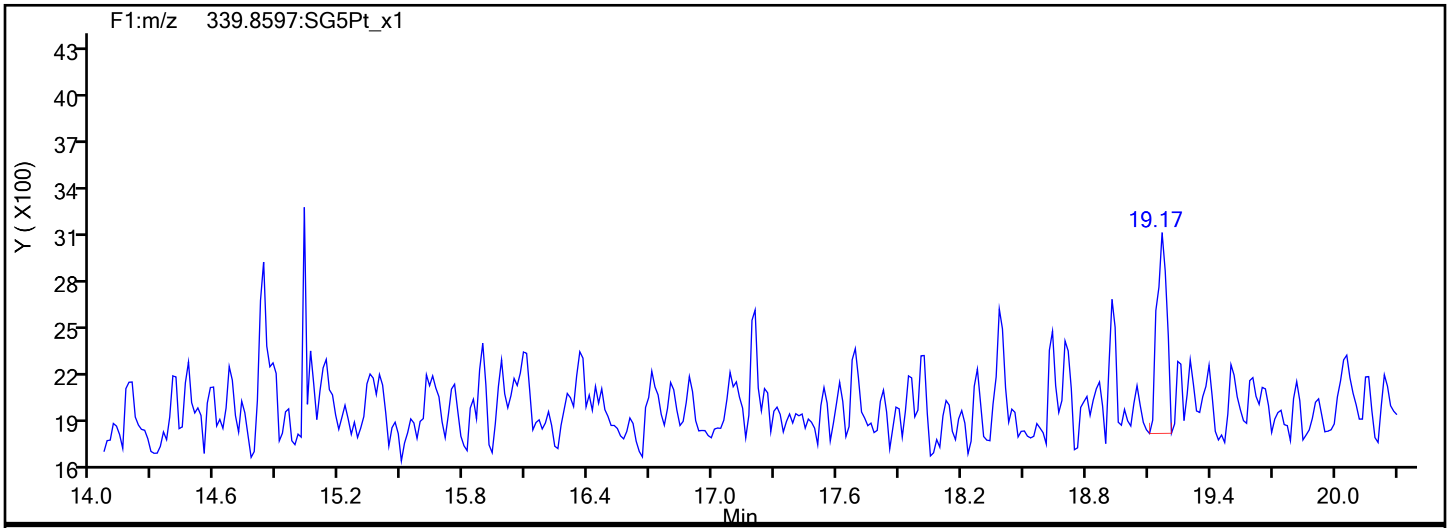

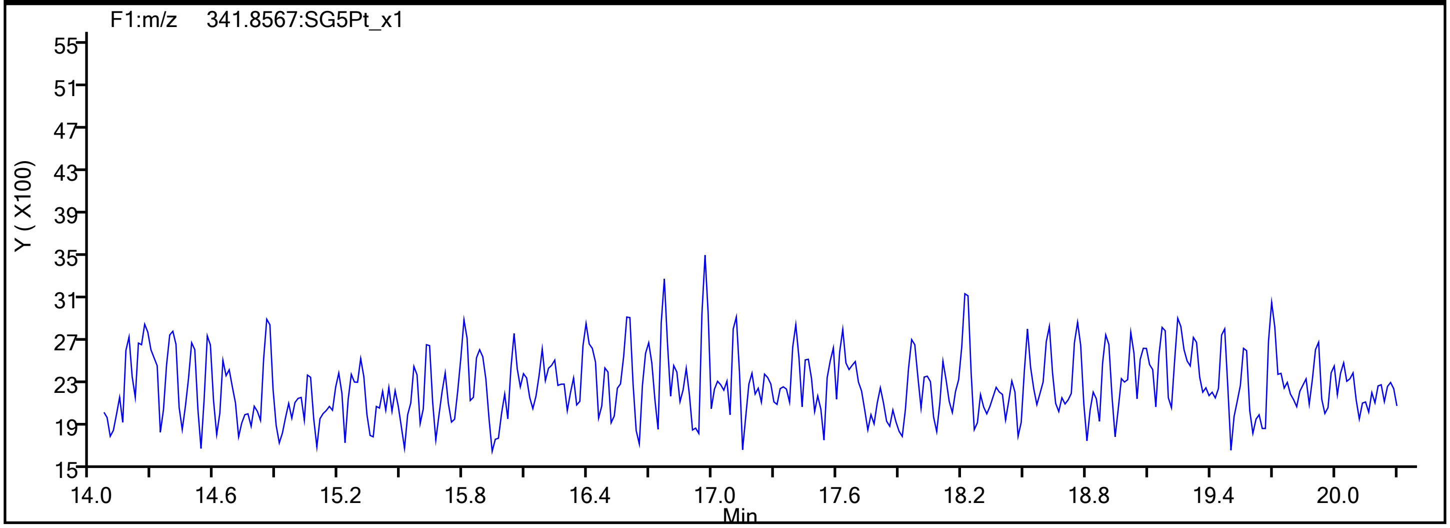

F1 PeCDFs Interference Mass

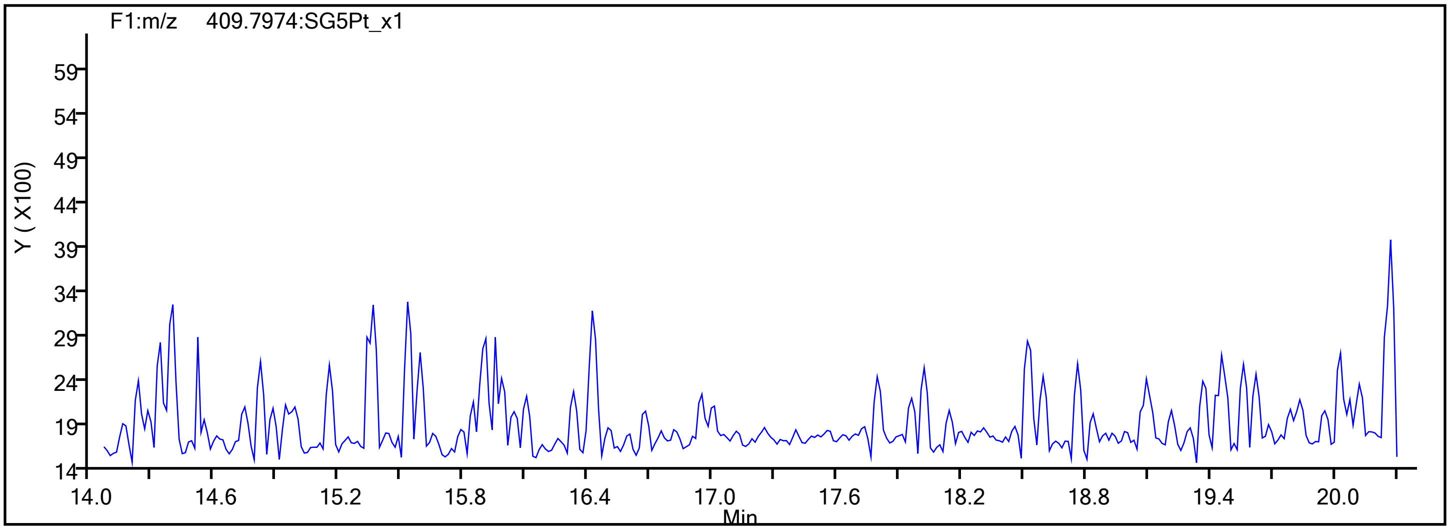

Report Date: 18-Sep-2020 10:35:58		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d		
Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

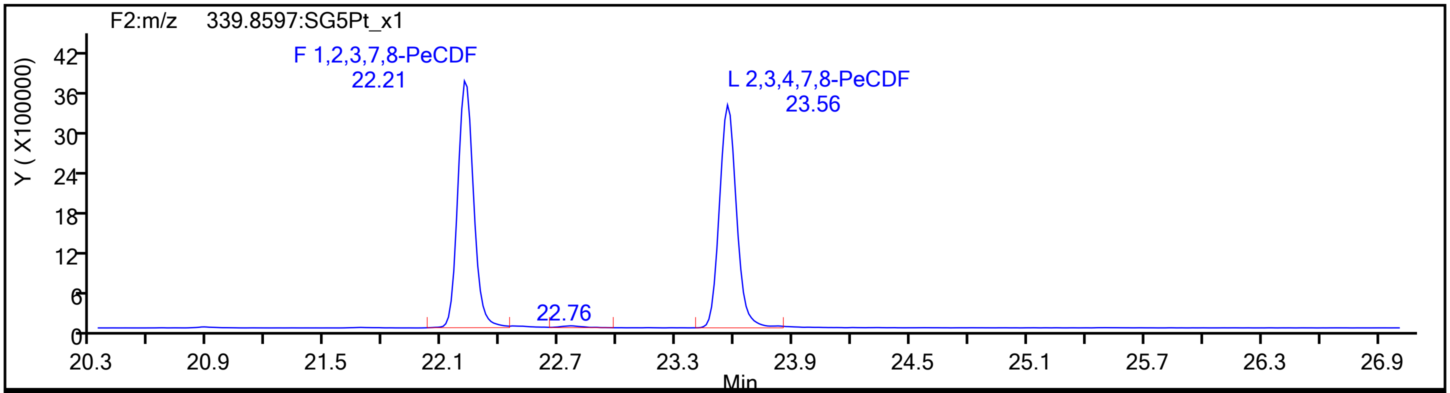

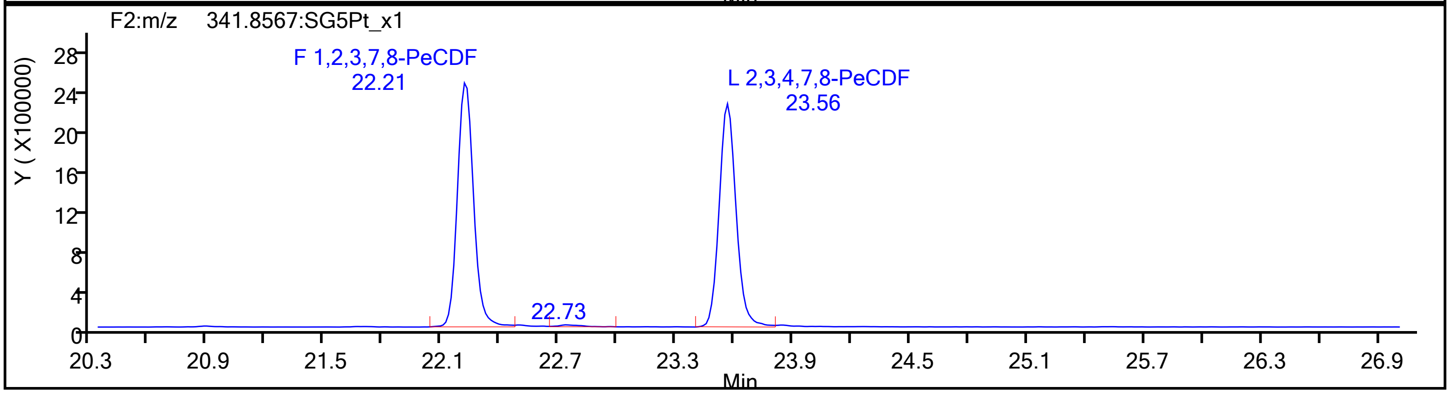

PeCDF Standards

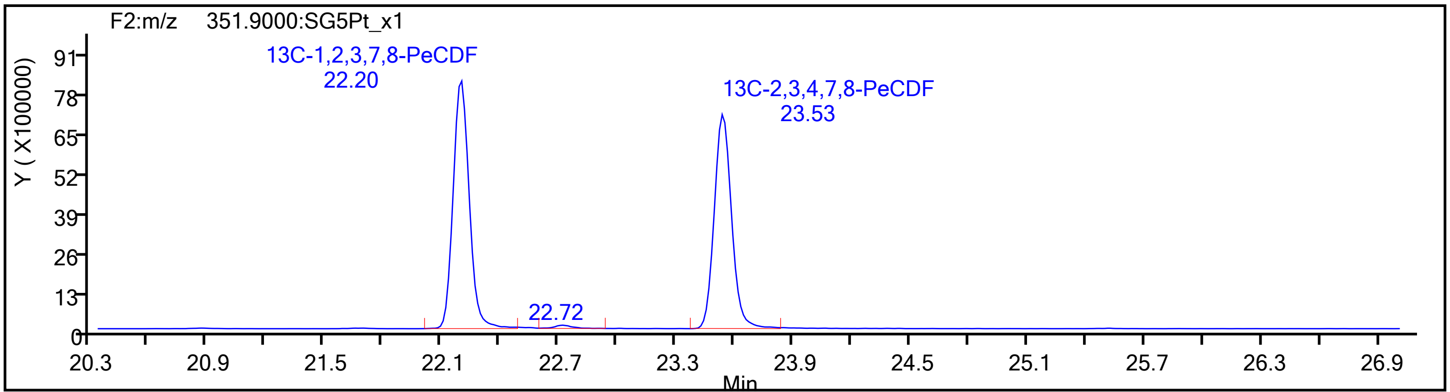

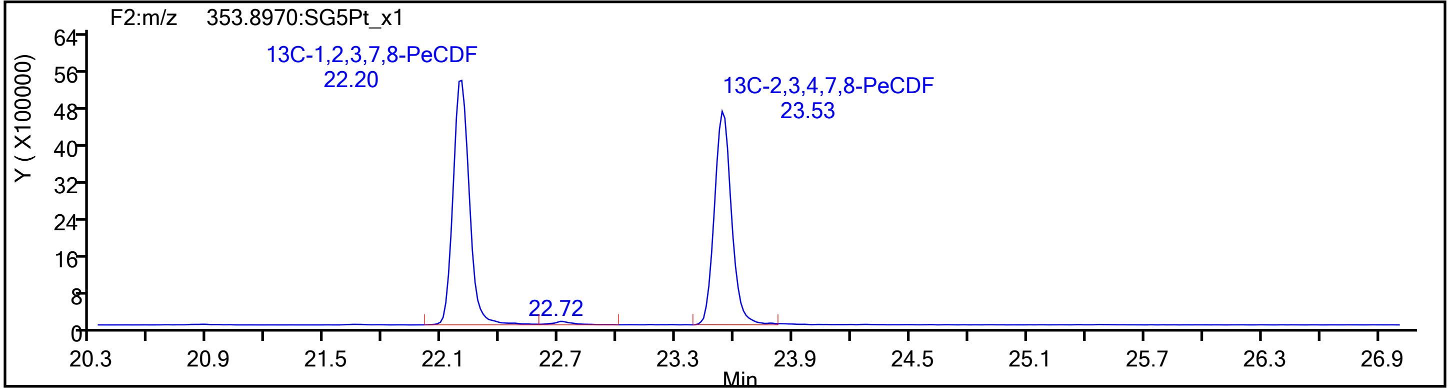

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

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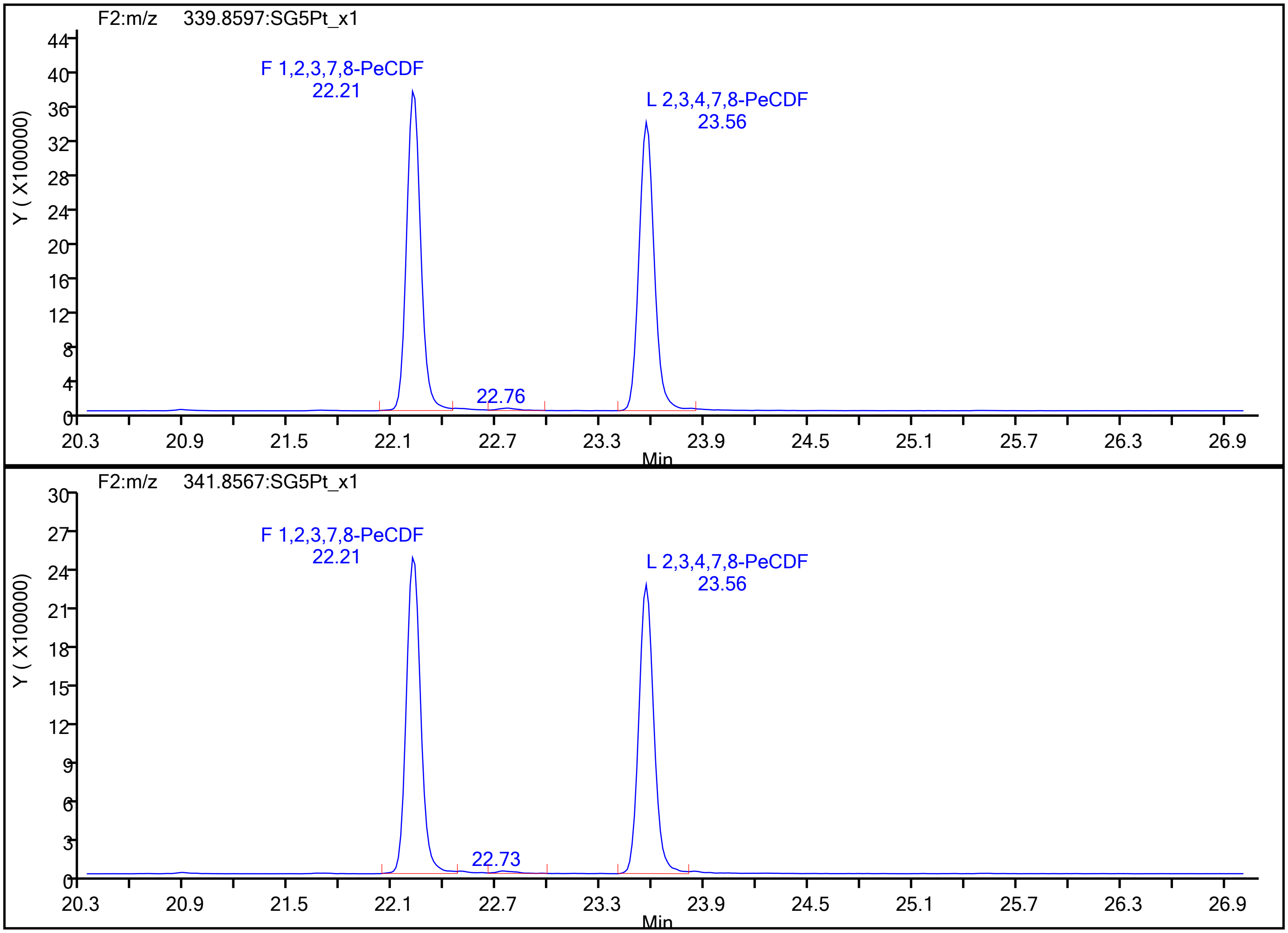

PeCDF Interference Mass

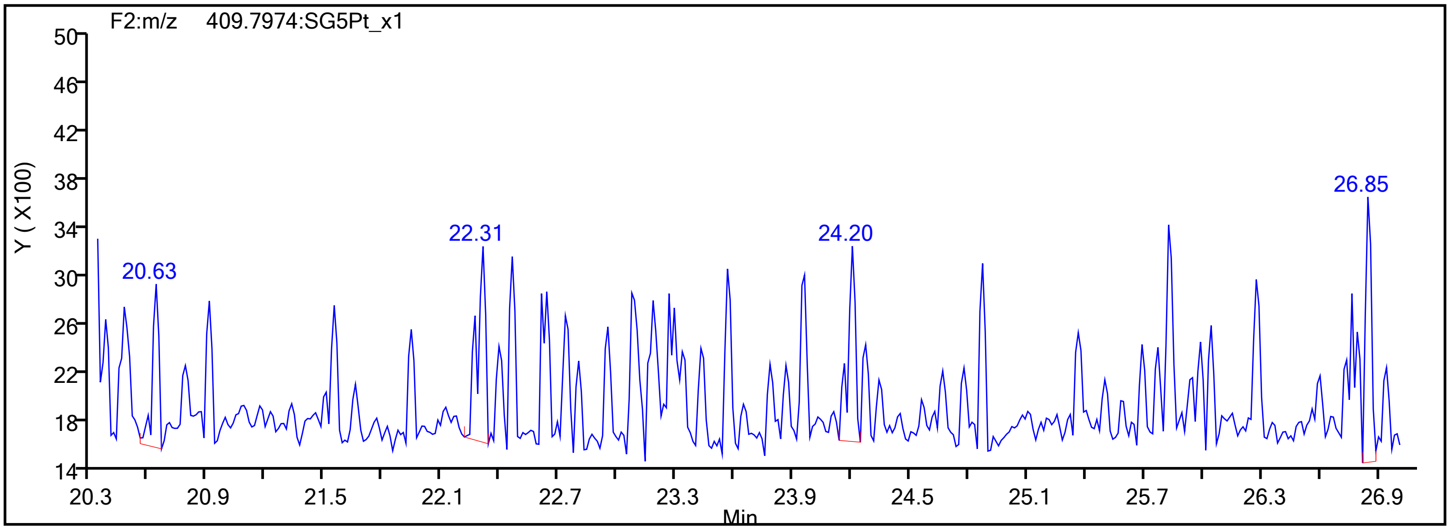

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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PeCDD

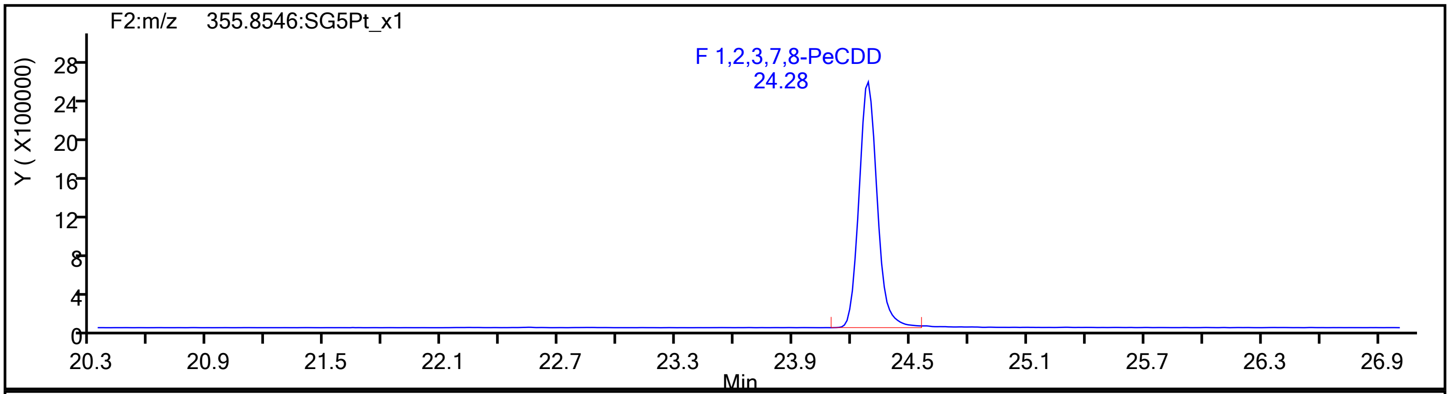

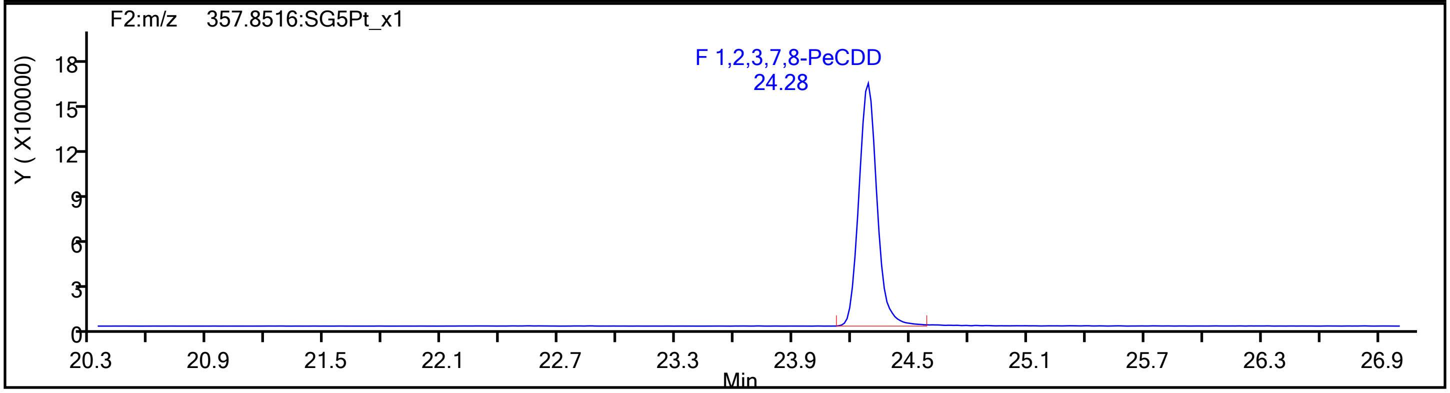

PeCDD Standards

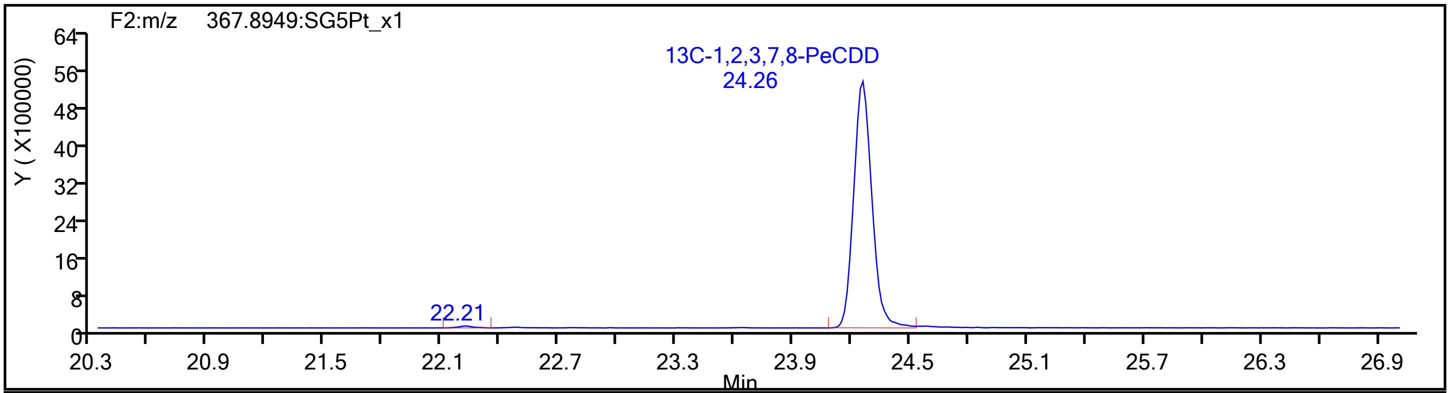

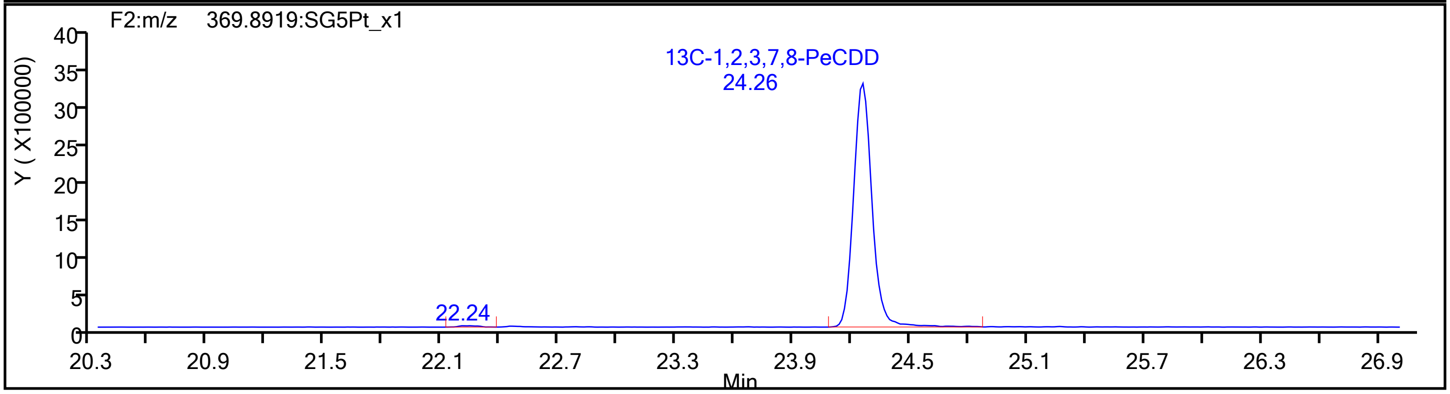

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

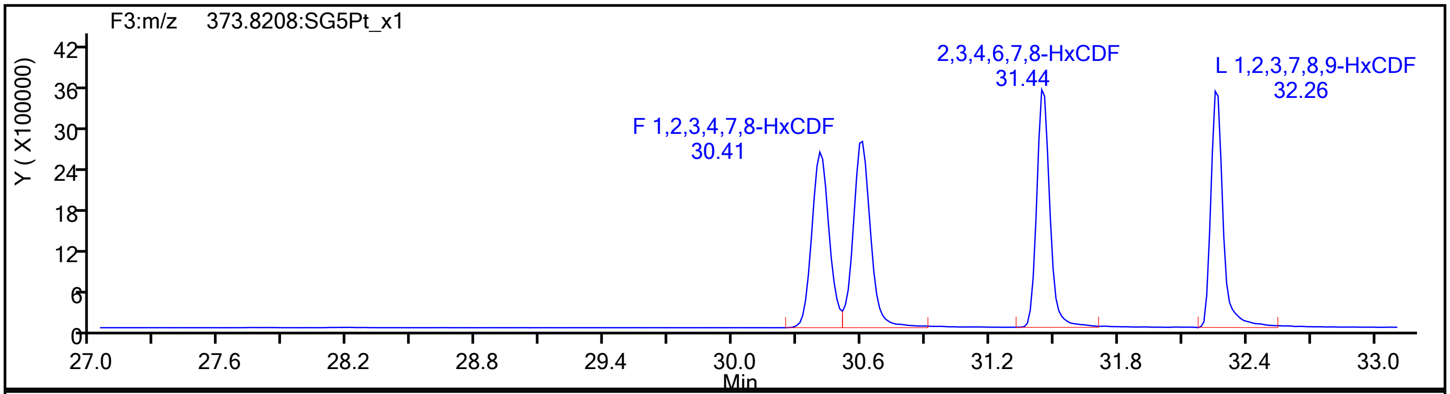

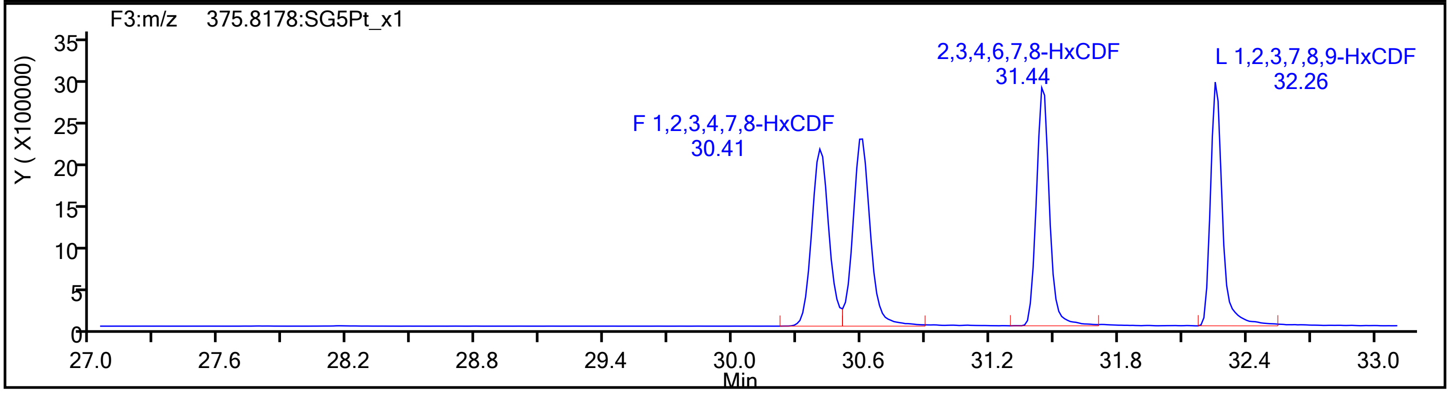

HxCDF Standards

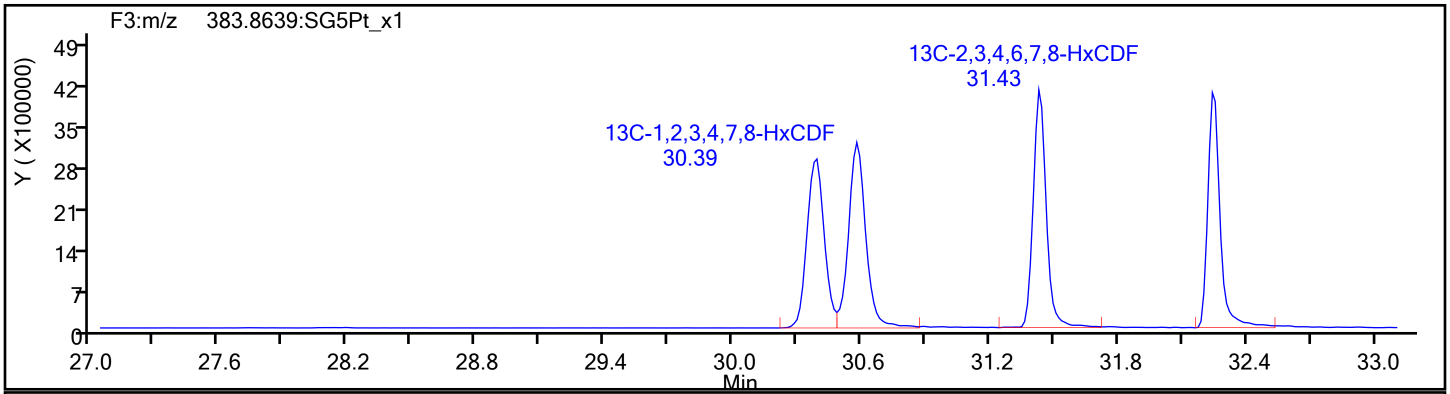

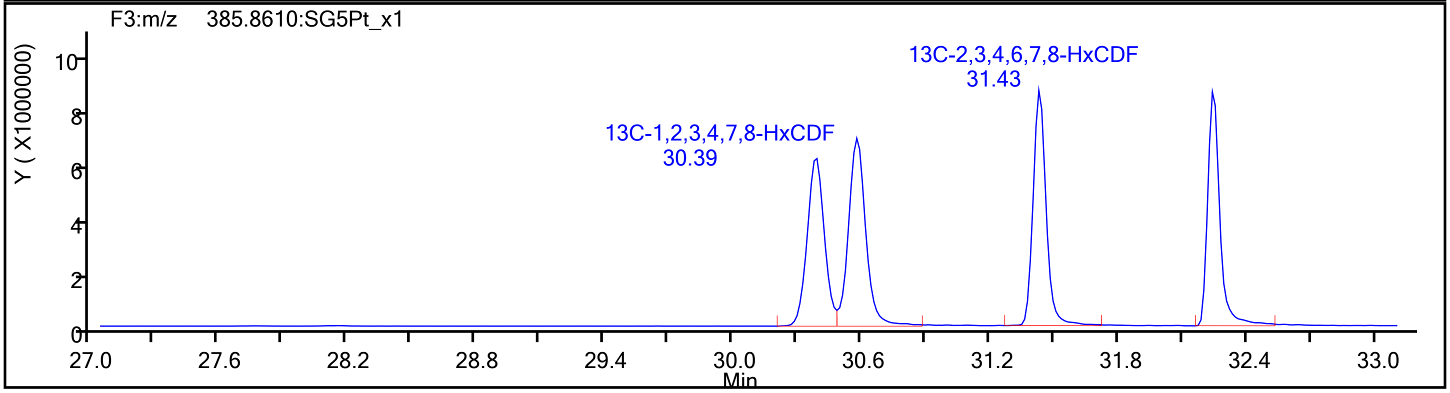

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d
Injection Date: 17-Sep-2020 17:39:44 Injection Vol: 2.0 ul
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Client ID:
Worklist#: 413246 Sample Line#: 5
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HxCDF

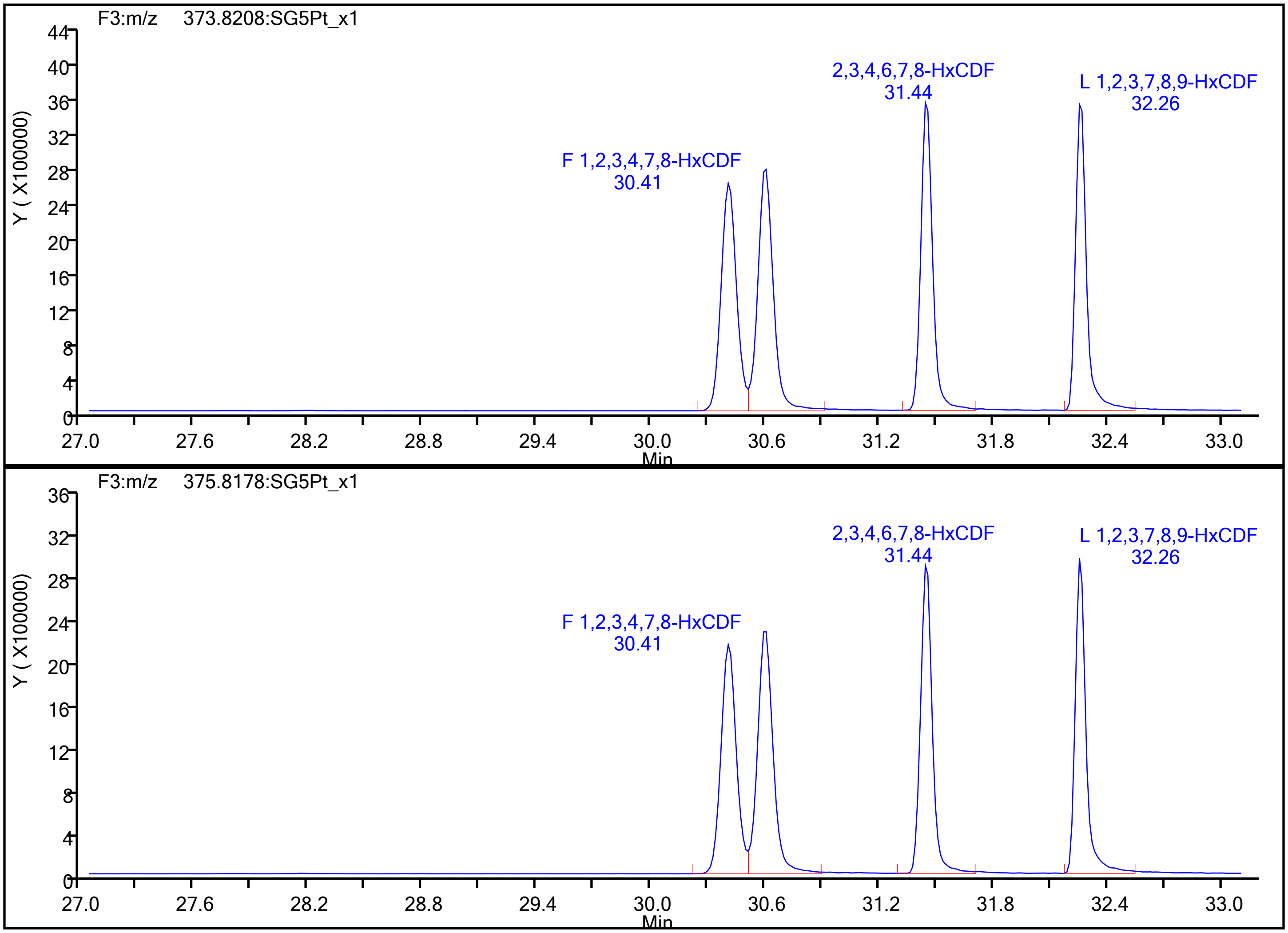

HxCDF Interference Mass

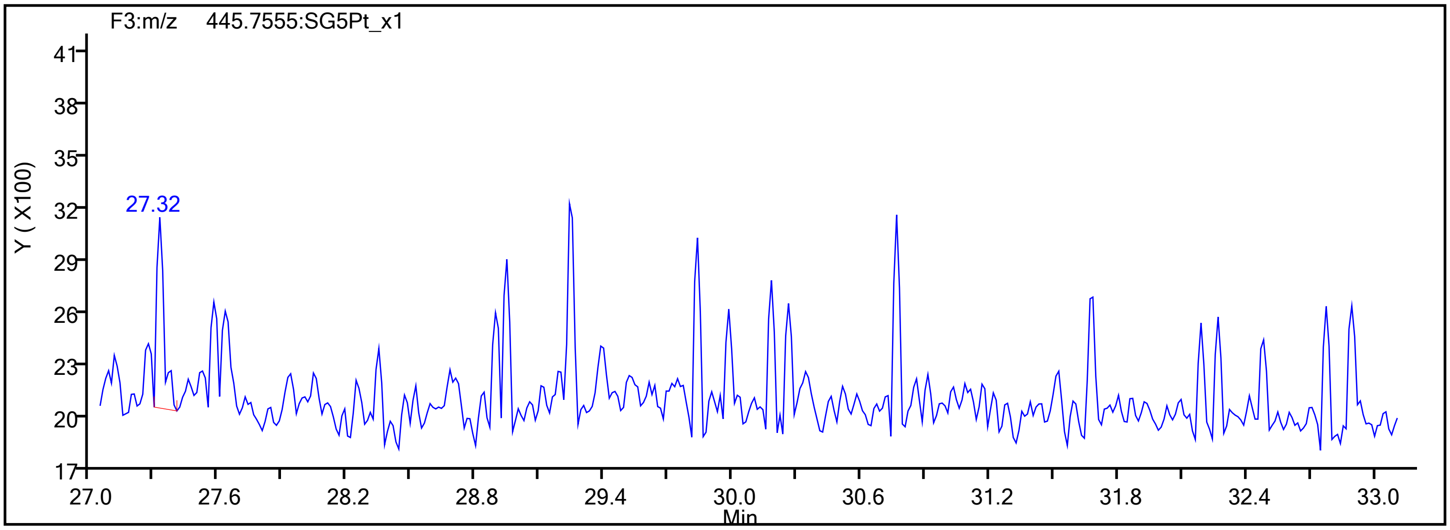

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 17:39:44

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

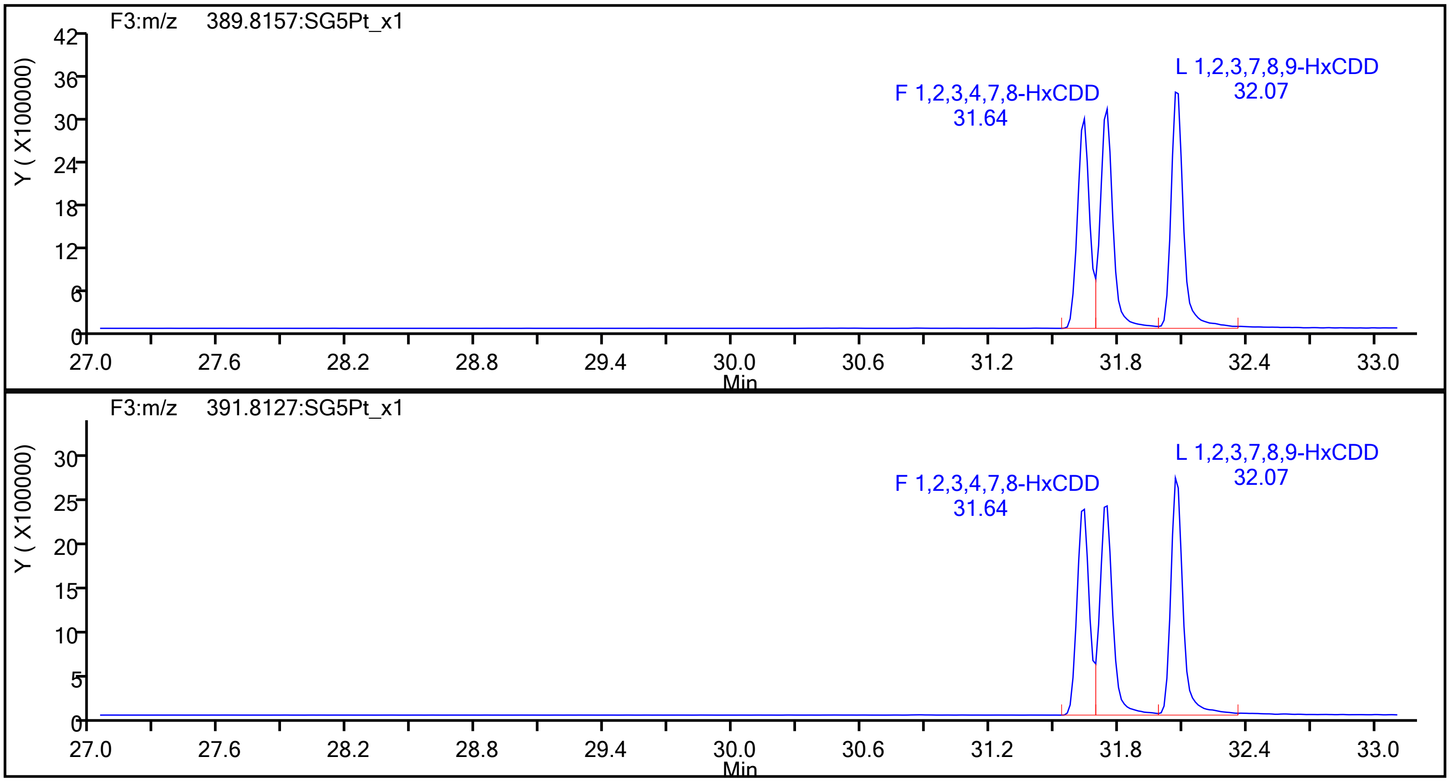

HxCDD Standards

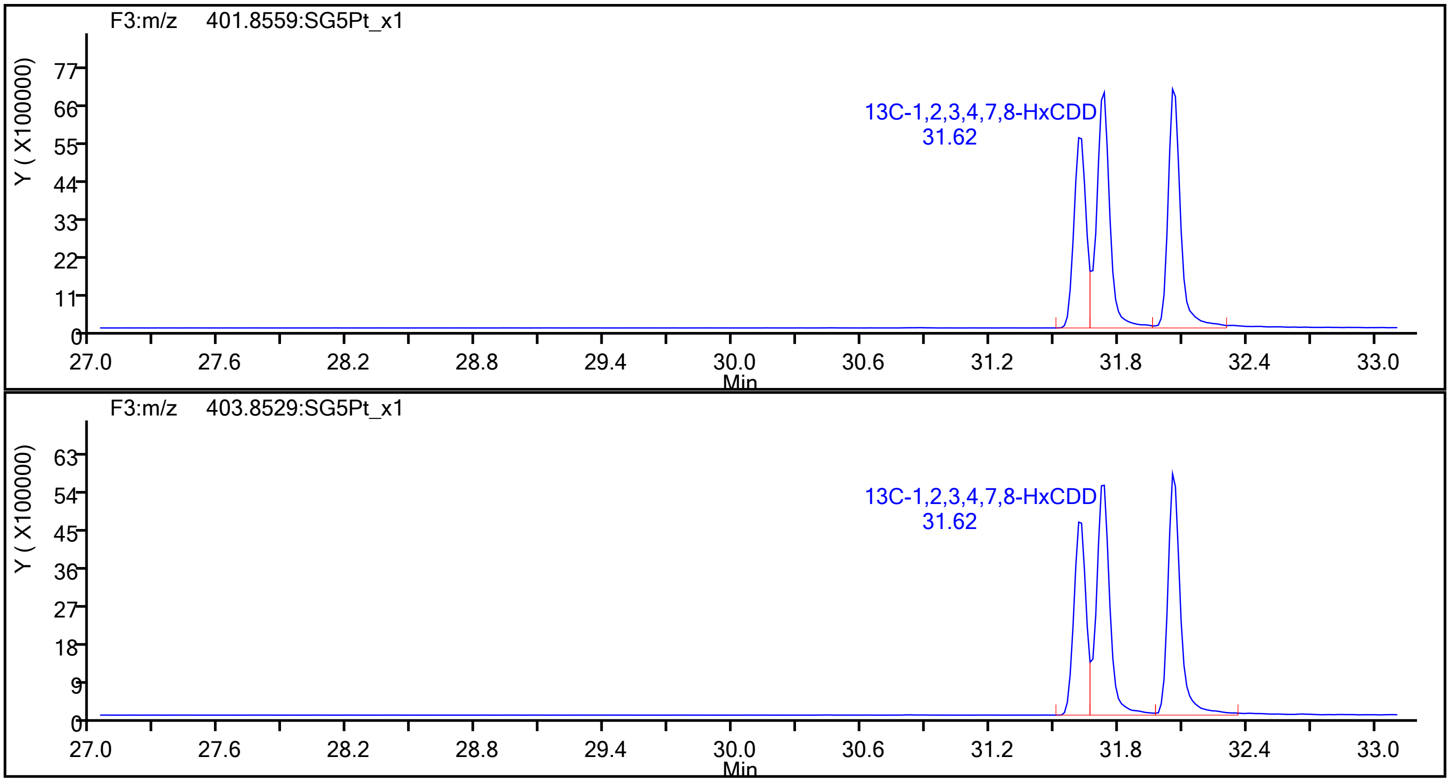

Report Date: 18-Sep-2020 10:35:58

Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_5.d

Injection Date: 17-Sep-2020 17:39:44

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

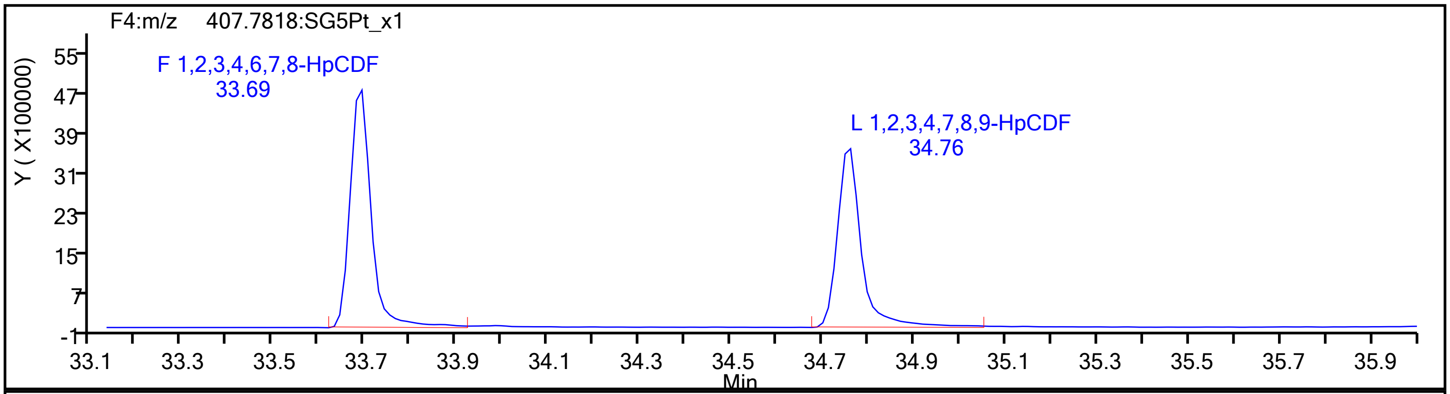

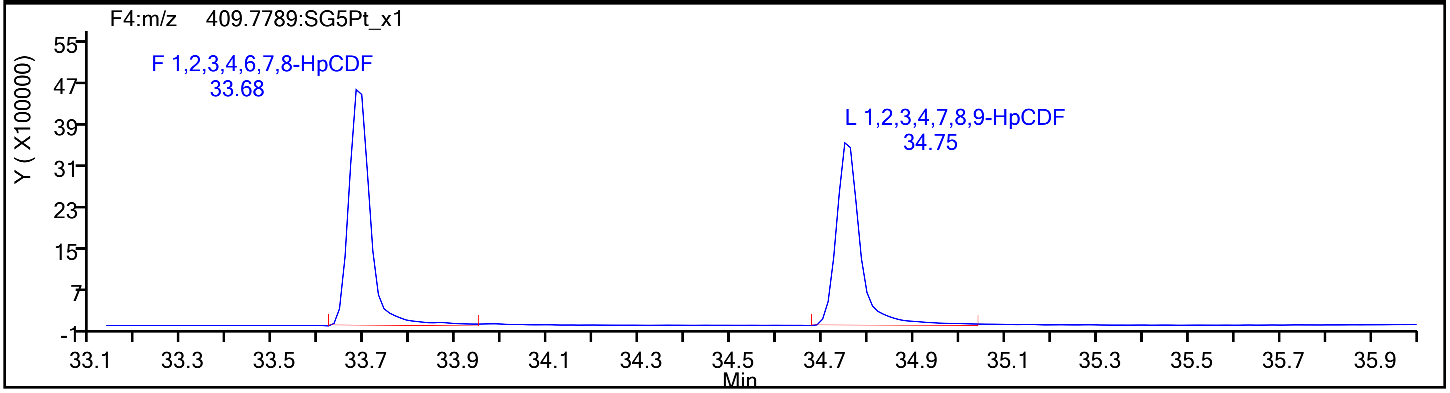

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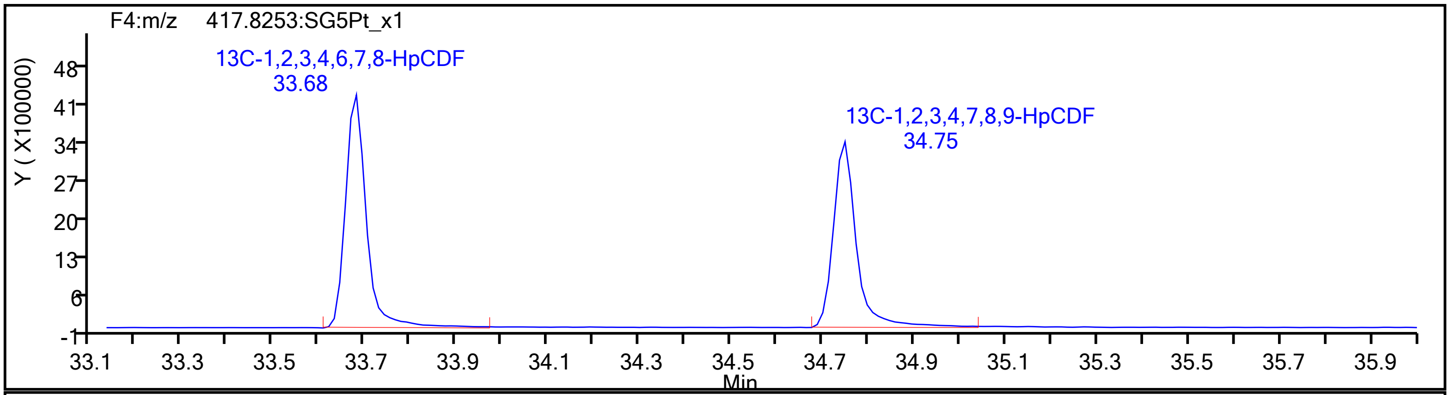

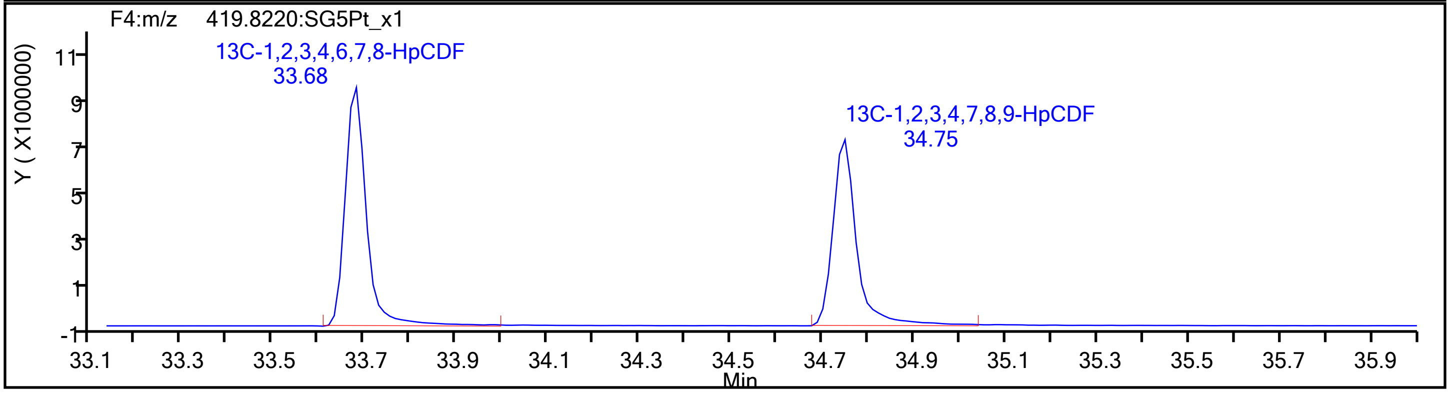

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	5
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HpCDF

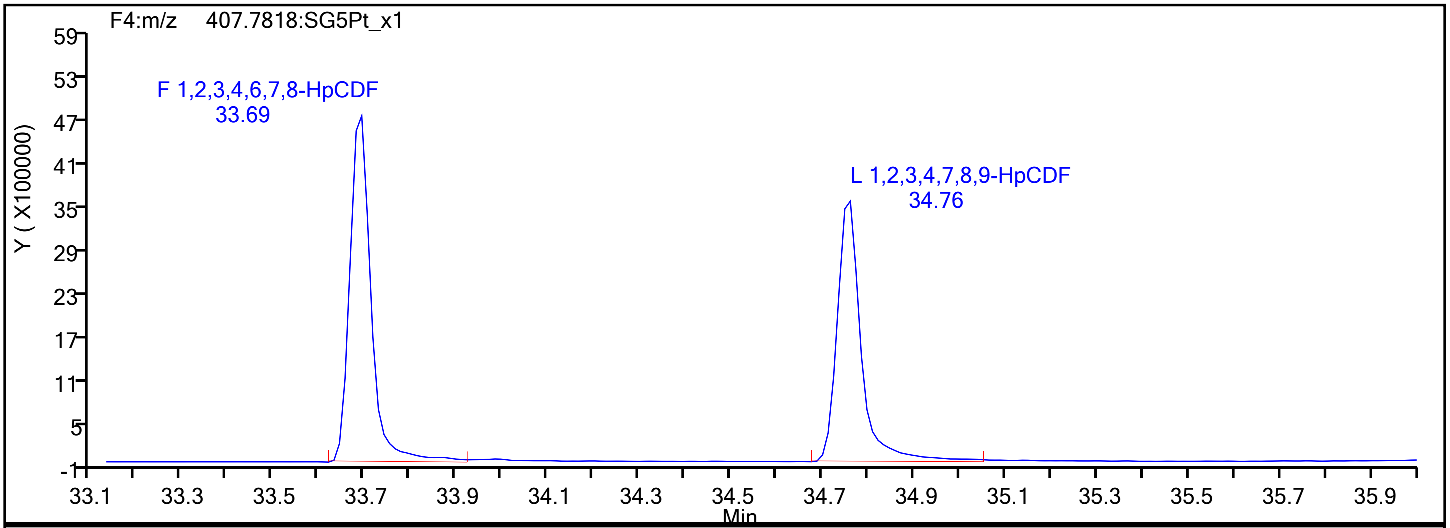

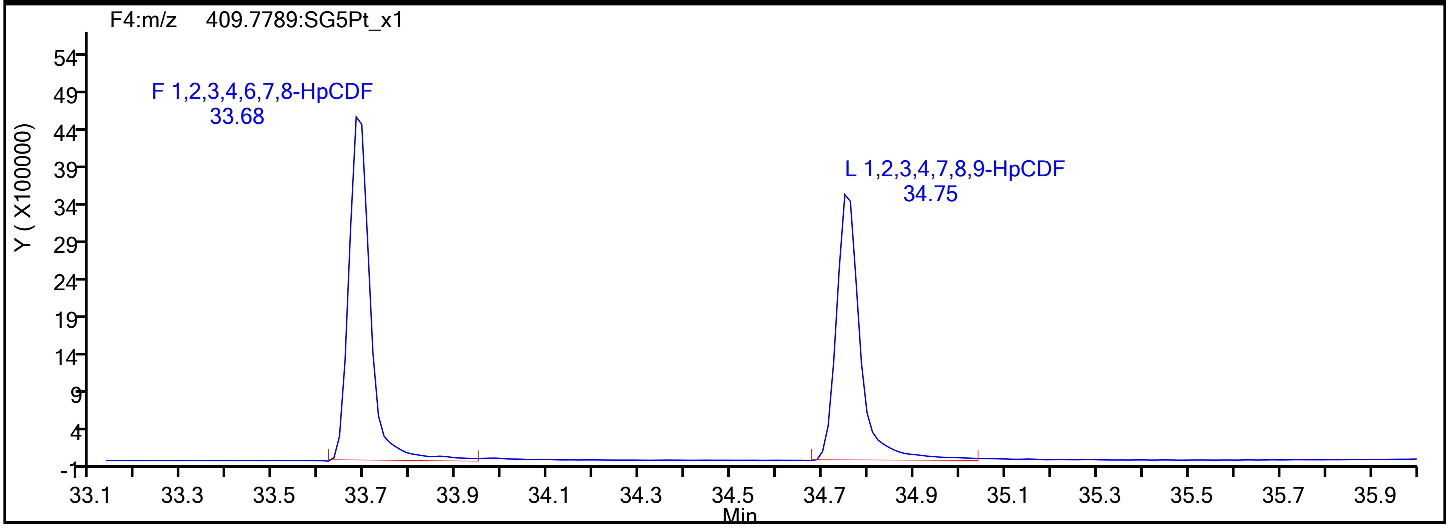

HpCDF Interference Mass

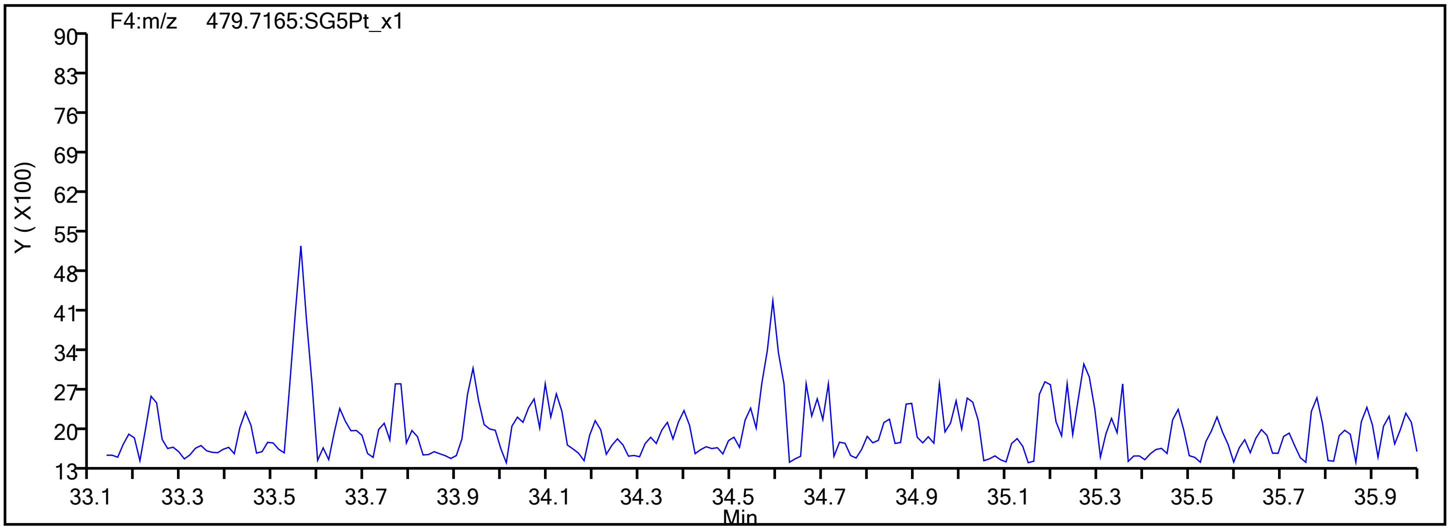

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
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HpCDD

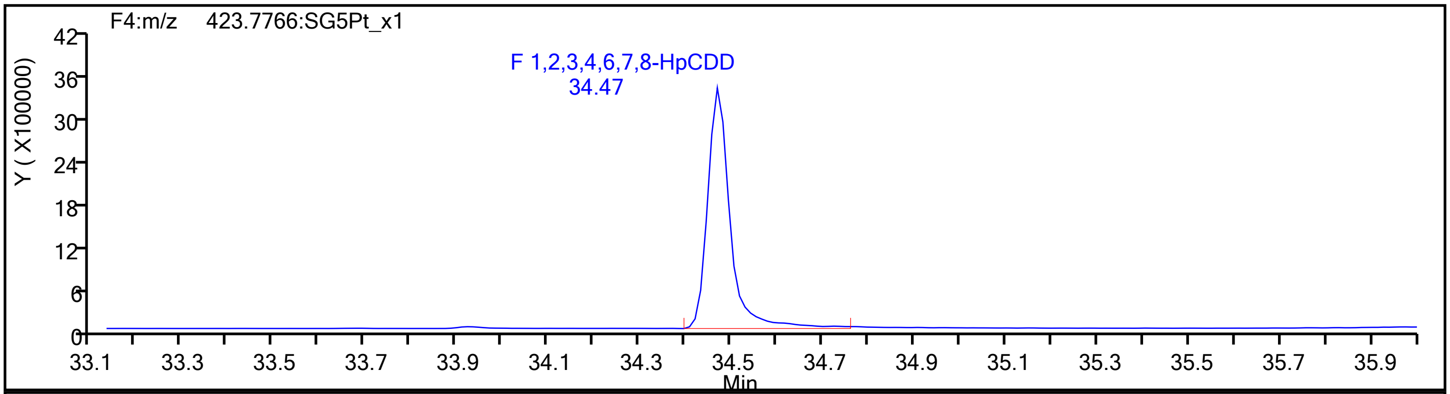

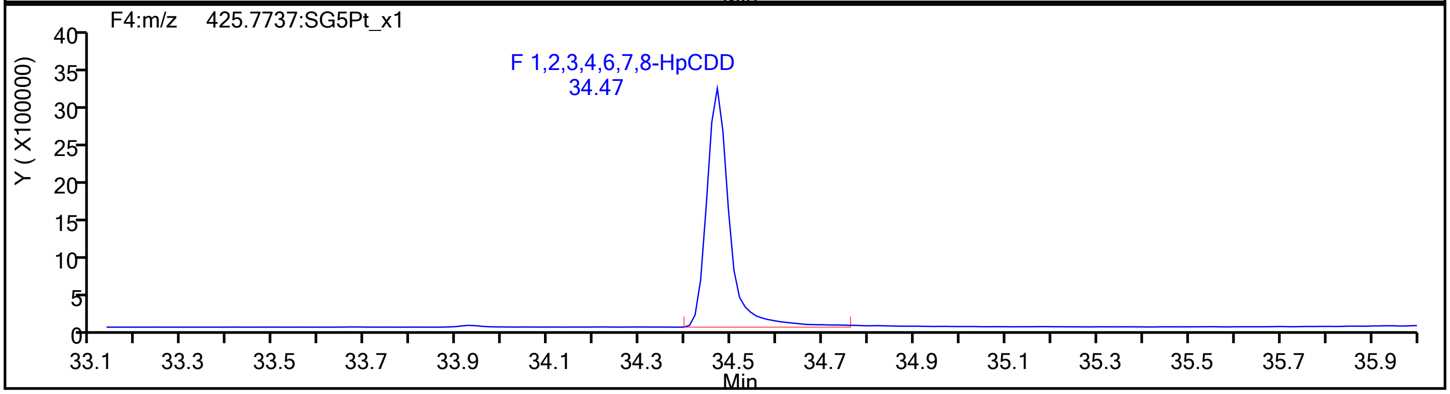

HpCDD Standards

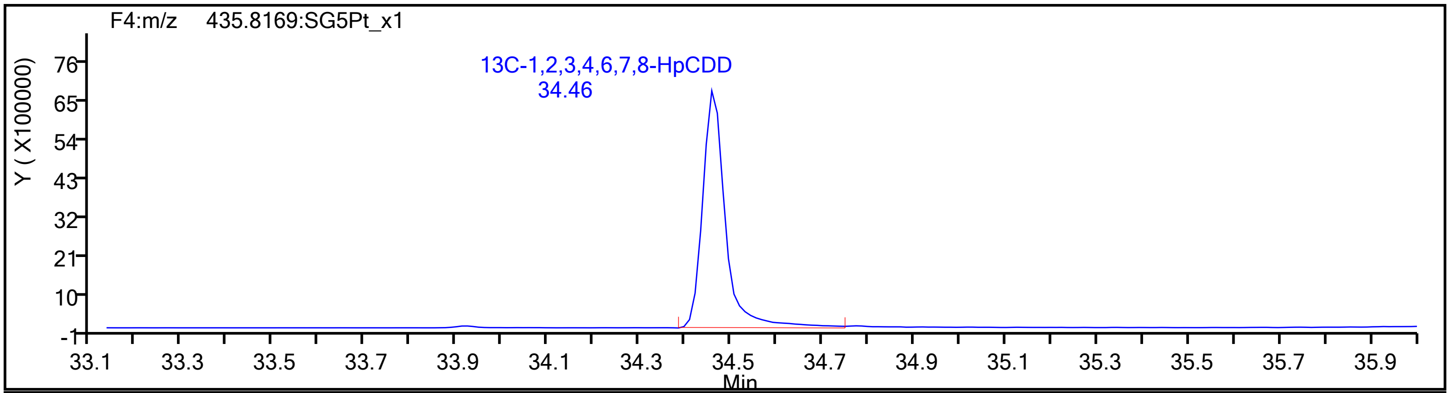

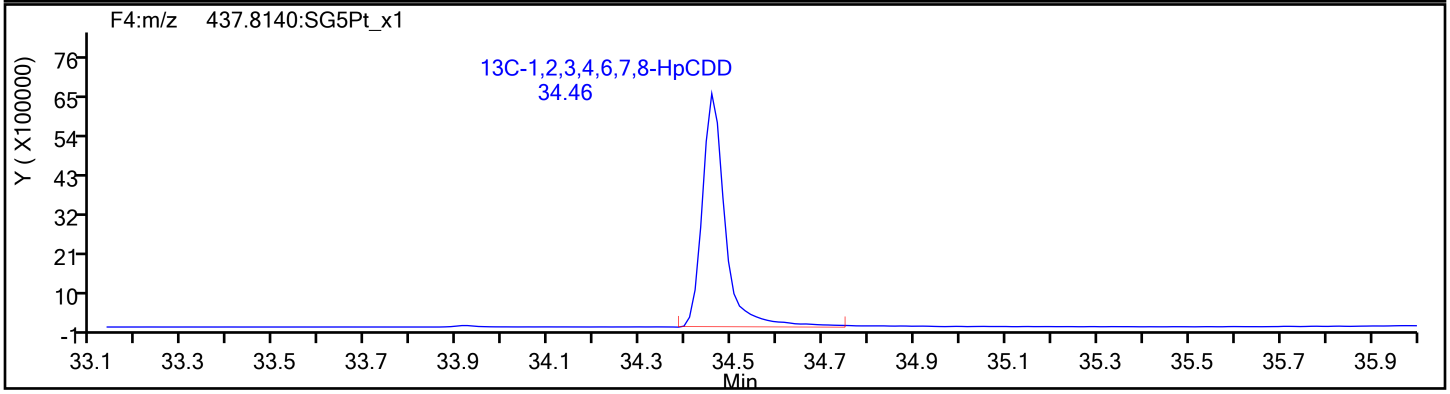

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OCDF

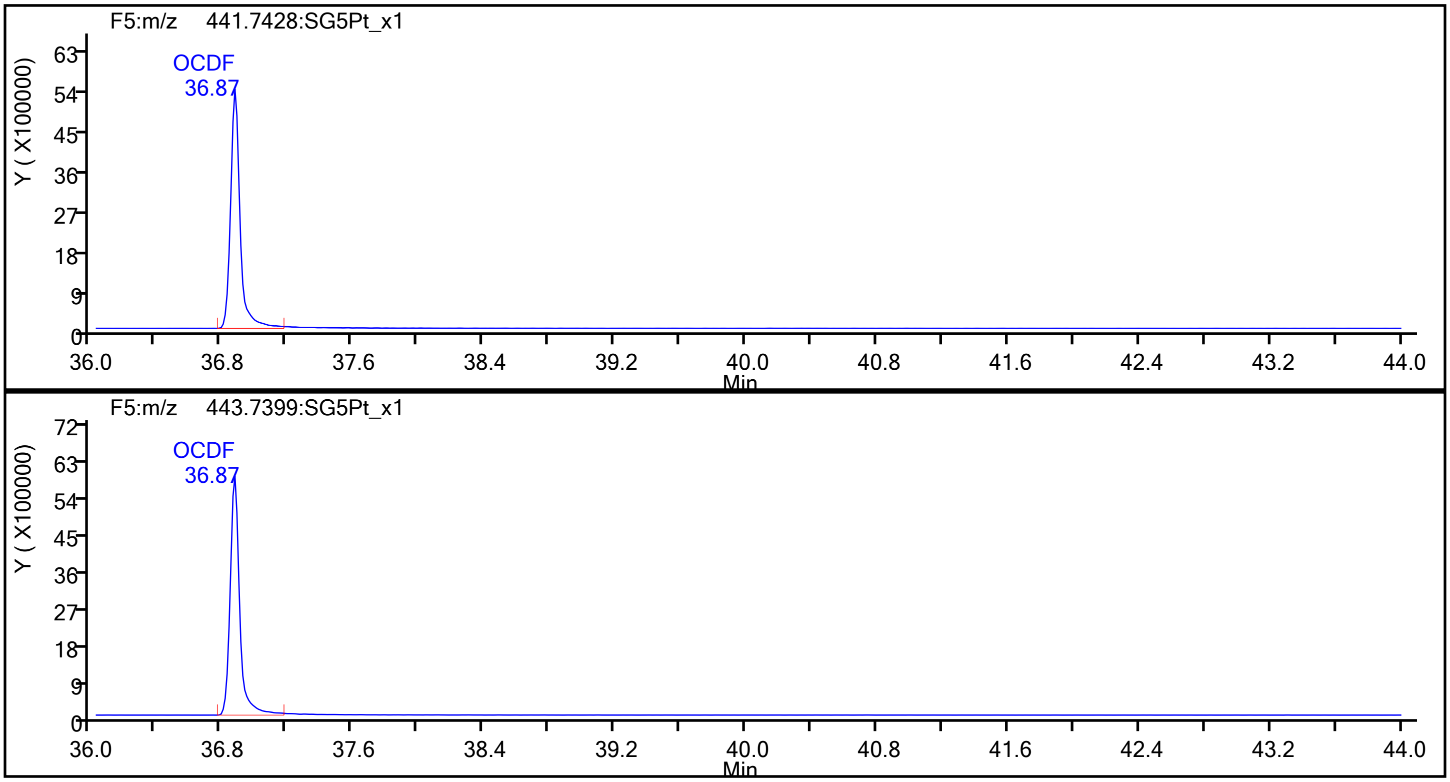

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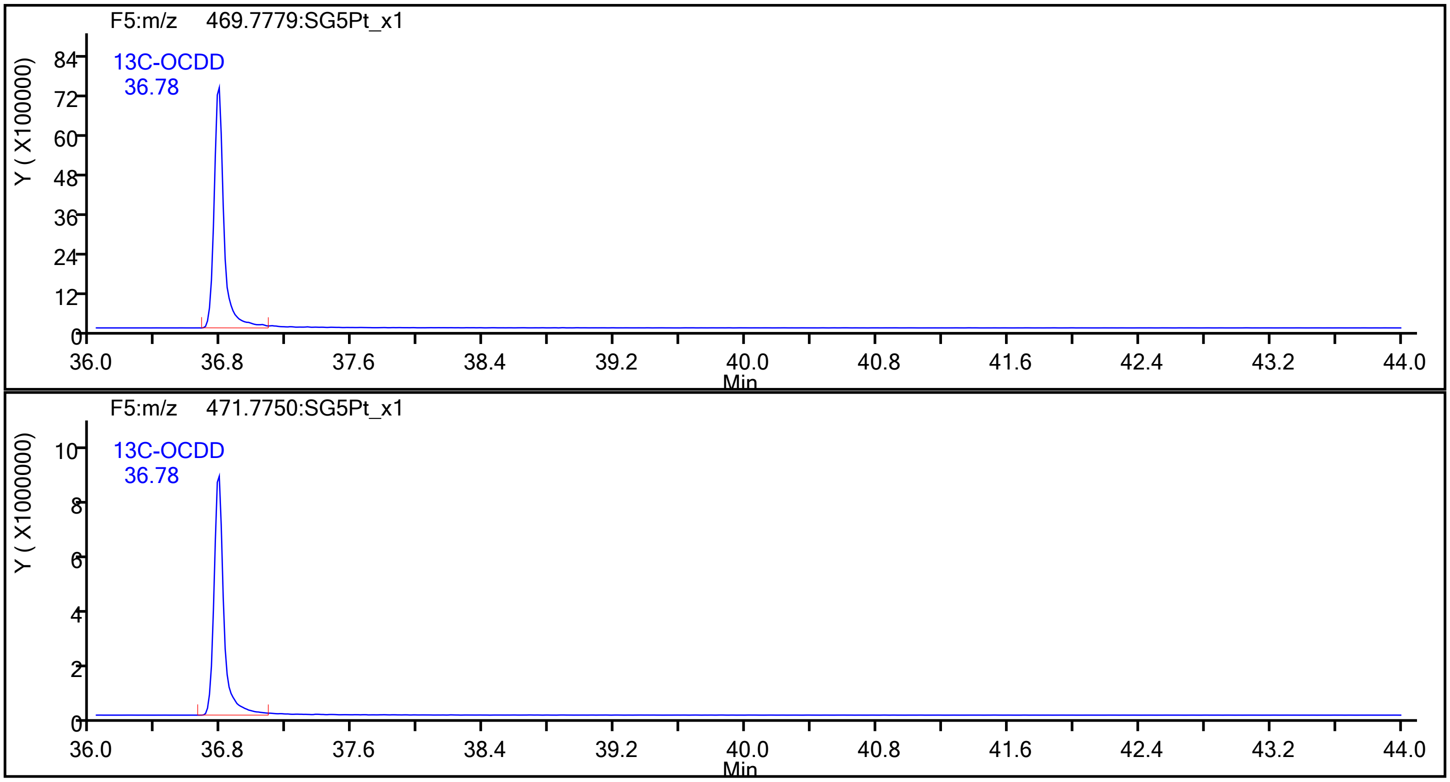

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OCDF

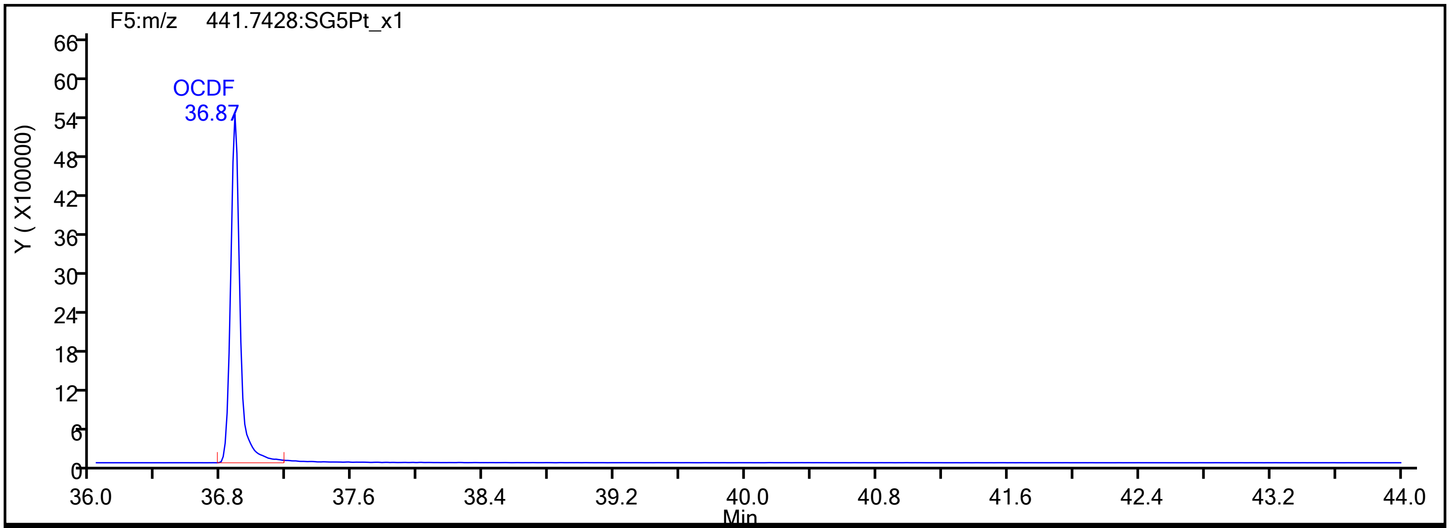

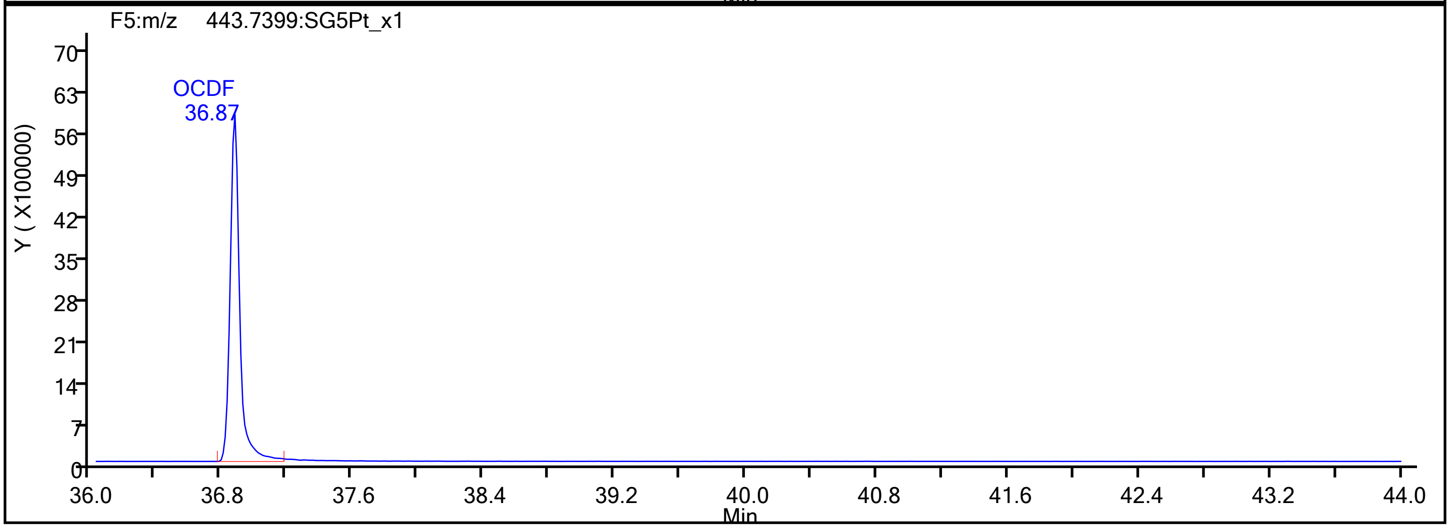

OCDF Interference Mass

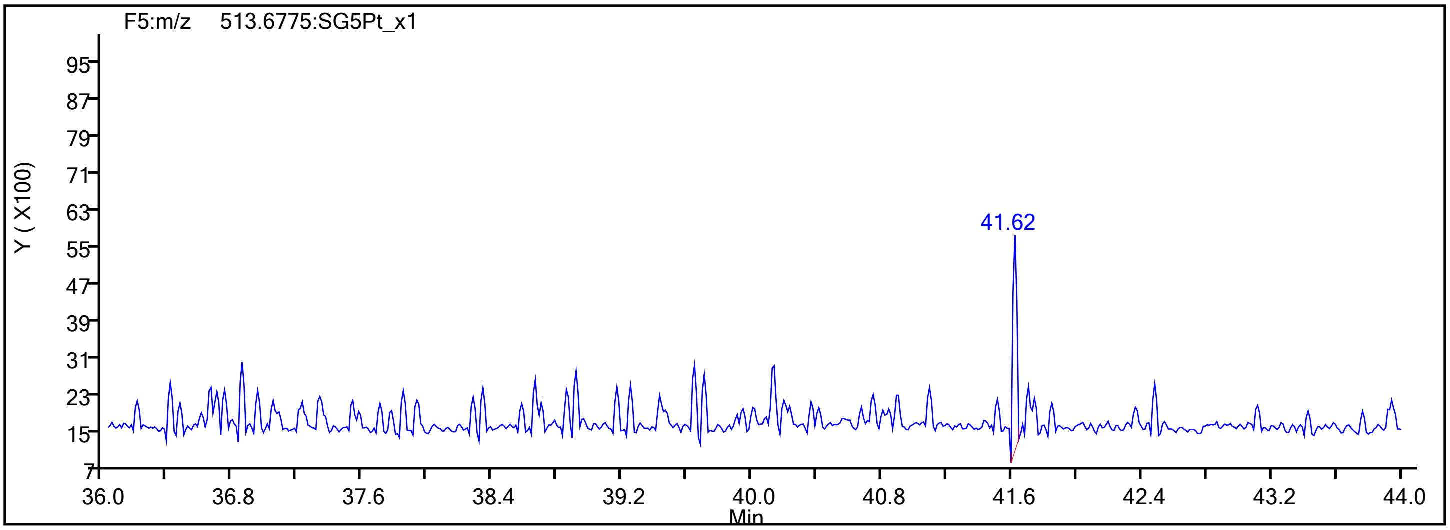

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OCDD

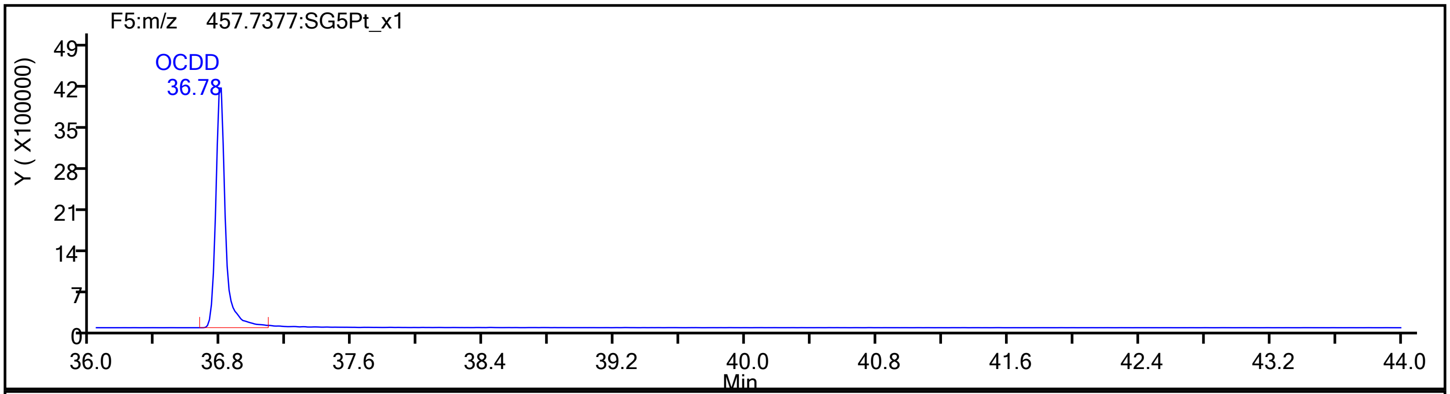

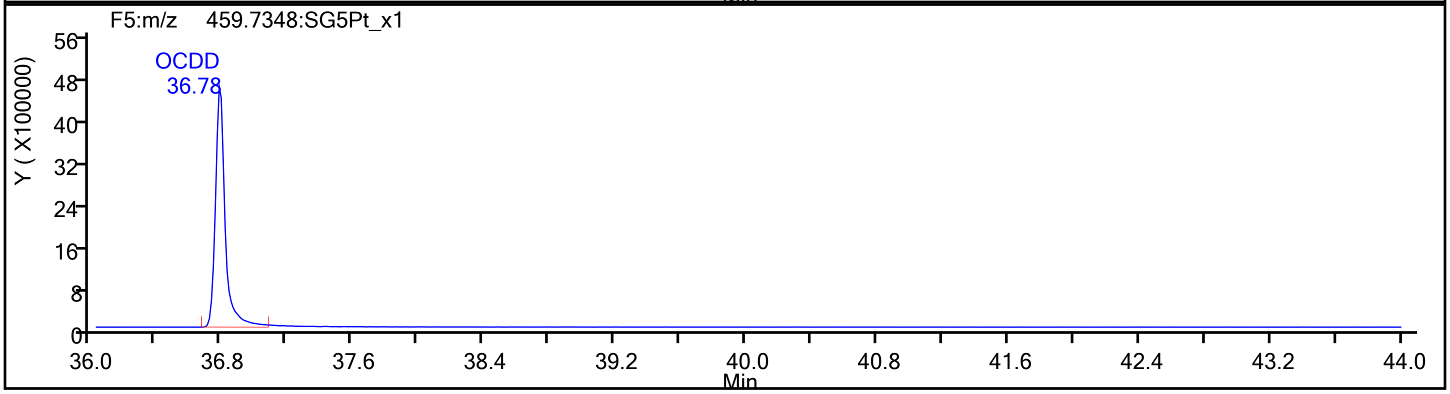

OCDD Standards

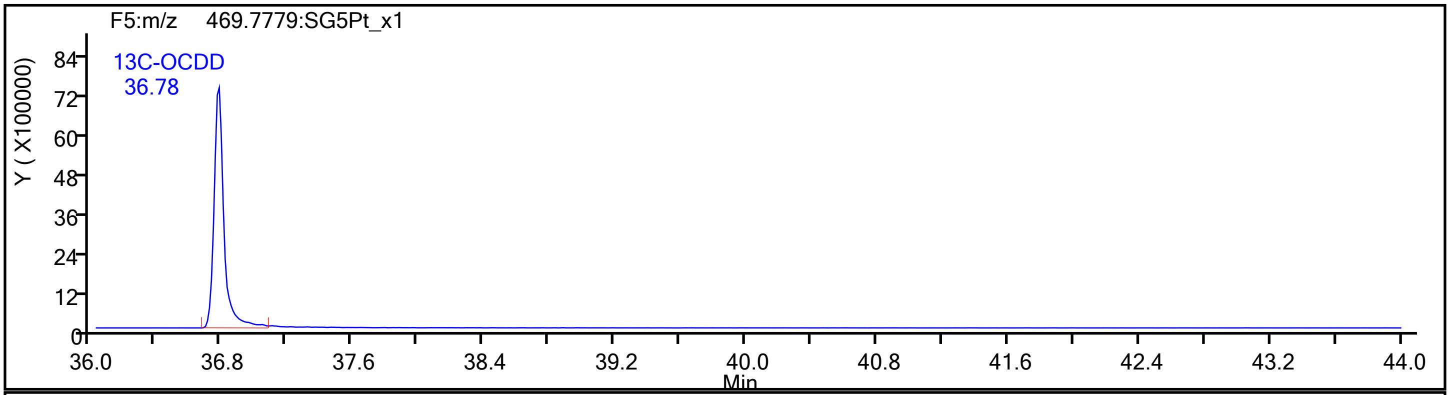

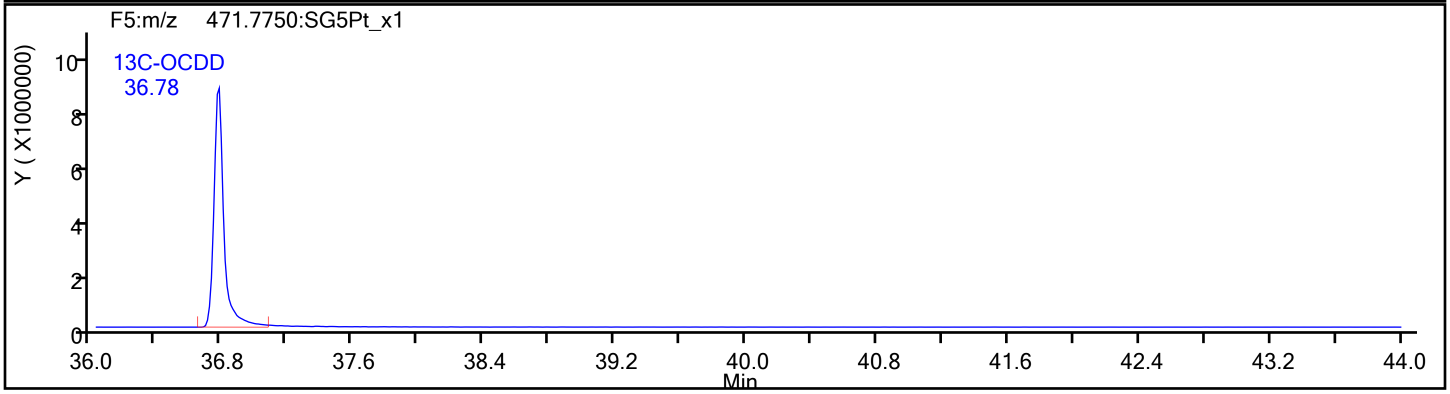

Report Date: 18-Sep-2020 10:35:58
Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

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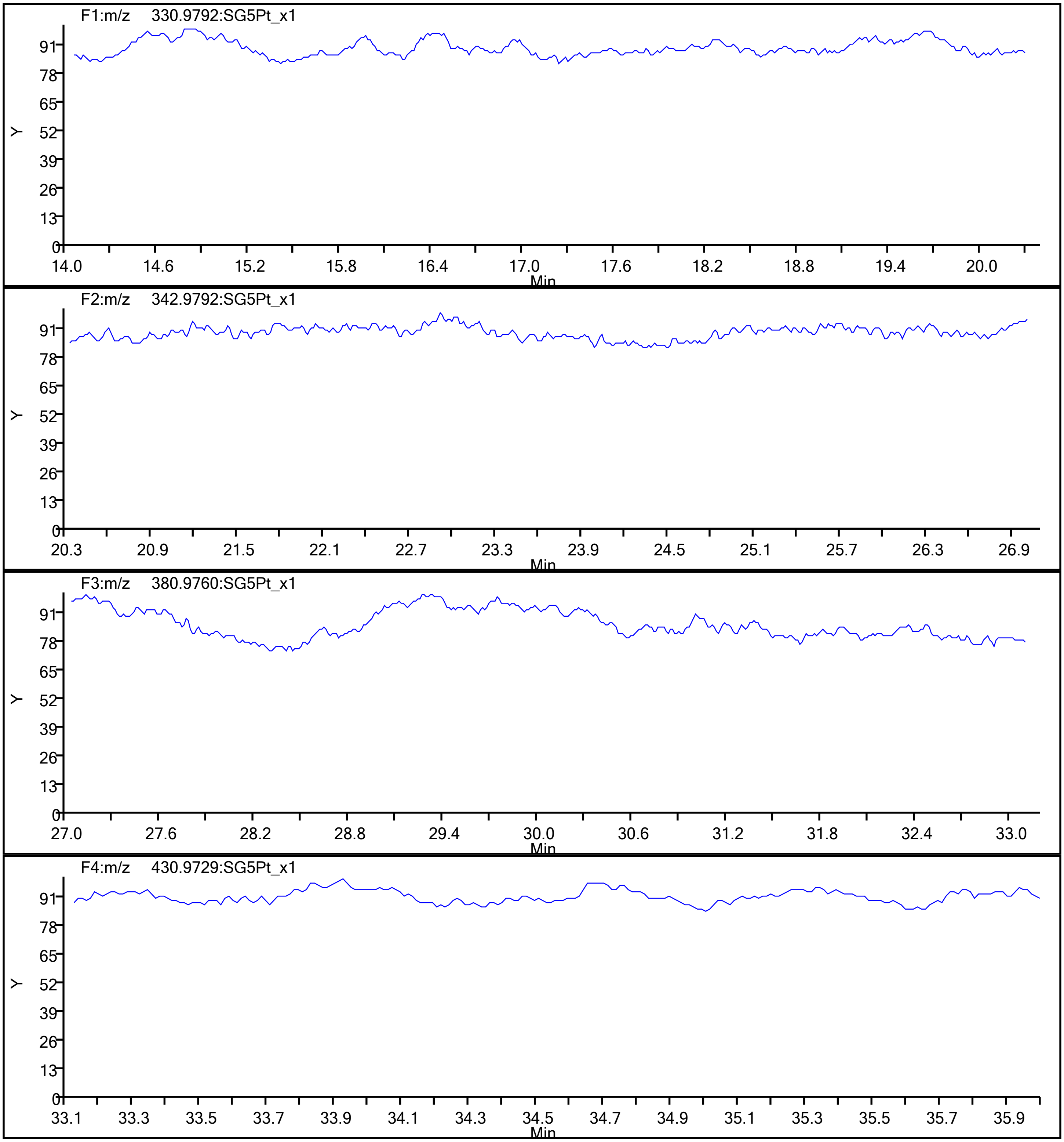

Report Date: 18-Sep-2020 10:35:58 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 17:39:44	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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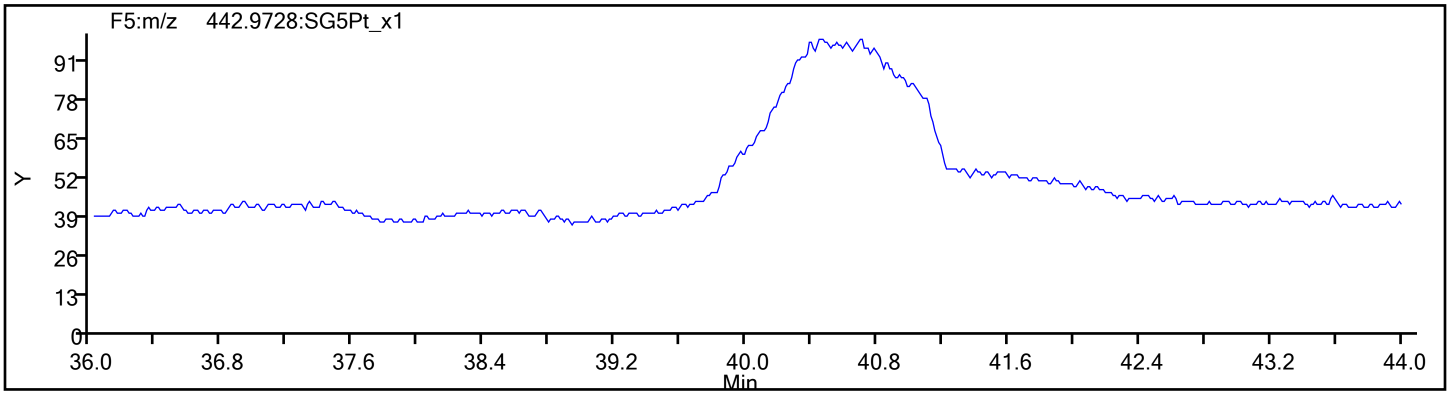

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	17-Sep-2020 18:24:43	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 091720C CS-5 HRDXNL5_00031				
Misc. Info.:	17SE2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Sep-2020 10:36:02	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: arghestanis		Date:	18-Sep-2020 10:17:55		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.718	69385886	0.79	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	96572003	0.77	1.3598	102.4	102.4	0.1609	0.1609	102	
2,3,7,8-TCDF	17.219	34873455	0.75	0.9077	39.8	39.8	0.0638	0.0638	99.45	
S Total TCDF					39.8	39.8	0.0638	0.0638		
D 13C-2,3,7,8-TCDD	17.914	74937692	0.76	1.0536	102.5	102.5	0.1762	0.1762	103	
2,3,7,8-TCDD	17.929	29967613	0.77	1.0061	39.7	39.7	0.0451	0.0451	99.36	
$ 37Cl4-2,3,7,8-TCDD	17.929	31470753		1.0488	43.2	43.2	0.0397	0.0397	108	
S Total TCDD					39.7	39.7	0.0451	0.0451		
D 13C-1,2,3,7,8-PeCDF	22.212	79929046	1.56	1.1306	101.9	101.9	0.2060	0.2060	102	
1,2,3,7,8-PeCDF	22.226	145371529	1.52	0.9147	198.8	198.8	0.5356	0.5356	99.41	
D 13C-2,3,4,7,8-PeCDF	23.548	72693510	1.55	1.0539	99.4	99.4	0.2210	0.2210	99.41	
2,3,4,7,8-PeCDF	23.576	138637753	1.54	0.9508	200.6	200.6	0.6044	0.6044	100	
S Total PeCDF					399.4	399.4	0.5700	0.5700		
D 13C-1,2,3,7,8-PeCDD	24.271	57281119	1.57	0.8084	102.1	102.1	0.1244	0.1244	102	
1,2,3,7,8-PeCDD	24.298	112792500	1.57	0.9955	197.8	197.8	0.2179	0.2179	98.90	
S Total PeCDD					197.8	197.8	0.2179	0.2179		
D 13C-1,2,3,4,7,8-HxCDF	30.406	50016942	0.51	0.9225	102.2	102.2	0.5034	0.5034	102	
1,2,3,4,7,8-HxCDF	30.420	112104497	1.24	1.1090	202.1	202.1	1.246	1.246	101	
D 13C-1,2,3,6,7,8-HxCDF	30.593	56052859	0.50	1.0336	102.2	102.2	0.4493	0.4493	102	
1,2,3,6,7,8-HxCDF	30.619	119502715	1.25	1.0721	198.9	198.9	1.138	1.138	99.43	
D 13C-2,3,4,6,7,8-HxCDF	31.444	53491599	0.51	0.9773	103.2	103.2	0.4751	0.4751	103	
2,3,4,6,7,8-HxCDF	31.458	115165865	1.24	1.0838	198.7	198.7	0.8770	0.8770	99.33	
D 13C-1,2,3,7,8,9-HxCDF	32.257	49233772	0.51	0.9153	101.4	101.4	0.5073	0.5073	101	
1,2,3,7,8,9-HxCDF	32.270	108414785	1.24	1.0931	201.5	201.5	0.8756	0.8756	101	
S Total HxCDF					801.1	801.1	1.034	1.034		
* 13C-1,2,3,7,8,9-HxCDD	32.070	53044339	1.24	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	42294958	1.24	0.7977	100.0	100.0	0.3382	0.3382	99.96	
1,2,3,4,7,8-HxCDD	31.644	85297387	1.23	1.0014	201.4	201.4	0.6505	0.6505	101	
D 13C-1,2,3,6,7,8-HxCDD	31.737	55171129	1.25	1.0010	103.9	103.9	0.2695	0.2695	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.764	99286402	1.23	0.8902	202.2	202.2	0.6268	0.6268	101	
1,2,3,7,8,9-HxCDD	32.083	103076569	1.24	1.0579	199.9	199.9	0.5682	0.5682	99.97	
S Total HxCDD					603.5	603.5	0.6151	0.6151		
D 13C-1,2,3,4,6,7,8-HpCDF	33.692	45908363	0.43	0.8506	101.7	101.7	0.9584	0.9584	102	
1,2,3,4,6,7,8-HpCDF	33.692	124894209	1.03	1.3603	200.0	200.0	1.822	1.822	100	
D 13C-1,2,3,4,7,8,9-HpCDF	34.749	42158862	0.43	0.7618	104.3	104.3	1.070	1.070	104	
1,2,3,4,7,8,9-HpCDF	34.761	111173202	1.03	1.3207	199.7	199.7	2.239	2.239	99.84	
S Total HpCDF					399.7	399.7	2.030	2.030		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	47987052	1.05	0.8873	102.0	102.0	0.5622	0.5622	102	
1,2,3,4,6,7,8-HpCDD	34.481	97091283	1.05	0.9988	202.6	202.6	0.9652	0.9652	101	
S Total HpCDD					202.6	202.6	0.9652	0.9652		
D 13C-OCDD	36.791	67776385	0.89	0.6287	203.2	203.2	0.2176	0.2176	102	
OCDF	36.887	195516483	0.92	1.4136	408.1	408.1	0.4076	0.4076	102	
OCDD	36.791	152532525	0.90	1.1290	398.7	398.7	0.4762	0.4762	99.67	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Sep-2020 18:24:43 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720C CS-5 HRDXNL5_00031
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:02 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:17:55

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.718	17.711	0		30594649	7615613	5357	13392	1422		
333.9339	17.718	17.711	0		38791237	9634885	7452	18630	1293	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	0.971	42088557	10712904	7778	19445	1377		
317.9389	17.203	17.203	0	0.971	54483446	13775198	7322	18305	1881	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.218	0	1.001	14988137	3834769	2179	5447	1760		
305.8987	17.219	17.218	0	1.001	19885318	5073329	3490	8725	1454	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.011	32475298	7514063	5357	13392	1403		
333.9339	17.914	17.905	1	1.011	42462394	9735287	7452	18630	1306	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	13023923	3137911	1586	3965	1979		
321.8936	17.929	17.920	1	1.001	16943690	4053189	1542	3855	2629	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.012	31470753	7536773	2874	7185	2622		
13C-1,2,3,7,8-PeCDF											
351.9000	22.212	22.204	0	1.254	48735874	8487133	9442	23605	899		
353.8970	22.212	22.204	0	1.254	31193172	5478294	6628	16570	827	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	87680093	15315046	16350	40875	937		
341.8567	22.226	22.220	0	1.001	57691436	10049417	11018	27545	912	1.52(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.548	23.540	0	1.329	44169998	7215550	9442	23605	764		
353.8970	23.548	23.540	0	1.329	28523512	4690652	6628	16570	708	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.576	23.567	0	1.001	84161718	13445088	16350	40875	822		
341.8567	23.576	23.567	0	1.001	54476035	8800004	11018	27545	799	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.271	24.263	0	1.370	35025877	5428276	4136	10340	1312		
369.8919	24.271	24.263	0	1.370	22255242	3412885	2802	7005	1218	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.298	24.290	0	1.001	68895744	10787859	4993	12482	2161		
357.8516	24.298	24.290	0	1.001	43896756	6792774	2679	6697	2536	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.406	30.398	0	0.948	16907006	3041251	8598	21495	354		
385.8610	30.406	30.398	0	0.948	33109936	5874433	16570	41425	355	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.420	30.414	0	1.000	62032242	11250500	27684	69210	406		
375.8178	30.420	30.414	0	1.000	50072255	9165427	21597	53992	424	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.593	30.587	0	0.954	18696062	3370533	8598	21495	392		
385.8610	30.593	30.587	0	0.954	37356797	6724539	16570	41425	406	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.619	30.608	1	1.001	66272566	12017984	27684	69210	434		
375.8178	30.619	30.608	1	1.001	53230149	9732786	21597	53992	451	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	17949694	4342395	8598	21495	505		
385.8610	31.444	31.439	0	0.980	35541905	8619284	16570	41425	520	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	63742674	15178042	27684	69210	548		
375.8178	31.458	31.458	0	1.000	51423191	12352167	21597	53992	572	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.257	32.254	0	1.006	16524564	4298019	8598	21495	500		
385.8610	32.257	32.254	0	1.006	32709208	8575005	16570	41425	518	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	60052822	15631621	27684	69210	565		
375.8178	32.270	32.267	0	1.000	48361963	12559390	21597	53992	582	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		29372372	7522788	7772	19430	968		
403.8529	32.070	32.067	0		23671967	6026631	6849	17122	880	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	23417365	6210189	7772	19430	799		
403.8529	31.631	31.631	0	0.986	18877593	5111540	6849	17122	746	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	47067080	12706631	17058	42645	745		
391.8127	31.644	31.647	0	1.000	38230307	10405760	12442	31105	836	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	30670919	7242217	7772	19430	932		
403.8529	31.737	31.740	0	0.990	24500210	5975738	6849	17122	872	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.764	31.756	0	1.001	54790140	12827485	17058	42645	752		
391.8127	31.751	31.756	0	1.000	44496262	10591613	12442	31105	851	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	57027257	14698359	17058	42645	862		
391.8127	32.083	32.081	0	1.014	46049312	11880470	12442	31105	955	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.692	33.684	0	1.051	13795751	4370624	13699	34247	319		
419.8220	33.680	33.684	0	1.050	32112612	10081277	30486	76215	331	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.692	33.694	0	1.000	63263736	20559612	71281	178202	288		
409.7789	33.692	33.694	0	1.000	61630473	20287990	71983	179957	282	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.749	34.751	0	1.084	12683797	3685698	13699	34247	269		
419.8220	34.749	34.751	0	1.084	29475065	8429189	30486	76215	276	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	56512355	16491490	71281	178202	231		
409.7789	34.761	34.763	0	1.000	54660847	16222332	71983	179957	225	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	24611998	7479570	14817	37042	505		
437.8140	34.469	34.464	0	1.075	23375054	7114259	12218	30545	582	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	49621378	14929353	28416	71040	525		
425.7737	34.481	34.474	0	1.000	47469905	14098323	27857	69642	506	1.05(0.88-1.20)	
13C-OCDD											
469.7779	36.791	36.784	0	1.147	31885312	7968197	3222	8055	2473		
471.7750	36.779	36.784	0	1.147	35891073	9011207	4194	10485	2149	0.89(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	93607627	24454795	9427	23567	2594		
443.7399	36.887	36.882	0	1.003	101908856	26336292	10137	25342	2598	0.92(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	72170058	18527867	8405	21012	2204		
459.7348	36.791	36.791	0	1.000	80362467	20814258	9853	24632	2112	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

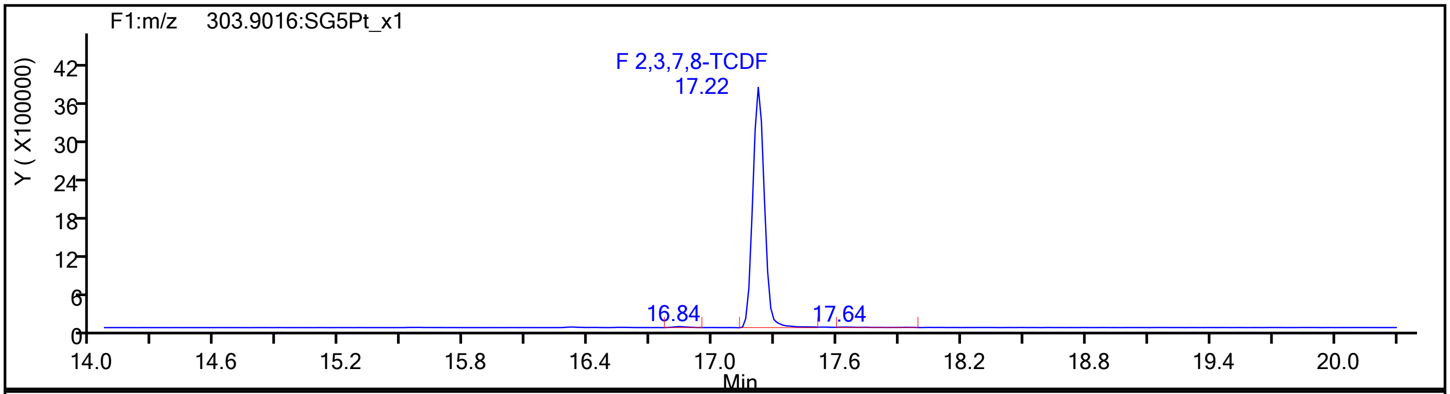

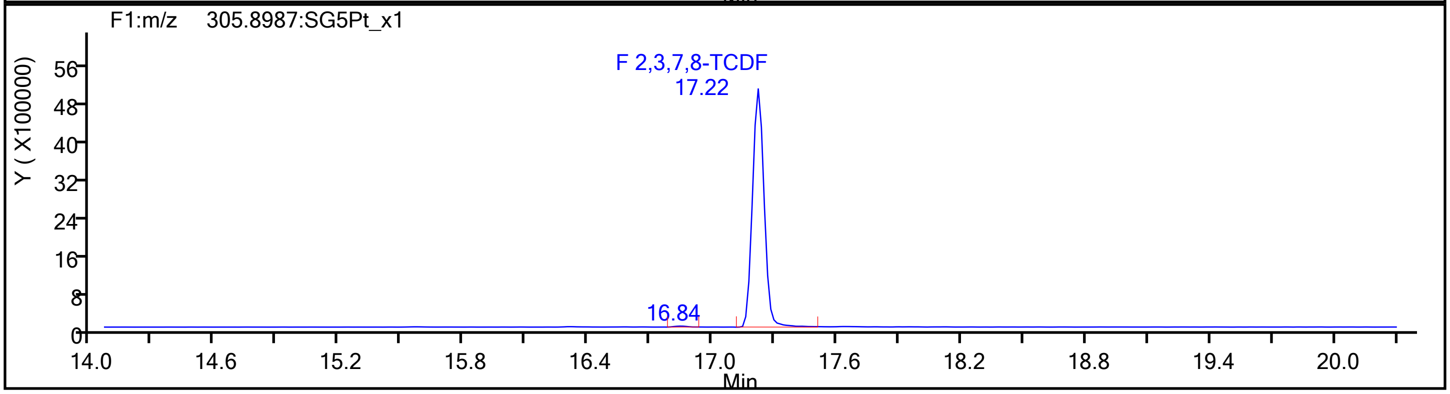

TCDF Standards

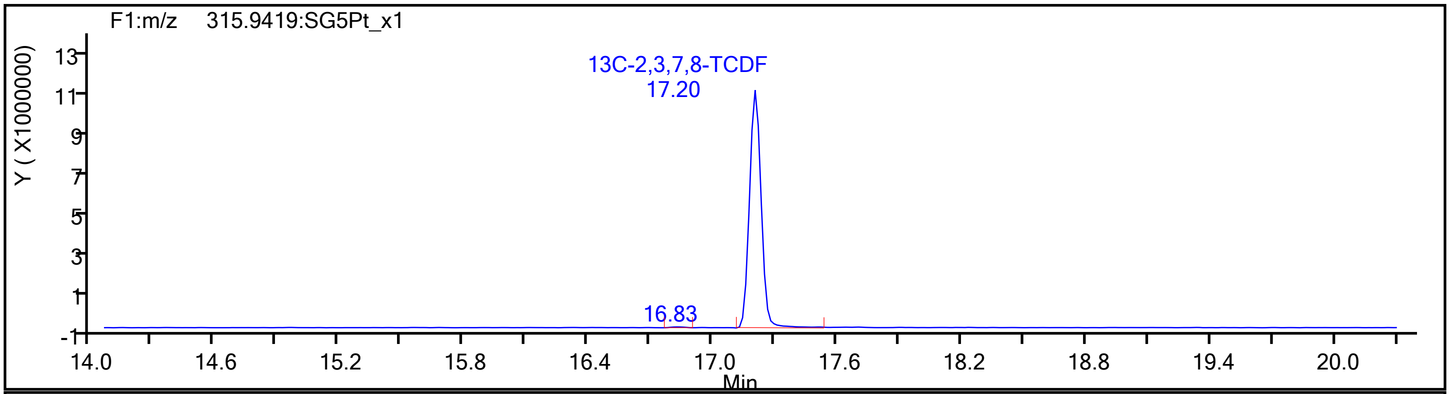

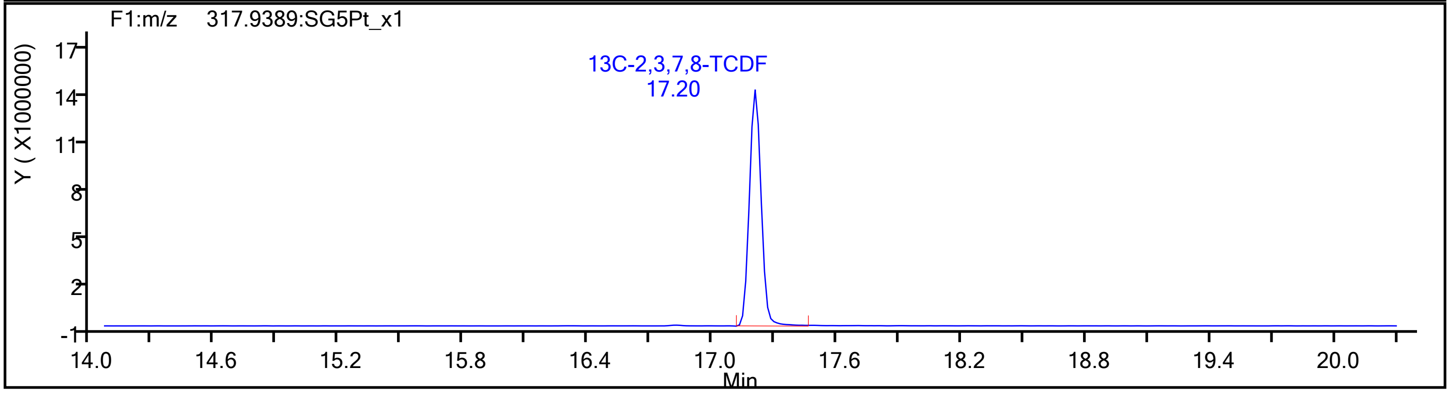

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

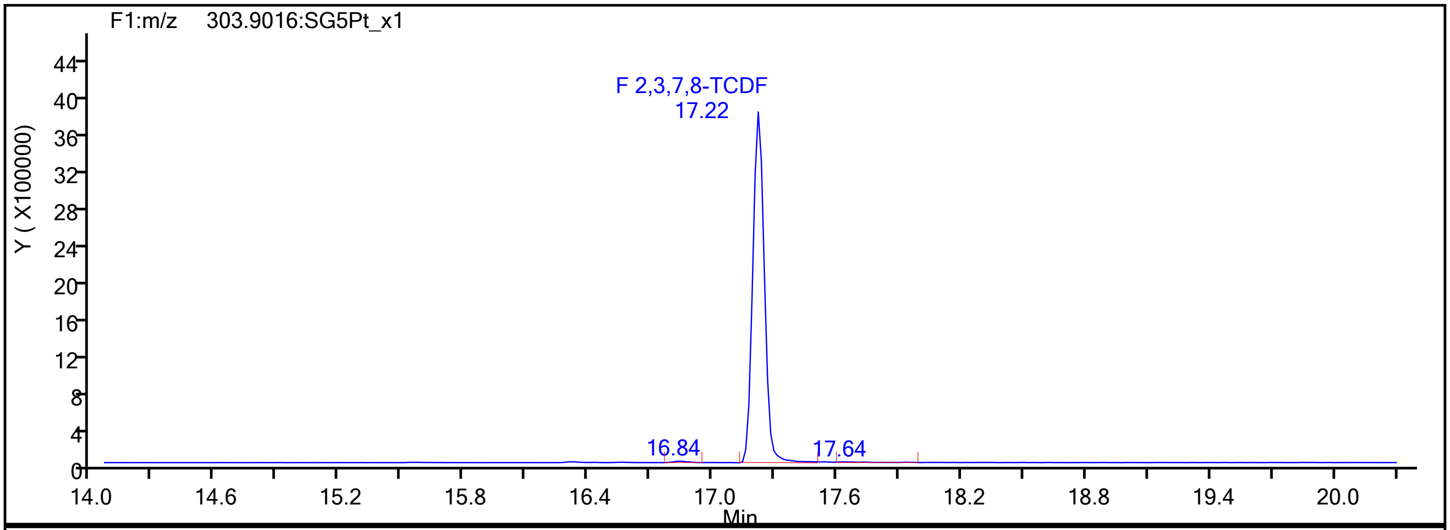

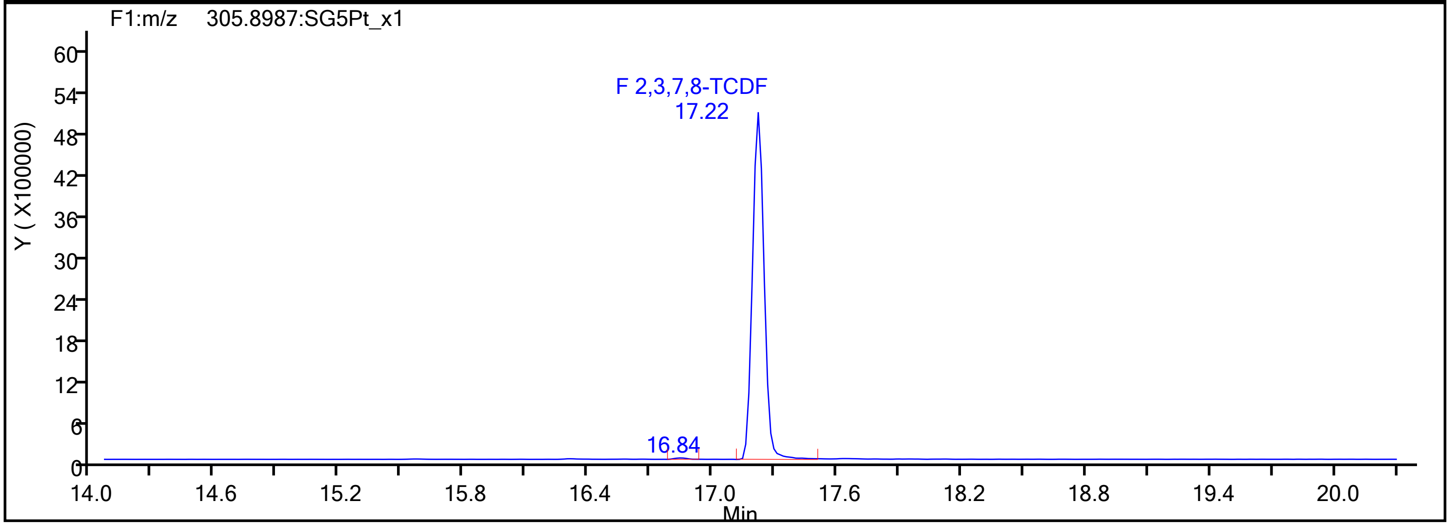

TCDF Interference Mass

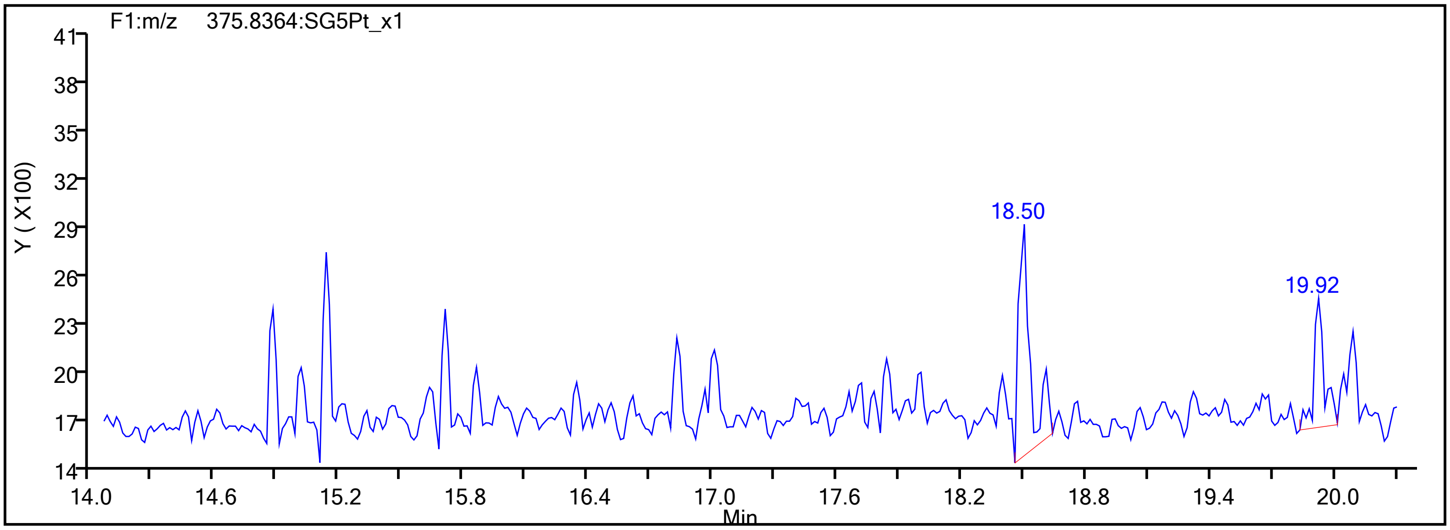

Report Date: 18-Sep-2020 10:36:06		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

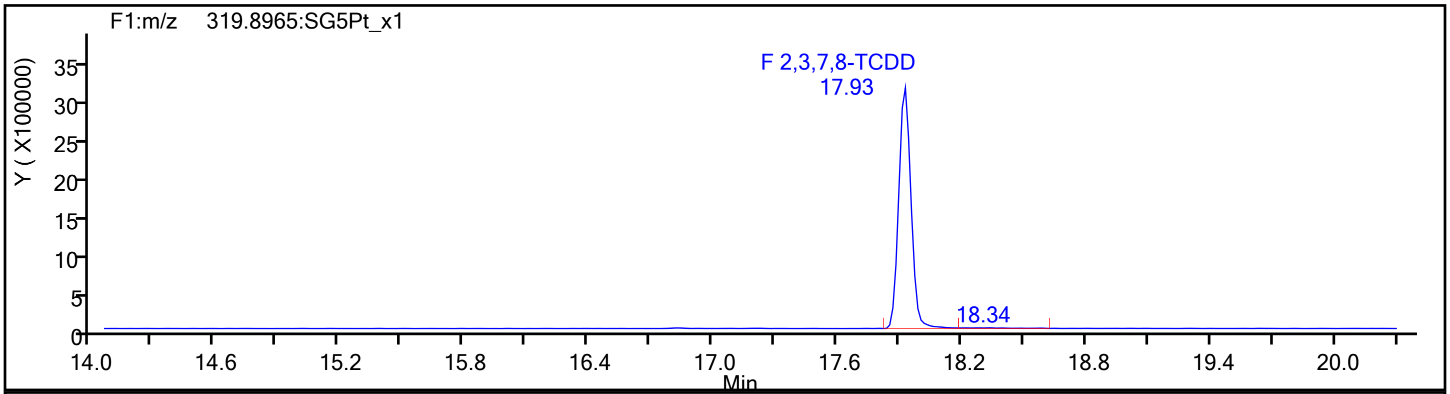

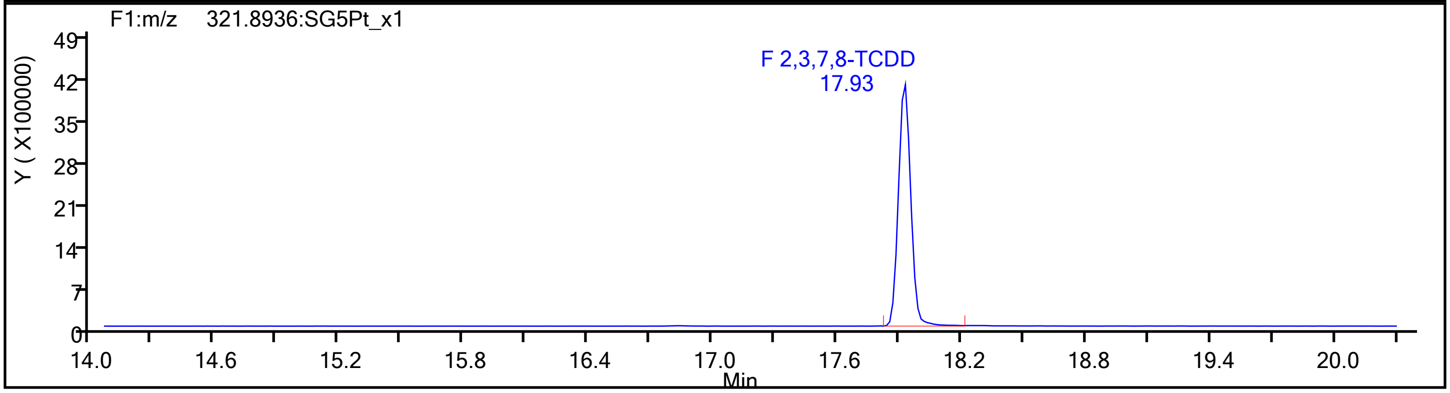

TCDD Standards

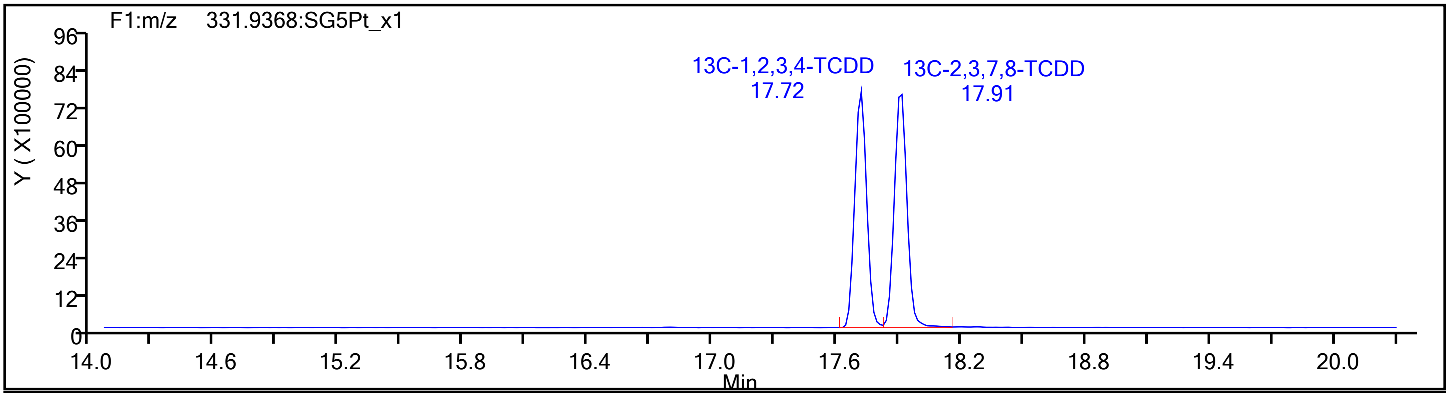

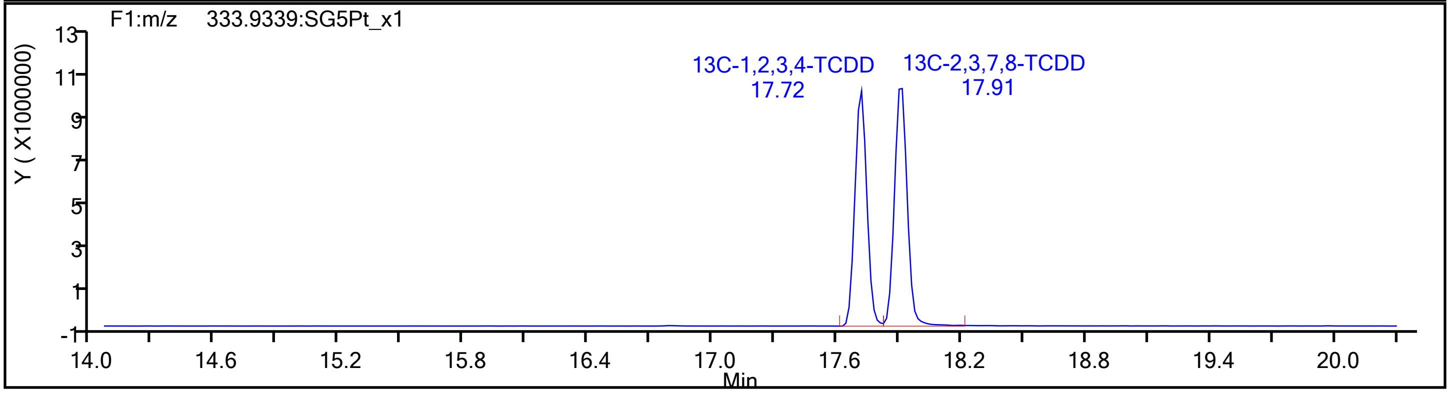

Report Date: 18-Sep-2020 10:36:06 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

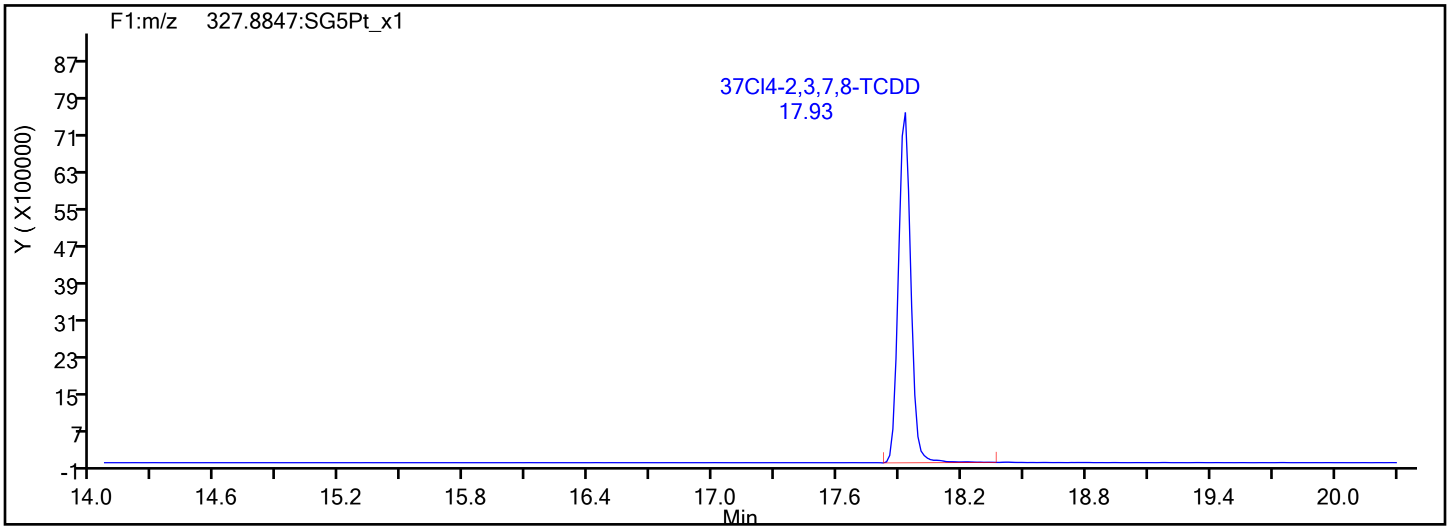

37Cl4-TCDD Standards

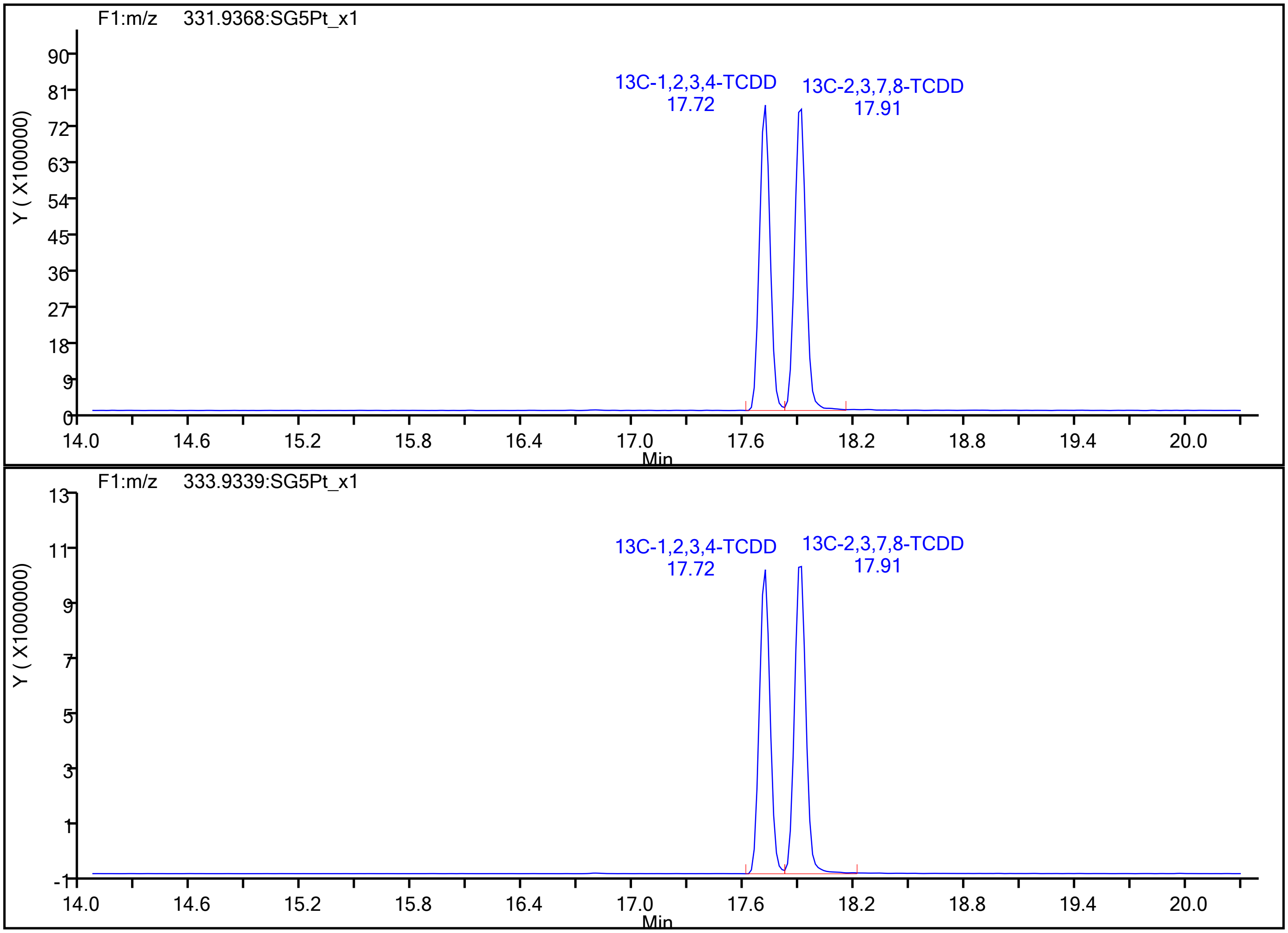

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

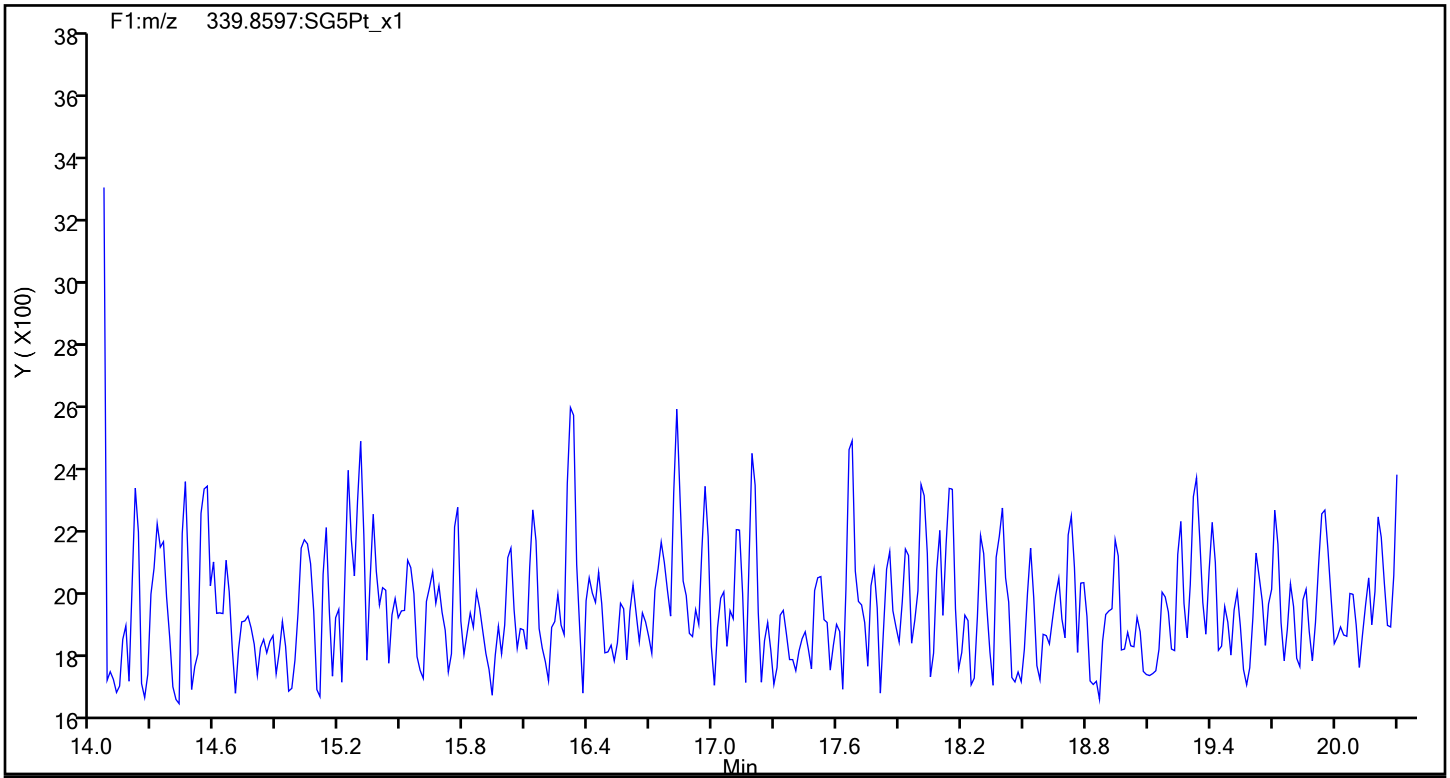

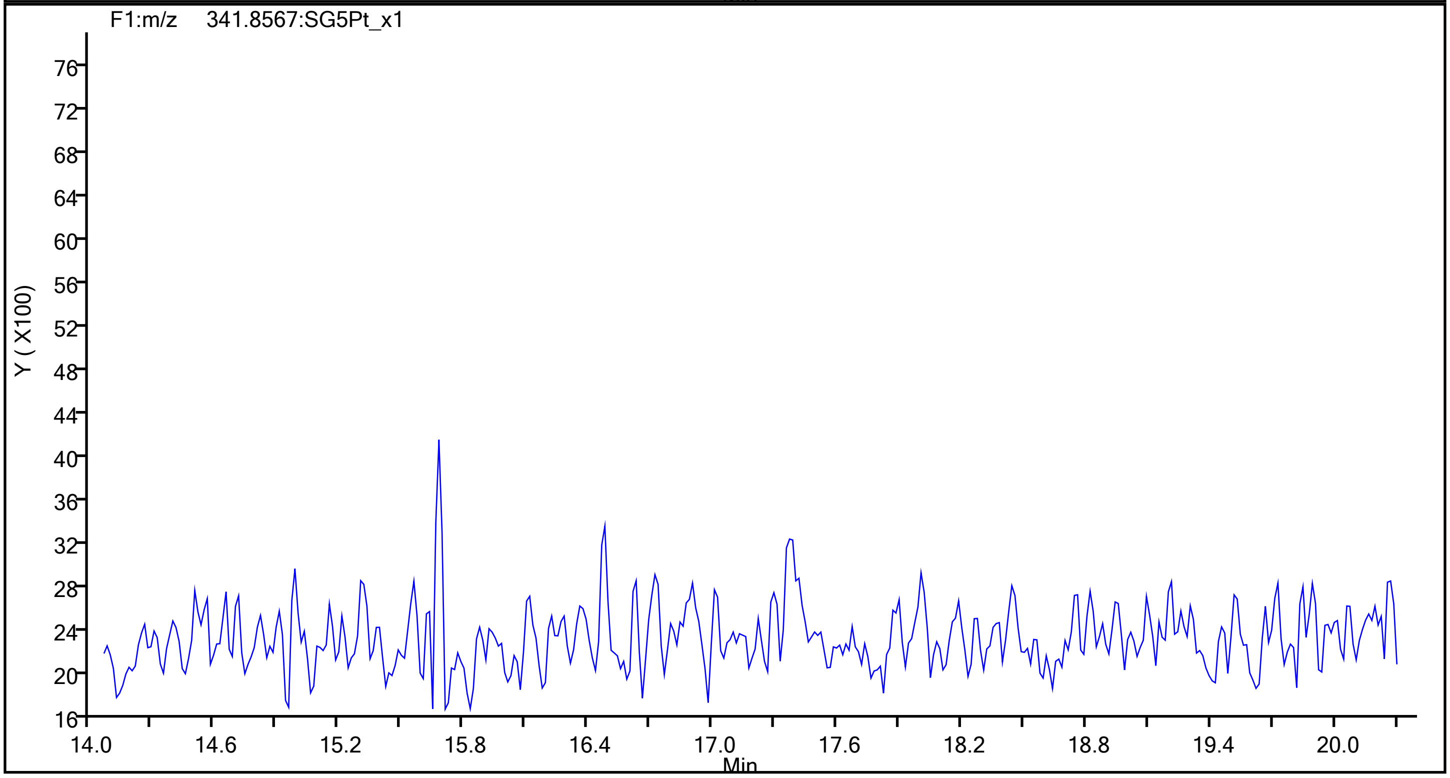

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Eurofins TestAmerica, Sacramento

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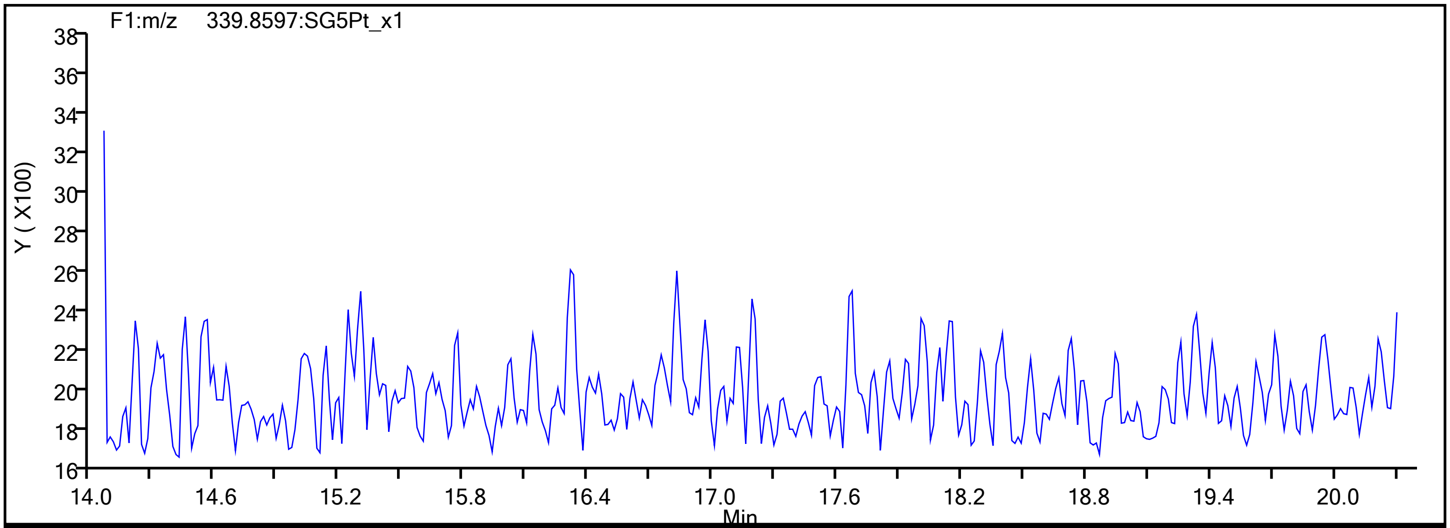

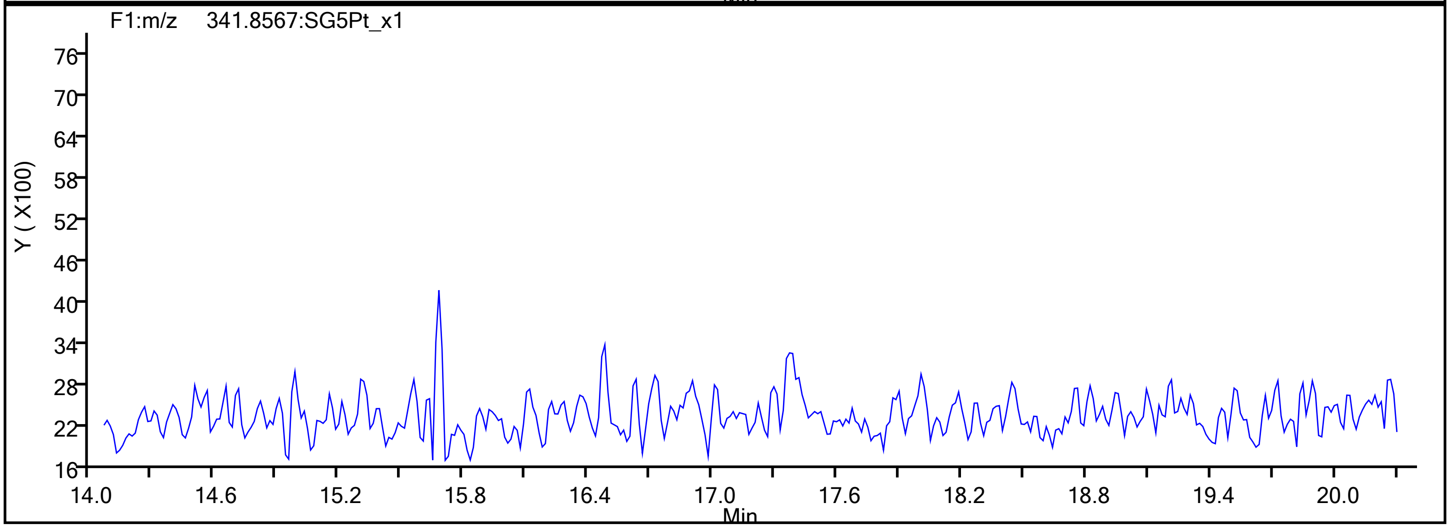

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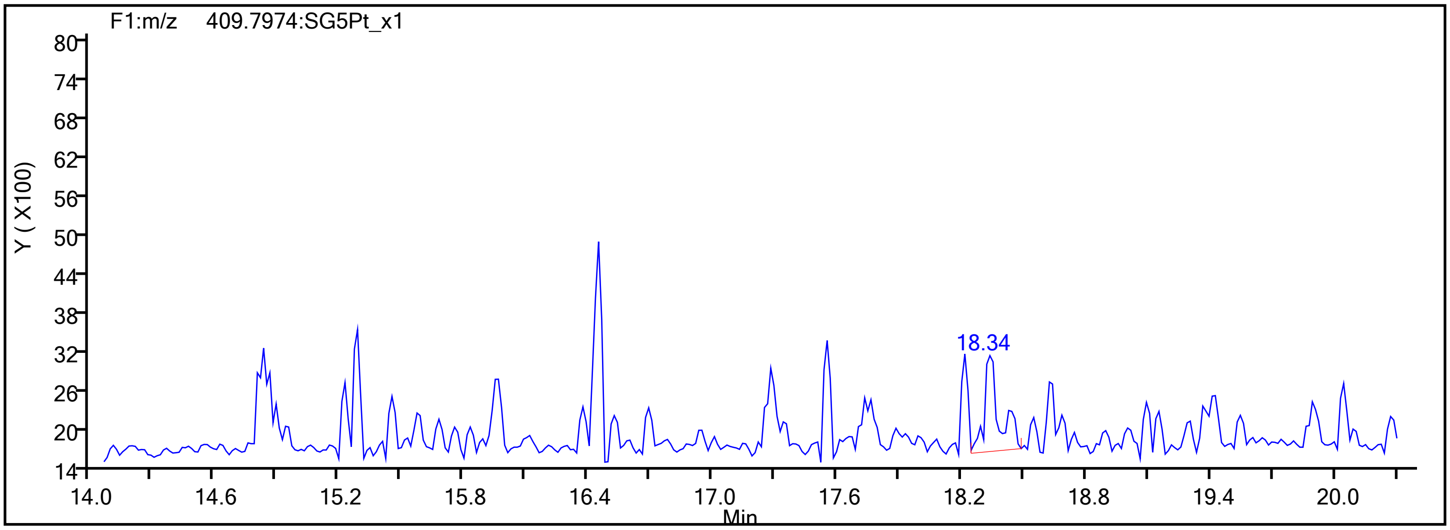

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Eurofins TestAmerica, Sacramento

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PeCDF

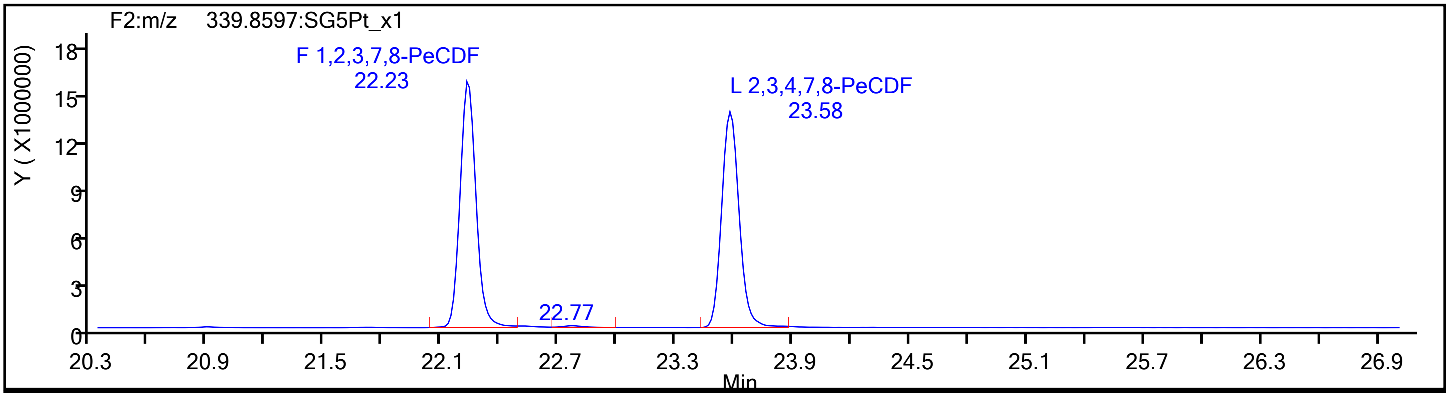

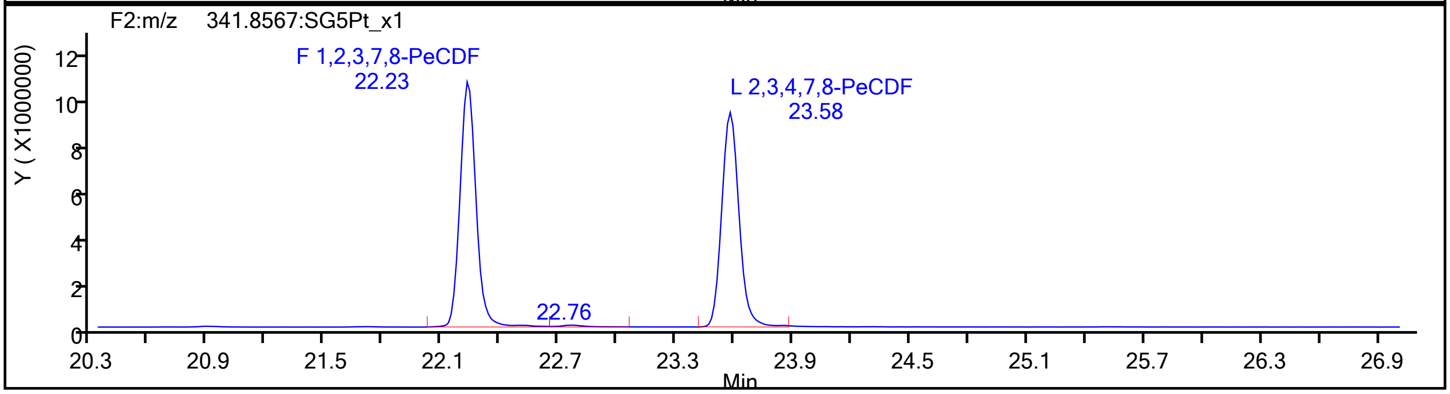

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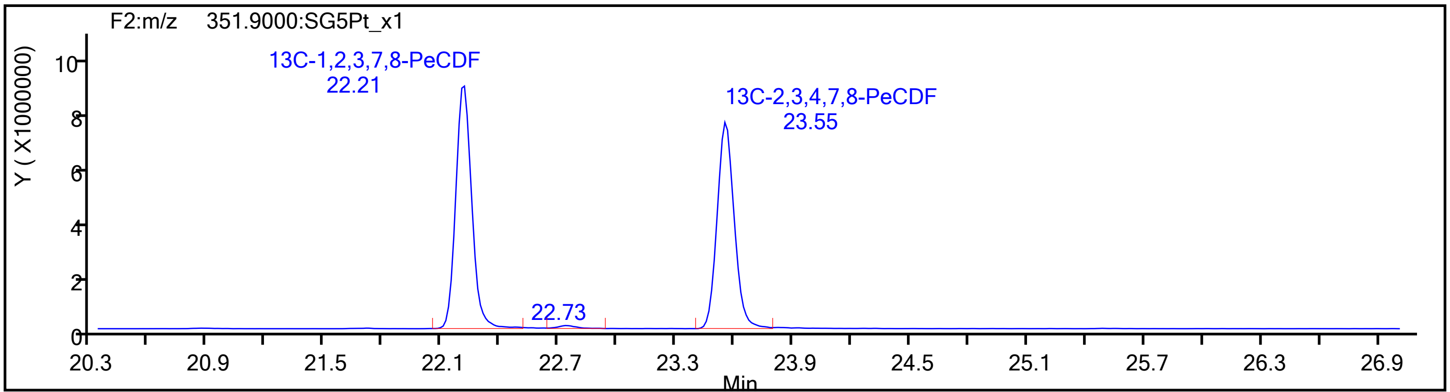

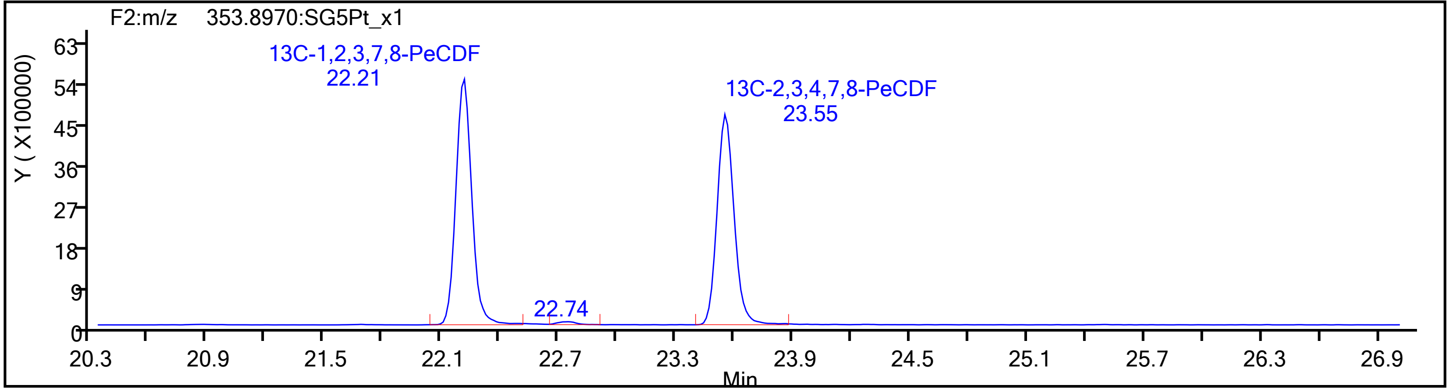

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Eurofins TestAmerica, Sacramento

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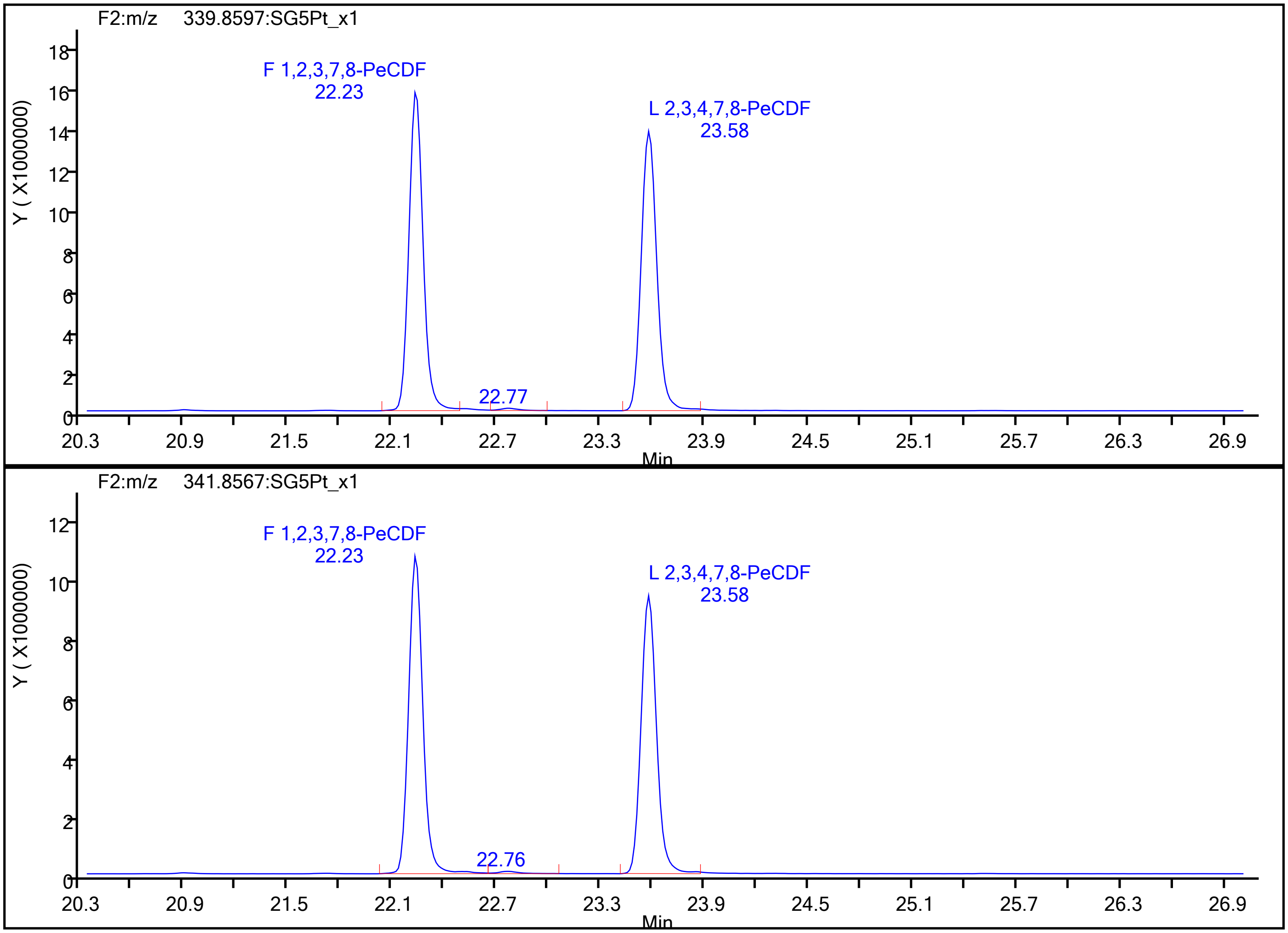

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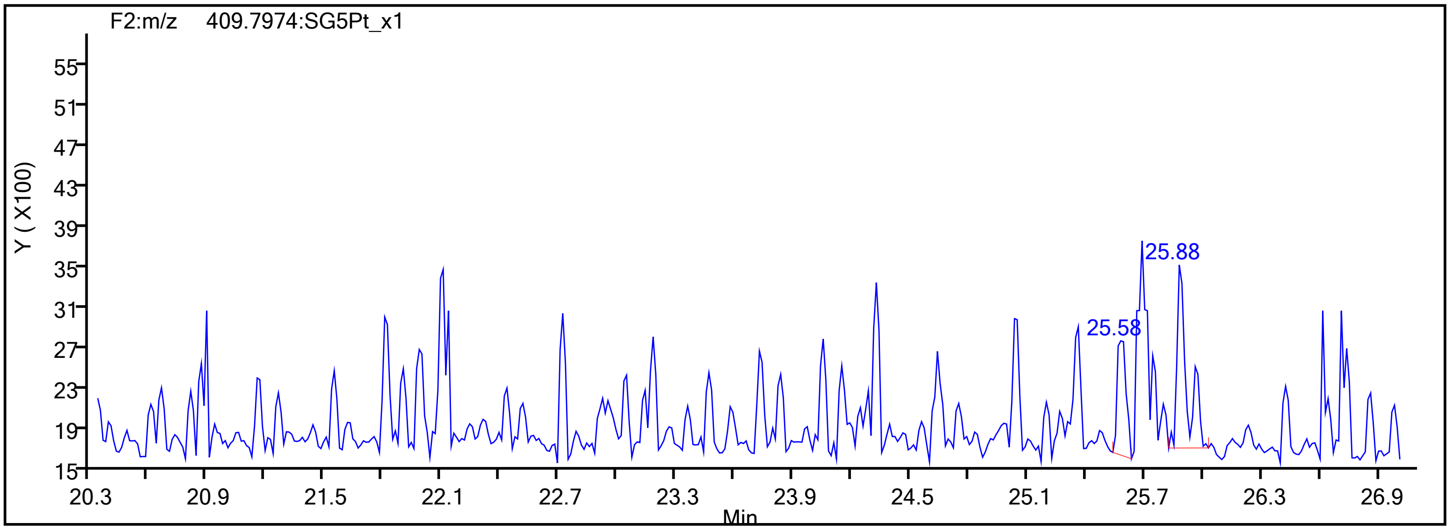

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Eurofins TestAmerica, Sacramento

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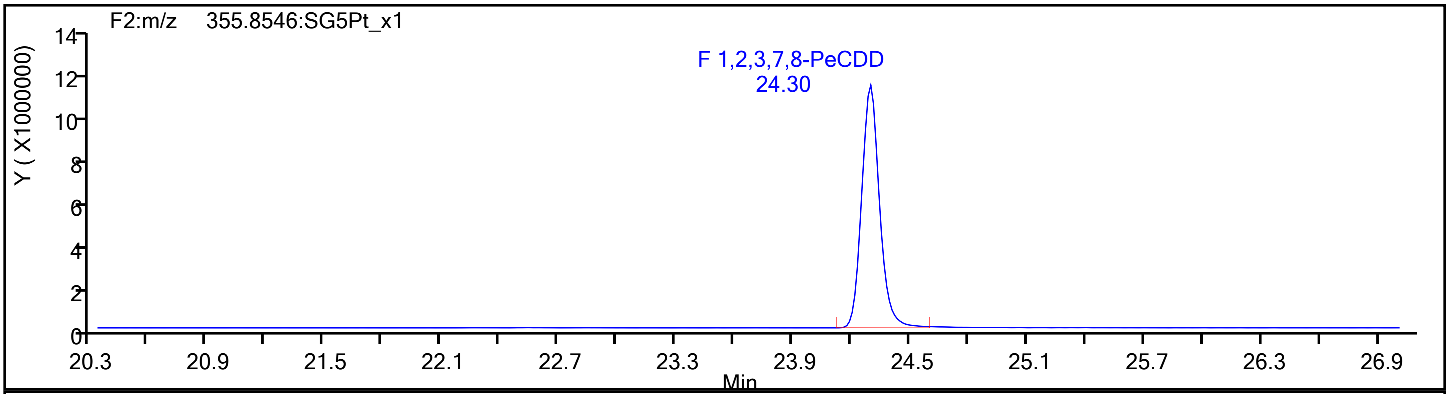

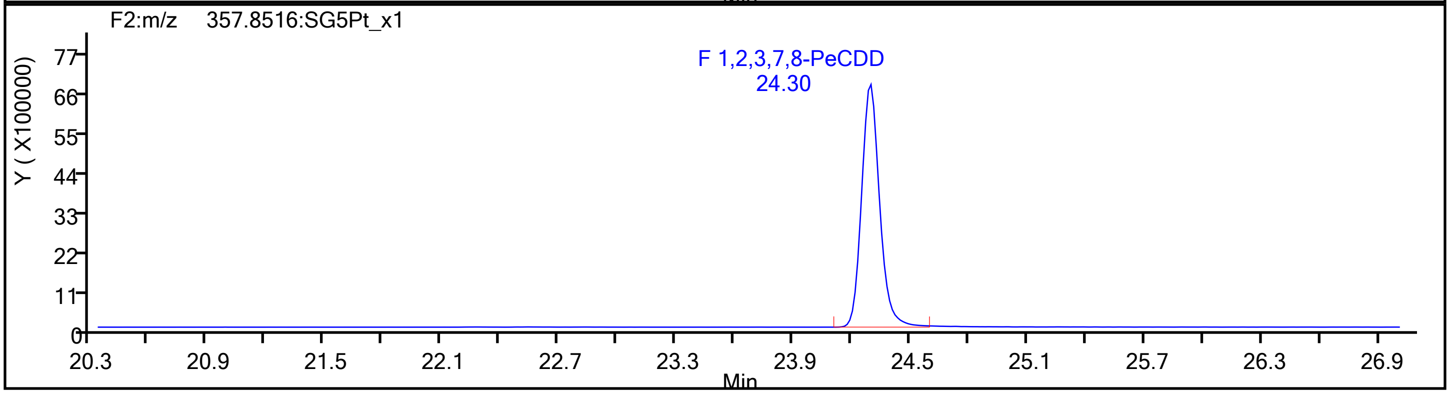

PeCDD Standards

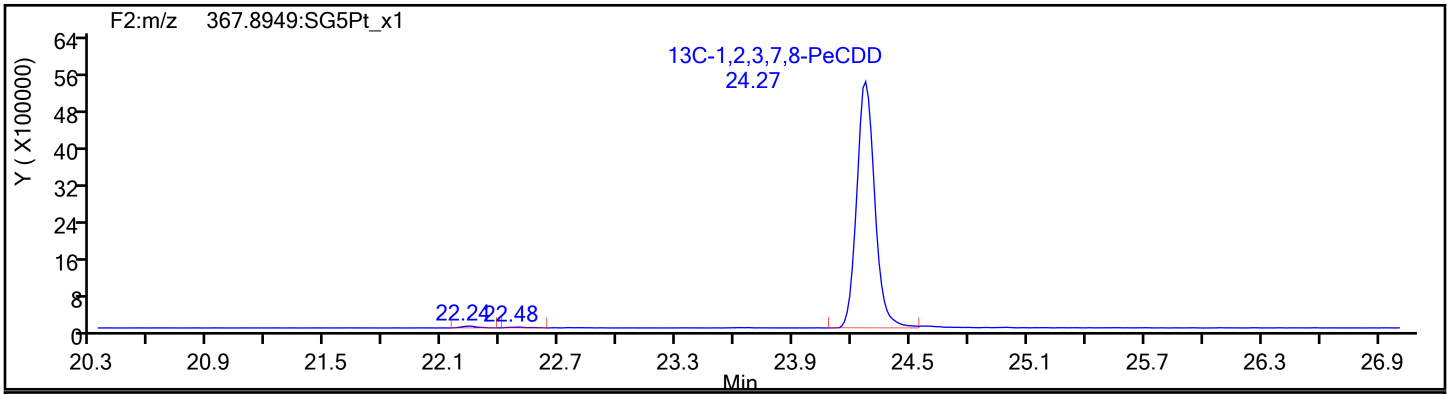

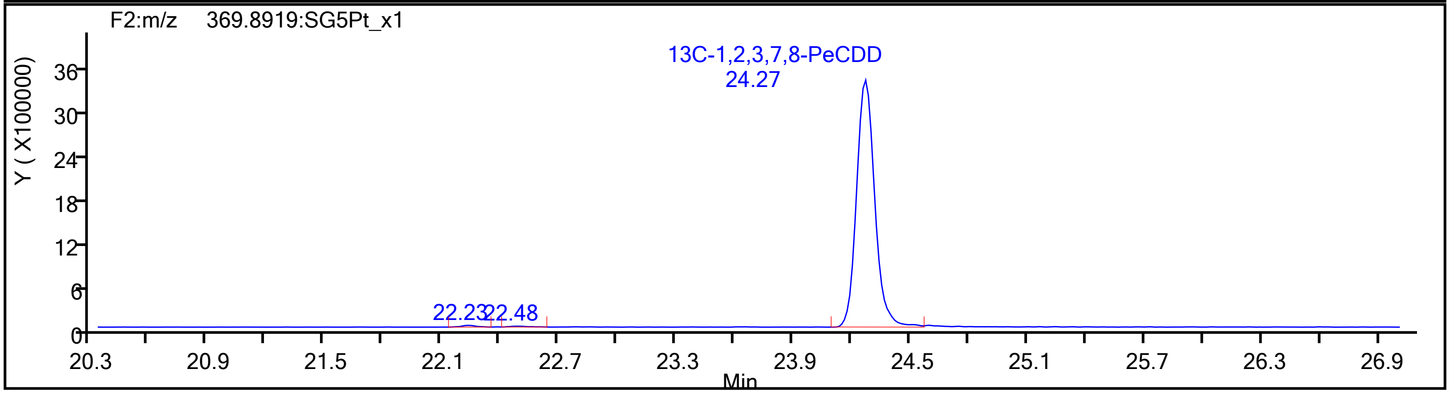

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: AJS

Method: Dioxin_10D5

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Client ID:

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Sample Line#: 6

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HxCDF

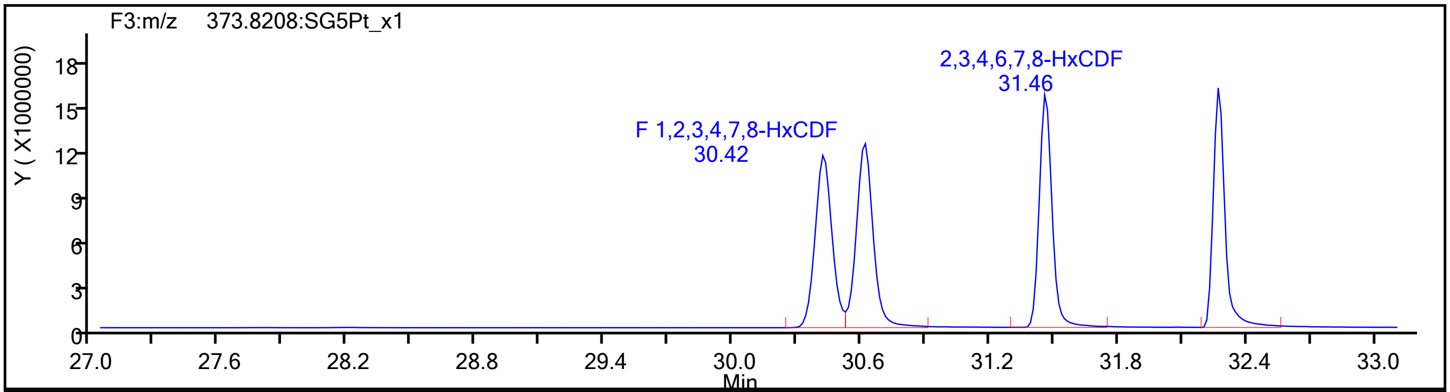

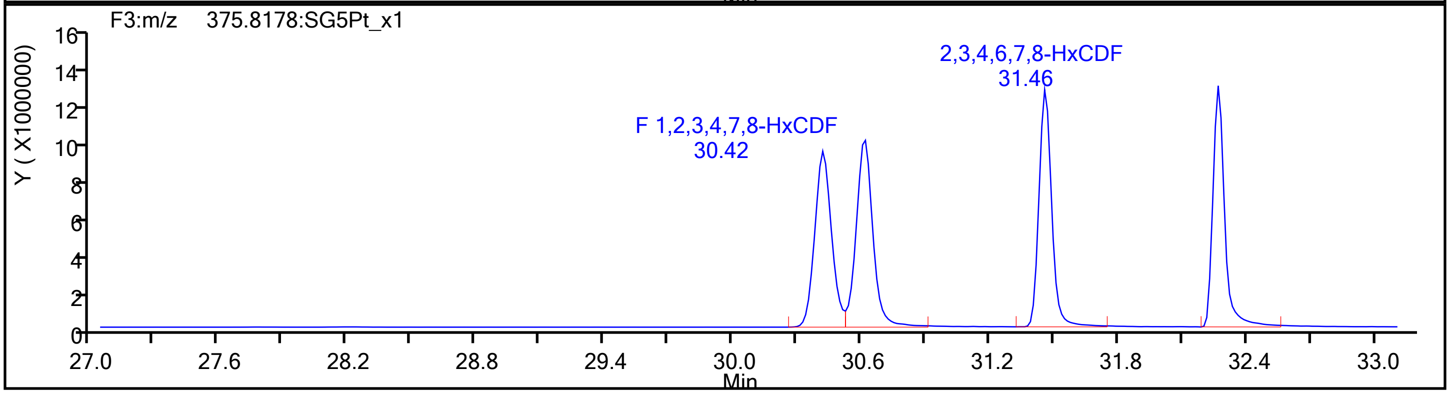

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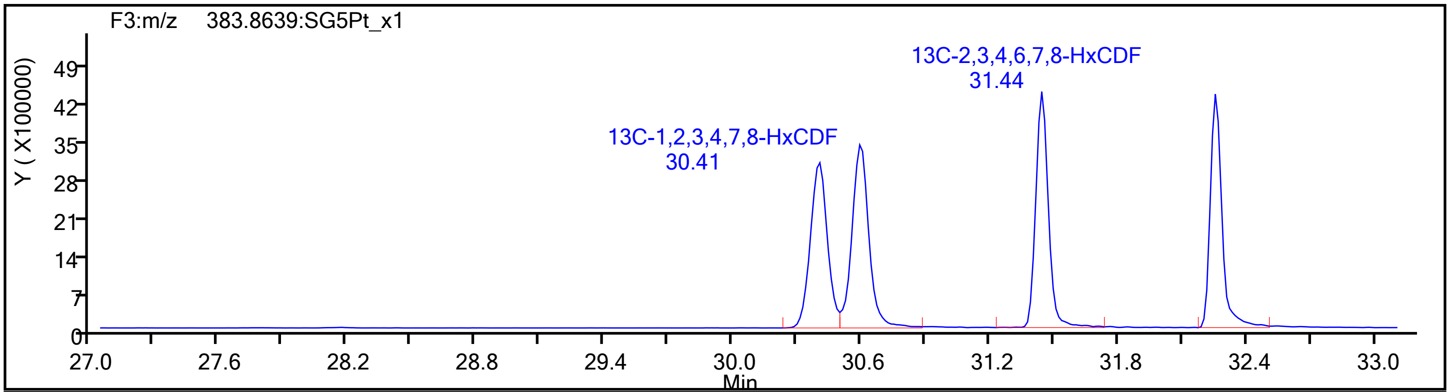

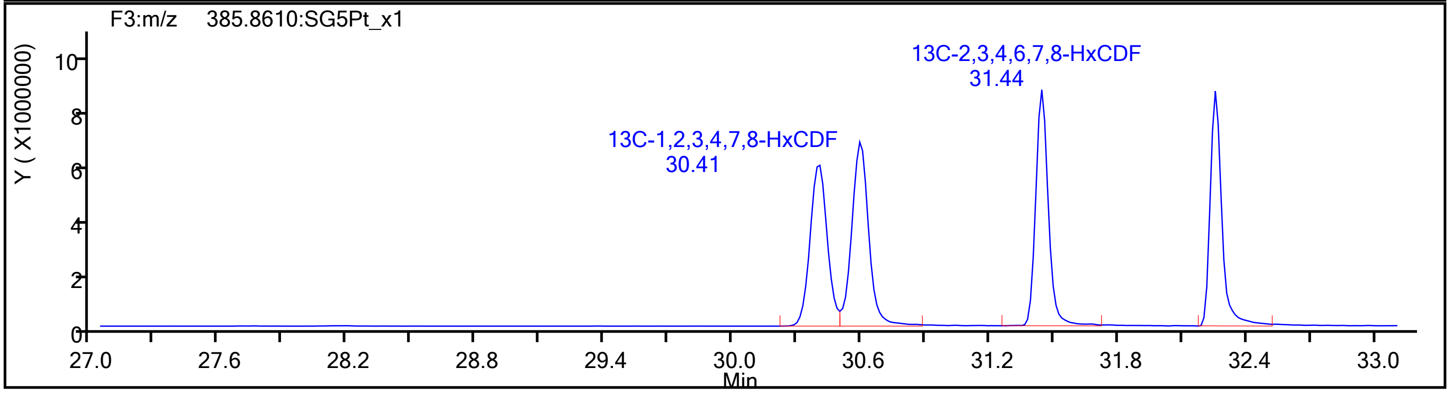

Eurofins TestAmerica, Sacramento

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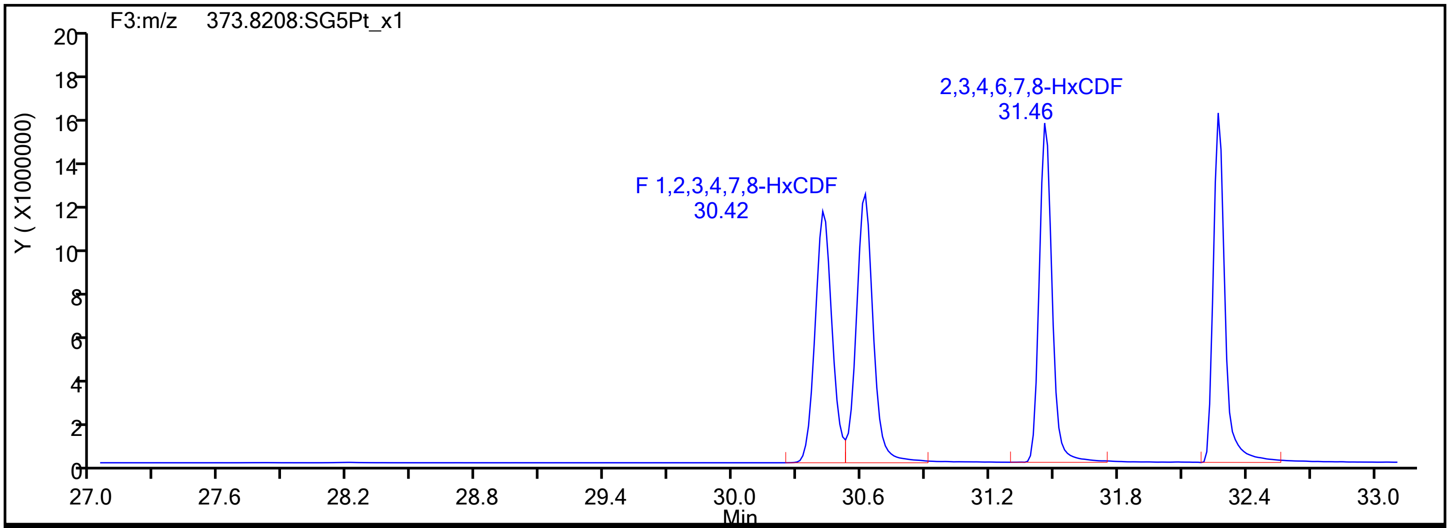

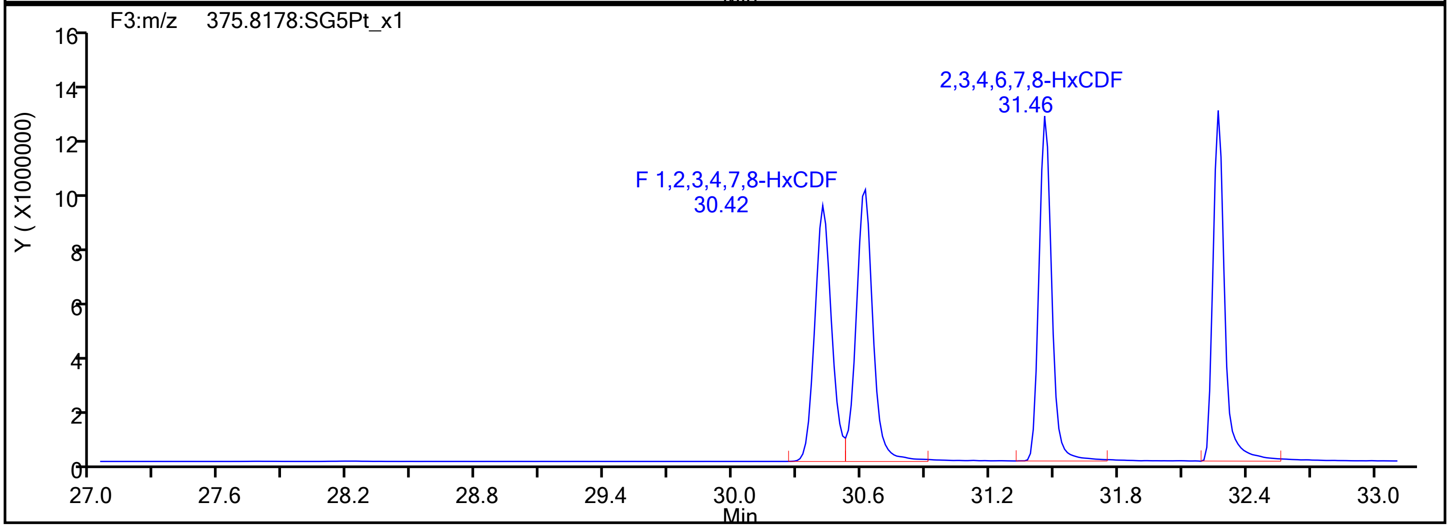

HxCDF Interference Mass

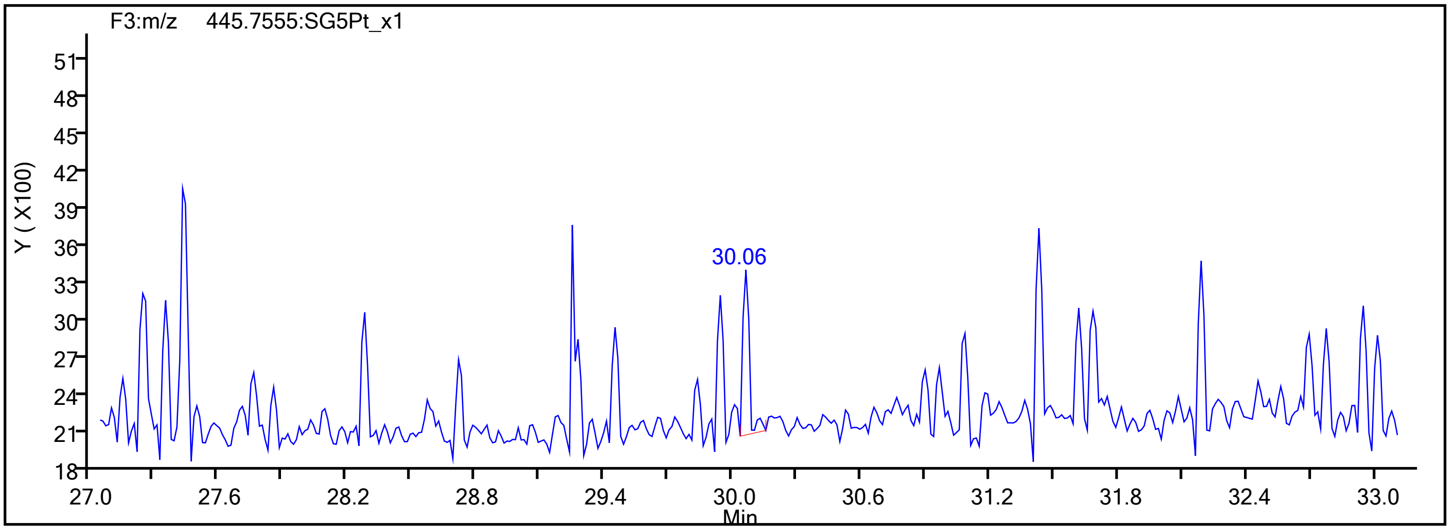

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Eurofins TestAmerica, Sacramento

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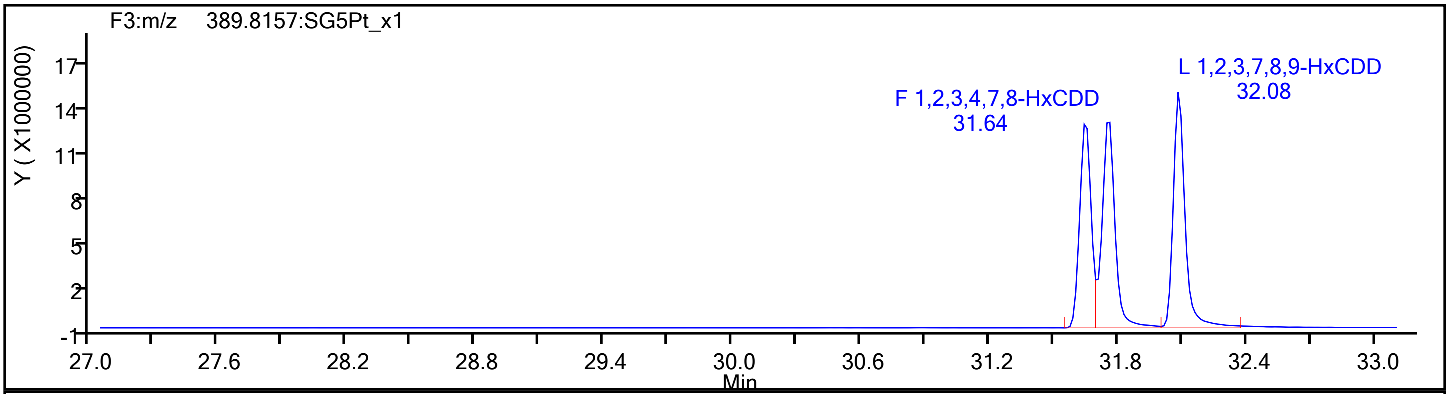

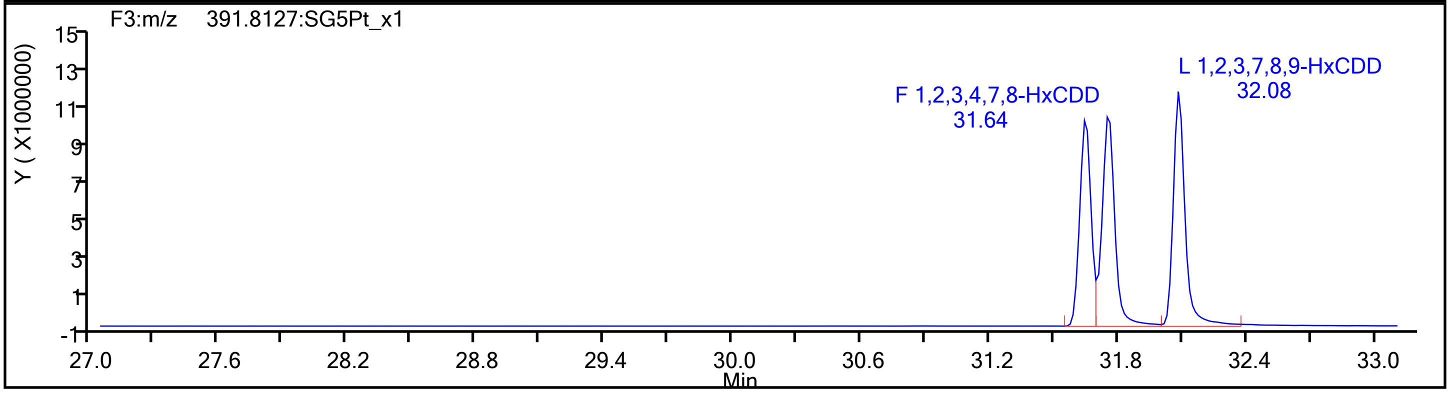

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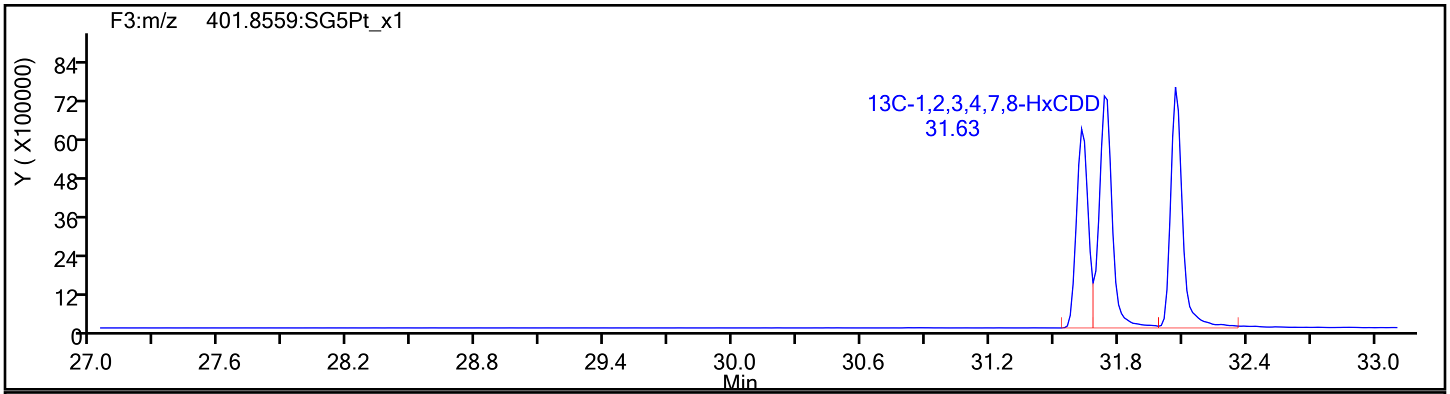

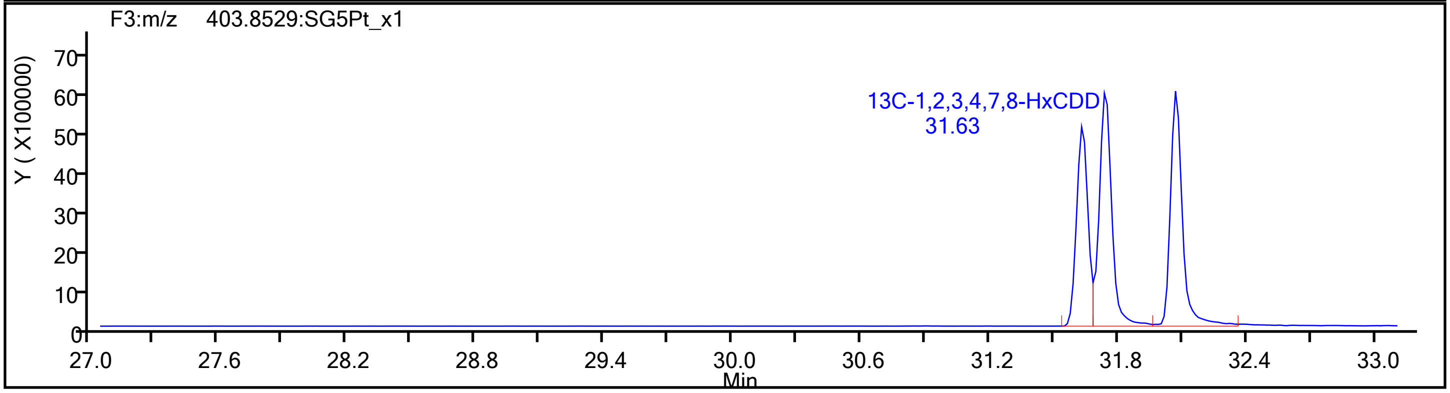

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Eurofins TestAmerica, Sacramento

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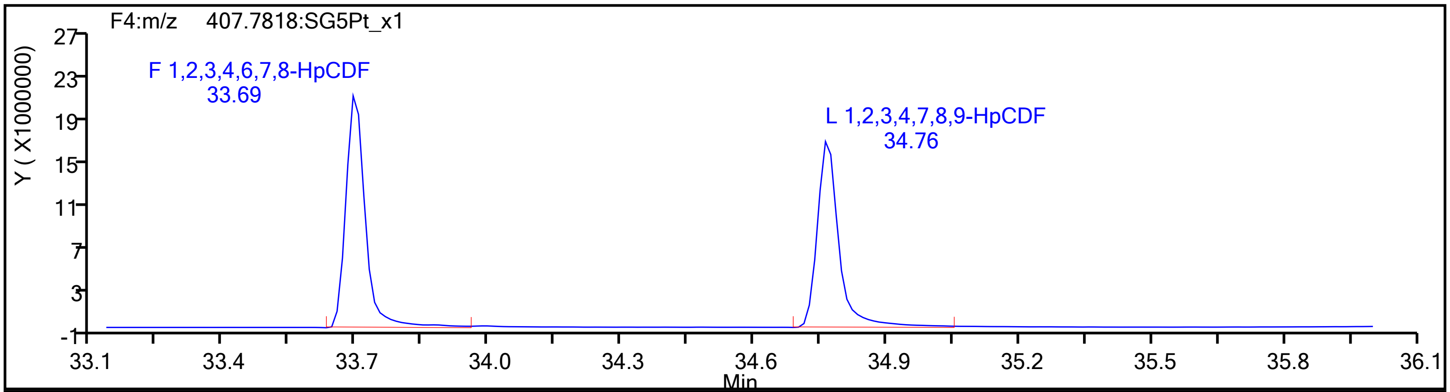

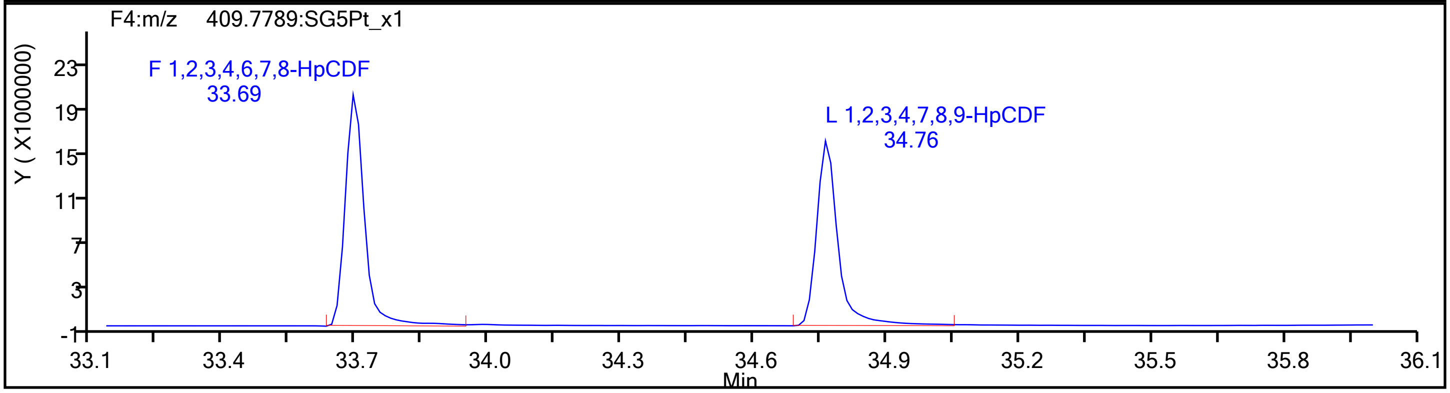

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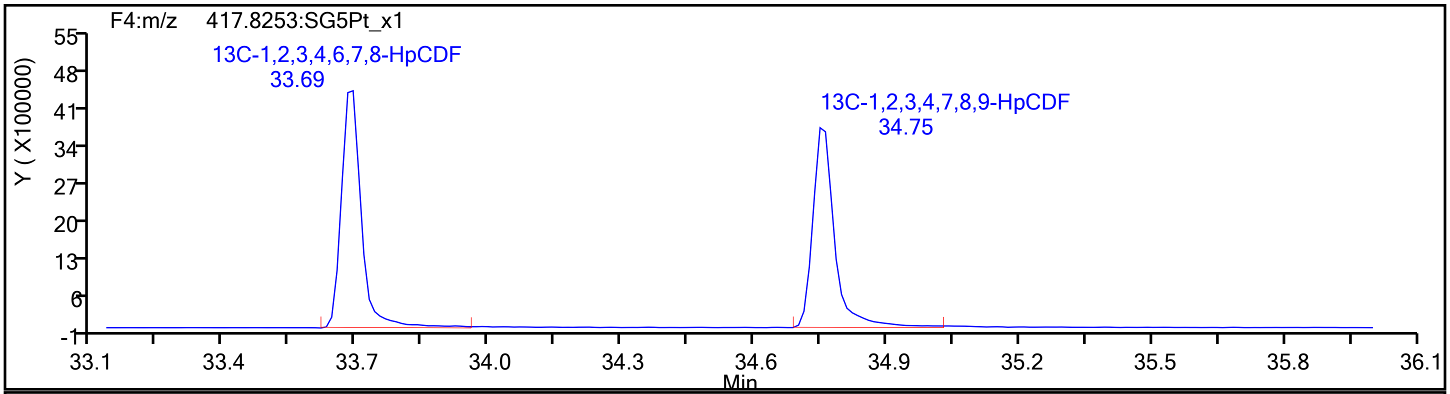

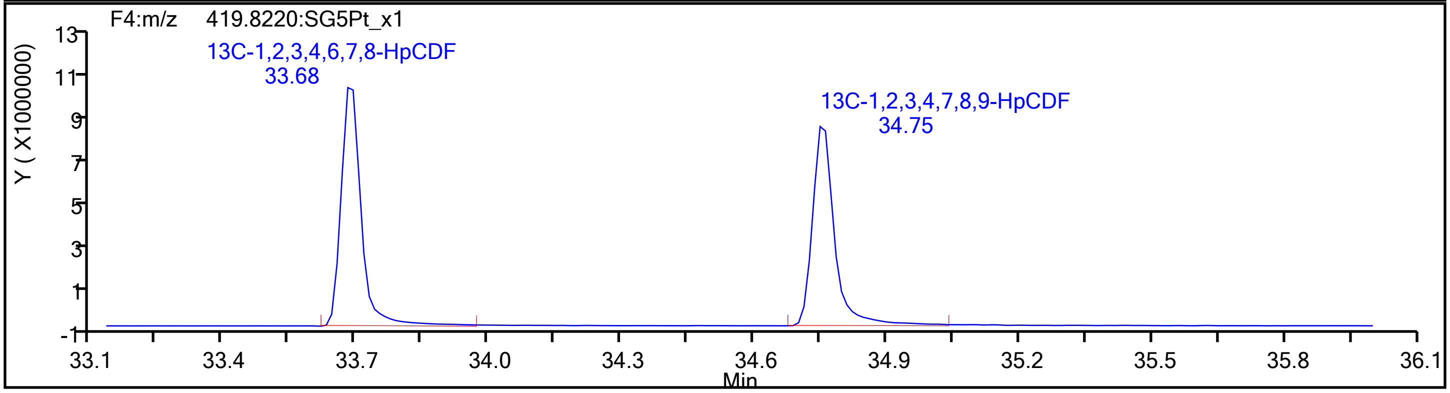

Eurofins TestAmerica, Sacramento

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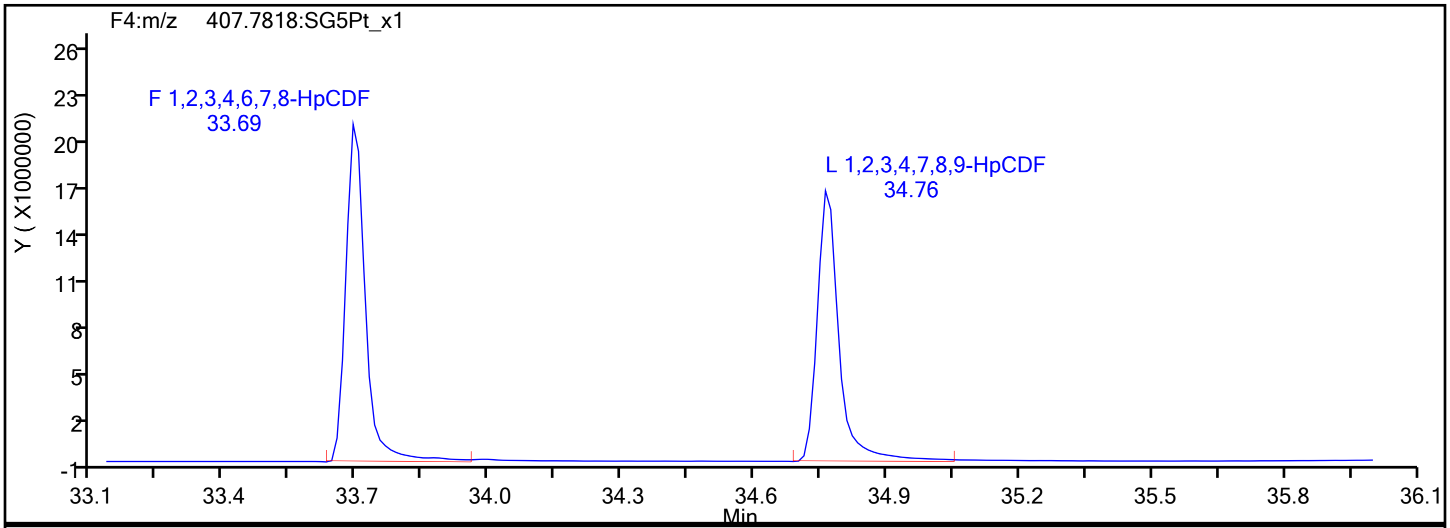

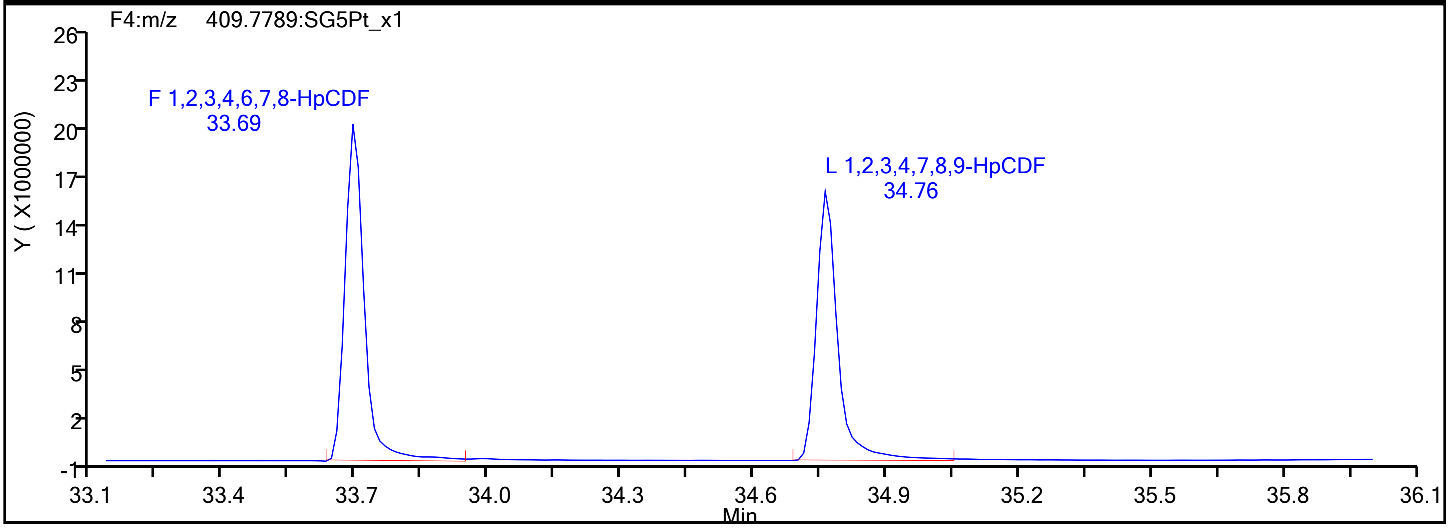

HpCDF Interference Mass

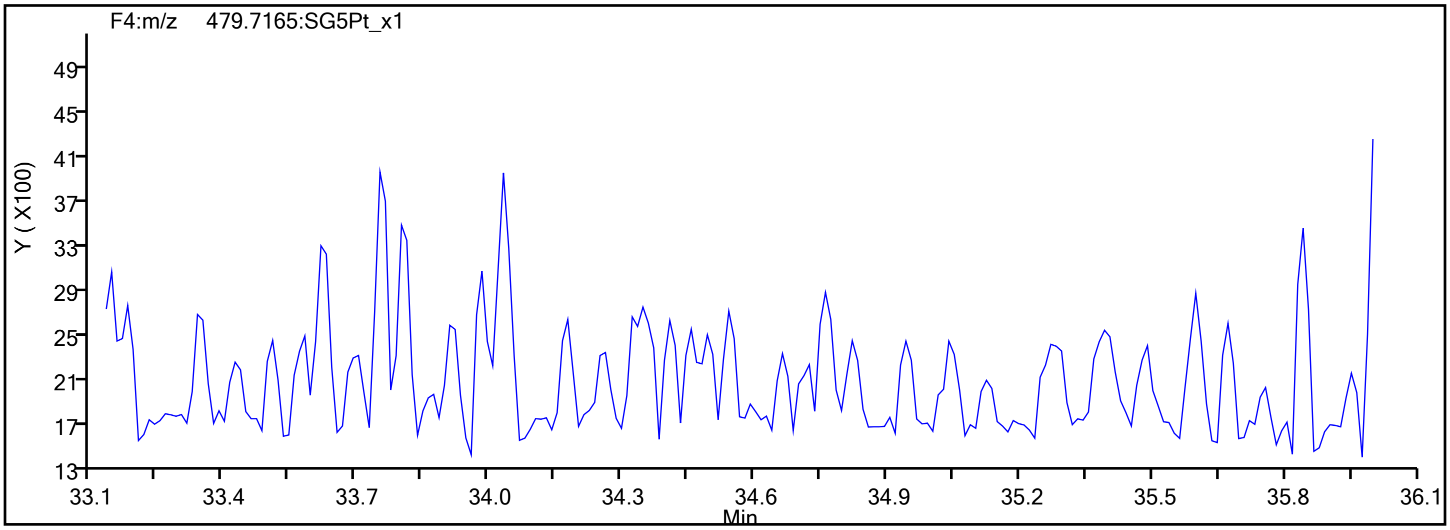

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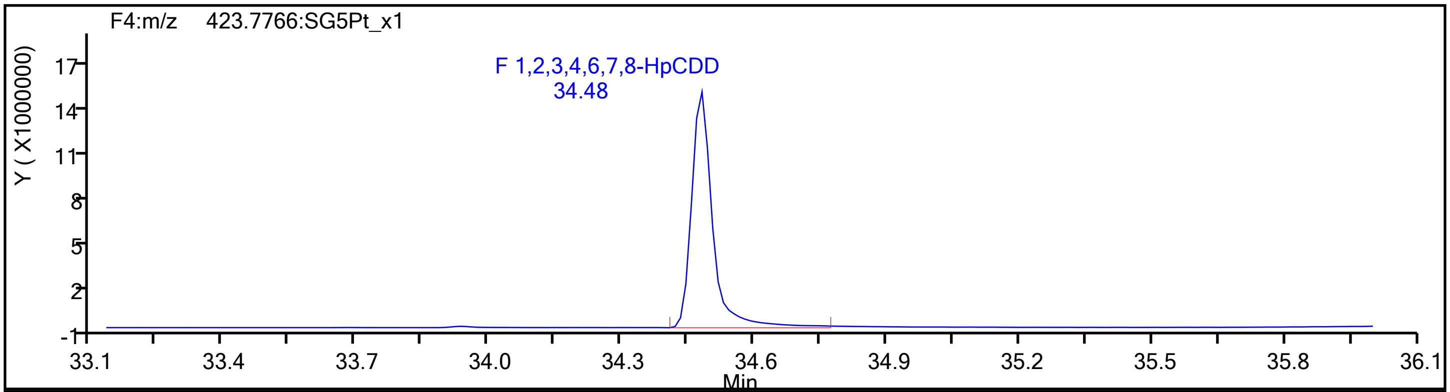

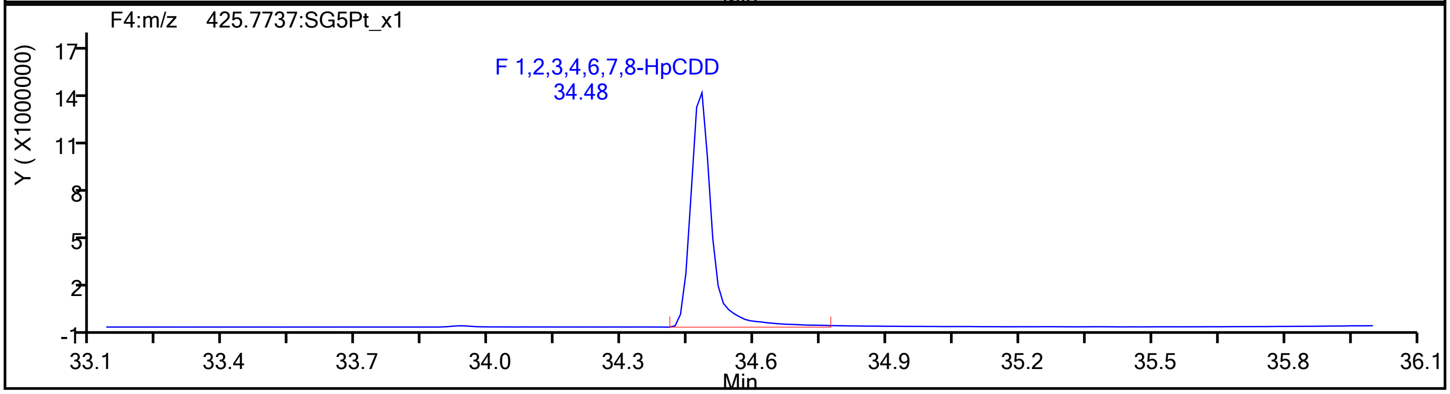

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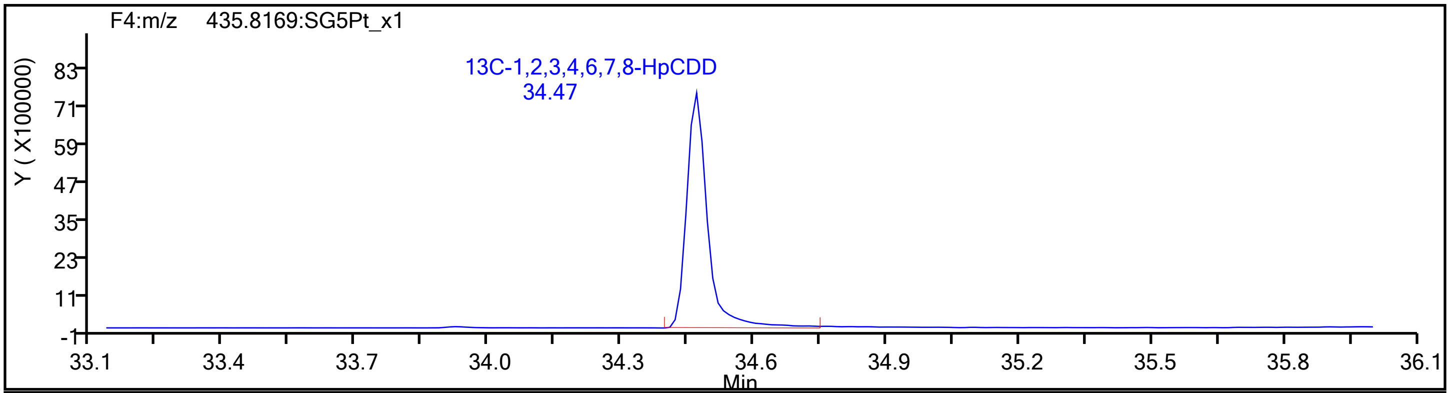

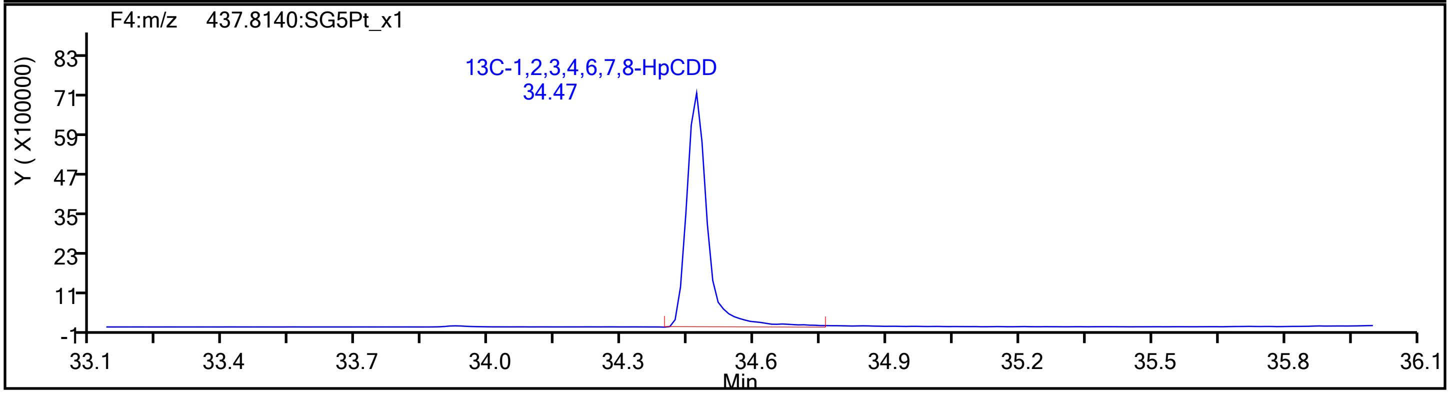

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Eurofins TestAmerica, Sacramento

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OCDF

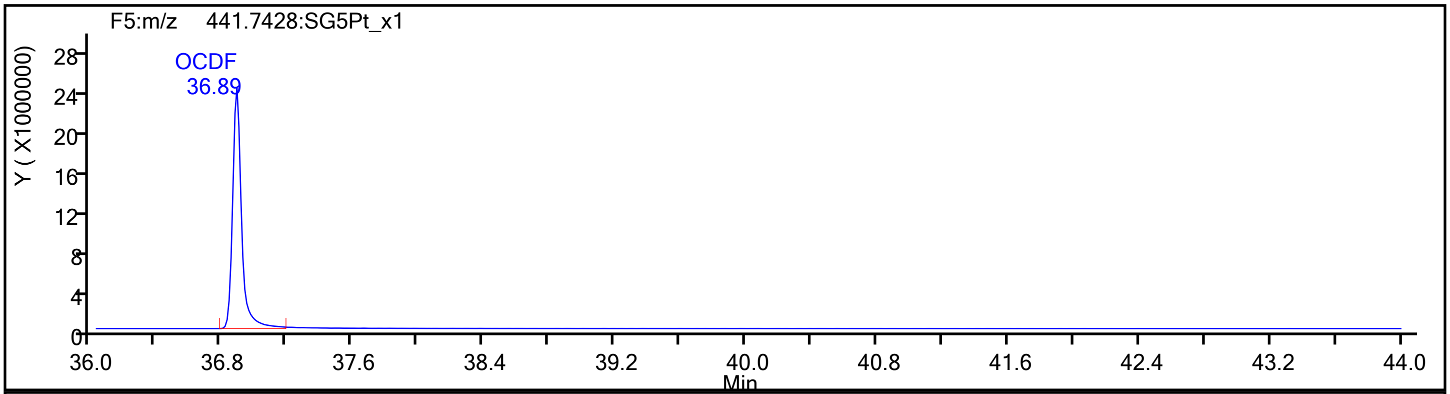

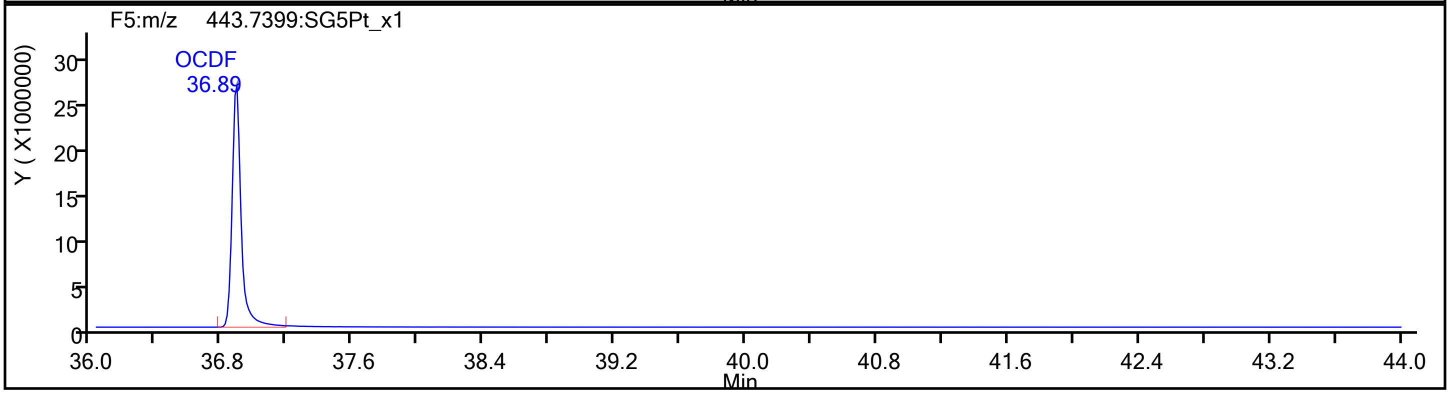

OCDF Standards

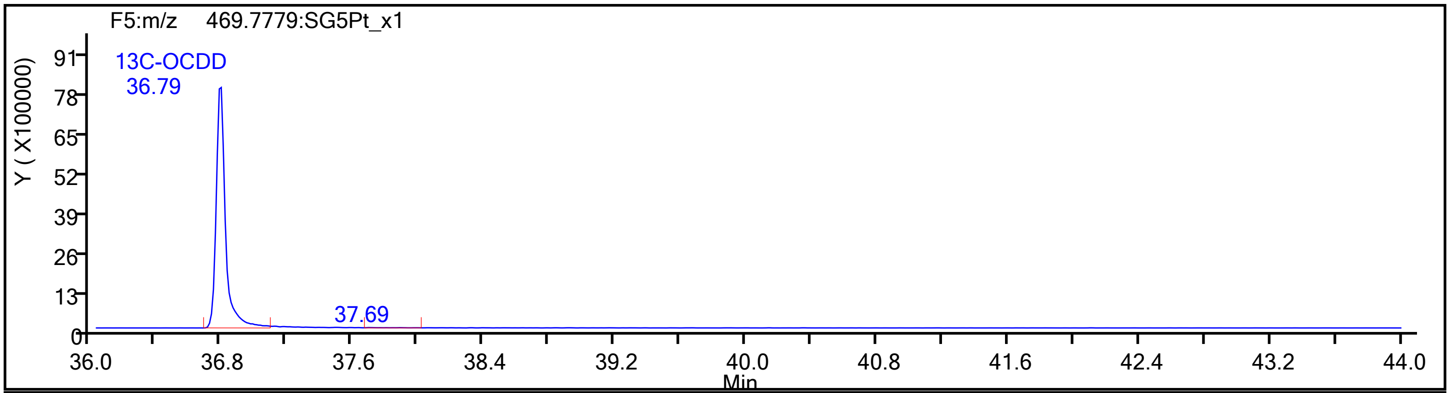

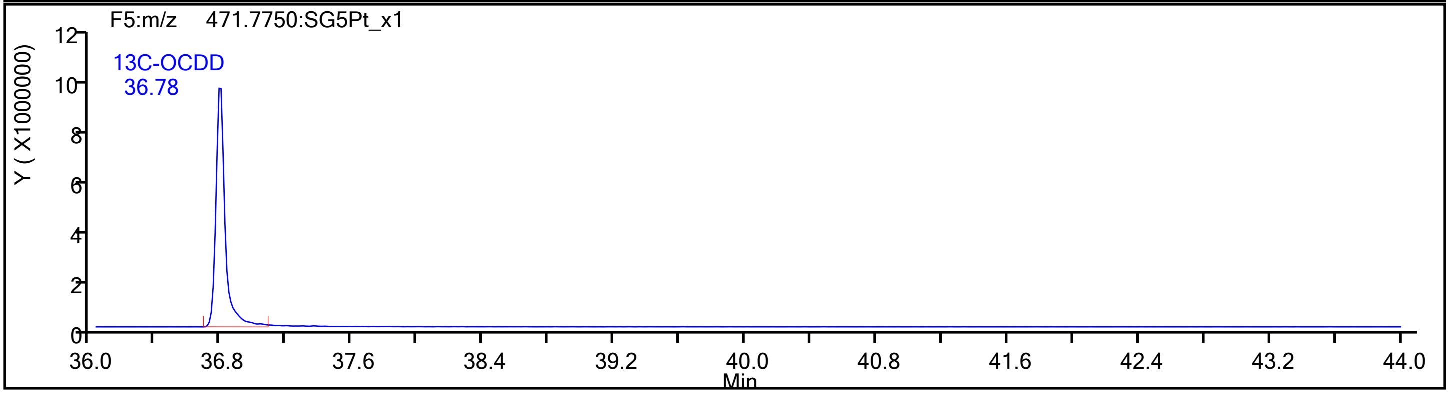

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Eurofins TestAmerica, Sacramento

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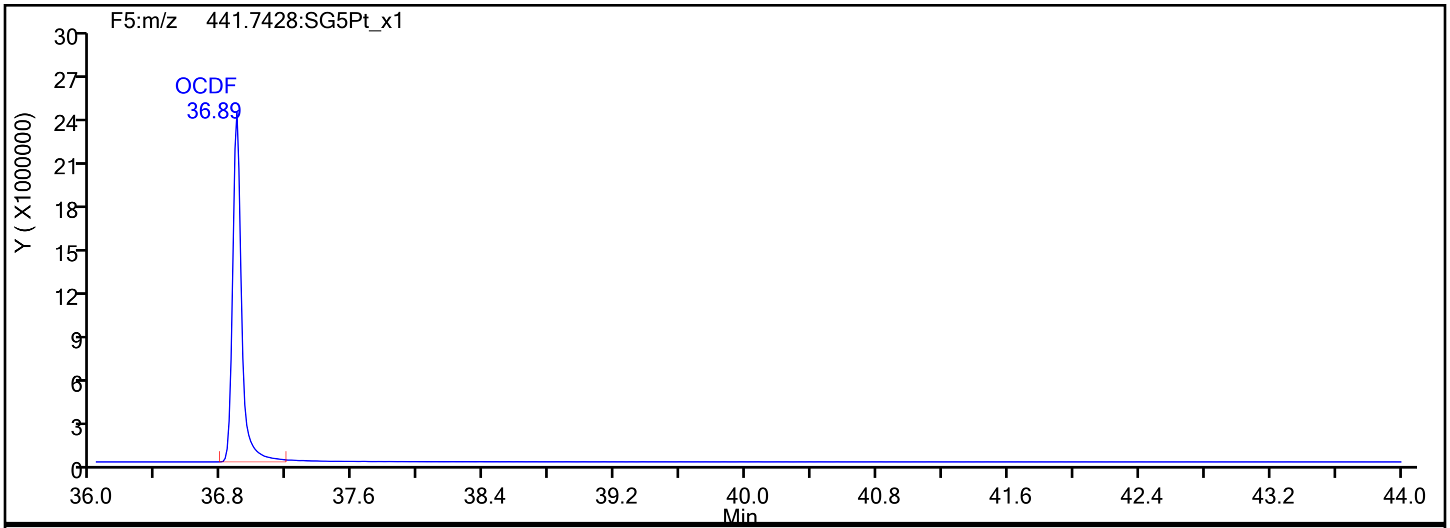

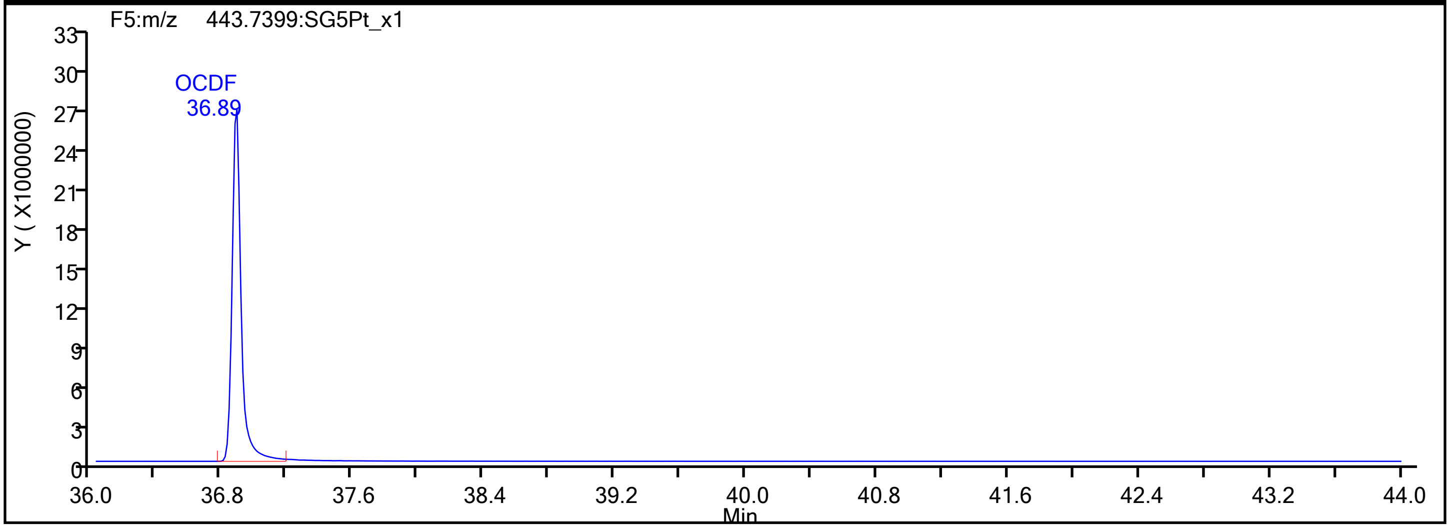

OCDF Interference Mass

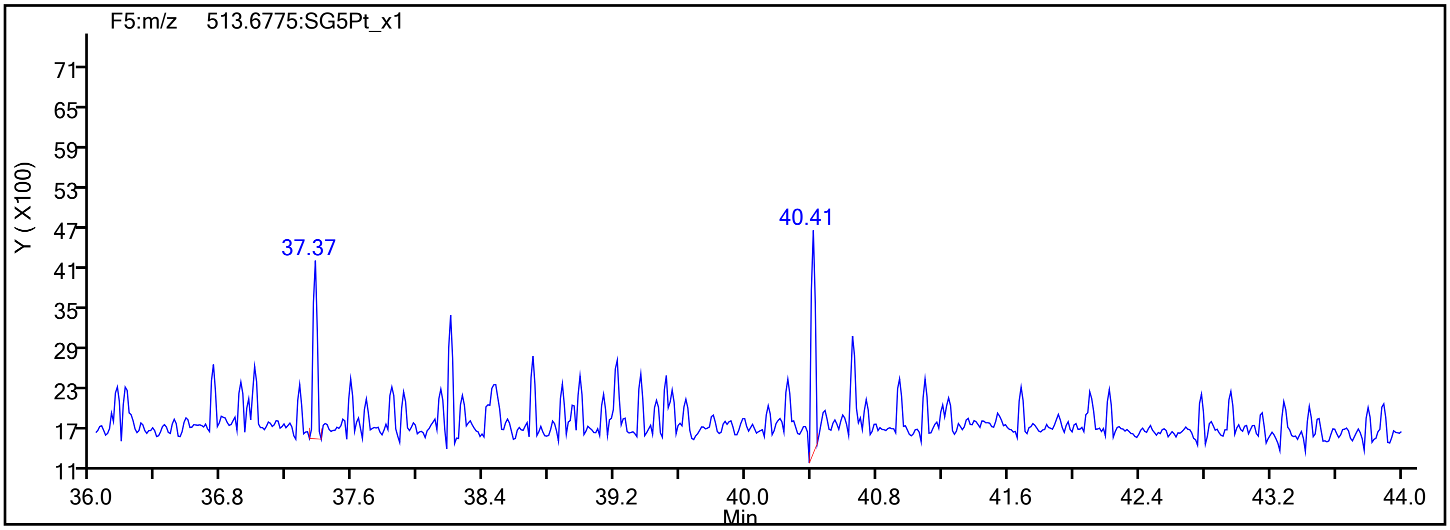

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Eurofins TestAmerica, Sacramento

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OCDD

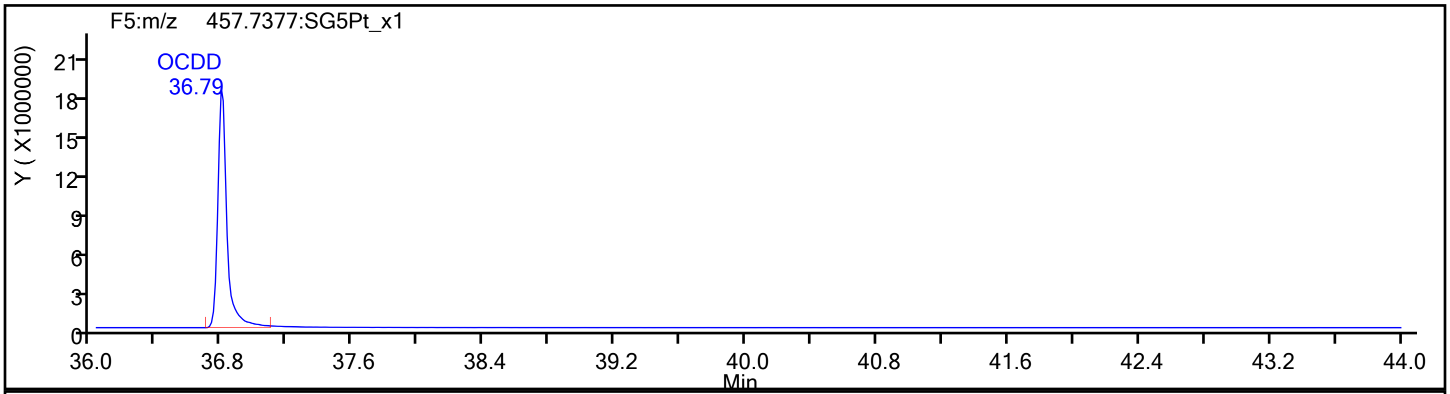

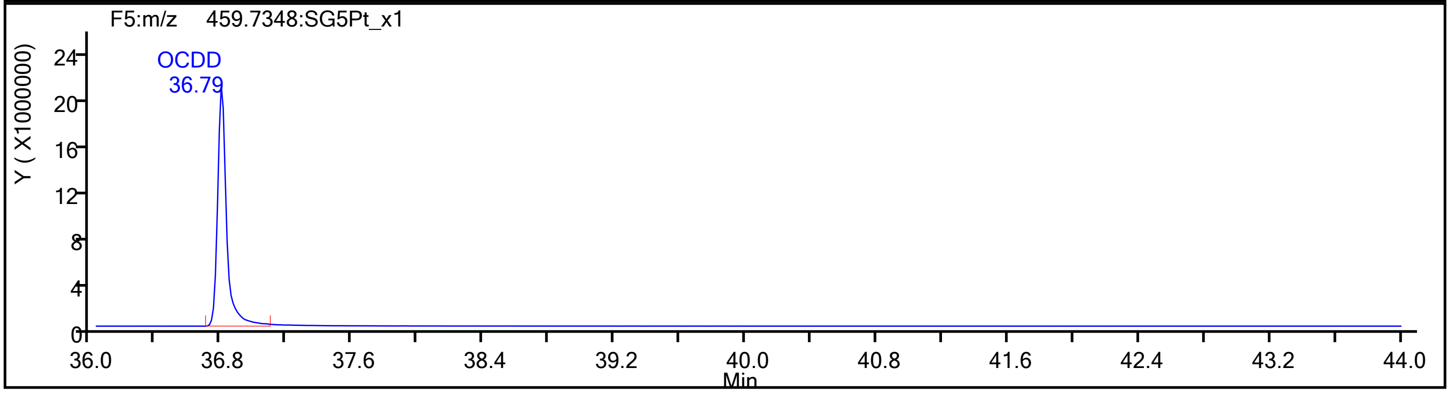

OCDD Standards

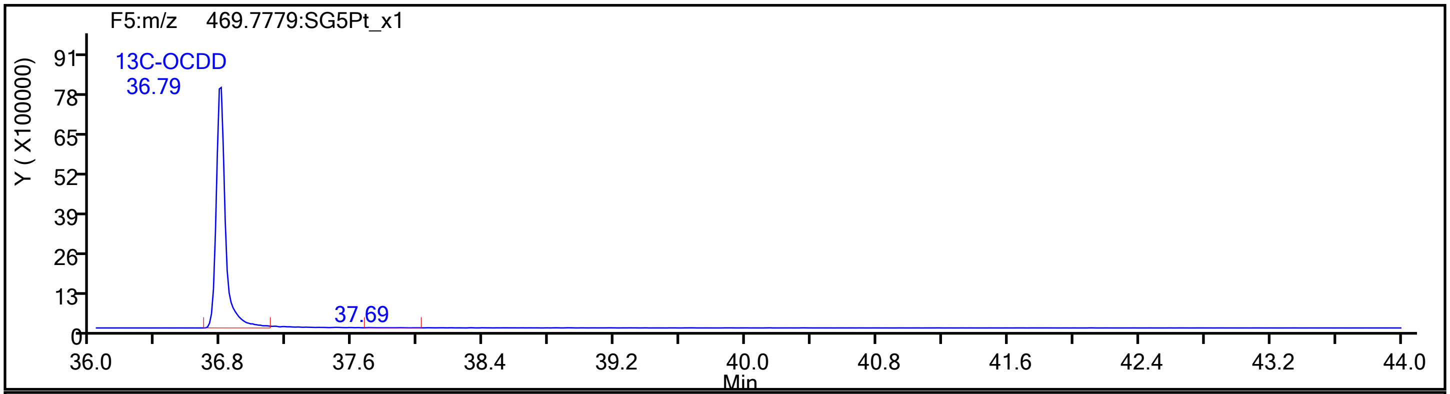

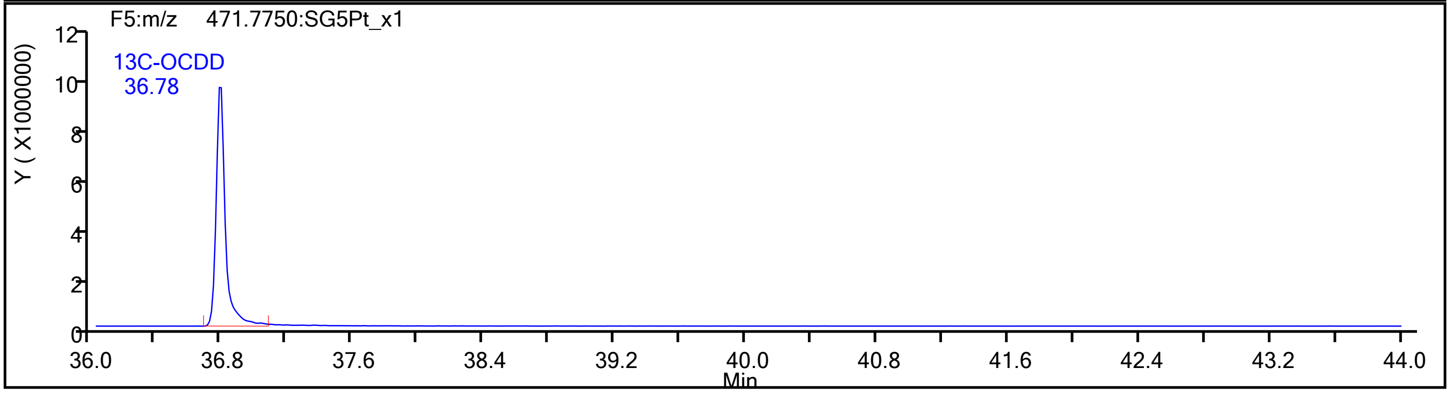

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Eurofins TestAmerica, Sacramento

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Column Type: DB-5
Column Dia: 0.32 mm

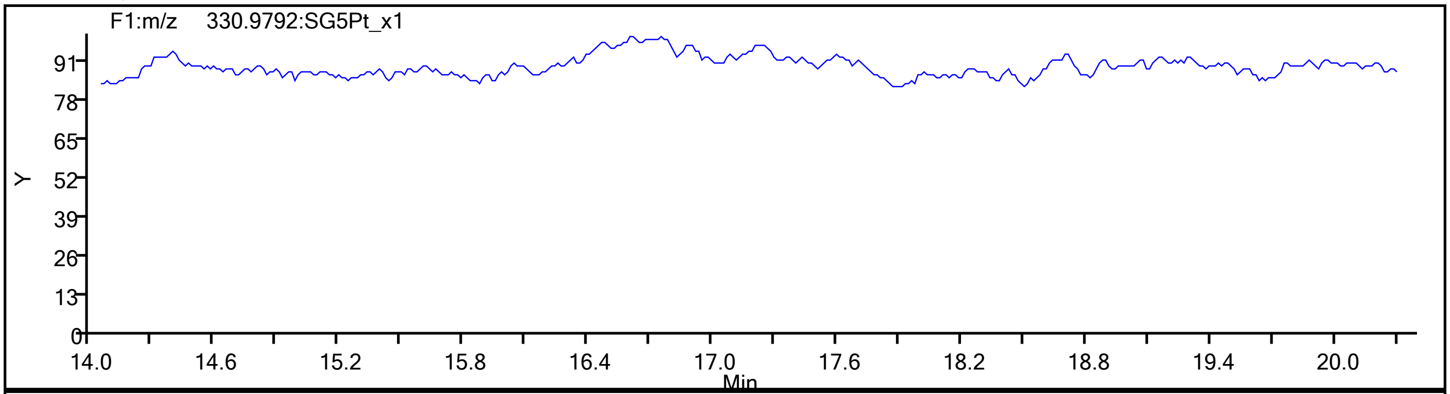

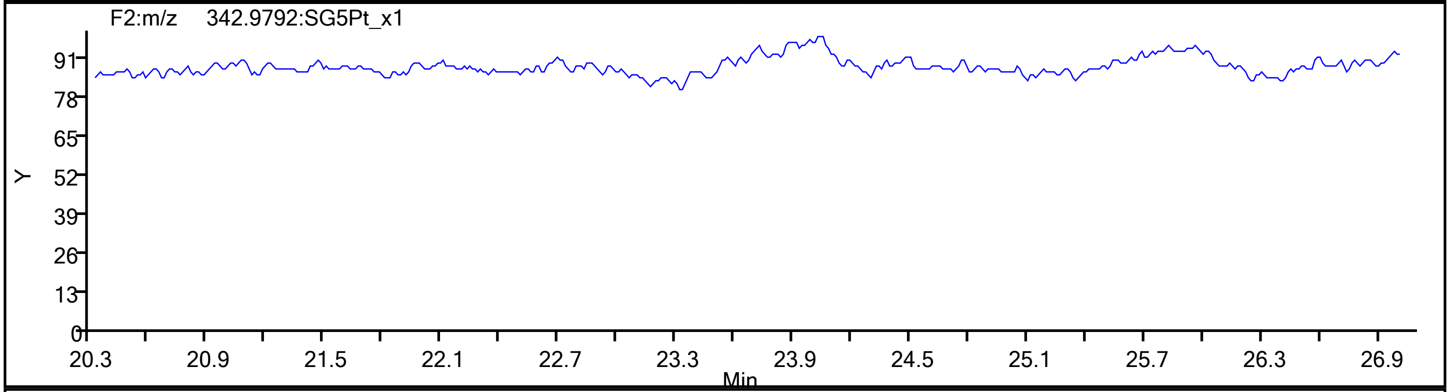

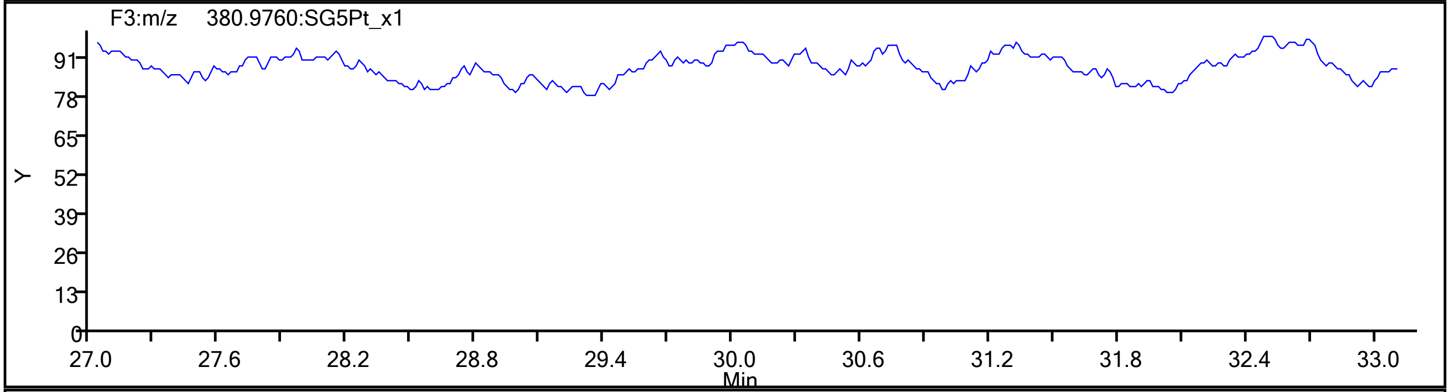

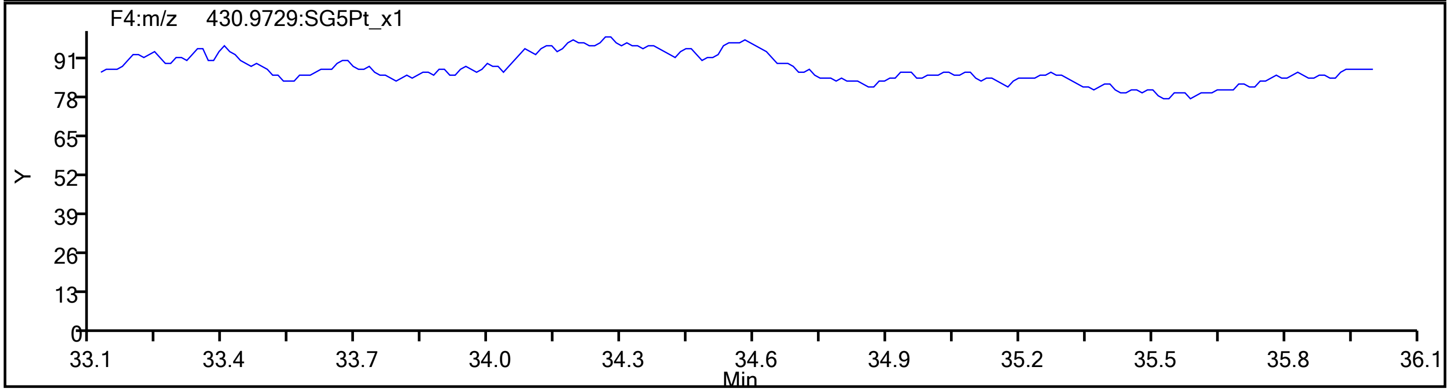

Report Date: 18-Sep-2020 10:36:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_6.d		
Injection Date:	17-Sep-2020 18:24:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

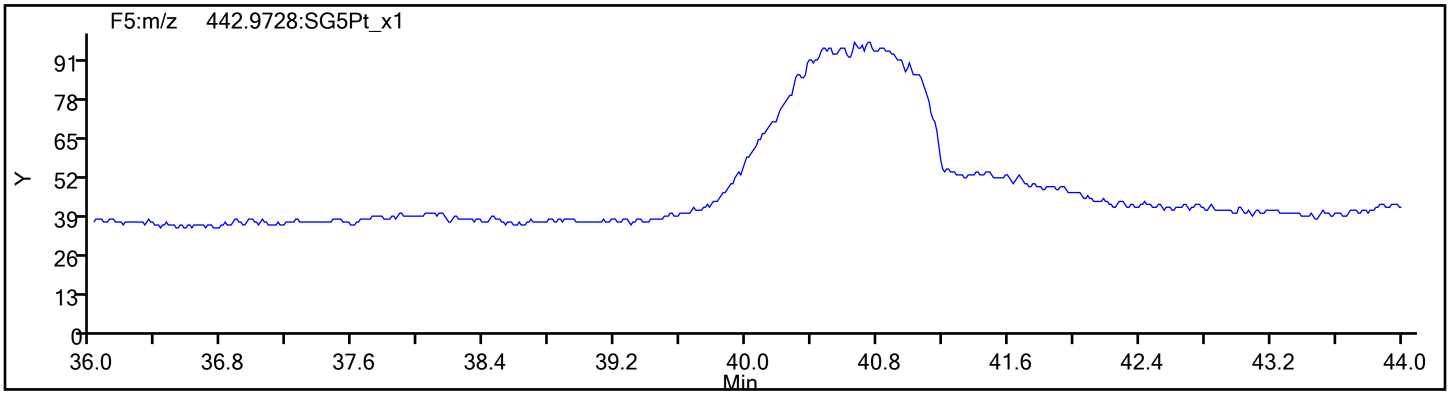

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 19:09:42 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720D CS-6 HRDXNL6_00027
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:12 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:18:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	82839664	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	112538942	0.77	1.3598	99.9	99.9	0.1328	0.1328	99.90	
2,3,7,8-TCDF	17.203	208980759	0.77	0.9077	204.6	204.6	0.2542	0.2542	102	
S Total TCDF					204.6	204.6	0.2542	0.2542		
D 13C-2,3,7,8-TCDD	17.899	90520287	0.78	1.0536	103.7	103.7	0.2060	0.2060	104	
2,3,7,8-TCDD	17.914	181906530	0.77	1.0061	199.7	199.7	0.1321	0.1321	99.86	
$ 37Cl4-2,3,7,8-TCDD	17.914	188393047		1.0488	216.8	216.8	0.2418	0.2418	108	
S Total TCDD					199.7	199.7	0.1321	0.1321		
D 13C-1,2,3,7,8-PeCDF	22.198	98967595	1.55	1.1306	105.7	105.7	0.1952	0.1952	106	
1,2,3,7,8-PeCDF	22.226	902066653	1.54	0.9147	996.4	996.4	2.315	2.315	99.64	
D 13C-2,3,4,7,8-PeCDF	23.535	93576375	1.56	1.0539	107.2	107.2	0.2094	0.2094	107	
2,3,4,7,8-PeCDF	23.562	881532861	1.55	0.9508	990.8	990.8	2.631	2.631	99.08	
S Total PeCDF					1987.2	1987.2	2.473	2.473		
D 13C-1,2,3,7,8-PeCDD	24.257	71300628	1.62	0.8084	106.5	106.5	0.1098	0.1098	106	
1,2,3,7,8-PeCDD	24.285	699080341	1.55	0.9955	984.9	984.9	0.8577	0.8577	98.49	
S Total PeCDD					984.9	984.9	0.8577	0.8577		
D 13C-1,2,3,4,7,8-HxCDF	30.393	63870758	0.50	0.9225	101.1	101.1	0.4103	0.4103	101	
1,2,3,4,7,8-HxCDF	30.419	708040990	1.23	1.1090	999.6	999.6	5.172	5.172	99.96	
D 13C-1,2,3,6,7,8-HxCDF	30.592	71480069	0.50	1.0336	101.0	101.0	0.3662	0.3662	101	
1,2,3,6,7,8-HxCDF	30.606	756804000	1.23	1.0721	987.5	987.5	4.711	4.711	98.75	
D 13C-2,3,4,6,7,8-HxCDF	31.444	67749621	0.51	0.9773	101.2	101.2	0.3873	0.3873	101	
2,3,4,6,7,8-HxCDF	31.458	728098205	1.23	1.0838	991.6	991.6	3.753	3.753	99.16	
D 13C-1,2,3,7,8,9-HxCDF	32.256	64454067	0.51	0.9153	102.8	102.8	0.4135	0.4135	103	
1,2,3,7,8,9-HxCDF	32.270	691727822	1.24	1.0931	981.8	981.8	3.441	3.441	98.18	
S Total HxCDF					3960.6	3960.6	4.269	4.269		
* 13C-1,2,3,7,8,9-HxCDD	32.070	68477434	1.23	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	57179178	1.26	0.7977	104.7	104.7	0.2996	0.2996	105	
1,2,3,4,7,8-HxCDD	31.644	559642002	1.23	1.0014	977.3	977.3	2.479	2.479	97.73	
D 13C-1,2,3,6,7,8-HxCDD	31.737	68606469	1.24	1.0010	100.1	100.1	0.2387	0.2387	100	

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.750	615512540	1.24	0.8902	1007.9	1007.9	2.381	2.381	101	
1,2,3,7,8,9-HxCDD	32.083	650702045	1.24	1.0579	978.0	978.0	2.162	2.162	97.80	
S Total HxCDD					2963.2	2963.2	2.341	2.341		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	59864107	0.43	0.8506	102.8	102.8	1.056	1.056	103	
1,2,3,4,6,7,8-HpCDF	33.691	794756968	1.03	1.3603	975.9	975.9	9.265	9.265	97.59	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	54480485	0.44	0.7618	104.4	104.4	1.179	1.179	104	
1,2,3,4,7,8,9-HpCDF	34.761	704300587	1.03	1.3207	978.9	978.9	11.8	11.8	97.89	
S Total HpCDF					1954.8	1954.8	10.5	10.5		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	62747060	1.05	0.8873	103.3	103.3	0.6046	0.6046	103	
1,2,3,4,6,7,8-HpCDD	34.469	624600336	1.04	0.9988	996.7	996.7	3.834	3.834	99.67	
S Total HpCDD					996.7	996.7	3.834	3.834		
D 13C-OCDD	36.779	93549216	0.91	0.6287	217.3	217.3	0.2539	0.2539	109	
OCDF	36.887	1328467600	0.91	1.4136	2009.2	2009.2	1.470	1.470	100	
OCDD	36.791	1025752146	0.90	1.1290	1942.5	1942.5	2.538	2.538	97.12	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Sep-2020 19:09:42 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 091720D CS-6 HRDXNL6_00027
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:36:12 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:18:30

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.711	-1		36265705	8998511	8935	22337	1007		
333.9339	17.702	17.711	-1		46573959	11572929	8924	22310	1297	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.971	48777539	12497008	7712	19280	1620		
317.9389	17.188	17.203	-1	0.971	63761403	16180769	7143	17857	2265	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.218	-1	1.001	90736146	23113639	9914	24785	2331		
305.8987	17.203	17.218	-1	1.001	118244613	30212266	16560	41400	1824	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	39757194	9381443	8935	22337	1050		
333.9339	17.899	17.905	0	1.011	50763093	11985425	8924	22310	1343	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.914	17.920	0	1.001	79337957	19089008	5189	12972	3679		
321.8936	17.914	17.920	0	1.001	102568573	24753380	6170	15425	4012	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	188393047	45007588	20867	52167	2157		
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.204	0	1.254	60181059	10820105	10516	26290	1029		
353.8970	22.198	22.204	0	1.254	38786536	7030773	7646	19115	920	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.226	22.220	0	1.001	547147193	96829975	91320	228300	1060		
341.8567	22.212	22.220	0	1.001	354919460	62761523	59870	149675	1048	1.54(1.32-1.78)	

Report Date: 18-Sep-2020 10:36:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.540	0	1.329	57068694	9204299	10516	26290	875		
353.8970	23.535	23.540	0	1.329	36507681	5907507	7646	19115	773	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.567	0	1.001	535474925	87654759	91320	228300	960		
341.8567	23.562	23.567	0	1.001	346057936	56952234	59870	149675	951	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.263	0	1.370	44042244	6991886	4343	10857	1610		
369.8919	24.257	24.263	0	1.370	27258384	4340482	2964	7410	1464	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.290	0	1.001	425216588	66893677	23507	58767	2846		
357.8516	24.285	24.290	0	1.001	273863753	43014297	15196	37990	2831	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.398	0	0.948	21353346	3735596	9504	23760	393		
385.8610	30.393	30.398	0	0.948	42517412	7541415	17334	43335	435	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.419	30.414	0	1.001	390623698	69210360	144699	361747	478		
375.8178	30.419	30.414	0	1.001	317417292	55842354	114030	285075	490	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.592	30.587	0	0.954	23831741	4284718	9504	23760	451		
385.8610	30.592	30.587	0	0.954	47648328	8520496	17334	43335	492	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.606	30.608	0	1.000	417477301	76471193	144699	361747	528		
375.8178	30.606	30.608	0	1.000	339326699	62317195	114030	285075	546	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.439	0	0.980	22867854	5367919	9504	23760	565		
385.8610	31.444	31.439	0	0.980	44881767	10535673	17334	43335	608	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	401761842	96152976	144699	361747	665		
375.8178	31.458	31.458	0	1.000	326336363	77698323	114030	285075	681	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.254	0	1.006	21707742	5888250	9504	23760	620		
385.8610	32.256	32.254	0	1.006	42746325	11309936	17334	43335	652	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.267	0	1.000	382964510	103123325	144699	361747	713		
375.8178	32.270	32.267	0	1.000	308763312	82432457	114030	285075	723	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.067	0		37715128	9806077	9513	23782	1031		
403.8529	32.070	32.067	0		30762306	7919228	7430	18575	1066	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	31831270	8312743	9513	23782	874		
403.8529	31.631	31.631	0	0.986	25347908	6557876	7430	18575	883	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.647	0	1.000	309092416	82861363	82628	206570	1003		
391.8127	31.644	31.647	0	1.000	250549586	66798770	65041	162602	1027	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.740	0	0.990	37988346	9644110	9513	23782	1014		
403.8529	31.737	31.740	0	0.990	30618123	7772384	7430	18575	1046	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.756	0	1.000	340937209	84715031	82628	206570	1025		
391.8127	31.750	31.756	0	1.000	274575331	68578489	65041	162602	1054	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.081	0	1.014	360109538	93726788	82628	206570	1134		
391.8127	32.083	32.081	0	1.014	290592507	74938635	65041	162602	1152	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.684	0	1.050	18070930	5942919	16854	42135	353		
419.8220	33.679	33.684	0	1.050	41793177	13661866	46806	117015	292	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.694	0	1.000	402533640	132249546	496016	1240040	267		
409.7789	33.691	33.694	0	1.000	392223328	128744831	492357	1230892	261	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.751	0	1.084	16669269	4937793	16854	42135	293		
419.8220	34.748	34.751	0	1.084	37811216	10942649	46806	117015	234	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	357604024	103225889	496016	1240040	208		
409.7789	34.761	34.763	0	1.000	346696563	99564112	492357	1230892	202	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.464	0	1.075	32145048	9496257	16712	41780	568		
437.8140	34.469	34.464	0	1.075	30602012	9099651	21325	53312	427	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.469	34.474	0	1.000	317811790	91651803	141262	353155	649		
425.7737	34.469	34.474	0	1.000	306788546	89877662	143540	358850	626	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.779	36.784	0	1.147	44483628	10712295	4504	11260	2378		
471.7750	36.779	36.784	0	1.147	49065588	11867172	6814	17035	1742	0.91(0.76-1.02)	
OCDF											
441.7428	36.887	36.882	0	1.003	633744193	156394749	46138	115345	3390		
443.7399	36.887	36.882	0	1.003	694723407	167173603	47678	119195	3506	0.91(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	485602206	117161035	57581	143952	2035		
459.7348	36.791	36.791	0	1.000	540149940	130532603	71827	179567	1817	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

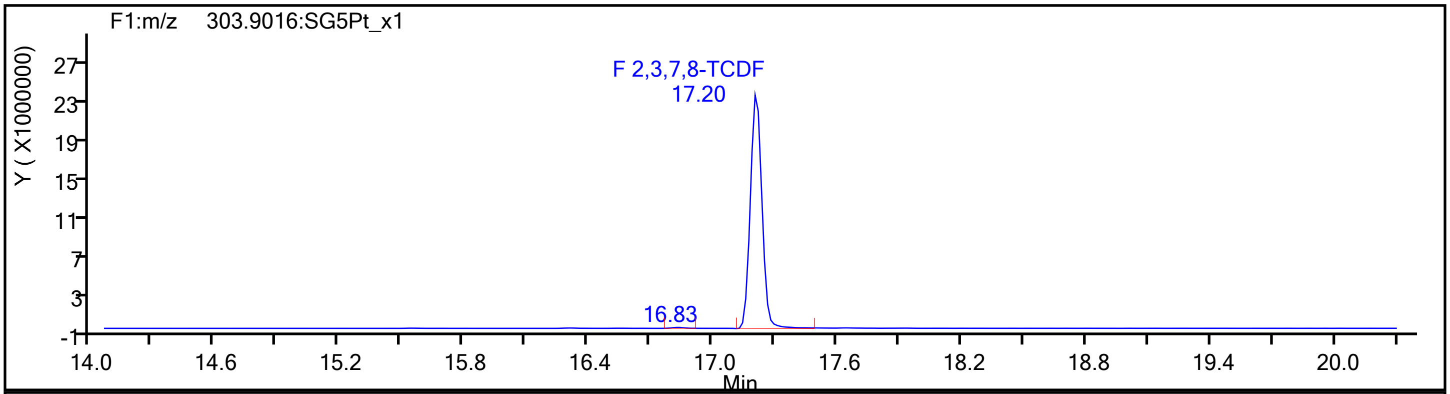

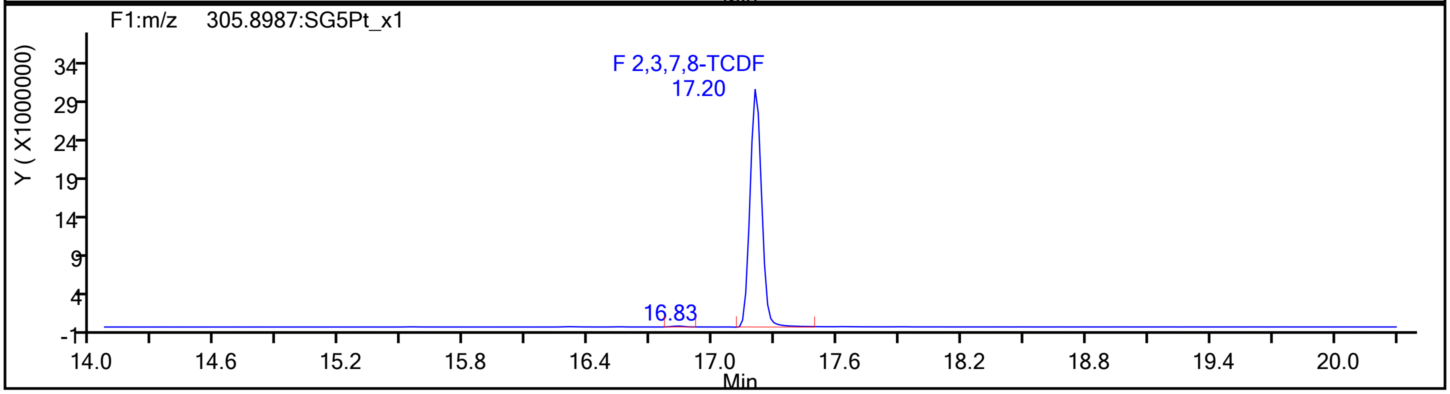

TCDF Standards

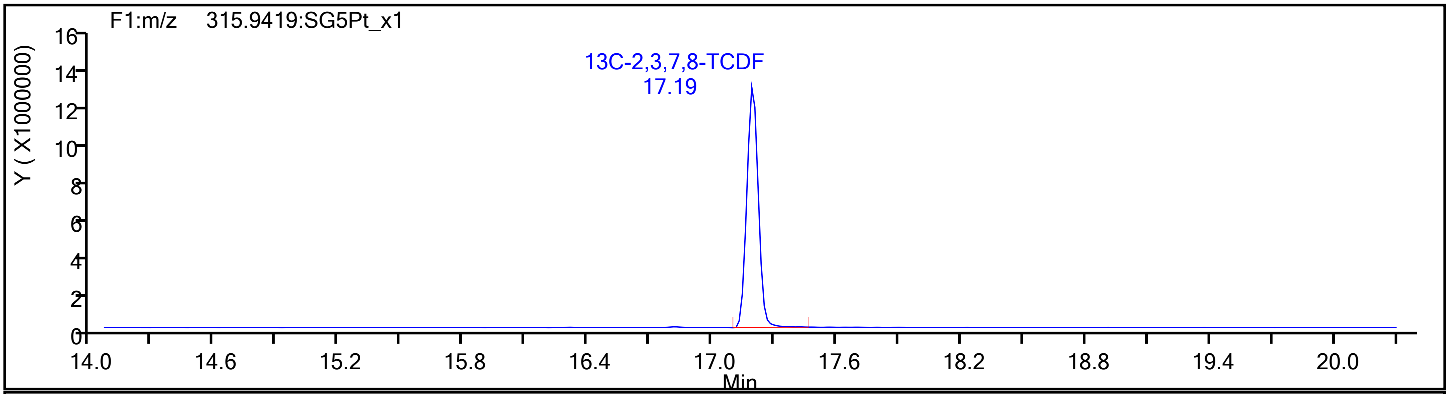

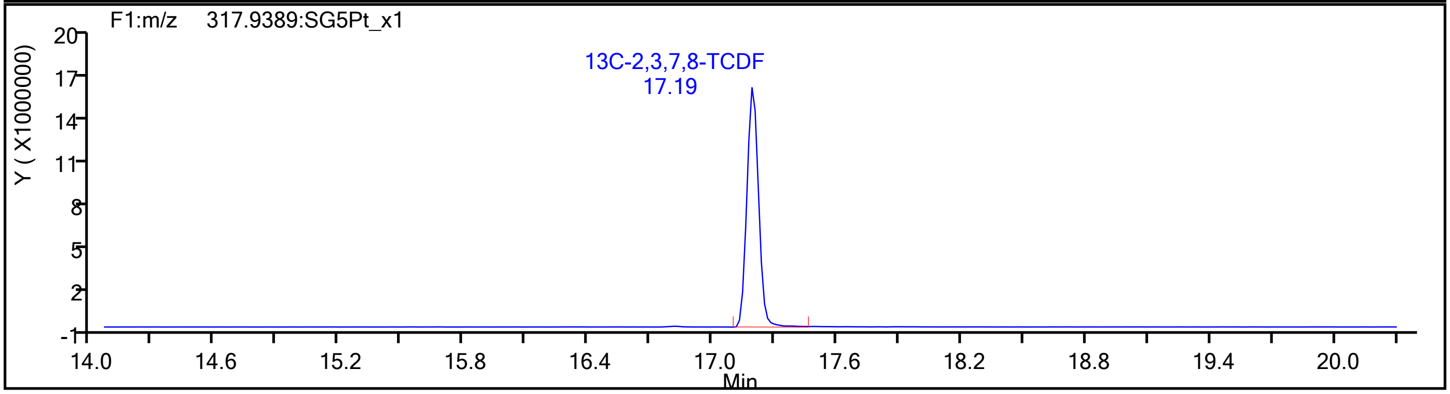

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d
Injection Date: 17-Sep-2020 19:09:42 Injection Vol: 2.0 ul
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Client ID:
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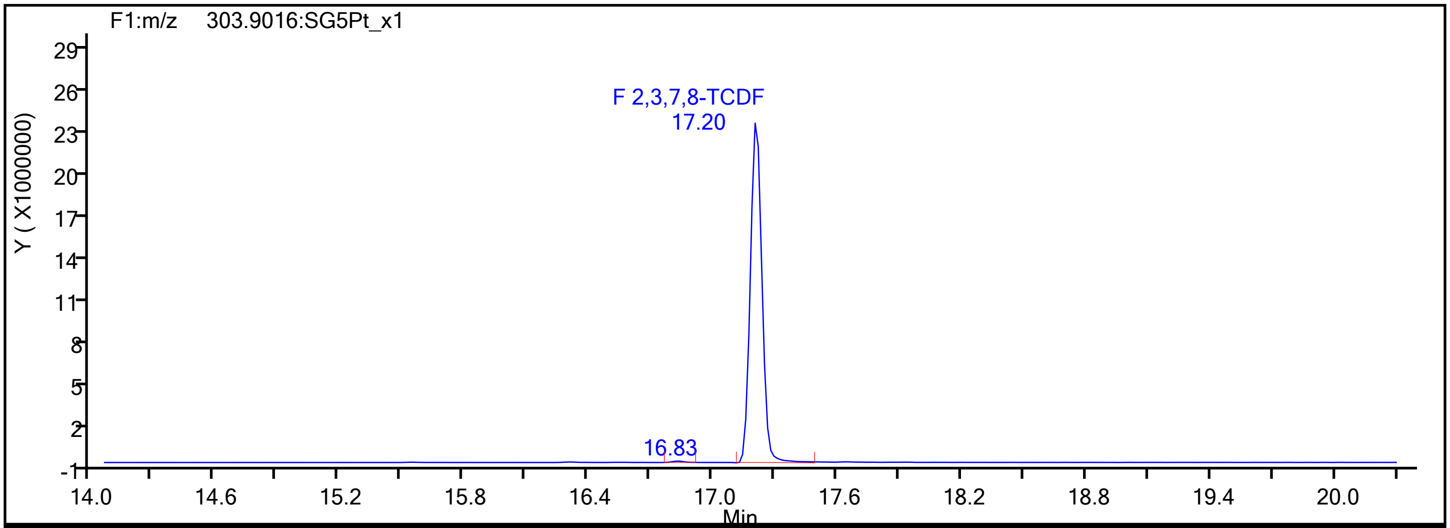

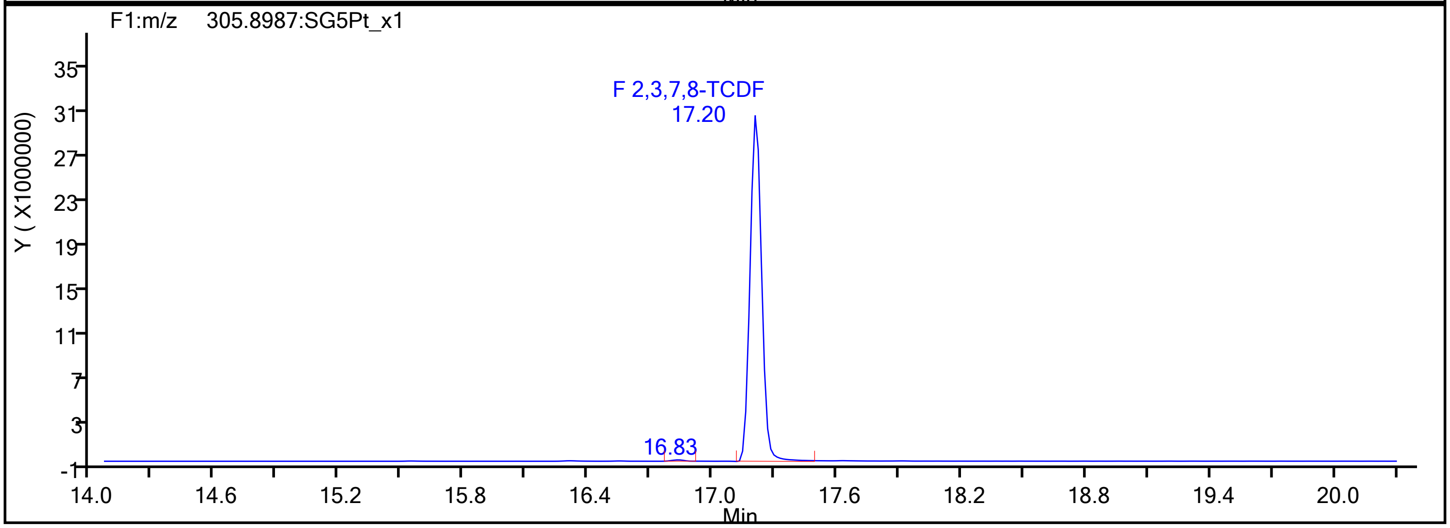

TCDF Interference Mass

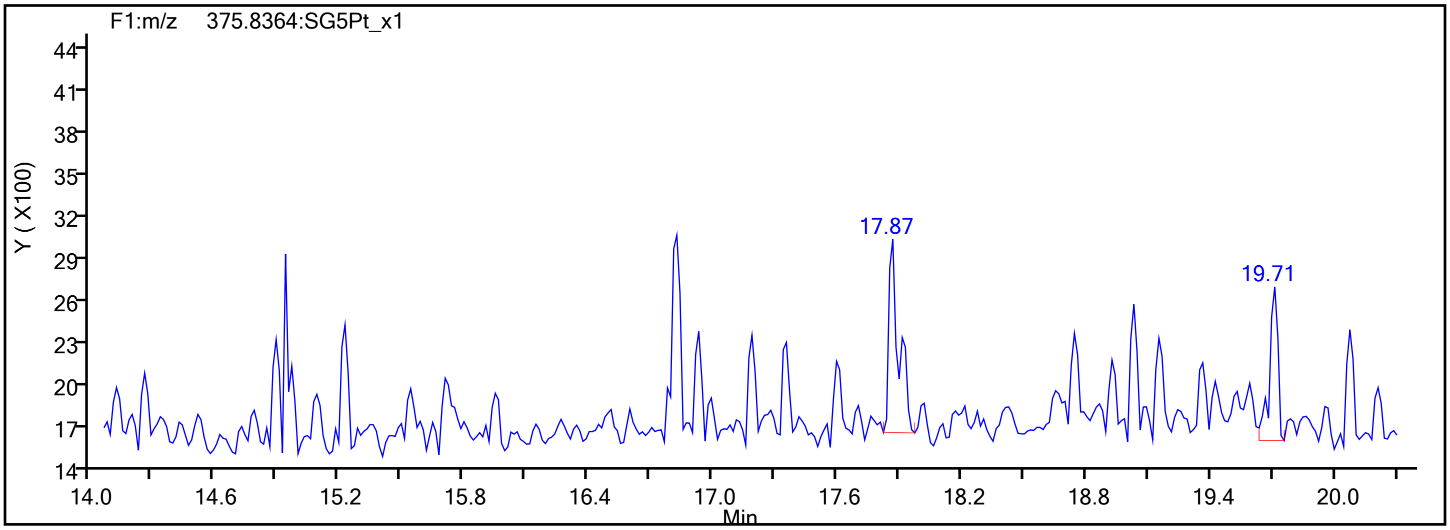

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

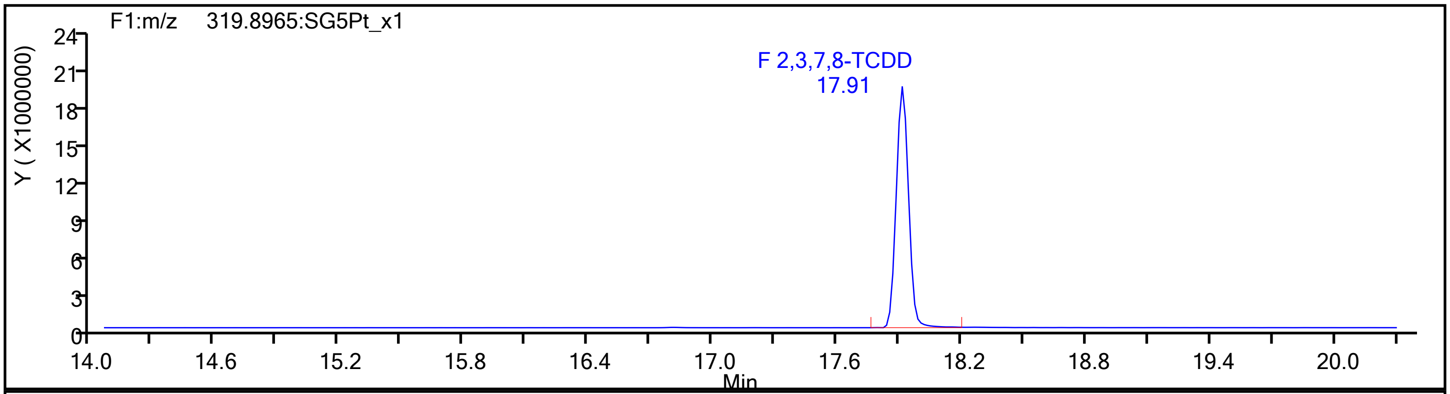

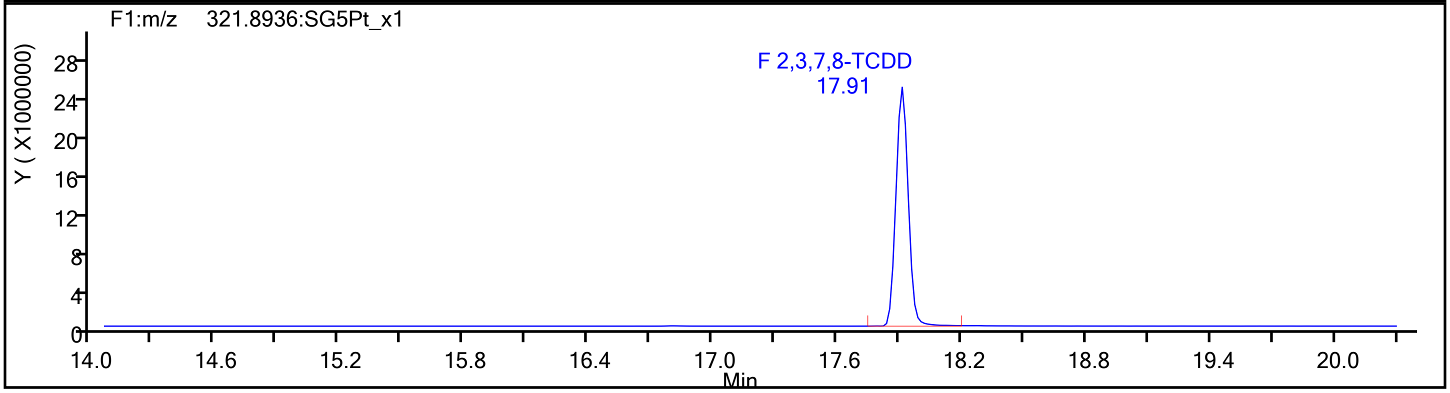

TCDD Standards

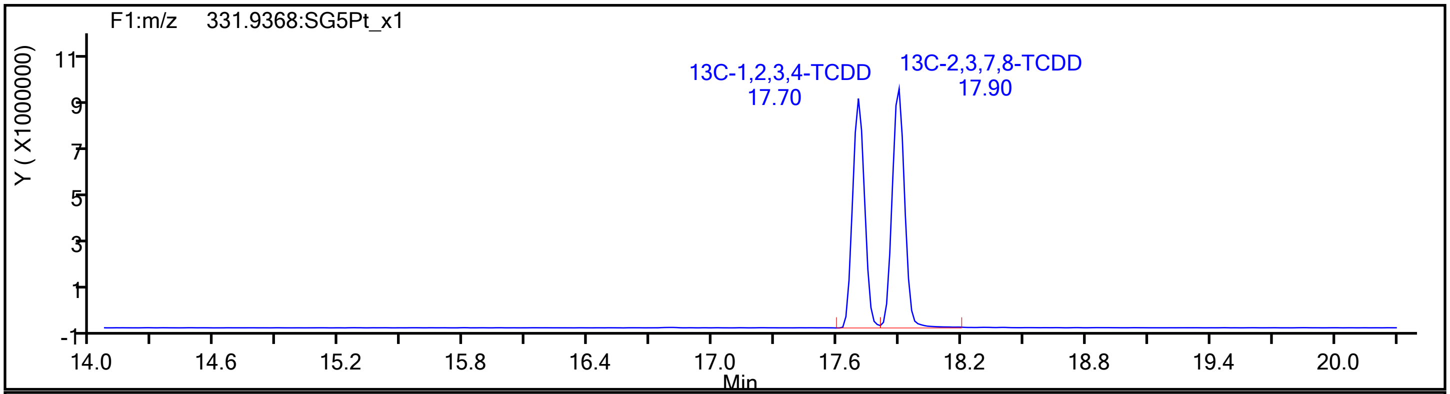

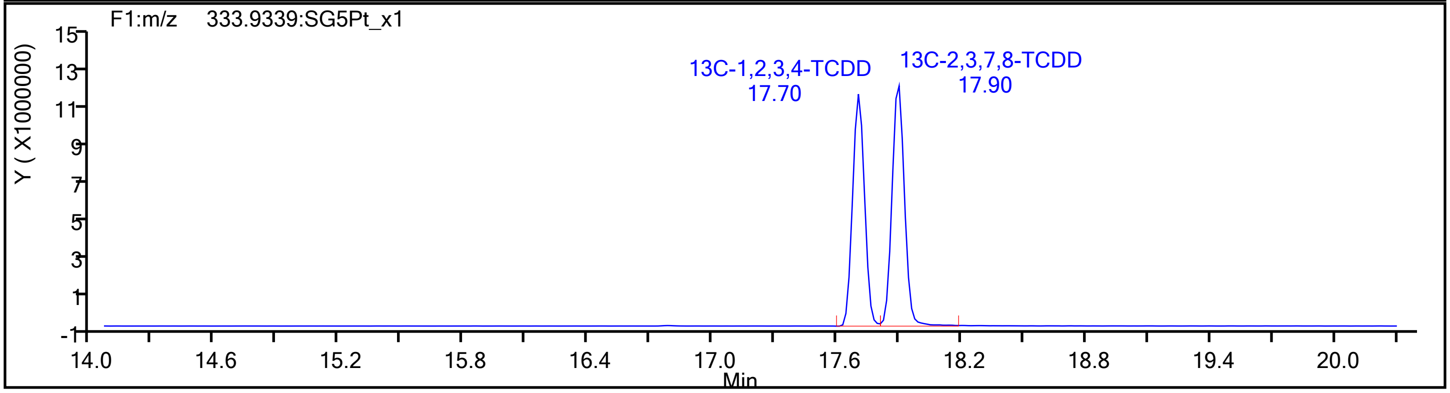

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

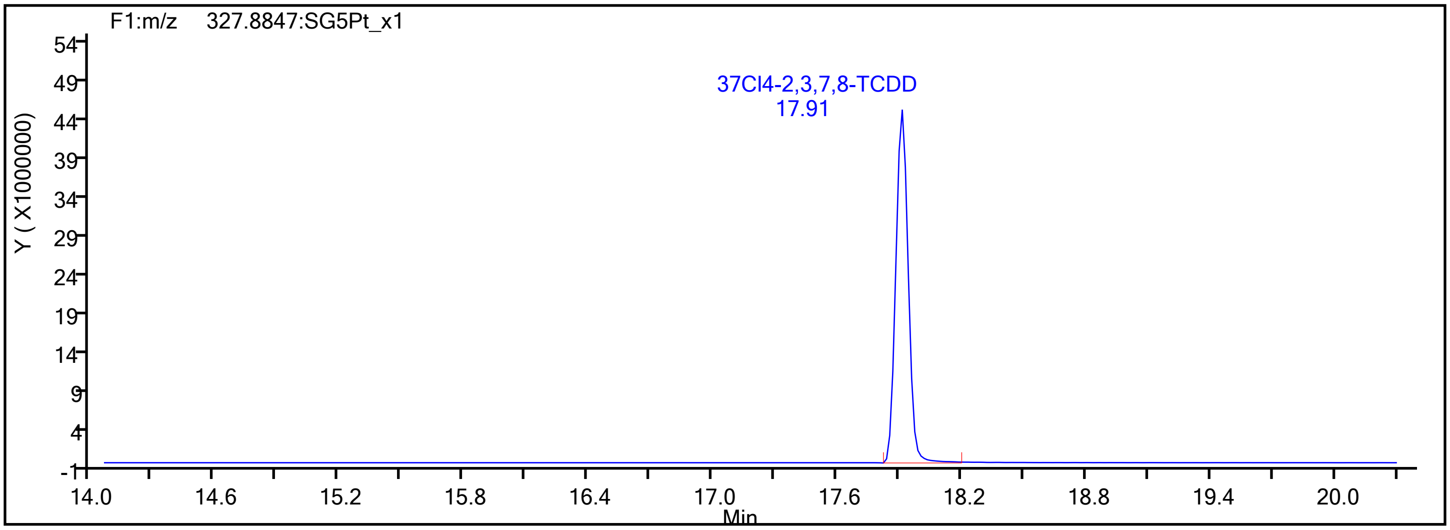

37Cl4-TCDD Standards

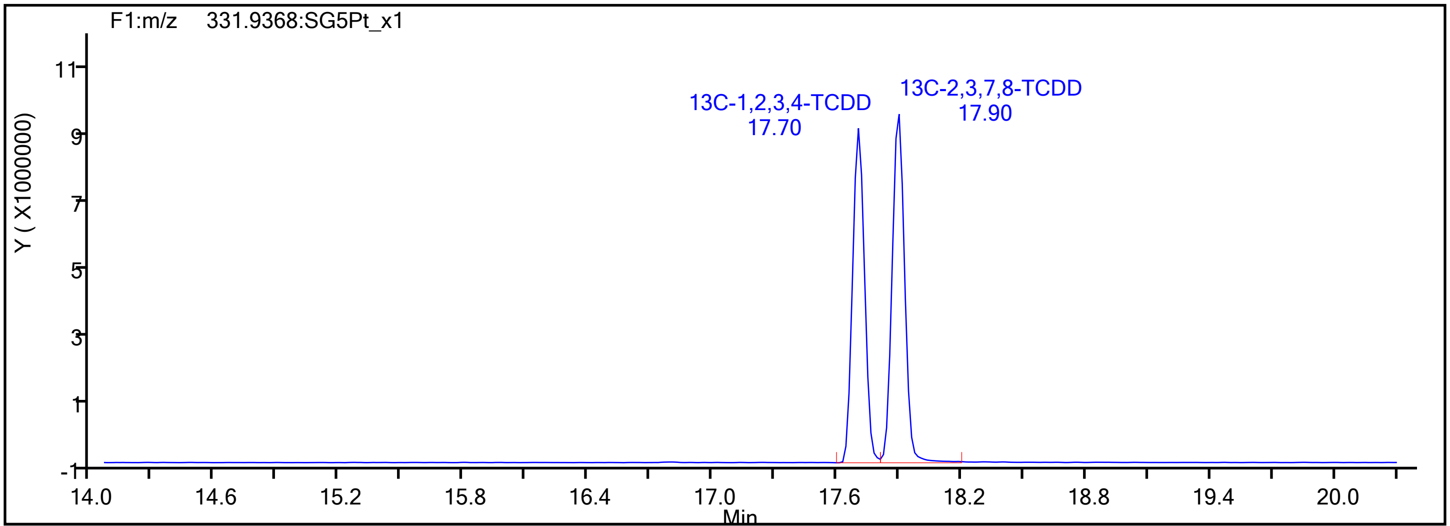

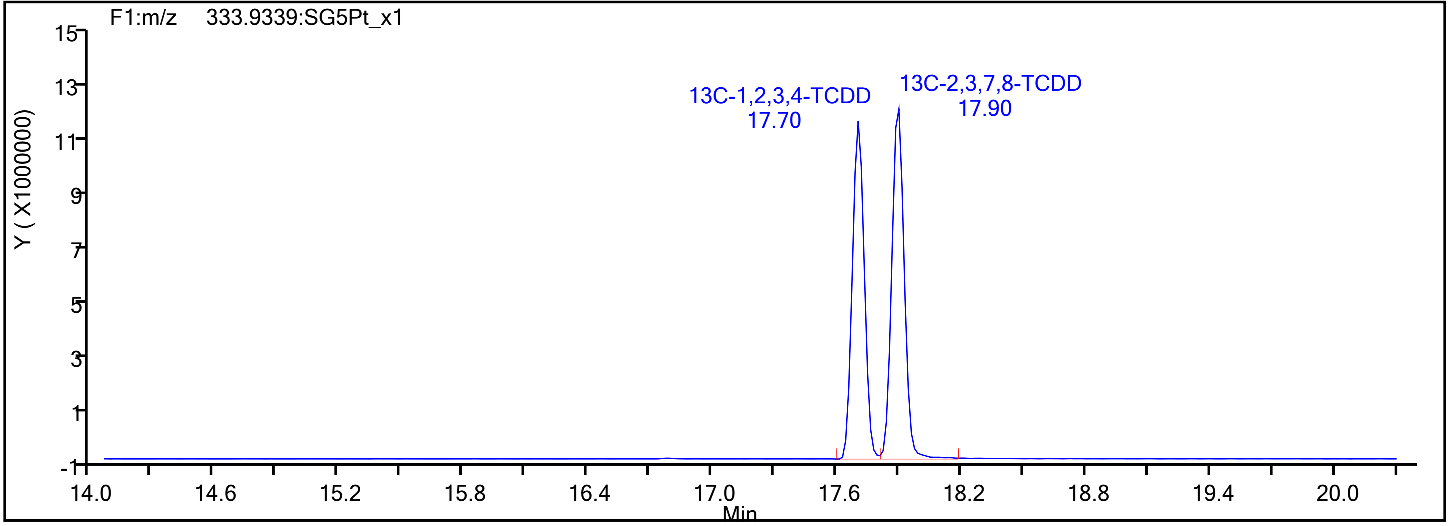

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 19:09:42

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

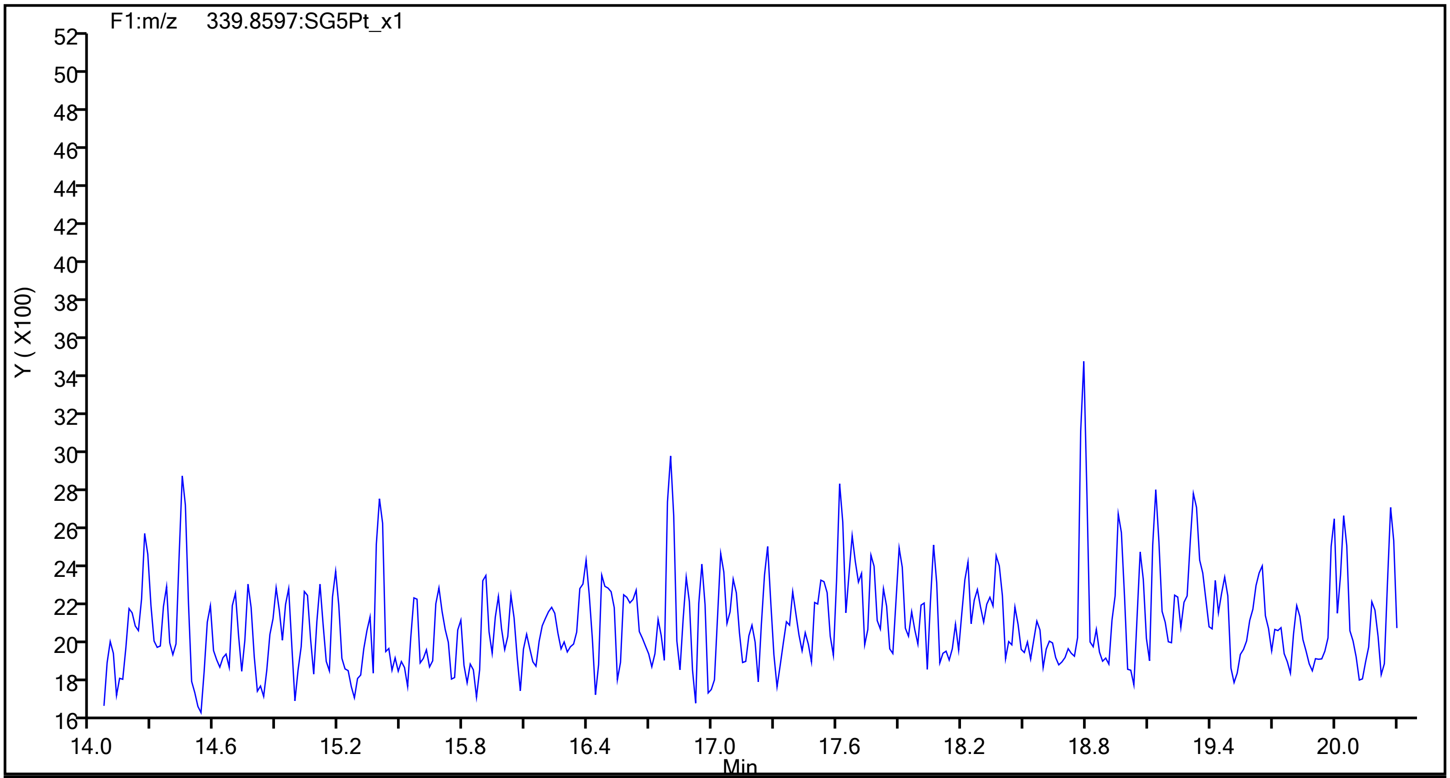

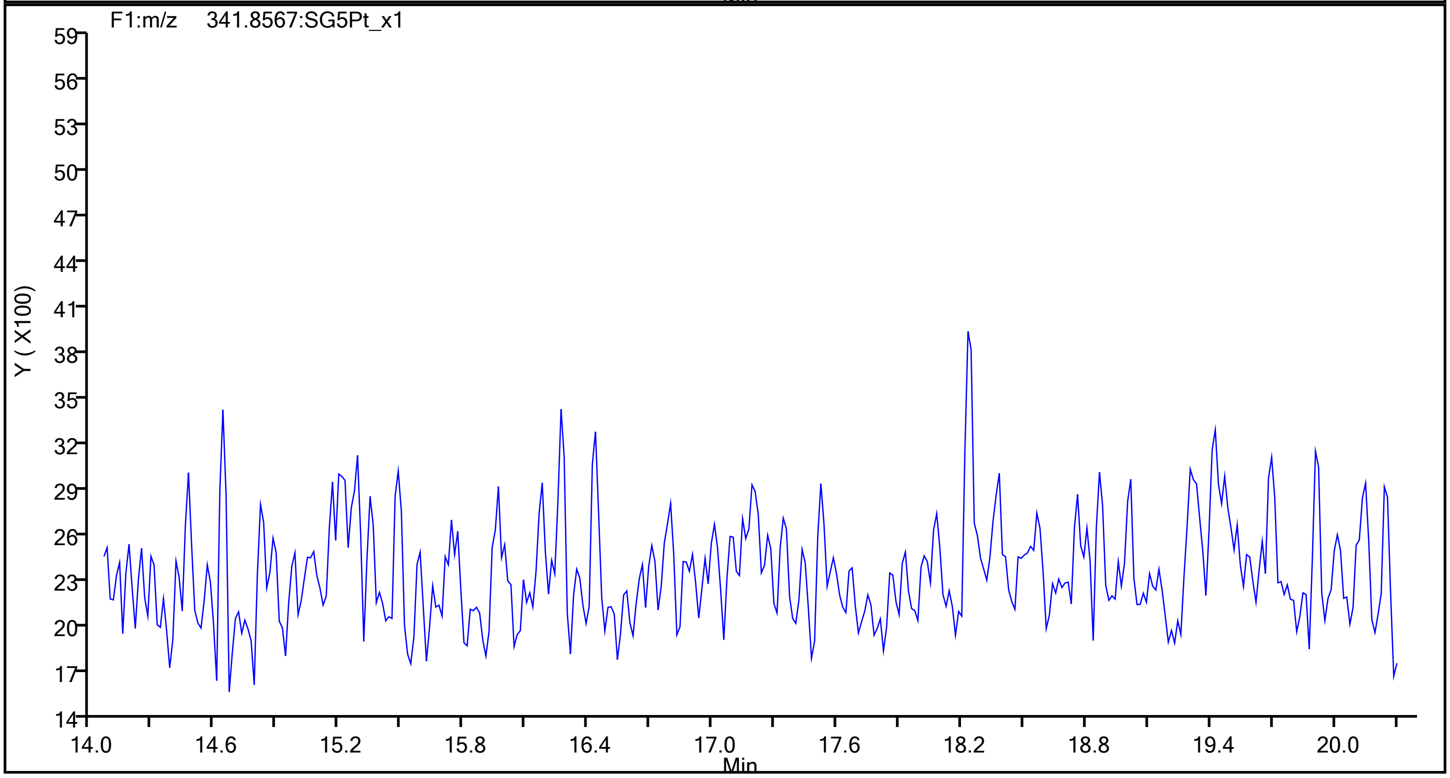

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Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

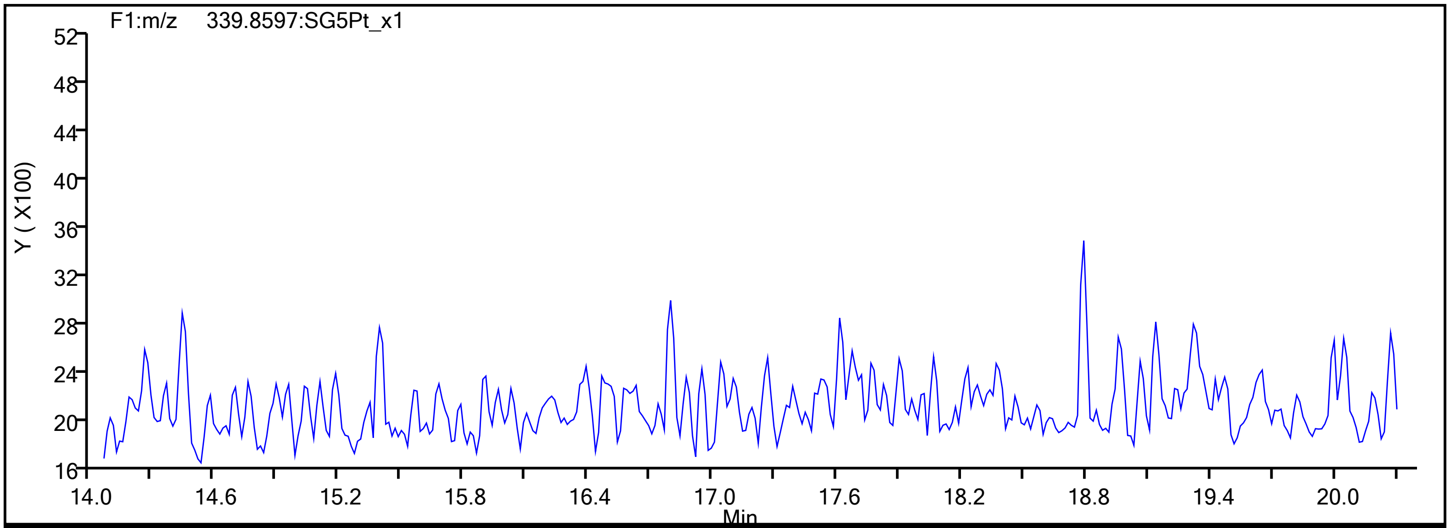

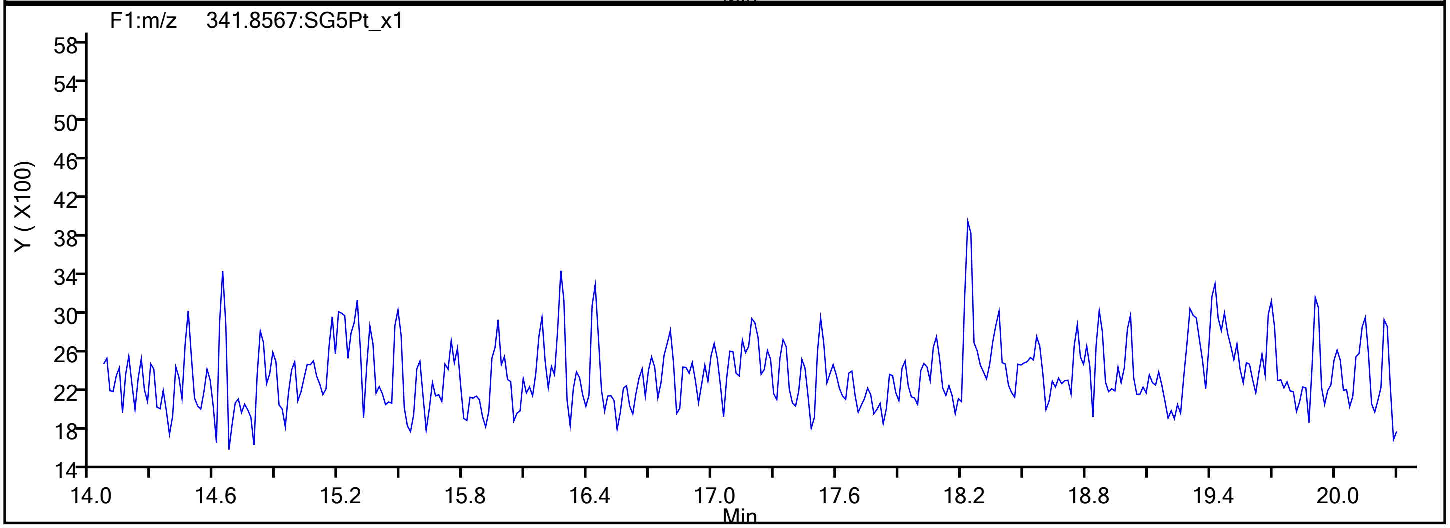

F1 PeCDFs Interference Mass

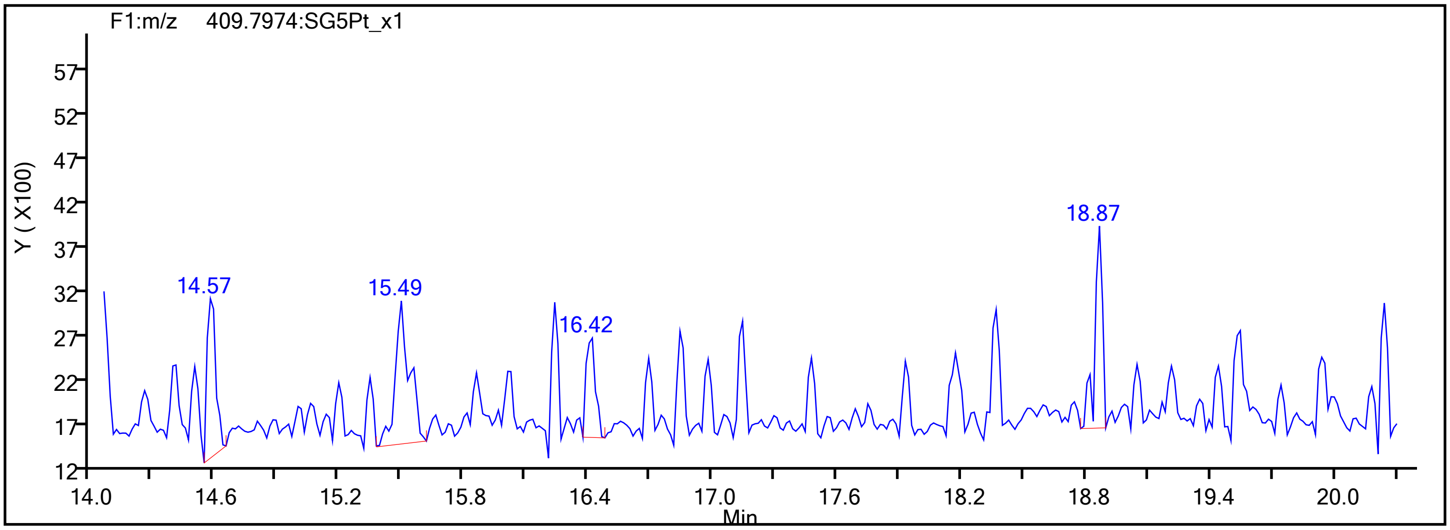

Eurofins TestAmerica, Sacramento

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PeCDF

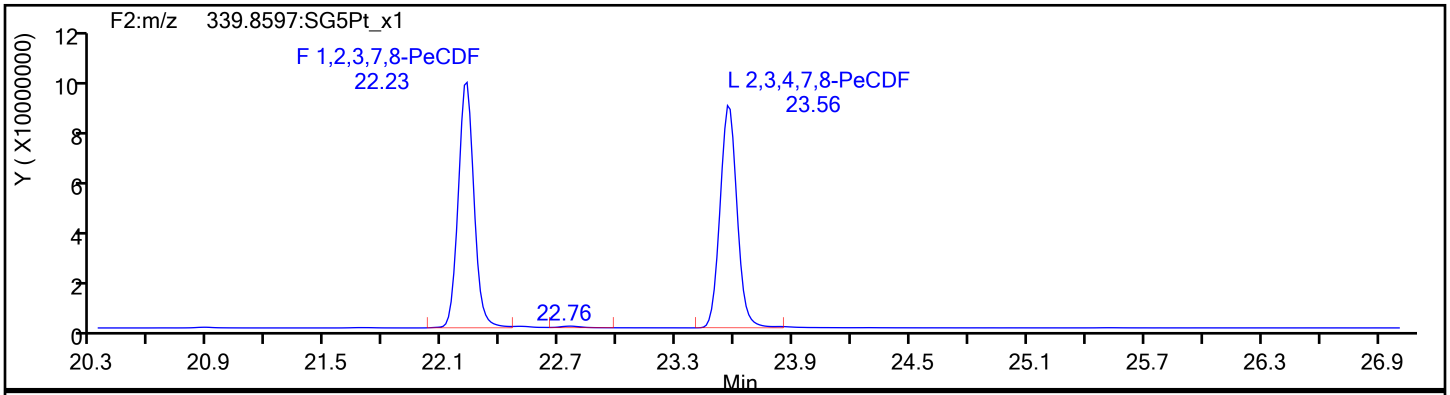

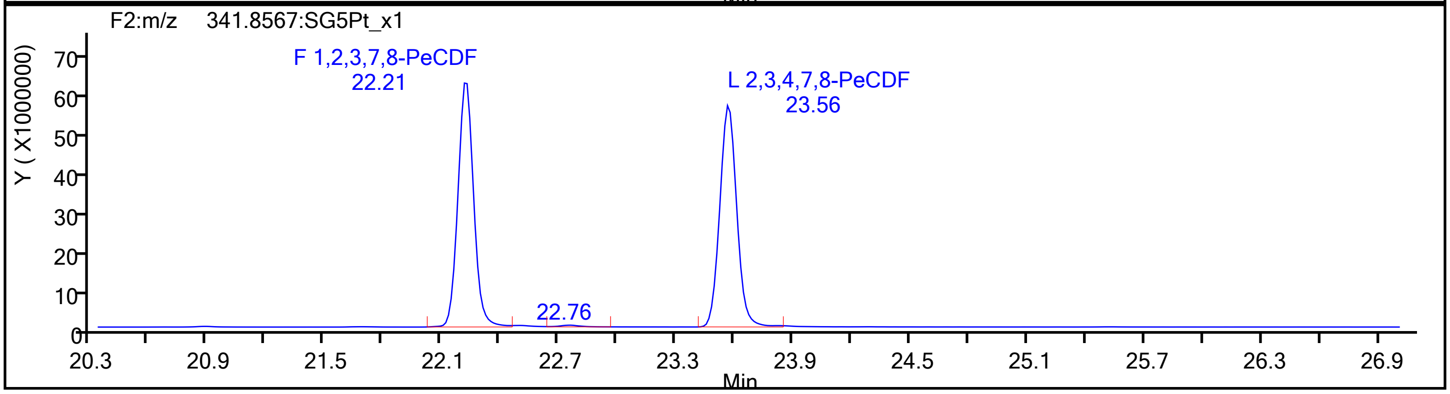

PeCDF Standards

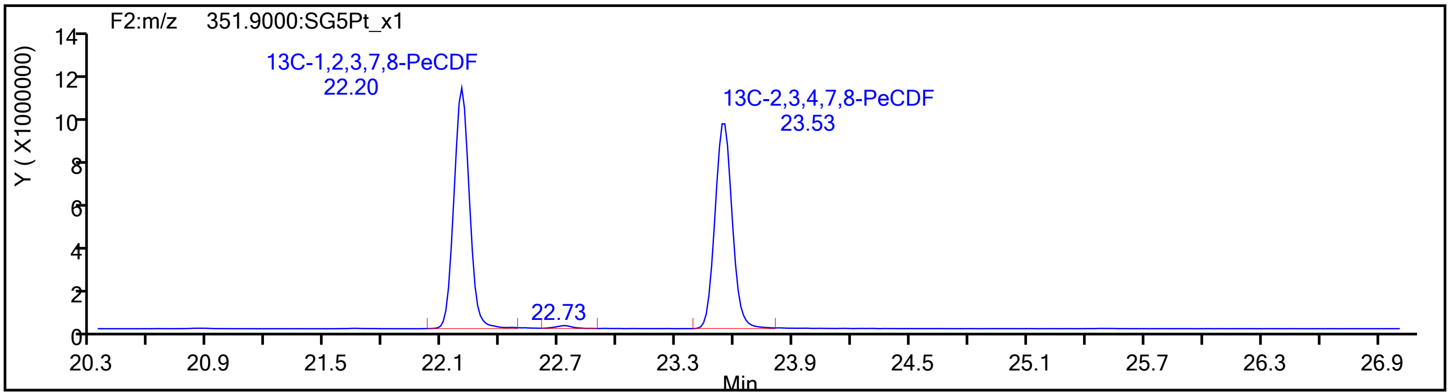

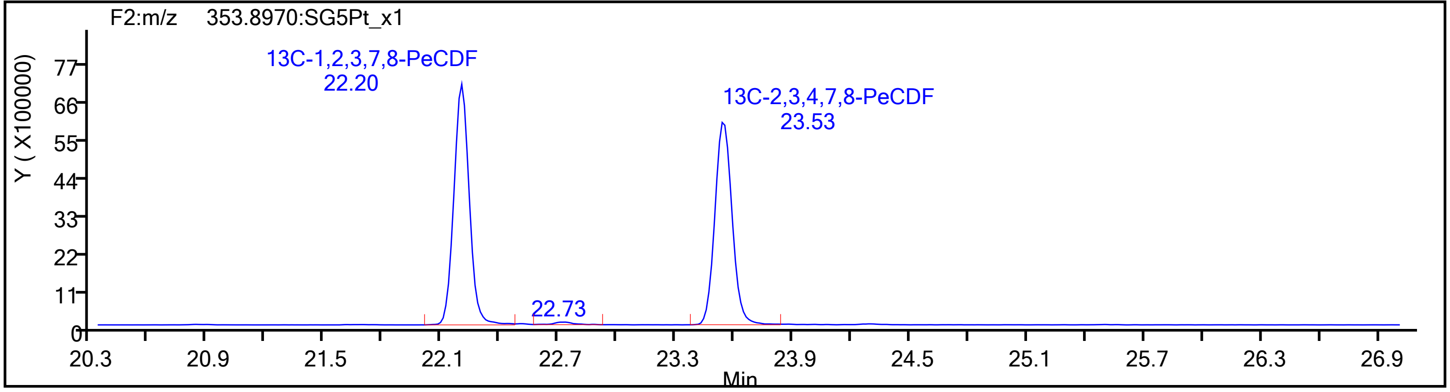

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Eurofins TestAmerica, Sacramento

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Client ID:			
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PeCDF

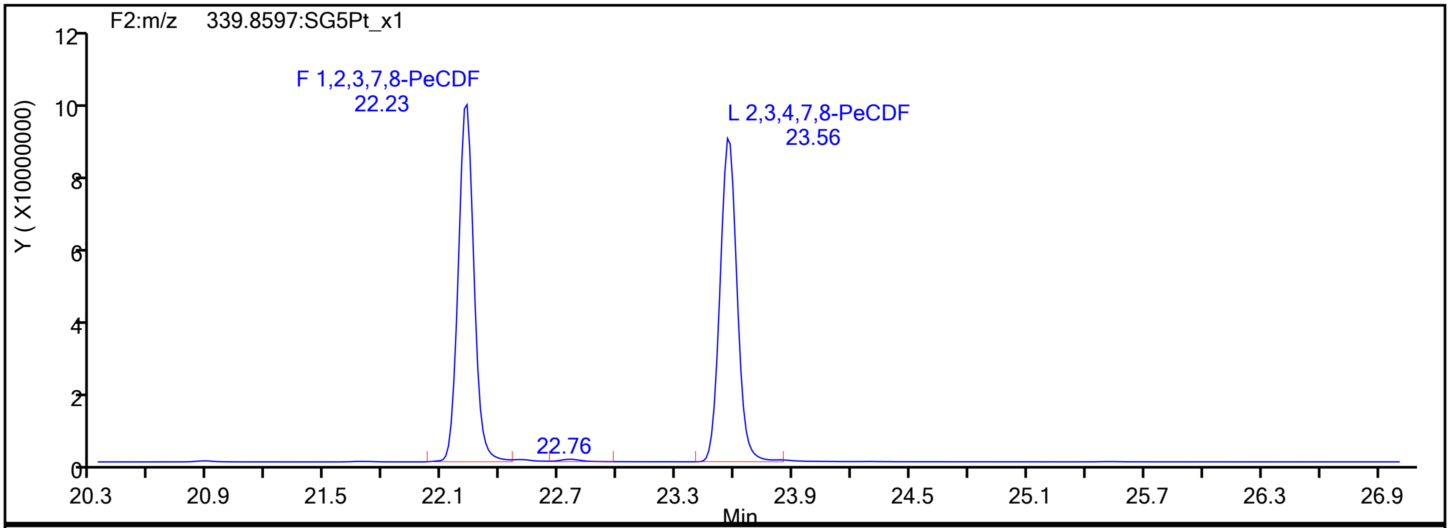

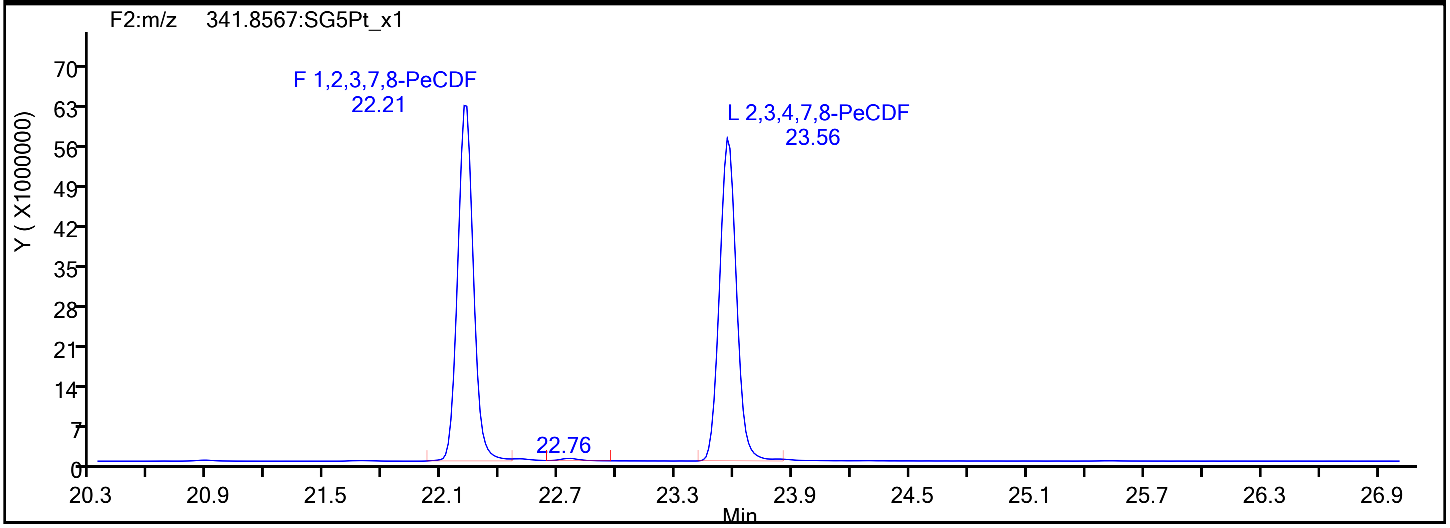

PeCDF Interference Mass

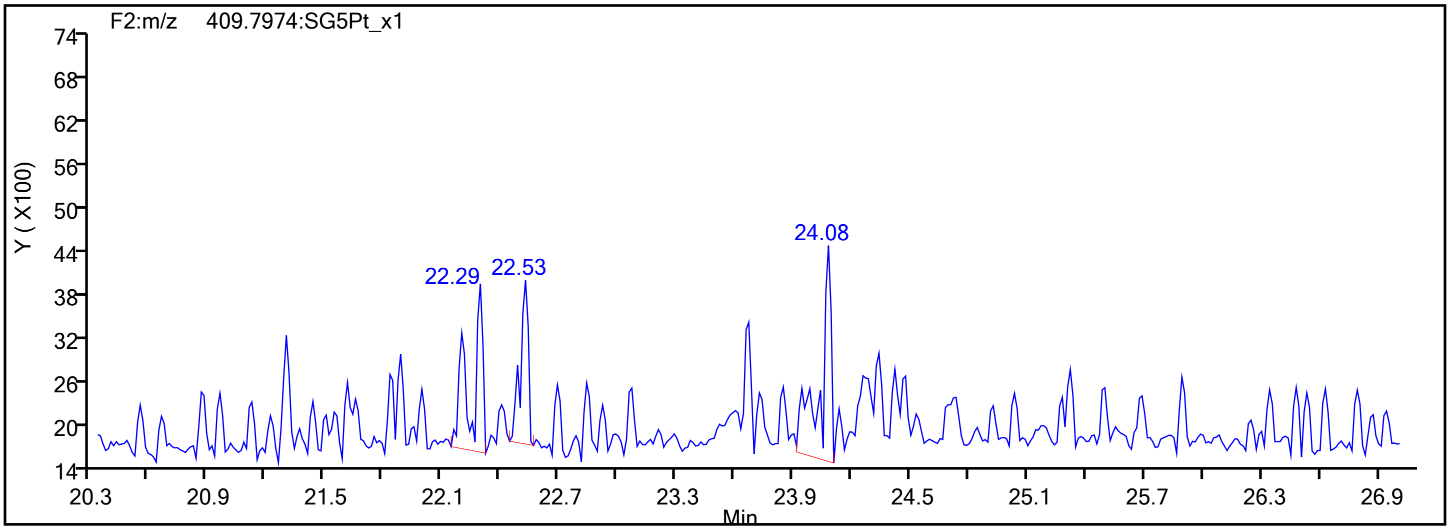

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: AJS

Method: Dioxin_10D5

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Client ID:

Worklist#: 413246

Sample Line#: 7

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Column Dia: 0.32 mm

PeCDD

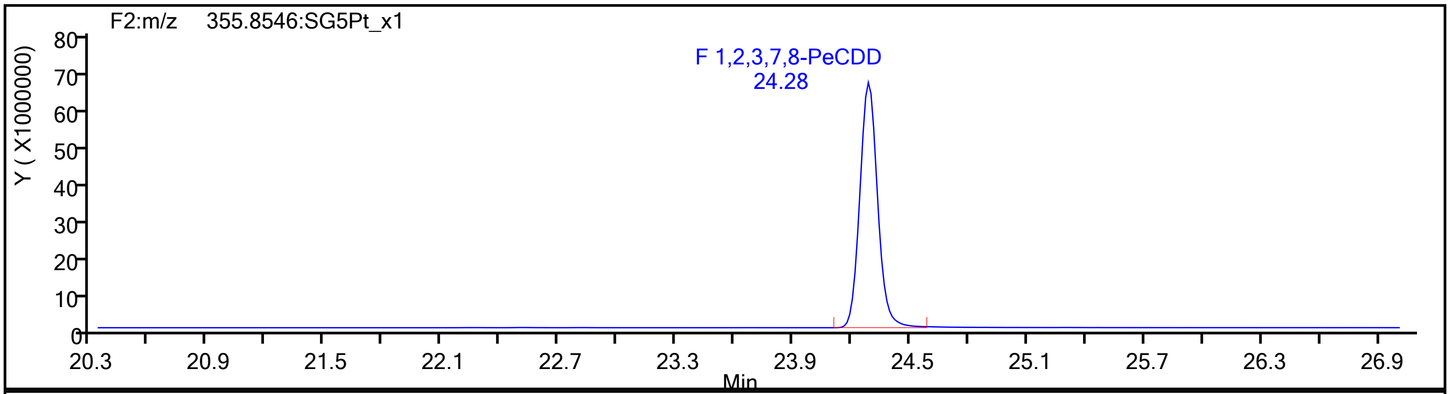

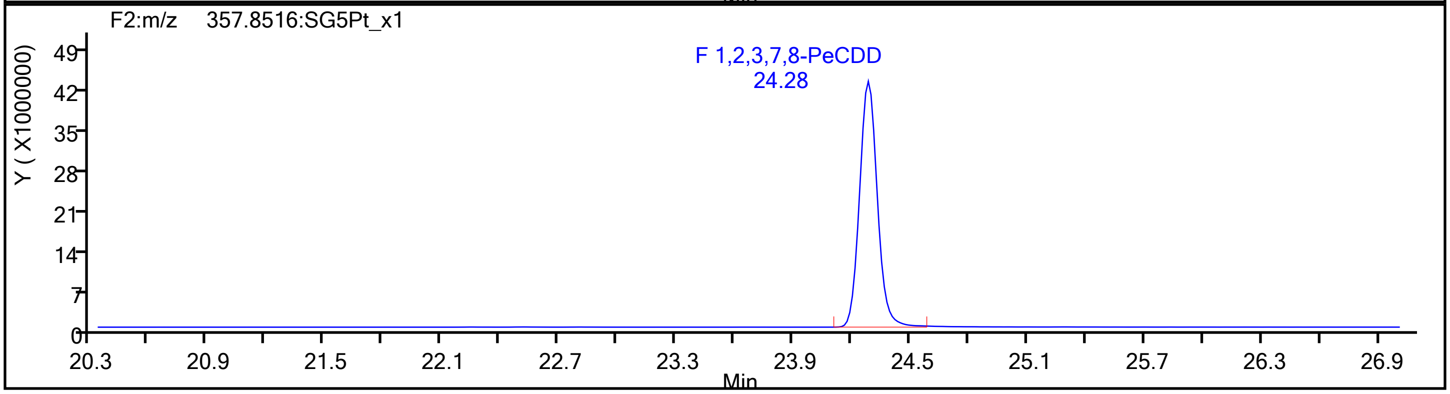

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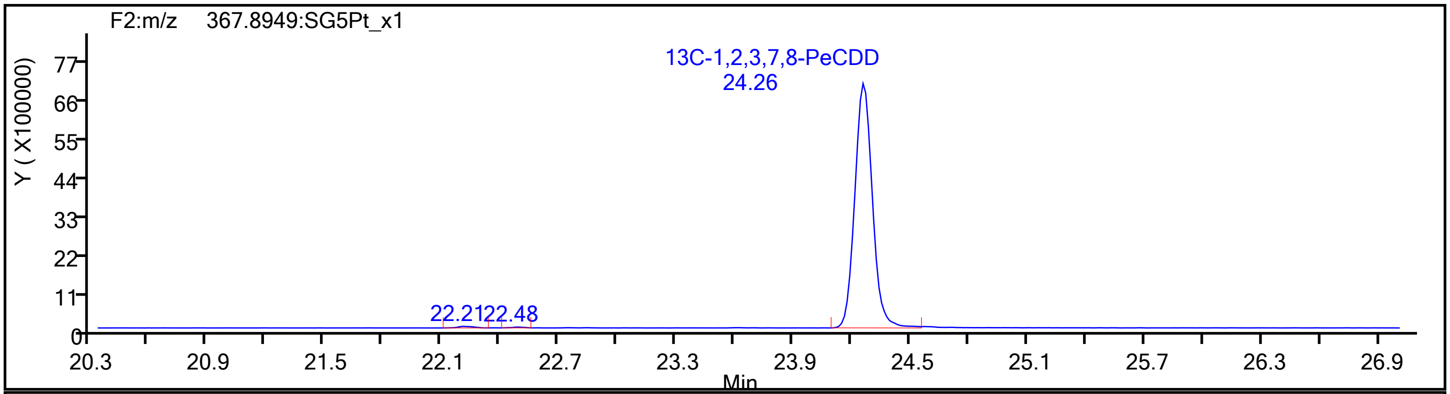

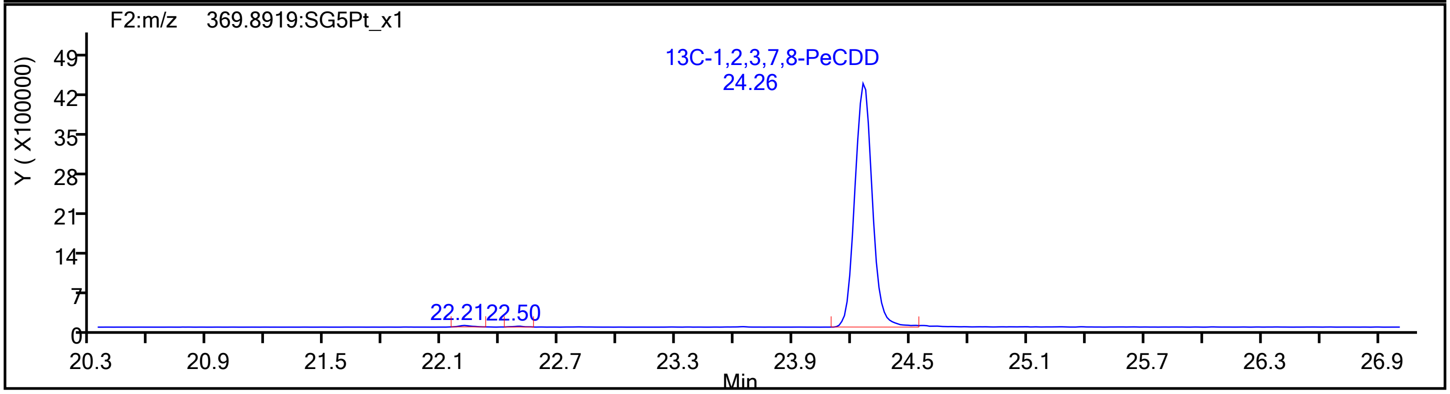

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Eurofins TestAmerica, Sacramento

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HxCDF

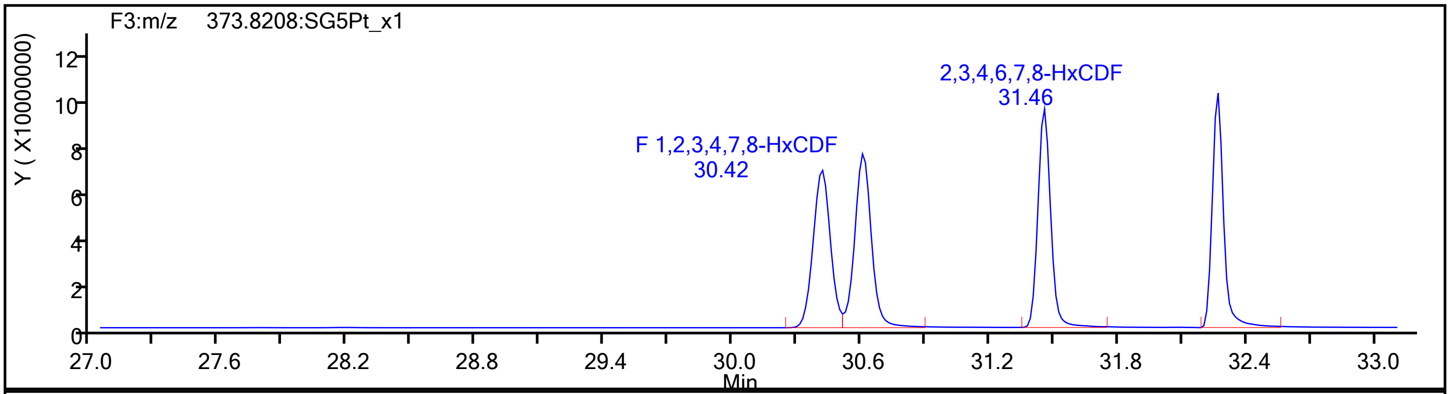

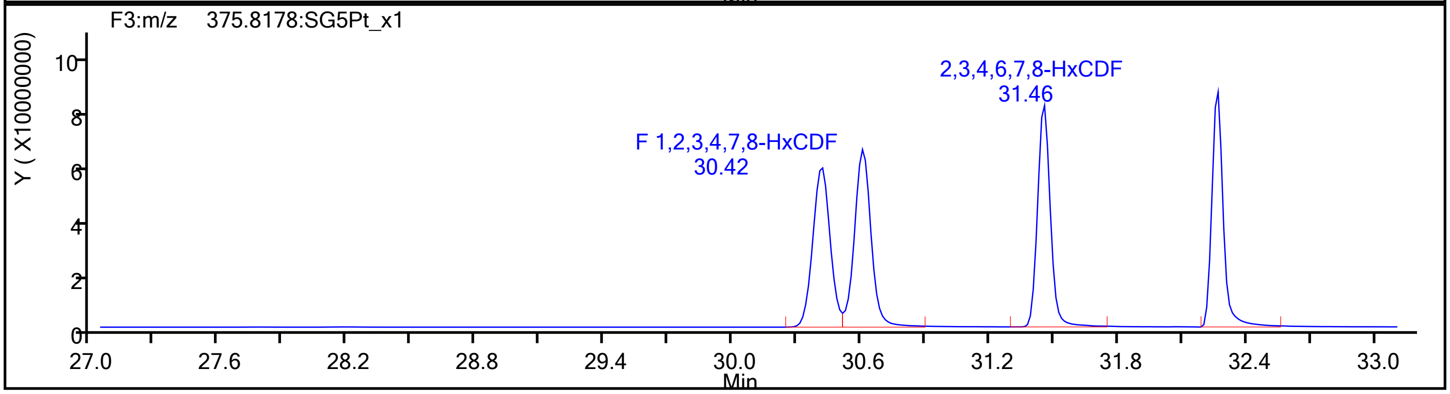

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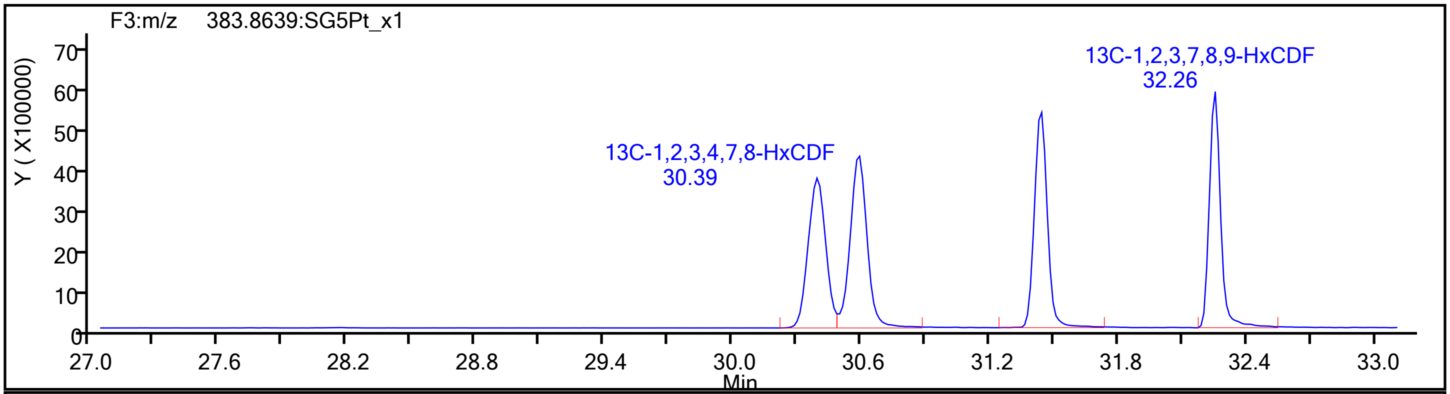

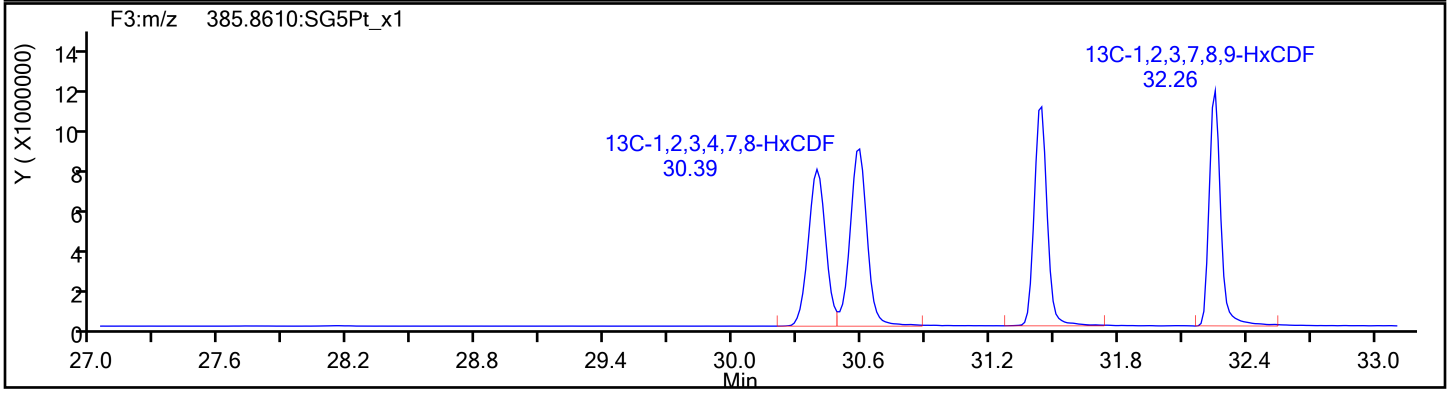

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Eurofins TestAmerica, Sacramento

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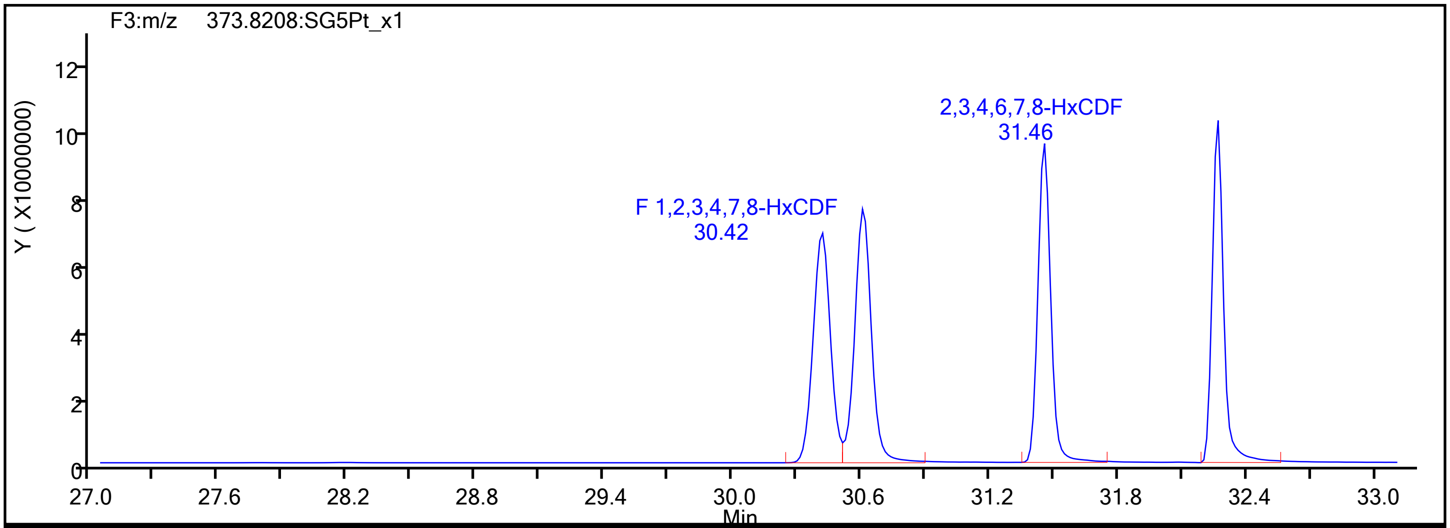

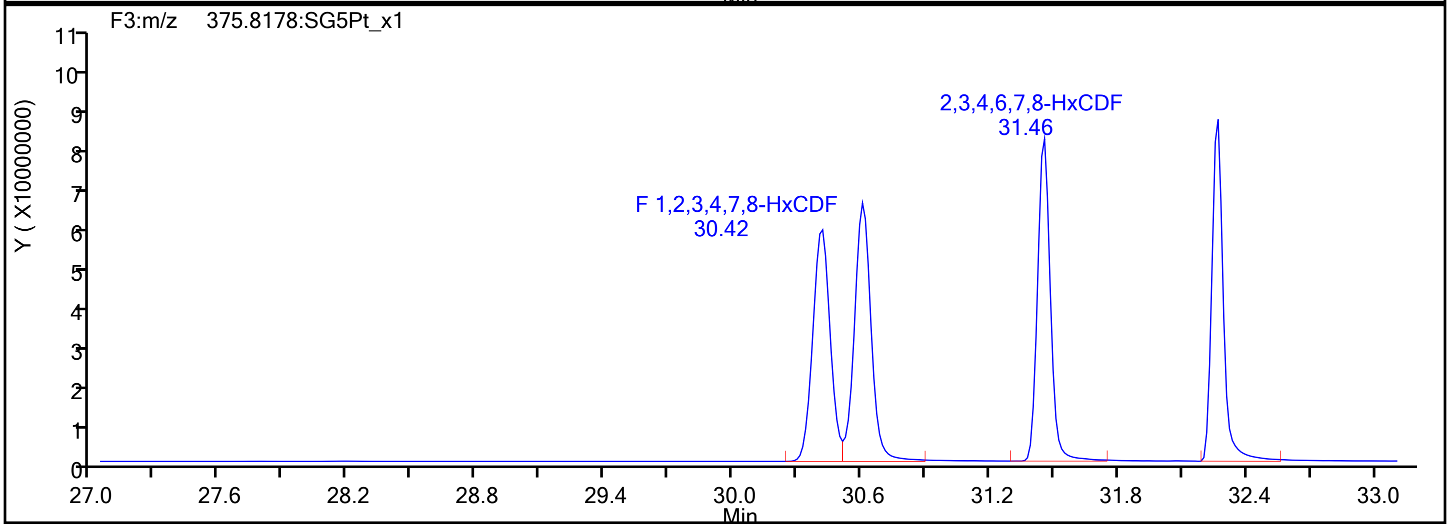

HxCDF Interference Mass

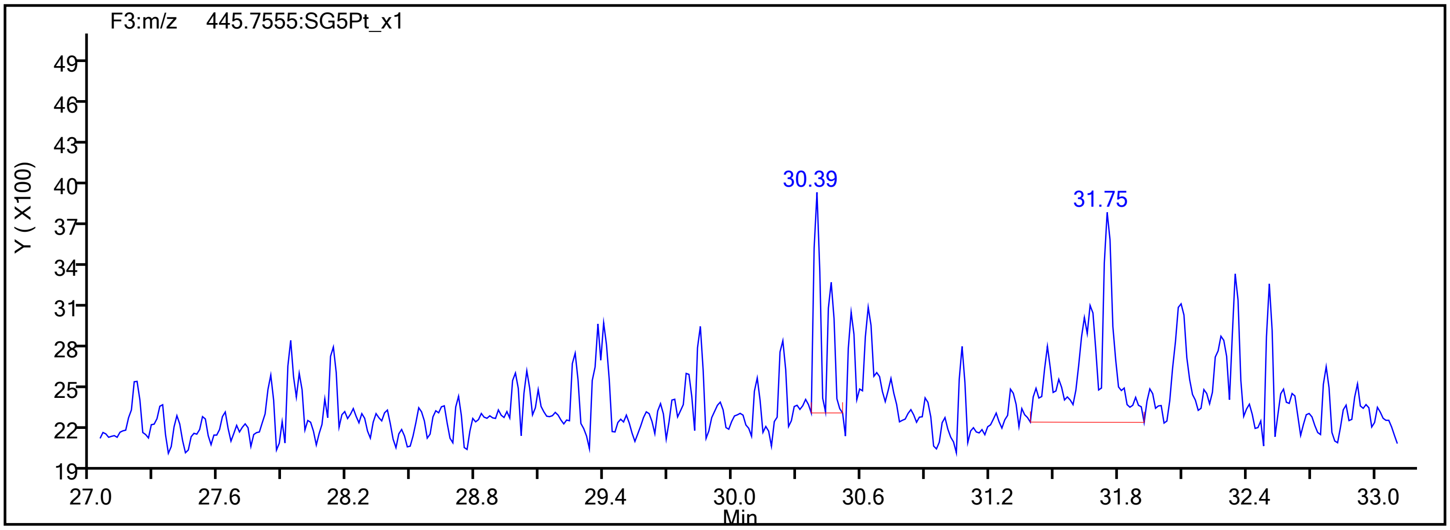

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: AJS
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Sample Line#: 7
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Column Dia: 0.32 mm

HxCDD

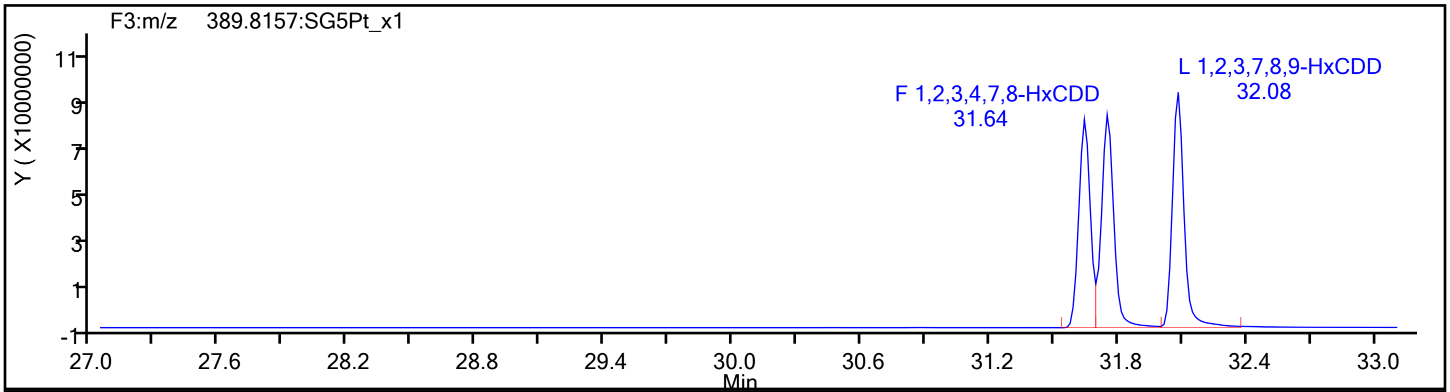

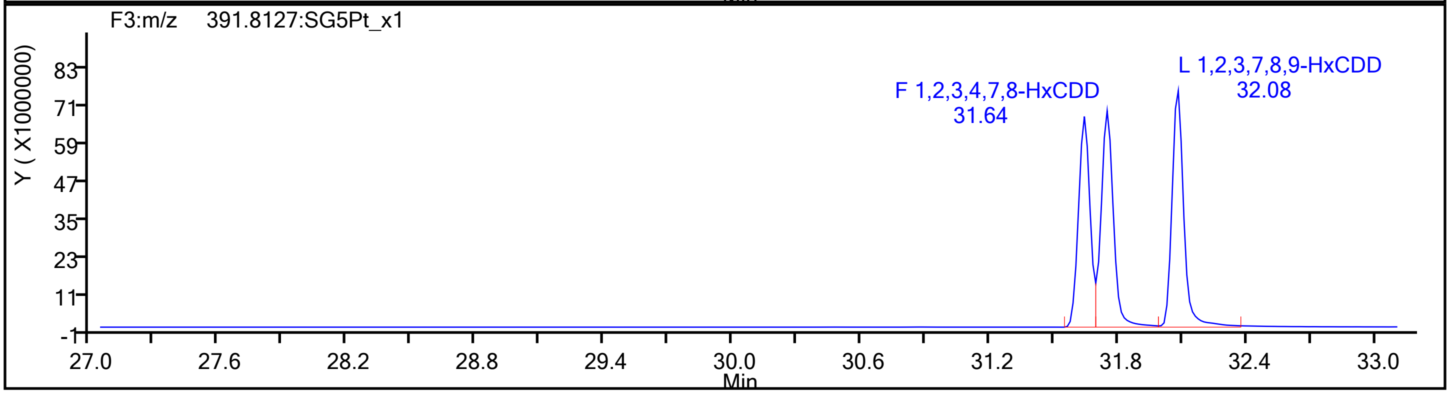

HxCDD Standards

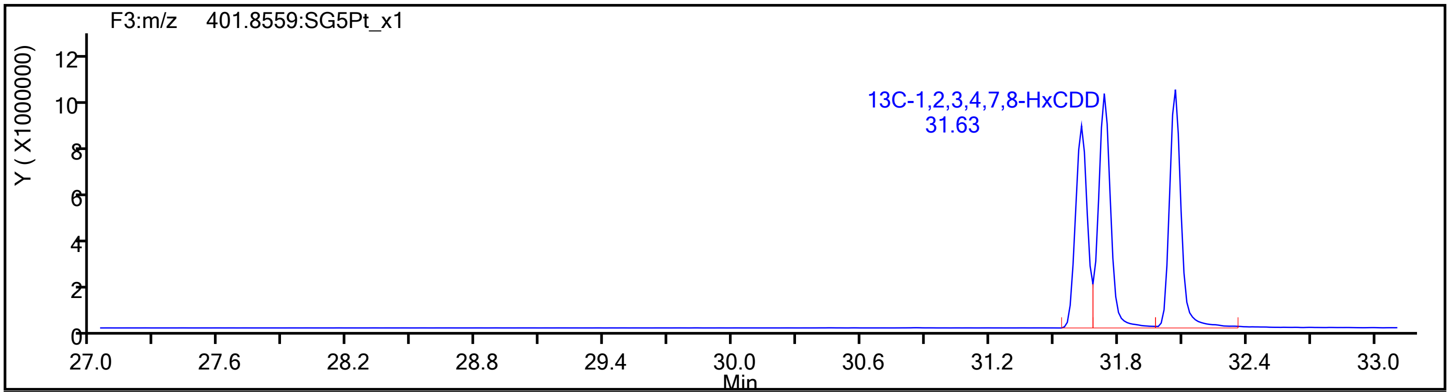

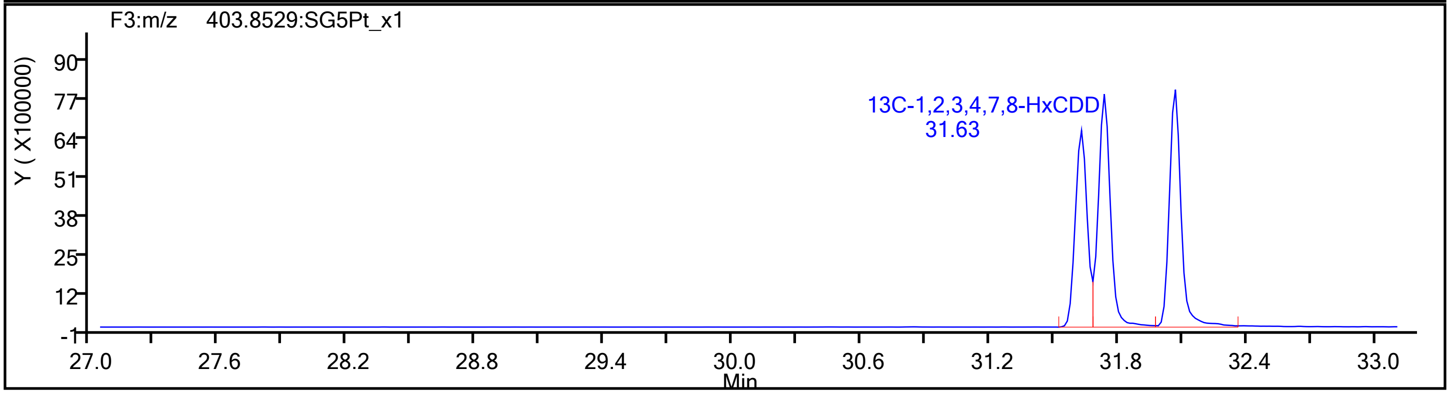

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Eurofins TestAmerica, Sacramento

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HpCDF

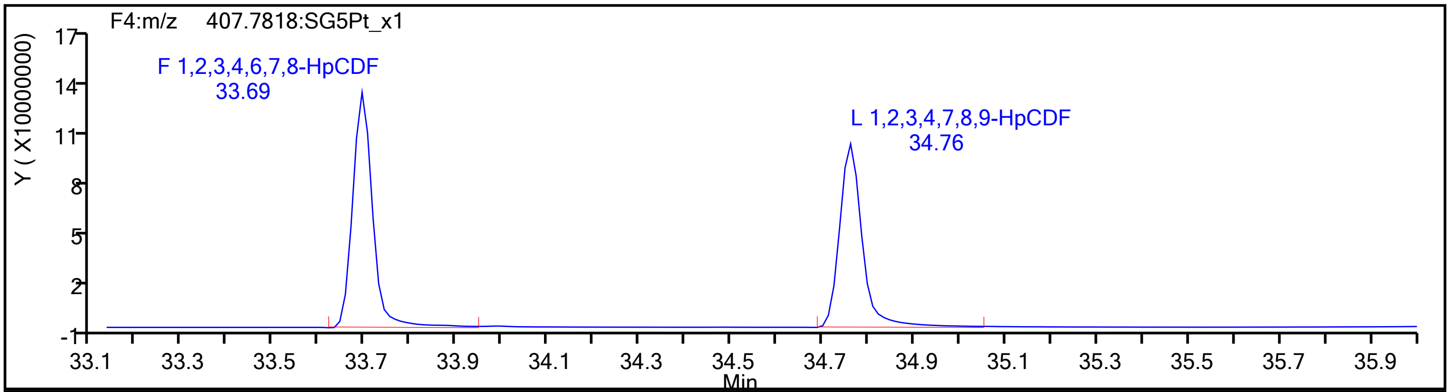

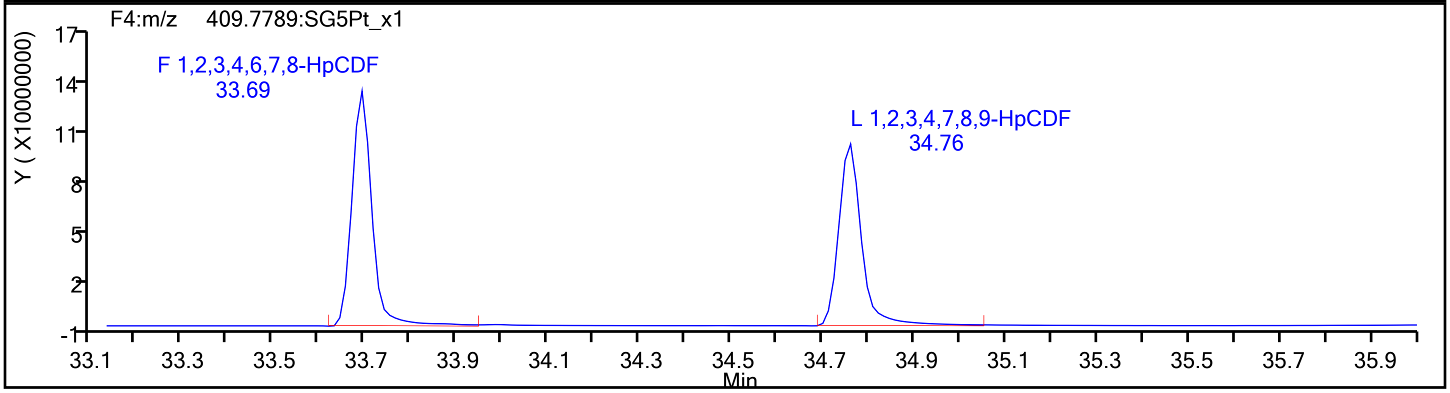

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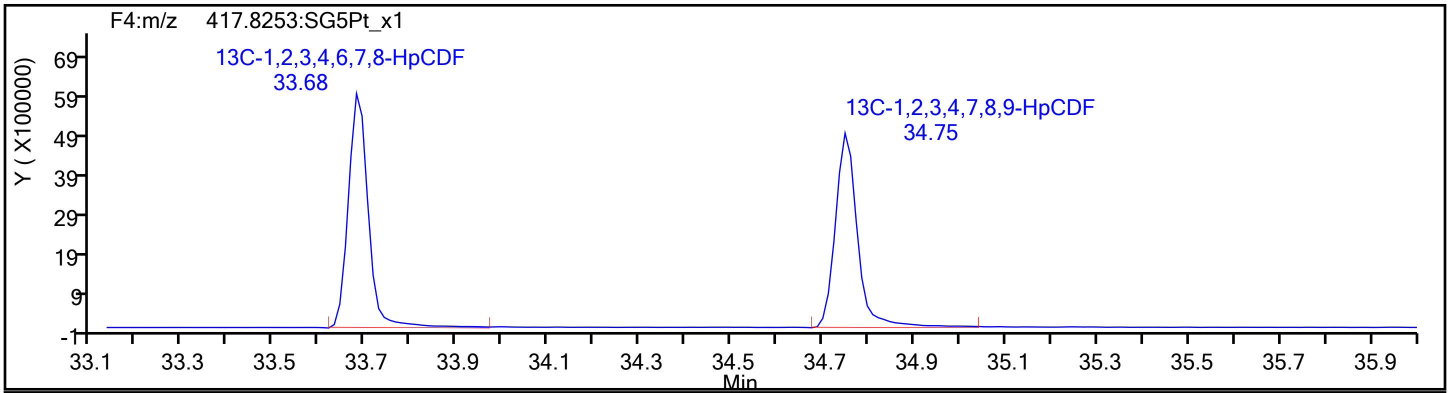

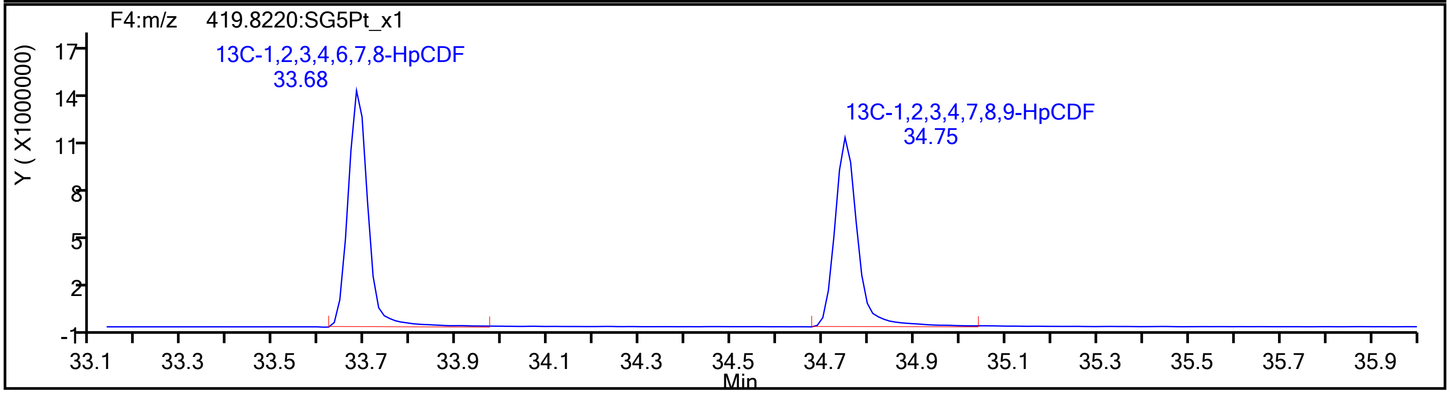

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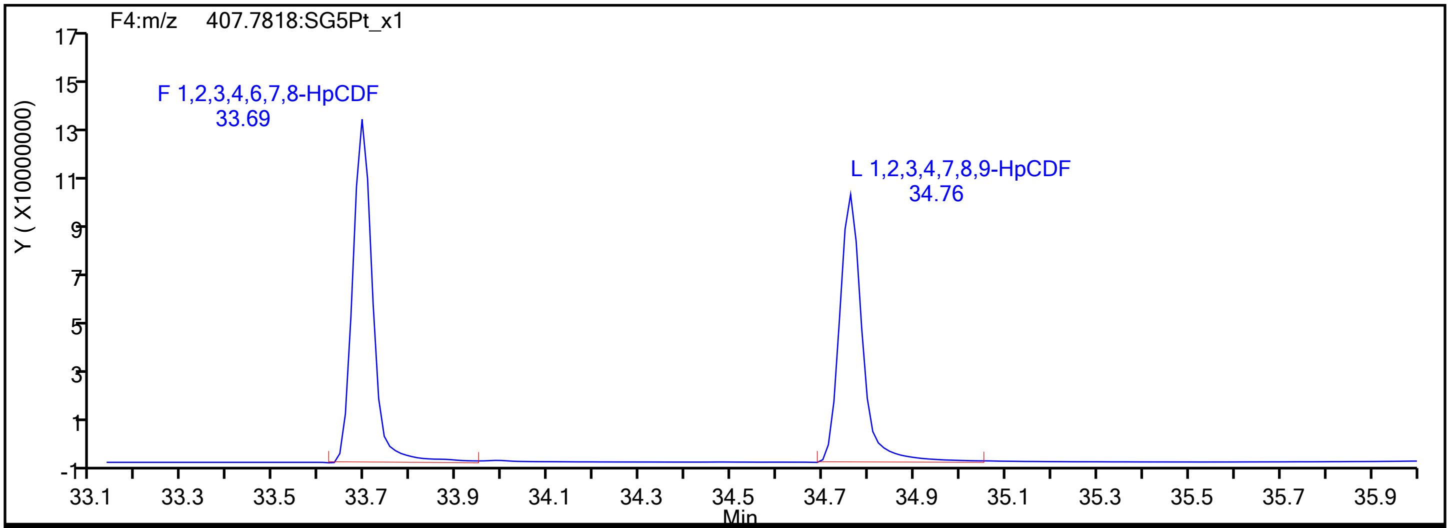

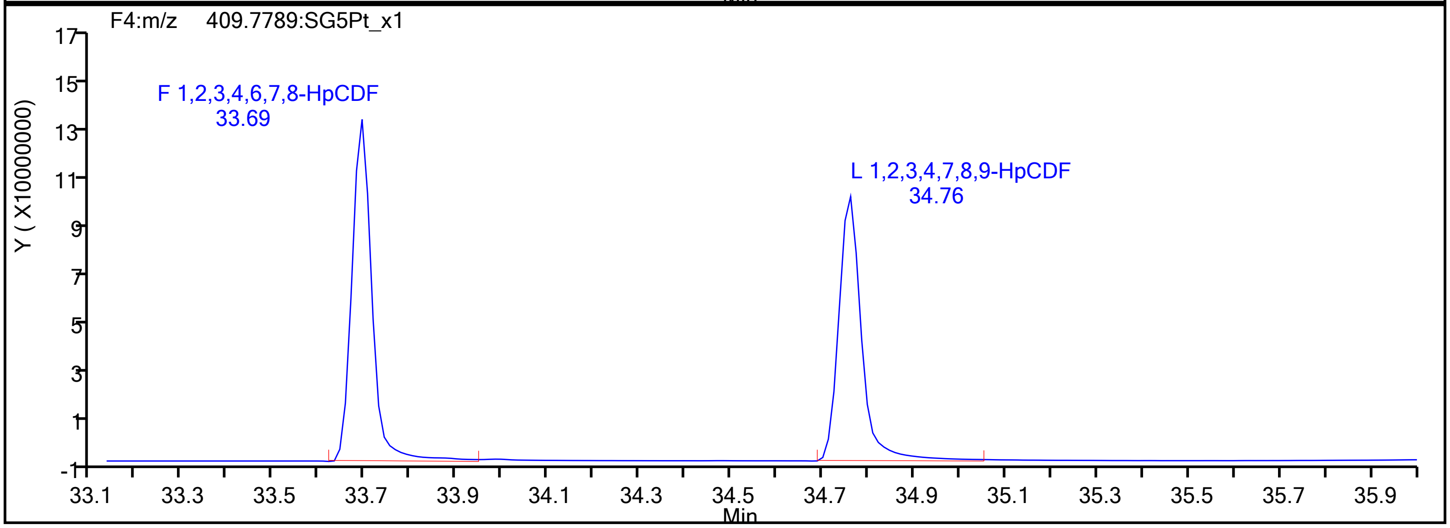

HpCDF Interference Mass

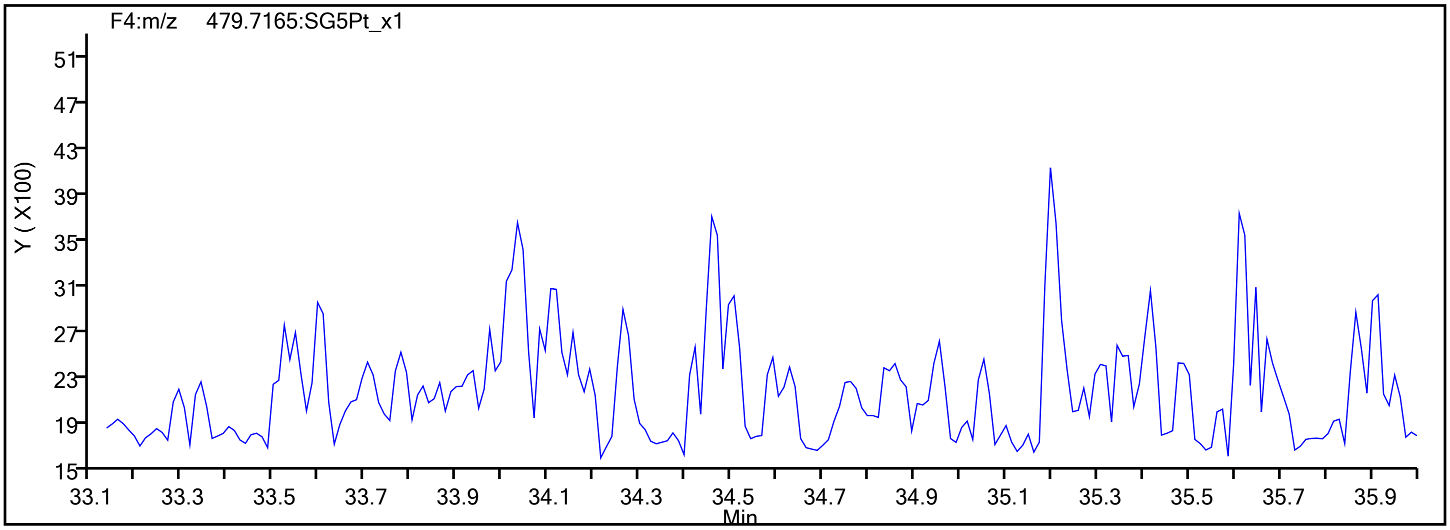

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_10D5　　Limit Group: HR - 1613B - ICAL
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HpCDD

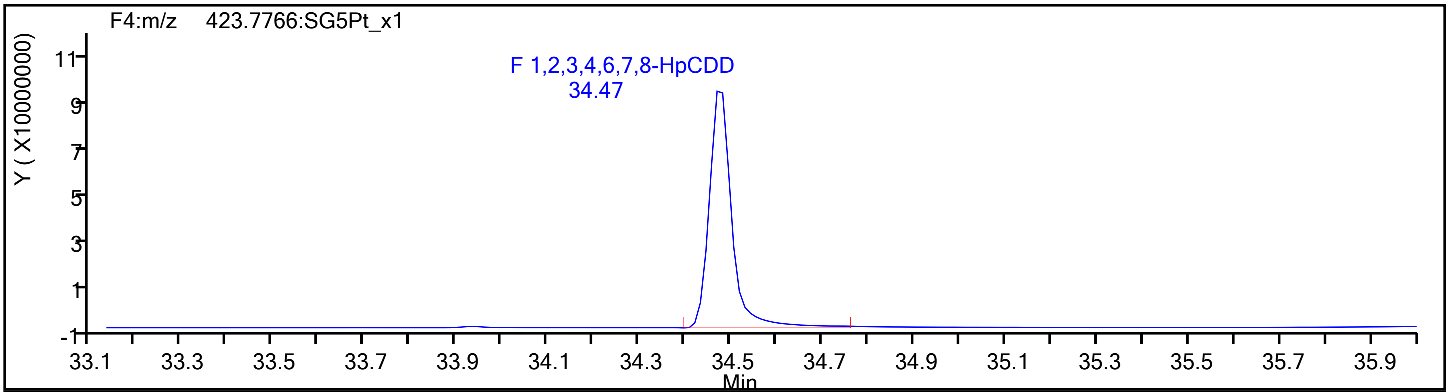

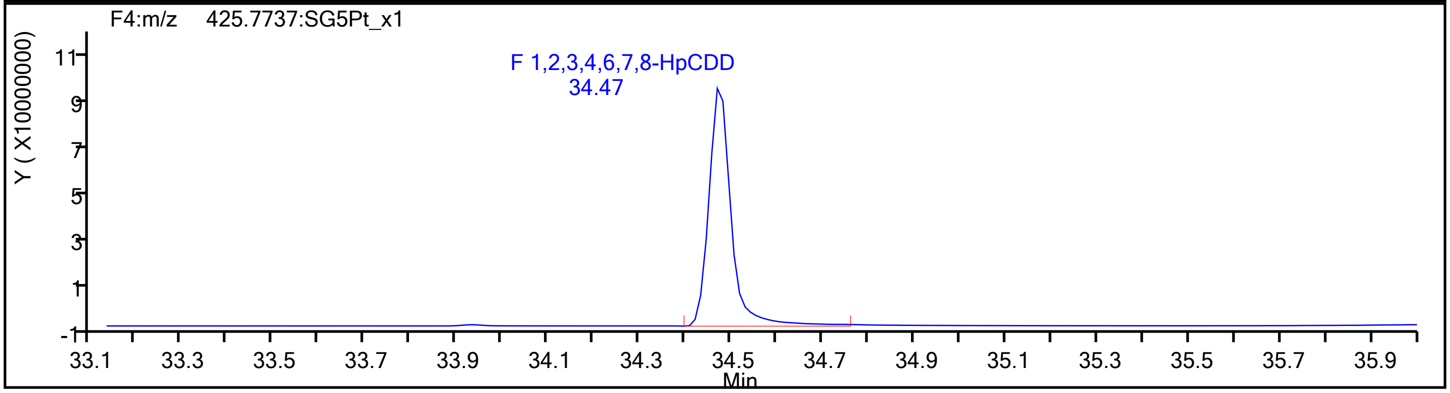

HpCDD Standards

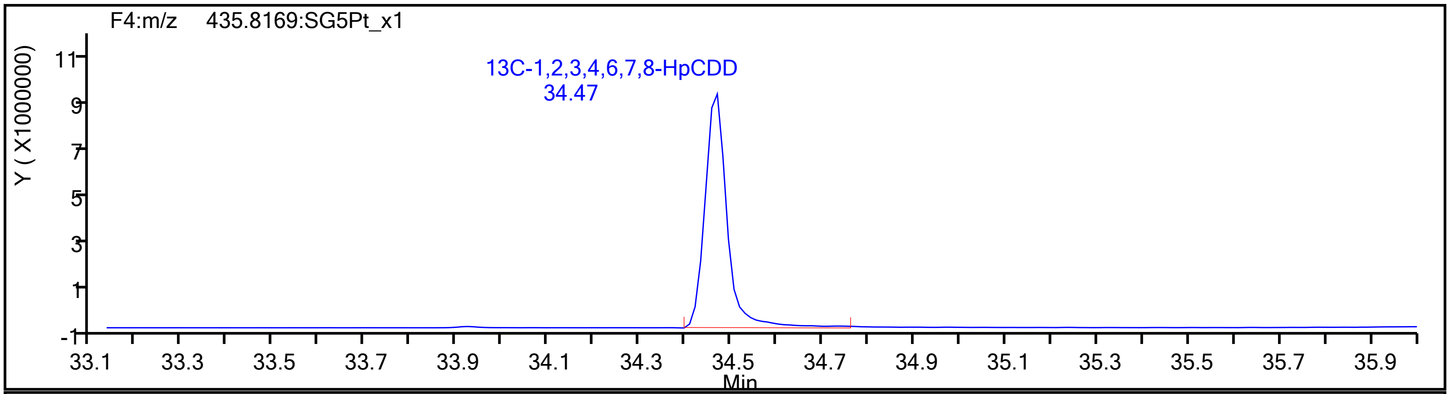

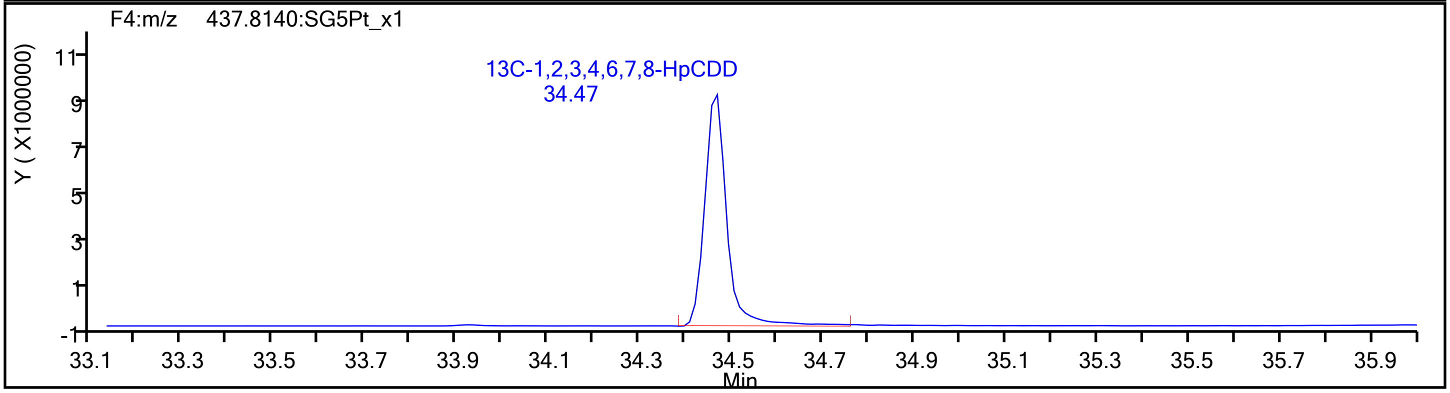

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

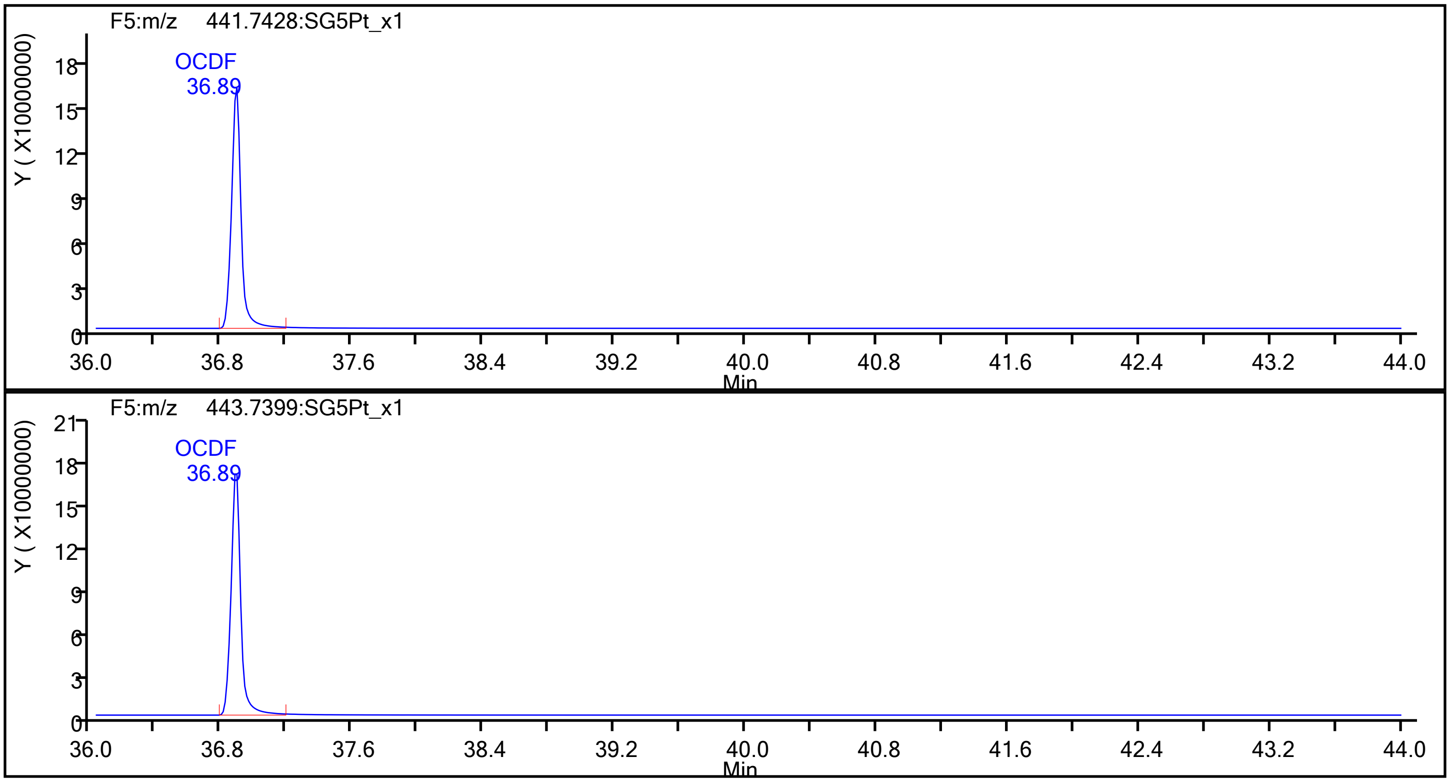

OCDF Standards

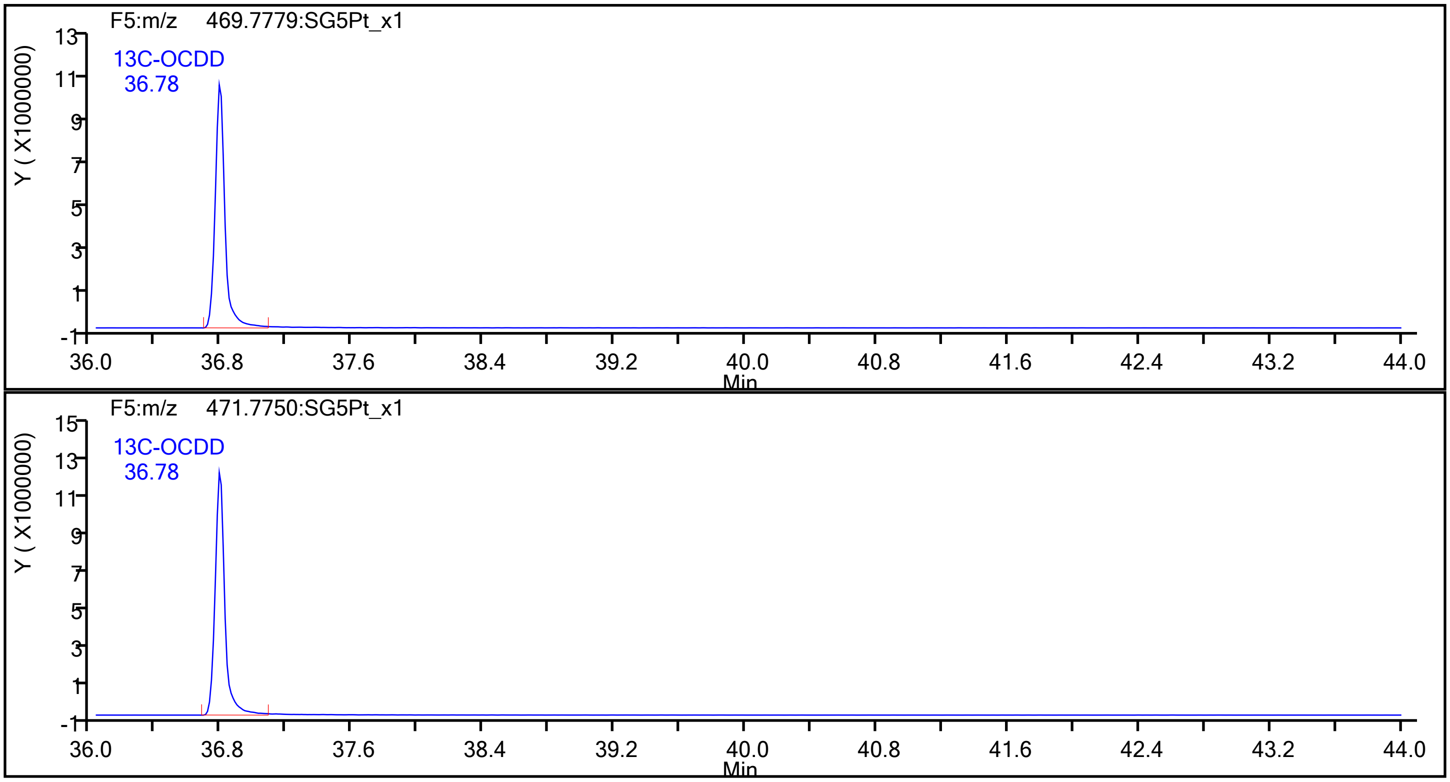

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

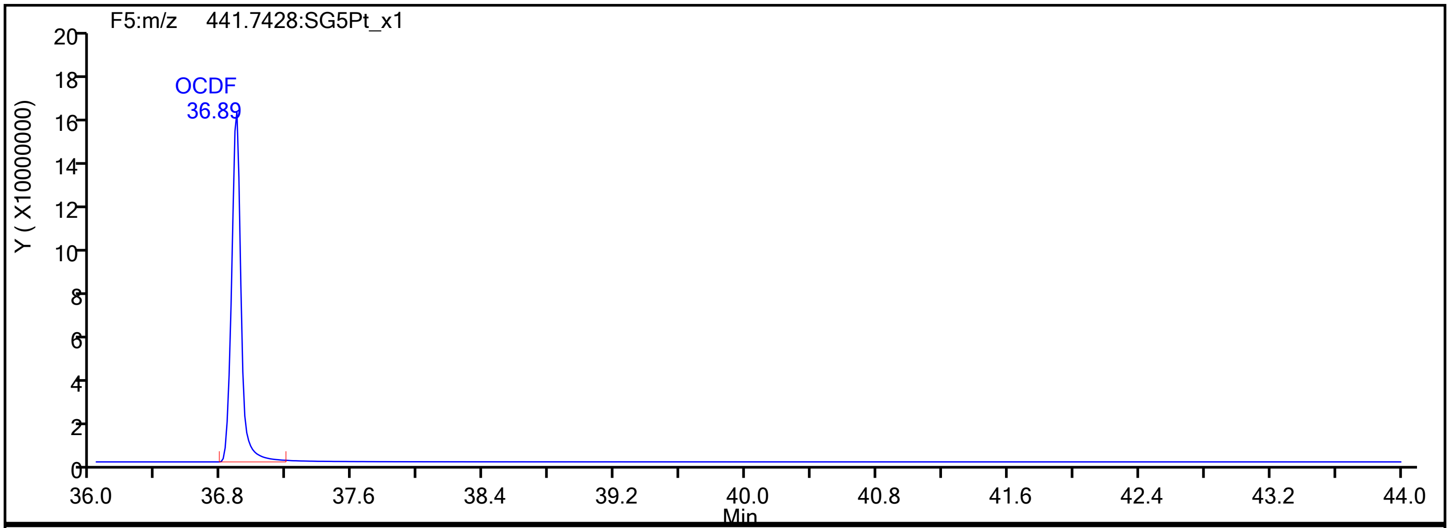

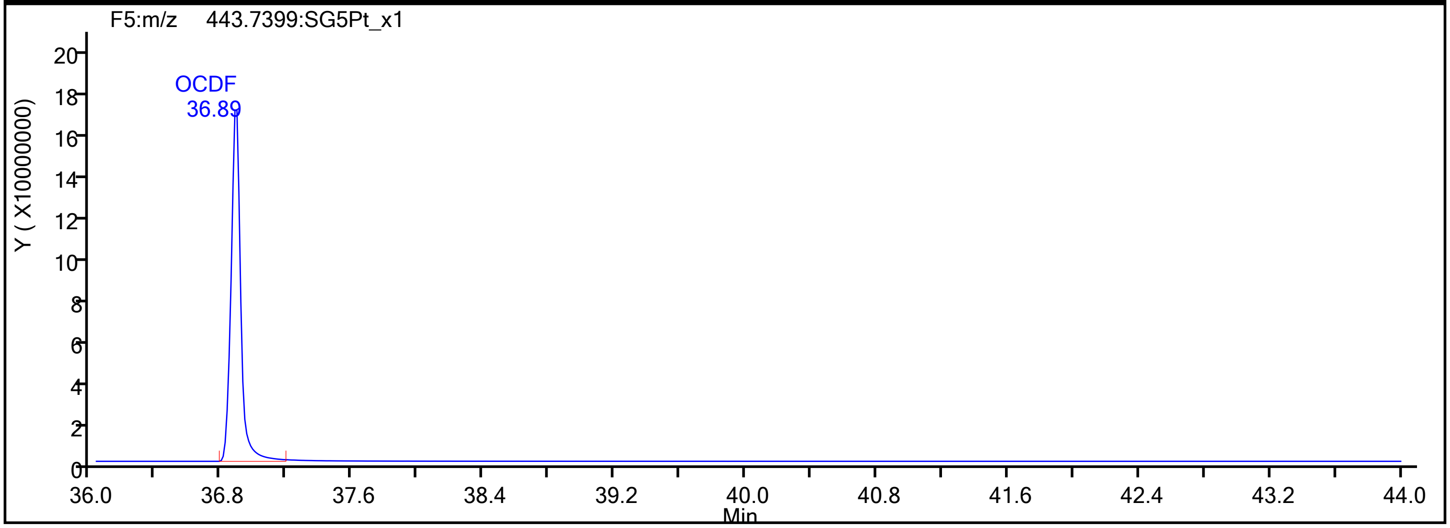

OCDF Interference Mass

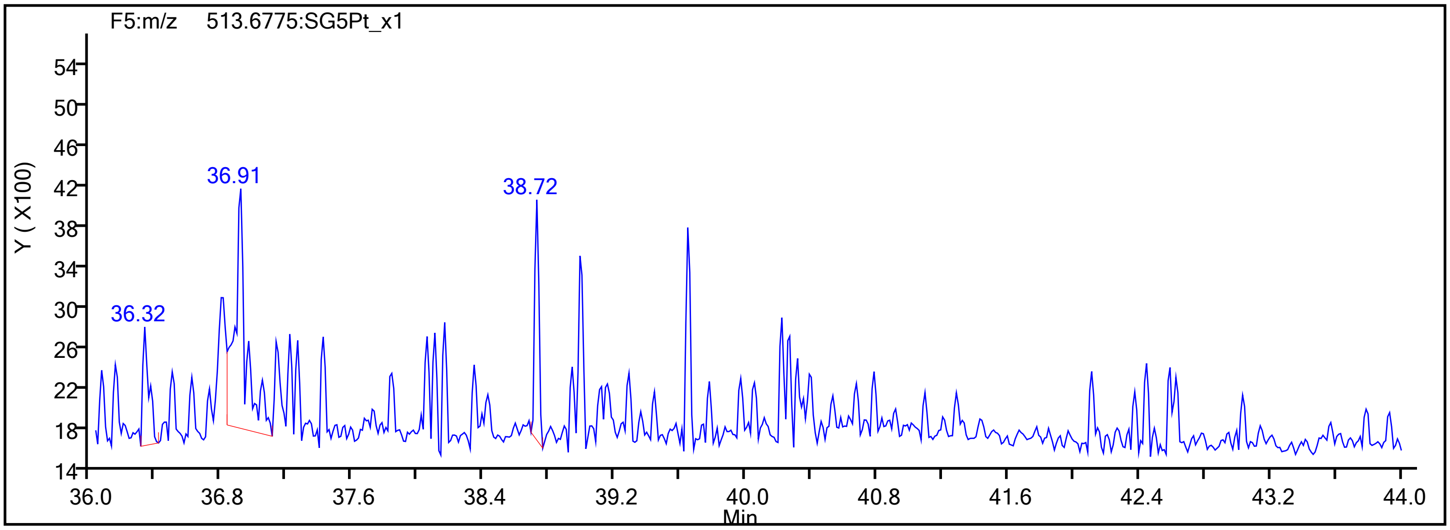

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d		
Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

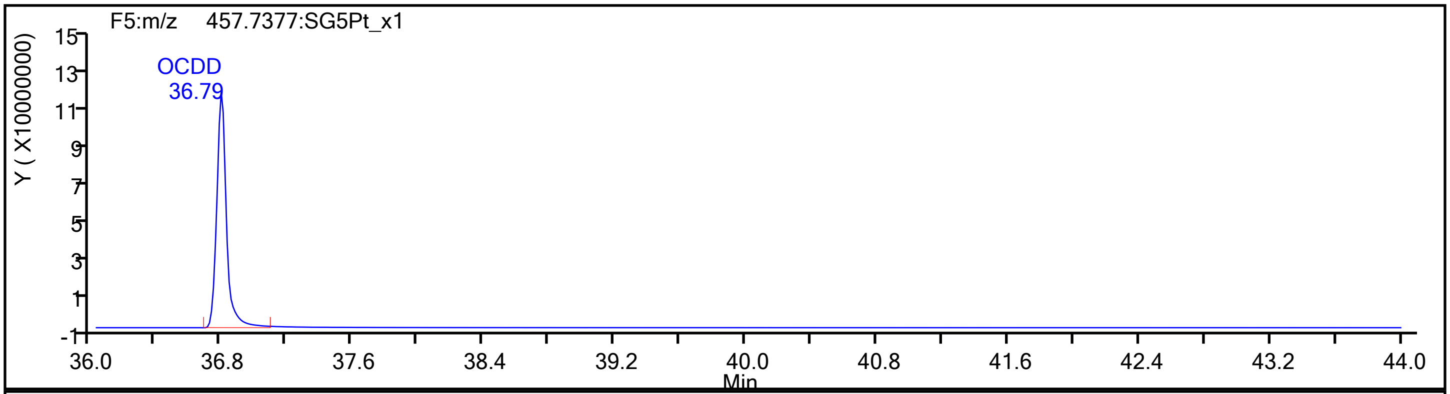

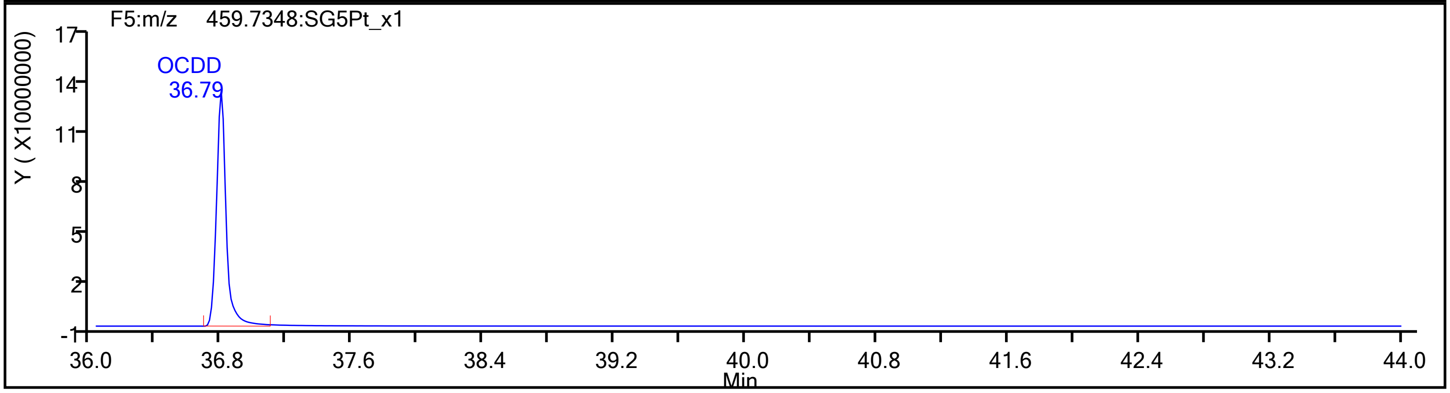

OCDD Standards

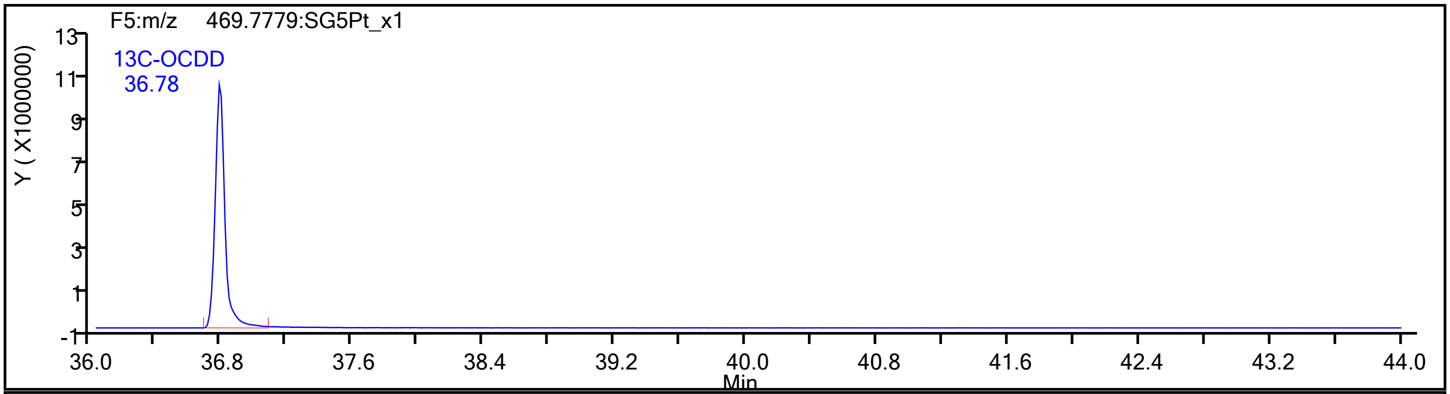

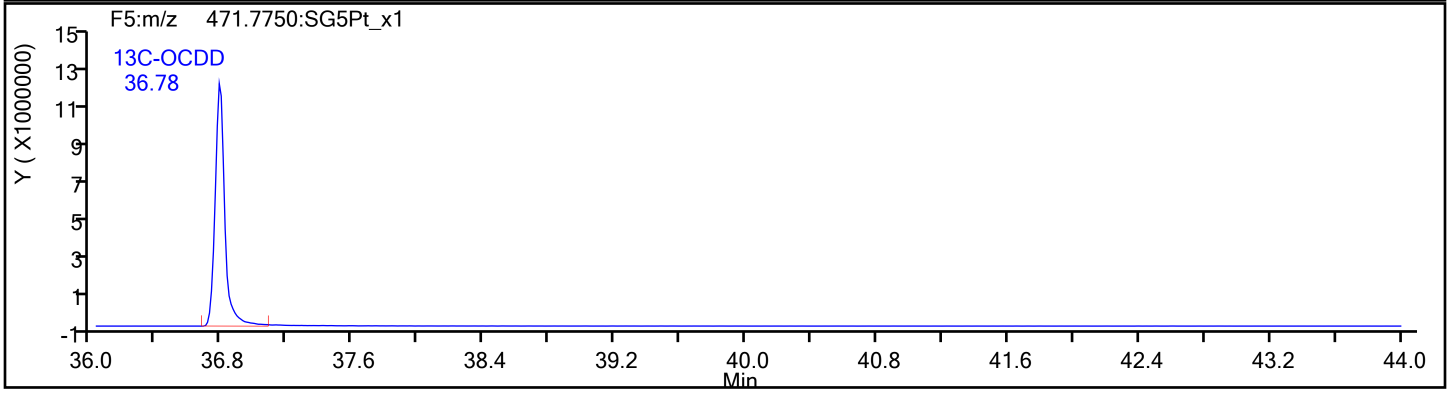

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date: 17-Sep-2020 19:09:42 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

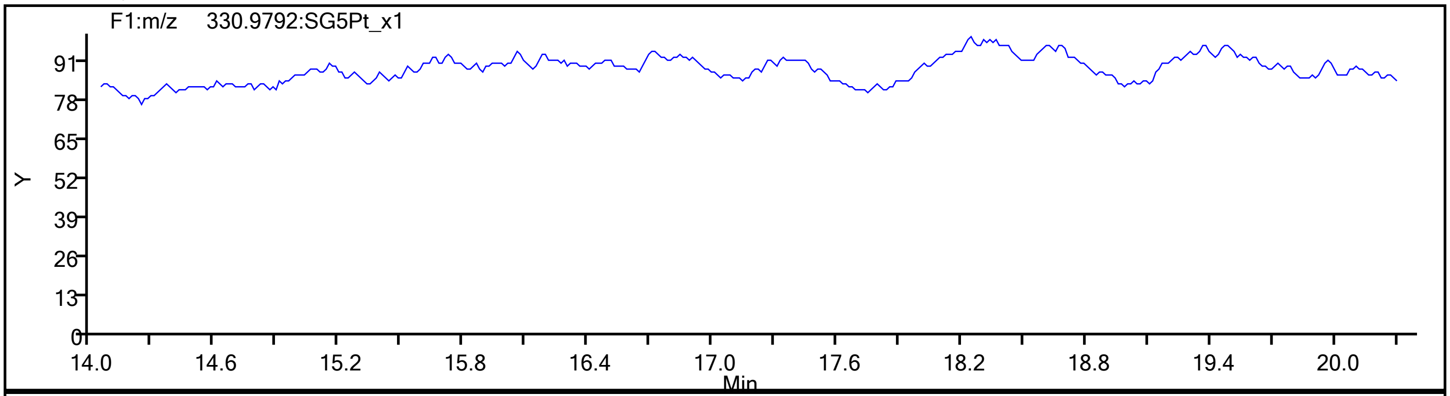

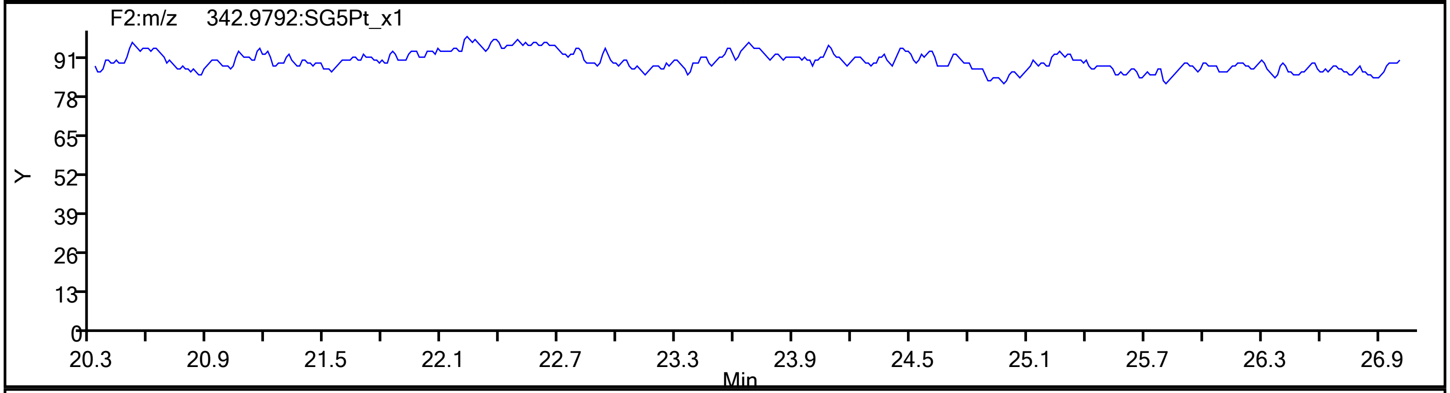

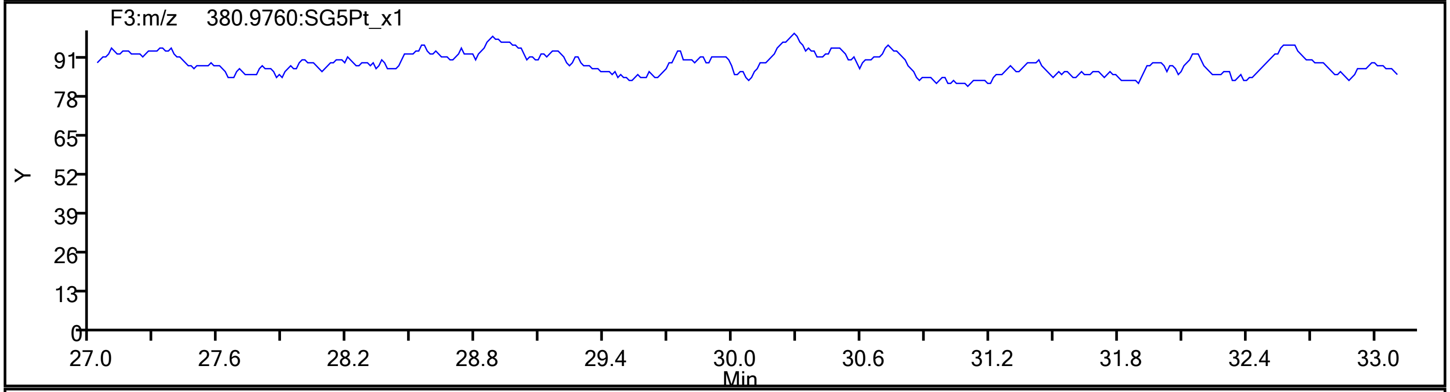

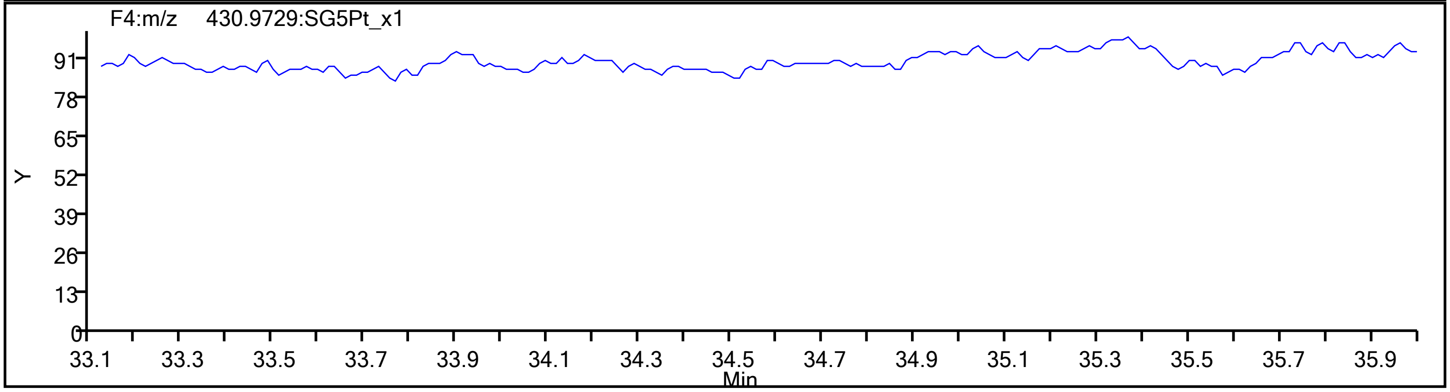

Report Date: 18-Sep-2020 10:36:16 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Injection Date:	17-Sep-2020 19:09:42	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

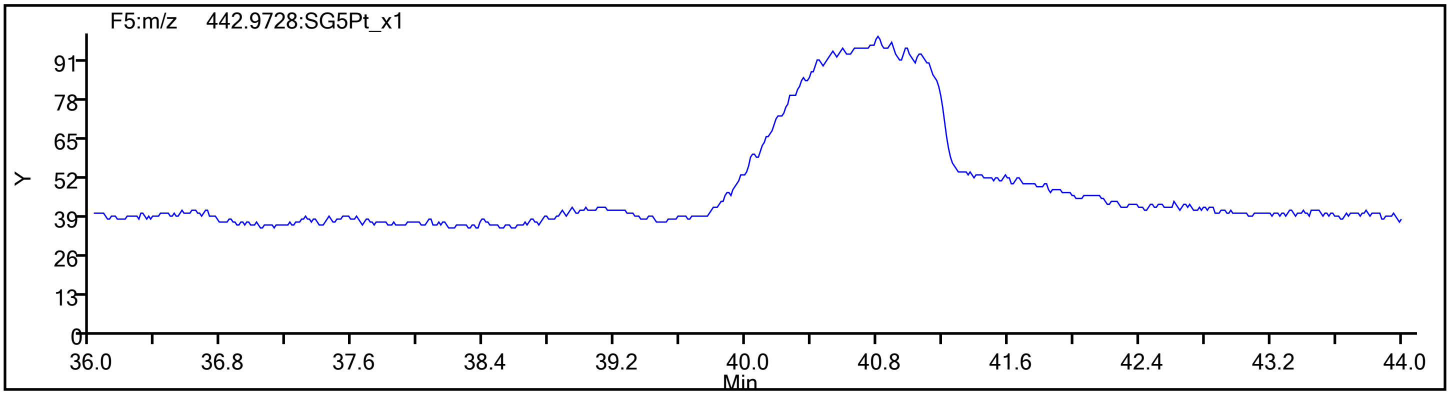

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento　Job No.: 320-66850-2　Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2　GC Column: DB-225　ID: 0.32(mm)　Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50　Calibration End Date: 07/25/2020 02:23　Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2   Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2   GC Column: DB-225   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50   Calibration End Date: 07/25/2020 02:23   Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCDD	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCDD	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
24JL2011D2	1	CPS 072420	CPS HRDXNCP_00040		Dioxin		1.00000	
24JL2011D2	2	SB 072420	SB Solvent Blank C-14				1.00000	
24JL2011D2	3	IC 072420	CS-2 HRDXNL2_00029		Dioxin	ICAL	1.00000	
24JL2011D2	4	IC 072420A	CS-3 HRDXNL3_00027		Dioxin		1.00000	
24JL2011D2	5	IC 072420B	CS-4 HRDXNL4_00094		Dioxin		1.00000	
24JL2011D2	6	IC 072420C	CS-5 HRDXNL5_00030		Dioxin		1.00000	
24JL2011D2	7	IC 072420D	CS-6 HRDXNL6_00026		Dioxin		1.00000	
24JL2011D2	8	SB 072420C	SB Solvent Blank C-14				1.00000	
24JL2011D2	9	ICV 072420	ICV HRDXNIC_00045		Dioxin		1.00000	
24JL2011D2	10						1.00000	
24JL2011D2	11						1.00000	
24JL2011D2	12						1.00000	
24JL2011D2	13						1.00000	
24JL2011D2	14						1.00000	
24JL2011D2	15						1.00000	
24JL2011D2	16						1.00000	
24JL2011D2	17						1.00000	
24JL2011D2	18		ALM 07-24-20				1.00000	
24JL2011D2	19						1.00000	

Logfile ✓id
7/27/20
KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

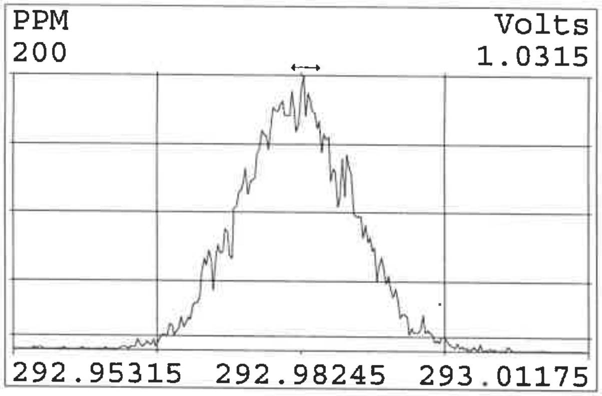

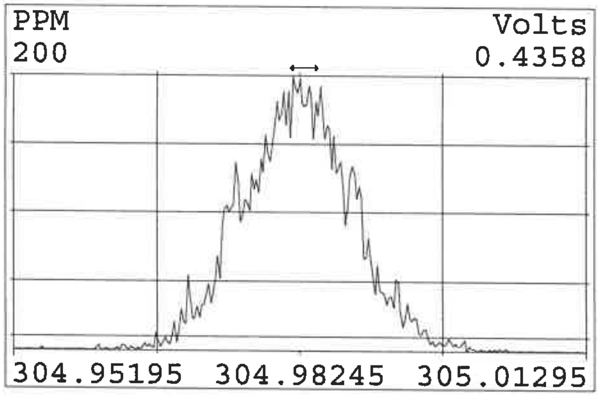

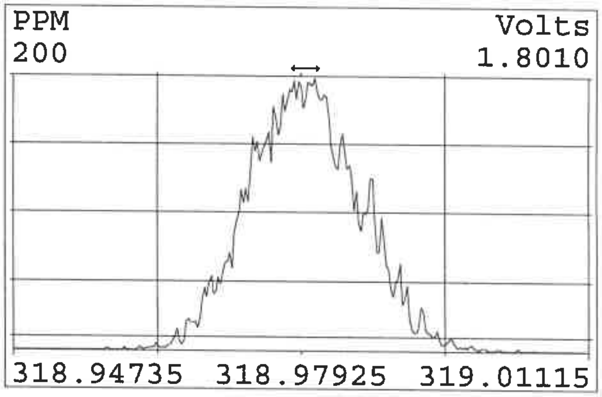

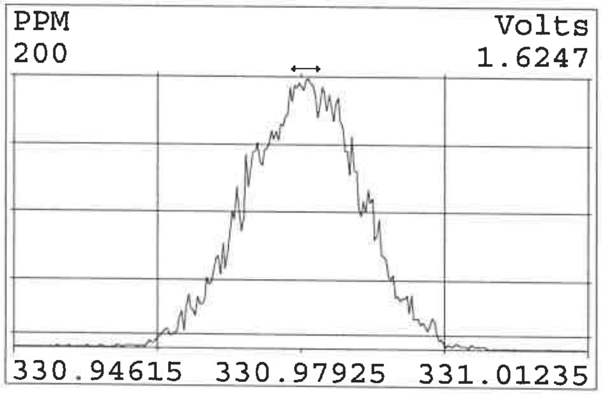

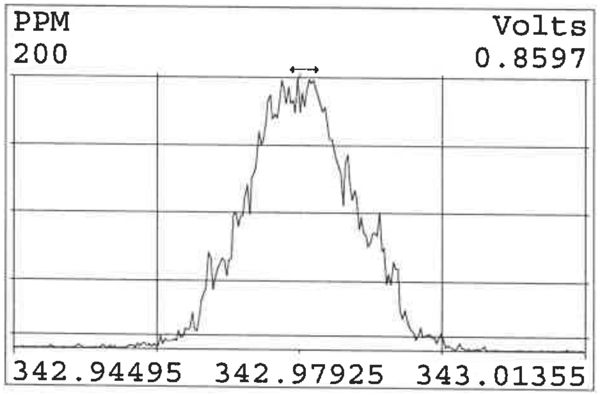

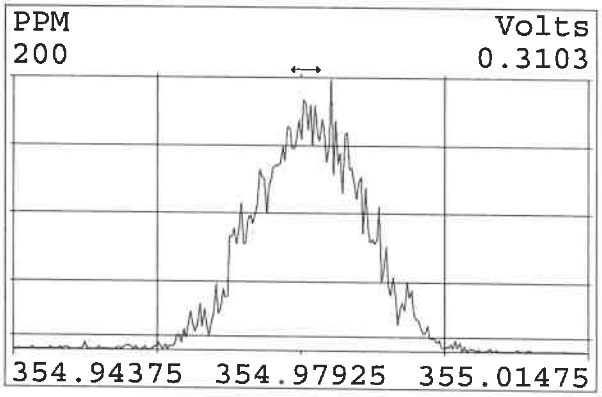

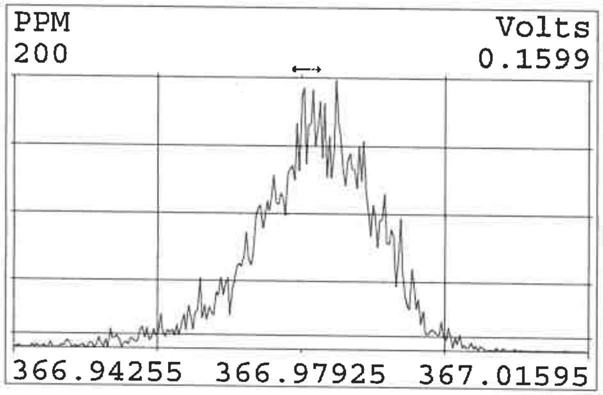

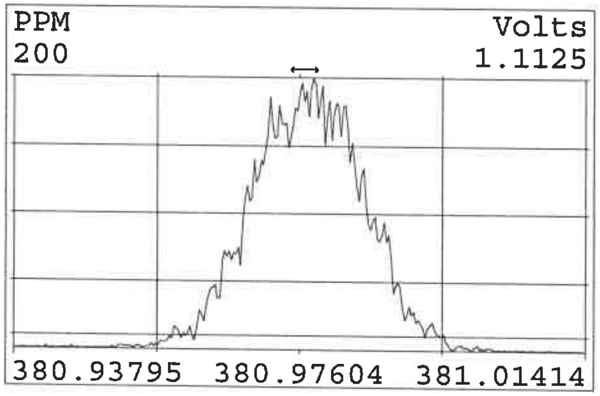

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

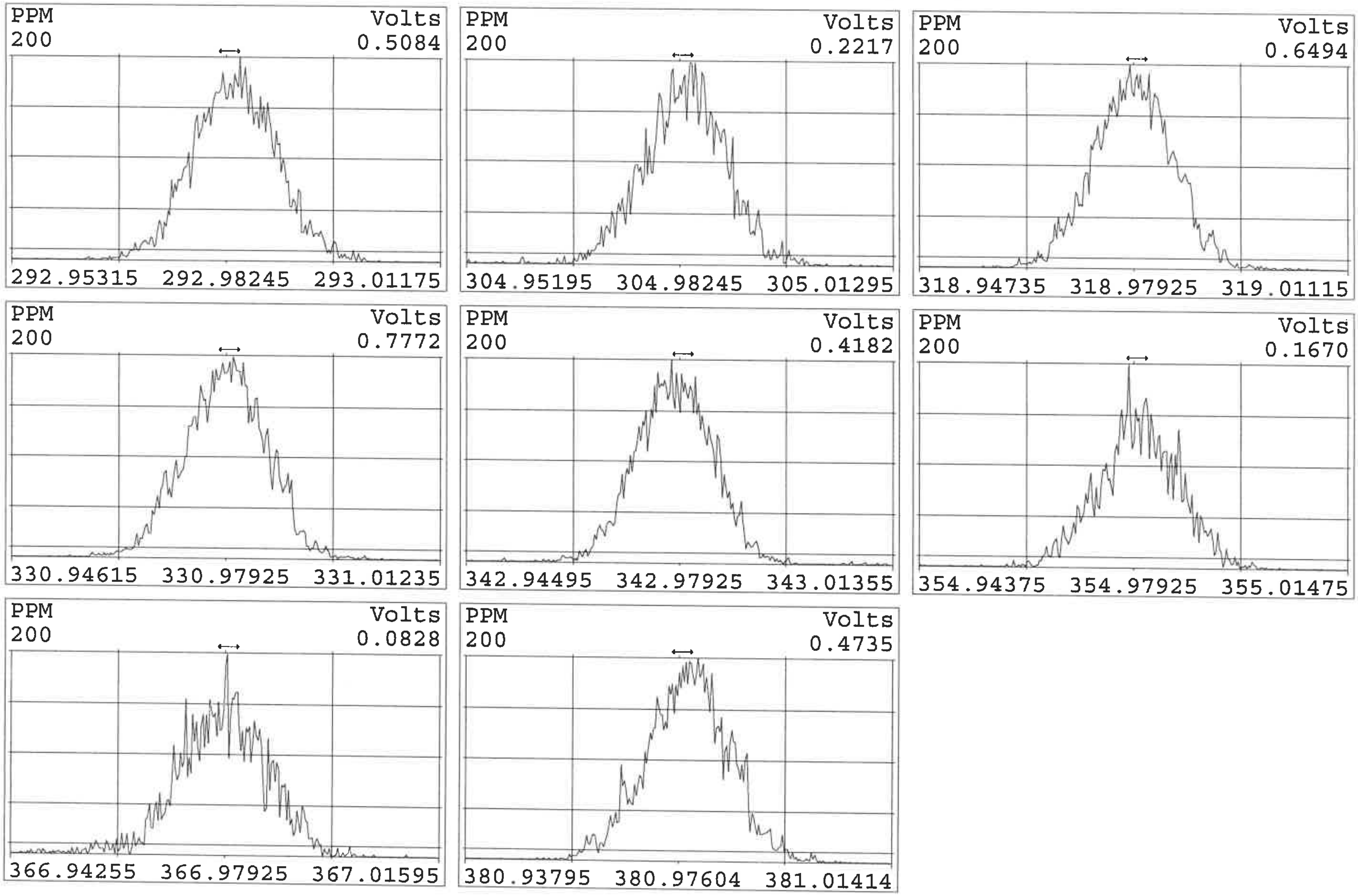

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d				
Lims ID:	IC 2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	24-Jul-2020 23:50:17	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:49	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC
Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17
ALS Bottle#: 0
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID:
Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49
Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)
Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa
Date: 27-Jul-2020 12:33:37

Signal	RT (min.)	Adj RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

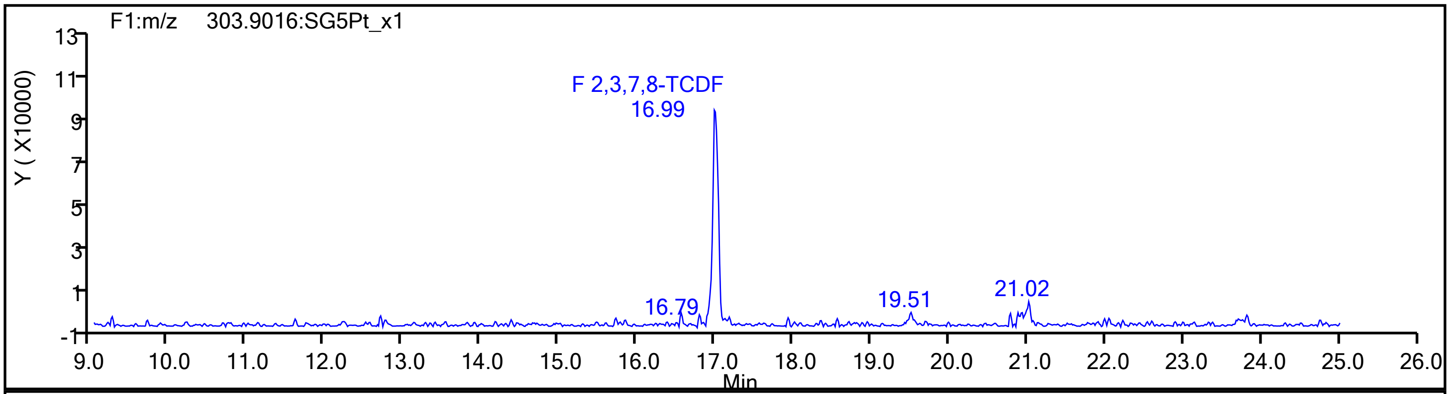

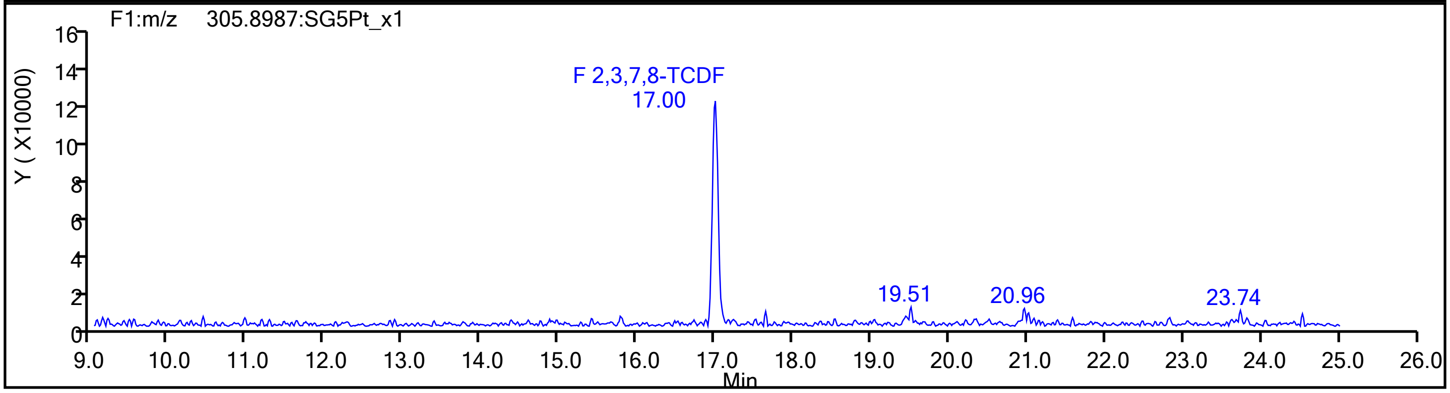

TCDF Standards

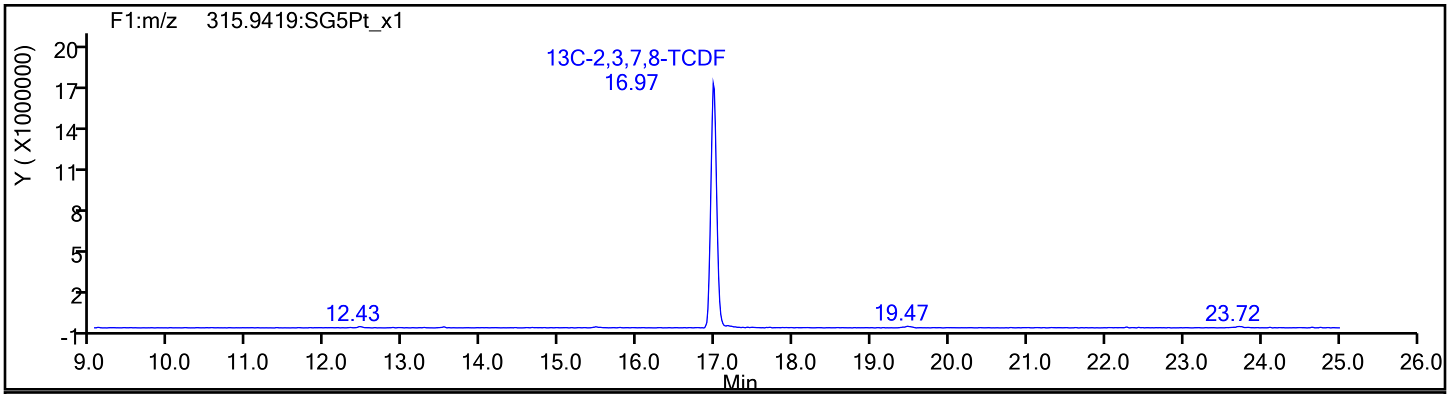

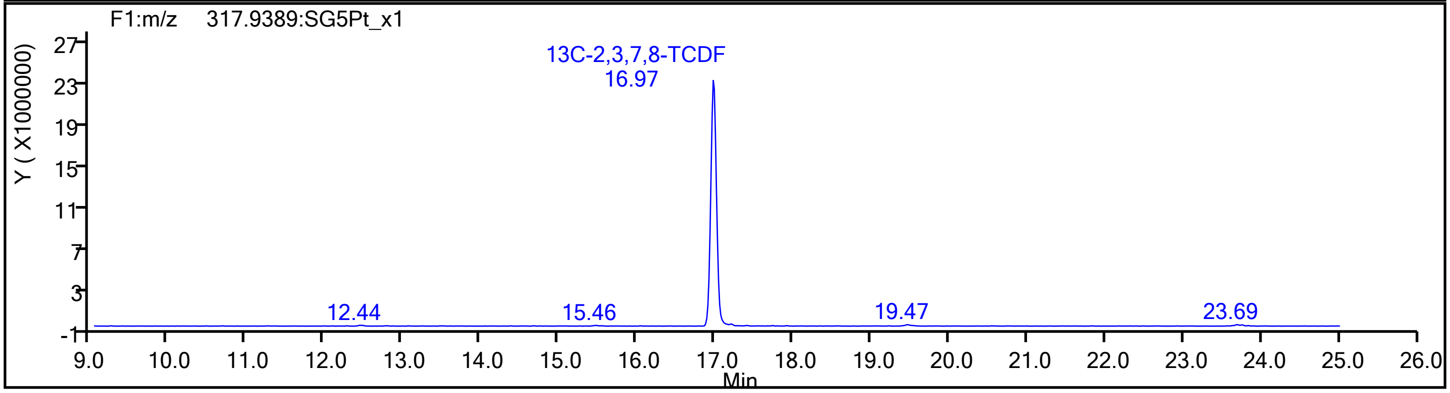

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

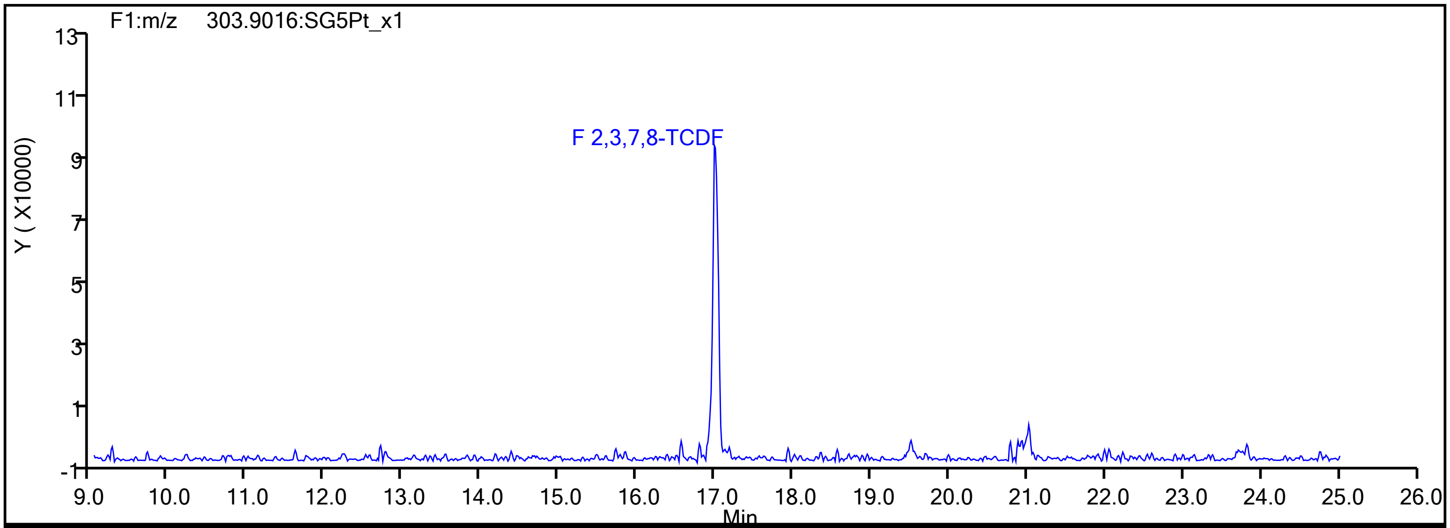

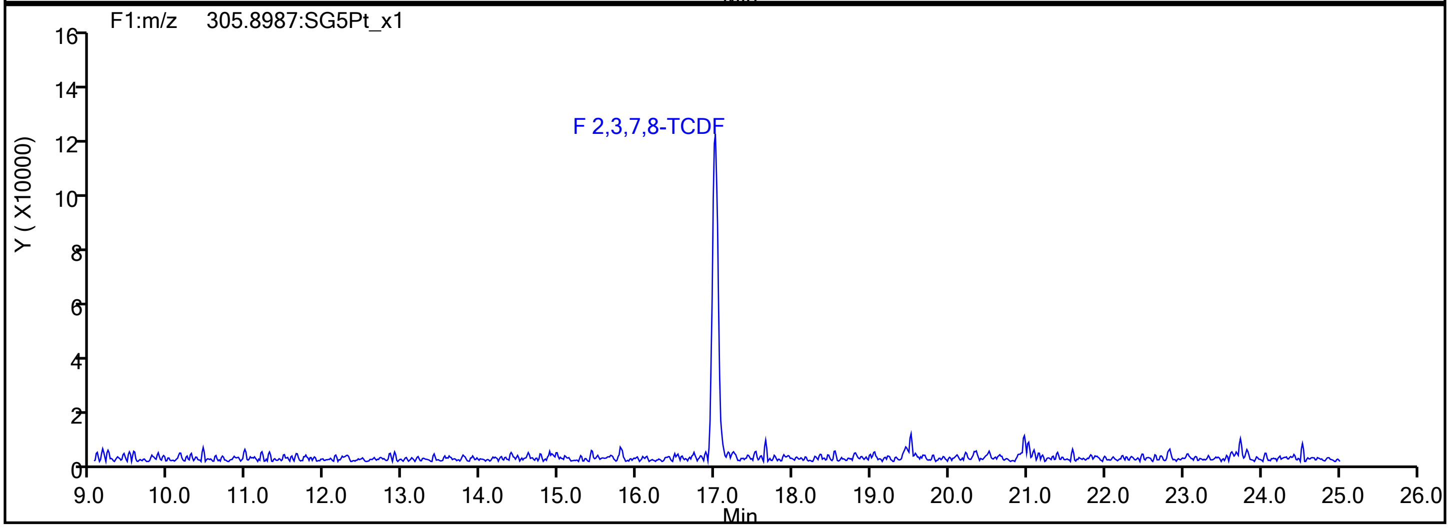

TCDF Interference Mass

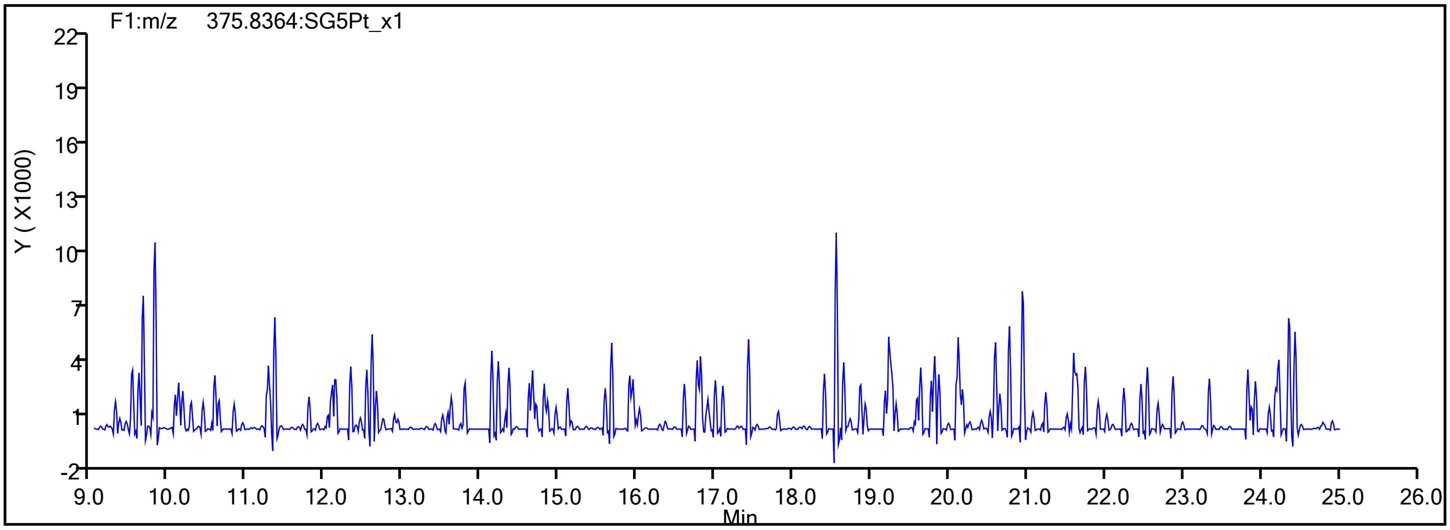

Report Date: 27-Jul-2020 12:42:51
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

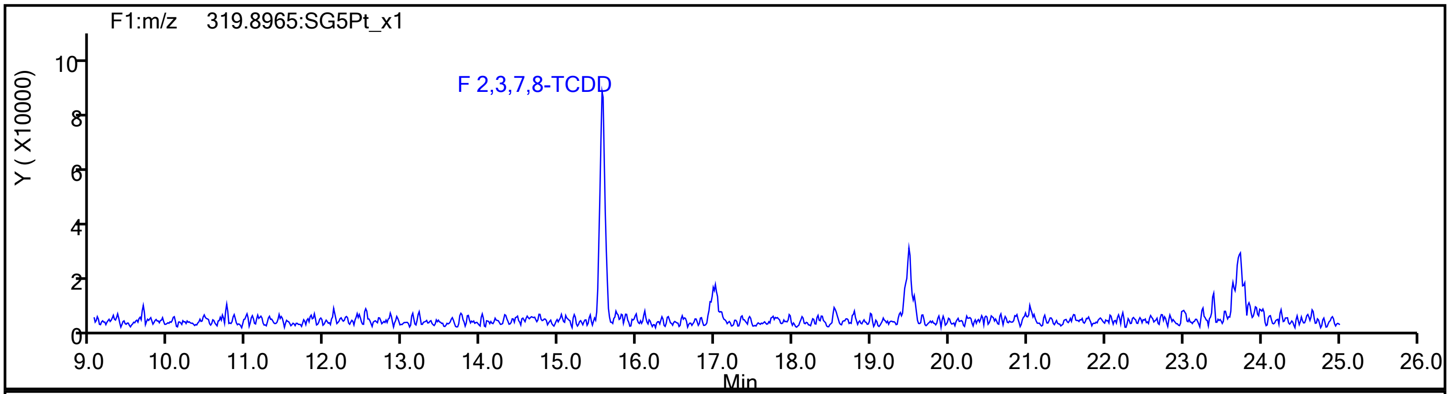

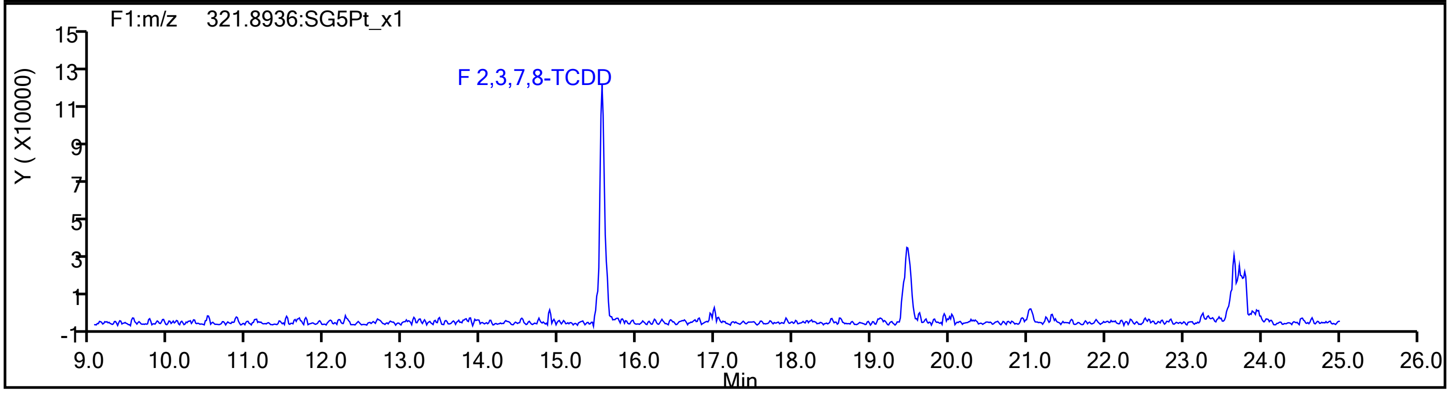

TCDD Standards

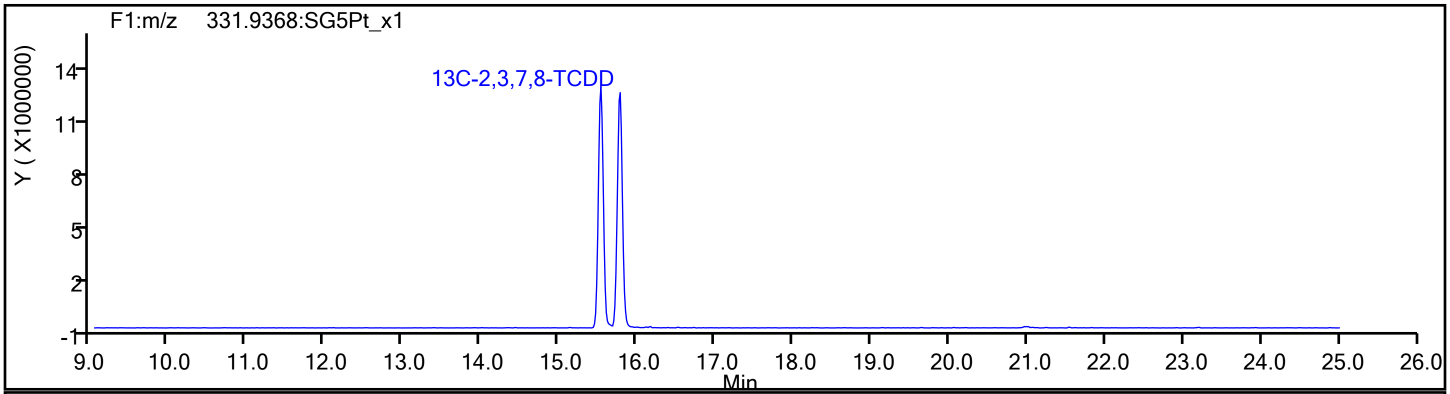

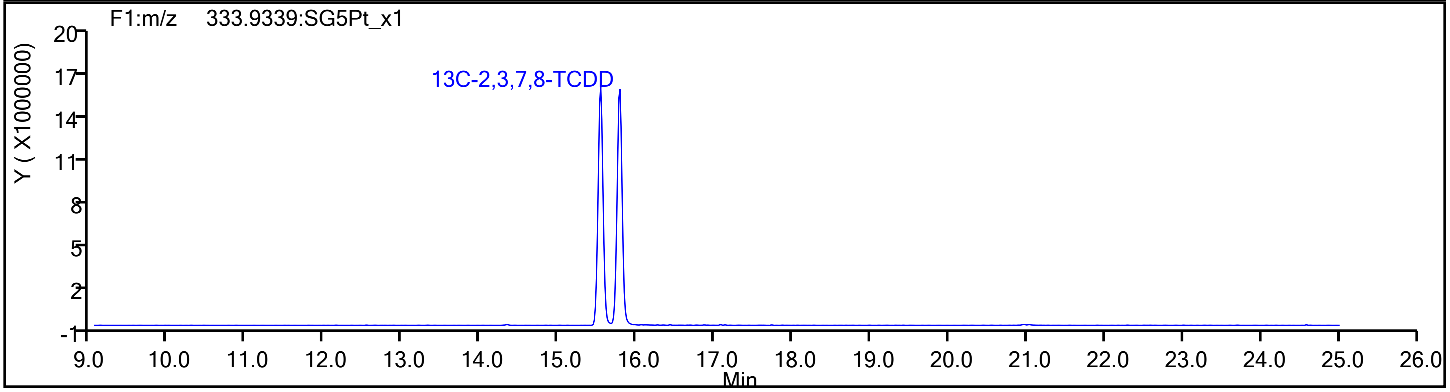

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

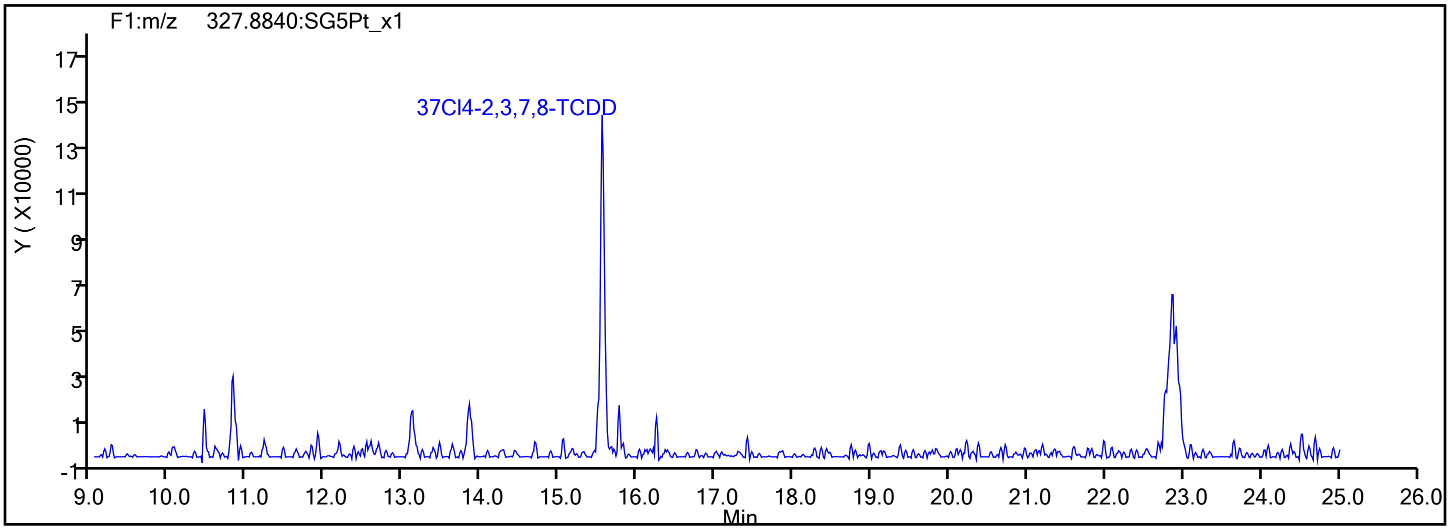

37Cl4-TCDD Standards

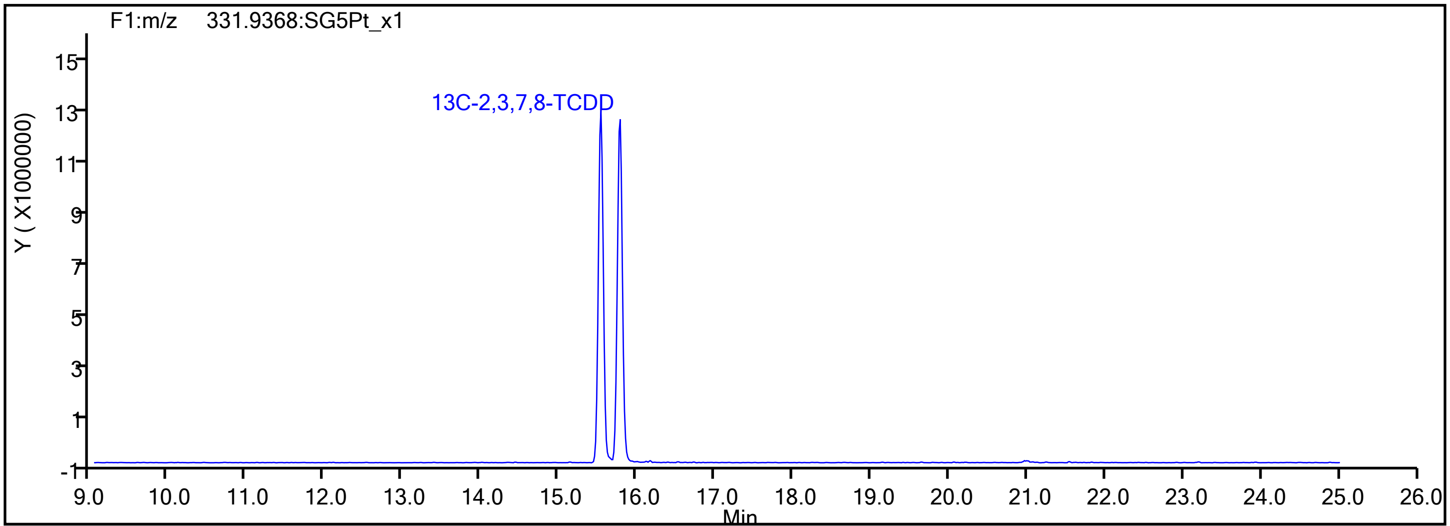

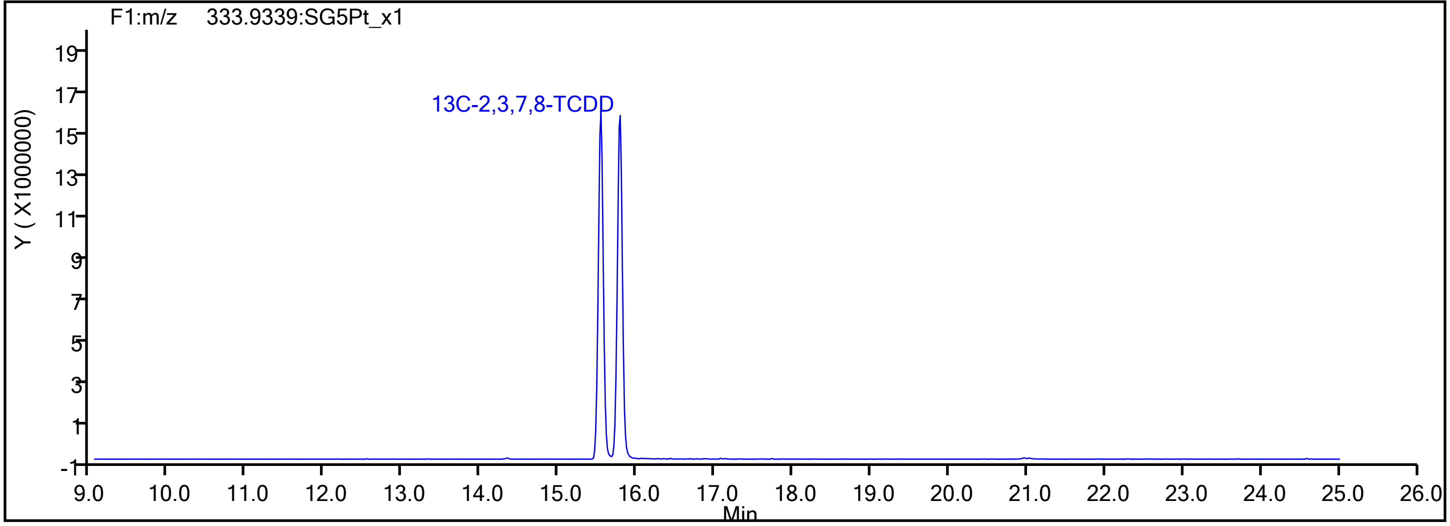

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

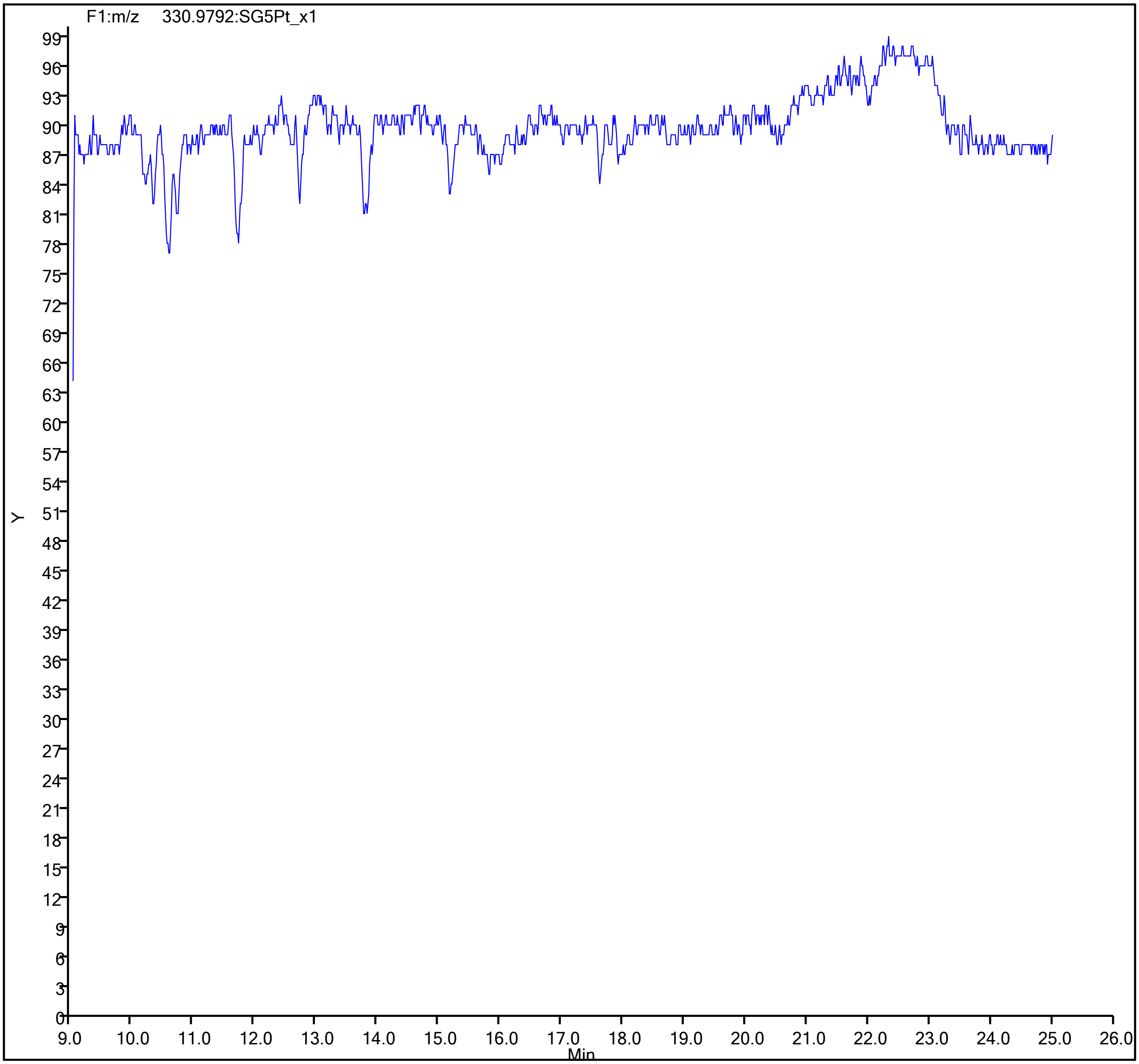

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

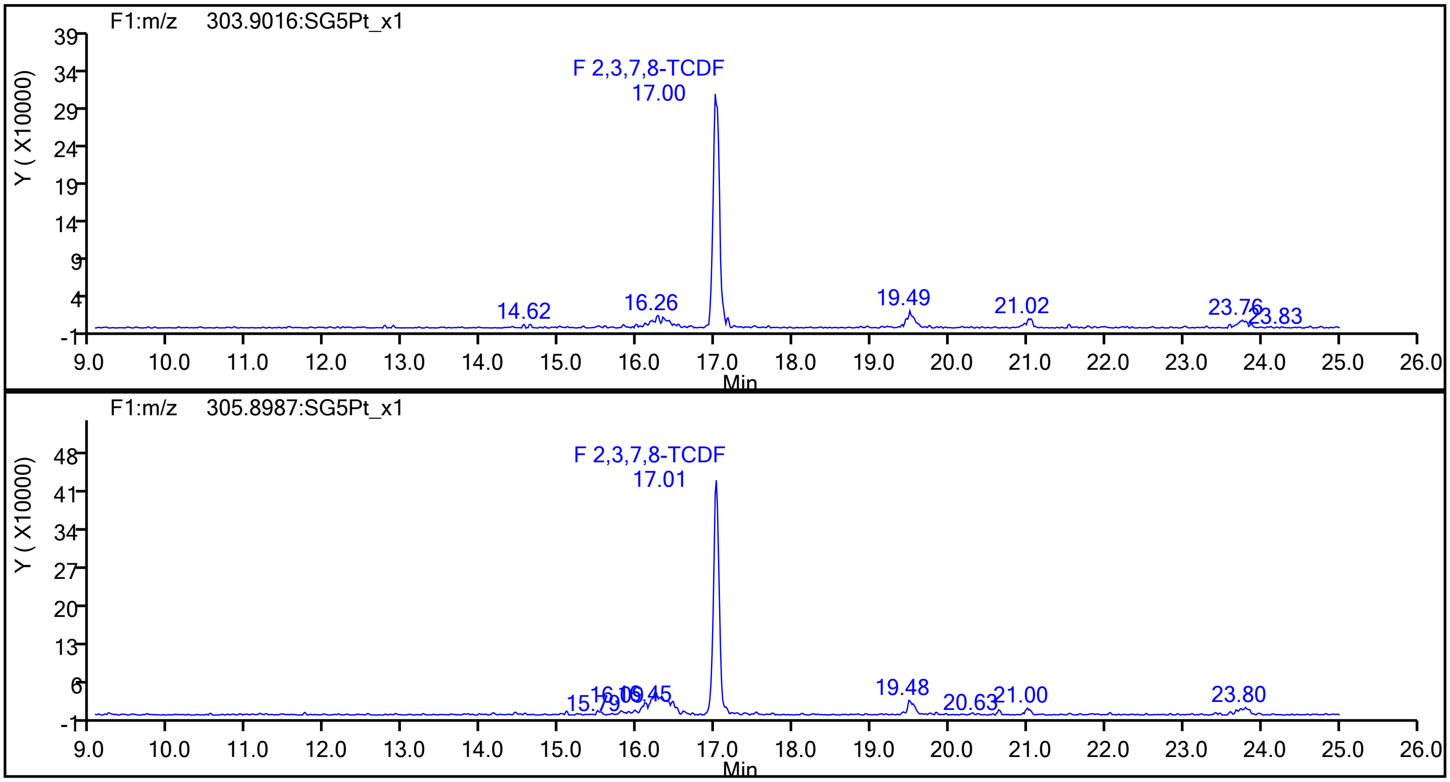

TCDF Standards

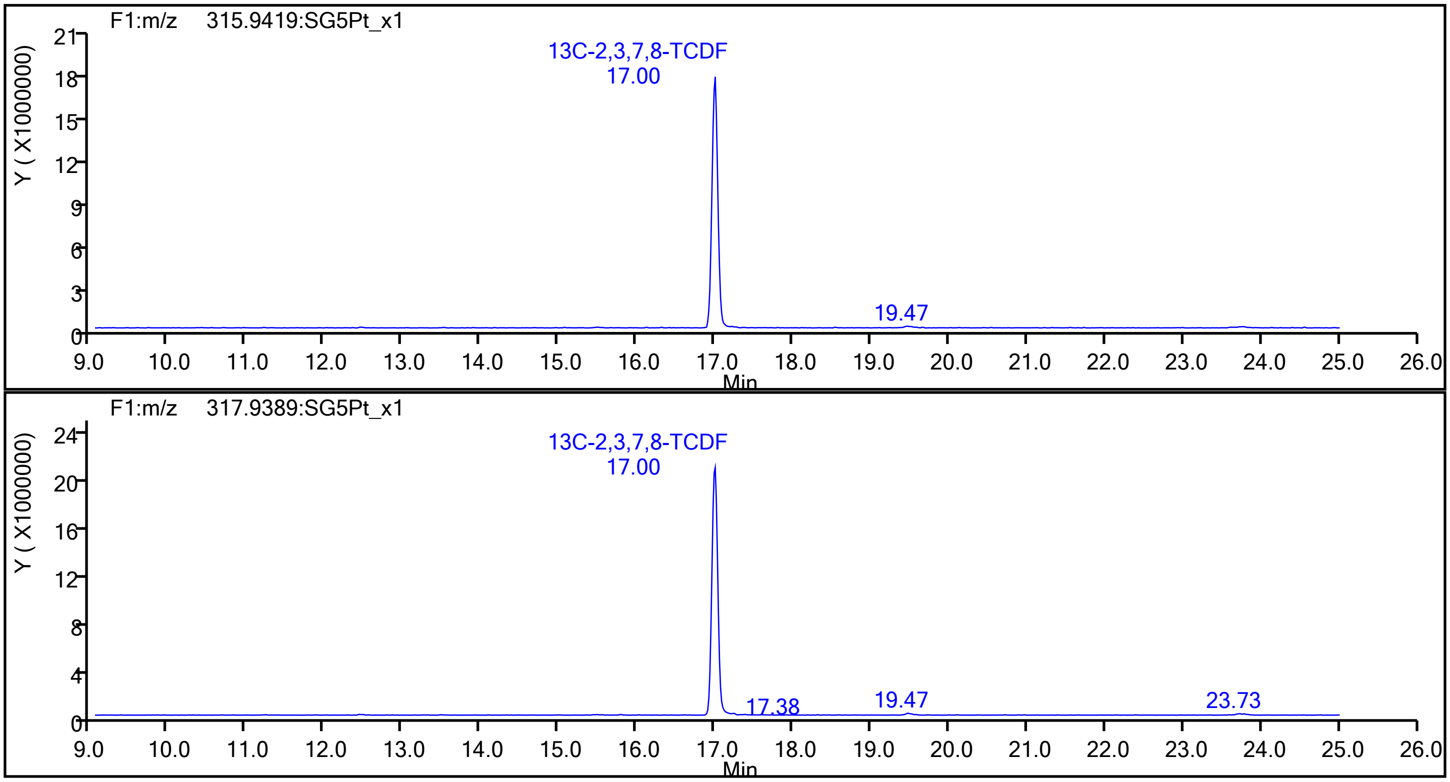

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

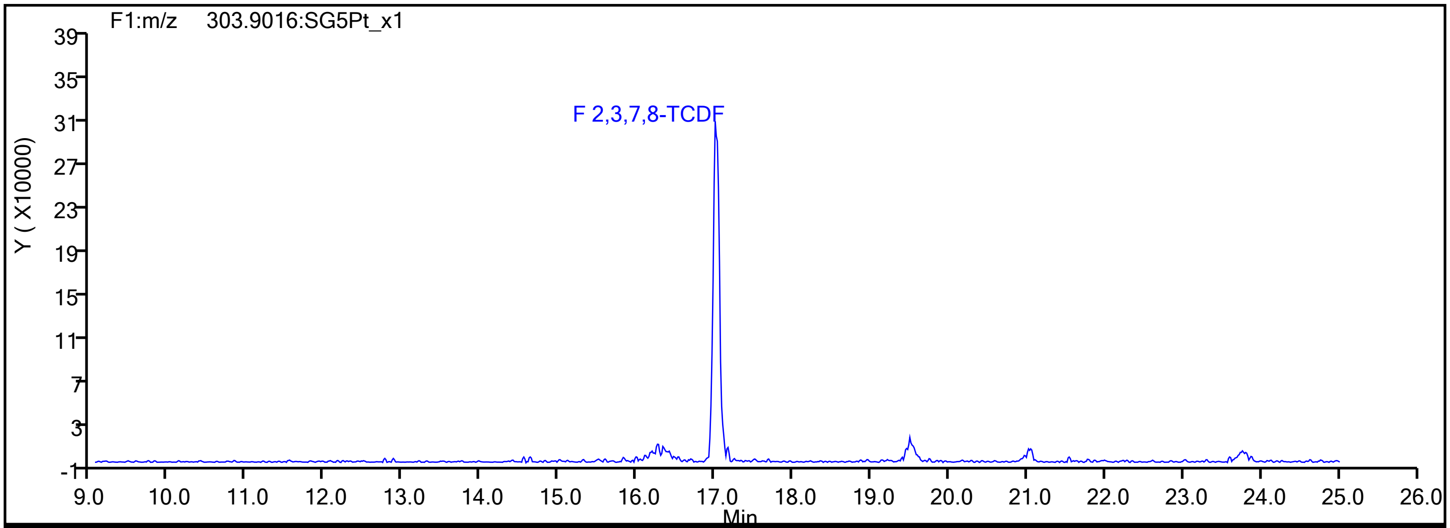

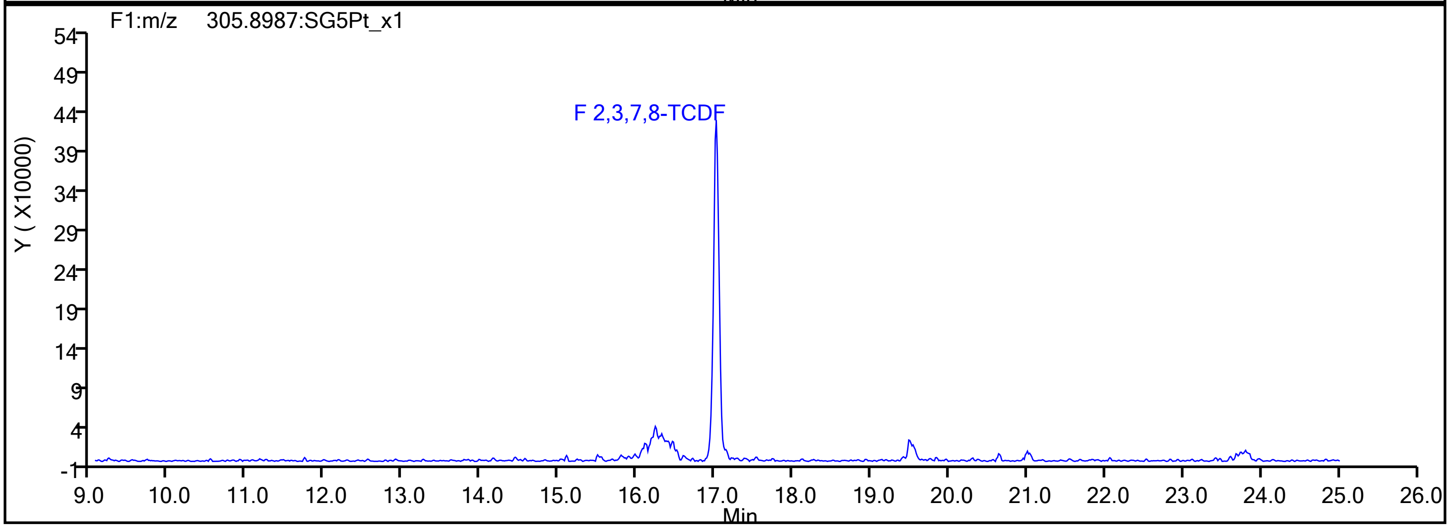

TCDF Interference Mass

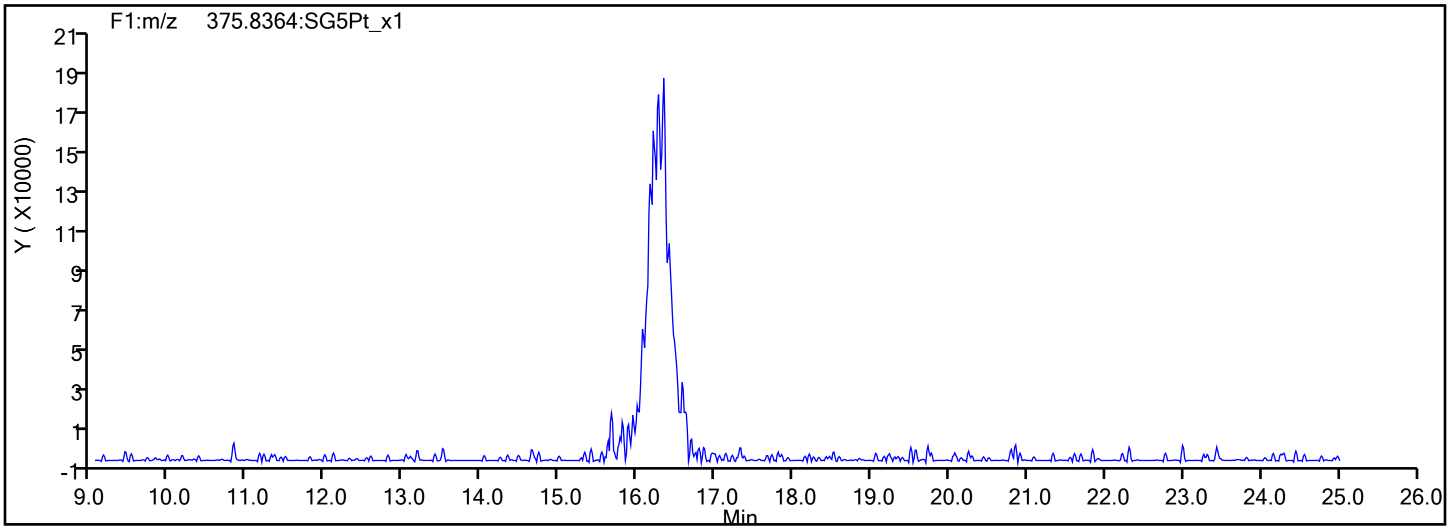

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Injection Date: 25-Jul-2020 00:28:40 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

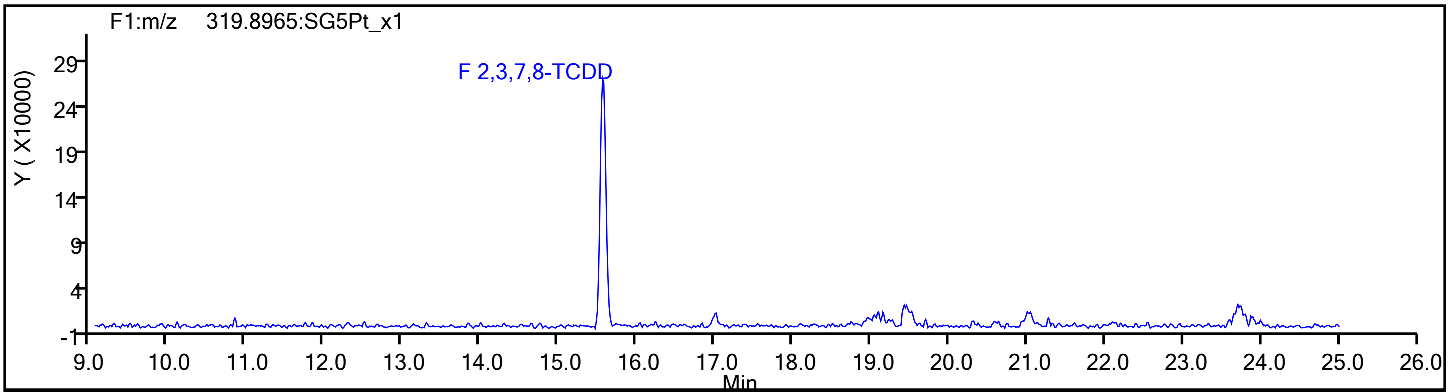

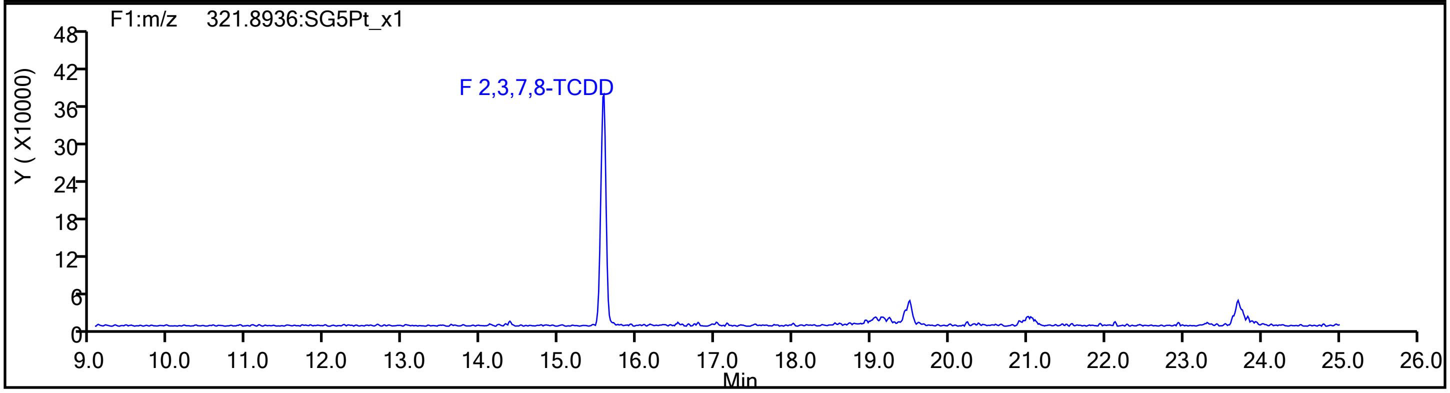

TCDD Standards

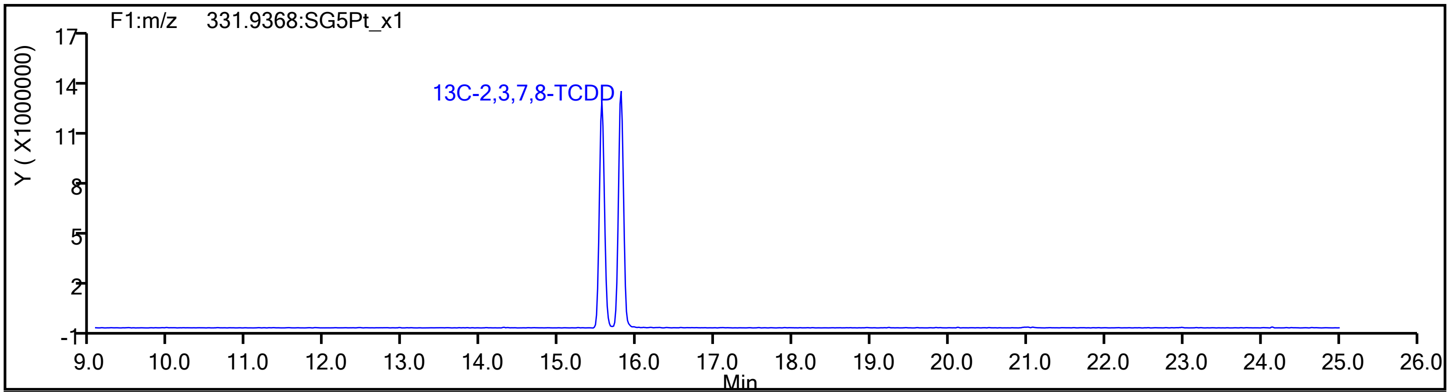

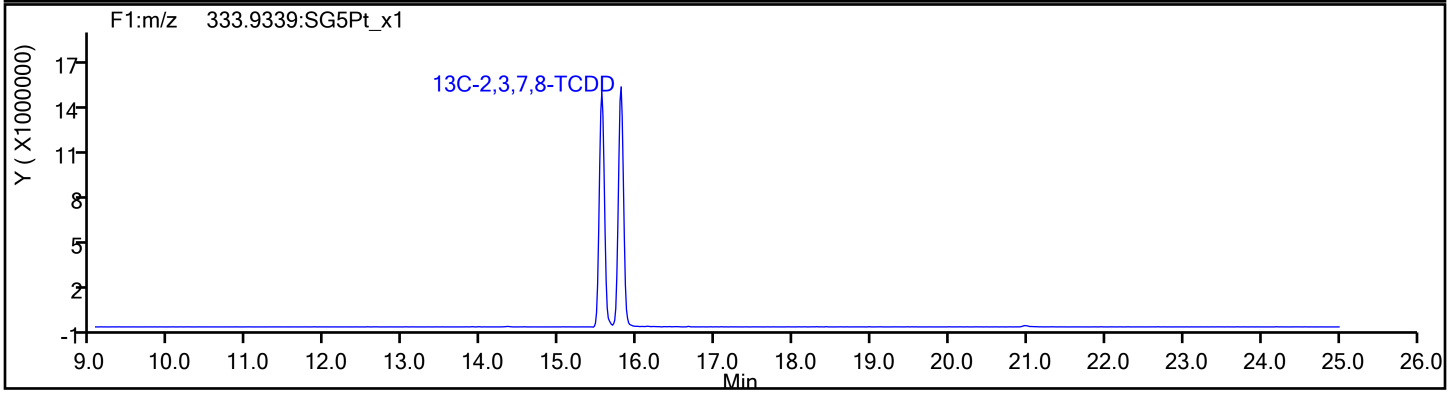

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

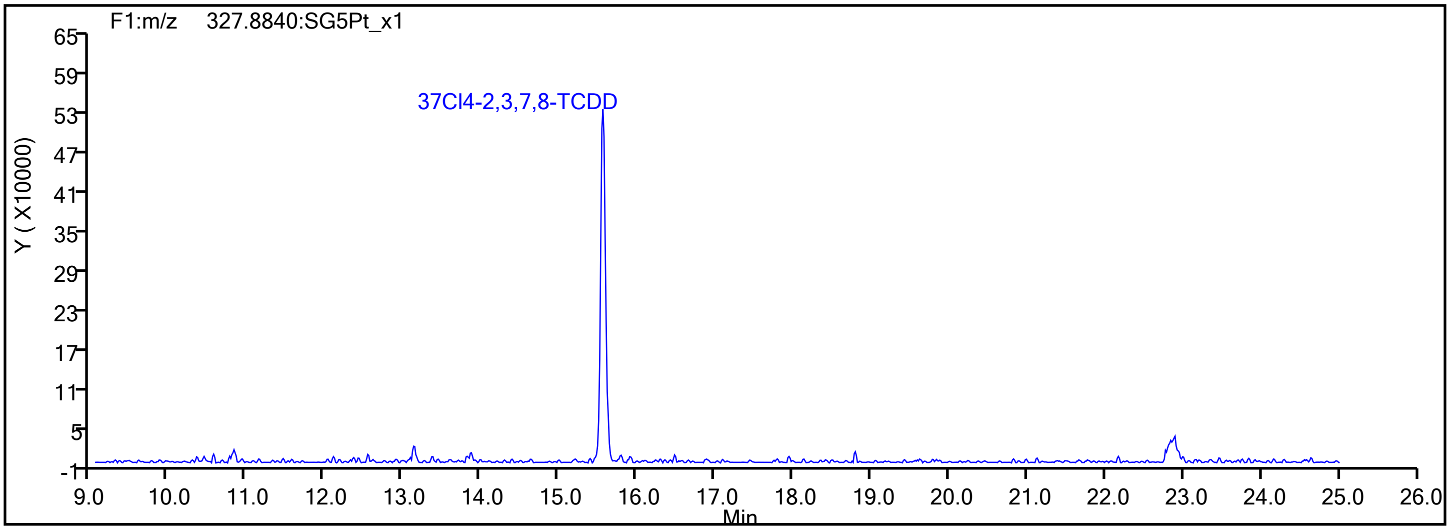

37Cl4-TCDD Standards

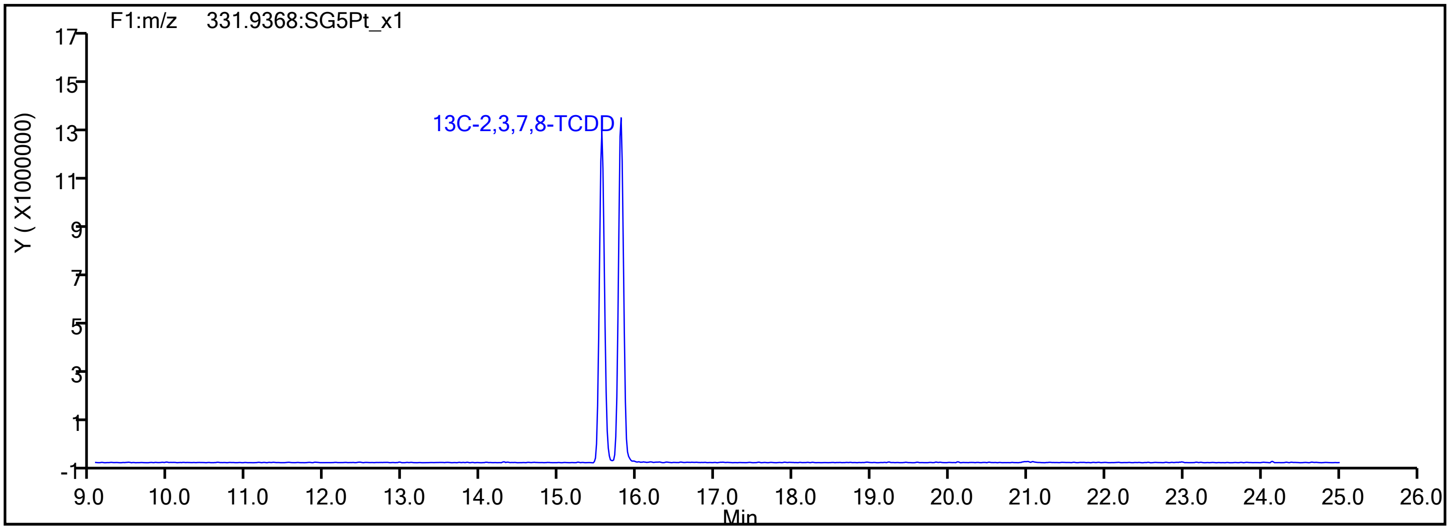

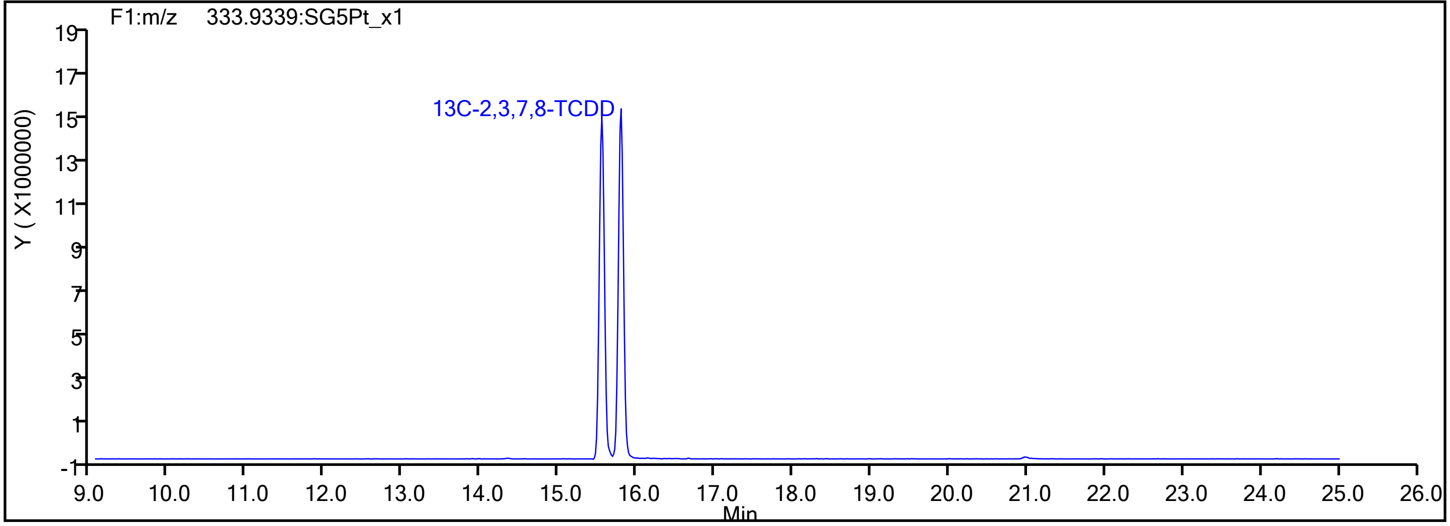

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

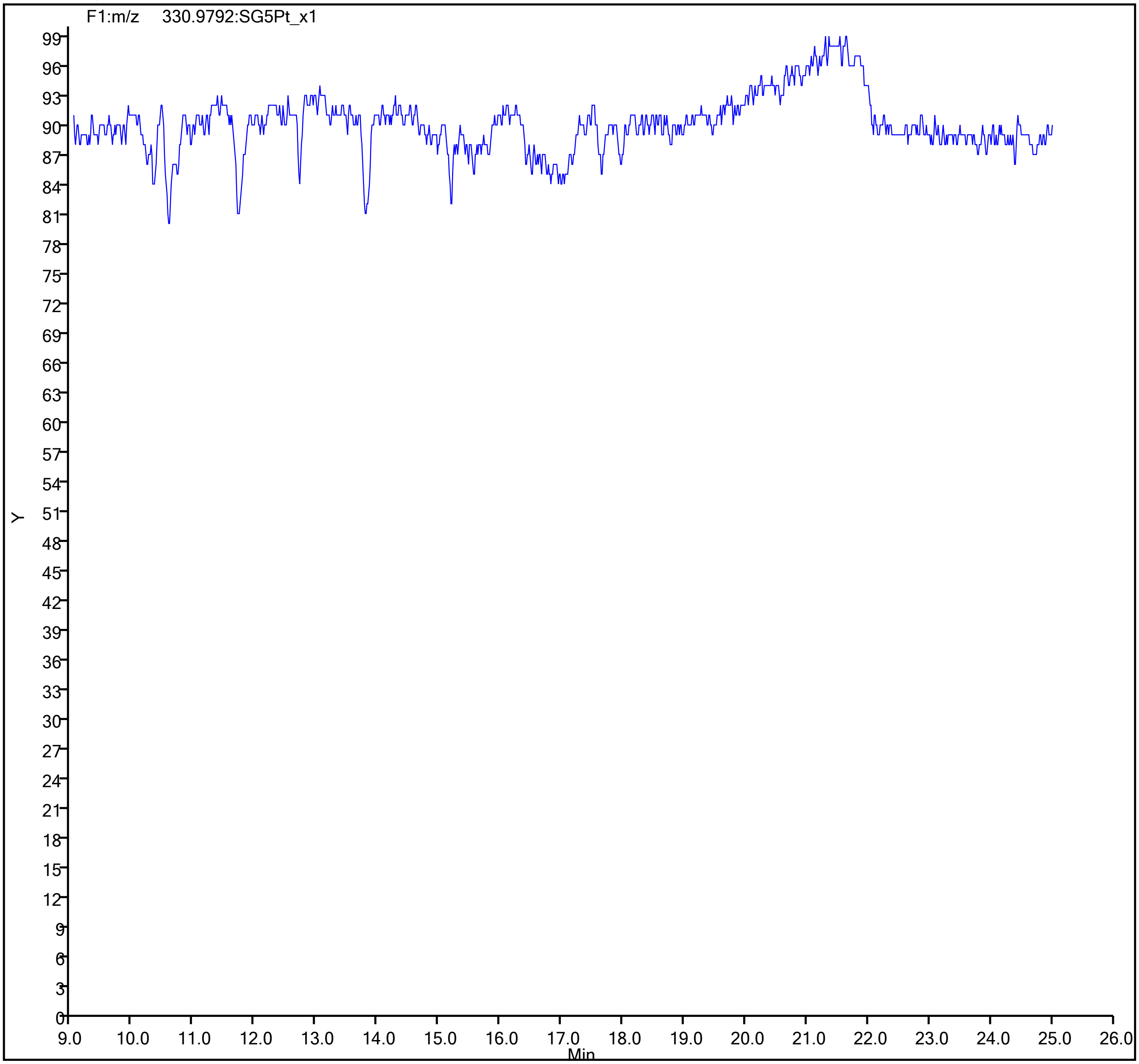

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d				
Lims ID:	IC 4				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	25-Jul-2020 01:07:02	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00094				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:57	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:57		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

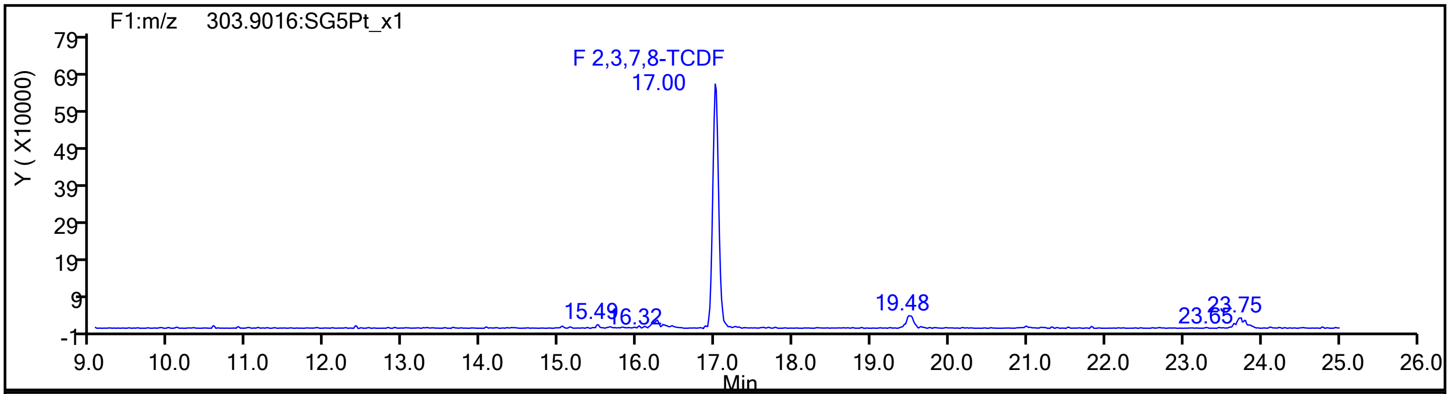

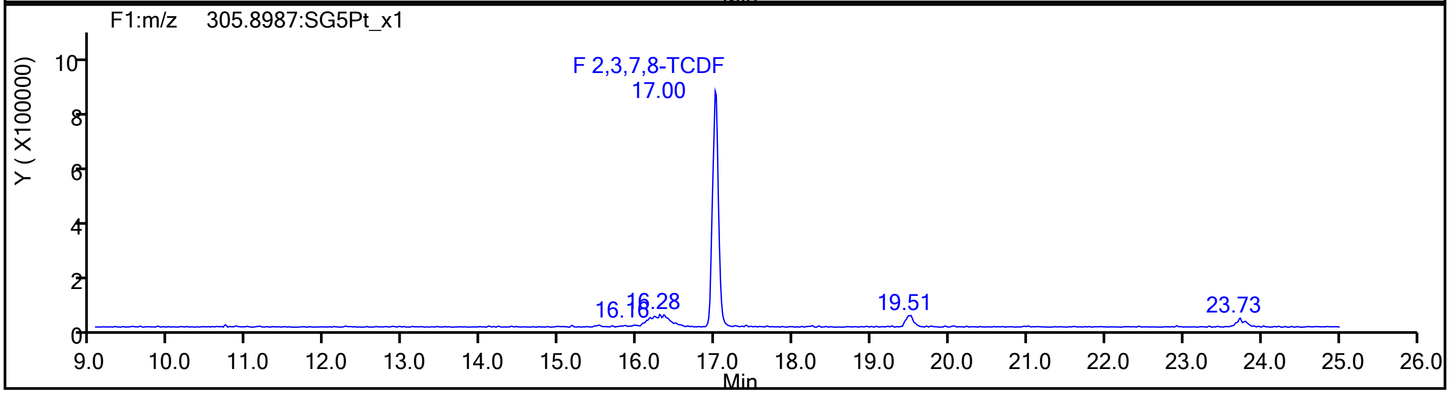

TCDF Standards

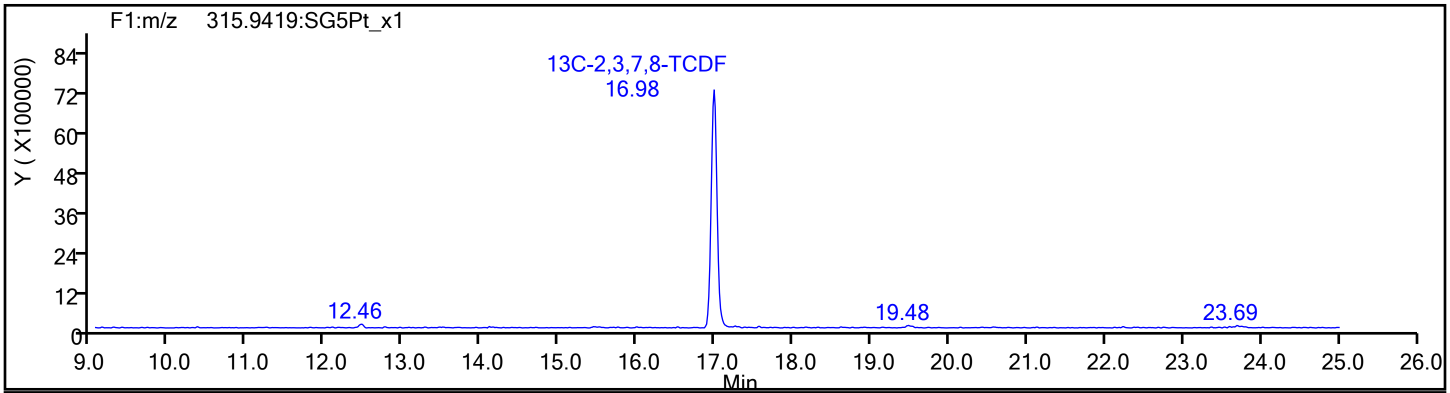

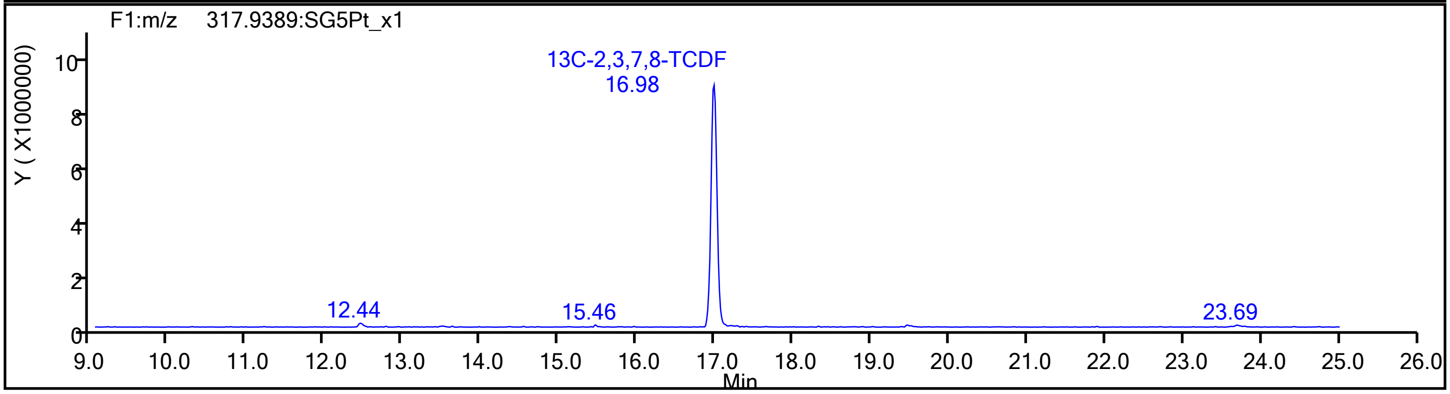

Report Date: 27-Jul-2020 12:43:00
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

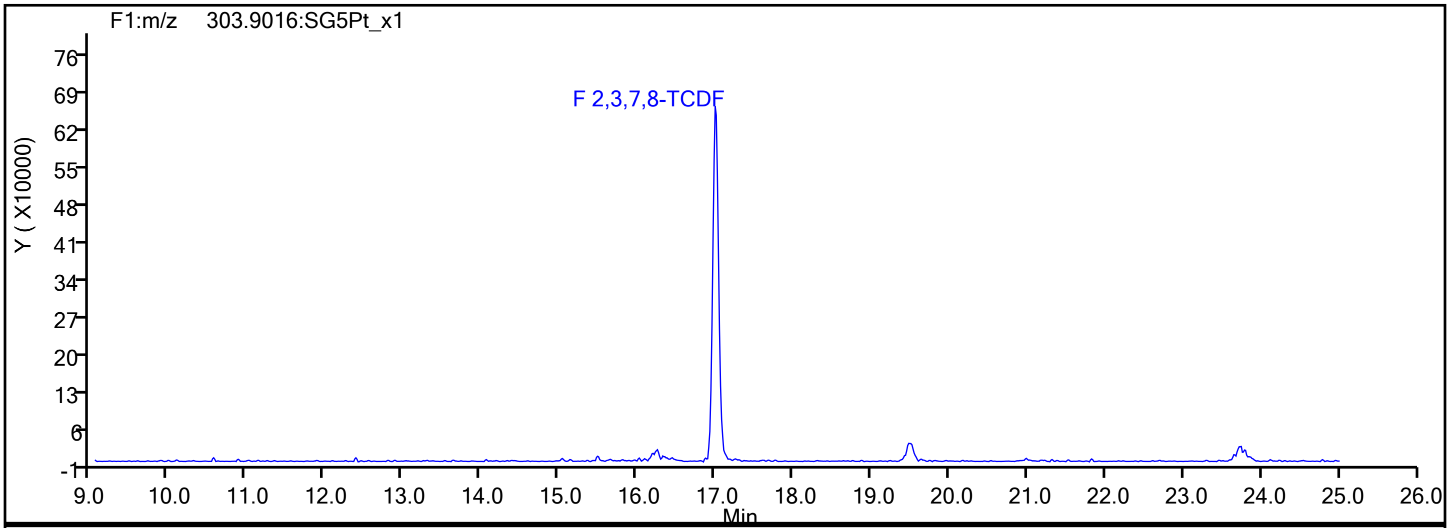

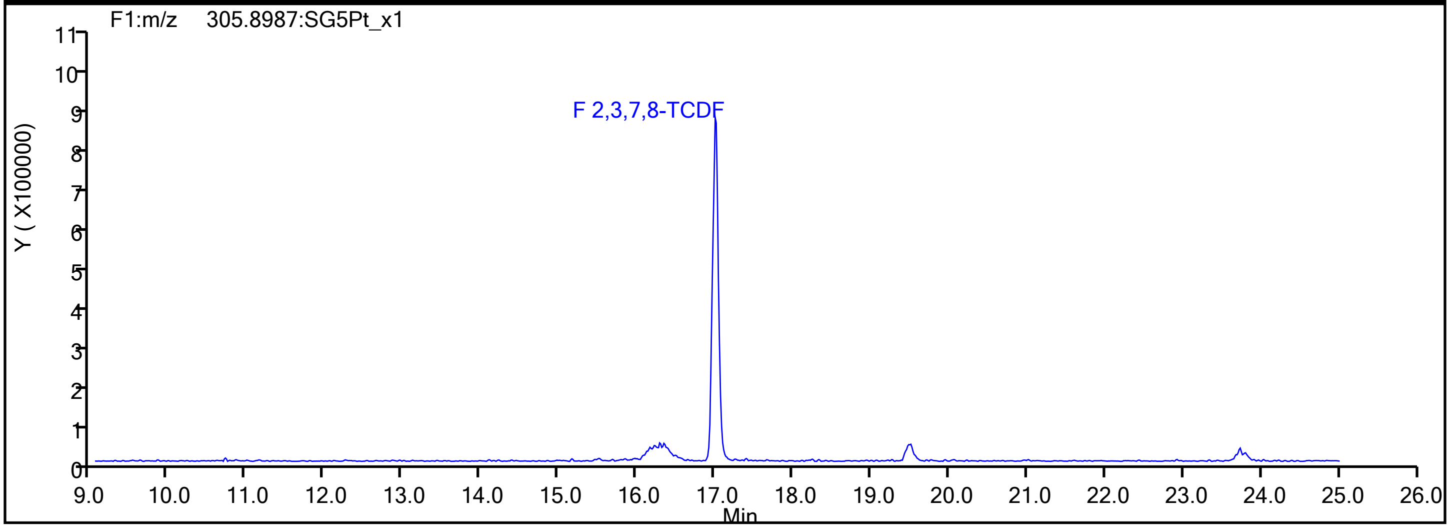

TCDF Interference Mass

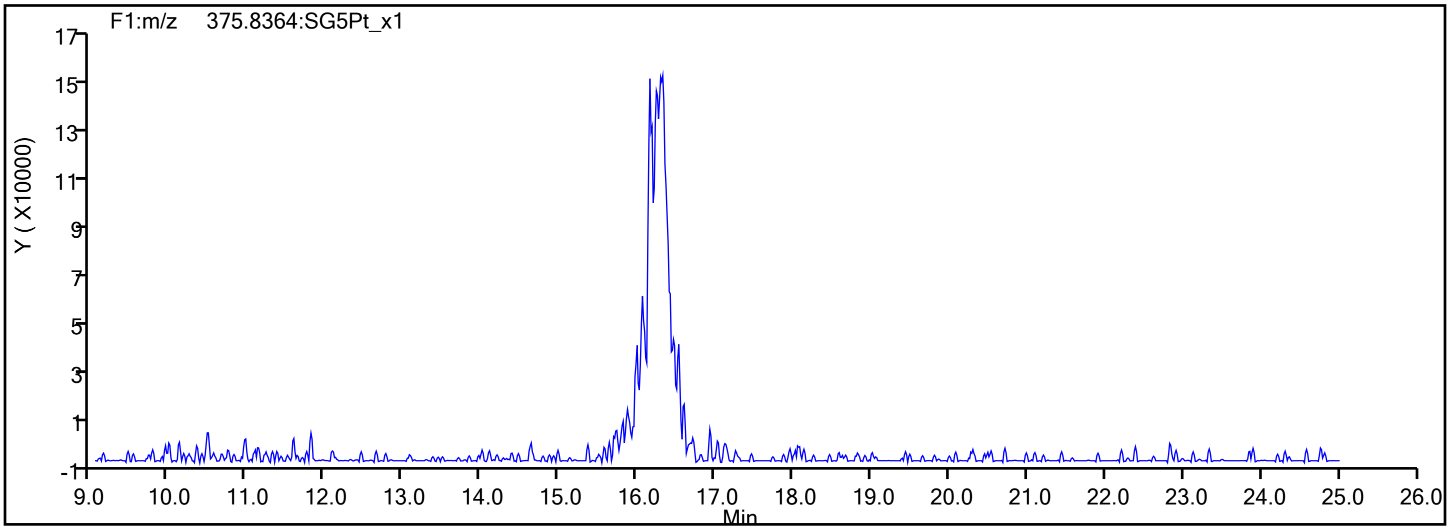

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

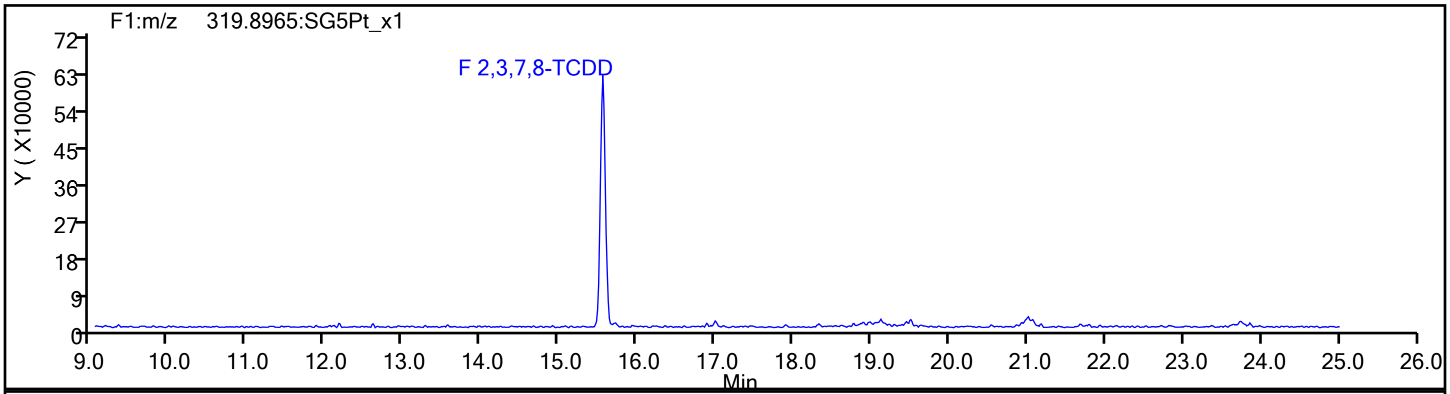

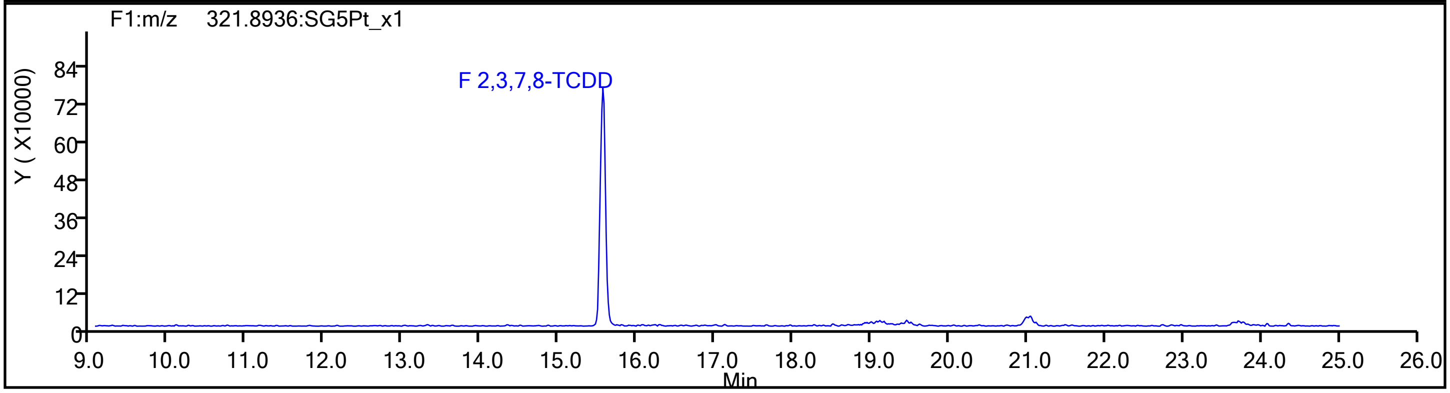

TCDD Standards

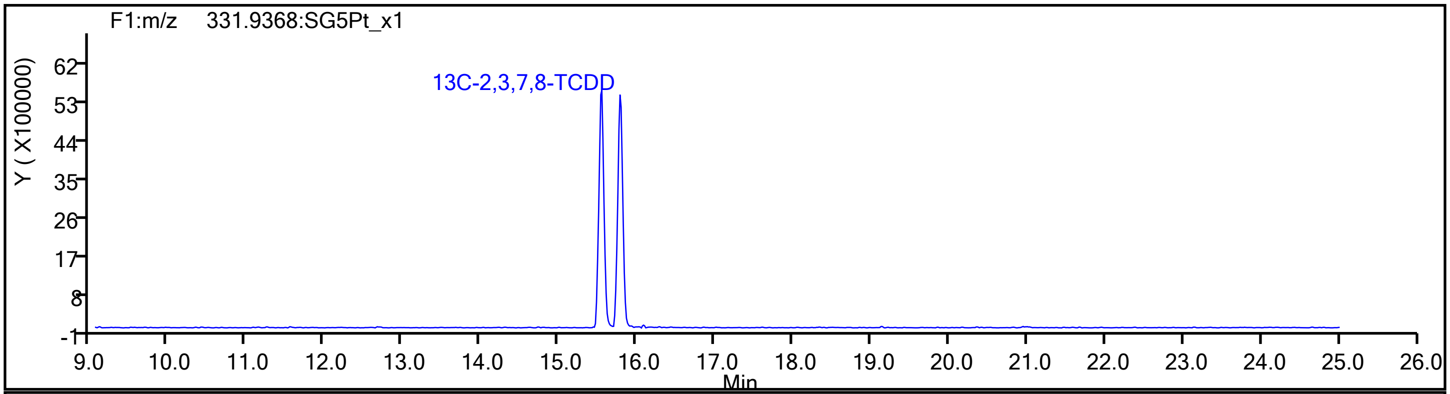

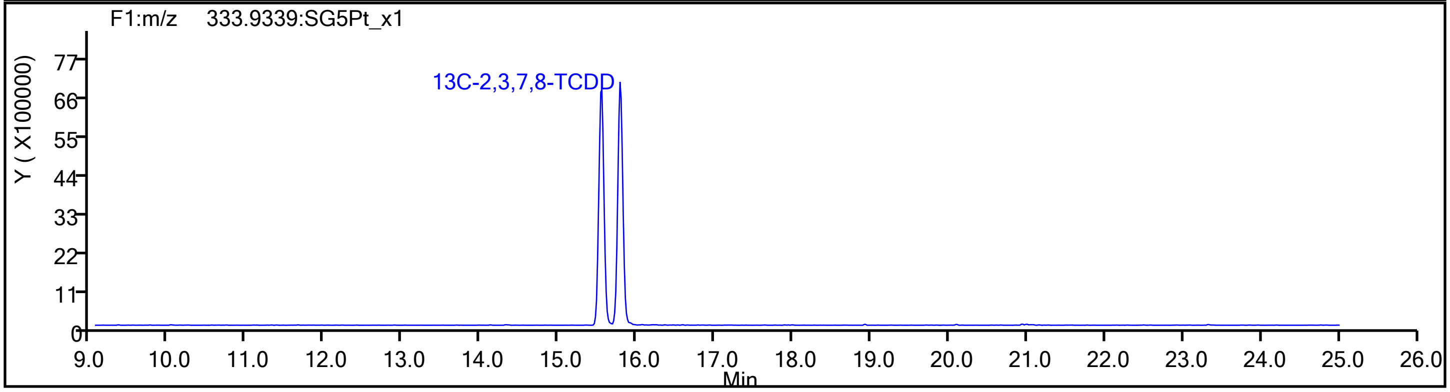

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

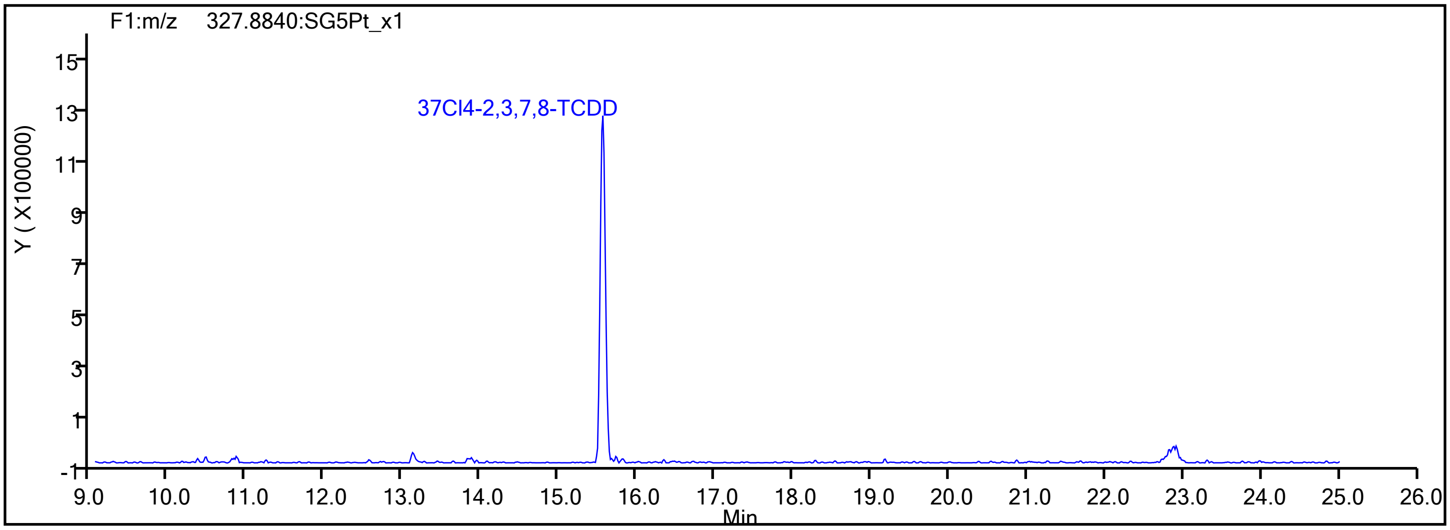

37Cl4-TCDD Standards

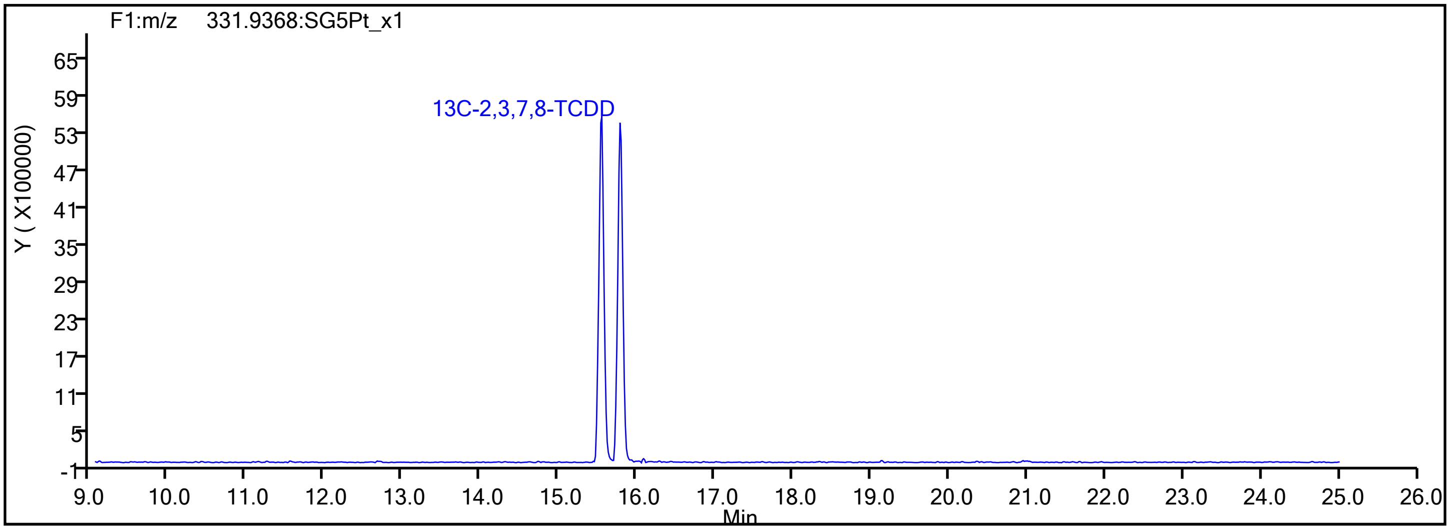

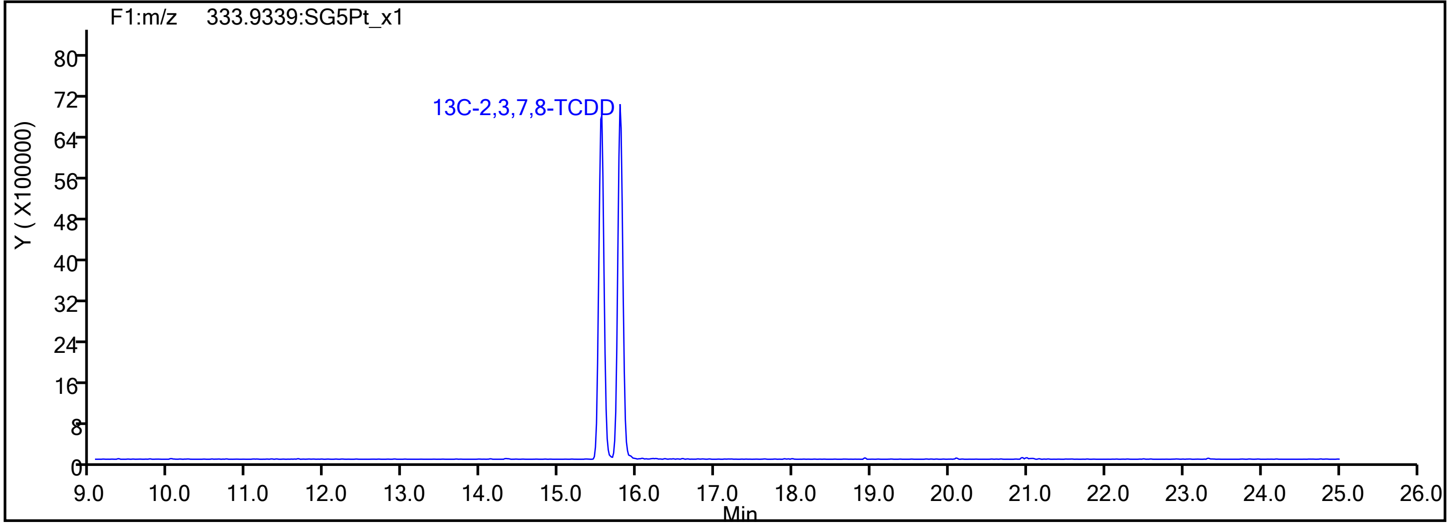

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

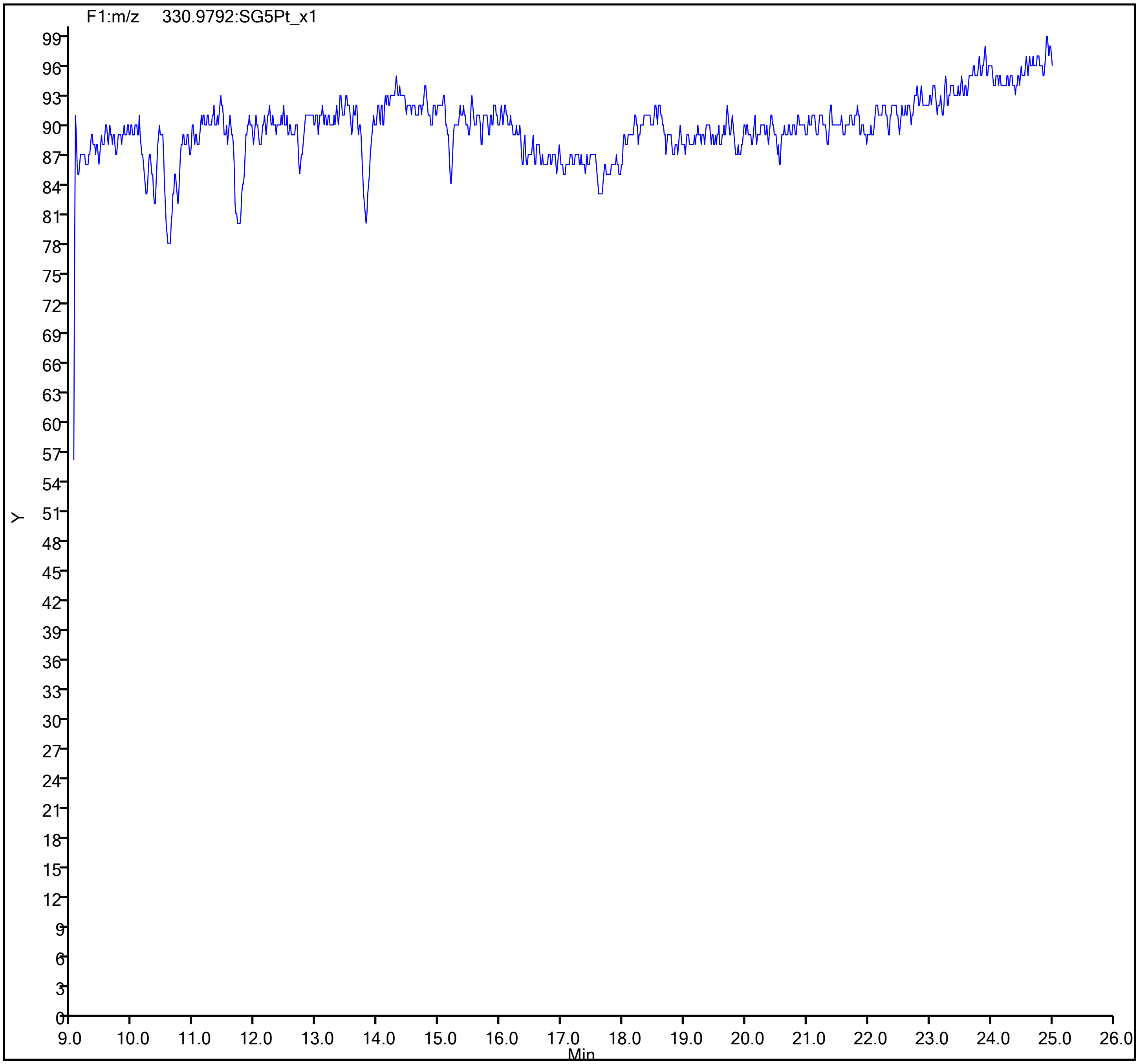

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:34:06		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Lims ID: IC 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 25-Jul-2020 01:45:24 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:43:03 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:06
Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

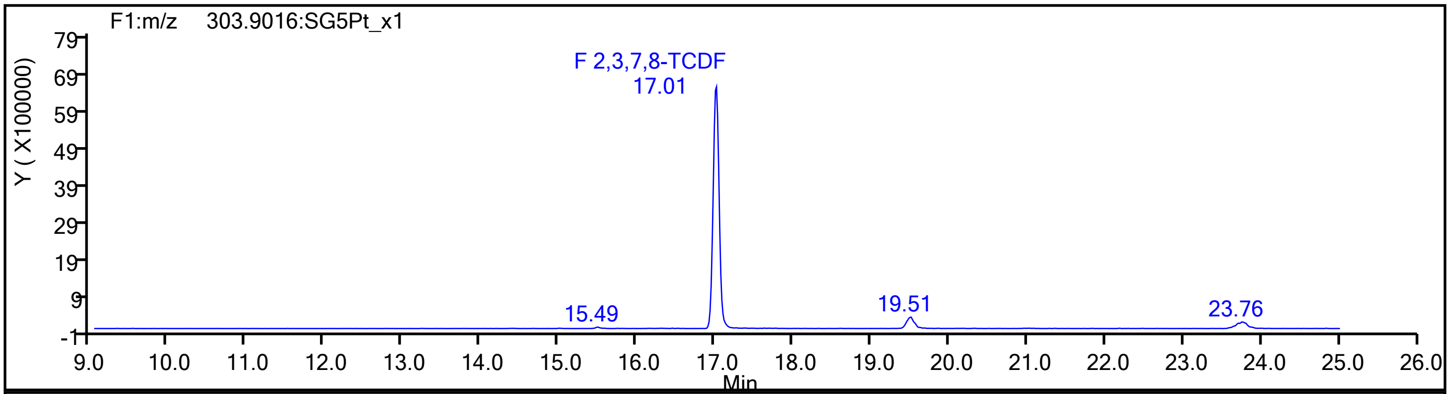

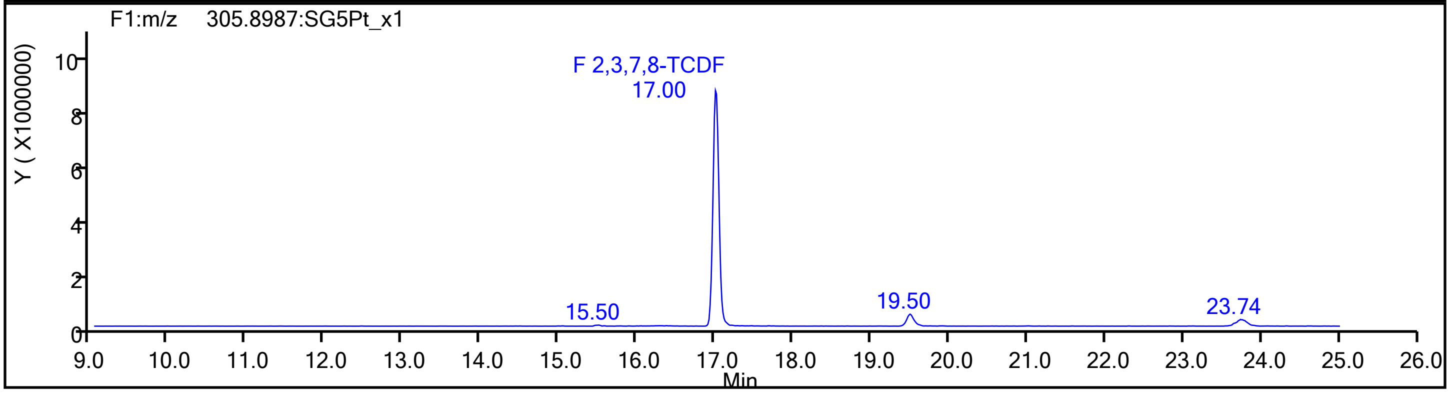

TCDF Standards

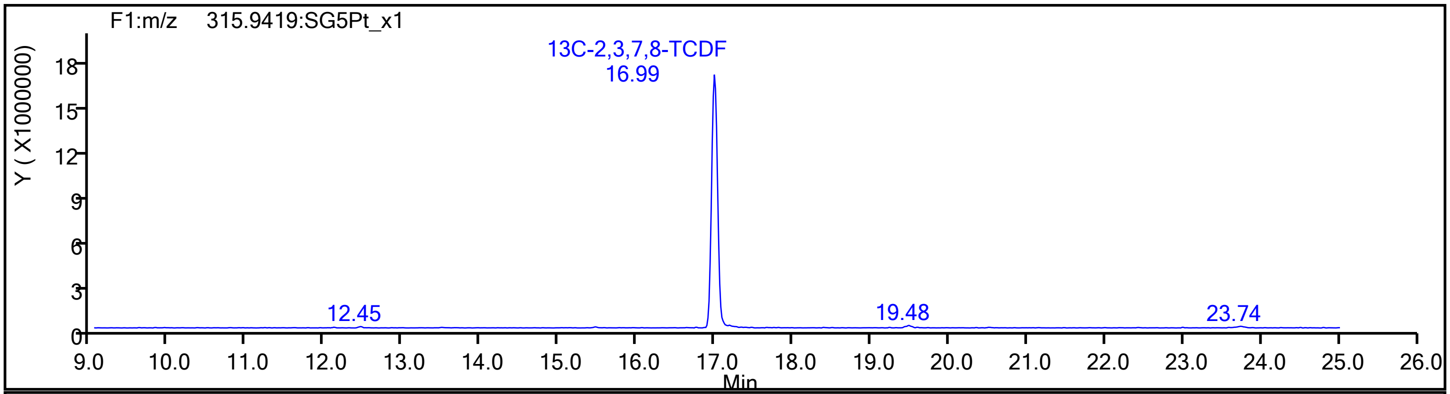

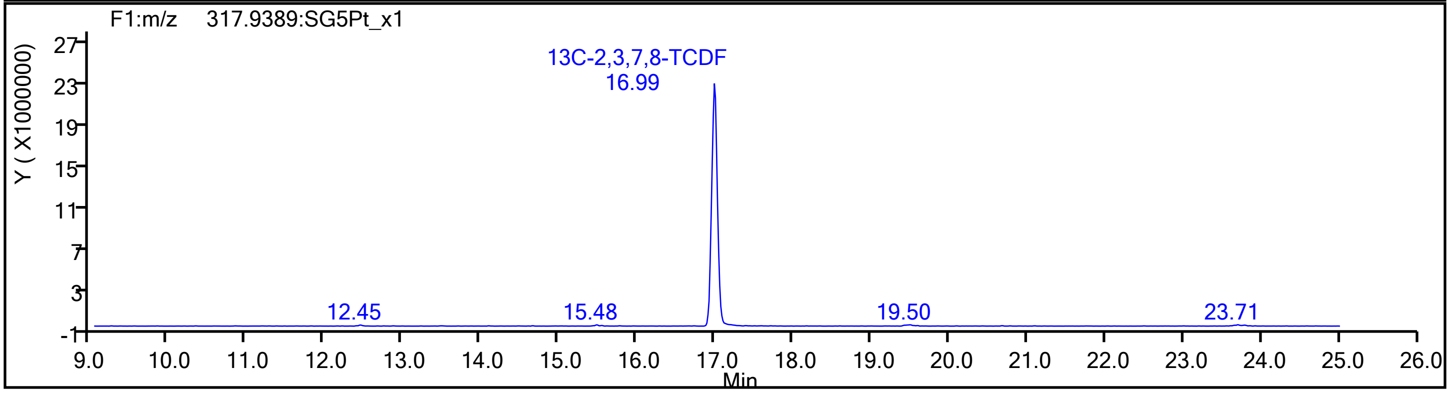

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

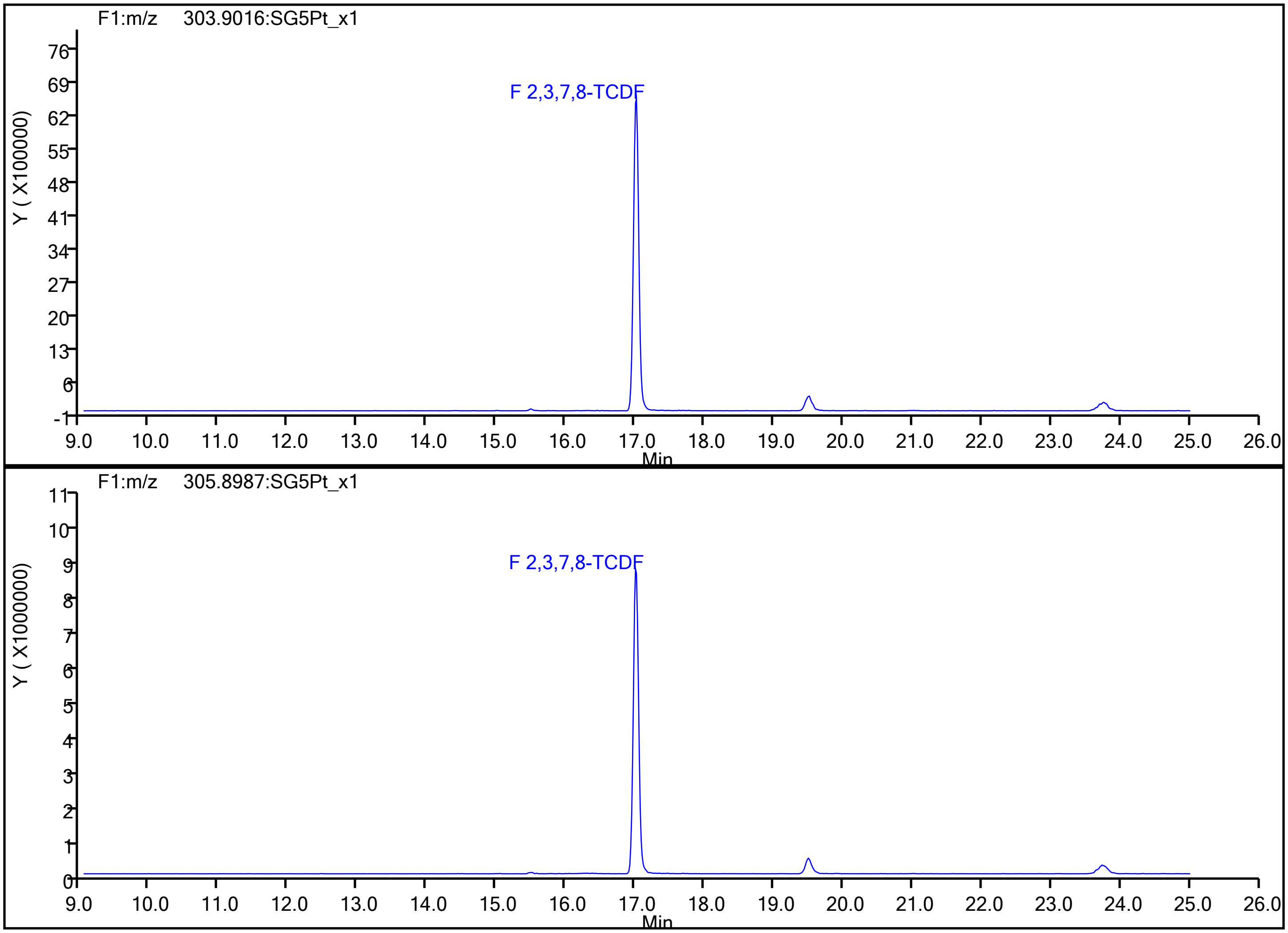

TCDF Interference Mass

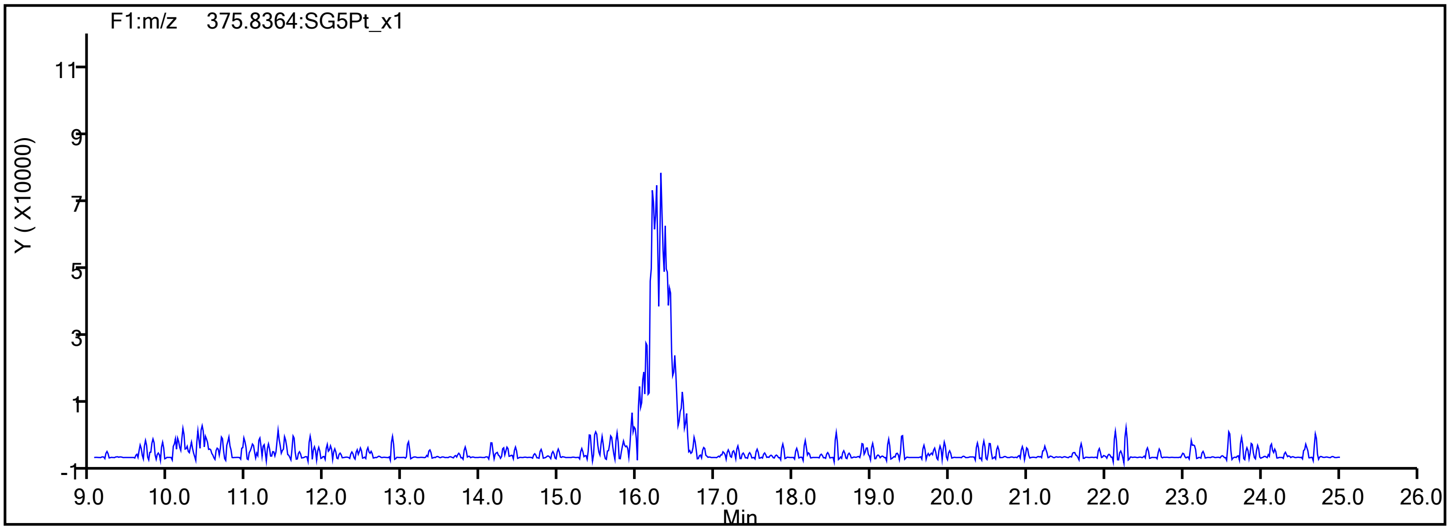

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date: 25-Jul-2020 01:45:24 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 6

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

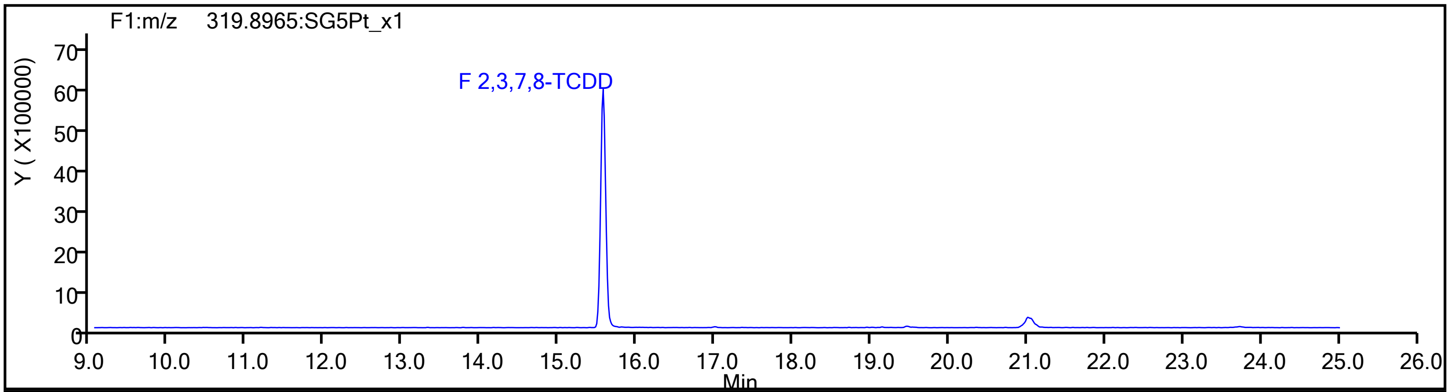

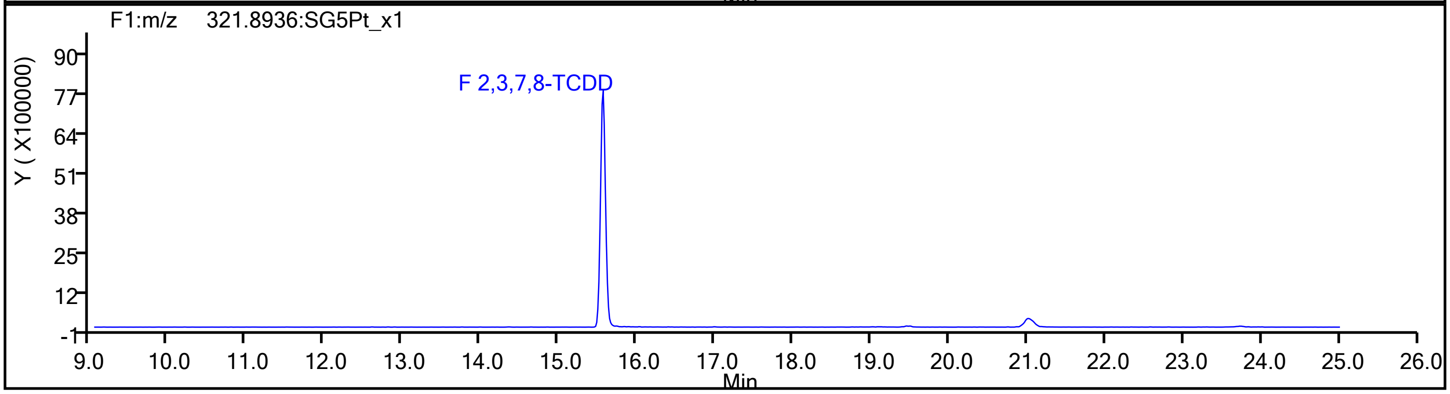

TCDD Standards

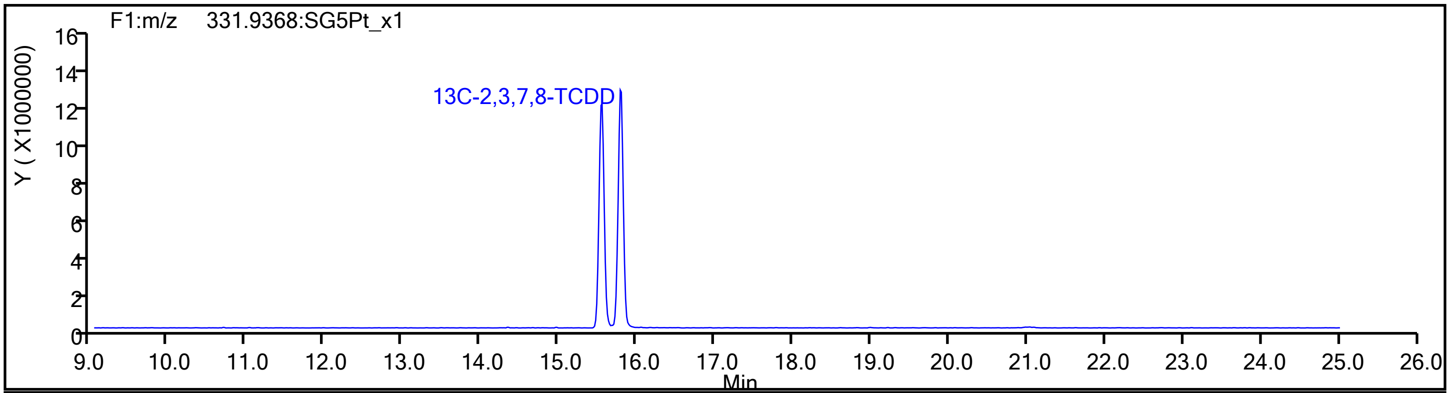

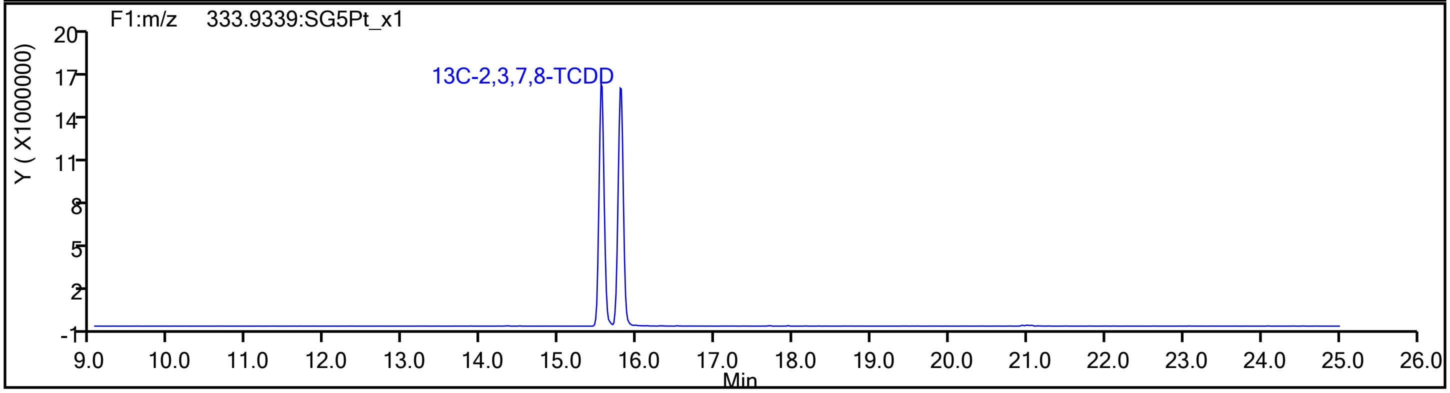

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

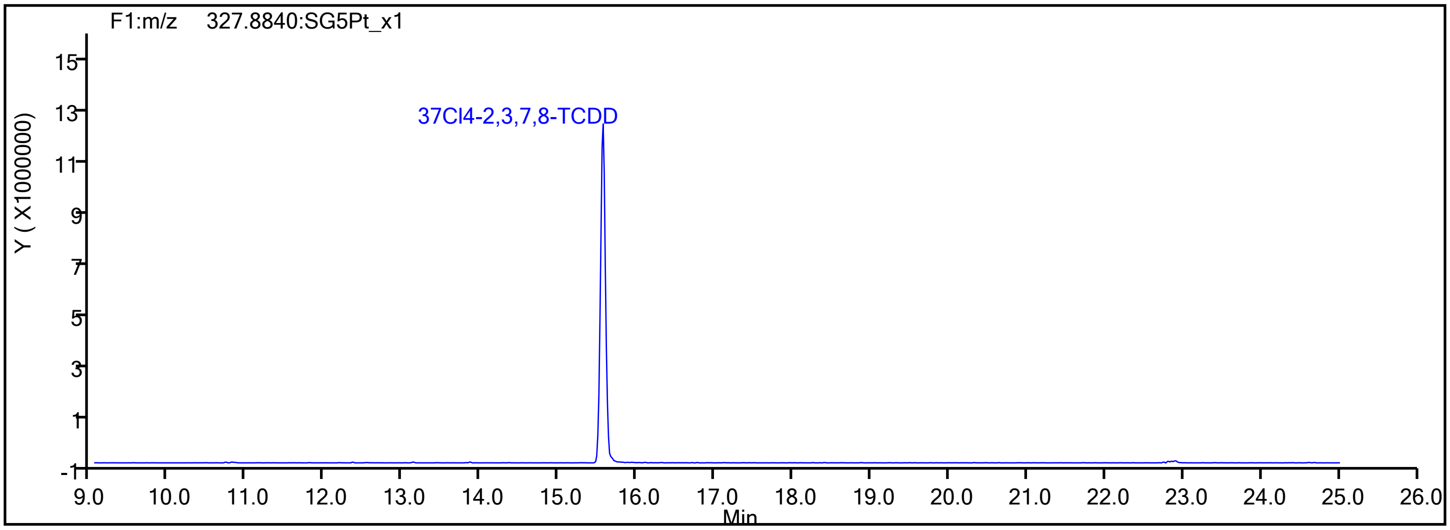

37Cl4-TCDD Standards

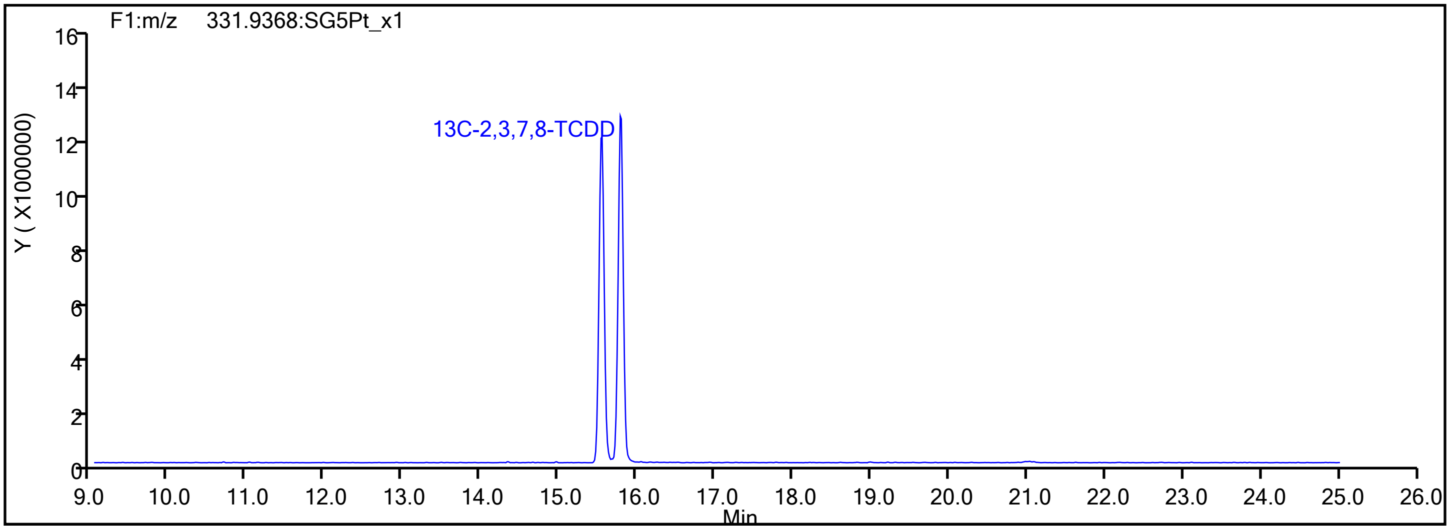

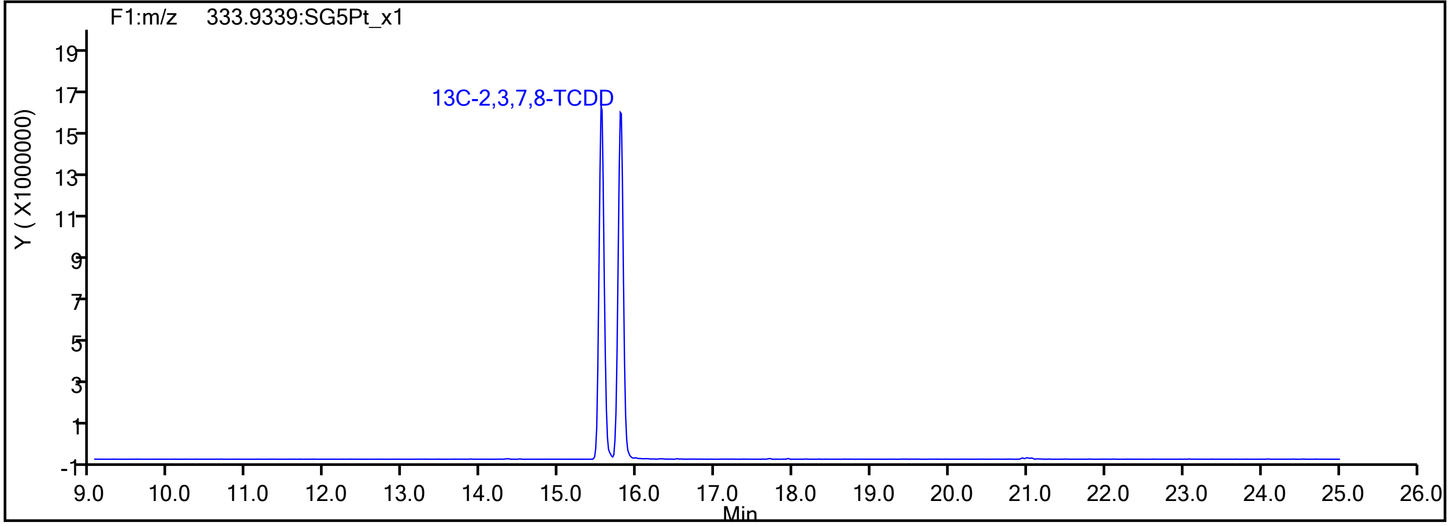

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

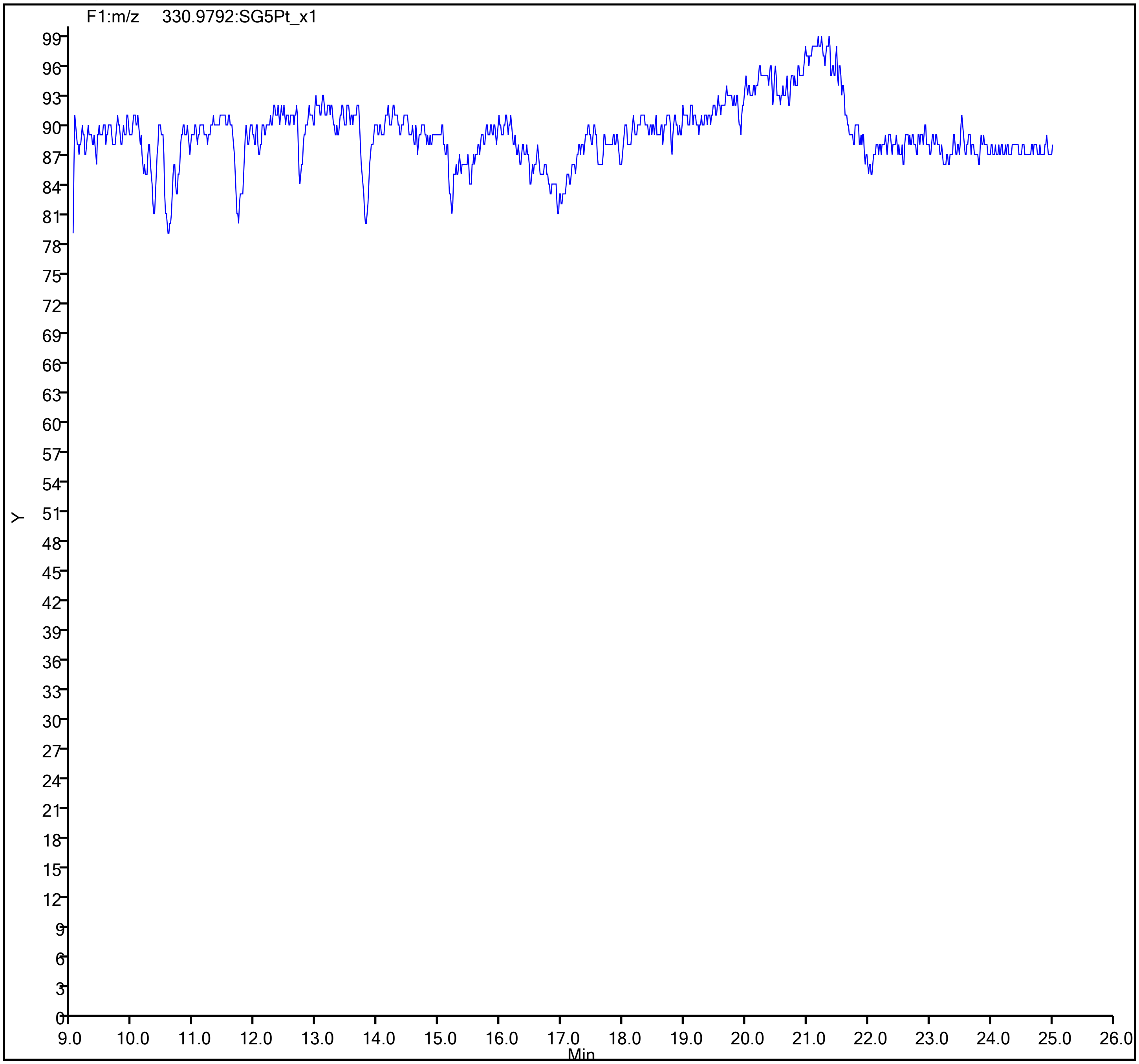

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:39:57		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:39:57

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

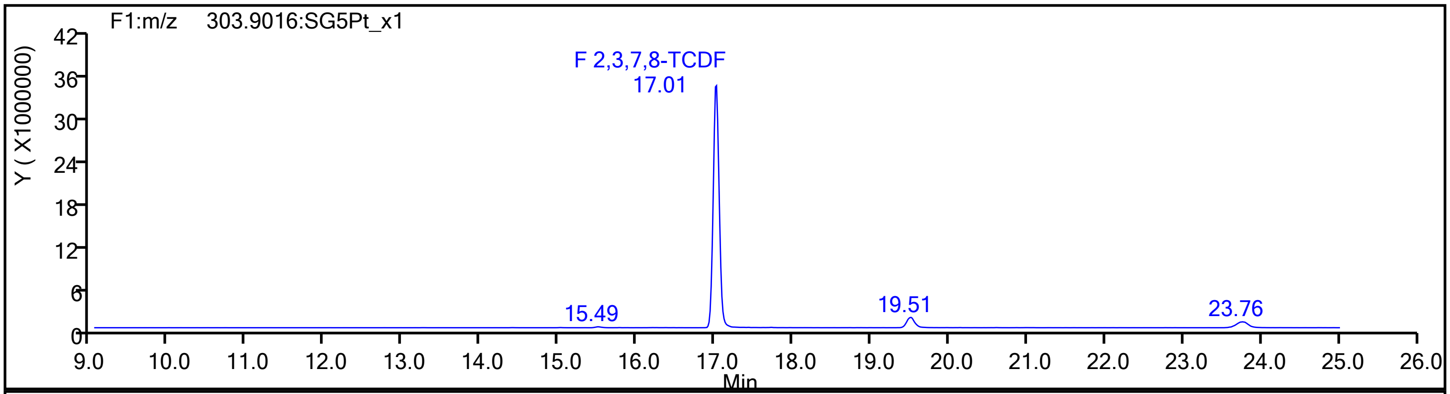

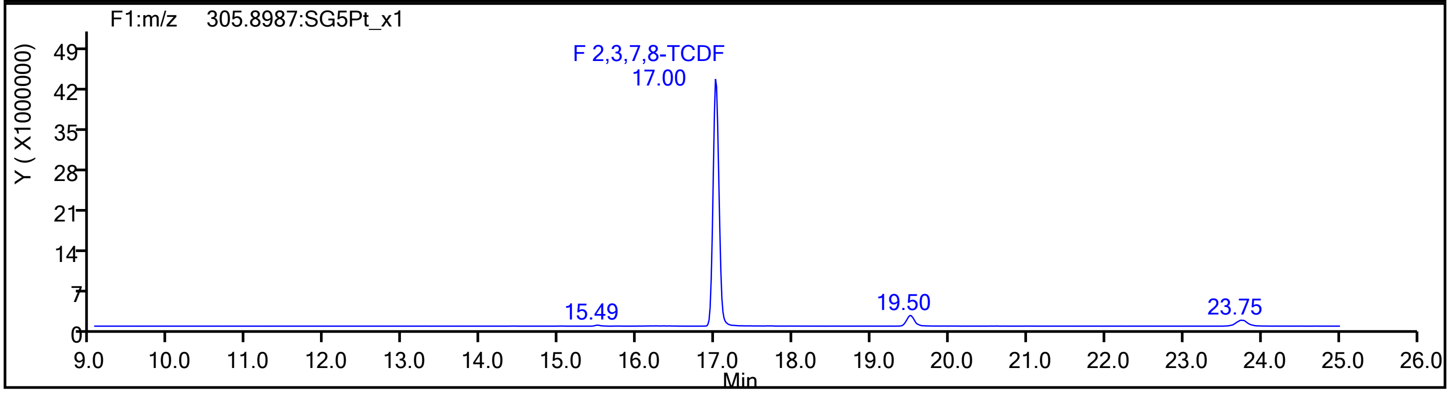

TCDF Standards

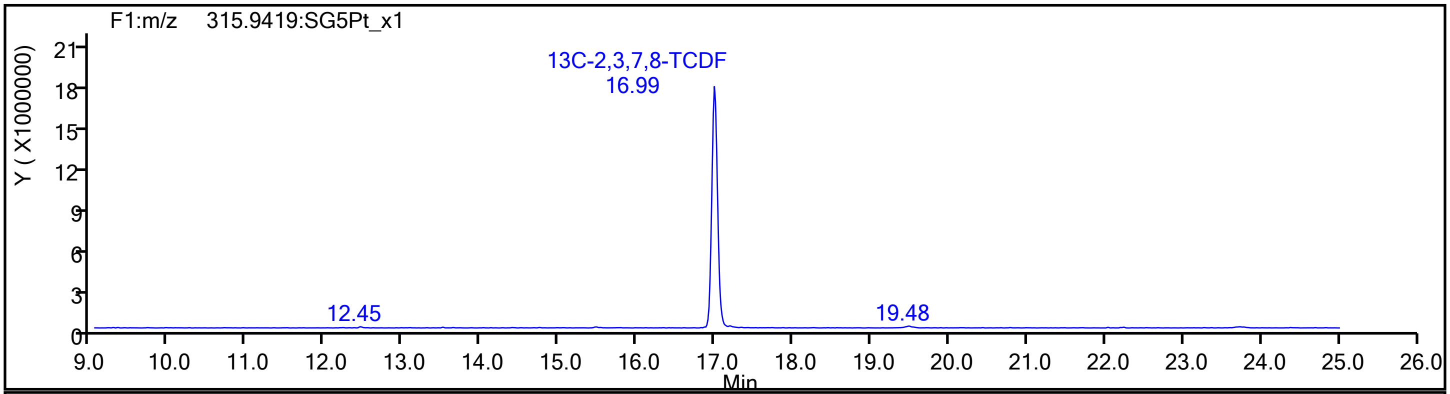

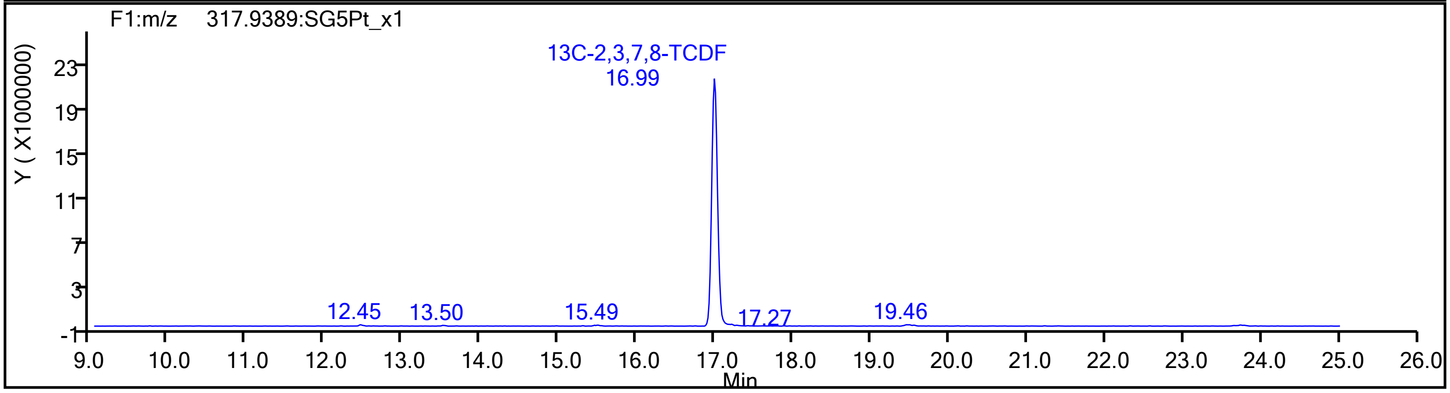

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

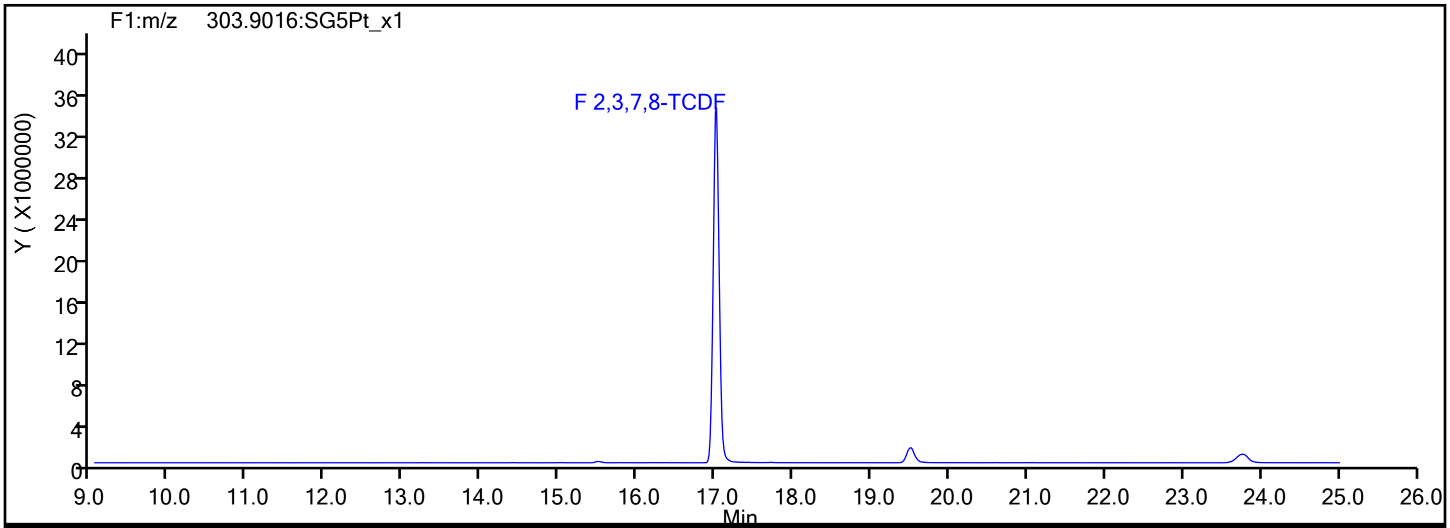

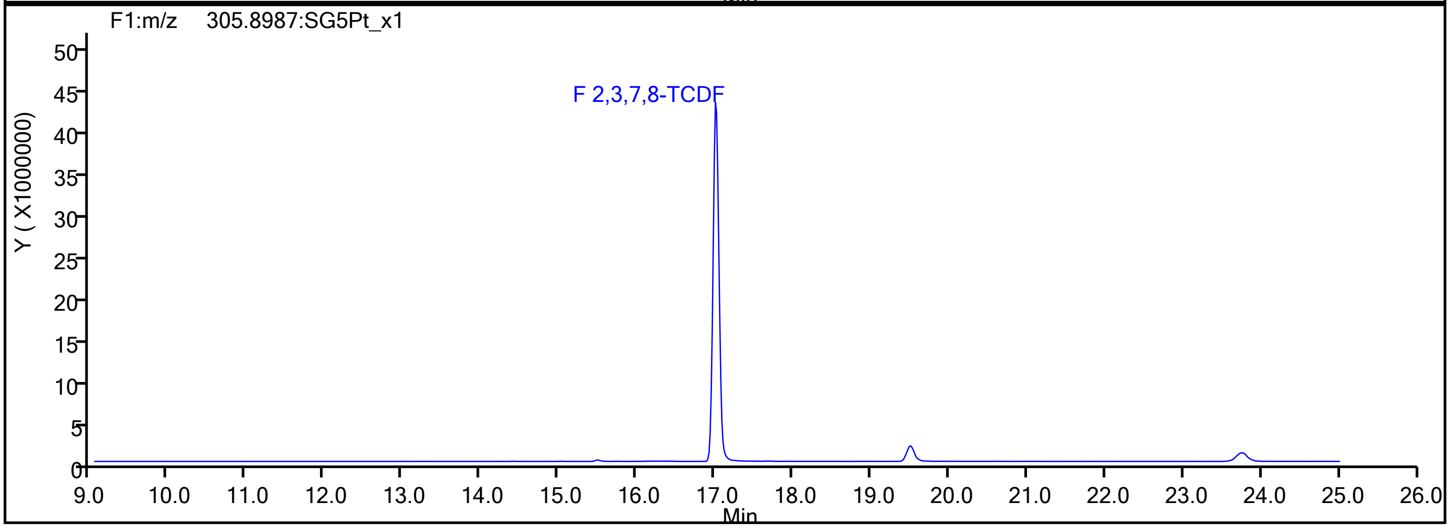

TCDF Interference Mass

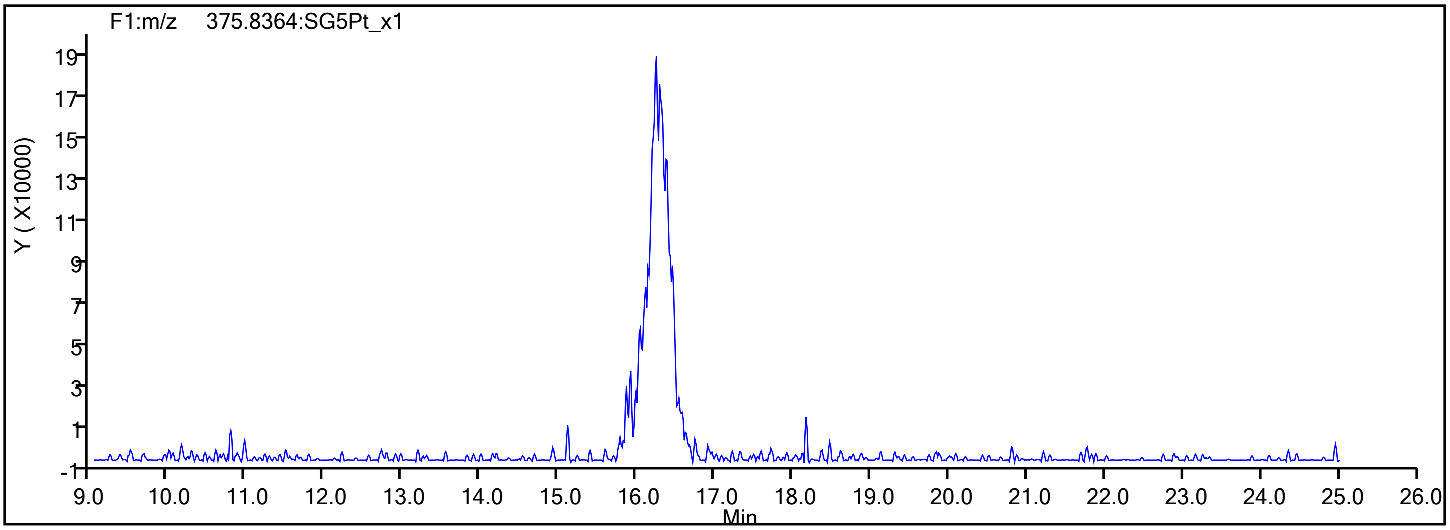

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

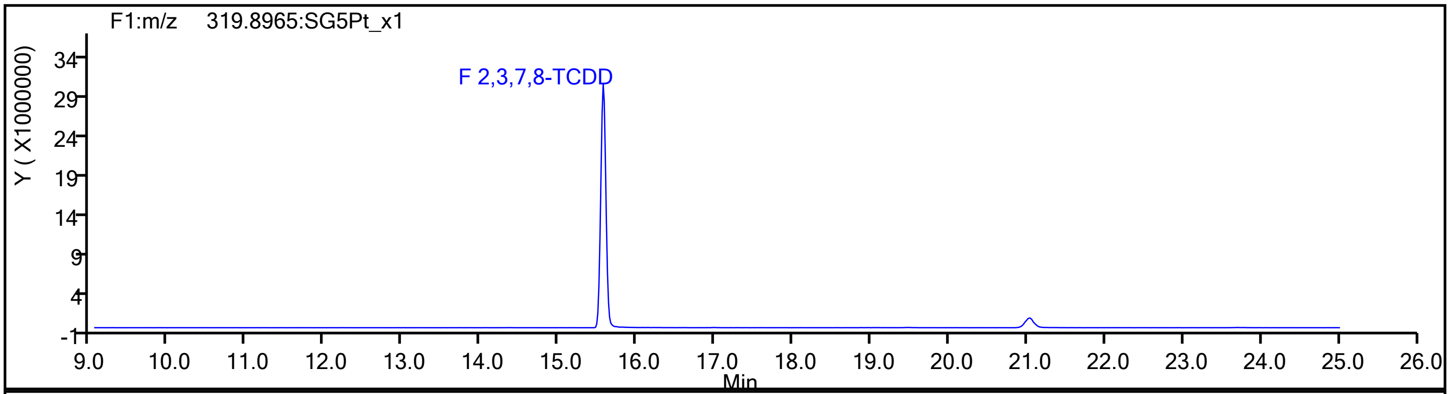

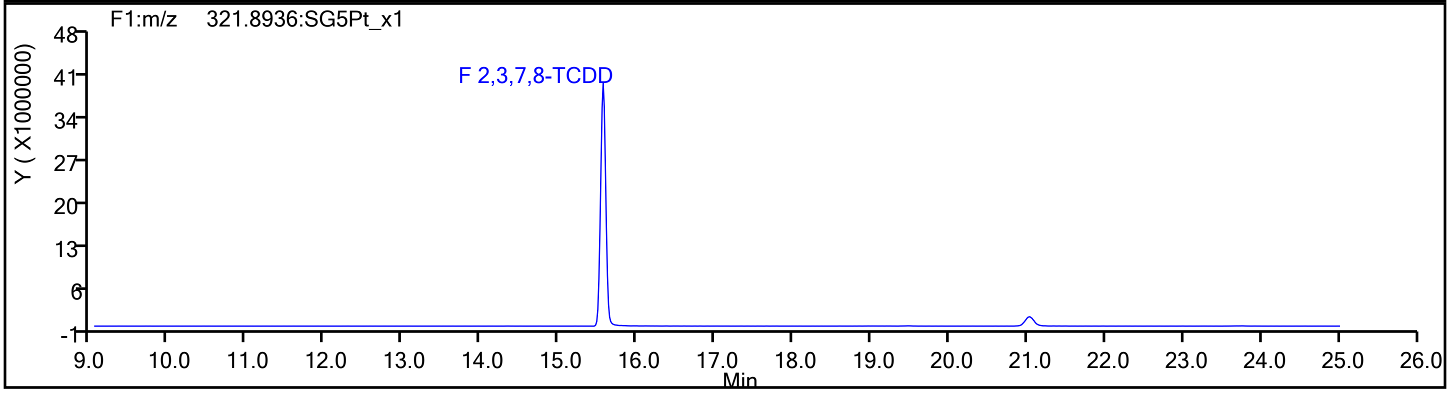

TCDD Standards

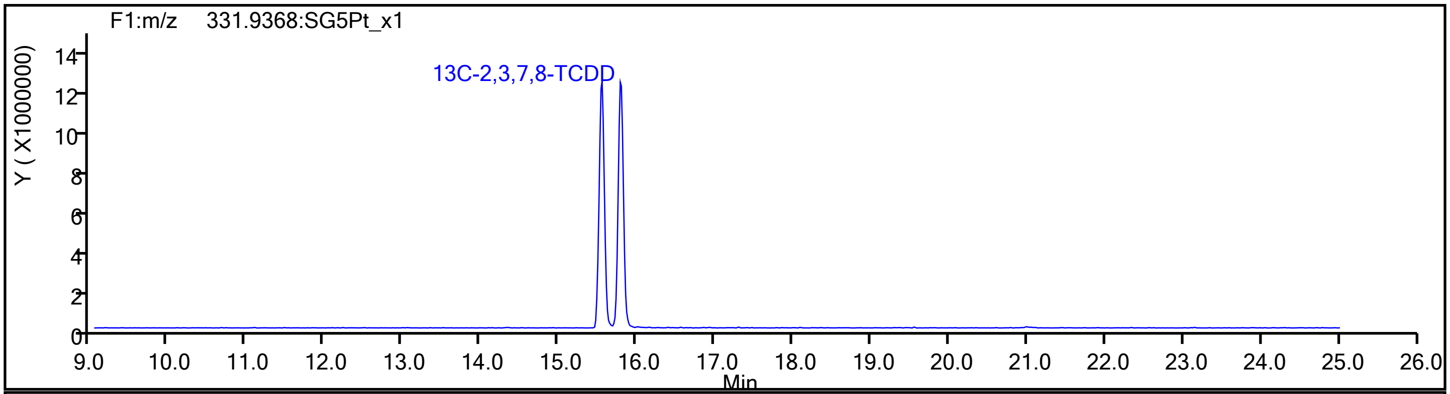

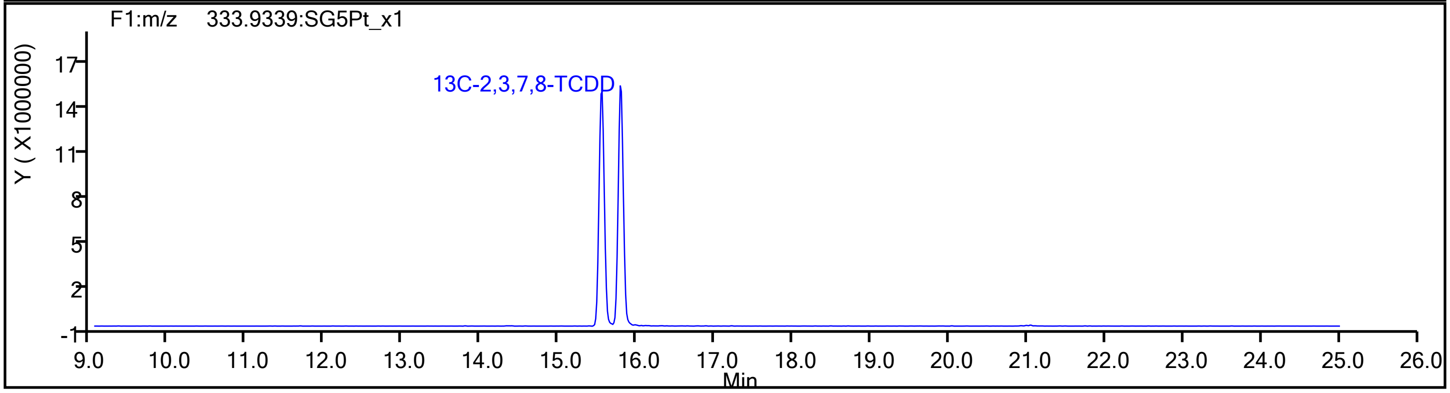

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

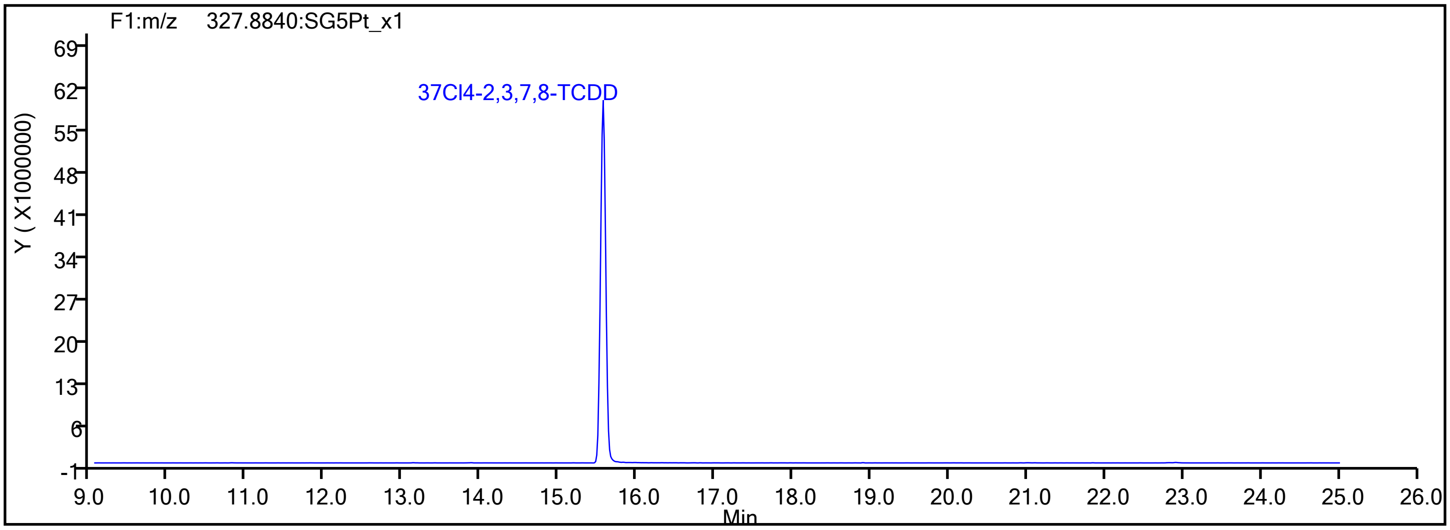

37Cl4-TCDD Standards

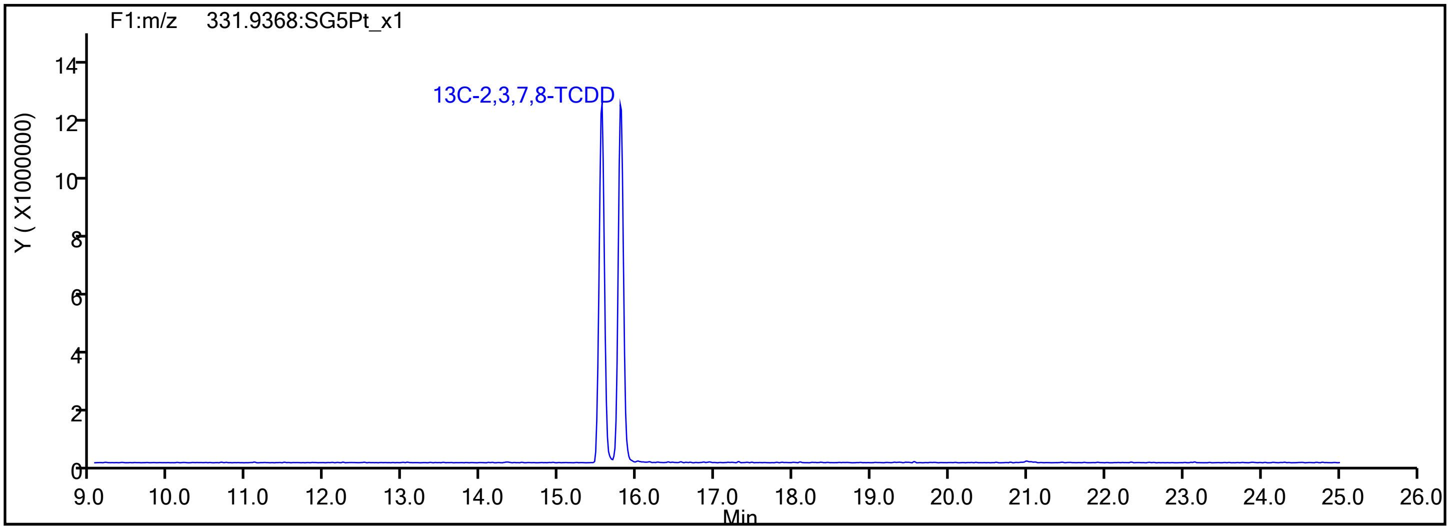

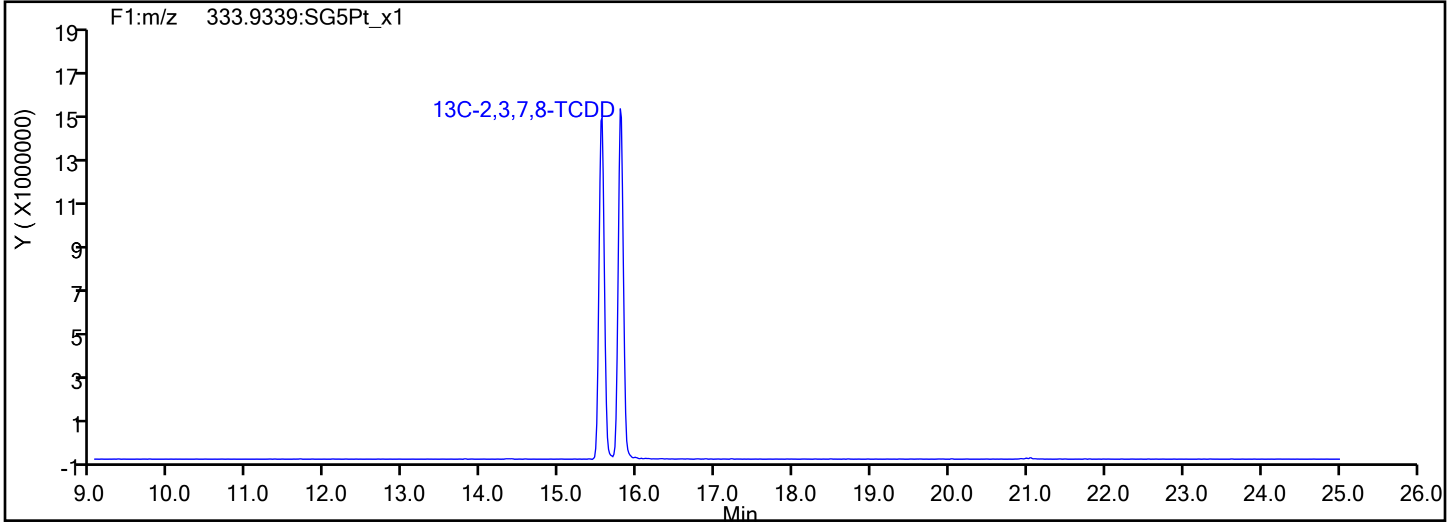

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

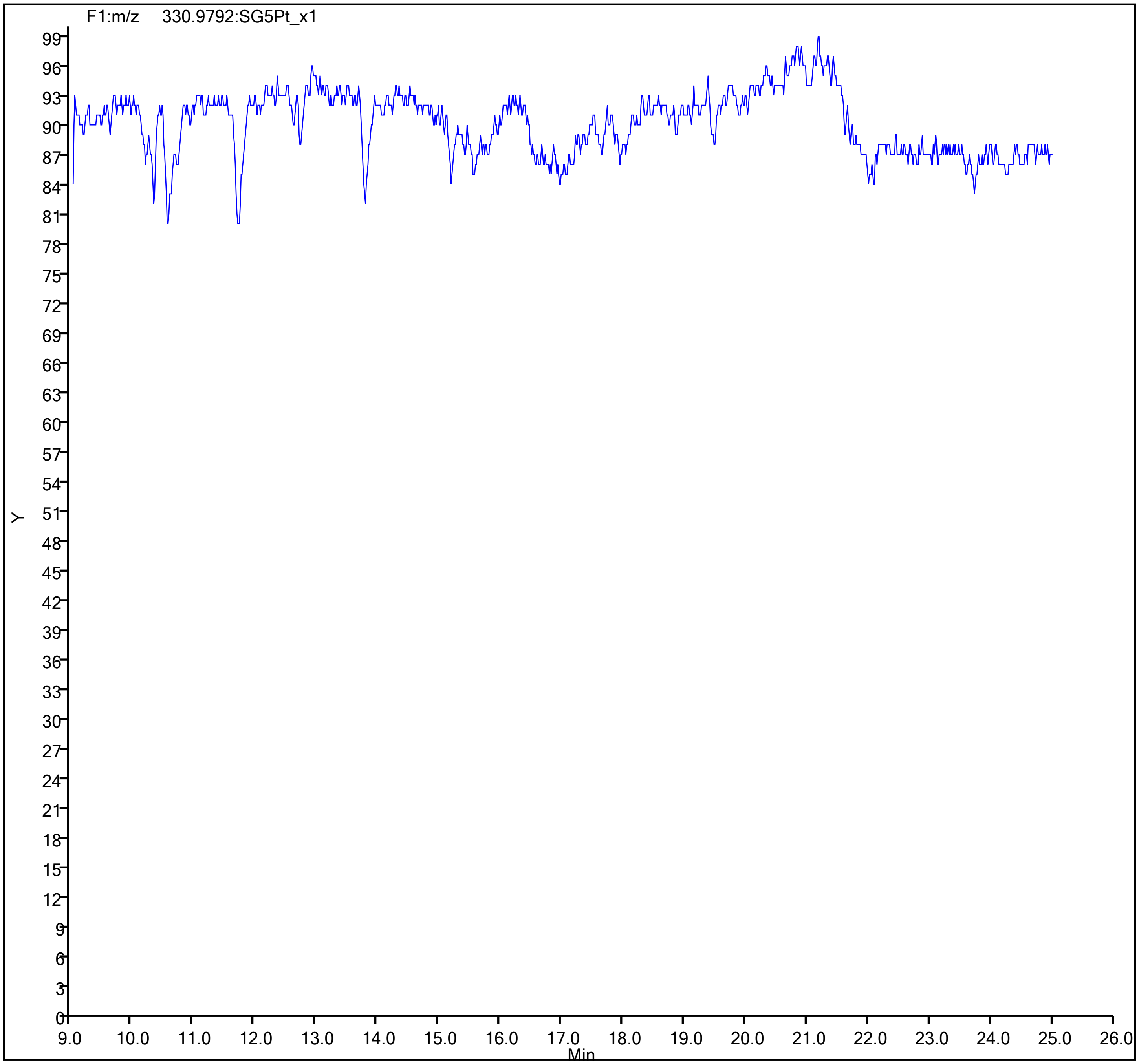

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-432585/9	17no20dfs1_10.d
Level 2	IC 320-432585/4	17no20dfs1_5.d
Level 3	IC 320-432585/5	17no20dfs1_6.d
Level 4	IC 320-432585/6	17no20dfs1_7.d
Level 5	IC 320-432585/7	17no20dfs1_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.4187	1.0861	1.1076	1.0908	1.0701	AveID		1.1547				12.8		20.0			
2,3,7,8-TCDD	1.3727	1.1507	1.1151	1.0942	1.0969	AveID		1.1659				10.1		20.0			
1,2,3,7,8-PeCDF	1.3403	1.1398	1.1049	1.0366	1.0395	AveID		1.1322				11.0		20.0			
2,3,4,7,8-PeCDF	1.3262	1.1628	1.1364	1.1019	1.0667	AveID		1.1588				8.7		20.0			
1,2,3,7,8-PeCDD	1.3238	1.1428	1.0649	1.0456	1.0184	AveID		1.1191				11.0		20.0			
1,2,3,4,7,8-HxCDF	1.5361	1.3299	1.2902	1.2440	1.2021	AveID		1.3205				9.8		20.0			
1,2,3,6,7,8-HxCDF	1.4964	1.2776	1.2237	1.1769	1.1662	AveID		1.2682				10.6		20.0			
2,3,4,6,7,8-HxCDF	1.4886	1.3040	1.2353	1.1909	1.2000	AveID		1.2838				9.6		20.0			
1,2,3,4,7,8-HxCDD	1.4901	1.1472	1.1740	1.1016	1.0731	AveID		1.1972				14.1		20.0			
1,2,3,6,7,8-HxCDD	1.2757	1.0840	1.0135	1.0119	0.9622	AveID		1.0695				11.5		20.0			
1,2,3,7,8,9-HxCDD	1.4384	1.1763	1.1247	1.0906	1.0728	AveID		1.1806				12.7		20.0			
1,2,3,7,8,9-HxCDF	1.5811	1.3111	1.2429	1.2031	1.1933	AveID		1.3063				12.3		20.0			
1,2,3,4,6,7,8-HpCDF	1.8820	1.5698	1.4975	1.4105	1.4494	AveID		1.5618				12.1		20.0			
1,2,3,4,6,7,8-HpCDD	1.3593	1.0851	1.0649	1.0294	1.0010	AveID		1.1079				13.0		20.0			
1,2,3,4,7,8,9-HpCDF	1.8432	1.4559	1.4319	1.3948	1.3616	AveID		1.4975				13.1		20.0			
OCDD	1.4508	1.1851	1.1003	1.0672	1.0294	AveID		1.1666				14.5		20.0			
OCDF	1.7508	1.4794	1.3712	1.4069	1.3926	AveID		1.4802				10.6		20.0			
13C-2,3,7,8-TCDF	1.6134	1.6929	1.6568	1.7111	1.7420	Ave		1.6832				3.0		35.0			
13C-2,3,7,8-TCDD	1.0810	1.0797	1.0648	1.0923	1.1304	Ave		1.0896				2.3		35.0			
13C-1,2,3,7,8-PeCDF	1.4981	1.3876	1.3863	1.4986	1.5315	Ave		1.4604				4.7		35.0			
13C-2,3,4,7,8-PeCDF	1.3631	1.3074	1.2846	1.3579	1.4391	Ave		1.3504				4.4		35.0			
13C-1,2,3,7,8-PeCDD	0.8732	0.8261	0.8449	0.8970	0.9232	Ave		0.8729				4.5		35.0			
13C-1,2,3,4,7,8-HxCDF	1.2577	1.3068	1.2661	1.2903	1.2832	Ave		1.2808				1.5		35.0			
13C-1,2,3,6,7,8-HxCDF	1.4245	1.4653	1.4758	1.5151	1.4269	Ave		1.4615				2.6		35.0			
13C-2,3,4,6,7,8-HxCDF	1.3095	1.3116	1.3272	1.3636	1.3015	Ave		1.3227				1.9		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8585	0.8944	0.8525	0.9021	0.8708	Ave		0.8757				2.5		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0577	1.0633	1.0665	1.0850	1.0528	Ave		1.0651				1.2		35.0			
13C-1,2,3,7,8,9-HxCDF	1.1012	1.0467	1.0986	1.1490	1.1355	Ave		1.1062				3.6		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9197	0.9532	0.9437	0.9913	0.9526	Ave		0.9521				2.7		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8143	0.8253	0.8337	0.8604	0.8630	Ave		0.8393				2.6		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7349	0.7699	0.7727	0.7932	0.8202	Ave		0.7782				4.0		35.0			
13C-OCDD	0.4938	0.4848	0.5285	0.5597	0.5837	Ave		0.5301				8.0		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.1787	1.1309	1.1089	1.1322	1.1719	Ave		1.1445				2.6					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-432585/9	17no20dfs1_10.d
Level 2	IC 320-432585/4	17no20dfs1_5.d
Level 3	IC 320-432585/5	17no20dfs1_6.d
Level 4	IC 320-432585/6	17no20dfs1_7.d
Level 5	IC 320-432585/7	17no20dfs1_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	48543	78902	629710	3500107	16528690	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	31468	53314	407439	2241168	10994725	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	212906	339347	2627930	14564784	70578766	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	191690	326187	2504487	14028593	68057207	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	122563	202562	1543597	8794530	41683724	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	198989	335604	2568215	14234353	73274262	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	219564	361503	2839217	15812779	79051672	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	200786	330280	2577456	14400763	74190158	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	131766	198132	1573325	8812547	44391919	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	138982	222574	1699311	9736393	48120799	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	141949	222340	1696471	9609067	49018548	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	179336	265008	2146580	12258577	64367080	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	178282	288953	2221729	12400149	65590399	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	114006	172927	1395664	7854304	41036566	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	139513	216435	1739348	9811769	53047298	2.50	10.0	50.0	200	1000
OCDD		AveID	147577	221914	1828375	10594948	57080751	5.00	20.0	100	400	2000
OCDF		AveID	178099	277015	2278487	13966649	77222416	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	6843222	3632320	5685124	8021729	7723296	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	4584854	2316674	3653681	5120726	5011703	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	6354139	2977170	4756996	7025605	6789961	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	5781548	2805191	4407855	6365852	6380229	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	3703477	1772472	2899131	4205499	4093198	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	5181766	2523469	3980989	5721063	6095612	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	5869111	2829584	4640355	6718059	6778427	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	5395434	2532810	4173055	6046028	6182541	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	3537152	1727097	2680342	3999855	4136810	100	100	100	100	100

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2 Analy Batch No.: 432585

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/17/2020 13:38 Calibration End Date: 11/17/2020 17:44 Calibration ID: 53030

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	4357819	2053194	3353387	4810874	5001351	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	4537064	2021278	3454092	5094707	5394247	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	3789205	1840655	2967331	4395524	4525374	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	3354869	1593650	2621187	3814878	4099544	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	3027653	1486611	2429483	3517248	3896084	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	4068864	1872512	3323397	4963784	5545172	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	24998	48530	380492	2123196	10391691	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	17NO20DFS1_1	Resolution Check	RC 111720	46			KSS	1.000	
2	17NO20DFS1_2	WDM HRDXNCP_00042	WDM 111720	1	Dioxin		KSS	1.000	
3	17NO20DFS1_3	SB Solvent Blank C-14	SB 111720	3			KSS	1.000	
4	17NO20DFS1_4	CS-2 HRDXNL2_00030	IC 111720	49	Dioxin		KSS	1.000	
5	17NO20DFS1_5	CS-3 HRDXNL3_00028	IC 111720A	50	Dioxin		KSS	1.000	
6	17NO20DFS1_6	CS-4 HRDXNL4_00095	IC 111720B	51	Dioxin		KSS	1.000	
7	17NO20DFS1_7	CS-5 HRDXNL5_00031	IC 111720C	52	Dioxin		KSS	1.000	
8	17NO20DFS1_8	CS-6 HRDXNL6_00027	IC 111720D	53	Dioxin		KSS	1.000	
9	17NO20DFS1_9	SB Solvent Blank C-14	SB 111720A	3			KSS	1.000	
10	17NO20DFS1_10	CS-2 HRDXNL2_00030	IC 111720 RI	49	Dioxin		KSS	1.000	
11	17NO20DFS1_11	ICV HRDXNIC_00046	ICV 111720	54	Dioxin		KSS	1.000	
12	17NO20DFS1_12	Resolution Check	RC 111720A	46			KSS	1.000	
13	17NO20DFS1_13	CCV CS-4 HRDXNL4_00095	CCV 111720	2	8290/1613B		KSS	1.000	
14	17NO20DFS1_14	WDM HRDXNCP_00042	WDM 111720A	1	8290/1613B		KSS	1.000	
15	17NO20DFS1_15	SB Solvent Blank C-14	SB 111720B	3			KSS	1.000	
16	17NO20DFS1_16	MB 320-430415/1-A	MB 320-430415/1-A	4	8290/Na2SO4	QC88	KSS	10.000	g
17	17NO20DFS1_17	MB 320-428541/1-A	MB 320-428541/1-A	5	8290A/Solid	D197	KSS	10.000	g
18	17NO20DFS1_18	LCS 320-428541/2-A	LCS 320-428541/2-A	6	8290A/Solid		KSS	10.000	g
19	17NO20DFS1_19	320-66234-A-4-A	320-66234-A-4-A	7	8290A/Solid		KSS	10.000	g
20	17NO20DFS1_20	320-66234-A-4-B MS	320-66234-A-4-B MS	8	8290A/Solid		KSS	10.000	g
21	17NO20DFS1_21	320-66234-A-4-C MSD	320-66234-A-4-C MSD	9	8290A/Solid		KSS	10.000	g
22	17NO20DFS1_22	240-138847-b-2-b RI	240-138847-b-2-b	10	8290A/Solid	D195	KSS	10.000	g
23	17NO20DFS1_23	240-138860-b-1-b RI	240-138860-b-1-b	11	8290A/Solid		KSS	10.000	g
24	17NO20DFS1_24	240-138860-b-2-b RI	240-138860-b-2-b	12	8290A/Solid		KSS	10.000	g
25	17NO20DFS1_25	SB Solvent Blank C-14	SB 111720C	3			KSS	1.000	
26	17NO20DFS1_26	Resolution Check	RC 111720B	46			KSS	1.000	
27	17NO20DFS1_27	CCV CS-4 HRDXNL4_00095	CCV 111720A	2	8290/1613B		KSS	1.000	
28	17NO20DFS1_28	Resolution Check	RC 111720C	46			KSS	1.000	
29	17NO20DFS1_29	WDM HRDXNCP_00042	WDM 111720B	1	8290/1613B		KSS	1.000	
30	17NO20DFS1_30	SB Solvent Blank C-14	SB 111720D	3			KSS	1.000	
31	17NO20DFS1_31	MB 320-429943/1-A	MB 320-429943/1-A	13	8290/Water	87	KSS	1.000	L
32	17NO20DFS1_32	LCS 320-429943/2-A	LCS 320-429943/2-A	14	8290/Water		KSS	1.000	L
33	17NO20DFS1_33	LCSD 320-429943/3-A	LCSD 320-429943/3-A	15	8290/Water		KSS	1.000	L
34	17NO20DFS1_34	280-142337-E-1-A	280-142337-E-1-A	16	8290A/Solid	D197	KSS	10.000	g
35	17NO20DFS1_35	280-142337-C-1-A MS	280-142337-C-1-A MS	17	8290A/Solid		KSS	10.000	g
36	17NO20DFS1_36	280-142337-C-1-B MSD	280-142337-C-1-B MSD	18	8290A/Solid		KSS	10.000	g
37	17NO20DFS1_37	550-152400-s-1-a	550-152400-s-1-a	19	8290/Water	87	KSS	1.000	L
38	17NO20DFS1_38	240-138860-b-3-b RI	240-138860-b-3-b	20	8290A/Solid	D195	KSS	10.000	g
39	17NO20DFS1_39	240-138860-b-4-b RI	240-138860-b-4-b	21	8290A/Solid		KSS	10.000	g
40	17NO20DFS1_40	SB Solvent Blank C-14	SB 111720E	3			KSS	1.000	
41	17NO20DFS1_41	Resolution Check	RC 111720D	46			KSS	1.000	
42	17NO20DFS1_42	CCV CS-4 HRDXNL4_00095	CCV 111720B	2	8290/1613B		KSS	1.000	
43	17NO20DFS1_43	Resolution Check	RC 111720E	46			KSS	1.000	
44	17NO20DFS1_44	WDM HRDXNCP_00042	WDM 111720C	1	8290/1613B		KSS	1.000	
45	17NO20DFS1_45	SB Solvent Blank C-14	SB 111720F	3			KSS	1.000	
46	17NO20DFS1_46	240-138847-b-7-b RI	240-138847-b-7-b	22	8290A/Solid	D195	KSS	10.000	g
47	17NO20DFS1_47	240-138847-b-8-b RI	240-138847-b-8-b	23	8290A/Solid		KSS	10.000	g
48	17NO20DFS1_48	320-66234-a-3-a	320-66234-a-3-a	24	8290A/Solid		KSS	10.000	g
49	17NO20DFS1_49	320-66234-a-5-a	320-66234-a-5-a	25	8290A/Solid		KSS	10.000	g
50	17NO20DFS1_50	320-66234-a-6-a	320-66234-a-6-a	26	8290A/Solid		KSS	10.000	g
51	17NO20DFS1_51	320-66234-a-7-a	320-66234-a-7-a	27	8290A/Solid		KSS	10.000	g
52	17NO20DFS1_52	320-66234-A-2-A screen	320-66234-A-2-A screen	28	8290A/Water	D197	KSS	1.000	L
53	17NO20DFS1_53	SB Solvent Blank C-14	SB 111720G	3			KSS	1.000	
54	17NO20DFS1_54	Resolution Check	RC 111720F	46			KSS	1.000	
55	17NO20DFS1_55	CCV CS-4 HRDXNL4_00095	CCV 111720C	2	8290/1613B		KSS	1.000	

Log file checked
11/18/20 SMA

(1→12)

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date:	17 Nov 2020 10:55
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11567 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11439 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11350 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11472 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11371 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11582 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11117 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11881 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11468 [5%height]

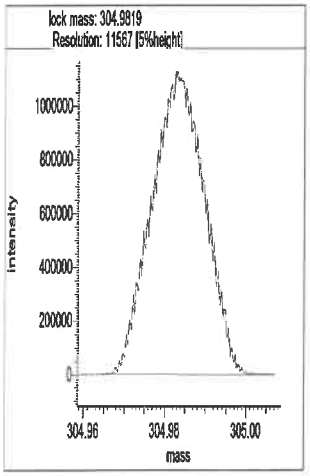

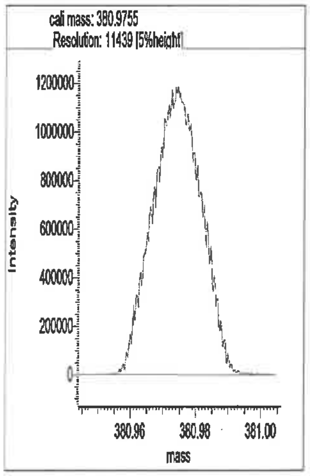

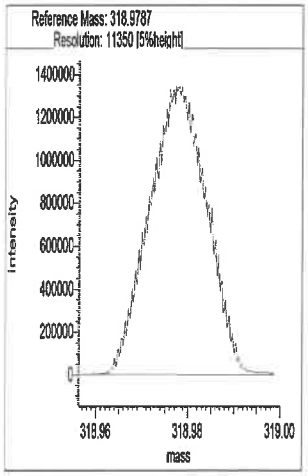

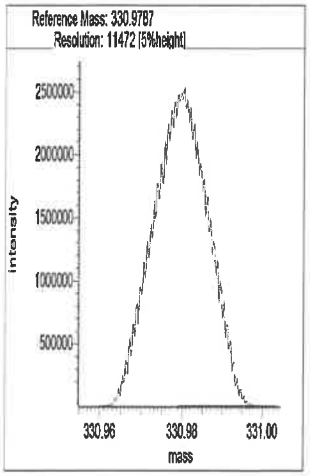

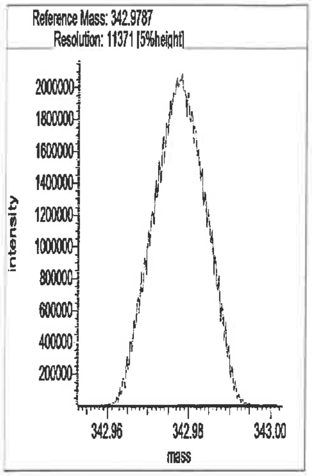

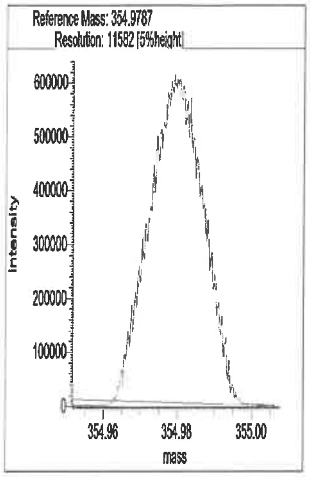

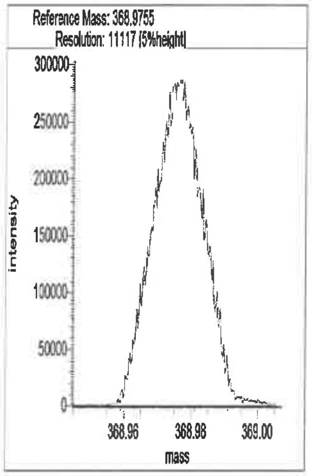

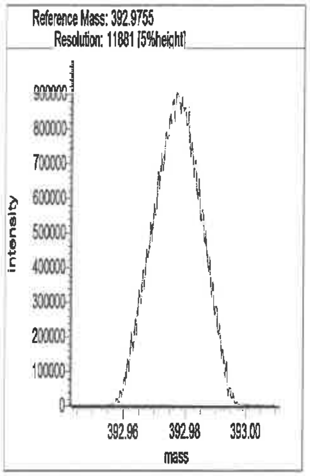

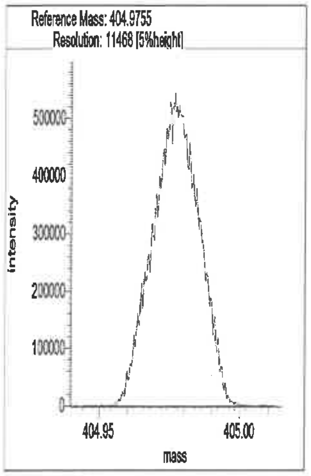

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11425 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11544 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11430 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11470 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10940 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11424 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11476 [5%height]

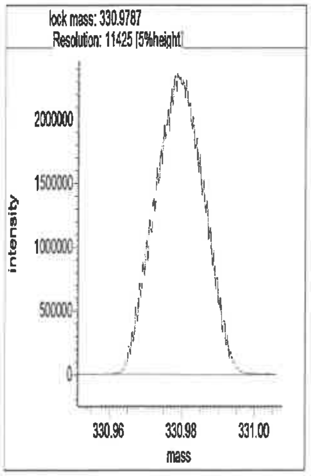

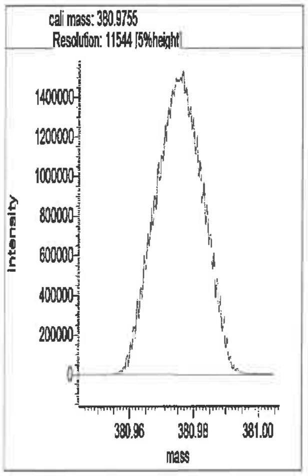

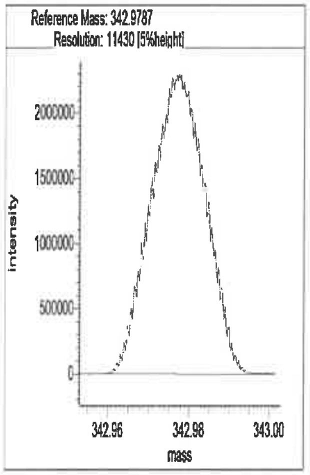

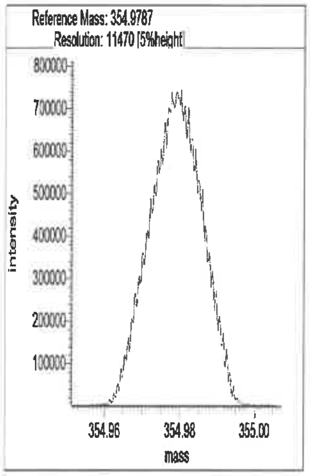

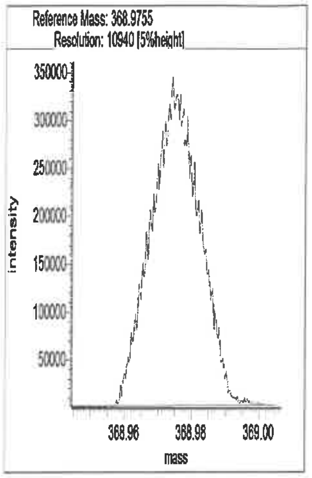

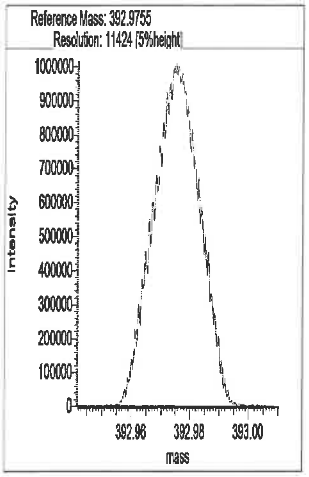

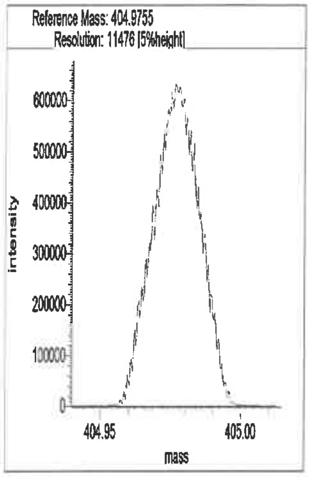

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11313 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11479 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11518 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11583 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11993 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11966 [5%height]

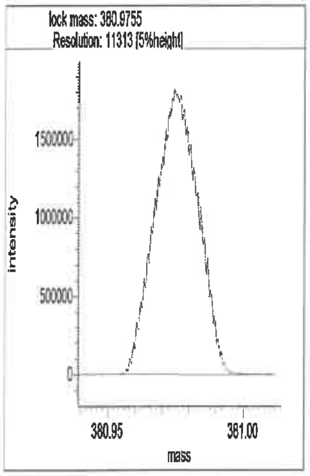

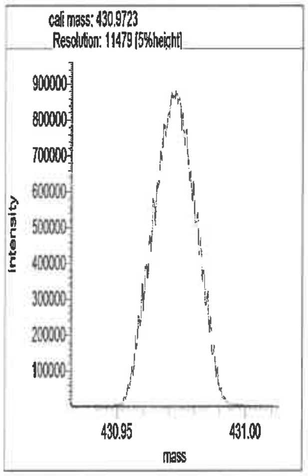

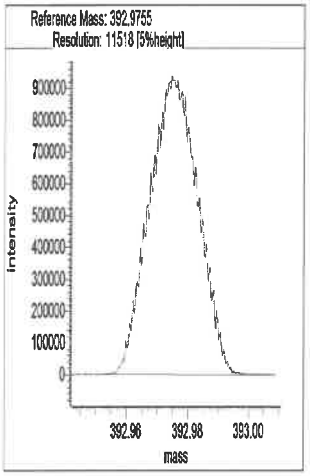

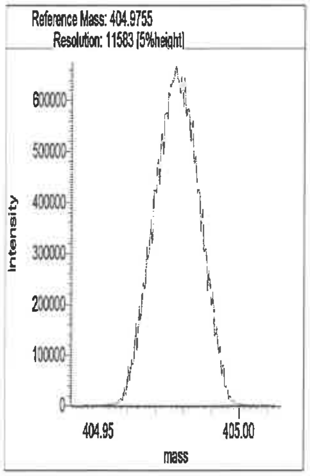

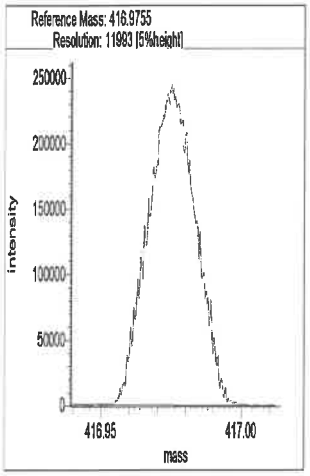

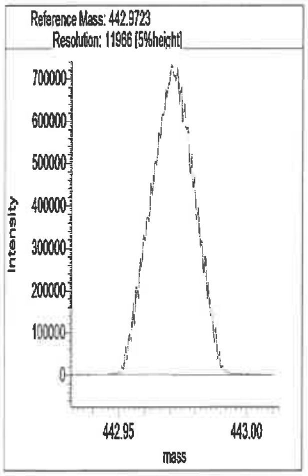

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11605 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11830 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11439 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11883 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11561 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11566 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12175 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11567 [5%height]

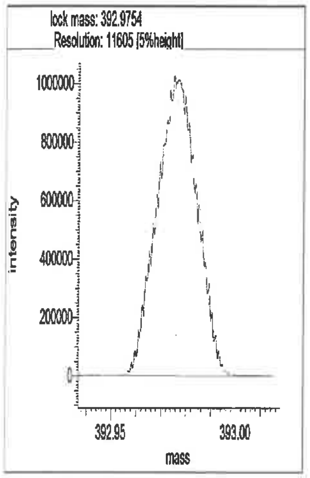

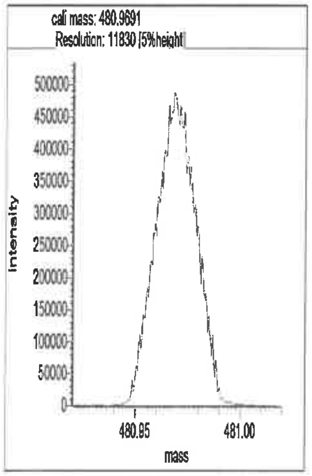

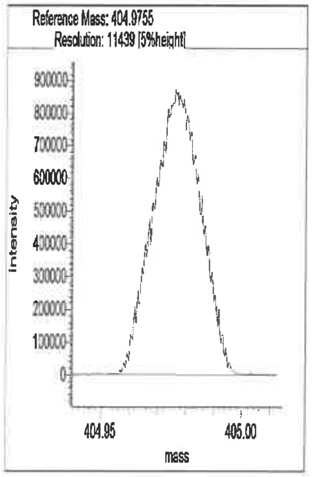

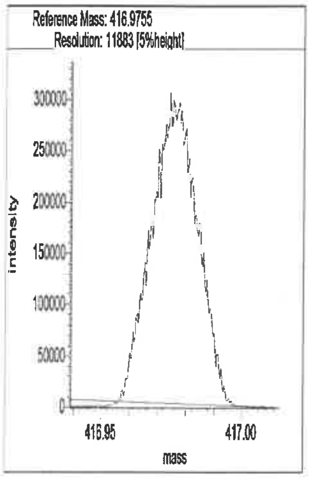

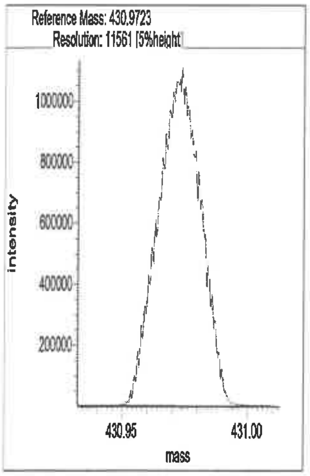

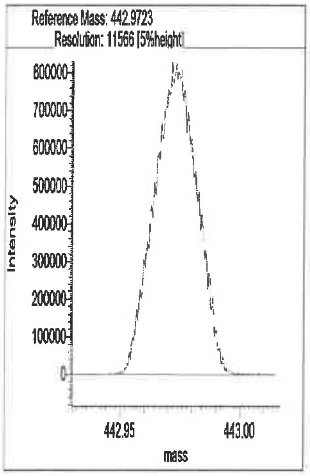

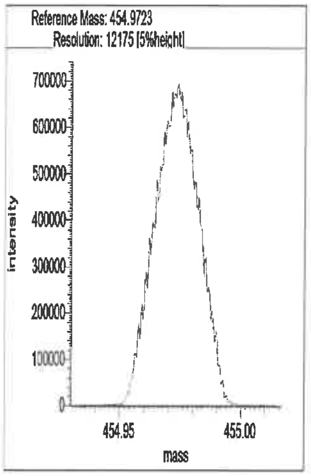

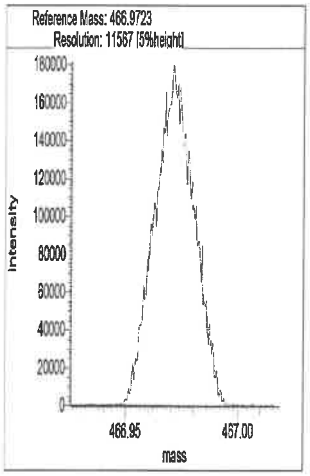

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11444 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11464 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11474 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11656 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11792 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11704 [5%height]

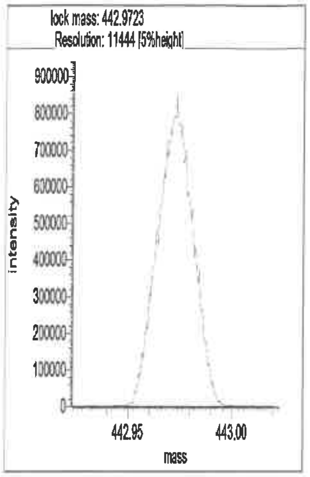
lock mass: 442.9723
Resolution: 11444 [5%height]
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800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

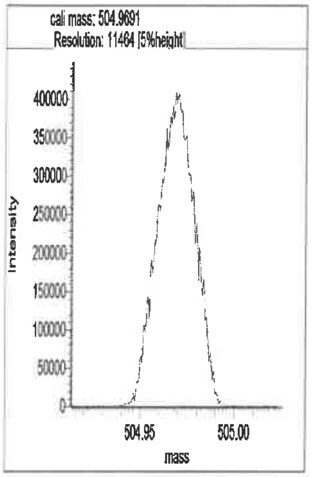
cali mass: 504.9691
Resolution: 11464 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

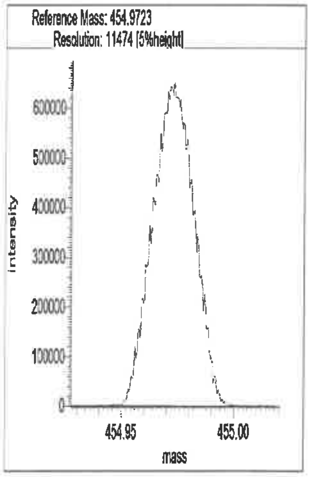
Reference Mass: 454.9723
Resolution: 11474 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

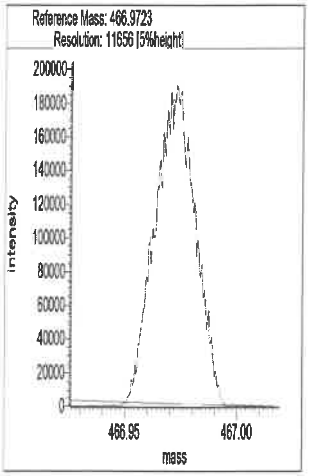
Reference Mass: 466.9723
Resolution: 11656 [5%height]
intensity
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

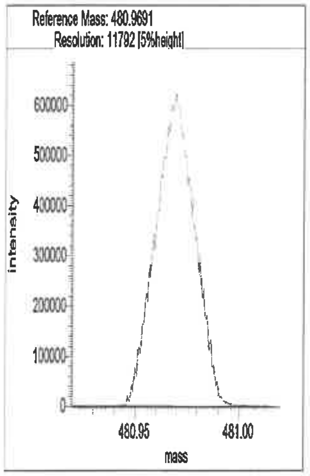
Reference Mass: 480.9691
Resolution: 11792 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

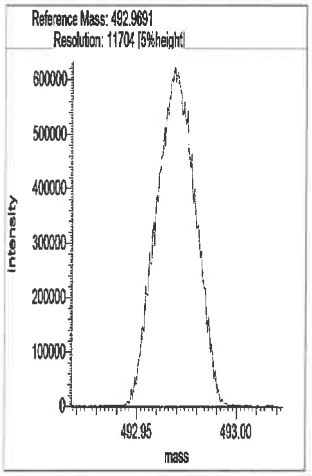
Reference Mass: 492.9691
Resolution: 11704 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	17 Nov 2020 19:20
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12887 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 13544 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 13530 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12838 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12850 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12863 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12646 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12699 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12839 [5%height]

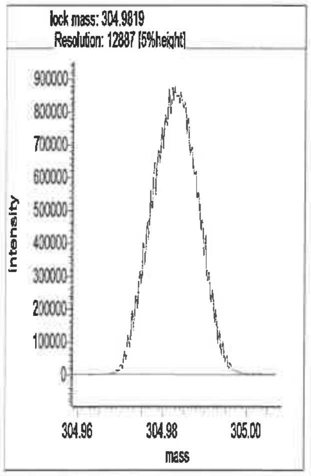

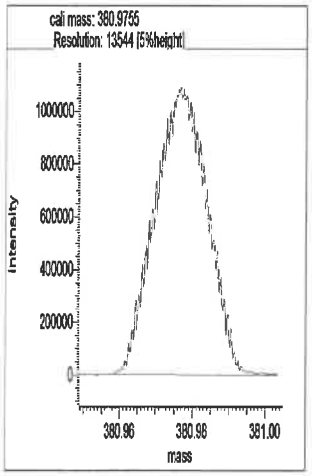

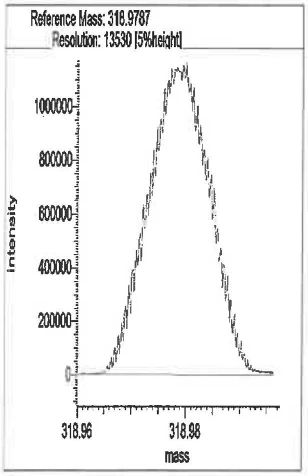

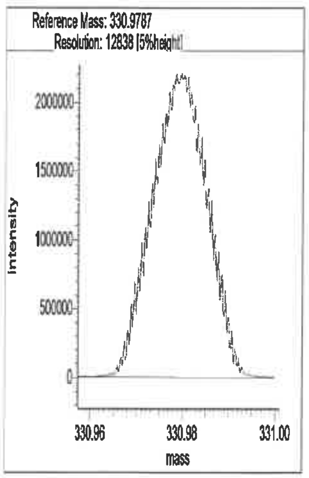

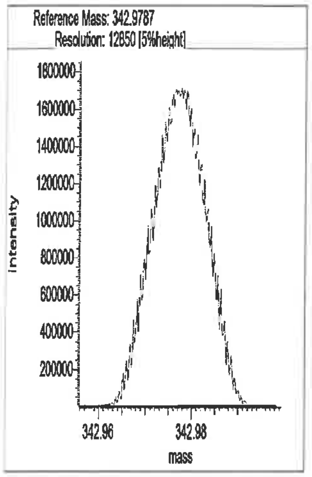

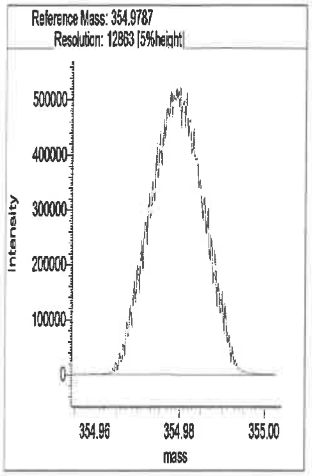

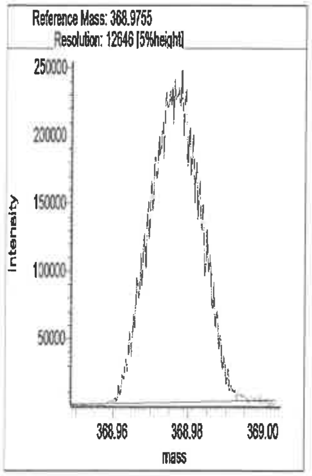

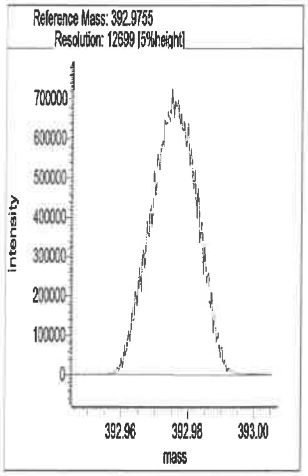

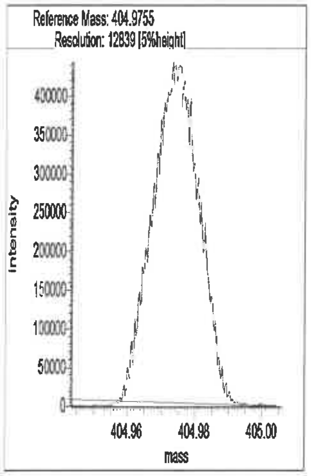

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12734 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12790 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12800 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12910 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12711 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12888 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12922 [5%height]

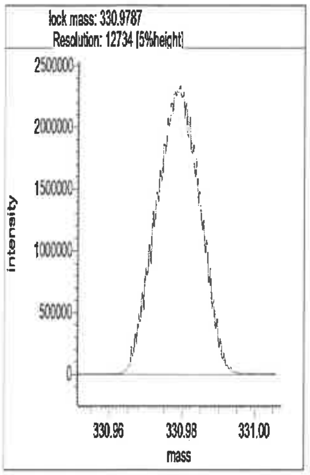

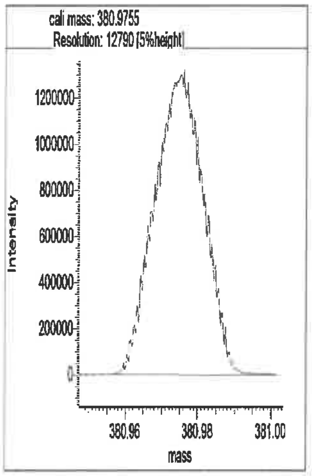

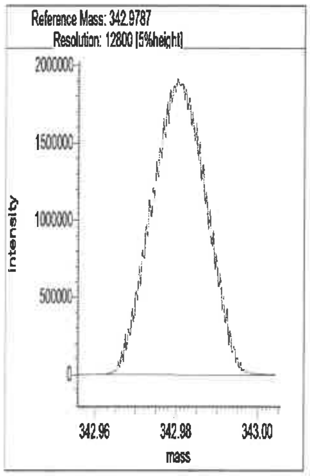

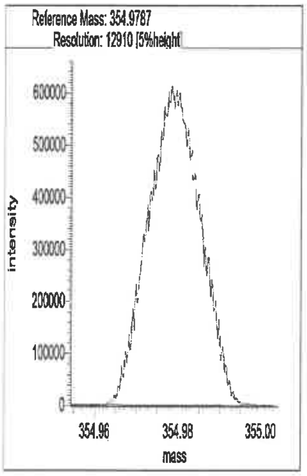

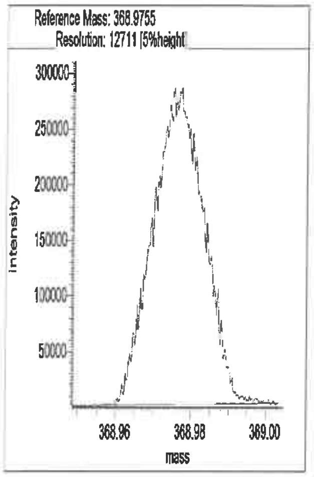

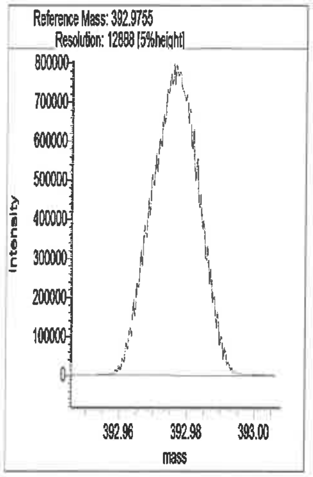

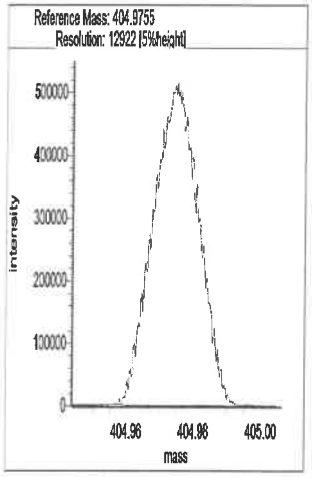

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12859 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12868 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12976 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13057 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12823 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 13333 [5%height]

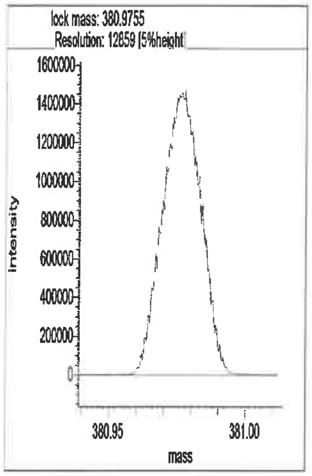

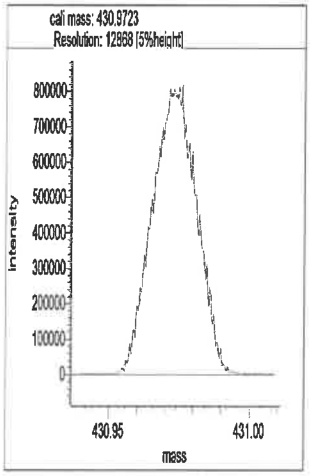

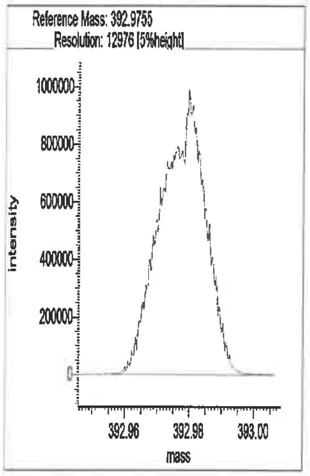

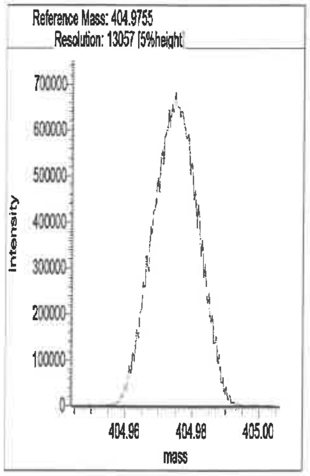

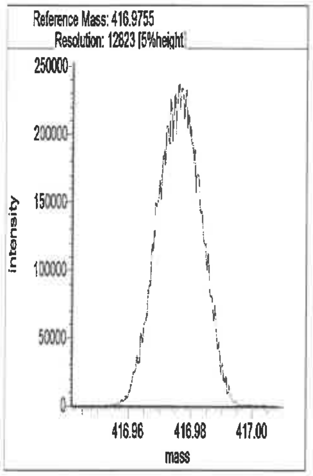

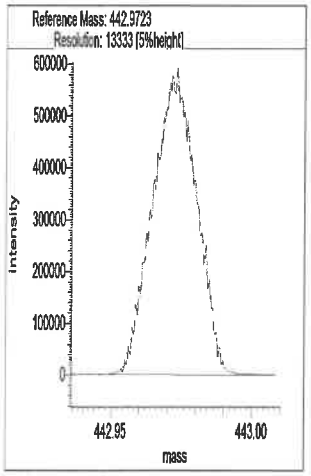

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13055 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12888 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13175 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12944 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12912 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13000 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12911 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12974 [5%height]

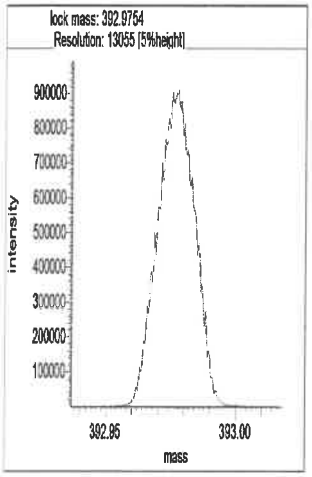

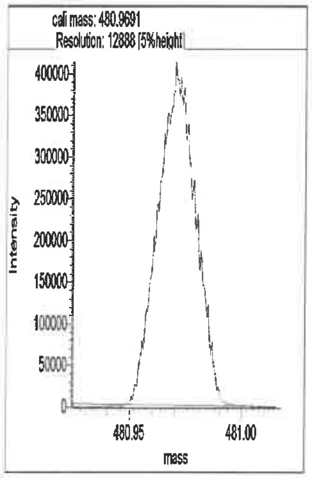

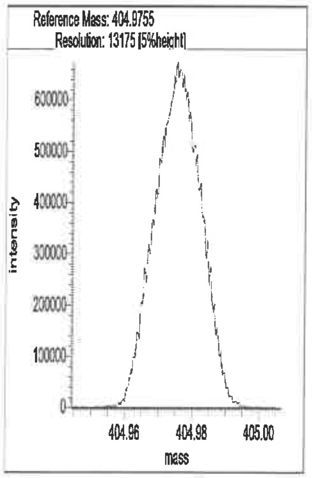

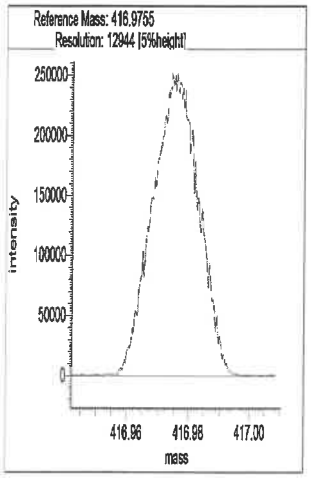

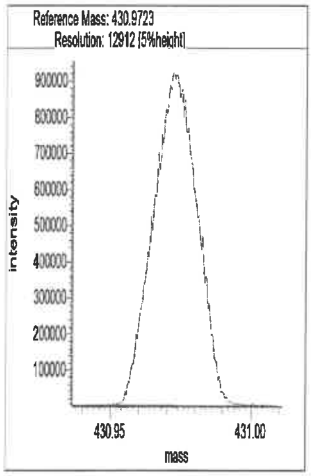

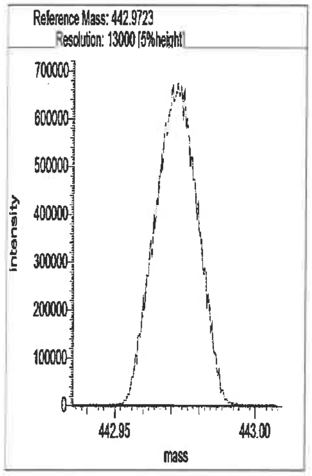

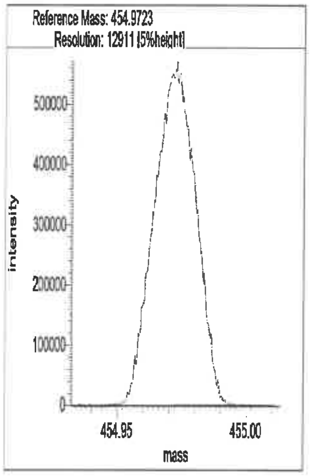

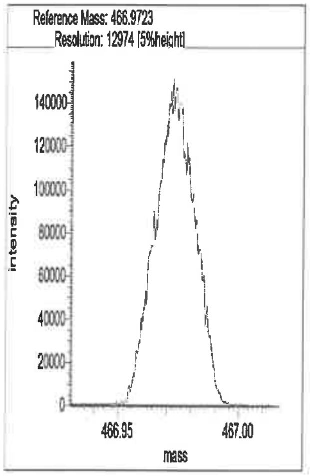

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13016 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 13206 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12739 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12763 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 13230 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12956 [5%height]

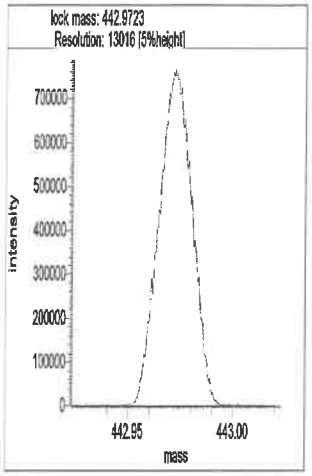
lock mass: 442.9723
Resolution: 13016 [5%height]

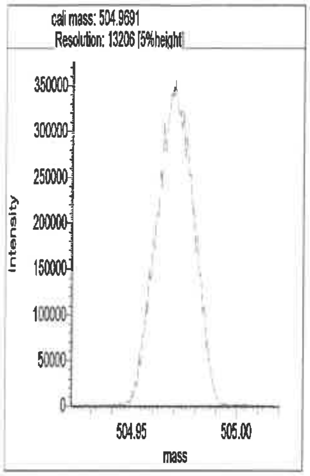
cali mass: 504.9691
Resolution: 13206 [5%height]

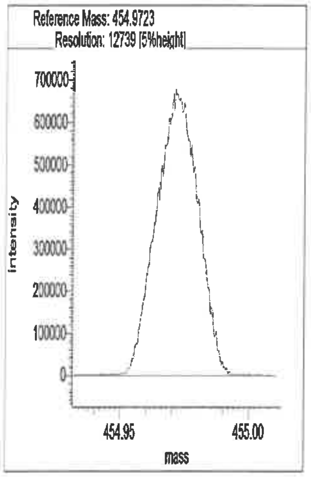
Reference Mass: 454.9723
Resolution: 12739 [5%height]

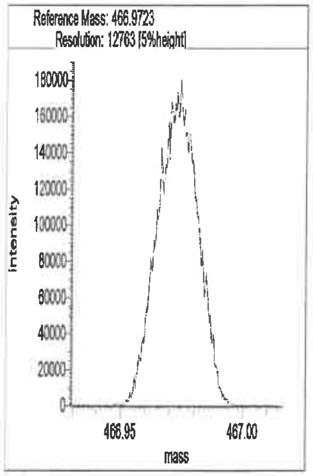
Reference Mass: 466.9723
Resolution: 12763 [5%height]

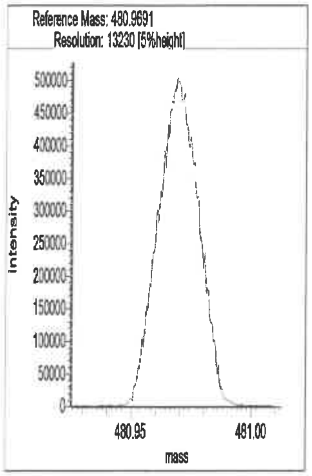
Reference Mass: 480.9691
Resolution: 13230 [5%height]

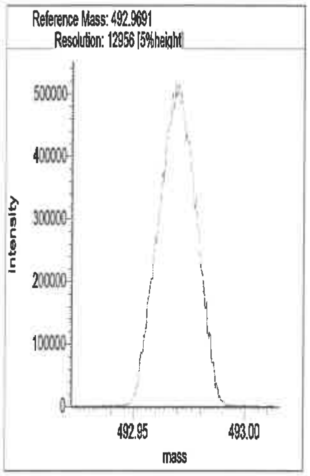
Reference Mass: 492.9691
Resolution: 12956 [5%height]

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Nov-2020 13:38:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:32 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.834	2145599	0.79	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.813	3632320	0.81	1.6832	100.6	100.6	0.4316	0.4316	101	
2,3,7,8-TCDF	20.838	78902	0.68	1.1547	1.881	1.881	0.0242	0.0242	94.06	
S Total TCDF					1.881	1.881	0.0242	0.0242		
D 13C-2,3,7,8-TCDD	22.220	2316674	0.82	1.0896	99.1	99.1	0.3693	0.3693	99.09	
2,3,7,8-TCDD	22.255	53314	0.76	1.1659	1.974	1.974	0.0626	0.0626	98.69	
$ 37Cl4-2,3,7,8-TCDD	22.263	48530		1.1445	1.976	1.976	0.0147	0.0147	98.81	
S Total TCDD					1.974	1.974	0.0626	0.0626		
D 13C-1,2,3,7,8-PeCDF	27.690	2977170	1.60	1.4604	95.0	95.0	0.4112	0.4112	95.01	
1,2,3,7,8-PeCDF	27.715	339347	1.58	1.1322	10.1	10.1	0.0686	0.0686	101	
D 13C-2,3,4,7,8-PeCDF	29.248	2805191	1.59	1.3504	96.8	96.8	0.4447	0.4447	96.82	
2,3,4,7,8-PeCDF	29.282	326187	1.60	1.1588	10.0	10.0	0.0767	0.0767	100	
S Total PeCDF					20.1	20.1	0.0726	0.0726		
D 13C-1,2,3,7,8-PeCDD	30.090	1772472	1.58	0.8729	94.6	94.6	0.1493	0.1493	94.64	
1,2,3,7,8-PeCDD	30.116	202562	1.60	1.1191	10.2	10.2	0.0707	0.0707	102	
S Total PeCDD					10.2	10.2	0.0707	0.0707		
D 13C-1,2,3,4,7,8-HxCDF	35.215	2523469	0.55	1.2808	102.0	102.0	0.3863	0.3863	102	
1,2,3,4,7,8-HxCDF	35.232	335604	1.20	1.3205	10.1	10.1	0.0606	0.0606	101	
D 13C-1,2,3,6,7,8-HxCDF	35.375	2829584	0.54	1.4615	100.3	100.3	0.3385	0.3385	100	
1,2,3,6,7,8-HxCDF	35.383	361503	1.27	1.2682	10.1	10.1	0.0602	0.0602	101	
D 13C-2,3,4,6,7,8-HxCDF	36.150	2532810	0.54	1.3227	99.2	99.2	0.3740	0.3740	99.16	
2,3,4,6,7,8-HxCDF	36.167	330280	1.24	1.2838	10.2	10.2	0.0580	0.0580	102	
D 13C-1,2,3,7,8,9-HxCDF	37.018	2021278	0.53	1.1062	94.6	94.6	0.4472	0.4472	94.62	
1,2,3,7,8,9-HxCDF	37.026	265008	1.23	1.3063	10.0	10.0	0.0667	0.0667	100	
S Total HxCDF					40.3	40.3	0.0614	0.0614		
* 13C-1,2,3,7,8,9-HxCDD	36.816	1931038	1.31	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.352	1727097	1.30	0.8757	102.1	102.1	0.2842	0.2842	102	
1,2,3,4,7,8-HxCDD	36.369	198132	1.23	1.1972	9.582	9.582	0.0511	0.0511	95.82	
D 13C-1,2,3,6,7,8-HxCDD	36.462	2053194	1.27	1.0651	99.8	99.8	0.2337	0.2337	99.83	
1,2,3,6,7,8-HxCDD	36.479	222574	1.30	1.0695	10.1	10.1	0.0525	0.0525	101	
1,2,3,7,8,9-HxCDD	36.833	222340	1.26	1.1806	9.964	9.964	0.0496	0.0496	99.64	
S Total HxCDD					29.7	29.7	0.0511	0.0511		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,6,7,8-HpCDF	38.764	1840655	0.46	0.9521	100.1	100.1	0.4871	0.4871	100	
1,2,3,4,6,7,8-HpCDF	38.781	288953	1.03	1.5618	10.1	10.1	0.0598	0.0598	101	
D 13C-1,2,3,4,7,8,9-HpCDF	39.993	1486611	0.46	0.7782	98.9	98.9	0.5960	0.5960	98.93	
1,2,3,4,7,8,9-HpCDF	40.002	216435	1.07	1.4975	9.722	9.722	0.0684	0.0684	97.22	
S Total HpCDF					19.8	19.8	0.0641	0.0641		
D 13C-1,2,3,4,6,7,8-HpCDD	39.690	1593650	1.05	0.8393	98.3	98.3	0.3115	0.3115	98.33	
1,2,3,4,6,7,8-HpCDD	39.699	172927	1.03	1.1079	9.794	9.794	0.0462	0.0462	97.94	
S Total HpCDD					9.794	9.794	0.0462	0.0462		
D 13C-OCDD	42.170	1872512	0.91	0.5301	182.9	182.9	0.4512	0.4512	91.46	
OCDF	42.271	277015	0.91	1.4802	20.0	20.0	0.0880	0.0880	99.95	
OCDD	42.179	221914	0.93	1.1666	20.3	20.3	0.0623	0.0623	102	

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Nov-2020 13:38:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:32 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.834	21.818	1		950220	123783	324	810	382		
333.9338	21.825	21.818	0		1195379	156312	127	317	1231	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.813	20.808	0	0.953	1624350	229982	574	1435	401		
317.9389	20.804	20.808	0	0.953	2007970	289347	240	600	1206	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.838	20.834	0	1.001	31919	4485	10	25	449		
305.8987	20.838	20.834	0	1.001	46983	6724	48	120	140	0.68(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.220	22.213	0	1.018	1045090	129437	324	810	399		
333.9338	22.212	22.213	0	1.017	1271584	168031	127	317	1323	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.255	22.239	1	1.002	23103	3259	76	190	43		
321.8936	22.263	22.239	1	1.002	30211	3878	11	27	353	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.263	22.241	1	1.020	48530	7331	19	47	386		
13C-1,2,3,7,8-PeCDF											
351.9000	27.690	27.677	1	1.268	1831386	273744	384	960	713		
353.8970	27.690	27.677	1	1.268	1145784	170632	289	722	590	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.715	27.702	1	1.001	207991	30217	61	152	495		
341.8567	27.723	27.702	1	1.001	131356	19443	77	192	253	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.248	29.235	1	1.340	1723633	237217	384	960	618		
353.8970	29.256	29.235	1	1.340	1081558	150922	289	722	522	1.59(1.32-1.78)	

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.282	29.262	1	1.001	200945	27937	61	152	458		
341.8567	29.273	29.262	1	1.001	125242	17321	77	192	225	1.60(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.090	30.073	1	1.378	1086265	145201	75	187	1936		
369.8919	30.090	30.073	1	1.378	686207	88509	71	177	1247	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.116	30.100	1	1.001	124772	16774	49	122	342		
357.8516	30.107	30.100	0	1.001	77790	11210	25	62	448	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.215	35.202	1	0.957	897968	200757	348	870	577		
385.8610	35.215	35.202	1	0.957	1625501	369963	630	1575	587	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.232	35.219	1	1.000	183143	41440	107	267	387		
375.8178	35.232	35.219	1	1.000	152461	32334	76	190	425	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.375	35.361	1	0.961	993960	211131	348	870	607		
385.8610	35.366	35.361	0	0.961	1835624	387055	630	1575	614	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.383	35.376	0	1.000	202362	43878	107	267	410		
375.8178	35.383	35.376	0	1.000	159141	33207	76	190	437	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.150	36.142	0	0.982	884722	214114	348	870	615		
385.8610	36.150	36.142	0	0.982	1648088	399675	630	1575	634	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.167	36.158	1	1.000	183030	43640	107	267	408		
375.8178	36.167	36.158	1	1.000	147250	36203	76	190	476	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.018	37.005	1	1.005	701532	183134	348	870	526		
385.8610	37.018	37.005	1	1.005	1319746	341244	630	1575	542	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.026	37.019	0	1.000	145963	38646	107	267	361		
375.8178	37.026	37.019	0	1.000	119045	31257	76	190	411	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.816	36.808	0		1095001	280424	281	702	998		
403.8529	36.816	36.808	0		836037	213786	211	527	1013	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.352	36.340	1	0.987	975795	261970	281	702	932		
403.8529	36.352	36.340	1	0.987	751302	203994	211	527	967	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.369	36.355	1	1.000	109271	29220	61	152	479		
391.8127	36.361	36.355	0	1.000	88861	24044	53	132	454	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.462	36.454	0	0.990	1150642	283945	281	702	1010		
403.8529	36.470	36.454	1	0.991	902552	223766	211	527	1061	1.27(1.05-1.43)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.479	36.468	1	1.000	125926	30770	61	152	504		
391.8127	36.479	36.468	1	1.000	96648	24483	53	132	462	1.30(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.833	36.821	1	1.013	124161	31482	61	152	516		
391.8127	36.833	36.821	1	1.013	98179	25395	53	132	479	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.764	38.755	0	1.053	583640	179518	318	795	565		
419.8220	38.764	38.755	0	1.053	1257015	384806	599	1497	642	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.781	38.769	1	1.000	146265	44351	123	307	361		
409.7788	38.781	38.769	1	1.000	142688	42730	88	220	486	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.993	39.984	1	1.086	469795	160877	318	795	506		
419.8220	39.993	39.984	1	1.086	1016816	353717	599	1497	591	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.002	39.994	0	1.000	111930	39522	123	307	321		
409.7788	40.002	39.994	0	1.000	104505	36677	88	220	417	1.07(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.690	39.679	1	1.078	818030	275660	263	657	1048		
437.8140	39.690	39.679	1	1.078	775620	255649	254	635	1006	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.699	39.689	1	1.000	87549	27915	68	170	411		
425.7737	39.699	39.689	1	1.000	85378	27678	41	102	675	1.03(0.88-1.20)	
13C-OCDD											
469.7780	42.170	42.157	1	1.145	894190	261146	216	540	1209		
471.7750	42.170	42.157	1	1.145	978322	294673	257	642	1147	0.91(0.76-1.02)	
OCDF											
441.7428	42.271	42.260	1	1.002	131633	39228	46	115	853		
443.7399	42.263	42.260	0	1.002	145382	41838	99	247	423	0.91(0.76-1.02)	
OCDD											
457.7377	42.179	42.167	1	1.000	106961	33011	40	100	825		
459.7348	42.179	42.167	1	1.000	114953	34211	41	102	834	0.93(0.76-1.02)	

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

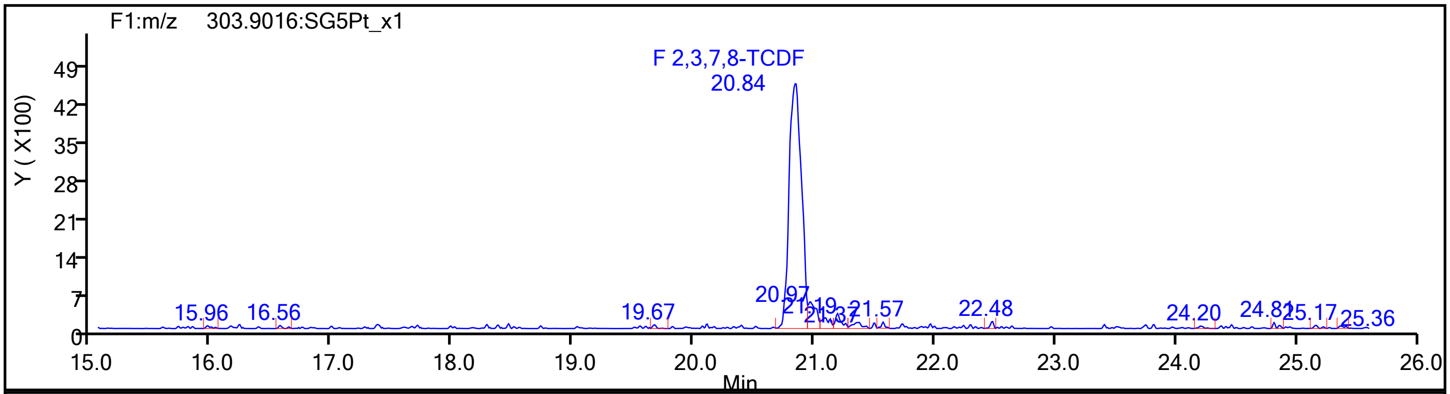

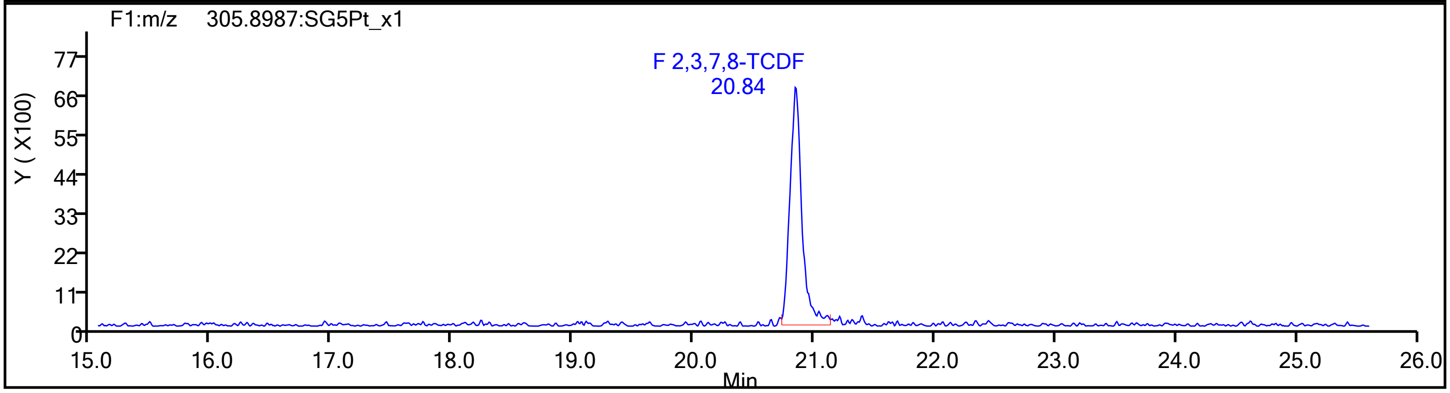

TCDF Standards

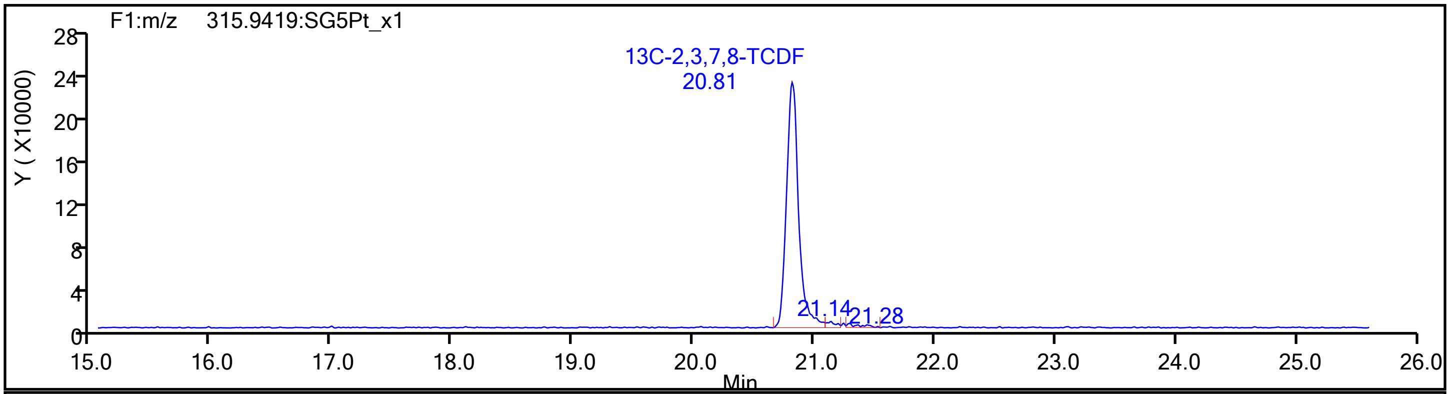

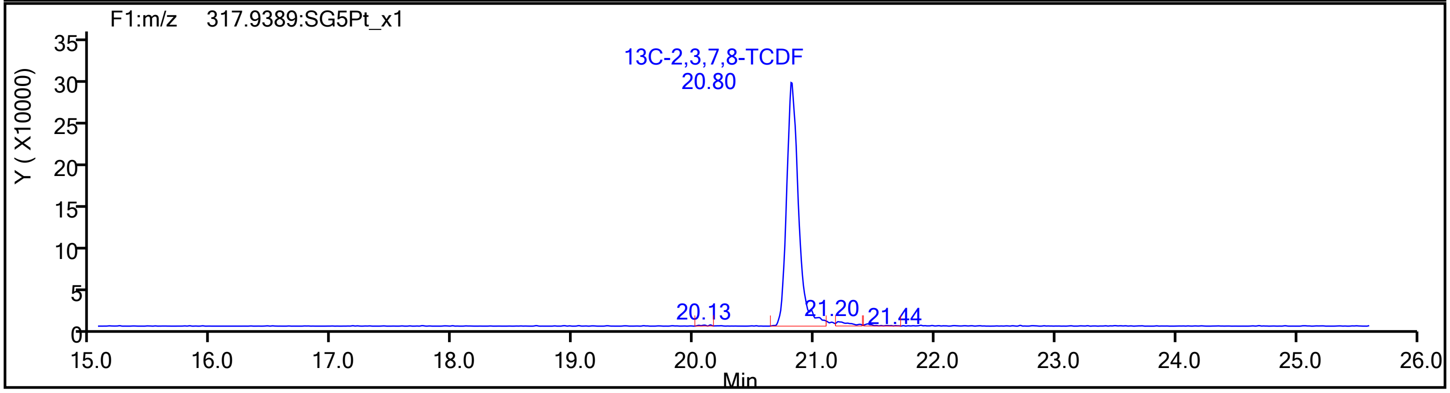

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Injection Date: 17-Nov-2020 13:38:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Sample Line#: 4
Column Type: DB-5
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TCDF

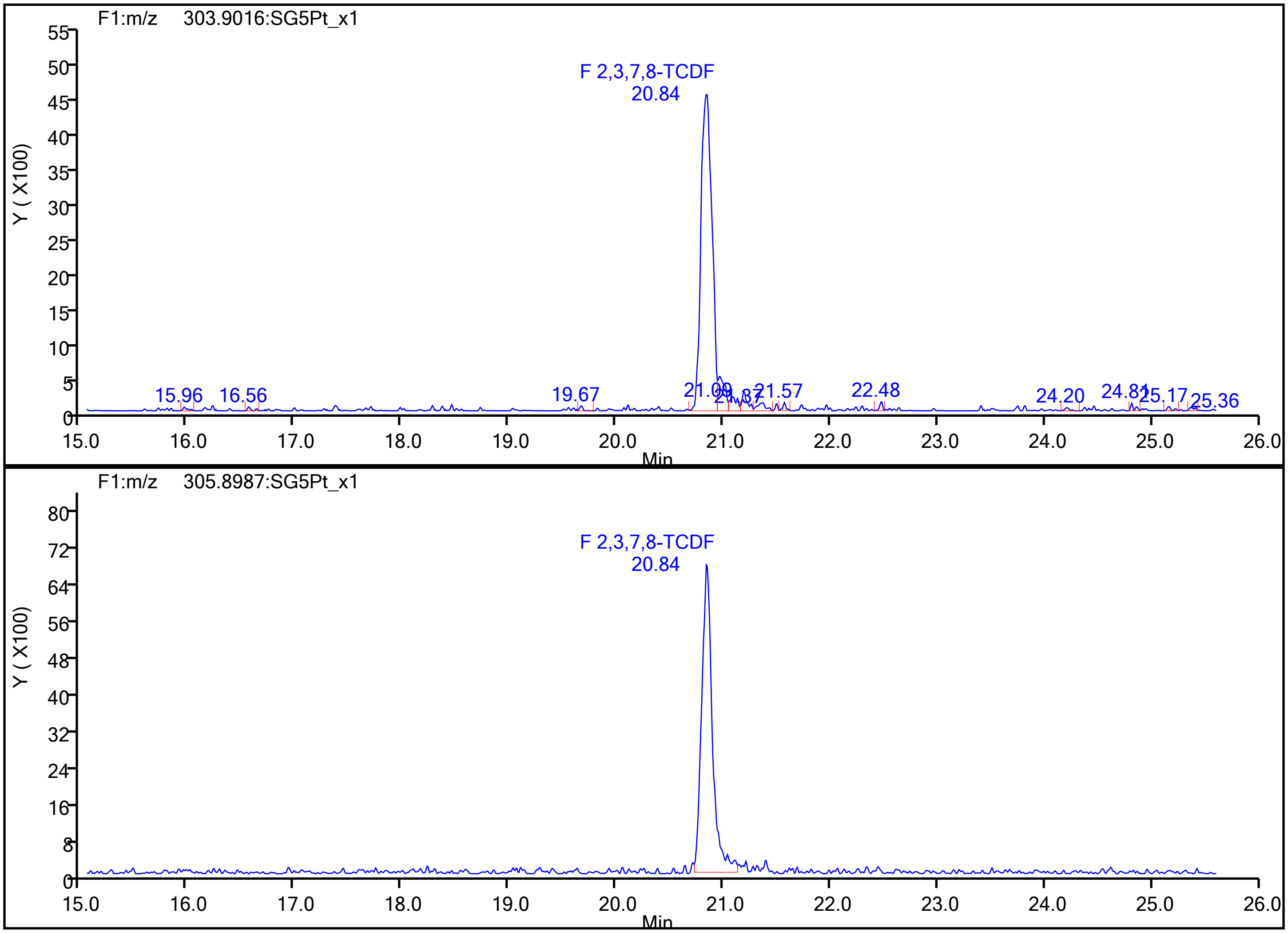

TCDF Interference Mass

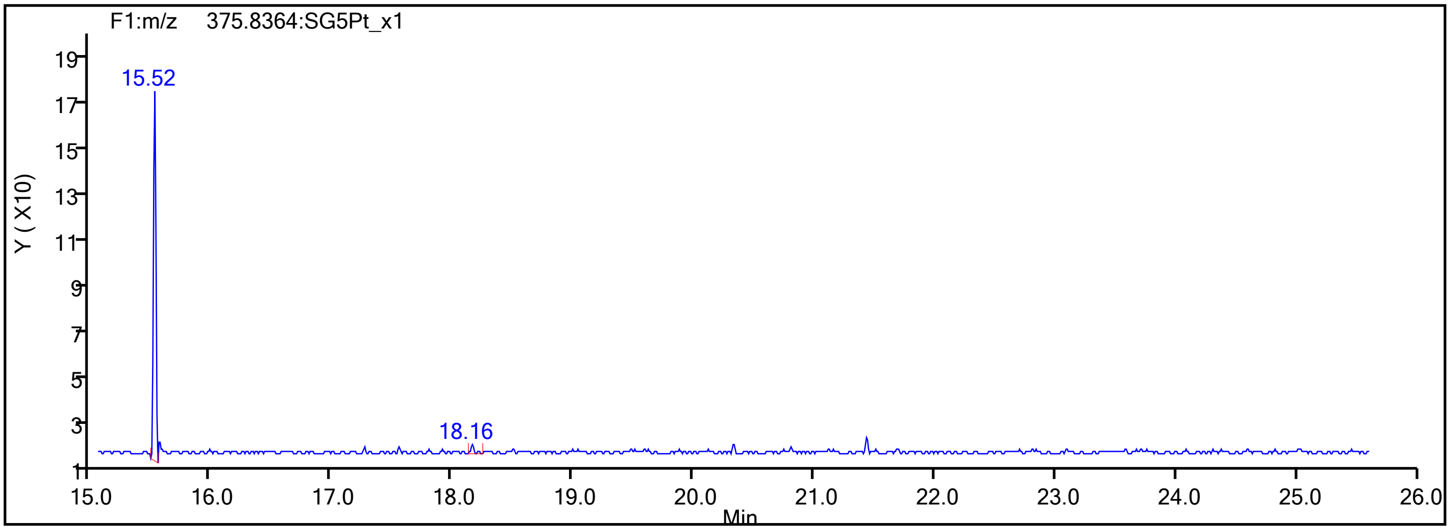

Report Date: 18-Nov-2020 12:34:43   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Injection Date: 17-Nov-2020 13:38:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585   Sample Line#: 4
Column Type: DB-5   Column Dia: 0.32 mm

TCDD

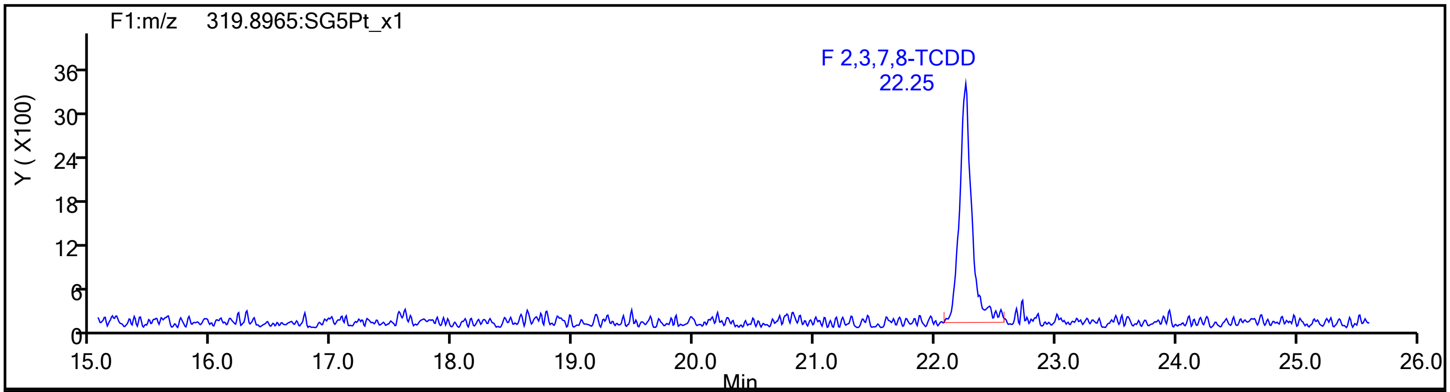

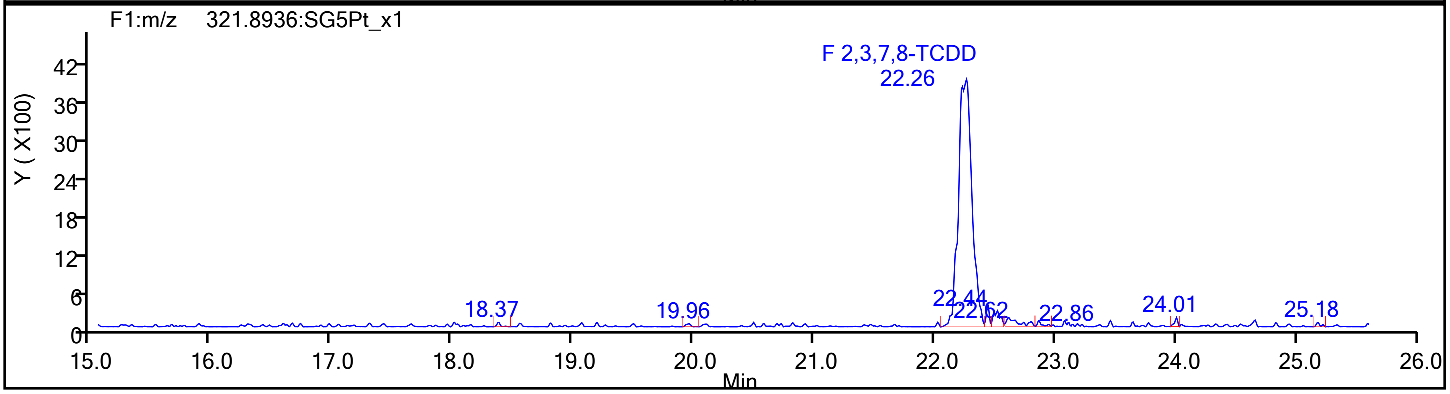

TCDD Standards

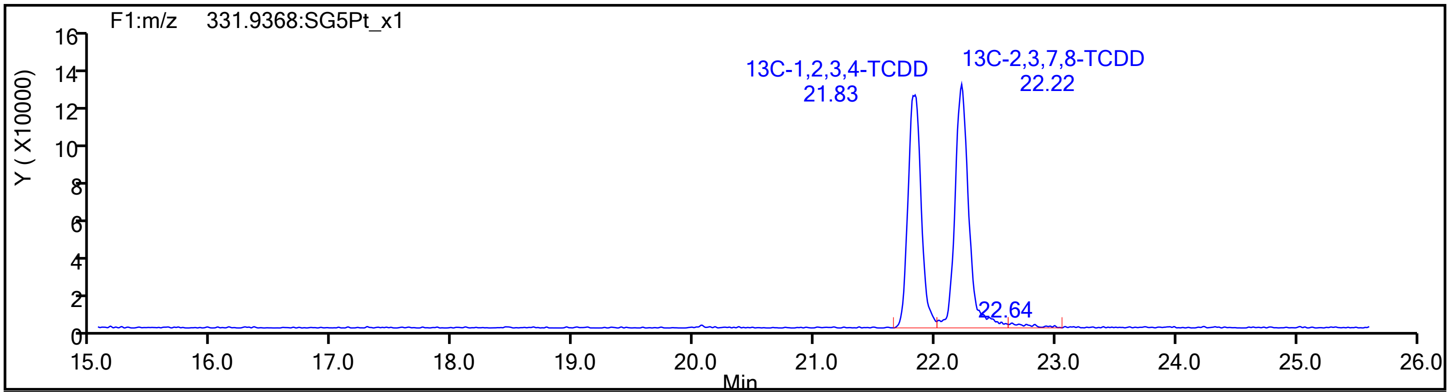

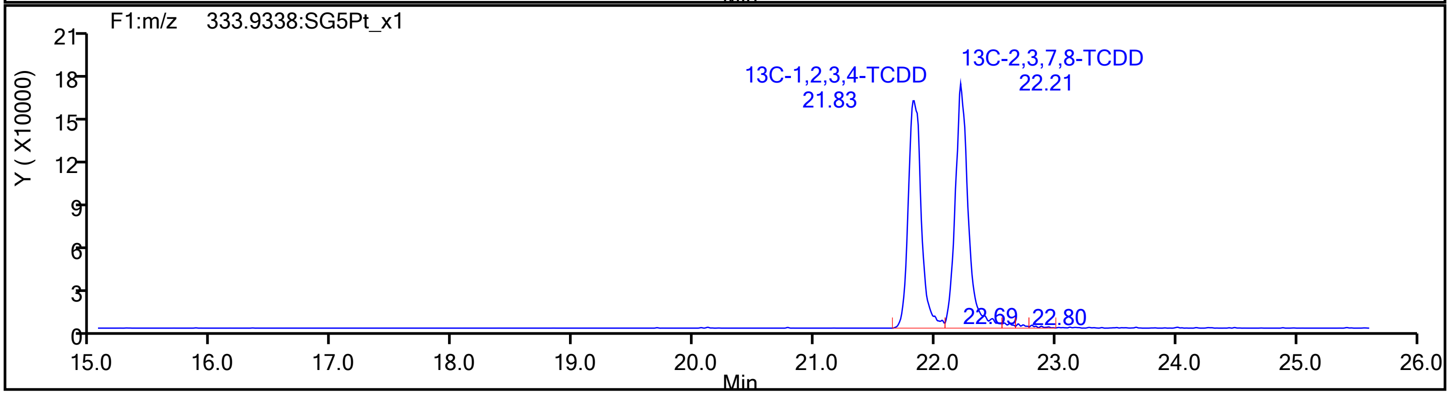

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

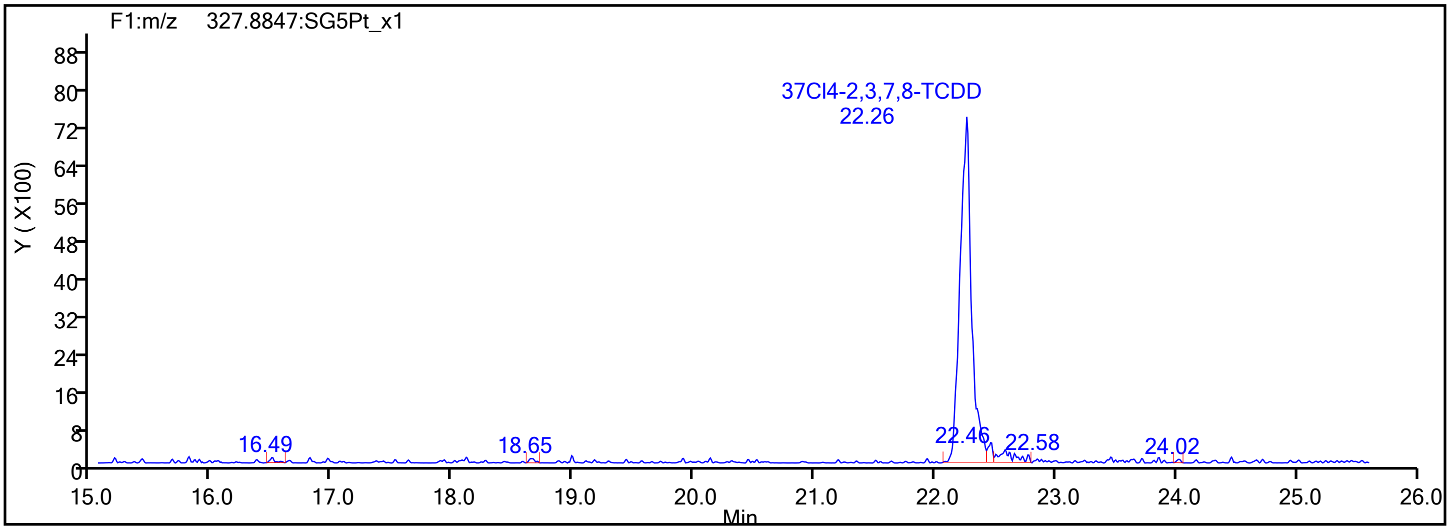

37Cl4-TCDD Standards

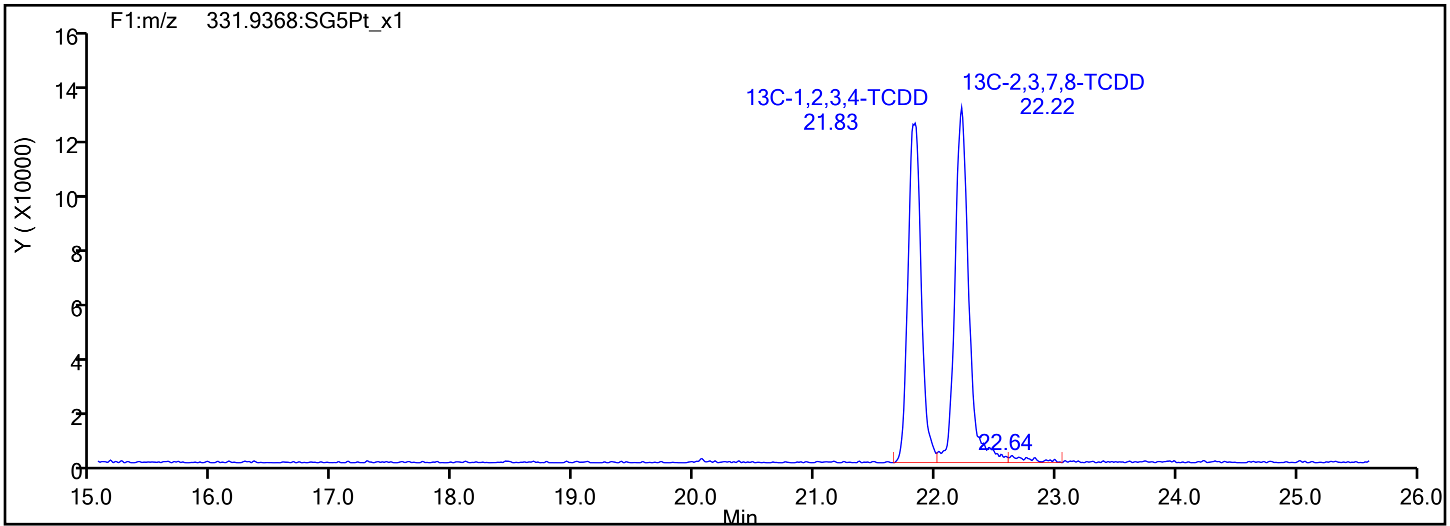

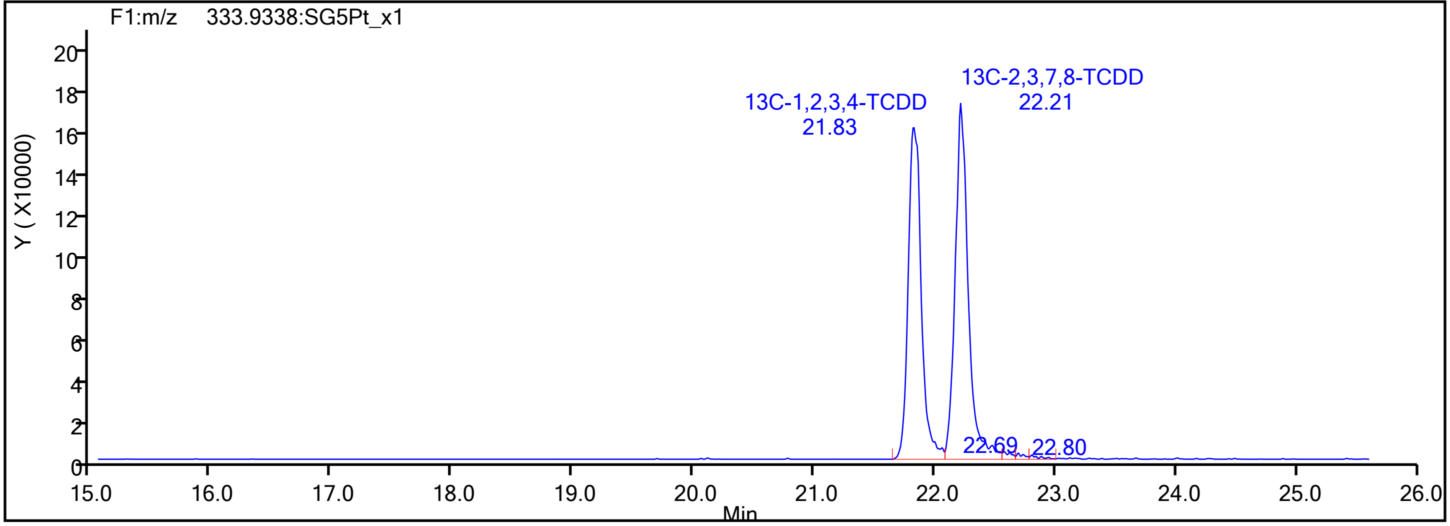

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Injection Date: 17-Nov-2020 13:38:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

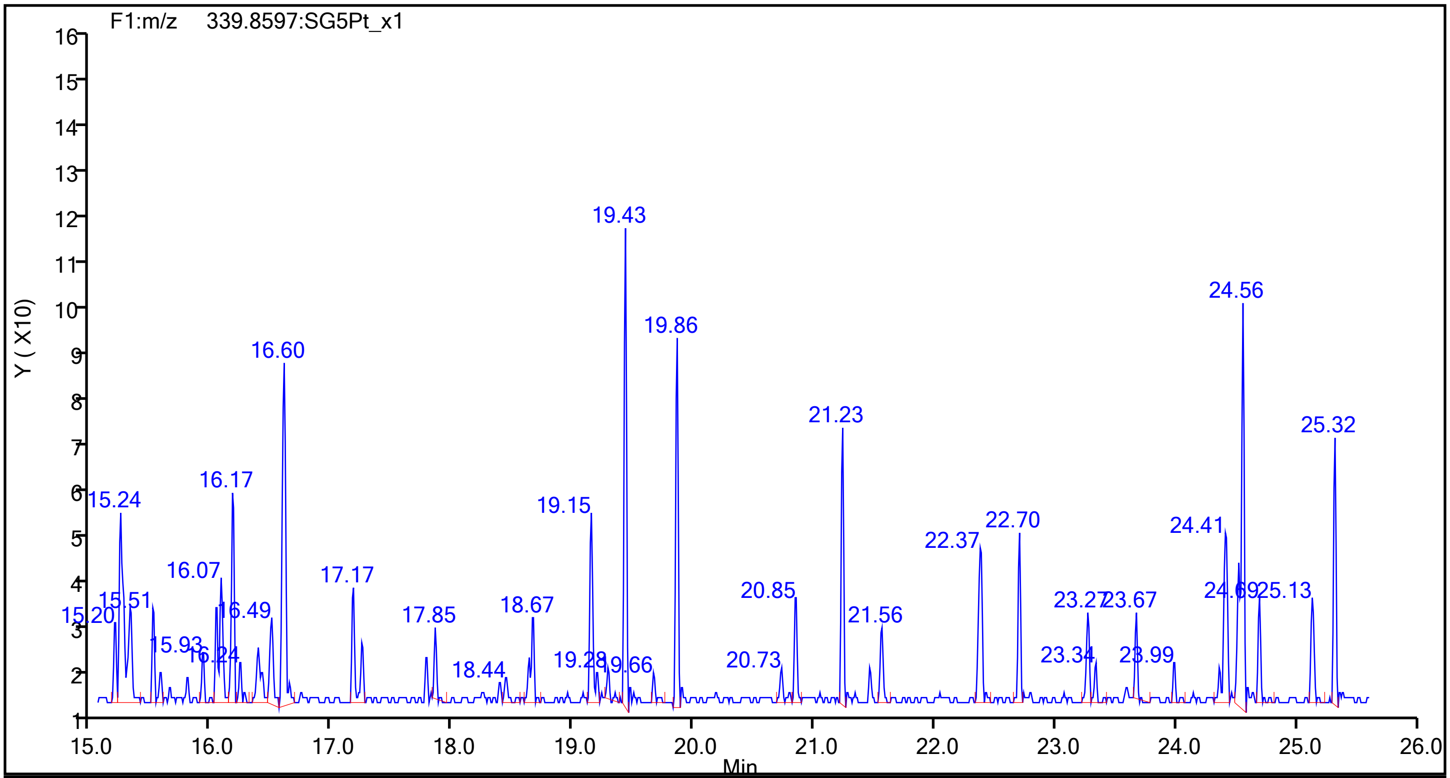

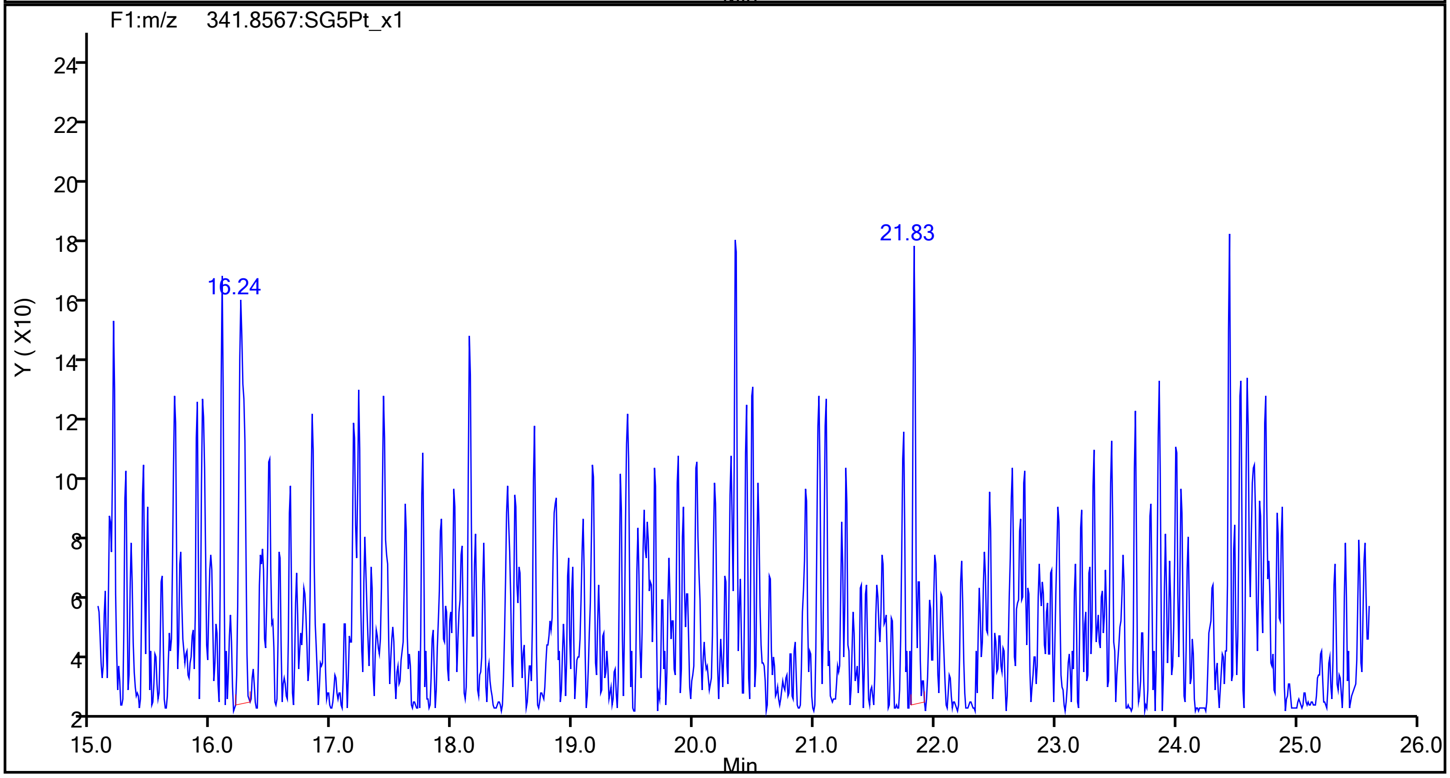

Report Date: 18-Nov-2020 12:34:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

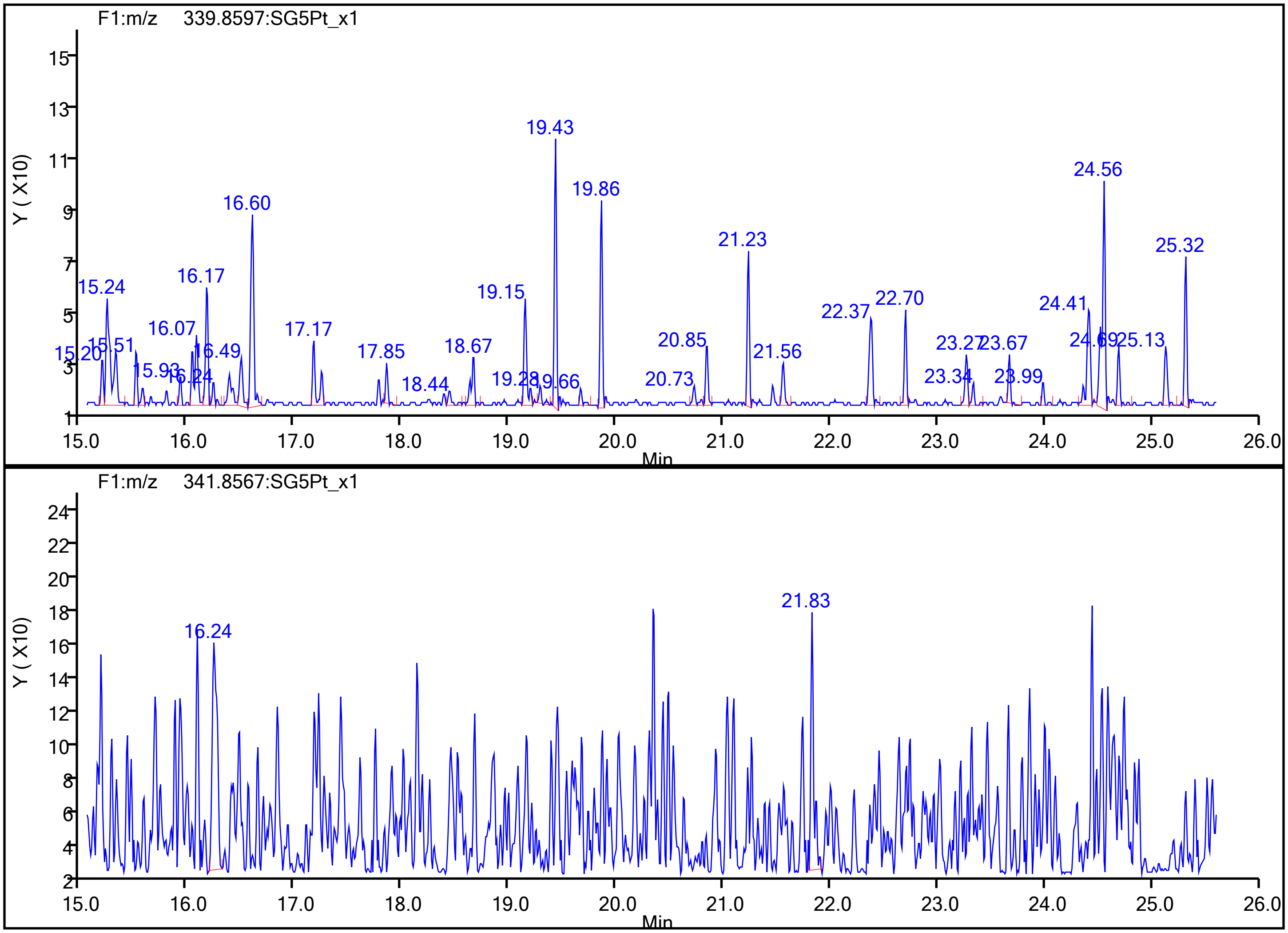

F1 PeCDFs Interference Mass

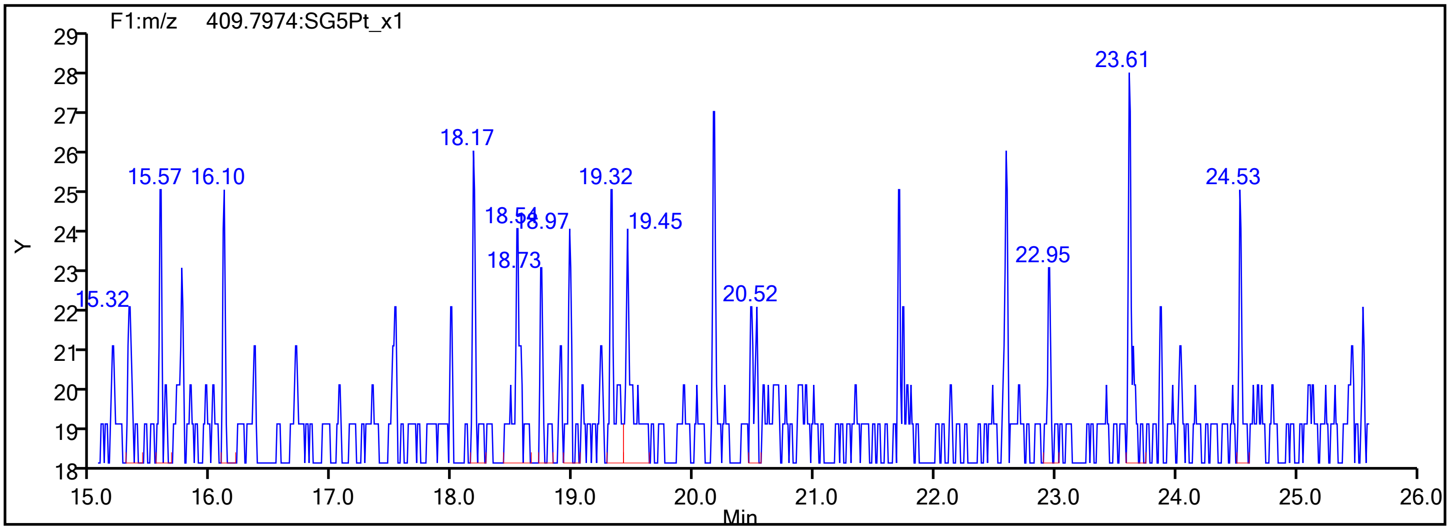

Report Date: 18-Nov-2020 12:34:44	Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

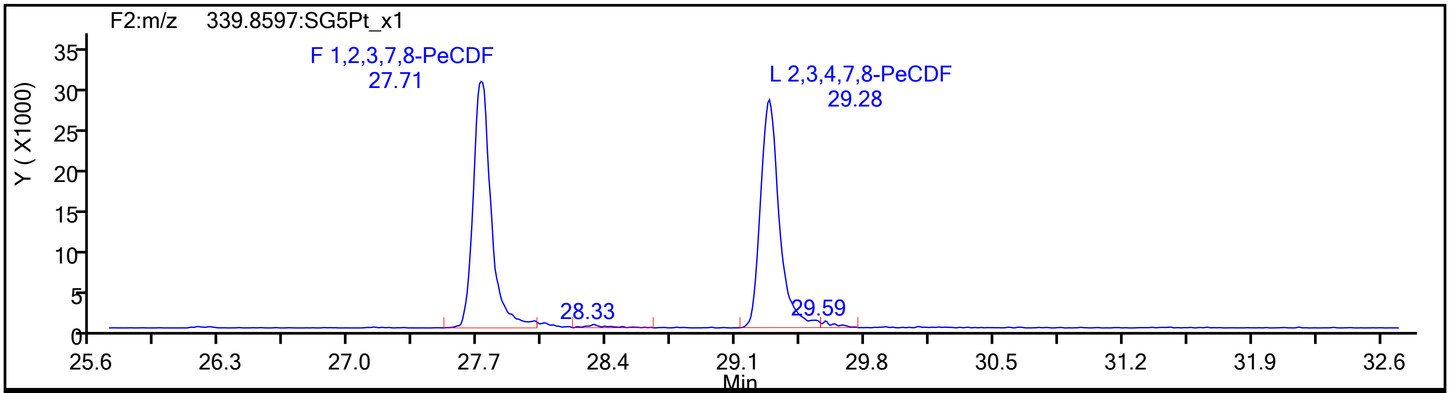

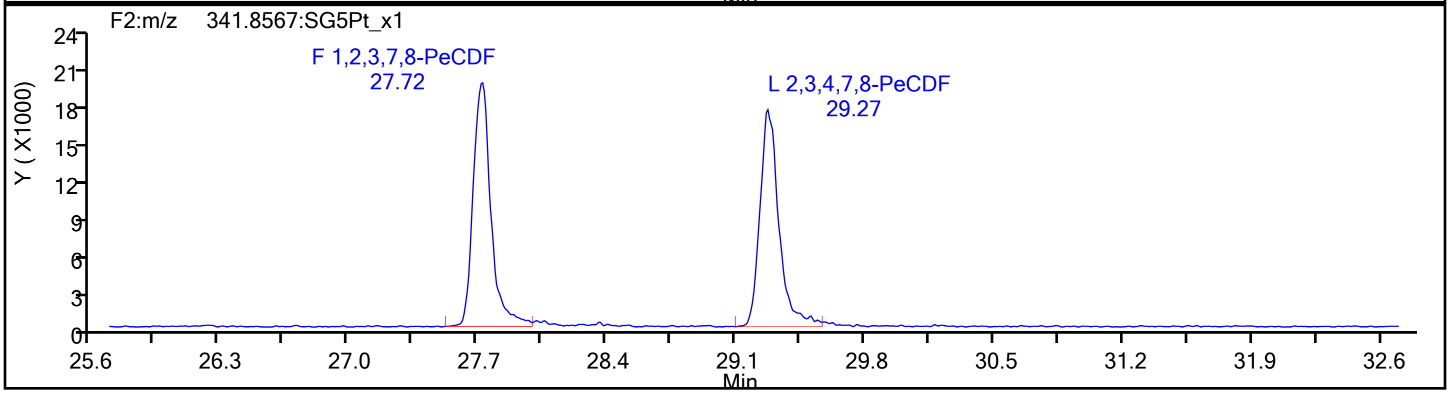

PeCDF Standards

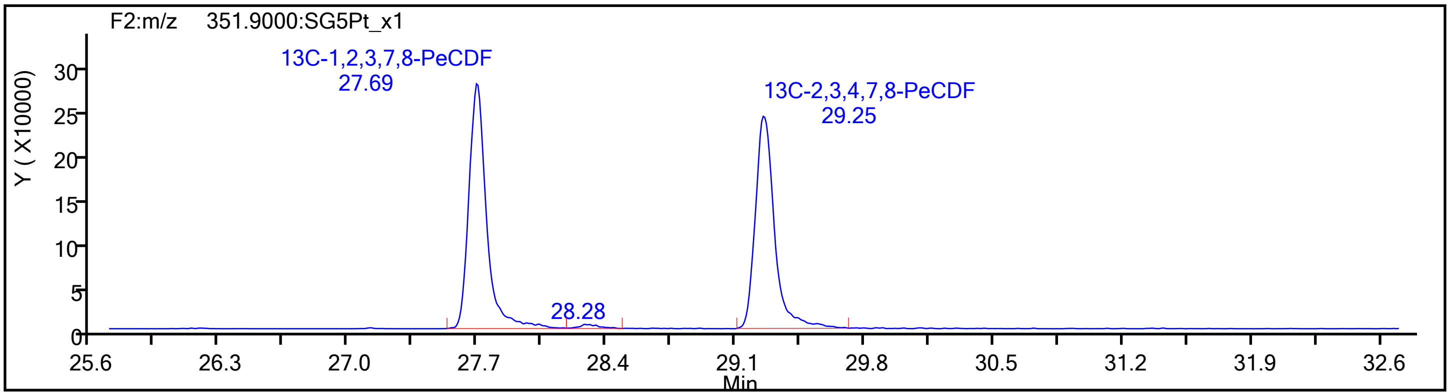

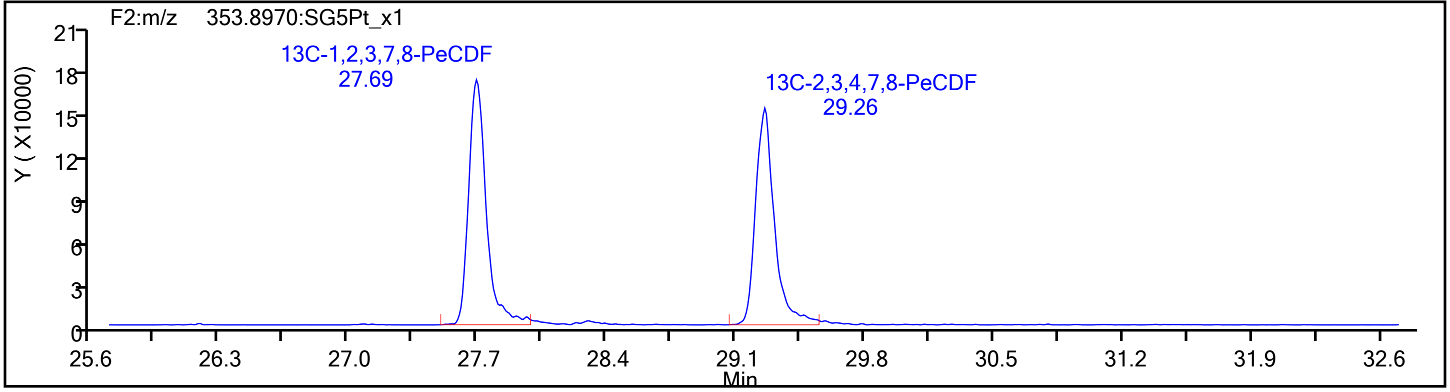

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

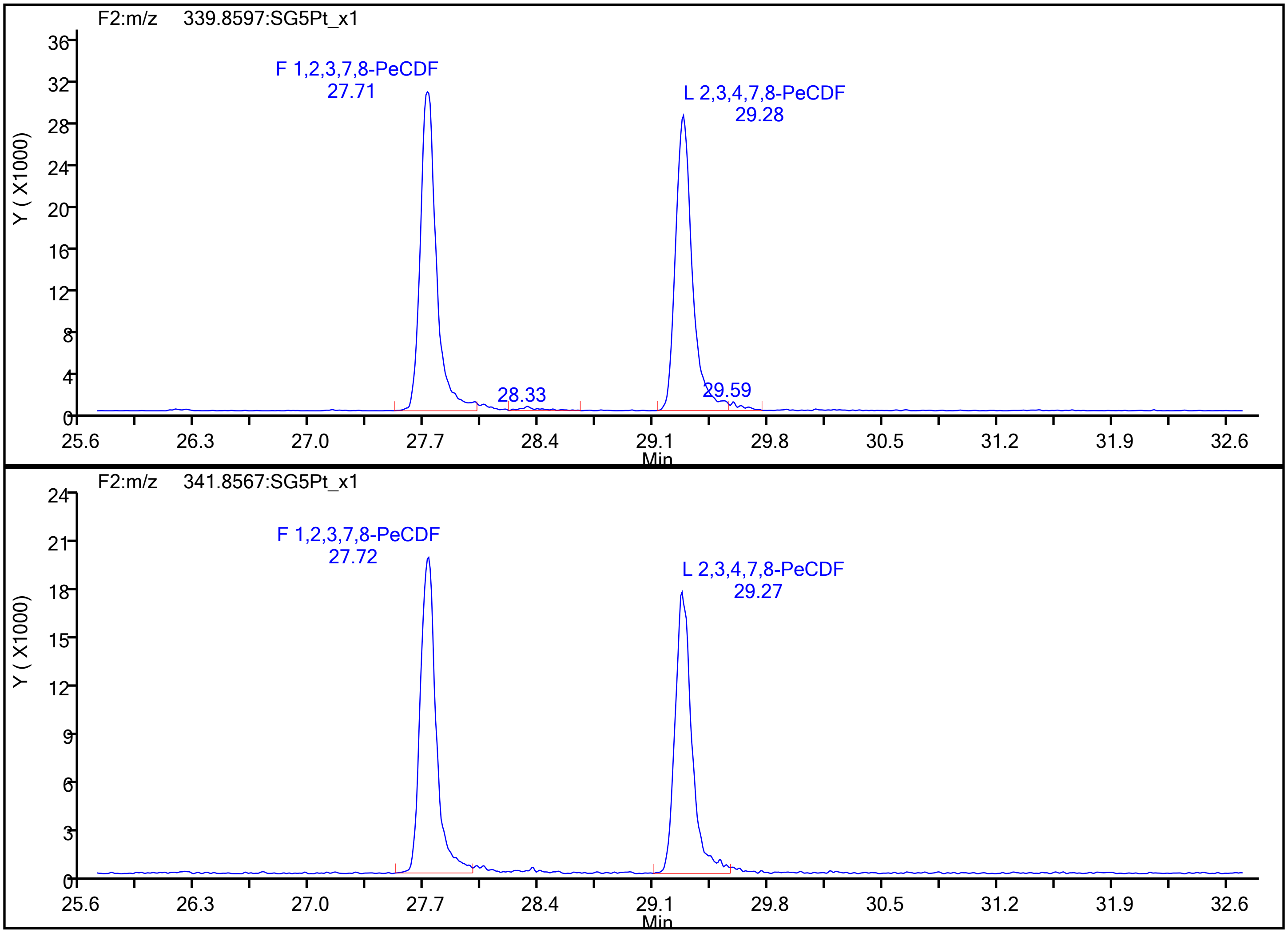

PeCDF Interference Mass

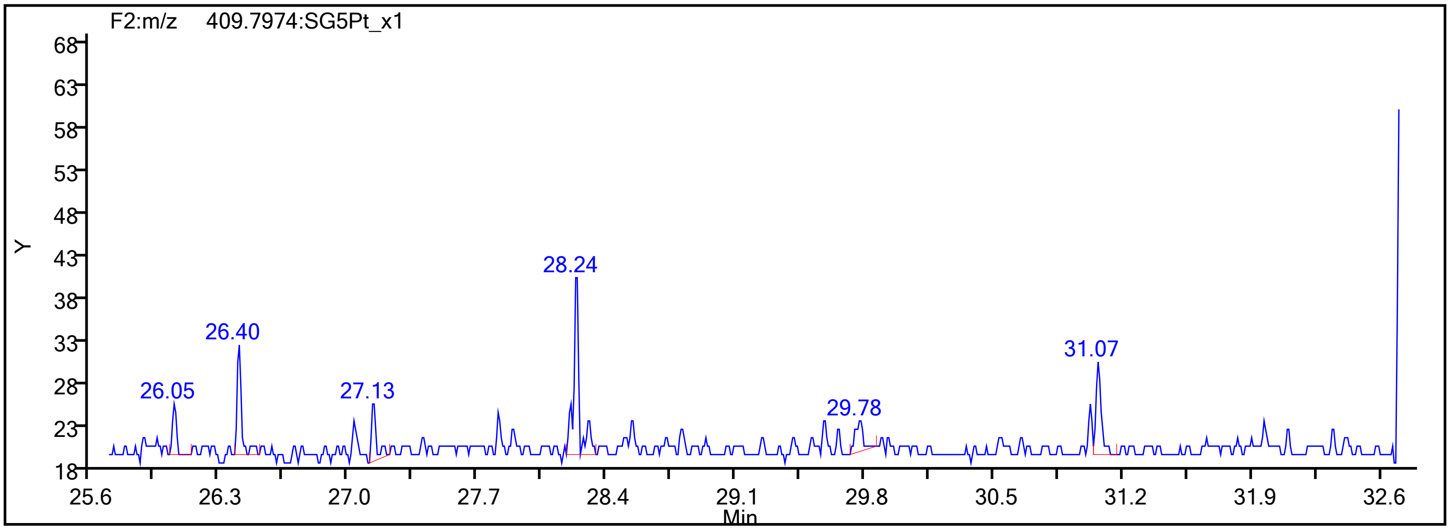

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

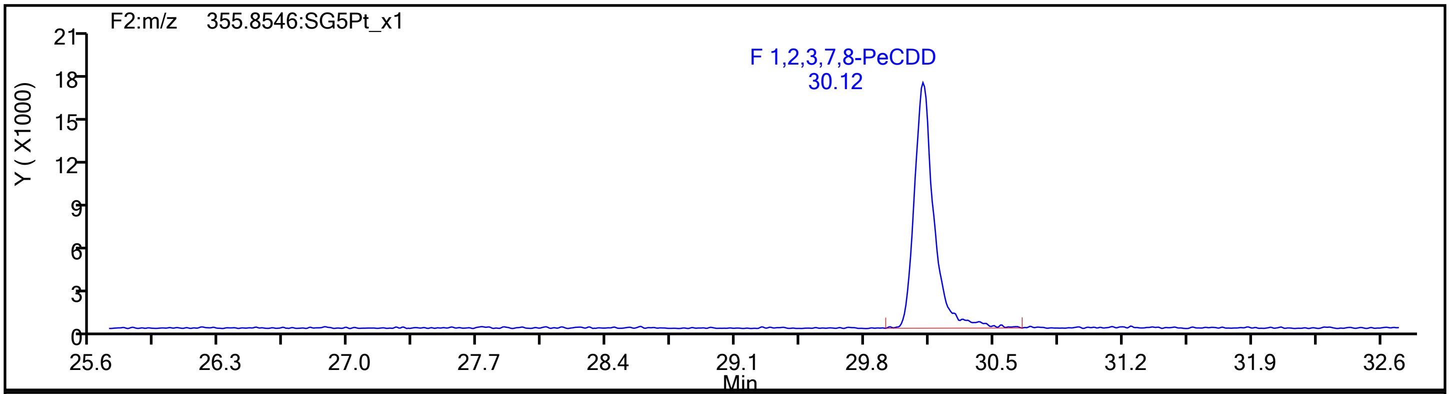

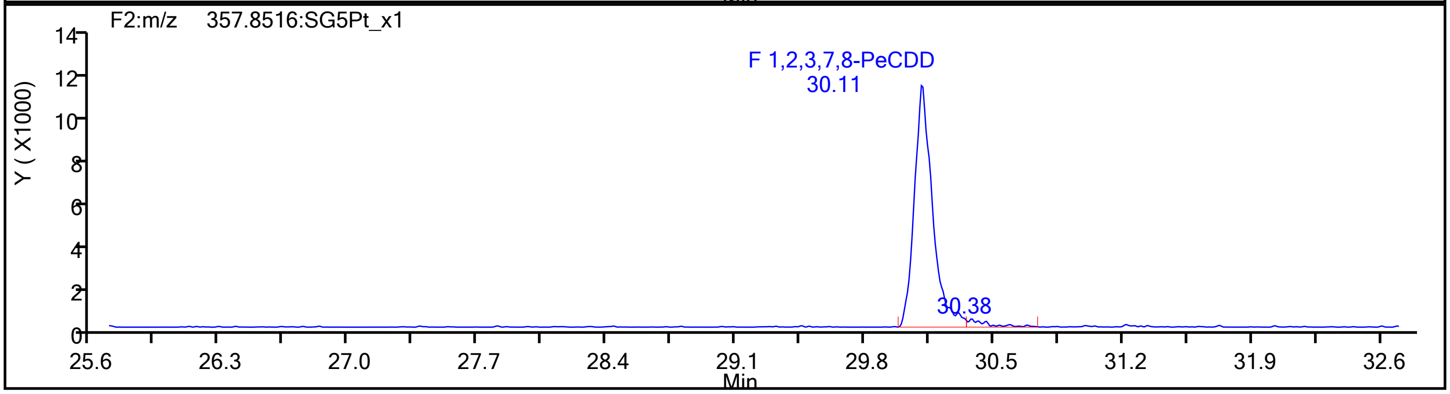

PeCDD Standards

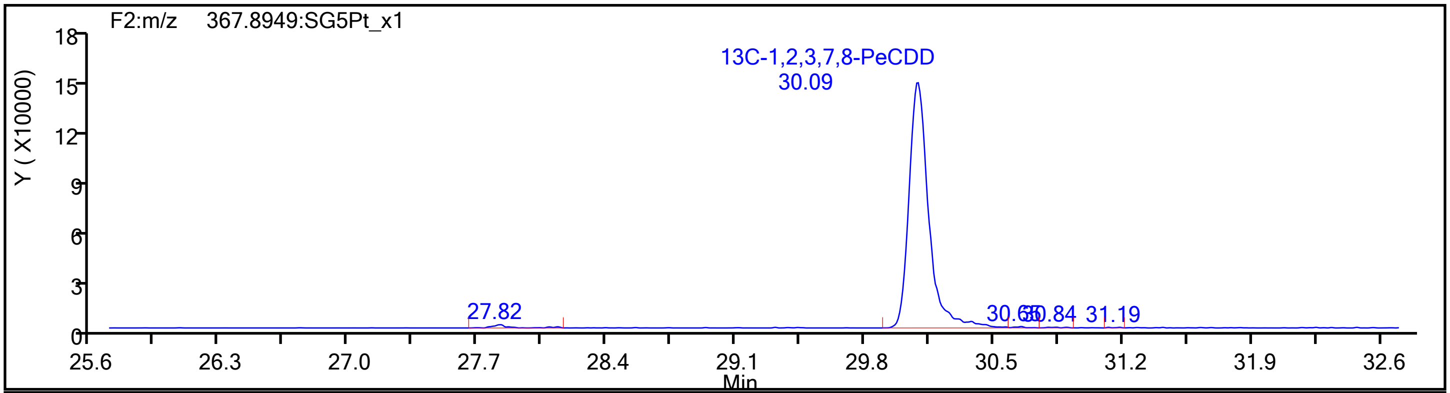

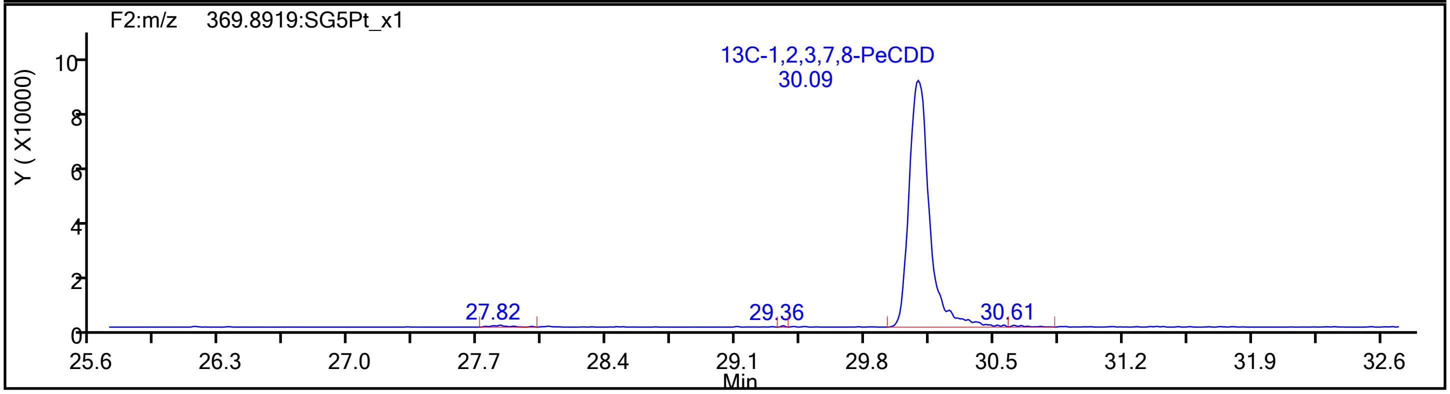

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

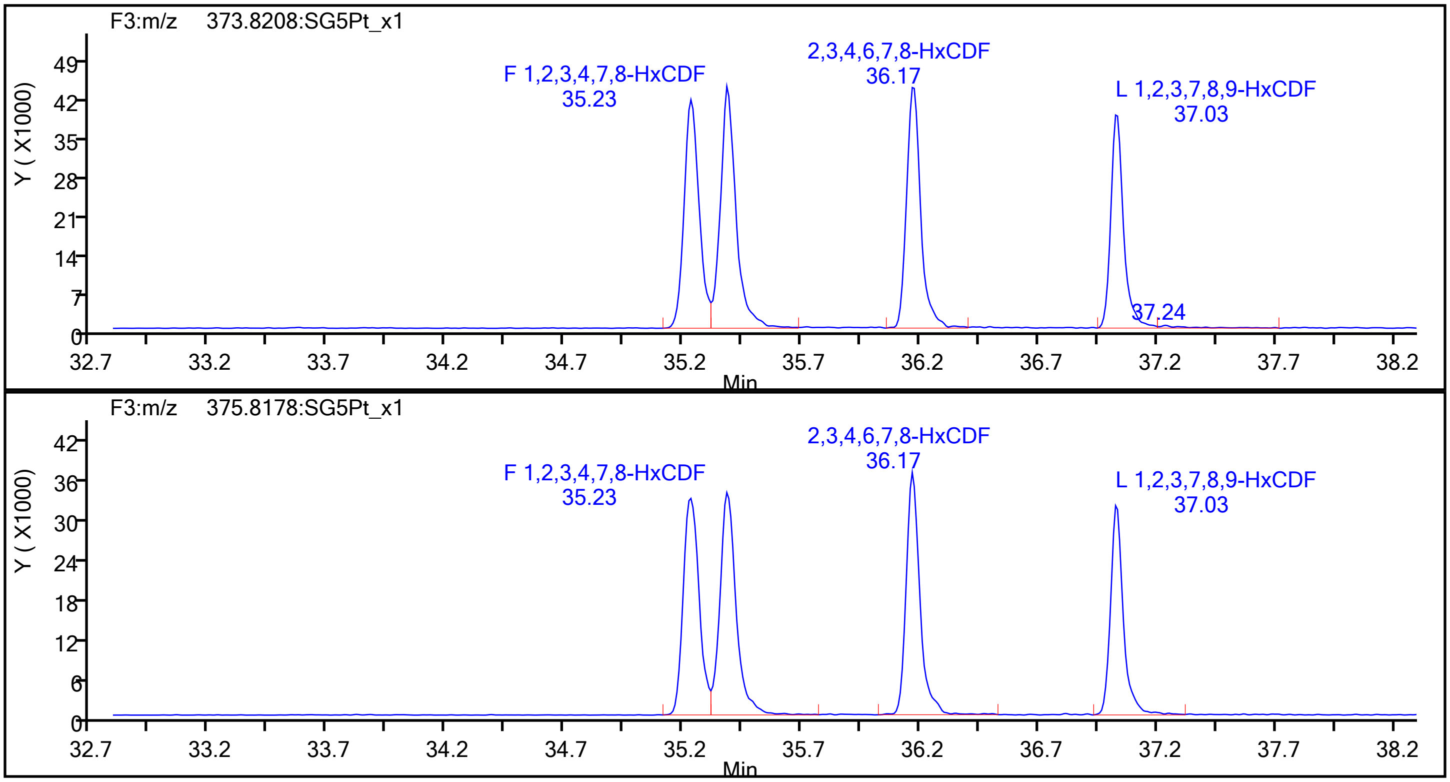

HxCDF Standards

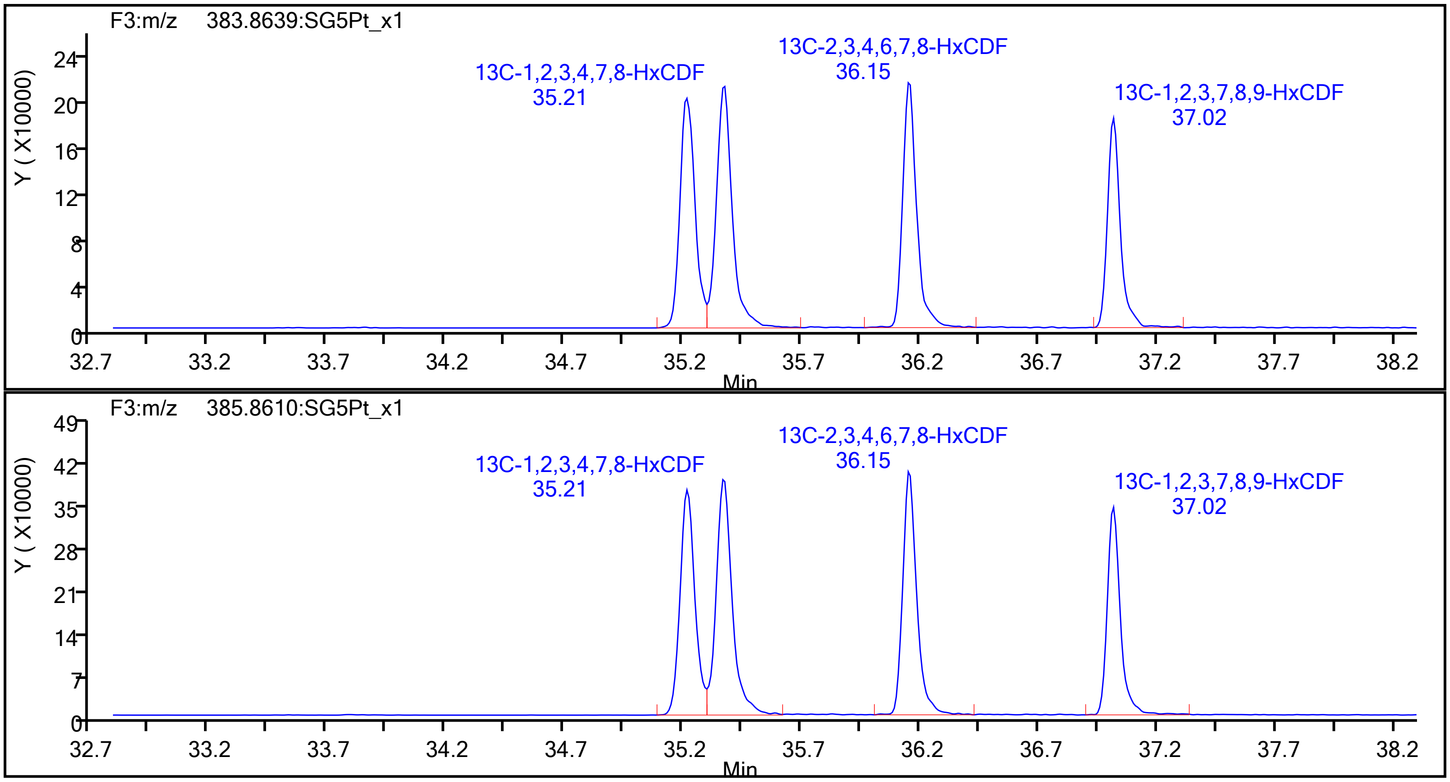

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
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HxCDF

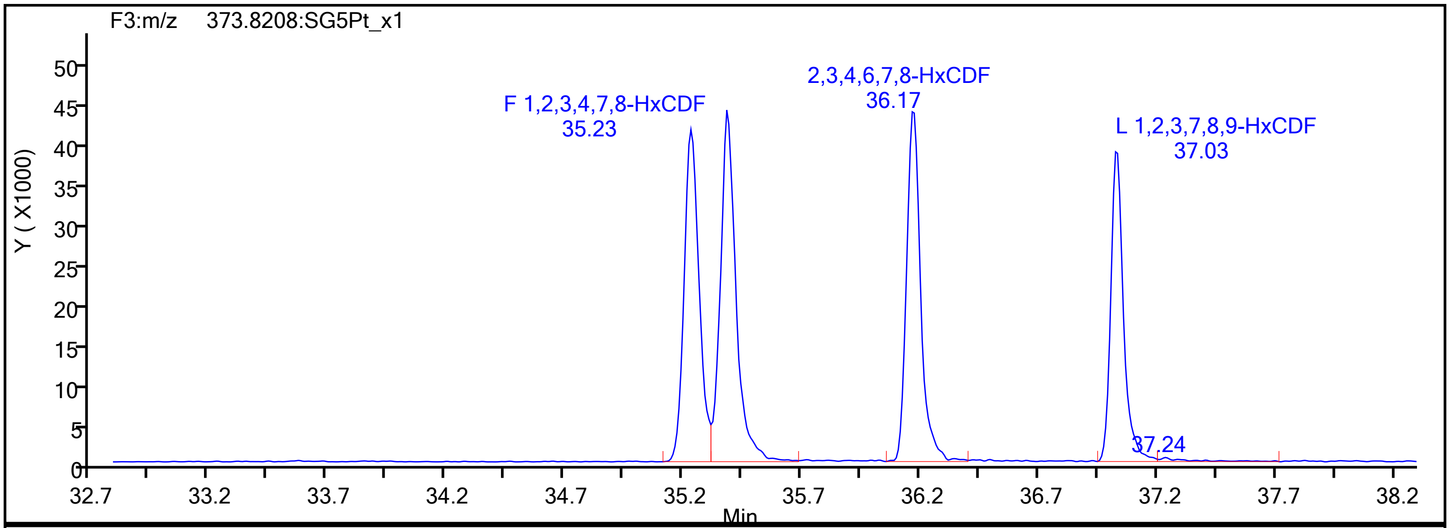

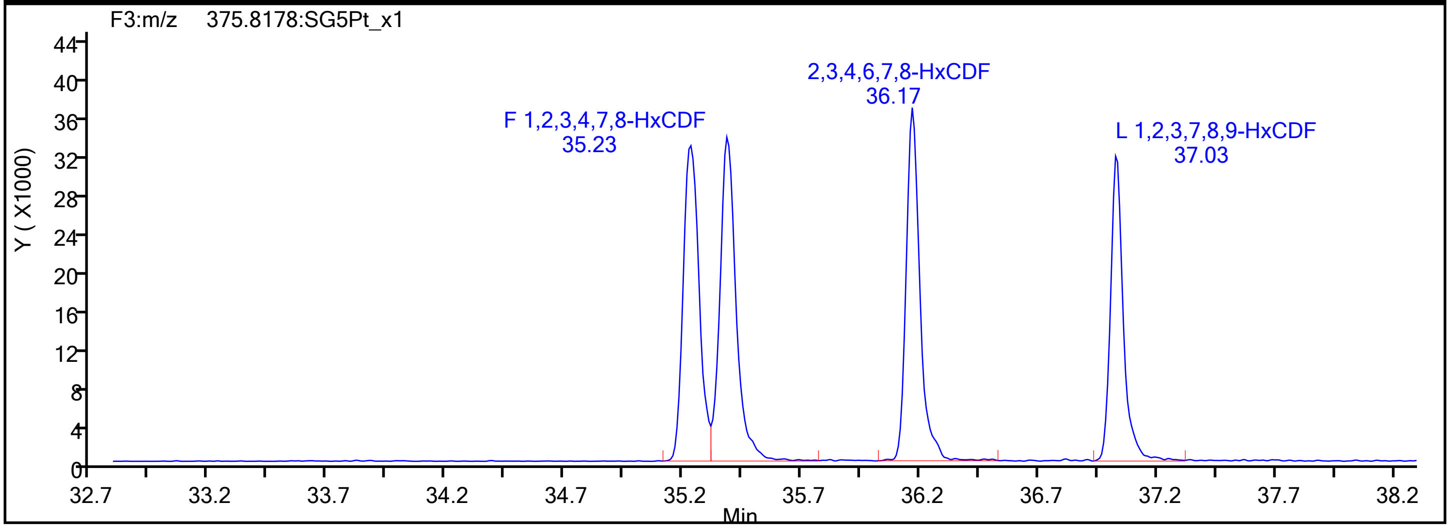

HxCDF Interference Mass

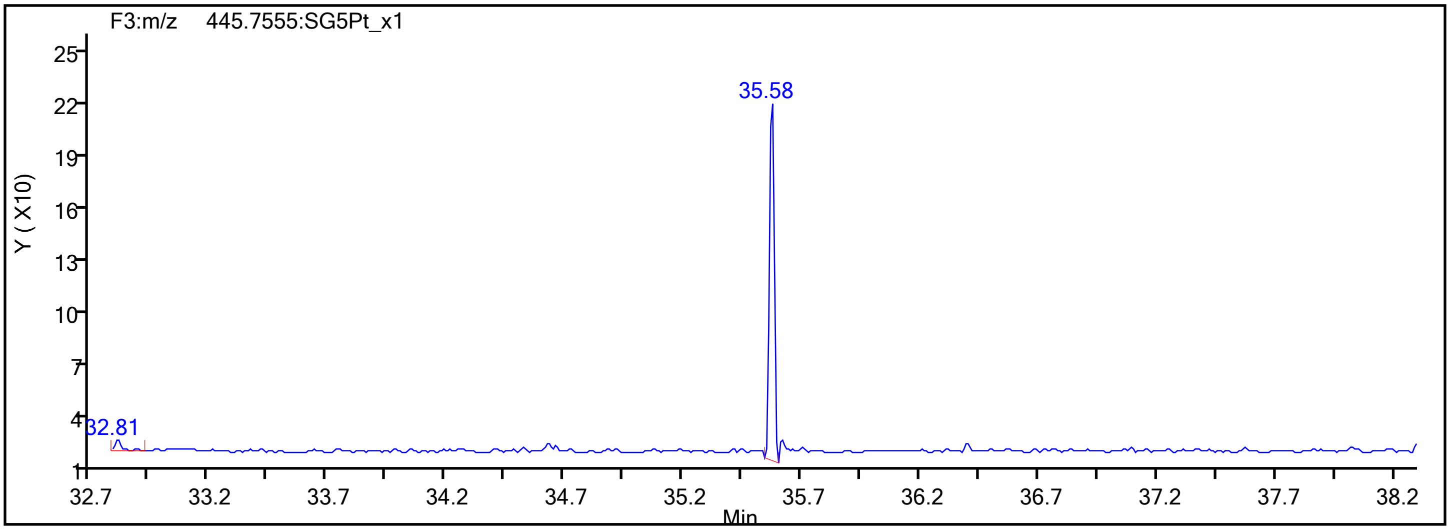

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

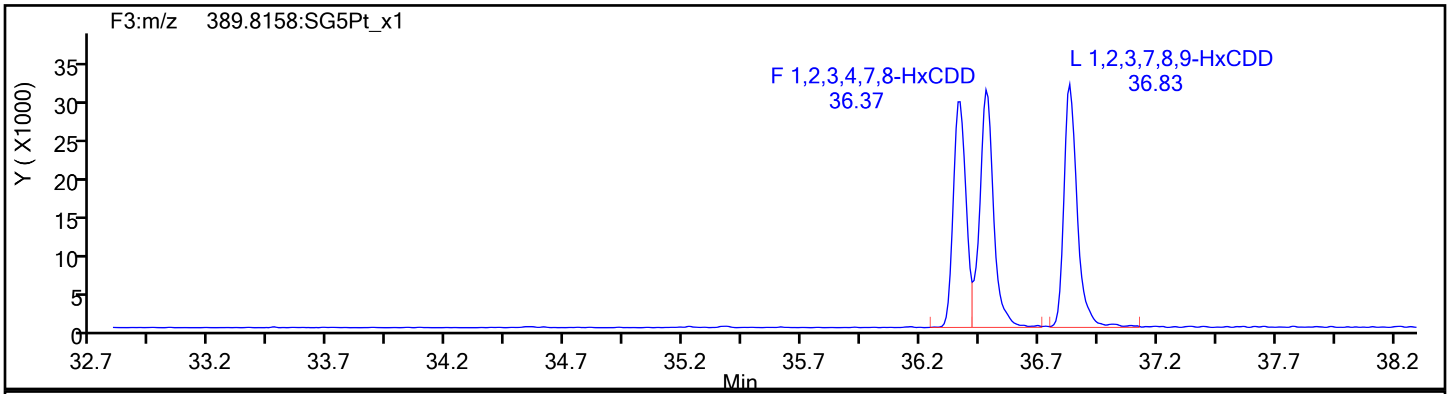

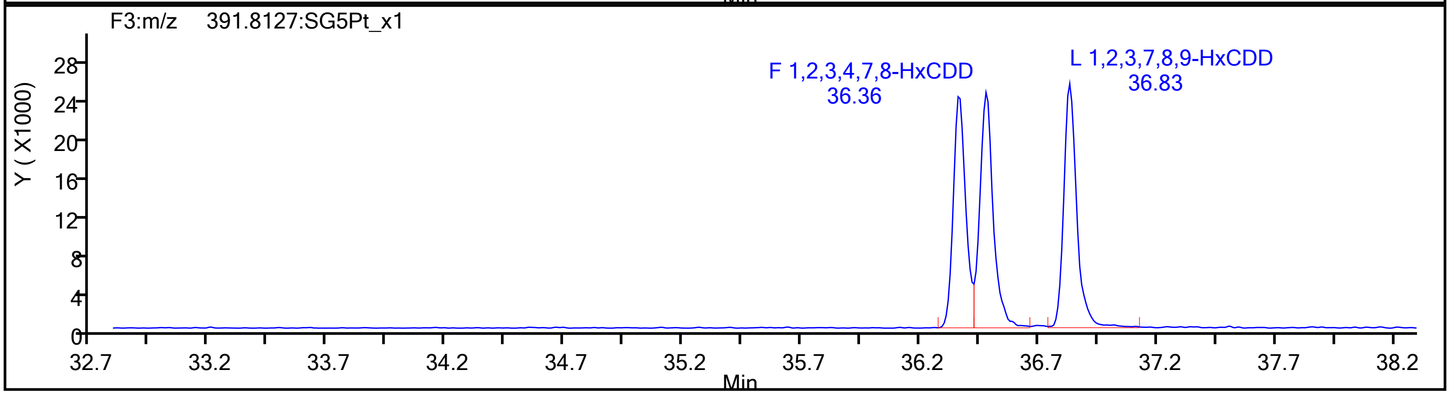

HxCDD Standards

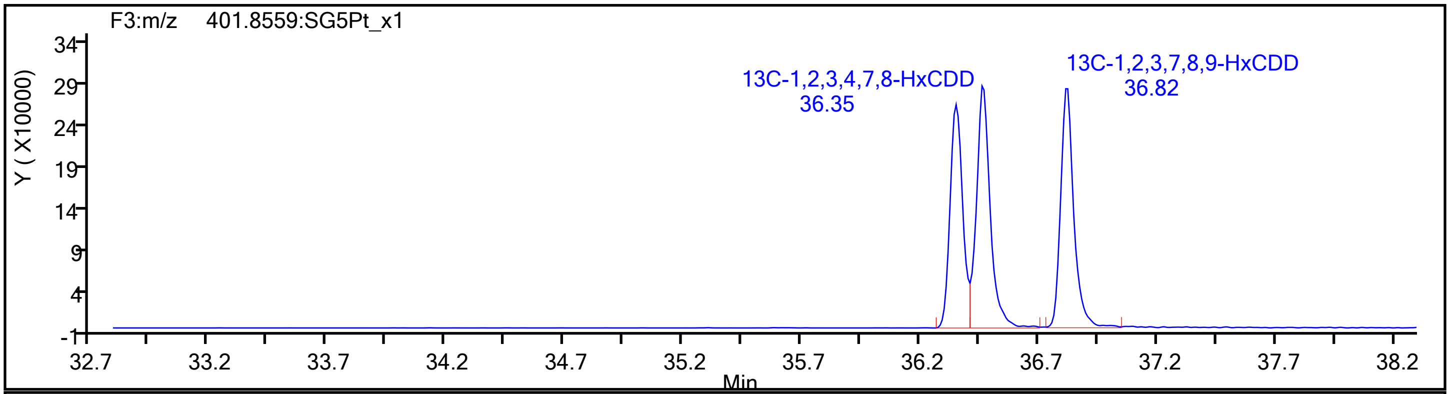

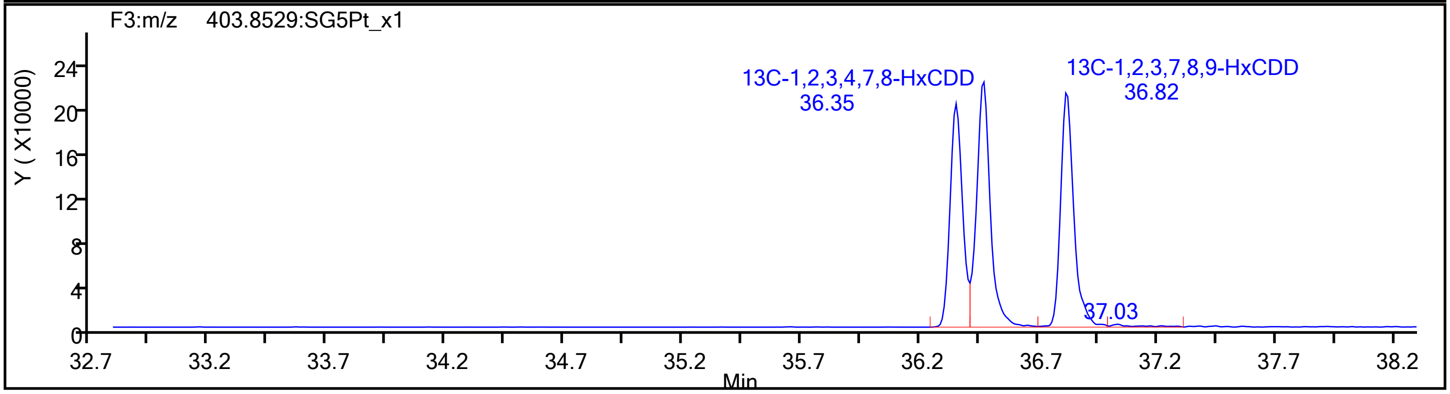

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Sample Line#: 4
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Column Dia: 0.32 mm

HpCDF

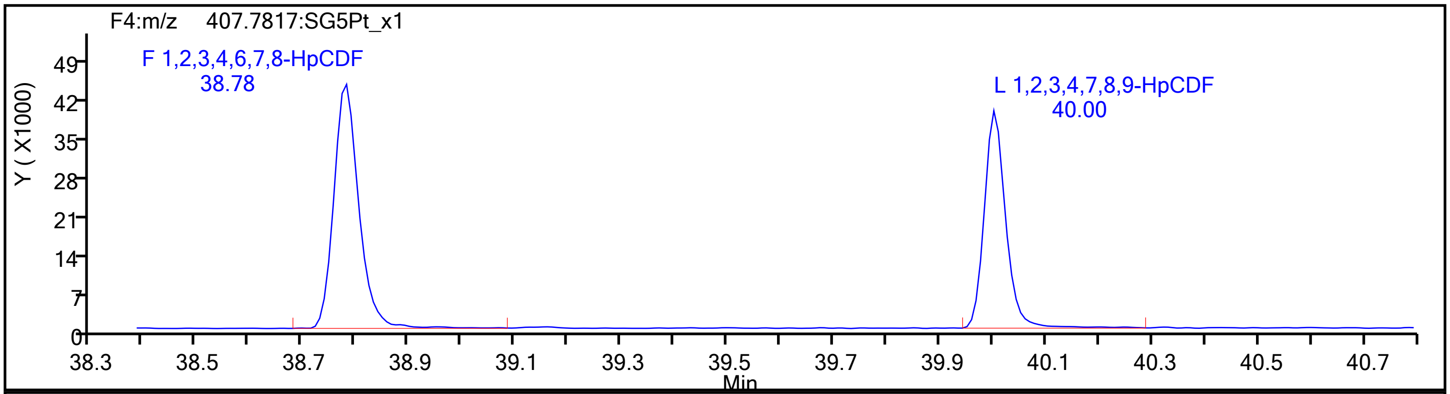

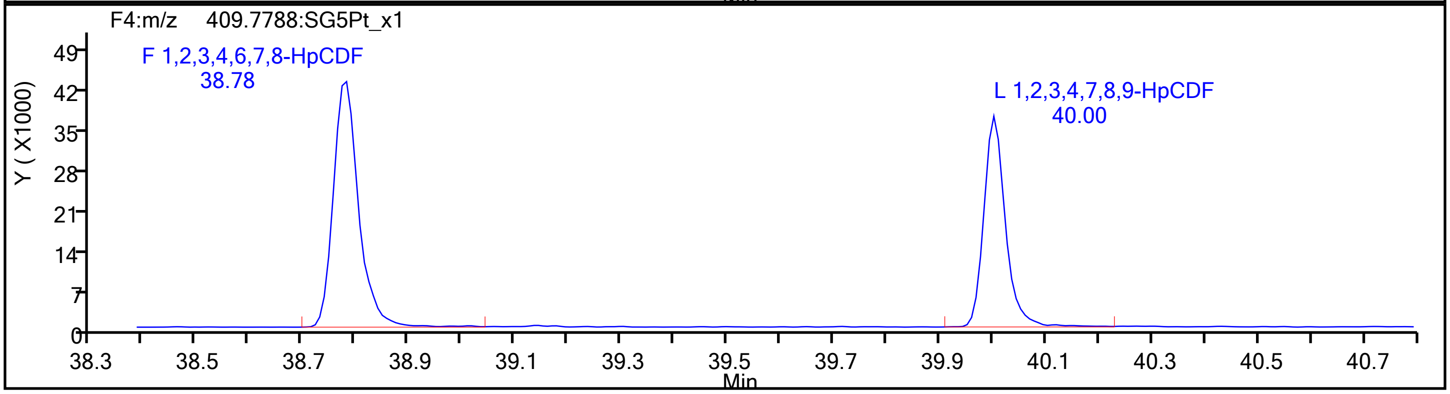

HpCDF Standards

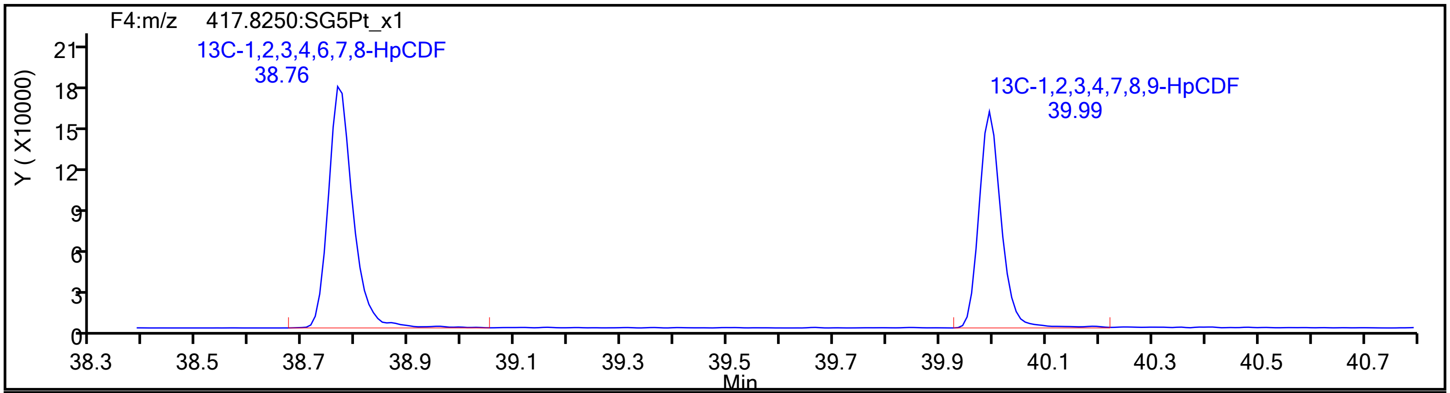

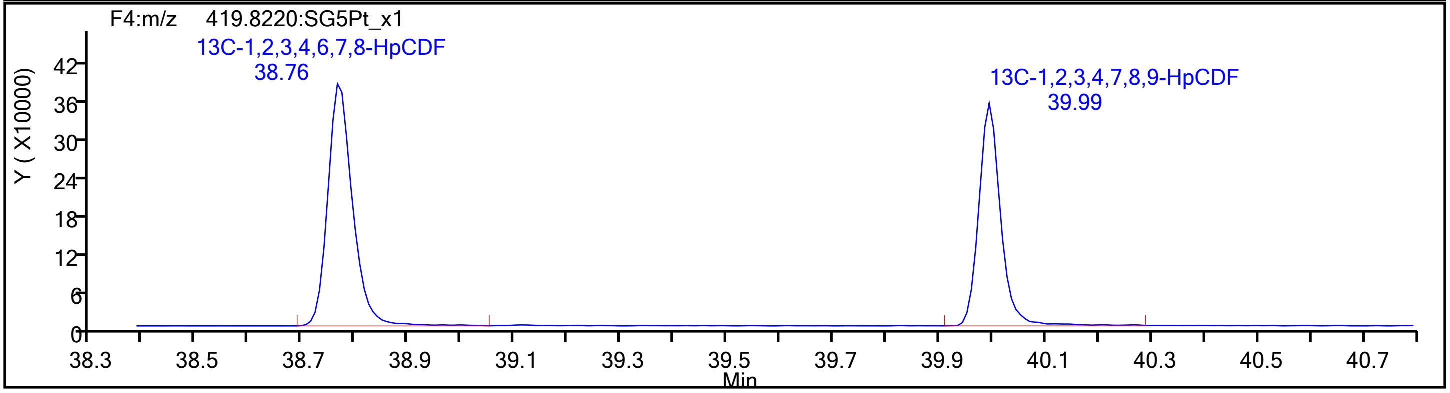

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

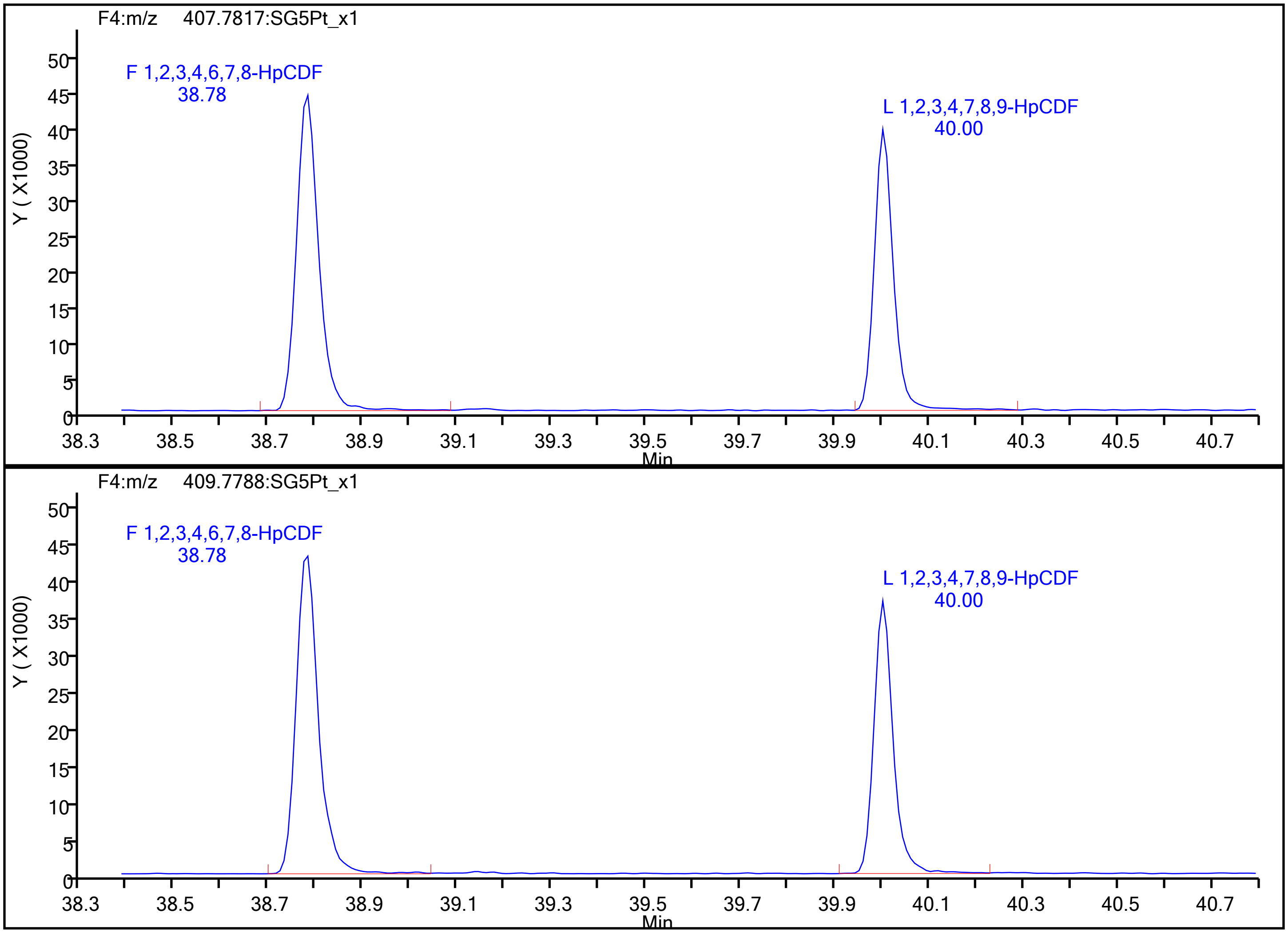

HpCDF Interference Mass

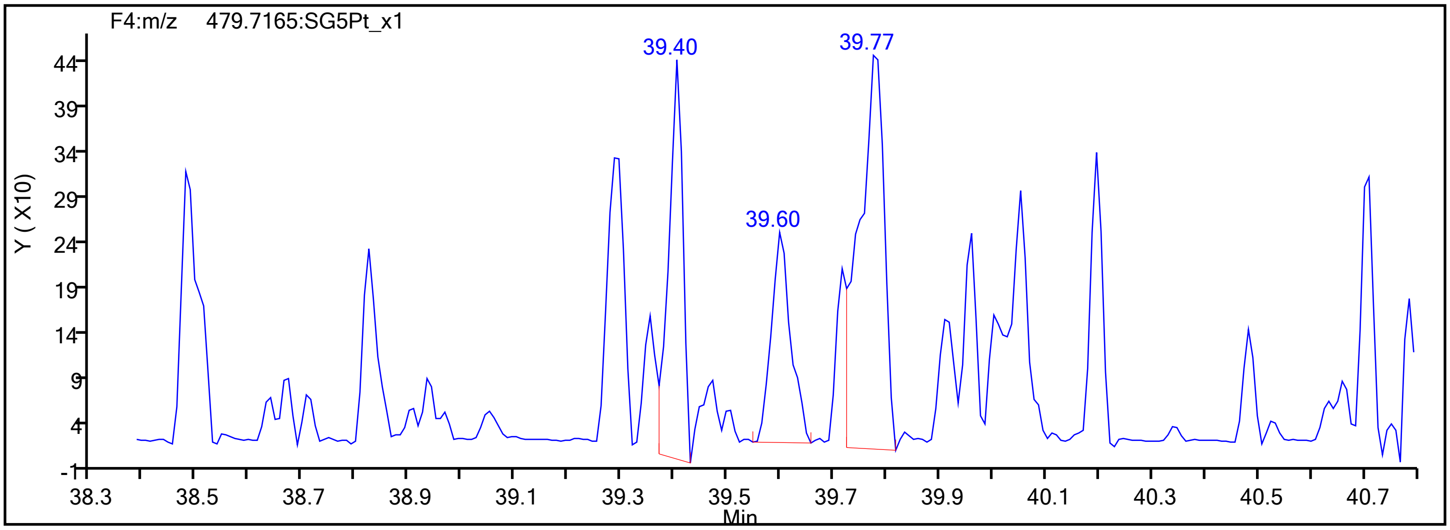

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d

Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

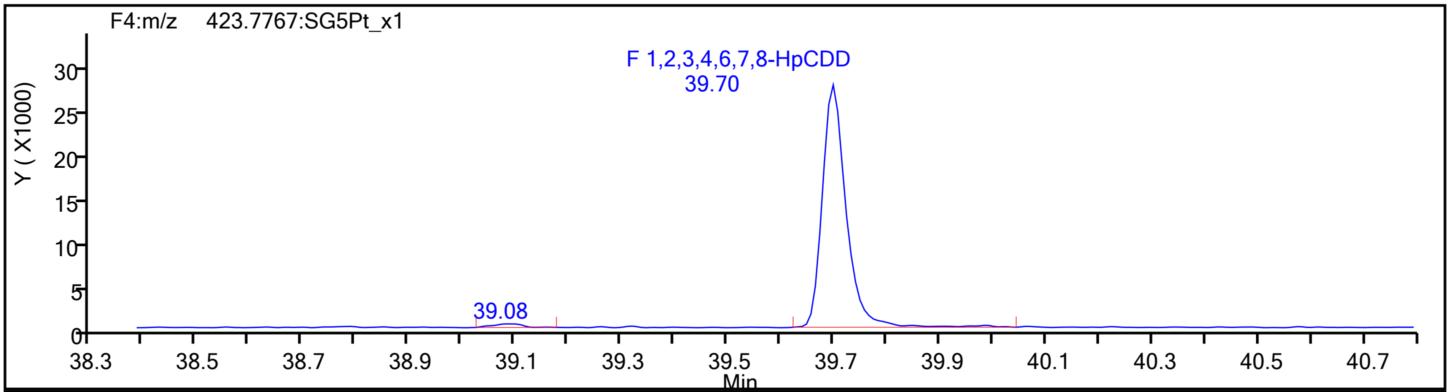

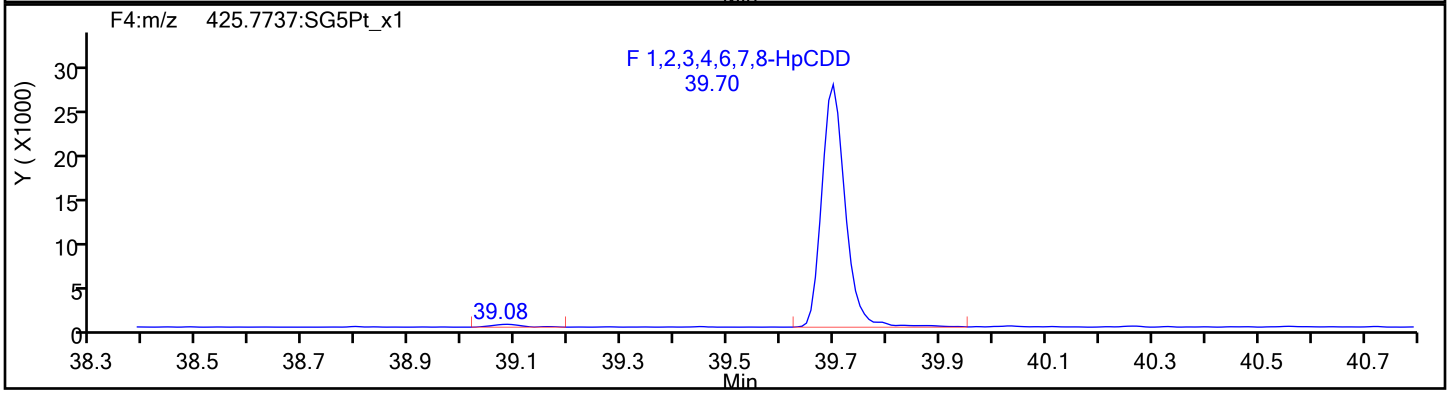

HpCDD Standards

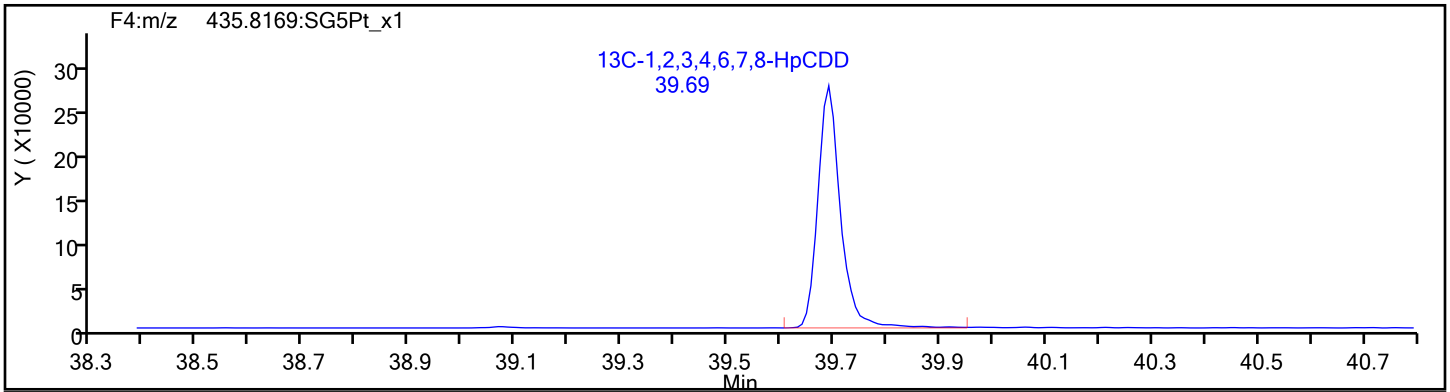

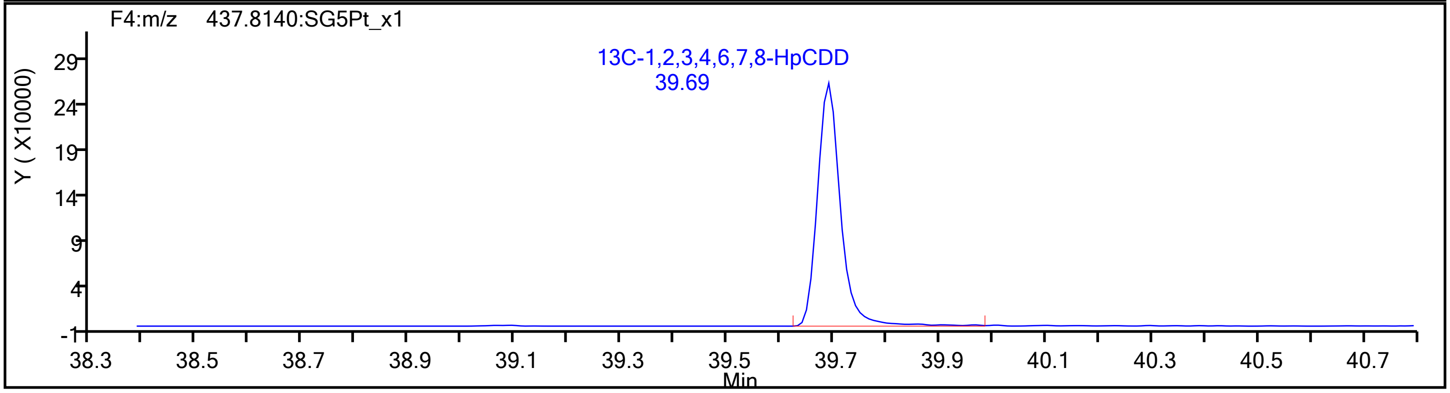

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Injection Date: 17-Nov-2020 13:38:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

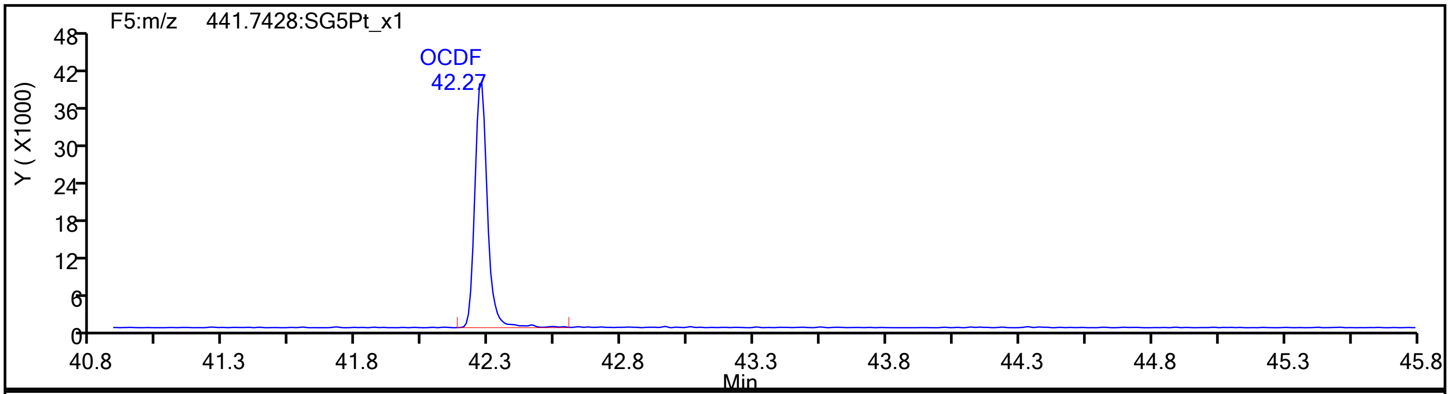

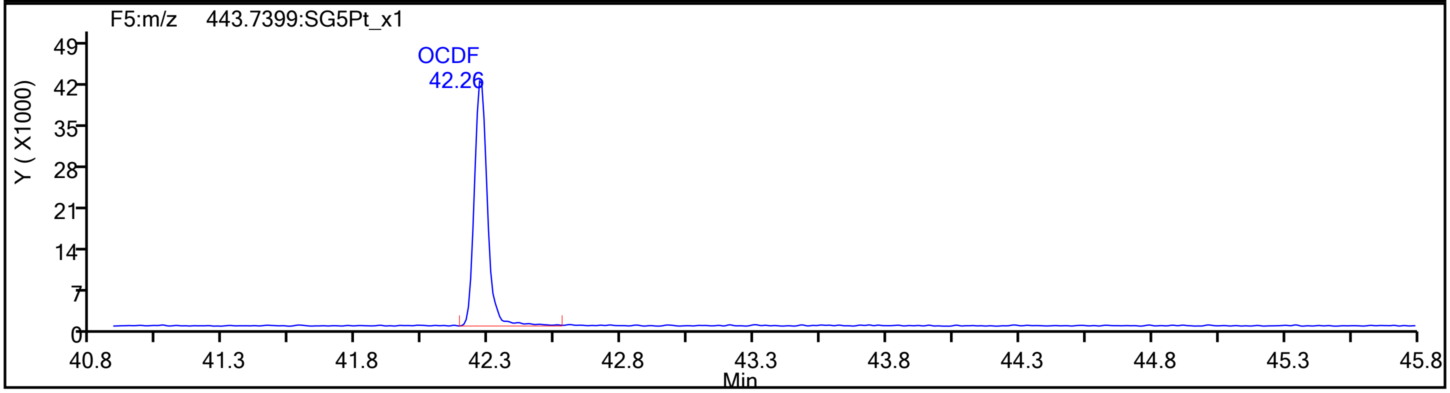

OCDF Standards

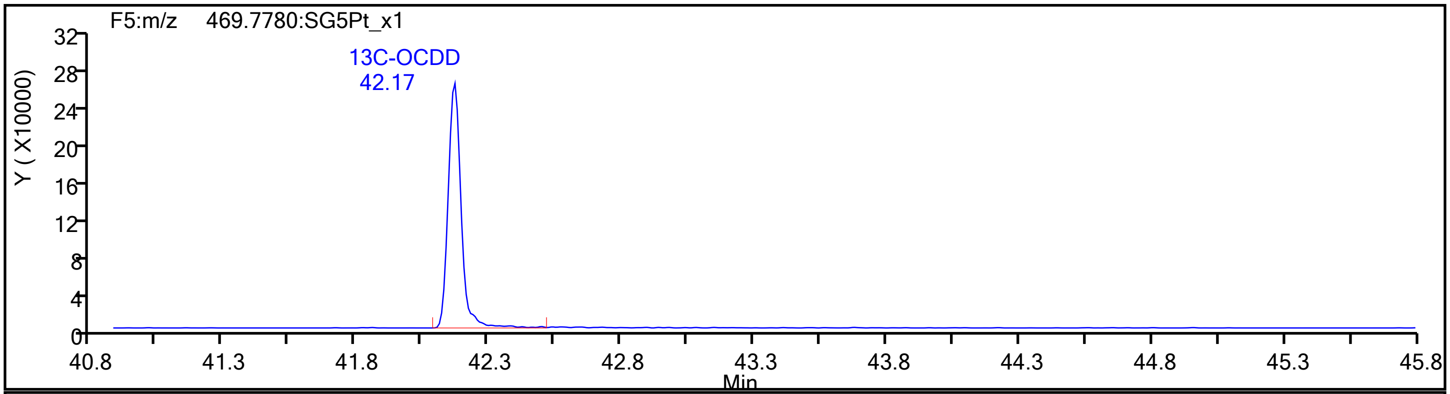

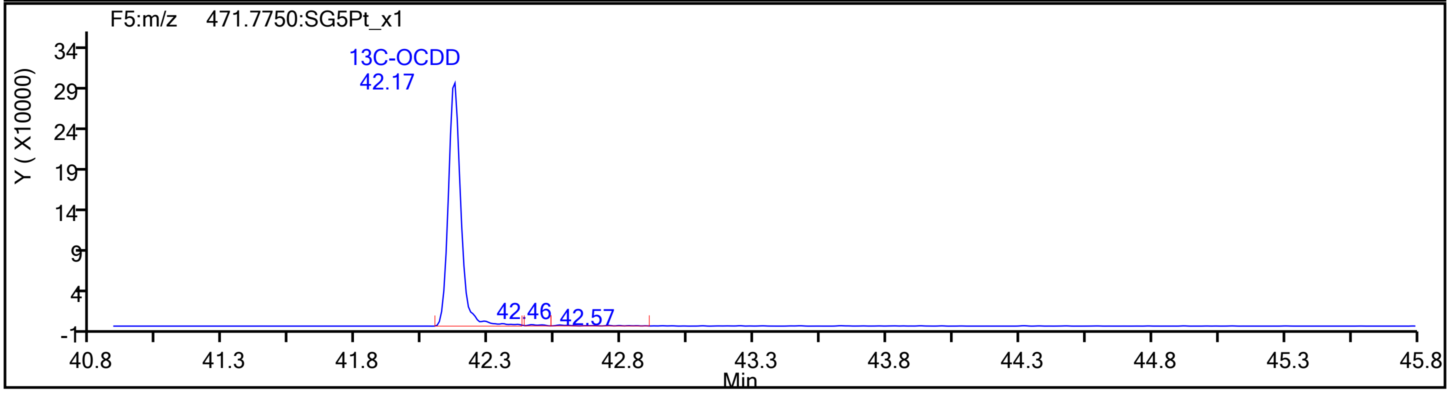

Report Date: 18-Nov-2020 12:34:44
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d
Injection Date: 17-Nov-2020 13:38:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 4
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Column Dia: 0.32 mm

OCDF

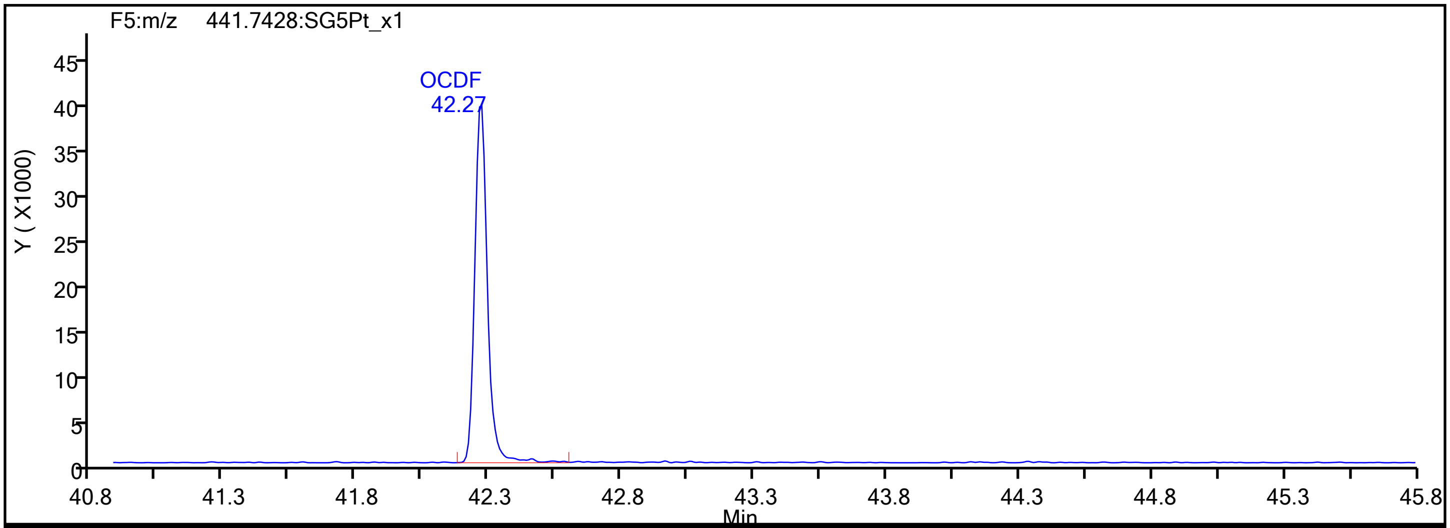

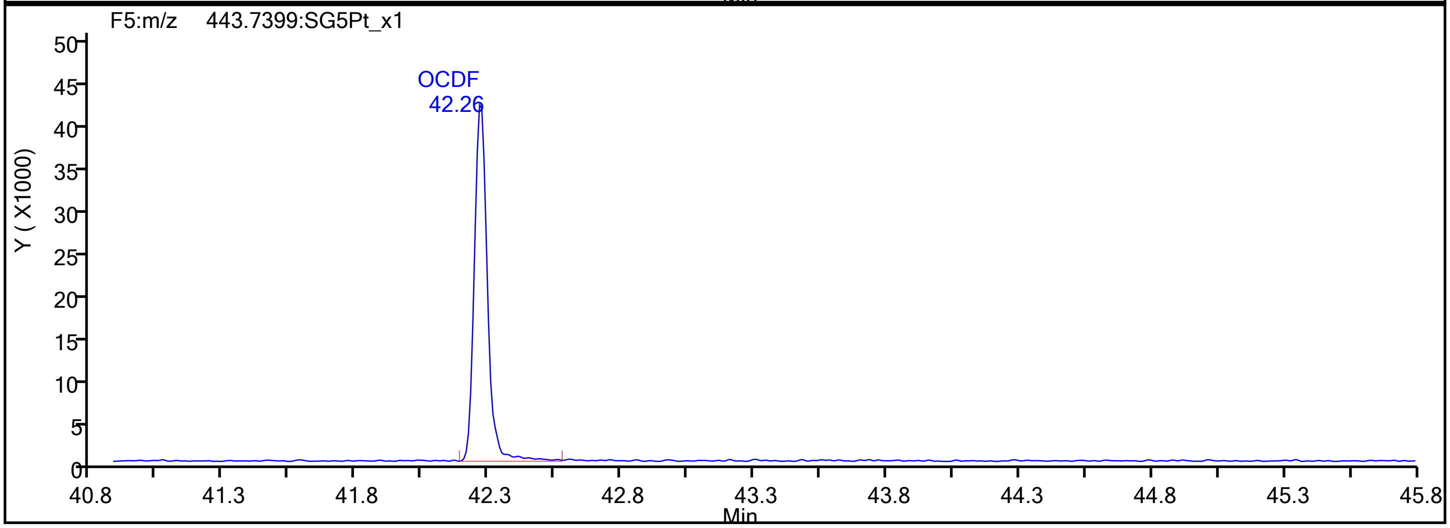

OCDF Interference Mass

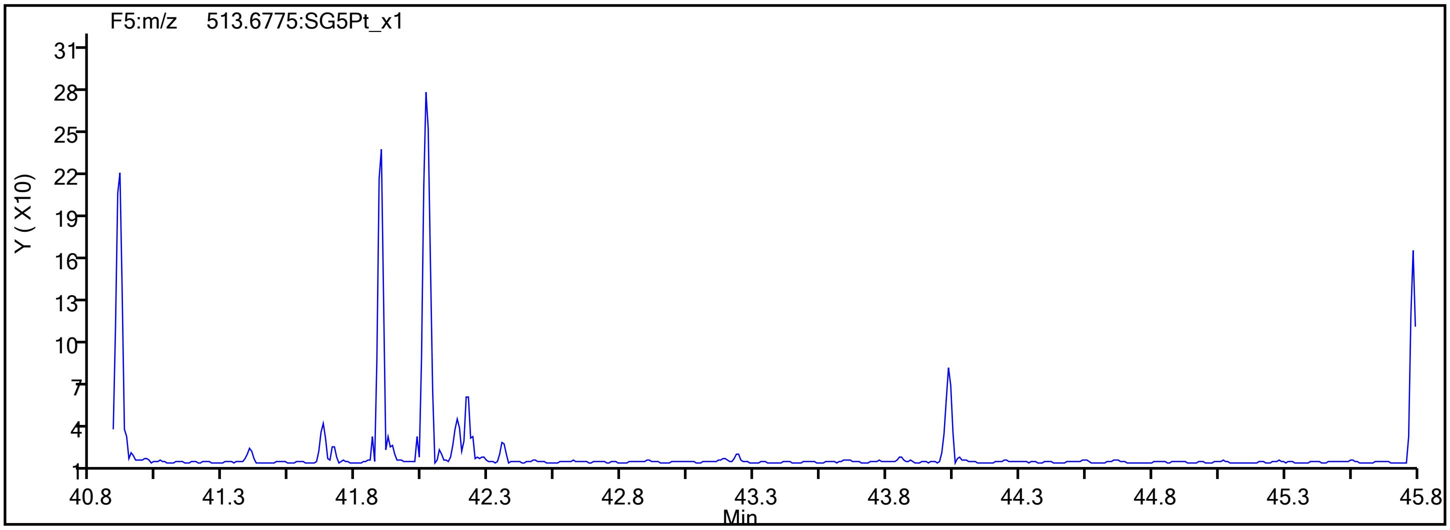

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

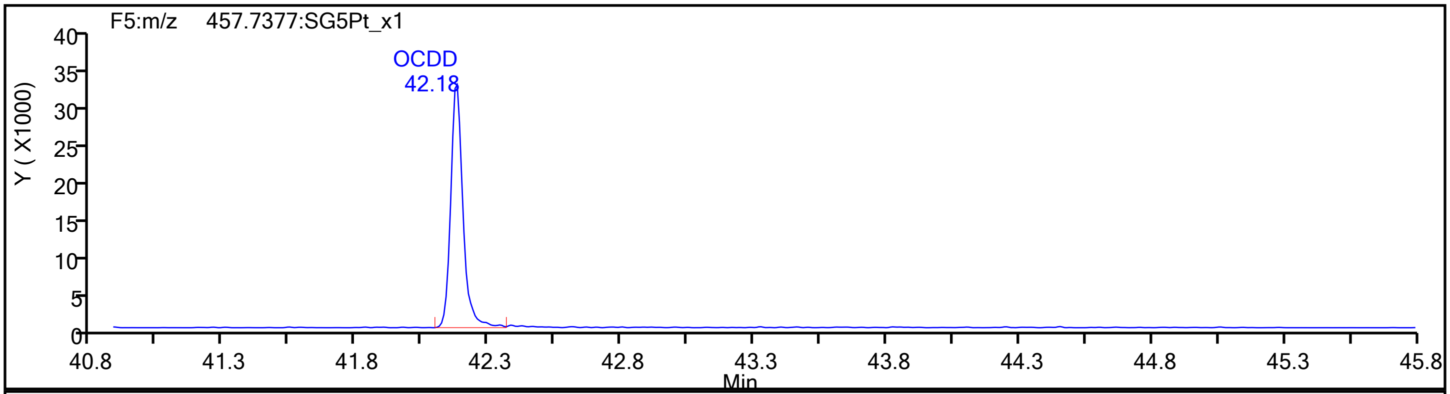

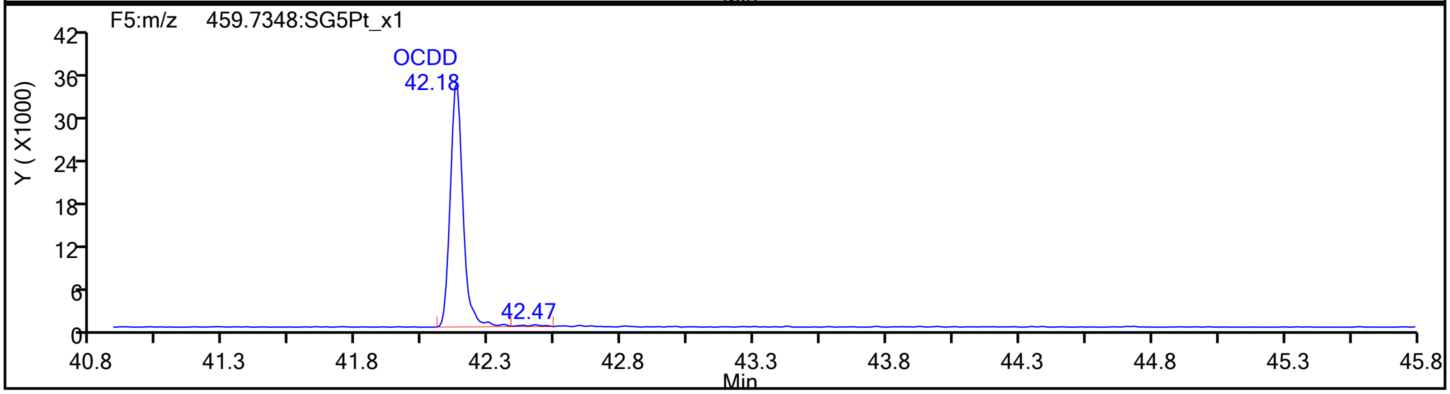

OCDD Standards

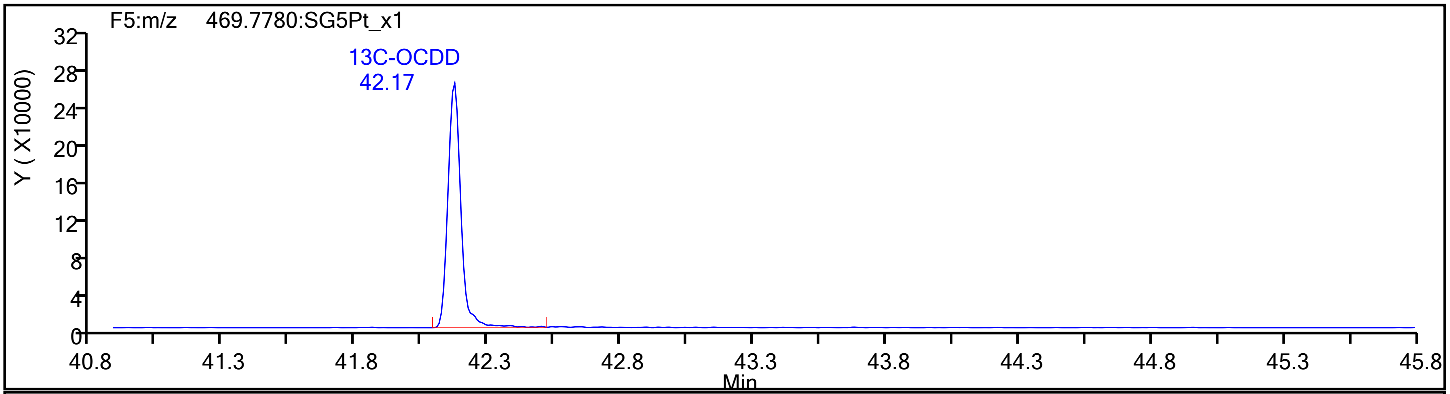

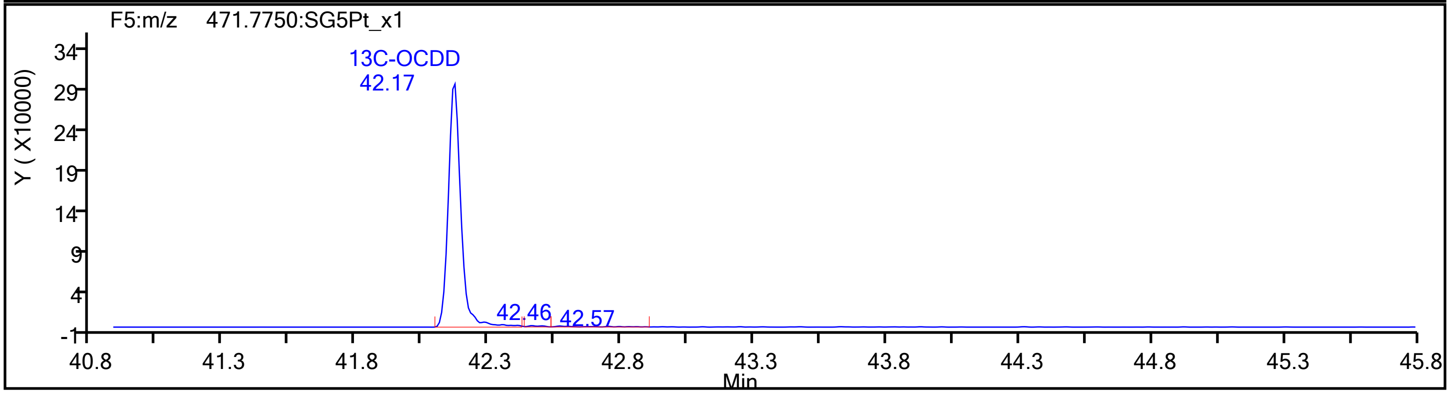

Report Date: 18-Nov-2020 12:34:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 13:38:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 4
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Column Dia: 0.32 mm

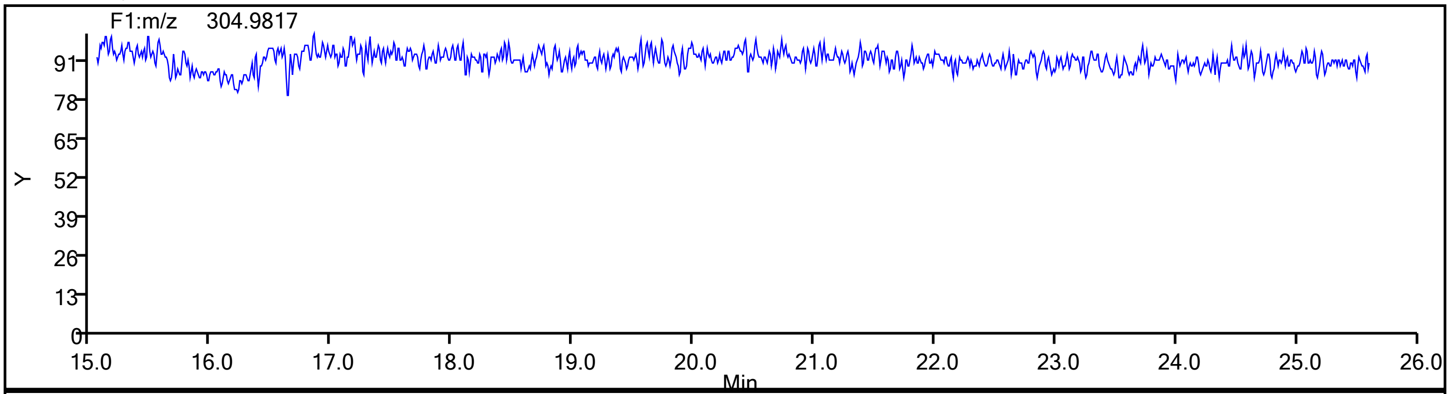
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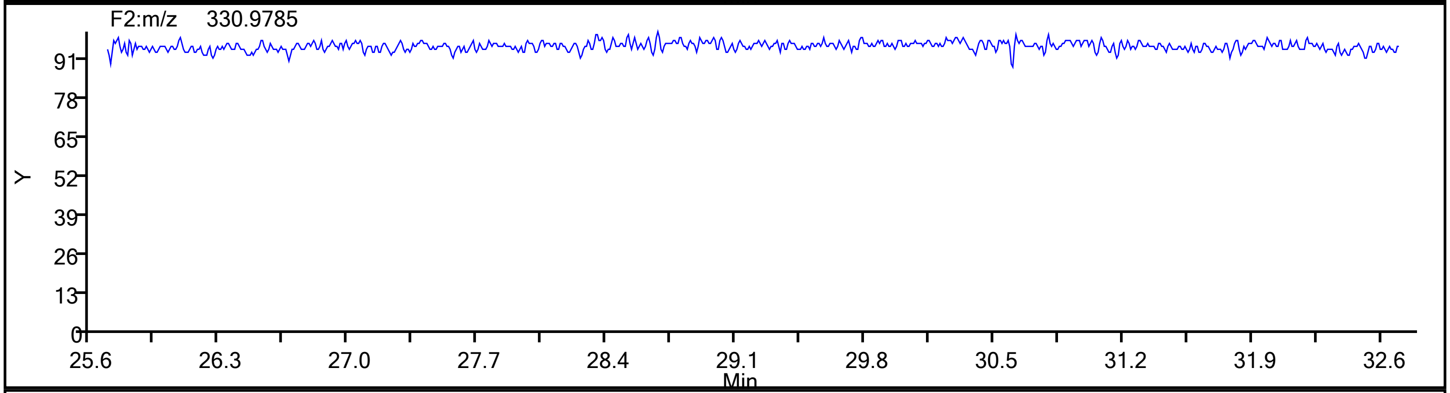
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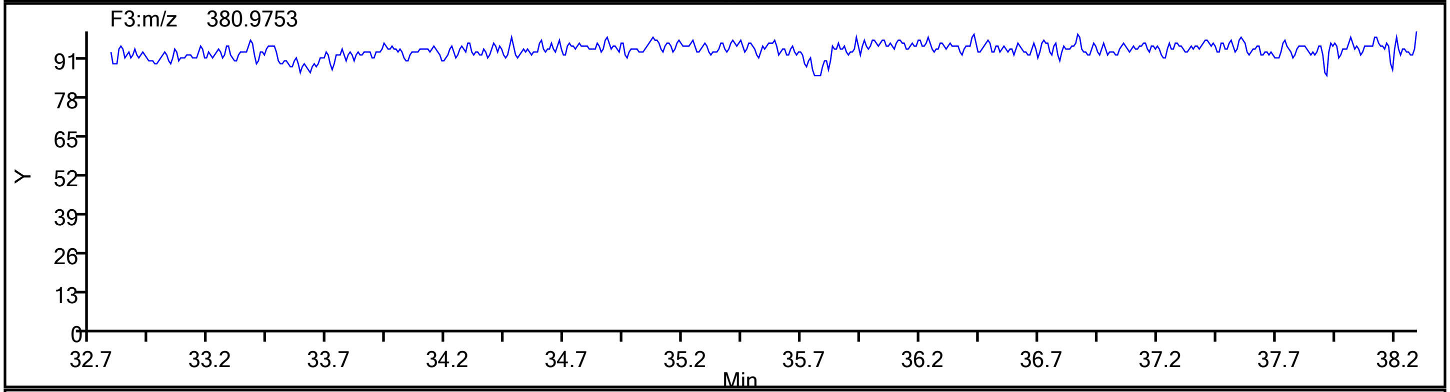
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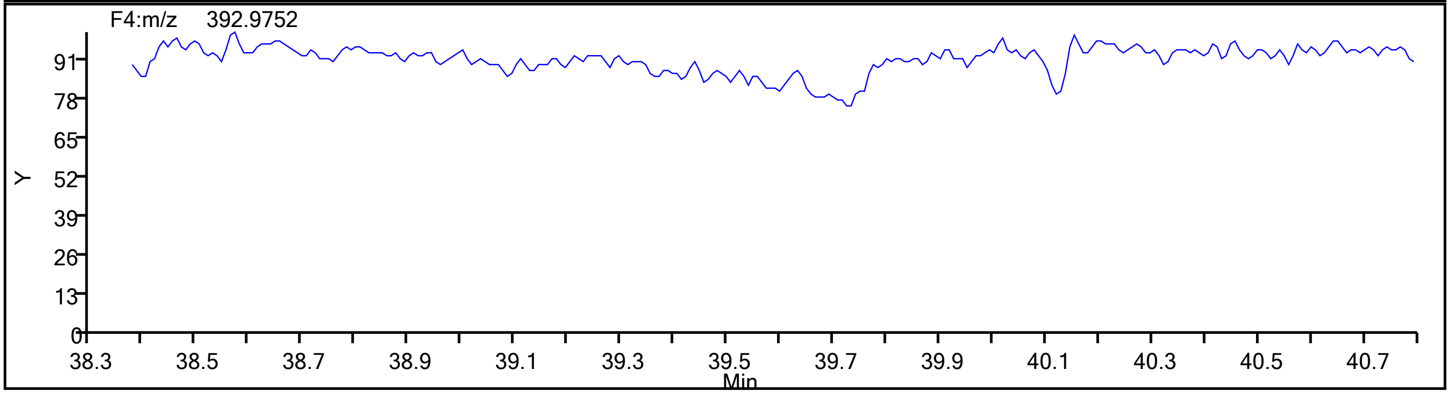
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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_5.d		
Injection Date:	17-Nov-2020 13:38:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

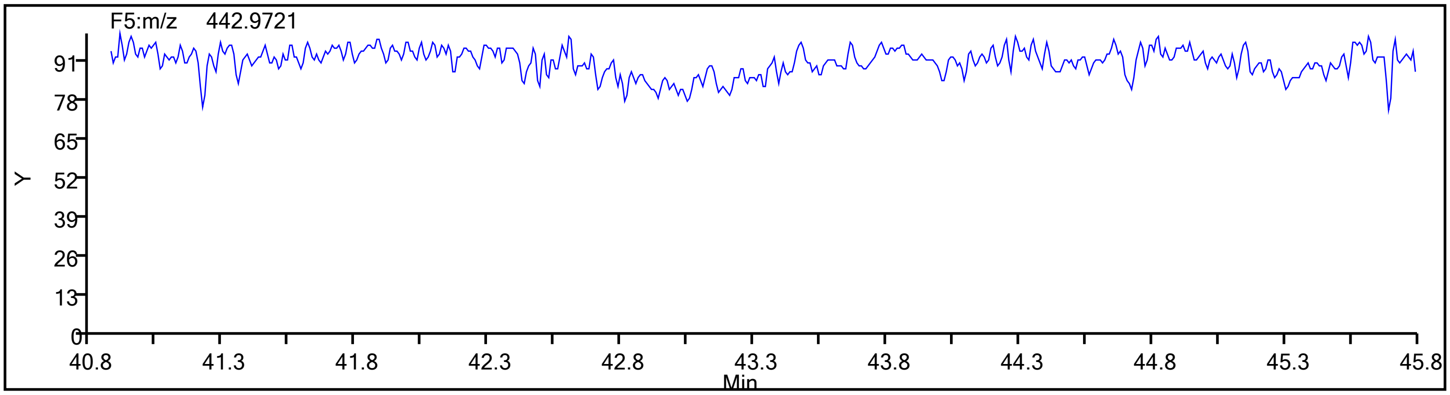

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Nov-2020 14:27:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:47 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:09:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.803	3431370	0.79	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.799	5685124	0.79	1.6832	98.4	98.4	0.2514	0.2514	98.43	
2,3,7,8-TCDF	20.833	629710	0.79	1.1547	9.593	9.593	0.0333	0.0333	95.93	
S Total TCDF					9.593	9.593	0.0333	0.0333		
D 13C-2,3,7,8-TCDD	22.198	3653681	0.81	1.0896	97.7	97.7	0.2220	0.2220	97.72	
2,3,7,8-TCDD	22.215	407439	0.80	1.1659	9.565	9.565	0.0543	0.0543	95.65	
$ 37Cl4-2,3,7,8-TCDD	22.224	380492		1.1445	9.688	9.688	0.0226	0.0226	96.88	
S Total TCDD					9.565	9.565	0.0543	0.0543		
D 13C-1,2,3,7,8-PeCDF	27.667	4756996	1.57	1.4604	94.9	94.9	0.3626	0.3626	94.93	
1,2,3,7,8-PeCDF	27.692	2627930	1.59	1.1322	48.8	48.8	0.1718	0.1718	97.59	
D 13C-2,3,4,7,8-PeCDF	29.225	4407855	1.63	1.3504	95.1	95.1	0.3921	0.3921	95.13	
2,3,4,7,8-PeCDF	29.251	2504487	1.58	1.1588	49.0	49.0	0.1878	0.1878	98.07	
S Total PeCDF					97.8	97.8	0.1798	0.1798		
D 13C-1,2,3,7,8-PeCDD	30.059	2899131	1.60	0.8729	96.8	96.8	0.1353	0.1353	96.79	
1,2,3,7,8-PeCDD	30.093	1543597	1.56	1.1191	47.6	47.6	0.0655	0.0655	95.16	
S Total PeCDD					47.6	47.6	0.0655	0.0655		
D 13C-1,2,3,4,7,8-HxCDF	35.192	3980989	0.54	1.2808	98.9	98.9	0.3752	0.3752	98.85	
1,2,3,4,7,8-HxCDF	35.209	2568215	1.24	1.3205	48.9	48.9	0.1946	0.1946	97.71	
D 13C-1,2,3,6,7,8-HxCDF	35.353	4640355	0.54	1.4615	101.0	101.0	0.3288	0.3288	101	
1,2,3,6,7,8-HxCDF	35.370	2839217	1.26	1.2682	48.2	48.2	0.1902	0.1902	96.49	
D 13C-2,3,4,6,7,8-HxCDF	36.136	4173055	0.54	1.3227	100.3	100.3	0.3633	0.3633	100	
2,3,4,6,7,8-HxCDF	36.153	2577456	1.25	1.2838	48.1	48.1	0.1799	0.1799	96.22	
D 13C-1,2,3,7,8,9-HxCDF	36.995	3454092	0.54	1.1062	99.3	99.3	0.4344	0.4344	99.31	
1,2,3,7,8,9-HxCDF	37.012	2146580	1.25	1.3063	47.6	47.6	0.1963	0.1963	95.15	
S Total HxCDF					192.8	192.8	0.1902	0.1902		
* 13C-1,2,3,7,8,9-HxCDD	36.802	3144209	1.27	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.330	2680342	1.28	0.8757	97.4	97.4	0.2348	0.2348	97.35	
1,2,3,4,7,8-HxCDD	36.347	1573325	1.26	1.1972	49.0	49.0	0.1134	0.1134	98.06	
D 13C-1,2,3,6,7,8-HxCDD	36.448	3353387	1.28	1.0651	100.1	100.1	0.1930	0.1930	100	
1,2,3,6,7,8-HxCDD	36.465	1699311	1.27	1.0695	47.4	47.4	0.1096	0.1096	94.77	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.819	1696471	1.25	1.1806	47.6	47.6	0.1066	0.1066	95.27	
S Total HxCDD					144.0	144.0	0.1099	0.1099		
D 13C-1,2,3,4,6,7,8-HpCDF	38.751	2967331	0.47	0.9521	99.1	99.1	0.4900	0.4900	99.12	
1,2,3,4,6,7,8-HpCDF	38.760	2221729	1.05	1.5618	47.9	47.9	0.2086	0.2086	95.88	
D 13C-1,2,3,4,7,8,9-HpCDF	39.981	2429483	0.45	0.7782	99.3	99.3	0.5995	0.5995	99.30	
1,2,3,4,7,8,9-HpCDF	39.990	1739348	1.04	1.4975	47.8	47.8	0.2471	0.2471	95.62	
S Total HpCDF					95.7	95.7	0.2278	0.2278		
D 13C-1,2,3,4,6,7,8-HpCDD	39.669	2621187	1.09	0.8393	99.3	99.3	0.3308	0.3308	99.33	
1,2,3,4,6,7,8-HpCDD	39.686	1395664	1.05	1.1079	48.1	48.1	0.1247	0.1247	96.12	
S Total HpCDD					48.1	48.1	0.1247	0.1247		
D 13C-OCDD	42.149	3323397	0.91	0.5301	199.4	199.4	0.2904	0.2904	99.70	
OCDF	42.250	2278487	0.90	1.4802	92.6	92.6	0.1192	0.1192	92.64	
OCDD	42.157	1828375	0.89	1.1666	94.3	94.3	0.1292	0.1292	94.32	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Nov-2020 14:27:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:34:47 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:09:17

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.803	21.818	-1		1515599	210511	315	787	668		a
333.9338	21.812	21.818	0		1915771	271968	152	380	1789	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.799	20.808	-1	0.954	2511960	355868	588	1470	605		
317.9389	20.790	20.808	-1	0.954	3173164	454741	229	572	1986	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.833	20.834	0	1.002	276938	40028	50	125	801		
305.8987	20.825	20.834	-1	1.001	352772	49925	75	187	666	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.198	22.213	-1	1.018	1632239	212981	315	787	676		
333.9338	22.190	22.213	-1	1.018	2021442	252790	152	380	1663	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.215	22.239	-1	1.001	181691	24097	80	200	301		
321.8936	22.224	22.239	-1	1.001	225748	30176	38	95	794	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.224	22.241	-1	1.019	380492	51169	50	125	1023		
13C-1,2,3,7,8-PeCDF											
351.9000	27.667	27.677	-1	1.269	2909341	444784	594	1485	749		
353.8970	27.675	27.677	0	1.269	1847655	290456	428	1070	679	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.692	27.702	-1	1.001	1613103	248835	346	865	719		
341.8567	27.692	27.702	-1	1.001	1014827	157154	226	565	695	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.225	29.235	-1	1.340	2729077	406056	594	1485	684		
353.8970	29.225	29.235	-1	1.340	1678778	250980	428	1070	586	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.251	29.262	-1	1.001	1535569	229683	346	865	664		
341.8567	29.251	29.262	-1	1.001	968918	146052	226	565	646	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.059	30.073	-1	1.379	1784249	258327	129	322	2003		
369.8919	30.059	30.073	-1	1.379	1114882	157710	99	247	1593	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.093	30.100	0	1.001	939692	128004	85	212	1506		
357.8516	30.085	30.100	-1	1.001	603905	82837	37	92	2239	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.192	35.202	-1	0.956	1395119	329306	535	1337	616		
385.8610	35.201	35.202	0	0.956	2585870	600994	1066	2665	564	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.209	35.219	-1	1.000	1424206	333414	562	1405	593		
375.8178	35.209	35.219	-1	1.000	1144009	270302	394	985	686	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.353	35.361	0	0.961	1626301	344446	535	1337	644		
385.8610	35.353	35.361	0	0.961	3014054	646222	1066	2665	606	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.370	35.376	0	1.000	1583648	343481	562	1405	611		
375.8178	35.370	35.376	0	1.000	1255569	272464	394	985	692	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.136	36.142	0	0.982	1462180	356524	535	1337	666		
385.8610	36.136	36.142	0	0.982	2710875	678338	1066	2665	636	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.153	36.158	0	1.000	1432440	345460	562	1405	615		
375.8178	36.145	36.158	-1	1.000	1145016	276901	394	985	703	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.995	37.005	-1	1.005	1212339	329648	535	1337	616		
385.8610	36.995	37.005	-1	1.005	2241753	602619	1066	2665	565	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.012	37.019	0	1.000	1191978	328741	562	1405	585		
375.8178	37.012	37.019	0	1.000	954602	258080	394	985	655	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.802	36.808	0		1758248	460446	386	965	1193		
403.8529	36.802	36.808	0		1385961	372366	299	747	1245	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.330	36.340	-1	0.987	1502316	408269	386	965	1058		
403.8529	36.330	36.340	-1	0.987	1178026	320634	299	747	1072	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.347	36.355	0	1.000	877490	239288	220	550	1088		
391.8127	36.347	36.355	0	1.000	695835	188859	176	440	1073	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.448	36.454	0	0.990	1884073	472843	386	965	1225		
403.8529	36.448	36.454	0	0.990	1469314	371644	299	747	1243	1.28(1.05-1.43)	

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.465	36.468	0	1.000	951268	235856	220	550	1072		
391.8127	36.456	36.468	-1	1.000	748043	187777	176	440	1067	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.819	36.821	0	1.013	942799	247779	220	550	1126		
391.8127	36.819	36.821	0	1.013	753672	197606	176	440	1123	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.751	38.755	0	1.053	952777	300537	514	1285	585		
419.8220	38.751	38.755	0	1.053	2014554	616393	1040	2600	593	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.760	38.769	-1	1.000	1136088	347269	643	1607	540		
409.7788	38.760	38.769	-1	1.000	1085641	333434	552	1380	604	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.981	39.984	0	1.086	748459	248343	514	1285	483		
419.8220	39.973	39.984	-1	1.086	1681024	558874	1040	2600	537	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.990	39.994	0	1.000	885211	296257	643	1607	461		
409.7788	39.990	39.994	0	1.000	854137	285502	552	1380	517	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.669	39.679	-1	1.078	1365105	452531	456	1140	992		
437.8140	39.669	39.679	-1	1.078	1256082	424518	469	1172	905	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.686	39.689	0	1.000	714189	237136	257	642	923		
425.7737	39.678	39.689	-1	1.000	681475	225964	228	570	991	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.149	42.157	0	1.145	1579827	482868	203	507	2379		
471.7750	42.149	42.157	0	1.145	1743570	525685	310	775	1696	0.91(0.76-1.02)	
OCDF											
441.7428	42.250	42.260	-1	1.002	1081774	337666	146	365	2313		
443.7399	42.250	42.260	-1	1.002	1196713	367791	210	525	1751	0.90(0.76-1.02)	
OCDD											
457.7377	42.157	42.167	-1	1.000	860561	260643	141	352	1849		
459.7348	42.157	42.167	-1	1.000	967814	292189	163	407	1793	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d				
Injection Date:	17-Nov-2020 14:27:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.82

Processing Integration Results

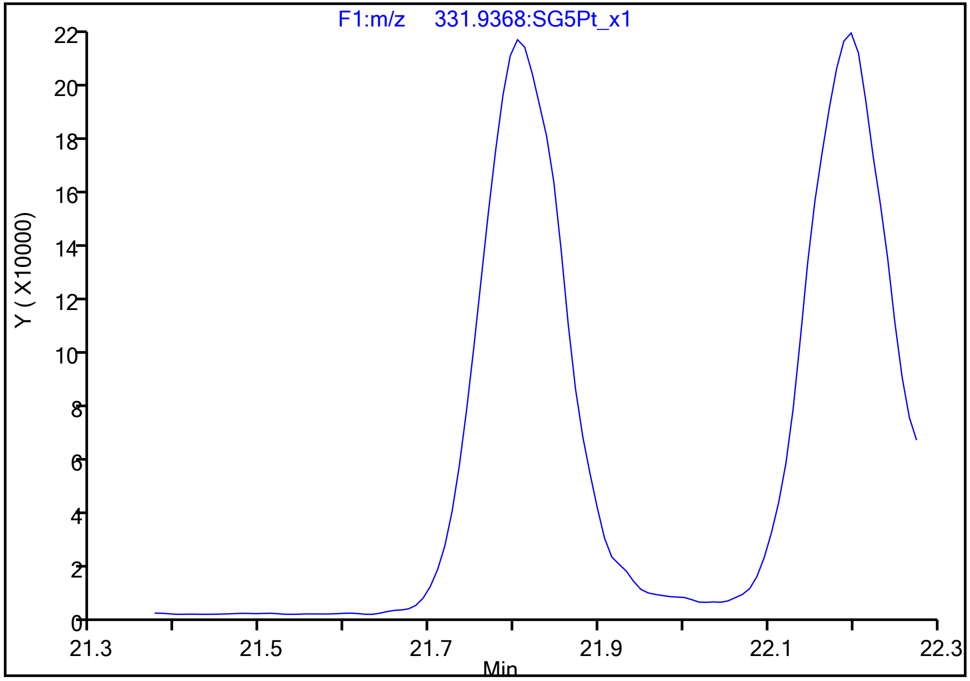

RT: 21.80
Area: 1515599
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

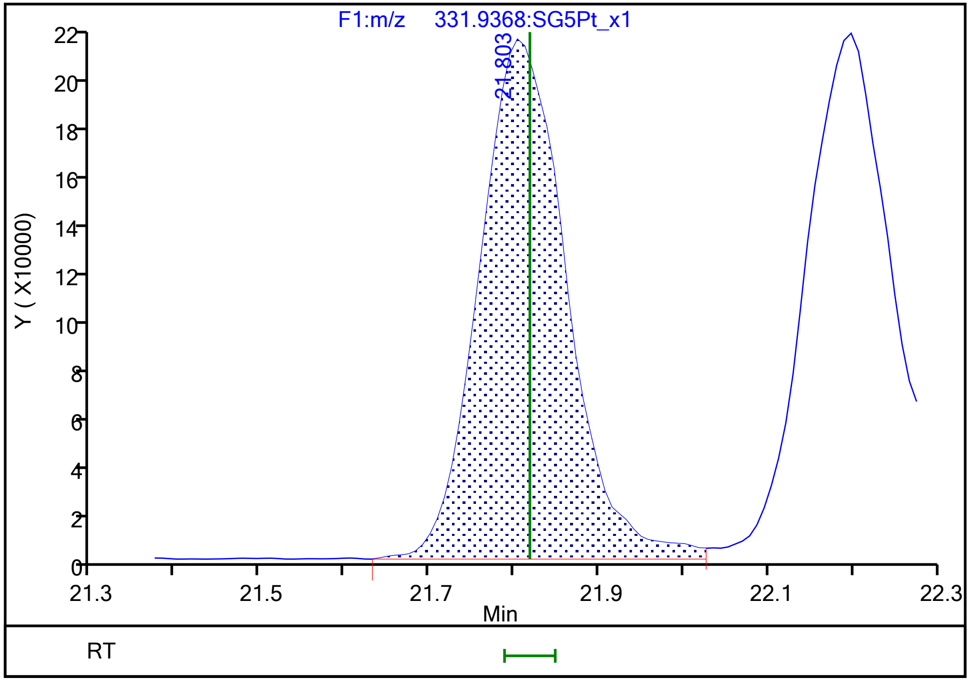

Reviewer: stephensk, 17-Nov-2020 16:09:10

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Injection Date: 17-Nov-2020 14:27:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

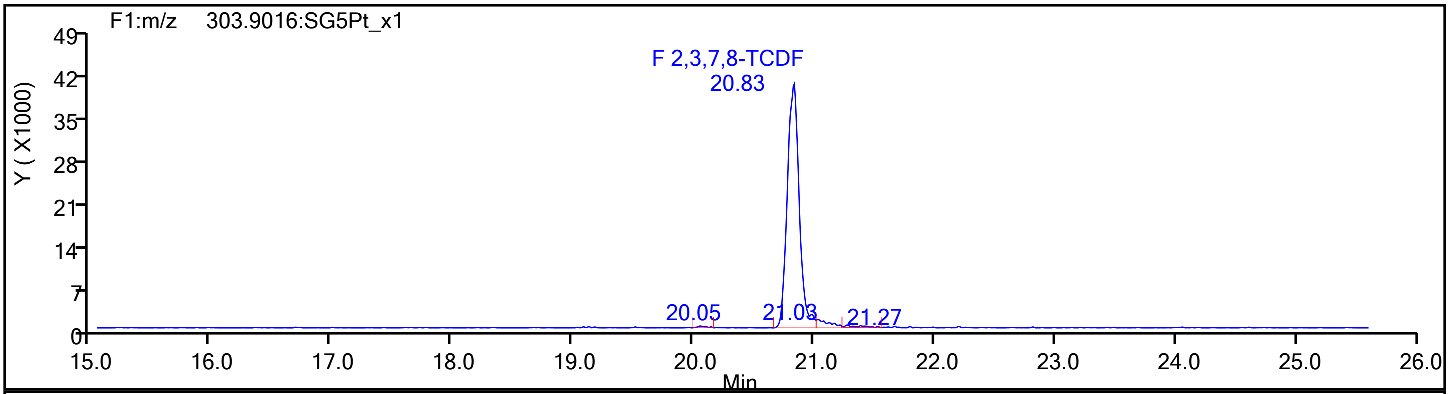

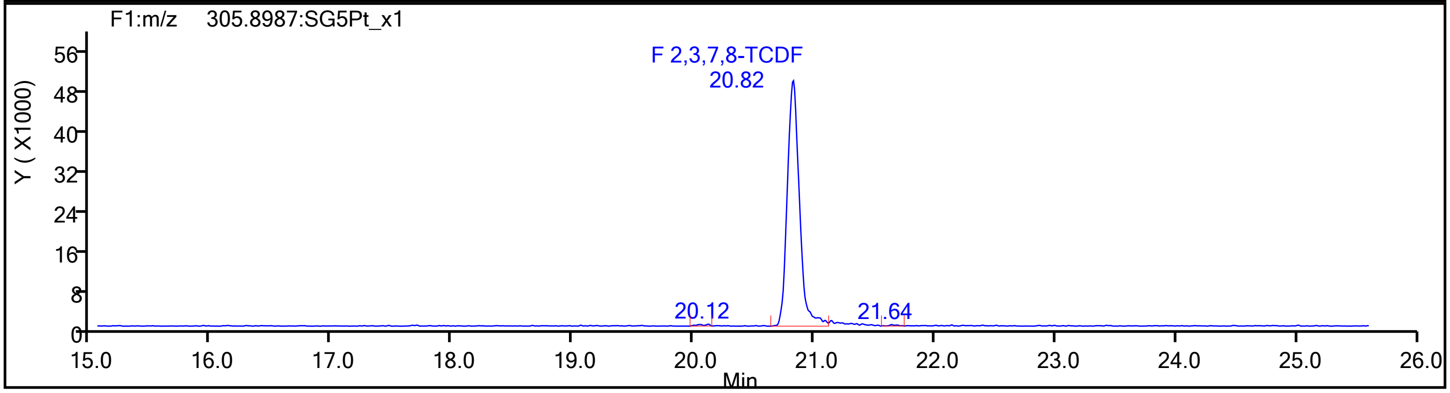

TCDF Standards

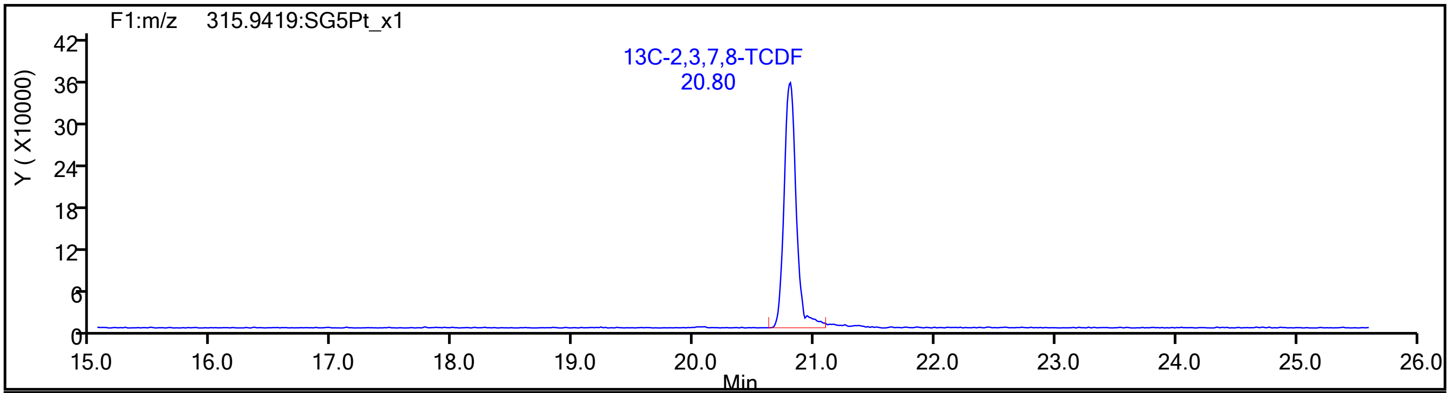

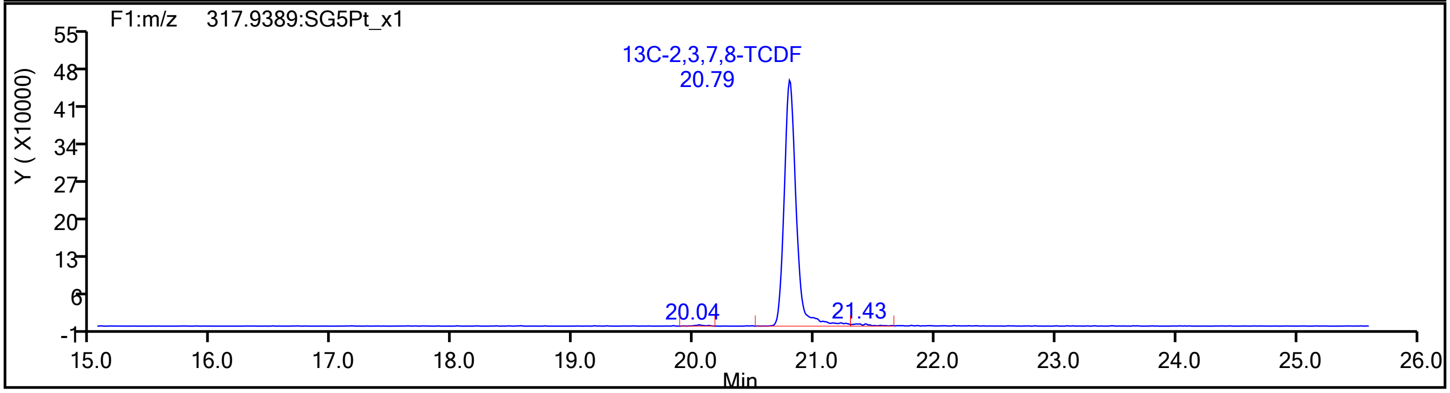

Report Date: 18-Nov-2020 12:34:58 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d

Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

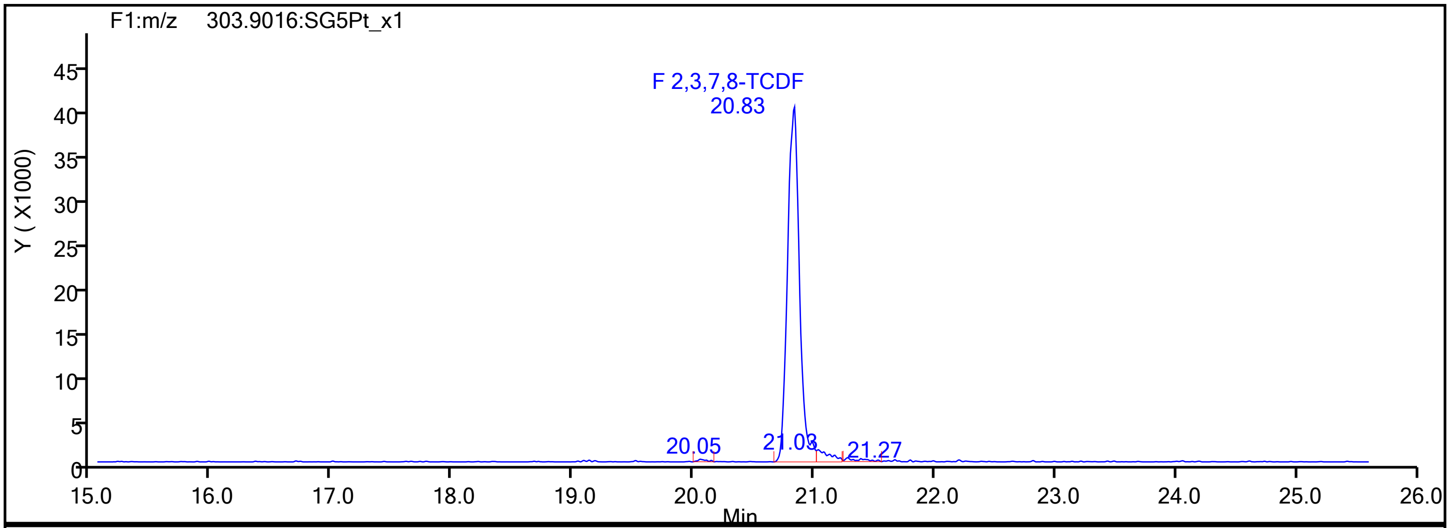

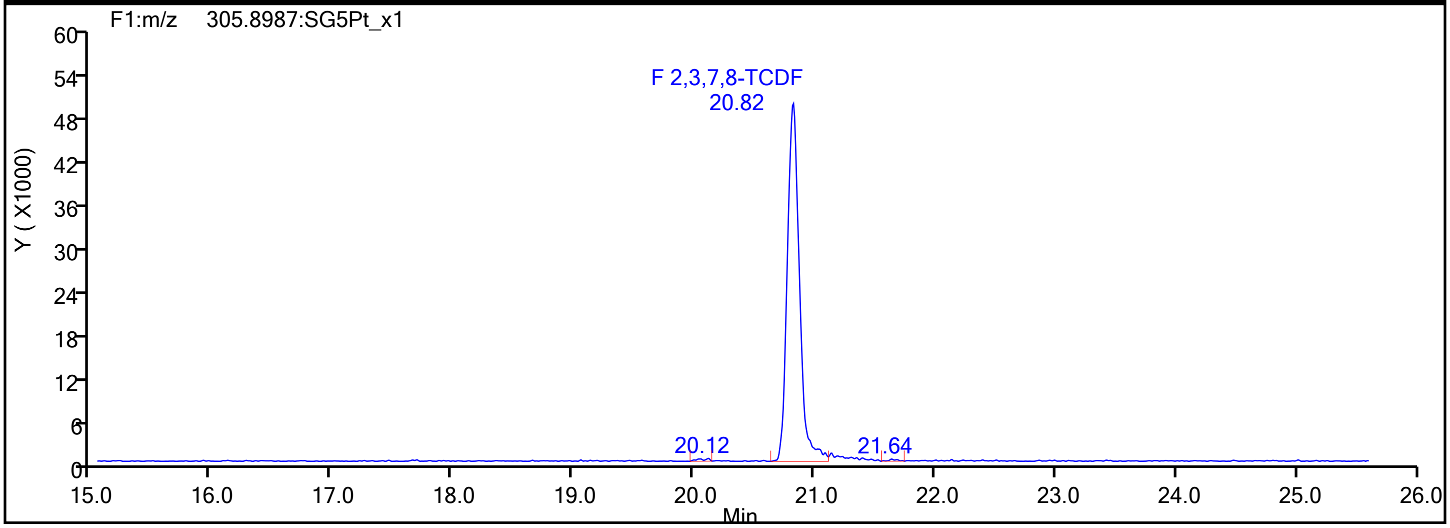

TCDF Interference Mass

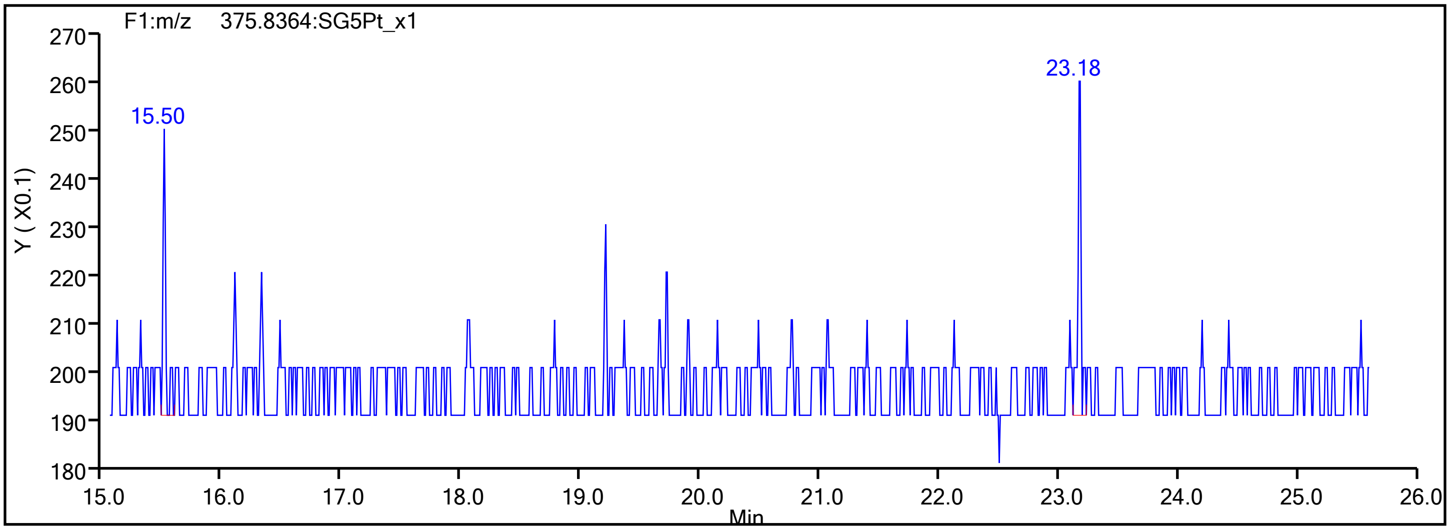

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

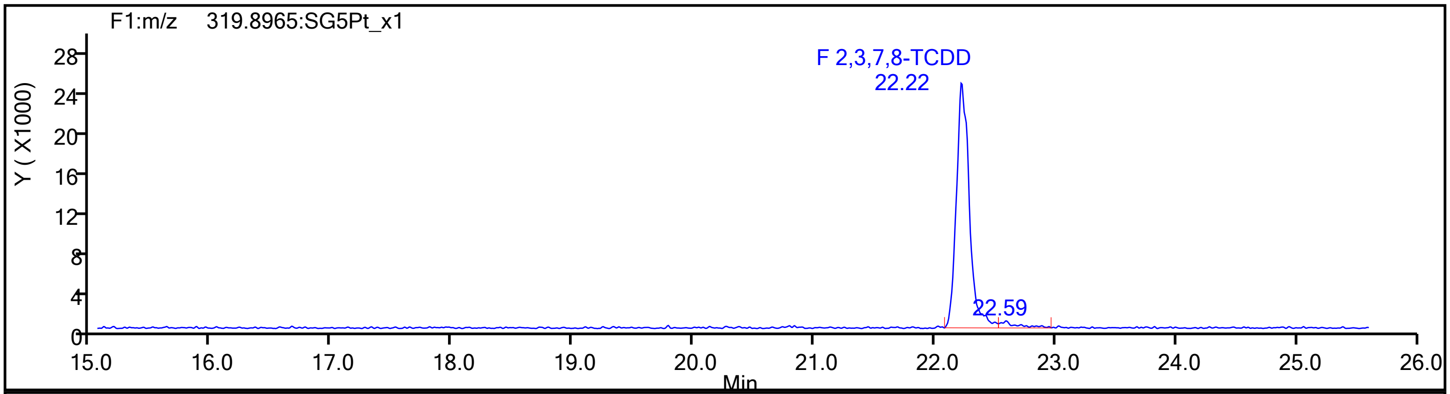

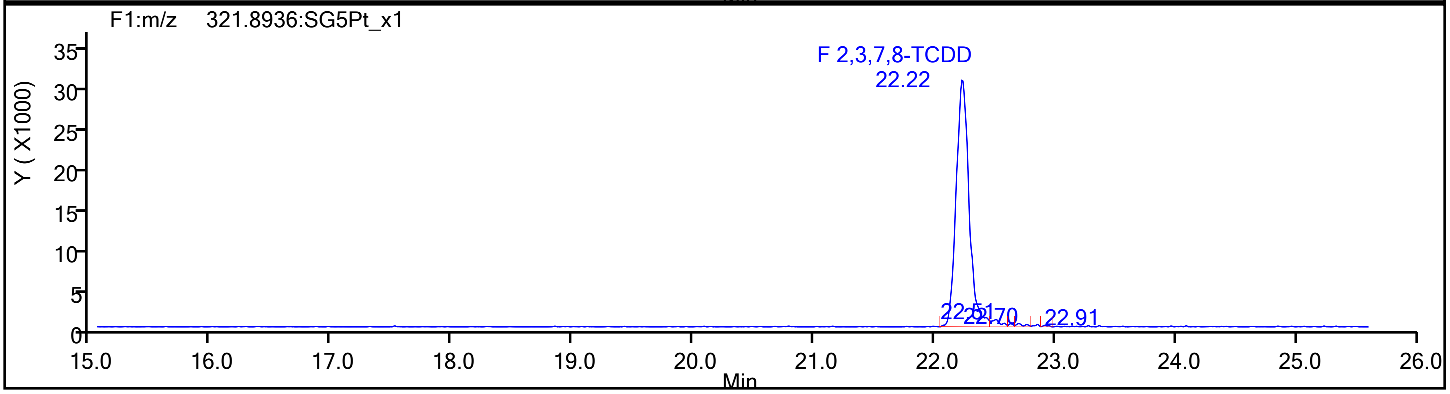

TCDD Standards

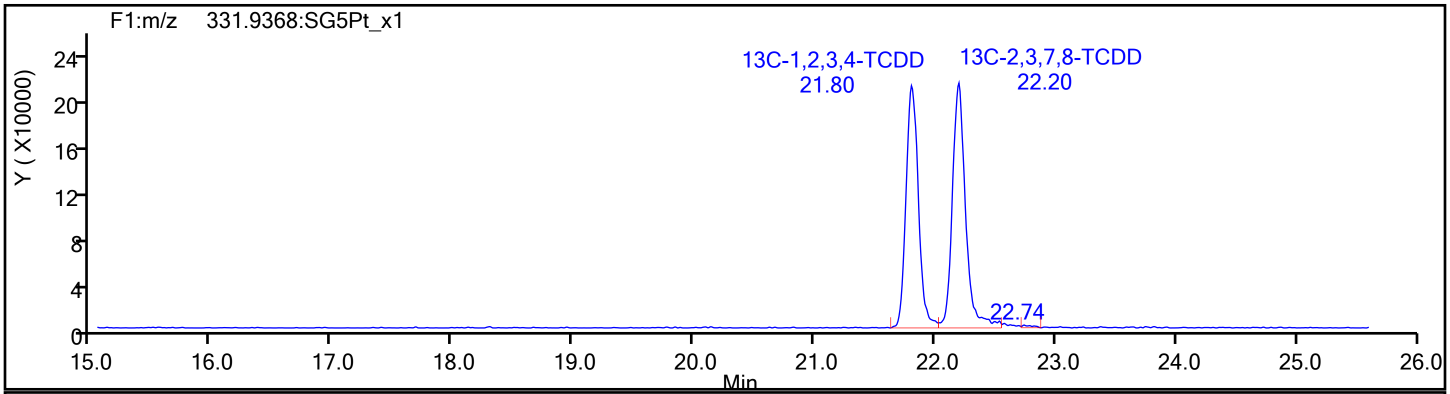

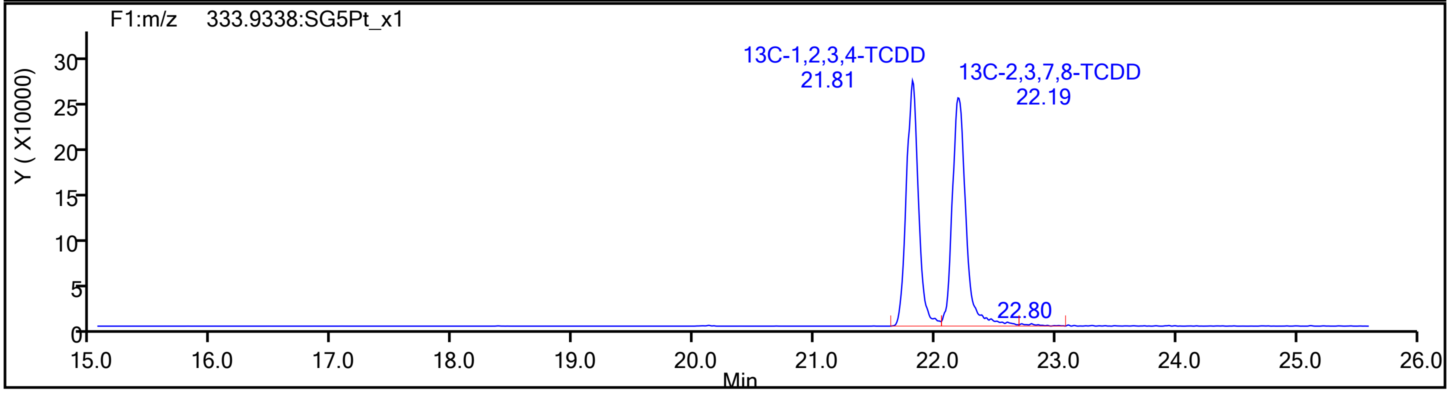

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d		
Injection Date:	17-Nov-2020 14:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

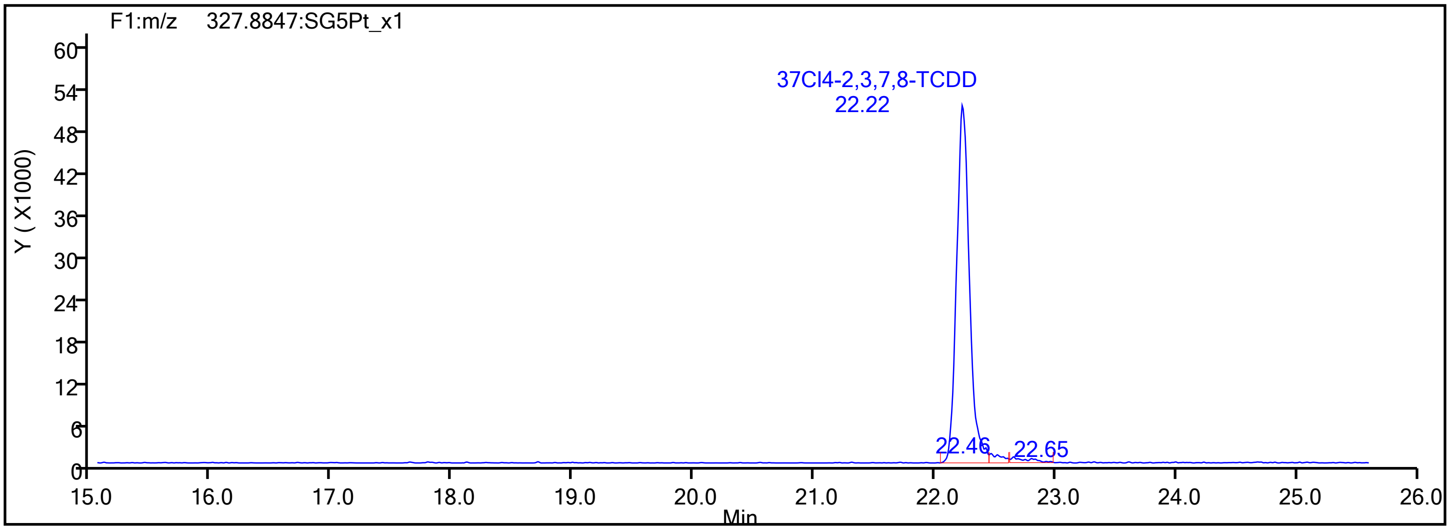

37Cl4-TCDD Standards

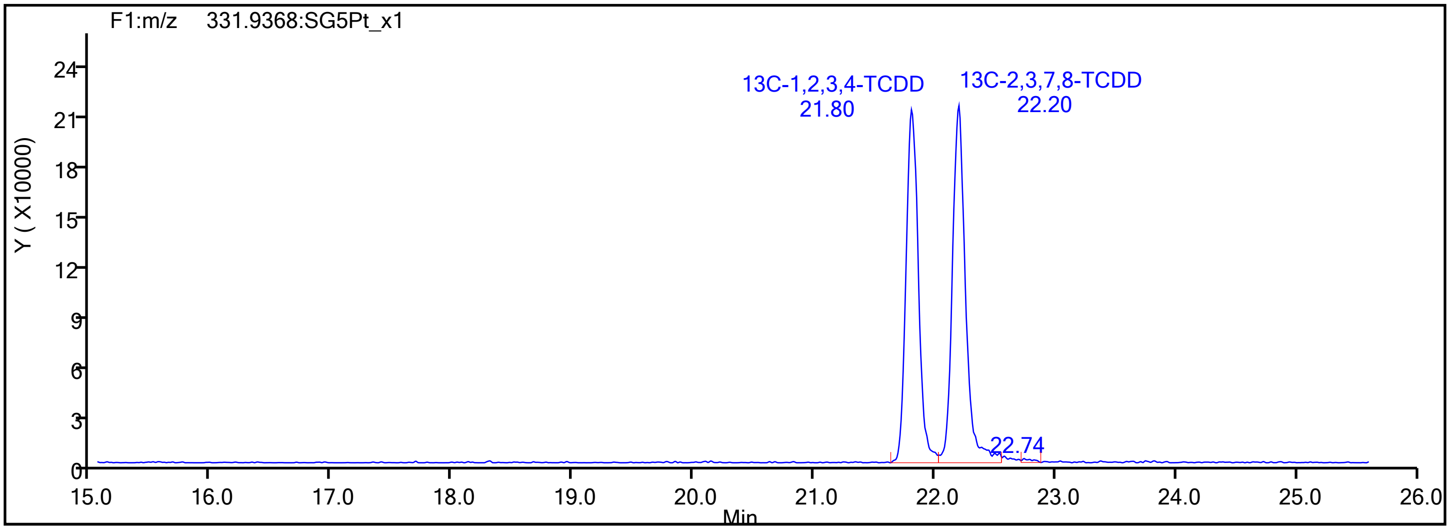

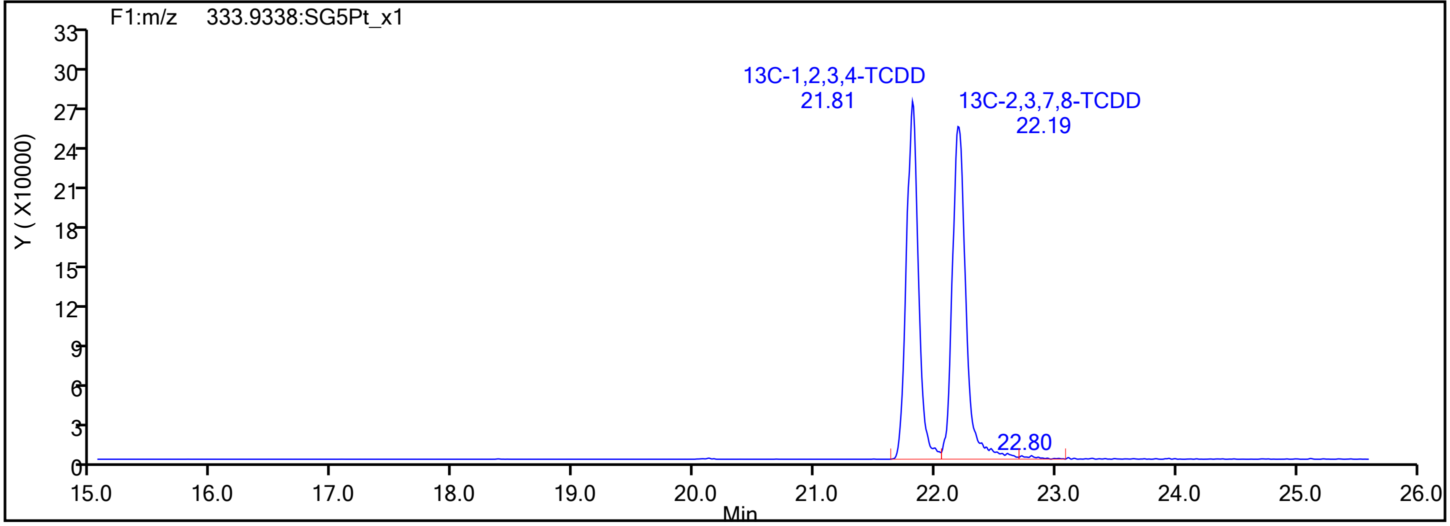

Report Date: 18-Nov-2020 12:34:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 14:27:00 Injection Vol: 1.0 ul

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Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

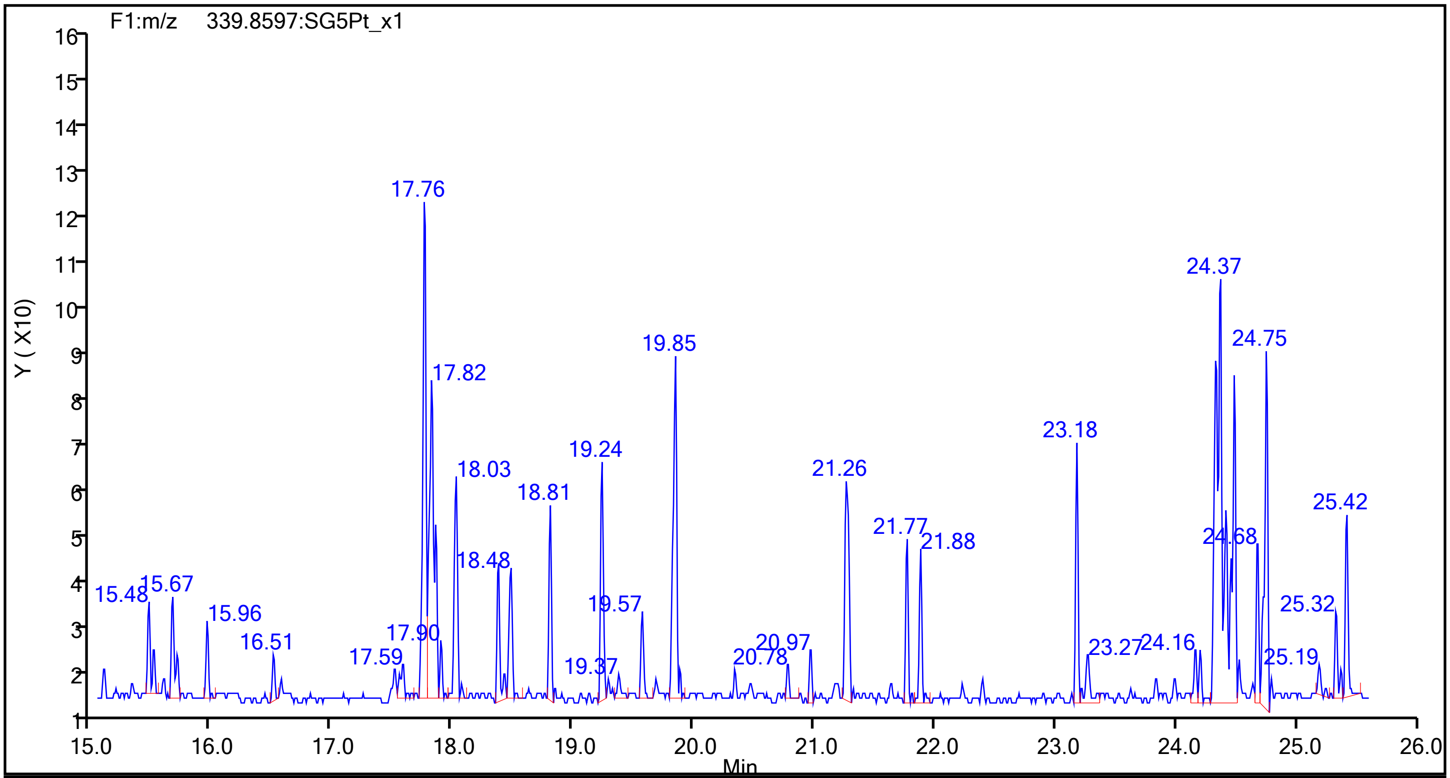

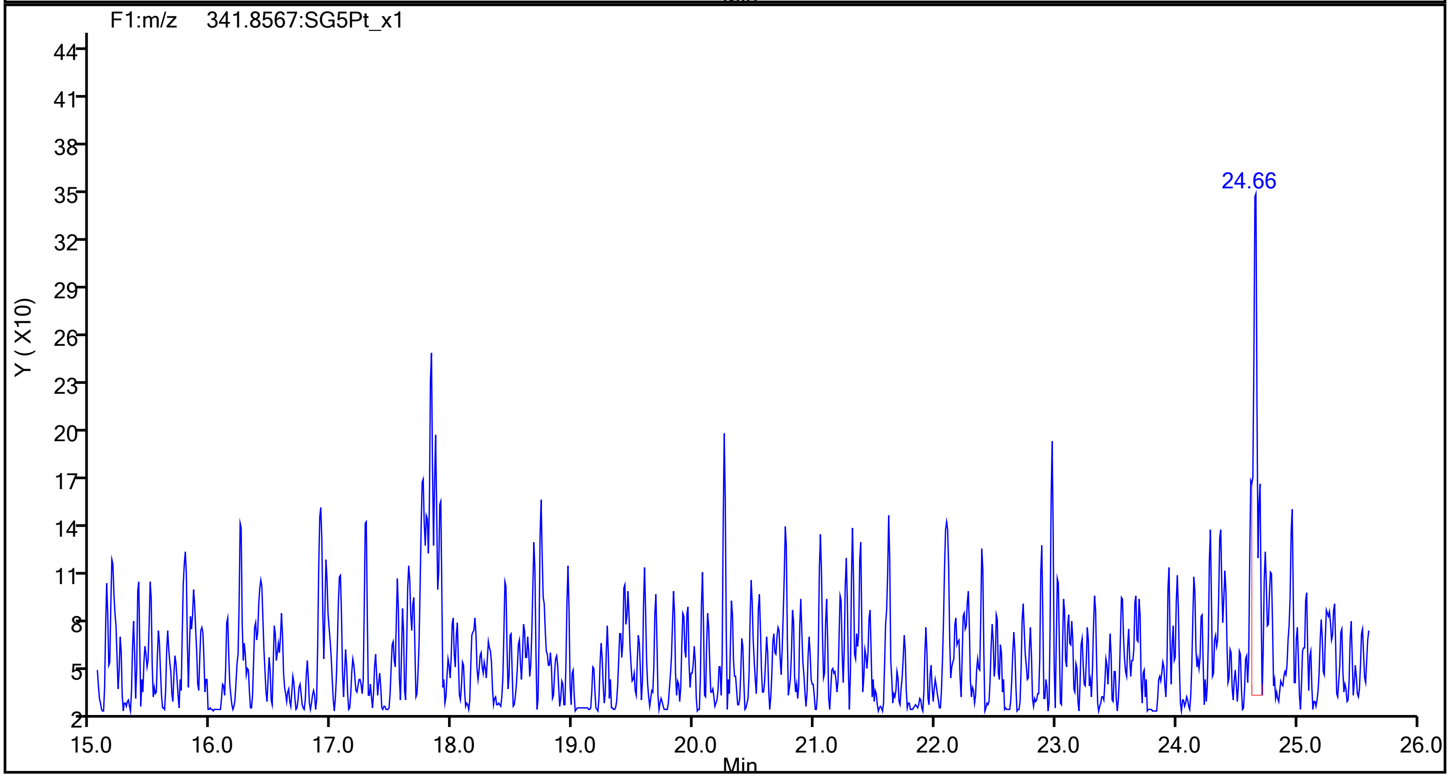

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Eurofins TestAmerica, Sacramento

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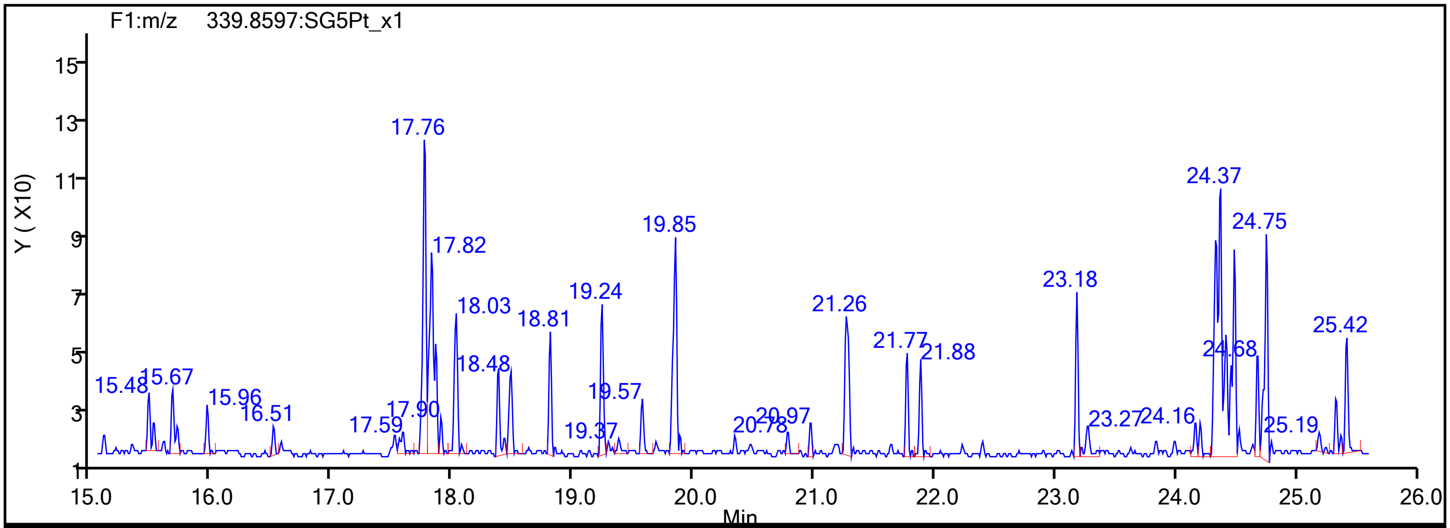

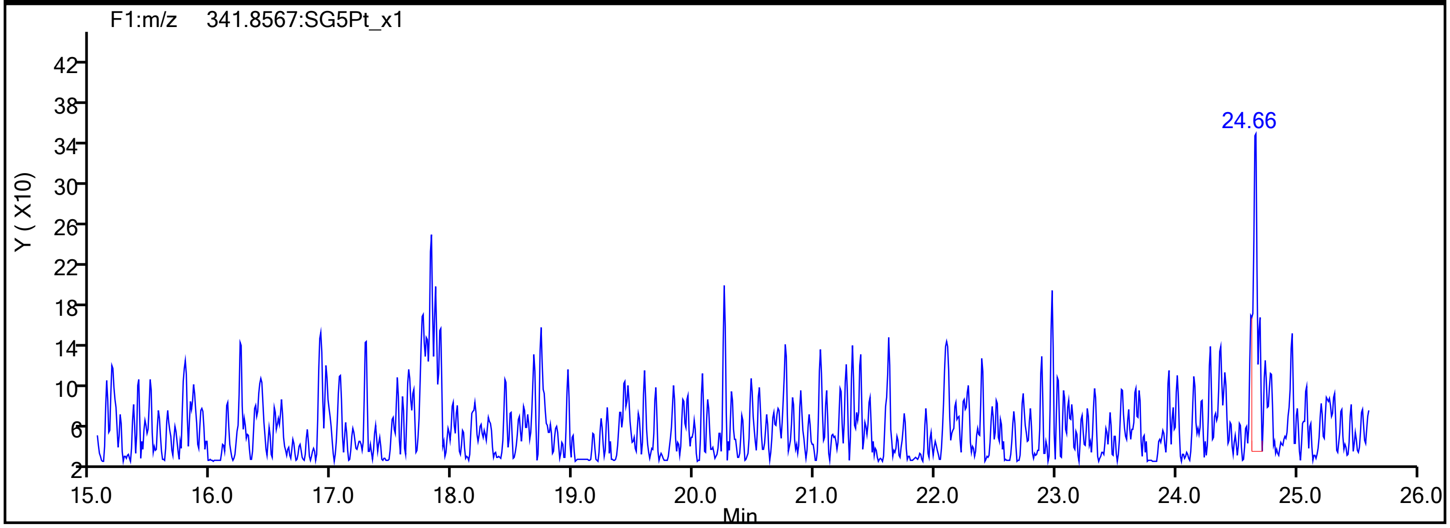

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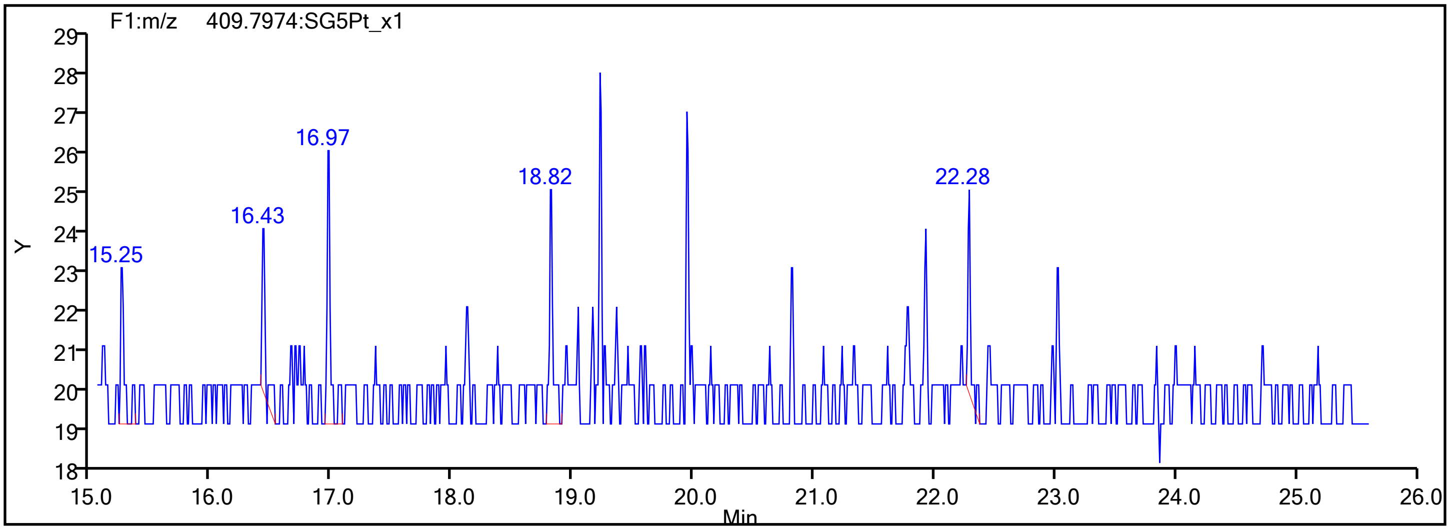

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Eurofins TestAmerica, Sacramento

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PeCDF

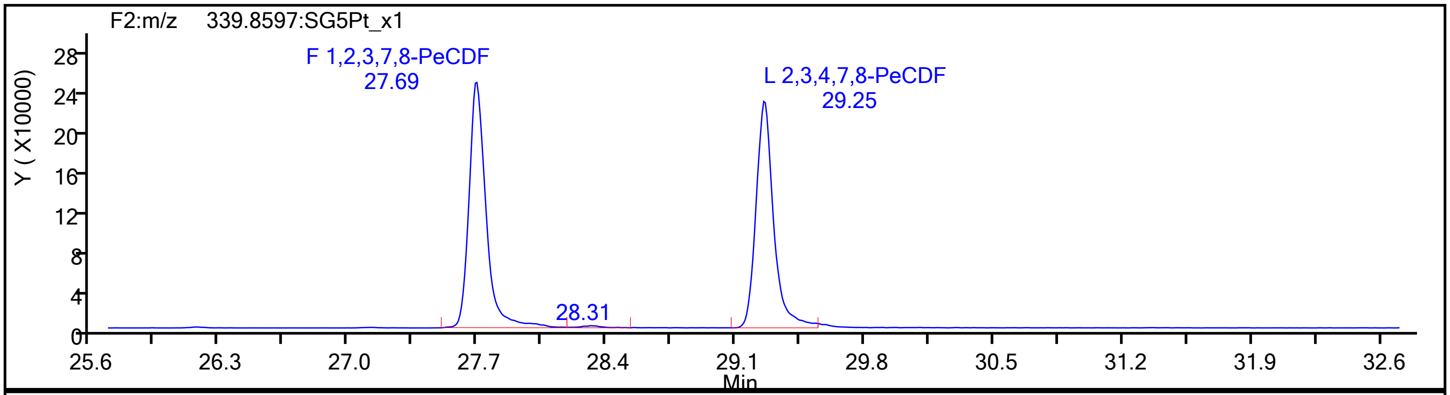

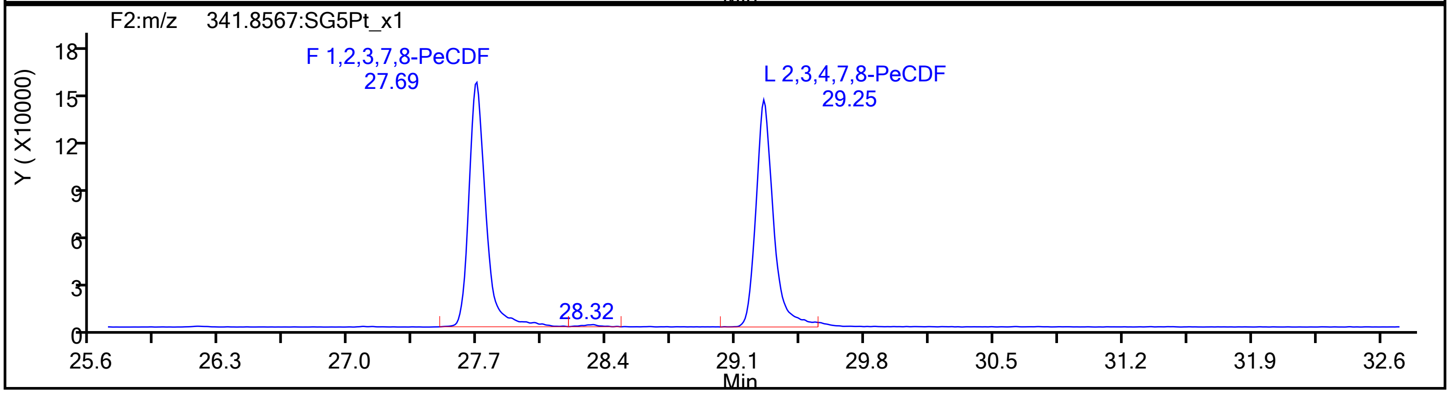

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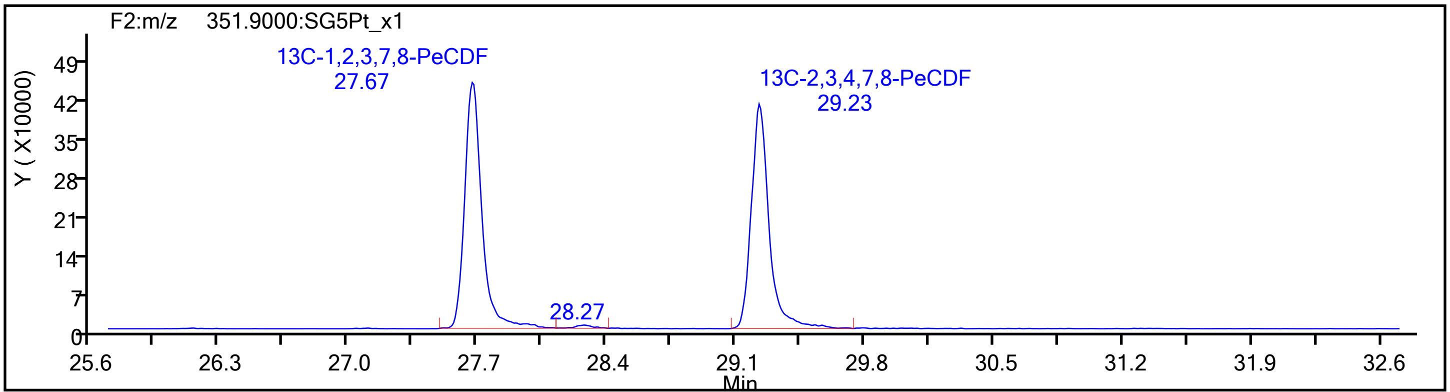

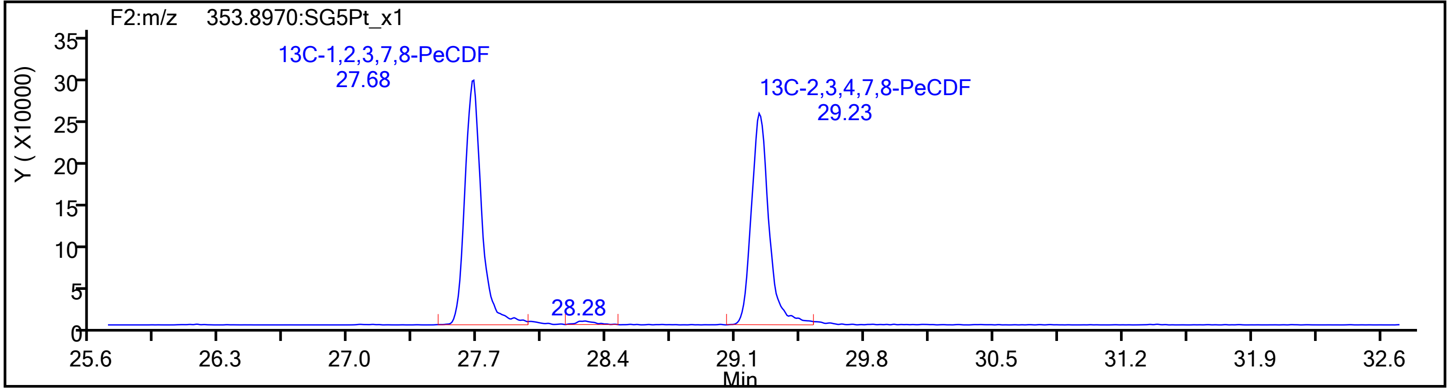

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Eurofins TestAmerica, Sacramento

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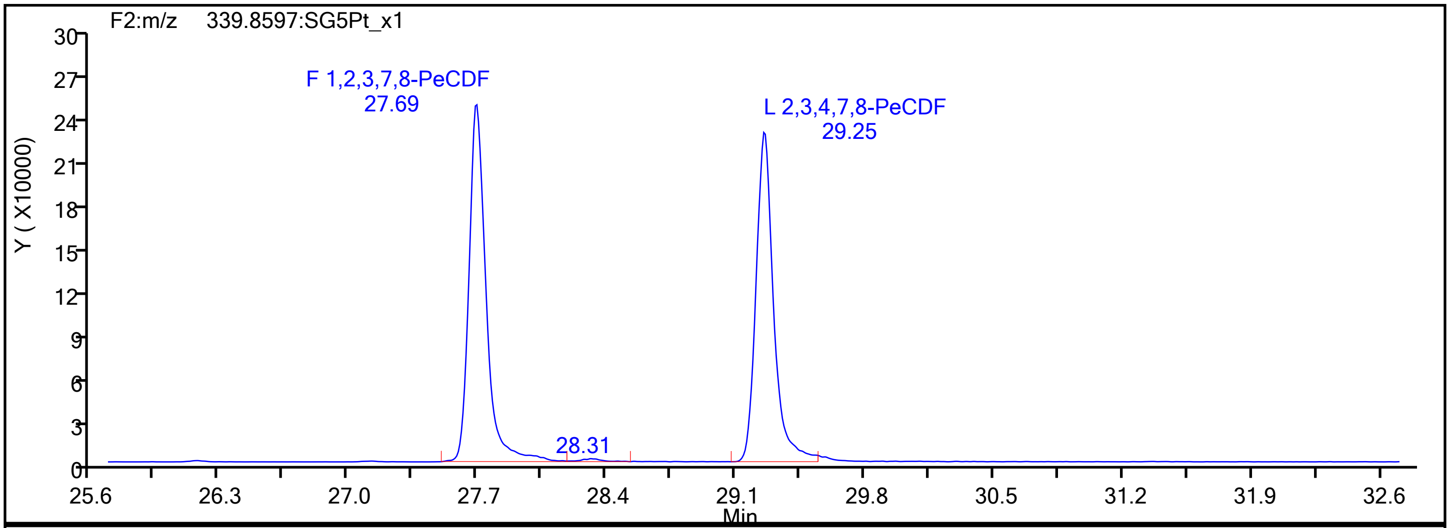

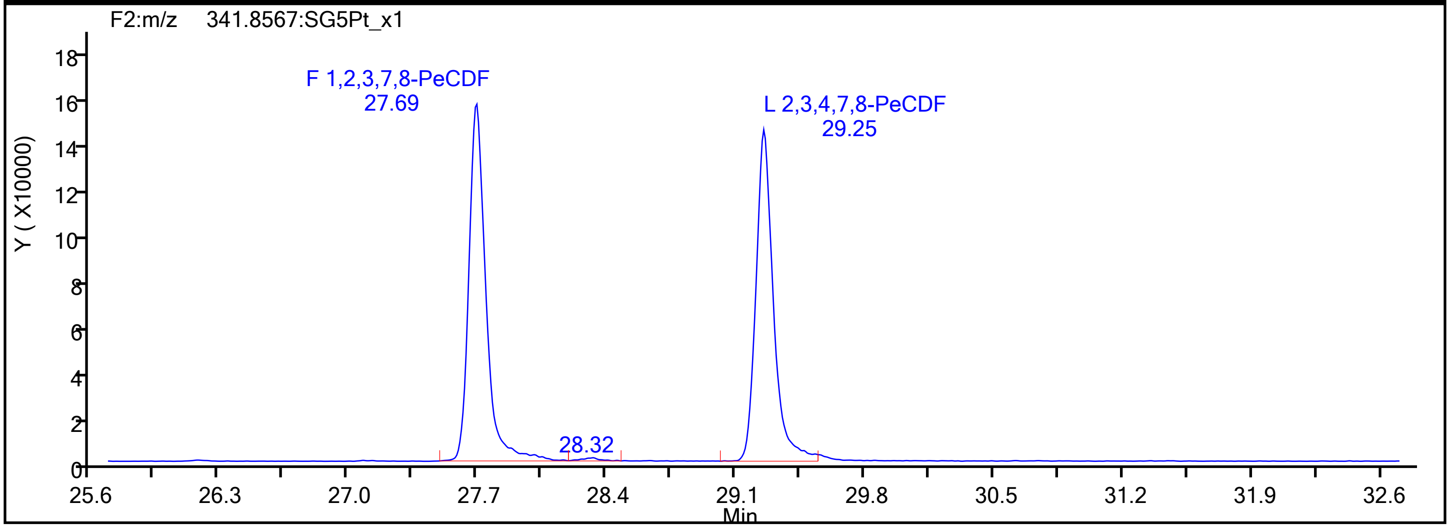

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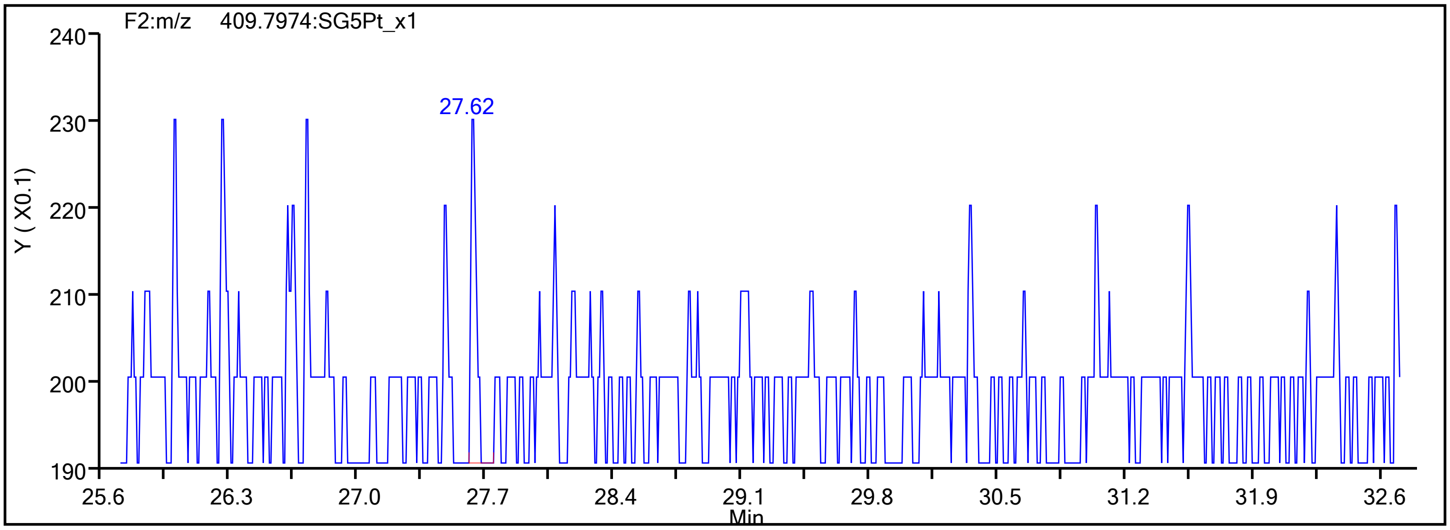

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Eurofins TestAmerica, Sacramento

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Client ID:

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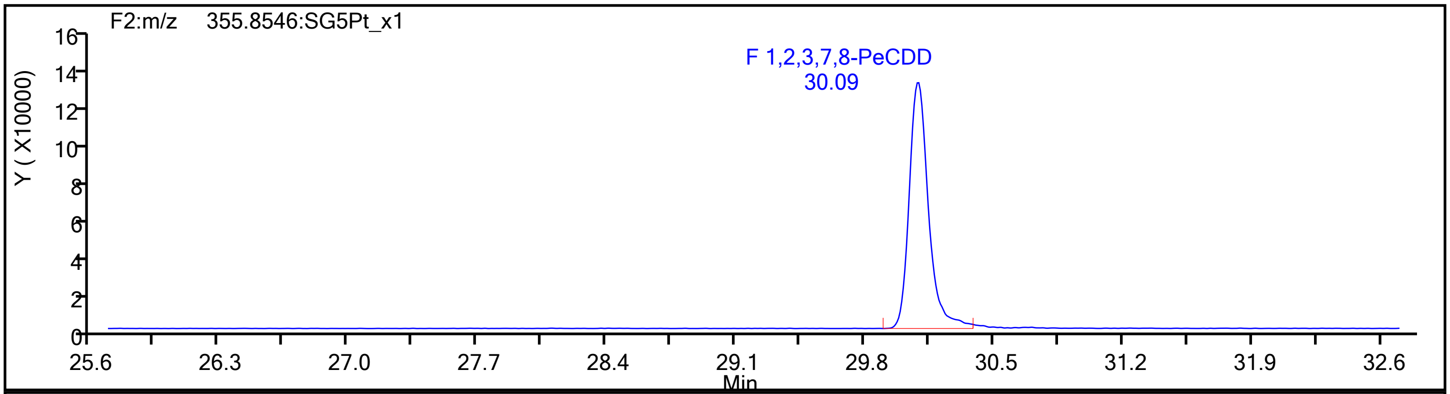

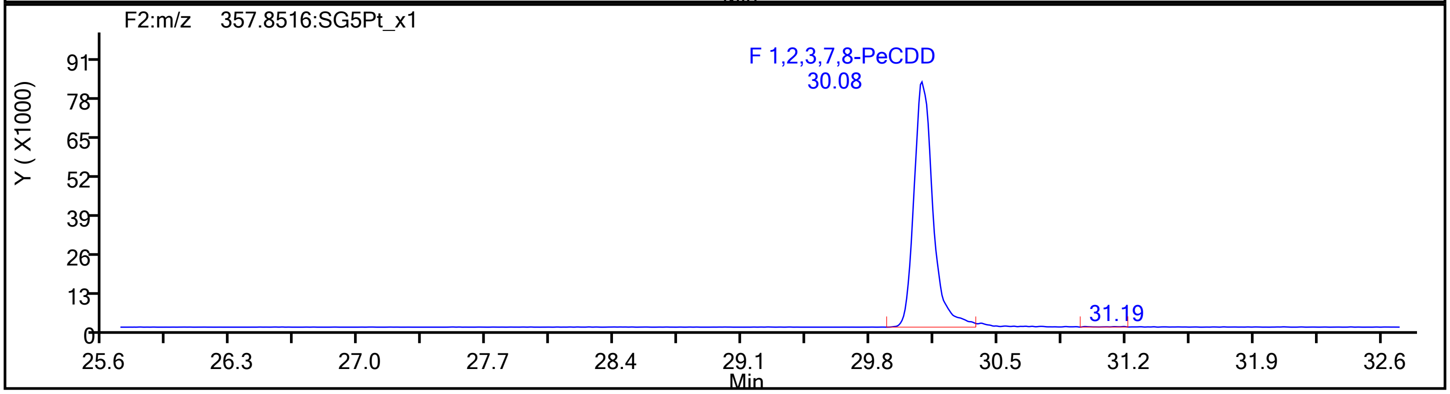

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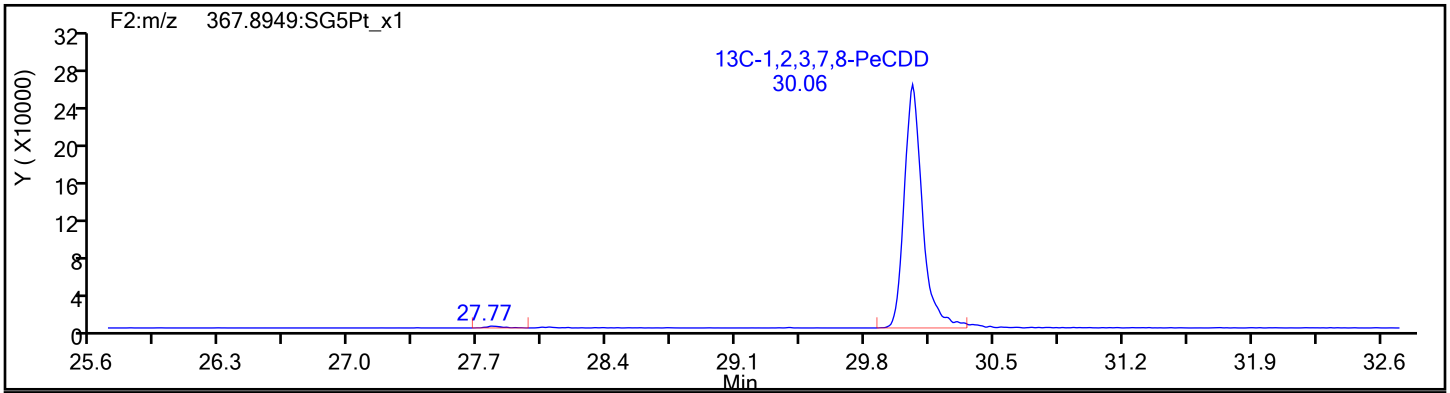

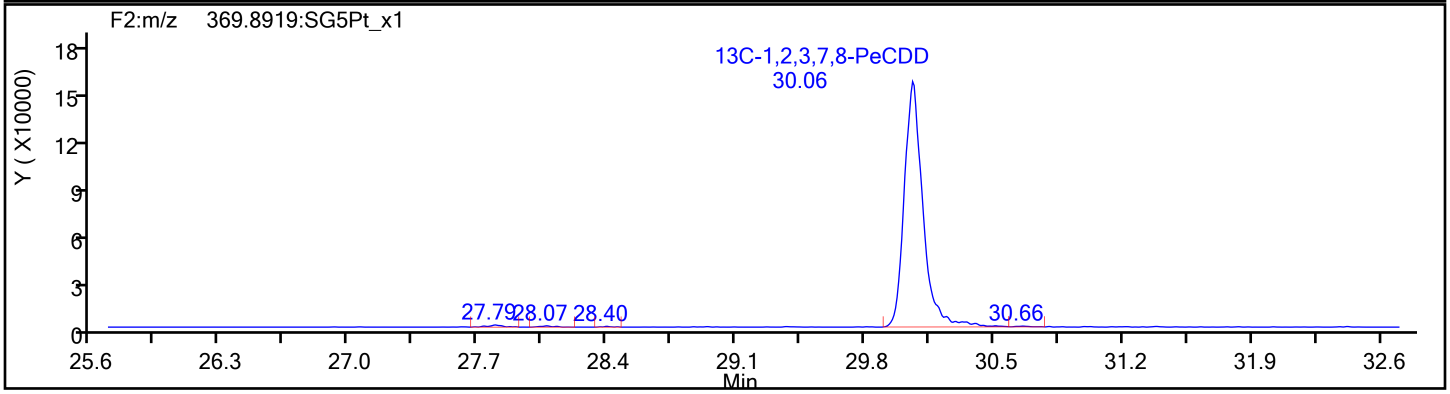

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Eurofins TestAmerica, Sacramento

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HxCDF

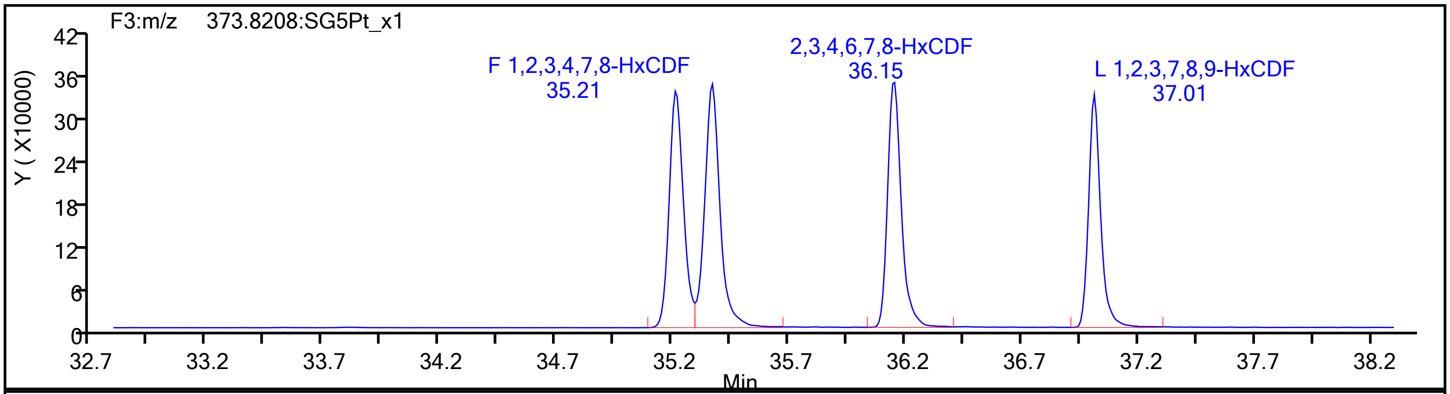

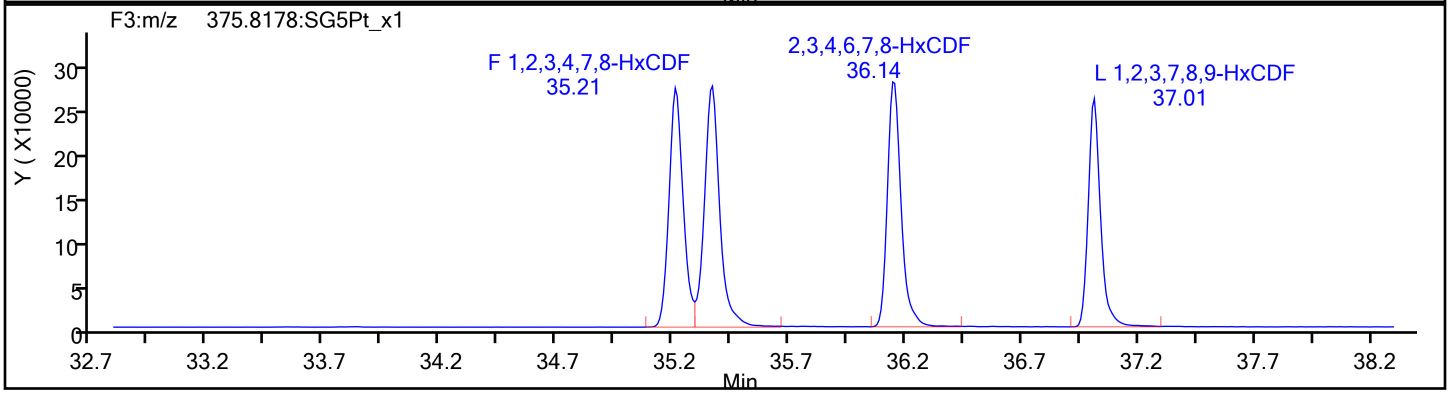

HxCDF Standards

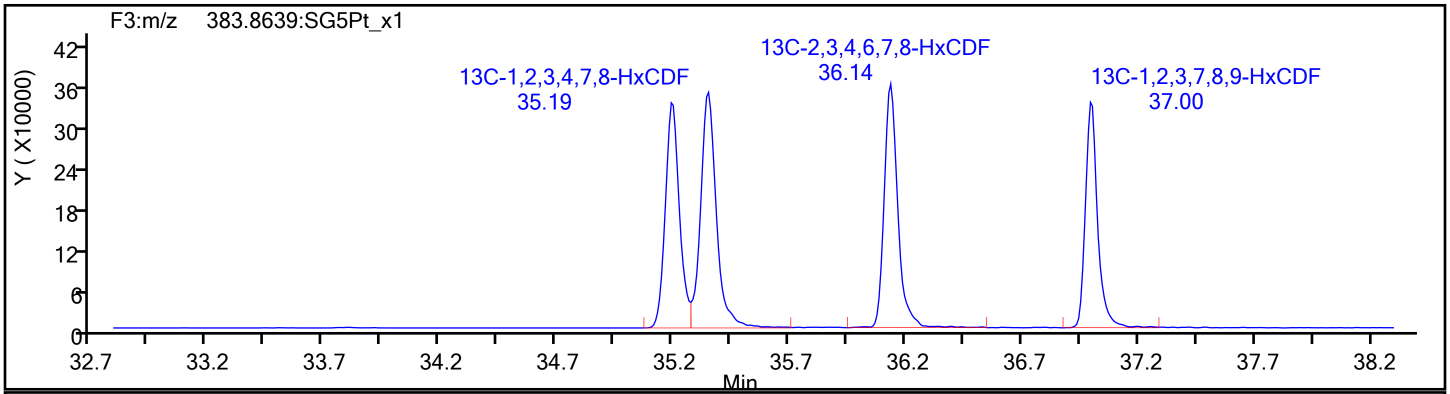

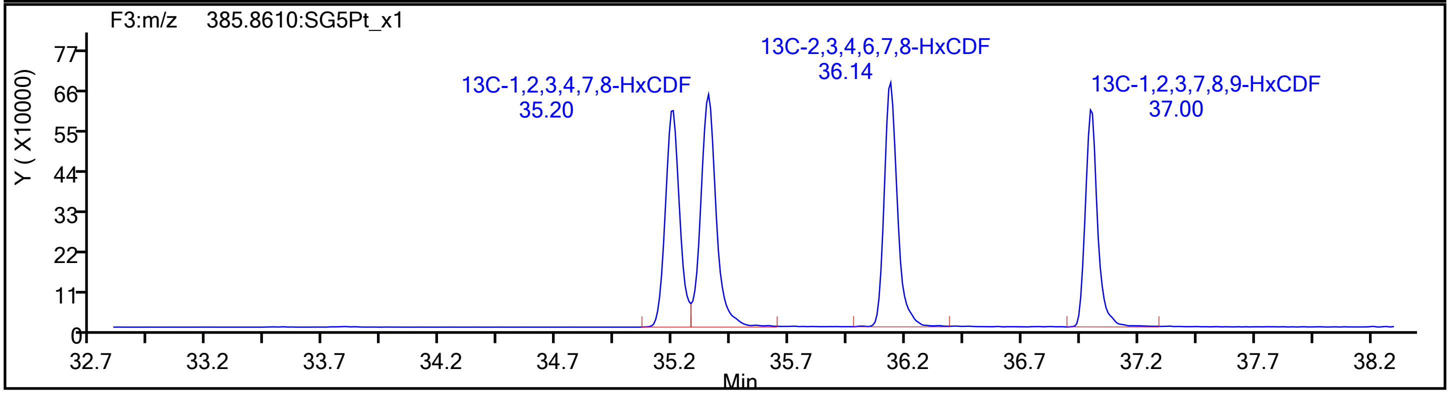

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Eurofins TestAmerica, Sacramento

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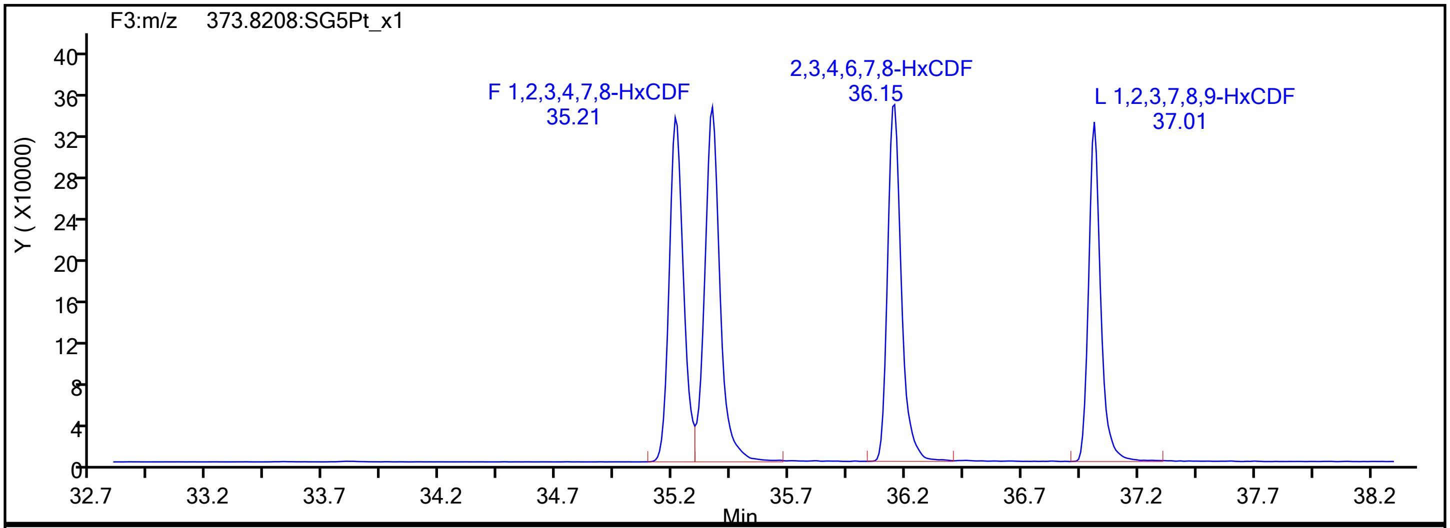

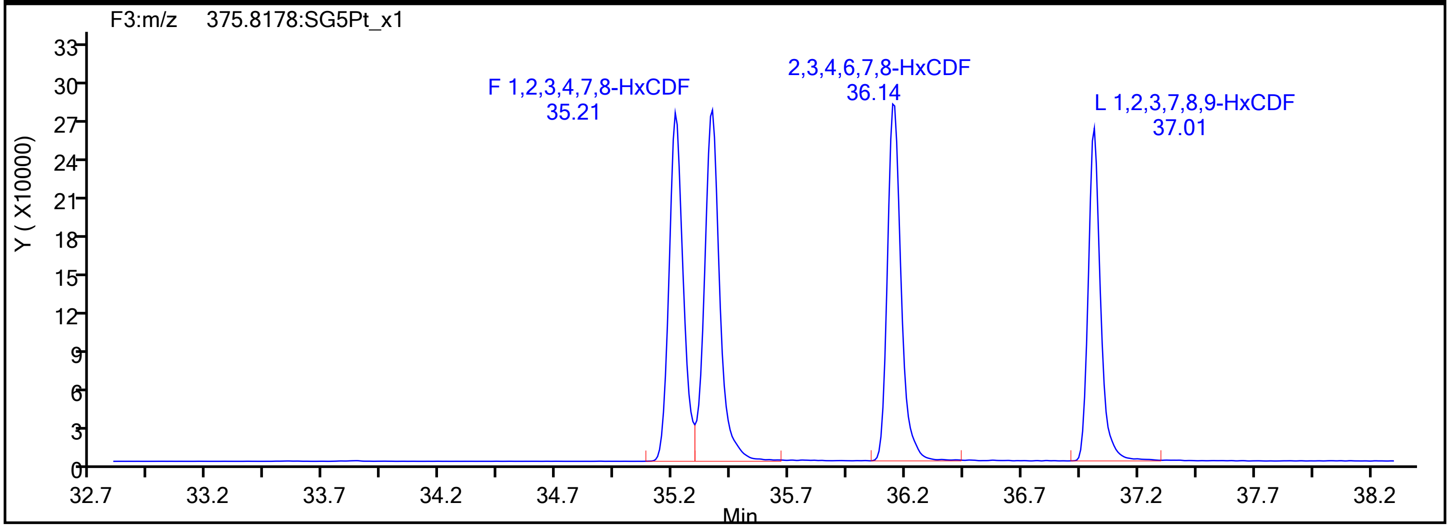

HxCDF Interference Mass

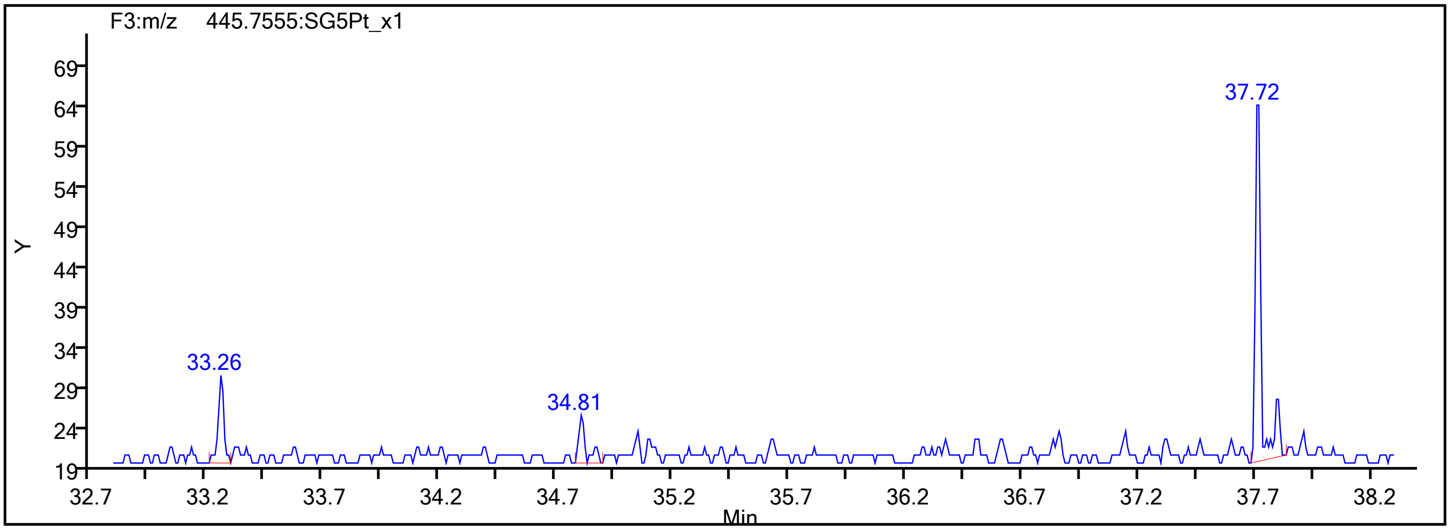

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 14:27:00 Injection Vol: 1.0 ul

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Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 5

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HxCDD

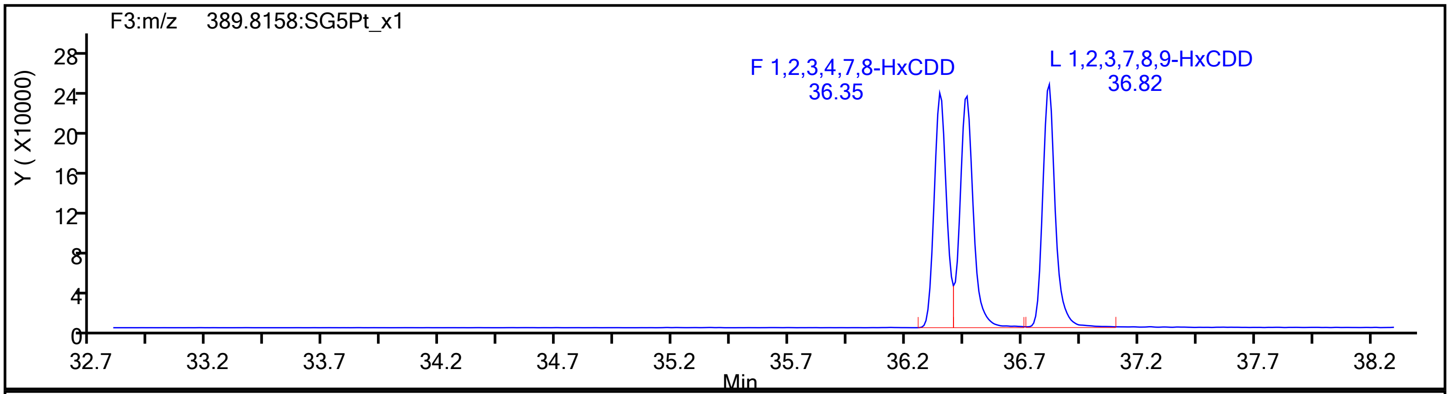

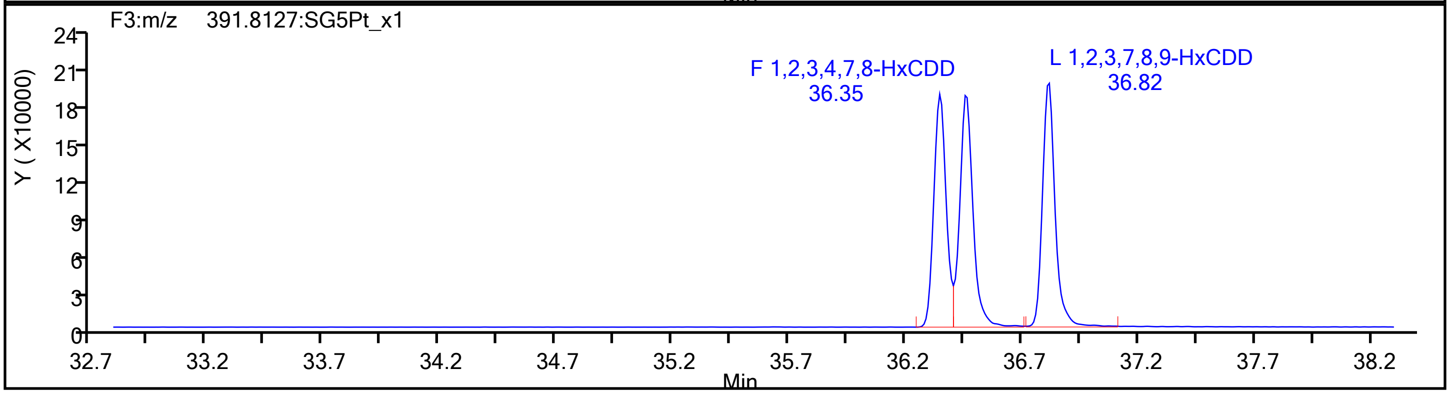

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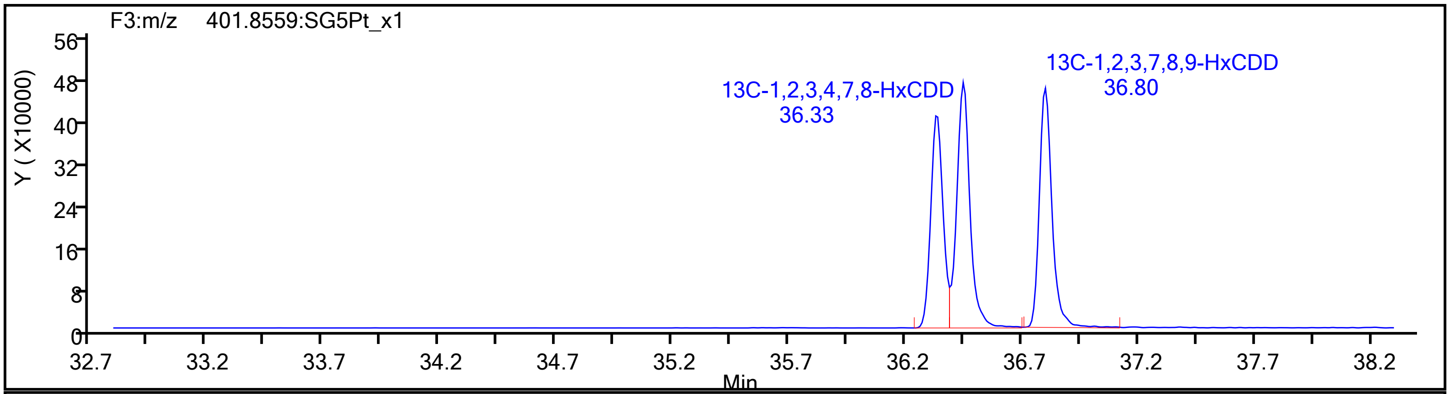

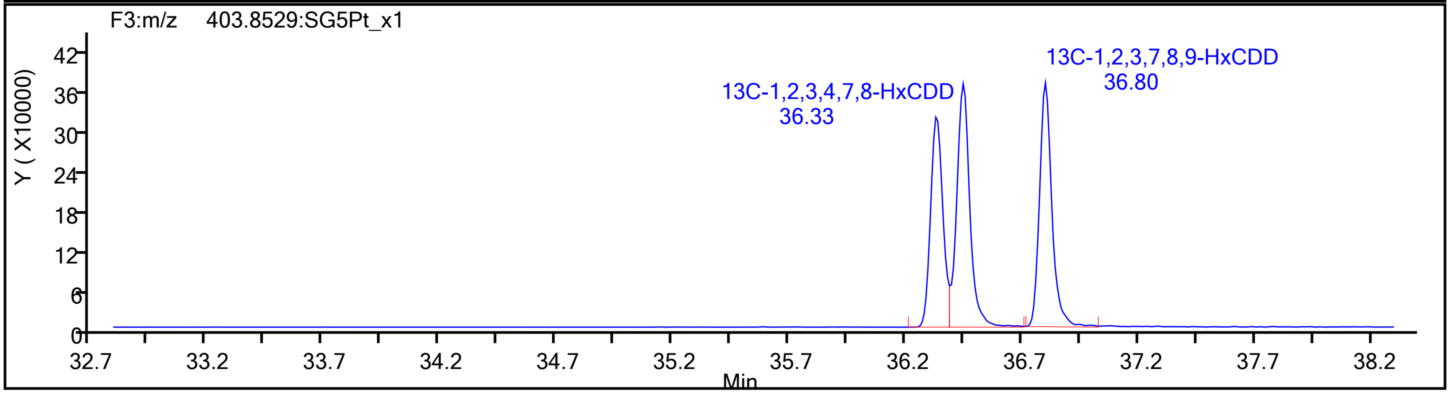

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Eurofins TestAmerica, Sacramento

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HpCDF

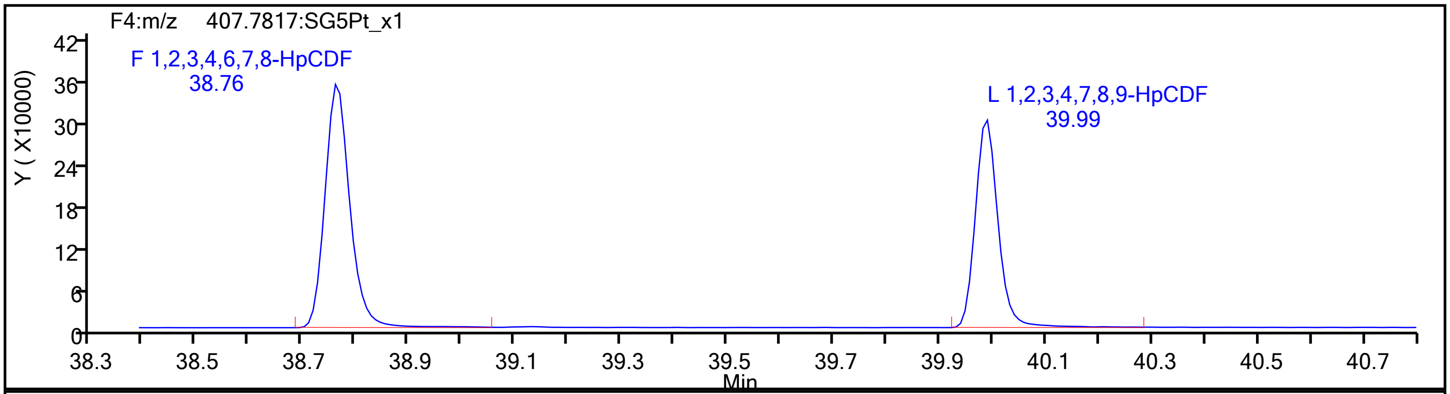

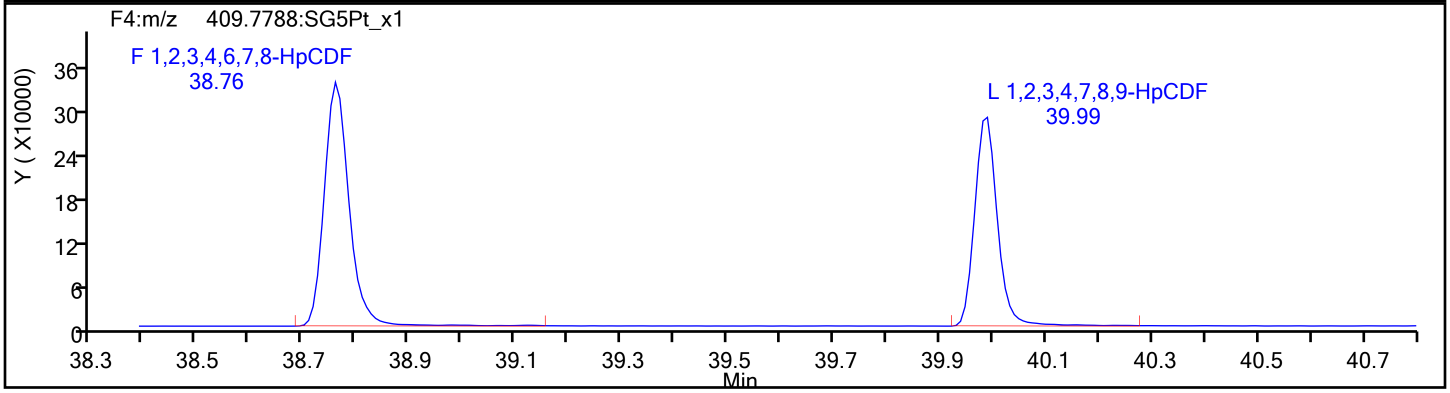

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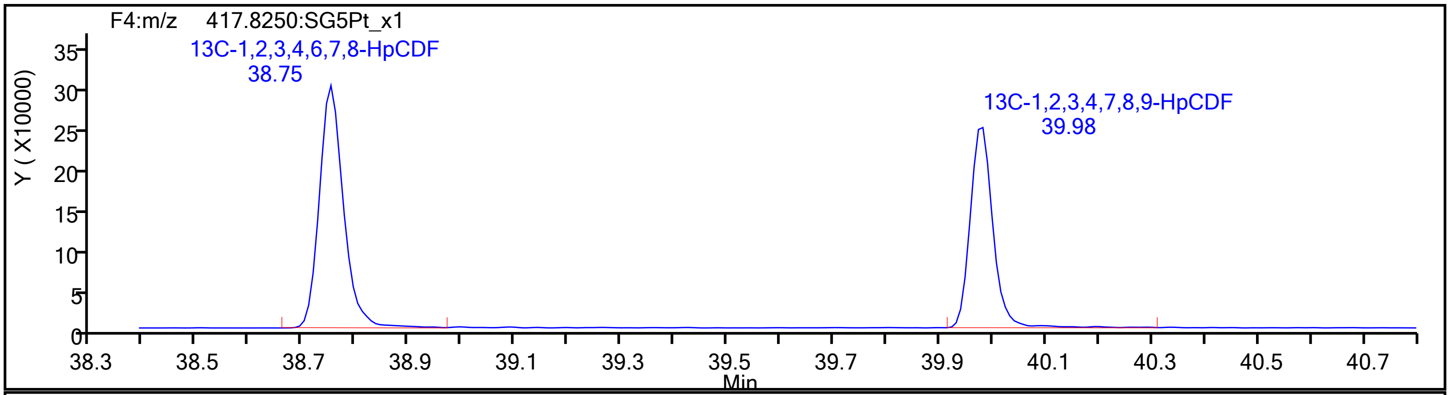

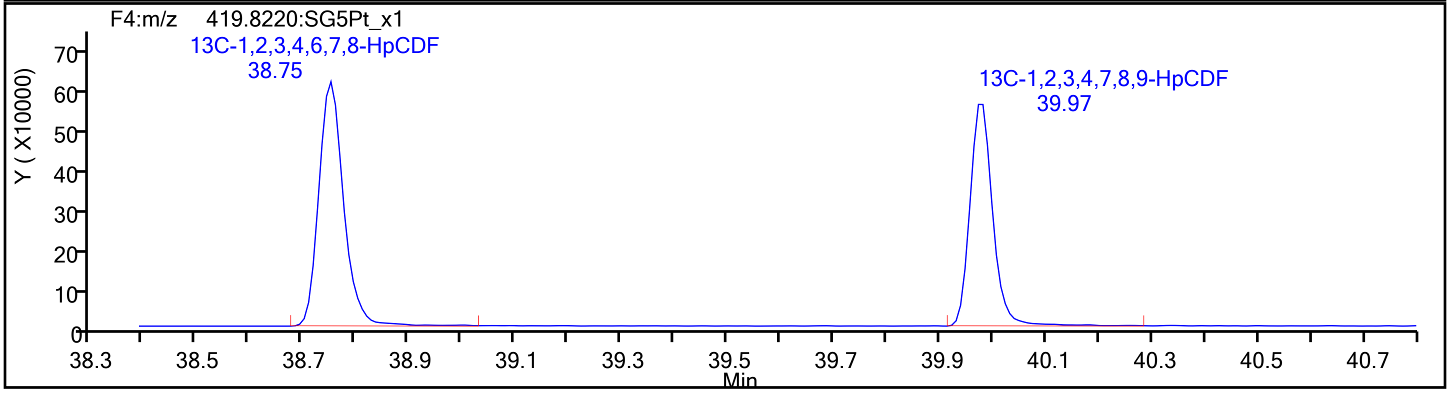

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Eurofins TestAmerica, Sacramento

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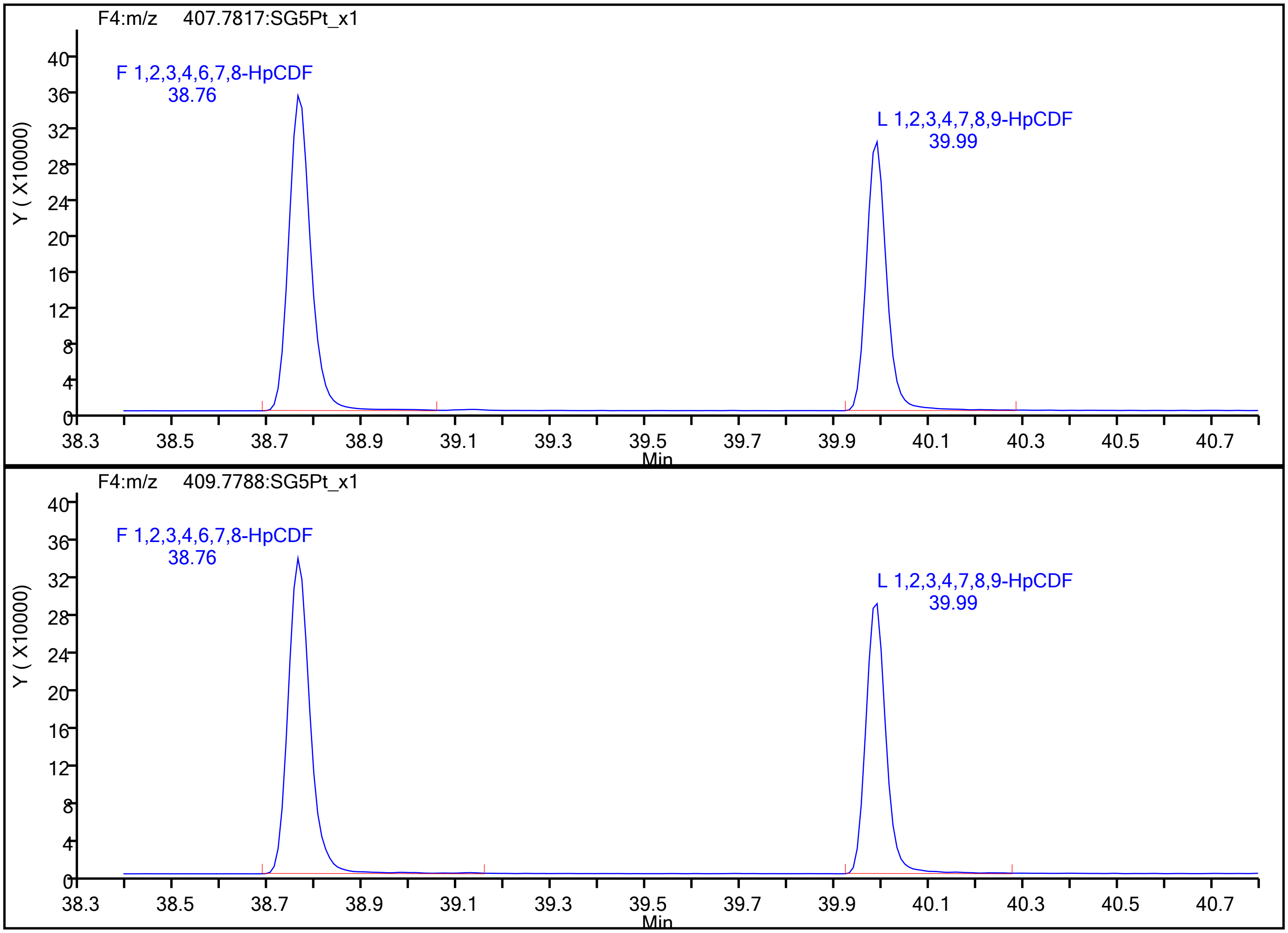

HpCDF Interference Mass

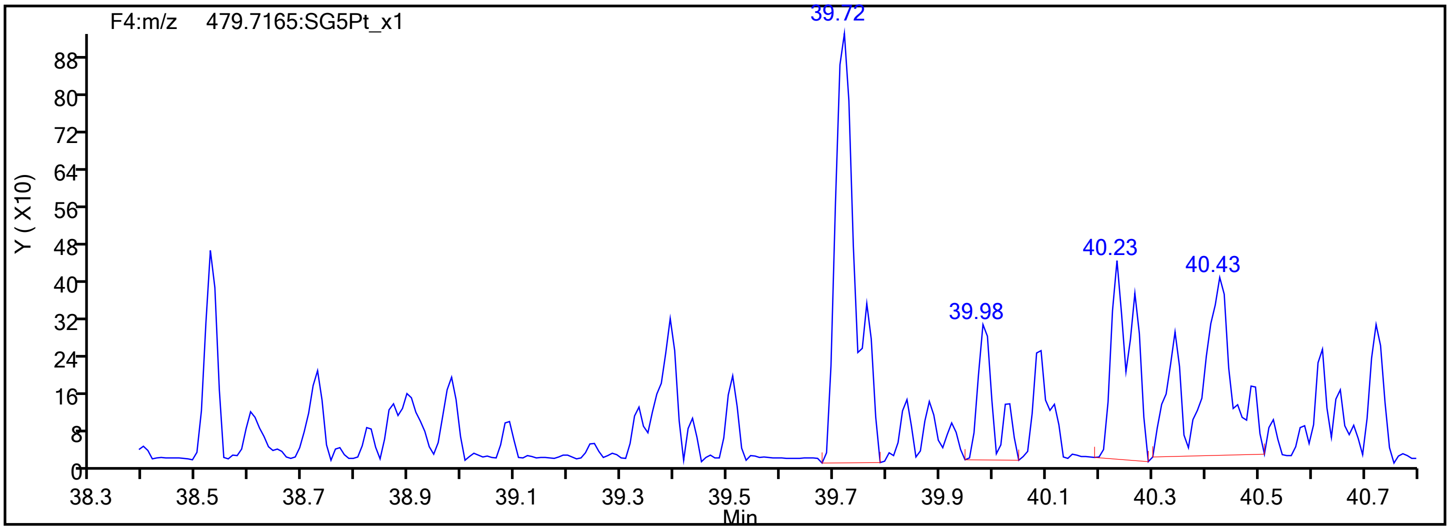

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Eurofins TestAmerica, Sacramento

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HpCDD

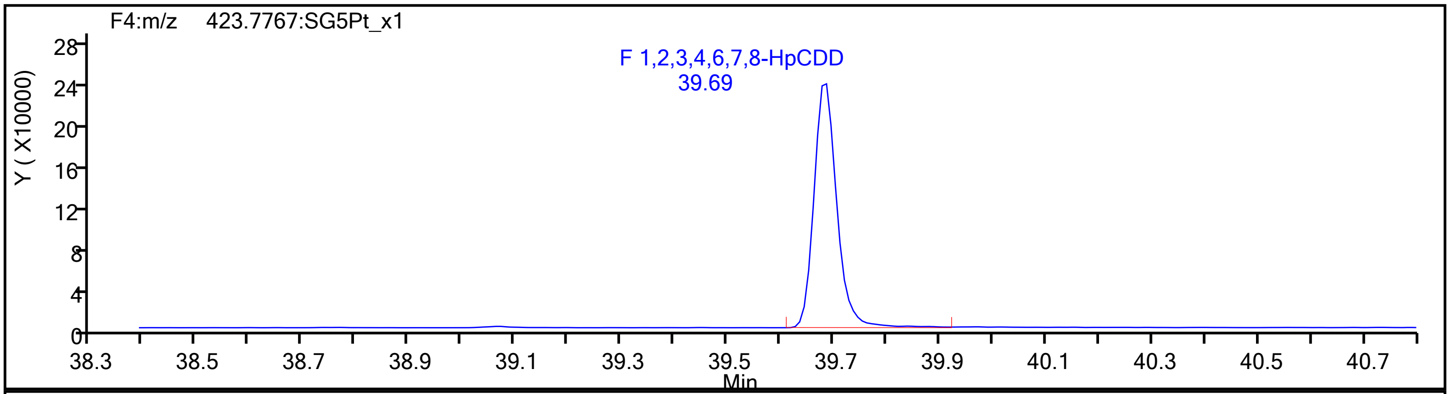

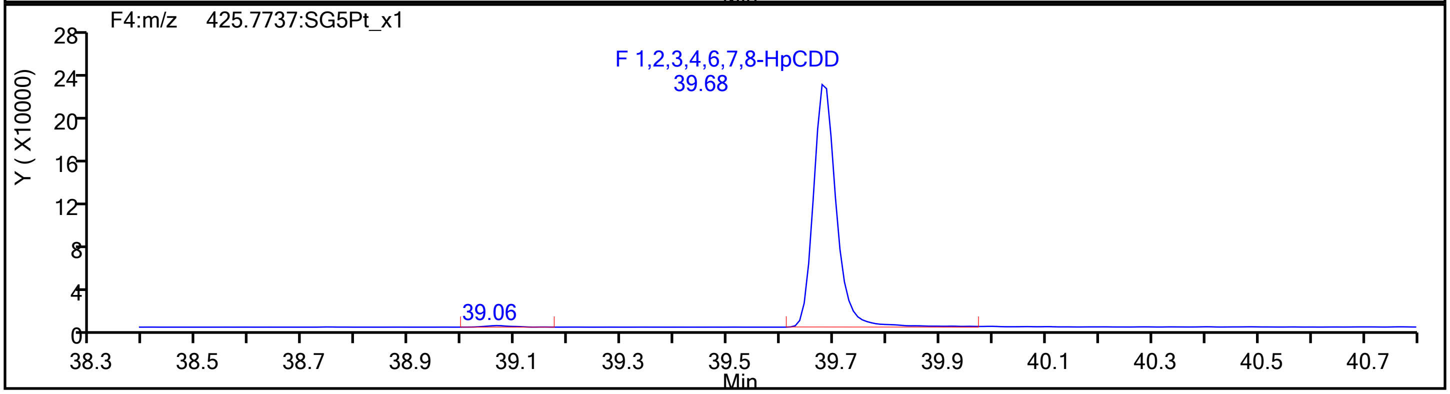

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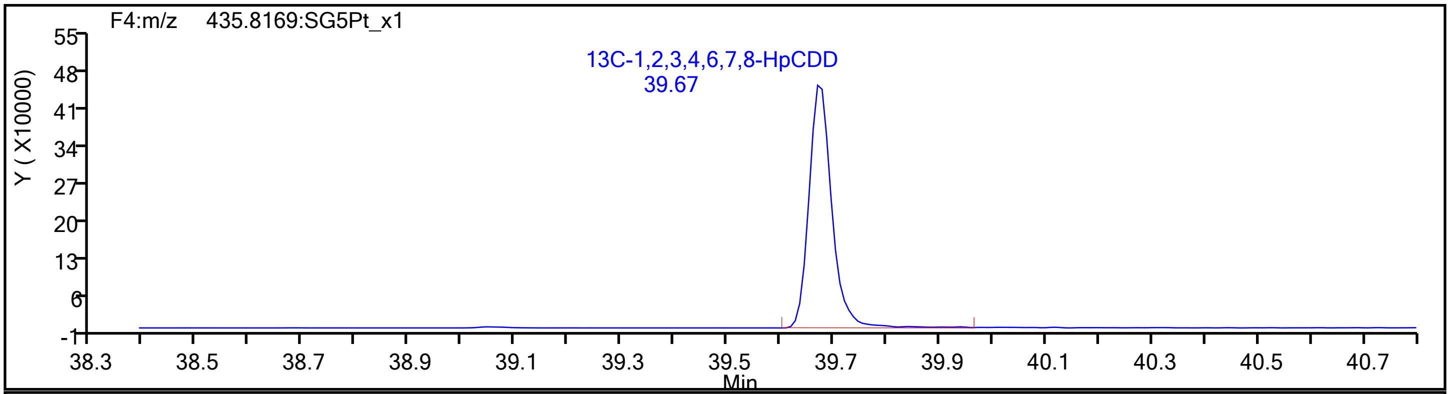

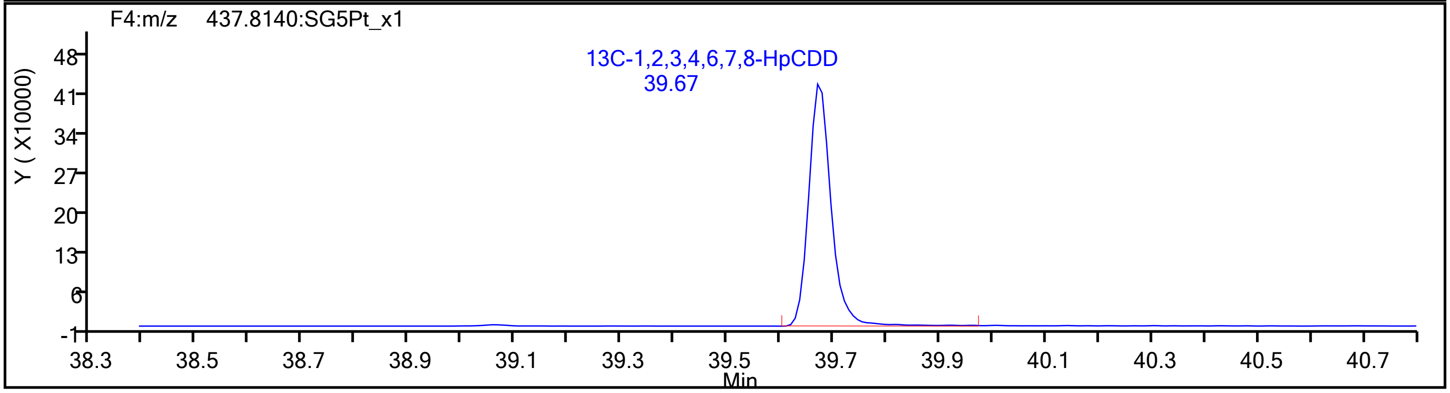

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Eurofins TestAmerica, Sacramento

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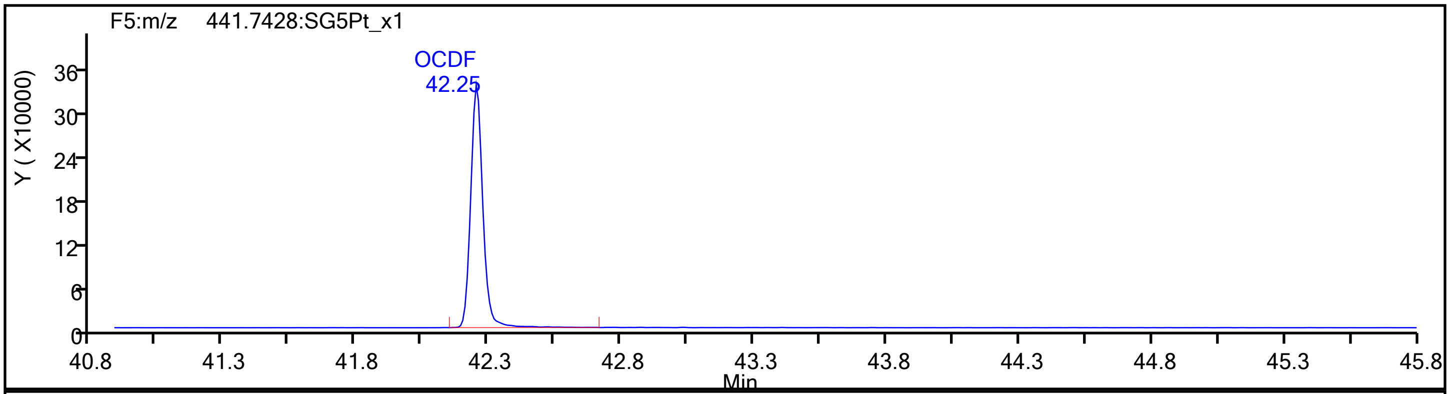

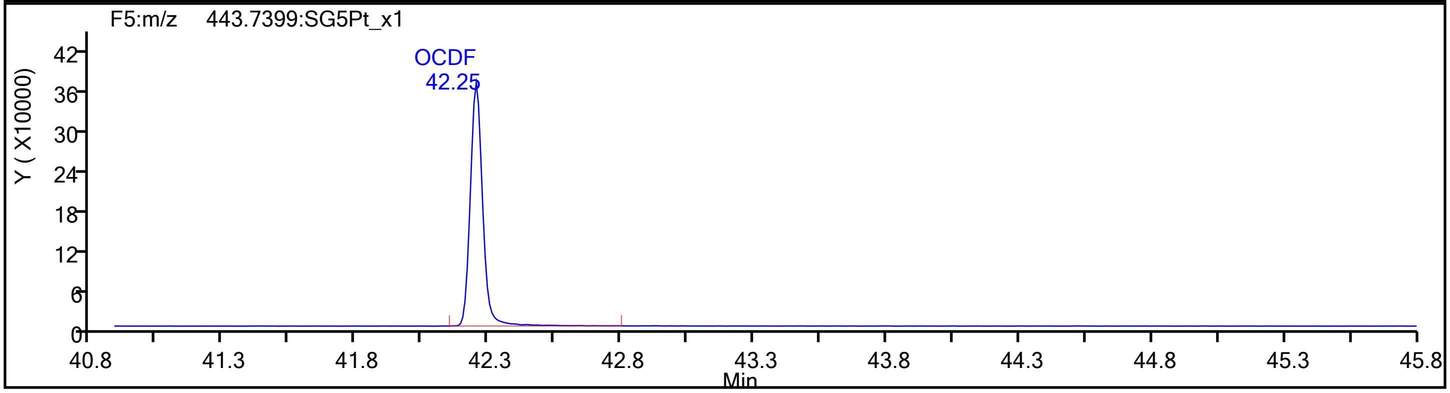

OCDF Standards

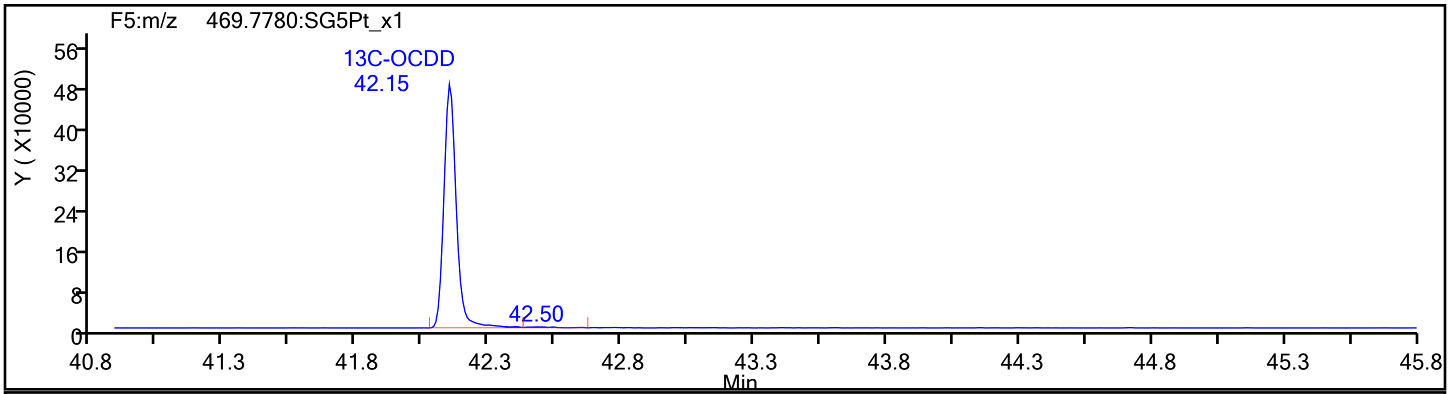

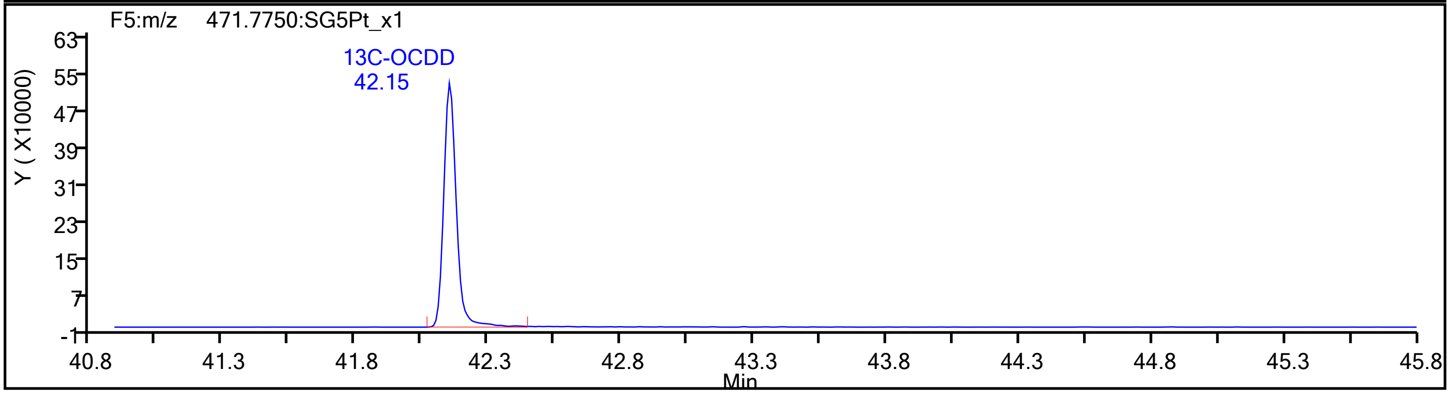

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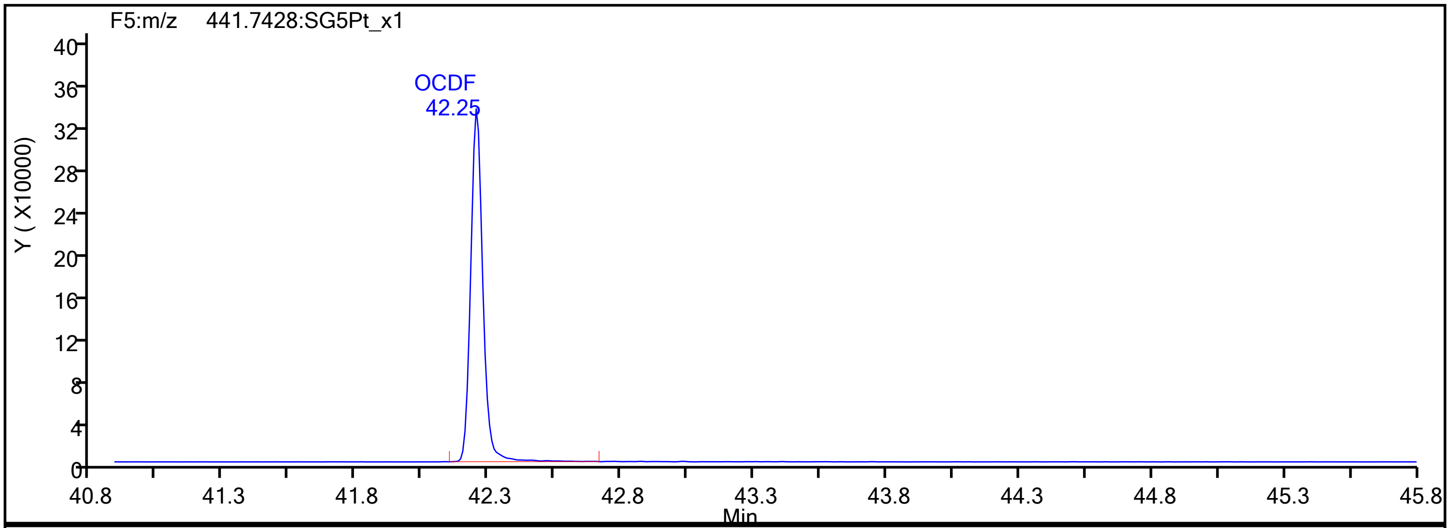

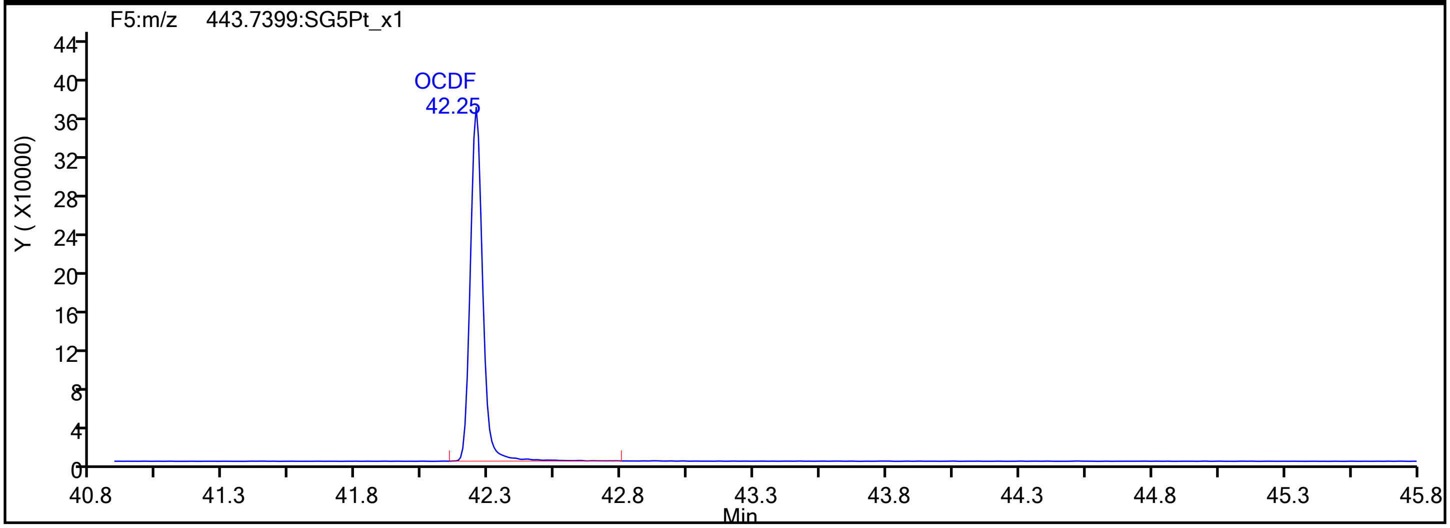

OCDF Interference Mass

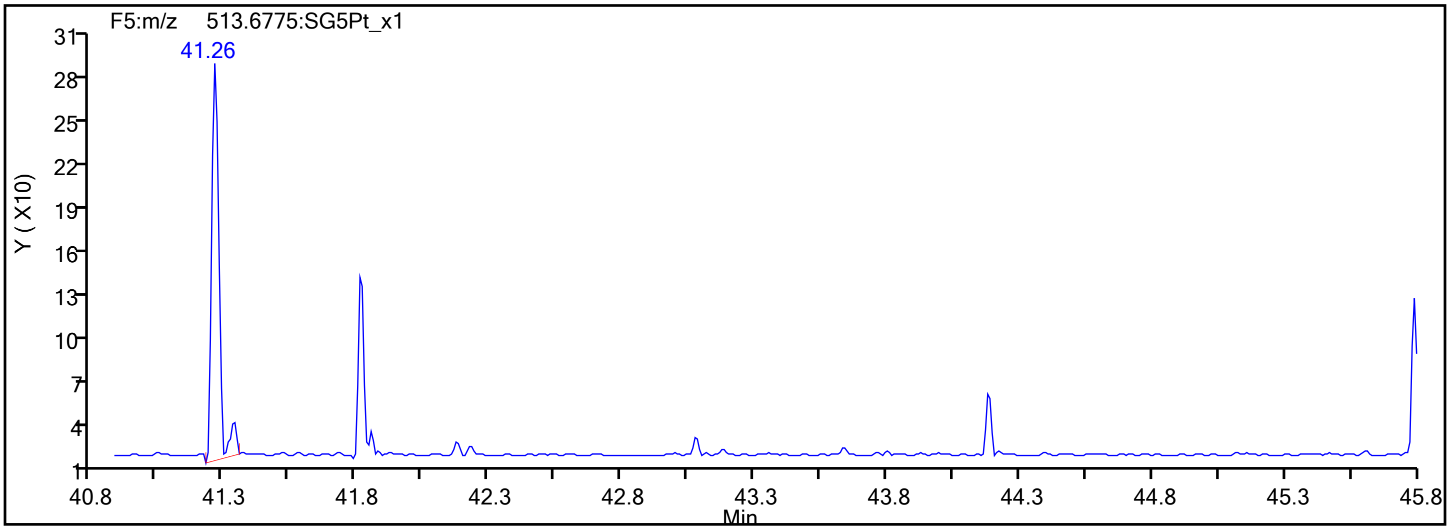

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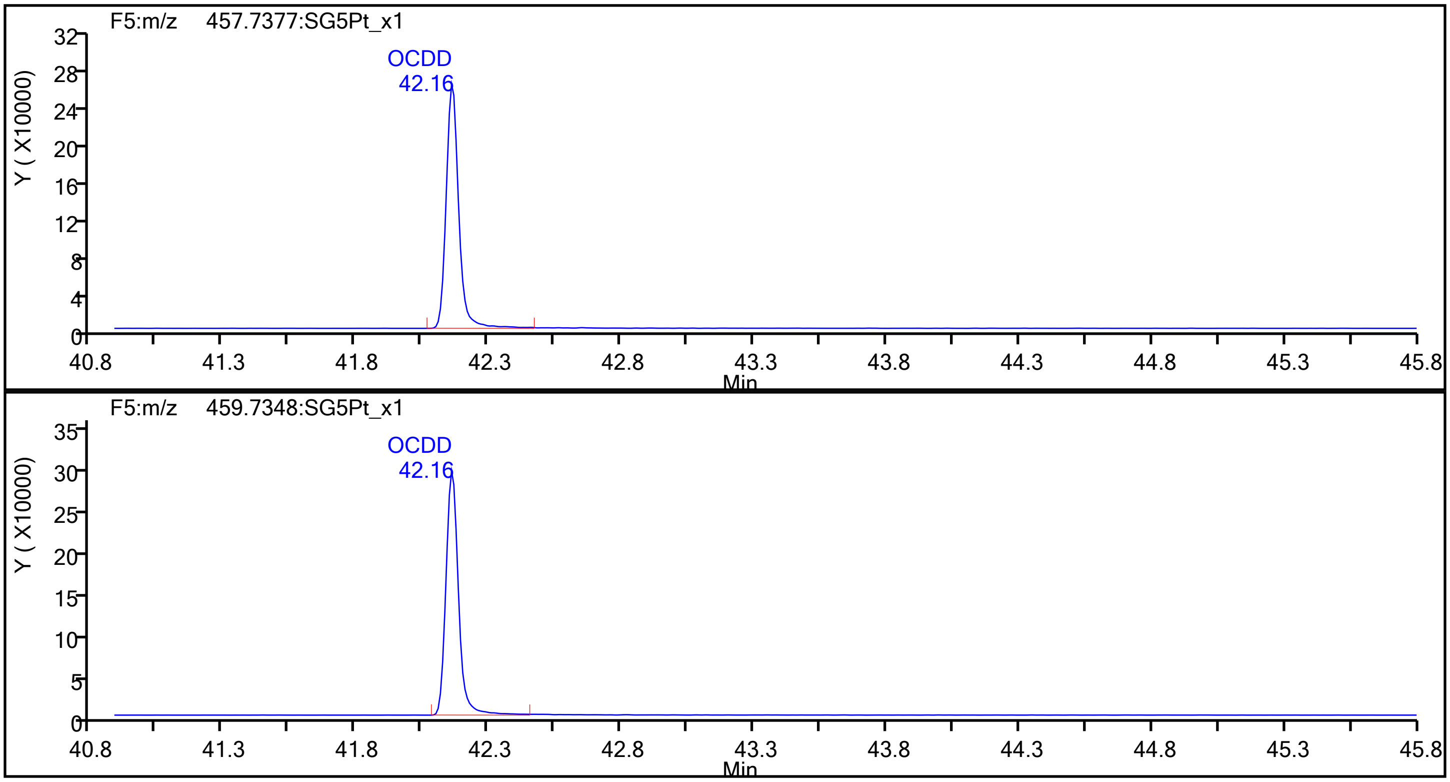

OCDD Standards

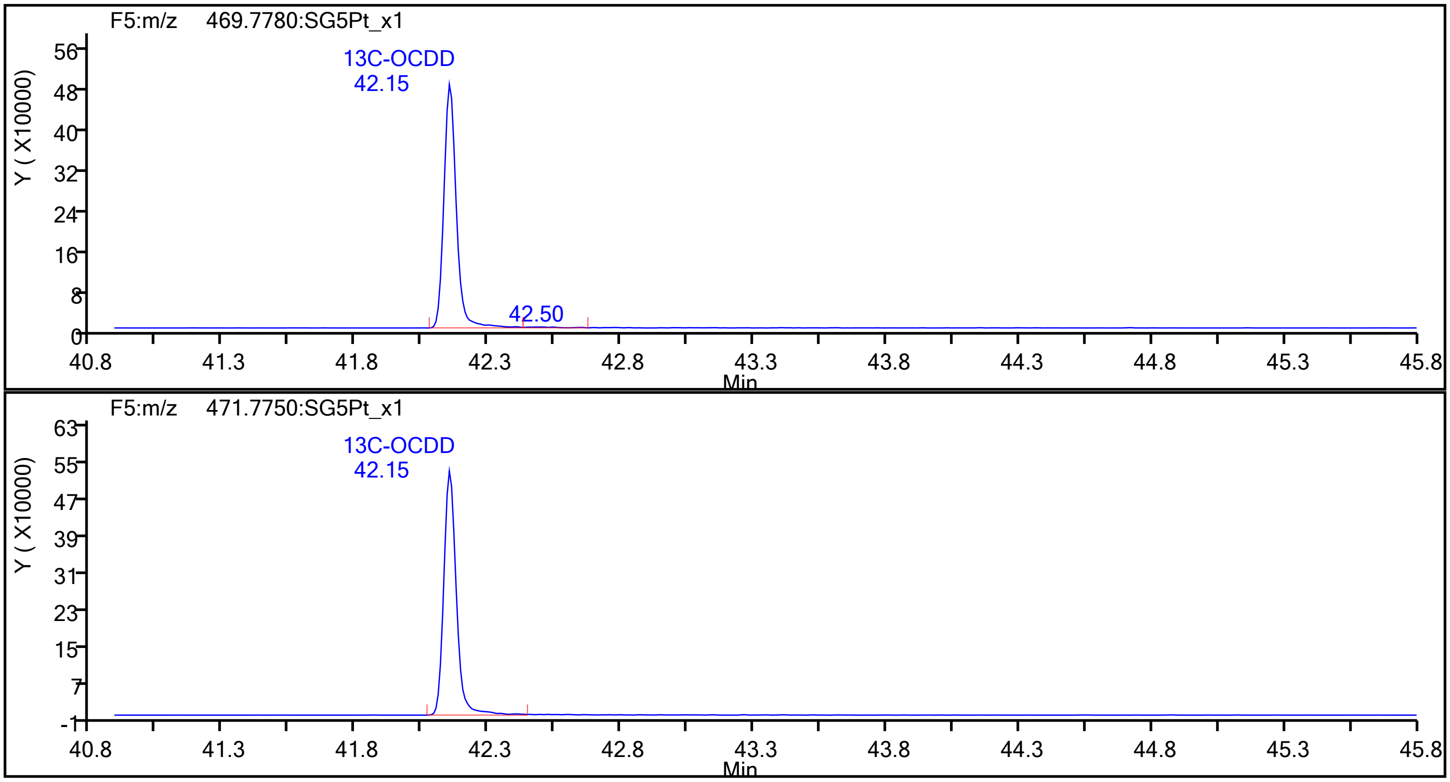

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Eurofins TestAmerica, Sacramento

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Column Type: DB-5
Column Dia: 0.32 mm

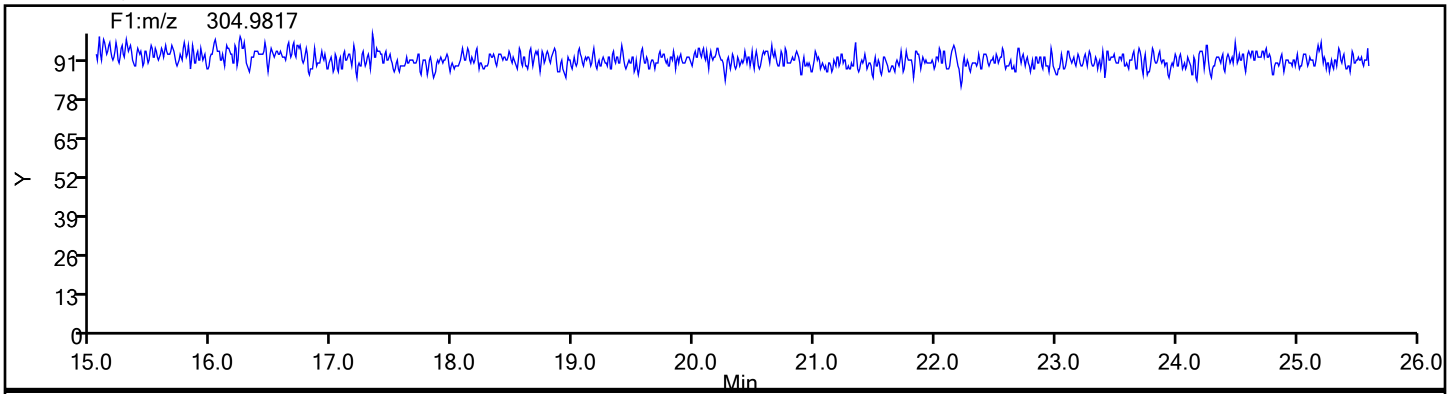

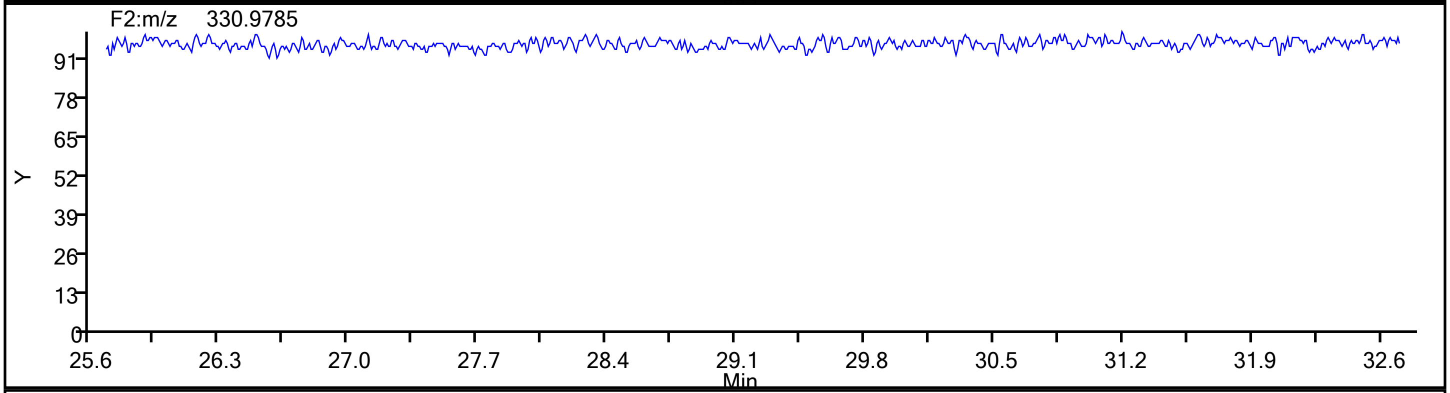

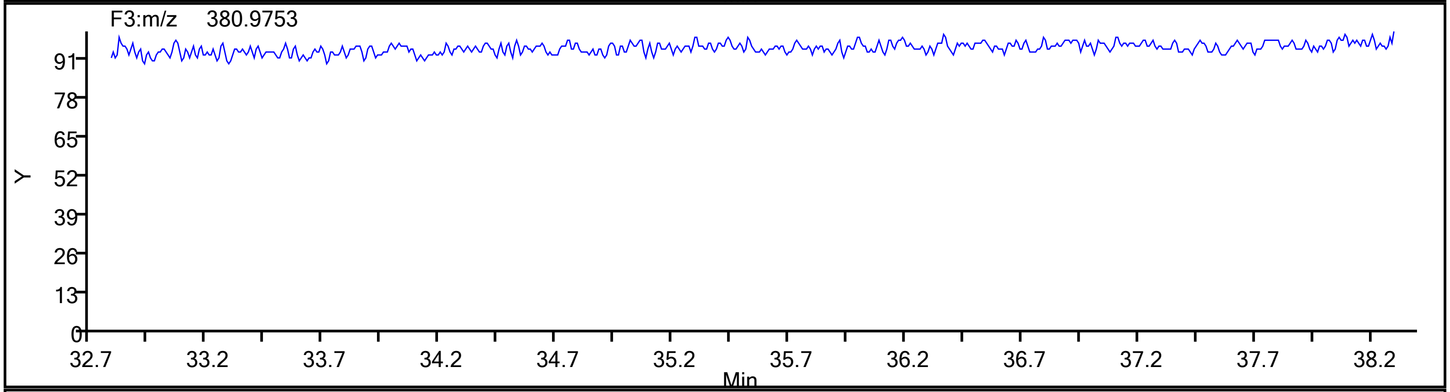

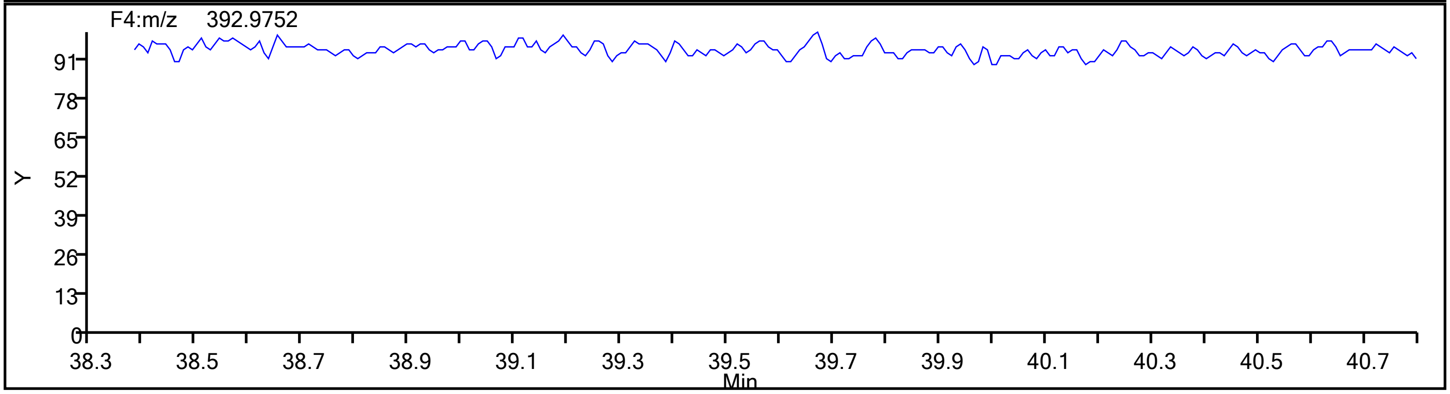

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_6.d
Injection Date: 17-Nov-2020 14:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

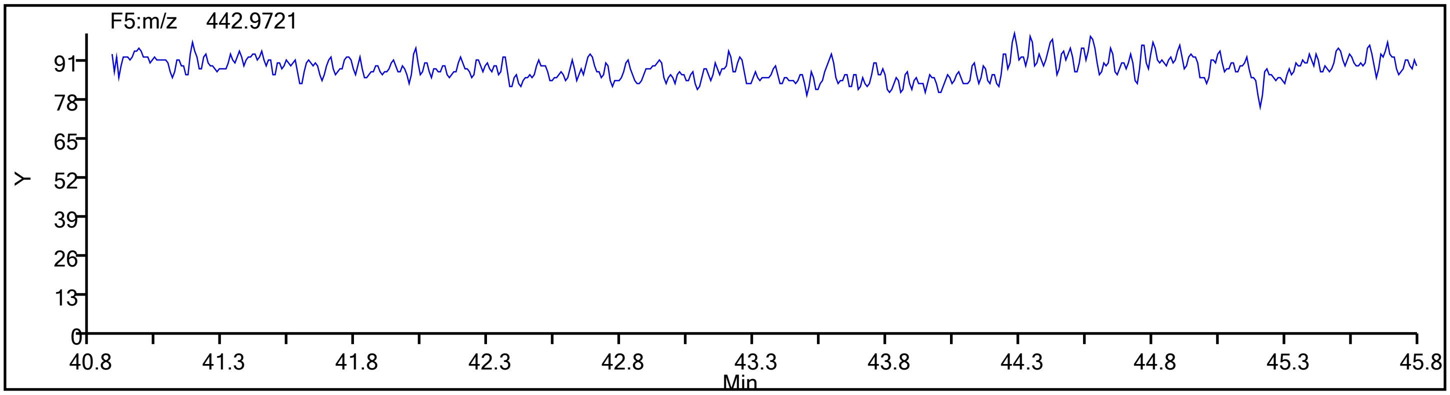

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Nov-2020 15:14:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:04 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 17-Nov-2020 16:17:25

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.788	4688160	0.80	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.792	8021729	0.80	1.6832	101.7	101.7	0.2236	0.2236	102	
2,3,7,8-TCDF	20.809	3500107	0.79	1.1547	37.8	37.8	0.0435	0.0435	94.47	
S Total TCDF					37.8	37.8	0.0435	0.0435		
D 13C-2,3,7,8-TCDD	22.191	5120726	0.82	1.0896	100.2	100.2	0.2142	0.2142	100	
2,3,7,8-TCDD	22.217	2241168	0.79	1.1659	37.5	37.5	0.0642	0.0642	93.85	
$ 37Cl4-2,3,7,8-TCDD	22.226	2123196		1.1445	39.6	39.6	0.0337	0.0337	98.92	
S Total TCDD					37.5	37.5	0.0642	0.0642		
D 13C-1,2,3,7,8-PeCDF	27.661	7025605	1.57	1.4604	102.6	102.6	0.4053	0.4053	103	
1,2,3,7,8-PeCDF	27.686	14564784	1.55	1.1322	183.1	183.1	0.6417	0.6417	91.55	
D 13C-2,3,4,7,8-PeCDF	29.219	6365852	1.58	1.3504	100.6	100.6	0.4383	0.4383	101	
2,3,4,7,8-PeCDF	29.244	14028593	1.57	1.1588	190.2	190.2	0.7615	0.7615	95.09	
S Total PeCDF					373.3	373.3	0.7016	0.7016		
D 13C-1,2,3,7,8-PeCDD	30.061	4205499	1.62	0.8729	102.8	102.8	0.1275	0.1275	103	
1,2,3,7,8-PeCDD	30.087	8794530	1.58	1.1191	186.9	186.9	0.1391	0.1391	93.43	
S Total PeCDD					186.9	186.9	0.1391	0.1391		
D 13C-1,2,3,4,7,8-HxCDF	35.189	5721063	0.53	1.2808	100.7	100.7	0.3434	0.3434	101	
1,2,3,4,7,8-HxCDF	35.214	14234353	1.25	1.3205	188.4	188.4	0.7027	0.7027	94.21	
D 13C-1,2,3,6,7,8-HxCDF	35.349	6718059	0.52	1.4615	103.7	103.7	0.3009	0.3009	104	
1,2,3,6,7,8-HxCDF	35.365	15812779	1.25	1.2682	185.6	185.6	0.6386	0.6386	92.80	
D 13C-2,3,4,6,7,8-HxCDF	36.132	6046028	0.54	1.3227	103.1	103.1	0.3325	0.3325	103	
2,3,4,6,7,8-HxCDF	36.149	14400763	1.24	1.2838	185.5	185.5	0.6077	0.6077	92.77	
D 13C-1,2,3,7,8,9-HxCDF	37.000	5094707	0.53	1.1062	103.9	103.9	0.3976	0.3976	104	
1,2,3,7,8,9-HxCDF	37.008	12258577	1.26	1.3063	184.2	184.2	0.6840	0.6840	92.10	
S Total HxCDF					743.8	743.8	0.6583	0.6583		
* 13C-1,2,3,7,8,9-HxCDD	36.797	4434003	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.334	3999855	1.29	0.8757	103.0	103.0	0.2236	0.2236	103	
1,2,3,4,7,8-HxCDD	36.343	8812547	1.25	1.1972	184.0	184.0	0.3390	0.3390	92.02	
D 13C-1,2,3,6,7,8-HxCDD	36.444	4810874	1.27	1.0651	101.9	101.9	0.1839	0.1839	102	
1,2,3,6,7,8-HxCDD	36.461	9736393	1.26	1.0695	189.2	189.2	0.3374	0.3374	94.62	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.814	9609067	1.25	1.1806	184.8	184.8	0.3236	0.3236	92.38	
S Total HxCDD					558.0	558.0	0.3333	0.3333		
D 13C-1,2,3,4,6,7,8-HpCDF	38.747	4395524	0.46	0.9521	104.1	104.1	0.4587	0.4587	104	
1,2,3,4,6,7,8-HpCDF	38.764	12400149	1.04	1.5618	180.6	180.6	0.6755	0.6755	90.31	
D 13C-1,2,3,4,7,8,9-HpCDF	39.977	3517248	0.45	0.7782	101.9	101.9	0.5612	0.5612	102	
1,2,3,4,7,8,9-HpCDF	39.986	9811769	1.05	1.4975	186.3	186.3	0.7909	0.7909	93.14	
S Total HpCDF					366.9	366.9	0.7332	0.7332		
D 13C-1,2,3,4,6,7,8-HpCDD	39.674	3814878	1.07	0.8393	102.5	102.5	0.2960	0.2960	103	
1,2,3,4,6,7,8-HpCDD	39.682	7854304	1.05	1.1079	185.8	185.8	0.3808	0.3808	92.91	
S Total HpCDD					185.8	185.8	0.3808	0.3808		
D 13C-OCDD	42.153	4963784	0.91	0.5301	211.2	211.2	0.2760	0.2760	106	
OCDF	42.254	13966649	0.91	1.4802	380.2	380.2	0.3603	0.3603	95.05	
OCDD	42.162	10594948	0.90	1.1666	365.9	365.9	0.3665	0.3665	91.48	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:15   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 5
Inject. Date: 17-Nov-2020 15:14:00   ALS Bottle#: 0   Worklist Smp#: 6
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:04   Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk   Date: 17-Nov-2020 16:17:25

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.788	21.818	-2		2082554	295213	408	1020	724		a
333.9338	21.796	21.818	-1		2605606	365422	209	522	1748	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.792	20.808	-1	0.954	3561785	529058	590	1475	897		
317.9389	20.792	20.808	-1	0.954	4459944	650726	405	1012	1607	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.809	20.834	-1	1.001	1546632	224633	88	220	2553		
305.8987	20.809	20.834	-1	1.001	1953475	282201	149	372	1894	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.191	22.213	-1	1.019	2302530	298080	408	1020	731		
333.9338	22.191	22.213	-1	1.019	2818196	377109	209	522	1804	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.217	22.239	-1	1.001	988936	131728	117	292	1126		
321.8936	22.226	22.239	-1	1.002	1252232	167392	85	212	1969	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.226	22.241	-1	1.020	2123196	284845	102	255	2793		
13C-1,2,3,7,8-PeCDF											
351.9000	27.661	27.677	-1	1.270	4293603	681092	948	2370	718		
353.8970	27.661	27.677	-1	1.270	2732002	431926	616	1540	701	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.686	27.702	-1	1.001	8845803	1379922	1962	4905	703		
341.8567	27.686	27.702	-1	1.001	5718981	890732	1273	3182	700	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.219	29.235	-1	1.341	3897630	556892	948	2370	587		
353.8970	29.227	29.235	0	1.341	2468222	359600	616	1540	584	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.244	29.262	-1	1.001	8568433	1228129	1962	4905	626		
341.8567	29.244	29.262	-1	1.001	5460160	793018	1273	3182	623	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.061	30.073	-1	1.380	2599993	352624	152	380	2320		
369.8919	30.061	30.073	-1	1.380	1605506	222536	142	355	1567	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.087	30.100	-1	1.001	5379226	749959	234	585	3205		
357.8516	30.087	30.100	-1	1.001	3415304	478996	124	310	3863	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.189	35.202	-1	0.956	1988709	451324	728	1820	620		
385.8610	35.197	35.202	0	0.957	3732354	862525	1379	3447	625	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.214	35.219	0	1.001	7902200	1812461	2734	6835	663		
375.8178	35.214	35.219	0	1.001	6332153	1460404	2143	5357	681	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.349	35.361	-1	0.961	2308755	517320	728	1820	711		
385.8610	35.349	35.361	-1	0.961	4409304	988259	1379	3447	717	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.365	35.376	-1	1.000	8794569	1925080	2734	6835	704		
375.8178	35.365	35.376	-1	1.000	7018210	1531863	2143	5357	715	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.132	36.142	-1	0.982	2109961	544356	728	1820	748		
385.8610	36.132	36.142	-1	0.982	3936067	1018449	1379	3447	739	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.149	36.158	-1	1.000	7959077	1978076	2734	6835	724		
375.8178	36.149	36.158	-1	1.000	6441686	1601859	2143	5357	747	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.000	37.005	0	1.005	1774834	475595	728	1820	653		
385.8610	37.000	37.005	0	1.005	3319873	888914	1379	3447	645	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.008	37.019	-1	1.000	6822485	1841445	2734	6835	674		
375.8178	37.008	37.019	-1	1.000	5436092	1467279	2143	5357	685	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.797	36.808	-1		2492138	673939	505	1262	1335		
403.8529	36.797	36.808	-1		1941865	523607	433	1082	1209	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.334	36.340	0	0.987	2252142	613545	505	1262	1215		
403.8529	36.334	36.340	0	0.987	1747713	479811	433	1082	1108	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.343	36.355	-1	1.000	4902081	1324899	989	2472	1340		
391.8127	36.343	36.355	-1	1.000	3910466	1077677	786	1965	1371	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.444	36.454	-1	0.990	2694401	688973	505	1262	1364		
403.8529	36.452	36.454	0	0.991	2116473	540607	433	1082	1249	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.461	36.468	0	1.000	5436051	1385203	989	2472	1401		
391.8127	36.461	36.468	0	1.000	4300342	1099278	786	1965	1399	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.814	36.821	0	1.013	5337111	1414966	989	2472	1431		
391.8127	36.814	36.821	0	1.013	4271956	1130375	786	1965	1438	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.747	38.755	0	1.053	1385487	437616	693	1732	631		
419.8220	38.747	38.755	0	1.053	3010037	957376	1399	3497	684	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.764	38.769	0	1.000	6319814	1970833	3025	7562	652		
409.7788	38.756	38.769	-1	1.000	6080335	1885569	2862	7155	659	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.977	39.984	0	1.086	1097127	383348	693	1732	553		
419.8220	39.977	39.984	0	1.086	2420121	859241	1399	3497	614	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.986	39.994	0	1.000	5025736	1741972	3025	7562	576		
409.7788	39.986	39.994	0	1.000	4786033	1651078	2862	7155	577	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.674	39.679	0	1.078	1971412	681267	632	1580	1078		
437.8140	39.674	39.679	0	1.078	1843466	628716	558	1395	1127	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.682	39.689	0	1.000	4028321	1372028	1157	2892	1186		
425.7737	39.682	39.689	0	1.000	3825983	1296217	1054	2635	1230	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.153	42.157	0	1.146	2367654	723843	382	955	1895		
471.7750	42.153	42.157	0	1.146	2596130	789437	319	797	2475	0.91(0.76-1.02)	
OCDF											
441.7428	42.254	42.260	0	1.002	6658396	1998013	764	1910	2615		
443.7399	42.254	42.260	0	1.002	7308253	2171772	850	2125	2555	0.91(0.76-1.02)	
OCDD											
457.7377	42.162	42.167	0	1.000	5025901	1544750	622	1555	2484		
459.7348	42.162	42.167	0	1.000	5569047	1701284	672	1680	2532	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Injection Date: 17-Nov-2020 15:14:00
Instrument ID: DFS 1
Lims ID: IC
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.82

Processing Integration Results

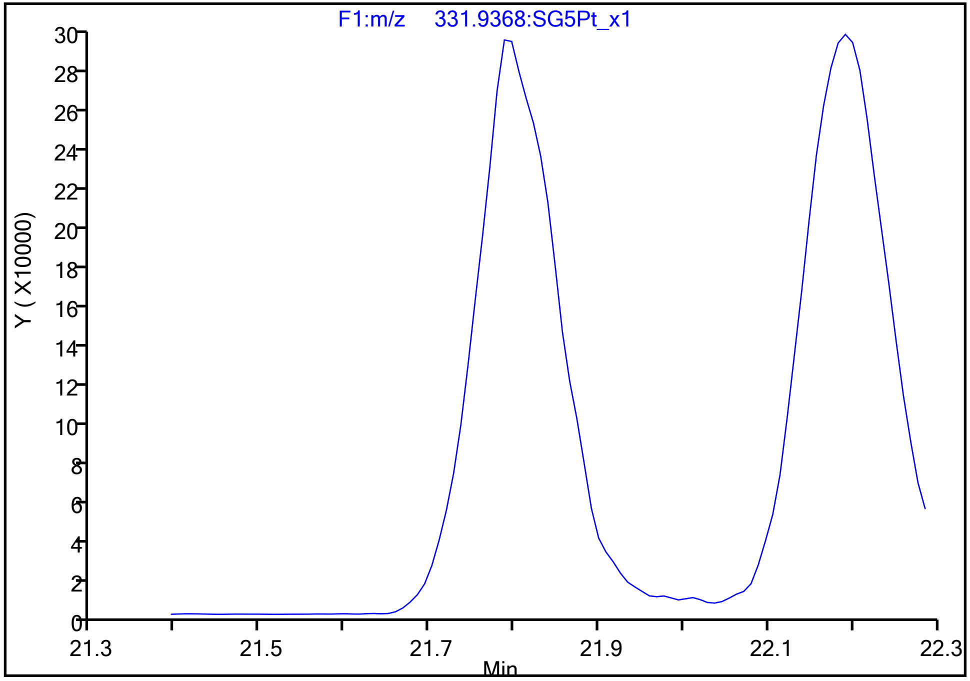

RT: 21.79
Area: 2082554
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

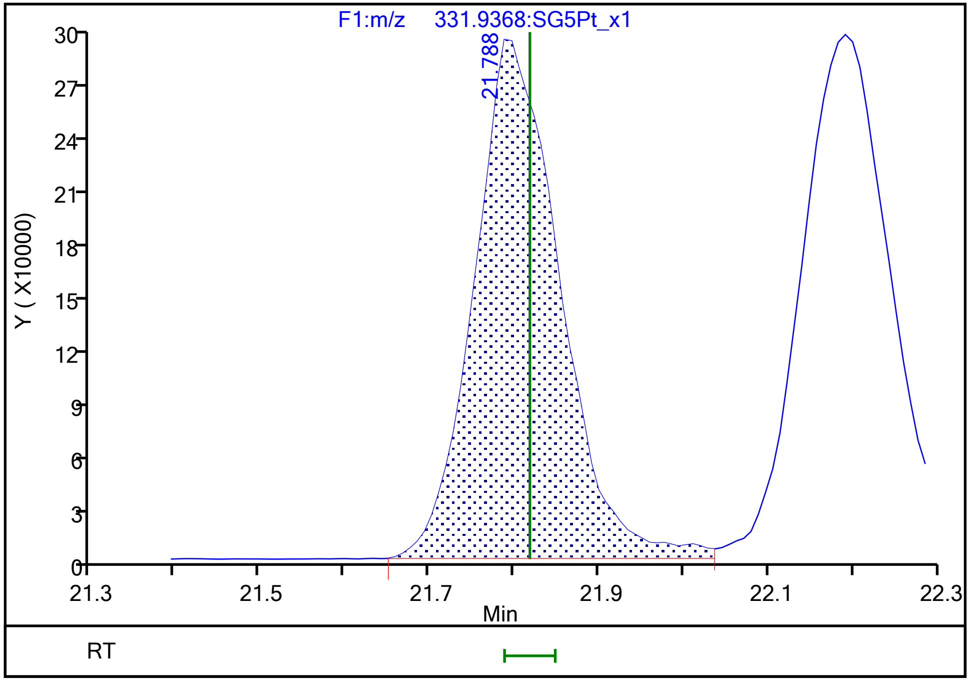

Reviewer: stephensk, 17-Nov-2020 16:09:26

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

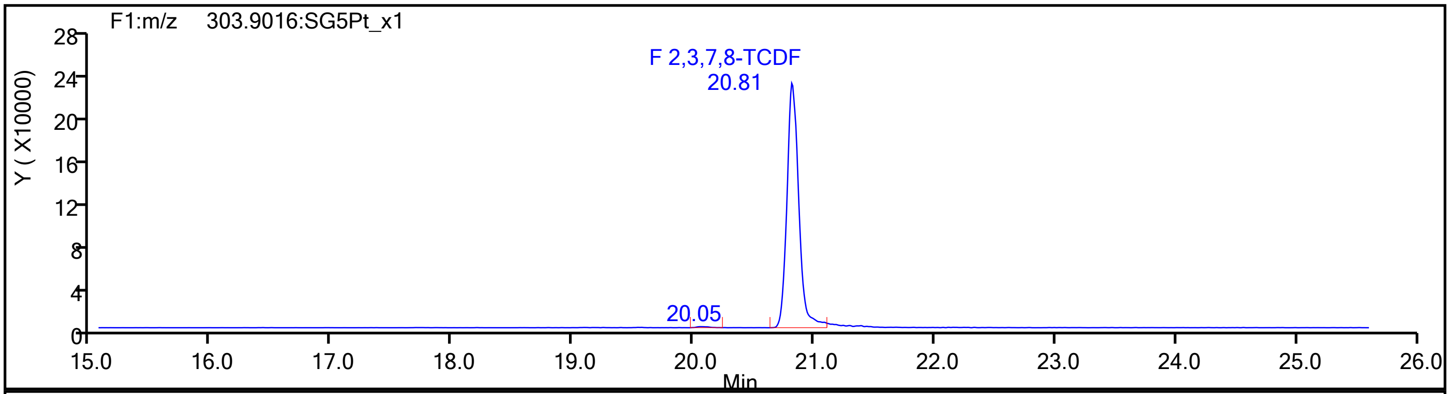

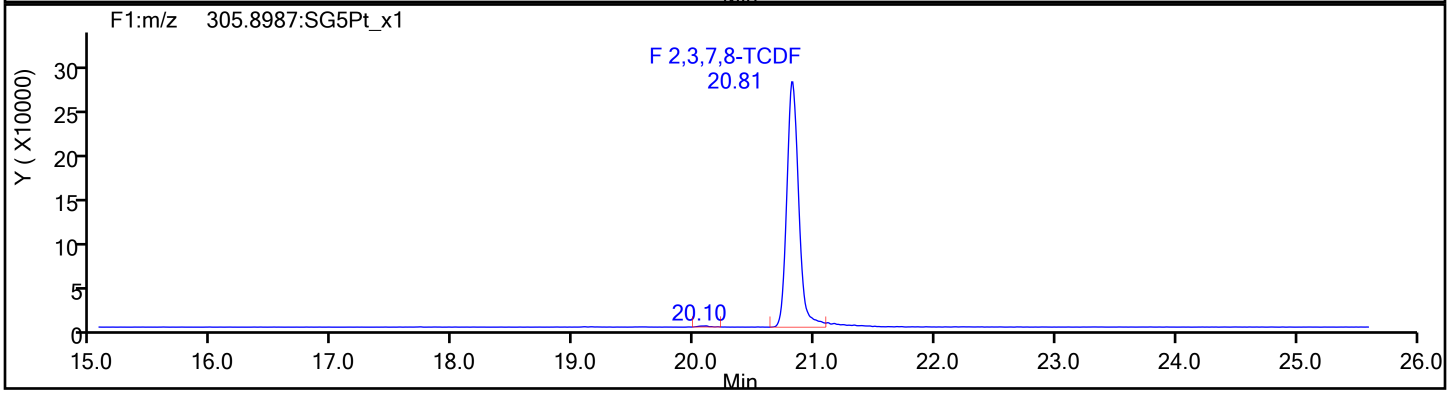

TCDF Standards

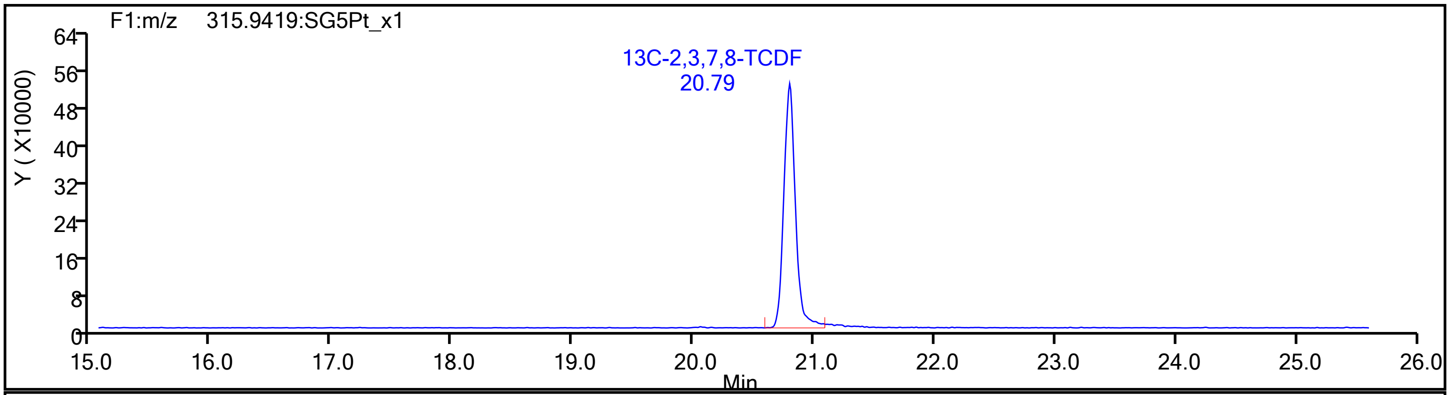

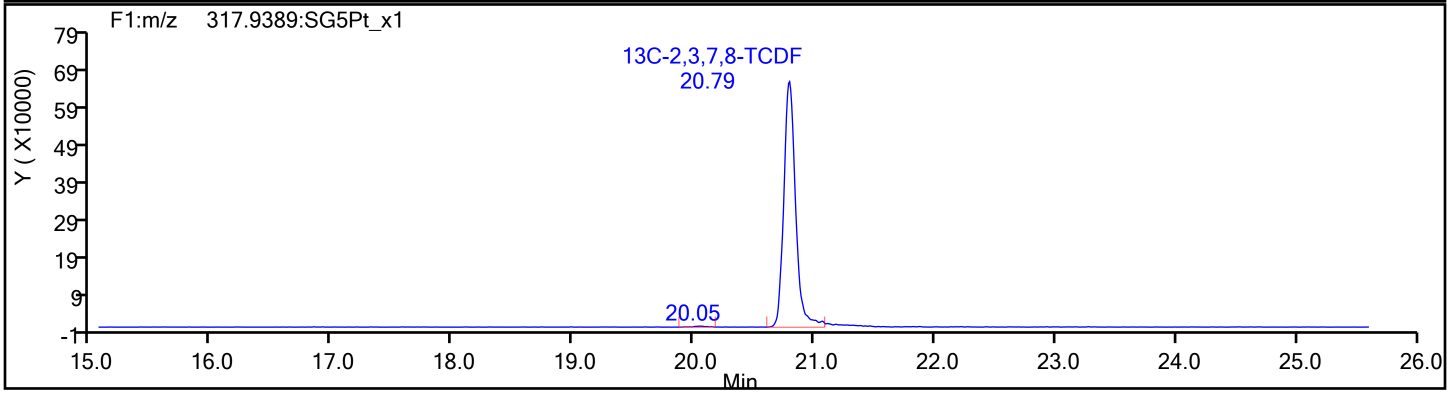

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

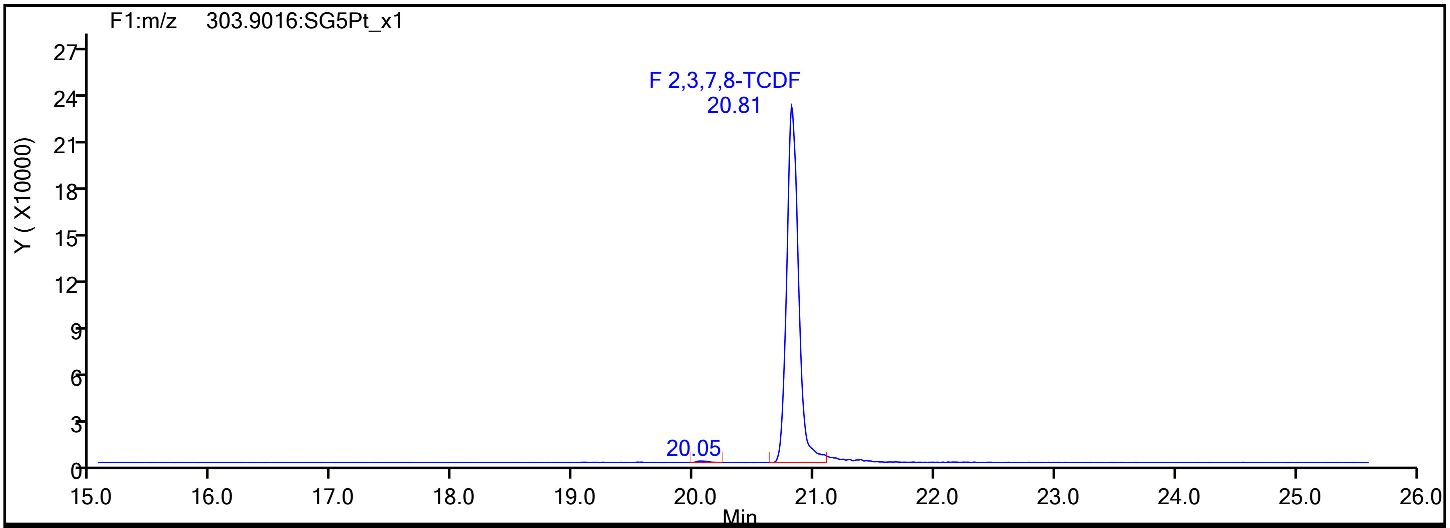

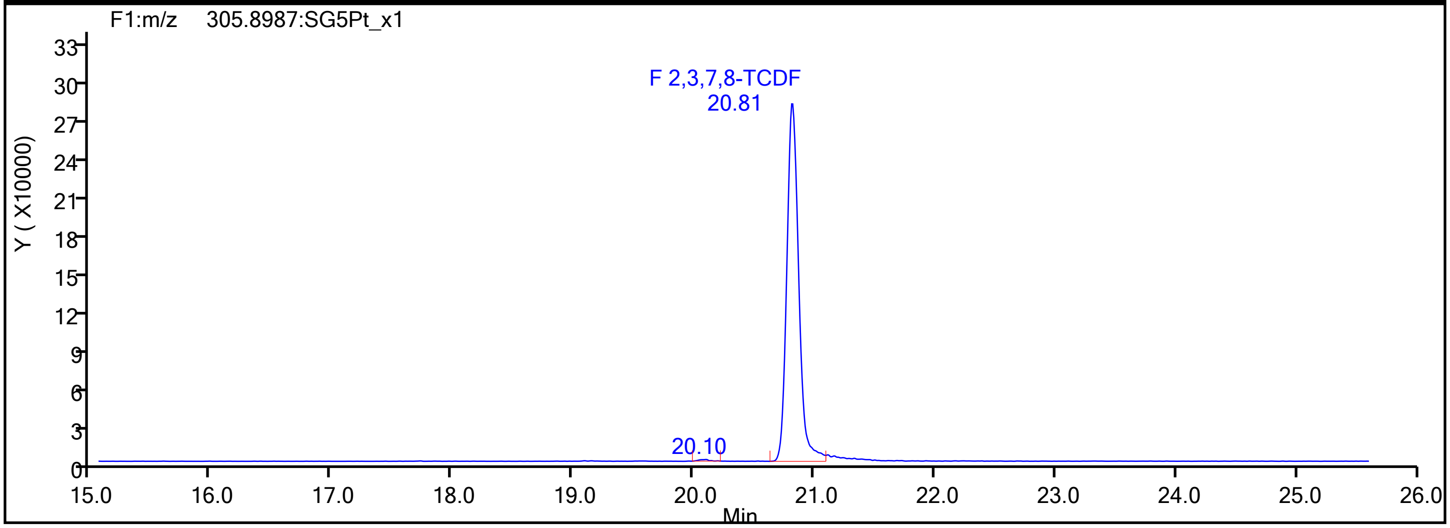

TCDF Interference Mass

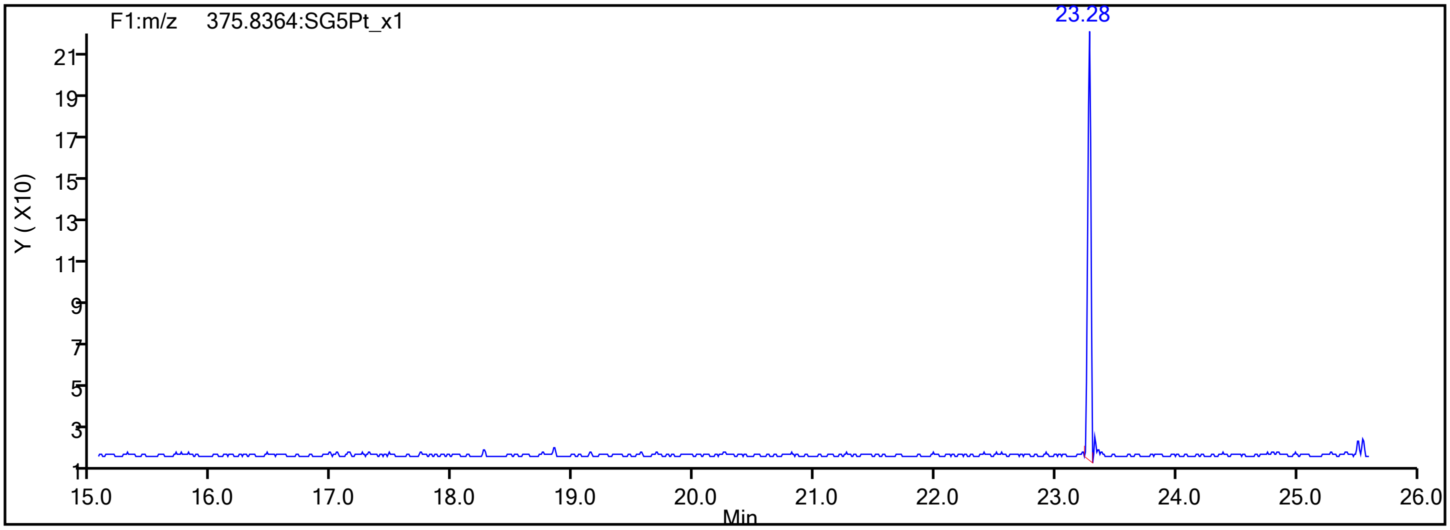

Report Date: 18-Nov-2020 12:35:15
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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TCDD

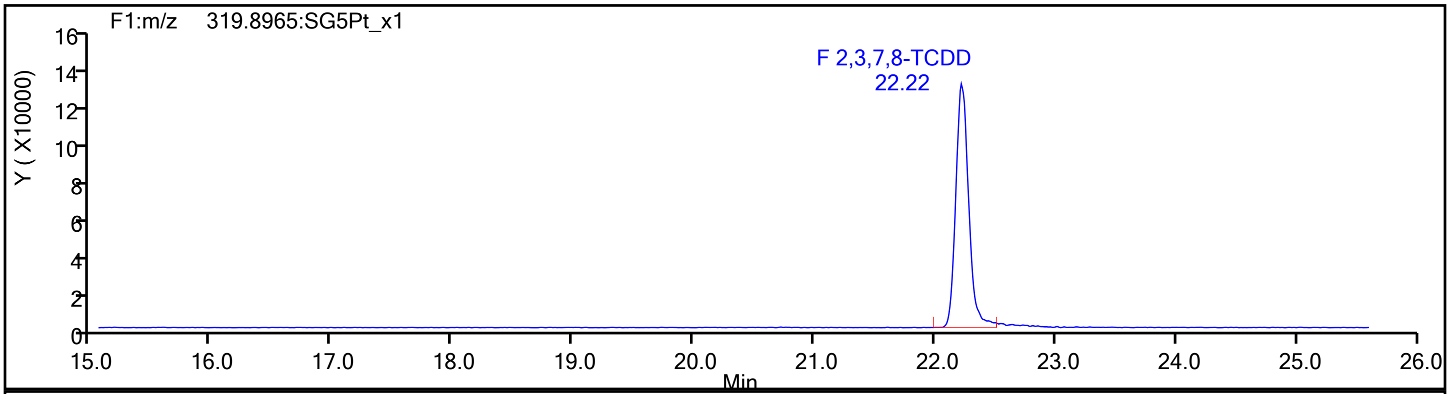

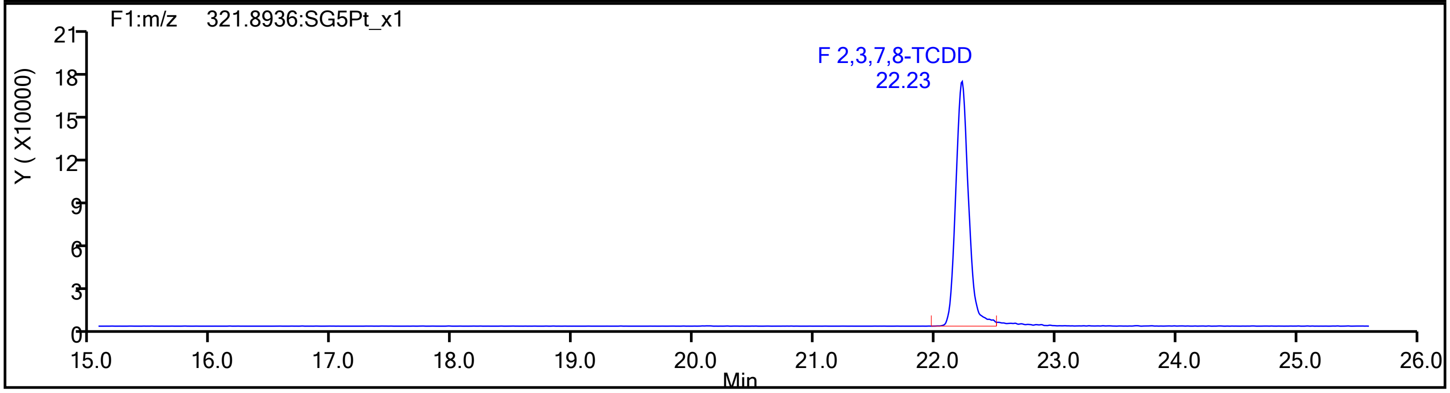

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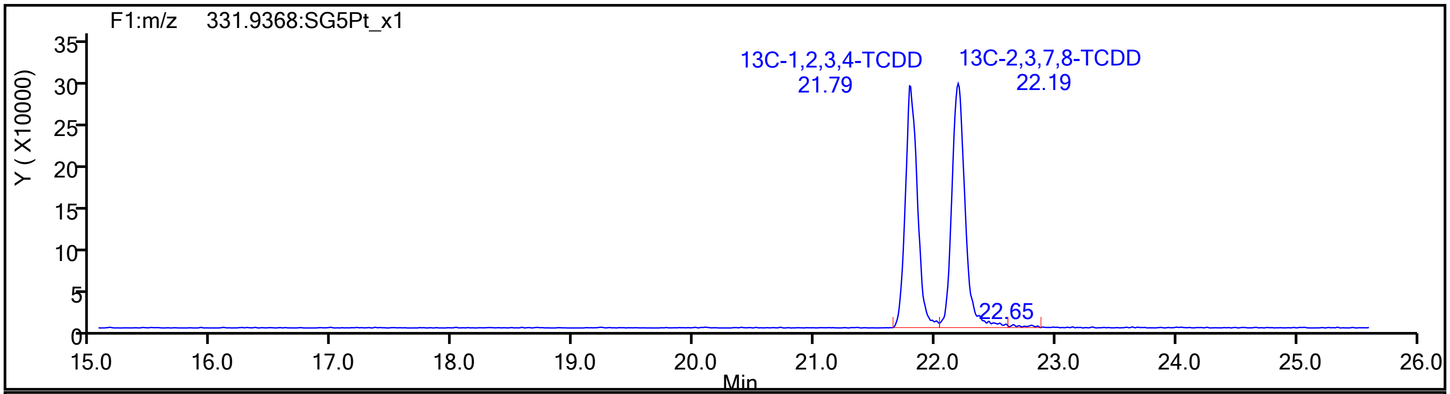

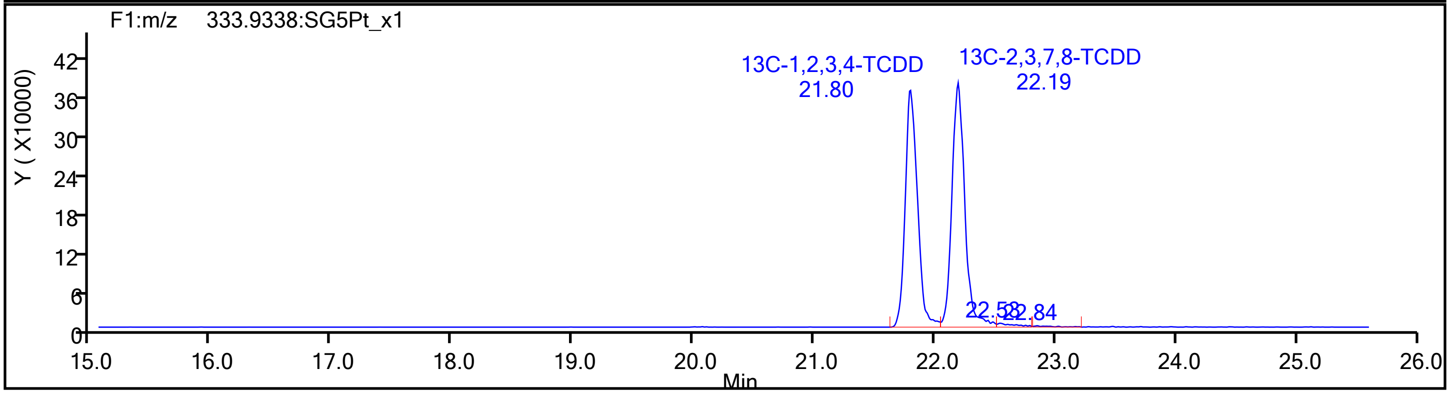

Report Date: 18-Nov-2020 12:35:15 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

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Client ID:

Worklist#: 432585

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

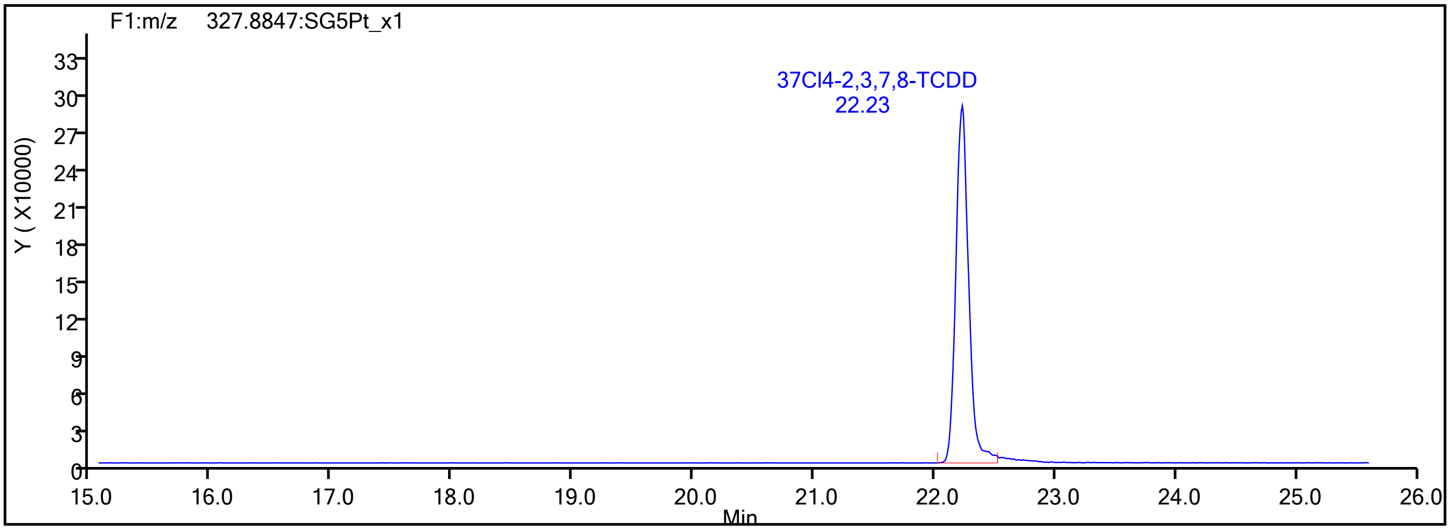

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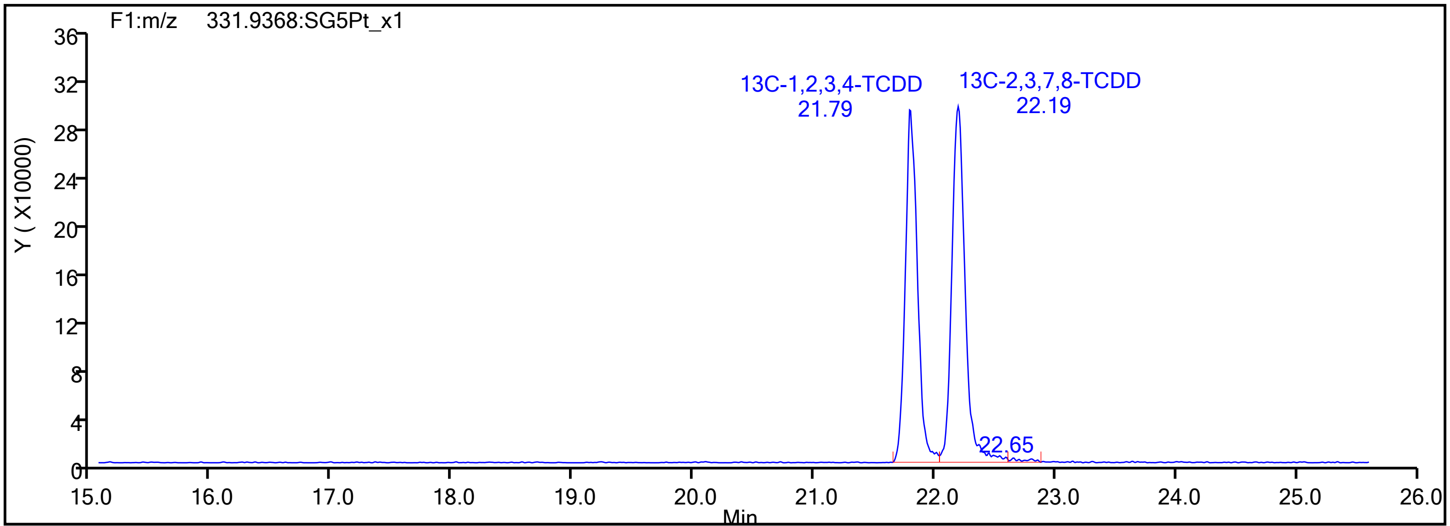

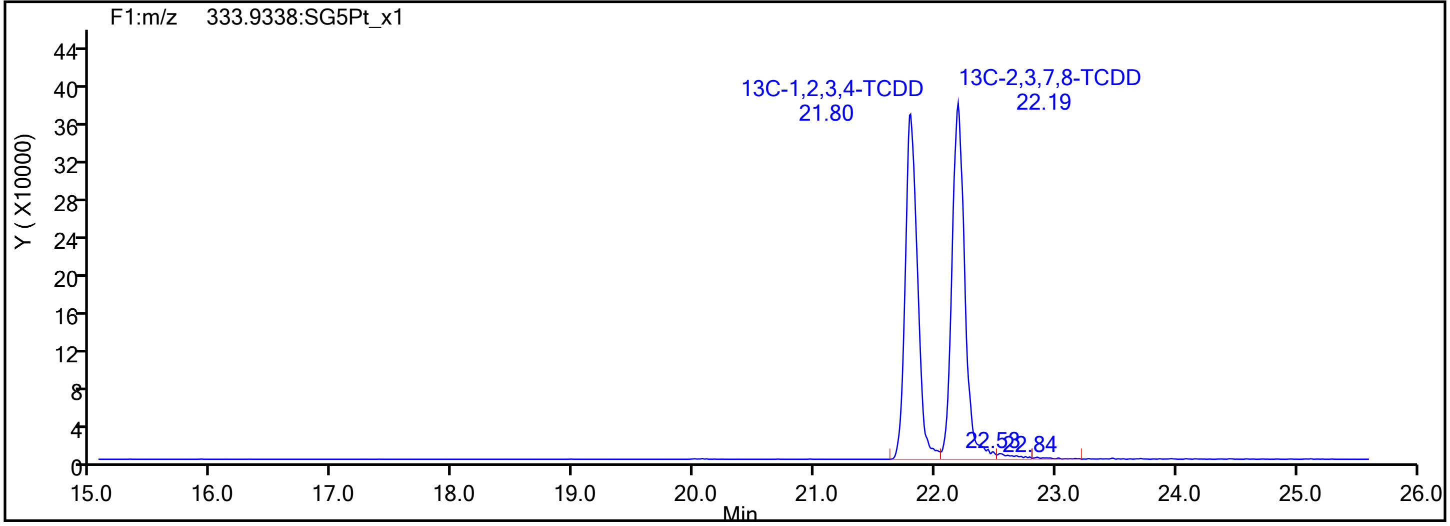

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

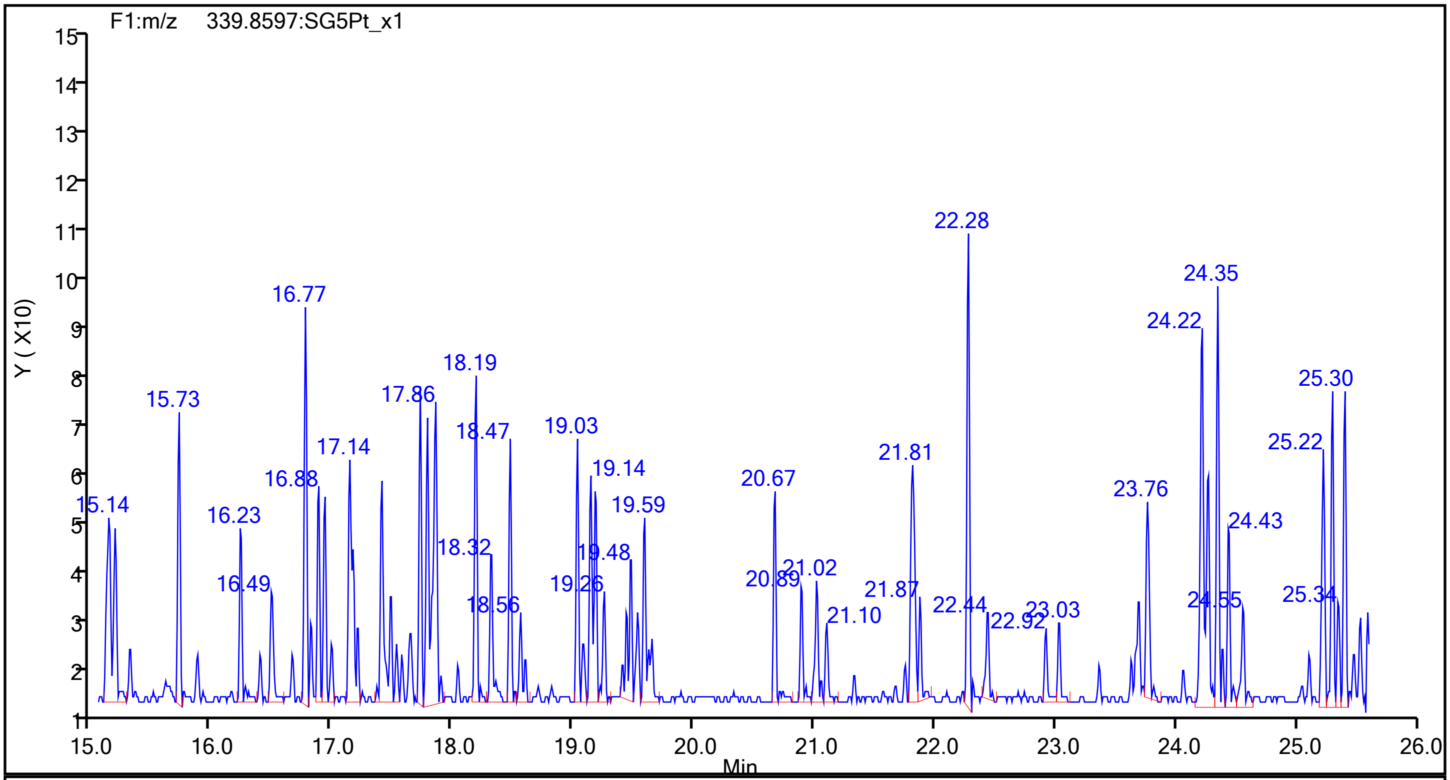

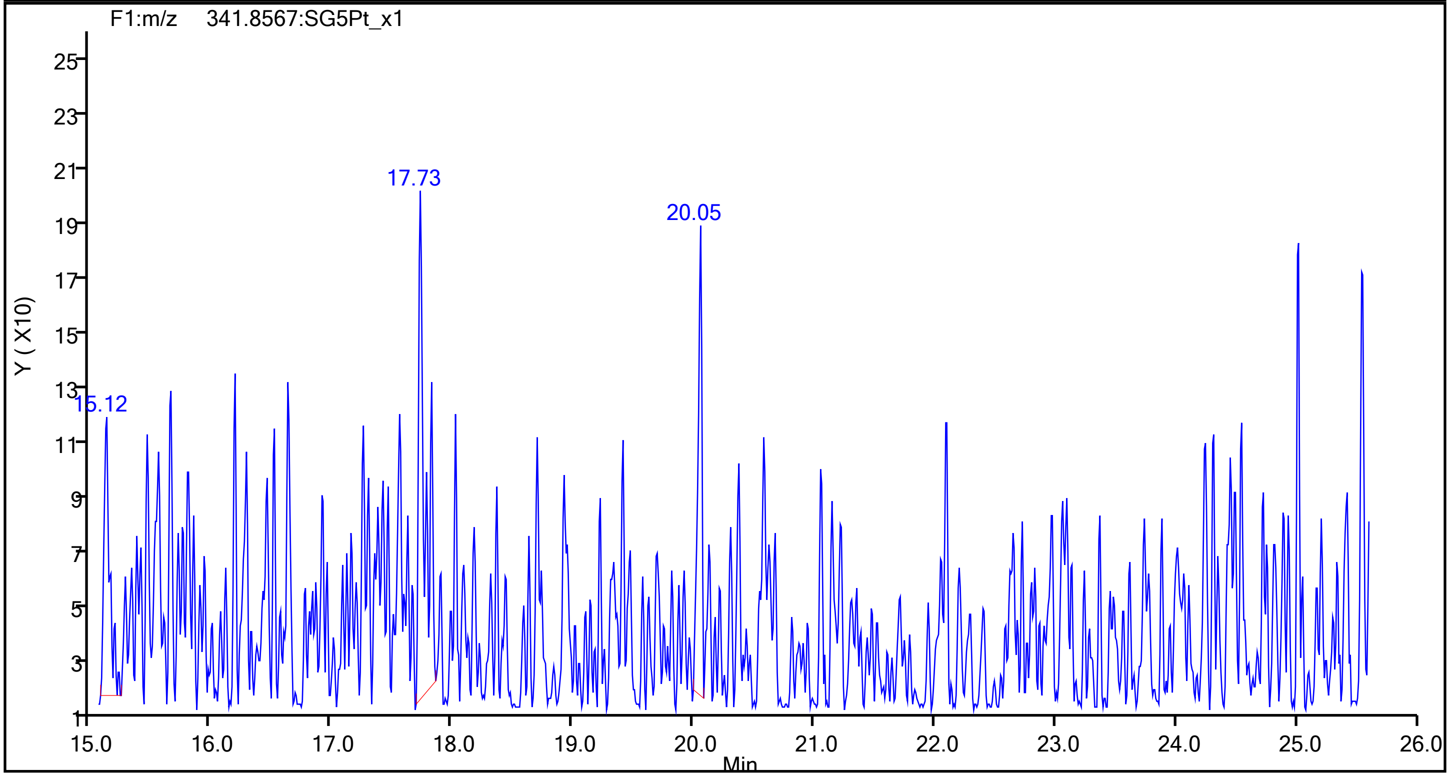

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

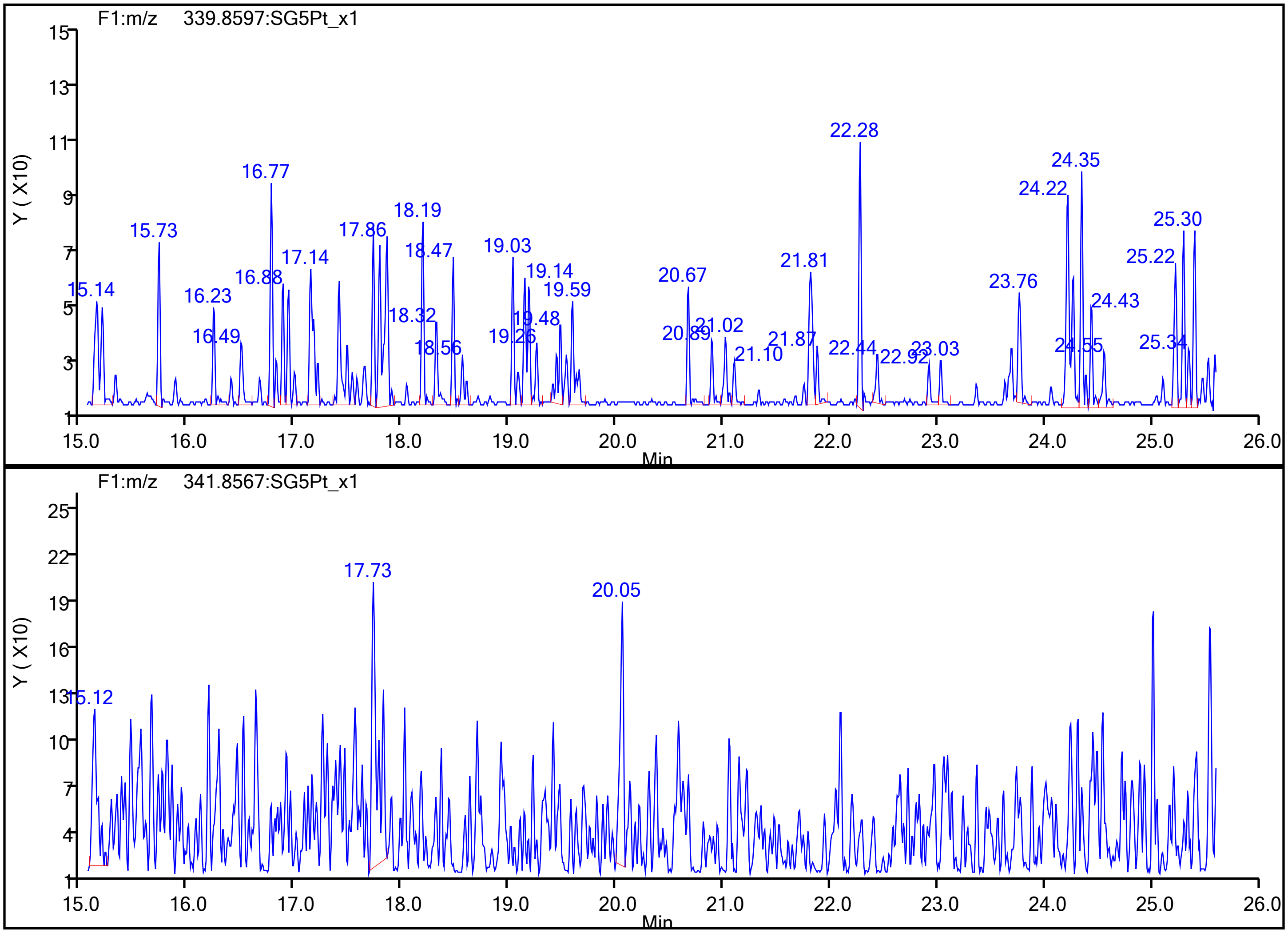

F1 PeCDFs Interference Mass

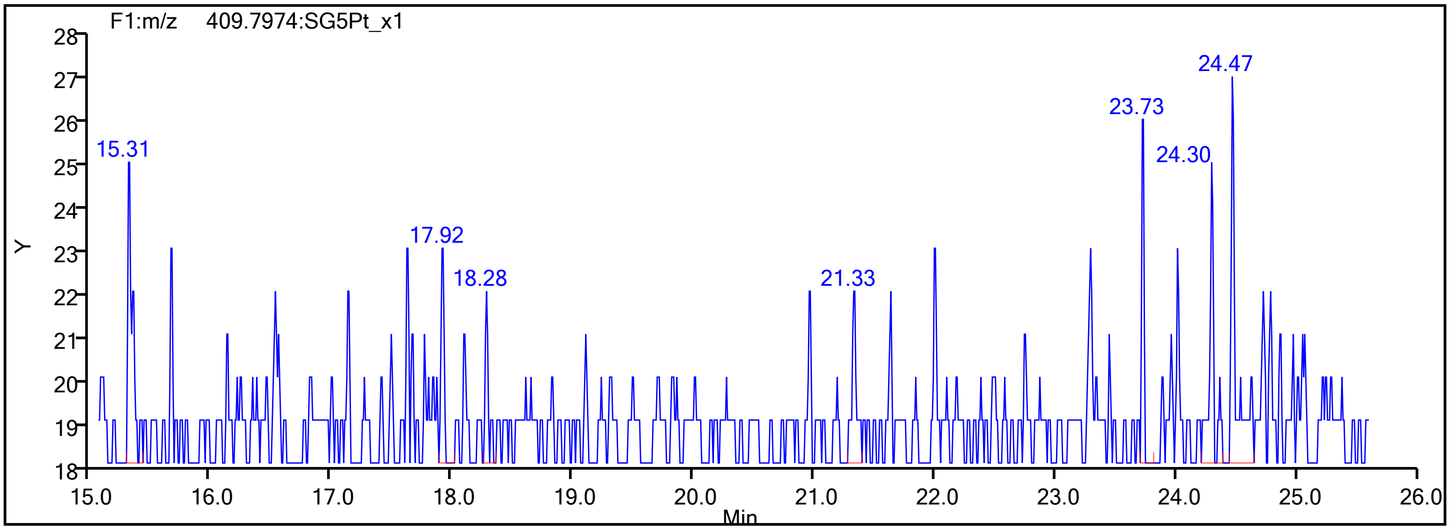

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Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDF

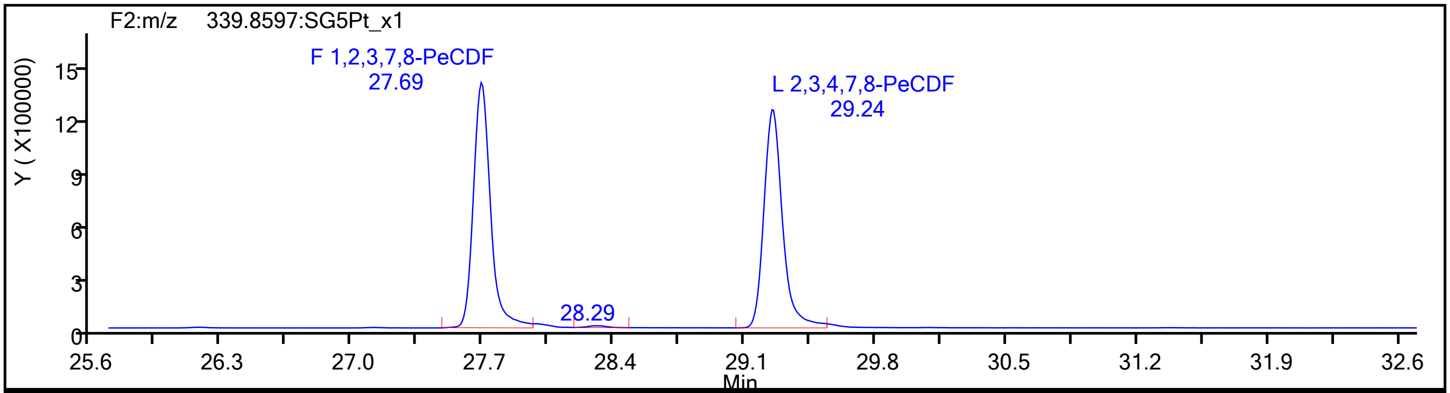

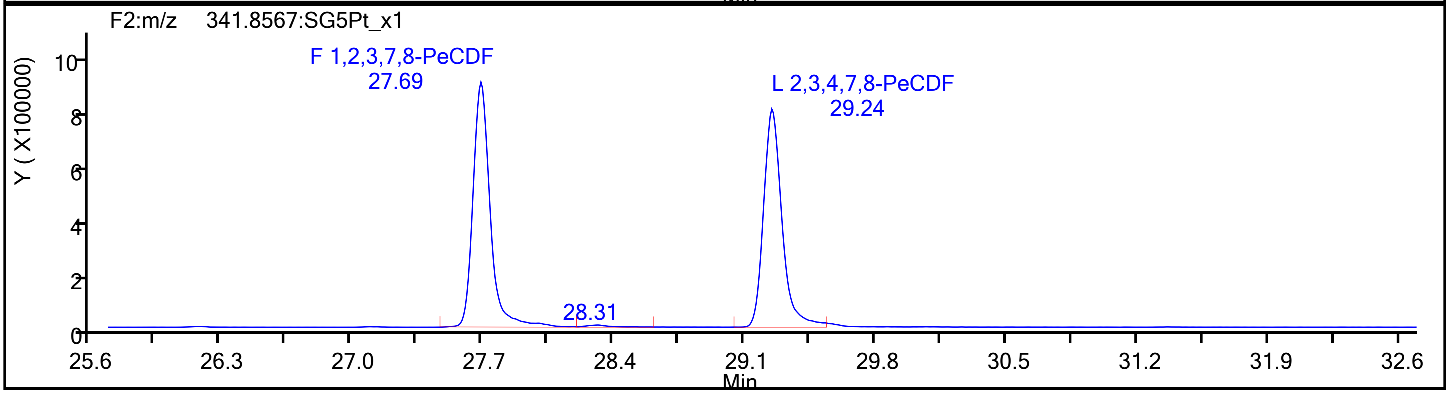

PeCDF Standards

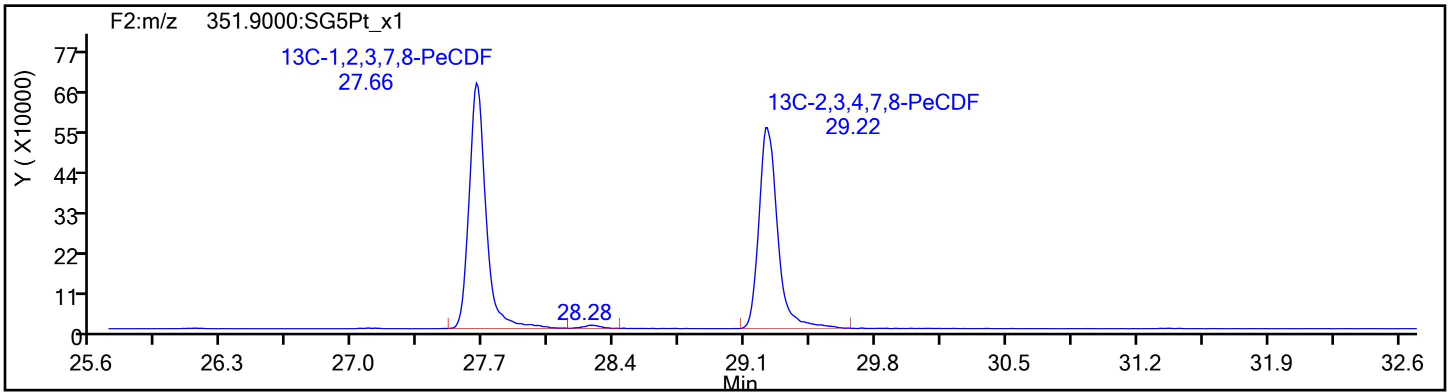

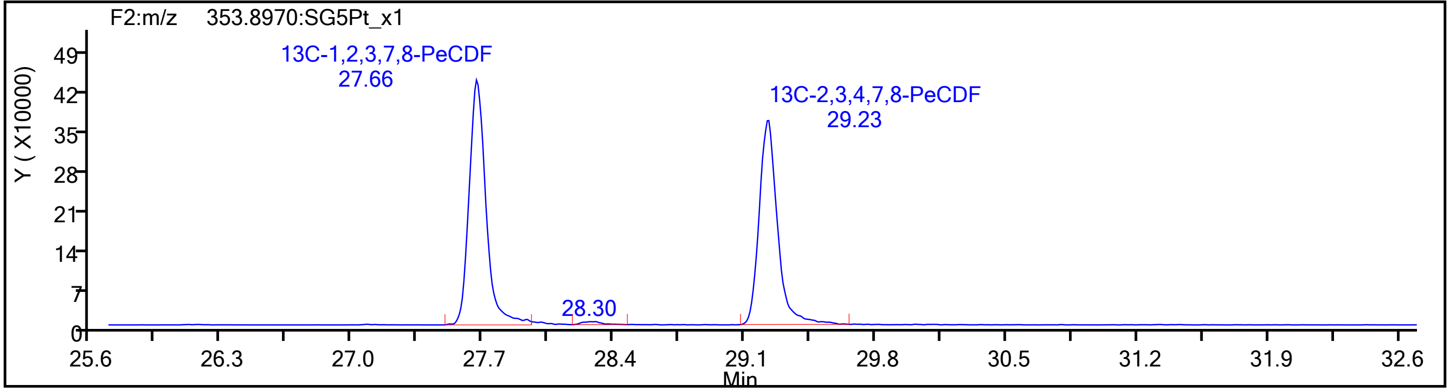

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Eurofins TestAmerica, Sacramento

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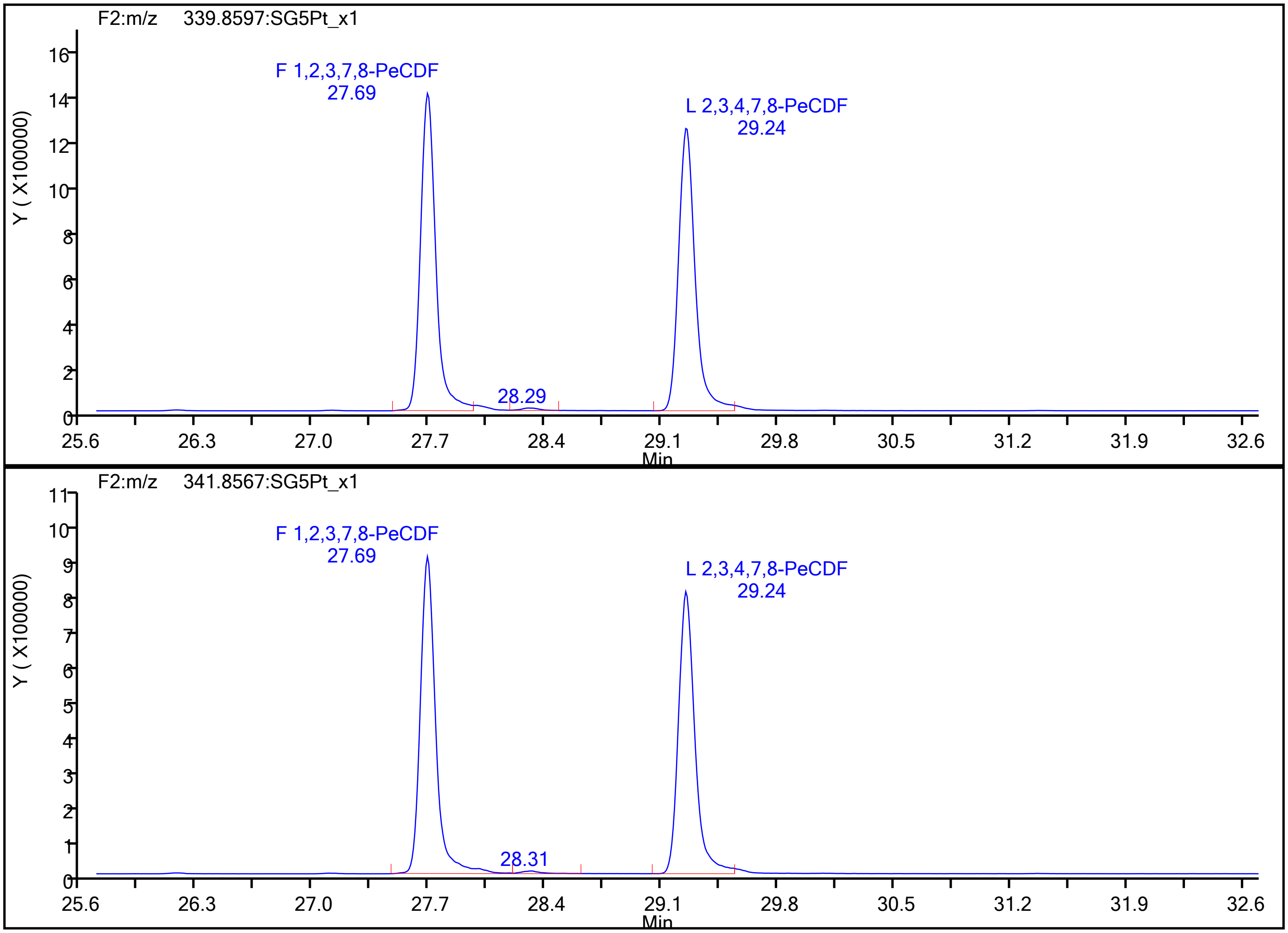

PeCDF Interference Mass

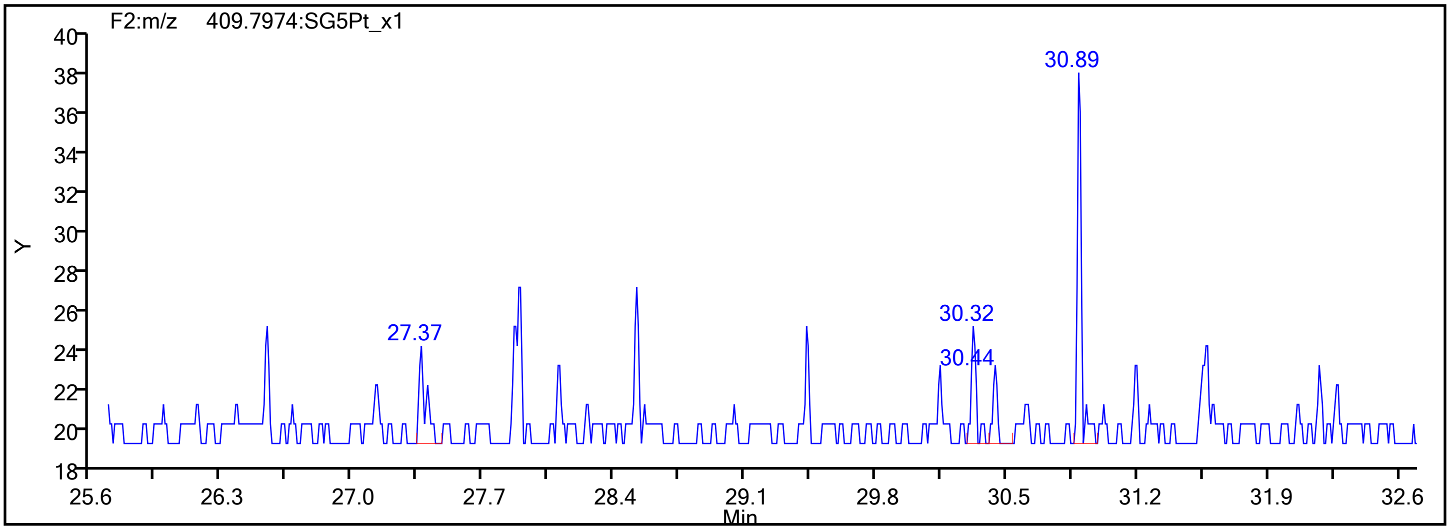

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 15:14:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

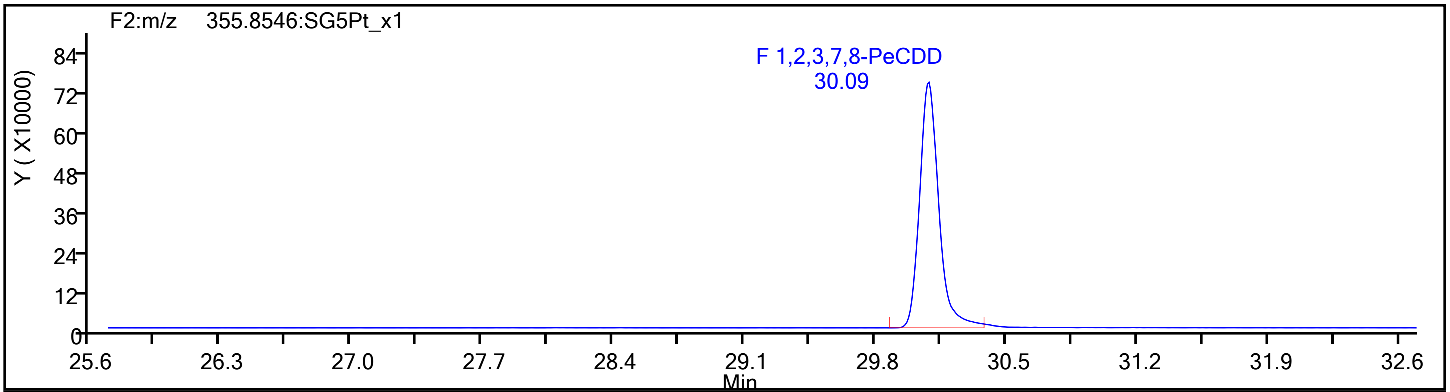

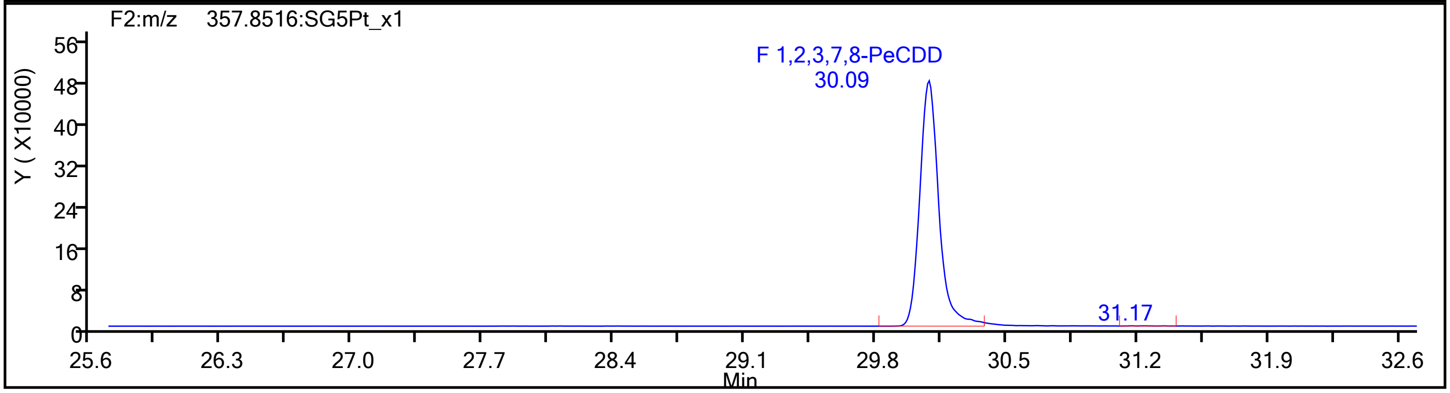

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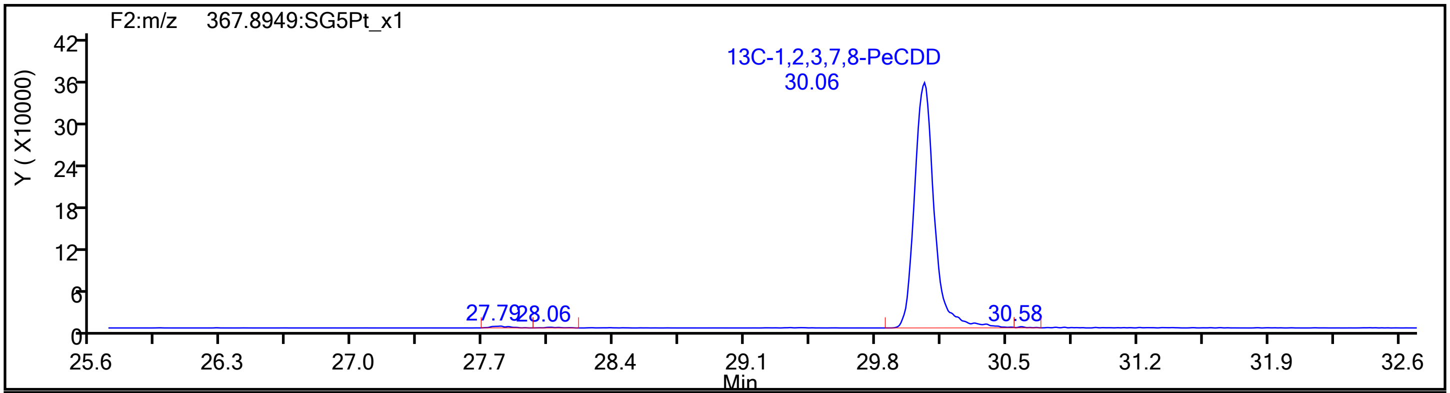

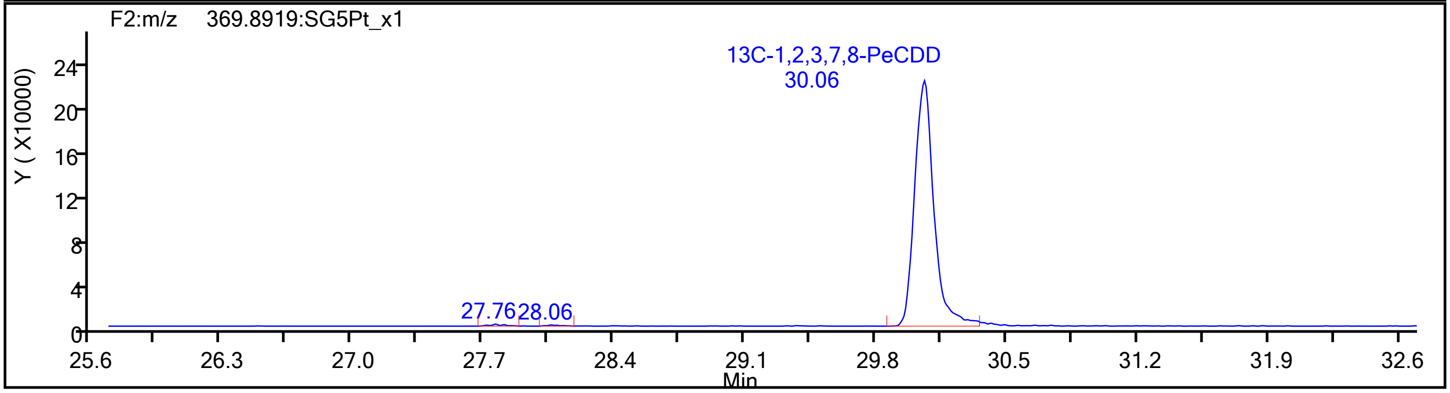

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Eurofins TestAmerica, Sacramento

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HxCDF

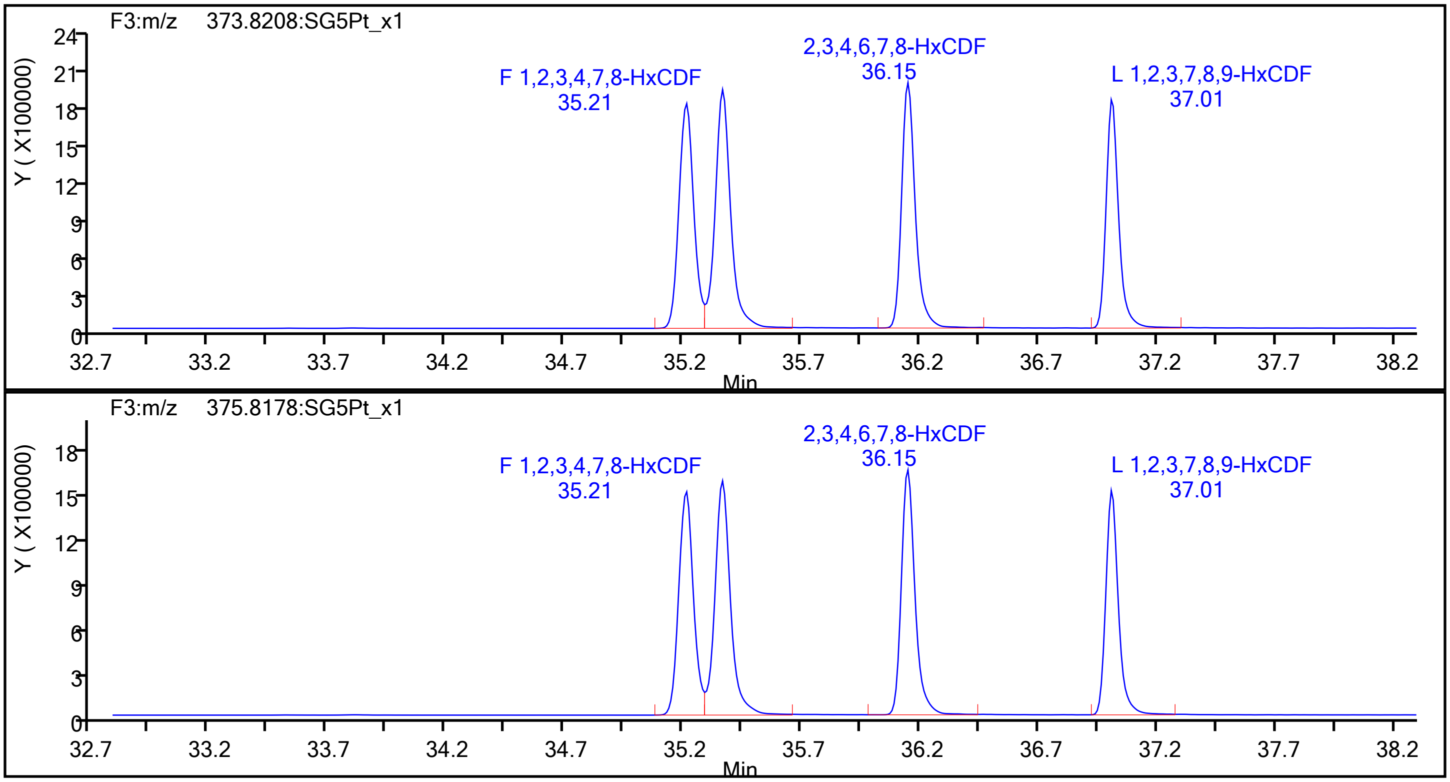

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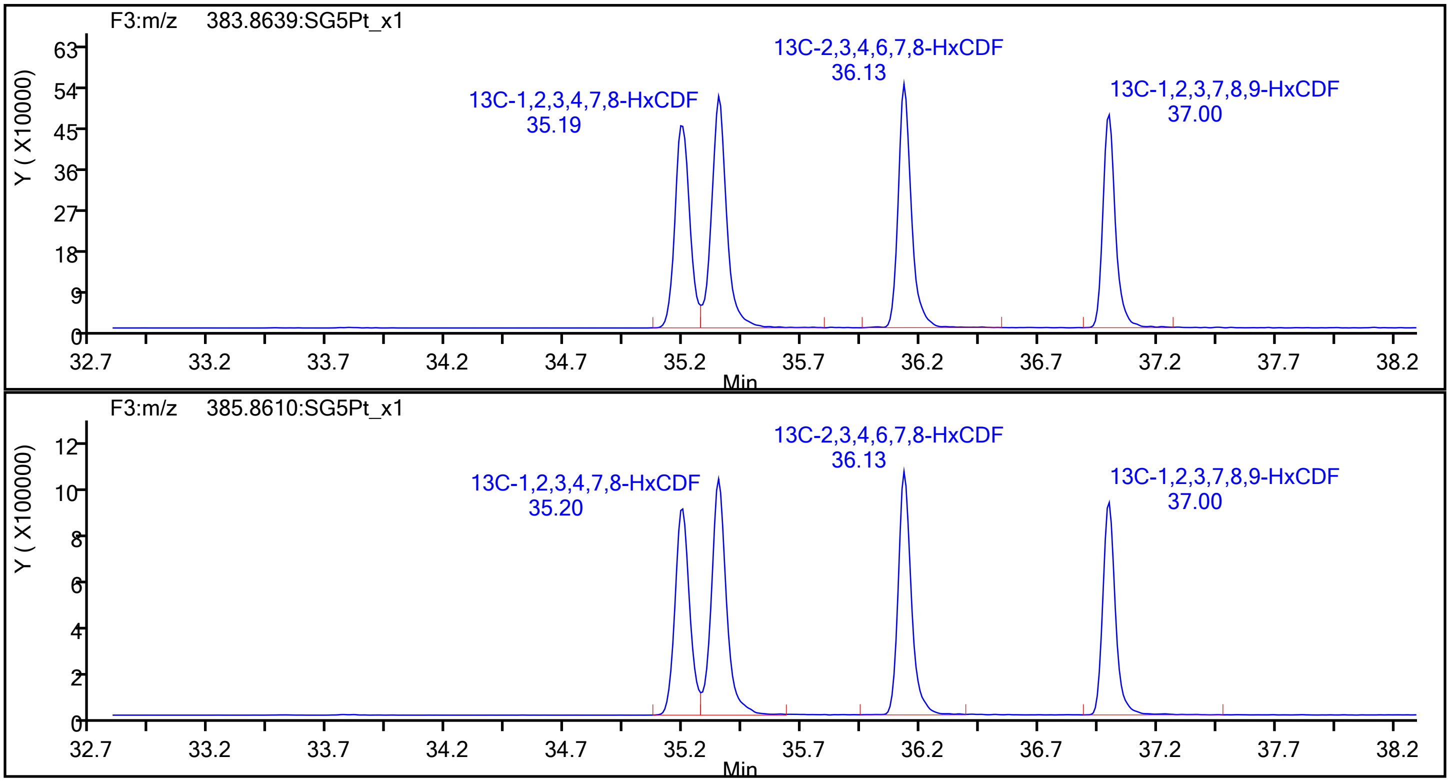

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Eurofins TestAmerica, Sacramento

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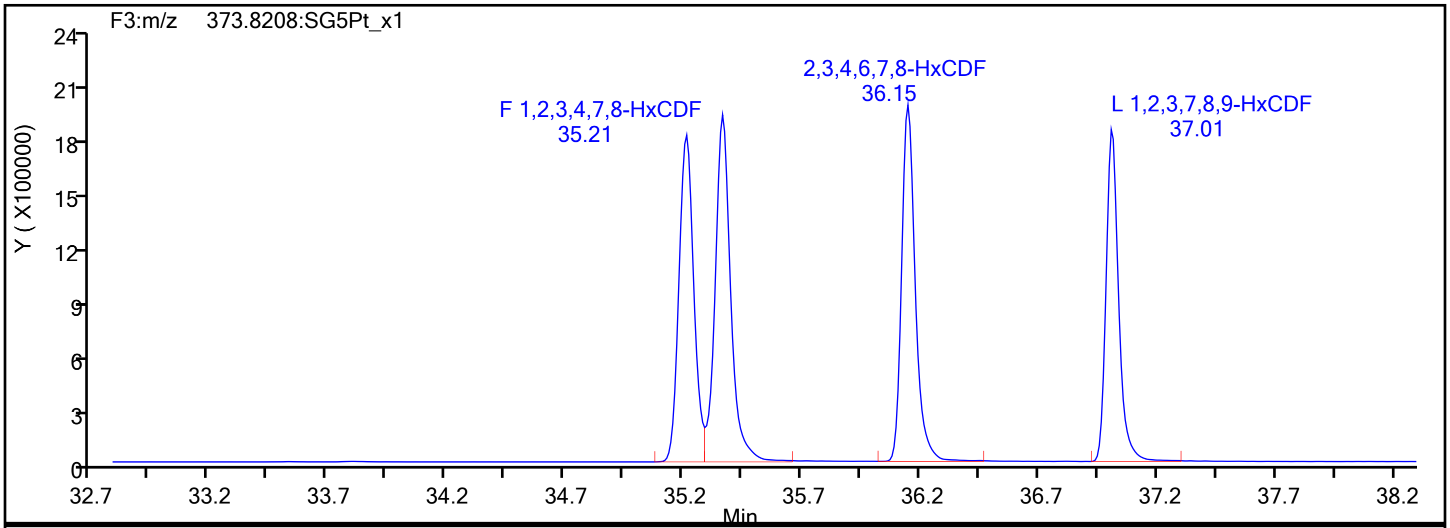

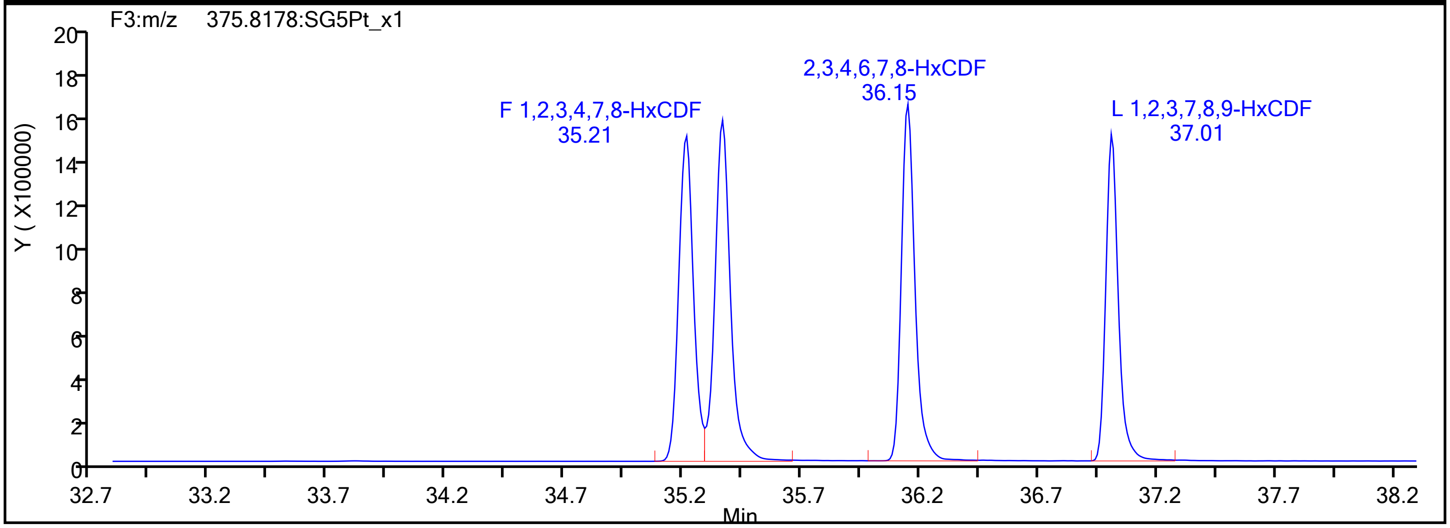

HxCDF Interference Mass

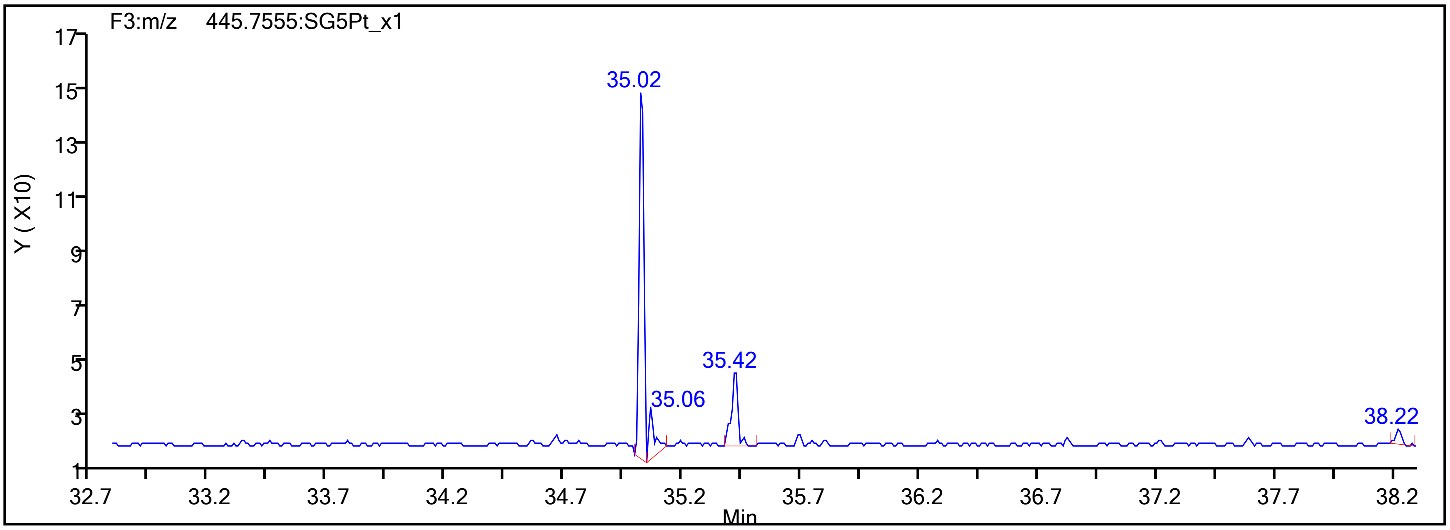

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Eurofins TestAmerica, Sacramento

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HxCDD

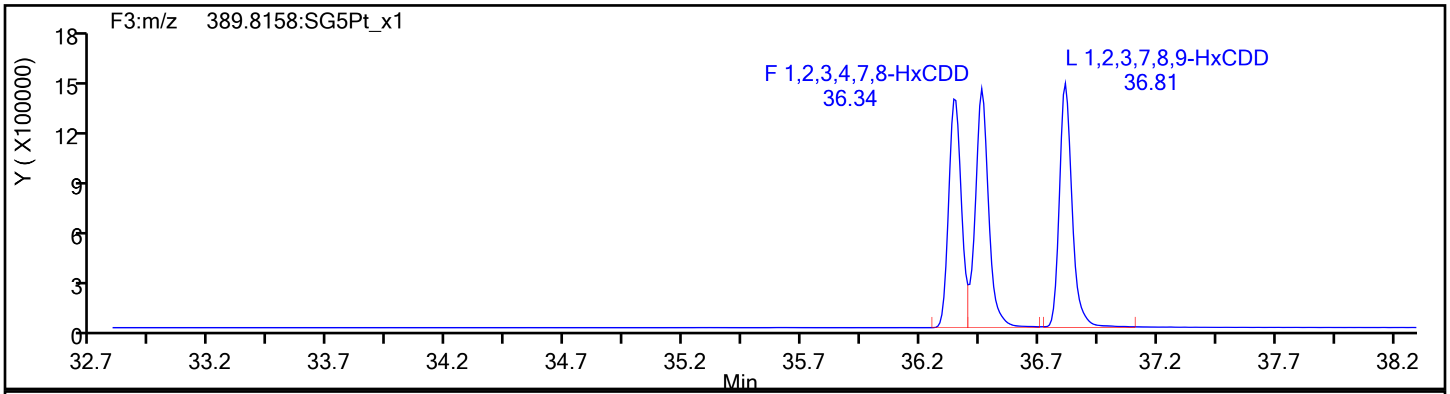

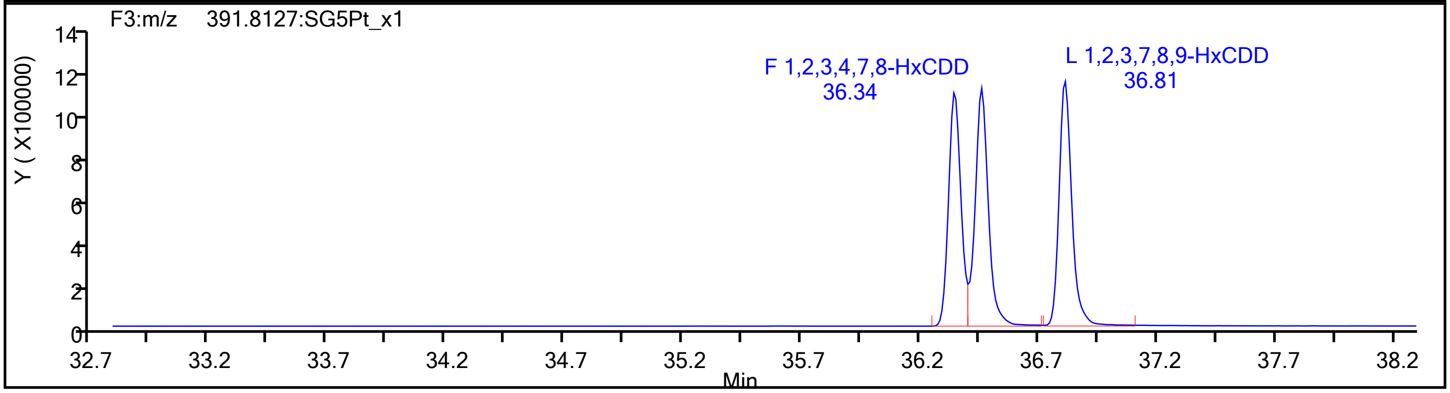

HxCDD Standards

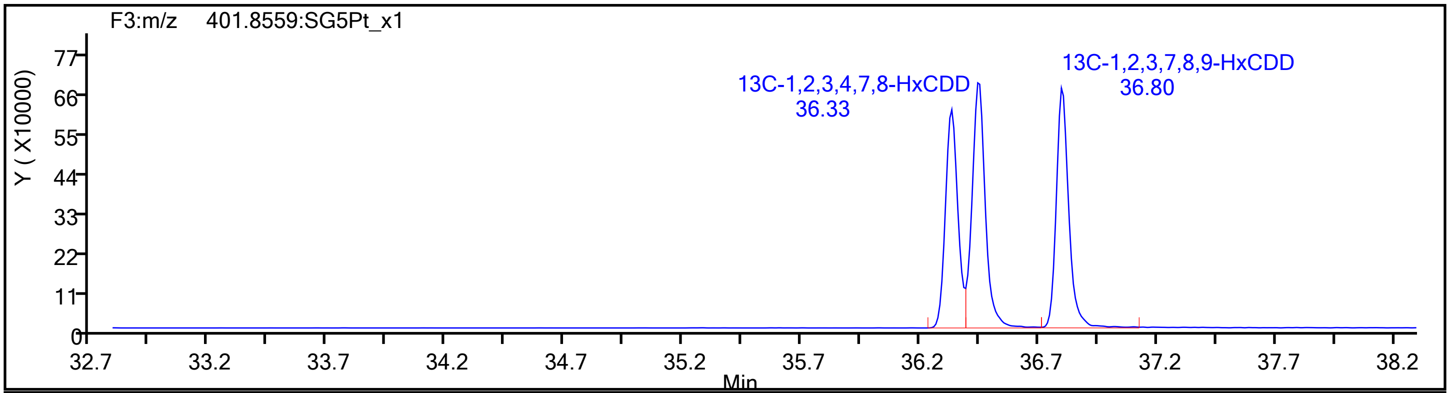

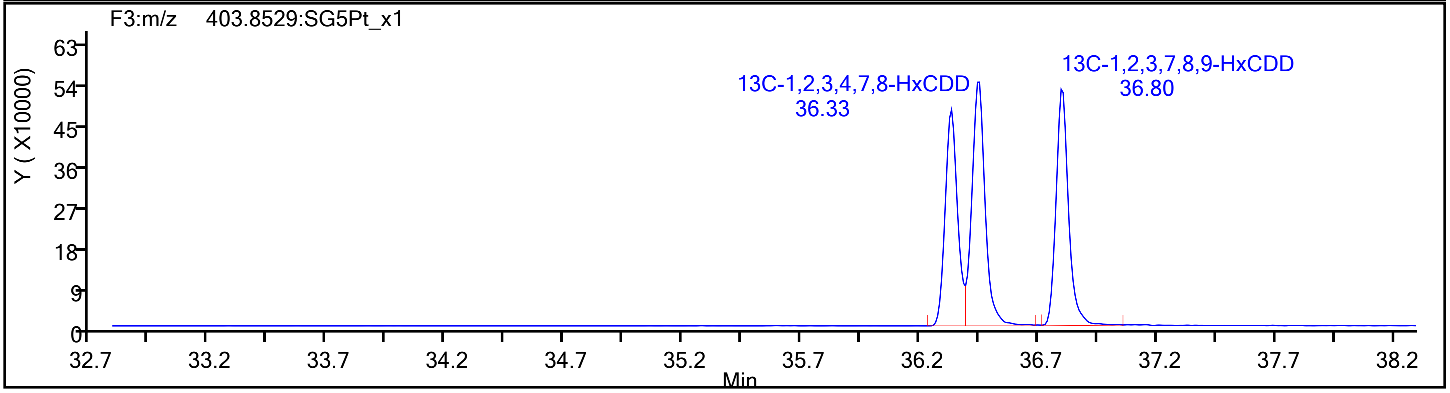

Eurofins TestAmerica, Sacramento

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HpCDF

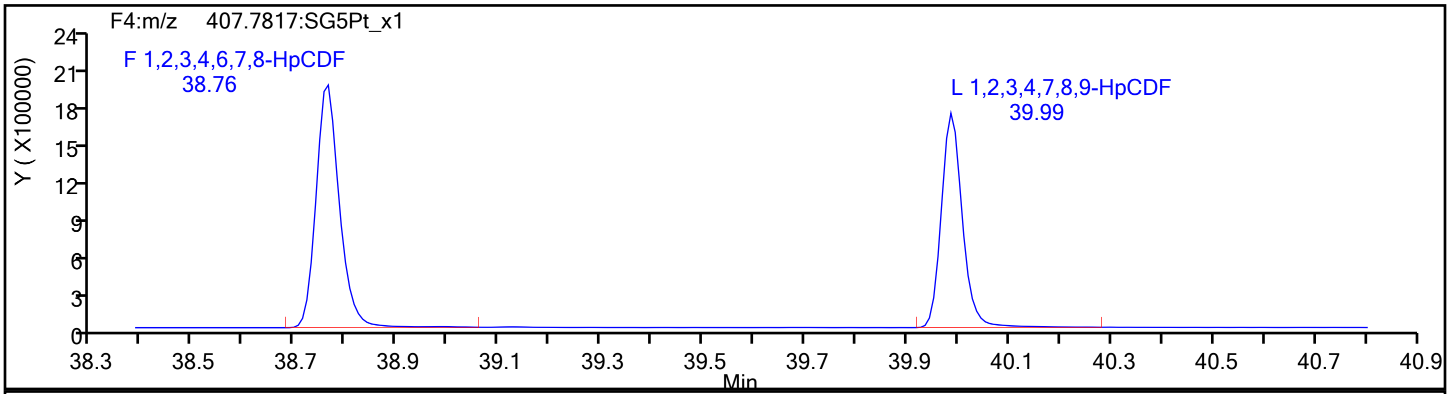

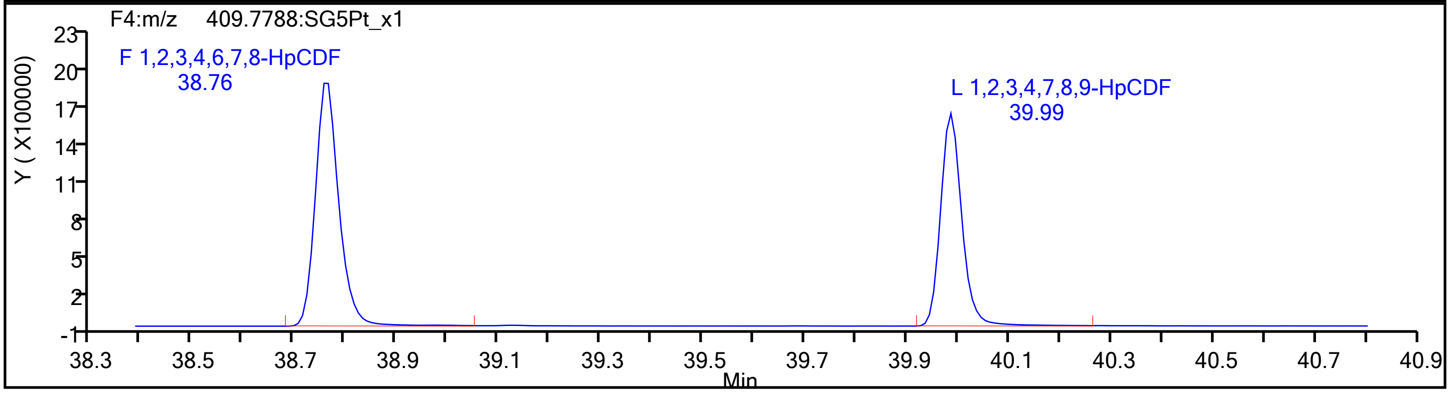

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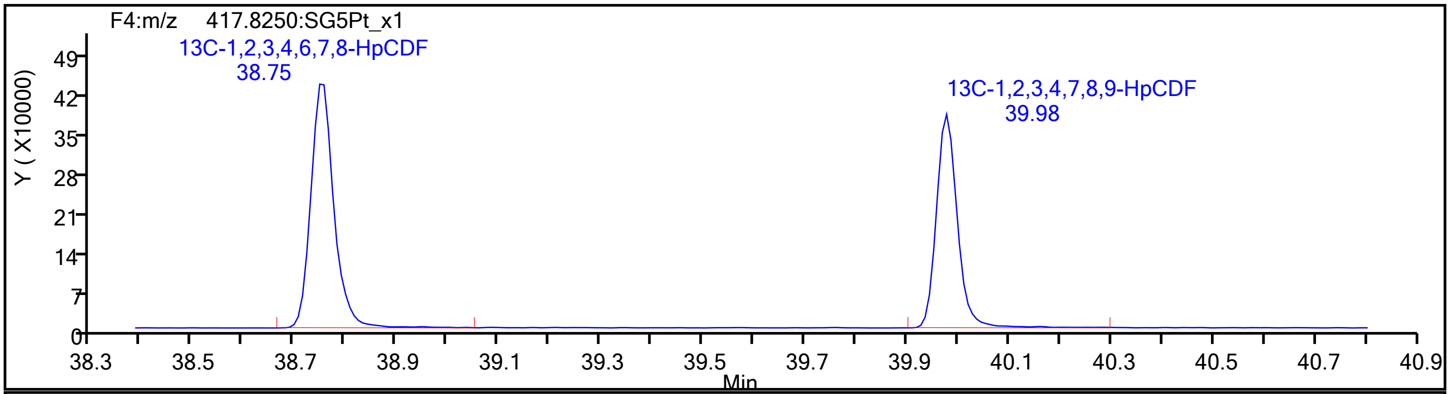

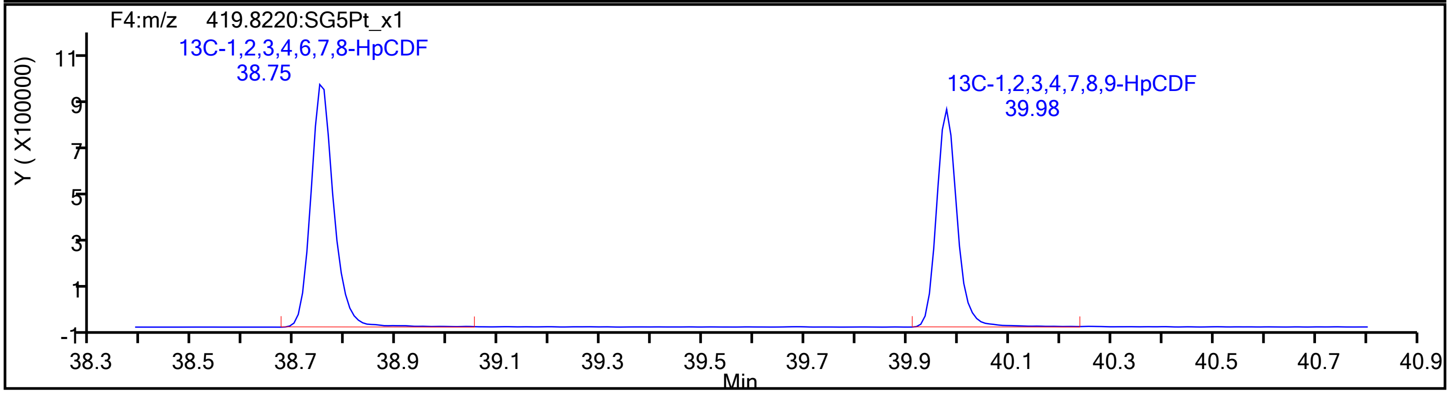

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Eurofins TestAmerica, Sacramento

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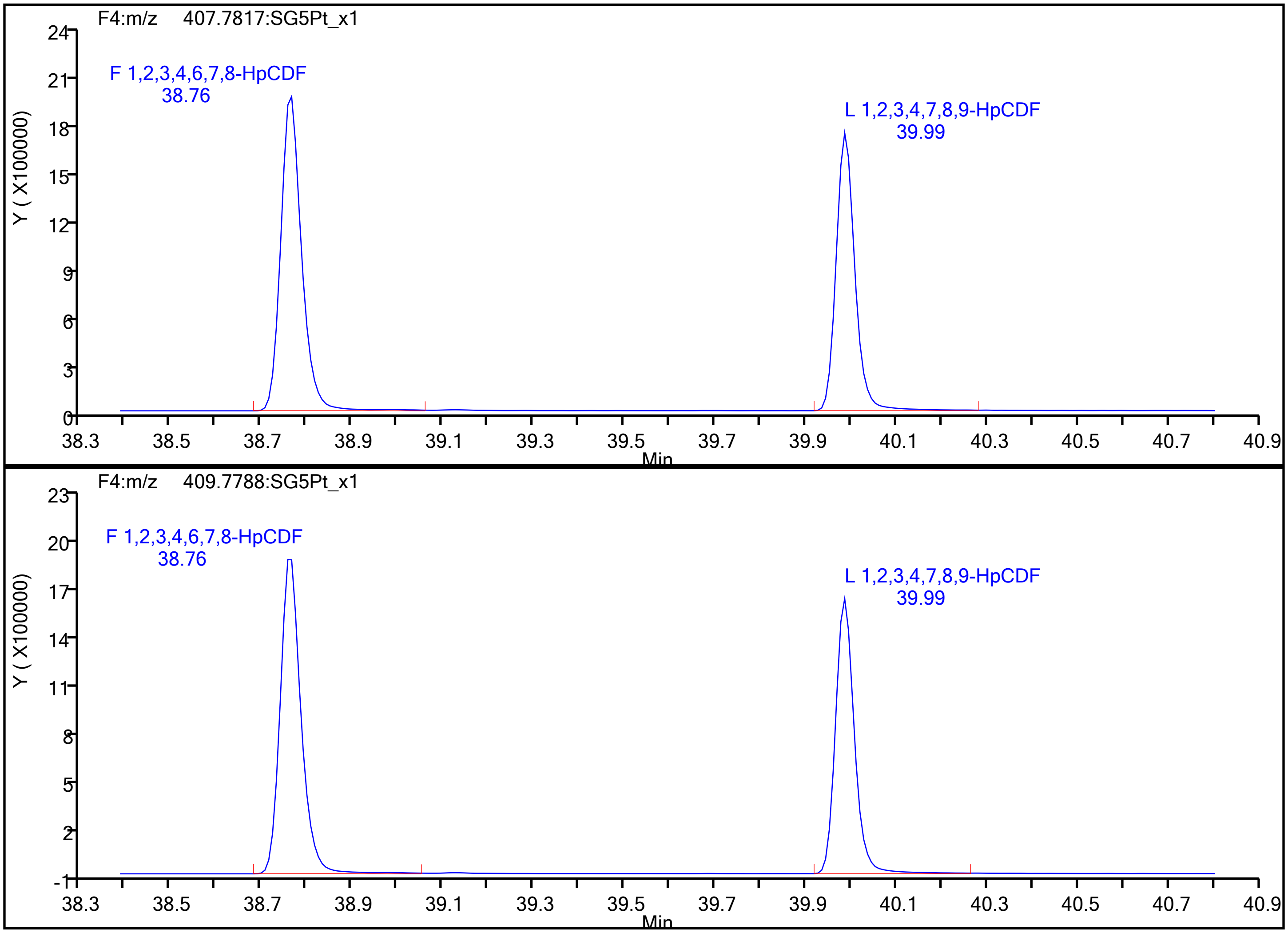

HpCDF Interference Mass

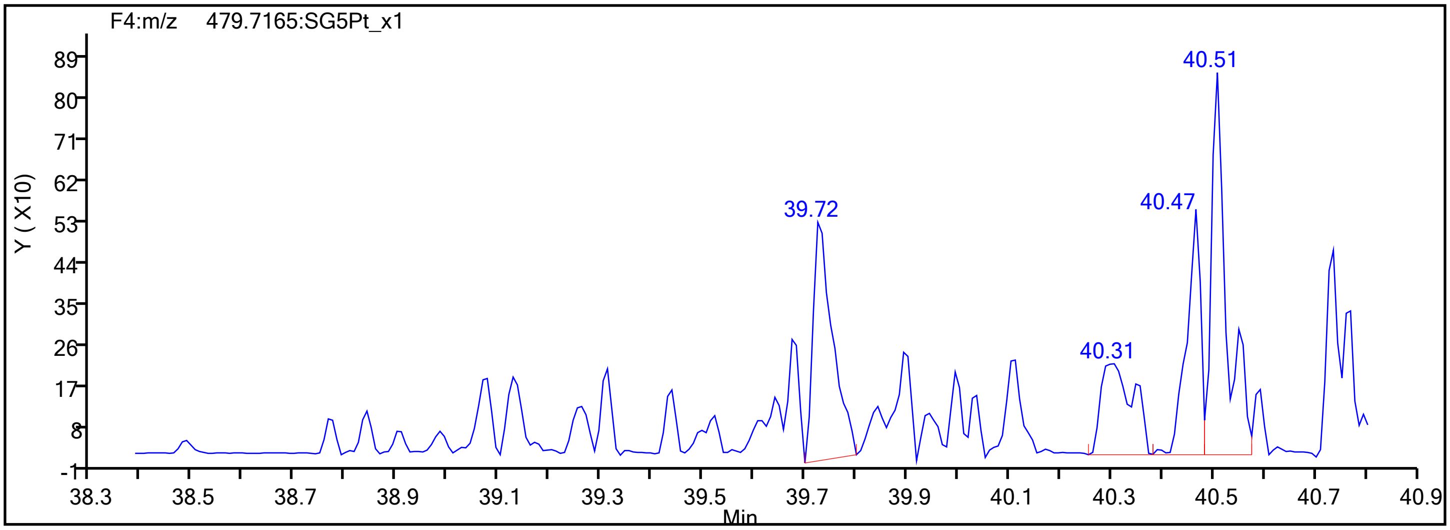

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 15:14:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
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Client ID:
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Column Dia: 0.32 mm

HpCDD

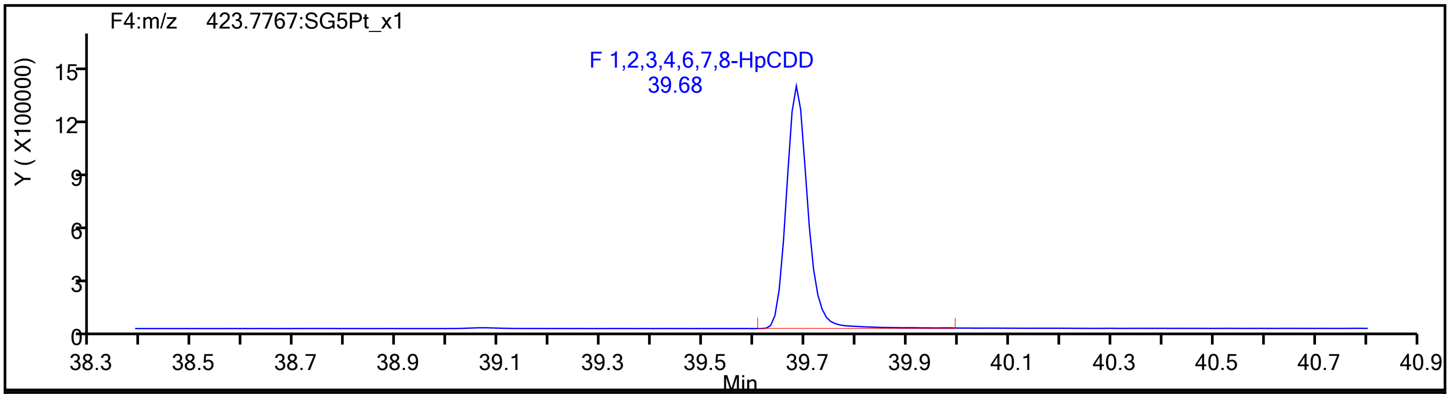

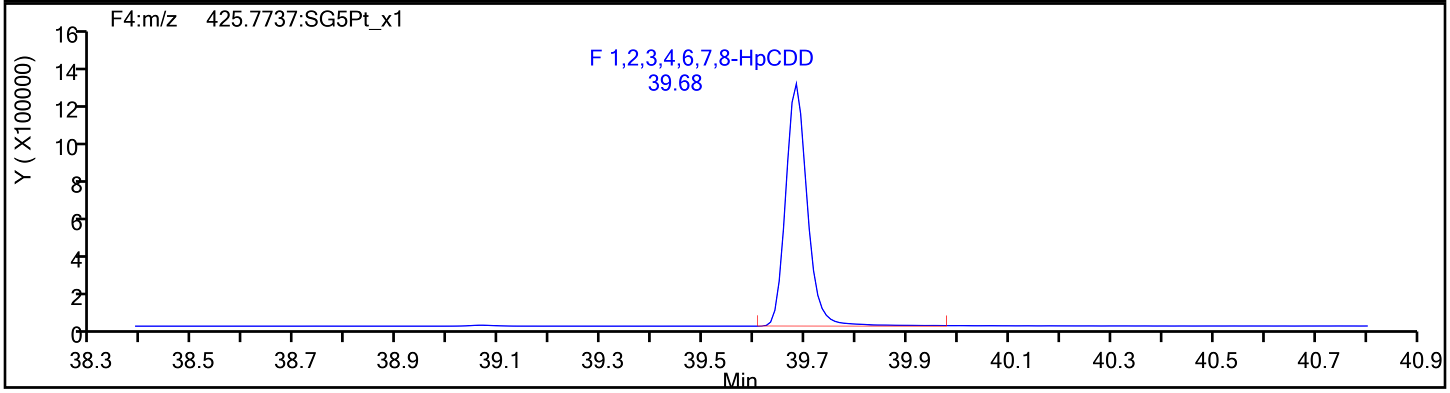

HpCDD Standards

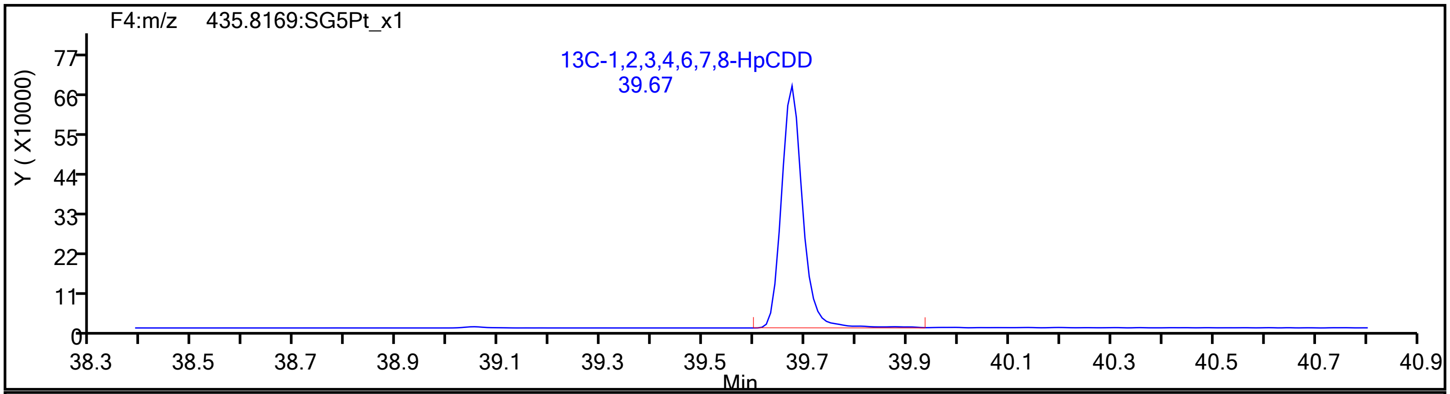

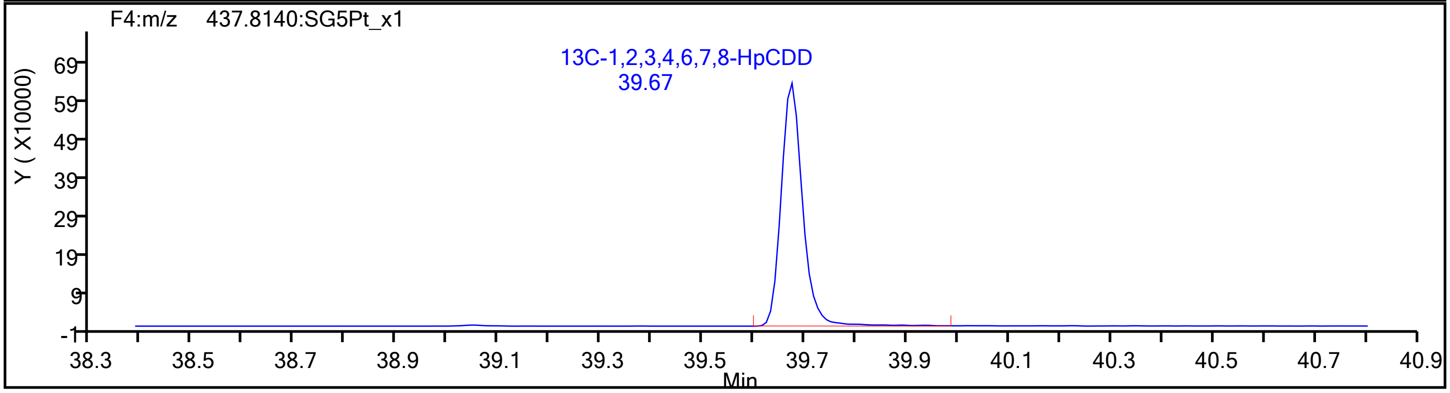

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

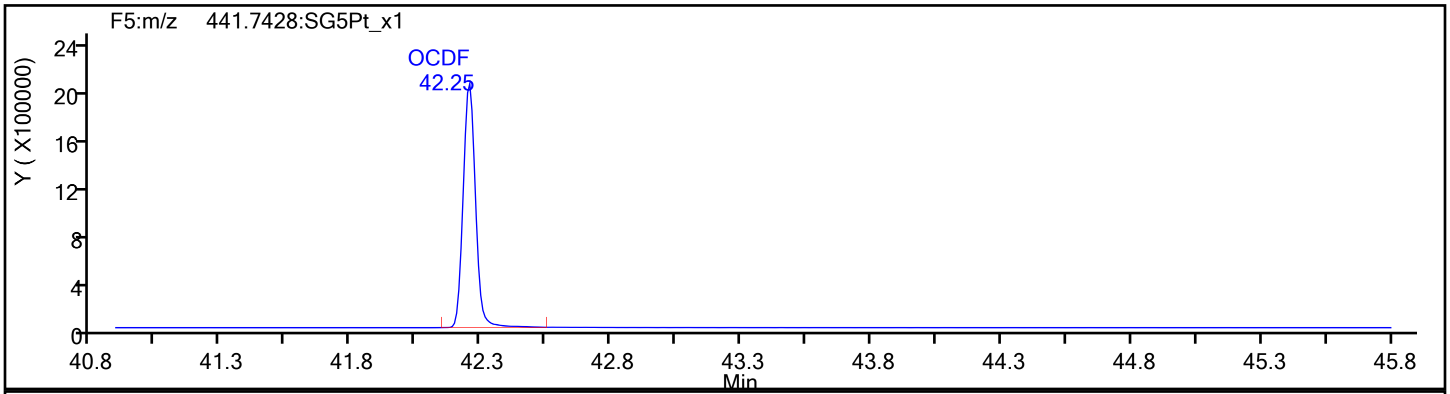

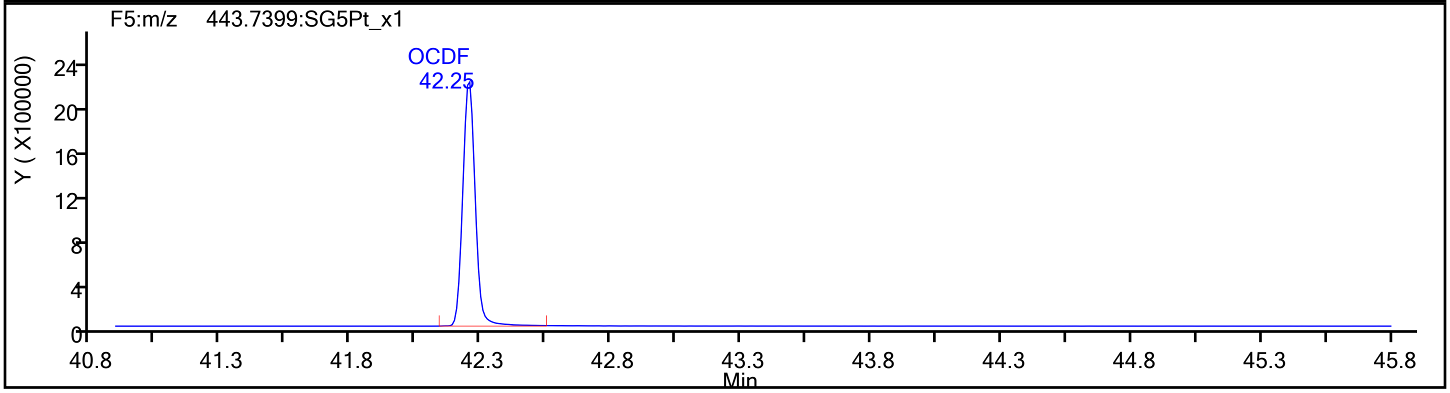

OCDF Standards

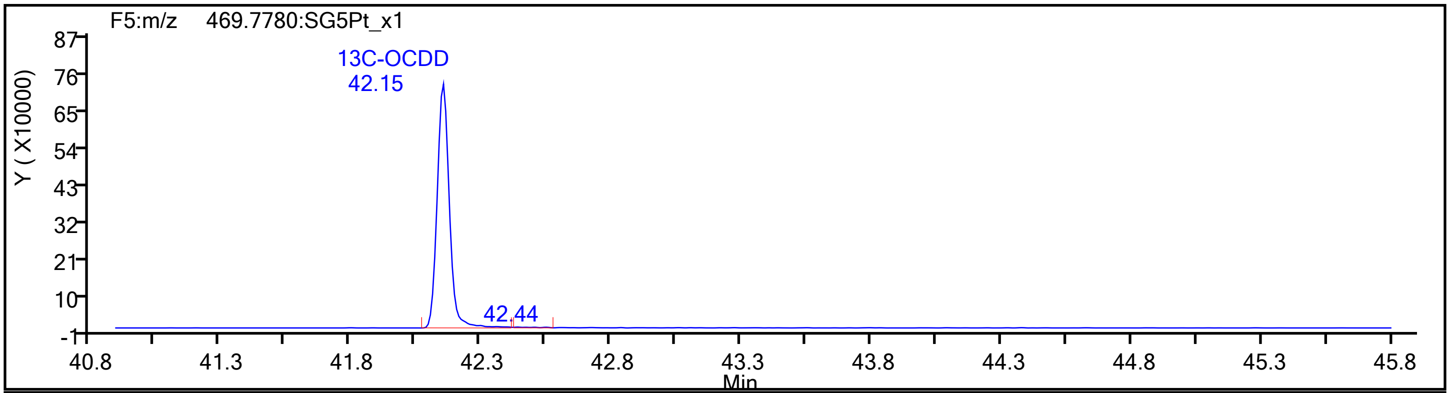

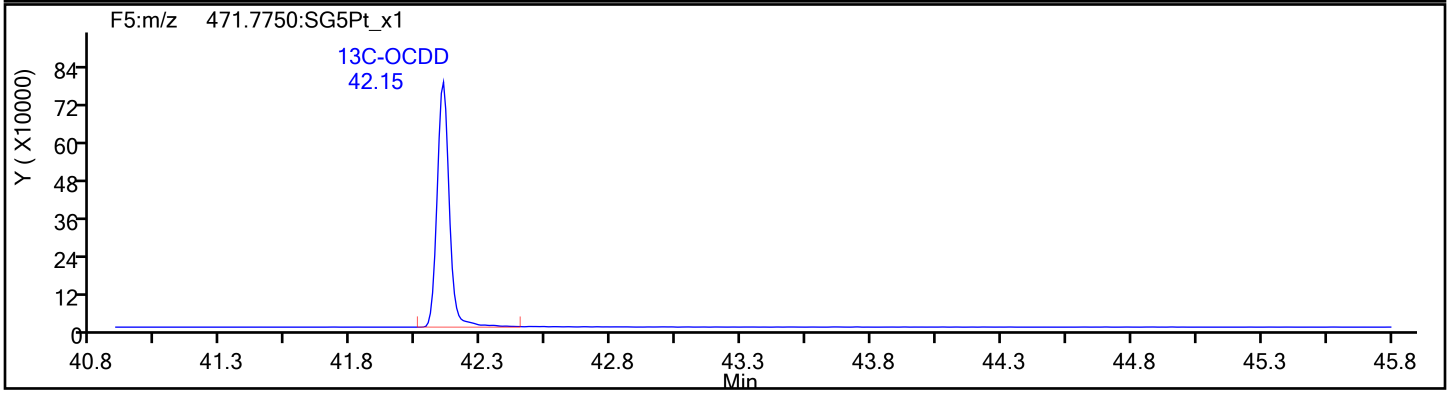

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

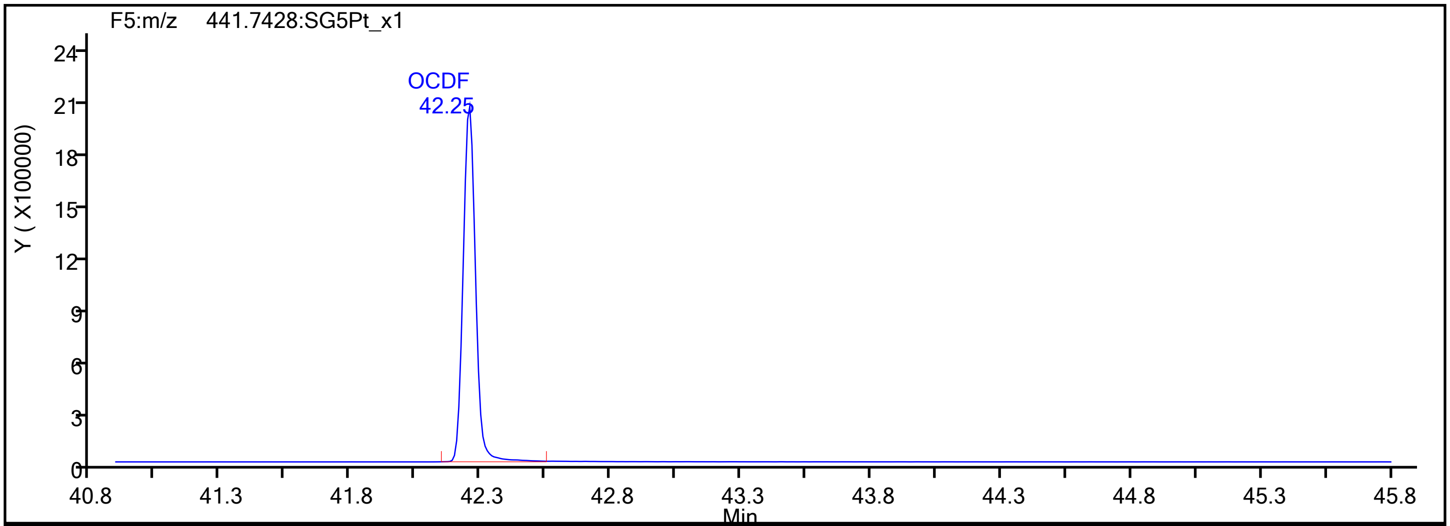

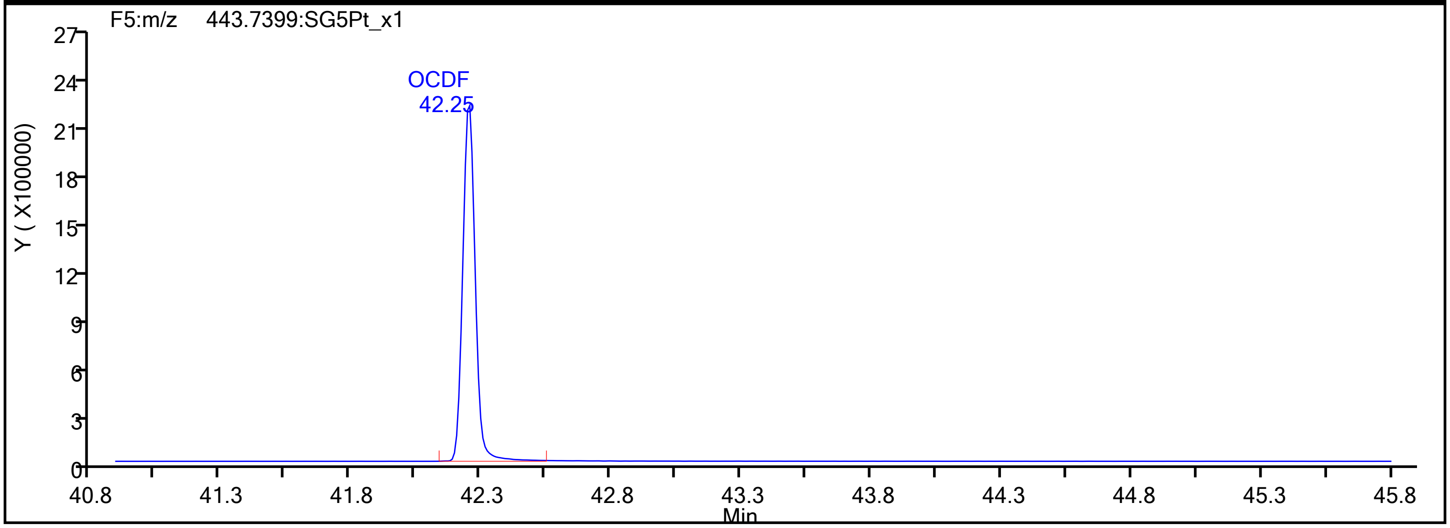

OCDF Interference Mass

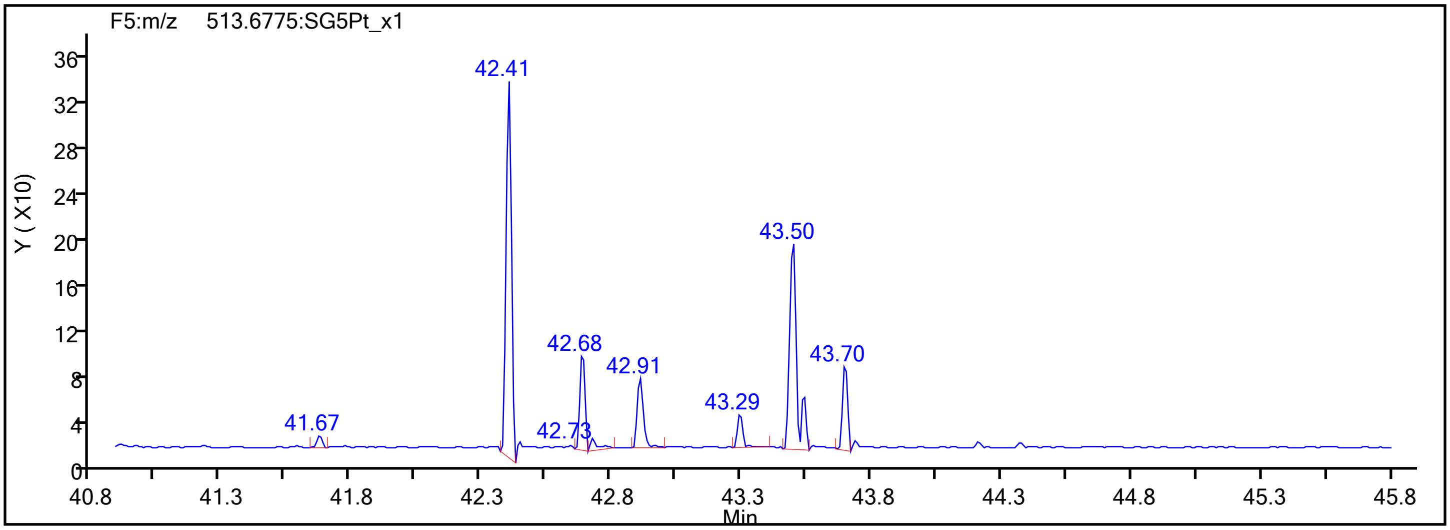

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d
Injection Date: 17-Nov-2020 15:14:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

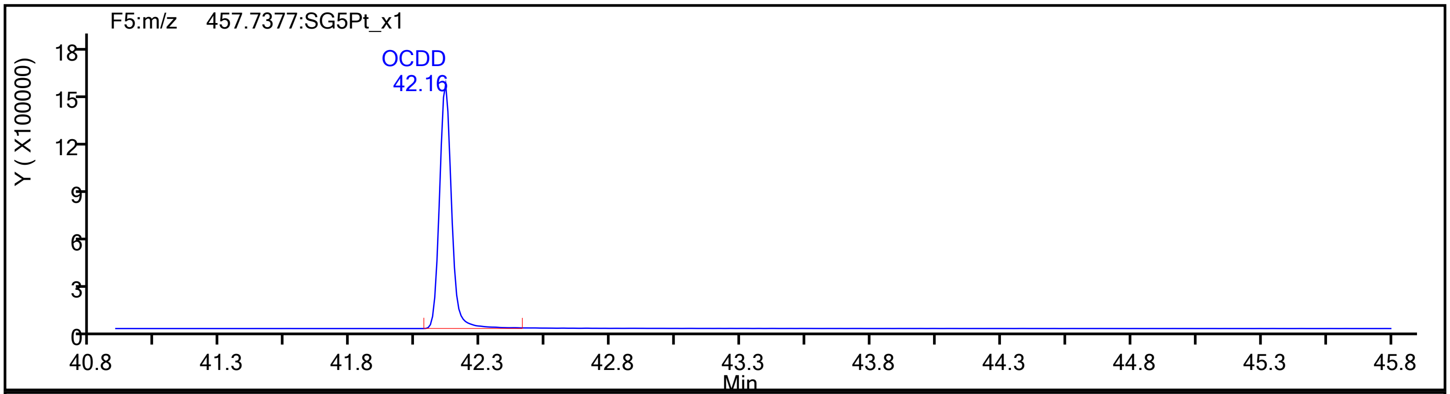

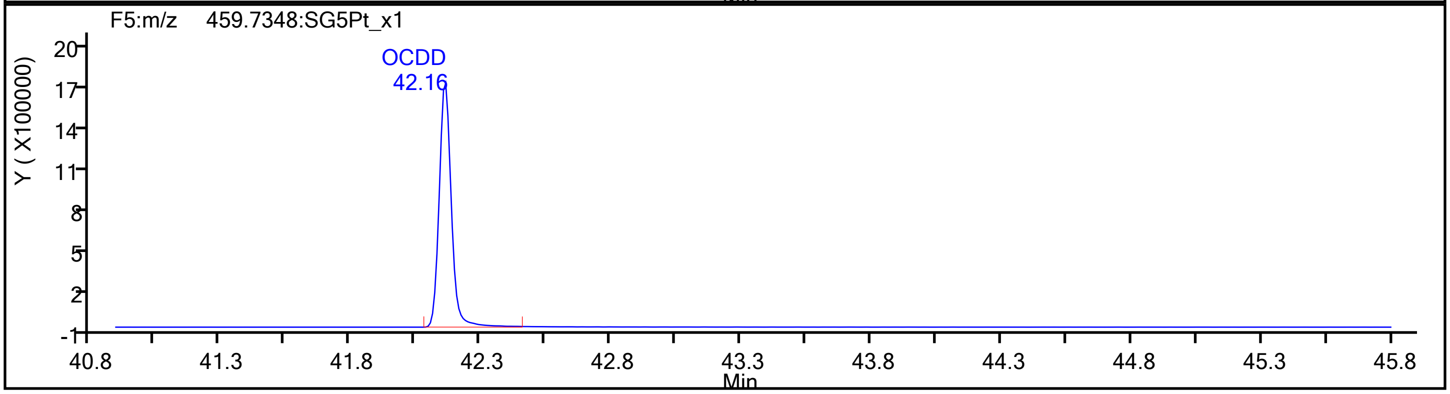

OCDD Standards

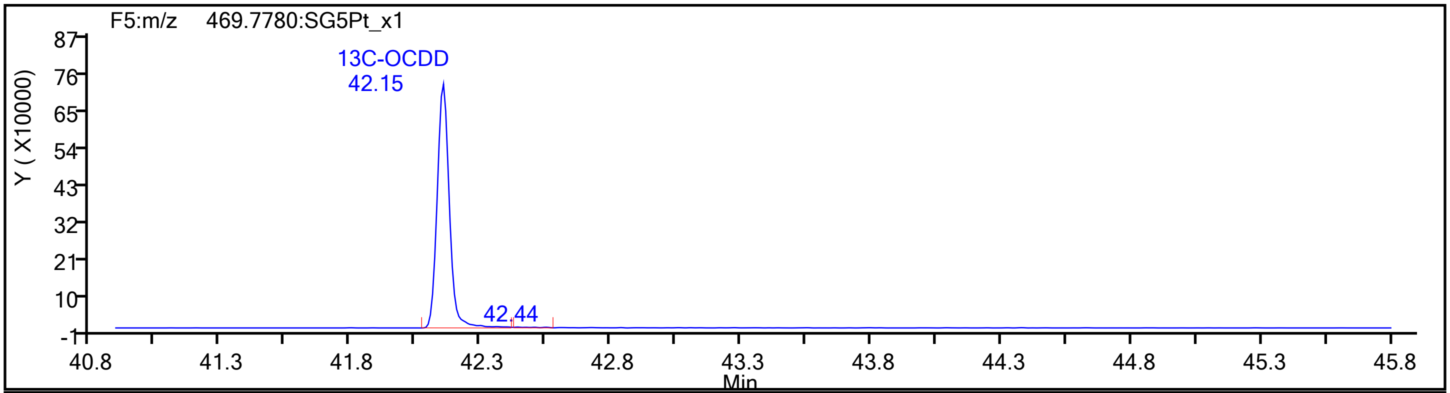

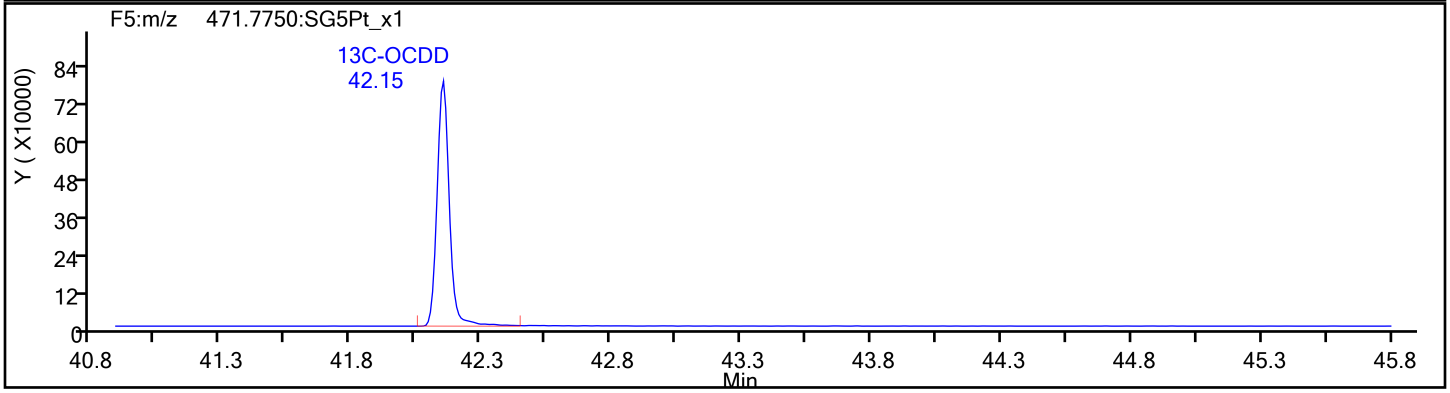

Report Date: 18-Nov-2020 12:35:16 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

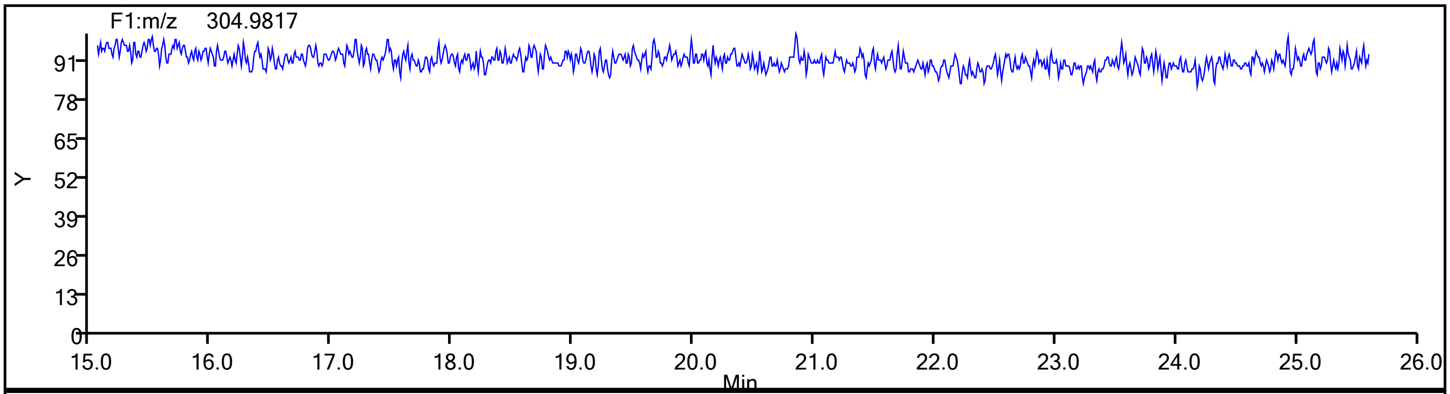

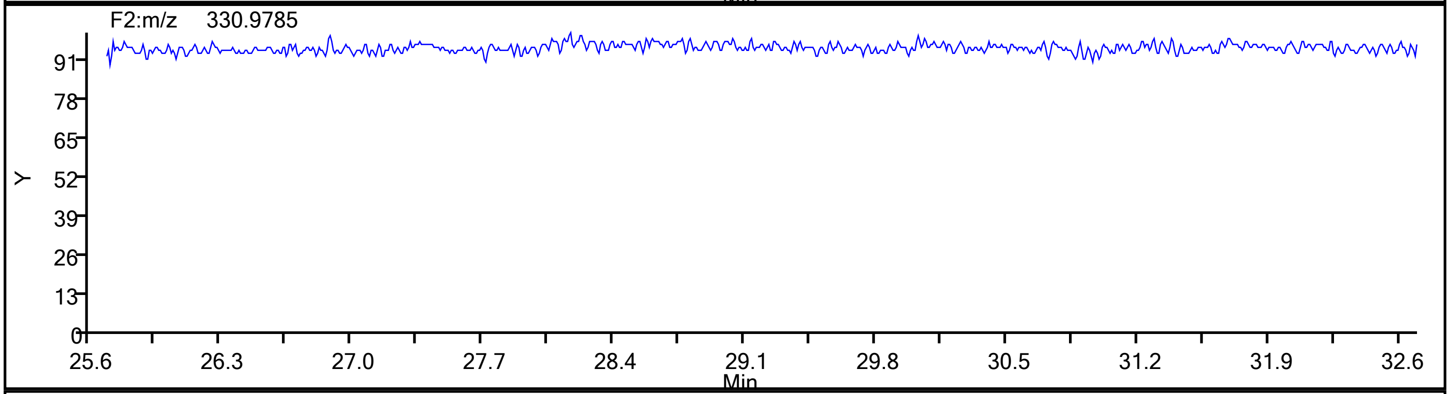

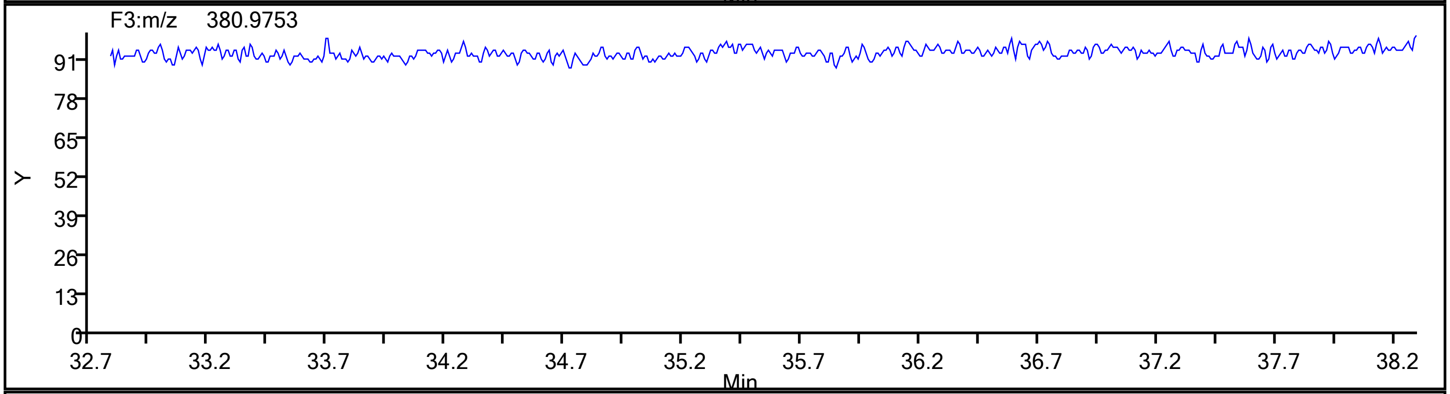

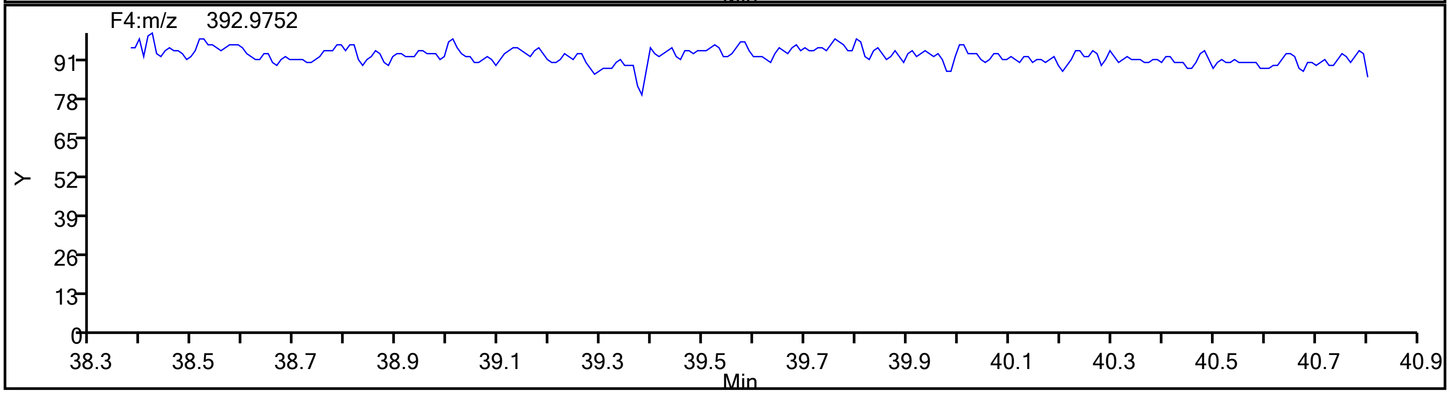

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_7.d		
Injection Date:	17-Nov-2020 15:14:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

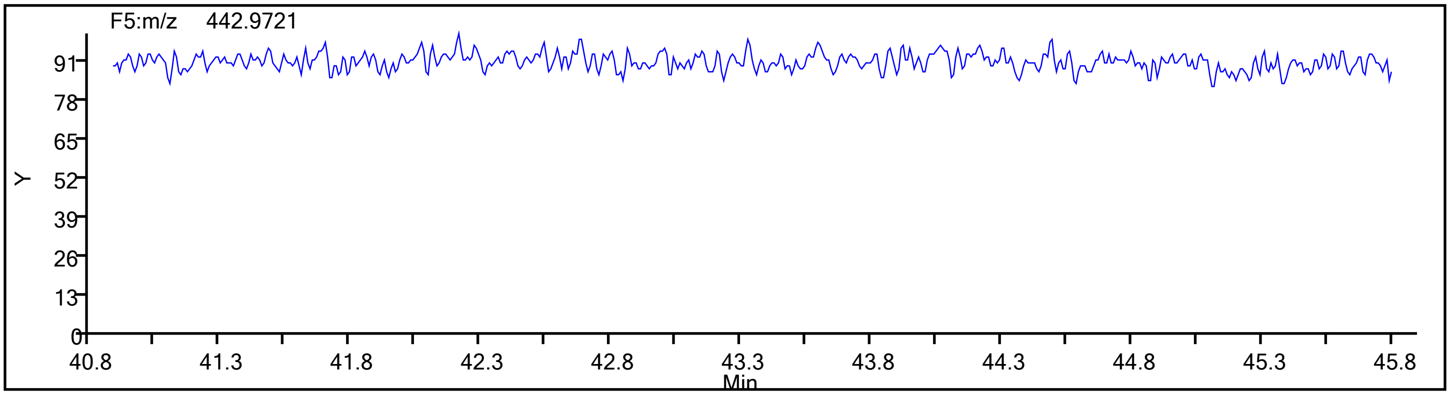

Report Date: 18-Nov-2020 12:35:30 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	17-Nov-2020 16:08:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00027				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Nov-2020 12:35:19	Calib Date:	17-Nov-2020 17:44:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1679				

First Level Reviewer: stephensk Date: 18-Nov-2020 08:59:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.845	4433551	0.80	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.832	7723296	0.82	1.6832	103.5	103.5	0.1903	0.1903	103	
2,3,7,8-TCDF	20.857	16528690	0.80	1.1547	185.3	185.3	0.1656	0.1656	92.67	
S Total TCDF					185.3	185.3	0.1656	0.1656		
D 13C-2,3,7,8-TCDD	22.240	5011703	0.81	1.0896	103.7	103.7	0.1997	0.1997	104	
2,3,7,8-TCDD	22.266	10994725	0.79	1.1659	188.2	188.2	0.1466	0.1466	94.08	
$ 37Cl4-2,3,7,8-TCDD	22.266	10391691		1.1445	204.8	204.8	0.1002	0.1002	102	
S Total TCDD					188.2	188.2	0.1466	0.1466		
D 13C-1,2,3,7,8-PeCDF	27.692	6789961	1.62	1.4604	104.9	104.9	0.3602	0.3602	105	
1,2,3,7,8-PeCDF	27.717	70578766	1.62	1.1322	918.1	918.1	2.931	2.931	91.81	
D 13C-2,3,4,7,8-PeCDF	29.251	6380229	1.62	1.3504	106.6	106.6	0.3895	0.3895	107	
2,3,4,7,8-PeCDF	29.276	68057207	1.59	1.1588	920.5	920.5	3.103	3.103	92.05	
S Total PeCDF					1838.6	1838.6	3.017	3.017		
D 13C-1,2,3,7,8-PeCDD	30.085	4093198	1.61	0.8729	105.8	105.8	0.0941	0.0941	106	
1,2,3,7,8-PeCDD	30.111	41683724	1.56	1.1191	910.0	910.0	0.4885	0.4885	91.00	
S Total PeCDD					910.0	910.0	0.4885	0.4885		
D 13C-1,2,3,4,7,8-HxCDF	35.212	6095612	0.53	1.2808	100.2	100.2	0.2779	0.2779	100	
1,2,3,4,7,8-HxCDF	35.221	73274262	1.26	1.3205	910.3	910.3	2.887	2.887	91.03	
D 13C-1,2,3,6,7,8-HxCDF	35.364	6778427	0.54	1.4615	97.6	97.6	0.2435	0.2435	97.63	
1,2,3,6,7,8-HxCDF	35.380	79051672	1.25	1.2682	919.6	919.6	2.807	2.807	91.96	
D 13C-2,3,4,6,7,8-HxCDF	36.147	6182541	0.54	1.3227	98.4	98.4	0.2691	0.2691	98.40	
2,3,4,6,7,8-HxCDF	36.164	74190158	1.26	1.2838	934.8	934.8	2.715	2.715	93.48	
D 13C-1,2,3,7,8,9-HxCDF	37.007	5394247	0.54	1.1062	102.7	102.7	0.3217	0.3217	103	
1,2,3,7,8,9-HxCDF	37.024	64367080	1.27	1.3063	913.5	913.5	2.764	2.764	91.35	
S Total HxCDF					3678.2	3678.2	2.793	2.793		
* 13C-1,2,3,7,8,9-HxCDD	36.813	4750408	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.341	4136810	1.26	0.8757	99.4	99.4	0.1818	0.1818	99.45	
1,2,3,4,7,8-HxCDD	36.358	44391919	1.26	1.1972	896.3	896.3	1.387	1.387	89.63	
D 13C-1,2,3,6,7,8-HxCDD	36.459	5001351	1.27	1.0651	98.9	98.9	0.1495	0.1495	98.85	
1,2,3,6,7,8-HxCDD	36.468	48120799	1.26	1.0695	899.7	899.7	1.345	1.345	89.97	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.822	49018548	1.26	1.1806	908.8	908.8	1.306	1.306	90.88	
S Total HxCDD					2704.8	2704.8	1.346	1.346		
D 13C-1,2,3,4,6,7,8-HpCDF	38.762	4525374	0.46	0.9521	100.1	100.1	0.3902	0.3902	100	
1,2,3,4,6,7,8-HpCDF	38.770	65590399	1.04	1.5618	928.0	928.0	3.033	3.033	92.80	
D 13C-1,2,3,4,7,8,9-HpCDF	39.984	3896084	0.47	0.7782	105.4	105.4	0.4775	0.4775	105	
1,2,3,4,7,8,9-HpCDF	39.992	53047298	1.04	1.4975	909.2	909.2	3.341	3.341	90.92	
S Total HpCDF					1837.2	1837.2	3.187	3.187		
D 13C-1,2,3,4,6,7,8-HpCDD	39.680	4099544	1.09	0.8393	102.8	102.8	0.2344	0.2344	103	
1,2,3,4,6,7,8-HpCDD	39.689	41036566	1.04	1.1079	903.5	903.5	1.719	1.719	90.35	
S Total HpCDD					903.5	903.5	1.719	1.719		
D 13C-OCDD	42.154	5545172	0.91	0.5301	220.2	220.2	0.2537	0.2537	110	
OCDF	42.263	77222416	0.89	1.4802	1881.7	1881.7	1.263	1.263	94.08	
OCDD	42.170	57080751	0.88	1.1666	1764.8	1764.8	1.499	1.499	88.24	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 6
Inject. Date: 17-Nov-2020 16:08:00   ALS Bottle#: 0   Worklist Smp#: 7
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00027
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:19   Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk   Date: 18-Nov-2020 08:59:42

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.845	21.818	2		1964389	275920	341	852	809		a
333.9338	21.837	21.818	1		2469162	347597	202	505	1721	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.832	20.808	1	0.954	3469289	506420	543	1357	933		
317.9389	20.832	20.808	1	0.954	4254007	592766	256	640	2315	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.857	20.834	1	1.001	7349159	1074459	303	757	3546		
305.8987	20.857	20.834	1	1.001	9179531	1334514	538	1345	2481	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.240	22.213	2	1.018	2249178	304970	341	852	894		
333.9338	22.240	22.213	2	1.018	2762525	365104	202	505	1807	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.266	22.239	2	1.001	4858326	686278	243	607	2824		
321.8936	22.266	22.239	2	1.001	6136399	858980	215	537	3995	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.266	22.241	2	1.019	10391691	1453545	286	715	5082		
13C-1,2,3,7,8-PeCDF											
351.9000	27.692	27.677	1	1.268	4201687	623536	752	1880	829		
353.8970	27.692	27.677	1	1.268	2588274	396436	560	1400	708	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.717	27.702	1	1.001	43595227	6995937	8454	21135	828		
341.8567	27.717	27.702	1	1.001	26983539	4287757	5083	12707	844	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.251	29.235	1	1.339	3942765	582640	752	1880	775		
353.8970	29.251	29.235	1	1.339	2437464	358500	560	1400	640	1.62(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.276	29.262	1	1.001	41742707	6316100	8454	21135	747		
341.8567	29.276	29.262	1	1.001	26314500	3961305	5083	12707	779	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.085	30.073	1	1.377	2522492	358863	95	237	3778		
369.8919	30.094	30.073	1	1.378	1570706	219134	110	275	1992	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.111	30.100	1	1.001	25380747	3606470	788	1970	4577		
357.8516	30.111	30.100	1	1.001	16302977	2306755	476	1190	4846	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.212	35.202	1	0.957	2110885	499171	661	1652	755		
385.8610	35.212	35.202	1	0.957	3984727	918044	1186	2965	774	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.221	35.219	0	1.000	40842565	9807153	11955	29887	820		
375.8178	35.221	35.219	0	1.000	32431697	7785371	9659	24147	806	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.364	35.361	0	0.961	2376366	539601	661	1652	816		
385.8610	35.364	35.361	0	0.961	4402061	978422	1186	2965	825	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.380	35.376	0	1.000	43933360	10003012	11955	29887	837		
375.8178	35.380	35.376	0	1.000	35118312	7920609	9659	24147	820	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.147	36.142	0	0.982	2167173	543132	661	1652	822		
385.8610	36.147	36.142	0	0.982	4015368	1007438	1186	2965	849	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.164	36.158	0	1.000	41423788	11004248	11955	29887	920		
375.8178	36.164	36.158	0	1.000	32766370	8634193	9659	24147	894	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.007	37.005	0	1.005	1889310	528835	661	1652	800		
385.8610	37.007	37.005	0	1.005	3504937	967600	1186	2965	816	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.024	37.019	0	1.000	36031424	10376035	11955	29887	868		
375.8178	37.024	37.019	0	1.000	28335656	8061009	9659	24147	835	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.813	36.808	0		2669360	730972	453	1132	1614		
403.8529	36.813	36.808	0		2081048	566331	373	932	1518	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.341	36.340	0	0.987	2307965	641727	453	1132	1417		
403.8529	36.341	36.340	0	0.987	1828845	507956	373	932	1362	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.358	36.355	0	1.000	24747908	6986517	4262	10655	1639		
391.8127	36.358	36.355	0	1.000	19644011	5526498	3375	8437	1637	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.459	36.454	0	0.990	2796496	744105	453	1132	1643		
403.8529	36.459	36.454	0	0.990	2204855	582689	373	932	1562	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.468	36.468	0	1.000	26843676	7122125	4262	10655	1671		
391.8127	36.468	36.468	0	1.000	21277123	5687048	3375	8437	1685	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.822	36.821	0	1.013	27310421	7623020	4262	10655	1789		
391.8127	36.822	36.821	0	1.013	21708127	6063055	3375	8437	1796	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.762	38.755	0	1.053	1434724	456017	708	1770	644		
419.8220	38.762	38.755	0	1.053	3090650	983425	1220	3050	806	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.770	38.769	0	1.000	33410665	11199419	14182	35455	790		
409.7788	38.770	38.769	0	1.000	32179734	10712658	13091	32727	818	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.984	39.984	0	1.086	1241560	428114	708	1770	605		
419.8220	39.984	39.984	0	1.086	2654524	934638	1220	3050	766	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.992	39.994	0	1.000	27042217	9782975	14182	35455	690		
409.7788	39.992	39.994	0	1.000	26005081	9390740	13091	32727	717	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.680	39.679	0	1.078	2140949	740893	493	1232	1503		
437.8140	39.680	39.679	0	1.078	1958595	671115	528	1320	1271	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.689	39.689	0	1.000	20960176	7477924	5602	14005	1335		
425.7737	39.689	39.689	0	1.000	20076390	7124263	5155	12887	1382	1.04(0.88-1.20)	
13C-OCDD											
469.7780	42.154	42.157	0	1.145	2642796	816997	356	890	2295		
471.7750	42.154	42.157	0	1.145	2902376	908750	342	855	2657	0.91(0.76-1.02)	
OCDF											
441.7428	42.263	42.260	0	1.003	36348194	11728155	3078	7695	3810		
443.7399	42.255	42.260	0	1.002	40874222	13484662	3377	8442	3993	0.89(0.76-1.02)	
OCDD											
457.7377	42.170	42.167	0	1.000	26726653	8635915	2802	7005	3082		
459.7348	42.162	42.167	0	1.000	30354098	9941453	3235	8087	3073	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d				
Injection Date:	17-Nov-2020 16:08:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.82

Processing Integration Results

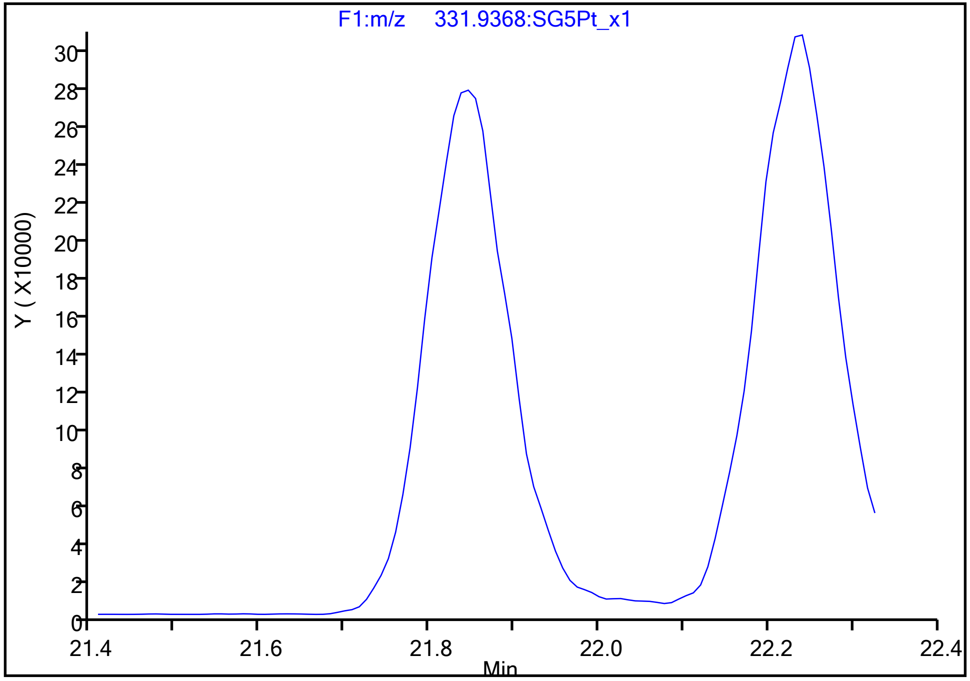

RT: 21.85

Area: 1964389

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

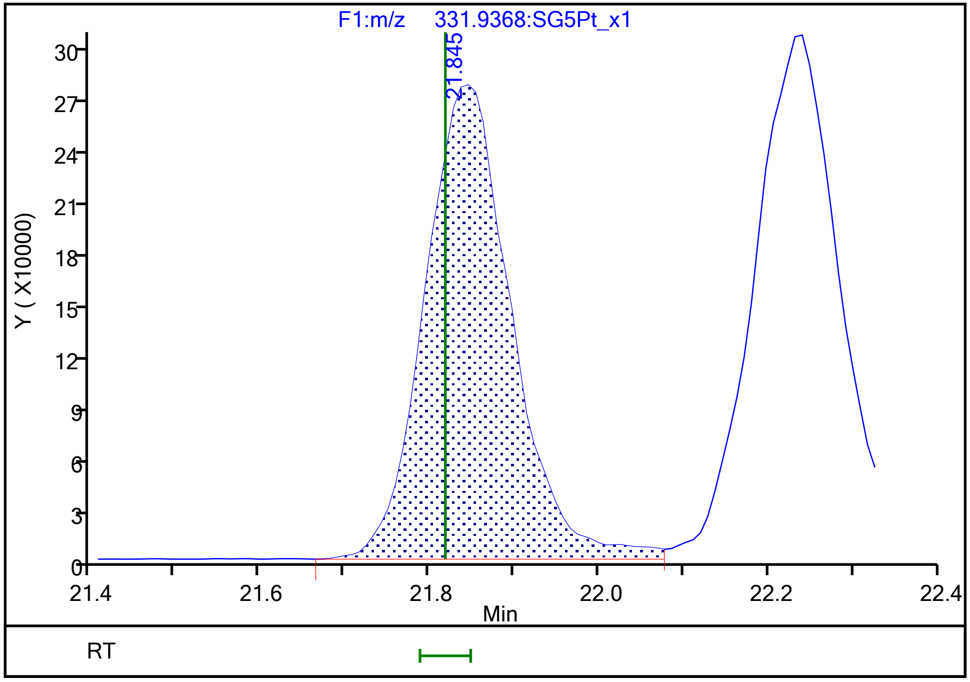

Reviewer: stephensk, 18-Nov-2020 08:59:02

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

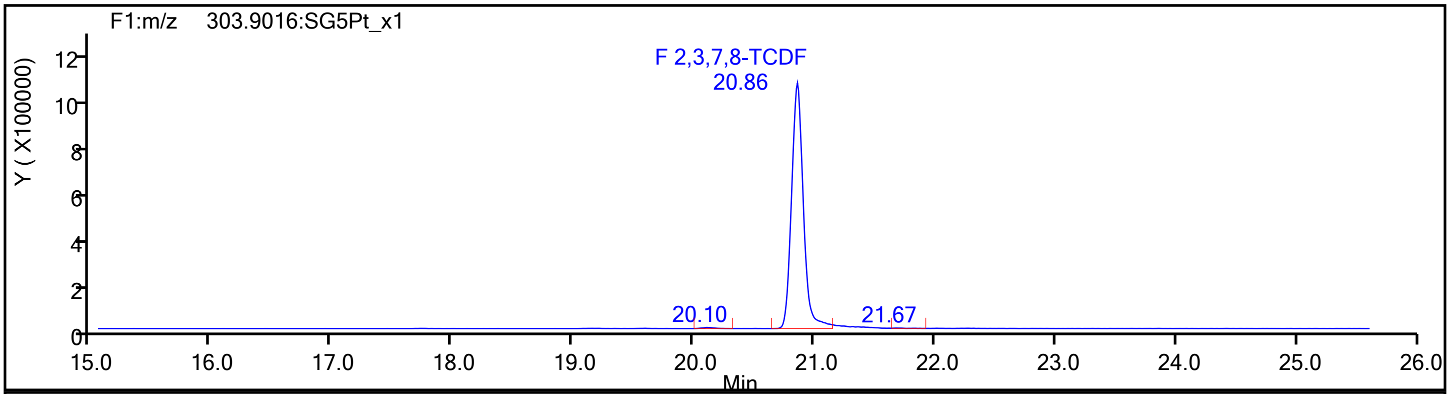

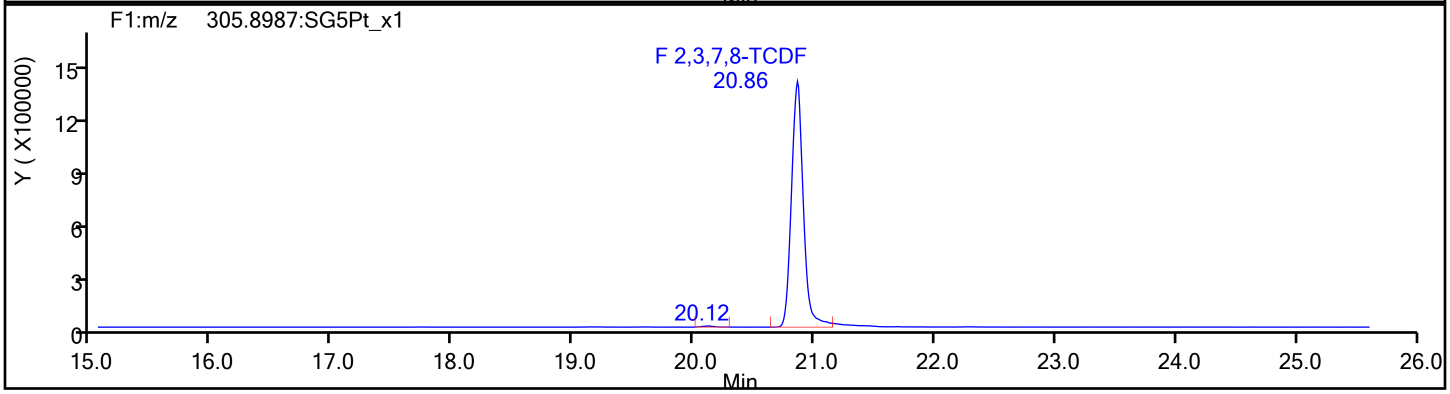

TCDF Standards

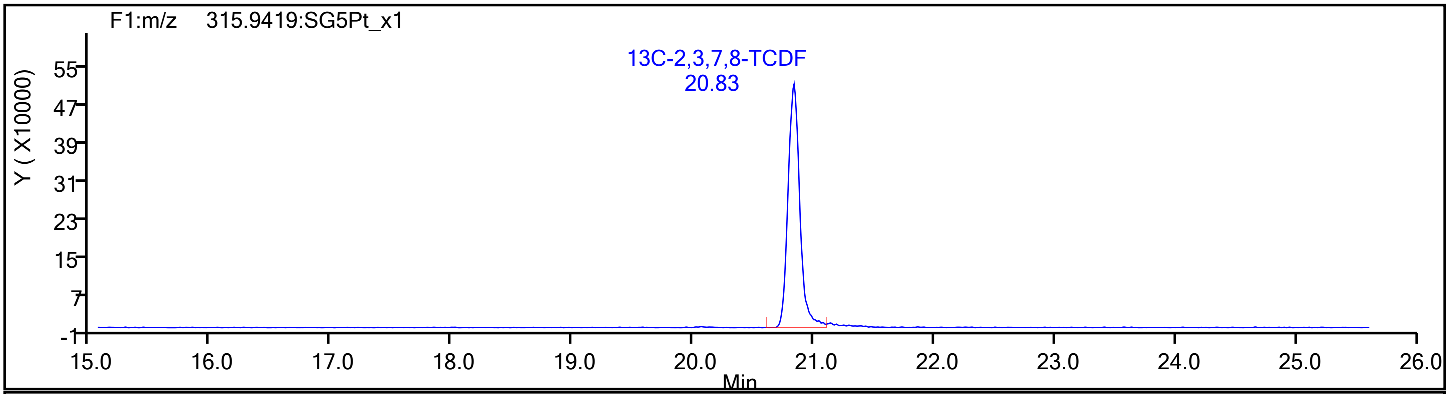

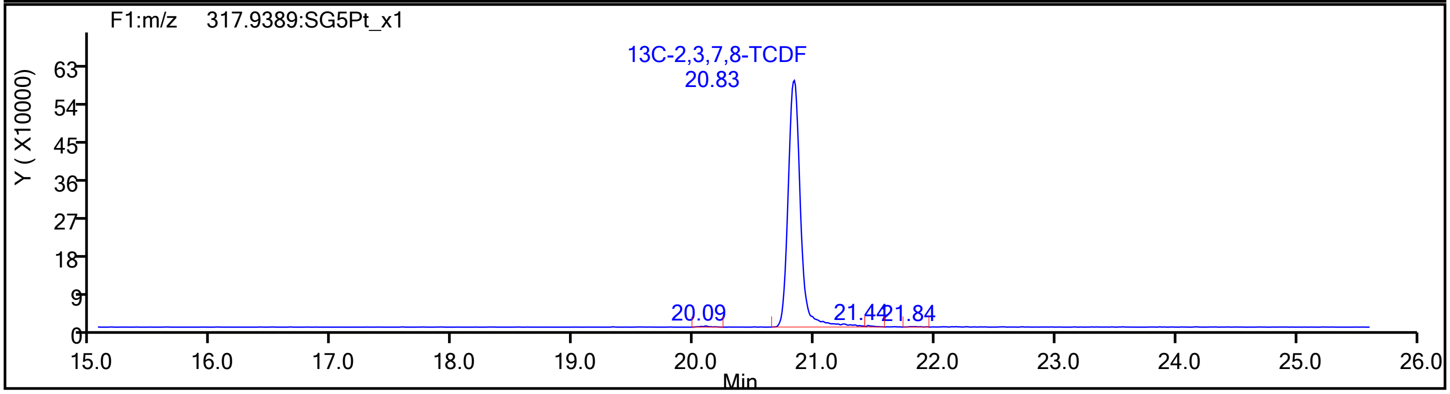

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

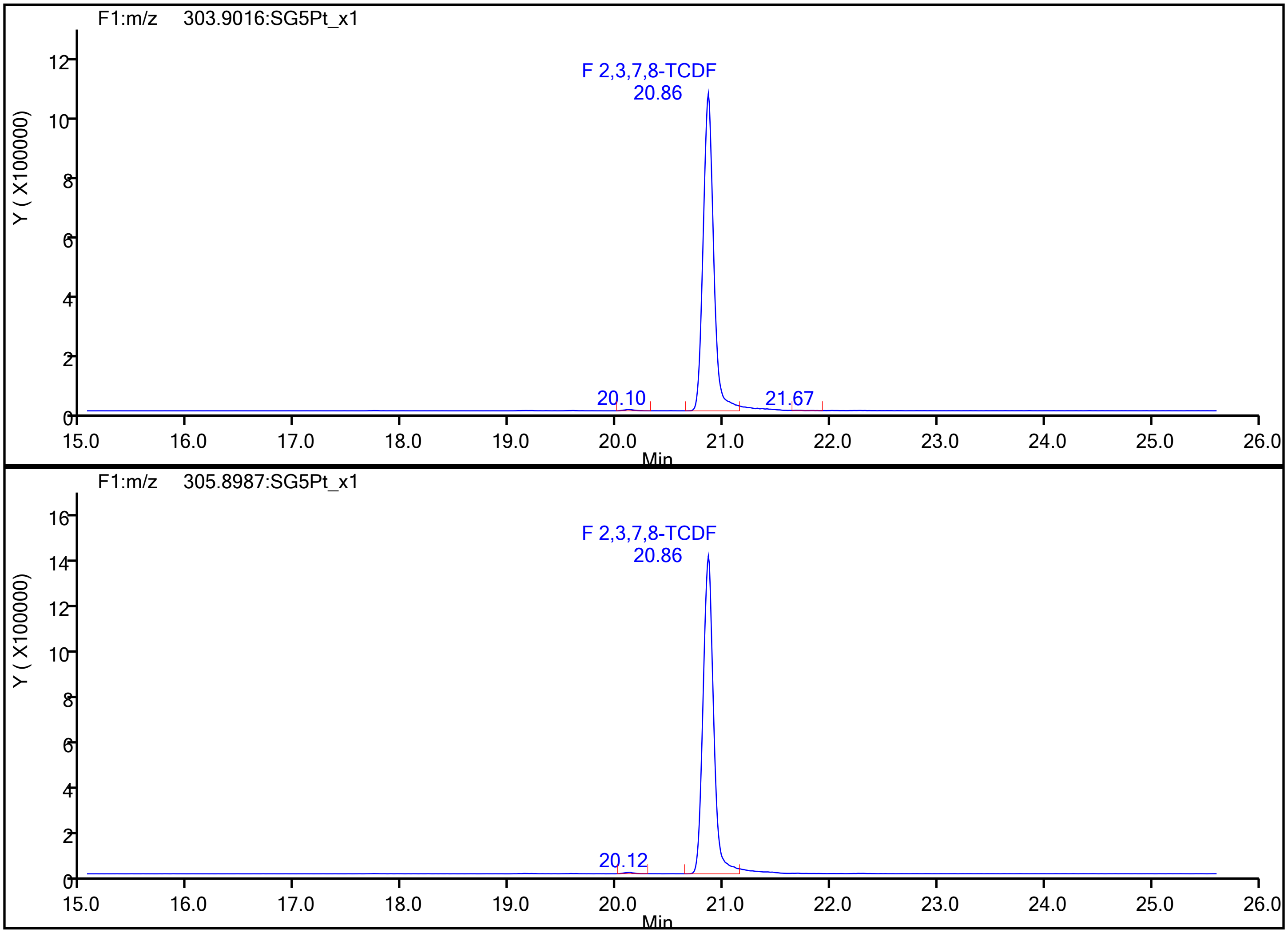

TCDF Interference Mass

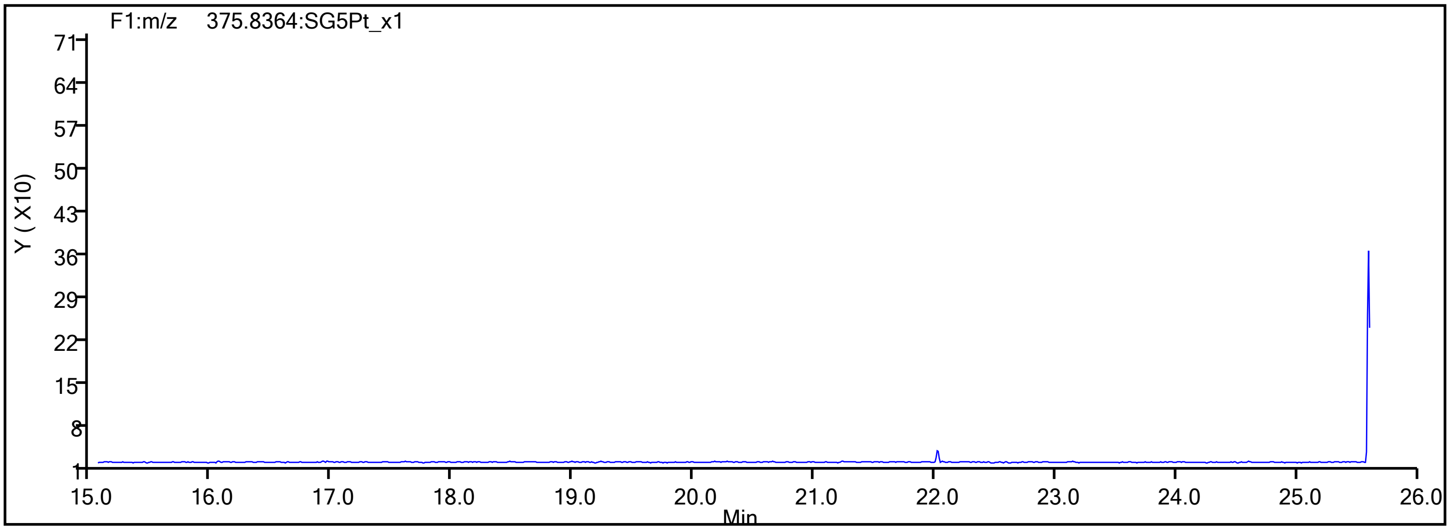

Report Date: 18-Nov-2020 12:35:31
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Injection Date: 17-Nov-2020 16:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 432585
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

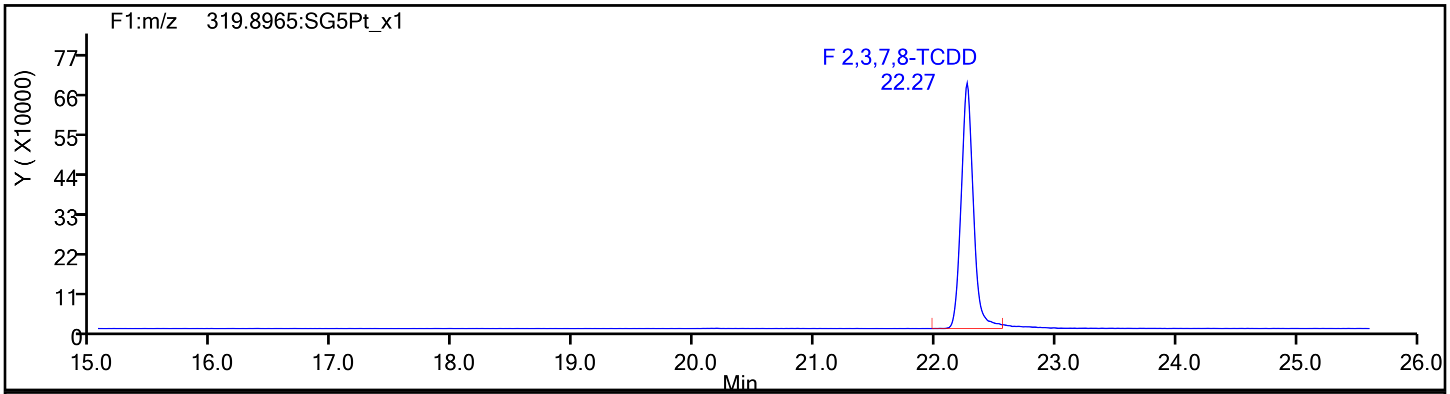

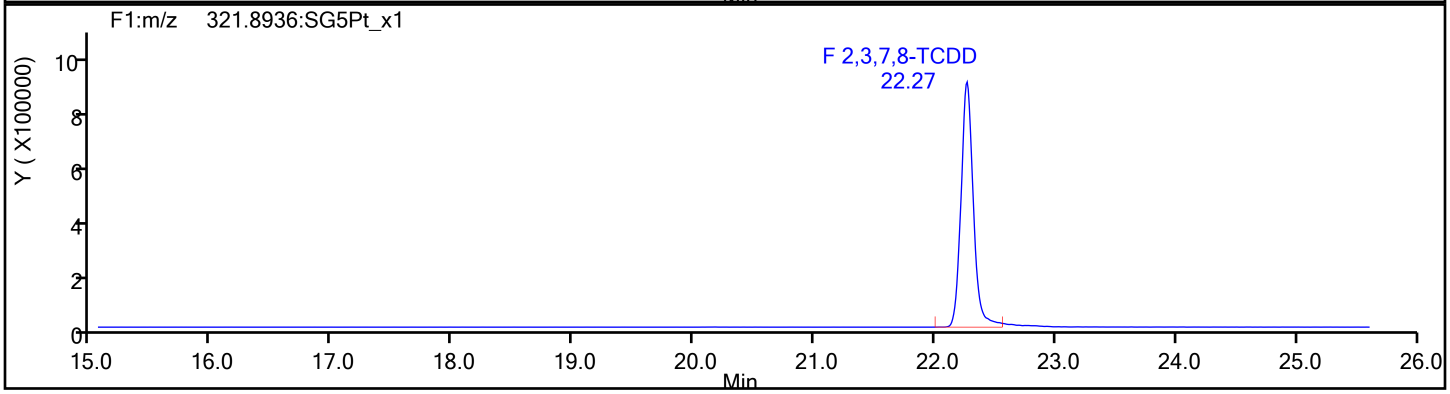

TCDD Standards

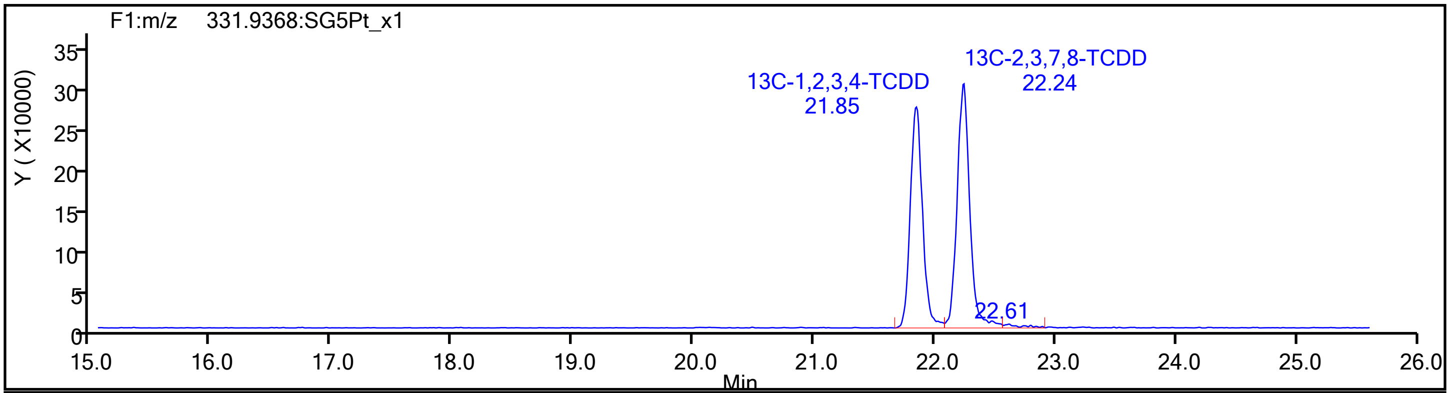

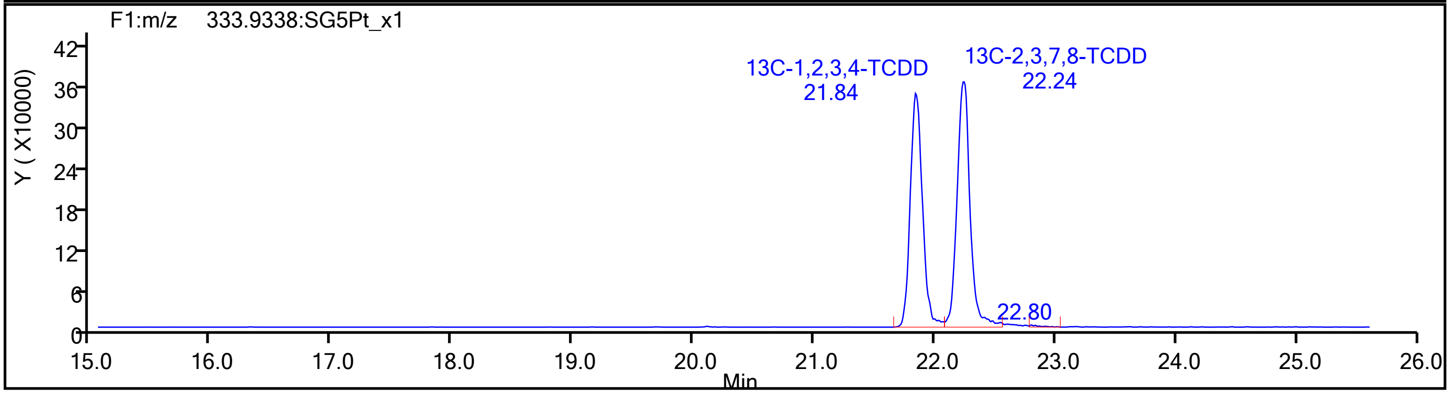

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

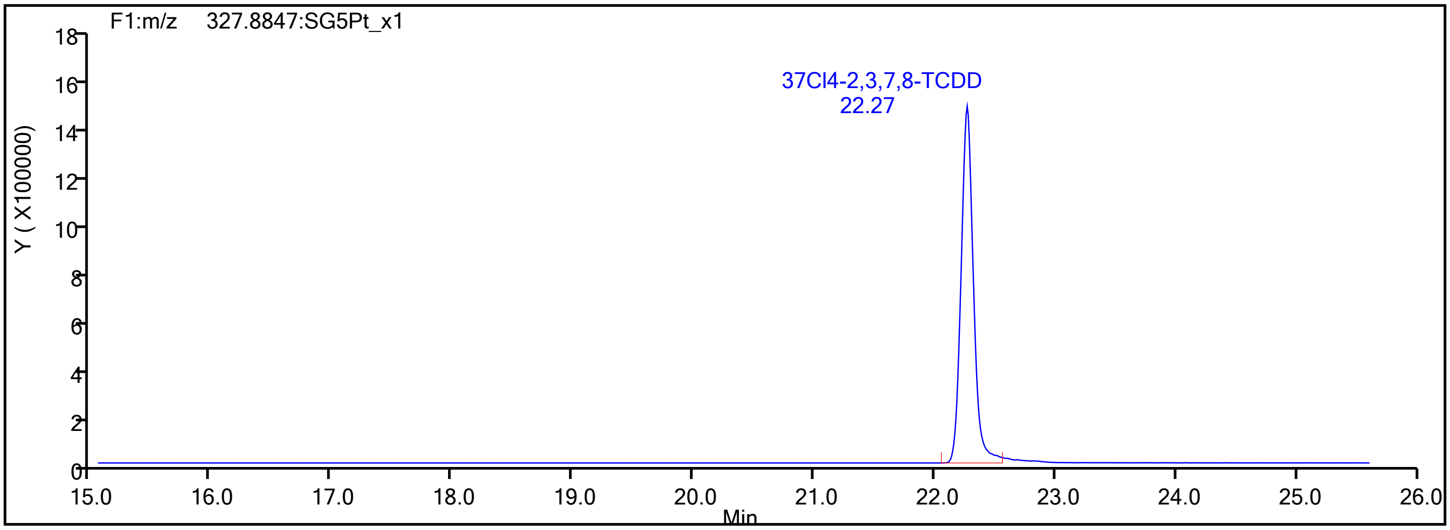

37Cl4-TCDD Standards

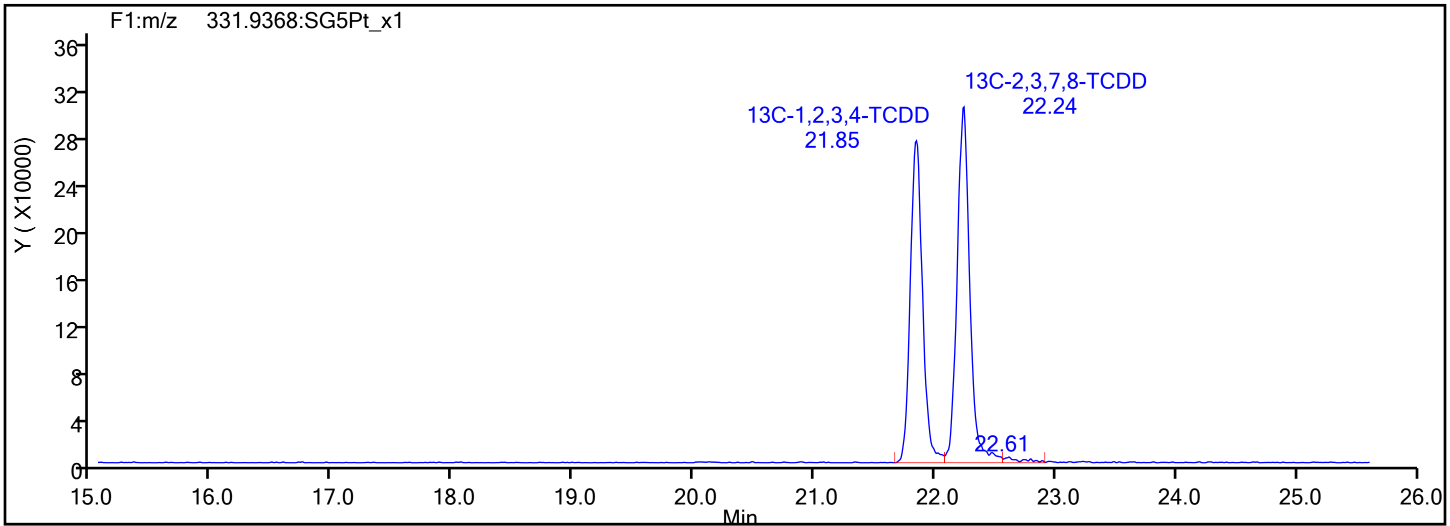

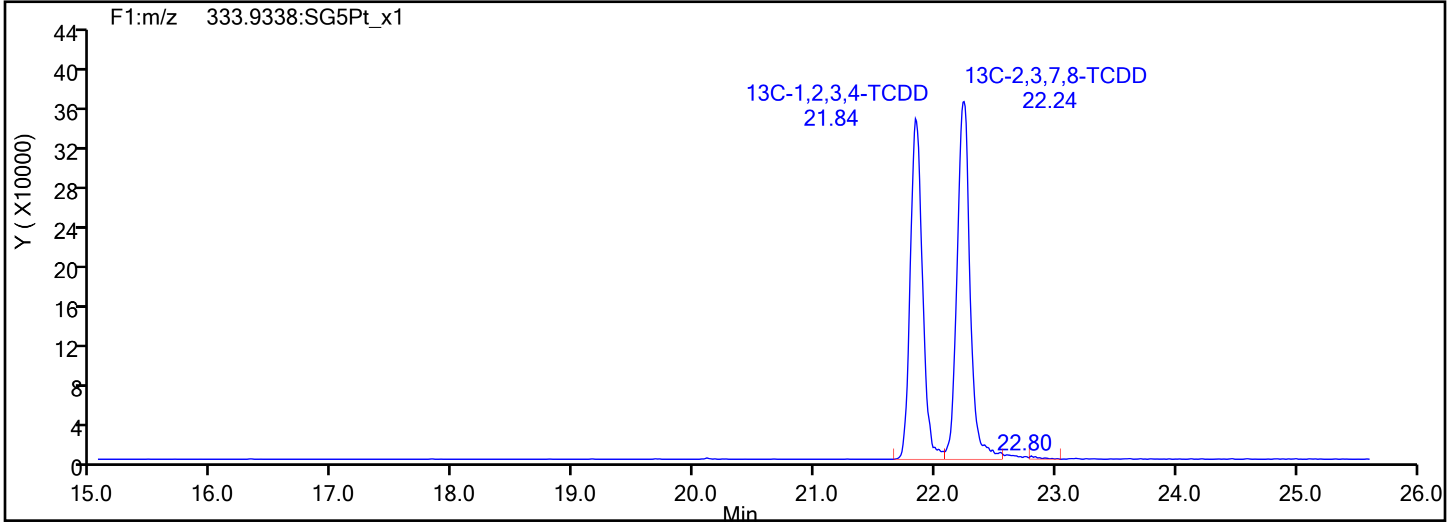

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

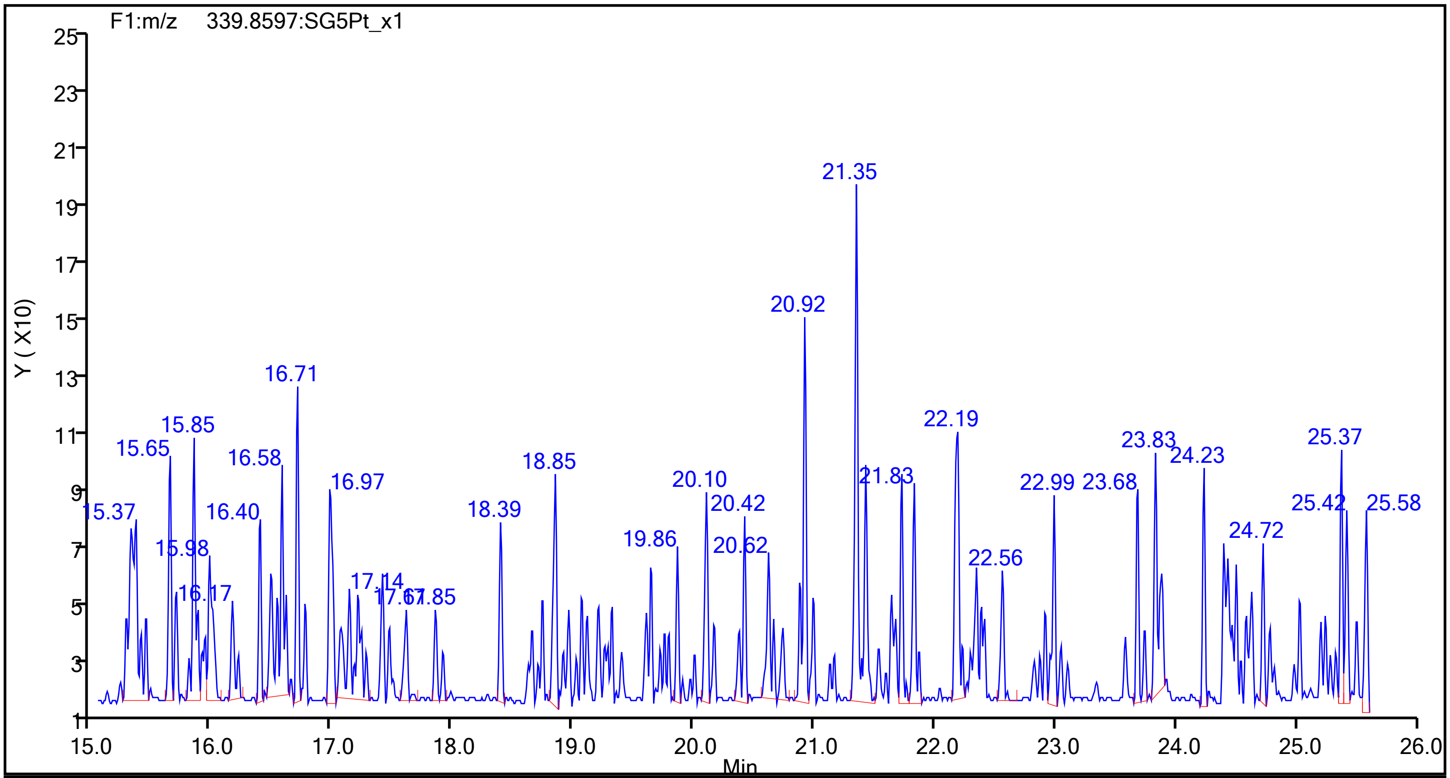

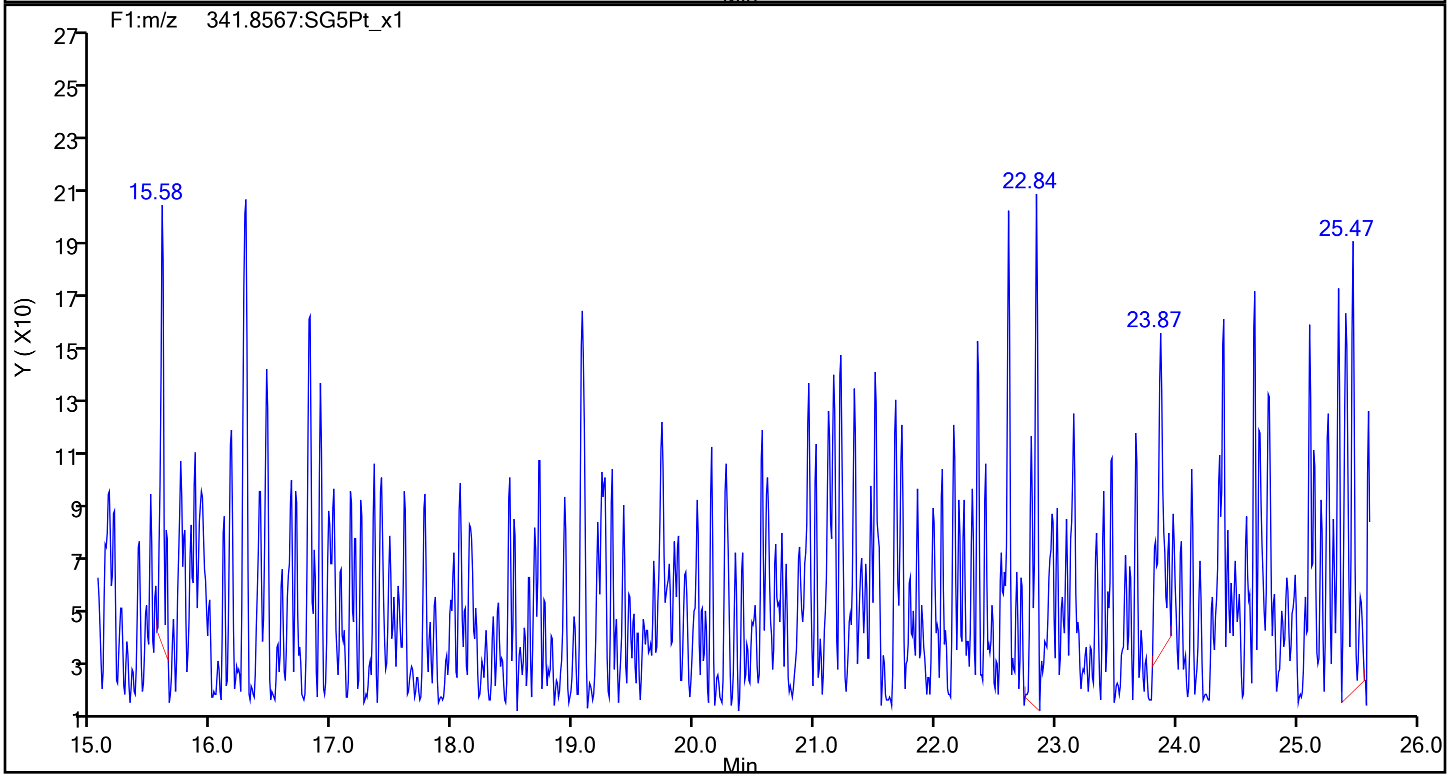

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

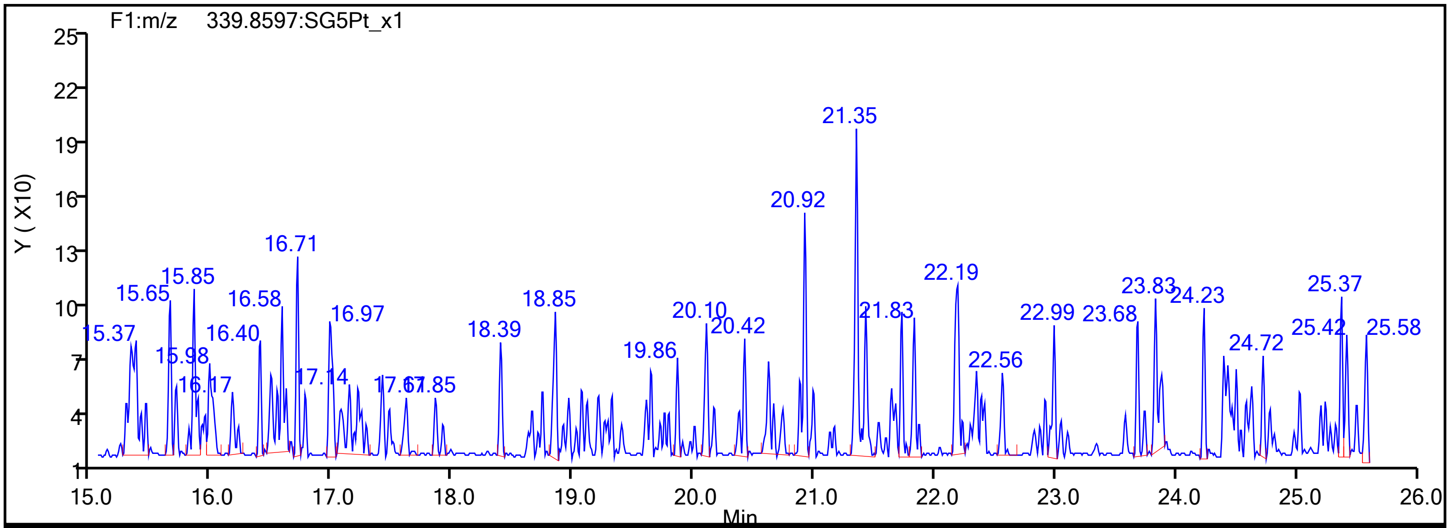

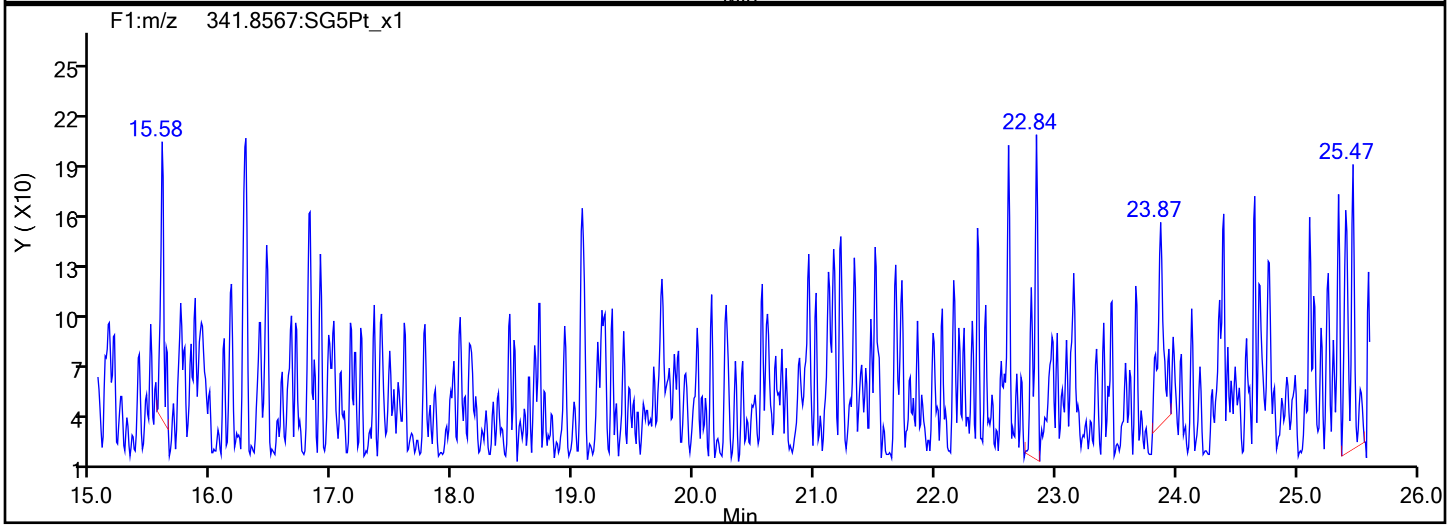

F1 PeCDFs Interference Mass

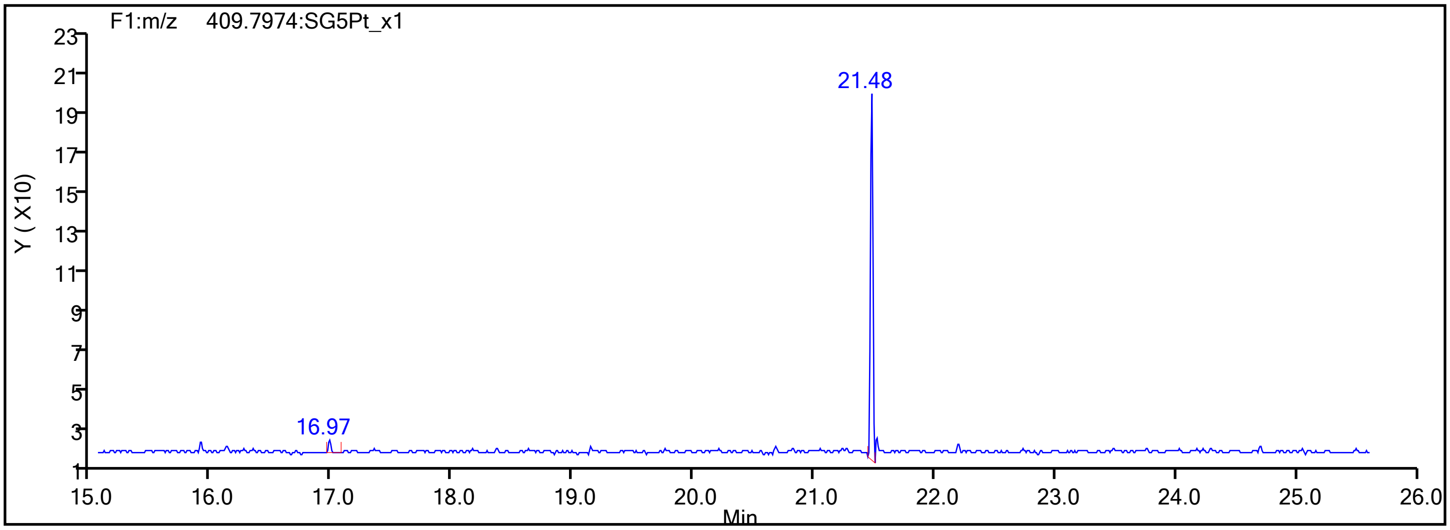

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

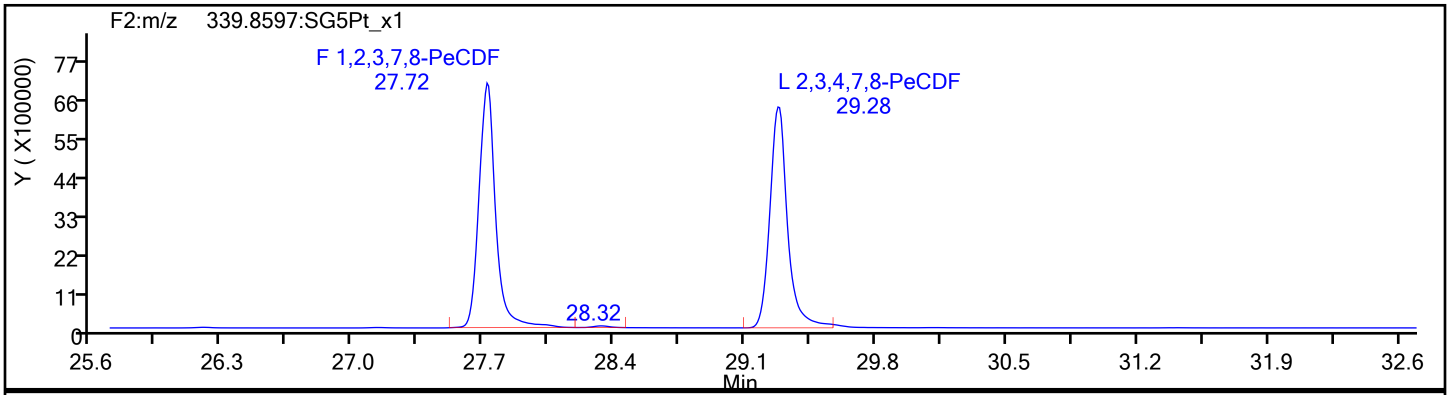

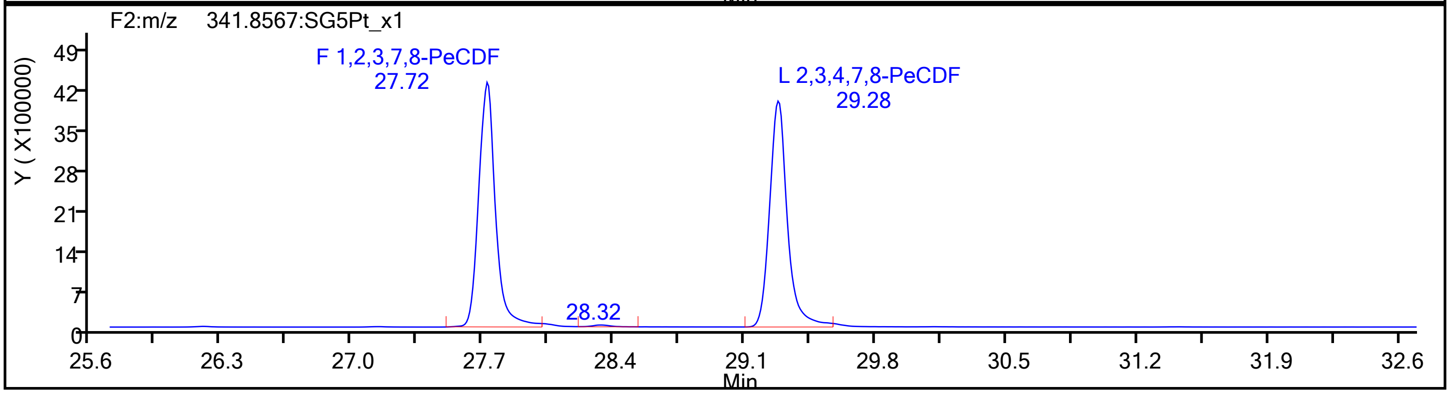

PeCDF Standards

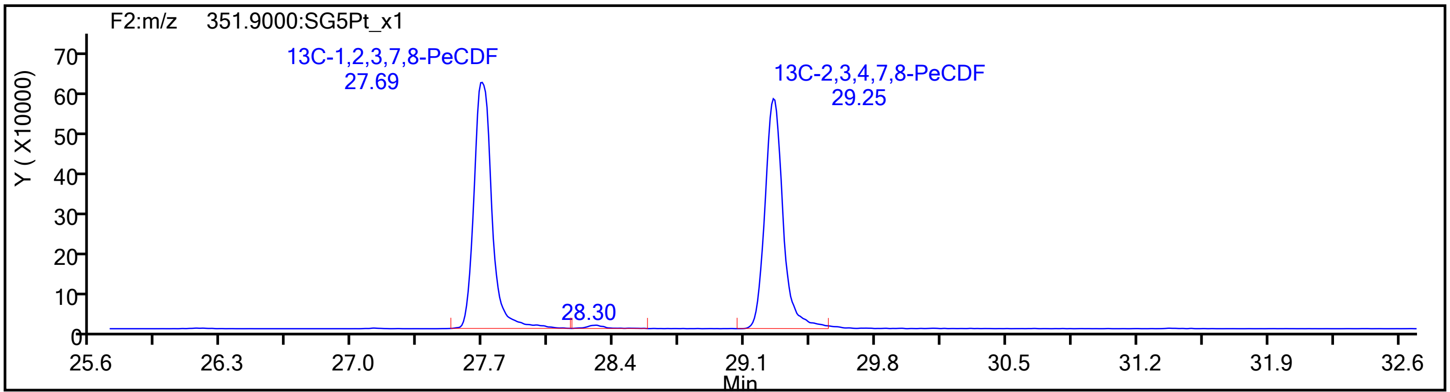

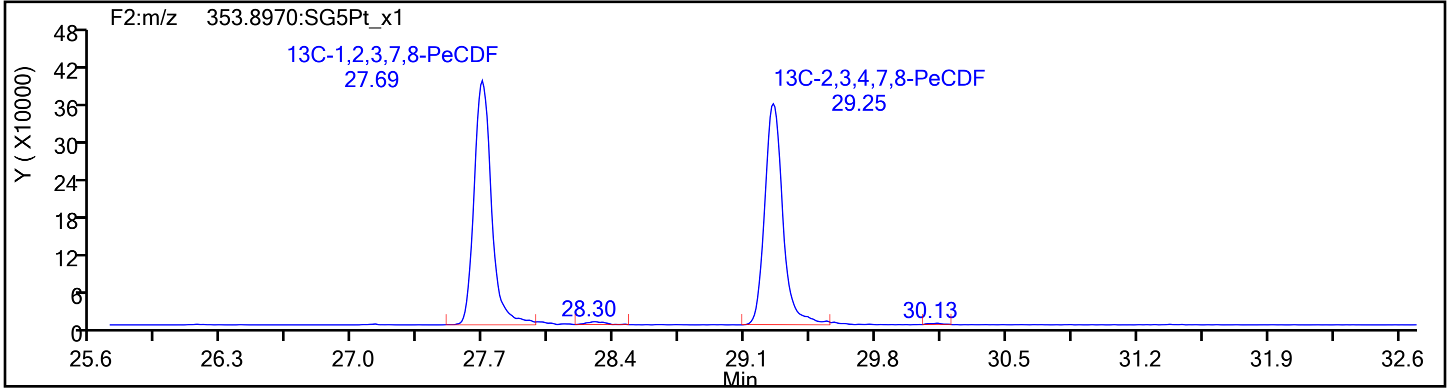

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

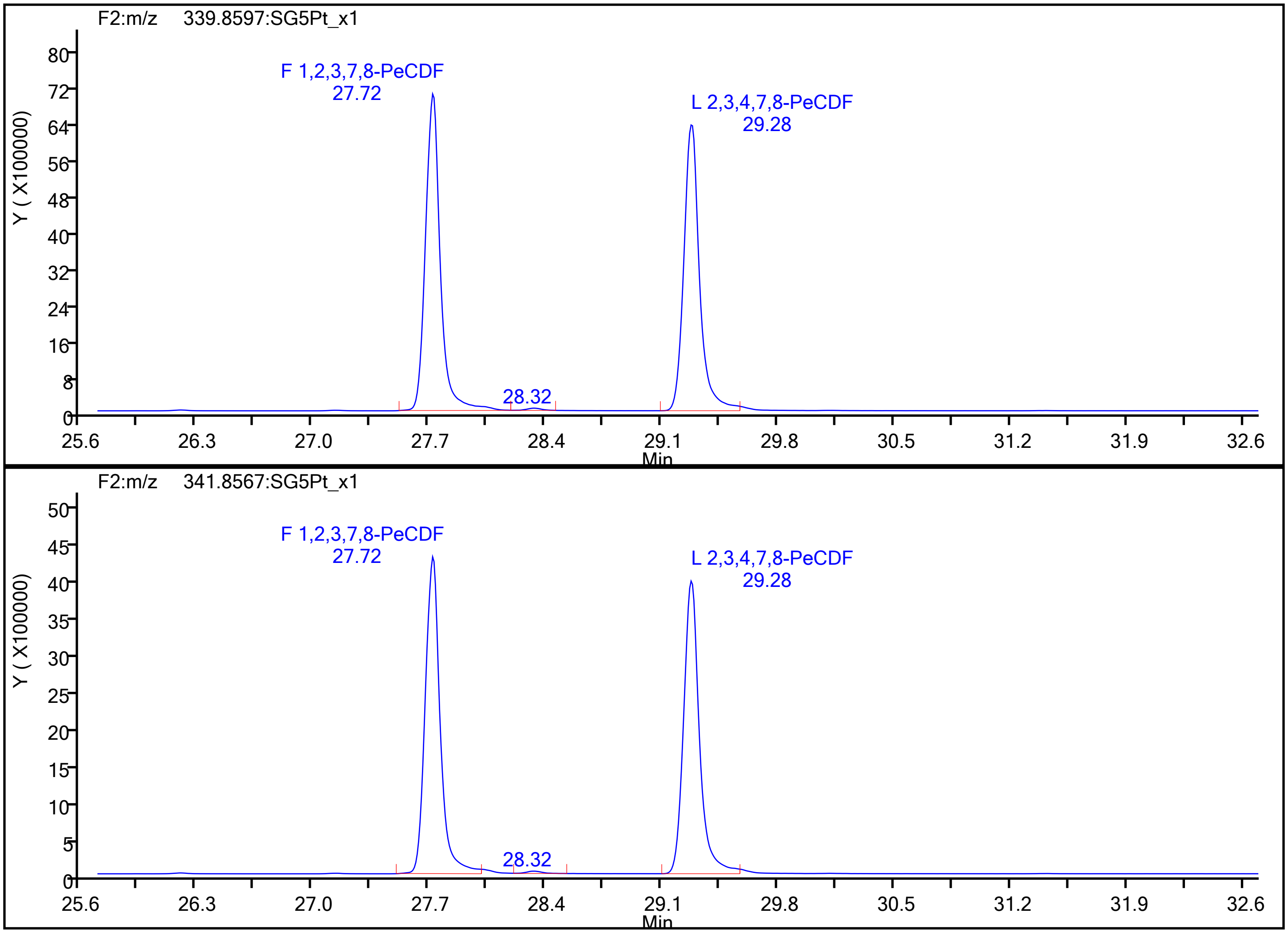

PeCDF Interference Mass

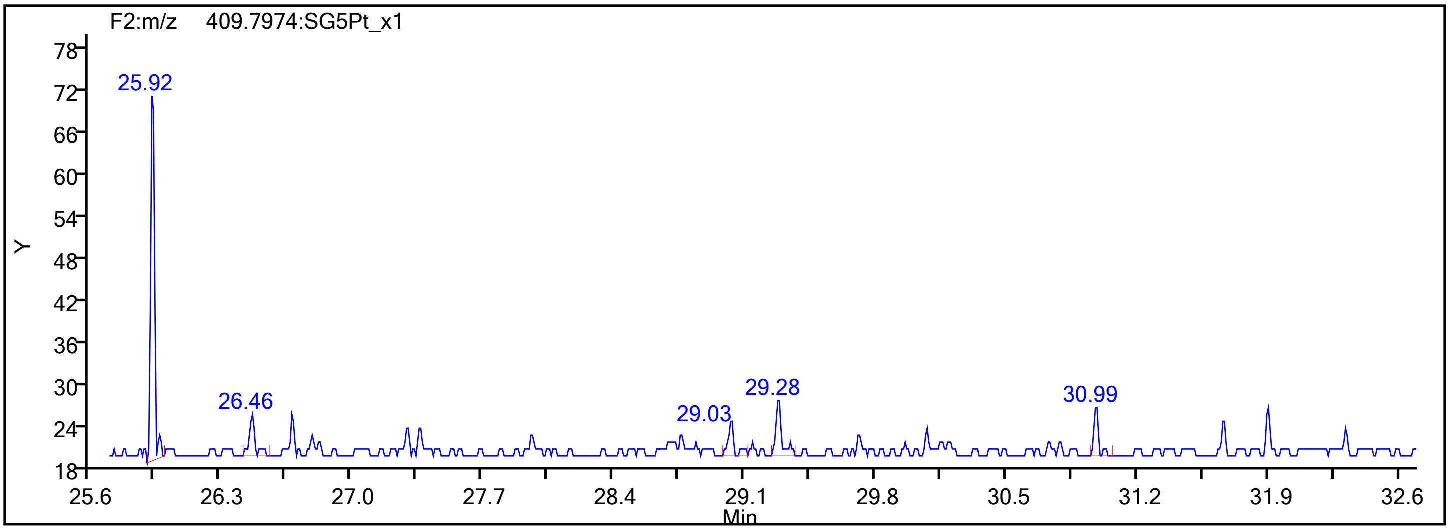

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Injection Date: 17-Nov-2020 16:08:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

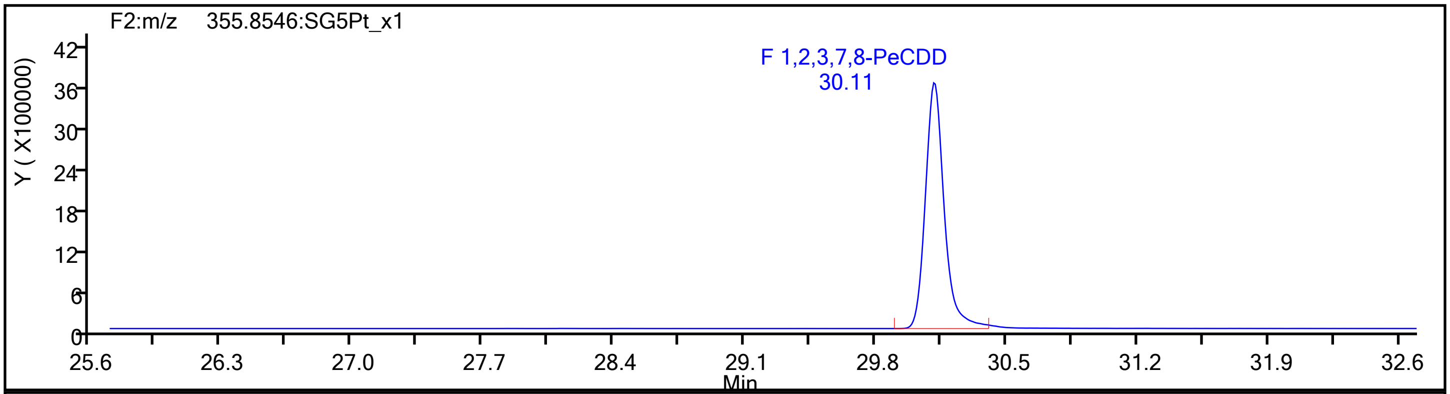

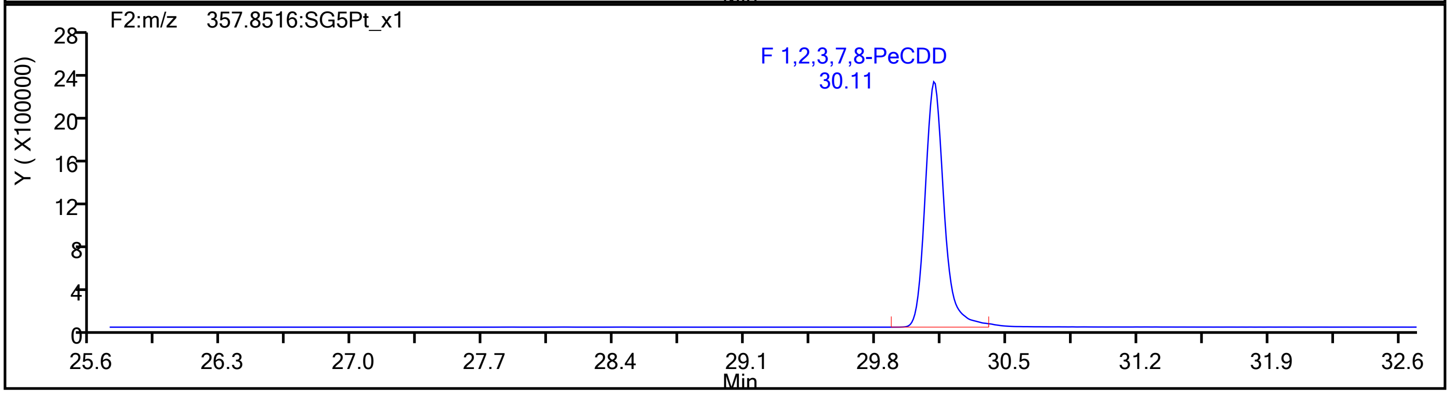

PeCDD Standards

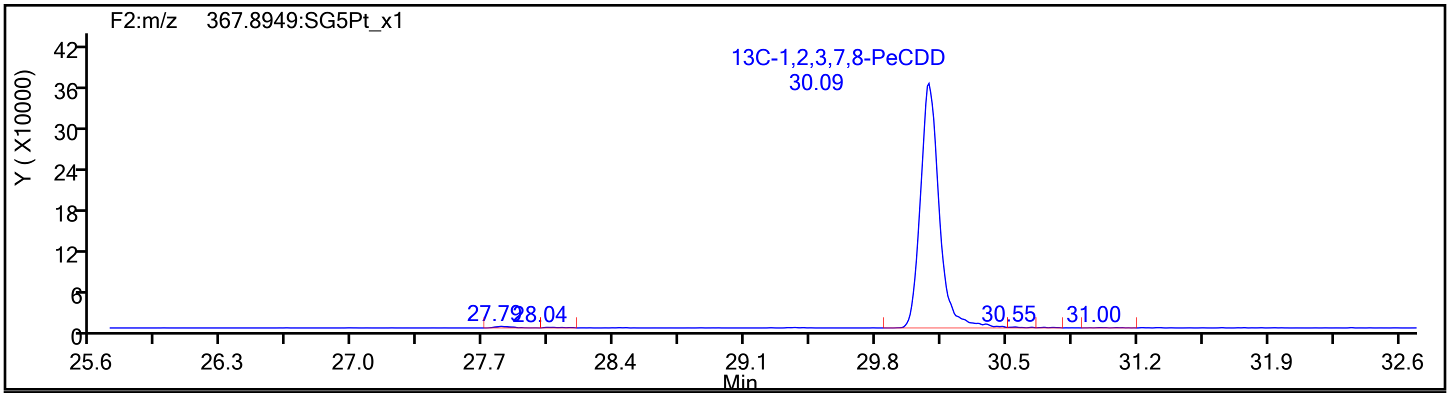

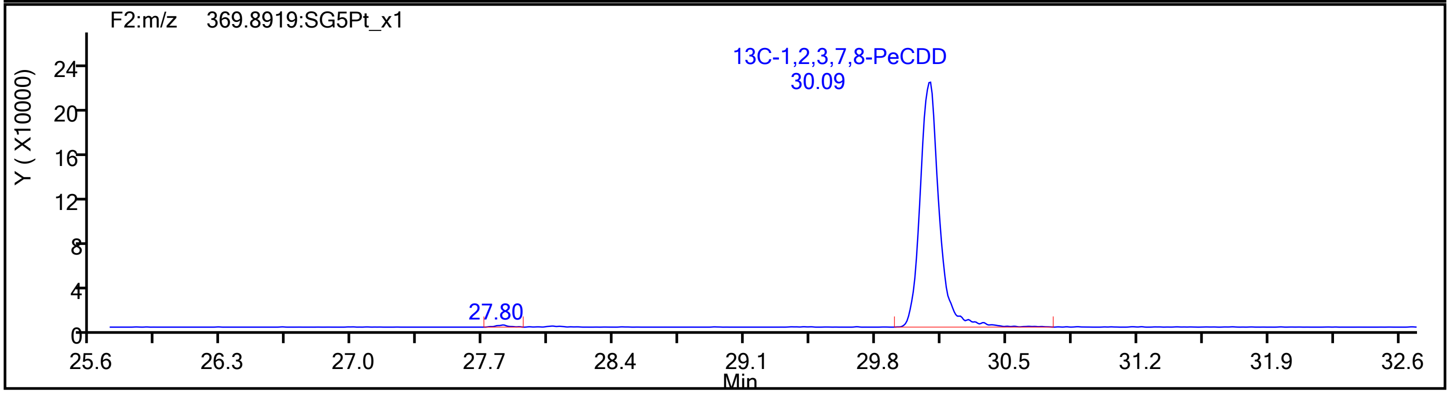

Report Date: 18-Nov-2020 12:35:31 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

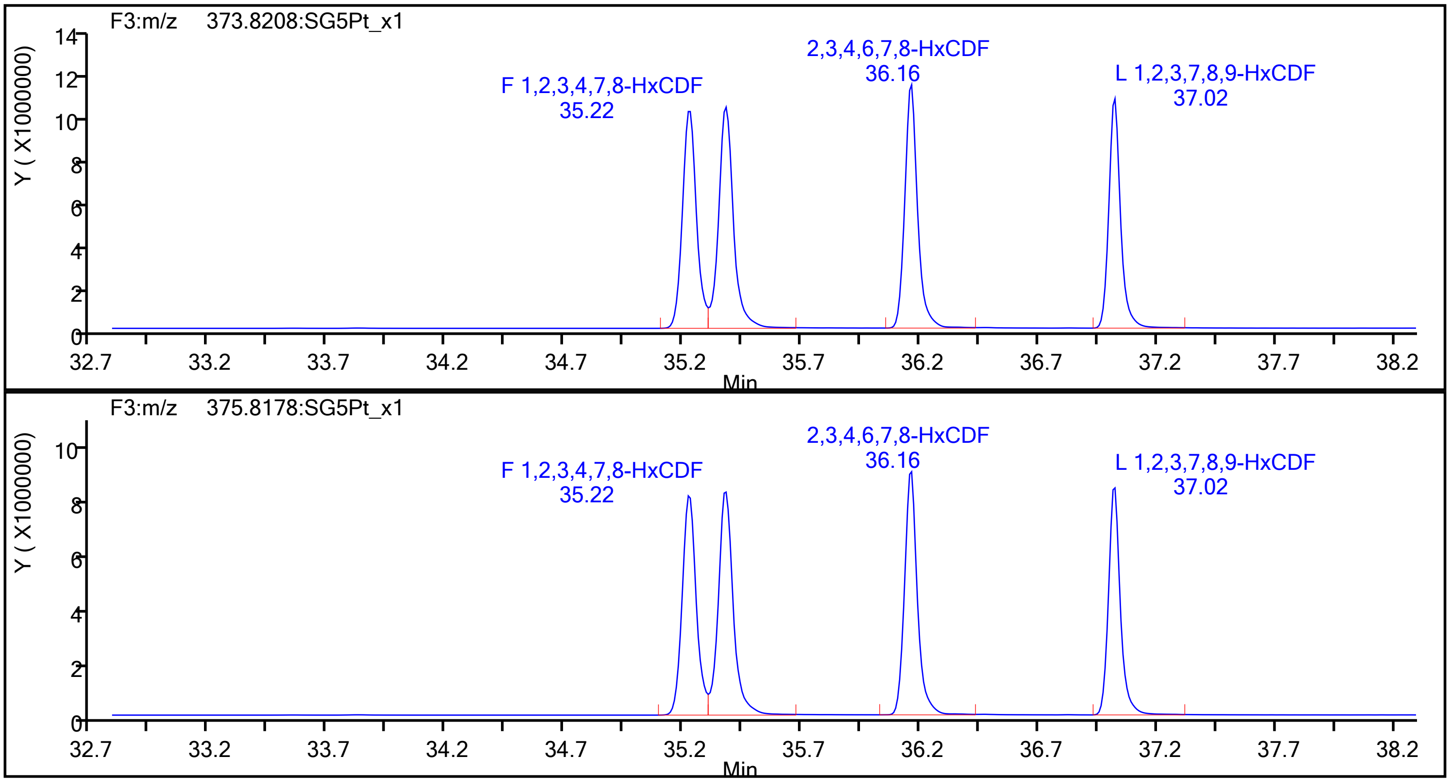

HxCDF Standards

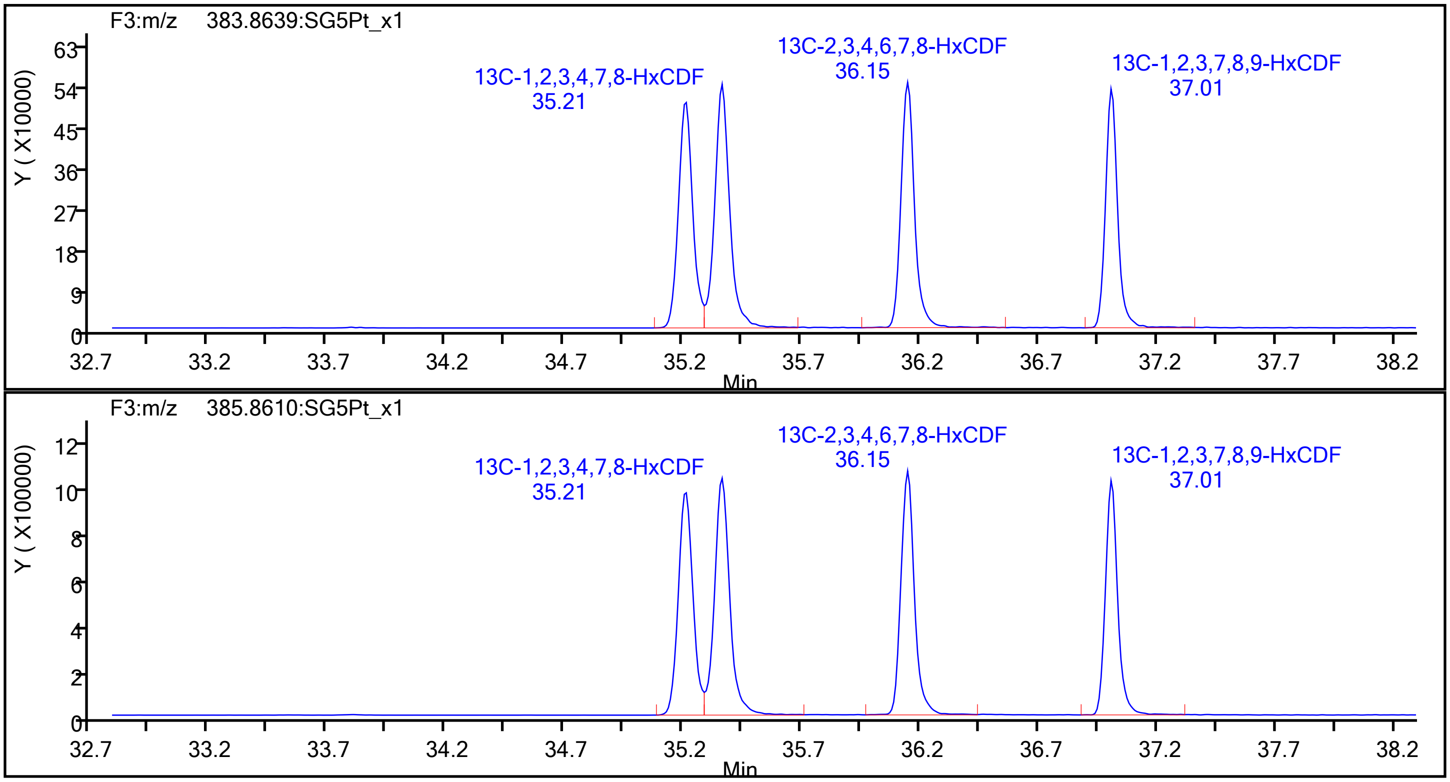

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Injection Date: 17-Nov-2020 16:08:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

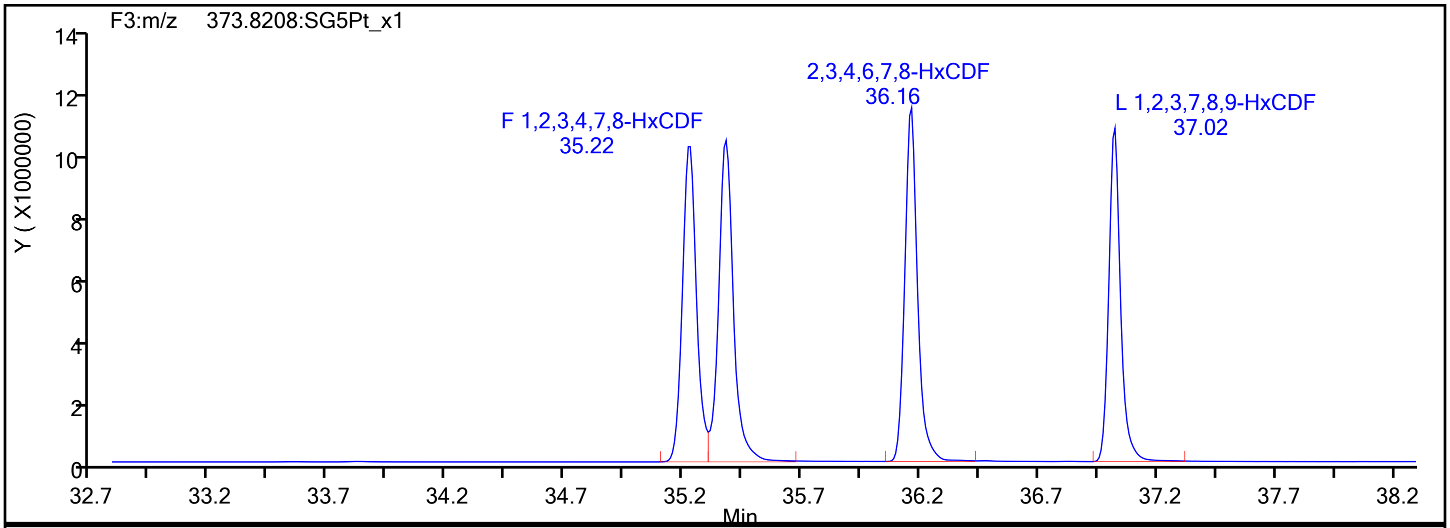

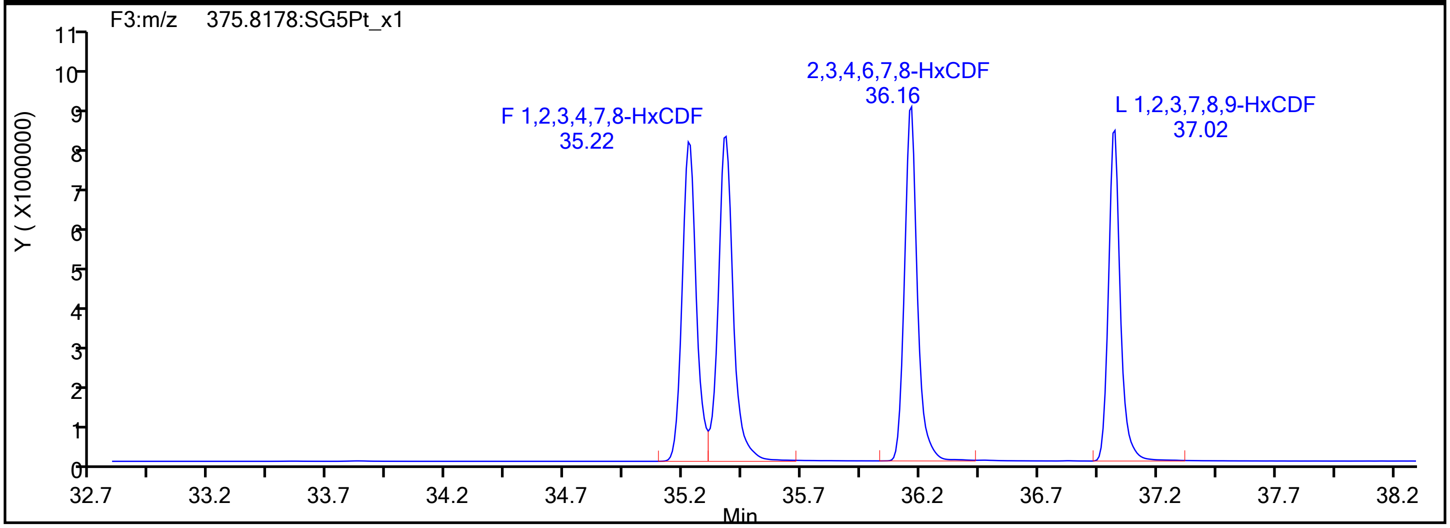

HxCDF Interference Mass

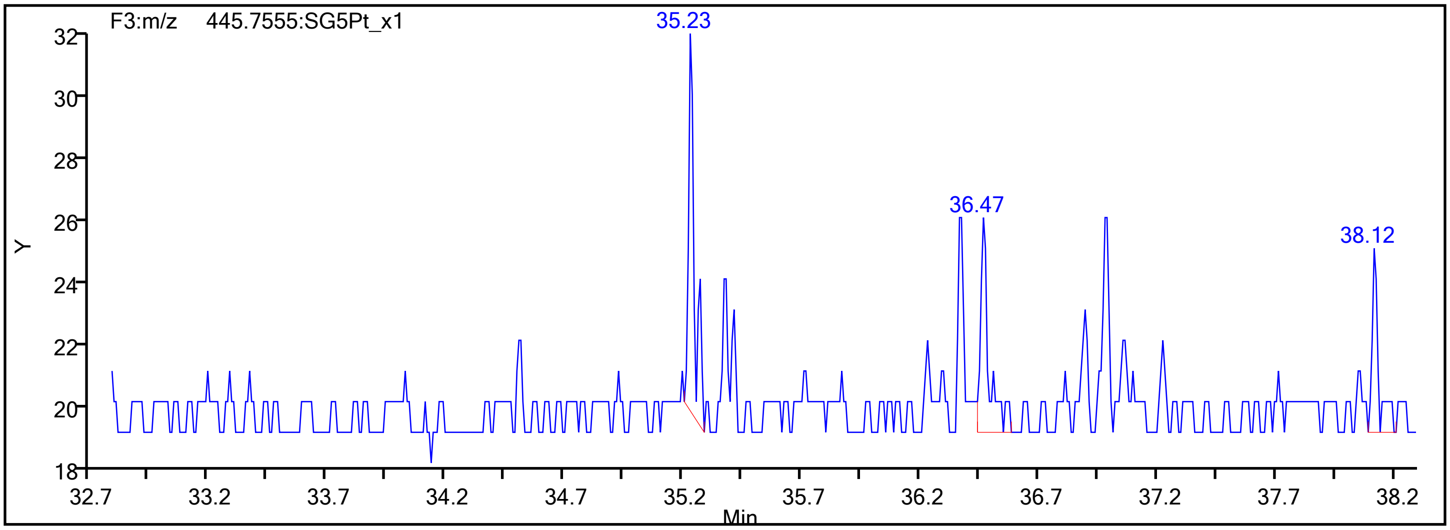

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Injection Date: 17-Nov-2020 16:08:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

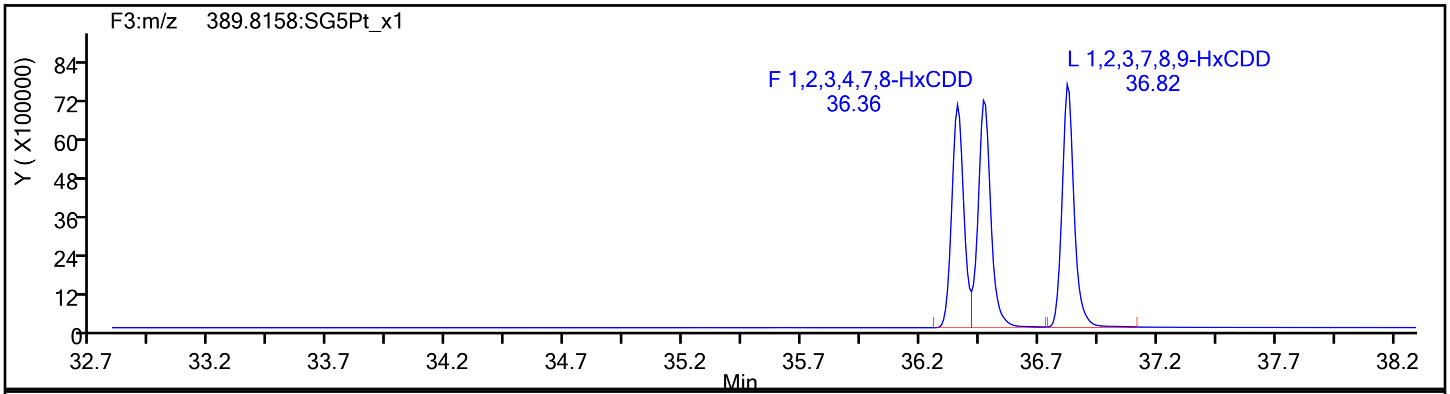

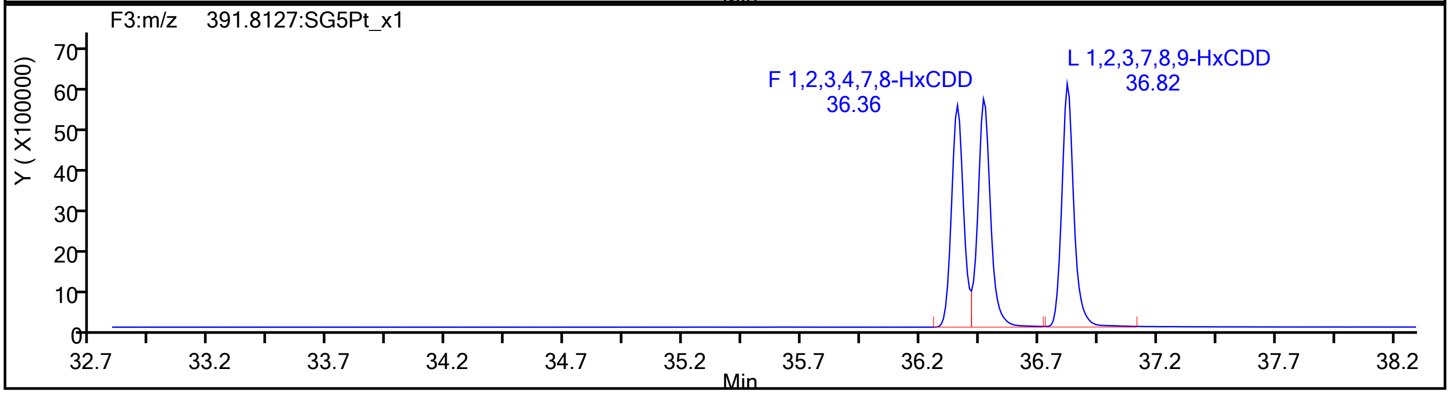

HxCDD Standards

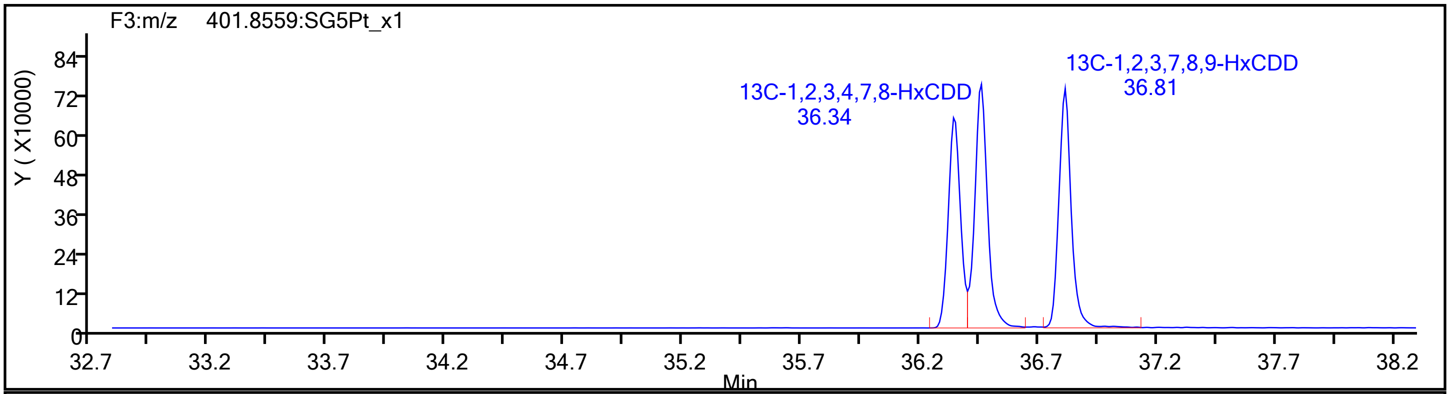

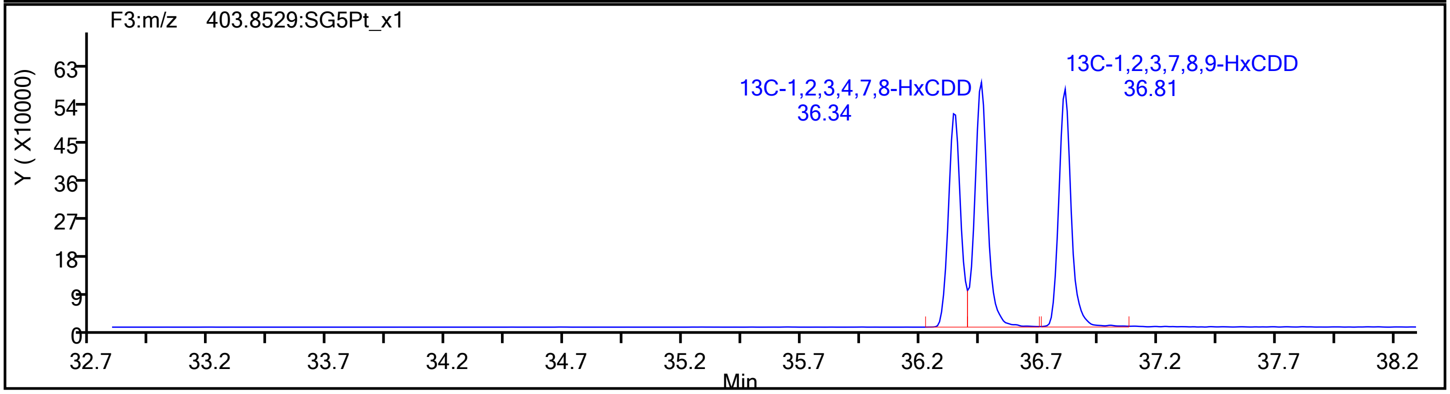

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

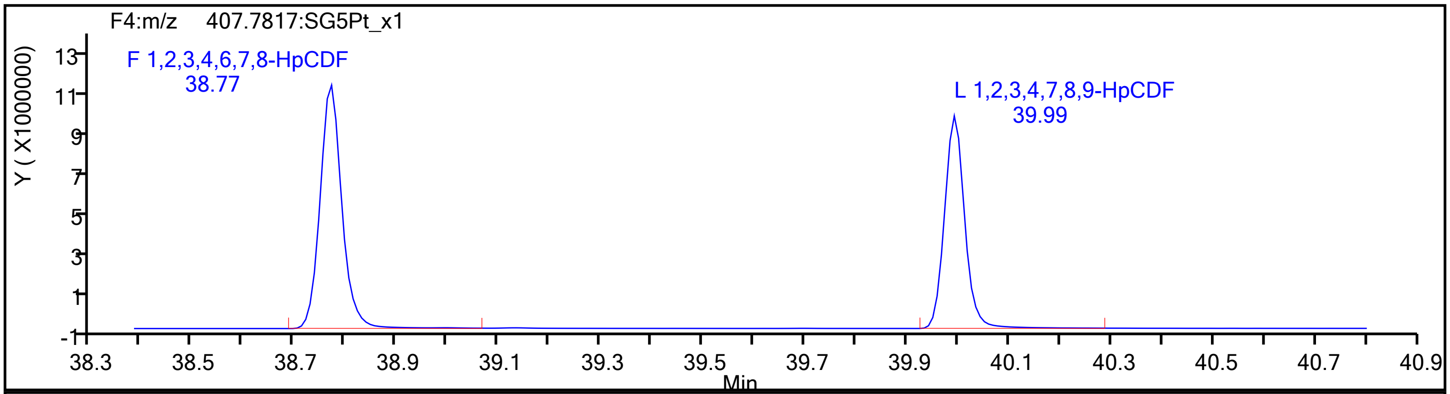

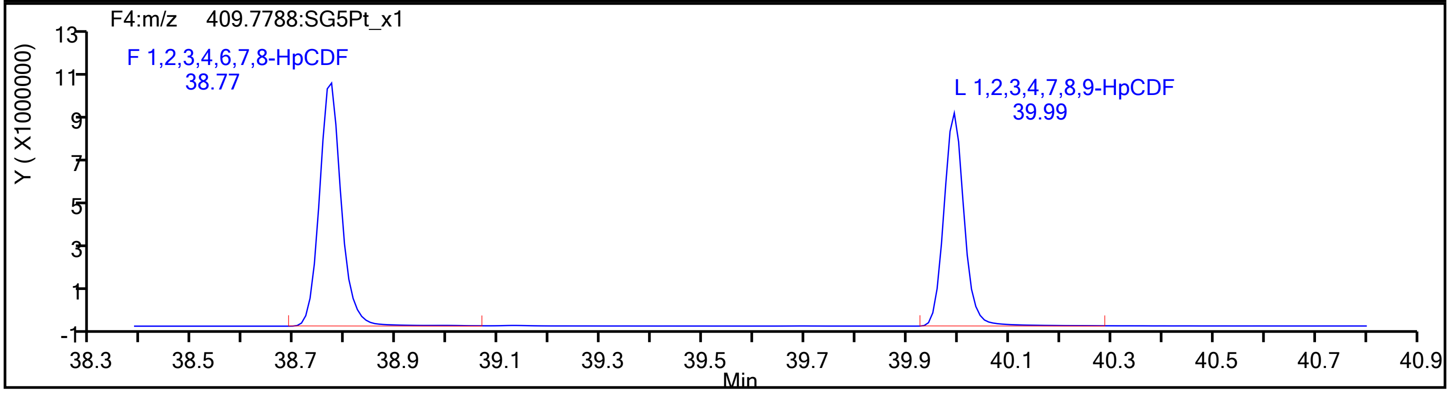

HpCDF Standards

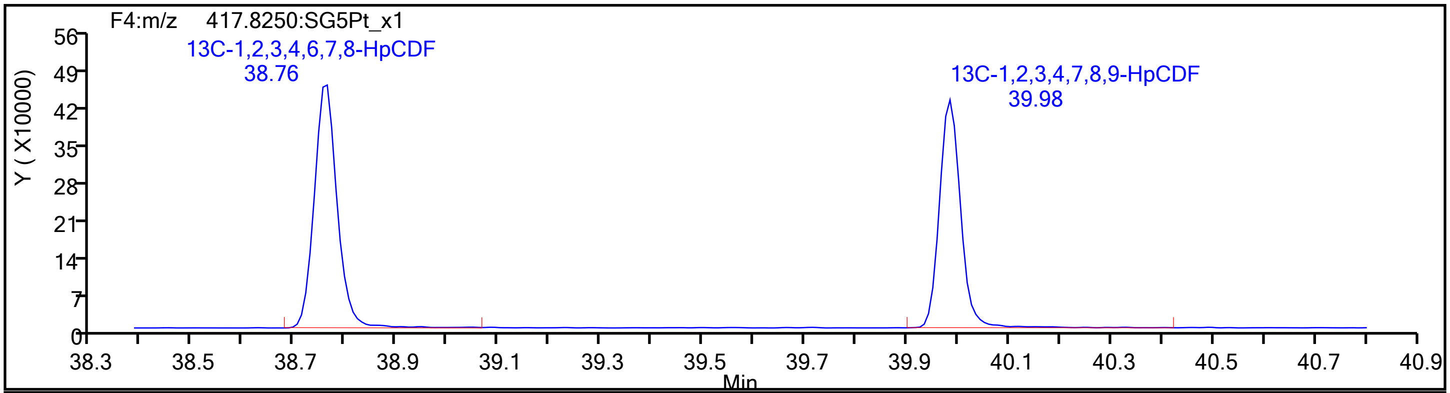

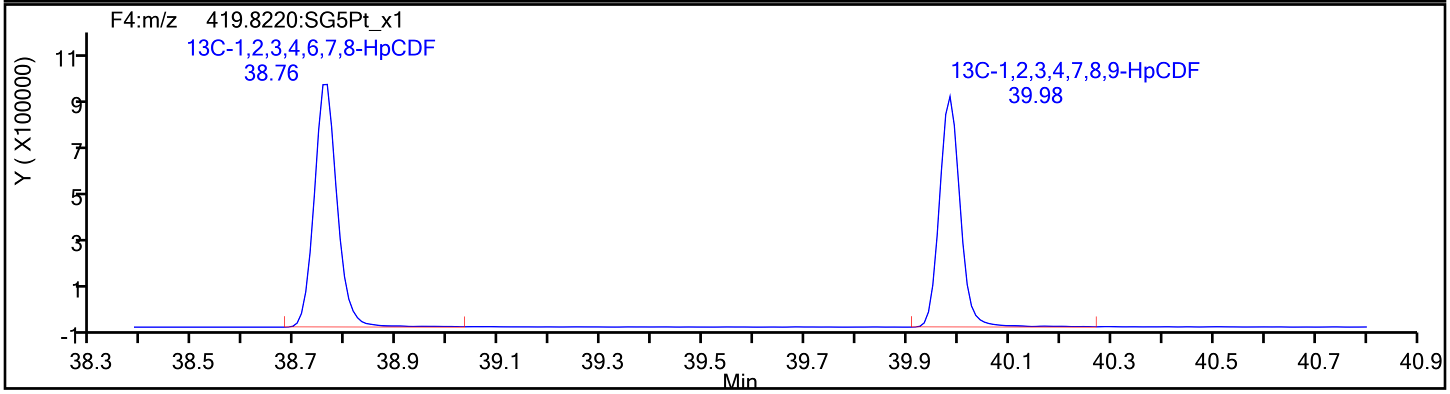

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

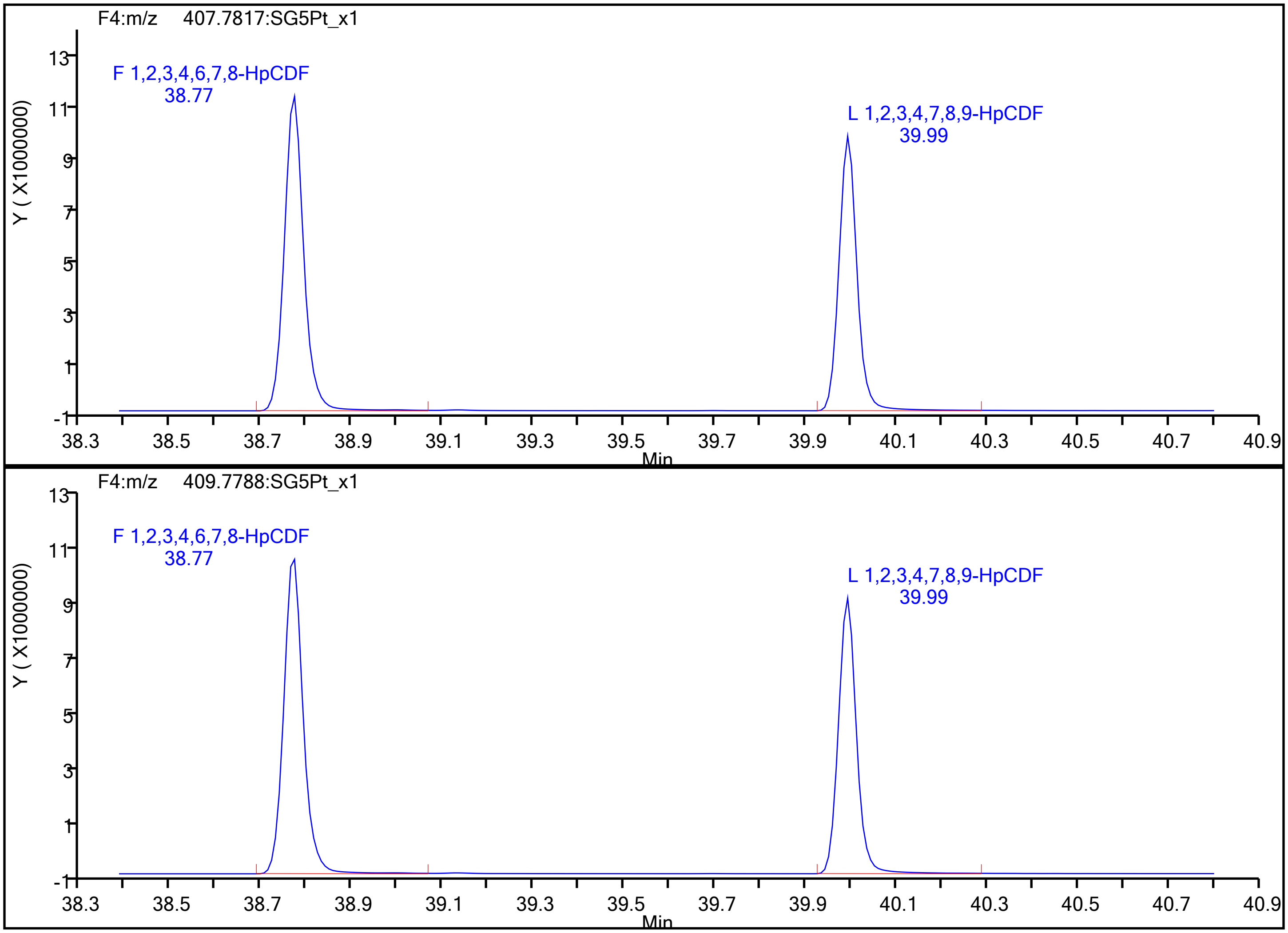

HpCDF Interference Mass

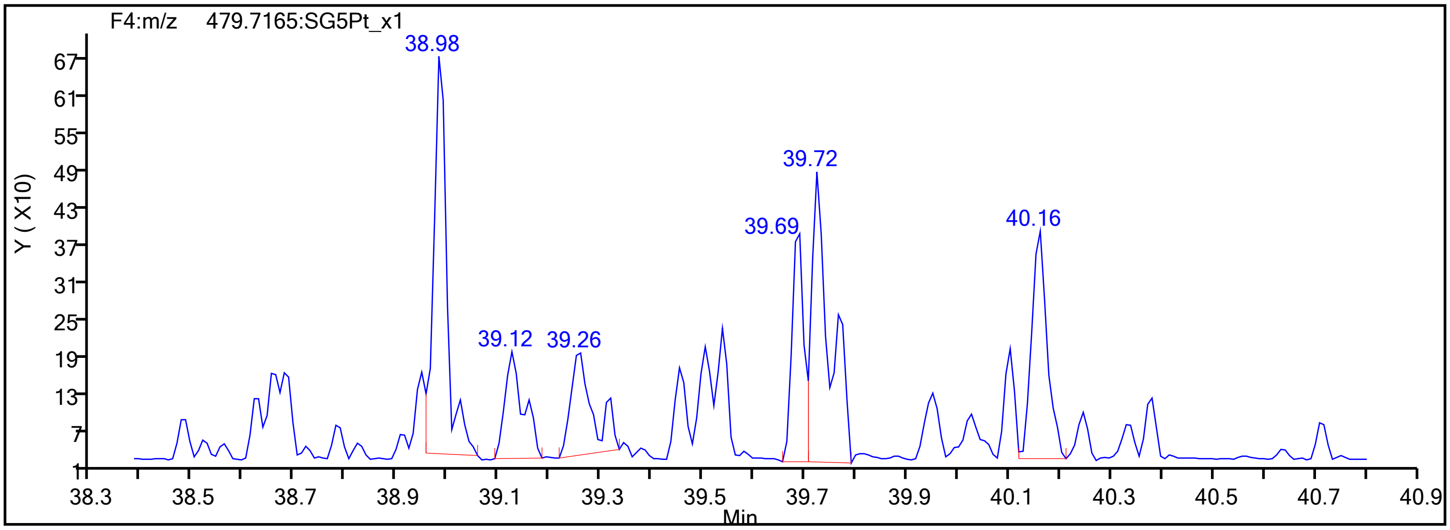

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

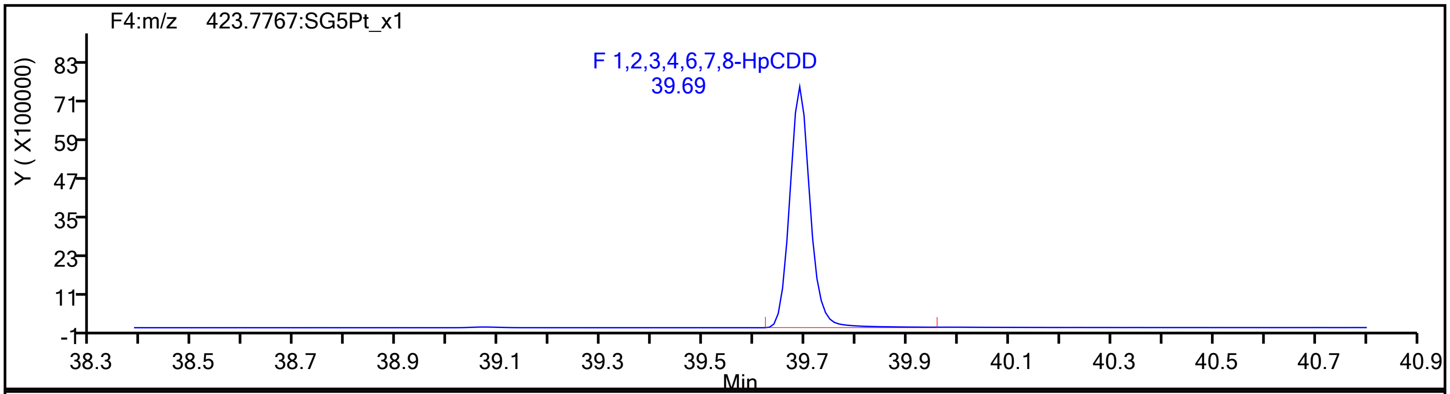

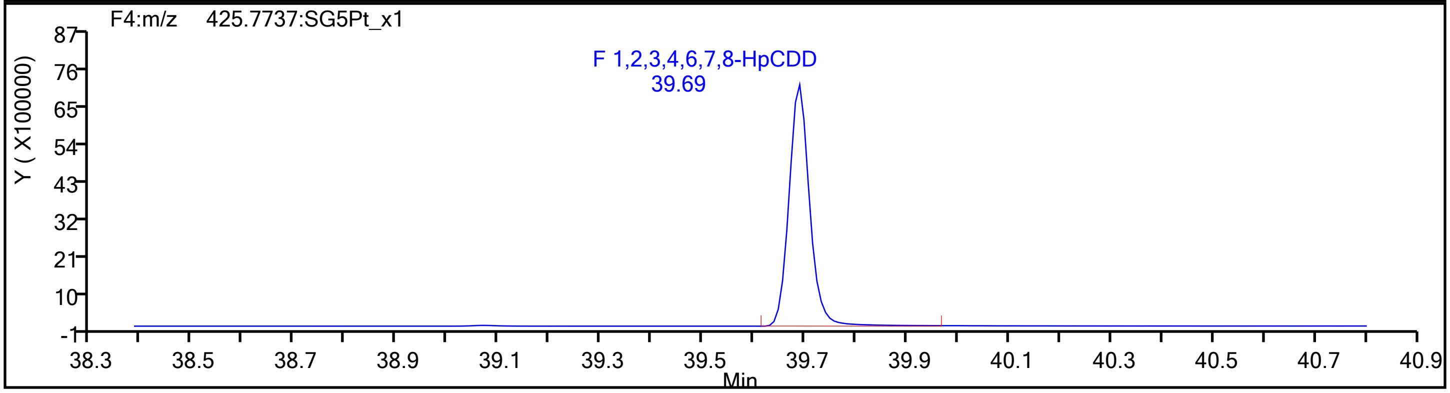

HpCDD Standards

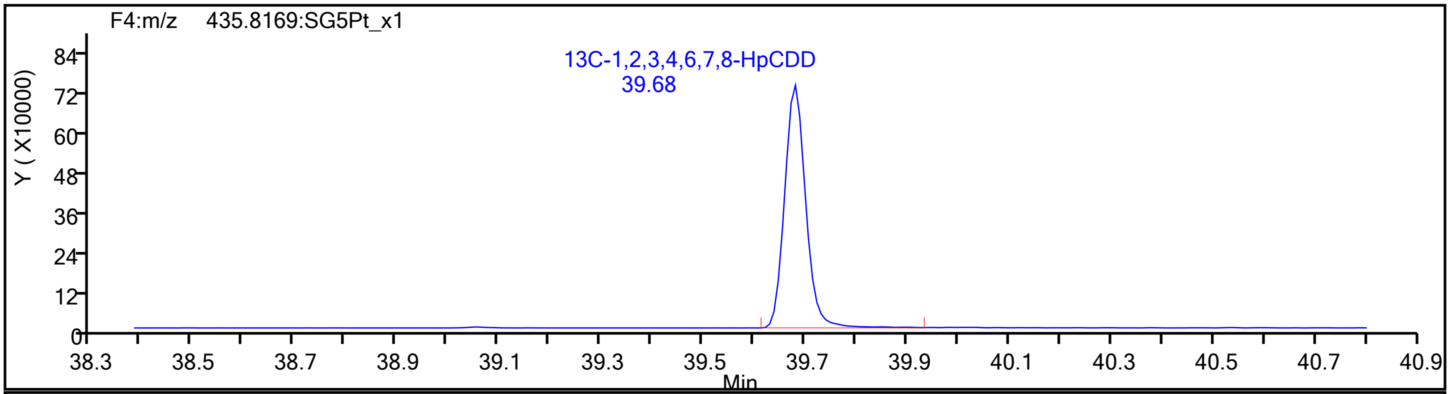

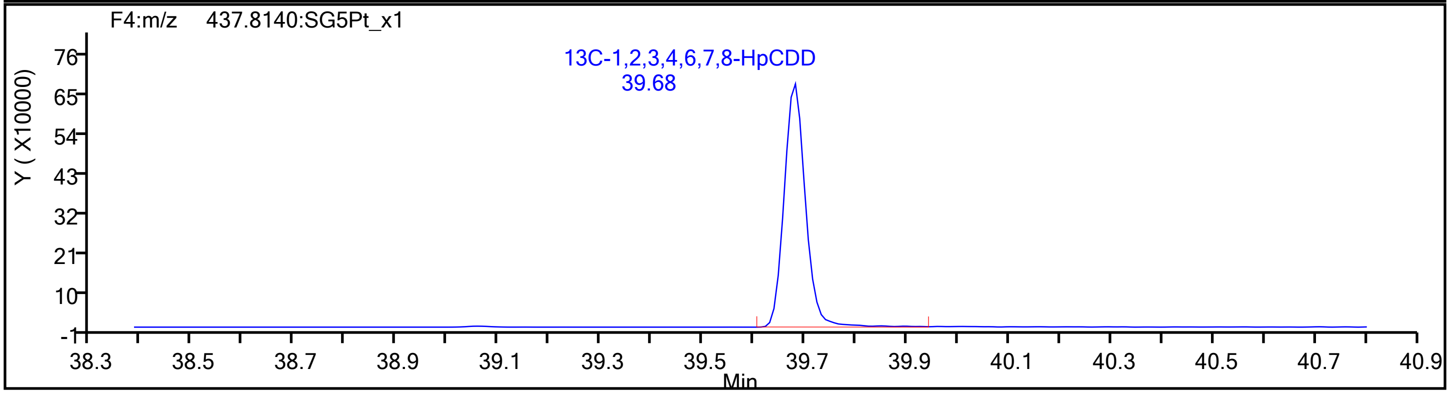

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d
Injection Date: 17-Nov-2020 16:08:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

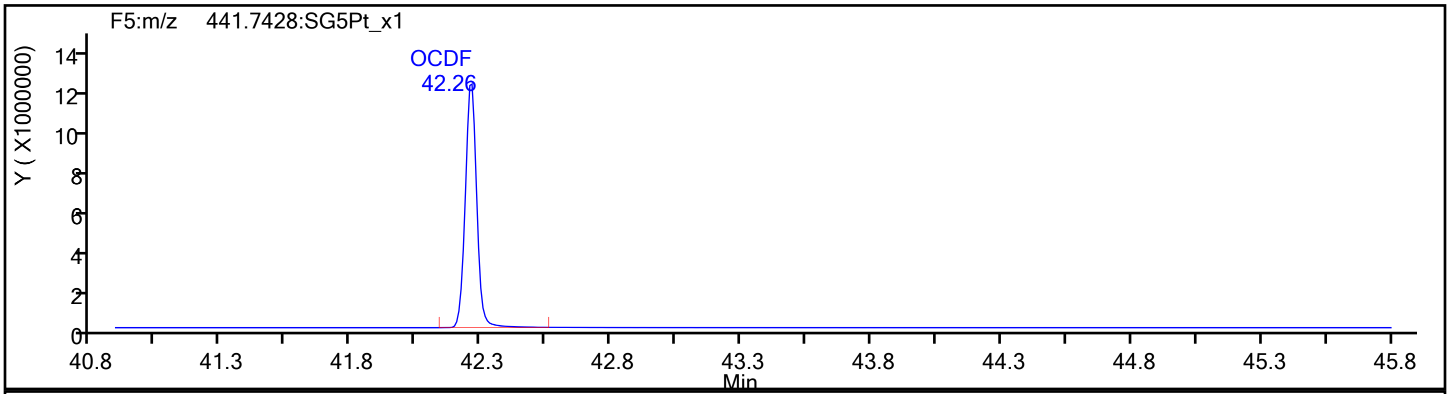

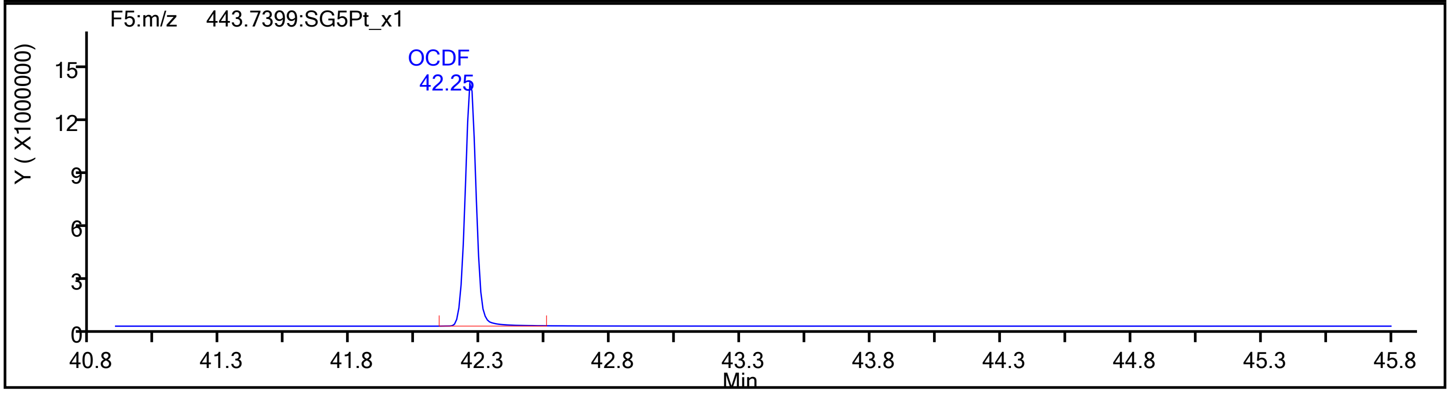

OCDF Standards

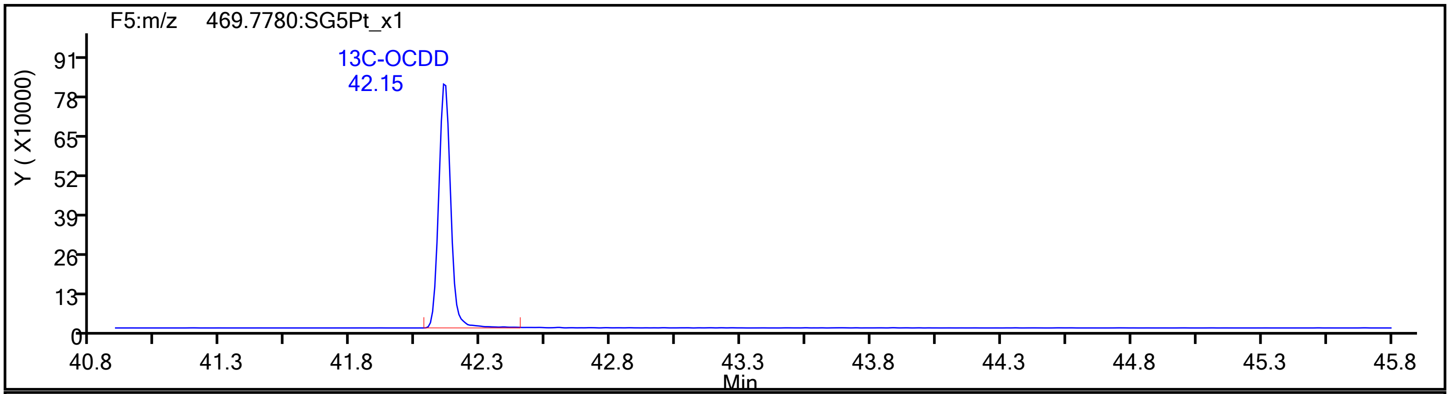

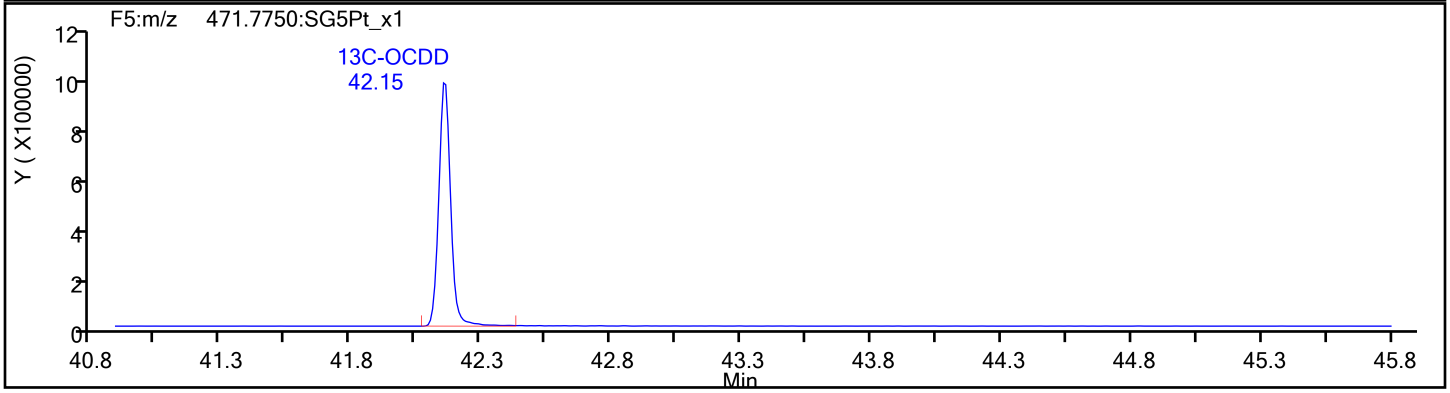

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

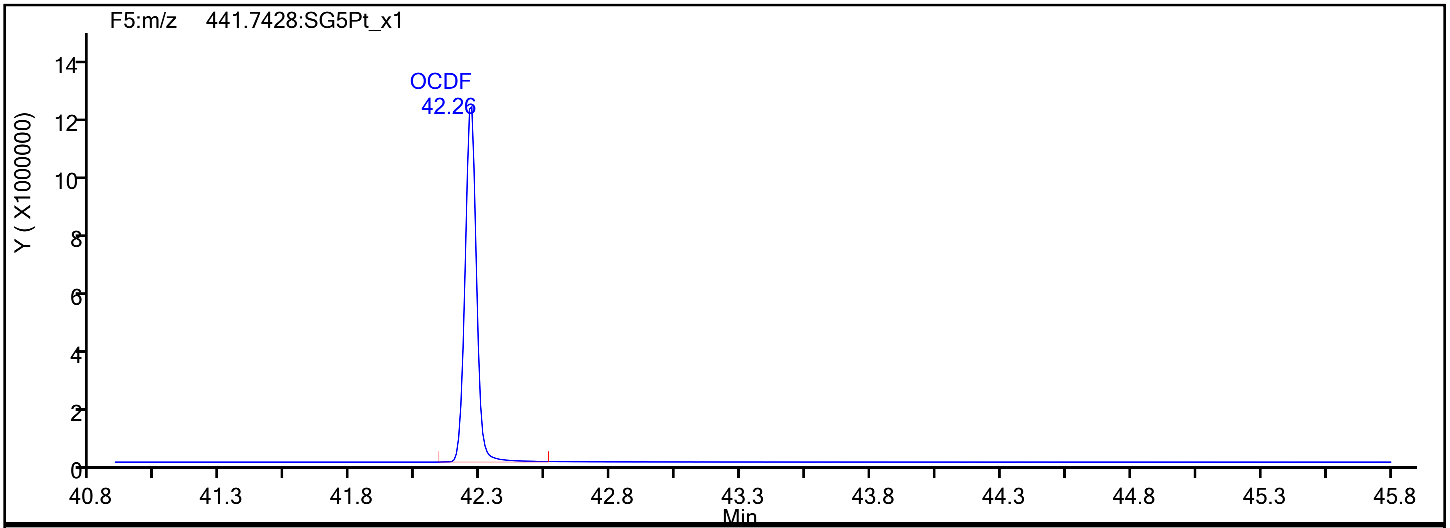

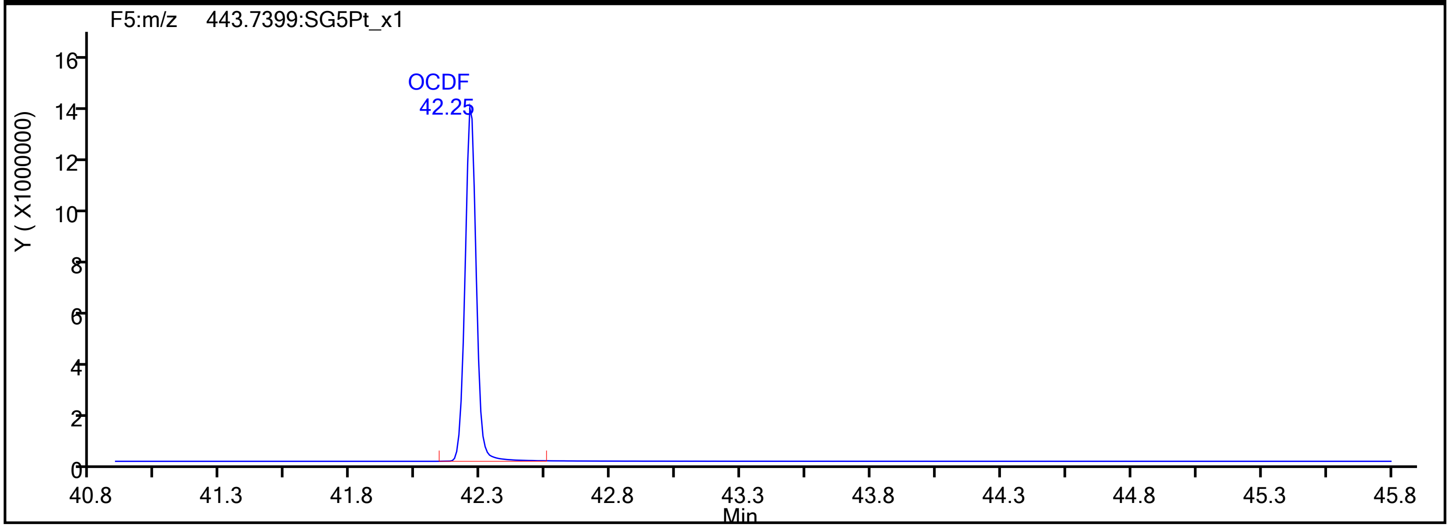

OCDF Interference Mass

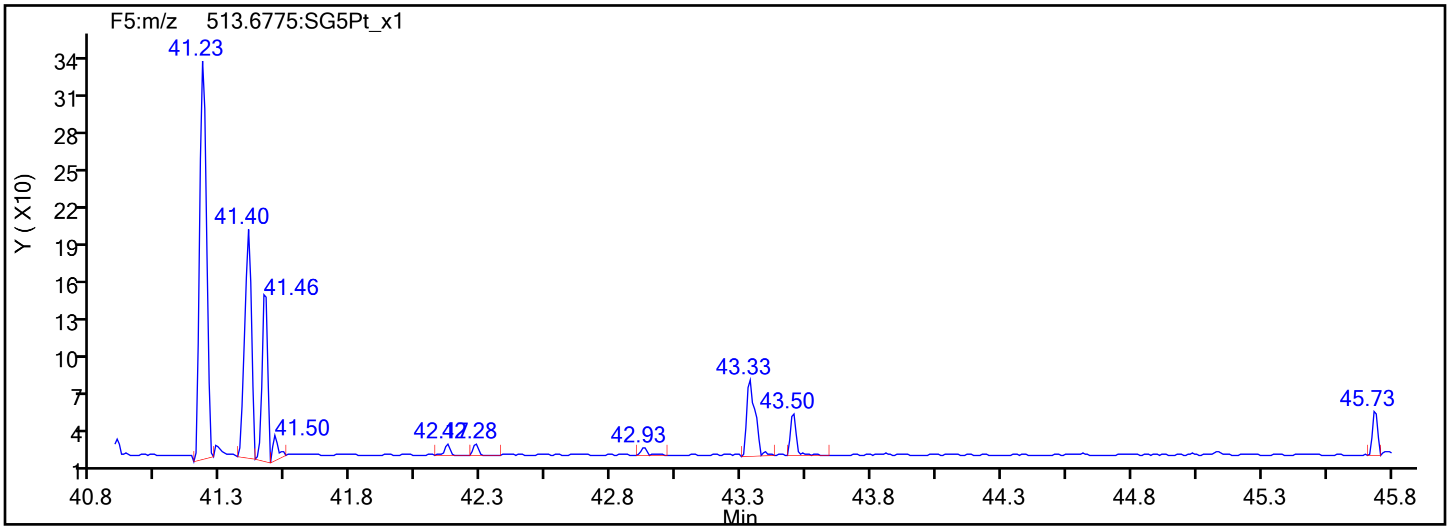

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

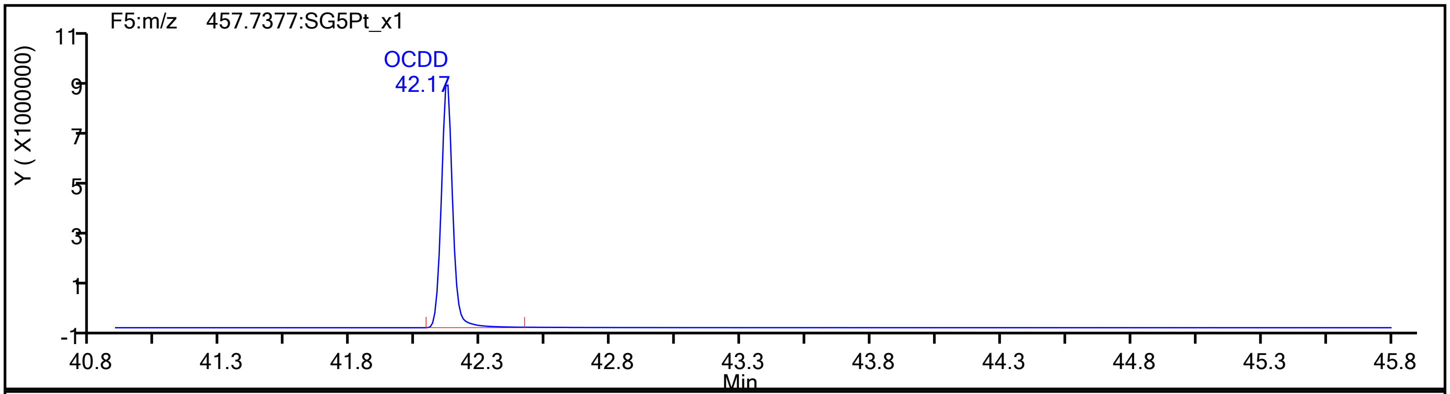

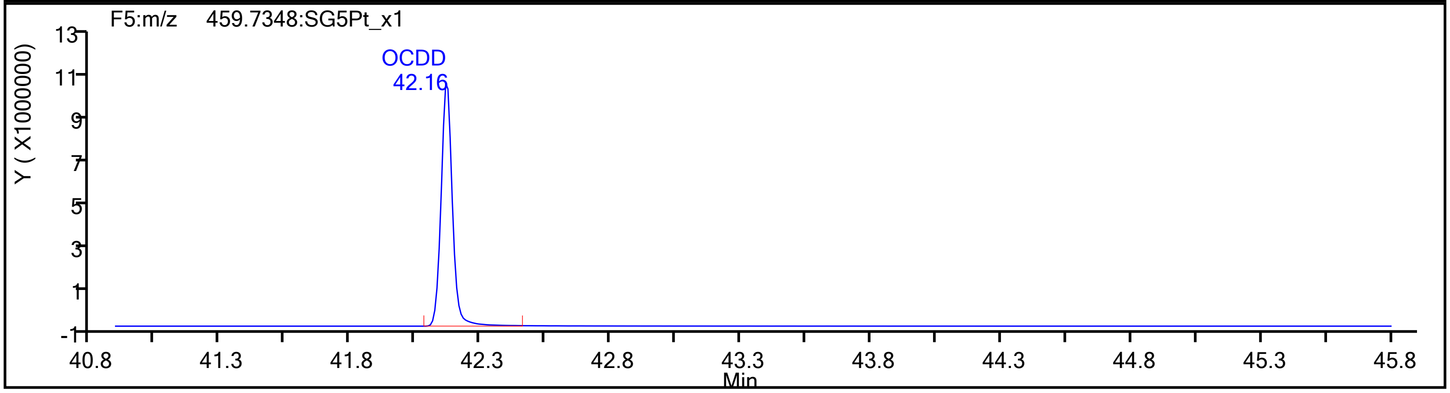

OCDD Standards

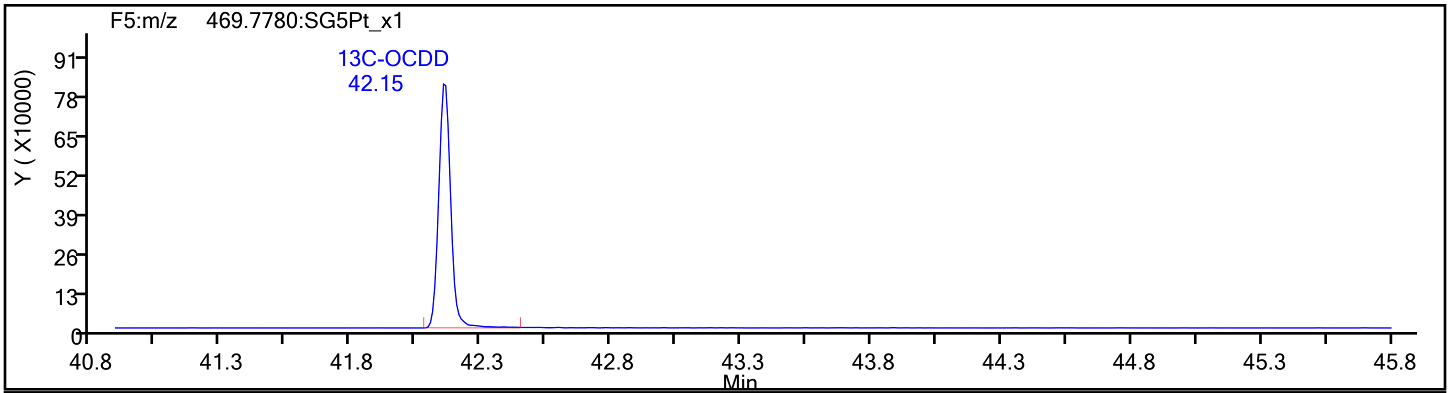

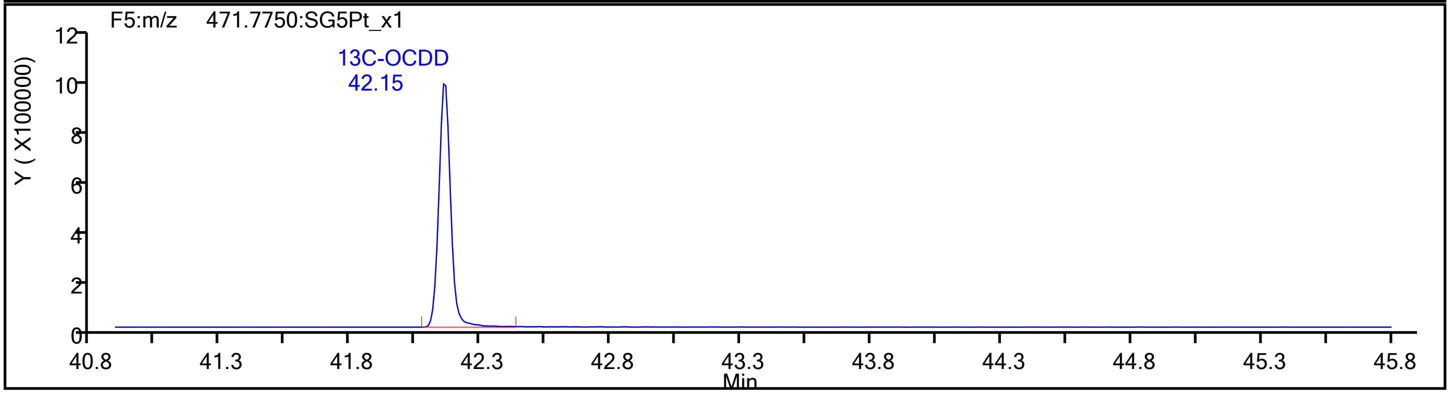

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d

Injection Date: 17-Nov-2020 16:08:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

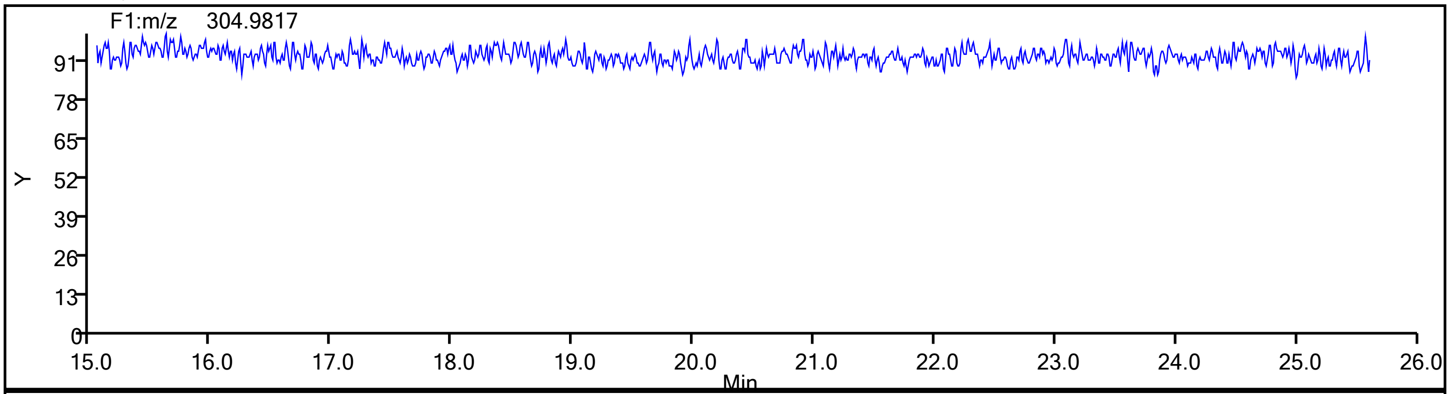

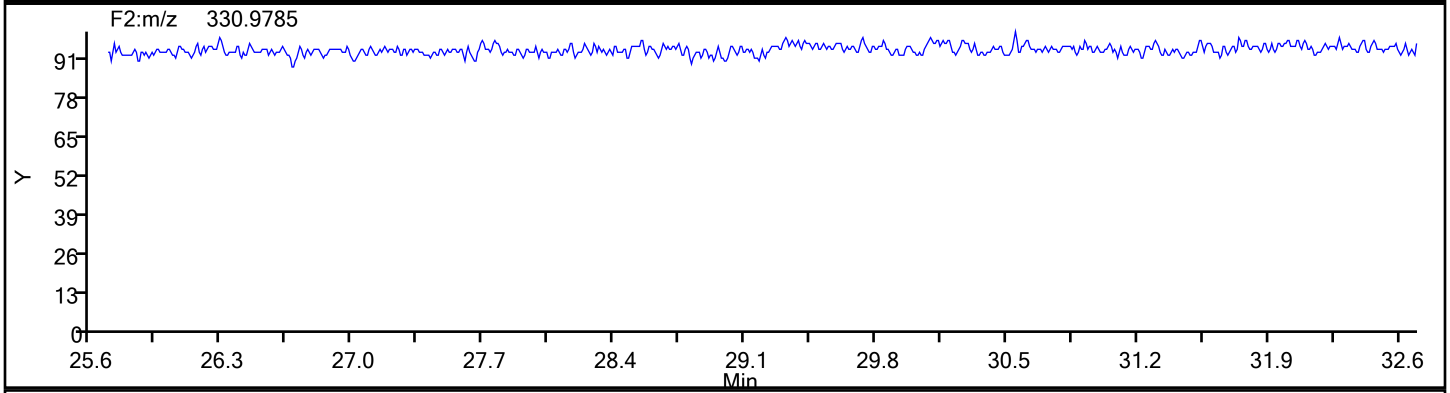

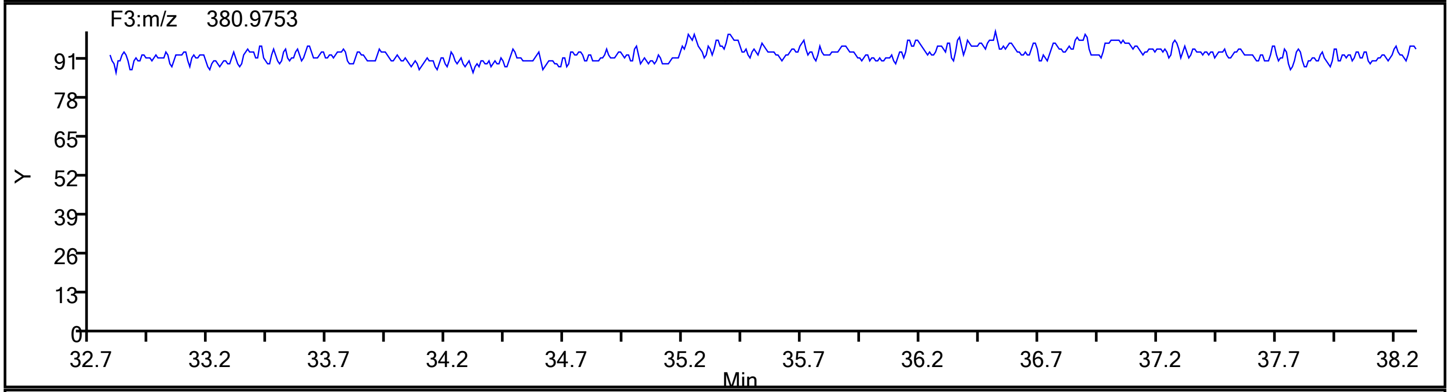

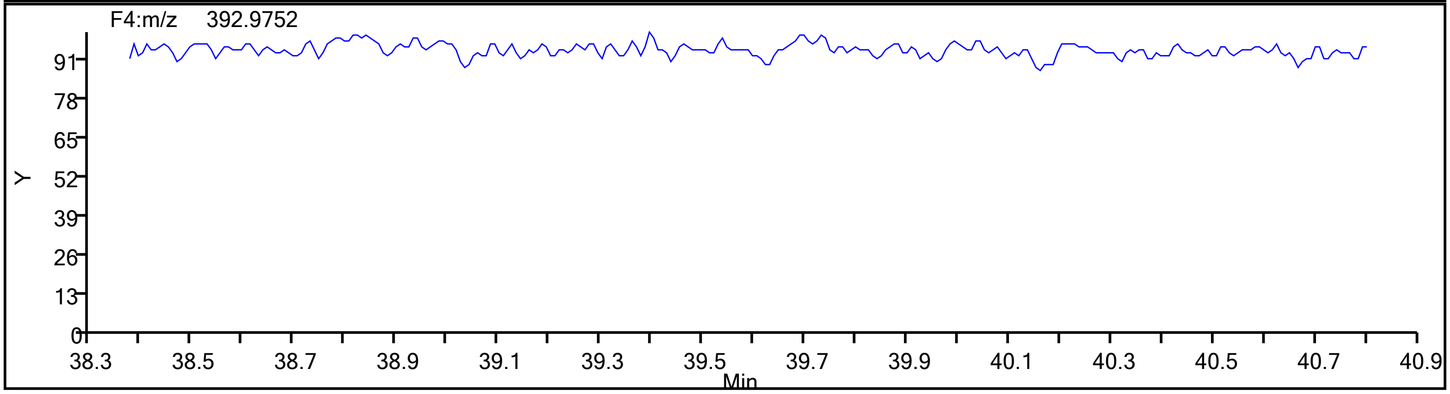

Report Date: 18-Nov-2020 12:35:32 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_8.d		
Injection Date:	17-Nov-2020 16:08:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

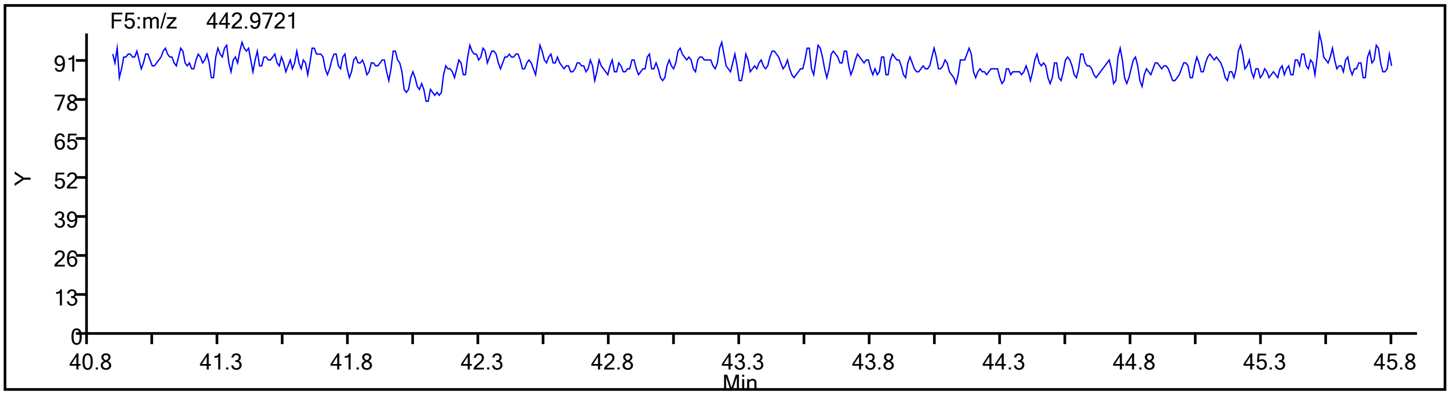

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Nov-2020 17:44:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:35 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:00:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.820	4241448	0.79	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.806	6843222	0.83	1.6832	95.9	95.9	0.2882	0.2882	95.85	
2,3,7,8-TCDF	20.832	48543	0.78	1.1547	0.6143	0.6143	0.0132	0.0132	123	
S Total TCDF					0.6143	0.6143	0.0132	0.0132		
D 13C-2,3,7,8-TCDD	22.215	4584854	0.82	1.0896	99.2	99.2	0.2004	0.2004	99.20	
2,3,7,8-TCDD	22.241	31468	0.84	1.1659	0.5887	0.5887	0.0311	0.0311	118	
$ 37Cl4-2,3,7,8-TCDD	22.224	24998		1.1445	0.5149	0.5149	0.006888	0.006888	103	
S Total TCDD					0.5887	0.5887	0.0311	0.0311		
D 13C-1,2,3,7,8-PeCDF	27.675	6354139	1.62	1.4604	102.6	102.6	0.4372	0.4372	103	
1,2,3,7,8-PeCDF	27.700	212906	1.57	1.1322	2.959	2.959	0.0332	0.0332	118	
D 13C-2,3,4,7,8-PeCDF	29.234	5781548	1.59	1.3504	100.9	100.9	0.4729	0.4729	101	
2,3,4,7,8-PeCDF	29.259	191690	1.55	1.1588	2.861	2.861	0.0387	0.0387	114	
S Total PeCDF					5.821	5.821	0.0359	0.0359		
D 13C-1,2,3,7,8-PeCDD	30.067	3703477	1.62	0.8729	100.0	100.0	0.1166	0.1166	100	
1,2,3,7,8-PeCDD	30.093	122563	1.61	1.1191	2.957	2.957	0.0486	0.0486	118	
S Total PeCDD					2.957	2.957	0.0486	0.0486		
D 13C-1,2,3,4,7,8-HxCDF	35.203	5181766	0.54	1.2808	98.2	98.2	0.3671	0.3671	98.19	
1,2,3,4,7,8-HxCDF	35.220	198989	1.26	1.3205	2.908	2.908	0.0323	0.0323	116	
D 13C-1,2,3,6,7,8-HxCDF	35.363	5869111	0.54	1.4615	97.5	97.5	0.3217	0.3217	97.47	
1,2,3,6,7,8-HxCDF	35.380	219564	1.19	1.2682	2.950	2.950	0.0310	0.0310	118	
D 13C-2,3,4,6,7,8-HxCDF	36.146	5395434	0.52	1.3227	99.0	99.0	0.3555	0.3555	99.01	
2,3,4,6,7,8-HxCDF	36.155	200786	1.25	1.2838	2.899	2.899	0.0291	0.0291	116	
D 13C-1,2,3,7,8,9-HxCDF	37.006	4537064	0.54	1.1062	99.5	99.5	0.4251	0.4251	99.55	
1,2,3,7,8,9-HxCDF	37.023	179336	1.25	1.3063	3.026	3.026	0.0310	0.0310	121	
S Total HxCDF					11.8	11.8	0.0308	0.0308		
* 13C-1,2,3,7,8,9-HxCDD	36.812	4120075	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.340	3537152	1.29	0.8757	98.0	98.0	0.2350	0.2350	98.04	
1,2,3,4,7,8-HxCDD	36.357	131766	1.26	1.1972	3.112	3.112	0.0325	0.0325	124	
D 13C-1,2,3,6,7,8-HxCDD	36.458	4357819	1.28	1.0651	99.3	99.3	0.1932	0.1932	99.31	
1,2,3,6,7,8-HxCDD	36.466	138982	1.25	1.0695	2.982	2.982	0.0330	0.0330	119	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.820	141949	1.27	1.1806	3.046	3.046	0.0314	0.0314	122	
S Total HxCDD					9.140	9.140	0.0323	0.0323		
D 13C-1,2,3,4,6,7,8-HpCDF	38.753	3789205	0.45	0.9521	96.6	96.6	0.4375	0.4375	96.59	
1,2,3,4,6,7,8-HpCDF	38.770	178282	1.06	1.5618	3.012	3.012	0.0269	0.0269	120	
D 13C-1,2,3,4,7,8,9-HpCDF	39.983	3027653	0.45	0.7782	94.4	94.4	0.5353	0.5353	94.44	
1,2,3,4,7,8,9-HpCDF	40.000	139513	1.08	1.4975	3.077	3.077	0.0315	0.0315	123	
S Total HpCDF					6.090	6.090	0.0292	0.0292		
D 13C-1,2,3,4,6,7,8-HpCDD	39.680	3354869	1.05	0.8393	97.0	97.0	0.2717	0.2717	97.02	
1,2,3,4,6,7,8-HpCDD	39.688	114006	1.03	1.1079	3.067	3.067	0.0229	0.0229	123	
S Total HpCDD					3.067	3.067	0.0229	0.0229		
D 13C-OCDD	42.160	4068864	0.90	0.5301	186.3	186.3	0.2868	0.2868	93.15	
OCDF	42.261	178099	0.90	1.4802	5.914	5.914	0.0413	0.0413	118	
OCDD	42.168	147577	0.96	1.1666	6.218	6.218	0.0285	0.0285	124	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Nov-2020 17:44:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:35:35 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:00:33

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.820	21.818	0		1877506	267395	377	942	709		
333.9338	21.820	21.818	0		2363942	328789	144	360	2283	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.806	20.808	0	0.954	3103577	464725	604	1510	769		
317.9389	20.806	20.808	0	0.954	3739645	581979	553	1382	1052	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.832	20.834	0	1.001	21303	3205	17	42	189		
305.8987	20.815	20.834	-1	1.000	27240	4510	47	117	96	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.215	22.213	0	1.018	2067944	266183	377	942	706		
333.9338	22.198	22.213	-1	1.017	2516910	327532	144	360	2275	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.241	22.239	0	1.001	14361	2167	72	180	30		
321.8936	22.258	22.239	1	1.002	17107	2537	14	35	181	0.84(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.224	22.241	-1	1.019	24998	3349	19	47	176		
13C-1,2,3,7,8-PeCDF											
351.9000	27.675	27.677	0	1.268	3925688	616378	921	2302	669		
353.8970	27.675	27.677	0	1.268	2428451	387020	602	1505	643	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.700	27.702	0	1.001	129982	20036	60	150	334		
341.8567	27.700	27.702	0	1.001	82924	12393	91	227	136	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.234	29.235	0	1.340	3549189	513672	921	2302	558		
353.8970	29.234	29.235	0	1.340	2232359	327076	602	1505	543	1.59(1.32-1.78)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.259	29.262	0	1.001	116508	16620	60	150	277		
341.8567	29.250	29.262	-1	1.001	75182	10119	91	227	111	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.067	30.073	0	1.378	2289185	306280	151	377	2028		
369.8919	30.059	30.073	-1	1.378	1414292	190664	92	230	2072	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.093	30.100	0	1.001	75533	9834	66	165	149		
357.8516	30.109	30.100	1	1.001	47030	6207	42	105	148	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.203	35.202	0	0.956	1816093	414668	738	1845	562		
385.8610	35.203	35.202	0	0.956	3365673	760607	1275	3187	597	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.220	35.219	0	1.000	111108	25806	118	295	219		
375.8178	35.220	35.219	0	1.000	87881	20142	83	207	243	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.363	35.361	0	0.961	2054895	444653	738	1845	603		
385.8610	35.363	35.361	0	0.961	3814216	832641	1275	3187	653	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.380	35.376	0	1.000	119147	25320	118	295	215		
375.8178	35.371	35.376	0	1.000	100417	20662	83	207	249	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.146	36.142	0	0.982	1850628	466806	738	1845	633		
385.8610	36.146	36.142	0	0.982	3544806	878912	1275	3187	689	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.155	36.158	0	1.000	111371	28175	118	295	239		
375.8178	36.155	36.158	0	1.000	89415	22000	83	207	265	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.006	37.005	0	1.005	1585694	429630	738	1845	582		
385.8610	37.006	37.005	0	1.005	2951370	810150	1275	3187	635	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.023	37.019	0	1.000	99750	25726	118	295	218		
375.8178	37.023	37.019	0	1.000	79586	20596	83	207	248	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.812	36.808	0		2312665	594447	480	1200	1238		
403.8529	36.812	36.808	0		1807410	475631	401	1002	1186	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.340	36.340	0	0.987	1991502	561408	480	1200	1170		
403.8529	36.340	36.340	0	0.987	1545650	421505	401	1002	1051	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.357	36.355	0	1.000	73551	19464	84	210	232		
391.8127	36.357	36.355	0	1.000	58215	15454	69	172	224	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.458	36.454	0	0.990	2446546	601835	480	1200	1254		
403.8529	36.458	36.454	0	0.990	1911273	479286	401	1002	1195	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.466	36.468	0	1.000	77221	18316	84	210	218		
391.8127	36.466	36.468	0	1.000	61761	15354	69	172	223	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.820	36.821	0	1.013	79402	19327	84	210	230		
391.8127	36.820	36.821	0	1.013	62547	15820	69	172	229	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.753	38.755	0	1.053	1183472	365739	645	1612	567		
419.8220	38.762	38.755	0	1.053	2605733	789828	1138	2845	694	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.770	38.769	0	1.000	91605	27550	115	287	240		
409.7788	38.770	38.769	0	1.000	86677	27098	79	197	343	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.983	39.984	0	1.086	941227	318519	645	1612	494		
419.8220	39.983	39.984	0	1.086	2086426	709350	1138	2845	623	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	40.000	39.994	0	1.000	72394	24595	115	287	214		
409.7788	39.992	39.994	0	1.000	67119	23171	79	197	293	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.680	39.679	0	1.078	1715826	576653	491	1227	1174		
437.8140	39.680	39.679	0	1.078	1639043	554670	485	1212	1144	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.688	39.689	0	1.000	57877	19580	74	185	265		
425.7737	39.688	39.689	0	1.000	56129	18826	41	102	459	1.03(0.88-1.20)	
13C-OCDD											
469.7780	42.160	42.157	0	1.145	1932377	578644	324	810	1786		
471.7750	42.160	42.157	0	1.145	2136487	655571	327	817	2005	0.90(0.76-1.02)	
OCDF											
441.7428	42.261	42.260	0	1.002	84155	24281	42	105	578		
443.7399	42.261	42.260	0	1.002	93944	27204	109	272	250	0.90(0.76-1.02)	
OCDD											
457.7377	42.168	42.167	0	1.000	72389	21679	41	102	529		
459.7348	42.168	42.167	0	1.000	75188	22291	41	102	544	0.96(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:35:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

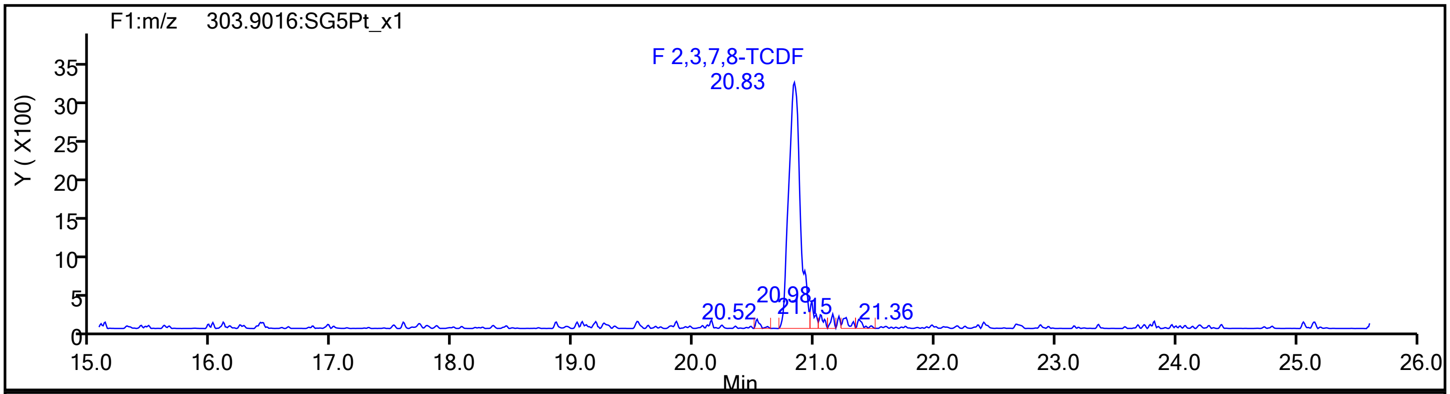

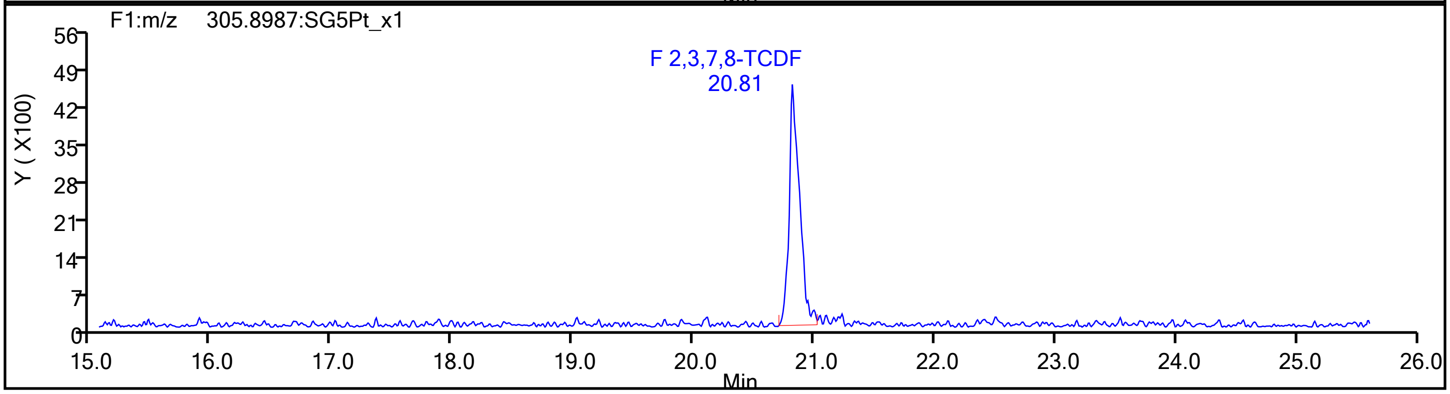

TCDF Standards

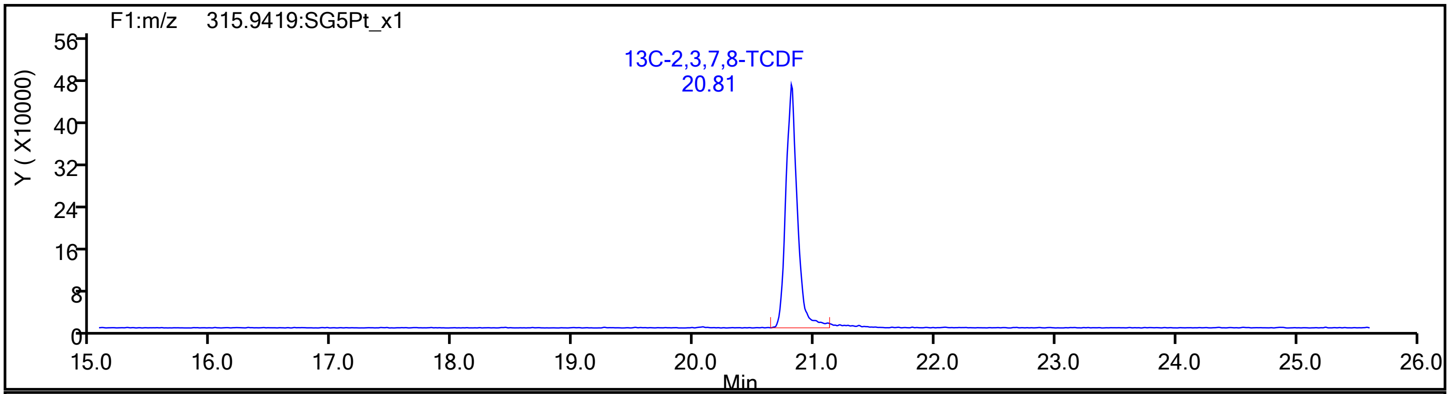

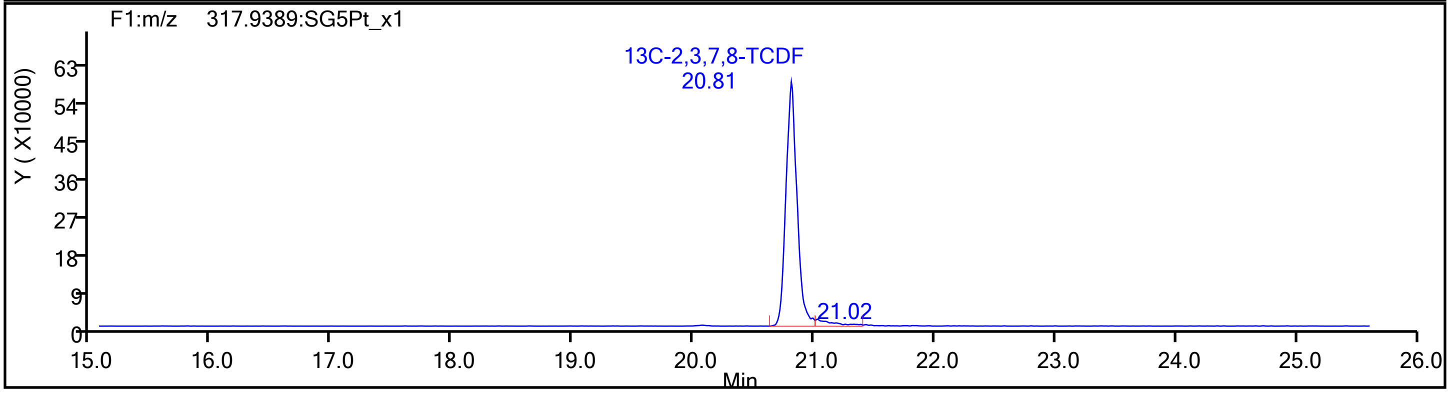

Report Date: 18-Nov-2020 12:35:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

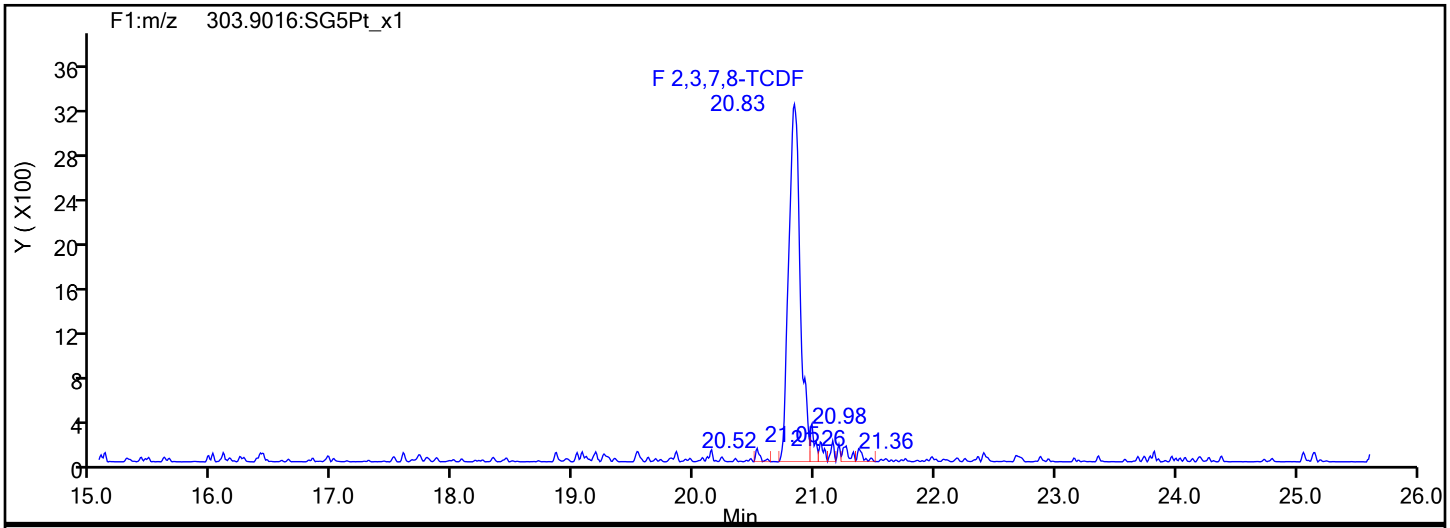

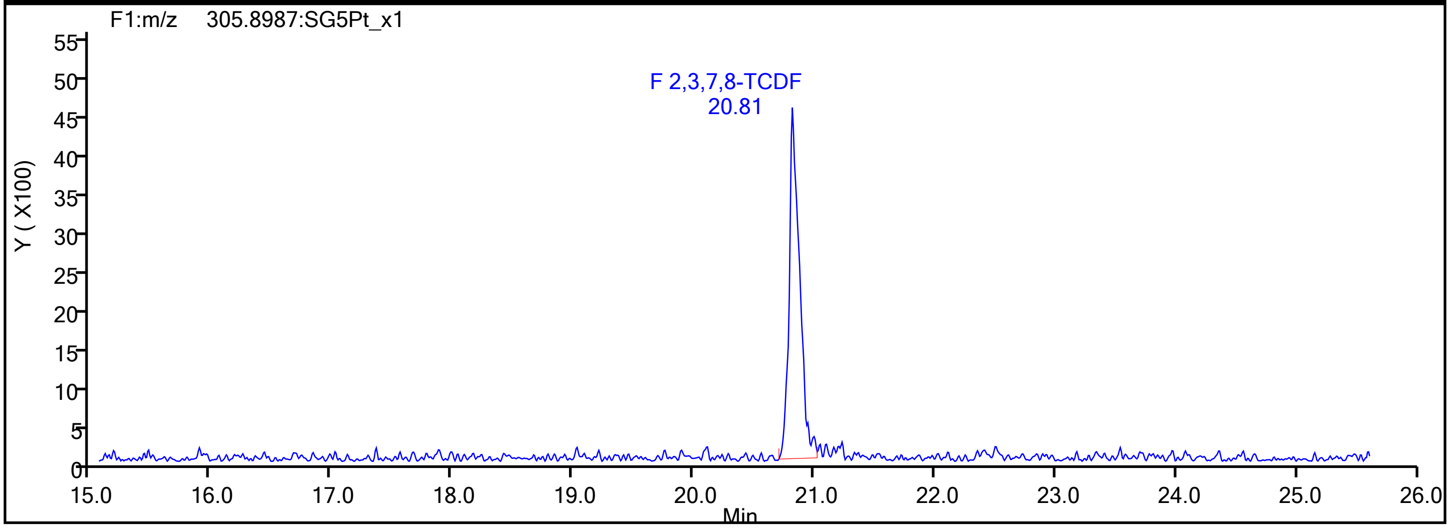

TCDF Interference Mass

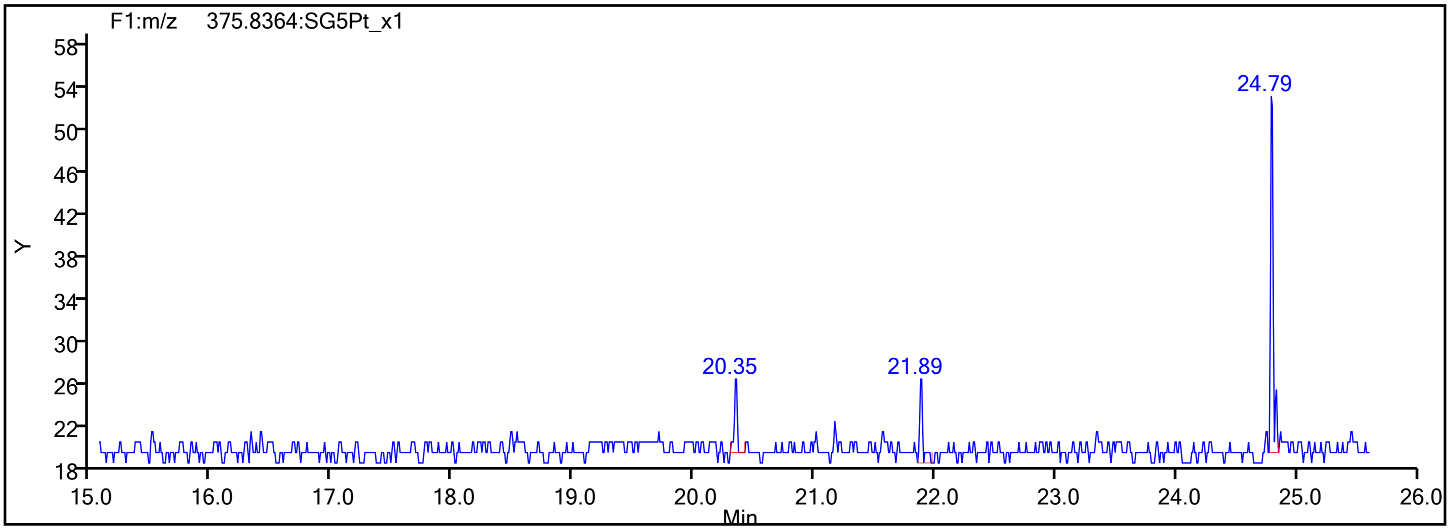

Report Date: 18-Nov-2020 12:35:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

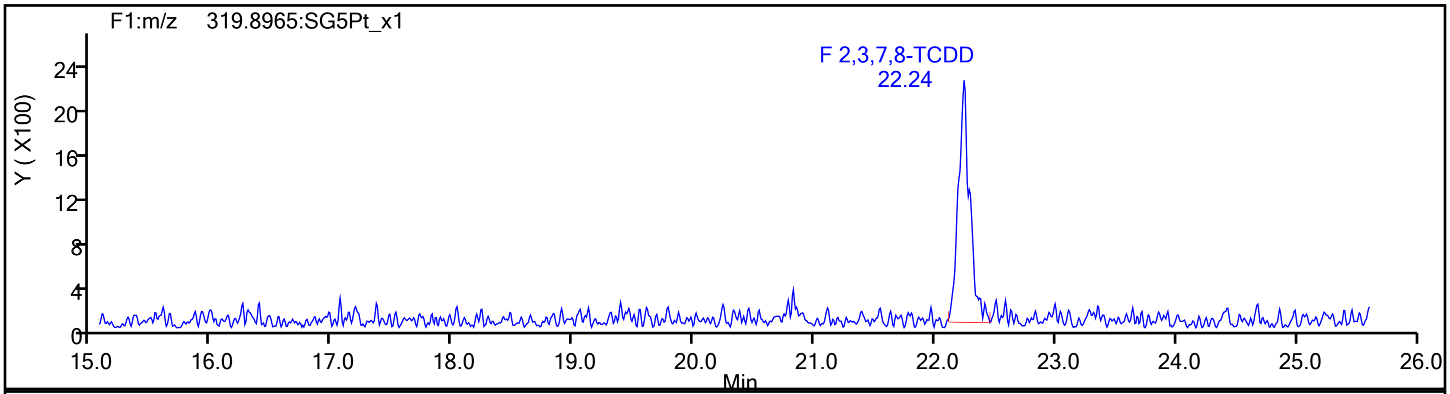

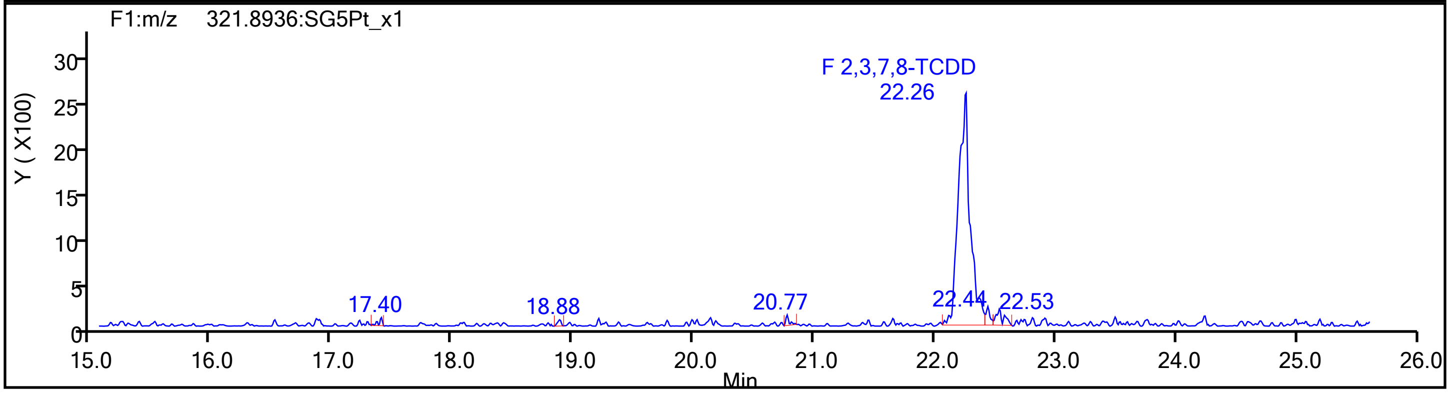

TCDD Standards

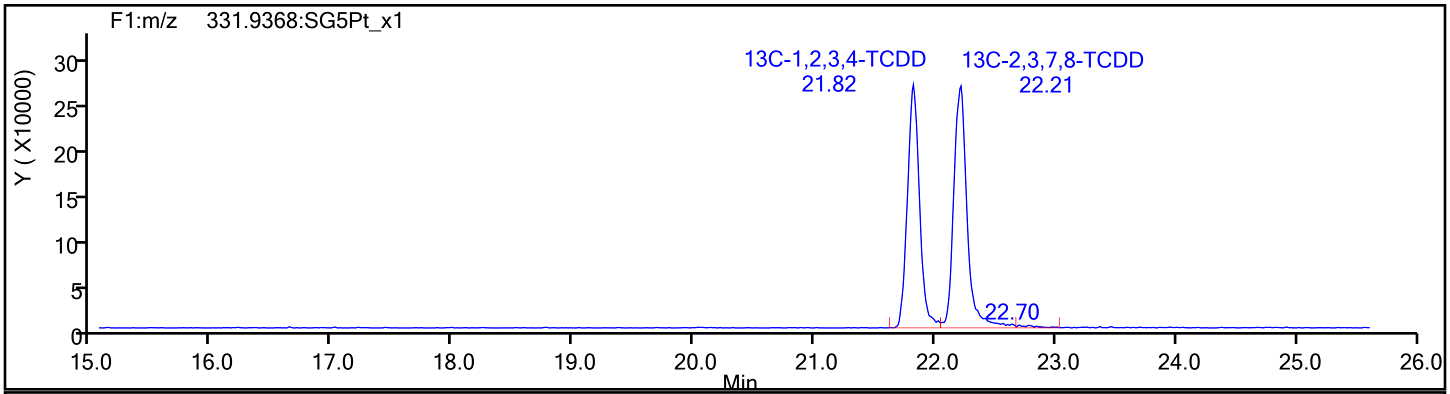

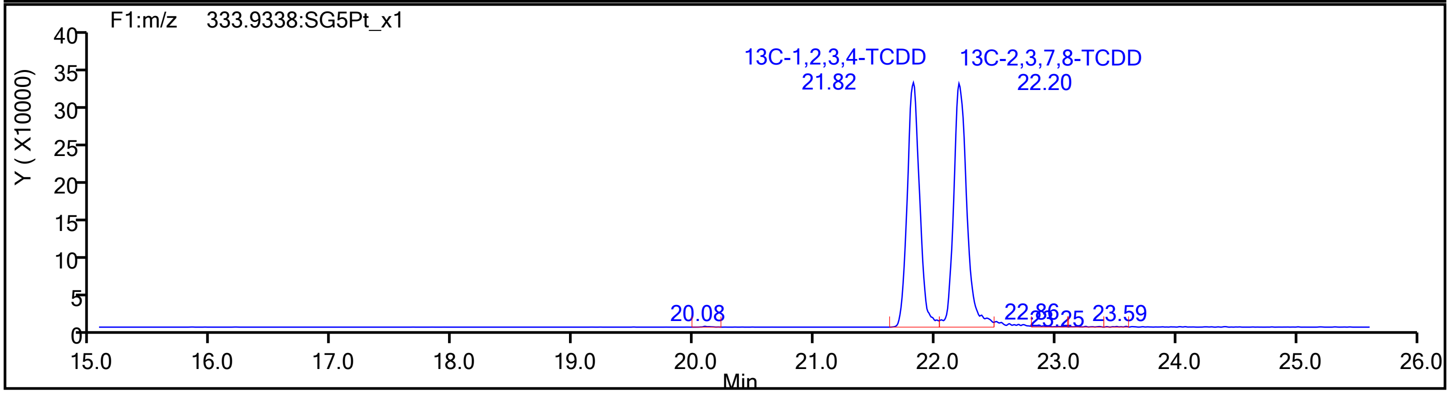

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Nov-2020 17:44:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

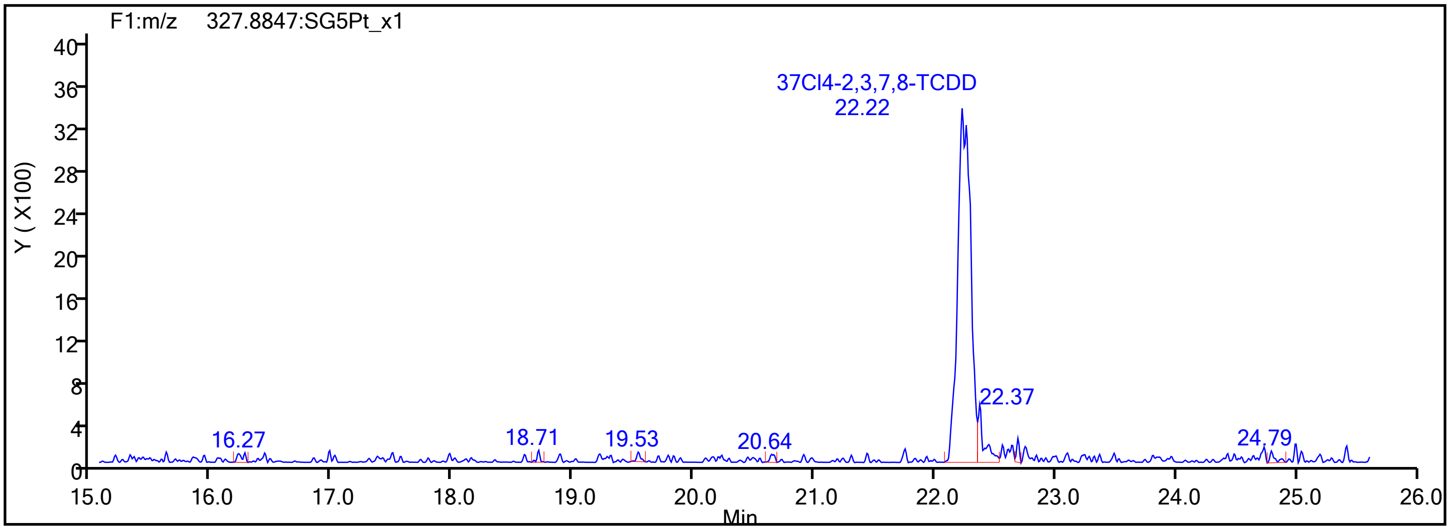

37Cl4-TCDD Standards

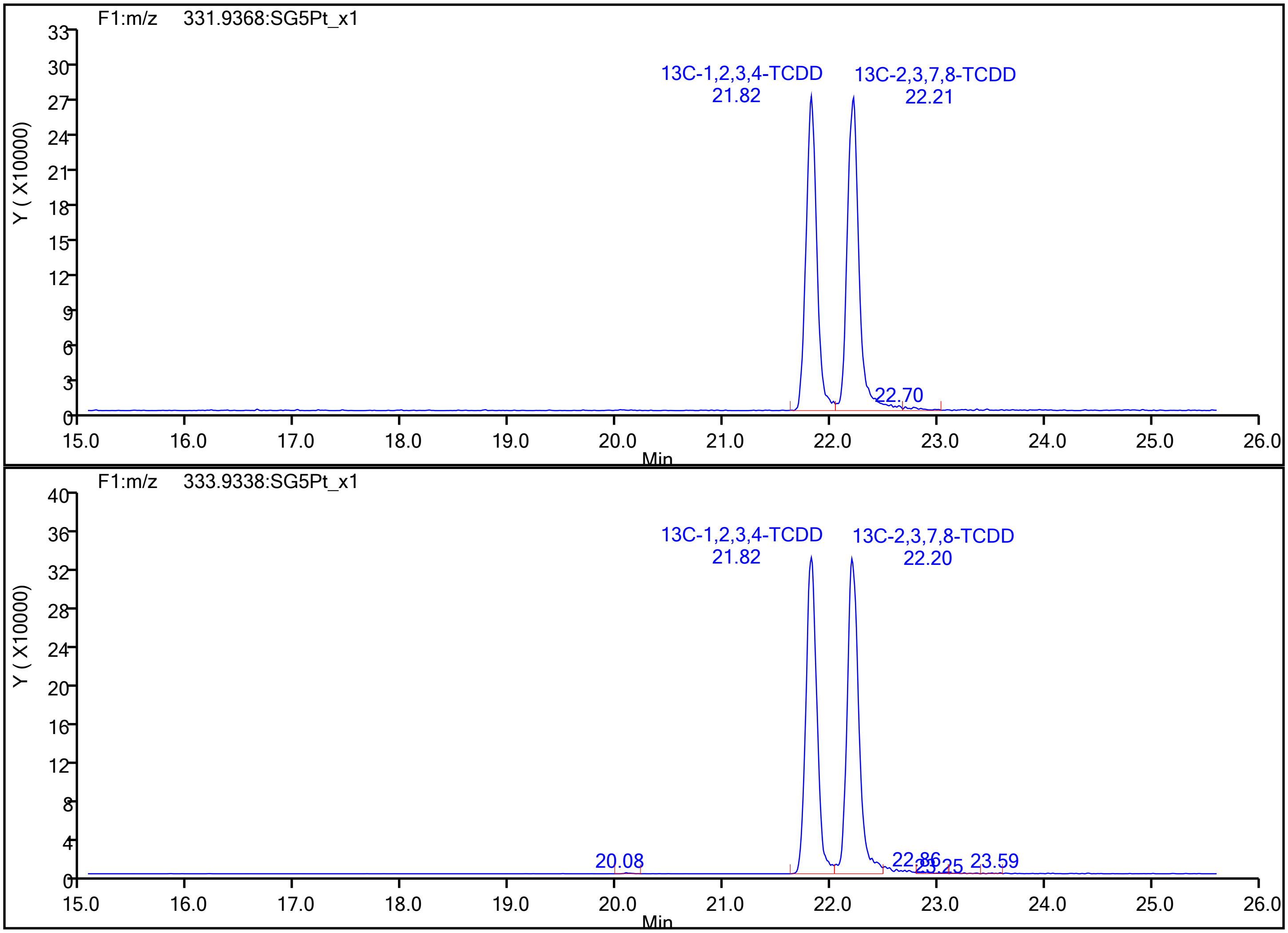

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

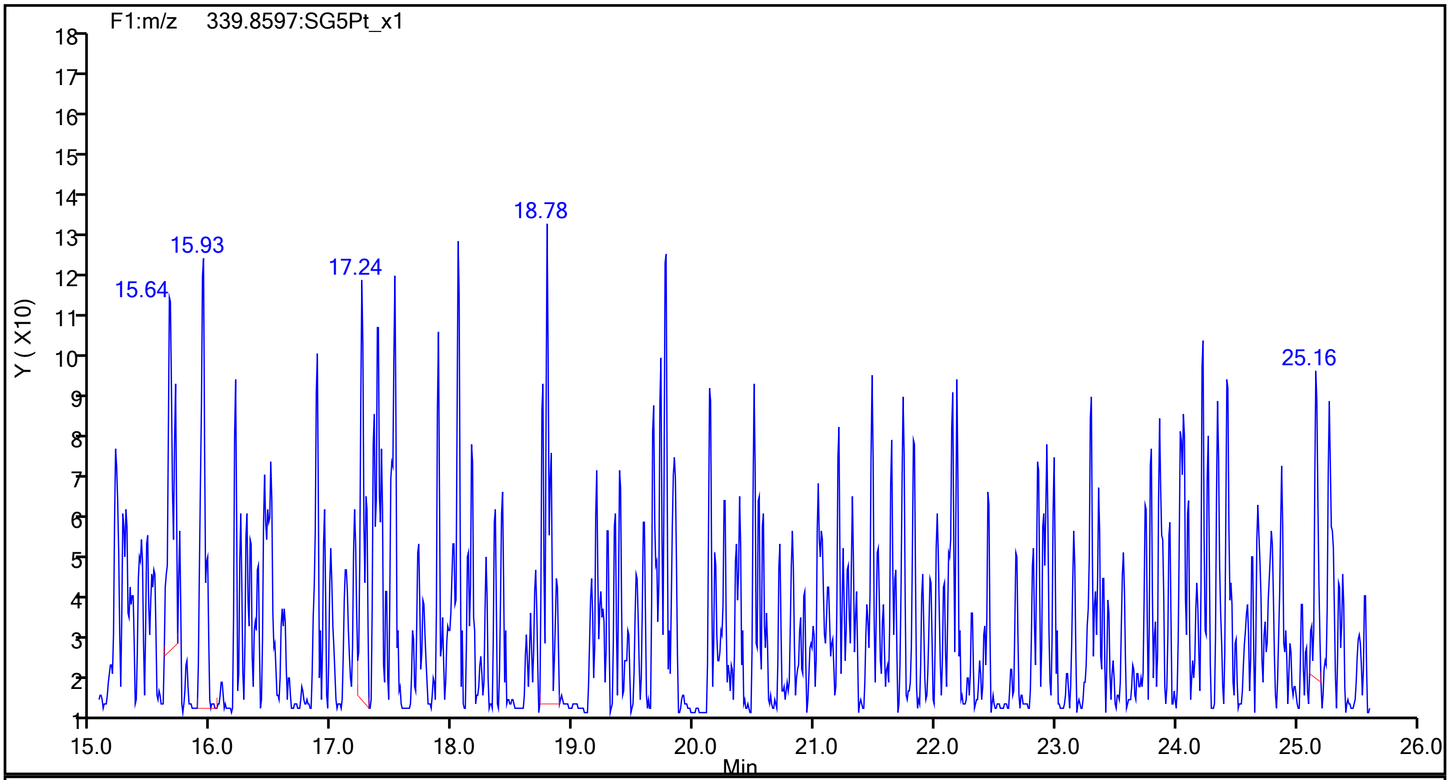

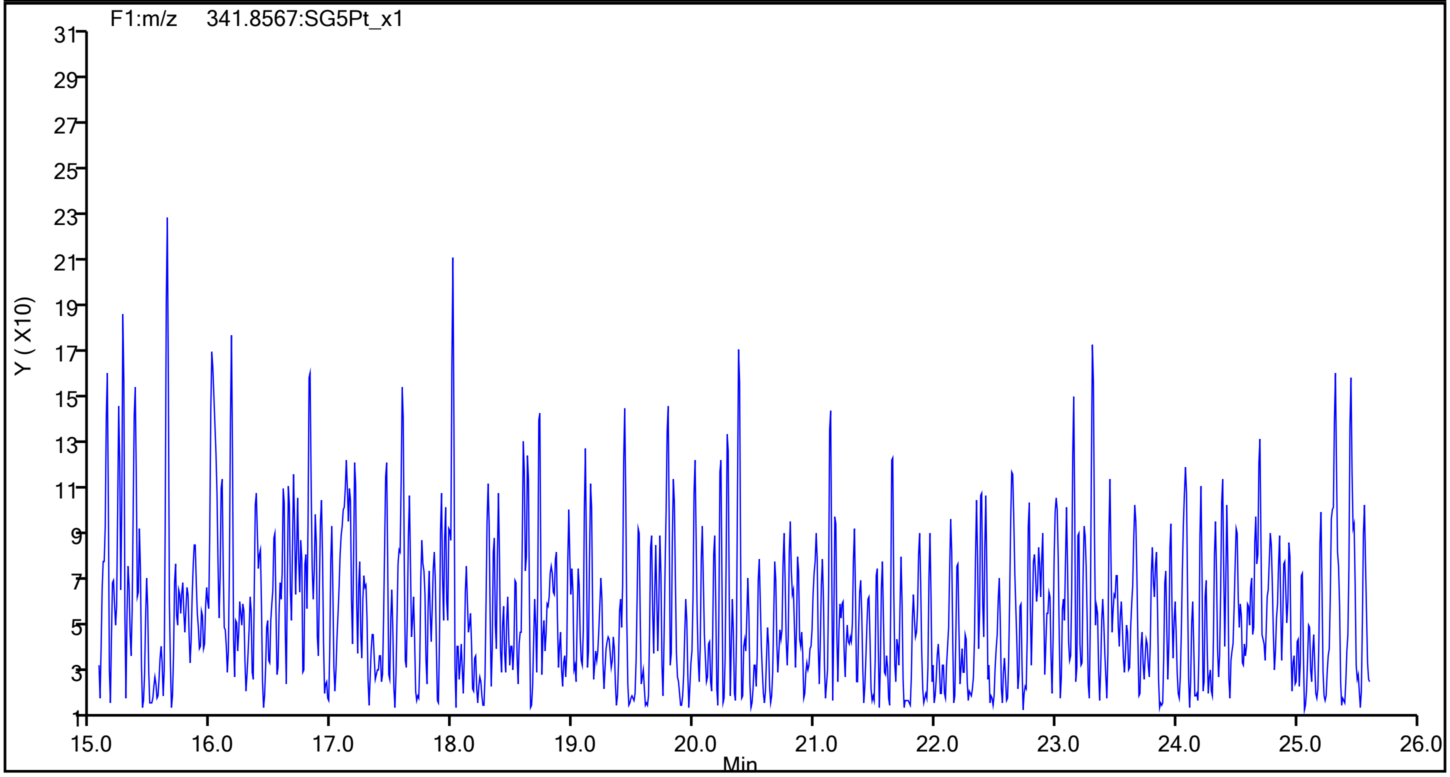

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

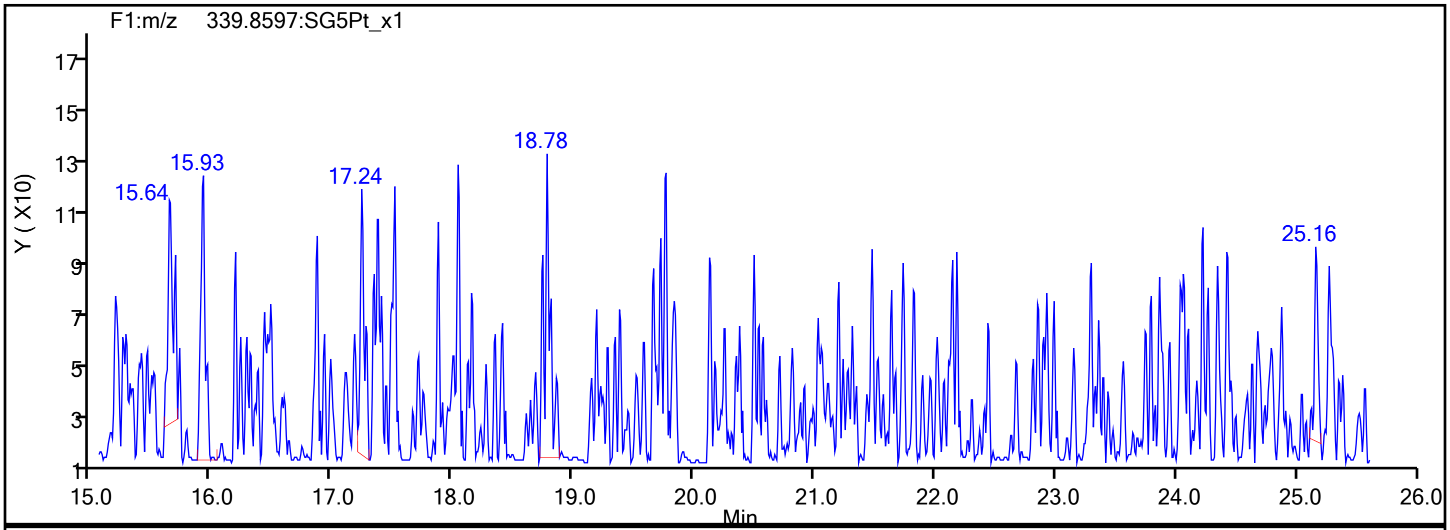

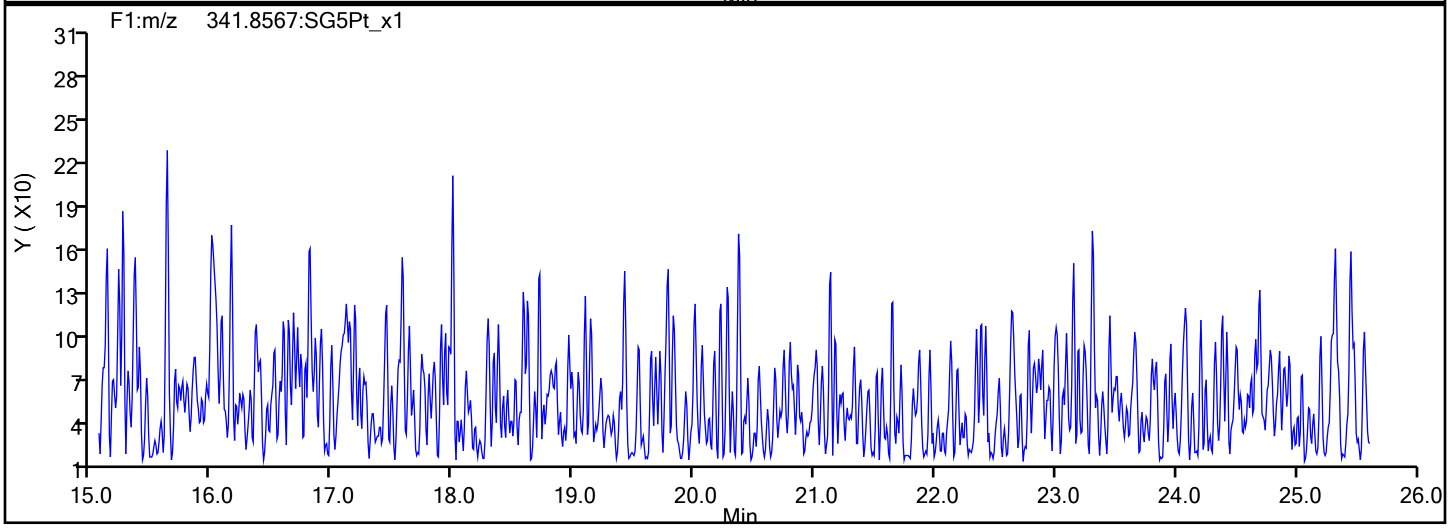

F1 PeCDFs Interference Mass

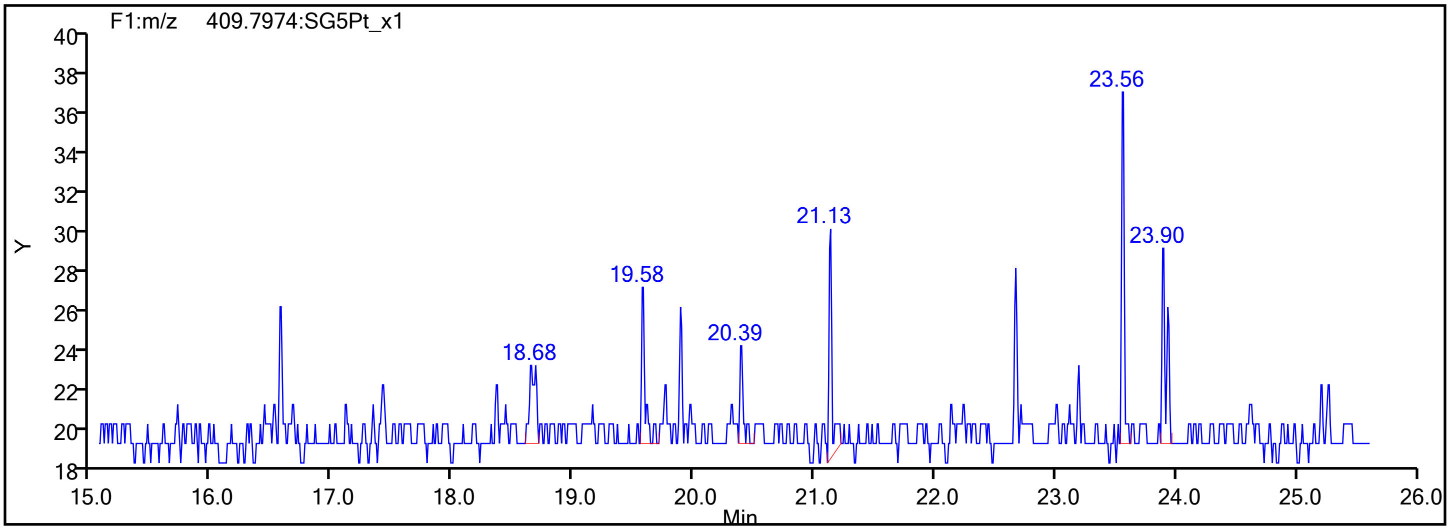

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

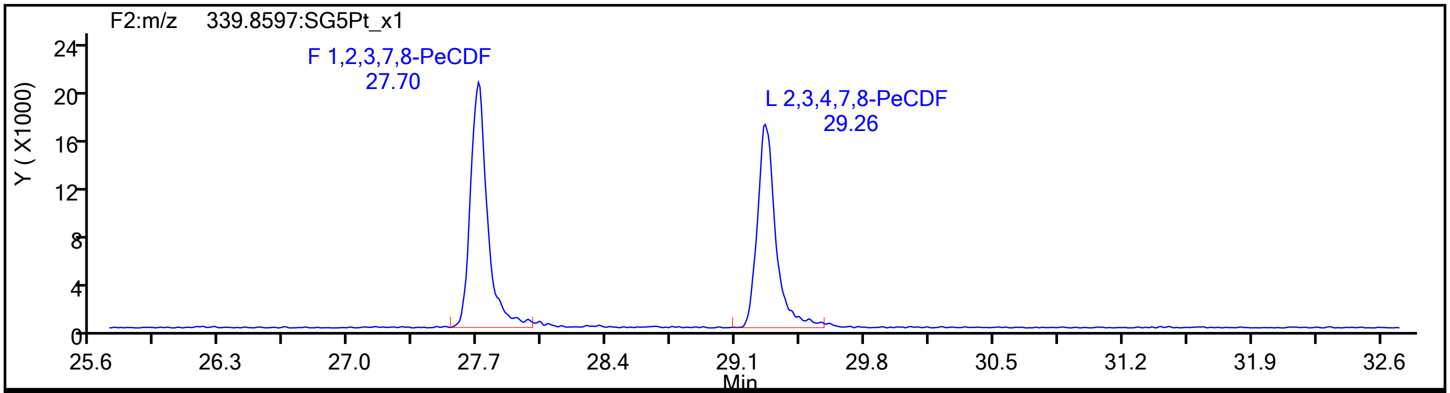

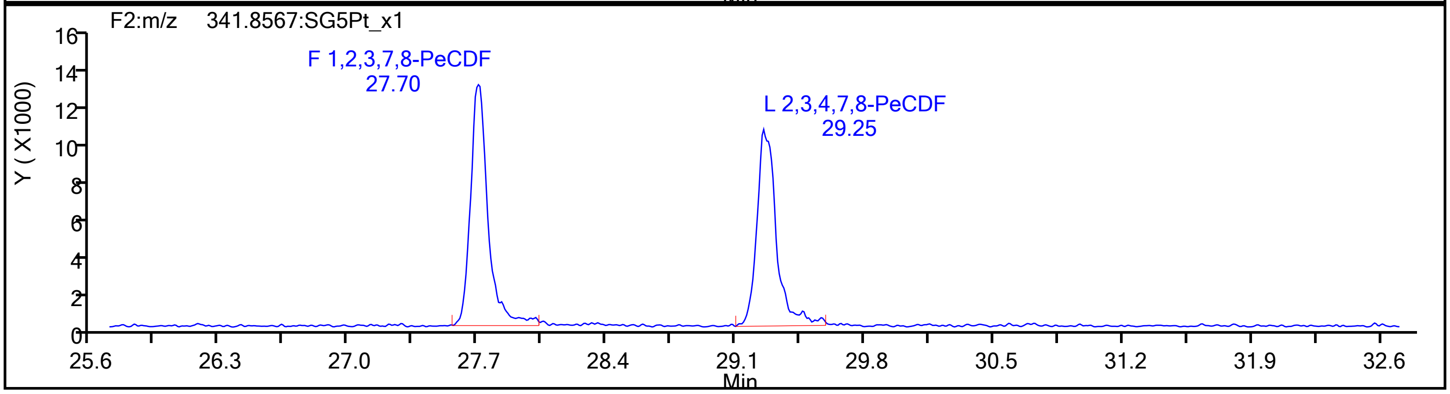

PeCDF Standards

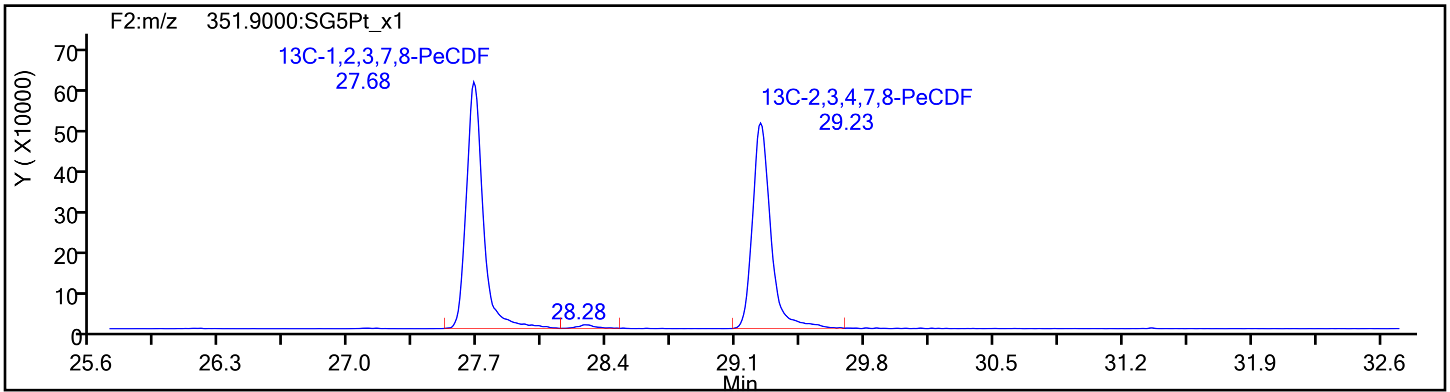

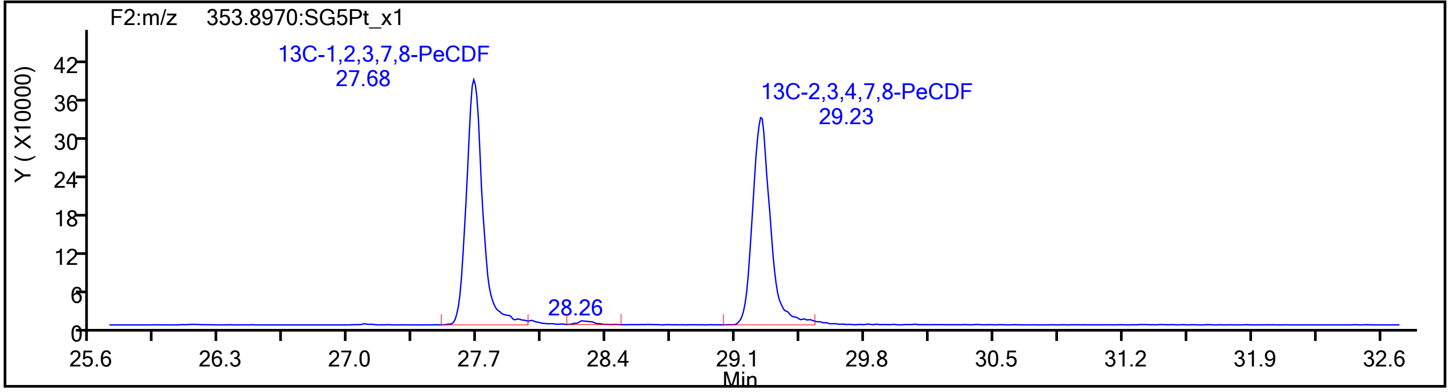

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

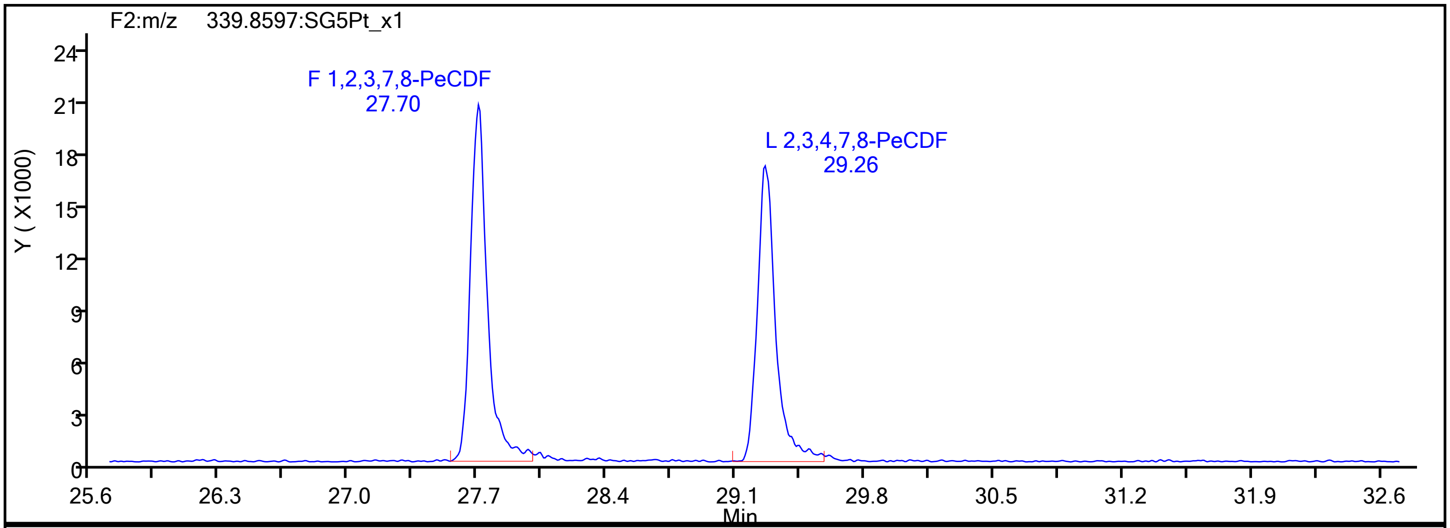

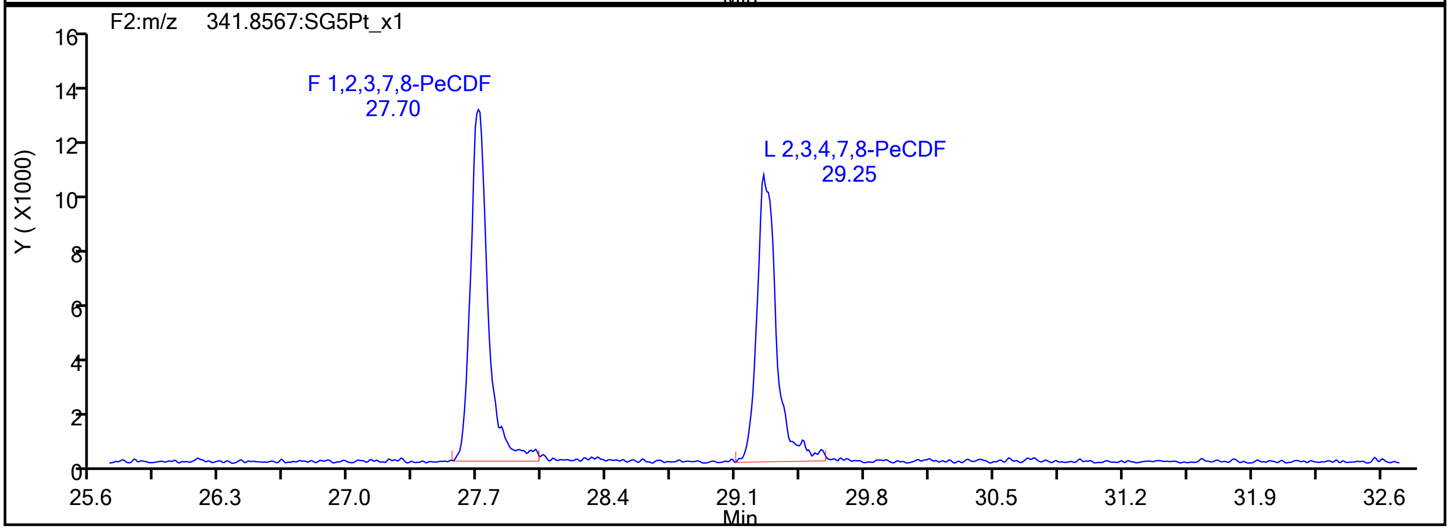

PeCDF Interference Mass

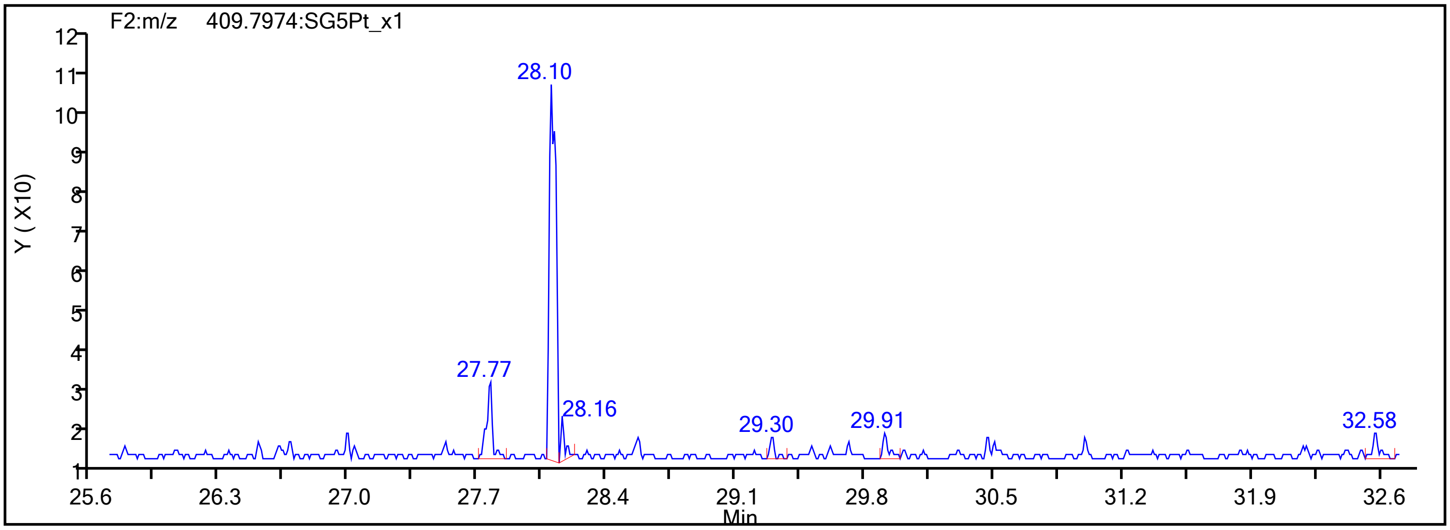

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

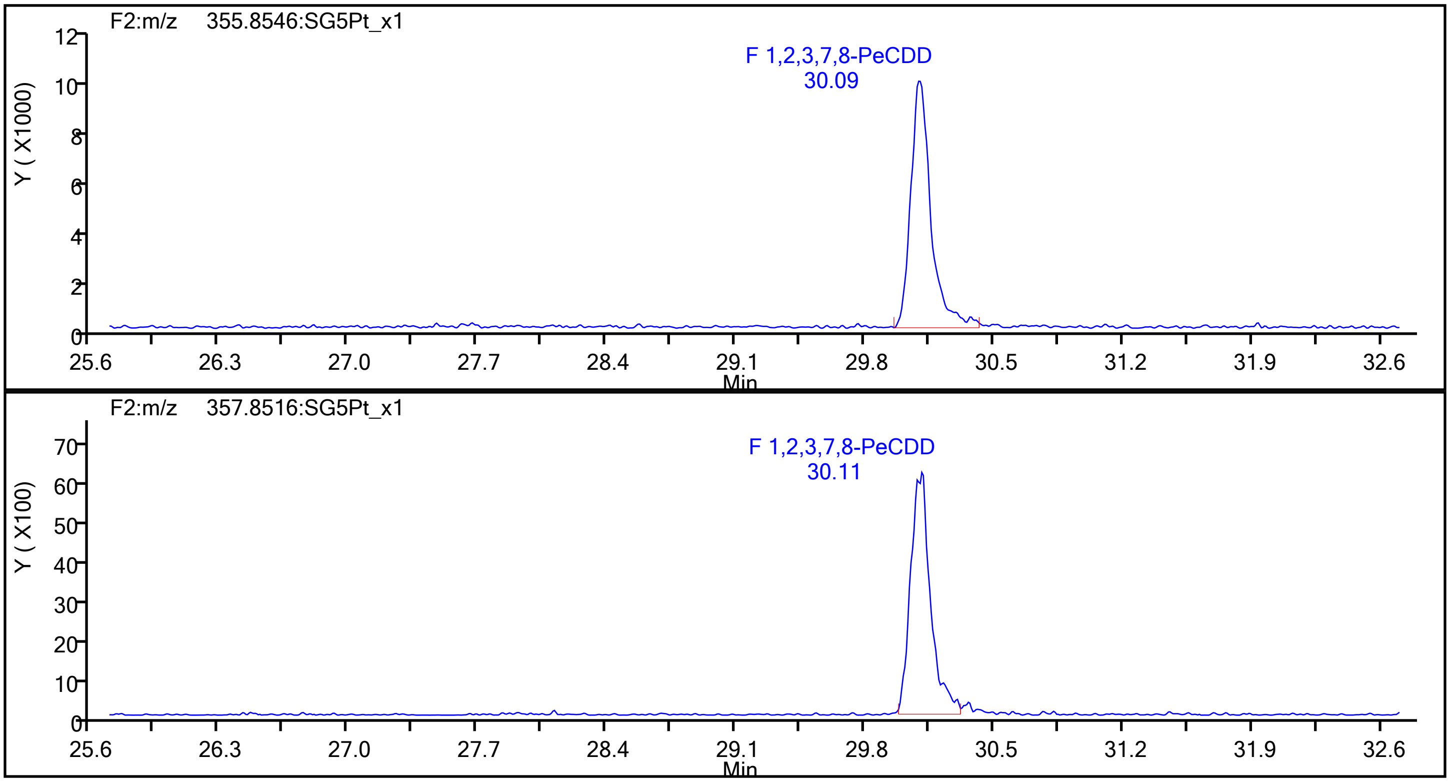

PeCDD Standards

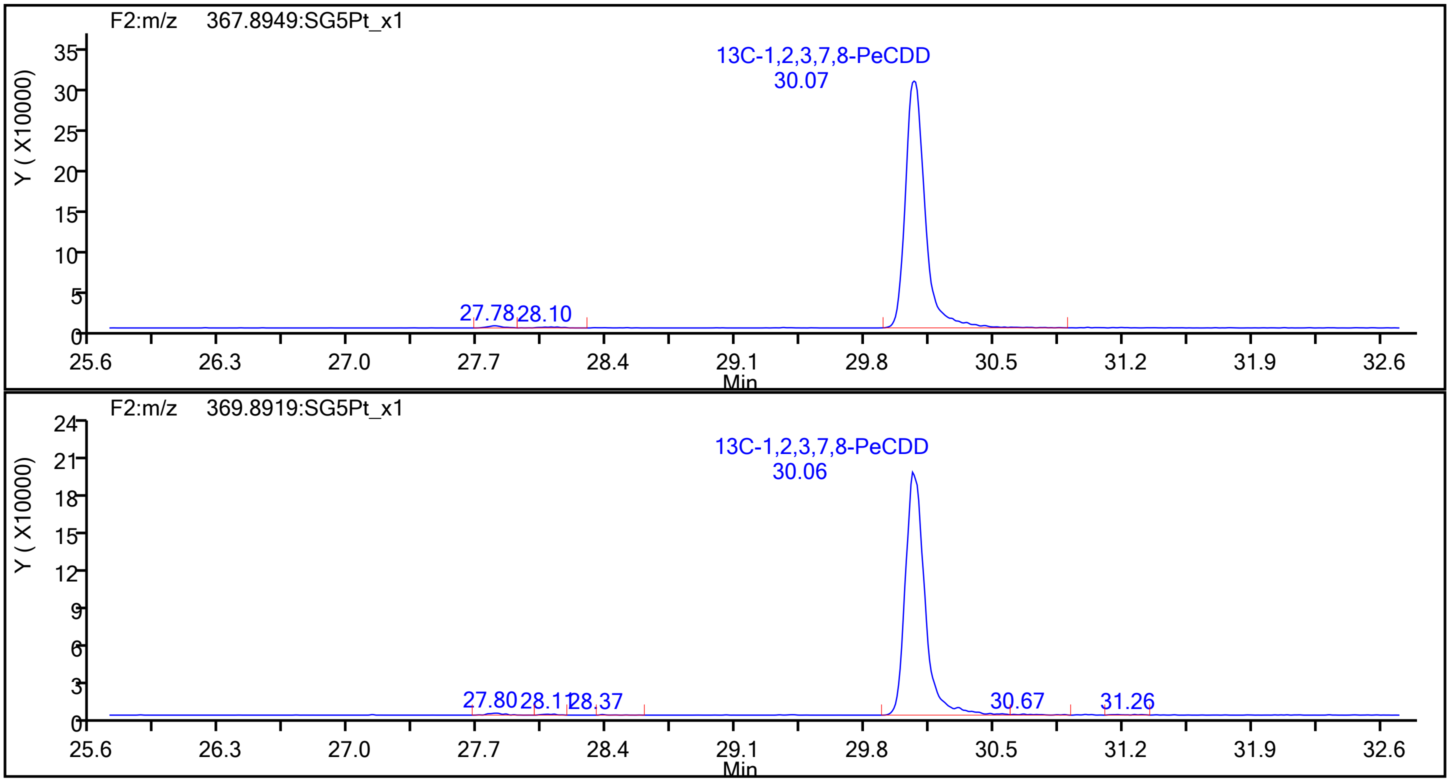

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Injection Date: 17-Nov-2020 17:44:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

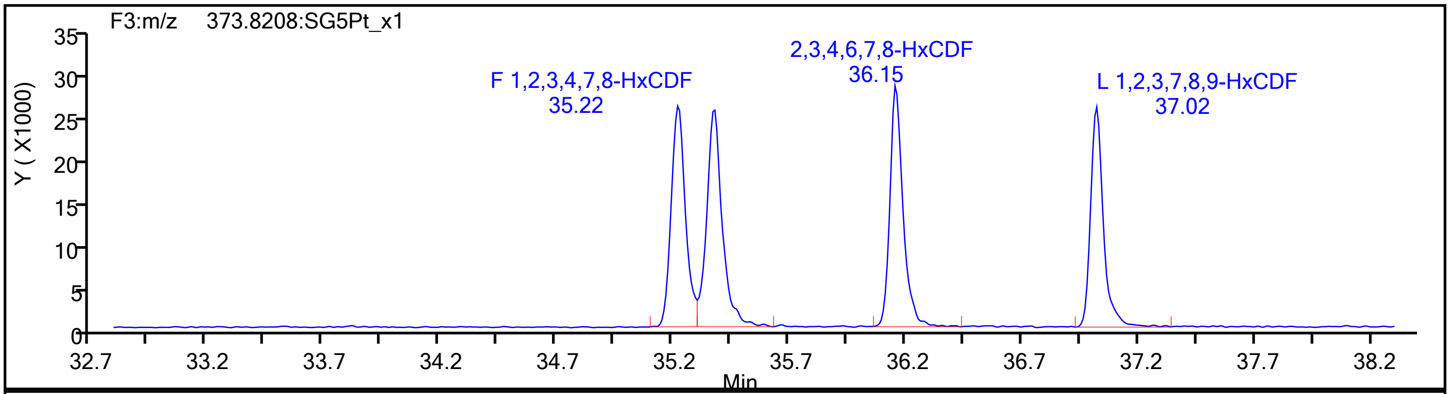

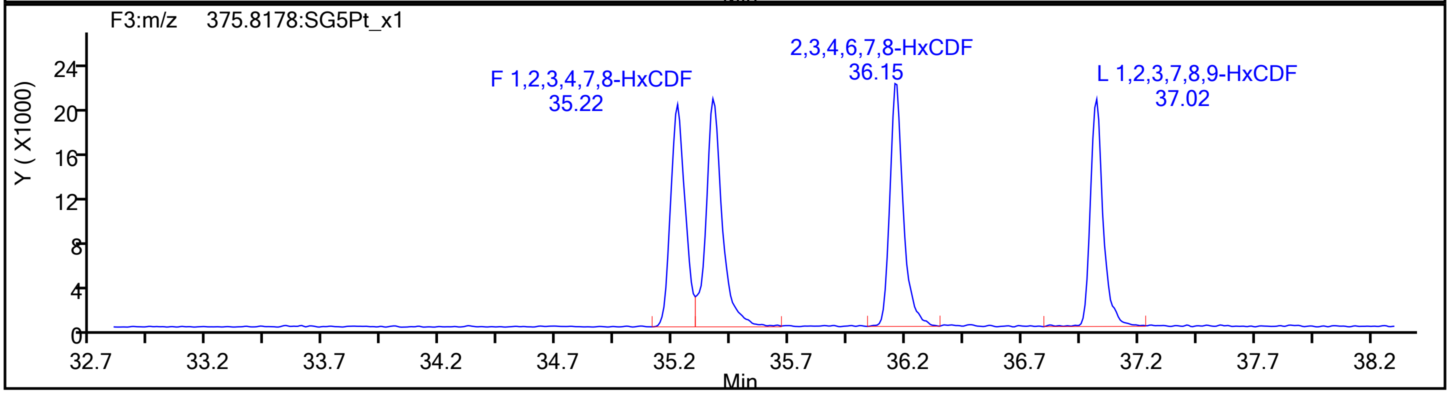

HxCDF Standards

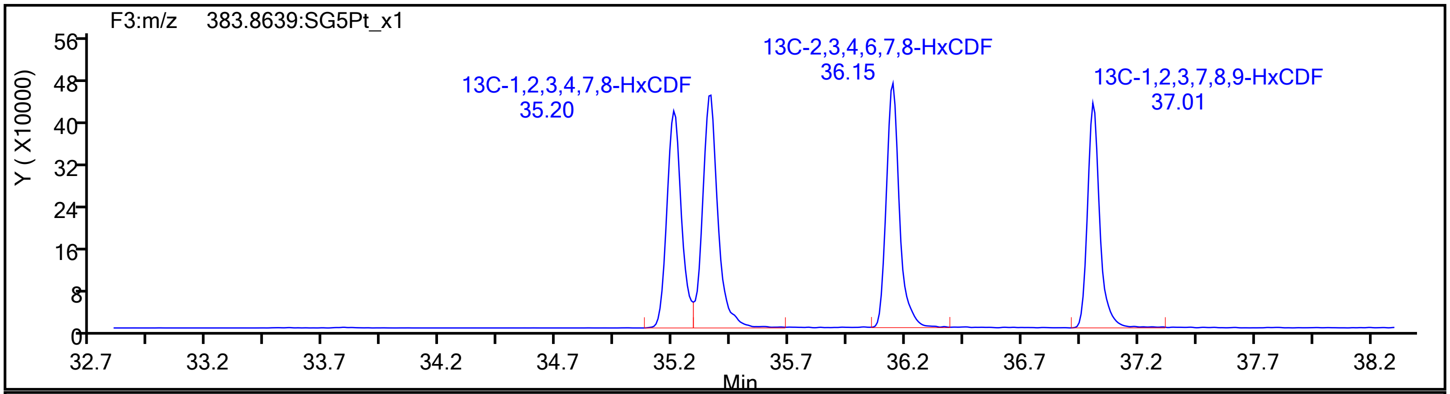

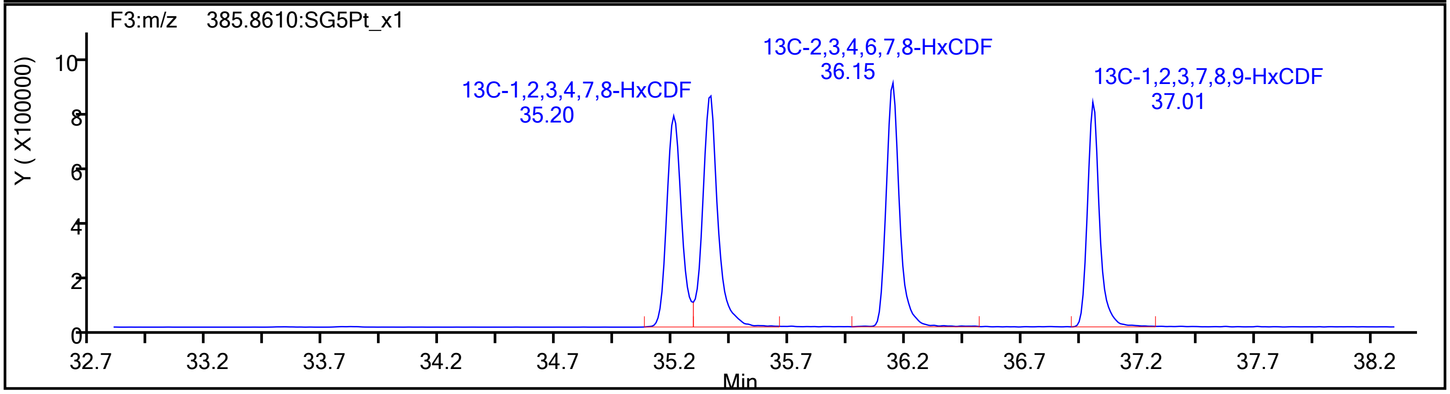

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

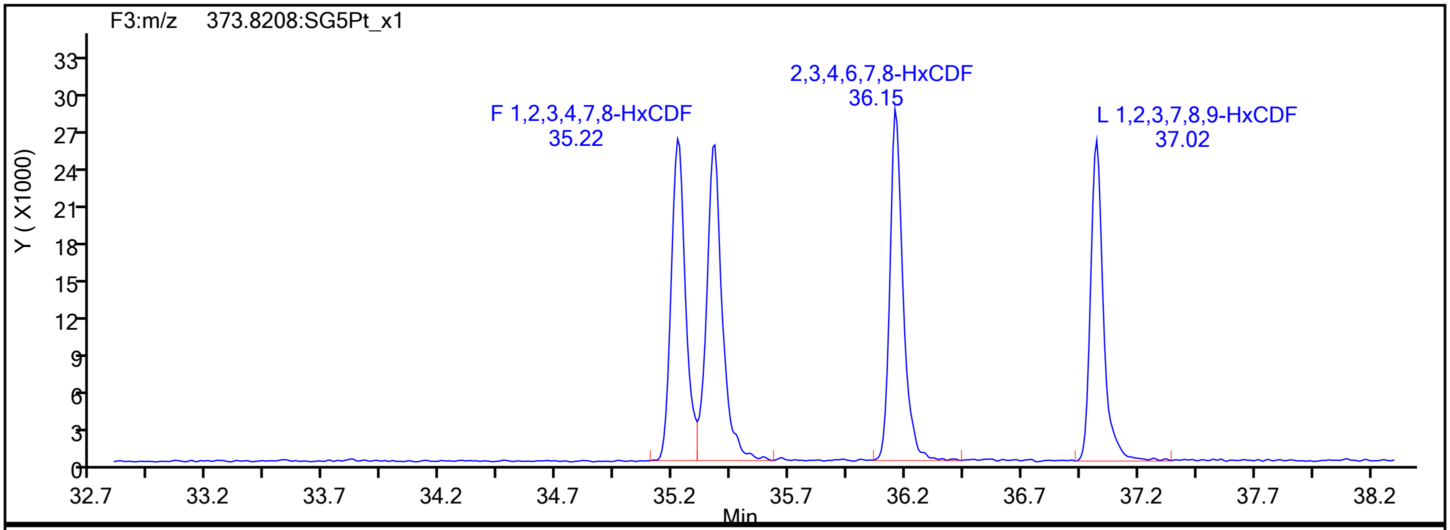

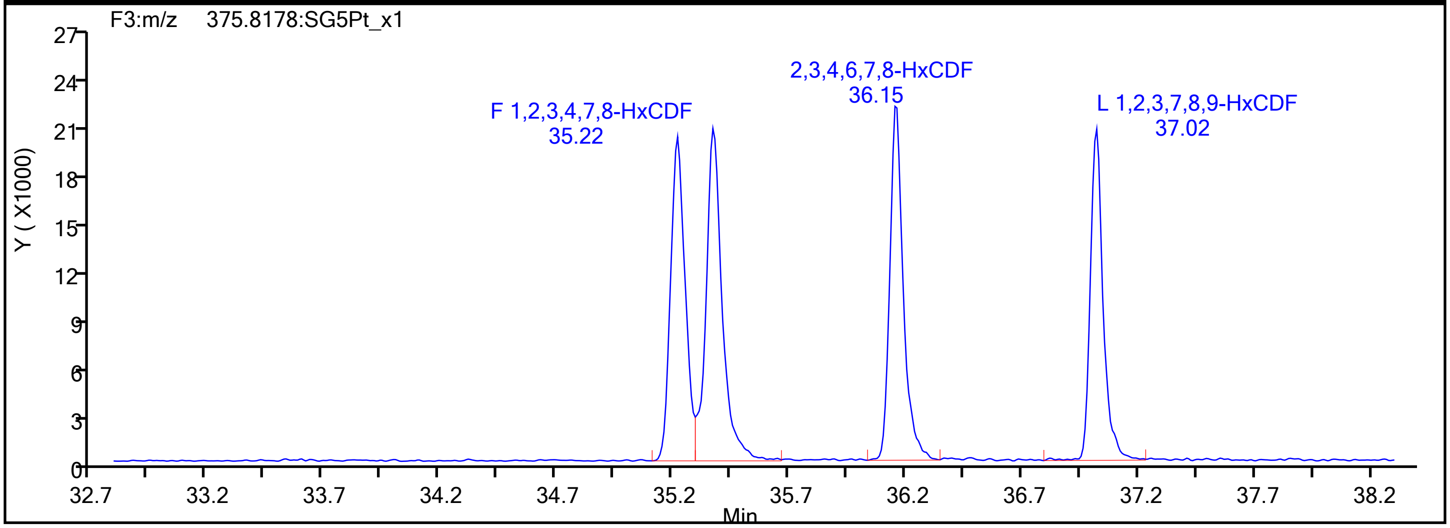

HxCDF Interference Mass

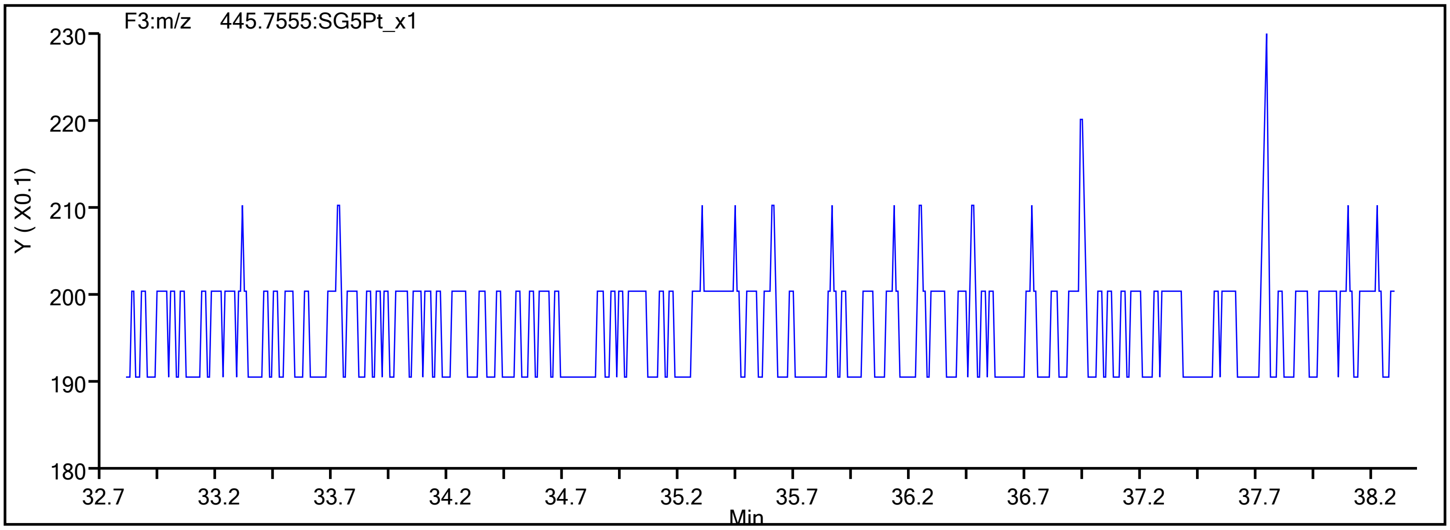

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

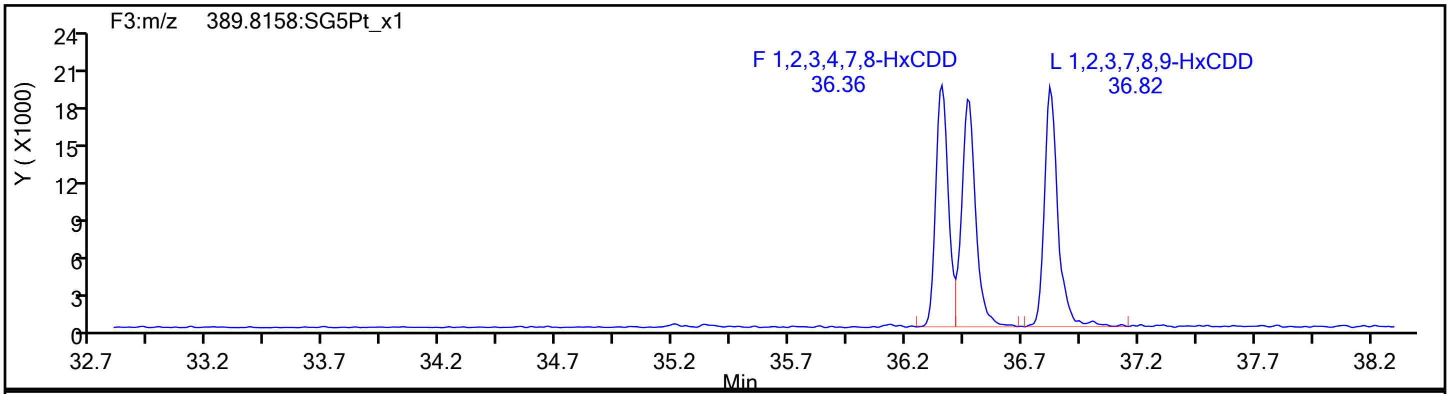

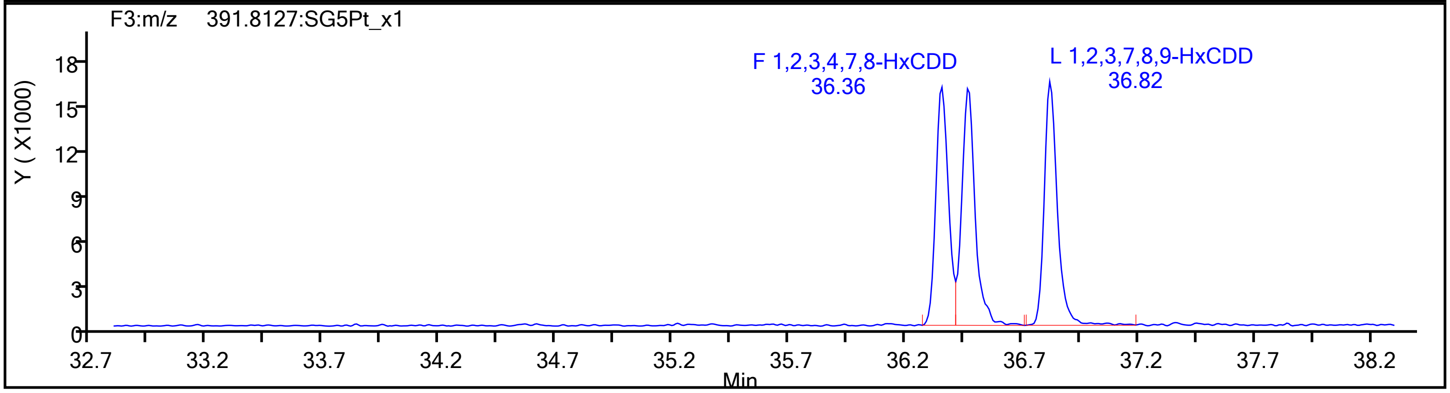

HxCDD Standards

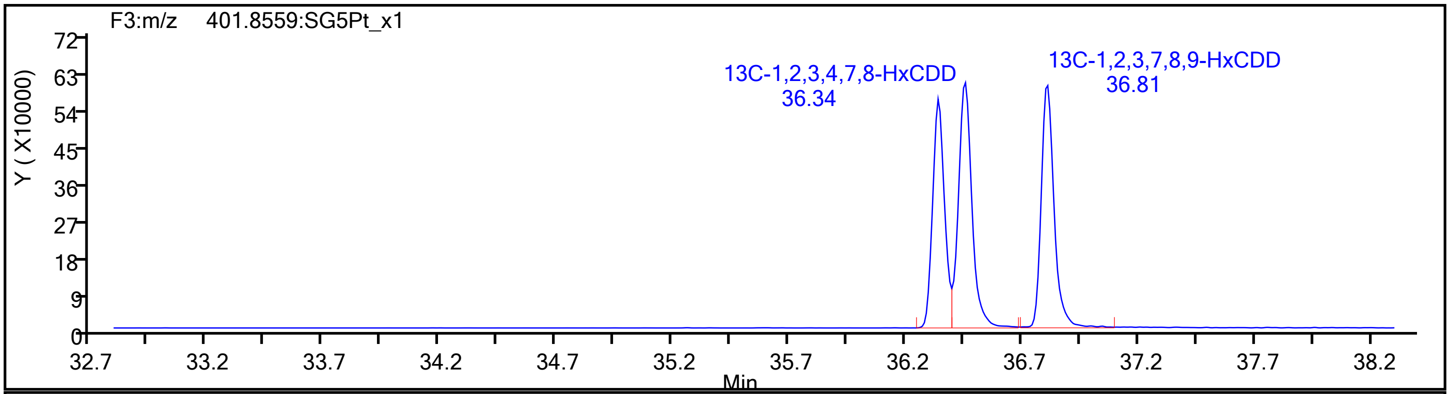

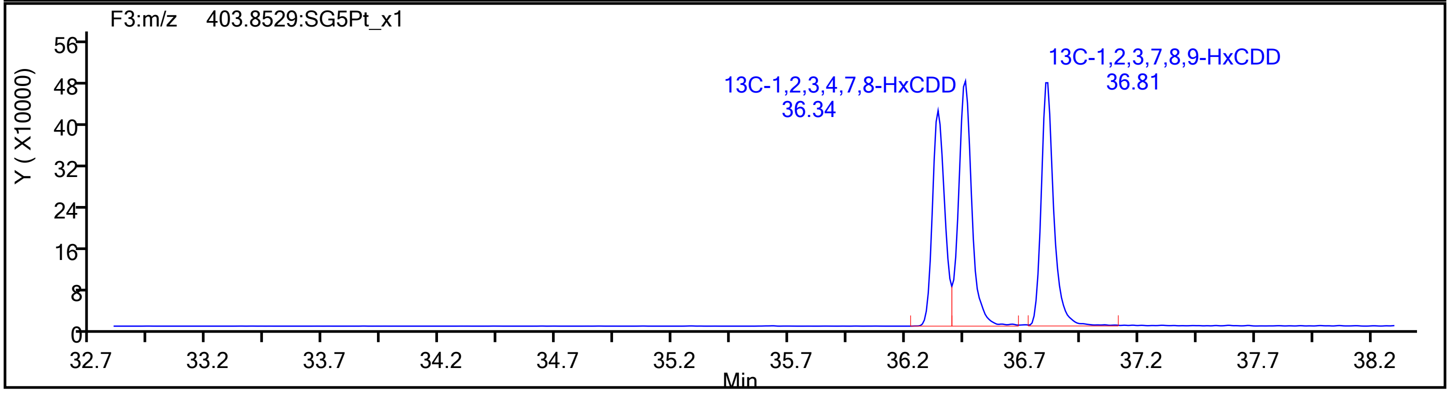

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

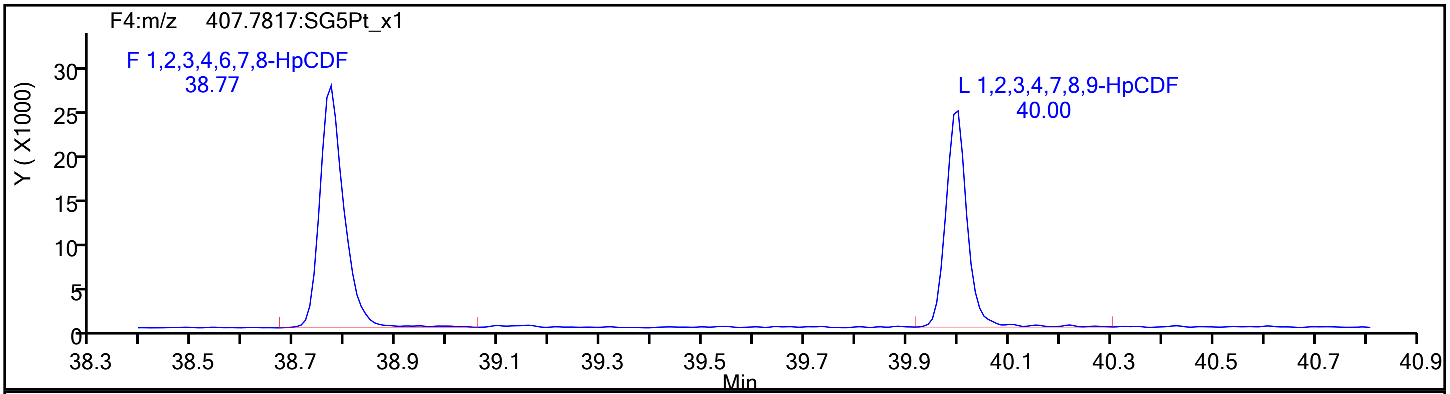

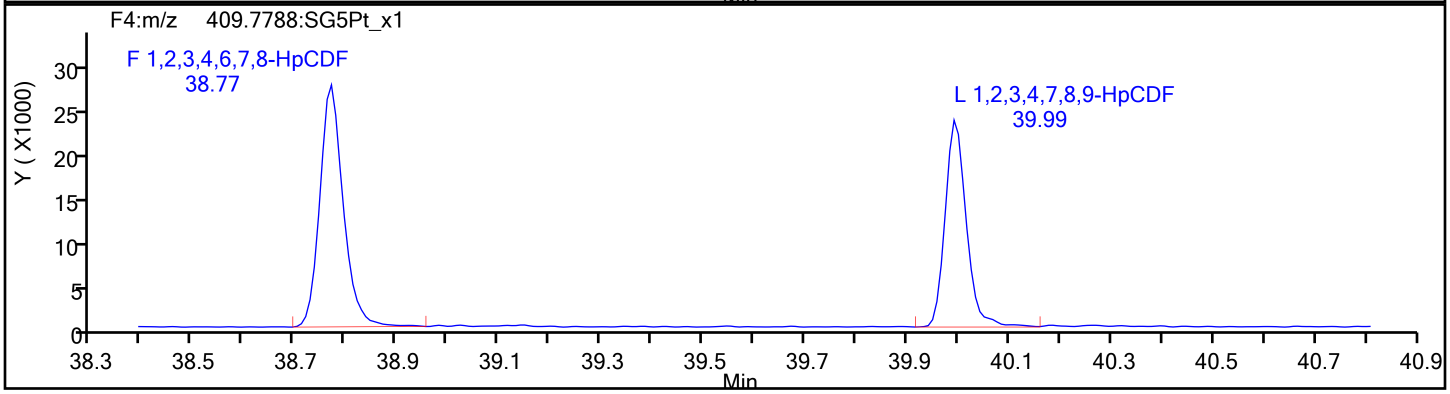

HpCDF Standards

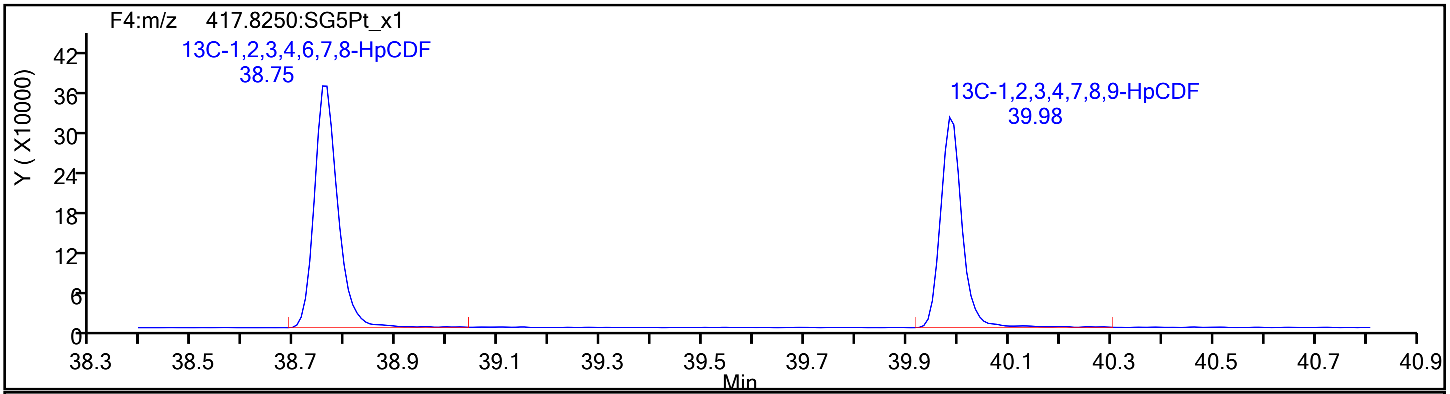

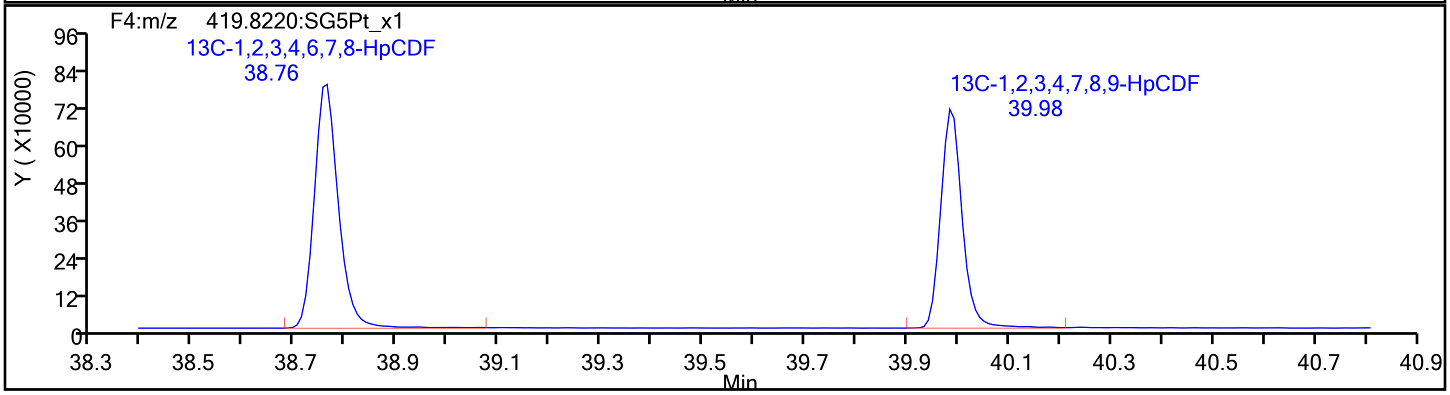

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

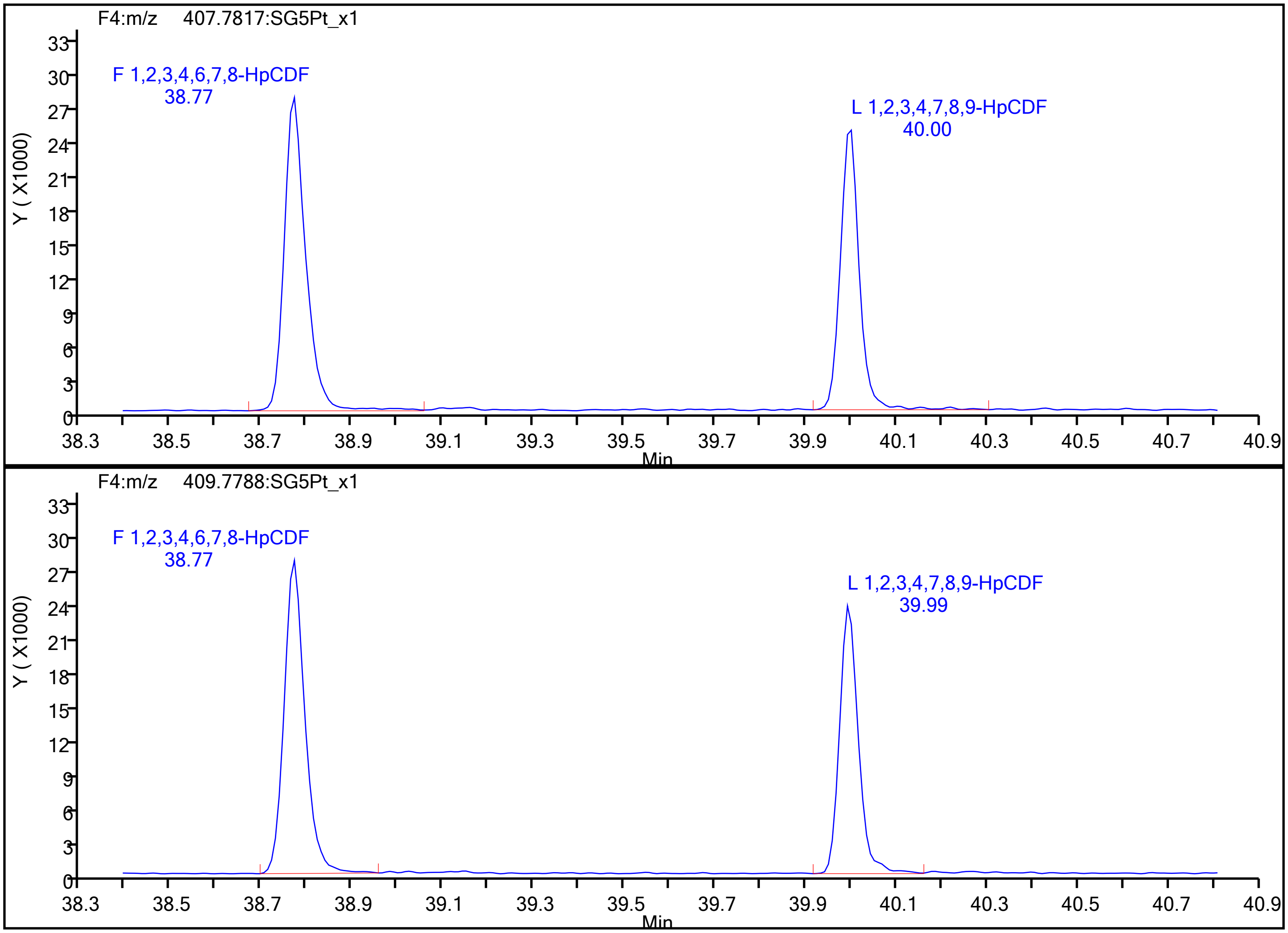

HpCDF Interference Mass

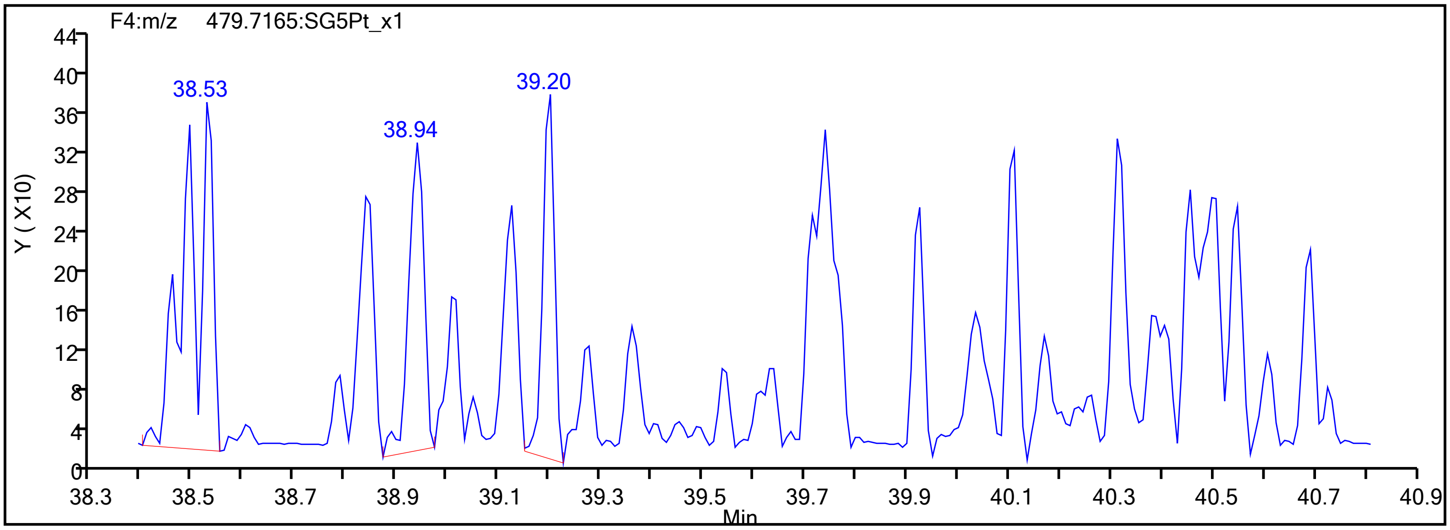

Report Date: 18-Nov-2020 12:35:47 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Injection Date: 17-Nov-2020 17:44:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

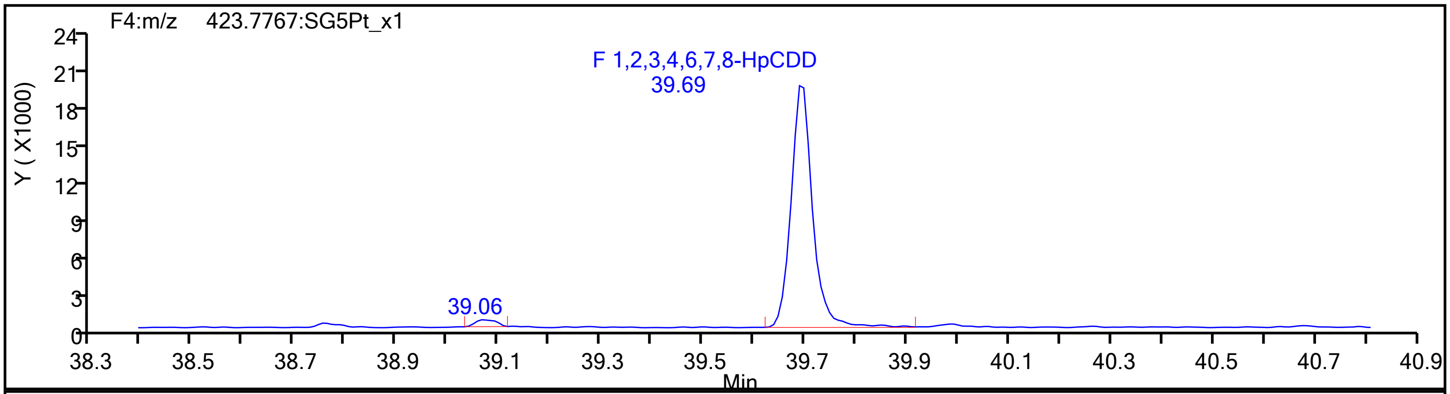

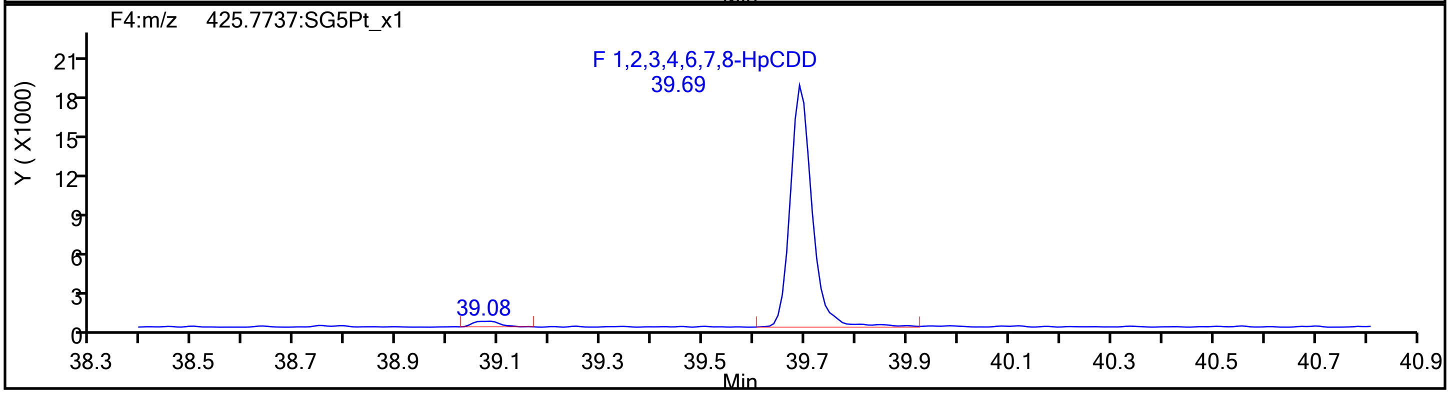

HpCDD Standards

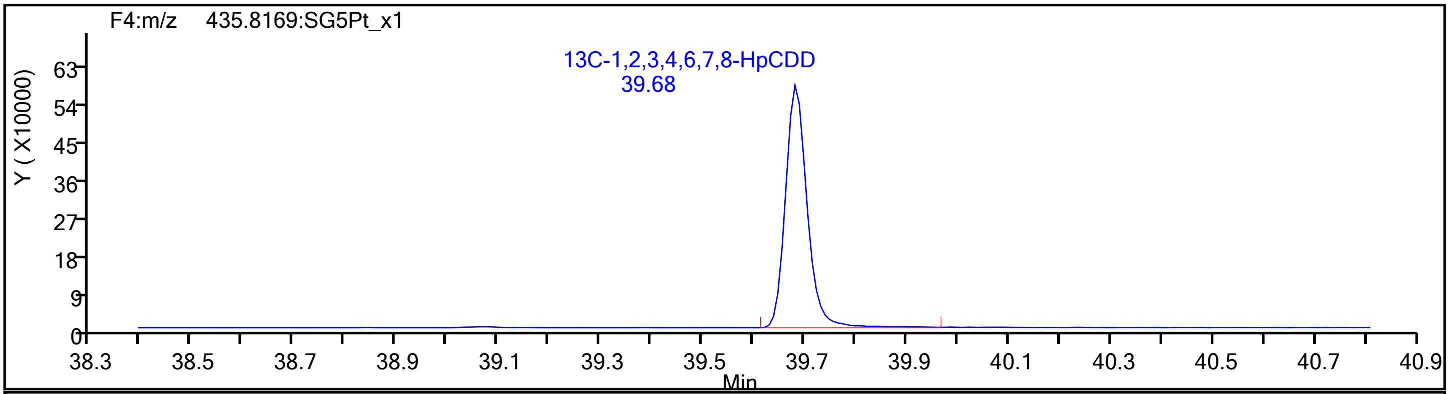

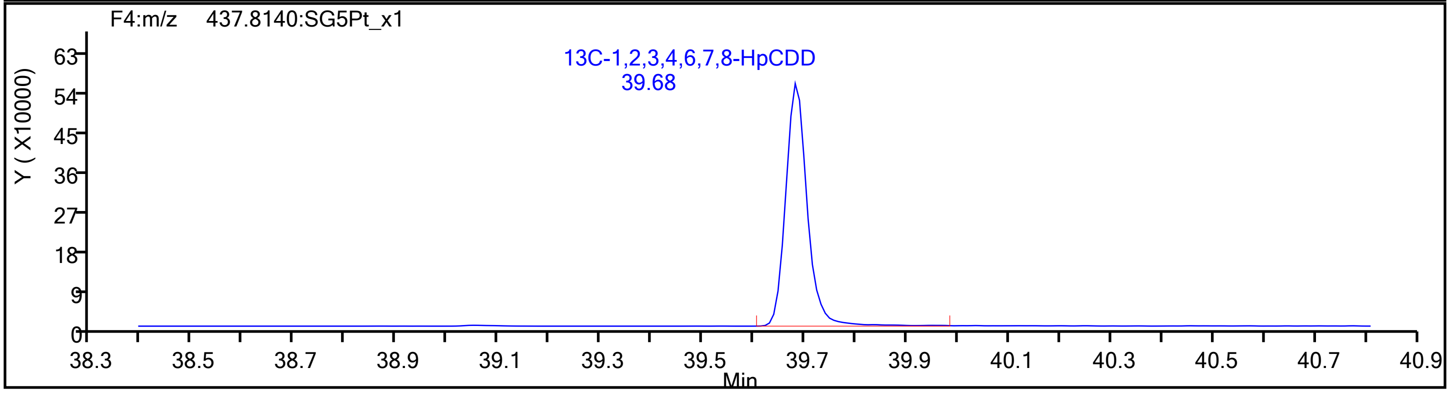

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

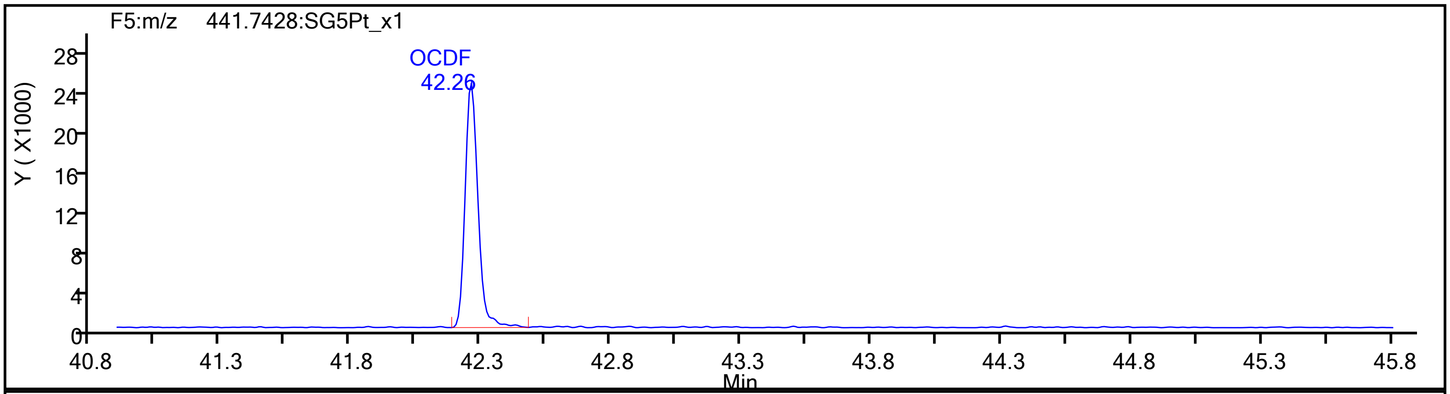

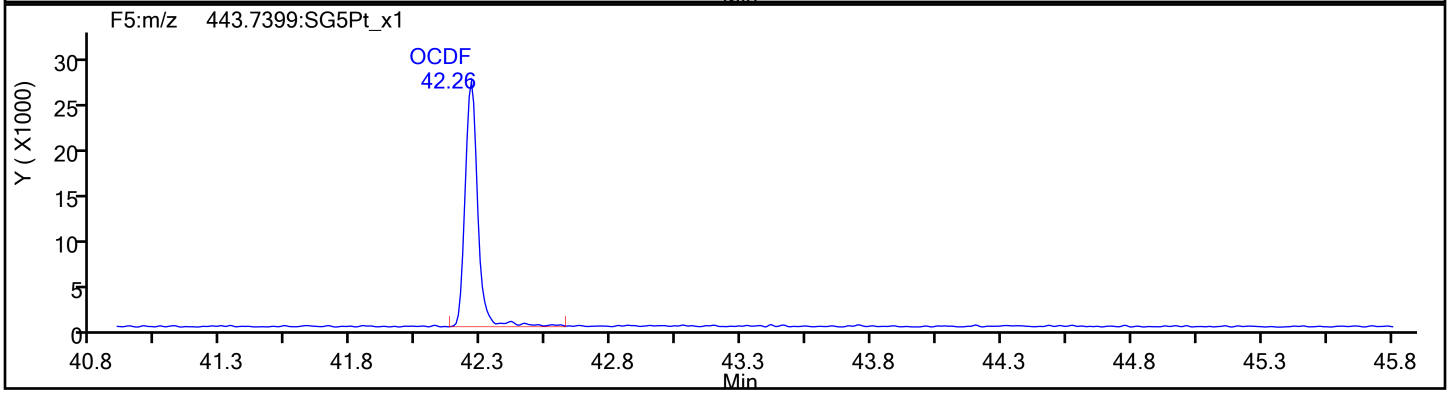

OCDF Standards

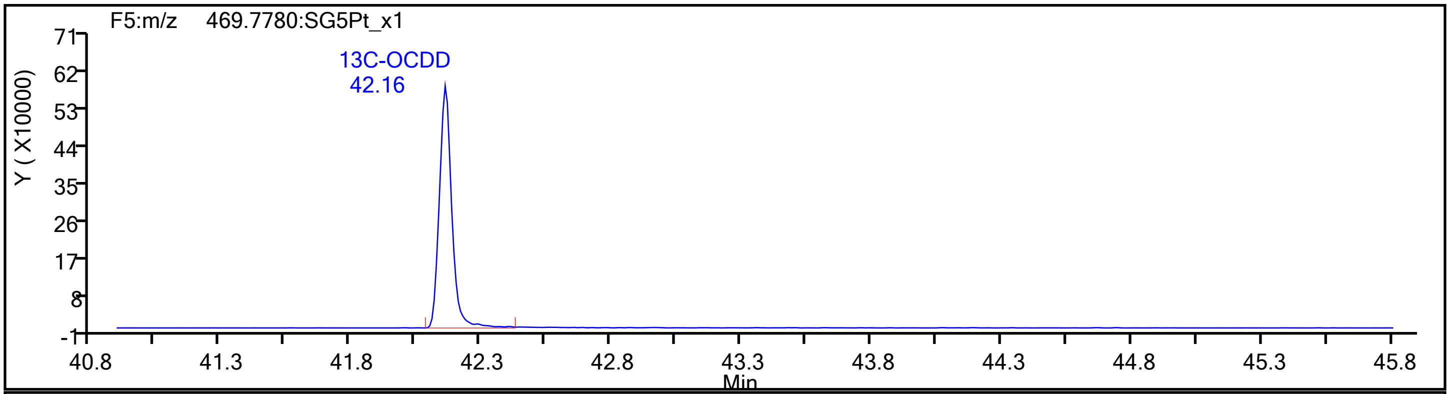

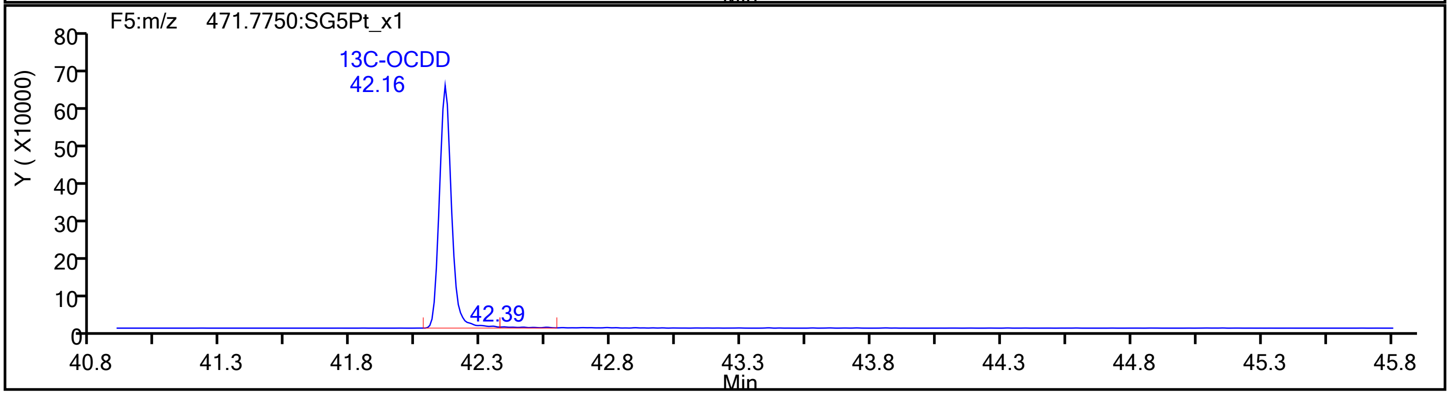

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

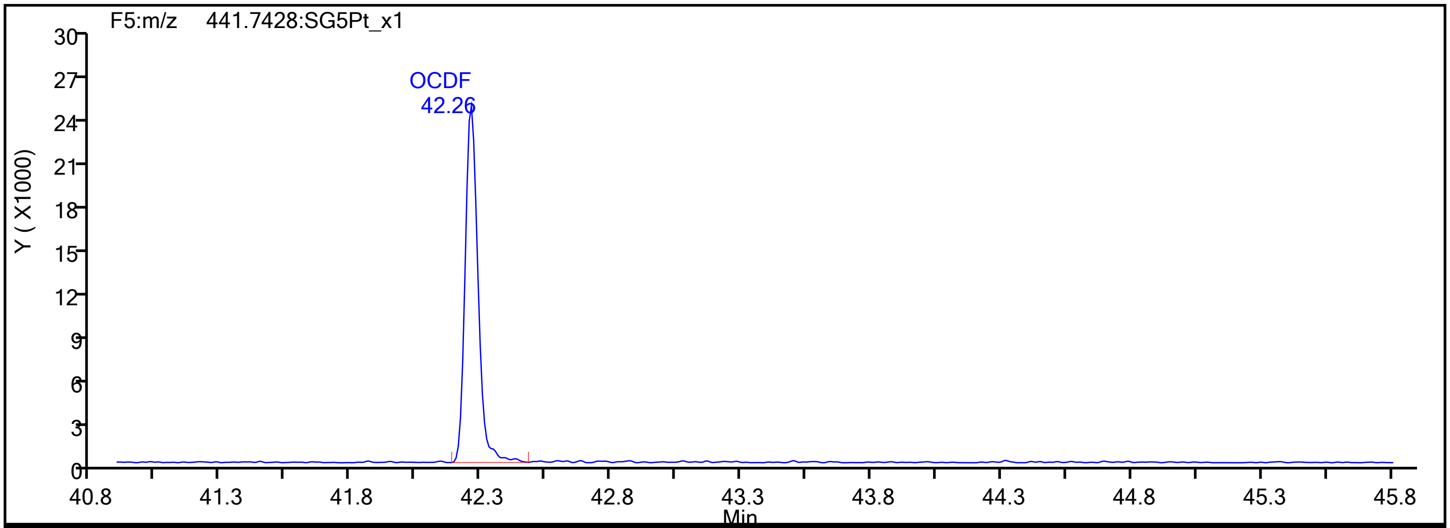

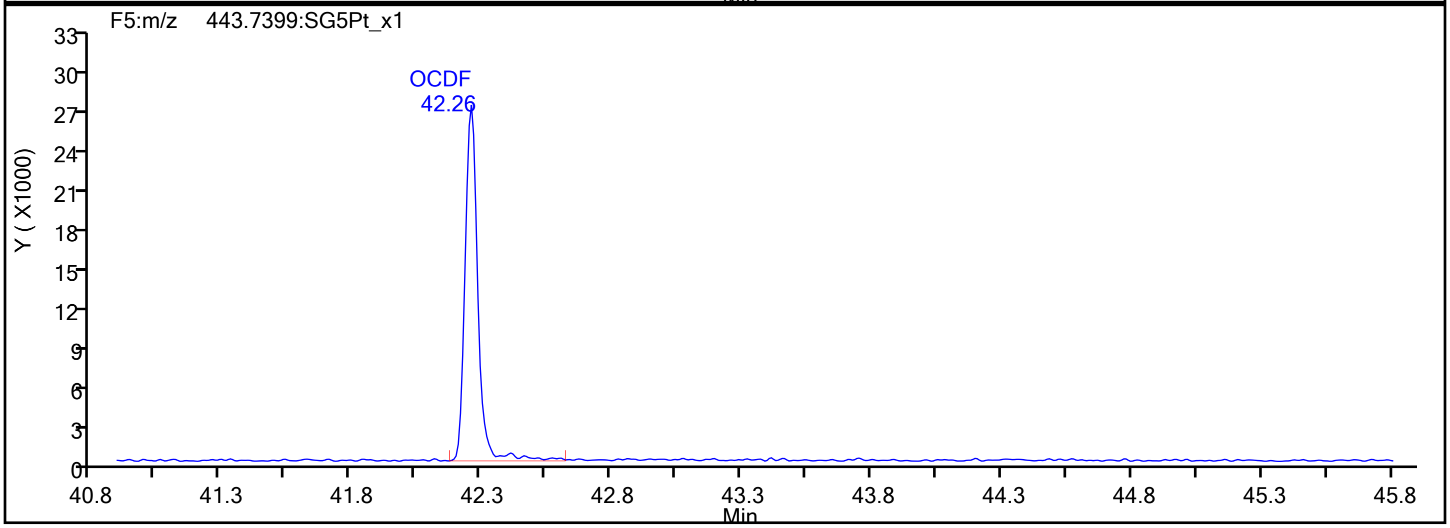

OCDF Interference Mass

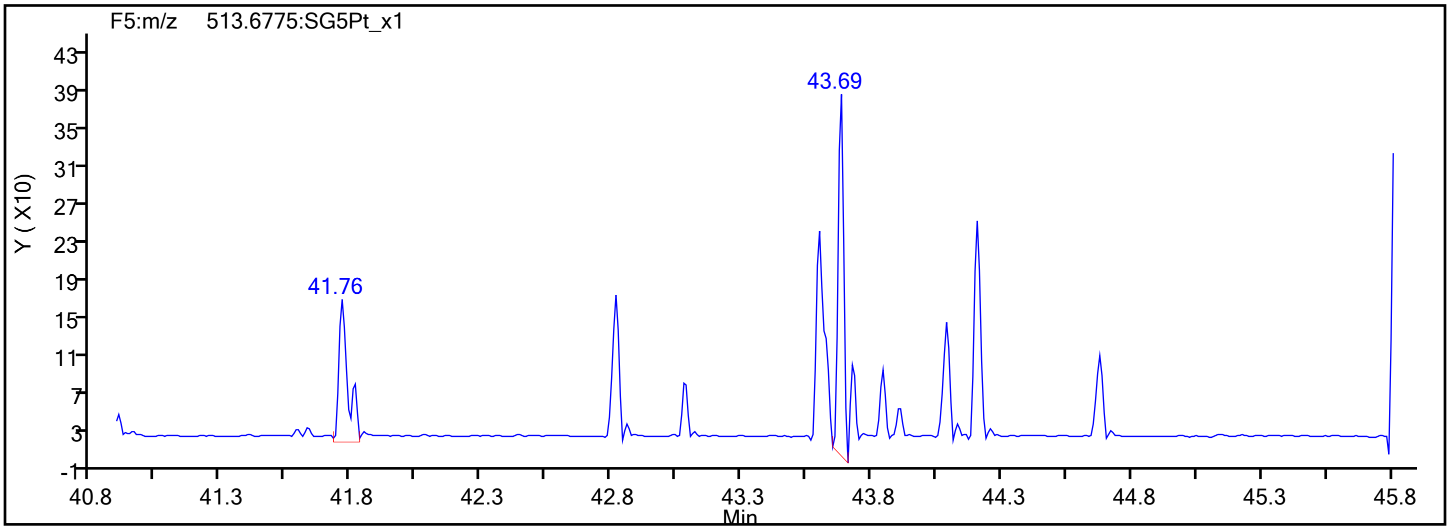

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Injection Date: 17-Nov-2020 17:44:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

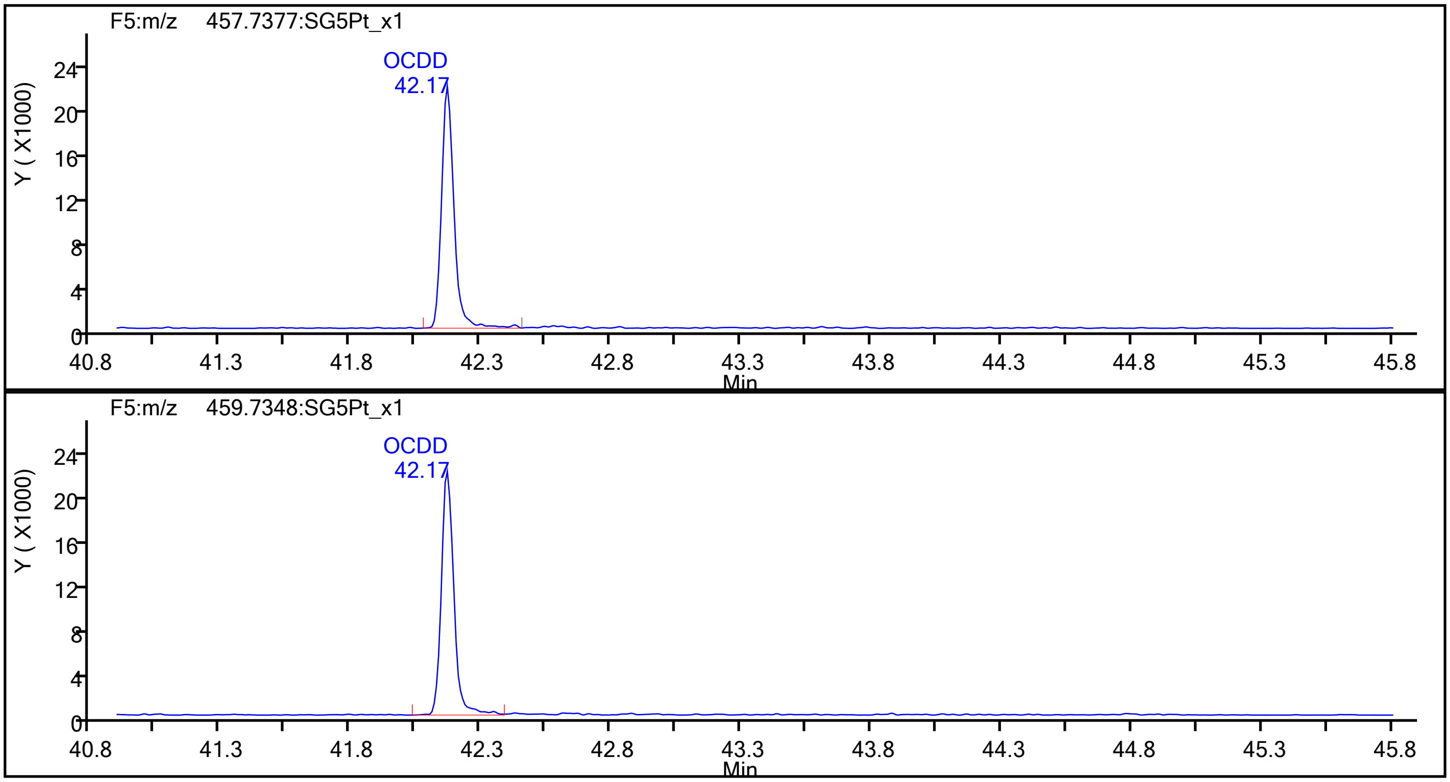

OCDD Standards

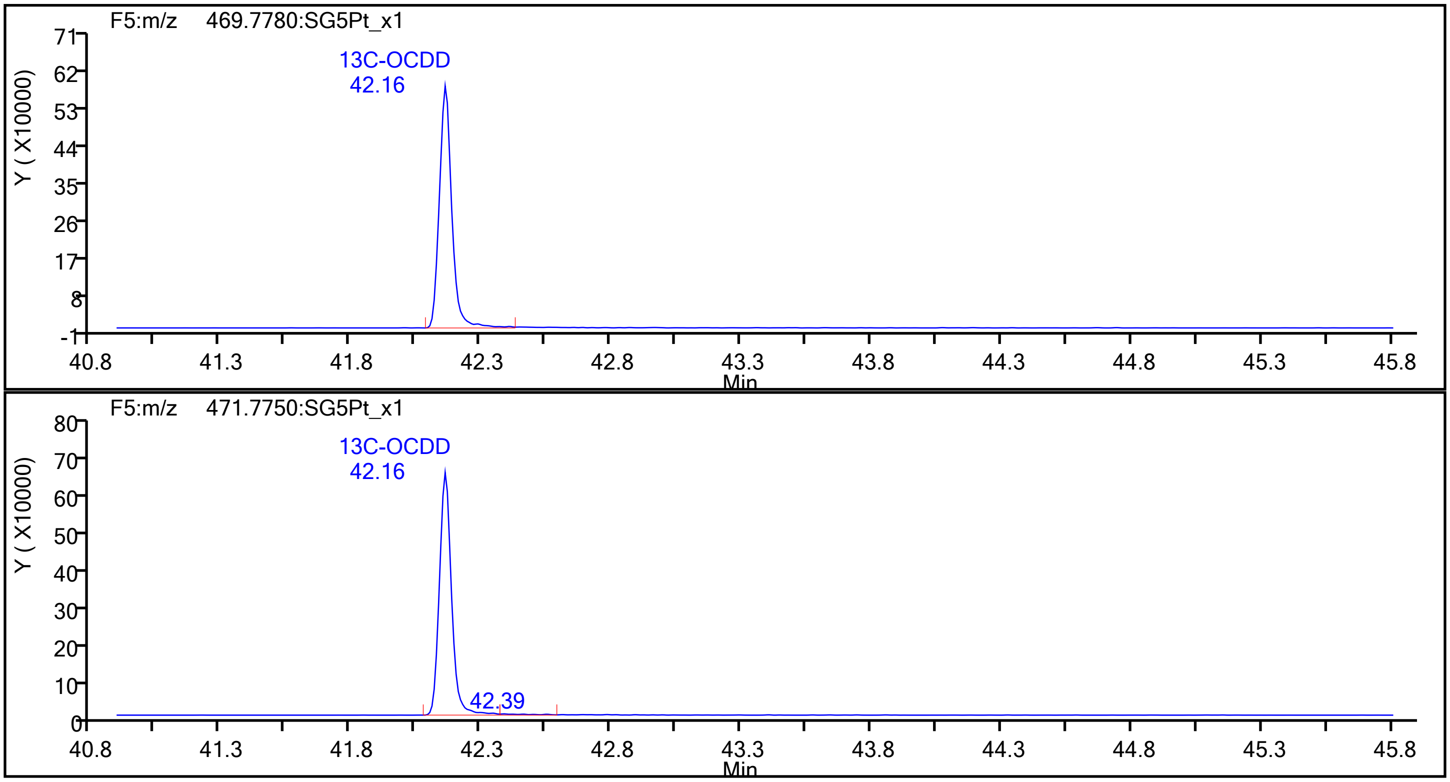

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

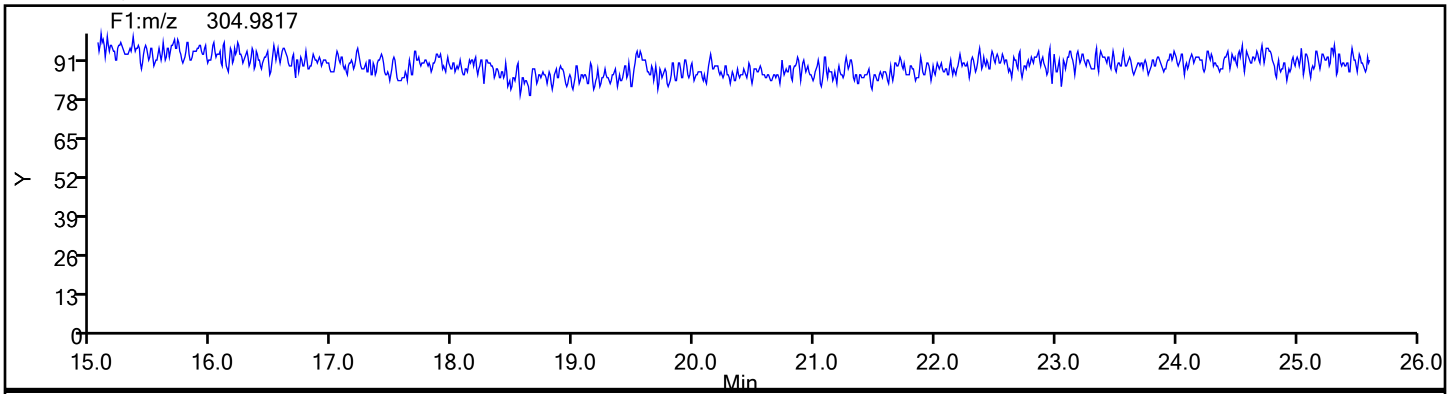

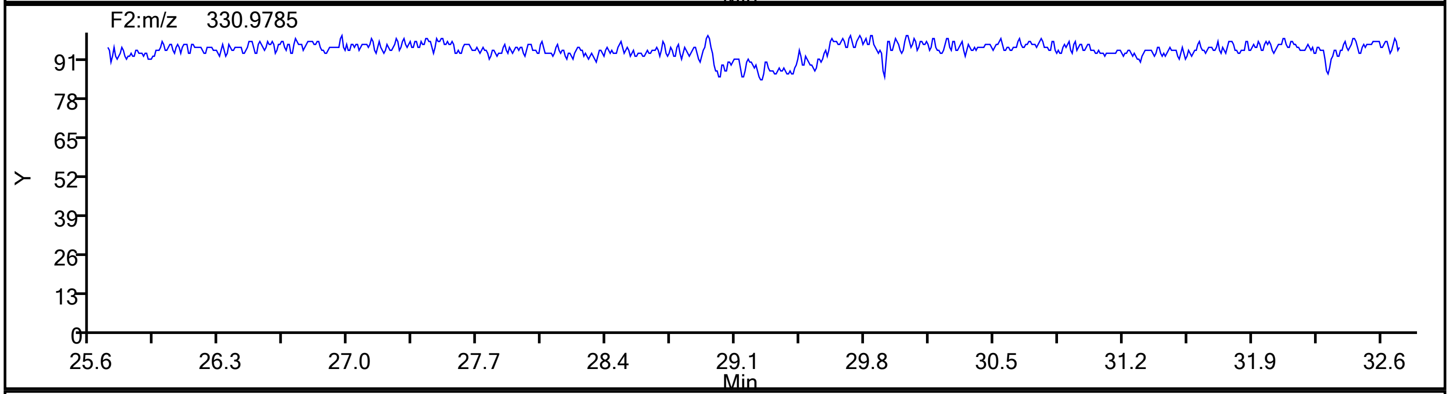

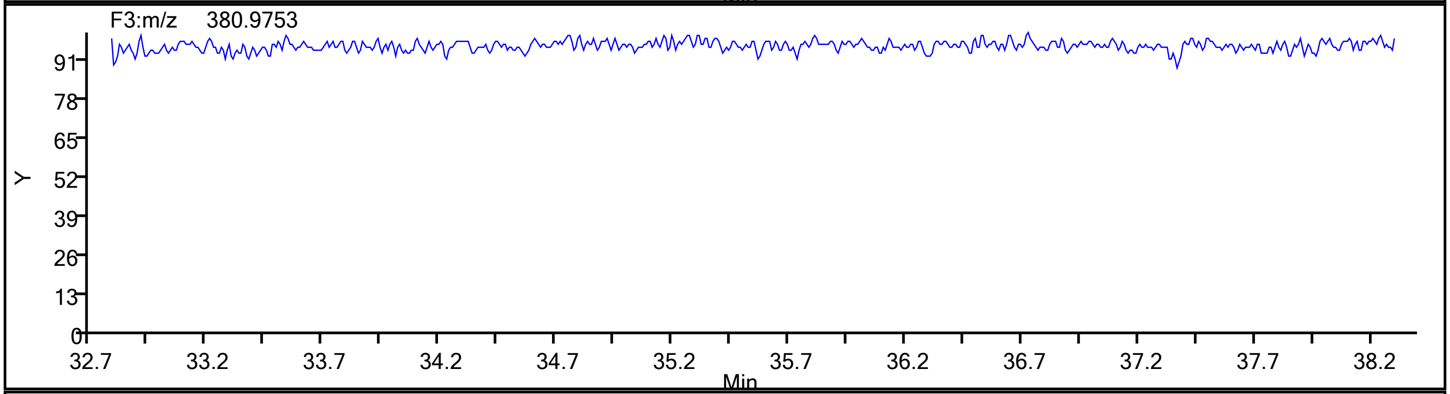

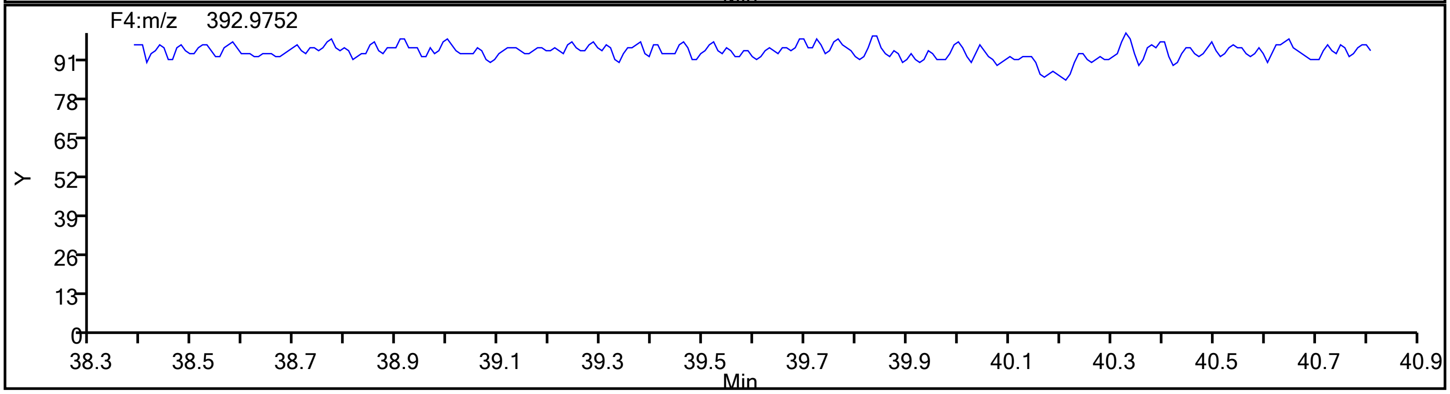

Report Date: 18-Nov-2020 12:35:48 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d		
Injection Date:	17-Nov-2020 17:44:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

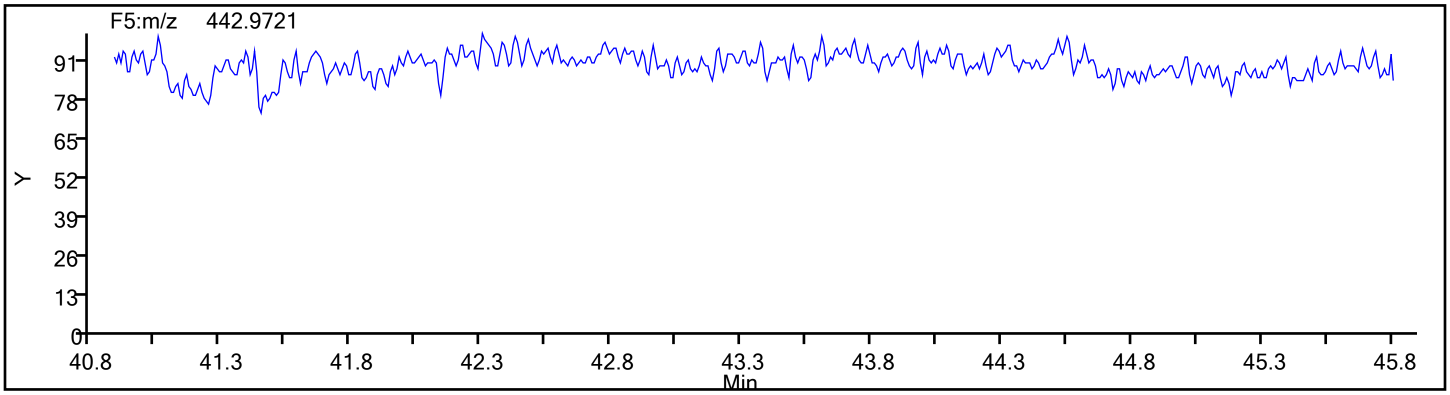

Calibration / 1,2,3,4,6,7,8-HpCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.108

Error Coefficients

Standard Error:	20900000
Relative Standard Error:	13.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.976

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.398225	100.0	3354869.0	1.35929	Y
2	IC 320-432585/4	10.0	10.851002	100.0	1593650.0	1.0851	Y
3	IC 320-432585/5	50.0	53.245495	100.0	2621187.0	1.06491	Y
4	IC 320-432585/6	200.0	205.886112	100.0	3814878.0	1.029431	Y
5	IC 320-432585/7	1000.0	1001.003185	100.0	4099544.0	1.001003	Y

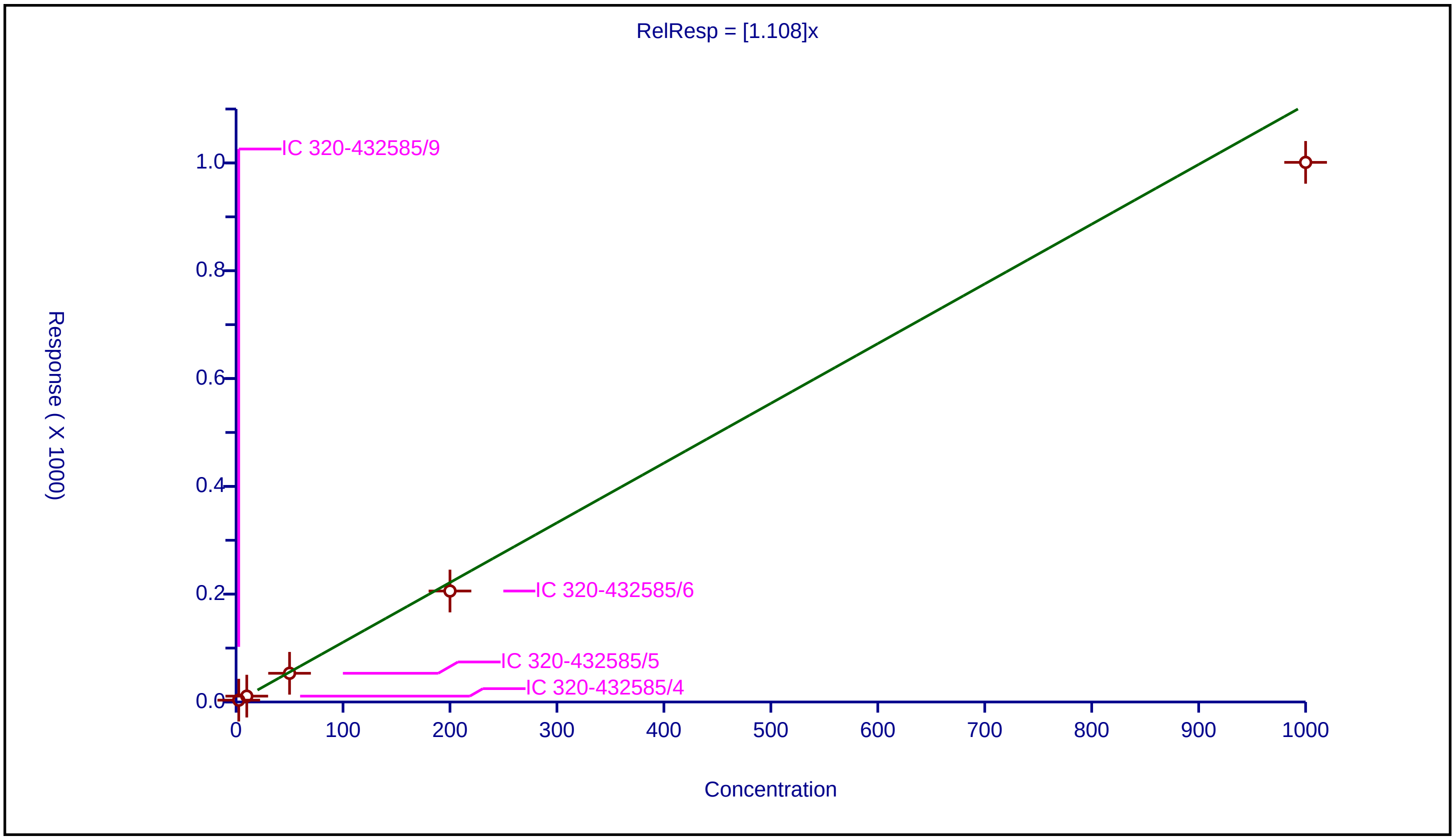

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.562

Error Coefficients

Standard Error:	33400000
Relative Standard Error:	12.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.980

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	4.704997	100.0	3789205.0	1.881999	Y
2	IC 320-432585/4	10.0	15.698379	100.0	1840655.0	1.569838	Y
3	IC 320-432585/5	50.0	74.872975	100.0	2967331.0	1.49746	Y
4	IC 320-432585/6	200.0	282.10855	100.0	4395524.0	1.410543	Y
5	IC 320-432585/7	1000.0	1449.391785	100.0	4525374.0	1.449392	Y

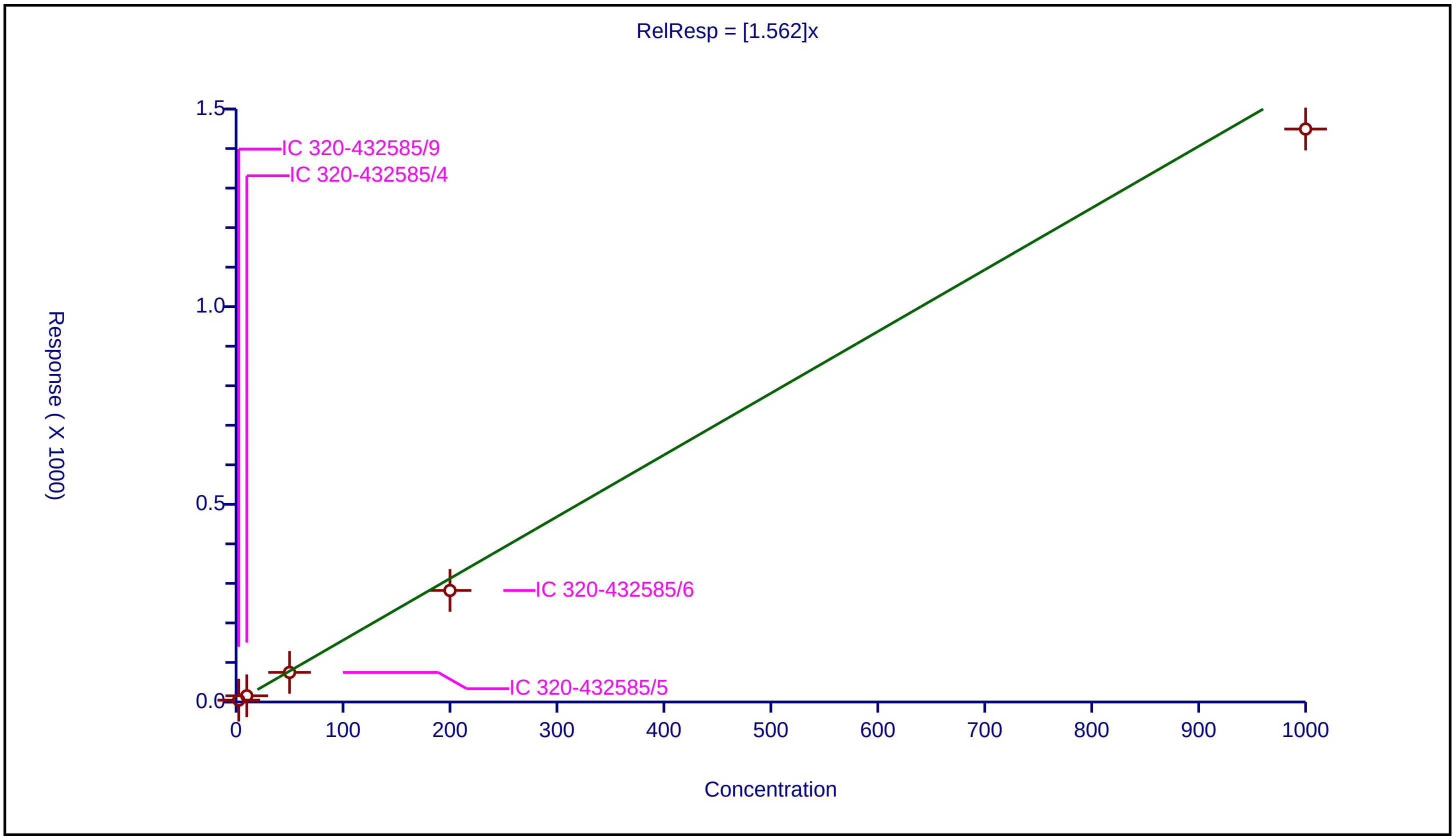

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.497

Error Coefficients

Standard Error:	27000000
Relative Standard Error:	13.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.976

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	4.607959	100.0	3027653.0	1.843183	Y
2	IC 320-432585/4	10.0	14.558953	100.0	1486611.0	1.455895	Y
3	IC 320-432585/5	50.0	71.593339	100.0	2429483.0	1.431867	Y
4	IC 320-432585/6	200.0	278.961535	100.0	3517248.0	1.394808	Y
5	IC 320-432585/7	1000.0	1361.554268	100.0	3896084.0	1.361554	Y

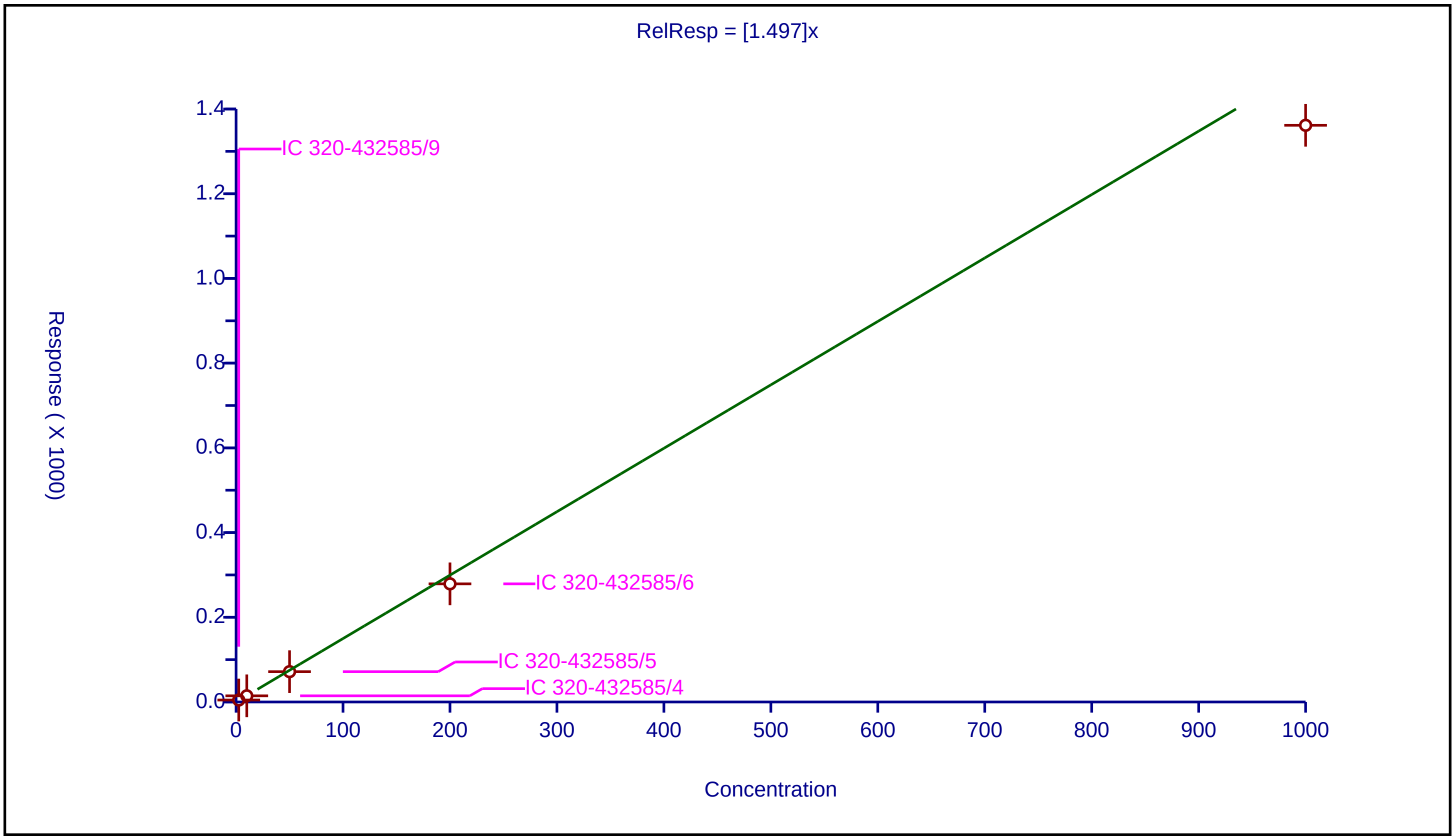

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.197

Error Coefficients

Standard Error:	22600000
Relative Standard Error:	14.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.972

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.7252	100.0	3537152.0	1.49008	Y
2	IC 320-432585/4	10.0	11.471967	100.0	1727097.0	1.147197	Y
3	IC 320-432585/5	50.0	58.698666	100.0	2680342.0	1.173973	Y
4	IC 320-432585/6	200.0	220.321662	100.0	3999855.0	1.101608	Y
5	IC 320-432585/7	1000.0	1073.095429	100.0	4136810.0	1.073095	Y

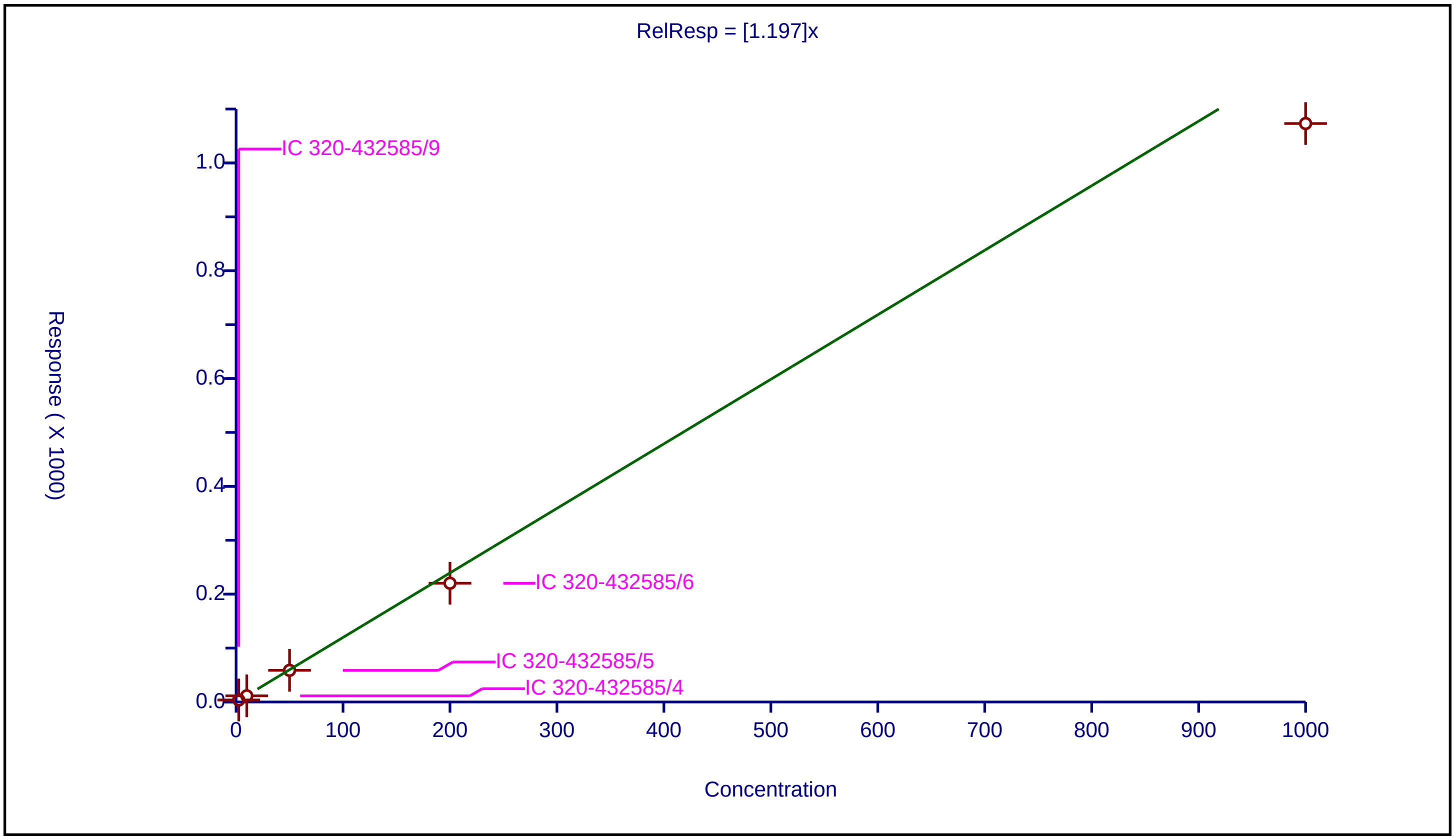

Calibration / 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.32

Error Coefficients

Standard Error:	37300000
Relative Standard Error:	9.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.987

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.840177	100.0	5181766.0	1.536071	Y
2	IC 320-432585/4	10.0	13.299311	100.0	2523469.0	1.329931	Y
3	IC 320-432585/5	50.0	64.511984	100.0	3980989.0	1.29024	Y
4	IC 320-432585/6	200.0	248.806087	100.0	5721063.0	1.24403	Y
5	IC 320-432585/7	1000.0	1202.082121	100.0	6095612.0	1.202082	Y

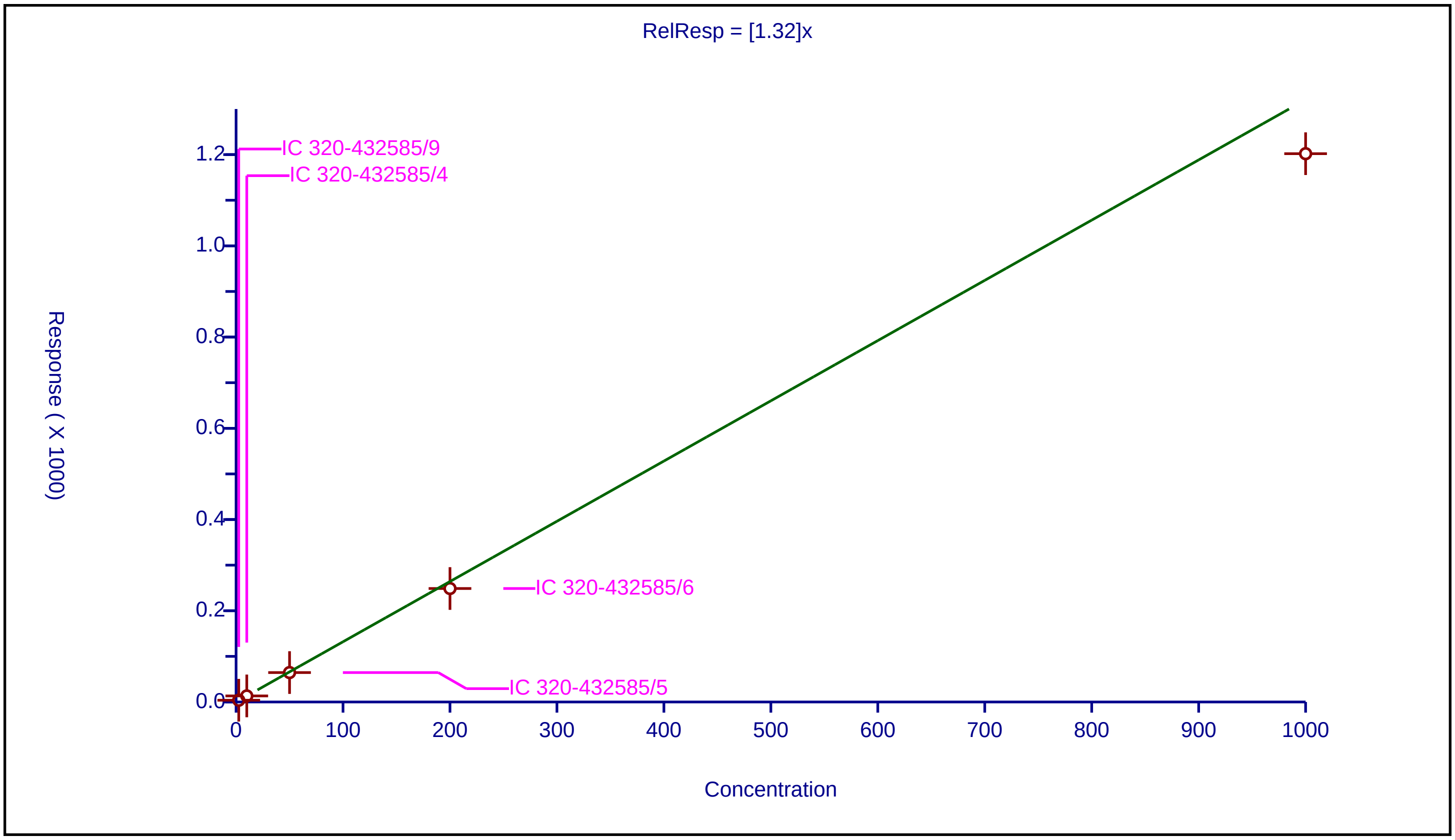

Calibration / 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.069

Error Coefficients

Standard Error:	24600000
Relative Standard Error:	11.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.982

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.189256	100.0	4357819.0	1.275702	Y
2	IC 320-432585/4	10.0	10.840378	100.0	2053194.0	1.084038	Y
3	IC 320-432585/5	50.0	50.674467	100.0	3353387.0	1.013489	Y
4	IC 320-432585/6	200.0	202.383039	100.0	4810874.0	1.011915	Y
5	IC 320-432585/7	1000.0	962.156005	100.0	5001351.0	0.962156	Y

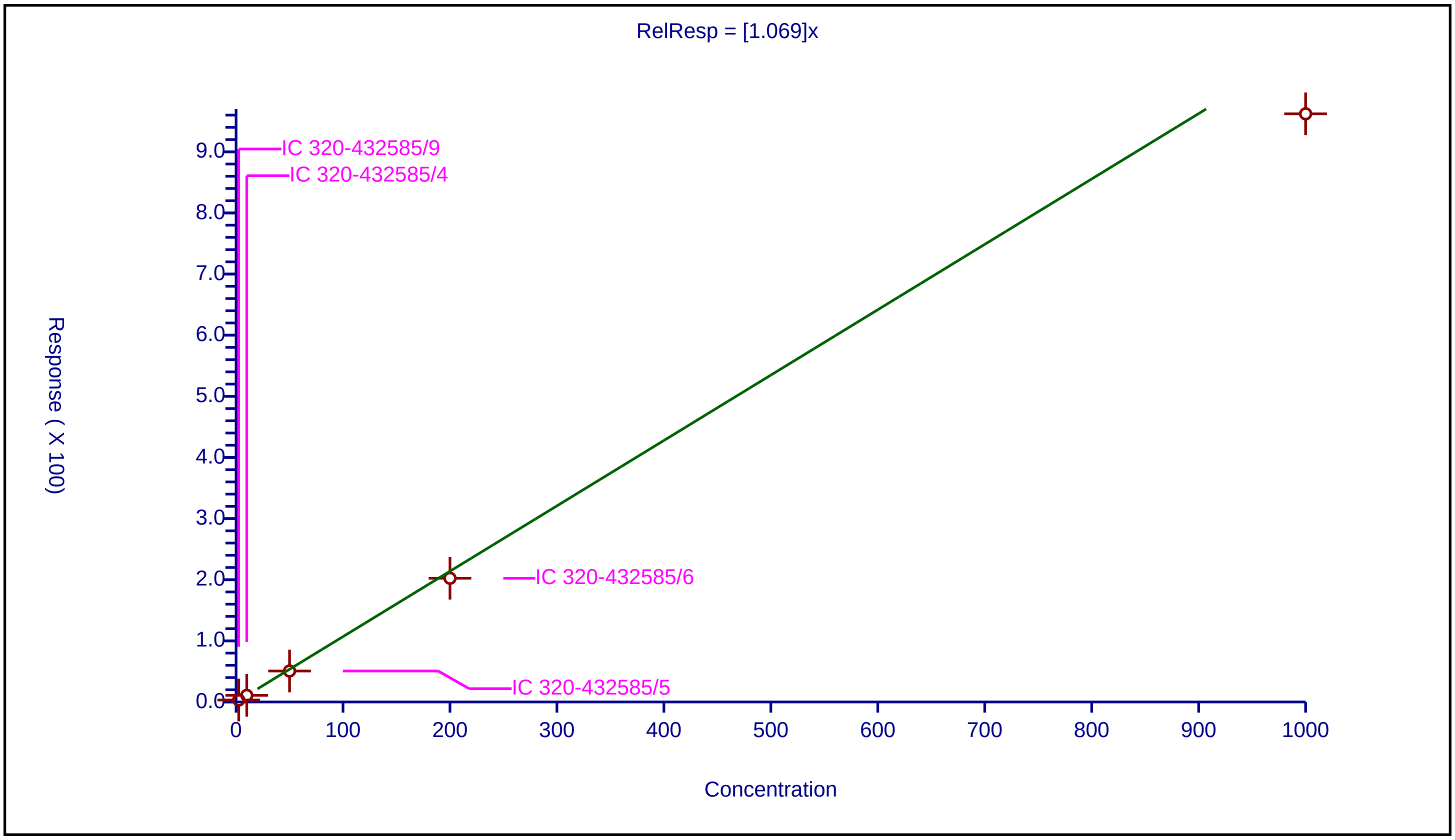

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.268

Error Coefficients

Standard Error:	40300000
Relative Standard Error:	10.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.985

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.741009	100.0	5869111.0	1.496404	Y
2	IC 320-432585/4	10.0	12.775836	100.0	2829584.0	1.277584	Y
3	IC 320-432585/5	50.0	61.18534	100.0	4640355.0	1.223707	Y
4	IC 320-432585/6	200.0	235.377197	100.0	6718059.0	1.176886	Y
5	IC 320-432585/7	1000.0	1166.224435	100.0	6778427.0	1.166224	Y

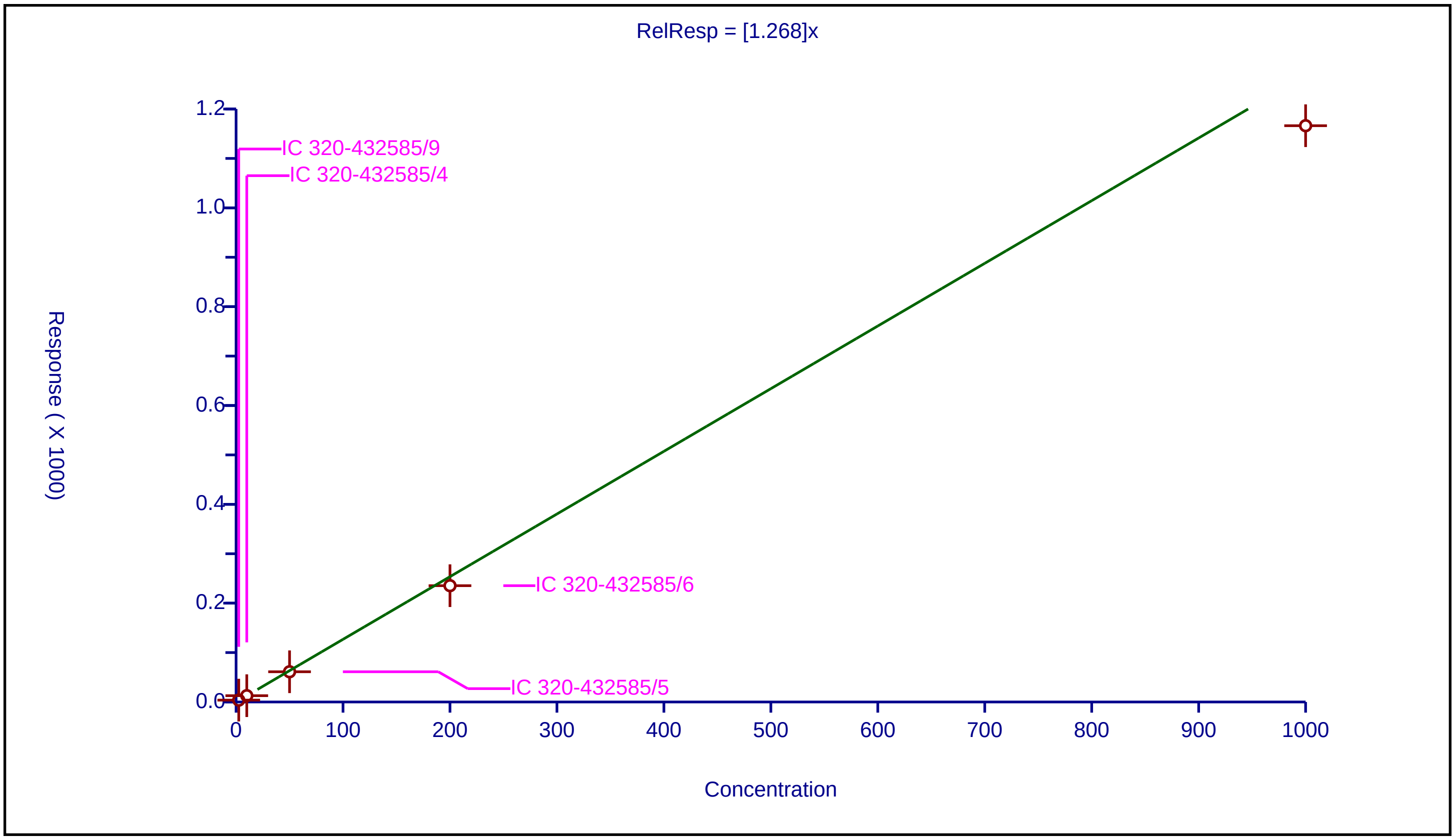

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.309

Error Coefficients

Standard Error:	25000000
Relative Standard Error:	13.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.976

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	4.013087	100.0	3537152.0	1.605235	Y
2	IC 320-432585/4	10.0	12.873626	100.0	1727097.0	1.287363	Y
3	IC 320-432585/5	50.0	63.29308	100.0	2680342.0	1.265862	Y
4	IC 320-432585/6	200.0	240.235384	100.0	3999855.0	1.201177	Y
5	IC 320-432585/7	1000.0	1184.935929	100.0	4136810.0	1.184936	Y

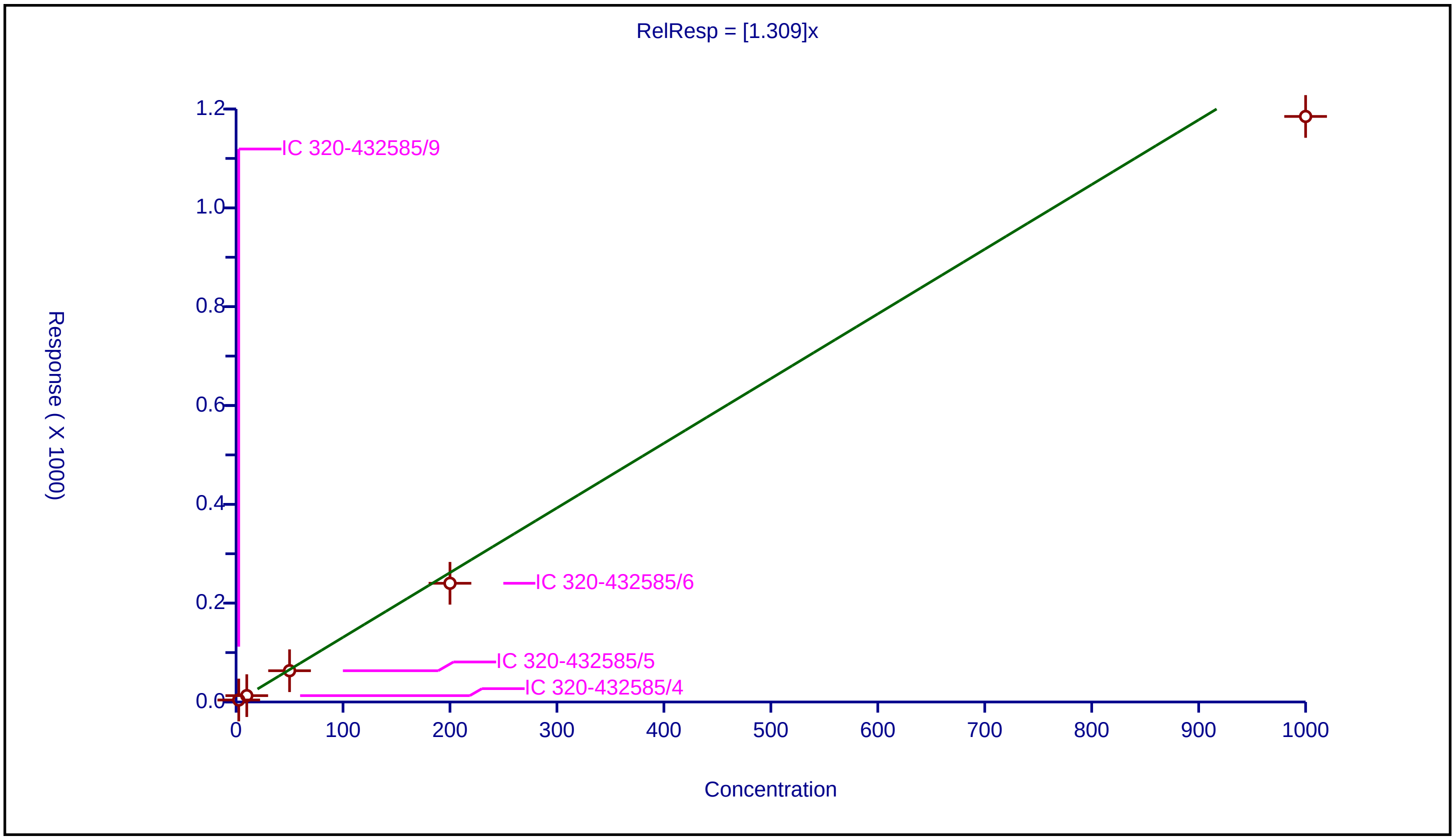

Calibration **/ 1,2,3,7,8,9-HxCDF**

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.306

Error Coefficients

Standard Error:	32800000
Relative Standard Error:	12.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.979

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.952688	100.0	4537064.0	1.581075	Y
2	IC 320-432585/4	10.0	13.110913	100.0	2021278.0	1.311091	Y
3	IC 320-432585/5	50.0	62.146	100.0	3454092.0	1.24292	Y
4	IC 320-432585/6	200.0	240.613974	100.0	5094707.0	1.20307	Y
5	IC 320-432585/7	1000.0	1193.254221	100.0	5394247.0	1.193254	Y

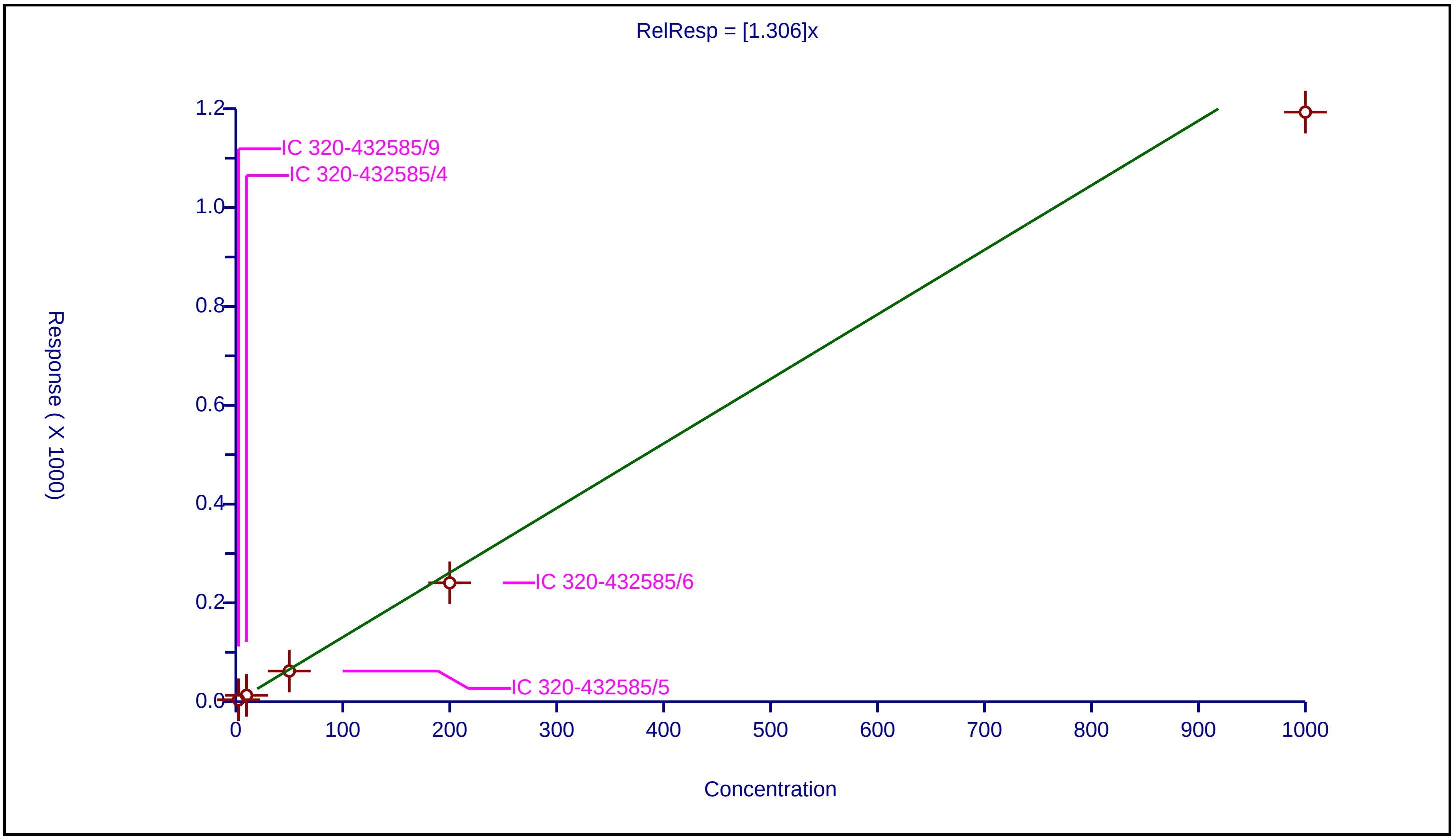

Calibration / 1,2,3,7,8-PeCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.119

Error Coefficients

Standard Error:	21300000
Relative Standard Error:	11.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.983

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.309404	100.0	3703477.0	1.323761	Y
2	IC 320-432585/4	10.0	11.42822	100.0	1772472.0	1.142822	Y
3	IC 320-432585/5	50.0	53.243437	100.0	2899131.0	1.064869	Y
4	IC 320-432585/6	200.0	209.119774	100.0	4205499.0	1.045599	Y
5	IC 320-432585/7	1000.0	1018.365689	100.0	4093198.0	1.018366	Y

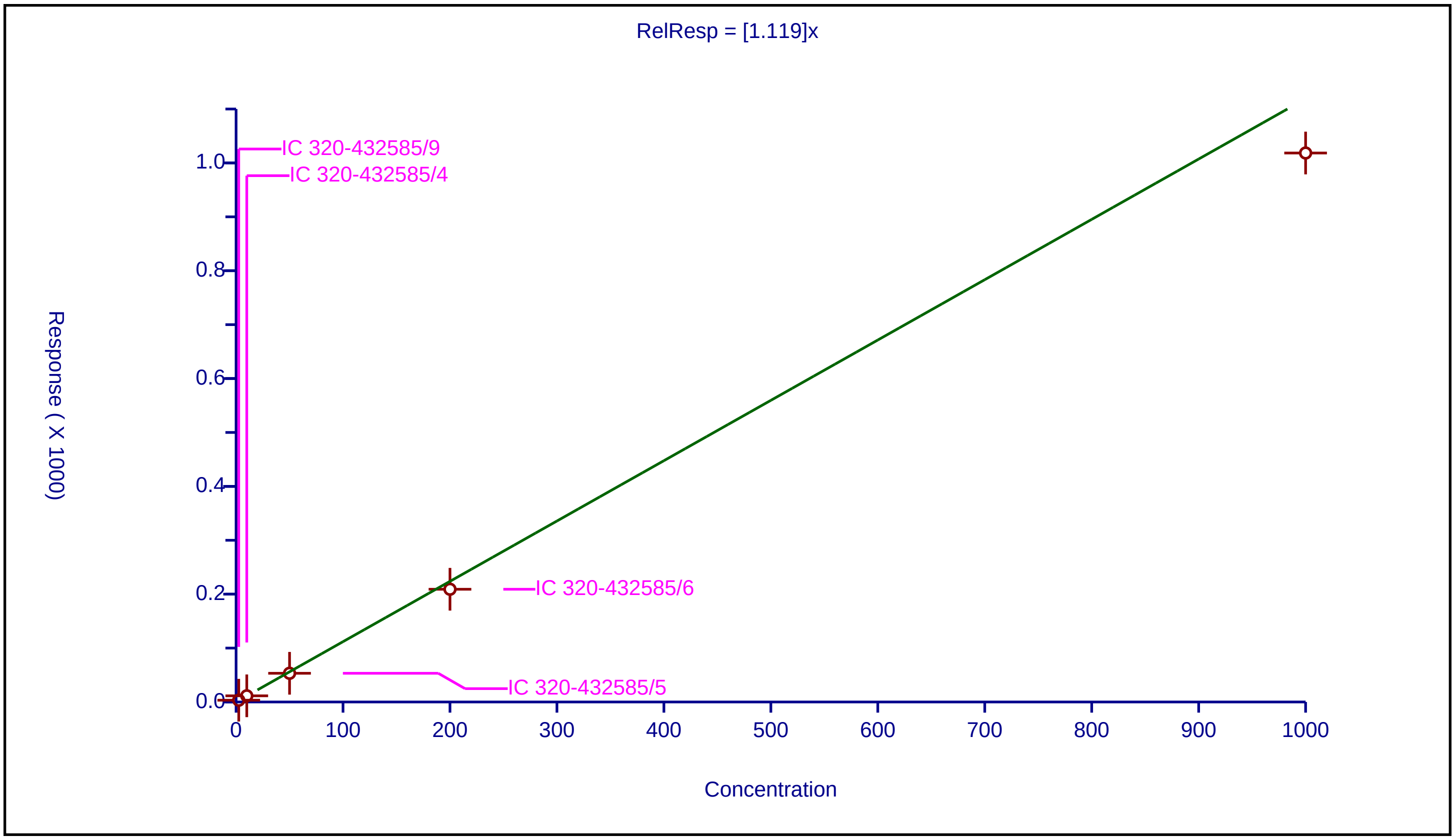

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.132

Error Coefficients

Standard Error:	36100000
Relative Standard Error:	11.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.984

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.350666	100.0	6354139.0	1.340267	Y
2	IC 320-432585/4	10.0	11.398308	100.0	2977170.0	1.139831	Y
3	IC 320-432585/5	50.0	55.243477	100.0	4756996.0	1.10487	Y
4	IC 320-432585/6	200.0	207.310032	100.0	7025605.0	1.03655	Y
5	IC 320-432585/7	1000.0	1039.457605	100.0	6789961.0	1.039458	Y

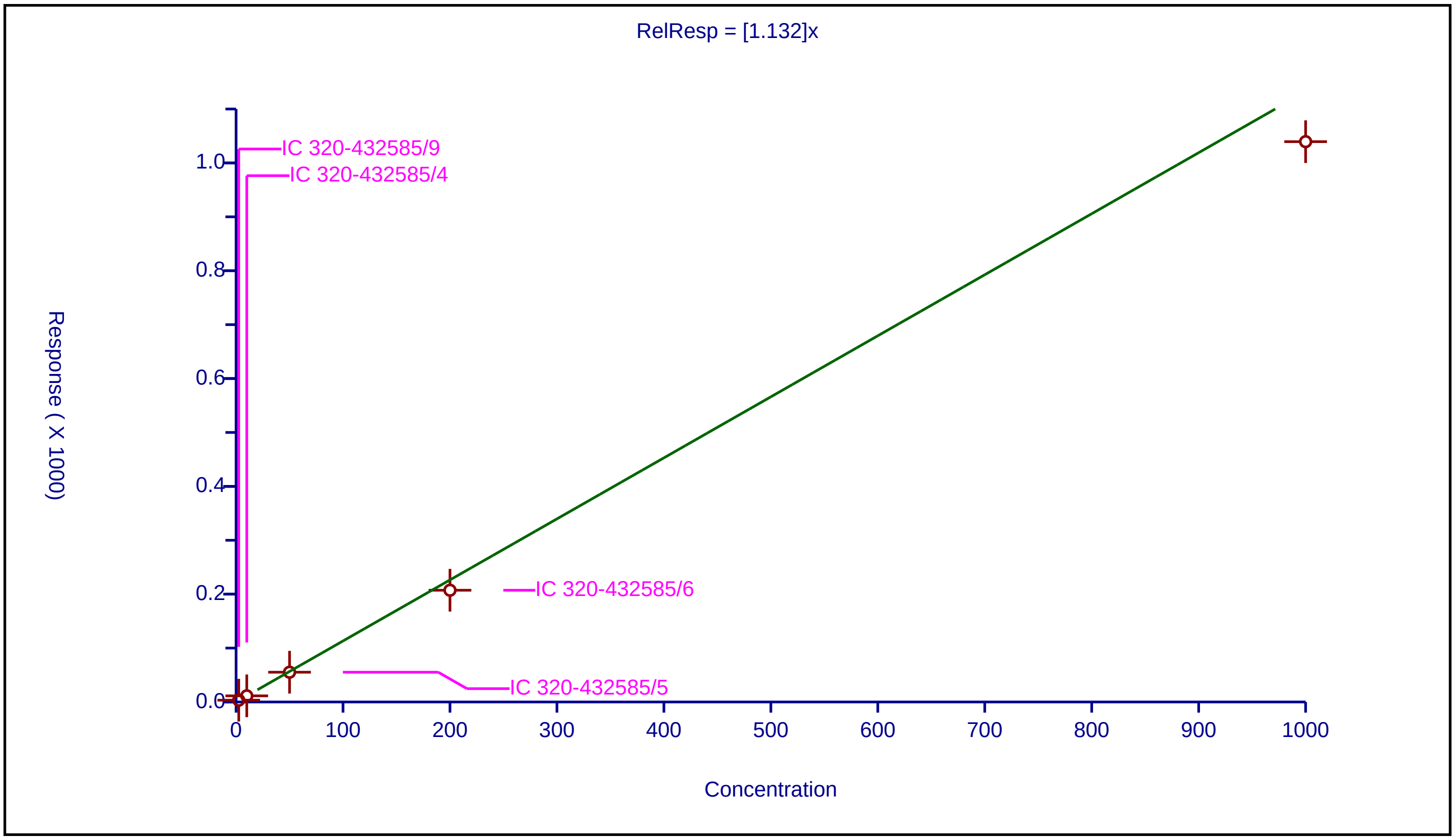

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.284

Error Coefficients

Standard Error:	37800000
Relative Standard Error:	9.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.721406	100.0	5395434.0	1.488562	Y
2	IC 320-432585/4	10.0	13.040062	100.0	2532810.0	1.304006	Y
3	IC 320-432585/5	50.0	61.764247	100.0	4173055.0	1.235285	Y
4	IC 320-432585/6	200.0	238.185516	100.0	6046028.0	1.190928	Y
5	IC 320-432585/7	1000.0	1199.994598	100.0	6182541.0	1.199995	Y

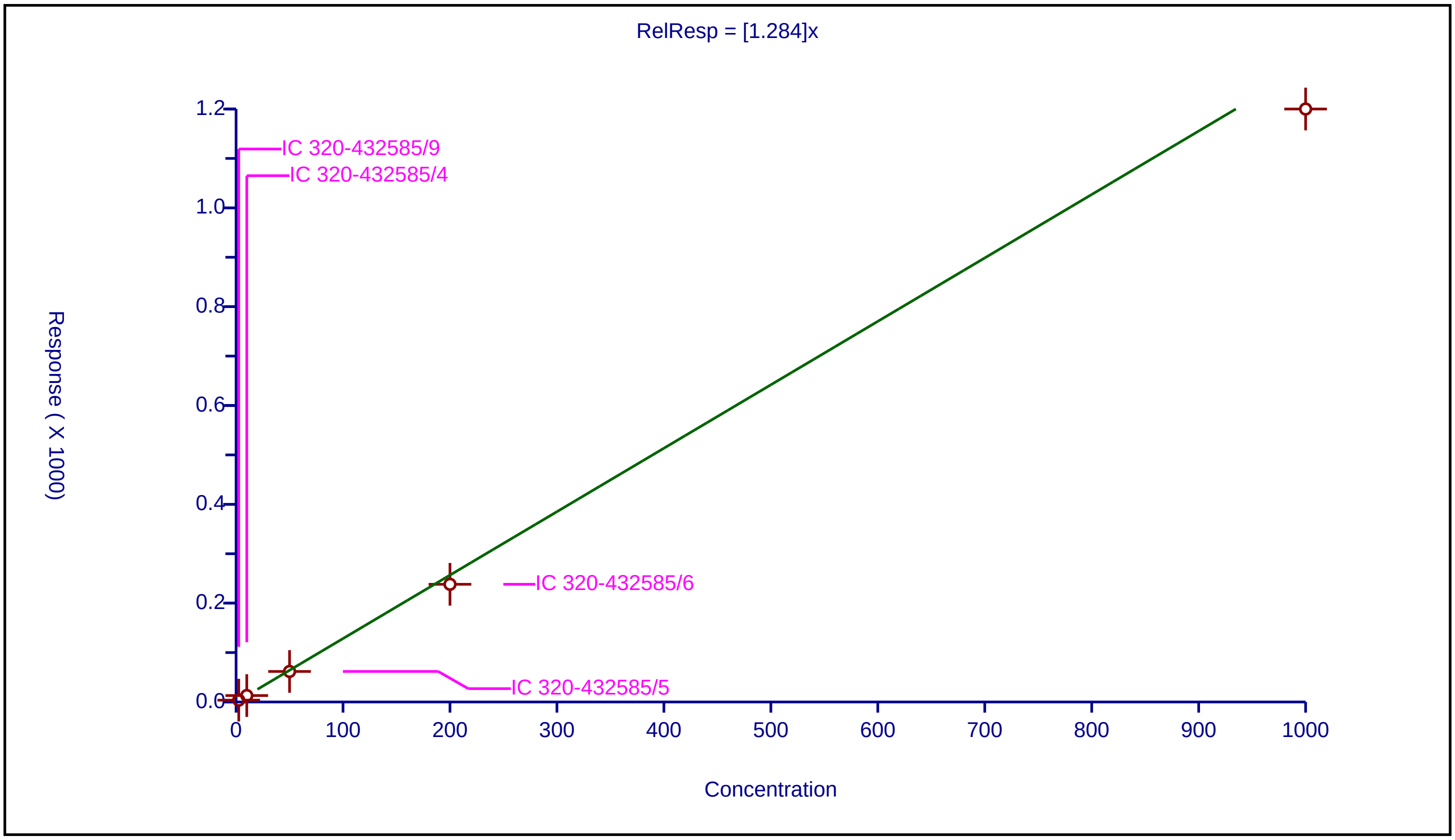

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.159

Error Coefficients

Standard Error:	34800000
Relative Standard Error:	8.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	2.5	3.315548	100.0	5781548.0	1.326219	Y
2	IC 320-432585/4	10.0	11.627978	100.0	2805191.0	1.162798	Y
3	IC 320-432585/5	50.0	56.818725	100.0	4407855.0	1.136374	Y
4	IC 320-432585/6	200.0	220.372591	100.0	6365852.0	1.101863	Y
5	IC 320-432585/7	1000.0	1066.689095	100.0	6380229.0	1.066689	Y

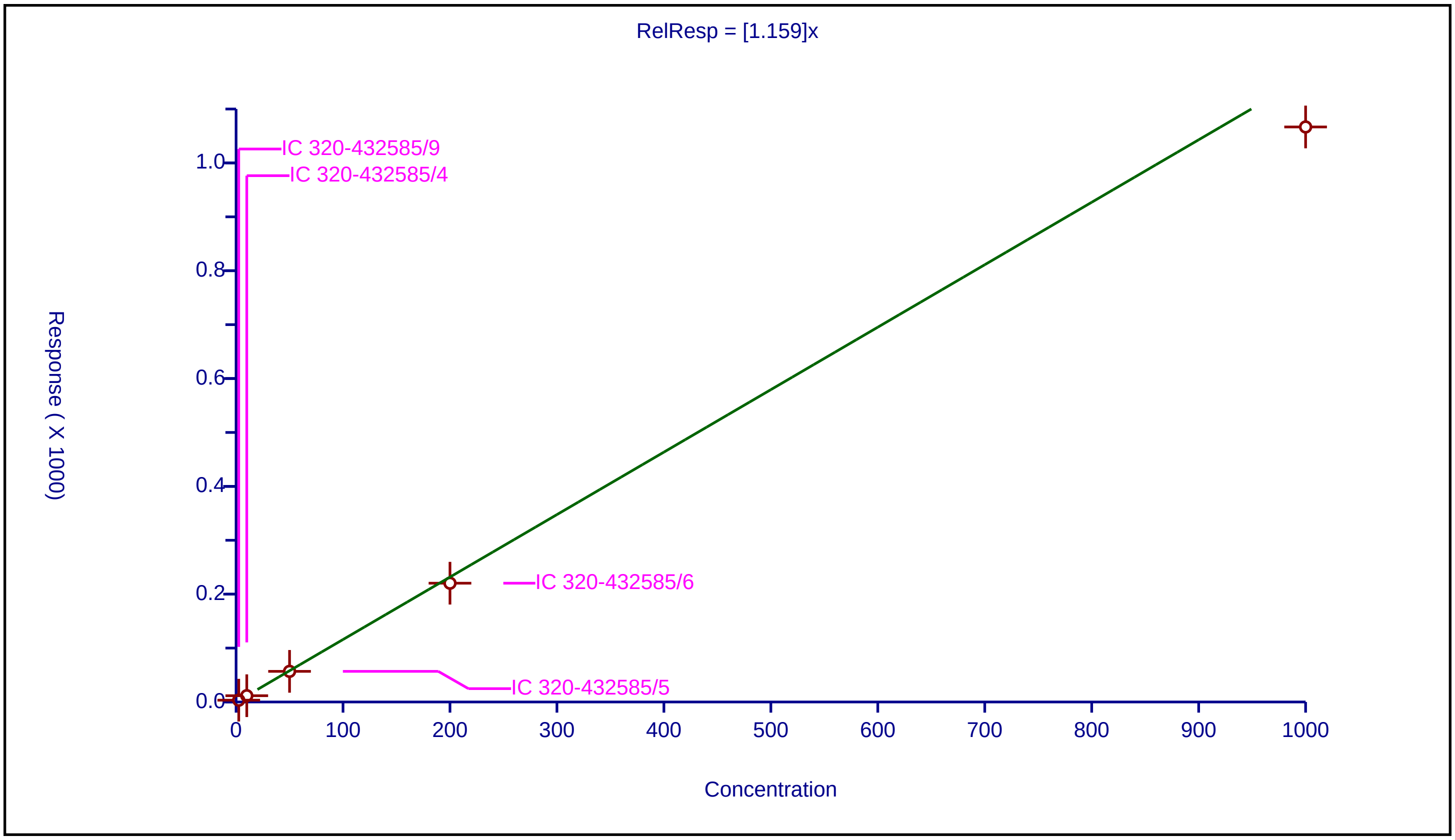

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.166

Error Coefficients

Standard Error:	5610000
Relative Standard Error:	10.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.986

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	0.5	0.686347	100.0	4584854.0	1.372694	Y
2	IC 320-432585/4	2.0	2.301316	100.0	2316674.0	1.150658	Y
3	IC 320-432585/5	10.0	11.151466	100.0	3653681.0	1.115147	Y
4	IC 320-432585/6	40.0	43.766607	100.0	5120726.0	1.094165	Y
5	IC 320-432585/7	200.0	219.381017	100.0	5011703.0	1.096905	Y

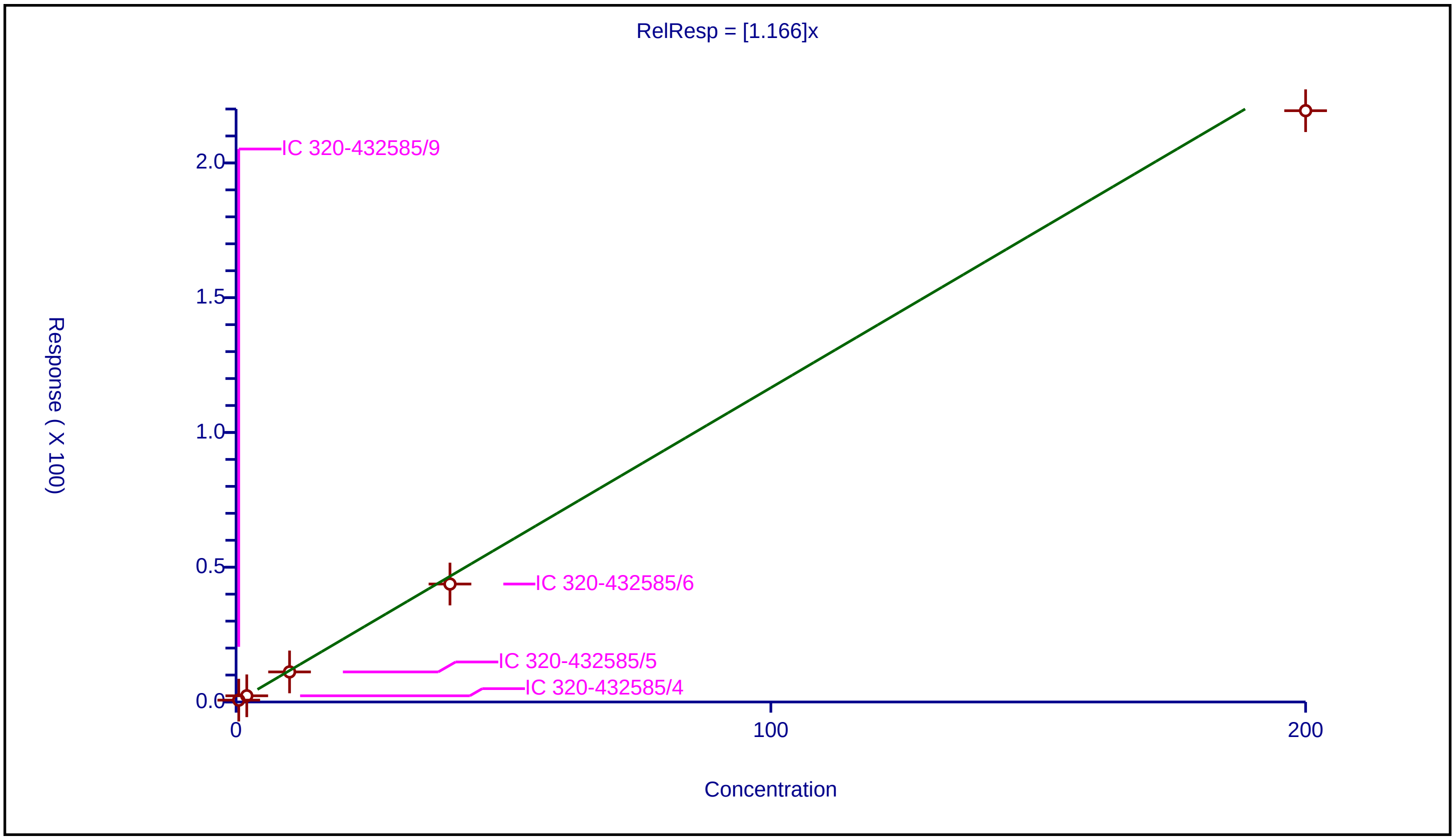

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.155

Error Coefficients

Standard Error:	8450000
Relative Standard Error:	12.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.977

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	0.5	0.709359	100.0	6843222.0	1.418718	Y
2	IC 320-432585/4	2.0	2.172221	100.0	3632320.0	1.08611	Y
3	IC 320-432585/5	10.0	11.076451	100.0	5685124.0	1.107645	Y
4	IC 320-432585/6	40.0	43.632825	100.0	8021729.0	1.090821	Y
5	IC 320-432585/7	200.0	214.010832	100.0	7723296.0	1.070054	Y

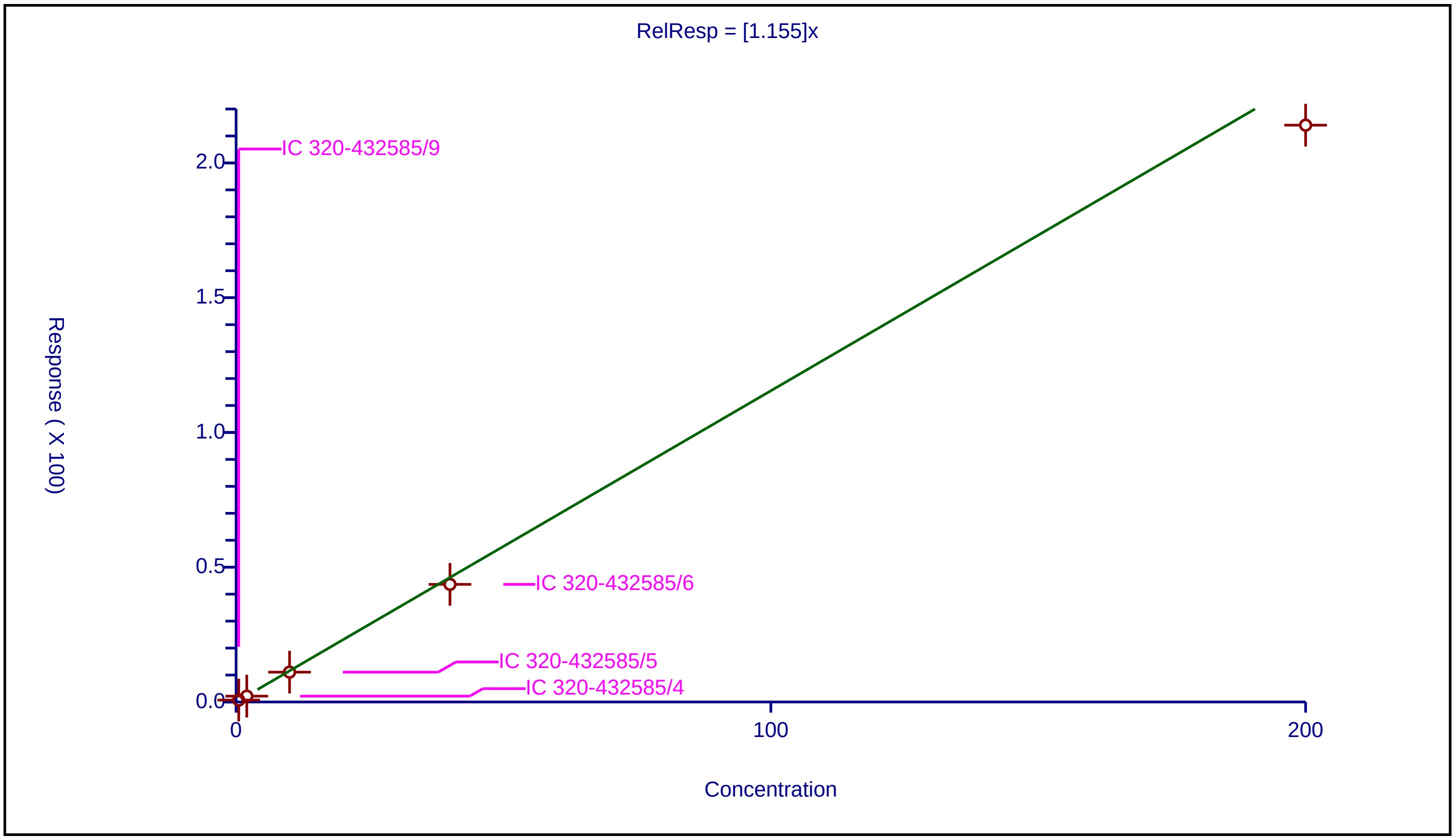

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.145

Error Coefficients

Standard Error:	5310000
Relative Standard Error:	2.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	0.5	0.589374	100.0	4241448.0	1.178748	Y
2	IC 320-432585/4	2.0	2.261839	100.0	2145599.0	1.13092	Y
3	IC 320-432585/5	10.0	11.088632	100.0	3431370.0	1.108863	Y
4	IC 320-432585/6	40.0	45.288471	100.0	4688160.0	1.132212	Y
5	IC 320-432585/7	200.0	234.387537	100.0	4433551.0	1.171938	Y

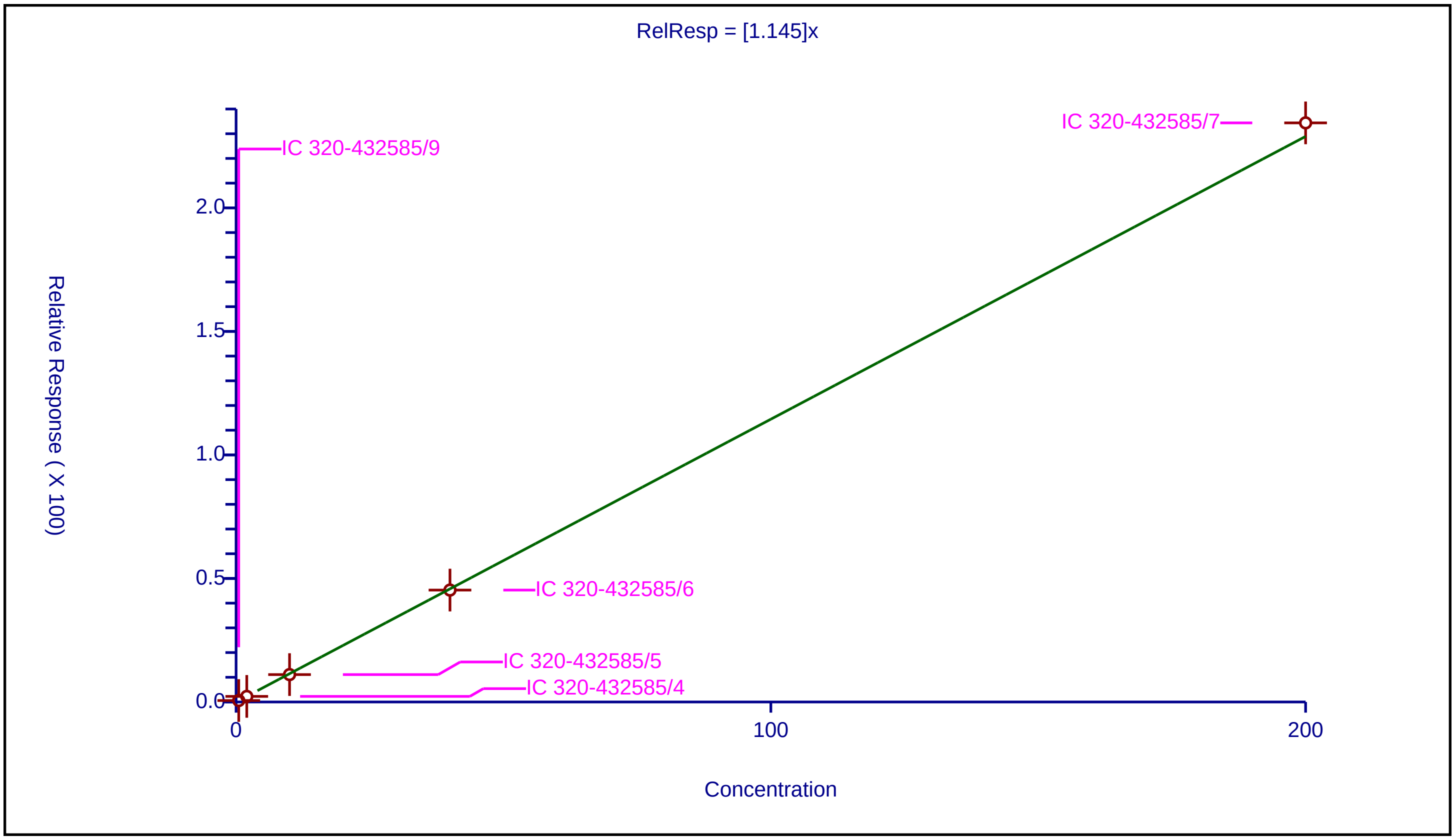

Calibration / OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.167

Error Coefficients

Standard Error:	29000000
Relative Standard Error:	14.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.970

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	5.0	7.253966	200.0	4068864.0	1.450793	Y
2	IC 320-432585/4	20.0	23.702278	200.0	1872512.0	1.185114	Y
3	IC 320-432585/5	100.0	110.03049	200.0	3323397.0	1.100305	Y
4	IC 320-432585/6	400.0	426.889969	200.0	4963784.0	1.067225	Y
5	IC 320-432585/7	2000.0	2058.754931	200.0	5545172.0	1.029377	Y

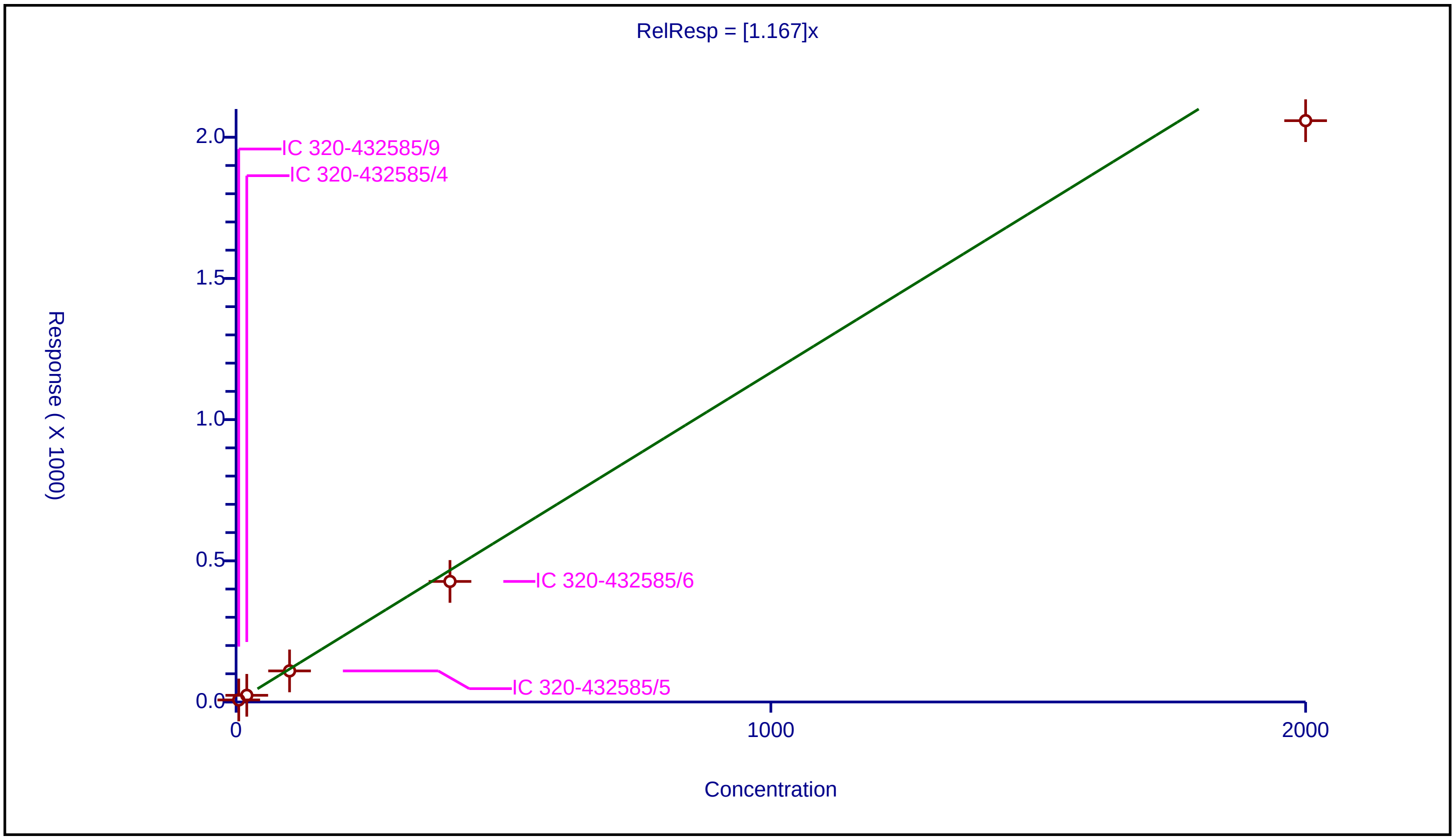

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.48

Error Coefficients

Standard Error:	39300000
Relative Standard Error:	10.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.985

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-432585/9	5.0	8.754237	200.0	4068864.0	1.750847	Y
2	IC 320-432585/4	20.0	29.587527	200.0	1872512.0	1.479376	Y
3	IC 320-432585/5	100.0	137.117955	200.0	3323397.0	1.37118	Y
4	IC 320-432585/6	400.0	562.742013	200.0	4963784.0	1.406855	Y
5	IC 320-432585/7	2000.0	2785.21265	200.0	5545172.0	1.392606	Y

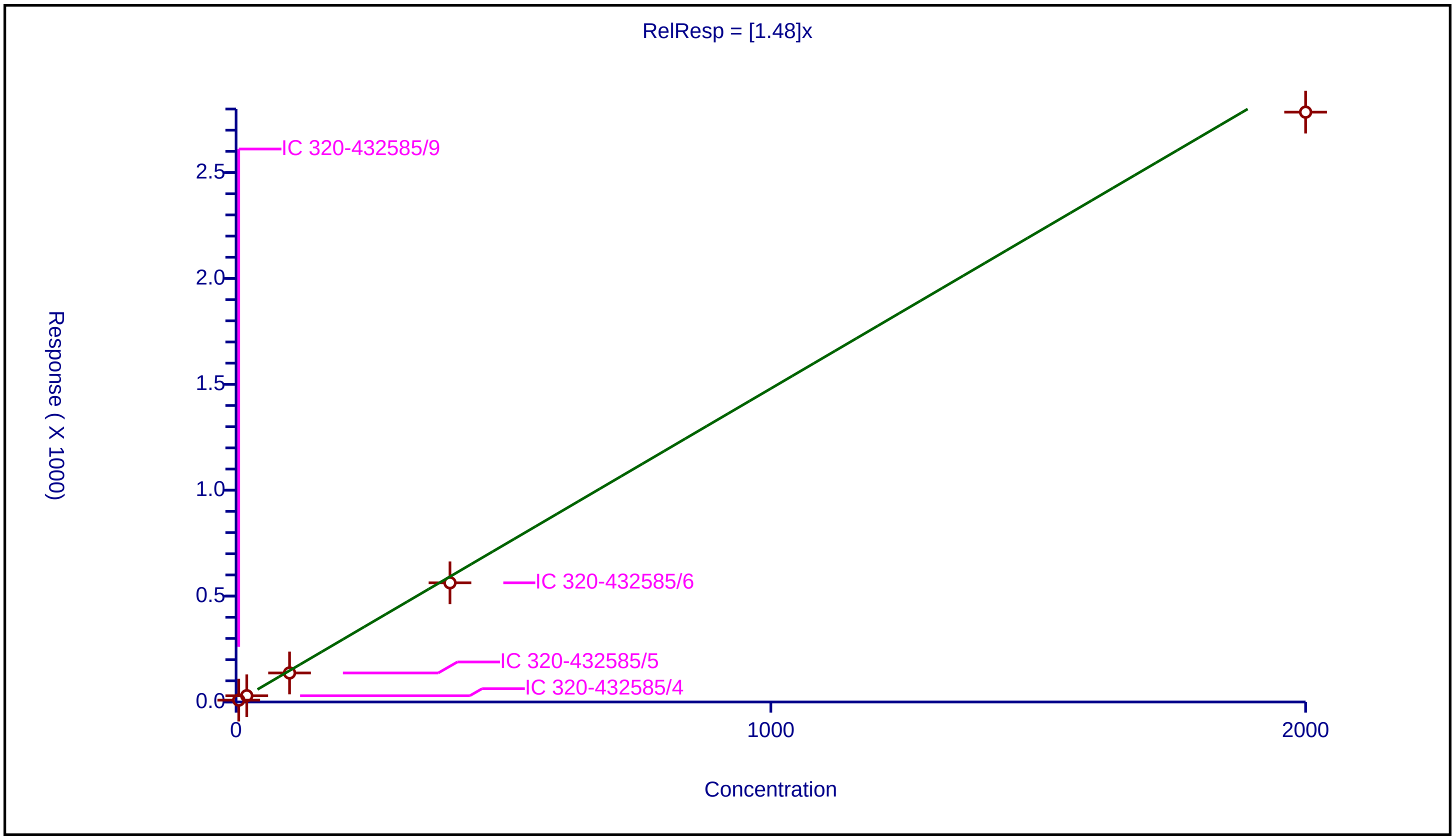

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID (1): CPS 320-398641/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324

H (Peak Height) = 10494443

%R = 16 <= 25

Passed

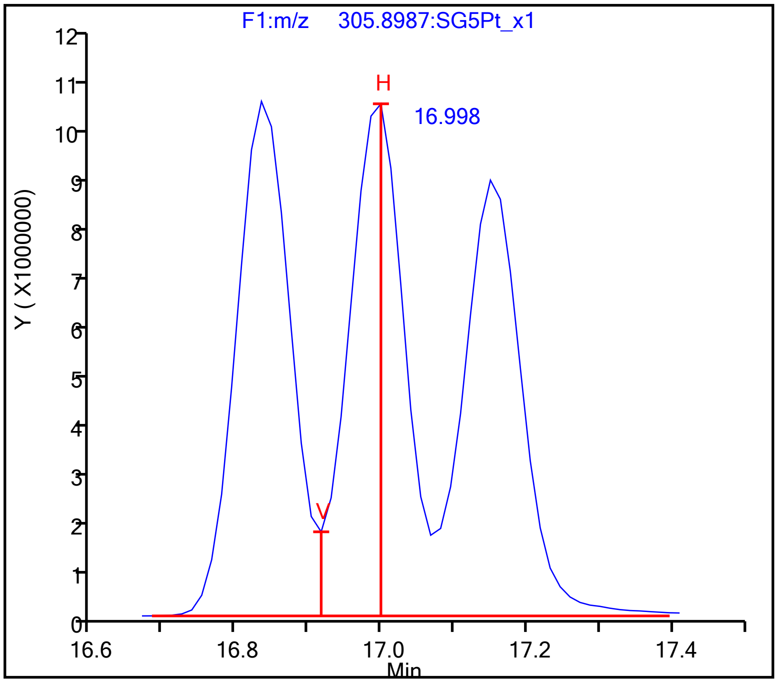

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID (1): WDM 320-413246/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 09/17/2020 14:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.93	20

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d				
Injection Date:	17-Sep-2020 14:12:48	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1048512
H (Peak Height) = 5269614

%R = 20 <= 25
Passed

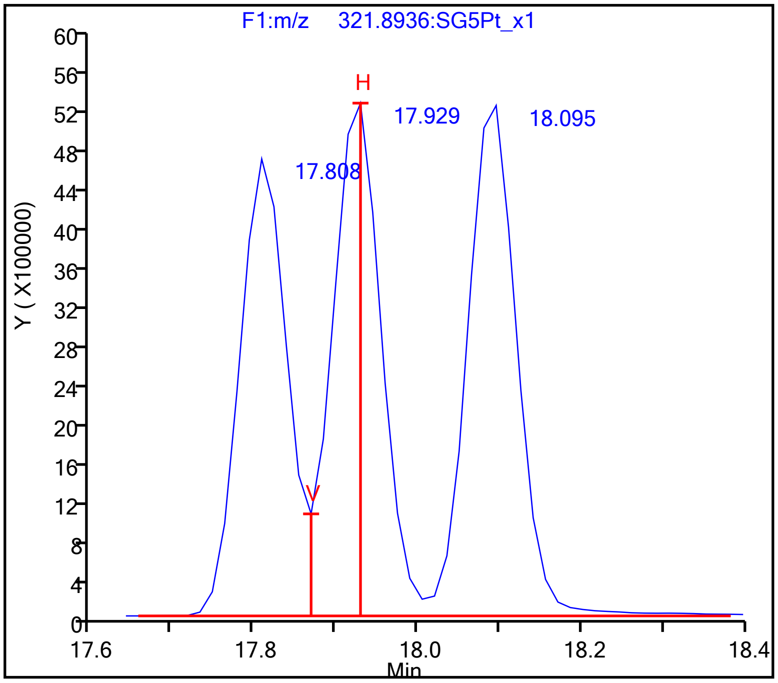

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID (1): WDM 320-432585/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/17/2020 11:15

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.29	16

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d				
Injection Date:	17-Nov-2020 11:15:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 19543
H (Peak Height) = 123665

%R = 16 <= 25
Passed

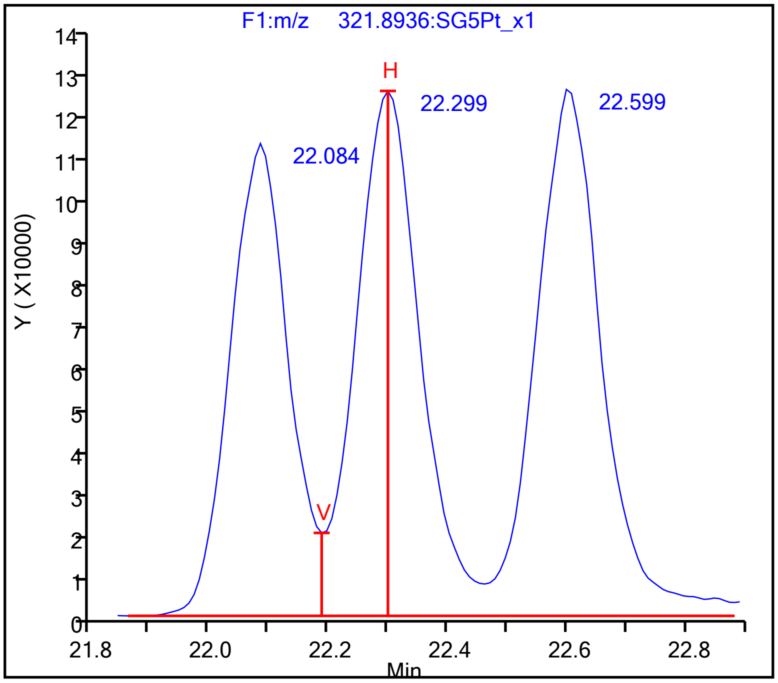

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID (1): WDM 320-434777/29 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/24/2020 08:41

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	22.16	16

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d				
Injection Date:	24-Nov-2020 08:41:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	29
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 18589
H (Peak Height) = 115883

%R = 16 <= 25
Passed

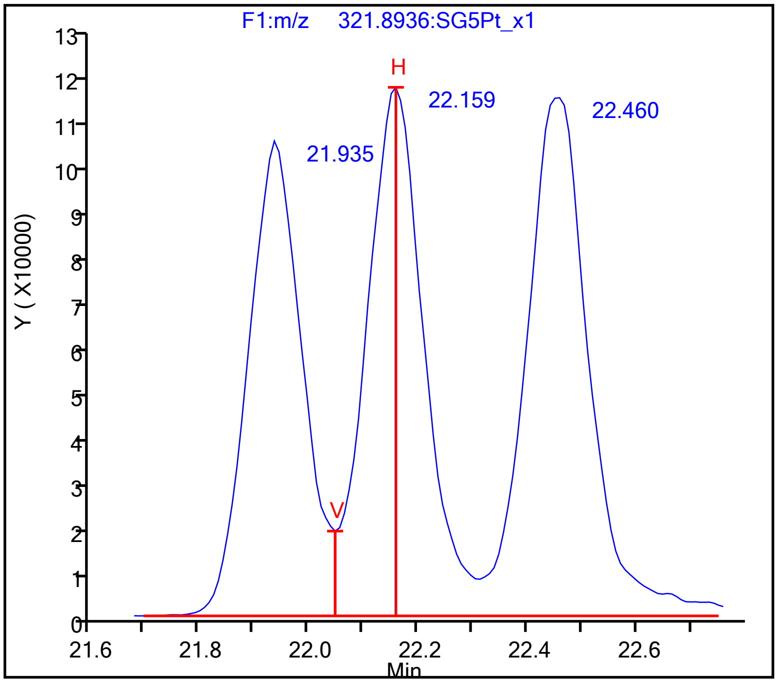

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID (1): WDM 320-435203/16 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/24/2020 16:08

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.05	19

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d				
Injection Date:	24-Nov-2020 16:08:13	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	16
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 403654
H (Peak Height) = 2110931

%R = 19 <= 25
Passed

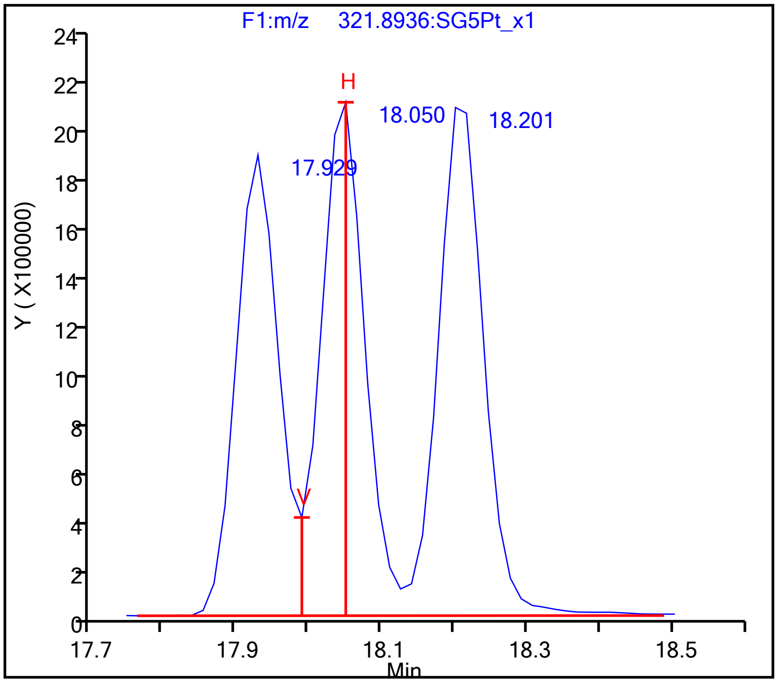

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID (1): CPS 320-436991/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/30/2020 12:27

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.79	17

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d				
Injection Date:	30-Nov-2020 12:27:33	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2760458
H (Peak Height) = 16540885

%R = 17 <= 25
Passed

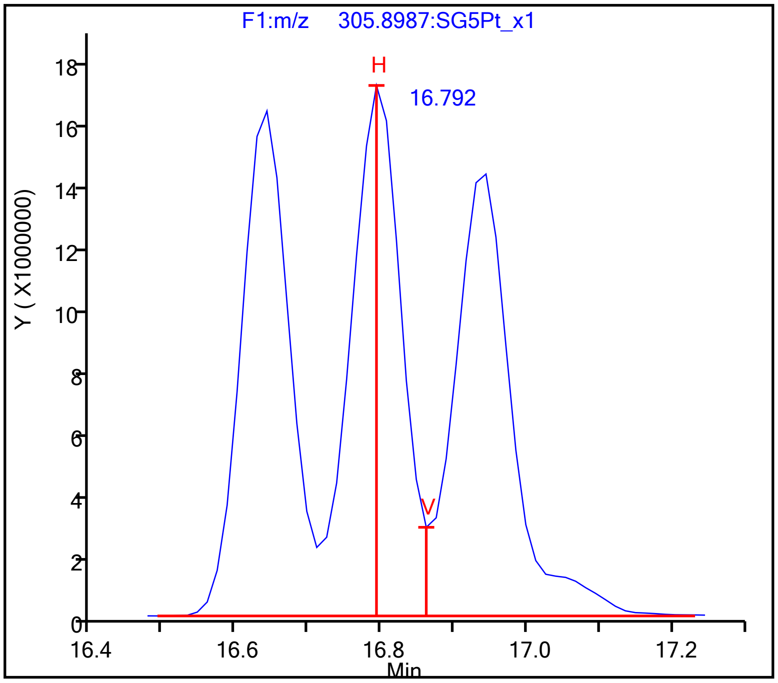

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d				
Injection Date:	30-Nov-2020 12:27:33	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID: ICV 320-413246/9 Calibration Date: 09/17/2020 20:42

Instrument ID: 10D5 Calib Start Date: 09/17/2020 16:09

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 19:09

Lab File ID: 17SE2010D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9077	0.9204		40.6	40.0	101	70-130
2,3,7,8-TCDD	AveID	1.006	1.031		41.0	40.0	102	70-130
1,2,3,7,8-PeCDF	AveID	0.9147	0.8942		196	200	98	70-130
2,3,4,7,8-PeCDF	AveID	0.9508	0.999		210	200	105	70-130
1,2,3,7,8-PeCDD	AveID	0.995	0.9269		186	200	93	70-130
1,2,3,4,7,8-HxCDF	AveID	1.109	1.057		191	200	95	70-130
1,2,3,6,7,8-HxCDF	AveID	1.072	1.099		205	200	102	70-130
2,3,4,6,7,8-HxCDF	AveID	1.084	1.130		209	200	104	70-130
1,2,3,4,7,8-HxCDD	AveID	1.001	0.9597		192	200	96	70-130
1,2,3,6,7,8-HxCDD	AveID	0.8902	0.9213		207	200	104	70-130
1,2,3,7,8,9-HxCDD	AveID	1.058	1.008		191	200	95	70-130
1,2,3,7,8,9-HxCDF	AveID	1.093	1.062		194	200	97	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.360	1.393		205	200	102	70-130
1,2,3,4,6,7,8-HpCDD	AveID	0.999	1.016		203	200	102	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.321	1.243		188	200	94	70-130
OCDD	AveID	1.129	1.154		409	400	102	70-130
OCDF	AveID	1.414	1.422		402	400	101	70-130
13C-2,3,7,8-TCDF	Ave	1.360	1.344		98.8	100	99	71-140
13C-2,3,7,8-TCDD	Ave	1.054	1.059		100	100	100	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.131	1.145		101	100	101	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.054	1.128		107	100	107	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8084	0.8415		104	100	104	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9225	0.9711		105	100	105	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.034	1.010		97.7	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9773	0.9650		98.7	100	99	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7977	0.8453		106	100	106	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.001	1.002		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9153	0.9192		100	100	100	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8506	0.8661		102	100	102	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8873	0.9091		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7618	0.8178		107	100	107	77-129
13C-OCDD	Ave	0.6287	0.6727		214	200	107	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.049	1.083		41.3	40.0	103	79-127

Report Date: 18-Sep-2020 10:38:14 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 20:42:06 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 091720 ICV HRDXNIC_00046
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:20:09

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.687	70813521	0.78	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.188	95171212	0.77	1.3598	98.8	98.8	0.1338	0.1338	98.83	
2,3,7,8-TCDF	17.203	35038898	0.74	0.9077	40.6	40.6	0.0800	0.0800	101	
A Non-2,3,7,8-sub-TCDF	16.924	270555	0.80	0.9077	0.3132	0.3132	0.0800	0.3132		
S Total TCDF					40.9	40.9	0.0800	0.0800		
D 13C-2,3,7,8-TCDD	17.884	74962580	0.78	1.0536	100.5	100.5	0.1339	0.1339	100	
$ 37Cl4-2,3,7,8-TCDD	17.899	30678698		1.0488	41.3	41.3	0.0266	0.0266	103	
2,3,7,8-TCDD	17.899	30913194	0.77	1.0061	41.0	41.0	0.0402	0.0402	102	
A Non-2,3,7,8-sub-TCDD	17.370	540486	0.71	1.0061	0.7166	0.7166	0.0402	0.7166		
S Total TCDD					41.7	41.7	0.0402	0.0402		
D 13C-1,2,3,7,8-PeCDF	22.198	81095265	1.56	1.1306	101.3	101.3	0.2000	0.2000	101	
1,2,3,7,8-PeCDF	22.212	145038273	1.56	0.9147	195.5	195.5	0.6709	0.6709	97.76	
D 13C-2,3,4,7,8-PeCDF	23.535	79912267	1.54	1.0539	107.1	107.1	0.2145	0.2145	107	
2,3,4,7,8-PeCDF	23.562	159694882	1.54	0.9508	210.2	210.2	0.6971	0.6971	105	
A F1 PeCDFs	19.789						0.0224	0.0224		
A Non-2,3,7,8-sub-PeCDF	22.936	3337810	1.57	0.9328	4.445	4.445	0.6832	4.445		
S Total PeCDF					410.1	410.1	0.6840	0.6840		
D 13C-1,2,3,7,8-PeCDD	24.257	59587891	1.59	0.8084	104.1	104.1	0.1077	0.1077	104	
1,2,3,7,8-PeCDD	24.285	110469696	1.55	0.9955	186.2	186.2	0.1846	0.1846	93.12	
A Non-2,3,7,8-sub-PeCDD	23.187						0.1846	0.1846		
S Total PeCDD					186.2	186.2	0.1846	0.1846		
D 13C-1,2,3,4,7,8-HxCDF	30.393	55574520	0.50	0.9225	105.3	105.3	0.4673	0.4673	105	
1,2,3,4,7,8-HxCDF	30.406	117452791	1.23	1.1090	190.6	190.6	1.119	1.119	95.29	
D 13C-1,2,3,6,7,8-HxCDF	30.579	57775623	0.51	1.0336	97.7	97.7	0.4170	0.4170	97.68	
1,2,3,6,7,8-HxCDF	30.606	126977499	1.23	1.0721	205.0	205.0	1.100	1.100	102	
D 13C-2,3,4,6,7,8-HxCDF	31.444	55227270	0.51	0.9773	98.7	98.7	0.4410	0.4410	98.74	
2,3,4,6,7,8-HxCDF	31.458	124808049	1.23	1.0838	208.5	208.5	0.8662	0.8662	104	
D 13C-1,2,3,7,8,9-HxCDF	32.256	52606327	0.51	0.9153	100.4	100.4	0.4709	0.4709	100	
1,2,3,7,8,9-HxCDF	32.270	111782395	1.24	1.0931	194.4	194.4	0.8173	0.8173	97.20	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	30.073						0.9565	0.9565		
S Total HxCDF					798.5	798.5	0.9756	0.9756		
* 13C-1,2,3,7,8,9-HxCDD	32.070	57229550	1.23	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.631	48373444	1.24	0.7977	106.0	106.0	0.3458	0.3458	106	
1,2,3,4,7,8-HxCDD	31.644	92846754	1.23	1.0014	191.7	191.7	0.6173	0.6173	95.83	
D 13C-1,2,3,6,7,8-HxCDD	31.737	57321536	1.22	1.0010	100.1	100.1	0.2755	0.2755	100	
1,2,3,6,7,8-HxCDD	31.750	105623177	1.22	0.8902	207.0	207.0	0.6074	0.6074	104	
1,2,3,7,8,9-HxCDD	32.083	106579071	1.22	1.0579	190.6	190.6	0.5453	0.5453	95.32	
A Non-2,3,7,8-sub-HxCDD	30.739						0.5867	0.5867		
S Total HxCDD					589.3	589.3	0.5900	0.5900		
D 13C-1,2,3,4,6,7,8-HpCDF	33.679	49567572	0.42	0.8506	101.8	101.8	0.9395	0.9395	102	
1,2,3,4,6,7,8-HpCDF	33.691	138105265	1.03	1.3603	204.8	204.8	1.786	1.786	102	
D 13C-1,2,3,4,7,8,9-HpCDF	34.748	46800223	0.44	0.7618	107.3	107.3	1.049	1.049	107	
1,2,3,4,7,8,9-HpCDF	34.761	116328721	1.03	1.3207	188.2	188.2	2.169	2.169	94.11	
A Non-2,3,7,8-sub-HpCDF	34.232						1.961	1.961		
S Total HpCDF					393.0	393.0	1.978	1.978		
D 13C-1,2,3,4,6,7,8-HpCDD	34.469	52029389	1.05	0.8873	102.5	102.5	0.6043	0.6043	102	
1,2,3,4,6,7,8-HpCDD	34.481	105745635	1.05	0.9988	203.5	203.5	1.049	1.049	102	
A Non-2,3,7,8-sub-HpCDD	34.208						1.049	1.049		
S Total HpCDD					203.5	203.5	1.049	1.049		
D 13C-OCDD	36.779	76996627	0.90	0.6287	214.0	214.0	0.3391	0.3391	107	
OCDF	36.887	218936724	0.90	1.4136	402.3	402.3	0.4055	0.4055	101	
OCDD	36.791	177685171	0.89	1.1290	408.8	408.8	0.5837	0.5837	102	

QC Flag Legend

Processing Flags

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Sep-2020 20:42:06 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 091720 ICV HRDXNIC_00046
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:11 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: arghestanis Date: 18-Sep-2020 10:20:09

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.687	17.702	-1		31056152	7545346	5603	14007	1347		
333.9339	17.687	17.702	-1		39757369	9625734	4090	10225	2353	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.188	17.203	-1	0.972	41252497	10124118	7380	18450	1372		
317.9389	17.188	17.203	-1	0.972	53918715	13281949	5117	12792	2596	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.203	17.234	-2	1.001	14945095	3755102	3383	8457	1110		
305.8987	17.203	17.234	-2	1.001	20093803	5020050	3417	8542	1469	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.538	16.924	-23	0.962	120192	31996	3383	8457	9		
305.8987	16.538	16.924	-23	0.962	150363	35792	3417	8542	10	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.884	17.914	-2	1.011	32795221	7790825	5603	14007	1390		
333.9339	17.884	17.914	-2	1.011	42167359	9954850	4090	10225	2434	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.899	17.914	-1	1.012	30678698	7149088	1918	4795	3727		
2,3,7,8-TCDD											
319.8965	17.899	17.929	-2	1.001	13420623	3096512	1556	3890	1990		
321.8936	17.899	17.929	-2	1.001	17492571	4045616	1312	3280	3084	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.793	17.370	25	0.995	223510	61586	1556	3890	40		
321.8936	17.793	17.370	25	0.995	316976	90101	1312	3280	69	0.71(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.198	22.198	0	1.255	49395326	8782235	9260	23150	948		
353.8970	22.185	22.198	-1	1.254	31699939	5590468	6268	15670	892	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.212	22.226	-1	1.001	88302790	15725278	21396	53490	735		
341.8567	22.212	22.226	-1	1.001	56735483	10054887	13886	34715	724	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.535	23.535	0	1.331	48486367	8111877	9260	23150	876		
353.8970	23.535	23.535	0	1.331	31425900	5196410	6268	15670	829	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.562	23.562	0	1.001	96748270	16146164	21396	53490	755		
341.8567	23.562	23.562	0	1.001	62946612	10513563	13886	34715	757	1.54(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.789						451	1127			
341.8567	19.789						704	1760			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.744	22.936	-12	1.025	2036794	338358	21396	53490	16		
341.8567	22.744	22.936	-12	1.025	1301016	215952	13886	34715	16	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.257	24.257	0	1.371	36585683	5766251	3659	9147	1576		
369.8919	24.257	24.257	0	1.371	23002208	3611161	2321	5802	1556	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.285	24.285	0	1.001	67206423	10604790	4199	10497	2526		
357.8516	24.285	24.285	0	1.001	43263273	6873635	2693	6732	2552	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.187						4199	10497			
357.8516	23.187						2693	6732			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.393	30.393	0	0.948	18603781	3356313	8739	21847	384		
385.8610	30.393	30.393	0	0.948	36970739	6597696	16728	41820	394	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.406	30.419	-1	1.000	64723276	11612171	27684	69210	419		
375.8178	30.406	30.419	-1	1.000	52729515	9541987	21735	54337	439	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.579	30.592	-1	0.954	19468539	3564701	8739	21847	408		
385.8610	30.579	30.592	-1	0.954	38307084	6914958	16728	41820	413	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.606	30.606	0	1.001	70139846	12960316	27684	69210	468		
375.8178	30.606	30.606	0	1.001	56837653	10424115	21735	54337	480	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.444	31.444	0	0.980	18592979	4462323	8739	21847	511		
385.8610	31.444	31.444	0	0.980	36634291	8698712	16728	41820	520	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.458	31.458	0	1.000	68722182	16644655	27684	69210	601		
375.8178	31.458	31.458	0	1.000	56085867	13550656	21735	54337	623	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.256	32.256	0	1.006	17757554	4720457	8739	21847	540		
385.8610	32.256	32.256	0	1.006	34848773	9108161	16728	41820	544	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.270	32.270	0	1.000	61960655	16131546	27684	69210	583		
375.8178	32.270	32.270	0	1.000	49821740	12758785	21735	54337	587	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.073						27684	69210			
375.8178	30.073						21735	54337			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.070	32.070	0		31617919	8159791	9513	23782	858		
403.8529	32.070	32.070	0		25611631	6610729	6783	16957	975	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.631	31.631	0	0.986	26770897	7007533	9513	23782	737		
403.8529	31.631	31.631	0	0.986	21602547	5619172	6783	16957	828	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.644	31.644	0	1.000	51214844	13655449	18151	45377	752		
391.8127	31.644	31.644	0	1.000	41631910	11121784	13073	32682	851	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.737	31.737	0	0.990	31521917	7962363	9513	23782	837		
403.8529	31.737	31.737	0	0.990	25799619	6475648	6783	16957	955	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.750	31.750	0	1.000	58049066	14313234	18151	45377	789		
391.8127	31.750	31.750	0	1.000	47574111	11874308	13073	32682	908	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.083	32.083	0	1.014	58491693	14960613	18151	45377	824		
391.8127	32.083	32.083	0	1.014	48087378	12267095	13073	32682	938	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.739						18151	45377			
391.8127	30.739						13073	32682			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.679	33.679	0	1.050	14666185	4781275	13313	33282	359		
419.8220	33.679	33.679	0	1.050	34901387	11152388	33904	84760	329	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.691	33.703	-1	1.000	70213618	22812042	77236	193090	295		
409.7789	33.691	33.703	-1	1.000	67891647	22147695	77604	194010	285	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.748	34.748	0	1.084	14215835	4174817	13313	33282	314		
419.8220	34.748	34.748	0	1.084	32584388	9335826	33904	84760	275	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.761	0	1.000	59144894	17089390	77236	193090	221		
409.7789	34.761	34.761	0	1.000	57183827	16577392	77604	194010	214	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.232						77236	193090			
409.7789	34.232						77604	194010			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.469	34.469	0	1.075	26640350	7863762	16812	42030	468		
437.8140	34.469	34.469	0	1.075	25389039	7410105	14867	37167	498	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.481	0	1.000	54139156	15544707	33488	83720	464		
425.7737	34.469	34.481	-1	1.000	51606479	14519786	30533	76332	476	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.208						33488	83720			
425.7737	34.208						30533	76332			
13C-OCDD											
469.7779	36.779	36.779	0	1.147	36471611	8922255	6815	17037	1309		
471.7750	36.779	36.779	0	1.147	40525016	9855753	5782	14455	1705	0.90(0.76-1.02)	
OCDF											
441.7428	36.887	36.887	0	1.003	103846841	25209045	10225	25562	2465		
443.7399	36.875	36.887	-1	1.003	115089883	27702868	11303	28257	2451	0.90(0.76-1.02)	
OCDD											
457.7377	36.791	36.791	0	1.000	83911792	20519960	13321	33302	1540		
459.7348	36.791	36.791	0	1.000	93773379	22817429	11426	28565	1997	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 20:42:06	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDF, RT: 16.924

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	95171212	23406067

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	95171212	23406067

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.538	120192	31996	150363	35792	0.3132	0.80	n
Signal Totals:							
	120192	31996	150363	35792			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	270555	67788				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3132 = (270555 * 100.000) / (95171212 * 0.908)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 20:42:06	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDD, RT: 17.370

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.006	D 13C-2,3,7,8-TCDD	100.000	74962580	17745675

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.006		100.000	74962580	17745675

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.793	223510	61586	316976	90101	0.7166	0.71	
Signal Totals:							
	223510	61586	316976	90101			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	540486	151687				0.71	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7166 = (540486 * 100.000) / (74962580 * 1.006)

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Sep-2020 20:42:06	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-PeCDF, RT: 22.936

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	81095265	14372703
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	79912267	13308287

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	80503766	13840495

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.744	2036794	338358	1301016	215952	4.44	1.57	
Signal Totals:							
	2036794	338358	1301016	215952			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3337810	554310				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 4.445 = (3337810 * 100.000) / (80503766 * 0.933)

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

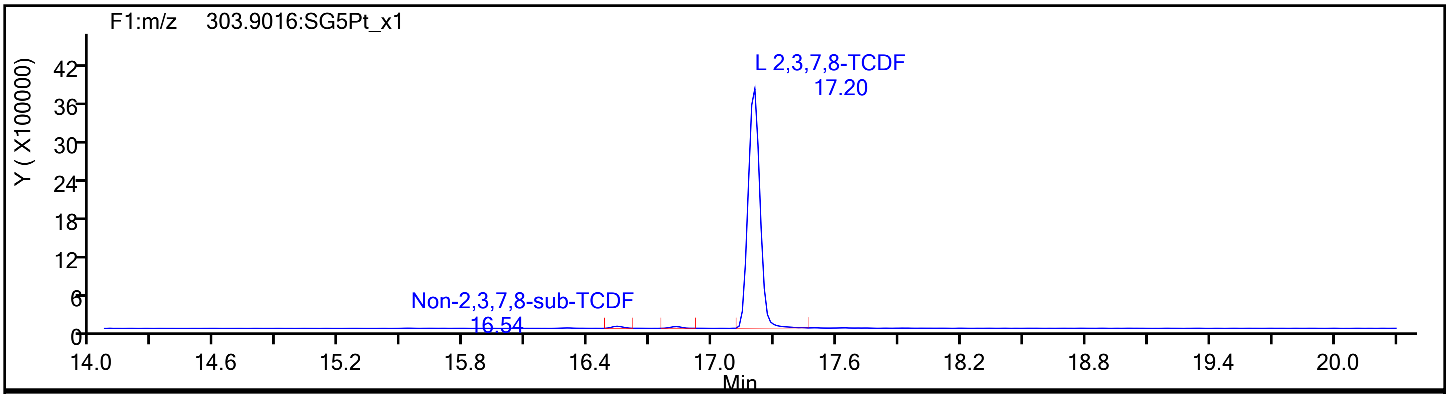

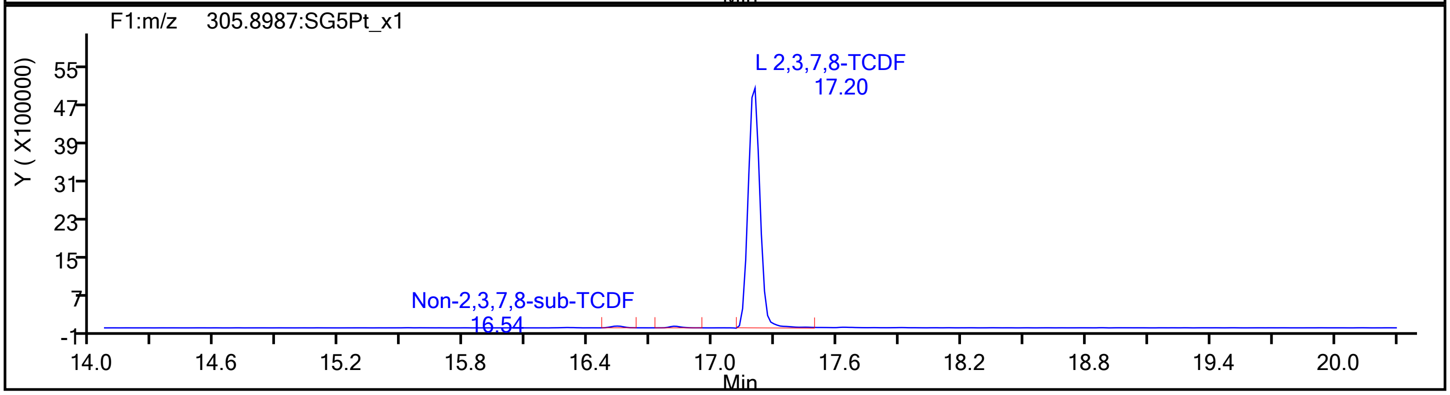

TCDF Standards

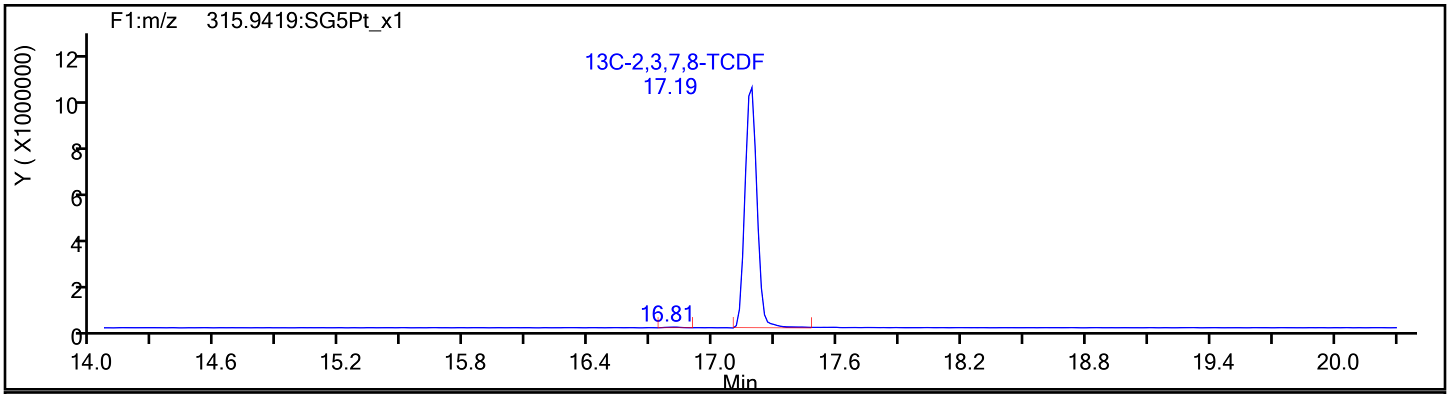

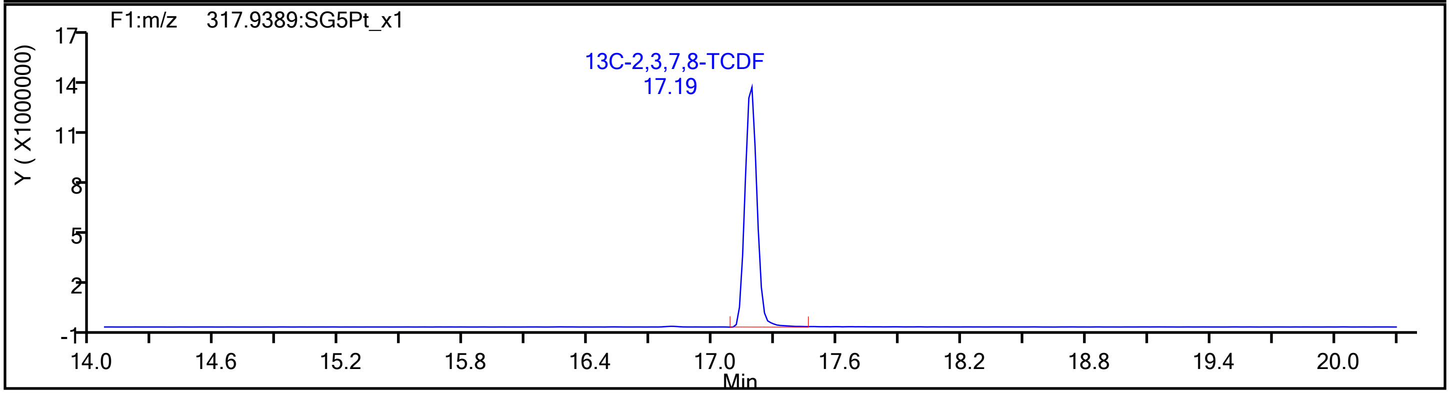

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

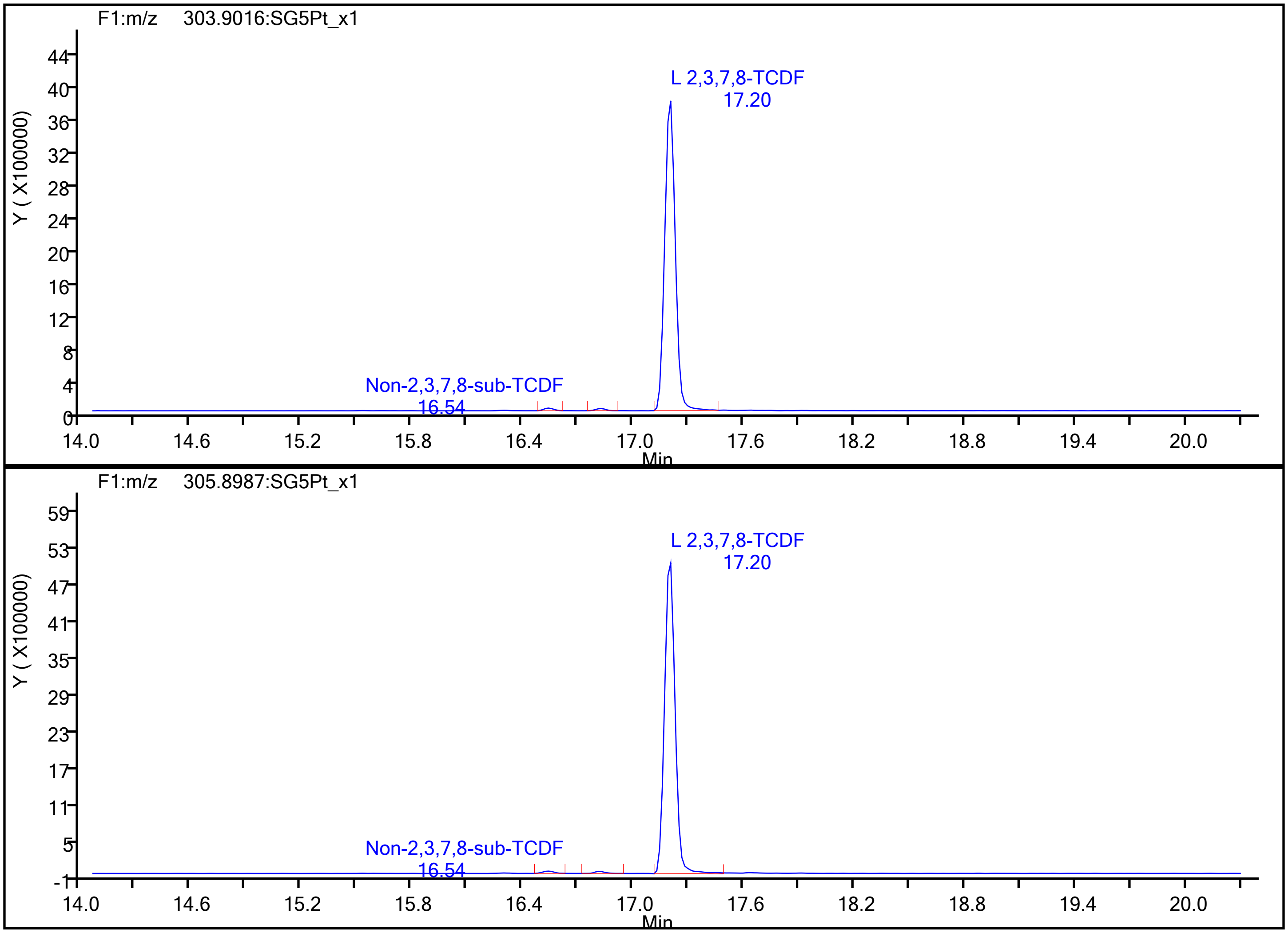

TCDF Interference Mass

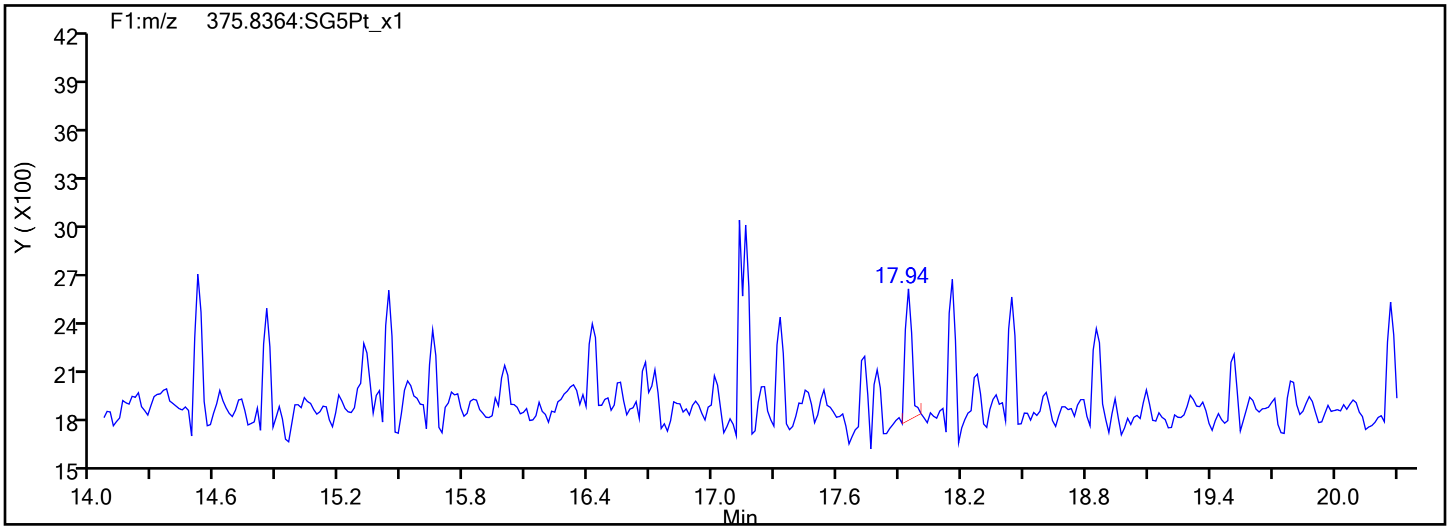

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

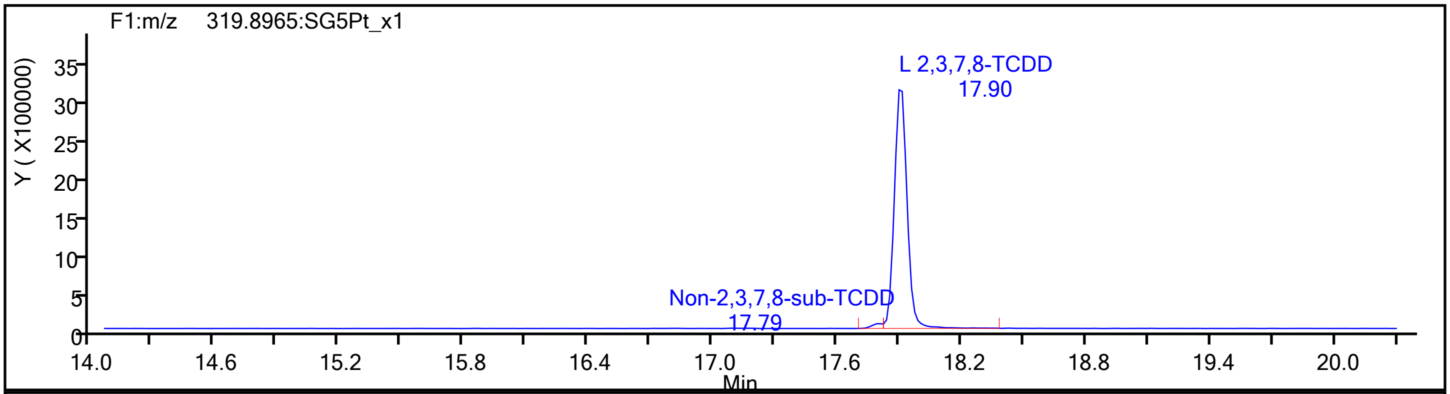

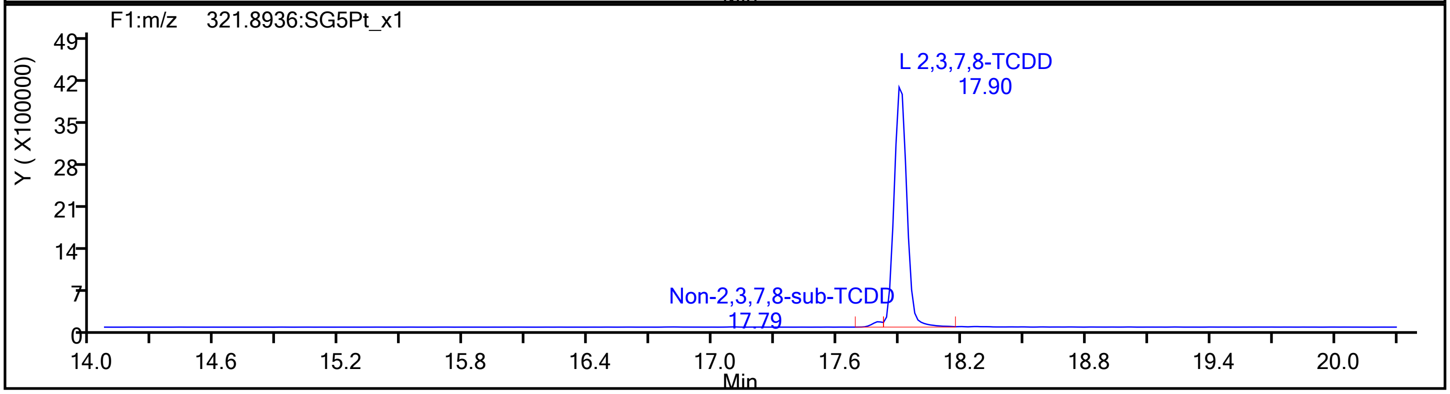

TCDD Standards

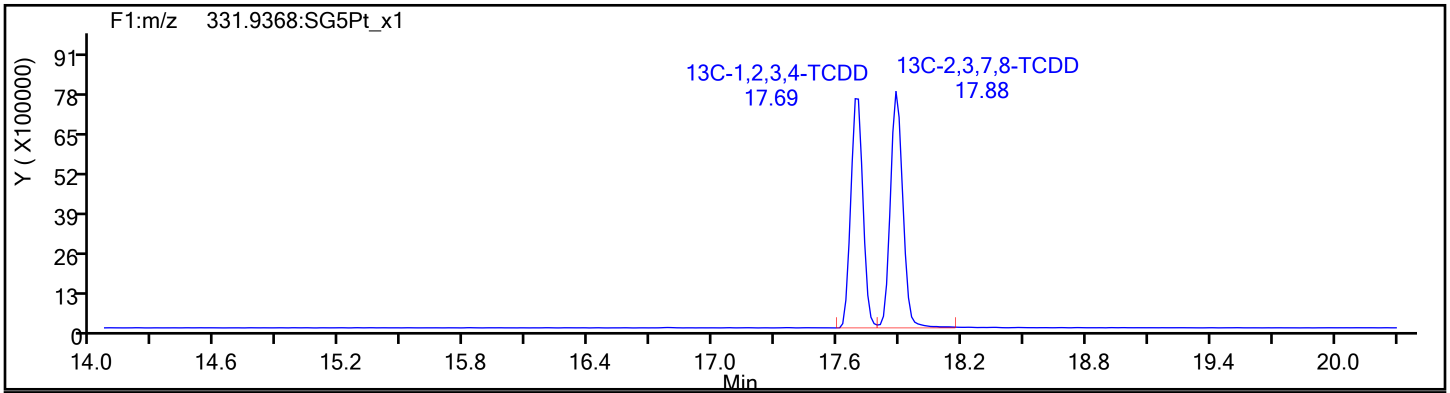

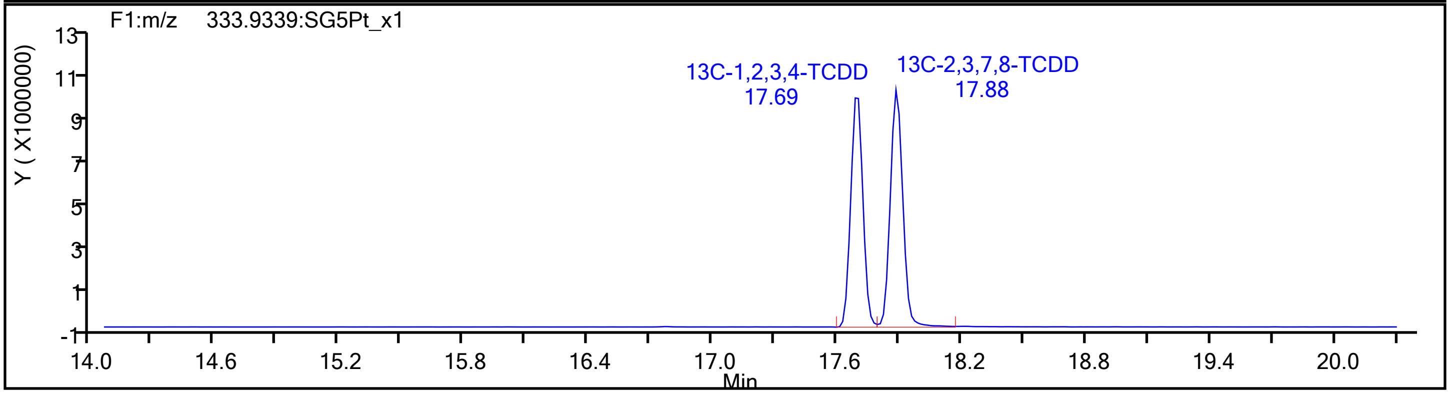

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

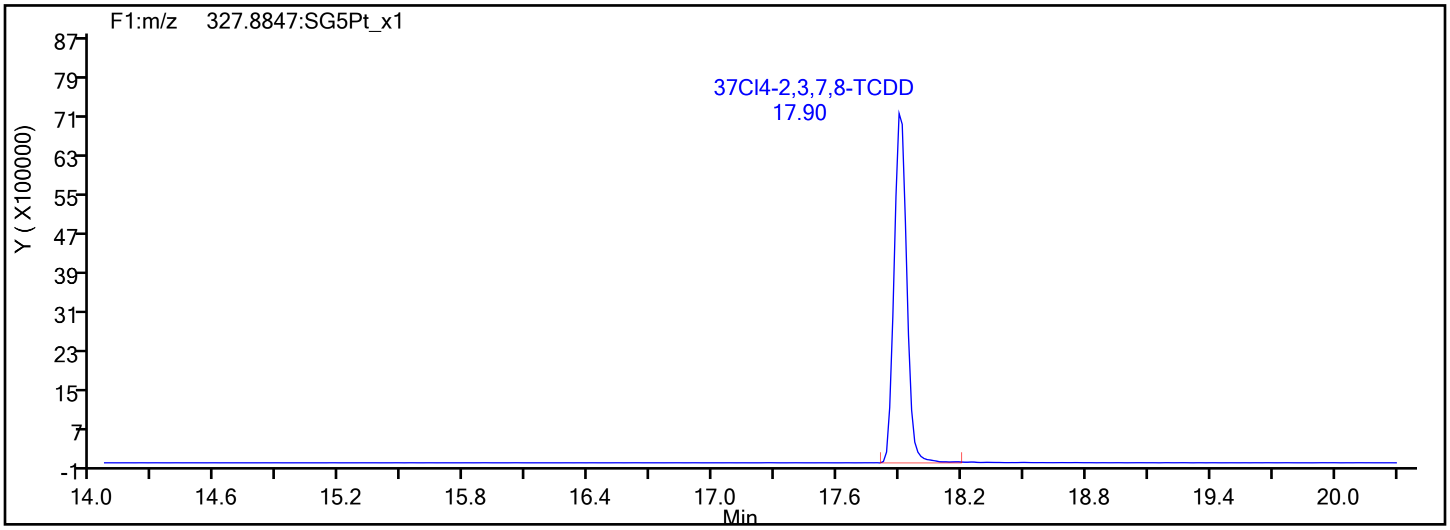

37Cl4-TCDD Standards

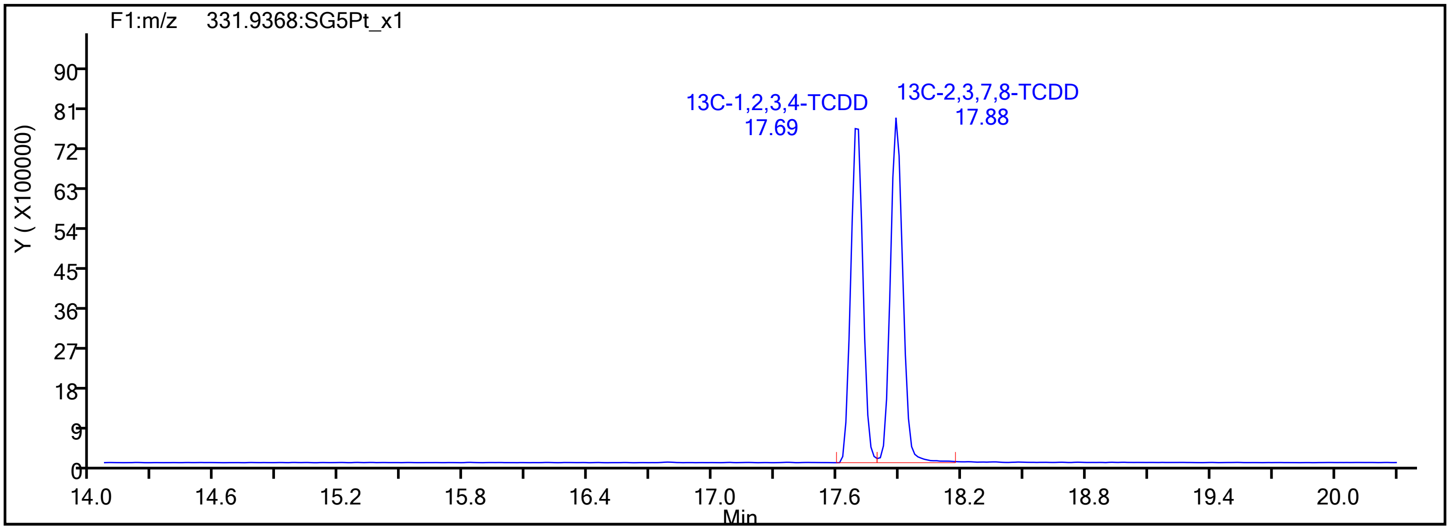

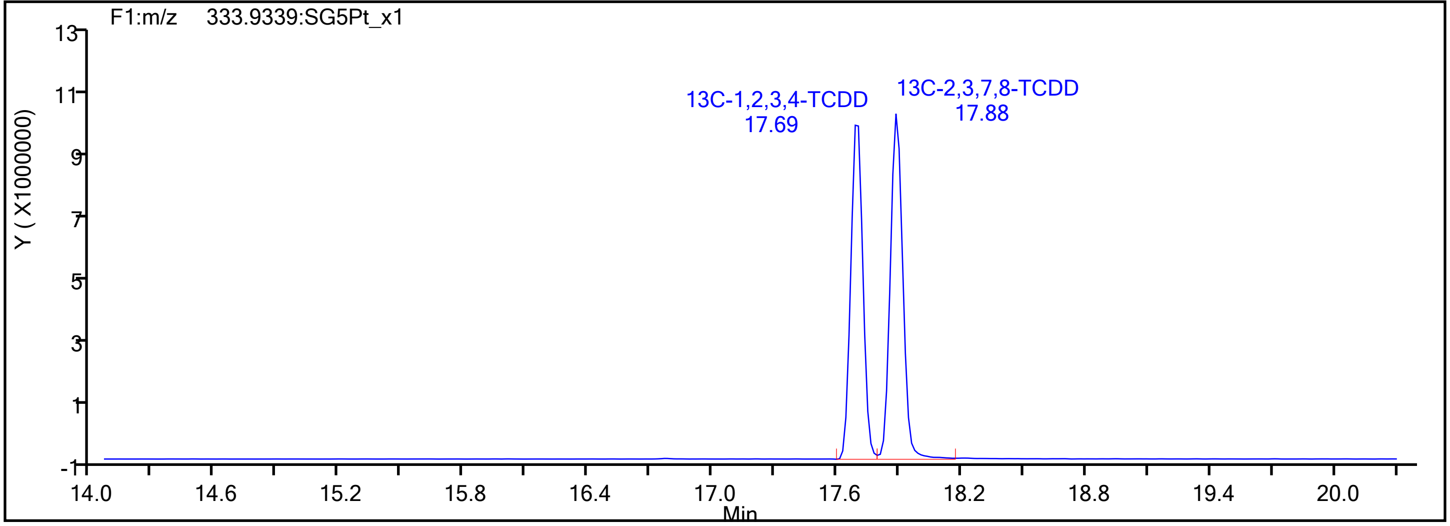

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

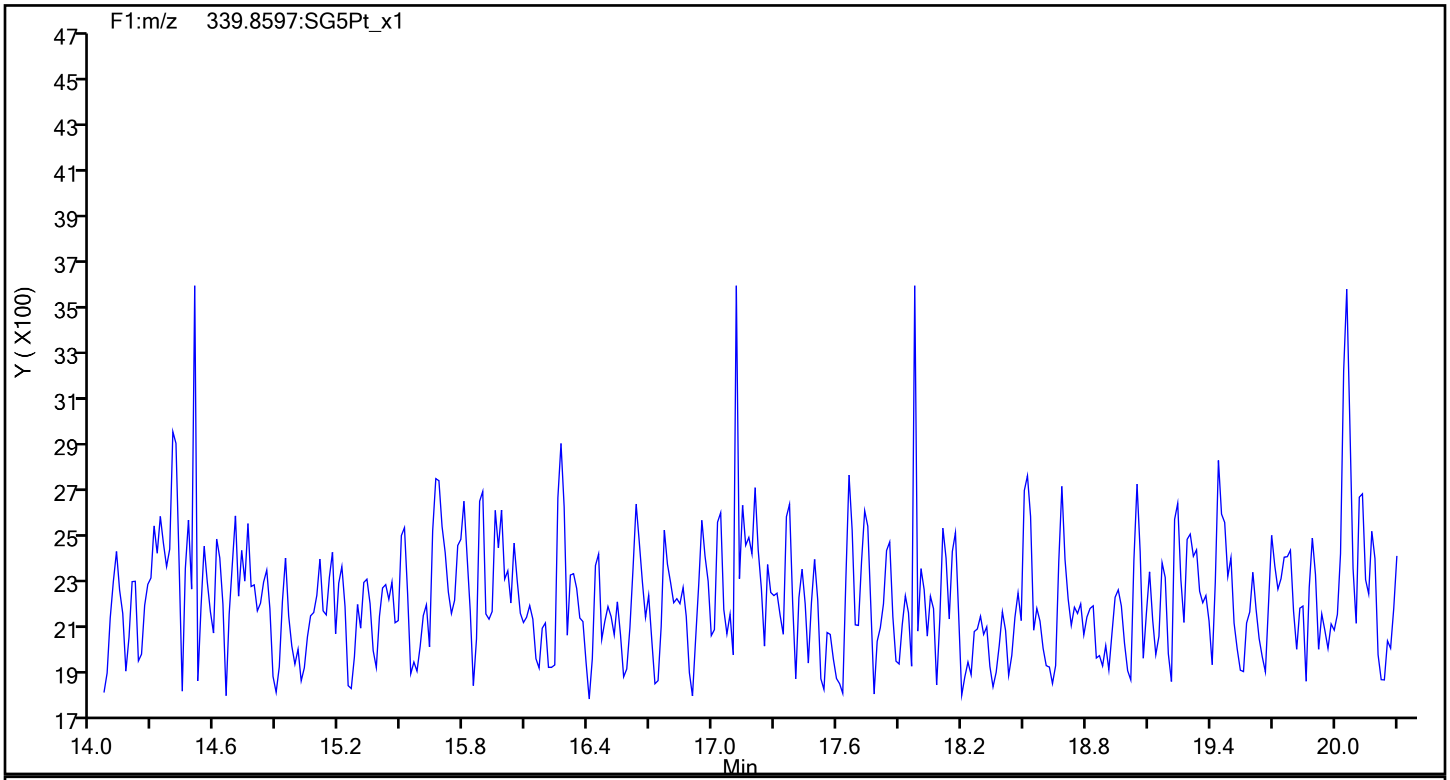

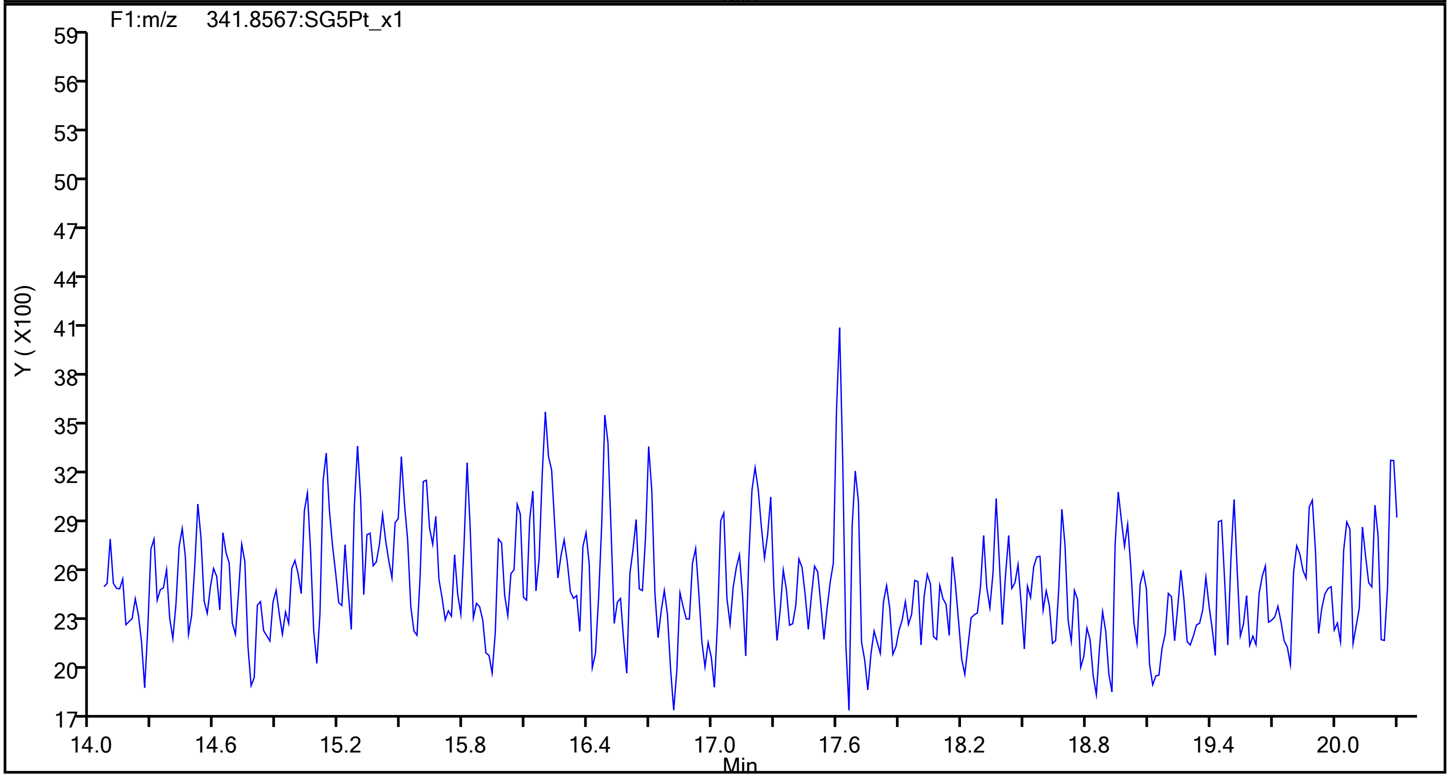

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

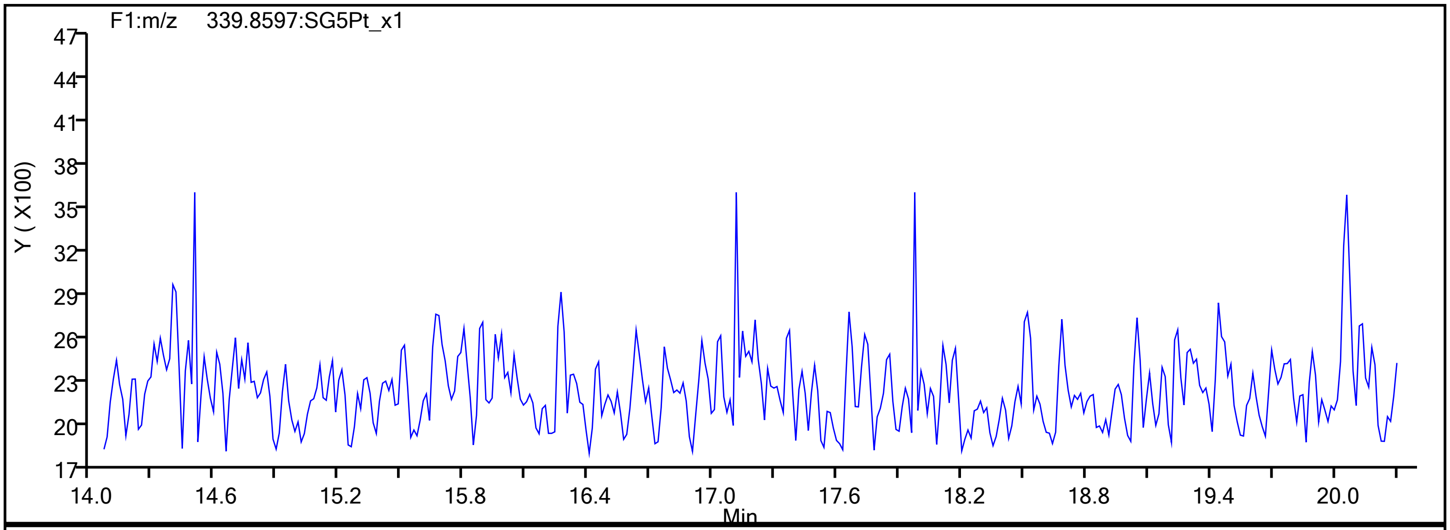

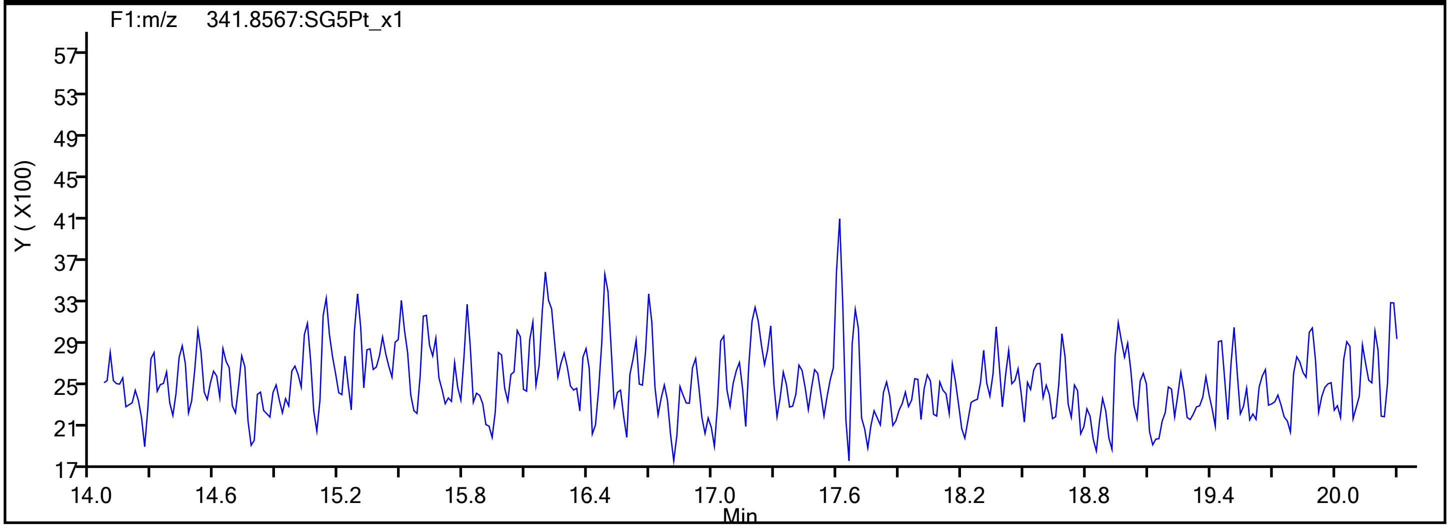

F1 PeCDFs Interference Mass

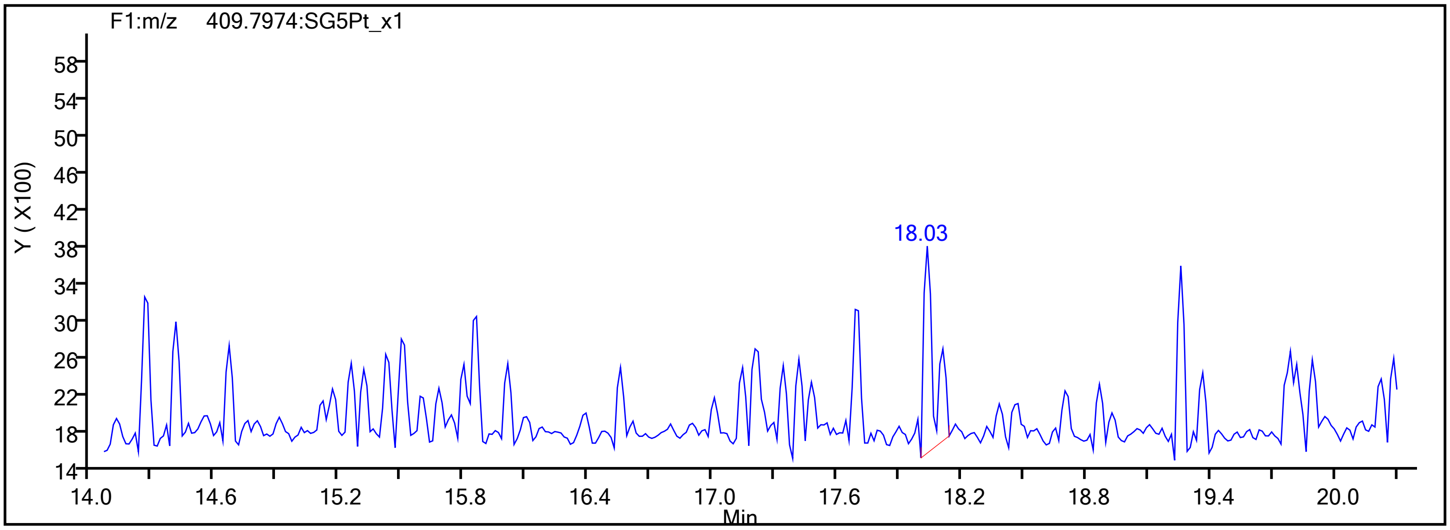

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

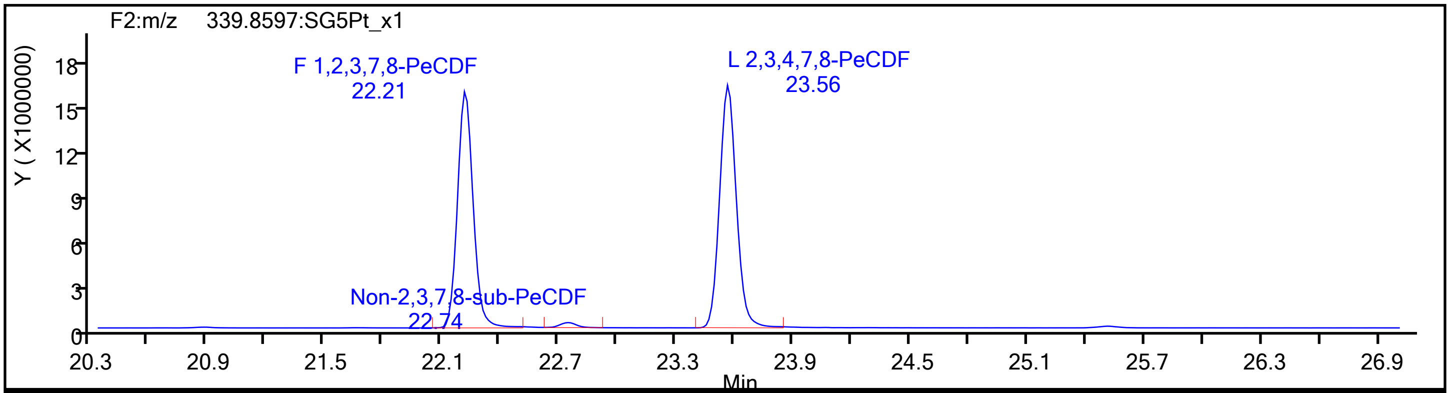

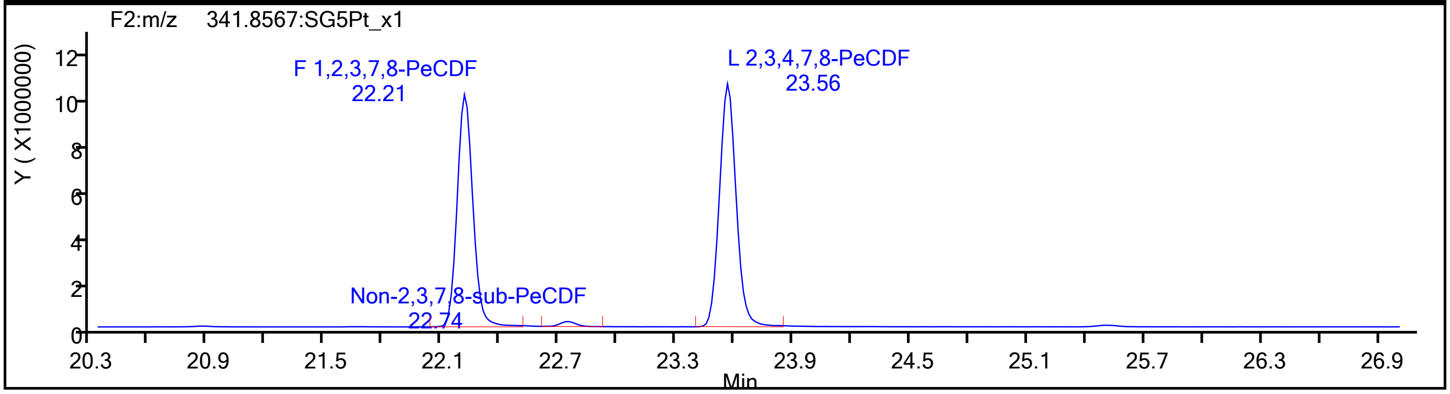

PeCDF Standards

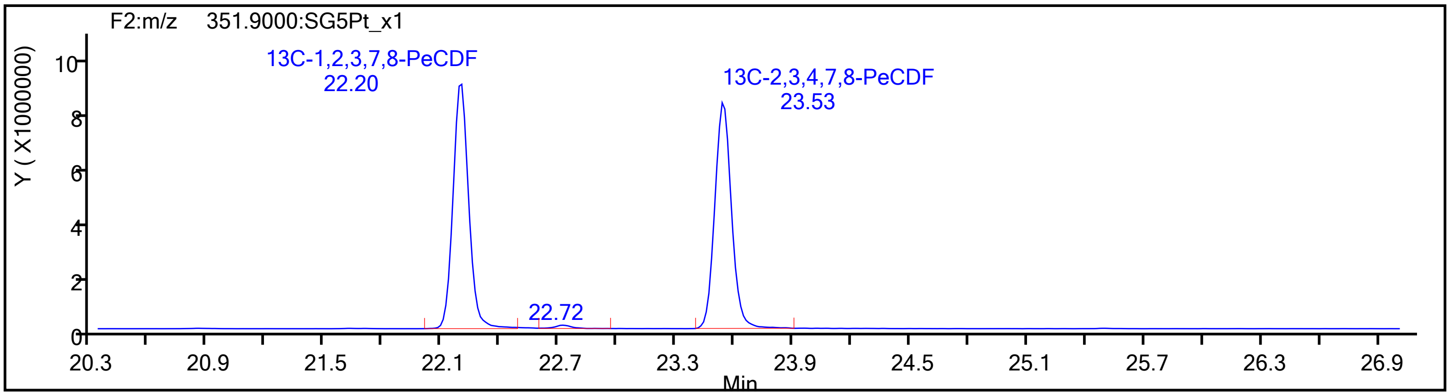

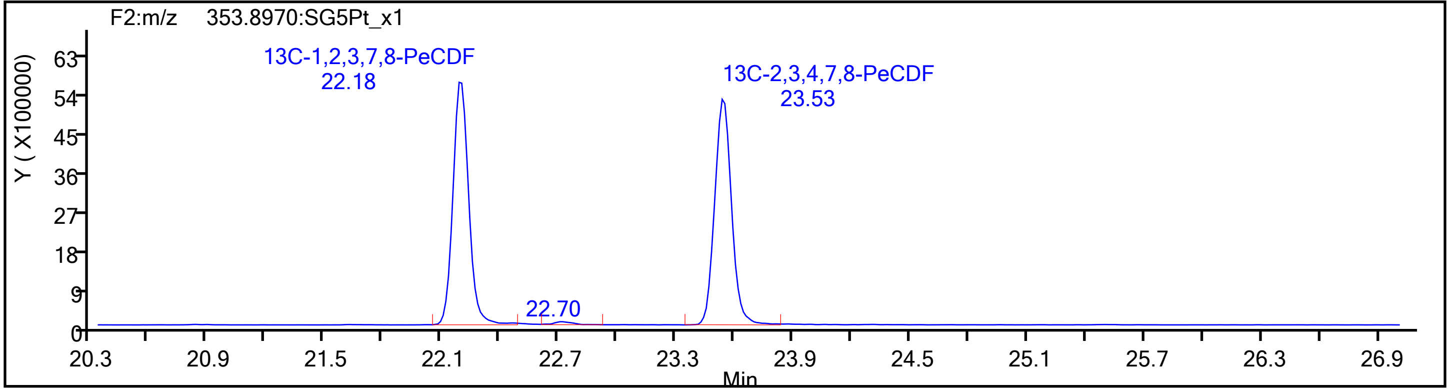

Report Date: 18-Sep-2020 10:38:15		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d		
Injection Date:	17-Sep-2020 20:42:06	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

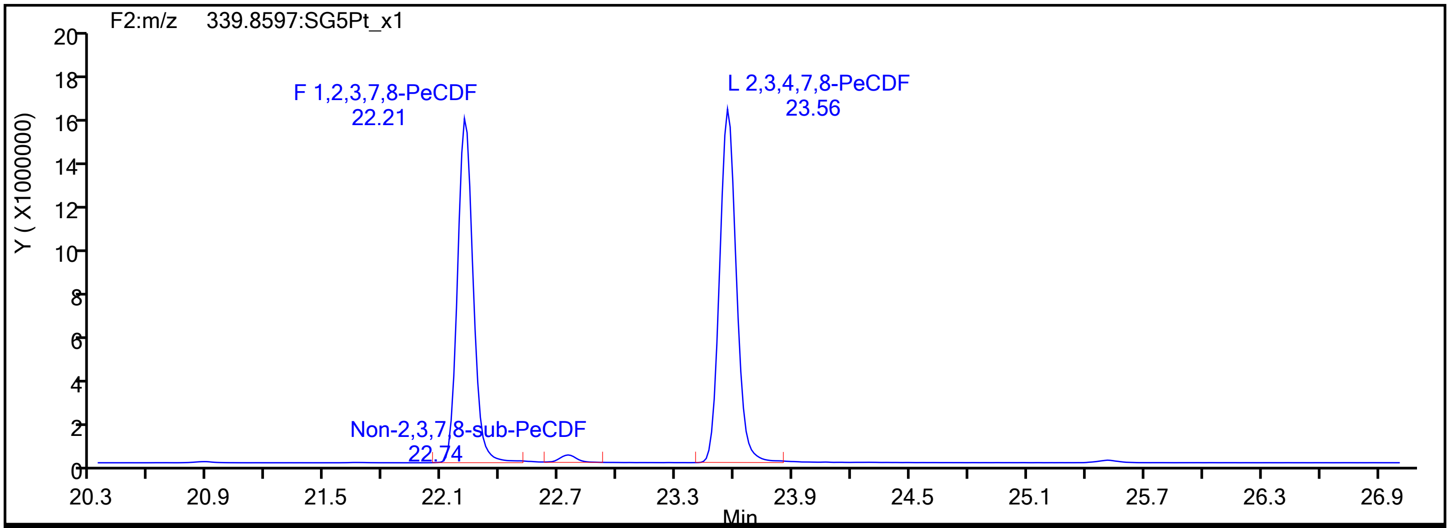

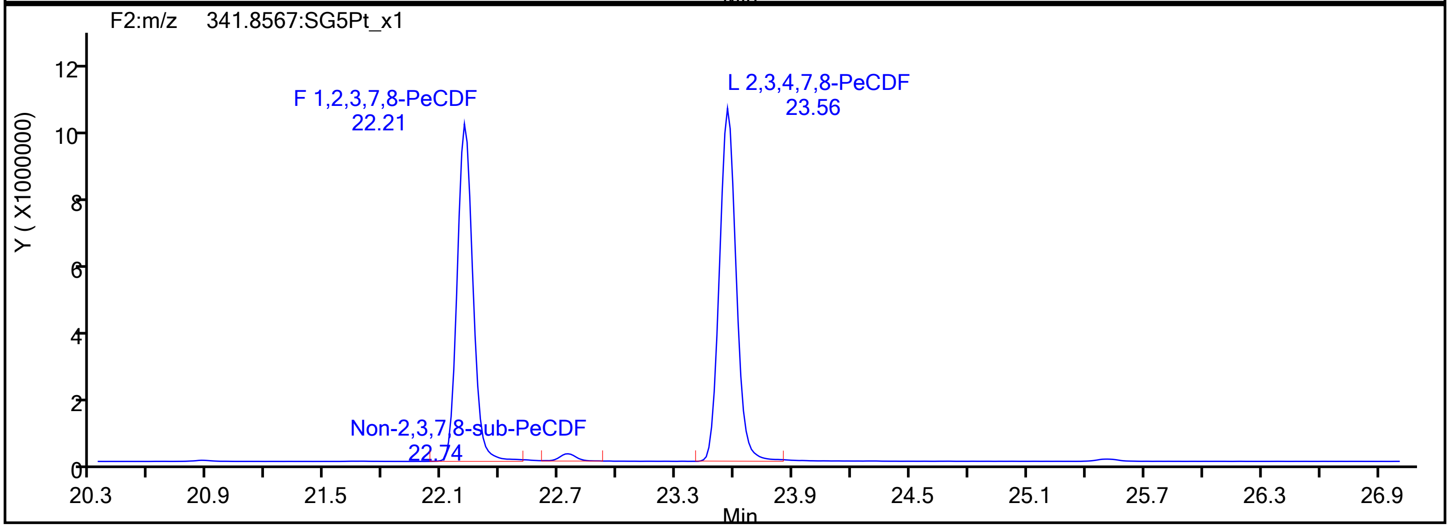

PeCDF Interference Mass

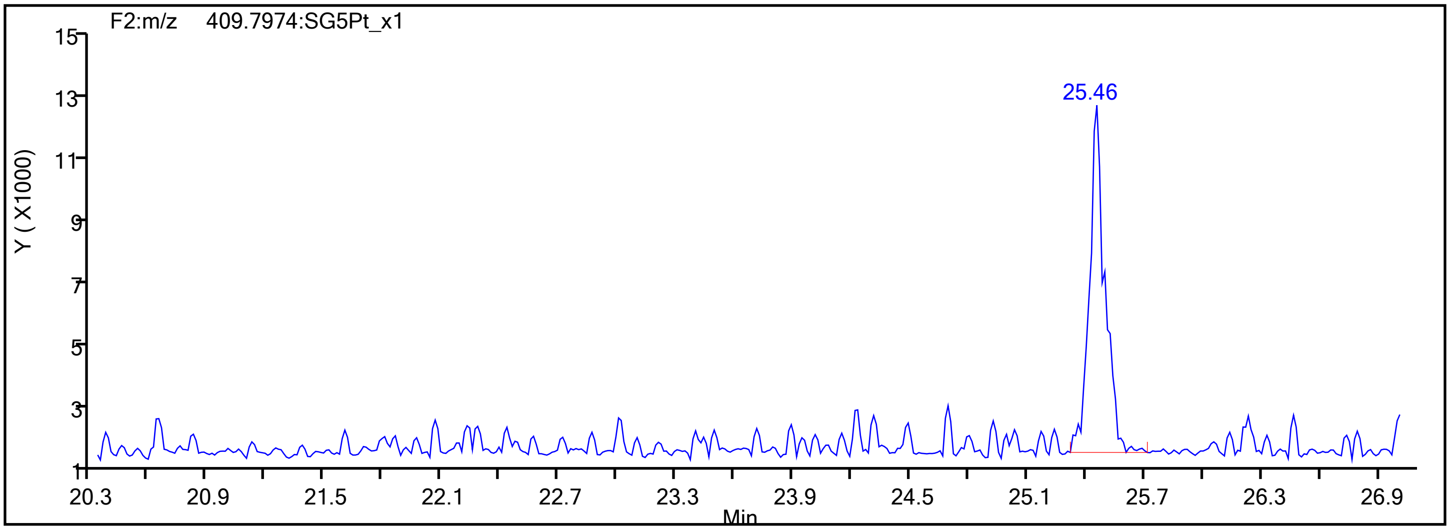

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Client ID:
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PeCDD

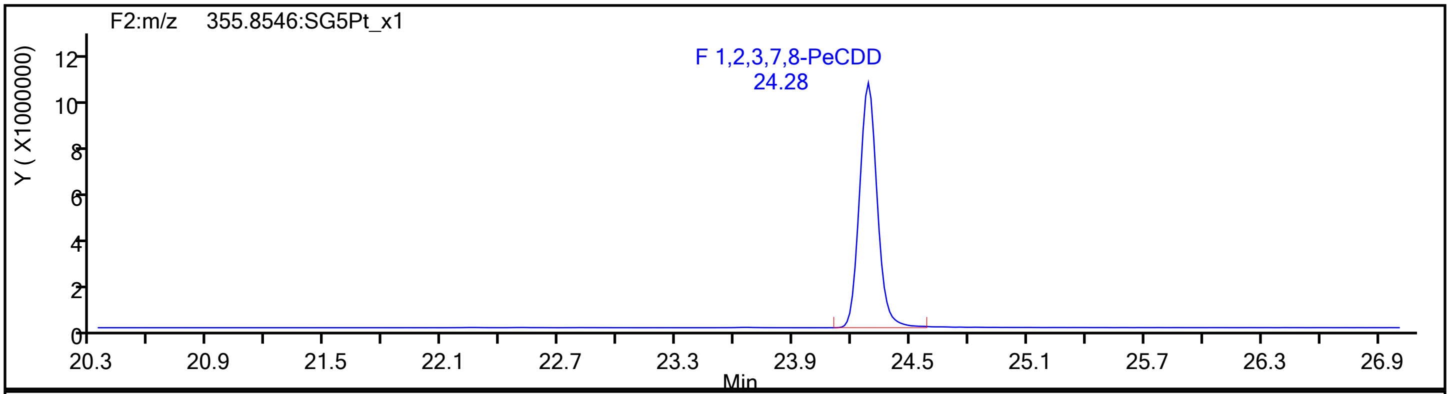

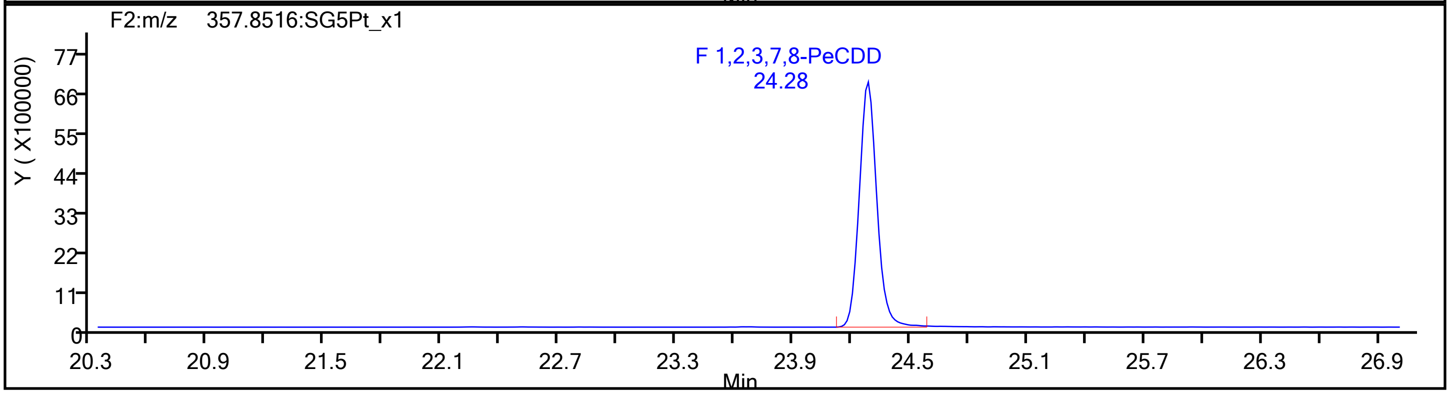

PeCDD Standards

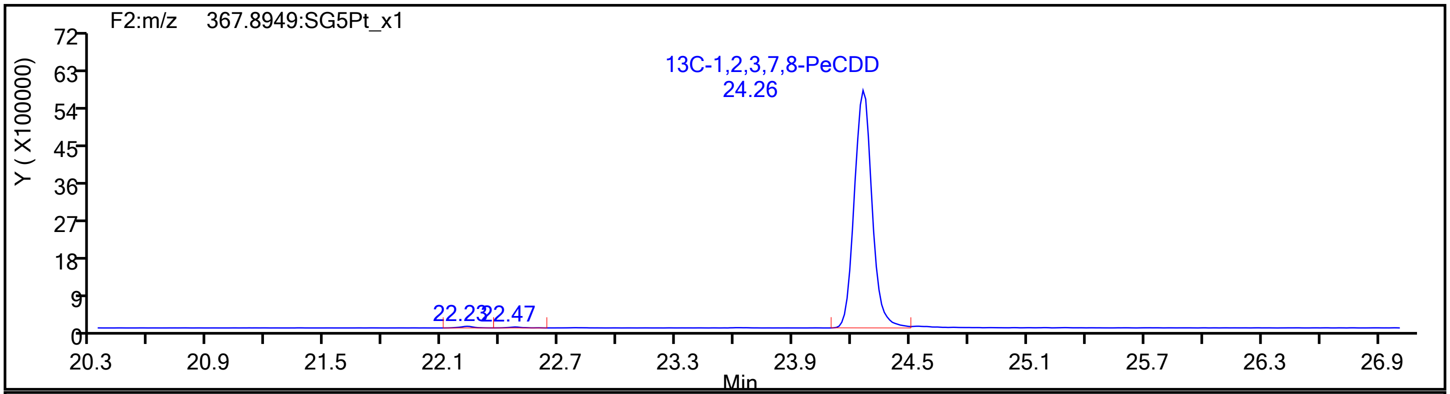

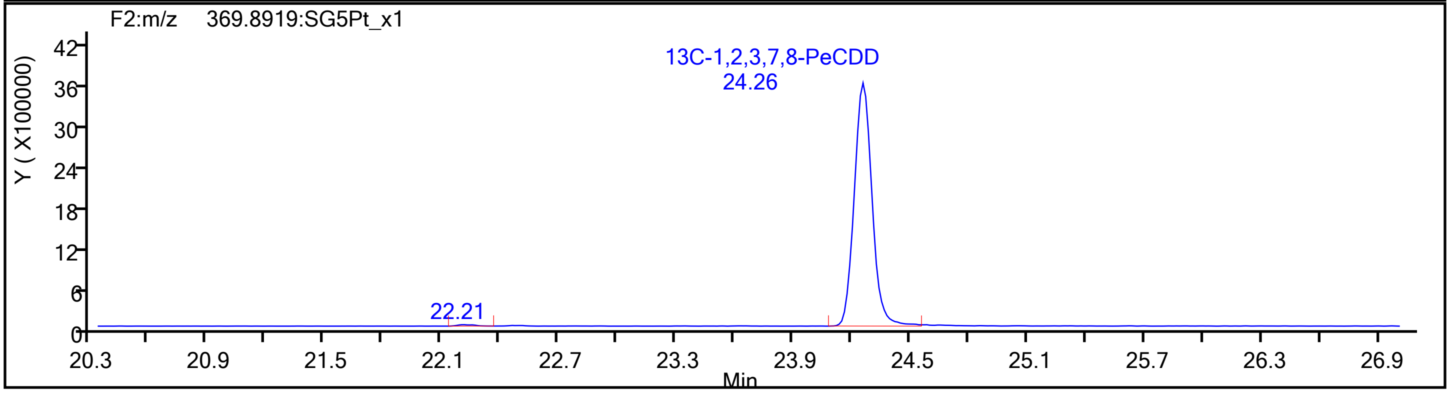

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

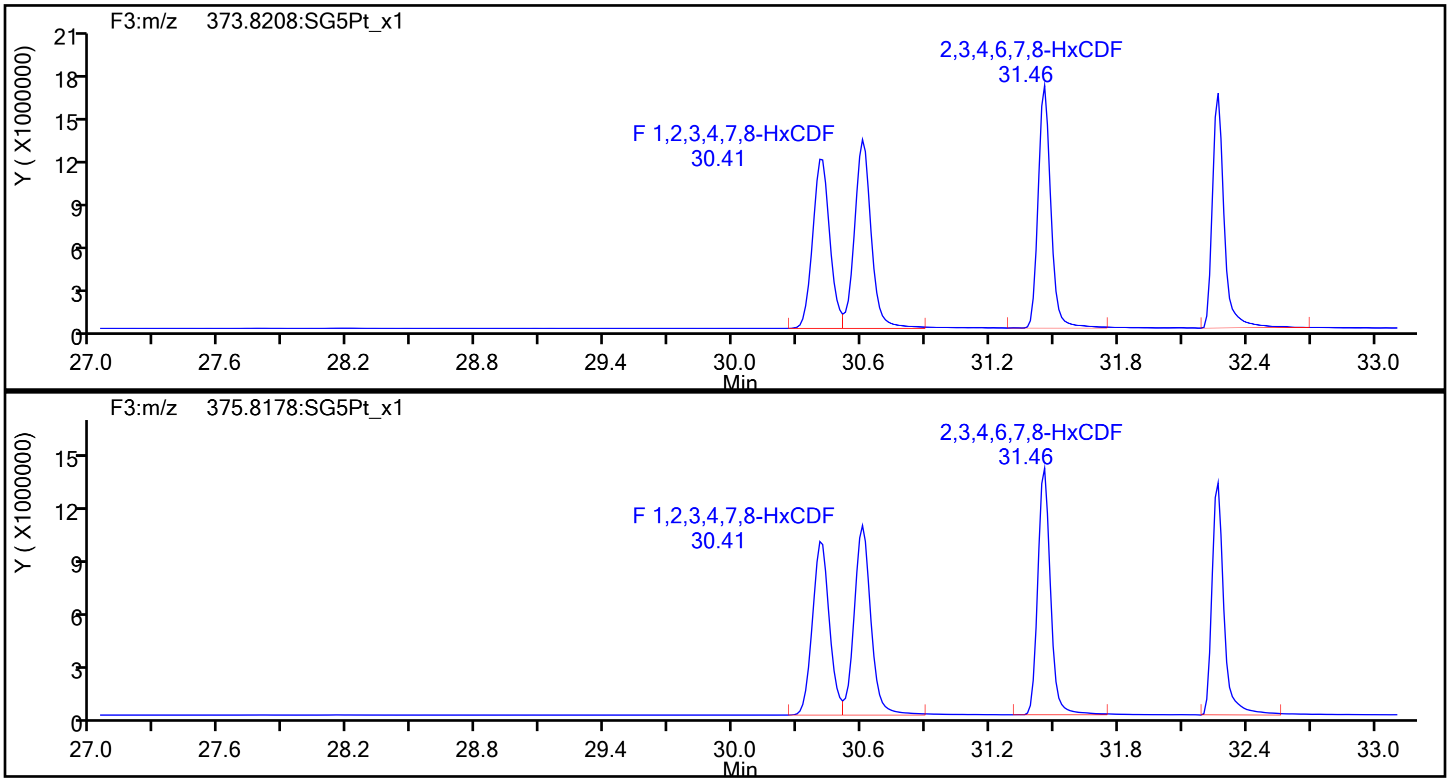

HxCDF Standards

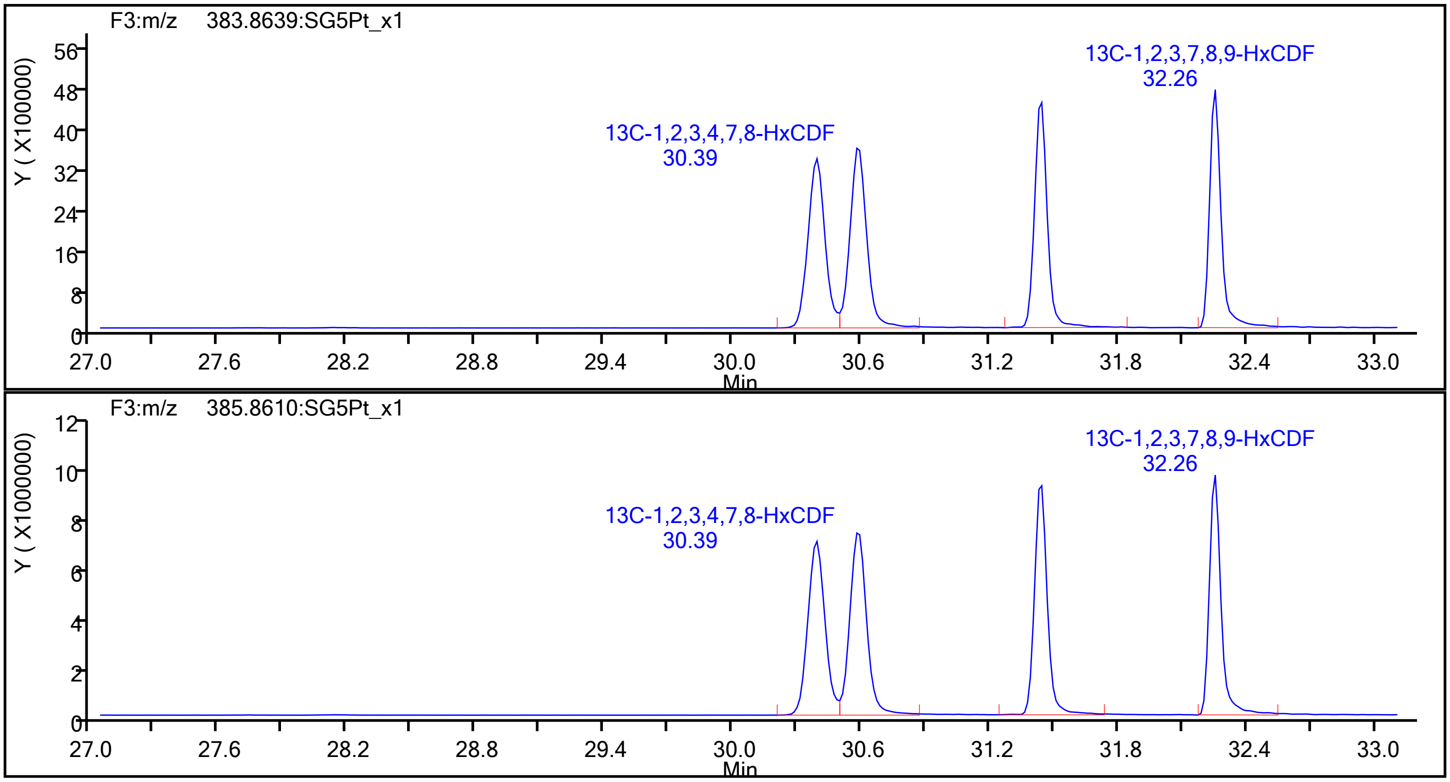

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

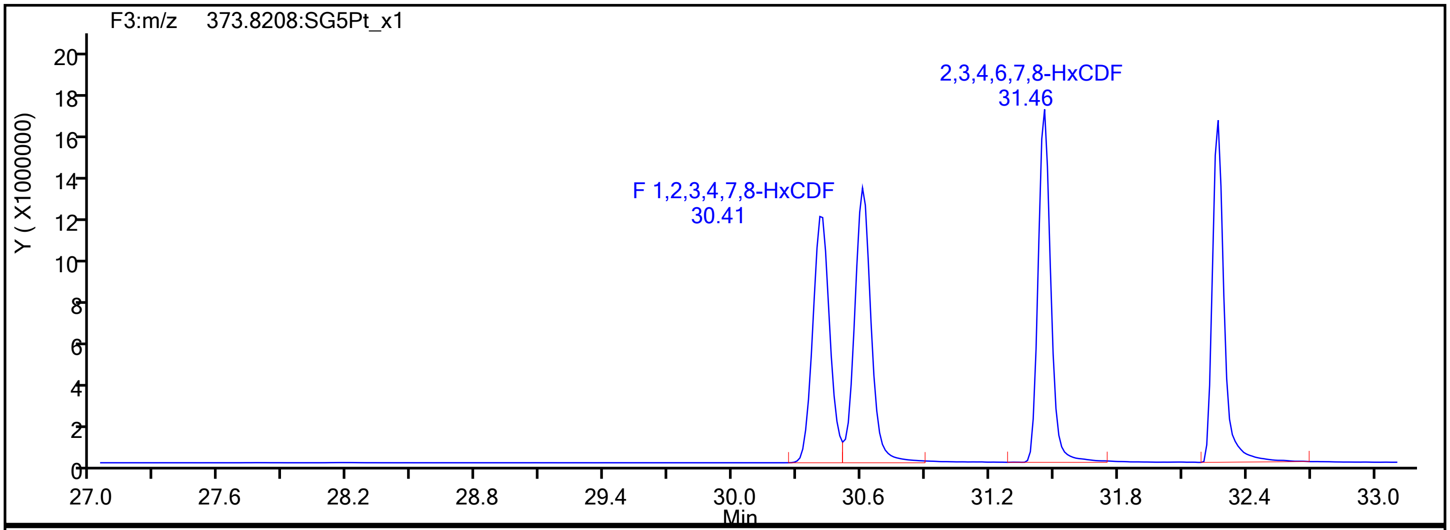

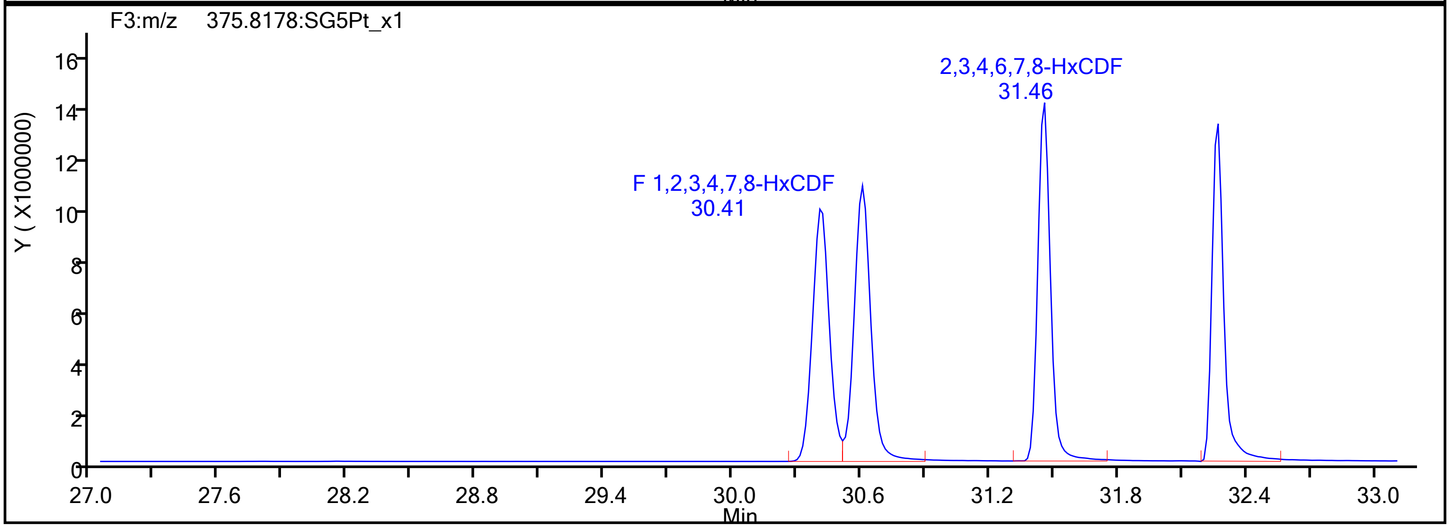

HxCDF Interference Mass

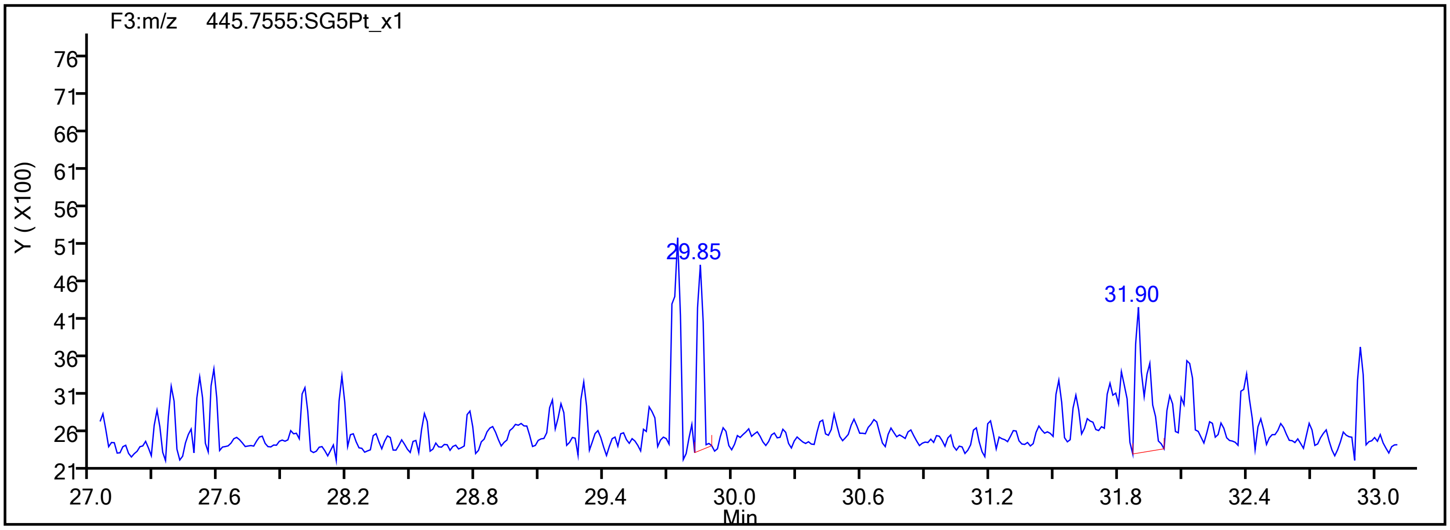

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HxCDD

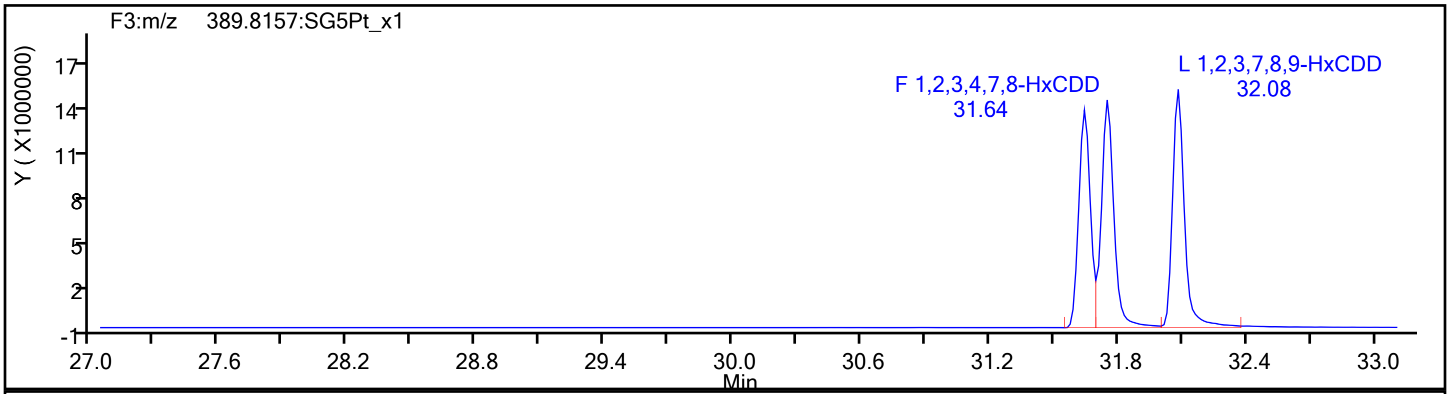

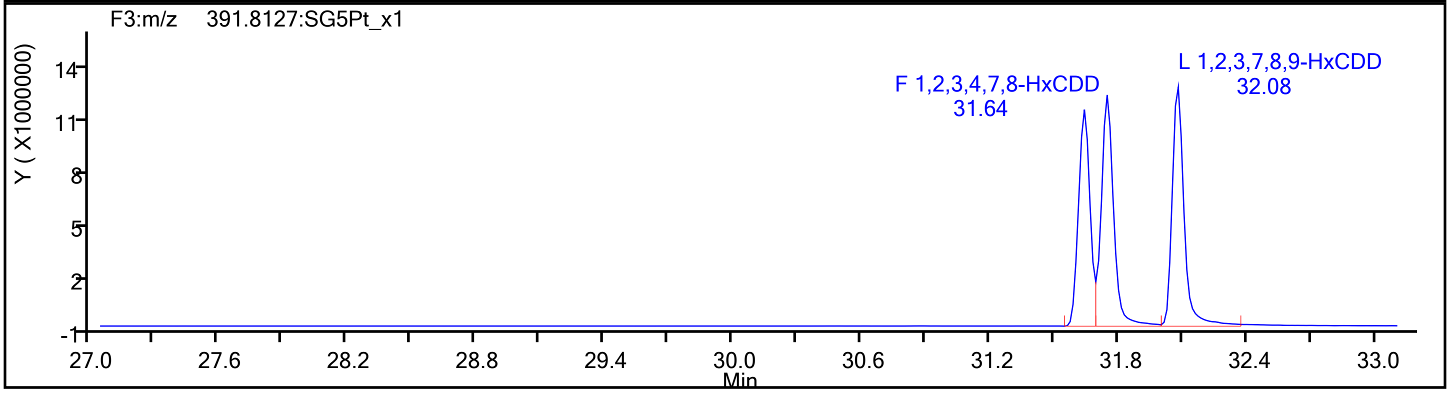

HxCDD Standards

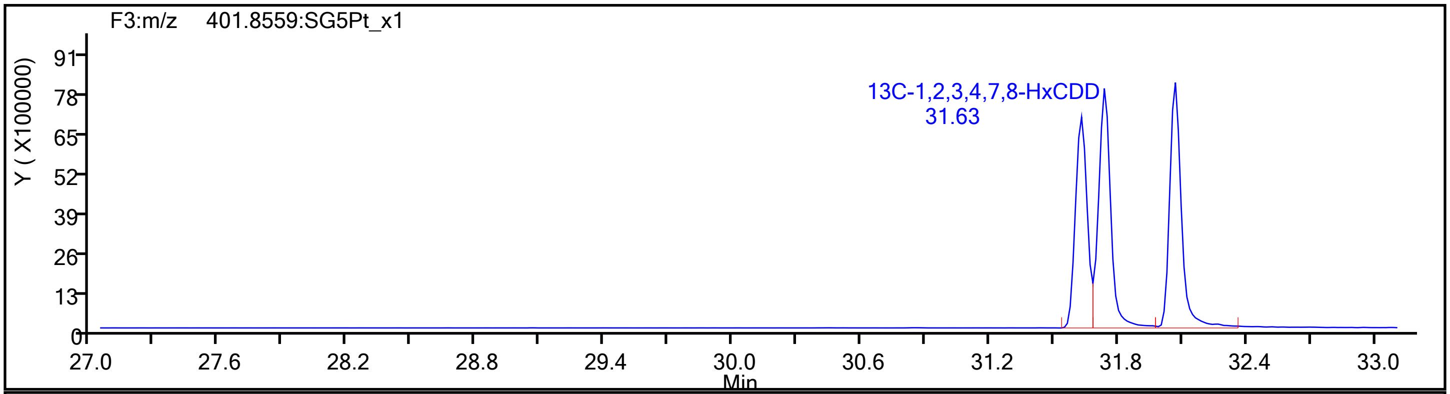

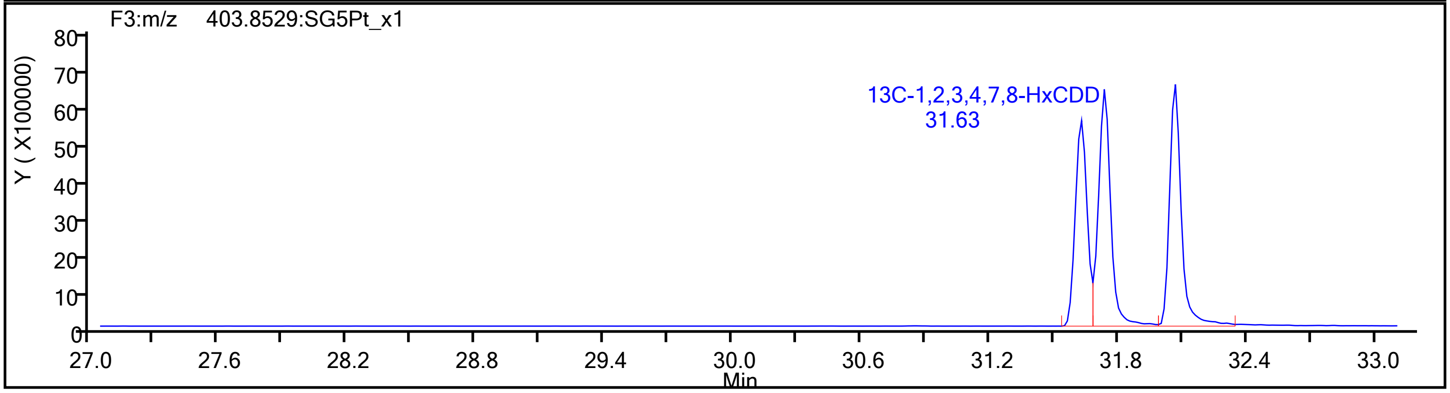

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_9.d

Injection Date: 17-Sep-2020 20:42:06

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

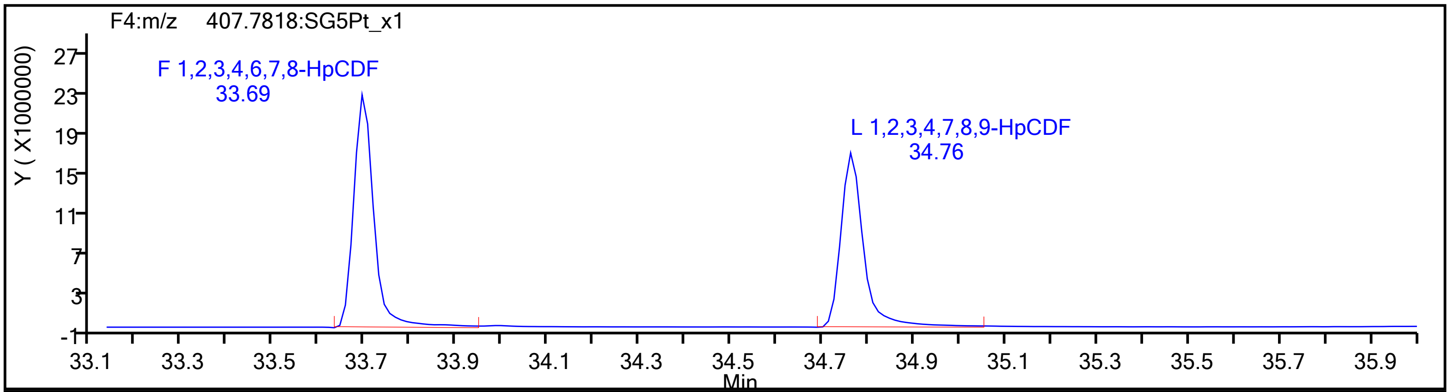

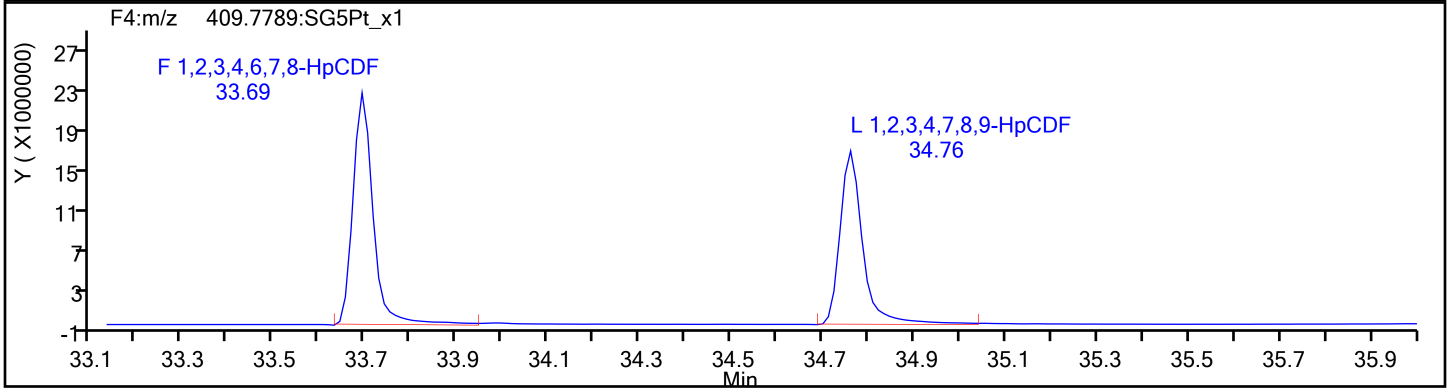

HpCDF Standards

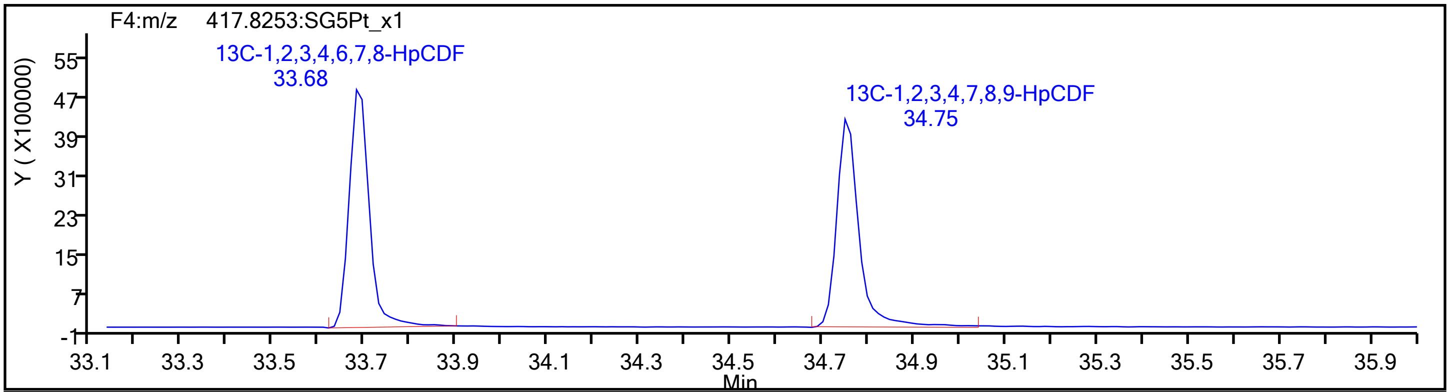

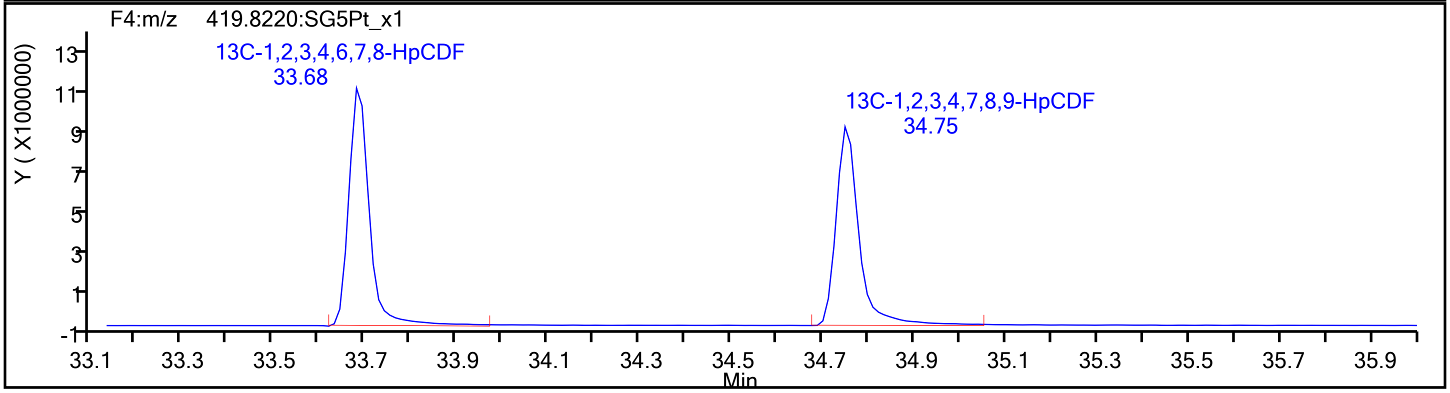

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Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

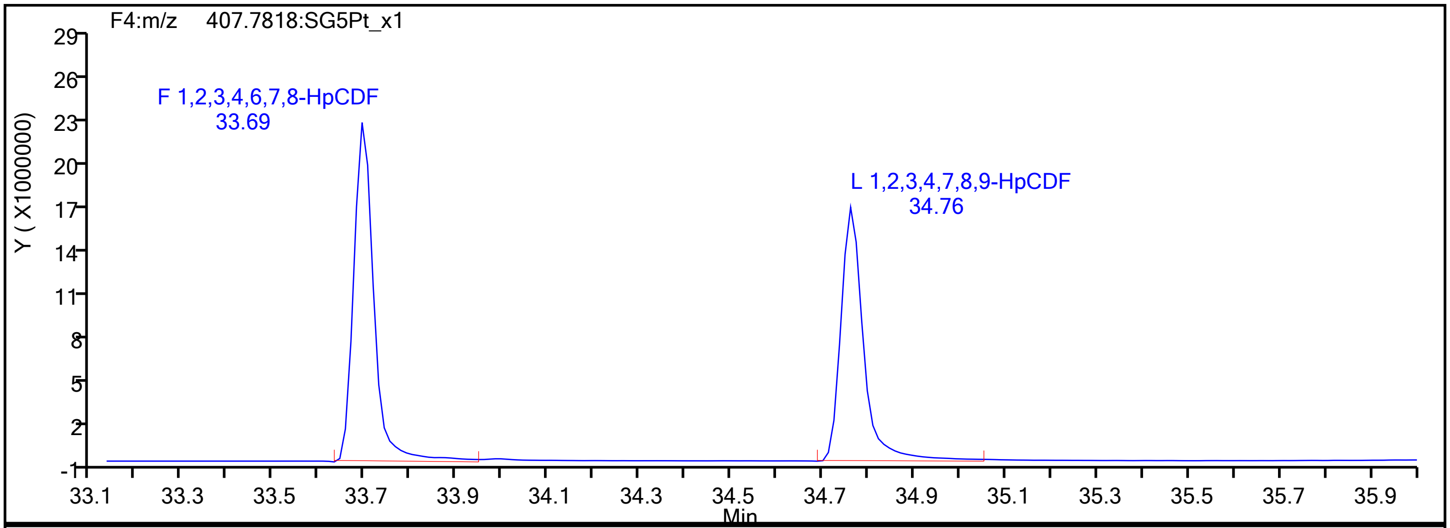

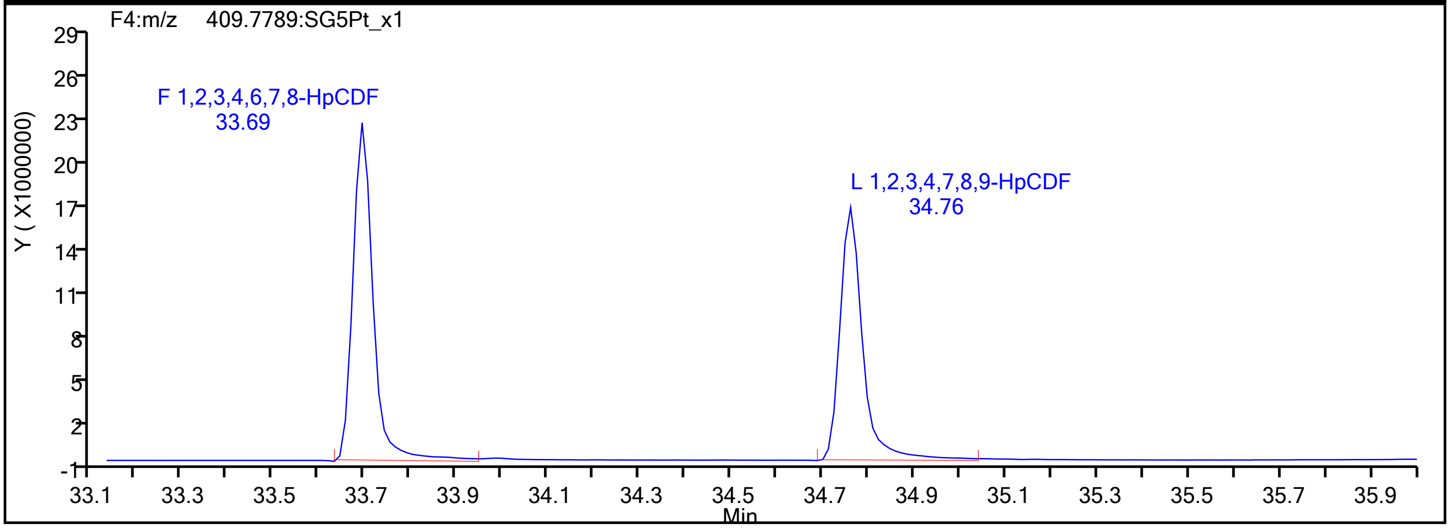

HpCDF Interference Mass

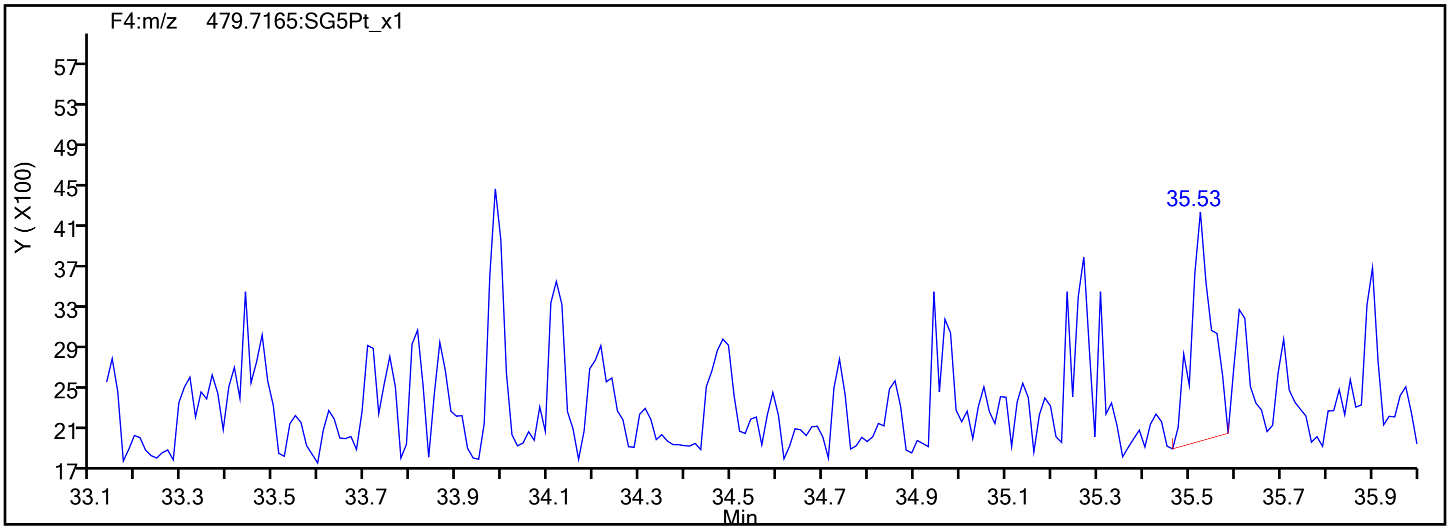

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 20:42:06

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

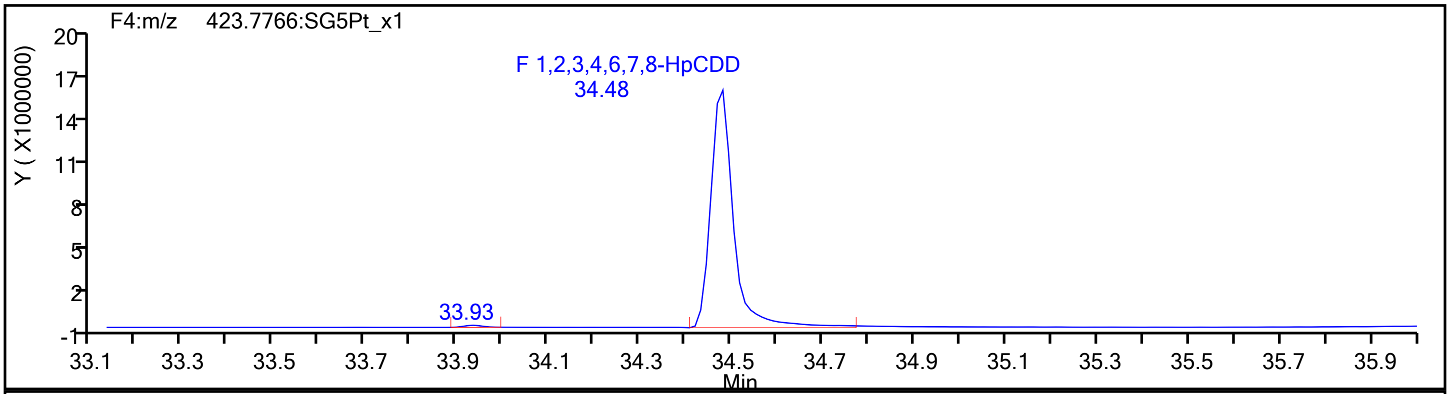

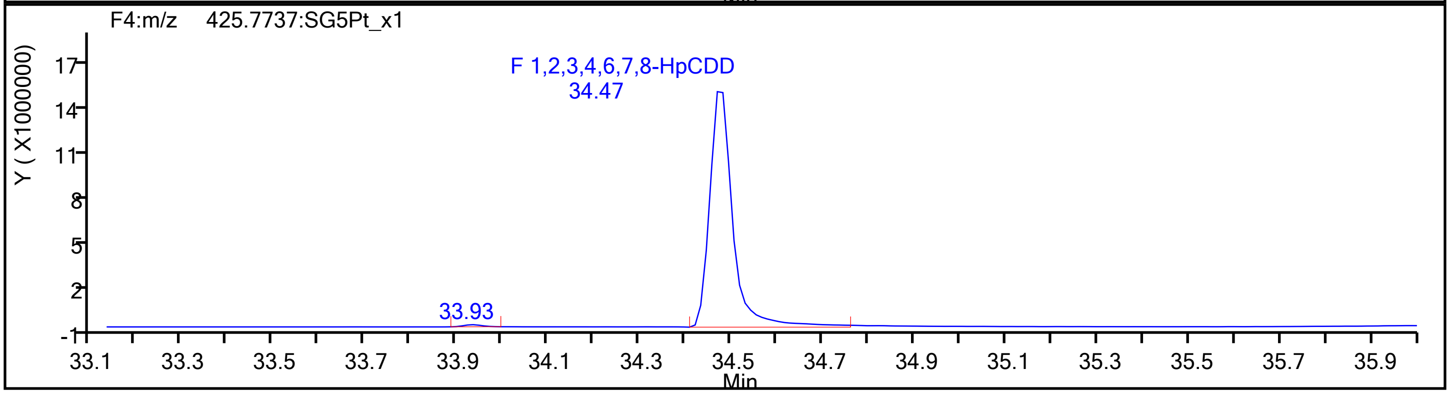

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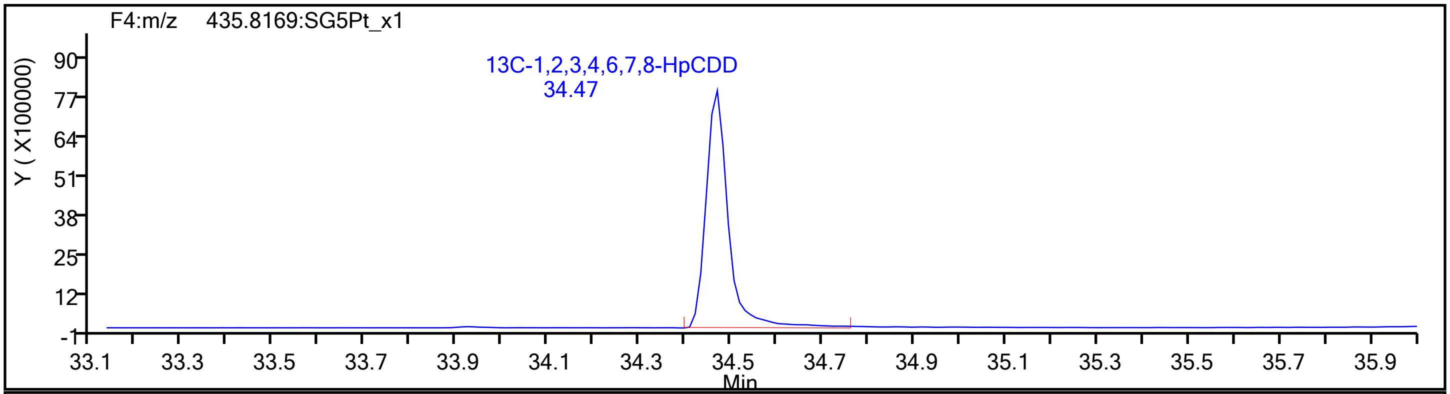

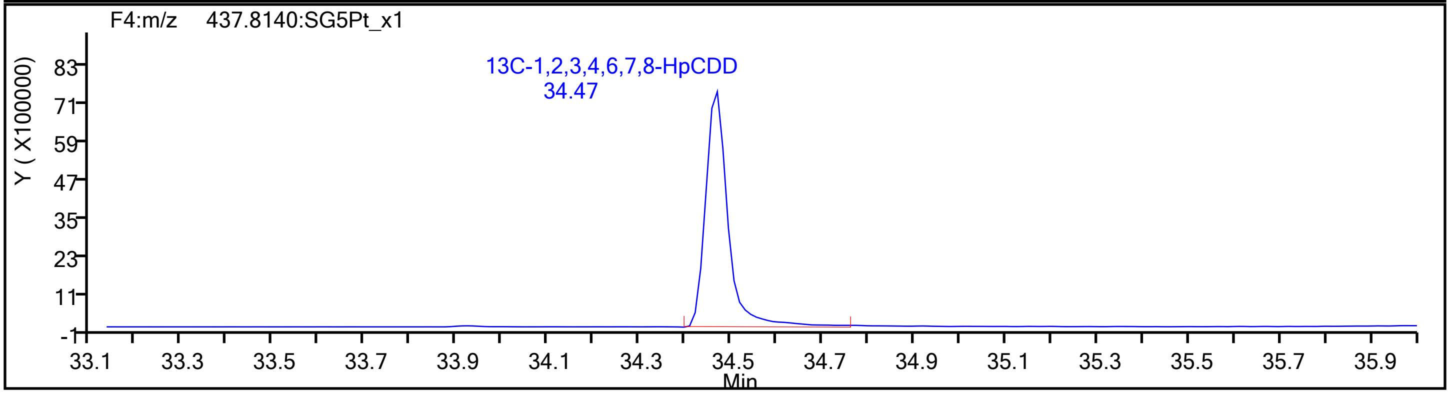

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

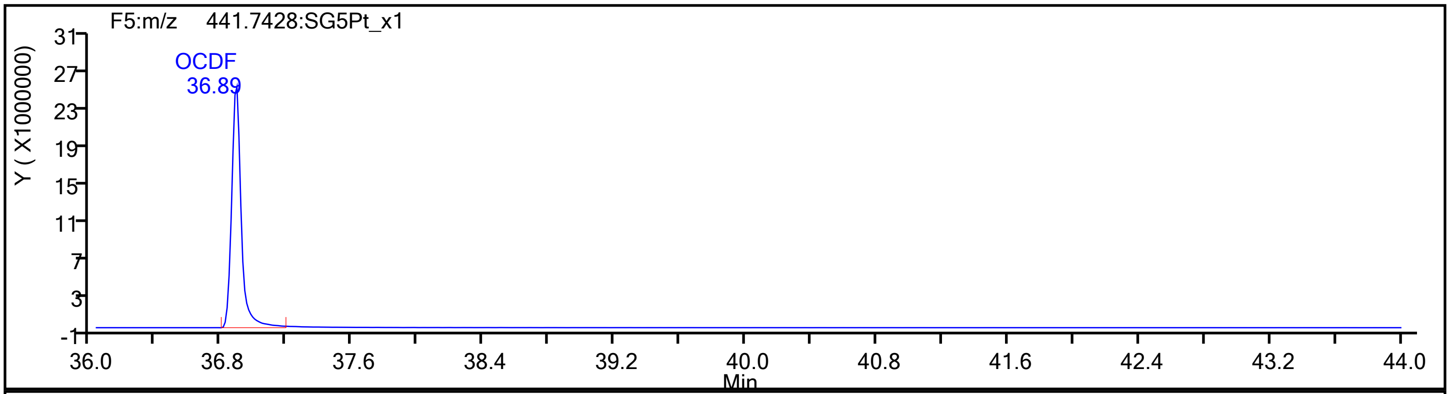

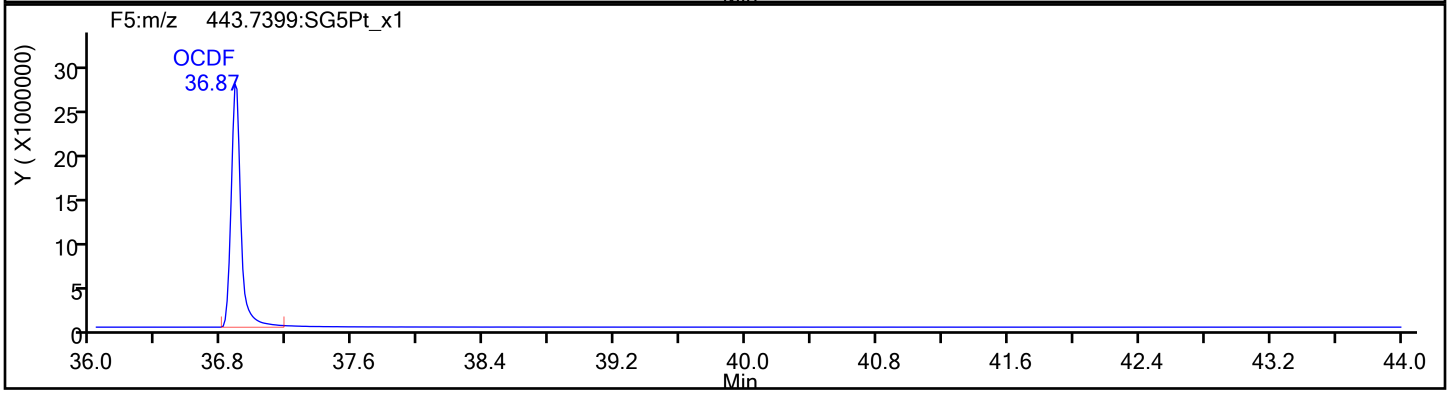

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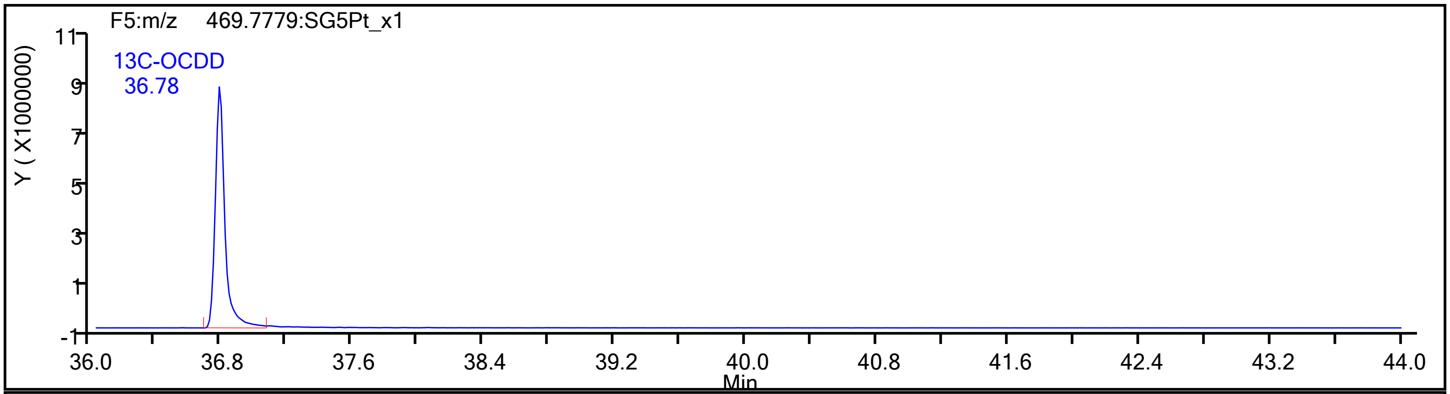

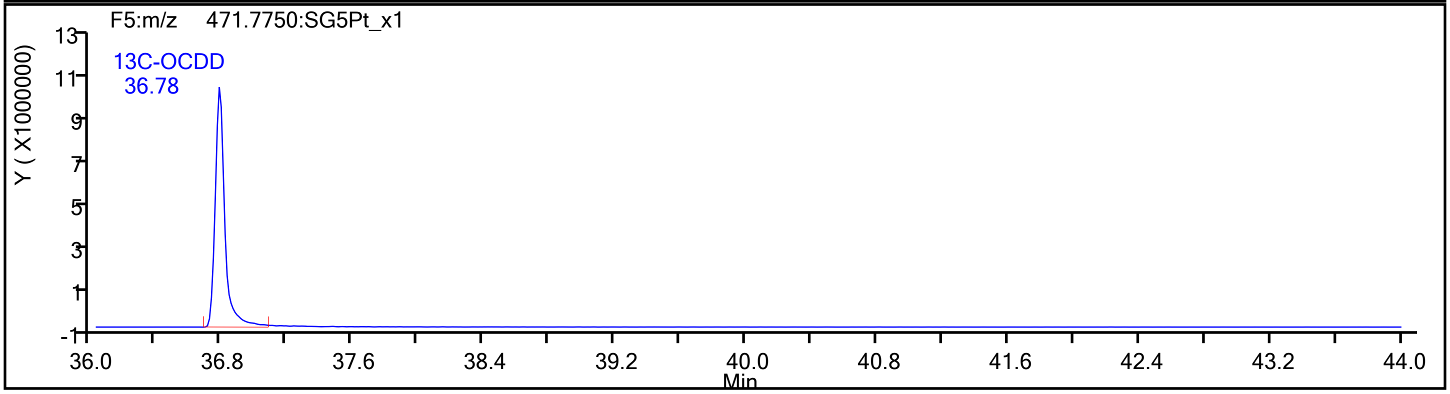

Report Date: 18-Sep-2020 10:38:15 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 9
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Column Dia: 0.32 mm

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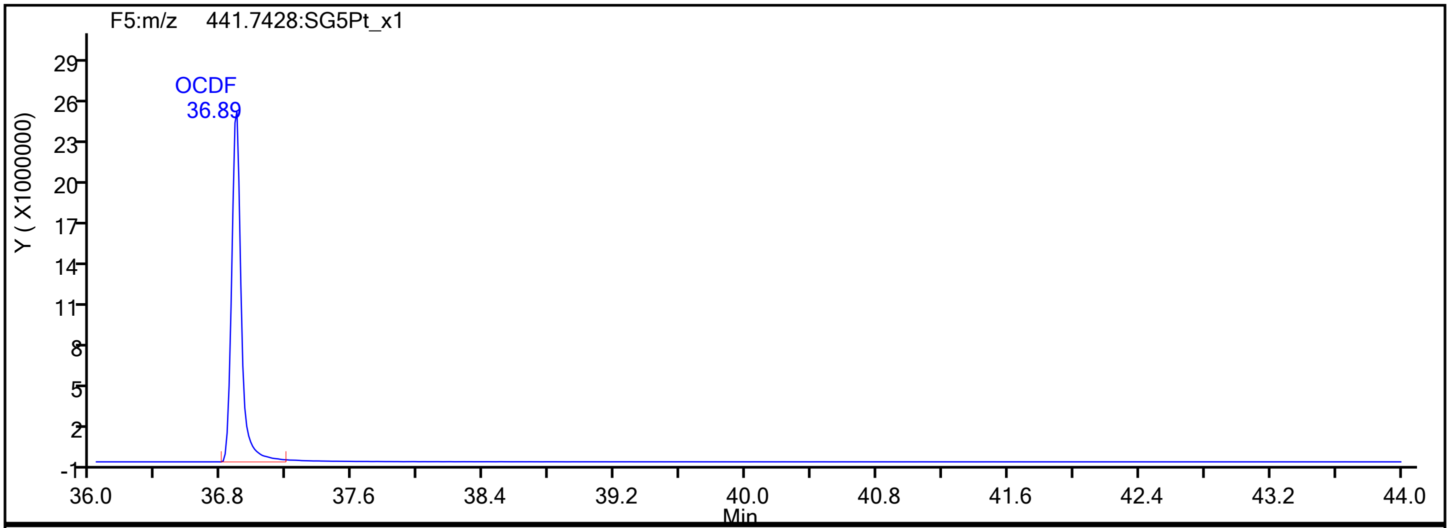

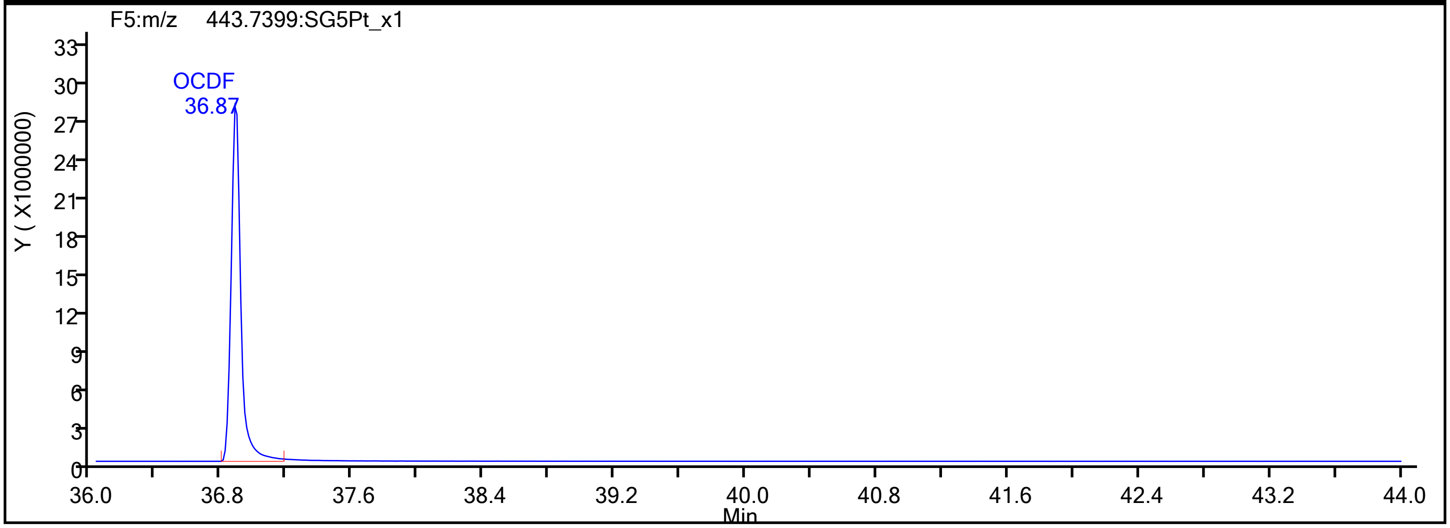

OCDF Interference Mass

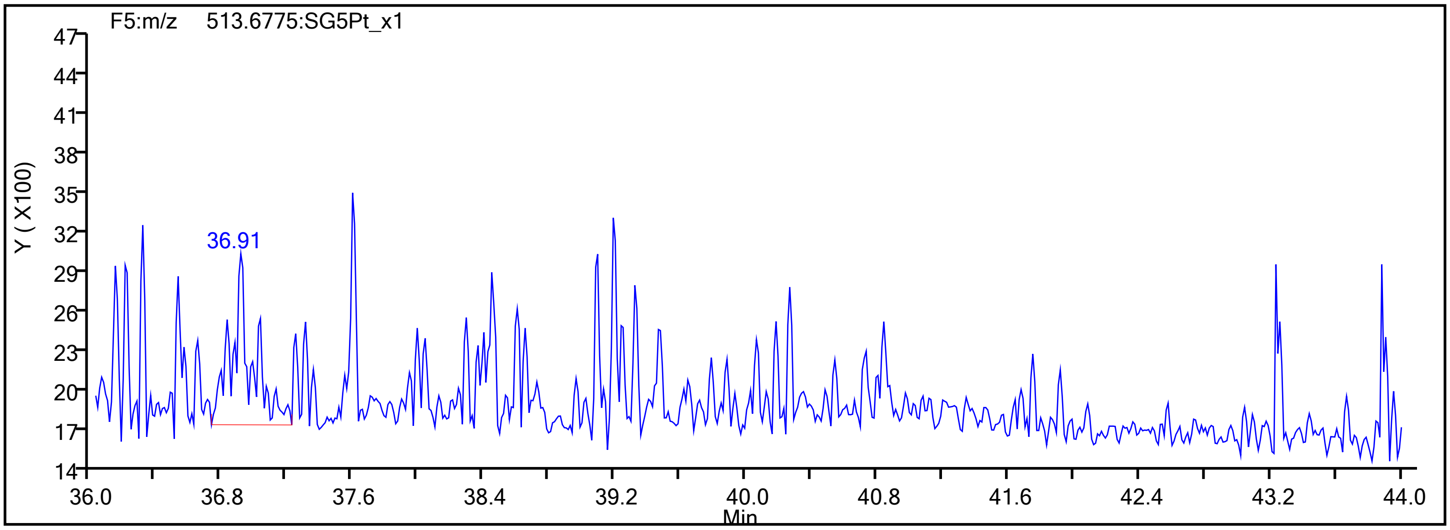

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

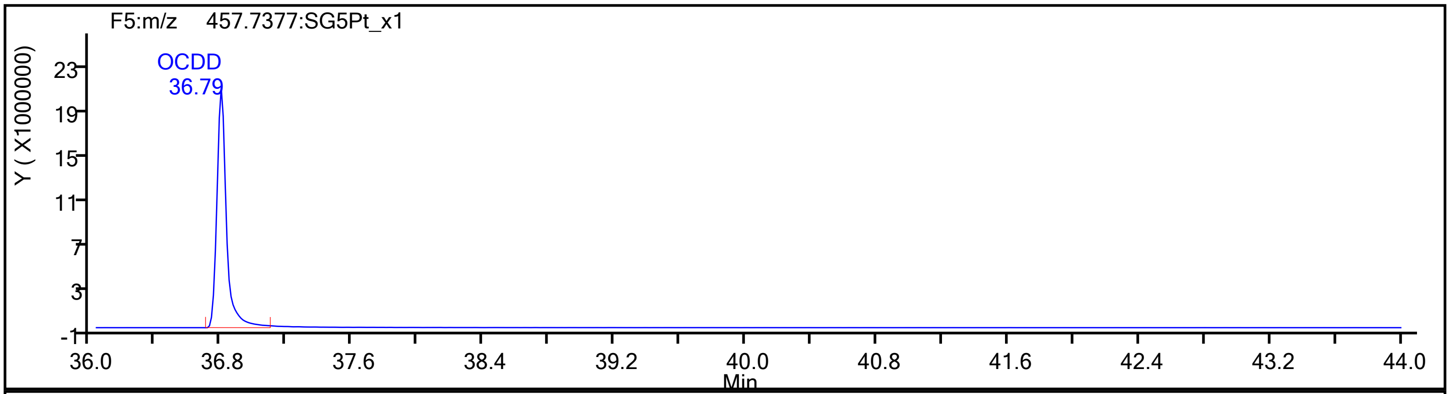

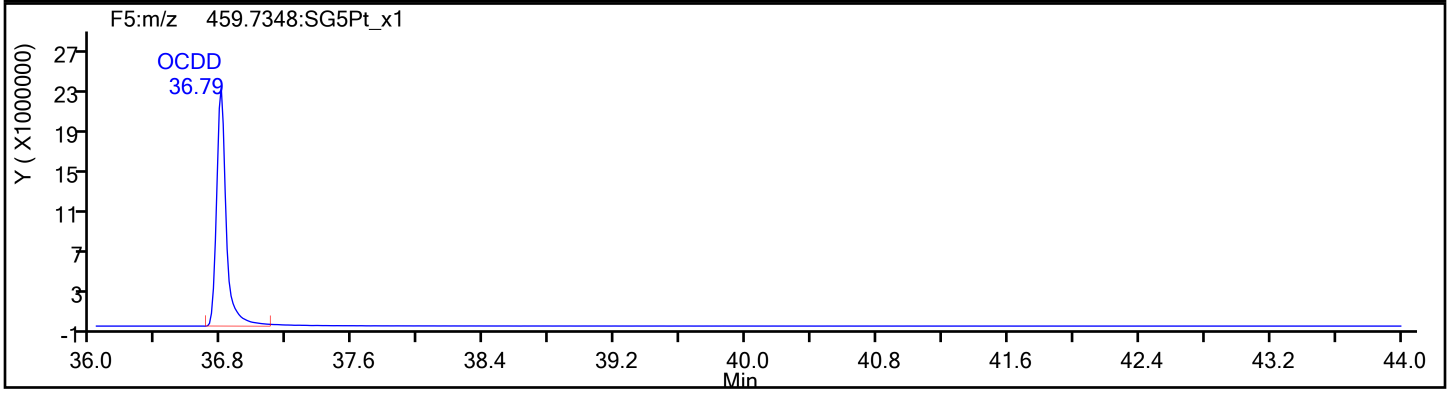

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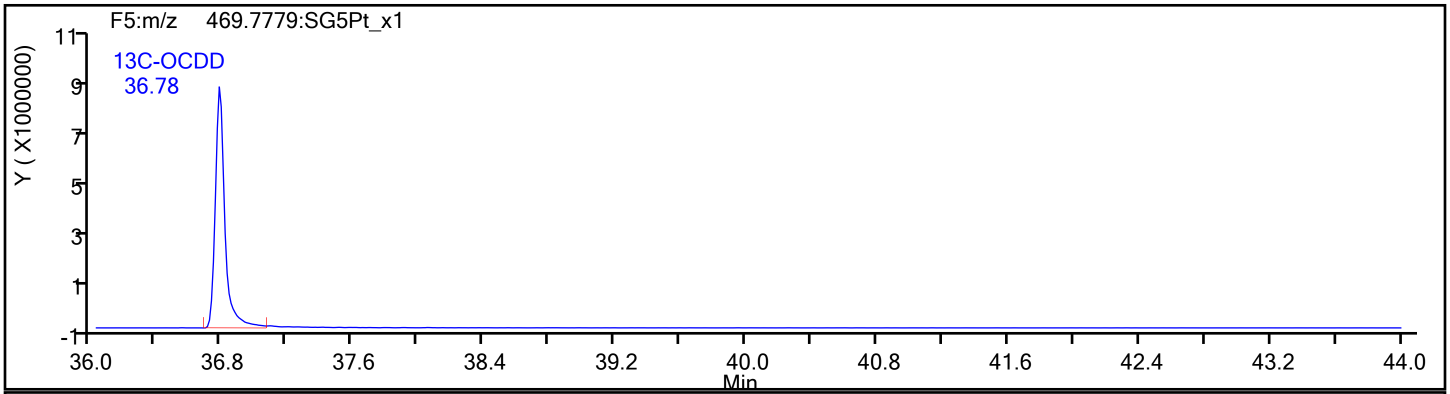

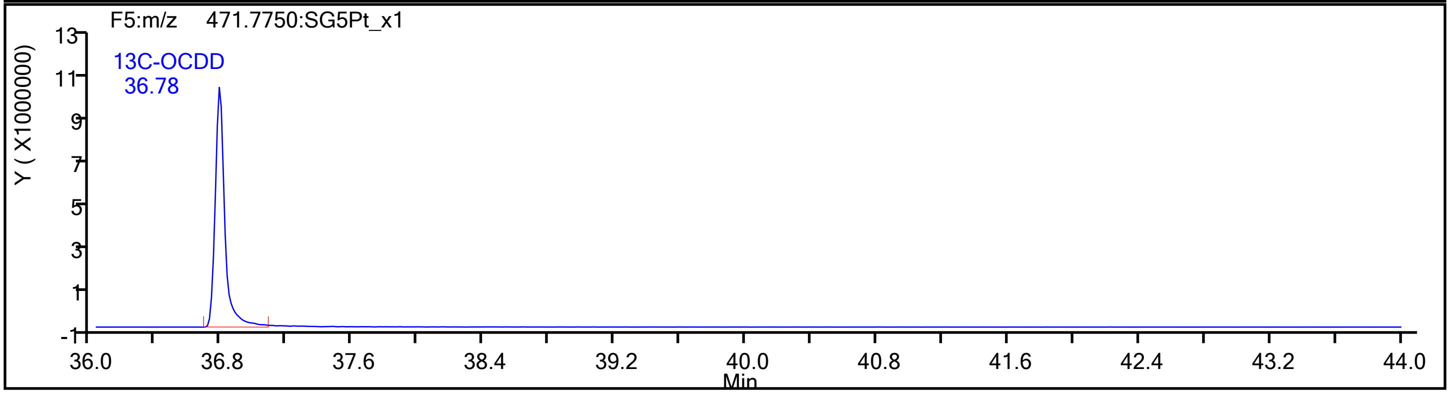

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Sep-2020 20:42:06 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

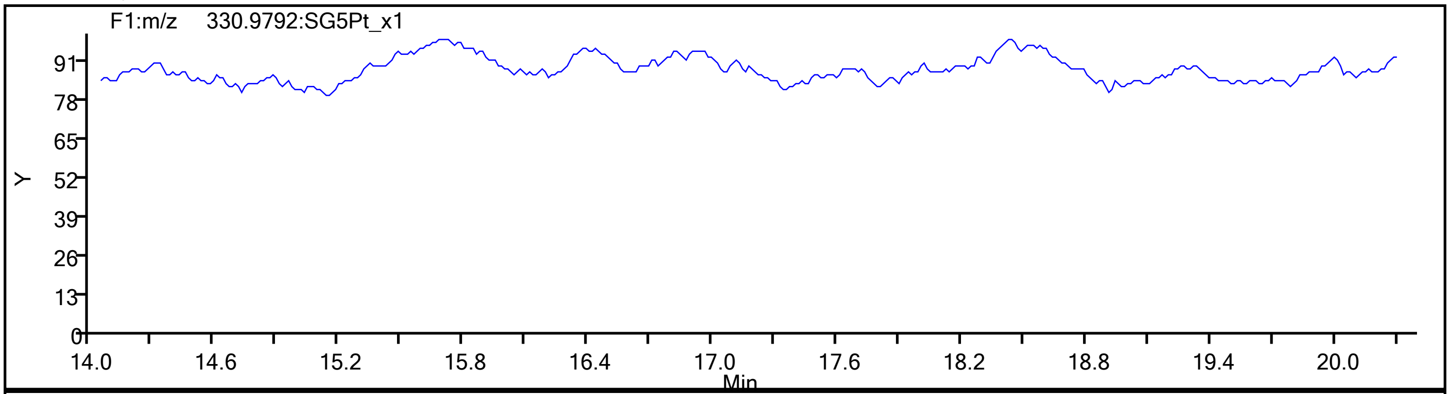

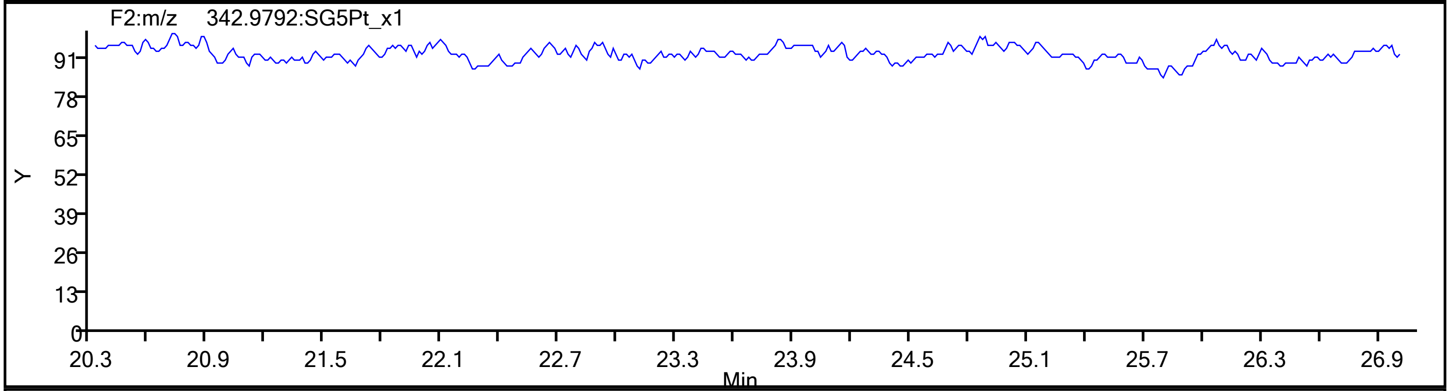

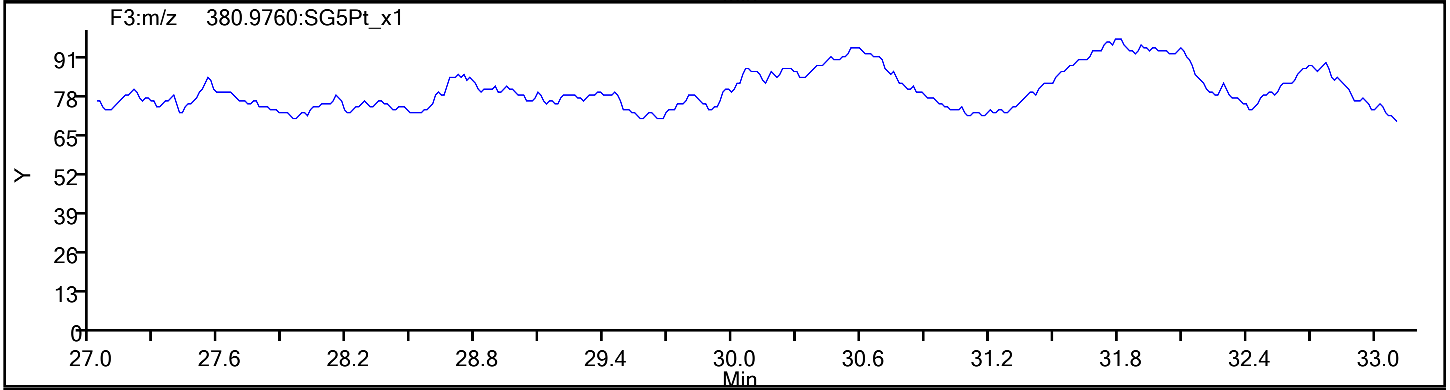

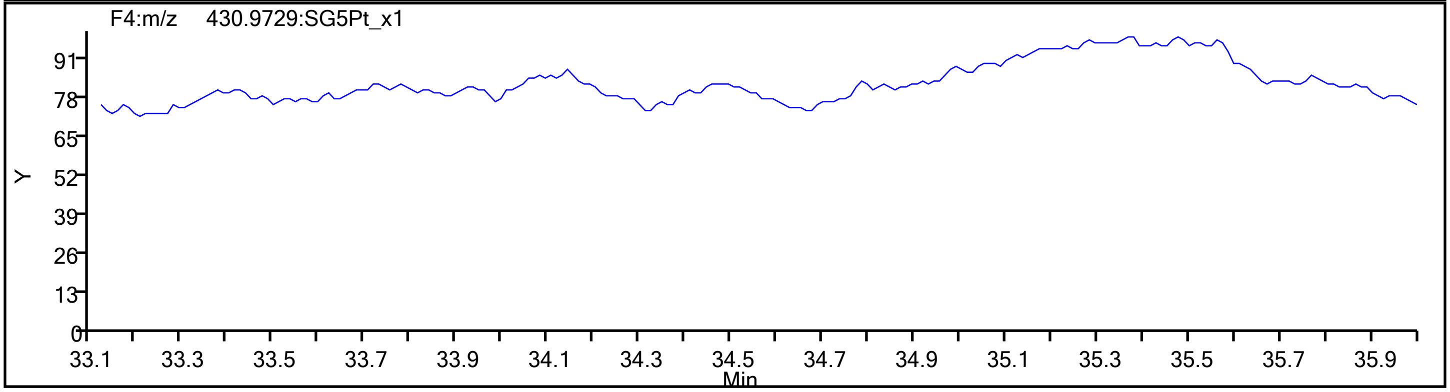

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

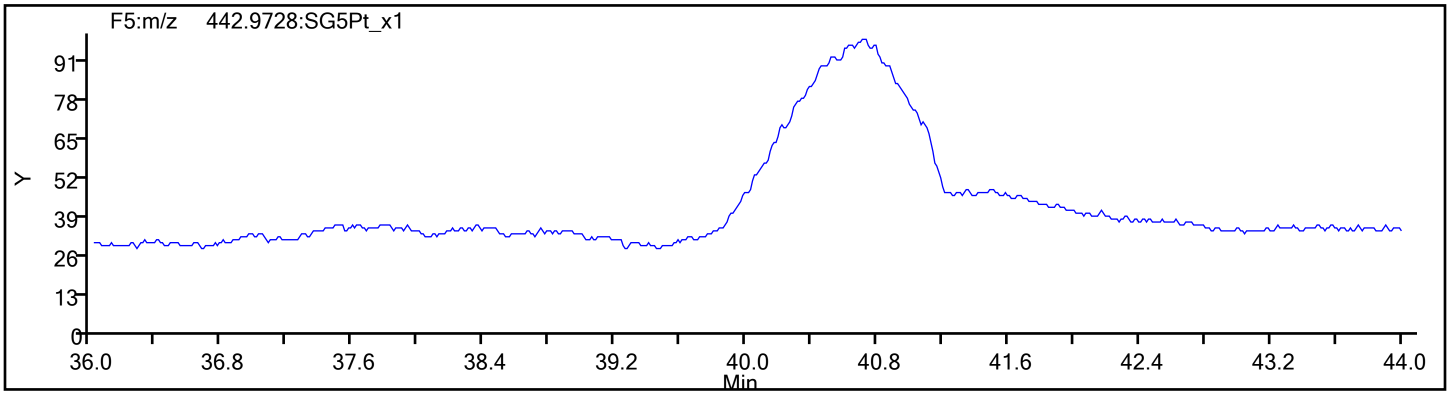

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID: CCV 320-435203/15 Calibration Date: 11/24/2020 15:13

Instrument ID: 10D5 Calib Start Date: 09/17/2020 16:09

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/17/2020 19:09

Lab File ID: 23NO2010D5_40.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9077	0.999		11.0	10.0	110	84-120
2,3,7,8-TCDD	AveID	1.006	1.099		10.9	10.0	109	78-129
1,2,3,7,8-PeCDF	AveID	0.9147	0.999		54.6	50.0	109	82-120
2,3,4,7,8-PeCDF	AveID	0.9508	1.053		55.4	50.0	111	82-122
1,2,3,7,8-PeCDD	AveID	0.995	1.022		51.3	50.0	103	78-130
1,2,3,4,7,8-HxCDF	AveID	1.109	1.186		53.5	50.0	107	90-112
1,2,3,6,7,8-HxCDF	AveID	1.072	1.146		53.5	50.0	107	88-114
2,3,4,6,7,8-HxCDF	AveID	1.084	1.173		54.1	50.0	108	88-114
1,2,3,4,7,8-HxCDD	AveID	1.001	1.150		57.4	50.0	115	78-128
1,2,3,6,7,8-HxCDD	AveID	0.8902	0.9741		54.7	50.0	109	78-128
1,2,3,7,8,9-HxCDD	AveID	1.058	1.178		55.7	50.0	111	82-122
1,2,3,7,8,9-HxCDF	AveID	1.093	1.194		54.6	50.0	109	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.360	1.408		51.8	50.0	104	90-110
1,2,3,4,6,7,8-HpCDD	AveID	0.999	1.050		52.6	50.0	105	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.321	1.393		52.7	50.0	105	86-116
OCDD	AveID	1.129	1.119		99.1	100	99	79-126
OCDF	AveID	1.414	1.446		102	100	102	63-159
13C-2,3,7,8-TCDF	Ave	1.360	1.600		118	100	118	71-140
13C-2,3,7,8-TCDD	Ave	1.054	1.022		97.0	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.131	1.206		107	100	107	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.054	1.112		105	100	105	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8084	0.7611		94.1	100	94	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9225	1.088		118	100	118	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.034	1.218		118	100	118	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9773	1.163		119	100	119	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7977	0.7515		94.2	100	94	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.001	1.001		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9153	1.058		116	100	116	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8506	0.8744		103	100	103	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8873	0.8180		92.2	100	92	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7618	0.7651		100	100	100	77-129
13C-OCDD	Ave	0.6287	0.5995		191	200	95	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.049	1.117		10.7	10.0	107	79-127

Sample List Report **MassLynx 4.1**

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	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	23NO2010D5_1	WDM HRDXNCP_00042	WDM 112320	Tray01:1	Dioxin	
2	23NO2010D5_2	CS-4 HRDXNL4_00095	CCV 112320	Tray01:2	Dioxin	
3	23NO2010D5_3	Solvent Blank C-14	SB 112320	Tray01:3	---	
4	23NO2010D5_4	MB 320-432815/1-A	MB 320-432815/1-A	Tray01:4	8290/Solid	88
5	23NO2010D5_5	LCS 320-432815/2-A	LCS 320-432815/2-A	Tray01:5	8290/Solid	
6	23NO2010D5_6	280-142427-A-1-B	280-142427-A-1-B	Tray01:6	8290/Solid	
7	23NO2010D5_7	280-142427-A-2-D	280-142427-A-2-D	Tray01:7	8290/Solid	
8	23NO2010D5_8	280-142427-A-2-E MS	280-142427-A-2-E MS	Tray01:8	8290/Solid	
9	23NO2010D5_9	280-142427-A-2-F MSD	280-142427-A-2-F MSD	Tray01:9	8290/Solid	
10	23NO2010D5_10	280-142538-A-1-B	280-142538-A-1-B	Tray01:10	8290/Solid	
11	23NO2010D5_11	280-142538-A-2-B	280-142538-A-2-B	Tray01:11	---	
12	23NO2010D5_12	Solvent Blank C-14	SB 112320A	Tray01:3	---	
13	23NO2010D5_13	CS-4 HRDXNL4_00095	CCV 112320A	Tray01:2	Dioxin	
14	23NO2010D5_14	WDM HRDXNCP_00042	WDM 112320A	Tray01:1	Dioxin	
15	23NO2010D5_15	LCS 320-42854/2-A RI	LCS 320-42854/2-A RI	Tray01:15	8290A/Solid	D197
16	23NO2010D5_16	280-142427-A-3-B	280-142427-A-3-B	Tray01:16	8290/Solid	88
17	23NO2010D5_17	280-142427-A-4-B	280-142427-A-4-B	Tray01:17	8290/Solid	
18	23NO2010D5_18	280-142427-A-5-B	280-142427-A-5-B	Tray01:18	8290/Solid	
19	23NO2010D5_19	280-142427-A-6-B	280-142427-A-6-B	Tray01:19	8290/Solid	
20	23NO2010D5_20	280-142427-A-7-B	280-142427-A-7-B	Tray01:20	8290/Solid	
21	23NO2010D5_21	280-142429-A-1-L 5x	280-142429-A-1-L 5x	Tray01:21	8290/Solid	87
22	23NO2010D5_22	280-142426-A-1-E 25x	280-142426-A-1-E 25x	Tray01:22	8290/Solid	
23	23NO2010D5_23	280-142429-A-2-H 25x	280-142429-A-2-H 25x	Tray01:23	8290/Solid	
24	23NO2010D5_24	Solvent Blank C-14	SB 112320B	Tray01:3	---	
25	23NO2010D5_25	Solvent Blank C-14	SB 112320C	Tray01:3	---	
26	23NO2010D5_26	CS-4 HRDXNL4_00095	CCV 112320B	Tray01:2	Dioxin	
27	23NO2010D5_27	WDM HRDXNCP_00042	WDM 112320C	Tray01:1	Dioxin	
28	23NO2010D5_28	Solvent Blank C-14	SB 112320D	Tray01:3	---	
29	23NO2010D5_29	MB 320-433563/1-A	MB 320-433563/1-A	Tray01:29	1613B/T/Water	D199
30	23NO2010D5_30	LCS 320-433563/2-A	LCS 320-433563/2-A	Tray01:30	1613B/T/Water	
31	23NO2010D5_31	LCSD 320-433563/3-A	LCSD 320-433563/3-A	Tray01:31	1613B/T/Water	
32	23NO2010D5_32	320-66905-A-2-A	320-66905-A-2-A	Tray01:32	1613B/Water	
33	23NO2010D5_33	440-275072-G-2-A	440-275072-G-2-A	Tray01:33	1613B/Water	
34	23NO2010D5_34	280-142761-A-2-B	280-142761-A-2-B	Tray01:34	1613B/Water	
35	23NO2010D5_35	320-66671-B-1-B	320-66671-B-1-B	Tray01:35	1613B/Water	
36	23NO2010D5_36	320-66848-A-1-A	320-66848-A-1-A	Tray01:36	1613B_T/Water	
37	23NO2010D5_37	320-66853-B-1-A	320-66853-B-1-A	Tray01:37	1613B_T/Water	
38	23NO2010D5_38	320-66854-A-1-A	320-66854-A-1-A	Tray01:38	1613B_T/Water	
39	23NO2010D5_39	Solvent Blank C-14	SB 112320E	Tray01:3	---	
40	23NO2010D5_40	CS-4 HRDXNL4_00095	CCV 112320C	Tray01:2	Dioxin	
41	23NO2010D5_41	WDM HRDXNCP_00042	WDM 112320C	Tray01:1	Dioxin	
42	23NO2010D5_42	Solvent Blank C-14	SB 112320F	Tray01:3	---	
43	23NO2010D5_43	320-66855-B-1-A	320-66855-B-1-A	Tray01:43	1613B_T/Water	D199
44	23NO2010D5_44	320-66856-A-1-A	320-66856-A-1-A	Tray01:44	1613B_T/Water	
45	23NO2010D5_45	320-66905-A-1-A	320-66905-A-1-A	Tray01:45	1613B_T/Water	
46	23NO2010D5_46	MB 320-434708/1-A	MB 320-434708/1-A	Tray01:46	1613B(T)/Water	D201
47	23NO2010D5_47	LCS 320-434708/2-A	LCS 320-434708/2-A	Tray01:47	1613B(T)/Water	
48	23NO2010D5_48	LCSD 320-434708/3-A	LCSD 320-434708/3-A	Tray01:48	1613B(T)/Water	
49	23NO2010D5_49	550-153270-B-4-A	550-153270-B-4-A	Tray01:49	1613B_T/Water	
50	23NO2010D5_50	280-142970-B-2-A	280-142970-B-2-A	Tray01:50	1613B/Water	
51	23NO2010D5_51	320-66979-B-1-A	320-66979-B-1-A	Tray01:51	1613B_T/Water	
52	23NO2010D5_52	LCS 320-432973/2-A RA	LCS 320-432973/2-A	Tray01:52	1613B(T)/Water	D200
53	23NO2010D5_53	LCSD 320-432973/3-A RA	LCSD 320-432973/3-A	Tray01:53	1613B(T)/Water	
54	23NO2010D5_54	Solvent Blank C-14	SB 112320G	Tray01:3	---	
55	23NO2010D5_55	WDM HRDXNCP_00042	WDM 112320D	Tray01:1	Dioxin	
56	23NO2010D5_56	CS-4 HRDXNL4_00095	CCV 112320D	Tray01:2	Dioxin	
57	23NO2010D5_57	Solvent Blank C-14	SB 112320H	Tray01:3	---	
58	23NO2010D5_58	LCS 320-432203/2-A RA	LCS 320-432203/2-A	Tray01:57	1613B(T)/Water	D199

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
59	23NO2010D5_59	LCSD 320-432203/3-A RA	LCSD 320-432203/3-A	Tray01:58	1613B(T)/Water	
60	23NO2010D5_60	MB 320-434702/1-A	MB 320-434702/1-A	Tray01:59	8290A(_D5)/Water	D201
61	23NO2010D5_61	LCS 320-434702/2-A	LCS 320-434702/2-A	Tray01:60	8290A(_D5)/Water	
62	23NO2010D5_62	320-67042-A-1-A	320-67042-A-1-A	Tray01:61	8290A/Water	
63	23NO2010D5_63	320-67042-A-2-A	320-67042-A-2-A	Tray01:62	8290A/Water	
64	23NO2010D5_64	680-191807-P-11-A	680-191807-P-11-A	Tray01:63	8290A_D5/Water	
65	23NO2010D5_65	680-191807-Q-11-A MS	680-191807-Q-11-A MS	Tray01:64	8290A_D5/Water	
66	23NO2010D5_66	680-191807-P-11-B MSD	680-191807-P-11-B MSD	Tray01:65	8290A_D5/Water	
67	23NO2010D5_67	Solvent Blank C-14	SB 112320I	Tray01:3	---	
68	23NO2010D5_68	CS-4 HRDXNL4_00095	CCV 112320E	Tray01:2	Dioxin	
69	23NO2010D5_69	WDM HRDXNCP_00042	WDM 112320E	Tray01:1	Dioxin	
70	23NO2010D5_70	CS-4 HRDXNL4_00095	CCV 112320F	Tray01:2	Dioxin	
71	23NO2010D5_71	Solvent Blank C-14	SB 112320J	Tray01:3	---	
72	23NO2010D5_72	mb 320-433926/1-a	mb 320-433926/1-a	Tray01:71	8290A(_D5)/Water	D200
73	23NO2010D5_73	lcs 320-433926/2-a	lcs 320-433926/2-a	Tray01:72	8290A(_D5)/Water	
74	23NO2010D5_74	lcsd 320-433926/3-a	lcsd 320-433926/3-a	Tray01:73	8290A(_D5)/Water	
75	23NO2010D5_75	680-191601-k-1-a	680-191601-k-1-a	Tray01:74	8290A(_D5)/Water	
76	23NO2010D5_76	680-191601-o-2-a	680-191601-o-2-a	Tray01:75	8290A(_D5)/Water	
77	23NO2010D5_77	680-191601-c-3-a	680-191601-c-3-a	Tray01:76	8290A(_D5)/Water	
78	23NO2010D5_78	680-191601-m-4-a	680-191601-m-4-a	Tray01:77	8290A(_D5)/Water	
79	23NO2010D5_79	680-191601-g-5-a	680-191601-g-5-a	Tray01:78	8290A(_D5)/Water	
80	23NO2010D5_80	680-191736-p-1-a	680-191736-p-1-a	Tray01:79	8290A(_D5)/Water	
81	23NO2010D5_81	680-191736-p-7-a	680-191736-p-7-a	Tray01:80	8290A(_D5)/Water	
82	23NO2010D5_82	Solvent Blank C-14	SB 112320K	Tray01:3	---	
83	23NO2010D5_83	CS-4 HRDXNL4_00095	CCV 112320G	Tray01:2	Dioxin	
84	23NO2010D5_84	WDM HRDXNCP_00042	WDM 112320F	Tray01:1	Dioxin	
85	23NO2010D5_85	CS-4 HRDXNL4_00095	CCV 112320H	Tray01:2	Dioxin	
86	23NO2010D5_86	Solvent Blank C-14	SB 112320L	Tray01:3	---	
87	23NO2010D5_87	mb 320-432518/1-a	mb 320-432518/1-a	Tray01:85	8290A(_D5)/Water	D200
88	23NO2010D5_88	lcs 320-432518/2-a	lcs 320-432518/2-a	Tray01:86	8290A(_D5)/Water	
89	23NO2010D5_89	680-191736-p-9-a	680-191736-p-9-a	Tray01:87	8290A(_D5)/Water	
90	23NO2010D5_90	680-191736-q-12-a	680-191736-q-12-a	Tray01:88	8290A(_D5)/Water	
91	23NO2010D5_91	280-142750-a-9-a	280-142750-a-9-a	Tray01:89	8290A(_D5)/Water	
92	23NO2010D5_92	280-142750-b-9-a ms	280-142750-b-9-a ms	Tray01:90	8290A(_D5)/Water	
93	23NO2010D5_93	280-142750-b-9-b msd	280-142750-b-9-b msd	Tray01:91	8290A(_D5)/Water	
94	23NO2010D5_94	680-191404-c-1-a	680-191404-c-1-a	Tray01:92	8290A(_D5)/Water	
95	23NO2010D5_95	680-191404-d-2-a	680-191404-d-2-a	Tray01:93	8290A(_D5)/Water	
96	23NO2010D5_96	680-191404-d-3-a	680-191404-d-3-a	Tray01:94	8290A(_D5)/Water	
97	23NO2010D5_97	Solvent Blank C-14	SB 112320M	Tray01:3	---	
98	23NO2010D5_98	CS-4 HRDXNL4_00095	CCV 112320I	Tray01:2	Dioxin	
99	23NO2010D5_99	WDM HRDXNCP_00042	WDM 112320G	Tray01:1	Dioxin	
100	23NO2010D5_100	CS-4 HRDXNL4_00095	CCV 112320J	Tray01:2	Dioxin	
101	23NO2010D5_101	Solvent Blank C-14	SB 112320N	Tray01:3	---	
102	23NO2010D5_102	280-142750-a-1-a	280-142750-a-1-a	Tray01:4	8290A(_D5)/Water	D200
103	23NO2010D5_103	280-142750-b-2-a	280-142750-b-2-a	Tray01:5	8290A(_D5)/Water	
104	23NO2010D5_104	280-142750-b-3-a	280-142750-b-3-a	Tray01:6	8290A(_D5)/Water	
105	23NO2010D5_105	280-142750-b-4-a	280-142750-b-4-a	Tray01:7	8290A(_D5)/Water	
106	23NO2010D5_106	280-142750-b-5-a	280-142750-b-5-a	Tray01:8	8290A(_D5)/Water	
107	23NO2010D5_107	280-142750-a-6-a	280-142750-a-6-a	Tray01:9	8290A(_D5)/Water	
108	23NO2010D5_108	280-142750-b-7-a	280-142750-b-7-a	Tray01:10	8290A(_D5)/Water	
109	23NO2010D5_109	280-142750-b-8-a	280-142750-b-8-a	Tray01:11	8290A(_D5)/Water	
110	23NO2010D5_110	280-142750-b-10-a	280-142750-b-10-a	Tray01:12	8290A(_D5)/Water	
111	23NO2010D5_111	320-66517-o-9-a	320-66517-o-9-a	Tray01:15	8290A(_D5)/Water	
112	23NO2010D5_112	Solvent Blank C-14	SB 112320O	Tray01:3	---	
113	23NO2010D5_113	CS-4 HRDXNL4_00095	CCV 112320K	Tray01:2	Dioxin	

Log File Reviewed
RDR
11/25/20

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
KSS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck

Process Options	Action On Error	s5
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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Process Options	Action On Error	s5
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

Resolution Check Report **MassLynx 4.1**

Printed: Tuesday, November 24, 2020 04:03:00 Pacific Standard Time

M 292.9824 R 11441

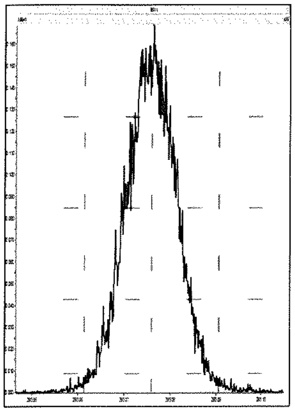

M 304.9824 R 11520

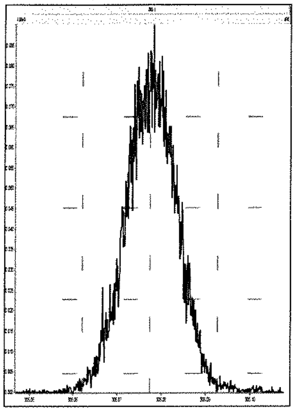

M 318.9792 R 11904

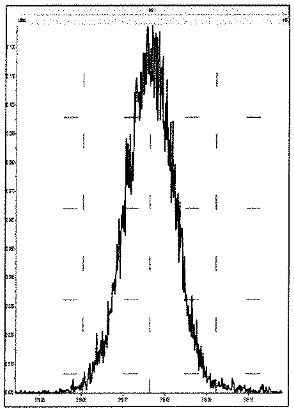

M 330.9792 R 11691

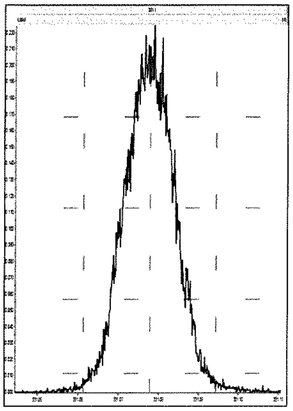

M 342.9792 R 11550

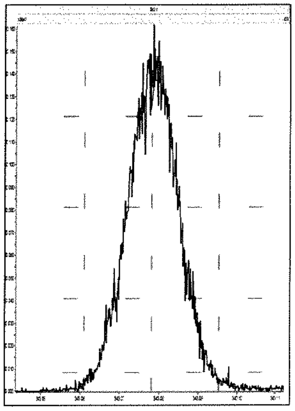

M 354.9792 R 11728

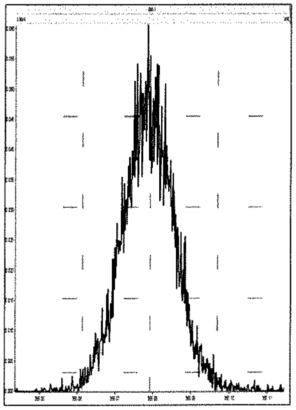

M 366.9792 R 11869

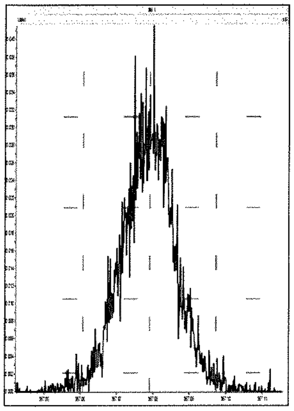

M 380.9760 R 11312

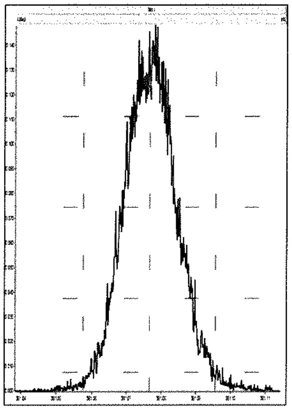

M 392.9760 R 11665

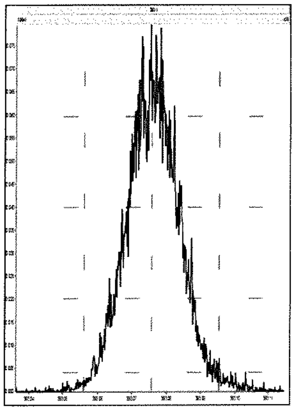

M 404.9760 R 11289

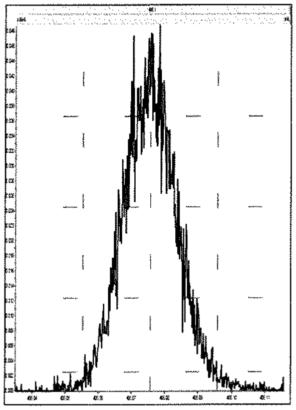

M 416.9760 R 12406

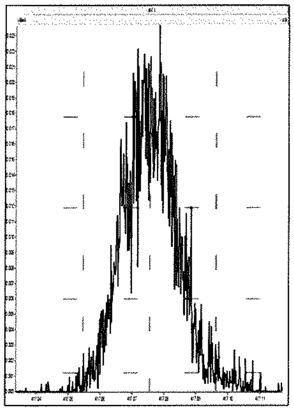

M 318.9792 R 12109

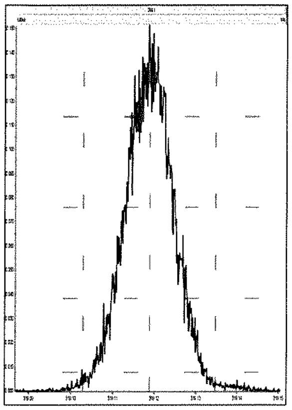

M 330.9792 R 11876

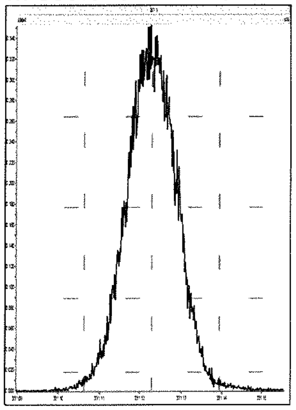

M 342.9792 R 12138

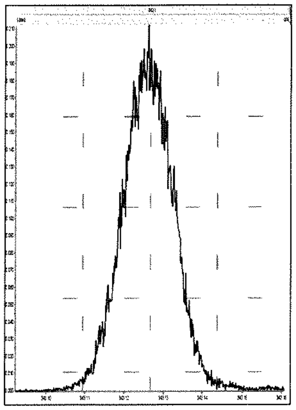

M 354.9792 R 11991

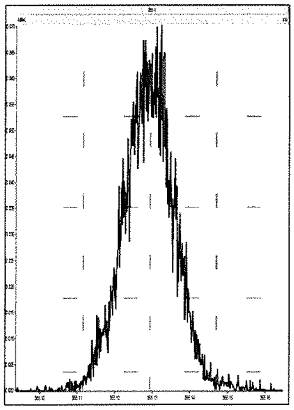

M 366.9792 R 11112

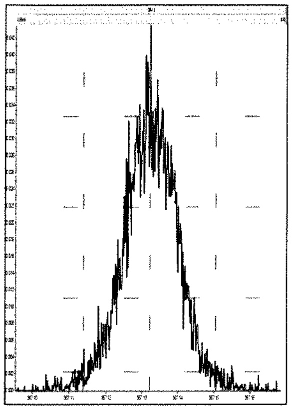

M 380.9760 R 12165

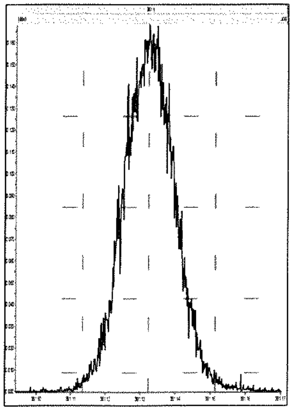

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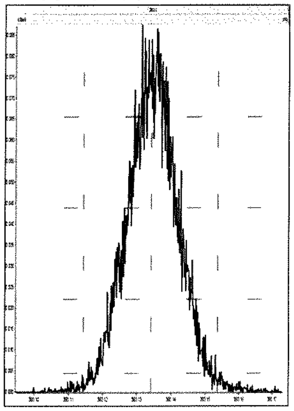

M 404.9760 R 11767

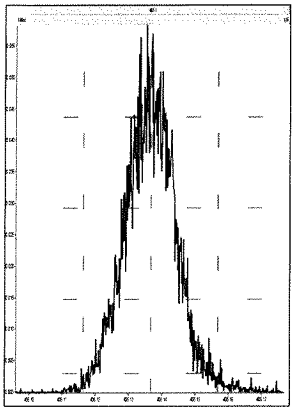

M 416.9760 R 12196

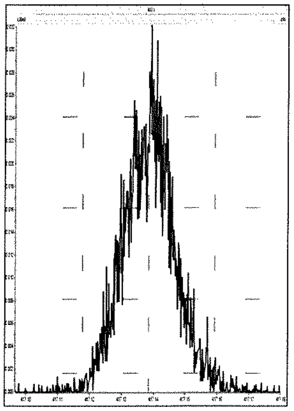

M 366.9792 R 11585

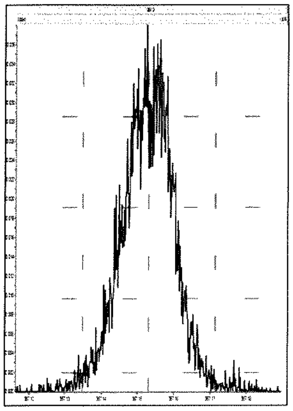

M 380.9760 R 11709

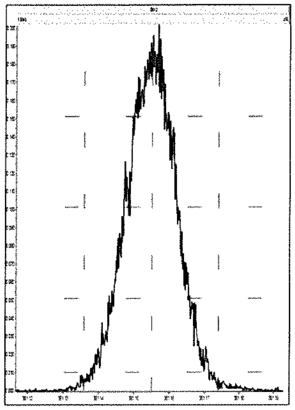

M 392.9760 R 11884

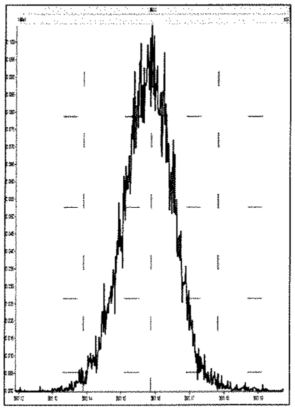

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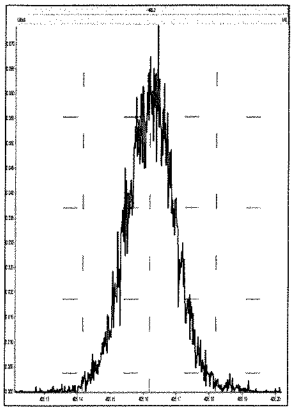

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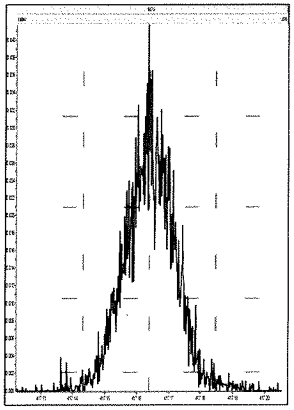

M 430.9728 R 11709

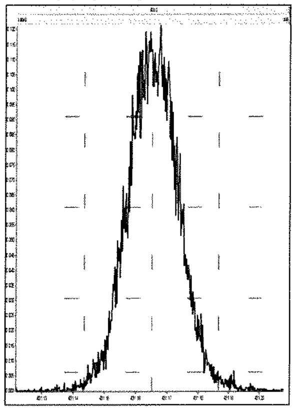

M 442.9728 R 11792

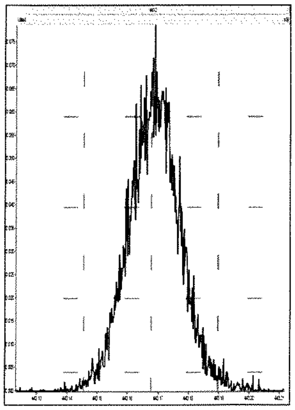

M 454.9728 R 11891

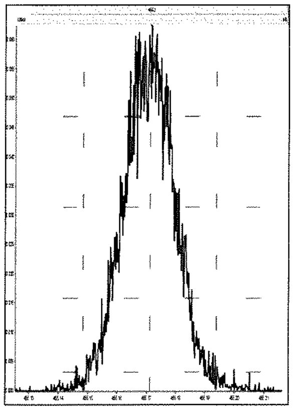

M 380.9760 R 11493

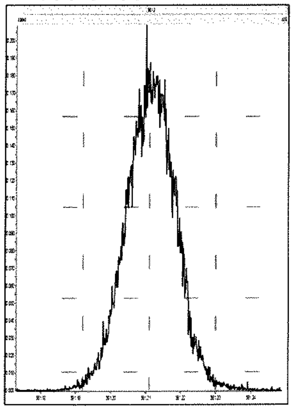

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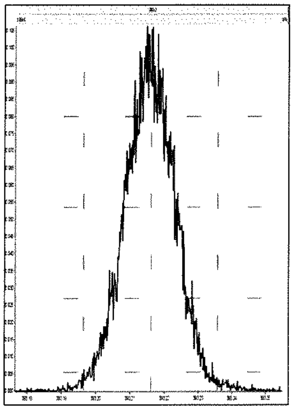

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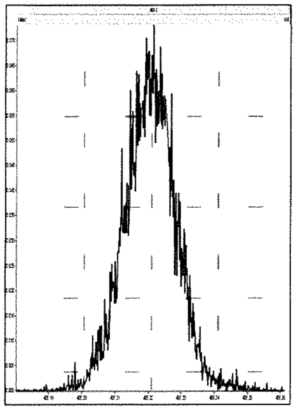

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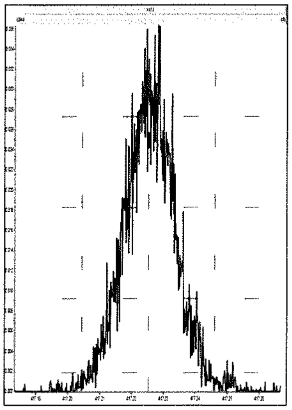

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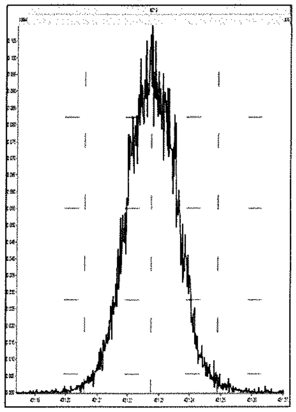

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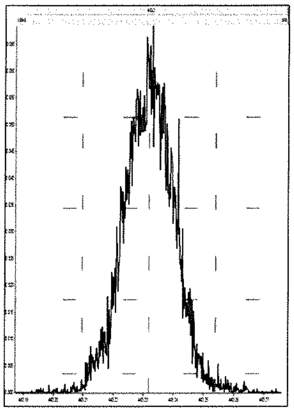

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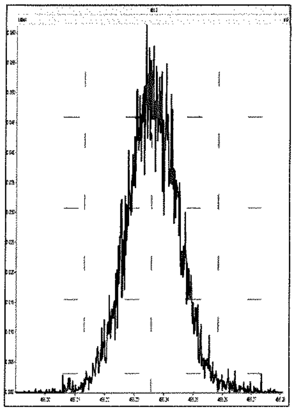

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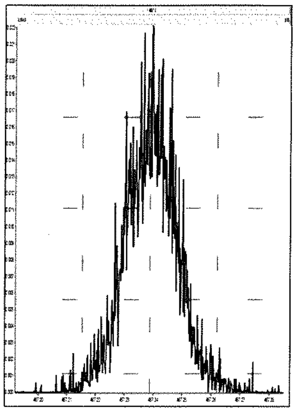

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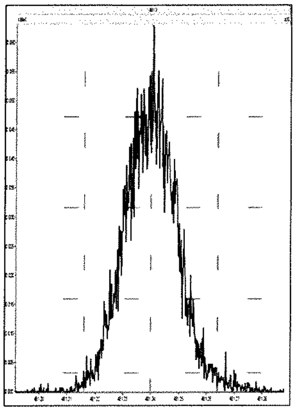

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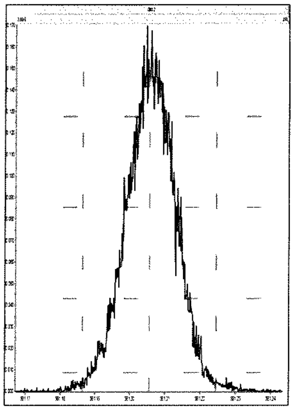

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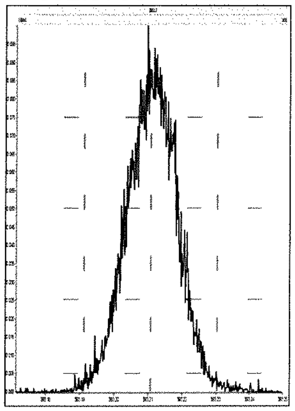

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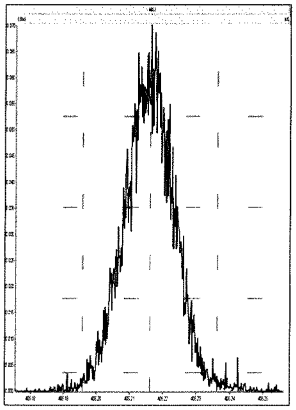

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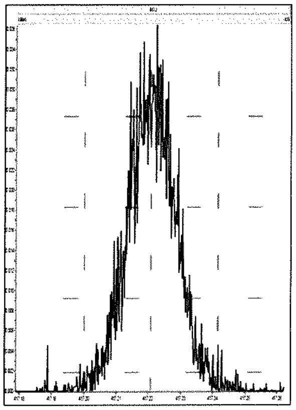

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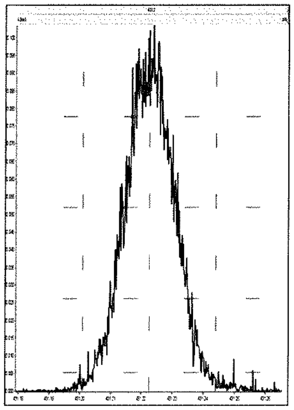

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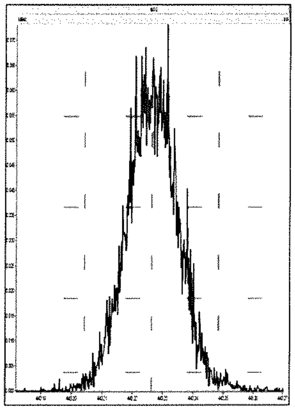

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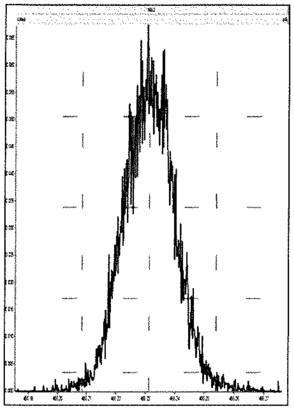

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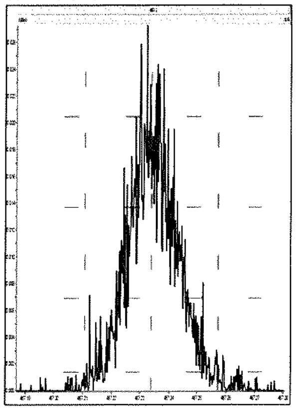

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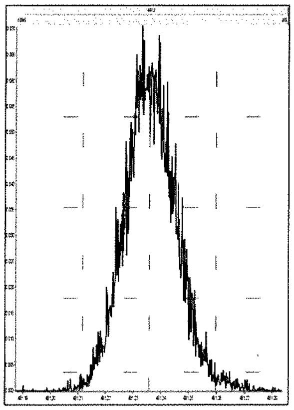

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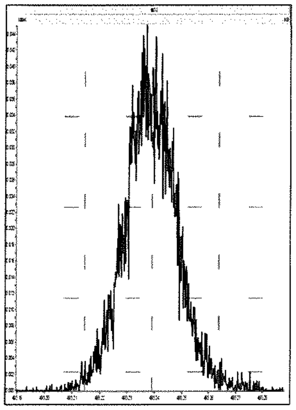

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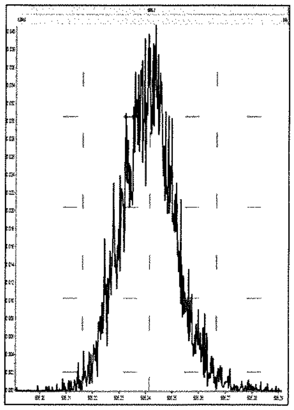

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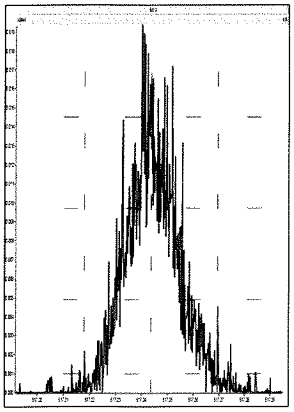

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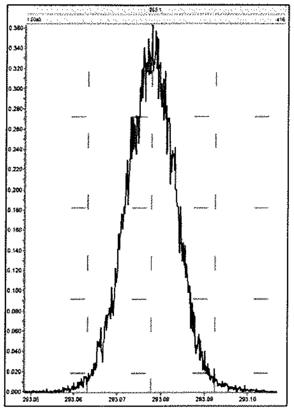

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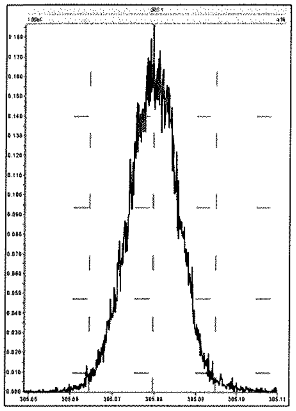

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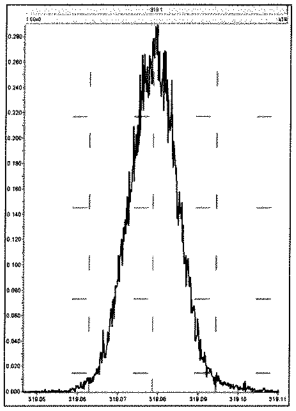

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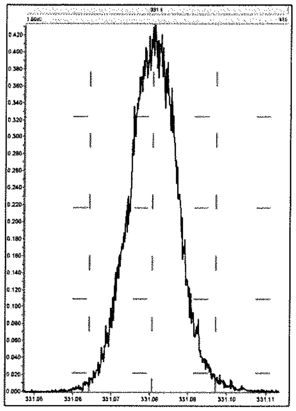

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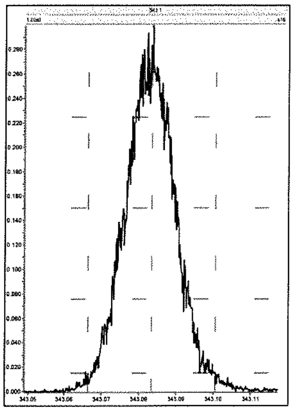

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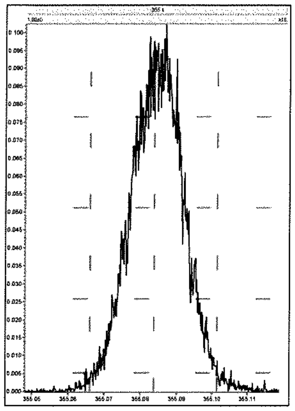

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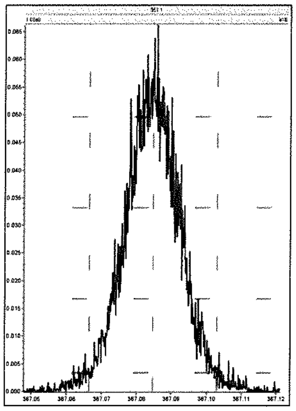

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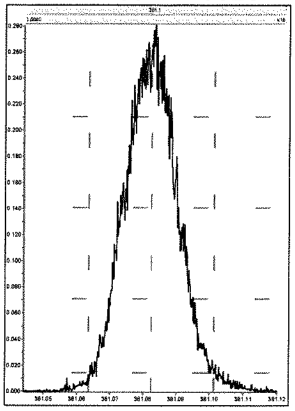

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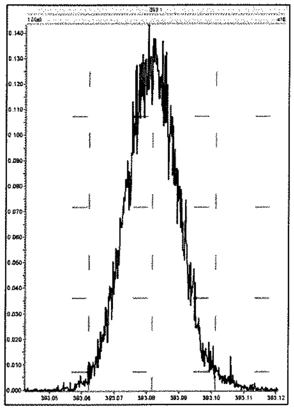

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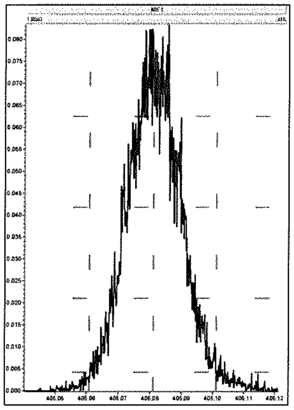

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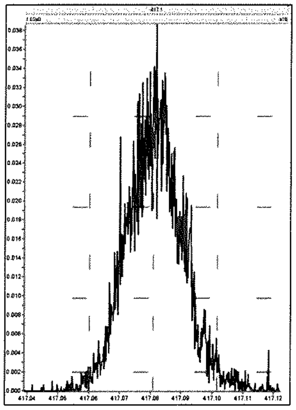

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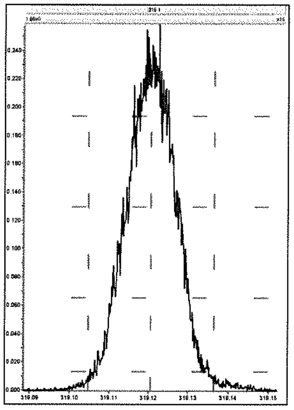

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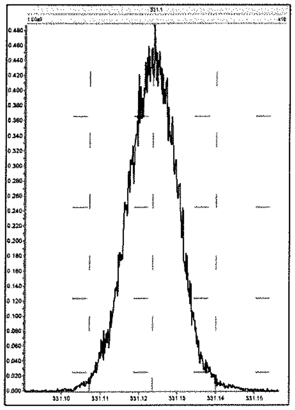

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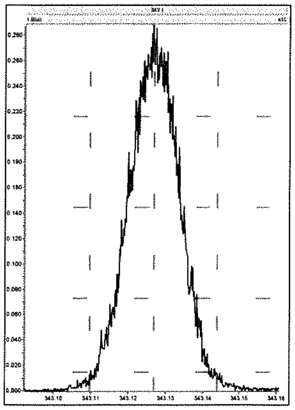

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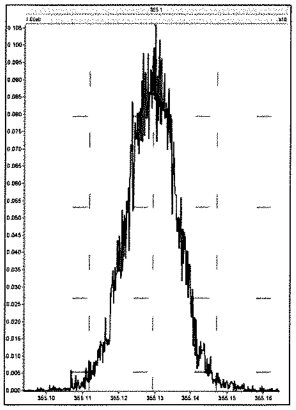

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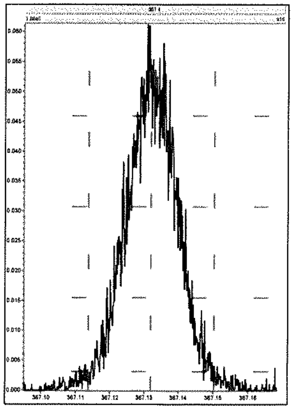

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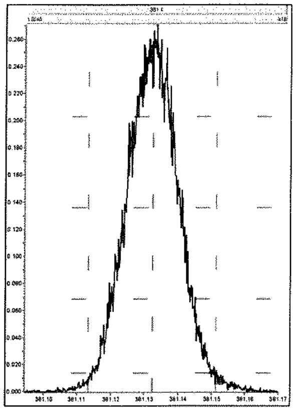

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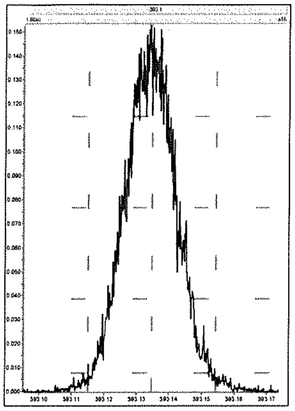

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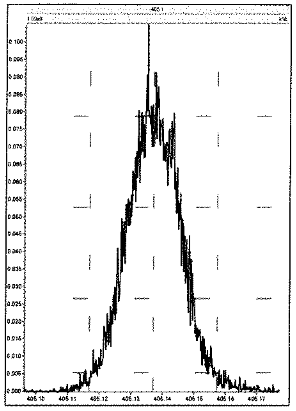

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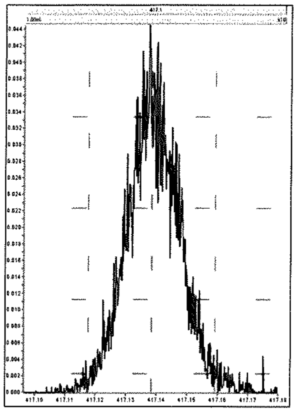

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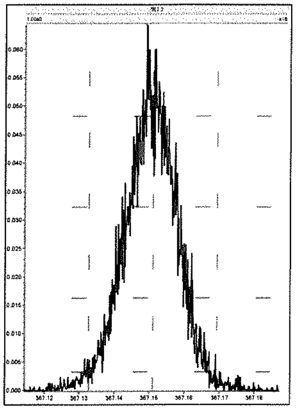

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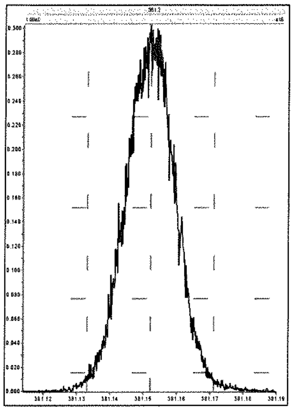

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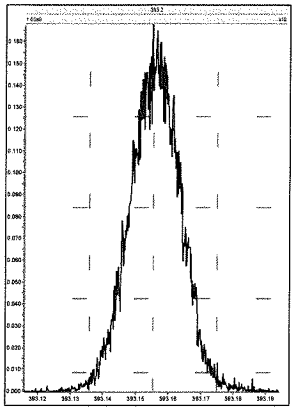

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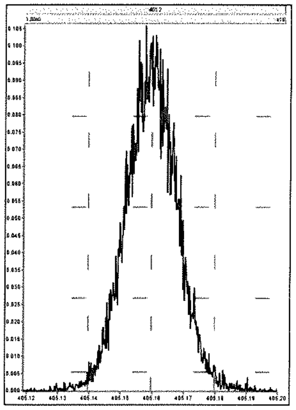

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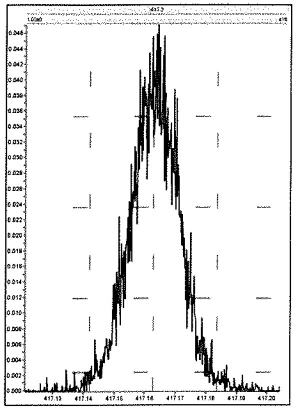

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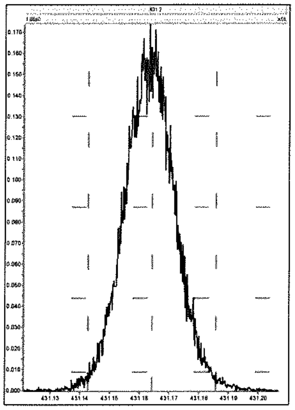

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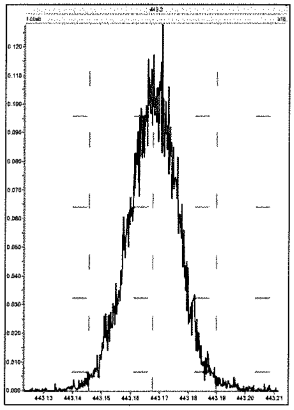

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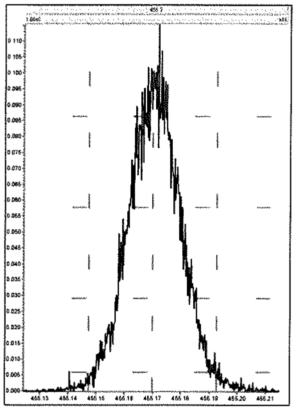

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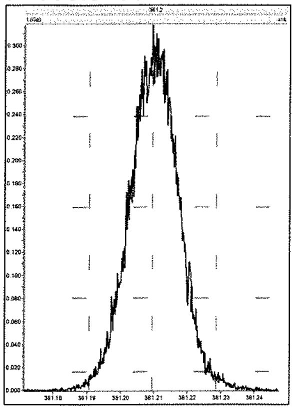

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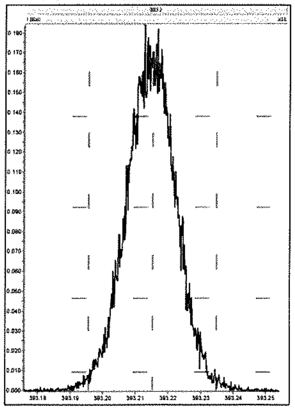

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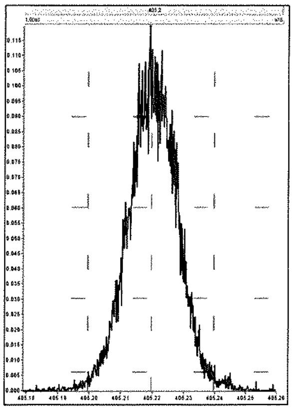

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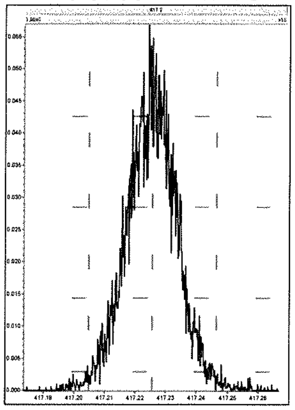

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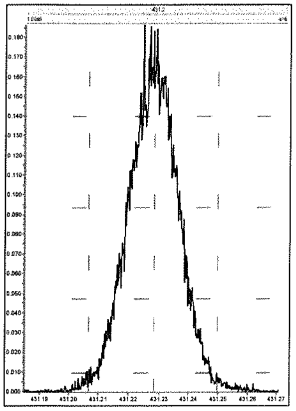

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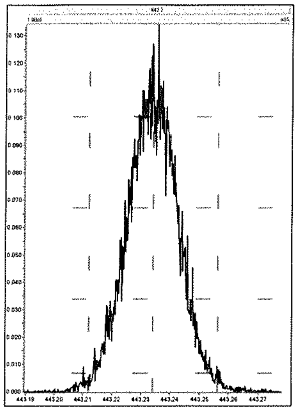

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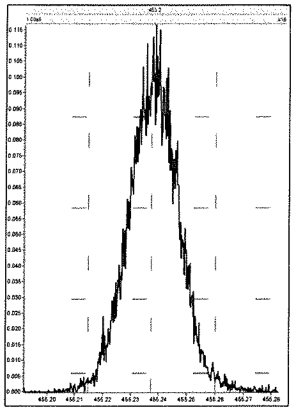

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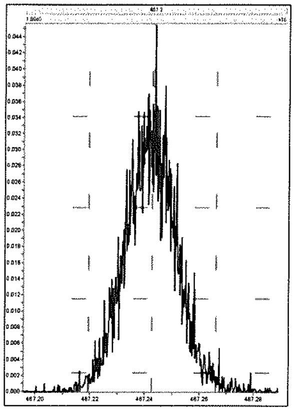

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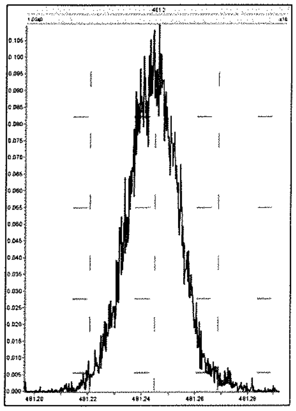

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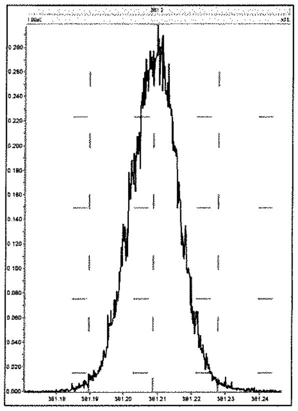

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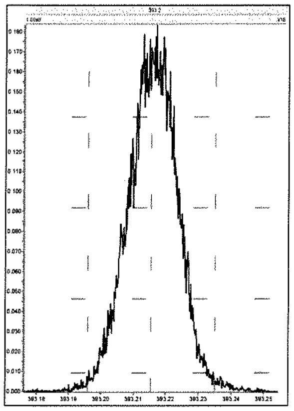

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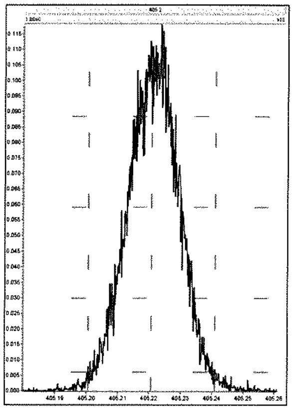

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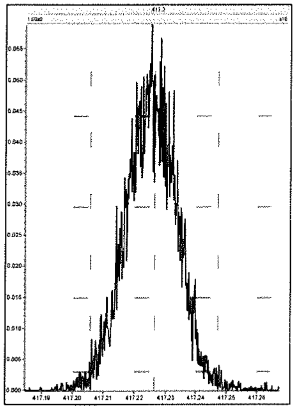

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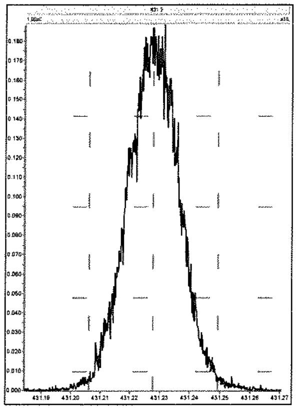

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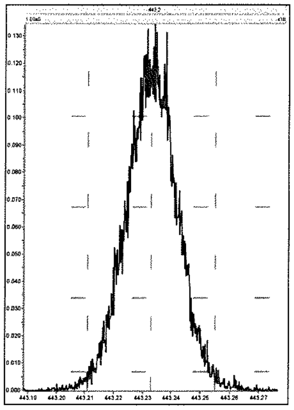

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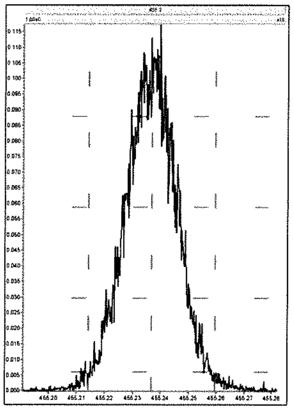

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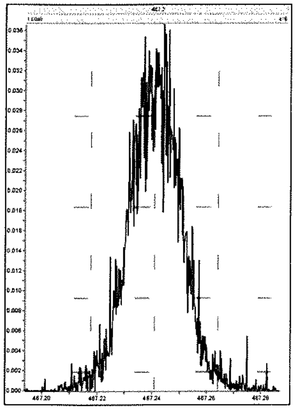

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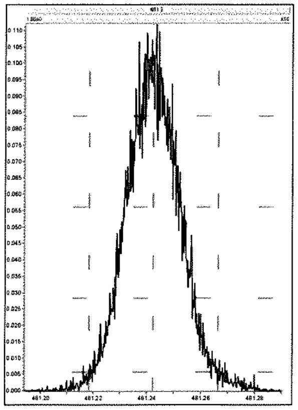

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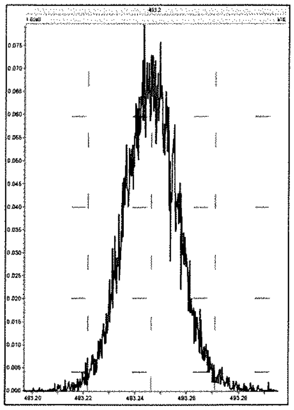

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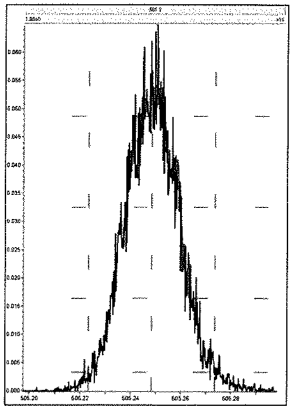

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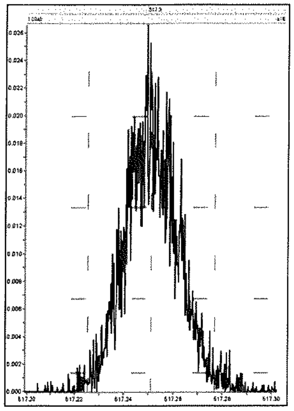

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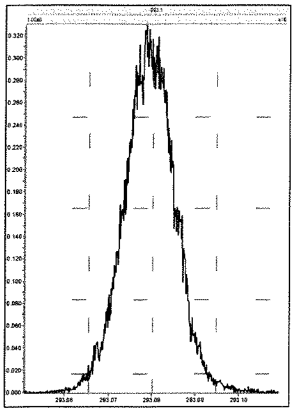

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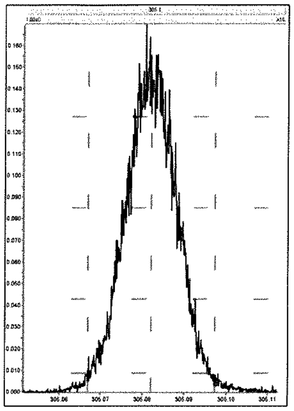

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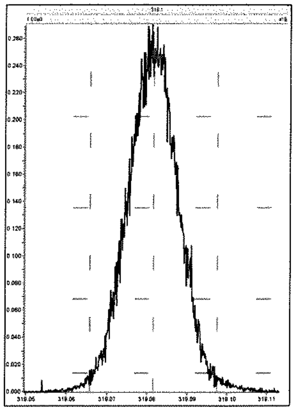

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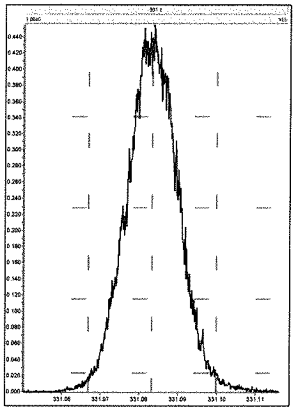

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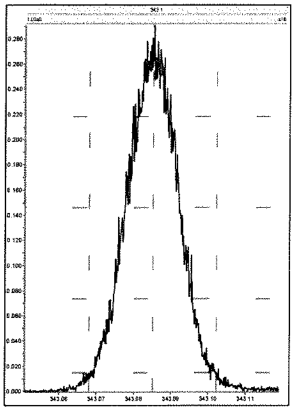

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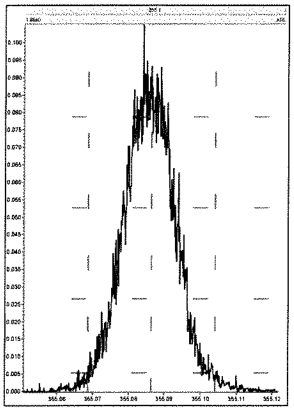

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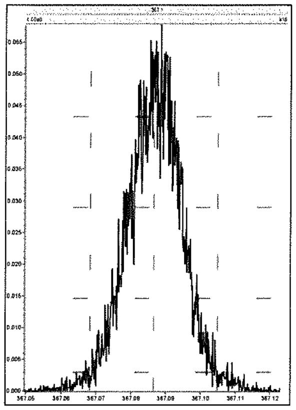

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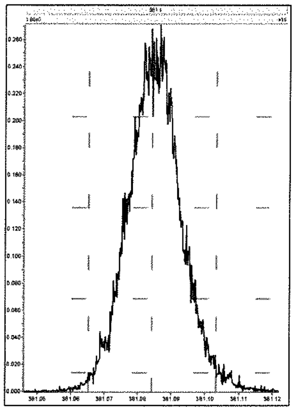

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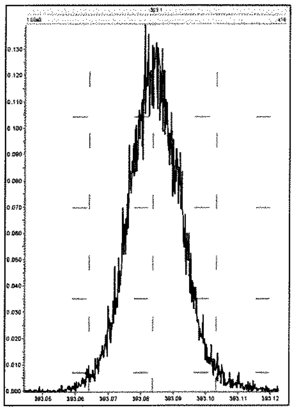

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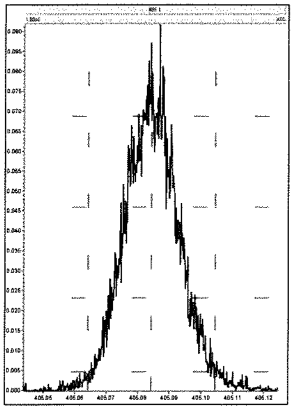

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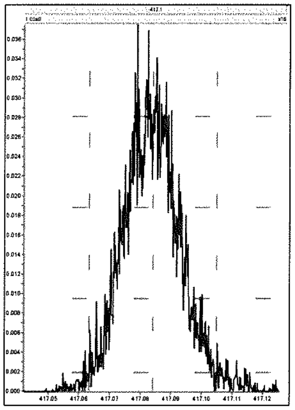

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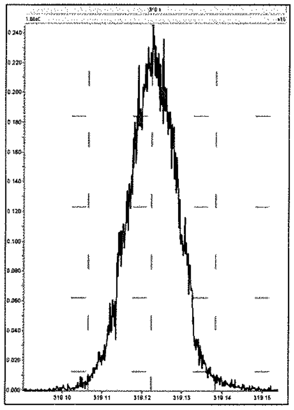

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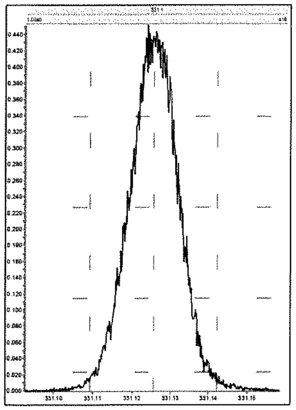

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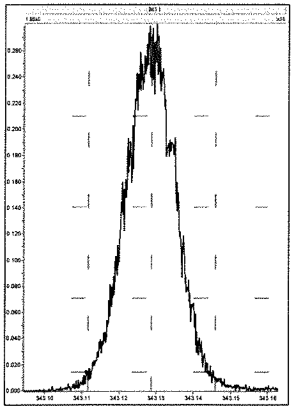

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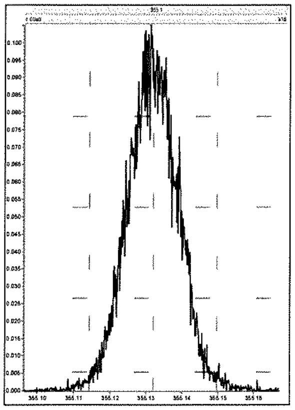

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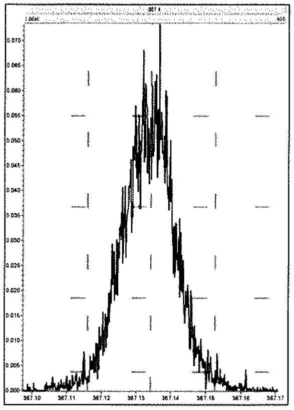

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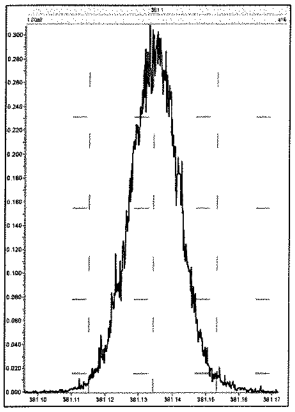

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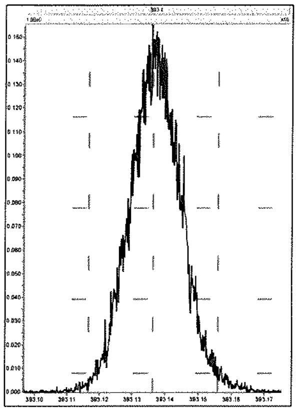

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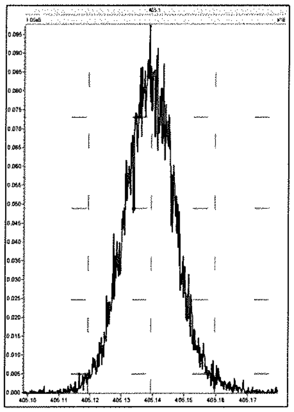

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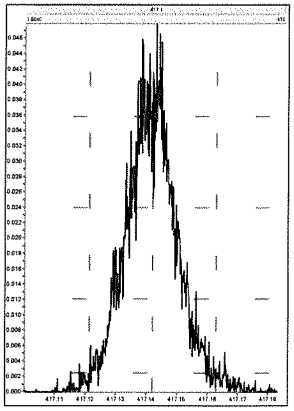

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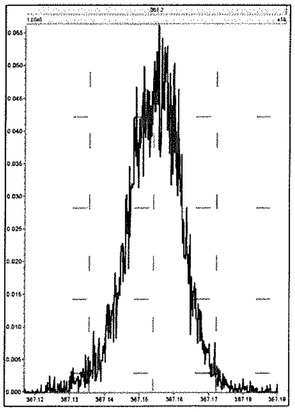

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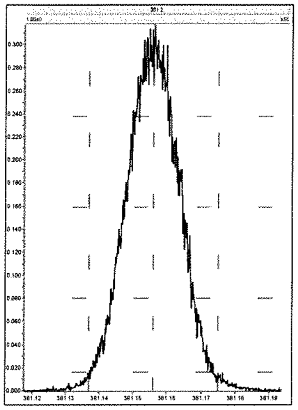

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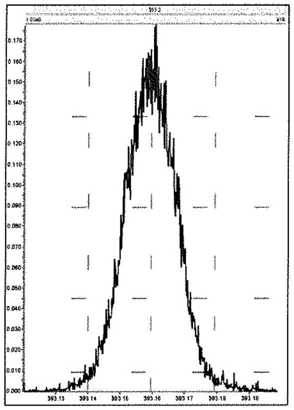

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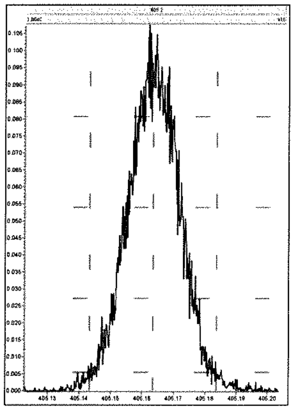

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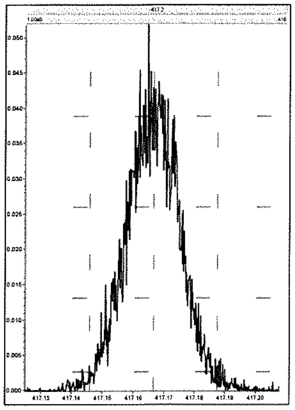

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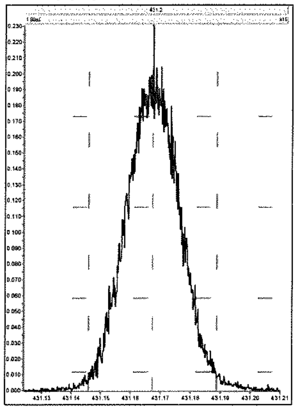

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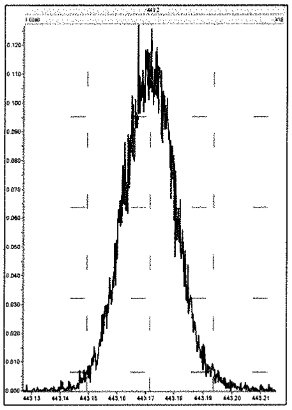

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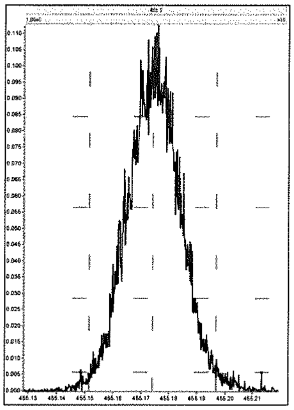

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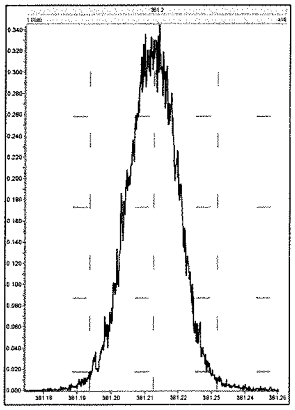

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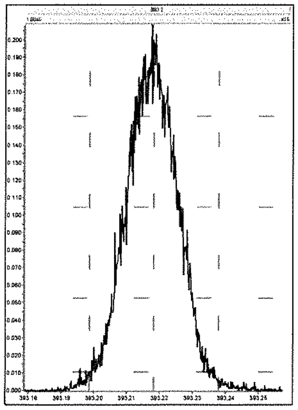

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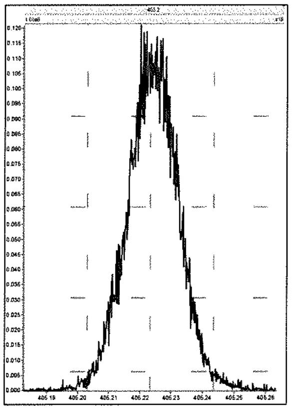

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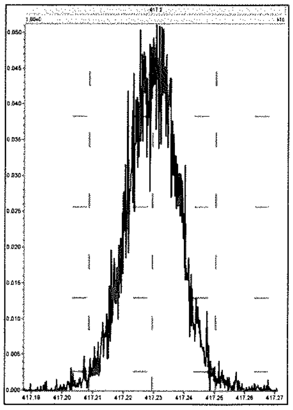

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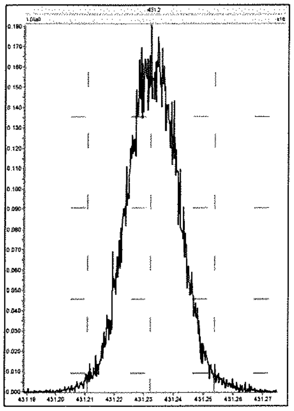

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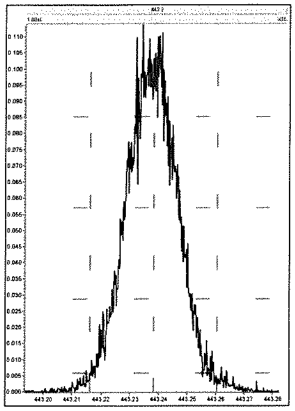

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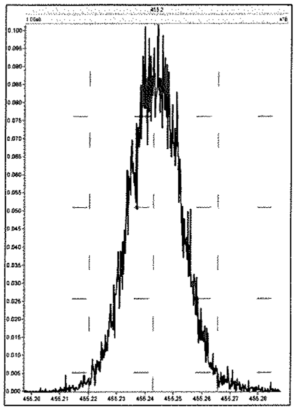

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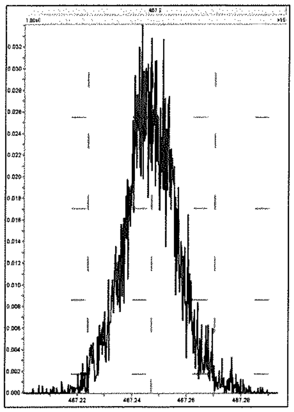

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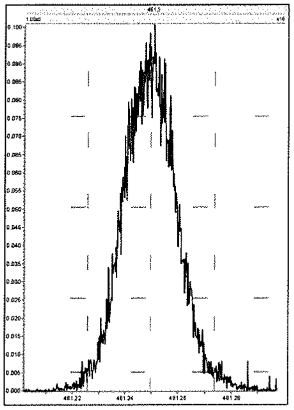

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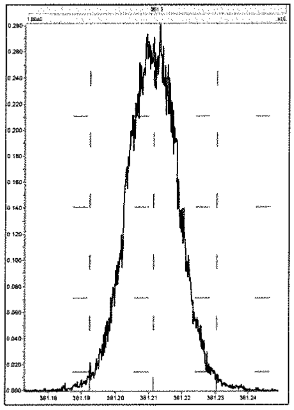

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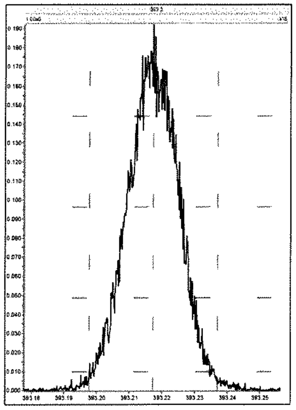

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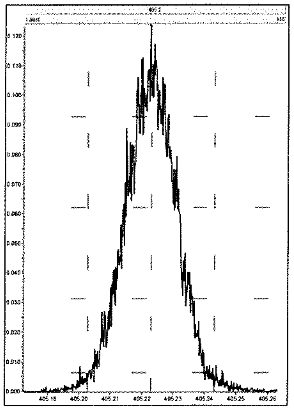

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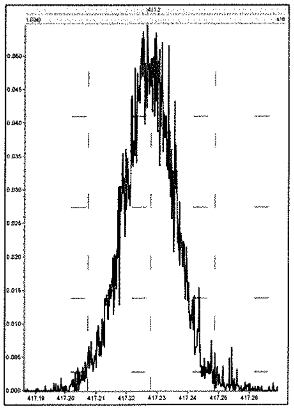

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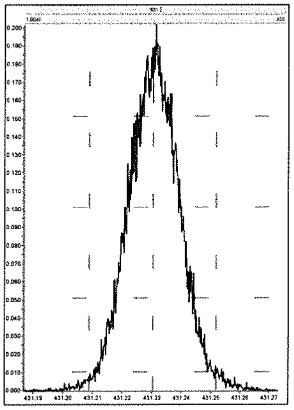

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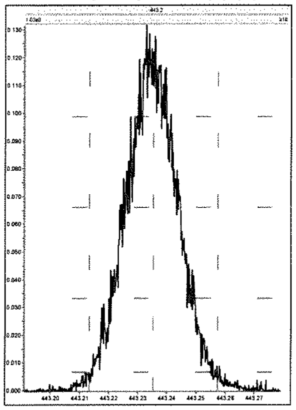

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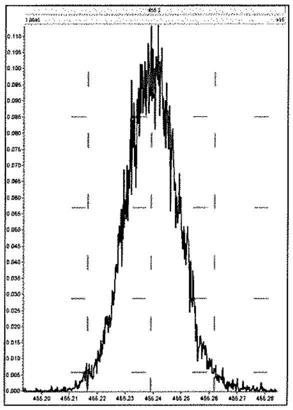

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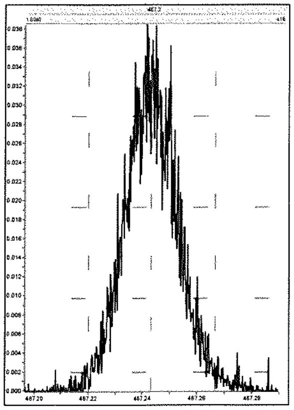

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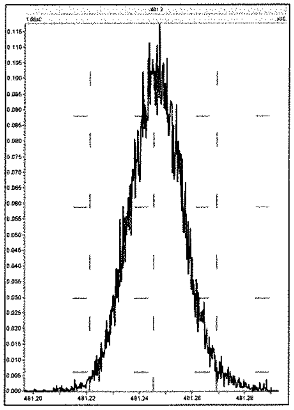

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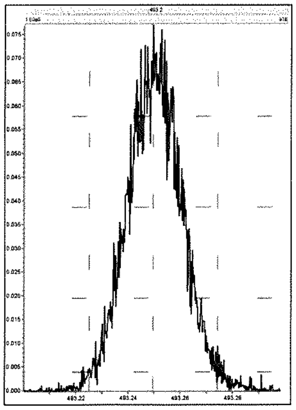

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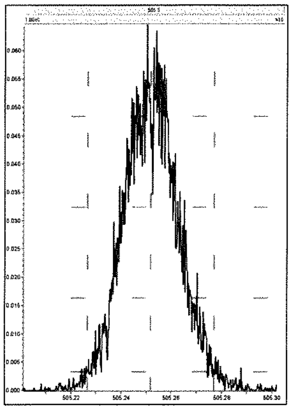

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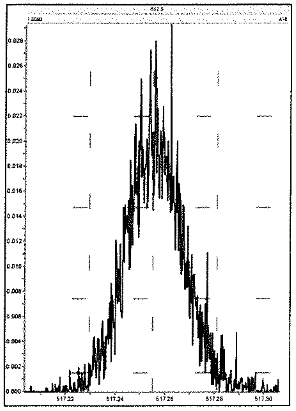

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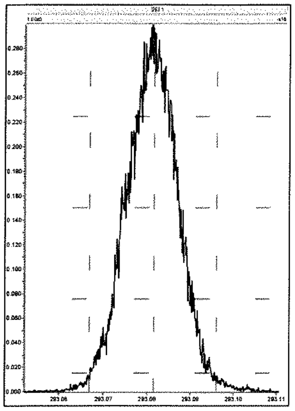

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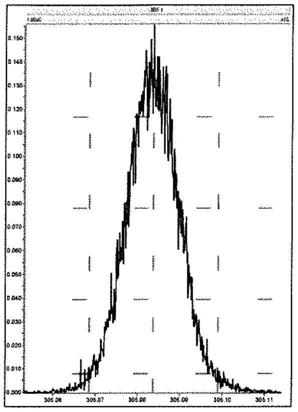

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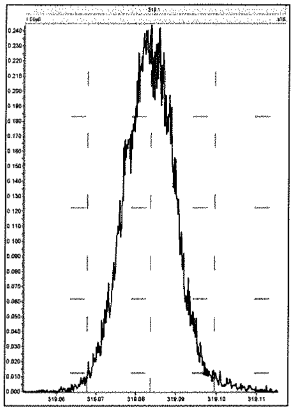

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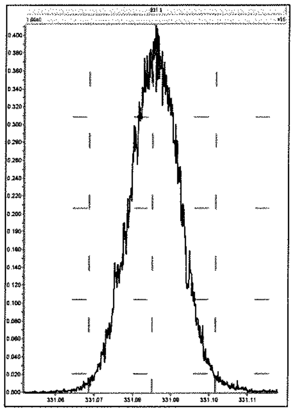

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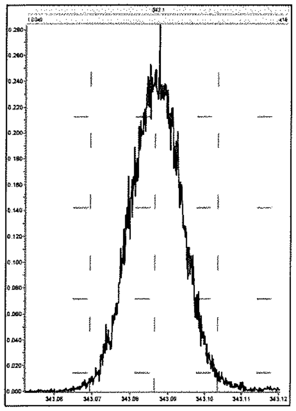

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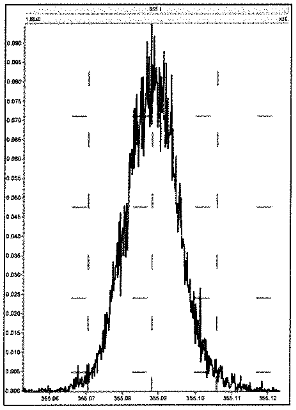

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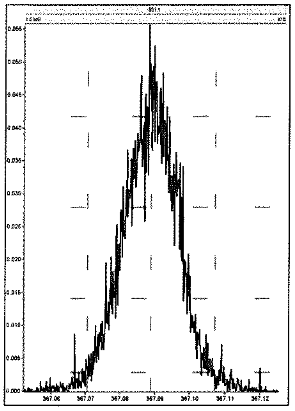

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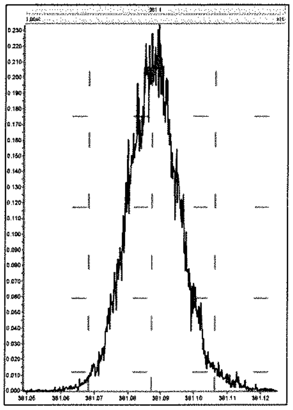

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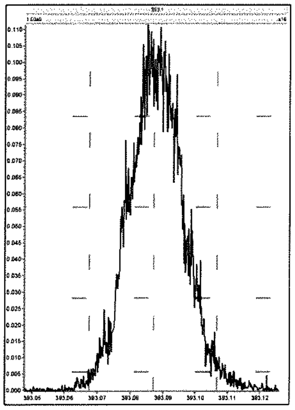

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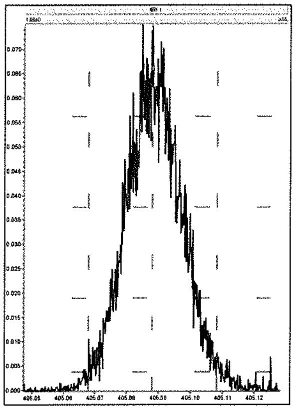

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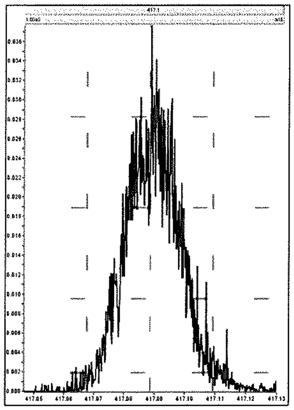

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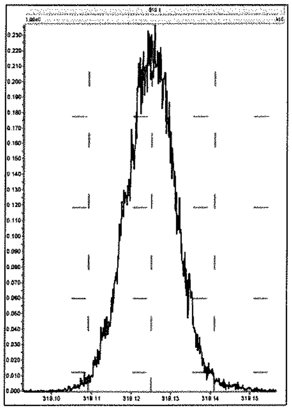

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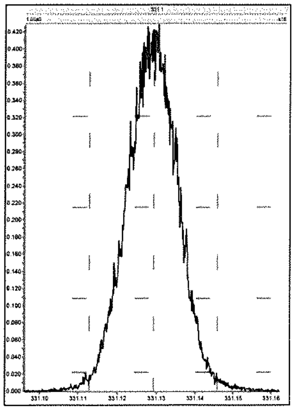

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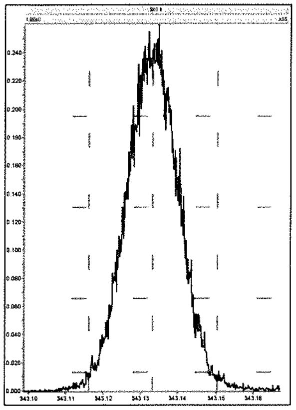

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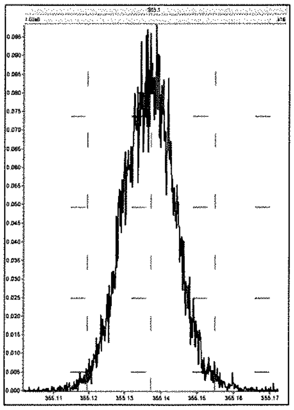

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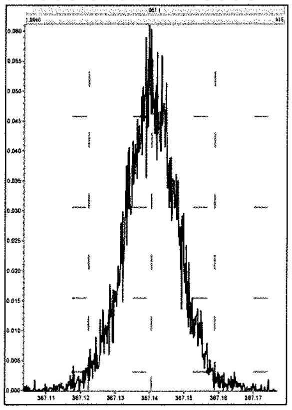

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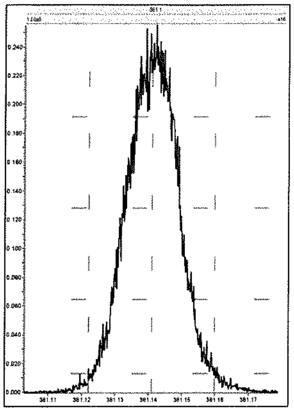

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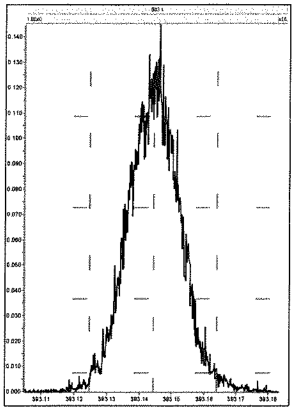

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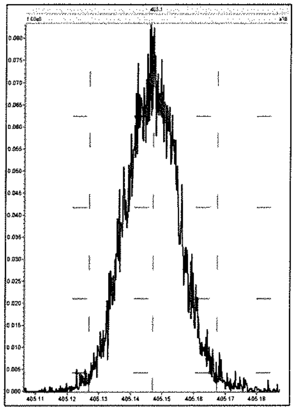

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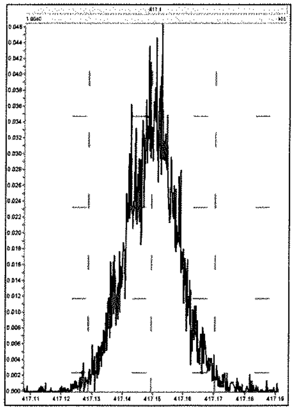

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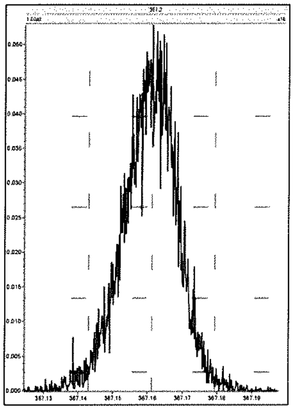

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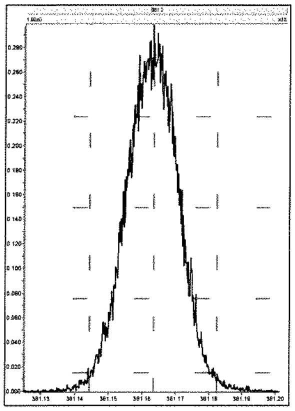

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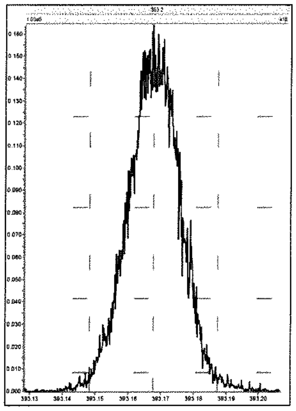

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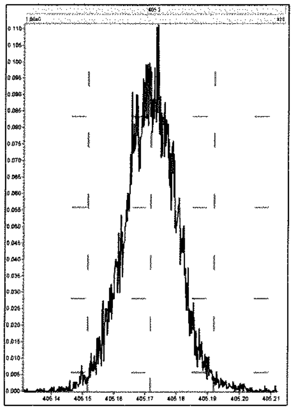

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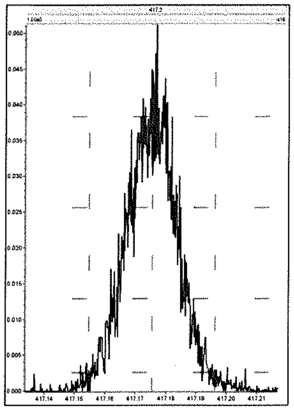

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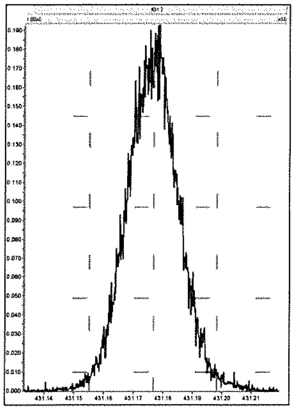

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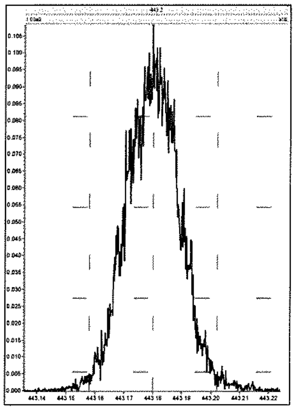

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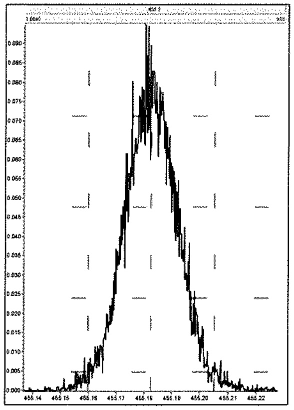

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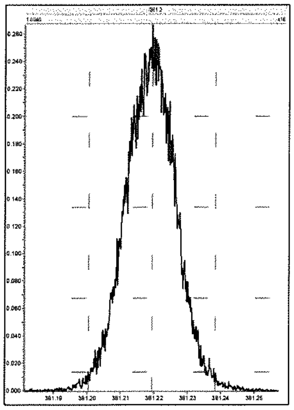

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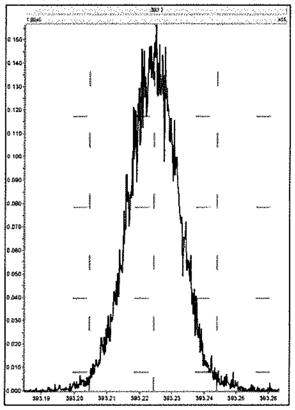

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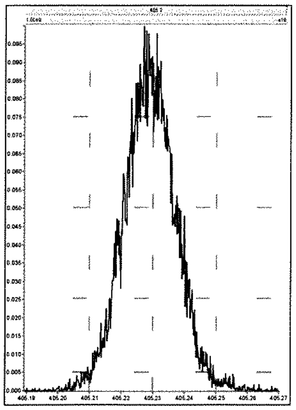

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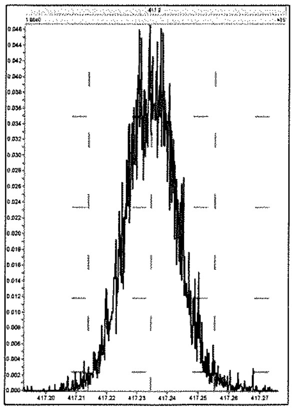

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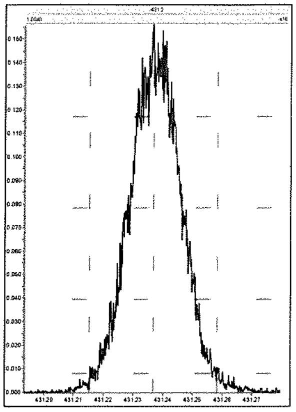

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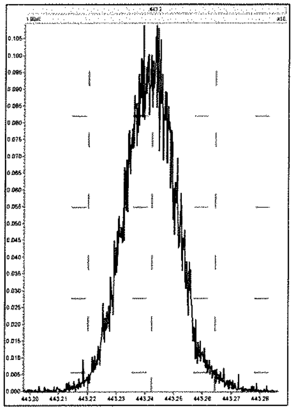

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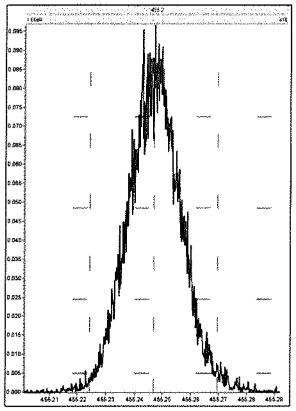

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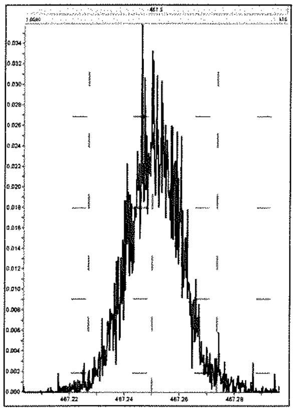

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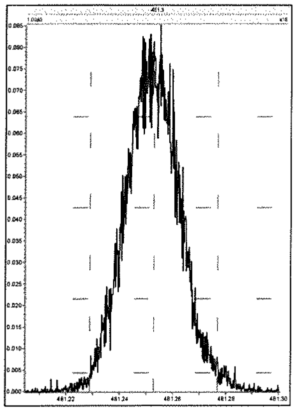

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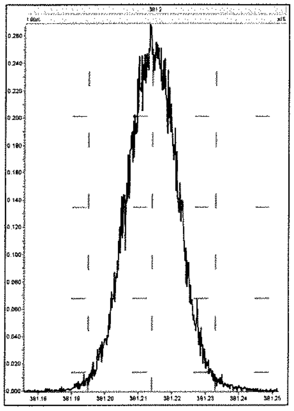

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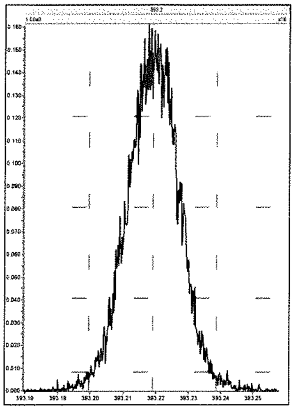

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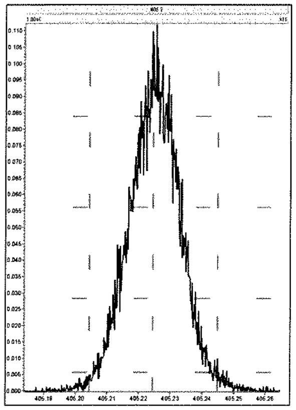

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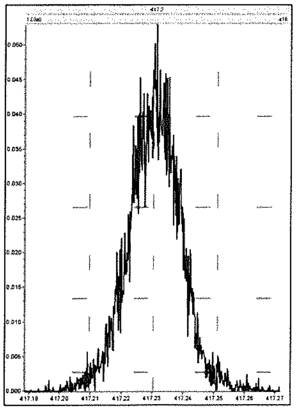

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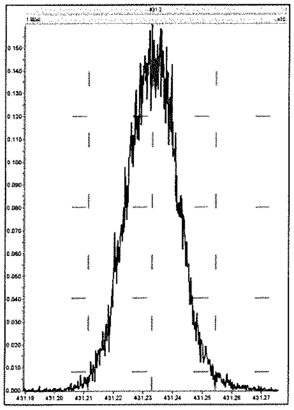

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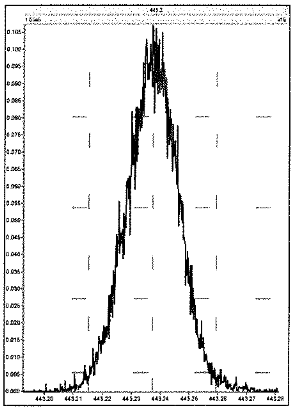

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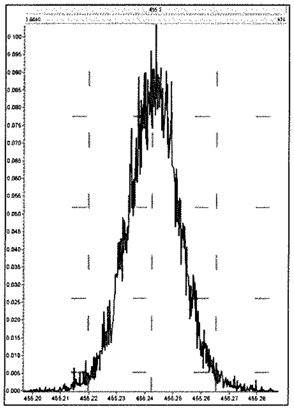

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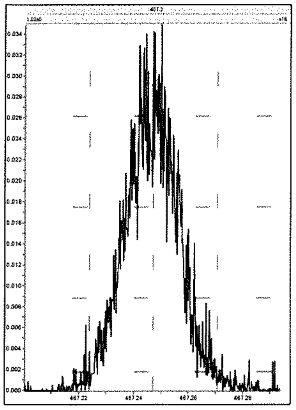

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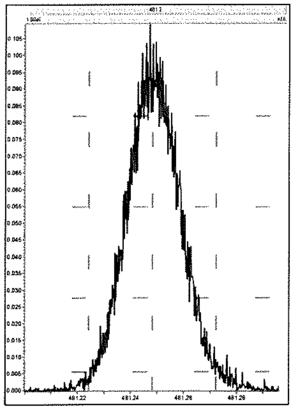

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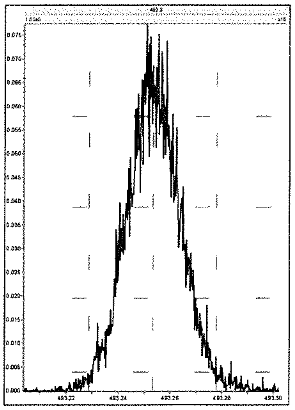

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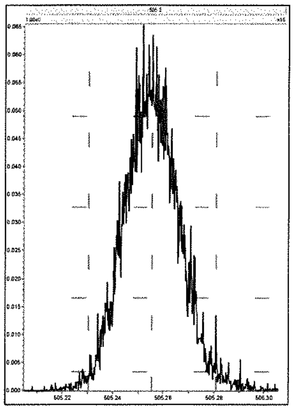

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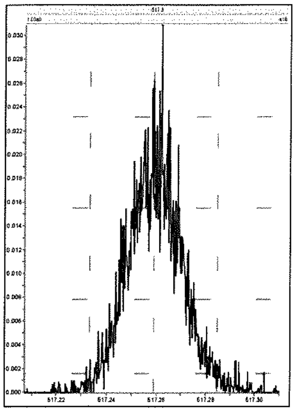

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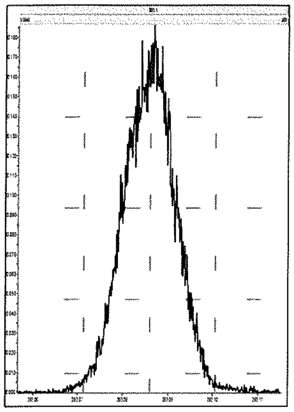

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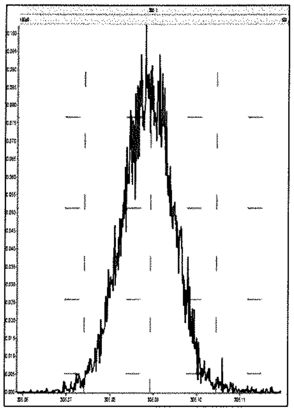

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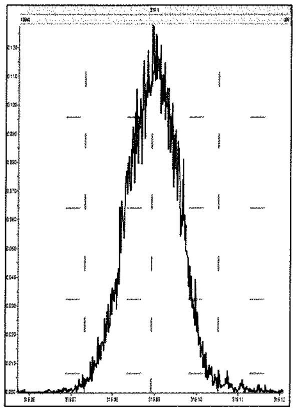

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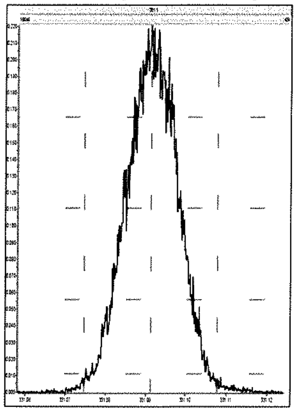

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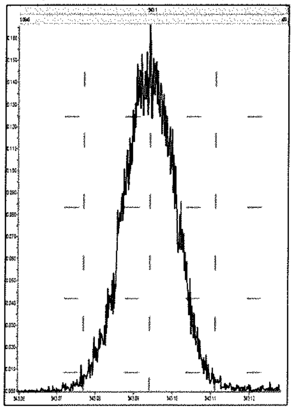

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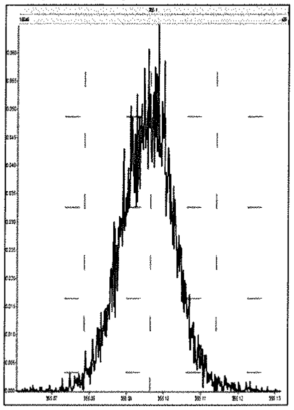

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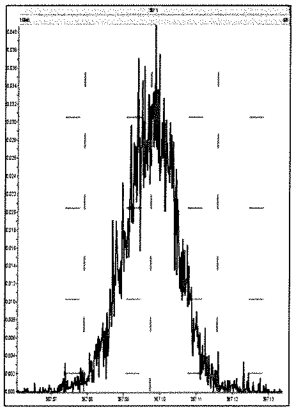

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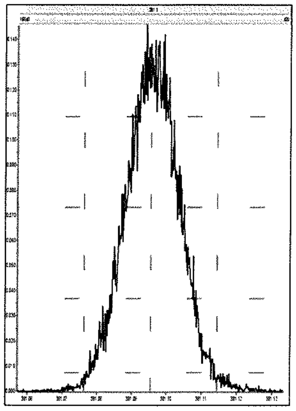

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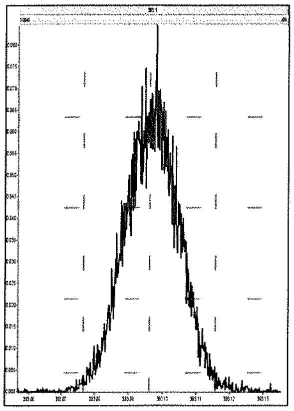

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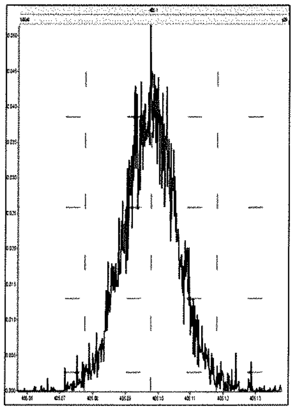

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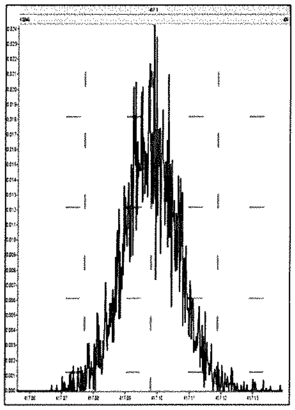

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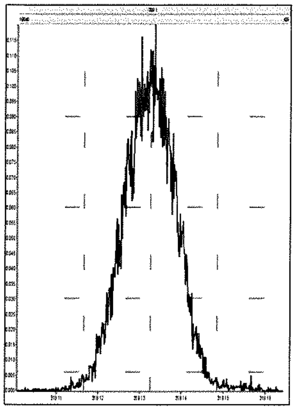

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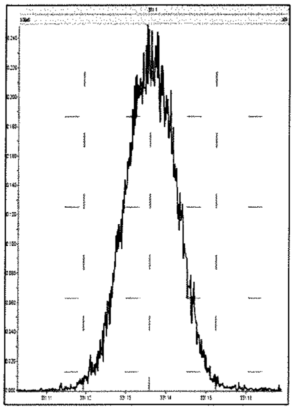

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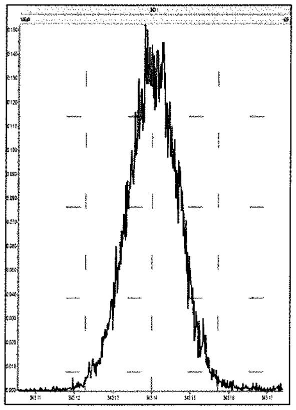

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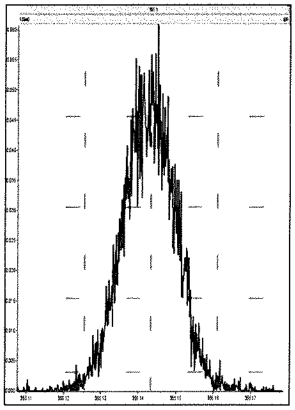

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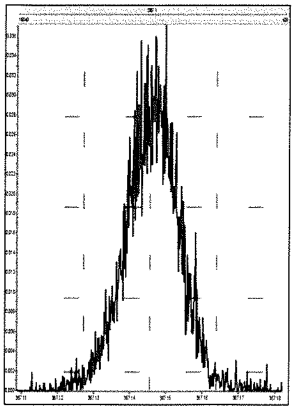

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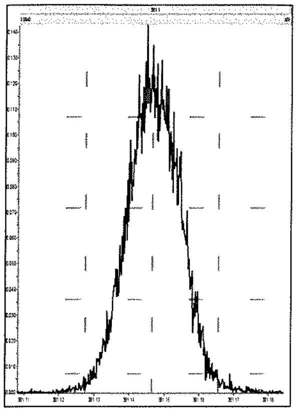

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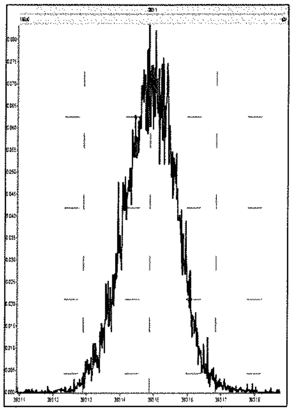

M 404.9760 R 11936

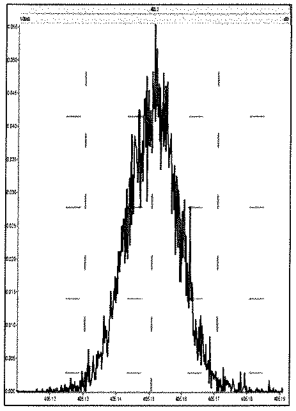

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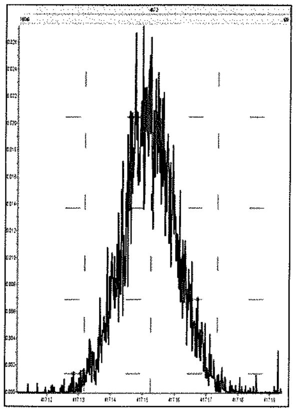

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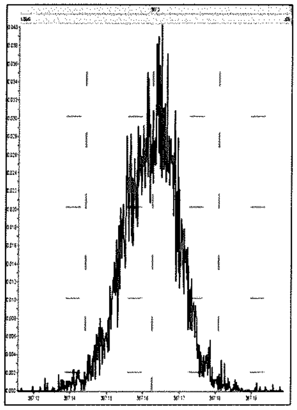

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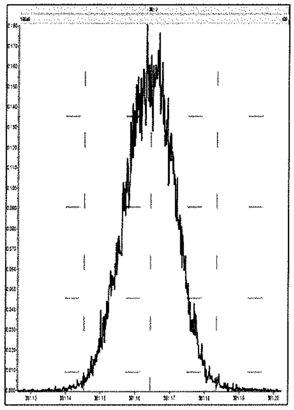

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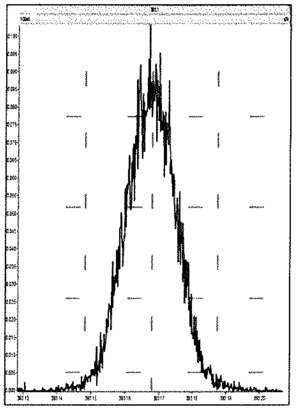

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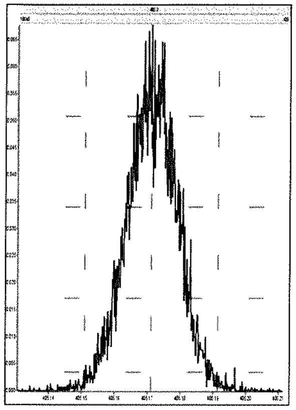

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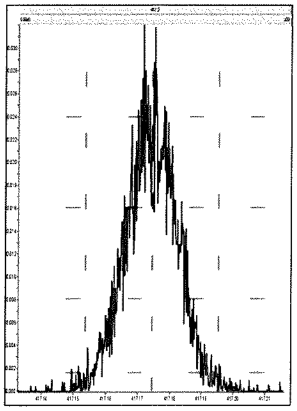

M 430.9728 R 12065

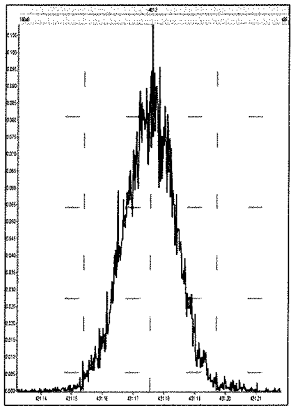

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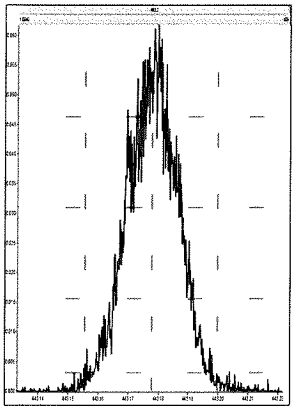

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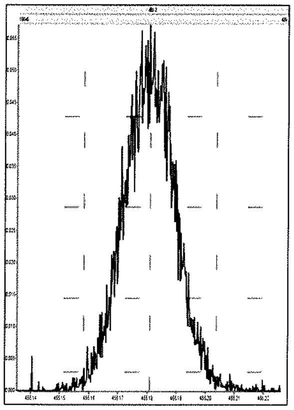

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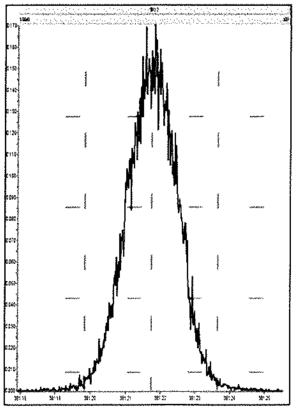

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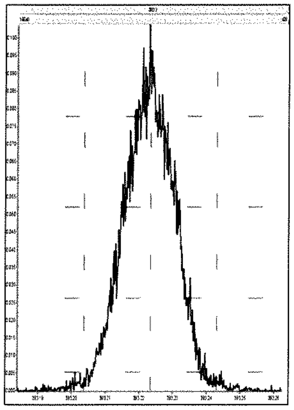

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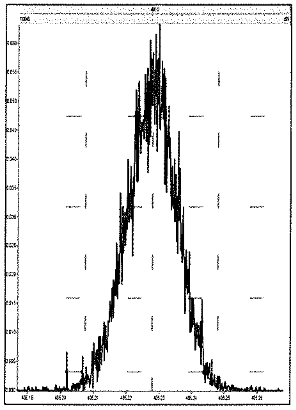

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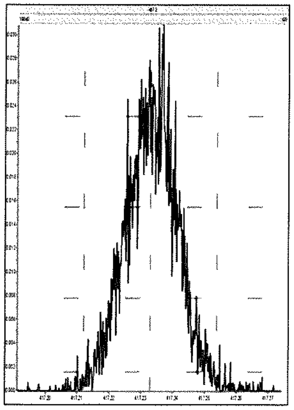

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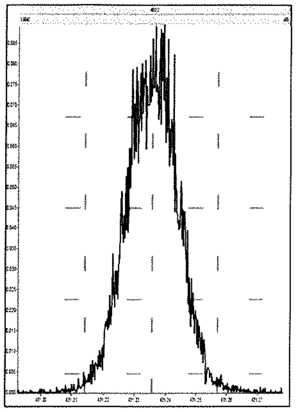

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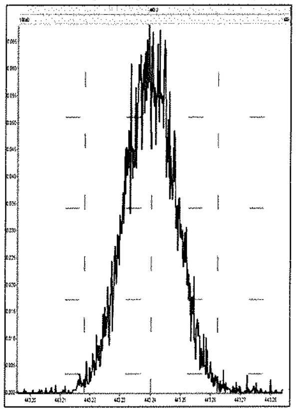

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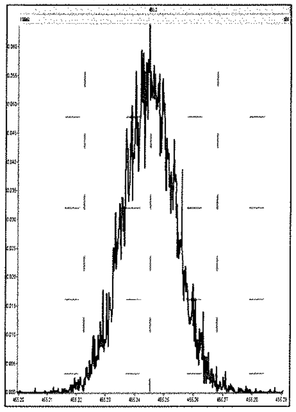

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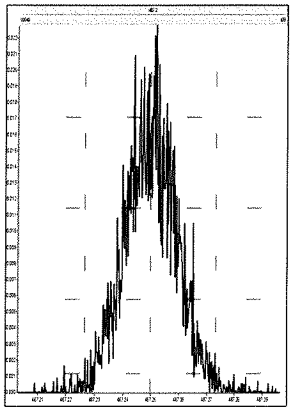

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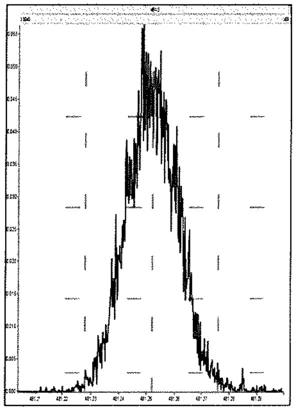

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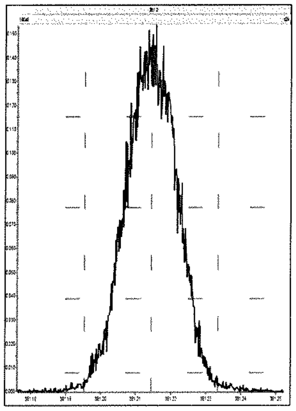

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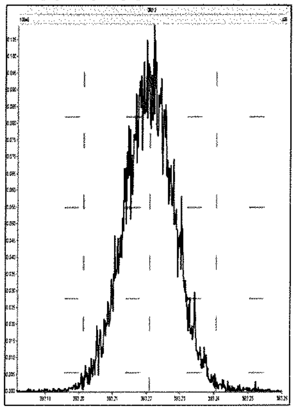

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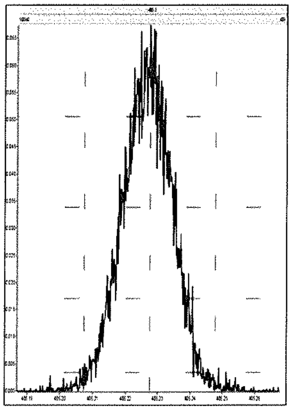

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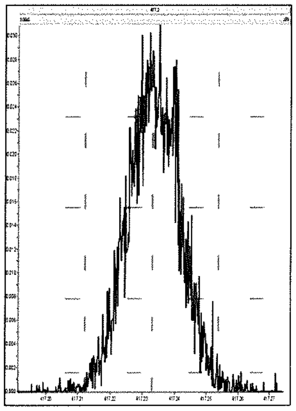

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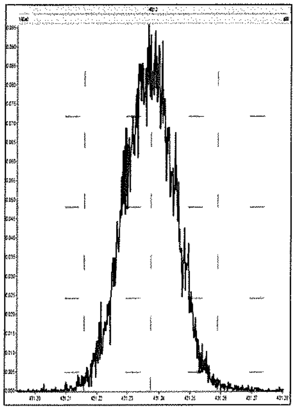

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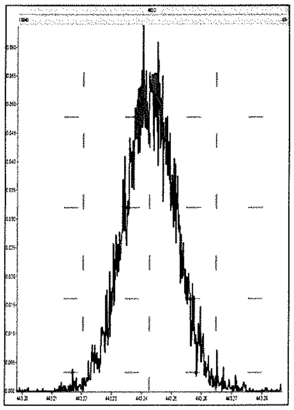

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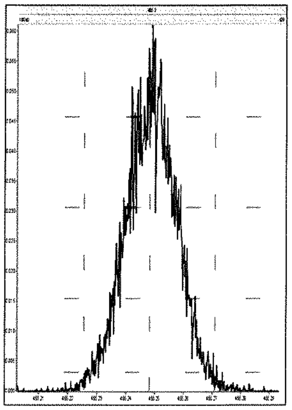

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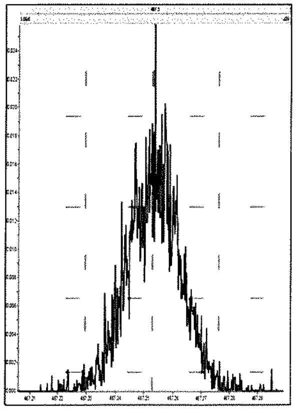

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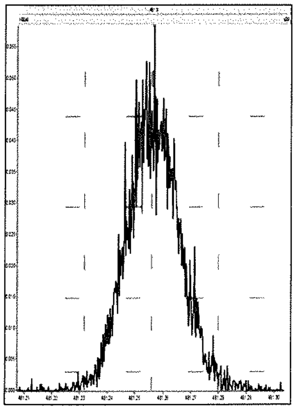

M 492.9696 R 12661

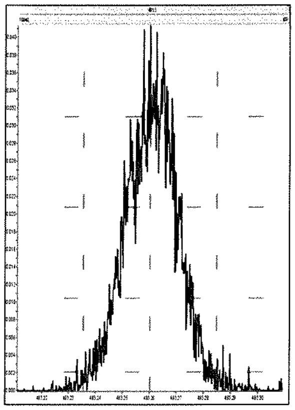

M 504.9696 R 12515

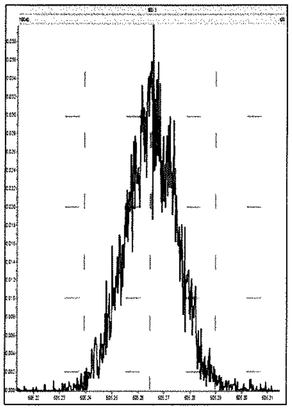

M 516.9697 R 13157

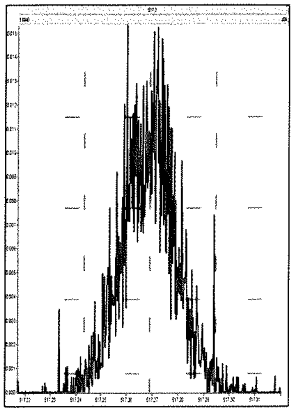

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 15:13:12 ALS Bottle#: 2 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 112320A CS-4 HRDXNL4_00095
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:44 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: arghestanis Date: 24-Nov-2020 16:18:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.854	28925610	0.74	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.339	46292449	0.78	1.3598	117.7	117.7	0.2970	0.2970	118	
2,3,7,8-TCDF	17.354	4626119	0.78	0.9077	11.0	11.0	0.0275	0.0275	110	
A Non-2,3,7,8-sub-TCDF	17.029						0.0275	0.0275		
S Total TCDF					11.0	11.0	0.0275	0.0275		
D 13C-2,3,7,8-TCDD	18.050	29562710	0.73	1.0536	97.0	97.0	0.2391	0.2391	97.01	
2,3,7,8-TCDD	18.065	3249938	0.78	1.0061	10.9	10.9	0.0462	0.0462	109	
$ 37Cl4-2,3,7,8-TCDD	18.065	3231410		1.0488	10.7	10.7	0.0194	0.0194	107	
A Non-2,3,7,8-sub-TCDD	17.491						0.0462	0.0462		
S Total TCDD					10.9	10.9	0.0462	0.0462		
D 13C-1,2,3,7,8-PeCDF	22.383	34872451	1.57	1.1306	106.6	106.6	0.2545	0.2545	107	
1,2,3,7,8-PeCDF	22.410	17426870	1.61	0.9147	54.6	54.6	0.1874	0.1874	109	
D 13C-2,3,4,7,8-PeCDF	23.746	32158952	1.60	1.0539	105.5	105.5	0.2730	0.2730	105	
2,3,4,7,8-PeCDF	23.774	16936654	1.61	0.9508	55.4	55.4	0.2091	0.2091	111	
A F1 PeCDFs	19.970						0.0278	0.0278		
A Non-2,3,7,8-sub-PeCDF	23.141						0.1974	0.1974		Rn
S Total PeCDF					110.0	110.0	0.1983	0.1983		
D 13C-1,2,3,7,8-PeCDD	24.469	22015596	1.59	0.8084	94.1	94.1	0.1288	0.1288	94.14	
1,2,3,7,8-PeCDD	24.496	11247916	1.59	0.9955	51.3	51.3	0.0852	0.0852	103	
A Non-2,3,7,8-sub-PeCDD	23.371						0.0852	0.0852		
S Total PeCDD					51.3	51.3	0.0852	0.0852		
D 13C-1,2,3,4,7,8-HxCDF	30.546	24065527	0.51	0.9225	117.9	117.9	0.6690	0.6690	118	
1,2,3,4,7,8-HxCDF	30.560	14268839	1.23	1.1090	53.5	53.5	0.3972	0.3972	107	
D 13C-1,2,3,6,7,8-HxCDF	30.719	26953564	0.52	1.0336	117.8	117.8	0.5971	0.5971	118	
1,2,3,6,7,8-HxCDF	30.746	15448892	1.26	1.0721	53.5	53.5	0.3788	0.3788	107	
D 13C-2,3,4,6,7,8-HxCDF	31.545	25743511	0.52	0.9773	119.0	119.0	0.6314	0.6314	119	
2,3,4,6,7,8-HxCDF	31.558	15103256	1.26	1.0838	54.1	54.1	0.3025	0.3025	108	
D 13C-1,2,3,7,8,9-HxCDF	32.343	23415238	0.51	0.9153	115.6	115.6	0.6742	0.6742	116	
1,2,3,7,8,9-HxCDF	32.357	13977478	1.23	1.0931	54.6	54.6	0.3198	0.3198	109	
A Non-2,3,7,8-sub-HxCDF	30.233						0.3449	0.3449		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					215.7	215.7	0.3495	0.3495		
* 13C-1,2,3,7,8,9-HxCDD	32.157	22129060	1.25	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.718	16630042	1.30	0.7977	94.2	94.2	0.4079	0.4079	94.21	
1,2,3,4,7,8-HxCDD	31.744	9560947	1.33	1.0014	57.4	57.4	0.2004	0.2004	115	
D 13C-1,2,3,6,7,8-HxCDD	31.824	22156299	1.29	1.0010	100.0	100.0	0.3250	0.3250	100	
1,2,3,6,7,8-HxCDD	31.837	10791060	1.19	0.8902	54.7	54.7	0.1926	0.1926	109	
1,2,3,7,8,9-HxCDD	32.170	11424768	1.28	1.0579	55.7	55.7	0.1748	0.1748	111	
A Non-2,3,7,8-sub-HxCDD	30.905						0.1881	0.1881		
S Total HxCDD					167.8	167.8	0.1893	0.1893		
D 13C-1,2,3,4,6,7,8-HpCDF	33.770	19350527	0.44	0.8506	102.8	102.8	1.305	1.305	103	
1,2,3,4,6,7,8-HpCDF	33.783	13623213	1.06	1.3603	51.8	51.8	0.5086	0.5086	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.864	16930363	0.44	0.7618	100.4	100.4	1.457	1.457	100	
1,2,3,4,7,8,9-HpCDF	34.876	11793439	1.05	1.3207	52.7	52.7	0.7110	0.7110	105	
A Non-2,3,7,8-sub-HpCDF	34.335						0.5943	0.5943		
S Total HpCDF					104.5	104.5	0.6098	0.6098		
D 13C-1,2,3,4,6,7,8-HpCDD	34.572	18101217	1.06	0.8873	92.2	92.2	0.4545	0.4545	92.19	
1,2,3,4,6,7,8-HpCDD	34.584	9505856	1.05	0.9988	52.6	52.6	0.2233	0.2233	105	
A Non-2,3,7,8-sub-HpCDD	34.305						0.2233	0.2233		
S Total HpCDD					52.6	52.6	0.2233	0.2233		
D 13C-OCDD	36.938	26531549	0.87	0.6287	190.7	190.7	0.2150	0.2150	95.35	
OCDF	37.034	19180604	0.91	1.4136	102.3	102.3	0.1329	0.1329	102	
OCDD	36.938	14848136	0.90	1.1290	99.1	99.1	0.1437	0.1437	99.14	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 15:13:12 ALS Bottle#: 2 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 112320A CS-4 HRDXNL4_00095
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:44 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

First Level Reviewer: arghestanis Date: 24-Nov-2020 16:18:14

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.854	17.853	0		12274257	2920642	3447	8617	847		
333.9339	17.838	17.853	-1		16651353	4044170	3570	8925	1133	0.74(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.339	17.339	0	0.971	20317357	4850654	6615	16537	733		
317.9389	17.339	17.339	0	0.971	25975092	6127934	4637	11592	1322	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.354	17.339	1	1.001	2026482	477004	423	1057	1128		
305.8987	17.354	17.339	1	1.001	2599637	600649	673	1682	892	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.029						423	1057			
305.8987	17.029						673	1682			
13C-2,3,7,8-TCDD											
331.9368	18.050	18.050	0	1.011	12490863	2885866	3447	8617	837		
333.9339	18.050	18.050	0	1.011	17071847	3923015	3570	8925	1099	0.73(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.065	18.050	1	1.001	1427637	335671	861	2152	390		
321.8936	18.065	18.050	1	1.001	1822301	429125	406	1015	1057	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.065	18.065	0	1.012	3231410	776680	567	1417	1370		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.491						861	2152			
321.8936	17.491						406	1015			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.383	22.383	0	1.254	21284785	3675195	4801	12002	766		
353.8970	22.396	22.383	1	1.254	13587666	2309696	3216	8040	718	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.410	22.410	0	1.001	10760076	1847866	2447	6117	755		
341.8567	22.410	22.410	0	1.001	6666794	1136910	1658	4145	686	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.746	23.746	0	1.330	19773291	3171740	4801	12002	661		
353.8970	23.746	23.746	0	1.330	12385661	1990619	3216	8040	619	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.774	23.760	1	1.001	10441284	1663818	2447	6117	680		
341.8567	23.760	23.760	0	1.001	6495370	1036723	1658	4145	625	1.61(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.970						195	487			
341.8567	19.970						383	957			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.955	23.141	-11	1.026	108924	13785	2447	6117	6		
341.8567	22.942	23.141	-12	1.025	54636	7357	1658	4145	4	1.99(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.469	24.469	0	1.371	13506733	2086855	1778	4445	1174		
369.8919	24.469	24.469	0	1.371	8508863	1291706	1122	2805	1151	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.496	24.496	0	1.001	6900809	1046630	782	1955	1338		
357.8516	24.496	24.496	0	1.001	4347107	639838	365	912	1753	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.371						782	1955			
357.8516	23.371						365	912			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.546	30.546	0	0.950	8104553	1582329	5055	12637	313		
385.8610	30.546	30.546	0	0.950	15960974	3170212	9138	22845	347	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.560	30.573	-1	1.000	7871171	1520190	4422	11055	344		
375.8178	30.560	30.573	-1	1.000	6397668	1235384	3951	9877	313	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.719	30.719	0	0.955	9210104	1770161	5055	12637	350		
385.8610	30.719	30.719	0	0.955	17743460	3384687	9138	22845	370	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.746	30.746	0	1.001	8625630	1633621	4422	11055	369		
375.8178	30.746	30.746	0	1.001	6823262	1315219	3951	9877	333	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.545	31.545	0	0.981	8771354	2175302	5055	12637	430		
385.8610	31.545	31.545	0	0.981	16972157	4209761	9138	22845	461	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.558	31.558	0	1.000	8406397	2113051	4422	11055	478		
375.8178	31.558	31.558	0	1.000	6696859	1679809	3951	9877	425	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.343	32.343	0	1.006	7933323	2026841	5055	12637	401		
385.8610	32.343	32.343	0	1.006	15481915	3961963	9138	22845	434	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.357	32.356	0	1.000	7701800	2009815	4422	11055	455		
375.8178	32.357	32.356	0	1.000	6275678	1596280	3951	9877	404	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.233						4422	11055			
375.8178	30.233						3951	9877			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.157	32.157	0		12283695	3237409	4632	11580	699		
403.8529	32.157	32.157	0		9845365	2512275	2851	7127	881	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.718	31.718	0	0.986	9396722	2618539	4632	11580	565		
403.8529	31.718	31.718	0	0.986	7233320	2020982	2851	7127	709	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.744	31.744	0	1.001	5457715	1459994	2011	5027	726		
391.8127	31.731	31.744	-1	1.000	4103232	1143042	1713	4282	667	1.33(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.824	31.824	0	0.990	12464658	3033362	4632	11580	655		
403.8529	31.824	31.824	0	0.990	9691641	2396588	2851	7127	841	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.837	31.851	-1	1.000	5873622	1475492	2011	5027	734		
391.8127	31.837	31.851	-1	1.000	4917438	1192947	1713	4282	696	1.19(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.170	32.170	0	1.014	6421238	1671025	2011	5027	831		
391.8127	32.170	32.170	0	1.014	5003530	1308614	1713	4282	764	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						2011	5027			
391.8127	30.905						1713	4282			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.770	33.770	0	1.050	5915784	1896022	7392	18480	256		
419.8220	33.770	33.770	0	1.050	13434743	4262822	18142	45355	235	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.783	33.782	0	1.000	7010470	2202816	10015	25037	220		
409.7789	33.783	33.782	0	1.000	6612743	2054168	7030	17575	292	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.864	34.864	0	1.084	5177710	1385987	7392	18480	187		
419.8220	34.864	34.864	0	1.084	11752653	3152045	18142	45355	174	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.876	34.888	-1	1.000	6053532	1604559	10015	25037	160		
409.7789	34.876	34.888	-1	1.000	5739907	1500178	7030	17575	213	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						10015	25037			
409.7789	34.335						7030	17575			

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.572	34.572	0	1.075	9304909	2615971	4317	10792	606		
437.8140	34.572	34.572	0	1.075	8796308	2509910	4957	12392	506	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.584	34.584	0	1.000	4860790	1351532	2020	5050	669		
425.7737	34.572	34.584	-1	1.000	4645066	1278839	2553	6382	501	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.305						2020	5050			
425.7737	34.305						2553	6382			
13C-OCDD											
469.7779	36.938	36.938	0	1.149	12373946	2820201	1758	4395	1604		
471.7750	36.938	36.938	0	1.149	14157603	3190570	1351	3377	2362	0.87(0.76-1.02)	
OCDF											
441.7428	37.034	37.046	-1	1.003	9145515	2056341	936	2340	2197		
443.7399	37.034	37.046	-1	1.003	10035089	2289523	1323	3307	1731	0.91(0.76-1.02)	
OCDD											
457.7377	36.938	36.950	-1	1.000	7047714	1613002	759	1897	2125		
459.7348	36.938	36.950	-1	1.000	7800422	1789008	1191	2977	1502	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00095 Amount Added: 2.00 Units: uL

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

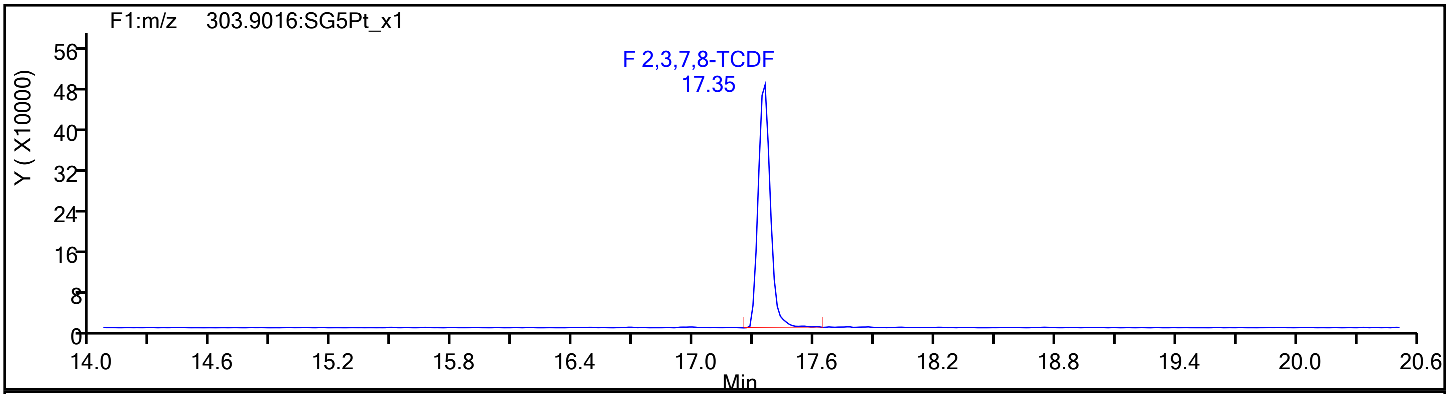

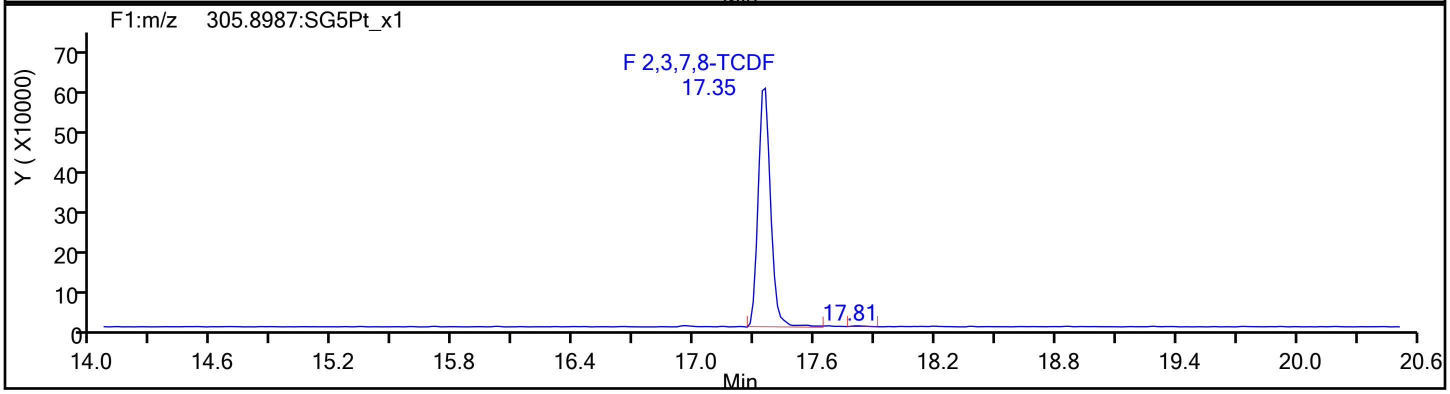

TCDF Standards

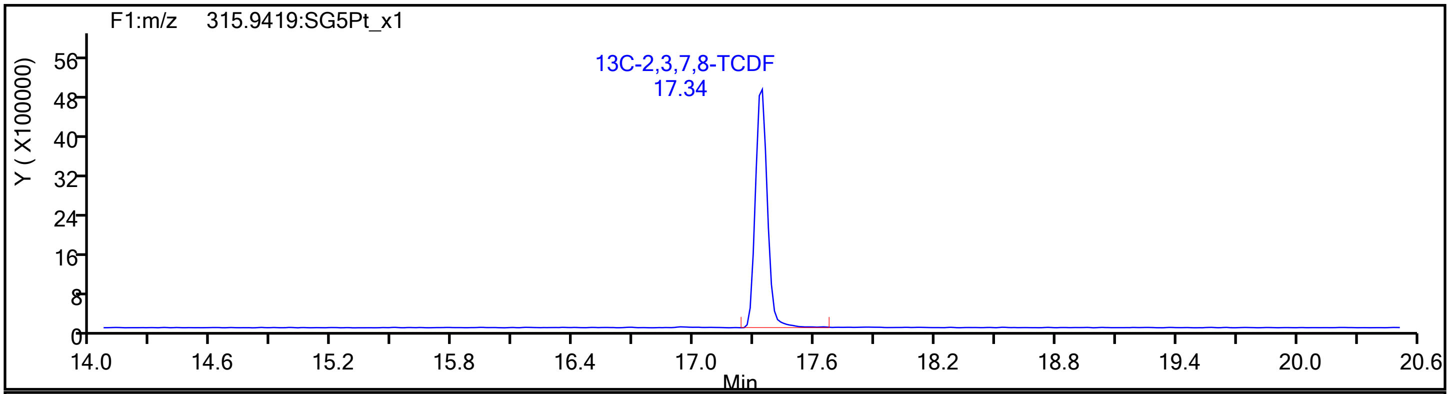

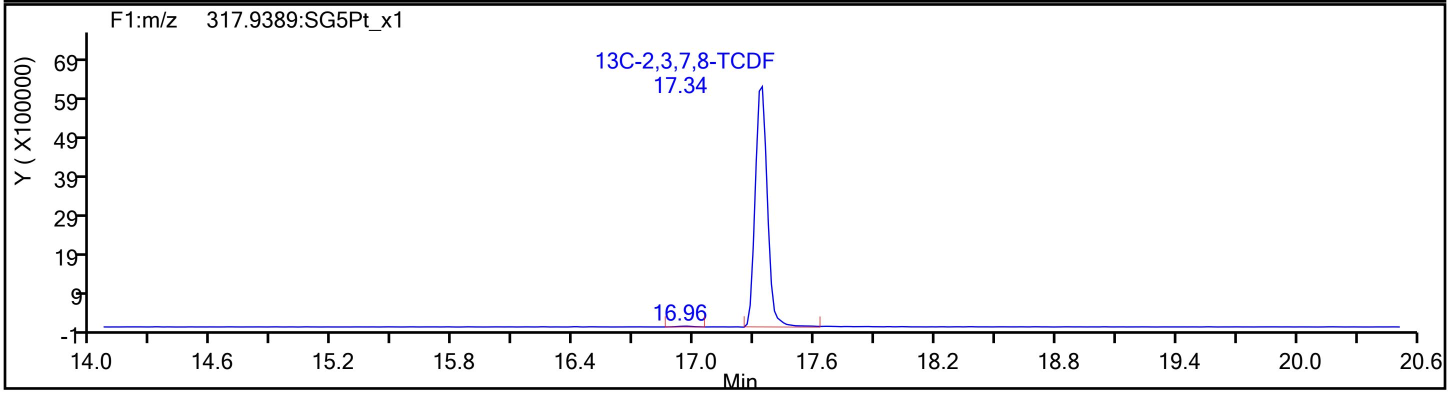

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

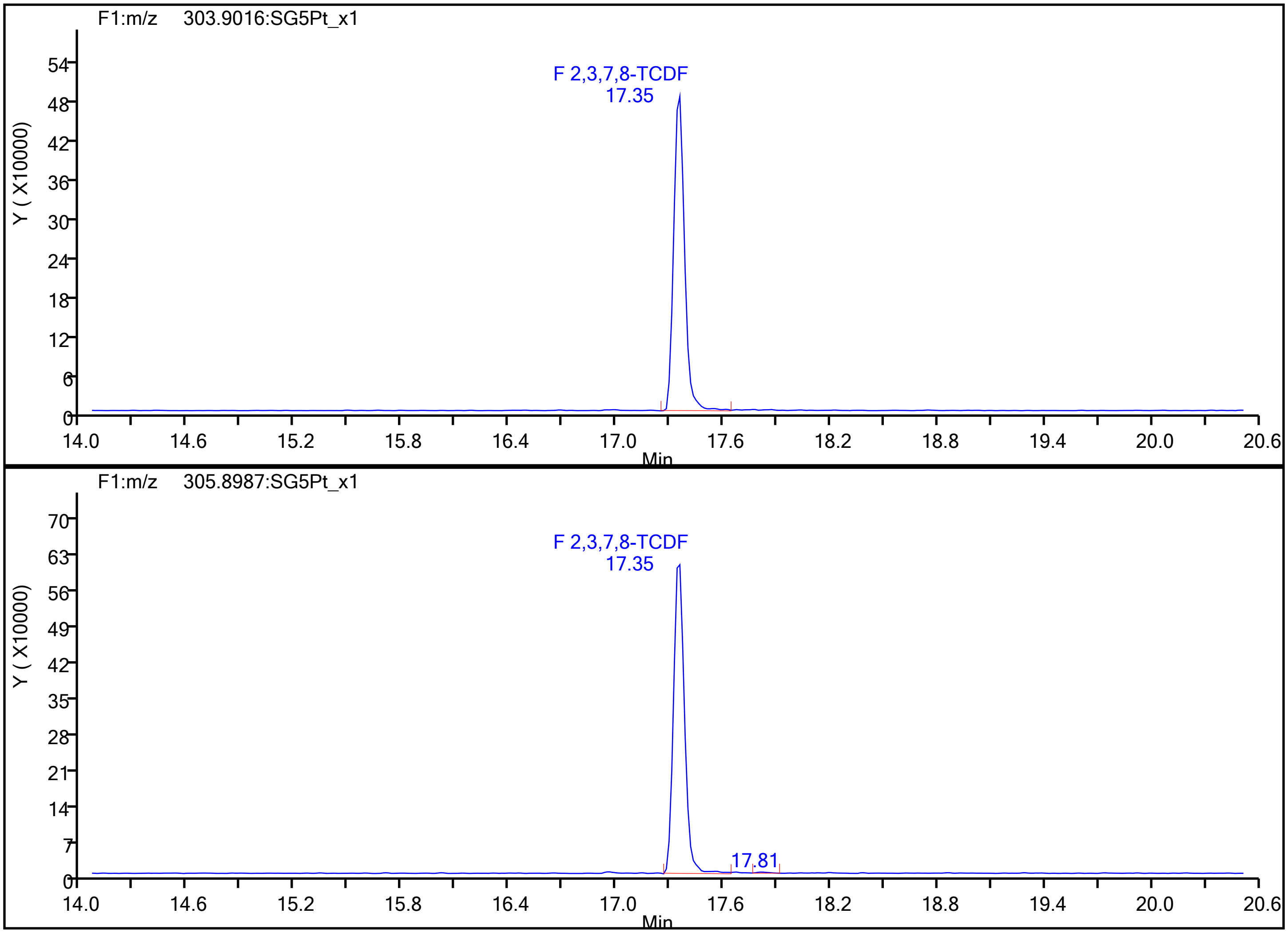

TCDF Interference Mass

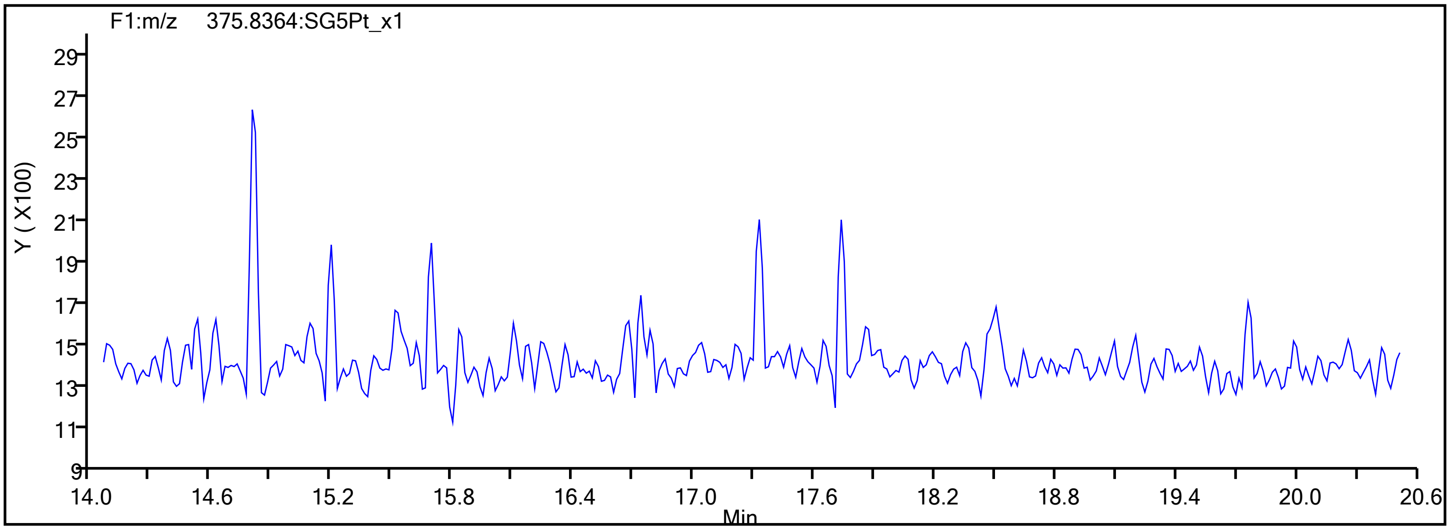

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

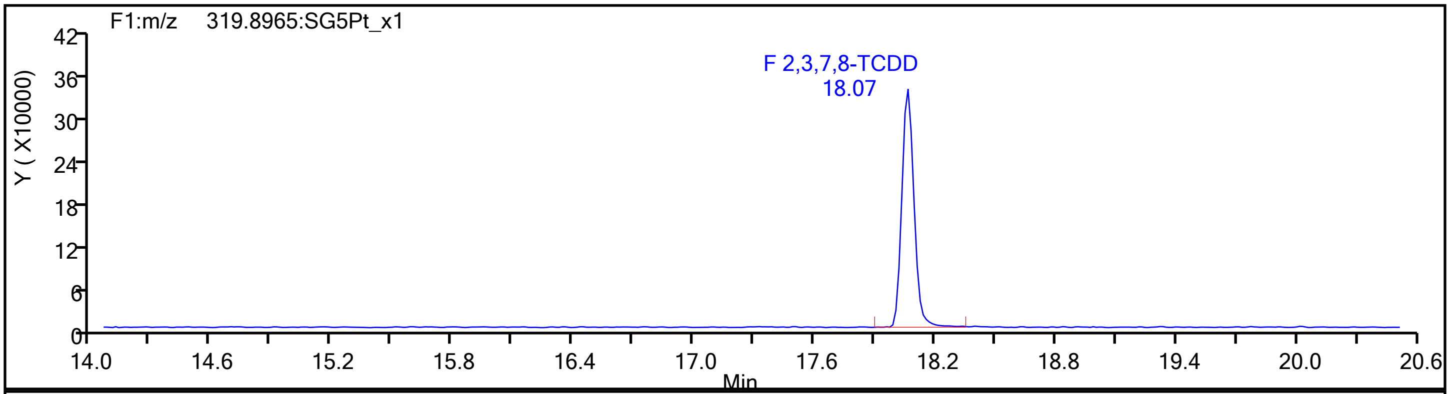

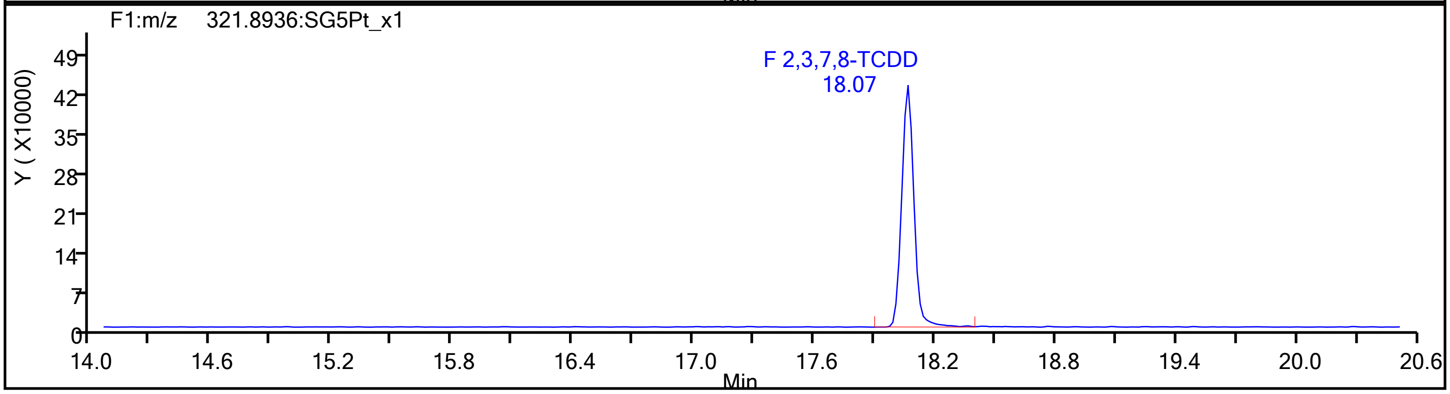

TCDD Standards

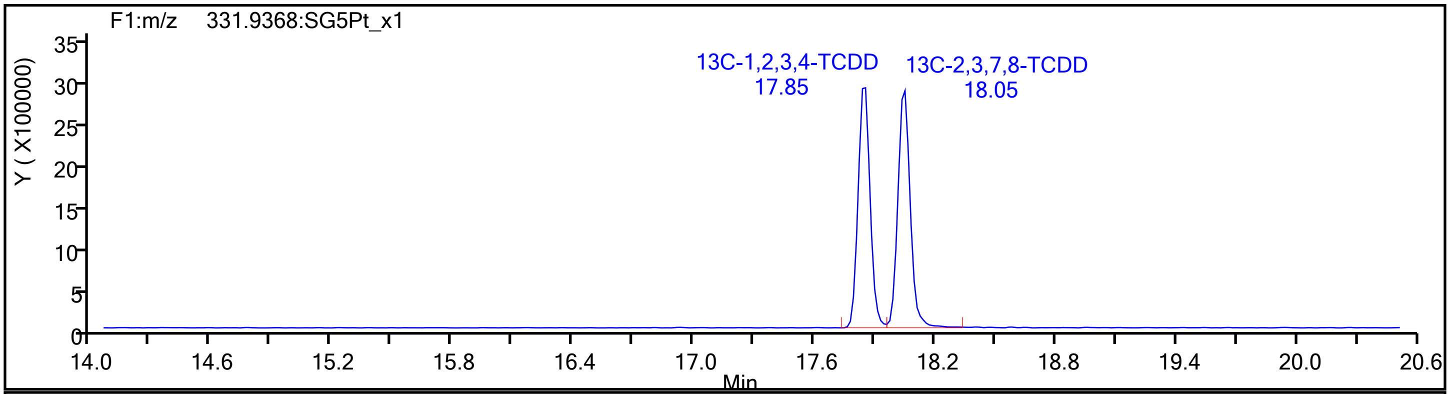

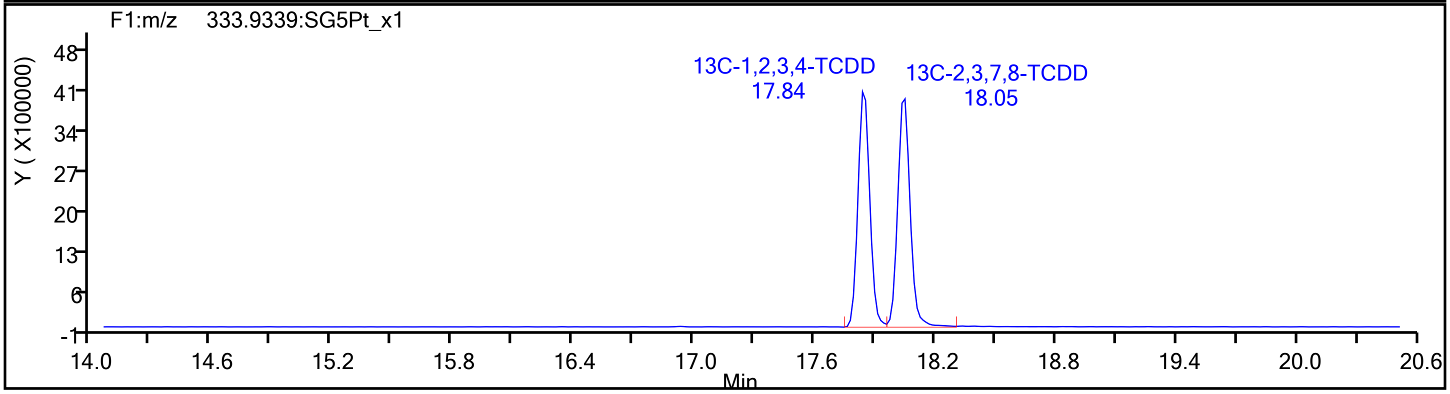

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

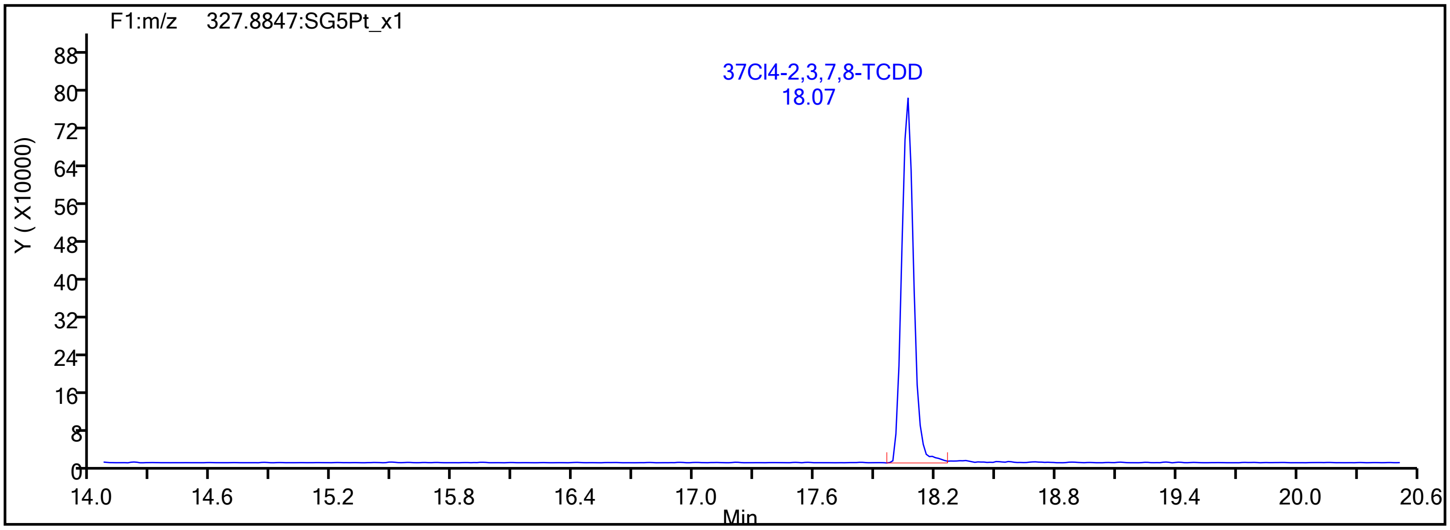

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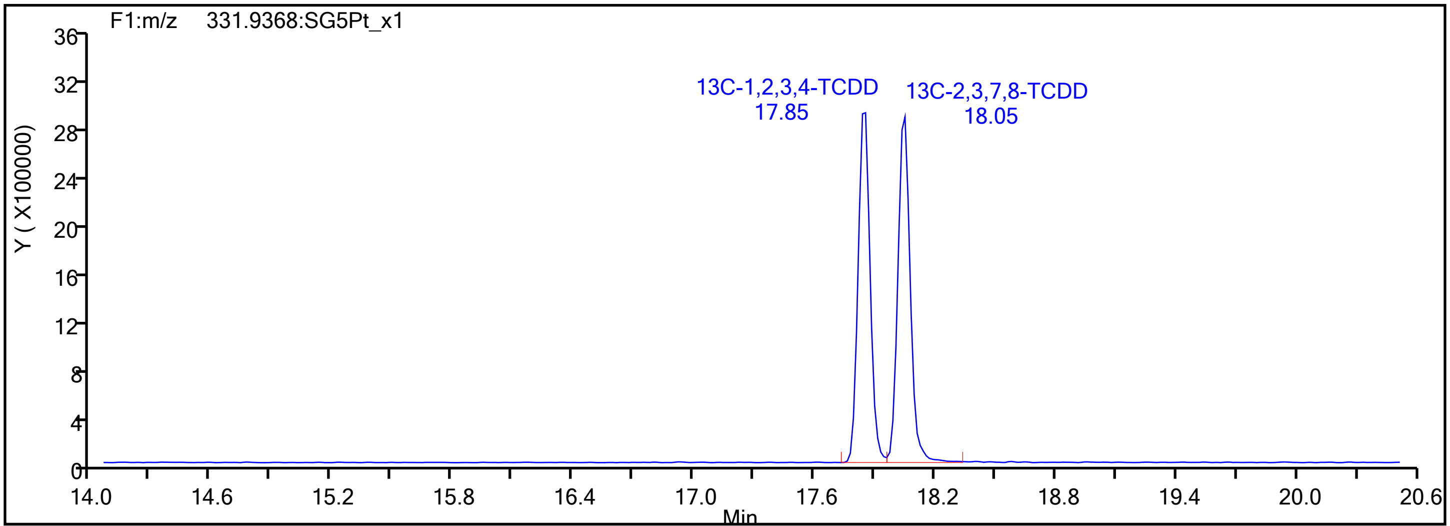

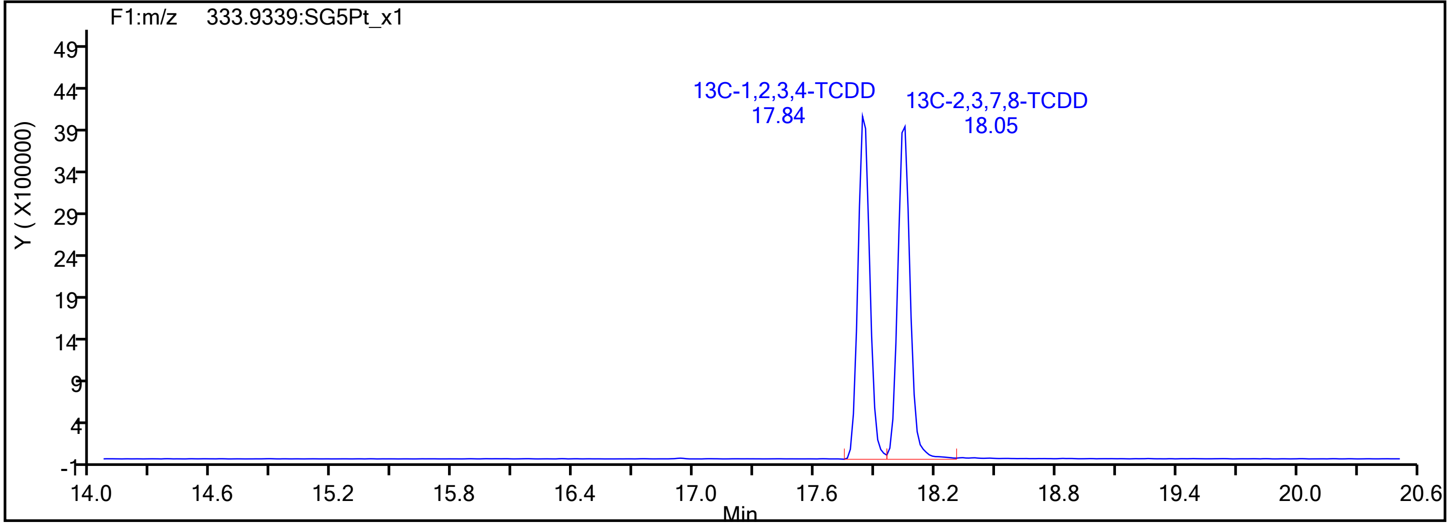

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

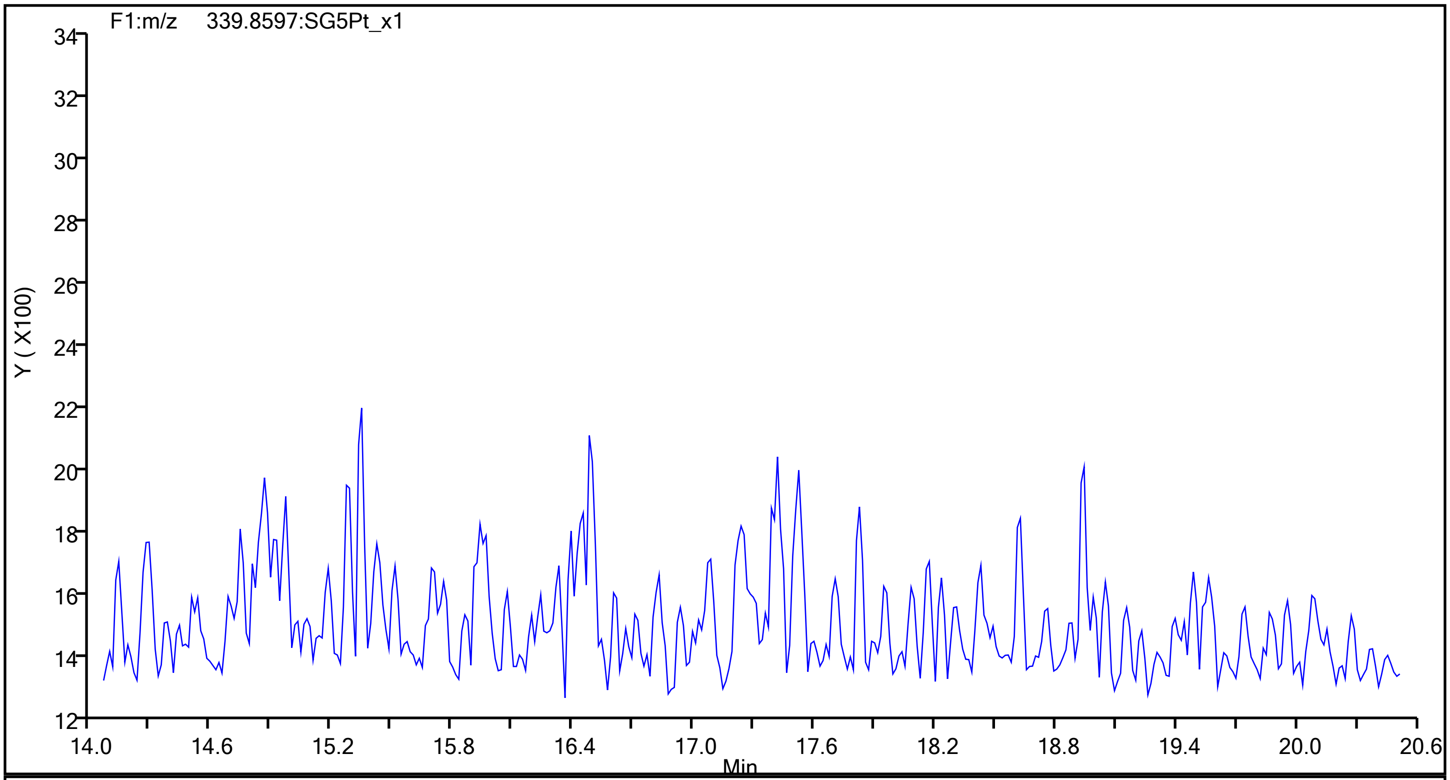

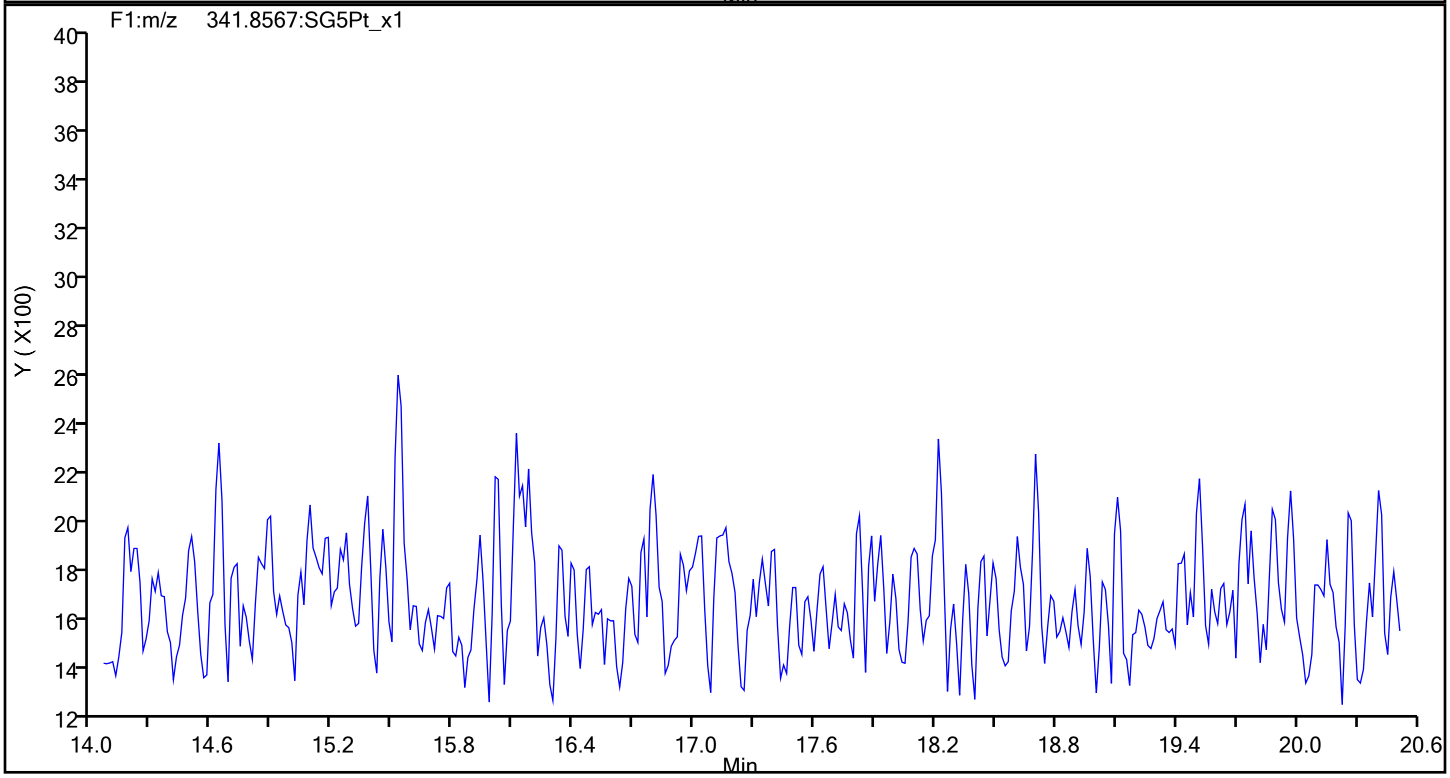

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

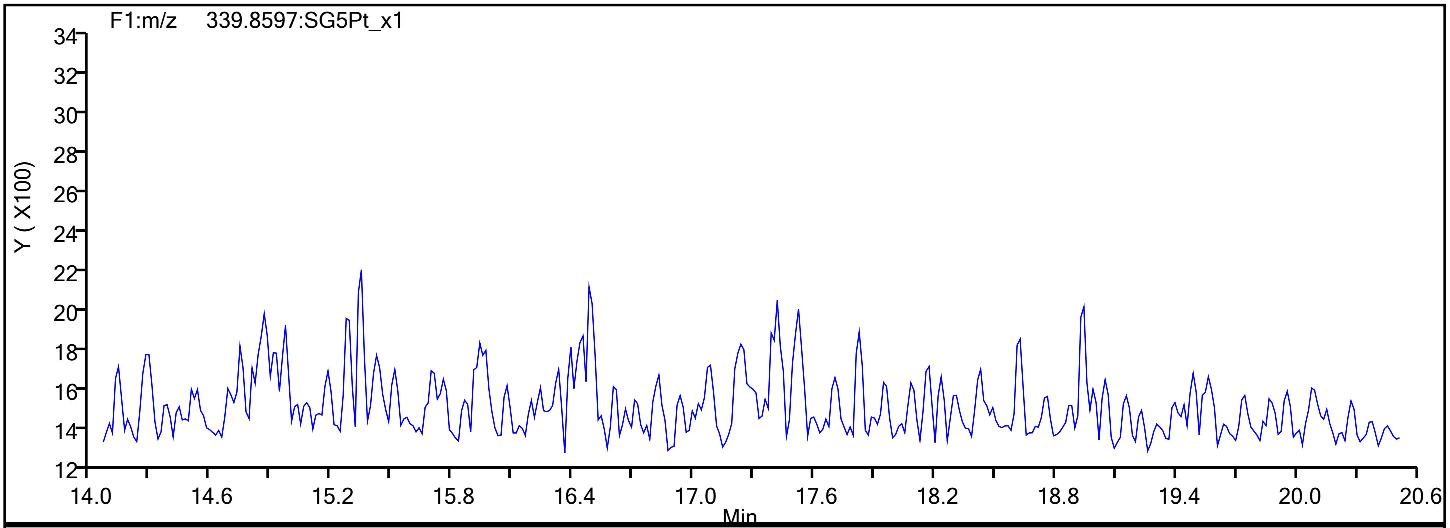

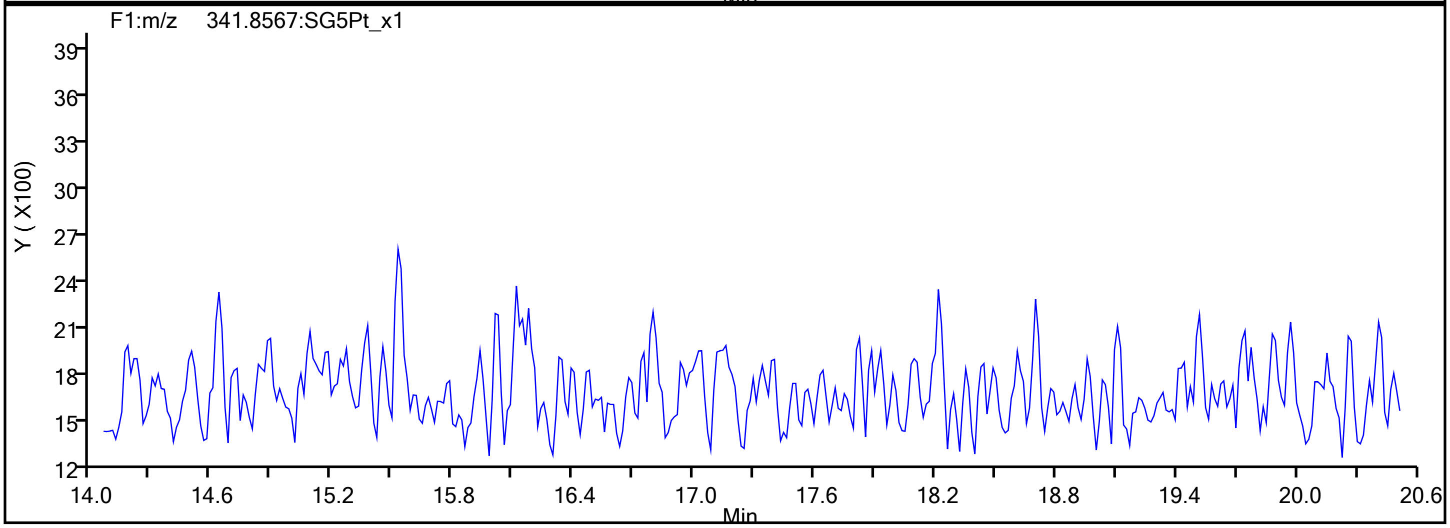

F1 PeCDFs Interference Mass

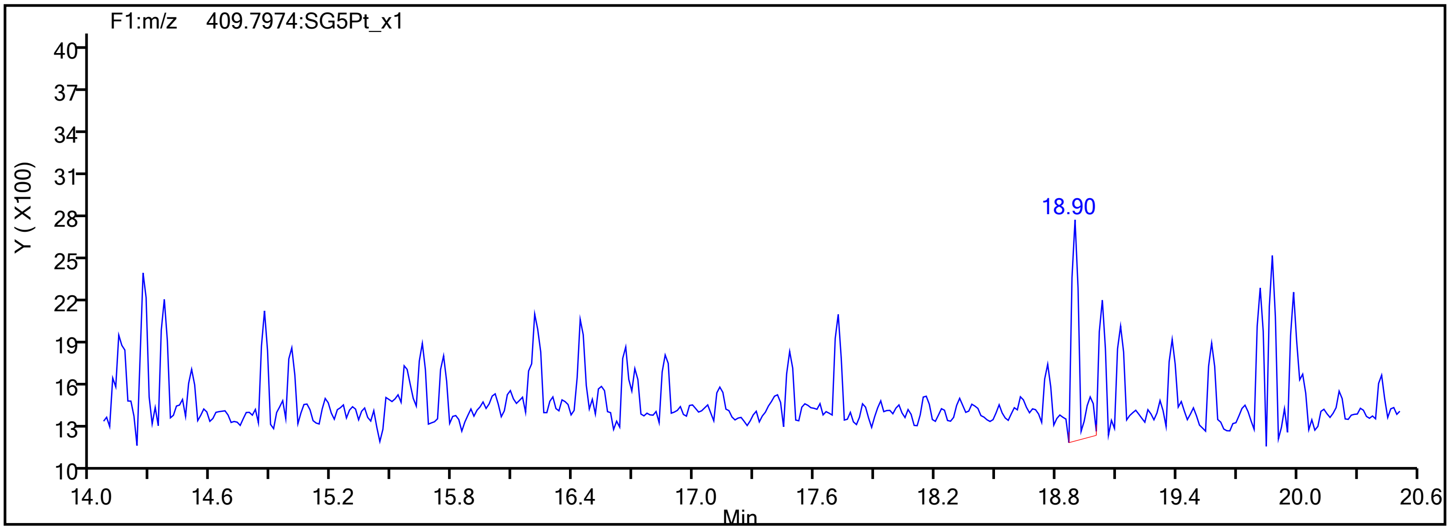

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_10D5
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Column Dia: 0.32 mm

PeCDF

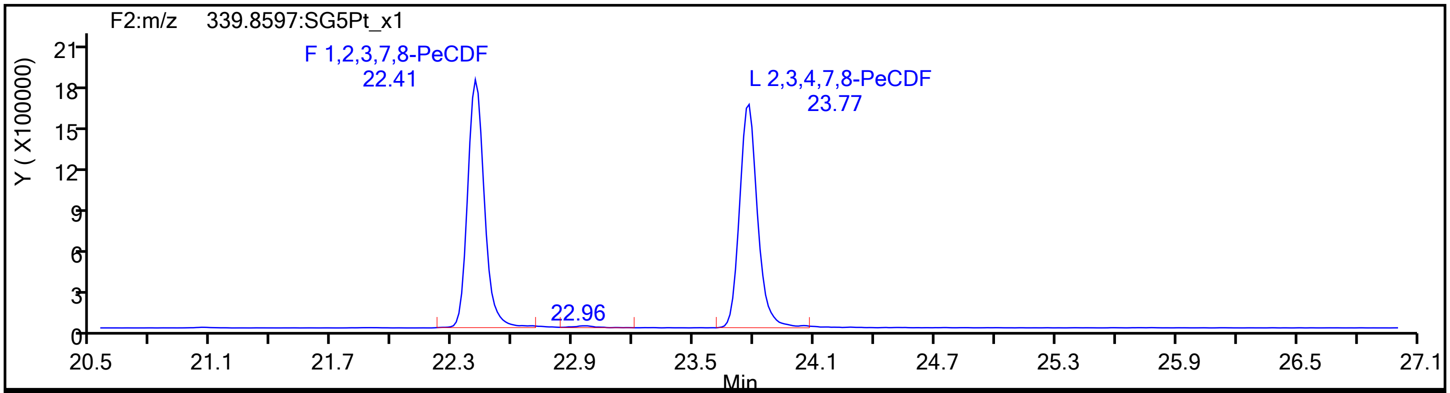

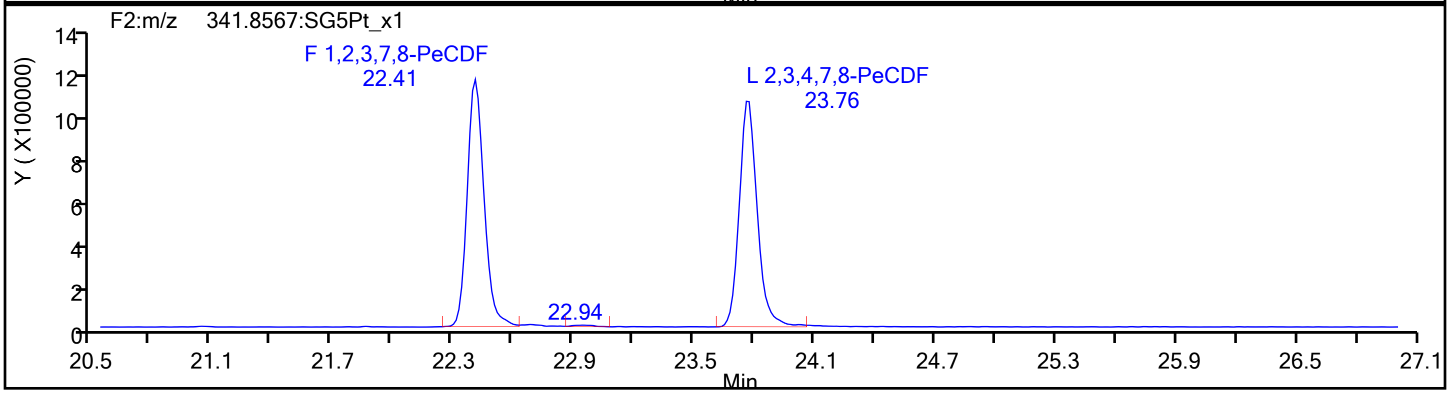

PeCDF Standards

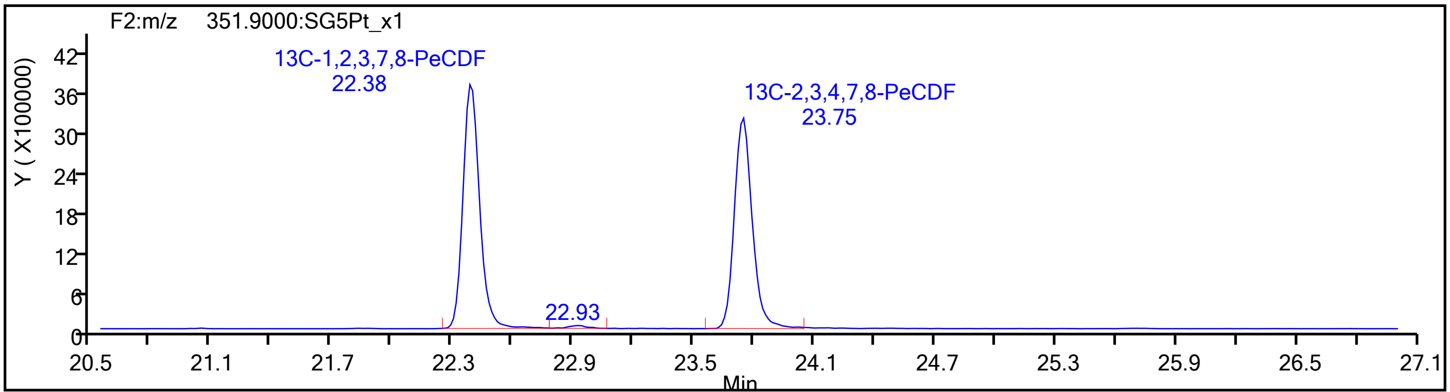

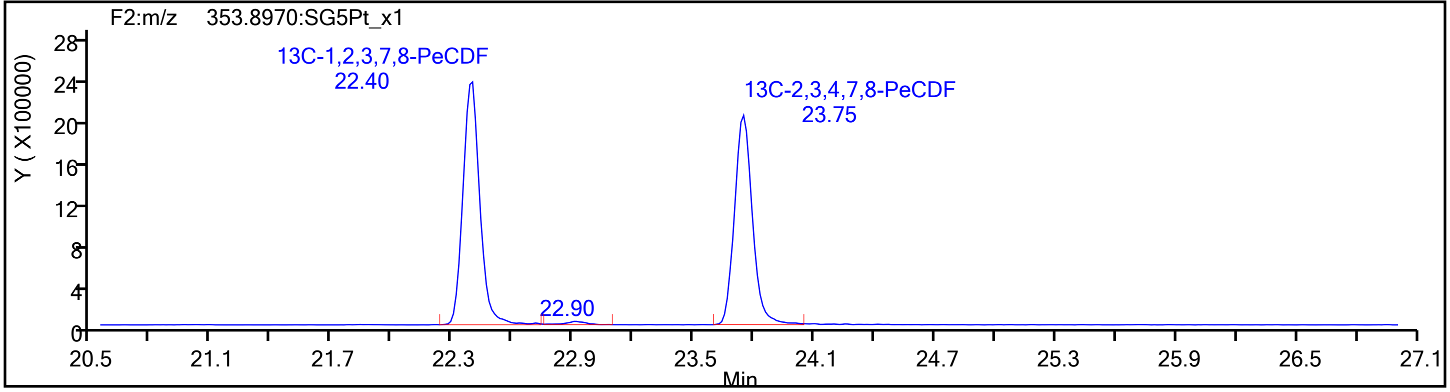

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

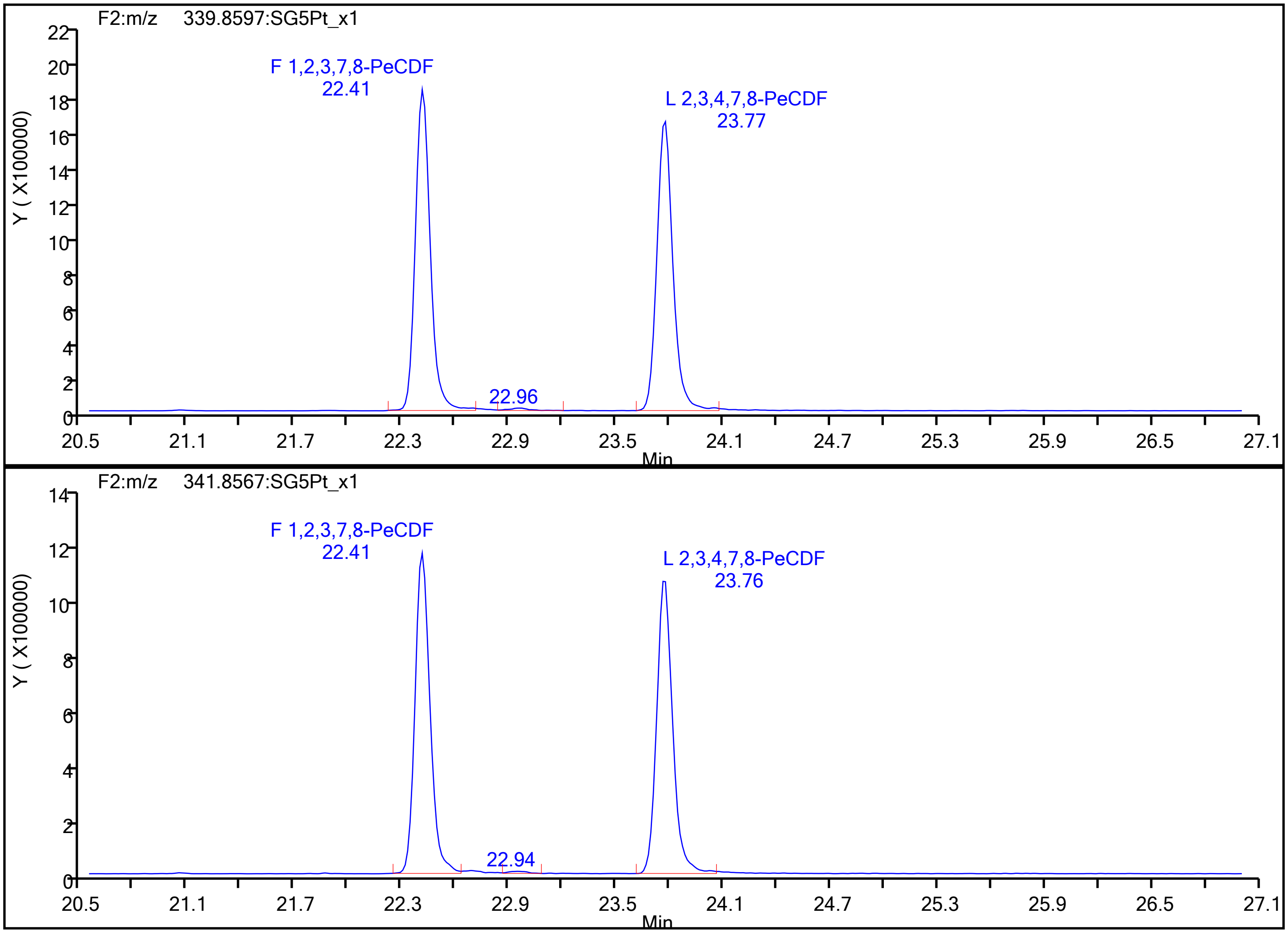

PeCDF Interference Mass

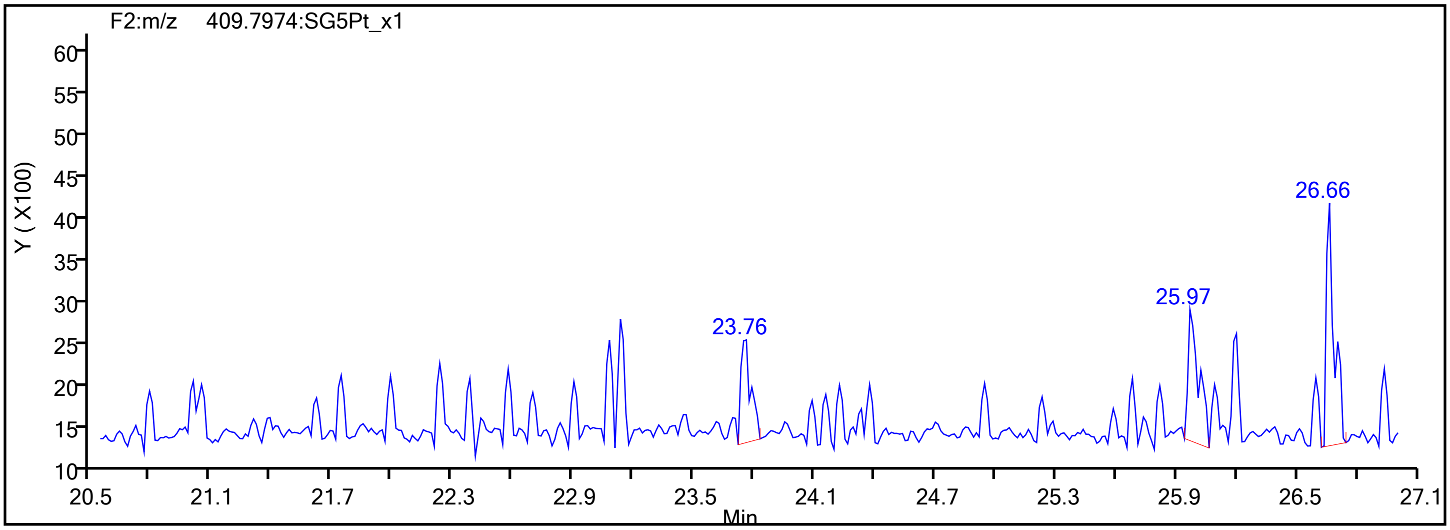

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 15

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PeCDD

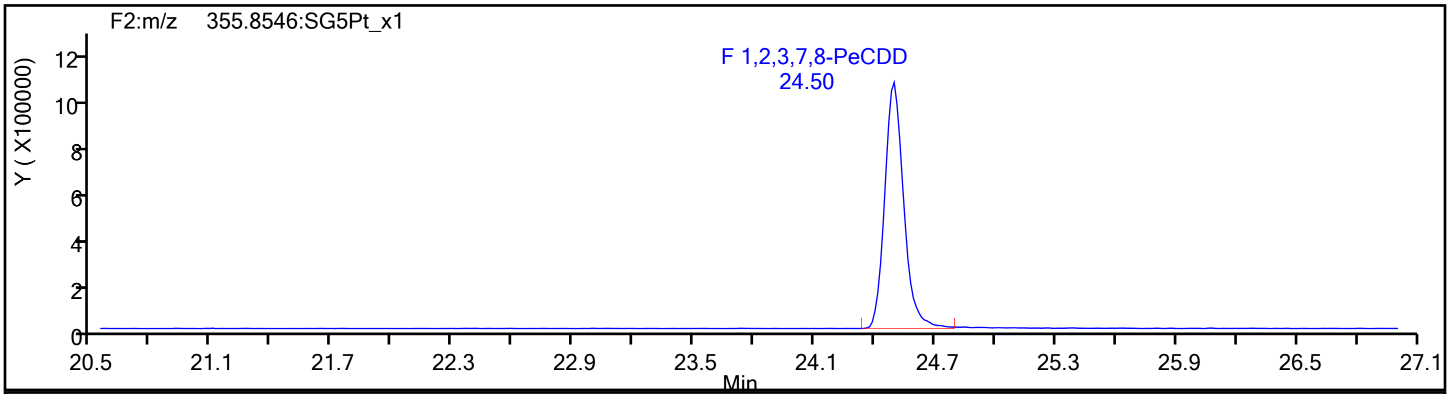

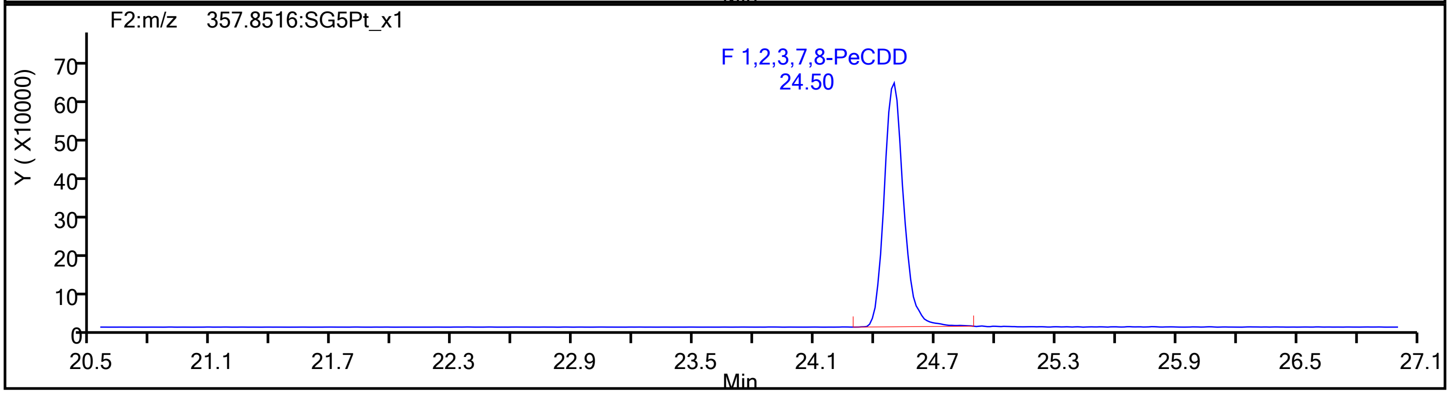

PeCDD Standards

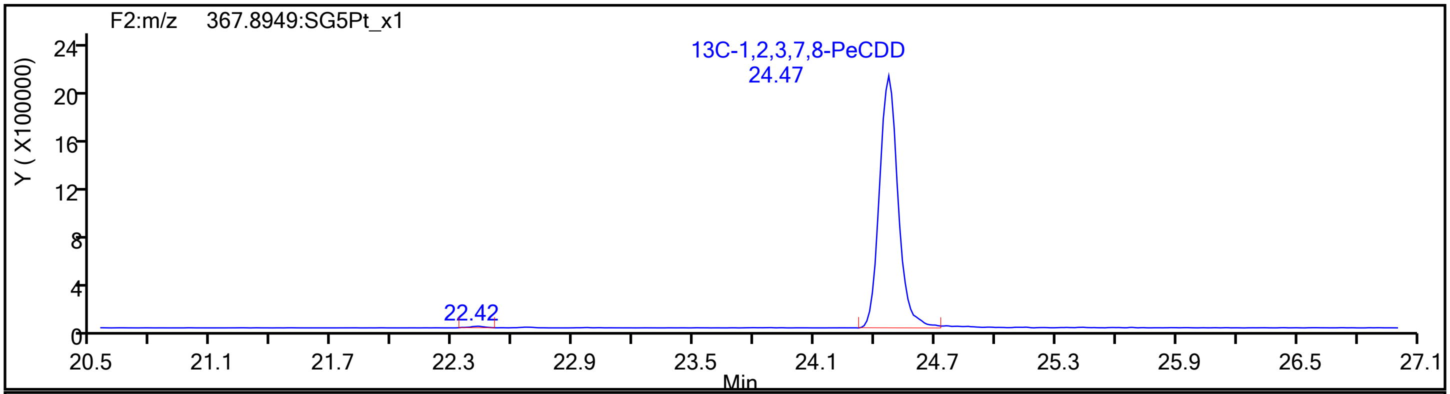

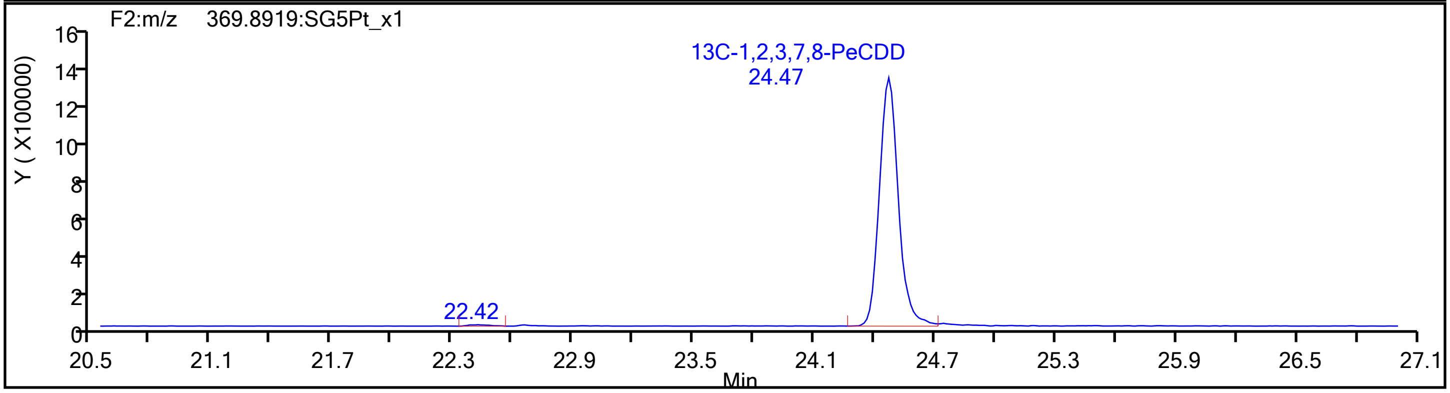

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 15:13:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
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Client ID:
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HxCDF

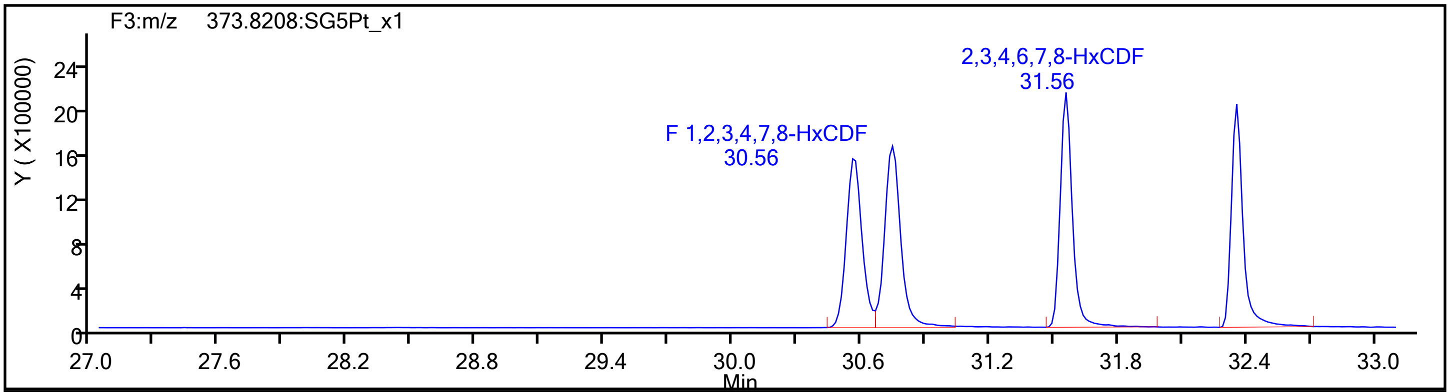

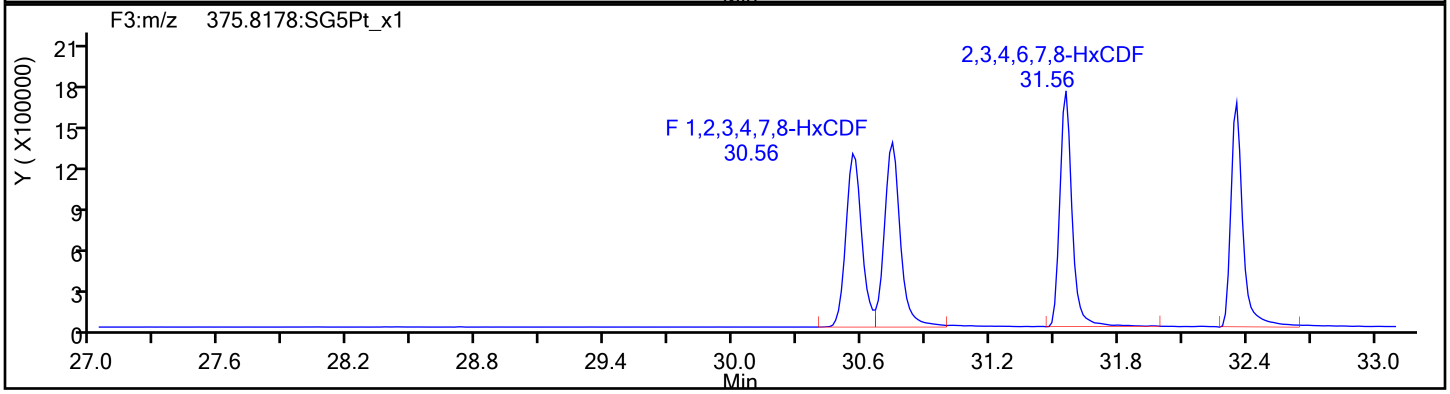

HxCDF Standards

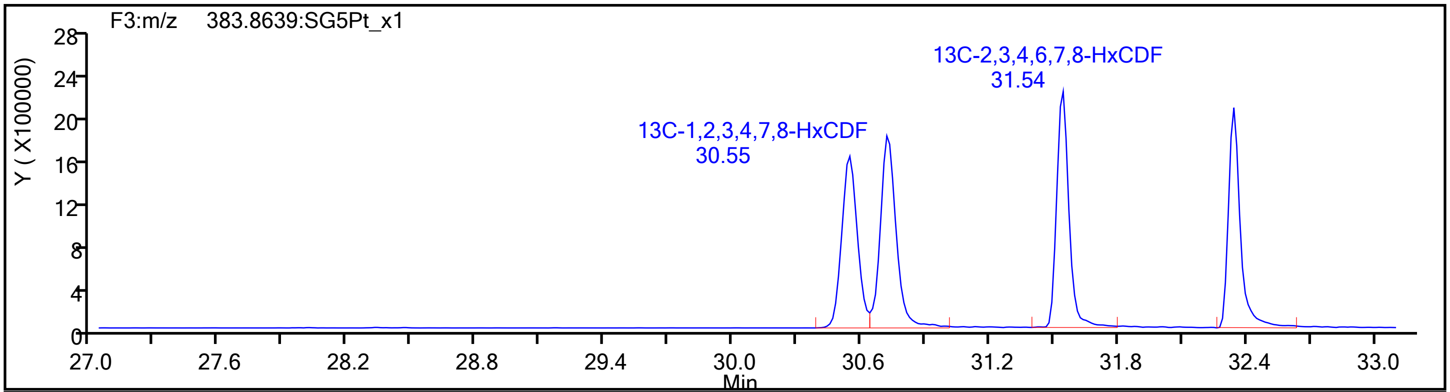

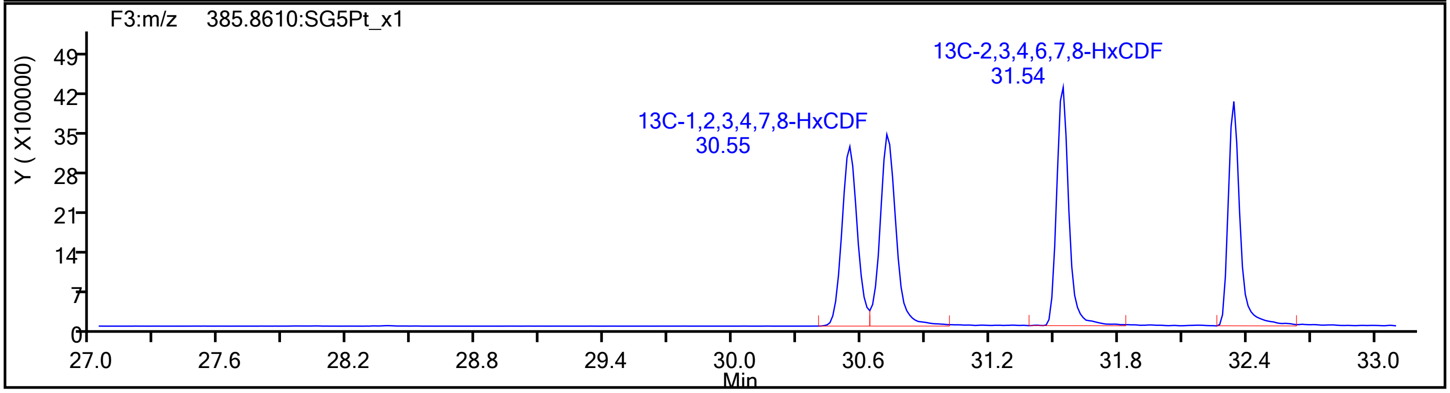

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HxCDF

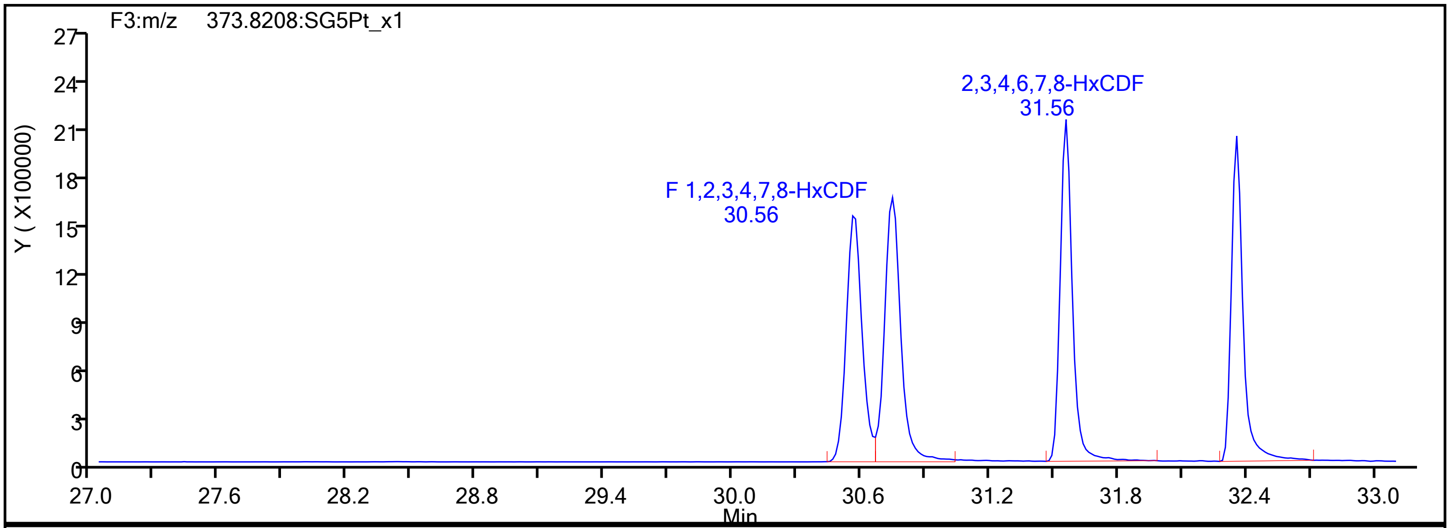

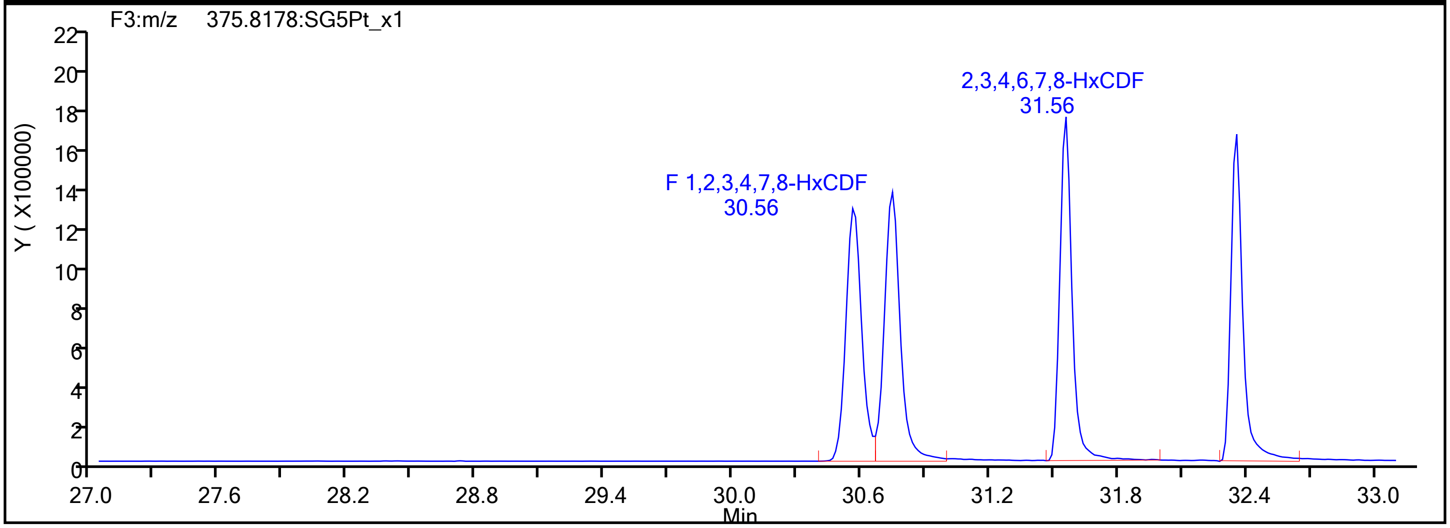

HxCDF Interference Mass

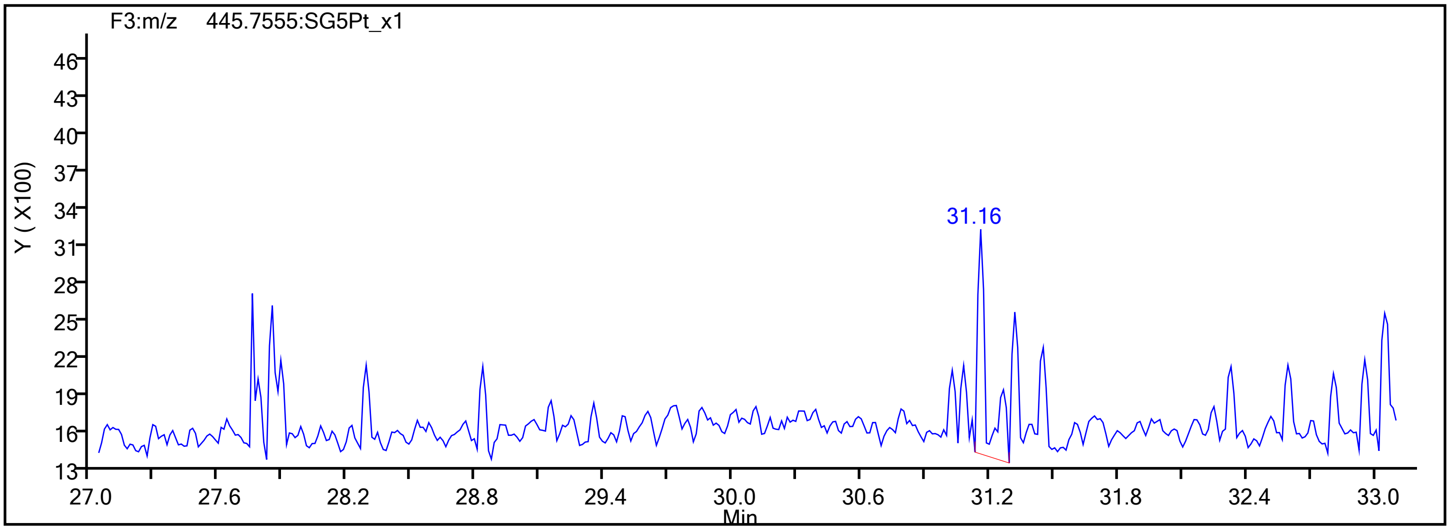

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Eurofins TestAmerica, Sacramento

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Injection Date: 24-Nov-2020 15:13:12

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 15

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

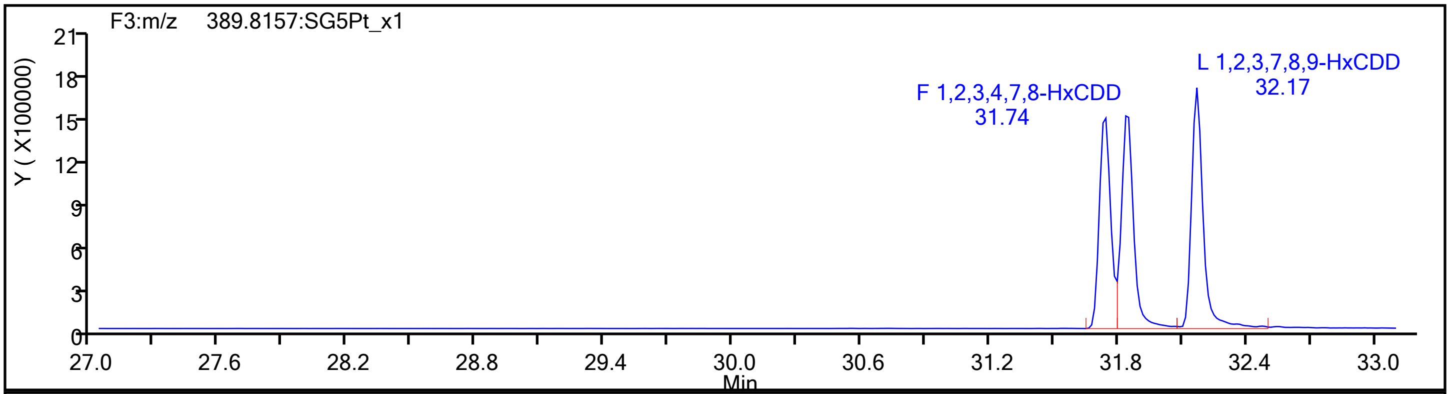

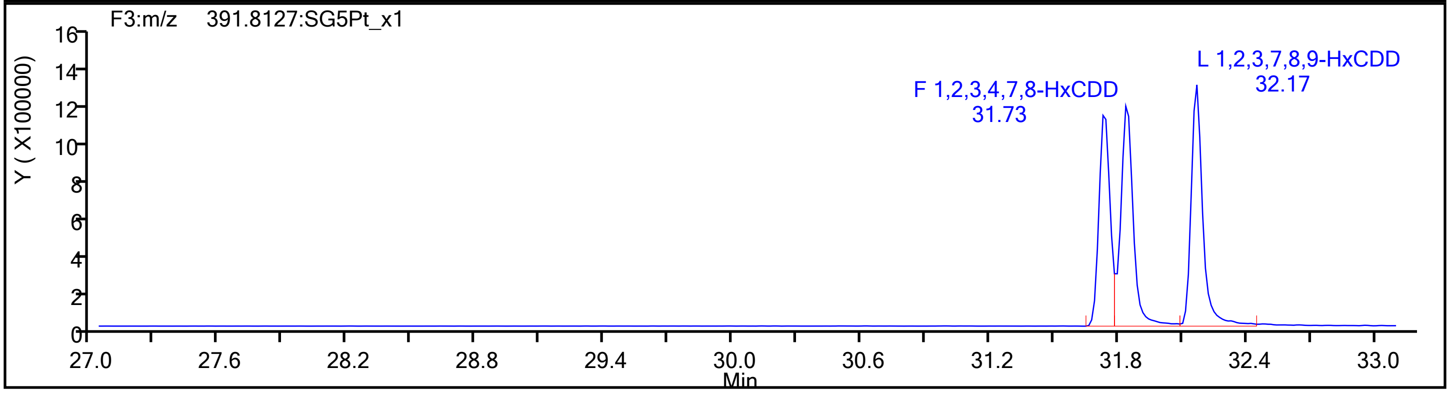

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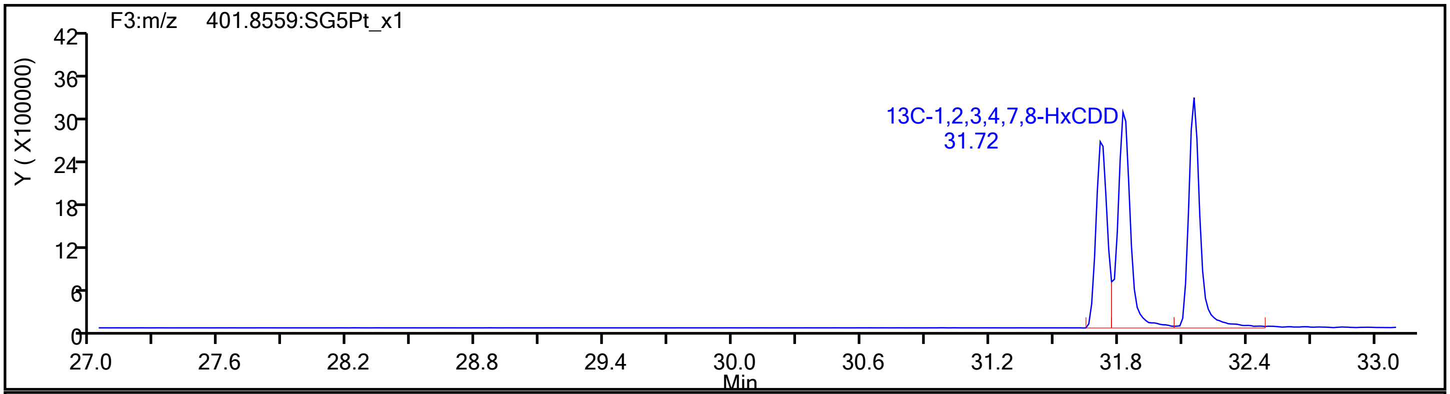

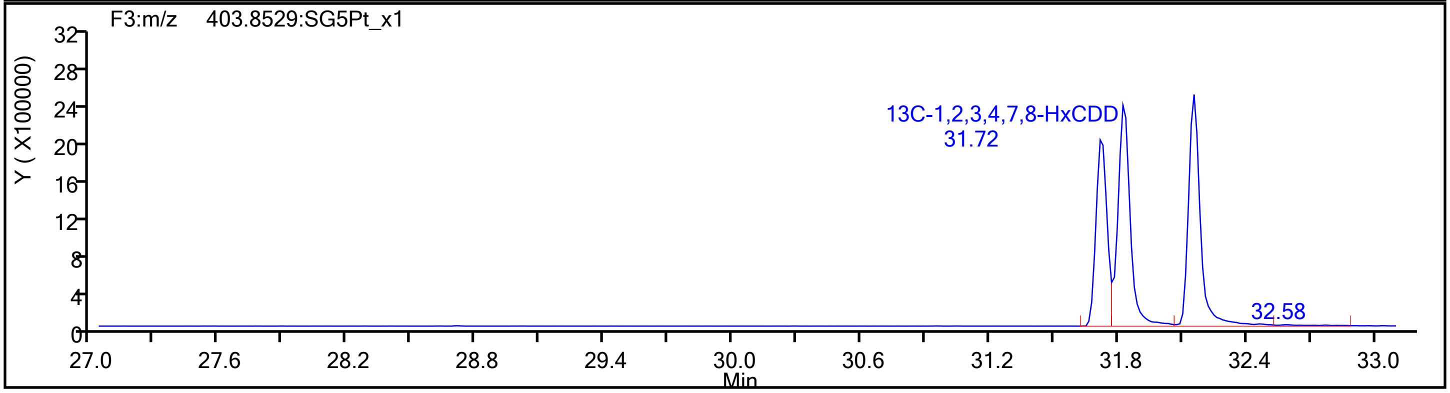

Eurofins TestAmerica, Sacramento

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HpCDF

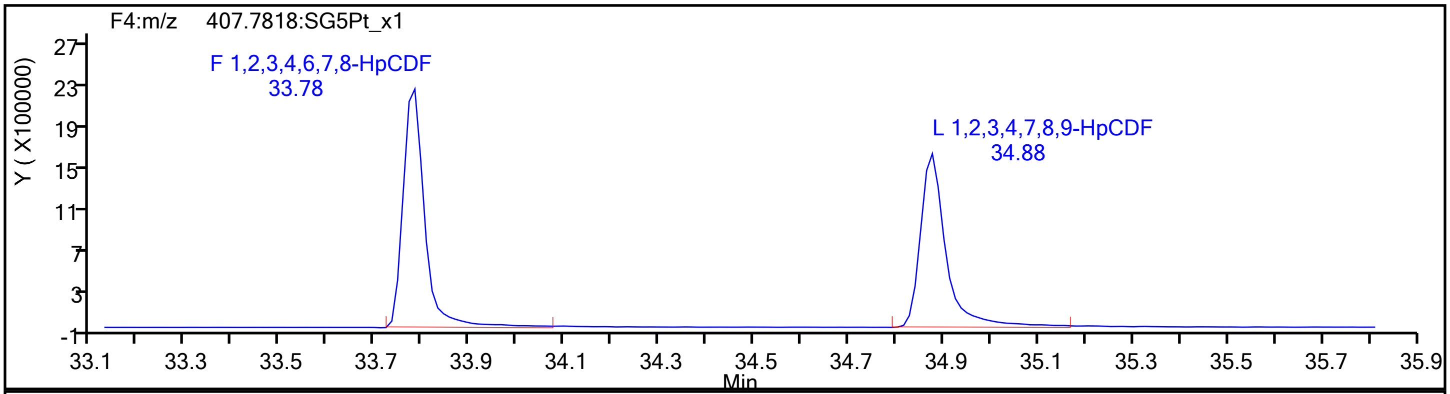

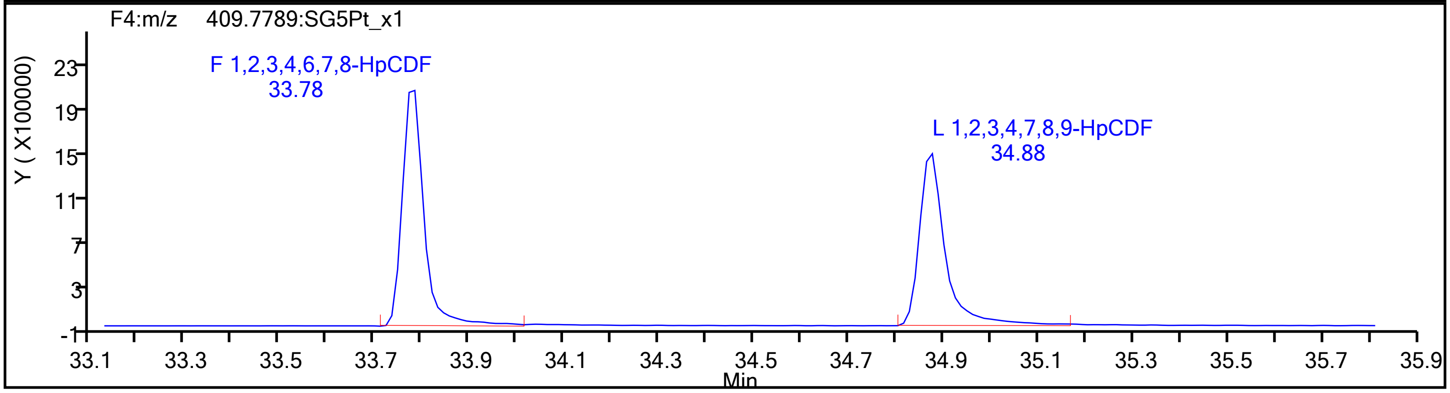

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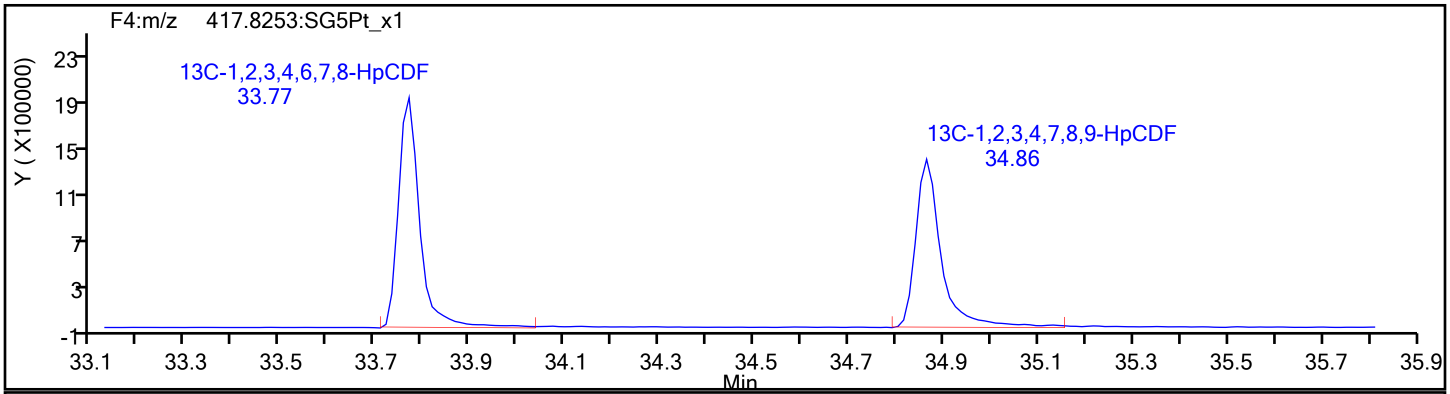

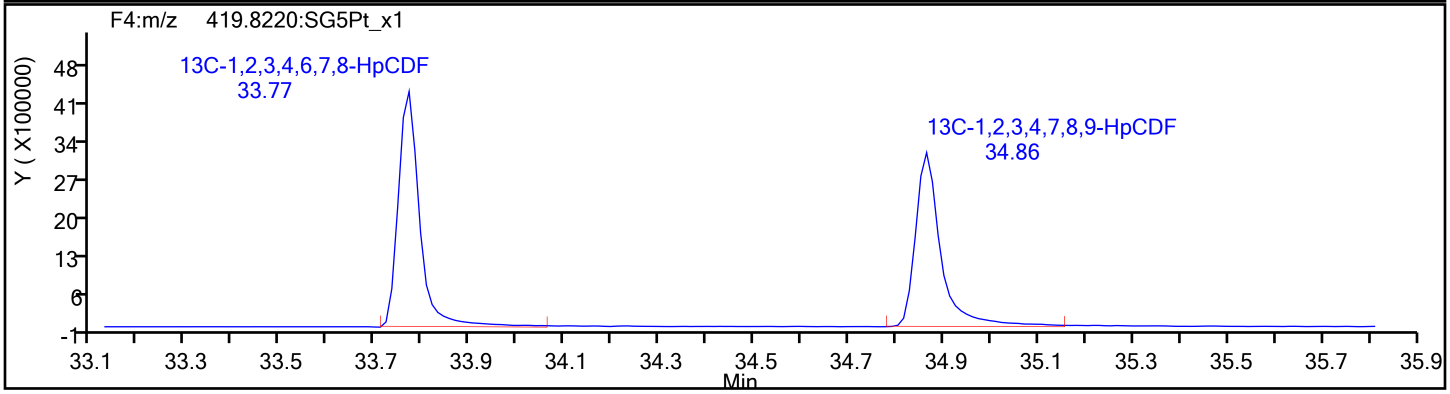

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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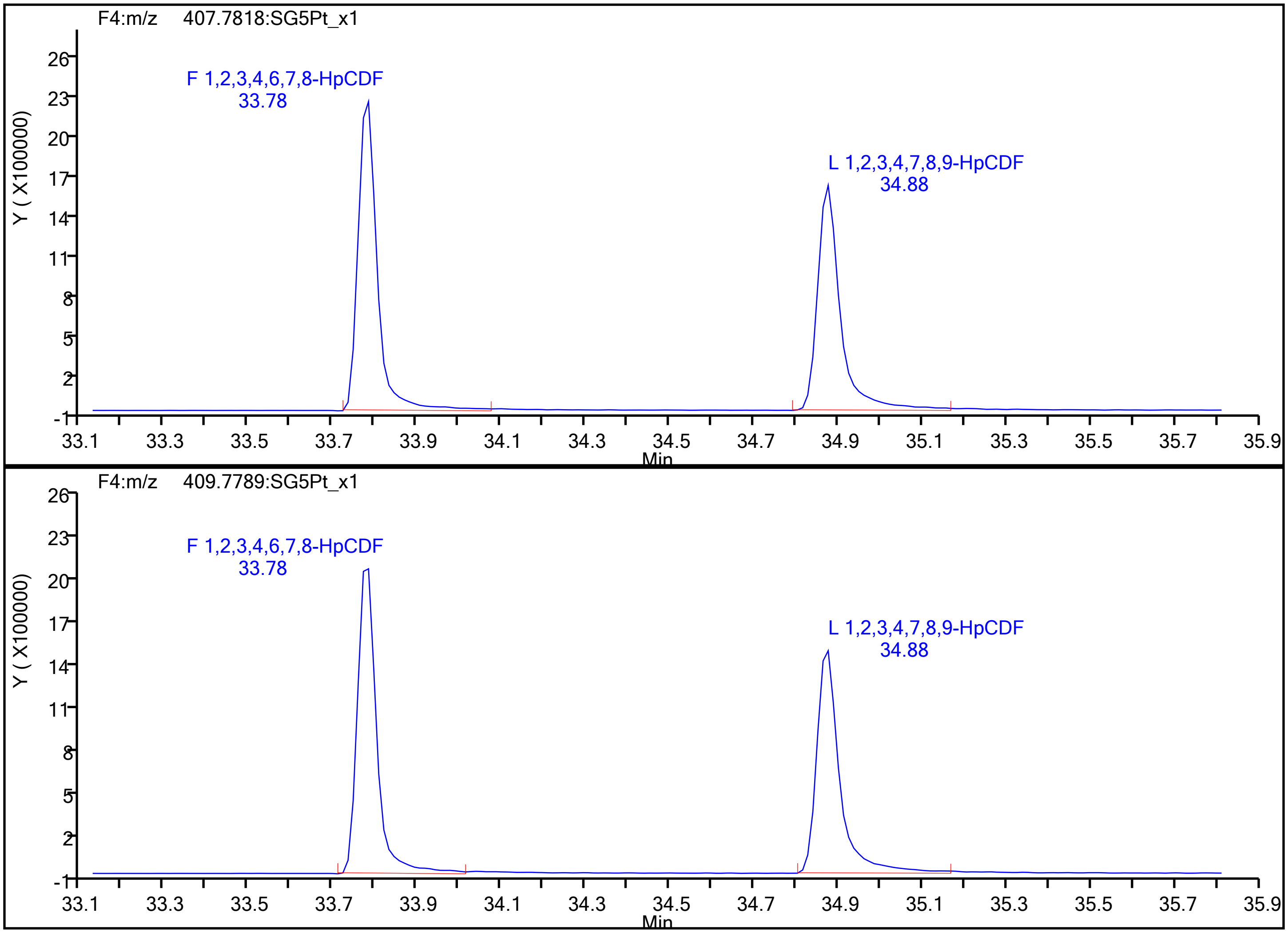

HpCDF Interference Mass

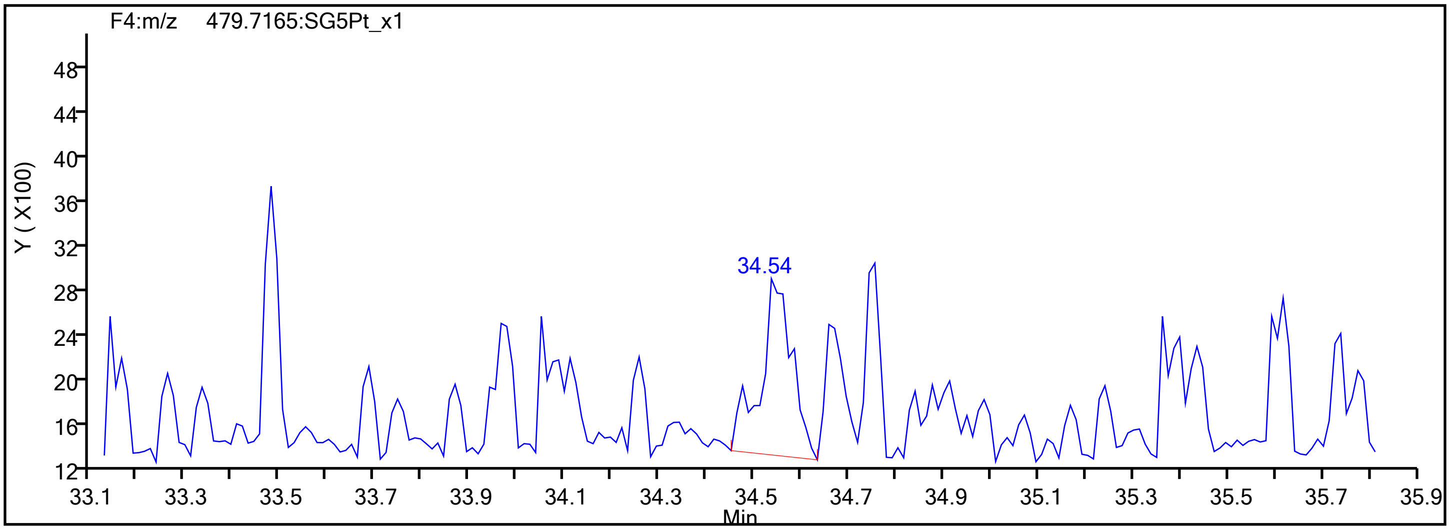

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

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HpCDD

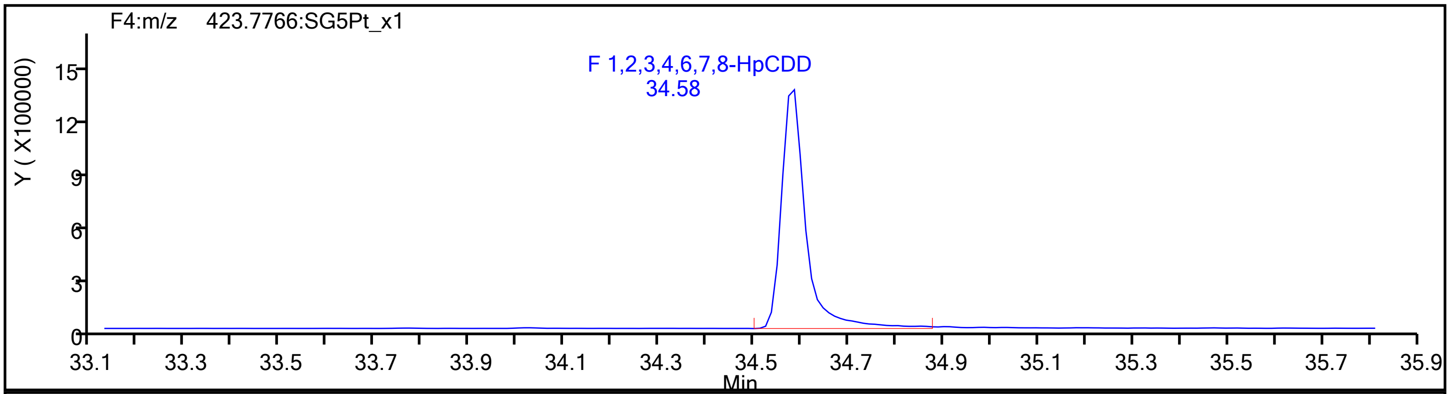

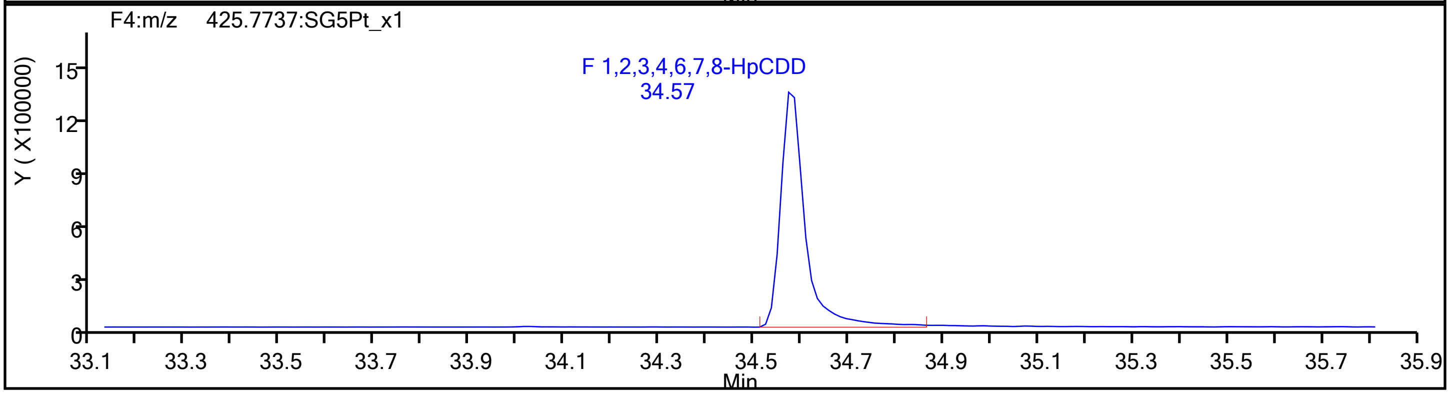

HpCDD Standards

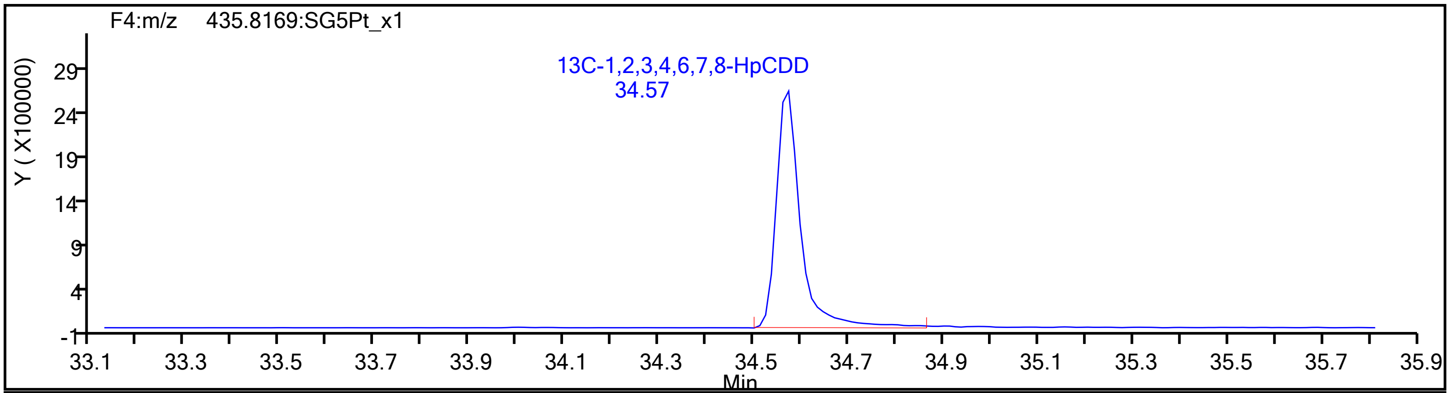

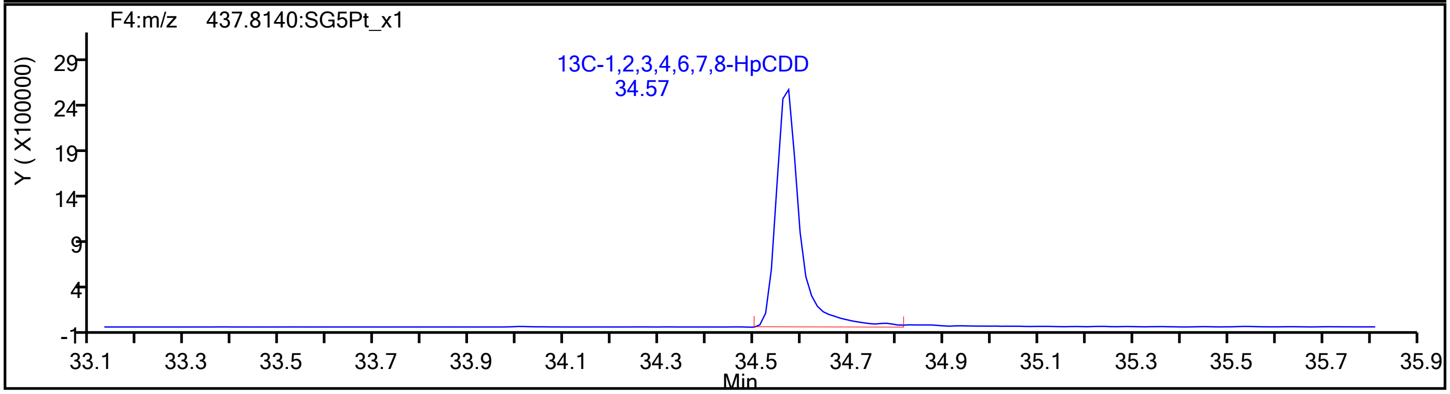

Report Date: 26-Nov-2020 00:06:44
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d
Injection Date: 24-Nov-2020 15:13:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 15
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

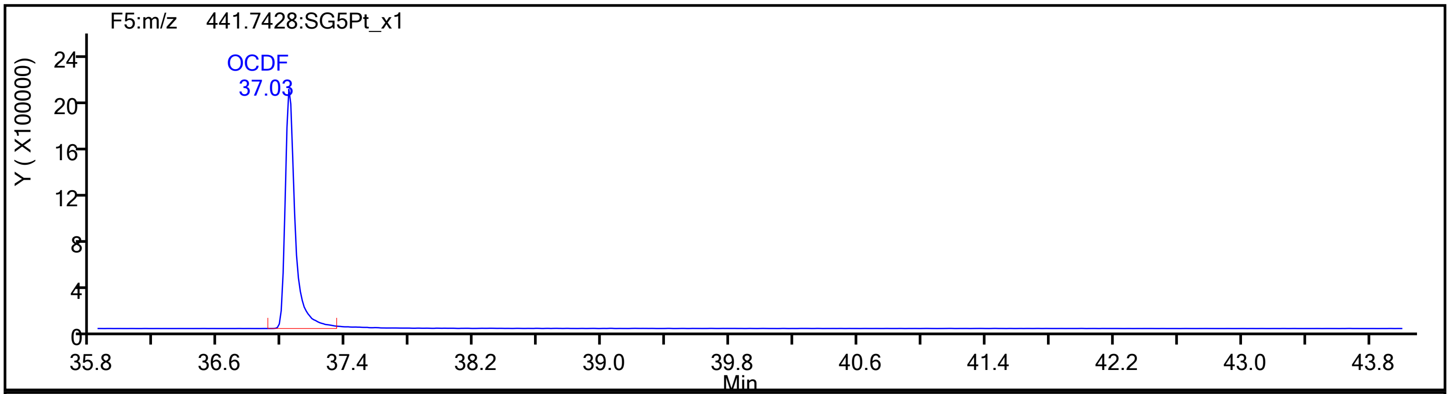

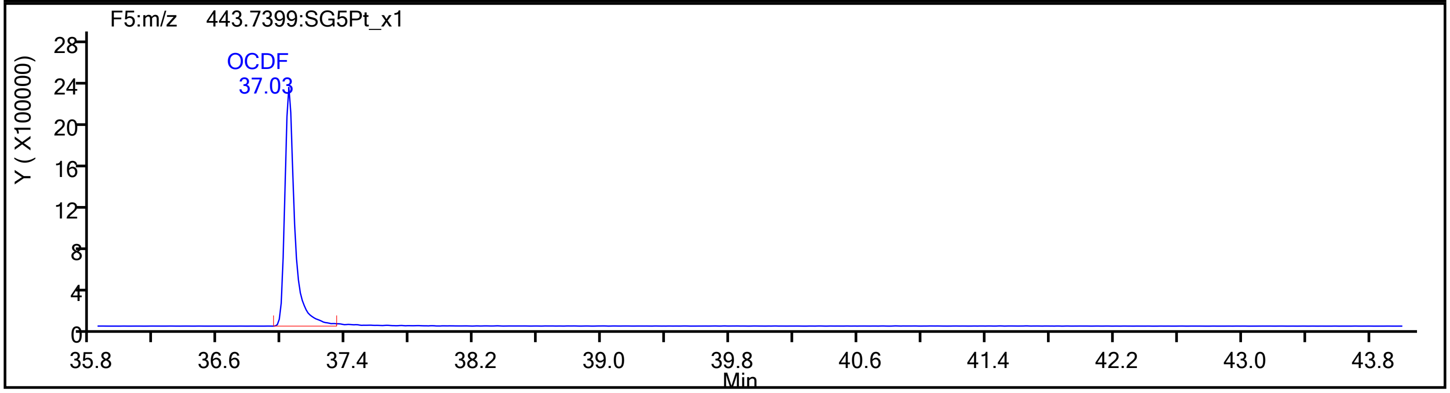

OCDF Standards

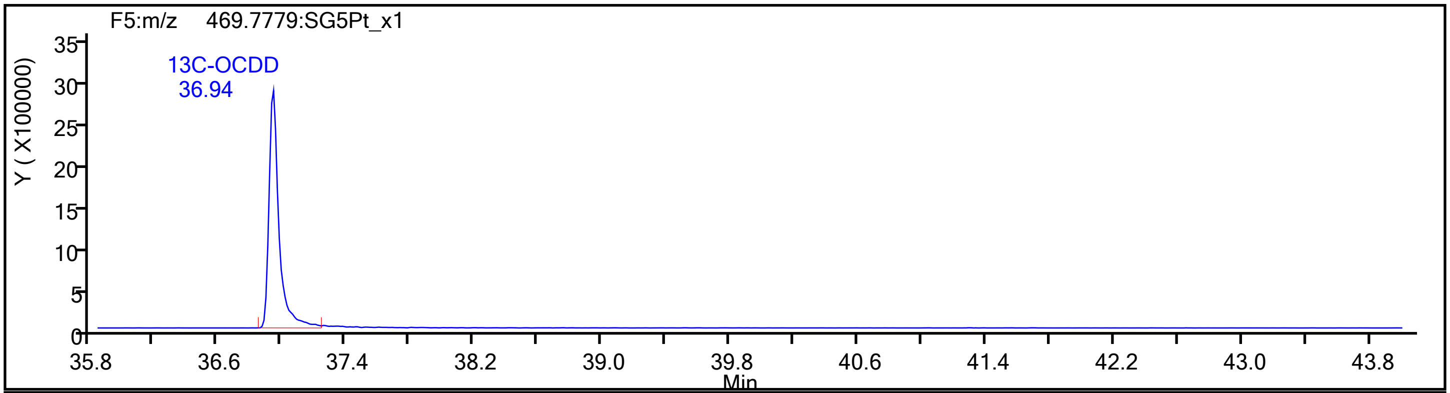

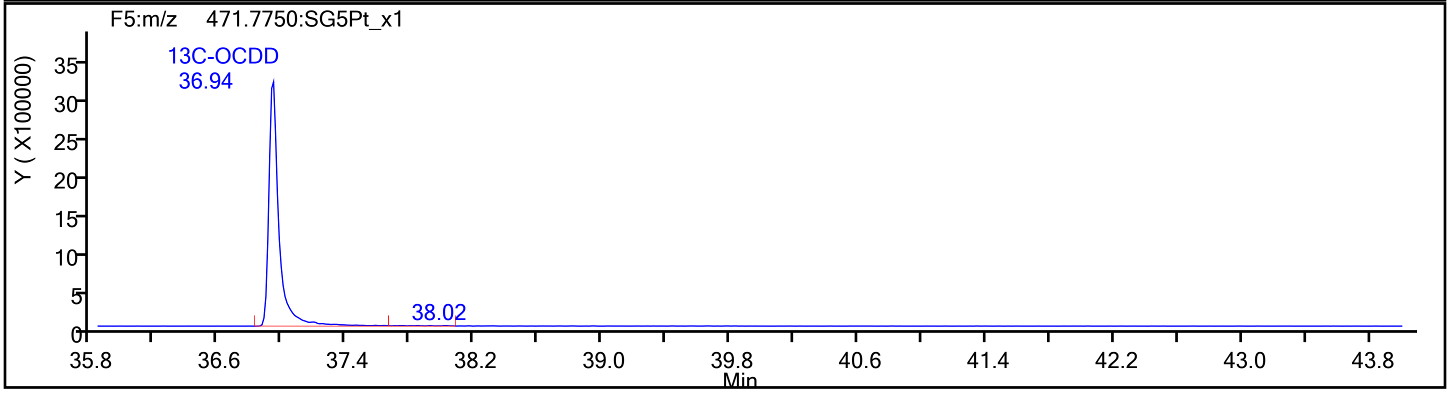

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

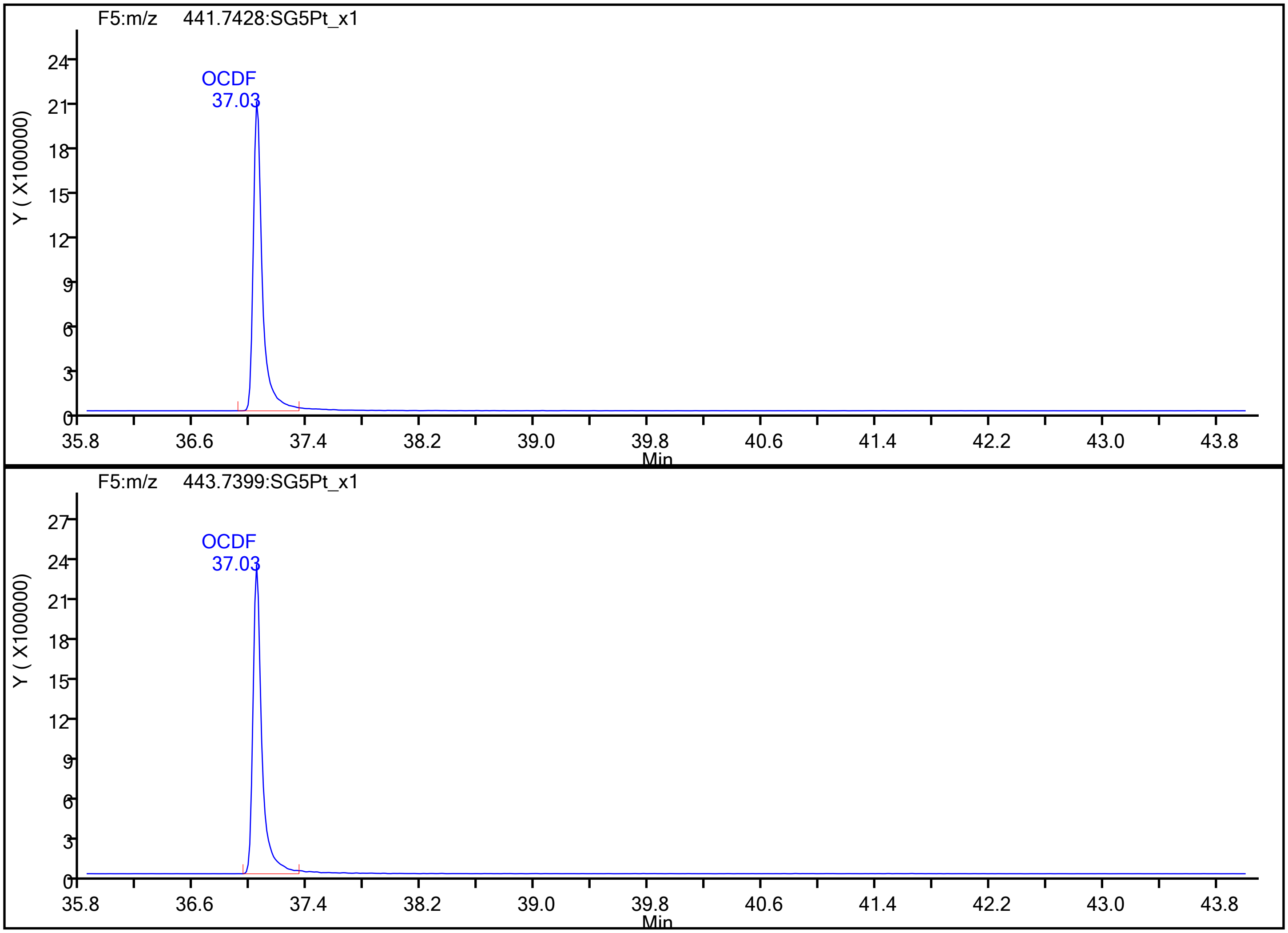

OCDF Interference Mass

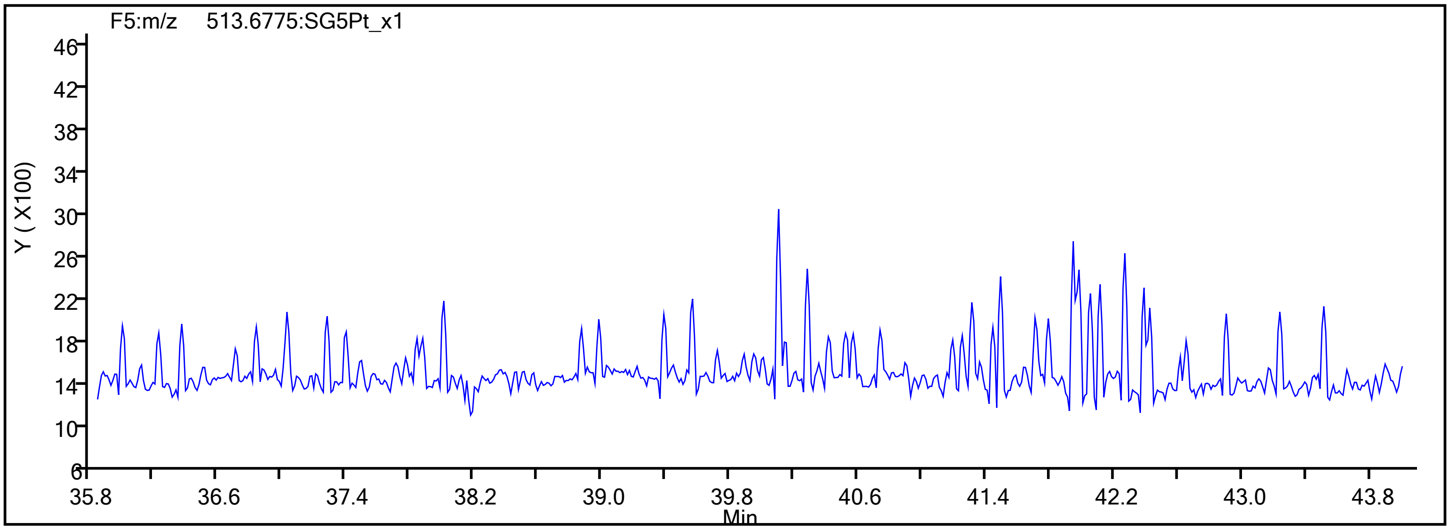

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

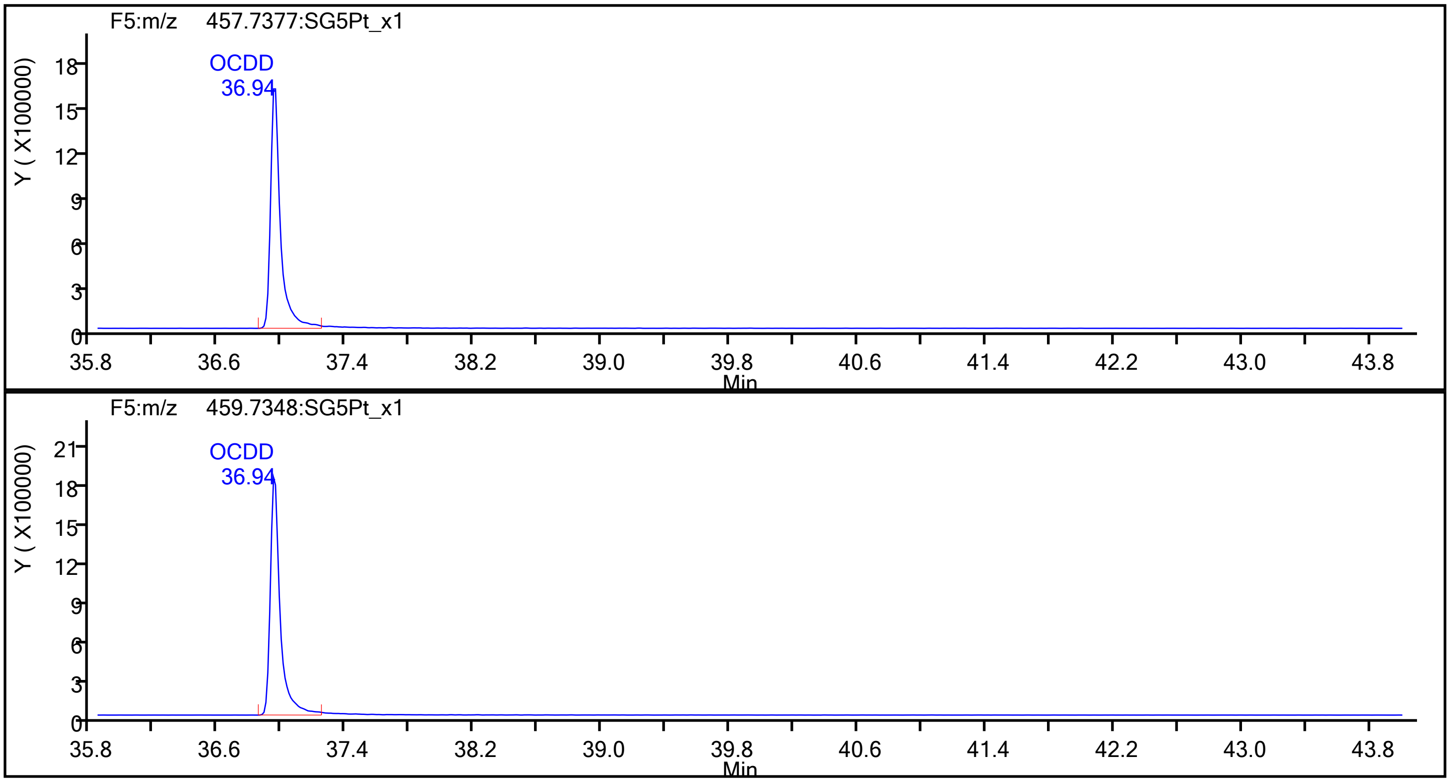

OCDD Standards

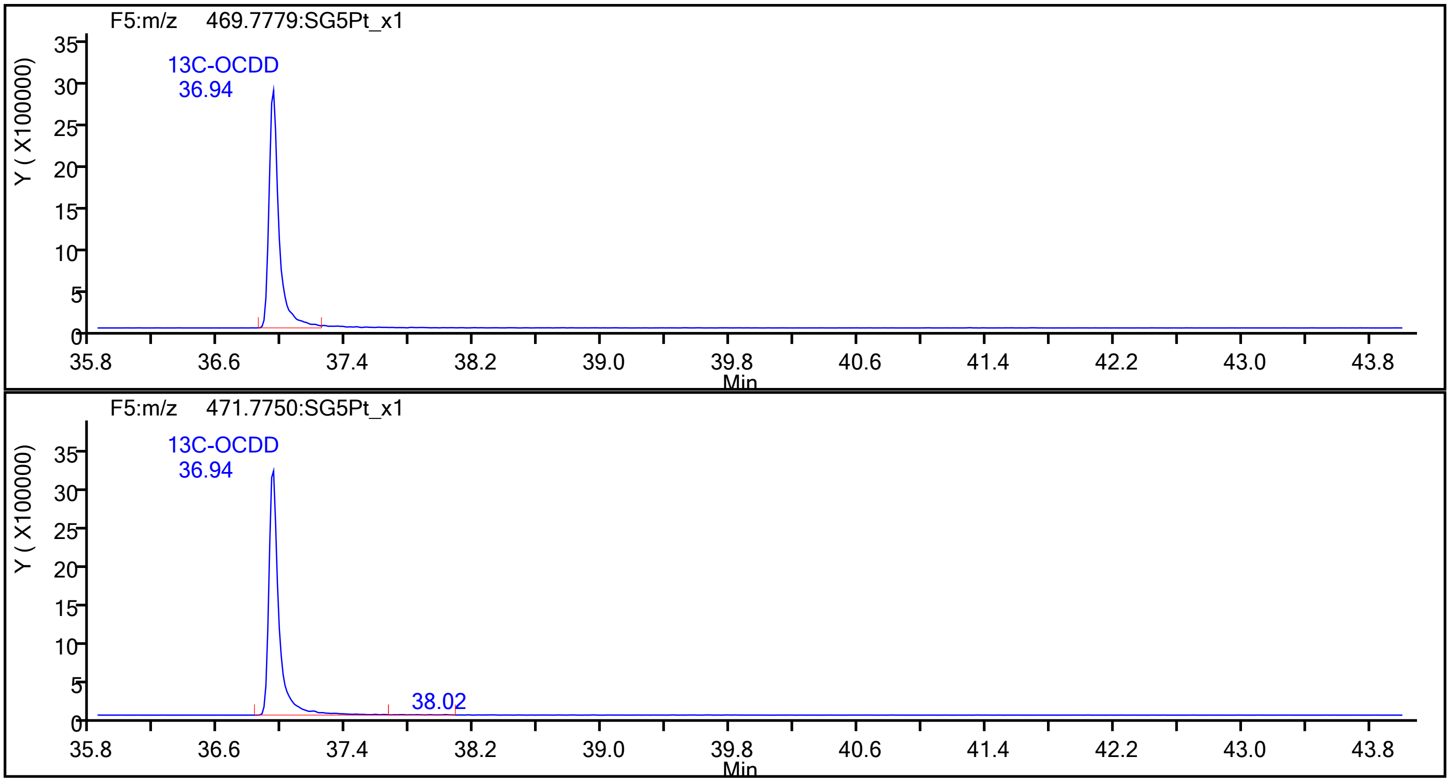

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d

Injection Date: 24-Nov-2020 15:13:12 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 15

Column Type: DB-5 Column Dia: 0.32 mm

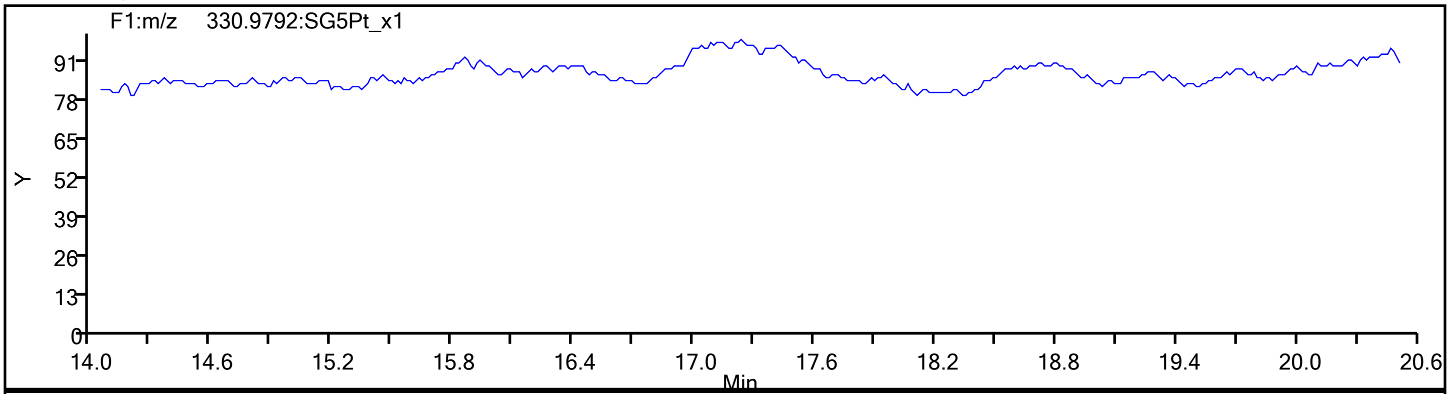

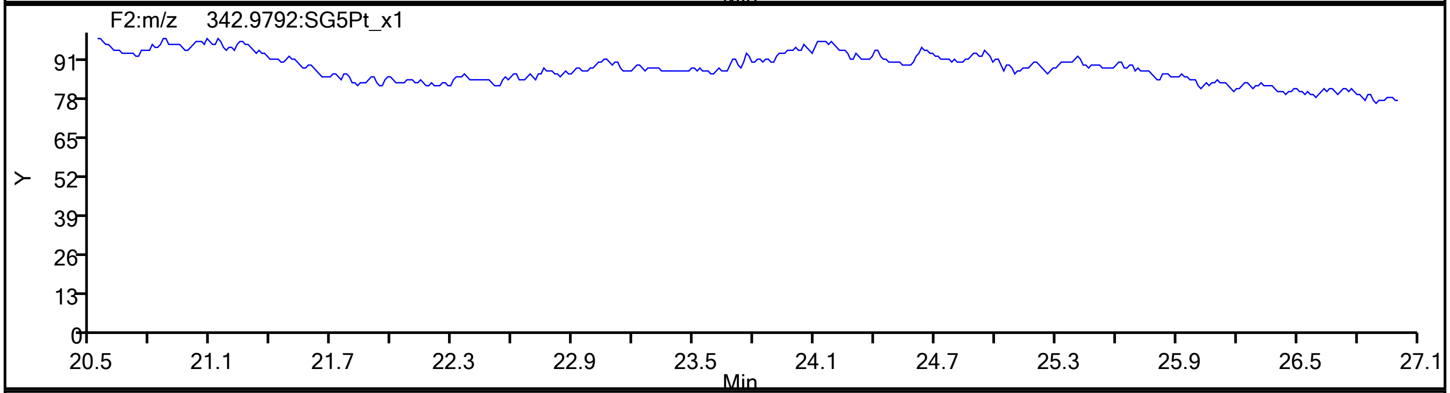

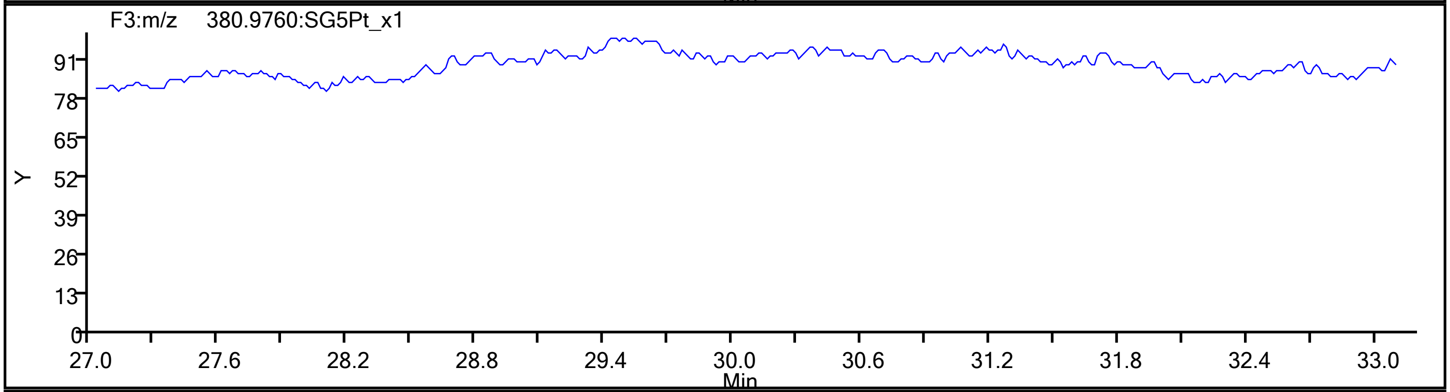

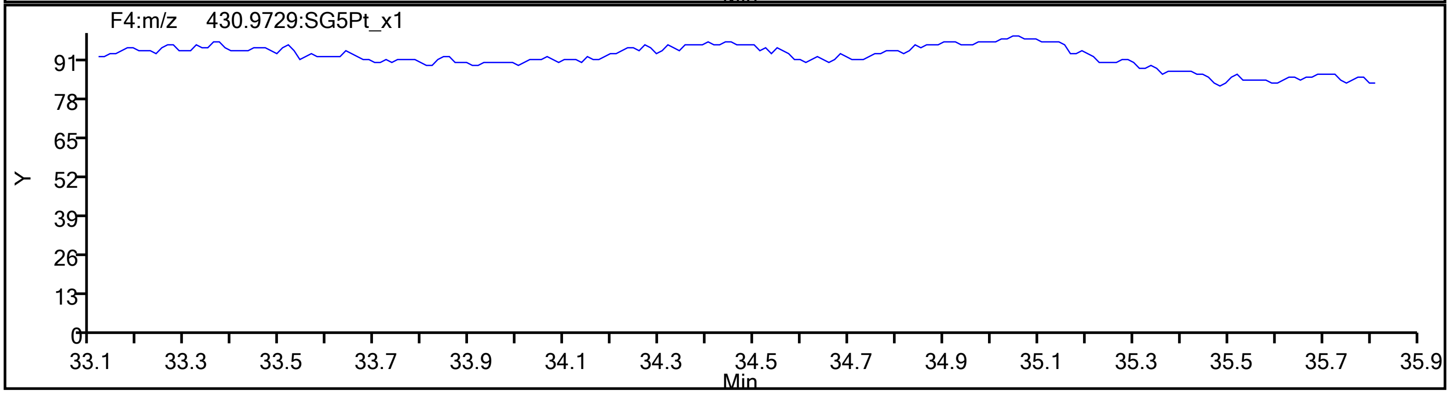

Report Date: 26-Nov-2020 00:06:44 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_40.d		
Injection Date:	24-Nov-2020 15:13:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	15
Column Type:	DB-5	Column Dia:	0.32 mm

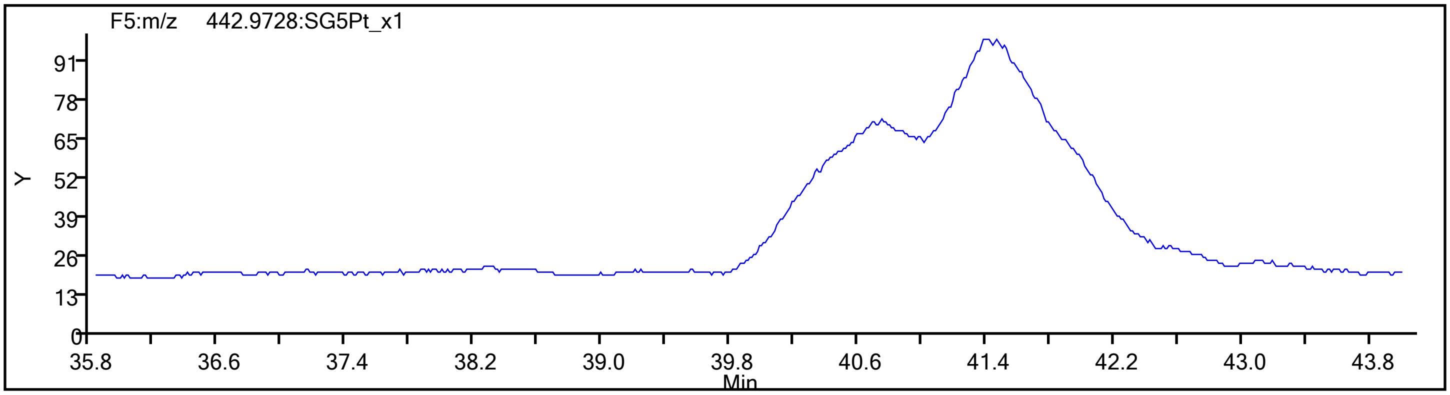

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-66850-2

SDG No.:

Lab Sample ID: ICV 320-398641/9

Calibration Date: 07/25/2020 03:40

Instrument ID: 11D2

Calib Start Date: 07/24/2020 23:50

GC Column: DB-225

ID: 0.32(mm)

Calib End Date: 07/25/2020 02:23

Lab File ID: 24JL2011D2_009.d

Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	25-Jul-2020 03:40:30	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00045				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:					

Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	27-Jul-2020 12:55:22	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1056	

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

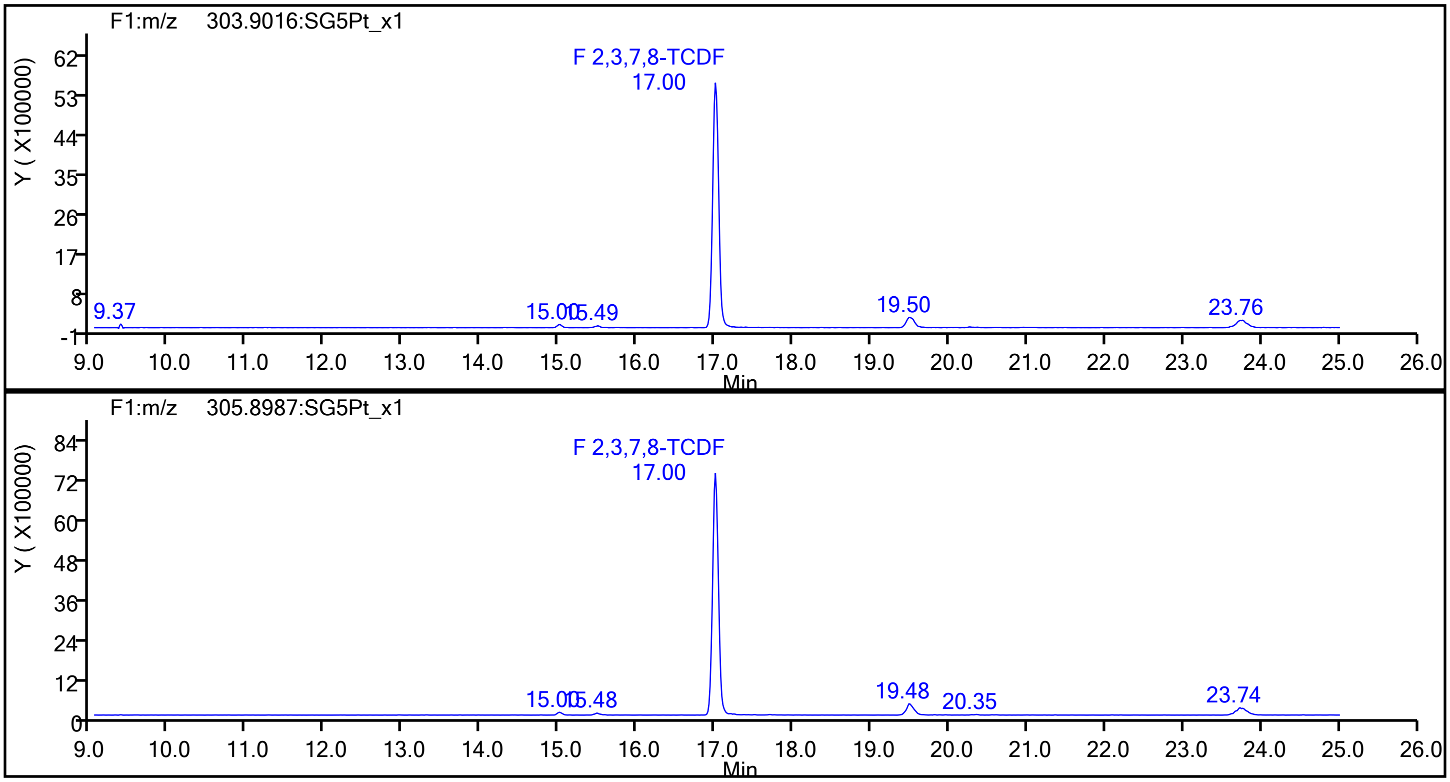

TCDF Standards

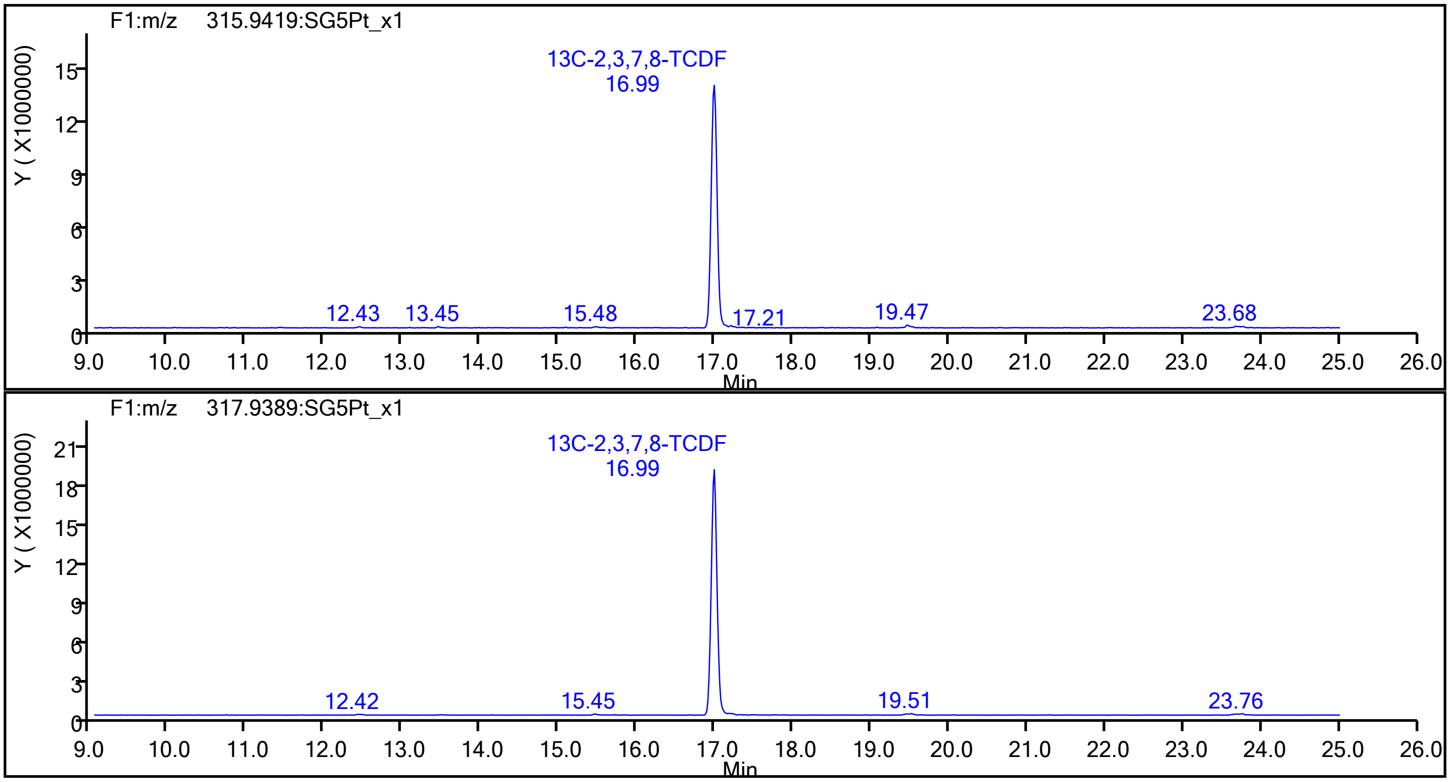

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

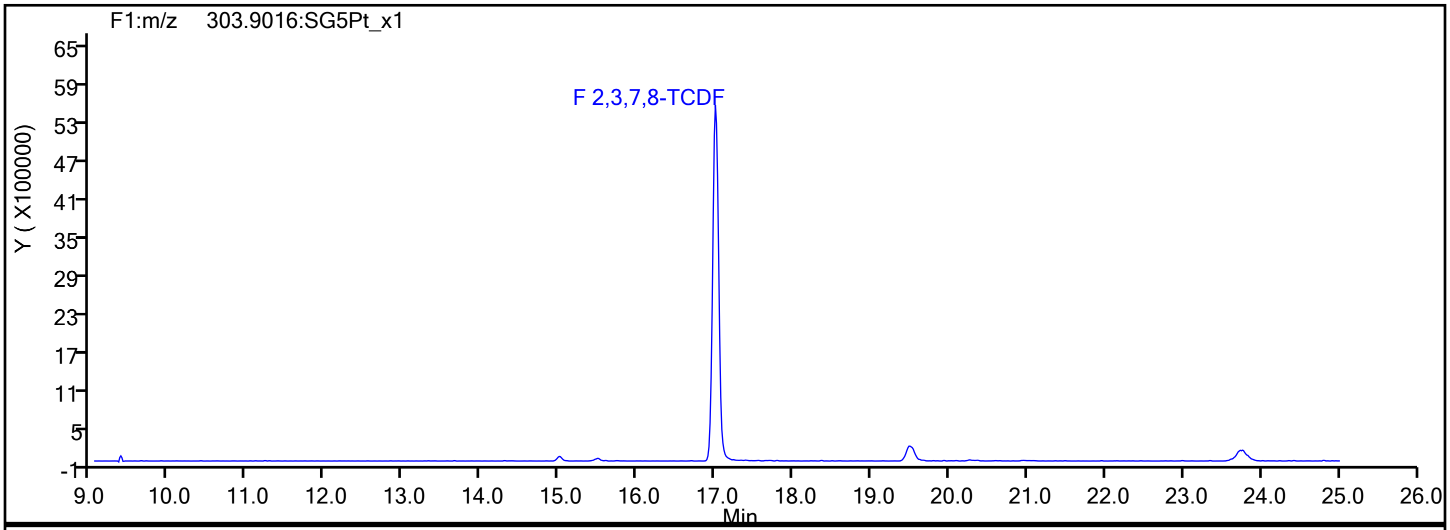

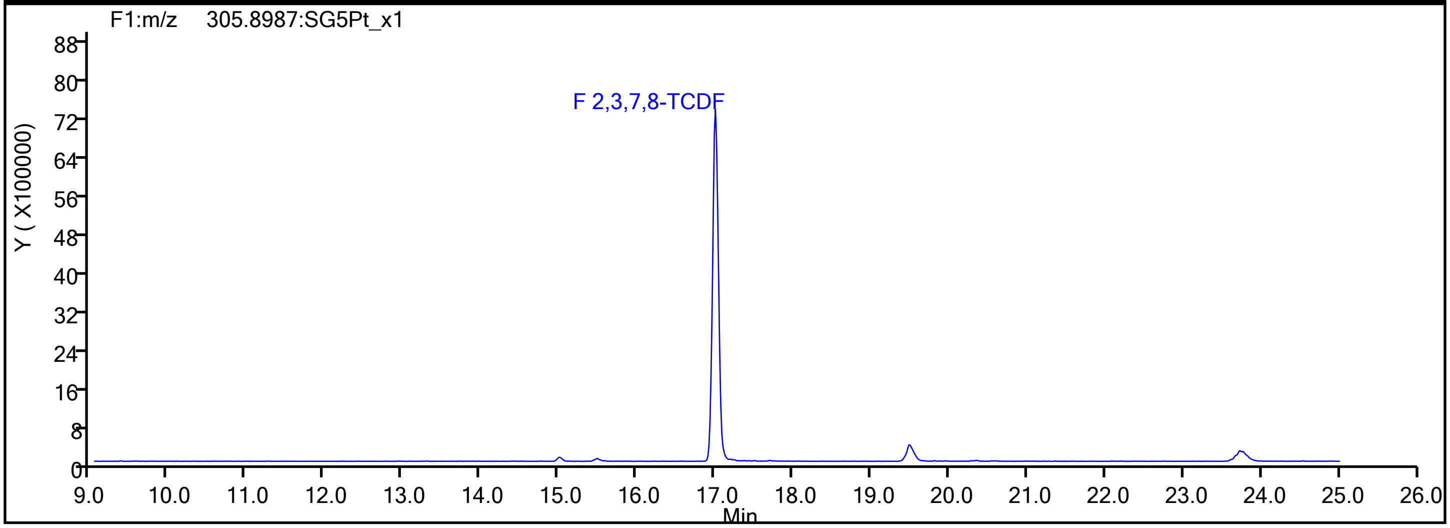

TCDF Interference Mass

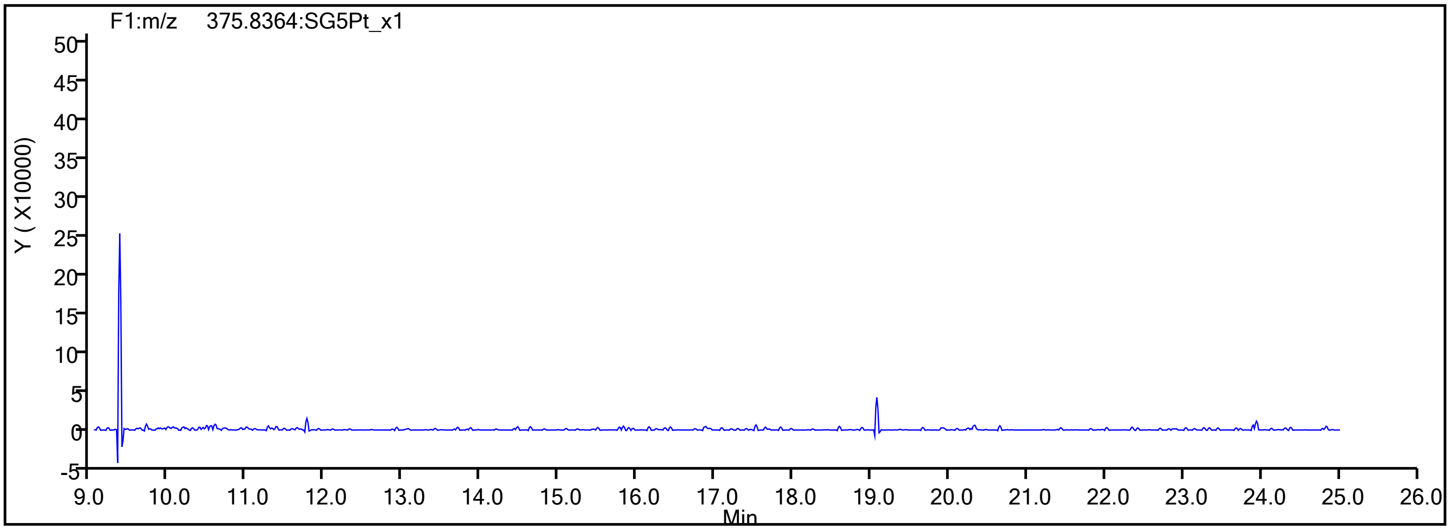

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

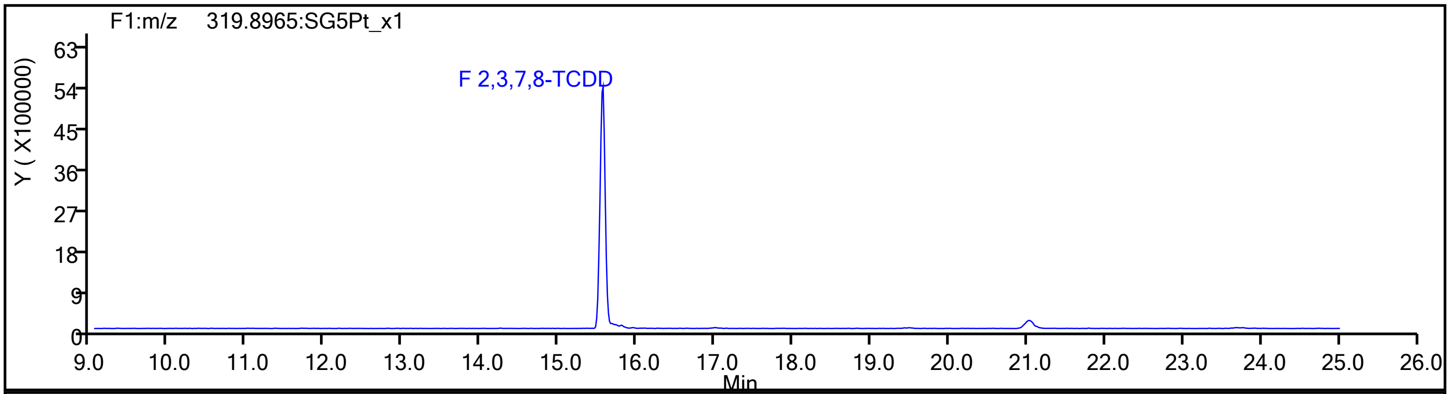

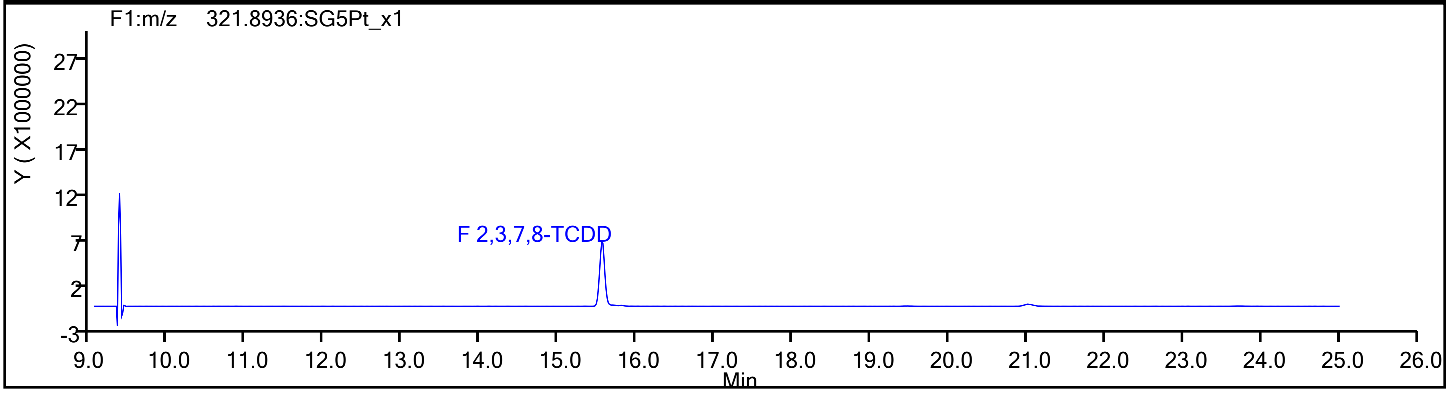

TCDD Standards

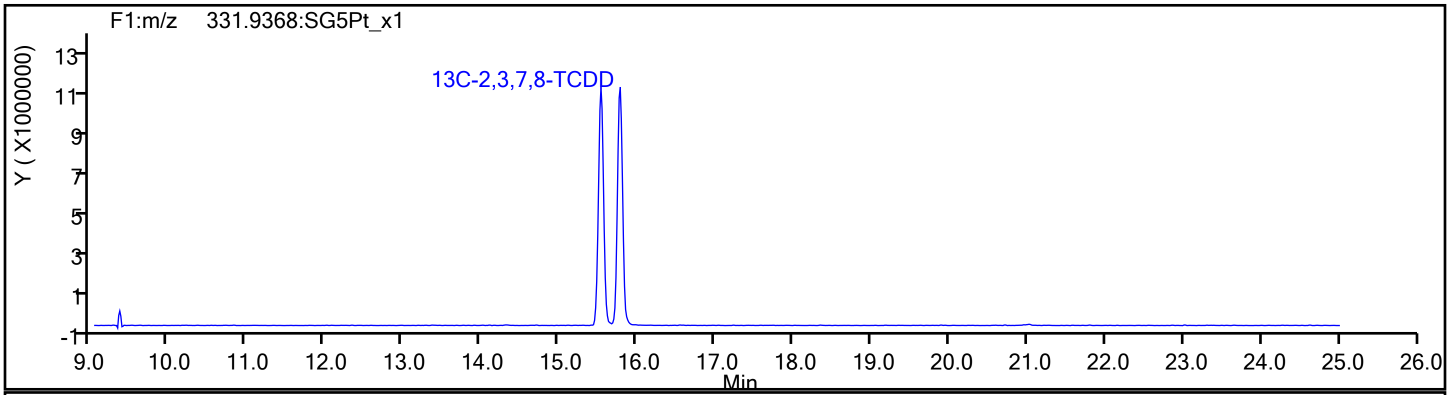

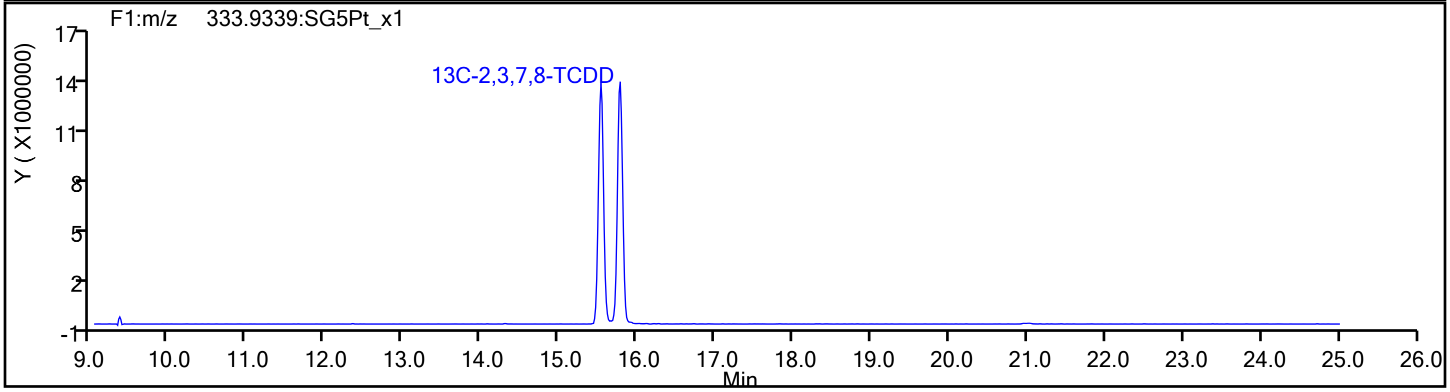

Report Date: 27-Jul-2020 12:55:25   Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

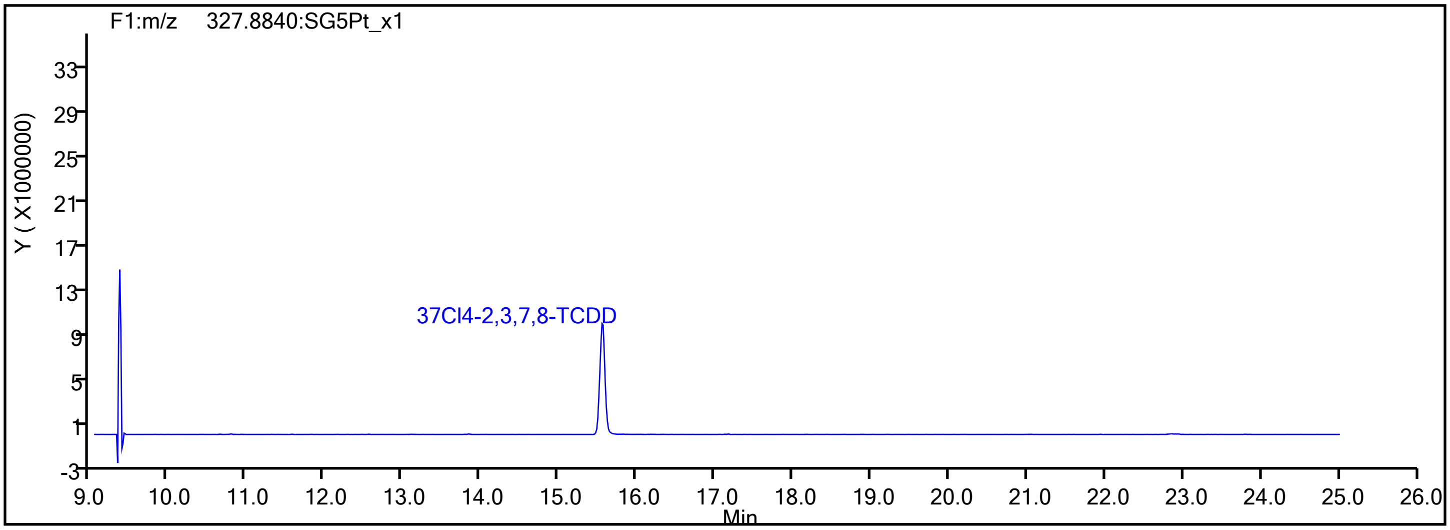

37Cl4-TCDD Standards

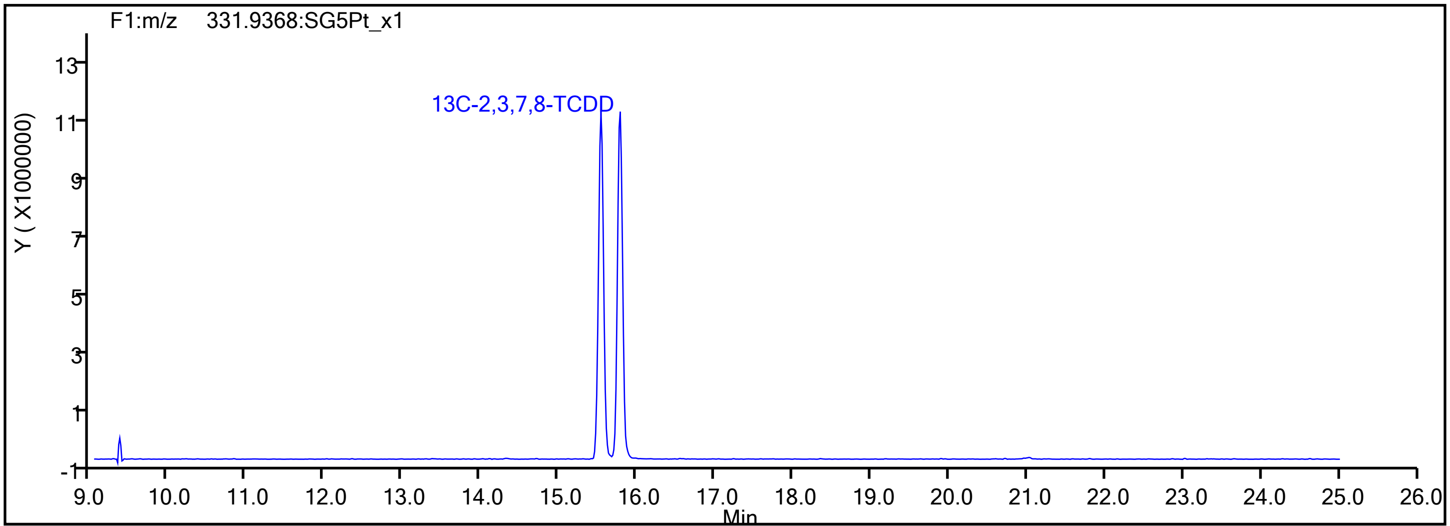

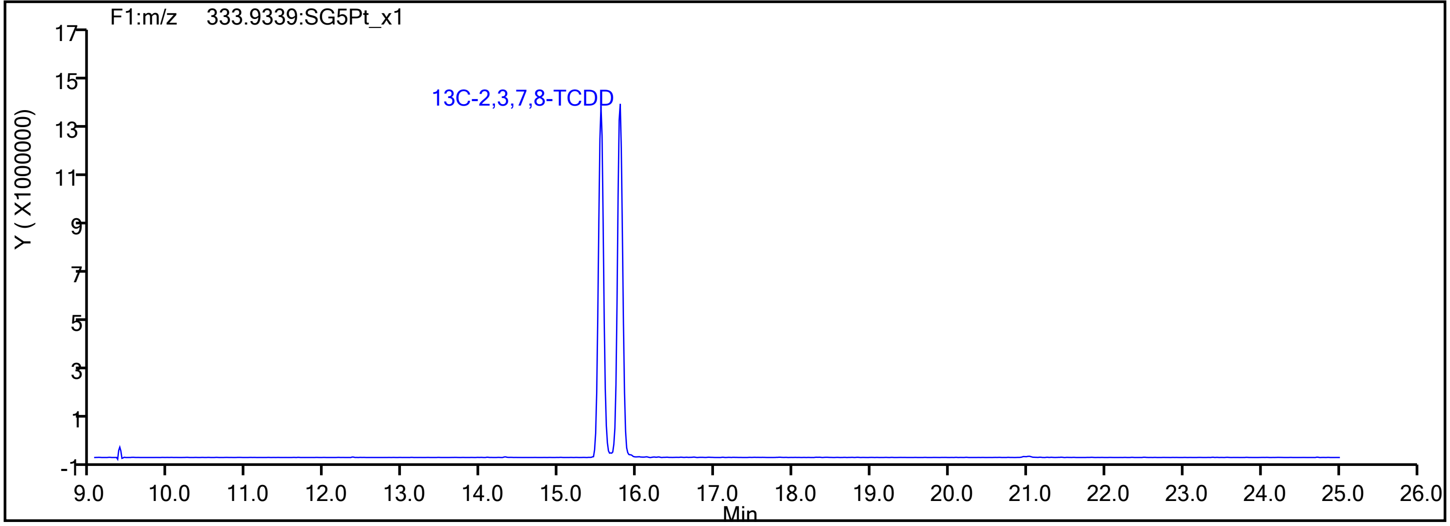

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d

Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

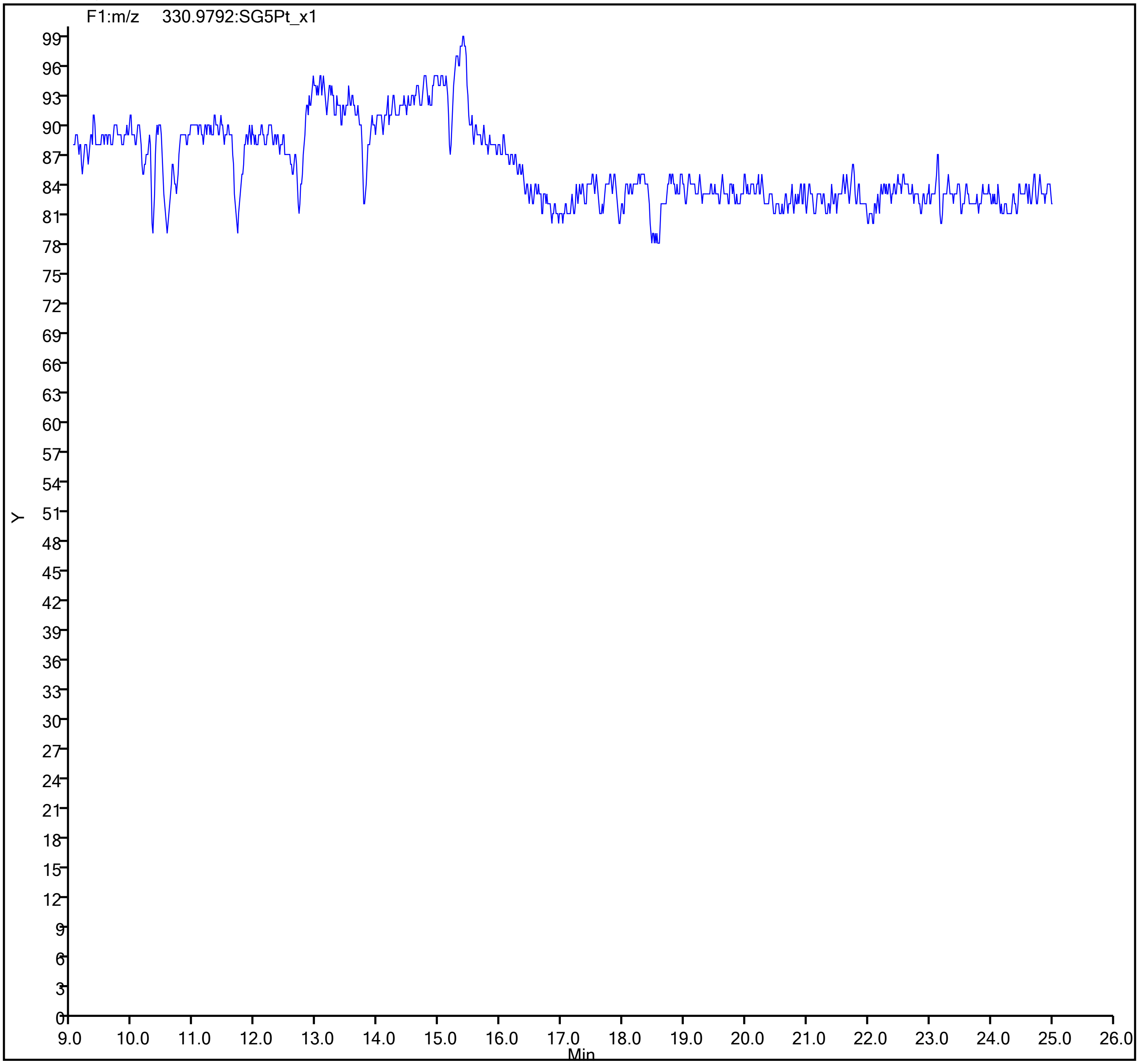

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento		Job No.: 320-66850-2	
SDG No.:			
Lab Sample ID: CCV 320-436991/2		Calibration Date: 11/30/2020 13:05	
Instrument ID: 11D2		Calib Start Date: 07/24/2020 23:50	
GC Column: DB-225	ID: 0.32(mm)	Calib End Date: 07/25/2020 02:23	
Lab File ID: 30NO2011D2_002.d		Conc. Units: pg/uL	

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.064		8.30	10.0	83	78-129
2,3,7,8-TCDF	AveID	0.9943	0.8459		8.51	10.0	85	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	1.059		108	100	108	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.642		105	100	105	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.053		10.6	10.0	106	79-127

FORM VII 1613B

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
30NO2011D2	1	CPS 113020	CPS HRDXNCP_00042				1.00000	
30NO2011D2	2	CCV 113020	CCV CS-4 HRDXNL4_00096				1.00000	
30NO2011D2	3	SU QC	QC HRDXNSU_00245	20	8290/1613B		1.00000	
30NO2011D2	4	320-432518	MB 320-432518/1-A	20	8290A_D5/Water	D200	1.00000	L
30NO2011D2	5	320-433926	680-191601-M-4-A	20	8290A_D5/Water	D200	1.00000	L
30NO2011D2	6	320-432518	680-191404-D-3-A	20	8290A_D5/Water	D200	1.00000	L
30NO2011D2	7	320-432518	280-142750-A-1-A	20	8290A_D5/Water		1.00000	L
30NO2011D2	8	320-432518	280-142750-B-2-A	20	8290A_D5/Water		1.00000	L
30NO2011D2	9	320-434333	280-142583-A-2-B	20	8290A/Solid	88	10.00000	g
30NO2011D2	10	320-434333	280-142583-A-3-B	20	8290A/Solid		10.00000	g
30NO2011D2	11	320-434333	280-142583-A-4-B	20	8290A/Solid		10.00000	g
30NO2011D2	12	320-432973	320-66850-A-2-B	20	1613B/Water	D200	1.00000	L
30NO2011D2	13	320-432973	320-66850-A-3-B	20	1613B/Water		1.00000	L
30NO2011D2	14	320-432973	320-66850-A-5-B	20	1613B/Water		1.00000	L
30NO2011D2	15	320-432973	320-66850-A-4-B	20	1613B/Water		1.00000	L
30NO2011D2	16	320-432973	320-66850-A-6-B	20	1613B/Water		1.00000	L
30NO2011D2	17	SB 113020A	SB Solvent Blank C-14				1.00000	
30NO2011D2	18	CCV 113020A	CCV CS-4 HRDXNL4_00096				1.00000	
30NO2011D2	19						1.00000	
30NO2011D2	20						1.00000	
30NO2011D2	21						1.00000	
30NO2011D2	22						1.00000	
30NO2011D2	23						1.00000	
30NO2011D2	24						1.00000	
30NO2011D2	25						1.00000	
30NO2011D2	26						1.00000	
30NO2011D2	27		KSS, ALM 11-30-20				1.00000	
30NO2011D2	28						1.00000	

logfile checked
12-01-20 ALM

Peak Locate Examination:30-NOV-2020:12:26 File:30NO2011D2
Experiment:DB225RES Function:1 Reference:PFK

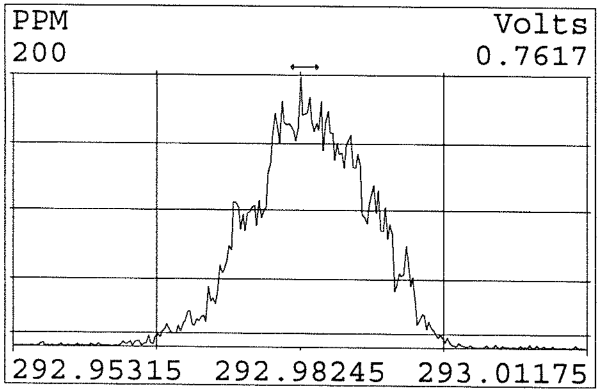

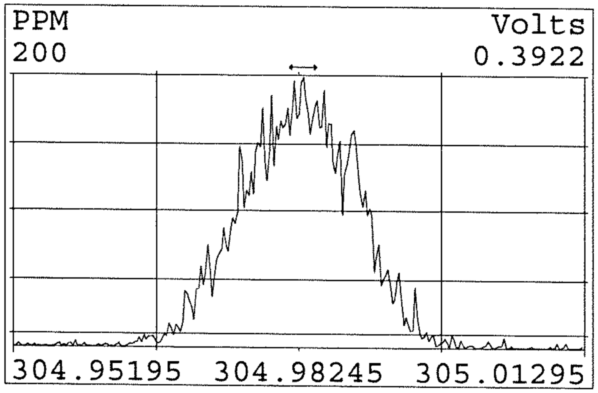

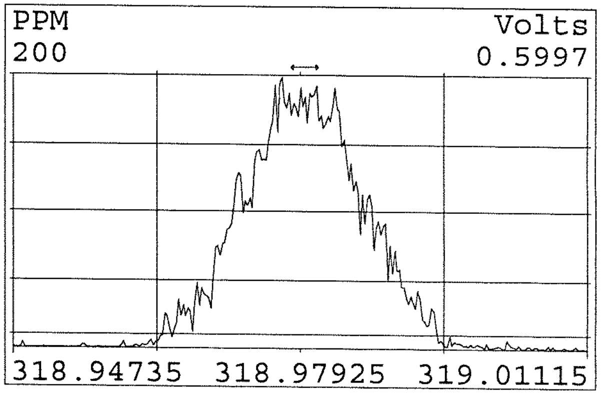

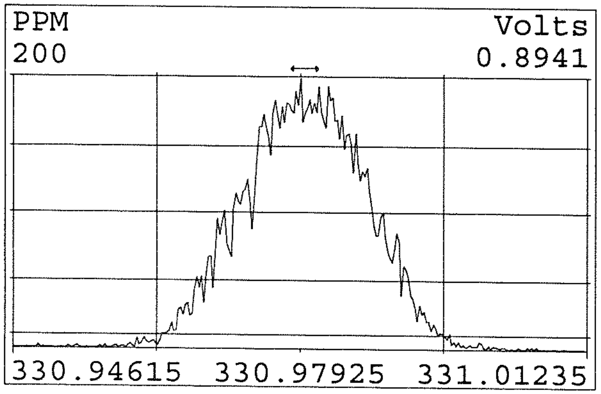

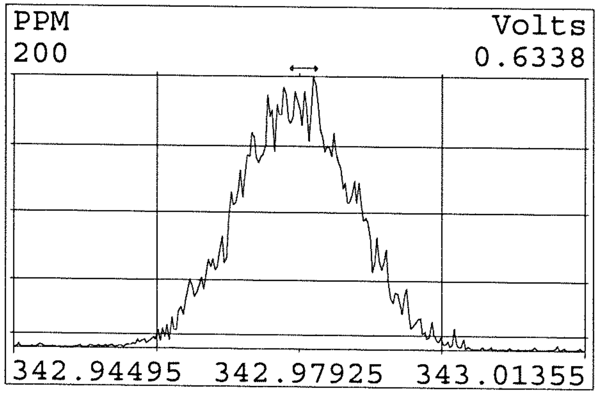

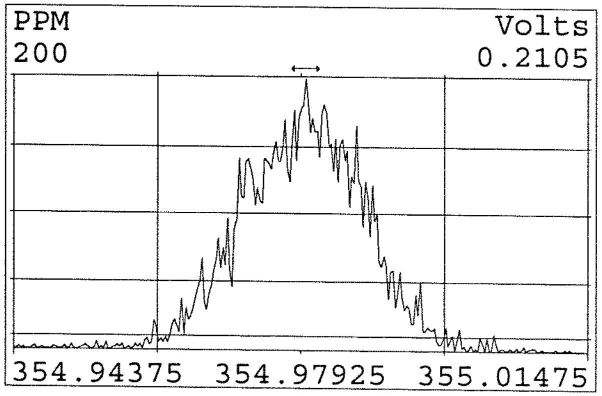

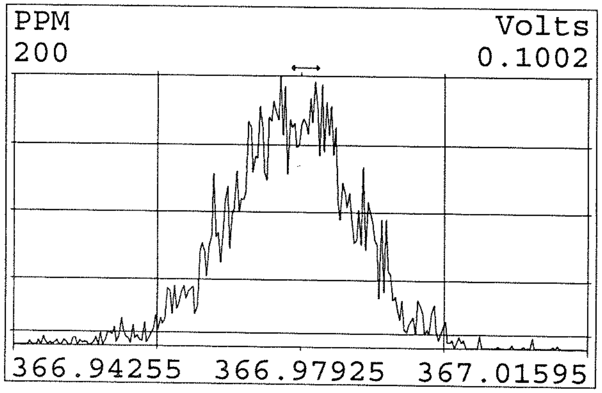

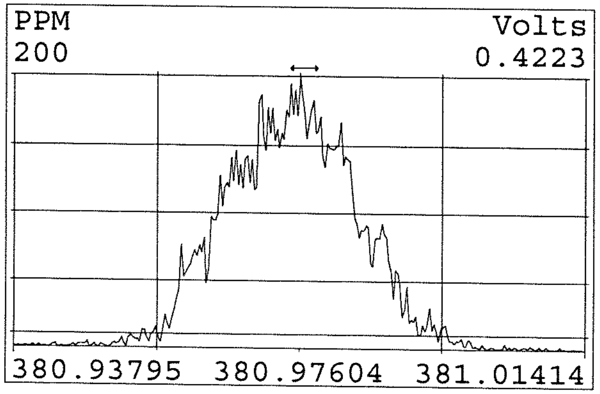

Peak Locate Examination: 1-DEC-2020:00:10 File:RESCHK30NO2011D2
Experiment:DB225RES Function:1 Reference:PFK

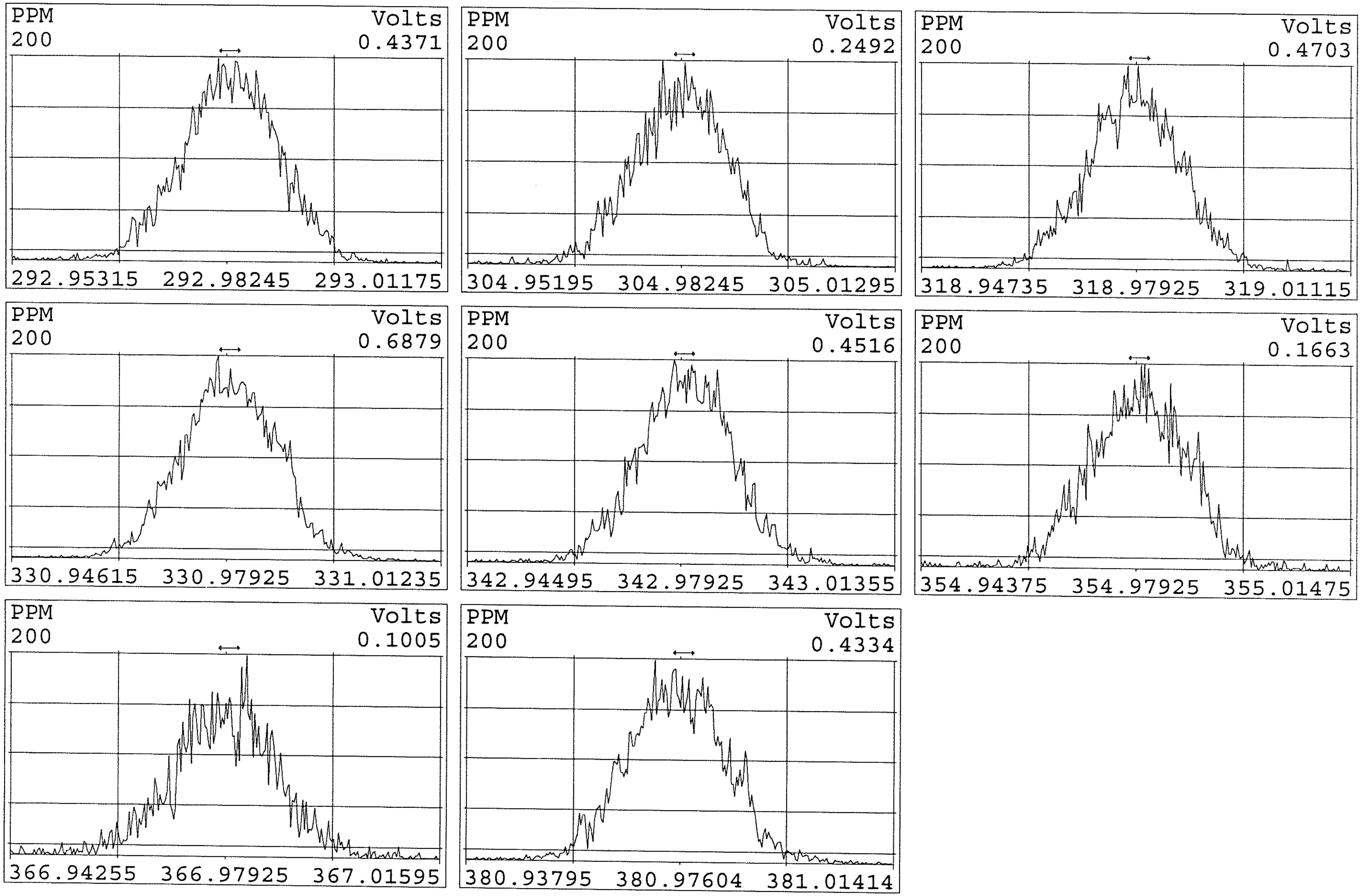

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	30-Nov-2020 13:05:55	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00096				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:51	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.573	219183598	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.767	359823316	0.79	1.5708	104.5	104.5	0.1398	0.1398	105	
2,3,7,8-TCDF	16.780	30436027	0.75	0.9943	8.507	8.507	0.0194	0.0194	85.07	
D 13C-2,3,7,8-TCDD	15.326	232170281	0.79	0.9834	107.7	107.7	0.1491	0.1491	108	
2,3,7,8-TCDD	15.340	24705443	0.79	1.2822	8.299	8.299	0.0289	0.0289	82.99	
$ 37Cl4-2,3,7,8-TCDD	15.340	23078198		0.9945	10.6	10.6	0.0241	0.0241	106	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	30-Nov-2020 13:05:55	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00096				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:51	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.573	15.573	0		96863427	22285671	15114	37785	1475		
333.9339	15.559	15.573	-1		122320171	27707038	14208	35520	1950	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.767	16.767	0	1.077	158266458	32101022	25364	63410	1266		
317.9389	16.767	16.767	0	1.077	201556858	41294203	18544	46360	2227	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.780	16.780	0	1.001	13085023	2650222	3002	7505	883		
305.8987	16.780	16.780	0	1.001	17351004	3537919	2667	6667	1327	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.326	15.326	0	0.984	102719902	24170250	15114	37785	1599		
333.9339	15.326	15.326	0	0.984	129450379	30296549	14208	35520	2132	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.340	15.340	0	1.001	10886164	2524422	4547	11367	555		
321.8936	15.340	15.340	0	1.001	13819279	3207229	3538	8845	907	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.340	15.340	0	0.985	23078198	5454675	4792	11980	1138		

Reagents:

HRDXNL4_00096	Amount Added: 2.00	Units: uL

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d
Injection Date: 30-Nov-2020 13:05:55
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 436991
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

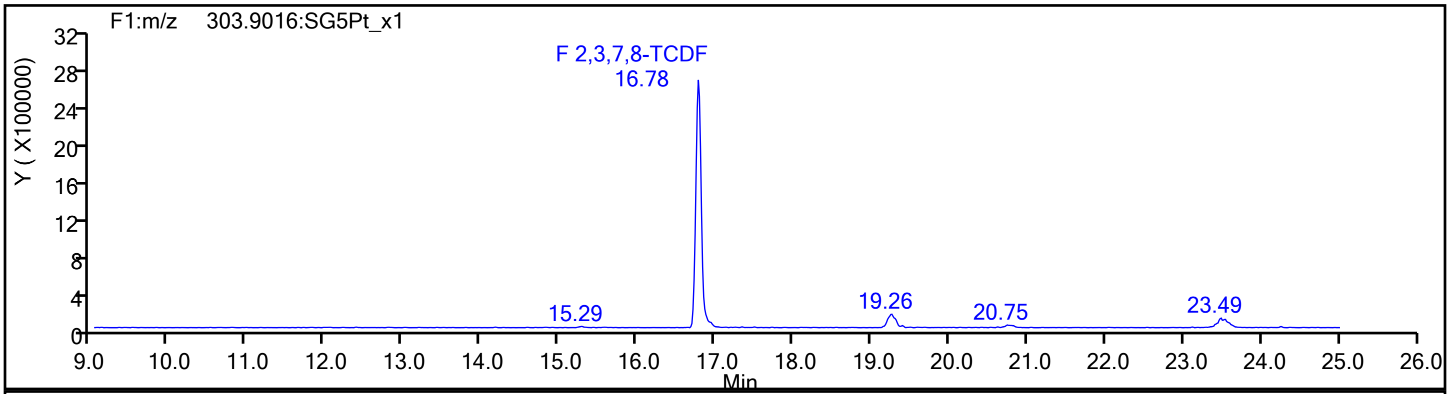

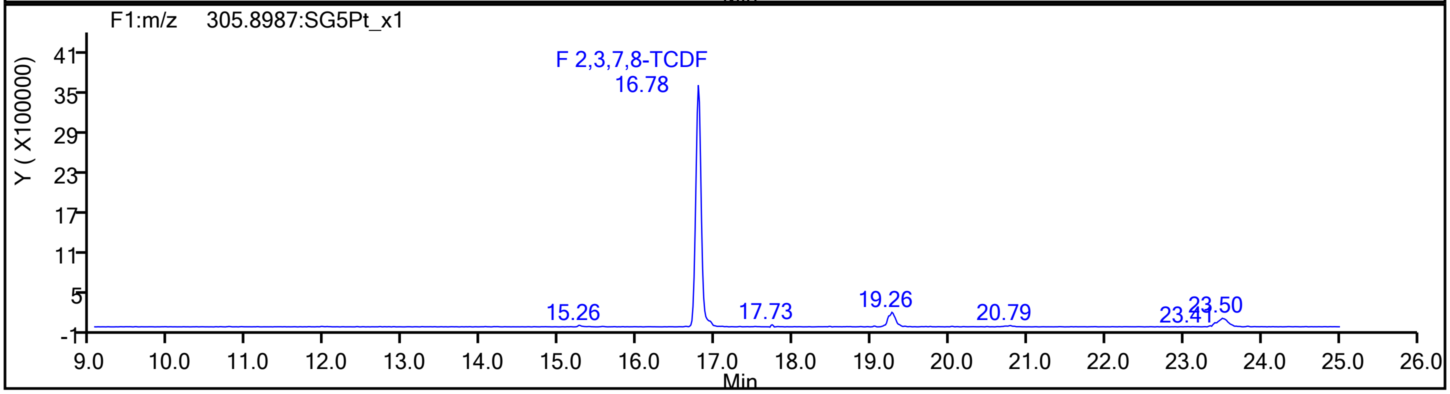

TCDF Standards

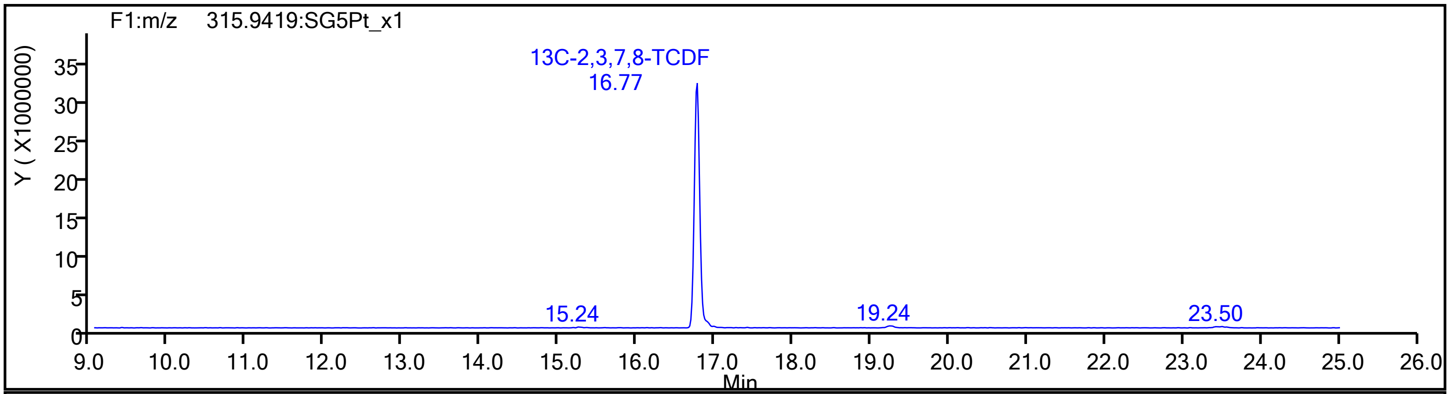

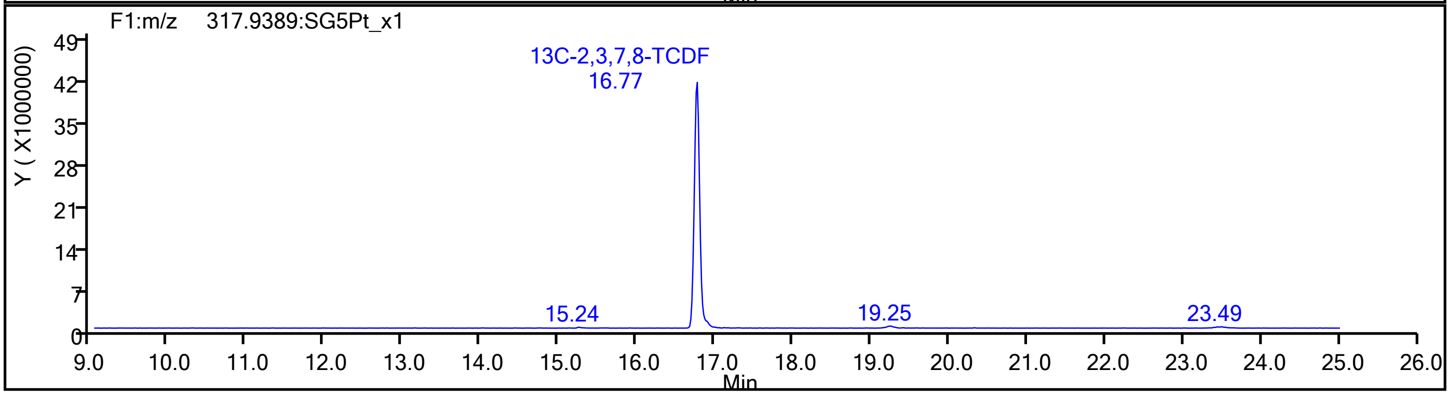

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d

Injection Date:	30-Nov-2020 13:05:55	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

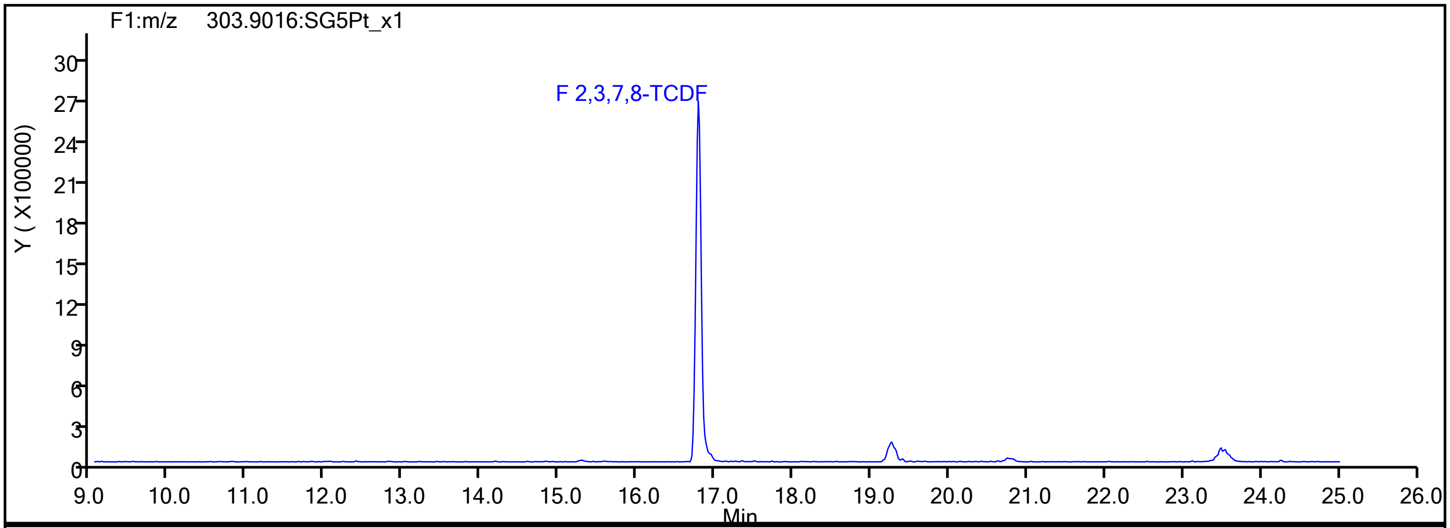

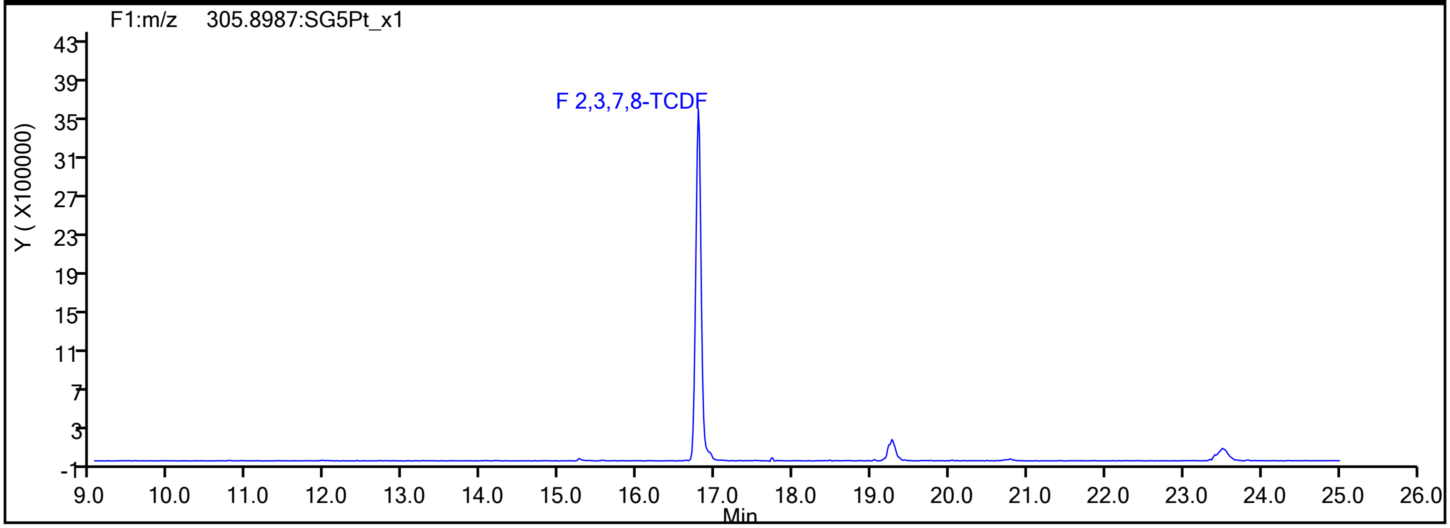

TCDF Interference Mass

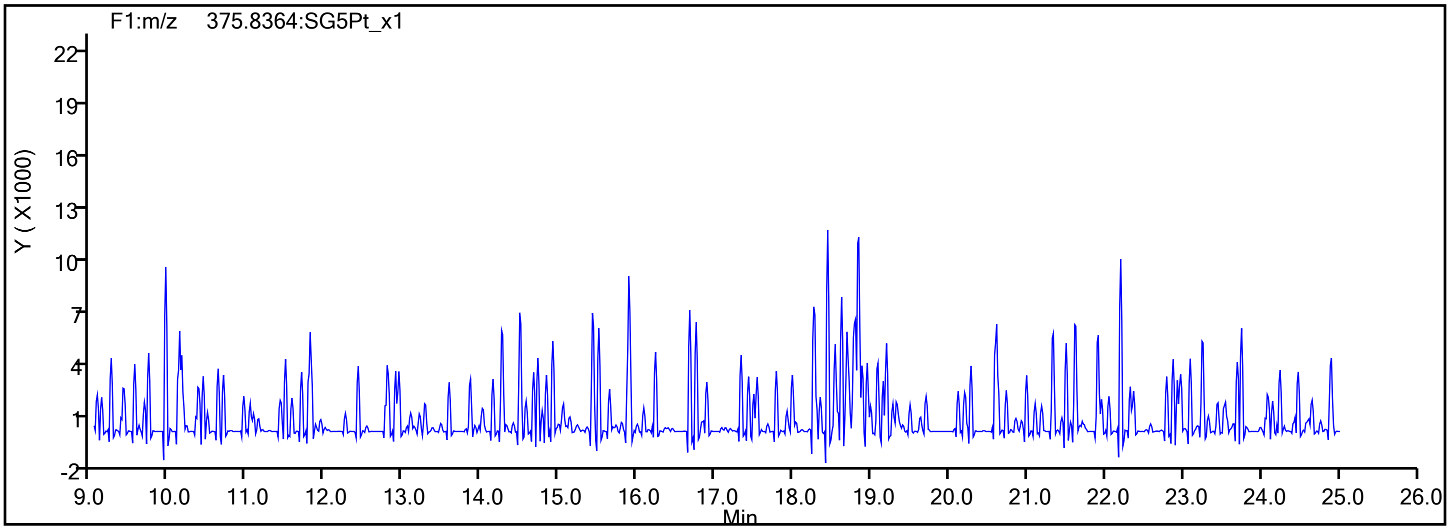

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d		
Injection Date:	30-Nov-2020 13:05:55	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

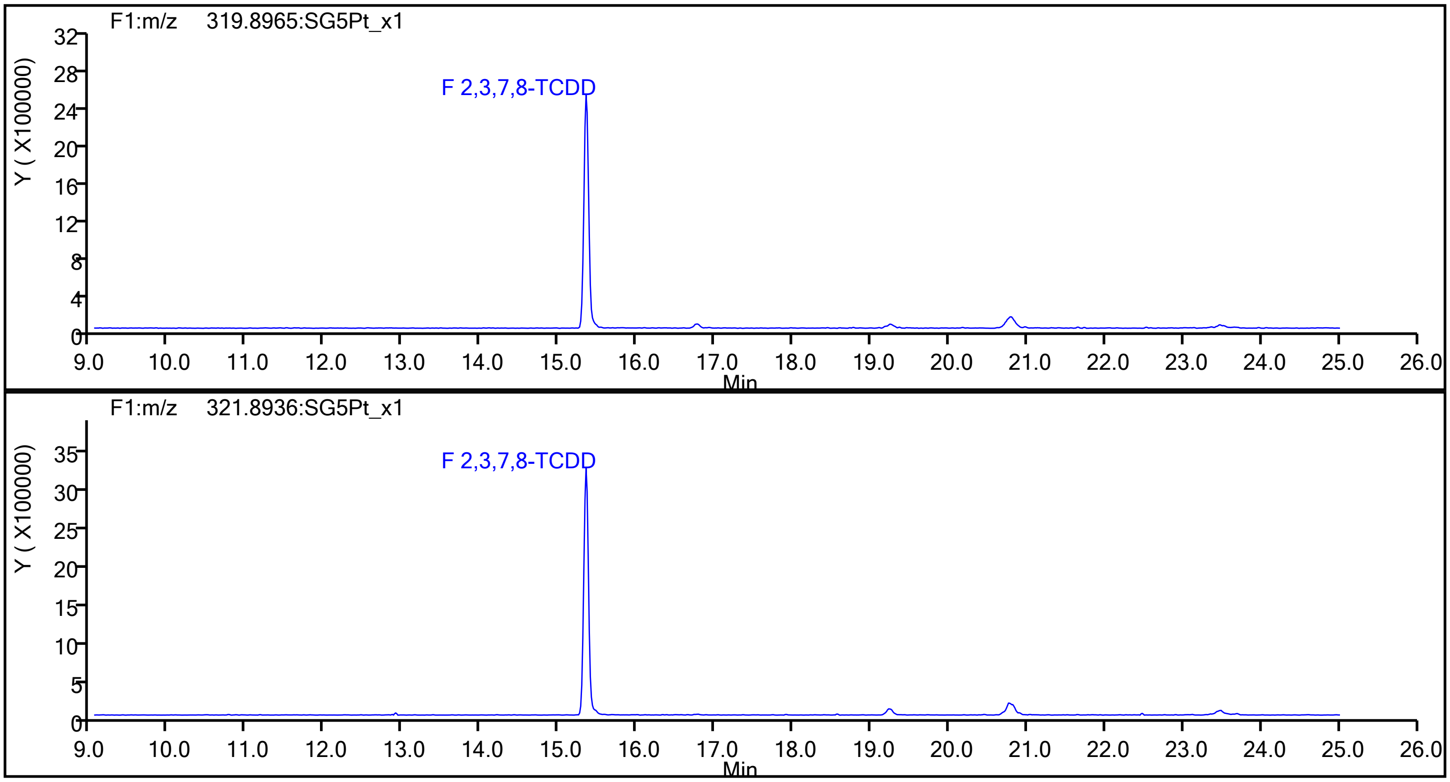

TCDD Standards

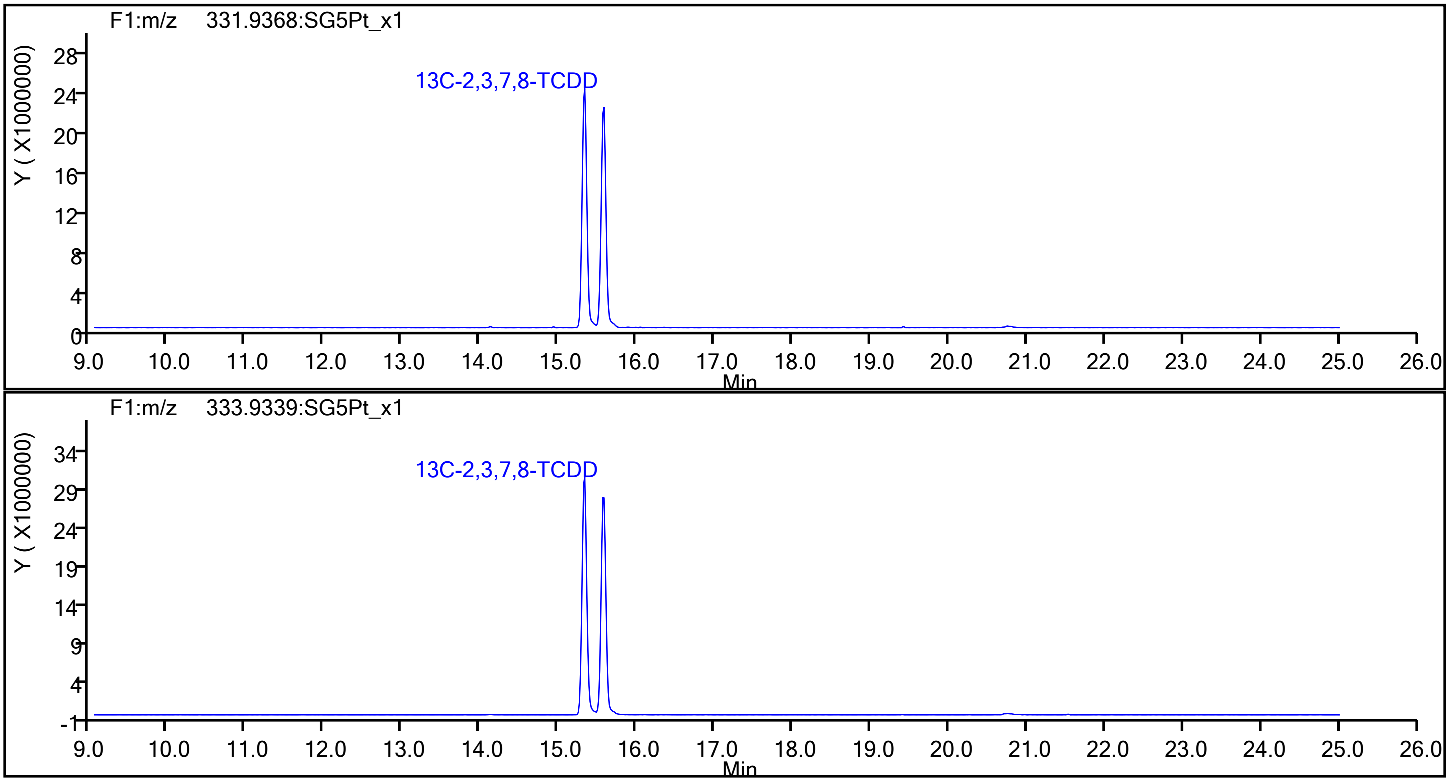

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d		
Injection Date:	30-Nov-2020 13:05:55	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

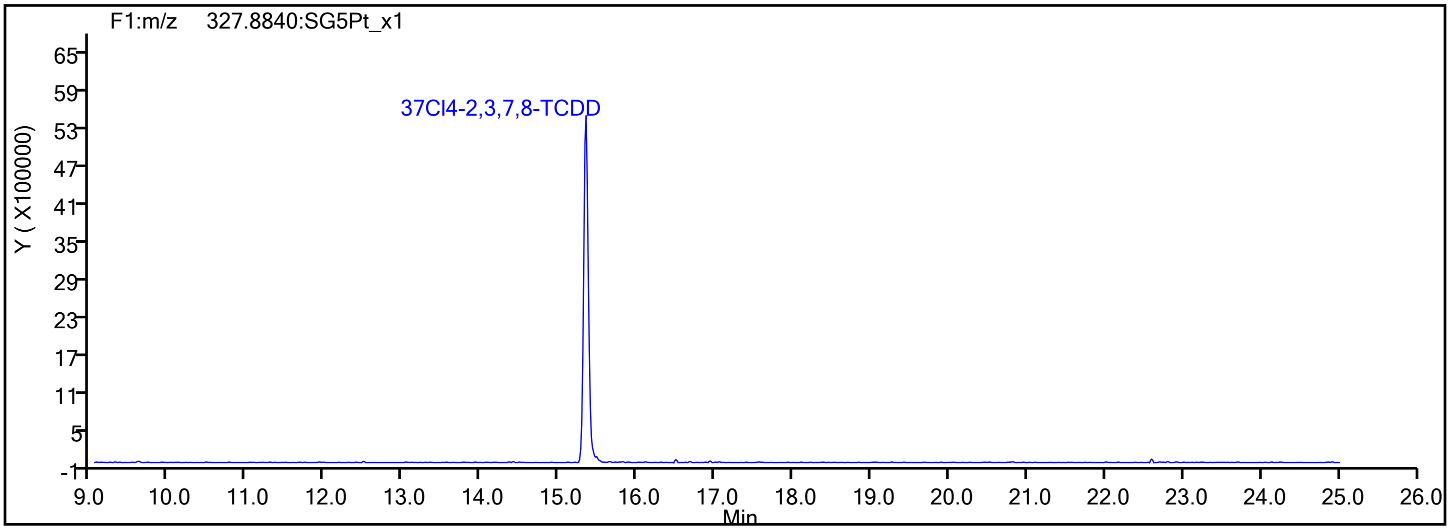

37Cl4-TCDD Standards

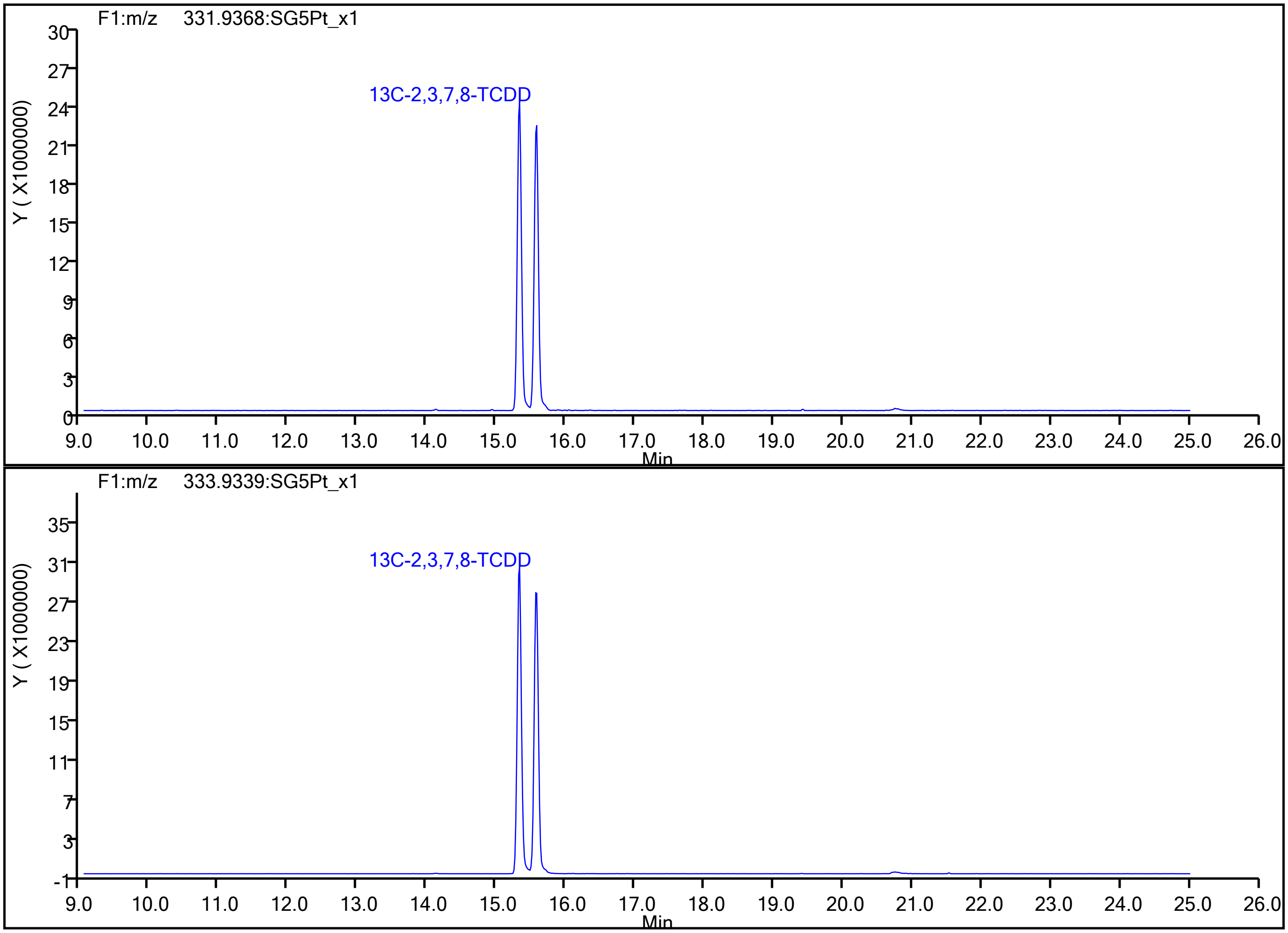

Report Date: 01-Dec-2020 08:43:51 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_002.d		
Injection Date:	30-Nov-2020 13:05:55	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

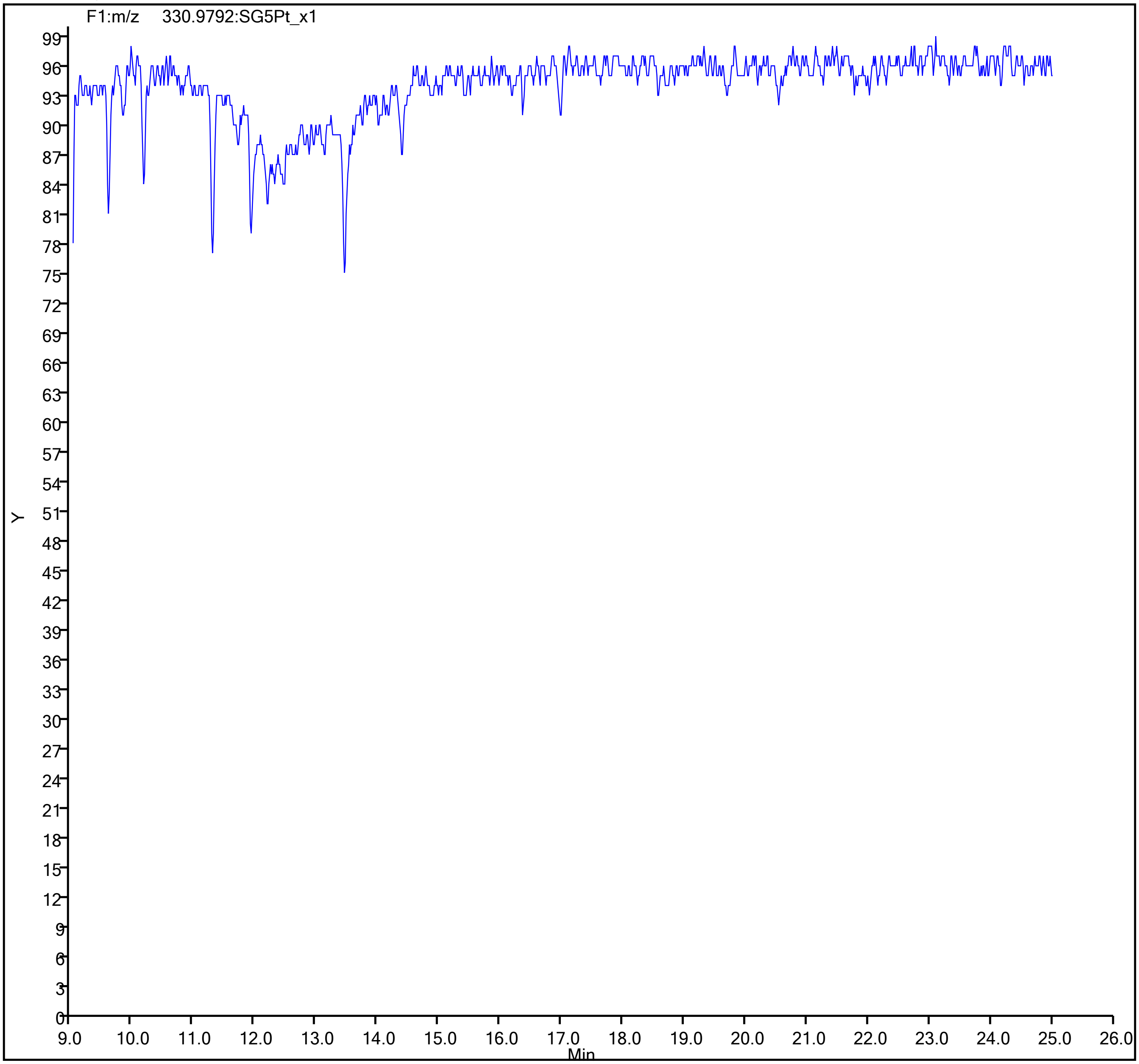

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Lab Sample ID: ICV 320-432585/10 Calibration Date: 11/17/2020 18:32

Instrument ID: DFS 1 Calib Start Date: 11/17/2020 13:38

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 11/17/2020 17:44

Lab File ID: 17no20dfs1_11.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.155	1.096		38.0	40.0	95	70-130
2,3,7,8-TCDD	AveID	1.166	1.125		38.6	40.0	97	70-130
1,2,3,7,8-PeCDF	AveID	1.132	1.018		180	200	90	70-130
2,3,4,7,8-PeCDF	AveID	1.159	1.151		199	200	99	70-130
1,2,3,7,8-PeCDD	AveID	1.119	0.998		178	200	89	70-130
1,2,3,4,7,8-HxCDF	AveID	1.320	1.207		183	200	91	70-130
1,2,3,6,7,8-HxCDF	AveID	1.268	1.185		187	200	93	70-130
2,3,4,6,7,8-HxCDF	AveID	1.284	1.272		198	200	99	70-130
1,2,3,4,7,8-HxCDD	AveID	1.197	1.053		176	200	88	70-130
1,2,3,6,7,8-HxCDD	AveID	1.069	1.037		194	200	97	70-130
1,2,3,7,8,9-HxCDD	AveID	1.181	1.041		176	200	88	70-130
1,2,3,7,8,9-HxCDF	AveID	1.306	1.119		171	200	86	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.562	1.422		182	200	91	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.108	1.034		187	200	93	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.497	1.309		175	200	87	70-130
OCDD	AveID	1.167	1.079		370	400	92	70-130
OCDF	AveID	1.480	1.264		342	400	85	70-130
13C-2,3,7,8-TCDF	Ave	1.683	1.557		92.5	100	93	71-140
13C-2,3,7,8-TCDD	Ave	1.090	1.048		96.2	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.460	1.302		89.1	100	89	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.350	1.288		95.4	100	95	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8729	0.7947		91.0	100	91	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.281	1.276		99.6	100	100	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.462	1.462		100	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.323	1.251		94.6	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8757	0.8790		100	100	100	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.065	1.070		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.106	1.036		93.6	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9521	0.8985		94.4	100	94	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8393	0.8392		100	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7782	0.7709		99.1	100	99	77-129
13C-OCDD	Ave	0.5301	0.4737		179	200	89	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.145	1.101		38.5	40.0	96	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Nov-2020 18:32:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:46 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

First Level Reviewer: stephensk Date: 18-Nov-2020 09:06:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.824	1533433	0.83	3.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.785	2387934	0.84	1.6832	92.5	92.5	0.6060	0.6060	92.51	
2,3,7,8-TCDF	20.811	1046837	0.84	1.1547	38.0	38.0	0.1052	0.1052	94.92	
A Non-2,3,7,8-sub-TCDF	20.216	10509	0.74	1.1547	0.3811	0.3811	0.1052	0.3811		
S Total TCDF					38.3	38.3	0.1052	0.1052		
$ 37Cl4-2,3,7,8-TCDD	22.228	675394		1.1445	38.5	38.5	0.0761	0.0761	96.21	
D 13C-2,3,7,8-TCDD	22.194	1607690	0.79	1.0896	96.2	96.2	0.5265	0.5265	96.22	
2,3,7,8-TCDD	22.228	723681	0.81	1.1659	38.6	38.6	0.1666	0.1666	96.52	
A Non-2,3,7,8-sub-TCDD	21.079						0.1666	0.1666		
S Total TCDD					38.6	38.6	0.1666	0.1666		
D 13C-1,2,3,7,8-PeCDF	27.680	1996101	1.63	1.4604	89.1	89.1	0.3670	0.3670	89.13	
1,2,3,7,8-PeCDF	27.705	4064999	1.62	1.1322	179.9	179.9	0.8750	0.8750	89.93	
D 13C-2,3,4,7,8-PeCDF	29.238	1975328	1.61	1.3504	95.4	95.4	0.3969	0.3969	95.39	
2,3,4,7,8-PeCDF	29.264	4548526	1.57	1.1588	198.7	198.7	0.9163	0.9163	99.36	
A F1 PeCDFs	24.989						0.0290	0.0290		
A Non-2,3,7,8-sub-PeCDF	28.574	102863	1.58	1.1455	4.522	4.522	0.8948	4.522		
S Total PeCDF					383.1	383.1	0.8957	0.8957		
D 13C-1,2,3,7,8-PeCDD	30.072	1218625	1.72	0.8729	91.0	91.0	0.2562	0.2562	91.04	
1,2,3,7,8-PeCDD	30.106	2433493	1.59	1.1191	178.4	178.4	0.2201	0.2201	89.22	
A Non-2,3,7,8-sub-PeCDD	28.862						0.2201	0.2201		
S Total PeCDD					178.4	178.4	0.2201	0.2201		
D 13C-1,2,3,4,7,8-HxCDF	35.206	1700222	0.53	1.2808	99.6	99.6	0.4181	0.4181	99.63	M
1,2,3,4,7,8-HxCDF	35.222	4104497	1.25	1.3205	182.8	182.8	0.7050	0.7050	91.41	
D 13C-1,2,3,6,7,8-HxCDF	35.357	1947317	0.53	1.4615	100.0	100.0	0.3664	0.3664	100	M
1,2,3,6,7,8-HxCDF	35.374	4616582	1.23	1.2682	186.9	186.9	0.6818	0.6818	93.47	
D 13C-2,3,4,6,7,8-HxCDF	36.141	1667288	0.52	1.3227	94.6	94.6	0.4049	0.4049	94.61	
2,3,4,6,7,8-HxCDF	36.158	4242564	1.25	1.2838	198.2	198.2	0.6739	0.6739	99.11	
D 13C-1,2,3,7,8,9-HxCDF	37.008	1380078	0.52	1.1062	93.6	93.6	0.4841	0.4841	93.64	
1,2,3,7,8,9-HxCDF	37.017	3089149	1.24	1.3063	171.4	171.4	0.7628	0.7628	85.68	
A Non-2,3,7,8-sub-HxCDF	35.351						0.7038	0.7038		
S Total HxCDF					739.3	739.3	0.7059	0.7059		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.806	1332342	1.26	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.343	1171086	1.21	0.8757	100.4	100.4	0.2912	0.2912	100	
1,2,3,4,7,8-HxCDD	36.360	2466366	1.24	1.1972	175.9	175.9	0.3898	0.3898	87.96	
D 13C-1,2,3,6,7,8-HxCDD	36.452	1425221	1.31	1.0651	100.4	100.4	0.2394	0.2394	100	
1,2,3,6,7,8-HxCDD	36.469	2956836	1.25	1.0695	194.0	194.0	0.3800	0.3800	97.00	
1,2,3,7,8,9-HxCDD	36.823	2702367	1.24	1.1806	176.3	176.3	0.3680	0.3680	88.17	
A Non-2,3,7,8-sub-HxCDD	35.676						0.3781	0.3781		
S Total HxCDD					546.2	546.2	0.3793	0.3793		
D 13C-1,2,3,4,6,7,8-HpCDF	38.755	1197058	0.46	0.9521	94.4	94.4	0.4975	0.4975	94.36	
1,2,3,4,6,7,8-HpCDF	38.764	3404343	1.03	1.5618	182.1	182.1	0.7864	0.7864	91.04	
D 13C-1,2,3,4,7,8,9-HpCDF	39.985	1027072	0.43	0.7782	99.1	99.1	0.6087	0.6087	99.06	
1,2,3,4,7,8,9-HpCDF	39.993	2688097	1.05	1.4975	174.8	174.8	0.8440	0.8440	87.39	
A Non-2,3,7,8-sub-HpCDF	39.385						0.8145	0.8145		
S Total HpCDF					356.9	356.9	0.8152	0.8152		
D 13C-1,2,3,4,6,7,8-HpCDD	39.682	1118064	1.10	0.8393	100.0	100.0	0.2795	0.2795	99.98	
1,2,3,4,6,7,8-HpCDD	39.690	2311053	1.05	1.1079	186.6	186.6	0.4722	0.4722	93.28	
A Non-2,3,7,8-sub-HpCDD	39.533						0.4722	0.4722		n
S Total HpCDD					186.6	186.6	0.4722	0.4722		
D 13C-OCDD	42.154	1262197	0.88	0.5301	178.7	178.7	0.3375	0.3375	89.36	
OCDF	42.255	3190856	0.89	1.4802	341.6	341.6	0.4340	0.4340	85.40	
OCDD	42.162	2723905	0.90	1.1666	370.0	370.0	0.4666	0.4666	92.50	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	17-Nov-2020 18:32:00	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00046				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:					
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Nov-2020 12:37:46	Calib Date:	17-Nov-2020 17:44:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1679				

First Level Reviewer: stephensk Date: 18-Nov-2020 09:06:56

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.824	21.820	0		697378	91356	349	872	262		
333.9338	21.816	21.820	0		836055	115203	125	312	922	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.785	20.873	-5	0.952	1090306	153930	532	1330	289		
317.9389	20.794	20.873	-5	0.953	1297628	179572	311	777	577	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.811	20.907	-6	1.001	476627	63535	56	140	1135		
305.8987	20.819	20.907	-5	1.002	570210	77271	106	265	729	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.531	20.216	-41	0.940	4484	730	56	140	13		
305.8987	19.574	20.216	-38	0.942	6025	877	106	265	8	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.228	22.224	0	1.019	675394	84126	72	180	1168		
13C-2,3,7,8-TCDD											
331.9368	22.194	22.256	-4	1.017	708769	92786	349	872	266		
333.9338	22.202	22.256	-3	1.017	898921	118249	125	312	946	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.228	22.290	-4	1.002	323300	42397	119	297	356		
321.8936	22.228	22.290	-4	1.002	400381	51125	45	112	1136	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.079						119	297			
321.8936	21.079						45	112			
13C-1,2,3,7,8-PeCDF											
351.9000	27.680	27.675	0	1.268	1238119	181007	267	667	678		
353.8970	27.680	27.675	0	1.268	757982	114752	176	440	652	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.705	27.700	0	1.001	2511646	373356	715	1787	522		
341.8567	27.696	27.700	0	1.001	1553353	237137	457	1142	519	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.238	29.234	0	1.340	1217081	169622	267	667	635		
353.8970	29.247	29.234	1	1.340	758247	106324	176	440	604	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.264	29.259	0	1.001	2777862	386025	715	1787	540		
341.8567	29.264	29.259	0	1.001	1770664	244975	457	1142	536	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.989						4	10			
341.8567	24.989						34	85			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.303	28.574	-16	1.023	62972	8944	715	1787	13		
341.8567	28.320	28.574	-15	1.023	39891	5847	457	1142	13	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	30.072	30.067	0	1.378	770400	105690	122	305	866		
369.8919	30.080	30.067	1	1.378	448225	62794	63	157	997	1.72(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.106	30.093	1	1.001	1494665	207053	113	282	1832		
357.8516	30.106	30.093	1	1.001	938828	128440	53	132	2423	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.862						113	282			
357.8516	28.862						53	132			
13C-1,2,3,4,7,8-HxCDF											M
383.8639	35.206	35.203	0	0.957	589976	132528	236	590	562		M
385.8610	35.206	35.203	0	0.957	1110246	246669	533	1332	463	0.53(0.43-0.59)	M
1,2,3,4,7,8-HxCDF											
373.8208	35.222	35.220	0	1.000	2282439	519172	778	1945	667		
375.8178	35.222	35.220	0	1.000	1822058	416388	634	1585	657	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											M
383.8639	35.357	35.363	0	0.961	673513	142292	236	590	603		M
385.8610	35.357	35.363	0	0.961	1273804	265950	533	1332	499	0.53(0.43-0.59)	M
1,2,3,6,7,8-HxCDF											
373.8208	35.374	35.380	0	1.000	2548014	545423	778	1945	701		
375.8178	35.374	35.380	0	1.000	2068568	435609	634	1585	687	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.141	36.146	0	0.982	573118	141808	236	590	601		
385.8610	36.141	36.146	0	0.982	1094170	266217	533	1332	499	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.158	36.155	0	1.000	2358142	564920	778	1945	726		
375.8178	36.158	36.155	0	1.000	1884422	456784	634	1585	720	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	37.008	37.006	0	1.005	469574	120378	236	590	510		
385.8610	37.008	37.006	0	1.005	910504	233888	533	1332	439	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	37.017	37.023	0	1.000	1708224	446974	778	1945	575		
375.8178	37.017	37.023	0	1.000	1380925	361475	634	1585	570	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.351						778	1945			
375.8178	35.351						634	1585			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.806	36.812	0		743898	197698	177	442	1117		
403.8529	36.806	36.812	0		588444	161176	189	472	853	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.343	36.340	0	0.987	640059	171546	177	442	969		
403.8529	36.343	36.340	0	0.987	531027	139605	189	472	739	1.21(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.360	36.357	0	1.000	1364754	382607	319	797	1199		
391.8127	36.360	36.357	0	1.000	1101612	306724	262	655	1171	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.452	36.458	0	0.990	807773	202091	177	442	1142		
403.8529	36.452	36.458	0	0.990	617448	155201	189	472	821	1.31(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.469	36.466	0	1.000	1645480	413253	319	797	1295		
391.8127	36.469	36.466	0	1.000	1311356	327607	262	655	1250	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.823	36.820	0	1.013	1497568	379221	319	797	1189		
391.8127	36.823	36.820	0	1.013	1204799	308436	262	655	1177	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.676						319	797			
391.8127	35.676						262	655			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.755	38.753	0	1.053	378056	115156	291	727	396		
419.8220	38.755	38.753	0	1.053	819002	245664	389	972	632	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.764	38.774	-1	1.000	1729416	515432	920	2300	560		
409.7788	38.764	38.774	-1	1.000	1674927	503540	853	2132	590	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.985	39.983	0	1.086	308448	102417	291	727	352		
419.8220	39.985	39.983	0	1.086	718624	248235	389	972	638	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.993	39.996	0	1.000	1377954	465302	920	2300	506		
409.7788	39.993	39.996	0	1.000	1310143	437513	853	2132	513	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.385						920	2300			
409.7788	39.385						853	2132			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.682	39.680	0	1.078	586486	192719	175	437	1101		
437.8140	39.682	39.680	0	1.078	531578	174680	162	405	1078	1.10(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.690	39.701	-1	1.000	1183744	390719	408	1020	958		
425.7737	39.690	39.701	-1	1.000	1127309	368865	361	902	1022	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.059	39.533	-28	0.984	9375	2750	408	1020	7		
425.7737	39.067	39.533	-28	0.985	8543	3149	361	902	9	1.10(0.88-1.20)	
13C-OCDD											
469.7780	42.154	42.160	0	1.145	590317	186641	131	327	1425		
471.7750	42.154	42.160	0	1.145	671880	200962	126	315	1595	0.88(0.76-1.02)	
OCDF											
441.7428	42.255	42.261	0	1.002	1501586	458654	209	522	2195		
443.7399	42.255	42.261	0	1.002	1689270	510907	289	722	1768	0.89(0.76-1.02)	
OCDD											
457.7377	42.162	42.168	0	1.000	1287136	392673	200	500	1963		
459.7348	42.162	42.168	0	1.000	1436769	438781	222	555	1976	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test
Review Flags
M - Manually Integrated

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Nov-2020 18:32:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	432585	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-TCDF, RT: 20.216

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	2387934	333502

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	2387934	333502

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.531	4484	730	6025	877	0.3811	0.74	n
Signal Totals:							
	4484	730	6025	877			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10509	1607				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3811 = (10509 * 100.000) / (2387934 * 1.155)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Nov-2020 18:32:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	432585	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 28.574

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132	D 13C-1,2,3,7,8-PeCDF	100.000	1996101	295759
2,3,4,7,8-PeCDF	1.159	D 13C-2,3,4,7,8-PeCDF	100.000	1975328	275946

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		100.000	1985714	285852

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
28.303	62972	8944	39891	5847	4.52	1.58	
Signal Totals:							
	62972	8944	39891	5847			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	102863	14791				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.522 = (102863 * 100.000) / (1985714 * 1.145)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Injection Date:	17-Nov-2020 18:32:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

RT: 35.21
Area: 598524
Amount: 101.0989
Amount Units: pg/ul

Processing Integration Results

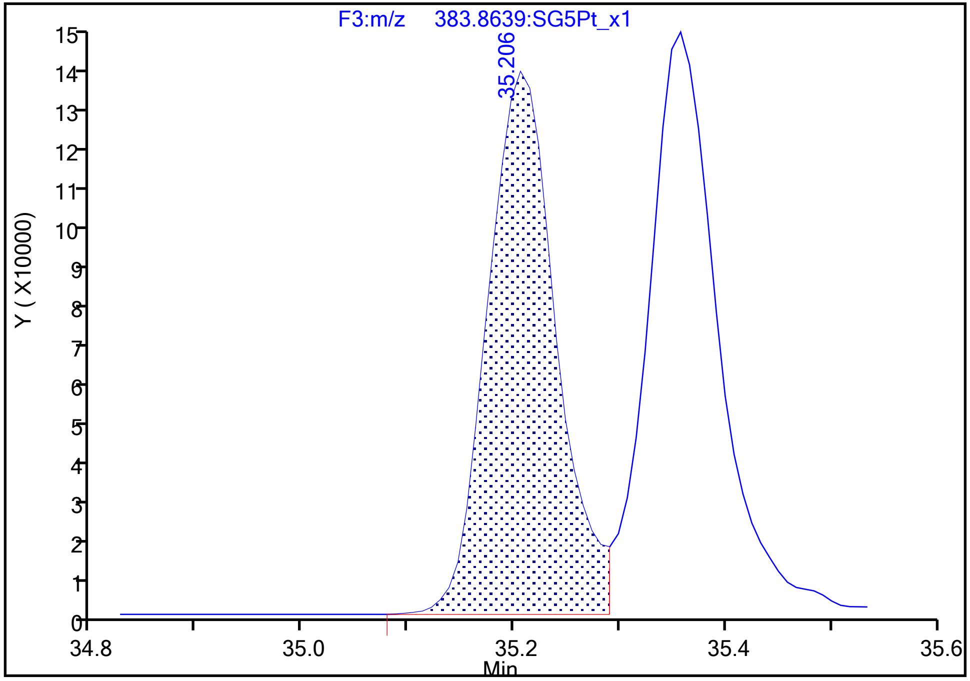

RT: 35.21
Area: 589976
Amount: 99.633271
Amount Units: pg/ul

Manual Integration Results

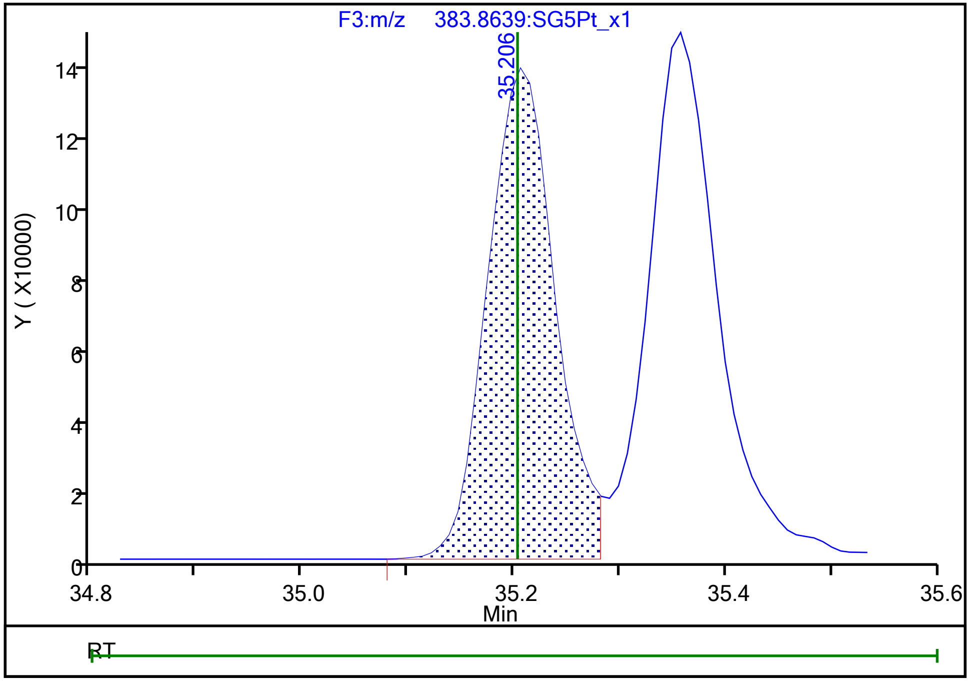

Reviewer: stephensk, 18-Nov-2020 09:10:35

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Injection Date: 17-Nov-2020 18:32:00
Instrument ID: DFS 1
Lims ID: ICV
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 10
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 2

RT: 35.21
Area: 1126708
Amount: 101.0989
Amount Units: pg/ul

Processing Integration Results

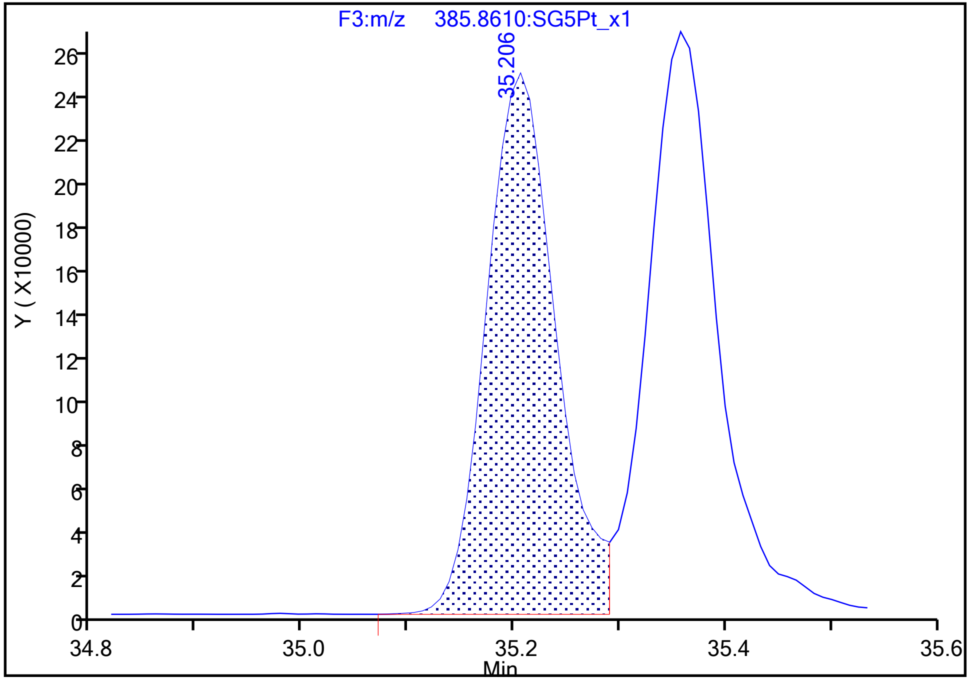

RT: 35.21
Area: 1110246
Amount: 99.633271
Amount Units: pg/ul

Manual Integration Results

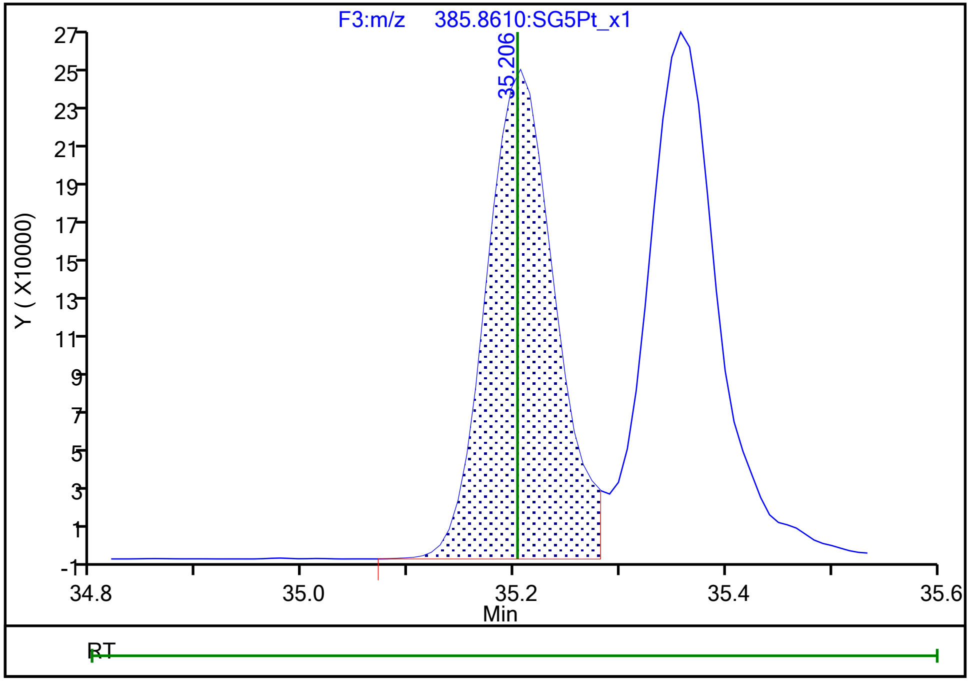

Reviewer: stephensk, 18-Nov-2020 09:10:44
Audit Action: Manually Integrated
Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Injection Date:	17-Nov-2020 18:32:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDF, CAS: 116843-03-9

Signal: 1

RT: 35.36
Area: 669408
Amount: 0
Amount Units: pg/ul

Processing Integration Results

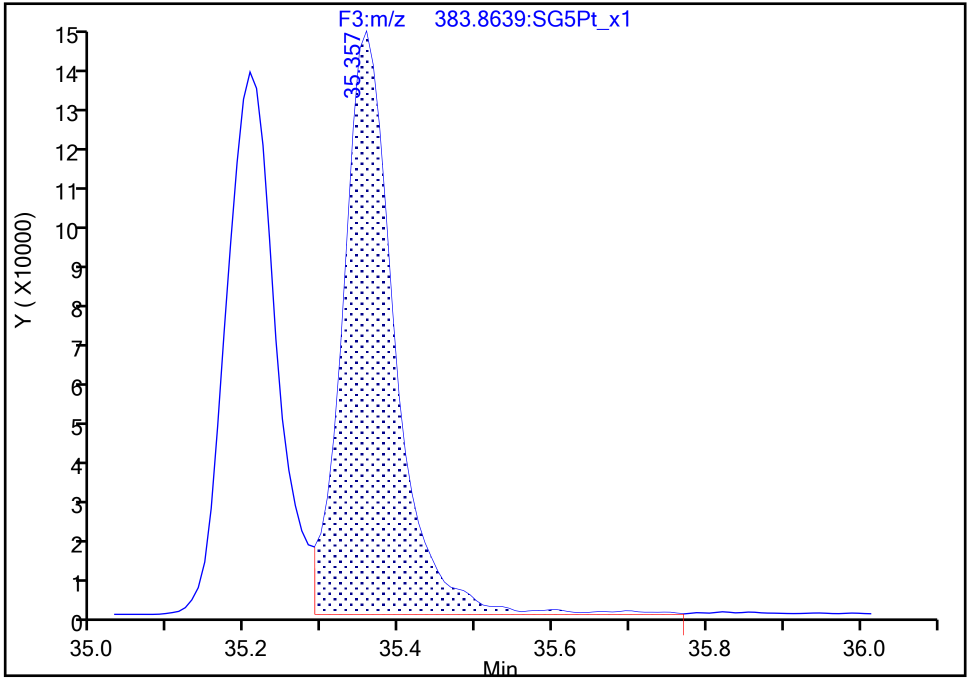

RT: 35.36
Area: 673513
Amount: 100.0022
Amount Units: pg/ul

Manual Integration Results

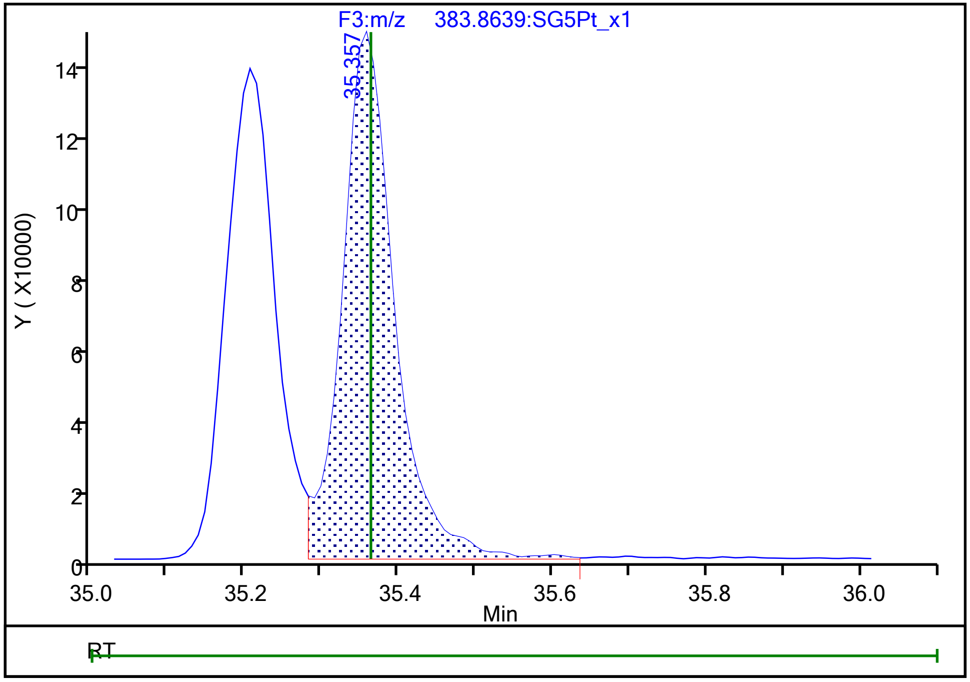

Reviewer: stephensk, 18-Nov-2020 09:10:35

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 18-Nov-2020 12:37:59

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d				
Injection Date:	17-Nov-2020 18:32:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDF, CAS: 116843-03-9

Signal: 2

Processing Integration Results

RT:	35.36
Area:	1257877
Amount:	0
Amount Units:	pg/ul

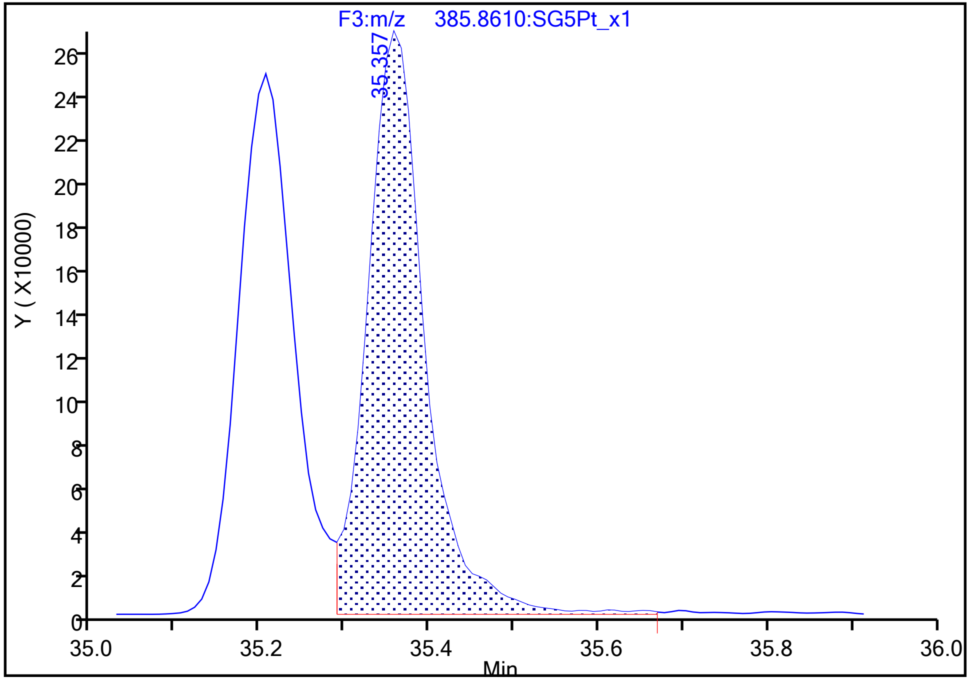

Manual Integration Results

RT:	35.36
Area:	1273804
Amount:	100.0022
Amount Units:	pg/ul

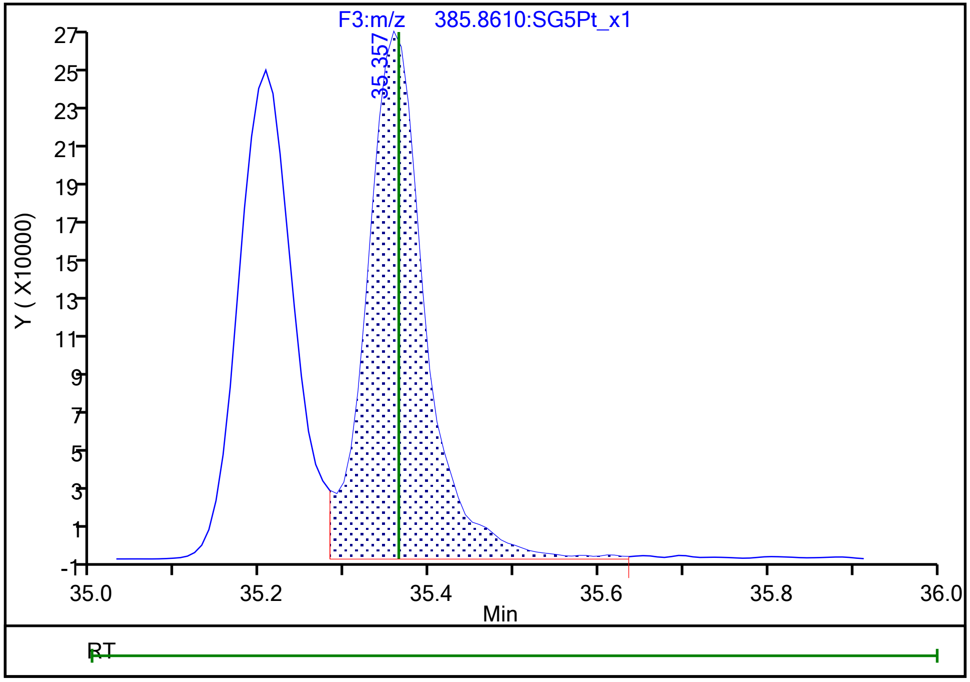

Reviewer: stephensk, 18-Nov-2020 09:10:44

Audit Action: Manually Integrated

Audit Reason: Poor chromatography

Report Date: 18-Nov-2020 12:37:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

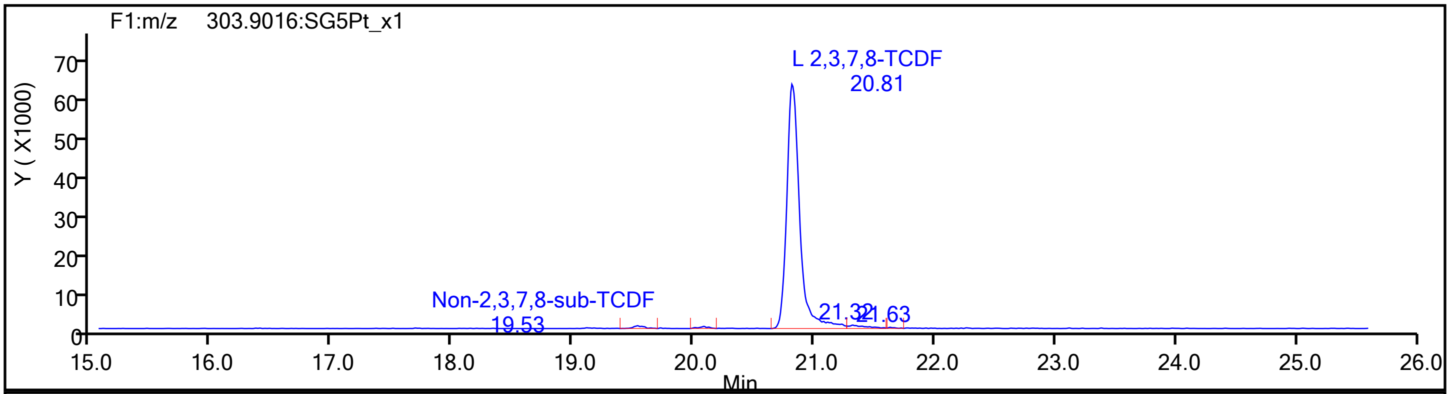

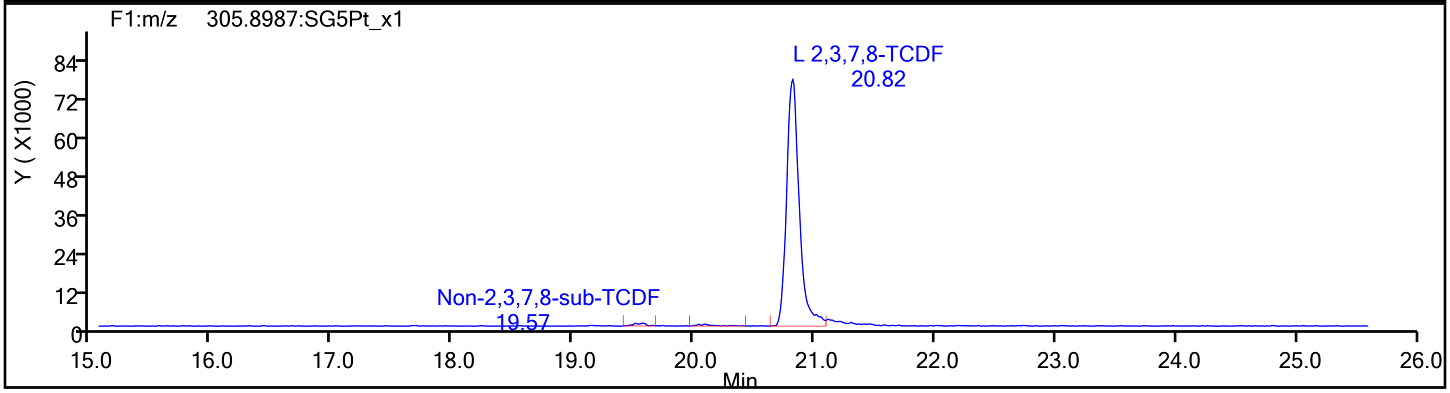

TCDF Standards

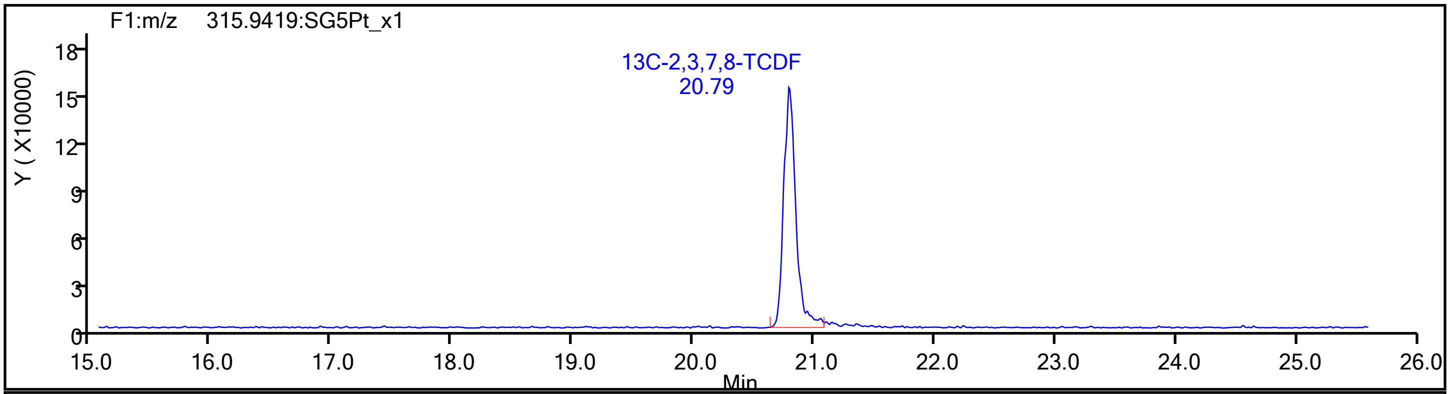

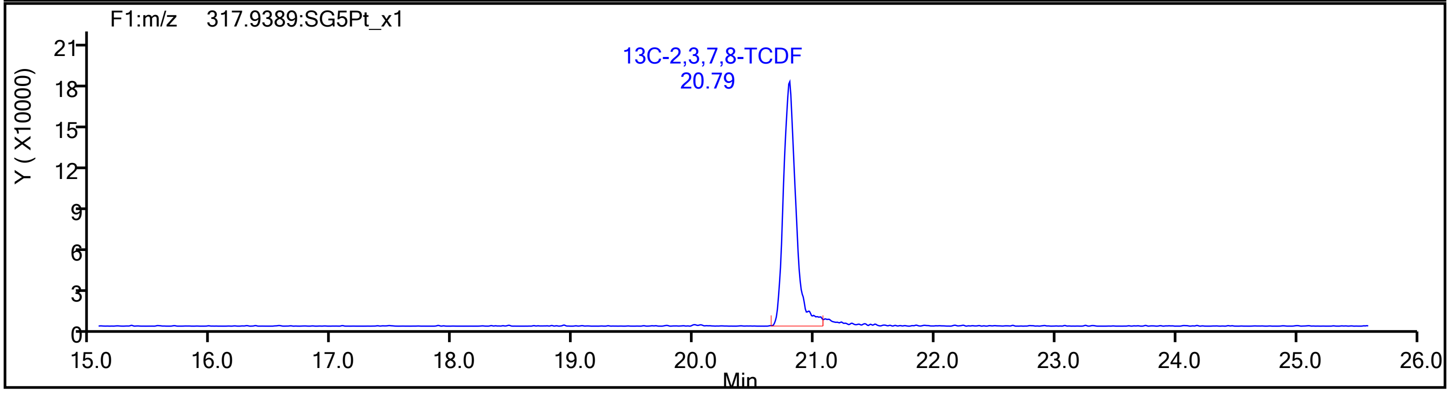

Report Date: 18-Nov-2020 12:37:59
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Injection Date: 17-Nov-2020 18:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

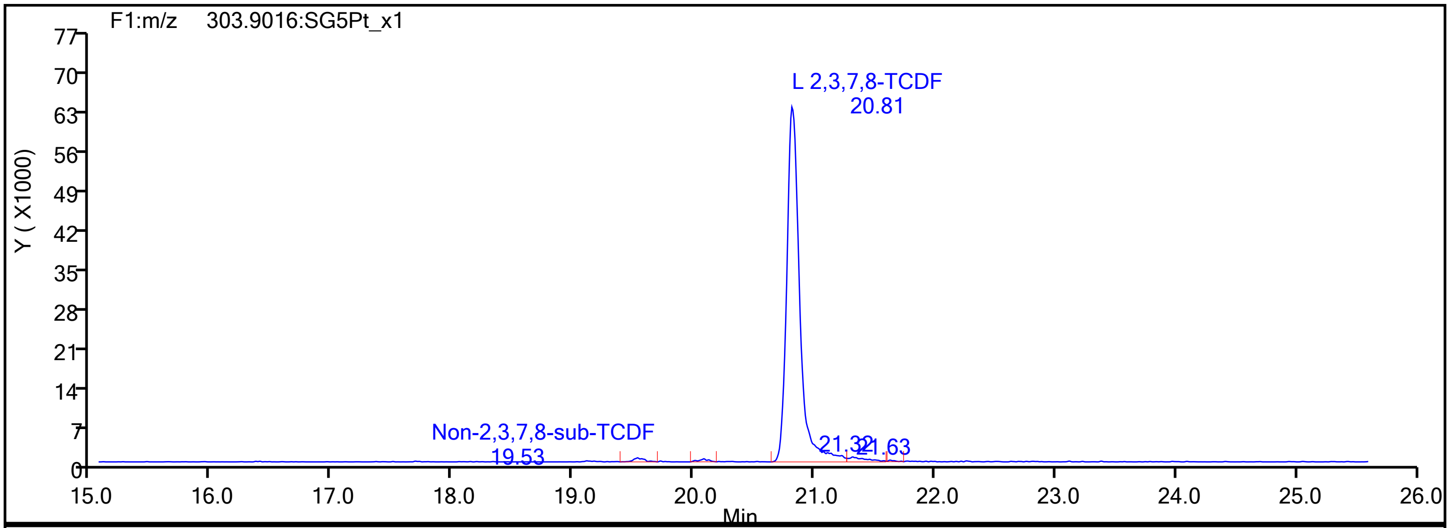

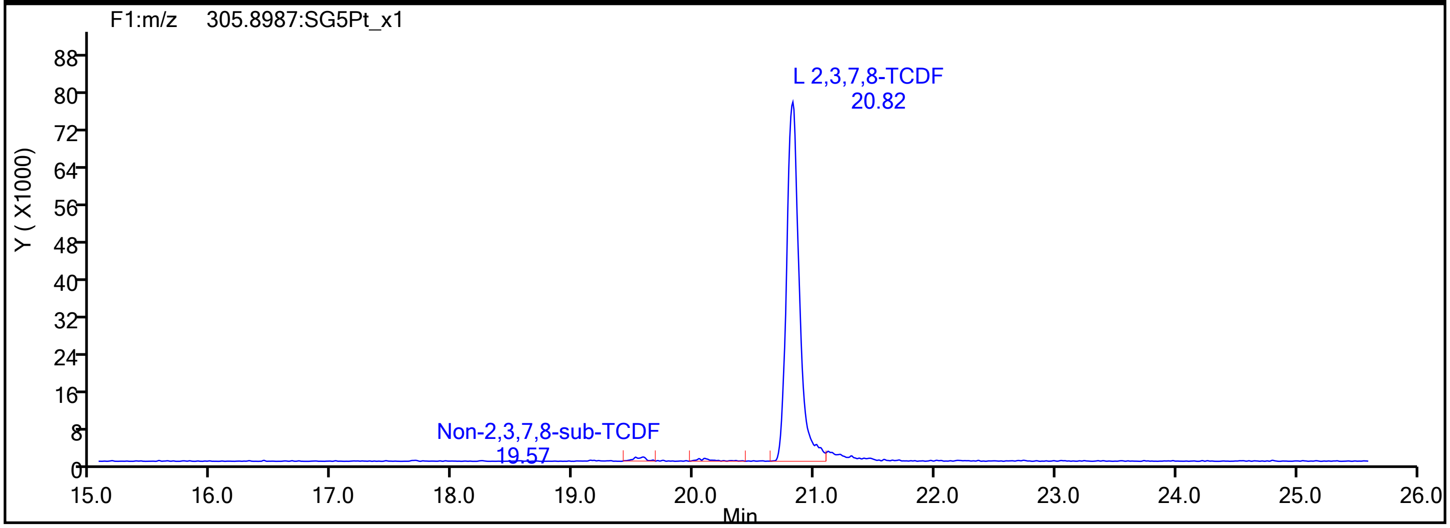

TCDF Interference Mass

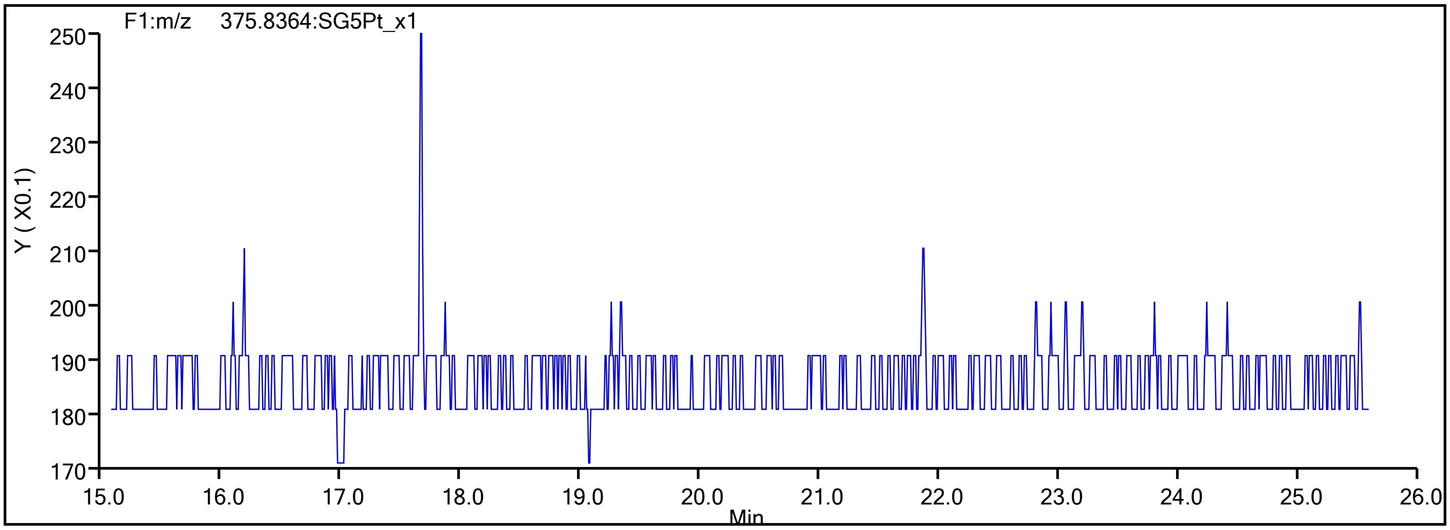

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

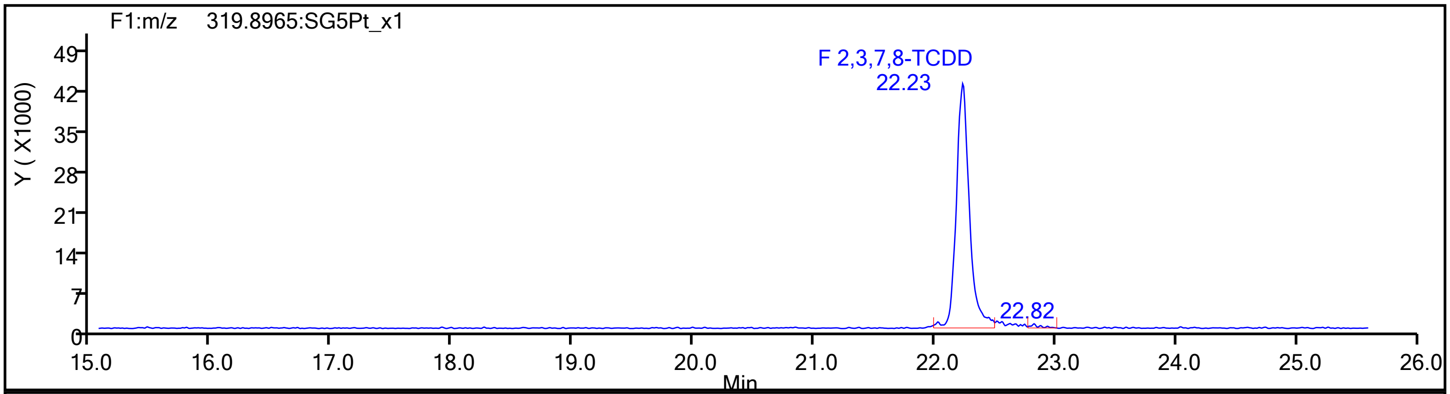

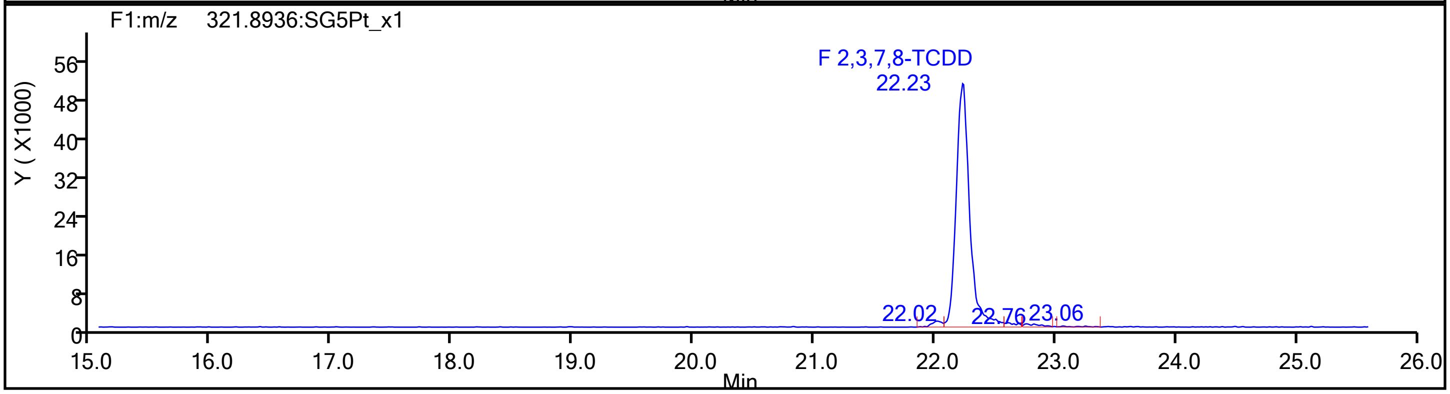

TCDD Standards

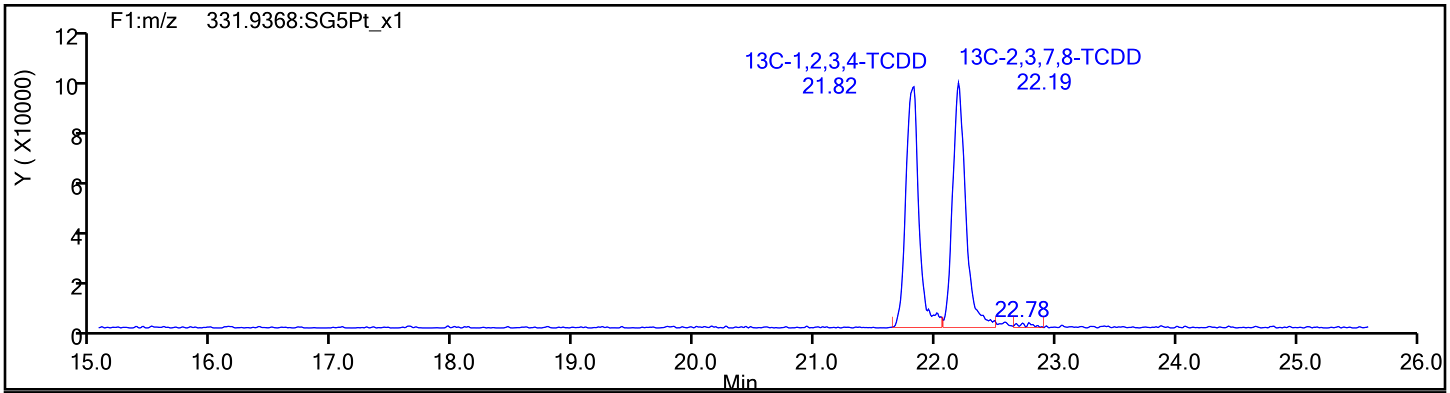

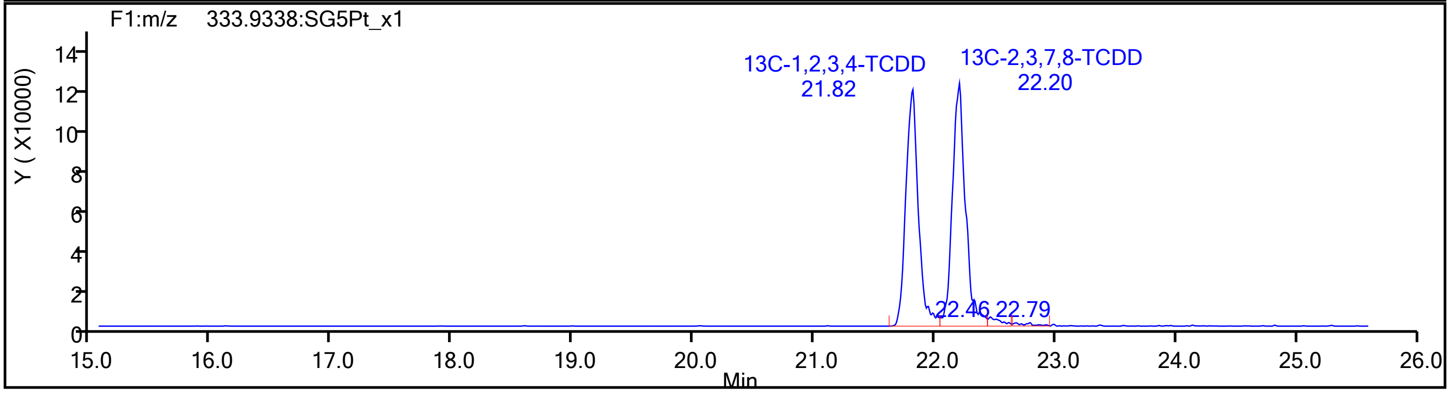

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

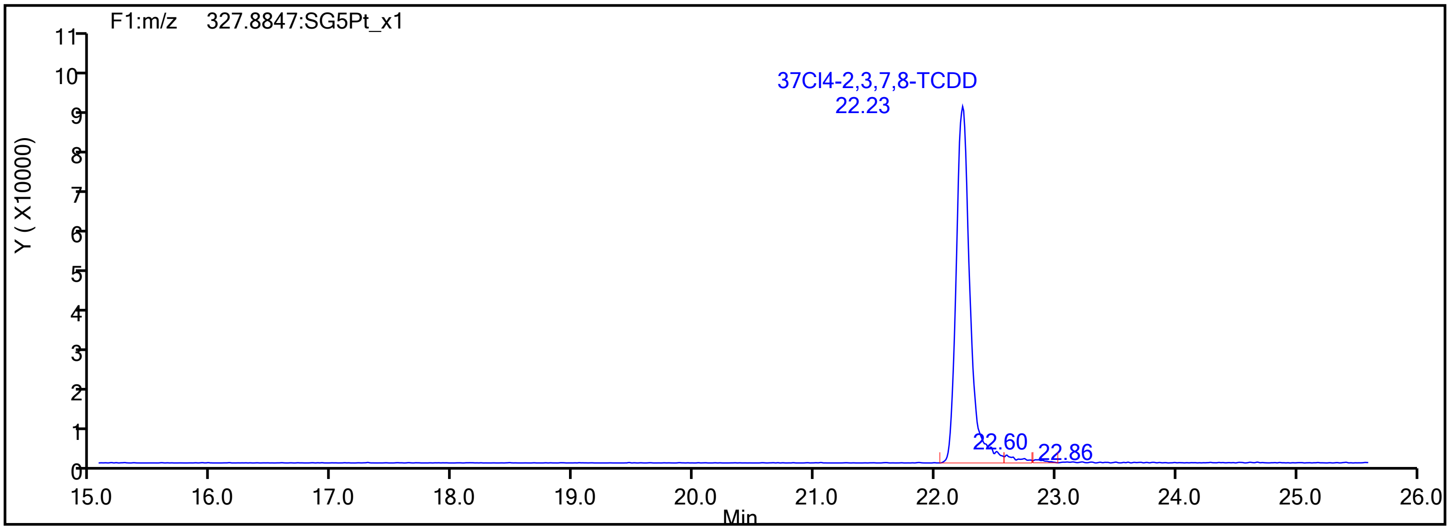

37Cl4-TCDD Standards

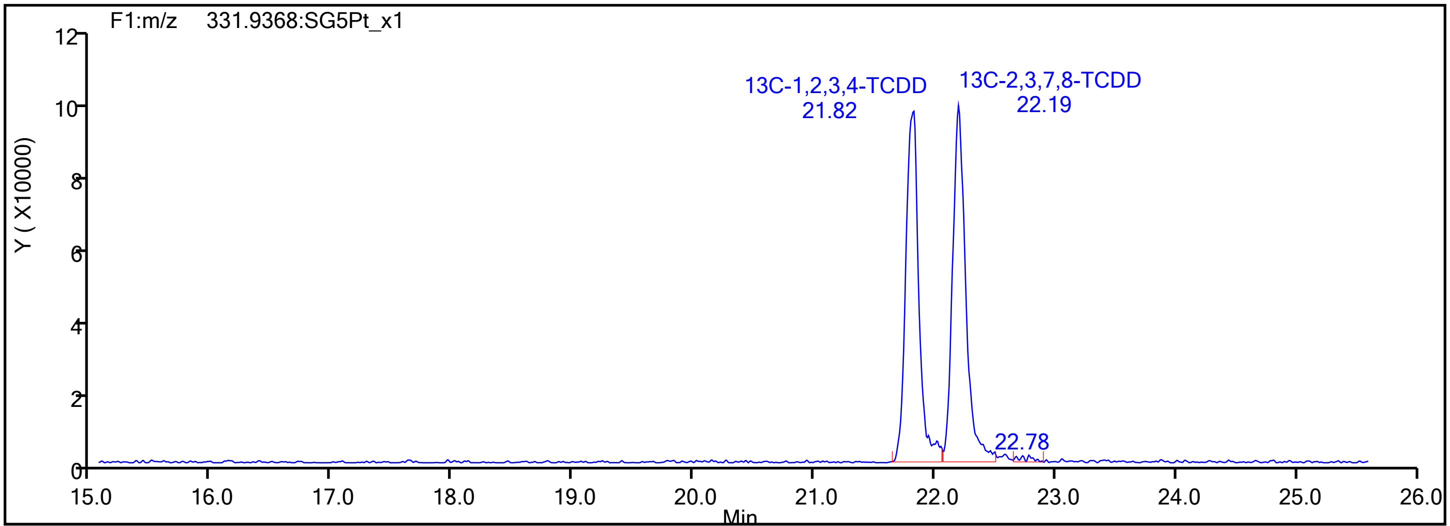

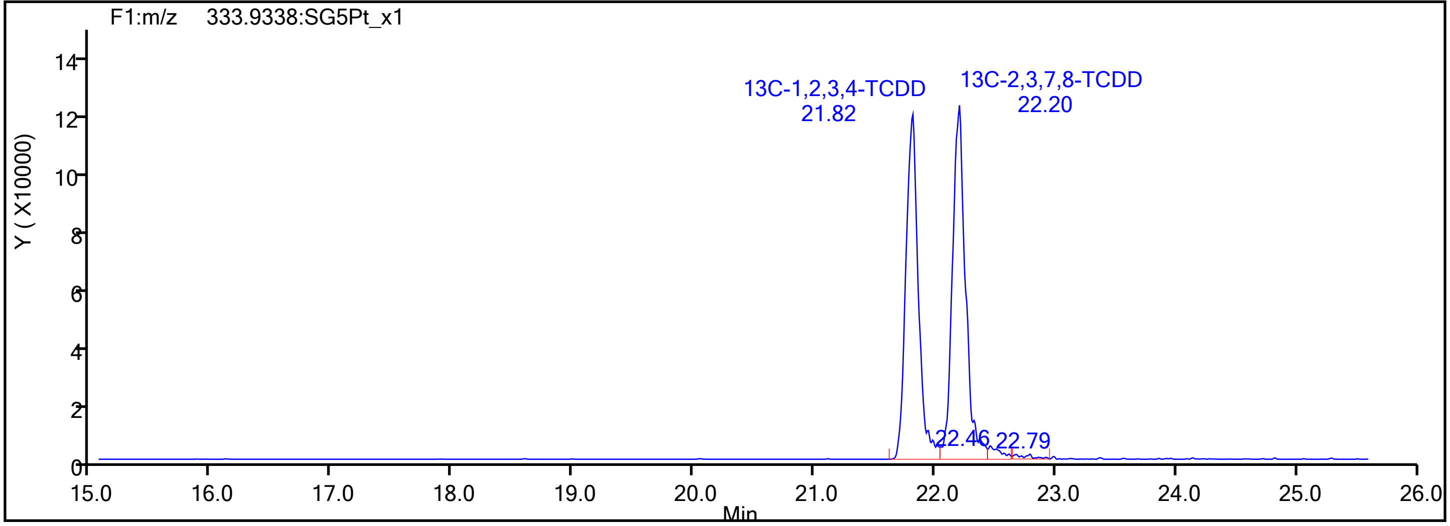

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

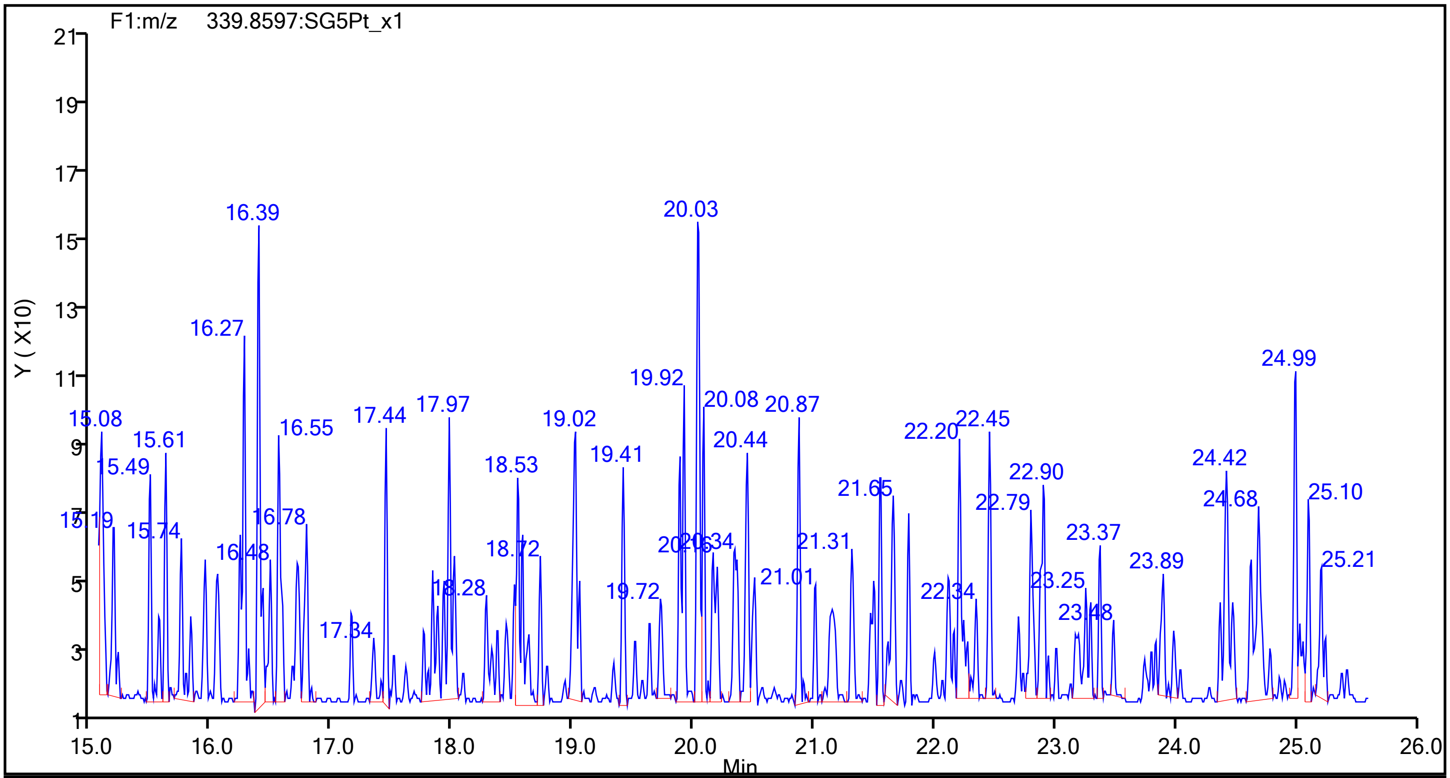

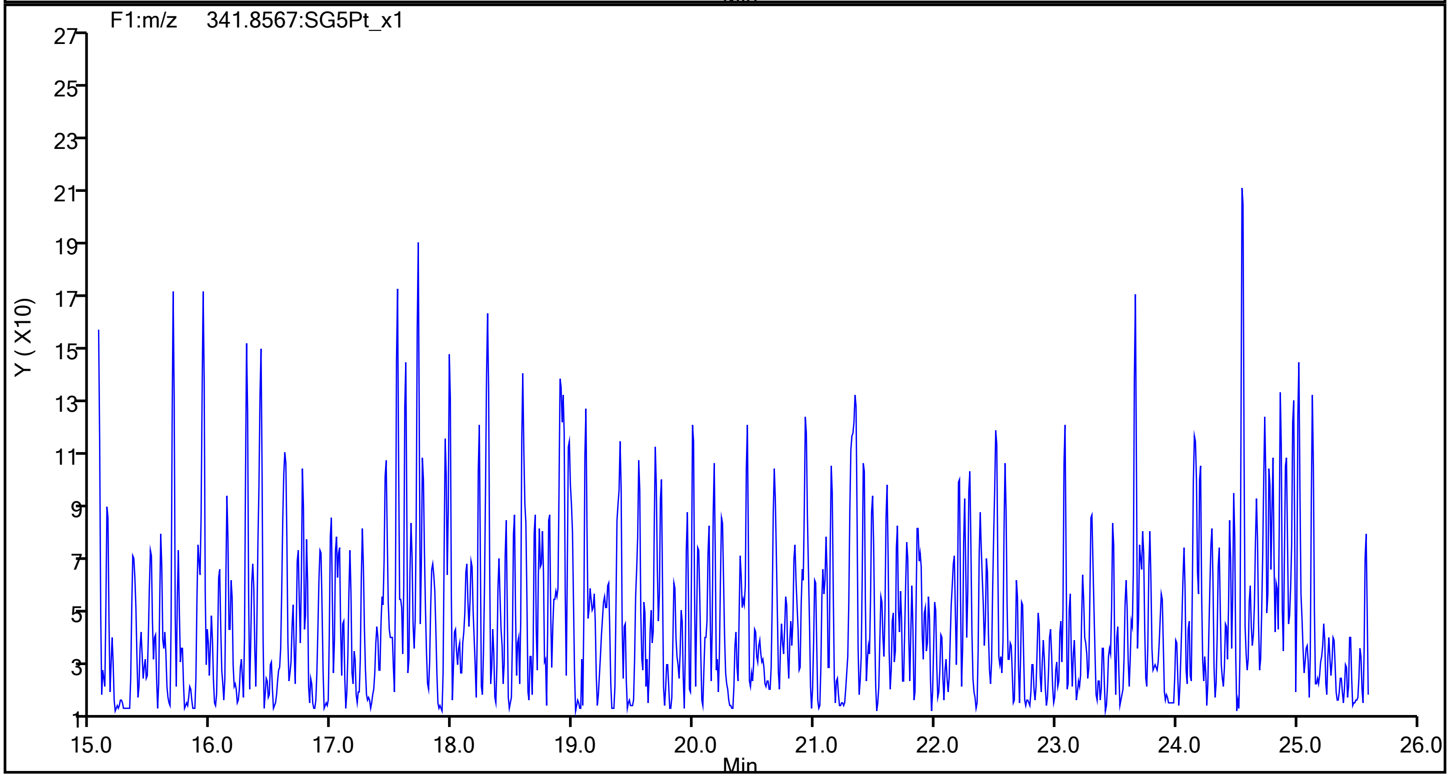

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

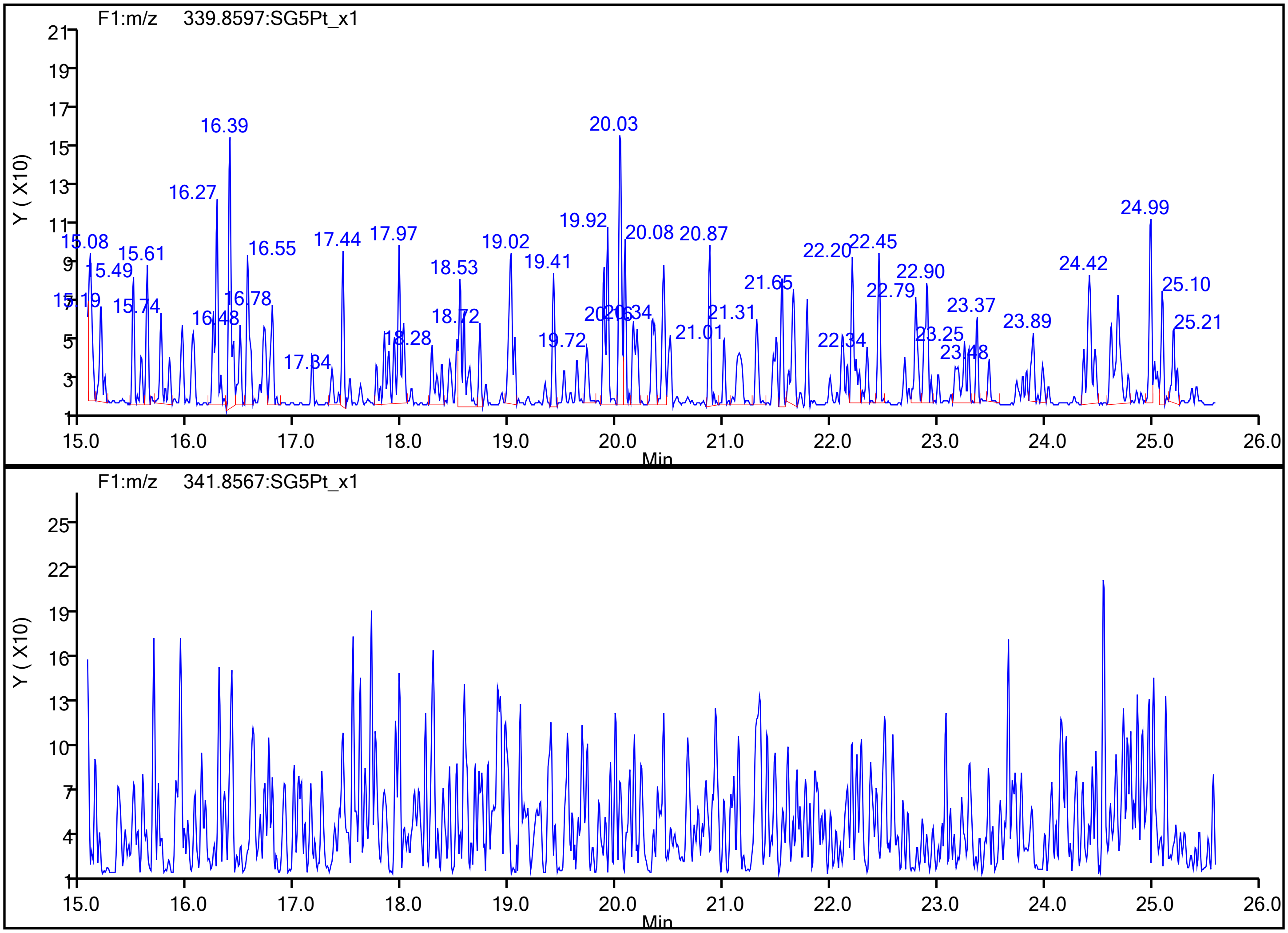

F1 PeCDFs Interference Mass

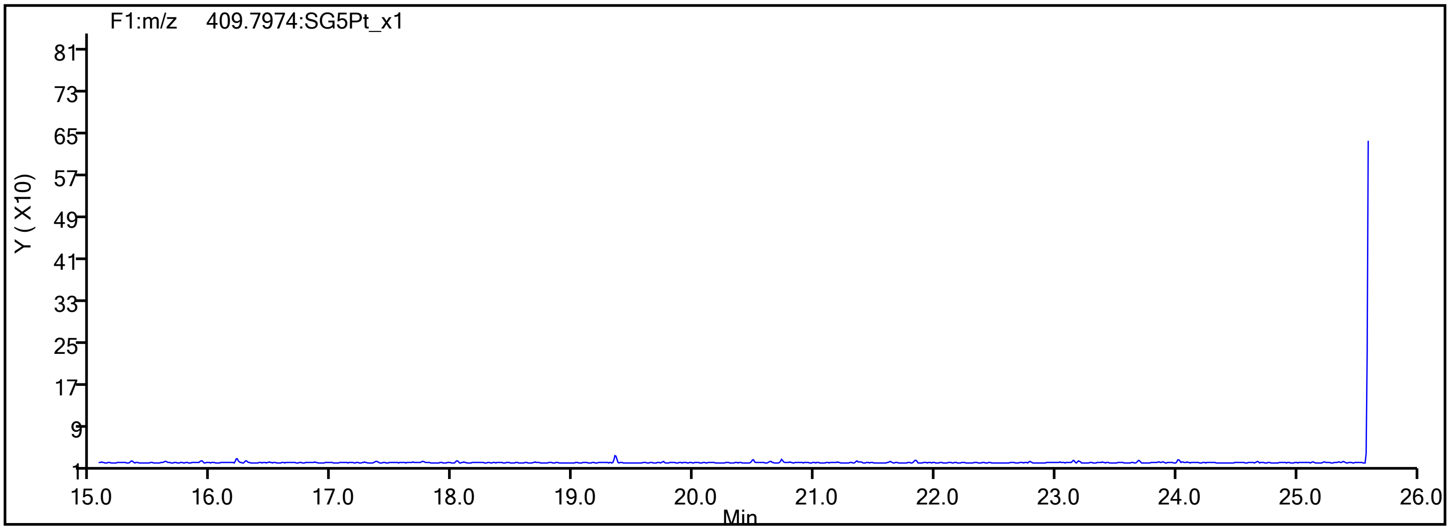

Report Date: 18-Nov-2020 12:38:00　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00　　Injection Vol: 1.0 ul

Instrument ID: DFS 1　　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585　　Sample Line#: 10

Column Type: DB-5　　Column Dia: 0.32 mm

PeCDF

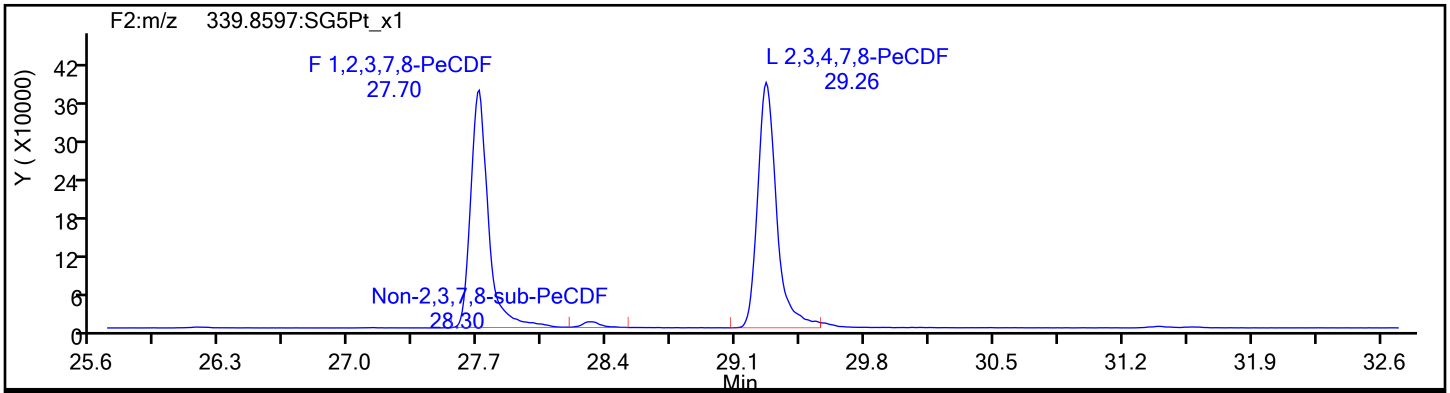

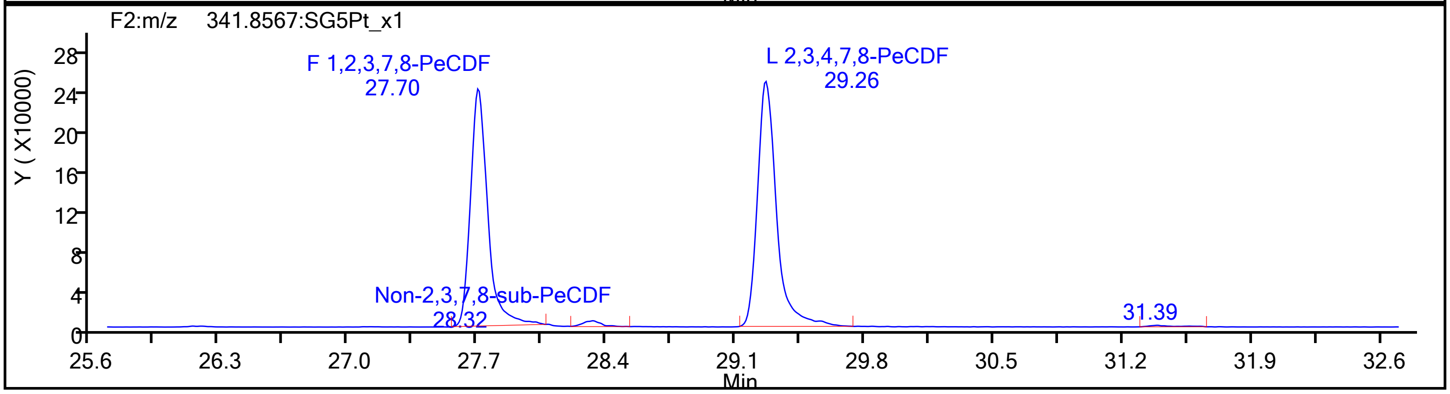

PeCDF Standards

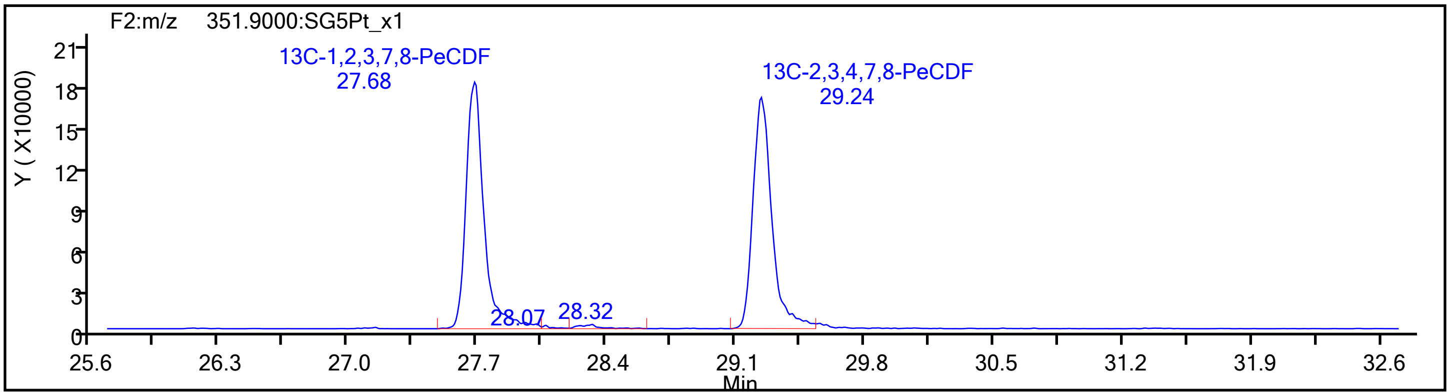

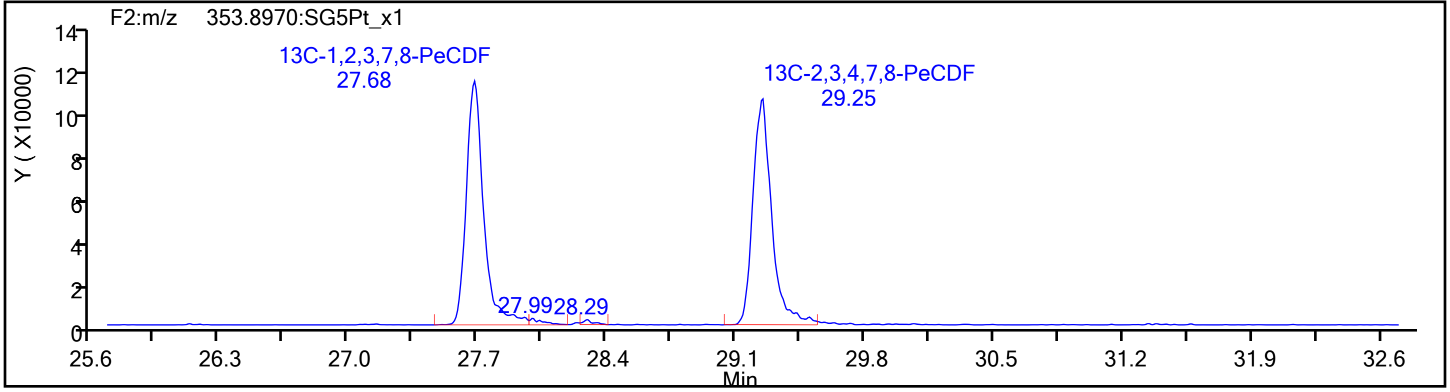

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Injection Date: 17-Nov-2020 18:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

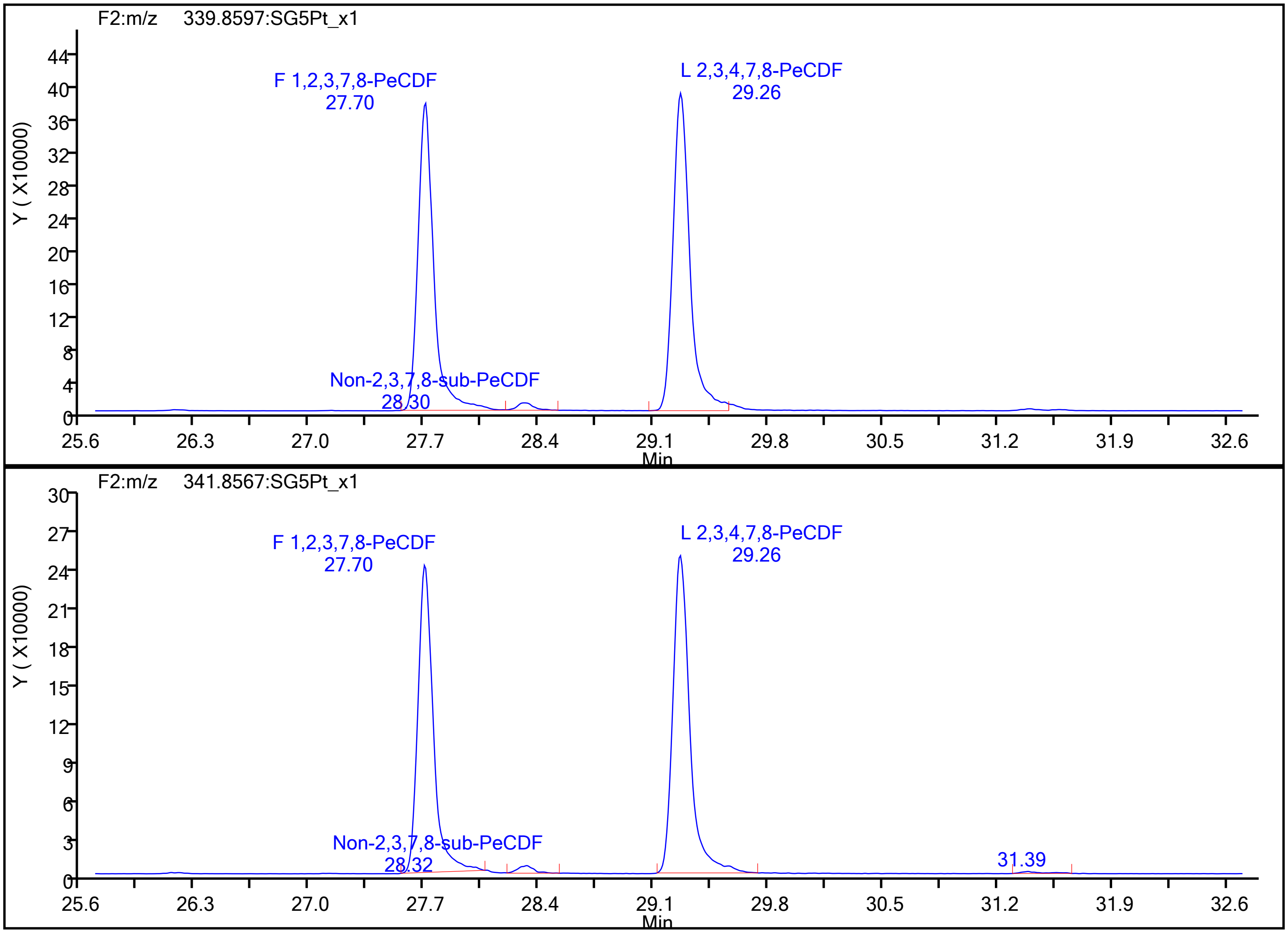

PeCDF Interference Mass

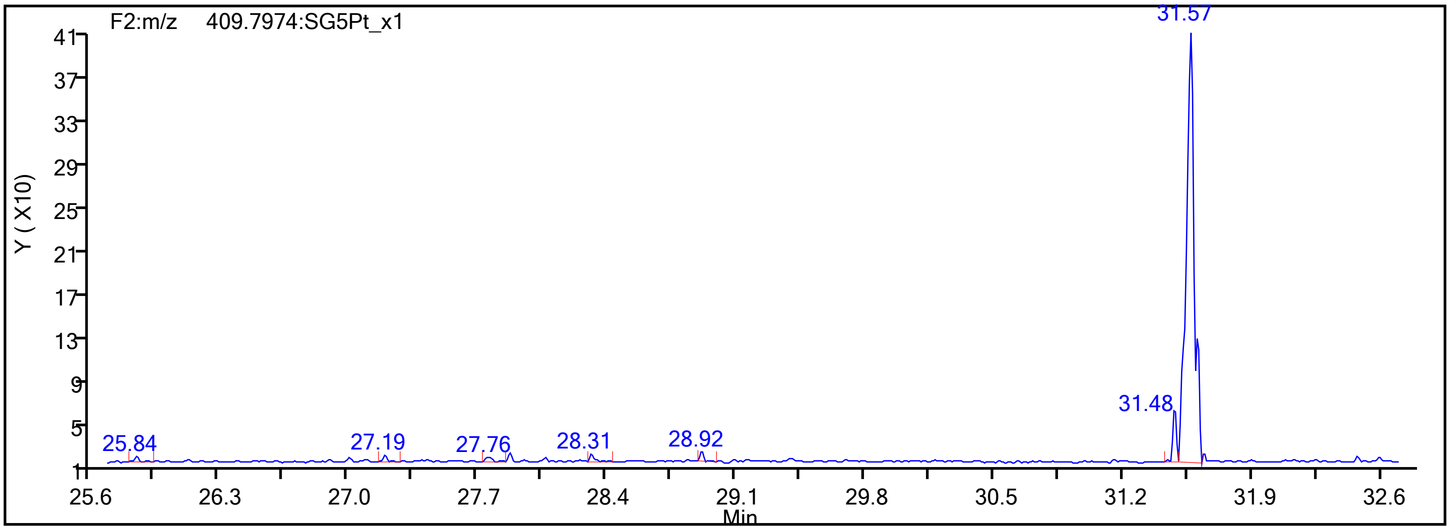

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

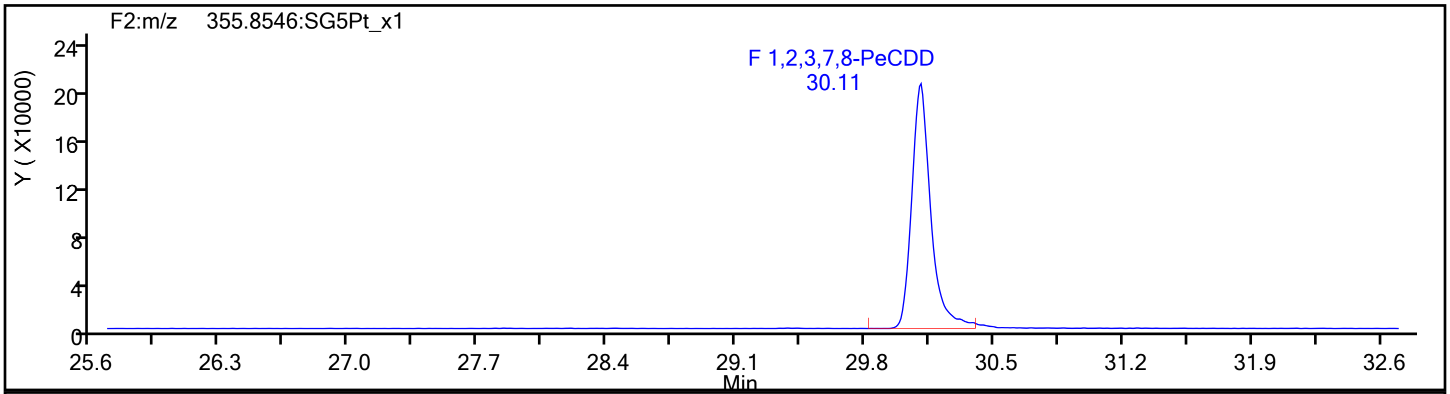

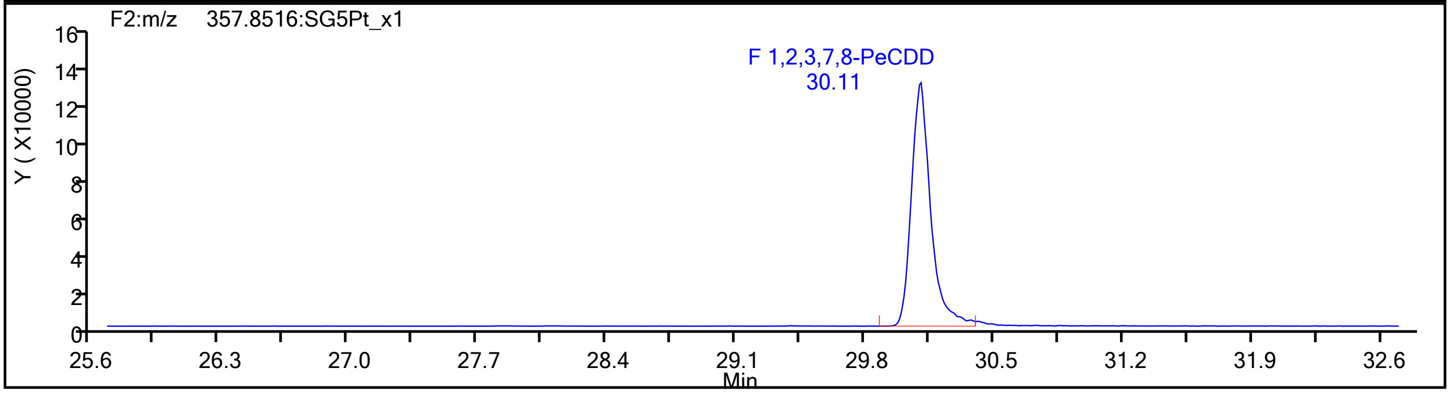

PeCDD Standards

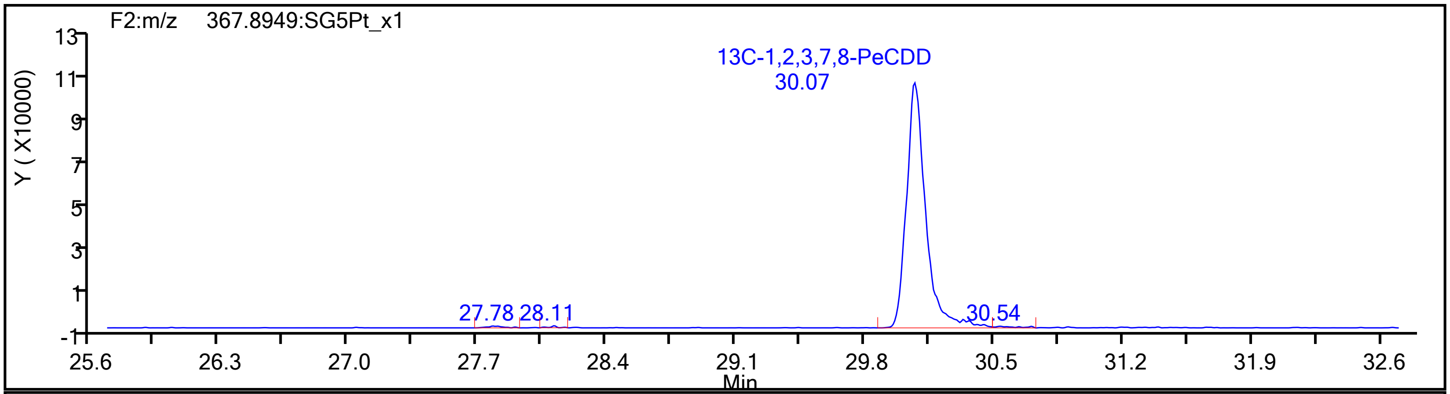

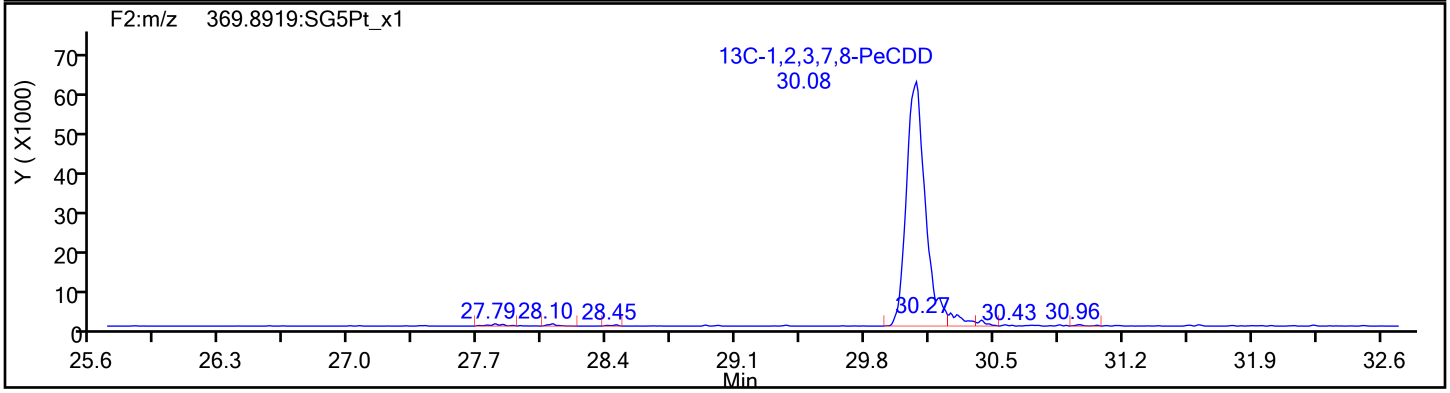

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

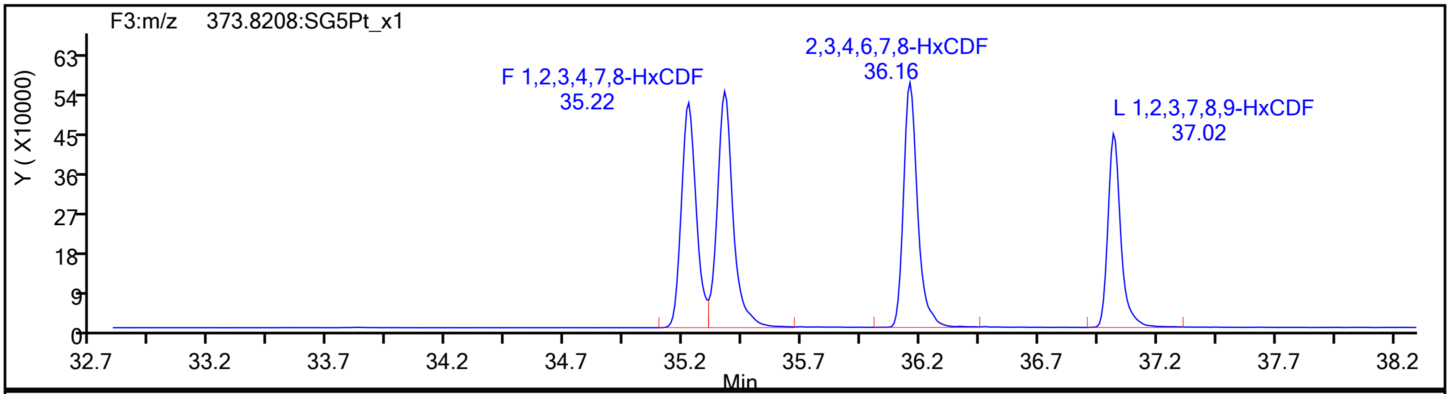

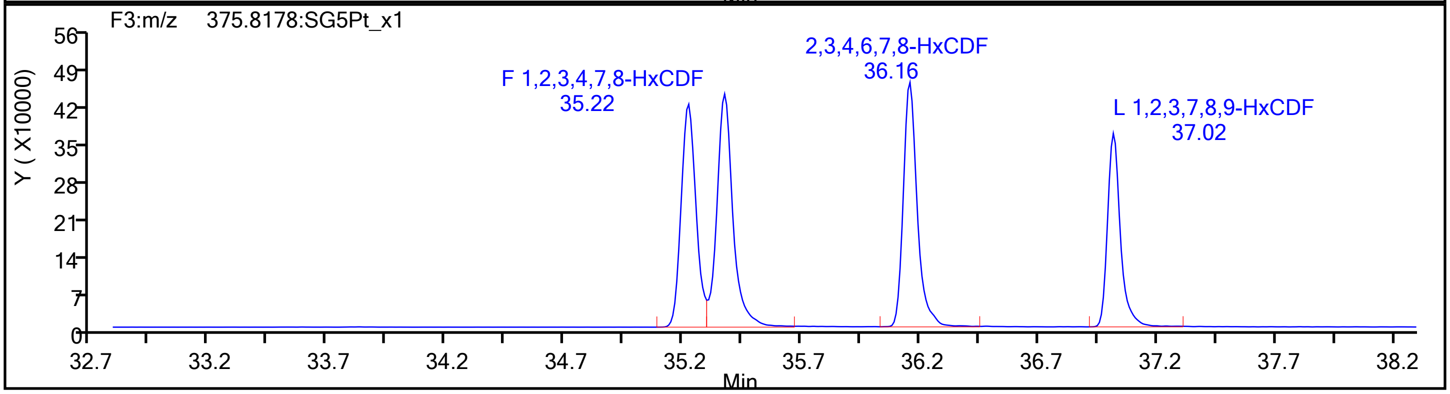

HxCDF Standards

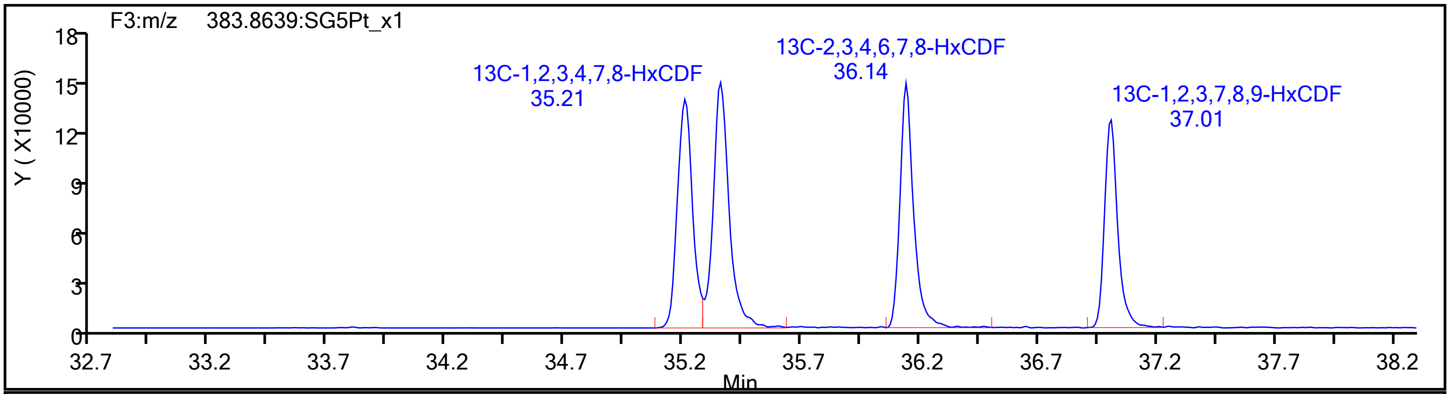

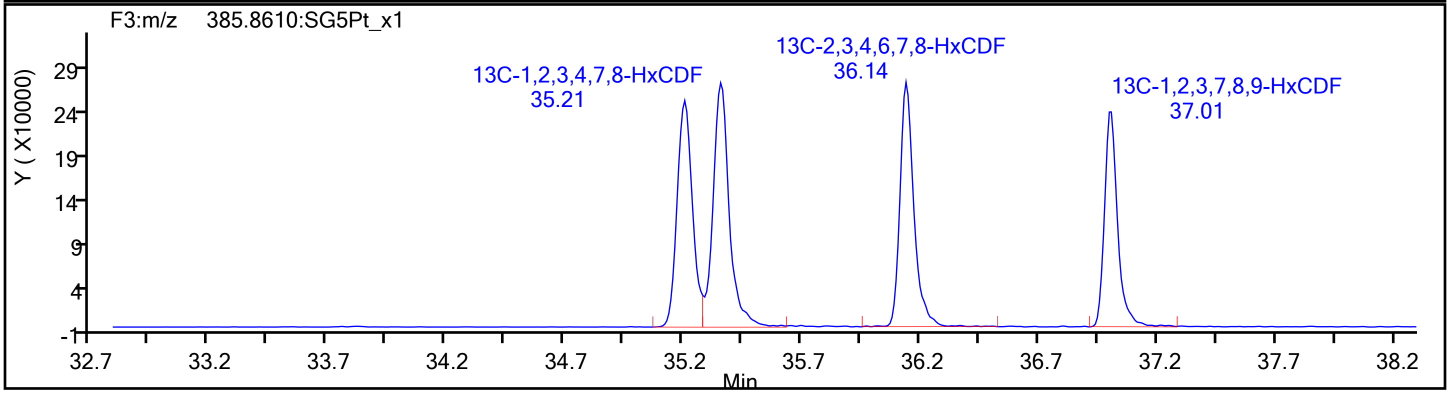

Report Date: 18-Nov-2020 12:38:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

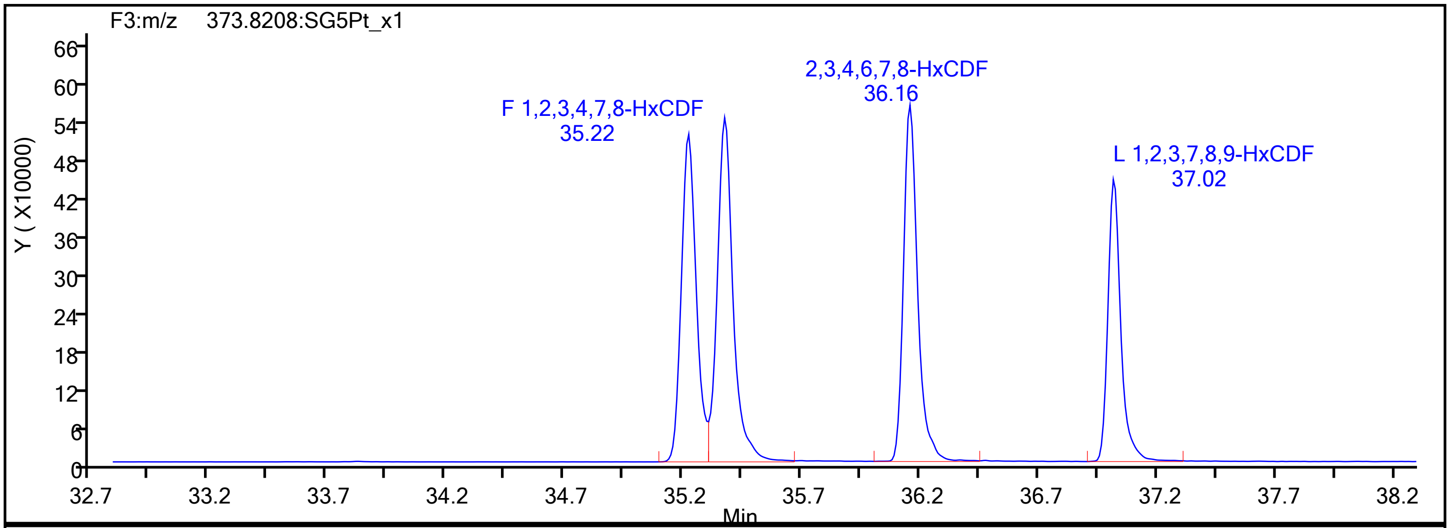

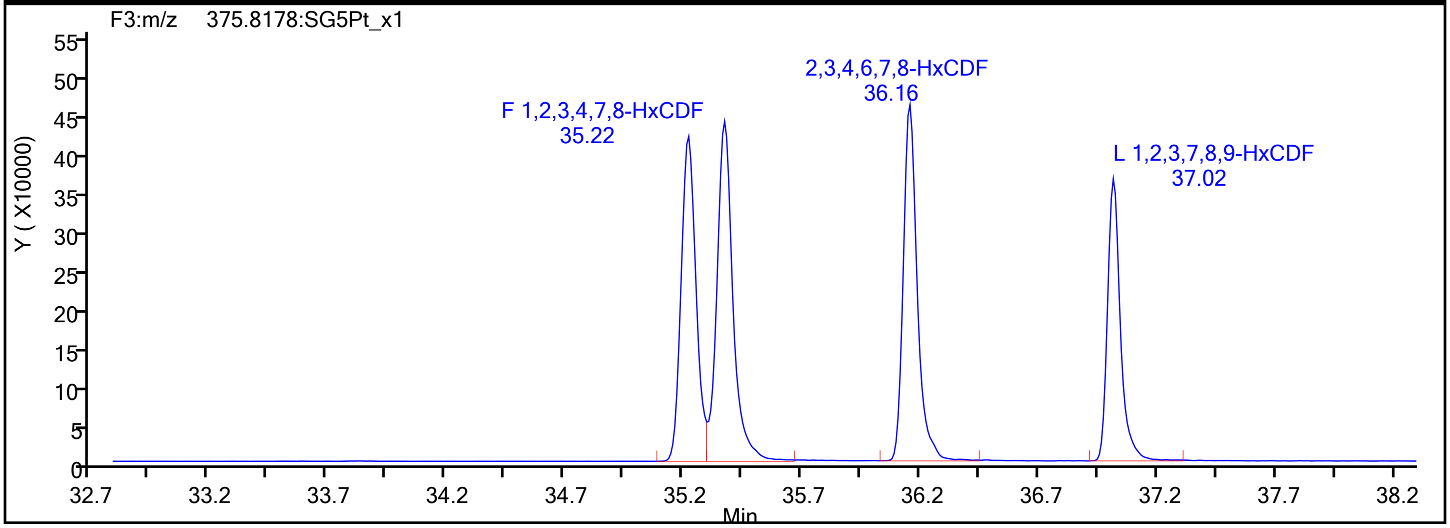

HxCDF Interference Mass

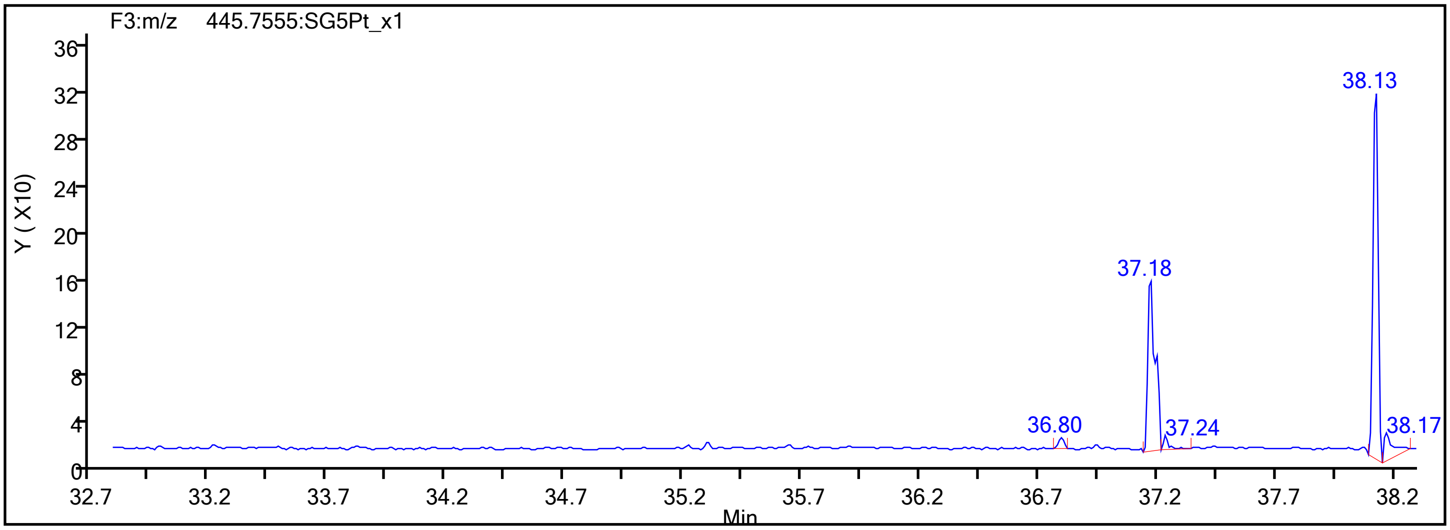

Report Date: 18-Nov-2020 12:38:00   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

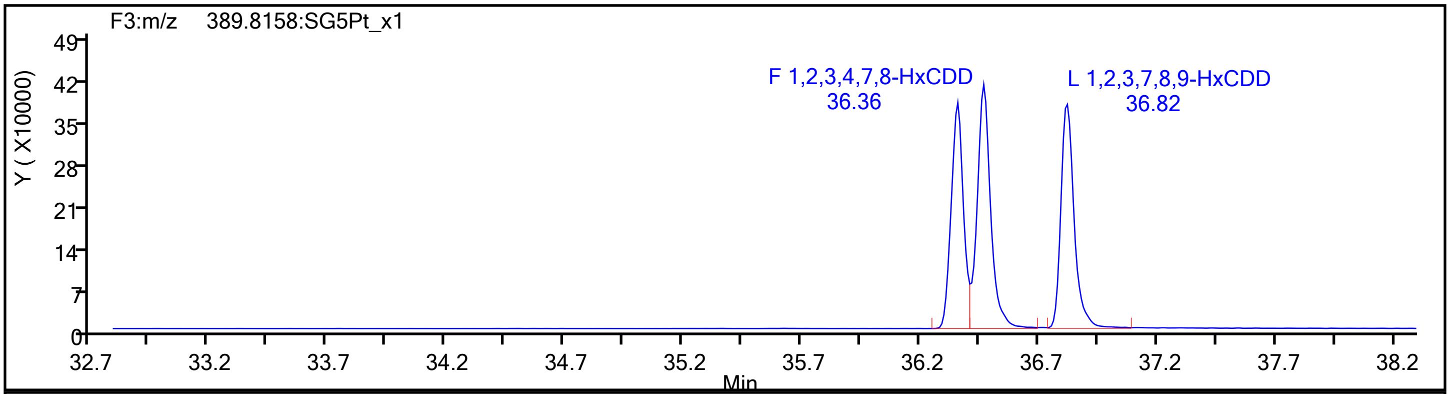

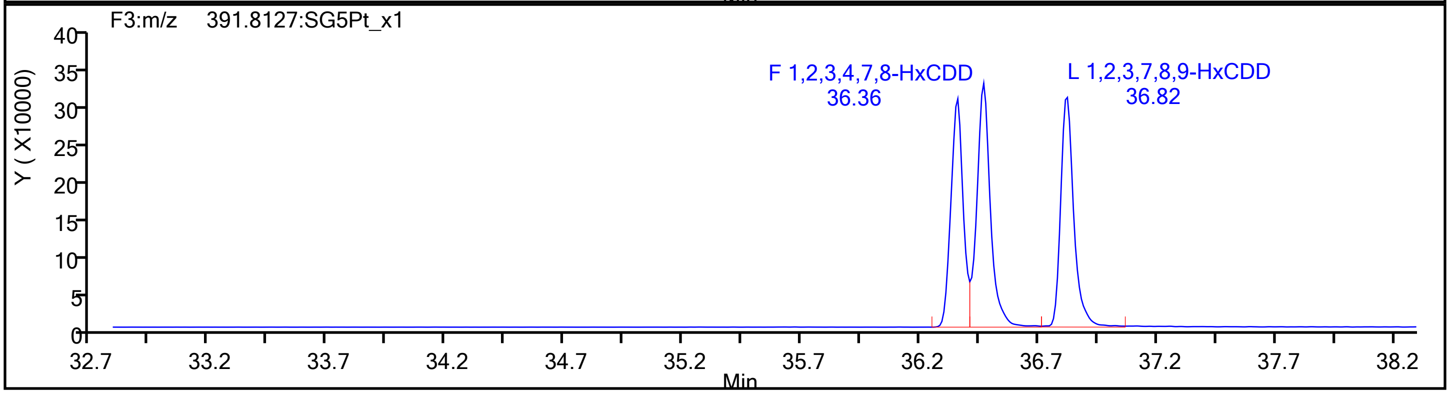

HxCDD Standards

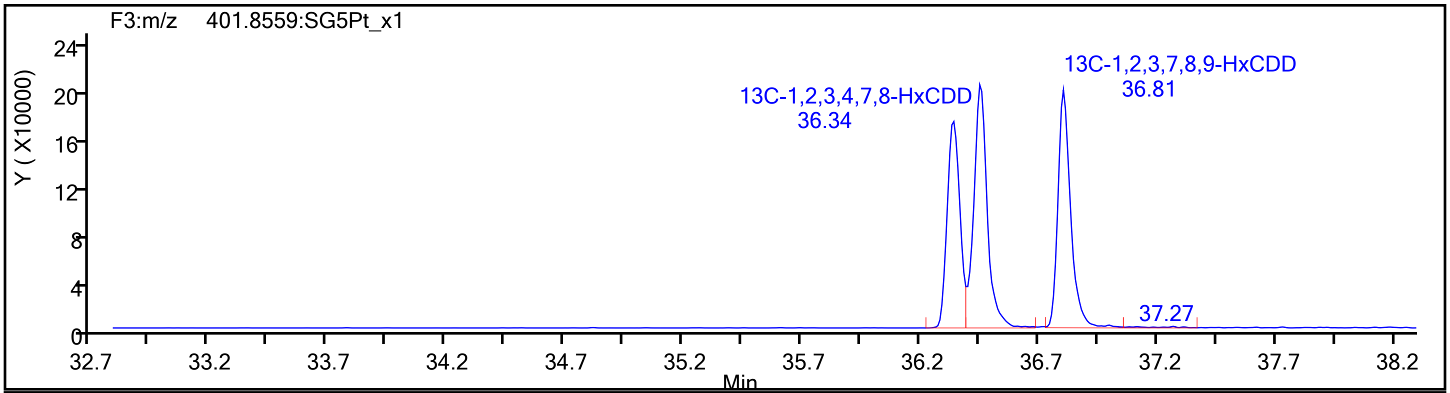

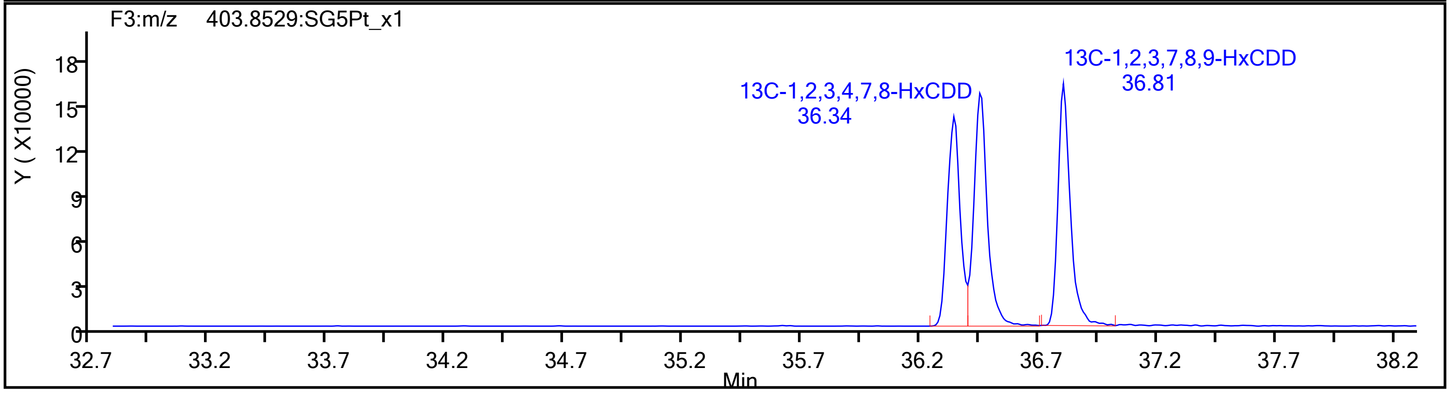

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

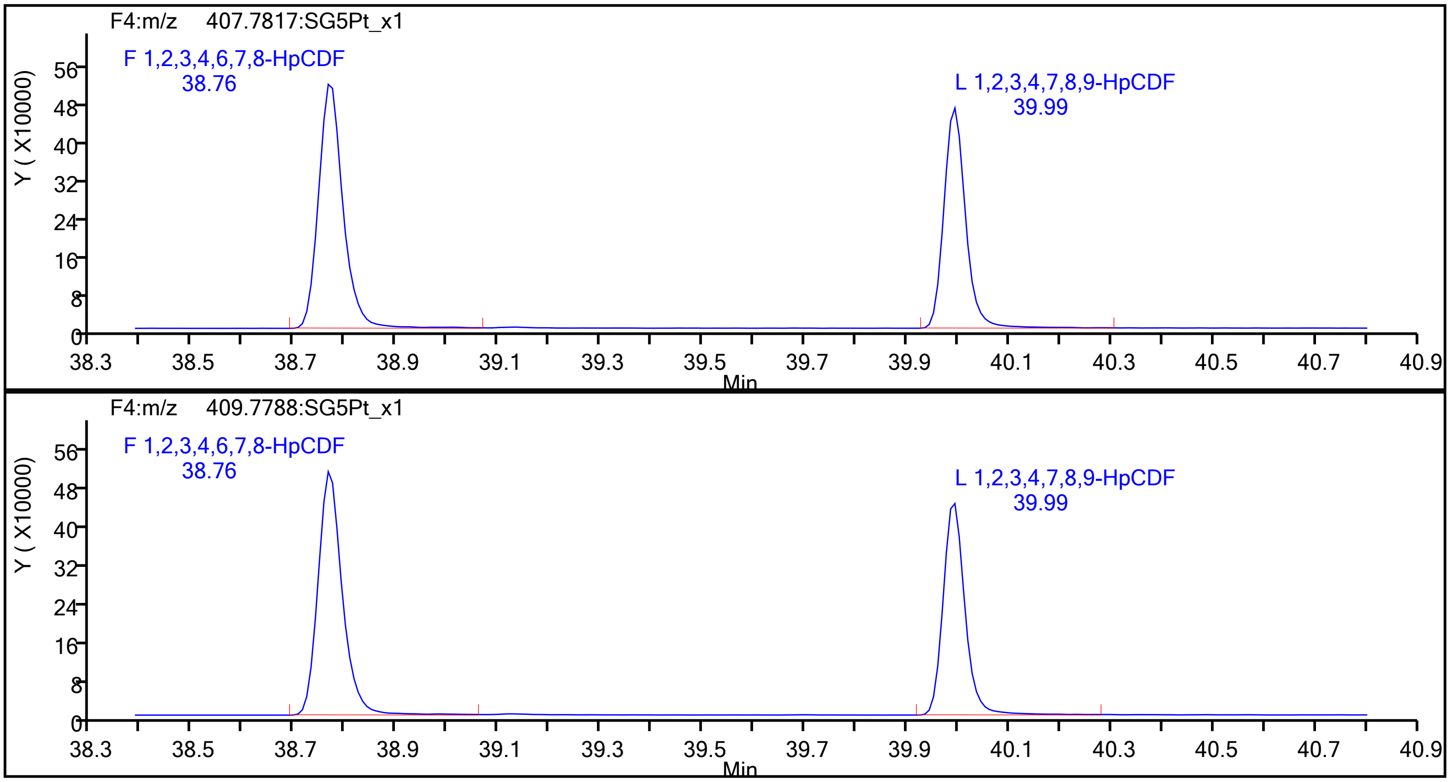

HpCDF Standards

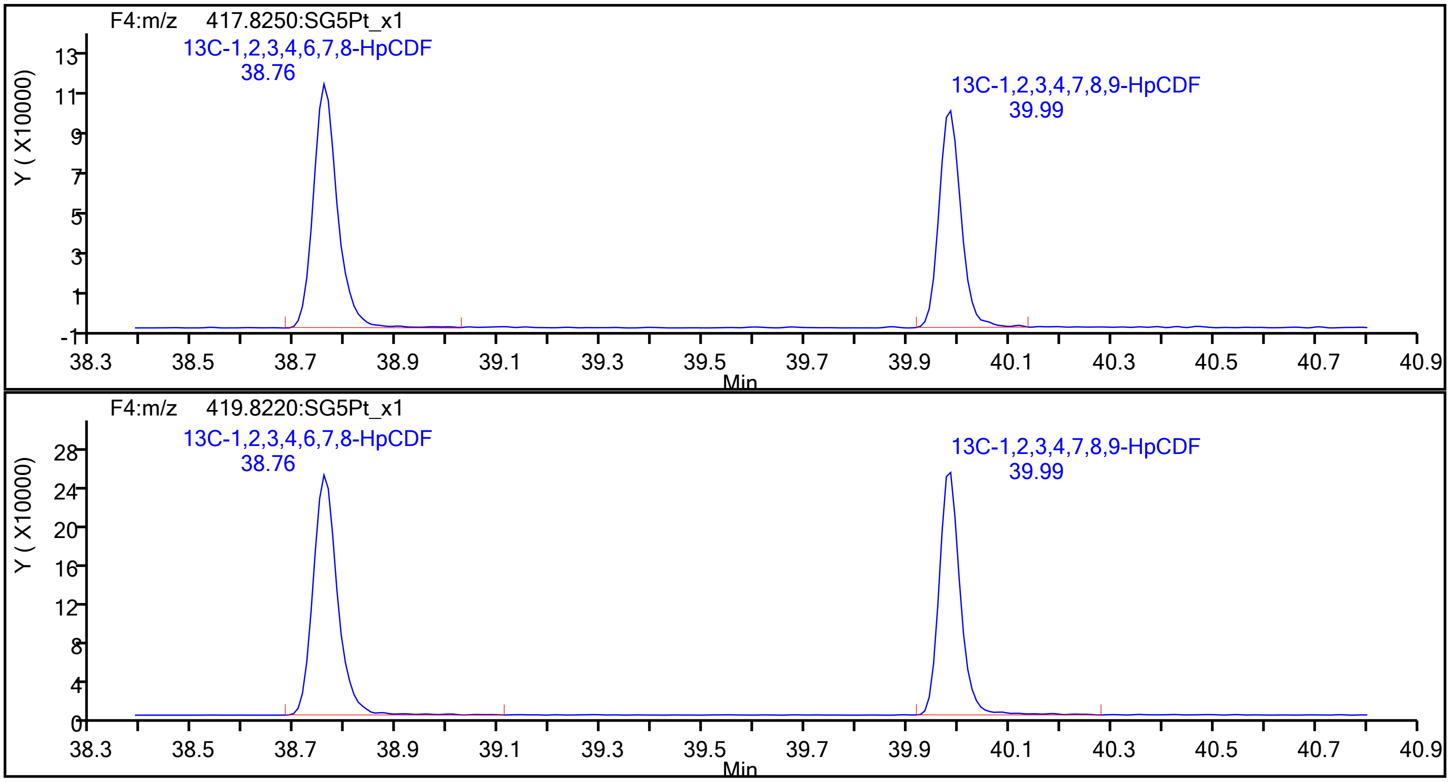

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

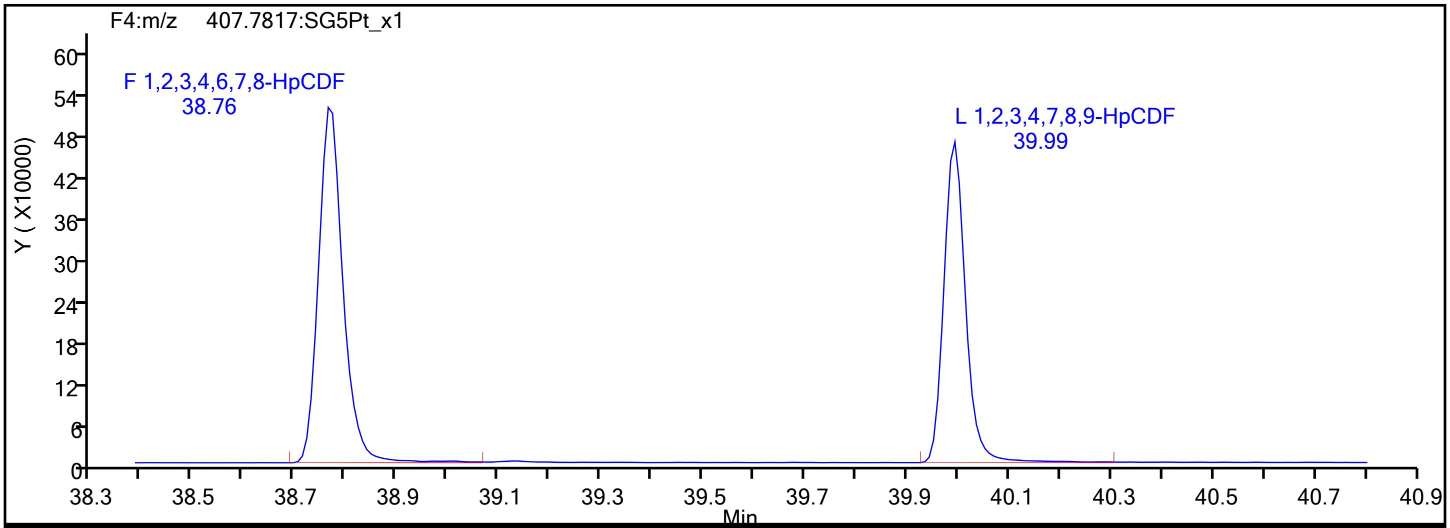

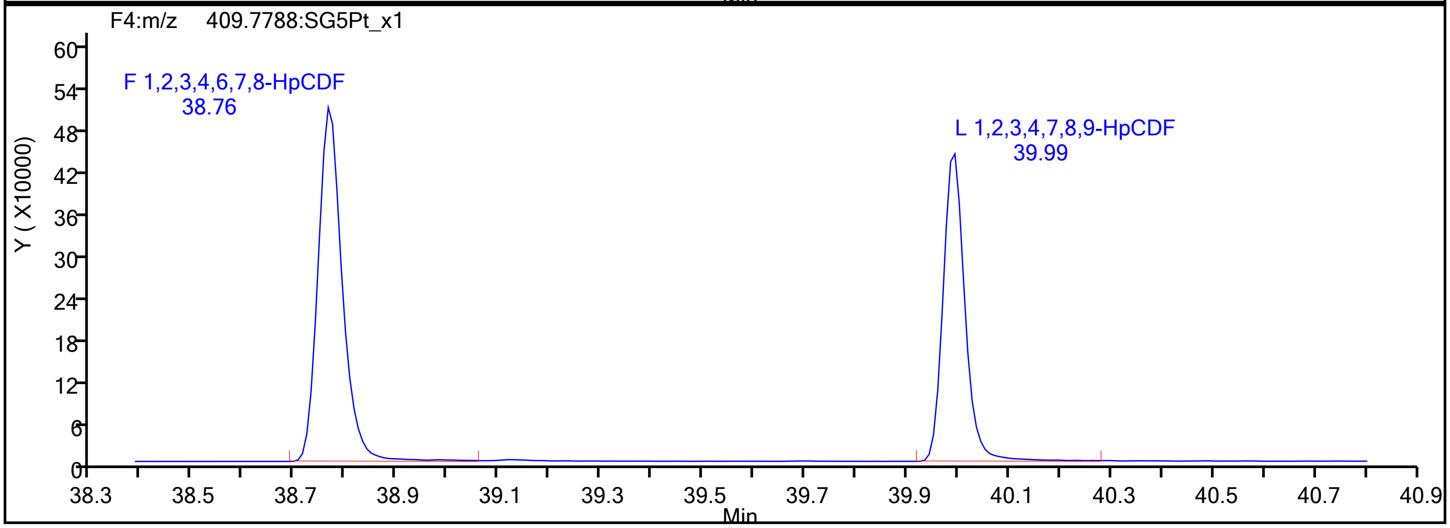

HpCDF Interference Mass

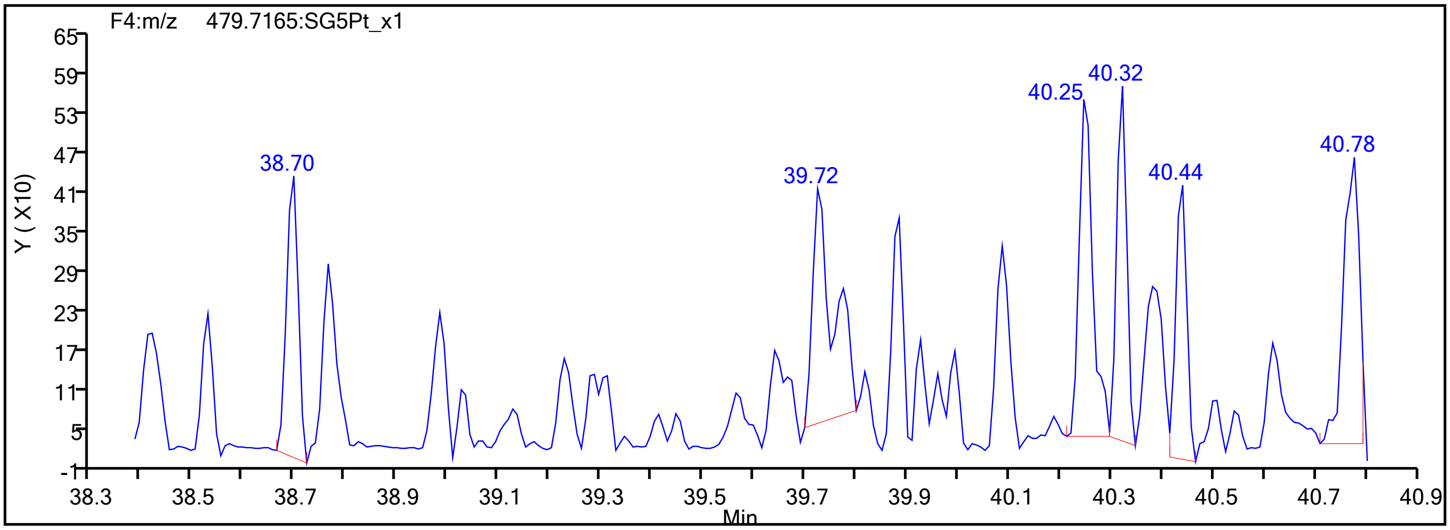

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Injection Date: 17-Nov-2020 18:32:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

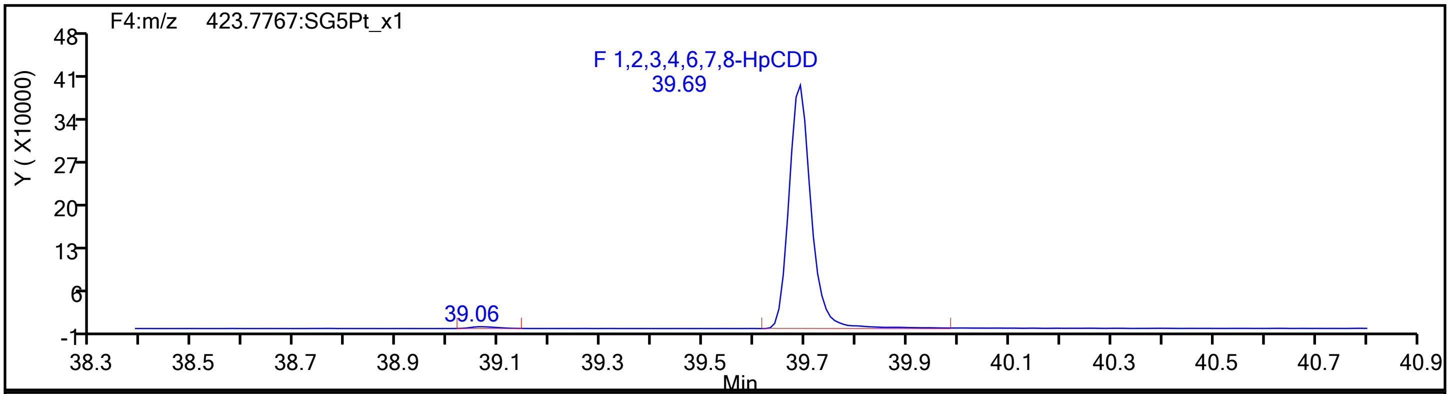

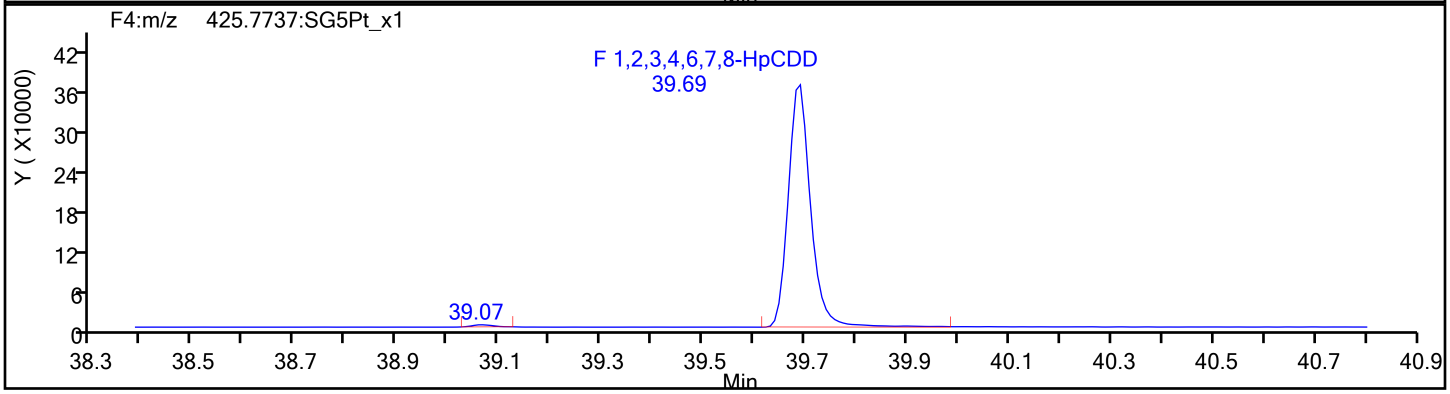

HpCDD Standards

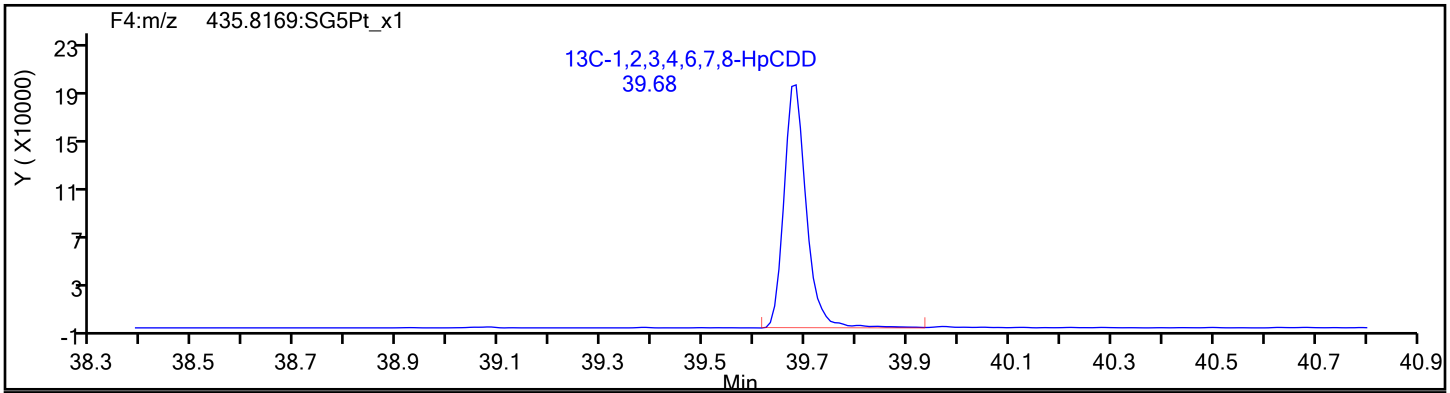

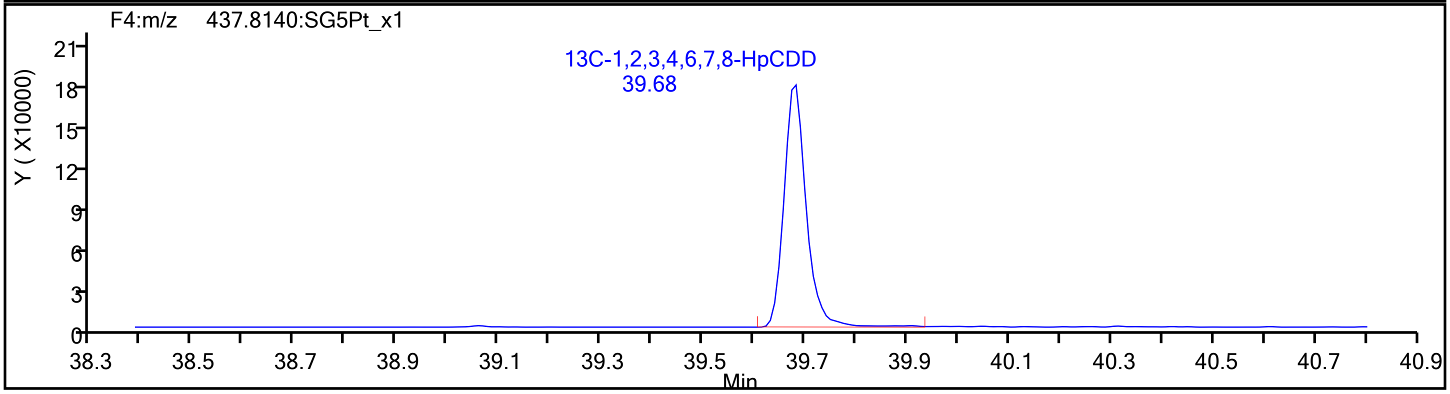

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

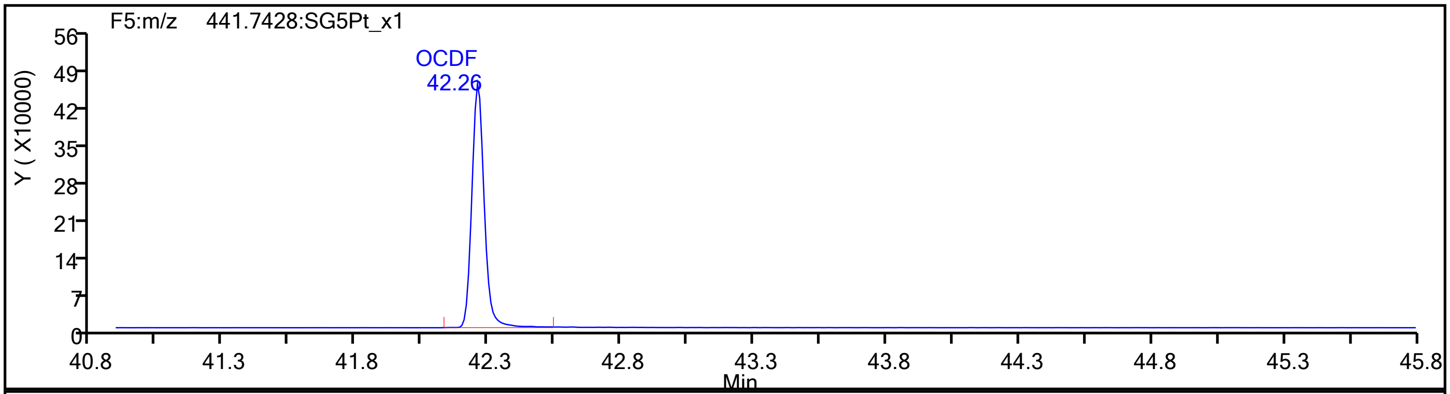

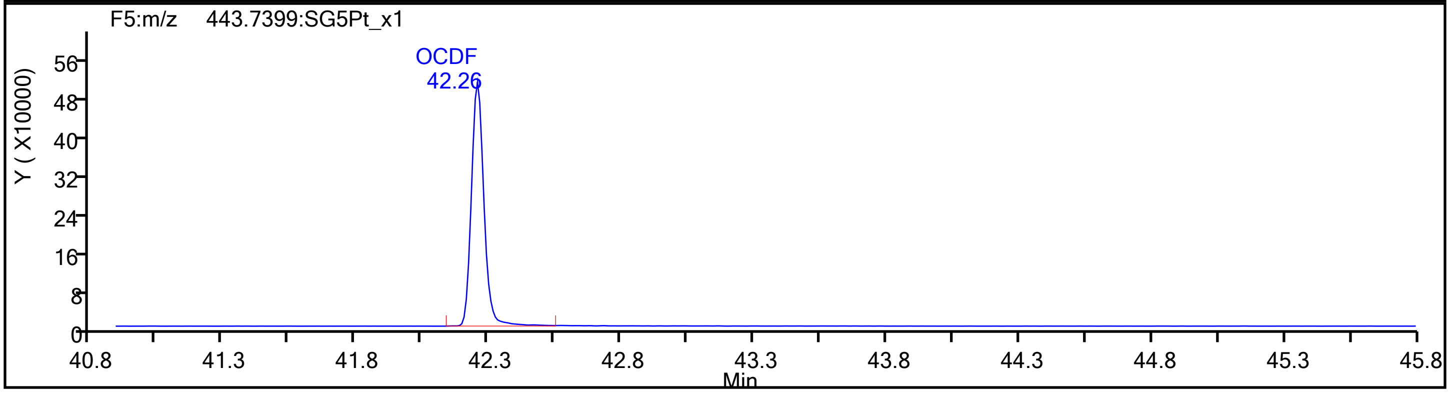

OCDF Standards

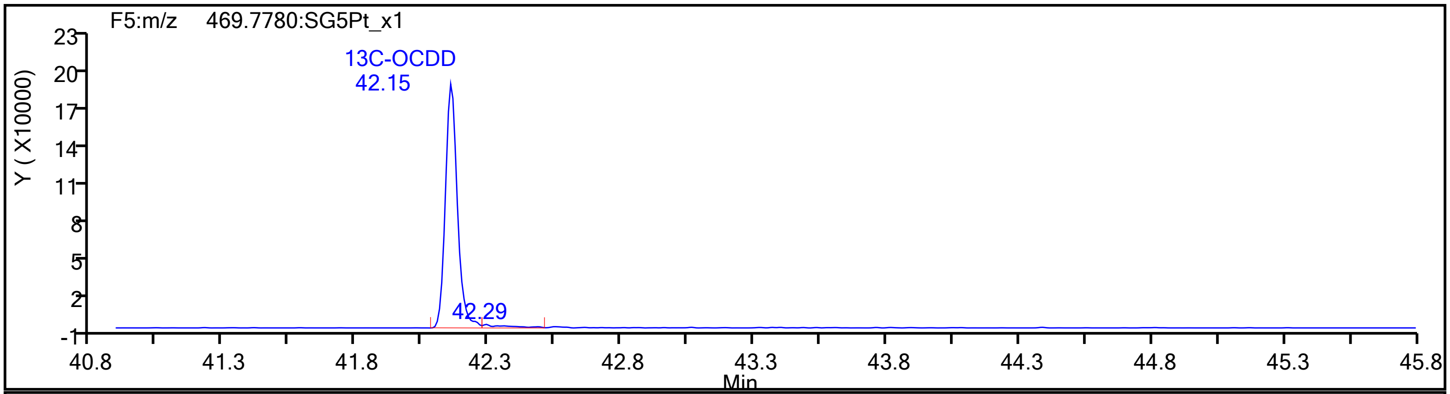

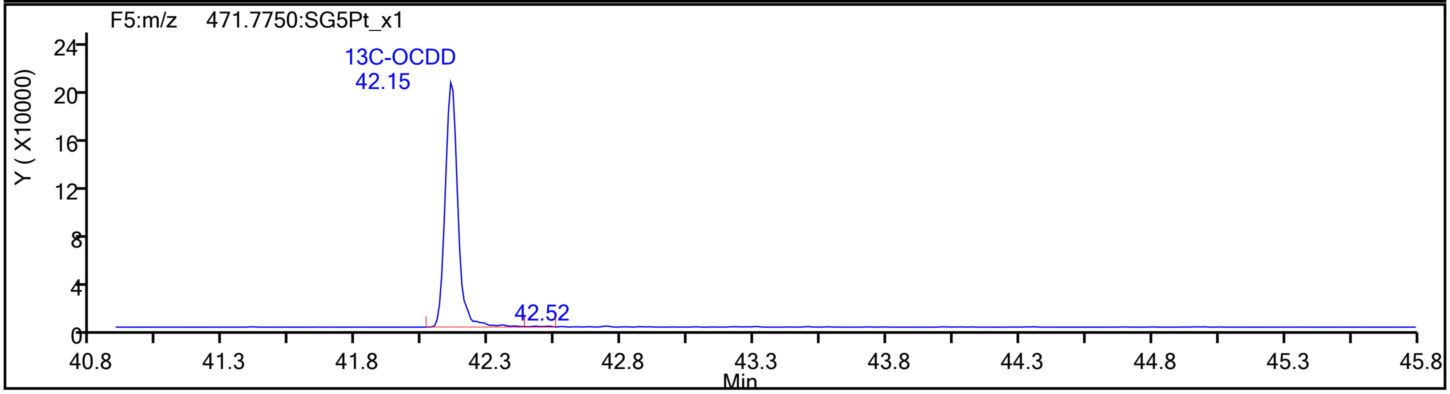

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d		
Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

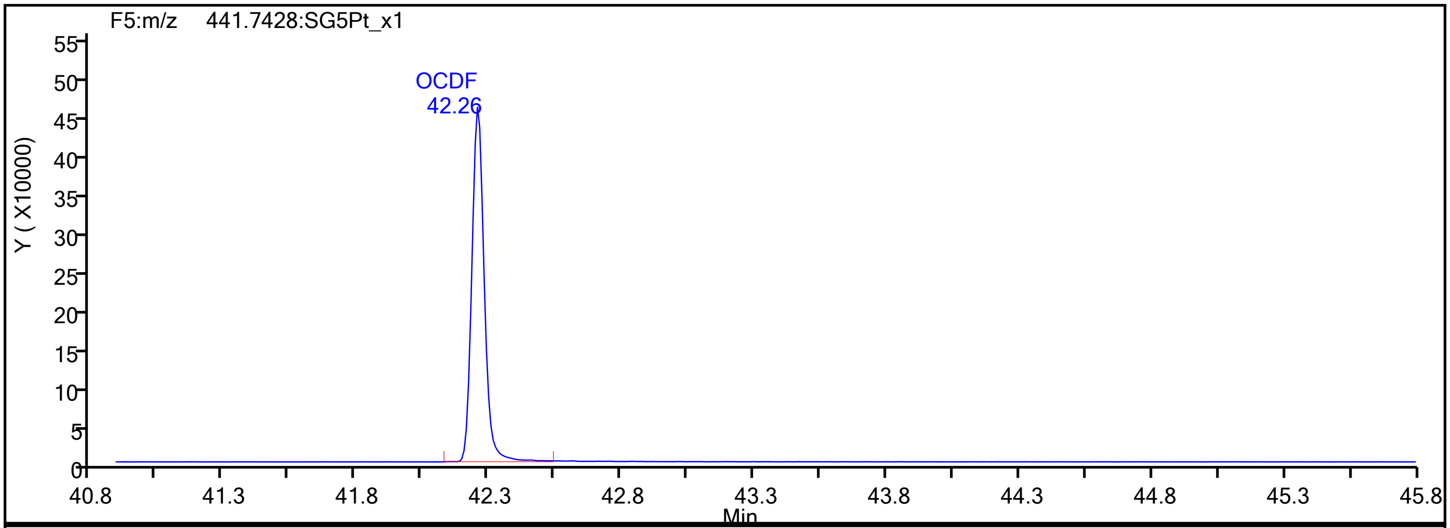

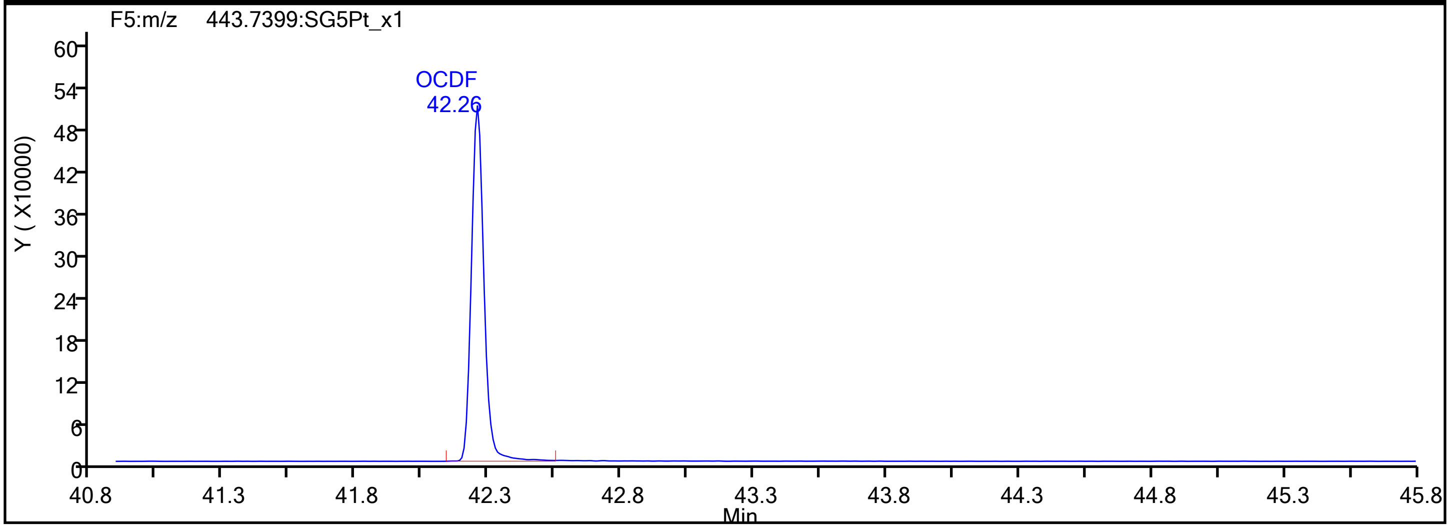

OCDF Interference Mass

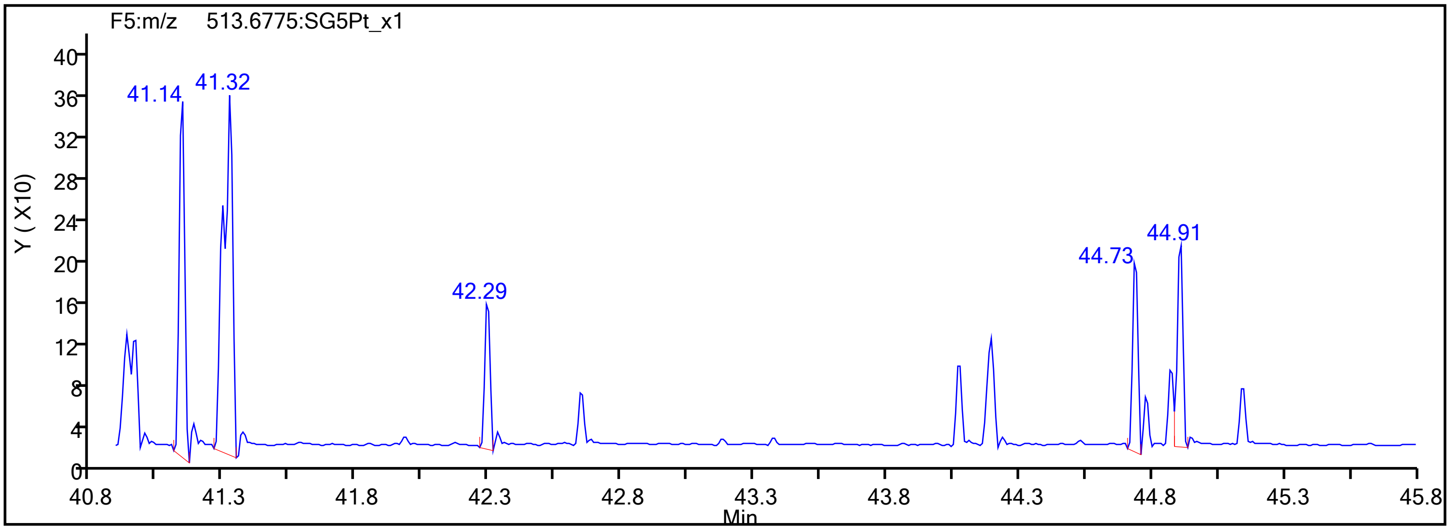

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d
Injection Date: 17-Nov-2020 18:32:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585 Sample Line#: 10
Column Type: DB-5 Column Dia: 0.32 mm

OCDD

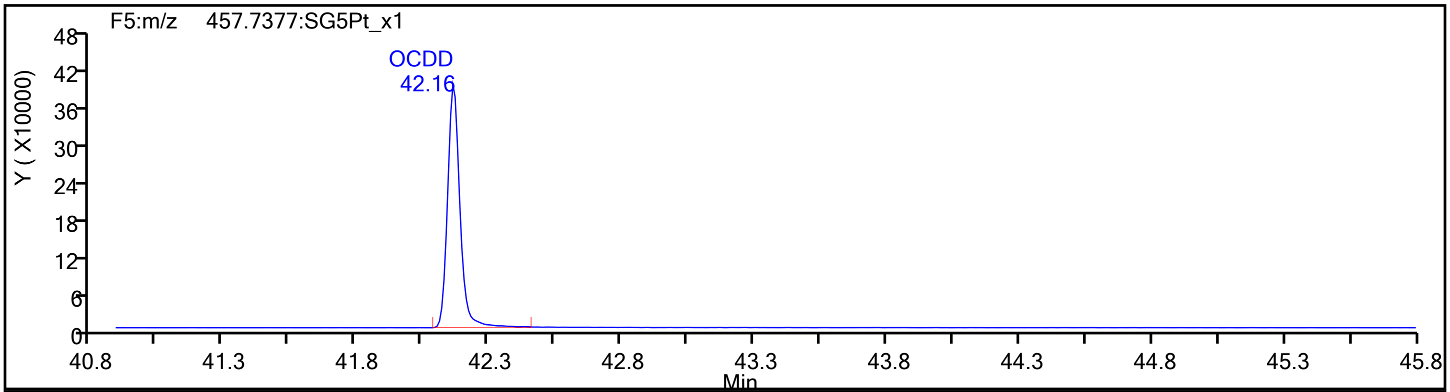

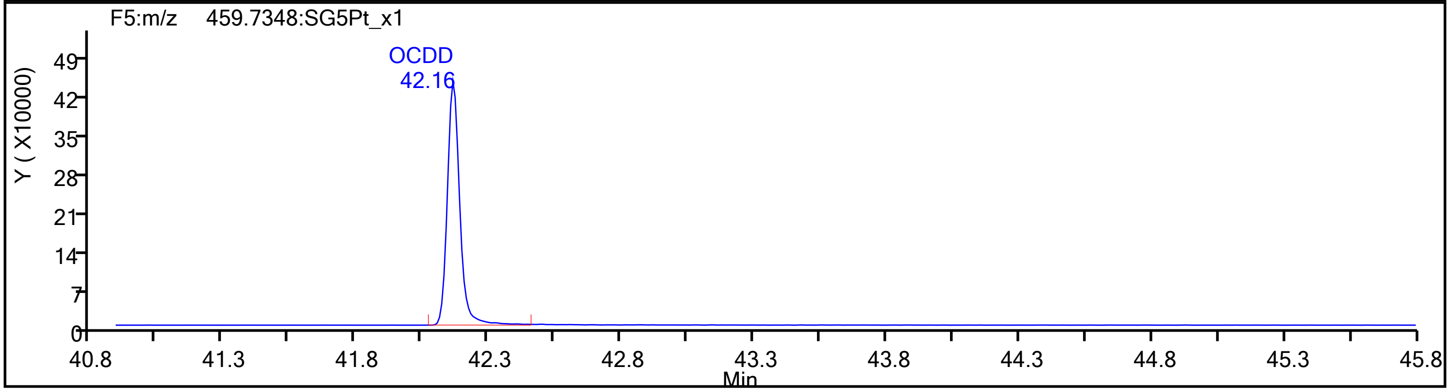

OCDD Standards

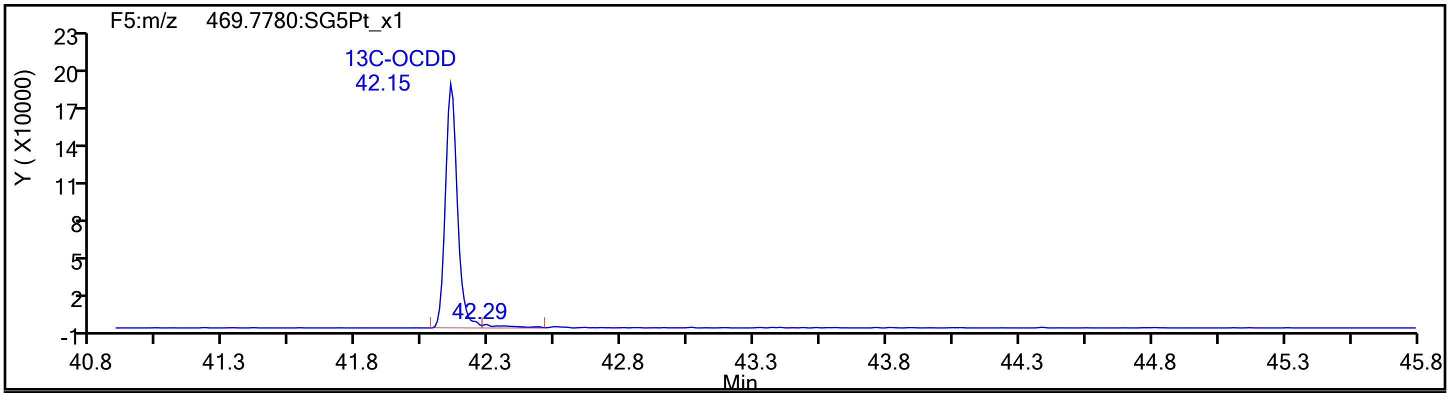

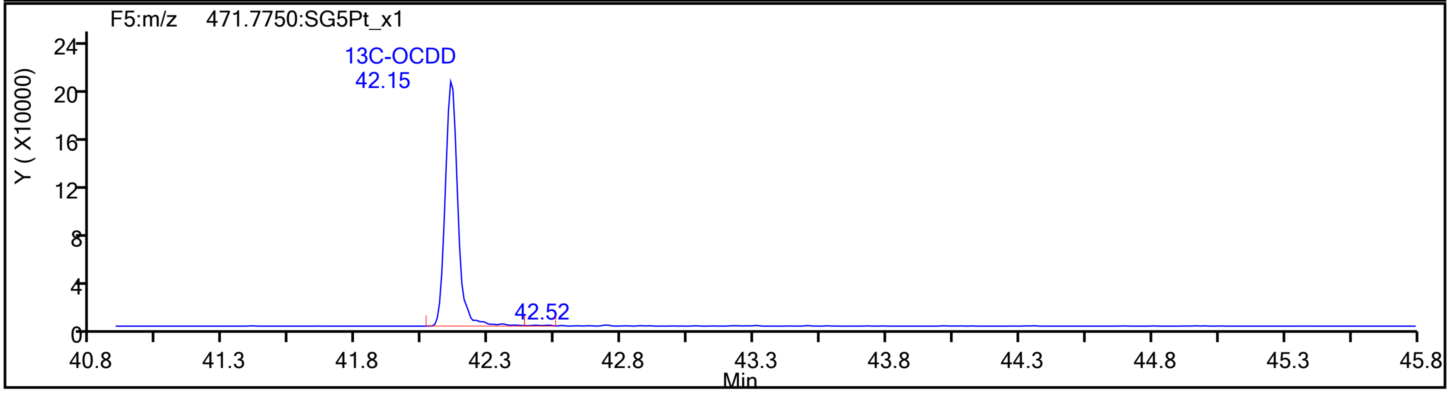

Report Date: 18-Nov-2020 12:38:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date: 17-Nov-2020 18:32:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 432585

Sample Line#: 10

Column Type: DB-5

Column Dia: 0.32 mm

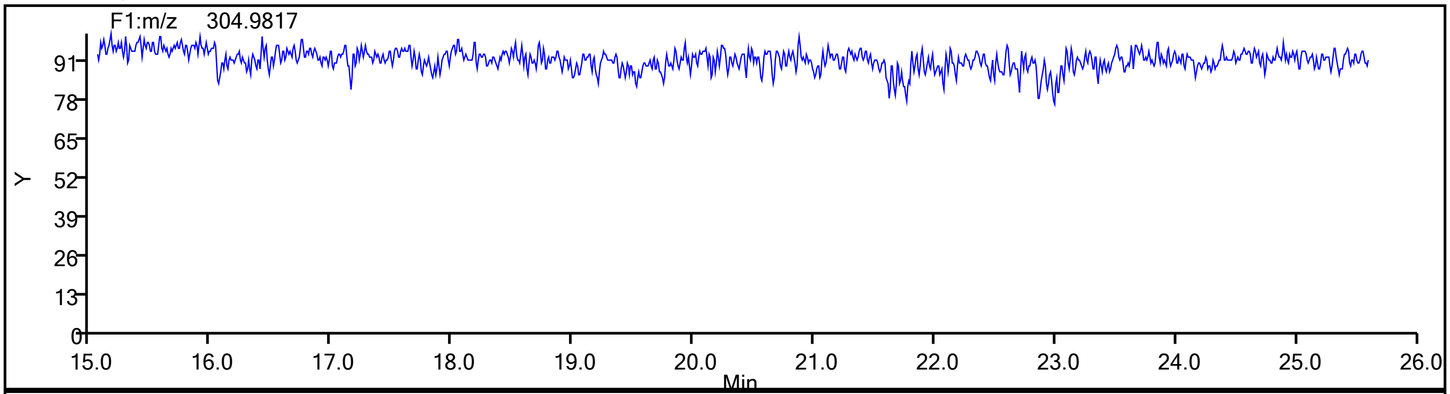
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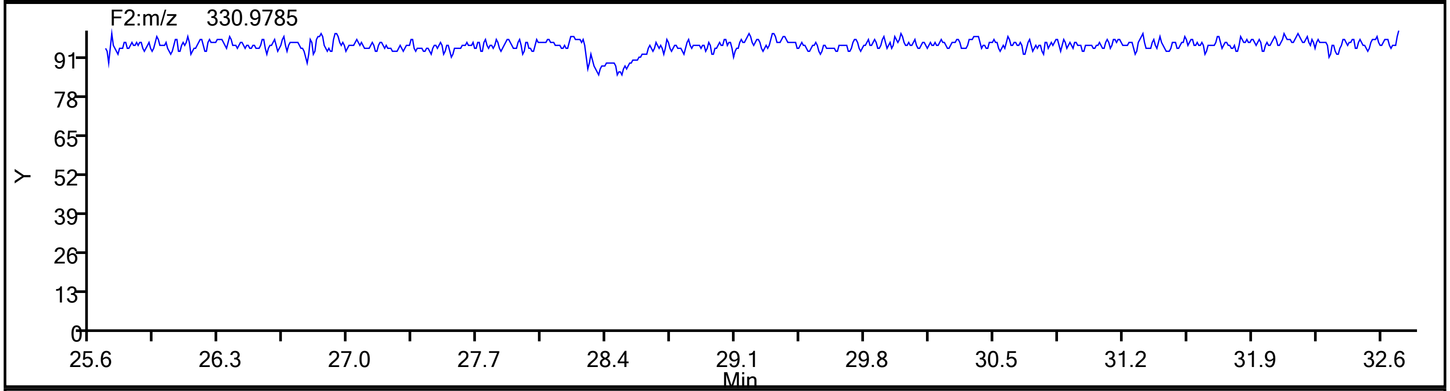
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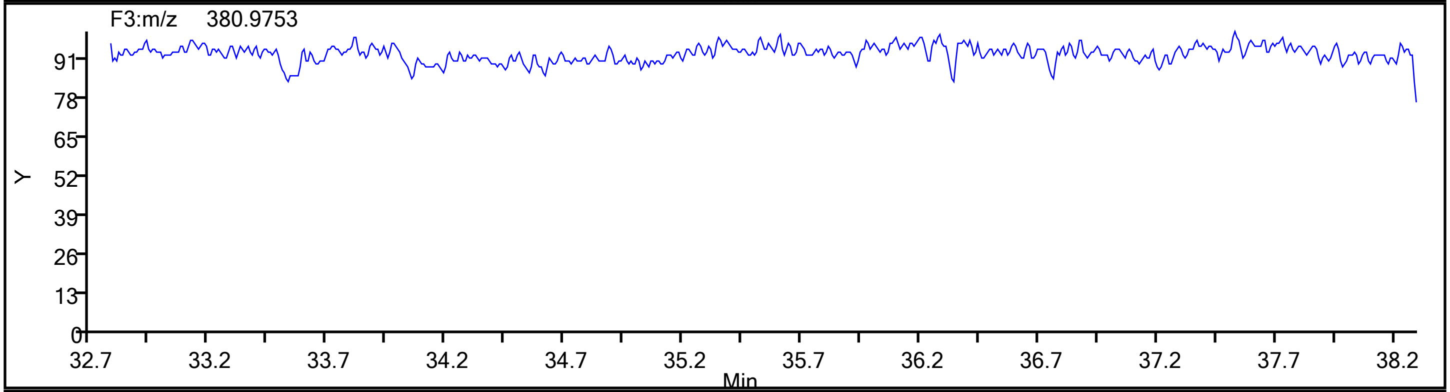
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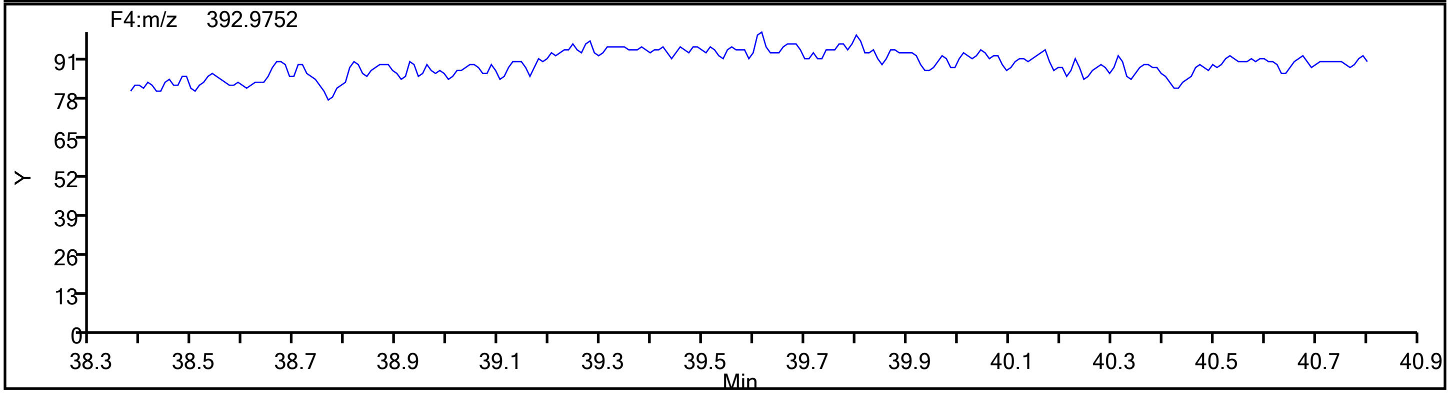
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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_11.d

Injection Date:	17-Nov-2020 18:32:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

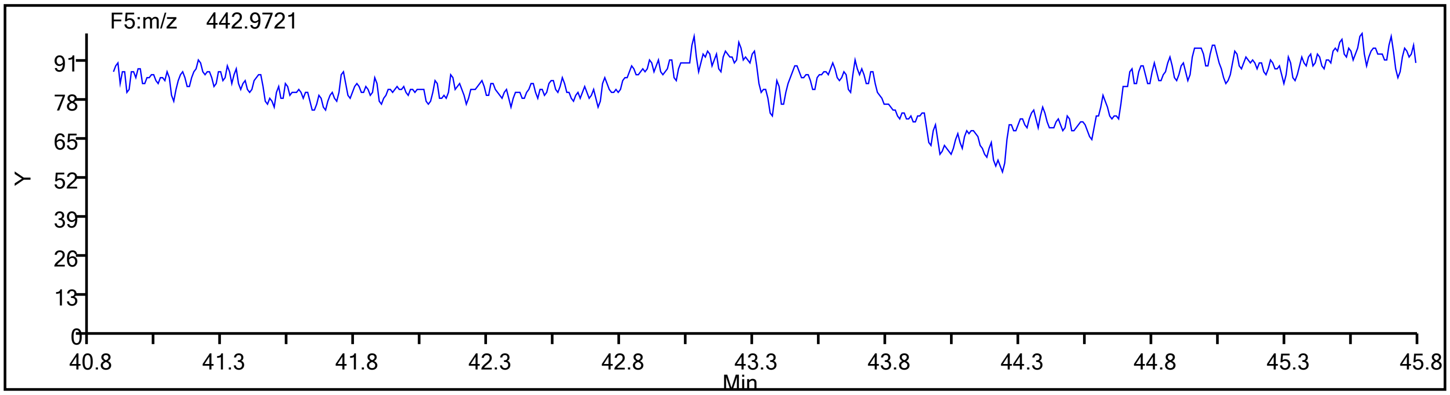

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2

SDG No.:

Lab Sample ID: CCV 320-434777/28   Calibration Date: 11/24/2020 07:33

Instrument ID: DFS 1   Calib Start Date: 11/17/2020 13:38

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 11/17/2020 17:44

Lab File ID: 23no20dfs1_32.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.155	1.171		10.1	10.0	101	84-120
2,3,7,8-TCDD	AveID	1.166	1.073		9.20	10.0	92	78-129
1,2,3,7,8-PeCDF	AveID	1.132	1.092		48.2	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	1.159	1.152		49.7	50.0	99	82-122
1,2,3,7,8-PeCDD	AveID	1.119	1.059		47.3	50.0	95	78-130
1,2,3,4,7,8-HxCDF	AveID	1.320	1.312		49.7	50.0	99	90-112
1,2,3,6,7,8-HxCDF	AveID	1.268	1.236		48.7	50.0	97	88-114
2,3,4,6,7,8-HxCDF	AveID	1.284	1.271		49.5	50.0	99	88-114
1,2,3,4,7,8-HxCDD	AveID	1.197	1.154		48.2	50.0	96	78-128
1,2,3,6,7,8-HxCDD	AveID	1.069	1.031		48.2	50.0	96	78-128
1,2,3,7,8,9-HxCDD	AveID	1.181	1.137		48.1	50.0	96	82-122
1,2,3,7,8,9-HxCDF	AveID	1.306	1.281		49.0	50.0	98	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.562	1.481		47.4	50.0	95	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.108	1.061		47.9	50.0	96	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.497	1.447		48.3	50.0	97	86-116
OCDD	AveID	1.167	1.097		94.0	100	94	79-126
OCDF	AveID	1.480	1.443		97.5	100	97	63-159
13C-2,3,7,8-TCDF	Ave	1.683	1.628		96.7	100	97	71-140
13C-2,3,7,8-TCDD	Ave	1.090	1.077		98.8	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.460	1.411		96.6	100	97	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.350	1.298		96.1	100	96	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8729	0.8821		101	100	101	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.281	1.167		91.1	100	91	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.462	1.467		100	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.323	1.296		97.9	100	98	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8757	0.8126		92.8	100	93	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.065	1.061		99.6	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.106	1.062		96.0	100	96	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9521	0.9505		99.8	100	100	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8393	0.8537		102	100	102	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7782	0.7464		95.9	100	96	77-129
13C-OCDD	Ave	0.5301	0.5447		205	200	103	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.145	1.159		10.1	10.0	101	79-127

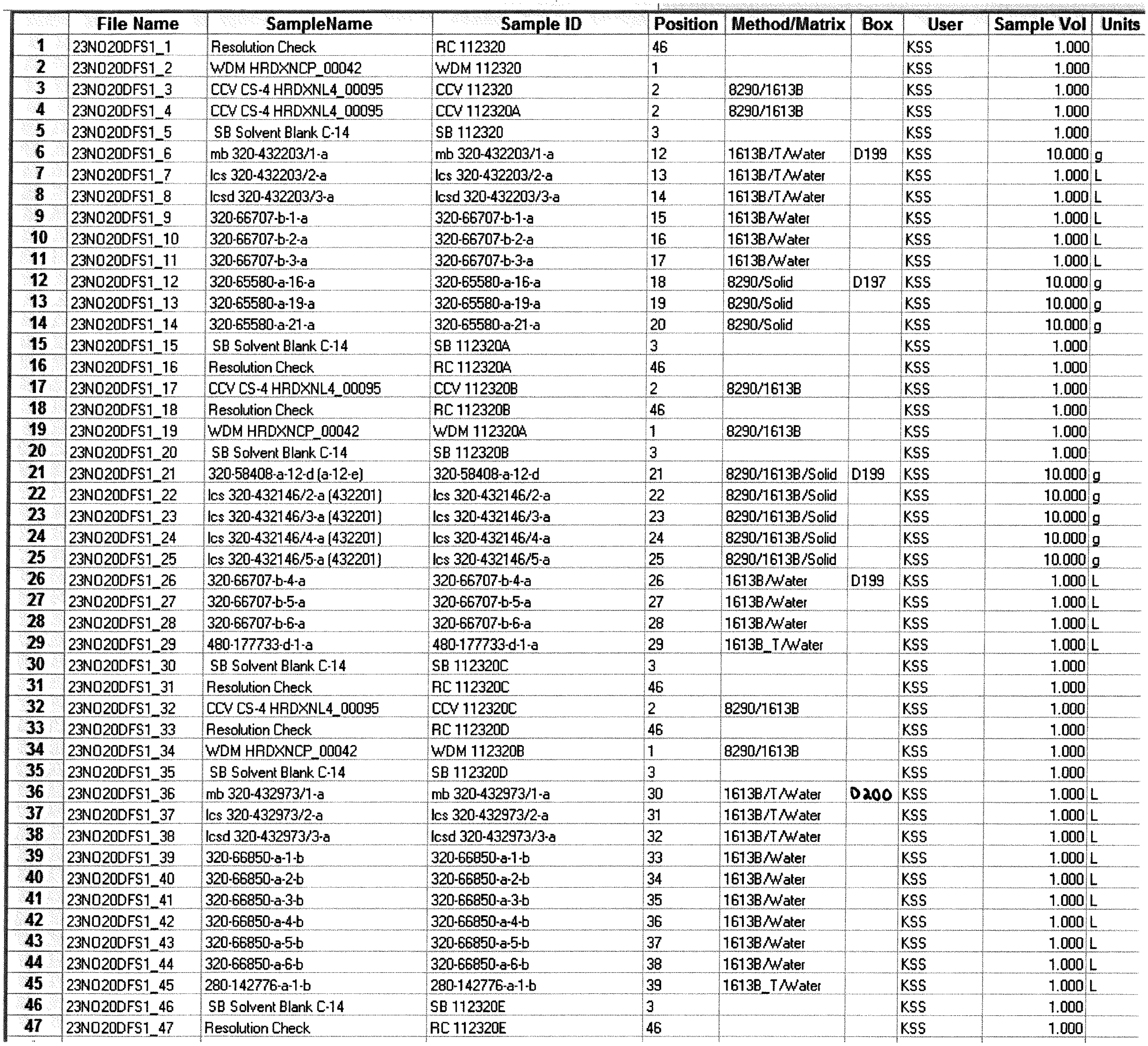

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1	23NO20DFS1_1	Resolution Check	RC 112320	46			KSS	1.000	
2	23NO20DFS1_2	WDM HRDXNCP_00042	WDM 112320	1			KSS	1.000	
3	23NO20DFS1_3	CCV CS-4 HRDXNL4_00095	CCV 112320	2	8290/1613B		KSS	1.000	
4	23NO20DFS1_4	CCV CS-4 HRDXNL4_00095	CCV 112320A	2	8290/1613B		KSS	1.000	
5	23NO20DFS1_5	SB Solvent Blank C-14	SB 112320	3			KSS	1.000	
6	23NO20DFS1_6	mb 320-432203/1-a	mb 320-432203/1-a	12	1613B/T/Water	D199	KSS	10.000	g
7	23NO20DFS1_7	lcs 320-432203/2-a	lcs 320-432203/2-a	13	1613B/T/Water		KSS	1.000	L
8	23NO20DFS1_8	lcsd 320-432203/3-a	lcsd 320-432203/3-a	14	1613B/T/Water		KSS	1.000	L
9	23NO20DFS1_9	320-66707-b-1-a	320-66707-b-1-a	15	1613B/Water		KSS	1.000	L
10	23NO20DFS1_10	320-66707-b-2-a	320-66707-b-2-a	16	1613B/Water		KSS	1.000	L
11	23NO20DFS1_11	320-66707-b-3-a	320-66707-b-3-a	17	1613B/Water		KSS	1.000	L
12	23NO20DFS1_12	320-65580-a-16-a	320-65580-a-16-a	18	8290/Solid	D197	KSS	10.000	g
13	23NO20DFS1_13	320-65580-a-19-a	320-65580-a-19-a	19	8290/Solid		KSS	10.000	g
14	23NO20DFS1_14	320-65580-a-21-a	320-65580-a-21-a	20	8290/Solid		KSS	10.000	g
15	23NO20DFS1_15	SB Solvent Blank C-14	SB 112320A	3			KSS	1.000	
16	23NO20DFS1_16	Resolution Check	RC 112320A	46			KSS	1.000	
17	23NO20DFS1_17	CCV CS-4 HRDXNL4_00095	CCV 112320B	2	8290/1613B		KSS	1.000	
18	23NO20DFS1_18	Resolution Check	RC 112320B	46			KSS	1.000	
19	23NO20DFS1_19	WDM HRDXNCP_00042	WDM 112320A	1	8290/1613B		KSS	1.000	
20	23NO20DFS1_20	SB Solvent Blank C-14	SB 112320B	3			KSS	1.000	
21	23NO20DFS1_21	320-58408-a-12-d (a-12-e)	320-58408-a-12-d	21	8290/1613B/Solid	D199	KSS	10.000	g
22	23NO20DFS1_22	lcs 320-432146/2-a (432201)	lcs 320-432146/2-a	22	8290/1613B/Solid		KSS	10.000	g
23	23NO20DFS1_23	lcs 320-432146/3-a (432201)	lcs 320-432146/3-a	23	8290/1613B/Solid		KSS	10.000	g
24	23NO20DFS1_24	lcs 320-432146/4-a (432201)	lcs 320-432146/4-a	24	8290/1613B/Solid		KSS	10.000	g
25	23NO20DFS1_25	lcs 320-432146/5-a (432201)	lcs 320-432146/5-a	25	8290/1613B/Solid		KSS	10.000	g
26	23NO20DFS1_26	320-66707-b-4-a	320-66707-b-4-a	26	1613B/Water	D199	KSS	1.000	L
27	23NO20DFS1_27	320-66707-b-5-a	320-66707-b-5-a	27	1613B/Water		KSS	1.000	L
28	23NO20DFS1_28	320-66707-b-6-a	320-66707-b-6-a	28	1613B/Water		KSS	1.000	L
29	23NO20DFS1_29	480-177733-d-1-a	480-177733-d-1-a	29	1613B_T/Water		KSS	1.000	L
30	23NO20DFS1_30	SB Solvent Blank C-14	SB 112320C	3			KSS	1.000	
31	23NO20DFS1_31	Resolution Check	RC 112320C	46			KSS	1.000	
32	23NO20DFS1_32	CCV CS-4 HRDXNL4_00095	CCV 112320C	2	8290/1613B		KSS	1.000	
33	23NO20DFS1_33	Resolution Check	RC 112320D	46			KSS	1.000	
34	23NO20DFS1_34	WDM HRDXNCP_00042	WDM 112320B	1	8290/1613B		KSS	1.000	
35	23NO20DFS1_35	SB Solvent Blank C-14	SB 112320D	3			KSS	1.000	
36	23NO20DFS1_36	mb 320-432973/1-a	mb 320-432973/1-a	30	1613B/T/Water	D200	KSS	1.000	L
37	23NO20DFS1_37	lcs 320-432973/2-a	lcs 320-432973/2-a	31	1613B/T/Water		KSS	1.000	L
38	23NO20DFS1_38	lcsd 320-432973/3-a	lcsd 320-432973/3-a	32	1613B/T/Water		KSS	1.000	L
39	23NO20DFS1_39	320-66850-a-1-b	320-66850-a-1-b	33	1613B/Water		KSS	1.000	L
40	23NO20DFS1_40	320-66850-a-2-b	320-66850-a-2-b	34	1613B/Water		KSS	1.000	L
41	23NO20DFS1_41	320-66850-a-3-b	320-66850-a-3-b	35	1613B/Water		KSS	1.000	L
42	23NO20DFS1_42	320-66850-a-4-b	320-66850-a-4-b	36	1613B/Water		KSS	1.000	L
43	23NO20DFS1_43	320-66850-a-5-b	320-66850-a-5-b	37	1613B/Water		KSS	1.000	L
44	23NO20DFS1_44	320-66850-a-6-b	320-66850-a-6-b	38	1613B/Water		KSS	1.000	L
45	23NO20DFS1_45	280-142776-a-1-b	280-142776-a-1-b	39	1613B_T/Water		KSS	1.000	L
46	23NO20DFS1_46	SB Solvent Blank C-14	SB 112320E	3			KSS	1.000	
47	23NO20DFS1_47	Resolution Check	RC 112320E	46			KSS	1.000	

Log File Reviewed
RDR
11/24/2020

Resolution Check Report (DFS SN: 3487)

Date: 24 Nov 2020 07:14
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11834 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12266 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12302 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12273 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12305 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12424 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11695 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12306 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12028 [5%height]

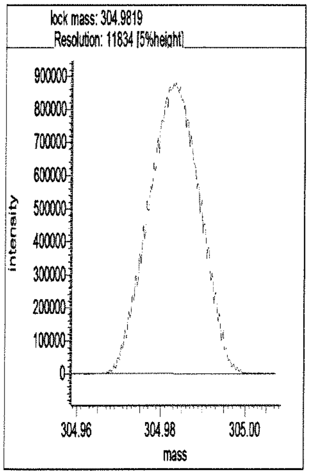

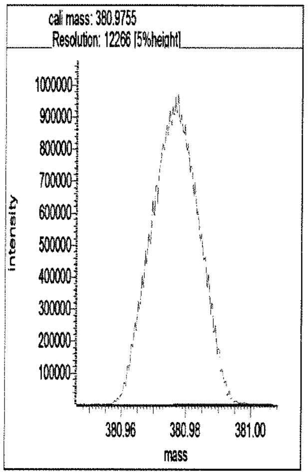

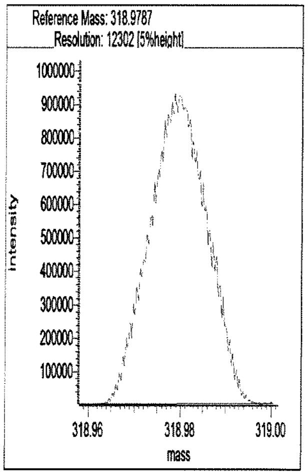

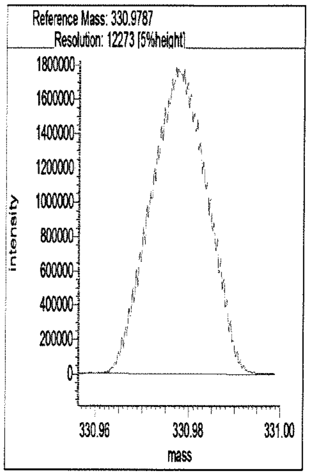

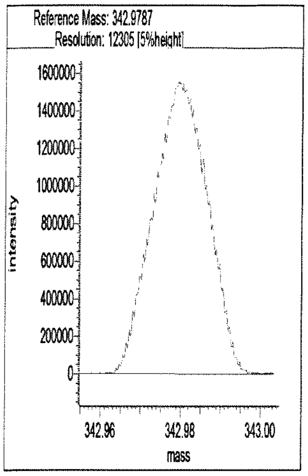

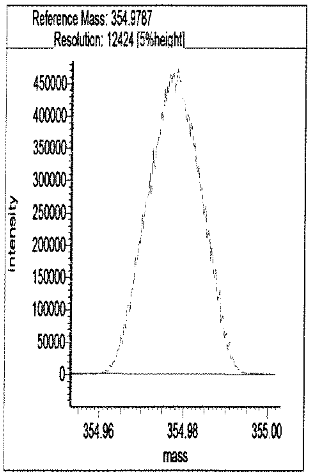

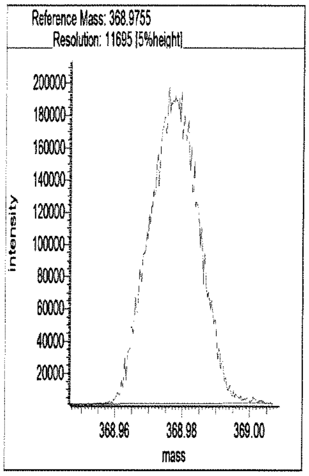

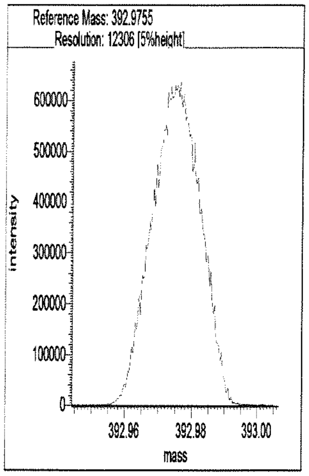

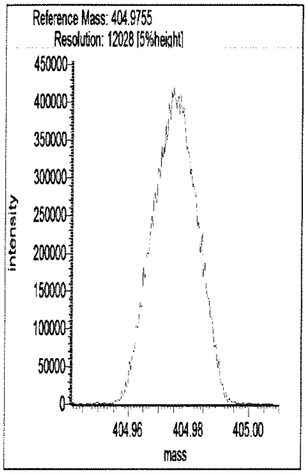

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12259 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12306 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11836 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12203 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11668 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12068 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12456 [5%height]

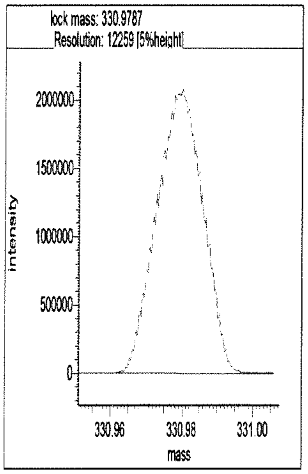

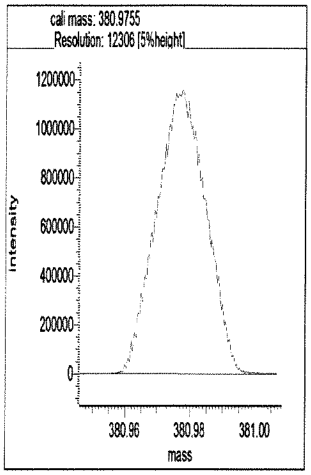

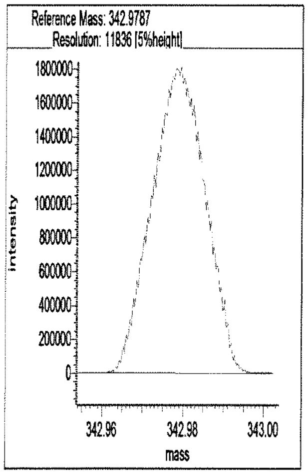

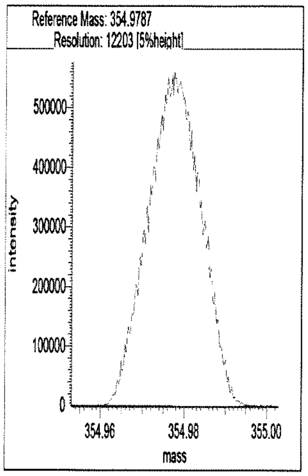

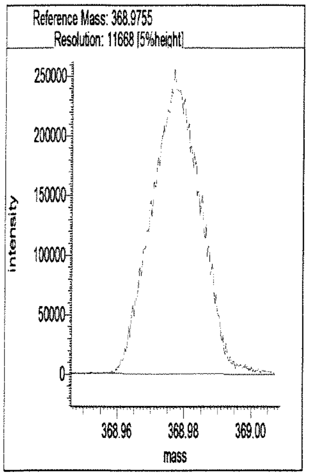

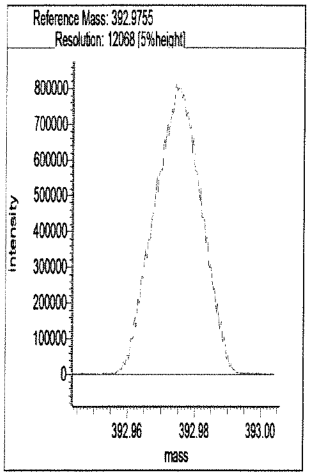

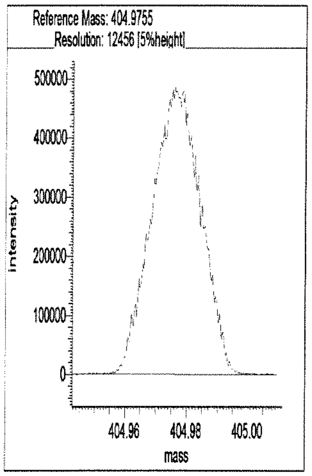

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12183 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12342 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12403 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12435 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12474 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12198 [5%height]

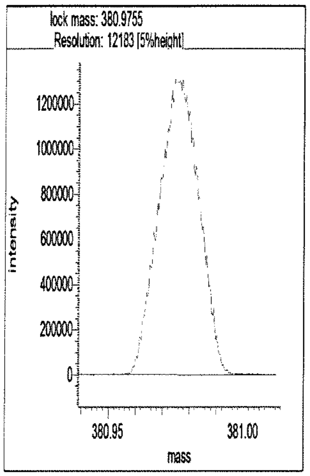

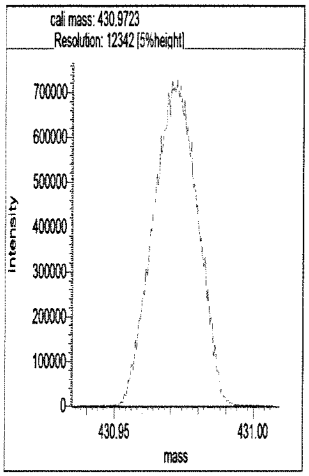

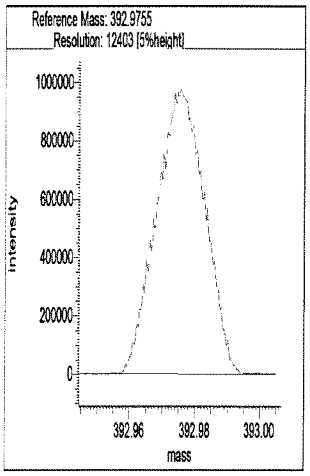

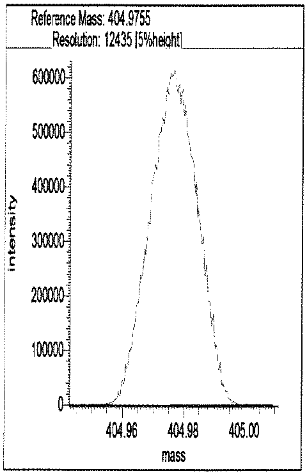

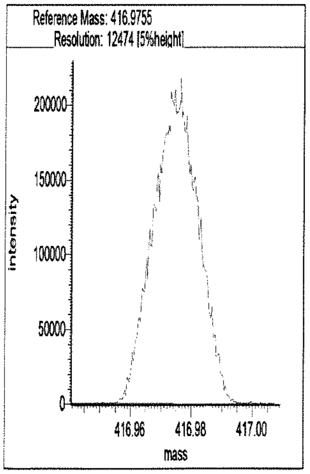

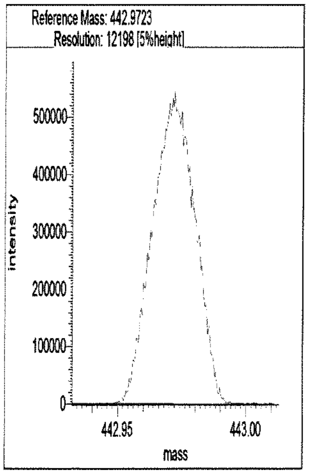

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12320 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11963 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11981 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11889 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12527 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12222 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11959 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12517 [5%height]

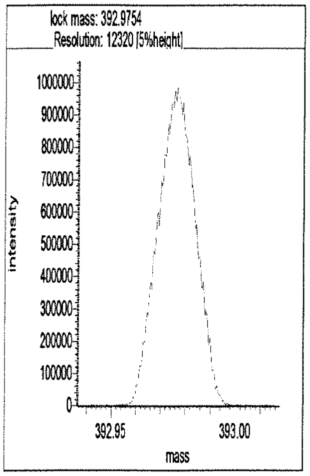

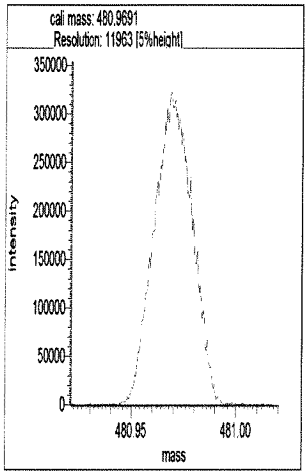

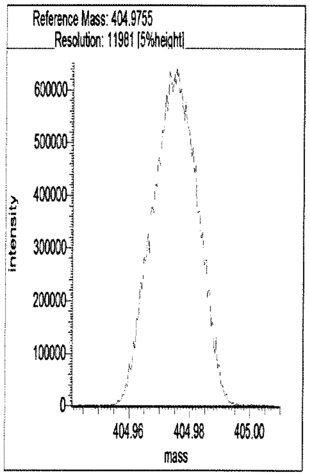

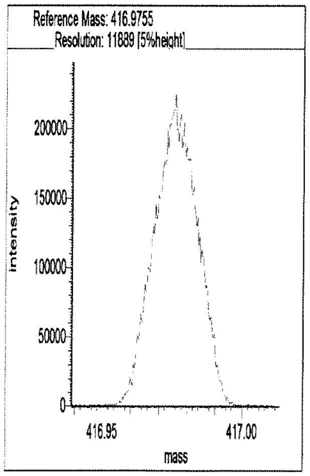

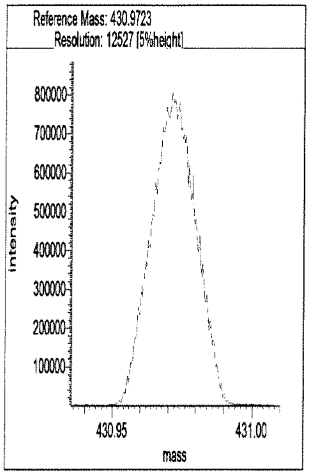

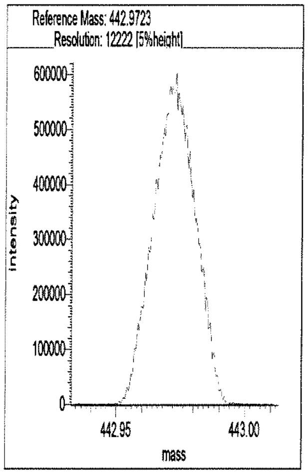

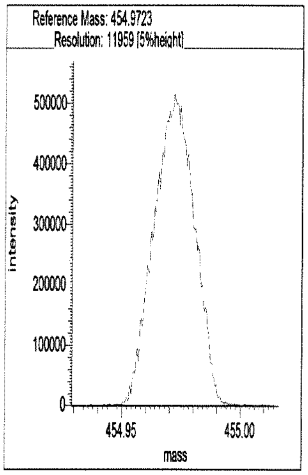

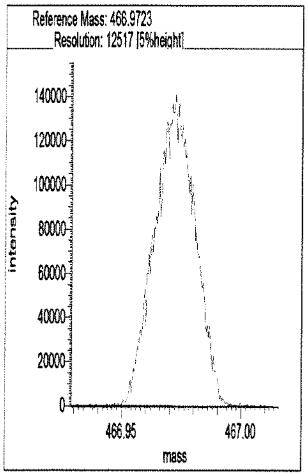

<u>Segment 5</u>

Lock mass 442.9723 [m/z] Resolution: 12320 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11913 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12363 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12490 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12316 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12416 [5%height]

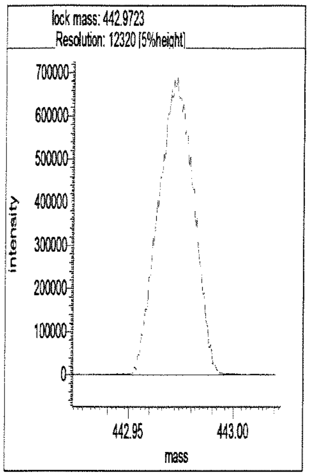
lock mass: 442.9723
Resolution: 12320 [5%height]

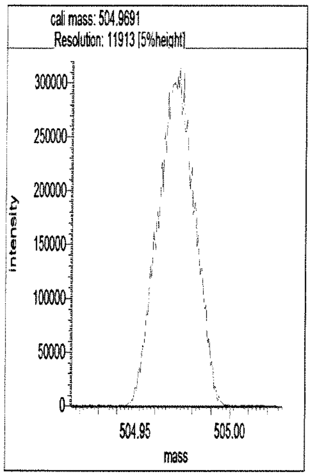
cali mass: 504.9691
Resolution: 11913 [5%height]

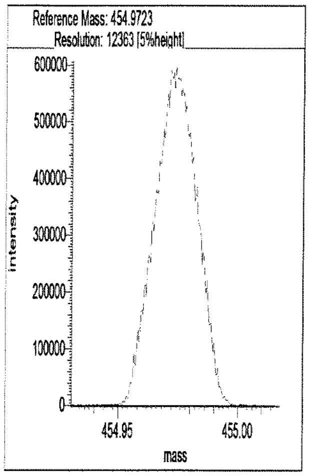
Reference Mass: 454.9723
Resolution: 12363 [5%height]

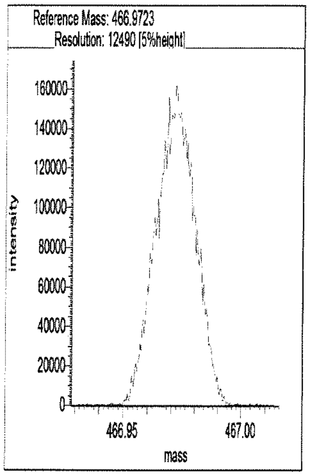
Reference Mass: 466.9723
Resolution: 12490 [5%height]

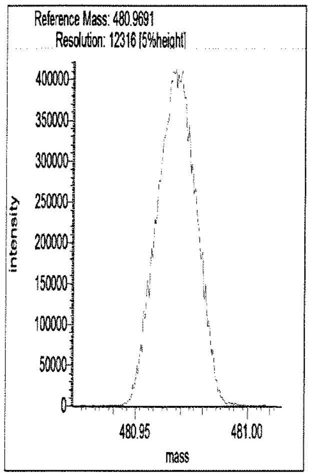
Reference Mass: 480.9691
Resolution: 12316 [5%height]

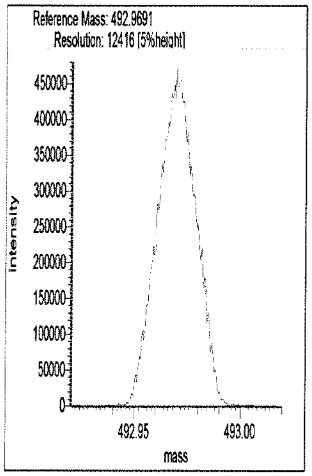
Reference Mass: 492.9691
Resolution: 12416 [5%height]

Resolution Check Report (DFS SN: 3487)

Date:	24 Nov 2020 19:04
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 16623 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 17189 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 16566 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 17060 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 16642 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 16239 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 15381 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 16227 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 15507 [5%height]

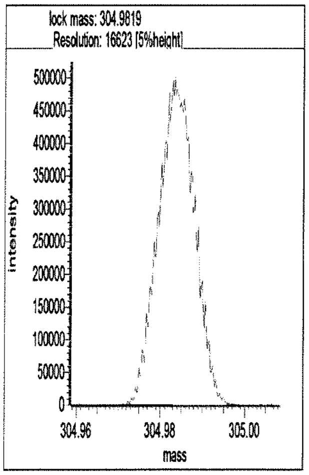

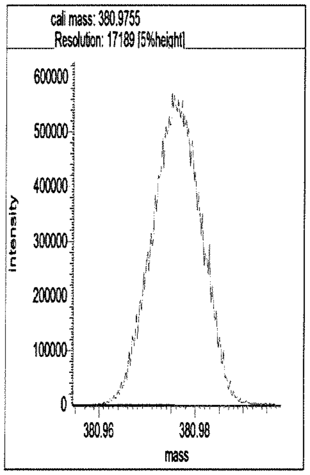

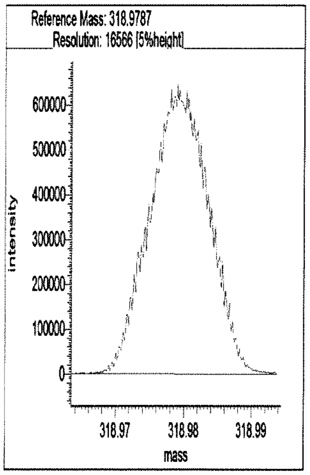

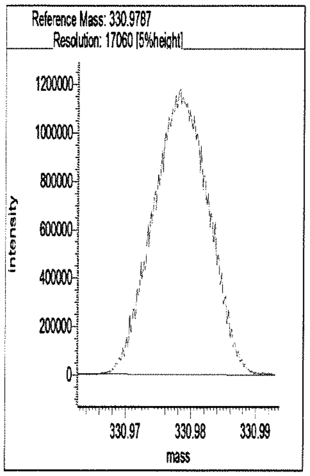

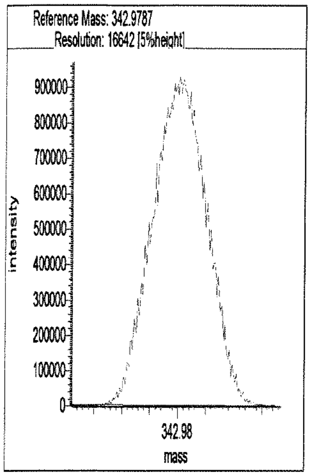

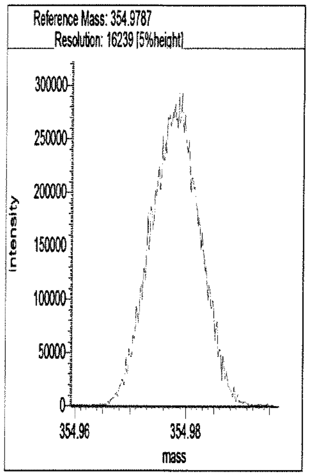

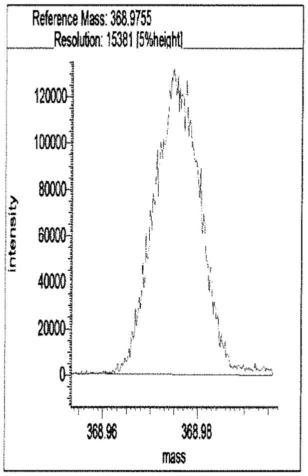

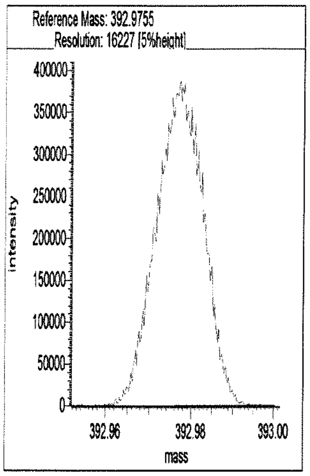

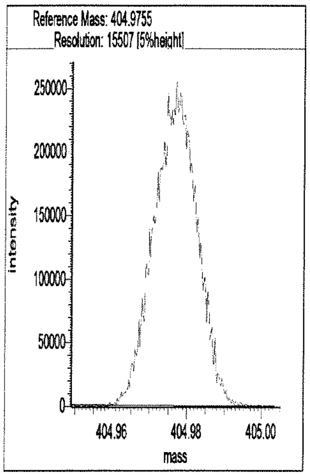

Segment 2

Lock mass 330.9787 [m/z] Resolution: 16630 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 16431 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 16717 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 16939 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 16271 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 17021 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 16588 [5%height]

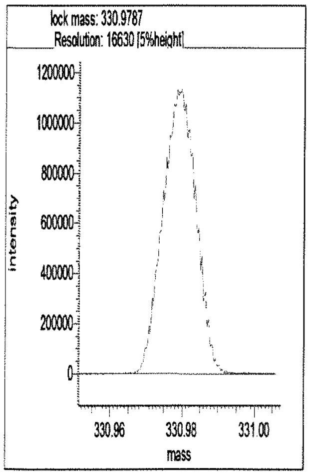

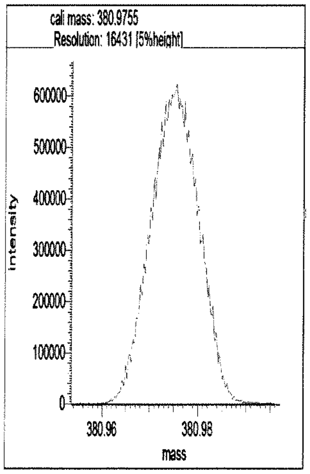

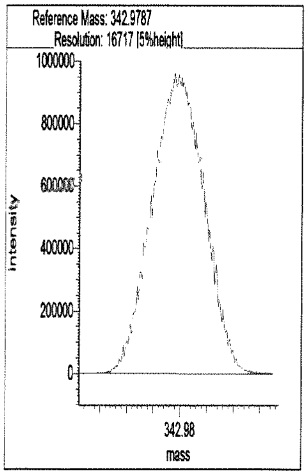

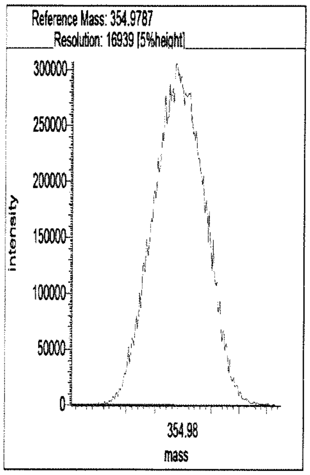

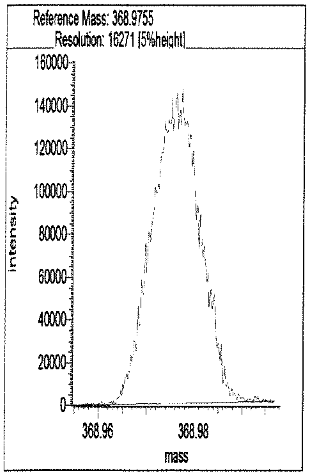

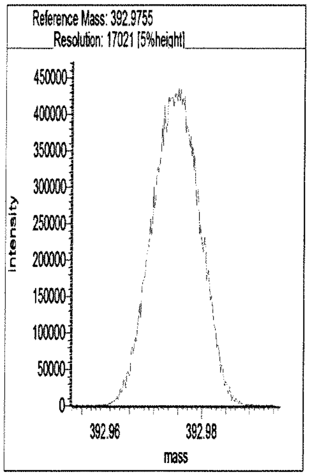

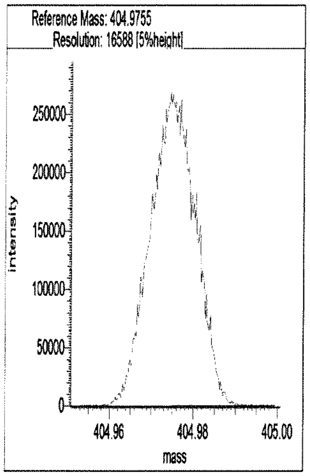

Segment 3

Lock mass 380.9755 [m/z] Resolution: 16657 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 16517 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 16665 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 16635 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 17418 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 16685 [5%height]

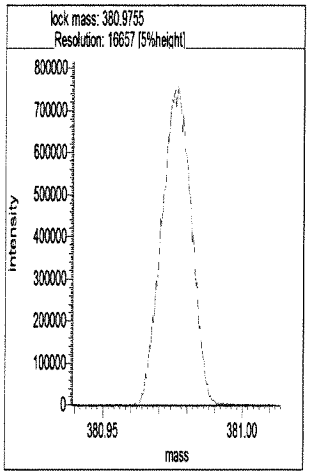

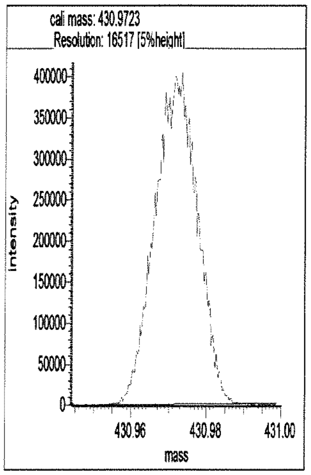

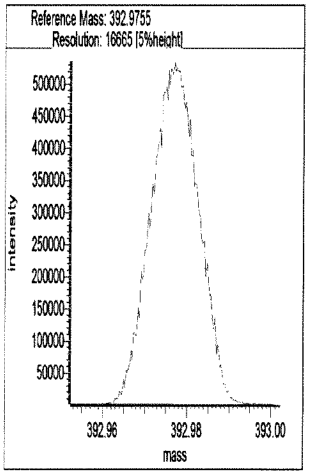

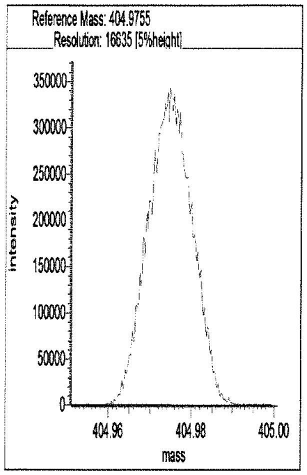

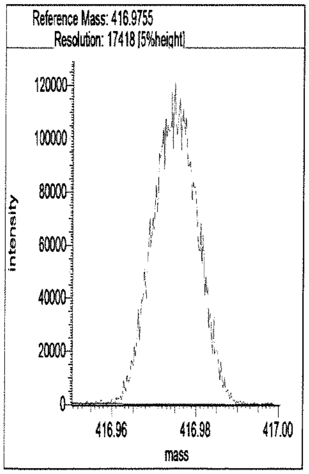

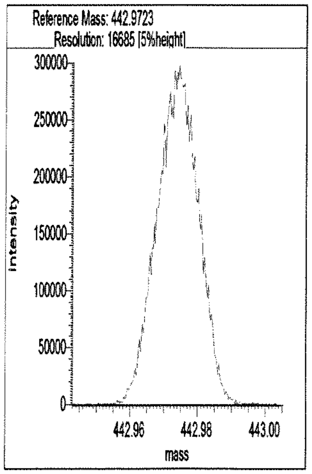

Segment 4

Lock mass 392.9754 [m/z] Resolution: 16961 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 16701 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 16587 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 16438 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 16493 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 16926 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 16722 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 16533 [5%height]

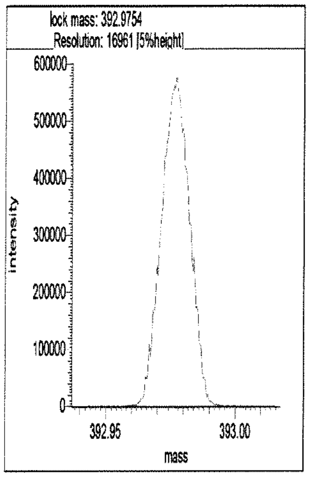

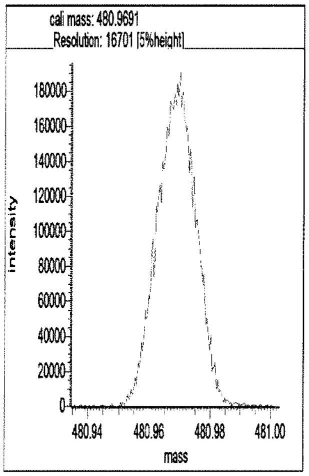

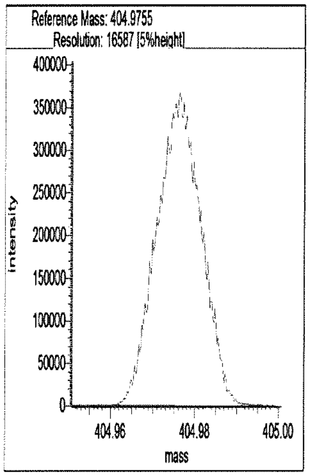

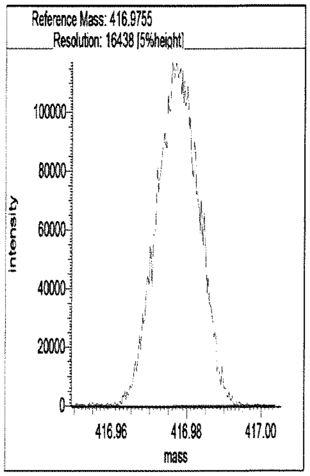

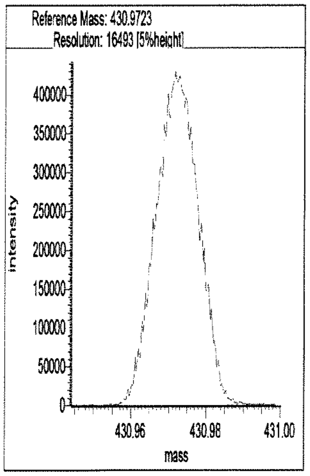

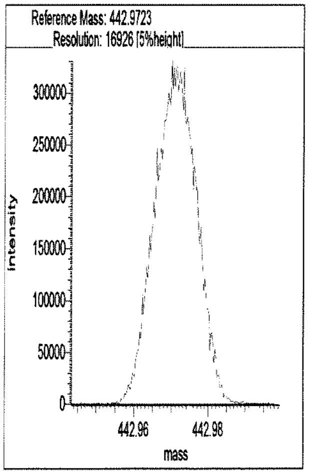

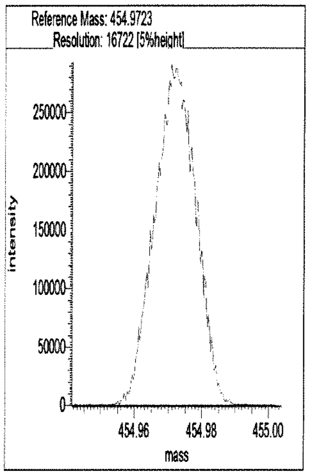

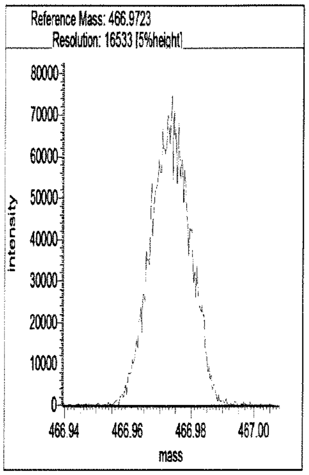

<u>Segment 5</u>

Lock mass 442.9723 [m/z] Resolution: 16700 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 16940 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 16633 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 16923 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 16311 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 16790 [5%height]

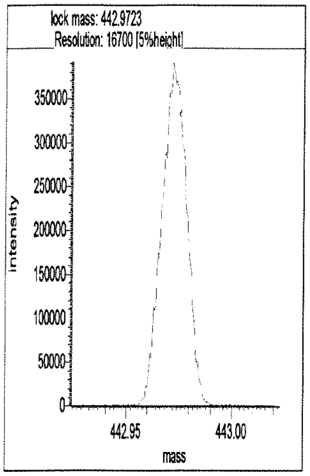
lock mass: 442.9723
Resolution: 16700 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
442.95
443.00
mass

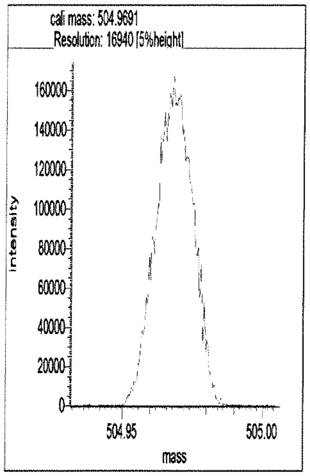
cali mass: 504.9691
Resolution: 16940 [5%height]
intensity
160000
140000
120000
100000
80000
60000
40000
20000
0
504.95
505.00
mass

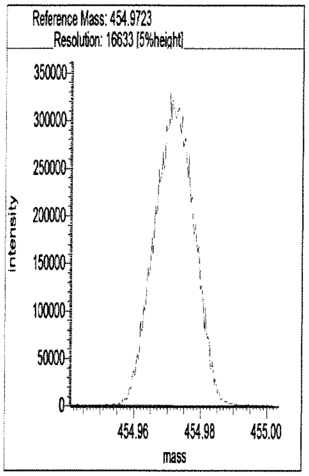
Reference Mass: 454.9723
Resolution: 16633 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
454.96
454.98
455.00
mass

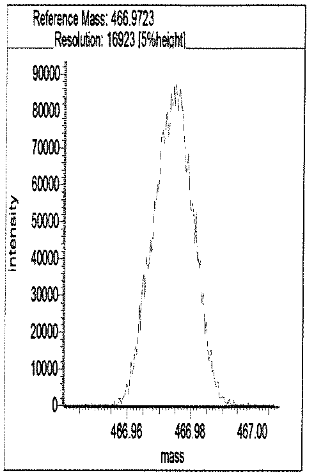
Reference Mass: 466.9723
Resolution: 16923 [5%height]
intensity
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
466.96
466.98
467.00
mass

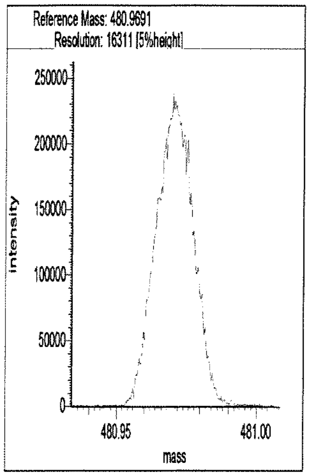
Reference Mass: 480.9691
Resolution: 16311 [5%height]
intensity
250000
200000
150000
100000
50000
0
480.95
481.00
mass

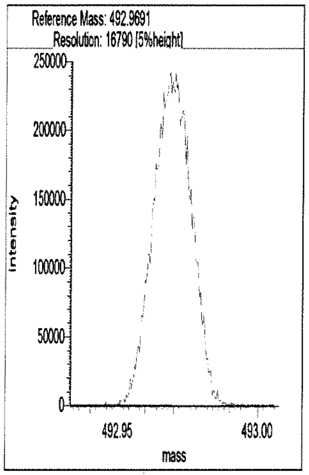
Reference Mass: 492.9691
Resolution: 16790 [5%height]
intensity
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 07:33:00 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:01:08 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

First Level Reviewer: stephensk Date: 24-Nov-2020 08:53:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.772	2050503	0.83	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.767	3338784	0.81	1.6832	96.7	96.7	0.4320	0.4320	96.73	
2,3,7,8-TCDF	20.793	390871	0.81	1.1547	10.1	10.1	0.0364	0.0364	101	
A Non-2,3,7,8-sub-TCDF	20.136						0.0364	0.0364		
S Total TCDF					10.1	10.1	0.0364	0.0364		
D 13C-2,3,7,8-TCDD	22.167	2207475	0.80	1.0896	98.8	98.8	0.2804	0.2804	98.80	
2,3,7,8-TCDD	22.201	236763	0.81	1.1659	9.199	9.199	0.0685	0.0685	91.99	
$ 37Cl4-2,3,7,8-TCDD	22.201	237563		1.1445	10.1	10.1	0.0371	0.0371	101	
A Non-2,3,7,8-sub-TCDD	20.999	1854	0.77	1.1659	0.0945	0.0720	0.0685	0.0720	0.00	RQ
S Total TCDD					9.294	9.271	0.0685	0.0685		RQ
D 13C-1,2,3,7,8-PeCDF	27.633	2892516	1.63	1.4604	96.6	96.6	0.2778	0.2778	96.59	
1,2,3,7,8-PeCDF	27.659	1578719	1.58	1.1322	48.2	48.2	0.1734	0.1734	96.41	
D 13C-2,3,4,7,8-PeCDF	29.184	2660800	1.61	1.3504	96.1	96.1	0.3004	0.3004	96.09	
2,3,4,7,8-PeCDF	29.217	1532267	1.58	1.1588	49.7	49.7	0.1954	0.1954	99.39	
A F1 PeCDFs	24.944						0.0148	0.0148		
A Non-2,3,7,8-sub-PeCDF	28.514						0.1836	0.1836		
S Total PeCDF					97.9	97.9	0.1844	0.1844		
D 13C-1,2,3,7,8-PeCDD	30.017	1808711	1.57	0.8729	101.1	101.1	0.1564	0.1564	101	
1,2,3,7,8-PeCDD	30.051	957852	1.52	1.1191	47.3	47.3	0.0845	0.0845	94.64	
A Non-2,3,7,8-sub-PeCDD	28.777						0.0845	0.0845		
S Total PeCDD					47.3	47.3	0.0845	0.0845		
D 13C-1,2,3,4,7,8-HxCDF	35.175	2437862	0.53	1.2808	91.1	91.1	0.4402	0.4402	91.09	
1,2,3,4,7,8-HxCDF	35.200	1598881	1.27	1.3205	49.7	49.7	0.2827	0.2827	99.34	
D 13C-1,2,3,6,7,8-HxCDF	35.335	3064343	0.54	1.4615	100.3	100.3	0.3858	0.3858	100	
1,2,3,6,7,8-HxCDF	35.351	1893081	1.27	1.2682	48.7	48.7	0.2561	0.2561	97.43	
D 13C-2,3,4,6,7,8-HxCDF	36.118	2706977	0.53	1.3227	97.9	97.9	0.4263	0.4263	97.95	
2,3,4,6,7,8-HxCDF	36.135	1720170	1.26	1.2838	49.5	49.5	0.2443	0.2443	99.00	
D 13C-1,2,3,7,8,9-HxCDF	36.986	2219945	0.54	1.1062	96.0	96.0	0.5097	0.5097	96.04	
1,2,3,7,8,9-HxCDF	37.003	1422134	1.26	1.3063	49.0	49.0	0.2932	0.2932	98.08	
A Non-2,3,7,8-sub-HxCDF	35.291						0.2673	0.2673		
S Total HxCDF					196.9	196.9	0.2691	0.2691		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.792	2089500	1.28	3.7E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.320	1697826	1.29	0.8757	92.8	92.8	0.3725	0.3725	92.79	
1,2,3,4,7,8-HxCDD	36.337	979385	1.26	1.1972	48.2	48.2	0.1531	0.1531	96.37	
D 13C-1,2,3,6,7,8-HxCDD	36.438	2216327	1.28	1.0651	99.6	99.6	0.3062	0.3062	99.59	
1,2,3,6,7,8-HxCDD	36.446	1142118	1.26	1.0695	48.2	48.2	0.1573	0.1573	96.37	
1,2,3,7,8,9-HxCDD	36.809	1112130	1.27	1.1806	48.1	48.1	0.1486	0.1486	96.27	
A Non-2,3,7,8-sub-HxCDD	35.623						0.1527	0.1527		
S Total HxCDD					144.5	144.5	0.1530	0.1530		
D 13C-1,2,3,4,6,7,8-HpCDF	38.749	1986075	0.46	0.9521	99.8	99.8	0.8086	0.8086	99.83	
1,2,3,4,6,7,8-HpCDF	38.758	1470441	1.04	1.5618	47.4	47.4	0.3537	0.3537	94.81	
D 13C-1,2,3,4,7,8,9-HpCDF	39.979	1559609	0.45	0.7782	95.9	95.9	0.9893	0.9893	95.92	
1,2,3,4,7,8,9-HpCDF	39.988	1128292	1.06	1.4975	48.3	48.3	0.4252	0.4252	96.62	
A Non-2,3,7,8-sub-HpCDF	39.358						0.3867	0.3867		
S Total HpCDF					95.7	95.7	0.3894	0.3894		
D 13C-1,2,3,4,6,7,8-HpCDD	39.676	1783879	1.08	0.8393	101.7	101.7	0.4144	0.4144	102	
1,2,3,4,6,7,8-HpCDD	39.684	946503	1.04	1.1079	47.9	47.9	0.1704	0.1704	95.78	
A Non-2,3,7,8-sub-HpCDD	40.007						0.1704	0.1704		
S Total HpCDD					47.9	47.9	0.1704	0.1704		
D 13C-OCDD	42.158	2276134	0.96	0.5301	205.5	205.5	0.4083	0.4083	103	
OCDF	42.251	1641943	0.92	1.4802	97.5	97.5	0.2125	0.2125	97.47	
OCDD	42.167	1248619	0.90	1.1666	94.0	94.0	0.2616	0.2616	94.05	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2020 07:33:00 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00095
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:01:08 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

First Level Reviewer: stephensk Date: 24-Nov-2020 08:53:55

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.772	21.772	0		929095	133270	213	532	626		a
333.9338	21.772	21.772	0		1121408	161269	147	367	1097	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.767	20.767	0	0.954	1491258	219219	551	1377	398		
317.9389	20.767	20.767	0	0.954	1847526	261767	306	765	855	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.793	20.793	0	1.001	175254	25229	25	62	1009		
305.8987	20.793	20.793	0	1.001	215617	29025	56	140	518	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	20.136						25	62			
305.8987	20.136						56	140			
13C-2,3,7,8-TCDD											
331.9368	22.167	22.167	0	1.018	979487	120011	213	532	563		
333.9338	22.149	22.167	-1	1.017	1227988	149363	147	367	1016	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.201	22.201	0	1.002	105964	14009	65	162	216		
321.8936	22.184	22.201	-1	1.001	130799	18353	21	52	874	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	22.201	22.201	0	1.020	237563	30983	50	125	620		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	22.682	20.999	101	1.023	1384	255	65	162	4		
	Empc Correction				806	199	65	162	3		
321.8936	22.750	20.999	105	1.026	1048	259	21	52	12	1.32(0.65-0.89)	

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.633	27.633	0	1.269	1791777	251614	256	640	983		
353.8970	27.633	27.633	0	1.269	1100739	158349	222	555	713	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.659	27.659	0	1.001	967063	140172	199	497	704		
341.8567	27.659	27.659	0	1.001	611656	86900	123	307	707	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.184	29.184	0	1.340	1640260	216974	256	640	848		
353.8970	29.184	29.184	0	1.340	1020540	138464	222	555	624	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.217	29.217	0	1.001	939336	127983	199	497	643		
341.8567	29.209	29.217	-1	1.001	592931	81192	123	307	660	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.944						1	2			
341.8567	24.944						25	62			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.514						199	497			
341.8567	28.514						123	307			
13C-1,2,3,7,8-PeCDD											
367.8949	30.017	30.017	0	1.379	1103615	143047	94	235	1522		
369.8919	30.017	30.017	0	1.379	705096	89623	67	167	1338	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.051	30.051	0	1.001	578483	74774	64	160	1168		
357.8516	30.043	30.051	-1	1.001	379369	48708	24	60	2030	1.52(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.777						64	160			
357.8516	28.777						24	60			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.175	35.175	0	0.956	845156	172204	406	1015	424		
385.8610	35.183	35.175	1	0.956	1592706	330627	636	1590	520	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.200	35.200	0	1.001	895016	187199	416	1040	450		
375.8178	35.191	35.200	-1	1.000	703865	148597	335	837	444	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.335	35.335	0	0.960	1078717	203690	406	1015	502		
385.8610	35.335	35.335	0	0.960	1985626	374204	636	1590	588	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.351	35.351	0	1.000	1057425	201906	416	1040	485		
375.8178	35.351	35.351	0	1.000	835656	157969	335	837	472	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.118	36.118	0	0.982	932193	207932	406	1015	512		
385.8610	36.118	36.118	0	0.982	1774784	390667	636	1590	614	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.135	36.135	0	1.000	959024	207259	416	1040	498		
375.8178	36.135	36.135	0	1.000	761146	168613	335	837	503	1.26(1.05-1.43)	

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.986	36.986	0	1.005	777071	174570	406	1015	430		
385.8610	36.986	36.986	0	1.005	1442874	315507	636	1590	496	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	37.003	37.003	0	1.000	792365	170828	416	1040	411		
375.8178	37.003	37.003	0	1.000	629769	137446	335	837	410	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.291						416	1040			
375.8178	35.291						335	837			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.792	36.792	0		1172535	261364	347	867	753		
403.8529	36.792	36.792	0		916965	200667	256	640	784	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.320	36.320	0	0.987	955758	249043	347	867	718		
403.8529	36.320	36.320	0	0.987	742068	193932	256	640	758	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.337	36.337	0	1.000	546683	133895	184	460	728		
391.8127	36.329	36.337	-1	1.000	432702	107495	141	352	762	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.438	36.438	0	0.990	1243971	270716	347	867	780		
403.8529	36.438	36.438	0	0.990	972356	211824	256	640	827	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.446	36.446	0	1.000	637797	141695	184	460	770		
391.8127	36.446	36.446	0	1.000	504321	113664	141	352	806	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.809	36.809	0	1.013	622133	135352	184	460	736		
391.8127	36.809	36.809	0	1.013	489997	108168	141	352	767	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.623						184	460			
391.8127	35.623						141	352			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.749	38.749	0	1.053	629505	157918	472	1180	335		
419.8220	38.749	38.749	0	1.053	1356570	345361	951	2377	363	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.758	38.758	0	1.000	748655	187810	591	1477	318		
409.7788	38.758	38.758	0	1.000	721786	181024	521	1302	347	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.979	39.979	0	1.087	481221	136599	472	1180	289		
419.8220	39.979	39.979	0	1.087	1078388	300020	951	2377	315	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.988	39.988	0	1.000	579439	159033	591	1477	269		
409.7788	39.988	39.988	0	1.000	548853	152501	521	1302	293	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.358						591	1477			
409.7788	39.358						521	1302			

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.676	39.676	0	1.078	926679	249573	299	747	835		
437.8140	39.676	39.676	0	1.078	857200	237844	344	860	691	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.684	39.684	0	1.000	482997	132785	189	472	703		
425.7737	39.684	39.684	0	1.000	463506	126844	179	447	709	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	40.007						189	472			
425.7737	40.007						179	447			
13C-OCDD											
469.7780	42.158	42.158	0	1.146	1114554	255690	181	452	1413		
471.7750	42.150	42.158	-1	1.146	1161580	276557	219	547	1263	0.96(0.76-1.02)	
OCDF											
441.7428	42.251	42.251	0	1.002	784798	193817	145	362	1337		
443.7399	42.251	42.251	0	1.002	857145	209187	190	475	1101	0.92(0.76-1.02)	
OCDD											
457.7377	42.167	42.167	0	1.000	591229	137536	190	475	724		
459.7348	42.158	42.167	-1	1.000	657390	153908	135	337	1140	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNL4_00095 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Lims ID:	CCV
Client ID:	
Inject. Date:	24-Nov-2020 07:33:00
Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification
Instrument ID:	DFS 1
Operator:	Xcalibur_System
Lims Batch ID:	434777
Lims Sample ID:	28
Sublist:	chrom-Dioxin_DFS1*sub1

Non-2,3,7,8-sub-TCDD, RT: 20.999

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	2207475	269374

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	2207475	269374

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
22.682	1384	255	1048	259	0.0945	1.32	RnQ
22.682	806	199	1048	259	0.0720		Empc Correction
Signal Totals:							
	806	199	1048	259			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2432	514				1.32	RQ
	1854	458					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0945 = (2432 * 100.000) / (2207475 * 1.166)
Empc Amount: 0.0720 = (1854 * 100.000) / (2207475 * 1.166)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d				
Injection Date:	24-Nov-2020 07:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	28
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.77

Processing Integration Results

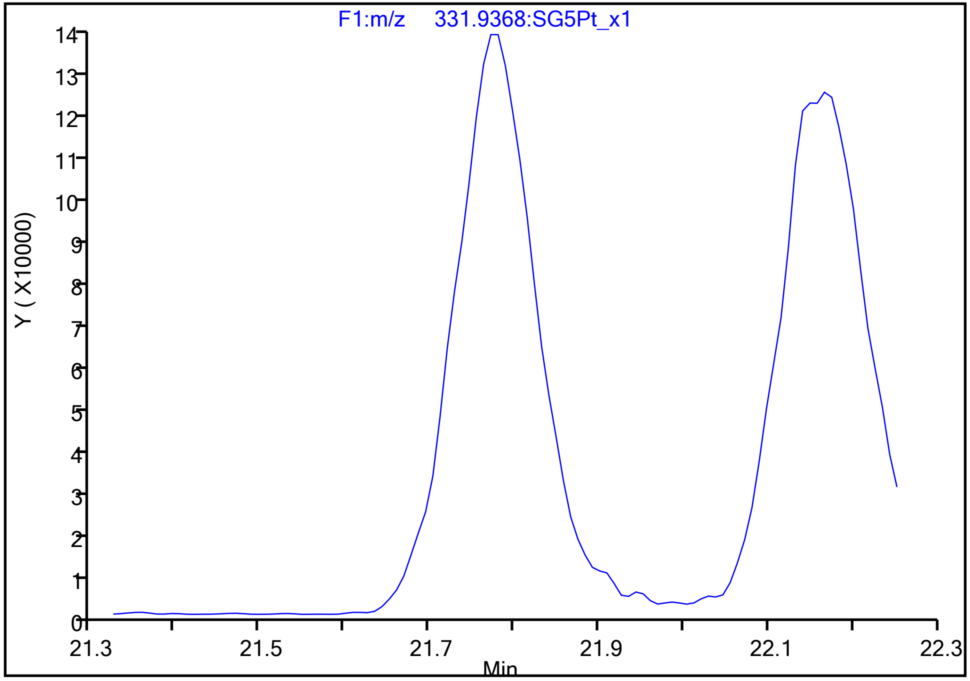

Manual Integration Results

RT: 21.77

Area: 929095

Amount: 100.0000

Amount Units: pg/ul

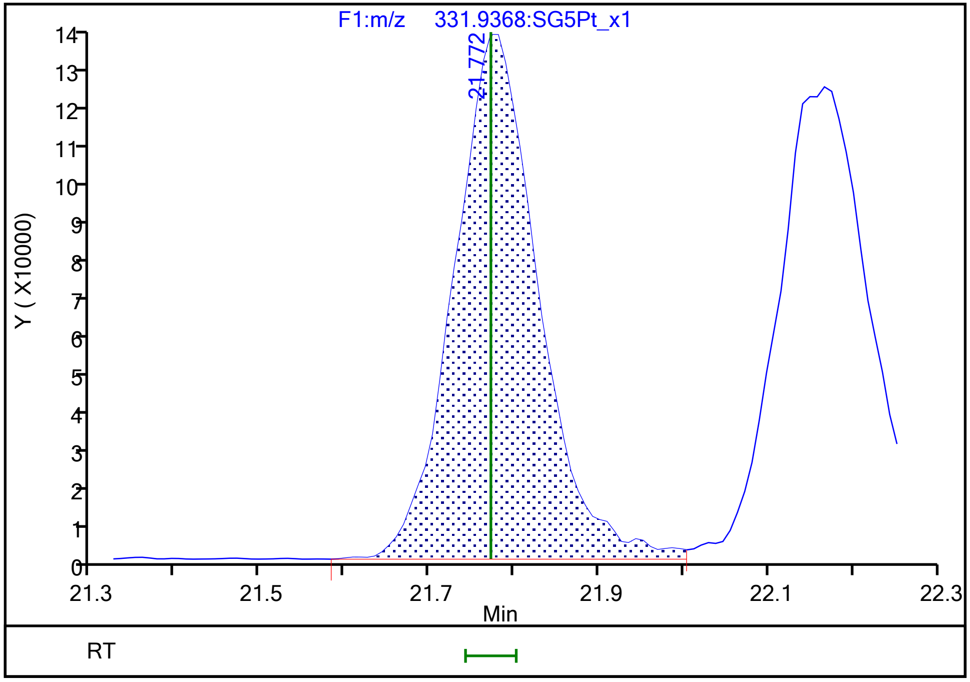

Reviewer: stephensk, 24-Nov-2020 08:53:37

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

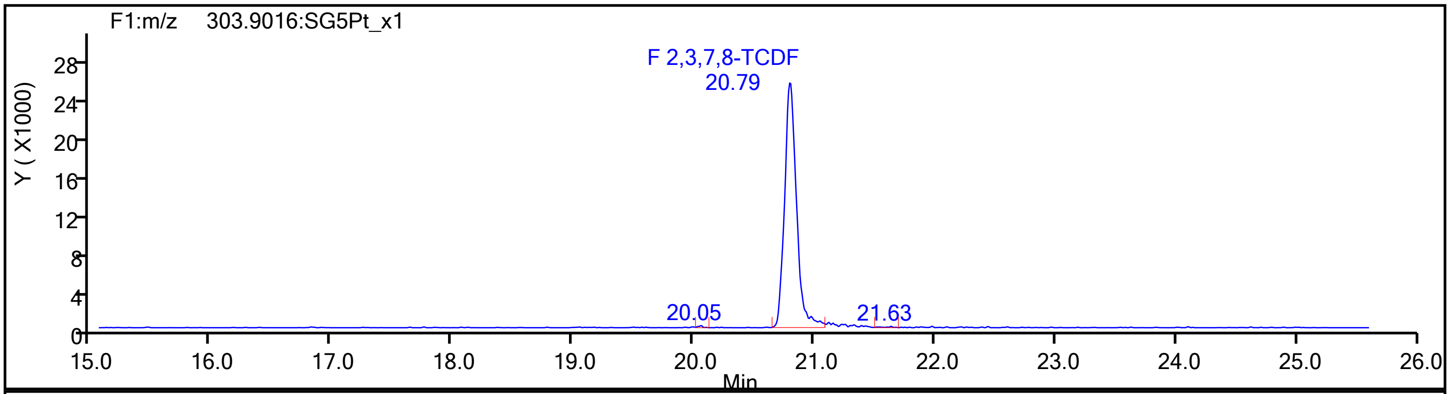

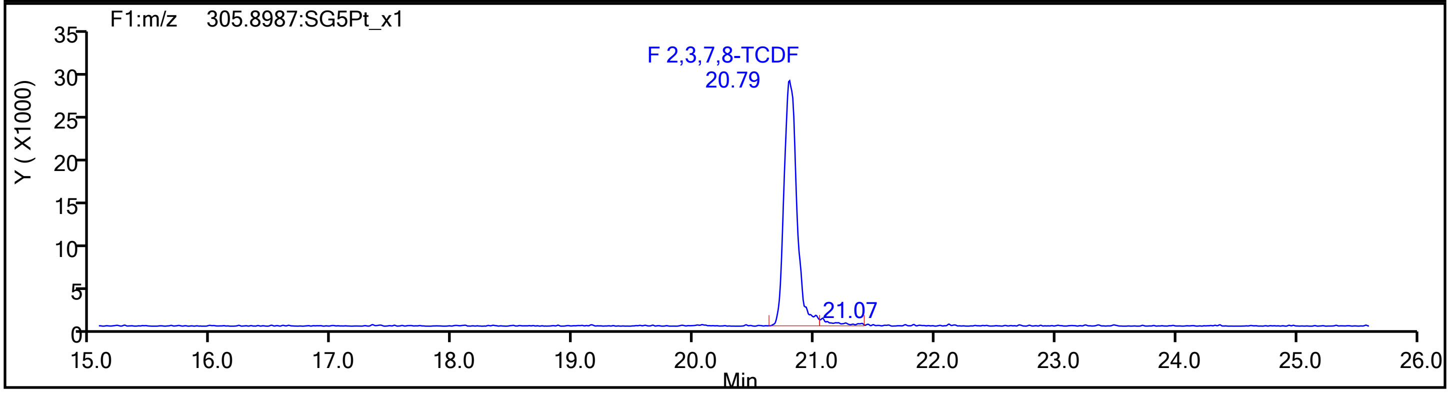

TCDF Standards

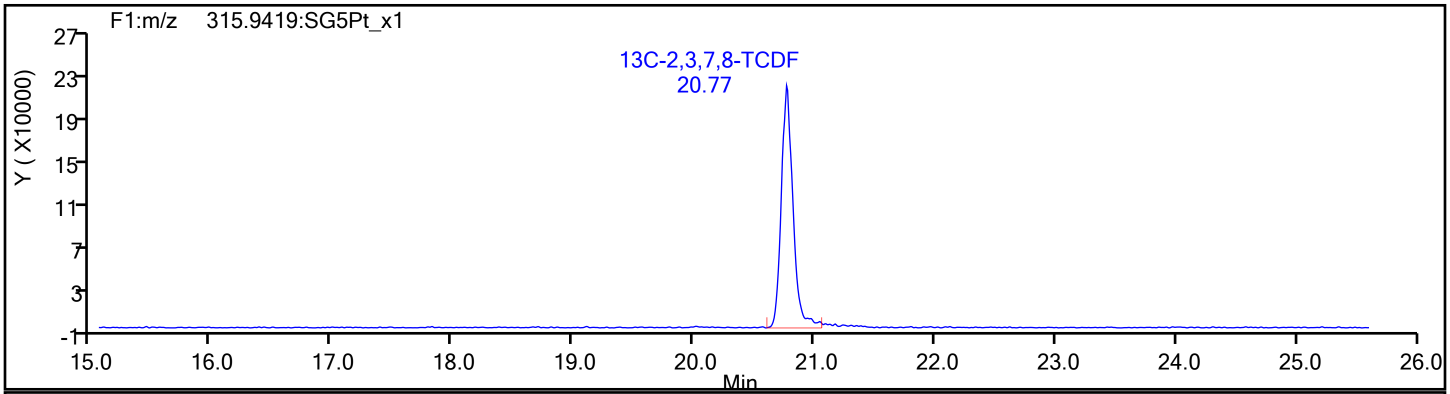

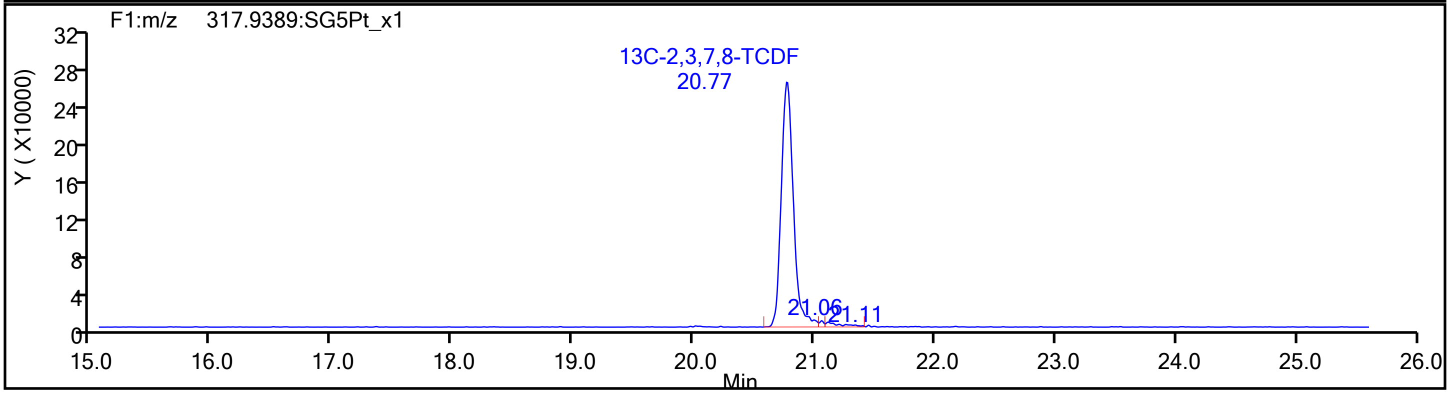

Report Date: 25-Nov-2020 02:01:13 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

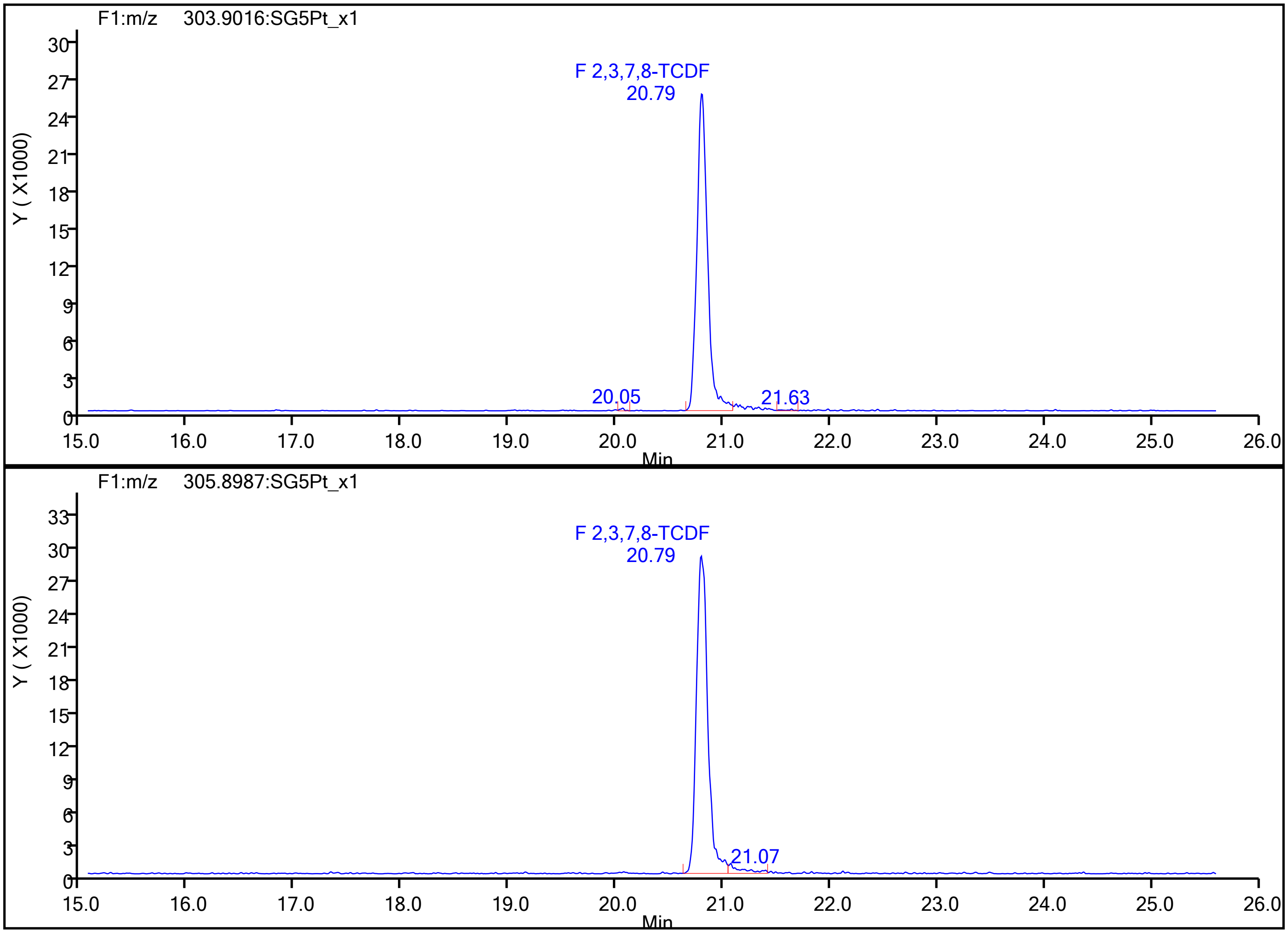

TCDF Interference Mass

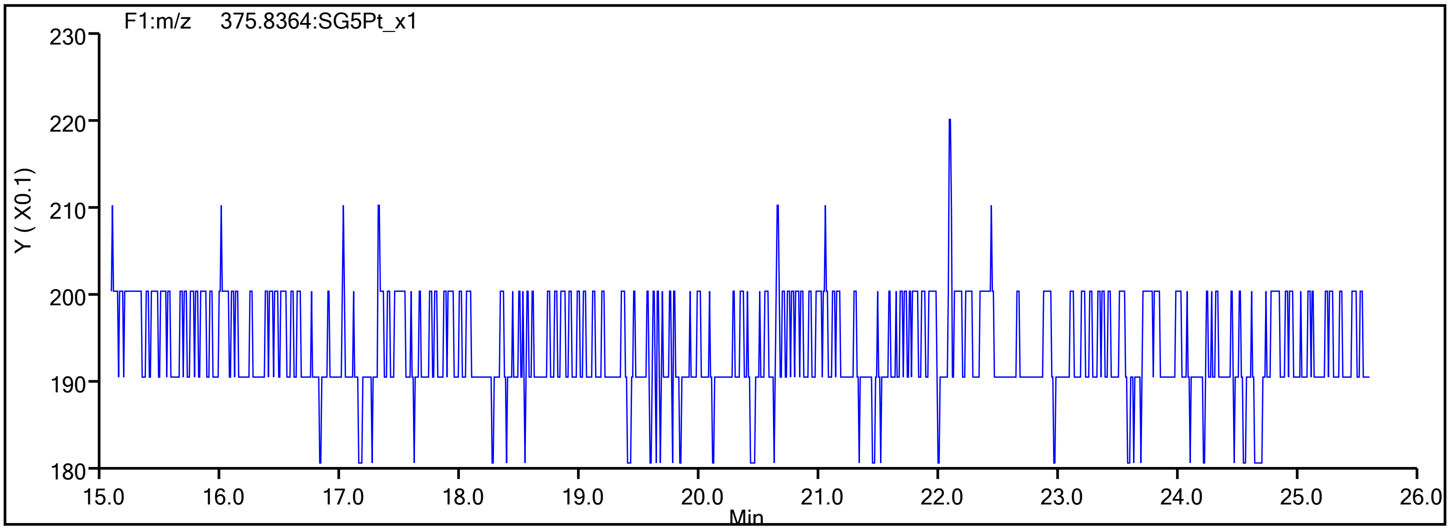

Report Date: 25-Nov-2020 02:01:13   Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

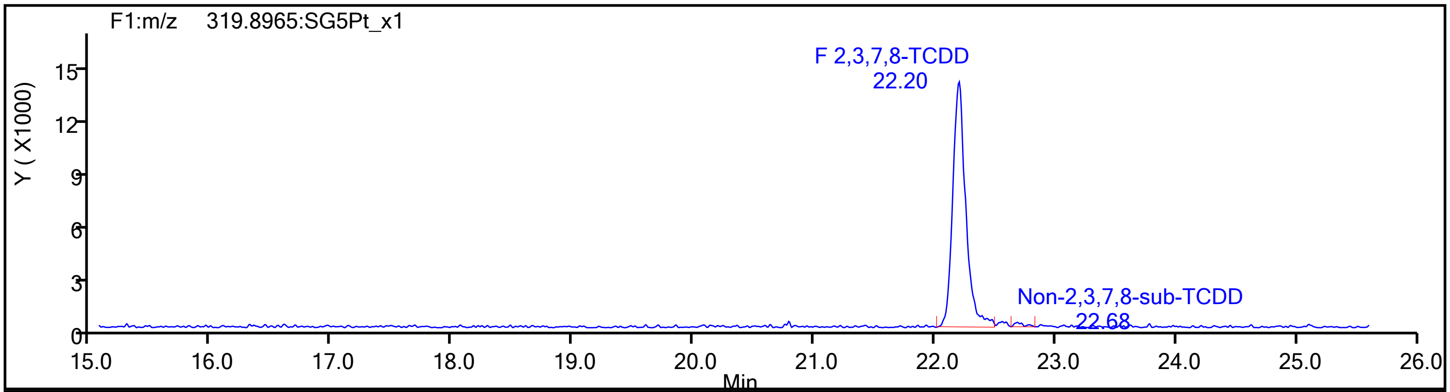

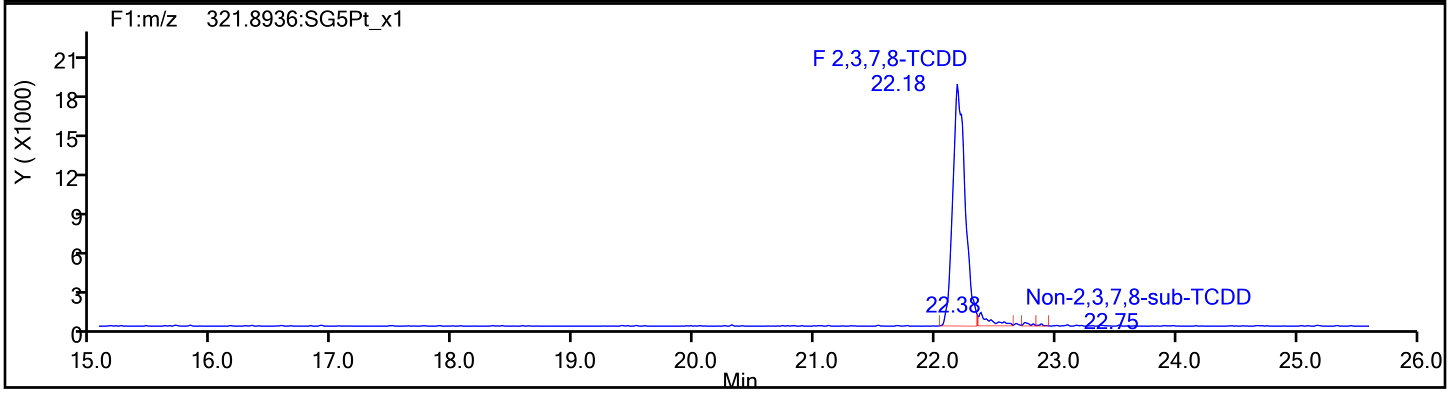

TCDD Standards

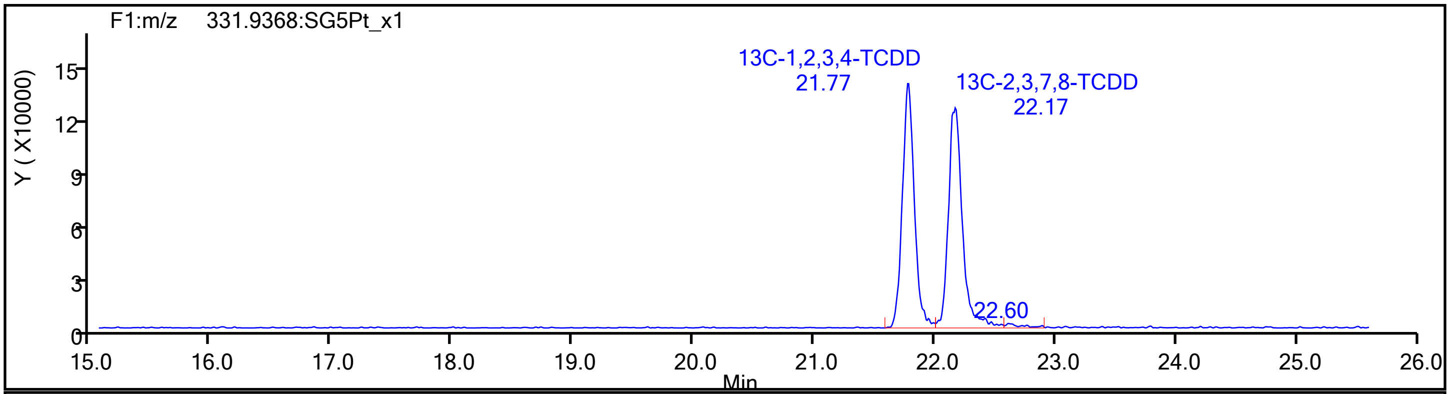

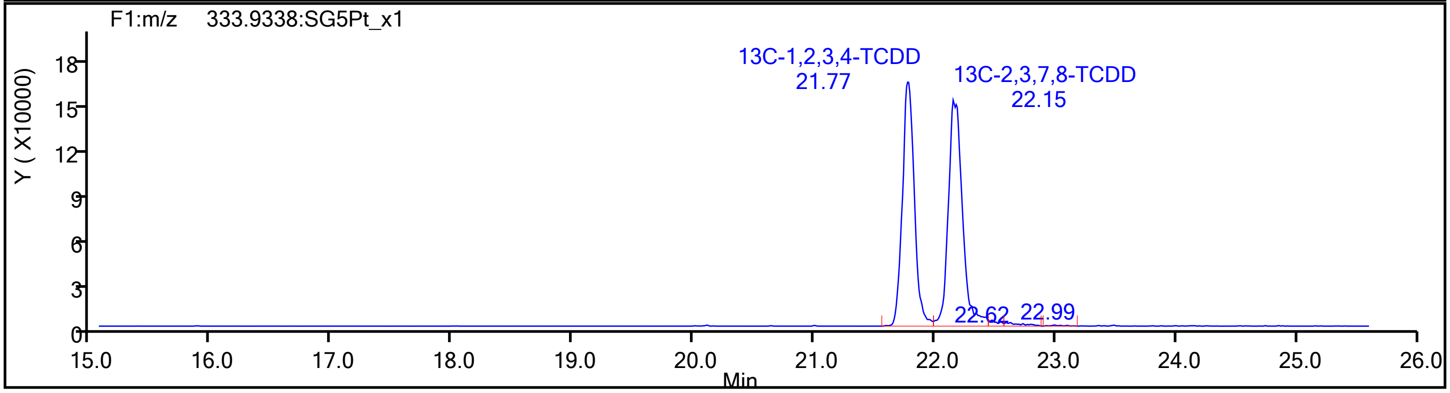

Report Date: 25-Nov-2020 02:01:13
Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

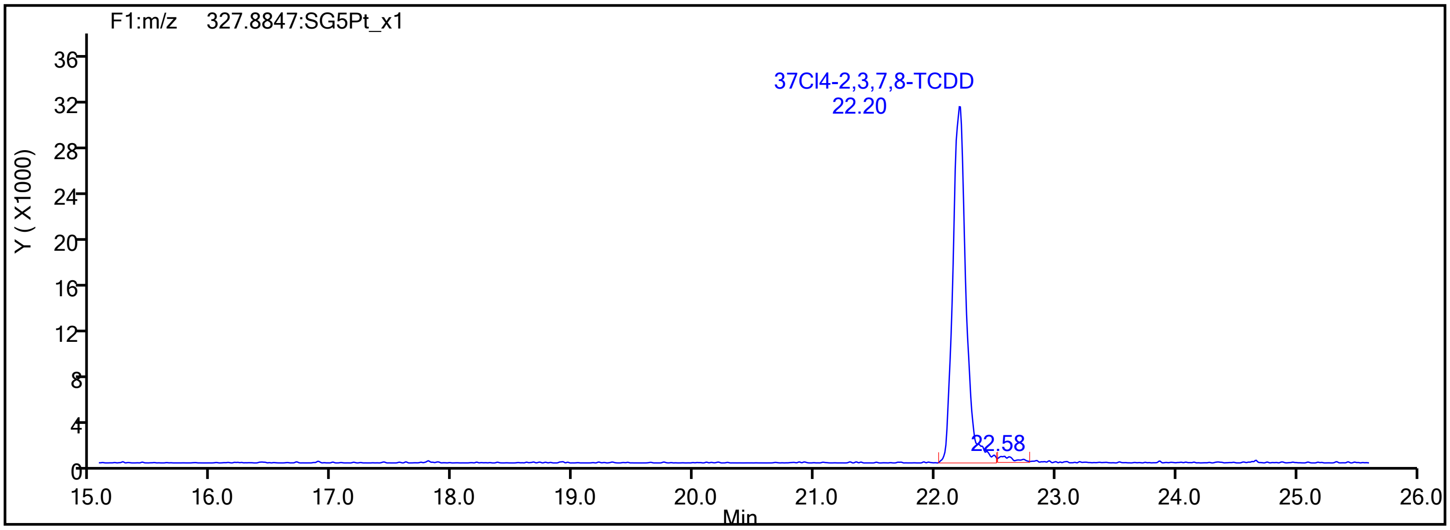

37Cl4-TCDD Standards

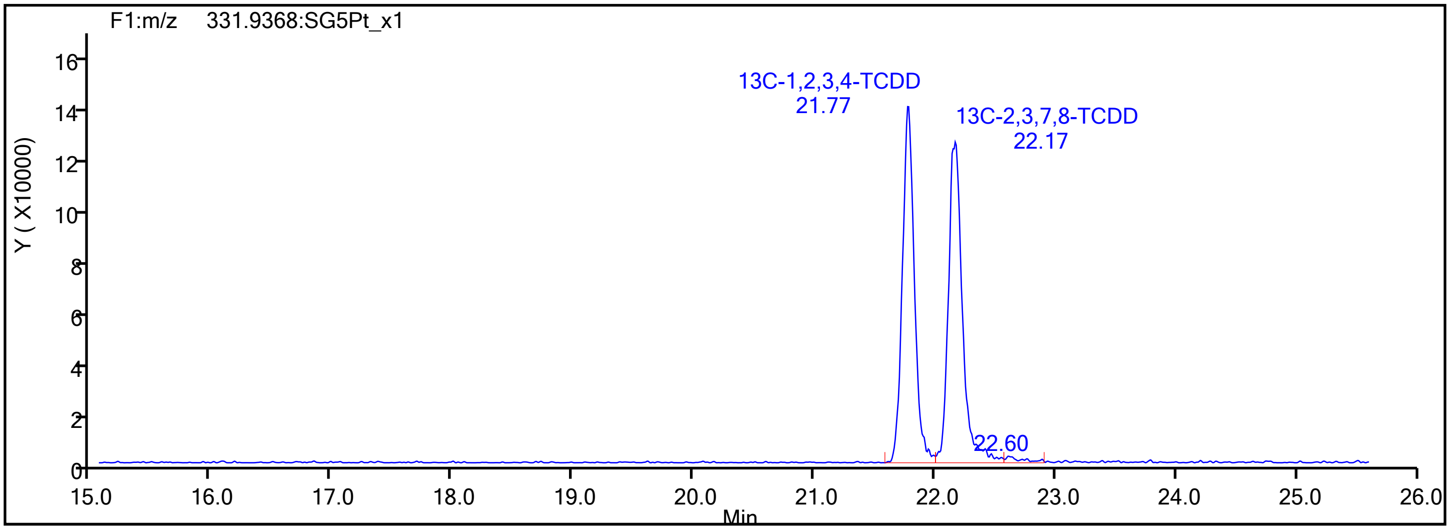

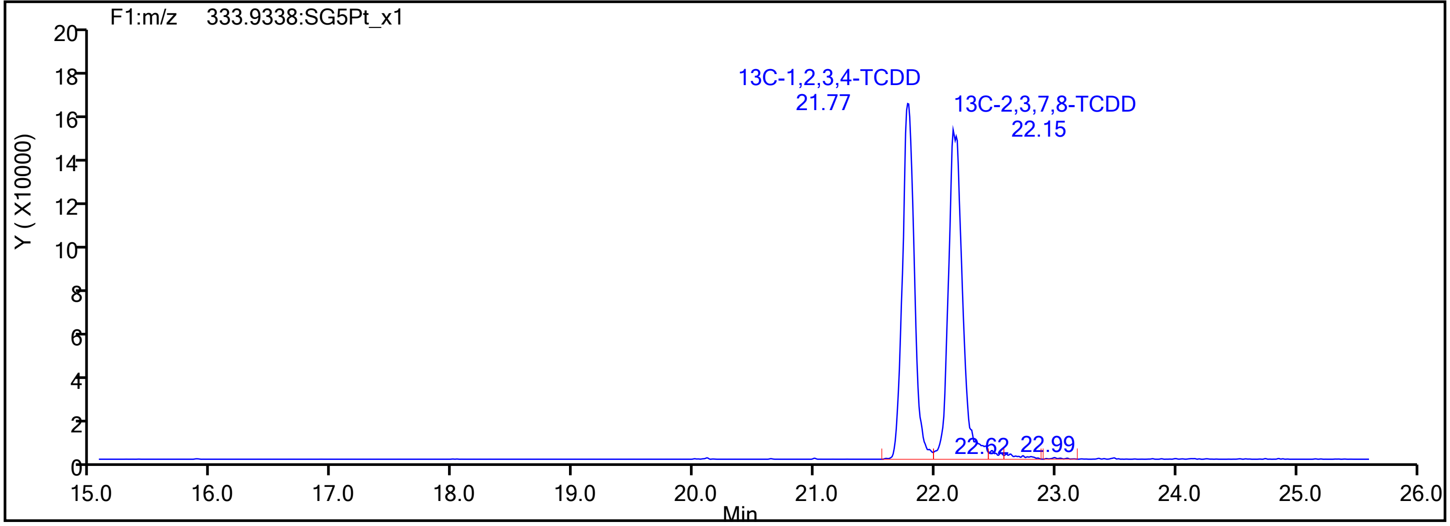

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

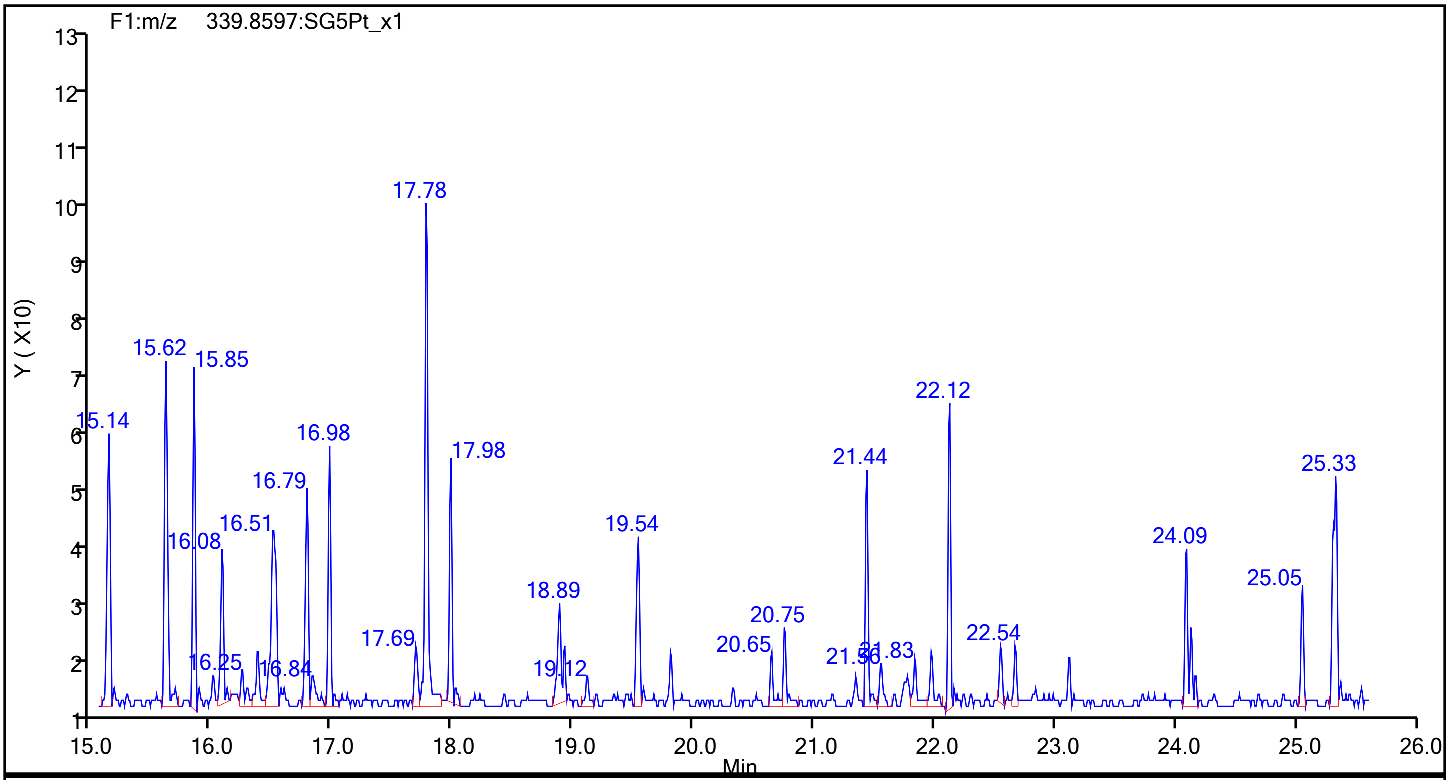

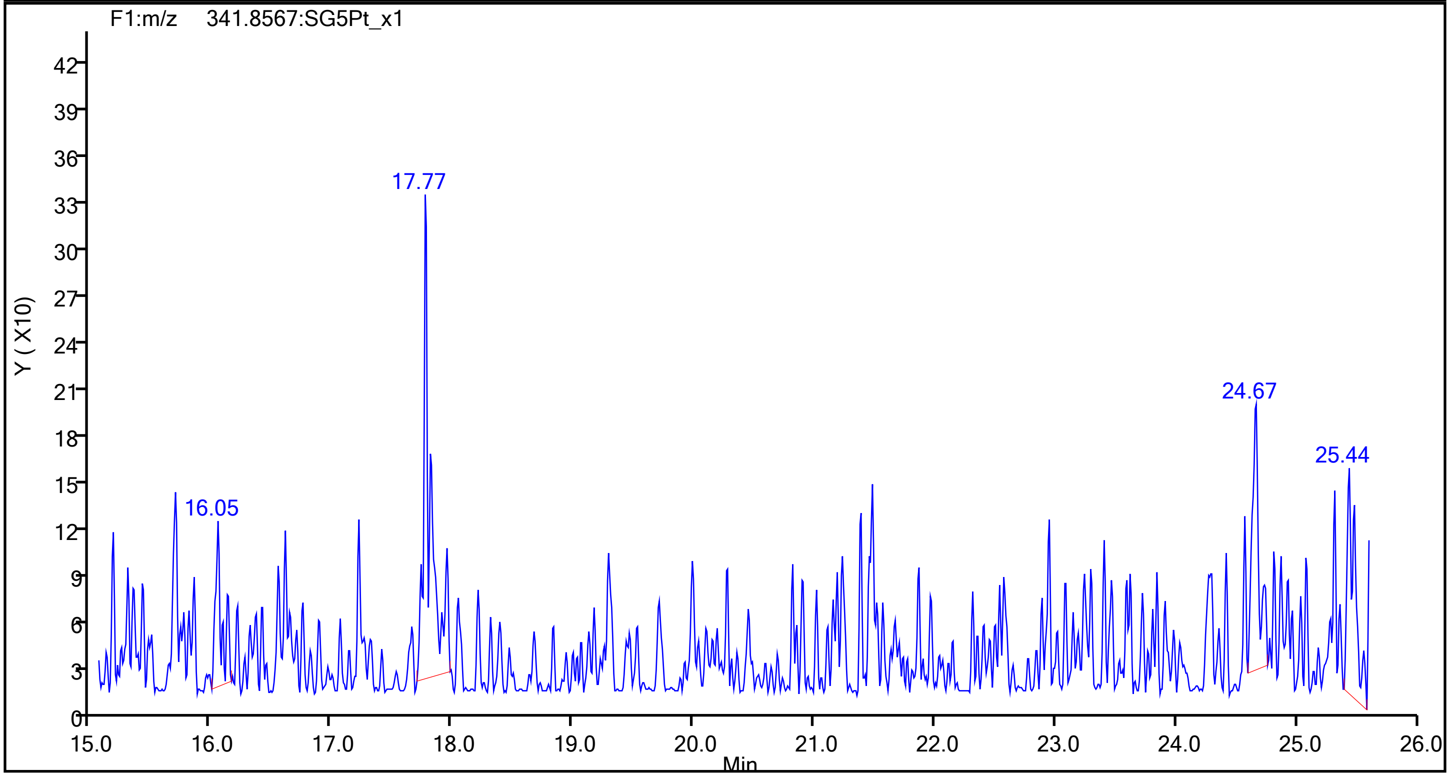

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Injection Date: 24-Nov-2020 07:33:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

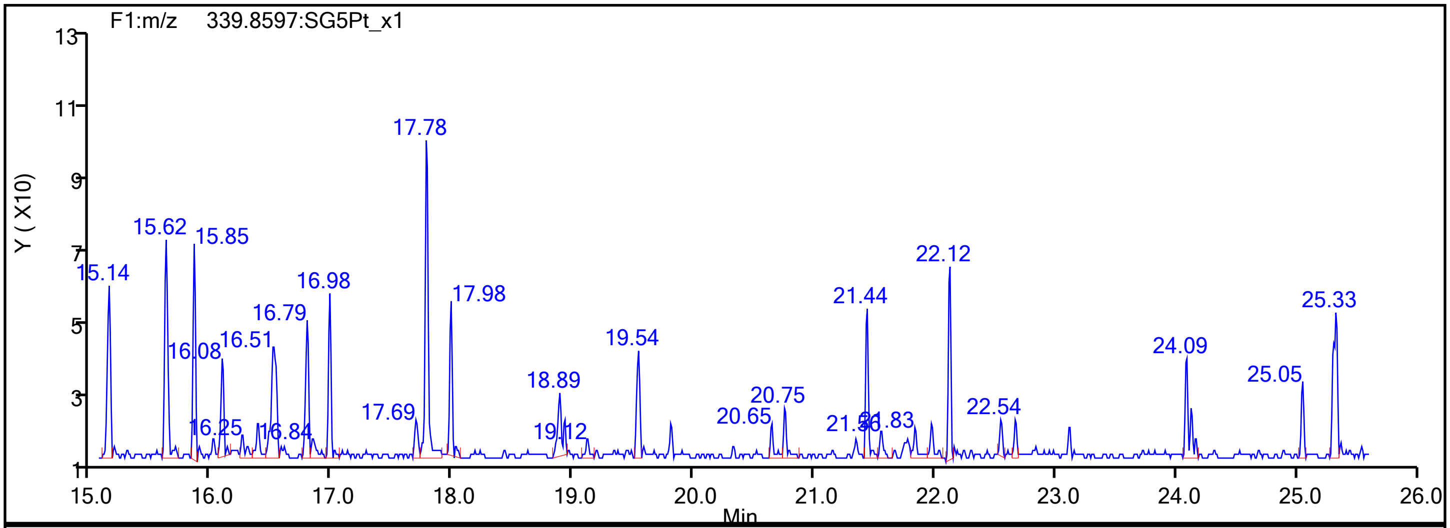

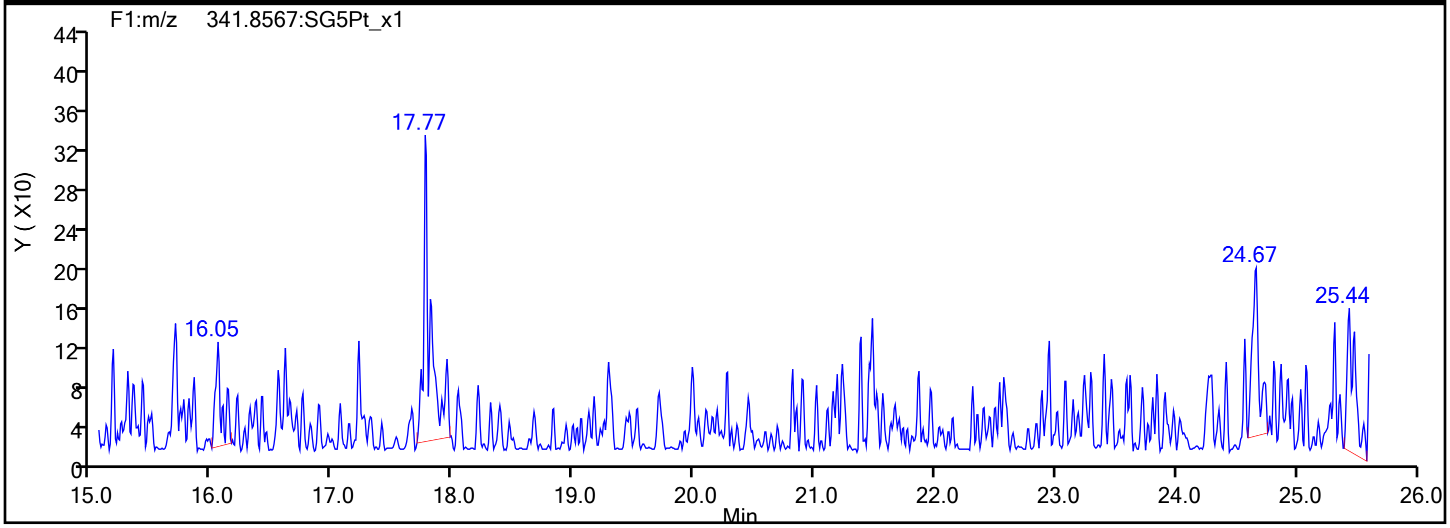

F1 PeCDFs Interference Mass

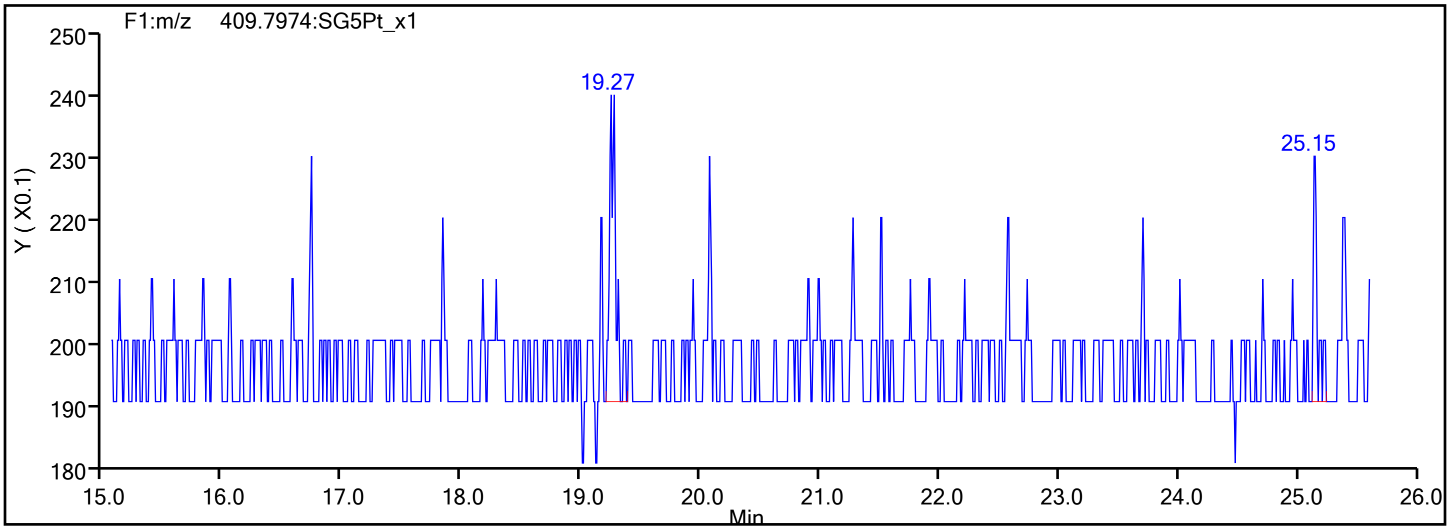

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

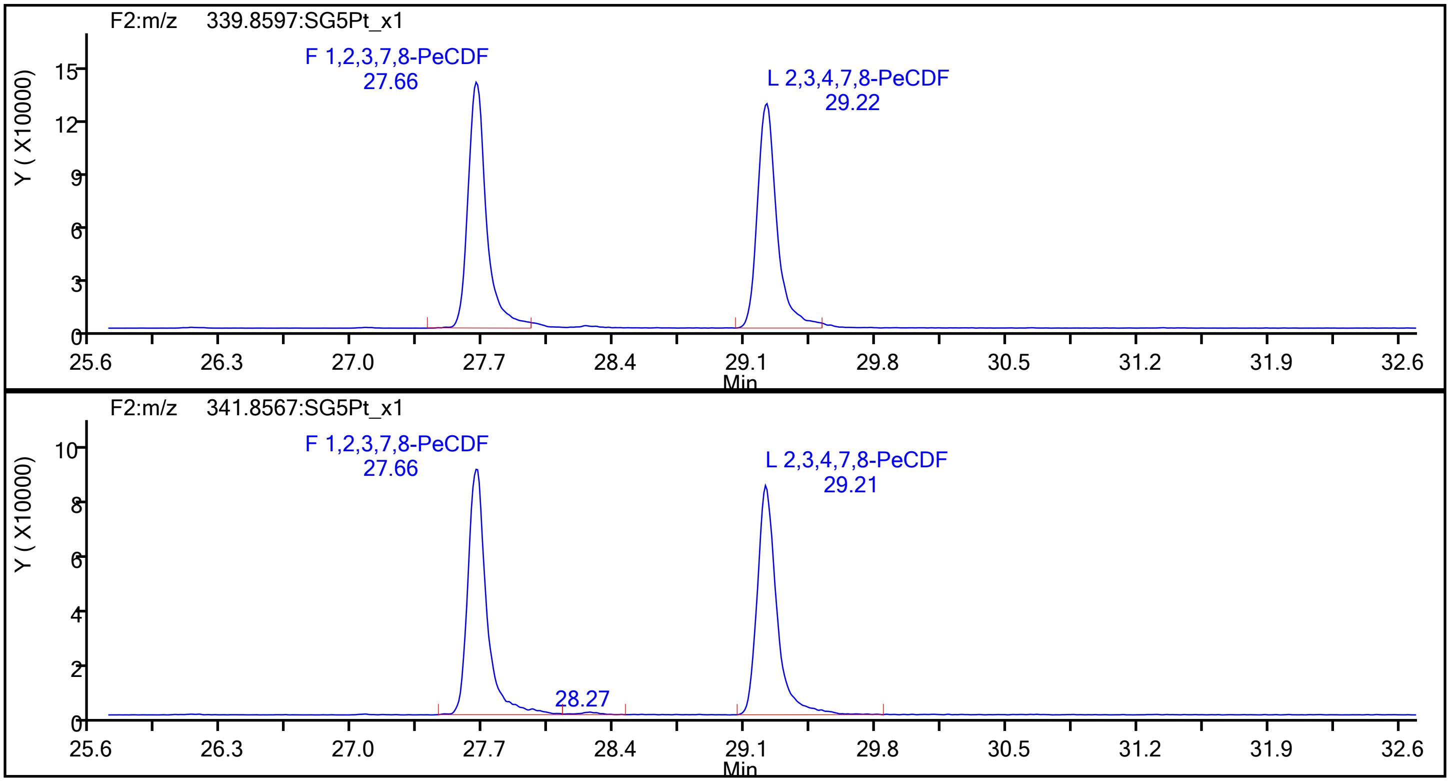

PeCDF Standards

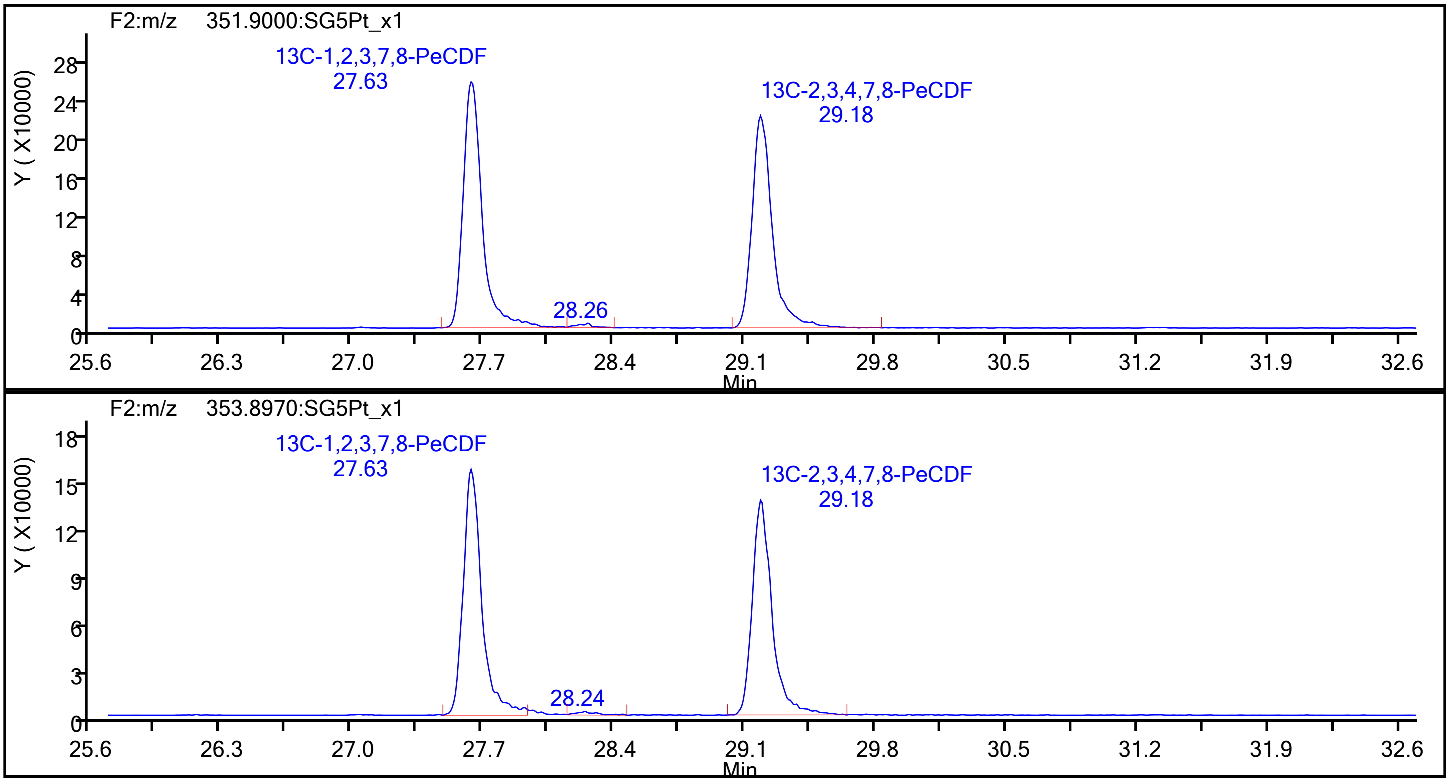

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

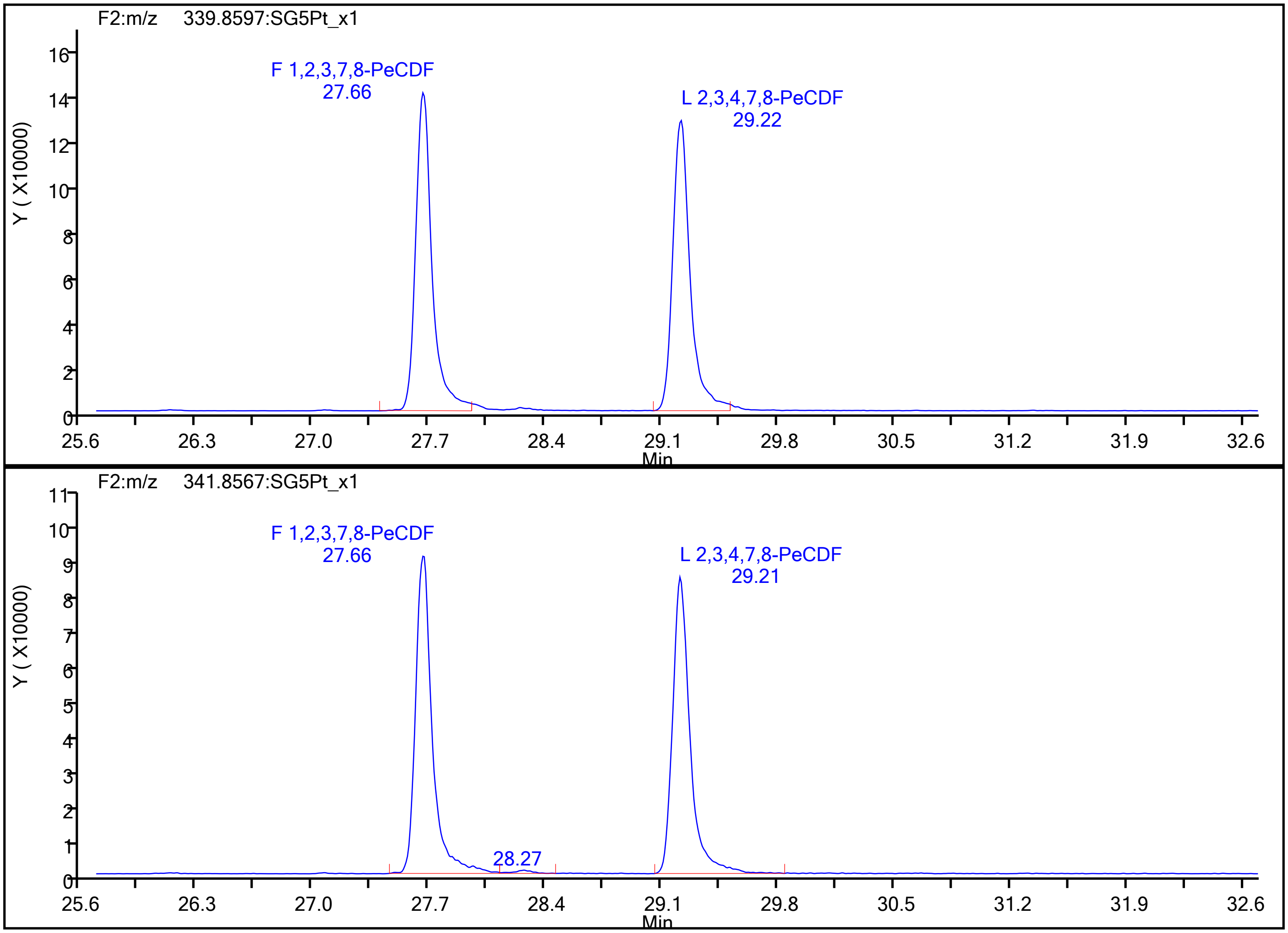

PeCDF Interference Mass

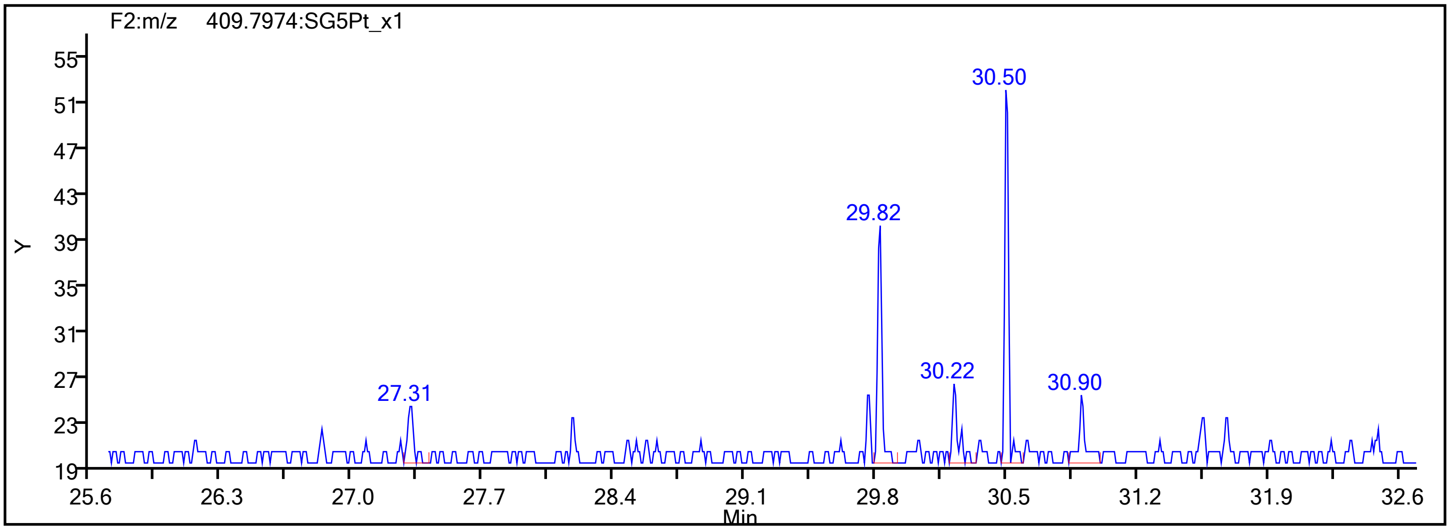

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Injection Date: 24-Nov-2020 07:33:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

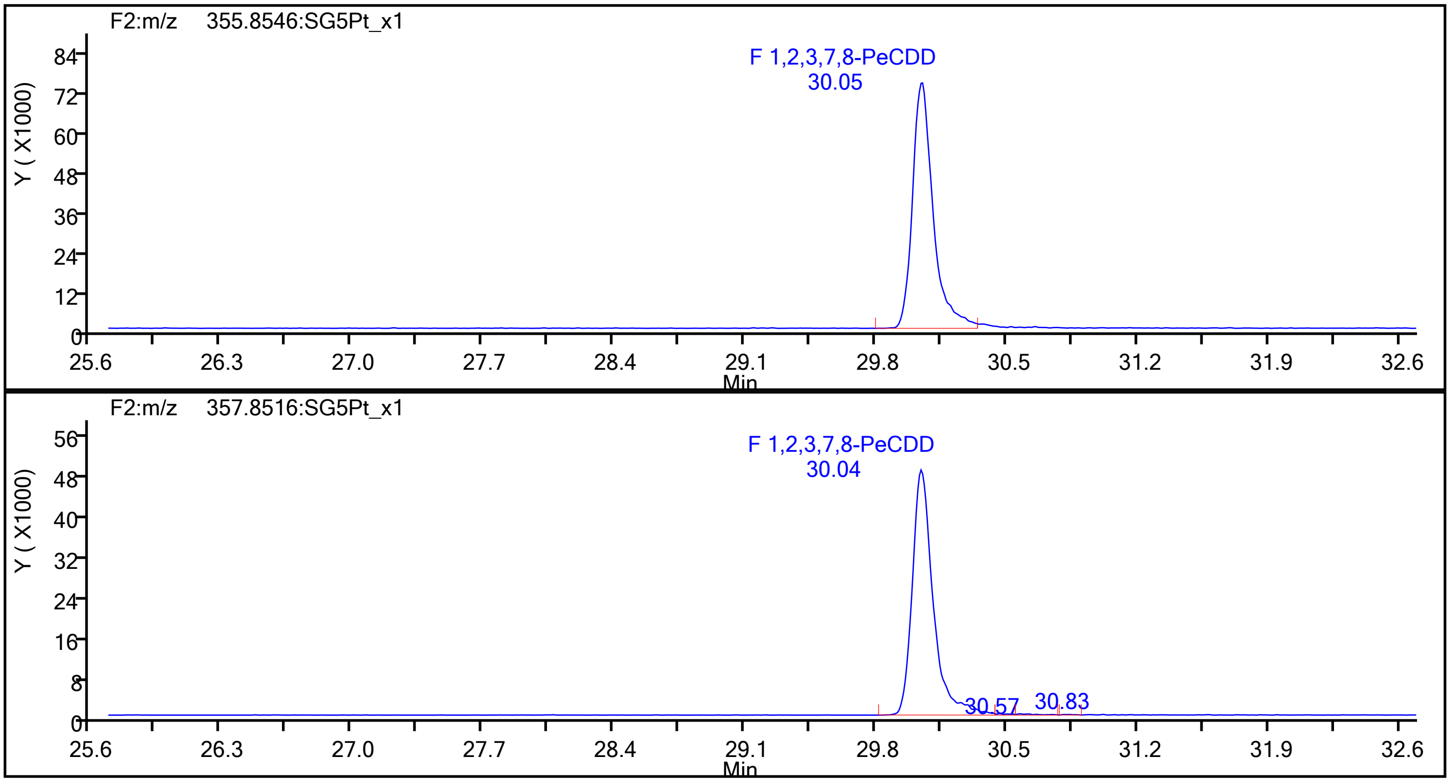

PeCDD Standards

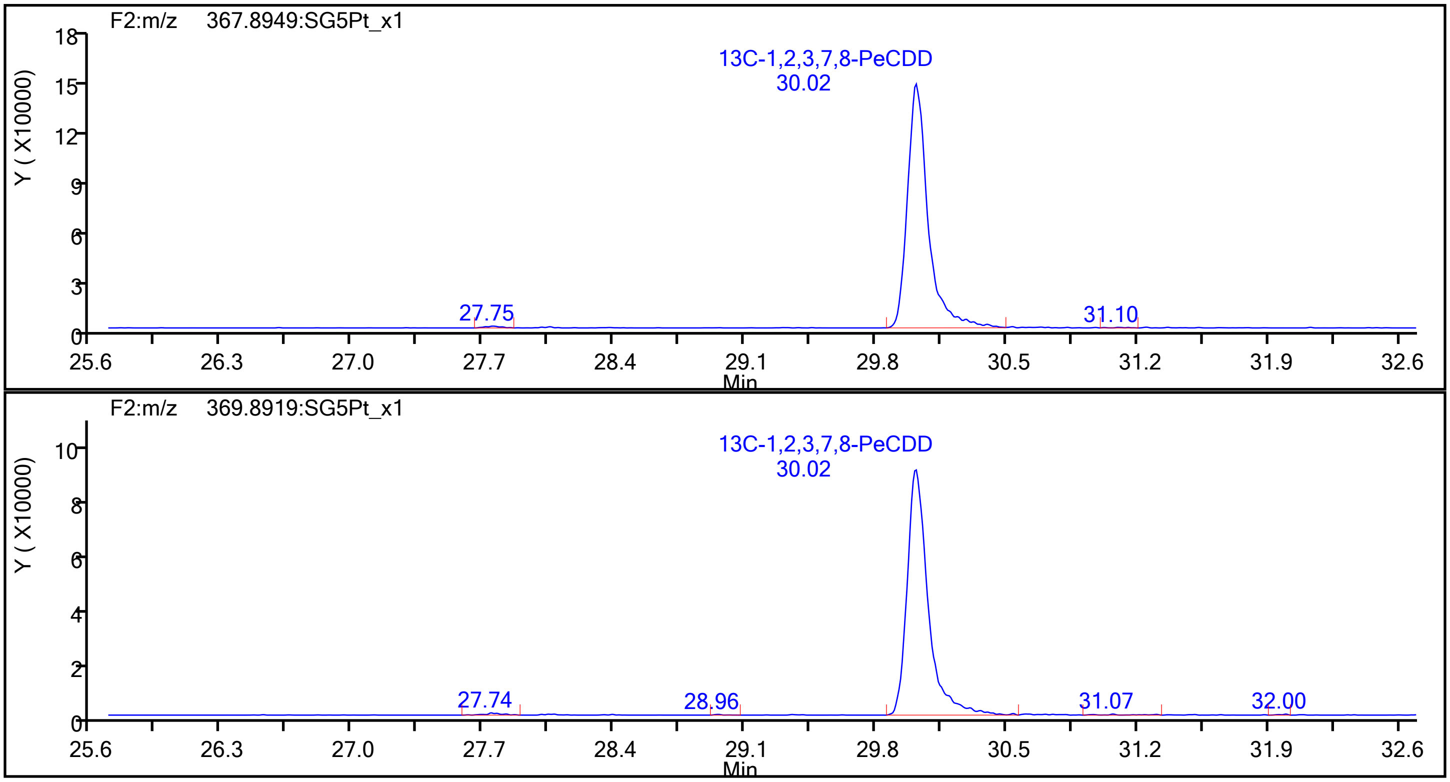

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

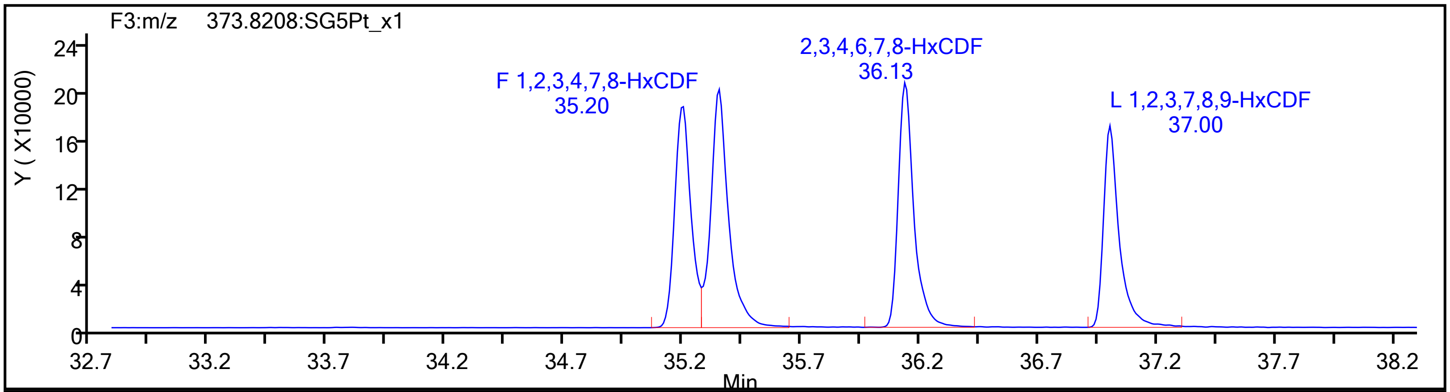

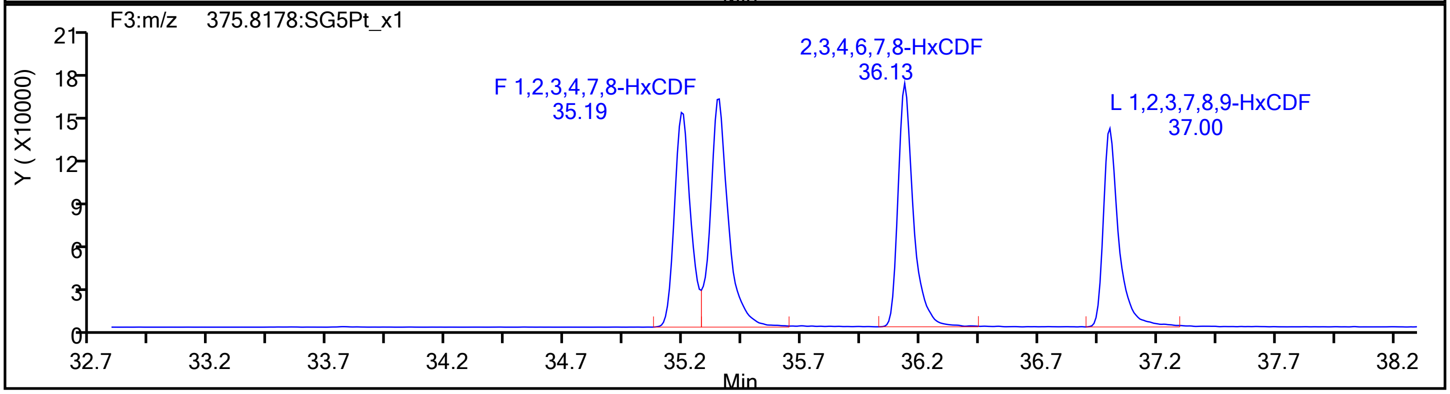

HxCDF Standards

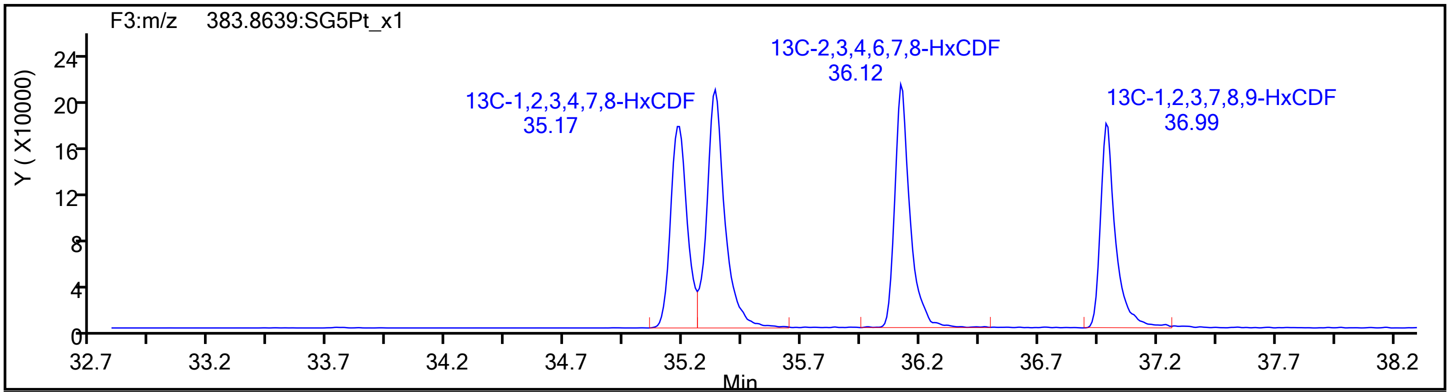

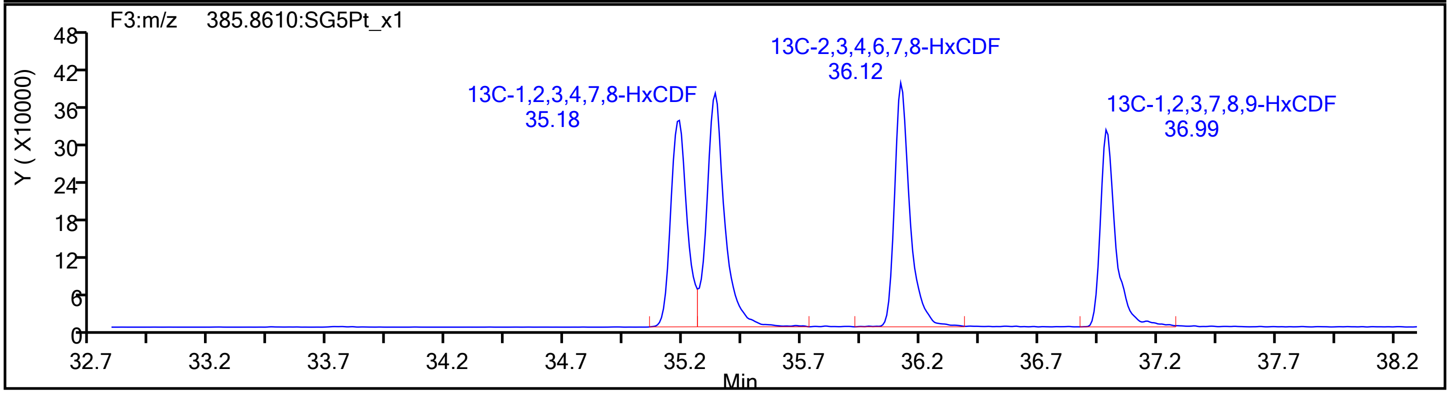

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date: 24-Nov-2020 07:33:00　　Injection Vol: 1.0 ul

Instrument ID: DFS 1　　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777　　Sample Line#: 28

Column Type: DB-5　　Column Dia: 0.32 mm

HxCDF

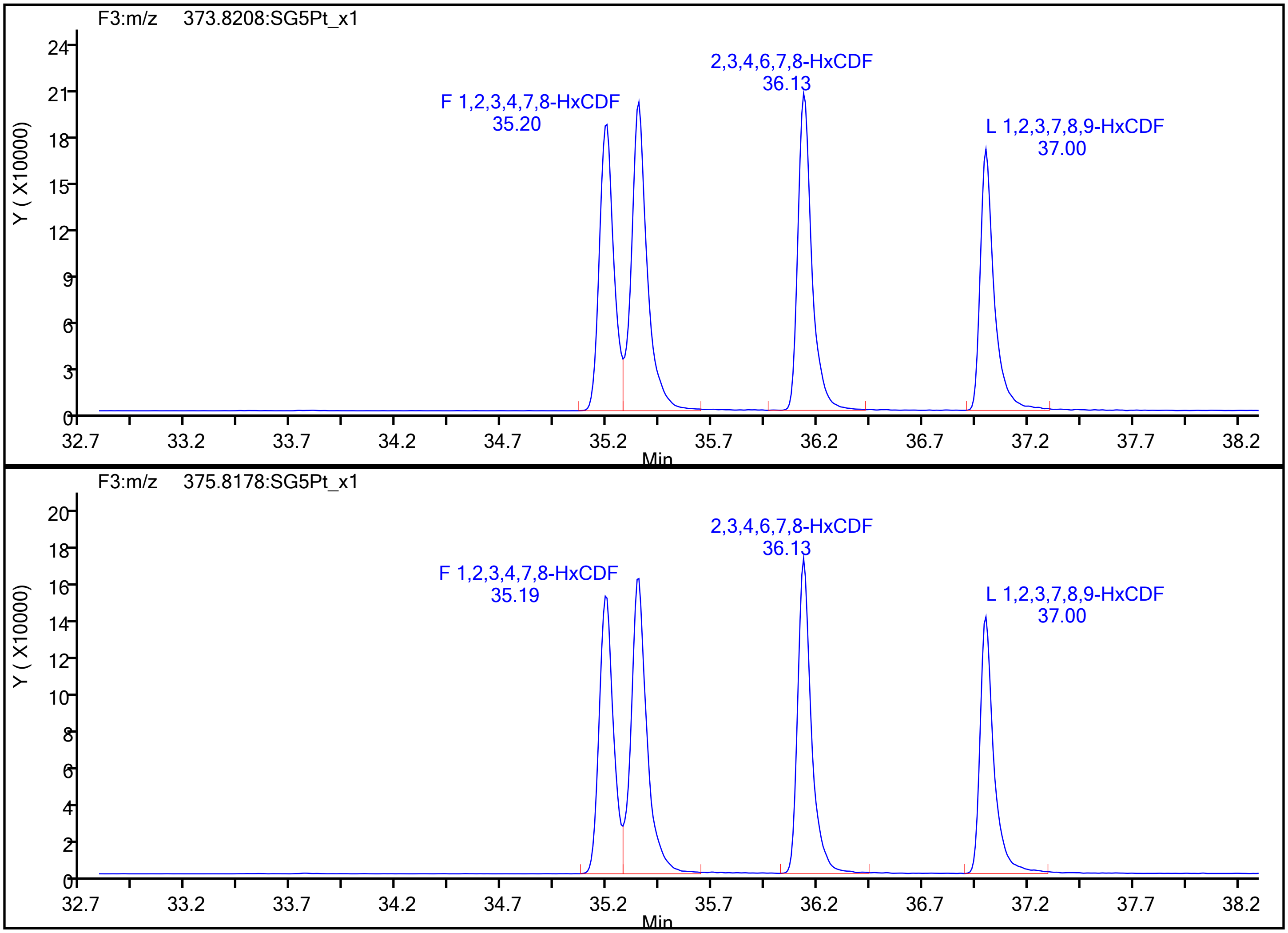

HxCDF Interference Mass

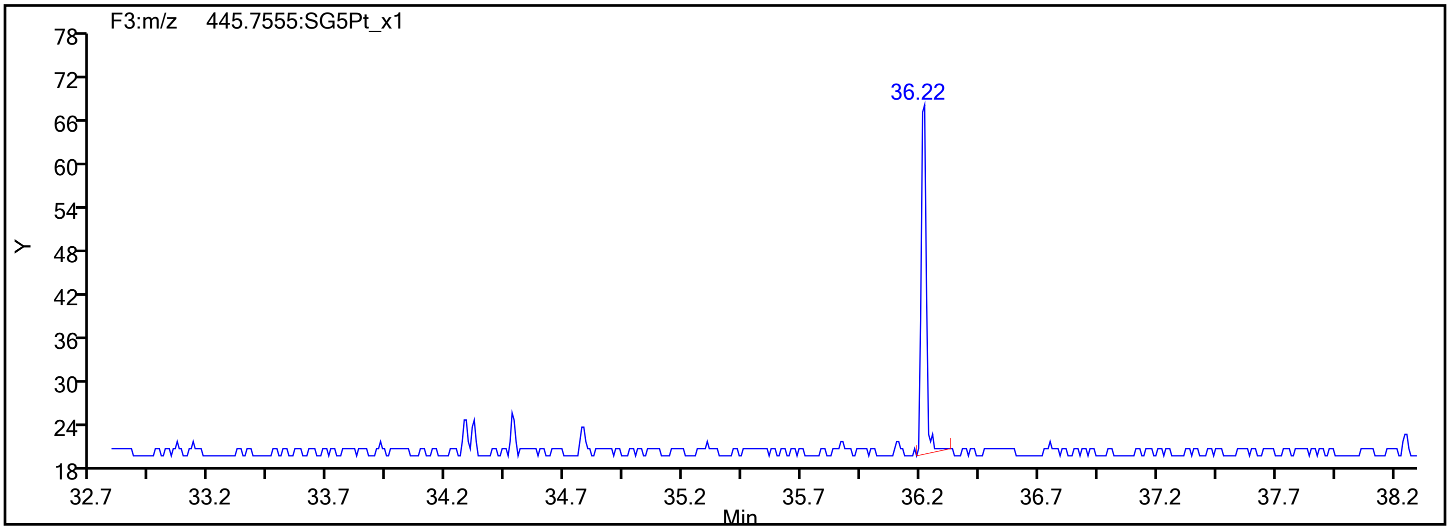

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date: 24-Nov-2020 07:33:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 28

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

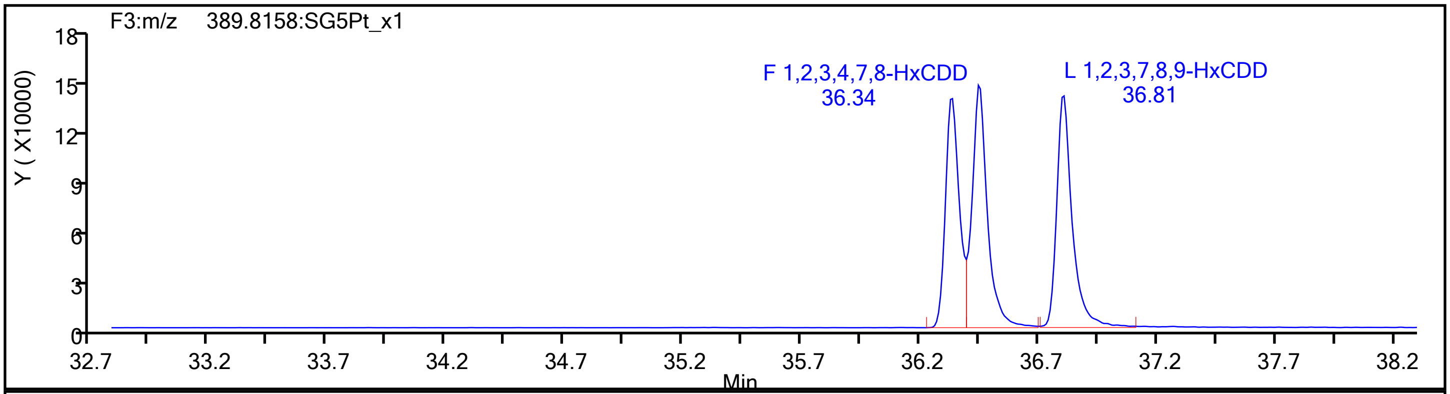

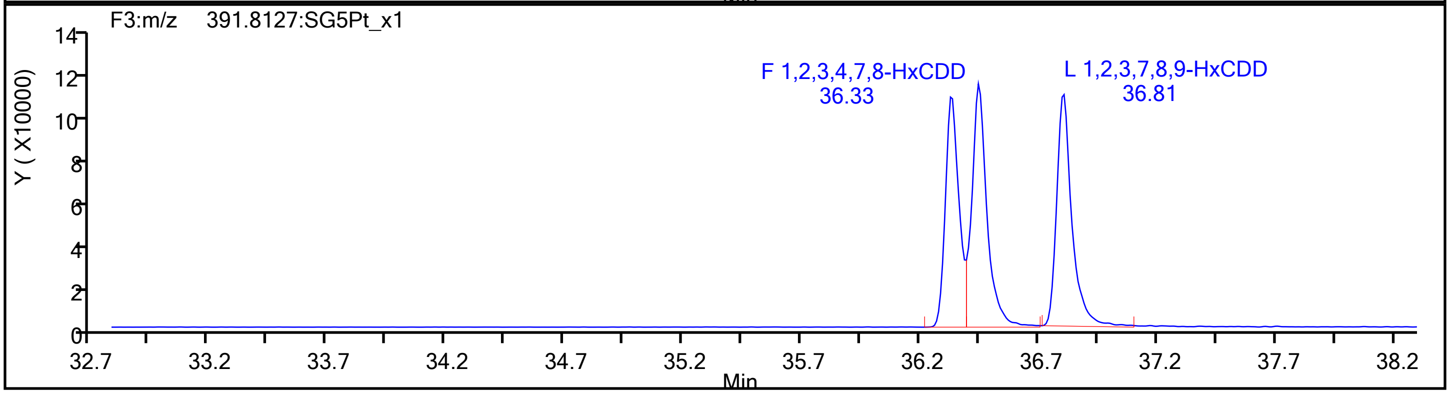

HxCDD Standards

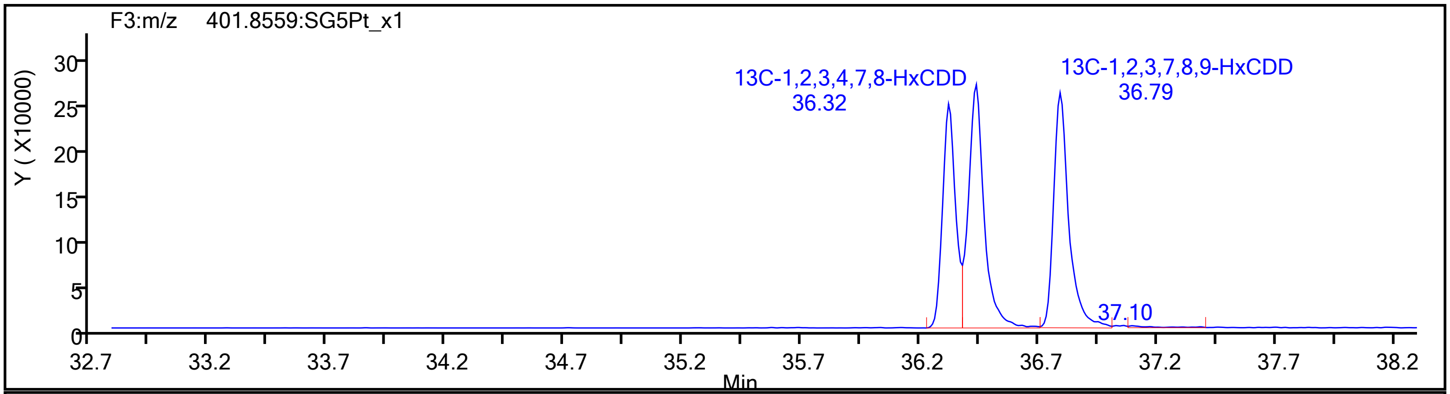

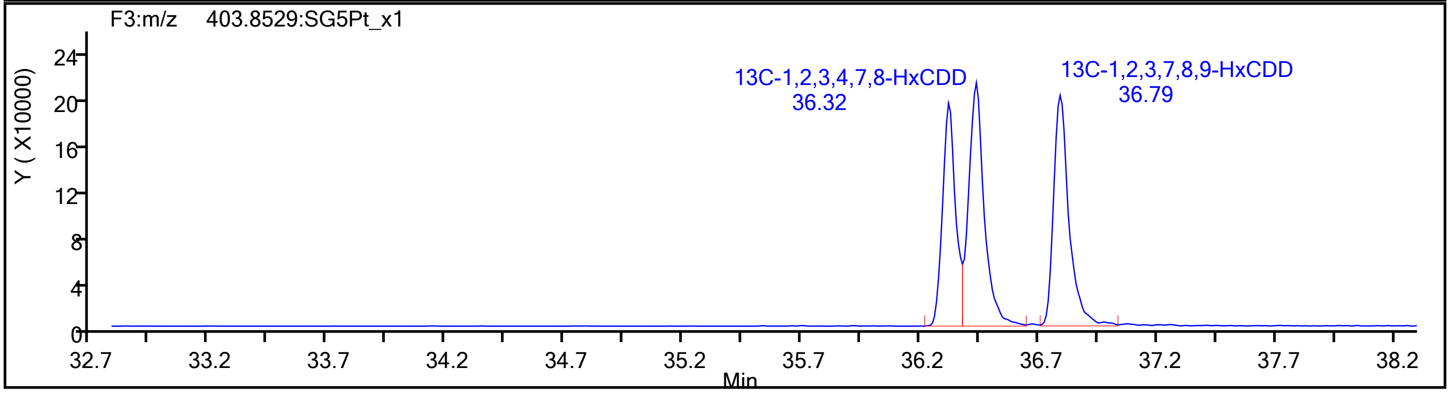

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

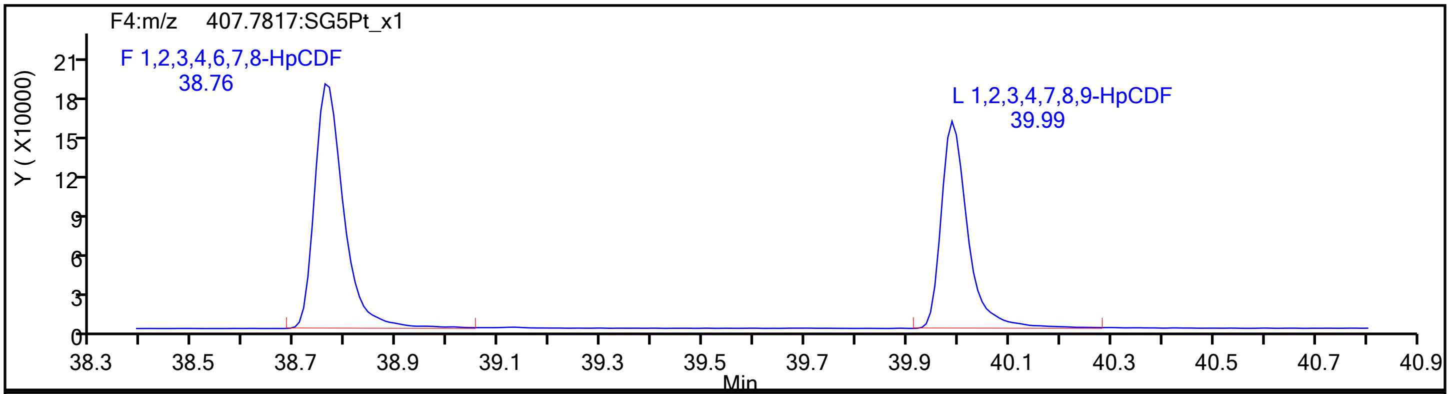

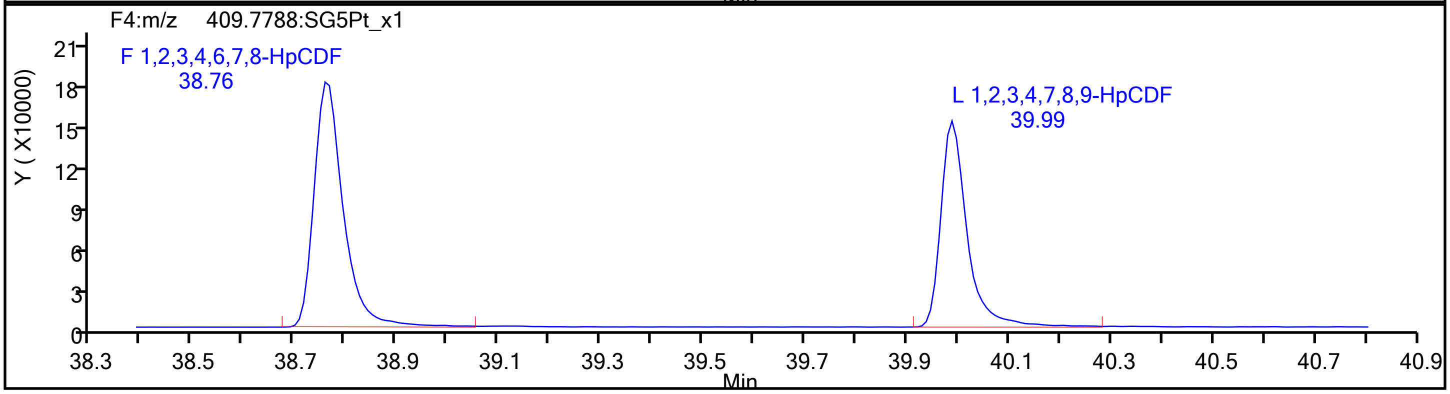

HpCDF Standards

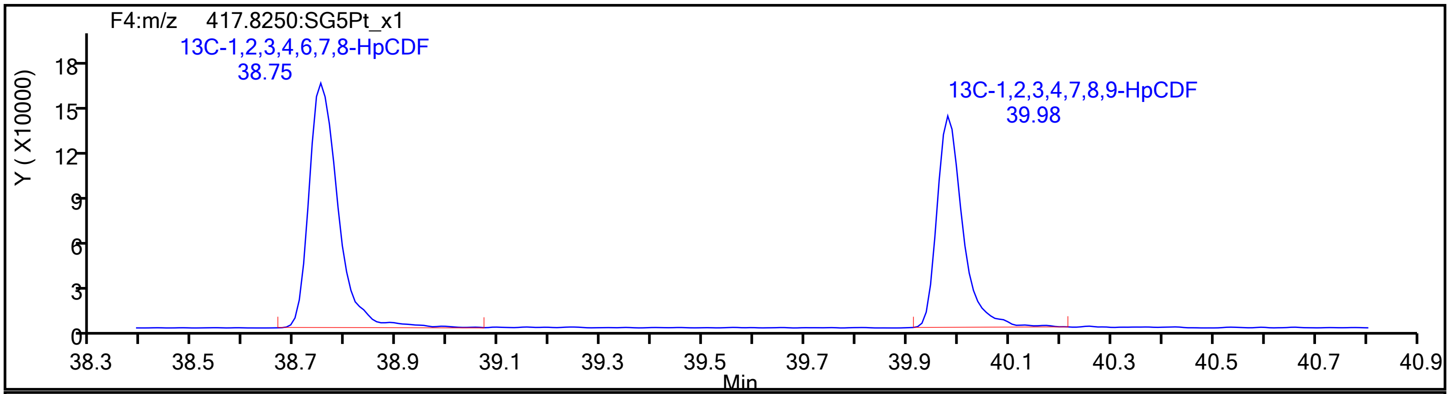

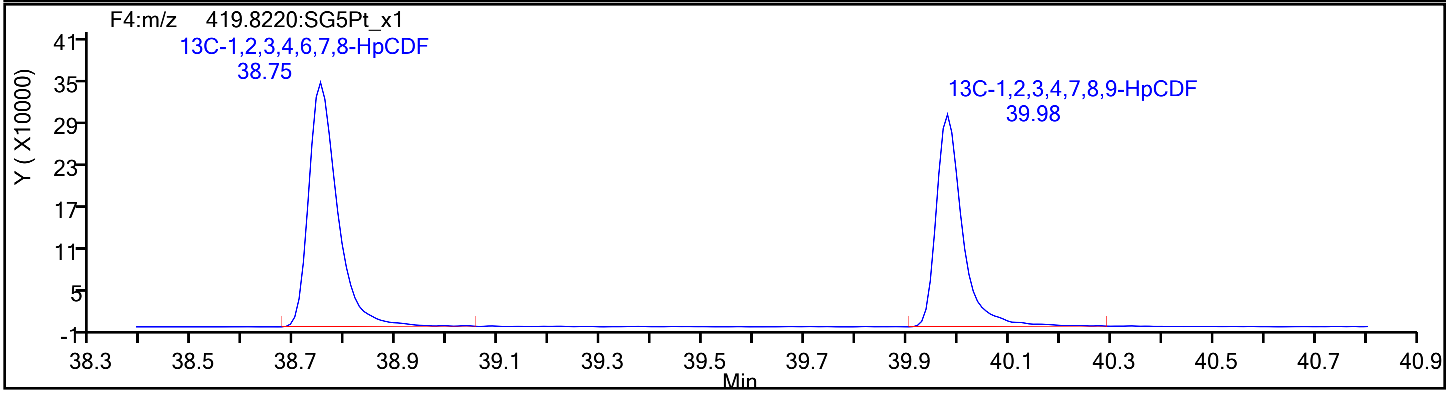

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

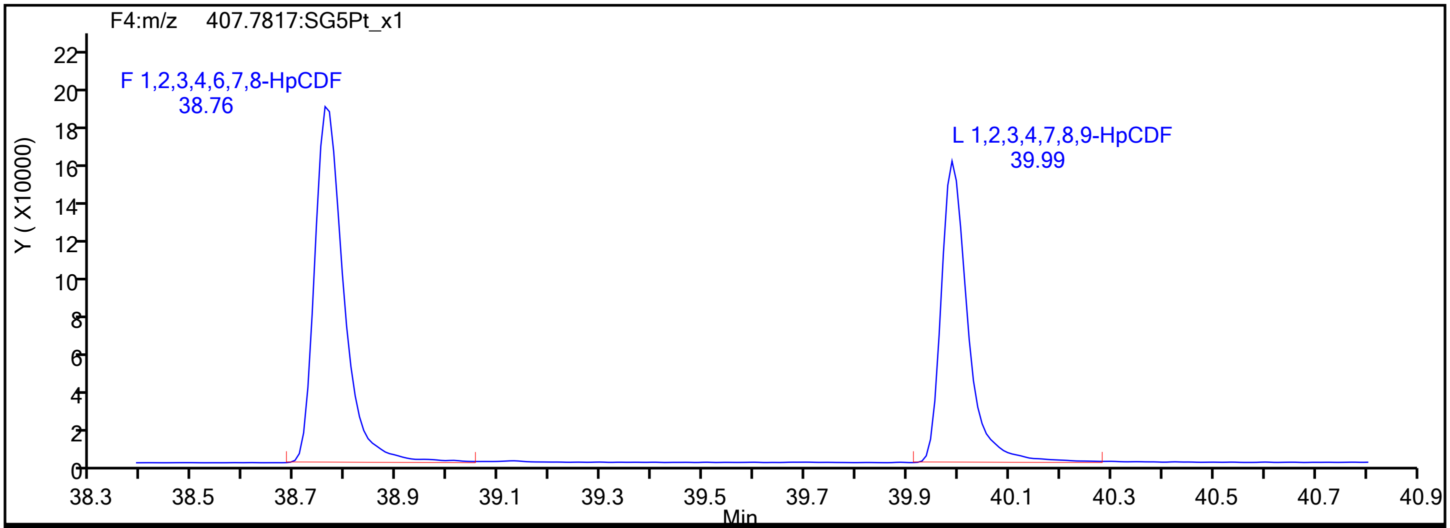

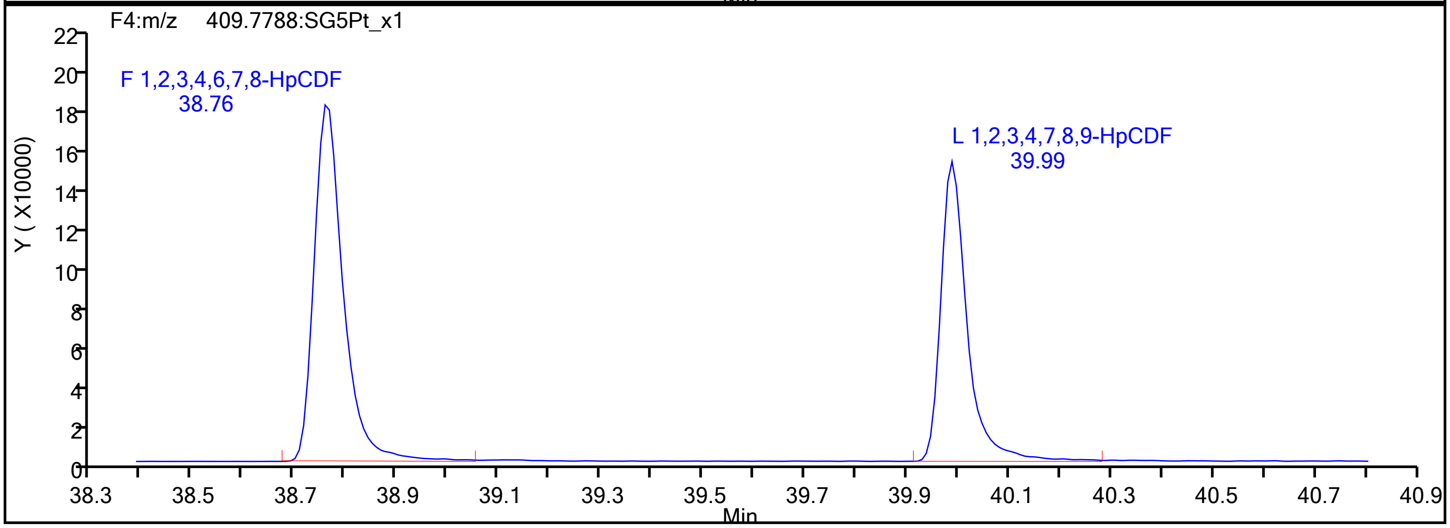

HpCDF Interference Mass

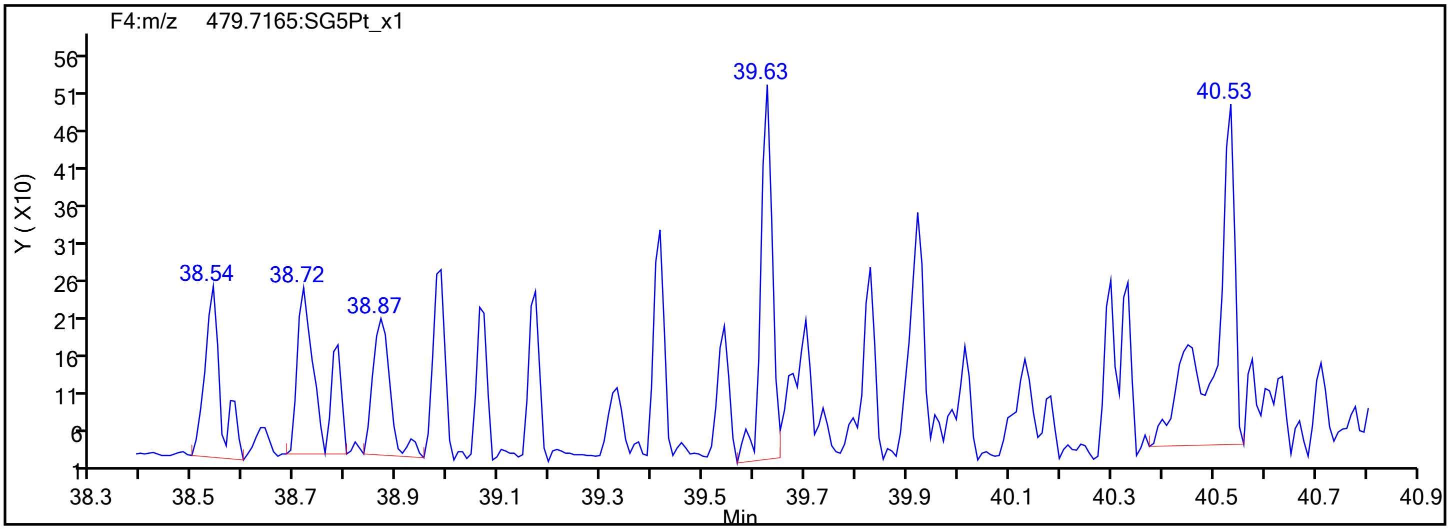

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d
Injection Date: 24-Nov-2020 07:33:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777 Sample Line#: 28
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

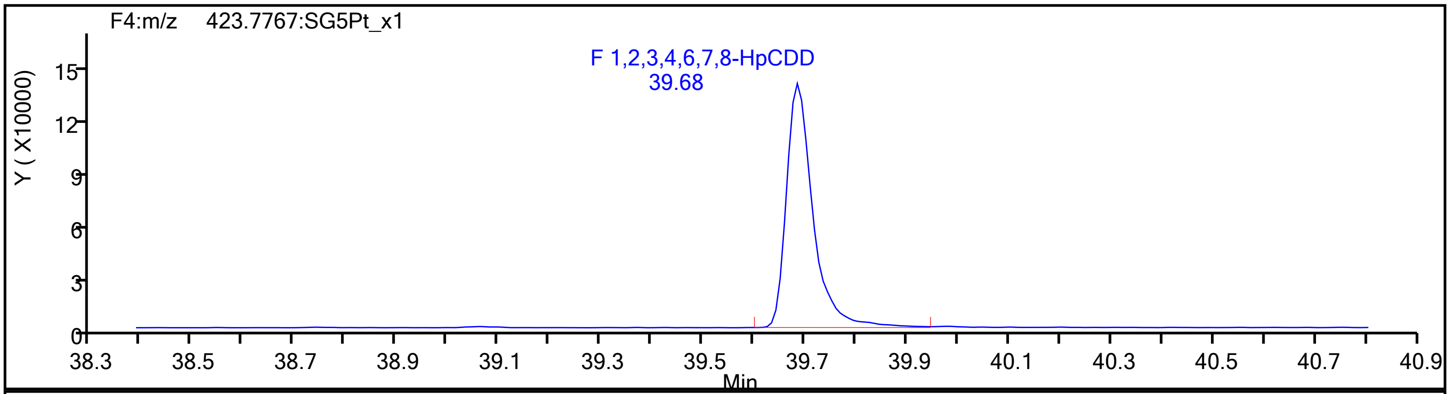

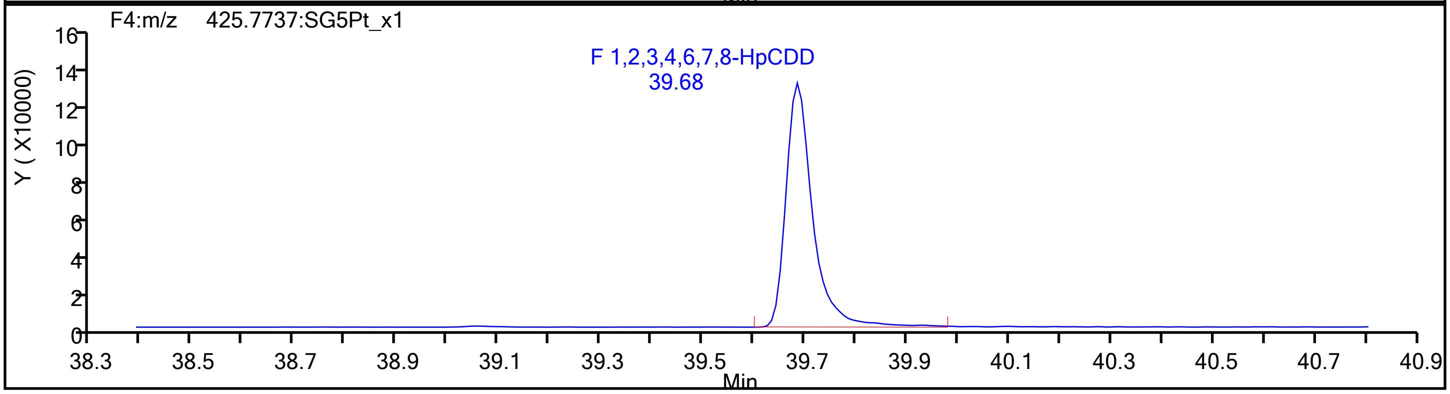

HpCDD Standards

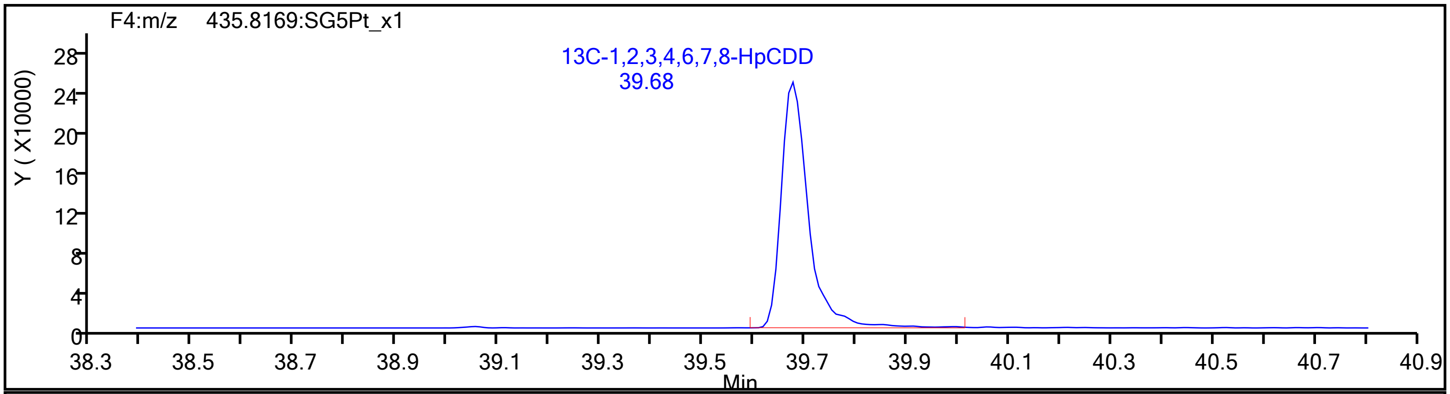

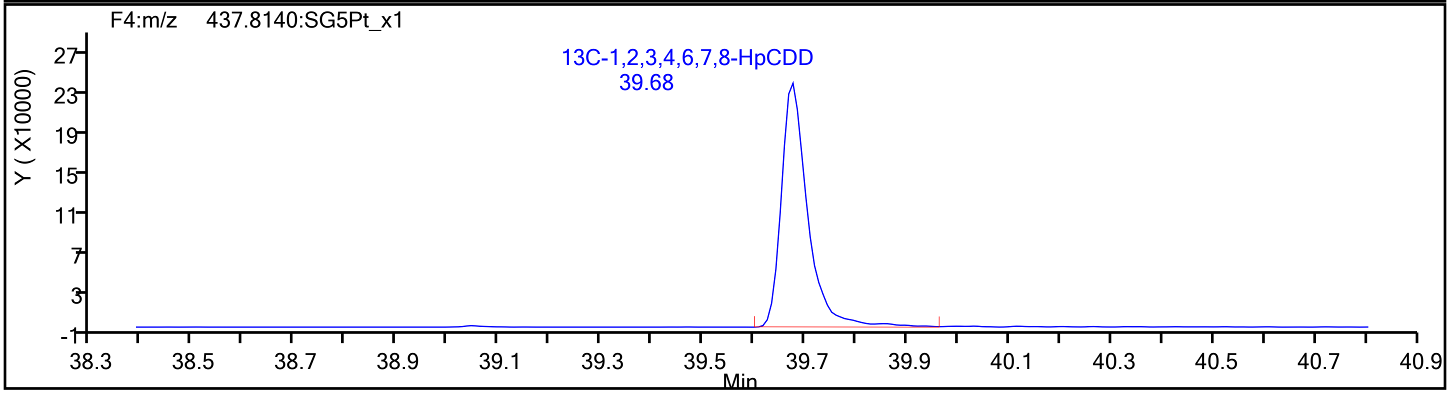

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

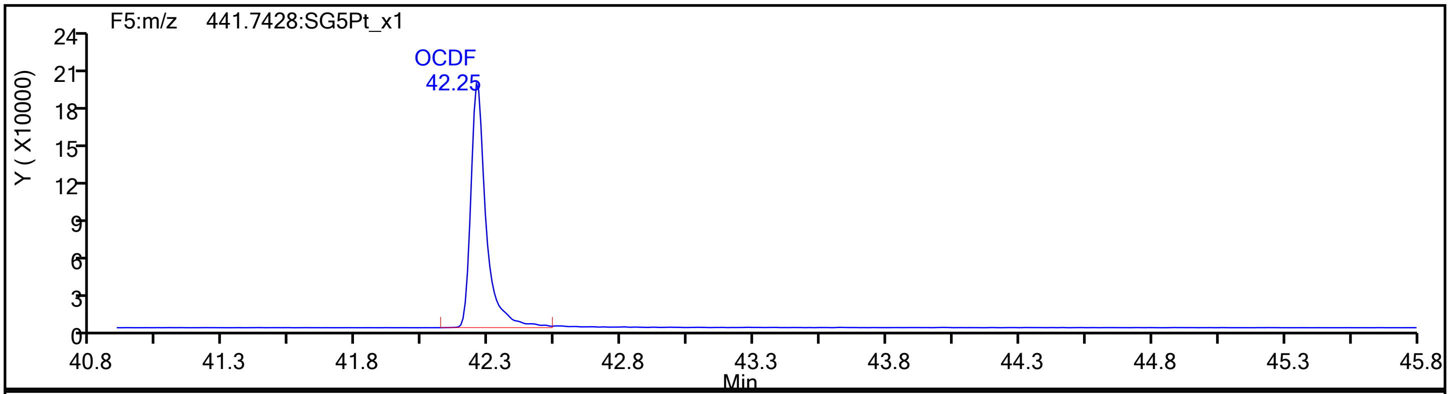

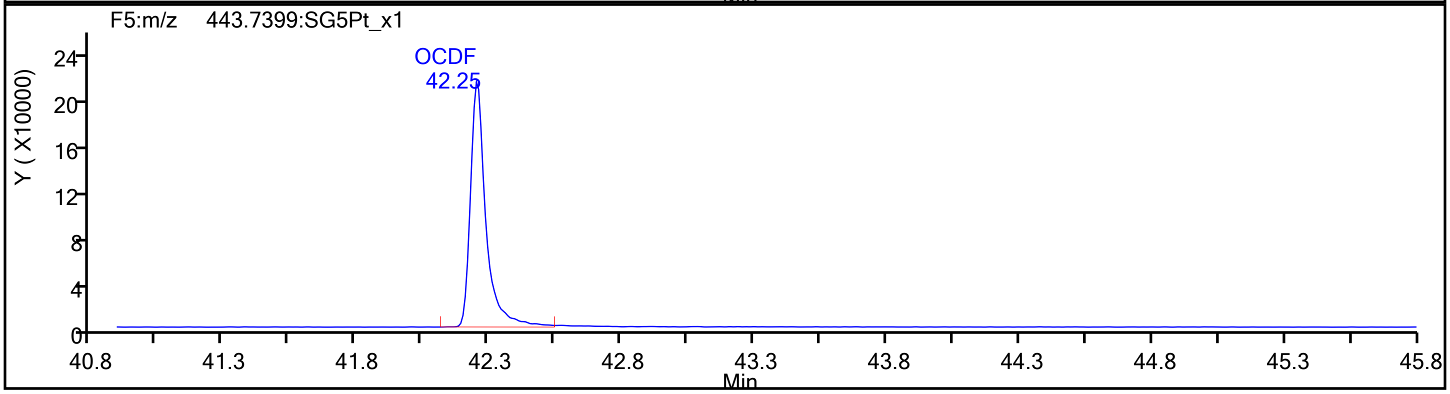

OCDF Standards

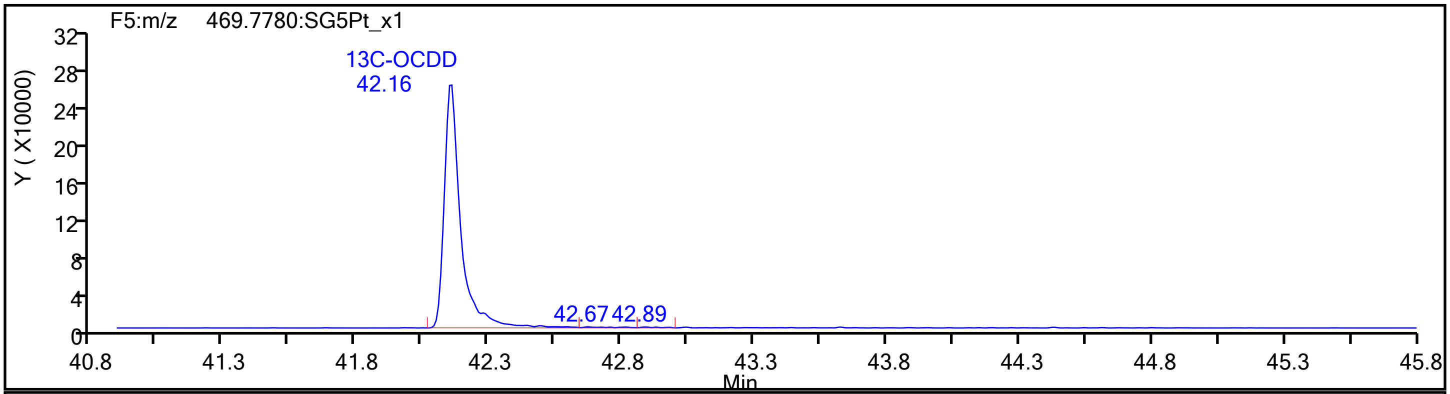

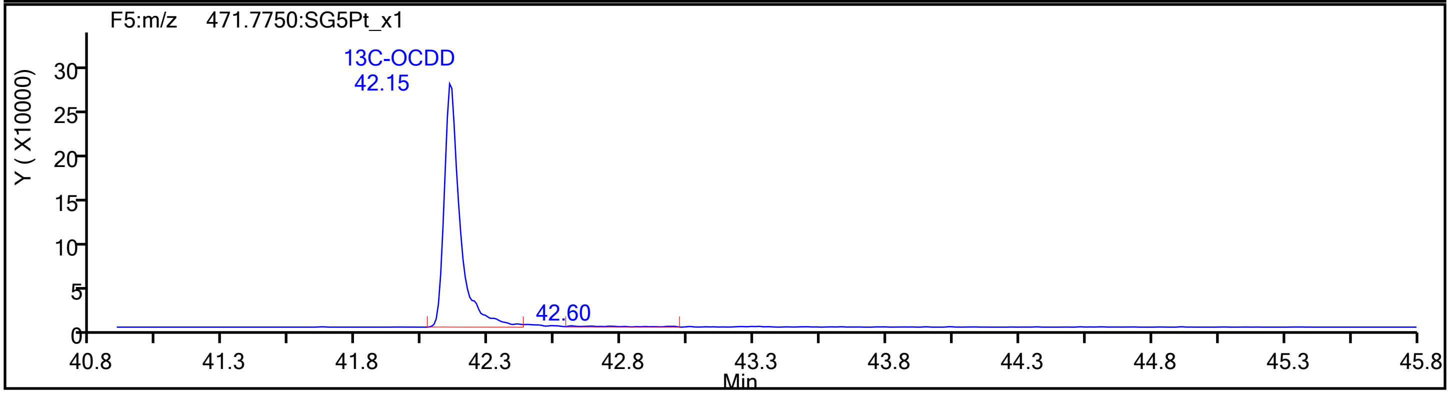

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

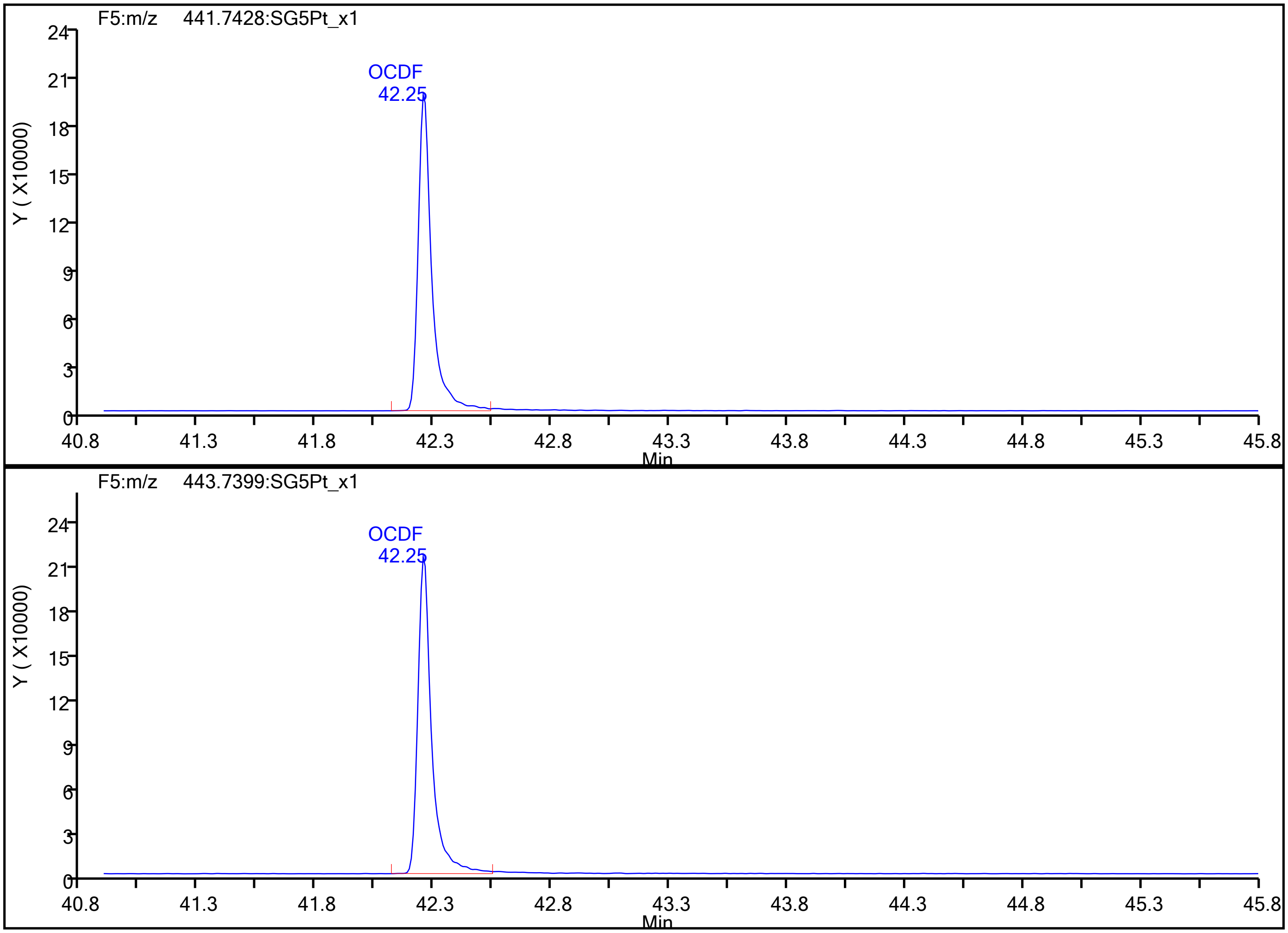

OCDF Interference Mass

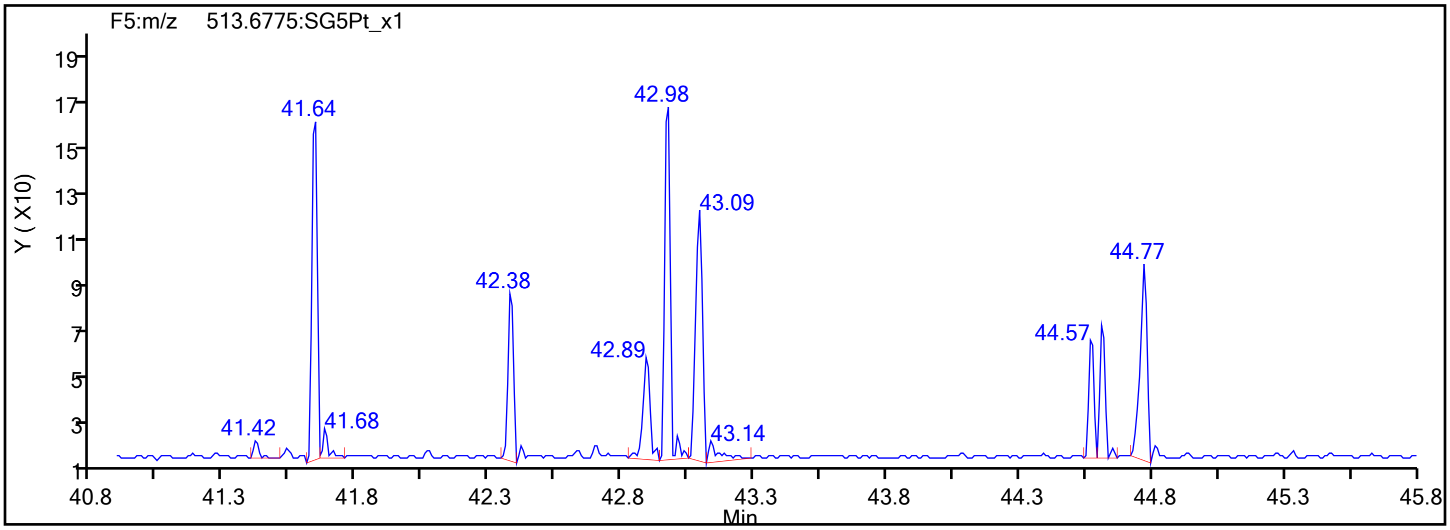

Report Date: 25-Nov-2020 02:01:14　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

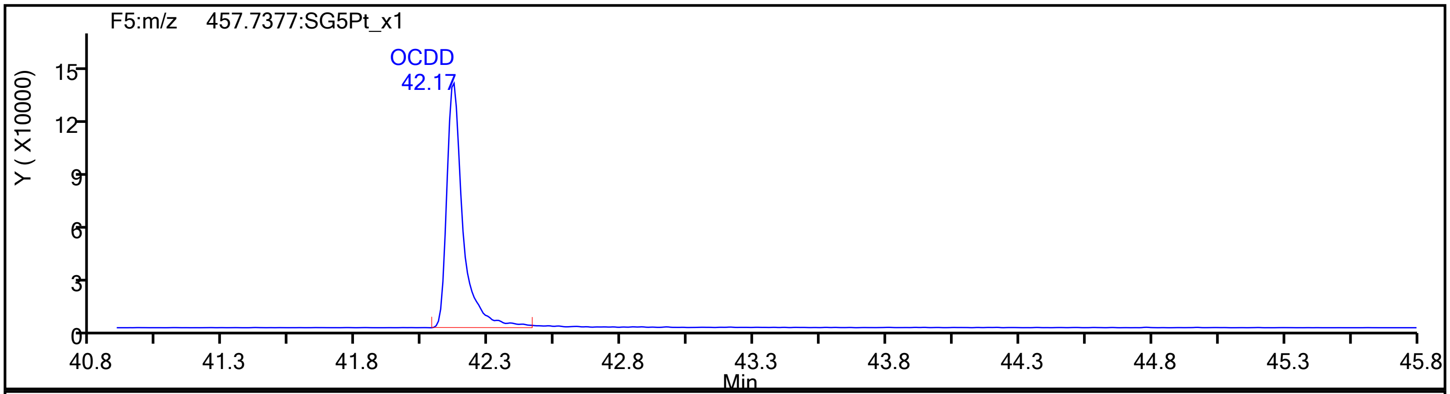

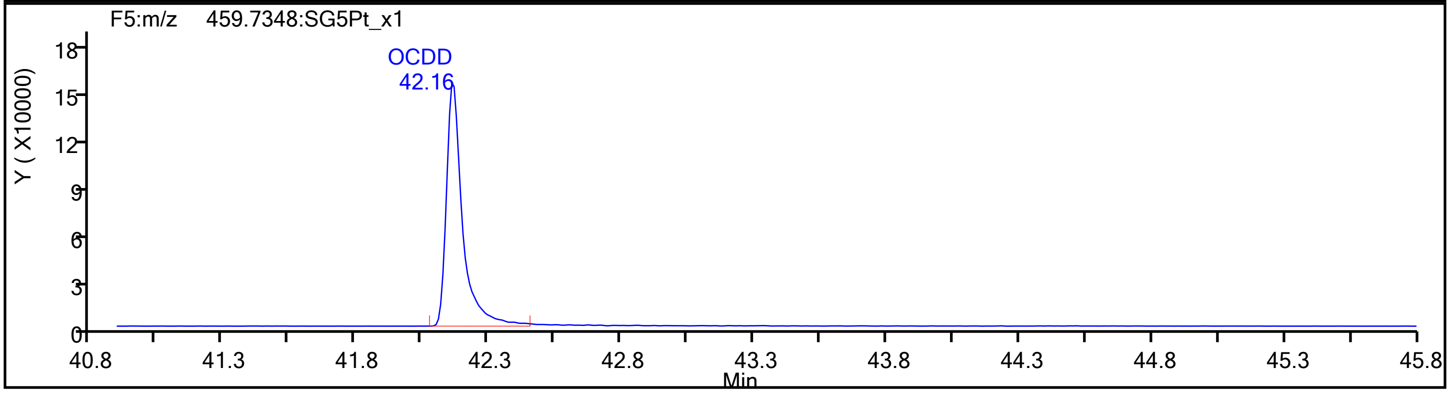

OCDD Standards

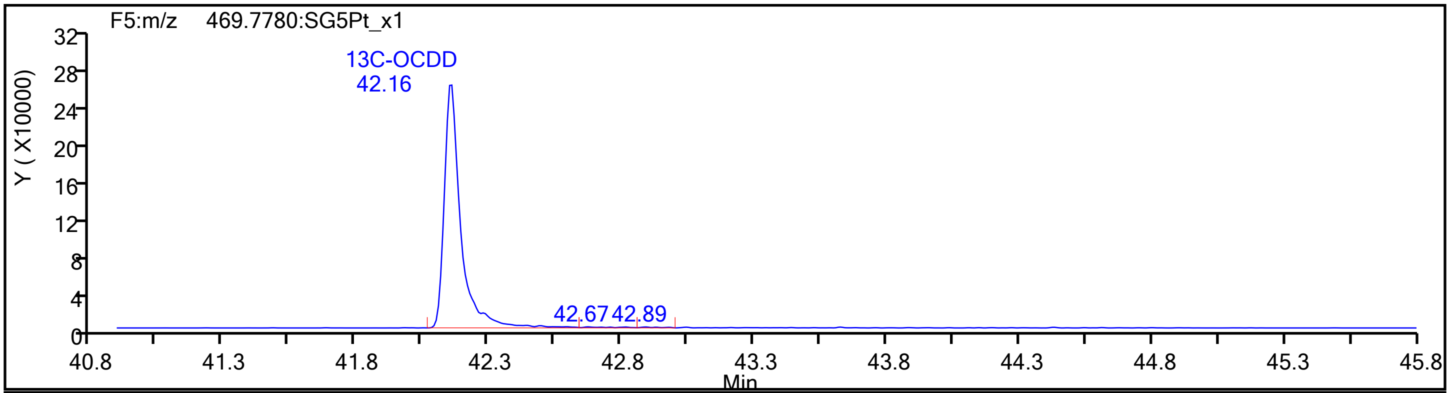

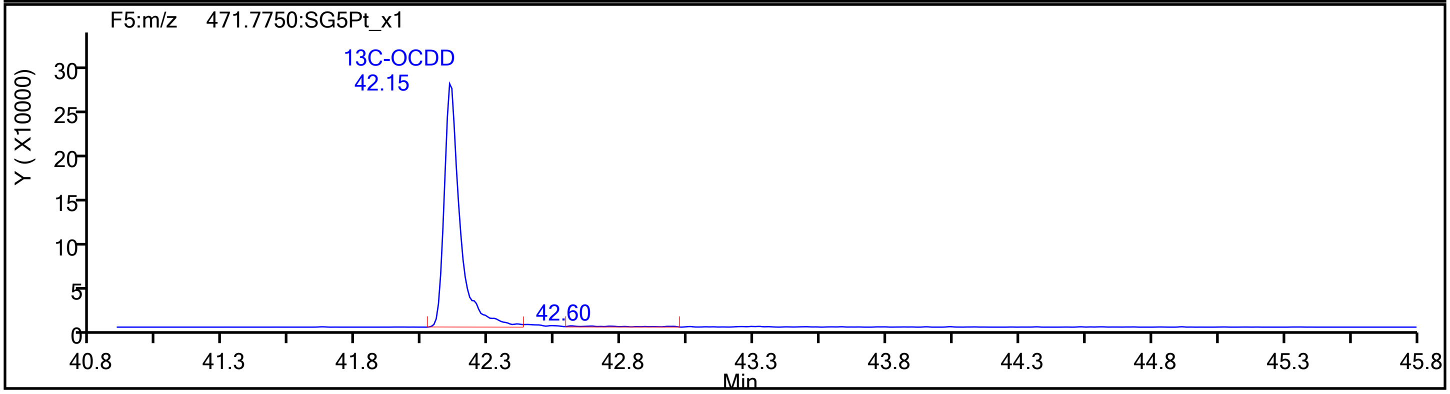

Report Date: 25-Nov-2020 02:01:14 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d

Injection Date: 24-Nov-2020 07:33:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777

Sample Line#: 28

Column Type: DB-5

Column Dia: 0.32 mm

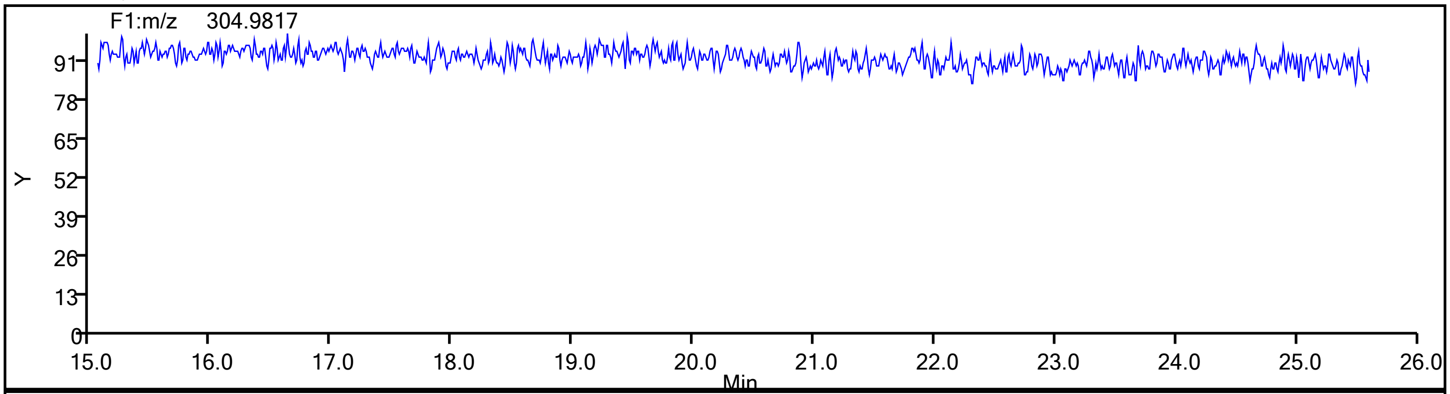

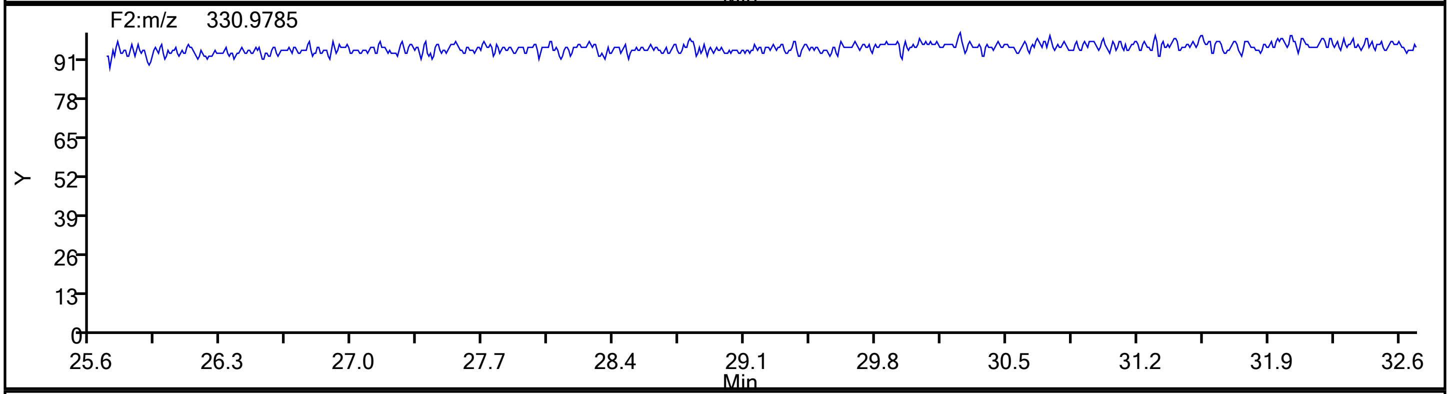

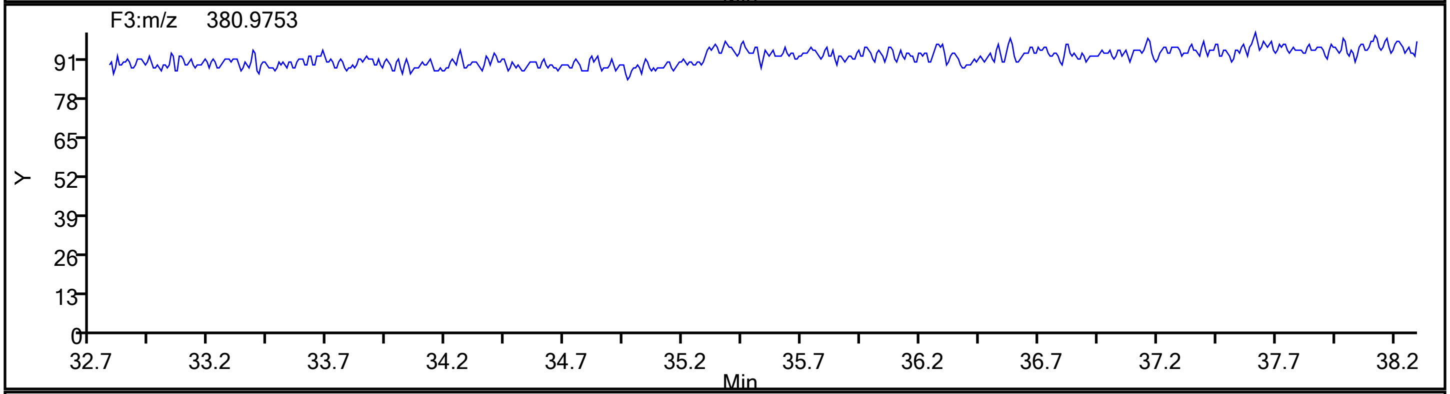

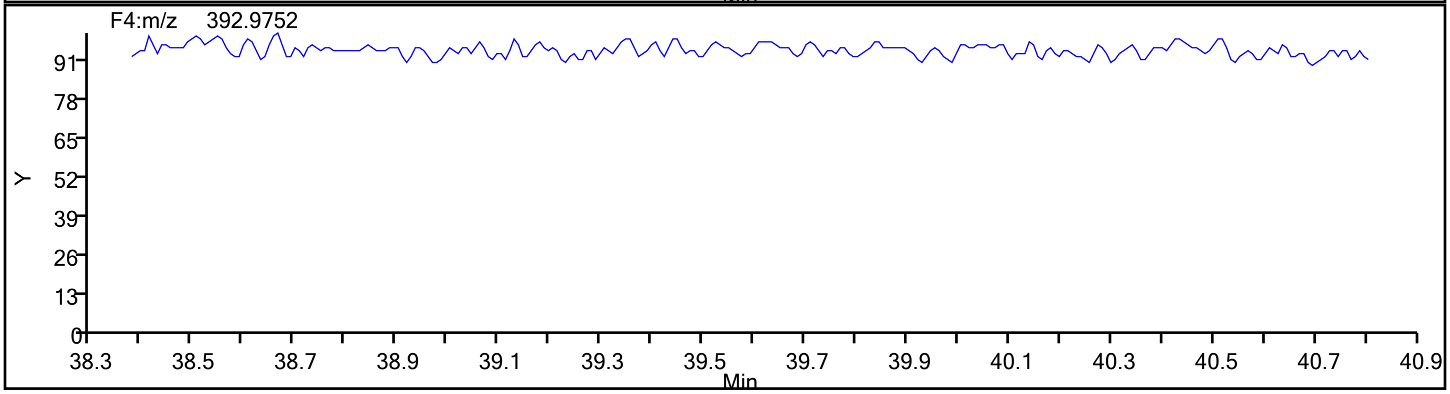

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_32.d		
Injection Date:	24-Nov-2020 07:33:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

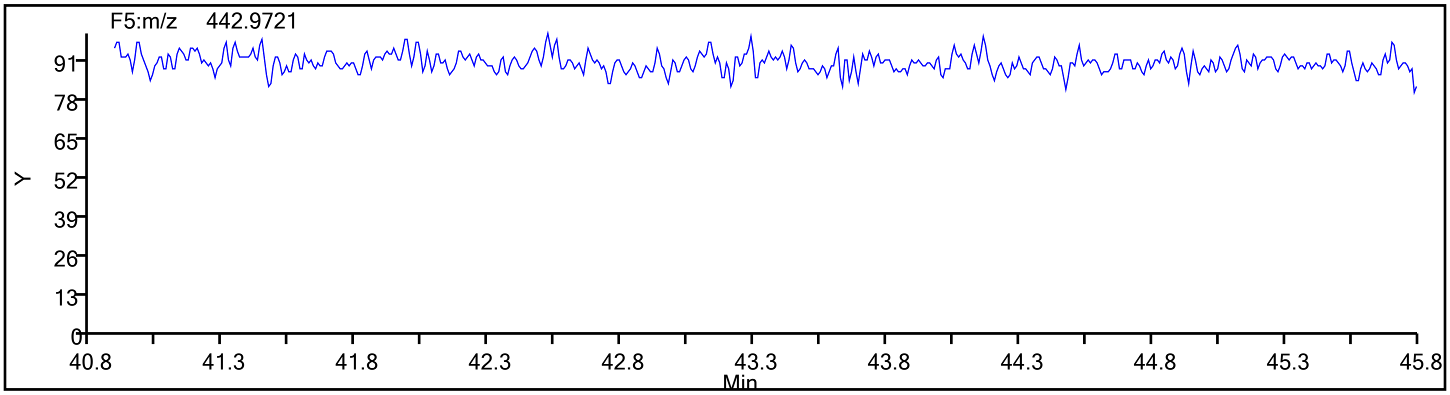

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 14:12:48 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 091720 WDM HRDXNCP_00042
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:03 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 15:04:13

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.203	49250871	0.76	1.3598					0.00	
2,3,7,8-TCDF	17.234	94619925	0.76	0.9077	84.7	84.7	0.3823	0.3823		
A Non-2,3,7,8-sub-TCDF	16.924						0.3823	0.3823		
S Total TCDF					84.7	84.7	0.3823	0.3823		
D 13C-2,3,7,8-TCDD	17.914	36781250	0.77	1.0536					0.00	
2,3,7,8-TCDD	17.929	38351069	0.76	1.0061	41.5	41.5	0.1547	0.1547		
A Non-2,3,7,8-sub-TCDD	17.370						0.1547	0.1547		
S Total TCDD					41.5	41.5	0.1547	0.1547		
A F1 PeCDFs	19.789						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.936	640258	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.187						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.073						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.739	284758	1.14	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.703	30782578	1.03	1.3603						
1,2,3,4,7,8,9-HpCDF	34.761	26162379	1.03	1.3207						
A Non-2,3,7,8-sub-HpCDF	34.232						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.481	23543258	1.03	0.9988						
A Non-2,3,7,8-sub-HpCDD	34.208						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.799	52685451	0.78							
1,3,6,8-TCDD	15.707	38886052	0.75							
2,3,4,7-TCDF	17.234	94619925	0.76							
1,2,3,7-TCDD	17.808	33726511	0.76							
1,2,3,9-TCDF	18.095	40906666	0.75							
1,2,3,9-TCDD	18.095	39676870	0.77							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.033	15863837								
1,2,8,9-TCDF	19.048	42747067	0.76							
1,3,4,6,8-PeCDF	19.305	49971187	1.57							
1,2,4,7,9-PeCDD	21.080	32106370	1.58							
1,2,3,8,9-PeCDD	25.294	29558915	1.56							
1,2,3,8,9-PeCDF	25.525	32468714	1.55							
1,2,3,4,6,8-HxCDF	27.784	30591446	1.24							
1,2,4,6,7,9-HxCDD	29.368	25005964	1.23							
1,2,3,4,6,7-HxCDD	32.043	24127463	1.23							
1,2,3,4,8,9-HxCDF	32.363	27025417	1.24							
1,2,3,4,6,7,9-HpCDD	33.934	26010589	1.01							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Sep-2020 14:12:48 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 091720 WDM HRDXNCP_00042
Misc. Info.: 17SE2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Sep-2020 10:38:03 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: shardaa Date: 17-Sep-2020 15:04:13

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	1.000	21193368	5354066	6881	17202	778		
317.9389	17.203	17.203	0	1.000	28057503	7203342	4698	11745	1533	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.234	17.218	1	1.002	40861480	9454804	17414	43535	543		
305.8987	17.234	17.218	1	1.002	53758445	12423371	26167	65417	475	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.924						17414	43535			
305.8987	16.924						26167	65417			
13C-2,3,7,8-TCDD											
331.9368	17.914	17.914	0	1.000	16059124	3776944	4960	12400	761		
333.9339	17.899	17.914	-1	1.000	20722126	4827538	3609	9022	1338	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.920	1	1.001	16551747	4039033	6220	15550	649		
321.8936	17.929	17.920	1	1.001	21799322	5268055	7172	17930	735	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.370						6220	15550			
321.8936	17.370						7172	17930			
A F1 PeCDFs											
339.8597	19.789						1673	4182			
341.8567	19.789						1070	2675			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	20.834	22.936	-126	1.000	59520	9829	2726	6815	4		
341.8567	20.821	22.936	-127	1.000	62266	9241	2187	5467	4	0.96(1.32-1.78)	
339.8597	21.666	22.936	-76	1.000	76538	13329	2726	6815	5		
341.8567	21.666	22.936	-76	1.000	71982	10240	2187	5467	5	1.06(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	22.239	22.936	-42	1.000	149800	18486	2726	6815	7		
341.8567	22.226	22.936	-43	1.000	104574	15321	2187	5467	7	1.43(1.32-1.78)	
339.8597	22.798	22.936	-8	1.000	96518	14757	2726	6815	5		
341.8567	22.771	22.936	-10	1.000	65529	9587	2187	5467	4	1.47(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.187						3279	8197			
357.8516	23.187						2096	5240			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.073						4012	10030			
375.8178	30.073						3098	7745			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.872	30.739	8	1.000	151698	26301	3698	9245	7		
391.8127	30.885	30.739	9	1.000	133060	26685	3064	7660	9	1.14(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.703	33.694	1	1.000	15628584	4803341	15156	37890	317		
409.7789	33.691	33.694	0	1.000	15153994	4733366	15833	39582	299	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.761	34.763	0	1.000	13275657	3644471	15156	37890	240		
409.7789	34.761	34.763	0	1.000	12886722	3595180	15833	39582	227	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.232						15156	37890			
409.7789	34.232						15833	39582			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.481	34.474	0	1.000	11962711	3539015	11522	28805	307		
425.7737	34.481	34.474	0	1.000	11580547	3380922	10862	27155	311	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.208						11522	28805			
425.7737	34.208						10862	27155			
1,3,6,8-TCDF											
303.9016	14.799	14.799	0		23019498	7225498	17414	43535	415		
305.8987	14.799	14.799	0		29665953	9356851	26167	65417	358	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.707	15.707	0		16676016	4870129	6220	15550	783		
321.8936	15.707	15.707	0		22210036	6470444	7172	17930	902	0.75(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.234	17.234	0		40861480	9454804	17414	43535	543		
305.8987	17.234	17.234	0		53758445	12423371	26167	65417	475	0.76(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.808	17.808	0		14613924	3629930	6220	15550	584		
321.8936	17.808	17.808	0		19112587	4695816	7172	17930	655	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.095	18.095	0		17582733	4186088	17414	43535	240		
305.8987	18.095	18.095	0		23323933	5427889	26167	65417	207	0.75(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.095	18.095	0		17277087	4050603	6220	15550	651		
321.8936	18.095	18.095	0		22399783	5245387	7172	17930	731	0.77(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	19.033	19.033	0		15863837	3560576	6220	15550	572		
1,2,8,9-TCDF											
303.9016	19.048	19.048	0		18481374	4024176	17414	43535	231		
305.8987	19.033	19.048	-1		24265693	5222787	26167	65417	200	0.76(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.305	19.305	0		30553599	6679807	1673	4182	3993		
341.8567	19.305	19.305	0		19417588	4276637	1070	2675	3997	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.080	21.080	0		19679913	3485372	3279	8197	1063		
357.8516	21.066	21.080	-1		12426457	2201634	2096	5240	1050	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.294	25.294	0		18021612	2589278	3279	8197	790		
357.8516	25.294	25.294	0		11537303	1672342	2096	5240	798	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.525	25.525	0		19715754	2822450	2726	6815	1035		
341.8567	25.512	25.525	-1		12752960	1811480	2187	5467	828	1.55(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.784	27.784	0		16954112	2203906	4012	10030	549		
375.8178	27.771	27.784	-1		13637334	1756070	3098	7745	567	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.368	29.368	0		13810229	1614262	3698	9245	437		
391.8127	29.354	29.368	-1		11195735	1300766	3064	7660	425	1.23(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.043	32.043	0		13319375	3548465	3698	9245	960		
391.8127	32.043	32.043	0		10808088	2862819	3064	7660	934	1.23(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.363	32.363	0		14977762	4045058	4012	10030	1008		
375.8178	32.363	32.363	0		12047655	3303867	3098	7745	1066	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.934	33.934	0		13068820	4207944	11522	28805	365		
425.7737	33.934	33.934	0		12941769	4085568	10862	27155	376	1.01(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Sep-2020 14:12:48 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 413246 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 22.936

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915				
2,3,4,7,8-PeCDF	0.951				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.834	59520	9829	62266	9241		0.96	R
21.666	76538	13329	71982	10240		1.06	R
22.239	149800	18486	104574	15321		1.43	
22.798	96518	14757	65529	9587		1.47	
Signal Totals:							
	382376	56401	304351	44389			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	686727	100790				1.26	RQ
	640258	96249					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (686727 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (640258 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Sep-2020 14:12:48	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	413246	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 30.739

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.001				
1,2,3,6,7,8-HxCDD	0.890				
1,2,3,7,8,9-HxCDD	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.872	151698	26301	133060	26685		1.14	
Signal Totals:							
	151698	26301	133060	26685			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	284758	52986				1.14	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (284758 * 0.0) / (0 * 0.000)

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

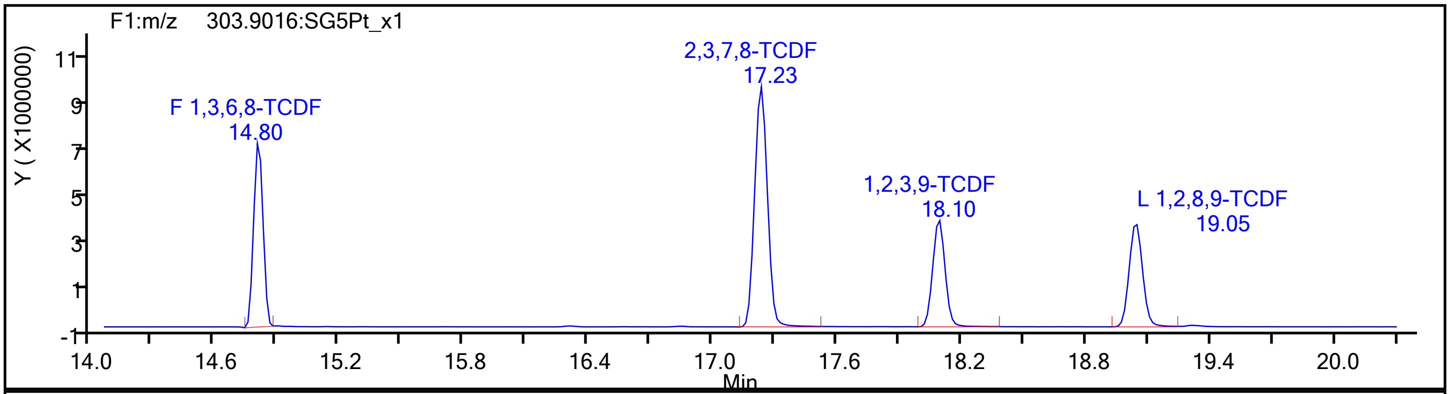

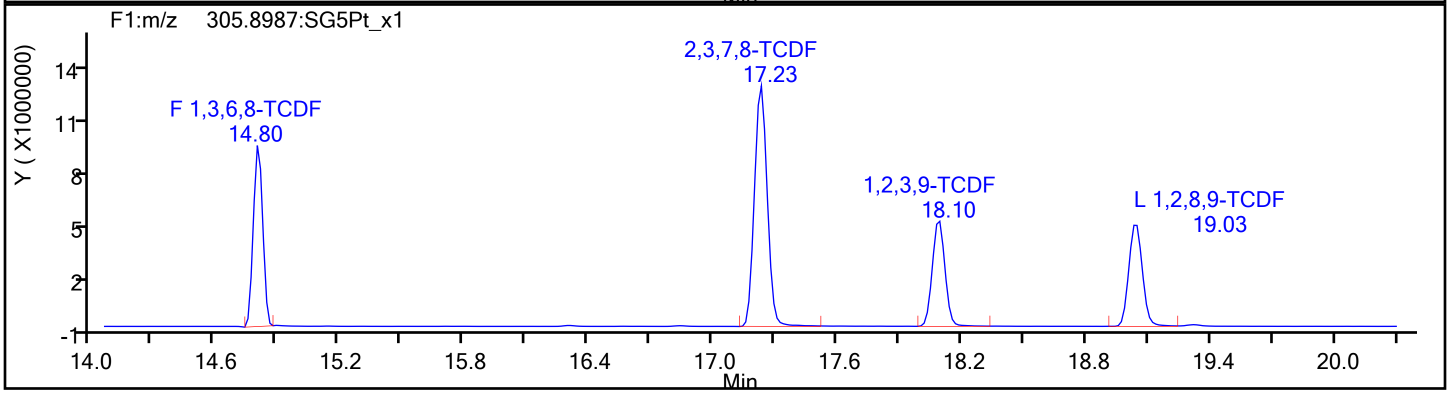

TCDF Standards

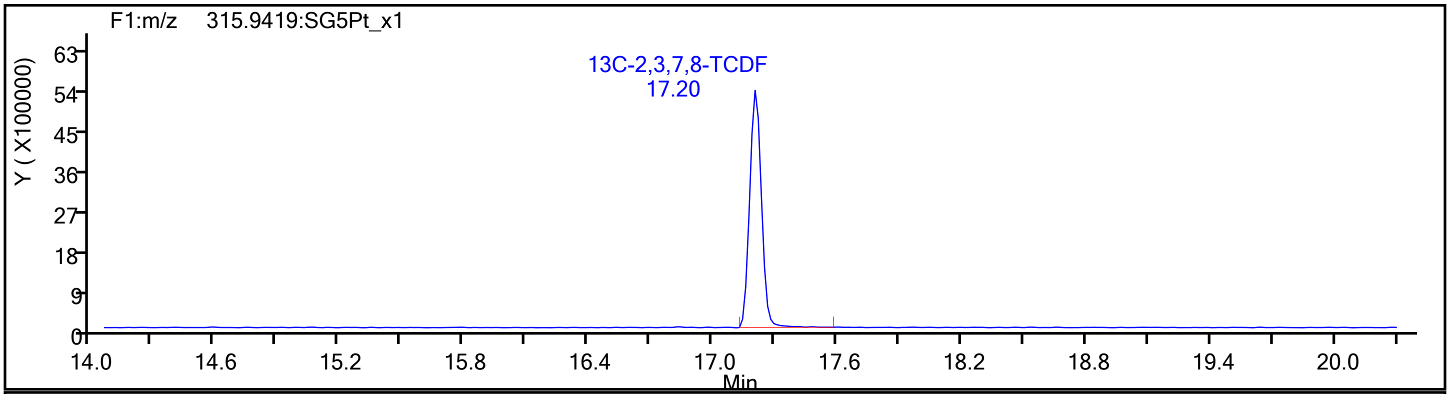

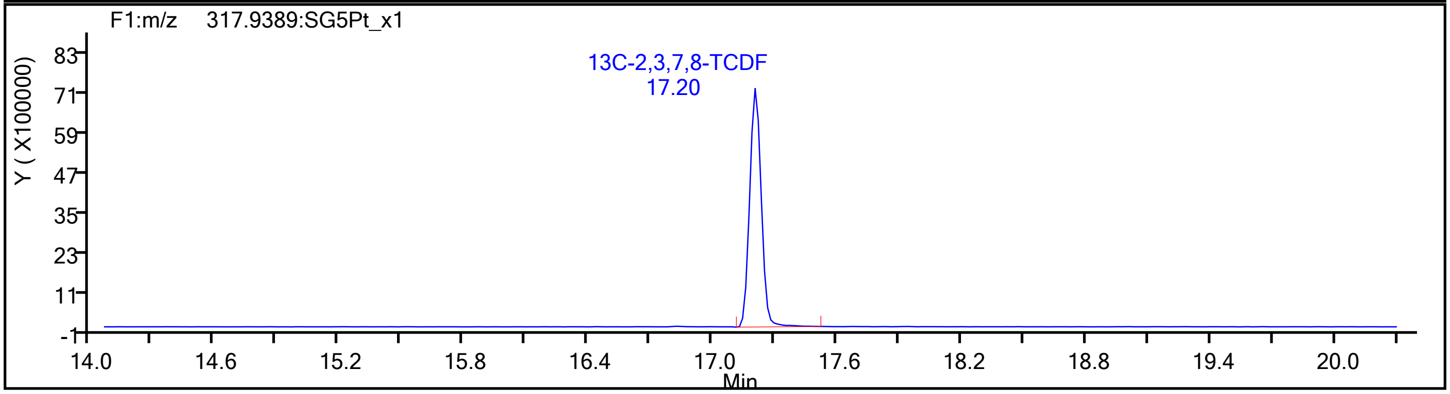

Report Date: 18-Sep-2020 10:38:07		Chrom Revision: 2.3 16-Sep-2020 17:17:04	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

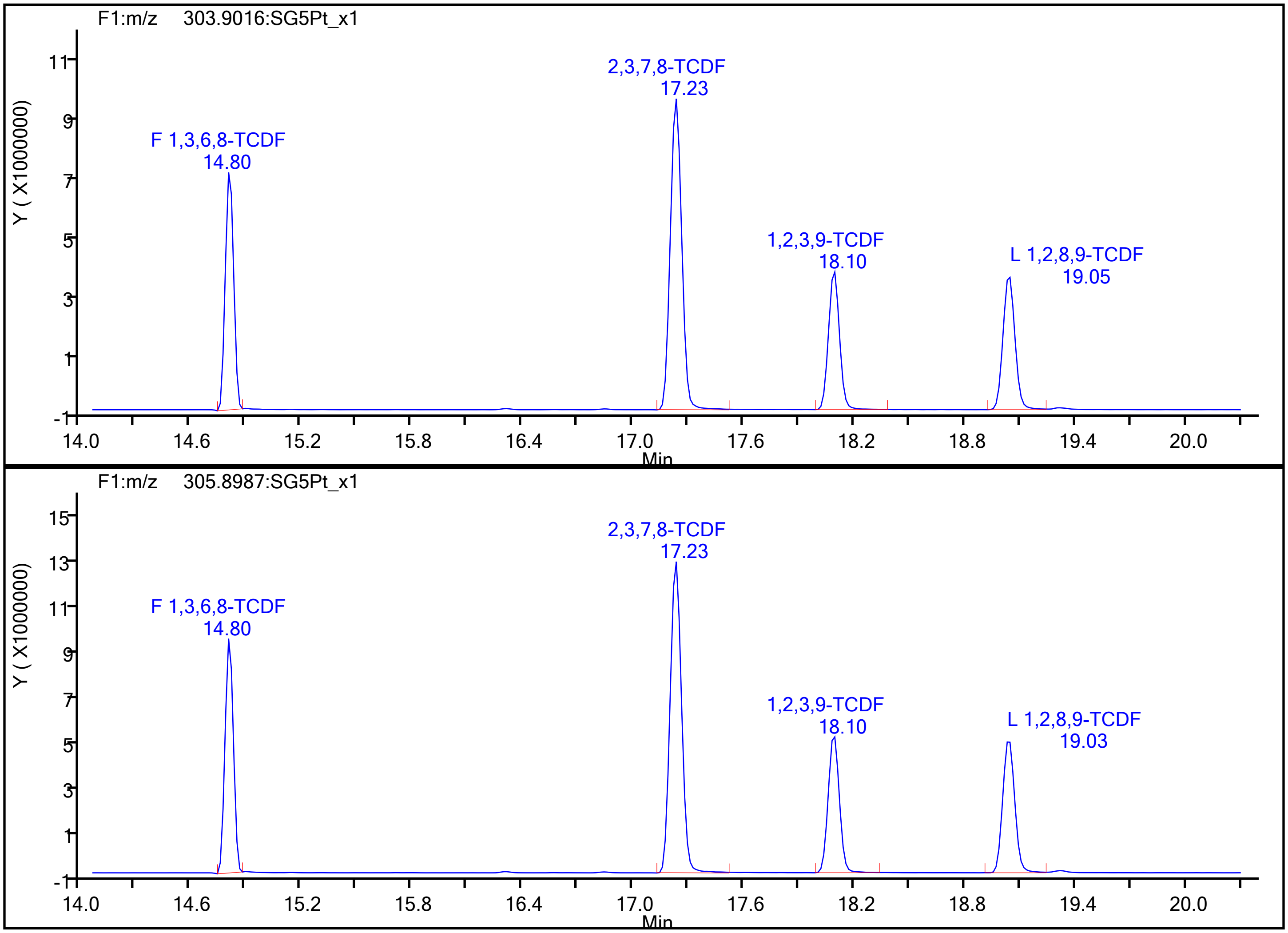

TCDF Interference Mass

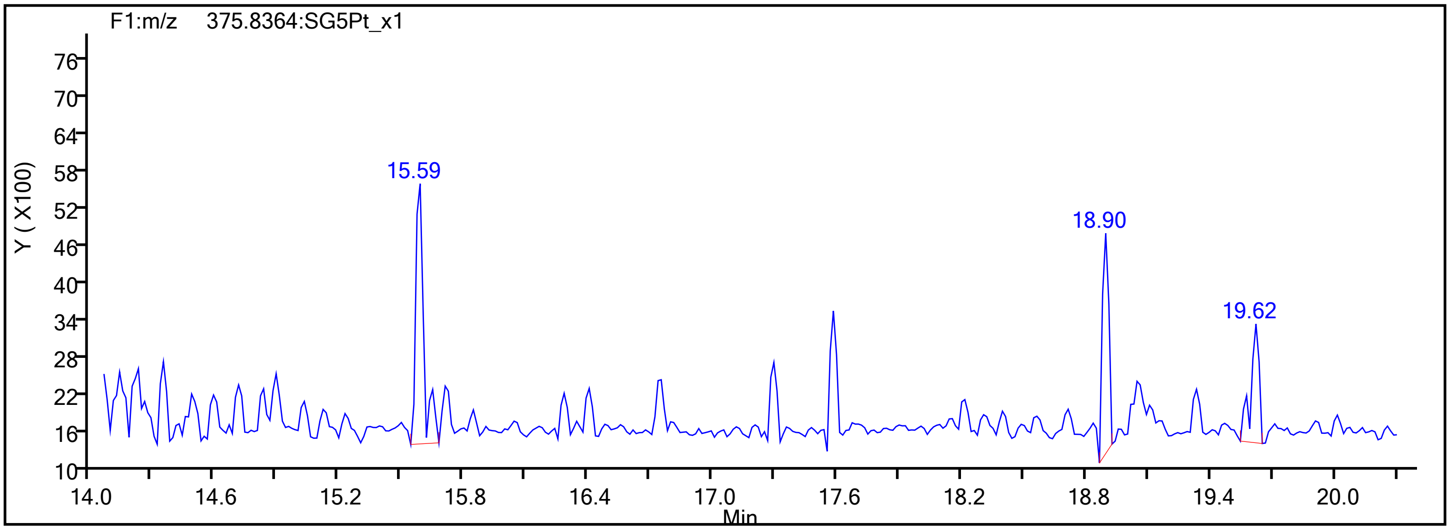

Report Date: 18-Sep-2020 10:38:07
Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

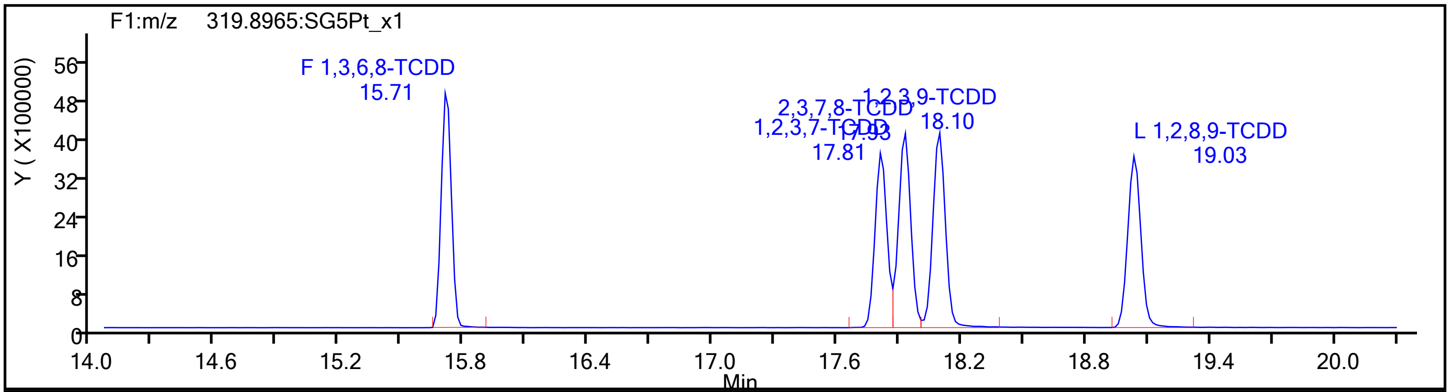

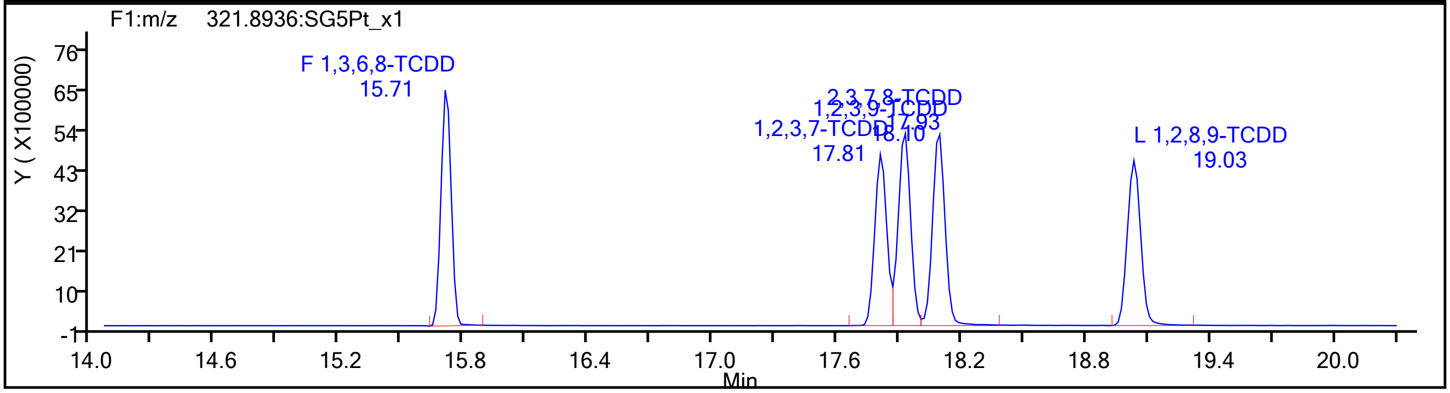

TCDD Standards

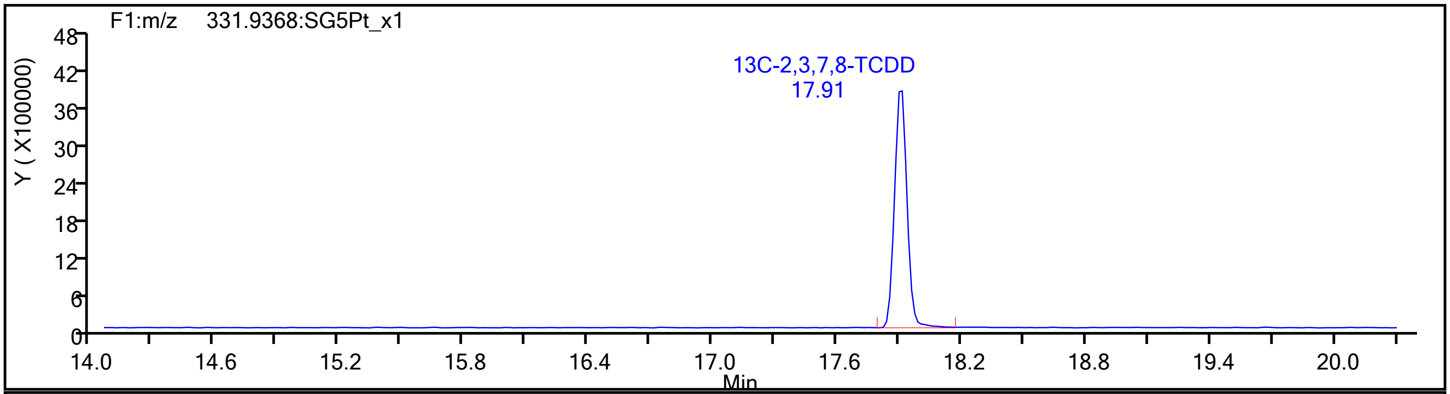

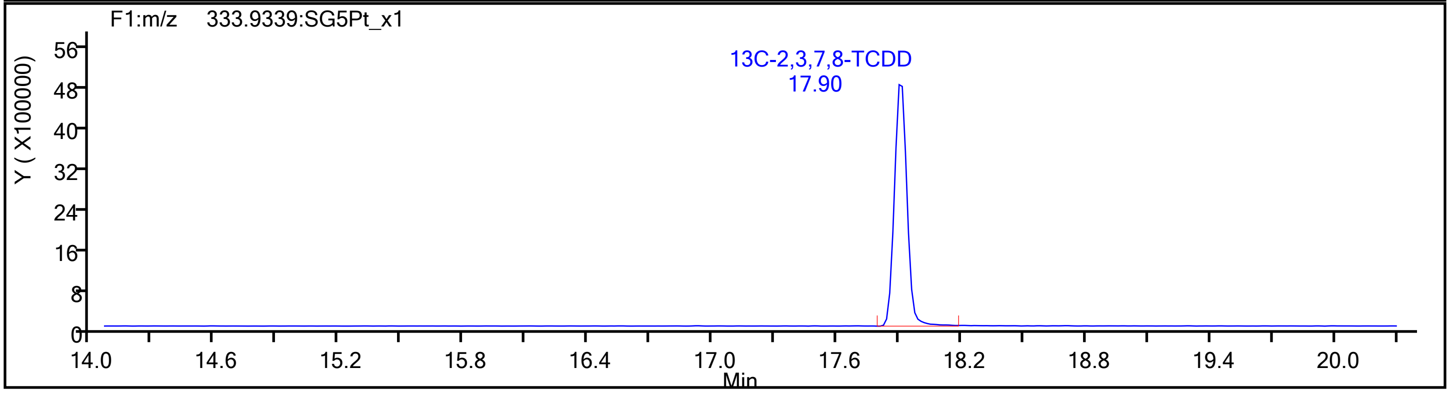

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

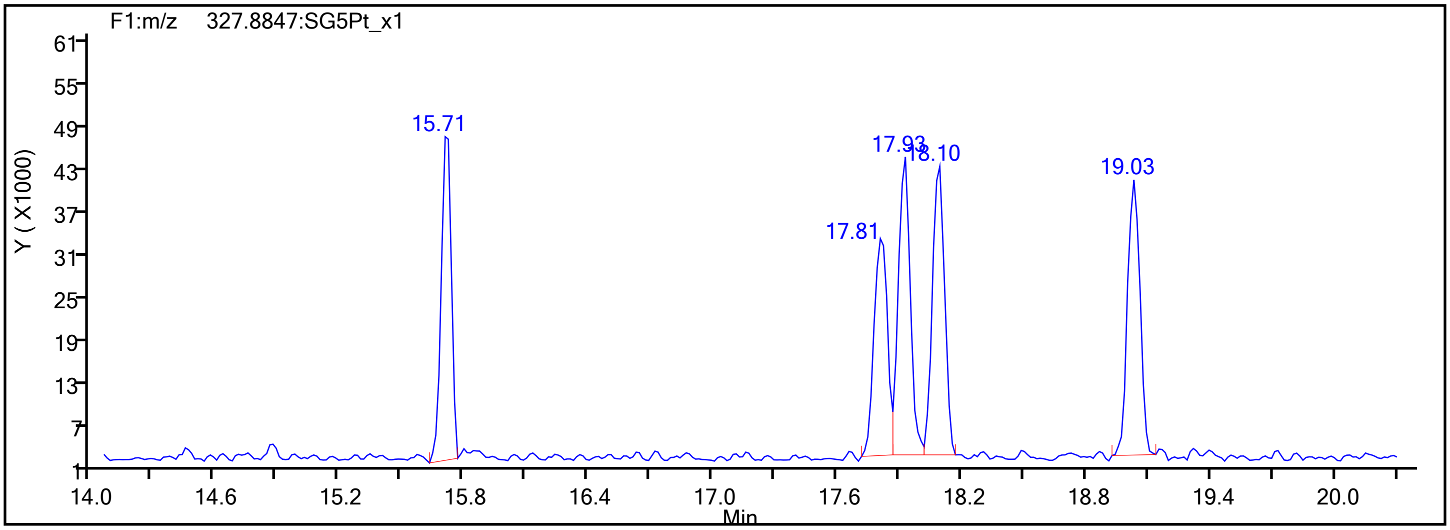

37Cl4-TCDD Standards

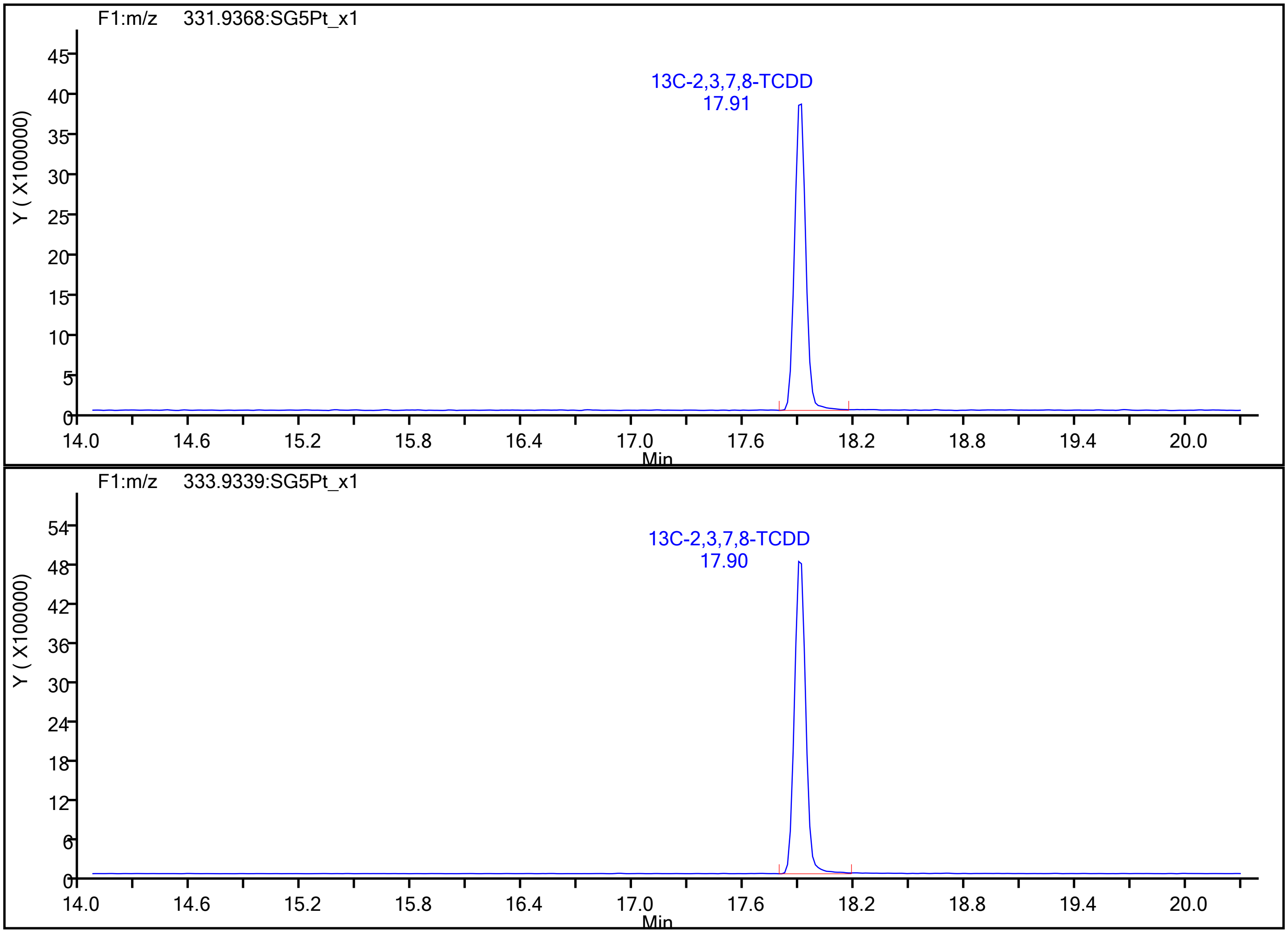

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

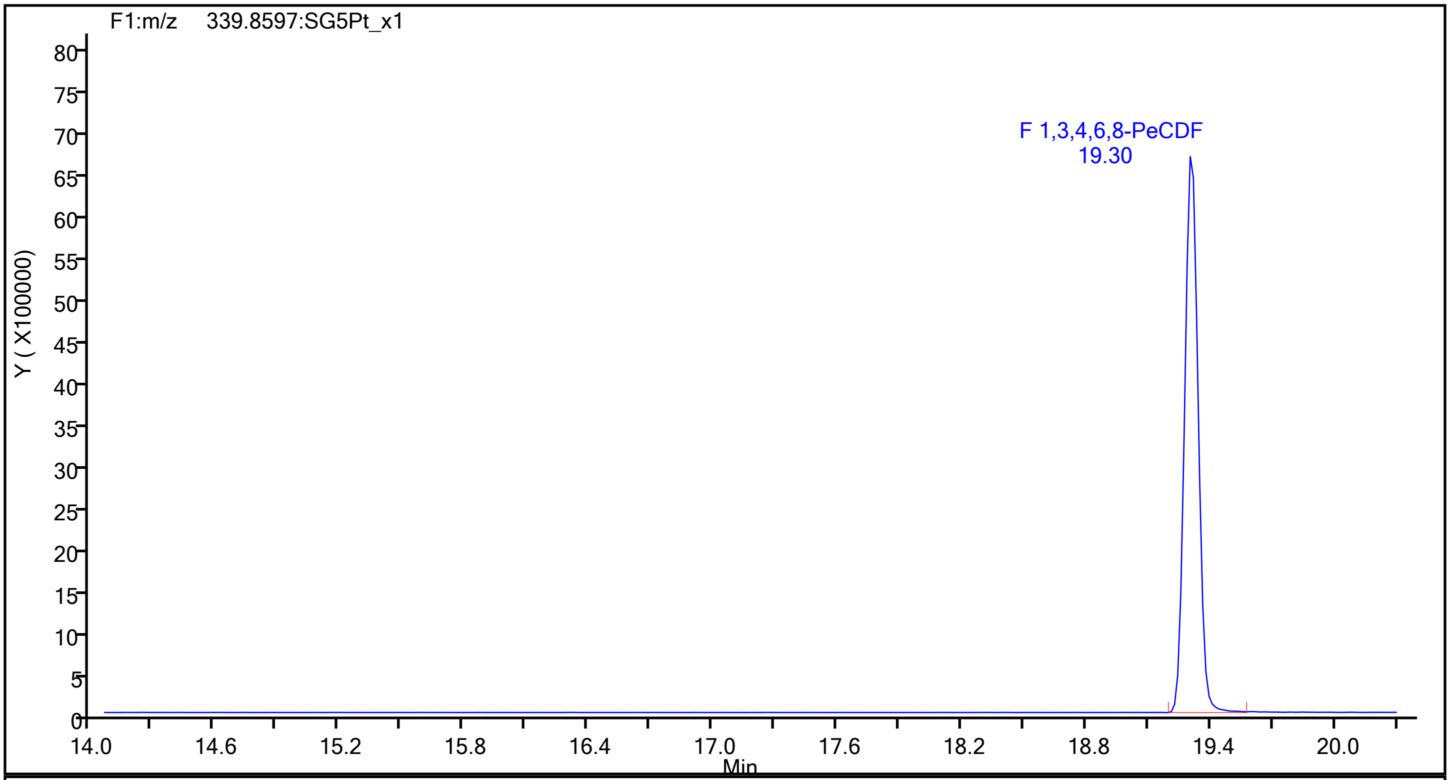

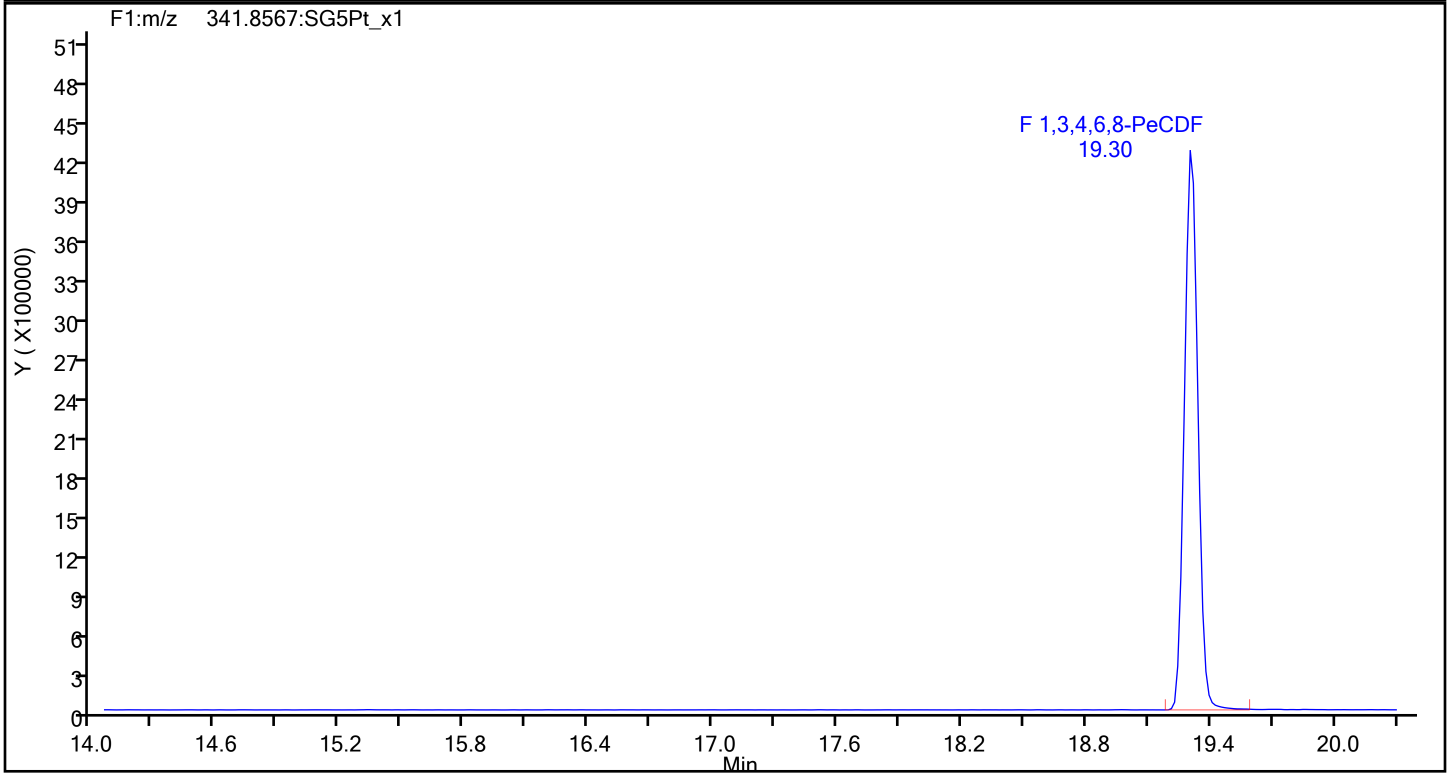

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

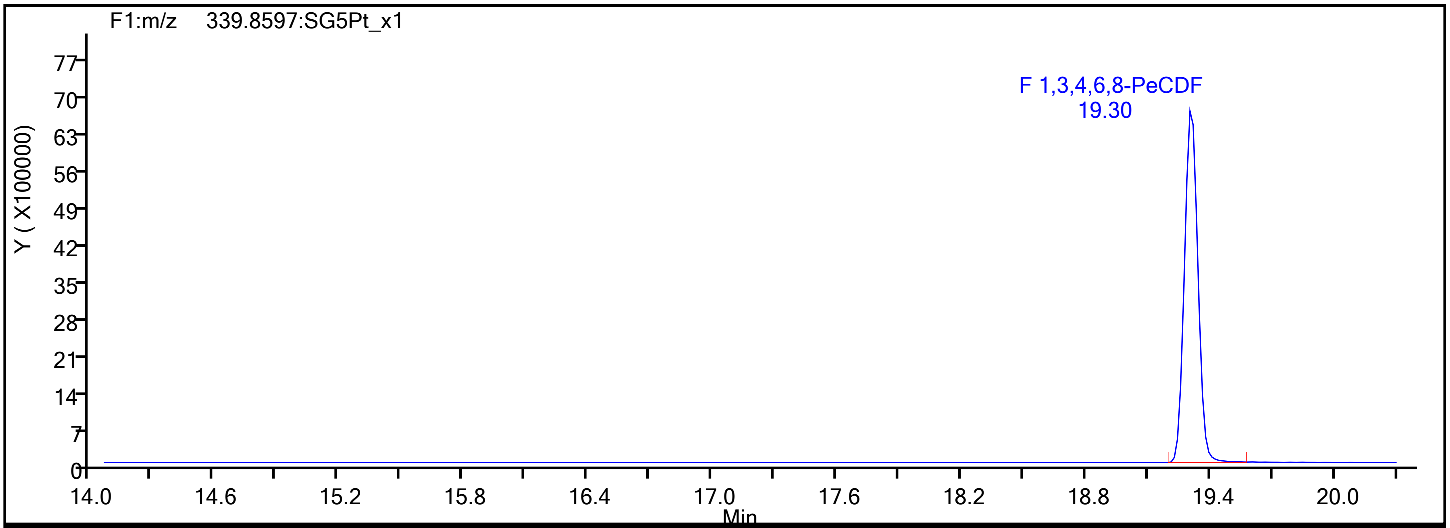

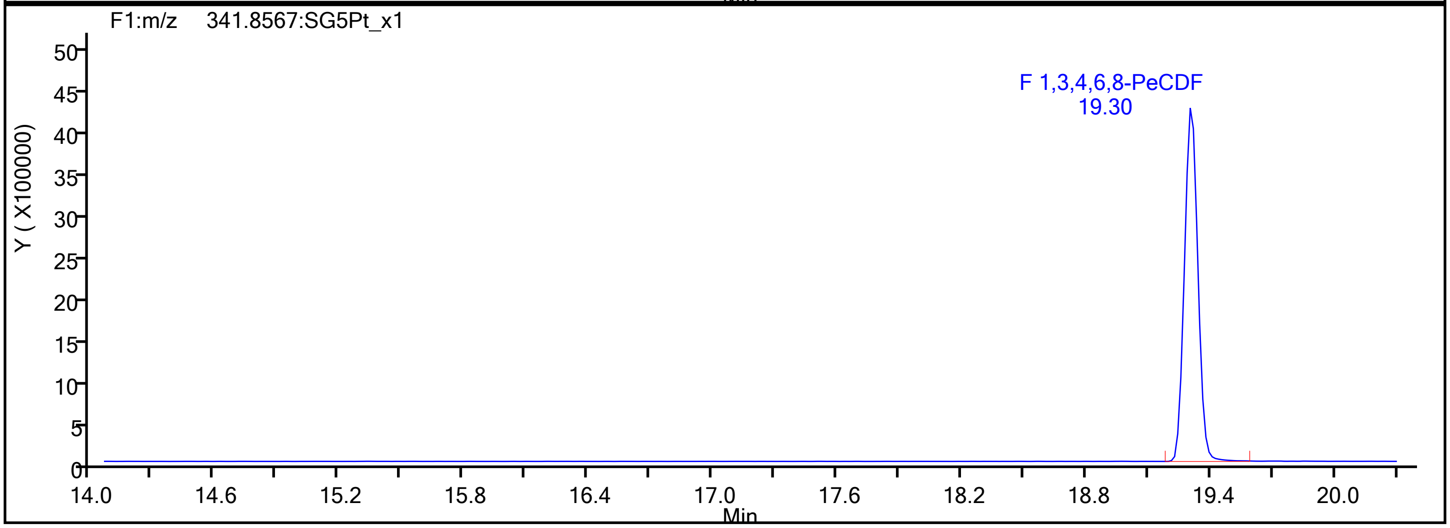

F1 PeCDFs Interference Mass

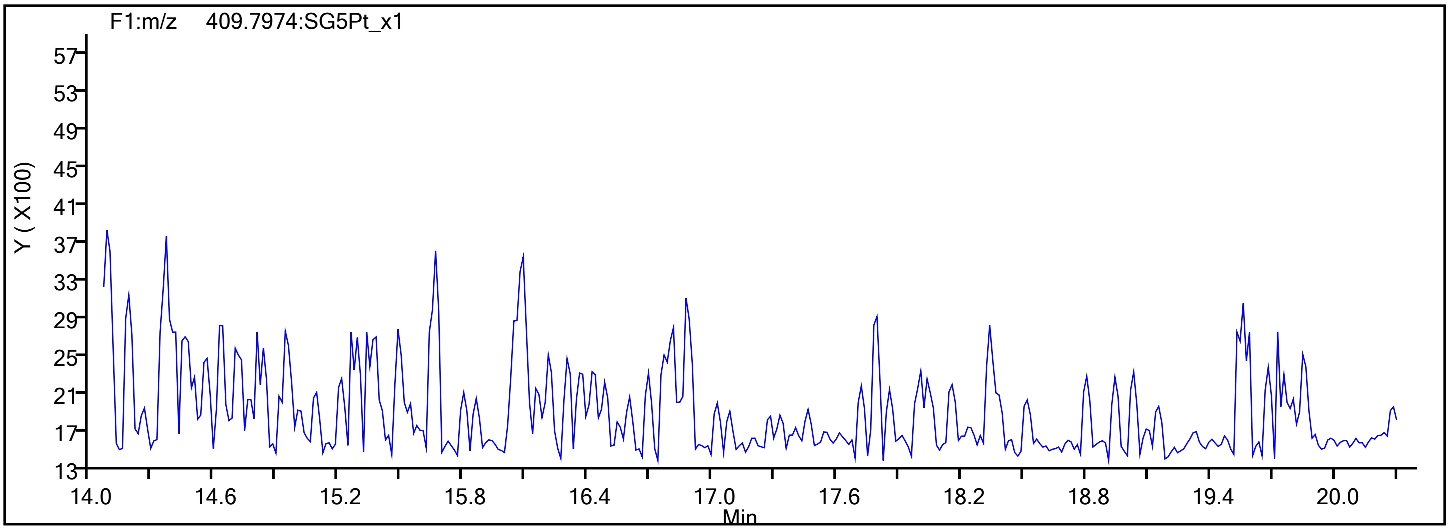

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

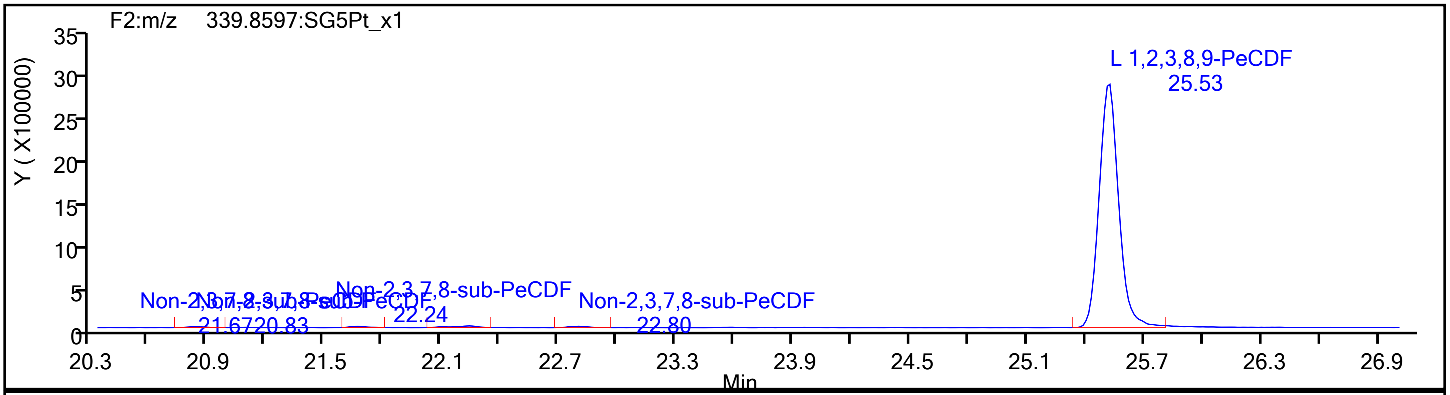

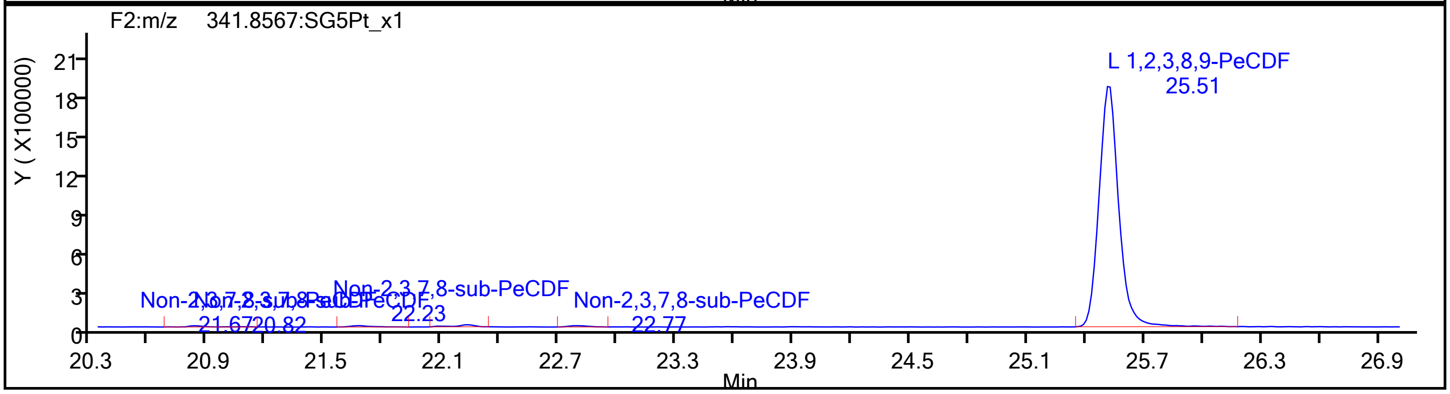

PeCDF Standards

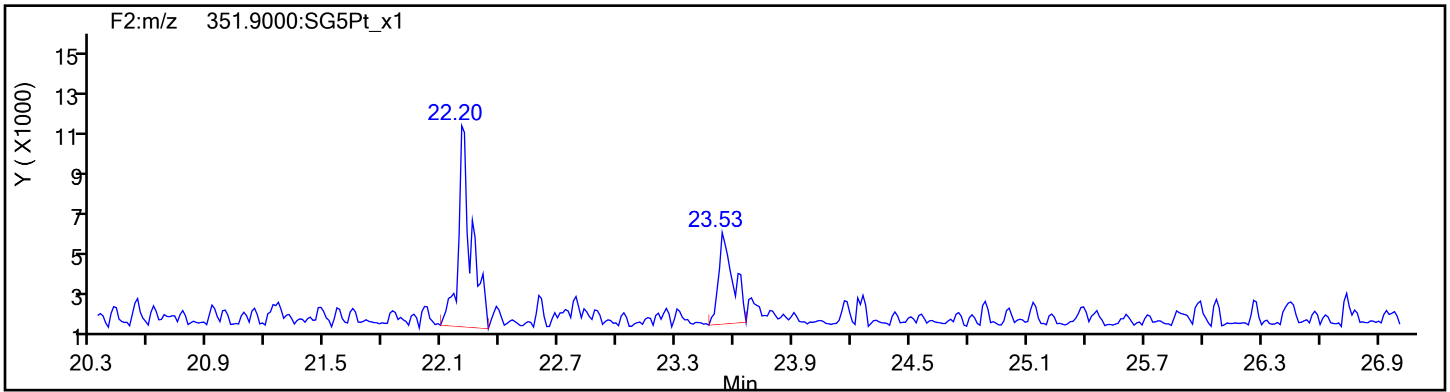

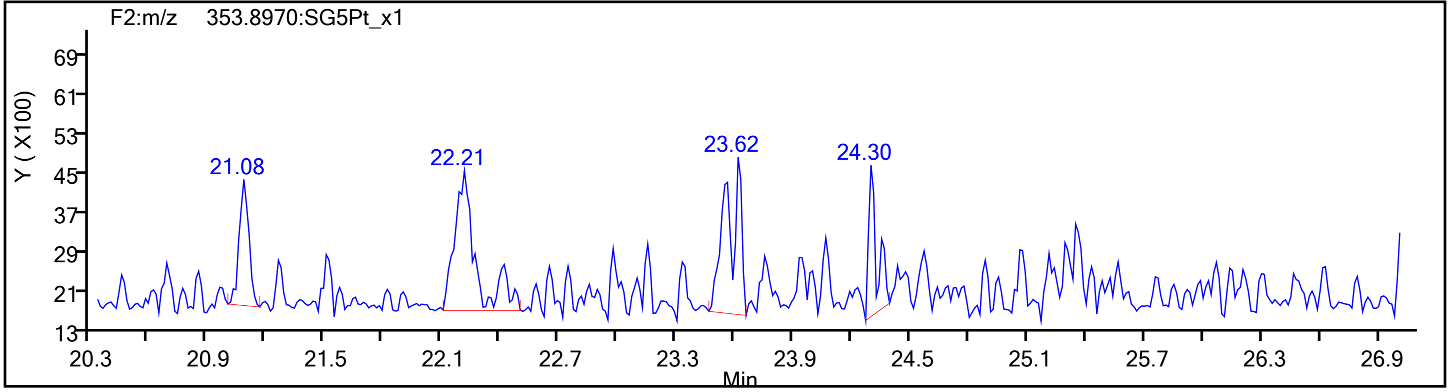

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

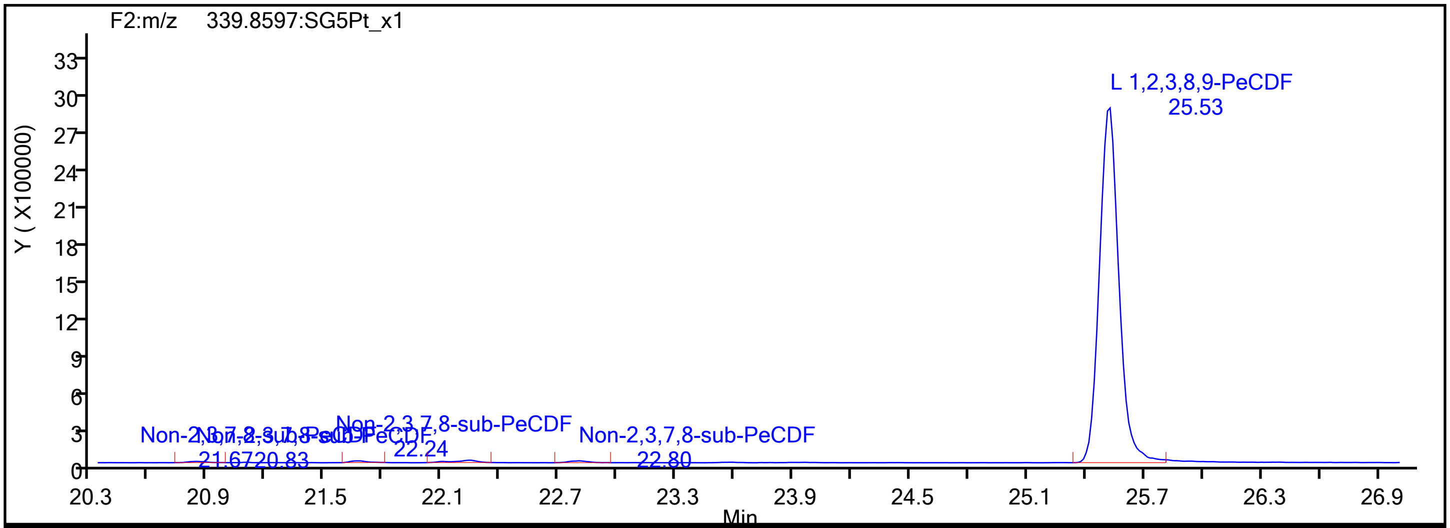

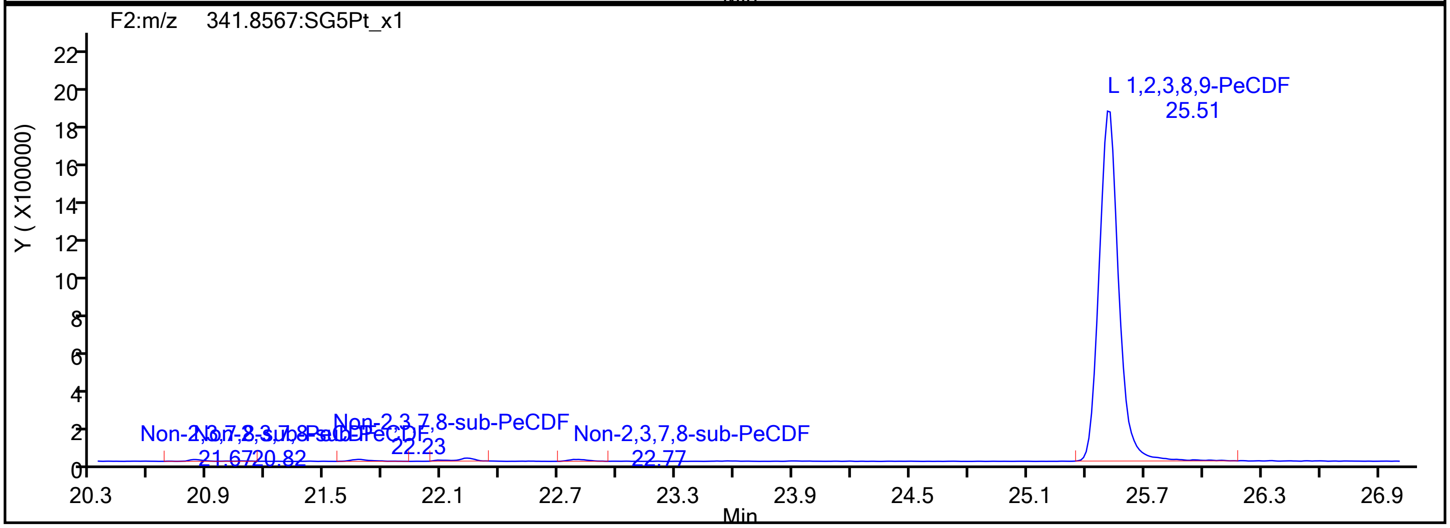

PeCDF Interference Mass

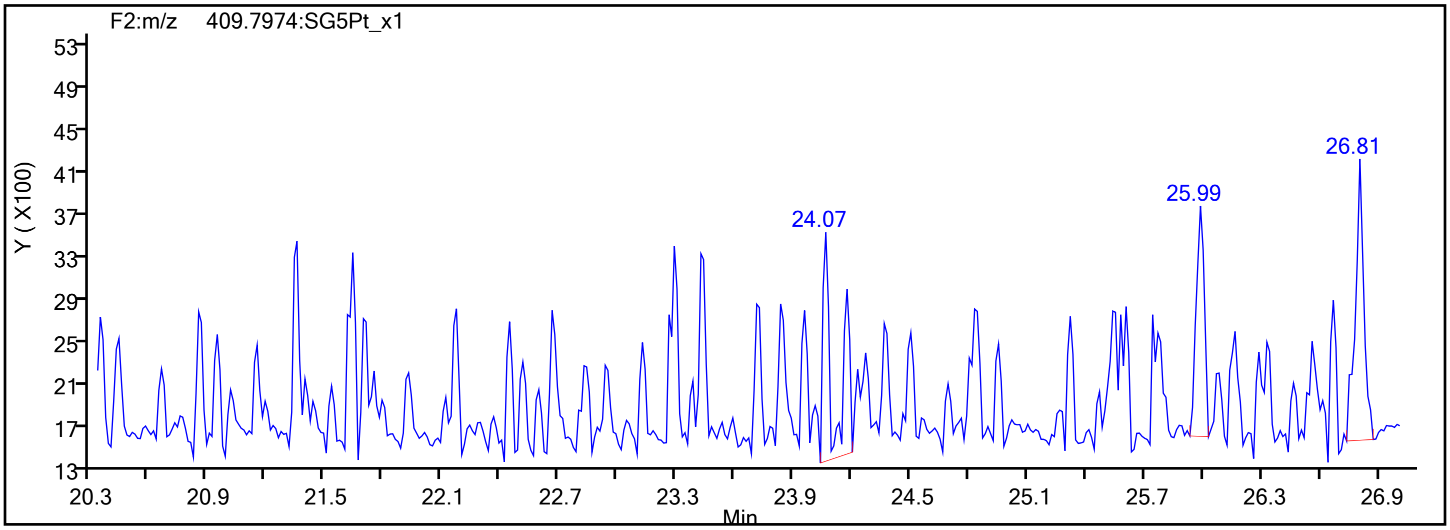

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

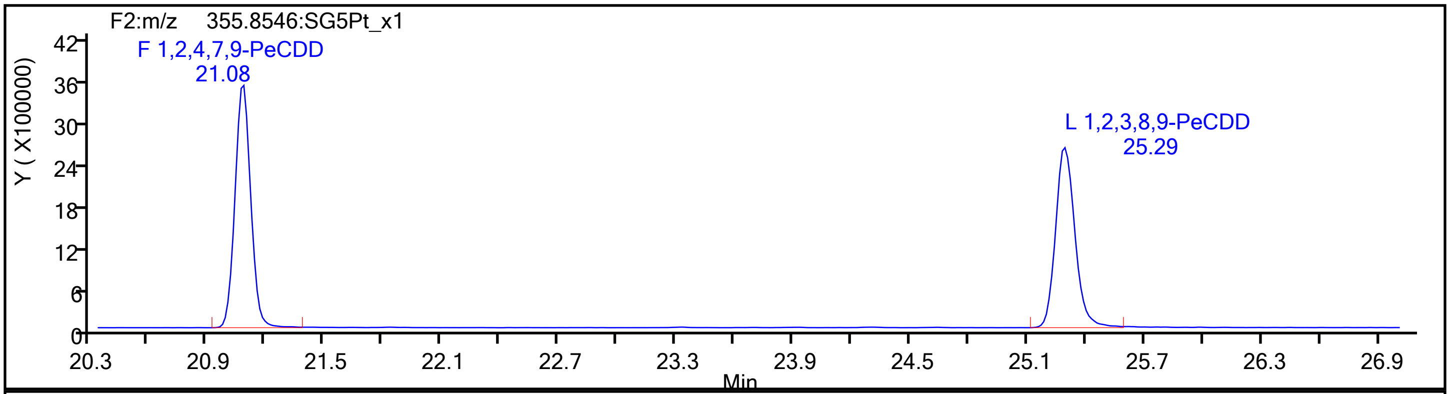

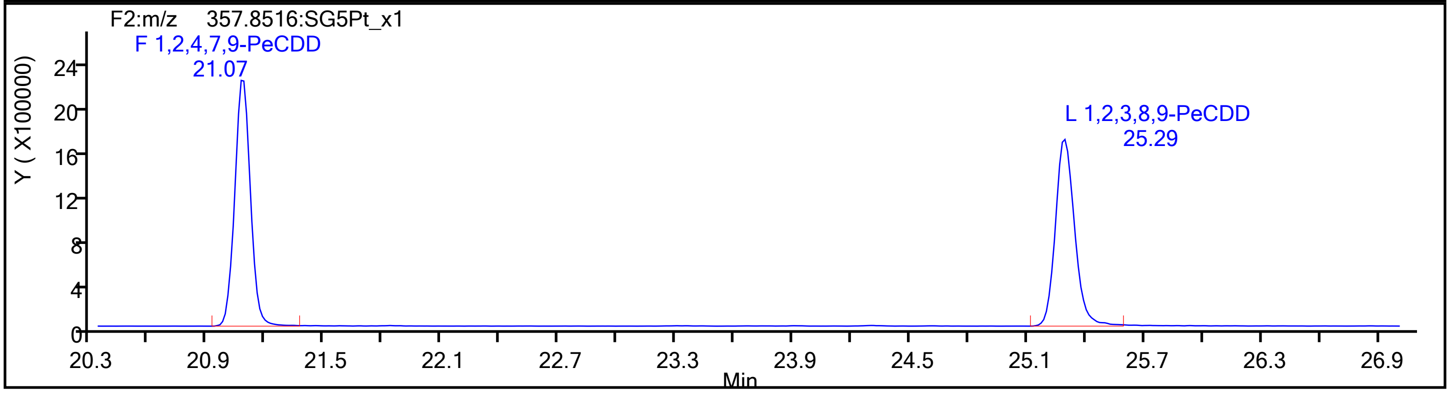

PeCDD Standards

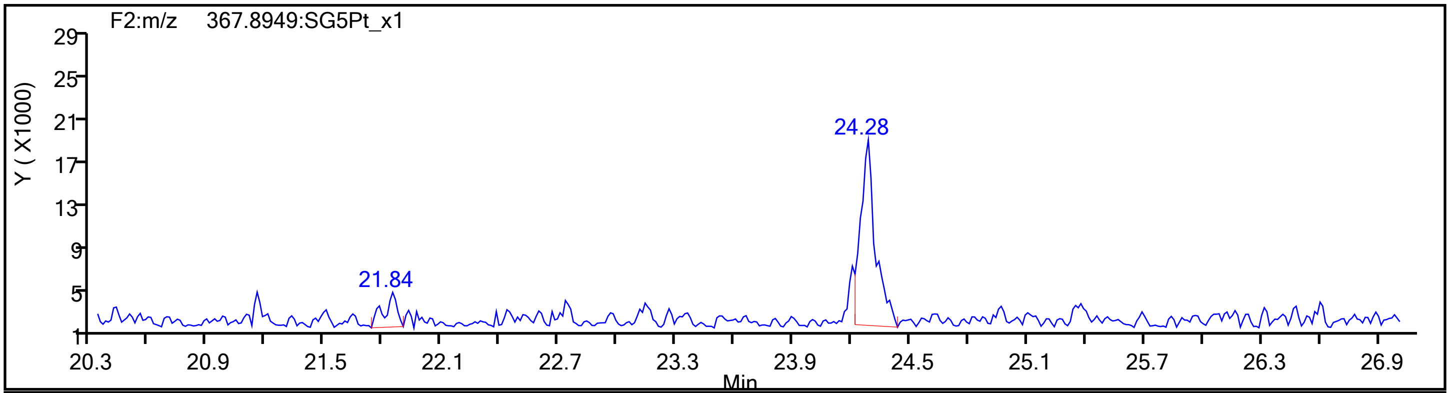

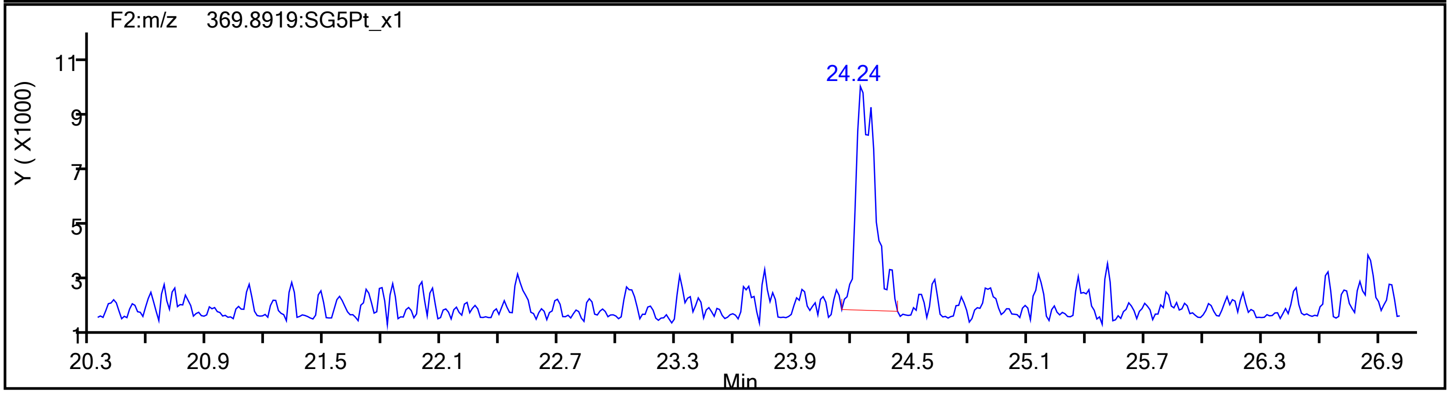

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

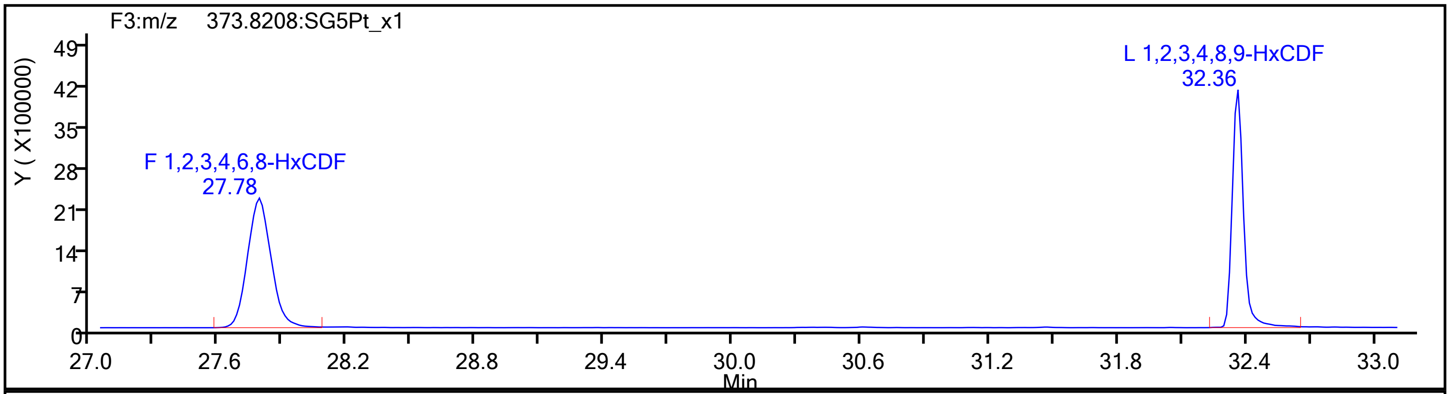

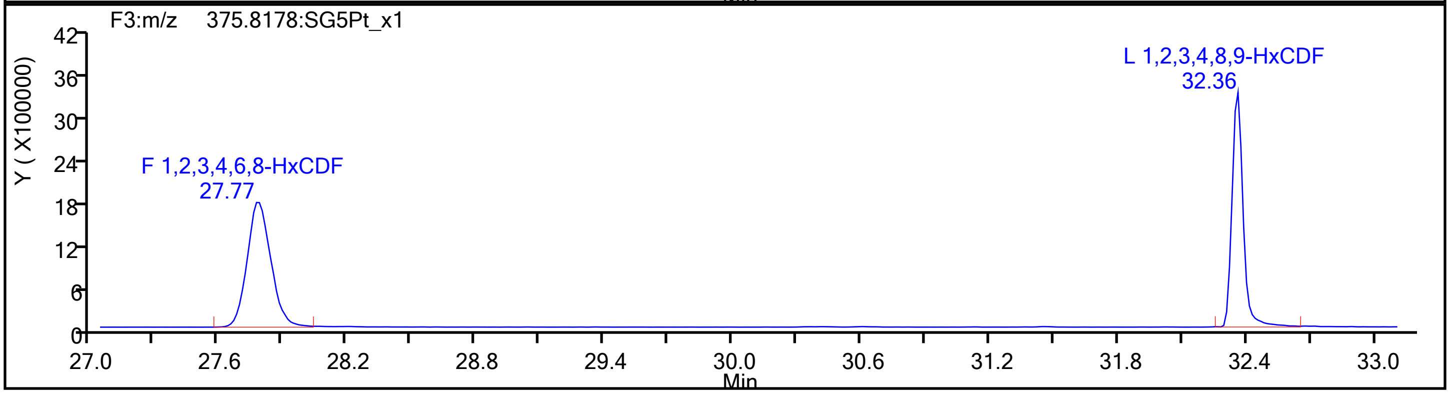

HxCDF Standards

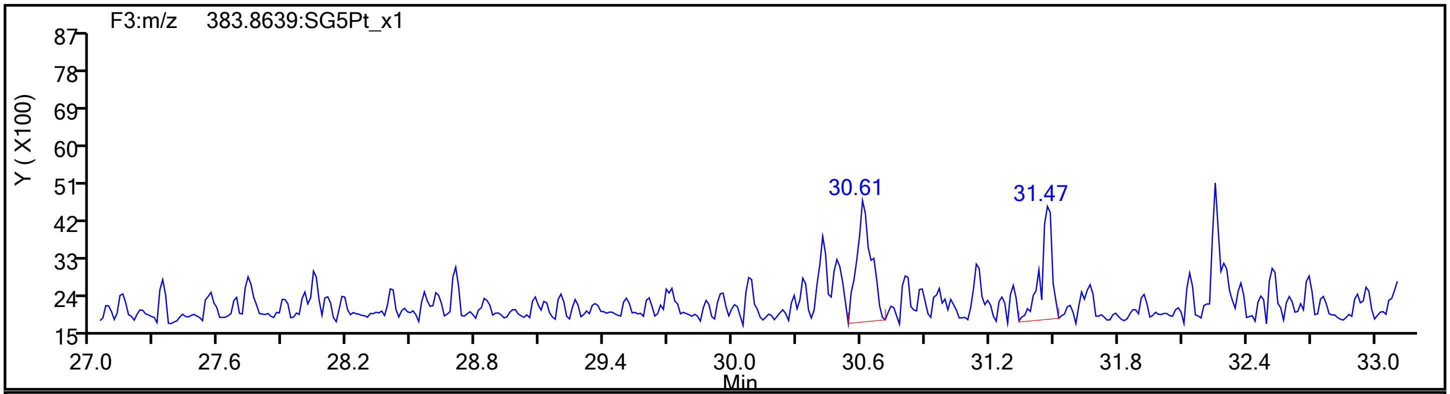

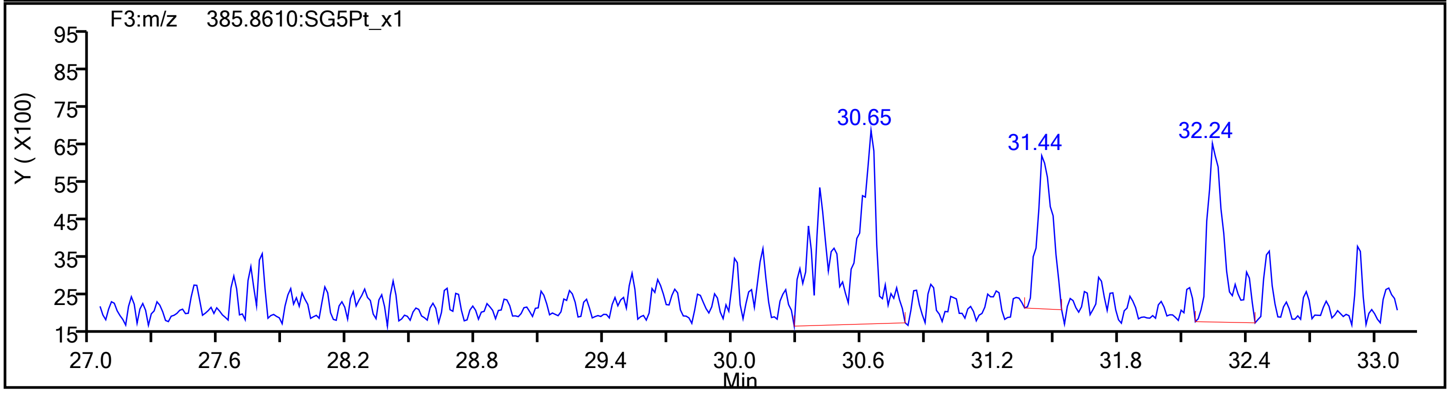

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d

Injection Date: 17-Sep-2020 14:12:48

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 413246

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

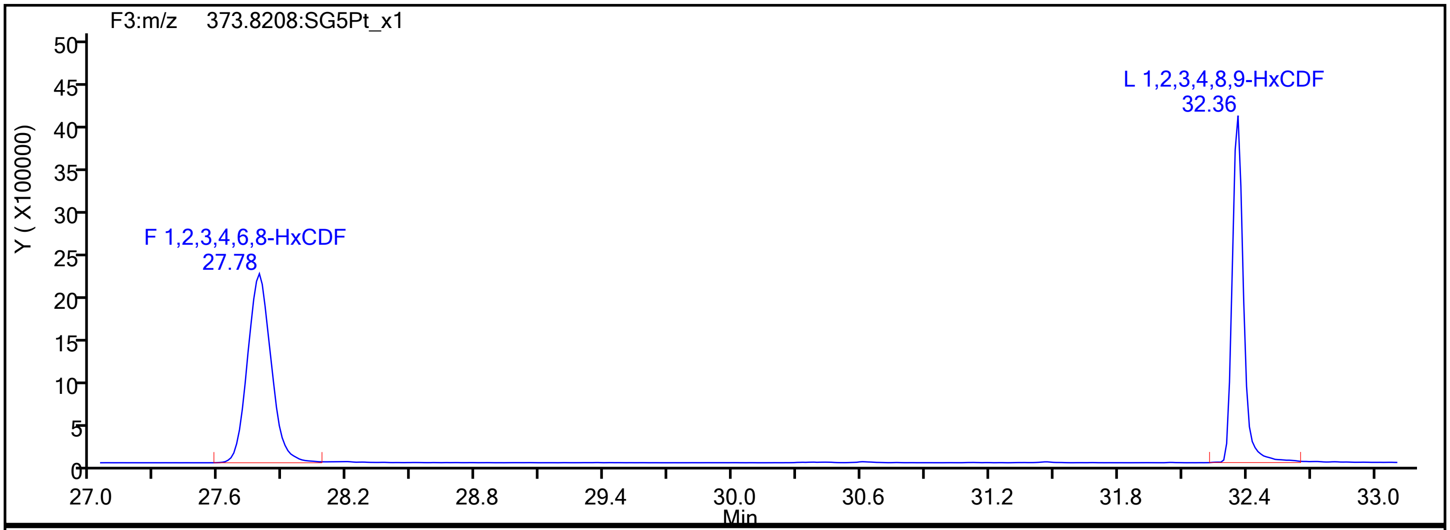

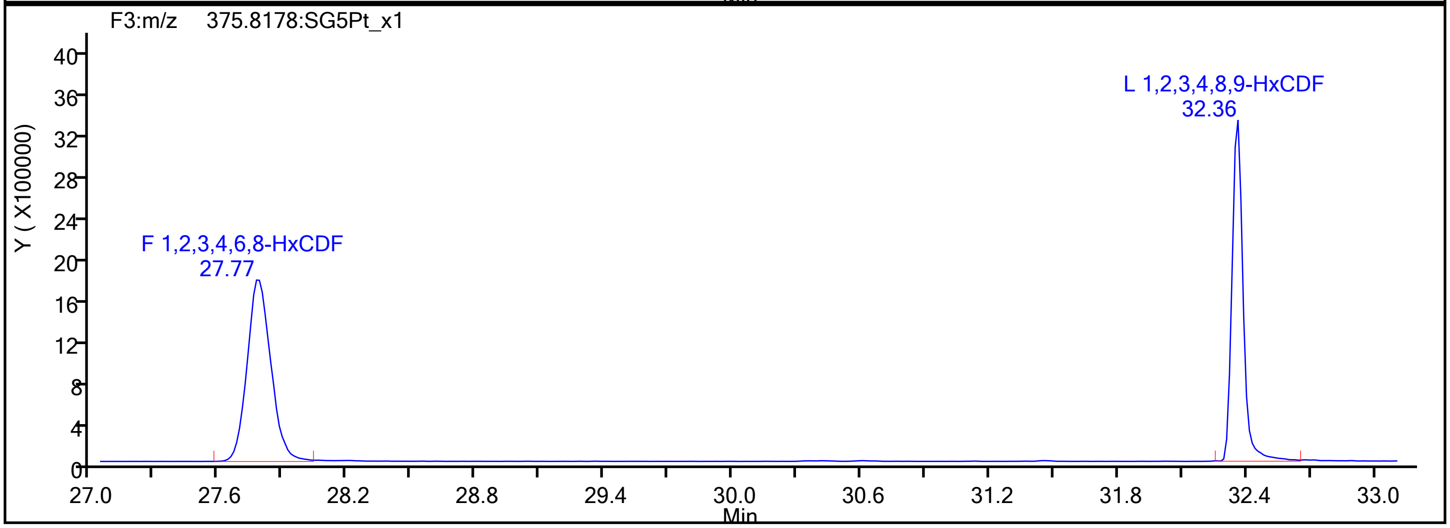

HxCDF Interference Mass

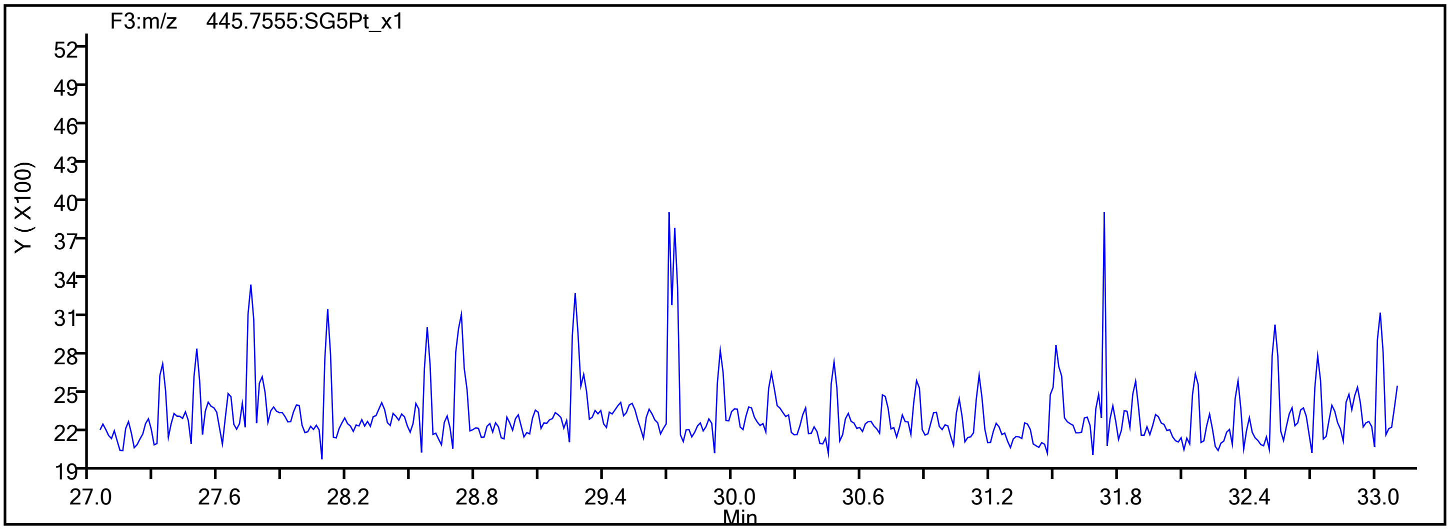

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

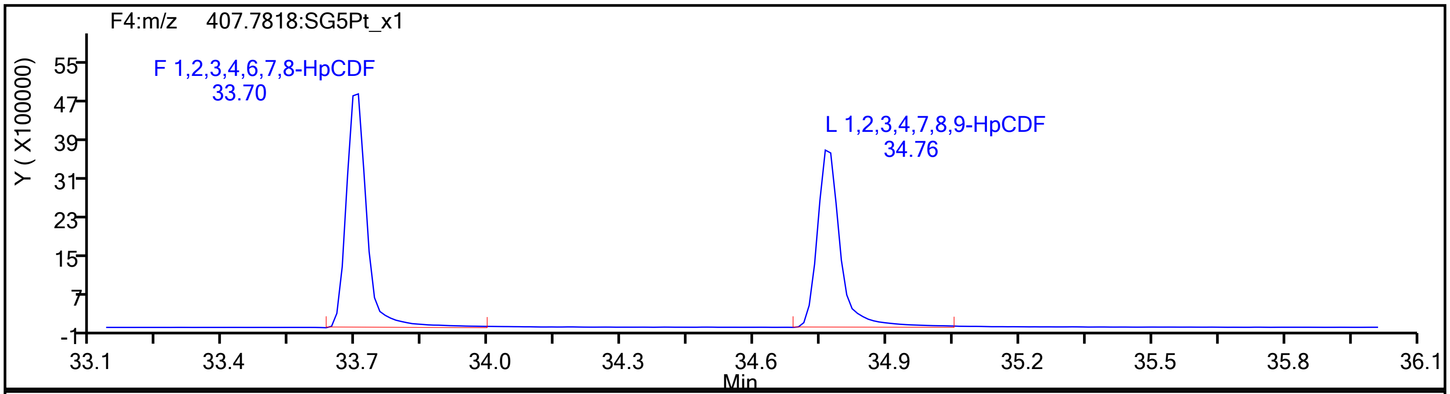

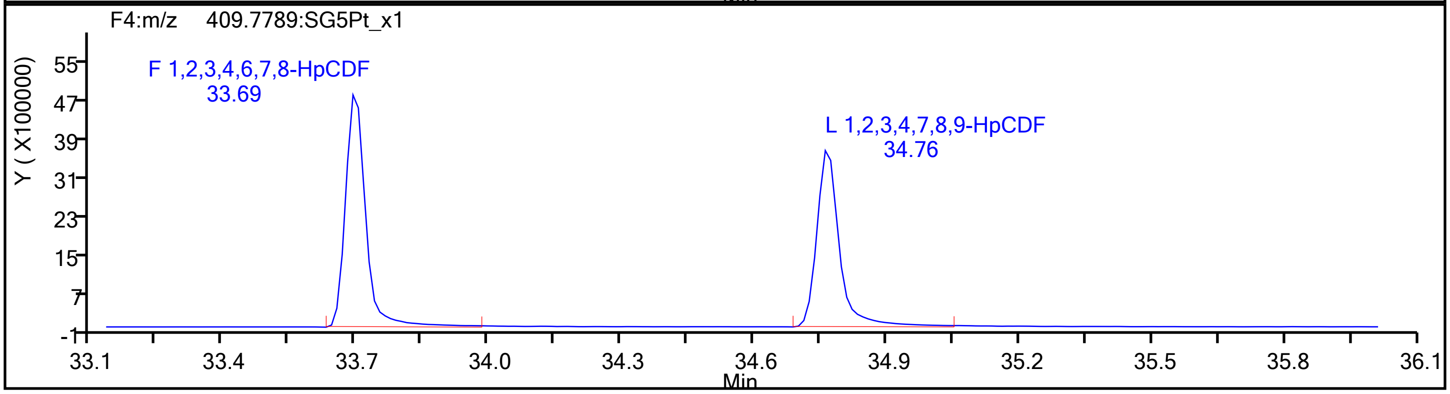

HpCDF Standards

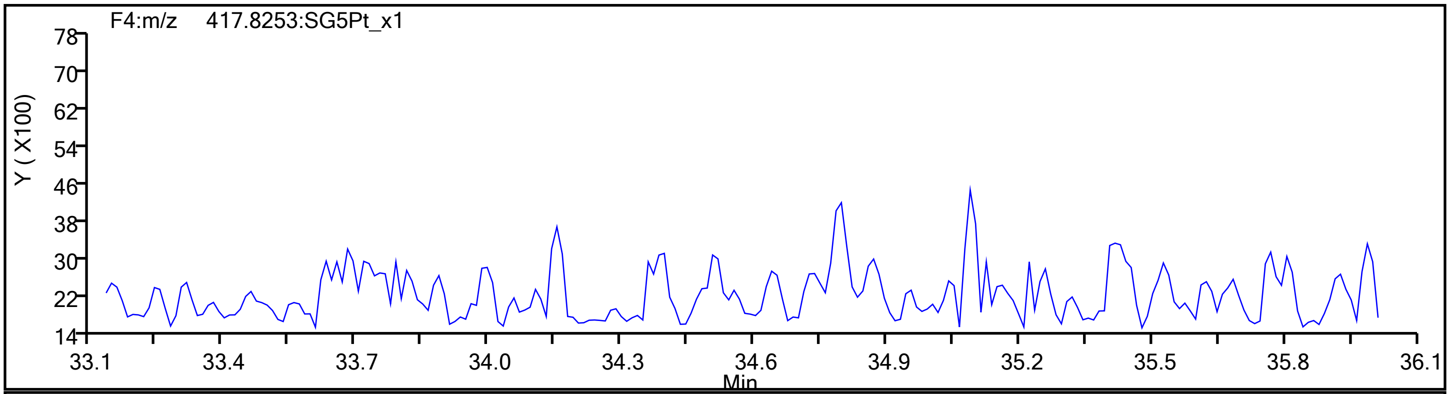

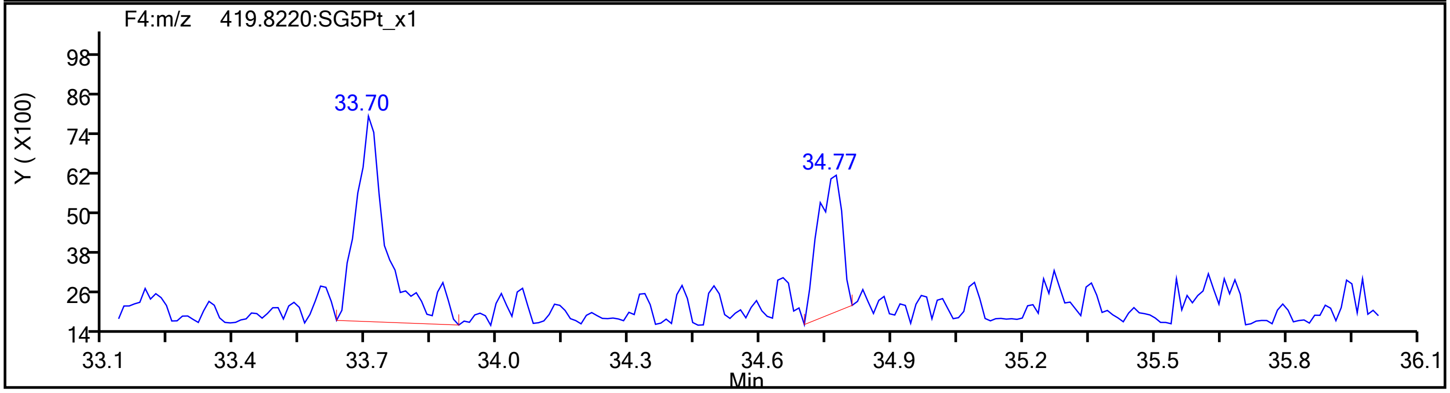

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

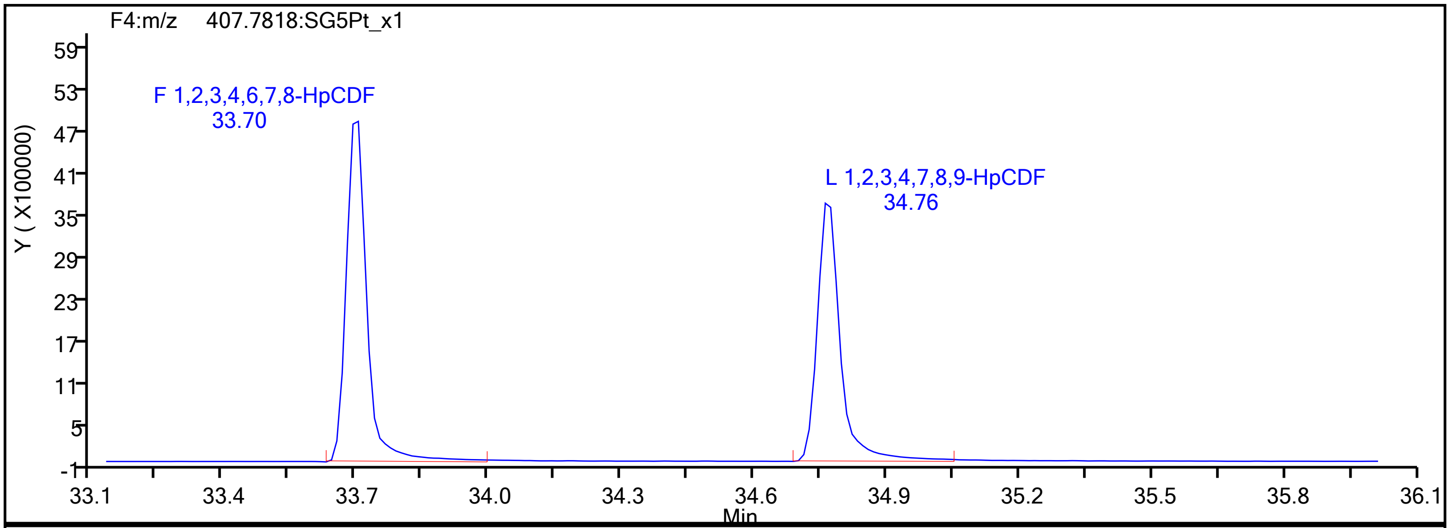

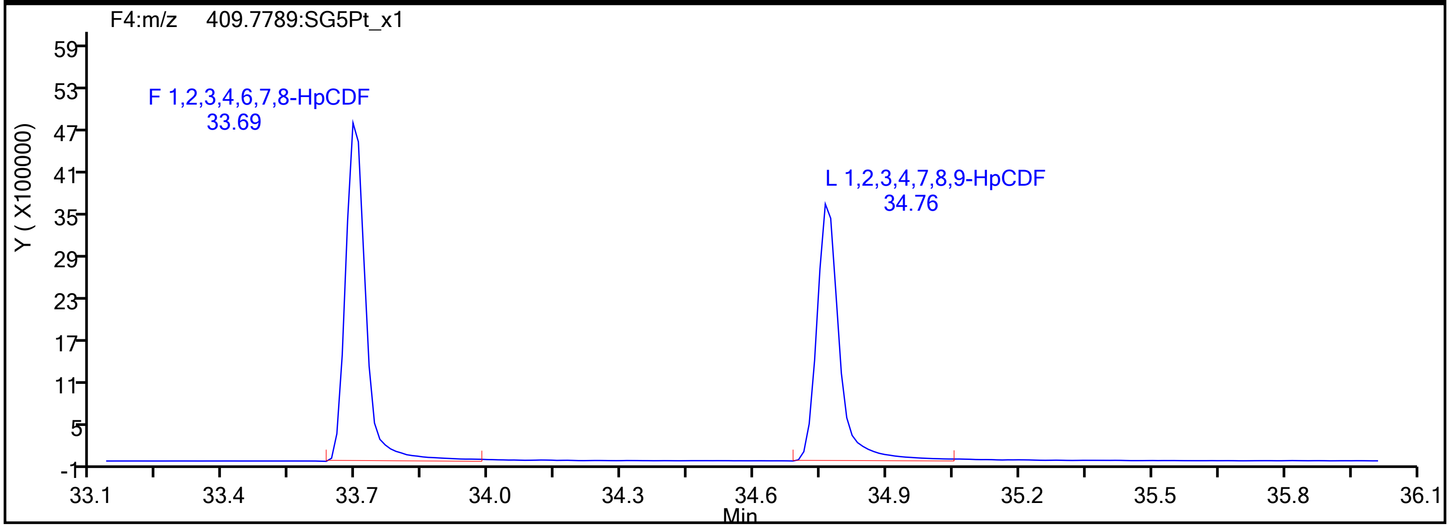

HpCDF Interference Mass

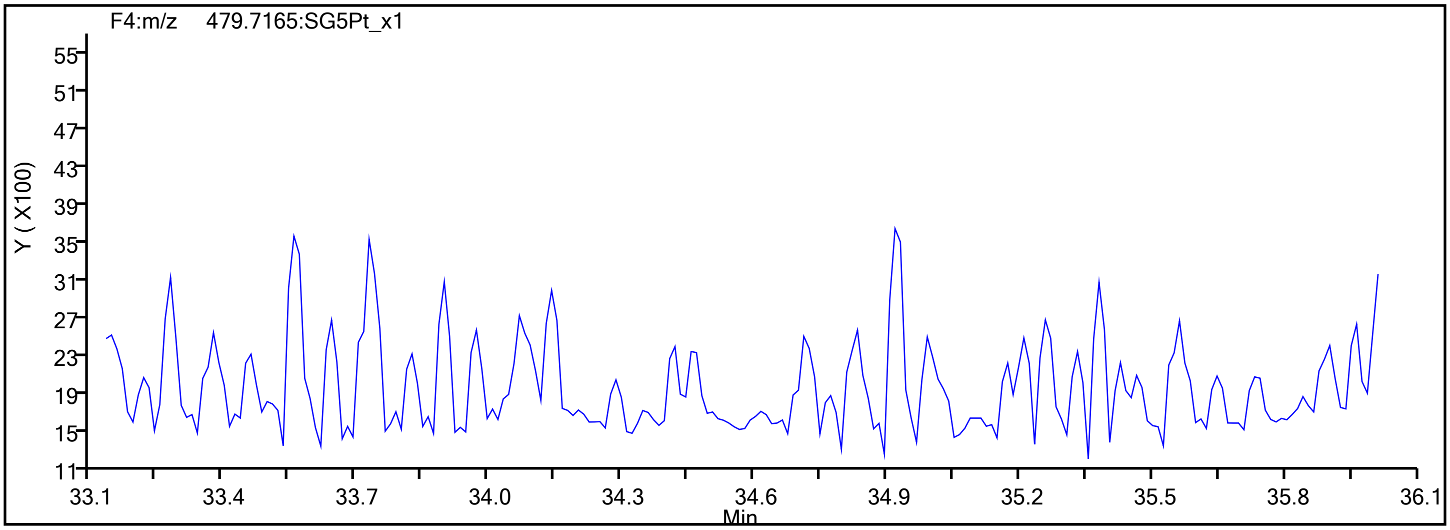

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

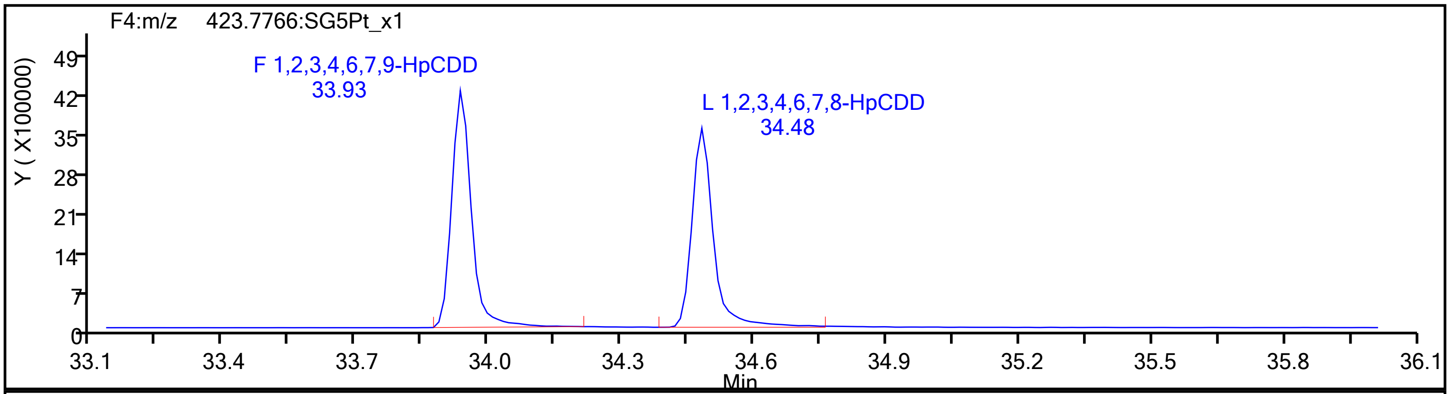

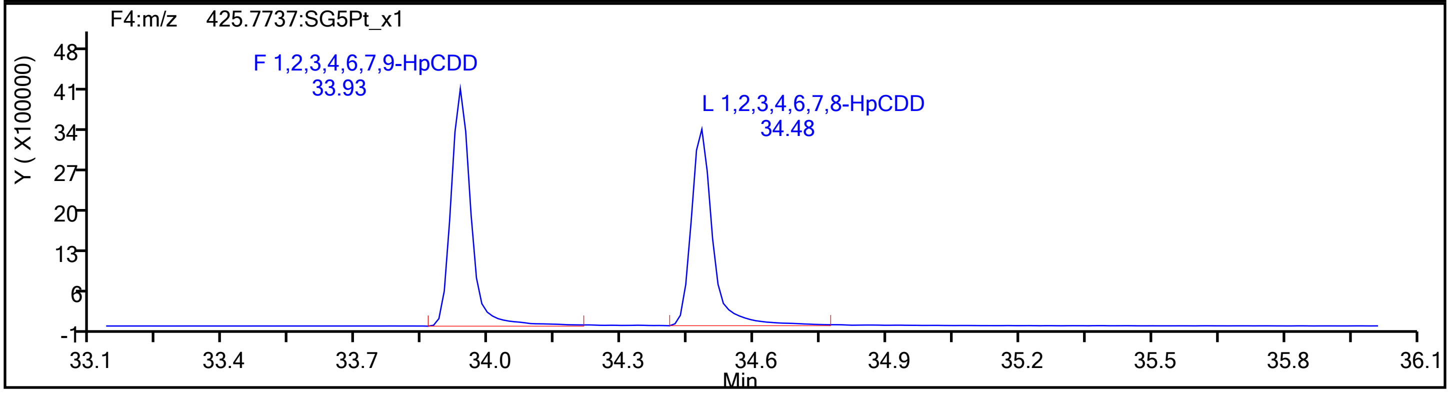

HpCDD Standards

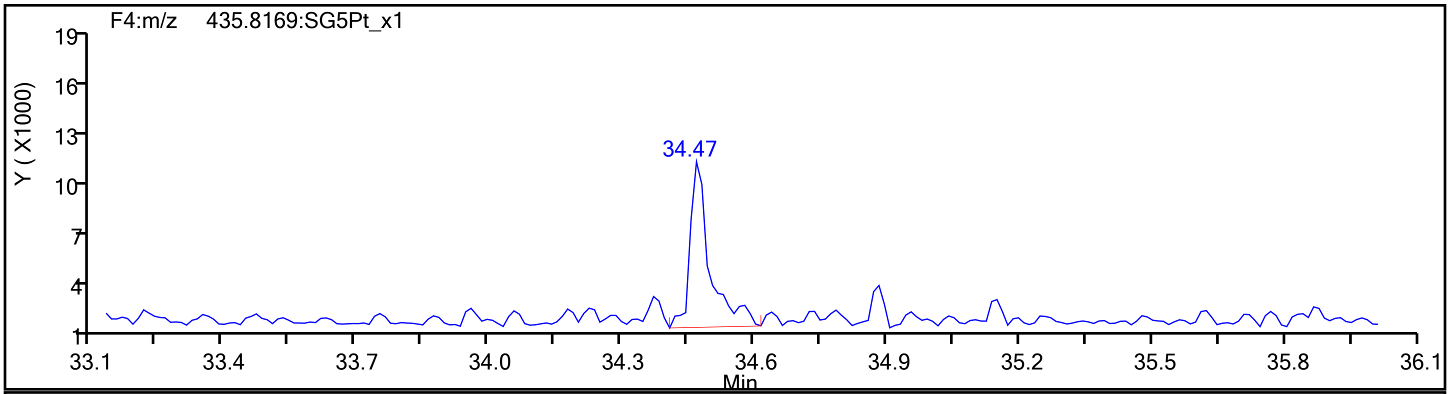

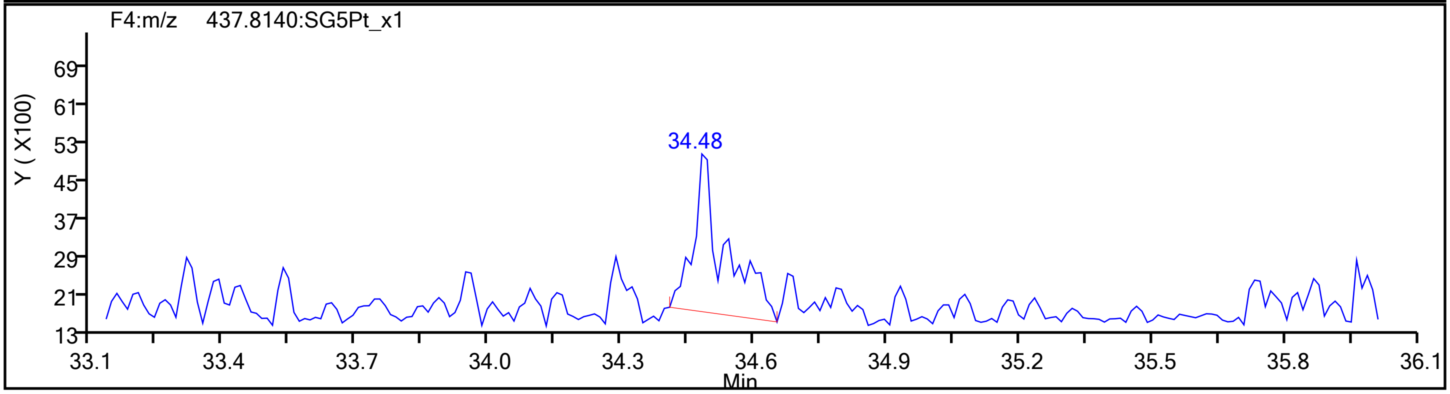

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d
Injection Date: 17-Sep-2020 14:12:48 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 413246 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

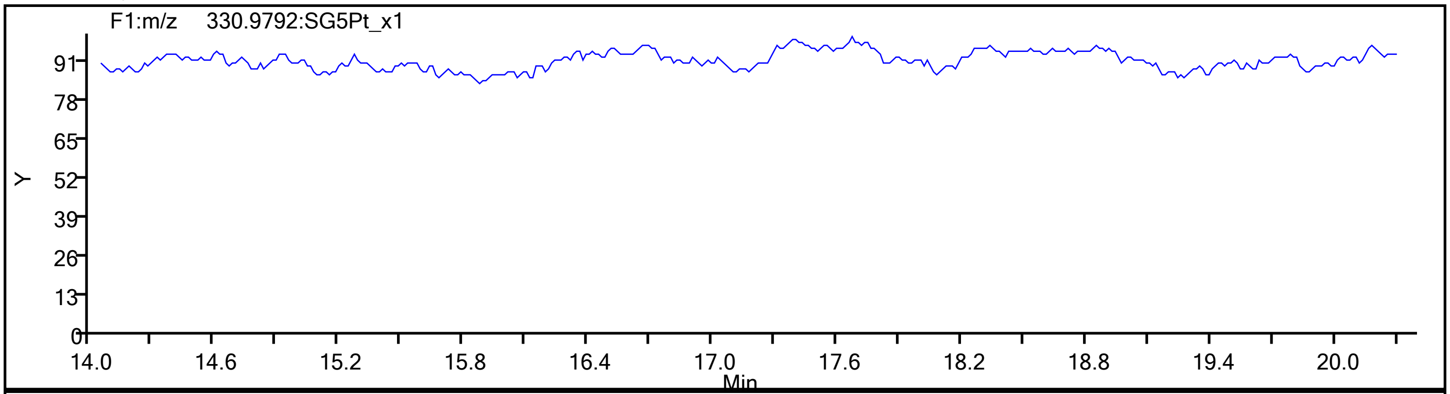

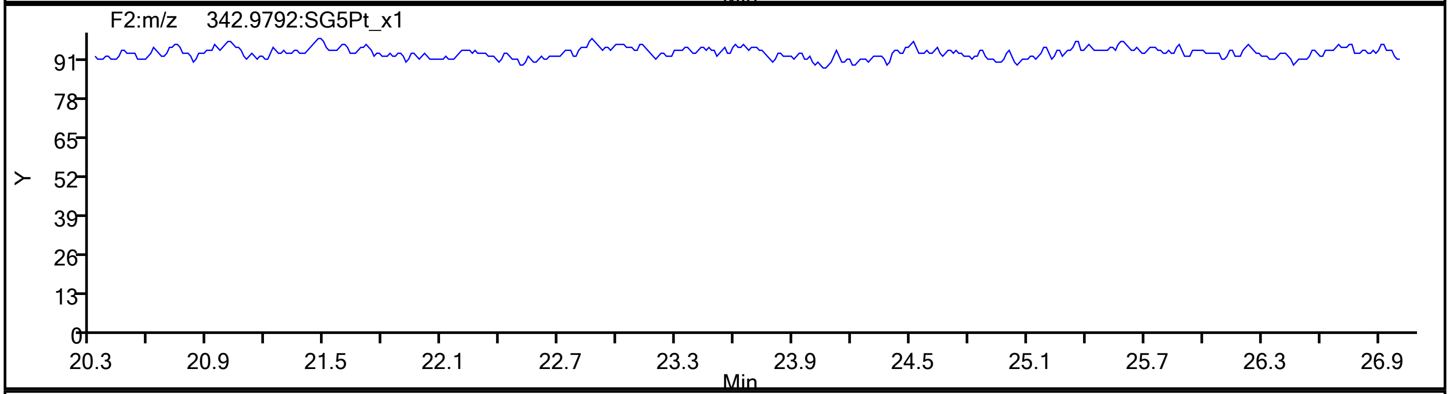

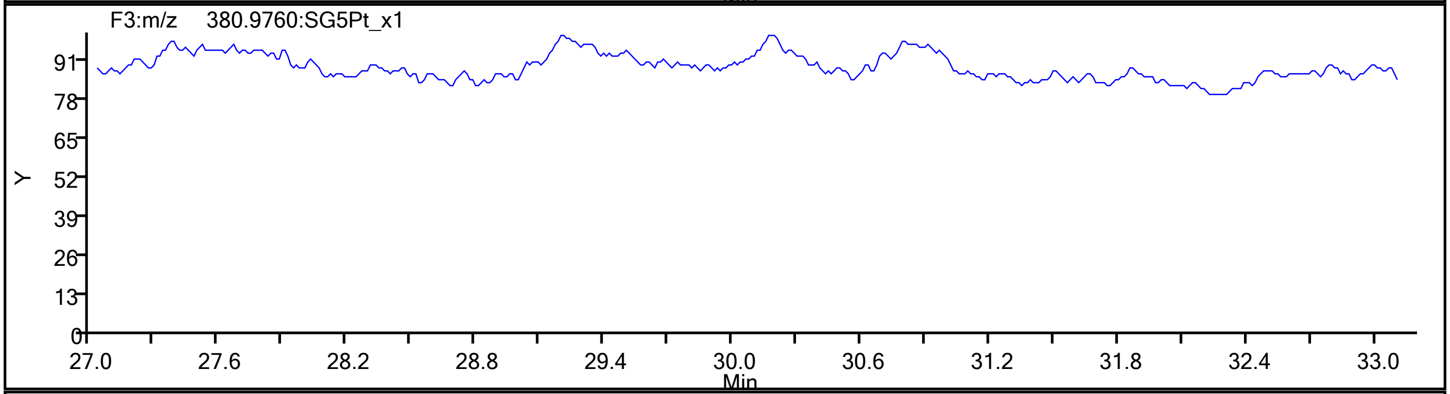

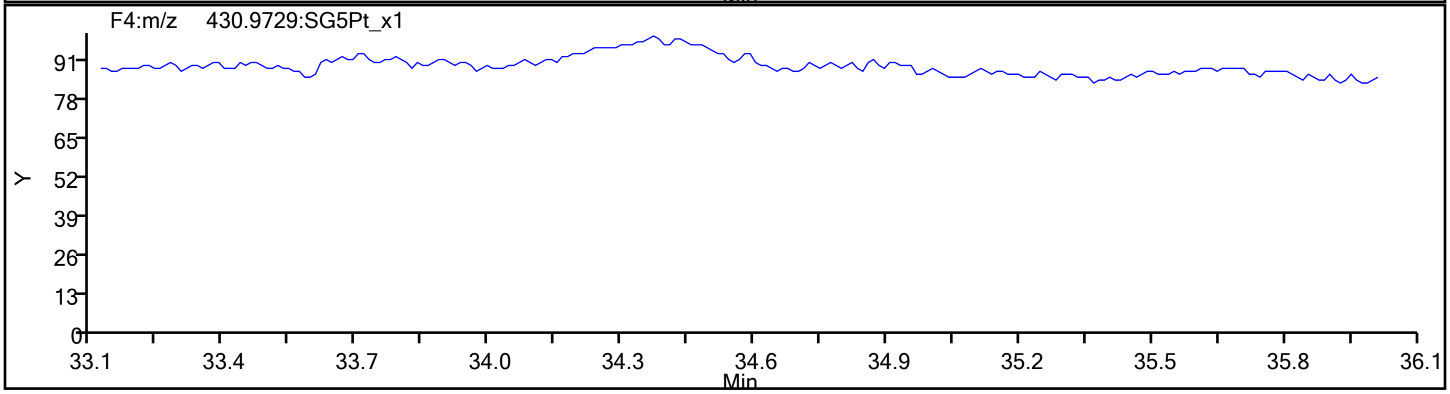

Report Date: 18-Sep-2020 10:38:07 Chrom Revision: 2.3 16-Sep-2020 17:17:04

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_1.d		
Injection Date:	17-Sep-2020 14:12:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	413246	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

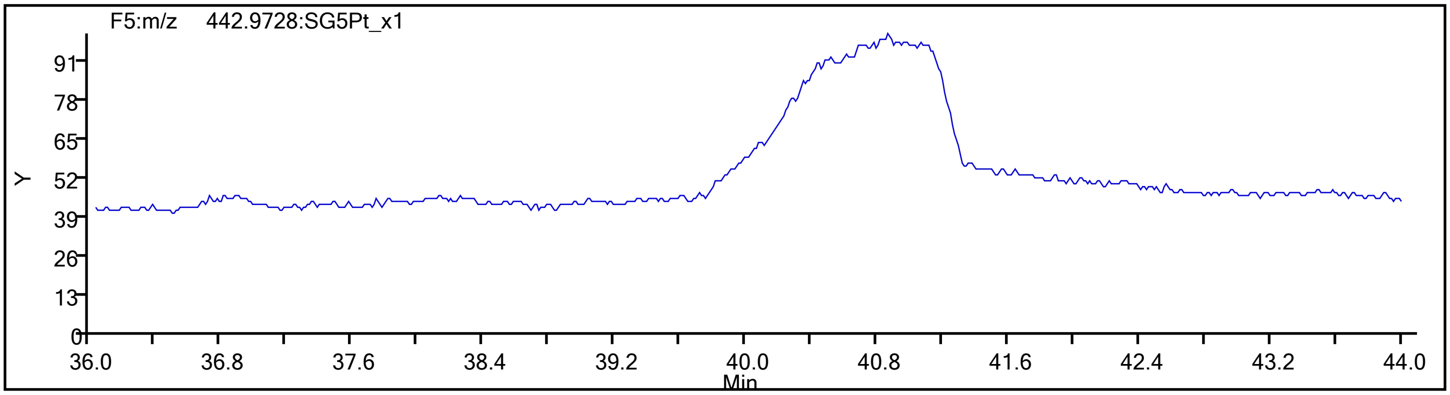

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	24-Nov-2020 16:08:13	ALS Bottle#:	1	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM 112020C WDM HRDXNCP_00042				
Misc. Info.:	23NO2010D5				
Operator ID:	SMA	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	26-Nov-2020 00:06:45	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1679				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.324	21602135	0.80	1.3598					0.00	
2,3,7,8-TCDF	17.339	47578652	0.78	0.9077	97.1	97.1	0.2677	0.2677		
A Non-2,3,7,8-sub-TCDF	17.029						0.2677	0.2677		
S Total TCDF					97.1	97.1	0.2677	0.2677		
D 13C-2,3,7,8-TCDD	18.035	13197735	0.73	1.0536					0.00	
2,3,7,8-TCDD	18.050	15609784	0.79	1.0061	47.0	47.0	0.1537	0.1537		
A Non-2,3,7,8-sub-TCDD	17.483						0.1537	0.1537		
S Total TCDD					47.0	47.0	0.1537	0.1537		
A F1 PeCDFs	19.963						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	23.127	259733	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.351						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.227						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.905						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.782	11484209	1.03	1.3603						
1,2,3,4,7,8,9-HpCDF	34.888	8694725	1.06	1.3207						
A Non-2,3,7,8-sub-HpCDF	34.335						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.596	7203414	1.07	0.9988						
A Non-2,3,7,8-sub-HpCDD	34.311						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.890	26920888	0.79							
1,3,6,8-TCDD	15.812	16085591	0.78							
2,3,4,7-TCDF	17.339	47578652	0.78							
1,2,3,7-TCDD	17.929	13651872	0.76							
1,2,3,9-TCDF	18.201	19971980	0.78							
1,2,3,9-TCDD	18.216	16429376	0.78							
1,2,8,9-TCDD	19.154	6530128								
1,2,8,9-TCDF	19.169	20688560	0.76							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,3,4,6,8-PeCDF	19.441	18553381	1.60							
1,2,4,7,9-PeCDD	21.223	12197372	1.58							
1,2,3,8,9-PeCDD	25.478	10835288	1.56							
1,2,3,8,9-PeCDF	25.696	13757939	1.59							
1,2,3,4,6,8-HxCDF	28.004	14827928	1.25							
1,2,4,6,7,9-HxCDD	29.601	10583483	1.26							
1,2,3,4,6,7-HxCDD	32.130	9700725	1.27							
1,2,3,4,8,9-HxCDF	32.450	12731638	1.25							
1,2,3,4,6,7,9-HpCDD	34.025	8526905	1.05							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 16:08:13 ALS Bottle#: 1 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 112020C WDM HRDXNCP_00042
Misc. Info.: 23NO2010D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Nov-2020 00:06:45 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1679

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.324	17.324	0	1.000	9603876	2316513	7431	18577	312		
317.9389	17.324	17.324	0	1.000	11998259	2956123	3344	8360	884	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.339	17.354	-1	1.001	20789286	4793104	5656	14140	847		
305.8987	17.339	17.354	-1	1.001	26789366	6227901	7157	17892	870	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.029						5656	14140			
305.8987	17.029						7157	17892			
13C-2,3,7,8-TCDD											
331.9368	18.035	18.035	0	1.000	5569999	1290512	2821	7052	457		
333.9339	18.035	18.035	0	1.000	7627736	1790984	1320	3300	1357	0.73(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.050	18.065	-1	1.001	6867841	1644997	2238	5595	735		
321.8936	18.050	18.065	-1	1.001	8741943	2110741	2528	6320	835	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.483						2238	5595			
321.8936	17.483						2528	6320			
A F1 PeCDFs											
339.8597	19.963						596	1490			
341.8567	19.963						588	1470			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	21.823	23.127	-78	1.000	41667	7919	1548	3870	5		
341.8567	21.823	23.127	-78	1.000	29984	4761	1215	3037	4	1.39(1.32-1.78)	
339.8597	22.396	23.127	-44	1.000	74454	10627	1548	3870	7		
341.8567	22.383	23.127	-45	1.000	43530	8169	1215	3037	7	1.71(1.32-1.78)	
339.8597	22.955	23.127	-10	1.000	42609	8771	1548	3870	6		
341.8567	22.983	23.127	-9	1.000	40393	5297	1215	3037	4	1.05(1.32-1.78)	

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.351						1811	4527			
357.8516	23.351						1000	2500			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.227						2769	6922			
375.8178	30.227						2291	5727			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						3689	9222			
391.8127	30.905						2772	6930			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.782	33.783	0	1.000	5833787	1702651	8802	22005	193		
409.7789	33.782	33.783	0	1.000	5650422	1660171	8454	21135	196	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.888	34.876	1	1.000	4469136	893377	8802	22005	101		
409.7789	34.888	34.876	1	1.000	4225589	844401	8454	21135	100	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						8802	22005			
409.7789	34.335						8454	21135			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.596	34.584	1	1.000	3720475	848252	6379	15947	133		
425.7737	34.596	34.584	1	1.000	3482939	802814	5594	13985	144	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.311						6379	15947			
425.7737	34.311						5594	13985			
1,3,6,8-TCDF											
303.9016	14.890	14.890	0		11860194	3649543	5656	14140	645		
305.8987	14.890	14.890	0		15060694	4651203	7157	17892	650	0.79(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.812	15.812	0		7043127	2060287	2238	5595	921		
321.8936	15.812	15.812	0		9042464	2595999	2528	6320	1027	0.78(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.339	17.339	0		20789286	4793104	5656	14140	847		
305.8987	17.339	17.339	0		26789366	6227901	7157	17892	870	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.929	17.929	0		5913041	1458632	2238	5595	652		
321.8936	17.929	17.929	0		7738831	1894015	2528	6320	749	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.201	18.201	0		8762582	2055841	5656	14140	363		
305.8987	18.201	18.201	0		11209398	2646772	7157	17892	370	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.216	18.216	0		7190036	1620913	2238	5595	724		
321.8936	18.201	18.216	-1		9239340	2089087	2528	6320	826	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	19.154	19.154	0		6530128	1415337	2238	5595	632		
1,2,8,9-TCDF											
303.9016	19.169	19.169	0		8920116	1959198	5656	14140	346		
305.8987	19.169	19.169	0		11768444	2548266	7157	17892	356	0.76(0.65-0.89)	

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	19.441	19.441	0		11423192	2456717	596	1490	4122		
341.8567	19.441	19.441	0		7130189	1511458	588	1470	2571	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.223	21.223	0		7469505	1305635	1811	4527	721		
357.8516	21.223	21.223	0		4727867	831705	1000	2500	832	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.478	25.478	0		6610095	923705	1811	4527	510		
357.8516	25.478	25.478	0		4225193	581882	1000	2500	582	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.696	25.696	0		8441918	1143031	1548	3870	738		
341.8567	25.710	25.696	1		5316021	725777	1215	3037	597	1.59(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	28.004	28.004	0		8234118	995339	2769	6922	359		
375.8178	27.990	28.004	-1		6593810	801905	2291	5727	350	1.25(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.601	29.601	0		5891008	695071	3689	9222	188		
391.8127	29.601	29.601	0		4692475	551145	2772	6930	199	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.130	32.130	0		5433209	1386602	3689	9222	376		
391.8127	32.130	32.130	0		4267516	1063153	2772	6930	384	1.27(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.450	32.450	0		7075943	1743248	2769	6922	630		
375.8178	32.436	32.450	-1		5655695	1408535	2291	5727	615	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	34.025	34.025	0		4376825	1167102	6379	15947	183		
425.7737	34.025	34.025	0		4150080	1142392	5594	13985	204	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Lims ID: WDM
Client ID:
Inject. Date: 24-Nov-2020 16:08:13 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 435203 Lims Sample ID: 16

Non-2,3,7,8-sub-PeCDF, RT: 23.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915				
2,3,4,7,8-PeCDF	0.951				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.823	41667	7919	29984	4761		1.39	
22.396	74454	10627	43530	8169		1.71	
22.955	42609	8771	40393	5297		1.05	R
Signal Totals:							
	158730	27317	113907	18227			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	272637	45544				1.39	RQ
	259733	45905					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (272637 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (259733 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

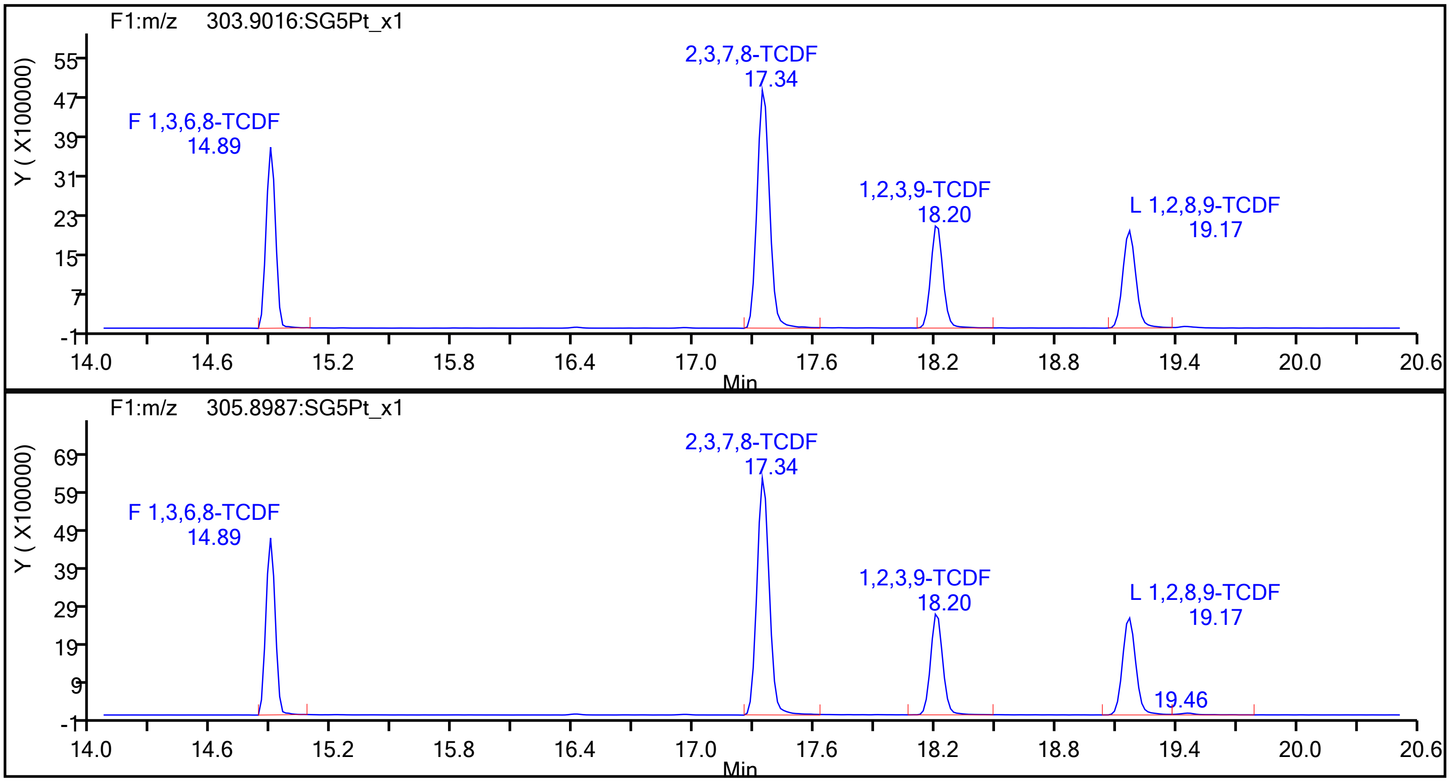

TCDF Standards

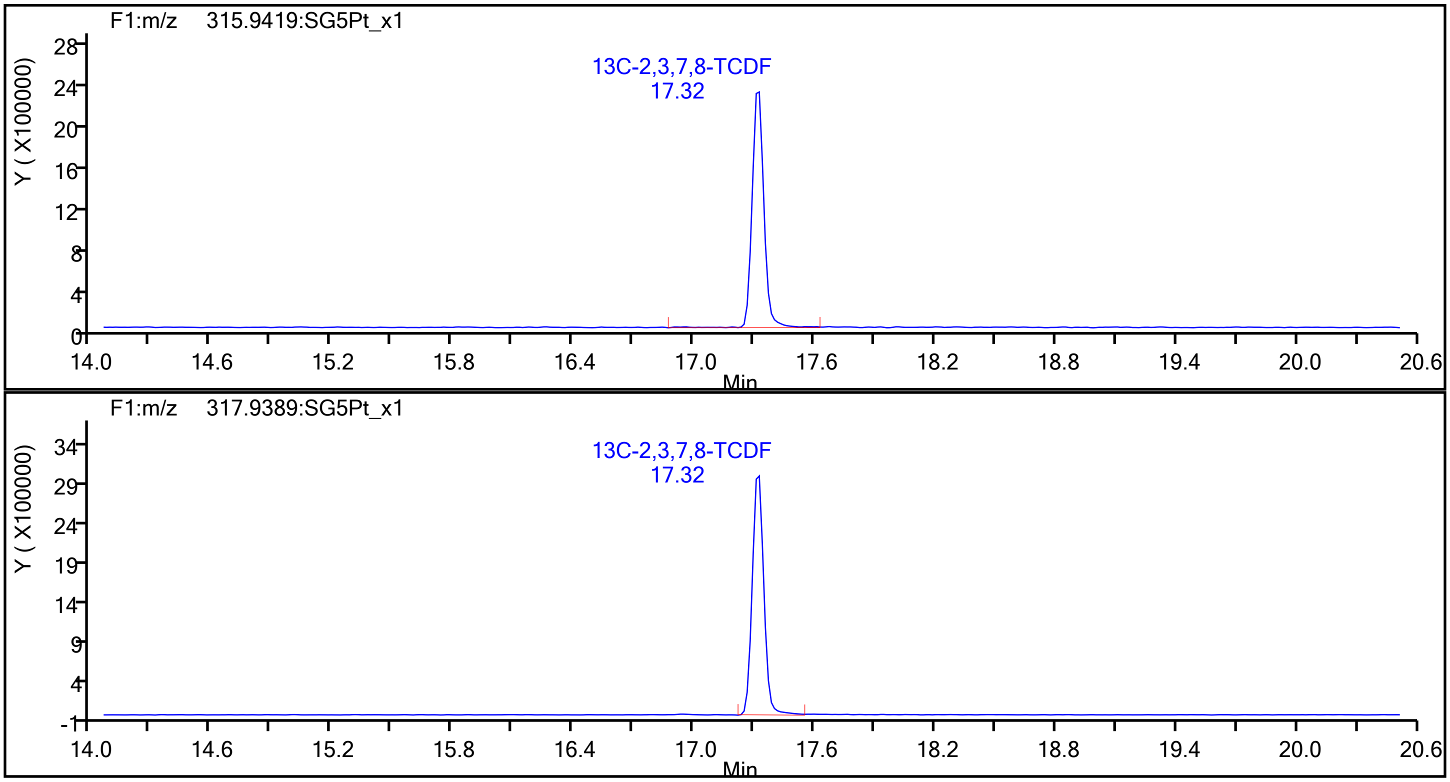

Report Date: 26-Nov-2020 00:06:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

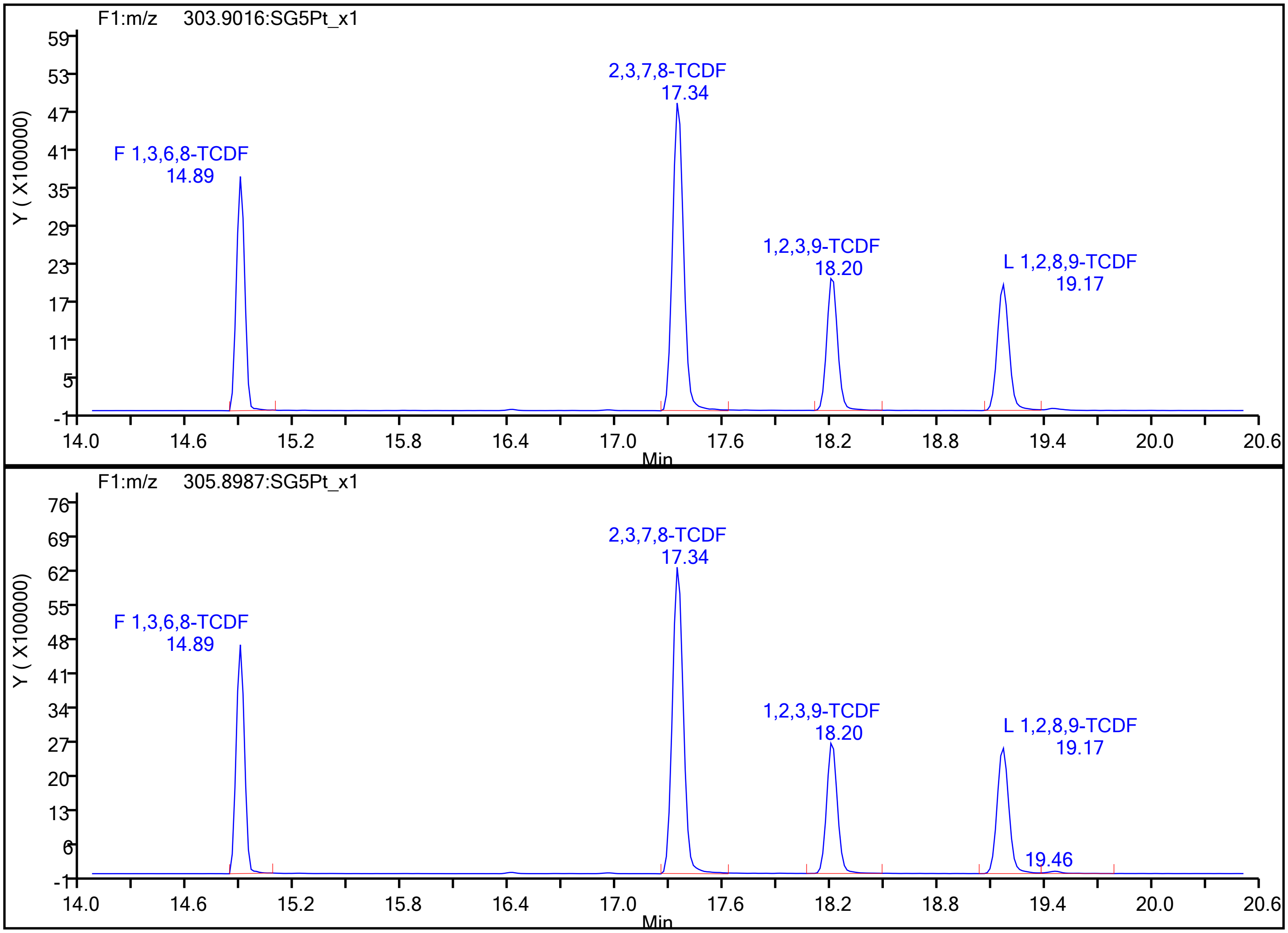

TCDF Interference Mass

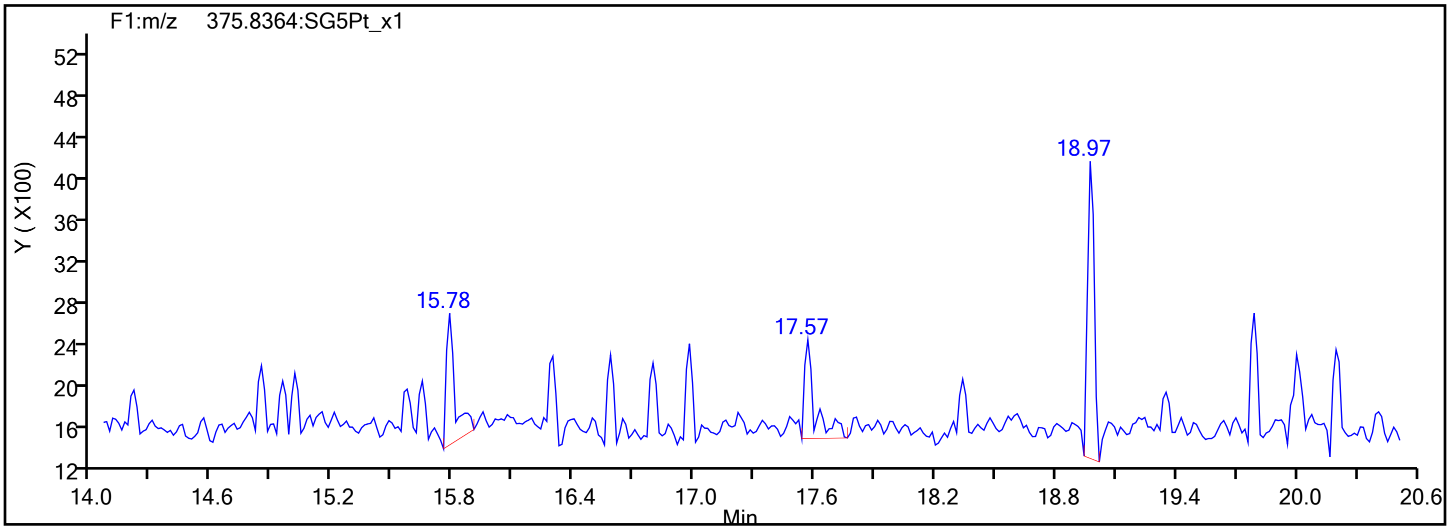

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

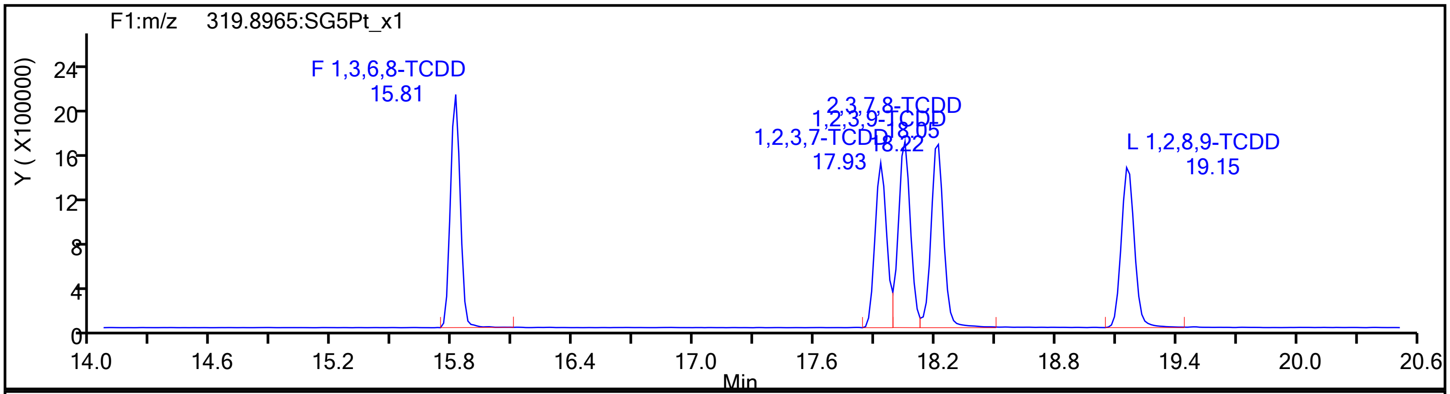

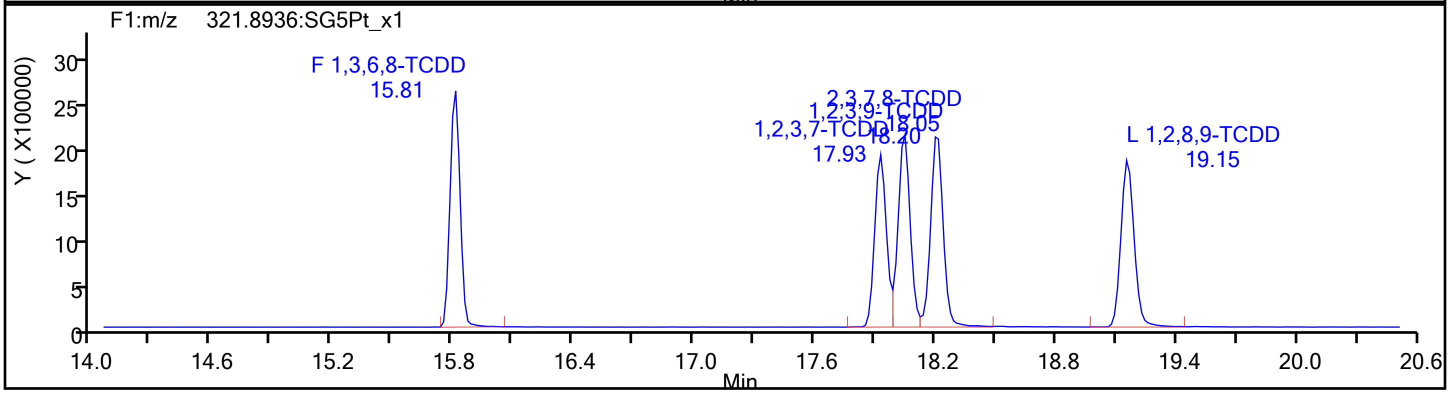

TCDD Standards

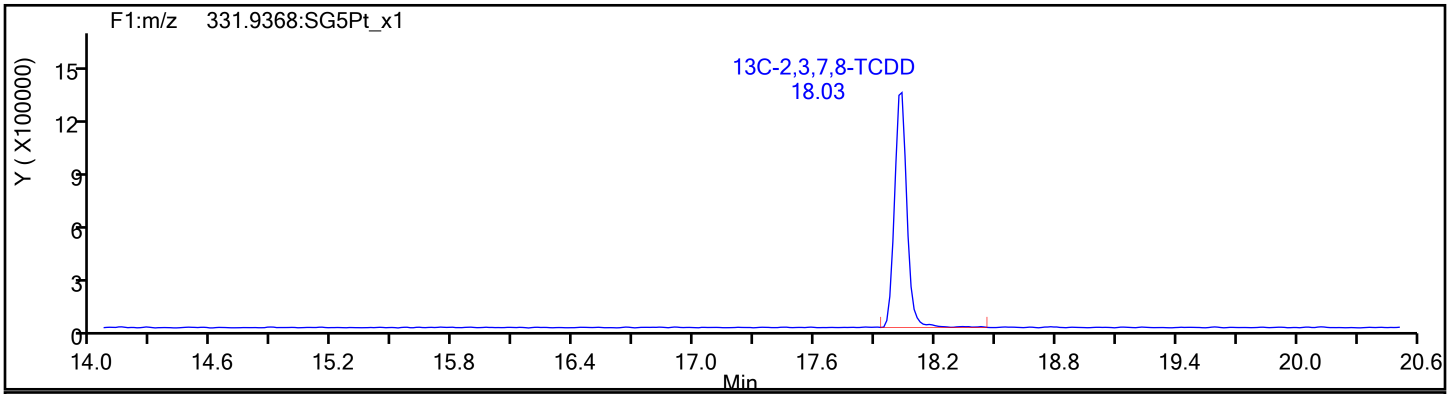

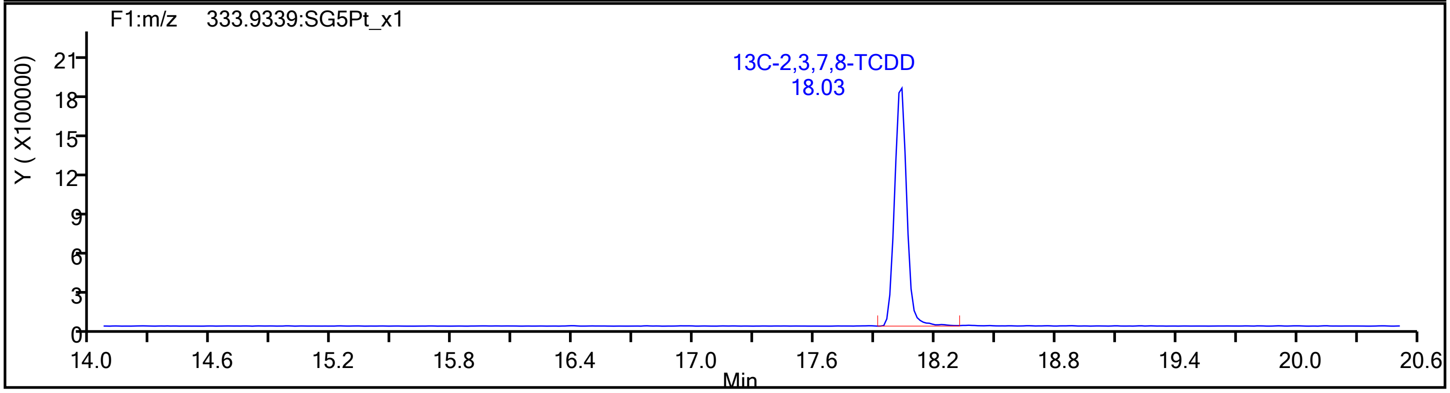

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date: 24-Nov-2020 16:08:13

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 16

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

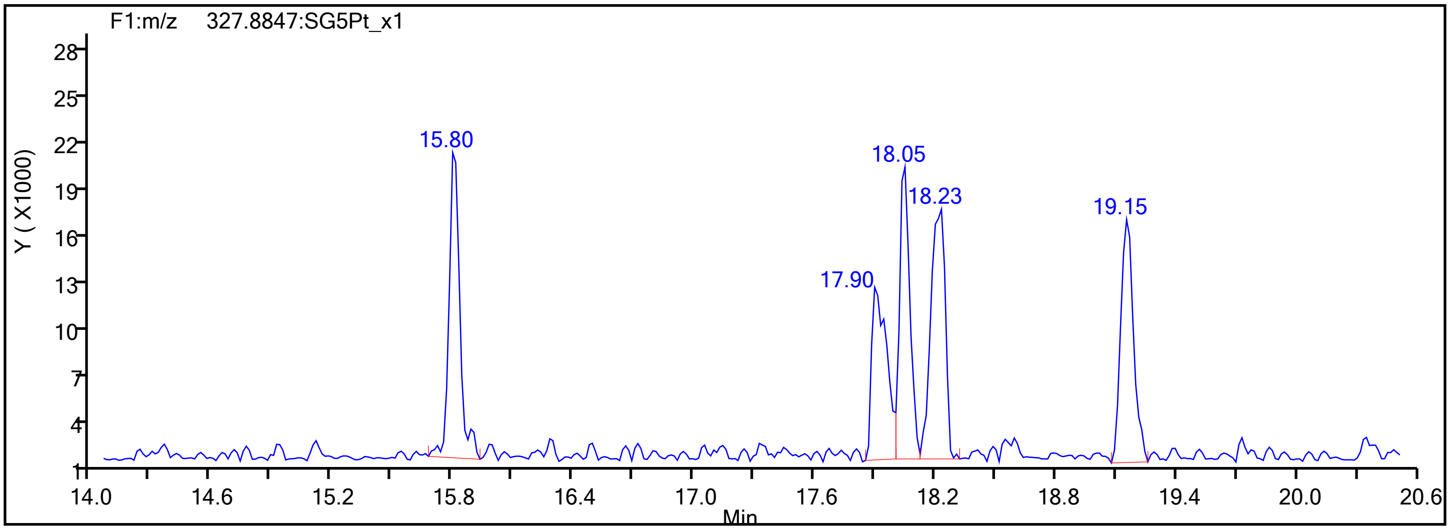

37Cl4-TCDD Standards

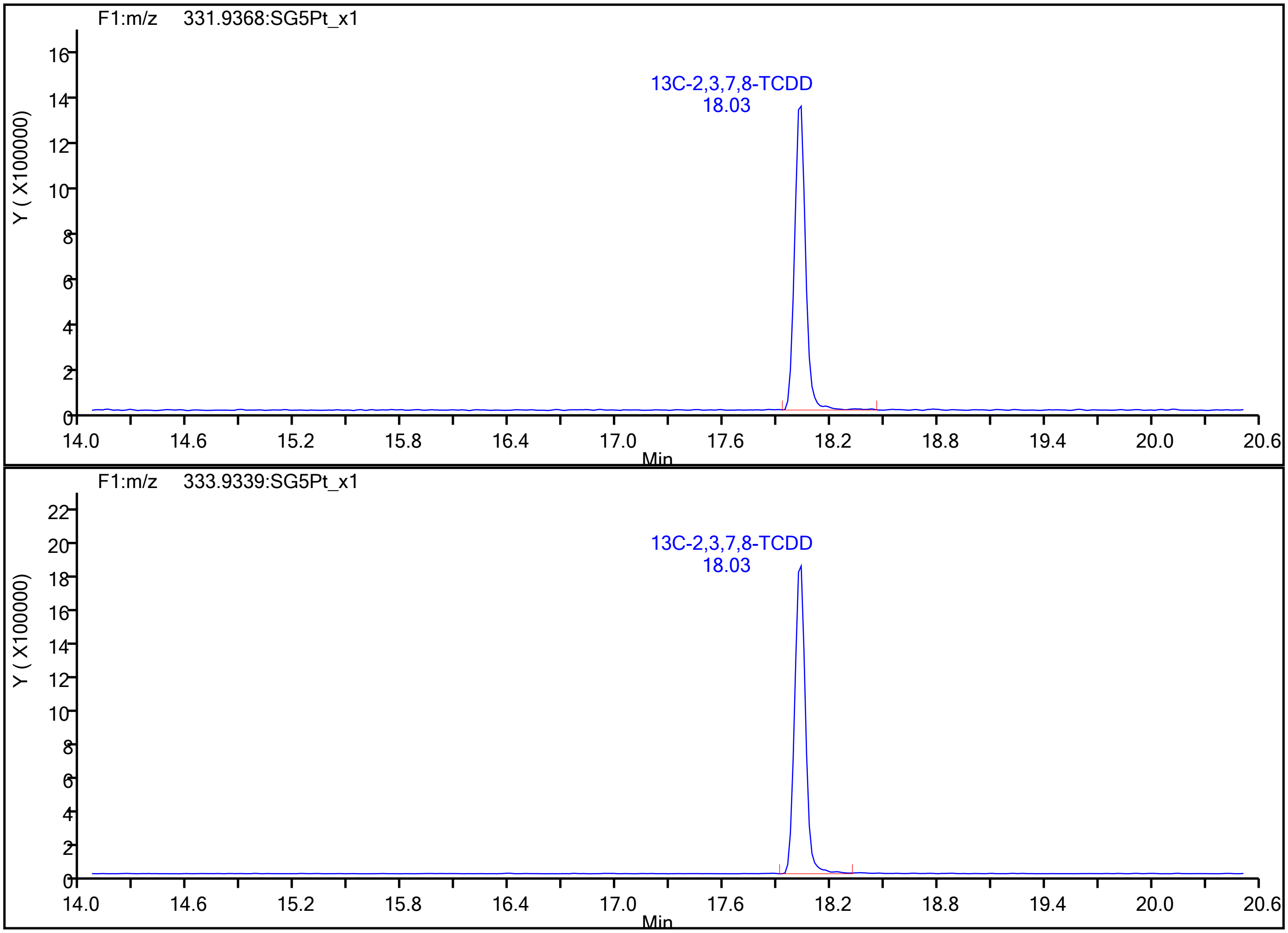

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

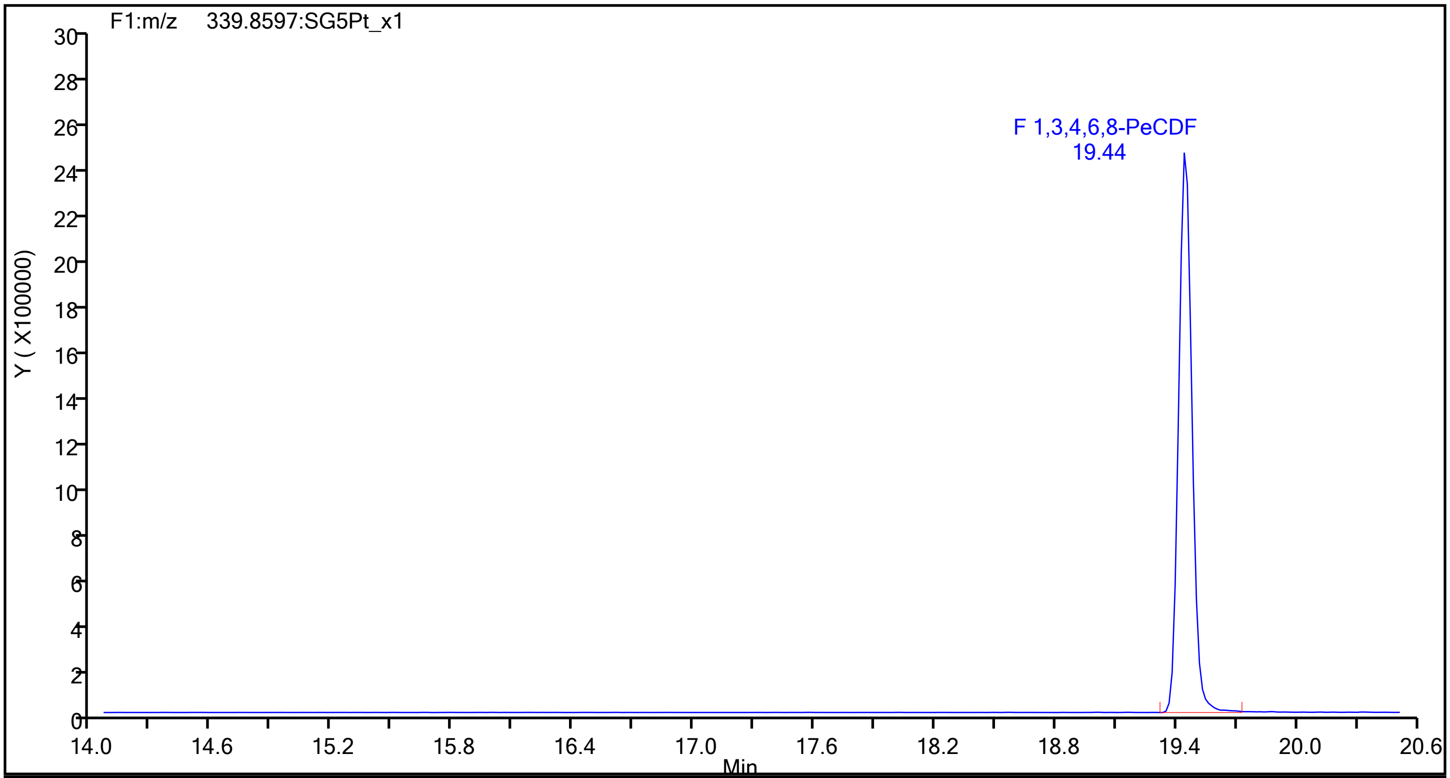

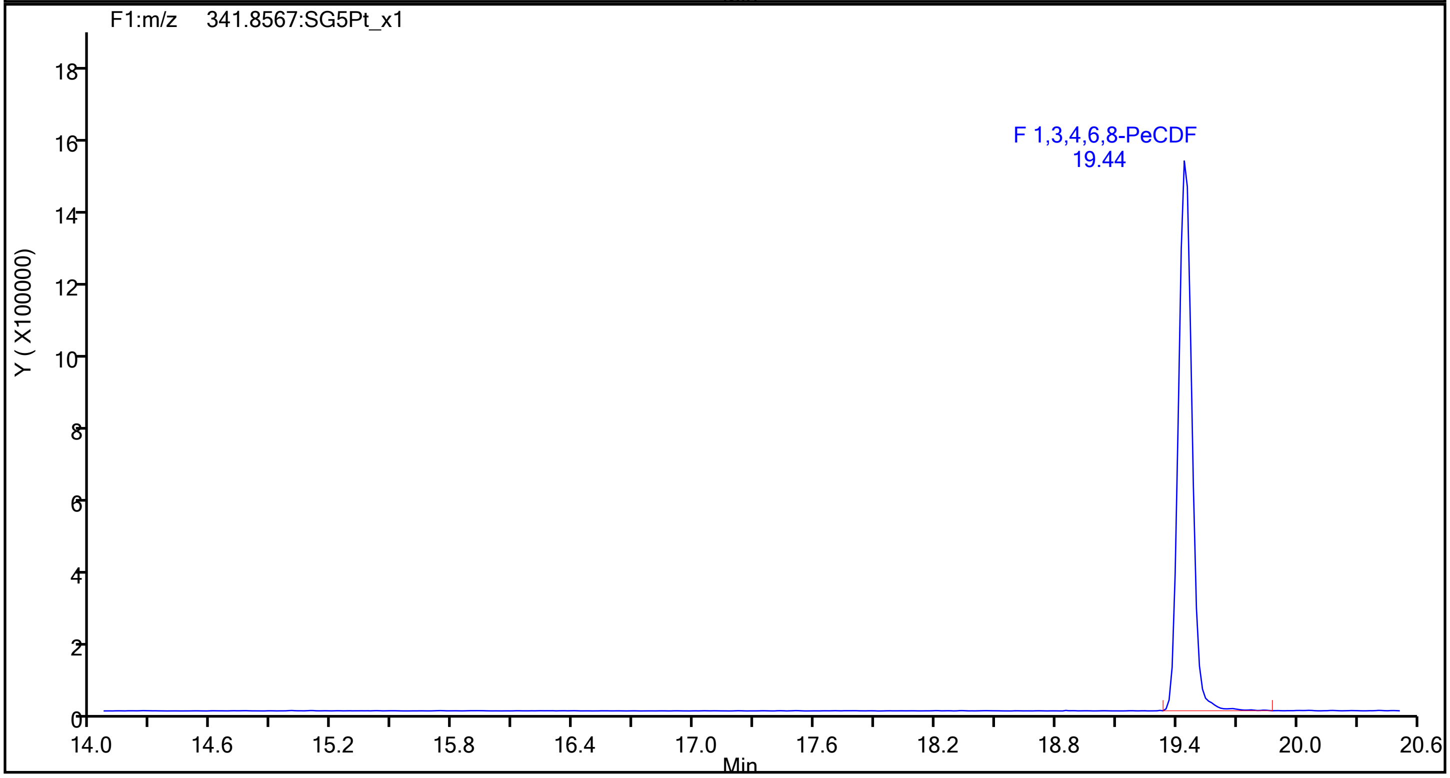

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

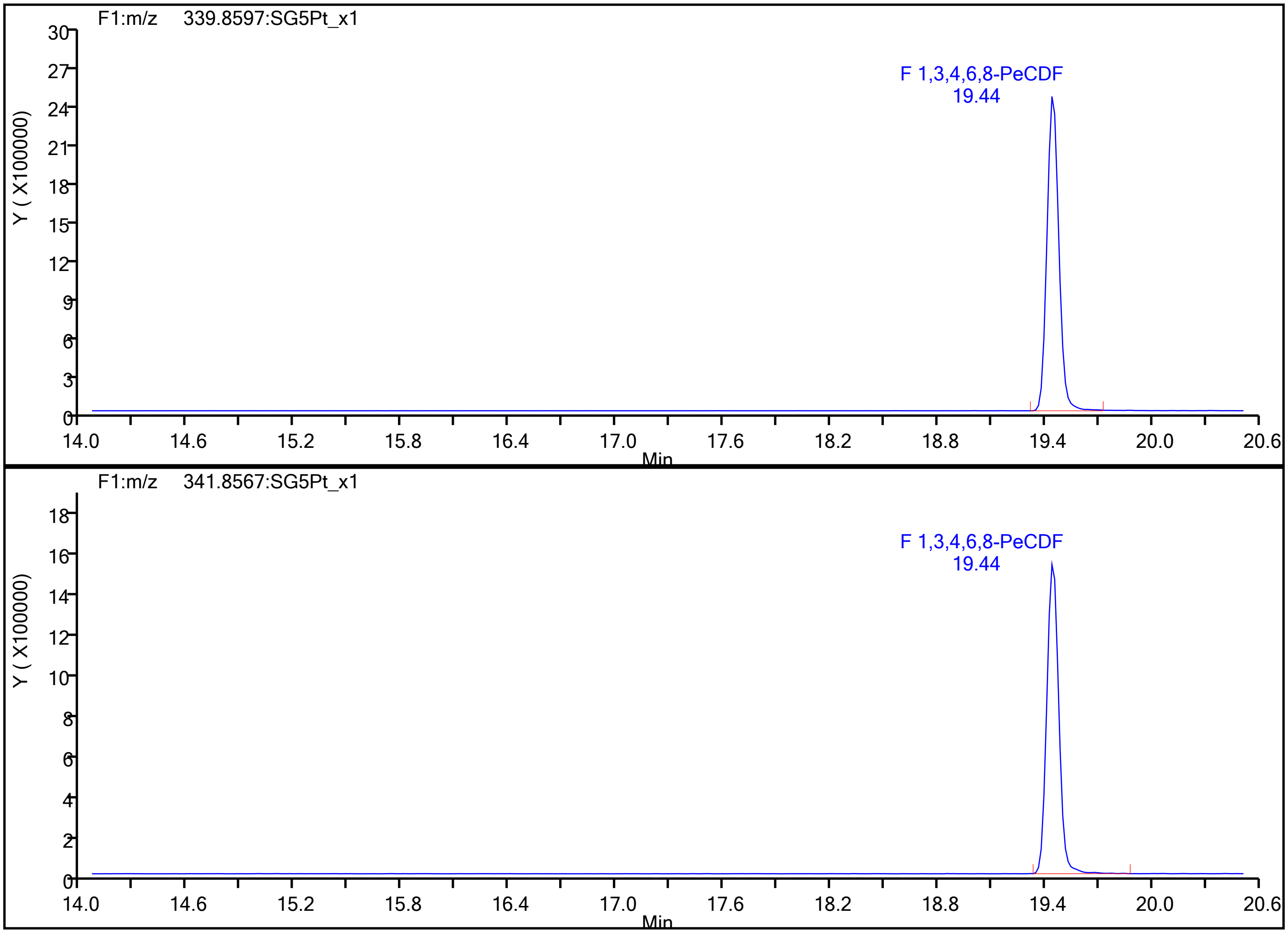

F1 PeCDFs Interference Mass

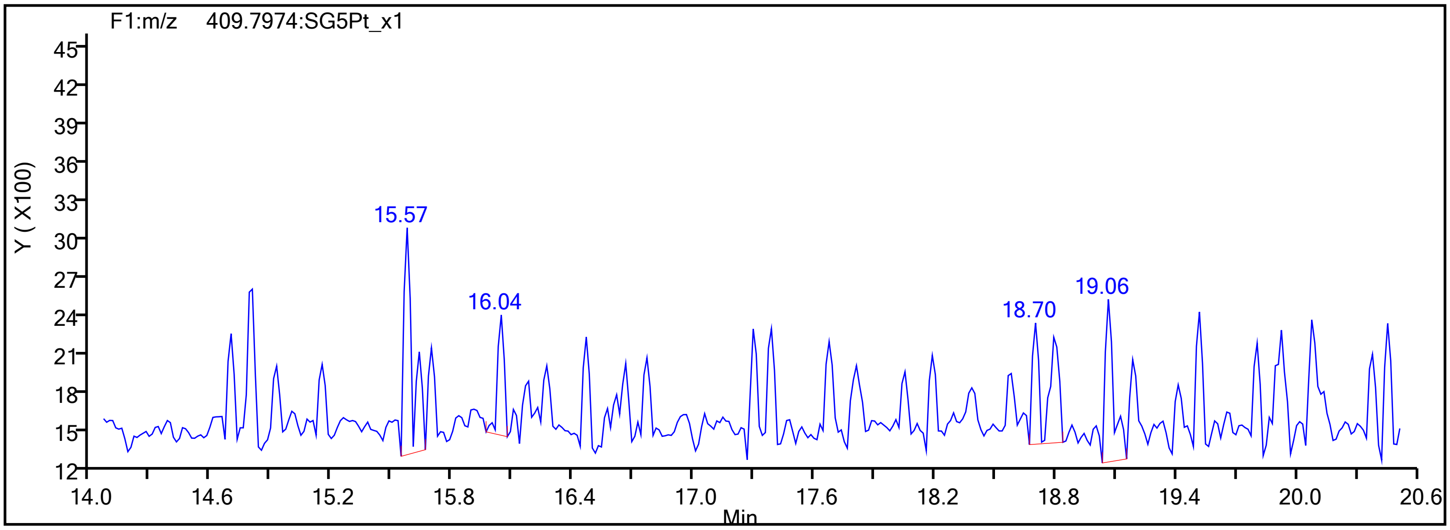

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date: 24-Nov-2020 16:08:13 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 16

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

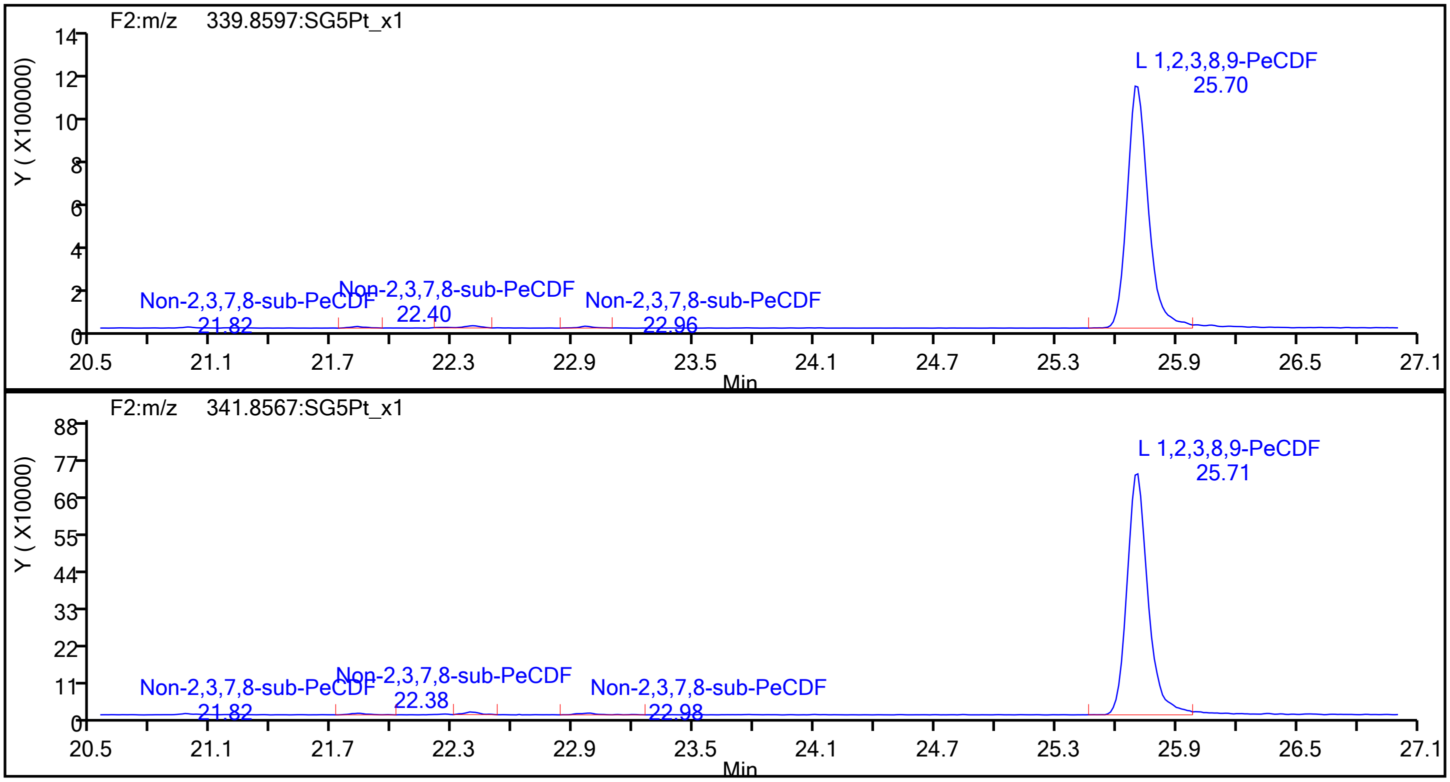

PeCDF Standards

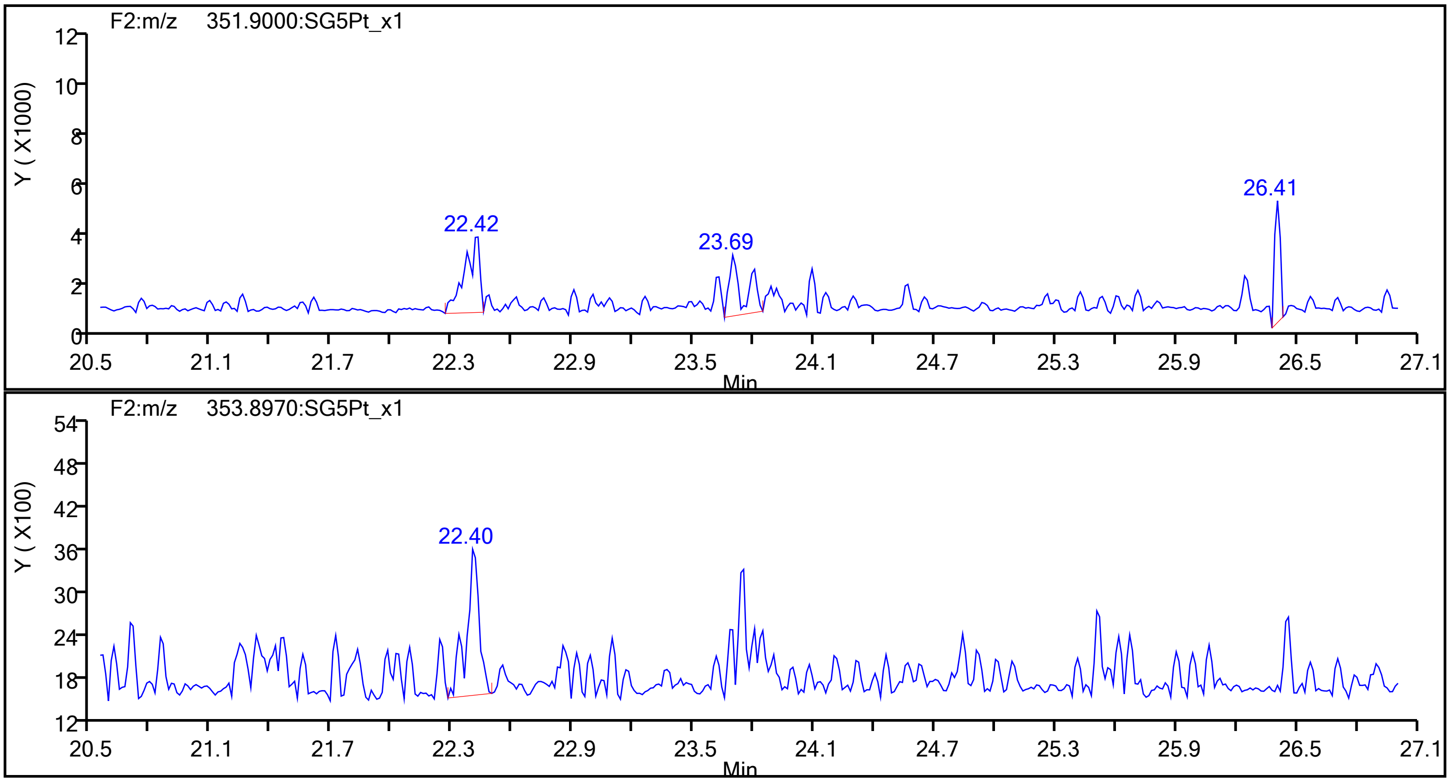

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d

Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

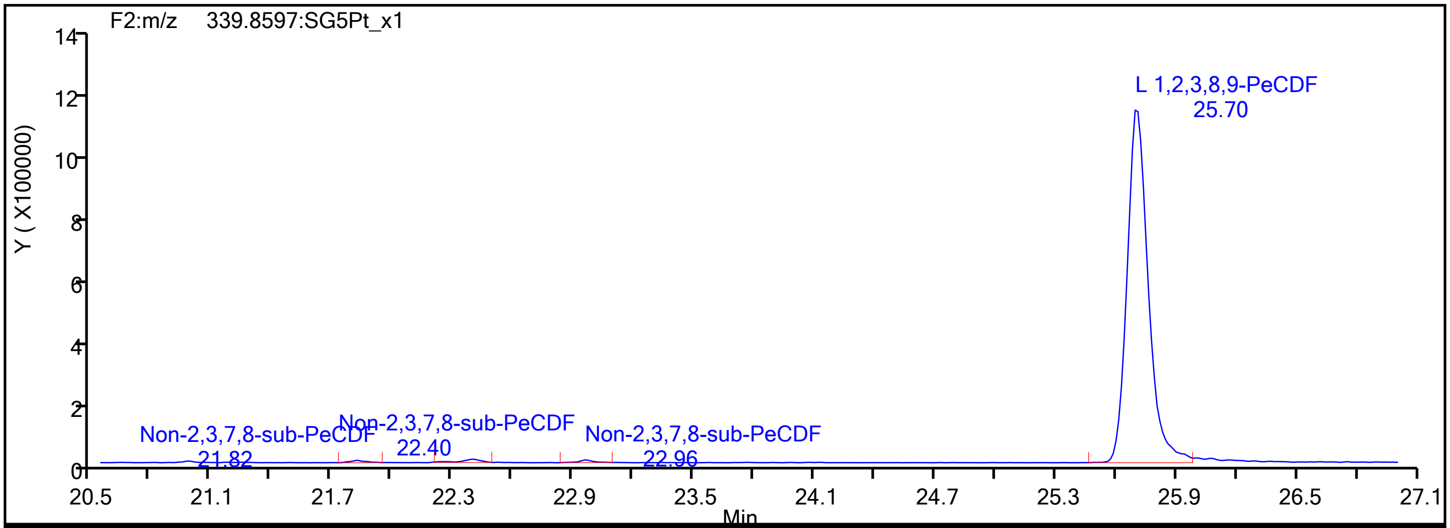

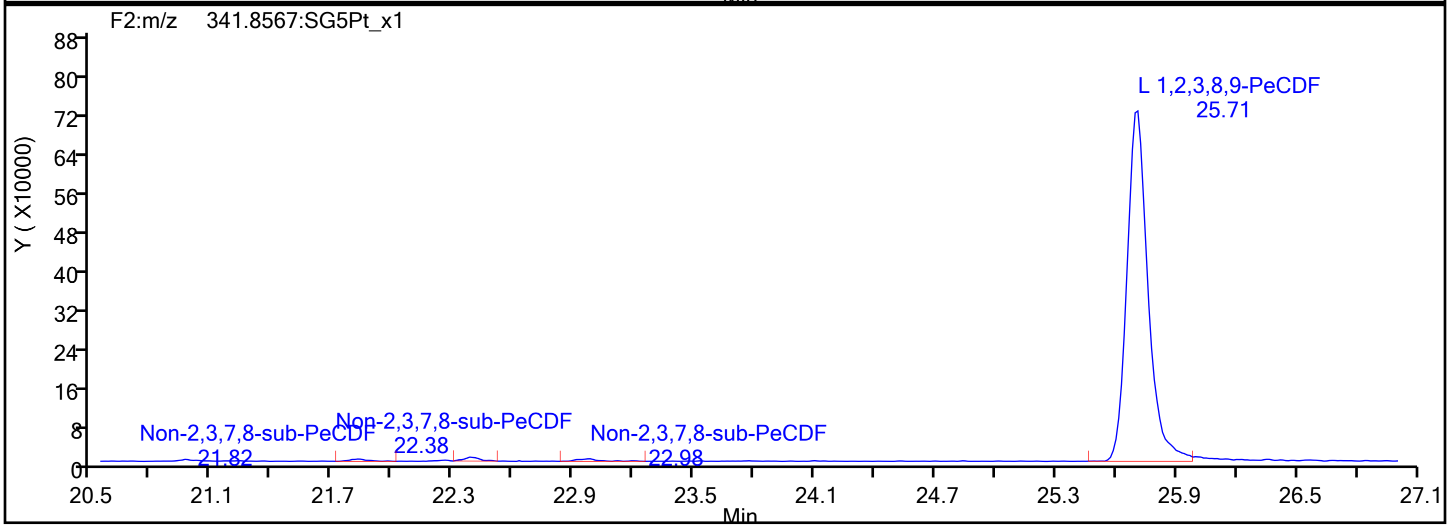

PeCDF Interference Mass

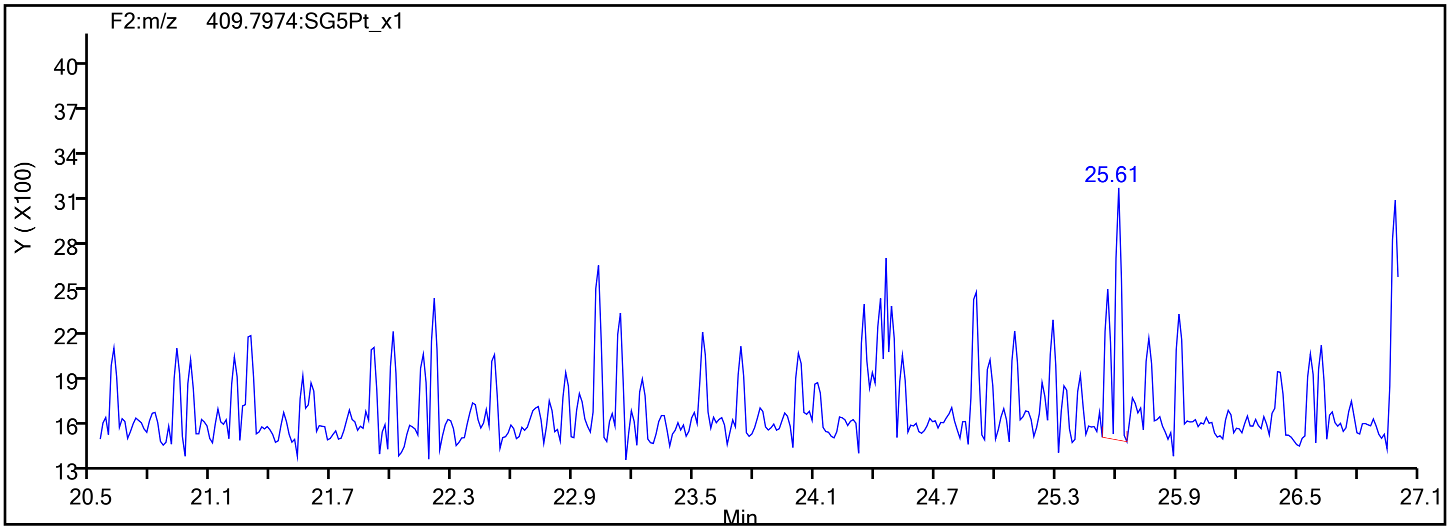

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

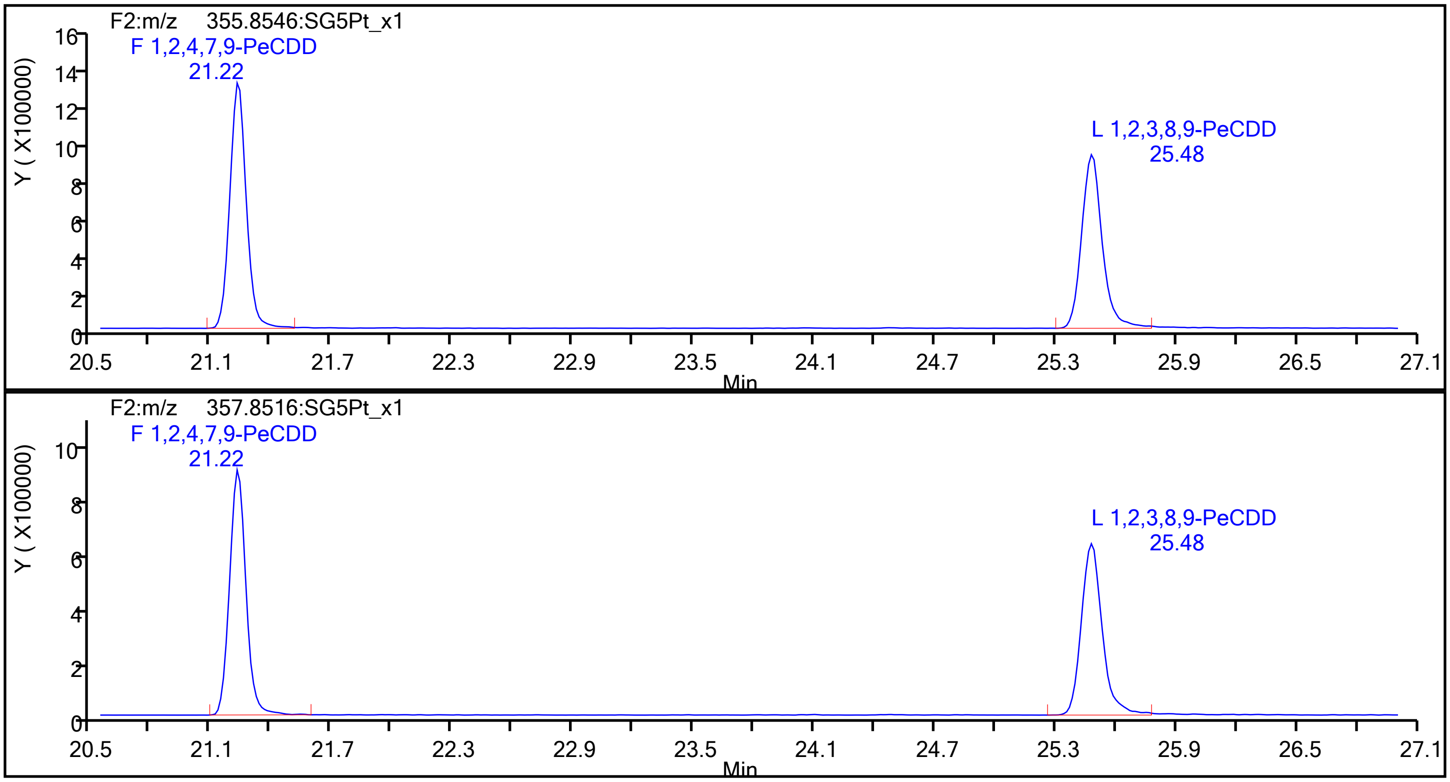

PeCDD Standards

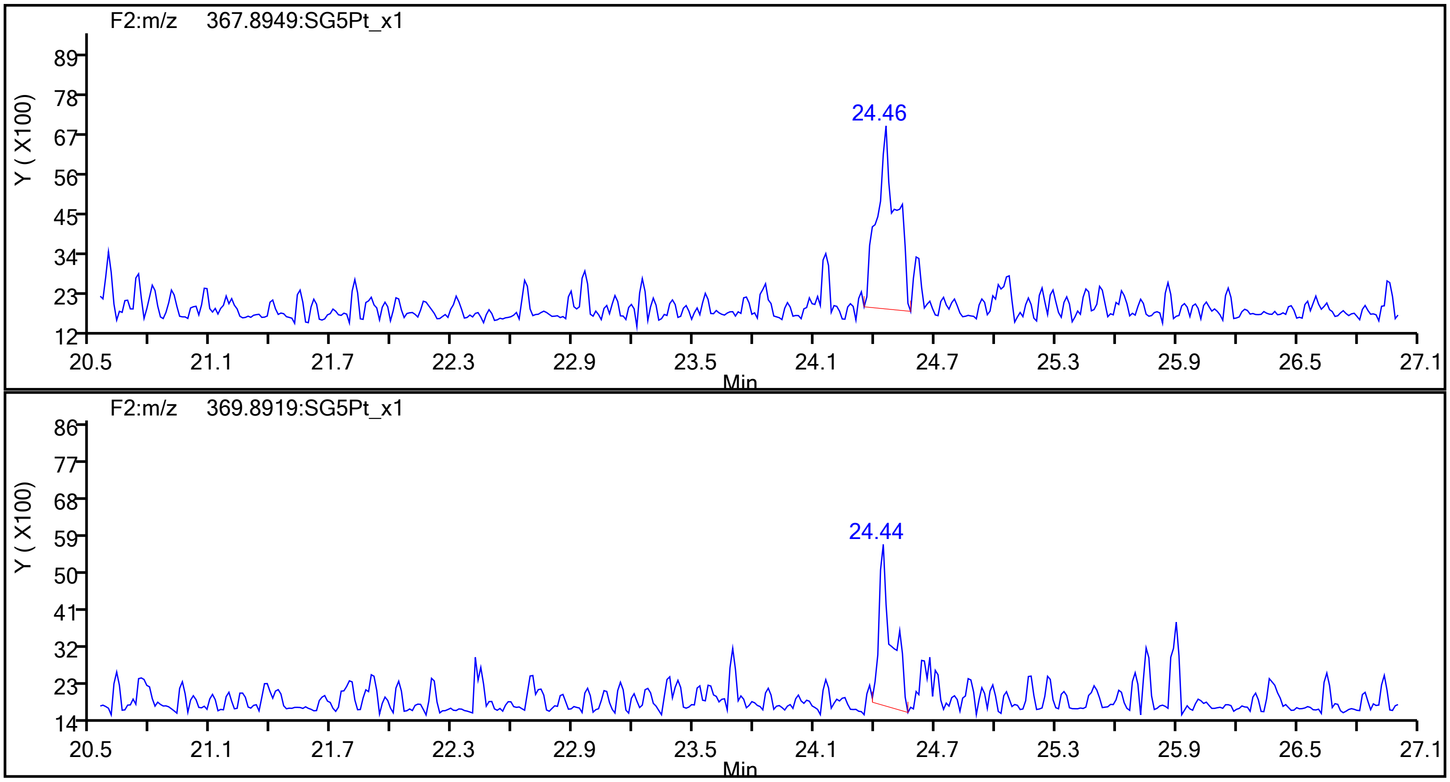

Report Date: 26-Nov-2020 00:06:46
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

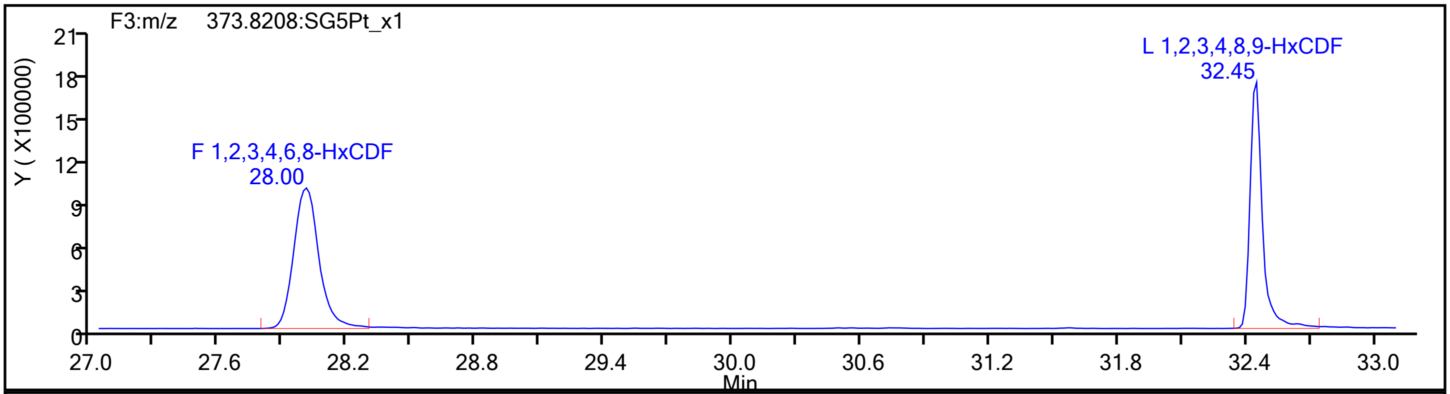

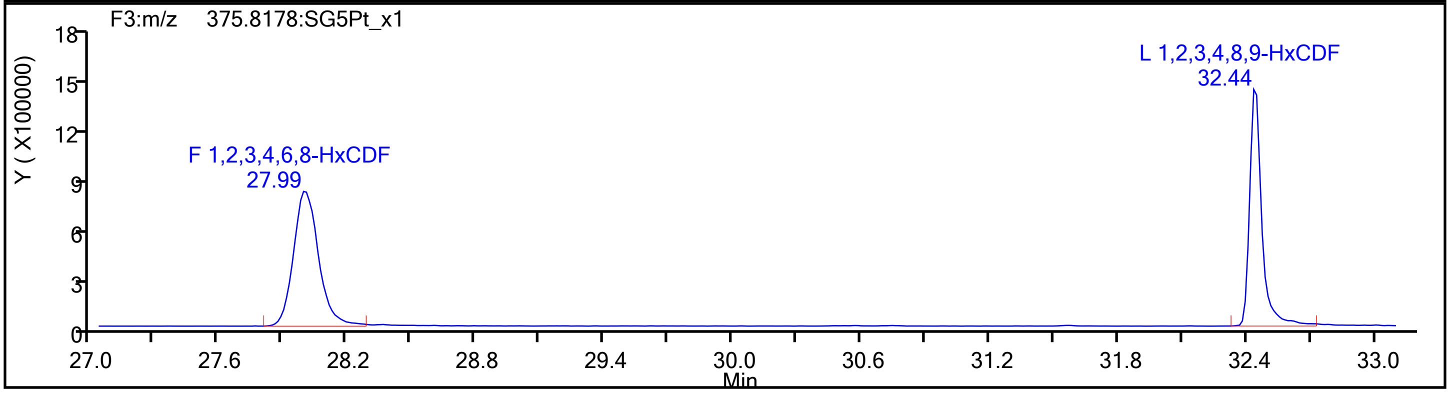

HxCDF Standards

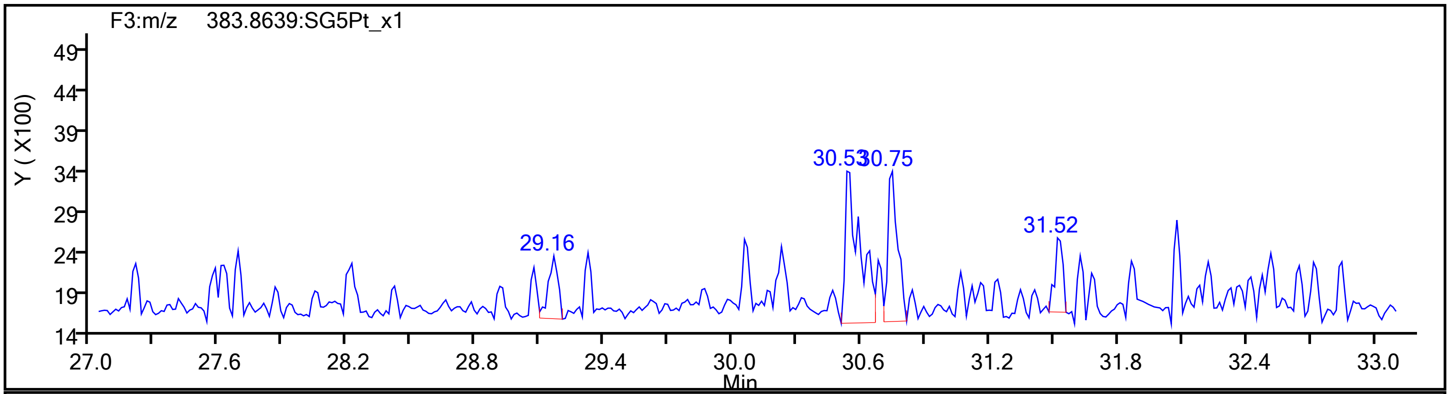

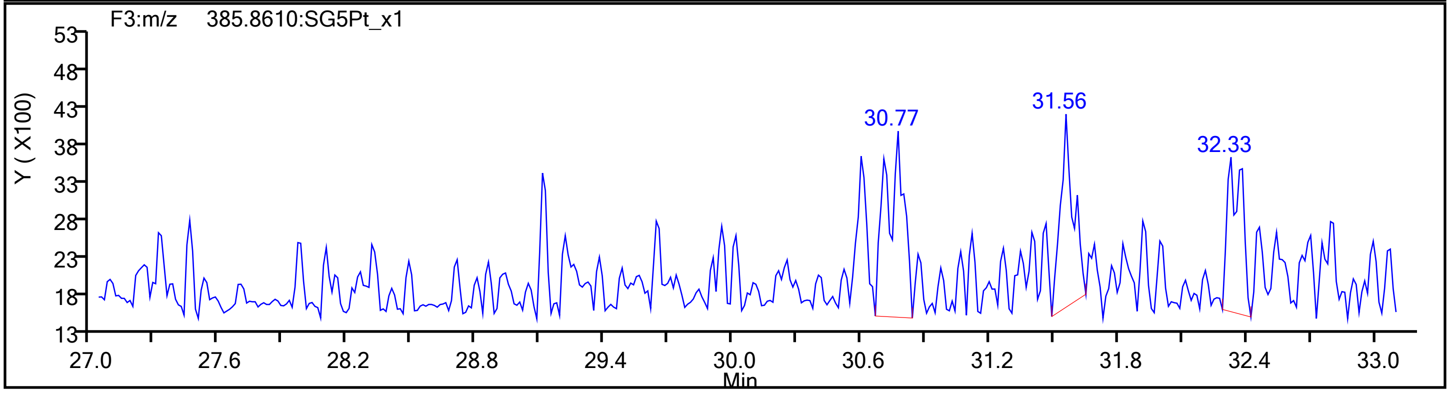

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

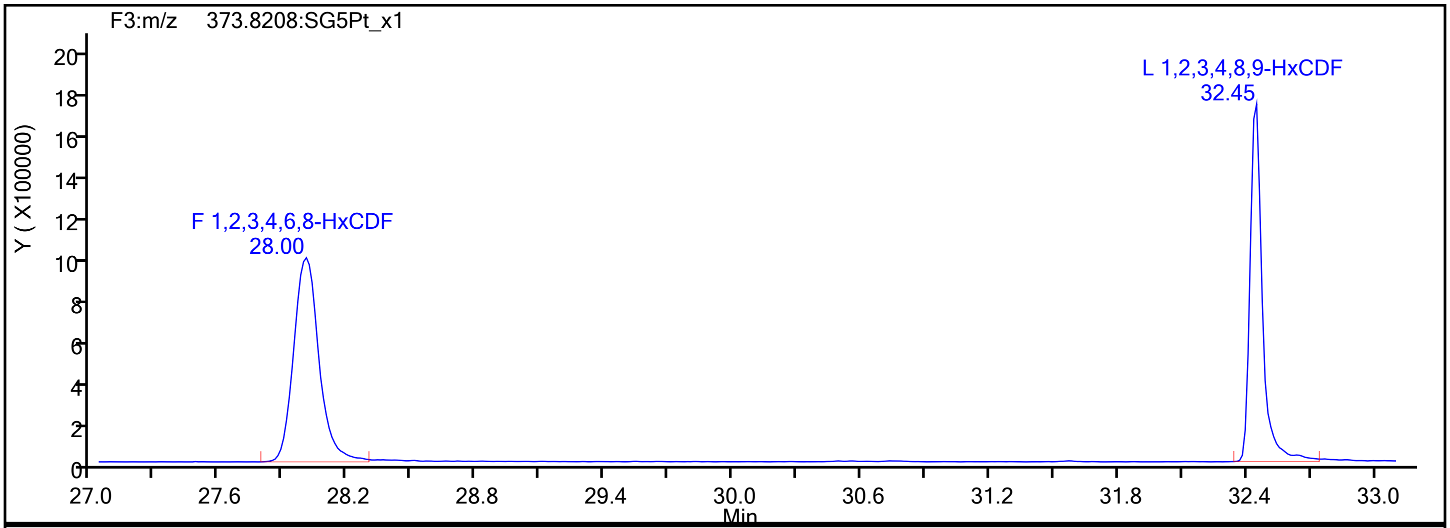

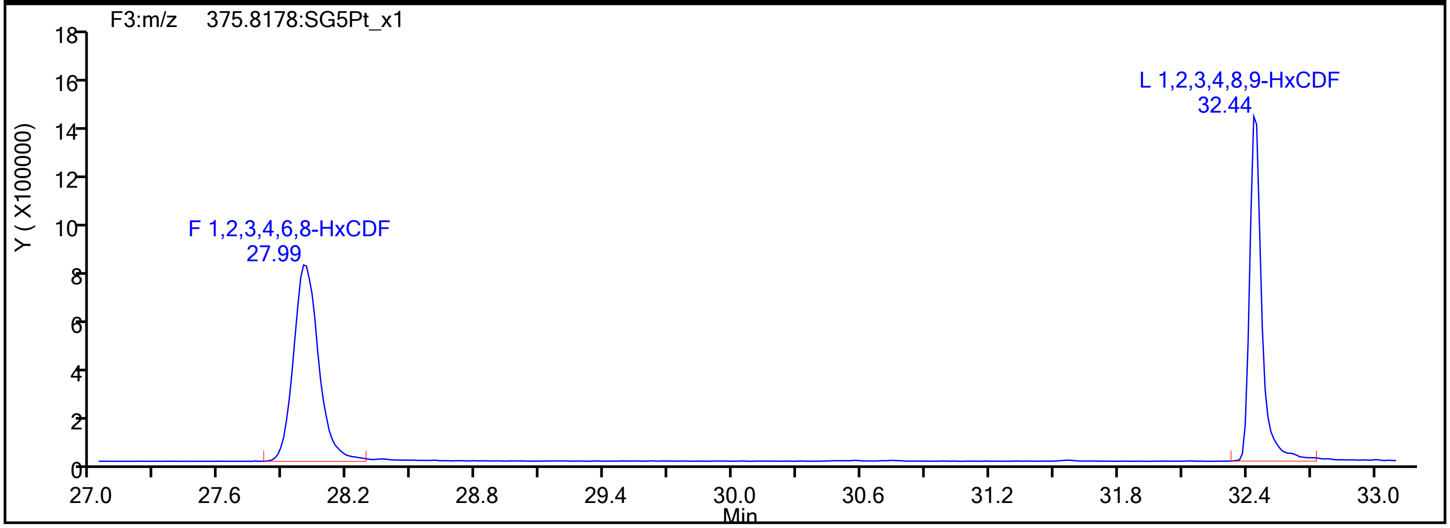

HxCDF Interference Mass

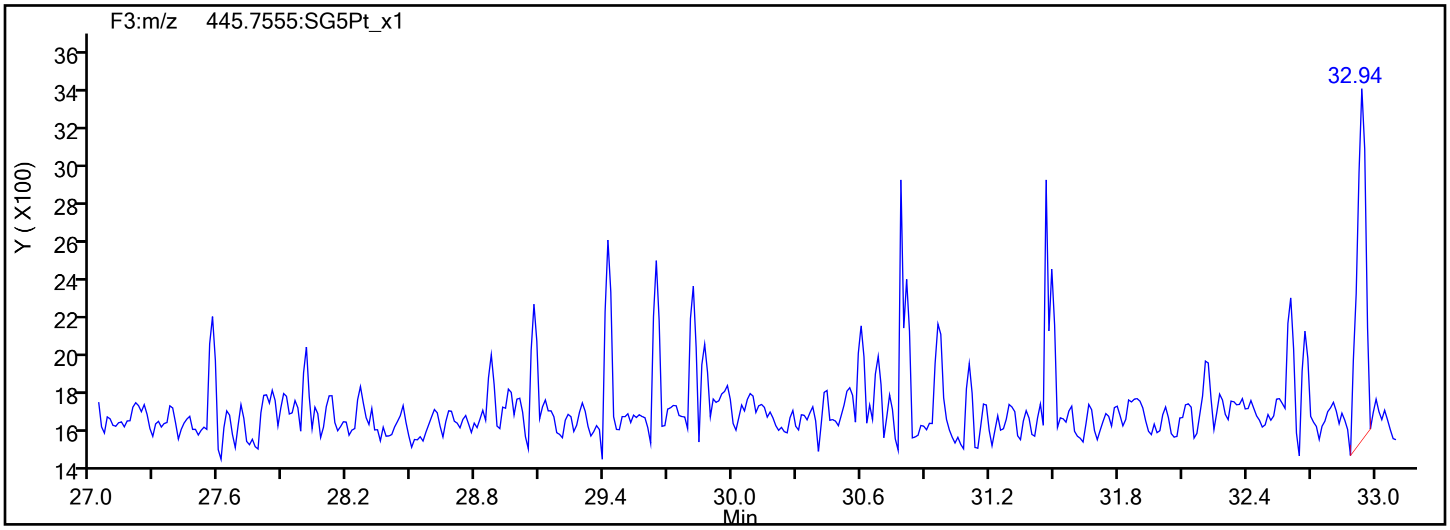

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

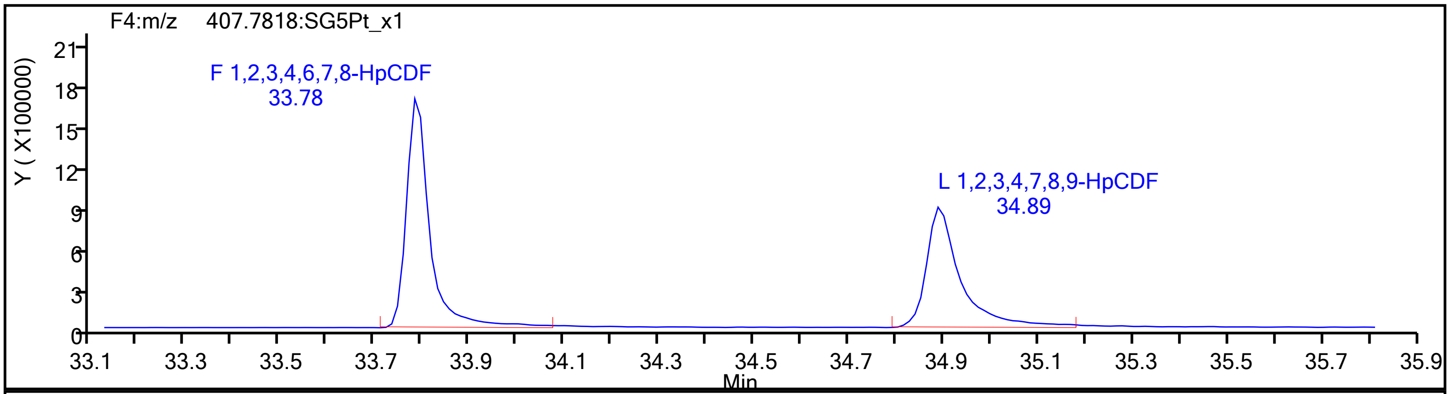

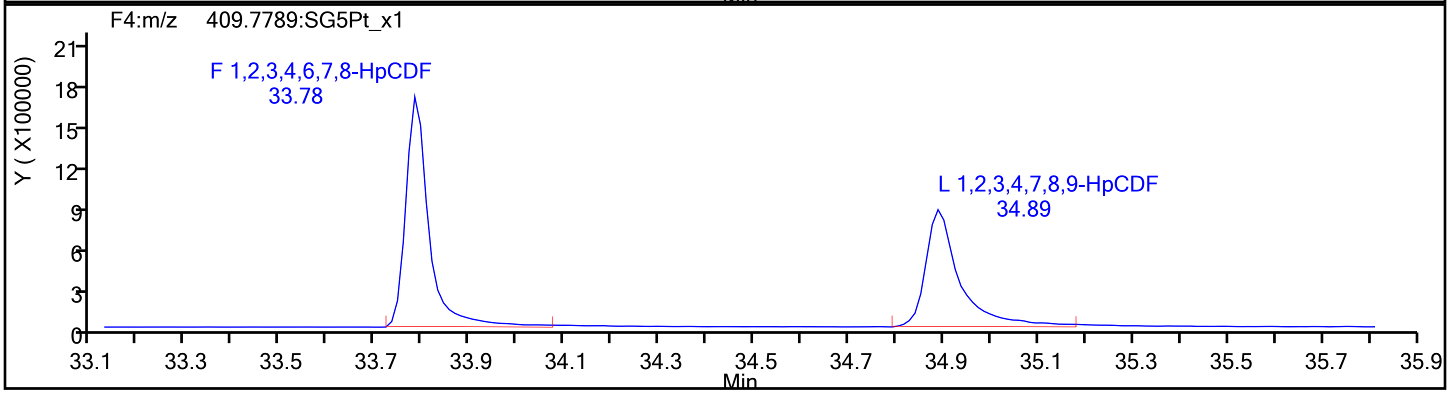

HpCDF Standards

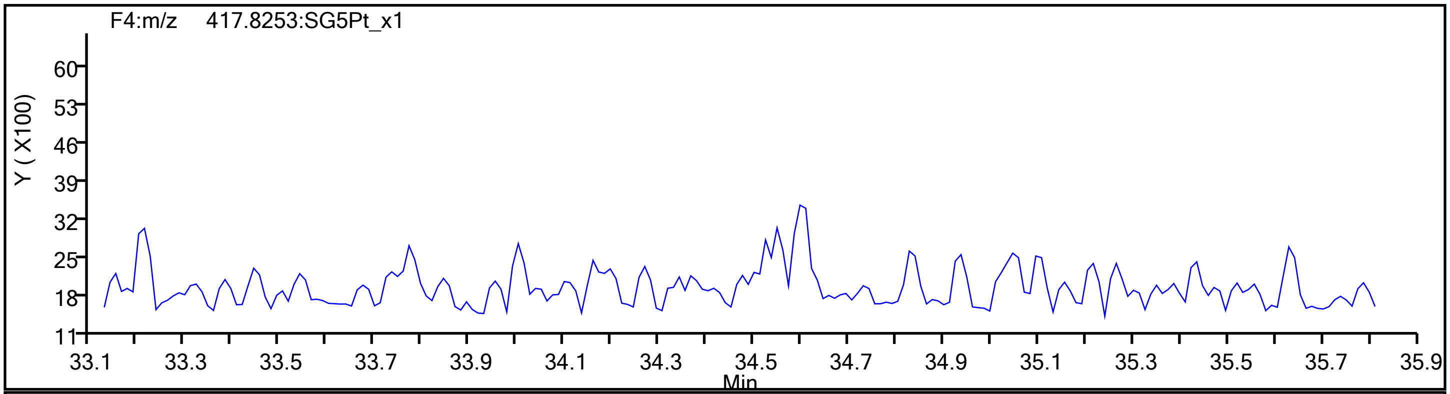

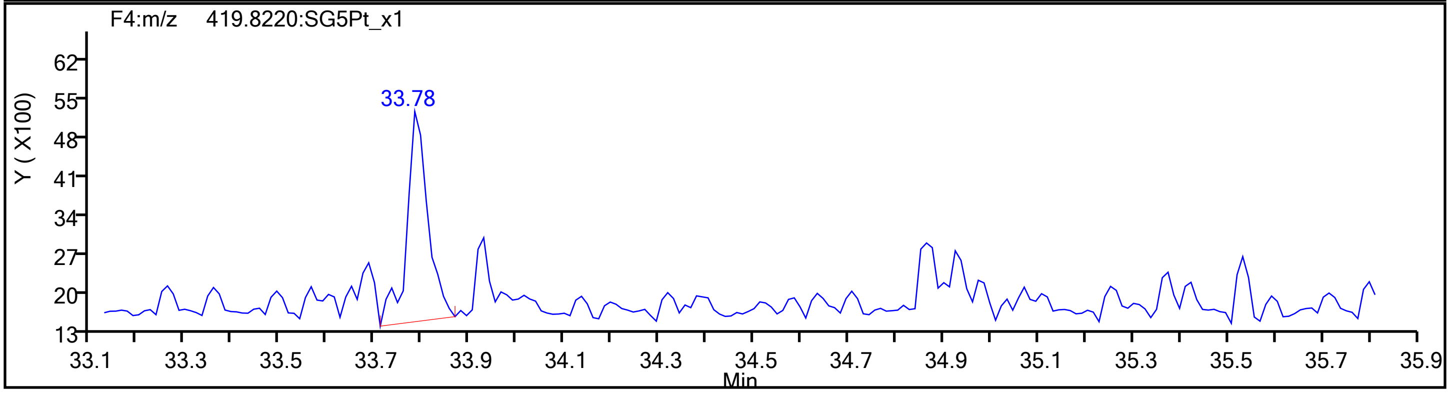

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

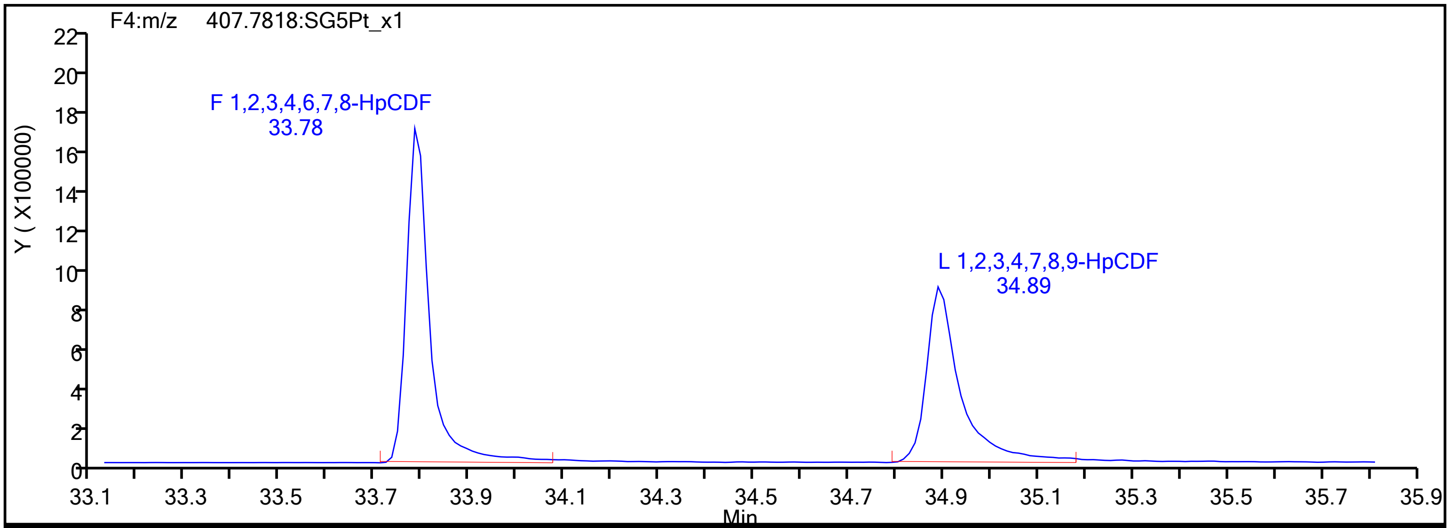

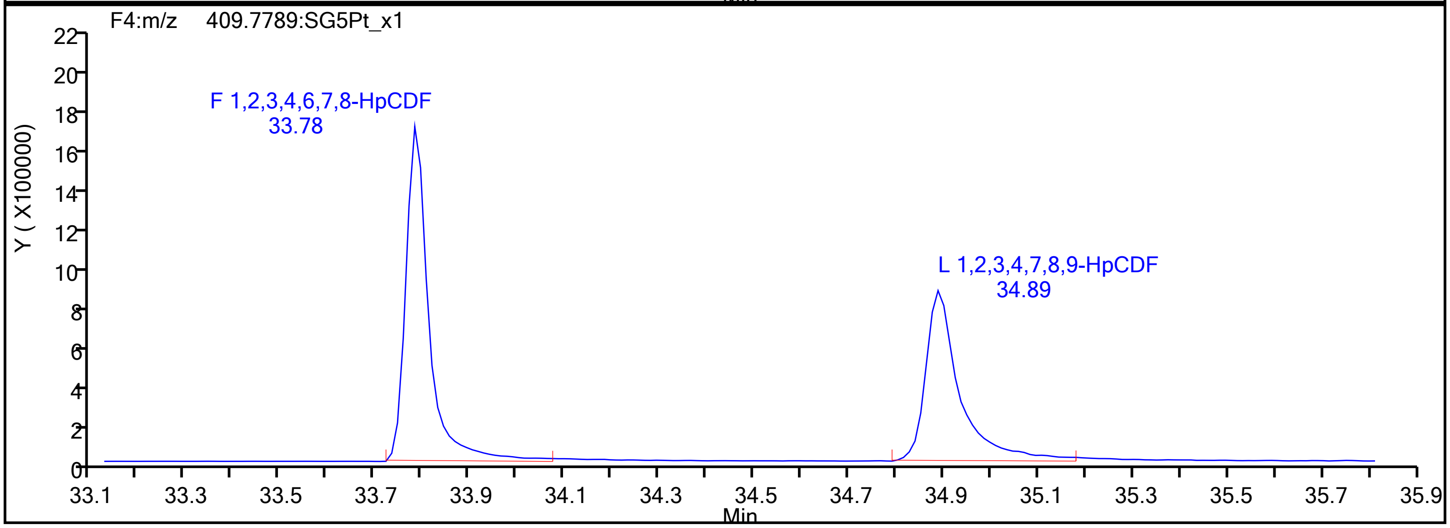

HpCDF Interference Mass

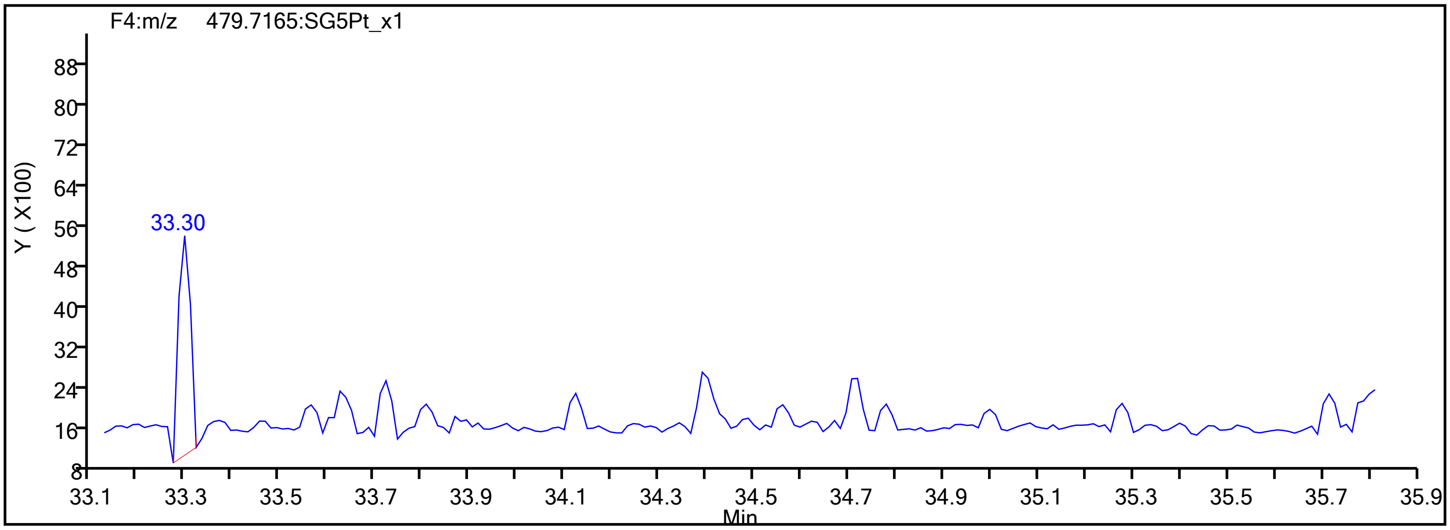

Report Date: 26-Nov-2020 00:06:46　　Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

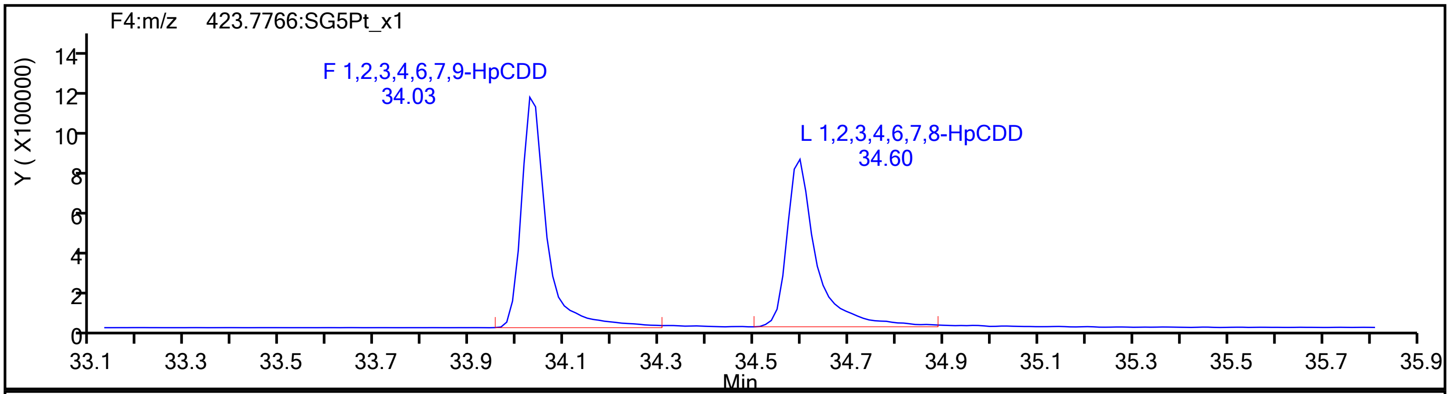

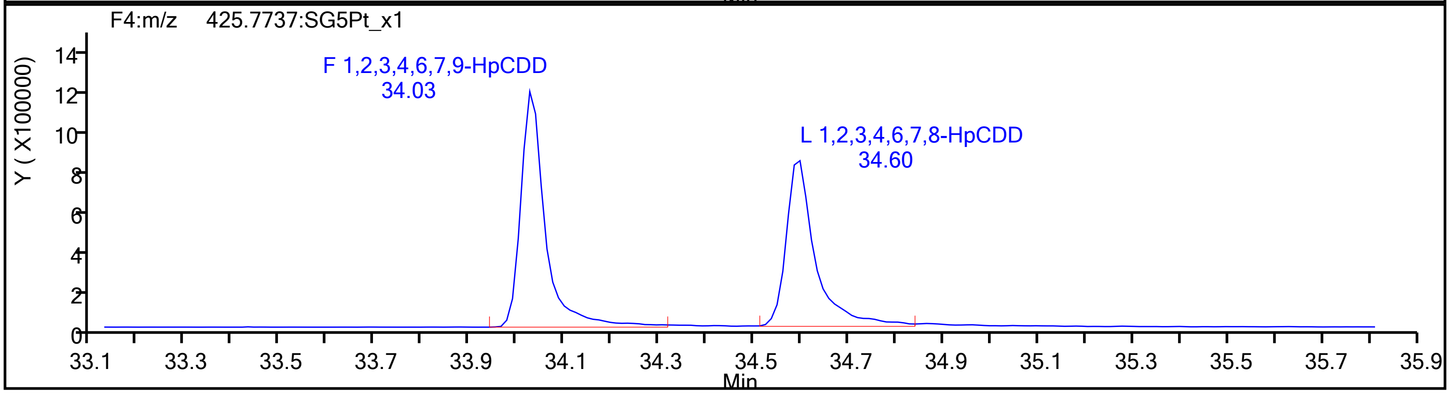

HpCDD Standards

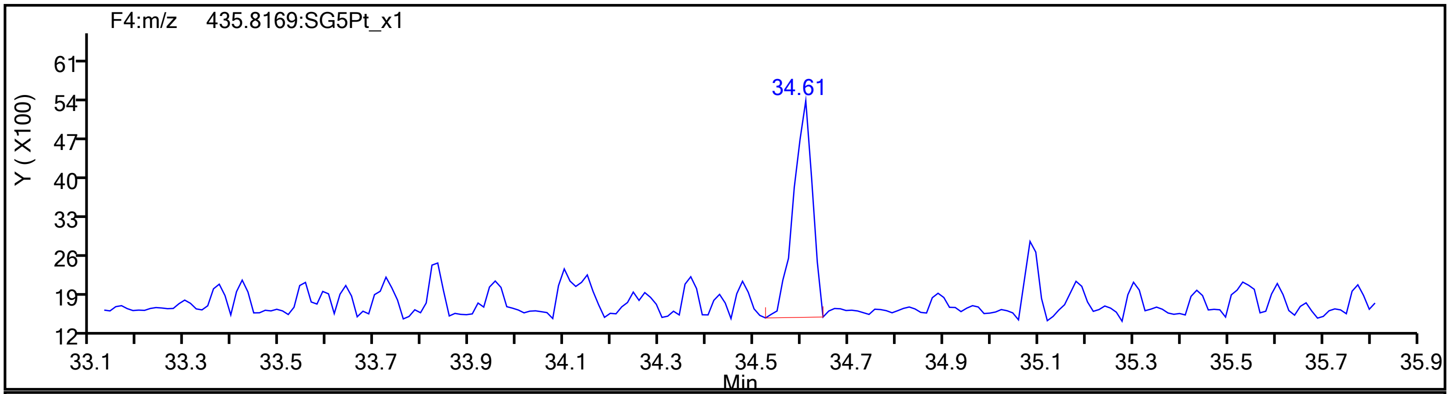

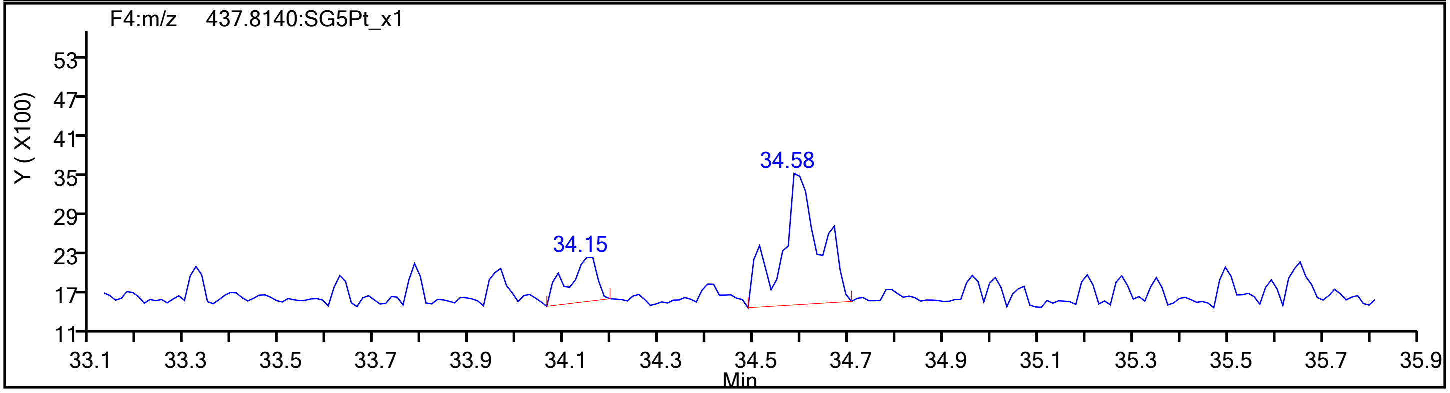

Report Date: 26-Nov-2020 00:06:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d
Injection Date: 24-Nov-2020 16:08:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 16
Column Type: DB-5
Column Dia: 0.32 mm

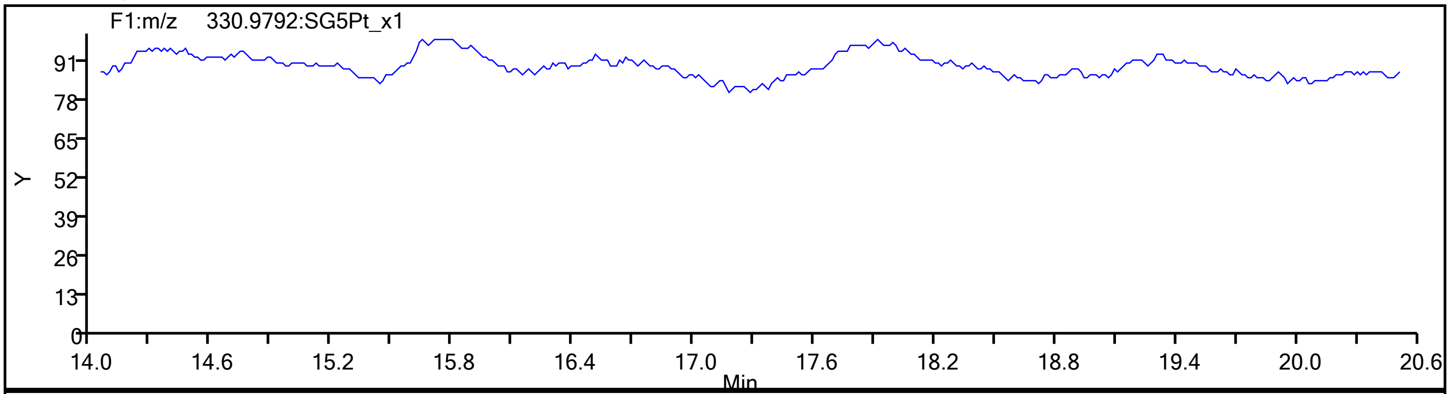

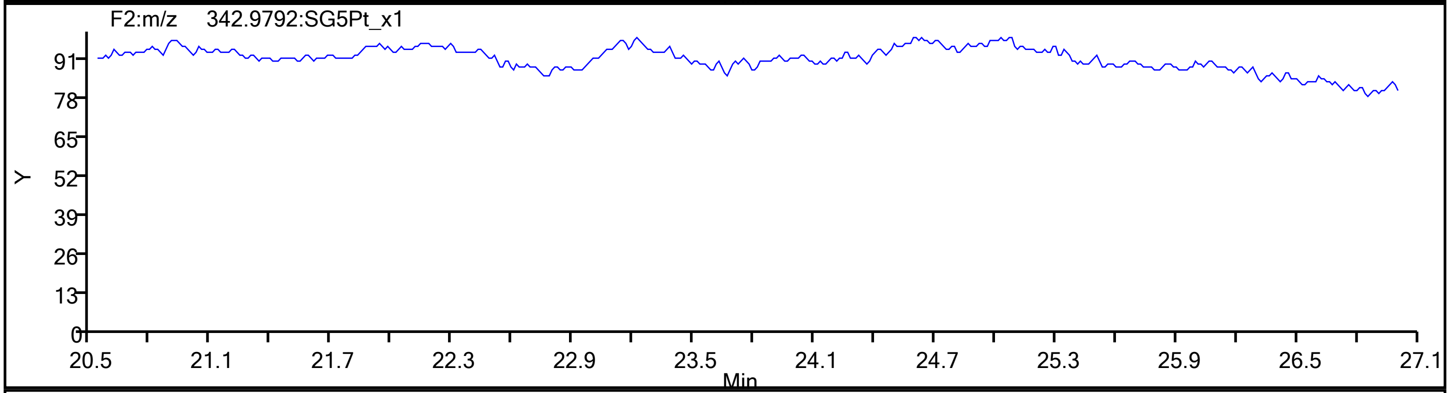

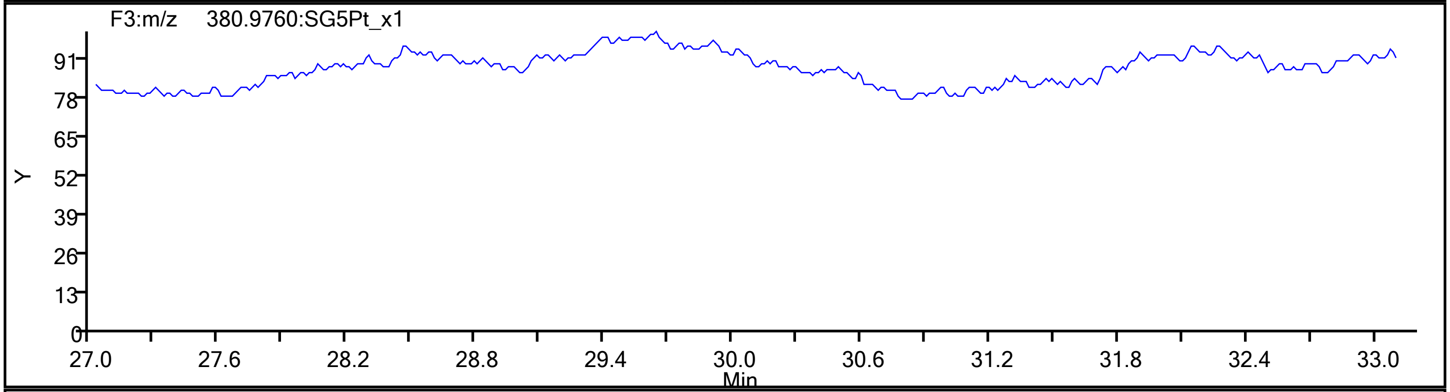

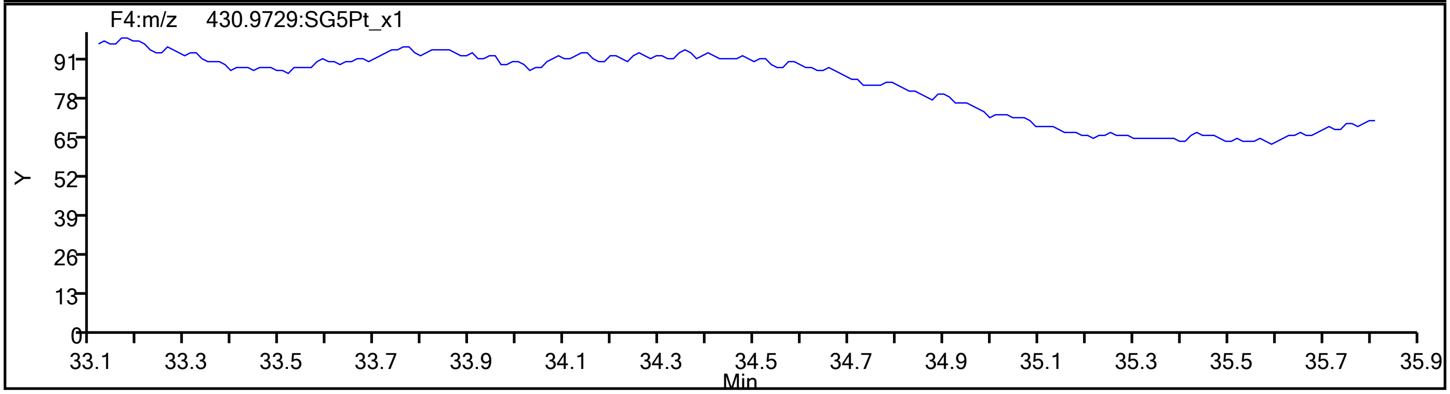

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_41.d		
Injection Date:	24-Nov-2020 16:08:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	16
Column Type:	DB-5	Column Dia:	0.32 mm

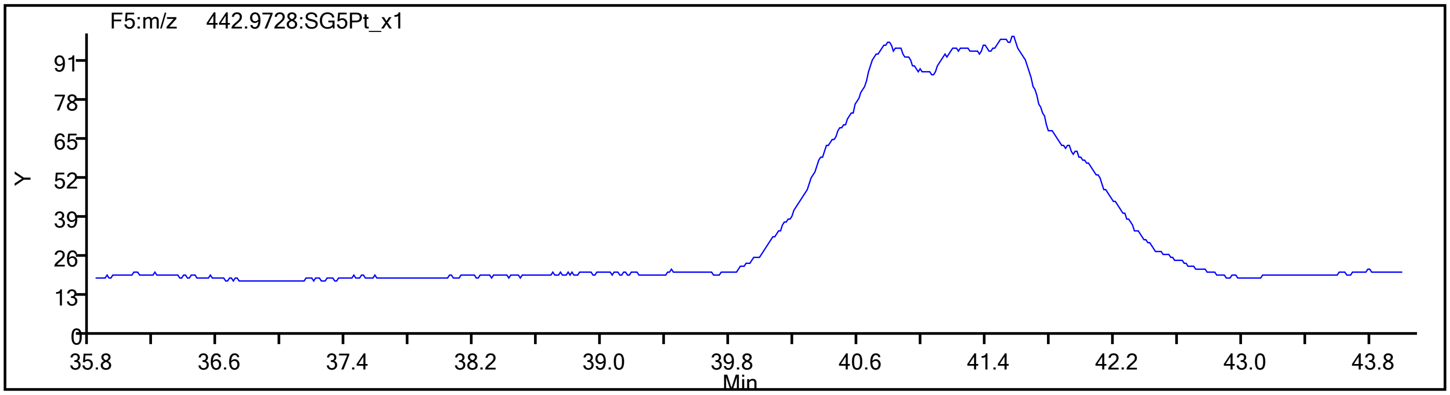

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 24-Jul-2020 22:33:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

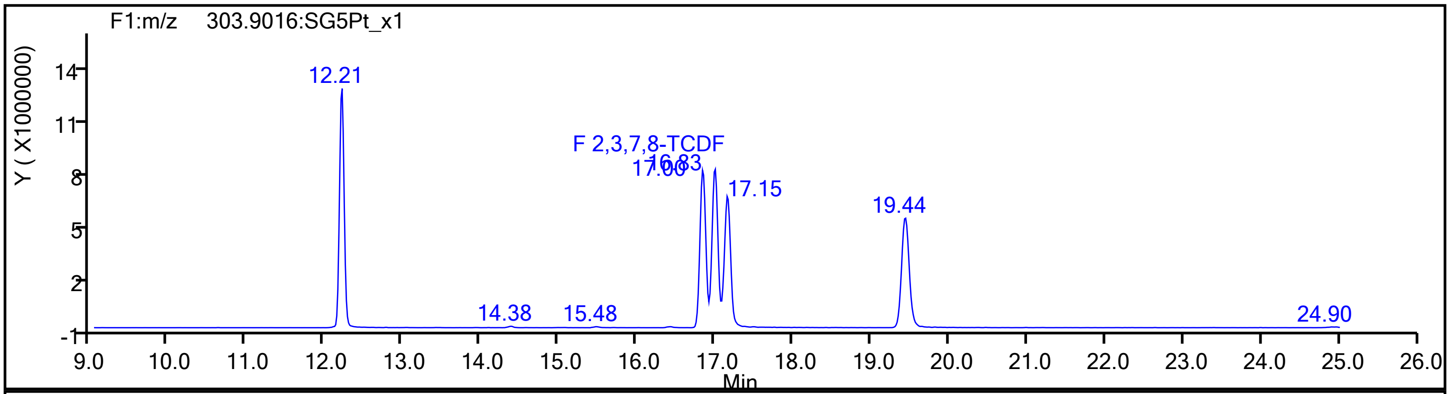

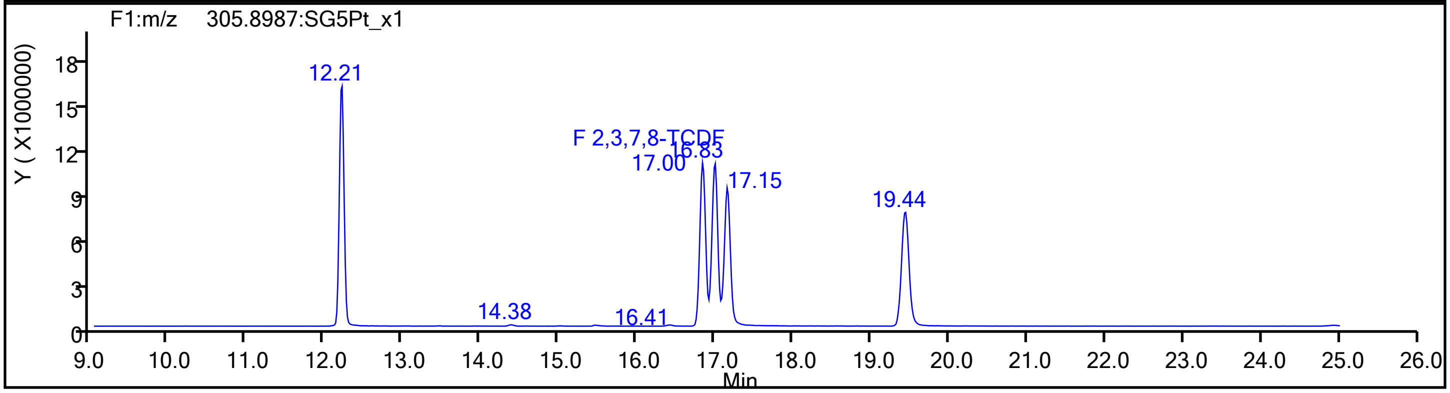

TCDF Standards

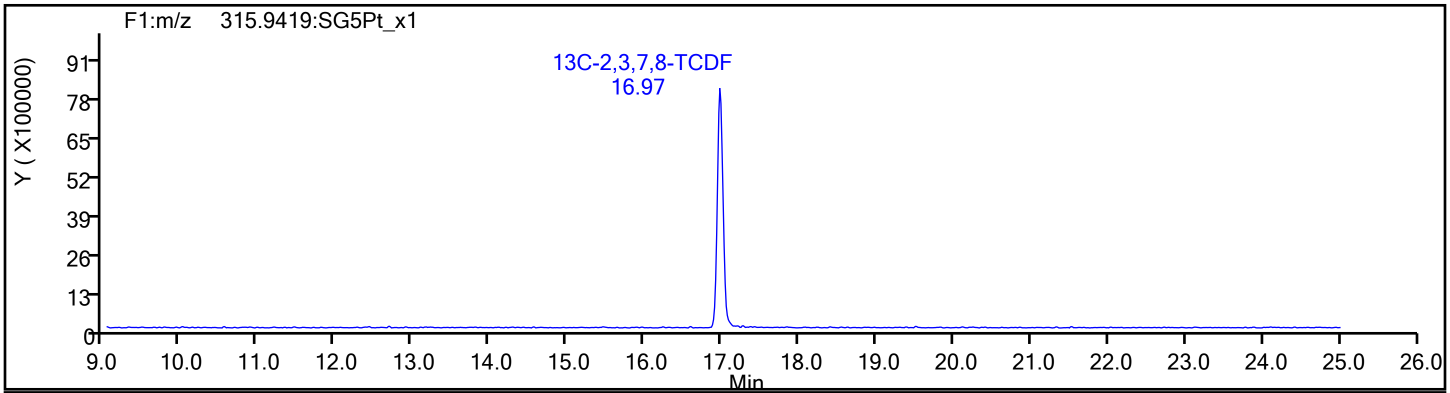

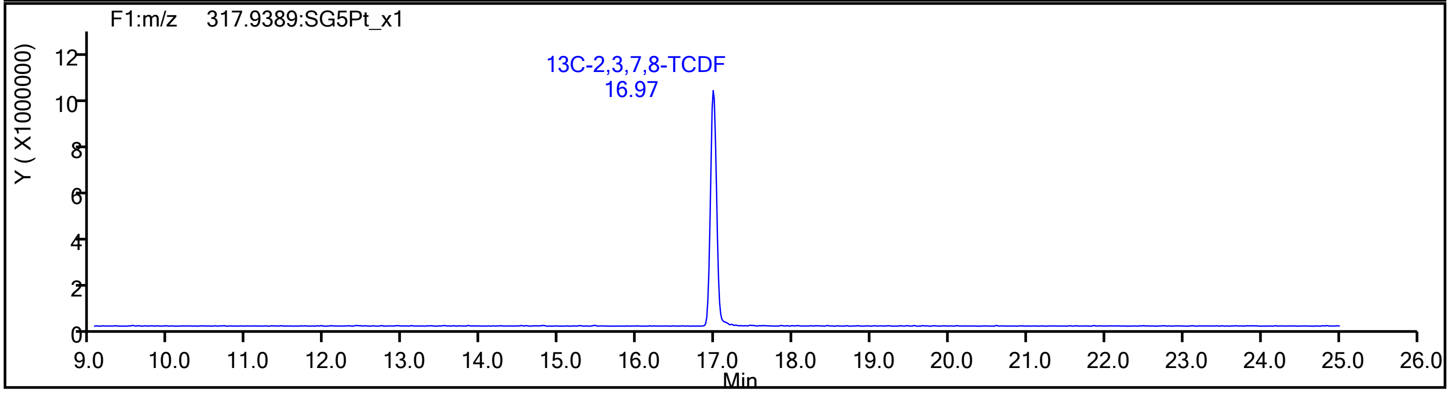

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

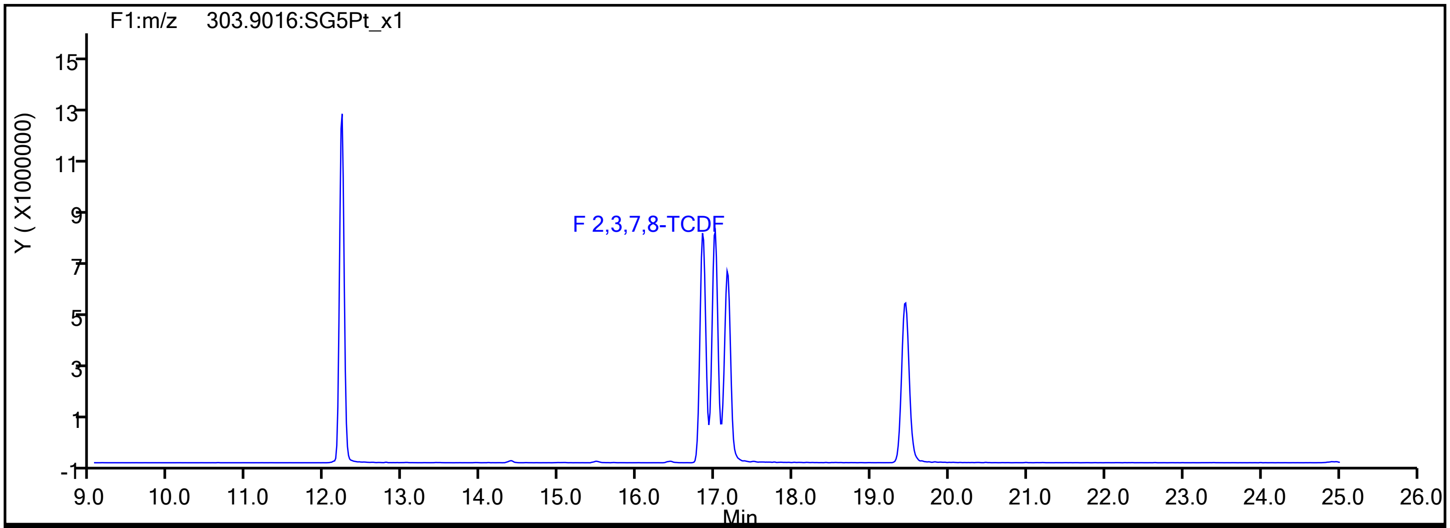

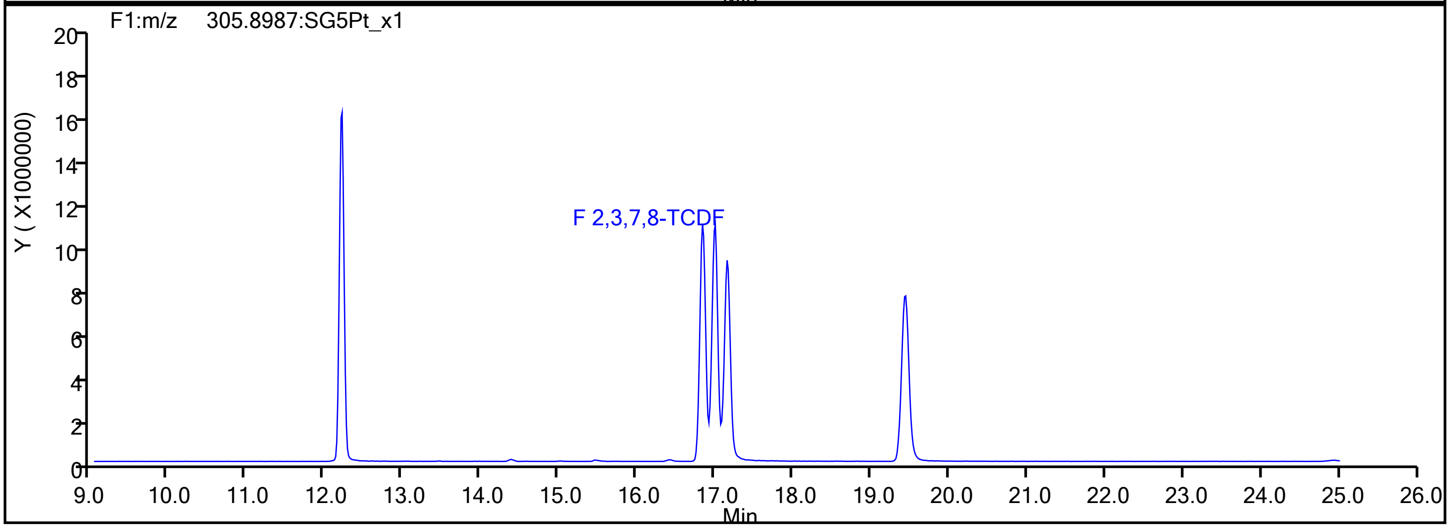

TCDF Interference Mass

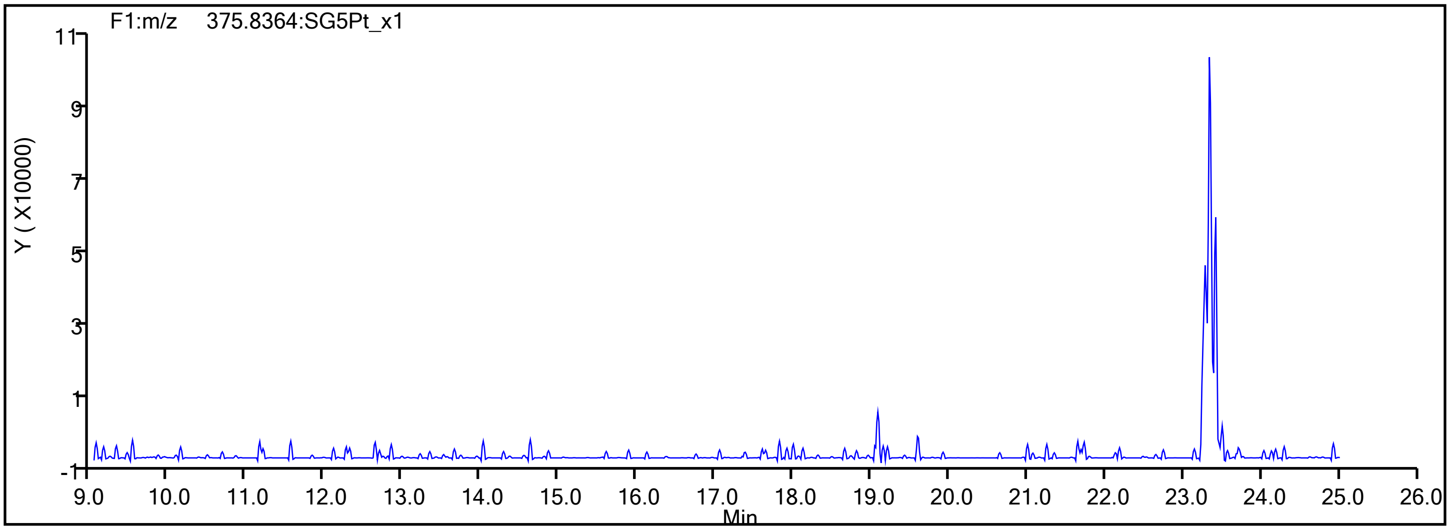

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

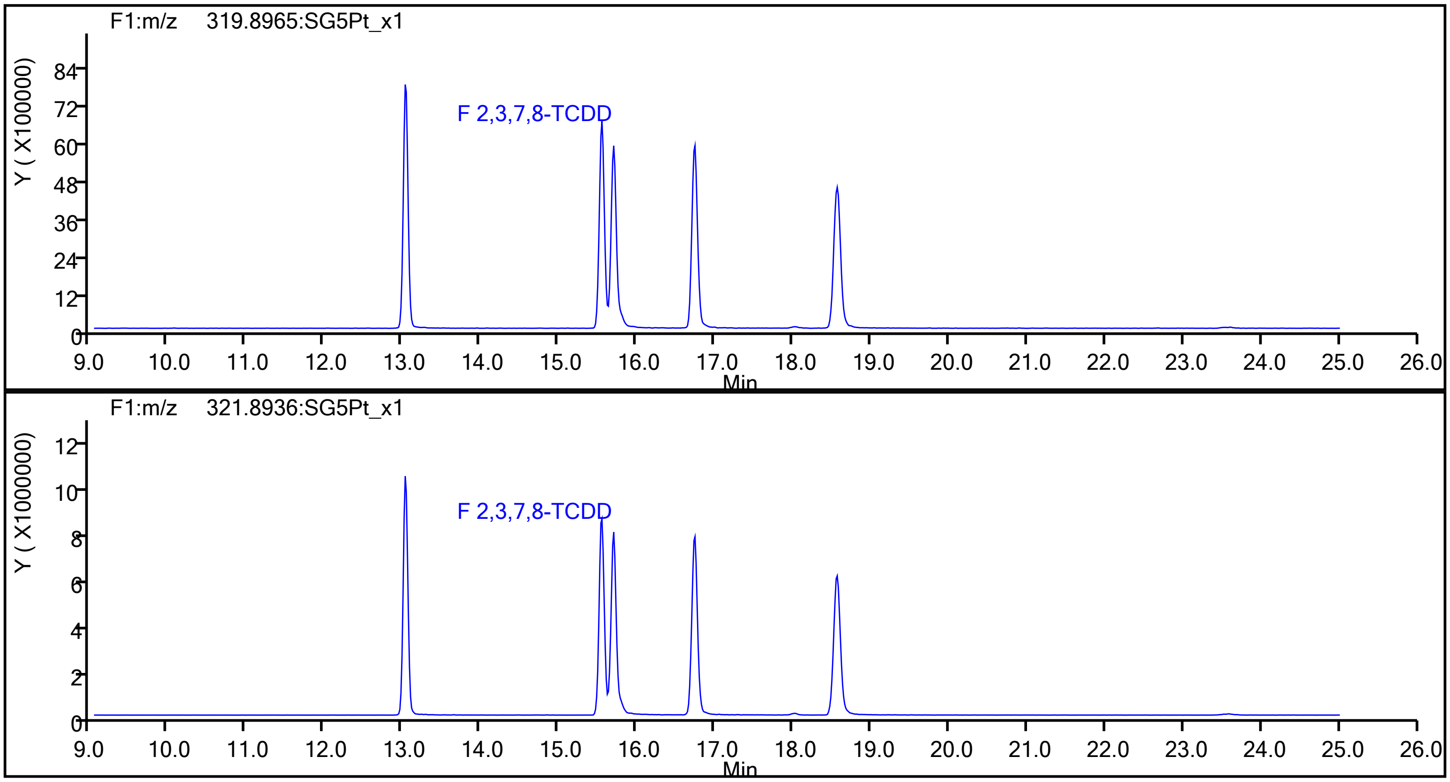

TCDD Standards

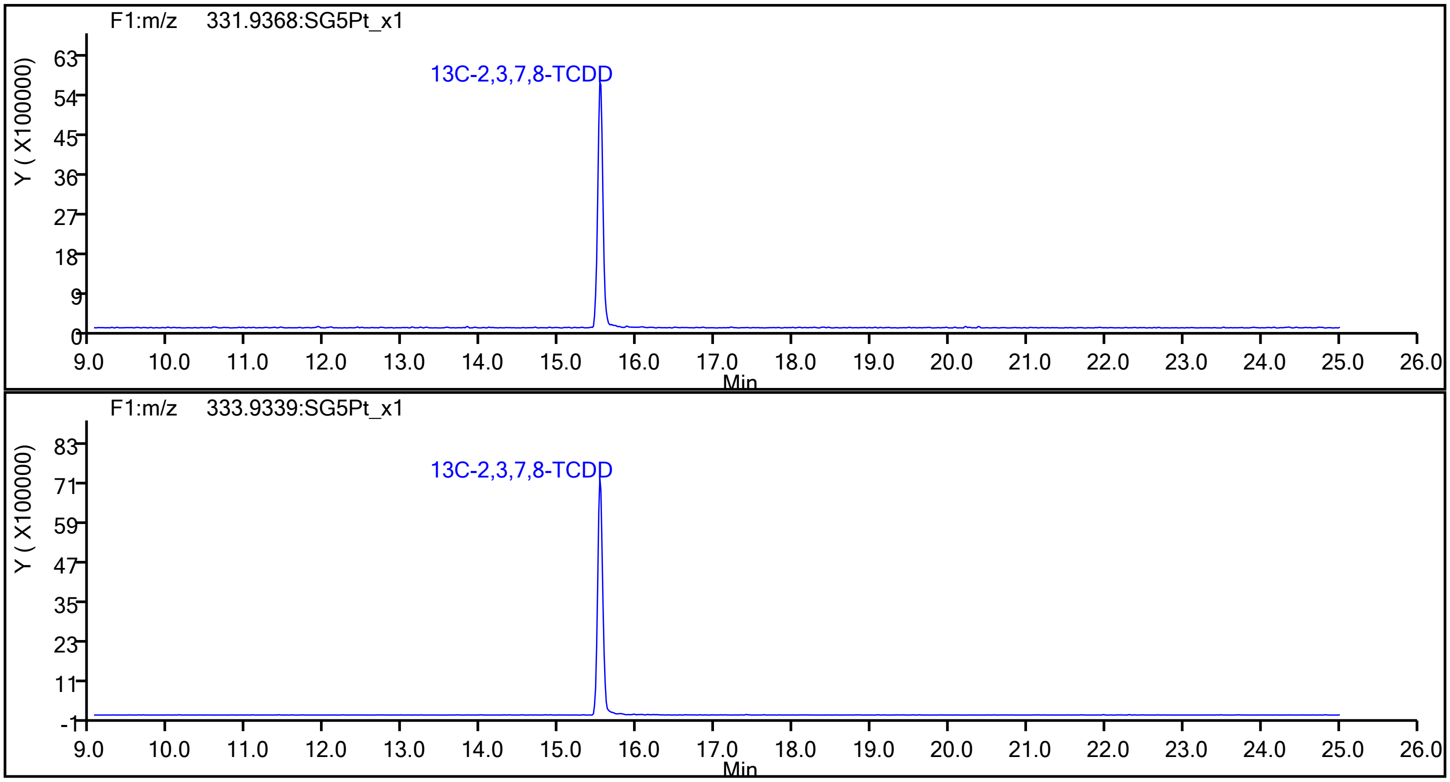

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d

Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

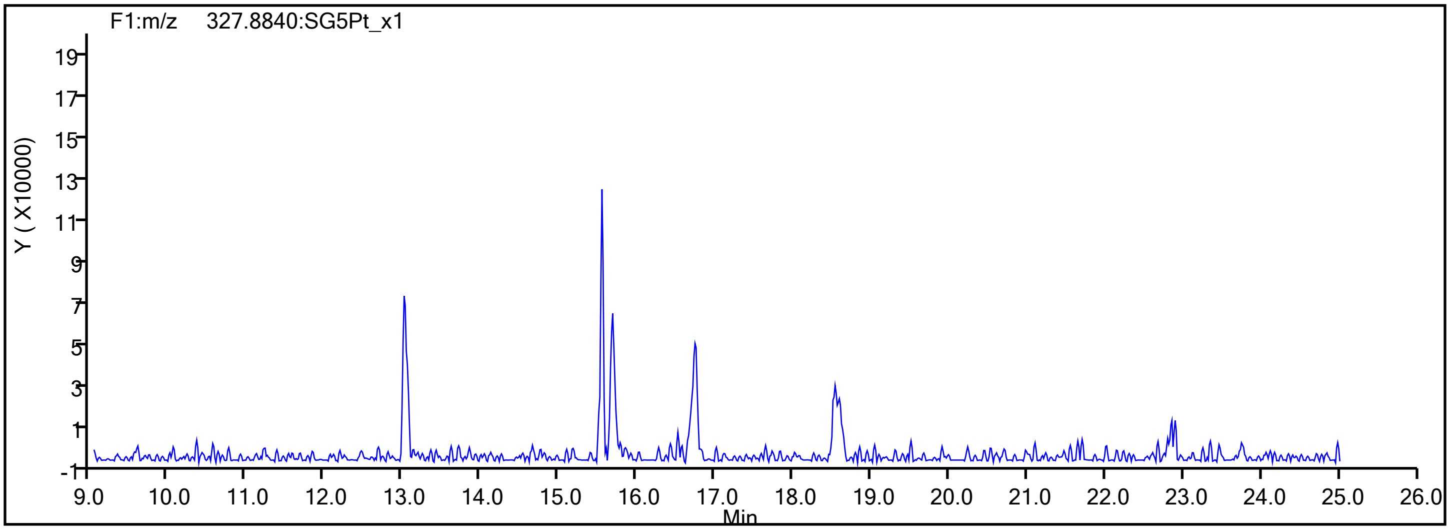

37Cl4-TCDD Standards

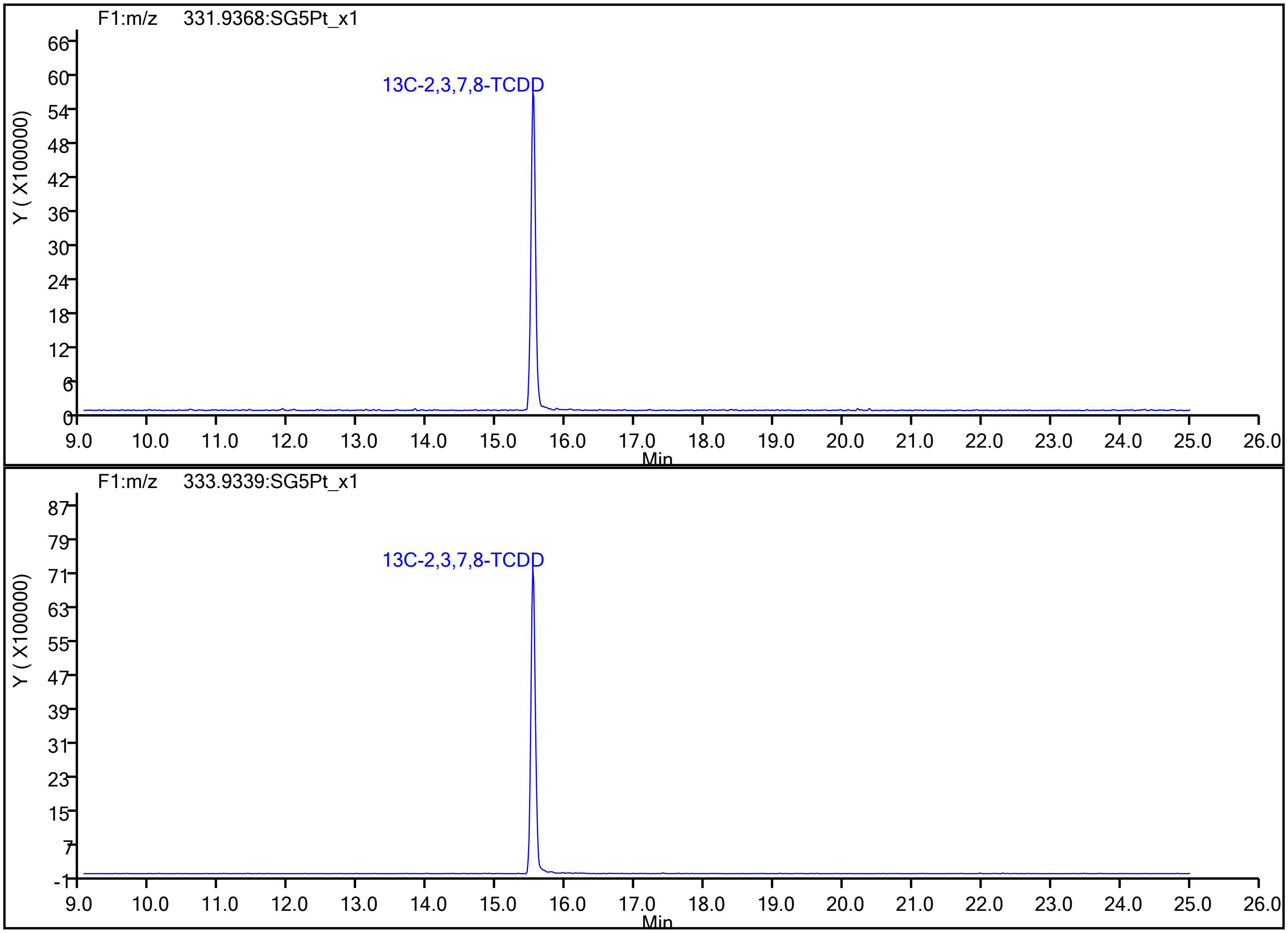

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d

Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

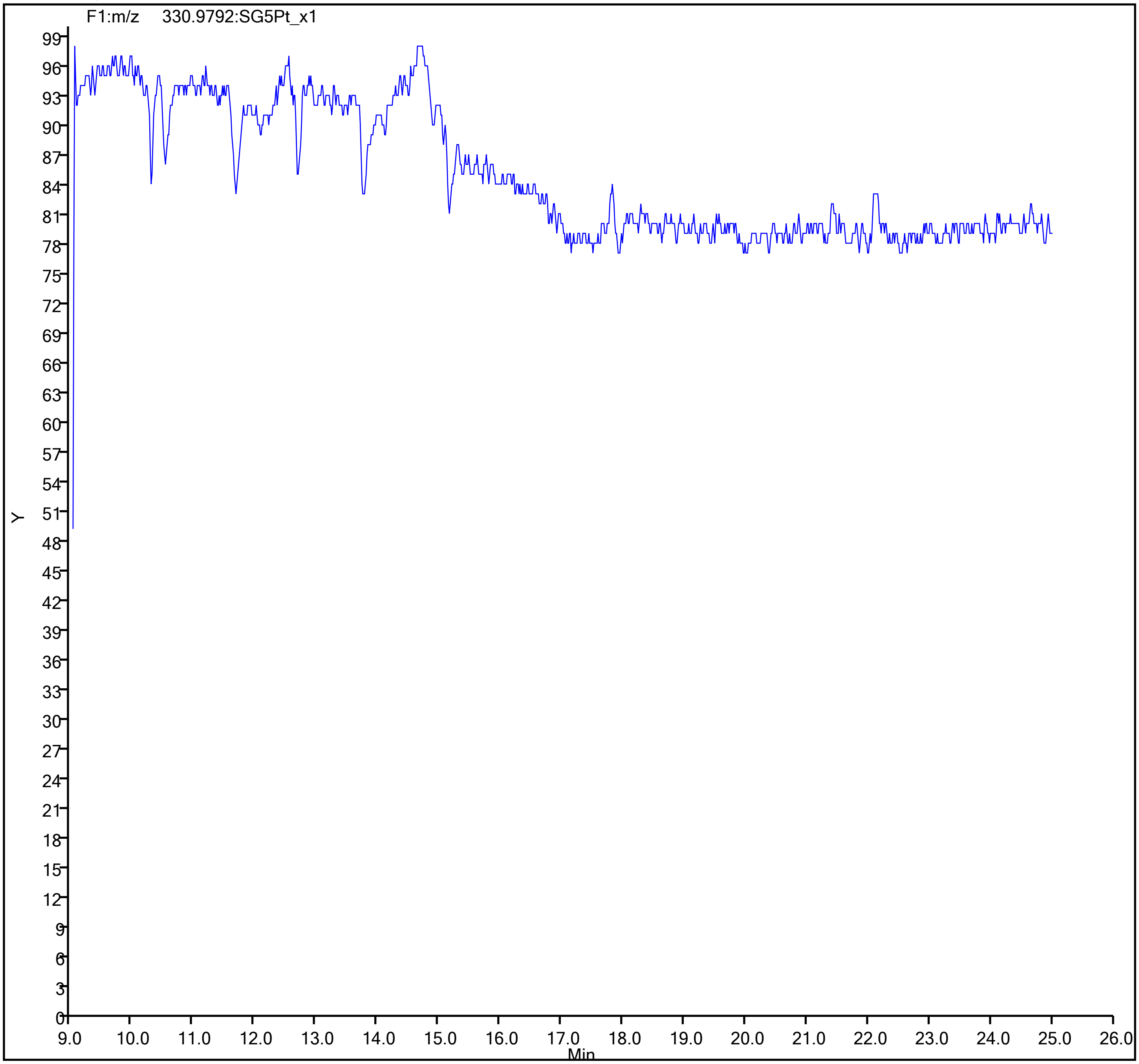

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 30-Nov-2020 12:27:33 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 01-Dec-2020 08:43:38 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1643

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.779	147049597	0.78	1.5708					0.00	
2,3,7,8-TCDF	16.792	141743195	0.76	0.9943	38.8	38.8	0.0899	0.0899		
D 13C-2,3,7,8-TCDD	15.324	86771505	0.81	0.9834					0.00	
2,3,7,8-TCDD	15.352	98757471	0.77	1.2822	35.5	35.5	0.0622	0.0622		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 01-Dec-2020 08:43:38 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	30-Nov-2020 12:27:33	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	01-Dec-2020 08:43:38	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1643				

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.779	16.779	0	1.000	64664180	12500599	17772	44430	703		
317.9389	16.779	16.779	0	1.000	82385417	15822296	12512	31280	1265	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.792	16.792	0	1.001	61383109	12691773	13097	32742	969		
305.8987	16.792	16.792	0	1.001	80360086	16542947	12229	30572	1353	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.324	15.324	0	1.000	38745630	8650137	11289	28222	766		
333.9339	15.324	15.324	0	1.000	48025875	11139362	5181	12952	2150	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.352	15.352	0	1.002	43057378	10315882	7031	17577	1467		
321.8936	15.338	15.352	-1	1.001	55700093	13338822	8750	21875	1524	0.77(0.65-0.89)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

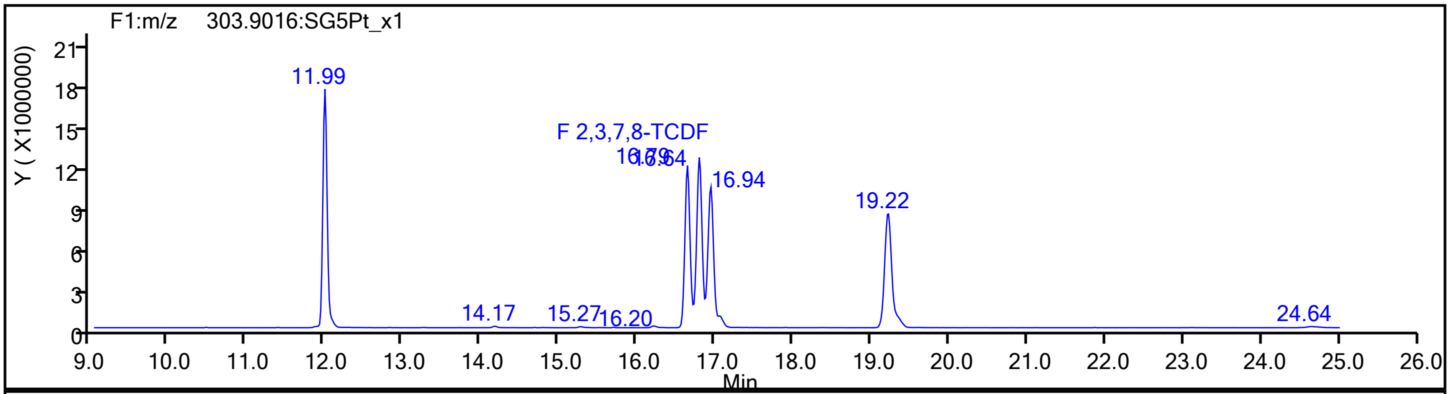

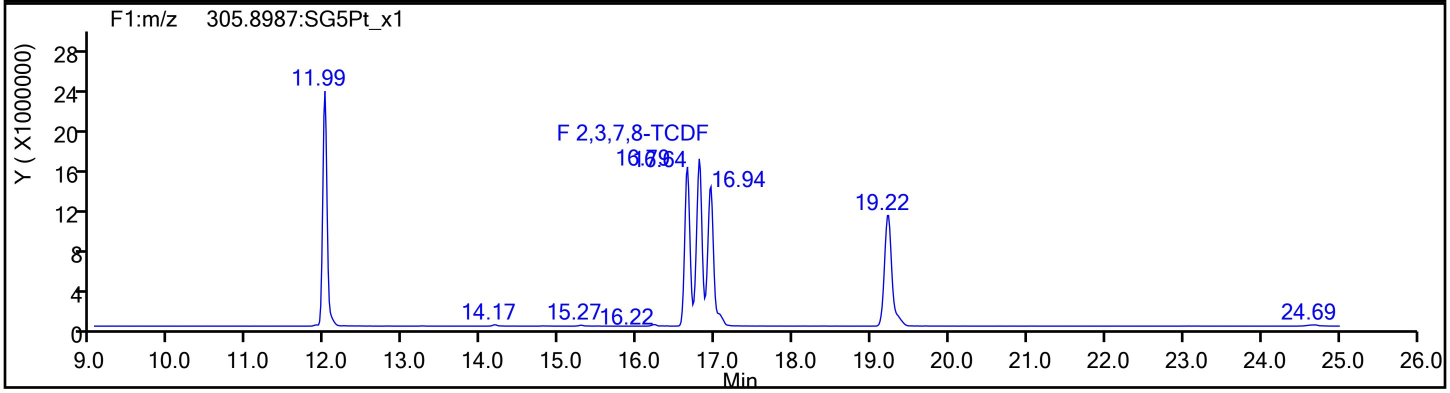

TCDF Standards

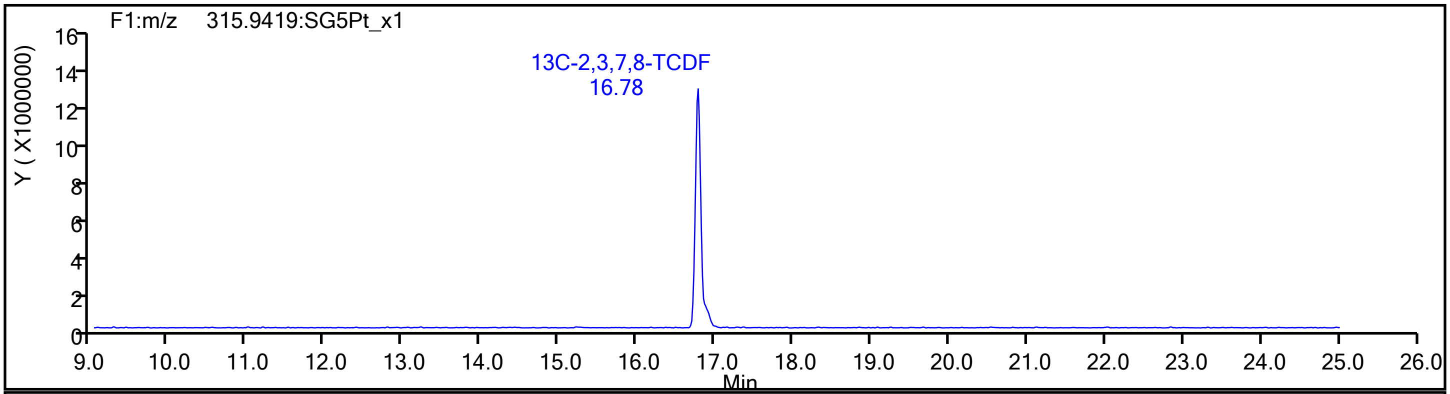

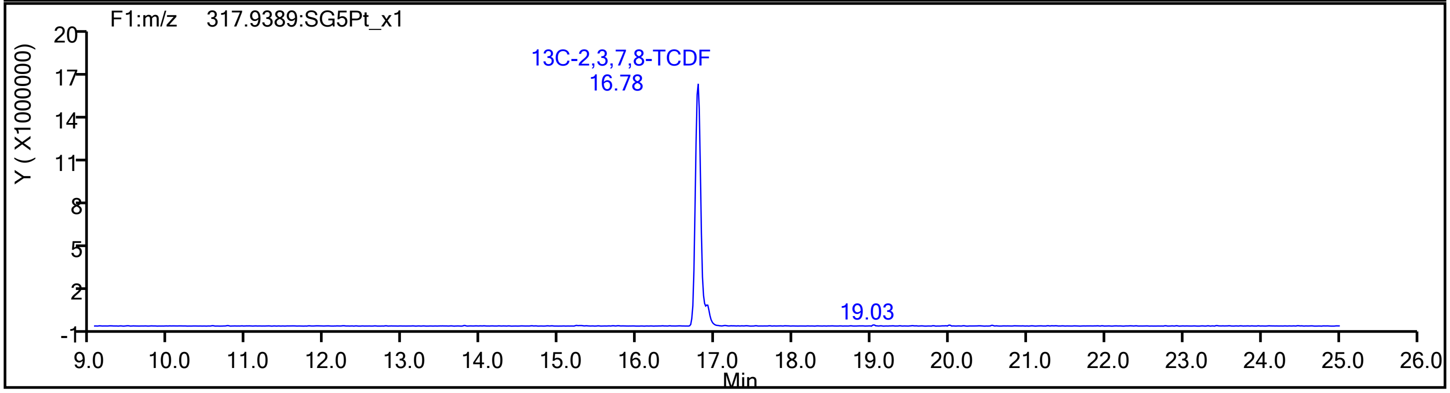

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

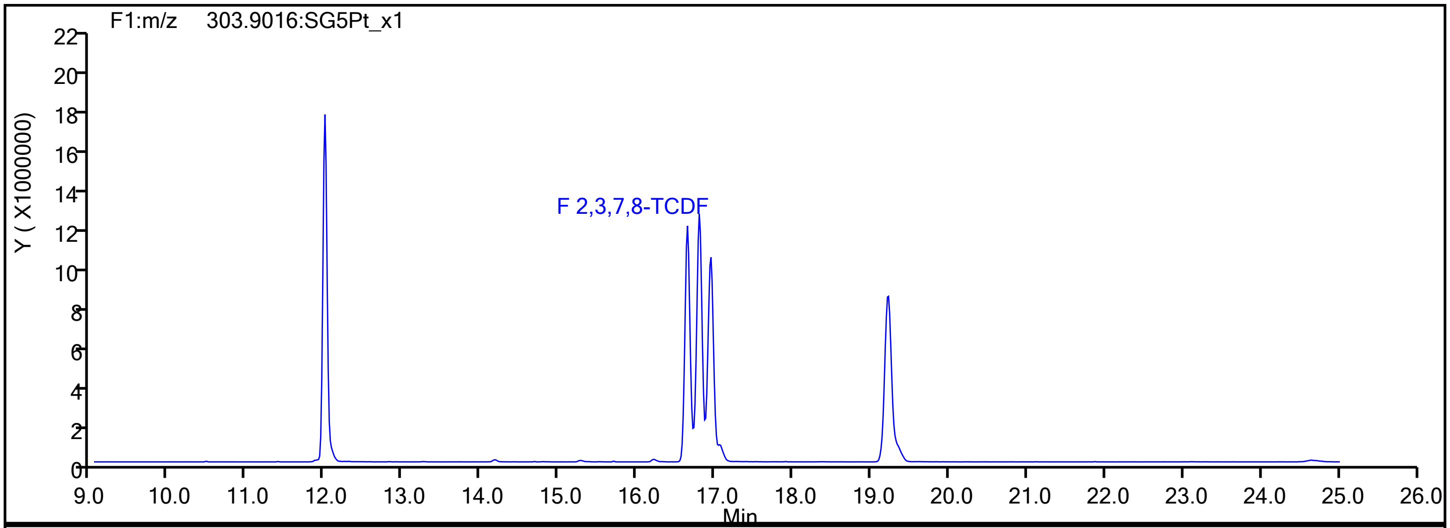

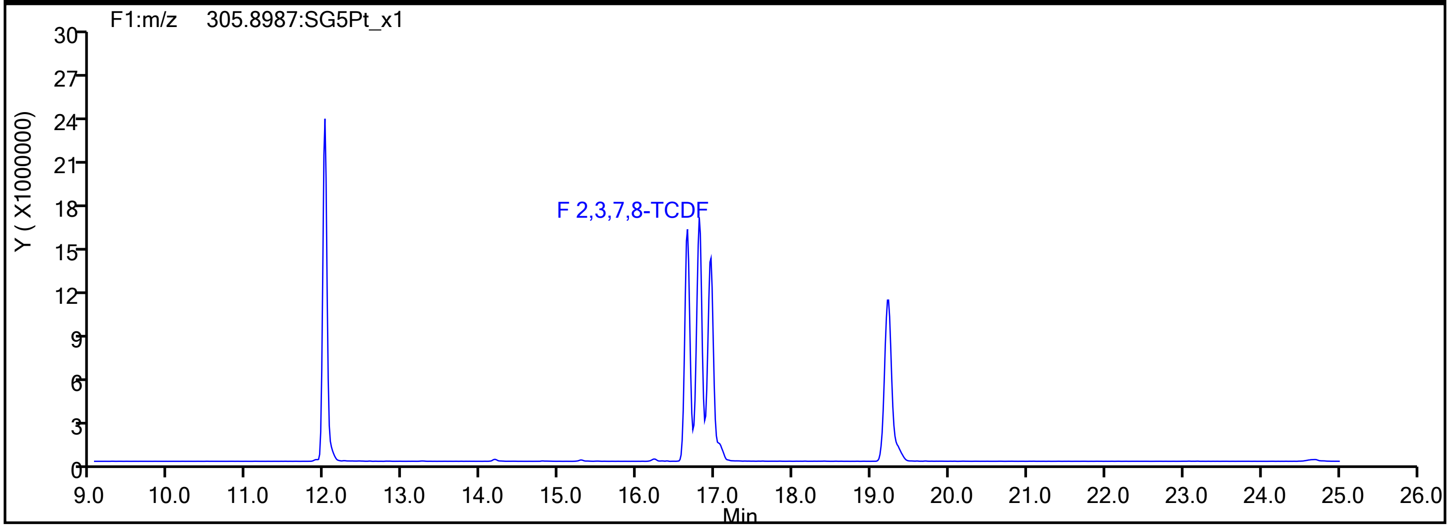

TCDF Interference Mass

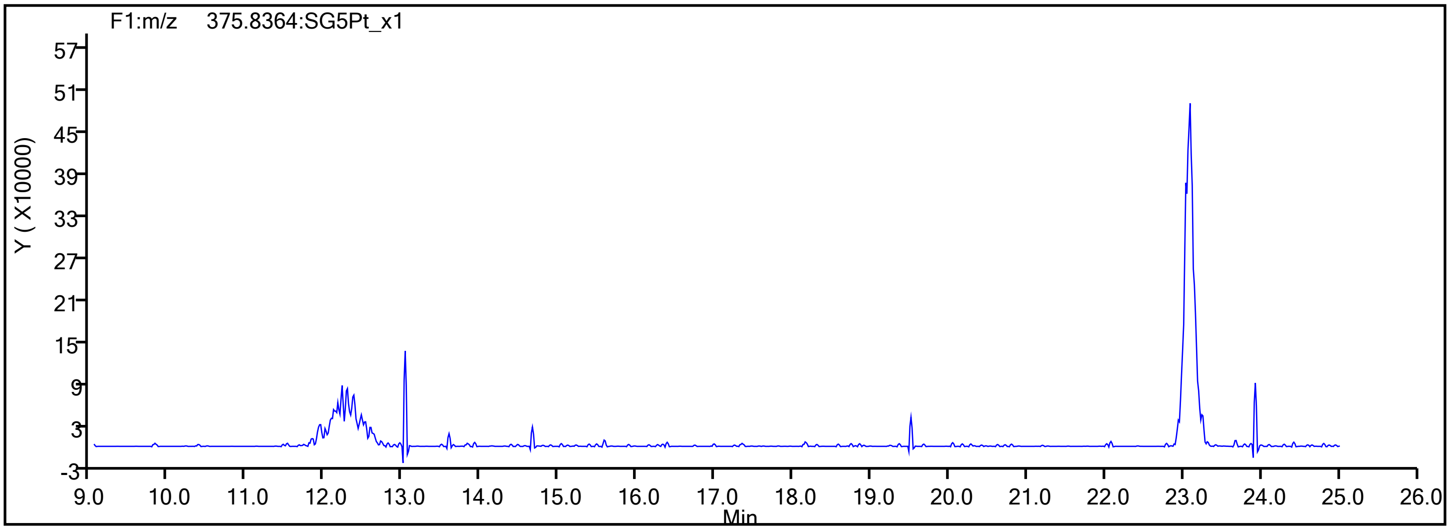

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d
Injection Date: 30-Nov-2020 12:27:33 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 436991 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

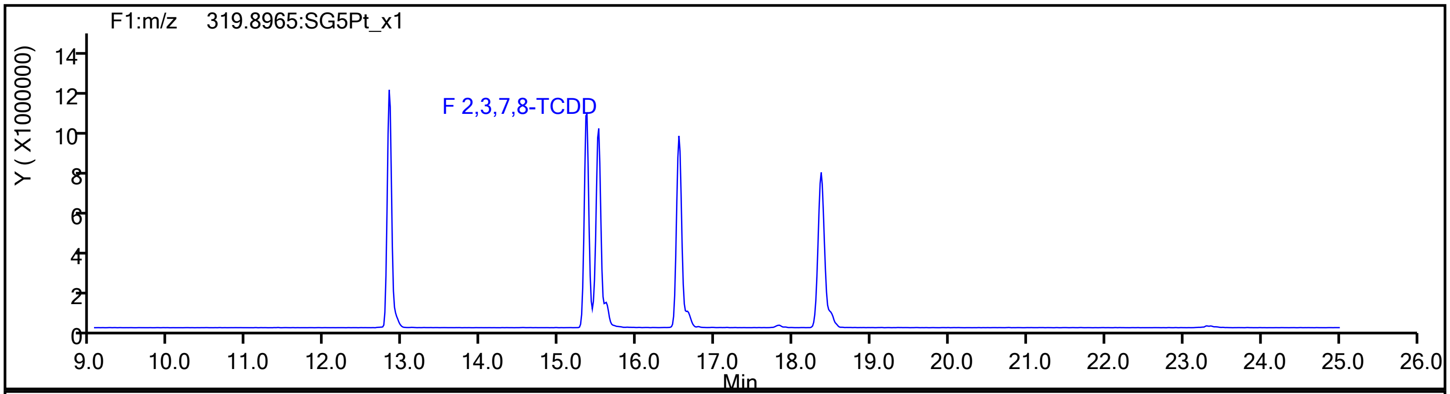

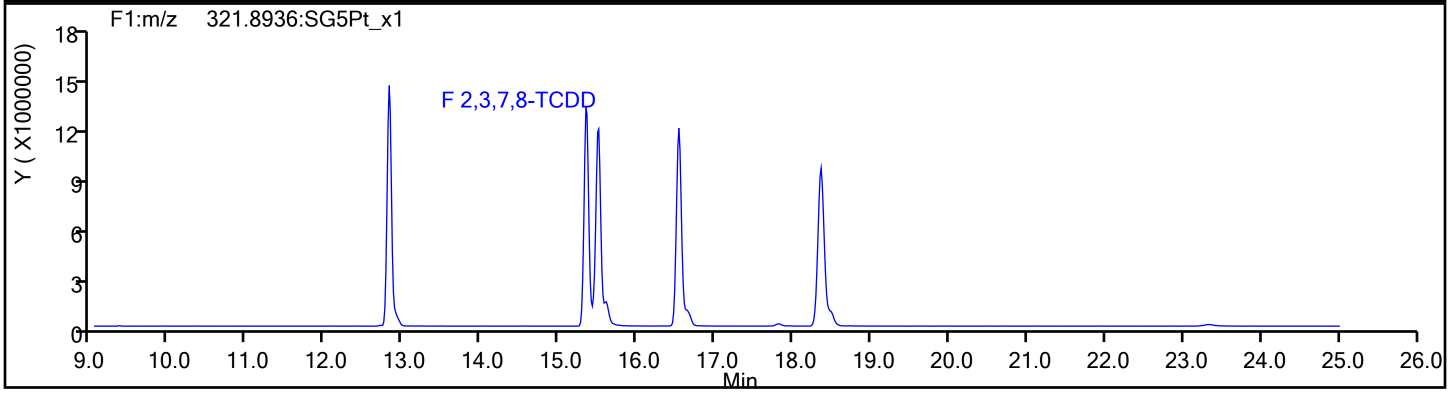

TCDD Standards

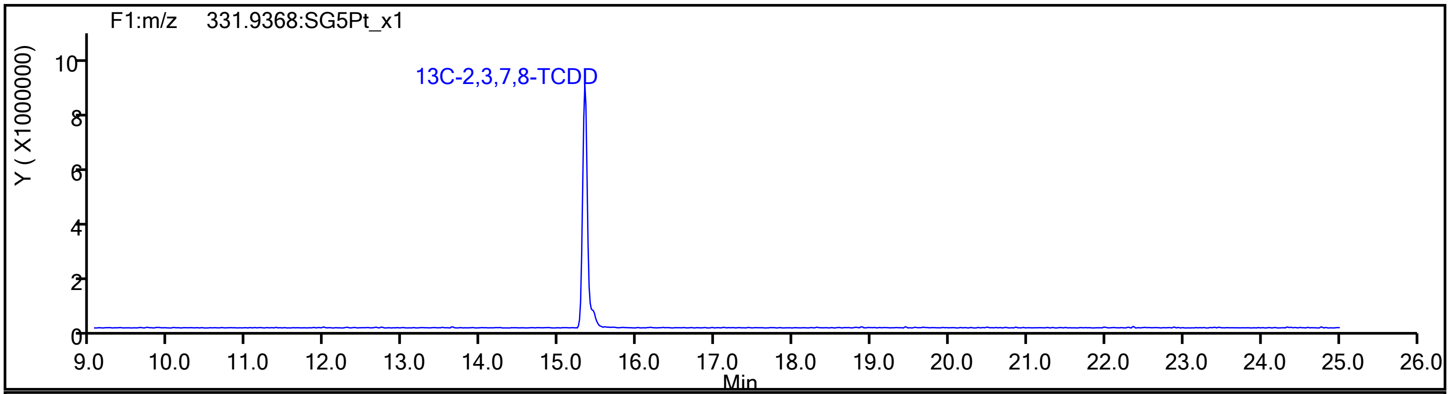

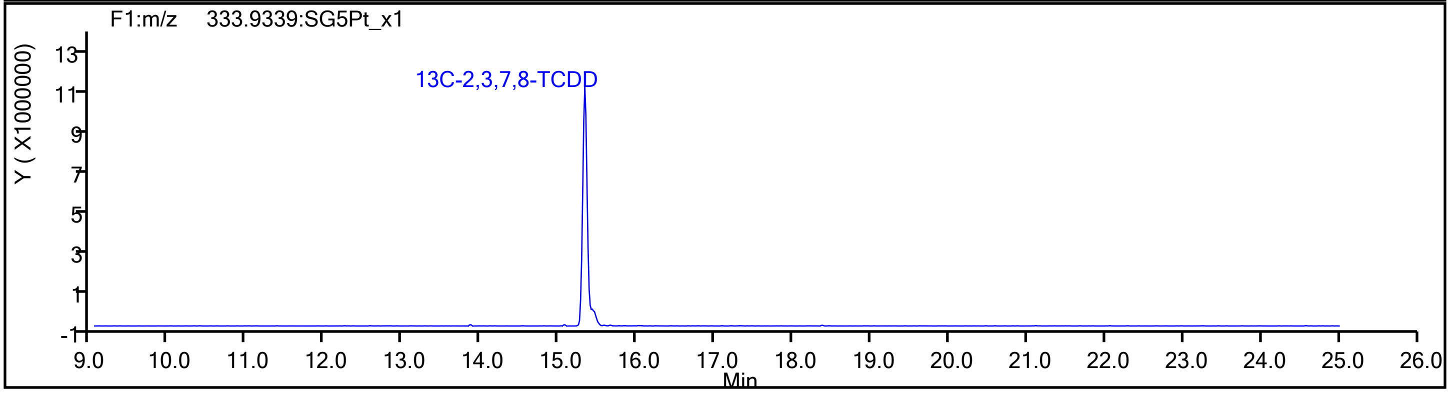

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

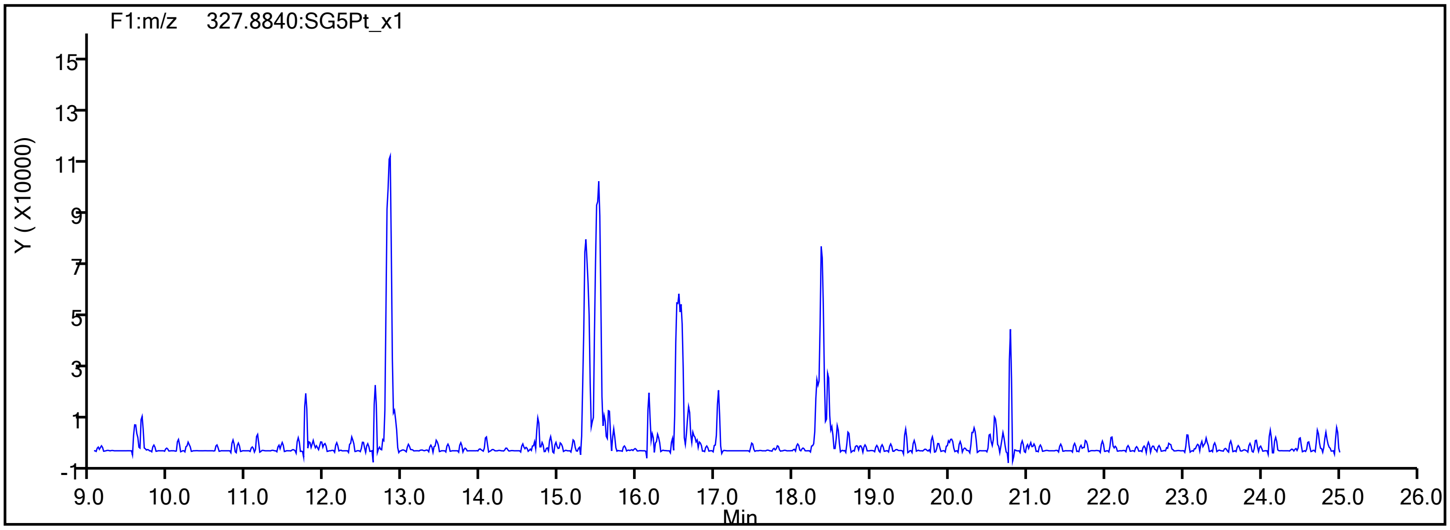

37Cl4-TCDD Standards

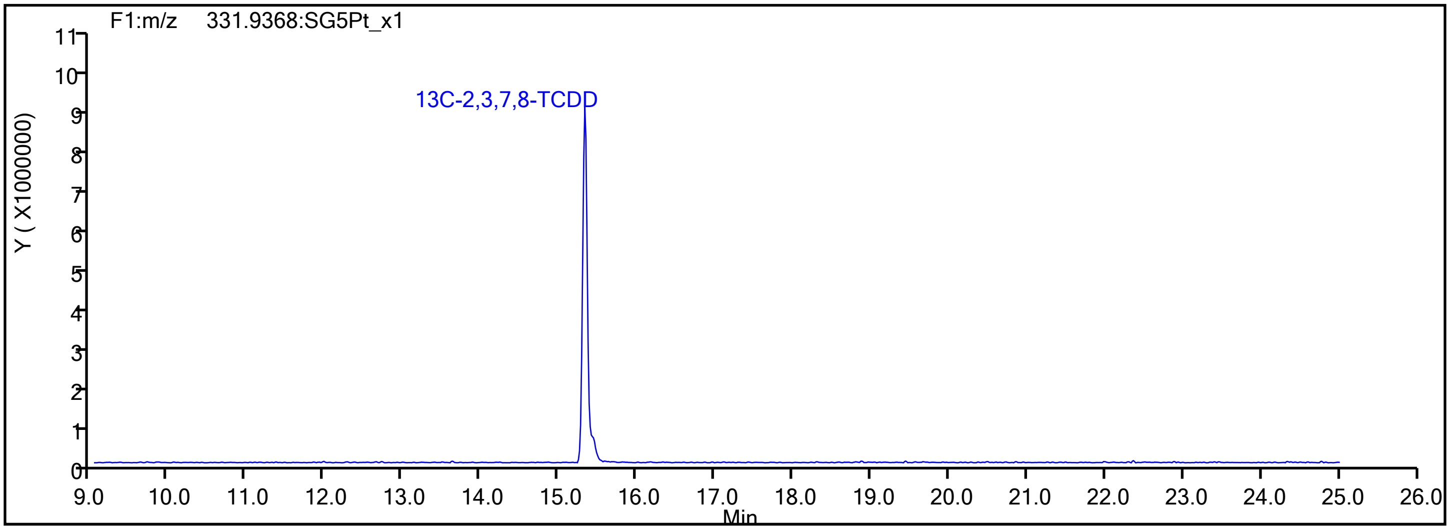

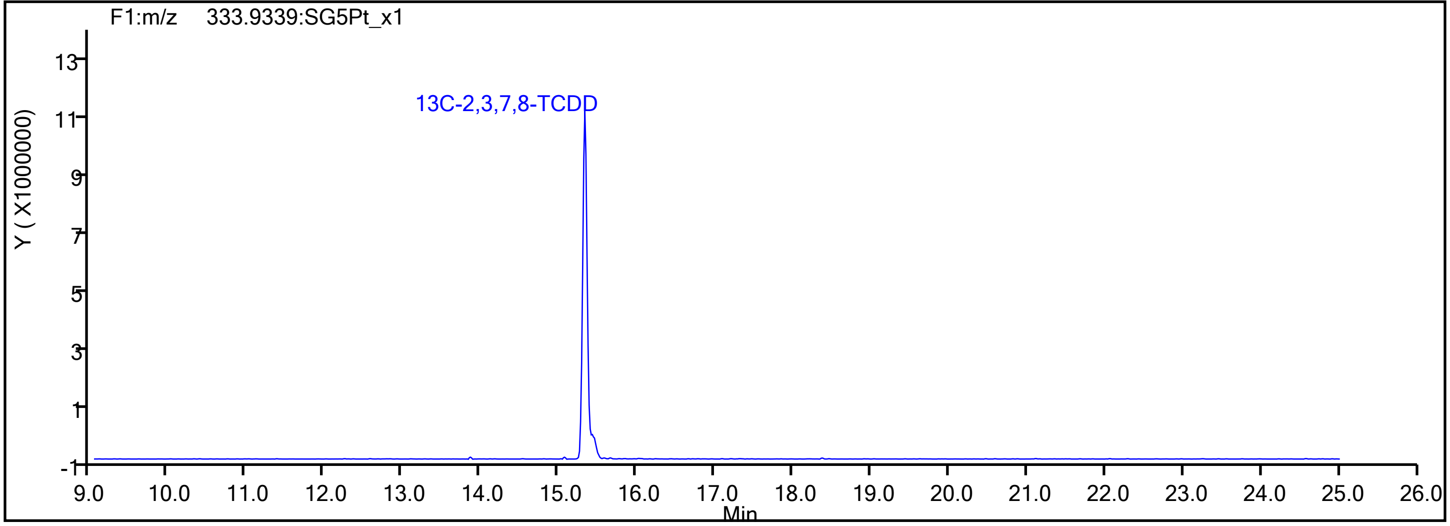

Report Date: 01-Dec-2020 08:43:39 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20201201-108468.b\30NO2011D2_001.d		
Injection Date:	30-Nov-2020 12:27:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	436991	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

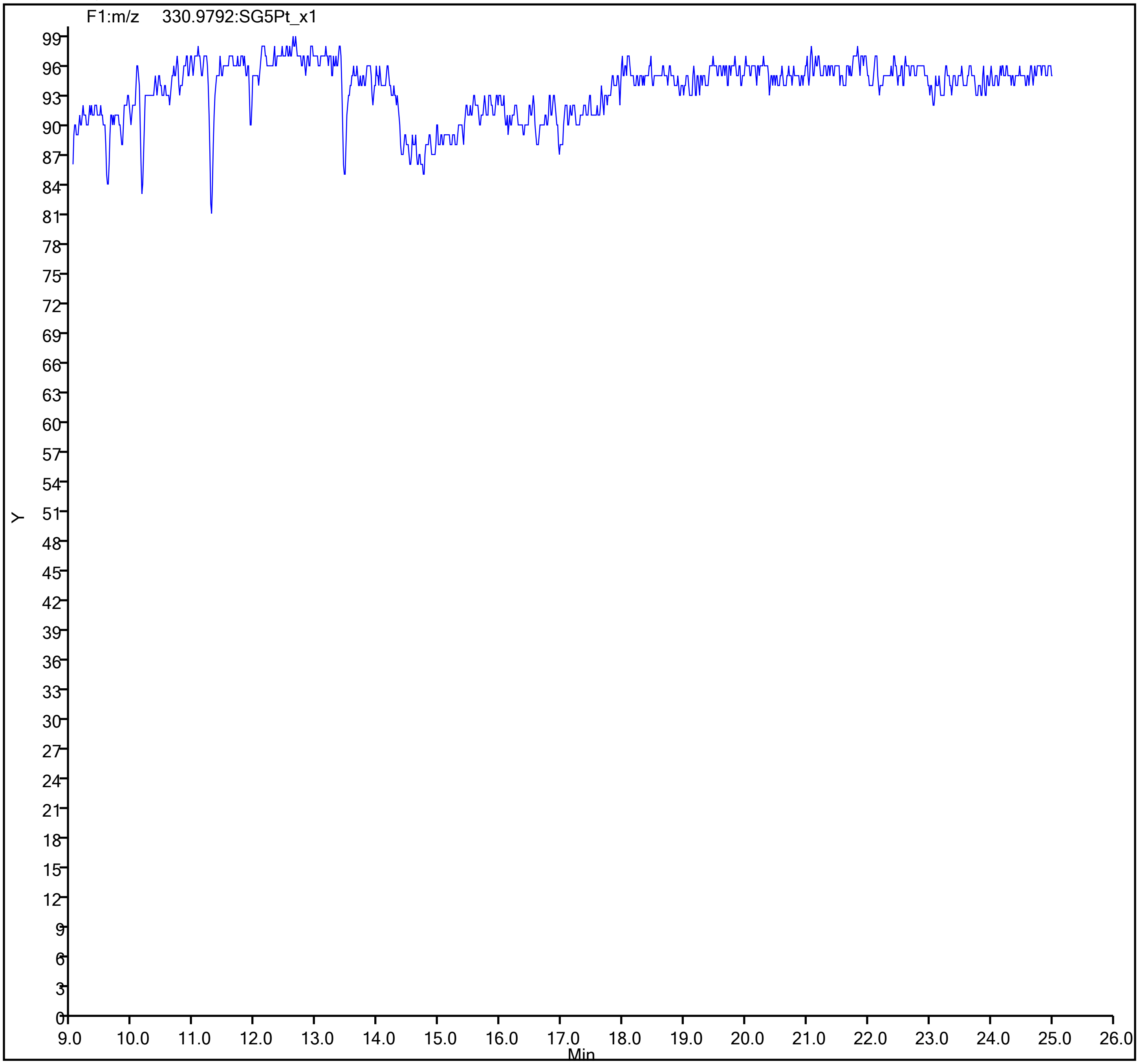

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Nov-2020 11:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:28 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	20.907	5110655	0.80	1.1547	78.3	78.3	0.3438	0.3438		
D 13C-2,3,7,8-TCDF	20.873	2260212	0.83	1.6832					0.00	
A Non-2,3,7,8-sub-TCDF	20.216	47778	0.70	1.1547	0.7323	0.7323	0.3438	0.7323		
S Total TCDF					79.1	79.1	0.3438	0.3438		
2,3,7,8-TCDD	22.290	1664355	0.78	1.1659	40.9	40.9	0.2356	0.2356		
D 13C-2,3,7,8-TCDD	22.256	1394850	0.82	1.0896					0.00	
A Non-2,3,7,8-sub-TCDD	21.079						0.2356	0.2356		
S Total TCDD					40.9	40.9	0.2356	0.2356		
A F1 PeCDFs	24.989						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.574	28059	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.862						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.351	12746	1.32	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.676	15638	1.22	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.774	1507187	1.03	1.5618						
1,2,3,4,7,8,9-HpCDF	39.996	1213335	1.02	1.4975						
A Non-2,3,7,8-sub-HpCDF	39.385						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.701	990507	1.06	1.1079						
A Non-2,3,7,8-sub-HpCDD	39.533						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.441	3276061	0.80							
1,3,6,8-TCDD	18.116	1739293	0.79							
2,3,4,7-TCDF	20.907	5110655	0.80							
1,2,3,7-TCDD	22.075	1365068	0.79							
1,2,3,9-TCDF	22.505	2196911	0.80							
1,2,3,9-TCDD	22.608	1753286	0.81							
1,2,8,9-TCDF	23.991	2334076	0.80							
1,2,8,9-TCDD	24.043	705501								
1,3,4,6,8-PeCDF	24.395	2052538	1.59							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	26.487	1404266	1.56							
1,2,3,8,9-PeCDD	31.238	1225247	1.54							
1,2,3,8,9-PeCDF	31.424	1629169	1.56							
1,2,3,4,6,8-HxCDF	33.566	2118566	1.27							
1,2,4,6,7,9-HxCDD	34.568	1490162	1.28							
1,2,3,4,6,7-HxCDD	36.784	1357310	1.25							
1,2,3,4,8,9-HxCDF	37.137	1681220	1.24							
1,2,3,4,6,7,9-HpCDD	39.069	1154294	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Nov-2020 11:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Nov-2020 12:37:28 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1679

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	20.907	20.834	4	1.002	2267125	297561	600	1500	496		
305.8987	20.907	20.834	4	1.002	2843530	378651	712	1780	532	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.873	20.873	0	1.000	1025204	144323	682	1705	212		
317.9389	20.864	20.873	-1	1.000	1235008	186181	357	892	522	0.83(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	24.403	20.216	251	1.169	19719	3263	600	1500	5		
305.8987	24.403	20.216	251	1.169	28059	3939	712	1780	6	0.70(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.290	22.239	3	1.002	731359	96478	247	617	391		
321.8936	22.299	22.239	4	1.002	932996	123585	283	707	437	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	22.256	22.256	0	1.000	627509	85616	309	772	277		
333.9338	22.265	22.256	1	1.000	767341	107330	77	192	1394	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.079						247	617			
321.8936	21.079						283	707			
A F1 PeCDFs											
339.8597	24.989						18	45			
341.8567	24.989						54	135			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.149	28.574	-145	1.000	2916	656	118	295	6		
341.8567	26.141	28.574	-146	1.000	2444	500	118	295	4	1.19(1.32-1.78)	
339.8597	27.751	28.574	-49	1.000	8636	1454	118	295	12		
341.8567	27.751	28.574	-49	1.000	7782	1020	118	295	9	1.11(1.32-1.78)	
339.8597	28.357	28.574	-13	1.000	6510	1152	118	295	10		
341.8567	28.366	28.574	-12	1.000	3551	574	118	295	5	1.83(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.862						202	505			
357.8516	28.862						82	205			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.385	35.351	2	1.000	7260	1525	317	792	5		
375.8178	35.402	35.351	3	1.000	5486	1345	249	622	5	1.32(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.629	35.676	-3	1.000	8594	1831	223	557	8		
391.8127	35.629	35.676	-3	1.000	7044	1611	190	475	8	1.22(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.774	38.769	0	1.000	764728	230402	504	1260	457		
409.7788	38.774	38.769	0	1.000	742459	226597	435	1087	521	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.996	39.994	0	1.000	612797	205660	504	1260	408		
409.7788	39.996	39.994	0	1.000	600538	201880	435	1087	464	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.385						504	1260			
409.7788	39.385						435	1087			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.701	39.689	1	1.000	509226	166108	423	1057	393		
425.7737	39.701	39.689	1	1.000	481281	154802	355	887	436	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.533						423	1057			
425.7737	39.533						355	887			
1,3,6,8-TCDF											
303.9016	16.441	16.441	0		1457286	277522	600	1500	463		
305.8987	16.441	16.441	0		1818775	346540	712	1780	487	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.116	18.116	0		766334	127384	247	617	516		
321.8936	18.116	18.116	0		972959	165146	283	707	584	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.907	20.907	0		2267125	297561	600	1500	496		
305.8987	20.907	20.907	0		2843530	378651	712	1780	532	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	22.075	22.075	0		603775	87465	247	617	354		
321.8936	22.084	22.075	1		761293	111297	283	707	393	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.505	22.505	0		976898	133973	600	1500	223		
305.8987	22.505	22.505	0		1220013	163299	712	1780	229	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.608	22.608	0		787092	99410	247	617	402		
321.8936	22.599	22.608	-1		966194	124030	283	707	438	0.81(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.991	23.991	0		1038431	200731	600	1500	335		
305.8987	23.991	23.991	0		1295645	253119	712	1780	356	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	24.043	24.043	0		705501	133864	247	617	542		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	24.395	24.395	0		1260675	242287	18	45	13460		
341.8567	24.395	24.395	0		791863	149771	54	135	2774	1.59(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.487	26.487	0		856189	128300	202	505	635		
357.8516	26.487	26.487	0		548077	80590	82	205	983	1.56(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.238	31.238	0		742873	95987	202	505	475		
357.8516	31.238	31.238	0		482374	59929	82	205	731	1.54(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.424	31.424	0		991670	125549	118	295	1064		
341.8567	31.424	31.424	0		637499	79837	118	295	677	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.566	33.566	0		1185896	196352	317	792	619		
375.8178	33.566	33.566	0		932670	151415	249	622	608	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.568	34.568	0		836120	170337	223	557	764		
391.8127	34.568	34.568	0		654042	132193	190	475	696	1.28(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.784	36.784	0		752837	197162	223	557	884		
391.8127	36.784	36.784	0		604473	161853	190	475	852	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.137	37.137	0		929560	246561	317	792	778		
375.8178	37.137	37.137	0		751660	195840	249	622	787	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.069	39.069	0		588795	187490	423	1057	443		
425.7737	39.069	39.069	0		565499	184941	355	887	521	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Nov-2020 11:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	432585	Lims Sample ID:	1

Non-2,3,7,8-sub-TCDF, RT: 20.216

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	40.000	2260212	330504

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		40.000	2260212	330504

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.403	19719	3263	28059	3939	0.7323	0.70	
Signal Totals:							
	19719	3263	28059	3939			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	47778	7202				0.70	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7323 = (47778 * 40.000) / (2260212 * 1.155)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Nov-2020 11:15:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 432585 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 28.574

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132				
2,3,4,7,8-PeCDF	1.159				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.149	2916	656	2444	500		1.19	R
27.751	8636	1454	7782	1020		1.11	R
28.357	6510	1152	3551	574		1.83	R
Signal Totals:							
	18062	3262	13777	2094			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	31839	5356				1.31	RQ
	28059	4934					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (31839 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (28059 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Nov-2020 11:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	432585	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 35.351

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.320				
1,2,3,6,7,8-HxCDF	1.268				
2,3,4,6,7,8-HxCDF	1.284				
1,2,3,7,8,9-HxCDF	1.306				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.385	7260	1525	5486	1345		1.32	
Signal Totals:							
	7260	1525	5486	1345			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12746	2870				1.32	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (12746 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Nov-2020 11:15:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 432585 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 35.676

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197				
1,2,3,6,7,8-HxCDD	1.069				
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.629	8594	1831	7044	1611		1.22	
Signal Totals:							
	8594	1831	7044	1611			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15638	3442				1.22	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15638 * 0.0) / (0 * 0.000)

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

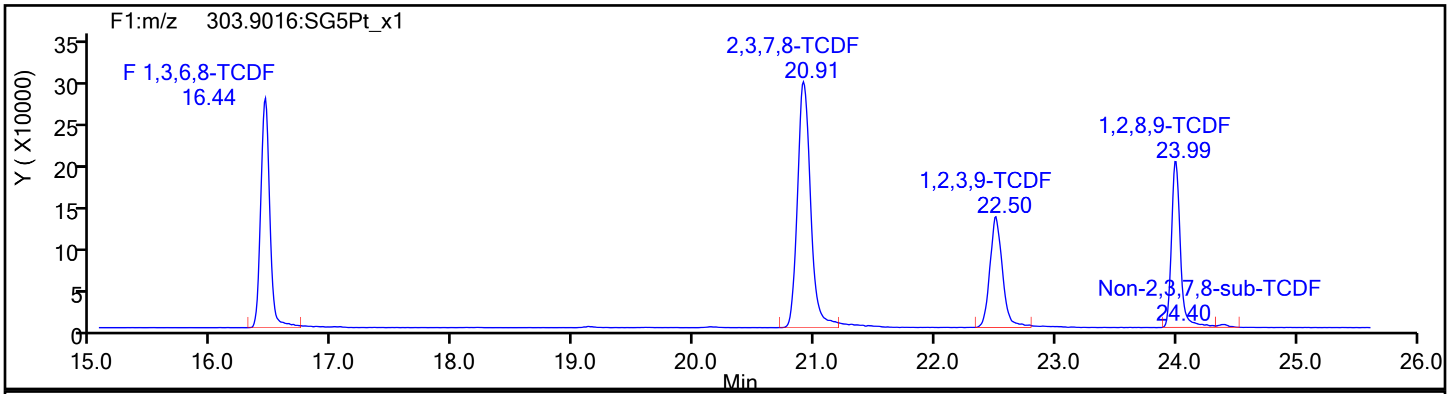

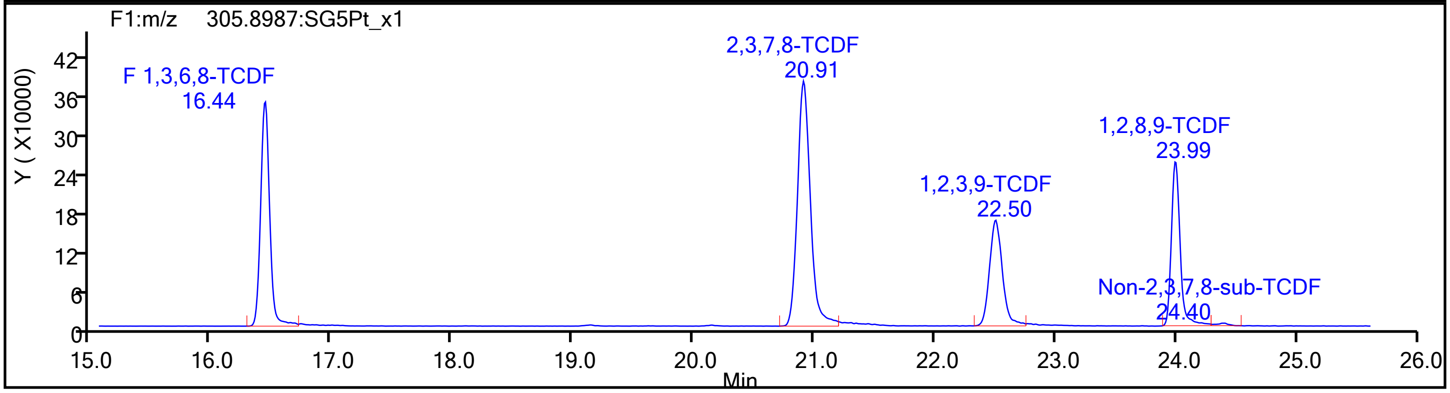

TCDF Standards

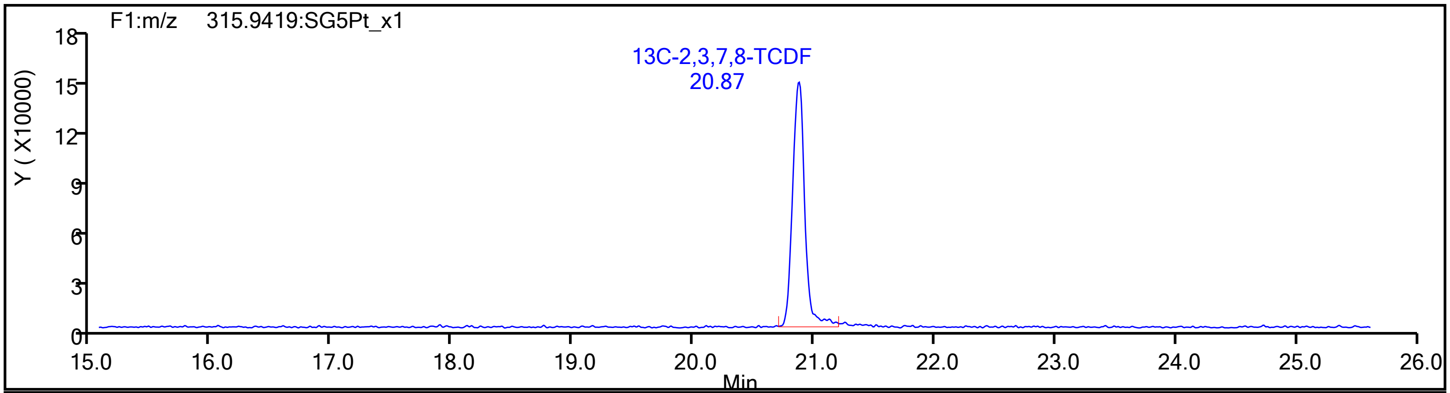

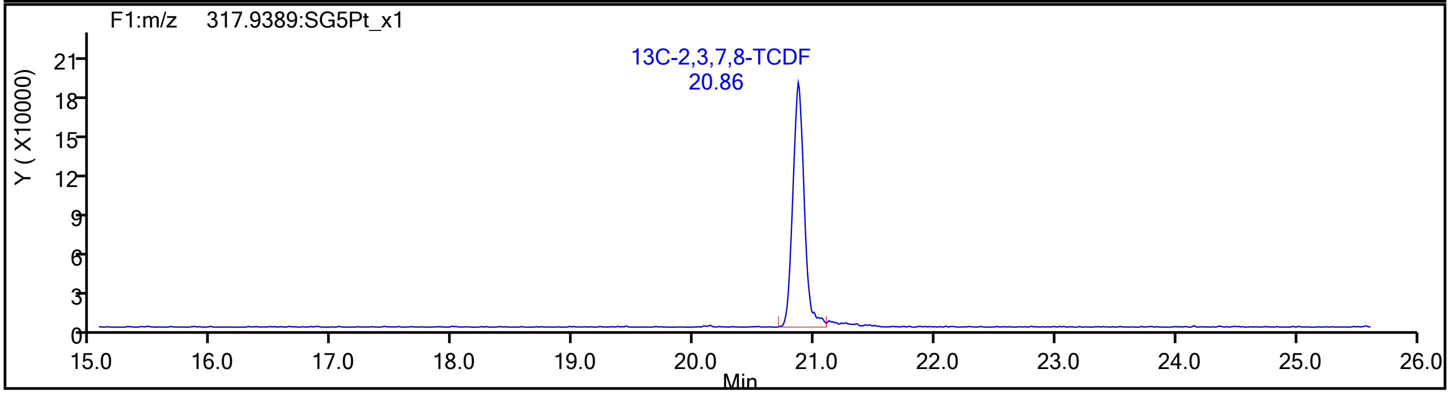

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

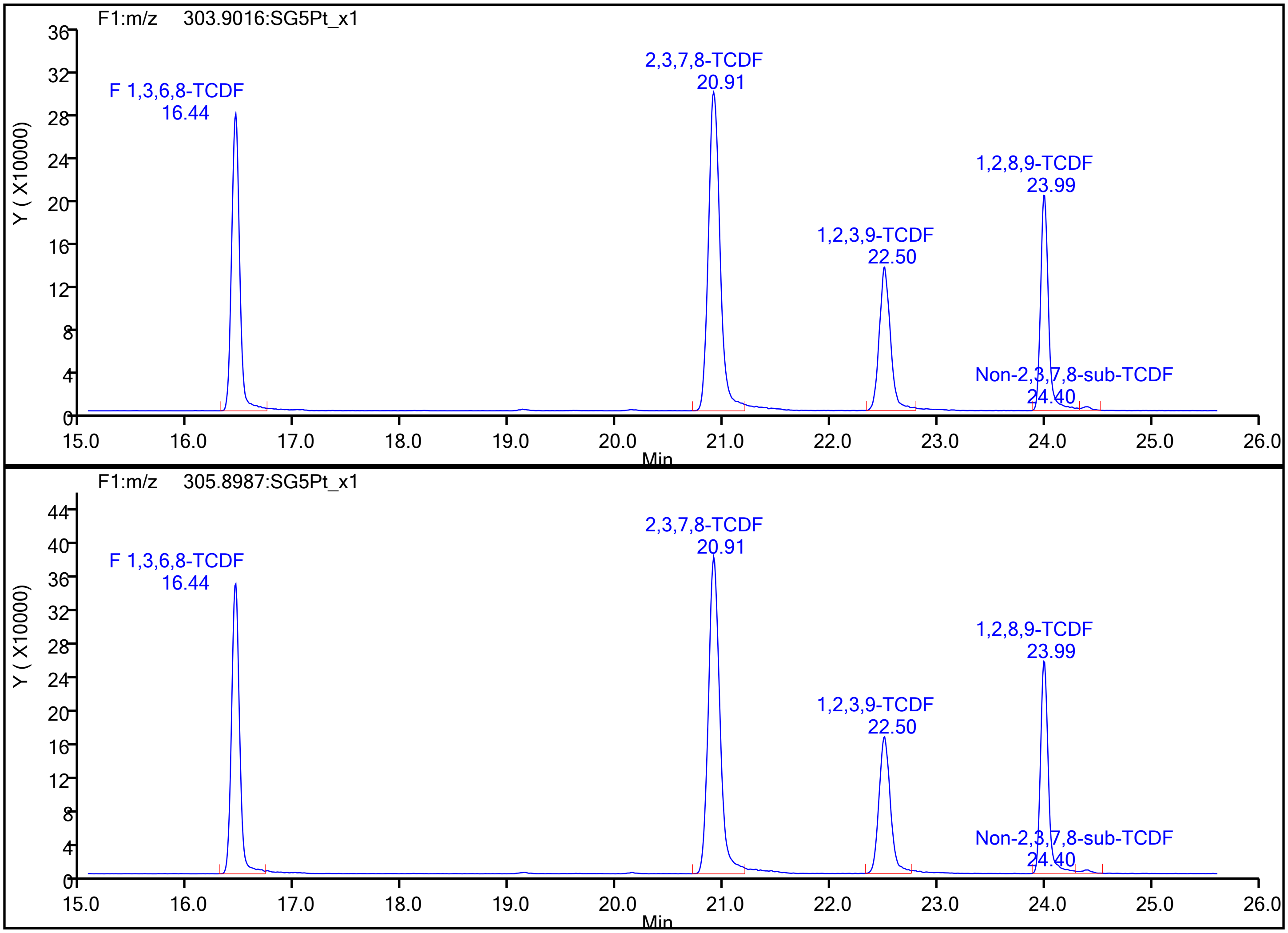

TCDF Interference Mass

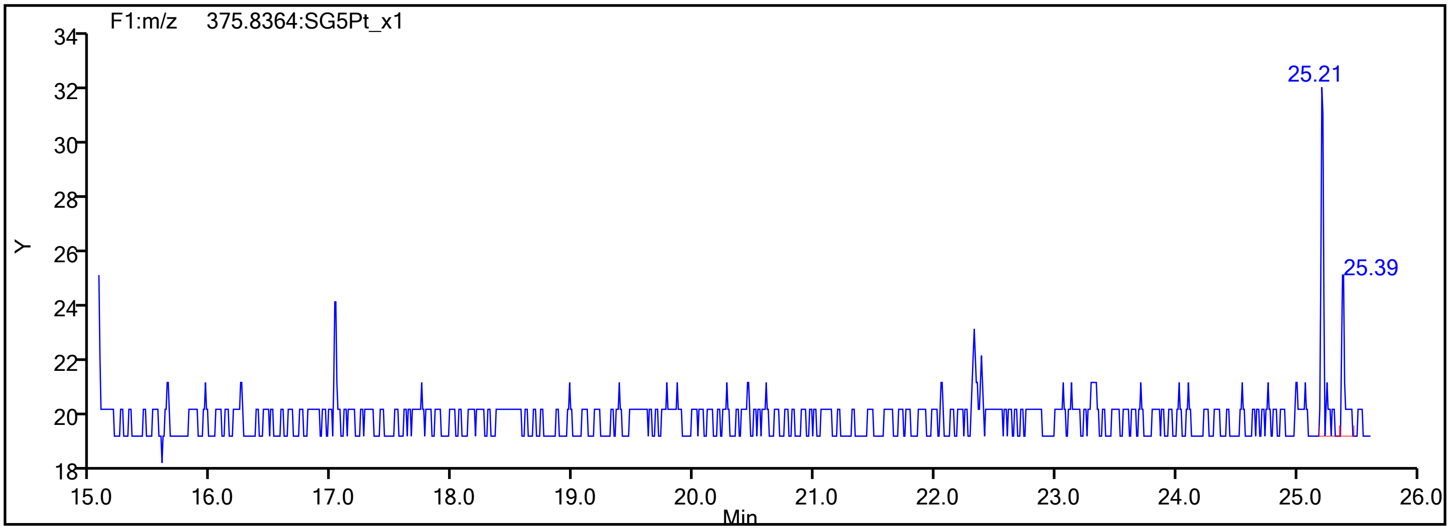

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

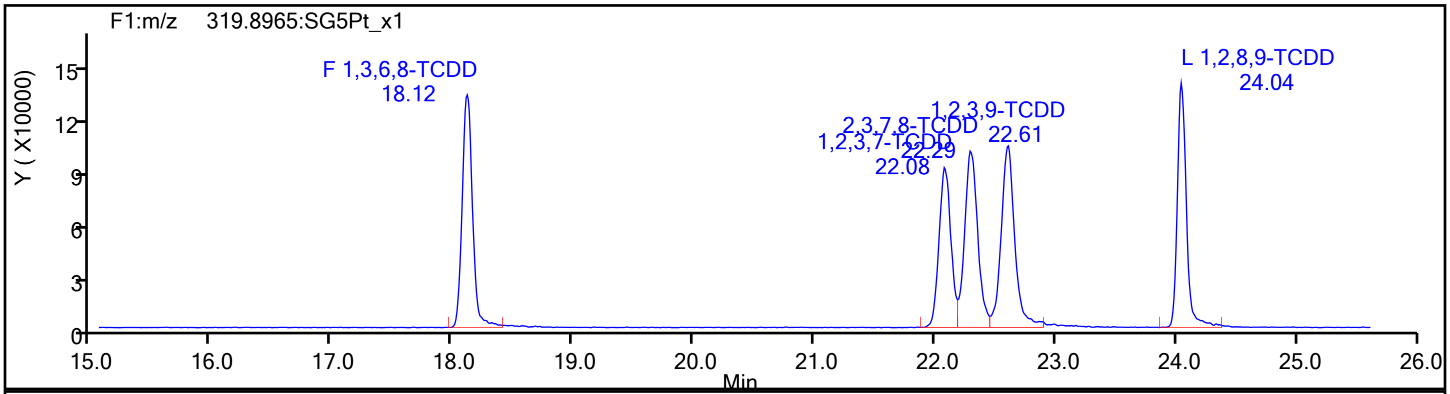

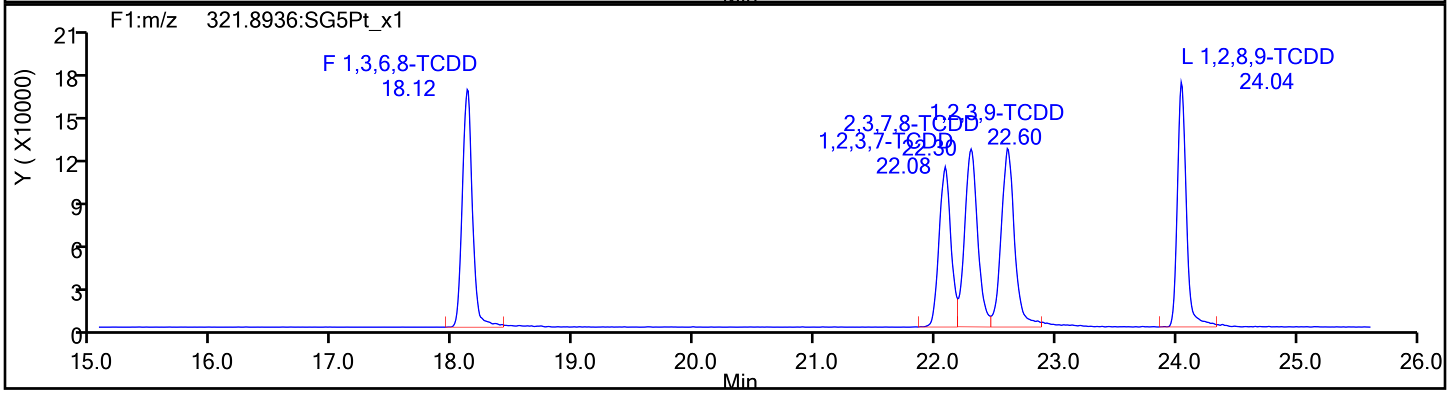

TCDD Standards

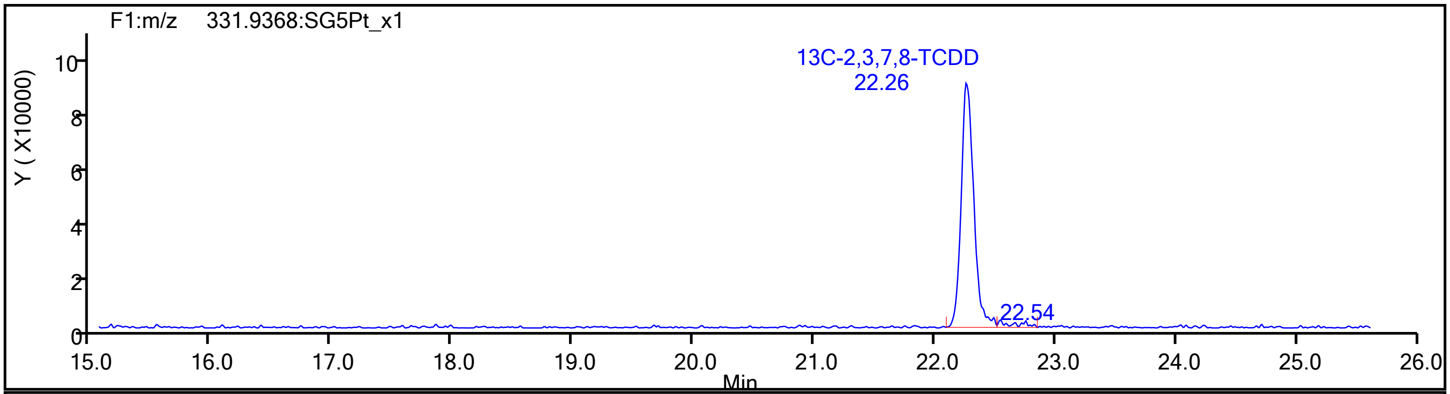

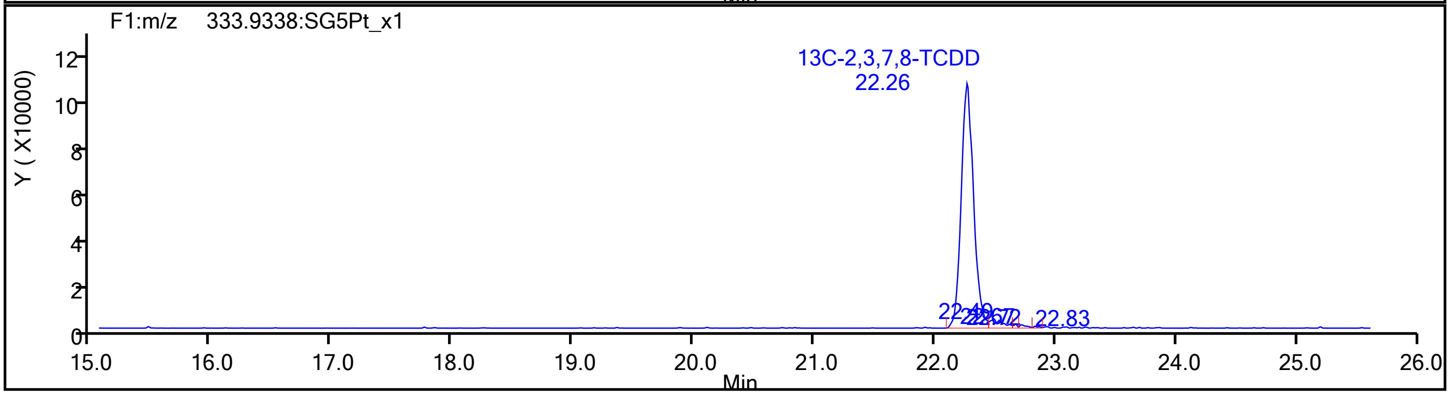

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

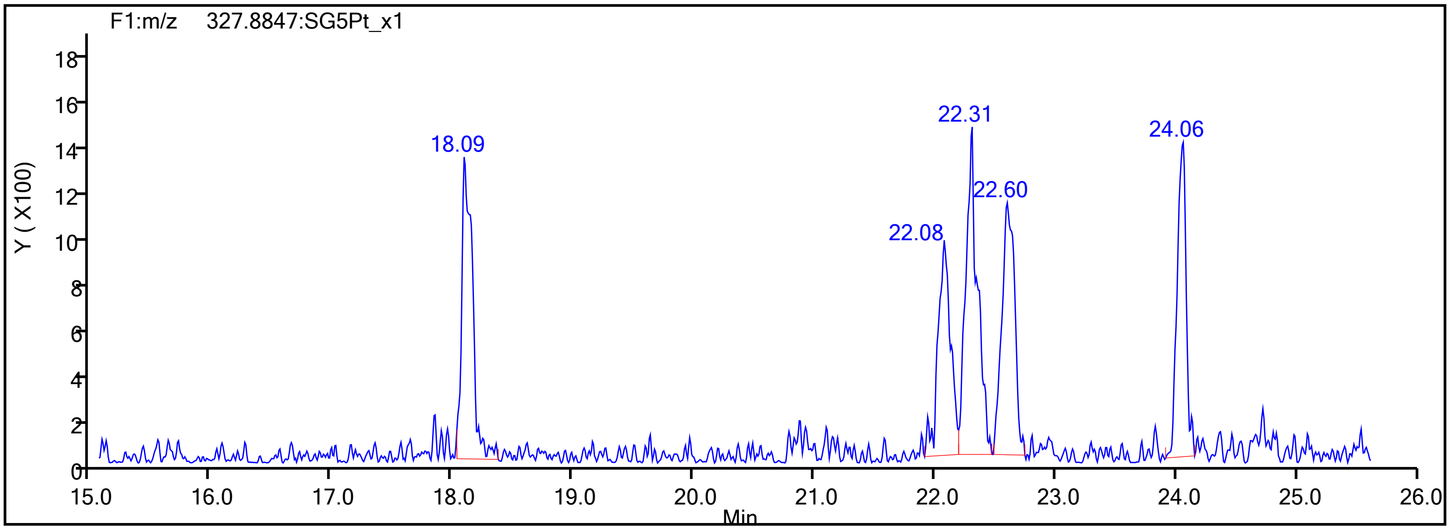

37Cl4-TCDD Standards

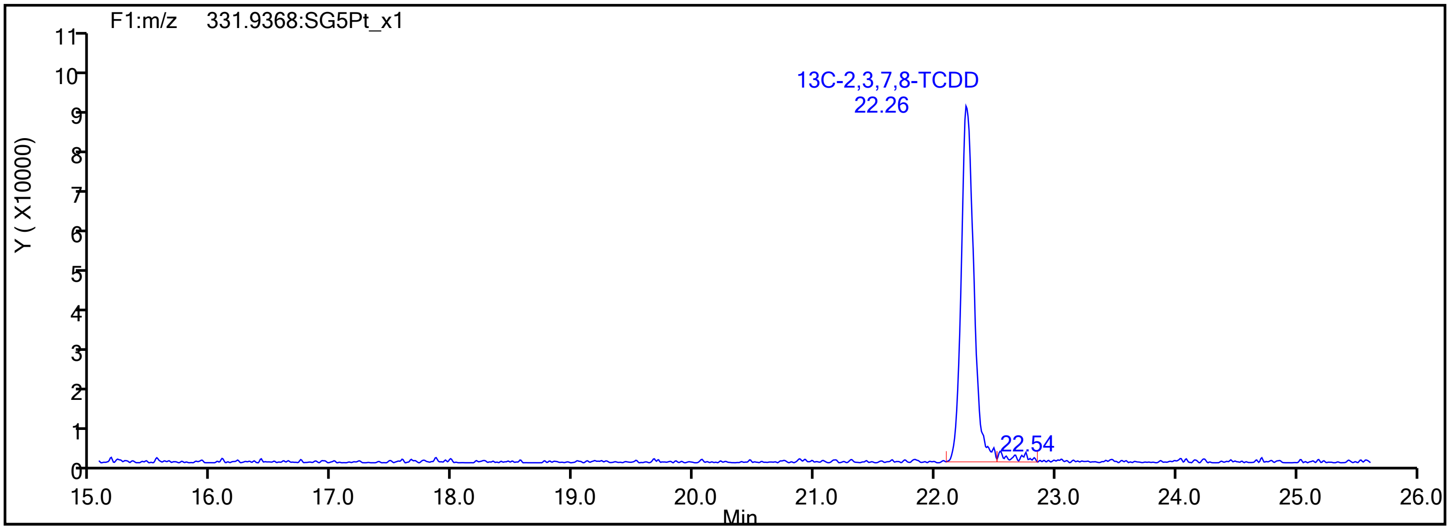

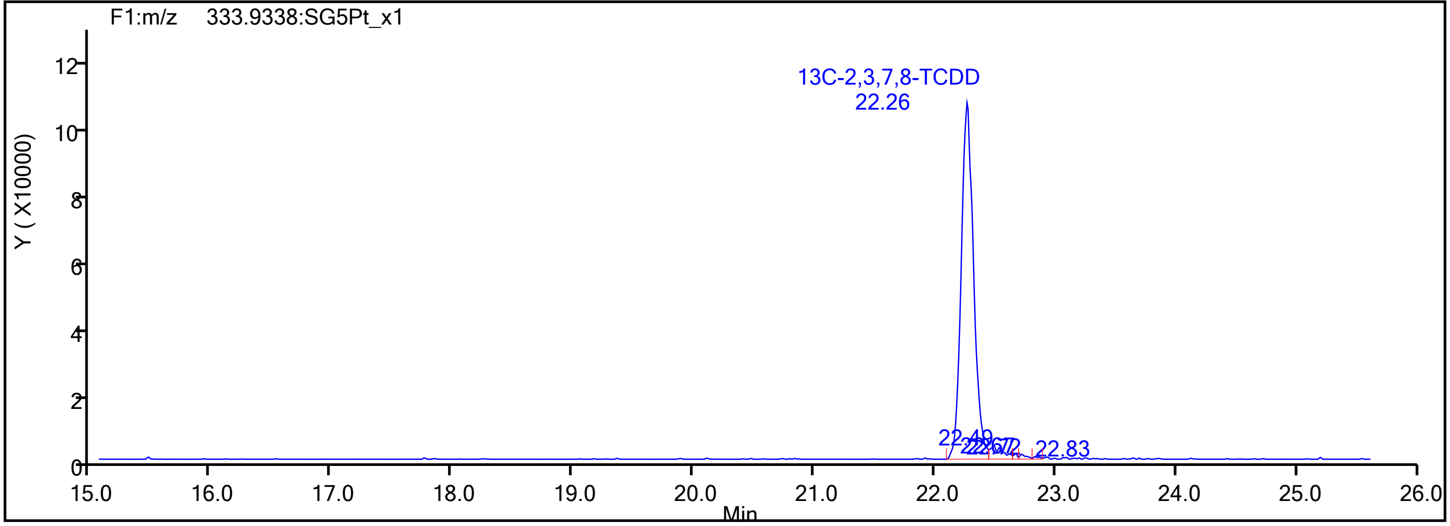

Report Date: 18-Nov-2020 12:37:41 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

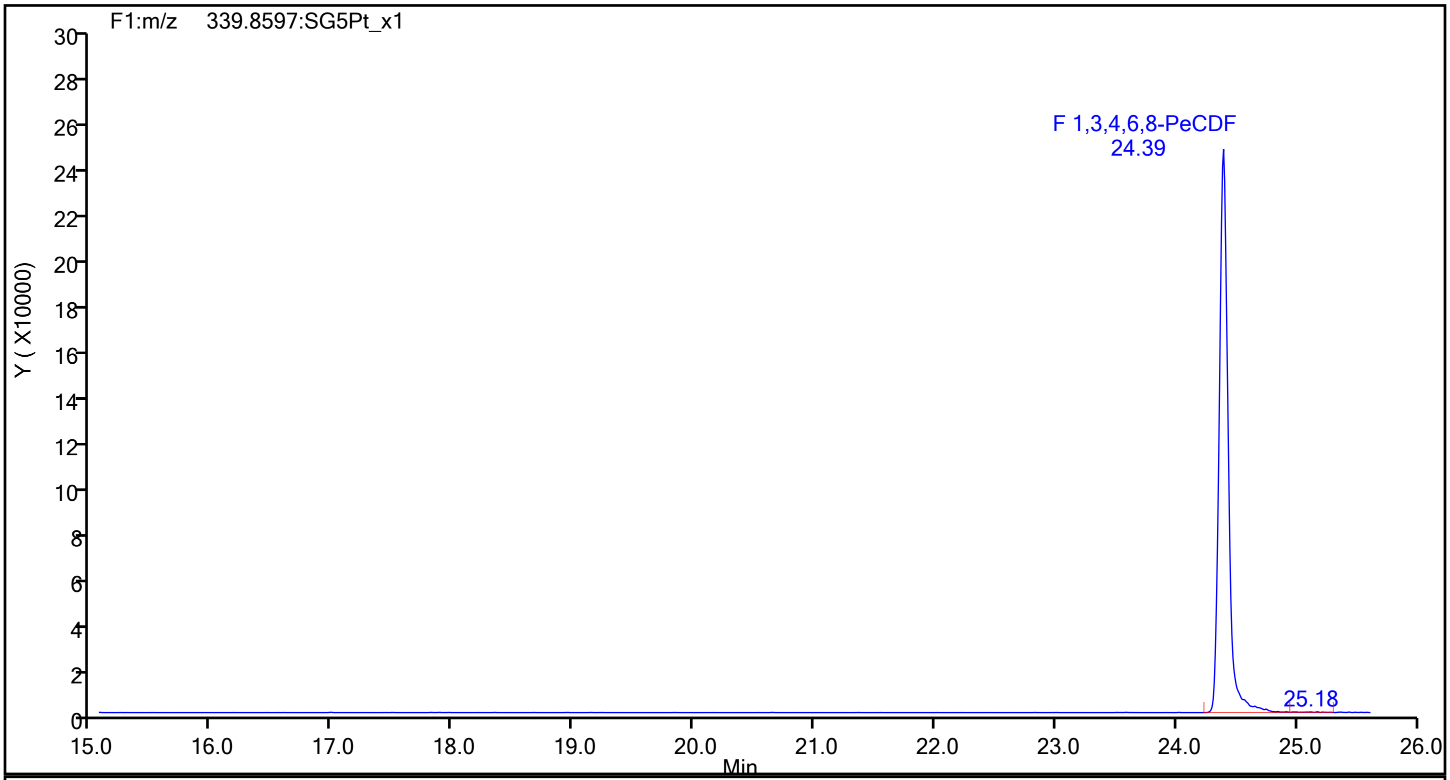

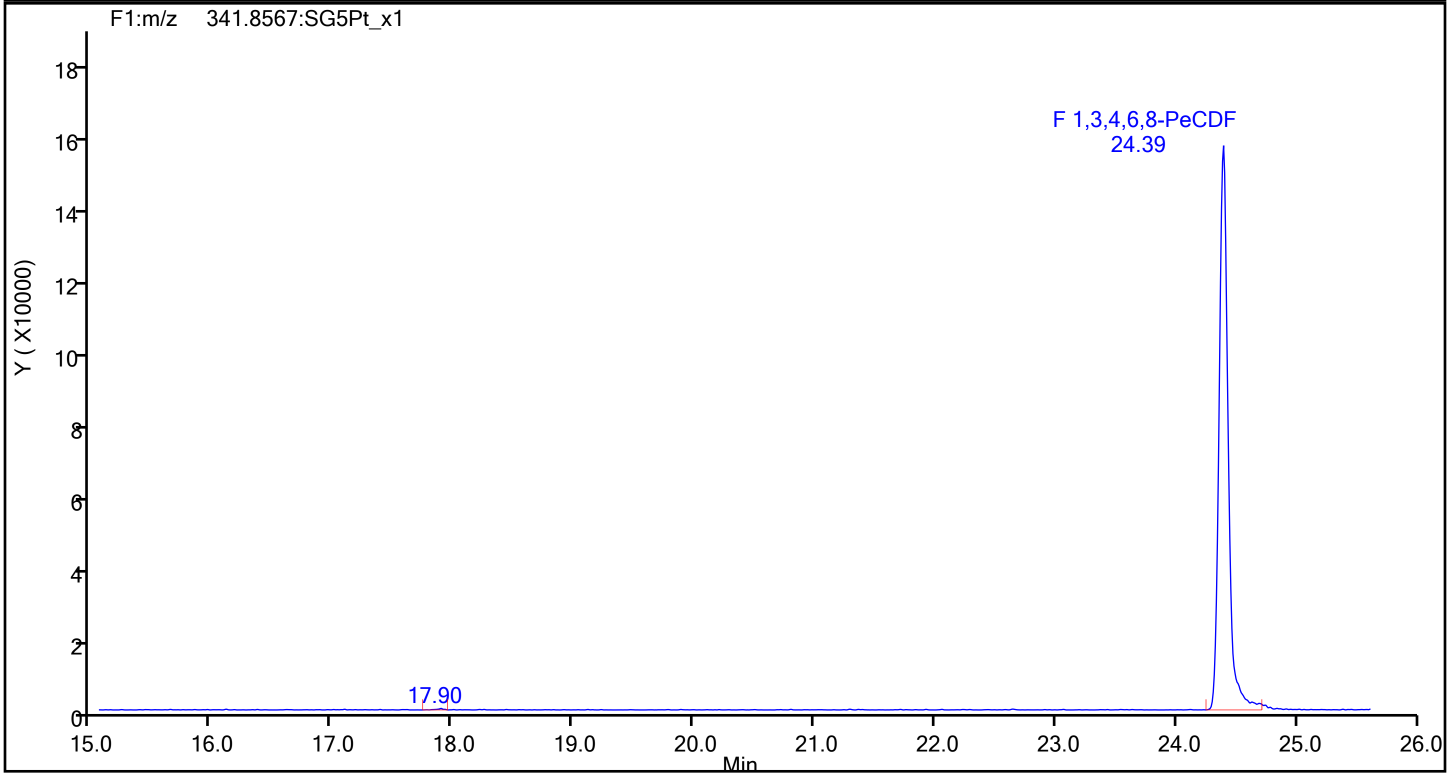

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

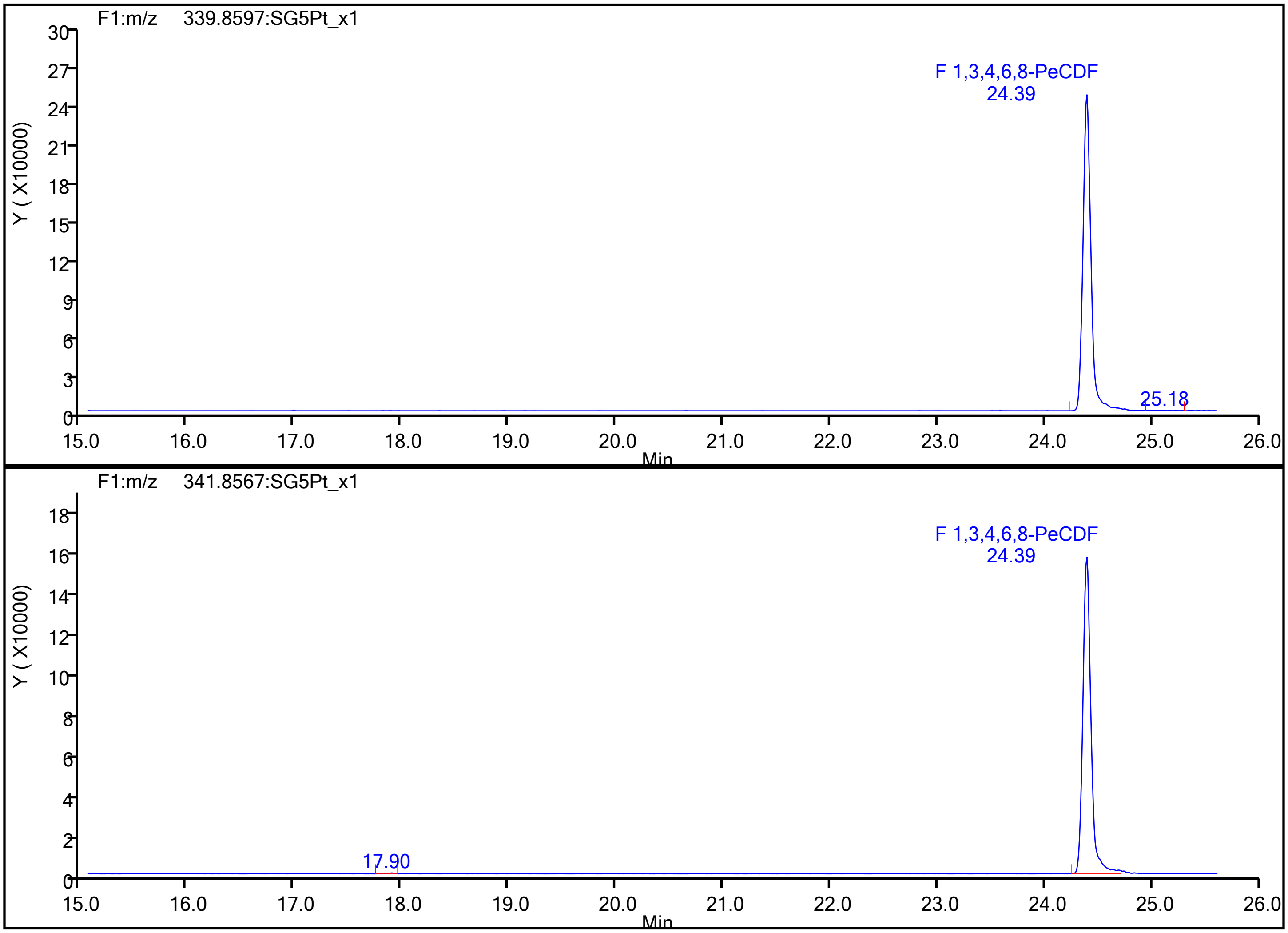

F1 PeCDFs Interference Mass

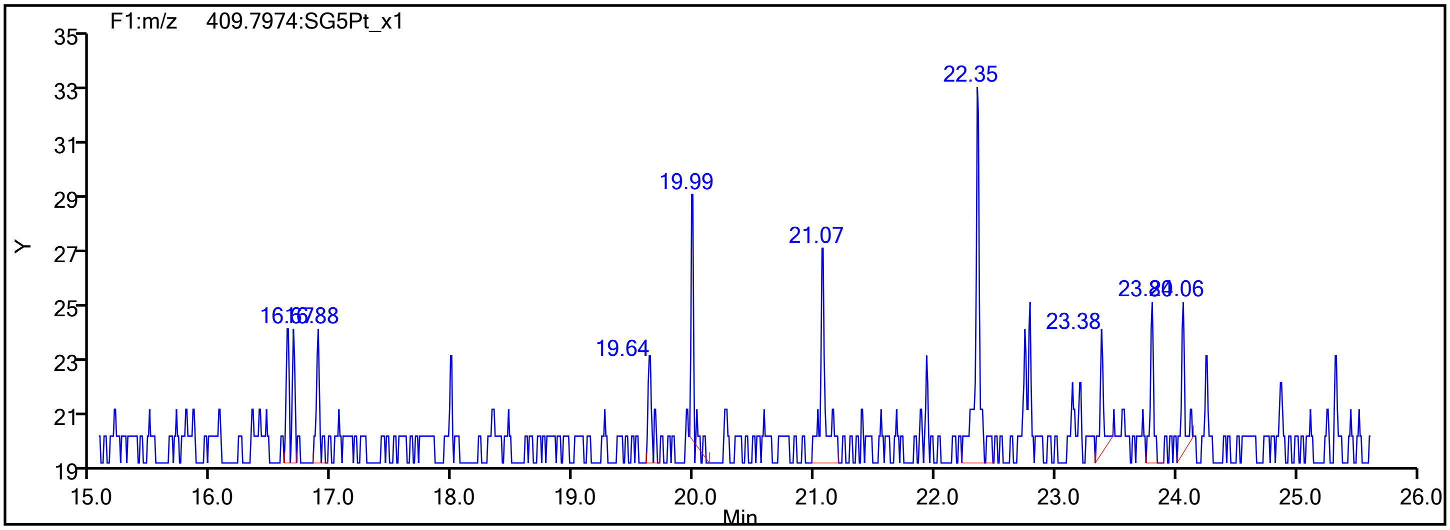

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

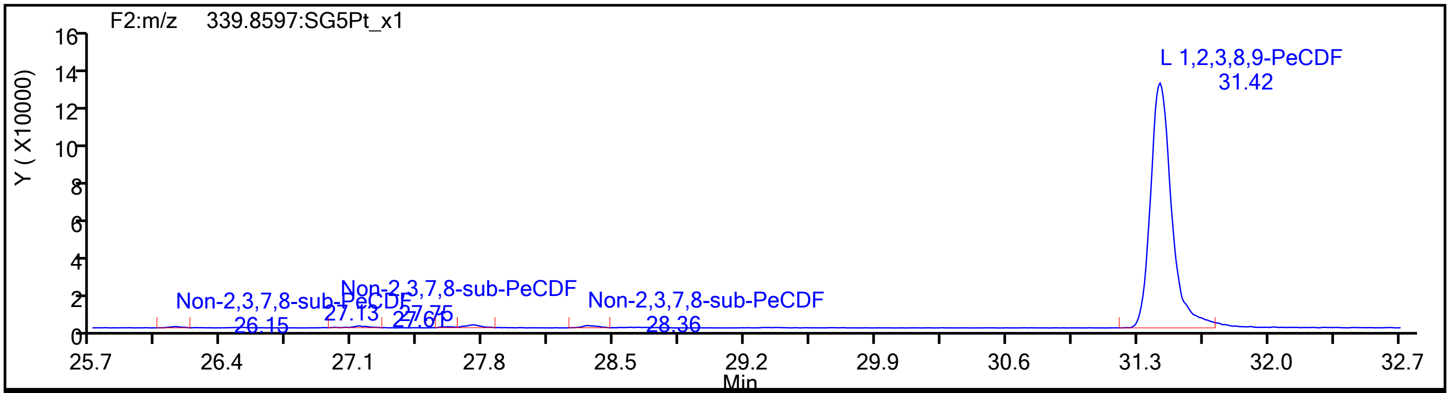

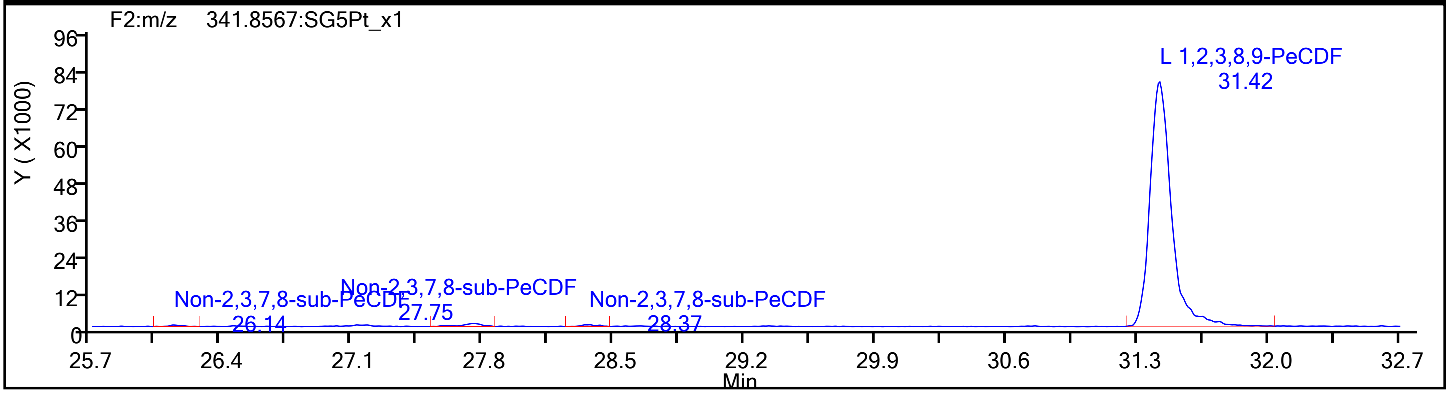

PeCDF Standards

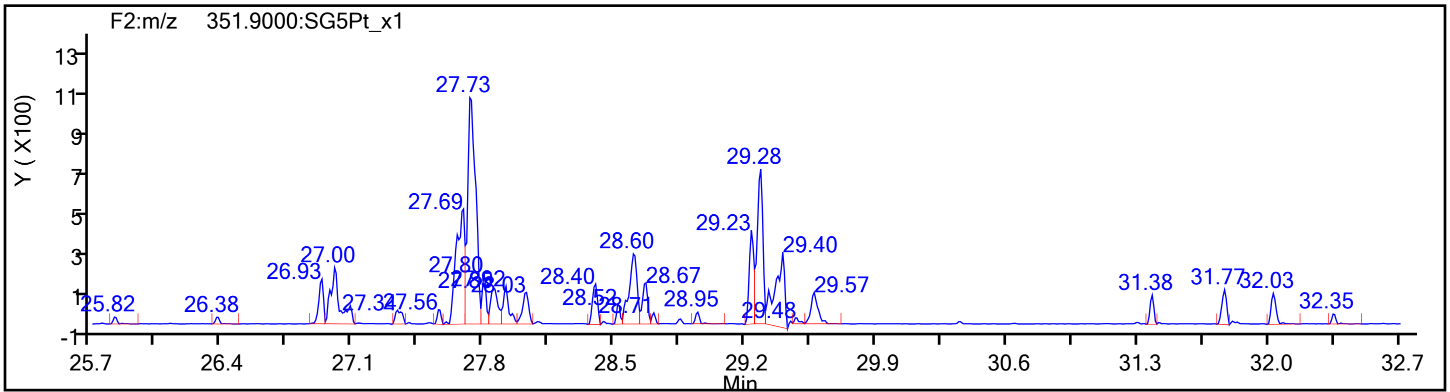

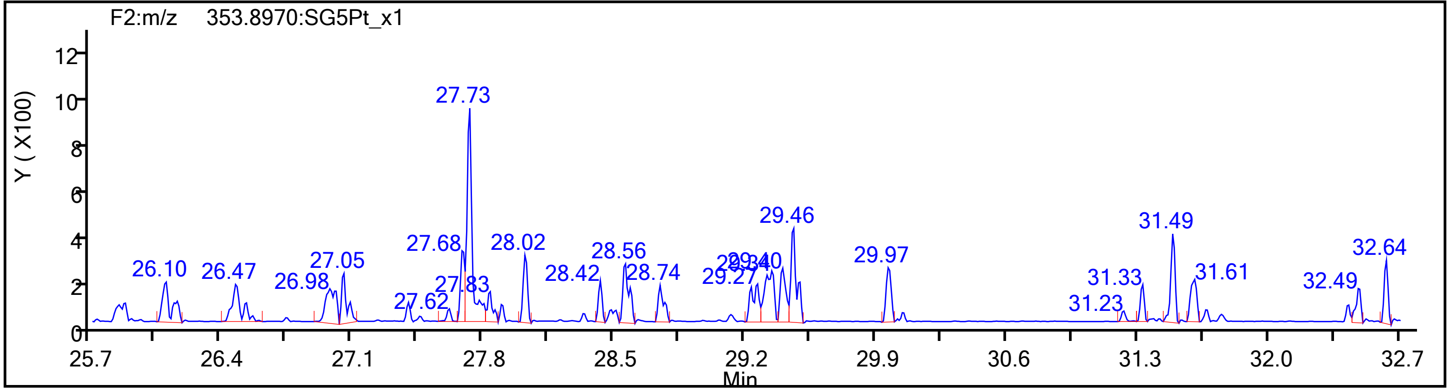

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

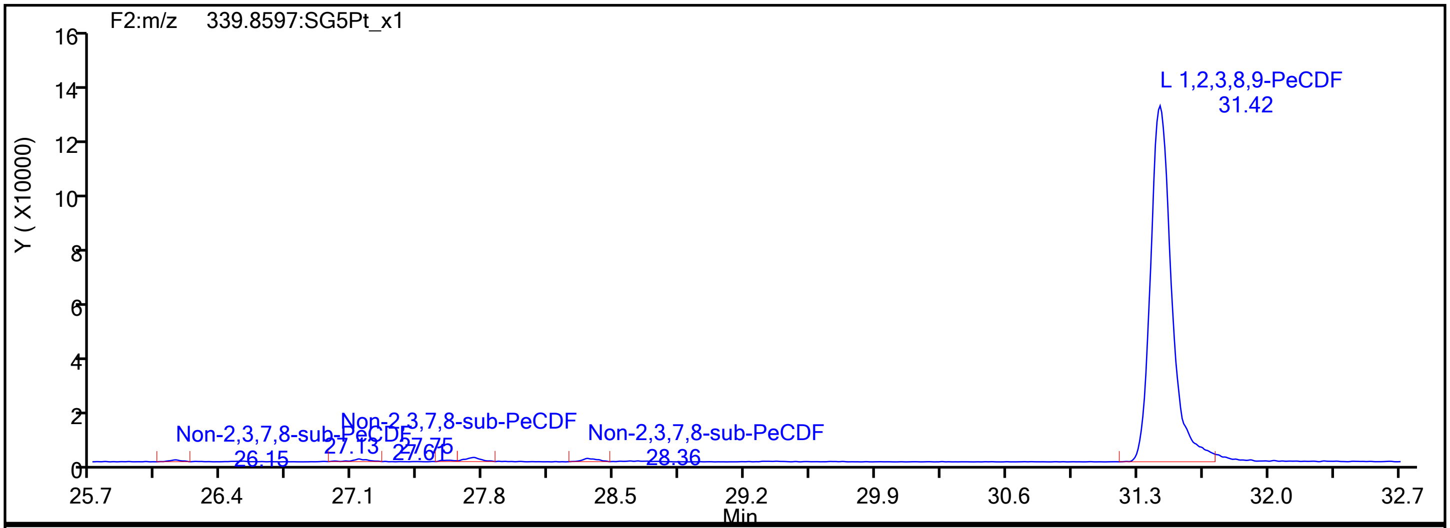

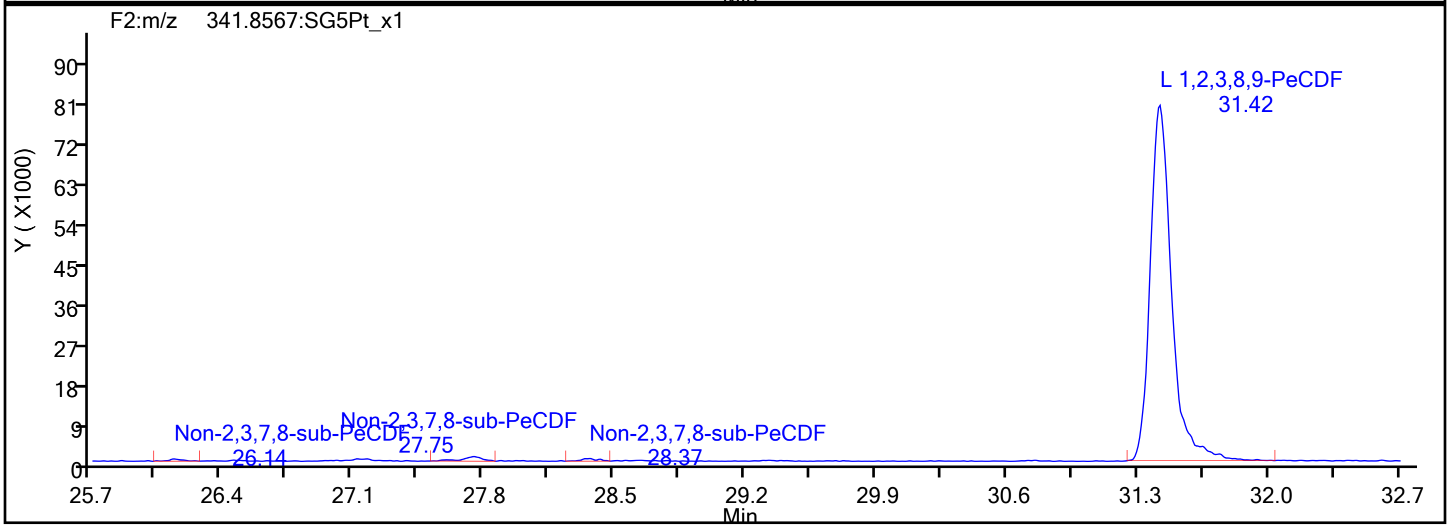

PeCDF Interference Mass

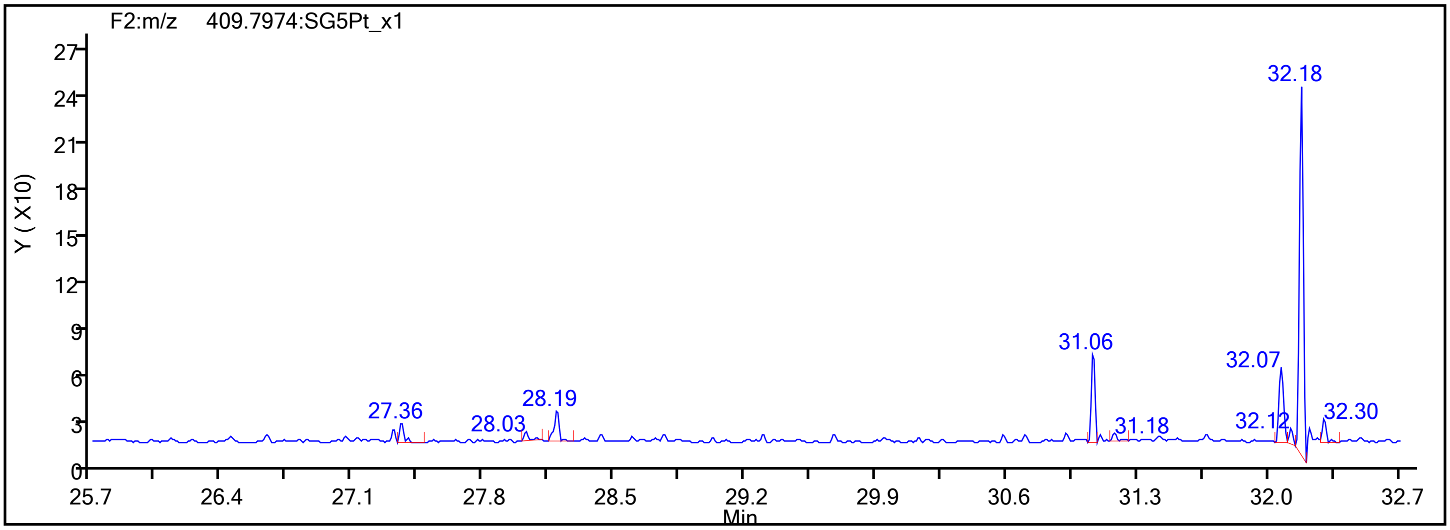

Report Date:	18-Nov-2020 12:37:42	Chrom Revision:	2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

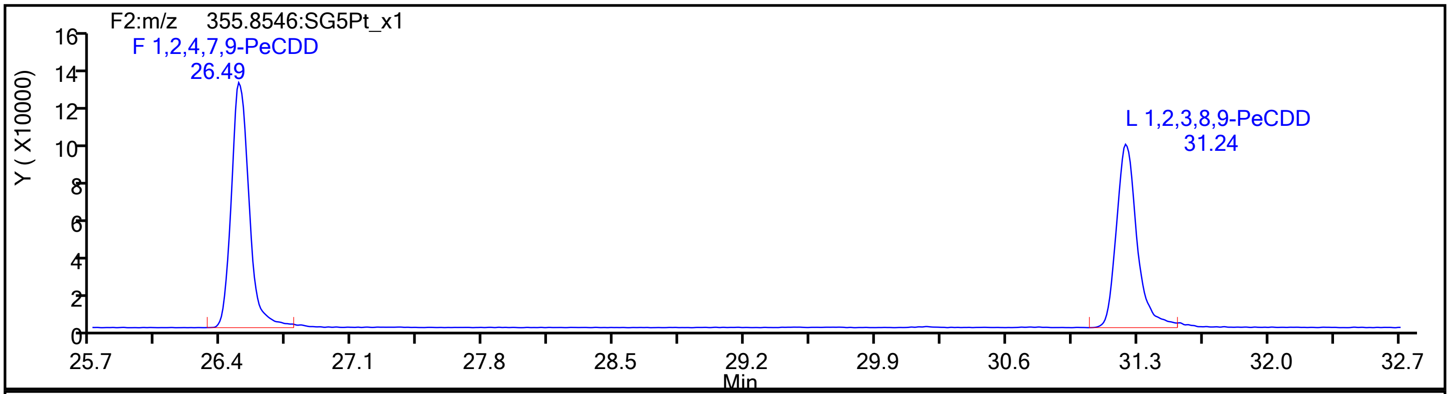

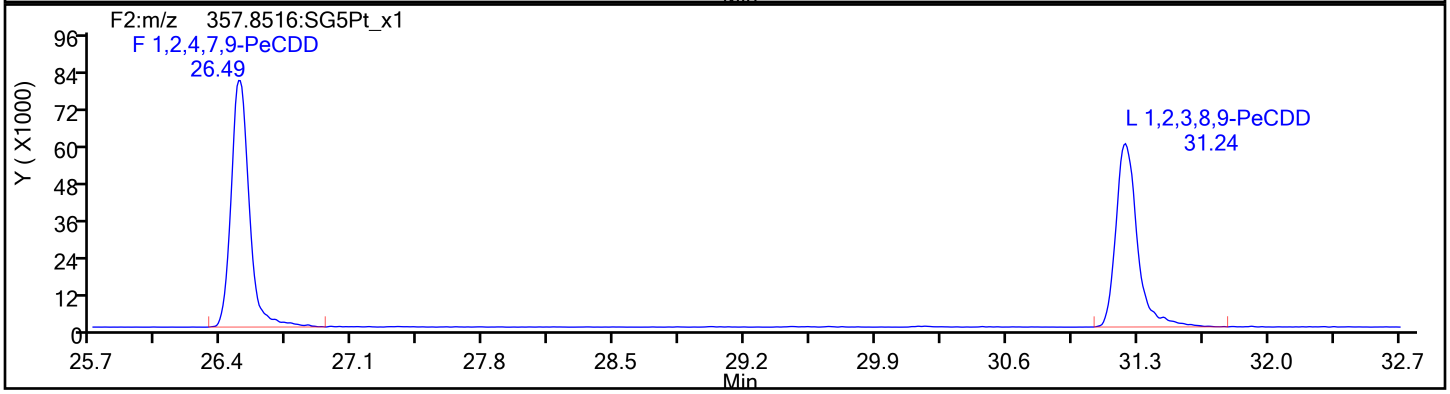

PeCDD Standards

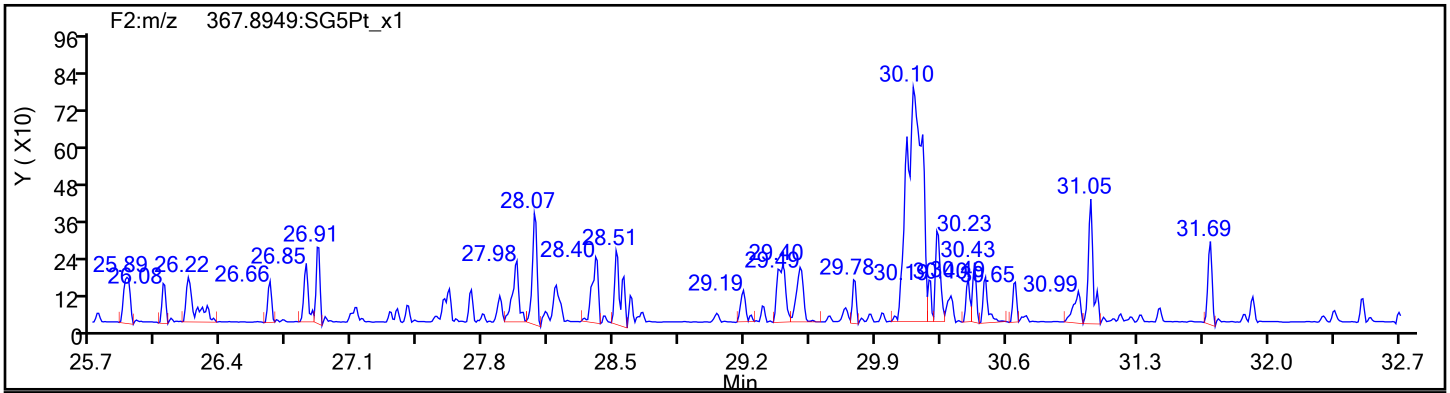

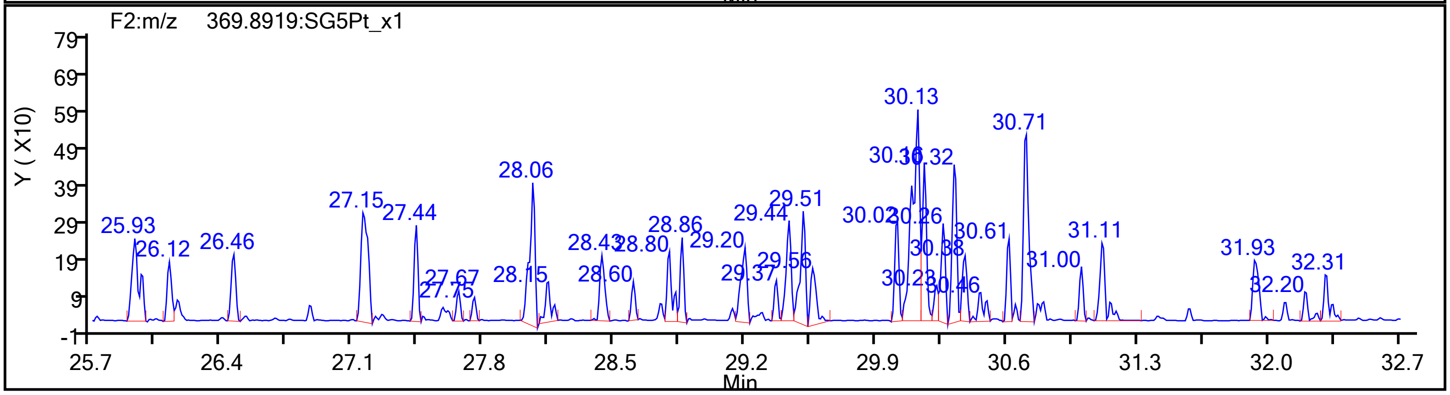

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

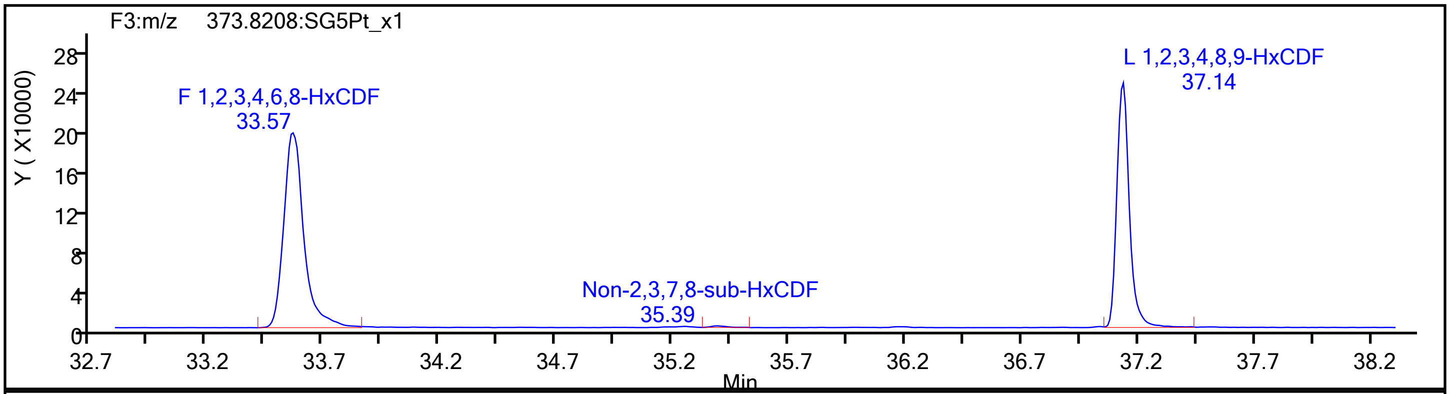

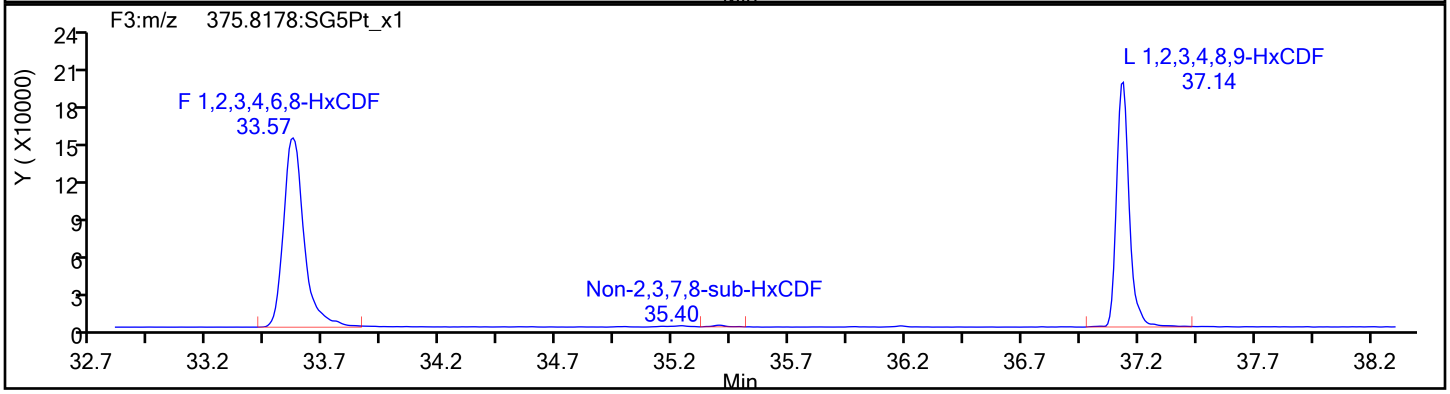

HxCDF Standards

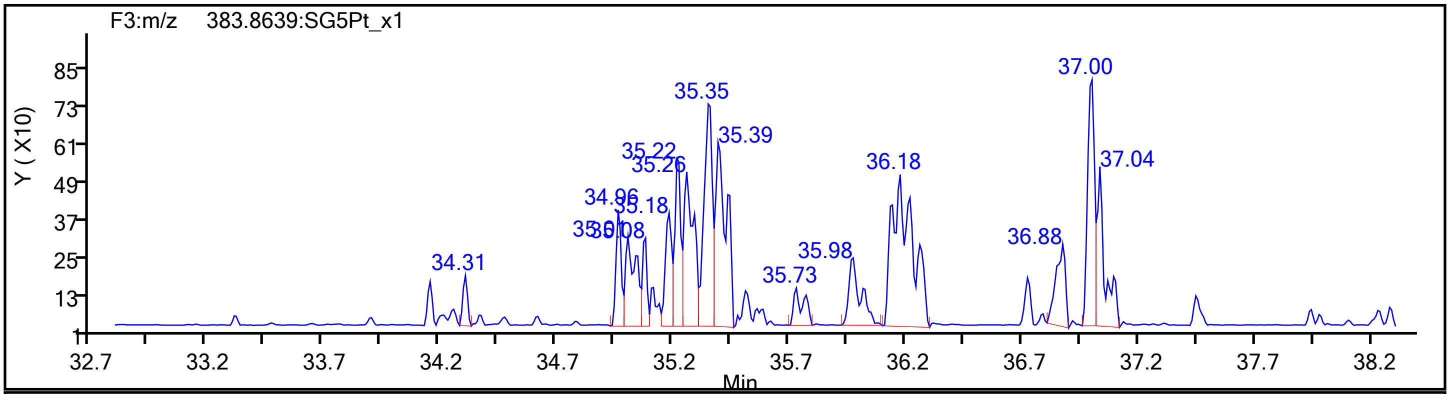

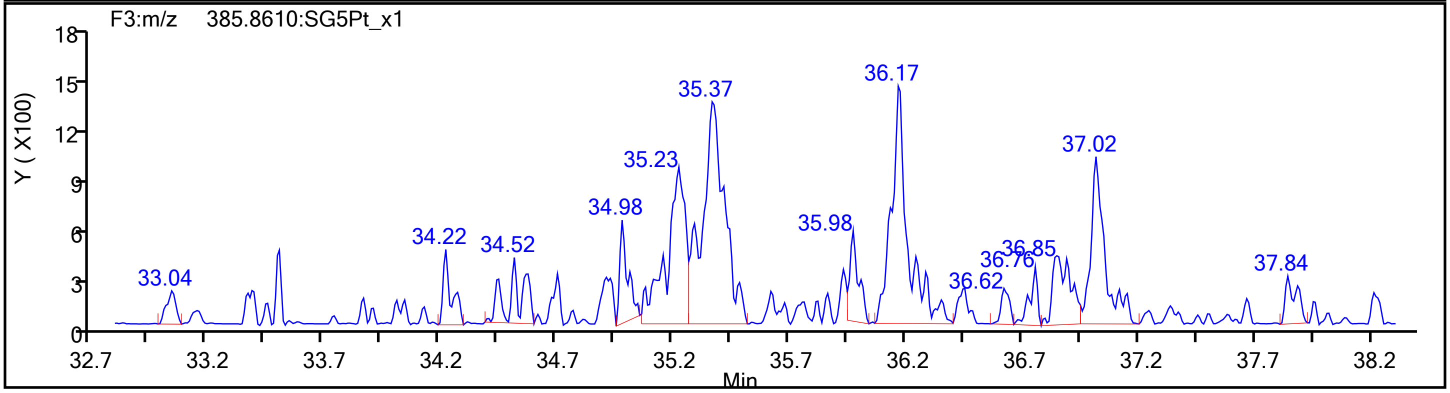

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

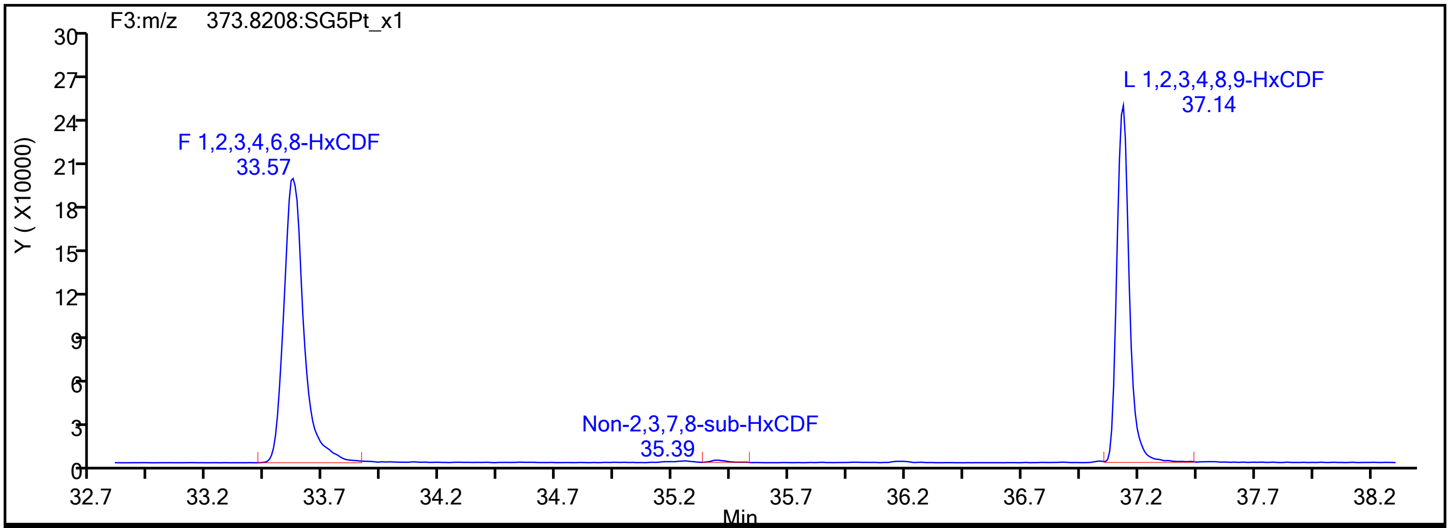

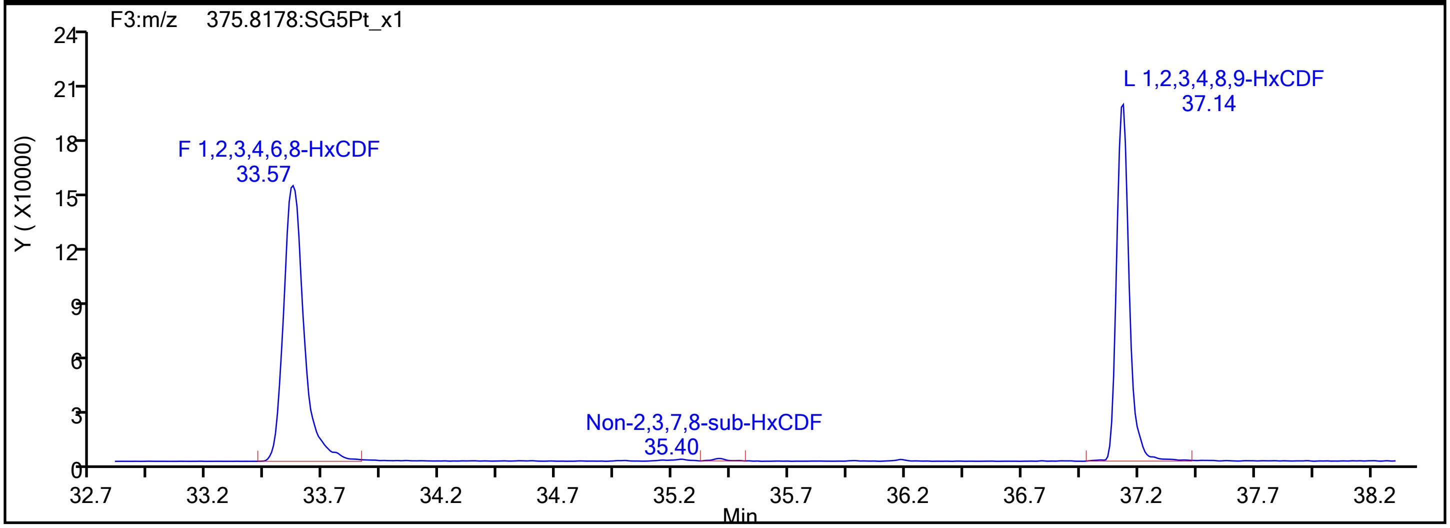

HxCDF Interference Mass

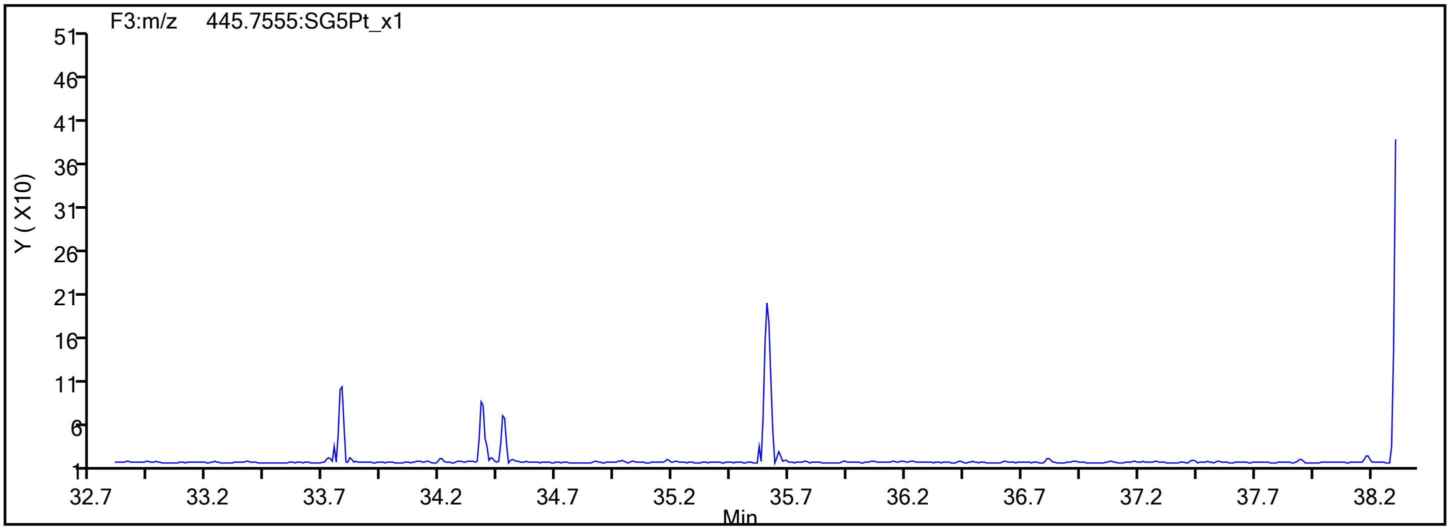

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d

Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

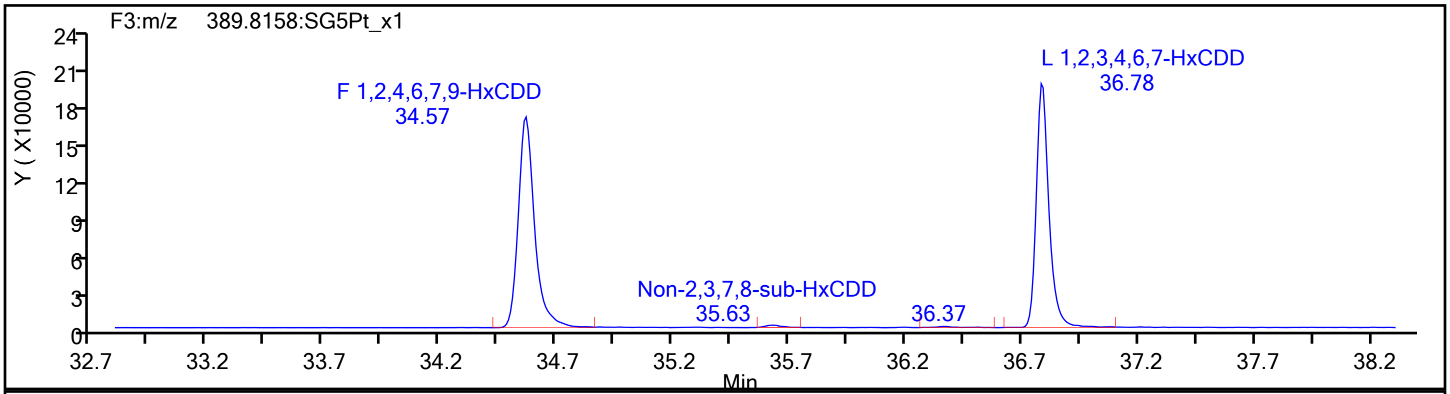

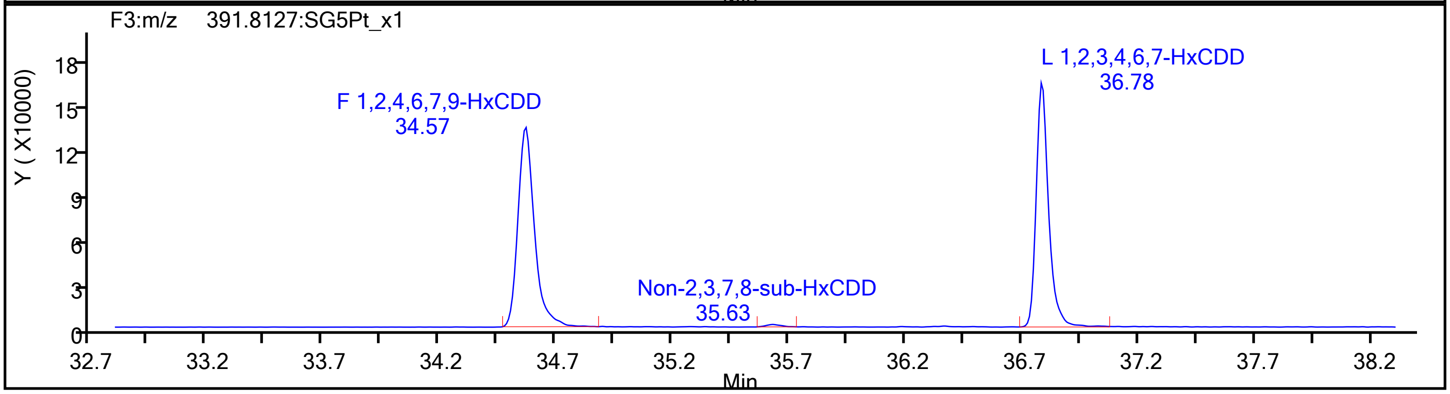

HxCDD Standards

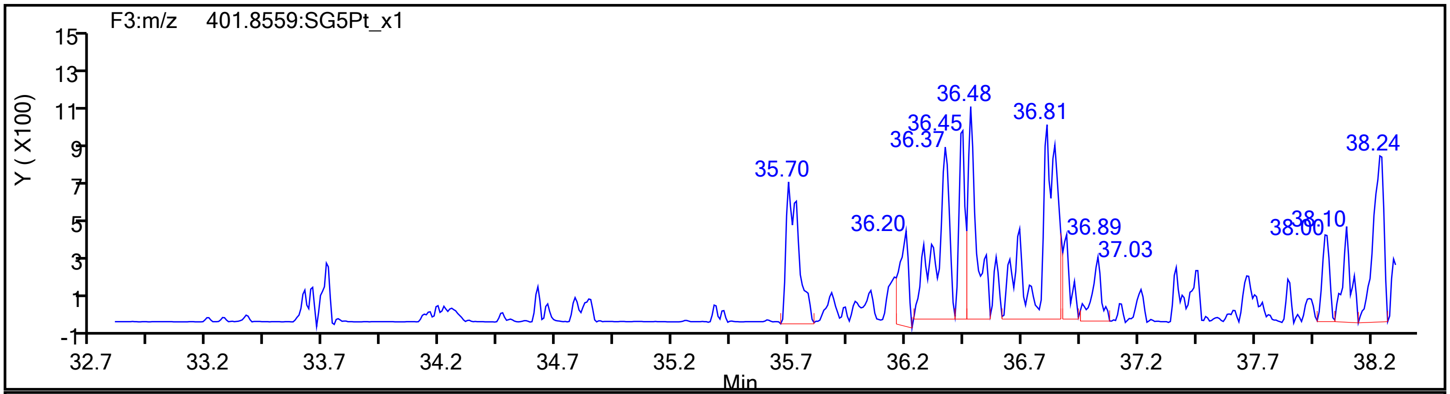

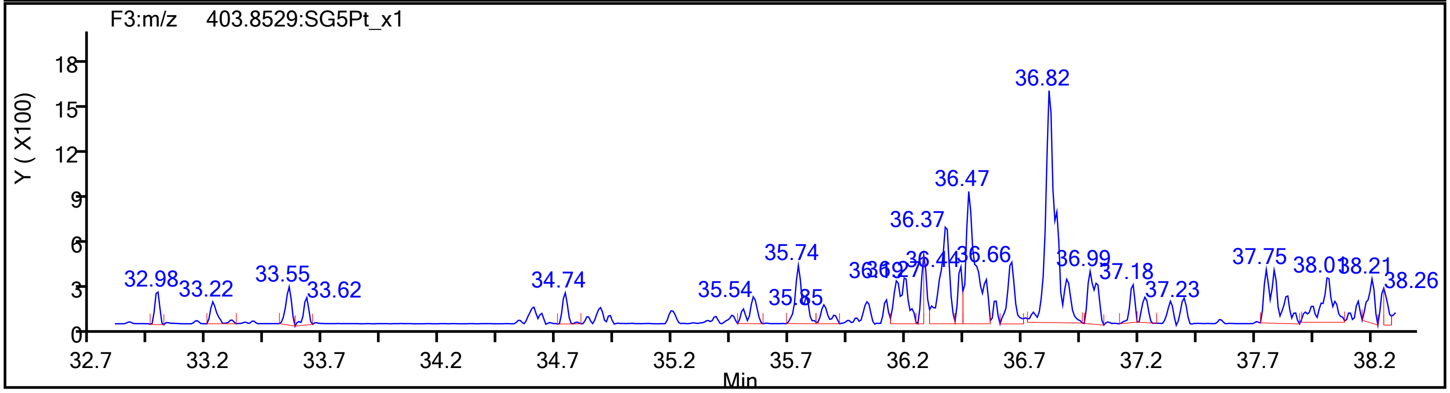

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

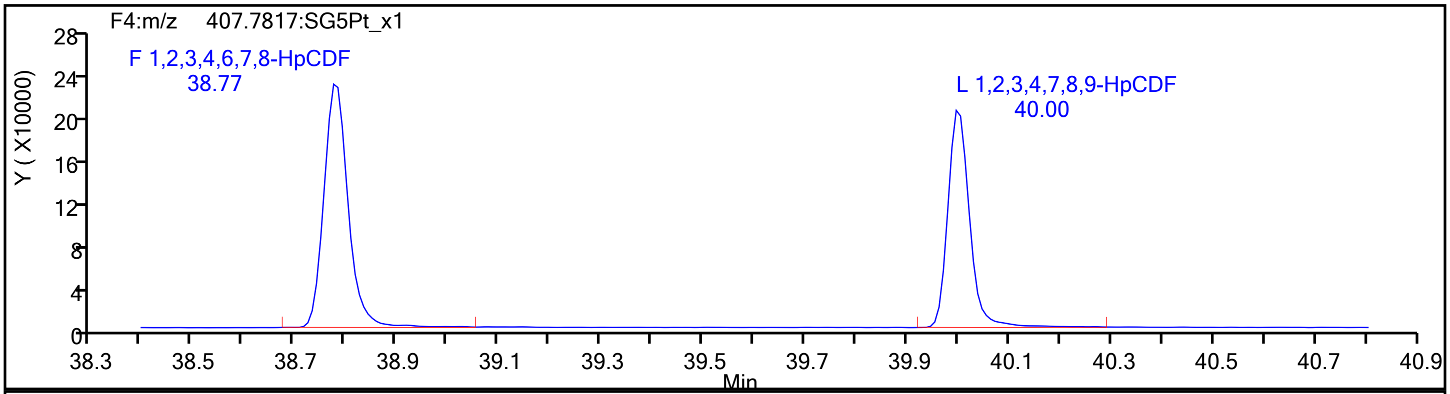

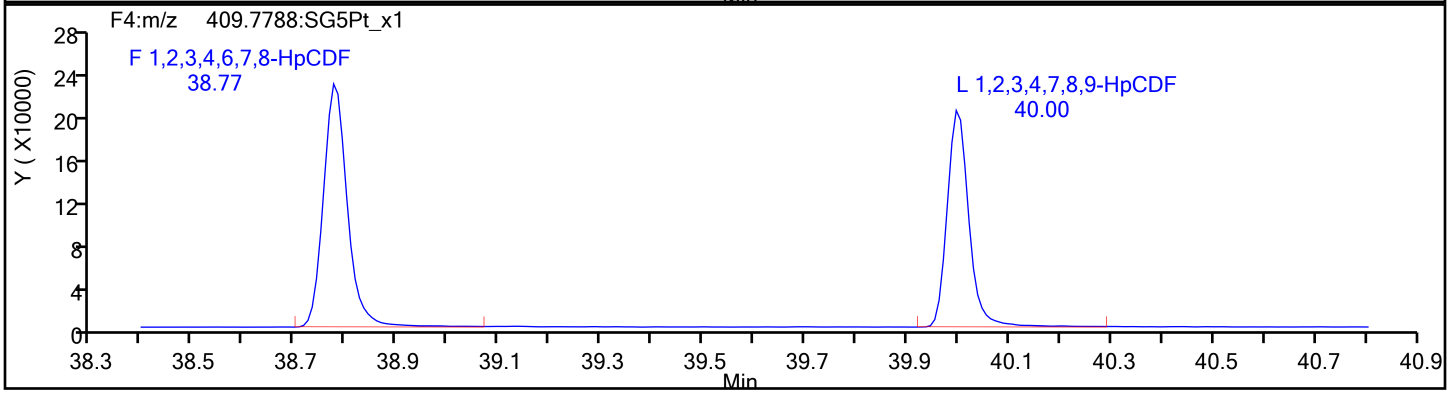

HpCDF Standards

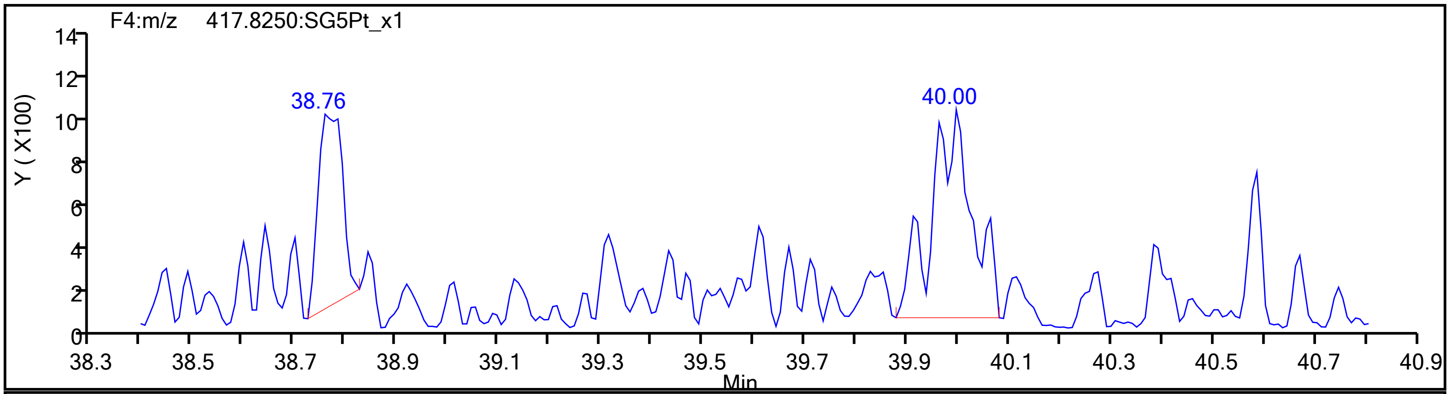

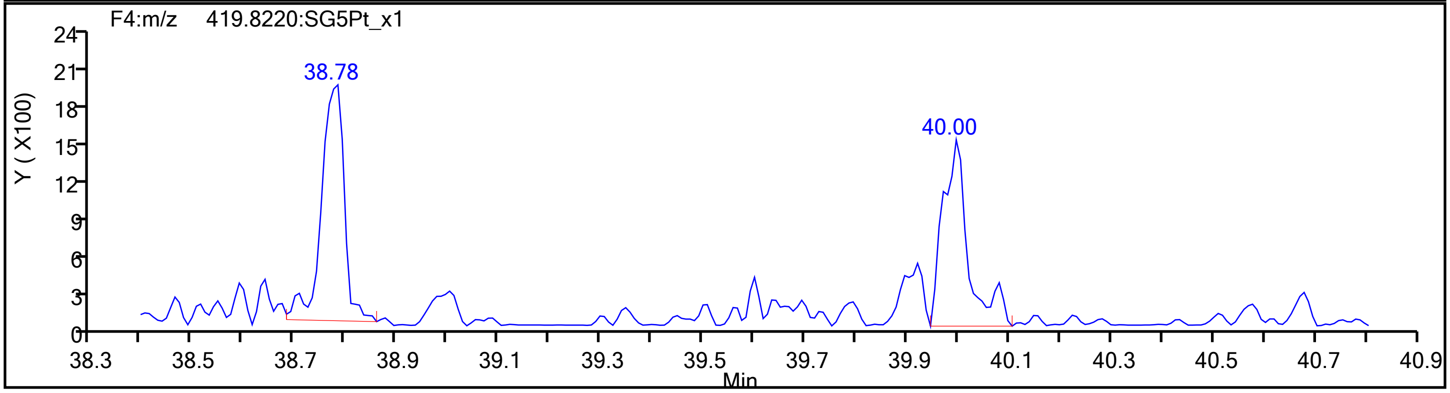

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

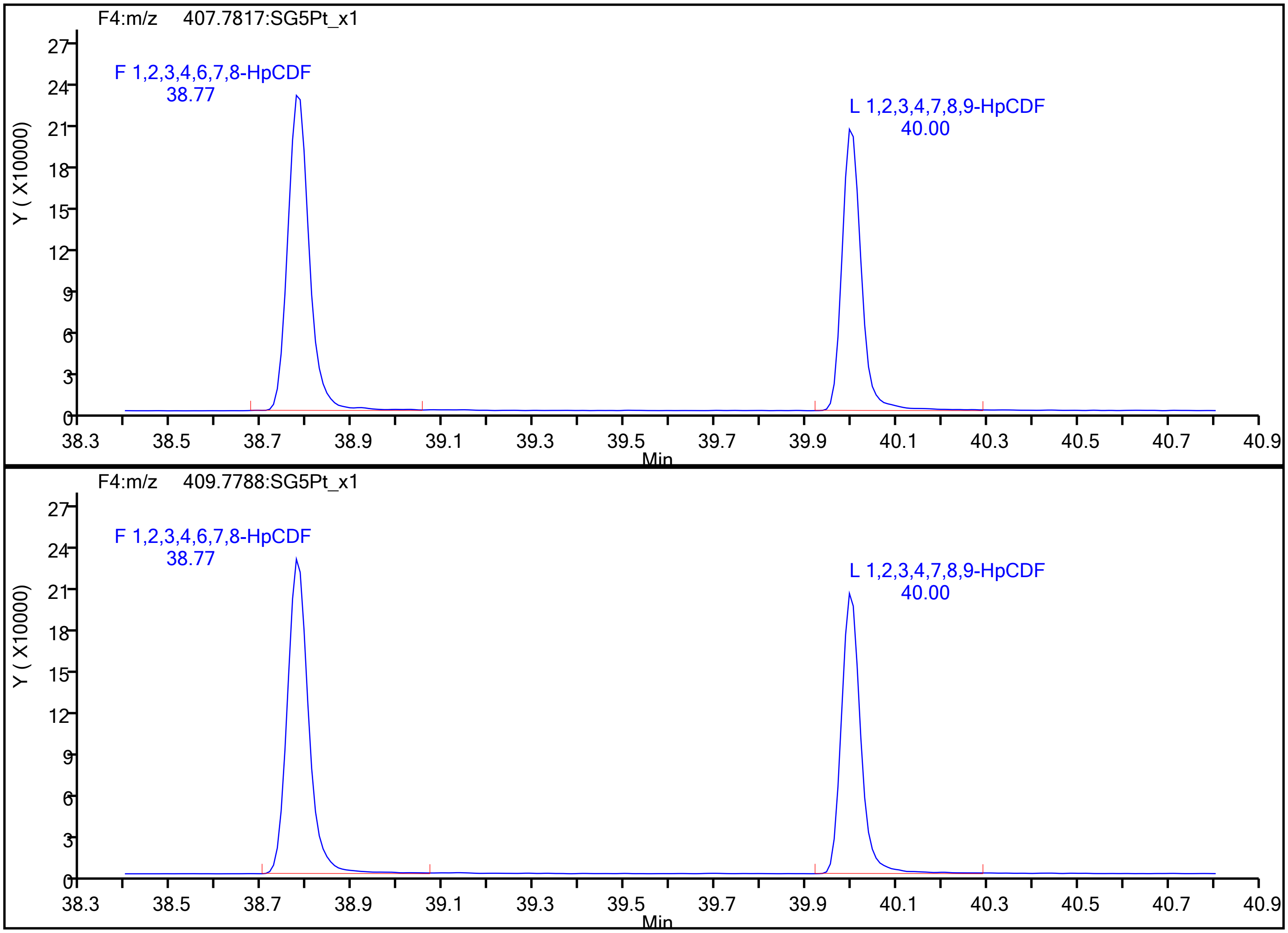

HpCDF Interference Mass

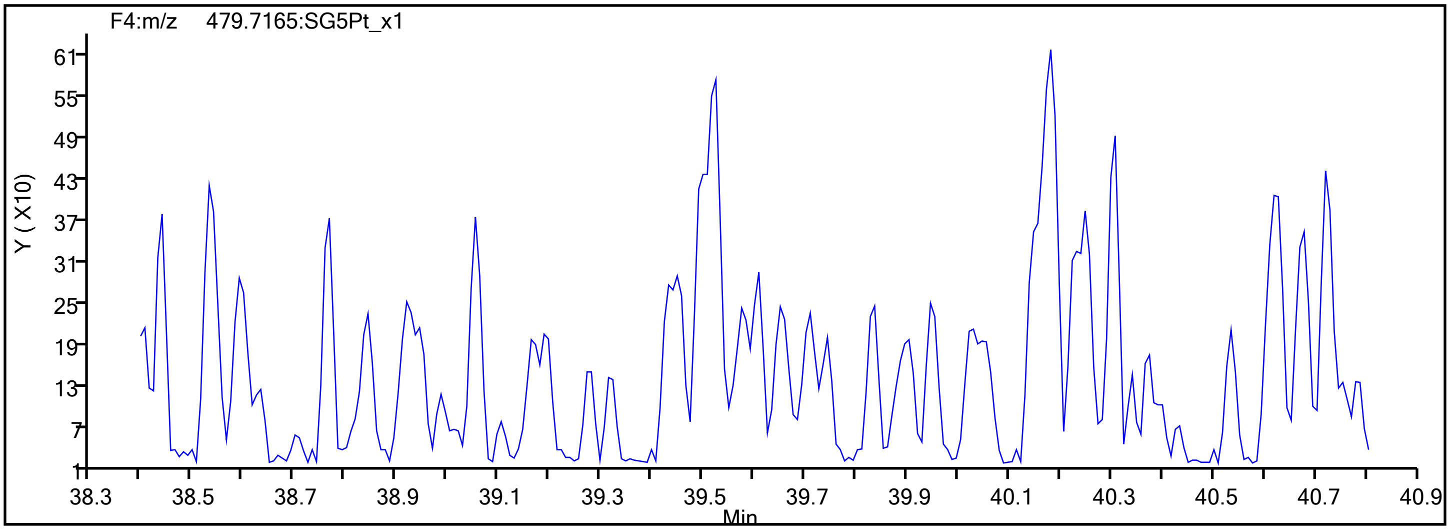

Report Date: 18-Nov-2020 12:37:42 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

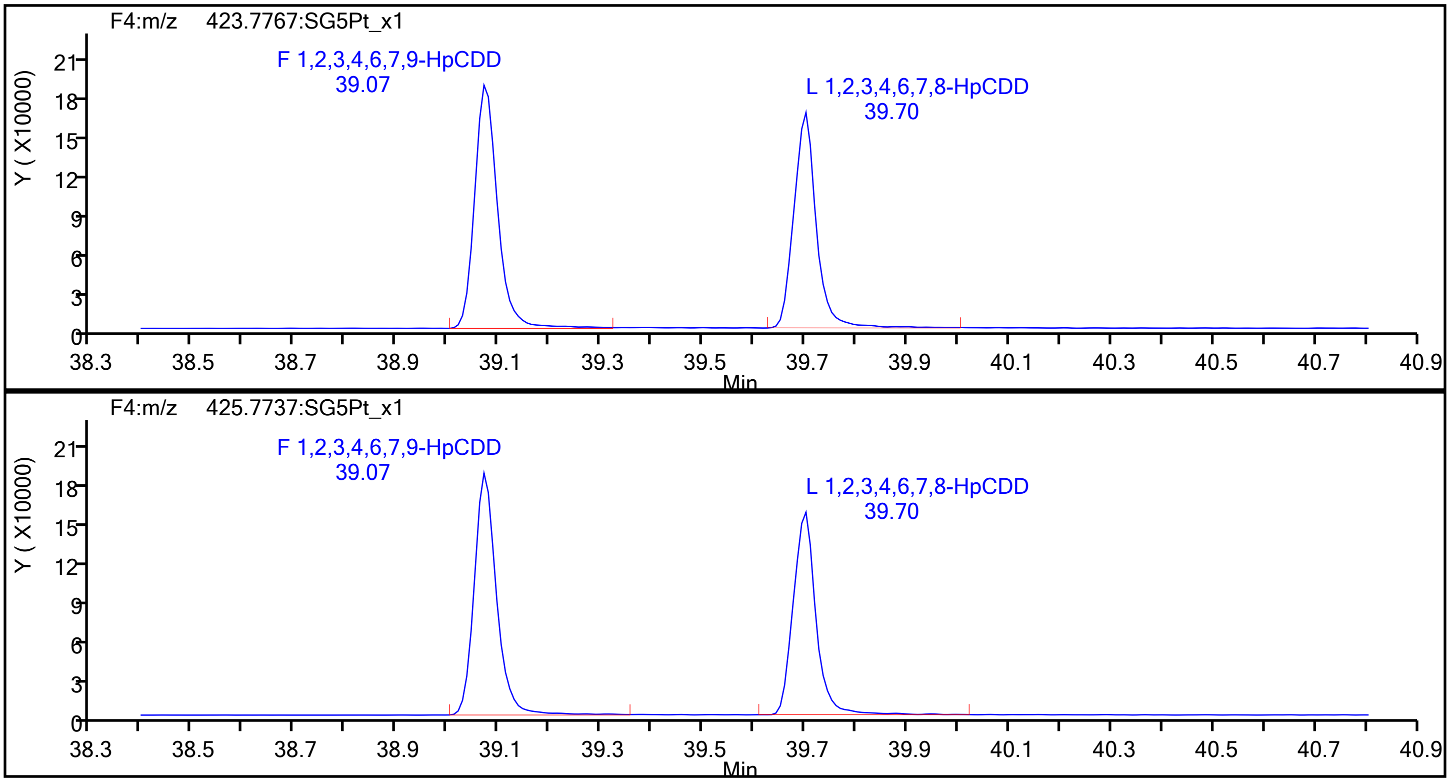

HpCDD Standards

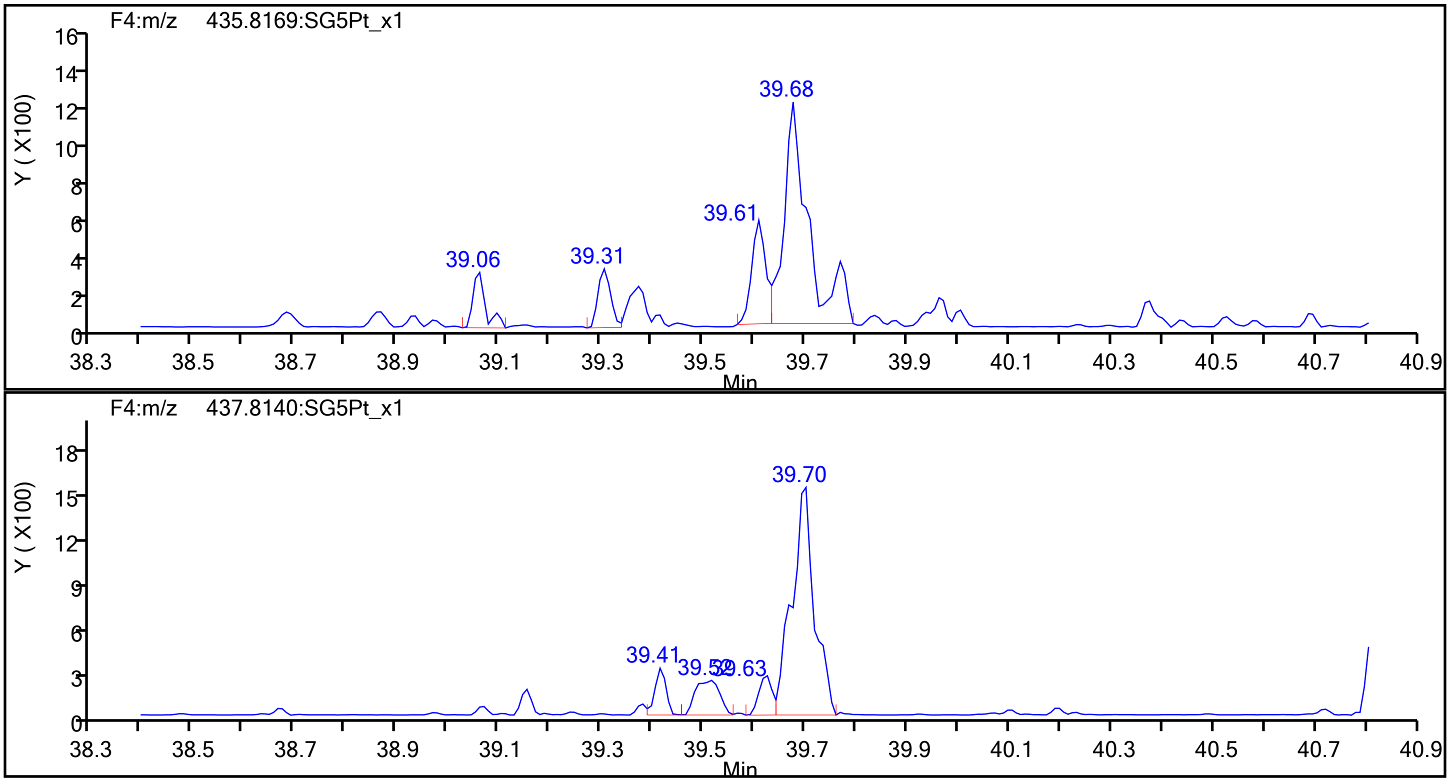

Report Date: 18-Nov-2020 12:37:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d
Injection Date: 17-Nov-2020 11:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 432585
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

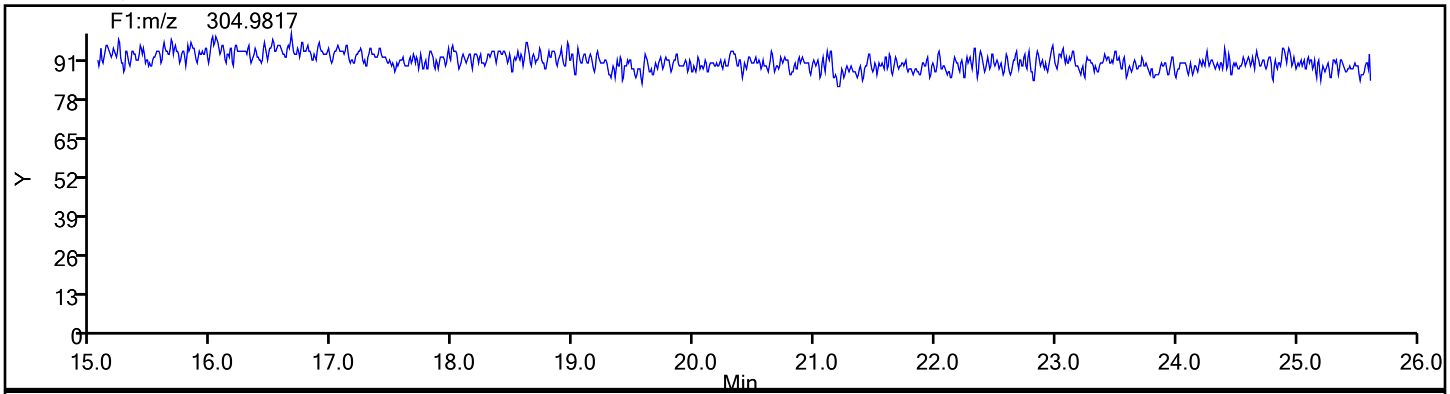

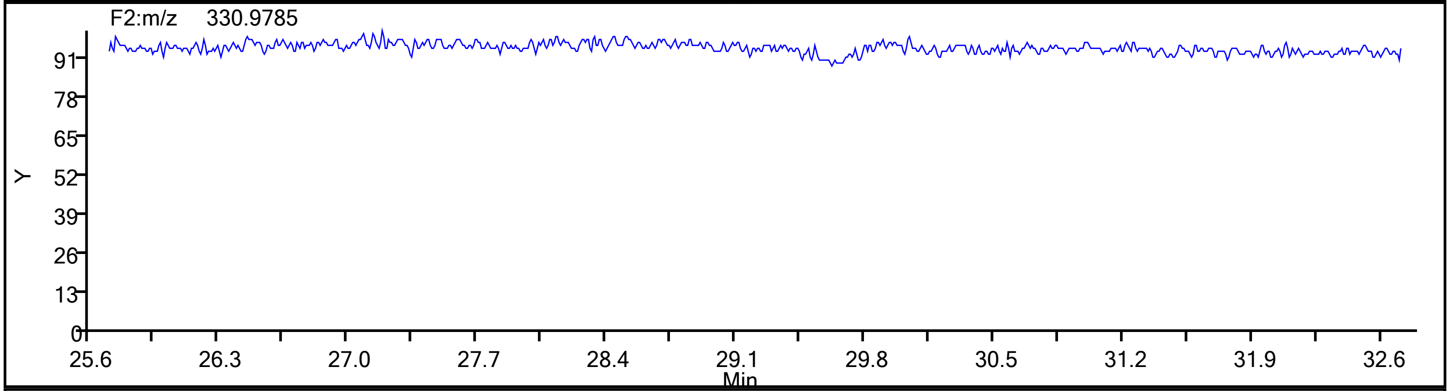

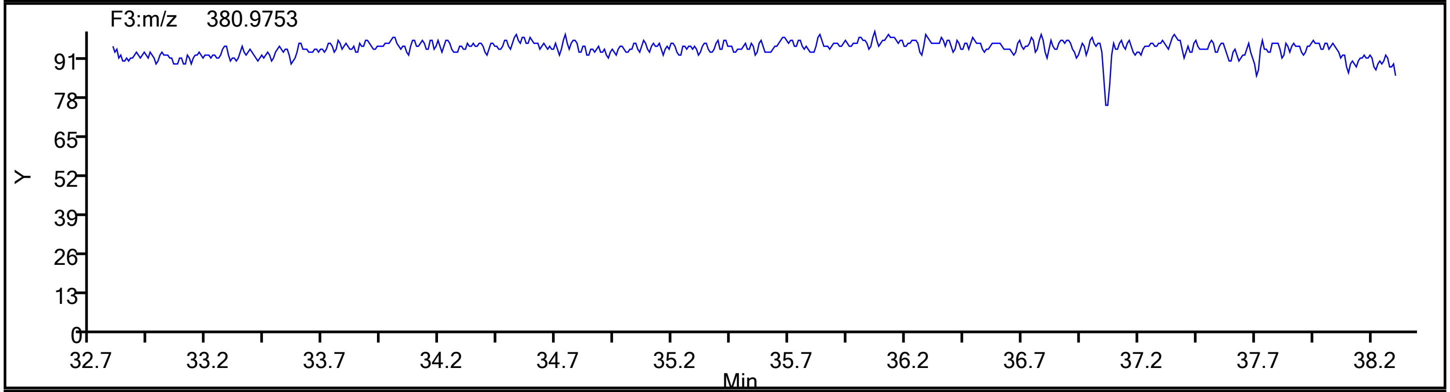

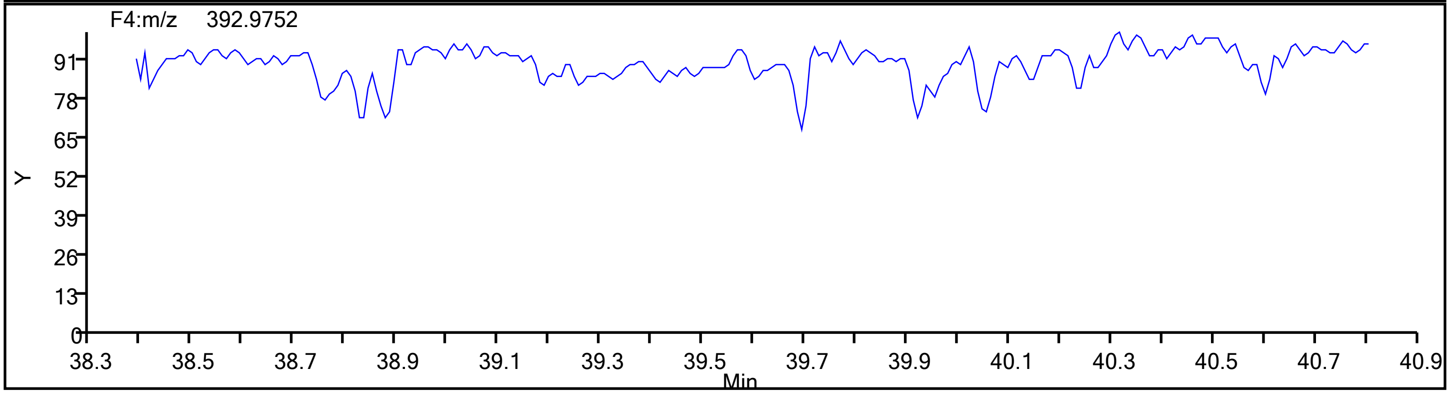

Report Date: 18-Nov-2020 12:37:43 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_2.d		
Injection Date:	17-Nov-2020 11:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	432585	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

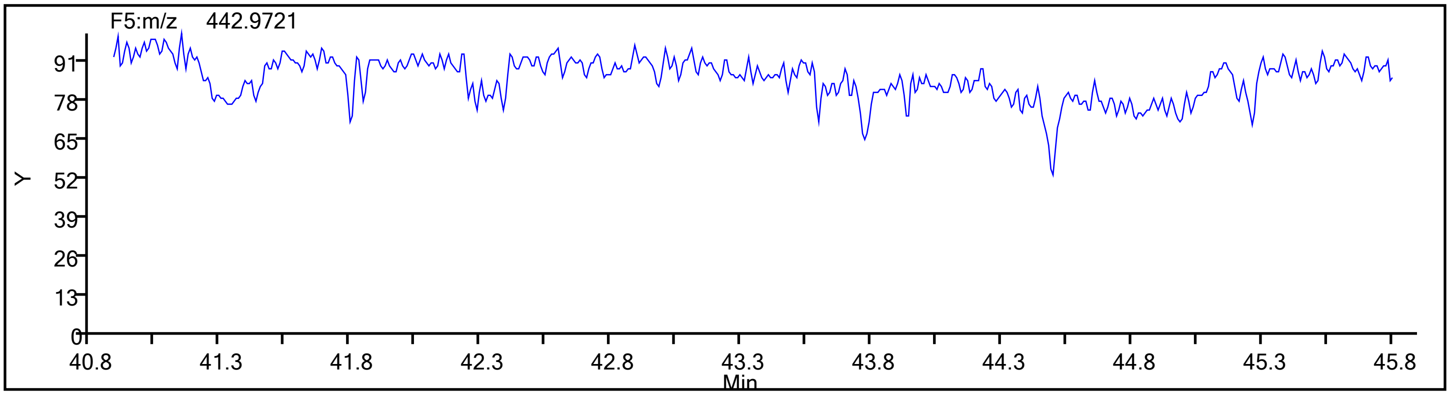

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 08:41:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:24:01 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.725	2056319	0.81	1.6832					0.00	
2,3,7,8-TCDF	20.776	4825674	0.81	1.1547	81.3	81.3	0.3365	0.3365		
A Non-2,3,7,8-sub-TCDF	20.119	37494	0.77	1.1547	0.7336	0.6316	0.3365	0.6316		RQ
S Total TCDF					82.0	81.9	0.3365	0.3365		RQ
D 13C-2,3,7,8-TCDD	22.124	1293394	0.83	1.0896					0.00	
2,3,7,8-TCDD	22.159	1534349	0.80	1.1659	40.7	40.7	0.2019	0.2019		
A Non-2,3,7,8-sub-TCDD	20.973						0.2019	0.2019		
S Total TCDD					40.7	40.7	0.2019	0.2019		
A F1 PeCDFs	24.940						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.506	32976	1.51	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	28.748						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.280						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.613	13321	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	38.745	1676643	1.06	1.5618						
1,2,3,4,7,8,9-HpCDF	39.975	1295612	1.05	1.4975						
A Non-2,3,7,8-sub-HpCDF	39.360						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.672	1060928	1.05	1.1079						
A Non-2,3,7,8-sub-HpCDD	40.007						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.336	2980154	0.82							
1,3,6,8-TCDD	18.001	1542814	0.80							
2,3,4,7-TCDF	20.776	4825674	0.81							
1,2,3,7-TCDD	21.935	1273656	0.77							
1,2,3,9-TCDF	22.348	2122872	0.80							
1,2,3,9-TCDD	22.451	1631557	0.78							
1,2,8,9-TCDF	23.902	2249675	0.81							
1,2,8,9-TCDD	23.945	653579								
1,3,4,6,8-PeCDF	24.298	1902110	1.60							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	26.389	1312708	1.58							
1,2,3,8,9-PeCDD	31.107	1205470	1.61							
1,2,3,8,9-PeCDF	31.293	1630316	1.56							
1,2,3,4,6,8-HxCDF	33.477	2115317	1.26							
1,2,4,6,7,9-HxCDD	34.488	1429821	1.25							
1,2,3,4,6,7-HxCDD	36.737	1343431	1.26							
1,2,3,4,8,9-HxCDF	37.082	1805219	1.24							
1,2,3,4,6,7,9-HpCDD	39.040	1201872	1.05							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Nov-2020 08:41:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 02:24:01 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1665

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.725	20.725	0	1.000	918191	130106	449	1122	290		
317.9389	20.733	20.725	1	1.000	1138128	161206	191	477	844	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.776	20.776	0	1.002	2154762	281484	482	1205	584		
305.8987	20.776	20.776	0	1.002	2670912	352135	650	1625	542	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	24.289	20.119	250	1.172	16311	2555	482	1205	5		
305.8987	24.298	20.119	250	1.172	27234	3932	650	1625	6	0.60(0.65-0.89)	
	Empc Correction				21183	3318	650	1625	5		
13C-2,3,7,8-TCDD											
331.9368	22.124	22.124	0	1.000	585923	80072	232	580	345		
333.9338	22.124	22.124	0	1.000	707471	94124	67	167	1405	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.159	22.159	0	1.002	681795	89586	214	535	419		
321.8936	22.159	22.159	0	1.002	852554	115824	196	490	591	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.973						214	535			
321.8936	20.973						196	490			
A F1 PeCDFs											
339.8597	24.940						23	57			
341.8567	24.940						32	80			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.021	28.506	-89	1.000	5560	975	96	240	10		
341.8567	27.021	28.506	-89	1.000	3238	544	114	285	5	1.72(1.32-1.78)	
339.8597	27.636	28.506	-52	1.000	8506	1346	96	240	14		
341.8567	27.636	28.506	-52	1.000	5532	687	114	285	6	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	28.260	28.506	-15	1.000	5773	807	96	240	8		
341.8567	28.260	28.506	-15	1.000	4367	590	114	285	5	1.32(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.748						122	305			
357.8516	28.748						81	202			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.280						282	705			
375.8178	35.280						215	537			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	35.558	35.613	-3	1.000	8597	1748	201	502	9		
391.8127	35.567	35.613	-3	1.000	5947	1220	170	425	7	1.45(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.745	38.745	0	1.000	864183	210680	751	1877	281		
409.7788	38.745	38.745	0	1.000	812460	197608	712	1780	278	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.975	39.975	0	1.000	664952	177876	751	1877	237		
409.7788	39.966	39.975	-1	1.000	630660	167303	712	1780	235	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.360						751	1877			
409.7788	39.360						712	1780			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.672	39.672	0	1.000	543540	140963	615	1537	229		
425.7737	39.663	39.672	-1	1.000	517388	136697	542	1355	252	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	40.007						615	1537			
425.7737	40.007						542	1355			
1,3,6,8-TCDF											
303.9016	16.336	16.336	0		1338940	262098	482	1205	544		
305.8987	16.336	16.336	0		1641214	316436	650	1625	487	0.82(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	18.001	18.001	0		687093	120530	214	535	563		
321.8936	18.001	18.001	0		855721	148779	196	490	759	0.80(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.776	20.776	0		2154762	281484	482	1205	584		
305.8987	20.776	20.776	0		2670912	352135	650	1625	542	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.935	21.935	0		553605	79693	214	535	372		
321.8936	21.935	21.935	0		720051	104112	196	490	531	0.77(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.348	22.348	0		943234	126180	482	1205	262		
305.8987	22.348	22.348	0		1179638	153820	650	1625	237	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.451	22.451	0		713274	90885	214	535	425		
321.8936	22.460	22.451	1		918283	113588	196	490	580	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.902	23.902	0		1009706	192261	482	1205	399		
305.8987	23.902	23.902	0		1239969	237441	650	1625	365	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	23.945	23.945	0		653579	128040	214	535	598		
1,3,4,6,8-PeCDF											
339.8597	24.298	24.298	0		1169174	222308	23	57	9666		
341.8567	24.298	24.298	0		732936	143255	32	80	4477	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.389	26.389	0		804533	116638	122	305	956		
357.8516	26.389	26.389	0		508175	75042	81	202	926	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	31.107	31.107	0		742879	85188	122	305	698		
357.8516	31.099	31.107	-1		462591	55248	81	202	682	1.61(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.293	31.293	0		992635	117224	96	240	1221		
341.8567	31.301	31.293	1		637681	71896	114	285	631	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.477	33.477	0		1179707	178022	282	705	631		
375.8178	33.477	33.477	0		935610	141605	215	537	659	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.488	34.488	0		793350	139967	201	502	696		
391.8127	34.488	34.488	0		636471	112243	170	425	660	1.25(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.737	36.737	0		749836	173822	201	502	865		
391.8127	36.737	36.737	0		593595	137108	170	425	807	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.082	37.082	0		1000106	227917	282	705	808		
375.8178	37.082	37.082	0		805113	182856	215	537	850	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.040	39.040	0		615607	156422	615	1537	254		
425.7737	39.040	39.040	0		586265	146731	542	1355	271	1.05(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Nov-2020 08:41:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	29

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	40.000	2056319	291312

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		40.000	2056319	291312

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
24.289	16311	2555	27234	3932	0.7336	0.60	RQ
24.289	16311	2555	21183	3318	0.6316		Empc Correction
Signal Totals:							
	16311	2555	21183	3318			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	43545	6487				0.60	RQ
	37494	5873					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7336 = (43545 * 40.000) / (2056319 * 1.155)
Empc Amount: 0.6316 = (37494 * 40.000) / (2056319 * 1.155)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Lims ID: WDM
Client ID:
Inject. Date: 24-Nov-2020 08:41:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 29

Non-2,3,7,8-sub-PeCDF, RT: 28.506

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.132				
2,3,4,7,8-PeCDF	1.159				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.021	5560	975	3238	544		1.72	
27.636	8506	1346	5532	687		1.54	
28.260	5773	807	4367	590		1.32	
Signal Totals:							
	19839	3128	13137	1821			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	32976	4949				1.51	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (32976 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Nov-2020 08:41:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	434777	Lims Sample ID:	29

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197				
1,2,3,6,7,8-HxCDD	1.069				
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.558	8597	1748	5947	1220		1.45	R
Signal Totals:							
	8597	1748	5947	1220			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14544	2968				1.45	RQ
	13321	2732					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (14544 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (13321 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 25-Nov-2020 02:24:01

Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

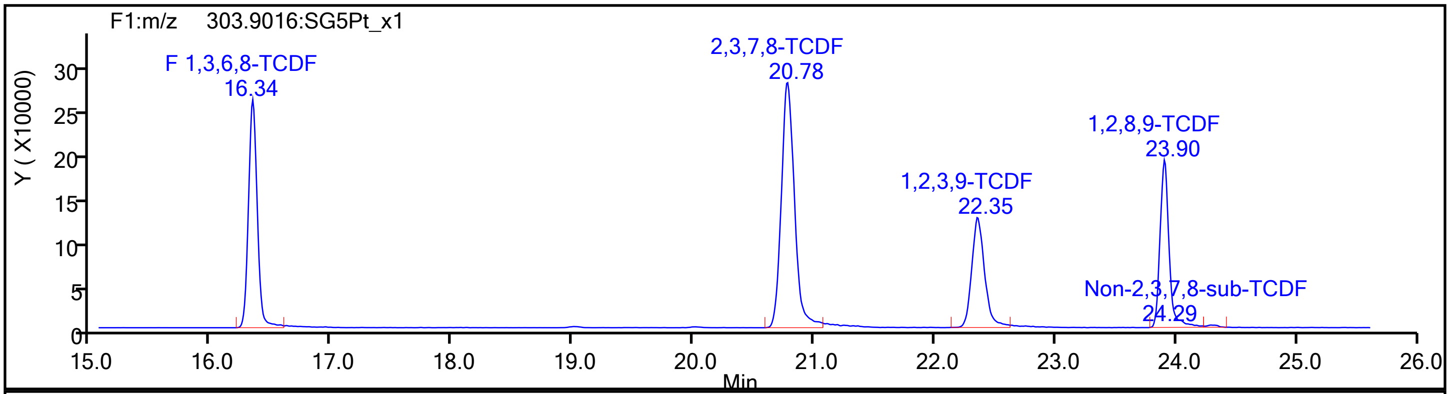

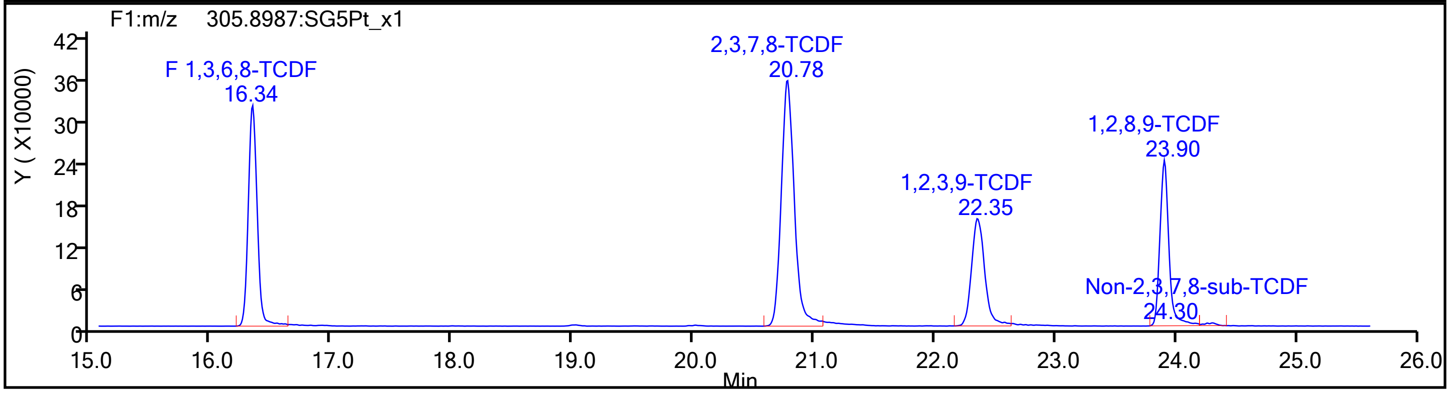

TCDF Standards

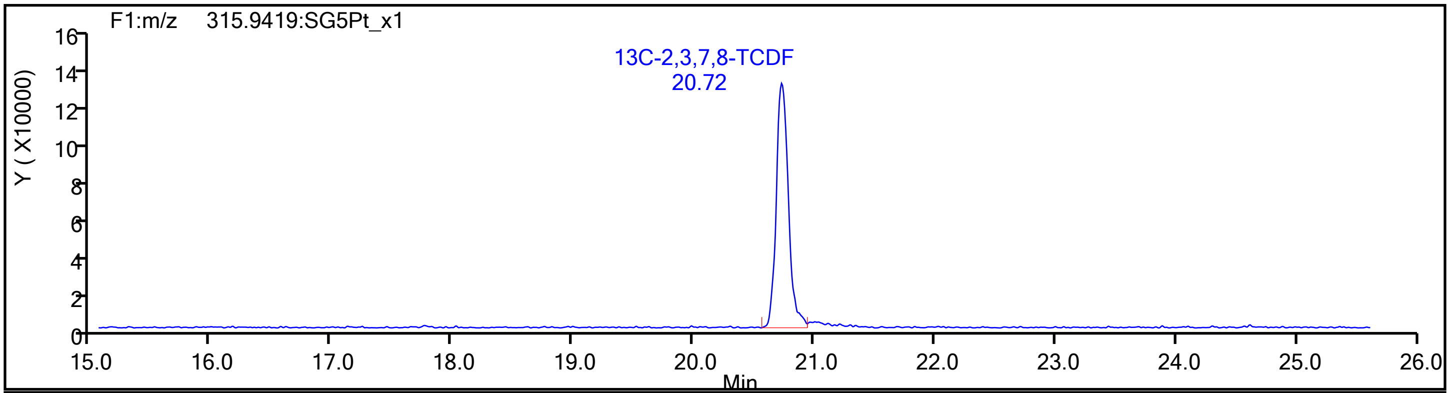

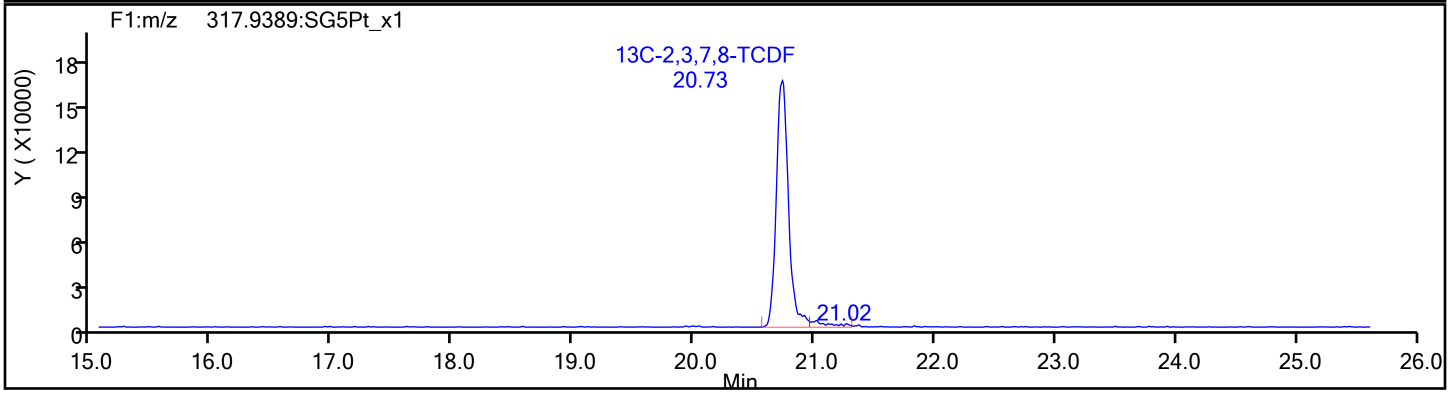

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

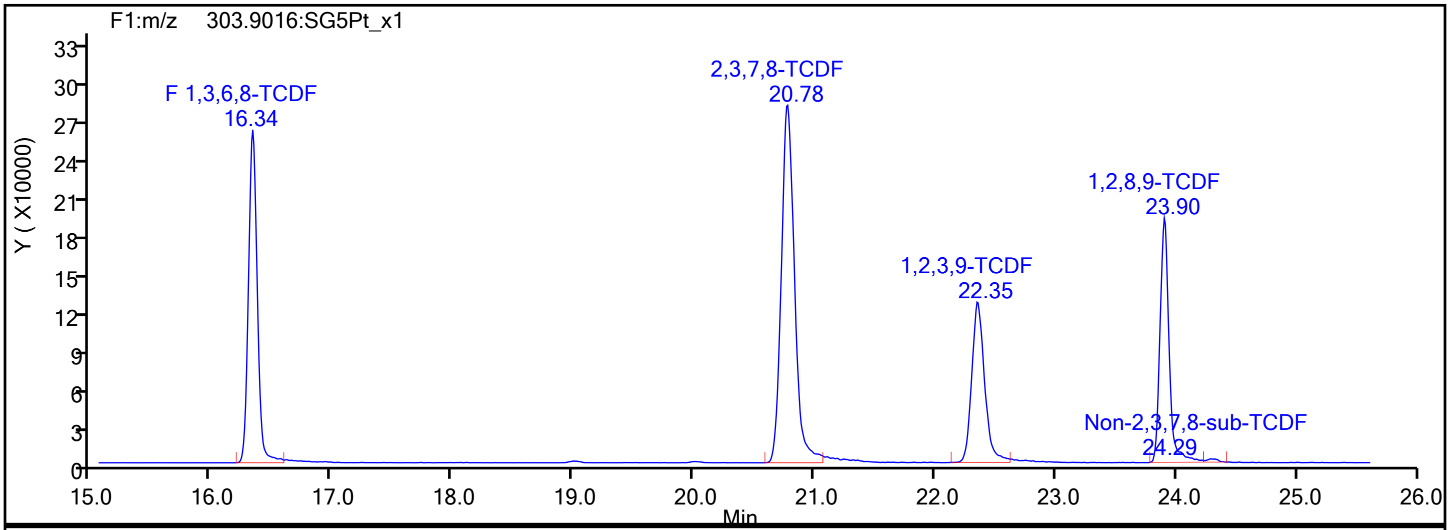

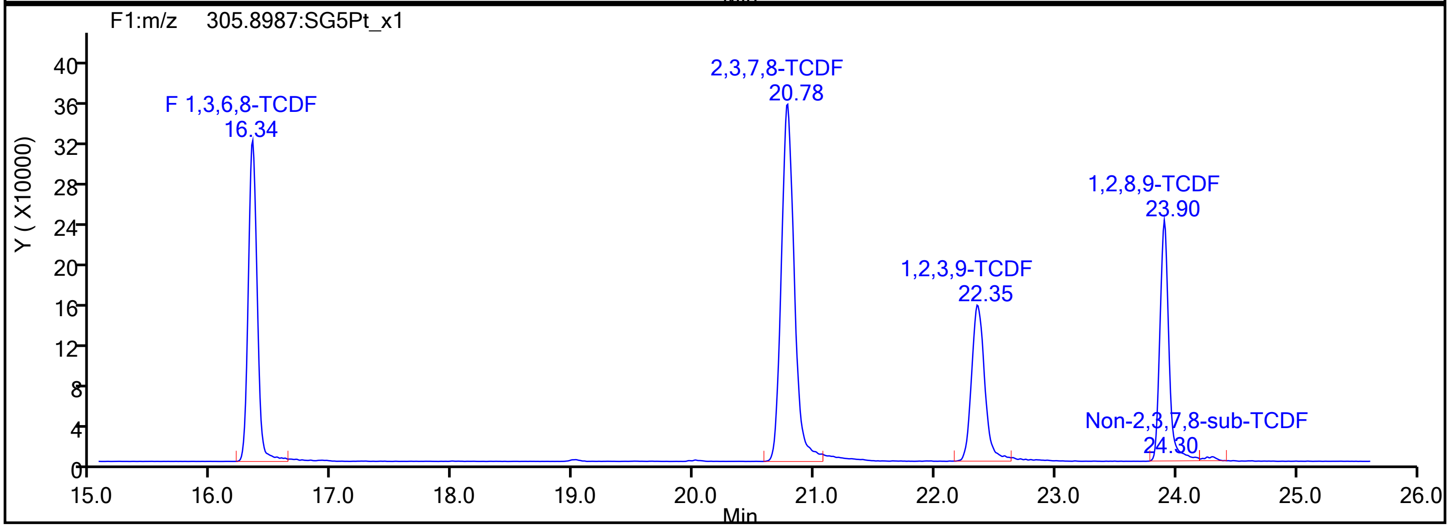

TCDF Interference Mass

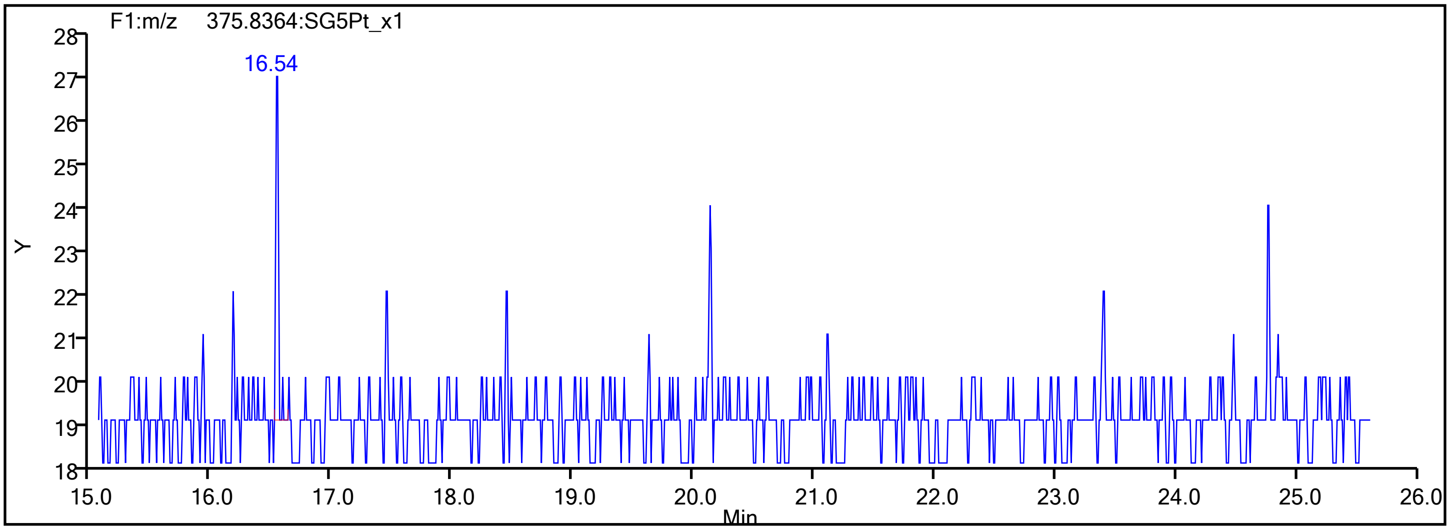

Report Date: 25-Nov-2020 02:24:01 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date: 24-Nov-2020 08:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 29
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

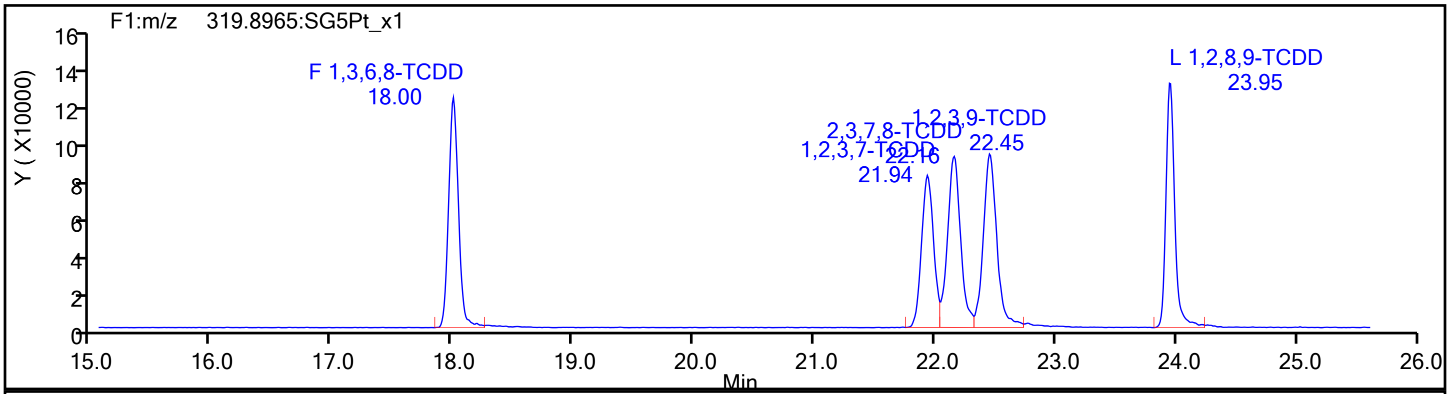

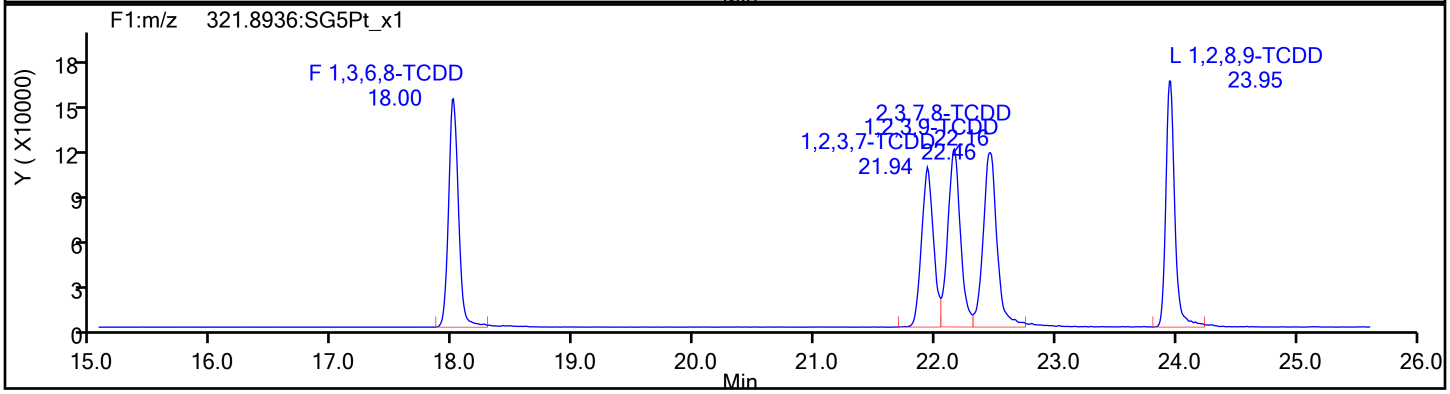

TCDD Standards

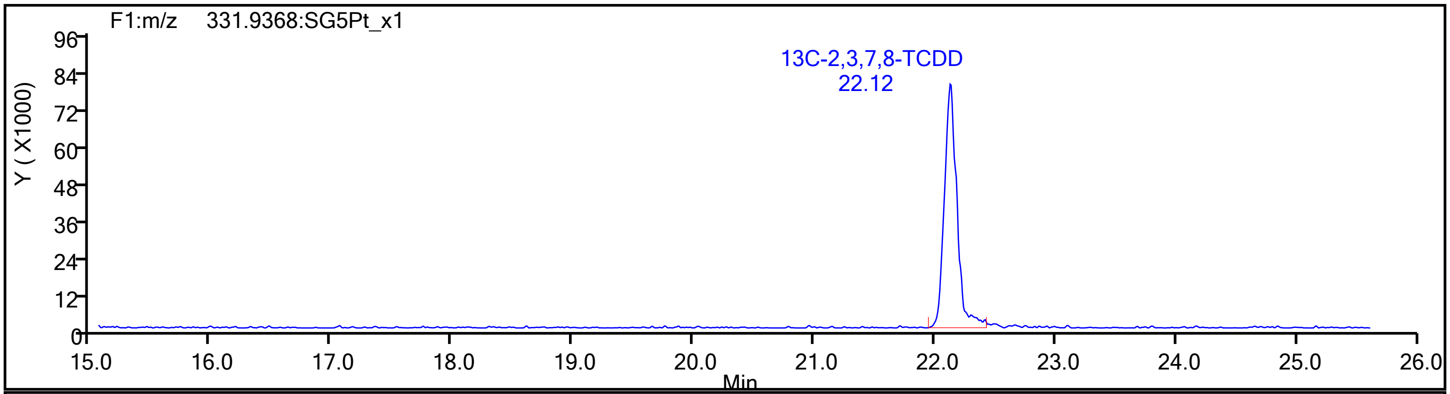

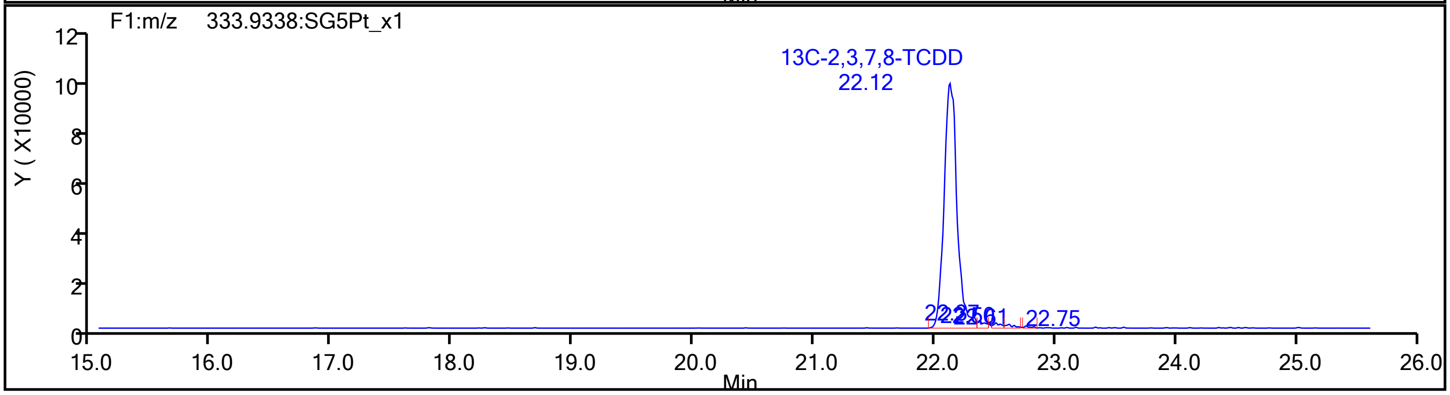

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

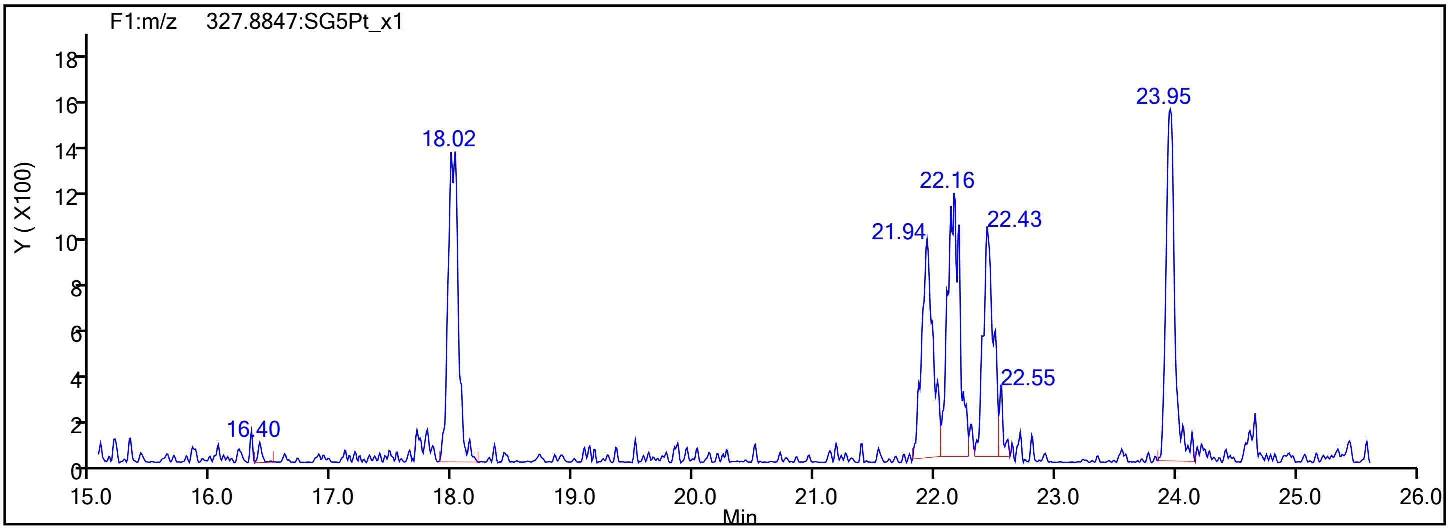

37Cl4-TCDD Standards

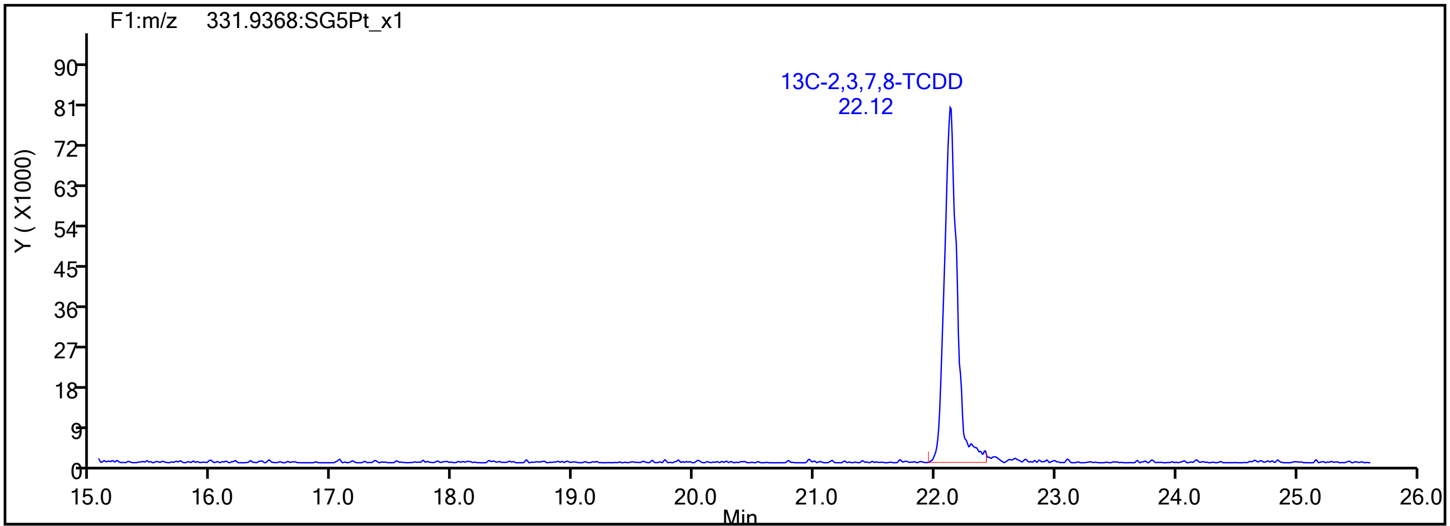

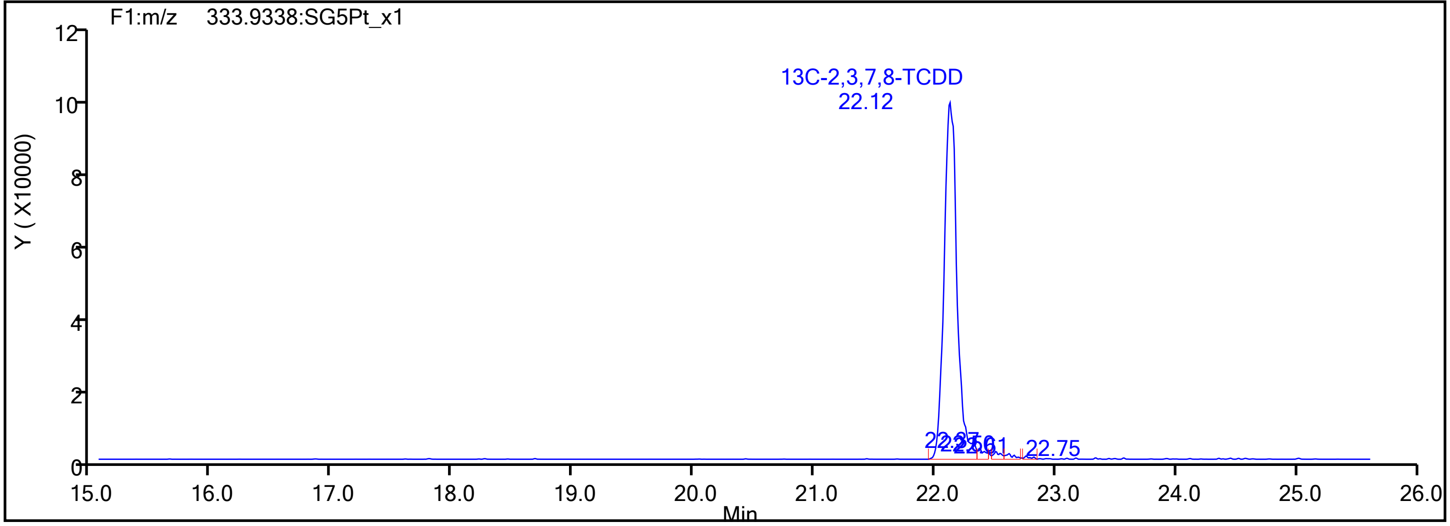

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

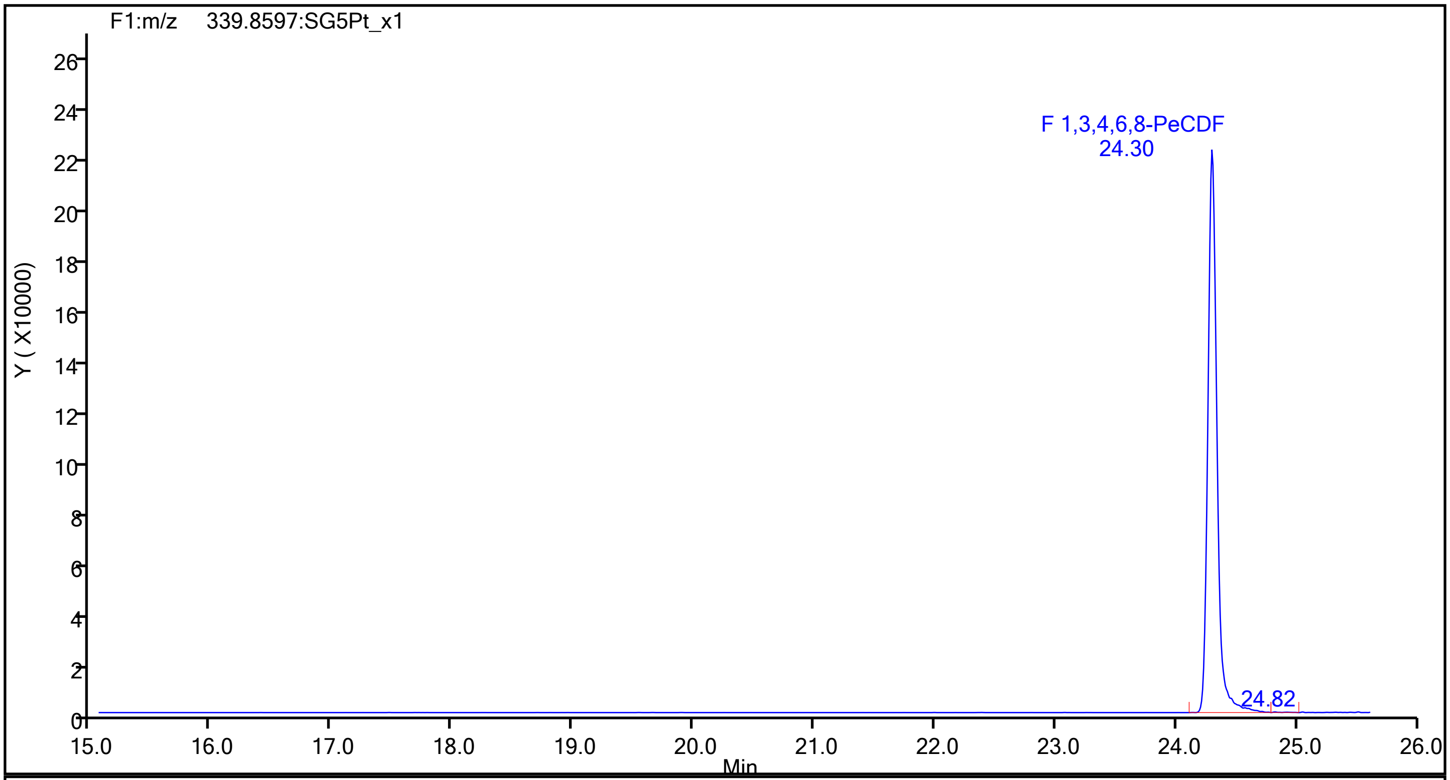

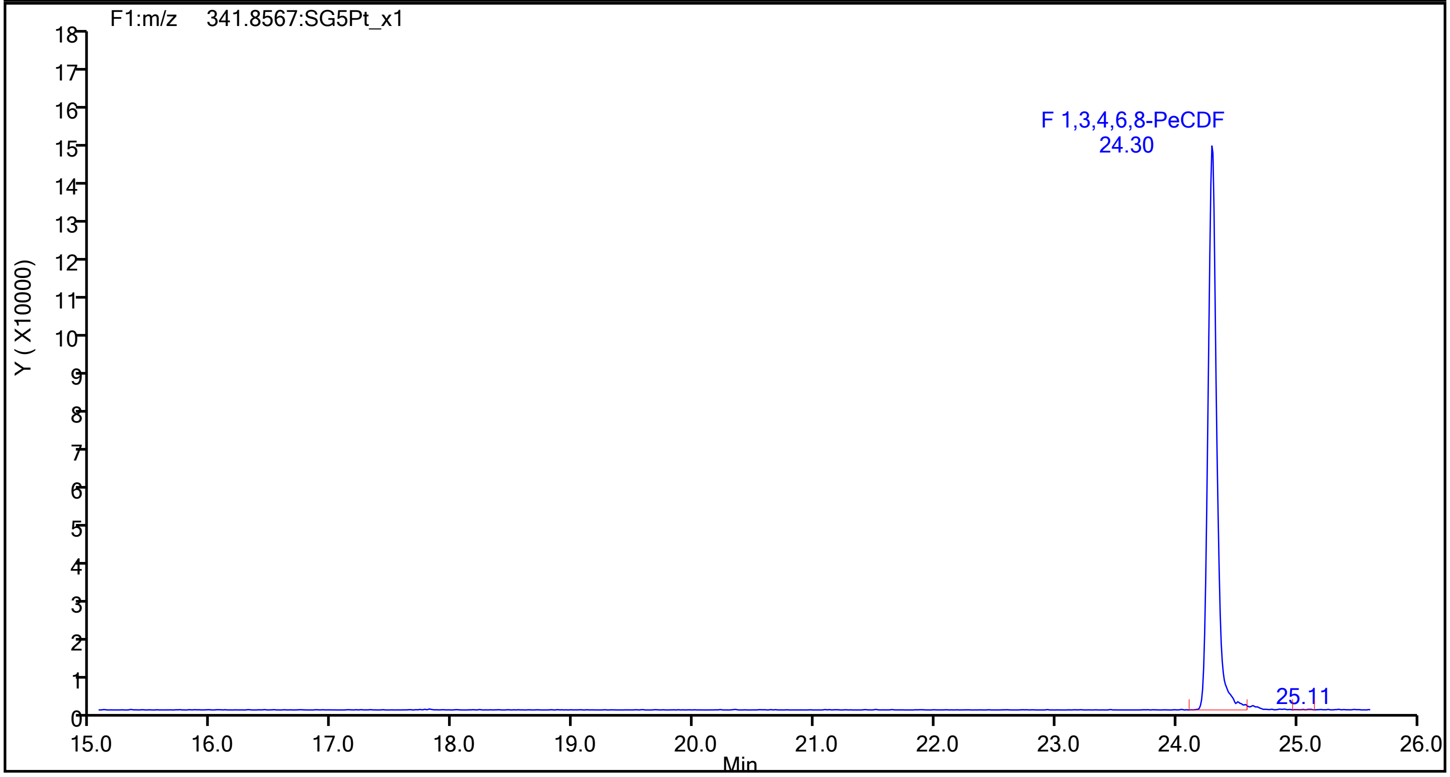

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

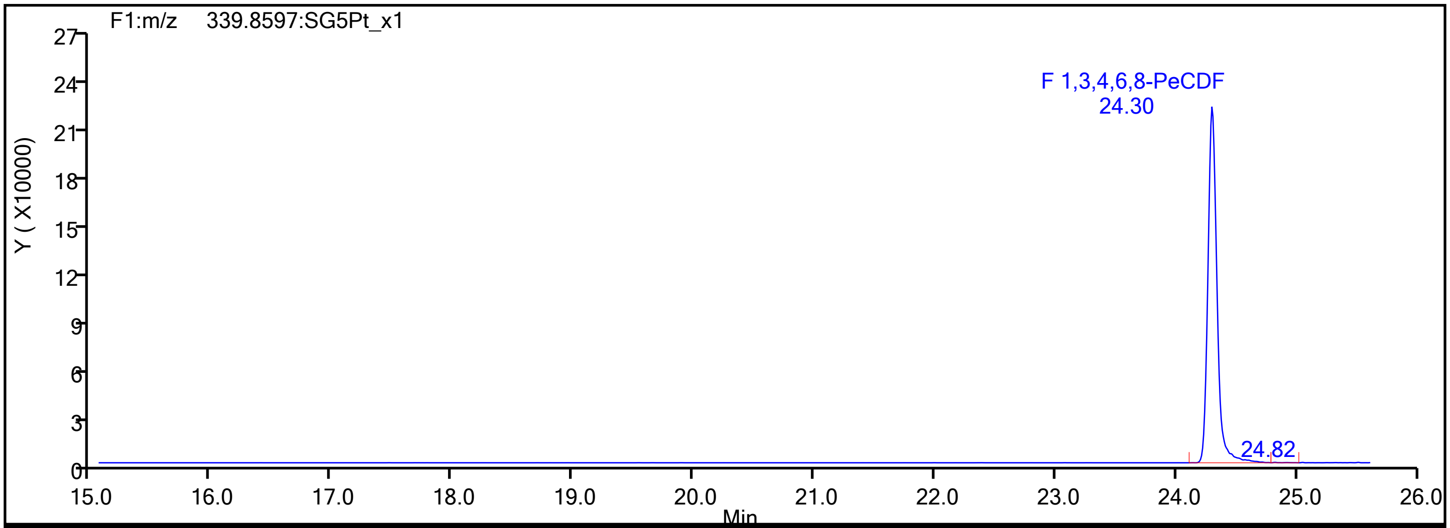

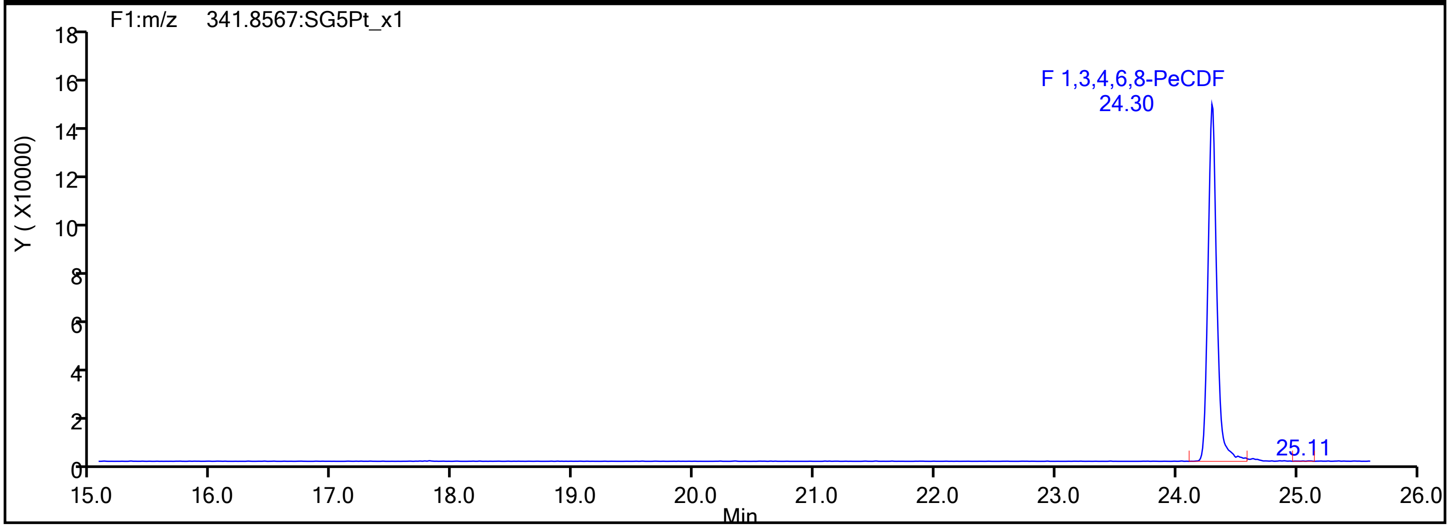

F1 PeCDFs Interference Mass

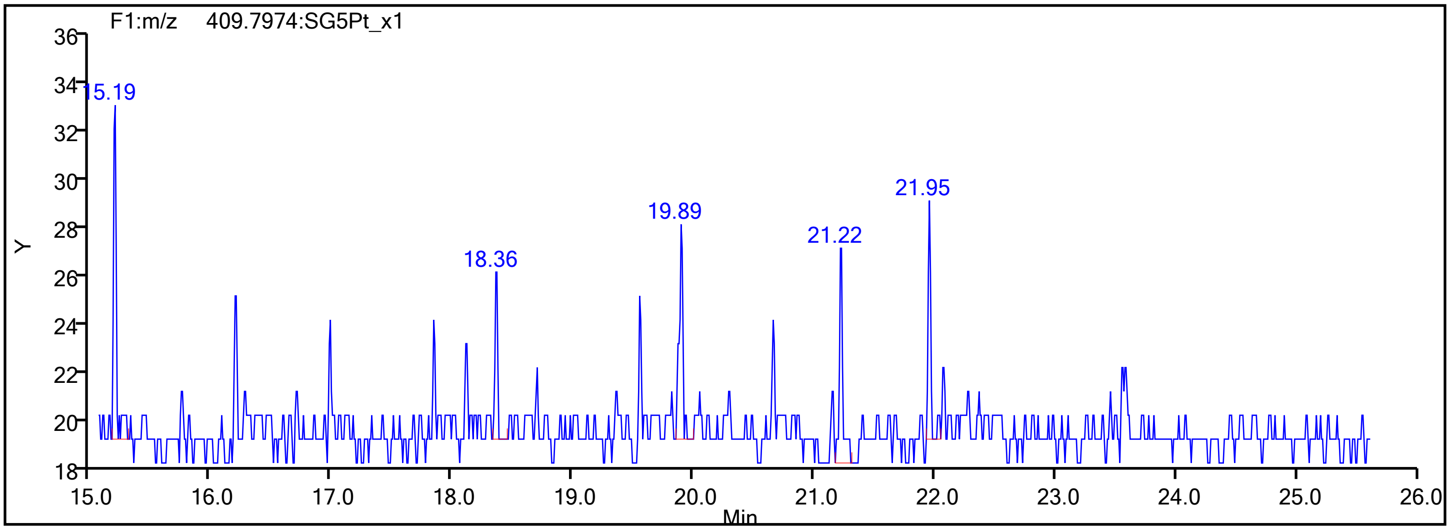

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d
Injection Date: 24-Nov-2020 08:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 434777
Sample Line#: 29
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

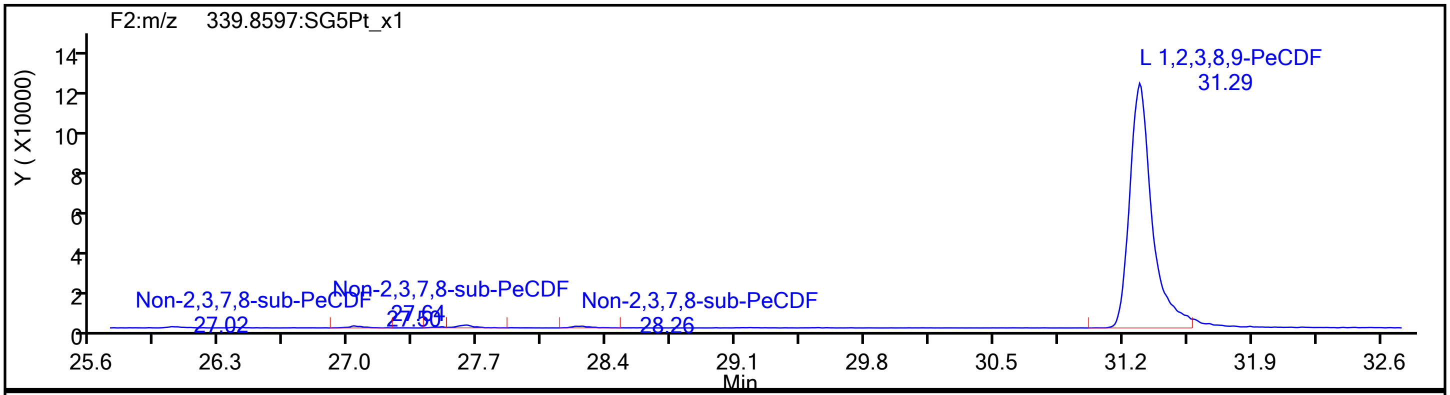

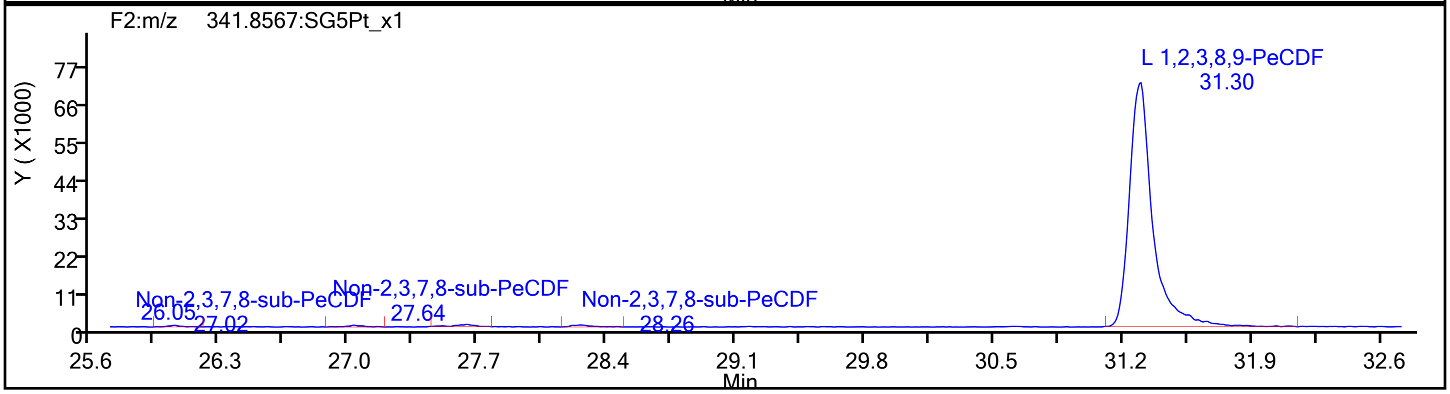

PeCDF Standards

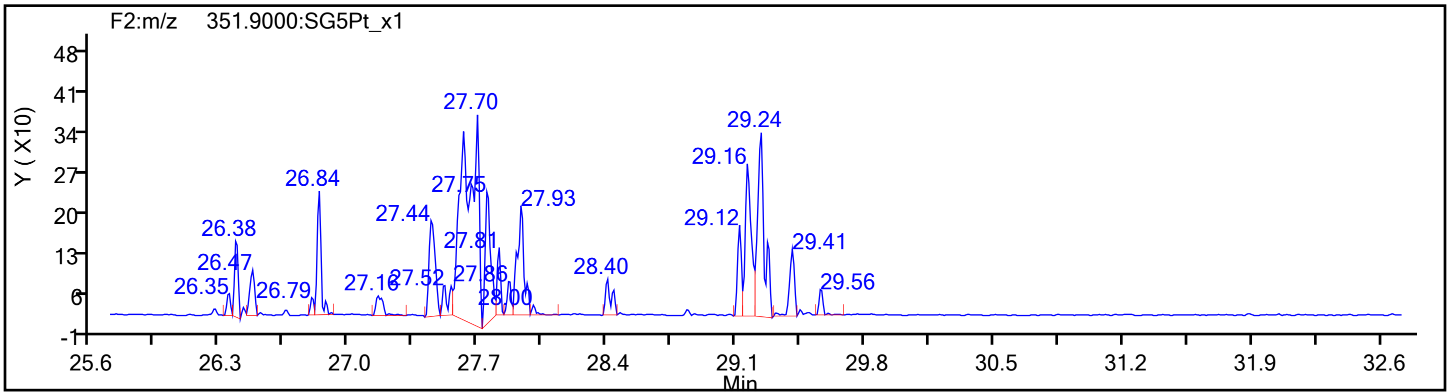

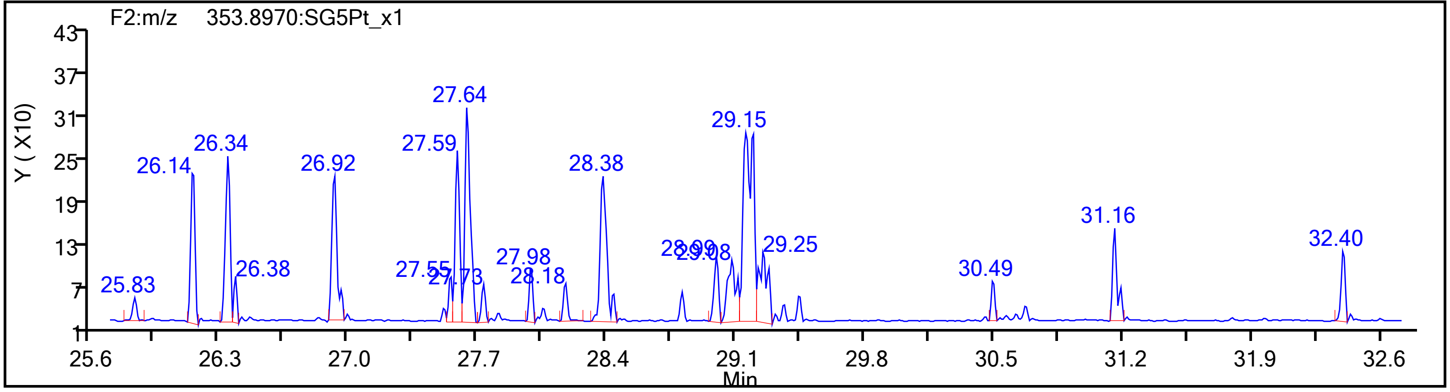

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

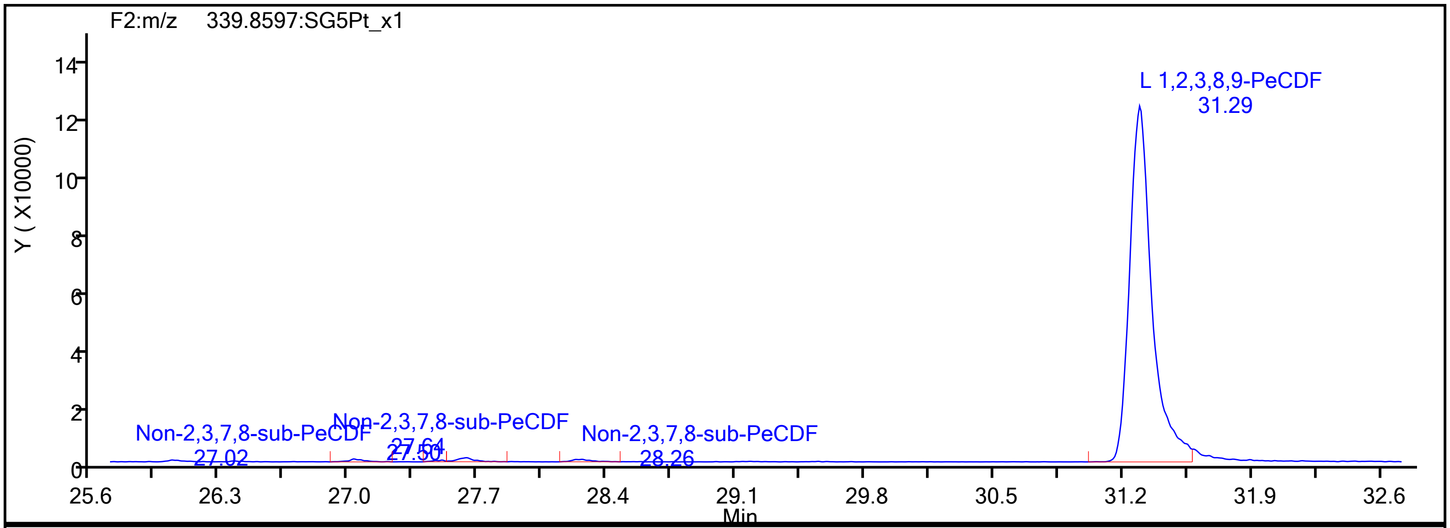

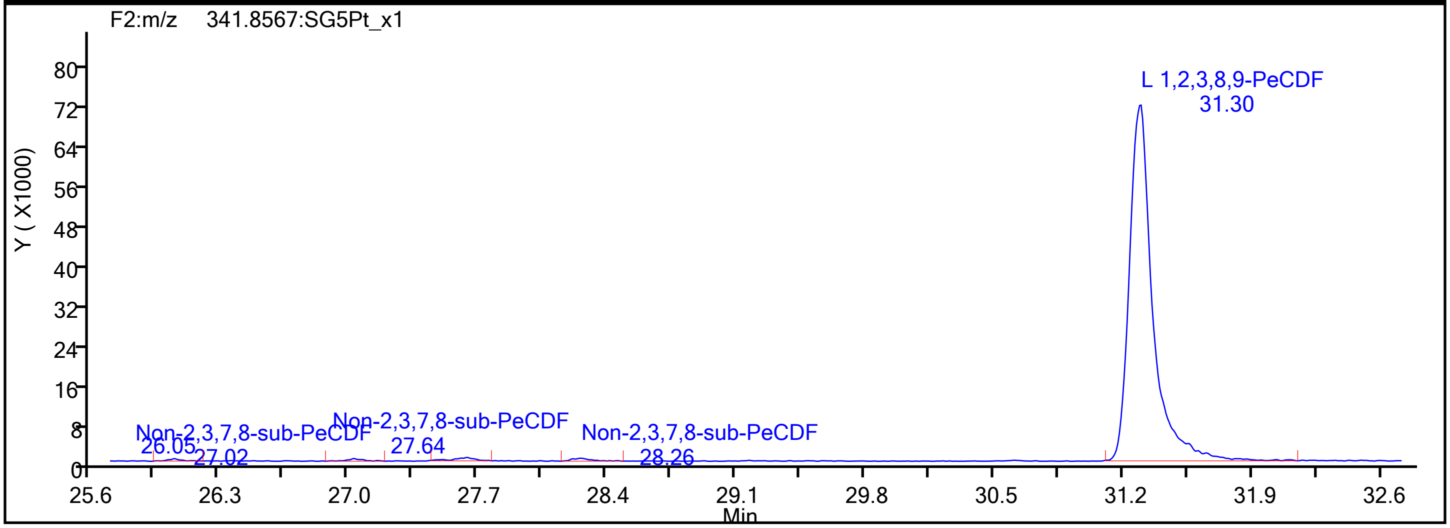

PeCDF Interference Mass

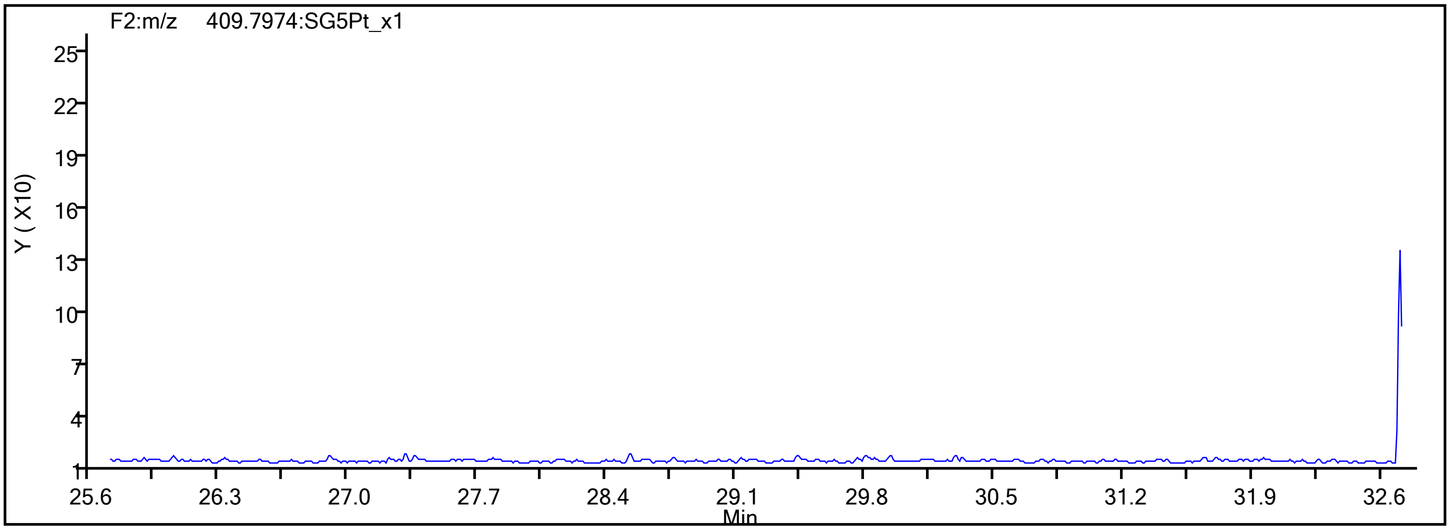

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

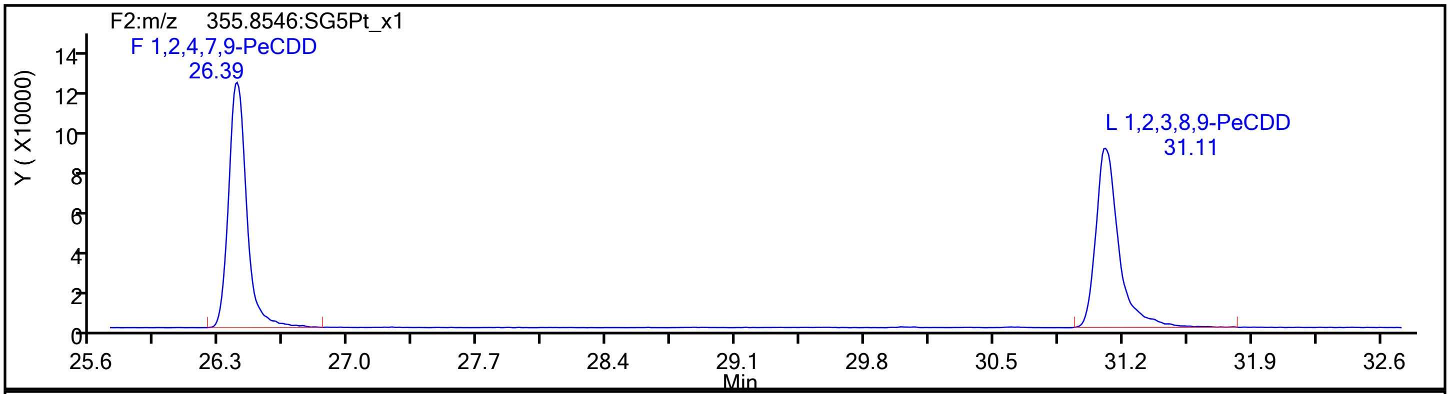

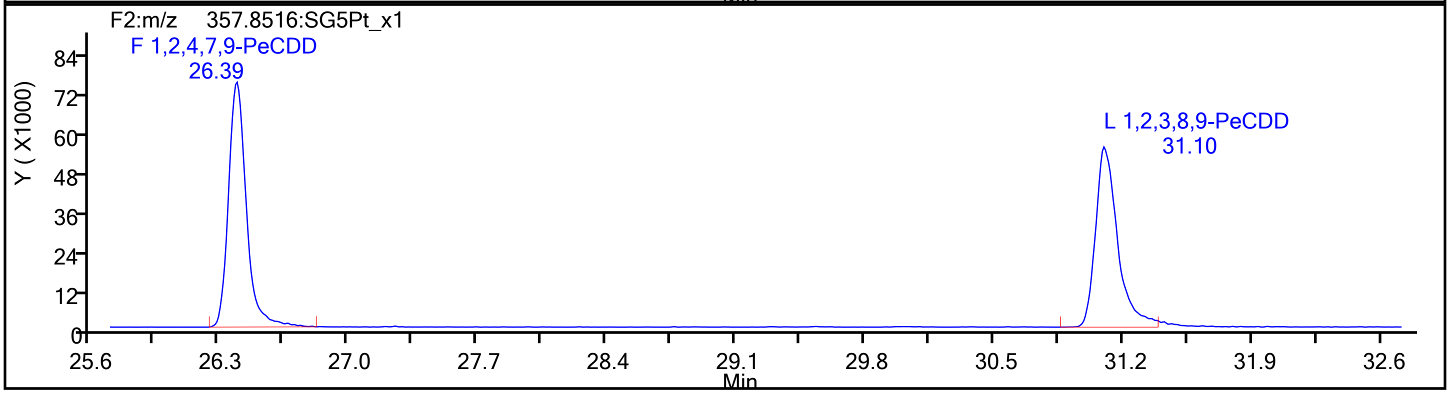

PeCDD Standards

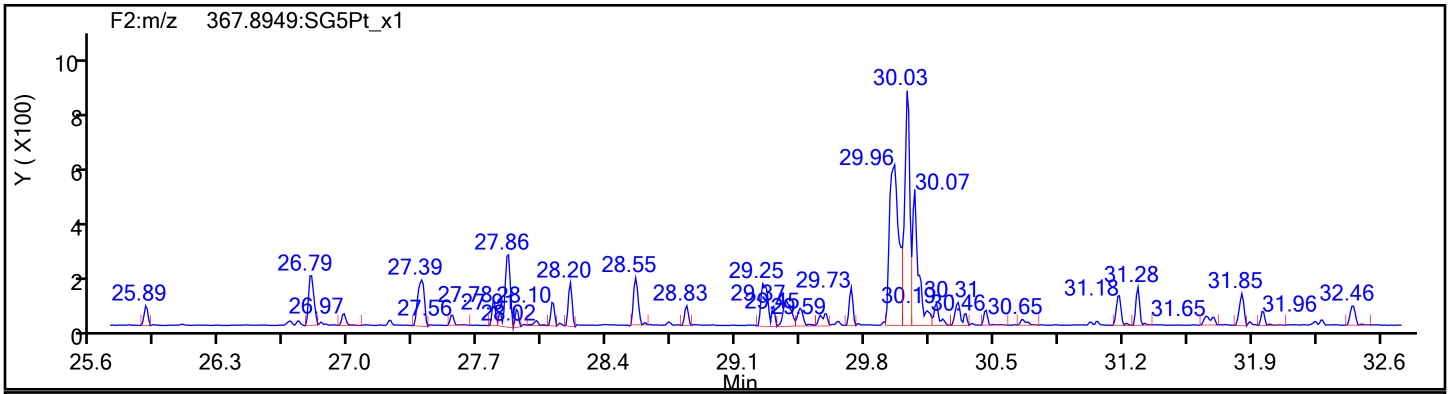

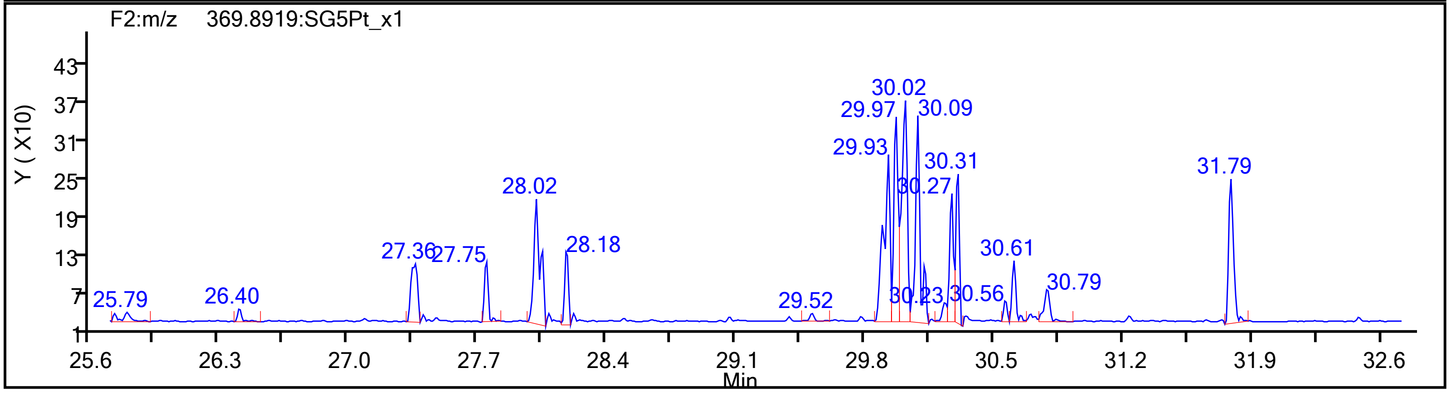

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

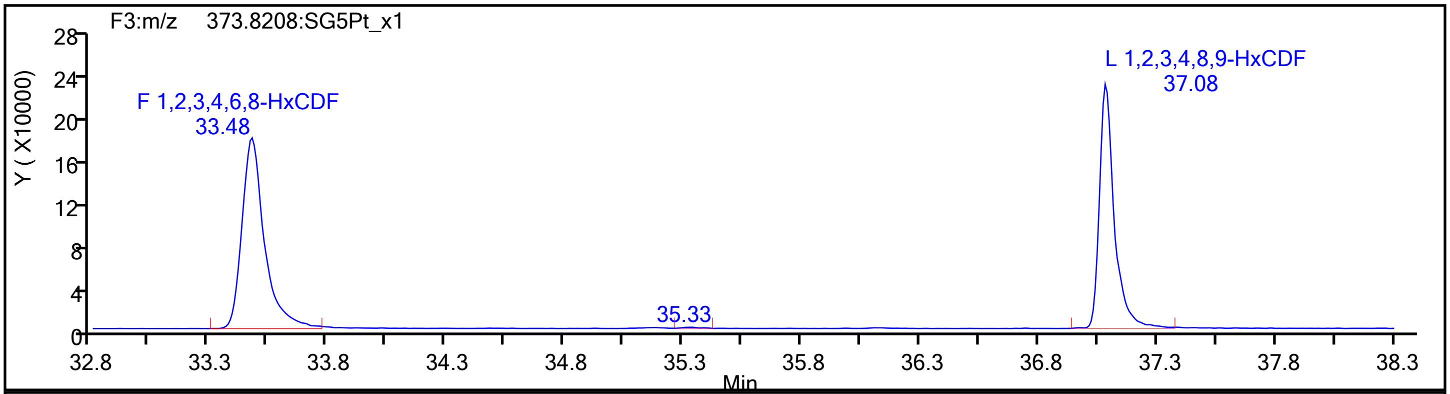

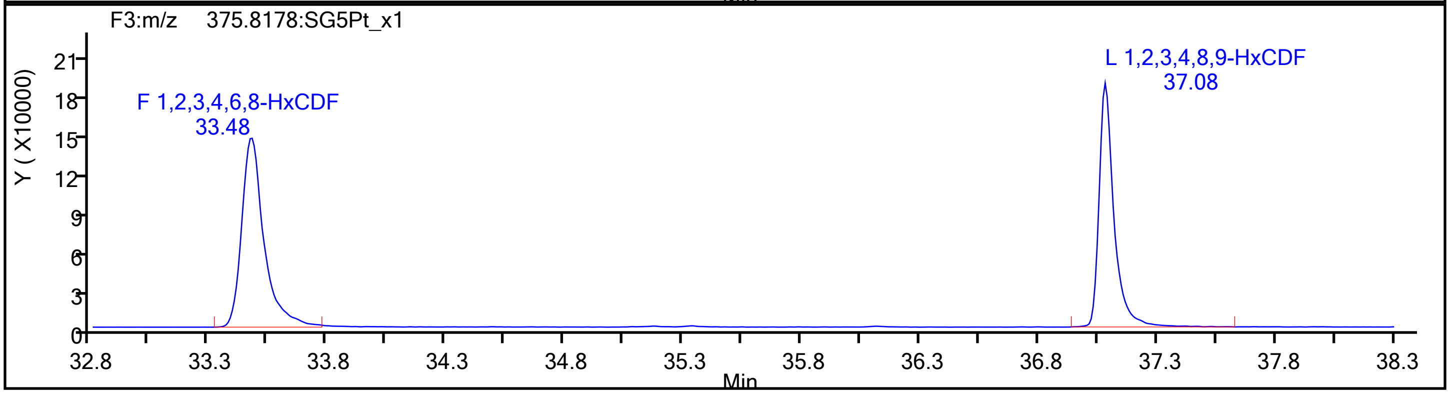

HxCDF Standards

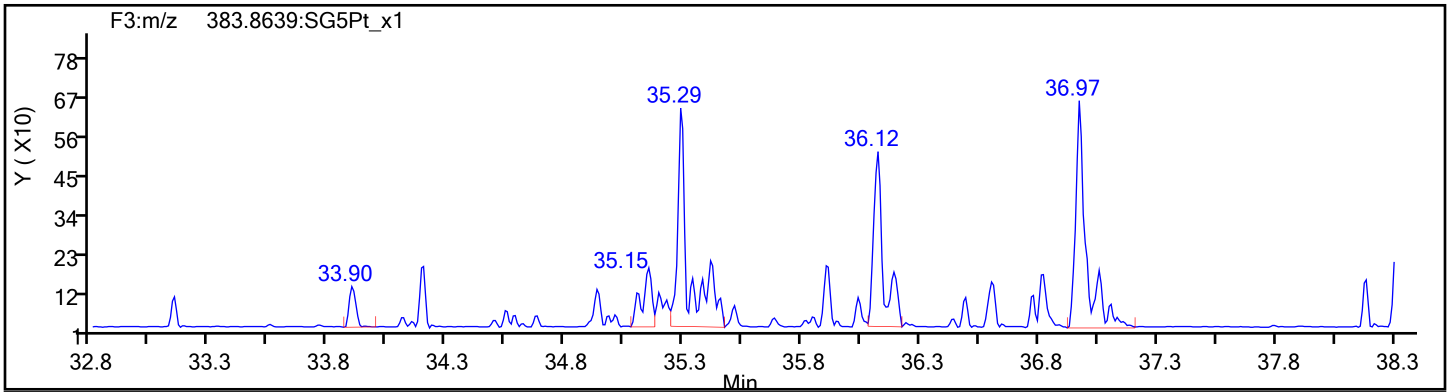

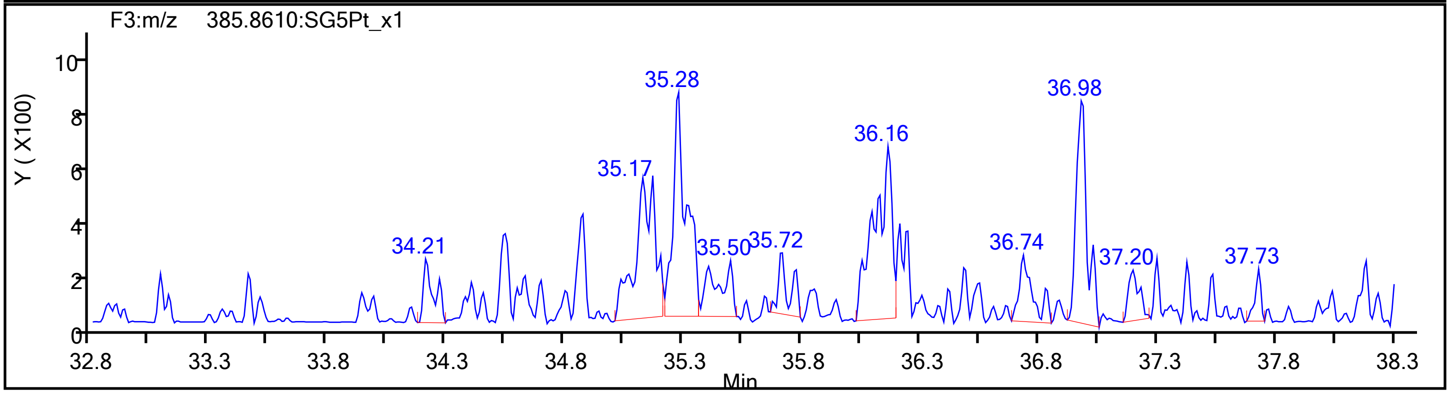

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

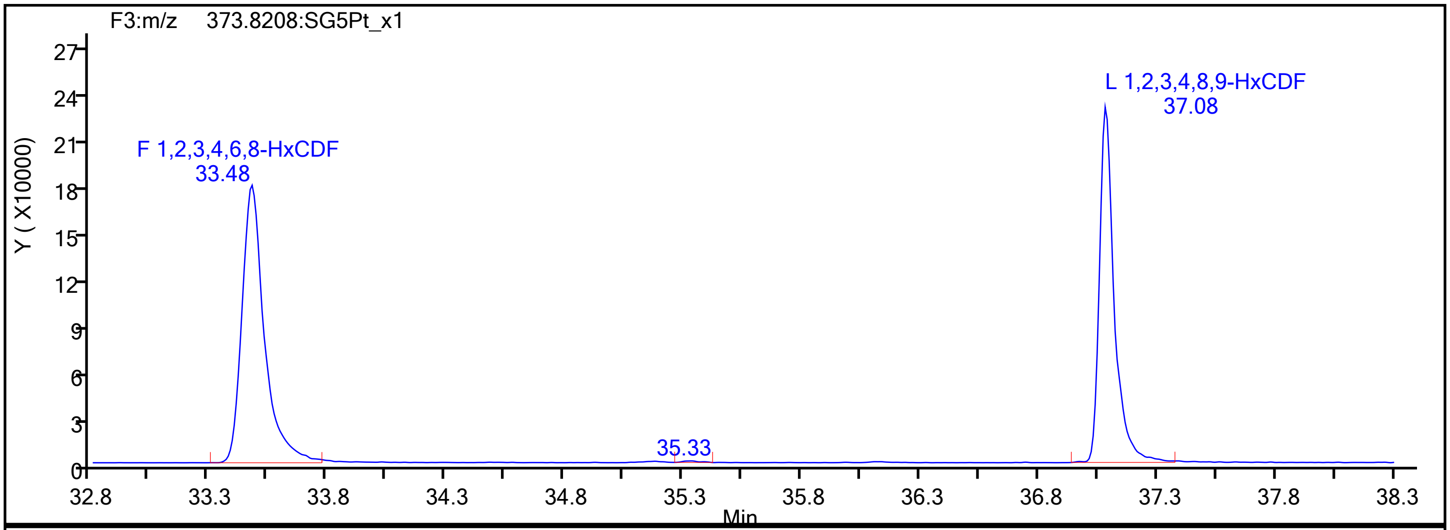

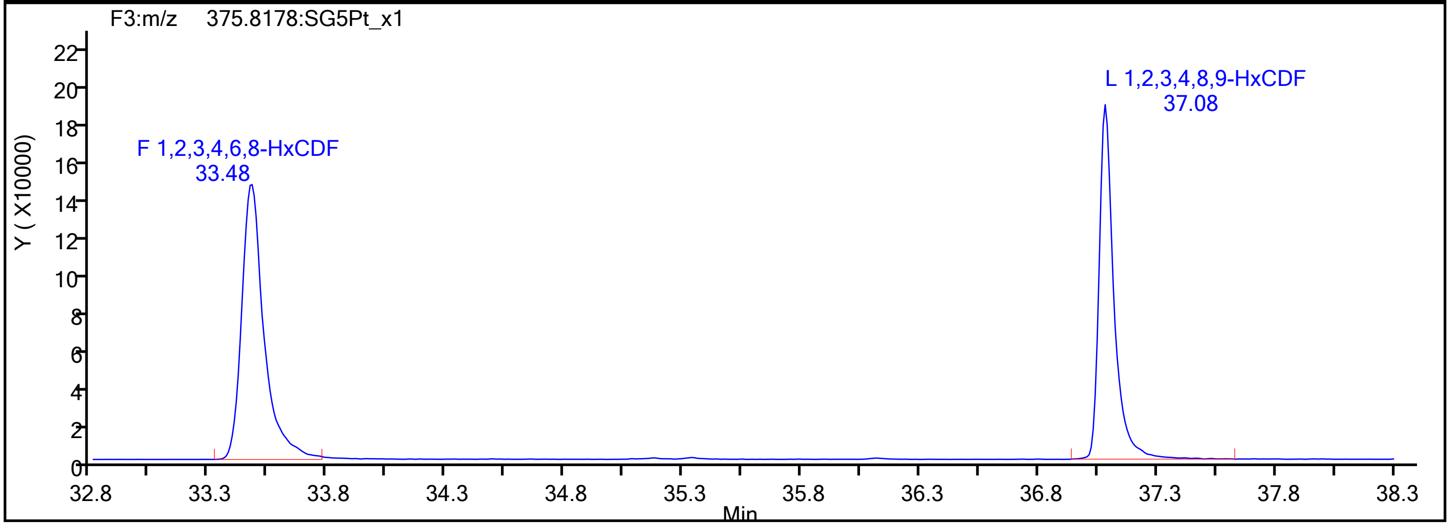

HxCDF Interference Mass

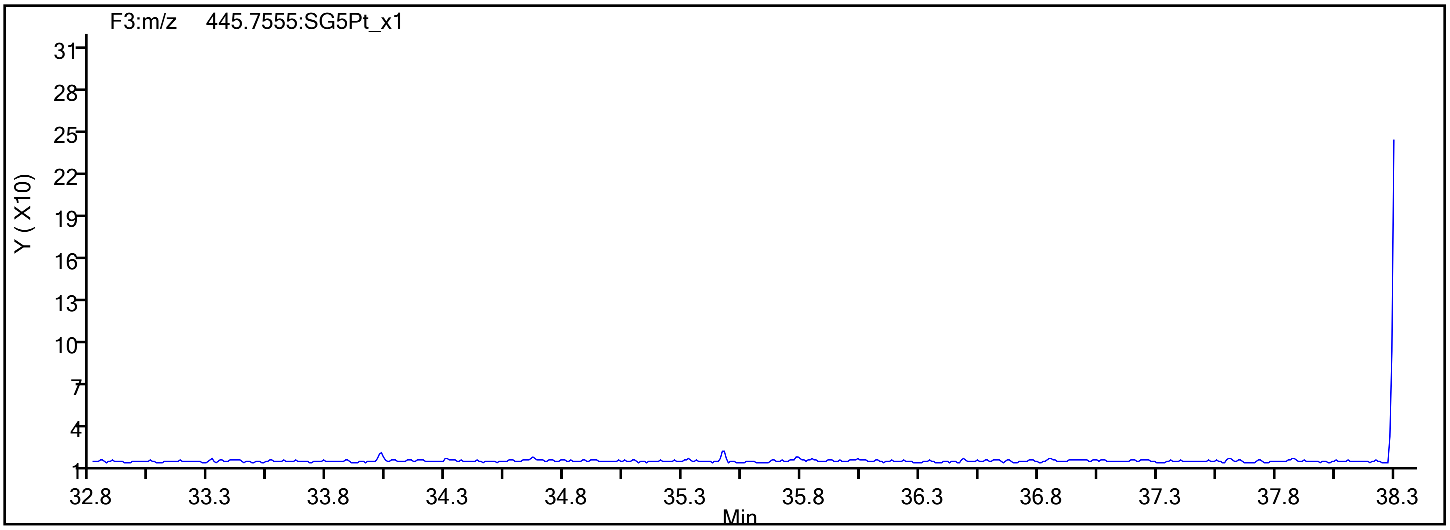

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date: 24-Nov-2020 08:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 29

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

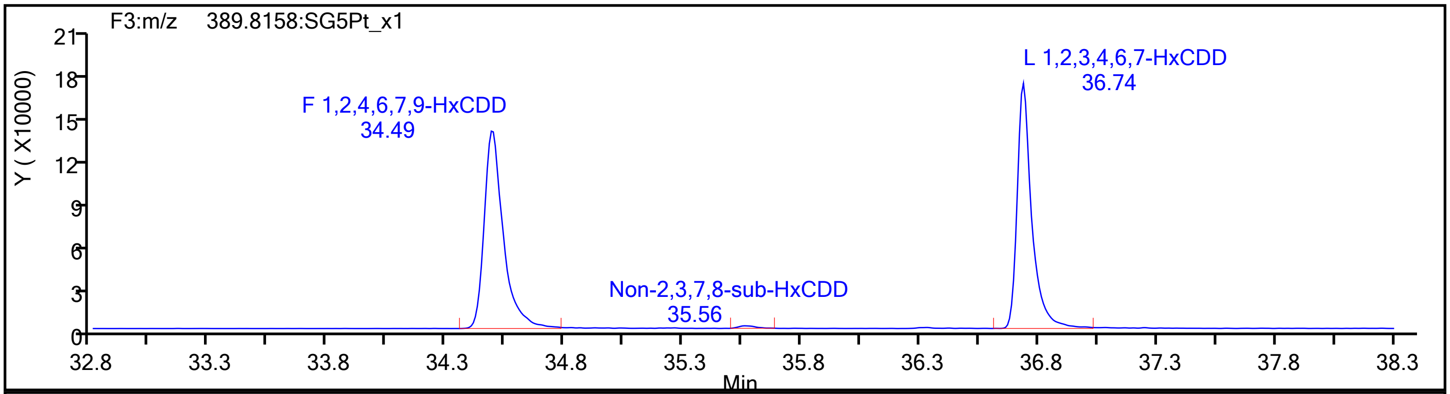

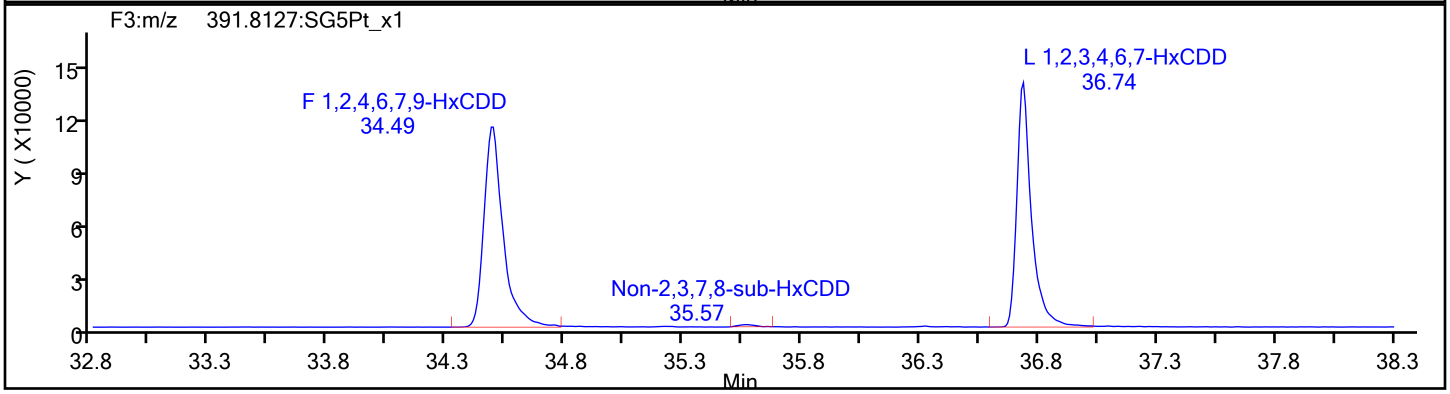

HxCDD Standards

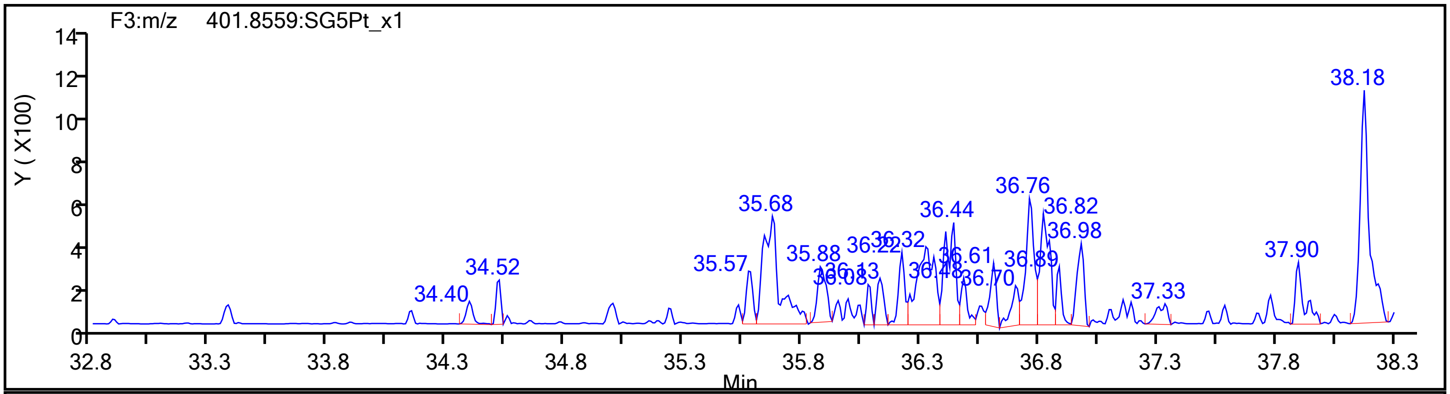

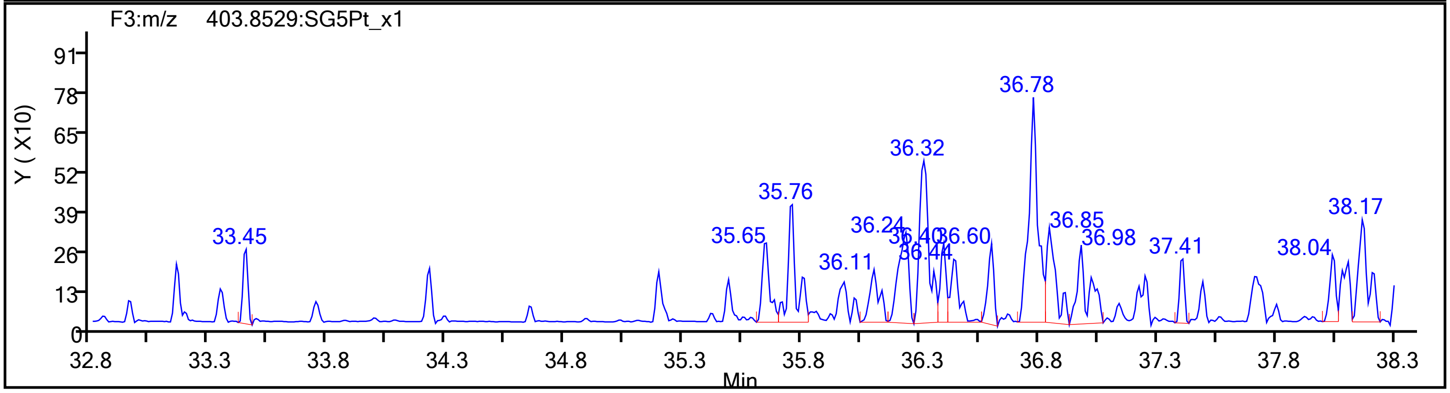

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

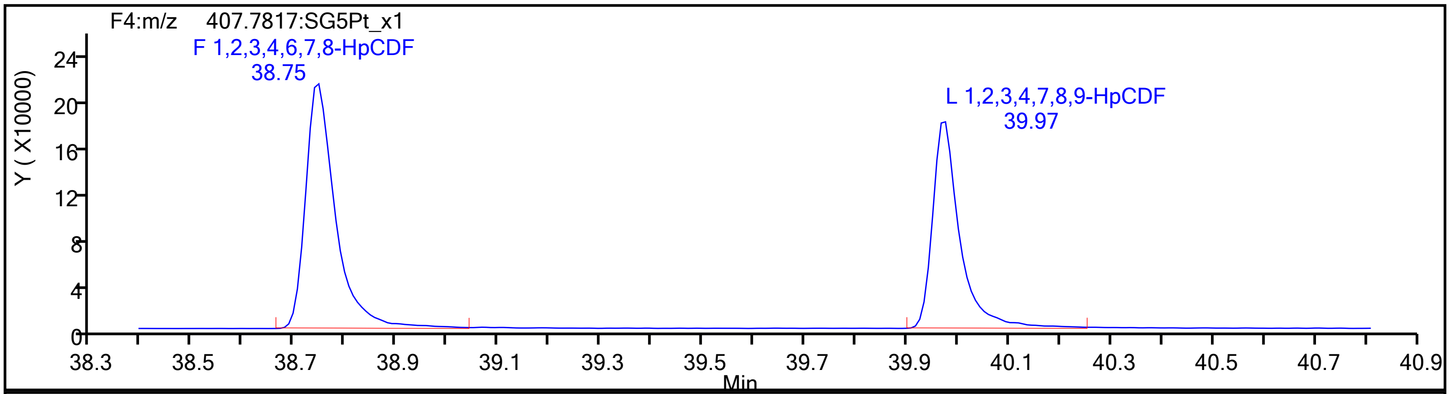

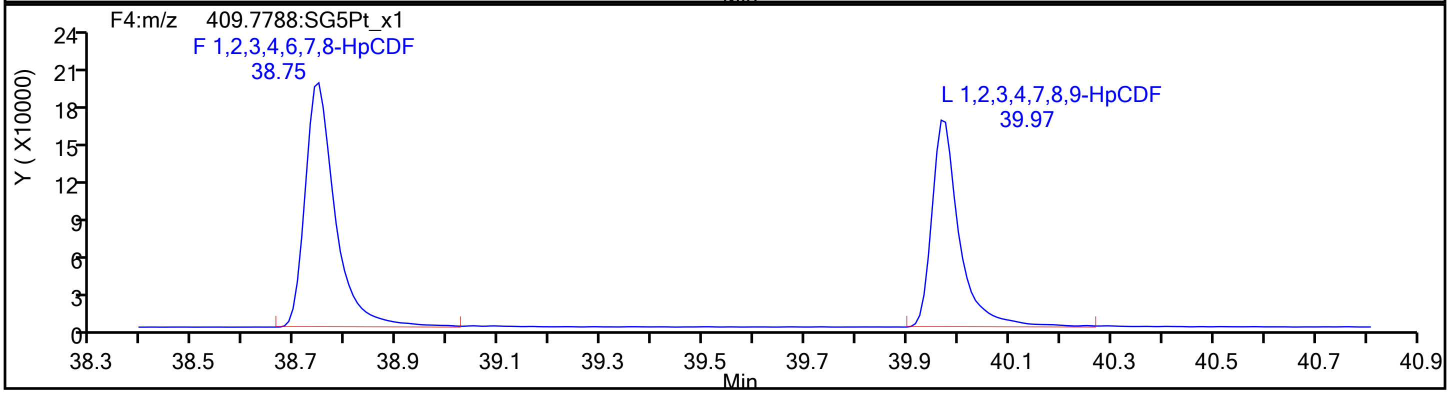

HpCDF Standards

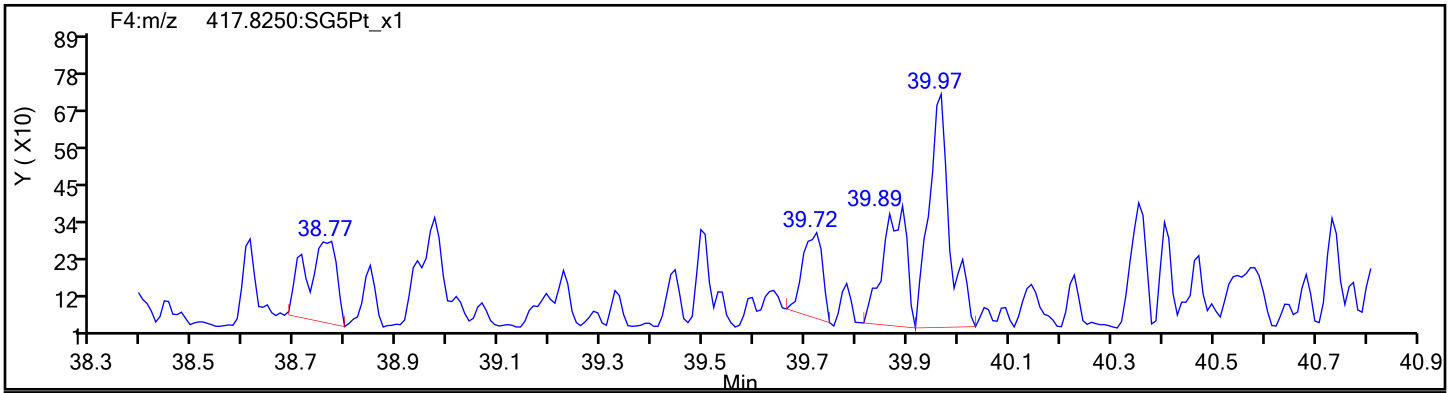

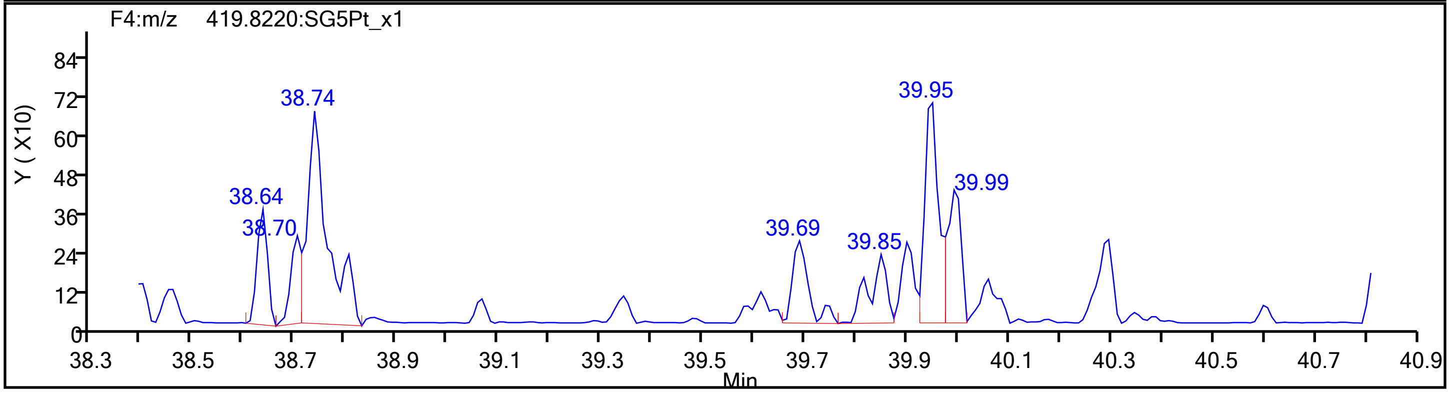

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d

Injection Date: 24-Nov-2020 08:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777

Sample Line#: 29

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

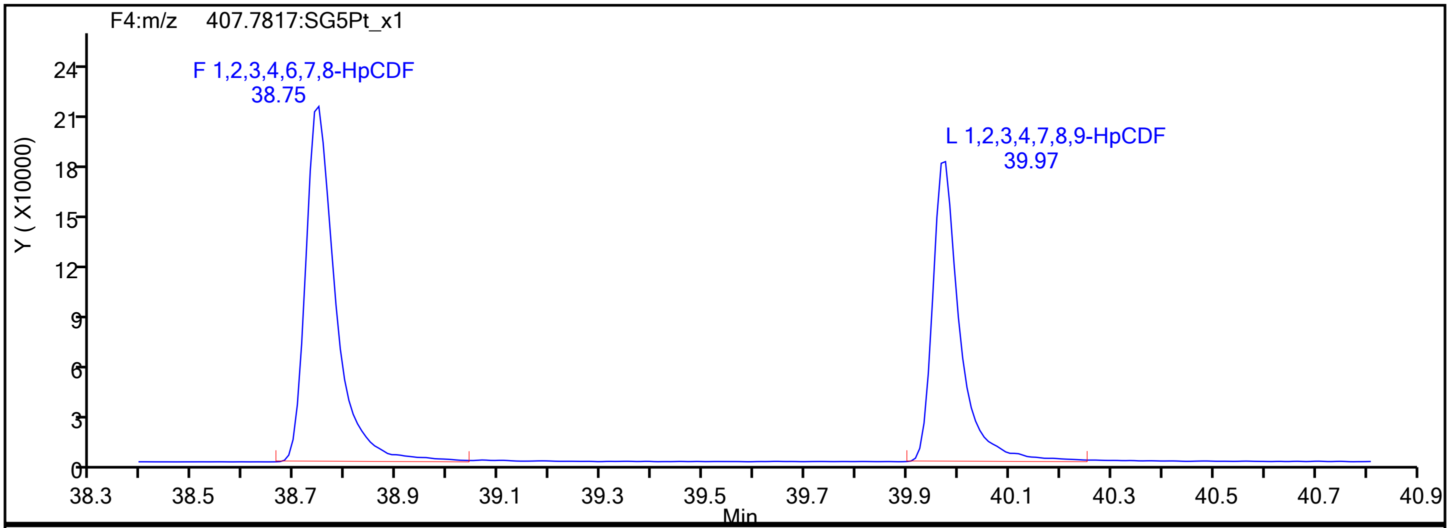

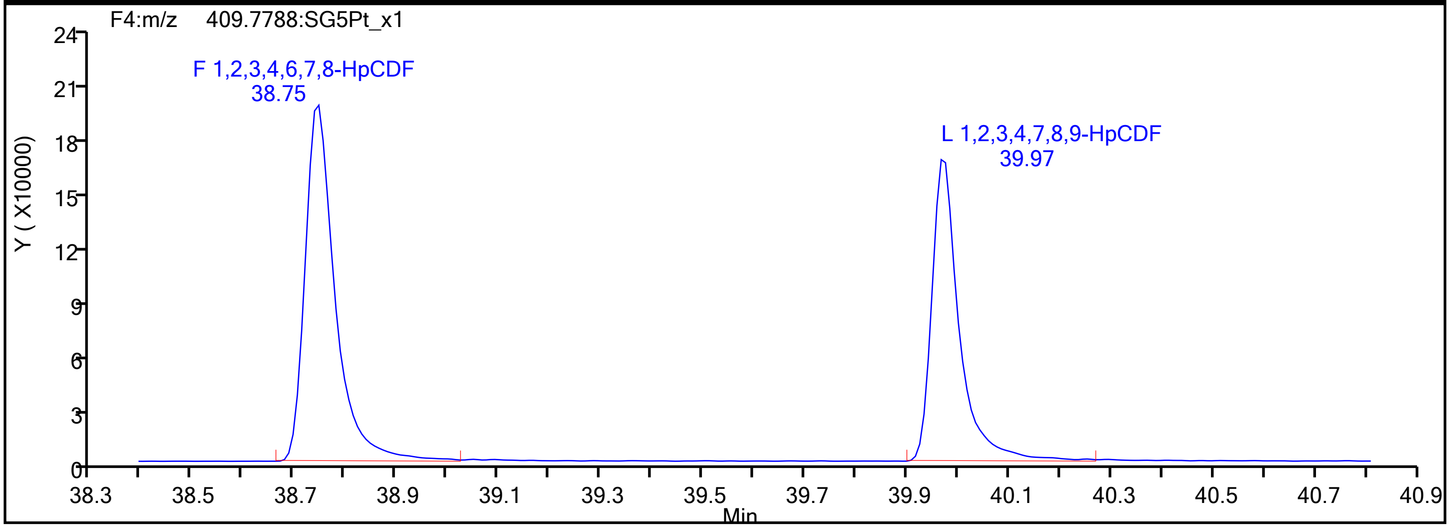

HpCDF Interference Mass

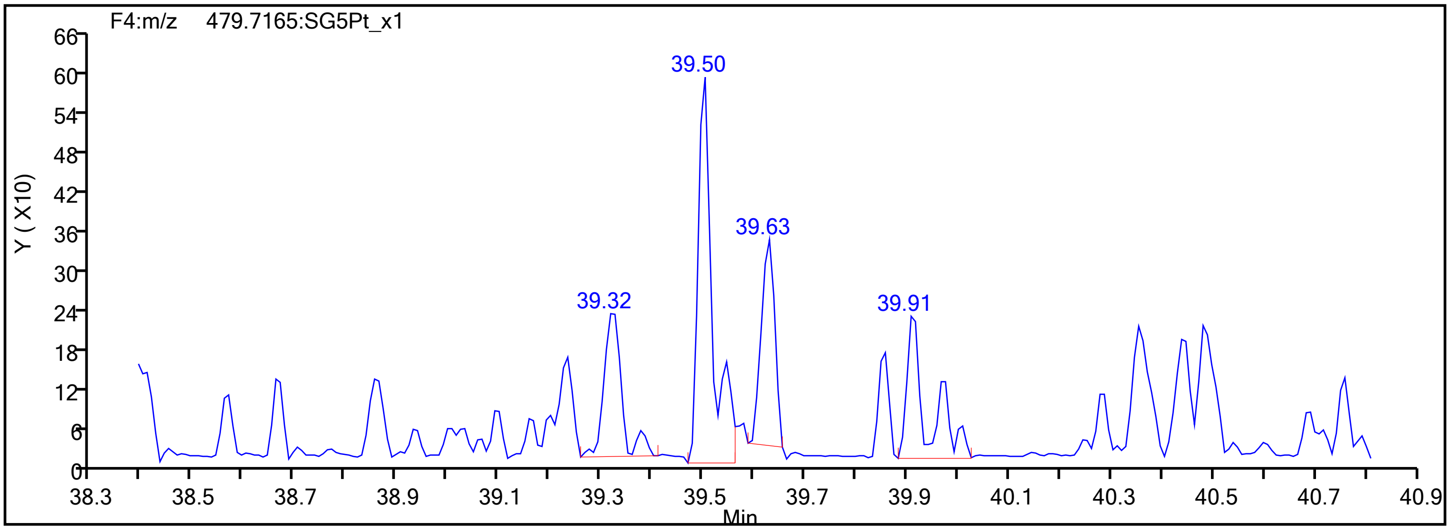

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

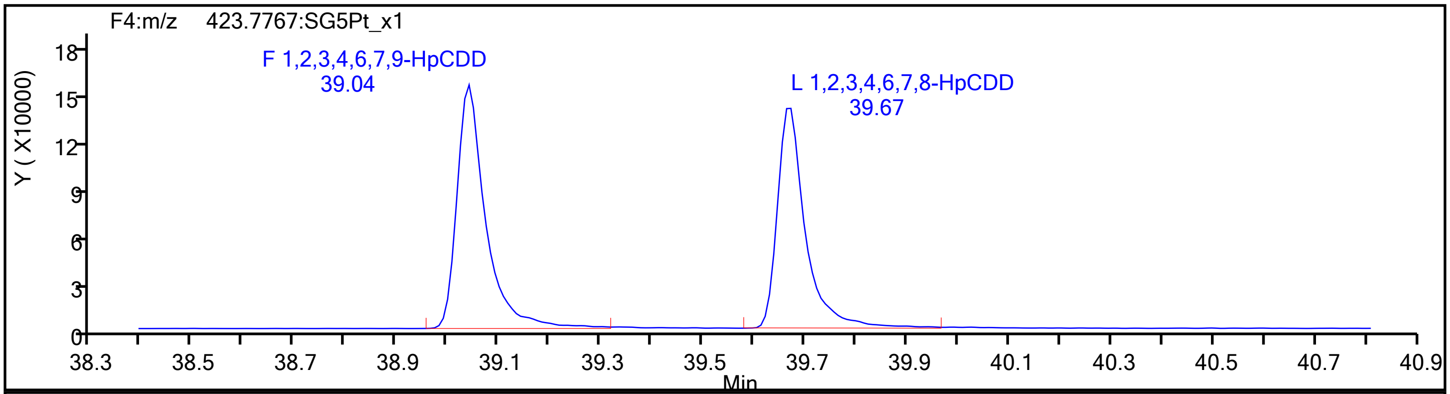

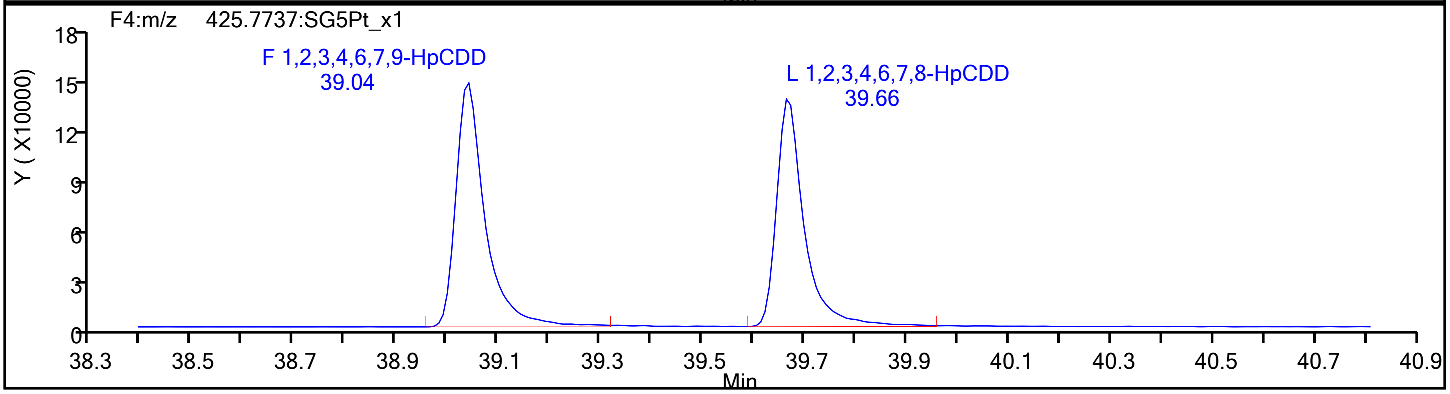

HpCDD Standards

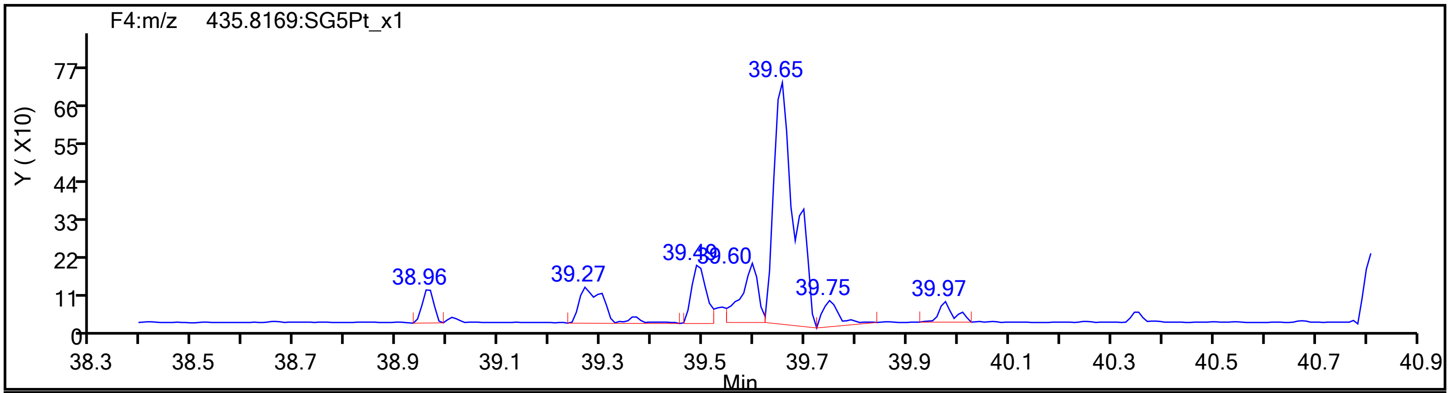

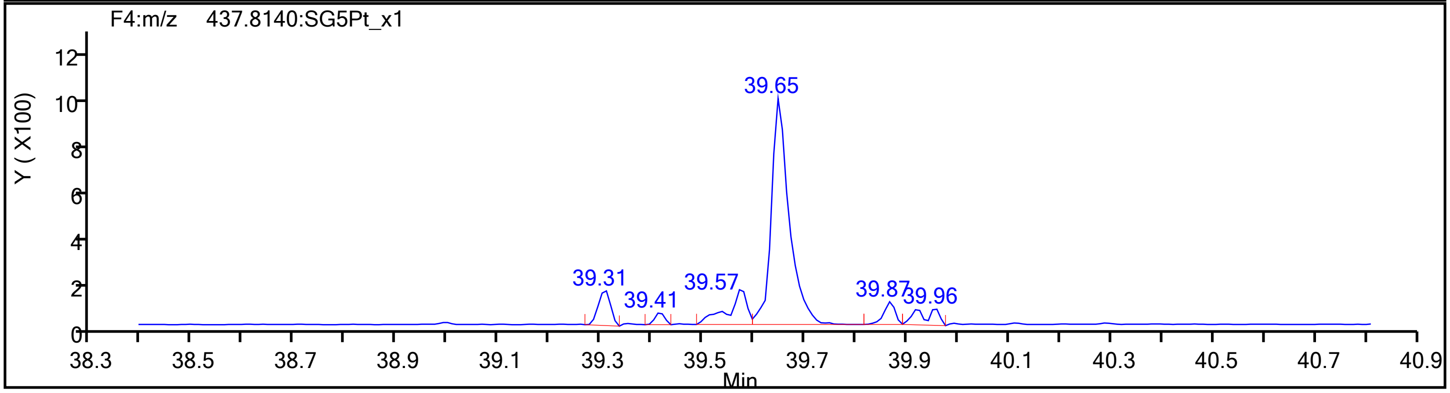

Report Date: 25-Nov-2020 02:24:02 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

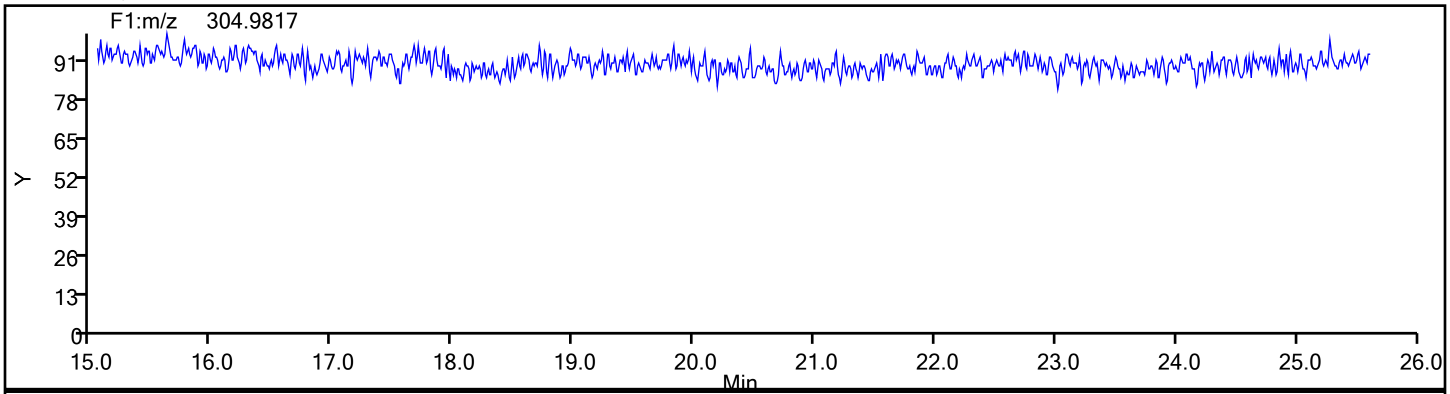

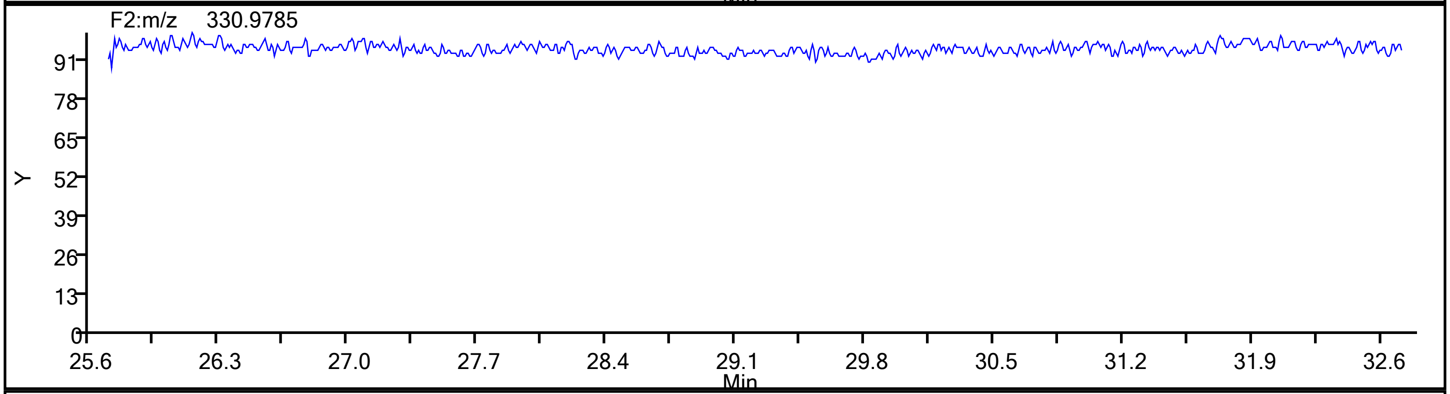

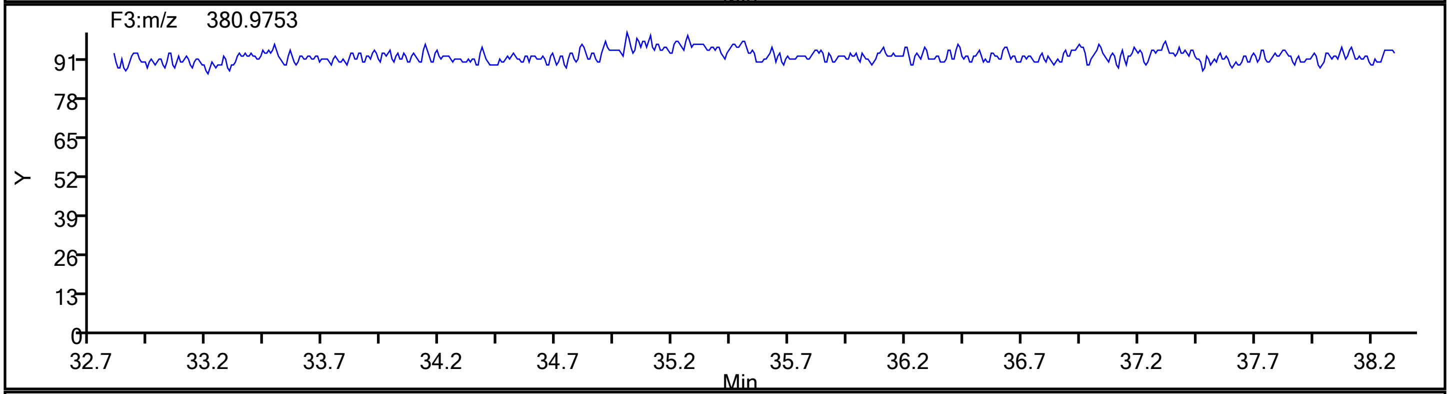

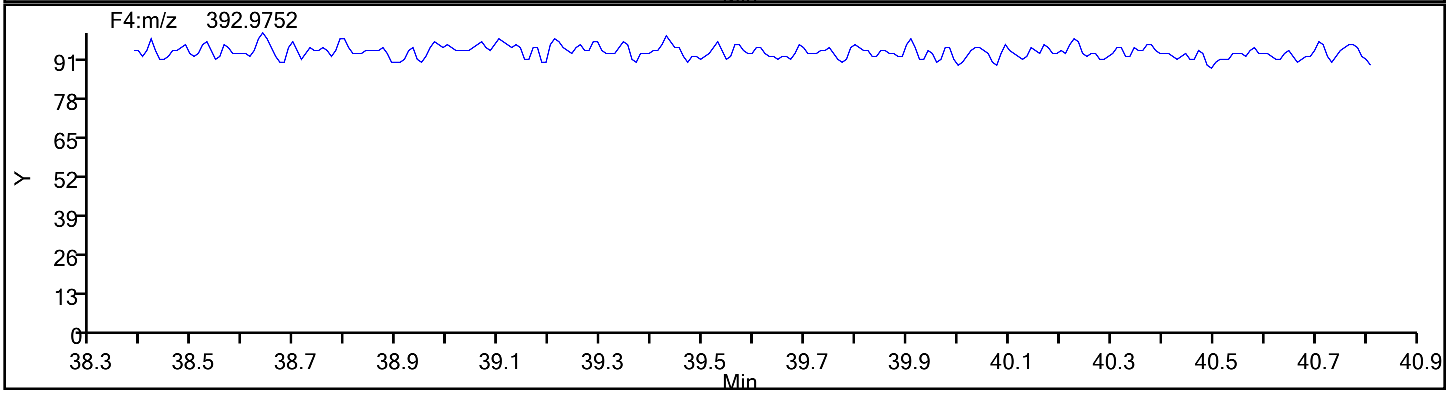

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_34.d		
Injection Date:	24-Nov-2020 08:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	29
Column Type:	DB-5	Column Dia:	0.32 mm

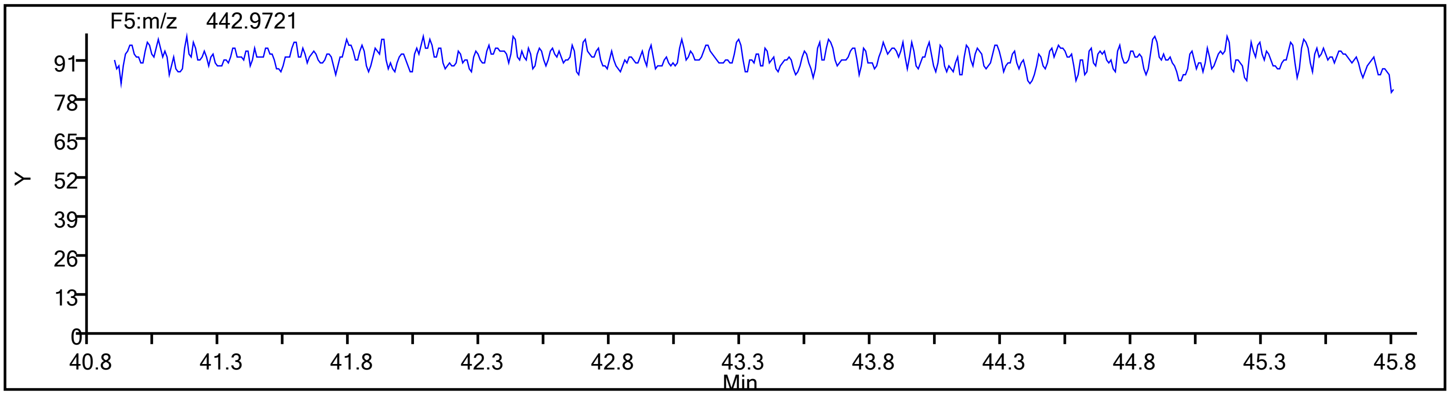

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-66850-2
SDG No.:
Client Sample ID:
Lab Sample ID: MB 320-432973/1-A
Matrix: Water
Lab File ID: 23no20dfs1_36.d
Analysis Method: 1613B
Date Collected:
Extract. Method: 1613B
Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1000(mL)
Date Analyzed: 11/24/2020 10:17
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.62
51207-31-9	2,3,7,8-TCDF	1.70	J	10	0.27
40321-76-4	1,2,3,7,8-PeCDD	19.9	J	50	0.66
57117-41-6	1,2,3,7,8-PeCDF	15.0	J	50	0.45
57117-31-4	2,3,4,7,8-PeCDF	20.3	J	50	0.49
39227-28-6	1,2,3,4,7,8-HxCDD	28.3	J	50	0.55
57653-85-7	1,2,3,6,7,8-HxCDD	24.7	J	50	0.54
19408-74-3	1,2,3,7,8,9-HxCDD	28.3	J	50	0.52
70648-26-9	1,2,3,4,7,8-HxCDF	23.2	J	50	0.50
57117-44-9	1,2,3,6,7,8-HxCDF	24.4	J	50	0.48
72918-21-9	1,2,3,7,8,9-HxCDF	28.7	J	50	0.51
60851-34-5	2,3,4,6,7,8-HxCDF	29.5	J	50	0.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	25.7	J	50	0.41
67562-39-4	1,2,3,4,6,7,8-HpCDF	25.1	J	50	0.47
55673-89-7	1,2,3,4,7,8,9-HpCDF	26.4	J	50	0.59
3268-87-9	OCDD	58.0	J	100	0.64
39001-02-0	OCDF	49.9	J	100	1.0
41903-57-5	Total TCDD	ND		10	0.62
30402-14-3	Total TCDF	1.70	J	10	0.27
36088-22-9	Total PeCDD	19.9	J	50	0.66
30402-15-4	Total PeCDF	35.3	J	50	0.47
34465-46-8	Total HxCDD	81.3		50	0.54
55684-94-1	Total HxCDF	106		50	0.48
37871-00-4	Total HpCDD	25.7	J	50	0.41
38998-75-3	Total HpCDF	51.6		50	0.53

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-432973/1-A
Matrix: Water	Lab File ID: 23no20dfs1_36.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1000(mL)	Date Analyzed: 11/24/2020 10:17
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 434777	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		25-164
89059-46-1	13C-2,3,7,8-TCDF	80		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	85		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	83		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	80		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	78		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	81		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	85		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	85		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		26-138
114423-97-1	13C-OCDD	83		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	88		35-197

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Sample Type: MB
Inject. Date: 24-Nov-2020 10:17:00 ALS Bottle#: 0 Worklist Smp#: 31
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-432973/1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 14:44:34 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1644

First Level Reviewer: stephensk Date: 25-Nov-2020 14:42:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.700	3478648	0.81	3.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.687	4675755	0.82	1.6832	79.9	79.9	0.2684	0.2684	79.85	
2,3,7,8-TCDF	20.739	4579	0.77	1.1547	0.0977	0.0848	0.0133	0.0133		RQM
A Non-2,3,7,8-sub-TCDF	20.119						0.0133	0.0133		RQU
S Total TCDF					0.0977	0.0848	0.0133	0.0133		RQ
D 13C-2,3,7,8-TCDD	22.087	3148429	0.78	1.0896	83.1	83.1	0.2107	0.2107	83.06	
2,3,7,8-TCDD	22.159						0.0309	0.0309		
$ 37Cl4-2,3,7,8-TCDD	22.121	1397330		1.1445	35.1	35.1	0.0290	0.0290	87.74	
A Non-2,3,7,8-sub-TCDD	20.973						0.0309	0.0309		RQU
S Total TCDD							0.0309	0.0309		
D 13C-1,2,3,7,8-PeCDF	27.576	4232619	1.58	1.4604	83.3	83.3	0.2802	0.2802	83.31	
1,2,3,7,8-PeCDF	27.610	35947	1.60	1.1322	0.7501	0.7501	0.0224	0.0224		
D 13C-2,3,4,7,8-PeCDF	29.125	3770147	1.60	1.3504	80.3	80.3	0.3030	0.3030	80.26	
2,3,4,7,8-PeCDF	29.151	44257	1.64	1.1588	1.013	1.013	0.0247	0.0247		
A F1 PeCDFs	24.940						0.006722	0.006722		
A Non-2,3,7,8-sub-PeCDF	28.506						0.0235	0.0235		
S Total PeCDF					1.763	1.763	0.0235	0.0235		
D 13C-1,2,3,7,8-PeCDD	29.959	2590858	1.62	0.8729	85.3	85.3	0.1028	0.1028	85.32	
1,2,3,7,8-PeCDD	30.001	28802	1.51	1.1191	0.993	0.993	0.0329	0.0329		
A Non-2,3,7,8-sub-PeCDD	28.748						0.0329	0.0329		
S Total PeCDD					0.993	0.993	0.0329	0.0329		
D 13C-1,2,3,4,7,8-HxCDF	35.142	3341878	0.54	1.2808	78.8	78.8	0.3664	0.3664	78.78	
1,2,3,4,7,8-HxCDF	35.159	51226	1.19	1.3205	1.161	1.161	0.0248	0.0248		
D 13C-1,2,3,6,7,8-HxCDF	35.302	3929281	0.53	1.4615	81.2	81.2	0.3211	0.3211	81.17	
1,2,3,6,7,8-HxCDF	35.319	60862	1.28	1.2682	1.221	1.221	0.0240	0.0240		
D 13C-2,3,4,6,7,8-HxCDF	36.093	3719586	0.53	1.3227	84.9	84.9	0.3548	0.3548	84.91	
2,3,4,6,7,8-HxCDF	36.110	70503	1.25	1.2838	1.476	1.476	0.0219	0.0219		
D 13C-1,2,3,7,8,9-HxCDF	36.969	3129364	0.53	1.1062	85.4	85.4	0.4243	0.4243	85.41	
1,2,3,7,8,9-HxCDF	36.977	58721	1.21	1.3063	1.436	1.436	0.0257	0.0257		
A Non-2,3,7,8-sub-HxCDF	35.280						0.0240	0.0240		
S Total HxCDF					5.295	5.295	0.0241	0.0241		
* 13C-1,2,3,7,8,9-HxCDD	36.767	3312092	1.27	3.7E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.295	2274446	1.26	0.8757	78.4	78.4	0.3137	0.3137	78.42	
1,2,3,4,7,8-HxCDD	36.304	38582	1.27	1.1972	1.417	1.417	0.0277	0.0277		
D 13C-1,2,3,6,7,8-HxCDD	36.413	3029543	1.26	1.0651	85.9	85.9	0.2579	0.2579	85.88	
1,2,3,6,7,8-HxCDD	36.421	39968	1.16	1.0695	1.234	1.234	0.0268	0.0268		
1,2,3,7,8,9-HxCDD	36.775	44256	1.38	1.1806	1.414	1.414	0.0261	0.0261		
A Non-2,3,7,8-sub-HxCDD	35.613						0.0268	0.0268		RQU
S Total HxCDD					4.064	4.064	0.0269	0.0269		
1,2,3,4,6,7,8-HpCDF	38.743	51300	1.03	1.5618	1.257	1.257	0.0235	0.0235		
D 13C-1,2,3,4,6,7,8-HpCDF	38.735	2612160	0.45	0.9521	82.8	82.8	0.6505	0.6505	82.83	
1,2,3,4,7,8,9-HpCDF	39.973	40662	1.04	1.4975	1.322	1.322	0.0296	0.0296		
D 13C-1,2,3,4,7,8,9-HpCDF	39.965	2053722	0.45	0.7782	79.7	79.7	0.7959	0.7959	79.68	
A Non-2,3,7,8-sub-HpCDF	39.360						0.0262	0.0262		
S Total HpCDF					2.580	2.580	0.0265	0.0265		
1,2,3,4,6,7,8-HpCDD	39.670	34147	1.06	1.1079	1.286	1.286	0.0204	0.0204		
D 13C-1,2,3,4,6,7,8-HpCDD	39.661	2397394	1.06	0.8393	86.2	86.2	0.3225	0.3225	86.24	
A Non-2,3,7,8-sub-HpCDD	40.007						0.0204	0.0204		RQU
S Total HpCDD					1.286	1.286	0.0204	0.0204		
D 13C-OCDD	42.140	2915444	0.90	0.5301	166.1	166.1	0.4915	0.4915	83.03	
OCDF	42.241	53797	0.82	1.4802	2.493	2.493	0.0513	0.0513		
OCDD	42.148	49329	0.95	1.1666	2.901	2.901	0.0318	0.0318		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Sample Type: MB
Inject. Date: 24-Nov-2020 10:17:00 ALS Bottle#: 0 Worklist Smp#: 31
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-432973/1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Nov-2020 14:44:34 Calib Date: 17-Nov-2020 17:44:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201117-107668.b\17no20dfs1_10.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1644

First Level Reviewer: stephensk Date: 25-Nov-2020 14:42:40

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.700	21.772	-4		1553893	215150	279	697	771		a
333.9338	21.692	21.772	-5		1924755	266237	163	407	1633	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.687	20.725	-2	0.953	2108403	303257	587	1467	517		
317.9389	20.687	20.725	-2	0.953	2567352	362068	283	707	1279	0.82(0.65-0.89)	
2,3,7,8-TCDF											RQM
303.9016	20.739	20.776	-2	1.002	1992	432	4	10	108		M
305.8987	20.696	20.776	-5	1.000	3283	591	37	92	16	0.61(0.65-0.89)	M
	Empc Correction				2587	561	37	92	15		
A Non-2,3,7,8-sub-TCDF											U
303.9016	20.119	20.119	0	0.973	98	48	4	10			
305.8987	20.119	20.119	0	0.973	321	153	37	92		0.31(0.65-0.89)	
	Empc Correction				127	62	37	92	0		
13C-2,3,7,8-TCDD											
331.9368	22.087	22.124	-2	1.018	1378425	179170	279	697	642		
333.9338	22.087	22.124	-2	1.018	1770004	222970	163	407	1368	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	22.159						53	132			
321.8936	22.159						5	12			
37Cl4-2,3,7,8-TCDD											
327.8847	22.121	22.201	-5	1.019	1397330	189522	64	160	2961		
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.687	20.973	-17	0.937	677	251	53	132	5		
	Empc Correction				203	46	53	132	0		
321.8936	20.730	20.973	-15	0.939	264	60	5	12	12	2.56(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.576	27.633	-3	1.271	2594320	378619	440	1100	860		
353.8970	27.584	27.633	-3	1.271	1638299	240649	348	870	692	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.610	27.659	-3	1.001	22129	3331	24	60	139		
341.8567	27.610	27.659	-3	1.001	13818	2151	39	97	55	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.125	29.184	-3	1.342	2322231	339994	440	1100	773		
353.8970	29.125	29.184	-3	1.342	1447916	209622	348	870	602	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.151	29.217	-4	1.001	27494	4161	24	60	173		
341.8567	29.168	29.217	-3	1.001	16763	2221	39	97	57	1.64(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.940						1	2			
341.8567	24.940						17	42			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.506						24	60			
341.8567	28.506						39	97			
13C-1,2,3,7,8-PeCDD											
367.8949	29.959	30.017	-3	1.381	1600887	213395	89	222	2398		
369.8919	29.959	30.017	-3	1.381	989971	139234	84	210	1658	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	30.001	30.051	-3	1.001	17340	2362	45	112	52		
357.8516	29.984	30.051	-4	1.001	11462	1653	7	17	236	1.51(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.748						45	112			
357.8516	28.748						7	17			
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.142	35.175	-2	0.956	1174142	248163	405	1012	613		
385.8610	35.142	35.175	-2	0.956	2167736	453015	987	2467	459	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.159	35.200	-2	1.000	27851	5677	58	145	98		
375.8178	35.159	35.200	-2	1.000	23375	4915	34	85	145	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.302	35.335	-2	0.960	1364567	264929	405	1012	654		
385.8610	35.302	35.335	-2	0.960	2564714	491783	987	2467	498	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.319	35.351	-2	1.000	34155	6485	58	145	112		
375.8178	35.319	35.351	-2	1.000	26707	5367	34	85	158	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.093	36.118	-2	0.982	1287290	279144	405	1012	689		
385.8610	36.093	36.118	-2	0.982	2432296	539453	987	2467	547	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.110	36.135	-2	1.000	39100	9097	58	145	157		
375.8178	36.110	36.135	-2	1.000	31403	6716	34	85	198	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.969	36.986	-1	1.005	1088116	233163	405	1012	576		
385.8610	36.969	36.986	-1	1.005	2041248	450968	987	2467	457	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.977	37.003	-2	1.000	32118	6658	58	145	115		
375.8178	36.977	37.003	-2	1.000	26603	5782	34	85	170	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.280						58	145			
375.8178	35.280						34	85			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.767	36.792	-2		1854146	406172	426	1065	953		
403.8529	36.767	36.792	-2		1457946	335279	389	972	862	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.295	36.320	-2	0.987	1269347	325114	426	1065	763		
403.8529	36.295	36.320	-2	0.987	1005099	253418	389	972	651	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.304	36.337	-2	1.000	21555	5226	42	105	124		
391.8127	36.312	36.337	-2	1.000	17027	4211	35	87	120	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.413	36.438	-1	0.990	1691442	378326	426	1065	888		
403.8529	36.413	36.438	-1	0.990	1338101	291493	389	972	749	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.421	36.446	-1	1.000	21476	4953	42	105	118		
391.8127	36.421	36.446	-1	1.000	18492	4508	35	87	129	1.16(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.775	36.809	-2	1.013	25657	5288	42	105	126		
391.8127	36.783	36.809	-2	1.013	18599	4374	35	87	125	1.38(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											U
389.8158	35.277	35.613	-20	0.969	1792	193	42	105	5		
391.8127	35.235	35.613	-23	0.968	367	173	35	87	5	4.88(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.743	38.745	0	1.000	26053	6459	67	167	96		
409.7788	38.743	38.745	0	1.000	25247	6583	33	82	199	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.735	38.749	-1	1.054	812745	212271	633	1582	335		
419.8220	38.735	38.749	-1	1.054	1799415	468887	1204	3010	389	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.973	39.975	0	1.000	20689	5616	67	167	84		
409.7788	39.973	39.975	0	1.000	19973	5866	33	82	178	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.965	39.979	-1	1.087	641658	175995	633	1582	278		
419.8220	39.965	39.979	-1	1.087	1412064	388488	1204	3010	323	0.45(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.360						67	167			
409.7788	39.360						33	82			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.670	39.672	0	1.000	17541	4751	36	90	132		
425.7737	39.670	39.672	0	1.000	16606	4636	23	57	202	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.661	39.676	-1	1.079	1232262	337166	461	1152	731		
437.8140	39.661	39.676	-1	1.079	1165132	312967	342	855	915	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											U
423.7767	39.956	40.007	-3	1.007	630	233	36	90	6		
425.7737	39.998	40.007	-1	1.008	396	108	23	57	5	1.59(0.88-1.20)	
13C-OCDD											
469.7780	42.140	42.158	-1	1.146	1382342	311774	372	930	838		
471.7750	42.140	42.158	-1	1.146	1533102	346835	401	1002	865	0.90(0.76-1.02)	
OCDF											
441.7428	42.241	42.251	-1	1.002	24244	6097	26	65	235		
443.7399	42.241	42.251	-1	1.002	29553	7092	74	185	96	0.82(0.76-1.02)	
OCDD											
457.7377	42.148	42.167	-1	1.000	24095	5175	23	57	225		
459.7348	42.148	42.167	-1	1.000	25234	5727	26	65	220	0.95(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Inject. Date: 24-Nov-2020 10:17:00
Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 31

Non-2,3,7,8-sub-TCDF, RT: 20.119

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.155	D 13C-2,3,7,8-TCDF	100.000	4675755	665325

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.155		100.000	4675755	665325

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
22.336	98	48	321	153	0.007761	0.31	RQ
22.336	98	48	127	62			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Inject. Date: 24-Nov-2020 10:17:00 Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 434777 Lims Sample ID: 31

Non-2,3,7,8-sub-TCDD, RT: 20.973

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.166	D 13C-2,3,7,8-TCDD	100.000	3148429	402140

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.166		100.000	3148429	402140

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.687	677	251	264	60	0.0256	2.56	RQ
20.687	203	46	264	60			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Inject. Date: 24-Nov-2020 10:17:00
Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 31

Non-2,3,7,8-sub-HxCDD, RT: 35.613

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.197	D 13C-1,2,3,4,7,8-HxCDD	100.000	2274446	578532
1,2,3,6,7,8-HxCDD	1.069	D 13C-1,2,3,6,7,8-HxCDD	100.000	3029543	669819
1,2,3,7,8,9-HxCDD	1.181				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2651994	624175

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.277	1792	193	367	173		4.88	R

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d
Lims ID: MB 320-432973/1-A
Client ID:
Inject. Date: 24-Nov-2020 10:17:00
Dil. Factor: 1.0000
Sample Type: MB, Method Blank
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 434777
Lims Sample ID: 31

Non-2,3,7,8-sub-HpCDD, RT: 40.007

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.108	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2397394	650133

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.108		100.000	2397394	650133

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.956	630	233	396	108		1.59	R

Compound is Marked ND

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d				
Injection Date:	24-Nov-2020 10:17:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-432973/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	31
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT:	20.74
Area:	1626
Amount:	0.101075
Amount Units:	pg/ul

Processing Integration Results

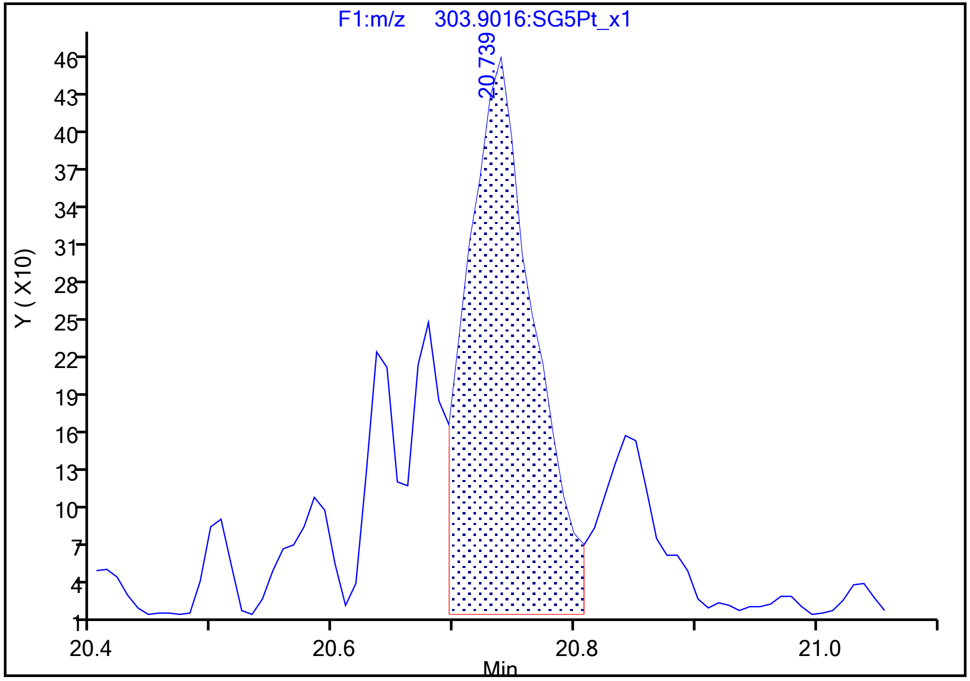

RT:	20.74
Area:	1992
Amount:	0.097704
Amount Units:	pg/ul

Manual Integration Results

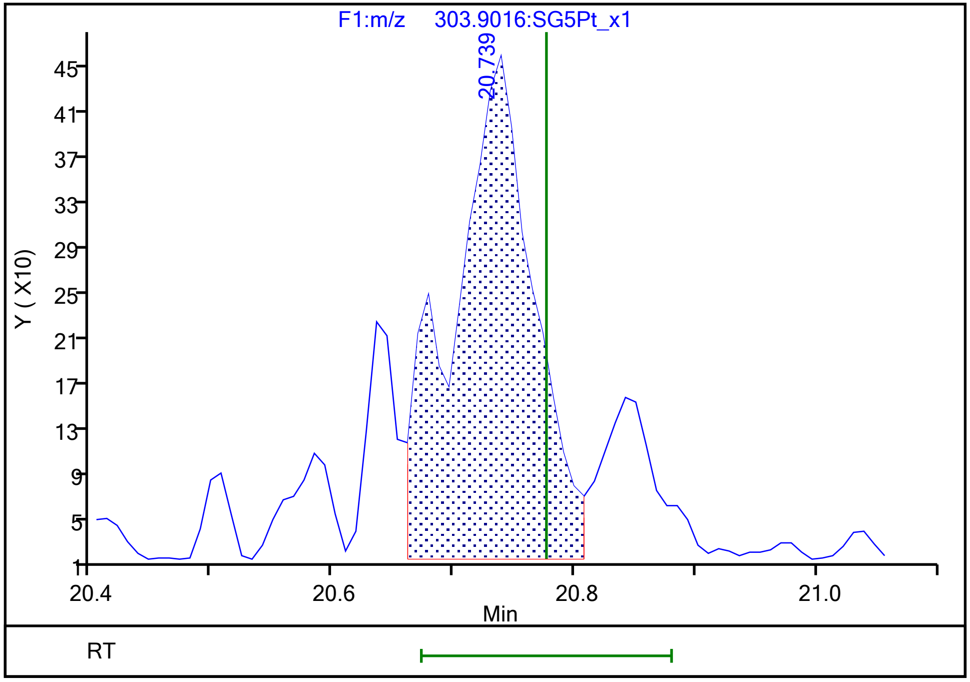

Reviewer: stephensk, 25-Nov-2020 14:40:49

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d				
Injection Date:	24-Nov-2020 10:17:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-432973/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	31
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT: 20.70
Area: 3831
Amount: 0.101075
Amount Units: pg/ul

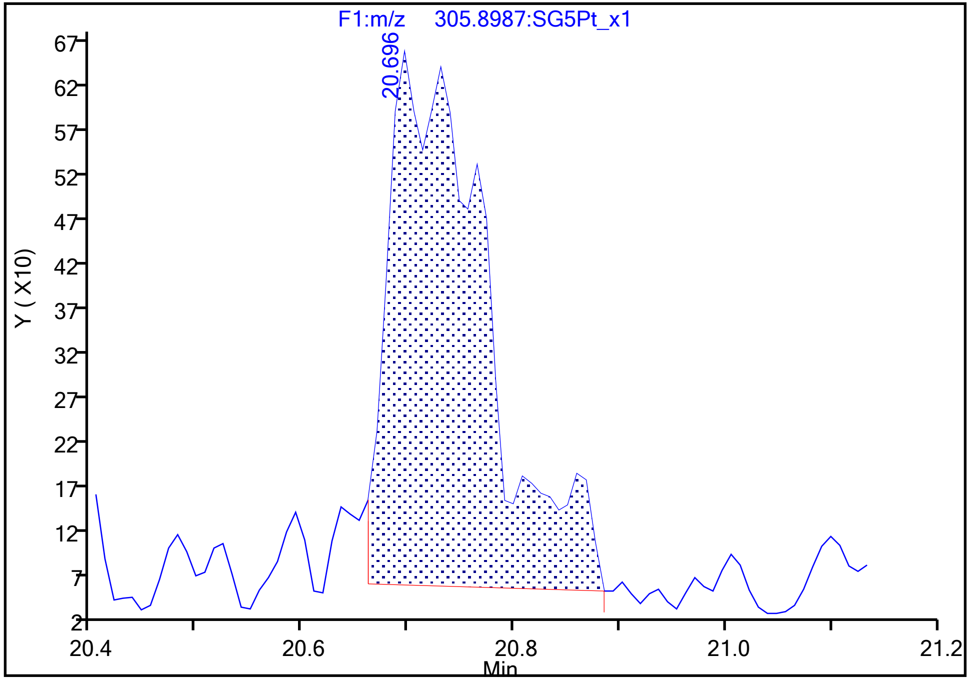

Manual Integration Results

RT: 20.70
Area: 3283
Amount: 0.097704
Amount Units: pg/ul

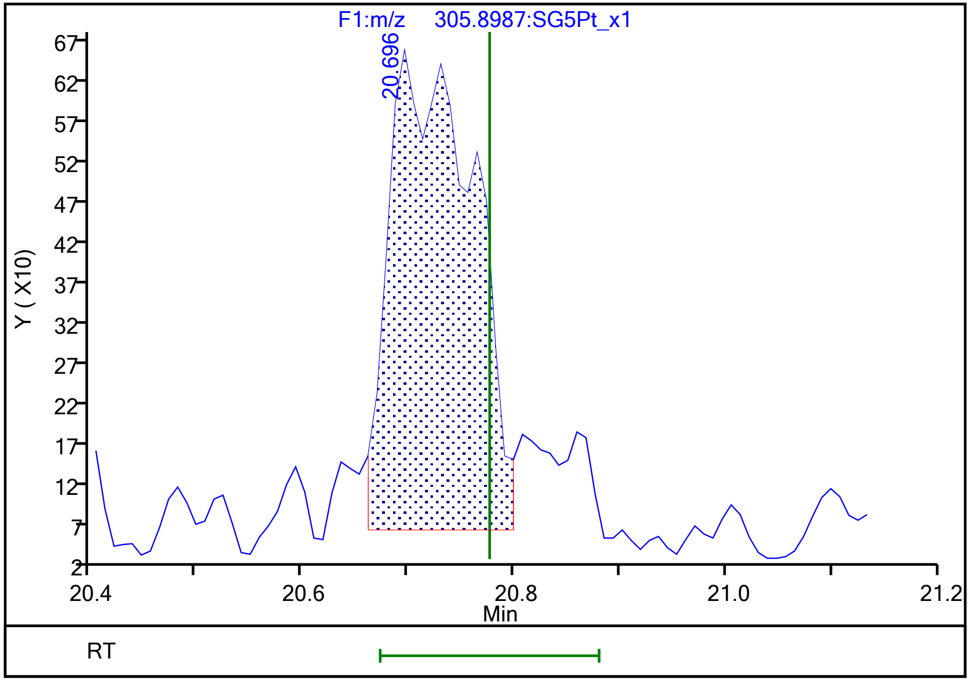

Reviewer: stephensk, 25-Nov-2020 14:41:43

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d

Injection Date: 24-Nov-2020 10:17:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 434777 Sample Line#: 31

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

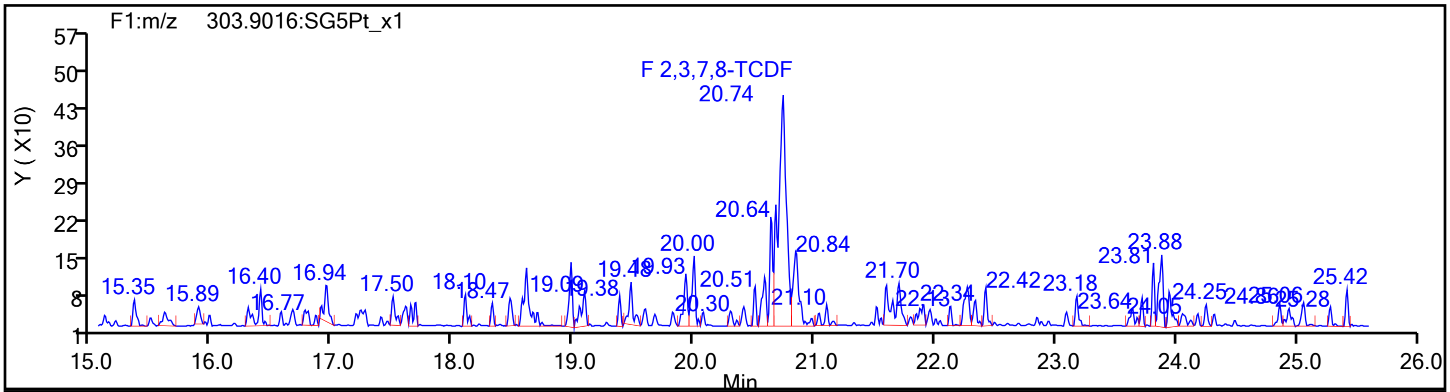

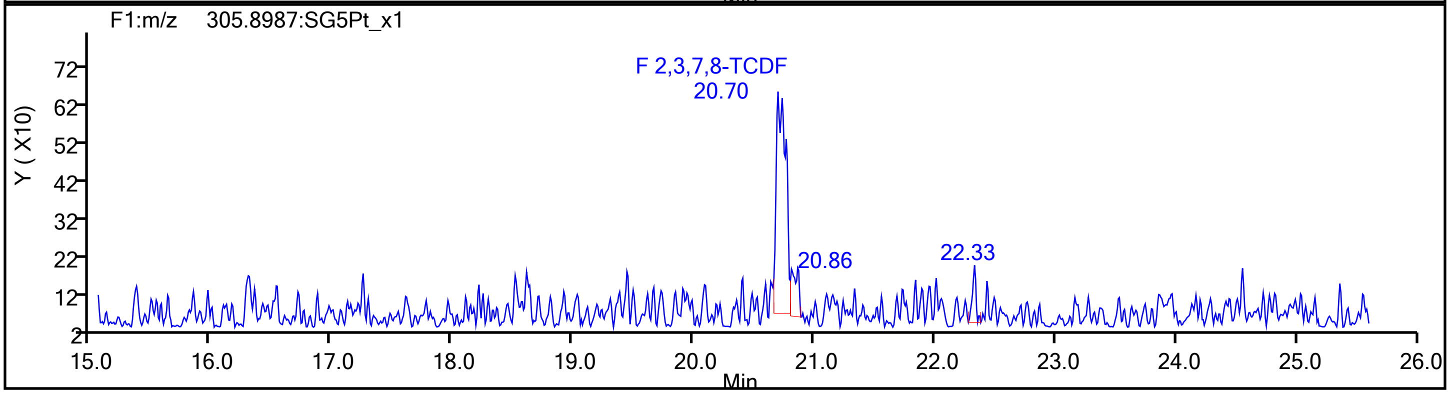

TCDF Standards

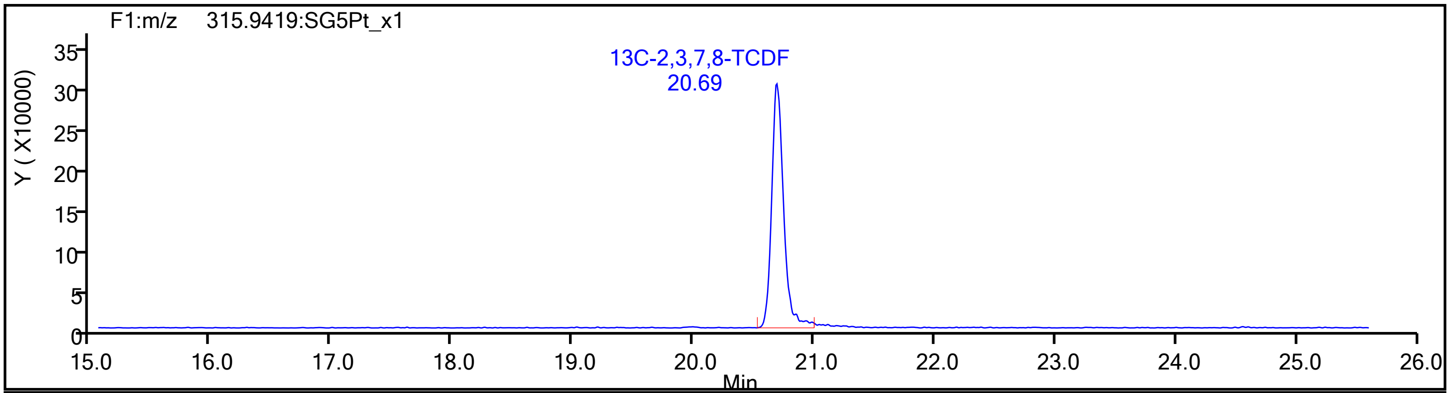

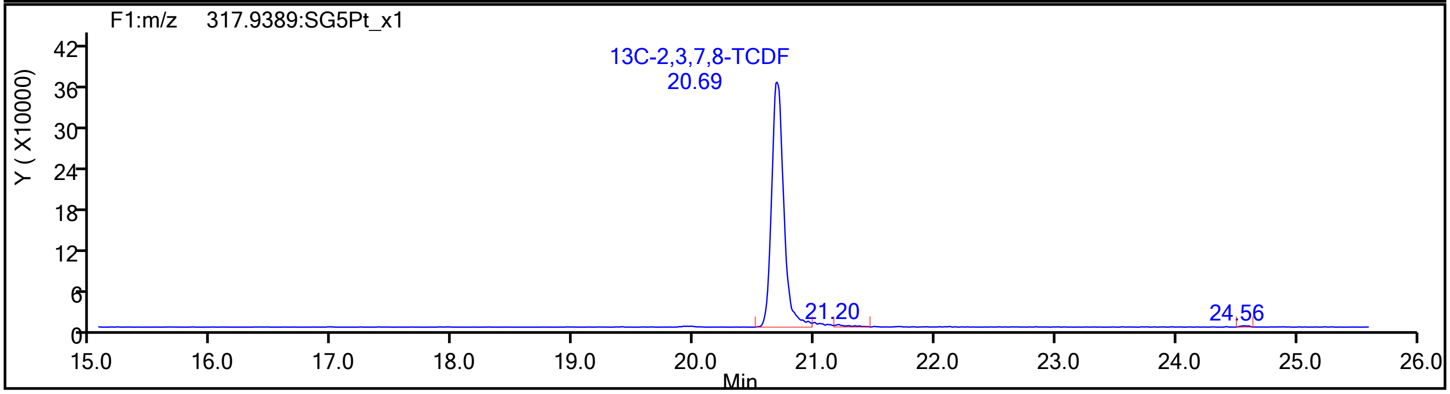

Report Date: 25-Nov-2020 14:44:45 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

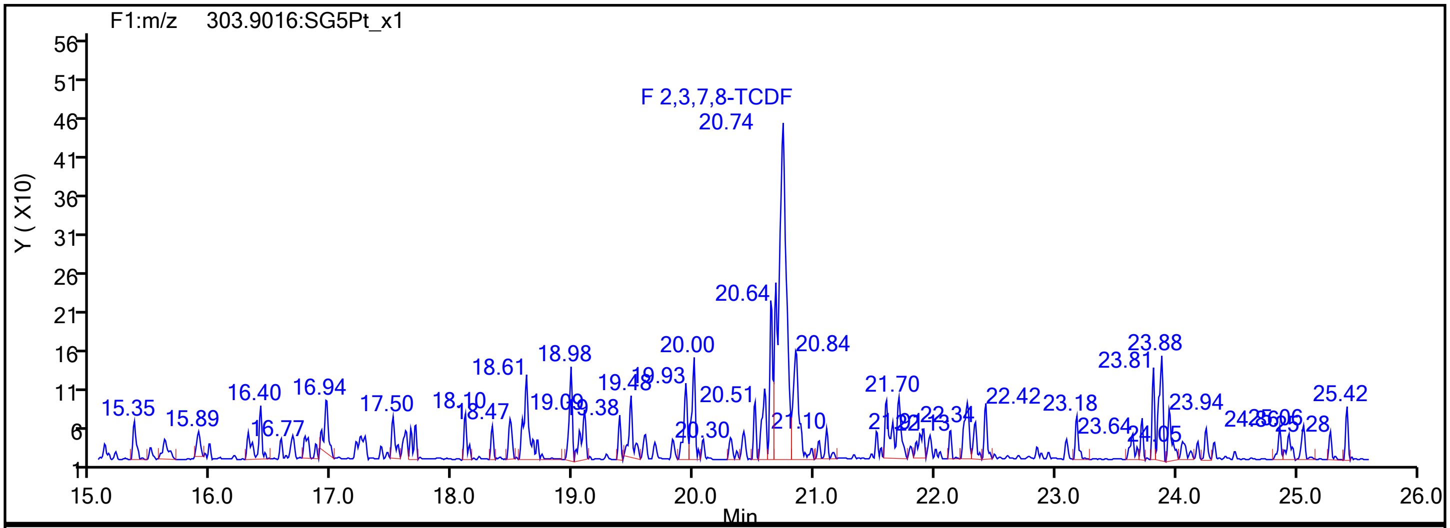

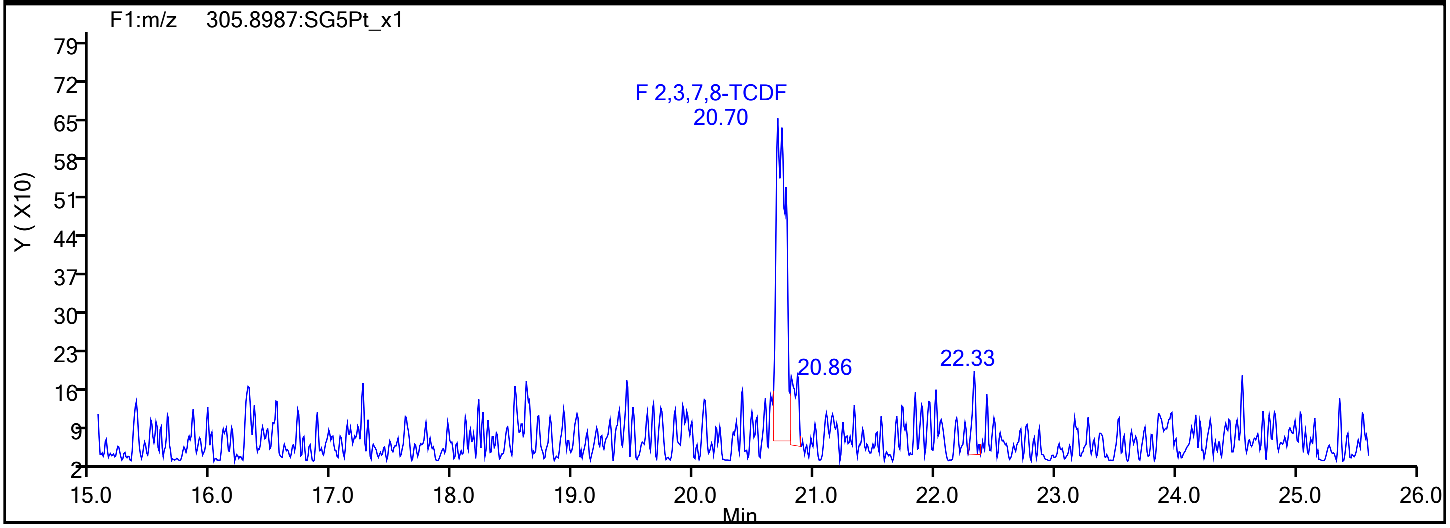

TCDF Interference Mass

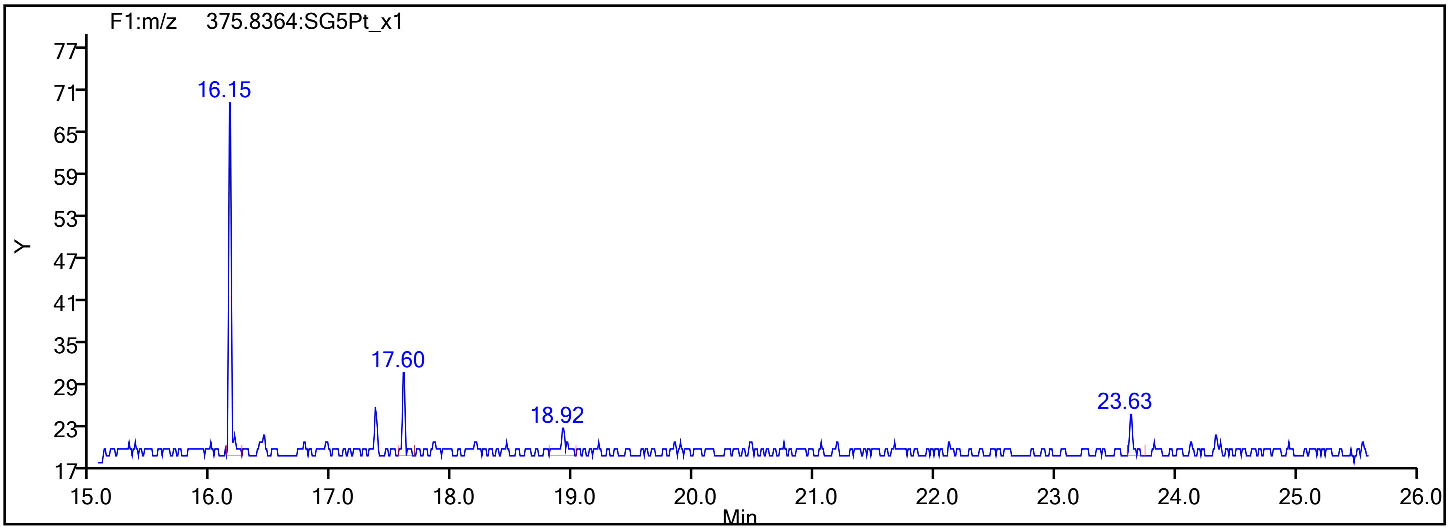

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Column Dia: 0.32 mm

TCDD

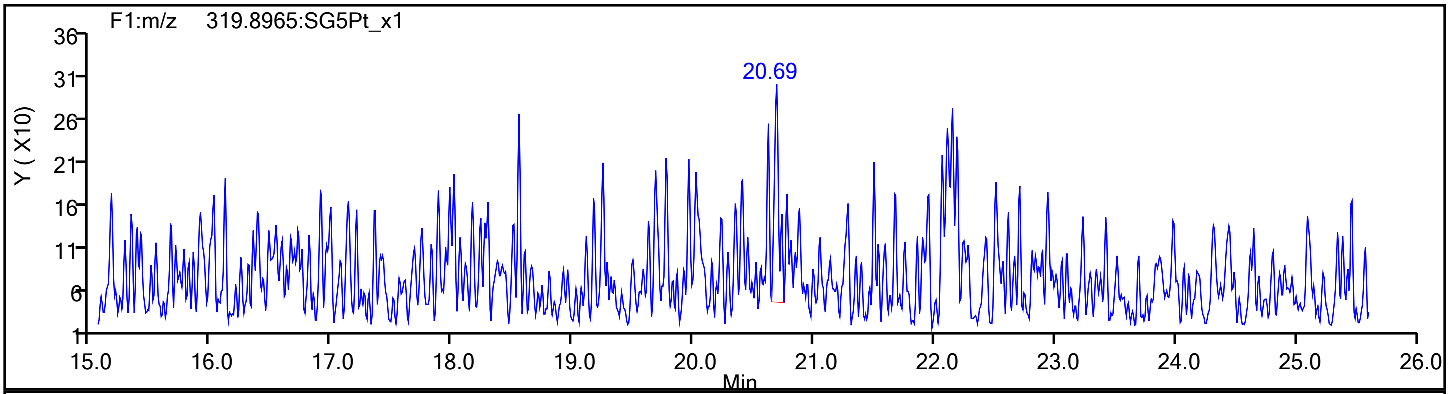

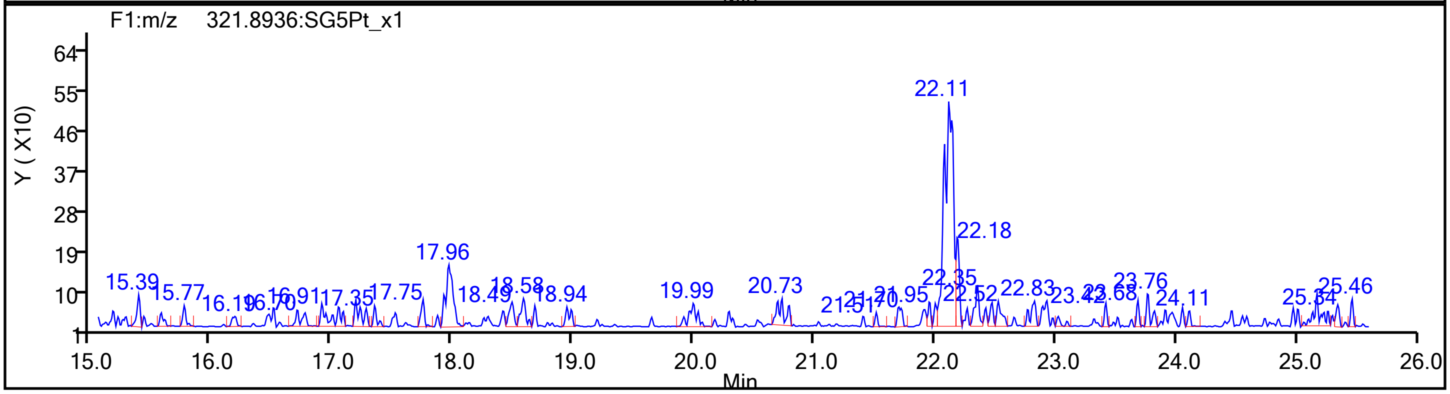

TCDD Standards

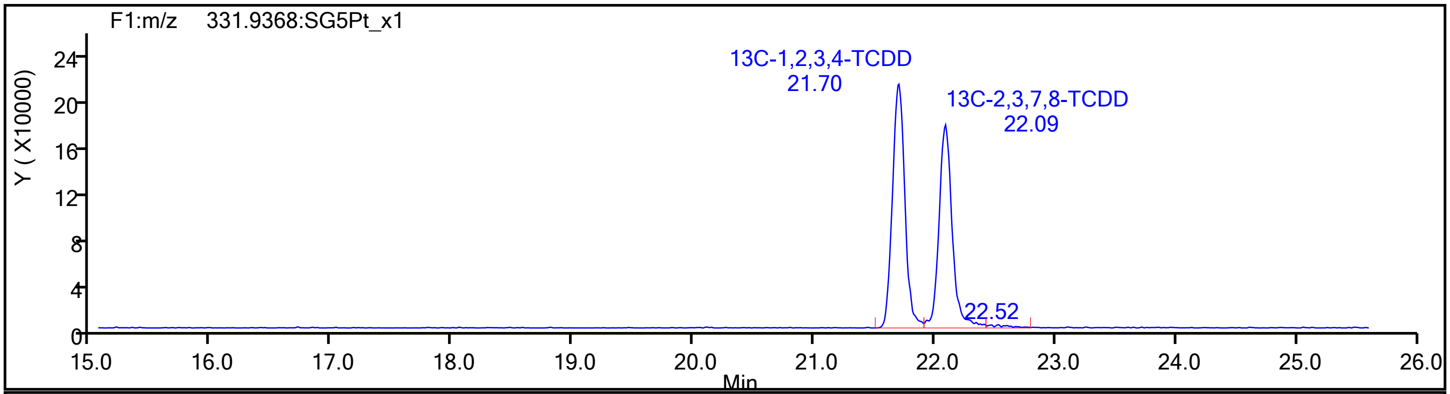

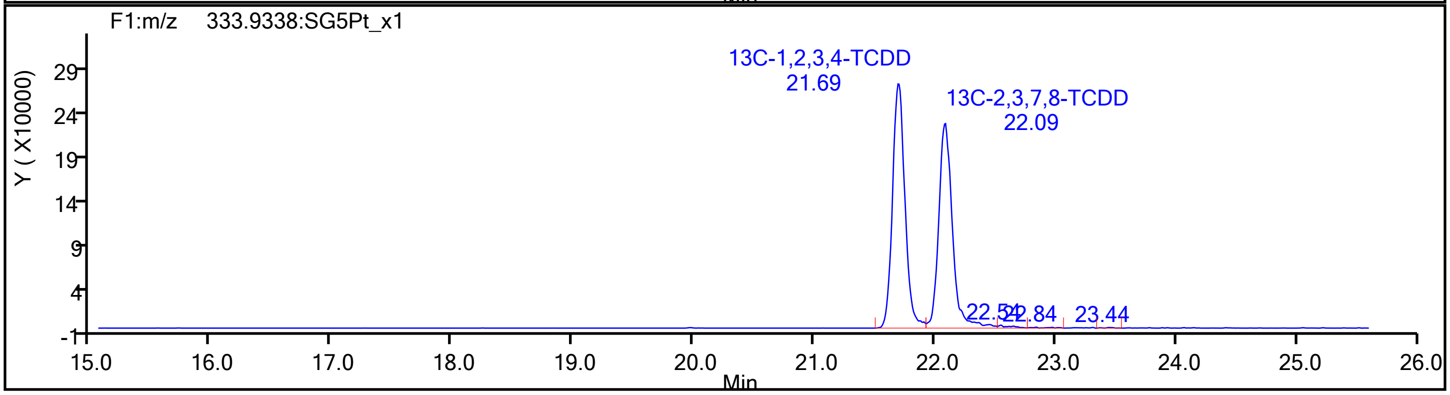

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

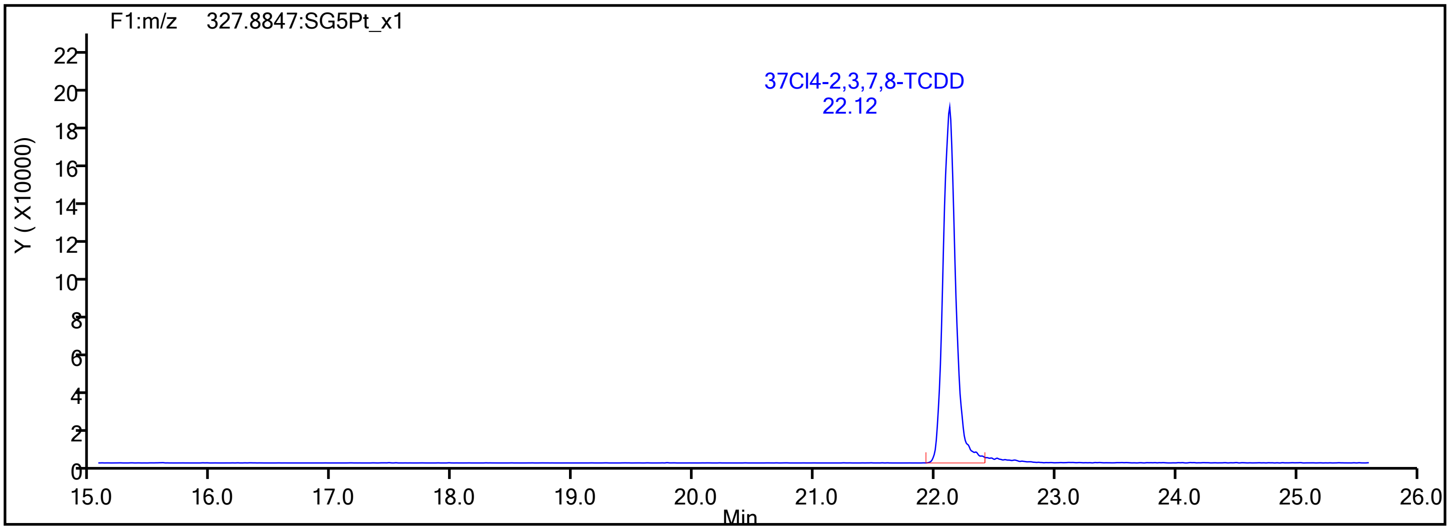

37Cl4-TCDD Standards

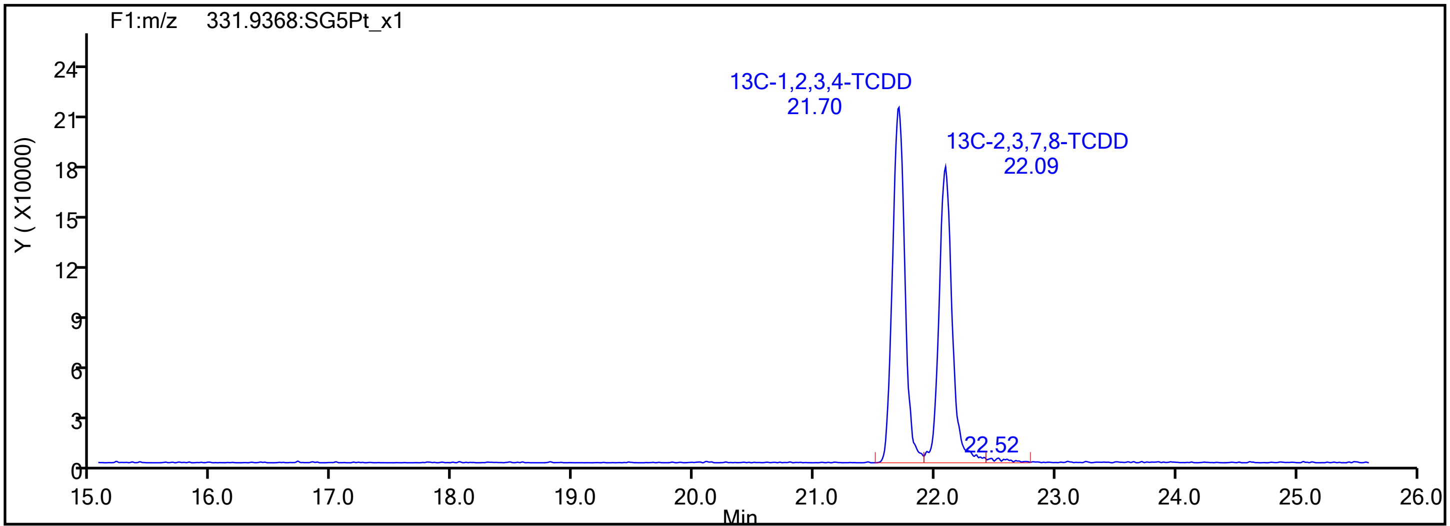

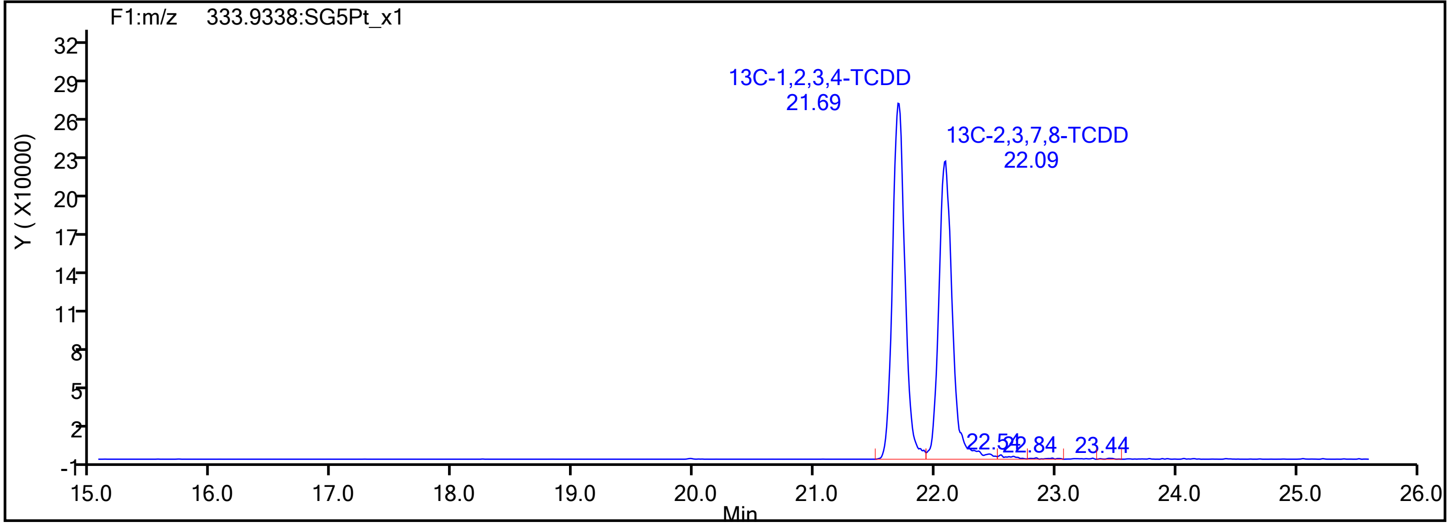

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

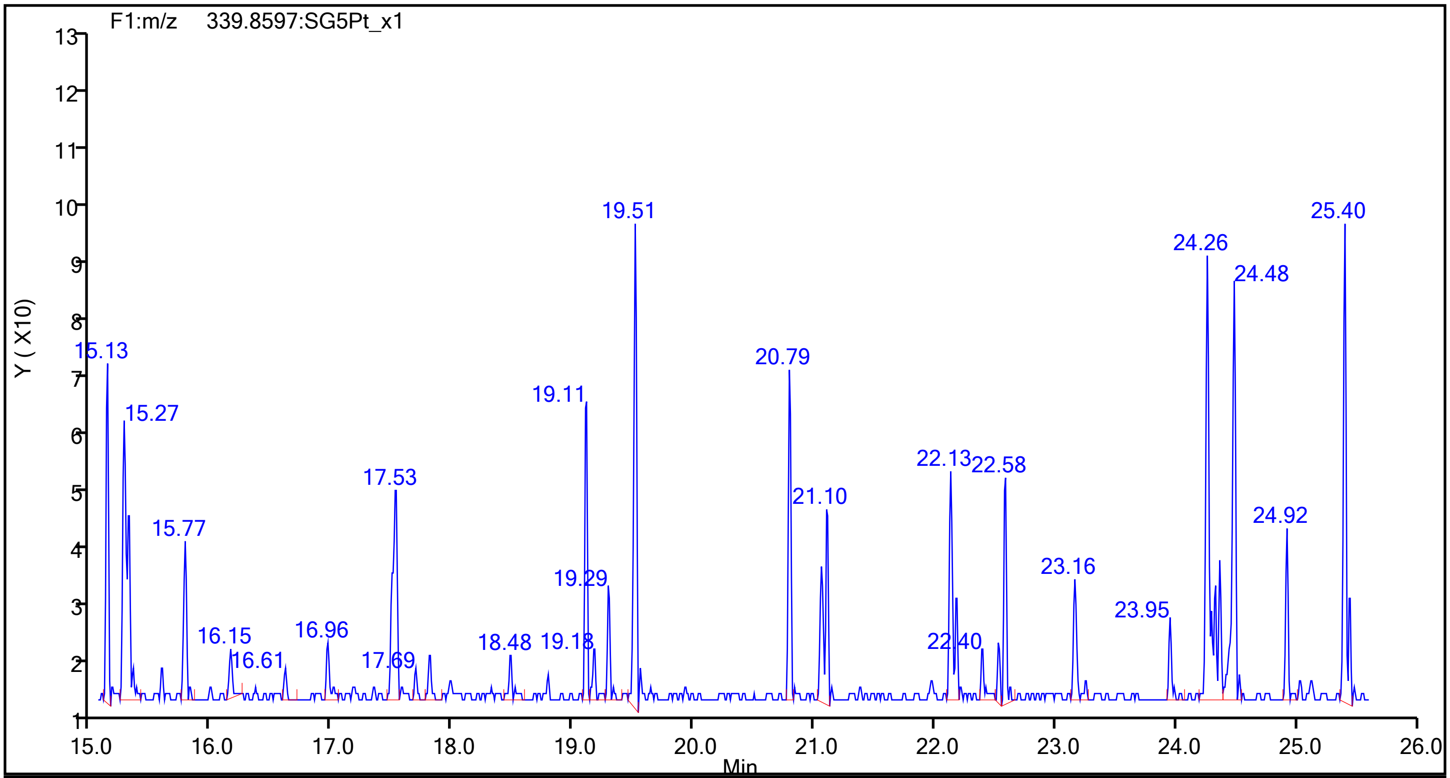

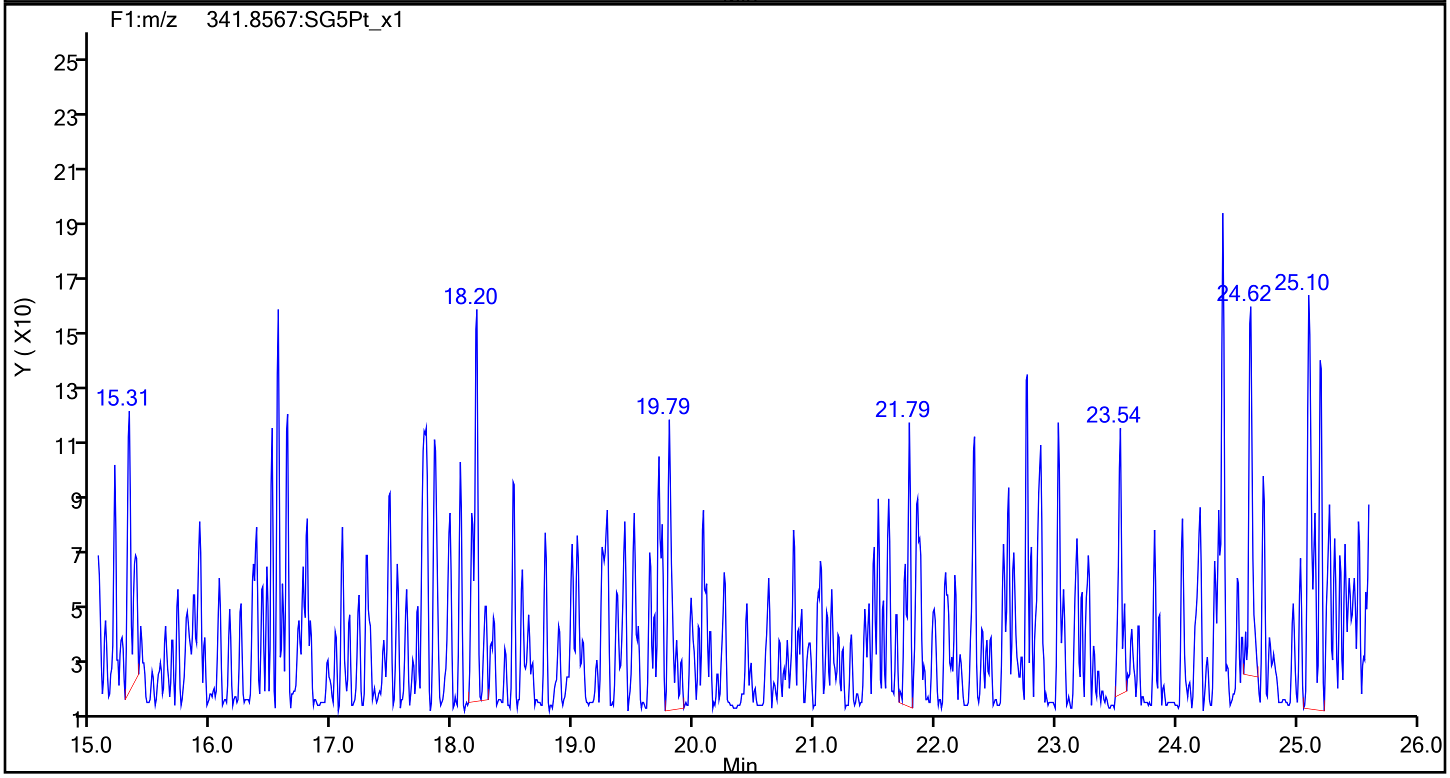

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

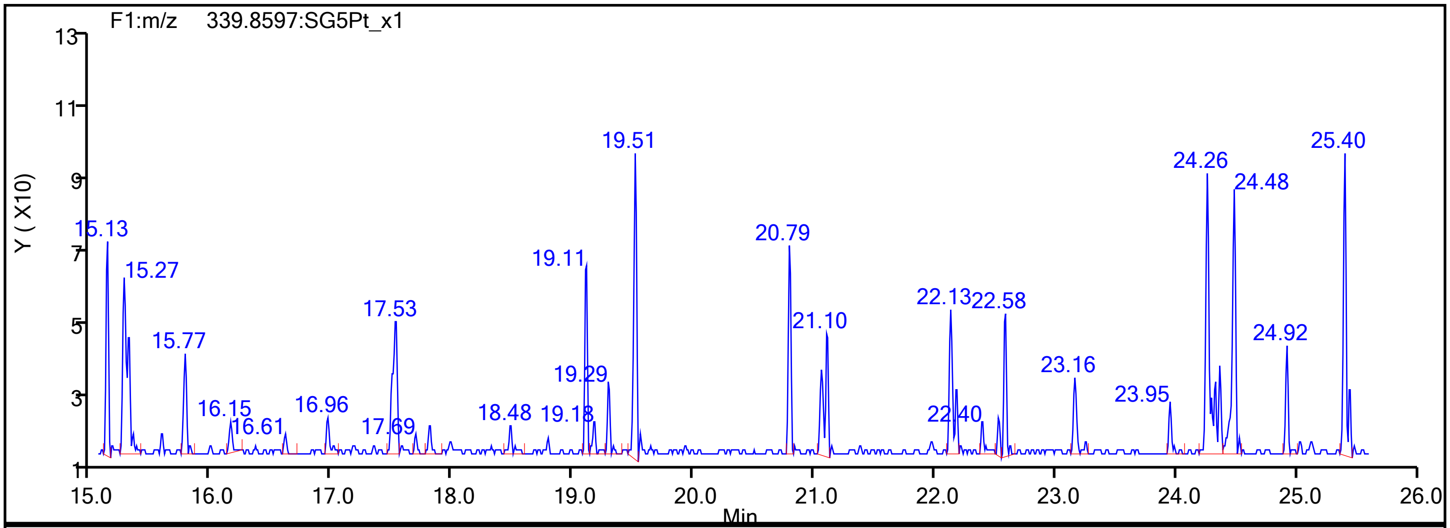

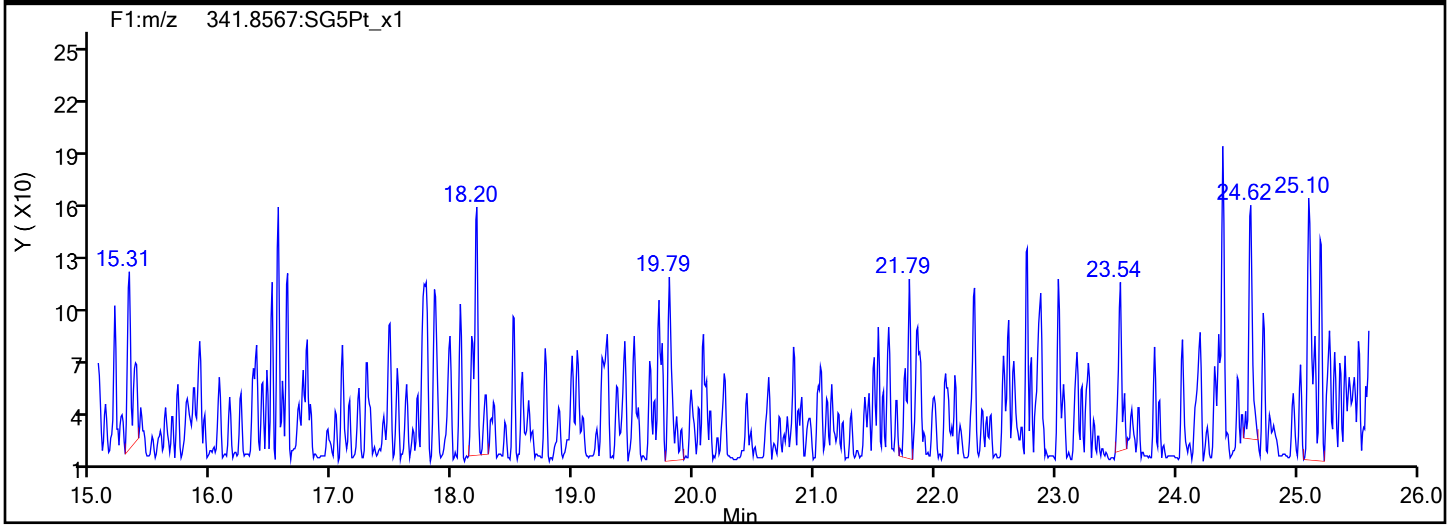

F1 PeCDFs Interference Mass

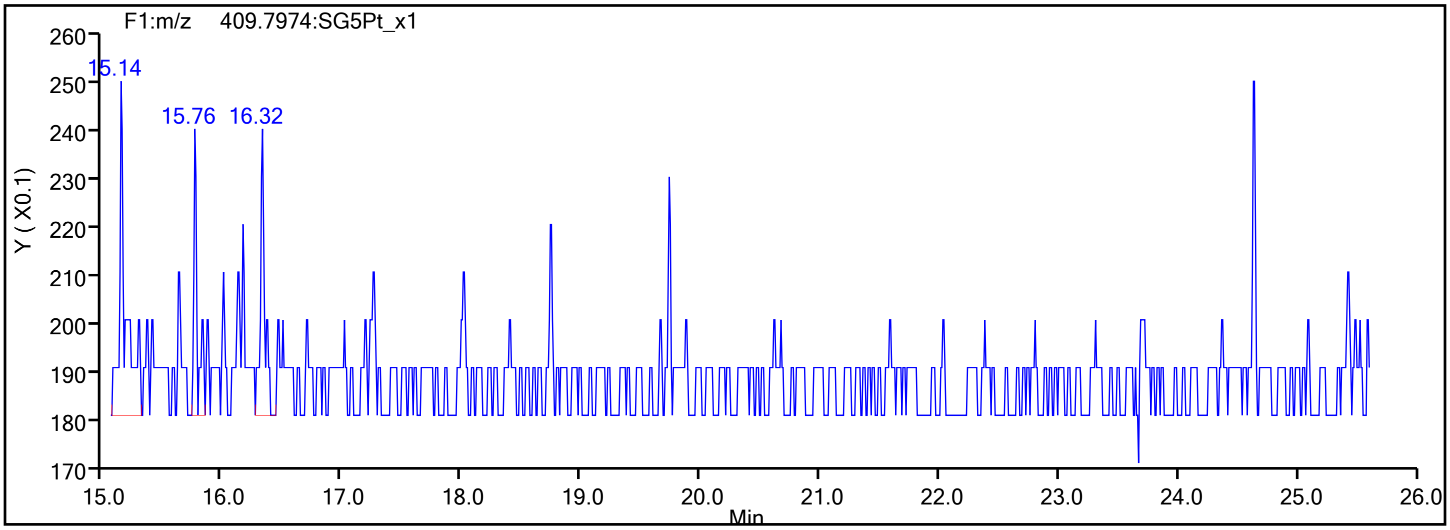

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

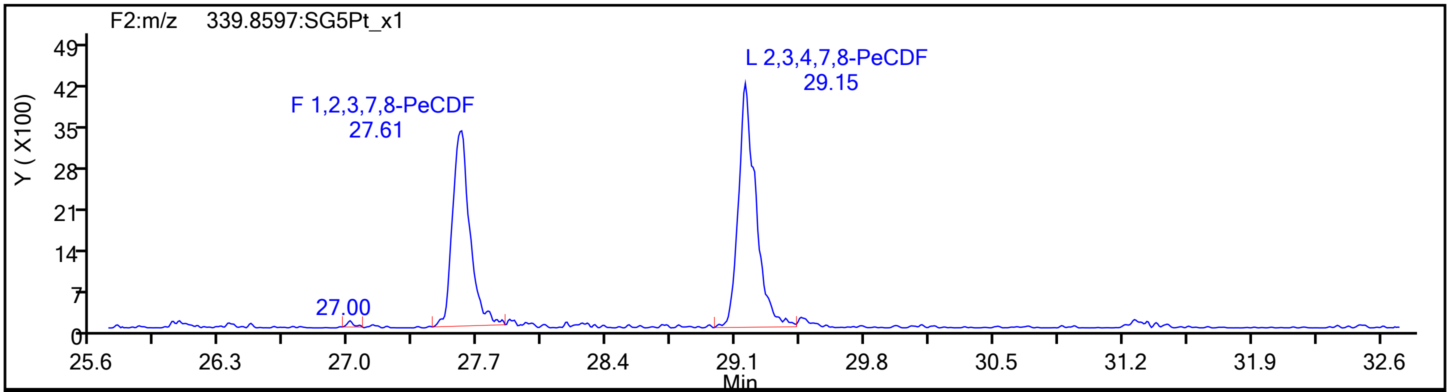

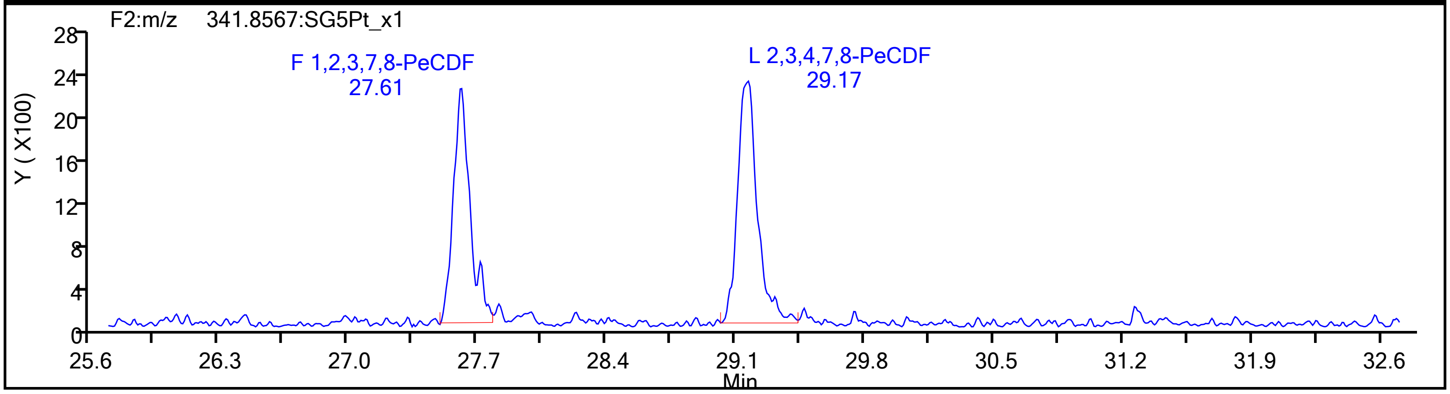

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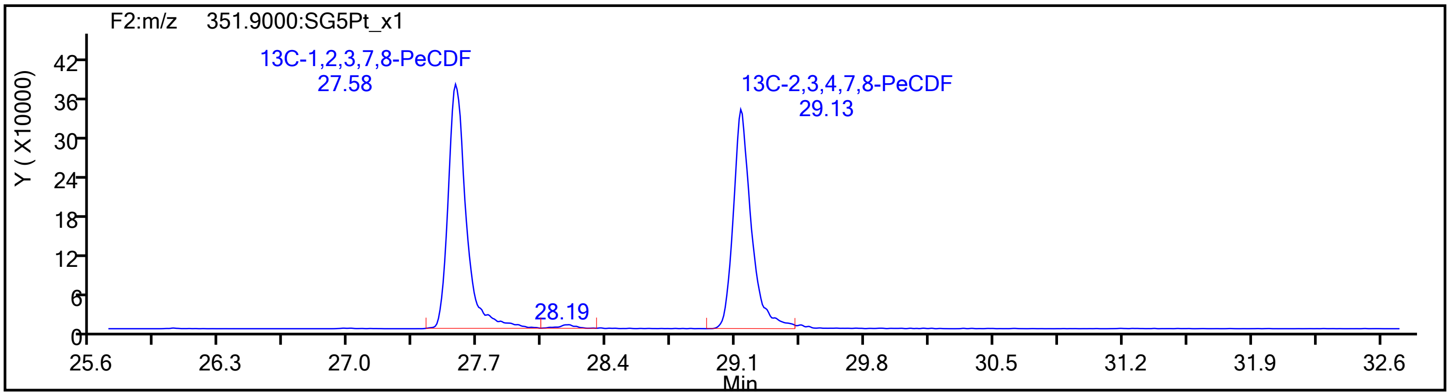

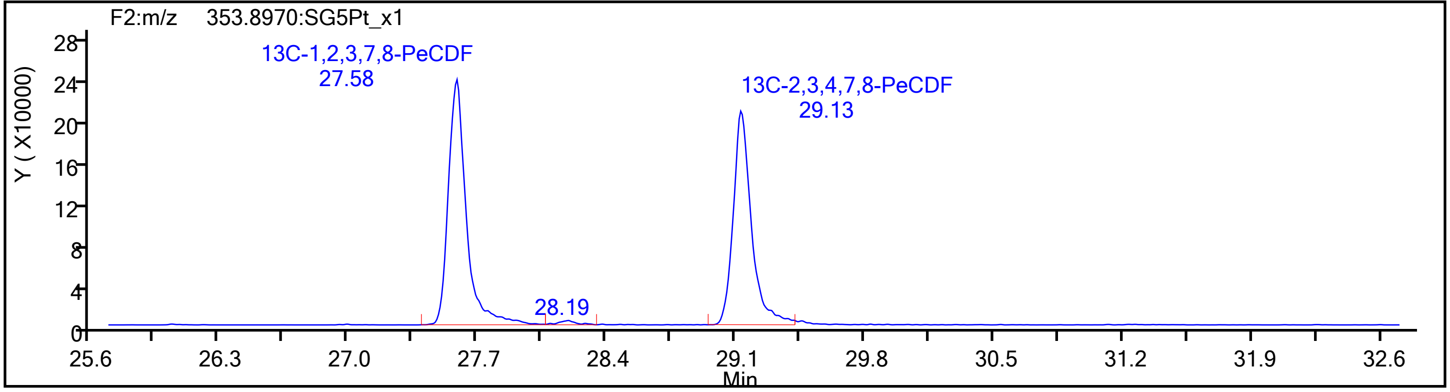

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Eurofins TestAmerica, Sacramento

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PeCDF

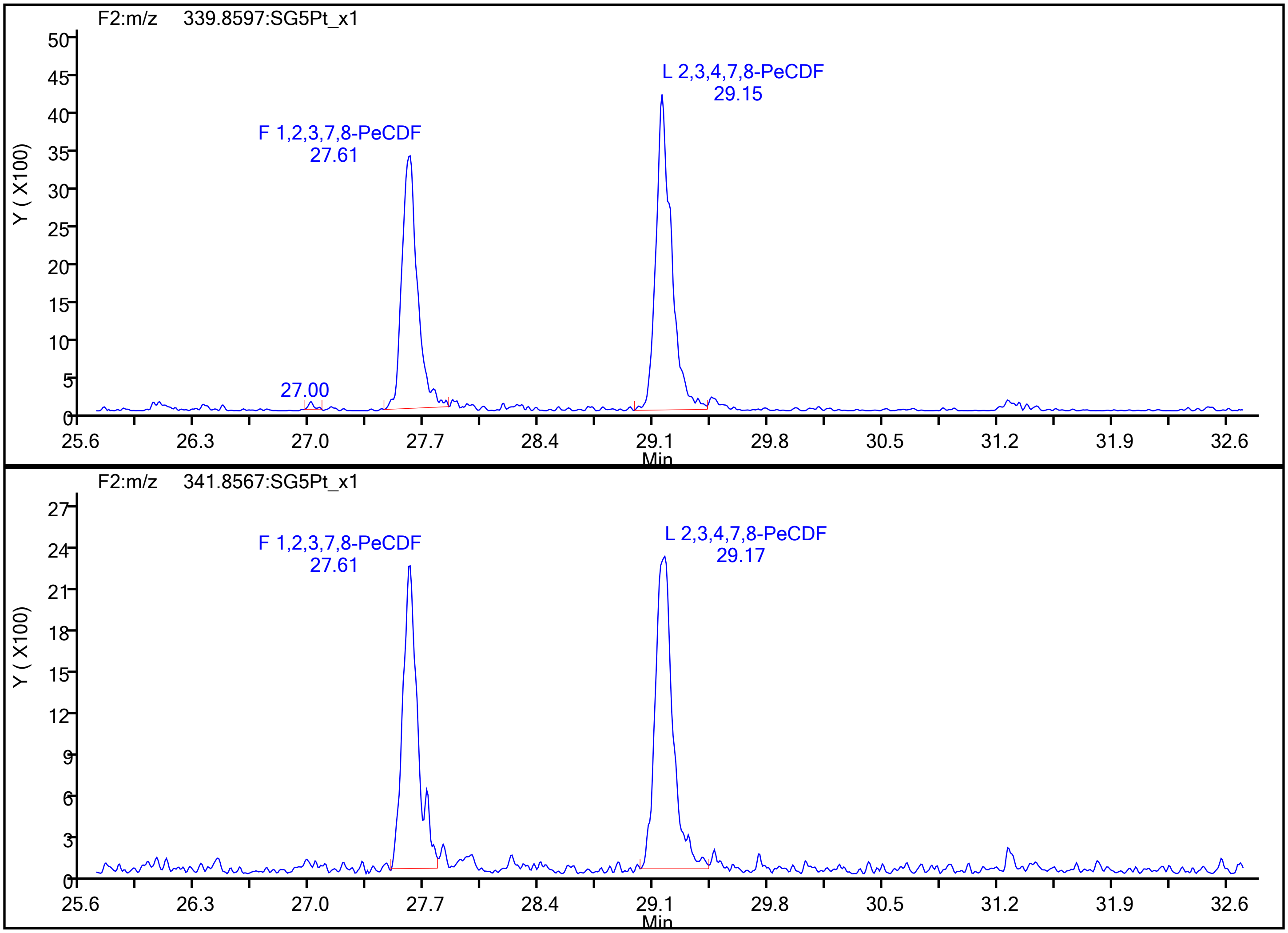

PeCDF Interference Mass

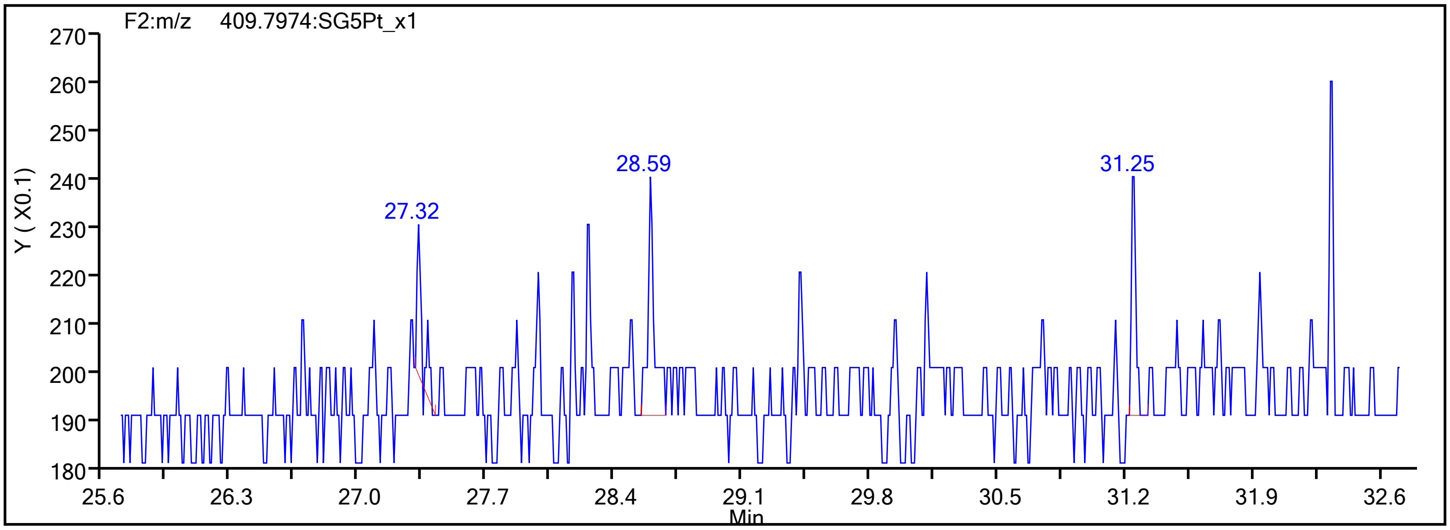

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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PeCDD

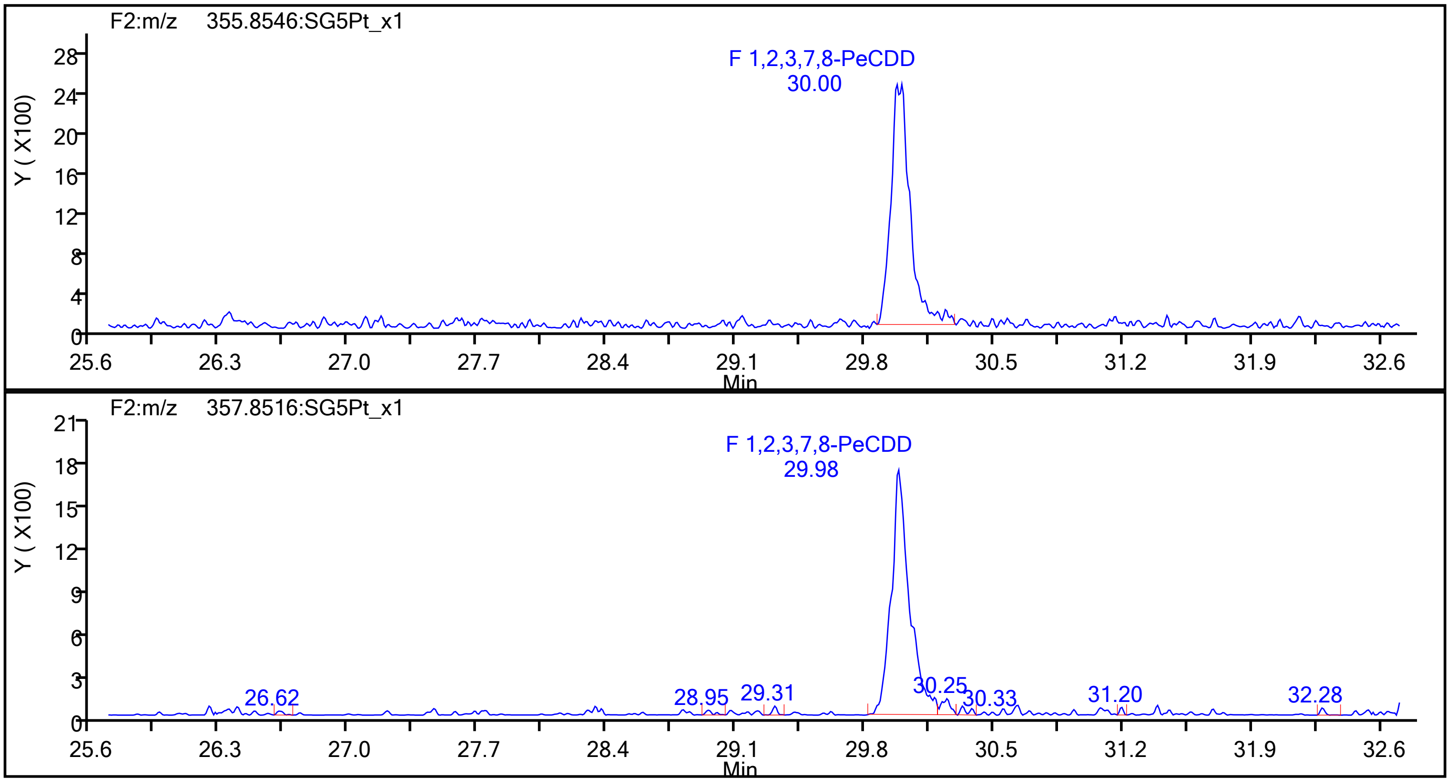

PeCDD Standards

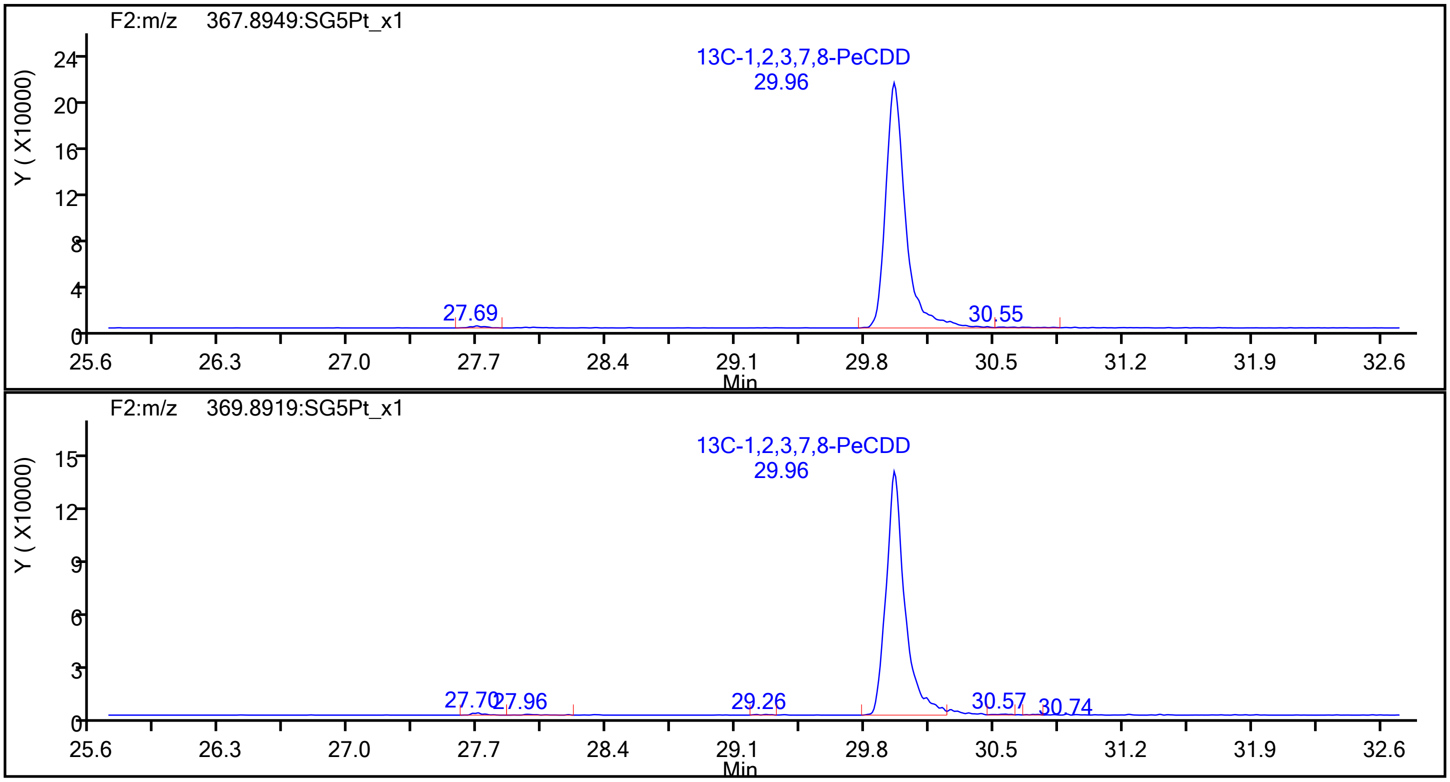

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HxCDF

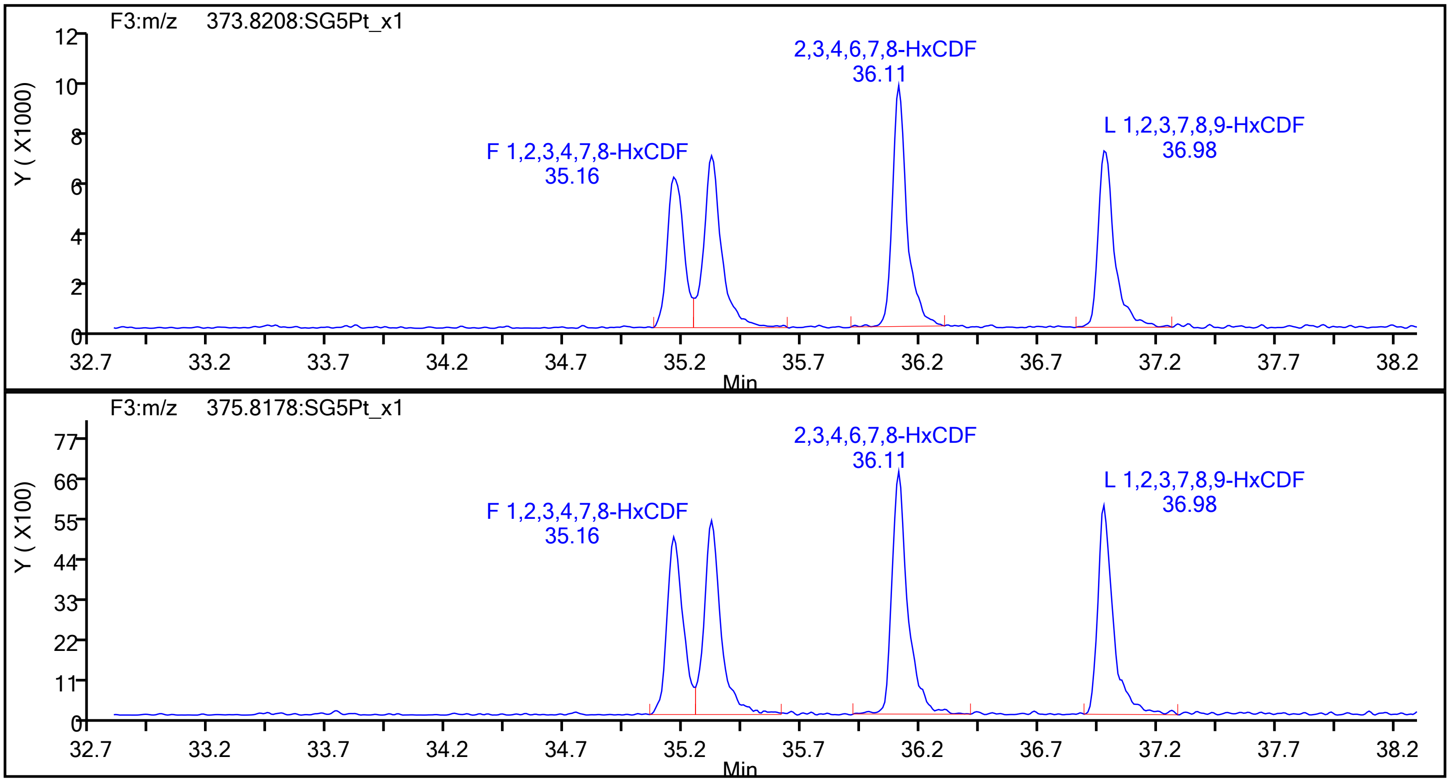

HxCDF Standards

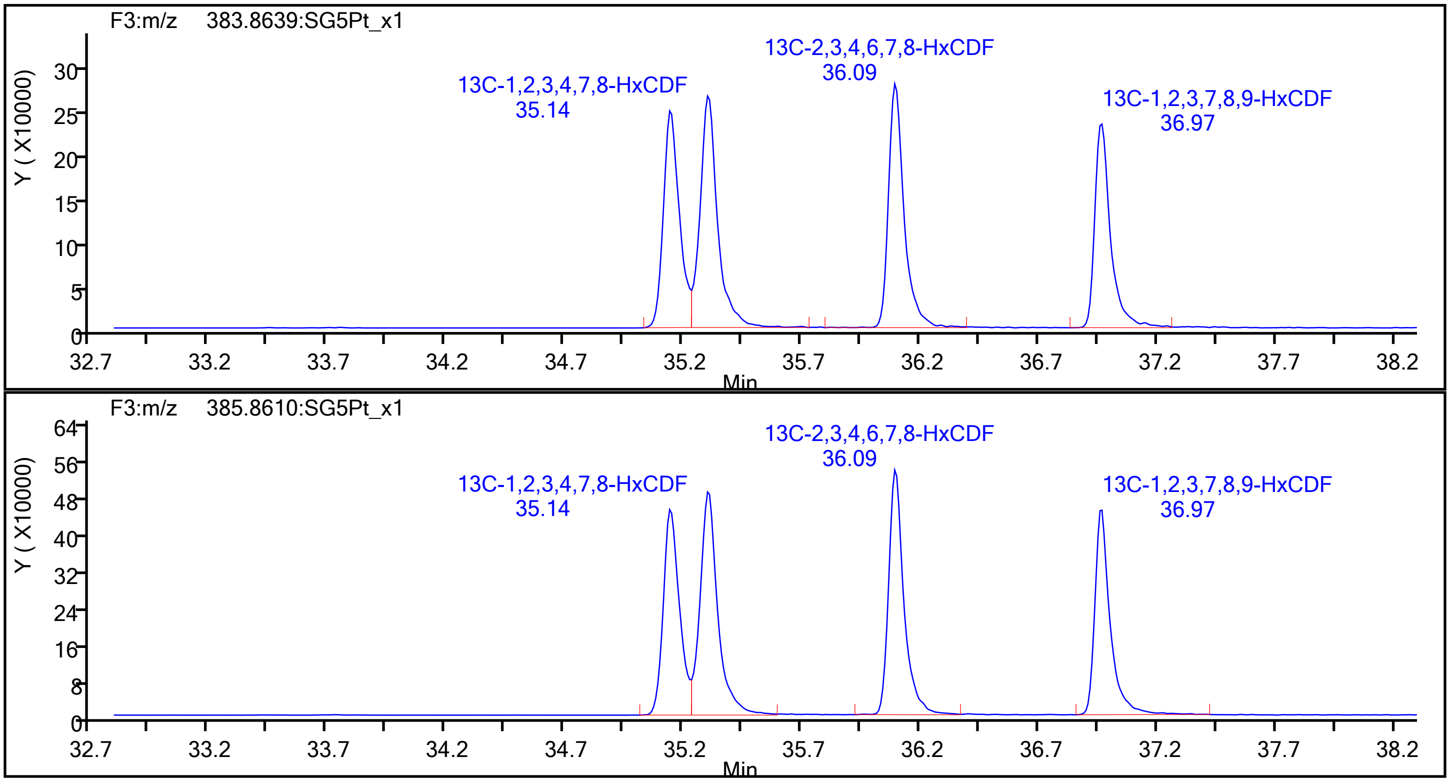

Report Date: 25-Nov-2020 14:44:46 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

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HxCDF

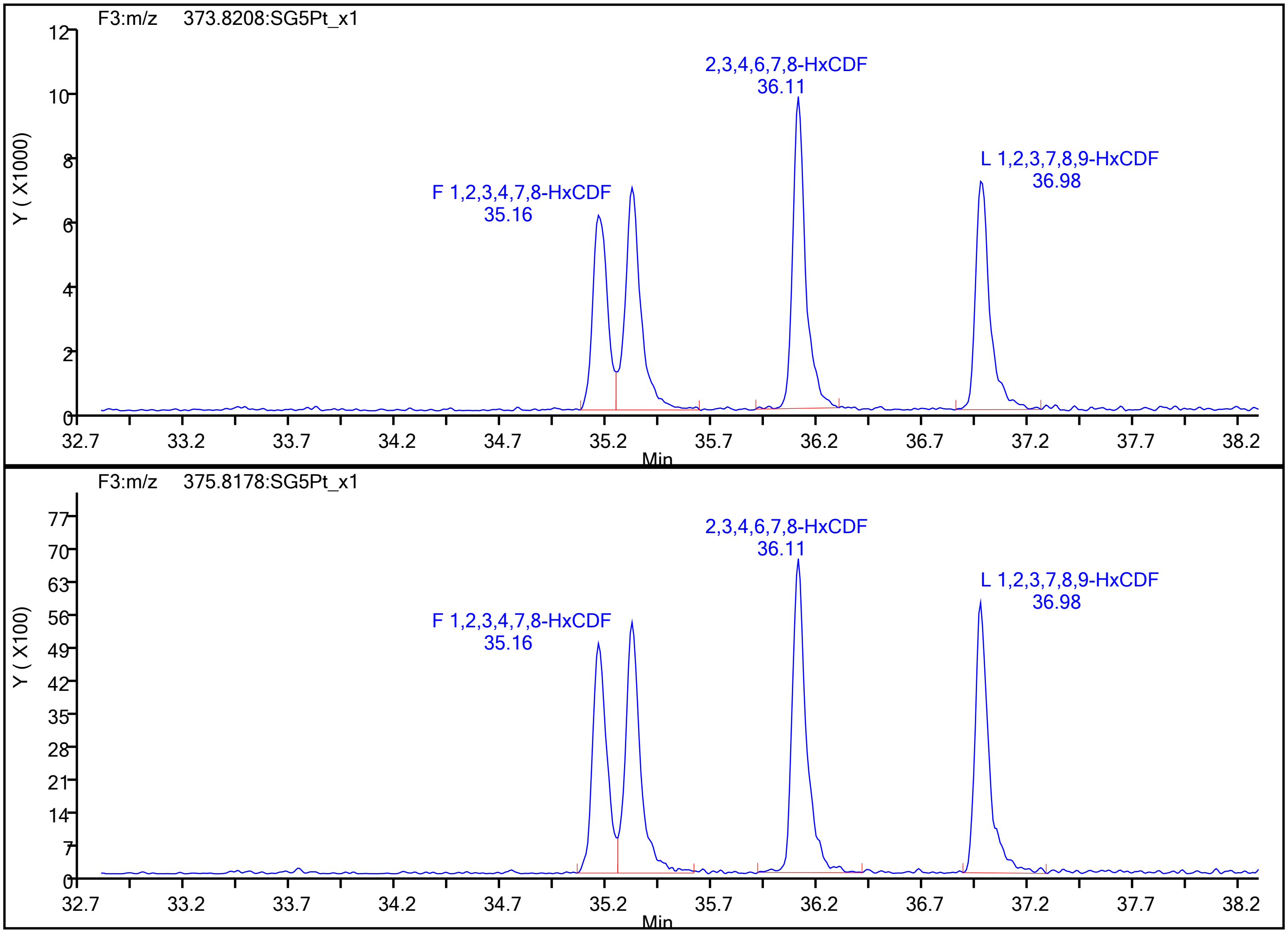

HxCDF Interference Mass

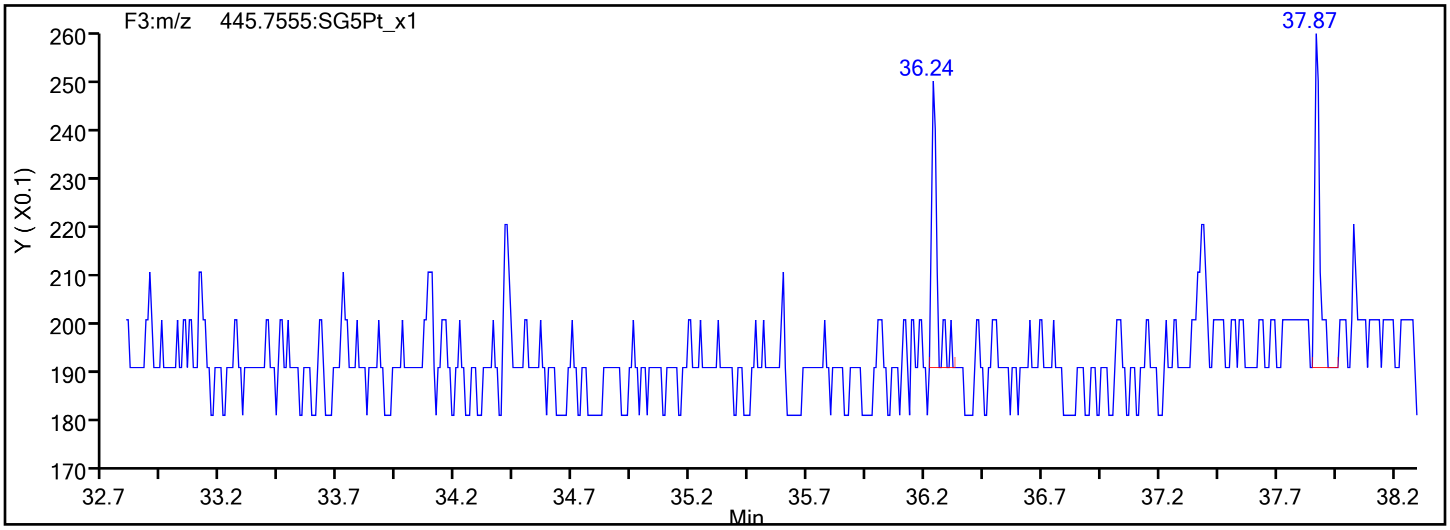

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Eurofins TestAmerica, Sacramento

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HxCDD

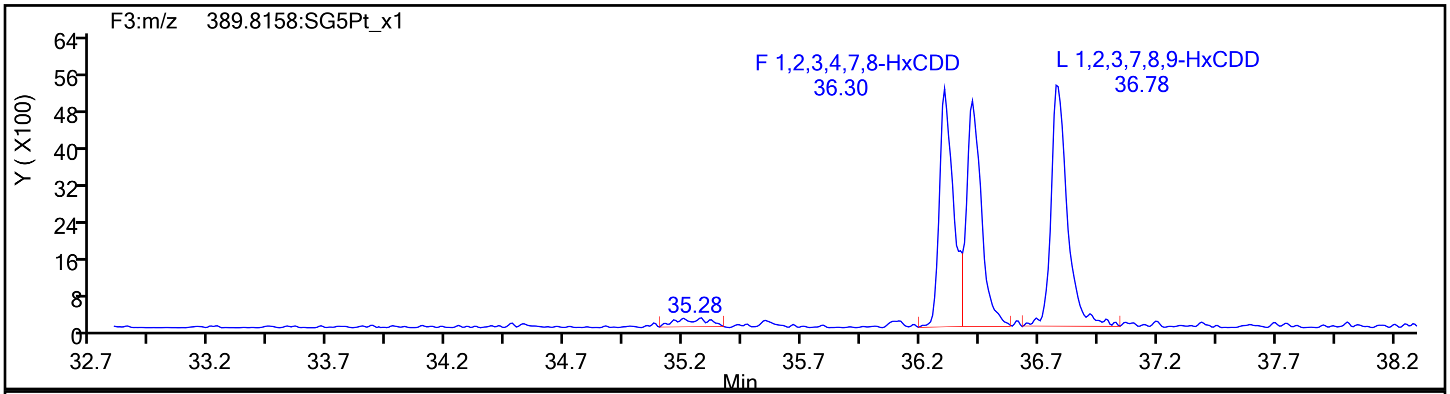

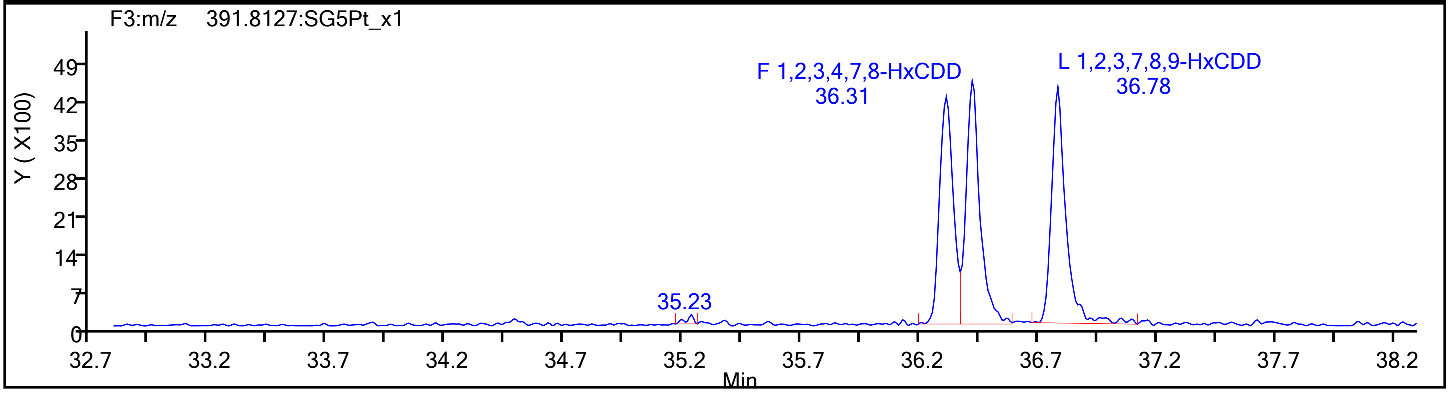

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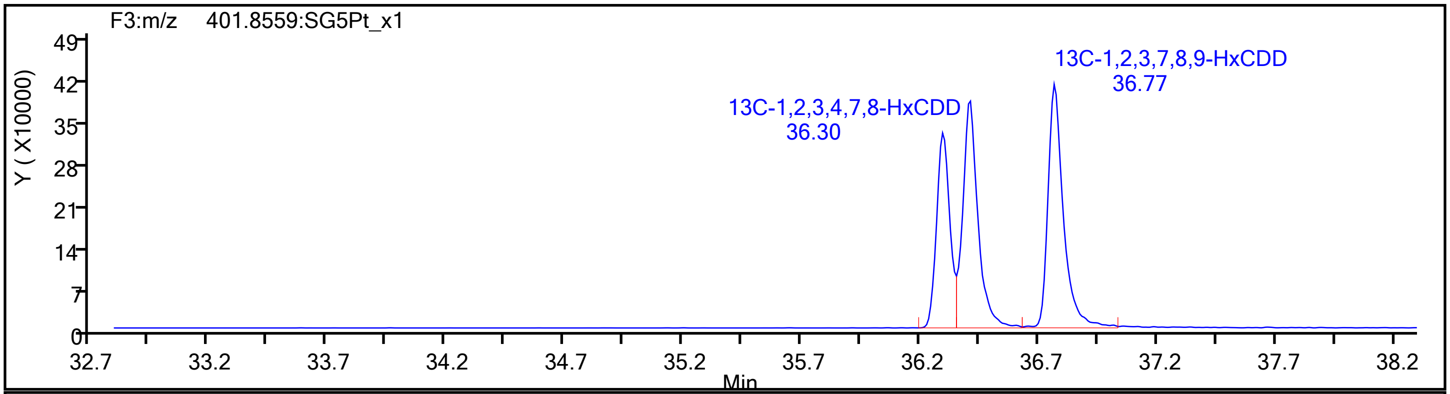

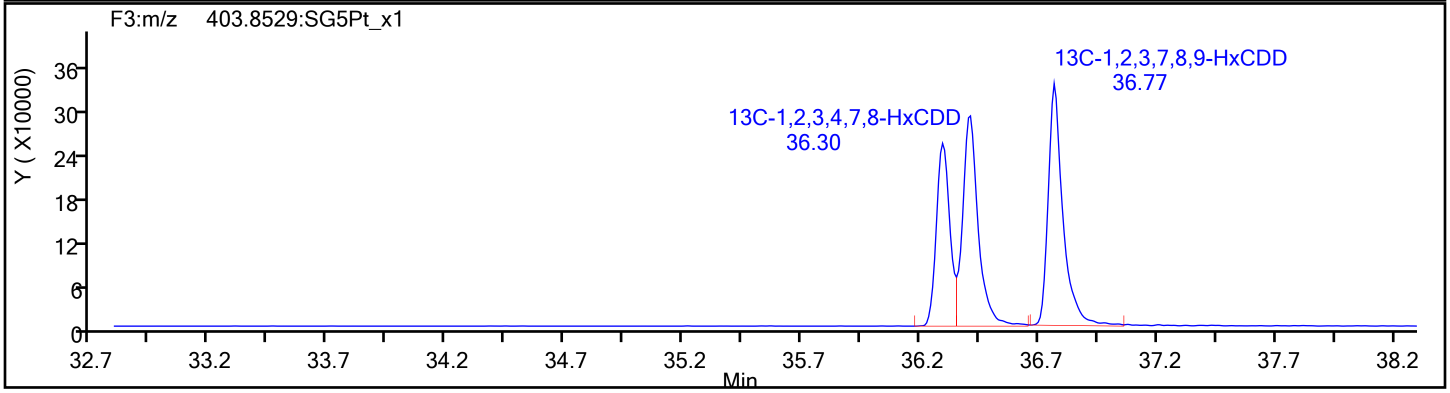

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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HpCDF

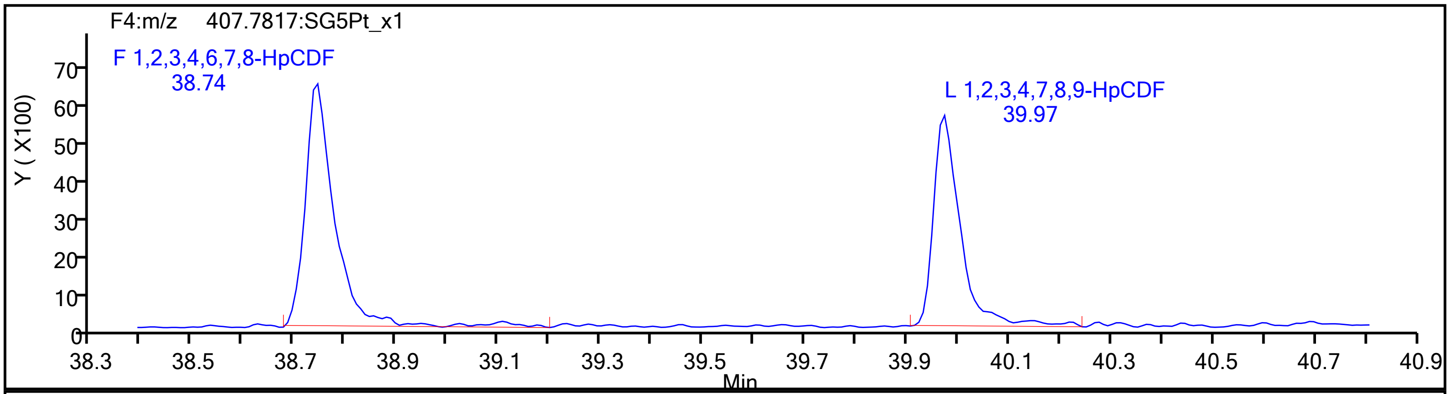

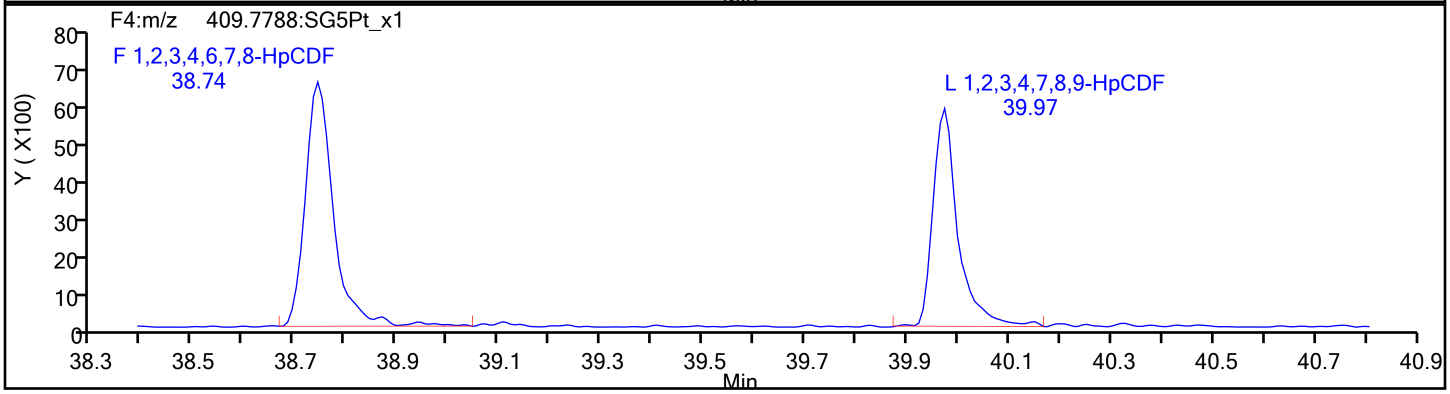

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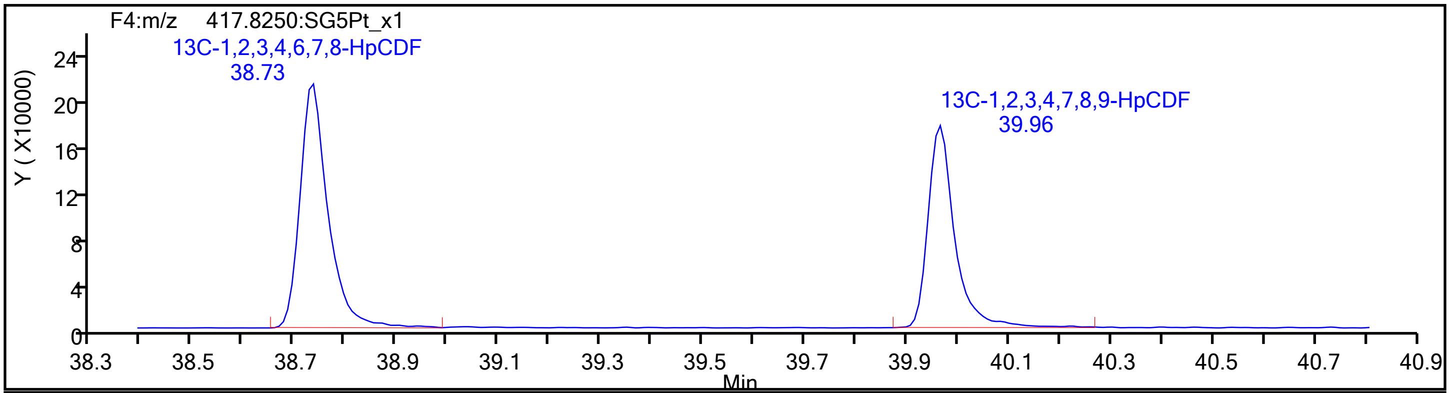

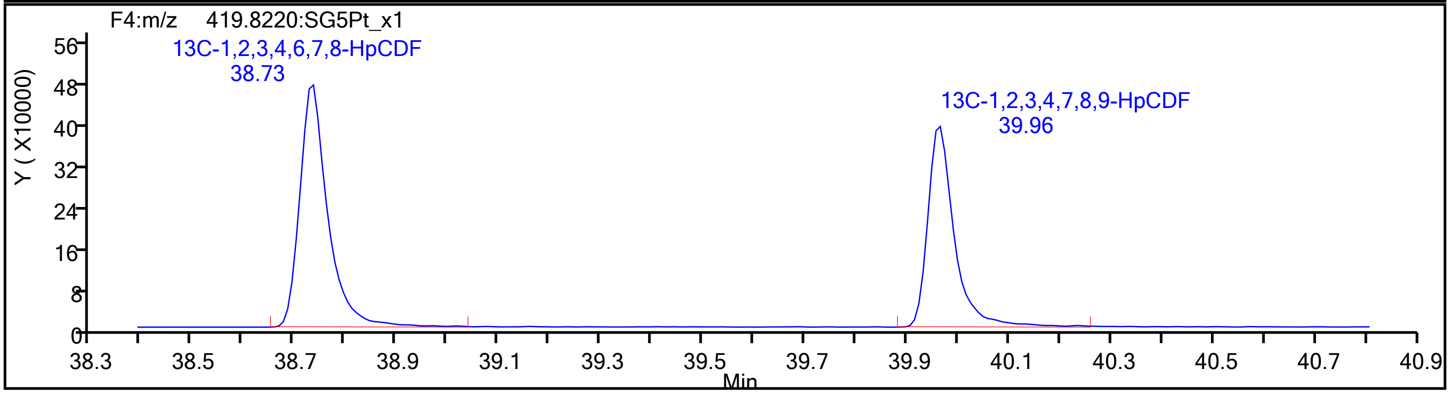

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Eurofins TestAmerica, Sacramento

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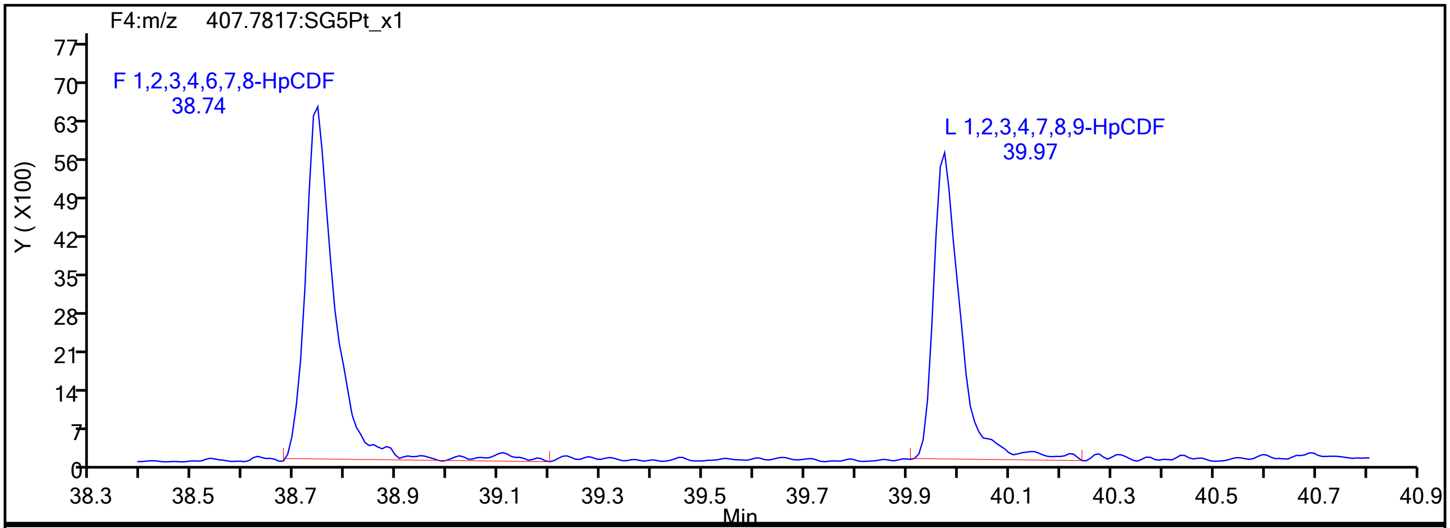

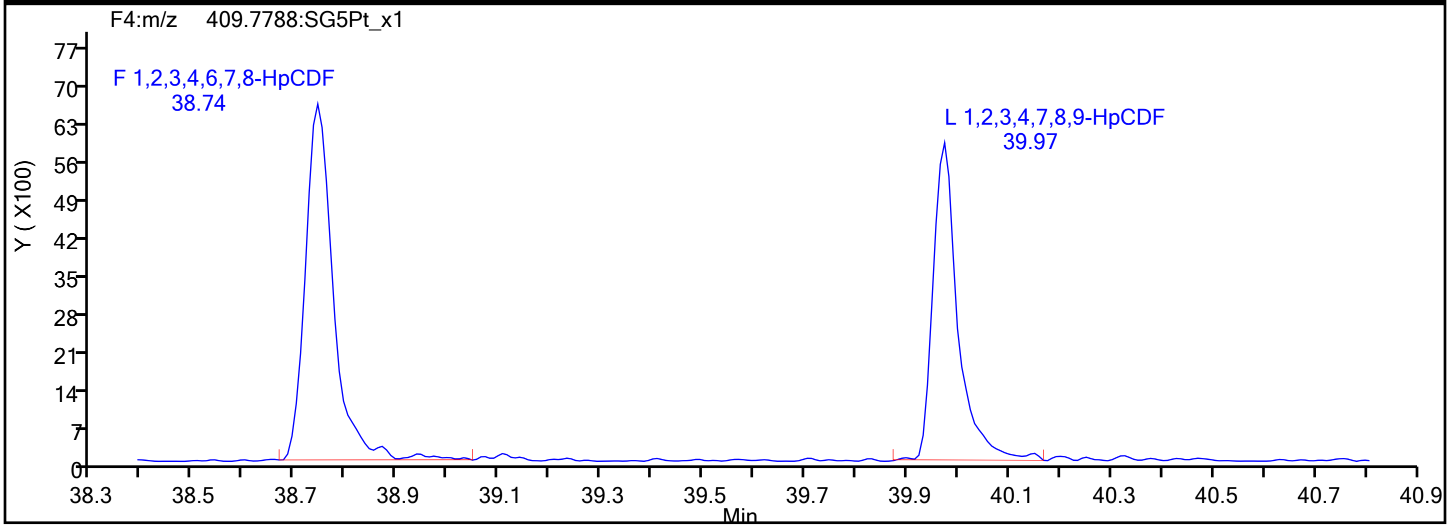

HpCDF Interference Mass

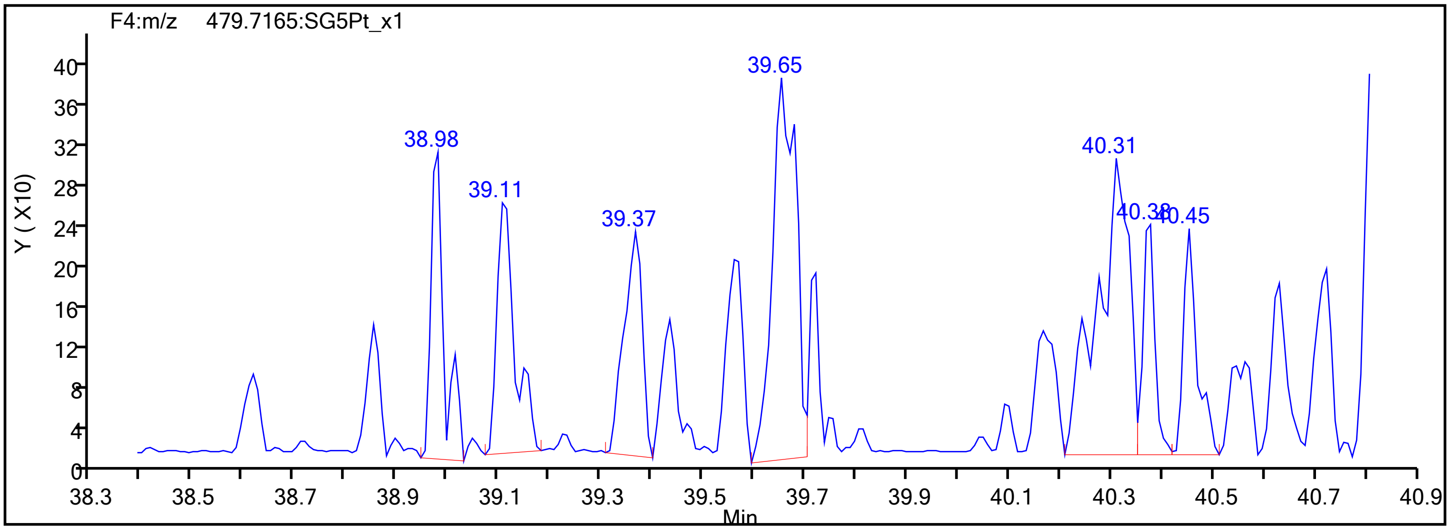

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Eurofins TestAmerica, Sacramento

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HpCDD

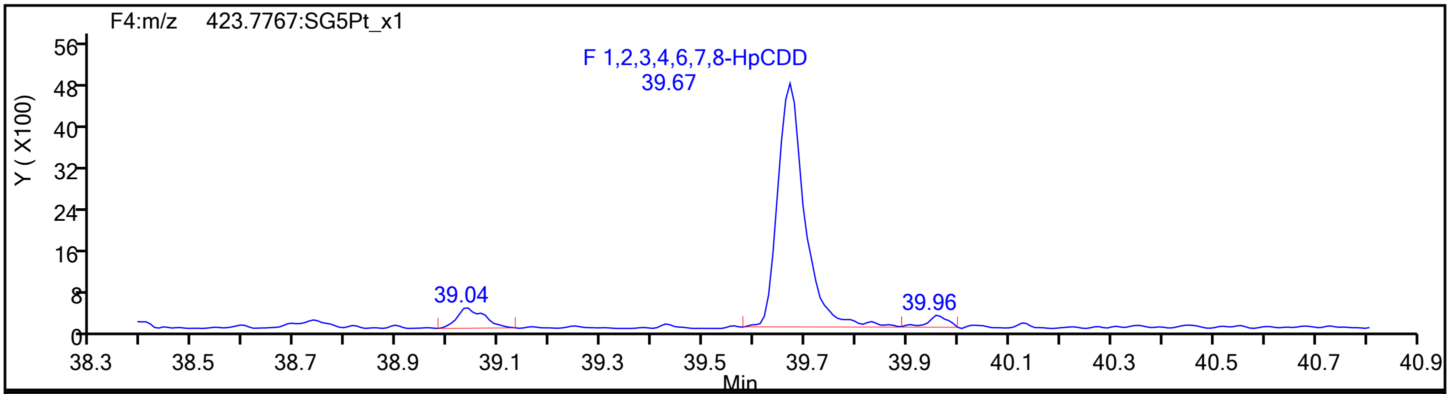

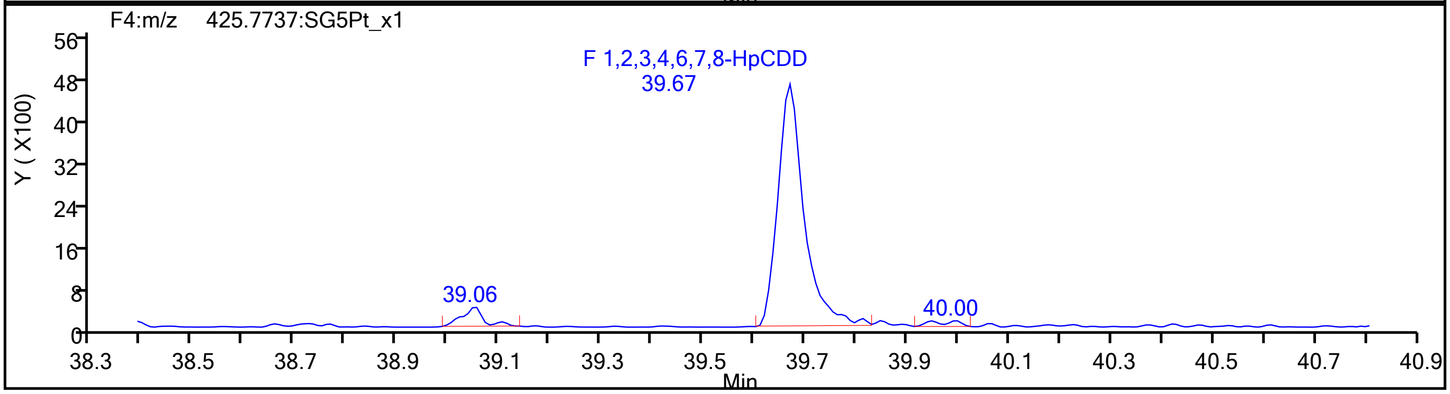

HpCDD Standards

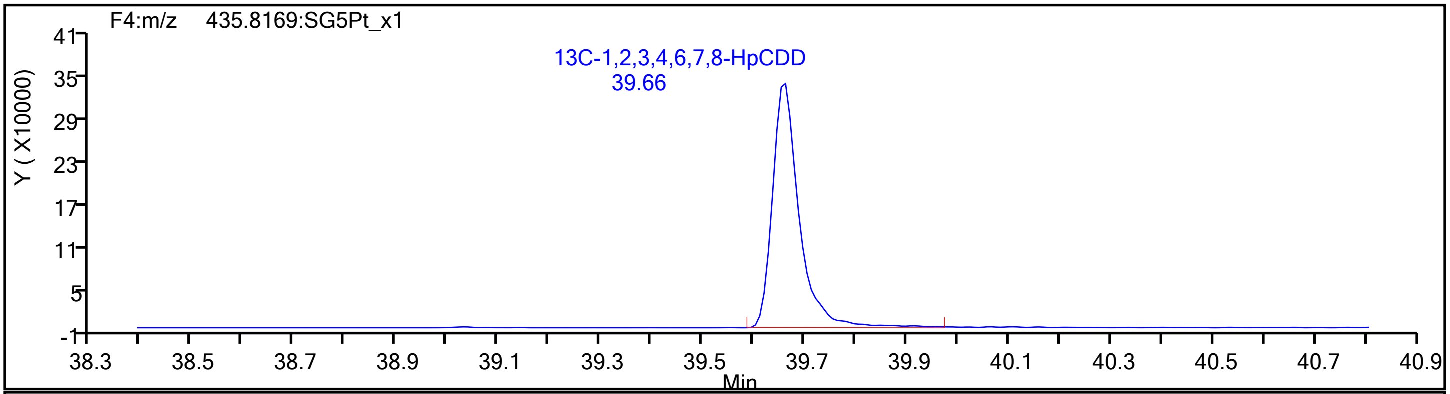

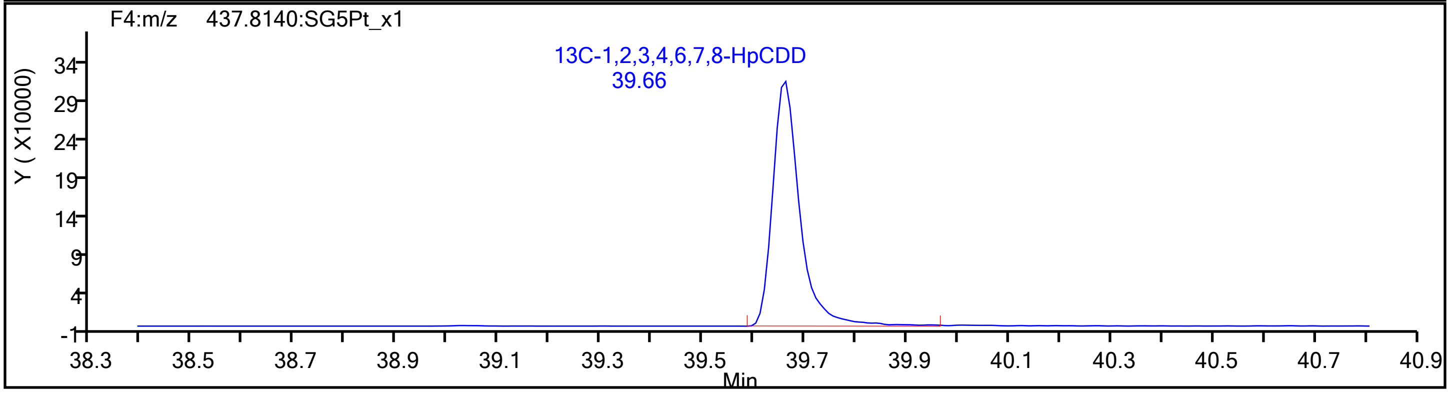

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Eurofins TestAmerica, Sacramento

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OCDF

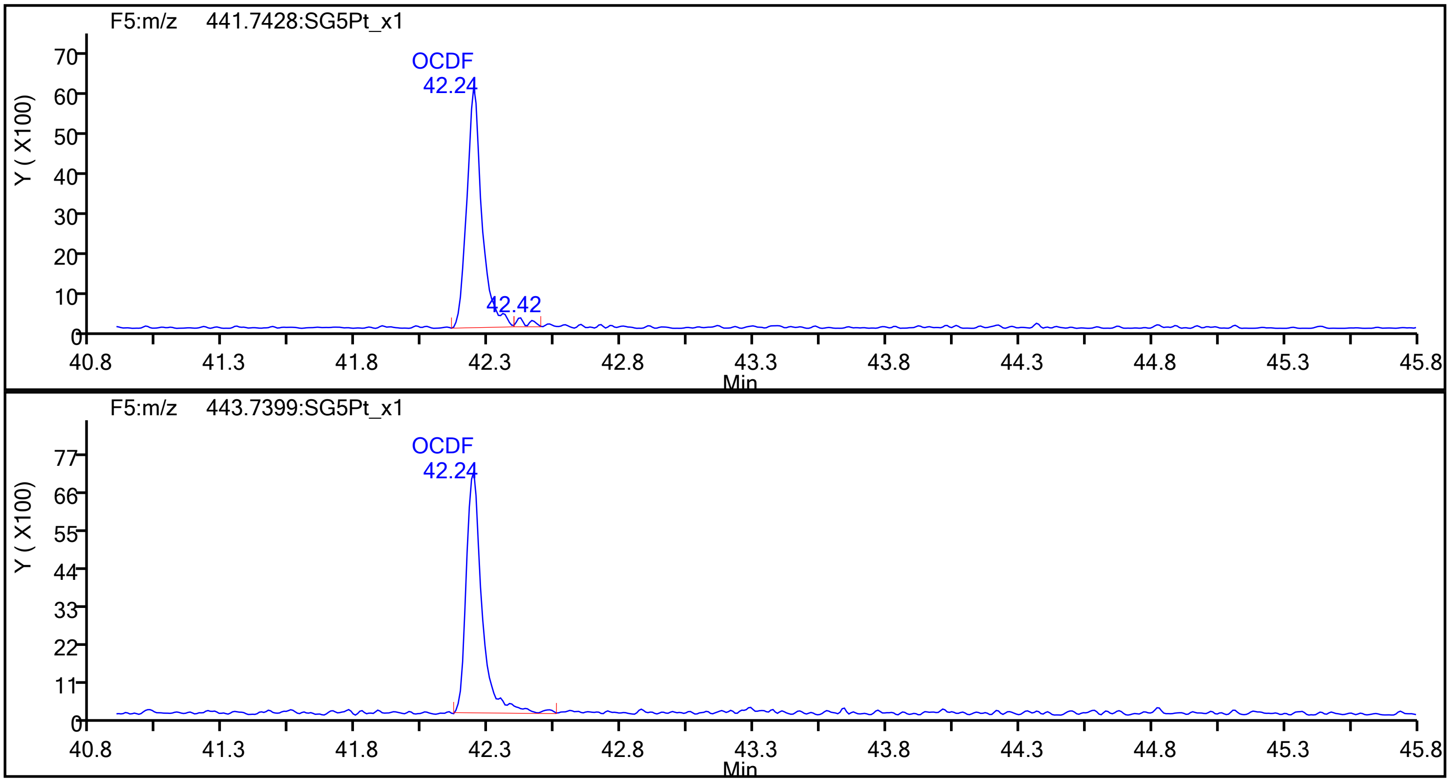

OCDF Standards

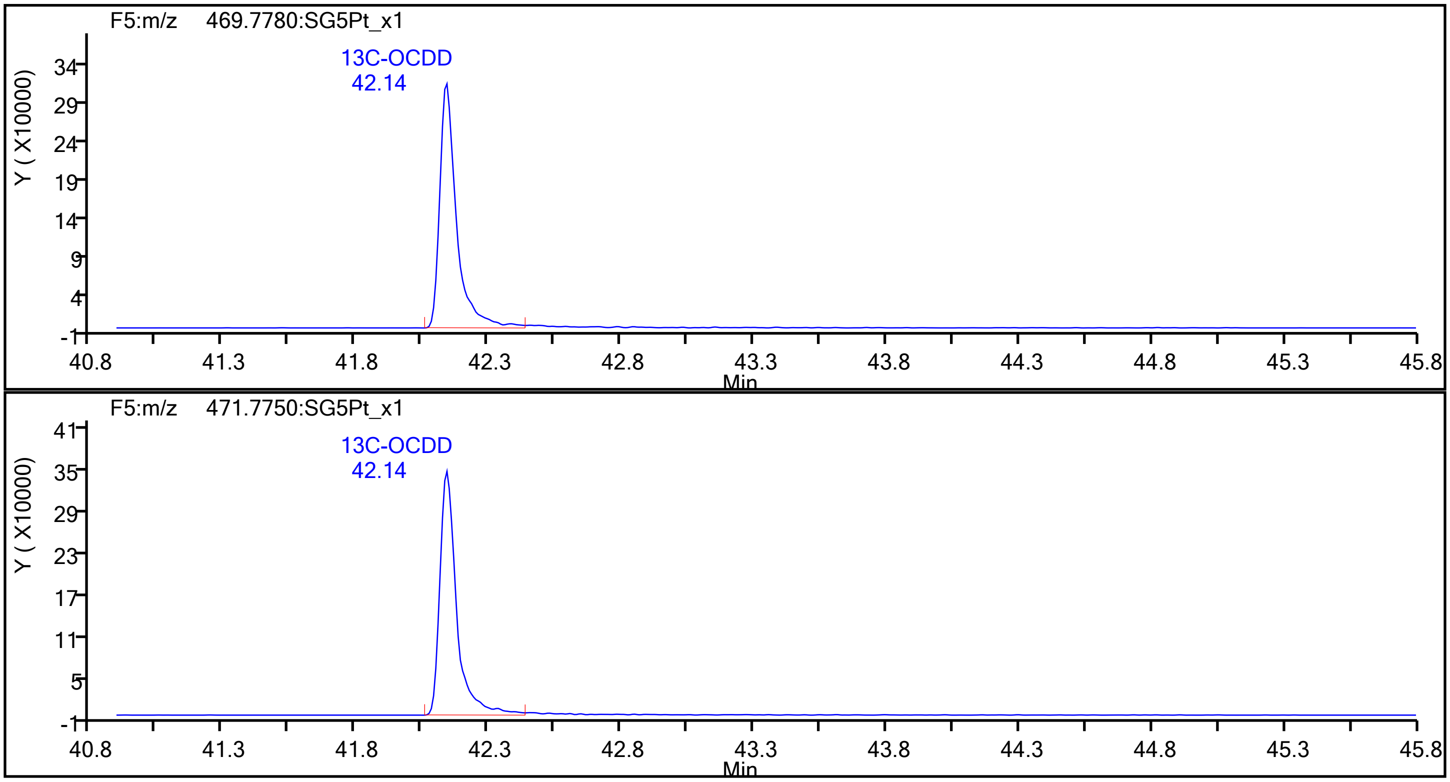

Eurofins TestAmerica, Sacramento

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OCDF

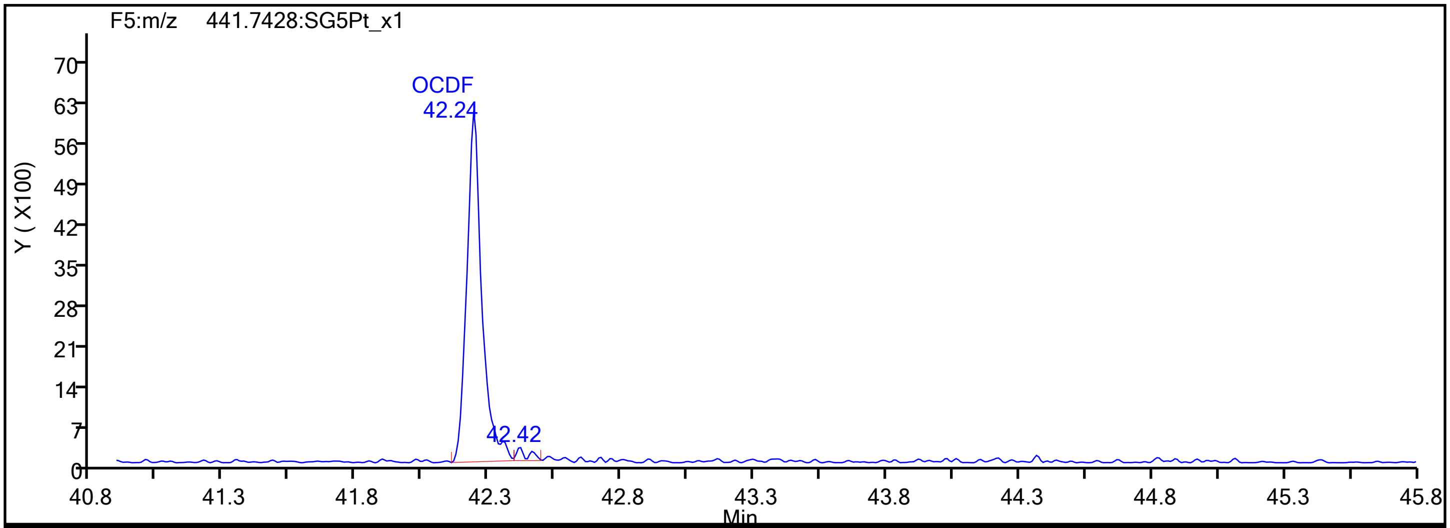

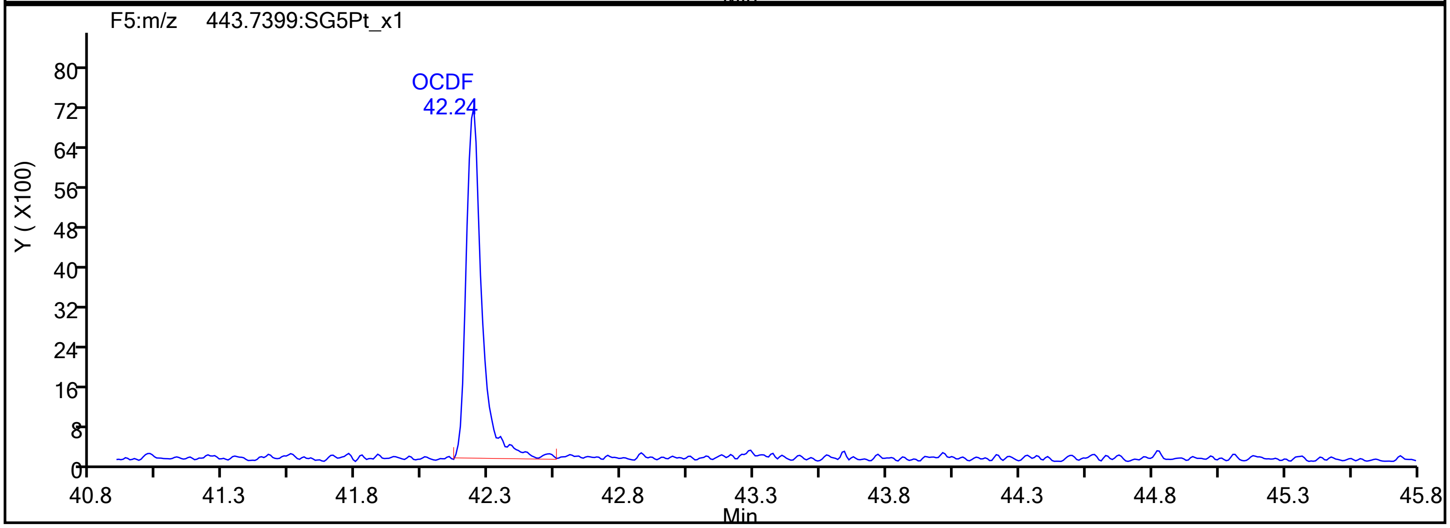

OCDF Interference Mass

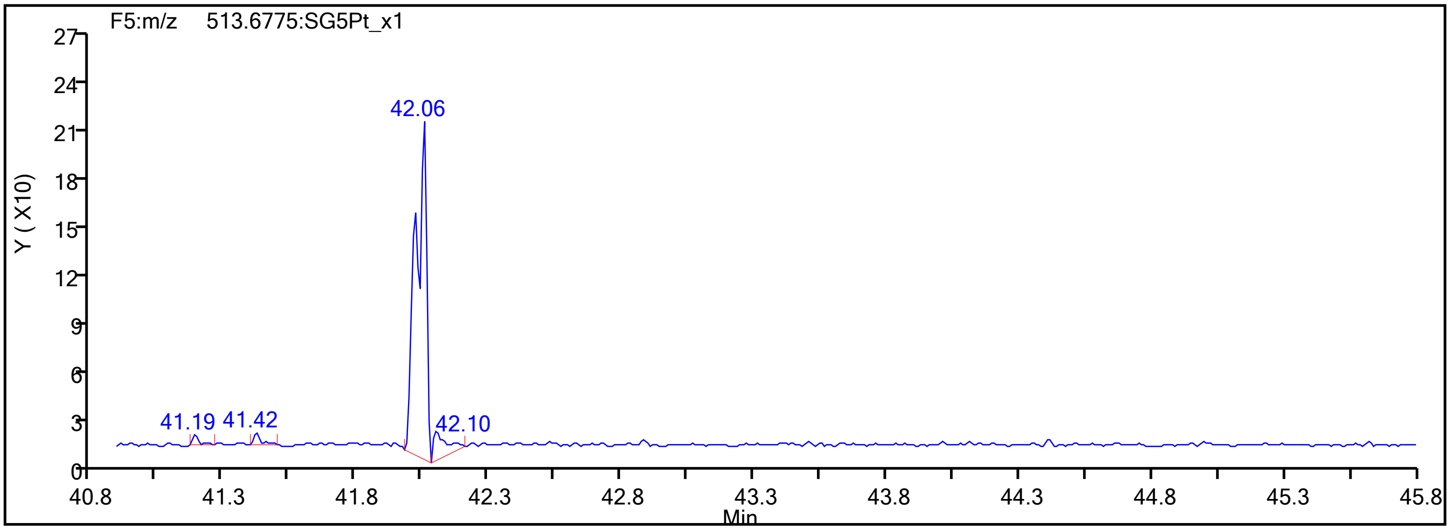

Report Date: 25-Nov-2020 14:44:47
Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

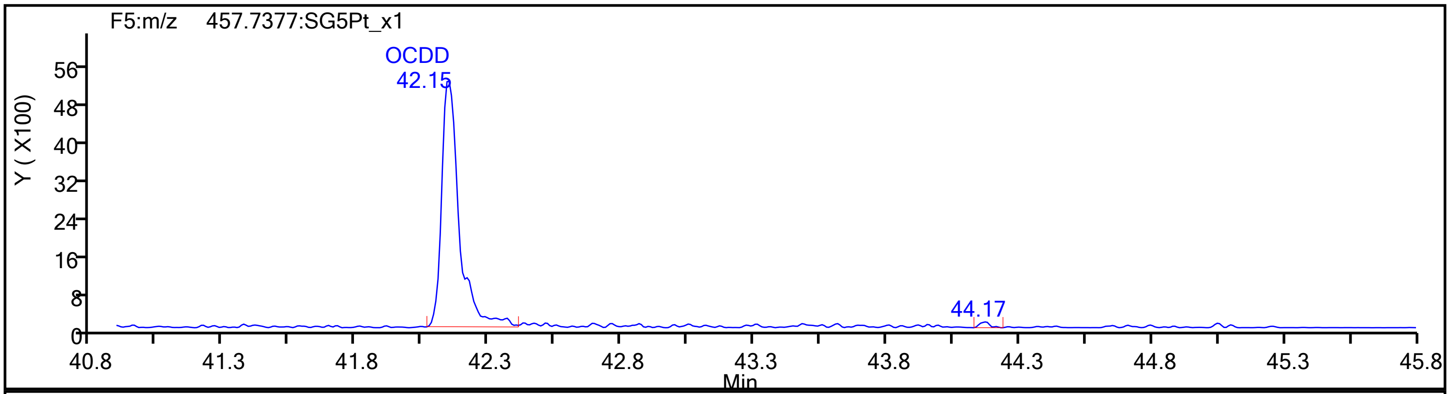

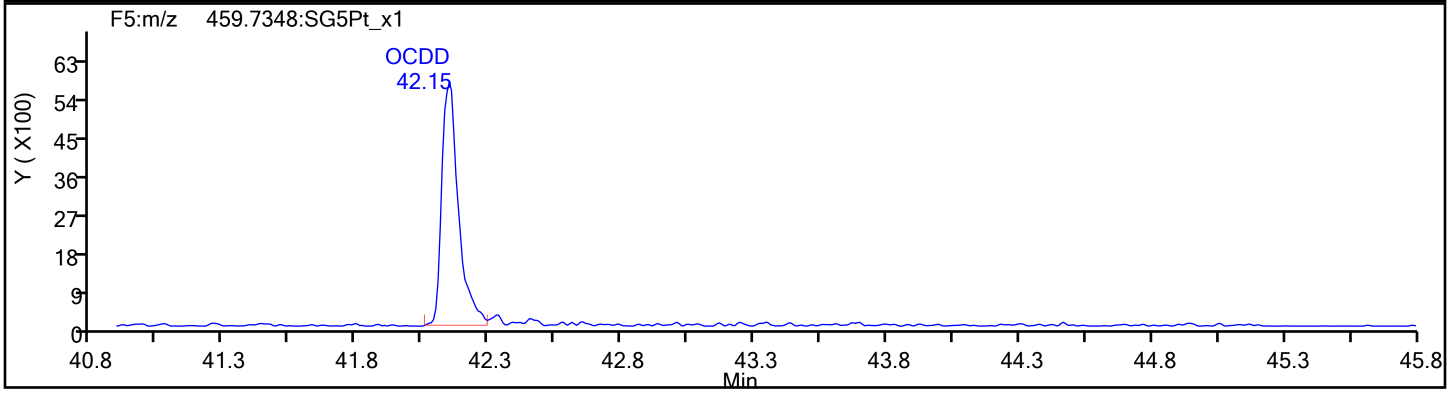

OCDD Standards

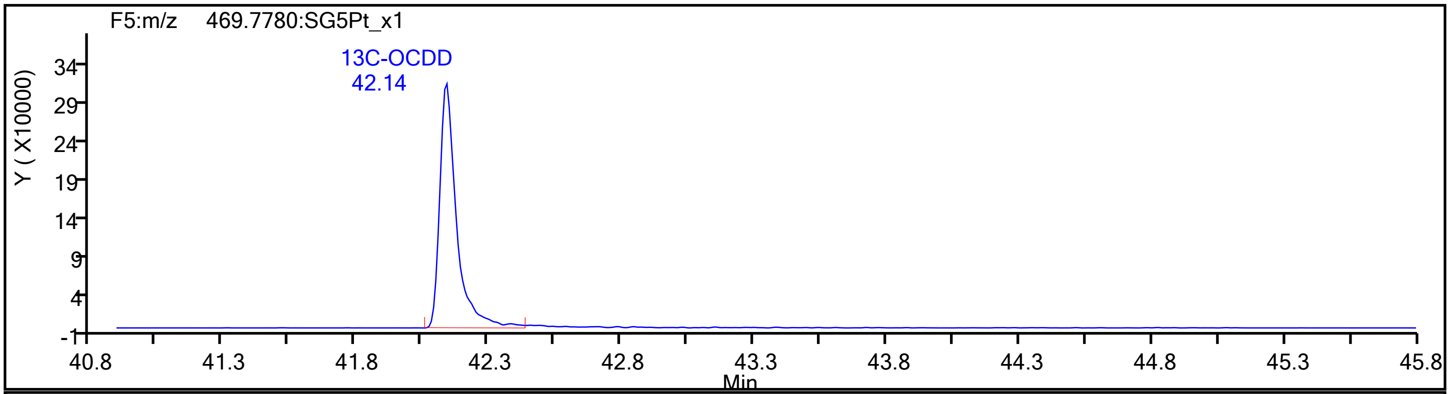

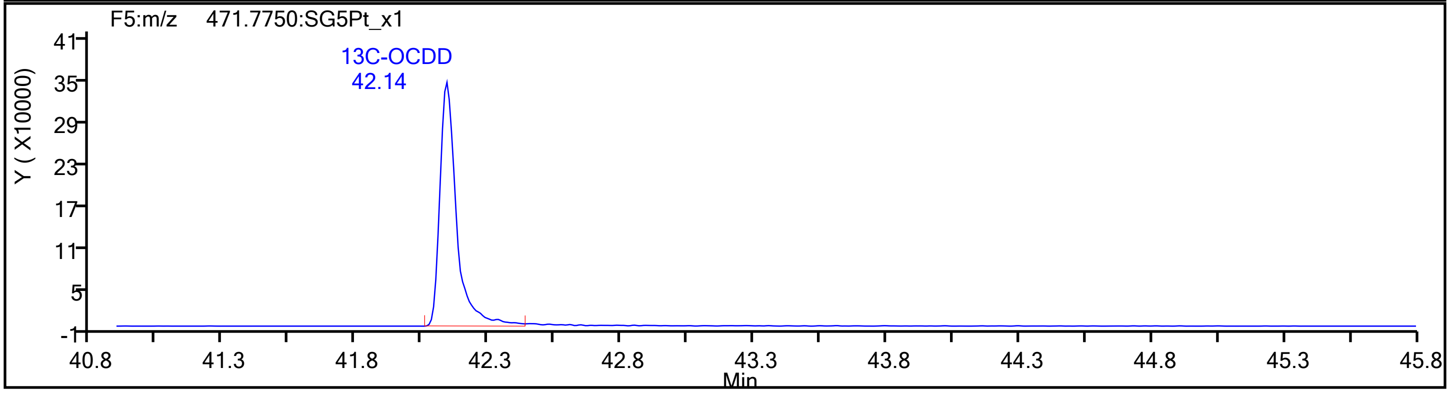

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d		
Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

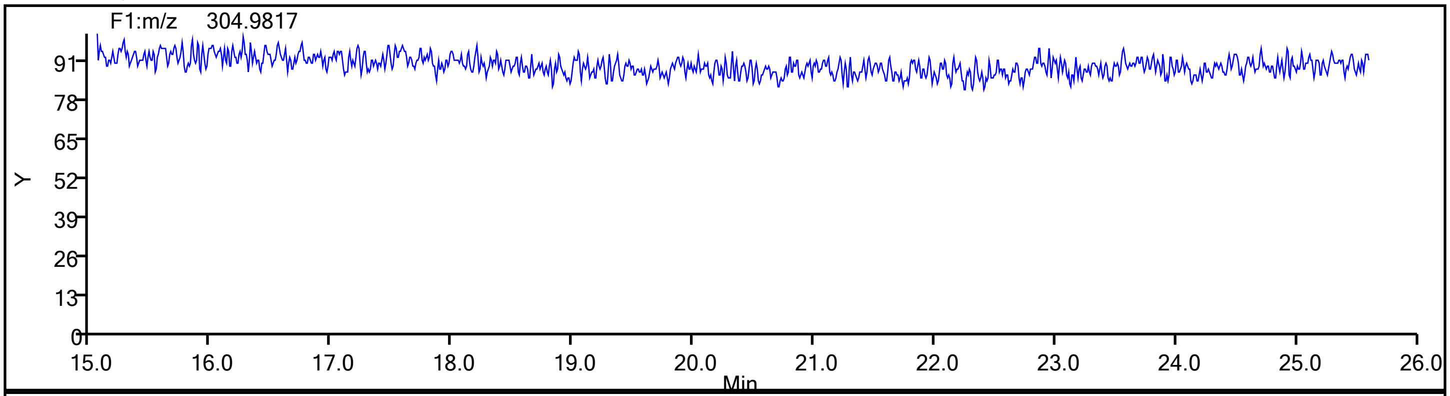

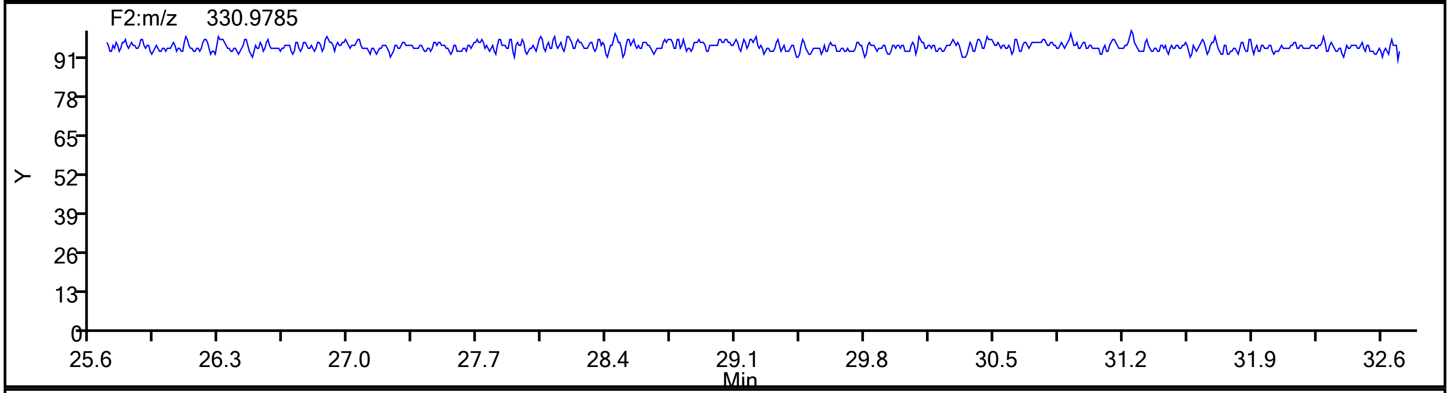

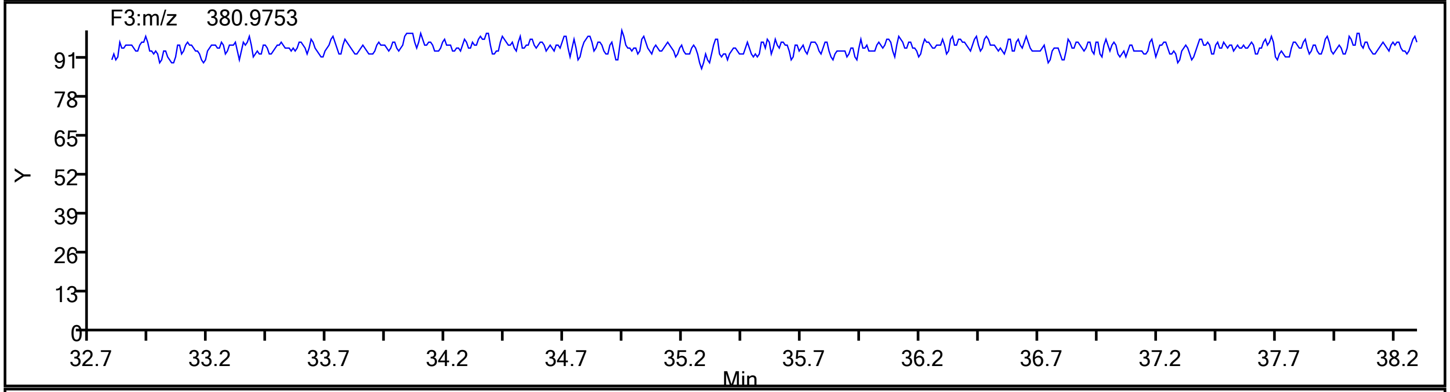

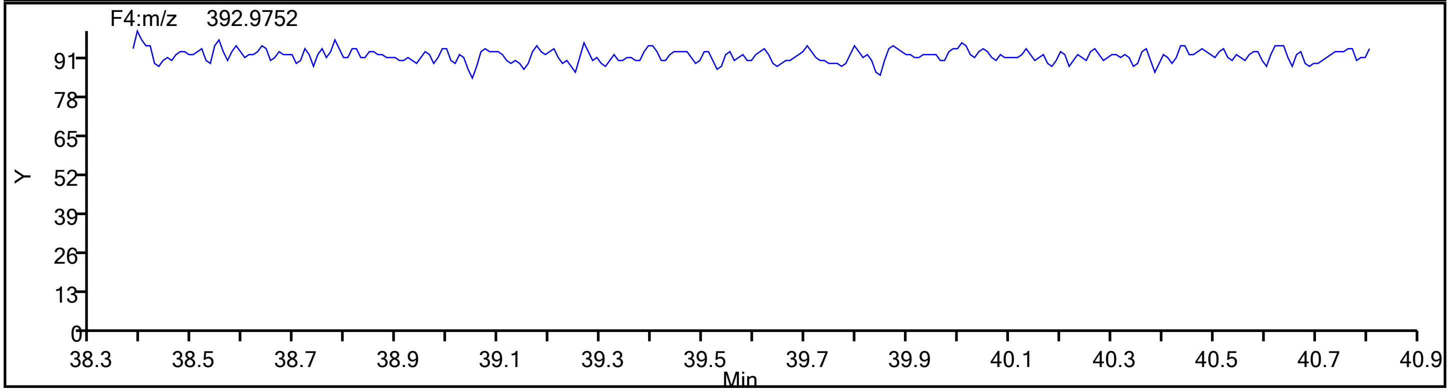

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201123-108081.b\23no20dfs1_36.d

Injection Date:	24-Nov-2020 10:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	434777	Sample Line#:	31
Column Type:	DB-5	Column Dia:	0.32 mm

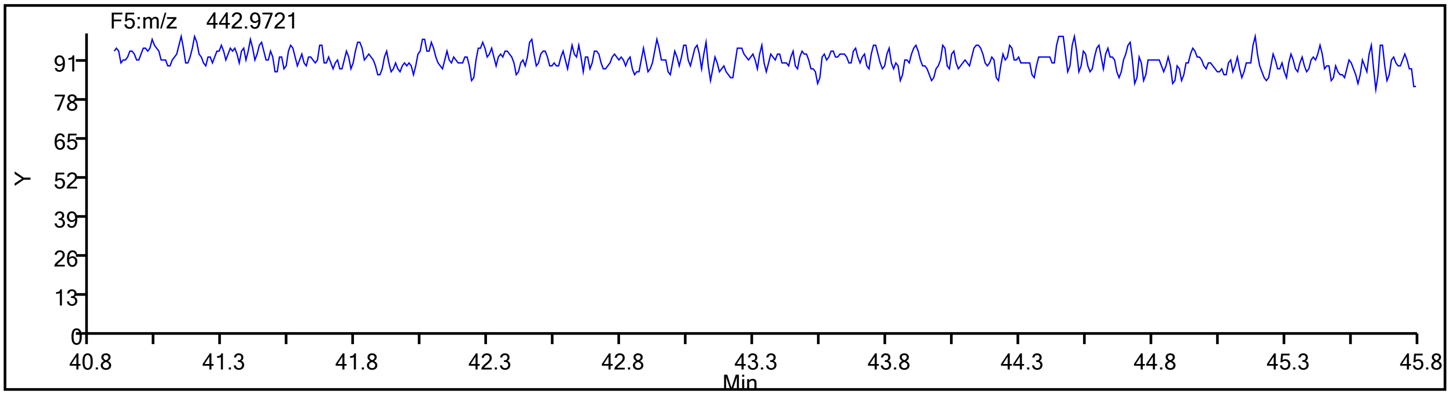

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-432973/2-A
Matrix: Water	Lab File ID: 23NO2010D5_52.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1000(mL)	Date Analyzed: 11/25/2020 01:18
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 435203	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	184		10	1.5
51207-31-9	2,3,7,8-TCDF	184		10	0.86
40321-76-4	1,2,3,7,8-PeCDD	823		50	2.1
57117-41-6	1,2,3,7,8-PeCDF	857		50	3.8
57117-31-4	2,3,4,7,8-PeCDF	903		50	4.4
39227-28-6	1,2,3,4,7,8-HxCDD	892		50	4.0
57653-85-7	1,2,3,6,7,8-HxCDD	887		50	3.7
19408-74-3	1,2,3,7,8,9-HxCDD	896		50	3.4
70648-26-9	1,2,3,4,7,8-HxCDF	873		50	6.5
57117-44-9	1,2,3,6,7,8-HxCDF	848		50	6.0
72918-21-9	1,2,3,7,8,9-HxCDF	853		50	4.7
60851-34-5	2,3,4,6,7,8-HxCDF	854		50	4.6
35822-46-9	1,2,3,4,6,7,8-HpCDD	859		50	3.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	851		50	8.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	875		50	12
3268-87-9	OCDD	1610		100	3.1
39001-02-0	OCDF	1670		100	2.7
41903-57-5	Total TCDD	184		10	1.5
30402-14-3	Total TCDF	184		10	0.86
36088-22-9	Total PeCDD	823		50	2.1
30402-15-4	Total PeCDF	1760		50	4.1
34465-46-8	Total HxCDD	2680		50	3.7
55684-94-1	Total HxCDF	3430		50	5.4
37871-00-4	Total HpCDD	859		50	3.4
38998-75-3	Total HpCDF	1730		50	10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-432973/2-A

Matrix: Water Lab File ID: 23NO2010D5_52.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1000(mL) Date Analyzed: 11/25/2020 01:18

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 435203 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		20-175
89059-46-1	13C-2,3,7,8-TCDF	98		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	80		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	88		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	86		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	74		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	88		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	91		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	92		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	96		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	75		20-186
114423-97-1	13C-OCDD	73		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		31-191

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Lims ID: LCS 320-432973/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Nov-2020 01:18:50 ALS Bottle#: 52 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-432973/2-A LCS 320-432973/2-A RA
Misc. Info.: 23NO2010D5
Operator ID: SMA, ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Nov-2020 08:07:24 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1603

First Level Reviewer: dadunj Date: 27-Nov-2020 08:08:24

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.854	29385994	0.73	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.340	39354341	0.80	1.3598	98.5	98.5	0.3935	0.3935	98.48	
2,3,7,8-TCDF	17.354	3282866	0.74	0.9077	9.190	9.190	0.0430	0.0430	91.90	
A Non-2,3,7,8-sub-TCDF	17.029						0.0430	0.0430		
S Total TCDF					9.190	9.190	0.0430	0.0430		
D 13C-2,3,7,8-TCDD	18.050	25063281	0.74	1.0536	81.0	81.0	0.2320	0.2320	80.95	
2,3,7,8-TCDD	18.065	2320658	0.78	1.0061	9.203	9.203	0.0757	0.0757	92.03	
$ 37Cl4-2,3,7,8-TCDD	18.065	12582092		1.0488	40.8	40.8	0.0566	0.0566	102	
A Non-2,3,7,8-sub-TCDD	17.483						0.0757	0.0757		
S Total TCDD					9.203	9.203	0.0757	0.0757		
D 13C-1,2,3,7,8-PeCDF	22.383	29272774	1.60	1.1306	88.1	88.1	0.2212	0.2212	88.11	
1,2,3,7,8-PeCDF	22.410	11473466	1.59	0.9147	42.8	42.8	0.1919	0.1919	85.70	
D 13C-2,3,4,7,8-PeCDF	23.733	26636072	1.60	1.0539	86.0	86.0	0.2372	0.2372	86.01	
2,3,4,7,8-PeCDF	23.760	11435253	1.60	0.9508	45.2	45.2	0.2199	0.2199	90.30	
A F1 PeCDFs	19.963						0.0490	0.0490		
A Non-2,3,7,8-sub-PeCDF	23.127						0.2046	0.2046		
S Total PeCDF					88.0	88.0	0.2059	0.2059		
D 13C-1,2,3,7,8-PeCDD	24.455	19010017	1.60	0.8084	80.0	80.0	0.1426	0.1426	80.02	
1,2,3,7,8-PeCDD	24.483	7789982	1.57	0.9955	41.2	41.2	0.1051	0.1051	82.33	
A Non-2,3,7,8-sub-PeCDD	23.351						0.1051	0.1051		
S Total PeCDD					41.2	41.2	0.1051	0.1051		
D 13C-1,2,3,4,7,8-HxCDF	30.533	19772814	0.53	0.9225	87.8	87.8	0.5232	0.5232	87.79	
1,2,3,4,7,8-HxCDF	30.559	9566432	1.25	1.1090	43.6	43.6	0.3250	0.3250	87.26	
D 13C-1,2,3,6,7,8-HxCDF	30.719	22904128	0.51	1.0336	90.8	90.8	0.4669	0.4669	90.77	
1,2,3,6,7,8-HxCDF	30.746	10416893	1.27	1.0721	42.4	42.4	0.2998	0.2998	84.84	
D 13C-2,3,4,6,7,8-HxCDF	31.545	22815073	0.50	0.9773	95.6	95.6	0.4938	0.4938	95.62	
2,3,4,6,7,8-HxCDF	31.558	10556049	1.23	1.0838	42.7	42.7	0.2290	0.2290	85.38	
D 13C-1,2,3,7,8,9-HxCDF	32.343	20478550	0.53	0.9153	91.6	91.6	0.5273	0.5273	91.64	
1,2,3,7,8,9-HxCDF	32.356	9544677	1.23	1.0931	42.6	42.6	0.2329	0.2329	85.28	
A Non-2,3,7,8-sub-HxCDF	30.227						0.2652	0.2652		
S Total HxCDF					171.4	171.4	0.2717	0.2717		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.157	24414327	1.26	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.718	14461656	1.27	0.7977	74.3	74.3	0.3282	0.3282	74.26	
1,2,3,4,7,8-HxCDD	31.744	6455934	1.25	1.0014	44.6	44.6	0.1978	0.1978	89.15	
D 13C-1,2,3,6,7,8-HxCDD	31.824	18981575	1.27	1.0010	77.7	77.7	0.2615	0.2615	77.67	
1,2,3,6,7,8-HxCDD	31.837	7494747	1.29	0.8902	44.4	44.4	0.1865	0.1865	88.71	
1,2,3,7,8,9-HxCDD	32.170	7927883	1.28	1.0579	44.8	44.8	0.1707	0.1707	89.63	
A Non-2,3,7,8-sub-HxCDD	30.905						0.1837	0.1837		
S Total HxCDD					133.8	133.8	0.1850	0.1850		
D 13C-1,2,3,4,6,7,8-HpCDF	33.770	16293893	0.43	0.8506	78.5	78.5	0.6589	0.6589	78.46	
1,2,3,4,6,7,8-HpCDF	33.782	9426019	1.06	1.3603	42.5	42.5	0.4176	0.4176	85.05	
D 13C-1,2,3,4,7,8,9-HpCDF	34.864	13937071	0.43	0.7618	74.9	74.9	0.7358	0.7358	74.93	
1,2,3,4,7,8,9-HpCDF	34.876	8053709	1.05	1.3207	43.8	43.8	0.5955	0.5955	87.51	
A Non-2,3,7,8-sub-HpCDF	34.335						0.4921	0.4921		
S Total HpCDF					86.3	86.3	0.5065	0.5065		
D 13C-1,2,3,4,6,7,8-HpCDD	34.572	15212968	1.05	0.8873	70.2	70.2	0.2651	0.2651	70.23	
1,2,3,4,6,7,8-HpCDD	34.572	6523005	1.04	0.9988	42.9	42.9	0.1685	0.1685	85.86	
A Non-2,3,7,8-sub-HpCDD	34.311						0.1685	0.1685		
S Total HpCDD					42.9	42.9	0.1685	0.1685		
D 13C-OCDD	36.938	22409692	0.91	0.6287	146.0	146.0	0.1651	0.1651	73.00	
OCDF	37.034	13188652	0.90	1.4136	83.3	83.3	0.1340	0.1340	83.27	
OCDD	36.938	10189570	0.92	1.1290	80.6	80.6	0.1548	0.1548	80.55	

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Lims ID: LCS 320-432973/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Nov-2020 01:18:50 ALS Bottle#: 52 Worklist Smp#: 27
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-432973/2-A LCS 320-432973/2-A RA
Misc. Info.: 23NO2010D5
Operator ID: SMA, ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Nov-2020 08:07:24 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1603

First Level Reviewer: dadunj Date: 27-Nov-2020 08:08:24

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.854	17.854	0		12443850	2984842	3988	9970	748		
333.9339	17.838	17.854	-1		16942144	4037049	2876	7190	1404	0.73(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.340	17.324	1	0.971	17523855	4276992	10656	26640	401		
317.9389	17.340	17.324	1	0.971	21830486	5402894	4375	10937	1235	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.354	17.339	1	1.001	1396120	340806	618	1545	551		
305.8987	17.354	17.339	1	1.001	1886746	451524	893	2232	506	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.029						618	1545			
305.8987	17.029						893	2232			
13C-2,3,7,8-TCDD											
331.9368	18.050	18.035	1	1.011	10633635	2494437	3988	9970	625		
333.9339	18.050	18.035	1	1.011	14429646	3337920	2876	7190	1161	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.065	18.050	1	1.001	1020174	234383	1069	2672	219		
321.8936	18.065	18.050	1	1.001	1300484	305833	709	1772	431	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.065	18.065	0	1.012	12582092	3001838	1668	4170	1800		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.483						1069	2672			
321.8936	17.483						709	1772			
13C-1,2,3,7,8-PeCDF											
351.9000	22.383	22.383	0	1.254	18027525	3187561	4052	10130	787		
353.8970	22.383	22.383	0	1.254	11245249	1984876	2971	7427	668	1.60(1.32-1.78)	

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.410	22.410	0	1.001	7046133	1200765	2237	5592	537		
341.8567	22.396	22.410	-1	1.001	4427333	750879	1395	3487	538	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.733	23.746	-1	1.329	16393874	2677986	4052	10130	661		
353.8970	23.733	23.746	-1	1.329	10242198	1663948	2971	7427	560	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.760	23.774	-1	1.001	7035384	1145446	2237	5592	512		
341.8567	23.760	23.774	-1	1.001	4399869	701639	1395	3487	503	1.60(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.963						353	882			
341.8567	19.963						517	1292			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.127						2237	5592			
341.8567	23.127						1395	3487			
13C-1,2,3,7,8-PeCDD											
367.8949	24.455	24.469	-1	1.370	11686241	1762374	1788	4470	986		
369.8919	24.455	24.469	-1	1.370	7323776	1153244	1450	3625	795	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.483	24.496	-1	1.001	4759526	707783	764	1910	926		
357.8516	24.483	24.496	-1	1.001	3030456	447472	456	1140	981	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.351						764	1910			
357.8516	23.351						456	1140			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.533	30.546	-1	0.950	6833240	1317781	5375	13437	245		
385.8610	30.533	30.546	-1	0.950	12939574	2489988	7168	17920	347	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.559	30.560	0	1.001	5314510	1005111	3077	7692	327		
375.8178	30.559	30.560	0	1.001	4251922	799149	2412	6030	331	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.719	30.719	0	0.955	7733250	1468949	5375	13437	273		
385.8610	30.719	30.719	0	0.955	15170878	2800546	7168	17920	391	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.746	30.746	0	1.001	5823399	1083645	3077	7692	352		
375.8178	30.733	30.746	-1	1.000	4593494	867428	2412	6030	360	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.545	31.545	0	0.981	7652566	1829964	5375	13437	340		
385.8610	31.545	31.545	0	0.981	15162507	3699044	7168	17920	516	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.558	31.558	0	1.000	5826813	1457314	3077	7692	474		
375.8178	31.558	31.558	0	1.000	4729236	1155478	2412	6030	479	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.343	32.343	0	1.006	7069633	1845777	5375	13437	343		
385.8610	32.343	32.343	0	1.006	13408917	3543810	7168	17920	494	0.53(0.43-0.59)	

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.356	32.357	0	1.000	5271699	1413930	3077	7692	460		
375.8178	32.356	32.357	0	1.000	4272978	1119064	2412	6030	464	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.227						3077	7692			
375.8178	30.227						2412	6030			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.157	32.157	0		13593160	3633040	4074	10185	892		
403.8529	32.157	32.157	0		10821167	2864195	2730	6825	1049	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.718	31.718	0	0.986	8080291	2249855	4074	10185	552		
403.8529	31.718	31.718	0	0.986	6381365	1803743	2730	6825	661	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.744	31.744	0	1.001	3592394	993965	1747	4367	569		
391.8127	31.731	31.744	-1	1.000	2863540	798323	1465	3662	545	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.824	31.824	0	0.990	10606086	2690164	4074	10185	660		
403.8529	31.824	31.824	0	0.990	8375489	2147984	2730	6825	787	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.837	31.837	0	1.000	4217205	1047058	1747	4367	599		
391.8127	31.837	31.837	0	1.000	3277542	841598	1465	3662	574	1.29(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.170	32.170	0	1.014	4446702	1173509	1747	4367	672		
391.8127	32.170	32.170	0	1.014	3481181	911834	1465	3662	622	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						1747	4367			
391.8127	30.905						1465	3662			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.770	33.770	0	1.050	4912465	1650974	4486	11215	368		
419.8220	33.770	33.770	0	1.050	11381428	3761263	10081	25202	373	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.782	33.782	0	1.000	4852598	1535040	7379	18447	208		
409.7789	33.770	33.782	-1	1.000	4573421	1439590	4920	12300	293	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.864	34.864	0	1.084	4207639	1190997	4486	11215	265		
419.8220	34.864	34.864	0	1.084	9729432	2718783	10081	25202	270	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.876	34.888	-1	1.000	4116819	1127181	7379	18447	153		
409.7789	34.876	34.888	-1	1.000	3936890	1052983	4920	12300	214	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						7379	18447			
409.7789	34.335						4920	12300			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.572	34.572	0	1.075	7788927	2268651	3222	8055	704		
437.8140	34.572	34.572	0	1.075	7424041	2133502	2890	7225	738	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.572	34.596	-1	1.000	3319792	956681	1508	3770	634		
425.7737	34.572	34.596	-1	1.000	3203213	927128	1456	3640	637	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.311						1508	3770			
425.7737	34.311						1456	3640			
13C-OCDD											
469.7779	36.938	36.938	0	1.149	10707486	2618637	1334	3335	1963		
471.7750	36.926	36.938	-1	1.148	11702206	2801107	1364	3410	2054	0.91(0.76-1.02)	
OCDF											
441.7428	37.034	37.034	0	1.003	6263006	1475469	1039	2597	1420		
443.7399	37.034	37.034	0	1.003	6925646	1630111	1014	2535	1608	0.90(0.76-1.02)	
OCDD											
457.7377	36.938	36.938	0	1.000	4887860	1202081	838	2095	1434		
459.7348	36.938	36.938	0	1.000	5301710	1350235	1056	2640	1279	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 27

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

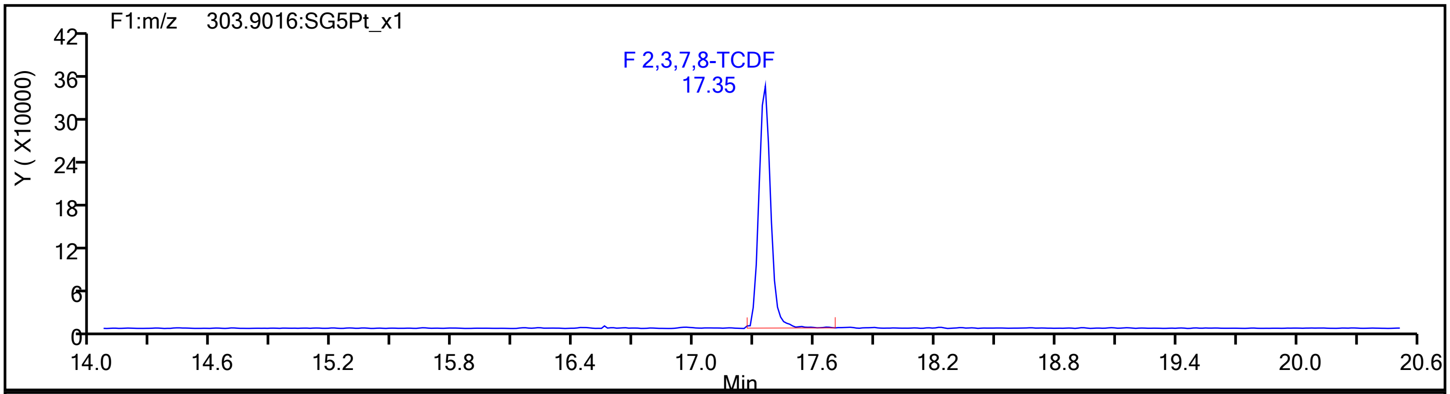

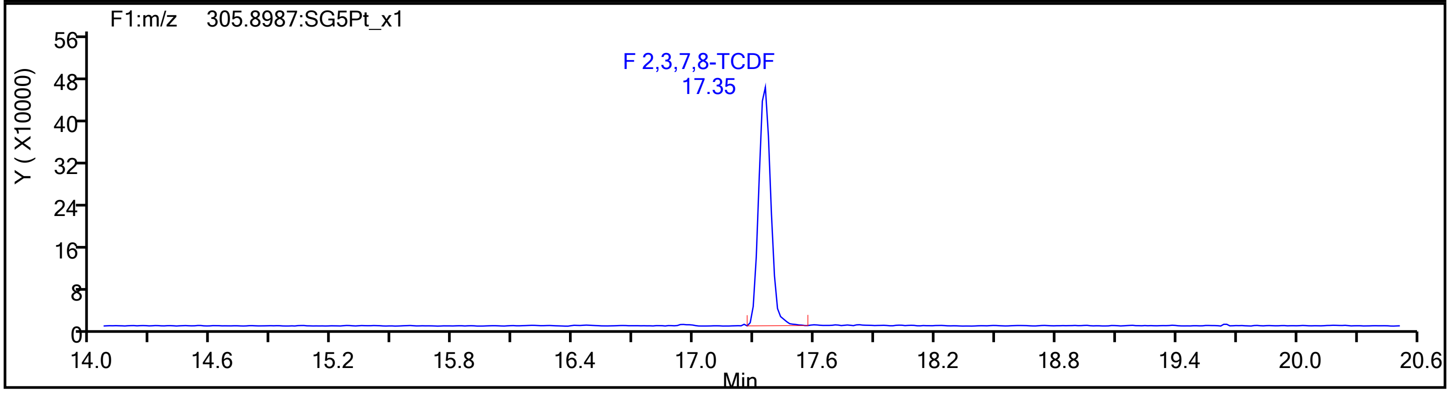

TCDF Standards

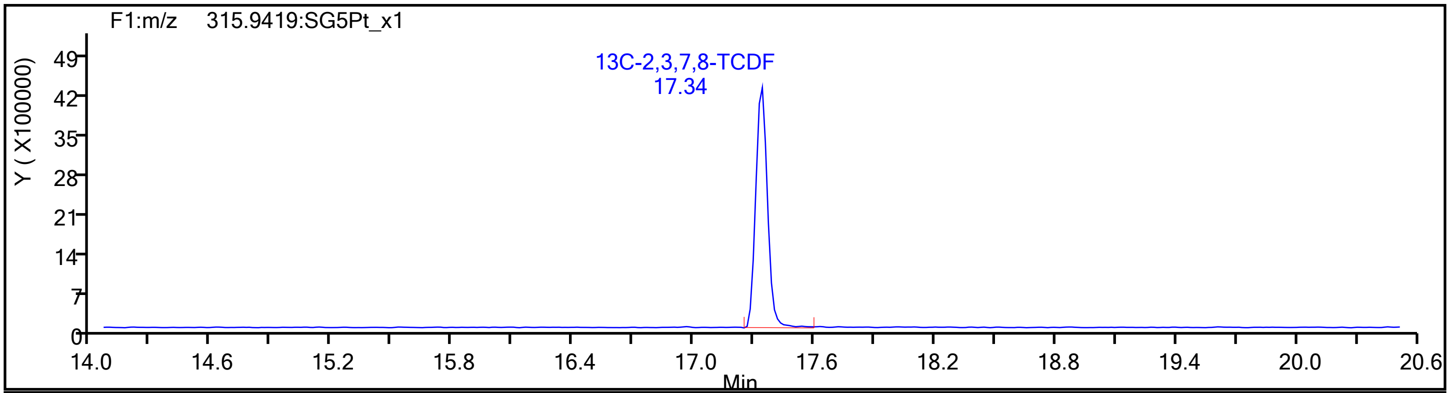

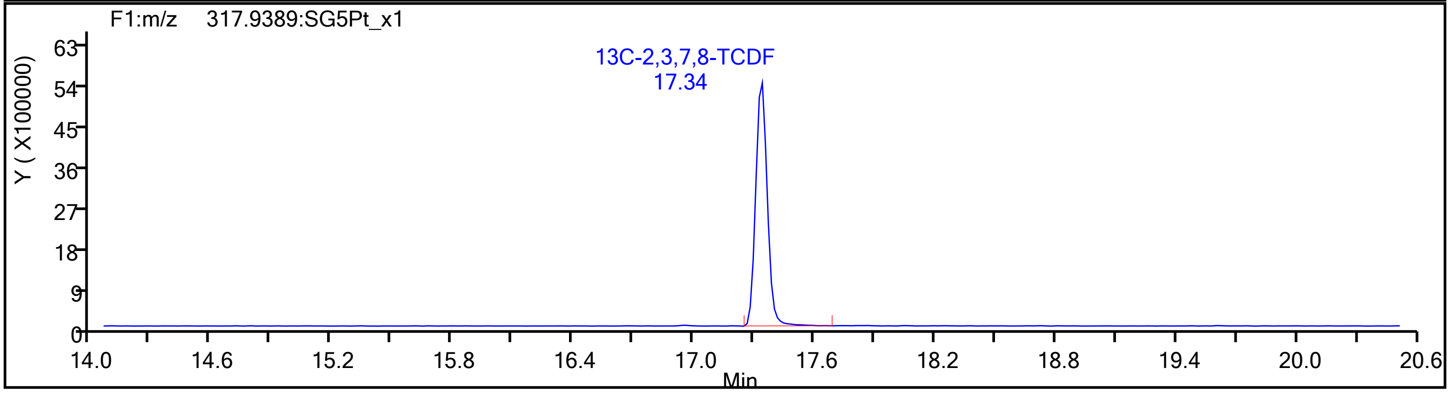

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

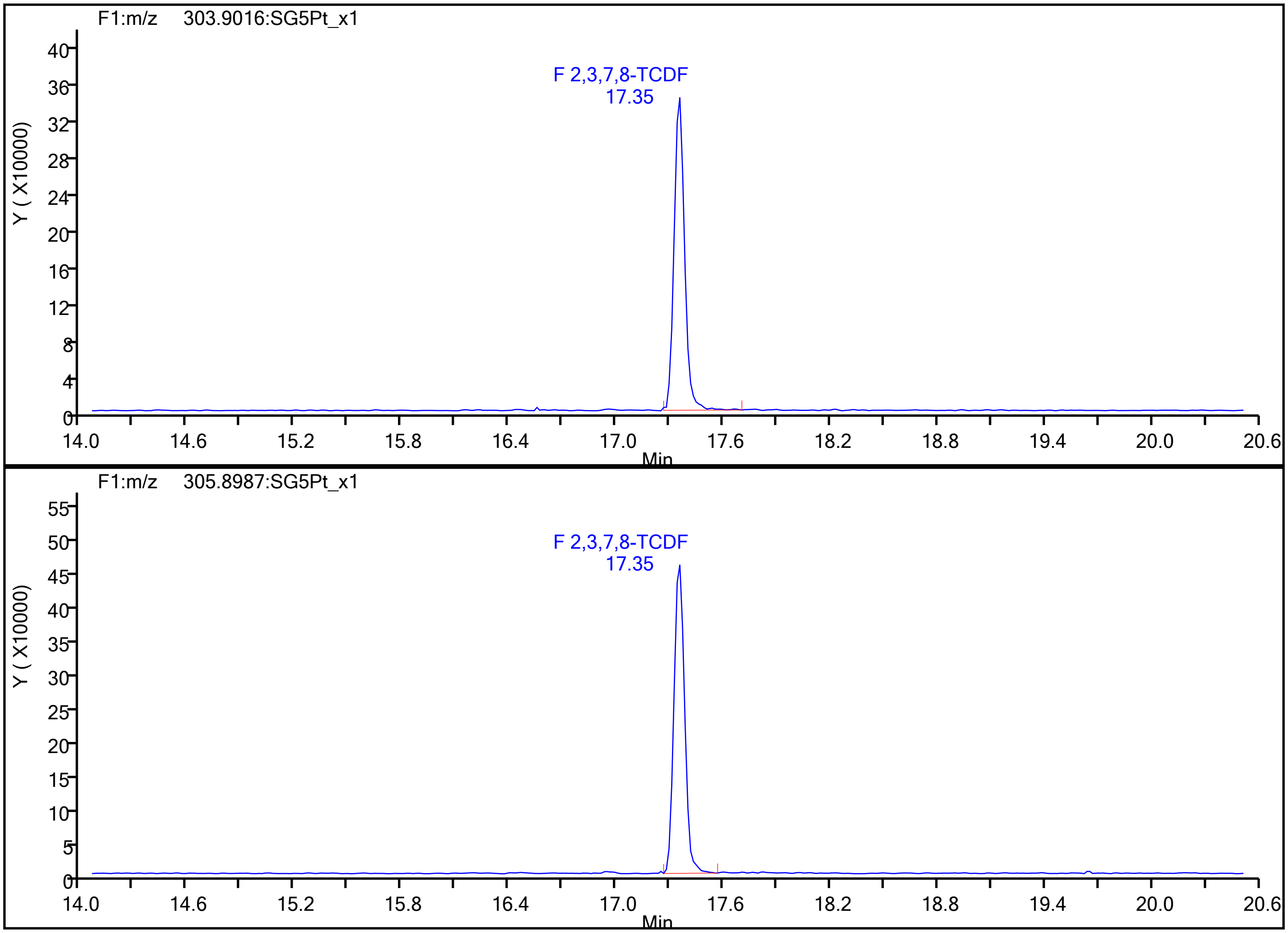

TCDF Interference Mass

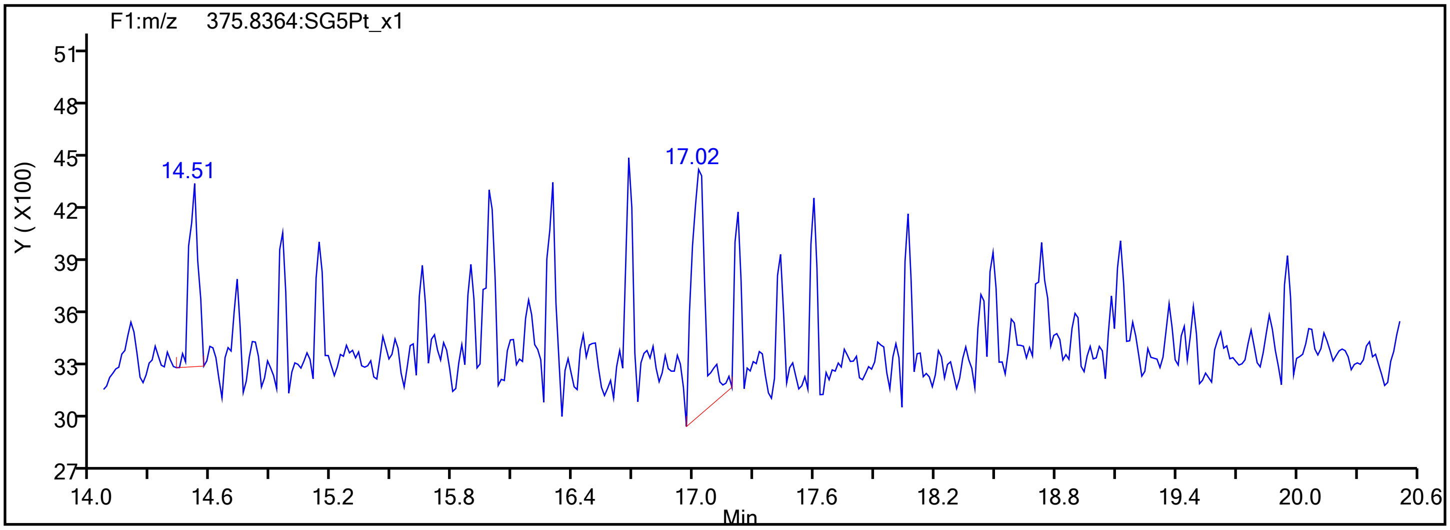

Report Date: 27-Nov-2020 08:08:24
Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

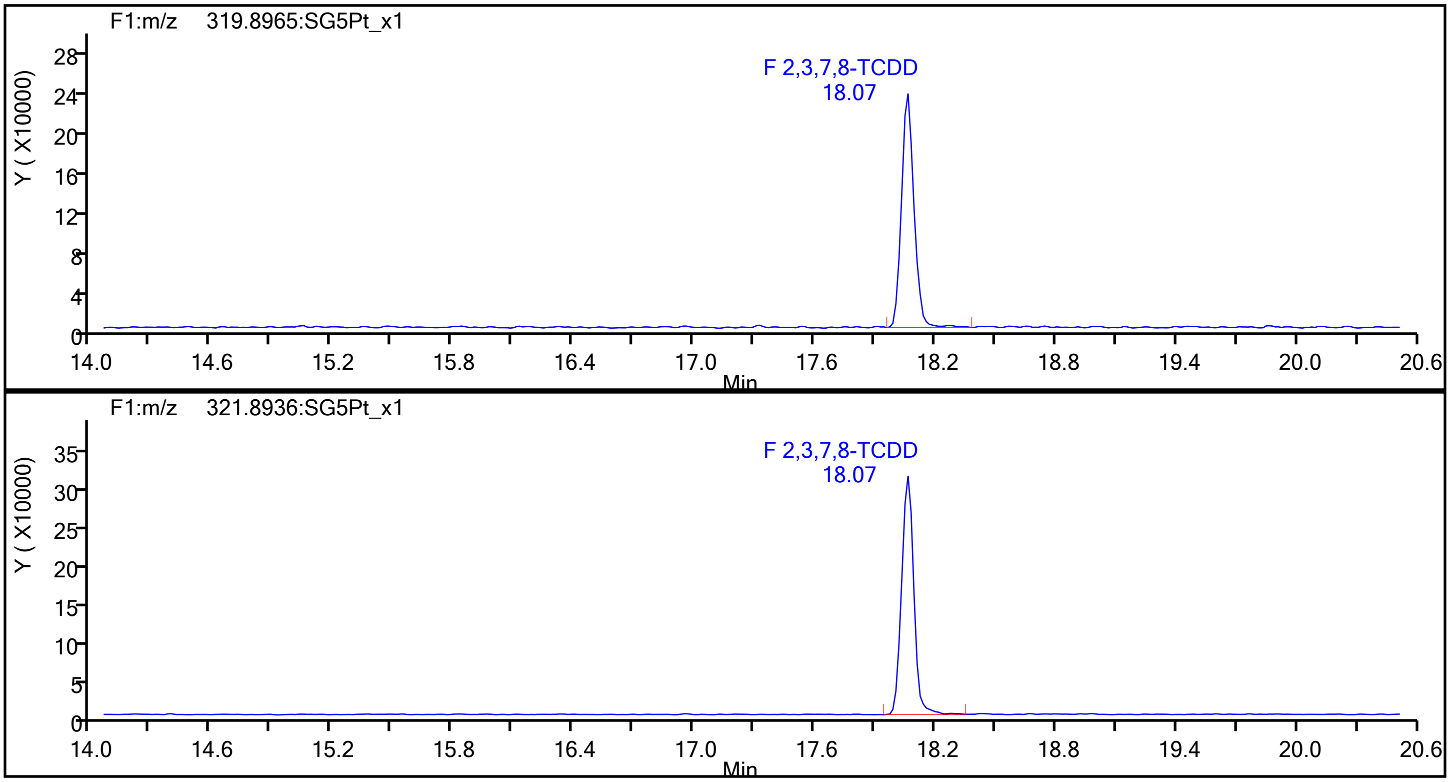

TCDD Standards

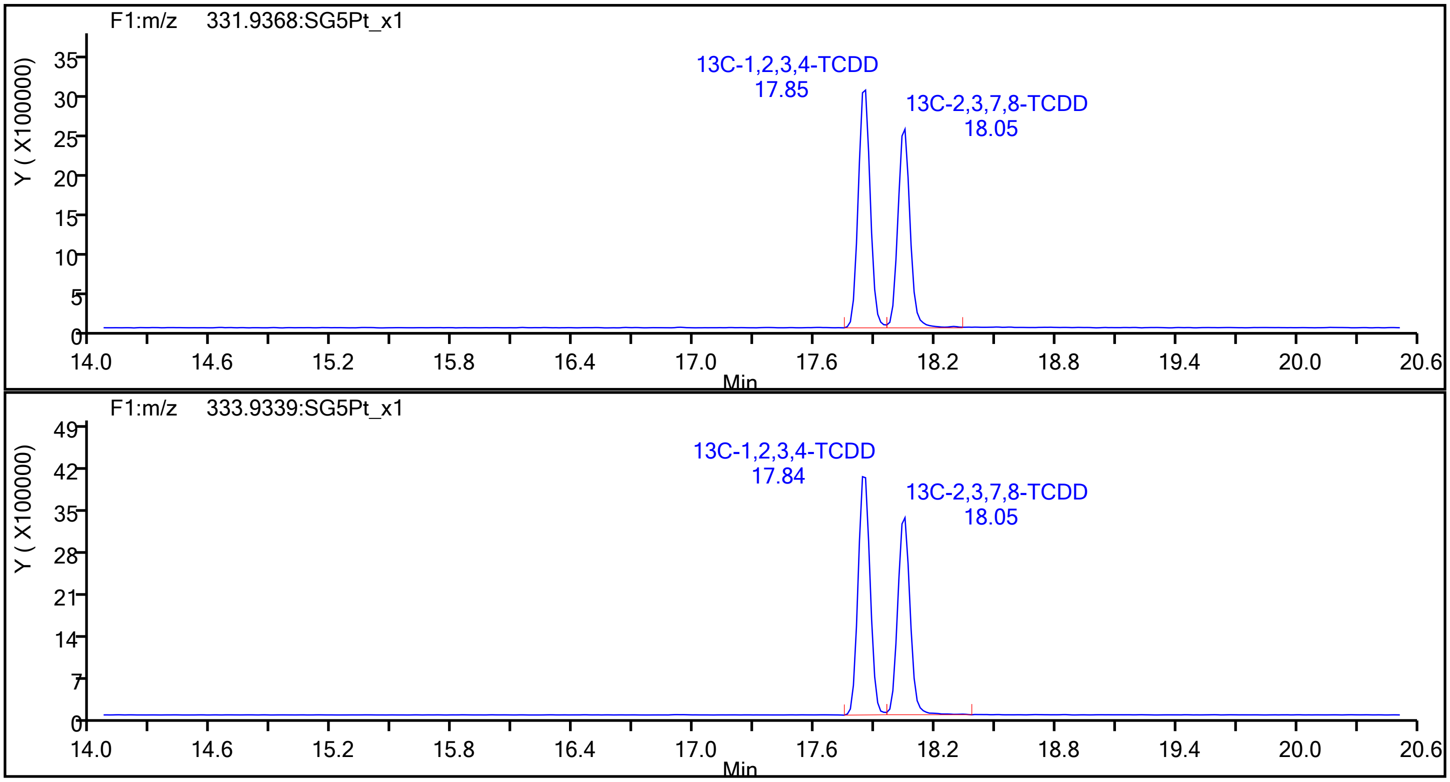

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 27

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

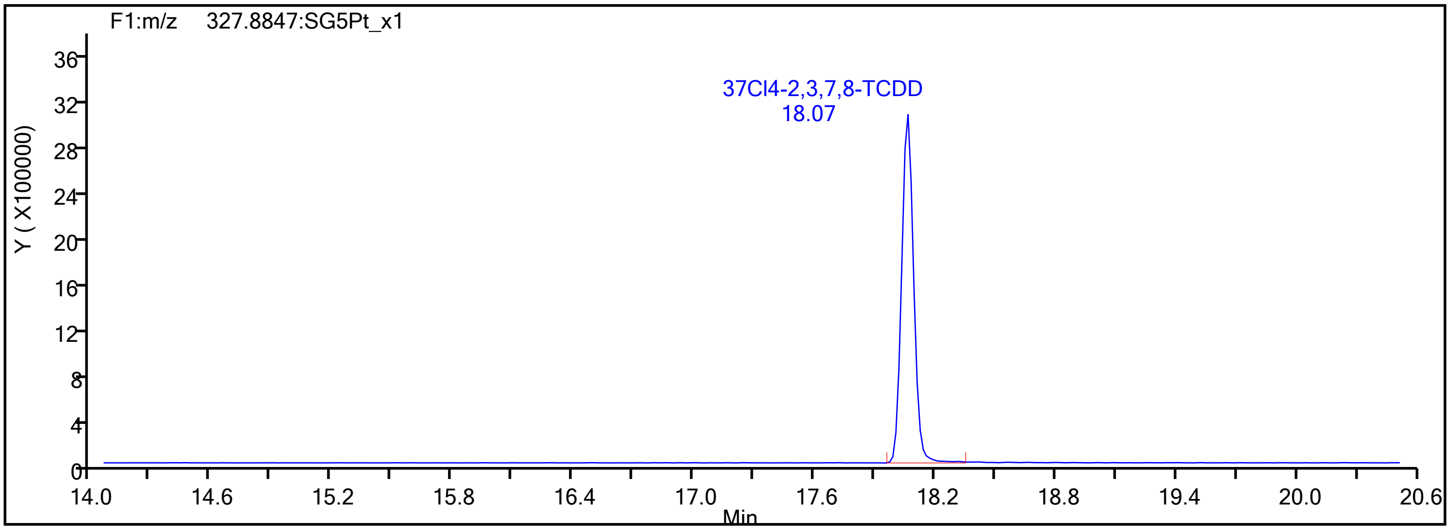

37Cl4-TCDD Standards

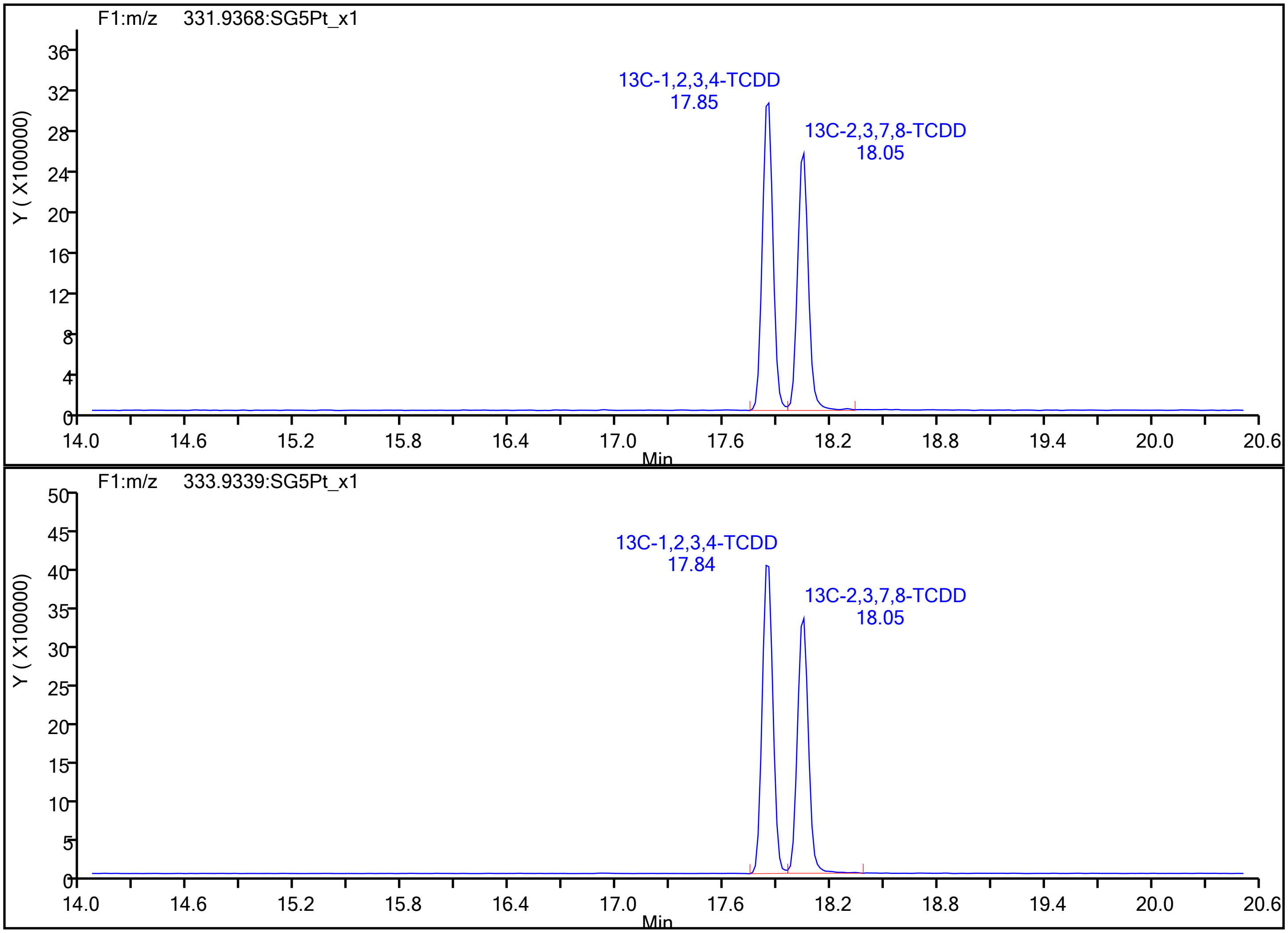

Report Date: 27-Nov-2020 08:08:24
Chrom Revision: 2.3 12-Nov-2020 21:52:08
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

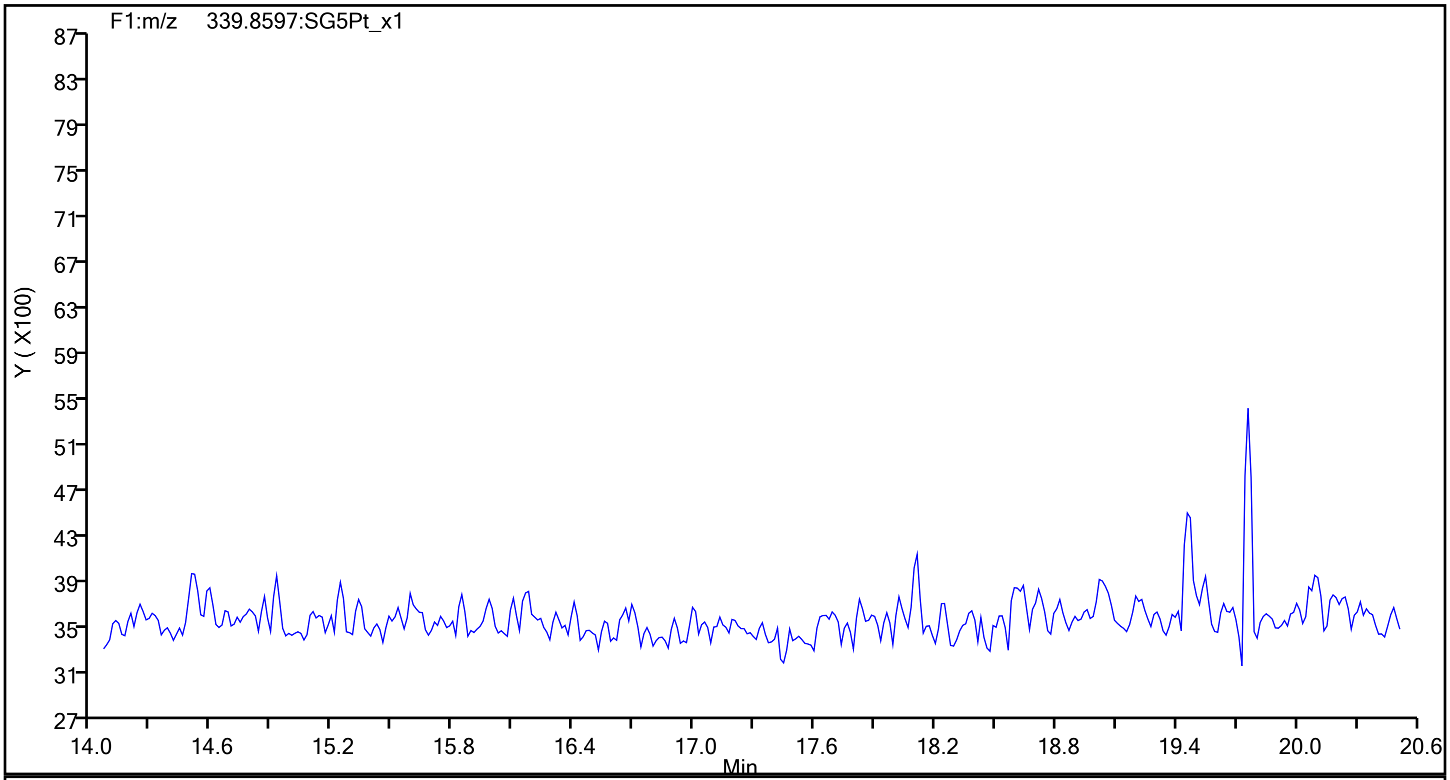

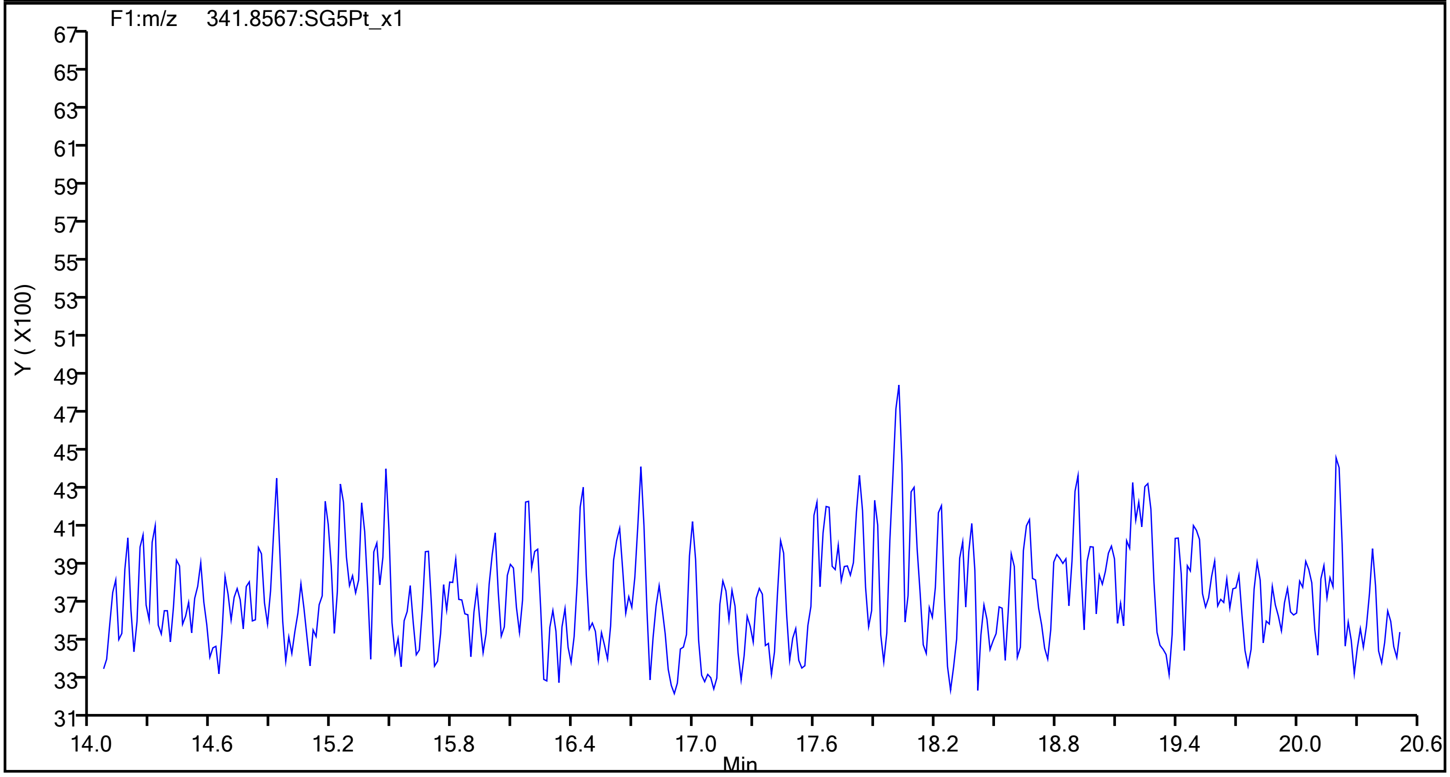

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

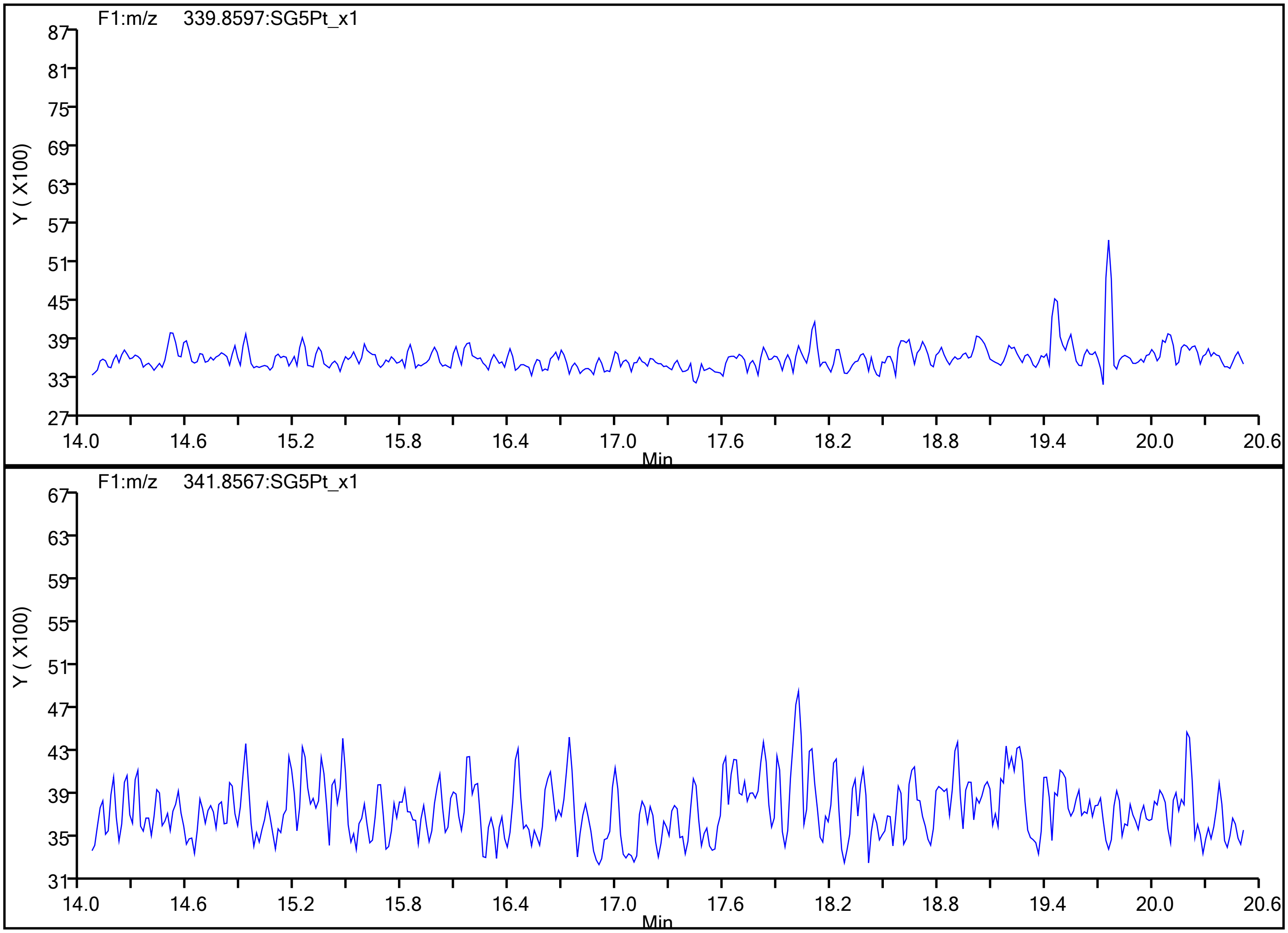

F1 PeCDFs Interference Mass

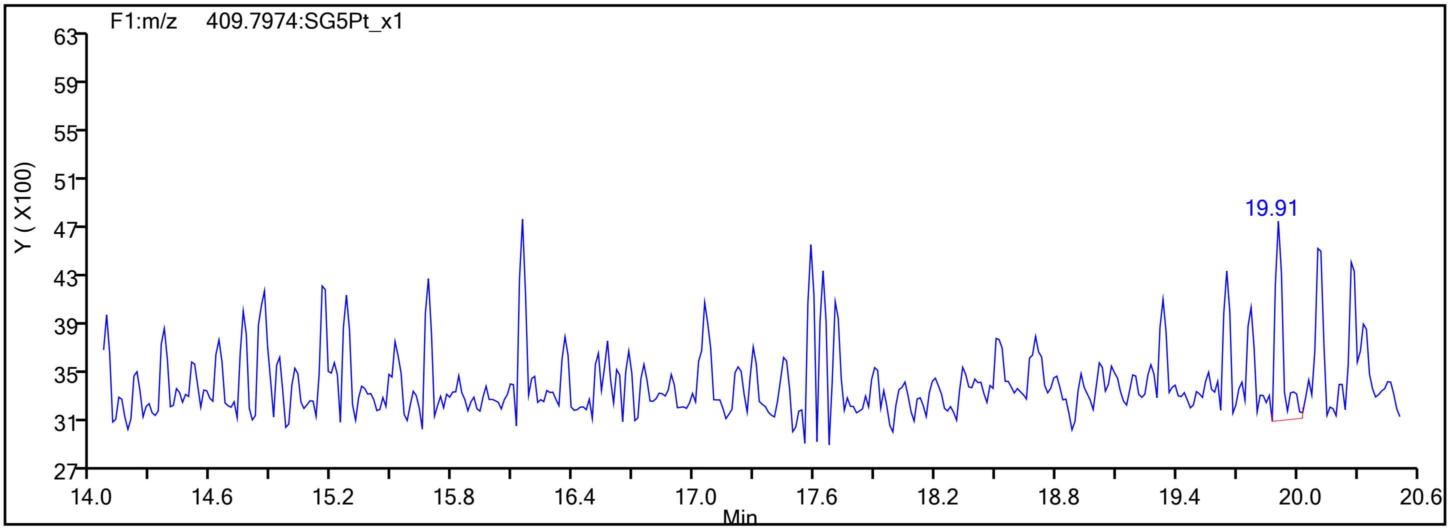

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

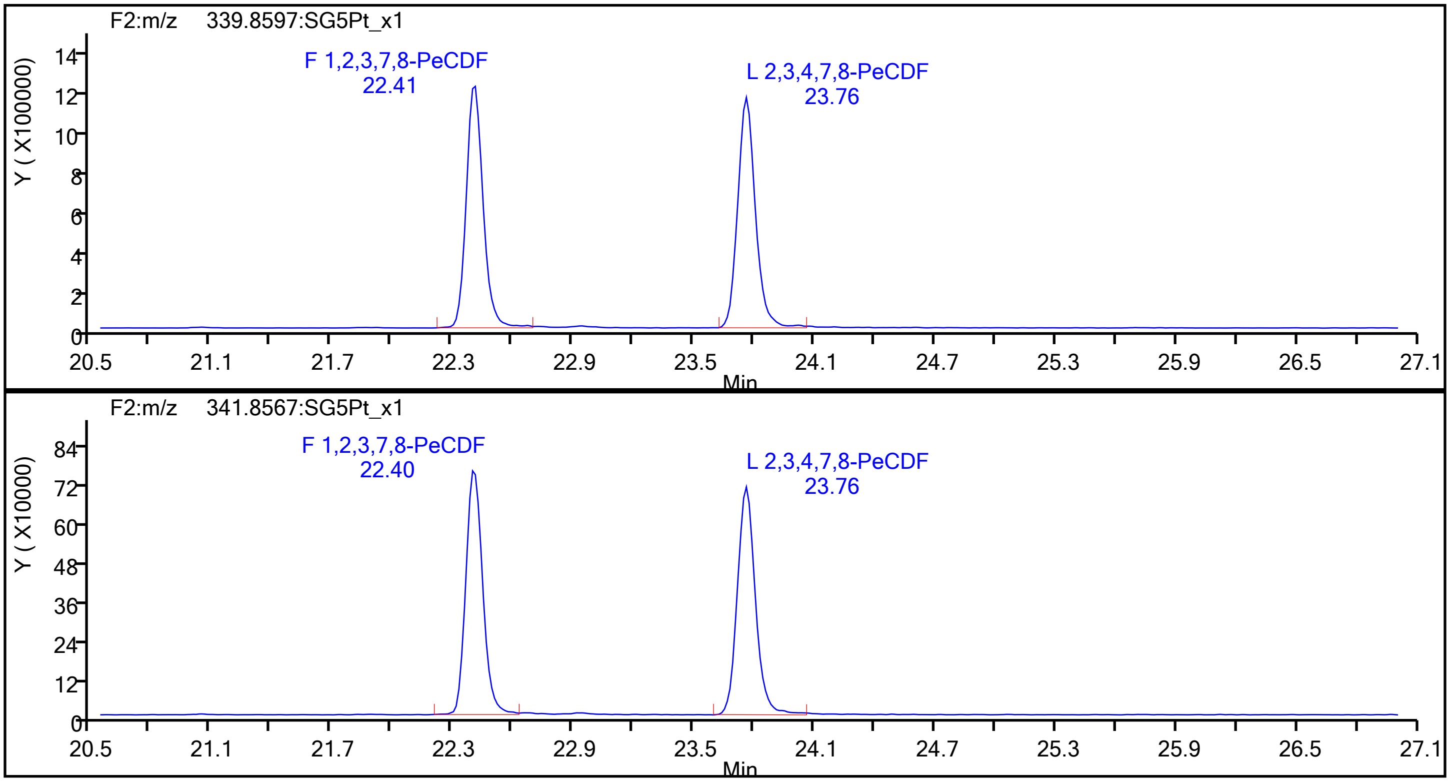

PeCDF Standards

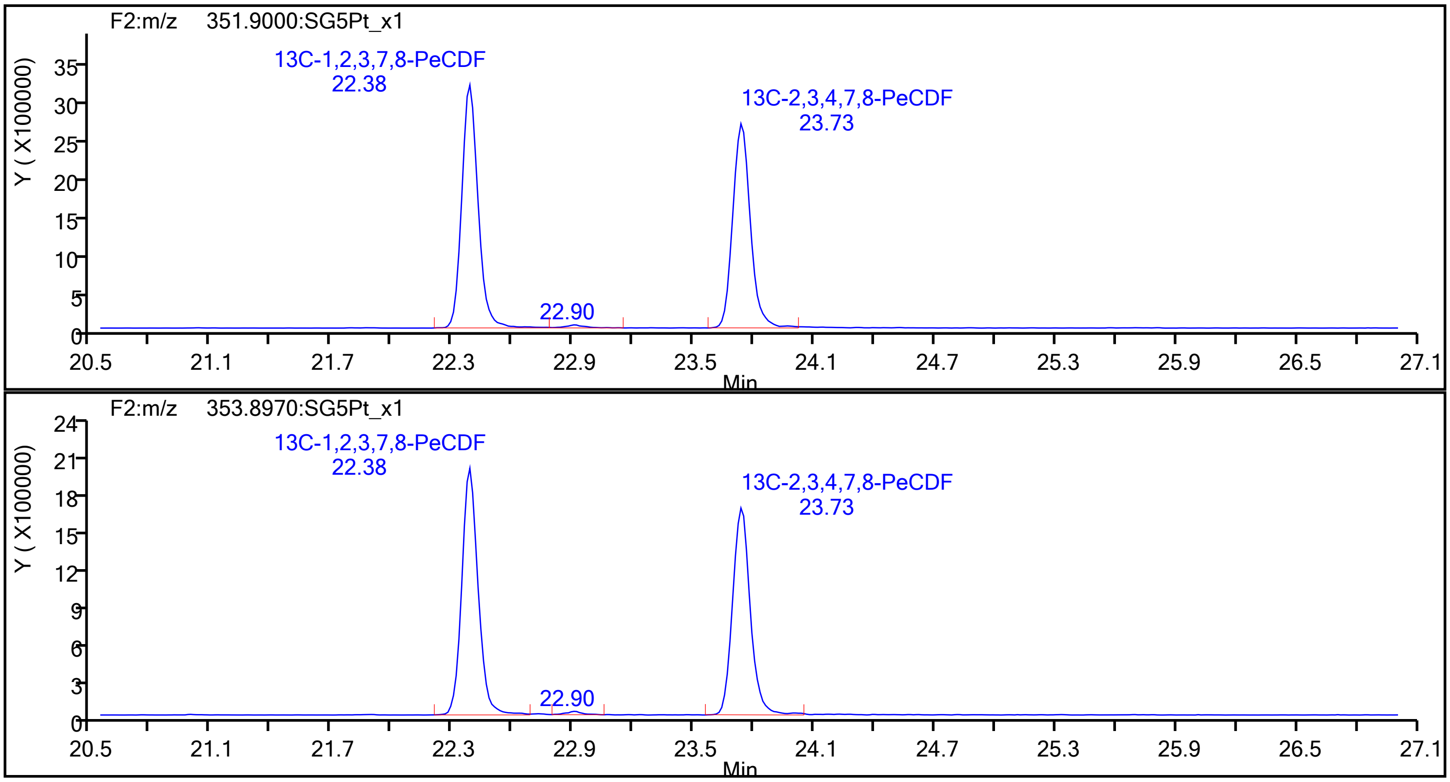

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 27

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

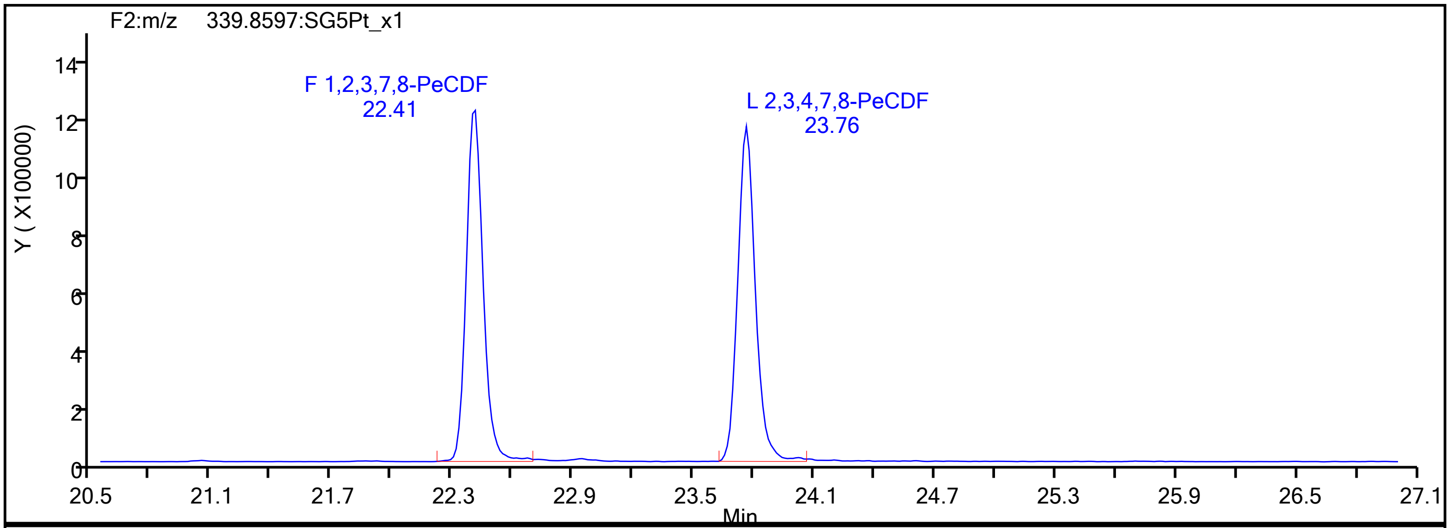

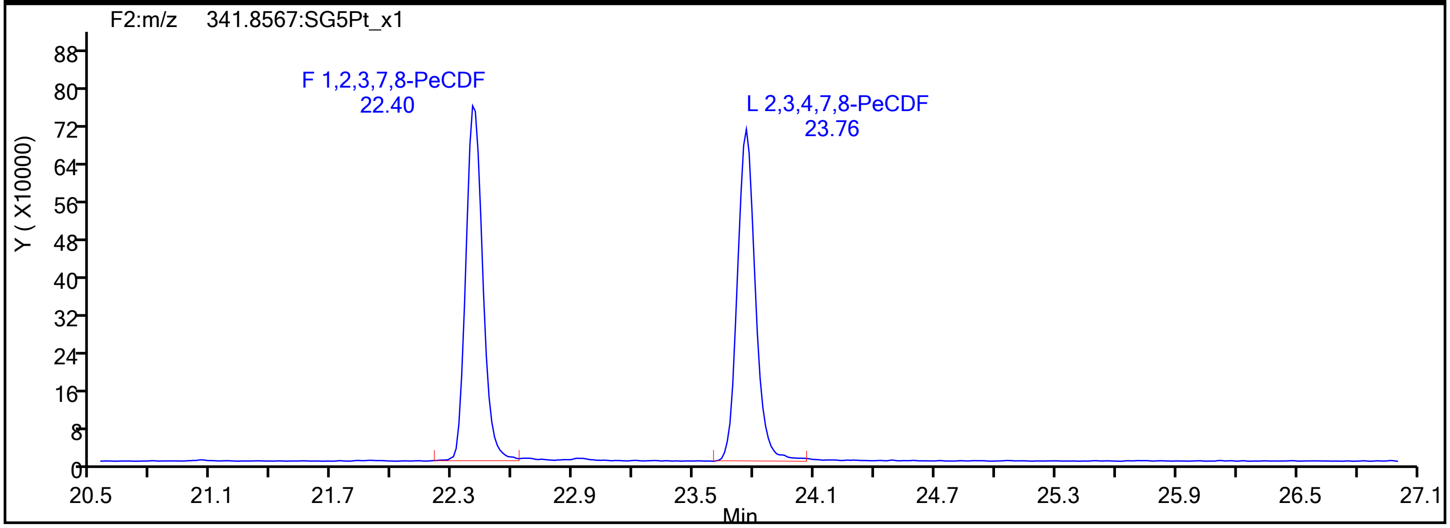

PeCDF Interference Mass

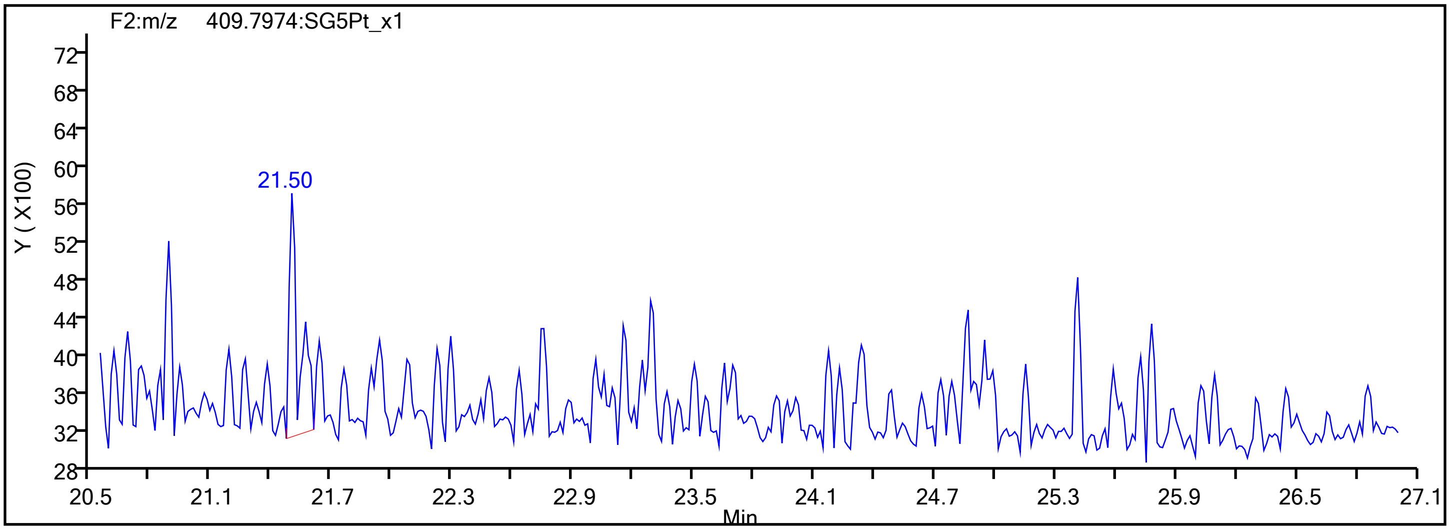

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Injection Date: 25-Nov-2020 01:18:50
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 27
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

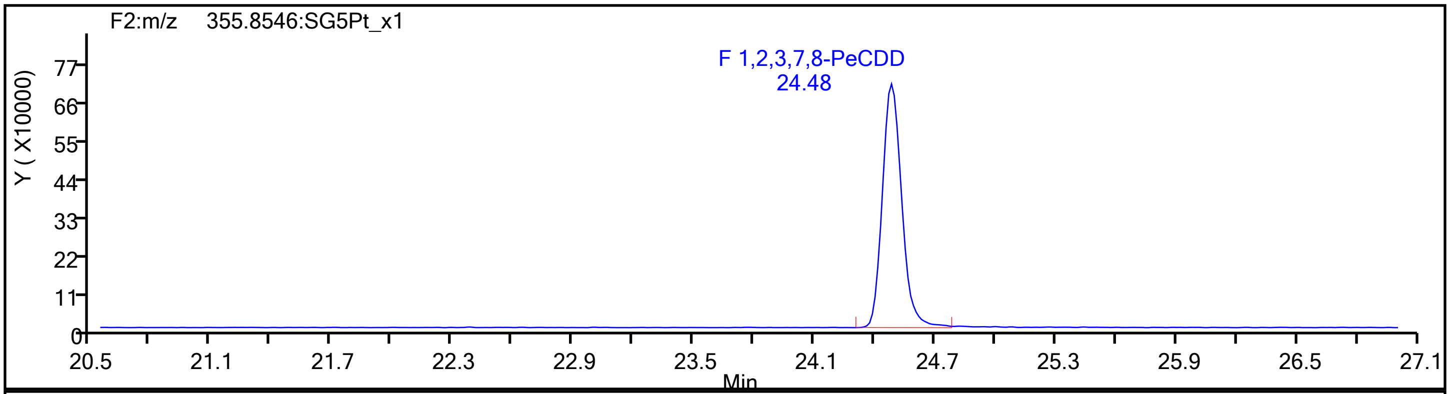

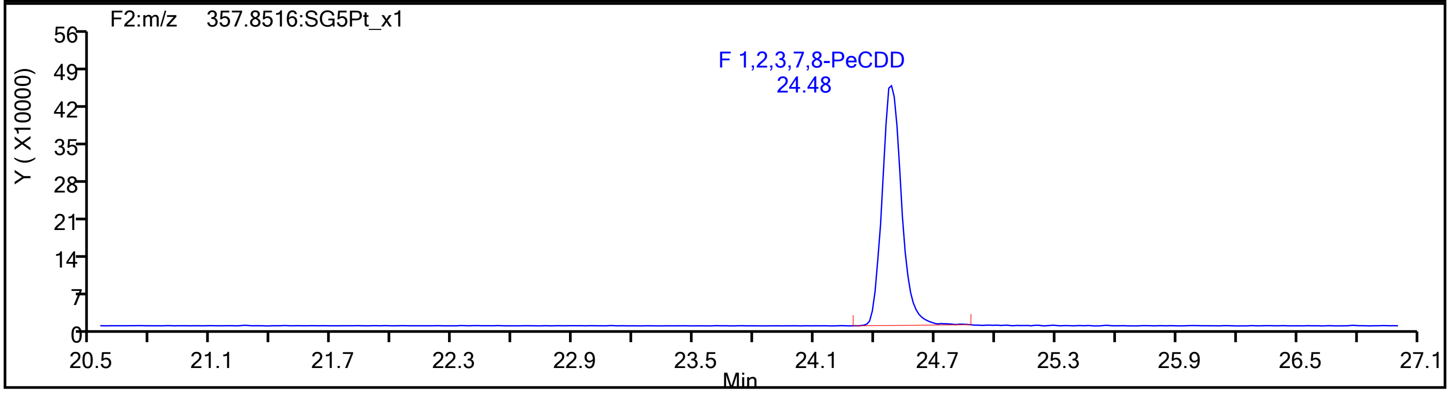

PeCDD Standards

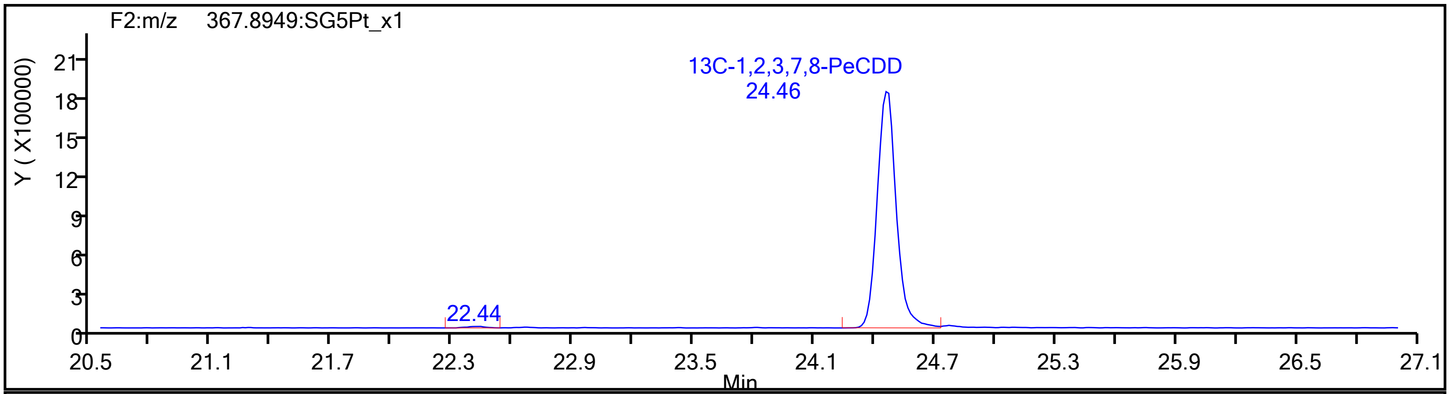

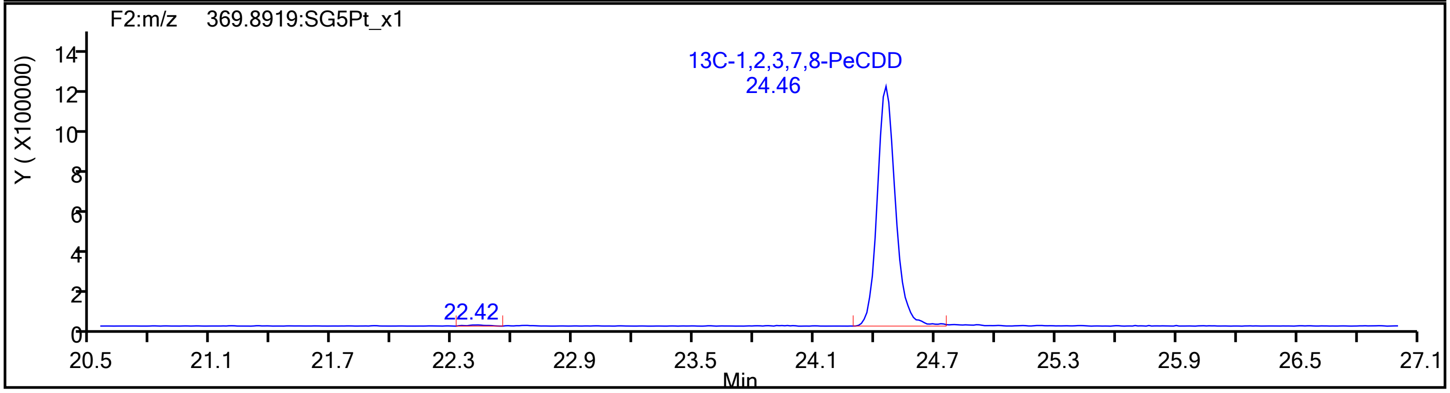

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Injection Date: 25-Nov-2020 01:18:50
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 27
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

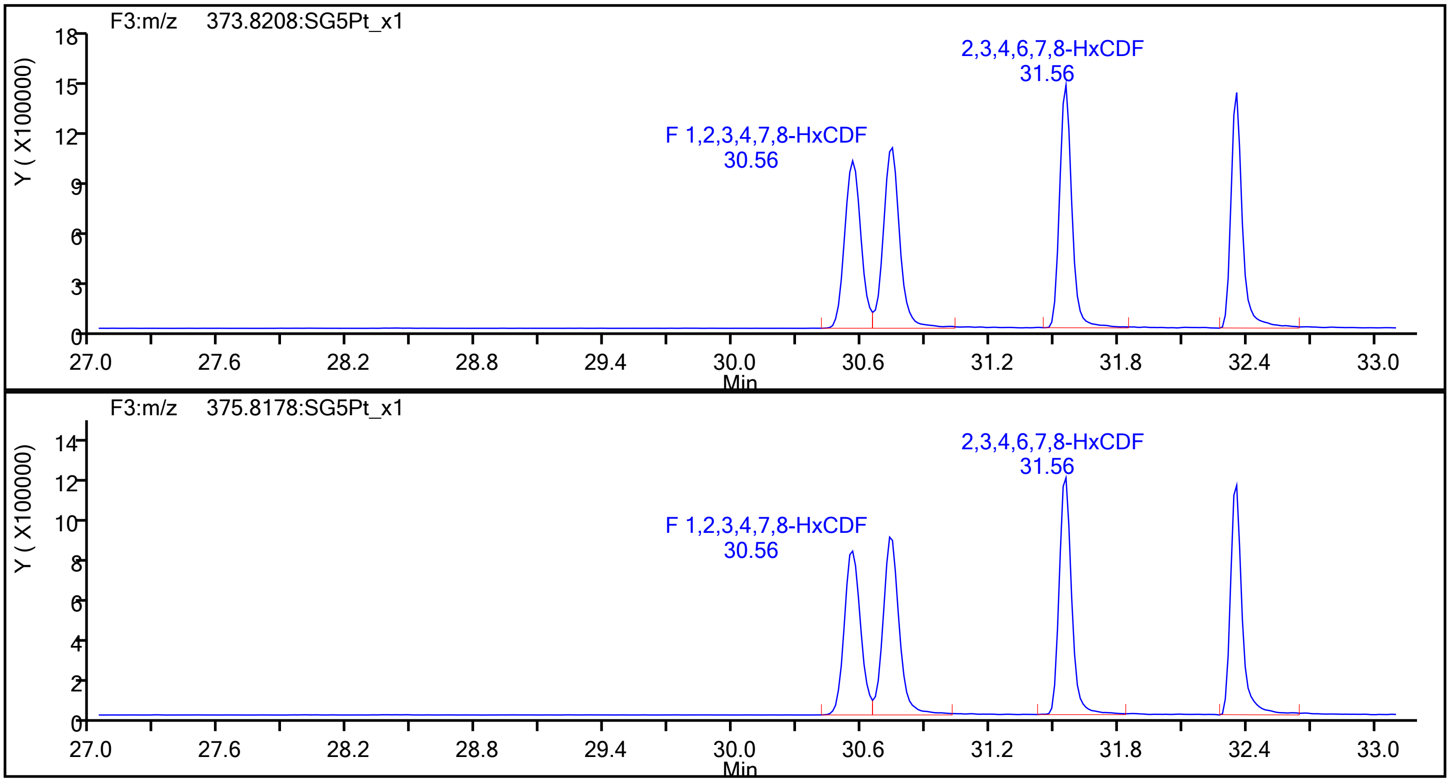

HxCDF Standards

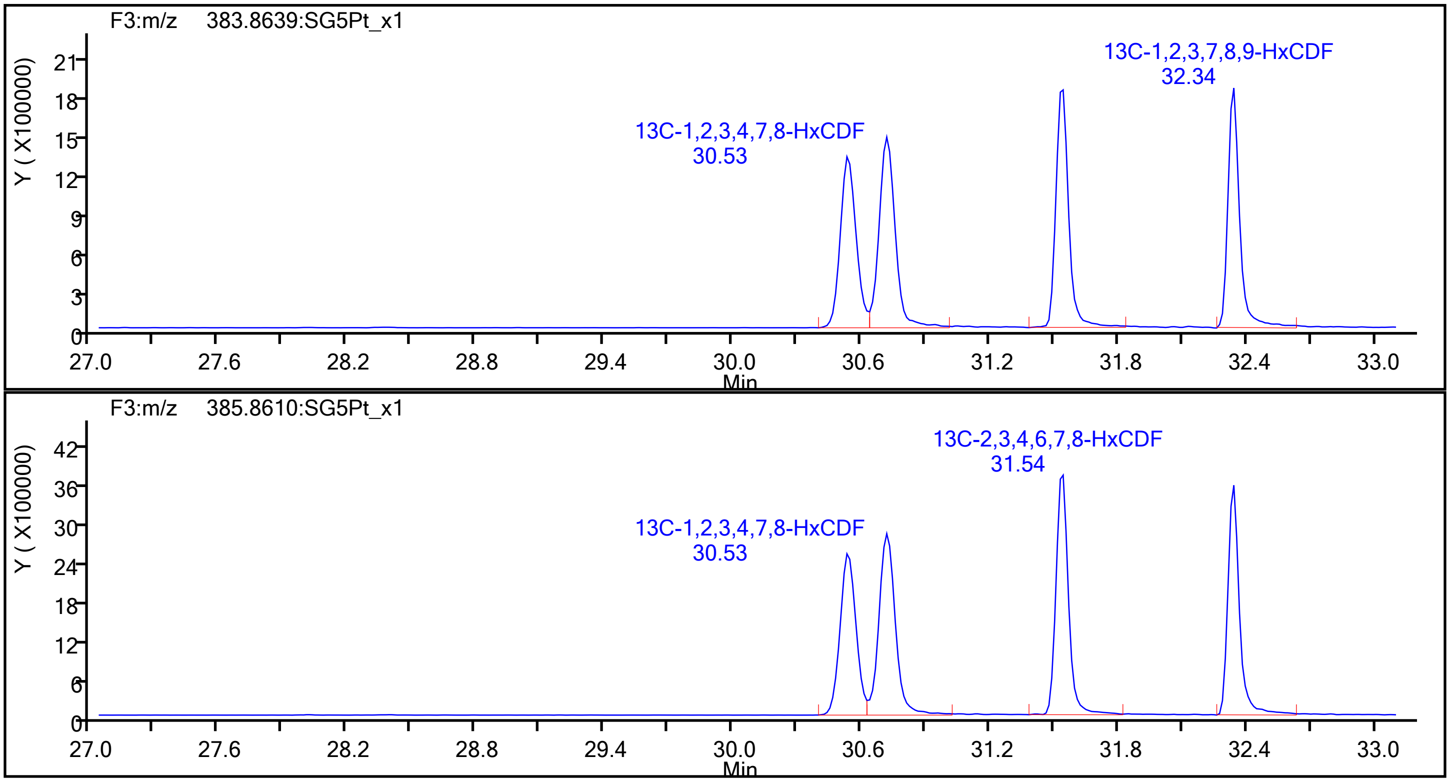

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

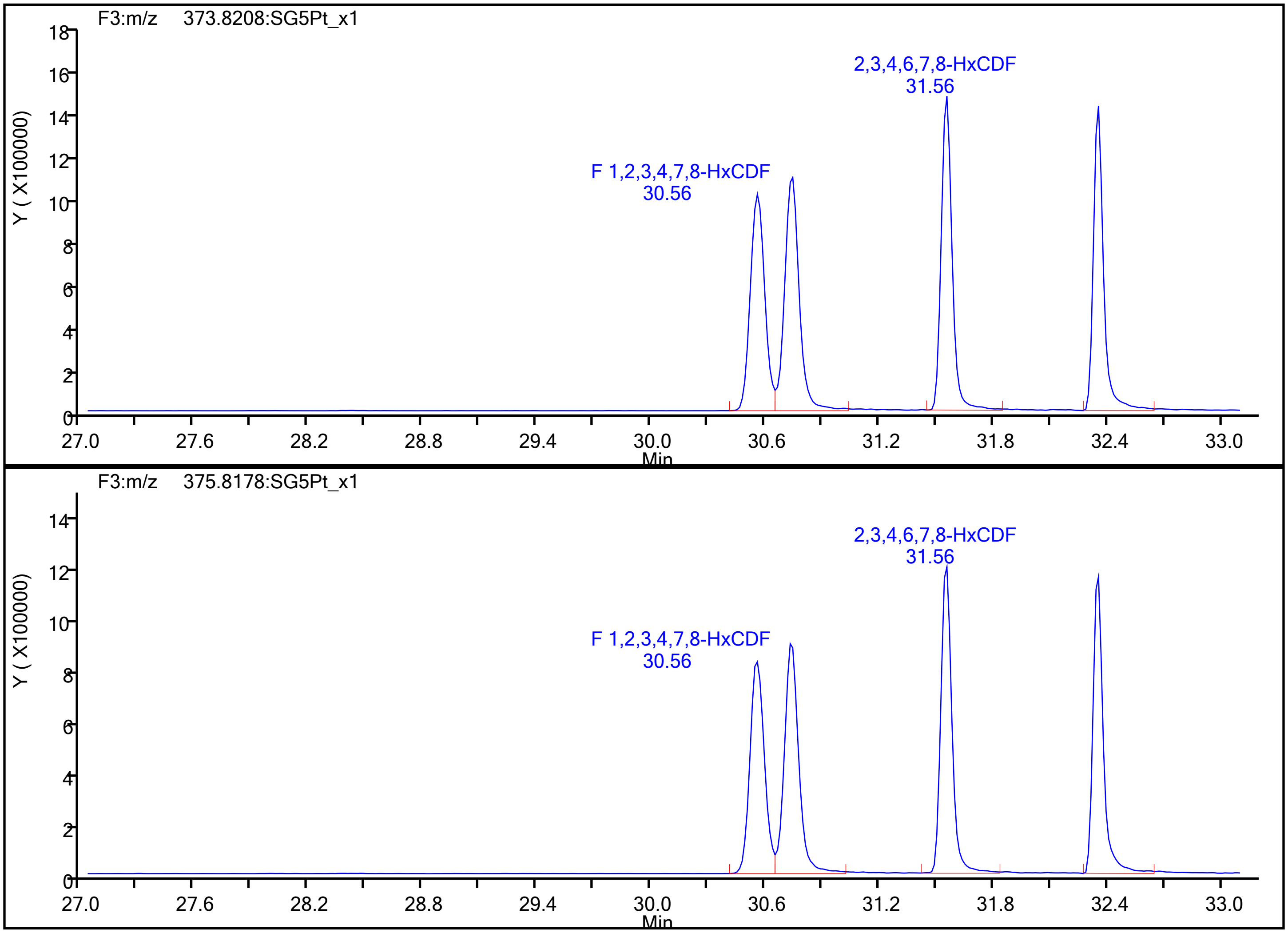

HxCDF Interference Mass

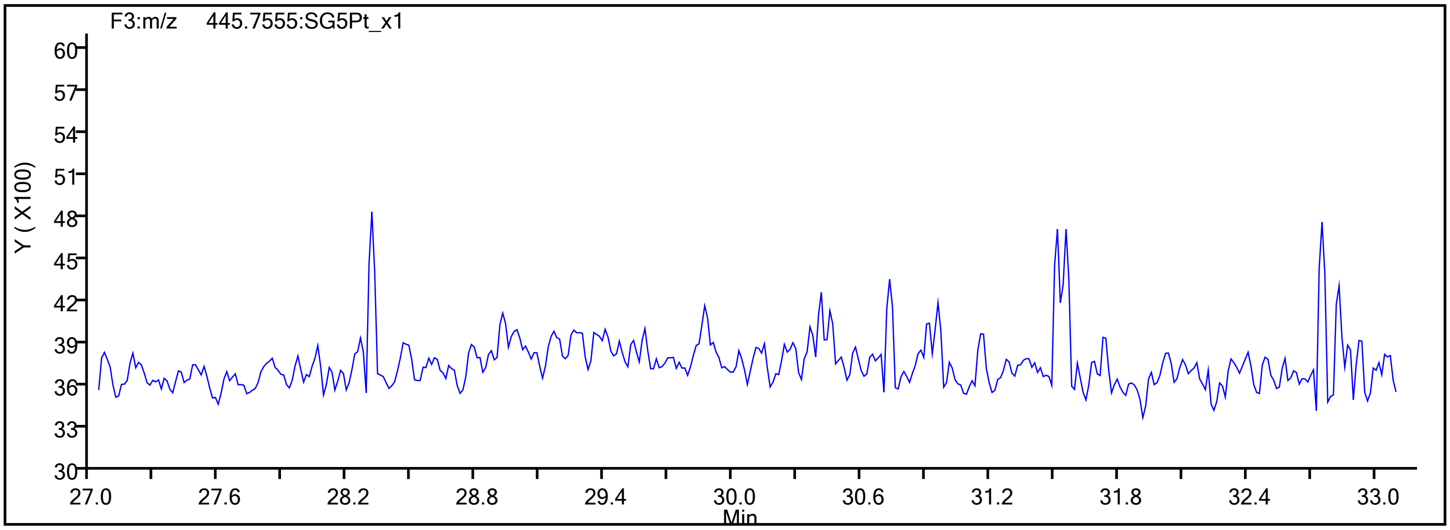

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

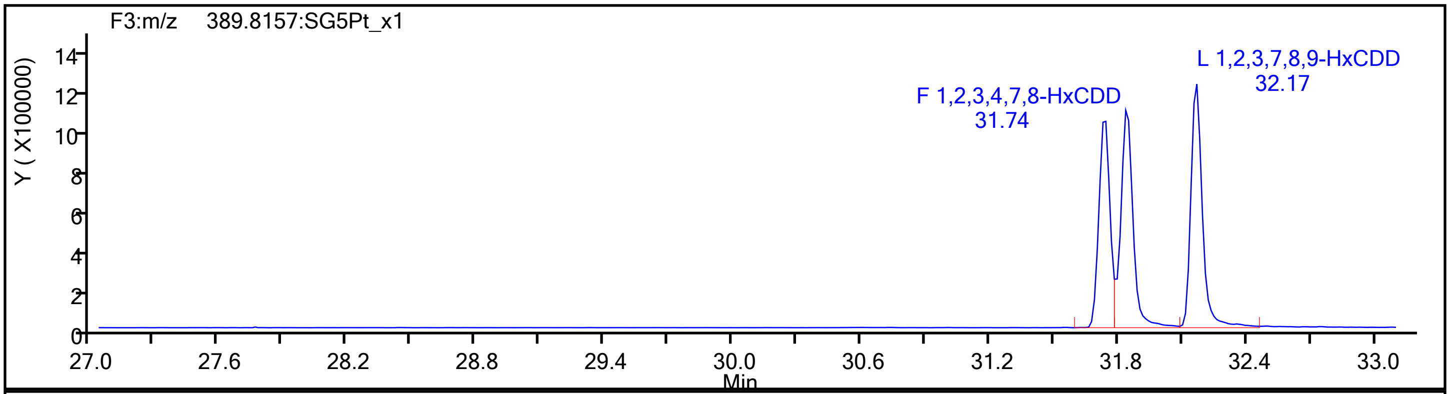

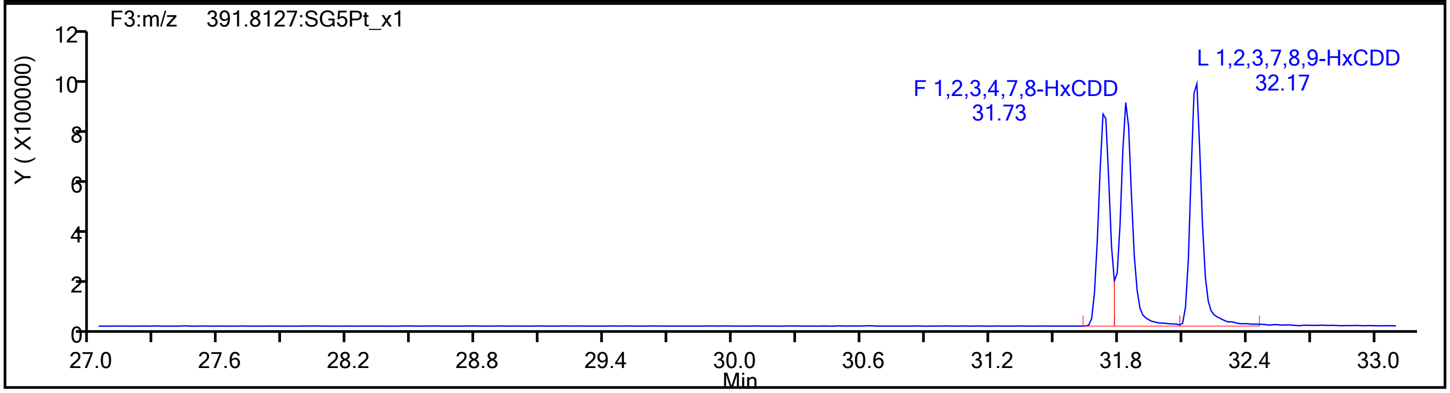

HxCDD Standards

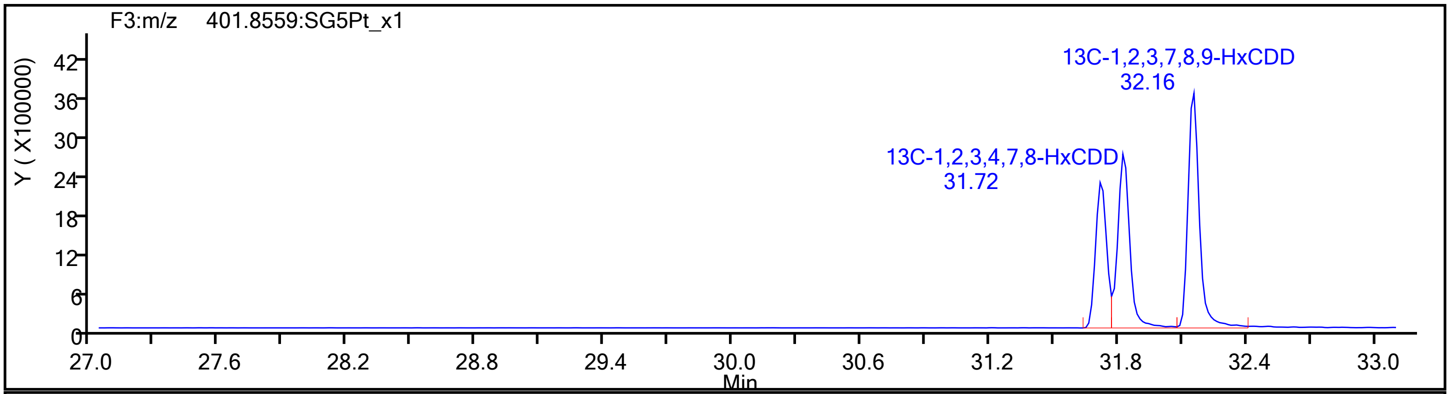

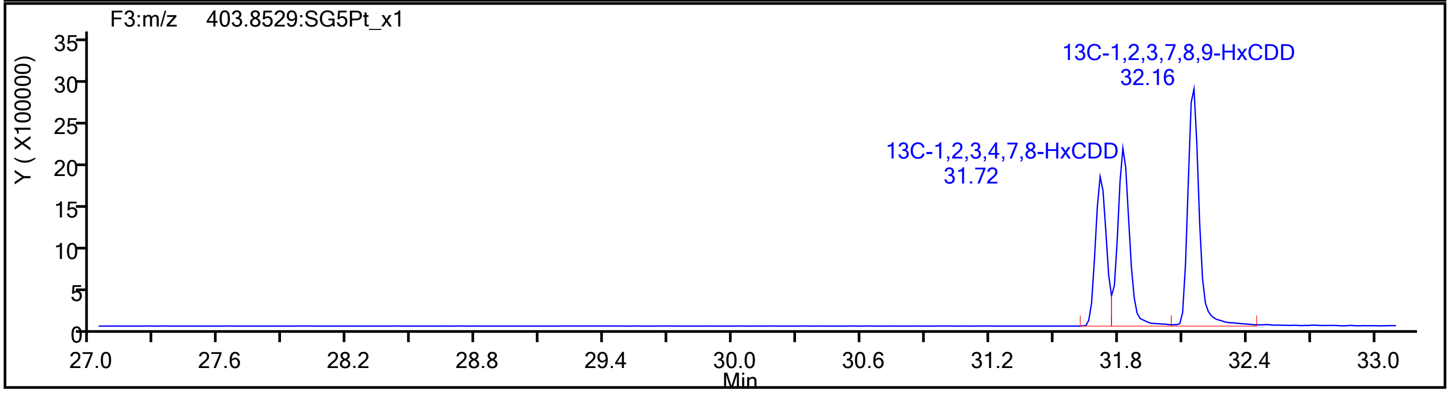

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 27

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

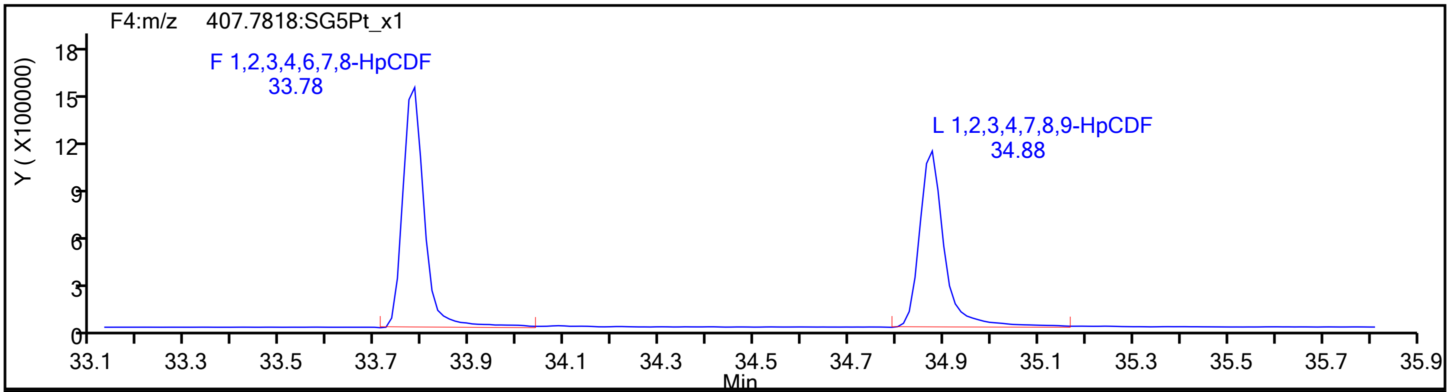

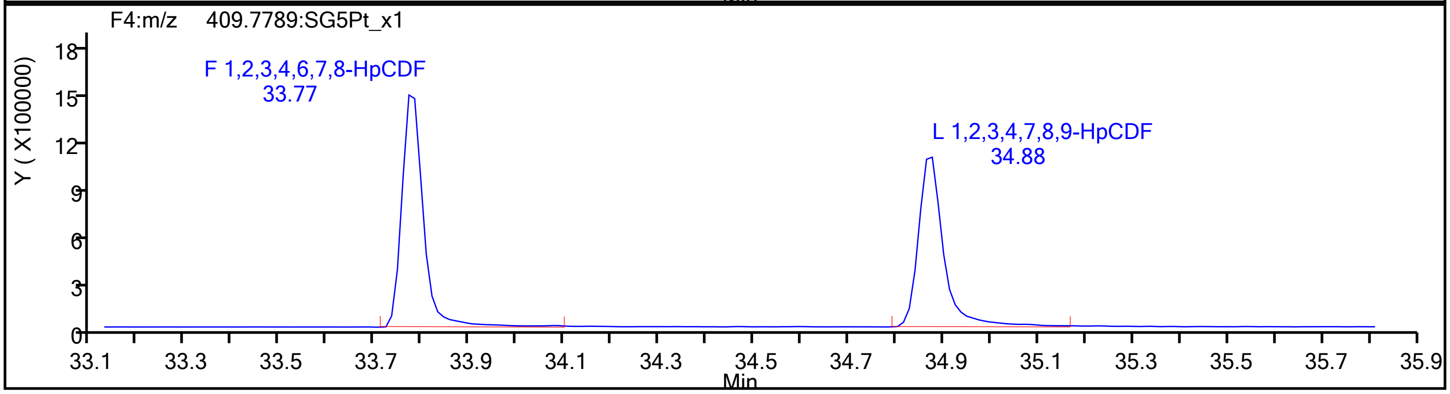

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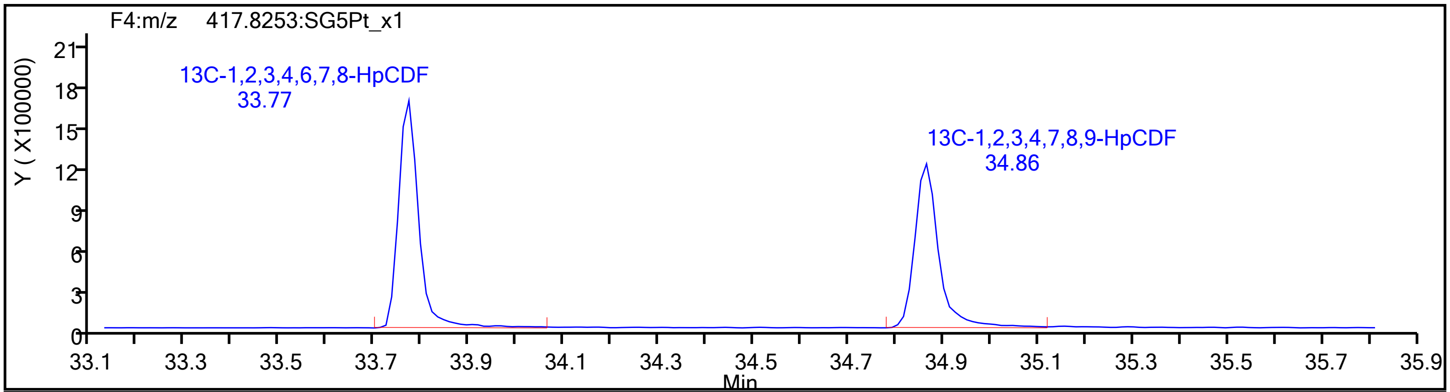

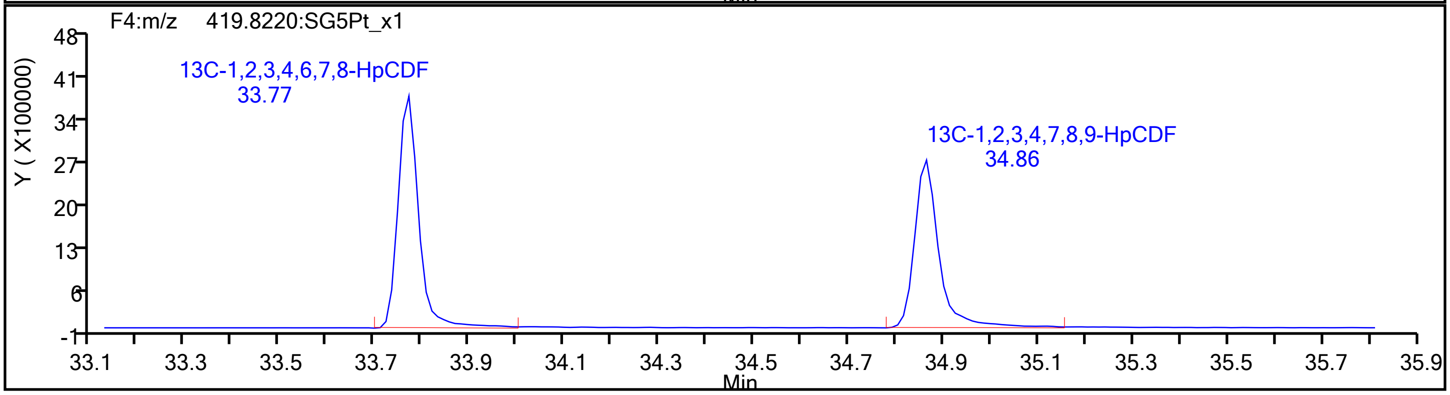

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

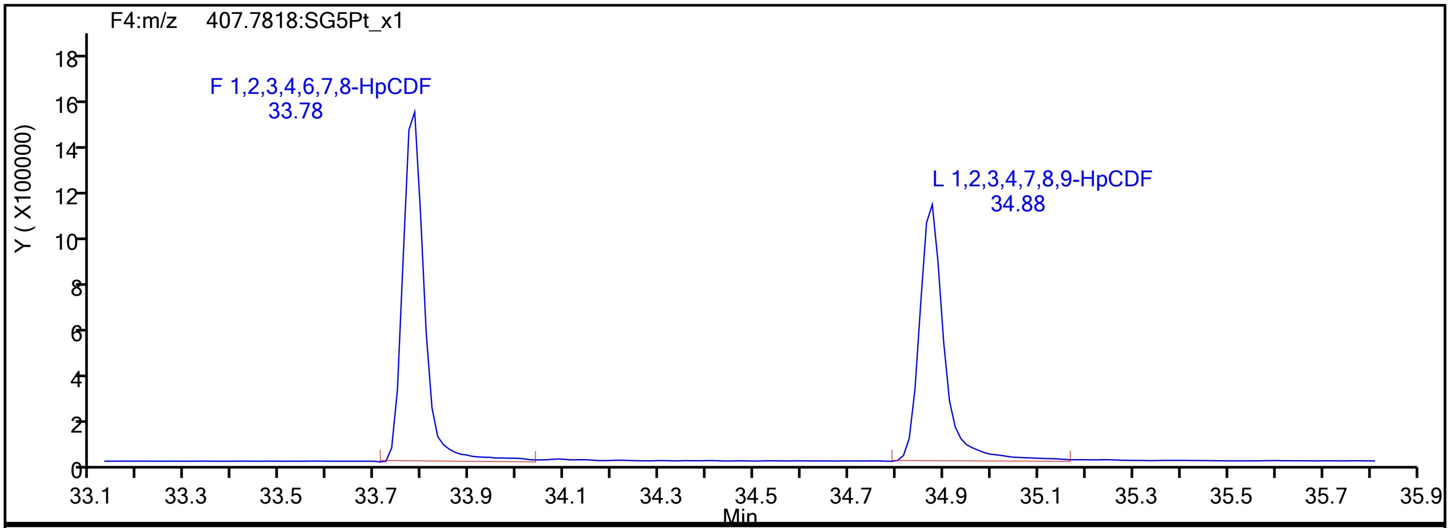

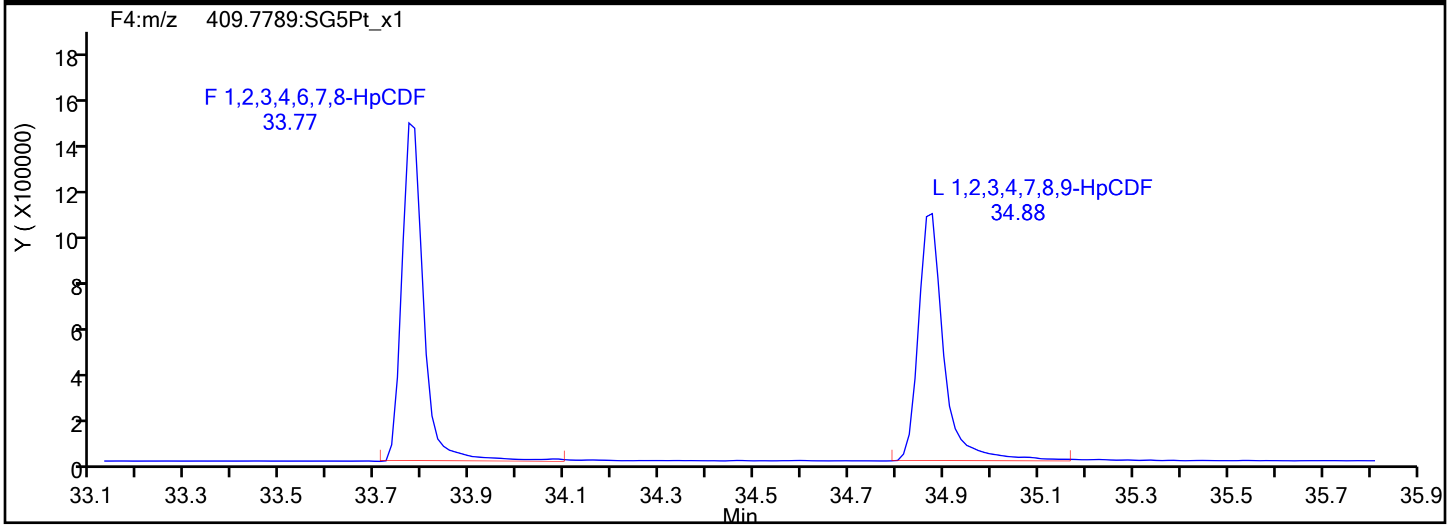

HpCDF Interference Mass

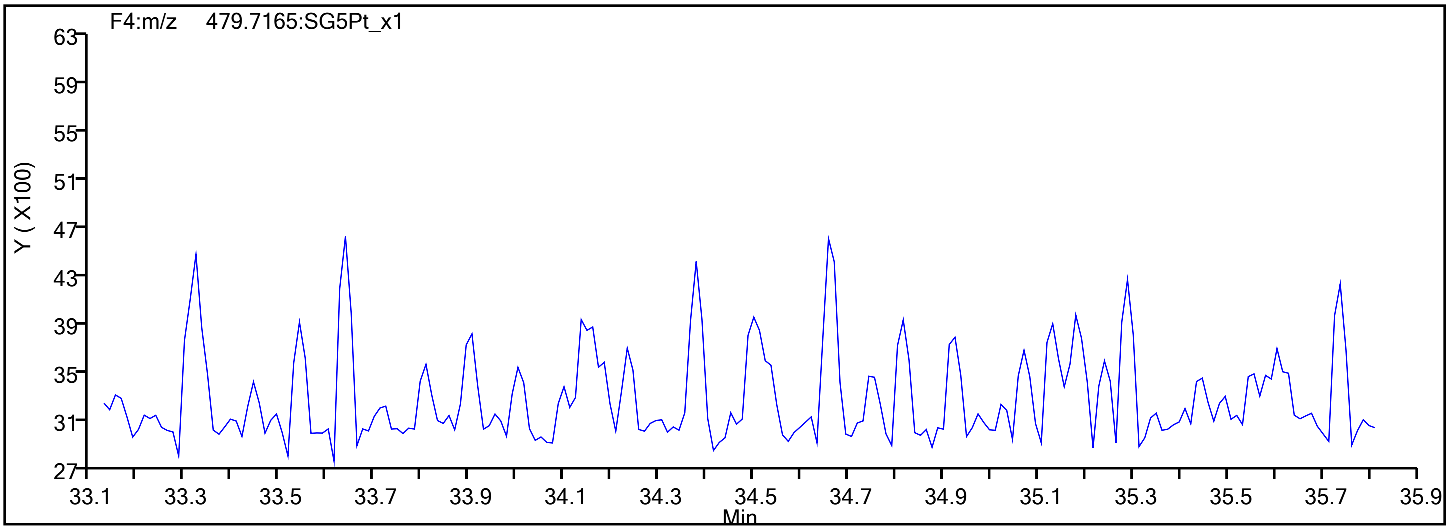

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

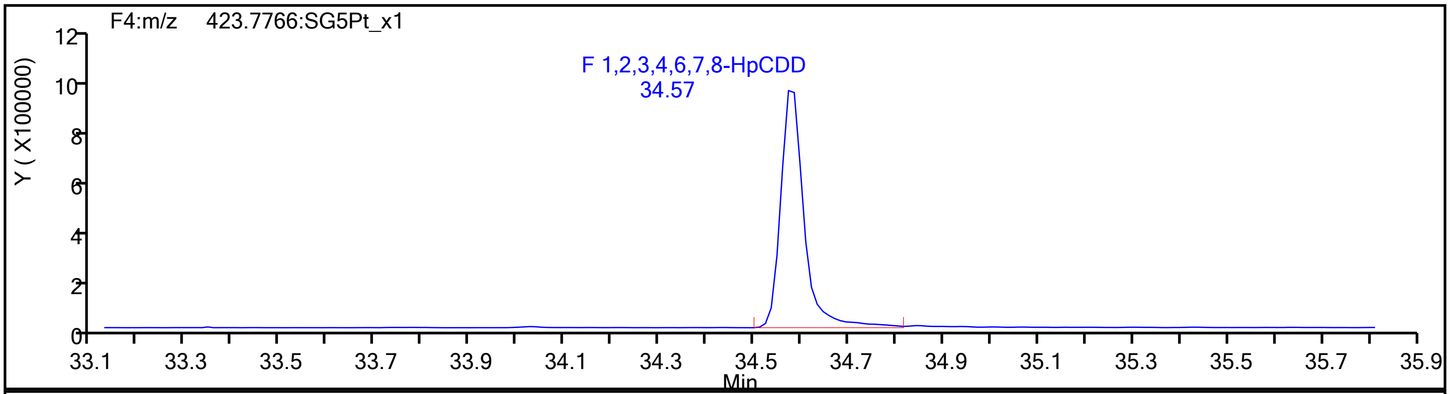

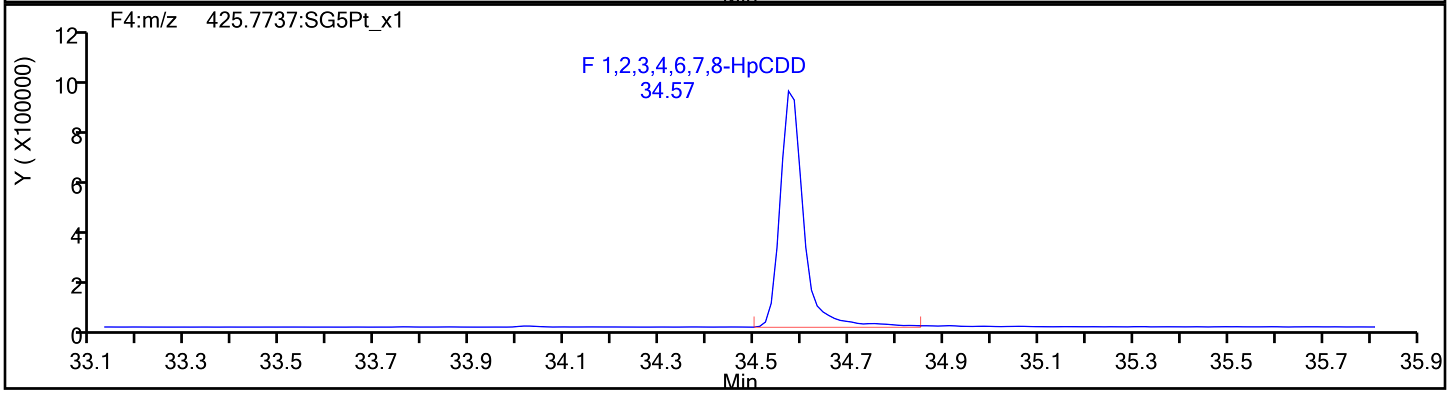

HpCDD Standards

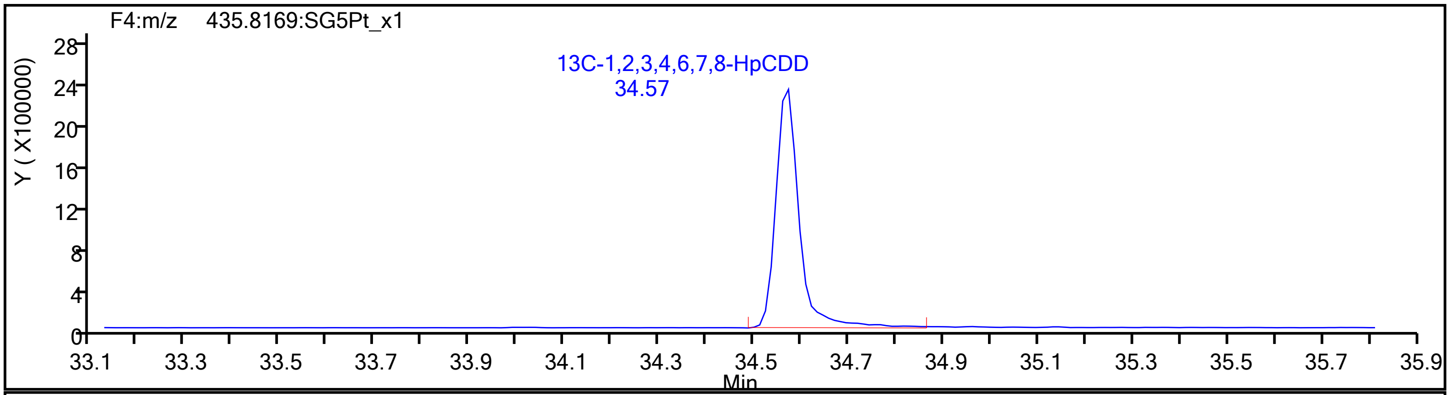

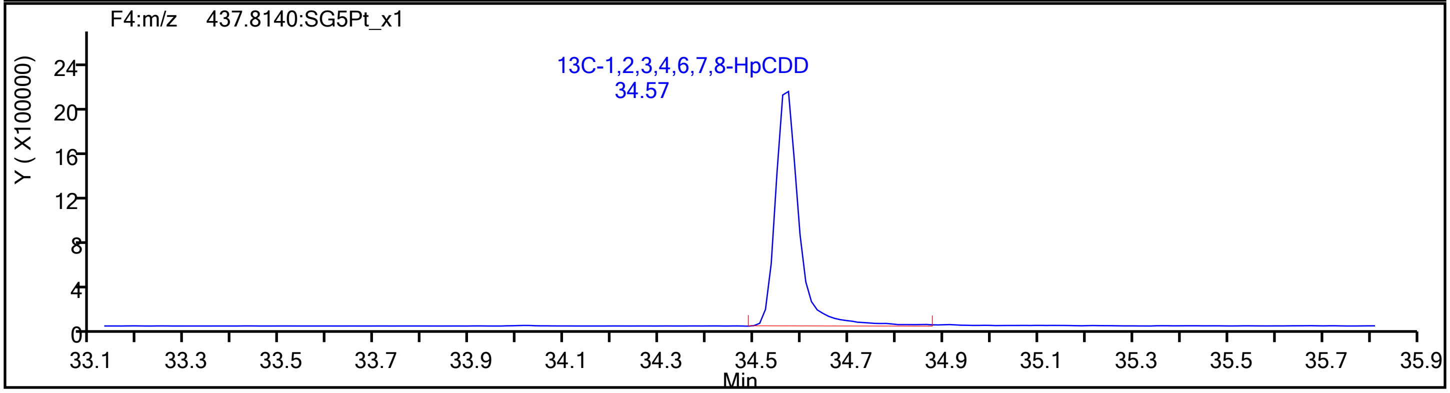

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

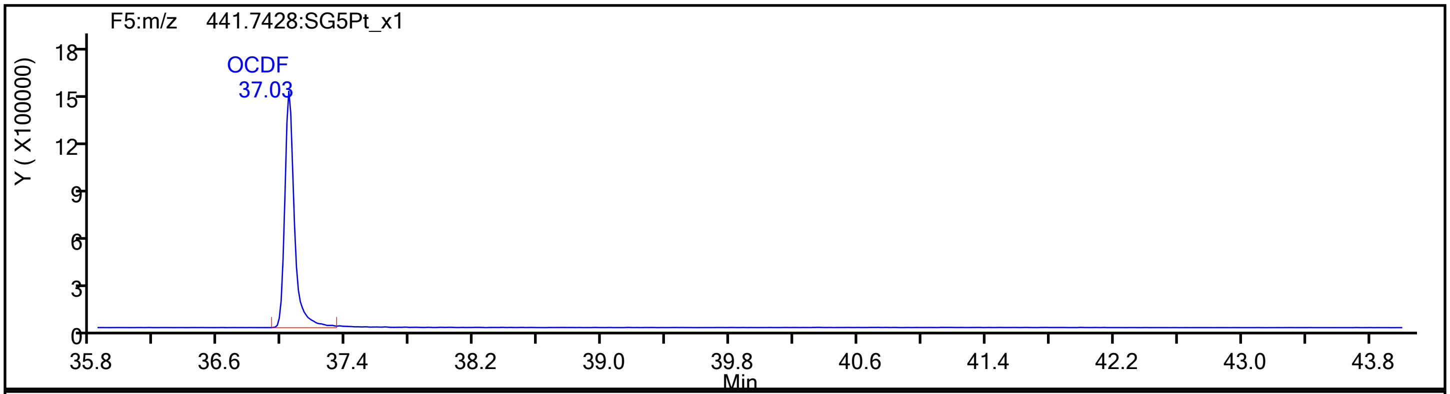

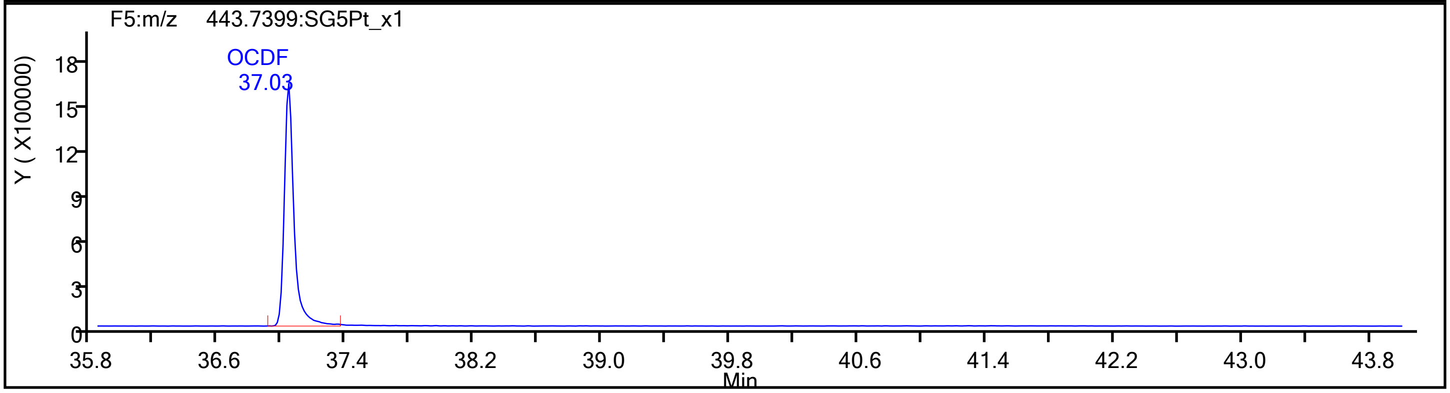

OCDF Standards

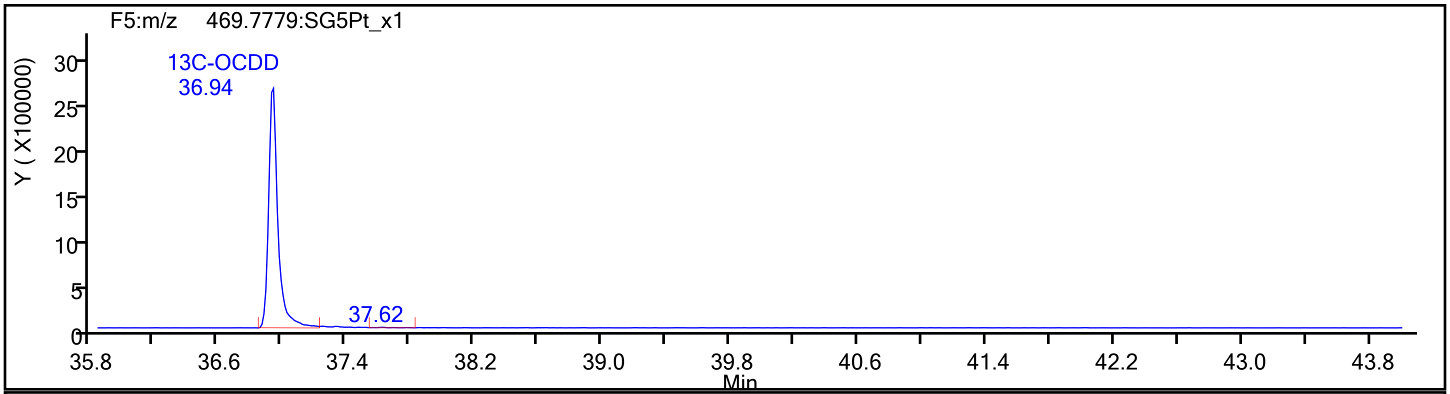

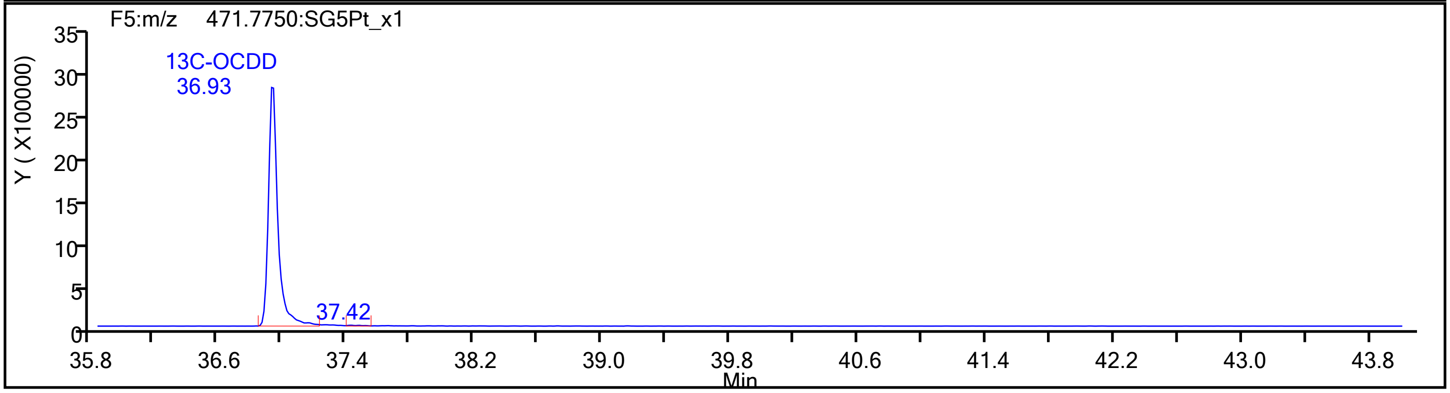

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

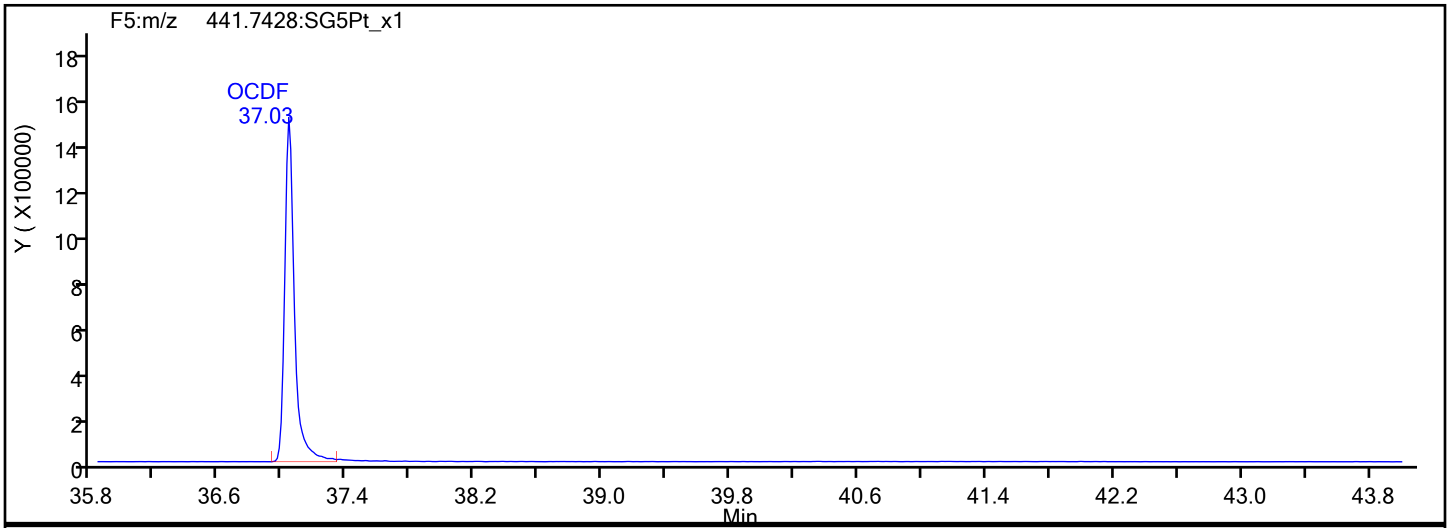

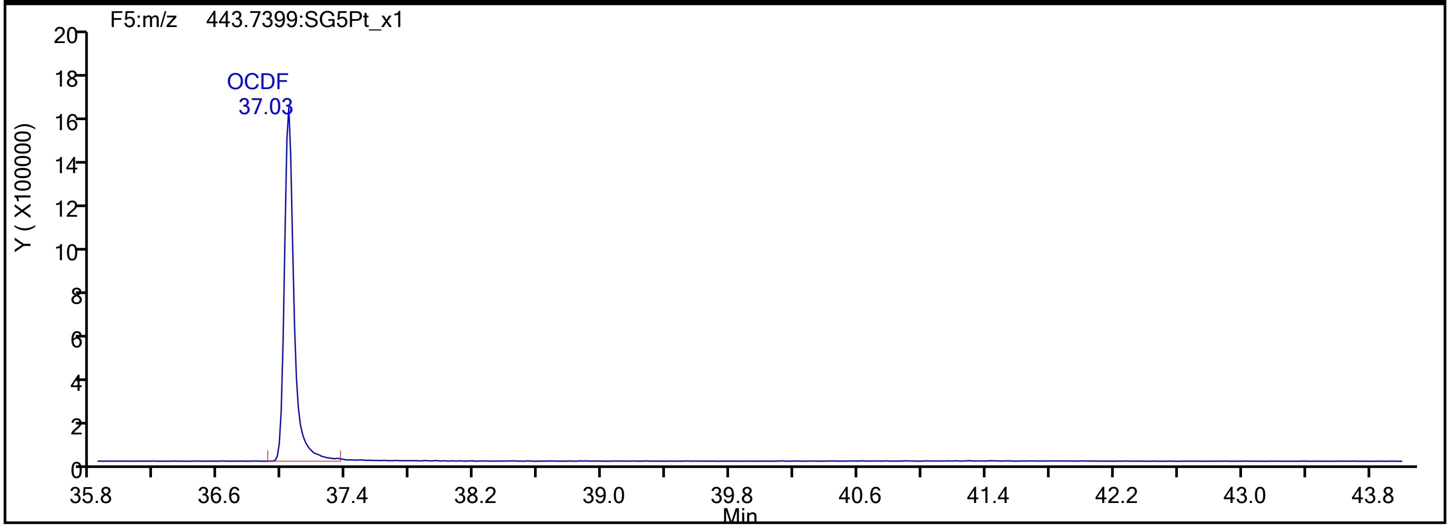

OCDF Interference Mass

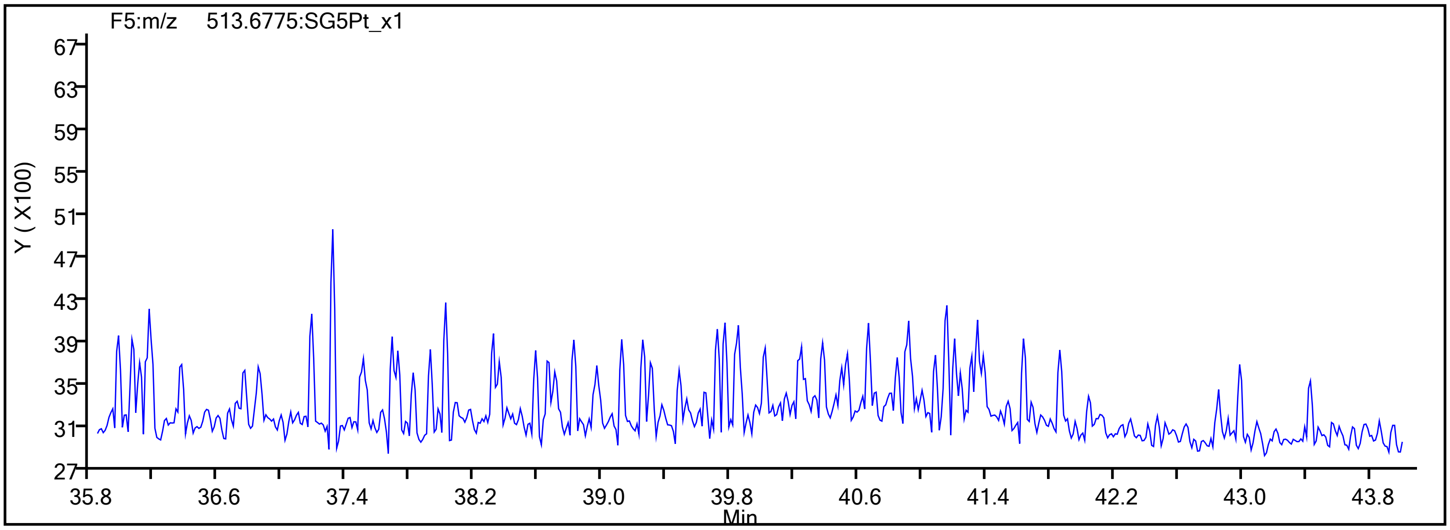

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d		
Injection Date:	25-Nov-2020 01:18:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	27
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

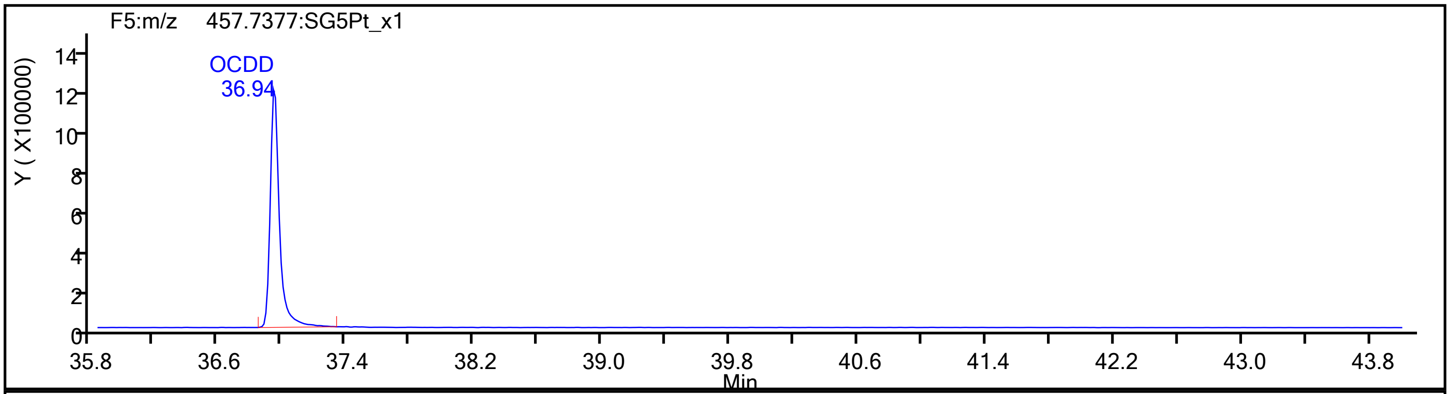

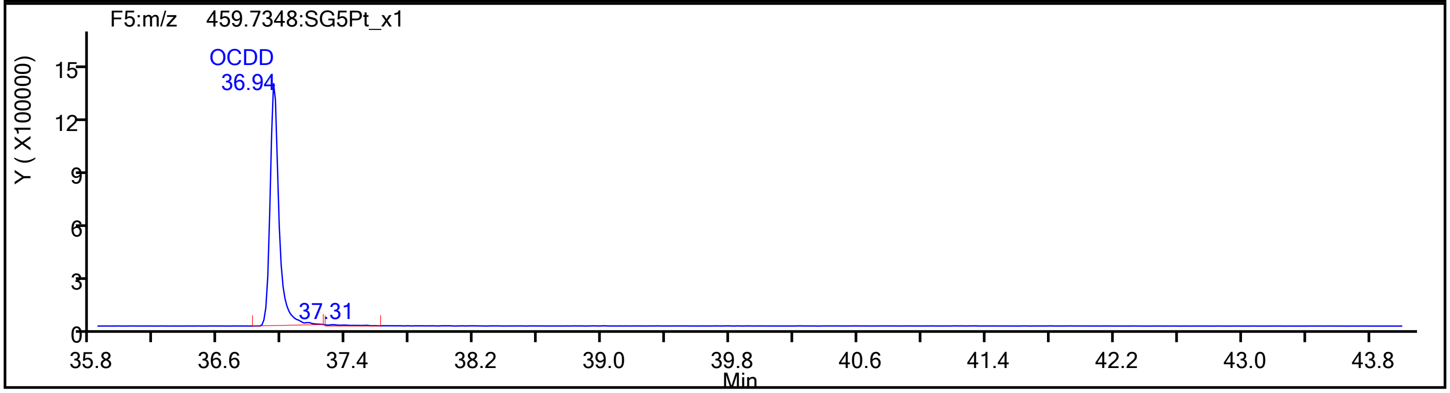

OCDD Standards

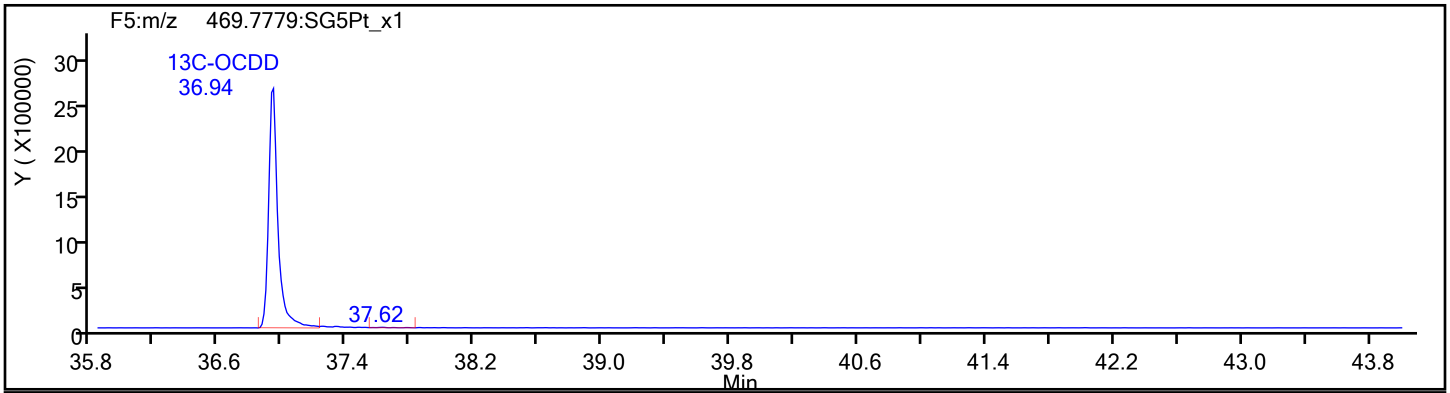

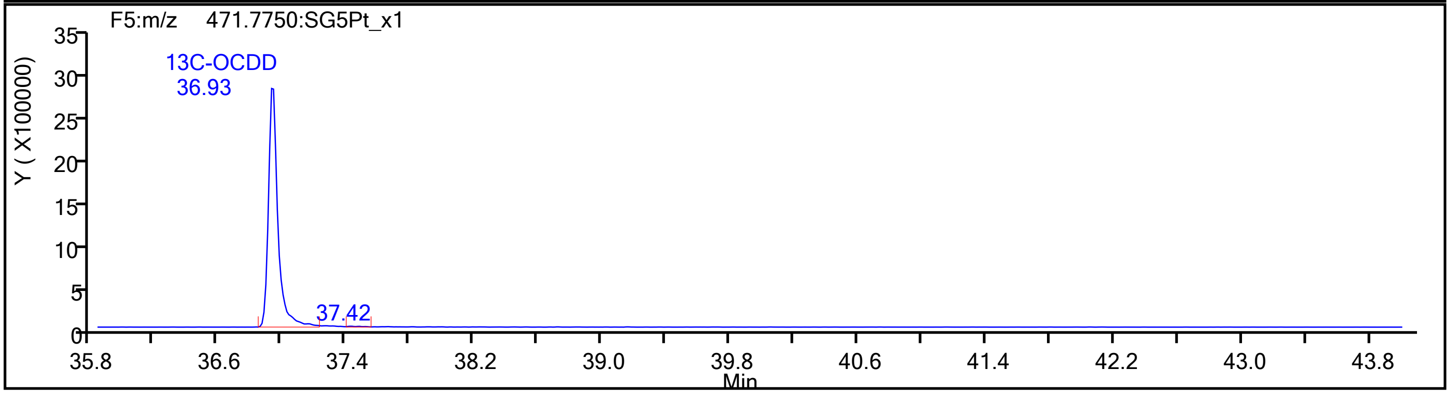

Report Date: 27-Nov-2020 08:08:24 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d

Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 27

Column Type: DB-5 Column Dia: 0.32 mm

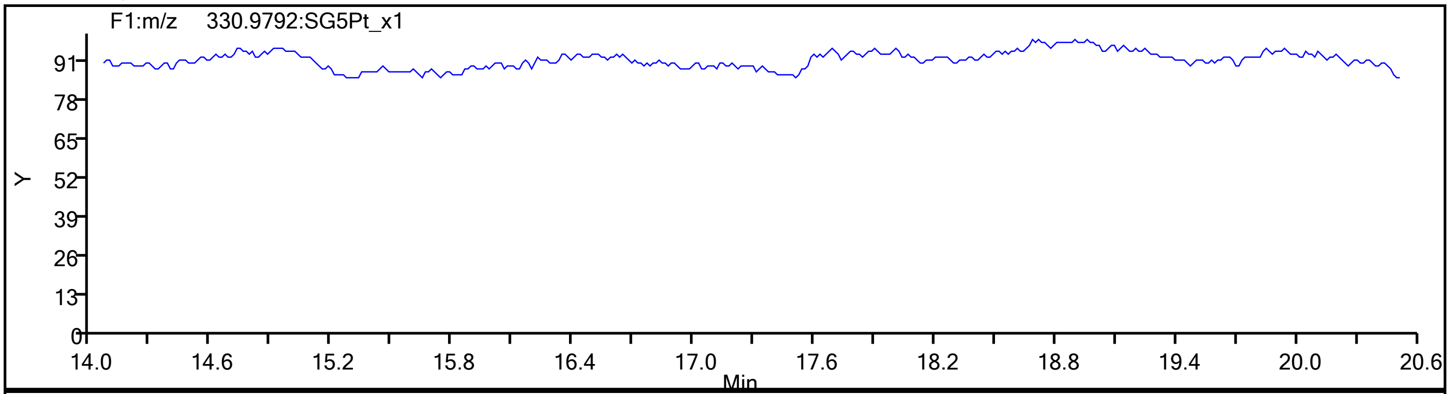

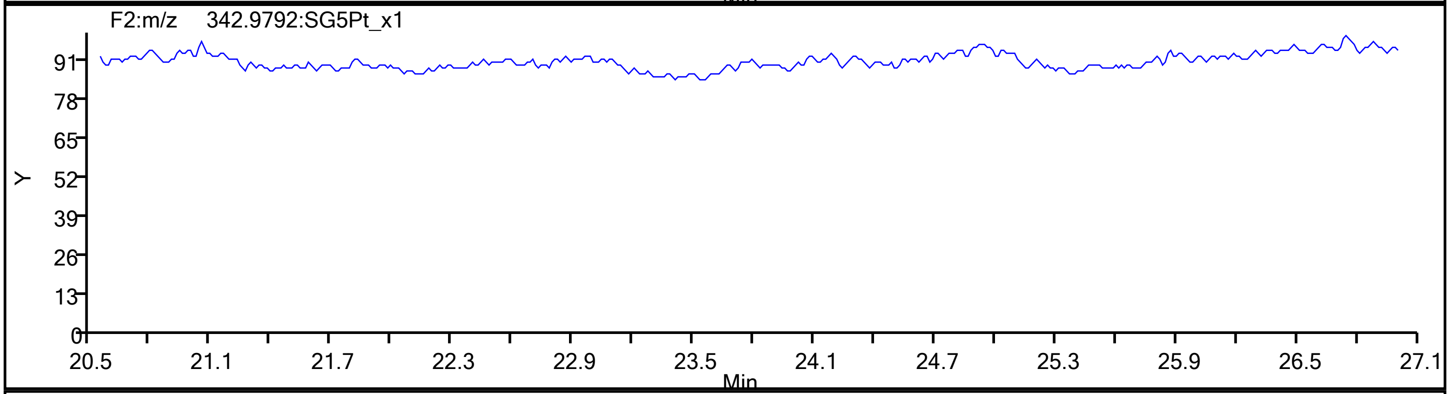

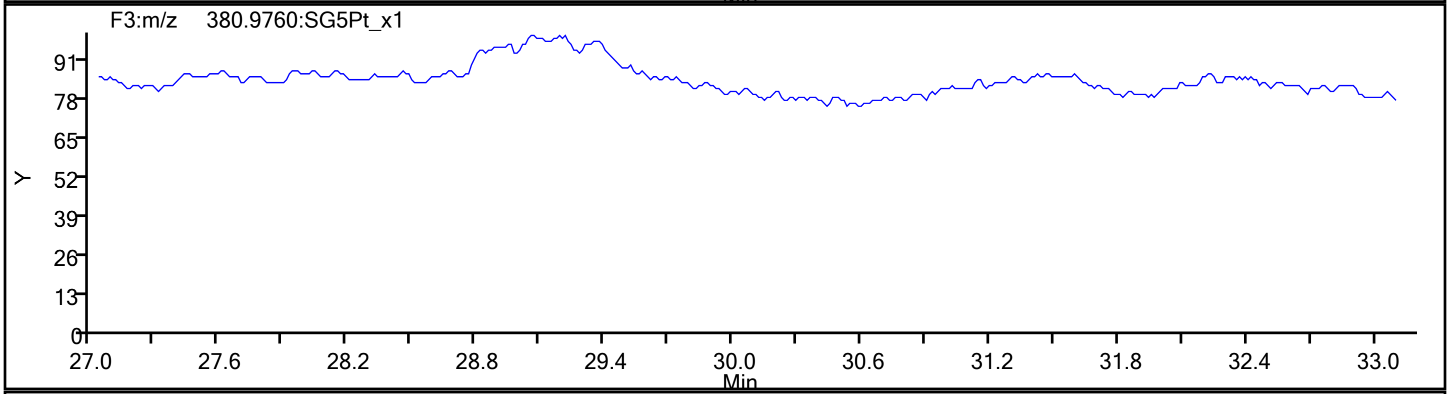

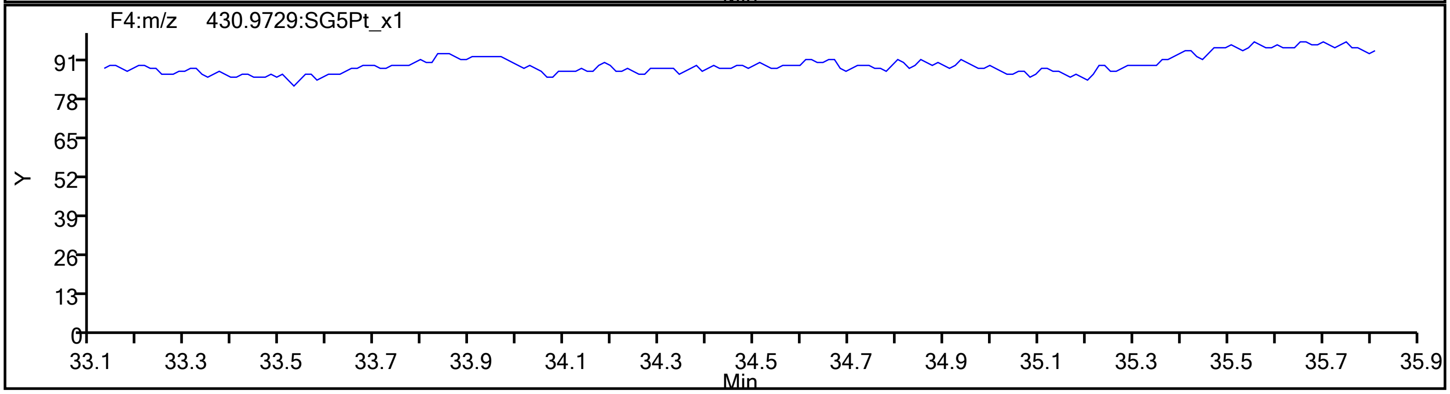

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_52.d
Injection Date: 25-Nov-2020 01:18:50 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA, ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203 Sample Line#: 27
Column Type: DB-5 Column Dia: 0.32 mm

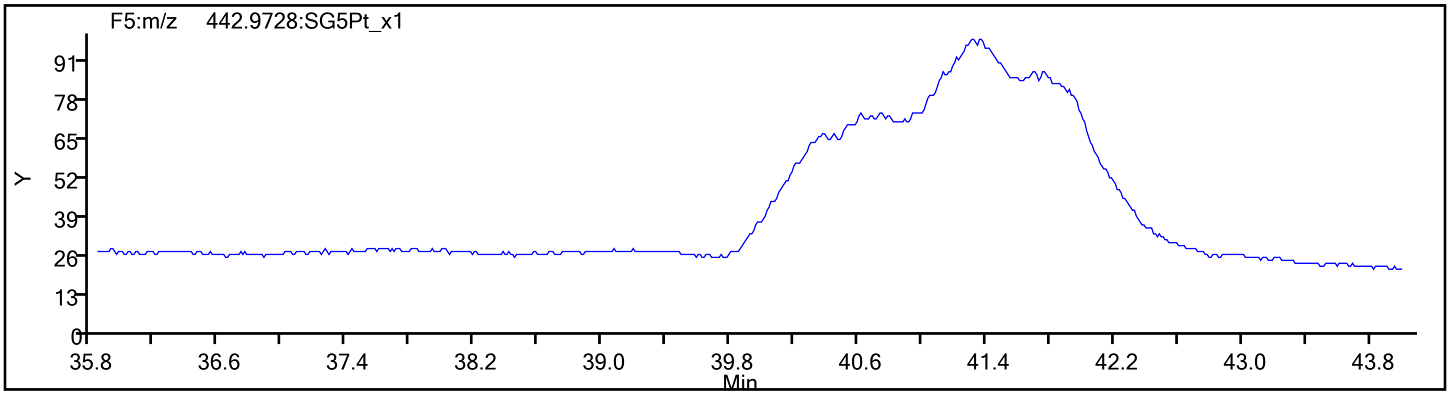

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-432973/3-A

Matrix: Water Lab File ID: 23NO2010D5_53.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 11/18/2020 11:29

Sample wt/vol: 1000(mL) Date Analyzed: 11/25/2020 02:03

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 435203 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	164		10	1.5
51207-31-9	2,3,7,8-TCDF	163		10	0.75
40321-76-4	1,2,3,7,8-PeCDD	747		50	2.0
57117-41-6	1,2,3,7,8-PeCDF	802		50	3.2
57117-31-4	2,3,4,7,8-PeCDF	812		50	3.9
39227-28-6	1,2,3,4,7,8-HxCDD	854		50	3.7
57653-85-7	1,2,3,6,7,8-HxCDD	807		50	3.6
19408-74-3	1,2,3,7,8,9-HxCDD	847		50	3.2
70648-26-9	1,2,3,4,7,8-HxCDF	790		50	5.7
57117-44-9	1,2,3,6,7,8-HxCDF	801		50	5.2
72918-21-9	1,2,3,7,8,9-HxCDF	787		50	4.2
60851-34-5	2,3,4,6,7,8-HxCDF	778		50	4.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	785		50	3.5
67562-39-4	1,2,3,4,6,7,8-HpCDF	775		50	7.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	794		50	11
3268-87-9	OCDD	1500		100	2.7
39001-02-0	OCDF	1530		100	2.8
41903-57-5	Total TCDD	164		10	1.5
30402-14-3	Total TCDF	163		10	0.75
36088-22-9	Total PeCDD	747		50	2.0
30402-15-4	Total PeCDF	1610		50	3.6
34465-46-8	Total HxCDD	2510		50	3.5
55684-94-1	Total HxCDF	3160		50	4.9
37871-00-4	Total HpCDD	785		50	3.5
38998-75-3	Total HpCDF	1570		50	9.4

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-66850-2
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-432973/3-A
Matrix: Water	Lab File ID: 23NO2010D5_53.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 11/18/2020 11:29
Sample wt/vol: 1000(mL)	Date Analyzed: 11/25/2020 02:03
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 435203	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		20-175
89059-46-1	13C-2,3,7,8-TCDF	96		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	81		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	89		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	85		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	78		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	98		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	99		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	97		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	99		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	84		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		20-186
114423-97-1	13C-OCDD	75		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	103		31-191

Report Date: 27-Nov-2020 08:08:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d				
Lims ID:	LCSD 320-432973/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	25-Nov-2020 02:03:48	ALS Bottle#:	53	Worklist Smp#:	28
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 320-432973/3-A LCSD 320-432973/3-A RA				
Misc. Info.:	23NO2010D5				
Operator ID:	SMA, ALM	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Nov-2020 08:08:59	Calib Date:	17-Sep-2020 19:09:42		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1603				

First Level Reviewer: stephensk Date: 25-Nov-2020 11:52:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.838	29571159	0.77	7.2E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.324	38715035	0.80	1.3598	96.3	96.3	0.3292	0.3292	96.28	
2,3,7,8-TCDF	17.339	2858251	0.79	0.9077	8.133	8.133	0.0374	0.0374	81.33	
A Non-2,3,7,8-sub-TCDF	17.029						0.0374	0.0496		RQU
S Total TCDF					8.133	8.133	0.0374	0.0374		
D 13C-2,3,7,8-TCDD	18.035	25446498	0.74	1.0536	81.7	81.7	0.1955	0.1955	81.68	
2,3,7,8-TCDD	18.050	2100217	0.76	1.0061	8.203	8.203	0.0750	0.0750	82.03	
$ 37Cl4-2,3,7,8-TCDD	18.050	12793747		1.0488	41.3	41.3	0.0386	0.0386	103	
A Non-2,3,7,8-sub-TCDD	17.483						0.0750	0.0750		
S Total TCDD					8.203	8.203	0.0750	0.0750		
D 13C-1,2,3,7,8-PeCDF	22.369	29744534	1.56	1.1306	89.0	89.0	0.2307	0.2307	88.97	
1,2,3,7,8-PeCDF	22.396	10912036	1.63	0.9147	40.1	40.1	0.1618	0.1618	80.21	
D 13C-2,3,4,7,8-PeCDF	23.719	26620629	1.59	1.0539	85.4	85.4	0.2475	0.2475	85.42	
2,3,4,7,8-PeCDF	23.746	10273018	1.58	0.9508	40.6	40.6	0.1954	0.1954	81.17	
A F1 PeCDFs	19.963						0.0373	0.0373		
A Non-2,3,7,8-sub-PeCDF	23.127						0.1766	0.3466		U
S Total PeCDF					80.7	80.7	0.1786	0.1786		
D 13C-1,2,3,7,8-PeCDD	24.442	19377191	1.62	0.8084	81.1	81.1	0.1366	0.1366	81.05	
1,2,3,7,8-PeCDD	24.469	7209321	1.56	0.9955	37.4	37.4	0.1009	0.1009	74.75	
A Non-2,3,7,8-sub-PeCDD	23.351						0.1009	0.1009		
S Total PeCDD					37.4	37.4	0.1009	0.1009		
D 13C-1,2,3,4,7,8-HxCDF	30.532	21379441	0.51	0.9225	98.0	98.0	0.5028	0.5028	97.96	
1,2,3,4,7,8-HxCDF	30.546	9359738	1.25	1.1090	39.5	39.5	0.2848	0.2848	78.95	
D 13C-1,2,3,6,7,8-HxCDF	30.706	24180412	0.52	1.0336	98.9	98.9	0.4488	0.4488	98.89	
1,2,3,6,7,8-HxCDF	30.732	10381443	1.26	1.0721	40.0	40.0	0.2596	0.2596	80.09	
D 13C-2,3,4,6,7,8-HxCDF	31.531	23000282	0.52	0.9773	99.5	99.5	0.4746	0.4746	99.47	
2,3,4,6,7,8-HxCDF	31.544	9694204	1.26	1.0838	38.9	38.9	0.2136	0.2136	77.78	
D 13C-1,2,3,7,8,9-HxCDF	32.329	21022173	0.54	0.9153	97.1	97.1	0.5068	0.5068	97.08	
1,2,3,7,8,9-HxCDF	32.343	9039895	1.27	1.0931	39.3	39.3	0.2124	0.2124	78.68	
A Non-2,3,7,8-sub-HxCDF	30.227						0.2386	0.2386		
S Total HxCDF					157.8	157.8	0.2426	0.2426		

Report Date: 27-Nov-2020 08:08:59 Chrom Revision: 2.3 12-Nov-2020 21:52:08
Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.143	23658433	1.27	5.6E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.704	14781754	1.27	0.7977	78.3	78.3	0.3243	0.3243	78.33	
1,2,3,4,7,8-HxCDD	31.730	6324150	1.33	1.0014	42.7	42.7	0.1843	0.1843	85.44	
D 13C-1,2,3,6,7,8-HxCDD	31.810	19246537	1.26	1.0010	81.3	81.3	0.2585	0.2585	81.27	
1,2,3,6,7,8-HxCDD	31.824	6913223	1.21	0.8902	40.4	40.4	0.1778	0.1778	80.70	
1,2,3,7,8,9-HxCDD	32.156	7619294	1.28	1.0579	42.3	42.3	0.1611	0.1611	84.66	
A Non-2,3,7,8-sub-HxCDD	30.905						0.1733	0.1733		
S Total HxCDD					125.4	125.4	0.1744	0.1744		
D 13C-1,2,3,4,6,7,8-HpCDF	33.757	16814269	0.44	0.8506	83.6	83.6	0.8993	0.8993	83.55	
1,2,3,4,6,7,8-HpCDF	33.770	8867317	1.04	1.3603	38.8	38.8	0.3893	0.3893	77.54	
D 13C-1,2,3,4,7,8,9-HpCDF	34.851	14363957	0.44	0.7618	79.7	79.7	1.004	1.004	79.70	
1,2,3,4,7,8,9-HpCDF	34.863	7532436	1.07	1.3207	39.7	39.7	0.5497	0.5497	79.41	
A Non-2,3,7,8-sub-HpCDF	34.335						0.4569	0.4569		
S Total HpCDF					78.5	78.5	0.4695	0.4695		
D 13C-1,2,3,4,6,7,8-HpCDD	34.560	15538604	1.05	0.8873	74.0	74.0	0.3598	0.3598	74.02	
1,2,3,4,6,7,8-HpCDD	34.560	6093376	1.01	0.9988	39.3	39.3	0.1749	0.1749	78.53	
A Non-2,3,7,8-sub-HpCDD	34.311						0.1749	0.1749		
S Total HpCDD					39.3	39.3	0.1749	0.1749		
D 13C-OCDD	36.914	22209718	0.91	0.6287	149.3	149.3	0.1809	0.1809	74.66	
OCDF	37.021	12020179	0.91	1.4136	76.6	76.6	0.1416	0.1416	76.57	
OCDD	36.925	9378148	0.91	1.1290	74.8	74.8	0.1332	0.1332	74.80	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d
Lims ID: LCSD 320-432973/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 25-Nov-2020 02:03:48 ALS Bottle#: 53 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-432973/3-A LCSD 320-432973/3-A RA
Misc. Info.: 23NO2010D5
Operator ID: SMA, ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Nov-2020 08:08:59 Calib Date: 17-Sep-2020 19:09:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20200917-103493.b\17SE2010D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1603

First Level Reviewer: stephensk Date: 25-Nov-2020 11:52:52

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.838	17.854	-1		12826475	3103765	3391	8477	915		
333.9339	17.838	17.854	-1		16744684	4061690	2514	6285	1616	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.324	17.324	0	0.971	17178285	4198503	8704	21760	482		
317.9389	17.324	17.324	0	0.971	21536750	5251529	4127	10317	1272	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.339	17.339	0	1.001	1258076	301662	510	1275	591		
305.8987	17.339	17.339	0	1.001	1600175	383853	773	1932	497	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	16.946	17.029	-5	0.978	10117	3007	510	1275	6		
	Empc Correction				7587	2397	510	1275	5		
305.8987	16.946	17.029	-5	0.978	9854	3113	773	1932	4	1.03(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.035	18.035	0	1.011	10863459	2563865	3391	8477	756		
333.9339	18.035	18.035	0	1.011	14583039	3431314	2514	6285	1365	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.050	18.050	0	1.001	904290	198941	1161	2902	171		
321.8936	18.050	18.050	0	1.001	1195927	285094	648	1620	440	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.050	18.065	-1	1.012	12793747	3009484	1161	2902	2592		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.483						1161	2902			
321.8936	17.483						648	1620			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.369	22.383	-1	1.254	18122511	3243805	4552	11380	713		
353.8970	22.369	22.383	-1	1.254	11622023	2095421	2924	7310	717	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.396	22.410	-1	1.001	6763878	1166542	1797	4492	649		
341.8567	22.396	22.410	-1	1.001	4148158	712706	1363	3407	523	1.63(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.719	23.746	-2	1.330	16335937	2629792	4552	11380	578		
353.8970	23.719	23.746	-2	1.330	10284692	1622057	2924	7310	555	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.746	23.774	-2	1.001	6295273	1011964	1797	4492	563		
341.8567	23.746	23.774	-2	1.001	3977745	633828	1363	3407	465	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.963						273	682			
341.8567	19.963						394	985			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	22.914	23.127	-13	1.024	52379	9339	1797	4492	5		
341.8567	22.942	23.127	-11	1.026	38736	6106	1363	3407	4	1.35(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.442	24.469	-2	1.370	11979433	1811656	1955	4887	927		
369.8919	24.442	24.469	-2	1.370	7397758	1141377	1210	3025	943	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.469	24.496	-2	1.001	4398217	641477	729	1822	880		
357.8516	24.469	24.496	-2	1.001	2811104	420608	458	1145	918	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.351						729	1822			
357.8516	23.351						458	1145			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.532	30.546	-1	0.950	7198979	1370589	4046	10115	339		
385.8610	30.532	30.546	-1	0.950	14180462	2763094	7477	18692	370	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.546	30.560	-1	1.000	5203623	1021084	2885	7212	354		
375.8178	30.546	30.560	-1	1.000	4156115	806662	2338	5845	345	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.706	30.719	-1	0.955	8275796	1586765	4046	10115	392		
385.8610	30.706	30.719	-1	0.955	15904616	3104508	7477	18692	415	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.732	30.746	-1	1.001	5781936	1094249	2885	7212	379		
375.8178	30.732	30.746	-1	1.001	4599507	883091	2338	5845	378	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.531	31.545	-1	0.981	7837047	1891486	4046	10115	467		
385.8610	31.531	31.545	-1	0.981	15163235	3747915	7477	18692	501	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.544	31.558	-1	1.000	5400105	1361521	2885	7212	472		
375.8178	31.544	31.558	-1	1.000	4294099	1053831	2338	5845	451	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.329	32.343	-1	1.006	7333000	1985174	4046	10115	491		
385.8610	32.329	32.343	-1	1.006	13689173	3639631	7477	18692	487	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.343	32.357	-1	1.000	5060139	1332584	2885	7212	462		
375.8178	32.343	32.357	-1	1.000	3979756	1039499	2338	5845	445	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.227						2885	7212			
375.8178	30.227						2338	5845			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.143	32.157	-1		13214204	3421011	3389	8472	1009		
403.8529	32.143	32.157	-1		10444229	2789202	3038	7595	918	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.704	31.718	-1	0.986	8263333	2332524	3389	8472	688		
403.8529	31.704	31.718	-1	0.986	6518421	1819194	3038	7595	599	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.730	31.744	-1	1.001	3606391	976061	1742	4355	560		
391.8127	31.717	31.744	-2	1.000	2717759	757815	1323	3307	573	1.33(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.810	31.824	-1	0.990	10720555	2711261	3389	8472	800		
403.8529	31.810	31.824	-1	0.990	8525982	2129205	3038	7595	701	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.824	31.837	-1	1.000	3781864	970155	1742	4355	557		
391.8127	31.824	31.837	-1	1.000	3131359	775009	1323	3307	586	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.156	32.170	-1	1.014	4283699	1142828	1742	4355	656		
391.8127	32.156	32.170	-1	1.014	3335595	872714	1323	3307	660	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.905						1742	4355			
391.8127	30.905						1323	3307			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.757	33.770	-1	1.050	5168742	1708769	7558	18895	226		
419.8220	33.757	33.770	-1	1.050	11645527	3832851	11444	28610	335	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.770	33.782	-1	1.000	4513651	1450728	5560	13900	261		
409.7789	33.757	33.782	-1	1.000	4353666	1380777	6180	15450	223	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.851	34.864	-1	1.084	4377434	1244577	7558	18895	165		
419.8220	34.851	34.864	-1	1.084	9986523	2798155	11444	28610	245	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.863	34.888	-1	1.000	3896708	1071128	5560	13900	193		
409.7789	34.863	34.888	-1	1.000	3635728	980983	6180	15450	159	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.335						5560	13900			
409.7789	34.335						6180	15450			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.560	34.572	-1	1.075	7977097	2392887	4677	11692	512		
437.8140	34.560	34.572	-1	1.075	7561507	2180983	3253	8132	670	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.560	34.596	-2	1.000	3062008	894126	1710	4275	523		
425.7737	34.560	34.596	-2	1.000	3031368	898360	1486	3715	605	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.311						1710	4275			
425.7737	34.311						1486	3715			
13C-OCDD											
469.7779	36.914	36.938	-1	1.148	10553315	2646602	1454	3635	1820		
471.7750	36.914	36.938	-1	1.148	11656403	2872679	1371	3427	2095	0.91(0.76-1.02)	
OCDF											
441.7428	37.021	37.034	-1	1.003	5735508	1403309	1162	2905	1208		
443.7399	37.021	37.034	-1	1.003	6284671	1515533	1048	2620	1446	0.91(0.76-1.02)	
OCDD											
457.7377	36.925	36.938	-1	1.000	4468986	1113252	762	1905	1461		
459.7348	36.925	36.938	-1	1.000	4909162	1216730	898	2245	1355	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Lims ID:	LCSD 320-432973/3-A		
Client ID:			
Inject. Date:	25-Nov-2020 02:03:48	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	10D5	Operator:	SMA, ALM
Lims Batch ID:	435203	Lims Sample ID:	28

Non-2,3,7,8-sub-TCDF, RT: 17.029

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.908	D 13C-2,3,7,8-TCDF	100.000	38715035	9450032

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.908		100.000	38715035	9450032

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.946	10117	3007	9854	3113	0.0568	1.03	RQ
16.946	7587	2397	9854	3113	0.0496		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Lims ID:	LCSD 320-432973/3-A		
Client ID:			
Inject. Date:	25-Nov-2020 02:03:48	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	10D5	Operator:	SMA, ALM
Lims Batch ID:	435203	Lims Sample ID:	28

Non-2,3,7,8-sub-PeCDF, RT: 23.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.915	D 13C-1,2,3,7,8-PeCDF	100.000	29744534	5339226
2,3,4,7,8-PeCDF	0.951	D 13C-2,3,4,7,8-PeCDF	100.000	26620629	4251849

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.933		100.000	28182581	4795537

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.914	52379	9339	38736	6106	0.3466	1.35	

Compound is Marked ND

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

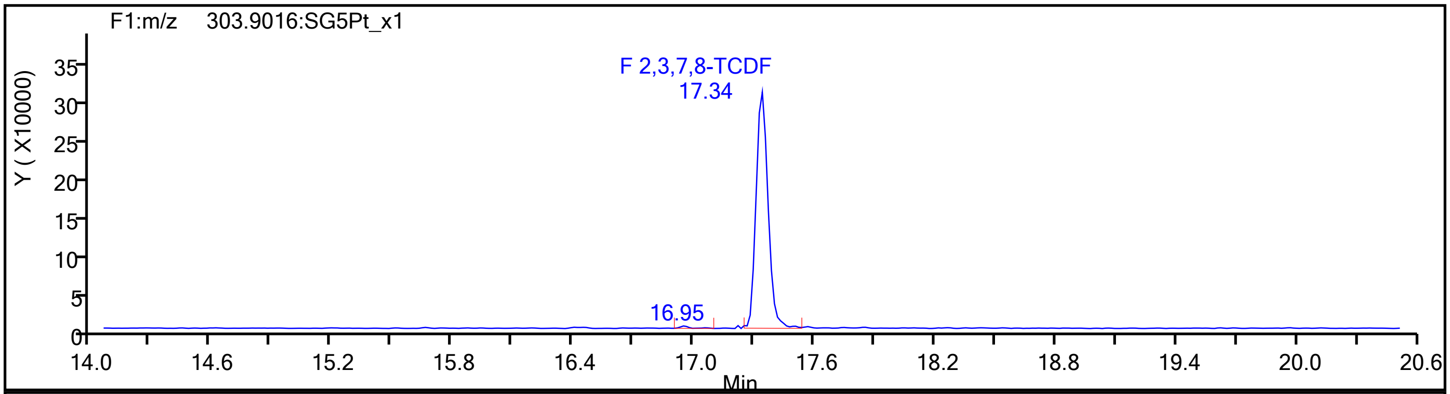

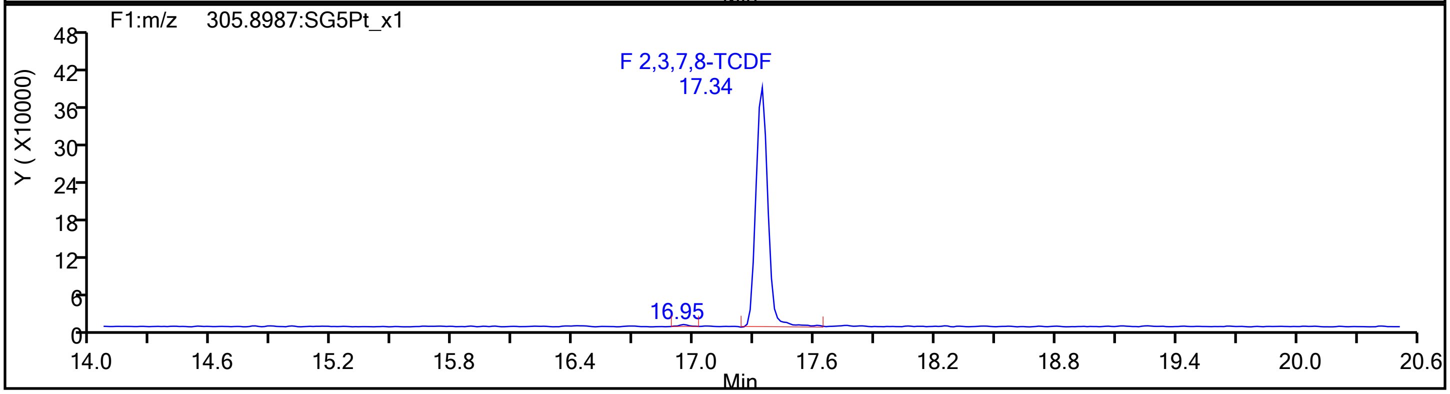

TCDF Standards

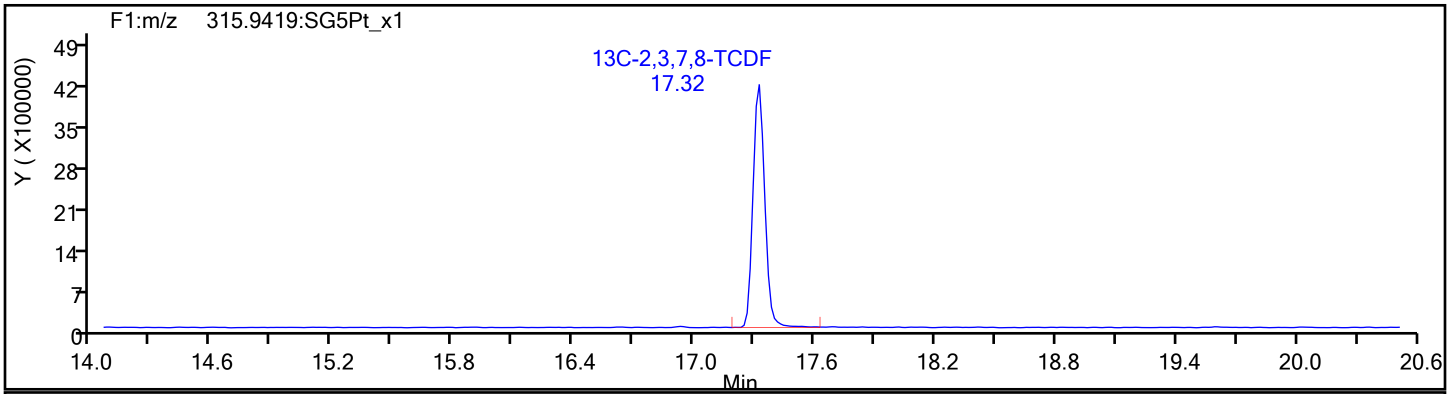

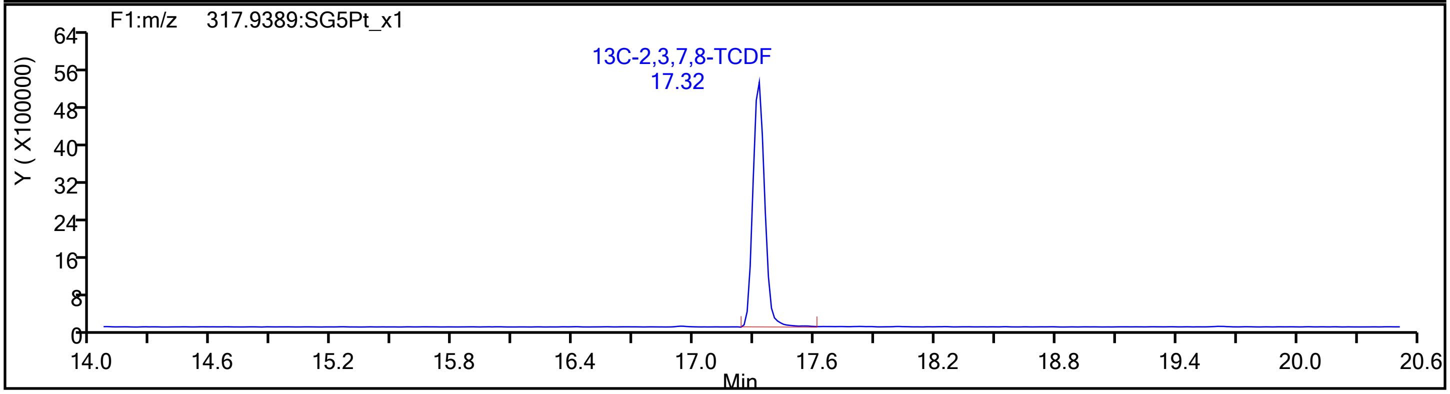

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d
Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul
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Operator ID: SMA, ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 435203
Sample Line#: 28
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

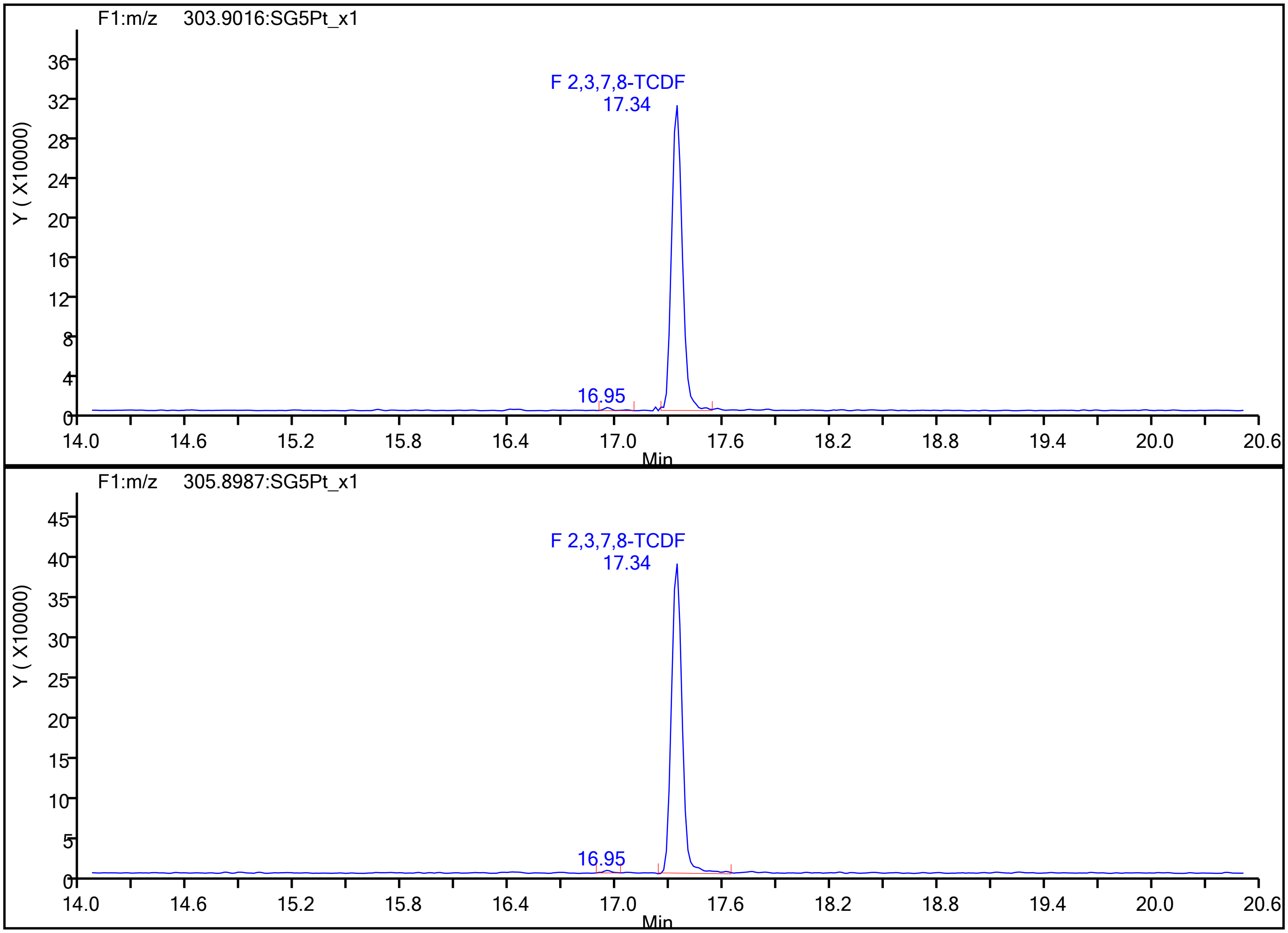

TCDF Interference Mass

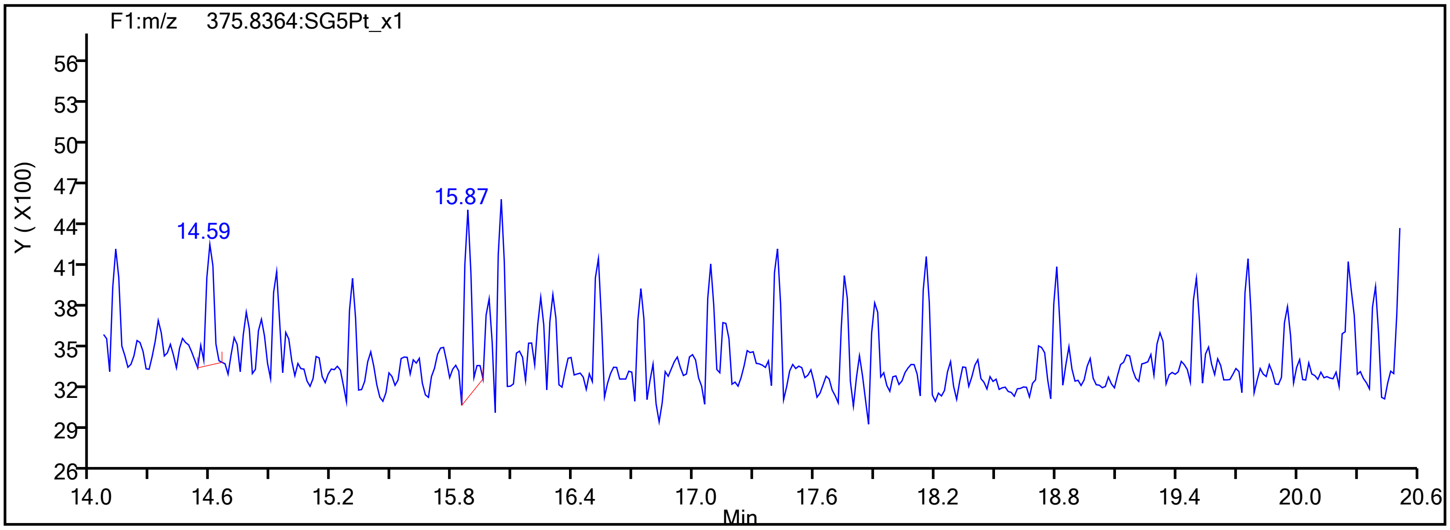

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Eurofins TestAmerica, Sacramento

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Operator ID: SMA, ALM
Method: Dioxin_10D5
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TCDD

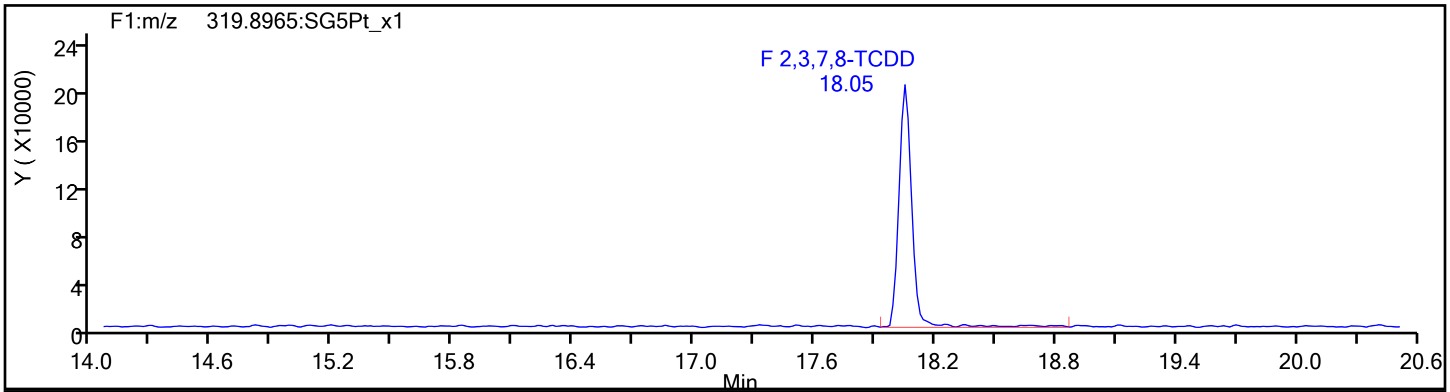

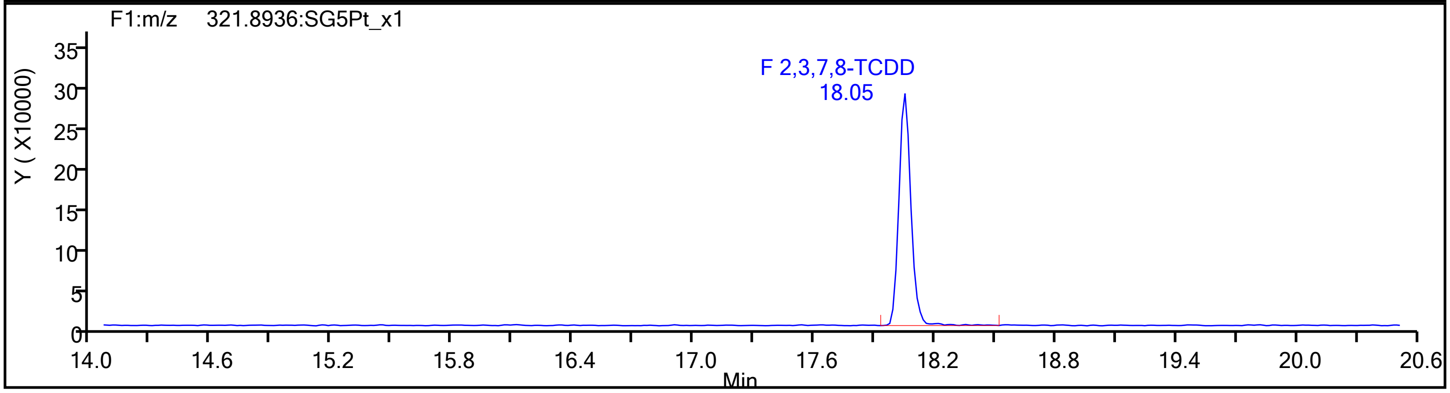

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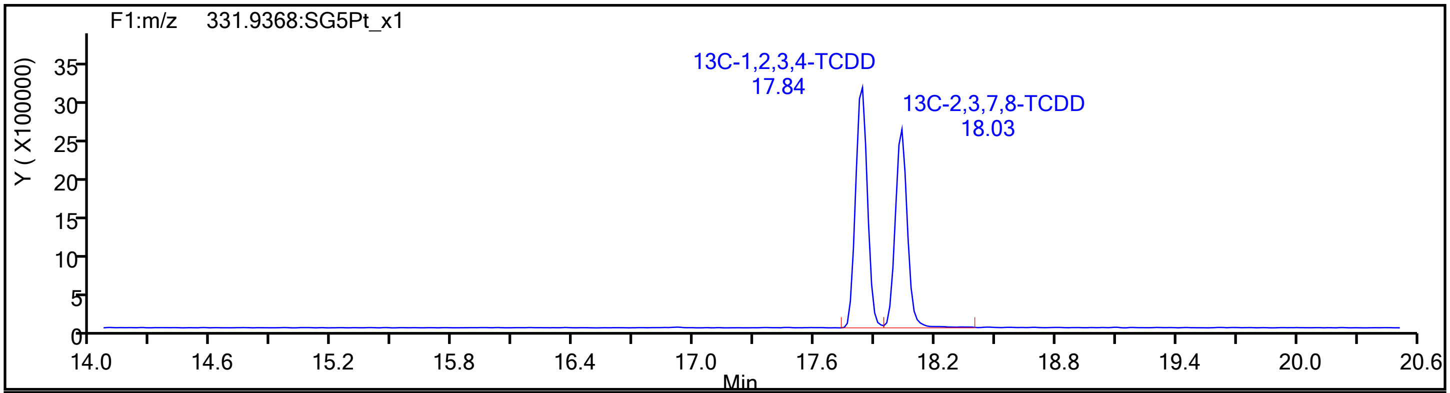

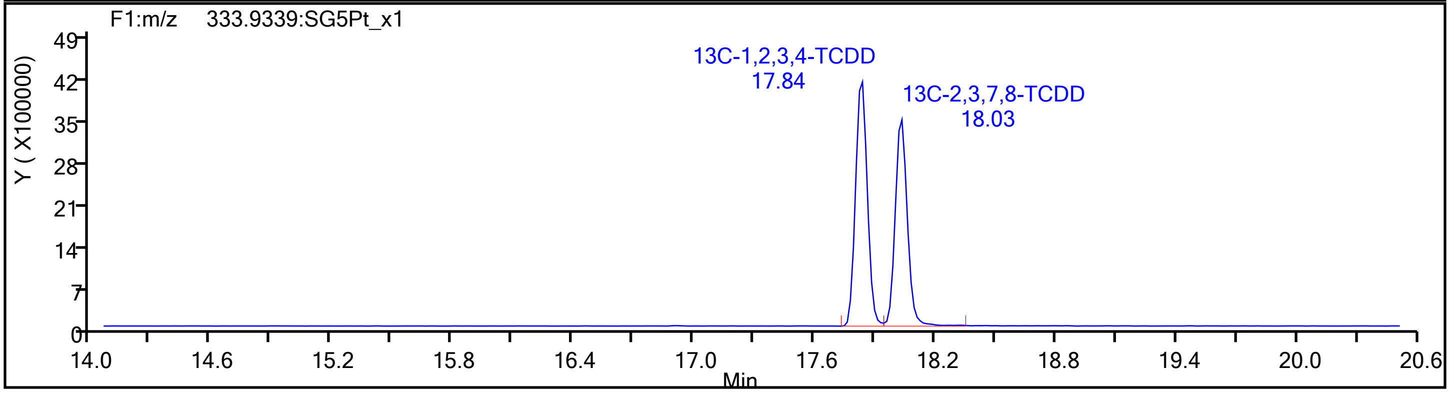

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

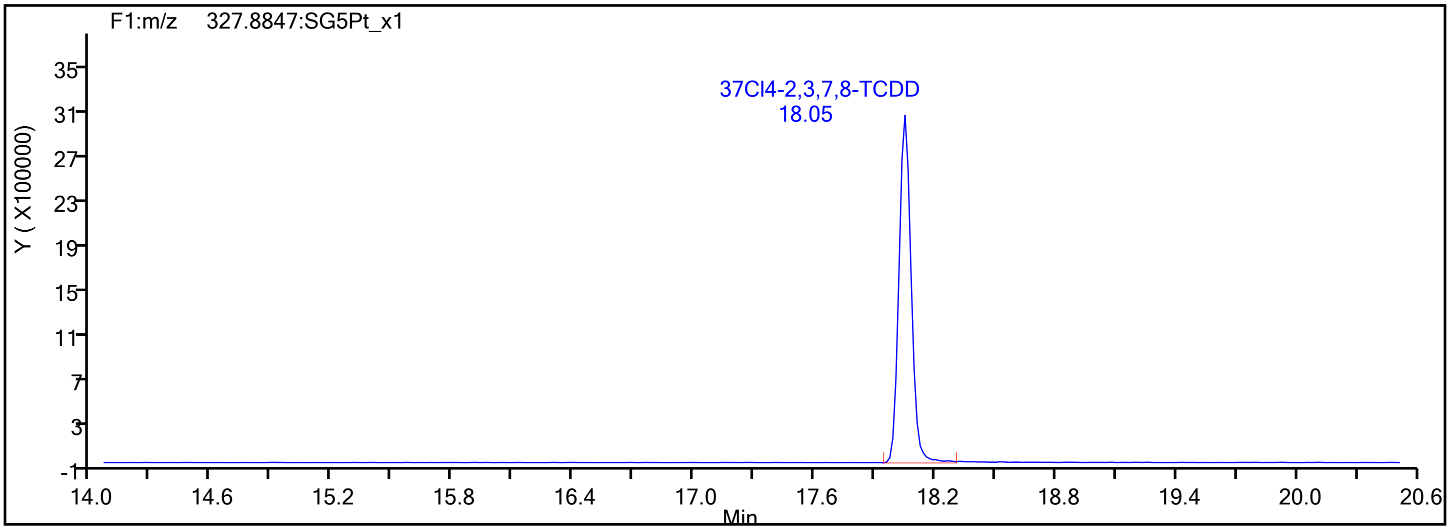

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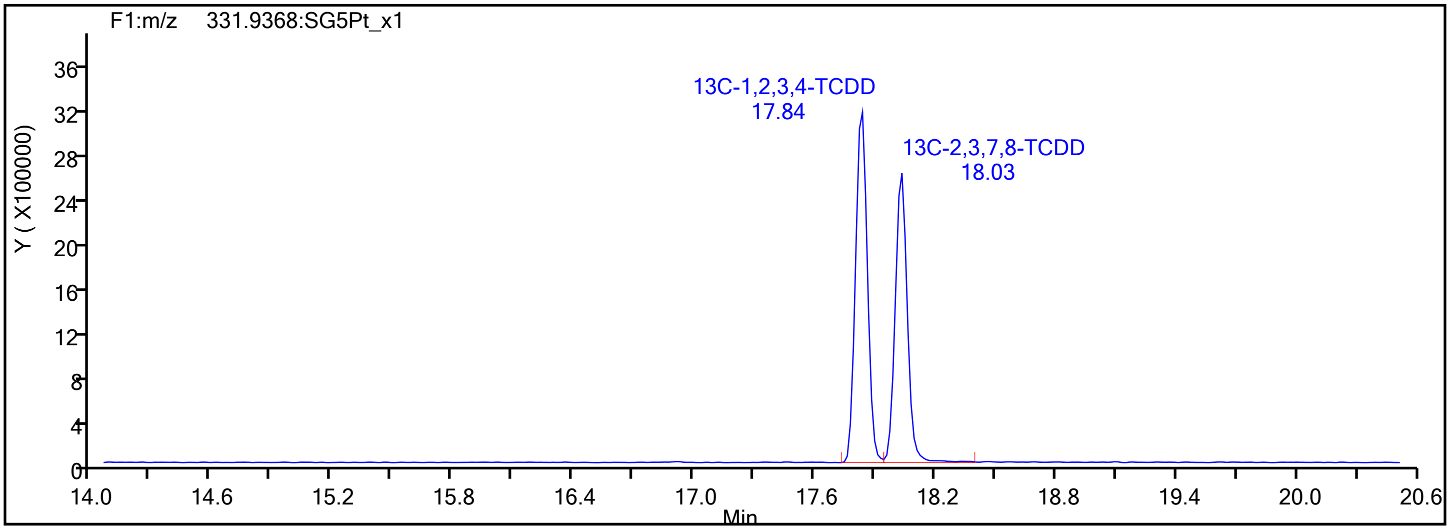

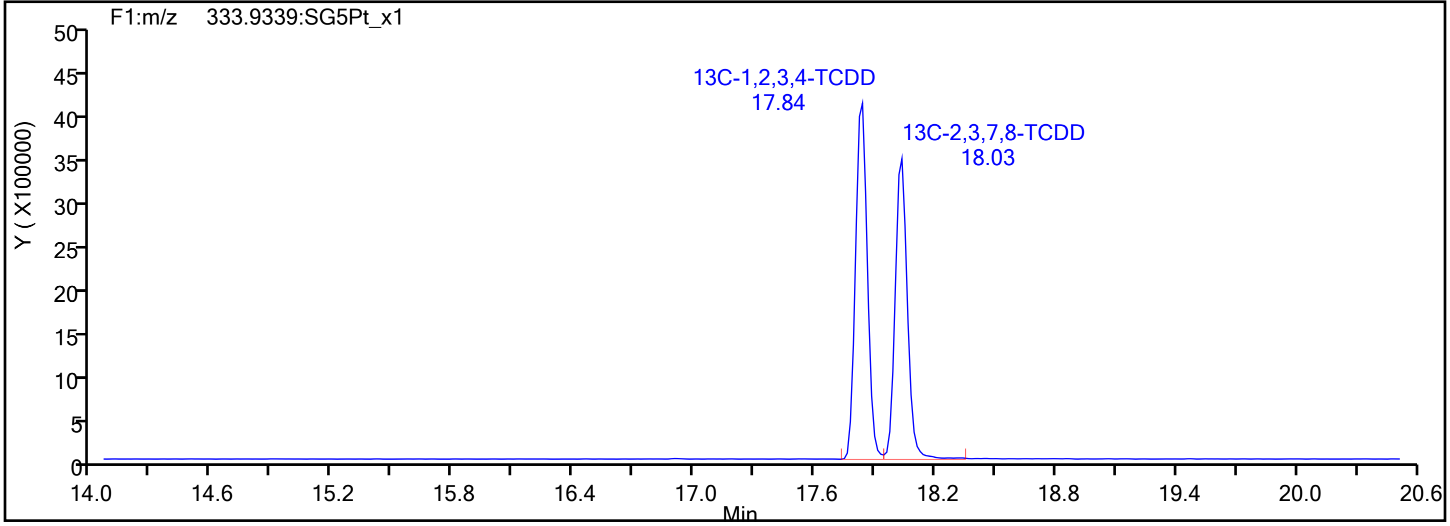

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F1 PeCDFs

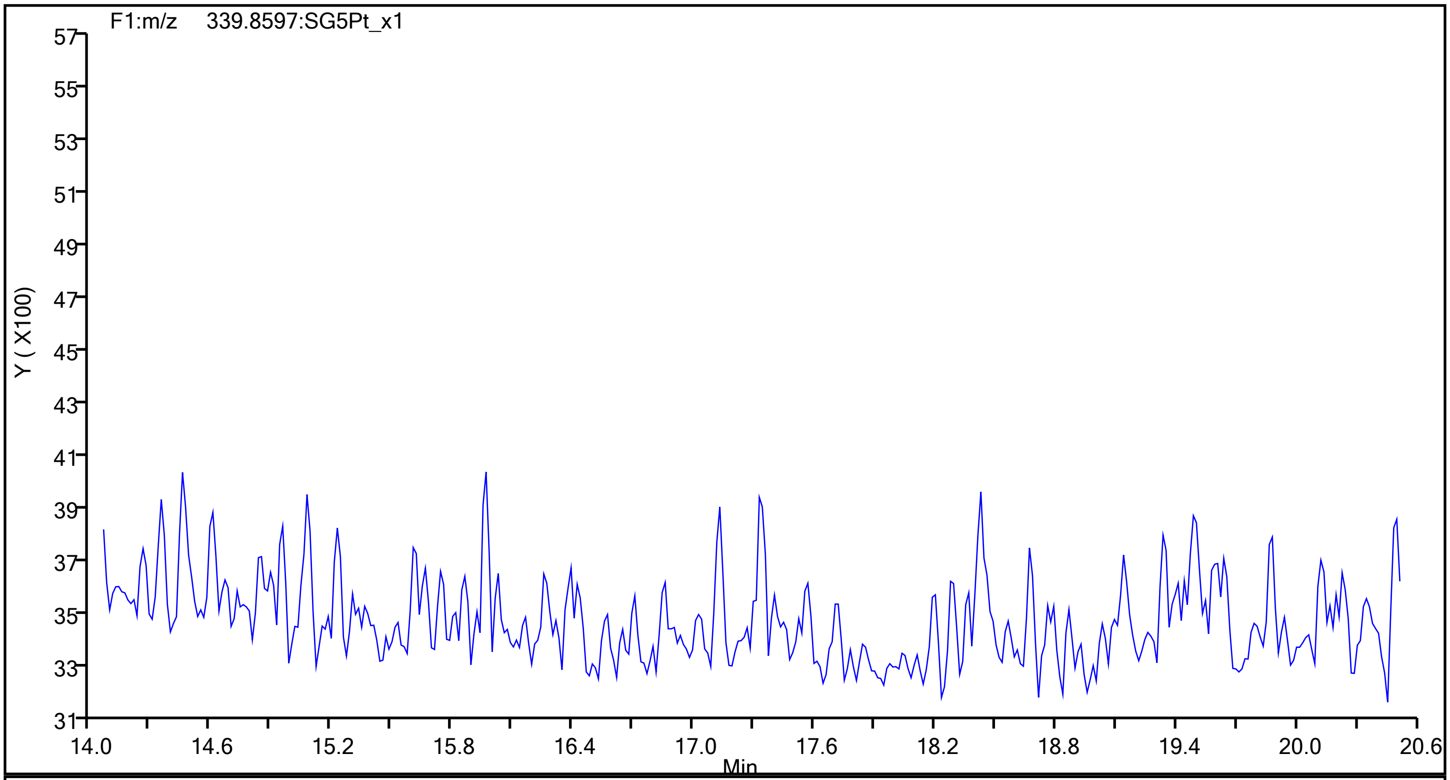

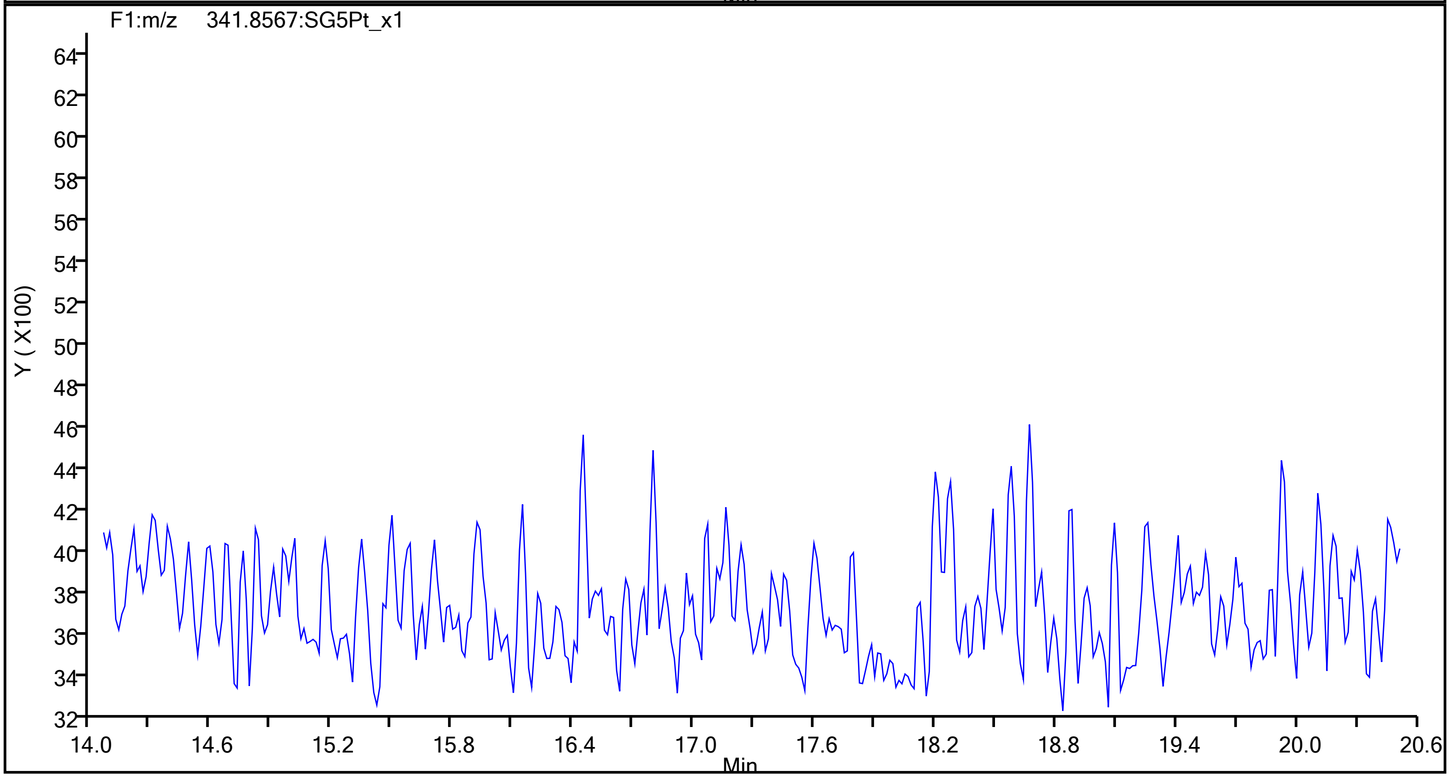

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Eurofins TestAmerica, Sacramento

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Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

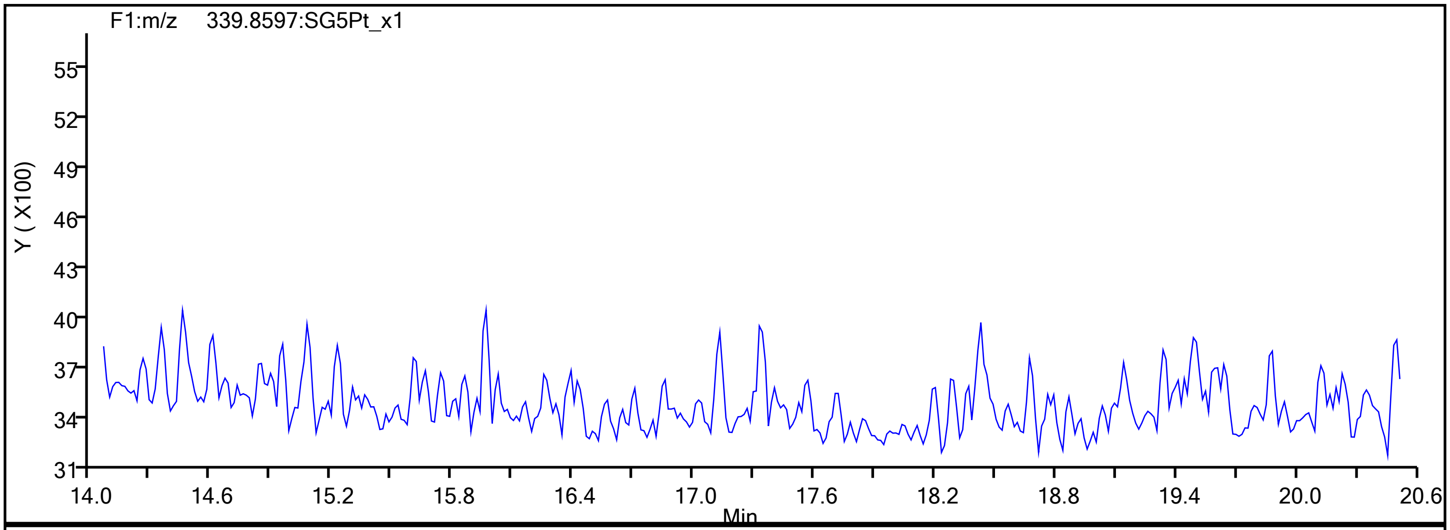

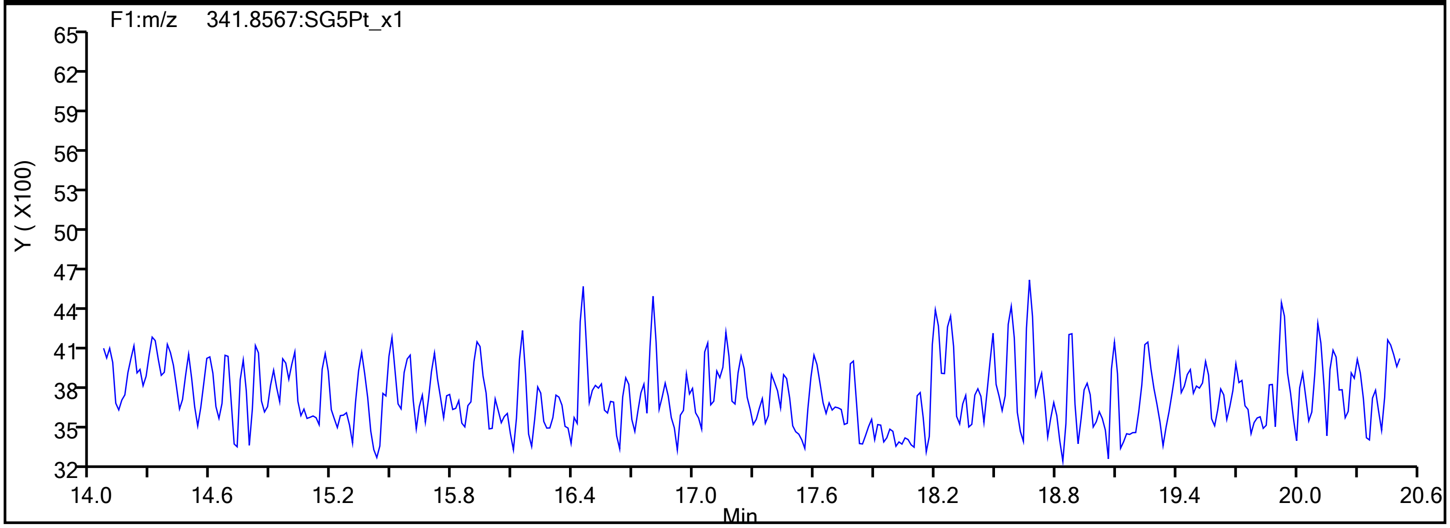

F1 PeCDFs Interference Mass

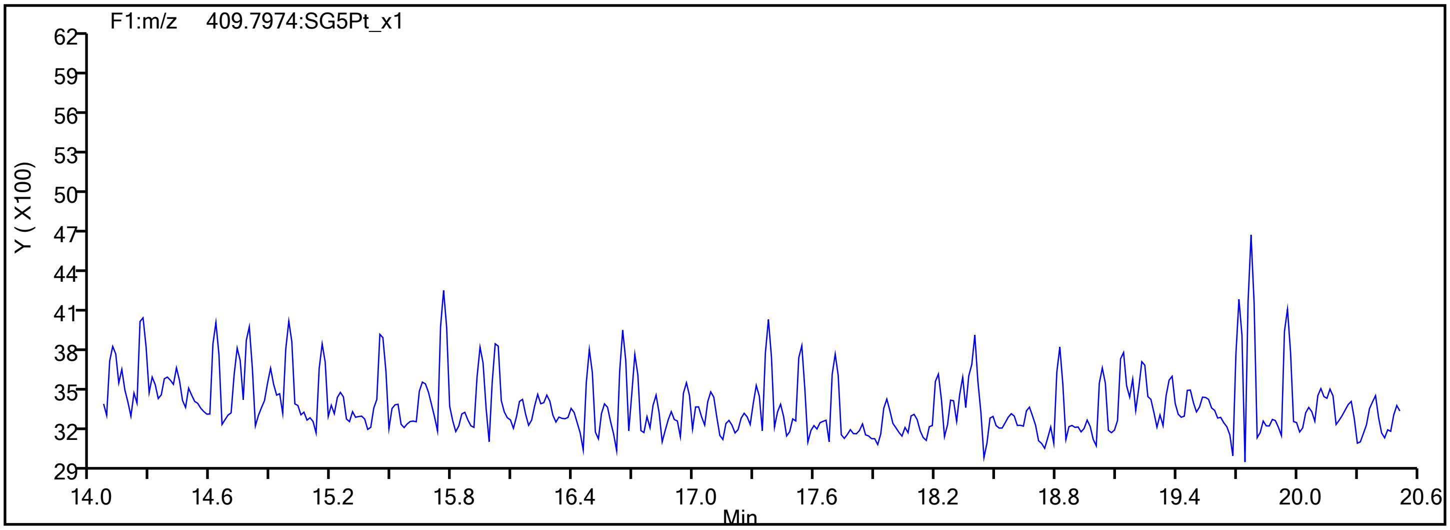

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Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDF

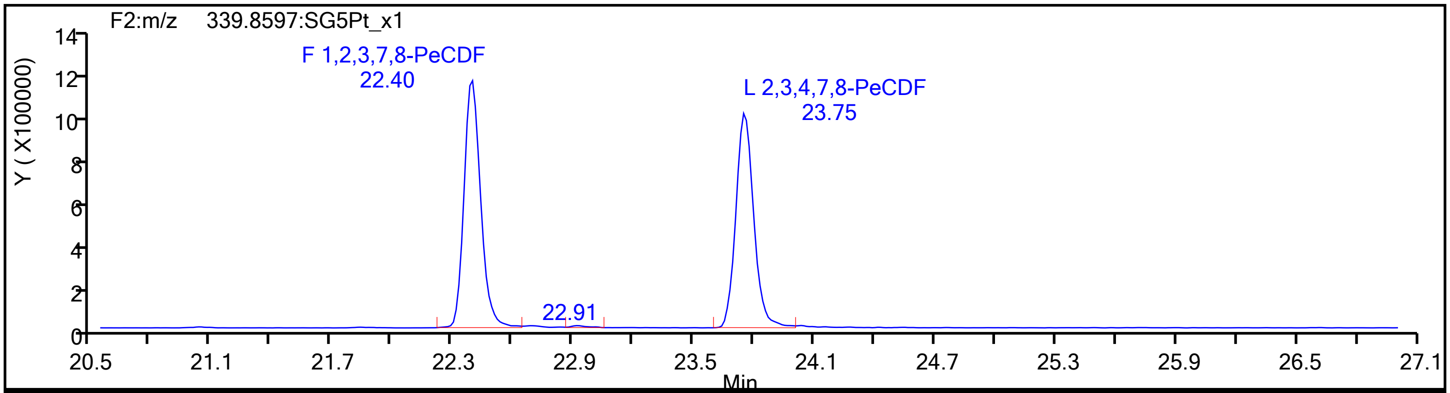

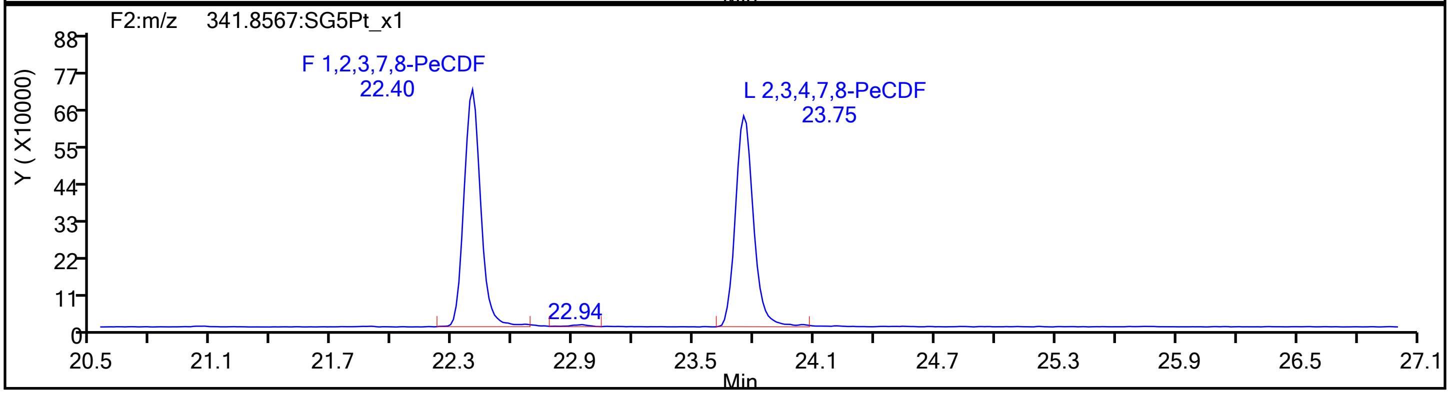

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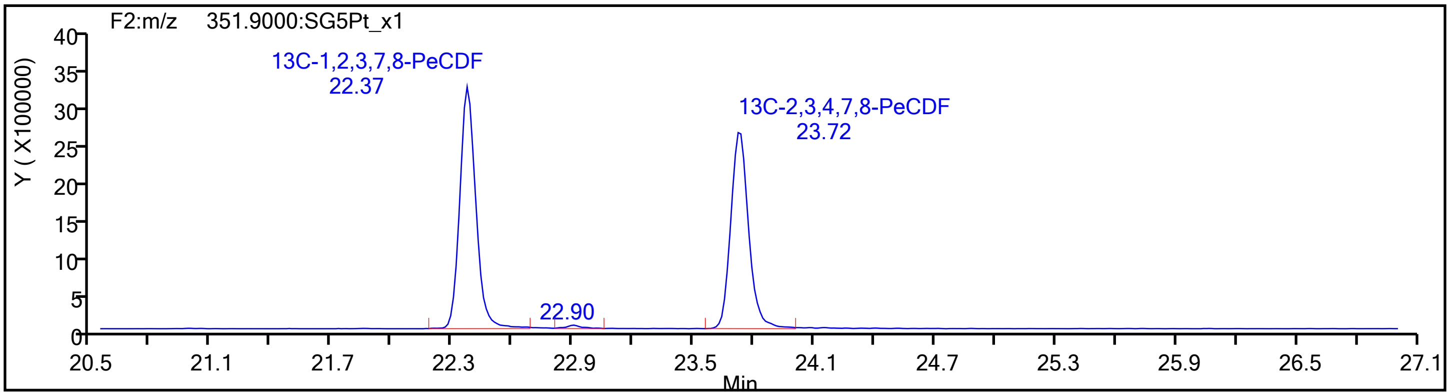

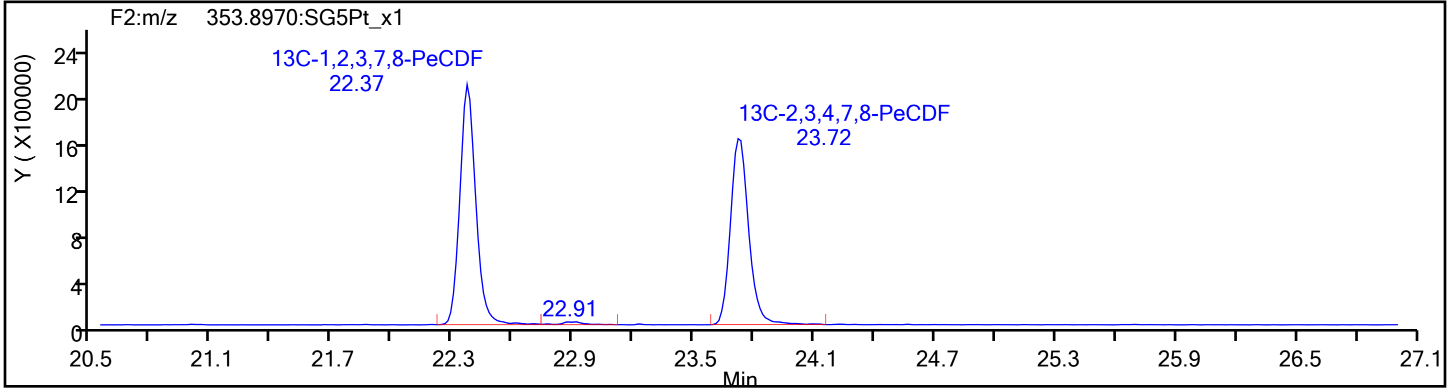

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Eurofins TestAmerica, Sacramento

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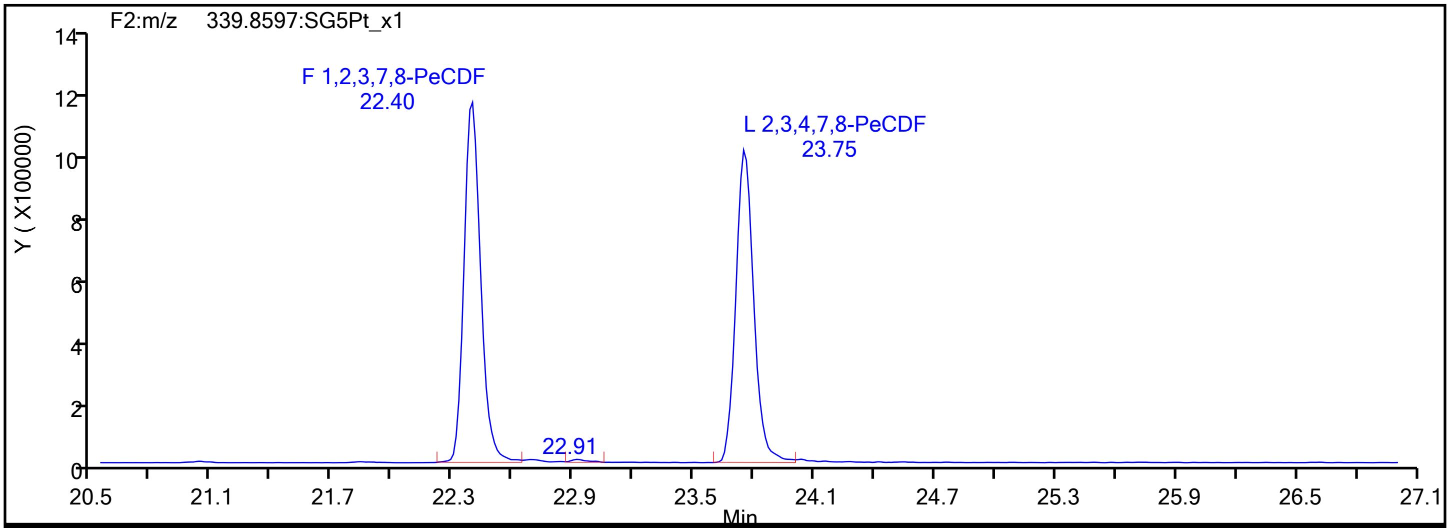

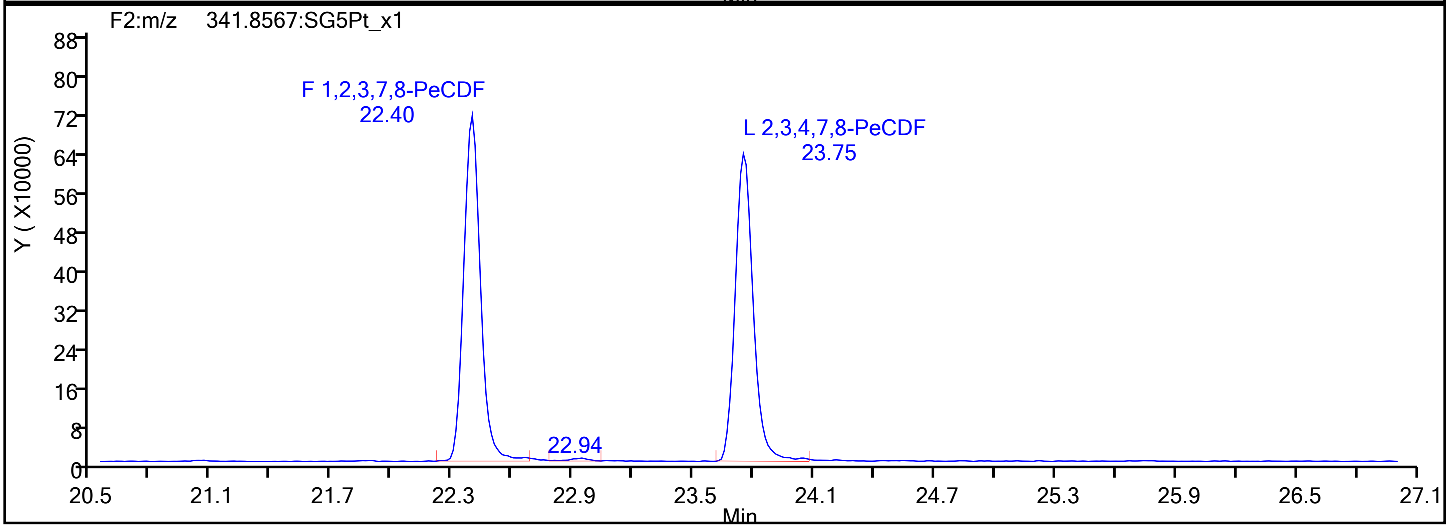

PeCDF Interference Mass

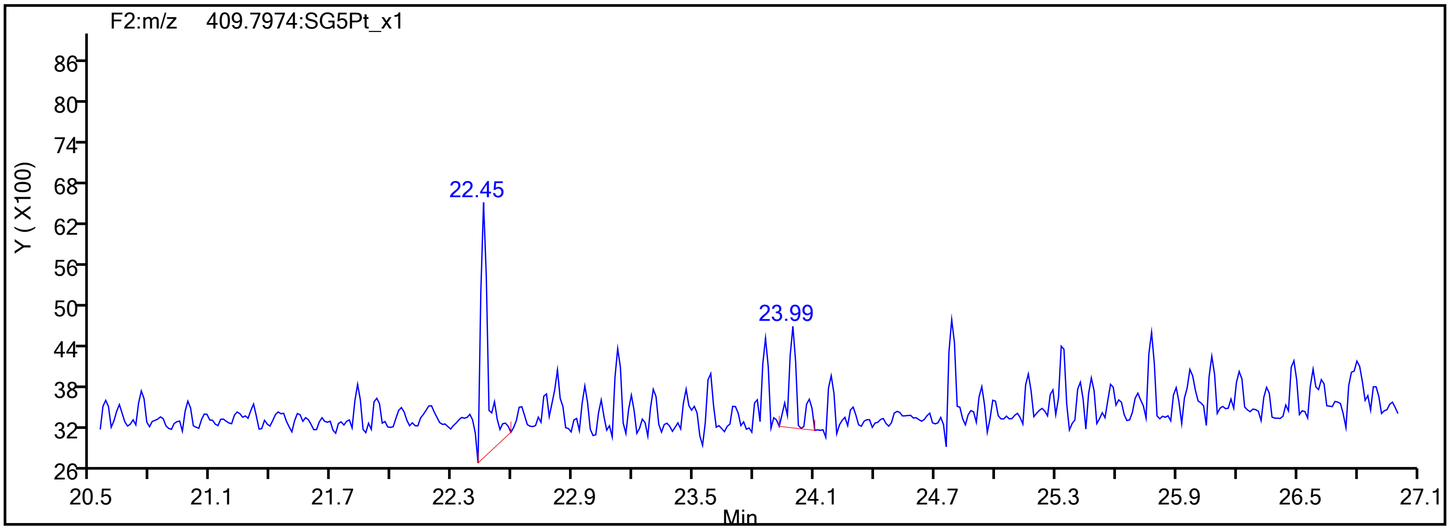

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Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 02:03:48 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA, ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203 Sample Line#: 28

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PeCDD

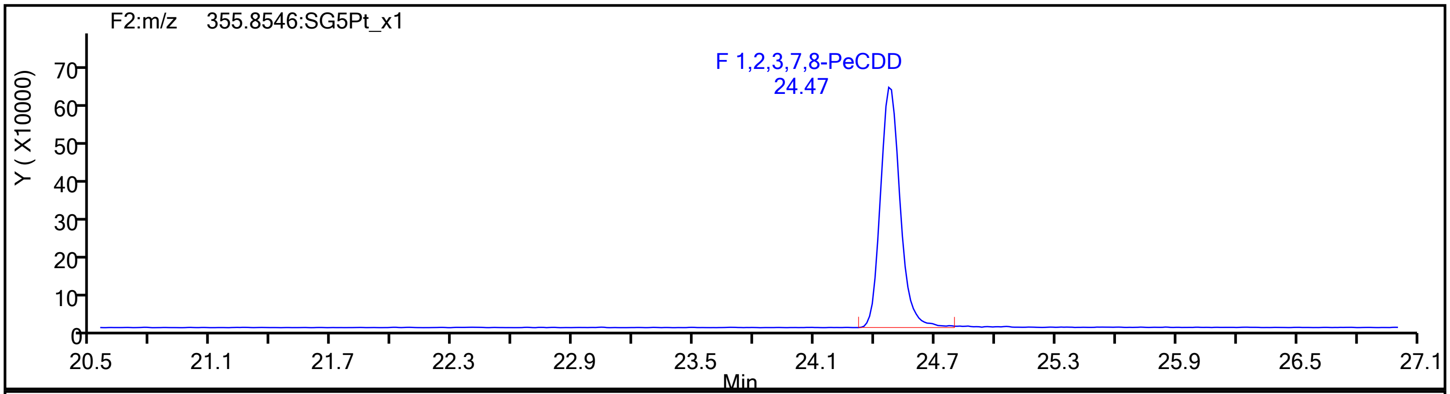

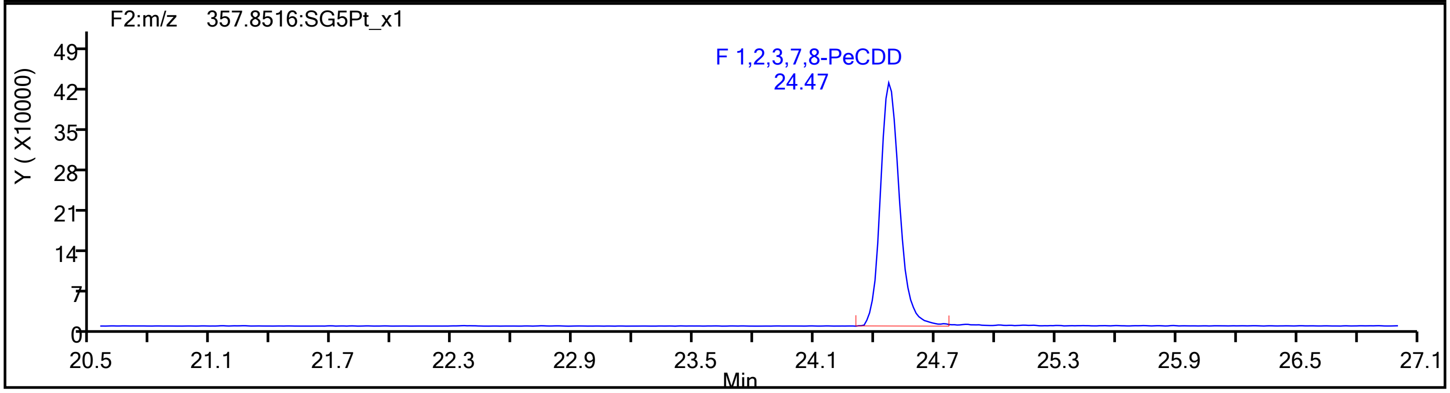

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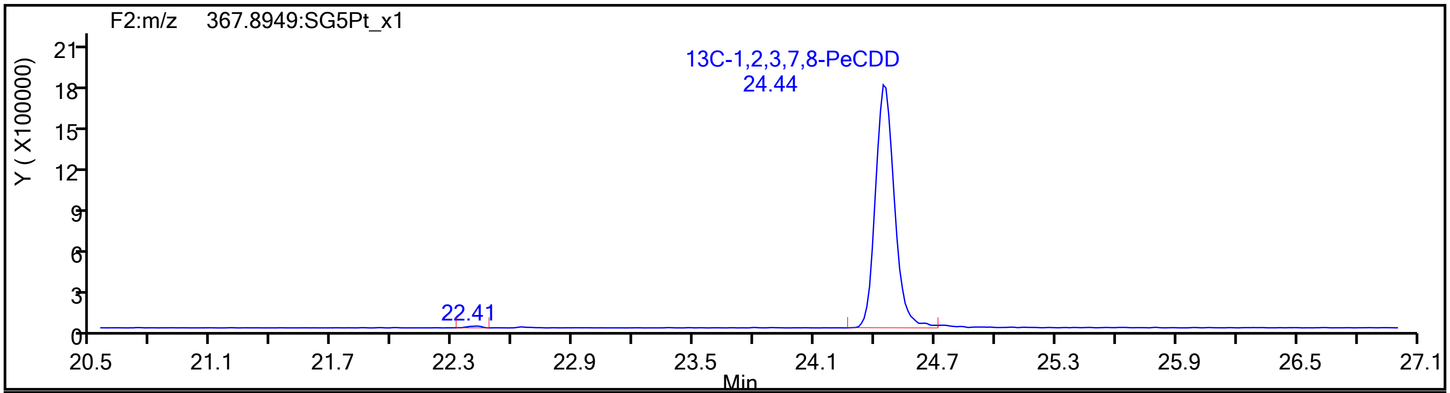

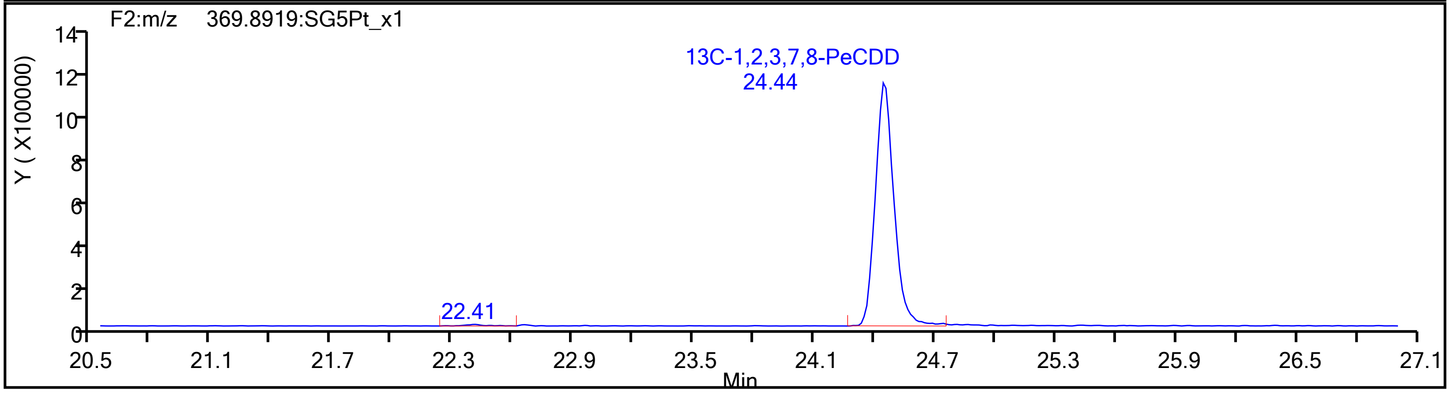

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Eurofins TestAmerica, Sacramento

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Injection Date: 25-Nov-2020 02:03:48
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA, ALM

Method: Dioxin_10D5
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Client ID:

Worklist#: 435203
Sample Line#: 28

Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

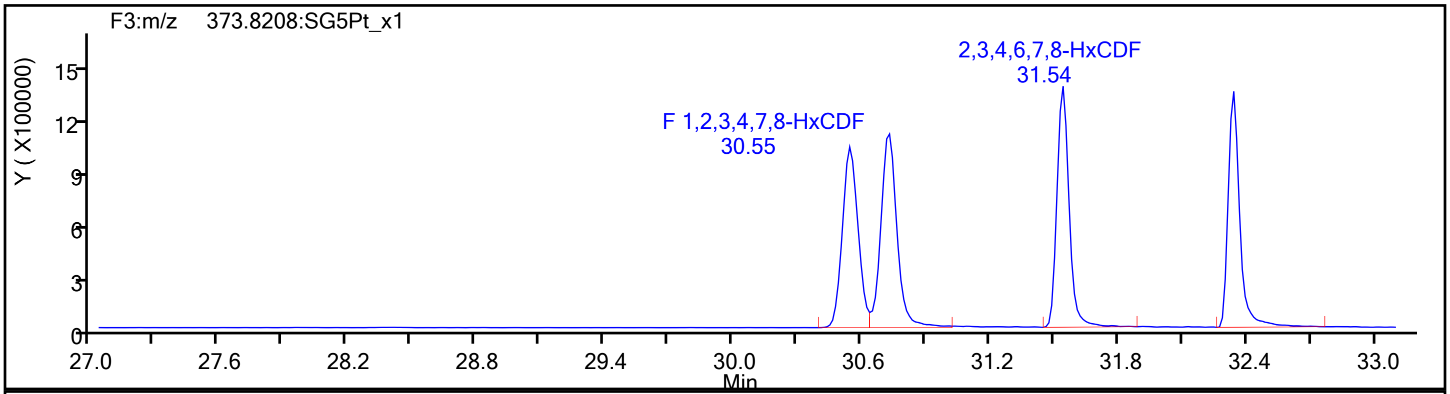

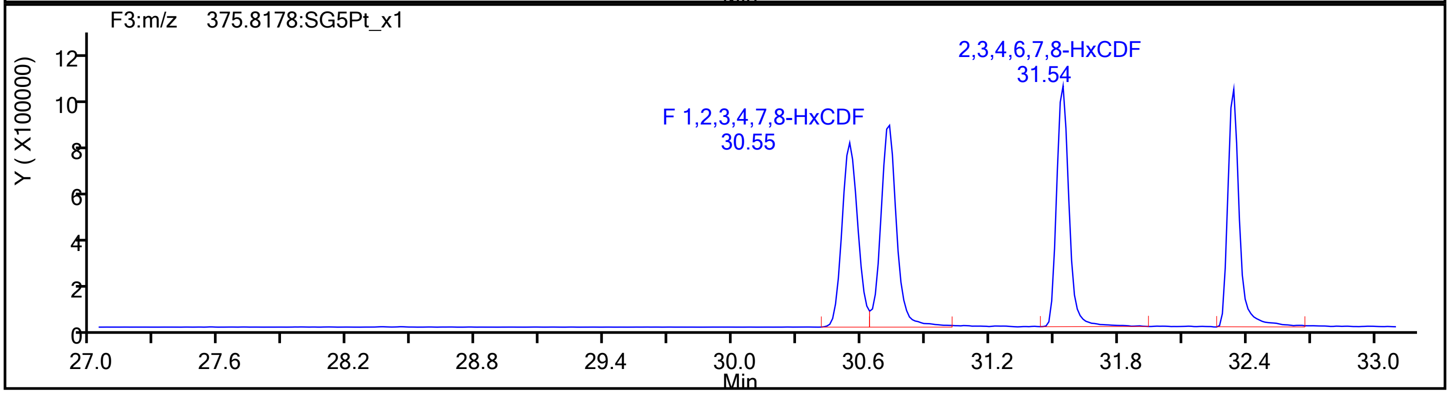

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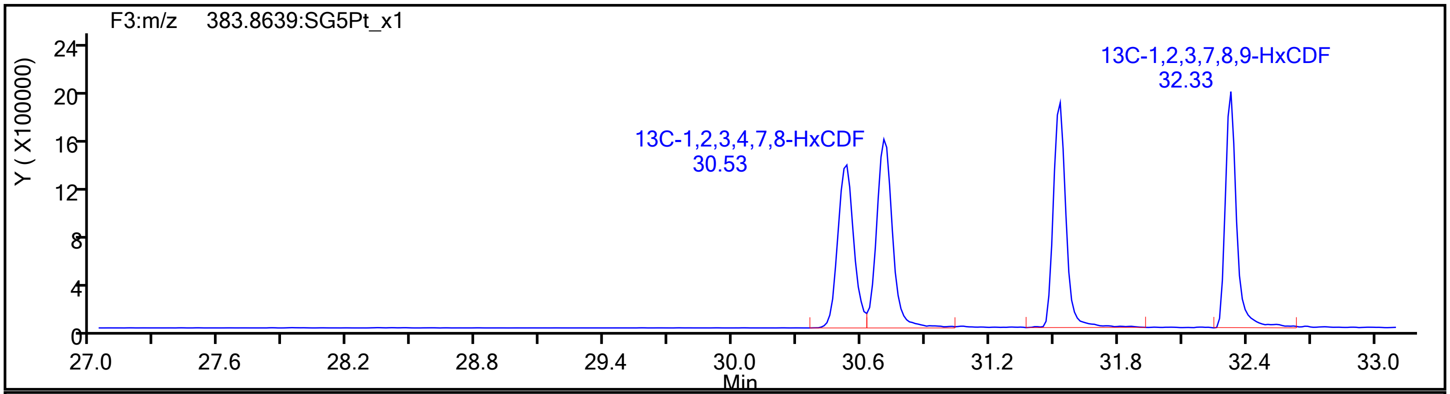

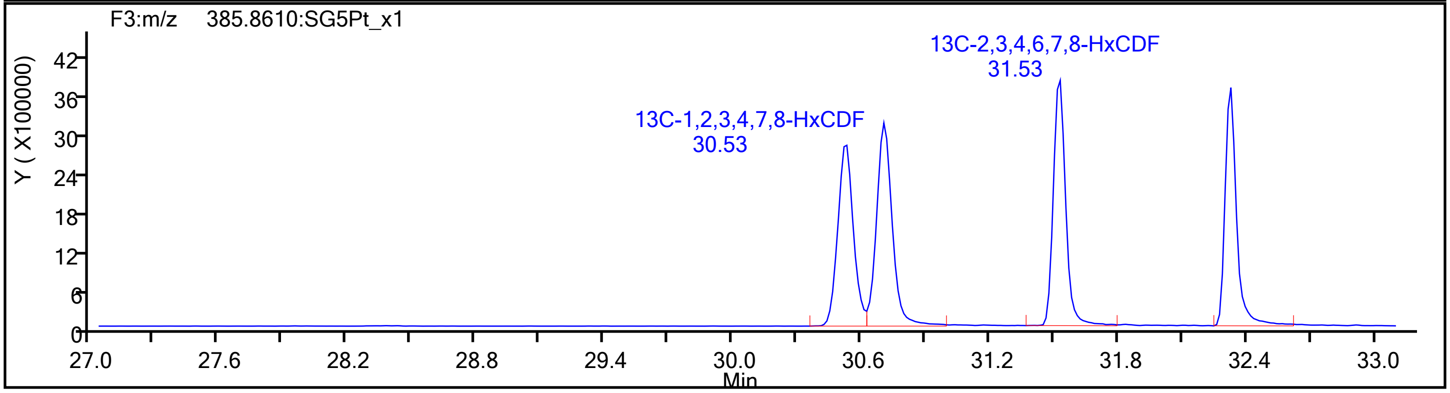

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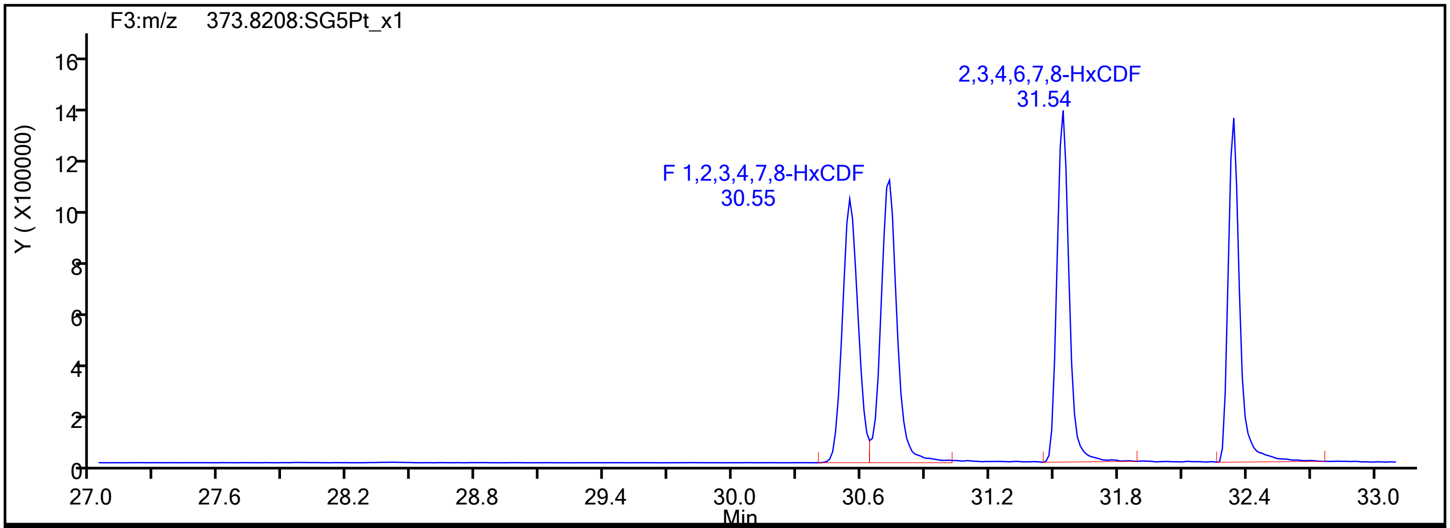

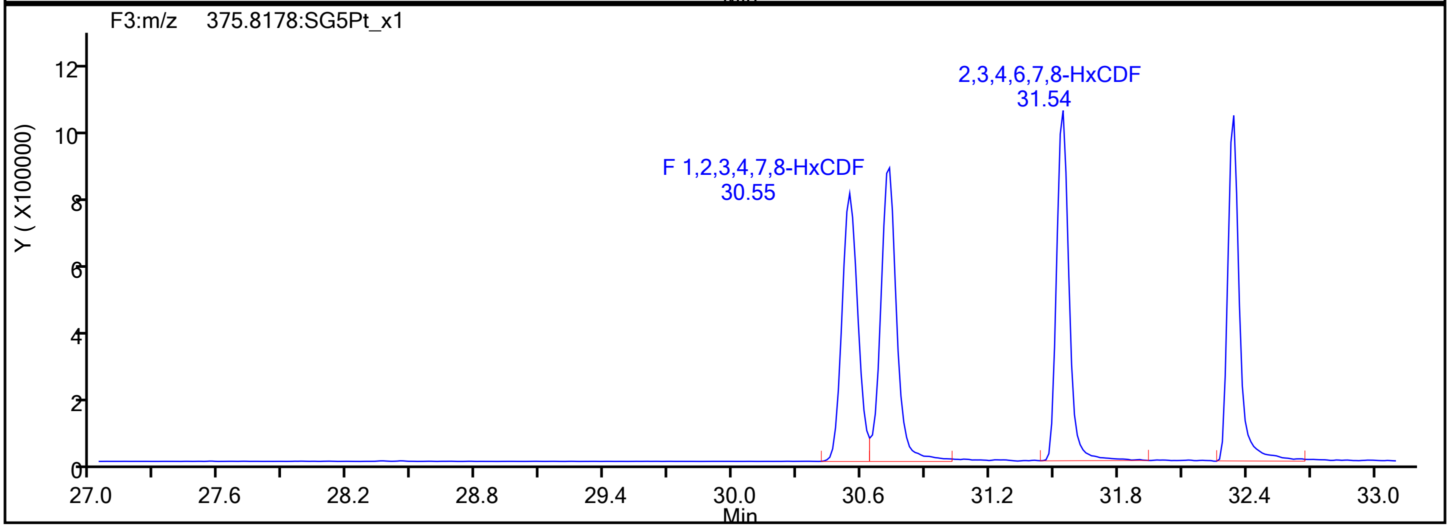

HxCDF Interference Mass

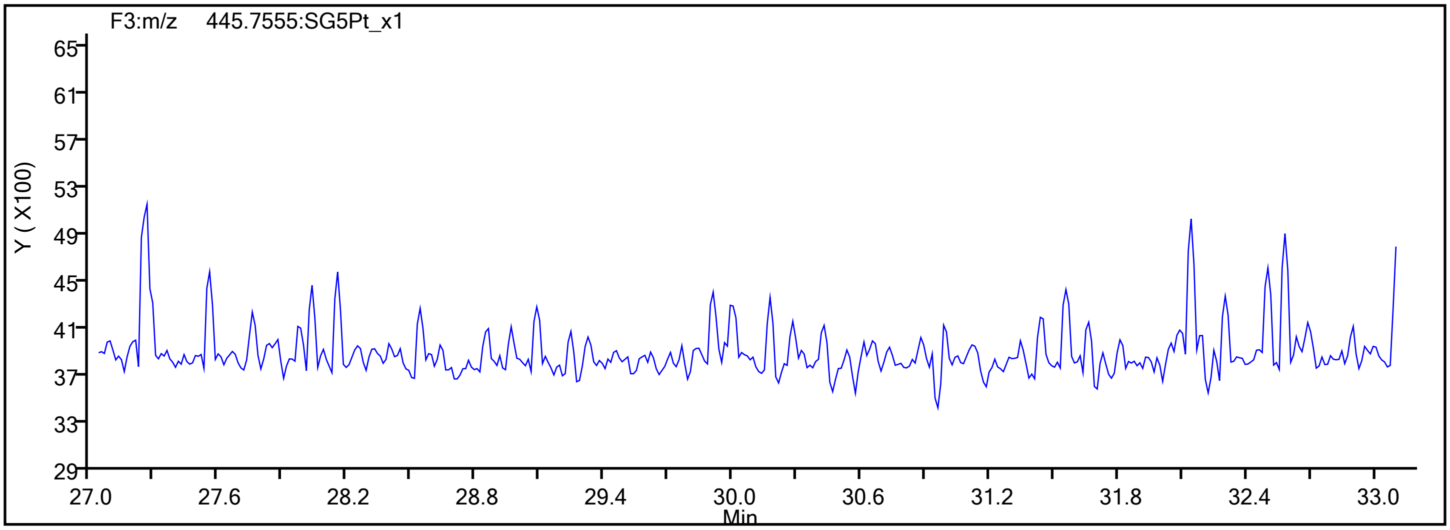

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HxCDD

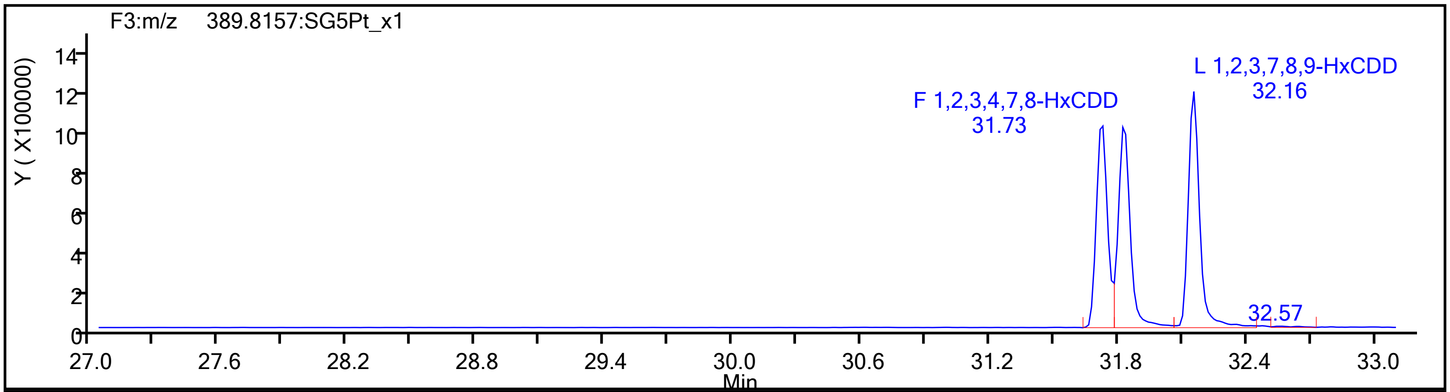

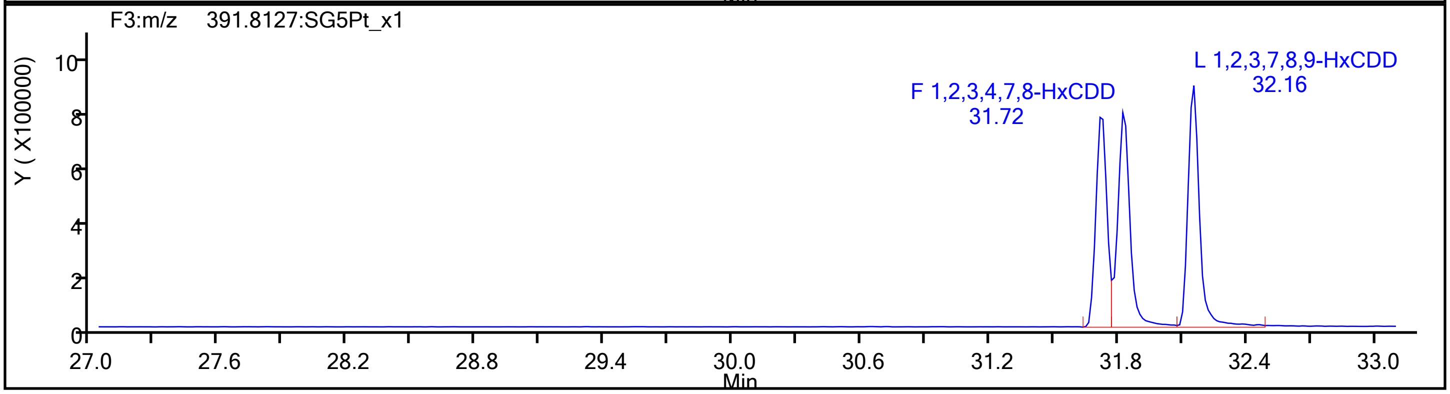

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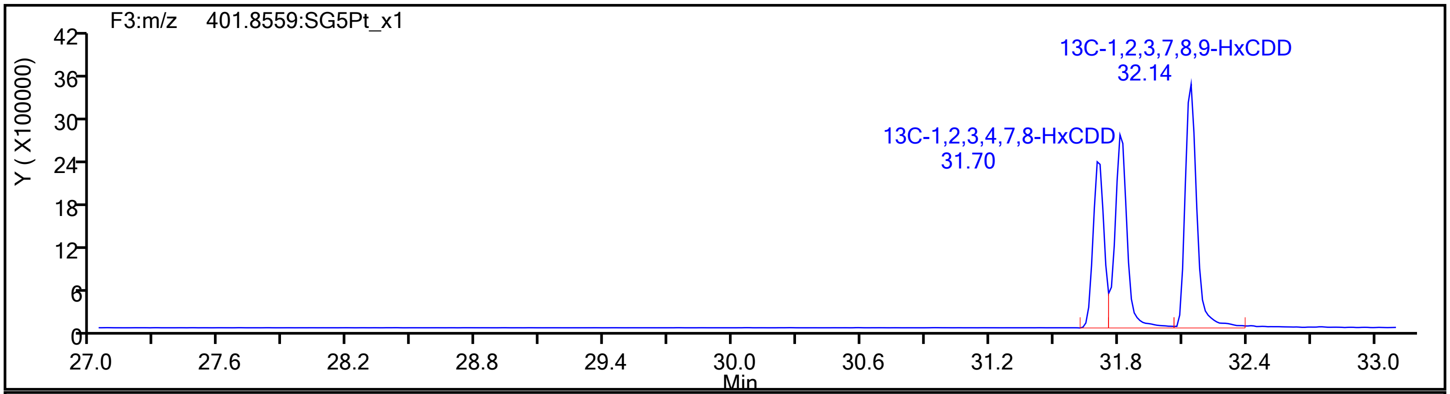

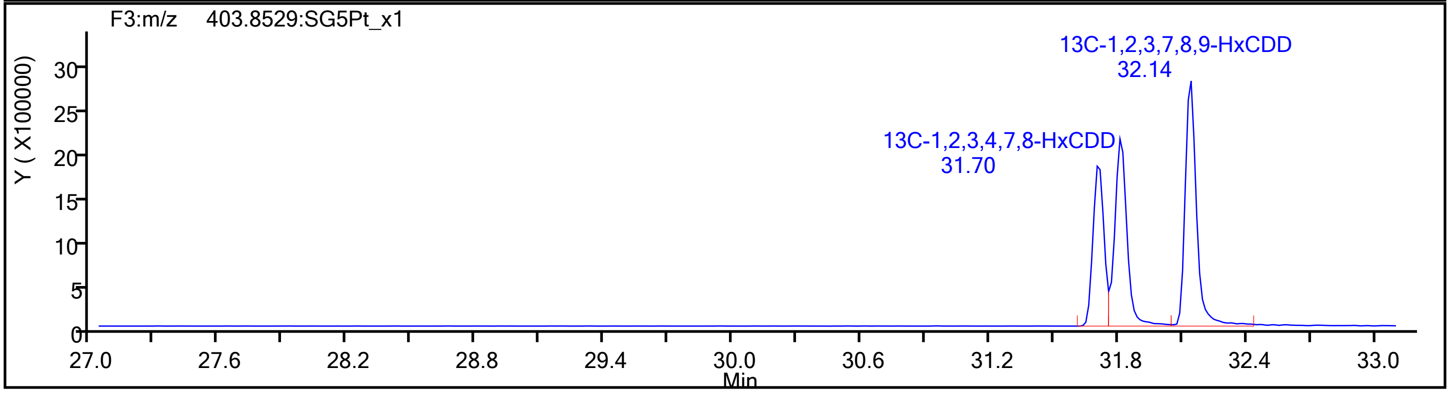

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Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA, ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 28

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

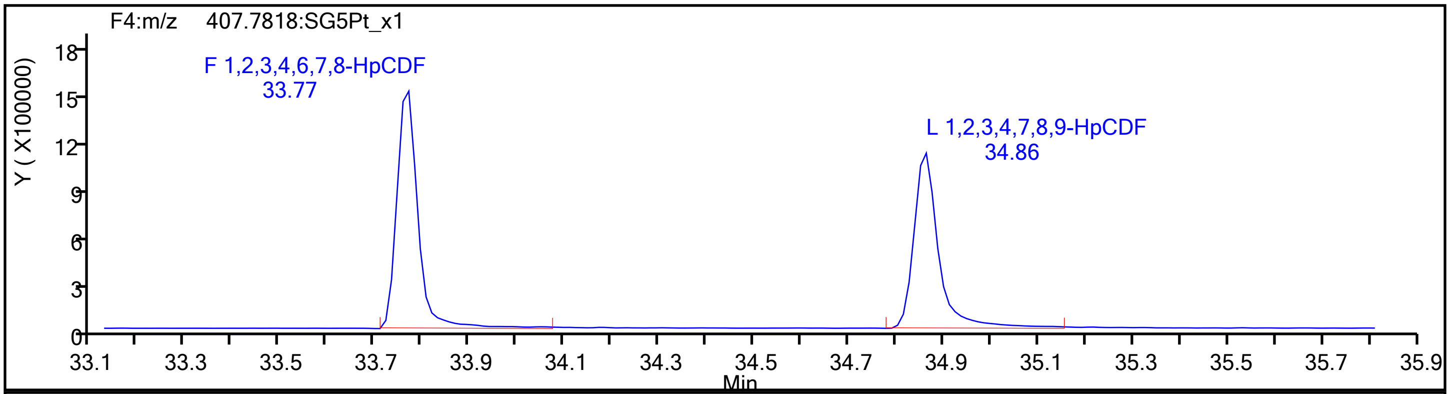

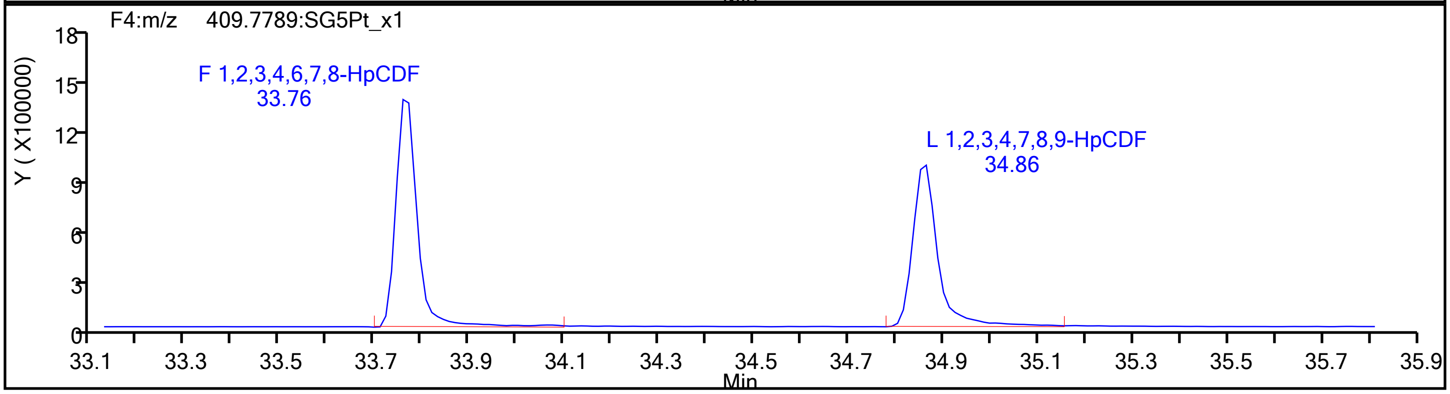

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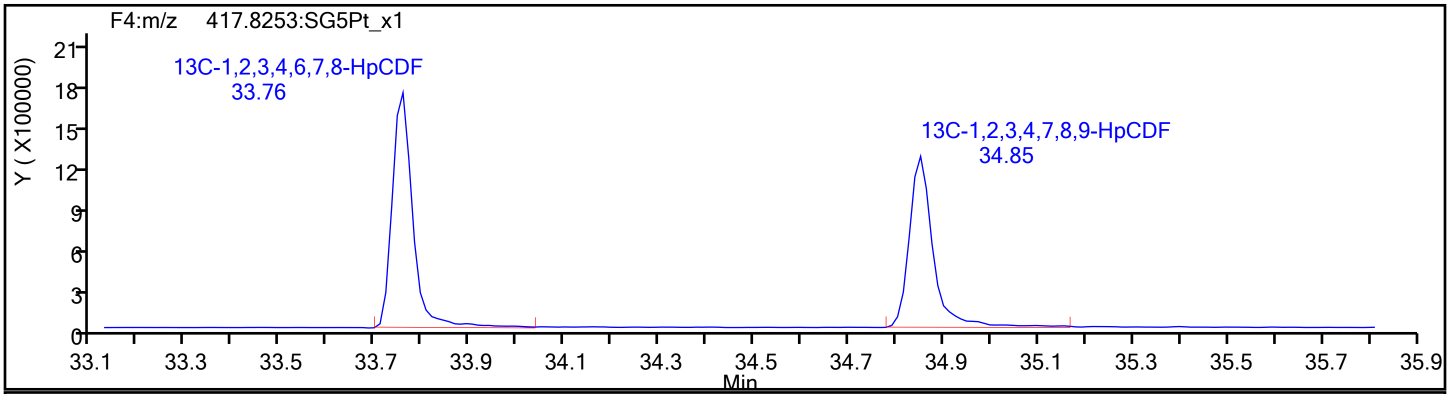

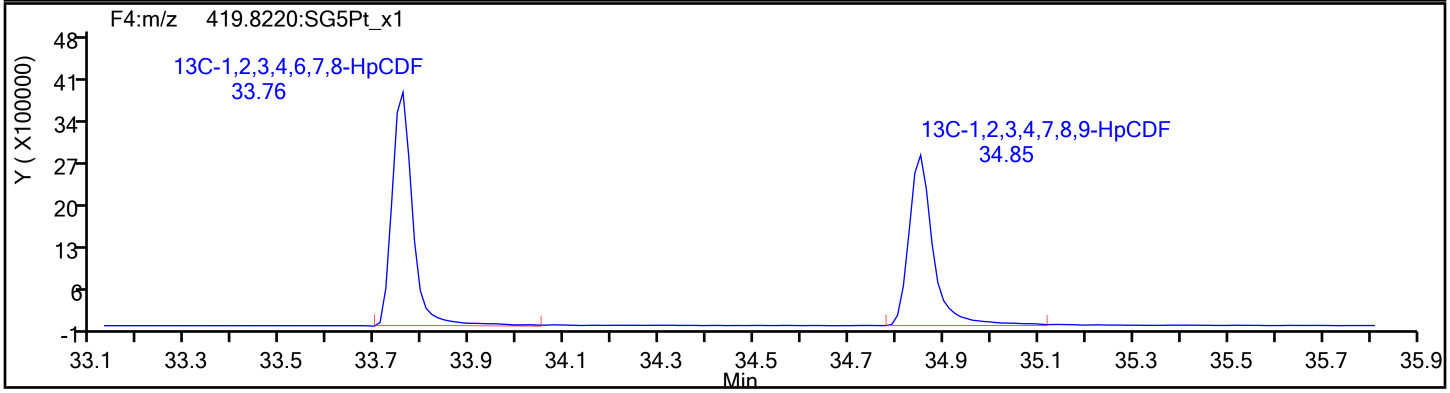

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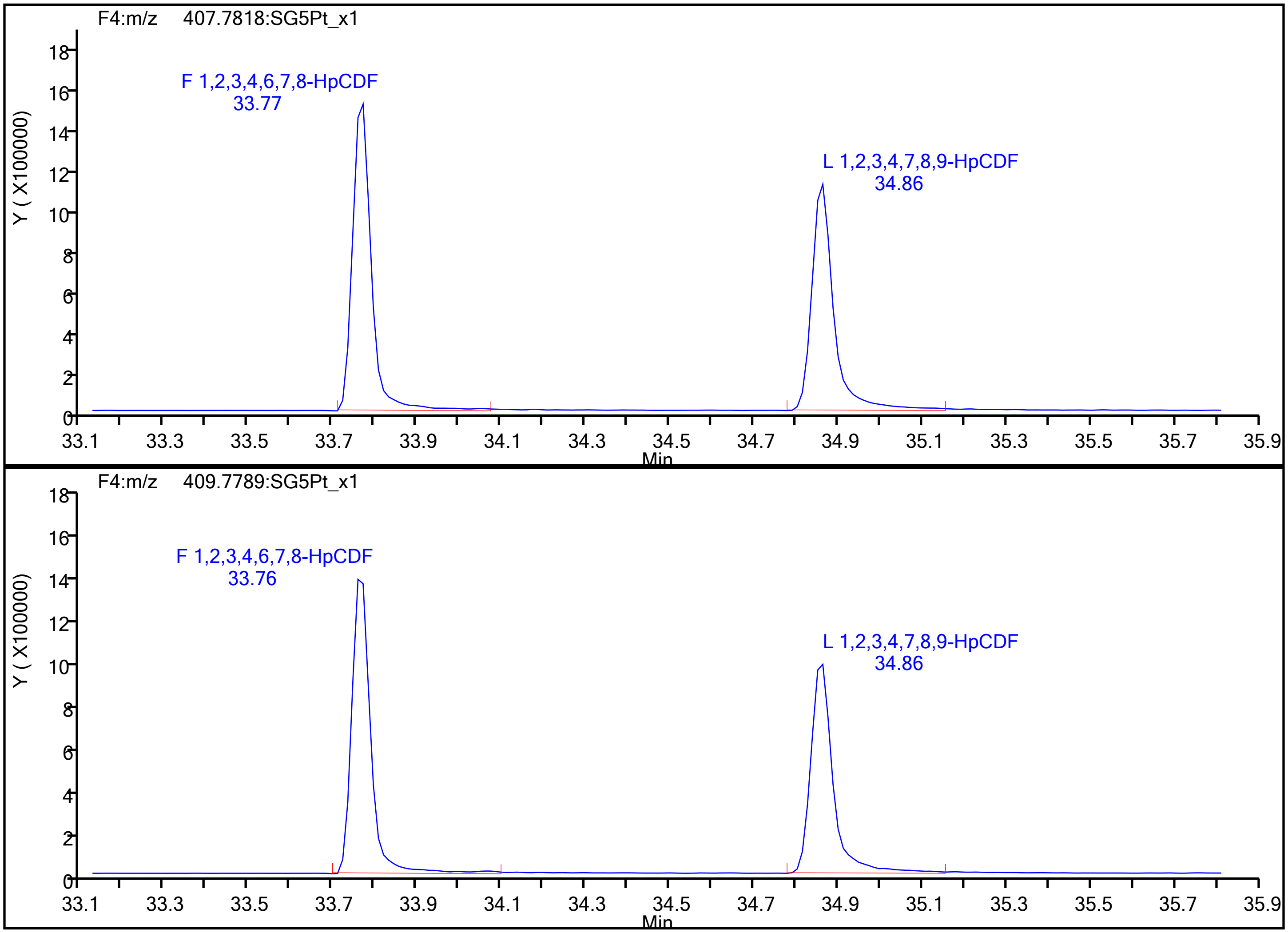

HpCDF Interference Mass

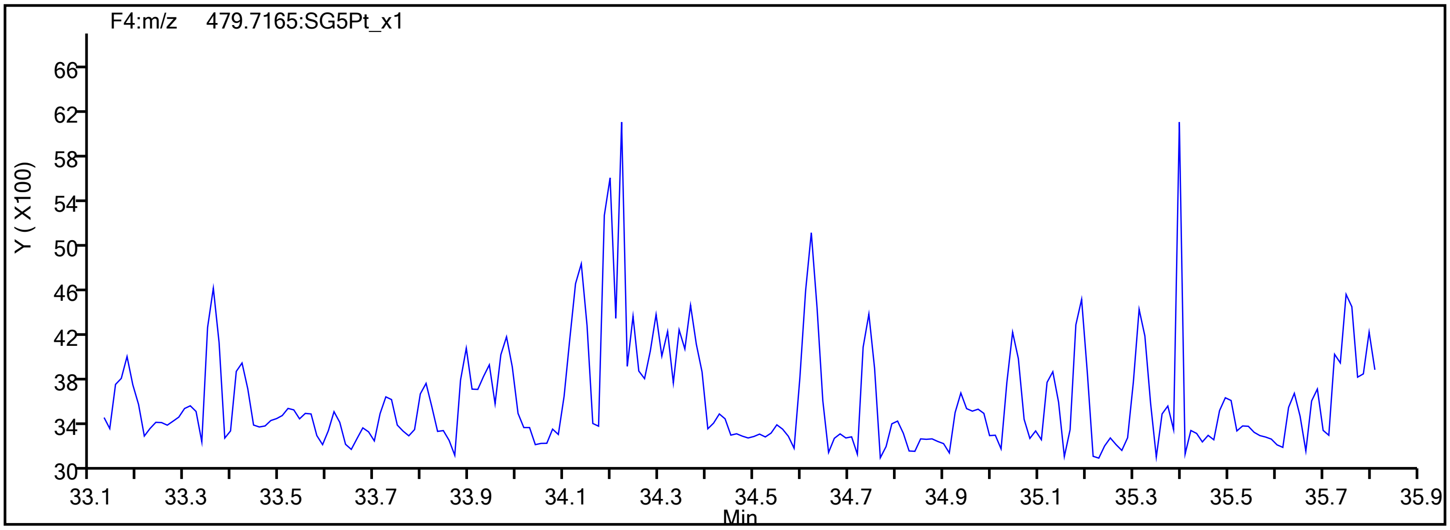

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Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA, ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 435203

Sample Line#: 28

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

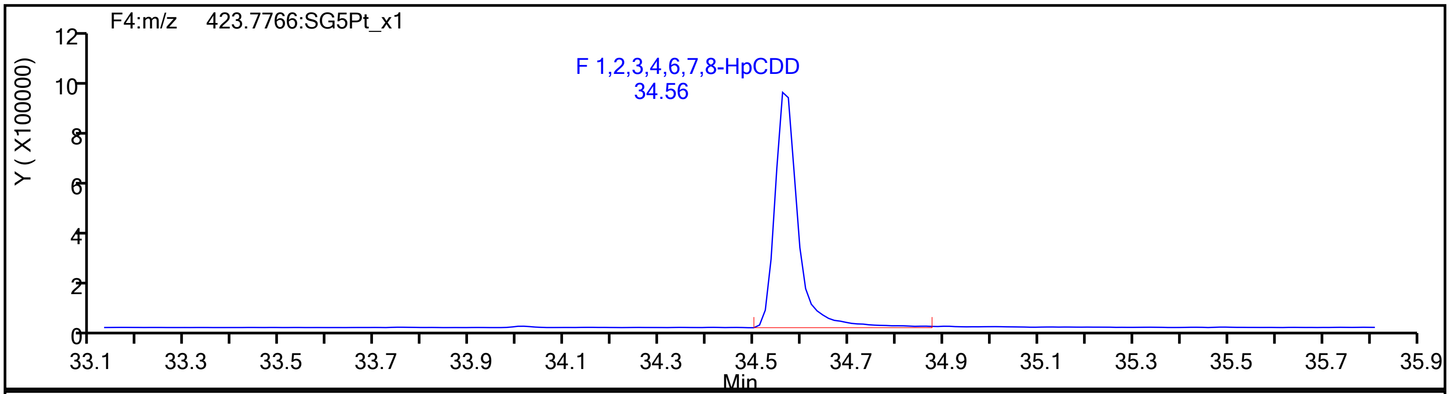

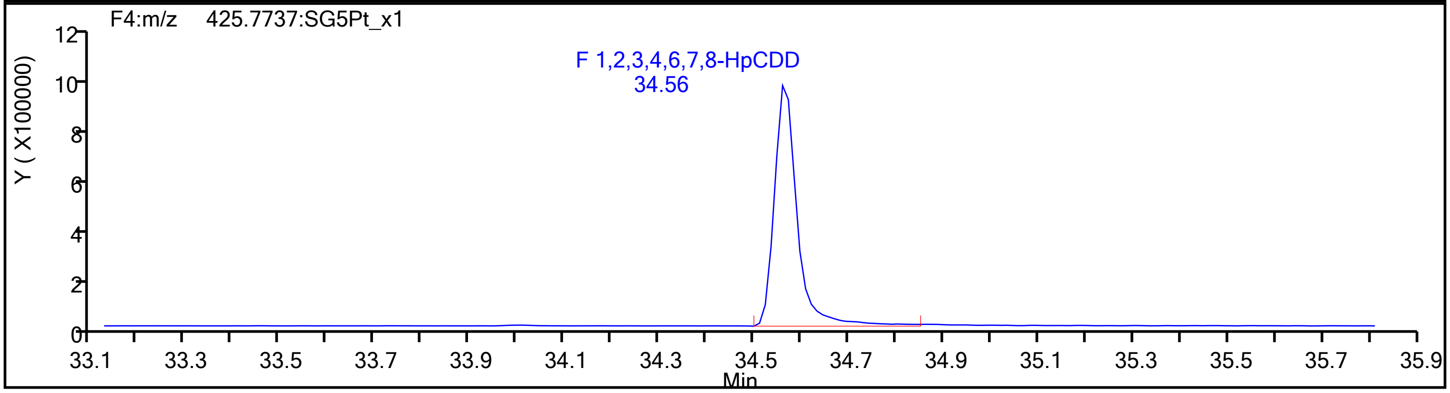

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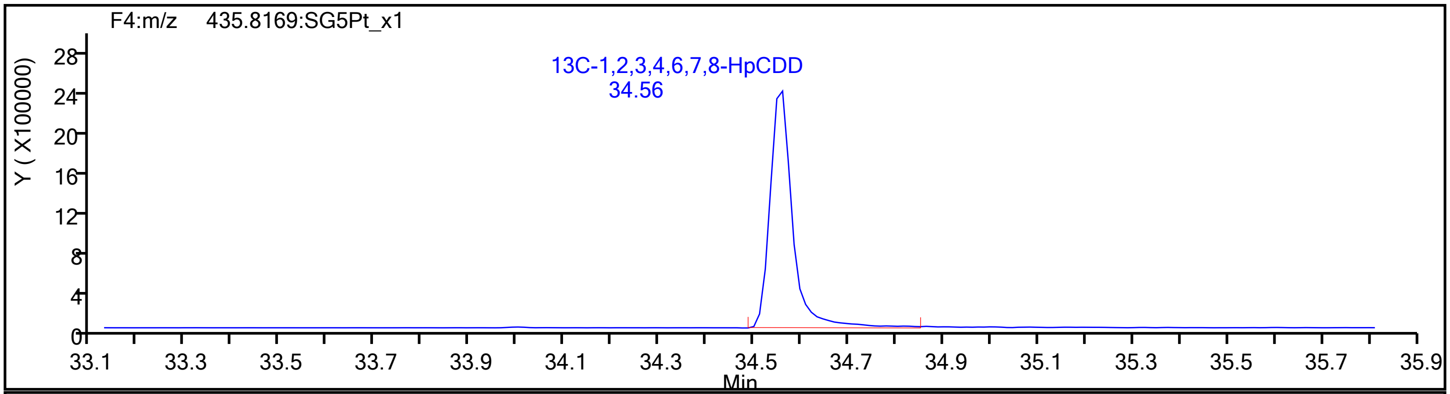

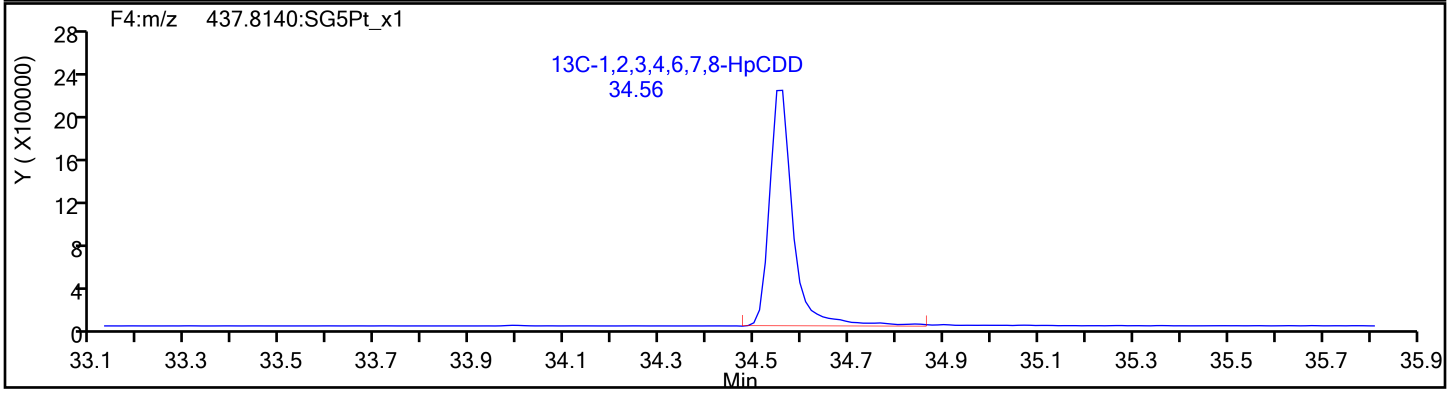

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

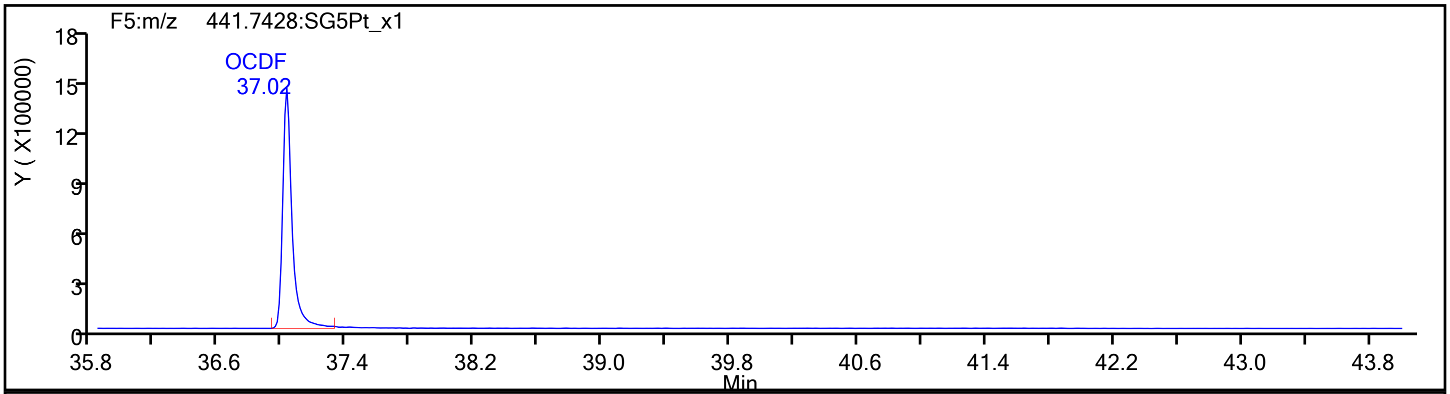

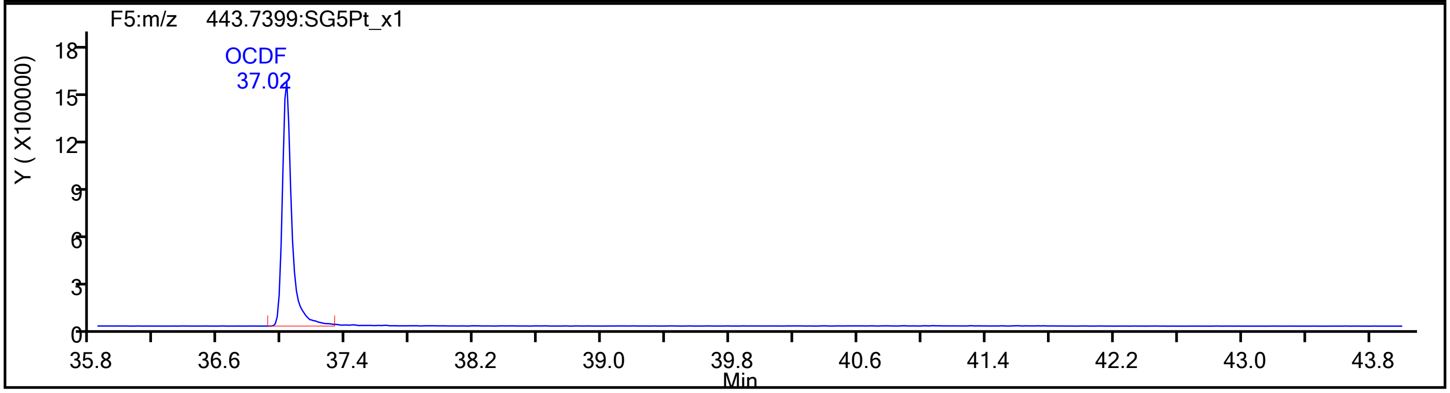

OCDF Standards

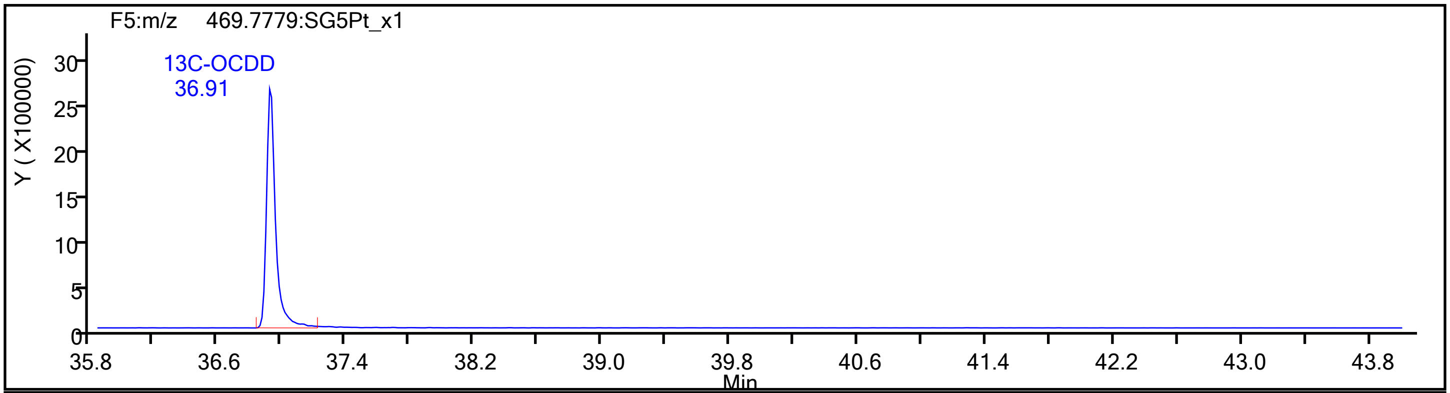

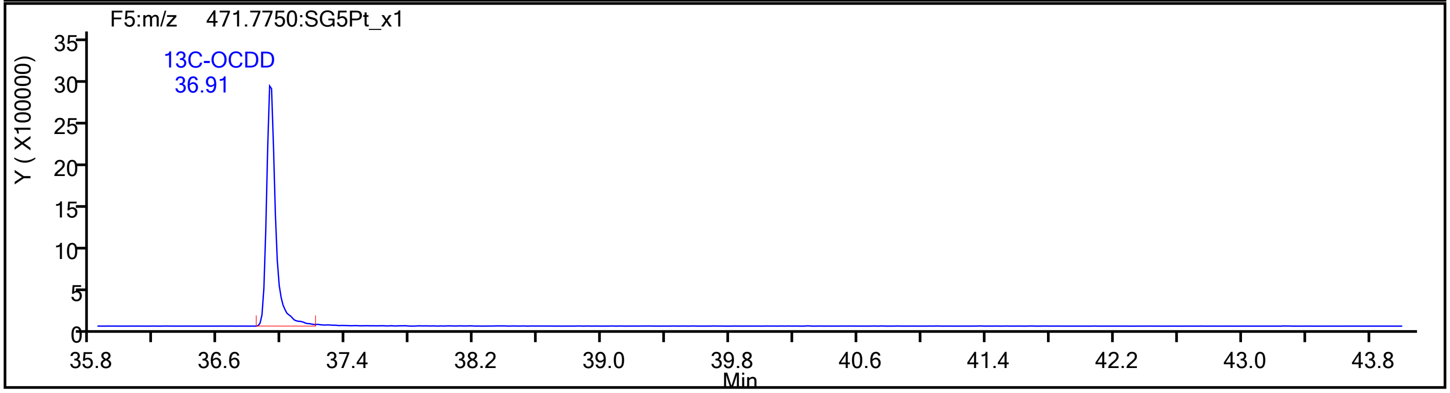

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

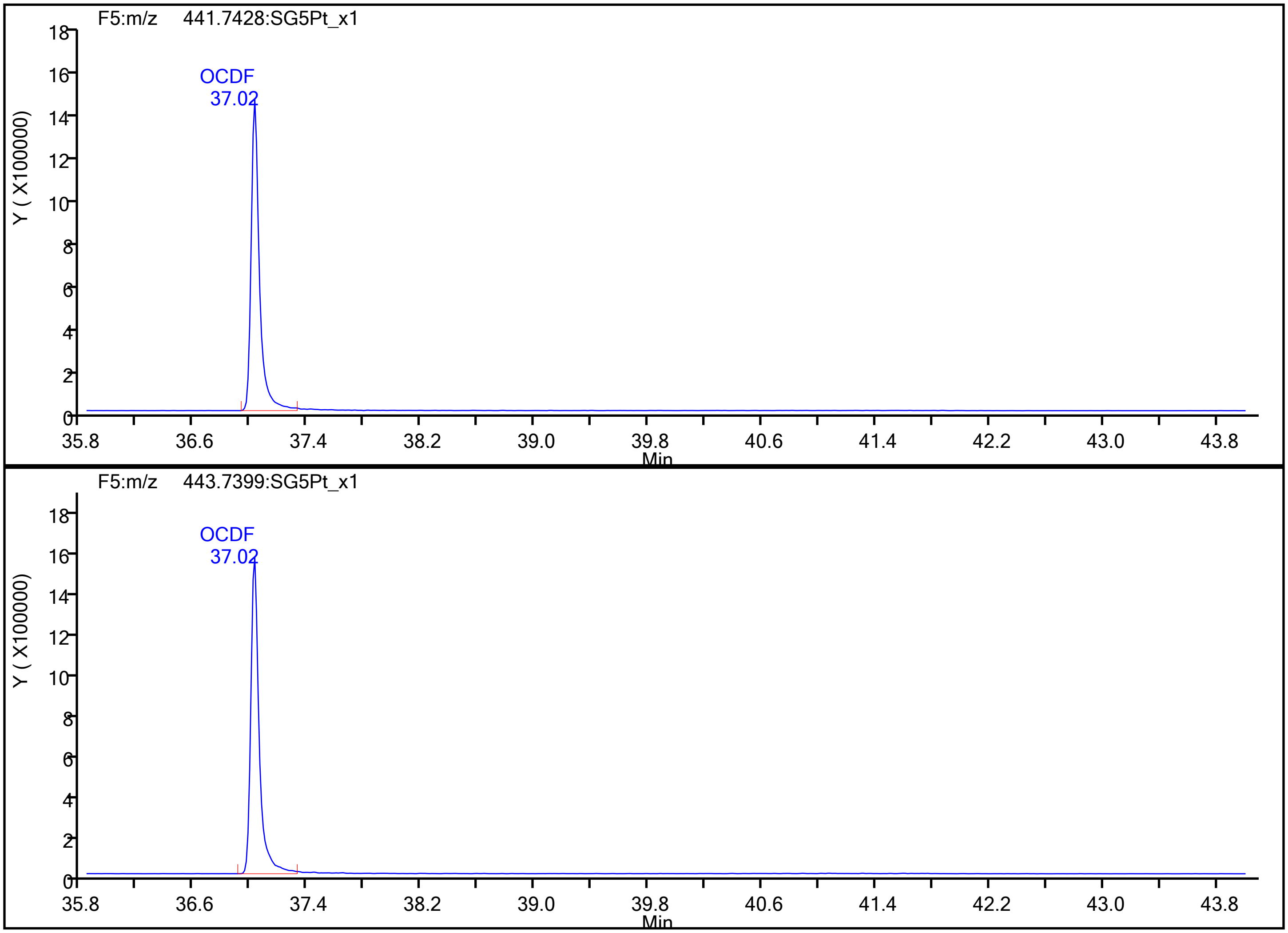

OCDF Interference Mass

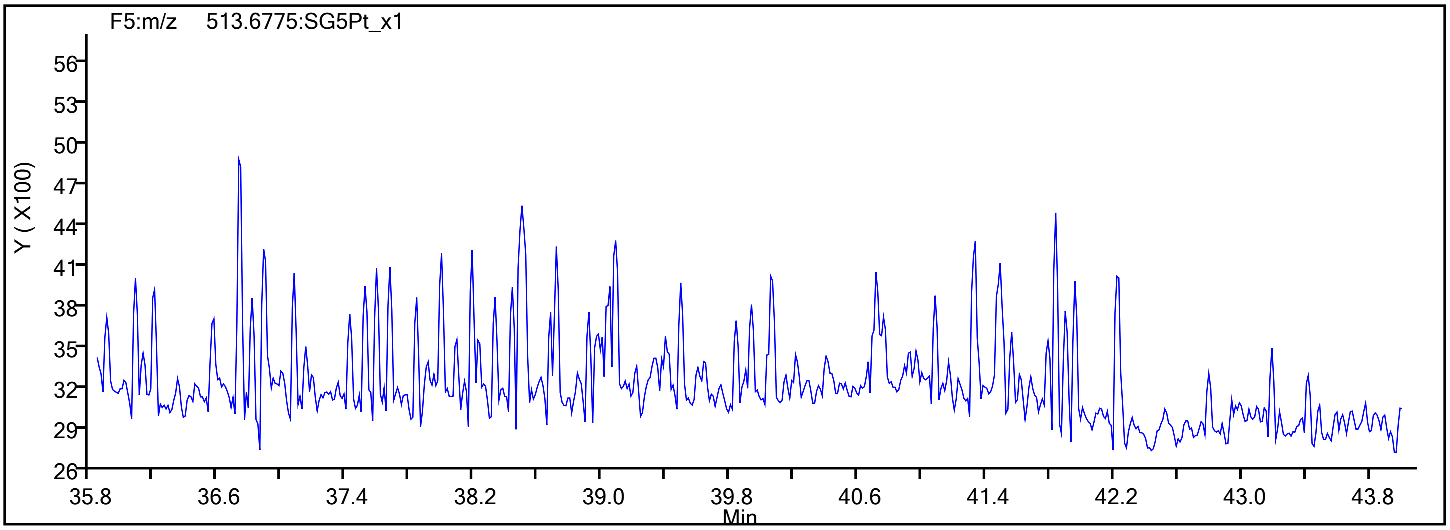

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

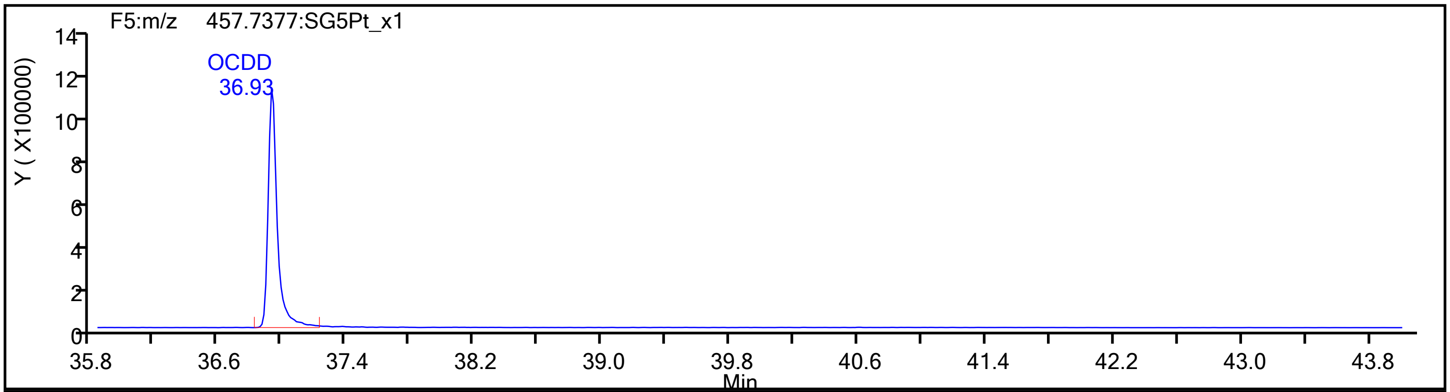

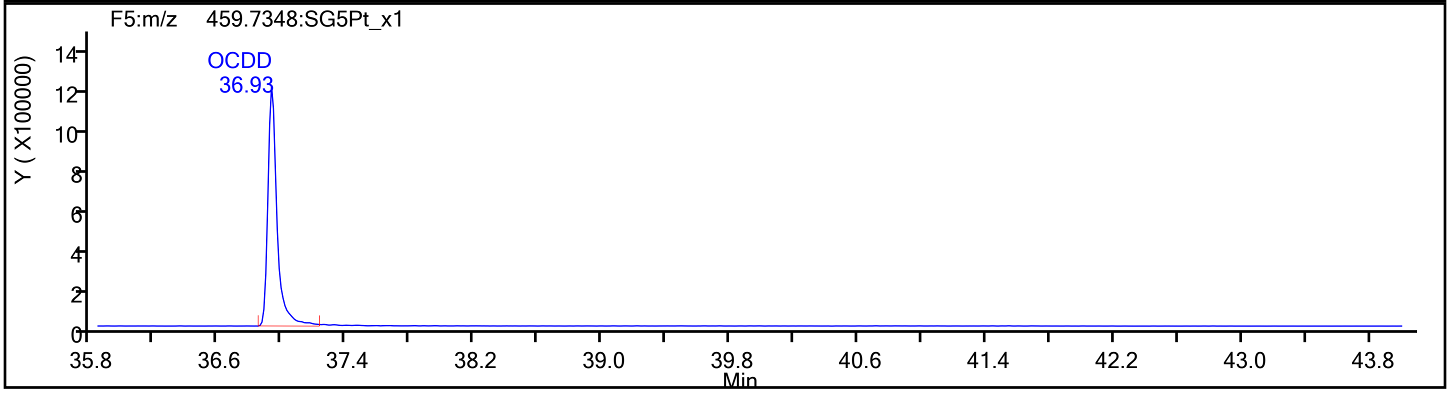

OCDD Standards

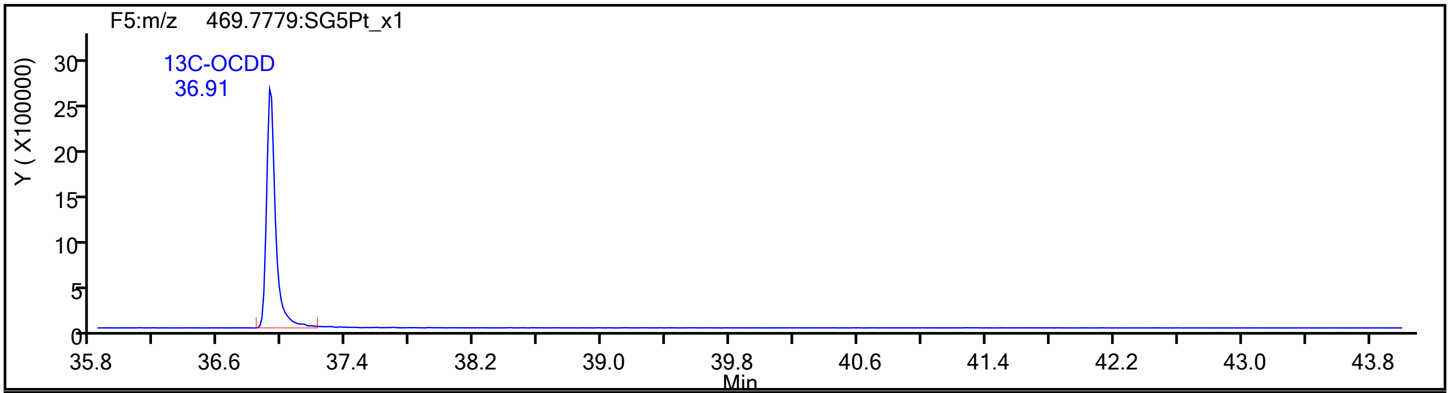

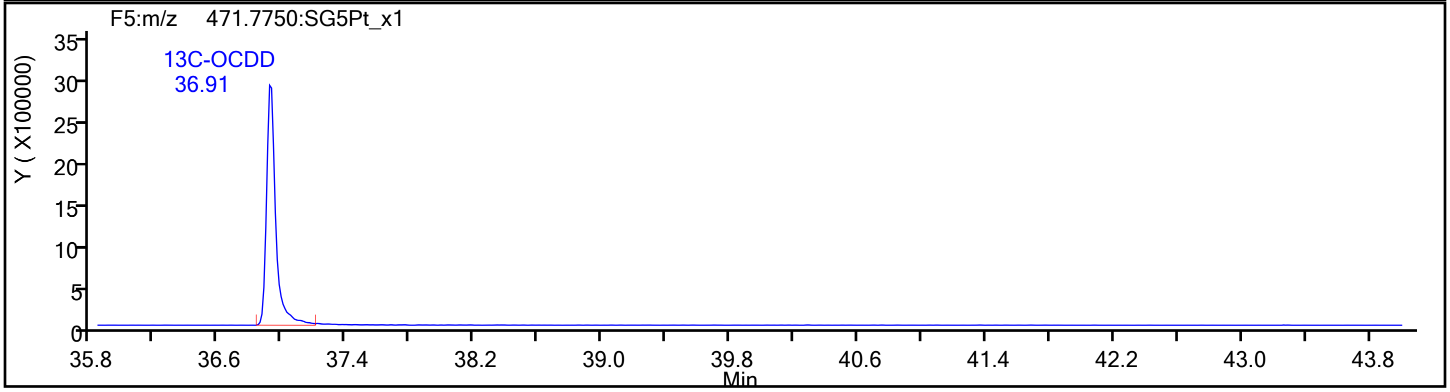

Report Date: 27-Nov-2020 08:09:00 Chrom Revision: 2.3 12-Nov-2020 21:52:08

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d		
Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

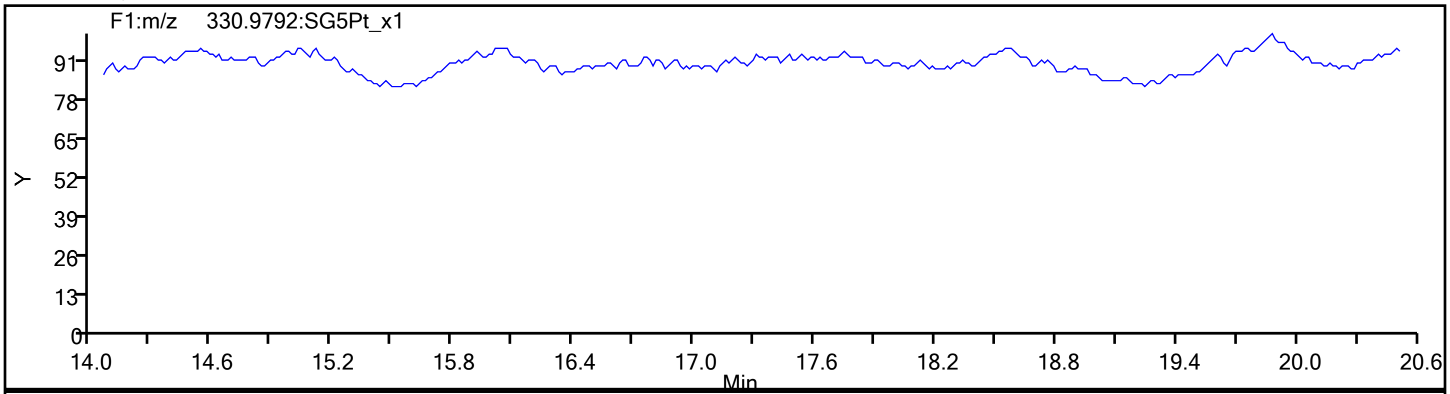

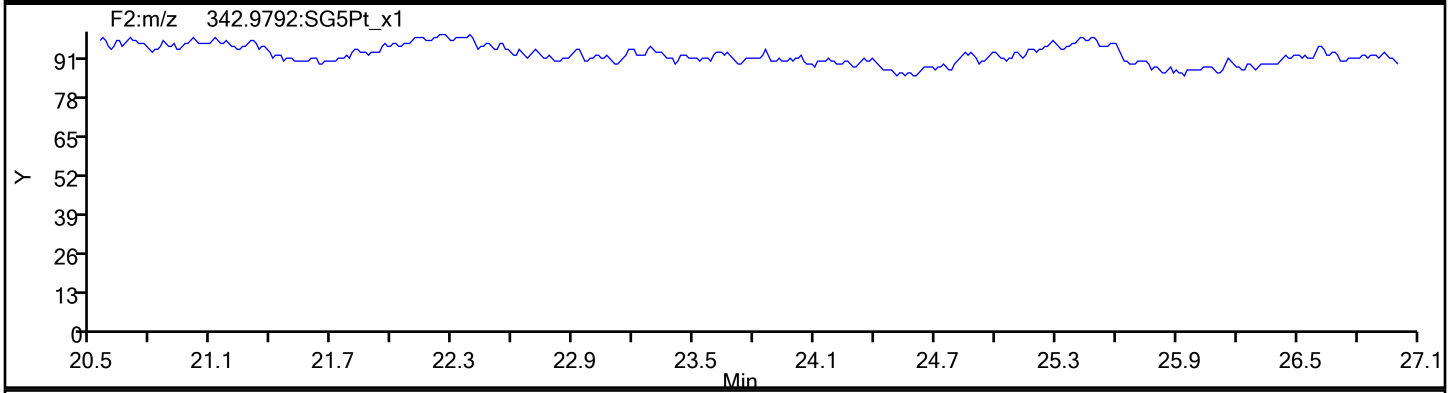

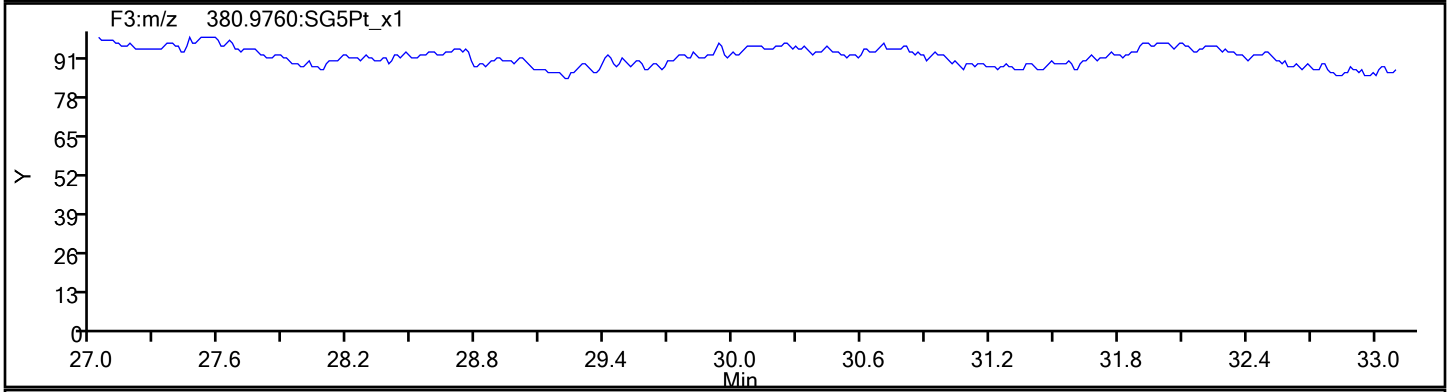

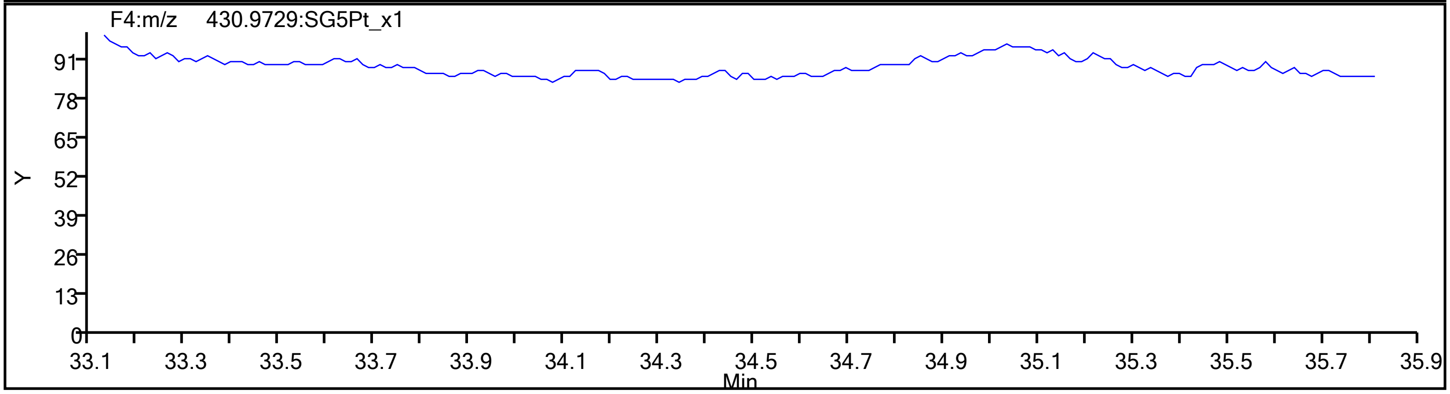

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201124-108149.b\23NO2010D5_53.d

Injection Date:	25-Nov-2020 02:03:48	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA, ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	435203	Sample Line#:	28
Column Type:	DB-5	Column Dia:	0.32 mm

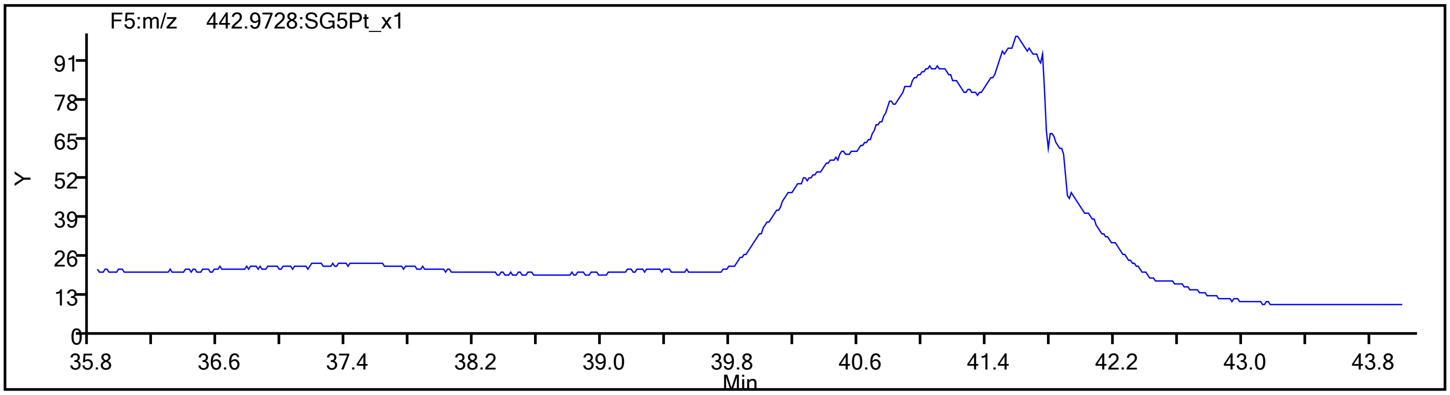

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Instrument ID: 10D5 Start Date: 09/17/2020 14:12

Analysis Batch Number: 413246 End Date: 09/17/2020 20:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-413246/1		09/17/2020 14:12	1	17SE2010D5_1.d	DB-5 0.32(mm)
IC 320-413246/3		09/17/2020 16:09	1	17SE2010D5_3.d	DB-5 0.32(mm)
IC 320-413246/4		09/17/2020 16:54	1	17SE2010D5_4.d	DB-5 0.32(mm)
IC 320-413246/5		09/17/2020 17:39	1	17SE2010D5_5.d	DB-5 0.32(mm)
IC 320-413246/6		09/17/2020 18:24	1	17SE2010D5_6.d	DB-5 0.32(mm)
IC 320-413246/7		09/17/2020 19:09	1	17SE2010D5_7.d	DB-5 0.32(mm)
ICV 320-413246/9		09/17/2020 20:42	1	17SE2010D5_9.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-66850-2

SDG No.:

Instrument ID: DFS 1   Start Date: 11/17/2020 11:15

Analysis Batch Number: 432585   End Date: 11/17/2020 18:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-432585/1		11/17/2020 11:15	1	17no20dfs1_2.d	DB-5 0.32(mm)
IC 320-432585/4		11/17/2020 13:38	1	17no20dfs1_5.d	DB-5 0.32(mm)
IC 320-432585/5		11/17/2020 14:27	1	17no20dfs1_6.d	DB-5 0.32(mm)
IC 320-432585/6		11/17/2020 15:14	1	17no20dfs1_7.d	DB-5 0.32(mm)
IC 320-432585/7		11/17/2020 16:08	1	17no20dfs1_8.d	DB-5 0.32(mm)
IC 320-432585/9		11/17/2020 17:44	1	17no20dfs1_10.d	DB-5 0.32(mm)
ICV 320-432585/10		11/17/2020 18:32	1	17no20dfs1_11.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Instrument ID: DFS 1 Start Date: 11/24/2020 07:33

Analysis Batch Number: 434777 End Date: 11/24/2020 16:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-434777/28		11/24/2020 07:33	1	23no20dfs1_32.d	DB-5 0.32(mm)
WDM 320-434777/29		11/24/2020 08:41	1	23no20dfs1_34.d	DB-5 0.32(mm)
MB 320-432973/1-A		11/24/2020 10:17	1	23no20dfs1_36.d	DB-5 0.32(mm)
ZZZZZ		11/24/2020 11:05	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 11:53	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 12:41	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 13:29	1		DB-5 0.32(mm)
320-66850-3	11215702-Tank #1 Drum	11/24/2020 14:17	1	23no20dfs1_41.d	DB-5 0.32(mm)
320-66850-4	11215702-Tank #2 Drum	11/24/2020 15:04	1	23no20dfs1_42.d	DB-5 0.32(mm)
320-66850-5	11215702-Tank #1 Tank	11/24/2020 15:53	1	23no20dfs1_43.d	DB-5 0.32(mm)
320-66850-6	11215702-Tank #2 Tank	11/24/2020 16:40	1	23no20dfs1_44.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Instrument ID: 10D5 Start Date: 11/24/2020 15:13

Analysis Batch Number: 435203 End Date: 11/25/2020 02:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-435203/15		11/24/2020 15:13	1	23NO2010D5_40.d	DB-5 0.32(mm)
WDM 320-435203/16		11/24/2020 16:08	1	23NO2010D5_41.d	DB-5 0.32(mm)
ZZZZZ		11/24/2020 20:13	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 21:03	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 21:48	1		DB-5 0.32(mm)
ZZZZZ		11/24/2020 23:48	1		DB-5 0.32(mm)
LCS 320-432973/2-A		11/25/2020 01:18	1	23NO2010D5_52.d	DB-5 0.32(mm)
LCSD 320-432973/3-A		11/25/2020 02:03	1	23NO2010D5_53.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-66850-2

SDG No.:

Instrument ID: 11D2 Start Date: 11/30/2020 12:27

Analysis Batch Number: 436991 End Date: 11/30/2020 22:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-436991/1		11/30/2020 12:27	1	30NO2011D2_001.d	DB-225 0.32(mm)
CCV 320-436991/2		11/30/2020 13:05	1	30NO2011D2_002.d	DB-225 0.32(mm)
ZZZZZ		11/30/2020 19:29	1		DB-225 0.32(mm)
320-66850-3 RA	11215702-Tank #1 Drum RA	11/30/2020 20:07	1	30NO2011D2_013.d	DB-225 0.32(mm)
320-66850-5 RA	11215702-Tank #1 Tank RA	11/30/2020 20:46	1	30NO2011D2_014.d	DB-225 0.32(mm)
320-66850-4 RA	11215702-Tank #2 Drum RA	11/30/2020 21:24	1	30NO2011D2_015.d	DB-225 0.32(mm)
320-66850-6 RA	11215702-Tank #2 Tank RA	11/30/2020 22:03	1	30NO2011D2_016.d	DB-225 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-66850-2

SDG No.:

Batch Number: 432973 Batch Start Date: 11/18/20 11:29 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 11/19/20 09:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-432973/1		1613B, 1613B				1000 mL	20.0 uL	A1	4
LCS 320-432973/2		1613B, 1613B				1000 mL	20.0 uL	2	6
LCSD 320-432973/3		1613B, 1613B				1000 mL	20.0 uL	3	4
320-66850-A-3	11215702-Tank #1 Drum	1613B, 1613B	T	1571.5 g	518.47 g	1053 mL	20.0 uL	6	6
320-66850-A-4	11215702-Tank #2 Drum	1613B, 1613B	T	1570.4 g	521.18 g	1049.2 mL	20.0 uL	B1	4
320-66850-A-5	11215702-Tank #1 Tank	1613B, 1613B	T	1570.6 g	517.35 g	1053.3 mL	20.0 uL	2	6
320-66850-A-6	11215702-Tank #2 Tank	1613B, 1613B	T	1569.8 g	520.70 g	1049.1 mL	20.0 uL	3	4

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00445	HRDXNIS 00129	HRDXNSU 00244	HRDXNTA 00123		
MB 320-432973/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-432973/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
LCSD 320-432973/3		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-66850-A-3	11215702-Tank #1 Drum	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-66850-A-4	11215702-Tank #2 Drum	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-66850-A-5	11215702-Tank #1 Tank	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-66850-A-6	11215702-Tank #2 Tank	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-66850-2

SDG No.:

Batch Number: 432973 Batch Start Date: 11/18/20 11:29 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 11/19/20 09:00

Batch Notes	
20% DCM:Hexane ID	DH28_00178 mL
65% DCM:Hexane ID	DH6535_00500 mL
Acid Silica Gel ID	SA5644_00668
Acid Alumina ID	Acid_Alumina_00011
Balance ID	QA-070
C14 ID	2191187
Hexane ID	Hexane_00258 mL
IFB Clean Up	GLB 11-19-20
MeCL2 ID	2224921 mL
Na2SO4 ID	2162899
Analyst ID - IDA Reagent Drop	NR 11/18/20 HD05018 HRDXNIDA_00445 B-4/4 1.00 mL
Analyst ID - IDA Reagent Drop Witness	11/18/20 SR
Analyst ID - IS Reagent Drop	GLB 11-19-20 20uL HRDXNIS00129 B 3/4 DB15270
Analyst ID - IS Reagent Drop Witness	FC 11-19-20
Analyst ID - SU Reagent Drop	GLB 11-19-20 1.0mL HRDXNSU0024 B 2/4 HD05018
Analyst ID - SU Reagent Drop Witness	FC 11-19-20
Analyst ID - TA Reagent Drop	NR 11/18/20 DB15270 HRDXNTA_00123 B-1/4 50.0 uL
Analyst ID - TA Reagent Drop Witness	11/18/20 SR
Silica Gel ID	SilicaGel_00350
Soxhlet/Soxtherm End	11/18/20 NR 1700
Soxhlet/Soxtherm Start	11/18/20 NR 1300
Storage Box ID	DXN 200
Toluene ID	2228738 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

eurofins | **Environment Testing**
TestAmerica

Sacramento
Sample Receiving Notes

320-66850 Field Sheet

Job: ______

Tracking # : 9379 3045 0119

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other______

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: L-02 Corr. Factor: (+ / -) 0 °C

Ice ✓ Wet ✓ Gel ______ Other ______

Cooler Custody Seal: –

Cooler ID: –

Temp Observed: 3.5 °C Corrected: 3.5 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐

Initials: ______ Date: 11/17/20

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

**Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")*

Initials: ______ Date: 11/17/20

Notes:

1 A6B Each

18020662

Trizma Lot #(s): ______

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☑	☐	☐

Initials: DL Date: 11/17/20

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 16NOV20
ACTWGT: 40.00 LB MAN
CAD: 68417/CAFE3407

BILL SENDER

TO **SAMPLE RECEIVING**
EUROFINS/TEST AMERICA
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215702 - NI0411 GEB (POPE)

56DC5/BAB9/05A2

FedEx
Express
E

J201019110601uv

TUE - 17 NOV 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **9379 3045 0119**

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/20

GHD

CHAIN OF CUSTODY RECORD

COC NO.: 59864

Address: 2055 Niagara Falls Blvd
Phone: 716-297-6150
Fax:
PAGE ___ OF ___

Project No/ Phase/Task Code: 11215702-	Laboratory Name: Eurofin/Test America
Project Name: San Jacinto	Lab Contact: Carrie Gamber/Beth Hill
Lab Location: Sacramento	SSOW ID: 11187072-2019-002
Cooler No:	Carrier:
Project Location: Texas	Airbill No:
GHD Chemistry Contact: Debbie Brennan	Total # of Containers: 6
Sampler(s): Dan Pope	

ANALYSIS REQUESTED (See Back of COC for Definitions)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins/Furans	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)									
1	11215702-Tank#1-1um	11/10/20	10:00	WG			X			Attn to: Carrie Gamber
2	11215702-Tank#2-1um	11/10/20	11:00	WG			X			412-963-2428
3	11215702-Tank#1 Drum	11/9/20	12:00	WG			X			
4	11215702-Tank#2 Drum	11/9/20	12:00	WG			X			*Samples
5	11215702-Tank#1 Tank	11/9/20	13:00	WG			X			11215702-Tank#1-1um and
6	11215702-Tank#2 Tank	11/9/20	13:00	WG			X			11215702-Tank#2-1um
7										on an expedited TAT
8										
9										
10										
11										
12										

320-66850 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☐2Week Other:

Notes/ Special Requirements:

3.5°C

	RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1.	Dan Pope	GHD	11/16/20	10:15		ETAWS	11/17/20	1010
2.								
3.								

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

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CRA Form: COC-10B (20110804)

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-66850-2

Login Number: 66850

List Source: Eurofins TestAmerica, Sacramento

List Number: 1

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Job Number: 320-68943-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
1/29/2021 4:17 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
01/29/2021

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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Definitions/Glossary

Client: GHD Services Inc. Job ID: 320-68943-1
Project/Site: San Jacinto River Waste Pits Superfund

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-68943-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 01/15/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.8 C.

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS

The following samples were diluted to bring the concentration of target analytes within the calibration range: 11215702-Tank#1-1-8-21 (320-68943-1) and 11215702-Tank#2-1-8-21 (320-68943-2). Elevated reporting limits (RLs) are provided.

The following sample exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 11215702-Tank#1-1-8-21 (320-68943-1) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

Several analytes were detected in method blank MB 320-452668/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: 11215702-Tank#1-1-8-21 (320-68943-1), 11215702-Tank#2-1-8-21 (320-68943-2) and (CCV 320-456198/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Detection Summary

Client Sample ID: 11215702-Tank#1-1-8-21 Lab Sample ID: 320-68943-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	120		48	2.7	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1800		48	14	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	990		48	15	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.9	J q	48	1.8	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	17	J q	48	1.8	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	12	J q	48	1.7	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	4500		48	13	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	1000		48	13	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	57		48	13	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	88		48	12	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	700	B	48	2.7	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1300	B	48	2.3	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	540		48	2.6	pg/L	1		1613B	Total/NA
OCDD	11000	B	95	4.6	pg/L	1		1613B	Total/NA
OCDF	680		95	1.2	pg/L	1		1613B	Total/NA
Total PeCDD	140		48	2.7	pg/L	1		1613B	Total/NA
Total PeCDF	4500	q	48	15	pg/L	1		1613B	Total/NA
Total HxCDD	160	q	48	1.8	pg/L	1		1613B	Total/NA
Total HxCDF	6400	q	48	13	pg/L	1		1613B	Total/NA
Total HpCDD	1400	B	48	2.7	pg/L	1		1613B	Total/NA
Total HpCDF	2300	B	48	2.5	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	15000		190	44	pg/L	20		1613B	Total/NA
Total TCDD - DL	17000	q B	190	44	pg/L	20		1613B	Total/NA
Total TCDF - DL	84000	G	210	210	pg/L	20		1613B	Total/NA
2,3,7,8-TCDF - RADL	39000		190	56	pg/L	20		1613B	Total/NA

Client Sample ID: 11215702-Tank#2-1-8-21 Lab Sample ID: 320-68943-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	52		47	1.5	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	910		47	6.1	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	470		47	6.7	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.0	J	47	0.84	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	8.4	J	47	0.84	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	5.0	J	47	0.78	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	1800		47	4.8	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	420		47	4.7	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	29	J	47	4.2	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	50		47	4.2	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	280	B	47	1.2	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	490	B	47	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	190		47	1.3	pg/L	1		1613B	Total/NA
OCDD	4400	B	95	2.0	pg/L	1		1613B	Total/NA
OCDF	270		95	0.76	pg/L	1		1613B	Total/NA
Total PeCDD	58		47	1.5	pg/L	1		1613B	Total/NA
Total PeCDF	2300		47	6.4	pg/L	1		1613B	Total/NA
Total HxCDD	61	q	47	0.82	pg/L	1		1613B	Total/NA
Total HxCDF	2500		47	4.5	pg/L	1		1613B	Total/NA
Total HpCDD	540	B	47	1.2	pg/L	1		1613B	Total/NA
Total HpCDF	840	B	47	1.2	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	6600		95	20	pg/L	10		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank#2-1-8-21 (Continued)
Lab Sample ID: 320-68943-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total TCDD - DL	7300	B	95	20	pg/L	10		1613B	Total/NA
Total TCDF - DL	36000	q	95	58	pg/L	10		1613B	Total/NA
2,3,7,8-TCDF - RADL	17000		95	23	pg/L	10		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank#1-1-8-21

Lab Sample ID: 320-68943-1

Date Collected: 01/08/21 14:00
Date Received: 01/15/21 09:30
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	120		48	2.7	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,7,8-PeCDF	1800		48	14	pg/L		01/18/21 11:00	01/23/21 07:04	1
2,3,4,7,8-PeCDF	990		48	15	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,4,7,8-HxCDD	3.9	J q	48	1.8	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,6,7,8-HxCDD	17	J q	48	1.8	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,7,8,9-HxCDD	12	J q	48	1.7	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,4,7,8-HxCDF	4500		48	13	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,6,7,8-HxCDF	1000		48	13	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,7,8,9-HxCDF	57		48	13	pg/L		01/18/21 11:00	01/23/21 07:04	1
2,3,4,6,7,8-HxCDF	88		48	12	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,4,6,7,8-HpCDD	700	B	48	2.7	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,4,6,7,8-HpCDF	1300	B	48	2.3	pg/L		01/18/21 11:00	01/23/21 07:04	1
1,2,3,4,7,8,9-HpCDF	540		48	2.6	pg/L		01/18/21 11:00	01/23/21 07:04	1
OCDD	11000	B	95	4.6	pg/L		01/18/21 11:00	01/23/21 07:04	1
OCDF	680		95	1.2	pg/L		01/18/21 11:00	01/23/21 07:04	1
Total PeCDD	140		48	2.7	pg/L		01/18/21 11:00	01/23/21 07:04	1
Total PeCDF	4500	q	48	15	pg/L		01/18/21 11:00	01/23/21 07:04	1
Total HxCDD	160	q	48	1.8	pg/L		01/18/21 11:00	01/23/21 07:04	1
Total HxCDF	6400	q	48	13	pg/L		01/18/21 11:00	01/23/21 07:04	1
Total HpCDD	1400	B	48	2.7	pg/L		01/18/21 11:00	01/23/21 07:04	1
Total HpCDF	2300	B	48	2.5	pg/L		01/18/21 11:00	01/23/21 07:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*68*		*25 - 181*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-2,3,4,7,8-PeCDF	*64*		*21 - 178*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,4,7,8-HxCDD	*65*		*32 - 141*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,6,7,8-HxCDD	*63*		*28 - 130*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,4,7,8-HxCDF	*64*		*26 - 152*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,6,7,8-HxCDF	*60*		*26 - 123*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,7,8,9-HxCDF	*58*		*29 - 147*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-2,3,4,6,7,8-HxCDF	*61*		*28 - 136*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*56*		*23 - 140*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*55*		*28 - 143*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*52*		*26 - 138*	*01/18/21 11:00*	*01/23/21 07:04*	*1*
13C-OCDD	*55*		*17 - 157*	*01/18/21 11:00*	*01/23/21 07:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*01/18/21 11:00*	*01/23/21 07:04*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	15000		190	44	pg/L		01/18/21 11:00	01/27/21 22:17	20
Total TCDD	17000	q B	190	44	pg/L		01/18/21 11:00	01/27/21 22:17	20
Total TCDF	84000	G	210	210	pg/L		01/18/21 11:00	01/27/21 22:17	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*65*		*25 - 164*	*01/18/21 11:00*	*01/27/21 22:17*	*20*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*01/18/21 11:00*	*01/27/21 22:17*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*01/18/21 11:00*	*01/27/21 22:17*	*20*

Client Sample Results

Client Sample ID: 11215702-Tank#1-1-8-21

Lab Sample ID: 320-68943-1

Date Collected: 01/08/21 14:00
Matrix: Water
Date Received: 01/15/21 09:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**39000**		190	56	pg/L		01/18/21 11:00	01/26/21 02:29	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*01/18/21 11:00*	*01/26/21 02:29*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*01/18/21 11:00*	*01/26/21 02:29*	*20*

Client Sample ID: 11215702-Tank#2-1-8-21

Lab Sample ID: 320-68943-2

Date Collected: 01/08/21 14:30
Matrix: Water
Date Received: 01/15/21 09:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**52**		47	1.5	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,7,8-PeCDF	**910**		47	6.1	pg/L		01/18/21 11:00	01/23/21 07:52	1
2,3,4,7,8-PeCDF	**470**		47	6.7	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,4,7,8-HxCDD	**3.0**	**J**	47	0.84	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,6,7,8-HxCDD	**8.4**	**J**	47	0.84	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,7,8,9-HxCDD	**5.0**	**J**	47	0.78	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,4,7,8-HxCDF	**1800**		47	4.8	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,6,7,8-HxCDF	**420**		47	4.7	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,7,8,9-HxCDF	**29**	**J**	47	4.2	pg/L		01/18/21 11:00	01/23/21 07:52	1
2,3,4,6,7,8-HxCDF	**50**		47	4.2	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,4,6,7,8-HpCDD	**280**	**B**	47	1.2	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,4,6,7,8-HpCDF	**490**	**B**	47	1.1	pg/L		01/18/21 11:00	01/23/21 07:52	1
1,2,3,4,7,8,9-HpCDF	**190**		47	1.3	pg/L		01/18/21 11:00	01/23/21 07:52	1
OCDD	**4400**	**B**	95	2.0	pg/L		01/18/21 11:00	01/23/21 07:52	1
OCDF	**270**		95	0.76	pg/L		01/18/21 11:00	01/23/21 07:52	1
Total PeCDD	**58**		47	1.5	pg/L		01/18/21 11:00	01/23/21 07:52	1
Total PeCDF	**2300**		47	6.4	pg/L		01/18/21 11:00	01/23/21 07:52	1
Total HxCDD	**61**	**q**	47	0.82	pg/L		01/18/21 11:00	01/23/21 07:52	1
Total HxCDF	**2500**		47	4.5	pg/L		01/18/21 11:00	01/23/21 07:52	1
Total HpCDD	**540**	**B**	47	1.2	pg/L		01/18/21 11:00	01/23/21 07:52	1
Total HpCDF	**840**	**B**	47	1.2	pg/L		01/18/21 11:00	01/23/21 07:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*83*		*25 - 181*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,7,8-PeCDF	*80*		*24 - 185*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-2,3,4,7,8-PeCDF	*78*		*21 - 178*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,4,7,8-HxCDD	*80*		*32 - 141*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,6,7,8-HxCDD	*72*		*28 - 130*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,4,7,8-HxCDF	*74*		*26 - 152*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,7,8,9-HxCDF	*73*		*29 - 147*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-2,3,4,6,7,8-HxCDF	*72*		*28 - 136*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*72*		*23 - 140*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*70*		*28 - 143*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*66*		*26 - 138*	*01/18/21 11:00*	*01/23/21 07:52*	*1*
13C-OCDD	*75*		*17 - 157*	*01/18/21 11:00*	*01/23/21 07:52*	*1*

Client Sample ID: 11215702-Tank#2-1-8-21 Lab Sample ID: 320-68943-2

Date Collected: 01/08/21 14:30 **Matrix: Water**
Date Received: 01/15/21 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*	*01/18/21 11:00*	*01/23/21 07:52*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**6600**		95	20	pg/L		01/18/21 11:00	01/27/21 21:32	10
Total TCDD	**7300**	**B**	95	20	pg/L		01/18/21 11:00	01/27/21 21:32	10
Total TCDF	**36000**	**q**	95	58	pg/L		01/18/21 11:00	01/27/21 21:32	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*72*		*25 - 164*	*01/18/21 11:00*	*01/27/21 21:32*	*10*
13C-2,3,7,8-TCDF	*78*		*24 - 169*	*01/18/21 11:00*	*01/27/21 21:32*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*01/18/21 11:00*	*01/27/21 21:32*	*10*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**17000**		95	23	pg/L		01/18/21 11:00	01/26/21 01:51	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*01/18/21 11:00*	*01/26/21 01:51*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*109*		*35 - 197*	*01/18/21 11:00*	*01/26/21 01:51*	*10*

Client Sample ID: 11215702-Tank#1-1-8-21 Lab Sample ID: 320-68943-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**120**		48	2.7	pg/L	1	**120**	1613B
1,2,3,7,8-PeCDF	**1800**		48	14	pg/L	0.03	**54**	1613B
2,3,4,7,8-PeCDF	**990**		48	15	pg/L	0.3	**300**	1613B
1,2,3,4,7,8-HxCDD	**3.9**	**J q**	48	1.8	pg/L	0.1	**0.39**	1613B
1,2,3,6,7,8-HxCDD	**17**	**J q**	48	1.8	pg/L	0.1	**1.7**	1613B
1,2,3,7,8,9-HxCDD	**12**	**J q**	48	1.7	pg/L	0.1	**1.2**	1613B
1,2,3,4,7,8-HxCDF	**4500**		48	13	pg/L	0.1	**450**	1613B
1,2,3,6,7,8-HxCDF	**1000**		48	13	pg/L	0.1	**100**	1613B
1,2,3,7,8,9-HxCDF	**57**		48	13	pg/L	0.1	**5.7**	1613B
2,3,4,6,7,8-HxCDF	**88**		48	12	pg/L	0.1	**8.8**	1613B
1,2,3,4,6,7,8-HpCDD	**700**	**B**	48	2.7	pg/L	0.01	**7.0**	1613B
1,2,3,4,6,7,8-HpCDF	**1300**	**B**	48	2.3	pg/L	0.01	**13**	1613B
1,2,3,4,7,8,9-HpCDF	**540**		48	2.6	pg/L	0.01	**5.4**	1613B
OCDD	**11000**	**B**	95	4.6	pg/L	0.0003	**3.3**	1613B
OCDF	**680**		95	1.2	pg/L	0.0003	**0.20**	1613B
2,3,7,8-TCDD - DL	**15000**		190	44	pg/L	1	**15000**	1613B
2,3,7,8-TCDF - RADL	**39000**		190	56	pg/L	0.1	**3900**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		20000	TEQ

Client Sample ID: 11215702-Tank#2-1-8-21 Lab Sample ID: 320-68943-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**52**		47	1.5	pg/L	1	**52**	1613B
1,2,3,7,8-PeCDF	**910**		47	6.1	pg/L	0.03	**27**	1613B
2,3,4,7,8-PeCDF	**470**		47	6.7	pg/L	0.3	**140**	1613B
1,2,3,4,7,8-HxCDD	**3.0**	**J**	47	0.84	pg/L	0.1	**0.30**	1613B
1,2,3,6,7,8-HxCDD	**8.4**	**J**	47	0.84	pg/L	0.1	**0.84**	1613B
1,2,3,7,8,9-HxCDD	**5.0**	**J**	47	0.78	pg/L	0.1	**0.50**	1613B
1,2,3,4,7,8-HxCDF	**1800**		47	4.8	pg/L	0.1	**180**	1613B
1,2,3,6,7,8-HxCDF	**420**		47	4.7	pg/L	0.1	**42**	1613B
1,2,3,7,8,9-HxCDF	**29**	**J**	47	4.2	pg/L	0.1	**2.9**	1613B
2,3,4,6,7,8-HxCDF	**50**		47	4.2	pg/L	0.1	**5.0**	1613B
1,2,3,4,6,7,8-HpCDD	**280**	**B**	47	1.2	pg/L	0.01	**2.8**	1613B
1,2,3,4,6,7,8-HpCDF	**490**	**B**	47	1.1	pg/L	0.01	**4.9**	1613B
1,2,3,4,7,8,9-HpCDF	**190**		47	1.3	pg/L	0.01	**1.9**	1613B
OCDD	**4400**	**B**	95	2.0	pg/L	0.0003	**1.3**	1613B
OCDF	**270**		95	0.76	pg/L	0.0003	**0.081**	1613B
2,3,7,8-TCDD - DL	**6600**		95	20	pg/L	1	**6600**	1613B
2,3,7,8-TCDF - RADL	**17000**		95	23	pg/L	0.1	**1700**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client: GHD Services Inc.
Job ID: 320-68943-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#2-1-8-21 (Continued)

Lab Sample ID: 320-68943-2

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		8800	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Surrogate Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-68943-1	11215702-Tank#1-1-8-21	102
320-68943-1 - RADL	11215702-Tank#1-1-8-21	111
320-68943-1 - DL	11215702-Tank#1-1-8-21	98
320-68943-2	11215702-Tank#2-1-8-21	99
320-68943-2 - RADL	11215702-Tank#2-1-8-21	109
320-68943-2 - DL	11215702-Tank#2-1-8-21	97
MB 320-452668/1-A	Method Blank	97

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-452668/2-A	Lab Control Sample	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)	HxDF (26-123)	HxCF (29-147)
320-68943-1	11215702-Tank#1-1-8-21	68	62	64	65	63	64	60	58
320-68943-2	11215702-Tank#2-1-8-21	83	80	78	80	72	74	69	73

		Percent Isotope Dilution Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-68943-1	11215702-Tank#1-1-8-21	61	56	55	52	55
320-68943-2	11215702-Tank#2-1-8-21	72	72	70	66	75

Surrogate Legend

PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TCDF (24-169)
320-68943-1 - RADL	11215702-Tank#1-1-8-21	69
320-68943-2 - RADL	11215702-Tank#2-1-8-21	80

Surrogate Legend

TCDF = 13C-2,3,7,8-TCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)
320-68943-1 - DL	11215702-Tank#1-1-8-21	65	70
320-68943-2 - DL	11215702-Tank#2-1-8-21	72	78

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF

Isotope Dilution Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	**Client Sample ID**	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-452668/2-A	Lab Control Sample	88	79	96	84	85	92	85	80

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	**Client Sample ID**	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)
LCS 320-452668/2-A	Lab Control Sample	74	83	79	90	80	81	90

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	**Client Sample ID**	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
MB 320-452668/1-A	Method Blank	90	85	96	85	86	92	88	83

		Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD
Lab Sample ID	**Client Sample ID**	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)
MB 320-452668/1-A	Method Blank	78	78	80	89	80	79	87

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

QC Sample Results

Client: GHD Services Inc.
Job ID: 320-68943-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-452668/1-A
Matrix: Water
Analysis Batch: 454782

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452668

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.68	pg/L		01/18/21 11:00	01/22/21 23:53	1
2,3,7,8-TCDF	ND		10	0.47	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,7,8-PeCDD	ND		50	0.70	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,7,8-PeCDF	ND		50	0.60	pg/L		01/18/21 11:00	01/22/21 23:53	1
2,3,4,7,8-PeCDF	ND		50	0.64	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,4,7,8-HxCDD	ND		50	0.55	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,6,7,8-HxCDD	ND		50	0.53	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,7,8,9-HxCDD	ND		50	0.50	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,4,7,8-HxCDF	ND		50	0.39	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,6,7,8-HxCDF	ND		50	0.37	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,7,8,9-HxCDF	ND		50	0.36	pg/L		01/18/21 11:00	01/22/21 23:53	1
2,3,4,6,7,8-HxCDF	ND		50	0.34	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,4,6,7,8-HpCDD	2.74	J	50	0.25	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,4,6,7,8-HpCDF	1.42	J q	50	0.35	pg/L		01/18/21 11:00	01/22/21 23:53	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.39	pg/L		01/18/21 11:00	01/22/21 23:53	1
OCDD	4.88	J	100	0.48	pg/L		01/18/21 11:00	01/22/21 23:53	1
OCDF	ND		100	0.58	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total TCDD	4.52	J q	10	0.68	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total TCDF	ND		10	0.47	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total PeCDD	ND		50	0.70	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total PeCDF	ND		50	0.64	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total HxCDD	ND		50	1.6	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total HxCDF	ND		50	0.39	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total HpCDD	4.46	J q	50	0.25	pg/L		01/18/21 11:00	01/22/21 23:53	1
Total HpCDF	1.42	J q	50	0.37	pg/L		01/18/21 11:00	01/22/21 23:53	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*90*		*25 - 164*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-2,3,7,8-TCDF	*85*		*24 - 169*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,7,8-PeCDD	*96*		*25 - 181*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,7,8-PeCDF	*85*		*24 - 185*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-2,3,4,7,8-PeCDF	*86*		*21 - 178*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,4,7,8-HxCDD	*92*		*32 - 141*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*28 - 130*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,4,7,8-HxCDF	*83*		*26 - 152*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*26 - 123*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,7,8,9-HxCDF	*78*		*29 - 147*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-2,3,4,6,7,8-HxCDF	*80*		*28 - 136*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*23 - 140*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*26 - 138*	*01/18/21 11:00*	*01/22/21 23:53*	*1*
13C-OCDD	*87*		*17 - 157*	*01/18/21 11:00*	*01/22/21 23:53*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*01/18/21 11:00*	*01/22/21 23:53*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-452668/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 454782 **Prep Batch: 452668**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	180		pg/L		90	67 - 158
2,3,7,8-TCDF	200	198		pg/L		99	75 - 158
1,2,3,7,8-PeCDD	1000	903		pg/L		90	70 - 142
1,2,3,7,8-PeCDF	1000	949		pg/L		95	80 - 134
2,3,4,7,8-PeCDF	1000	968		pg/L		97	68 - 160
1,2,3,4,7,8-HxCDD	1000	903		pg/L		90	70 - 164
1,2,3,6,7,8-HxCDD	1000	903		pg/L		90	76 - 134
1,2,3,7,8,9-HxCDD	1000	913		pg/L		91	64 - 162
1,2,3,4,7,8-HxCDF	1000	964		pg/L		96	72 - 134
1,2,3,6,7,8-HxCDF	1000	947		pg/L		95	84 - 130
1,2,3,7,8,9-HxCDF	1000	939		pg/L		94	78 - 130
2,3,4,6,7,8-HxCDF	1000	951		pg/L		95	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	905		pg/L		91	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	915		pg/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	961		pg/L		96	78 - 138
OCDD	2000	1800		pg/L		90	78 - 144
OCDF	2000	1720		pg/L		86	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*88*		*20 - 175*
13C-2,3,7,8-TCDF	*79*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*96*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*84*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*85*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*92*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*85*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*80*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*74*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*83*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*79*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*90*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*81*		*20 - 186*
13C-OCDD	*90*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*93*		*31 - 191*

Specialty Organics

Prep Batch: 452668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-68943-1 - DL	11215702-Tank#1-1-8-21	Total/NA	Water	1613B	
320-68943-1 - RADL	11215702-Tank#1-1-8-21	Total/NA	Water	1613B	
320-68943-1	11215702-Tank#1-1-8-21	Total/NA	Water	1613B	
320-68943-2 - DL	11215702-Tank#2-1-8-21	Total/NA	Water	1613B	
320-68943-2 - RADL	11215702-Tank#2-1-8-21	Total/NA	Water	1613B	
320-68943-2	11215702-Tank#2-1-8-21	Total/NA	Water	1613B	
MB 320-452668/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-452668/2-A	Lab Control Sample	Total/NA	Water	1613B	

Analysis Batch: 454782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-68943-1	11215702-Tank#1-1-8-21	Total/NA	Water	1613B	452668
320-68943-2	11215702-Tank#2-1-8-21	Total/NA	Water	1613B	452668
MB 320-452668/1-A	Method Blank	Total/NA	Water	1613B	452668
LCS 320-452668/2-A	Lab Control Sample	Total/NA	Water	1613B	452668

Analysis Batch: 456198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-68943-1 - RADL	11215702-Tank#1-1-8-21	Total/NA	Water	1613B	452668
320-68943-2 - RADL	11215702-Tank#2-1-8-21	Total/NA	Water	1613B	452668

Analysis Batch: 456215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-68943-1 - DL	11215702-Tank#1-1-8-21	Total/NA	Water	1613B	452668
320-68943-2 - DL	11215702-Tank#2-1-8-21	Total/NA	Water	1613B	452668

Lab Chronicle

Client: GHD Services Inc.
Job ID: 320-68943-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank#1-1-8-21

Lab Sample ID: 320-68943-1

Date Collected: 01/08/21 14:00

Matrix: Water

Date Received: 01/15/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	DL		452668	01/18/21 11:00	NR	TAL SAC
Total/NA	Analysis	1613B	DL	20	456215	01/27/21 22:17	SMA	TAL SAC
Total/NA	Prep	1613B	RADL		452668	01/18/21 11:00	NR	TAL SAC
Total/NA	Analysis	1613B	RADL	20	456198	01/26/21 02:29	ALM	TAL SAC
Total/NA	Prep	1613B			452668	01/18/21 11:00	NR	TAL SAC
Total/NA	Analysis	1613B		1	454782	01/23/21 07:04	ALM	TAL SAC

Client Sample ID: 11215702-Tank#2-1-8-21

Lab Sample ID: 320-68943-2

Date Collected: 01/08/21 14:30

Matrix: Water

Date Received: 01/15/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	DL		452668	01/18/21 11:00	NR	TAL SAC
Total/NA	Analysis	1613B	DL	10	456215	01/27/21 21:32	SMA	TAL SAC
Total/NA	Prep	1613B	RADL		452668	01/18/21 11:00	NR	TAL SAC
Total/NA	Analysis	1613B	RADL	10	456198	01/26/21 01:51	ALM	TAL SAC
Total/NA	Prep	1613B			452668	01/18/21 11:00	NR	TAL SAC
Total/NA	Analysis	1613B		1	454782	01/23/21 07:52	ALM	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 320-68943-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.

Job ID: 320-68943-1

Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-68943-1	11215702-Tank#1-1-8-21	Water	01/08/21 14:00	01/15/21 09:30	
320-68943-2	11215702-Tank#2-1-8-21	Water	01/08/21 14:30	01/15/21 09:30	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-68943-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 440976

Lab Sample ID: WDM 320-440976/1 Client Sample ID:

Date Analyzed: 12/10/20 16:57 Lab File ID: 10DE20B10D5_1 .d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,8,9-PeCDD	25.29	Peak assignment corrected	messecara	12/10/20 23:40
1,2,3,8,9-PeCDF	25.51	Peak assignment corrected	messecara	12/10/20 23:41
1,2,3,4,6,8-HxCDF	27.78	Peak assignment corrected	messecara	12/10/20 23:41
1,2,4,6,7,9-HxCDD	29.36	Peak assignment corrected	messecara	12/10/20 23:41

Lab Sample ID: IC 320-440976/3 Client Sample ID:

Date Analyzed: 12/10/20 18:27 Lab File ID: 10DE20B10D5_3 .d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	17.73	Peak assignment corrected	messecara	12/10/20 23:37
2,3,7,8-TCDD	17.94	Baseline	arghestanis	12/11/20 08:28

Lab Sample ID: ICV 320-440976/9 Client Sample ID:

Date Analyzed: 12/10/20 23:07 Lab File ID: 10DE20B10D5_9 .d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	17.67	Peak assignment corrected	arghestanis	12/11/20 09:47

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-68943-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 456215

Lab Sample ID: 320-68943-2 DL Client Sample ID: 11215702-Tank#2-1-8-21 DL

Date Analyzed: 01/27/21 21:32 Lab File ID: 27JA2110D5_10.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	18.17	Split Peak	dadunj	01/29/21 09:23

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-68943-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 447767

Lab Sample ID: IC 320-447767/4 Client Sample ID:

Date Analyzed: 12/31/20 15:05 Lab File ID: 31de20bdfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	21.66	Invalid Compound ID	stephensk	01/04/21 09:20

Lab Sample ID: ICV 320-447767/9 Client Sample ID:

Date Analyzed: 12/31/20 19:05 Lab File ID: 31de20bdfs1_10.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.25	Peak assignment corrected	stephensk	01/04/21 09:28

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-68943-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 454782

Lab Sample ID: CCV 320-454782/1 Client Sample ID:

Date Analyzed: 01/22/21 21:17 Lab File ID: 22ja21dfs1_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	21.25	Peak assignment corrected	messecara	01/25/21 19:09
13C-2,3,7,8-TCDD	21.62	Incomplete Integration	messecara	01/25/21 19:10

Lab Sample ID: MB 320-452668/1-A Client Sample ID:

Date Analyzed: 01/22/21 23:53 Lab File ID: 22ja21dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION REASON	ANALYST	DATE
1,2,3,4,7,8-HxCDD		Invalid Compound ID	dadunj	01/27/21 10:10
1,2,3,4,7,8-HxCDF		Invalid Compound ID	dadunj	01/27/21 10:10
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	01/27/21 10:10
1,2,3,6,7,8-HxCDF		Invalid Compound ID	dadunj	01/27/21 10:10
2,3,4,6,7,8-HxCDF		Invalid Compound ID	dadunj	01/27/21 10:10
1,2,3,4,6,7,8-HpCDD	39.49	Baseline	dadunj	01/27/21 10:11

Lab Sample ID: 320-68943-1 Client Sample ID: 11215702-Tank#1-1-8-21

Date Analyzed: 01/23/21 07:04 Lab File ID: 22ja21dfs1_14.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION REASON	ANALYST	DATE
2,3,4,6,7,8-HxCDF	35.87	Split Peak	dadunj	01/29/21 08:44
1,2,3,4,7,8-HxCDD	36.07	Split Peak	dadunj	01/29/21 08:45
1,2,3,6,7,8-HxCDD	36.19	Invalid Compound ID	dadunj	01/29/21 08:45
1,2,3,7,8,9-HxCDF	36.75	Split Peak	dadunj	01/29/21 08:44

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram   Job No.: 320-68943-1

SDG No.:

Instrument ID: DFS 1   Analysis Batch Number: 454782

Lab Sample ID: 320-68943-2   Client Sample ID: 11215702-Tank#2-1-8-21

Date Analyzed: 01/23/21 07:52   Lab File ID: 22ja21dfs1_15.d   GC Column: DB-5   ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDD	29.54	Baseline	dadunj	01/29/21 09:03
2,3,4,6,7,8-HxCDF	35.87	Split Peak	dadunj	01/29/21 09:03

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
HRDXNIC_00046	01/31/21	09/11/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00455	01/31/21	12/10/20	Acetone, Lot 0000267457	500 mL	HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL2_00030	01/31/21	09/11/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00122	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL3_00028	01/31/21	09/11/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00241	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00122	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26	CIL, Lot ER09271601			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30	CIL, Lot ER01062016			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00241	08/19/21	08/19/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00122	08/19/21	08/19/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00094	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00096	01/31/21	11/24/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

				Reagent	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL5_00031	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL6_00027	01/31/21	09/11/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-OCDD	200 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00246	12/29/21	12/29/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00128	10/02/21	12/10/20	Acetone, Lot 00000267457	25 mL	HRDXNTA_00112	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDF	40 ng/mL
.HRDXNTA_00112	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00039

received 8/30/19 KSS

(pg 1/6)

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

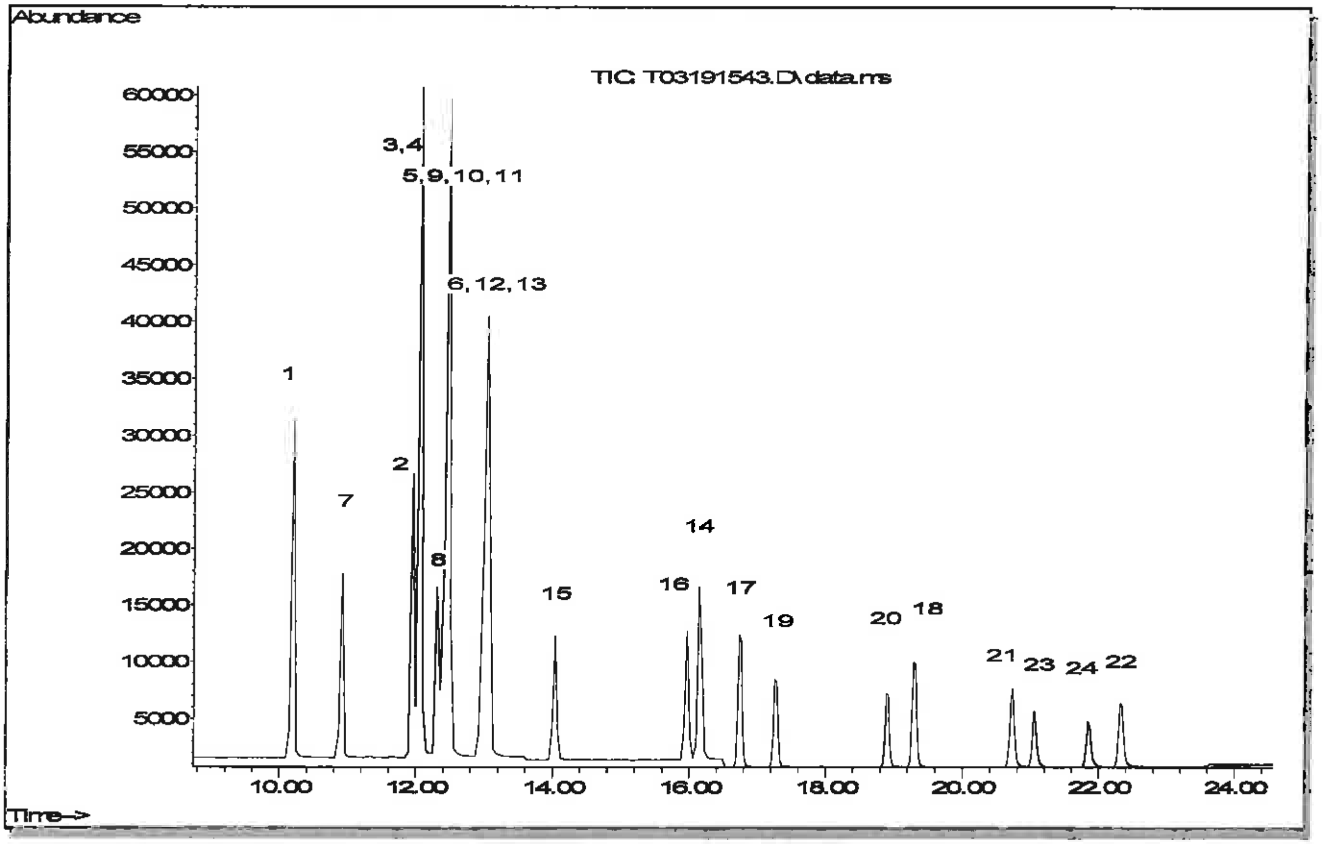

1	1,3,6,8-Tetrachlorodibenzofuran	13	1,3,4,6,8-Pentachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran	14	1,2,3,8,9-Pentachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran	15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
5	1,2,3,9-Tetrachlorodibenzofuran	17	1,2,3,4,6,8-Hexachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran	18	1,2,3,4,8,9-Hexachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin	19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin	21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin	22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin	24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

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COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNCP_00041

rec 7/29/20 skv

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/MS
Column:	DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min
Injector Temp:	Cool-on-Column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

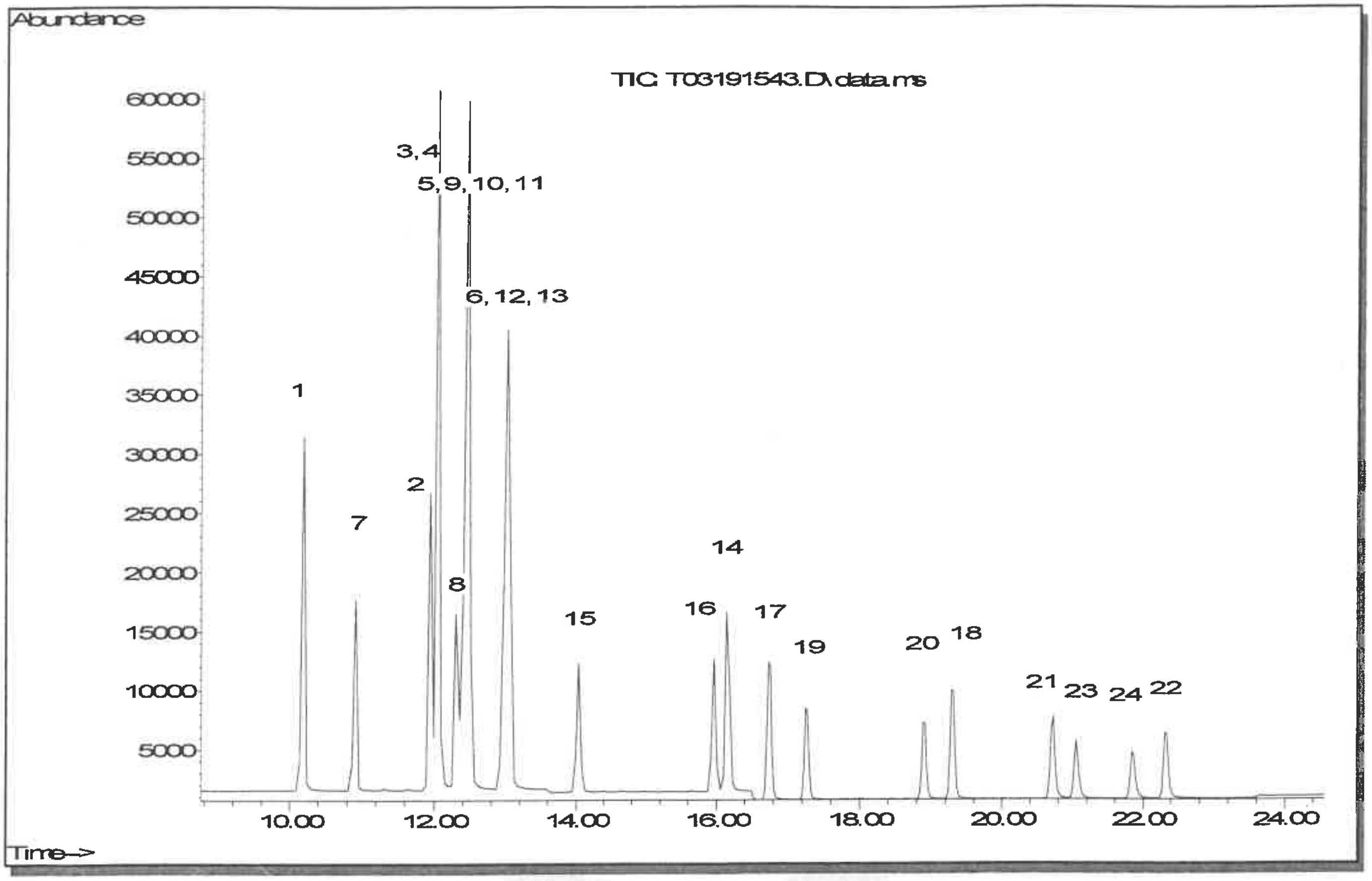

1	1,3,6,8-Tetrachlorodibenzofuran	13	1,3,4,6,8-Pentachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran	14	1,2,3,8,9-Pentachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran	15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
5	1,2,3,9-Tetrachlorodibenzofuran	17	1,2,3,4,6,8-Hexachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran	18	1,2,3,4,8,9-Hexachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin	19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin	21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin	22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin	24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00398

9280 I#24
Received 11-11-19
GWS

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Revision 00
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Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

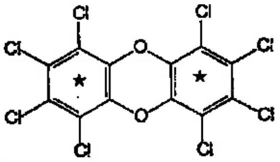

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04057101	10 22	± 5%	1 1	≤ 5%
Previous Lot	ER06061601	10 17	± 5%	0 8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

[illegible]

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 70°C to 200°C at 40°C/min
200°C to 280°C at 10°C/min hold 15 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 3
Linearity (r): 0.997

Neat Material Data

Compound Name: Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER04041601
Chemical Formula: $^{13}C_{12}Cl_8O_2$
CAS Number: 114423-97-1
Molecular Weight: 471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

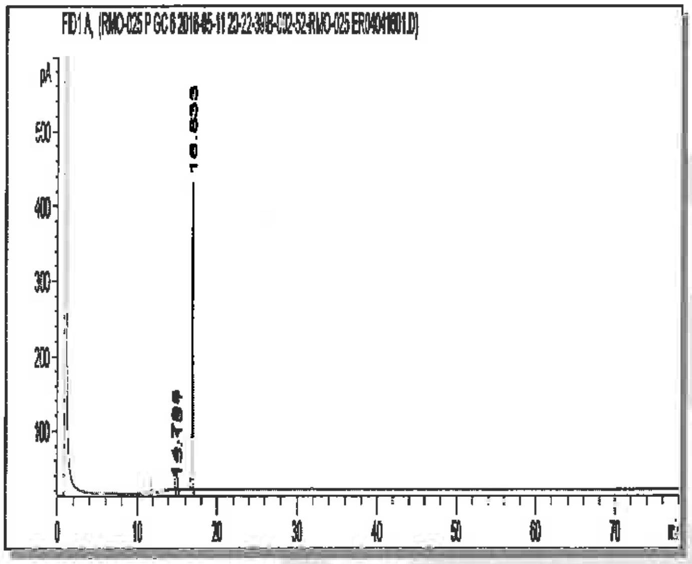

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument:	GC#6
Sample Name:	ER04041601
Acquired:	May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.80	12.12	3.62	0.61
2	15.15	4.72	1.32	0.24
3	16.83	1980.56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

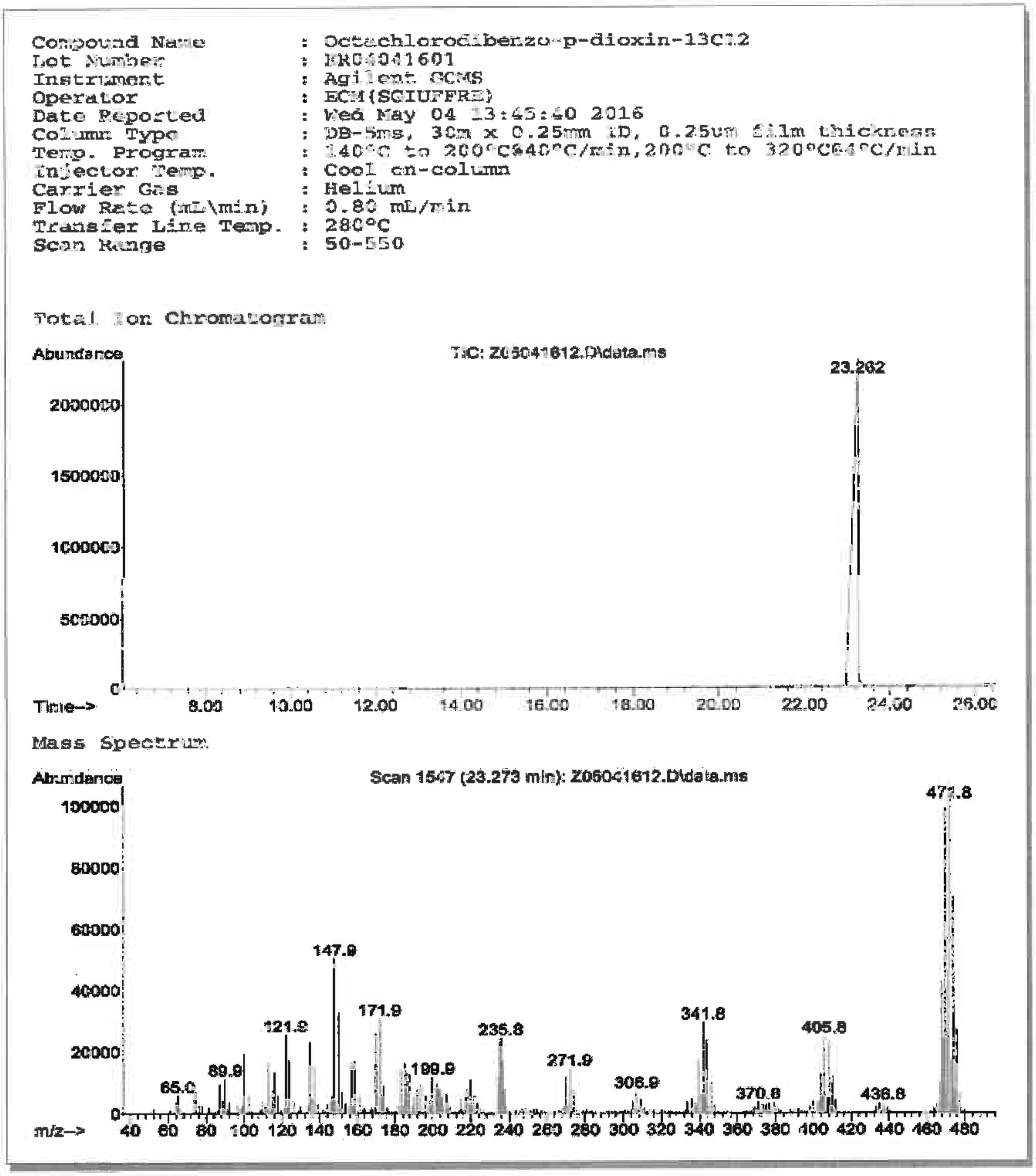

```
Compound Name          : Octachlorodibenzo-p-dioxin-13C12
Lot Number             : ER04041601
Instrument             : Agilent GCMS
Operator               : ECM(SCIUFFRE)
Date Reported          : Wed May 04 13:45:40 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00407

Recd 11-26-19

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 00
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ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

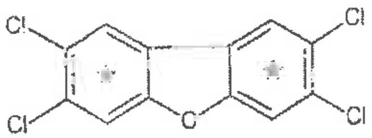

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER01161401
Chemical Formula:	$^{13}C_{12}H_4Cl_4O$
CAS Number:	89059-46-1
Molecular Weight:	317.88

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

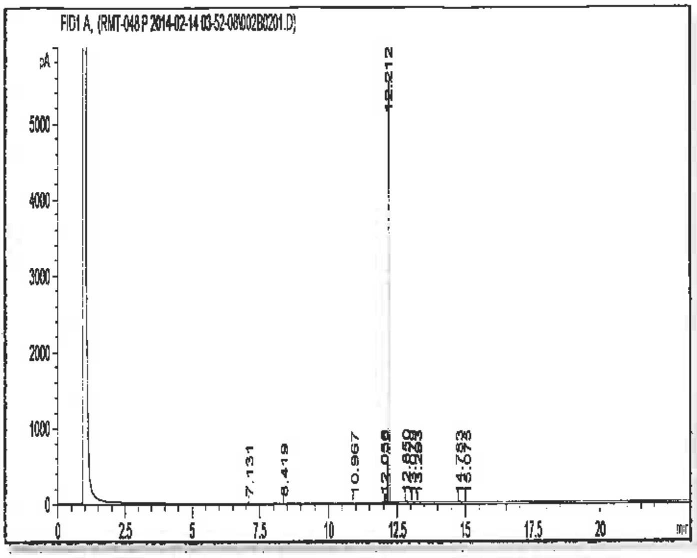

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

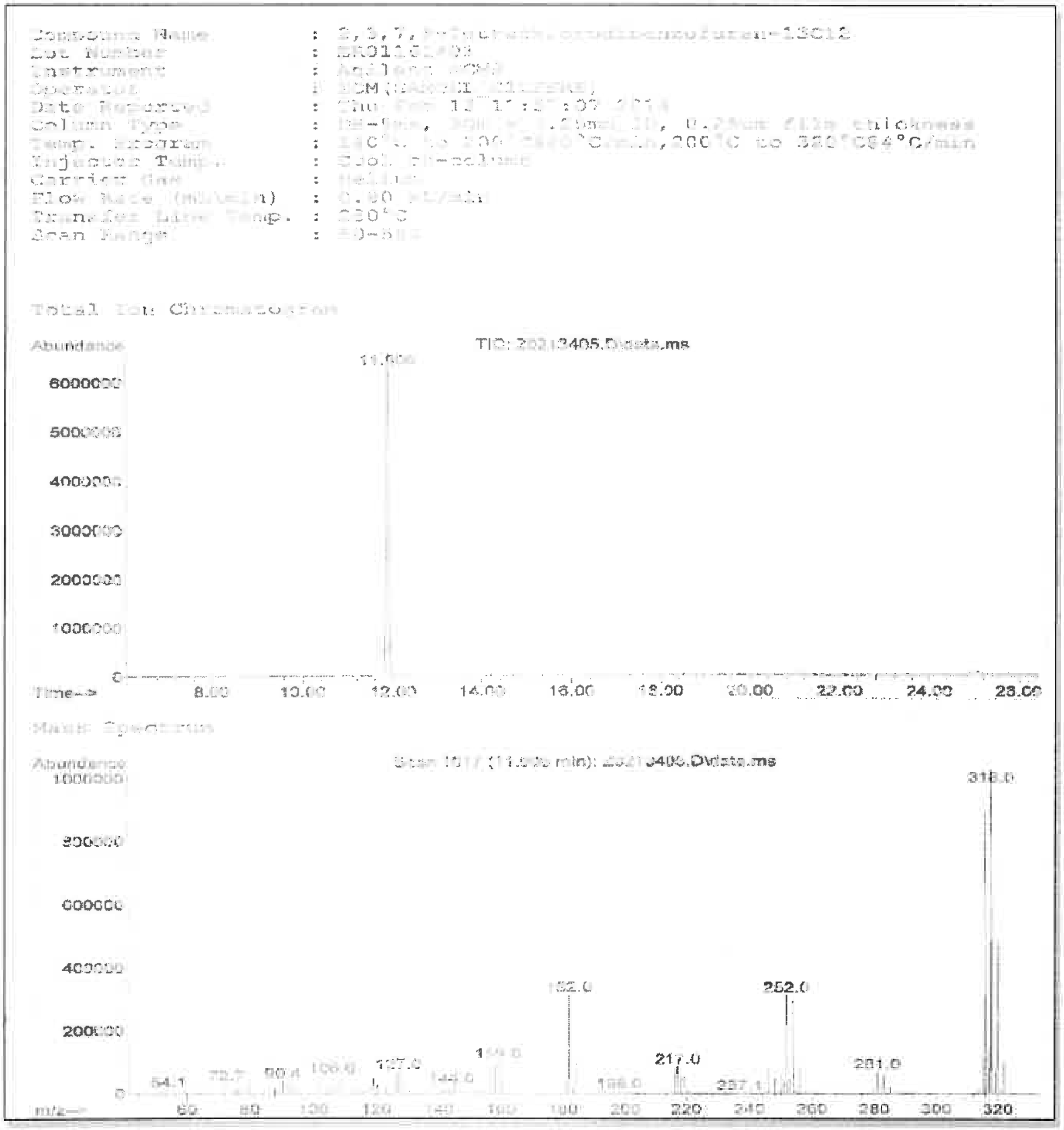

```
Compound Name           : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number              : ER011[illegible]-03
Instrument              : Agilent GCMS
Operator                : SCM([illegible])
Date Reported           : Thu [illegible] 13 11:[illegible]:07 [illegible]
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL/min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-500
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-18

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Analytical Reference Standards
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Revision 01
Page 1 of 5

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-974
Solution Lot: ER08101404
Expiration Date: November 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

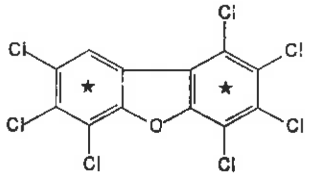

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER020507-02

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-84-8
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

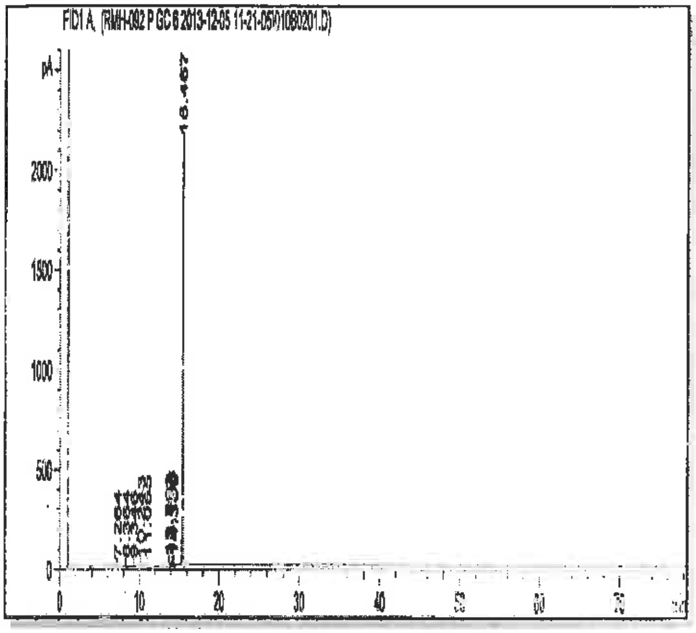

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

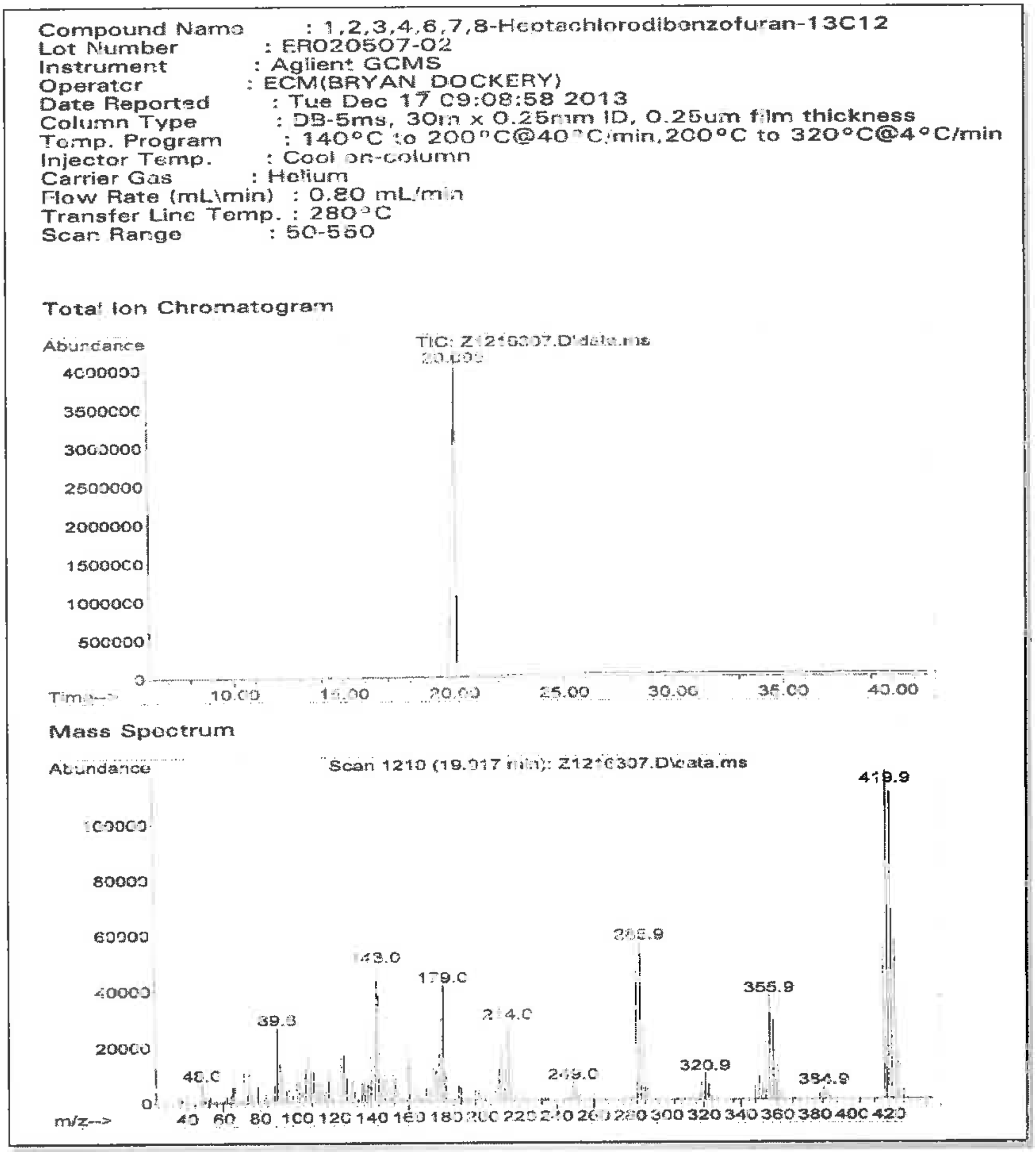

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Received 11-[illegible]

Cerilliant
Analytical Reference Standards
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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

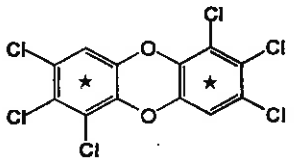

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

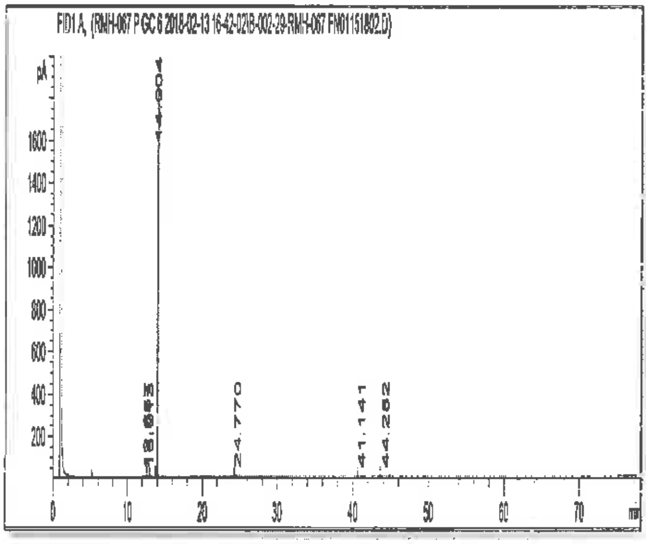

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

Spectral and Physical Data (cont.)

GC/MS

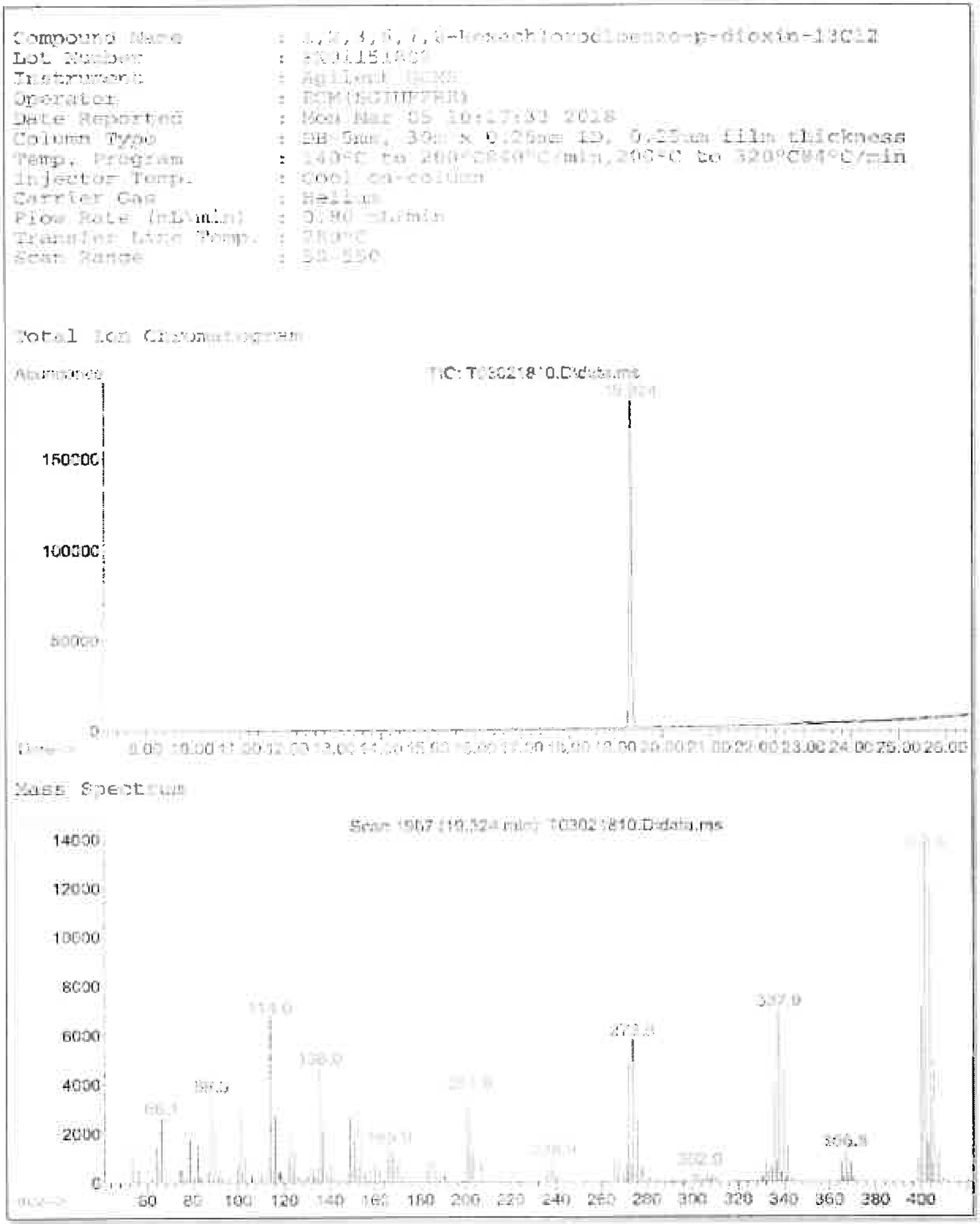

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Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number             : [illegible]
Instrument             : Agilent GCMS
Operator               : ECM(SCHUFFER)
Date Reported          : Mon Mar 05 10:17:33 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.90 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
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Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00410

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CIL

Revision 0
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Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

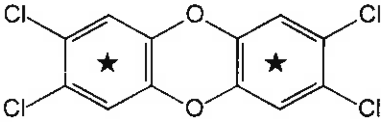

Catalog Number: ED-900
Solution Lot: ER03031601
Expiration Date: March 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

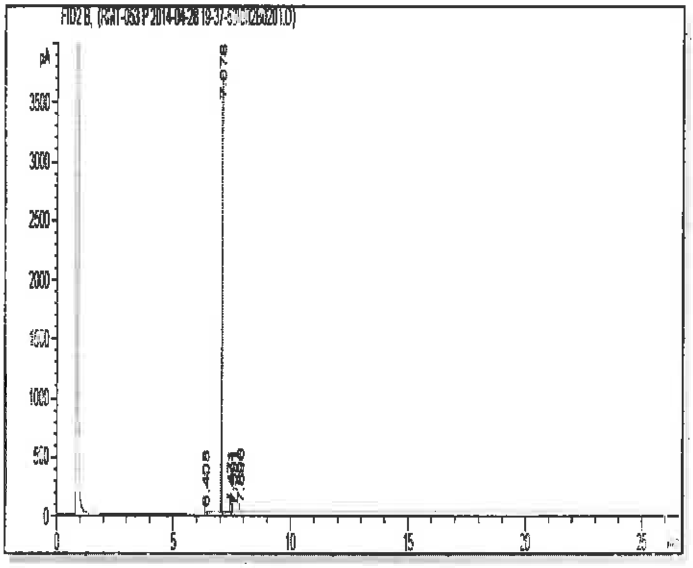

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

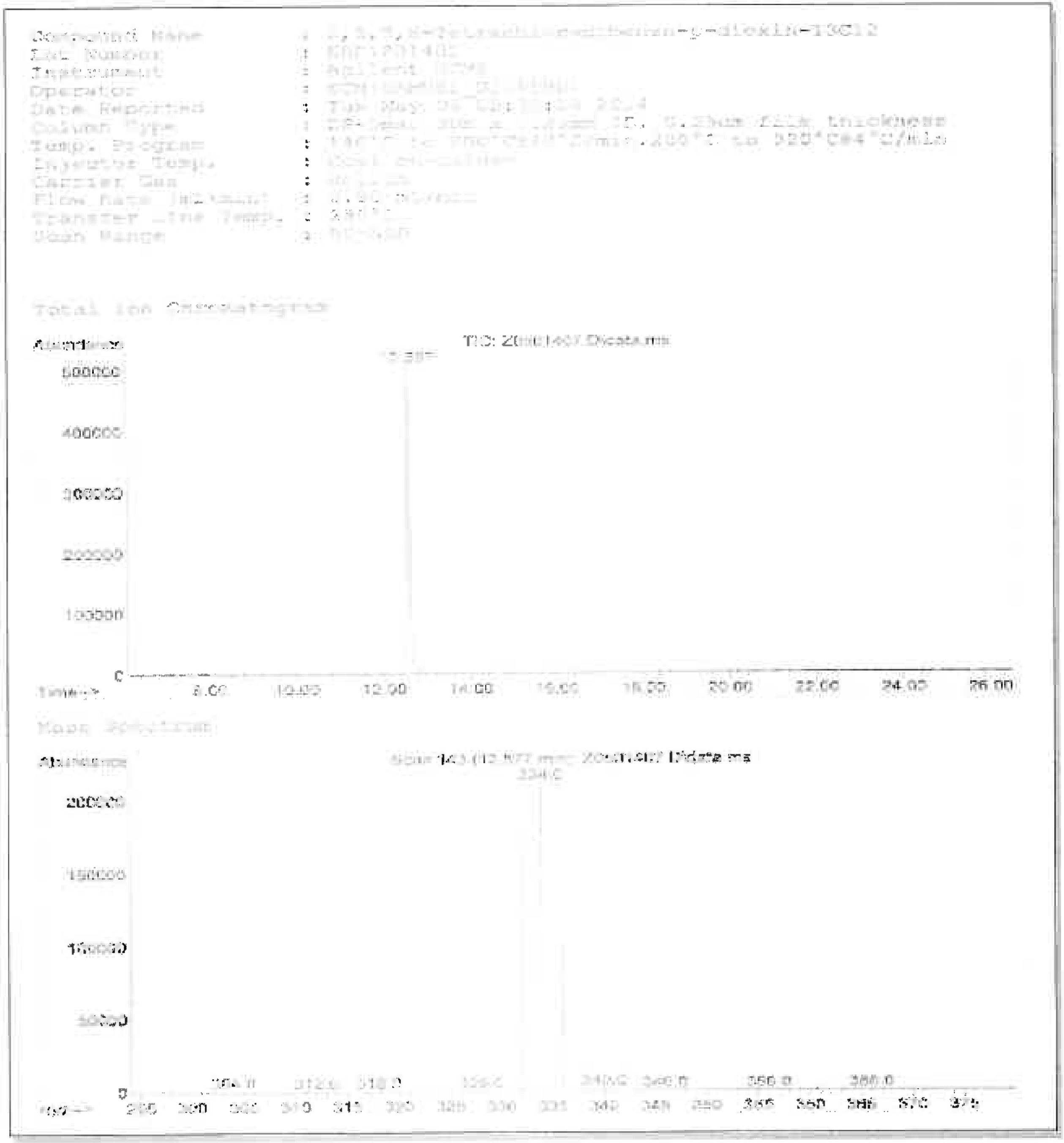

```
Compound Name          : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : [illegible]
Instrument             : Agilent [illegible]
Operator               : [illegible]
Date Reported          : Tue May [illegible] 2014
Column Type            : [illegible] film thickness
Temp. Program          : [illegible]
Injector Temp.         : [illegible]
Carrier Gas            : [illegible]
Flow Rate (Helium)     : [illegible]
Transfer Line Temp.    : [illegible]
Scan Range             : [illegible]
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00417

r: 3/30/20

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

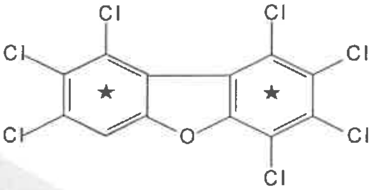

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

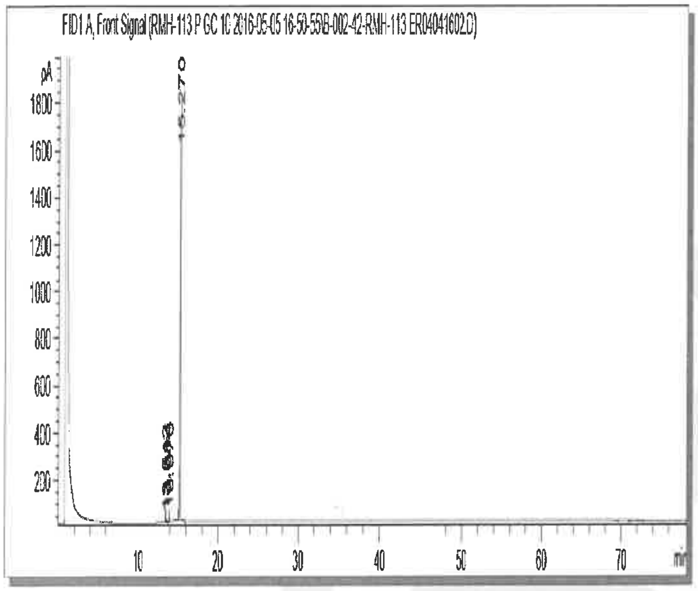

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument:	GC#10
Sample Name:	ER04041602
Acquired:	May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

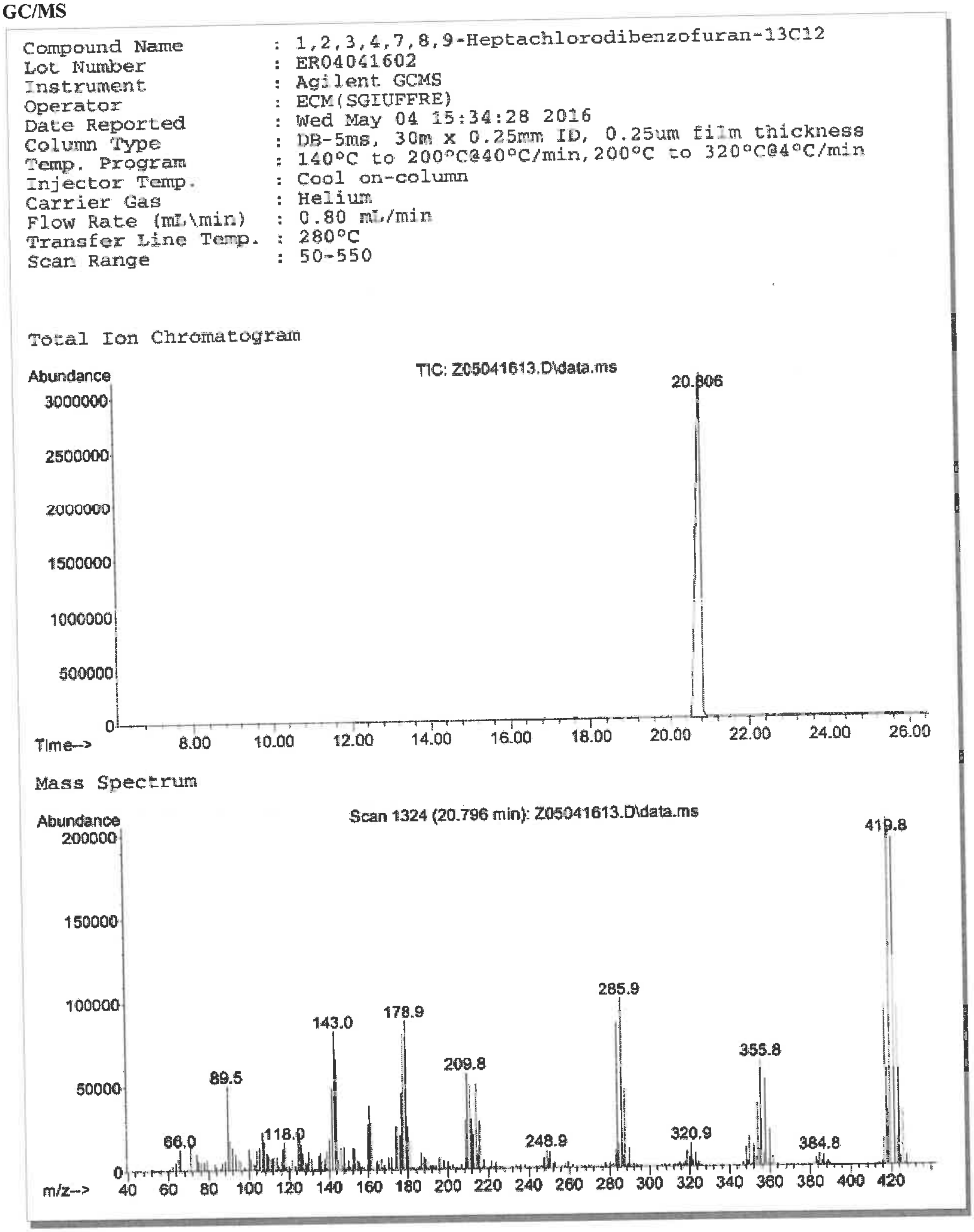

```
Compound Name          : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number             : ER04041602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Wed May 04 15:34:28 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/30/20 SAD

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Revision 00
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

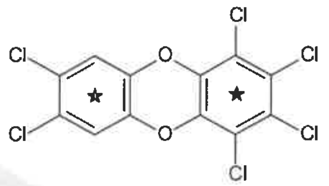

Catalog Number: ED-946
Solution Lot: ER04211601
Expiration Date: June 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

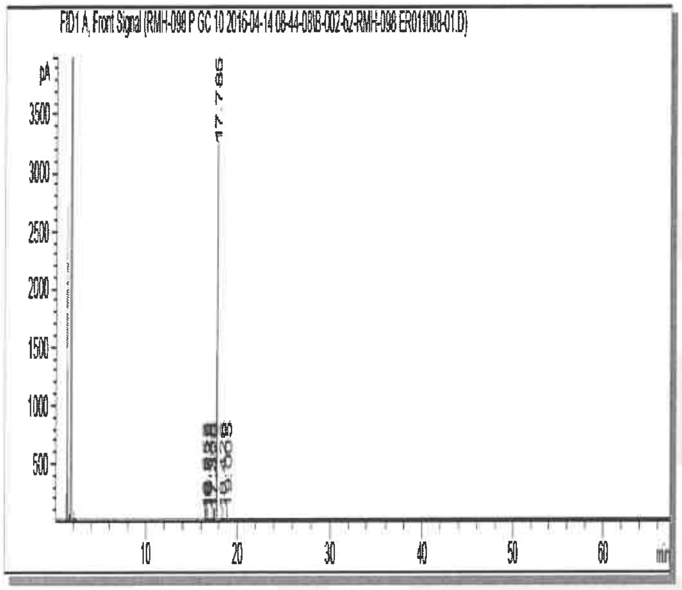

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

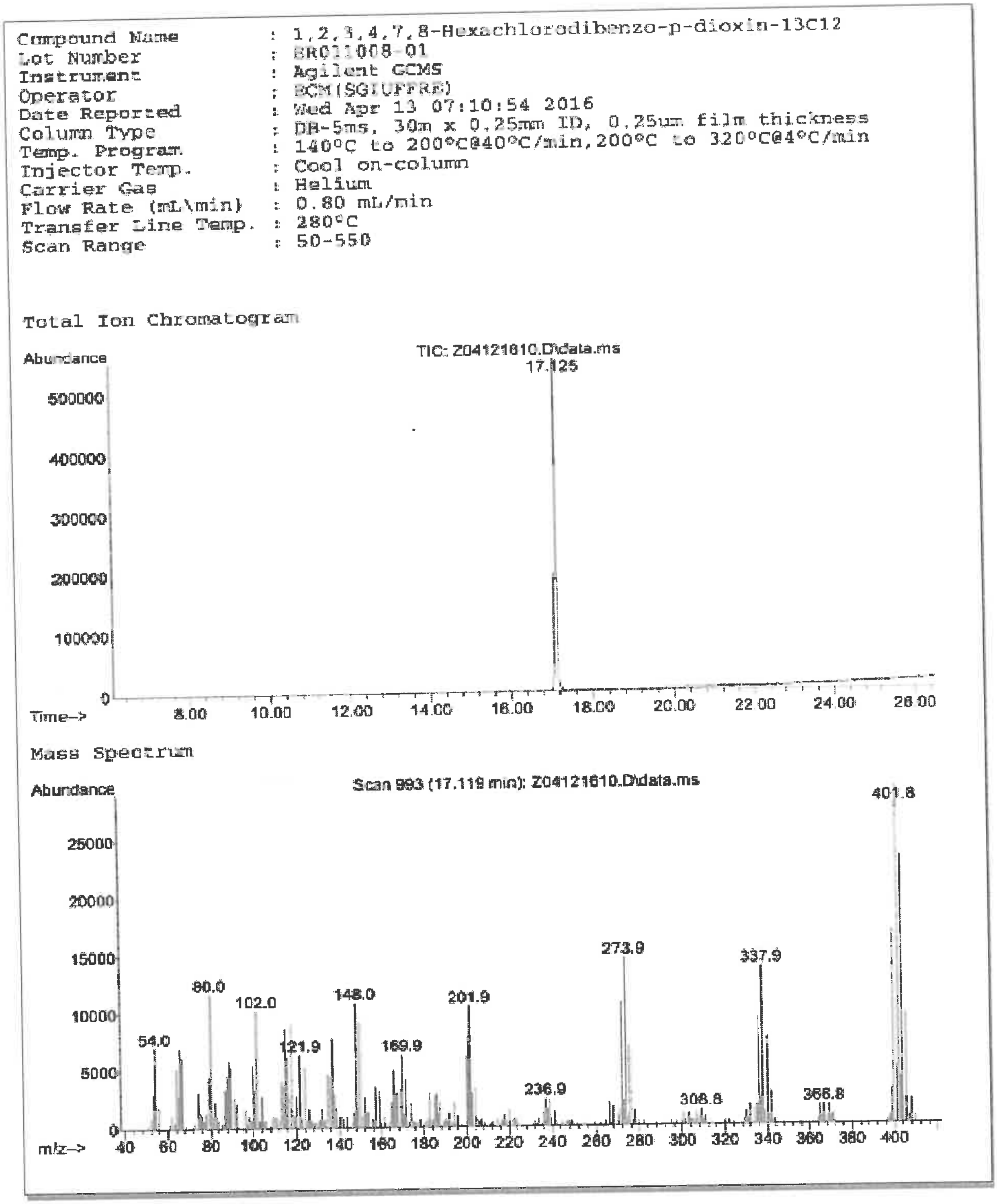

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER011008-01
Instrument : Agilent GCMS
Operator : RCM(SGIUFFRE)
Date Reported : Wed Apr 13 07:10:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SK✓

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

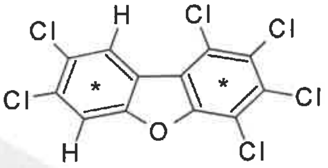

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11281601
Chemical Formula: $^{13}C_{12}Cl_6H_2O$
CAS Number: 114423-98-2
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

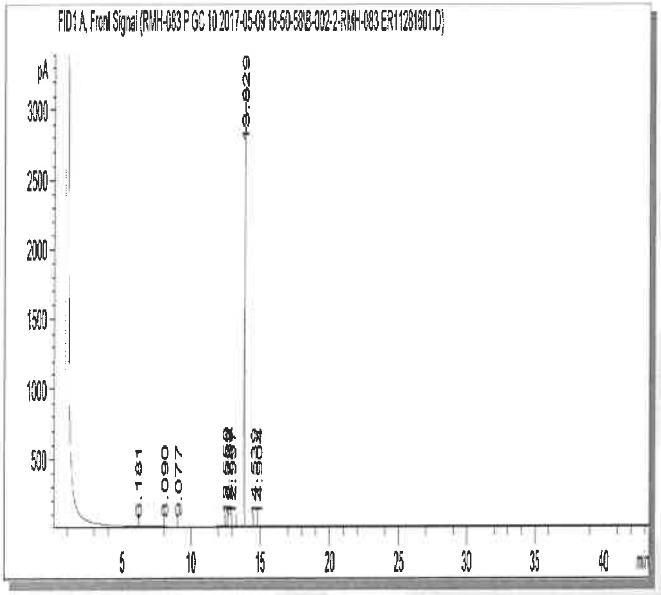

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

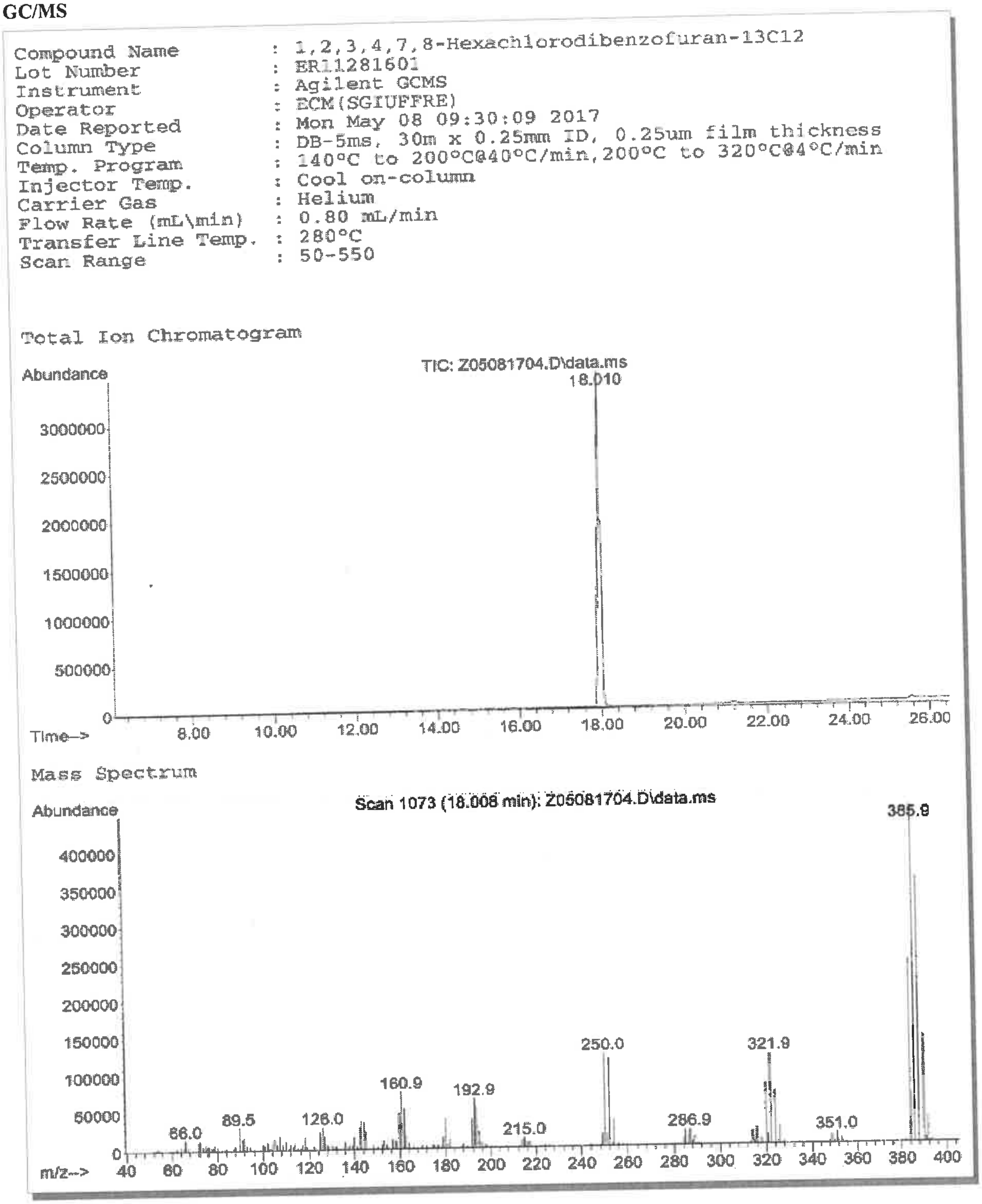

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

TIC: Z05081704.D\data.ms

Mass Spectrum

Scan 1073 (18.008 min): Z05081704.D\data.ms

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

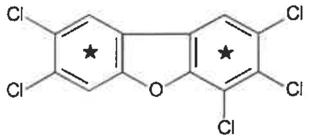

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

January 27, 2017

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

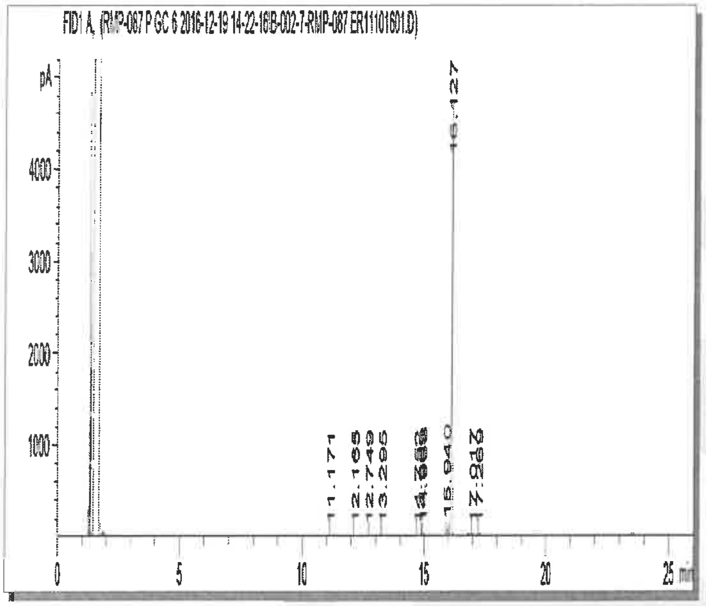

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument:	GC#6
Sample Name:	ER11101601
Acquired:	December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

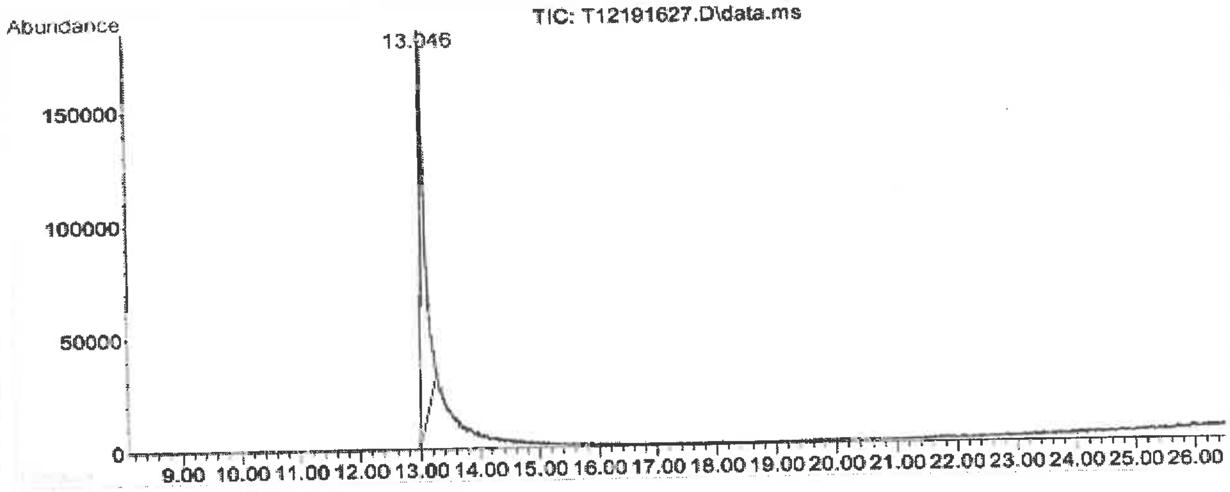

Mass Spectrum

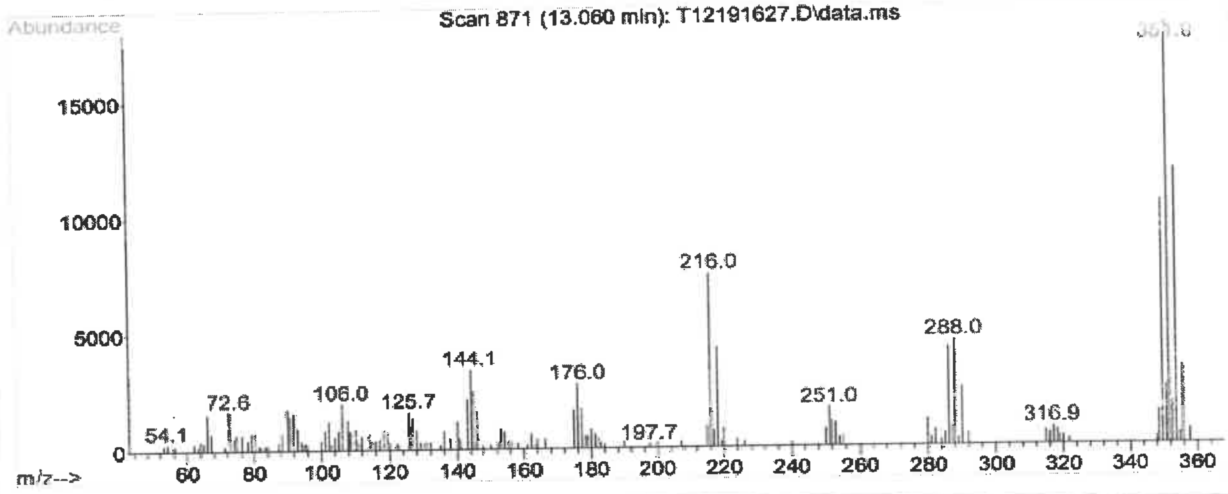

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

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Cerilliant Quality
ISO GUIDE 34 CERTIFICATE AR1353
ISO/IEC 17025 CERTIFICATE AT1352
ISO 9001:2008 CERTIFICATE 3854

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-952
Solution Lot: ER012111-01
Expiration Date: January 2021
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

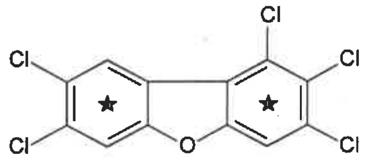

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Crtieria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER090110-01

Chemical Formula:	$^{13}C_{12}H_3OCl_5$
CAS Number:	109719-77-9
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

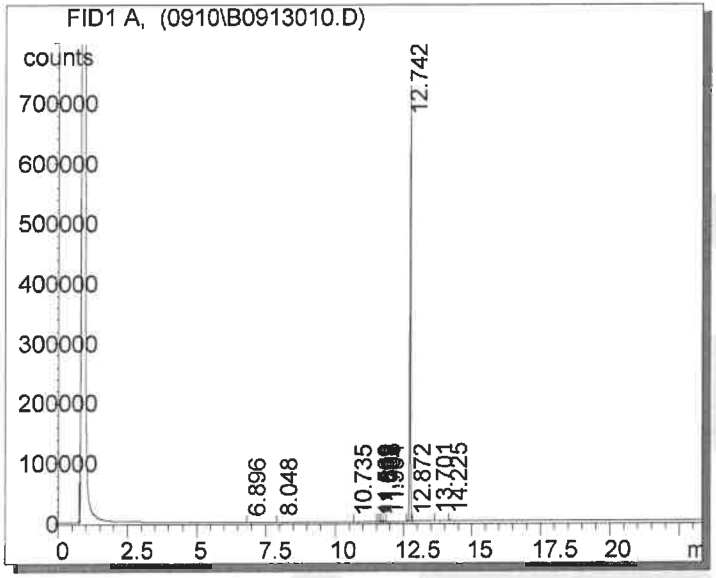

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

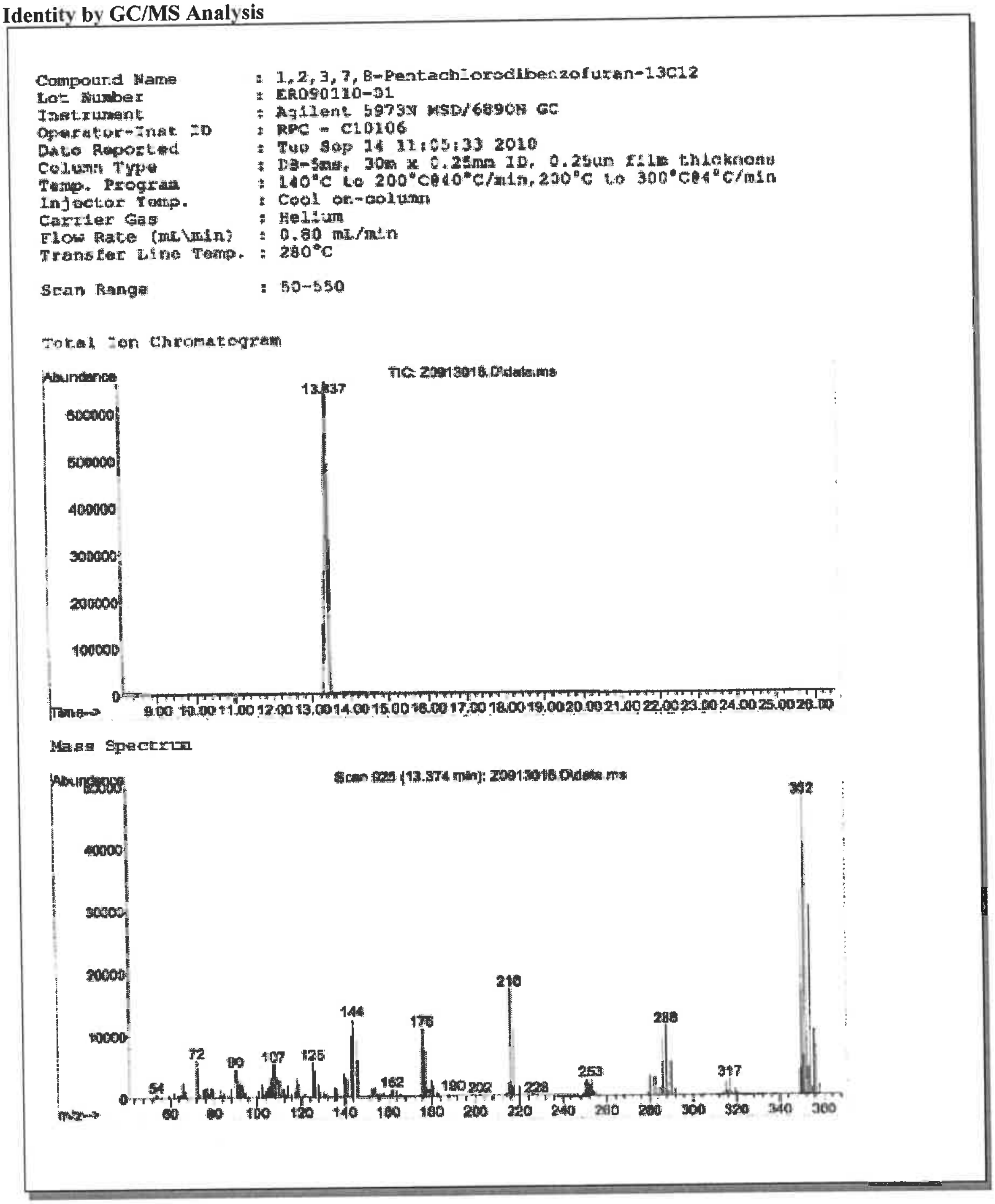

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number             : ER090110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Tue Sep 14 11:05:33 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

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Revision 01
Page 1 of 5

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

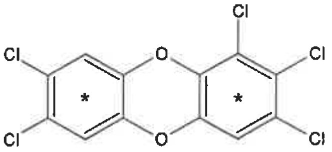

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

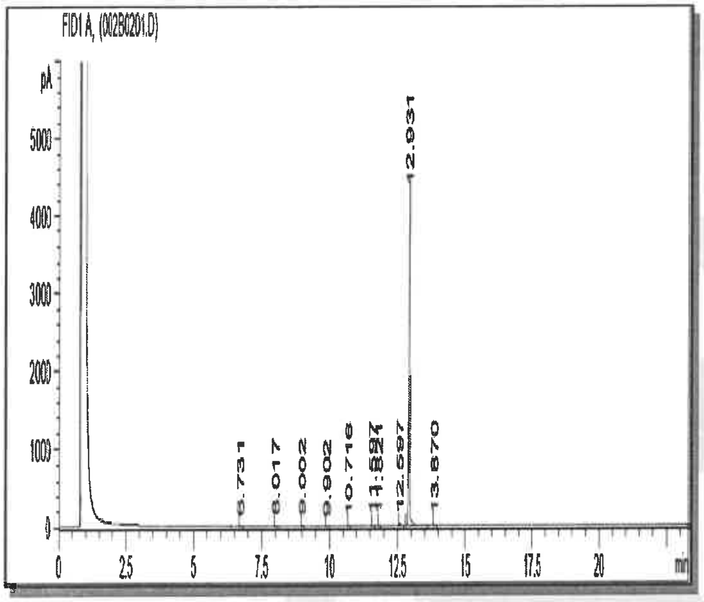

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

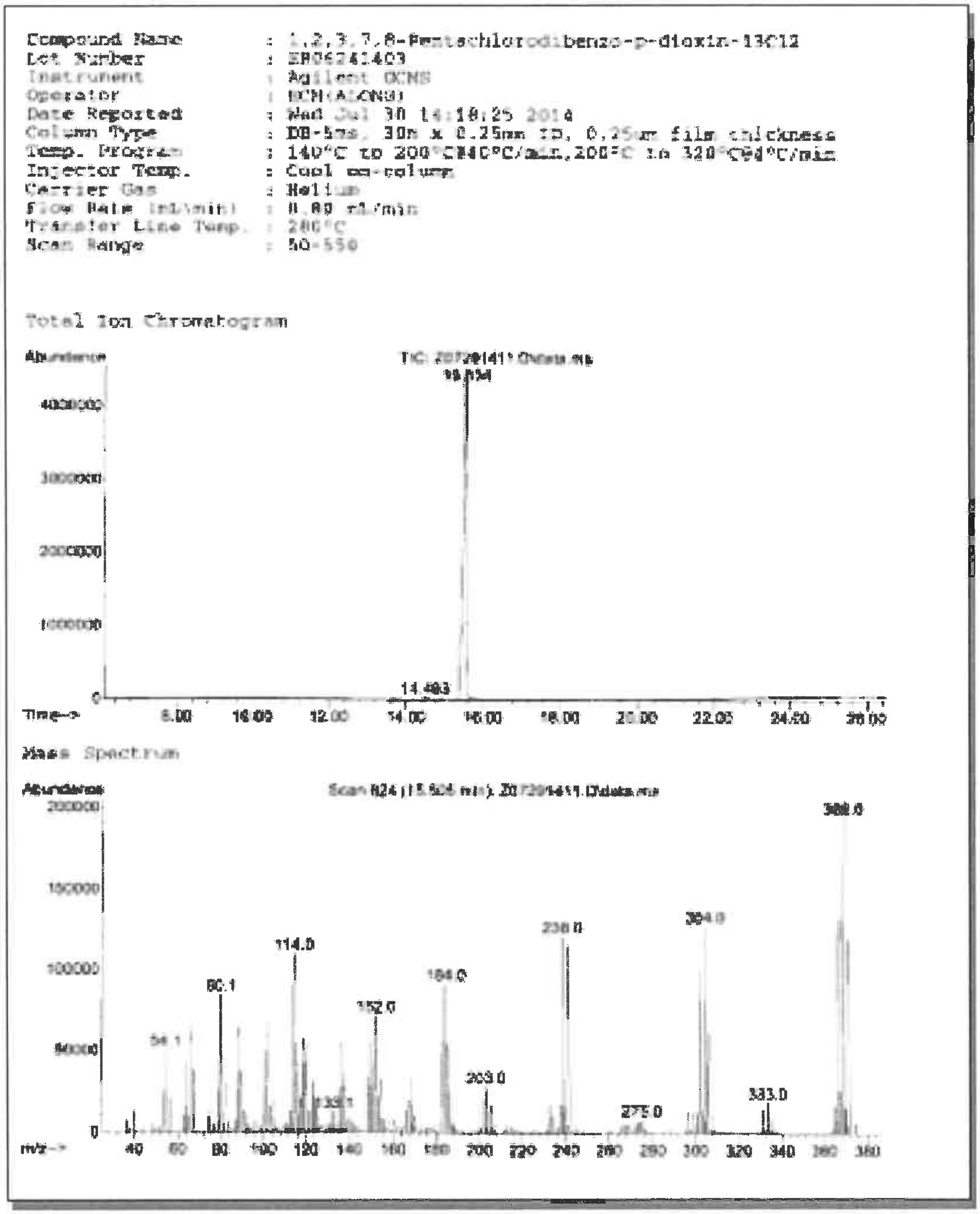

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number             : ER06241403
Instrument             : Agilent GCMS
Operator               : BCH(ALONG)
Date Reported          : Wed Jul 30 14:18:25 2014
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL/min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

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Analytical Reference Standards
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CIL

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

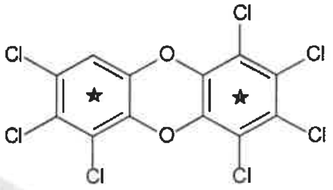

Catalog Number: ED-972
Solution Lot: ER09271601
Expiration Date: October 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 0.999

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER100110-01
Chemical Formula: $^{13}C_{12}HCl_7O_2$
CAS Number: 109719-83-7
Molecular Weight: 437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

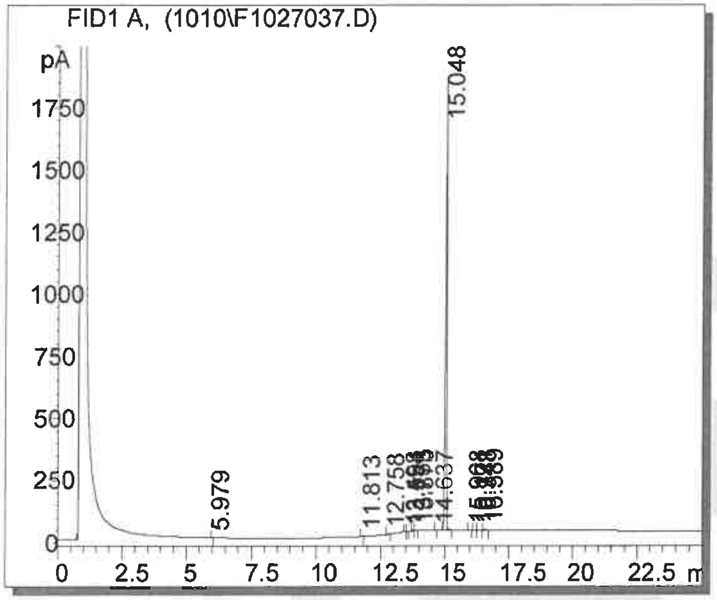

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

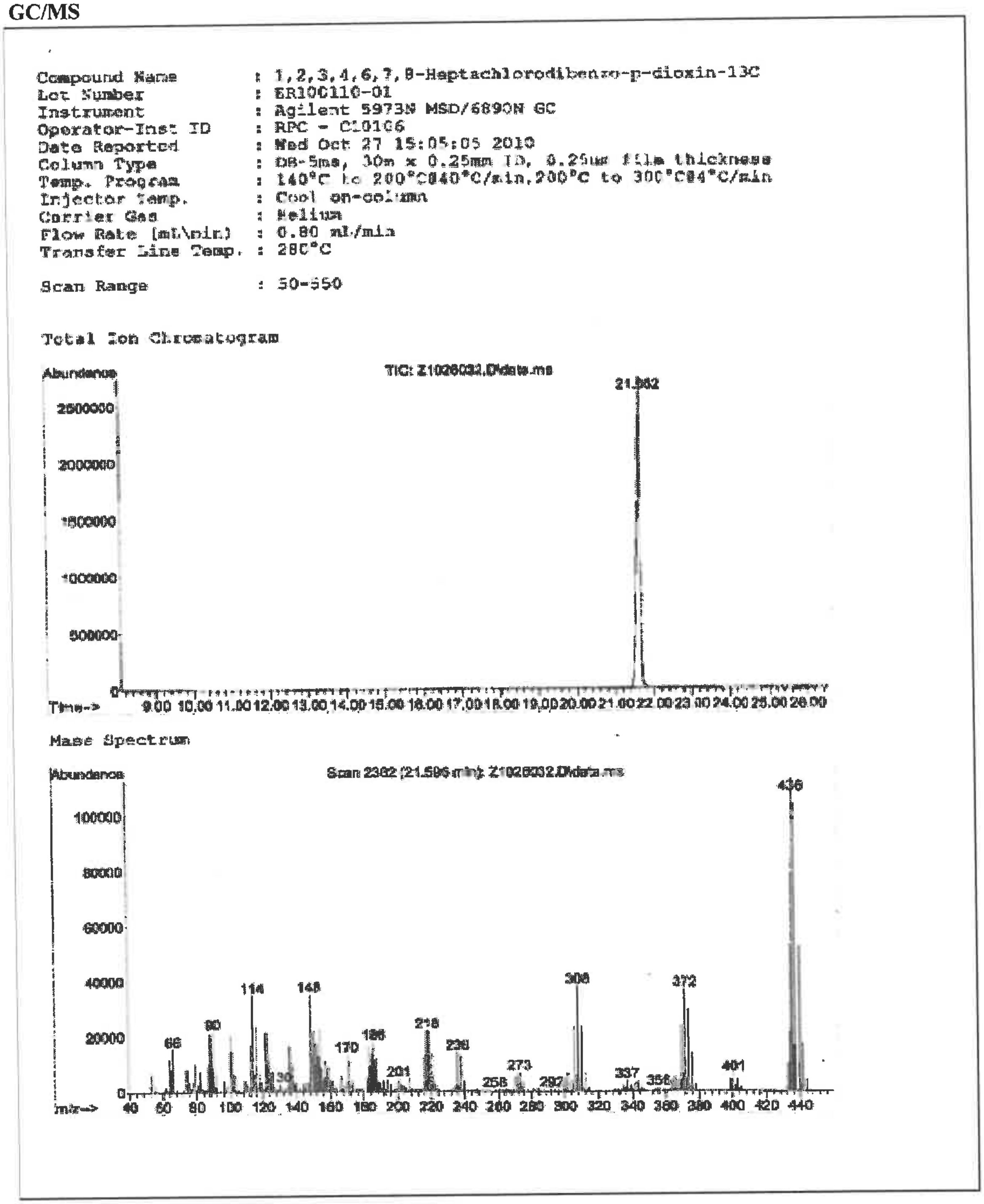

```
Compound Name         : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number            : ER10C110-01
Instrument            : Agilent 5973N MSD/6890N GC
Operator-Inst ID      : RPC - C10106
Date Reported         : Wed Oct 27 15:05:05 2010
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C

Scan Range            : 50-550

Total Ion Chromatogram
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Mass Spectrum
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Reagent

HRDXNIDA_00424

r: 4/21/20 SW

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Analytical Reference Standards
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CIL

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

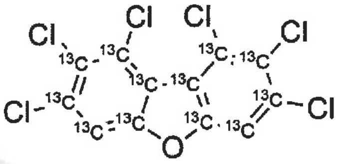

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

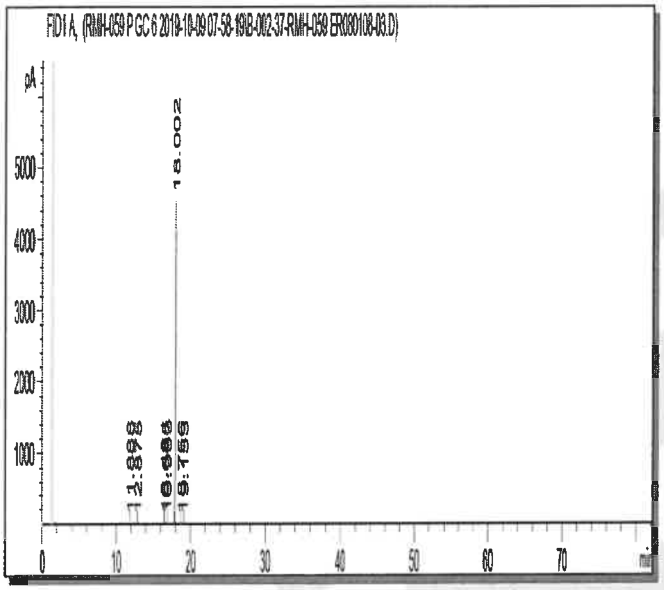

Column: DB-5ms, 30 m x 0.53 mm ID,
1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min
hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER080108-03
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number : ER080108-03
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Oct 08 10:54:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

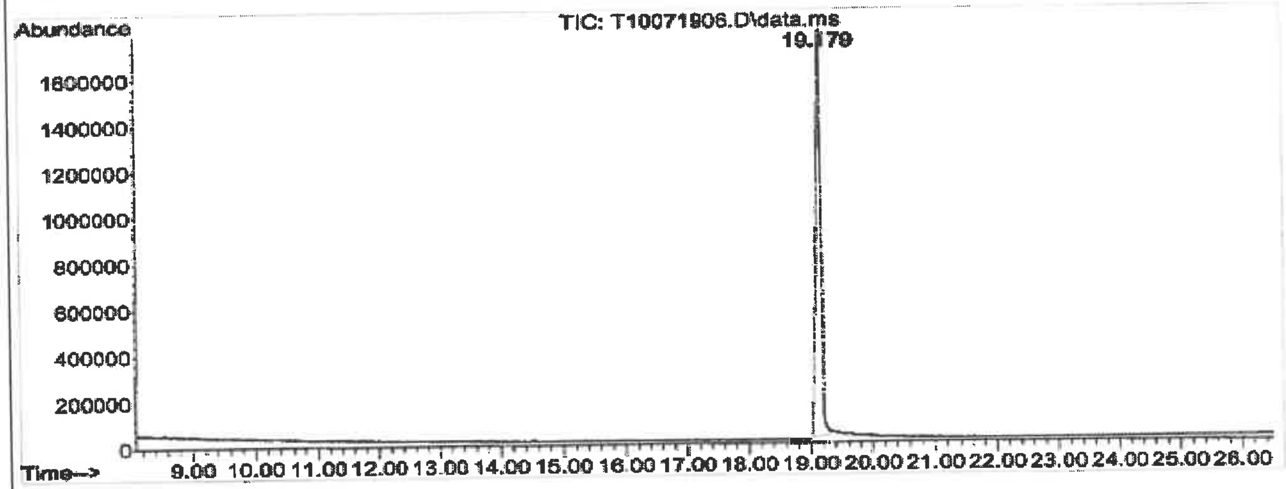

Mass Spectrum

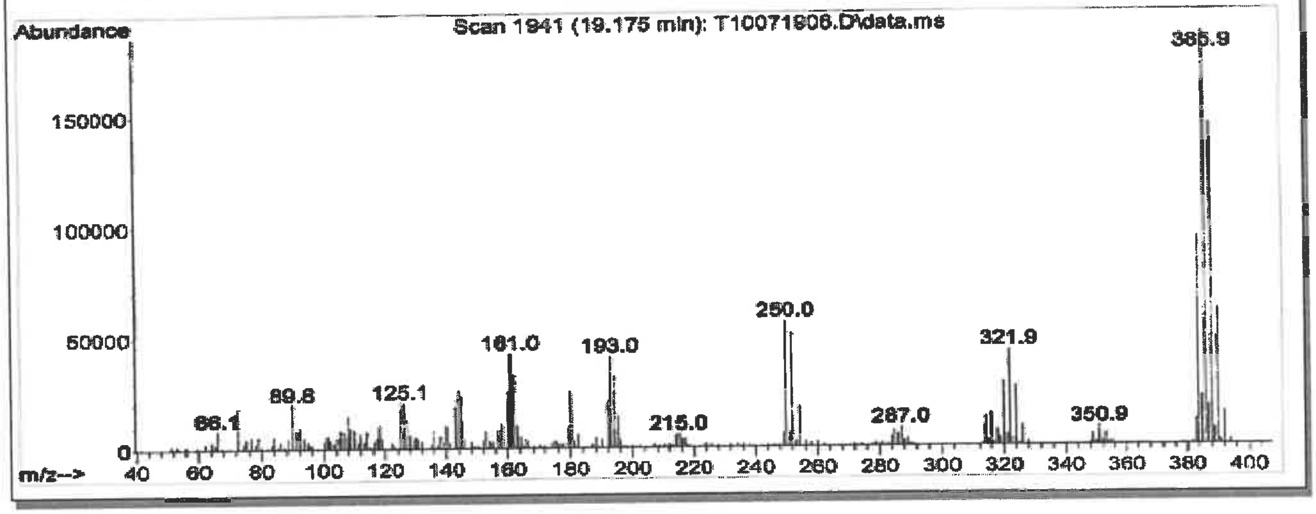

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 skw

Cerilliant
Analytical Reference Standards
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Revision 0
Page 1 of 5

Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

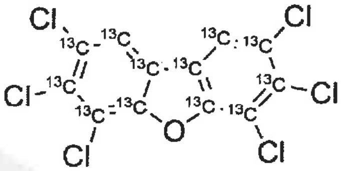

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

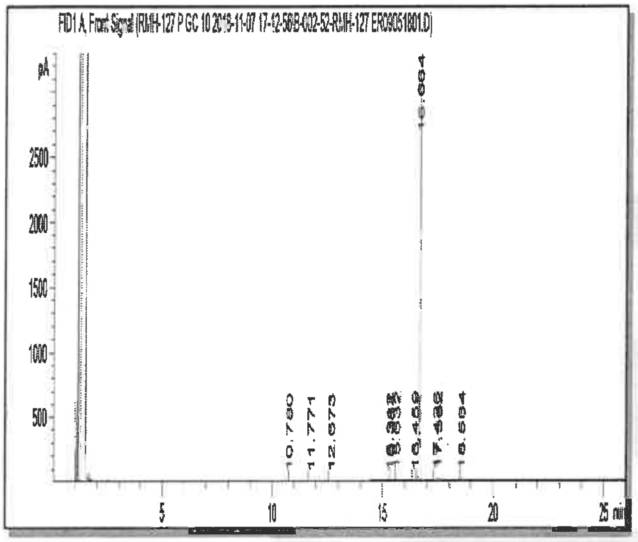

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

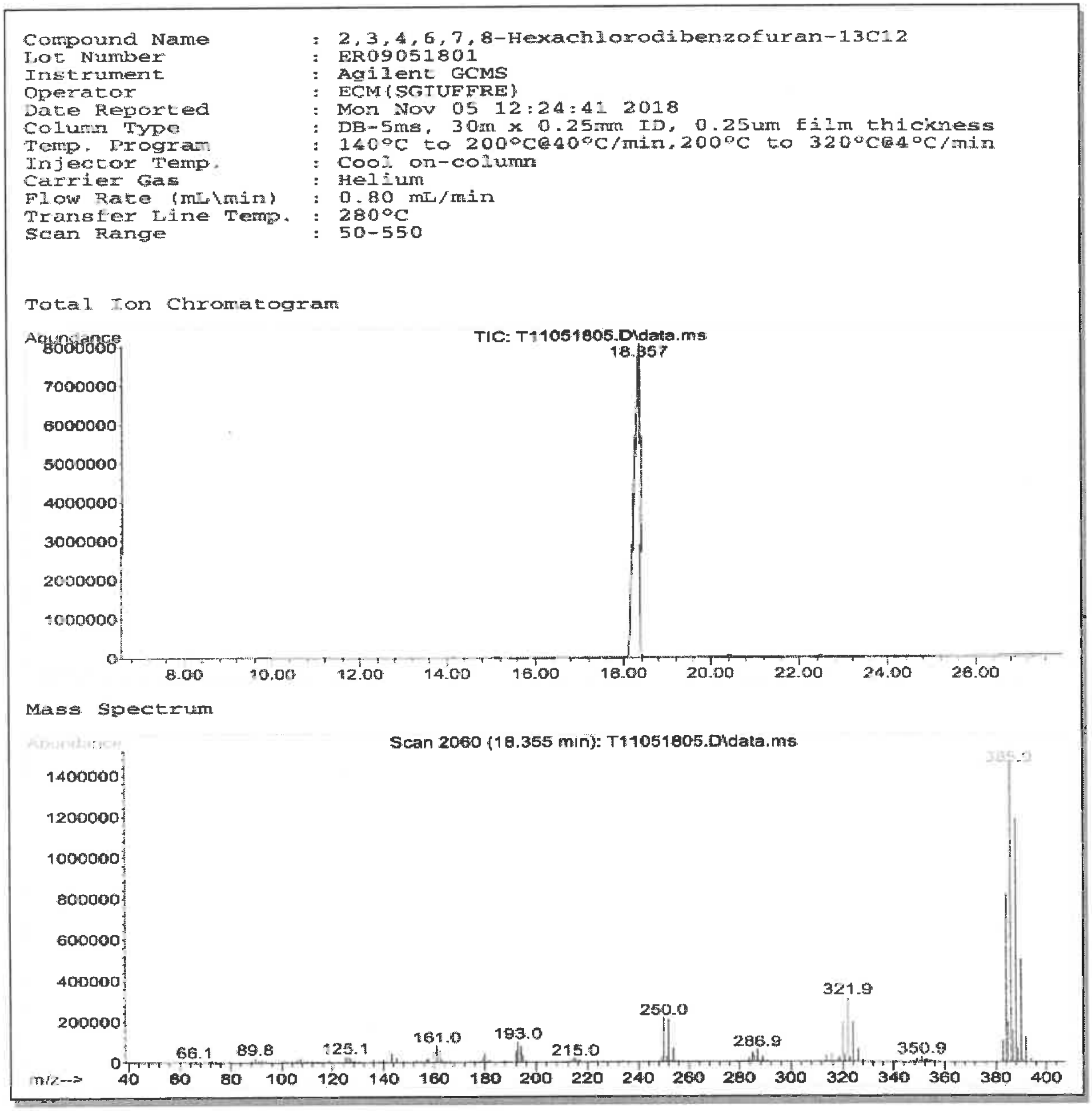

```
Compound Name           : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number              : ER09051801
Instrument              : Agilent GCMS
Operator                : ECM(SGTUFFRE)
Date Reported           : Mon Nov 05 12:24:41 2018
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20

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Revision 0
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

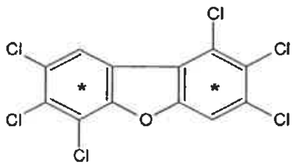

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

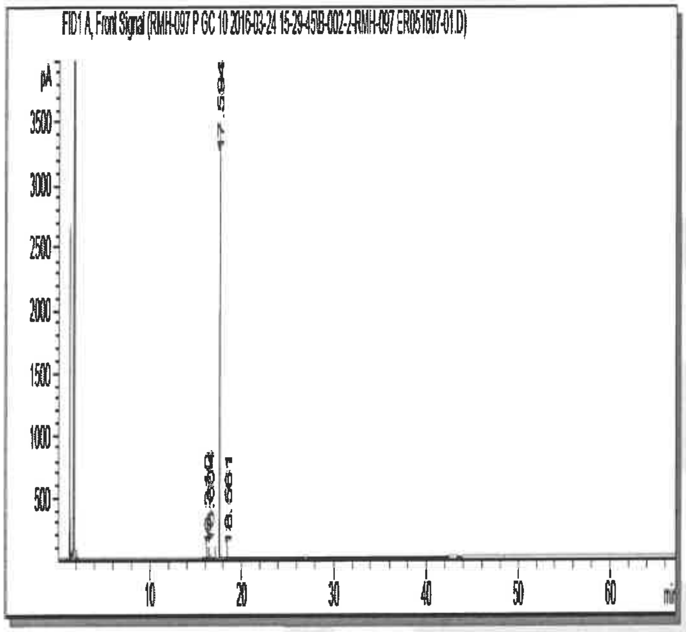

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

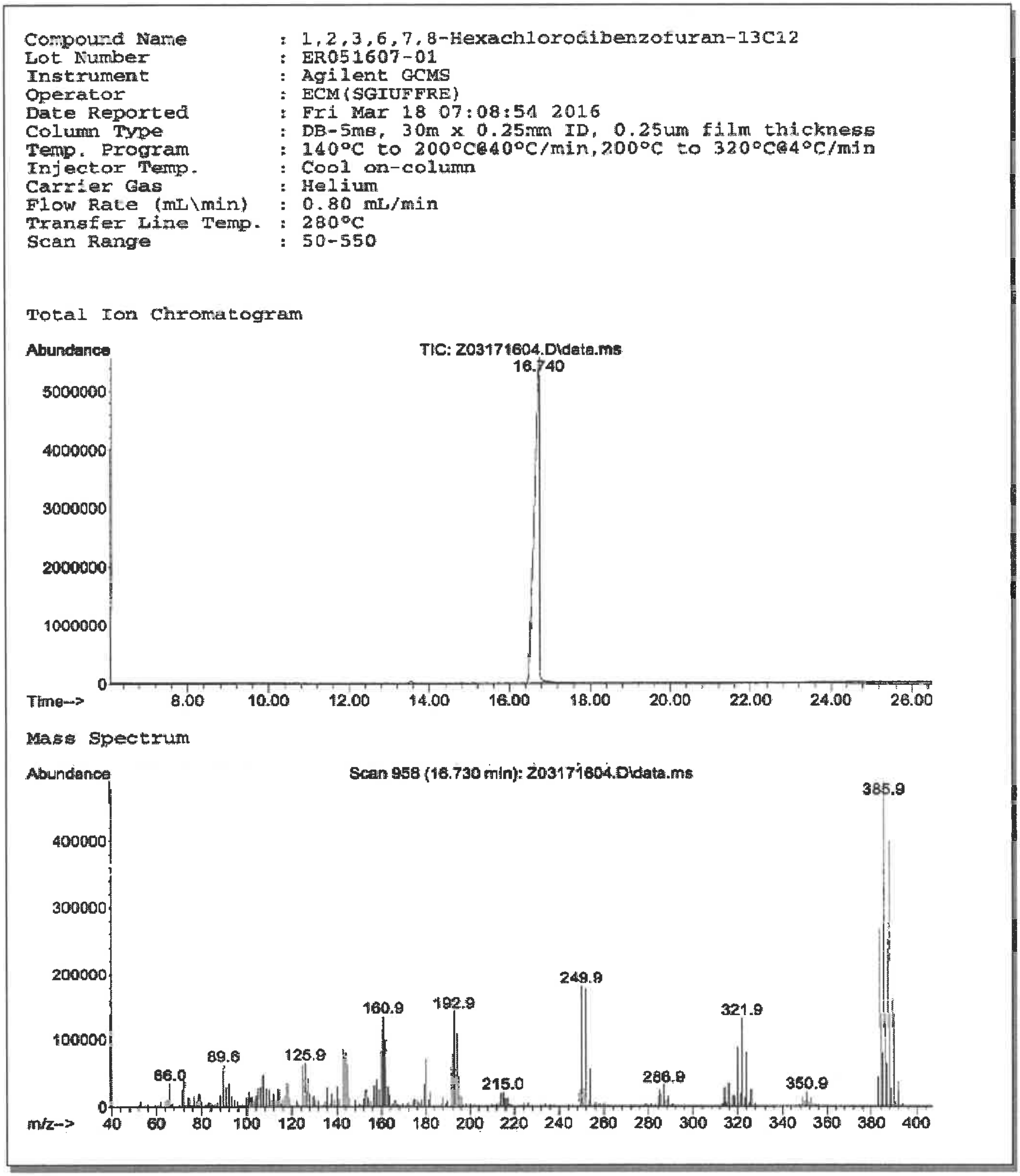

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER051607-01
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Mar 18 07:08:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00126

Rec'd. 3/26/20 SW

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Analytical Reference Standards
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Revision 01
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

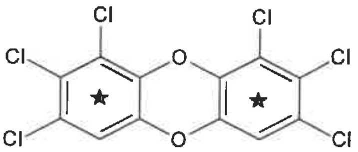

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER110510-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-82-6
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$ 0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

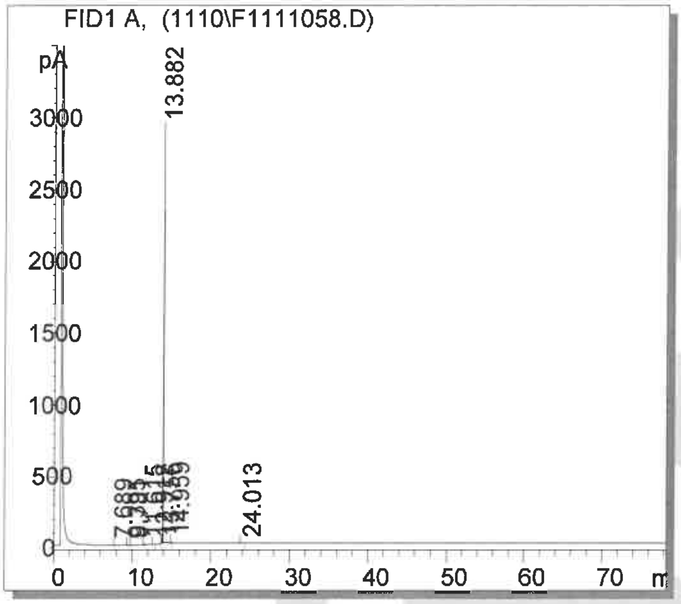

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

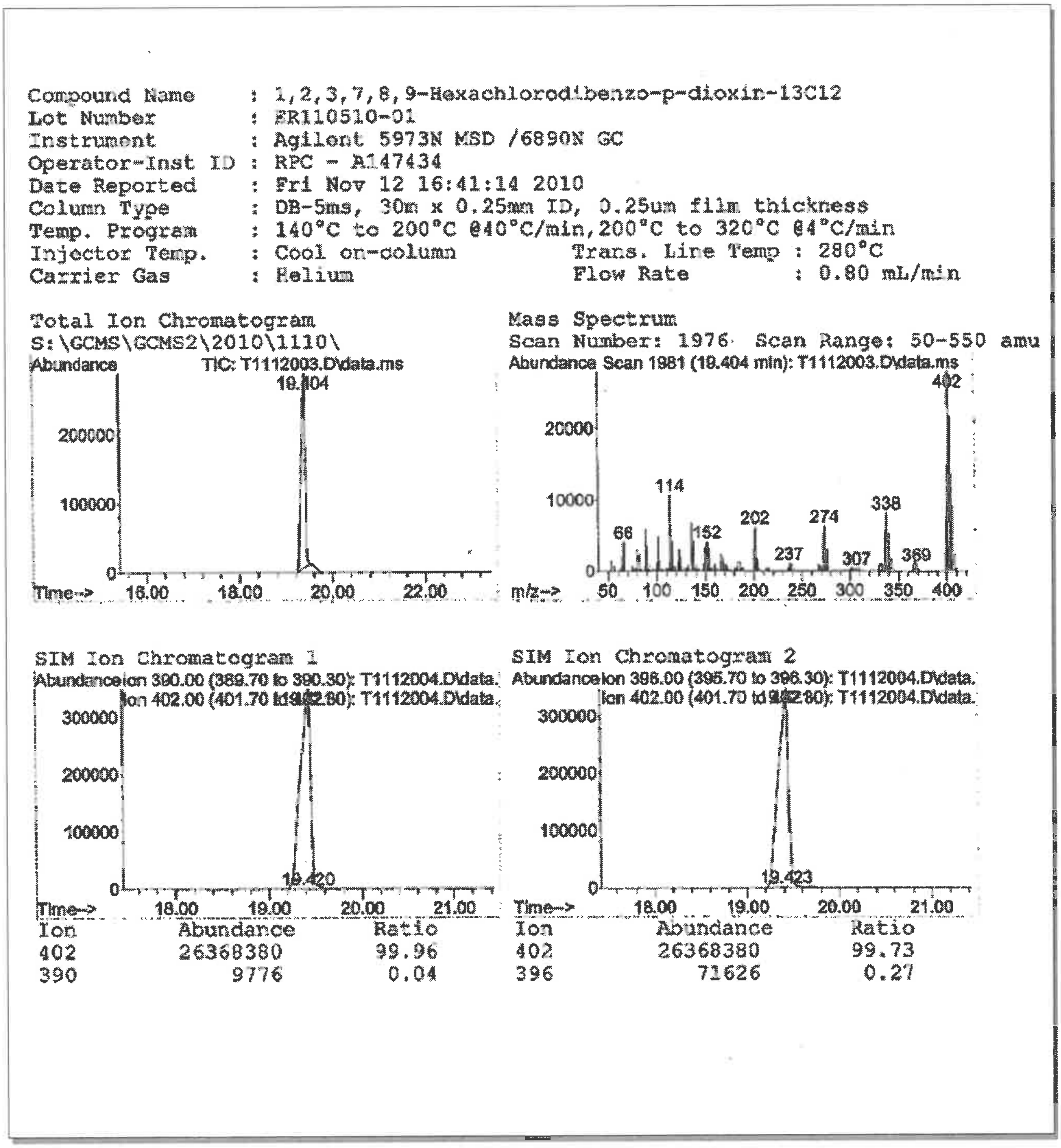

```
Compound Name       : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number          : FR110510-01
Instrument          : Agilent 5973N MSD /6890N GC
Operator-Inst ID    : RPC - A147434
Date Reported       : Fri Nov 12 16:41:14 2010
Column Type         : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program       : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.      : Cool on-column          Trans. Line Temp : 280°C
Carrier Gas         : Helium                  Flow Rate        : 0.80 mL/min
```

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKJ

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

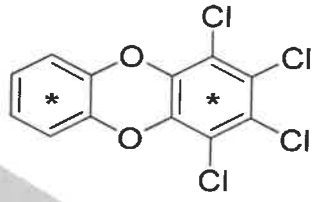

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

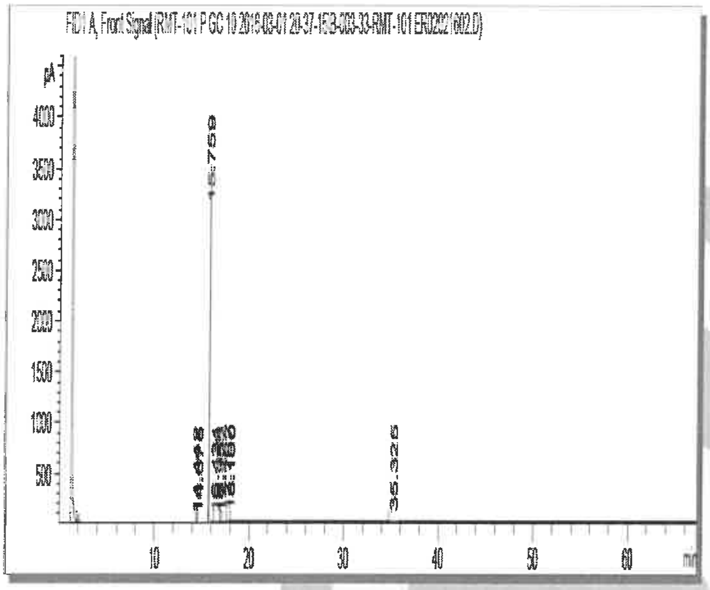

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 μm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

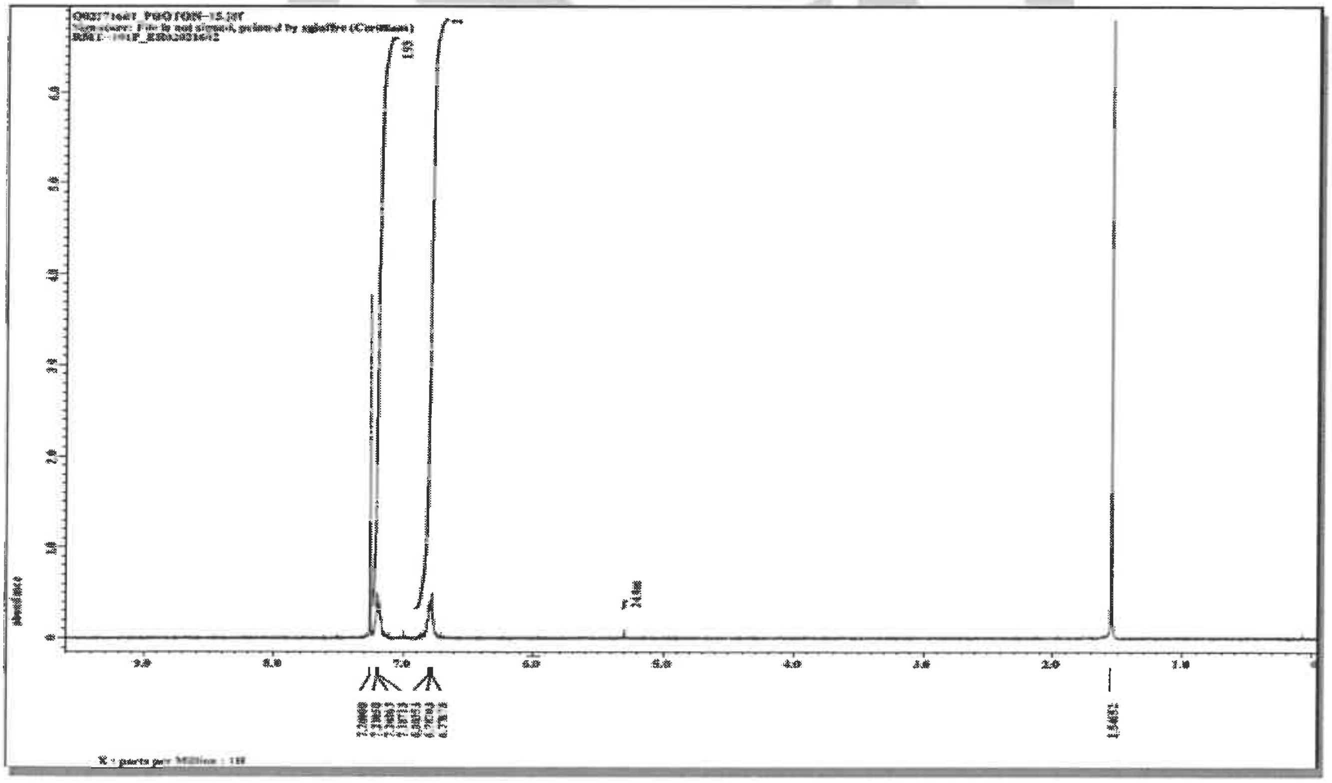

Spectral and Physical Data (cont.)

GC/MS

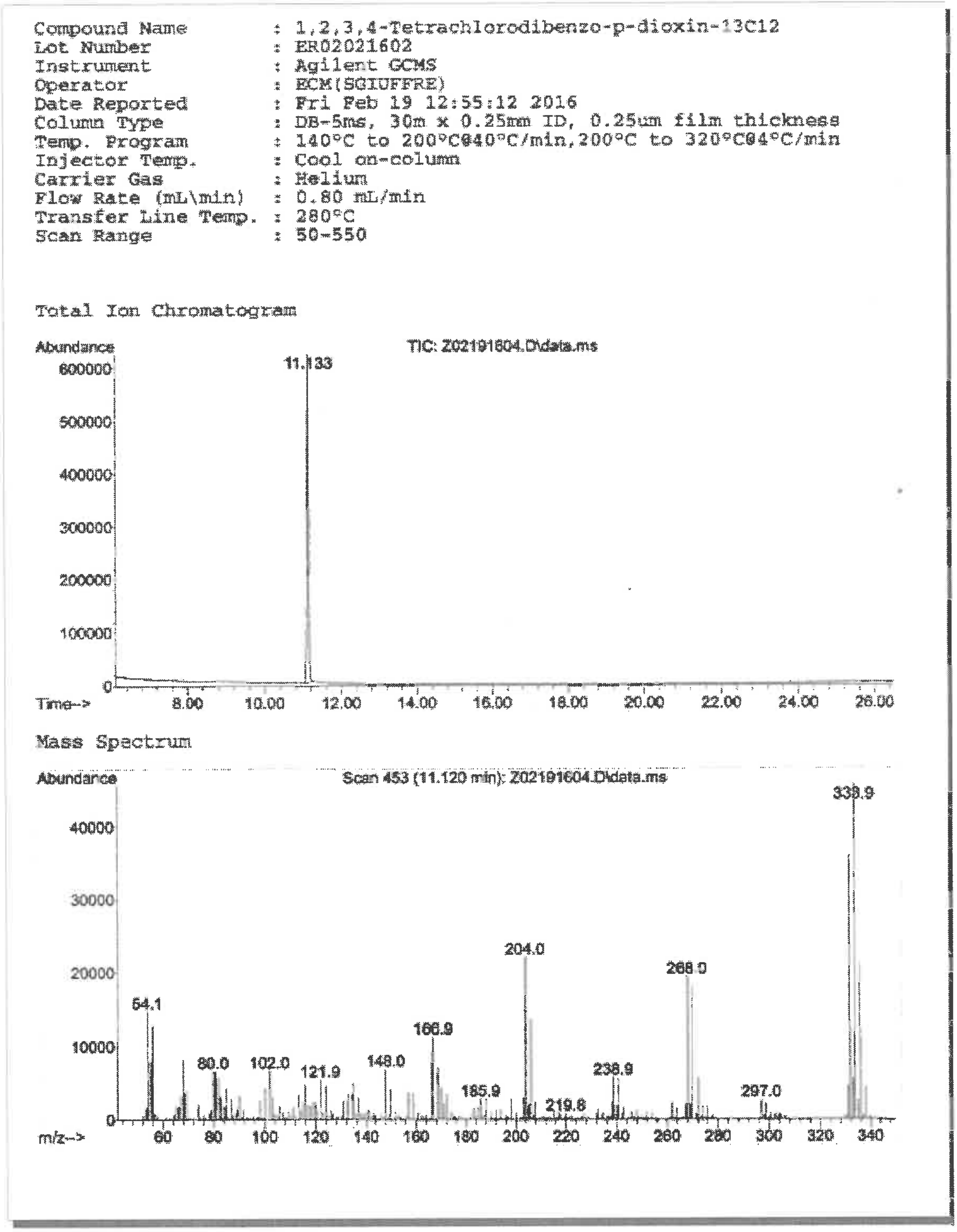

```
Compound Name        : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number           : ER02021602
Instrument           : Agilent GCMS
Operator             : ECM(SGIUFFRE)
Date Reported        : Fri Feb 19 12:55:12 2016
Column Type          : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program        : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.       : Cool on-column
Carrier Gas          : Helium
Flow Rate (mL\min)   : 0.80 mL/min
Transfer Line Temp.  : 280°C
Scan Range           : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

②

P: 4/22/19 SKJ

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ______________ **Date:** 04/16/2018
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)

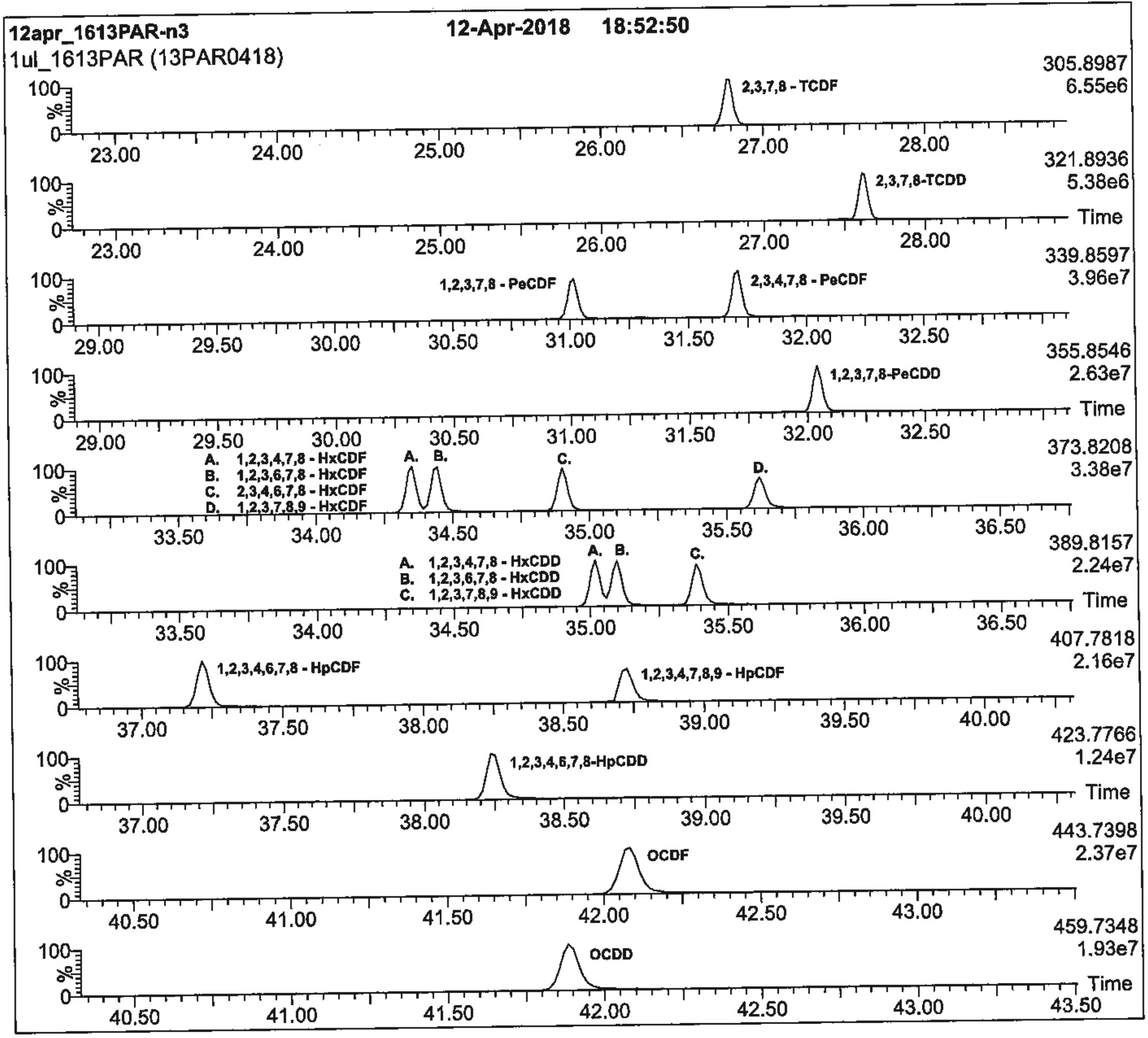

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W		
Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min, 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

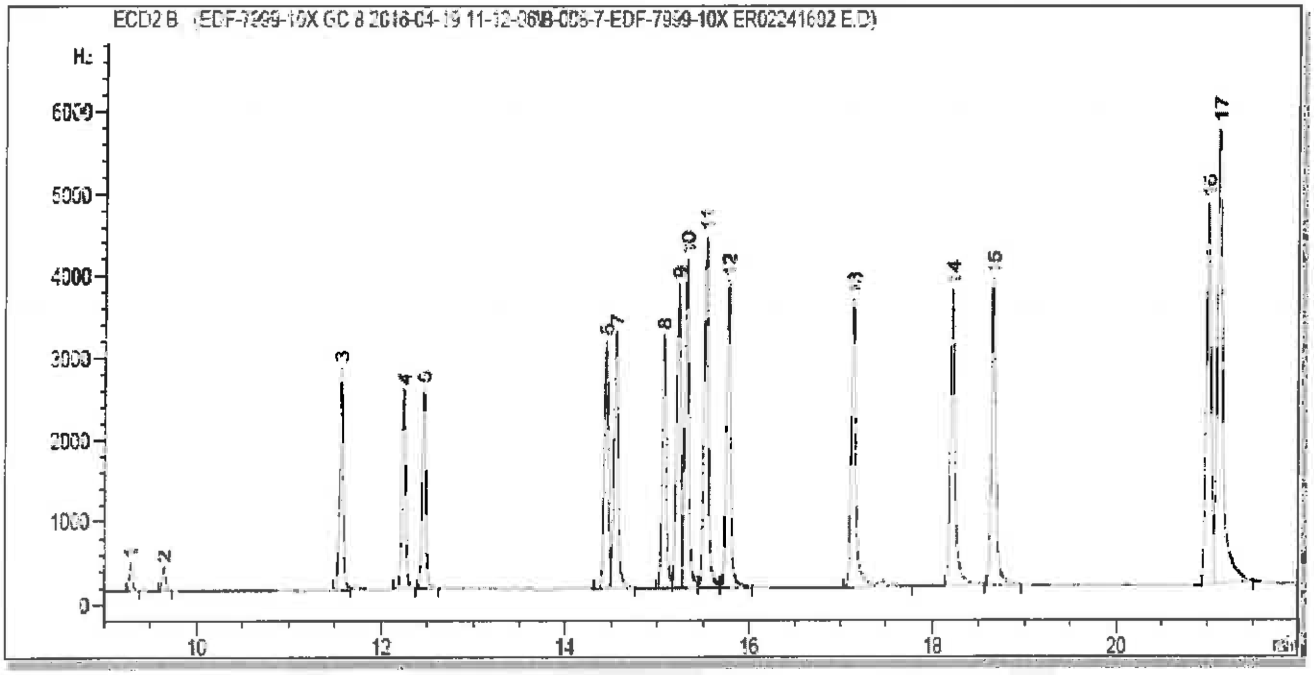

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③

r: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

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Certificate of Analysis

Method 1613 PAR Stock Solution

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

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Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

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1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
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1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

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Product Analysis

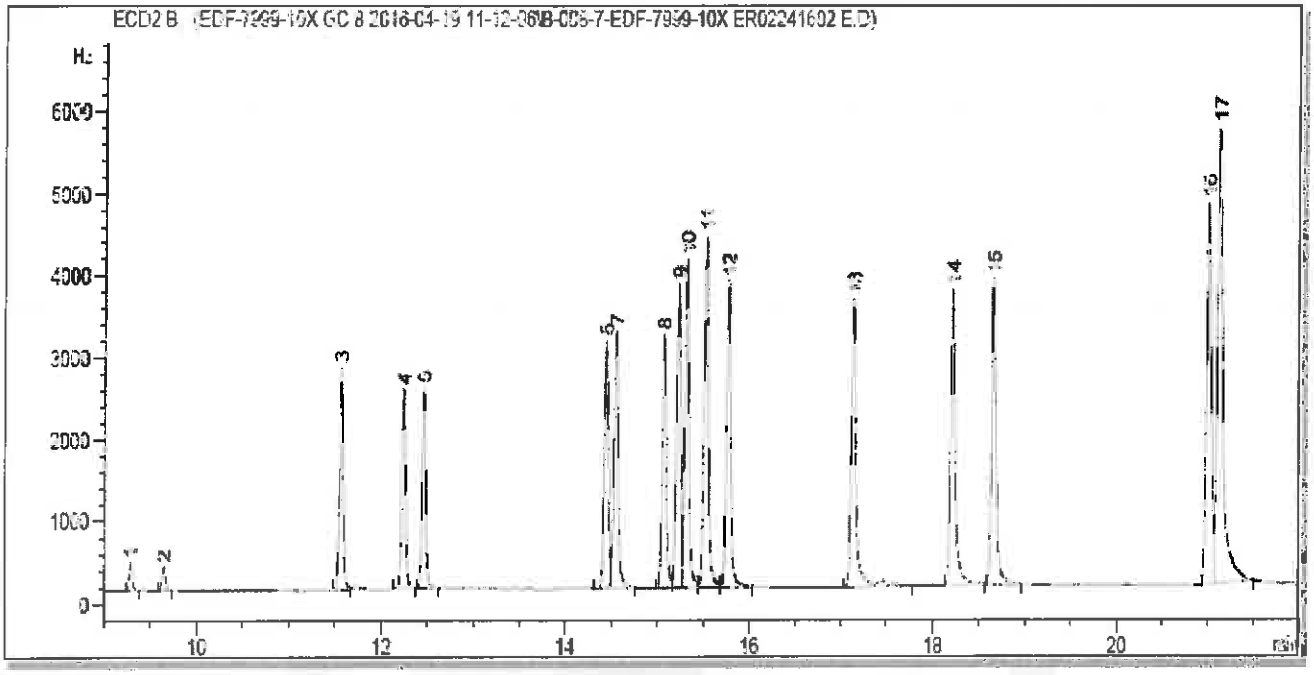

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9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00112

③

r: 4/30/16 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of **k** = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		**%RSD - Homogeneity**	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

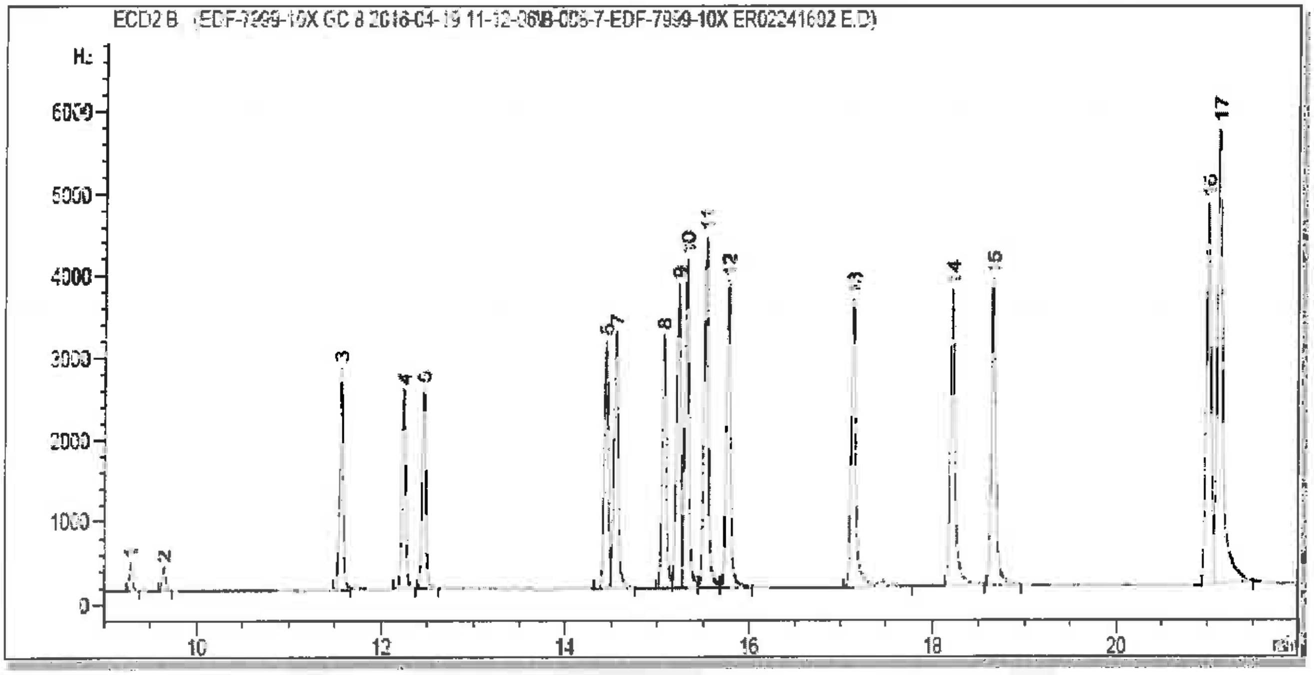

Peak:	**Analyte:**
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #	13CHxCF #	HxCDD #
11215702-Tank#1-1-8-21	320-68943-1	102	62	64	68	64	60	61	65
11215702-Tank#2-1-8-21	320-68943-2	99	80	78	83	74	69	72	80

	QC LIMITS
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank#1-1-8-21	320-68943-1	63	58	55	56	52	55
11215702-Tank#2-1-8-21	320-68943-2	72	73	70	72	66	75

	QC LIMITS
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-452668/2-A	79	88	93	84	85	96	80	74

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-452668/2-A	79	92	85	83	80	90	81	90

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-225   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Tank#1-1-8-21 RADL	320-68943-1 RADL	69	111
11215702-Tank#2-1-8-21 RADL	320-68943-2 RADL	80	109

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #
11215702-Tank#1-1-8-21 DL	320-68943-1 DL	70	65	98
11215702-Tank#2-1-8-21 DL	320-68943-2 DL	78	72	97

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	MB 320-452668/1-A	85	90	97	85	86	96	83	78

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	MB 320-452668/1-A	80	92	88	78	80	89	79	87

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22ja21dfs1_6.d

Lab ID: LCS 320-452668/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	180	90	67-158	
2,3,7,8-TCDF	200	198	99	75-158	
1,2,3,7,8-PeCDD	1000	903	90	70-142	
1,2,3,7,8-PeCDF	1000	949	95	80-134	
2,3,4,7,8-PeCDF	1000	968	97	68-160	
1,2,3,4,7,8-HxCDD	1000	903	90	70-164	
1,2,3,6,7,8-HxCDD	1000	903	90	76-134	
1,2,3,7,8,9-HxCDD	1000	913	91	64-162	
1,2,3,4,7,8-HxCDF	1000	964	96	72-134	
1,2,3,6,7,8-HxCDF	1000	947	95	84-130	
1,2,3,7,8,9-HxCDF	1000	939	94	78-130	
2,3,4,6,7,8-HxCDF	1000	951	95	70-156	
1,2,3,4,6,7,8-HpCDD	1000	905	91	70-140	
1,2,3,4,6,7,8-HpCDF	1000	915	92	82-122	
1,2,3,4,7,8,9-HpCDF	1000	961	96	78-138	
OCDD	2000	1800	90	78-144	
OCDF	2000	1720	86	63-170	
13C-2,3,7,8-TCDD	2000	1760	88	20-175	
13C-2,3,7,8-TCDF	2000	1590	79	22-152	
13C-1,2,3,7,8-PeCDD	2000	1930	96	21-227	
13C-1,2,3,7,8-PeCDF	2000	1680	84	21-192	
13C-2,3,4,7,8-PeCDF	2000	1700	85	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1850	92	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1710	85	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1590	80	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1480	74	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1660	83	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1580	79	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1790	90	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1600	80	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1620	81	20-186	
13C-OCDD	4000	3610	90	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Lab File ID: 22ja21dfs1_5.d   Lab Sample ID: MB 320-452668/1-A

Matrix: Water   Date Extracted: 01/18/2021 11:00

Instrument ID: DFS 1   Date Analyzed: 01/22/2021 23:53

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-452668/2-A	22ja21dfs1_6.d	01/23/2021 00:41
11215702-Tank#1-1-8-21	320-68943-1	22ja21dfs1_14.d	01/23/2021 07:04
11215702-Tank#2-1-8-21	320-68943-2	22ja21dfs1_15.d	01/23/2021 07:52
11215702-Tank#2-1-8-21 RADL	320-68943-2 RADL	25JA2111D2_004.d	01/26/2021 01:51
11215702-Tank#1-1-8-21 RADL	320-68943-1 RADL	25JA2111D2_005.d	01/26/2021 02:29
11215702-Tank#2-1-8-21 DL	320-68943-2 DL	27JA2110D5_10.d	01/27/2021 21:32
11215702-Tank#1-1-8-21 DL	320-68943-1 DL	27JA2110D5_11.d	01/27/2021 22:17

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-1-8-21	Lab Sample ID: 320-68943-1
Matrix: Water	Lab File ID: 22ja21dfs1_14.d
Analysis Method: 1613B	Date Collected: 01/08/2021 14:00
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1051.2(mL)	Date Analyzed: 01/23/2021 07:04
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 454782	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	120		48	2.7
57117-41-6	1,2,3,7,8-PeCDF	1800		48	14
57117-31-4	2,3,4,7,8-PeCDF	990		48	15
39227-28-6	1,2,3,4,7,8-HxCDD	3.9	J q	48	1.8
57653-85-7	1,2,3,6,7,8-HxCDD	17	J q	48	1.8
19408-74-3	1,2,3,7,8,9-HxCDD	12	J q	48	1.7
70648-26-9	1,2,3,4,7,8-HxCDF	4500		48	13
57117-44-9	1,2,3,6,7,8-HxCDF	1000		48	13
72918-21-9	1,2,3,7,8,9-HxCDF	57		48	13
60851-34-5	2,3,4,6,7,8-HxCDF	88		48	12
35822-46-9	1,2,3,4,6,7,8-HpCDD	700	B	48	2.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	1300	B	48	2.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	540		48	2.6
3268-87-9	OCDD	11000	B	95	4.6
39001-02-0	OCDF	680		95	1.2
36088-22-9	Total PeCDD	140		48	2.7
30402-15-4	Total PeCDF	4500	q	48	15
34465-46-8	Total HxCDD	160	q	48	1.8
55684-94-1	Total HxCDF	6400	q	48	13
37871-00-4	Total HpCDD	1400	B	48	2.7
38998-75-3	Total HpCDF	2300	B	48	2.5

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID: 11215702-Tank#1-1-8-21	Lab Sample ID: 320-68943-1
Matrix: Water	Lab File ID: 22ja21dfs1_14.d
Analysis Method: 1613B	Date Collected: 01/08/2021 14:00
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1051.2(mL)	Date Analyzed: 01/23/2021 07:04
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 454782	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
109719-79-1	13C-1,2,3,7,8-PeCDD	68		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	62		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	64		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	65		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	64		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	60		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	58		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	61		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	56		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	55		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	52		26-138
114423-97-1	13C-OCDD	55		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	102		35-197

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Sample Type: Client
Inject. Date: 23-Jan-2021 07:04:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-68943-A-1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 08:49:34 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: messecara Date: 25-Jan-2021 19:24:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.236	4163693	0.82	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.250	5484449	0.82	1.9134	68.8	68.8	0.5167	0.5167	68.84	
2,3,7,8-TCDF	20.275	137596392	0.79	1.1488	2183.8	2183.8	6.664	6.664		E
A Non-2,3,7,8-sub-TCDF	19.715	103215446	0.77	1.1488	1644.6	1638.1	6.664	942.4		RQMa
S Total TCDF					3828.4	3821.9	6.664	6.664		RQ
D 13C-2,3,7,8-TCDD	21.606	3195612	0.84	1.0908	70.4	70.4	0.3933	0.3933	70.36	
2,3,7,8-TCDD	21.640	25861080	0.82	1.3069	619.2	619.2	1.627	1.627		EMa
$ 37Cl4-2,3,7,8-TCDD	21.640	2092209		1.2281	40.9	40.9	0.0966	0.0966	102	
A Non-2,3,7,8-sub-TCDD	20.561	2546815	0.77	1.3069	61.0	61.0	1.627	54.2		Ma
S Total TCDD					680.2	680.2	1.627	1.627		
D 13C-1,2,3,7,8-PeCDF	27.202	3992163	1.63	1.5355	62.4	62.4	0.2220	0.2220	62.44	
1,2,3,7,8-PeCDF	27.219	4434544	1.56	1.1695	95.0	95.0	0.7407	0.7407		
D 13C-2,3,4,7,8-PeCDF	28.717	3815881	1.63	1.4278	64.2	64.2	0.2388	0.2388	64.19	
2,3,4,7,8-PeCDF	28.742	2436808	1.61	1.2244	52.2	52.2	0.7965	0.7965		
A F1 PeCDFs	24.445	16710	1.55	1.1970	0.3994	0.3576	0.0208	0.3576		RQMa
A Non-2,3,7,8-sub-PeCDF	27.929	4203617	1.58	1.1970	90.0	90.0	0.7666	38.7		
S Total PeCDF					237.5	237.4	0.7686	0.7686		RQ
D 13C-1,2,3,7,8-PeCDD	29.516	2206774	1.61	0.7800	67.9	67.9	0.1764	0.1764	67.95	
1,2,3,7,8-PeCDD	29.542	169558	1.64	1.2613	6.092	6.092	0.1411	0.1411		
A Non-2,3,7,8-sub-PeCDD	28.272	28064	1.41	1.2613	1.008	1.008	0.1411	0.6931		
S Total PeCDD					7.100	7.100	0.1411	0.1411		
D 13C-1,2,3,4,7,8-HxCDF	34.859	3424534	0.54	1.4248	63.7	63.7	0.1523	0.1523	63.68	
1,2,3,4,7,8-HxCDF	34.884	11005984	1.28	1.3553	237.1	237.1	0.7063	0.7063		
D 13C-1,2,3,6,7,8-HxCDF	35.028	3871222	0.53	1.7108	60.0	60.0	0.1269	0.1269	59.95	
1,2,3,6,7,8-HxCDF	35.044	2721280	1.25	1.3081	53.7	53.7	0.6735	0.6735		
D 13C-2,3,4,6,7,8-HxCDF	35.853	3566811	0.53	1.5455	61.1	61.1	0.1404	0.1404	61.14	
2,3,4,6,7,8-HxCDF	35.870	218890	1.41	1.3248	4.632	4.632	0.6313	0.6313		M
D 13C-1,2,3,7,8,9-HxCDF	36.745	3031727	0.54	1.3772	58.3	58.3	0.1576	0.1576	58.33	
1,2,3,7,8,9-HxCDF	36.754	120513	1.32	1.3372	2.973	2.973	0.6594	0.6594		M
A Non-2,3,7,8-sub-HxCDF	34.940	1735509	1.24	1.3313	38.2	37.5	0.6662	15.0		RQMa
S Total HxCDF					336.7	336.0	0.6676	0.6676		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.543	3774386	1.29	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.063	2039974	1.32	0.8266	65.4	65.4	0.1589	0.1589	65.38	
1,2,3,4,7,8-HxCDD	36.072	5622	1.24	1.3422	0.2523	0.2053	0.0972	0.0972		RQM
D 13C-1,2,3,6,7,8-HxCDD	36.181	2469259	1.26	1.0417	62.8	62.8	0.1261	0.1261	62.80	
1,2,3,6,7,8-HxCDD	36.190	26682	1.24	1.1989	0.9832	0.9013	0.0945	0.0945		RQMa
1,2,3,7,8,9-HxCDD	36.560	18708	1.24	1.3636	0.6630	0.6085	0.0889	0.0889		RQ
A Non-2,3,7,8-sub-HxCDD	35.311	200679	1.21	1.3016	6.838	6.838	0.0932	3.707		
S Total HxCDD					8.737	8.554	0.0935	0.0935		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.552	2303651	0.47	1.1053	55.2	55.2	0.1525	0.1525	55.22	
1,2,3,4,6,7,8-HpCDF	38.561	2604202	1.05	1.6487	68.6	68.6	0.1223	0.1223		
D 13C-1,2,3,4,7,8,9-HpCDF	39.799	1914160	0.46	0.9761	52.0	52.0	0.1726	0.1726	51.96	
1,2,3,4,7,8,9-HpCDF	39.807	861441	1.06	1.5723	28.6	28.6	0.1380	0.1380		
A Non-2,3,7,8-sub-HpCDF	39.160	774424	1.03	1.6105	22.8	22.8	0.1298	22.8		
S Total HpCDF					120.0	120.0	0.1302	0.1302		
D 13C-1,2,3,4,6,7,8-HpCDD	39.496	1863171	1.10	0.8768	56.3	56.3	0.0898	0.0898	56.30	
1,2,3,4,6,7,8-HpCDD	39.504	830497	1.06	1.2146	36.7	36.7	0.1403	0.1403		
A Non-2,3,7,8-sub-HpCDD	39.237	860334	1.04	1.2146	38.0	38.0	0.1403	38.0		
S Total HpCDD					74.7	74.7	0.1403	0.1403		
D 13C-OCDD	41.950	2945197	0.94	0.7137	109.3	109.3	0.0859	0.0859	54.67	
OCDF	42.051	959300	0.89	1.8132	35.9	35.9	0.0607	0.0607		
OCDD	41.958	11121351	0.91	1.2562	601.2	601.2	0.2400	0.2400		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Sample Type: Client
Inject. Date: 23-Jan-2021 07:04:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-68943-A-1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 08:49:34 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: messecara Date: 25-Jan-2021 19:24:52

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.236	21.144	6		1875029	256872	642	1605	400		
333.9338	21.219	21.144	5		2288664	307700	327	817	941	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.250	20.156	6	0.954	2478420	376231	1209	3022	311		
317.9389	20.250	20.156	6	0.954	3006029	452461	1024	2560	442	0.82(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.275	20.182	6	1.001	60931660	8953394	11057	27642	810		
305.8987	20.275	20.182	6	1.001	76664732	11387958	14320	35800	795	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	17.253	19.715	-147	0.852	316420	63279	11057	27642	6		
305.8987	17.253	19.715	-147	0.852	393294	79320	14320	35800	6	0.80(0.65-0.89)	
303.9016	17.725	19.715	-119	0.875	1187341	211793	11057	27642	19		
305.8987	17.716	19.715	-120	0.875	1462406	259763	14320	35800	18	0.81(0.65-0.89)	
303.9016	18.214	19.715	-90	0.899	2383244	314252	11057	27642	28		
305.8987	18.214	19.715	-90	0.899	2953558	390977	14320	35800	27	0.81(0.65-0.89)	
303.9016	18.644	19.715	-64	0.921	2073419	279071	11057	27642	25		M
305.8987	18.644	19.715	-64	0.921	2611215	346023	14320	35800	24	0.79(0.65-0.89)	
303.9016	19.030	19.715	-41	0.940	2853792	422176	11057	27642	38		
	Empc Correction				2448475	395419	11057	27642	36		
305.8987	19.030	19.715	-41	0.940	3179838	513532	14320	35800	36	0.90(0.65-0.89)	M
303.9016	19.537	19.715	-11	0.965	26399269	4014687	11057	27642	363		
305.8987	19.537	19.715	-11	0.965	32982070	5041023	14320	35800	352	0.80(0.65-0.89)	
303.9016	19.958	19.715	15	0.986	1561917	187919	11057	27642	17		
305.8987	19.958	19.715	15	0.986	1937669	237787	14320	35800	17	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	21.065	19.715	81	1.040	4115277	595934	11057	27642	54		
305.8987	21.065	19.715	81	1.040	5111898	746964	14320	35800	52	0.81(0.65-0.89)	
303.9016	21.520	19.715	108	1.063	948183	121685	11057	27642	11		
305.8987	21.520	19.715	108	1.063	1166738	148347	14320	35800	10	0.81(0.65-0.89)	
303.9016	23.538	19.715	229	1.162	4452821	765756	11057	27642	69		
305.8987	23.538	19.715	229	1.162	5530394	948495	14320	35800	66	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.606	21.496	7	1.017	1459803	199863	642	1605	311		
333.9338	21.606	21.496	7	1.017	1735809	239512	327	817	732	0.84(0.65-0.89)	
2,3,7,8-TCDD											EMa
319.8965	21.640	21.522	7	1.002	11617062	1548887	2037	5092	760		M
321.8936	21.640	21.522	7	1.002	14244018	1914564	1700	4250	1126	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.640	21.539	6	1.019	2092209	295564	268	670	1103		
A Non-2,3,7,8-sub-TCDD											Ma
319.8965	21.443	20.561	53	0.992	121671	20273	2037	5092	10		M
321.8936	21.434	20.561	52	0.992	161926	26868	1700	4250	16	0.75(0.65-0.89)	
319.8965	22.319	20.561	105	1.033	984967	126124	2037	5092	62		
321.8936	22.319	20.561	105	1.033	1278251	155771	1700	4250	92	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.202	27.119	5	1.281	2474087	393877	455	1137	866		
353.8970	27.202	27.119	5	1.281	1518076	243903	315	787	774	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.219	27.145	4	1.001	2699798	420169	1310	3275	321		
341.8567	27.219	27.145	4	1.001	1734746	267105	900	2250	297	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.717	28.635	5	1.352	2363405	351061	455	1137	772		
353.8970	28.717	28.635	5	1.352	1452476	215450	315	787	684	1.63(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.742	28.660	5	1.001	1501398	229177	1310	3275	175		
341.8567	28.742	28.660	5	1.001	935410	142993	900	2250	159	1.61(1.32-1.78)	
A F1 PeCDFs											RQMa
339.8597	23.984	24.445	-28	0.882	12111	2628	5	12	526		M
	Empc Correction				10157	1952	5	12	390		
341.8567	23.967	24.445	-29	0.881	6553	1260	55	137	23	1.85(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	25.737	27.929	-131	0.946	1105801	191195	1310	3275	146		
341.8567	25.737	27.929	-131	0.946	700738	123098	900	2250	137	1.58(1.32-1.78)	
339.8597	26.646	27.929	-77	0.980	81941	12688	1310	3275	10		
341.8567	26.654	27.929	-76	0.980	47428	7434	900	2250	8	1.73(1.32-1.78)	
339.8597	27.084	27.929	-51	0.996	163952	36998	1310	3275	28		
341.8567	27.084	27.929	-51	0.996	104077	24955	900	2250	28	1.58(1.32-1.78)	
339.8597	27.808	27.929	-7	1.022	727588	115387	1310	3275	88		
341.8567	27.808	27.929	-7	1.022	455531	72903	900	2250	81	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	29.087	27.929	69	1.069	413037	53911	1310	3275	41		
341.8567	29.087	27.929	69	1.069	271403	33898	900	2250	38	1.52(1.32-1.78)	
339.8597	30.788	27.929	171	1.132	79068	11828	1310	3275	9		
341.8567	30.788	27.929	171	1.132	53053	8375	900	2250	9	1.49(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.516	29.443	4	1.390	1359704	196520	215	537	914		
369.8919	29.525	29.443	5	1.390	847070	124917	96	240	1301	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.542	29.477	4	1.001	105414	15403	147	367	105		
357.8516	29.542	29.477	4	1.001	64144	9266	82	205	113	1.64(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.328	28.272	-57	0.926	11360	1917	147	367	13		
357.8516	27.353	28.272	-55	0.927	7932	1400	82	205	17	1.43(1.32-1.78)	
355.8546	27.614	28.272	-39	0.936	5050	1001	147	367	7		
357.8516	27.623	28.272	-39	0.936	3722	601	82	205	7	1.36(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.859	34.817	3	0.954	1200389	265998	347	867	767		
385.8610	34.868	34.817	3	0.954	2224145	498335	524	1310	951	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.884	34.834	3	1.001	6172749	1333501	1431	3577	932		
375.8178	34.884	34.834	3	1.001	4833235	1054417	1496	3740	705	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.028	34.985	3	0.959	1341065	289002	347	867	833		
385.8610	35.028	34.985	3	0.959	2530157	541530	524	1310	1033	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.044	35.002	3	1.000	1512592	318462	1431	3577	223		
375.8178	35.044	35.002	3	1.000	1208688	249788	1496	3740	167	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.853	35.811	3	0.981	1240279	292056	347	867	842		
385.8610	35.853	35.811	3	0.981	2326532	582861	524	1310	1112	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	35.870	35.828	3	1.000	128157	30802	1431	3577	22		M
375.8178	35.861	35.828	2	1.000	90733	22860	1496	3740	15	1.41(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.745	36.703	3	1.006	1062070	292667	347	867	843		
385.8610	36.745	36.703	3	1.006	1969657	537209	524	1310	1025	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	36.754	36.720	2	1.000	68466	19958	1431	3577	14		M
375.8178	36.762	36.720	3	1.000	52047	16960	1496	3740	11	1.32(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											RQMa
373.8208	33.385	34.940	-93	0.958	390494	68001	1431	3577	48		
375.8178	33.385	34.940	-93	0.958	302987	54083	1496	3740	36	1.29(1.05-1.43)	
373.8208	34.253	34.940	-41	0.983	227469	44817	1431	3577	31		
	Empc Correction				195030	43535	1431	3577	30		
375.8178	34.253	34.940	-41	0.983	157283	35109	1496	3740	23	1.45(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
373.8208	35.743	34.940	48	1.025	93999	24953	1431	3577	17		M
375.8178	35.743	34.940	48	1.025	69905	18275	1496	3740	12	1.34(1.05-1.43)	
373.8208	36.863	34.940	115	1.057	298655	84372	1431	3577	59		M
375.8178	36.863	34.940	115	1.057	227156	65025	1496	3740	43	1.31(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.543	36.501	3		2124154	559193	297	742	1883		
403.8529	36.543	36.501	3		1650232	443754	230	575	1929	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.063	36.021	3	0.987	1162533	315561	297	742	1062		
403.8529	36.063	36.021	3	0.987	877441	236437	230	575	1028	1.32(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	36.072	36.030	3	1.000	4398	1059	121	302	9		M
	Empc Correction				3112	1086	121	302	9		
391.8127	36.063	36.030	2	1.000	2510	876	167	417	5	1.75(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.181	36.139	3	0.990	1378591	356532	297	742	1200		
403.8529	36.181	36.139	3	0.990	1090668	278776	230	575	1212	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMa
389.8158	36.190	36.156	2	1.000	17194	4523	121	302	37		M
	Empc Correction				14770	3635	121	302	30		
391.8127	36.198	36.156	3	1.000	11912	2932	167	417	18	1.44(1.05-1.43)	
1,2,3,7,8,9-HxCDD											RQ
389.8158	36.560	36.518	3	1.014	12031	2364	121	302	20		
	Empc Correction				10356	2453	121	302	20		
391.8127	36.552	36.518	2	1.014	8352	1979	167	417	12	1.44(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.177	35.311	-68	0.945	61038	11632	121	302	96		
391.8127	34.177	35.311	-68	0.945	47760	9042	167	417	54	1.28(1.05-1.43)	
389.8158	35.297	35.311	-1	0.976	48997	10929	121	302	90		
391.8127	35.297	35.311	-1	0.976	42884	8308	167	417	50	1.14(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.552	38.517	2	1.055	734190	246448	366	915	673		
419.8220	38.552	38.517	2	1.055	1569461	520745	310	775	1680	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.561	38.525	2	1.000	1333834	435166	357	892	1219		
409.7788	38.561	38.525	2	1.000	1270368	423688	262	655	1617	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.799	39.772	2	1.089	602545	223419	366	915	610		
419.8220	39.799	39.772	2	1.089	1311615	489498	310	775	1579	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.807	39.780	2	1.000	442805	158631	357	892	444		
409.7788	39.807	39.780	2	1.000	418636	154879	262	655	591	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.923	39.160	-14	1.010	392819	135509	357	892	380		
409.7788	38.923	39.160	-14	1.010	381605	133544	262	655	510	1.03(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.496	39.460	2	1.081	977408	360943	159	397	2270		
437.8140	39.496	39.460	2	1.081	885763	320741	157	392	2043	1.10(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.504	39.477	2	1.000	428191	155275	247	617	629		
425.7737	39.504	39.477	2	1.000	402306	144193	218	545	661	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.864	39.237	-22	0.984	437787	150839	247	617	611		
425.7737	38.864	39.237	-22	0.984	422547	144922	218	545	665	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.950	41.913	2	1.148	1426314	517849	135	337	3836		
471.7750	41.950	41.913	2	1.148	1518883	526860	111	277	4746	0.94(0.76-1.02)	
OCDF											
441.7428	42.051	42.015	2	1.002	452383	151096	81	202	1865		
443.7399	42.051	42.015	2	1.002	506917	167703	149	372	1126	0.89(0.76-1.02)	
OCDD											
457.7377	41.958	41.930	2	1.000	5299026	1845661	283	707	6522		
459.7348	41.958	41.930	2	1.000	5822325	2014345	347	867	5805	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-TCDF, RT: 19.715

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.149	D 13C-2,3,7,8-TCDF	100.000	5484449	828692

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	5484449	828692

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.253	316420	63279	393294	79320	11.3	0.80	
17.725	1187341	211793	1462406	259763	42.1	0.81	
18.214	2383244	314252	2953558	390977	84.7	0.81	
18.644	2073419	279071	2611215	346023	74.4	0.79	Ma
19.030	2853792	422176	3179838	513532	95.8	0.90	RQM
19.030	2448475	395419	3179838	513532	89.3		Empc Correction
19.537	26399269	4014687	32982070	5041023	942.4	0.80	
19.958	1561917	187919	1937669	237787	55.5	0.81	
21.065	4115277	595934	5111898	746964	146.4	0.81	
21.520	948183	121685	1166738	148347	33.6	0.81	
23.538	4452821	765756	5530394	948495	158.4	0.81	
Signal Totals:							
	45886366	6949795	57329080	8712231			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	103620763	15688783				0.81	RQMa
	103215446	15662026					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1644.6 = (103620763 * 100.000) / (5484449 * 1.149)
Empc Amount: 1638.1 = (103215446 * 100.000) / (5484449 * 1.149)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Inject. Date: 23-Jan-2021 07:04:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 454782 Lims Sample ID: 13

Non-2,3,7,8-sub-TCDD, RT: 20.561

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.307	D 13C-2,3,7,8-TCDD	100.000	3195612	439375

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.307		100.000	3195612	439375

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.443	121671	20273	161926	26868	6.79	0.75	Ma
22.319	984967	126124	1278251	155771	54.2	0.77	
Signal Totals:							
	1106638	146397	1440177	182639			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2546815	329036				0.77	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 60.982 = (2546815 * 100.000) / (3195612 * 1.307)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

F1 PeCDFs, RT: 24.445

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	3992163	637780
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	3815881	566511

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	3904022	602145

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.984	12111	2628	6553	1260	0.3994	1.85	RQMa
23.984	10157	1952	6553	1260	0.3576		Empc Correction
Signal Totals:							
	10157	1952	6553	1260			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18664	3888				1.85	RQMa
	16710	3212					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3994 = (18664 * 100.000) / (3904022 * 1.197)
Empc Amount: 0.3576 = (16710 * 100.000) / (3904022 * 1.197)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-PeCDF, RT: 27.929

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	3992163	637780
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	3815881	566511

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	3904022	602145

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.737	1105801	191195	700738	123098	38.7	1.58	
26.646	81941	12688	47428	7434	2.77	1.73	
27.084	163952	36998	104077	24955	5.74	1.58	
27.808	727588	115387	455531	72903	25.3	1.60	
29.087	413037	53911	271403	33898	14.6	1.52	
30.788	79068	11828	53053	8375	2.83	1.49	
Signal Totals:							
	2571387	422007	1632230	270663			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4203617	692670				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 89.955 = (4203617 * 100.000) / (3904022 * 1.197)

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-PeCDD, RT: 28.272

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.261	D 13C-1,2,3,7,8-PeCDD	100.000	2206774	321437

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.261		100.000	2206774	321437

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
27.328	11360	1917	7932	1400	0.6931	1.43	
27.614	5050	1001	3722	601	0.3151	1.36	
Signal Totals:							
	16410	2918	11654	2001			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	28064	4919				1.41	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.008 = (28064 * 100.000) / (2206774 * 1.261)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDF, RT: 34.940

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.355	D 13C-1,2,3,4,7,8-HxCDF	100.000	3424534	764333
1,2,3,6,7,8-HxCDF	1.308	D 13C-1,2,3,6,7,8-HxCDF	100.000	3871222	830532
2,3,4,6,7,8-HxCDF	1.325	D 13C-2,3,4,6,7,8-HxCDF	100.000	3566811	874917
1,2,3,7,8,9-HxCDF	1.337	D 13C-1,2,3,7,8,9-HxCDF	100.000	3031727	829876

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.331		100.000	3473573	824914

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.385	390494	68001	302987	54083	15.0	1.29	
34.253	227469	44817	157283	35109	8.32	1.45	RQ
34.253	195030	43535	157283	35109	7.62		Empc Correction
35.743	93999	24953	69905	18275	3.54	1.34	Ma
36.863	298655	84372	227156	65025	11.4	1.31	Ma
Signal Totals:							
	978178	220861	757331	172492			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1767948	394635				1.33	RQMa
	1735509	393353					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 38.230 = (1767948 * 100.000) / (3473573 * 1.331)
Empc Amount: 37.528 = (1735509 * 100.000) / (3473573 * 1.331)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDD, RT: 35.311

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.342	D 13C-1,2,3,4,7,8-HxCDD	100.000	2039974	551998
1,2,3,6,7,8-HxCDD	1.199	D 13C-1,2,3,6,7,8-HxCDD	100.000	2469259	635308
1,2,3,7,8,9-HxCDD	1.364				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.302		100.000	2254616	593653

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.177	61038	11632	47760	9042	3.71	1.28	
35.297	48997	10929	42884	8308	3.13	1.14	
Signal Totals:							
	110035	22561	90644	17350			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	200679	39911				1.21	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.838 = (200679 * 100.000) / (2254616 * 1.302)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDF, RT: 39.160

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.649	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2303651	767193
1,2,3,4,7,8,9-HpCDF	1.572	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1914160	712917

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.610		100.000	2108905	740055

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.923	392819	135509	381605	133544	22.8	1.03	
Signal Totals:							
	392819	135509	381605	133544			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	774424	269053				1.03	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 22.801 = (774424 * 100.000) / (2108905 * 1.610)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	23-Jan-2021 07:04:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDD, RT: 39.237

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.215	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1863171	681684

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.215		100.000	1863171	681684

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.864	437787	150839	422547	144922	38.0	1.04	
Signal Totals:							
	437787	150839	422547	144922			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	860334	295761				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 38.018 = (860334 * 100.000) / (1863171 * 1.215)

Report Date: 29-Jan-2021 08:49:34

Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1
Client ID:	11215702-Tank#1-1-8-21		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (23.89- 25.00)

Signal: 1

Processing Integration Results

RT = 23.984 Area = 12111

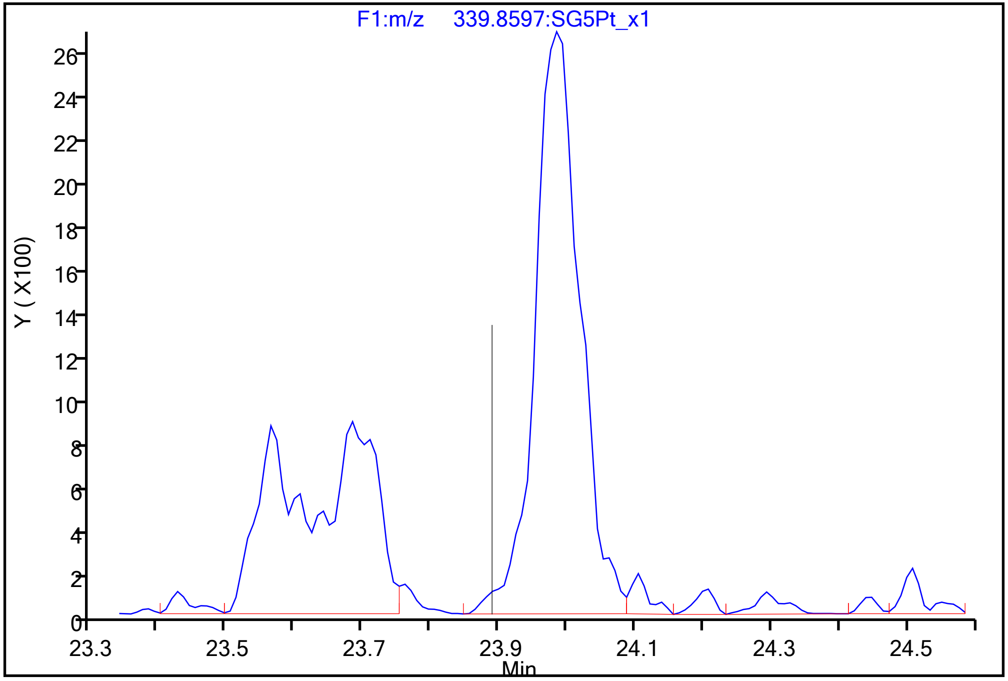

Manual Integration Results

RT = 23.984 Area = 12111

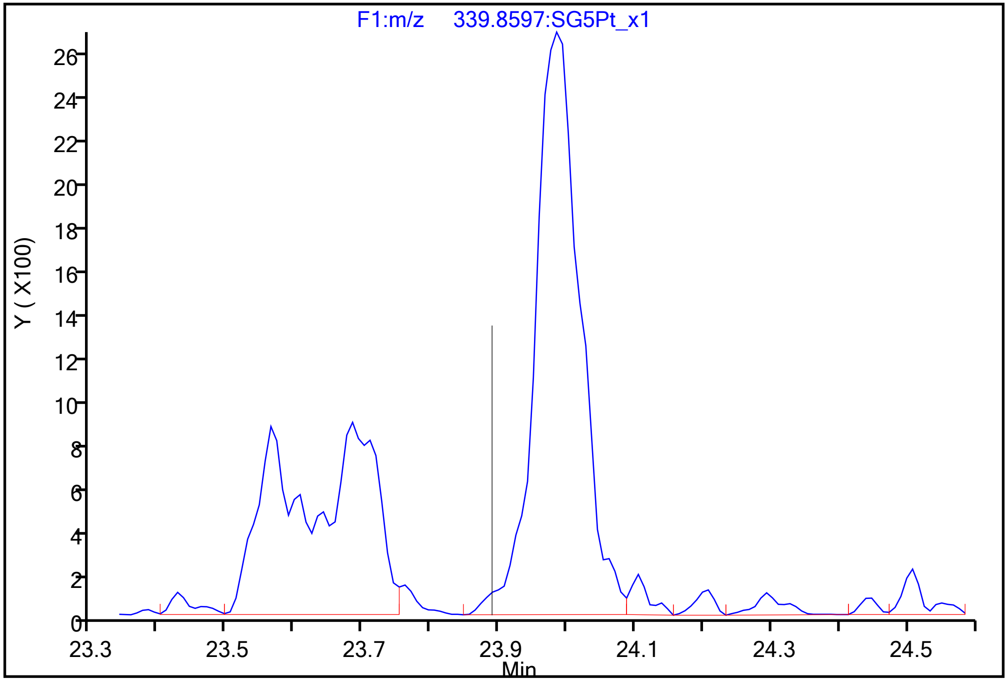

Reviewer: dadunj, 29-Jan-2021 08:43:49

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d				
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	35.87
Area:	222158
Amount:	8.101387
Amount Units:	pg/ul

Processing Integration Results

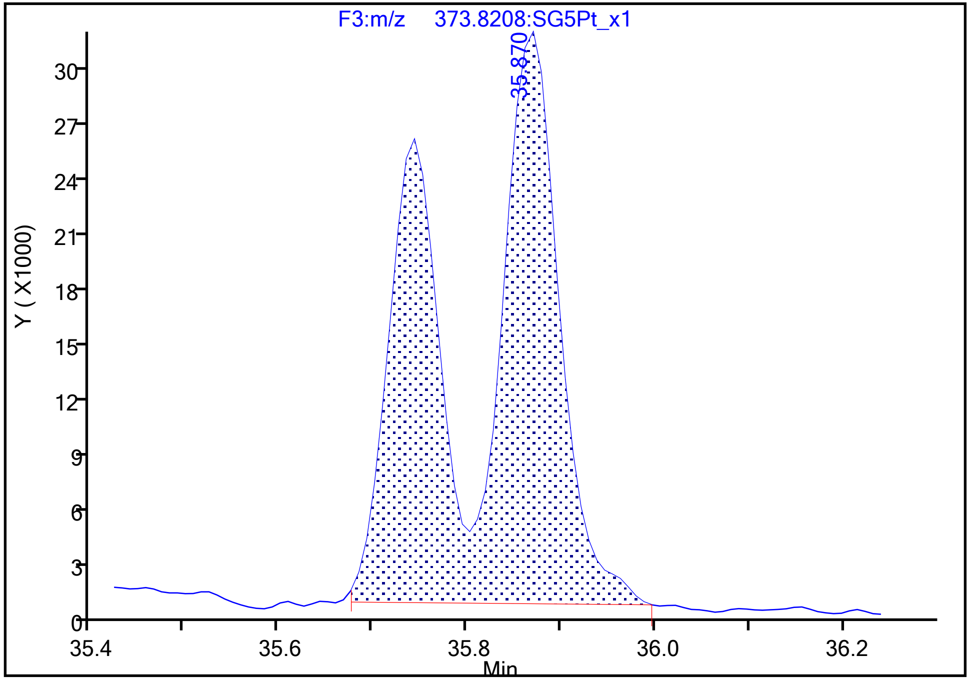

RT:	35.87
Area:	128157
Amount:	4.632442
Amount Units:	pg/ul

Manual Integration Results

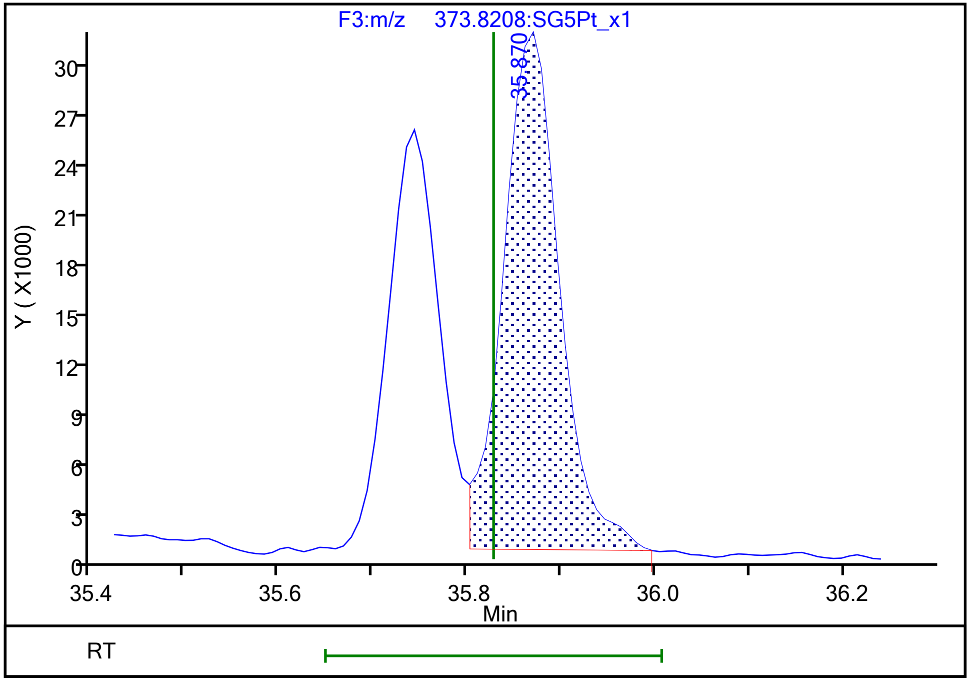

Reviewer: dadunj, 29-Jan-2021 08:44:29

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date: 23-Jan-2021 07:04:00

Instrument ID: DFS 1

Lims ID: 320-68943-A-1-A

Lab Sample ID: 320-68943-1

Client ID: 11215702-Tank#1-1-8-21

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 13

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT:	35.86
Area:	160645
Amount:	8.101387
Amount Units:	pg/ul

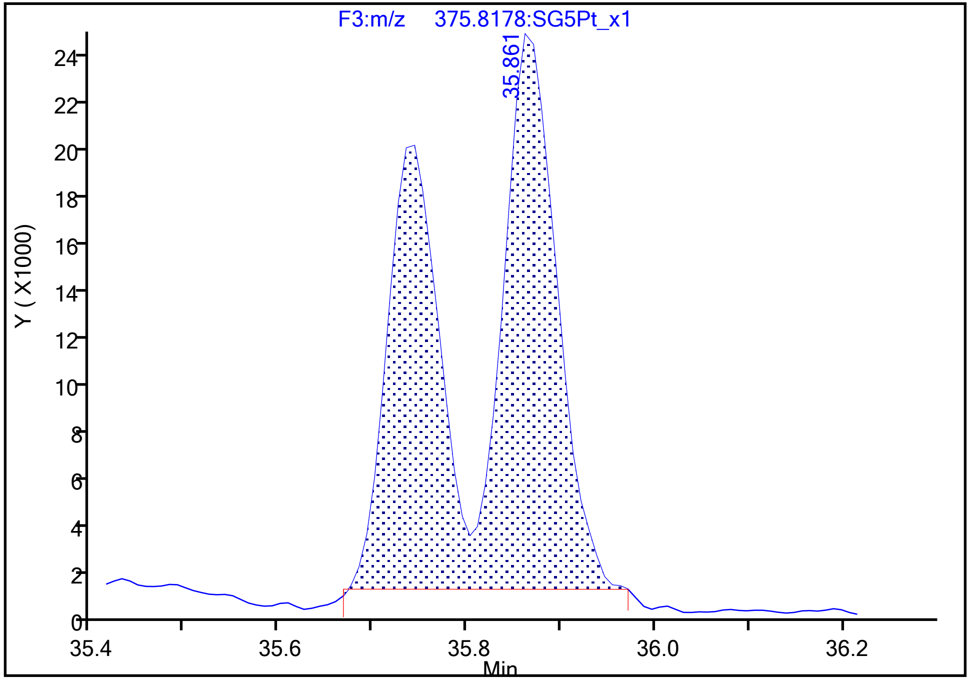

Manual Integration Results

RT:	35.86
Area:	90733
Amount:	4.632442
Amount Units:	pg/ul

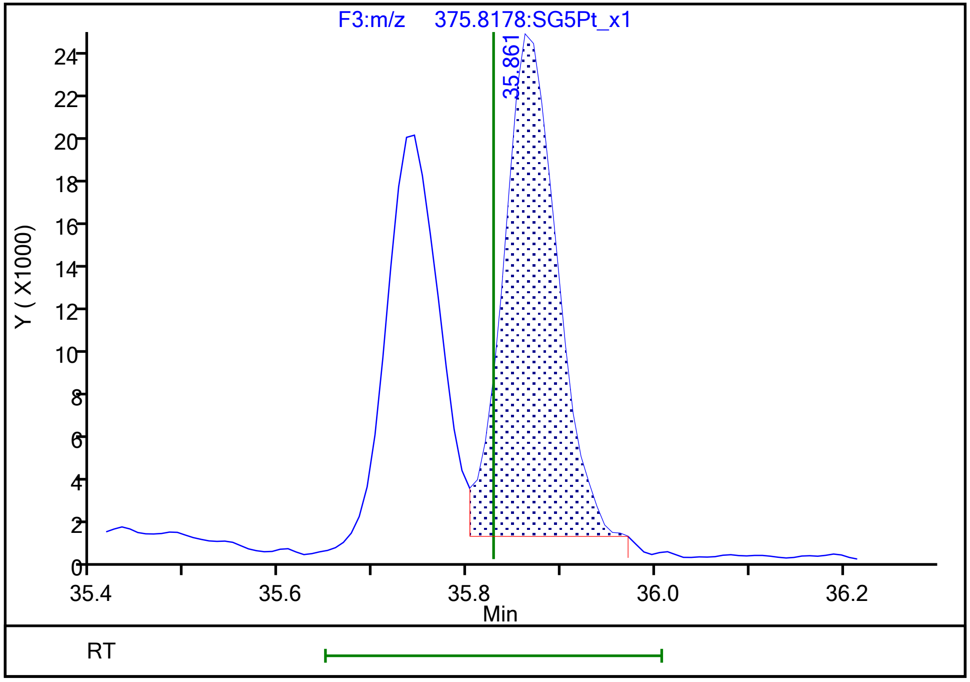

Reviewer: dadunj, 29-Jan-2021 08:44:32

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 29-Jan-2021 08:49:34

Chrom Revision: 2.3 18-Dec-2020 13:34:10
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d				
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	36.86
Area:	367129
Amount:	15.942718
Amount Units:	pg/ul

Processing Integration Results

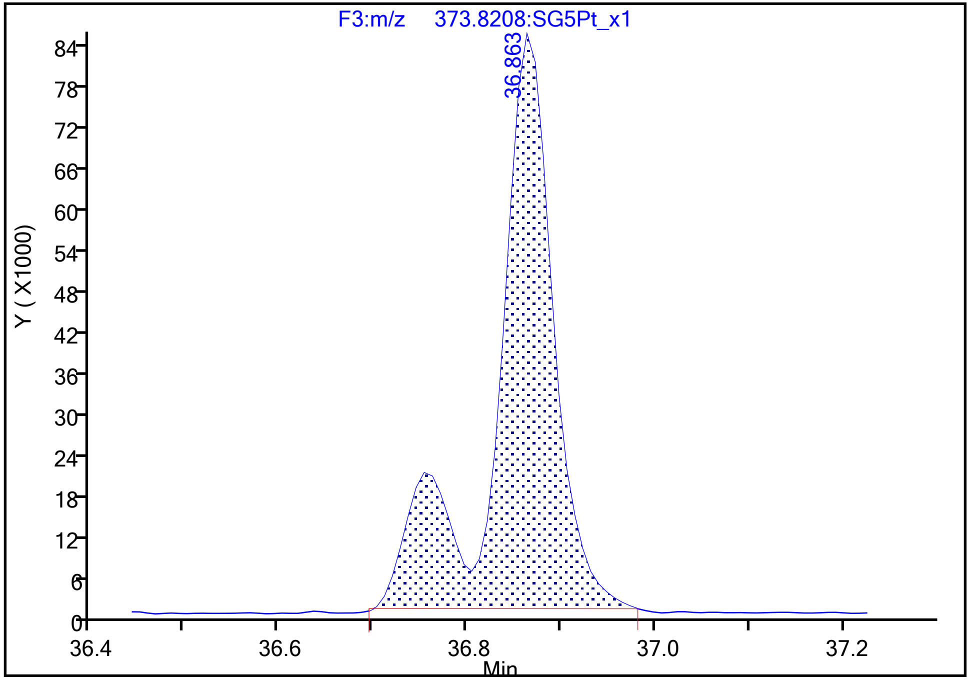

RT:	36.75
Area:	68466
Amount:	2.972633
Amount Units:	pg/ul

Manual Integration Results

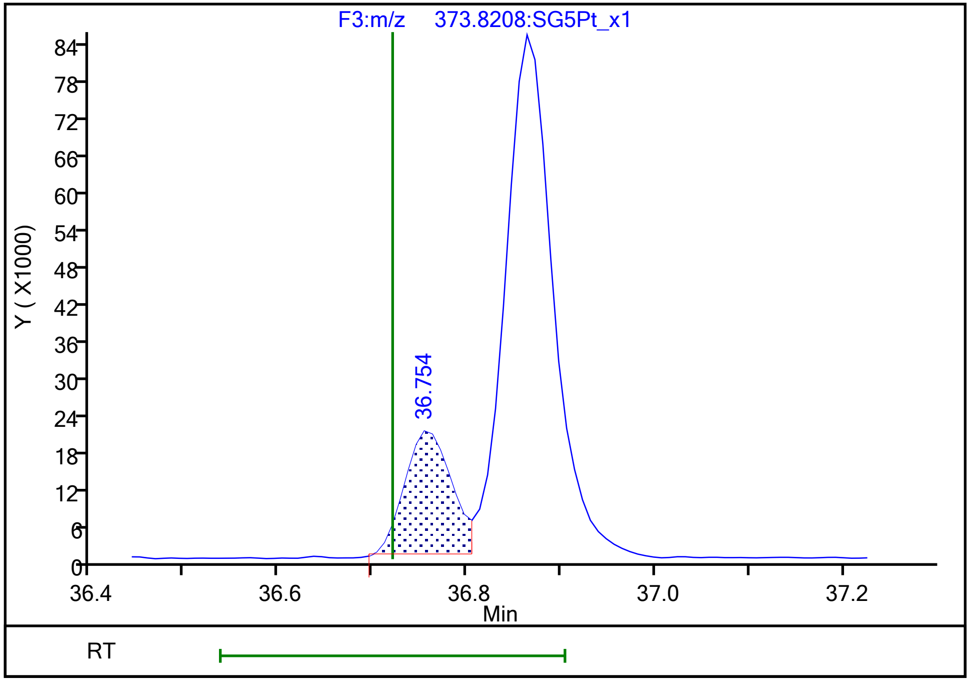

Reviewer: dadunj, 29-Jan-2021 08:44:40

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 29-Jan-2021 08:49:34

Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Processing Integration Results

RT: 36.86
Area: 279202
Amount: 15.942718
Amount Units: pg/ul

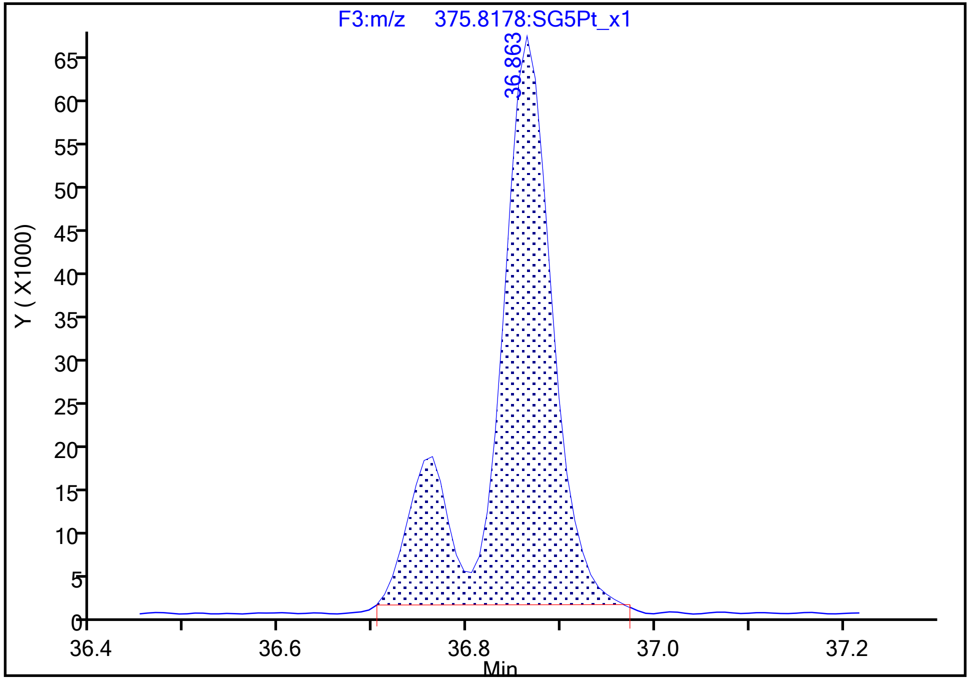

Manual Integration Results

RT: 36.76
Area: 52047
Amount: 2.972633
Amount Units: pg/ul

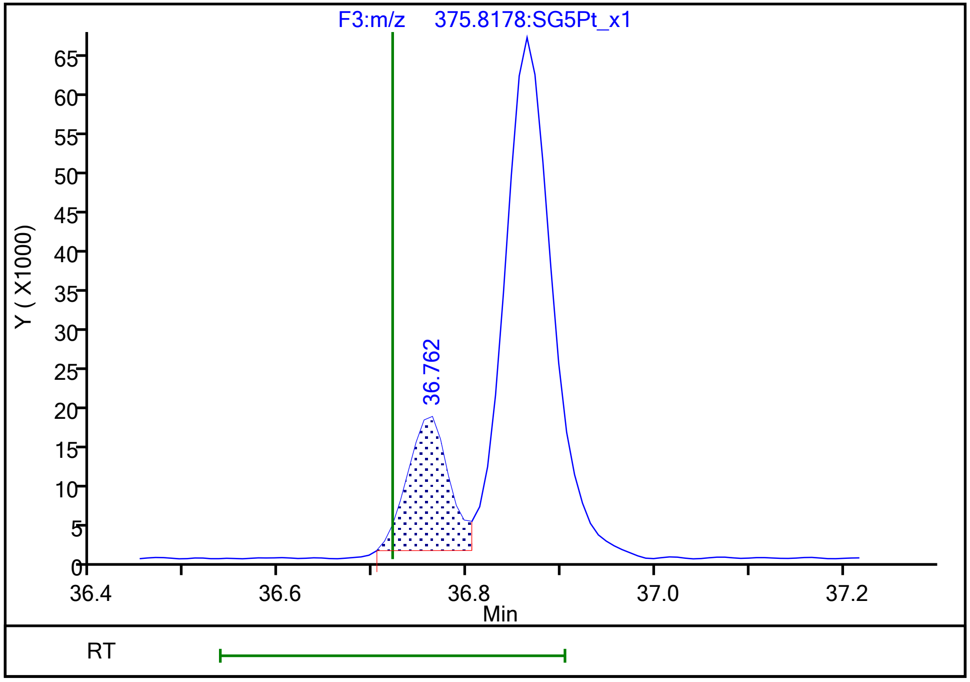

Reviewer: dadunj, 29-Jan-2021 08:44:43

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date: 23-Jan-2021 07:04:00 Instrument ID: DFS 1

Lims ID: 320-68943-A-1-A Lab Sample ID: 320-68943-1

Client ID: 11215702-Tank#1-1-8-21

Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 13

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm) Detector F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.01- 36.87)

Signal: 1

Not Detected

RT: 33.01- 36.87

Processing Integration Results

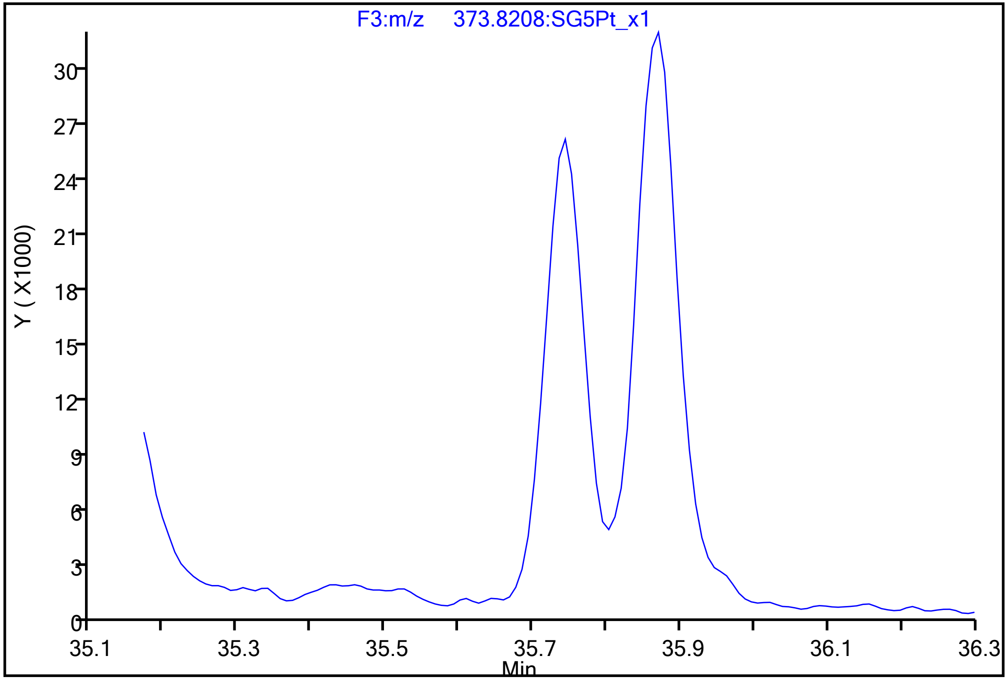

RT = 35.743 Area = 93999 M

Manual Integration Results

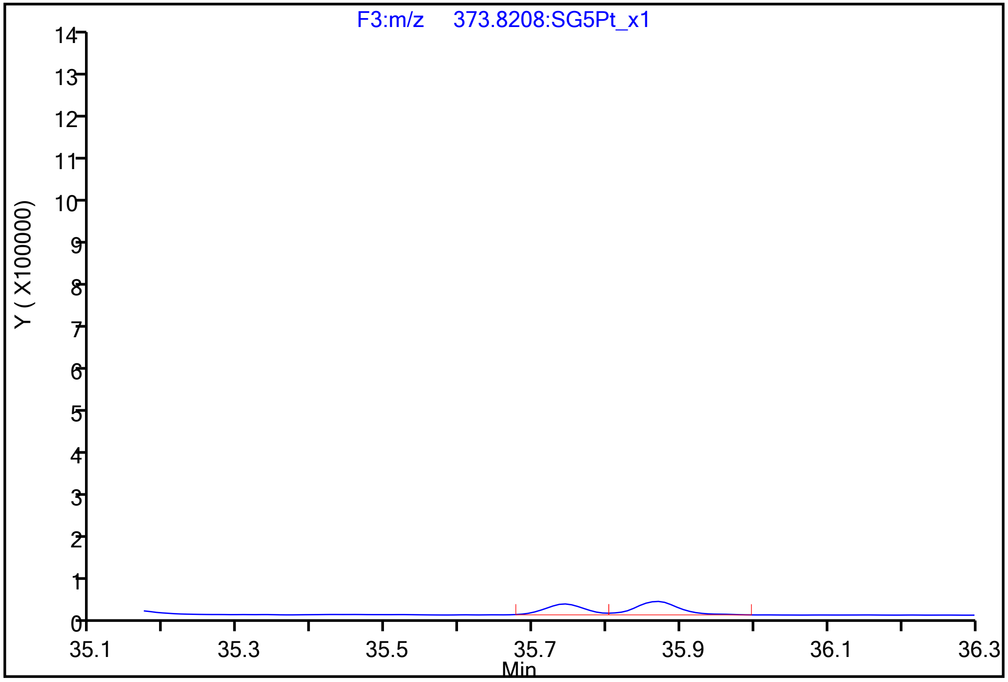

Reviewer: dadunj, 29-Jan-2021 08:44:52

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d				
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (33.01- 36.87)

Signal: 1

Processing Integration Results

RT = 36.863 Area = 367129

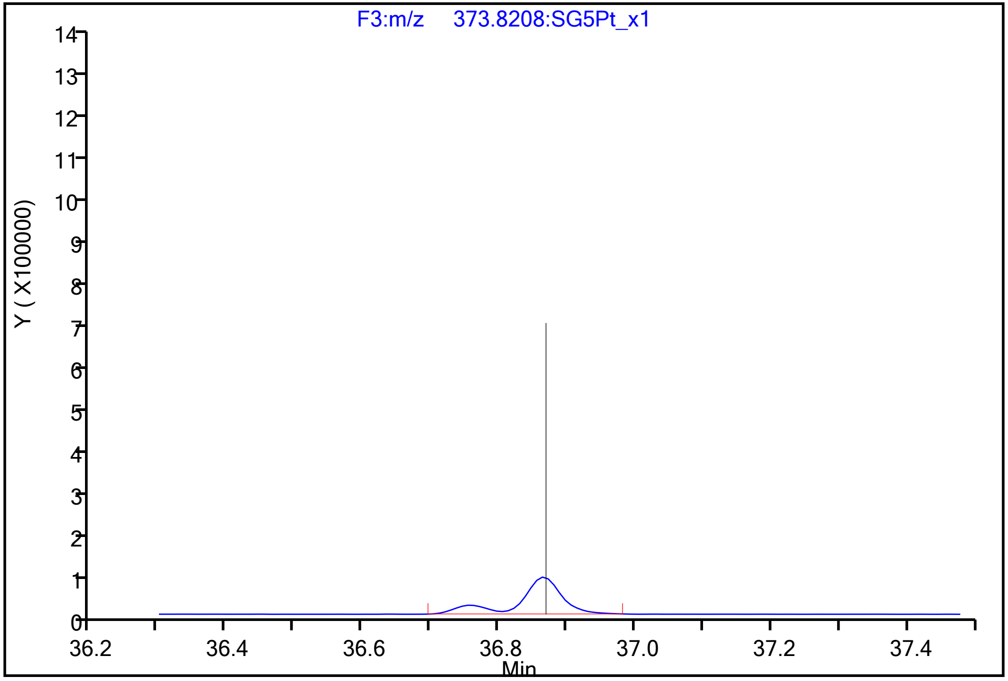

Manual Integration Results

RT = 36.863 Area = 298655 M

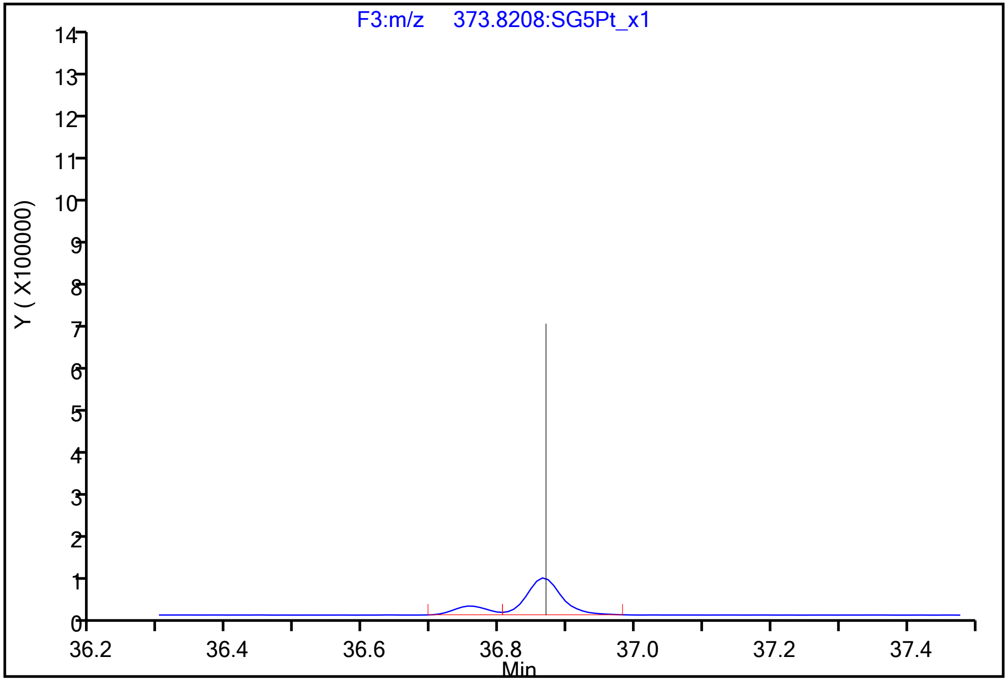

Reviewer: dadunj, 29-Jan-2021 08:44:52

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d				
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	36.07
Area:	4413
Amount:	0.252838
Amount Units:	pg/ul

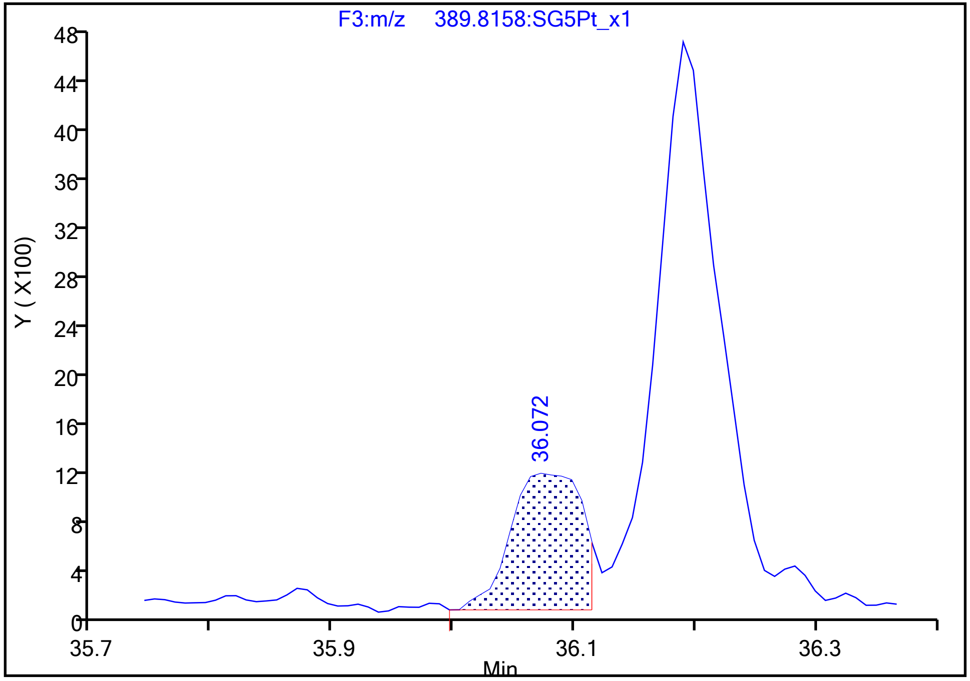

Manual Integration Results

RT:	36.07
Area:	4398
Amount:	0.252291
Amount Units:	pg/ul

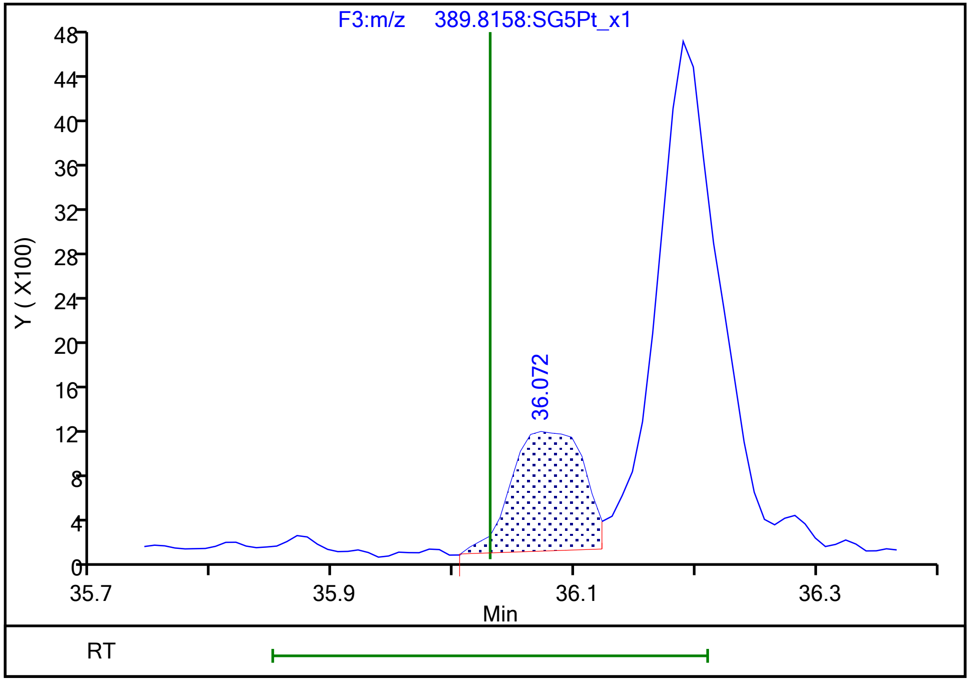

Reviewer: dadunj, 29-Jan-2021 08:45:17

Audit Action: Manually Integrated

Audit Reason: Split Peak

Report Date: 29-Jan-2021 08:49:34 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d				
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

RT:	36.20
Area:	11912
Amount:	1.004741
Amount Units:	pg/ul

Processing Integration Results

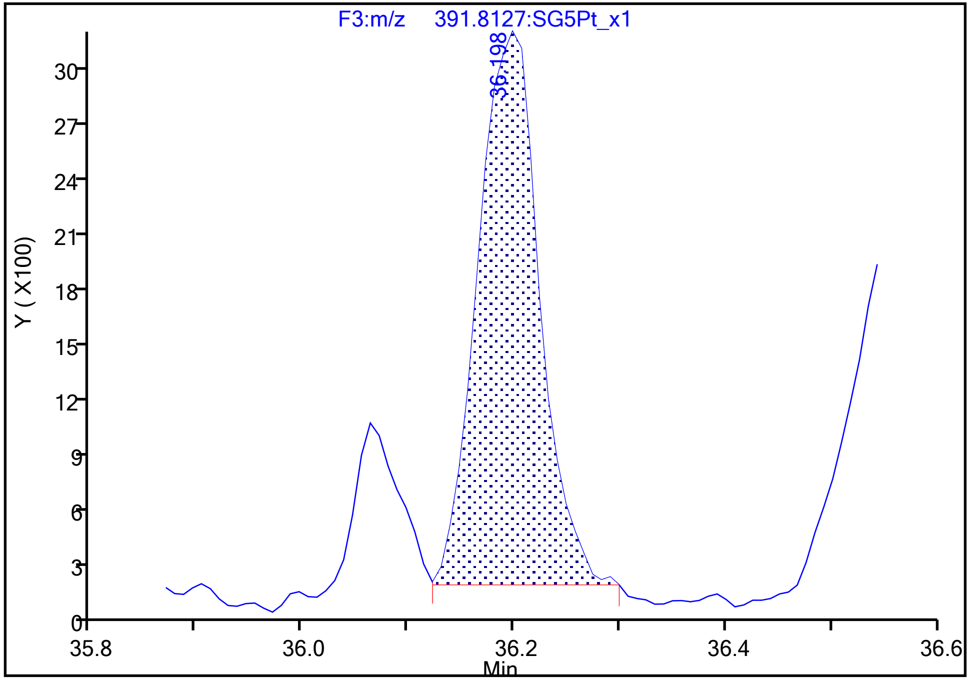

RT:	36.20
Area:	11912
Amount:	0.983157
Amount Units:	pg/ul

Manual Integration Results

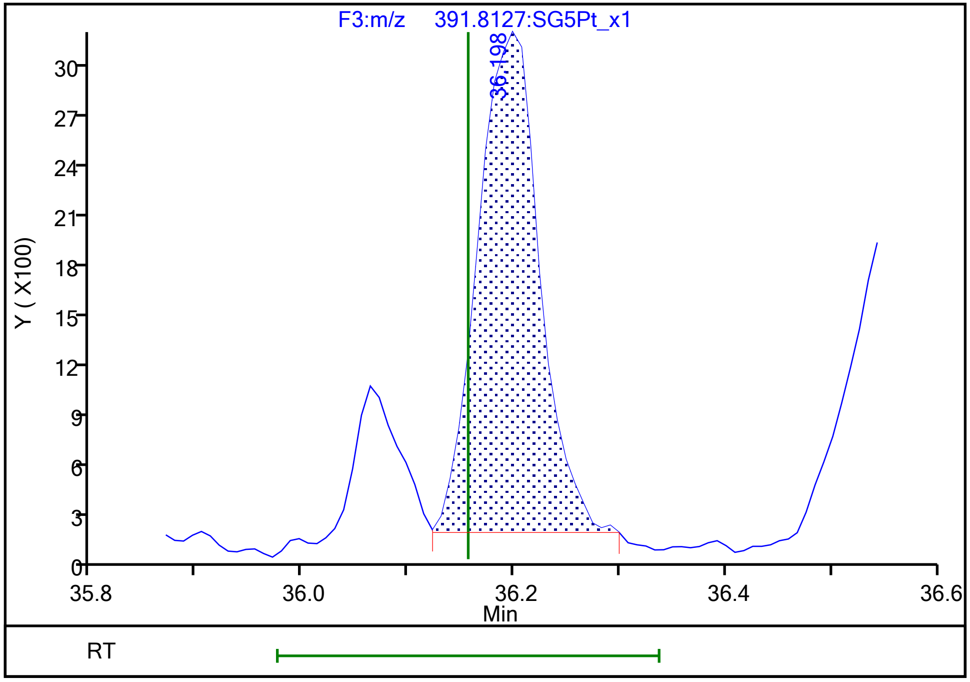

Reviewer: dadunj, 29-Jan-2021 08:45:23

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d				
Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 3

RT:	36.19
Area:	29745
Amount:	1.004741
Amount Units:	pg/ul

Processing Integration Results

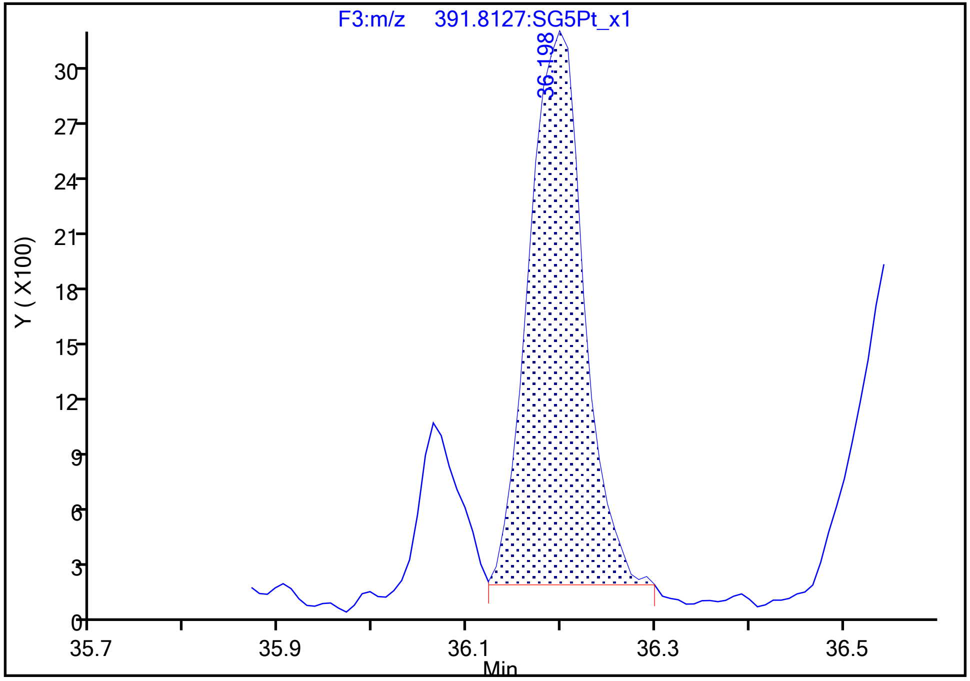

Manual Integration Results

RT:	36.19
Area:	29106
Amount:	0.983157
Amount Units:	pg/ul

Reviewer: dadunj, 29-Jan-2021 08:45:23

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date:	23-Jan-2021 07:04:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-1-A	Lab Sample ID:	320-68943-1		
Client ID:	11215702-Tank#1-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT:	36.19
Area:	17833
Amount:	1.004741
Amount Units:	pg/ul

Processing Integration Results

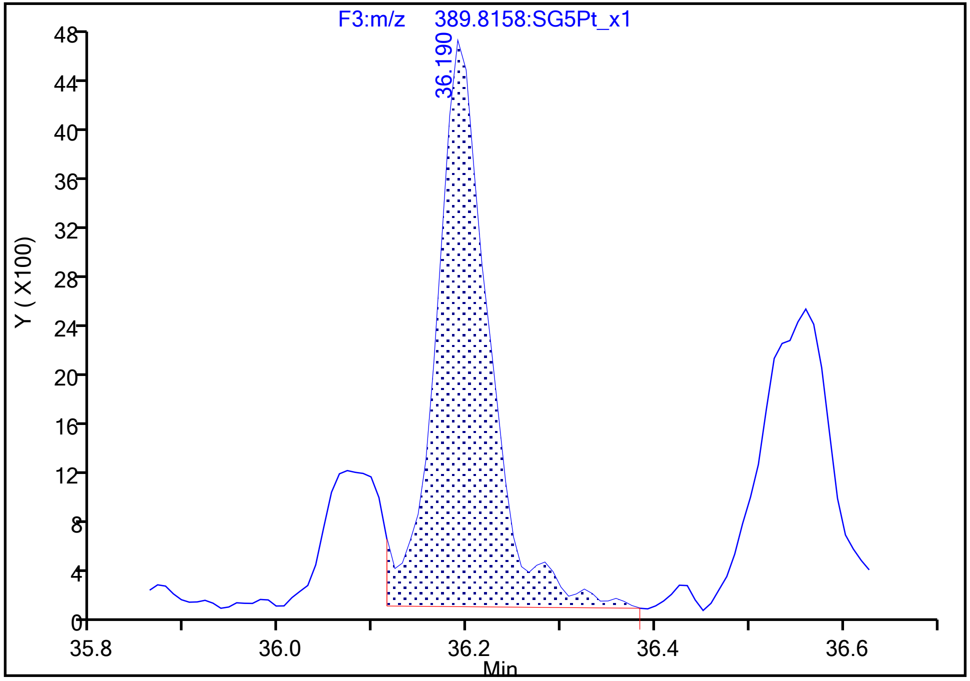

RT:	36.19
Area:	17194
Amount:	0.983157
Amount Units:	pg/ul

Manual Integration Results

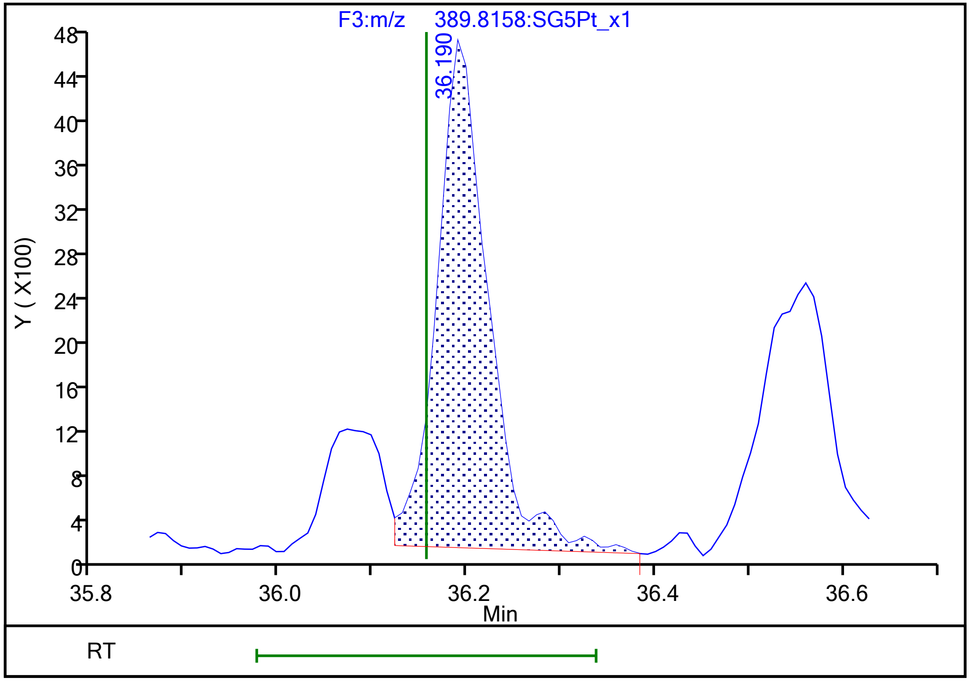

Reviewer: dadunj, 29-Jan-2021 08:45:24

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d
Injection Date: 23-Jan-2021 07:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-1-8-21
Worklist#: 454782
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

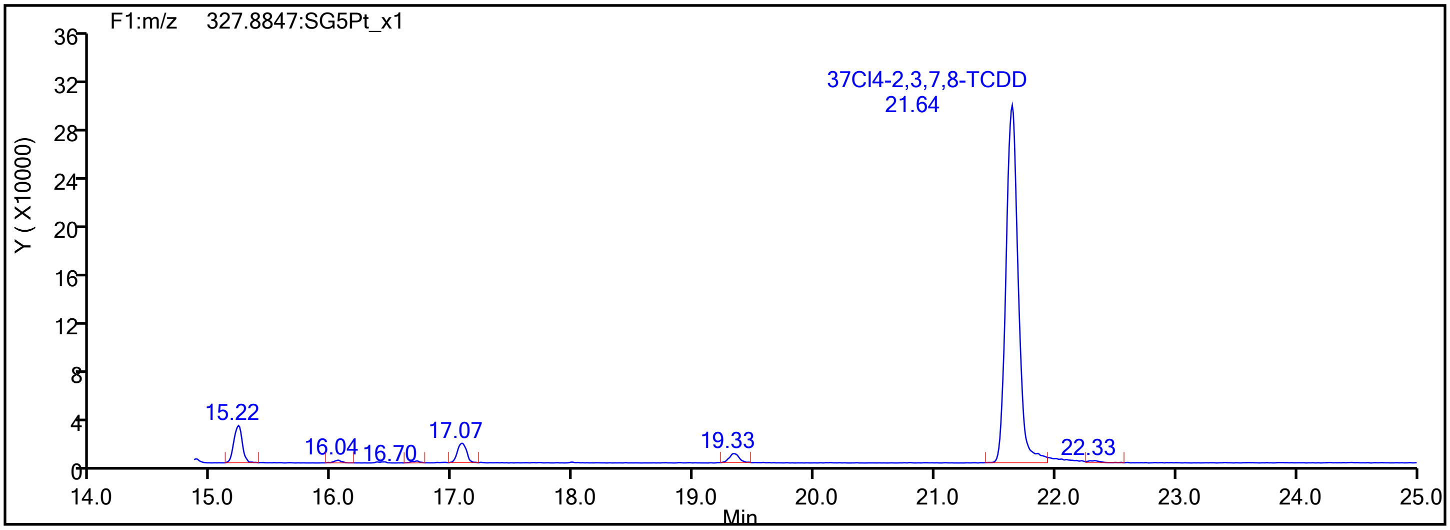

37Cl4-TCDD Standards

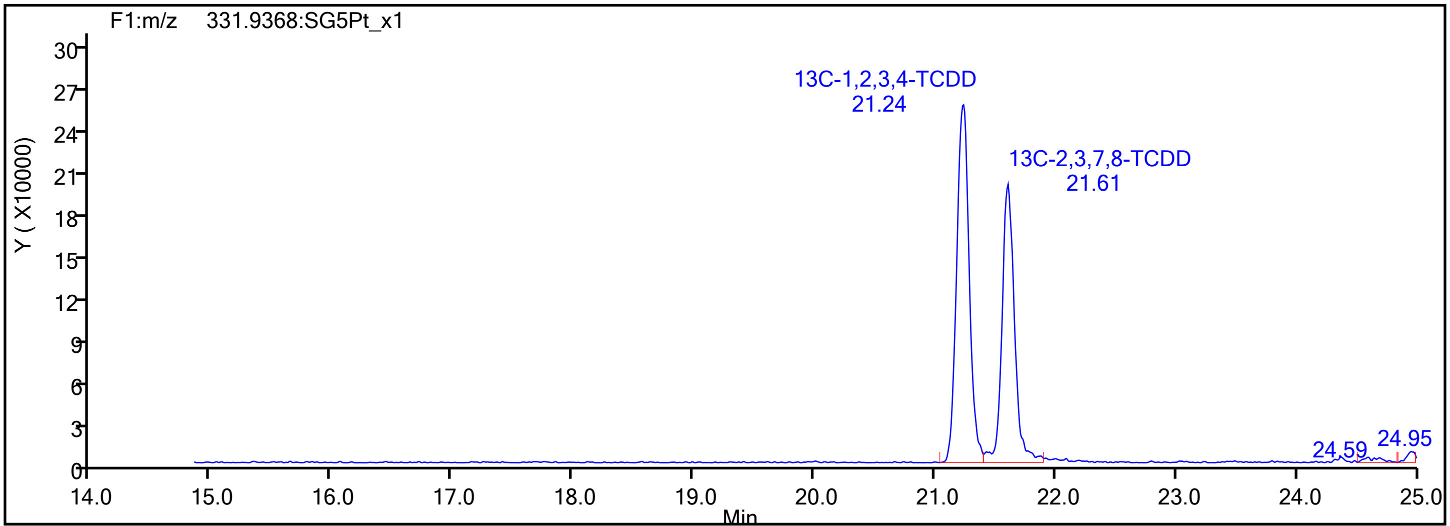

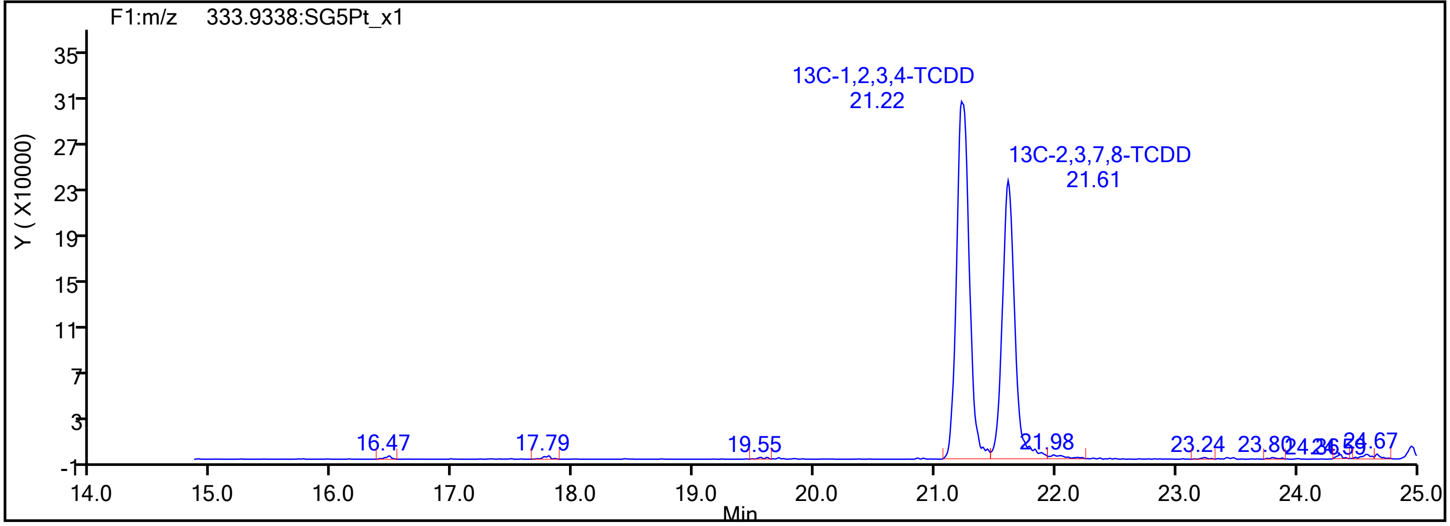

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	454782	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

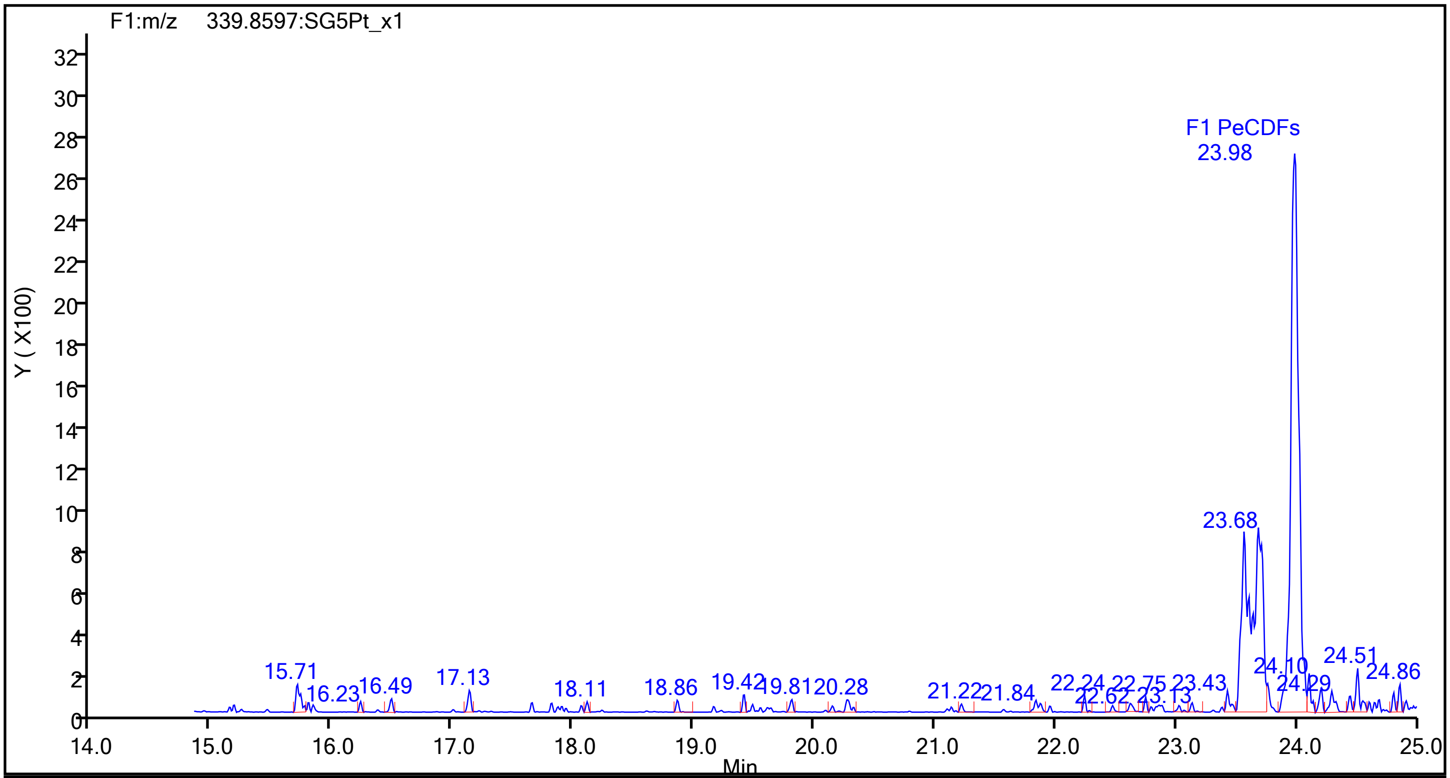

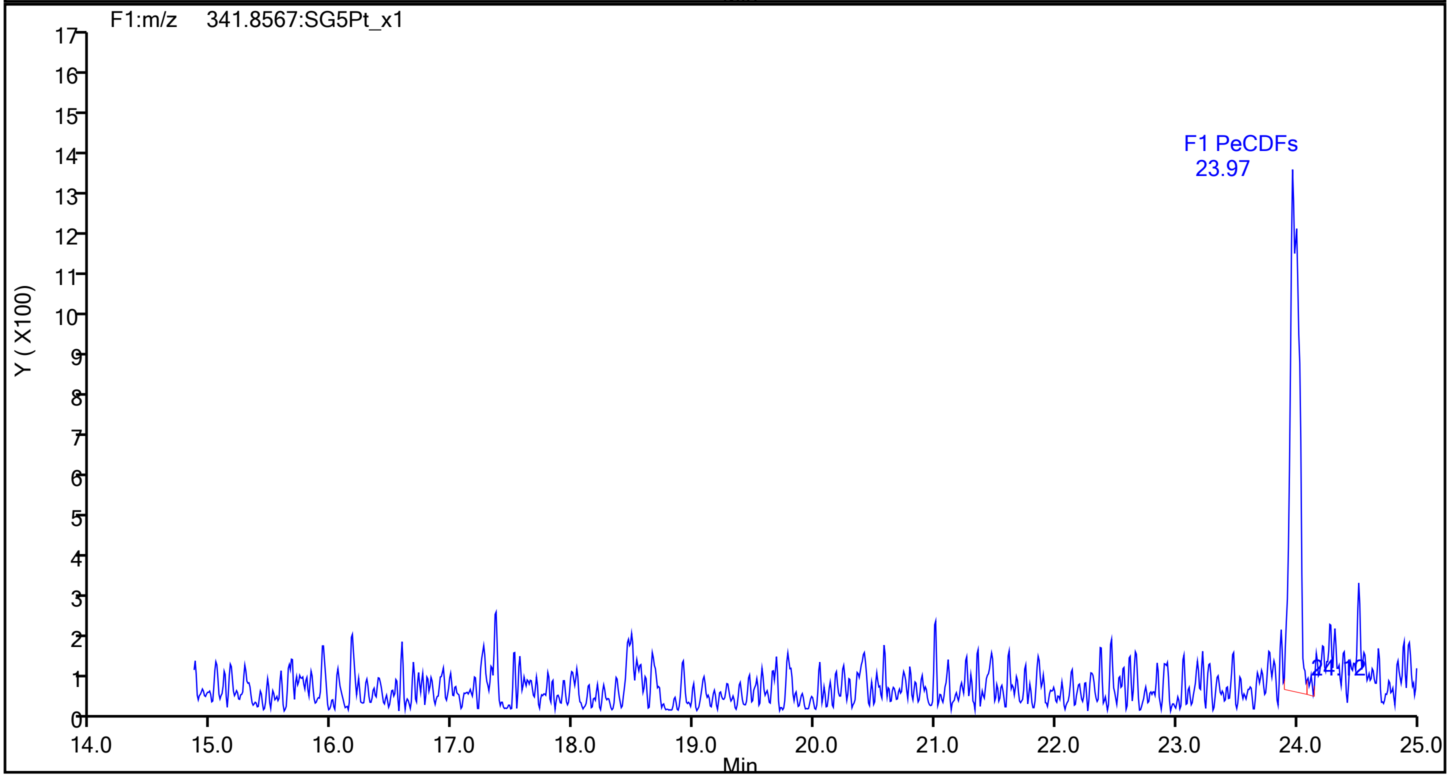

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Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 454782
Sample Line#: 13
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Column Dia: 0.32 mm

F1 PeCDFs

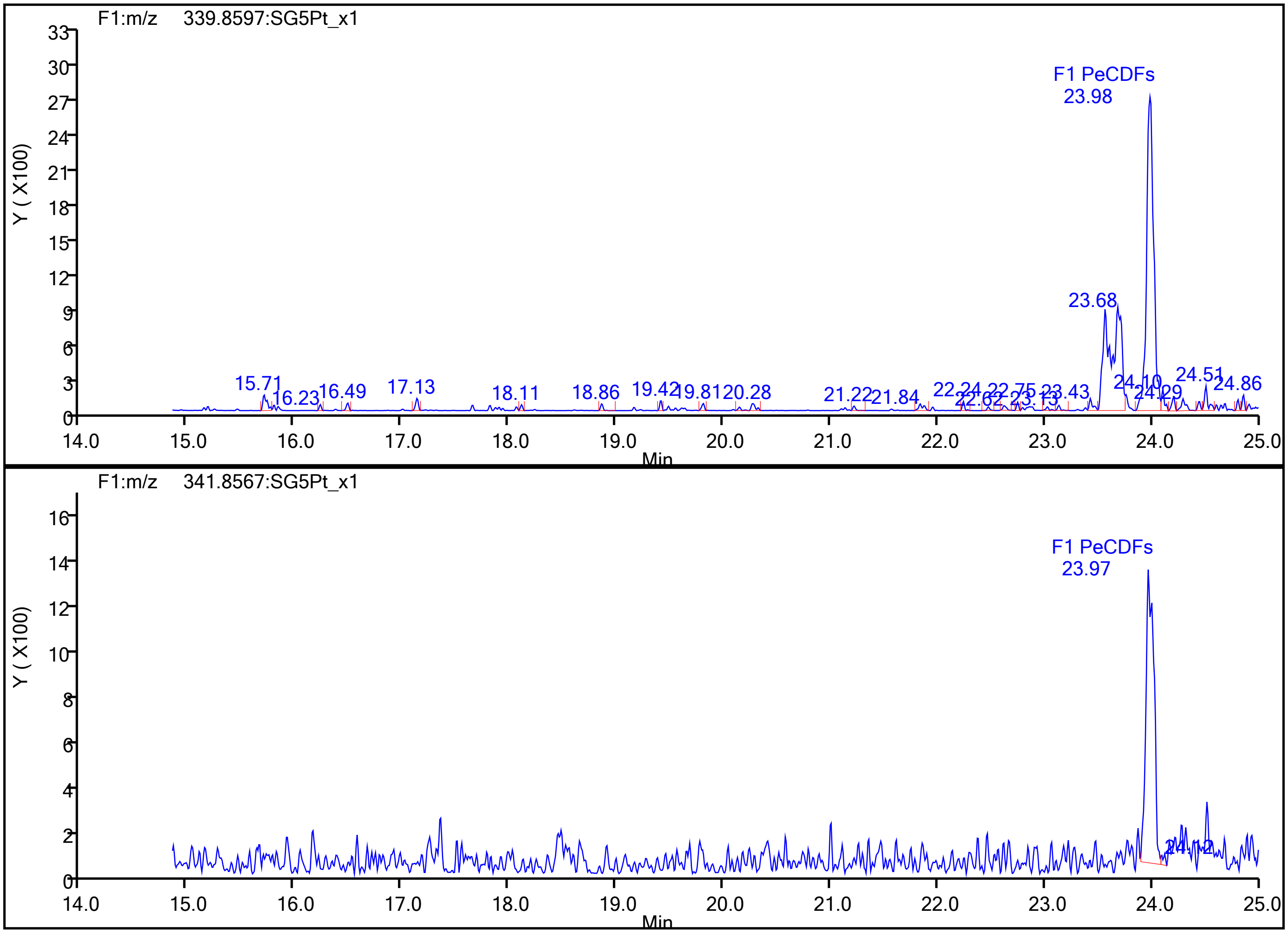

F1 PeCDFs Interference Mass

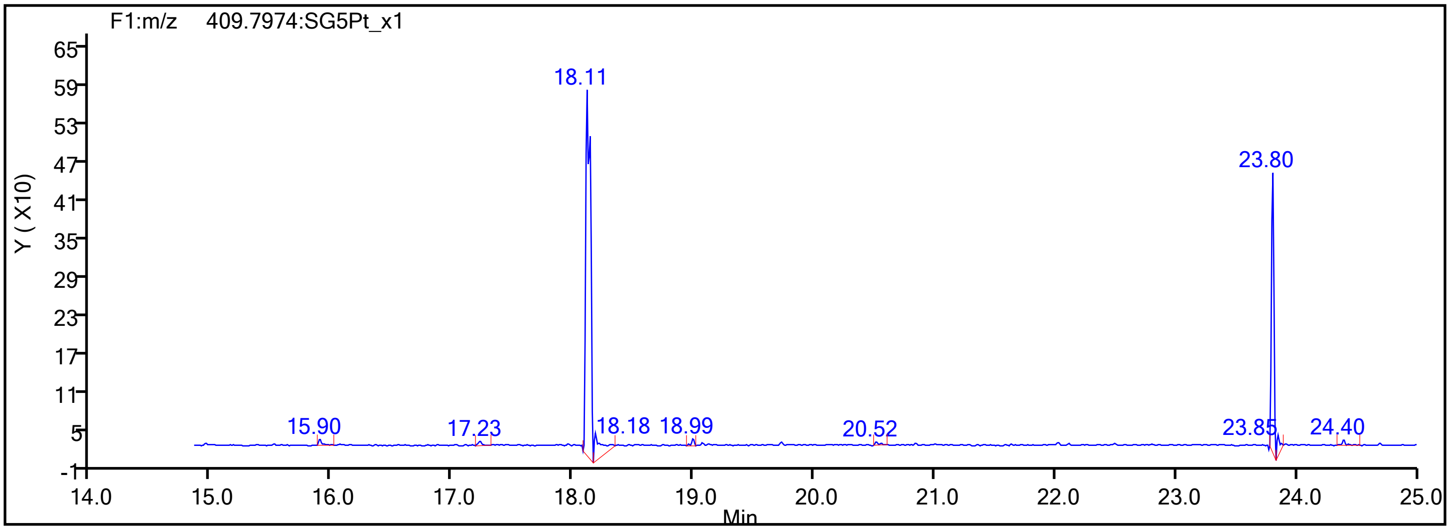

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Eurofins TestAmerica, Sacramento

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Injection Date: 23-Jan-2021 07:04:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-1-8-21
Worklist#: 454782 Sample Line#: 13
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PeCDF

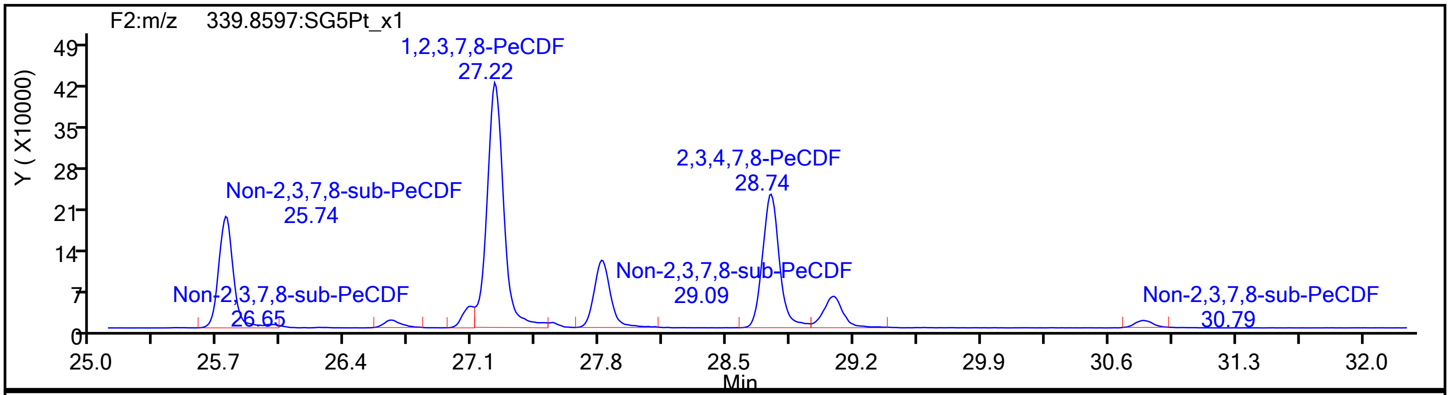

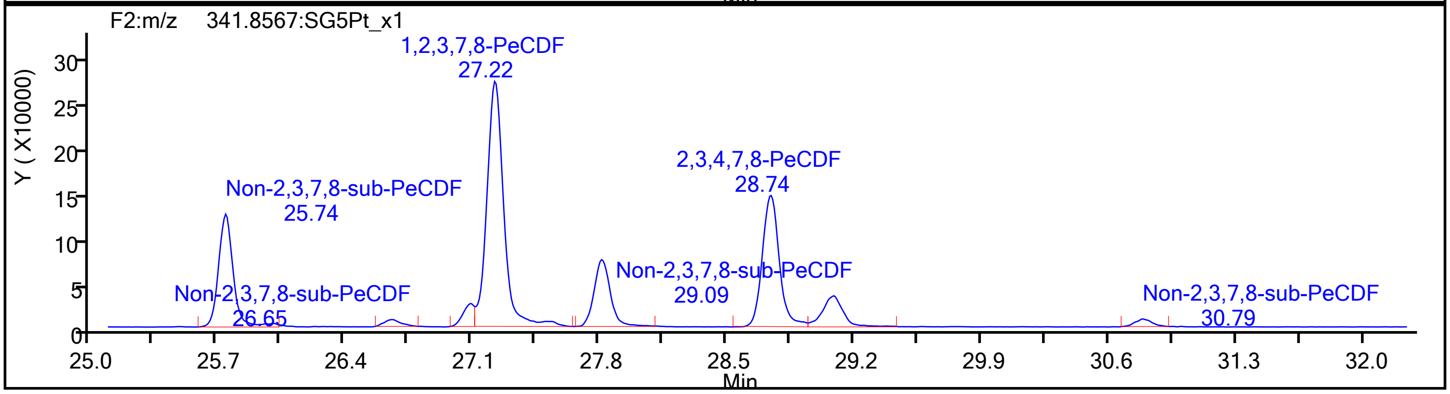

PeCDF Standards

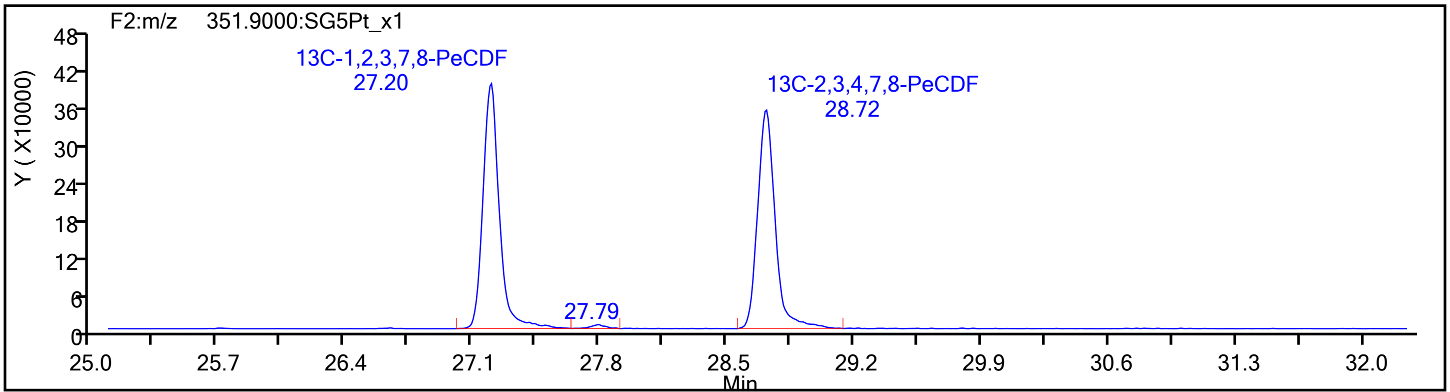

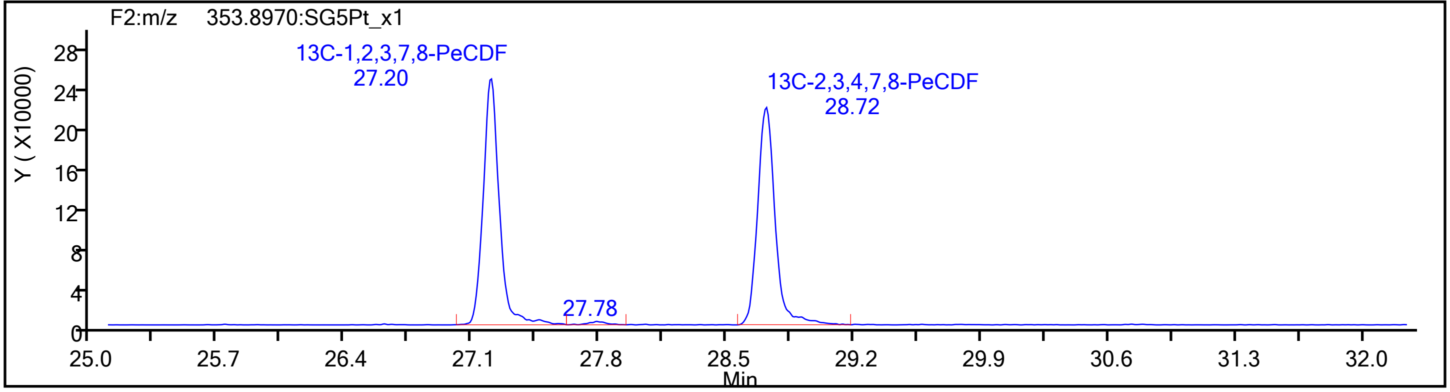

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

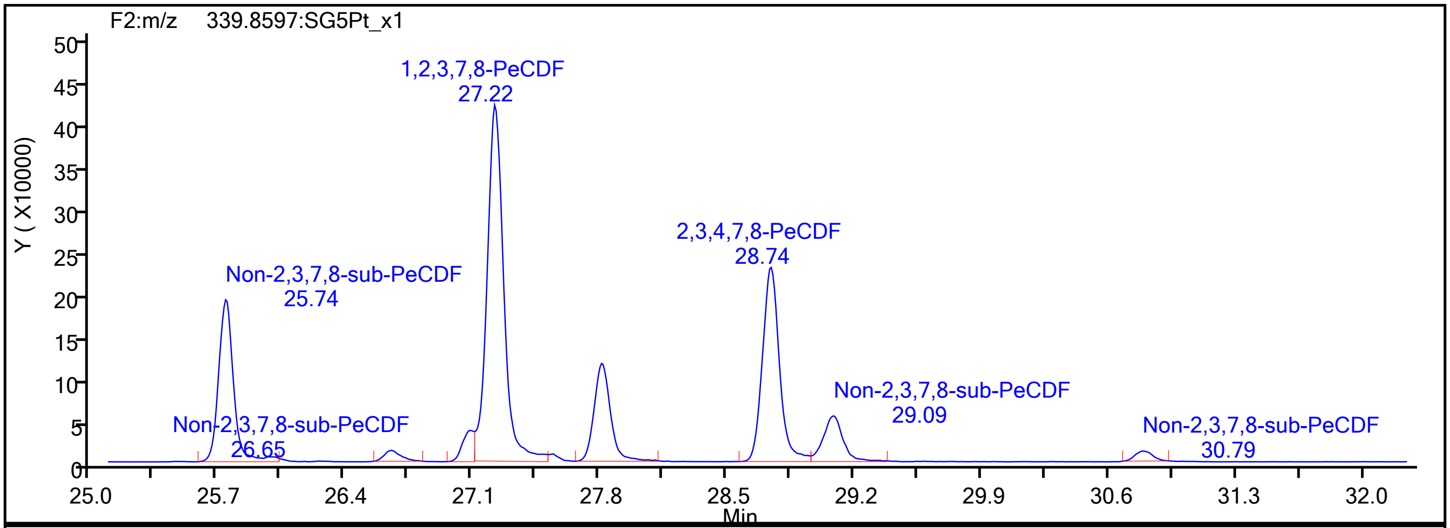

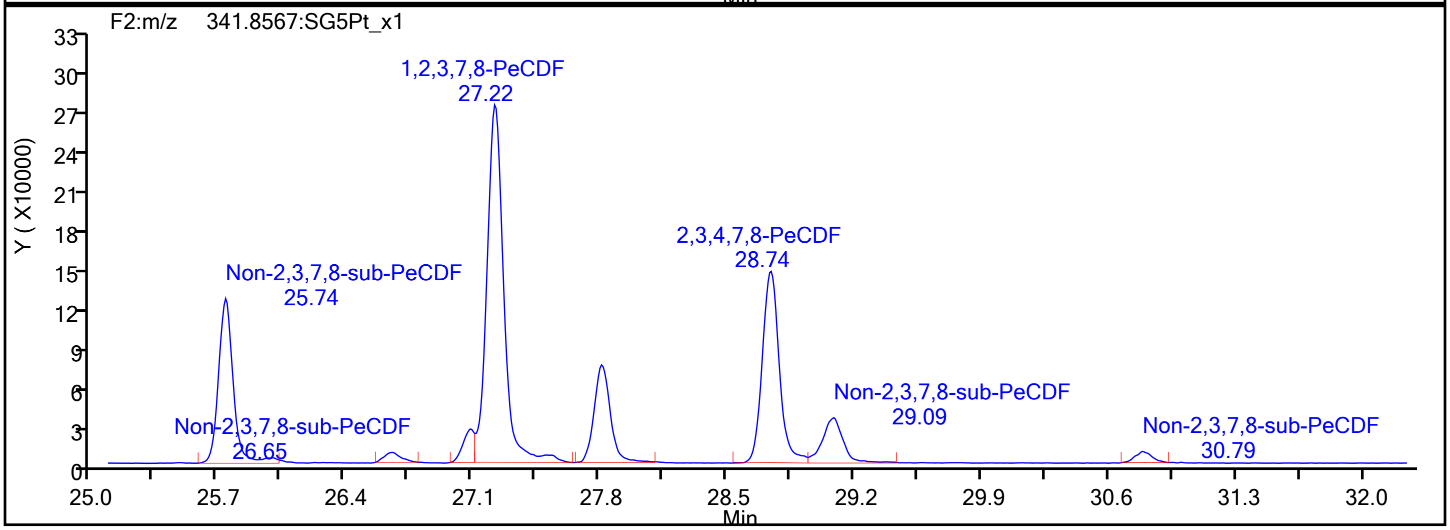

PeCDF Interference Mass

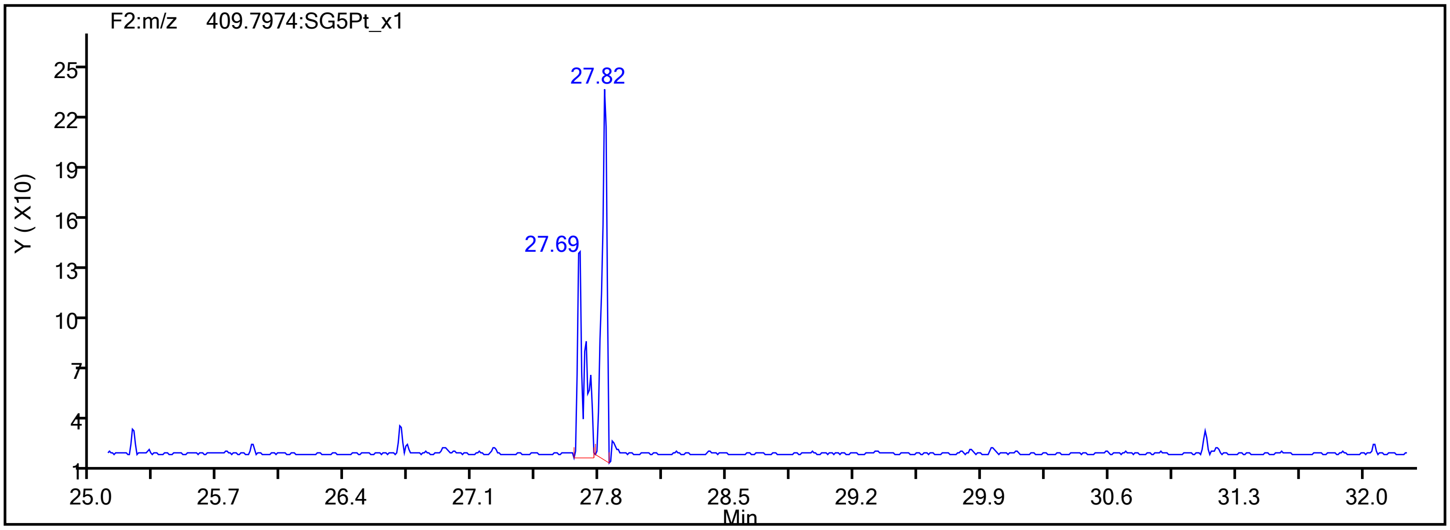

Report Date: 29-Jan-2021 08:49:35　　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date: 23-Jan-2021 07:04:00　　Injection Vol: 1.0 ul

Instrument ID: DFS 1　　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-1-8-21

Worklist#: 454782　　Sample Line#: 13

Column Type: DB-5　　Column Dia: 0.32 mm

PeCDD

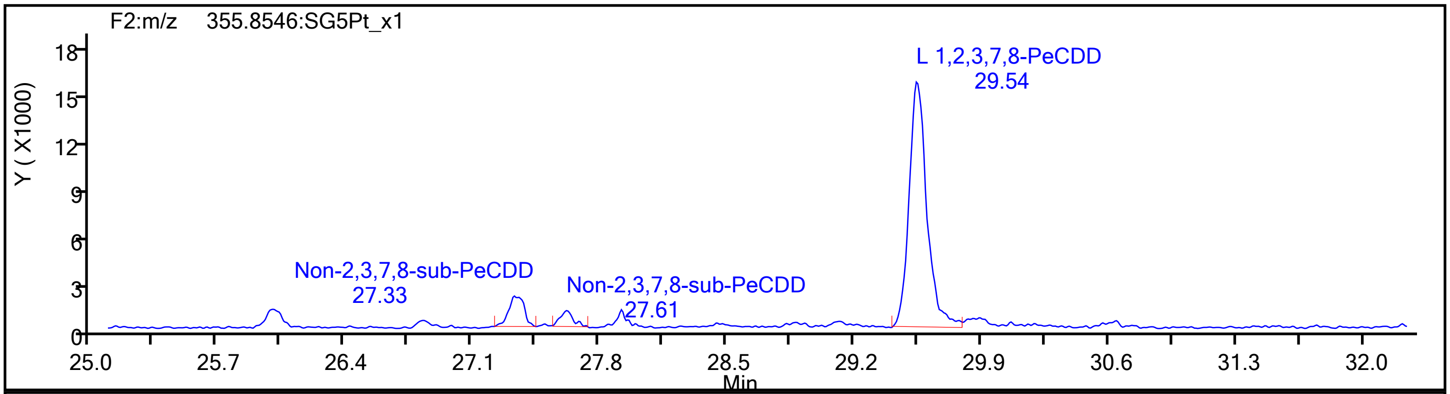

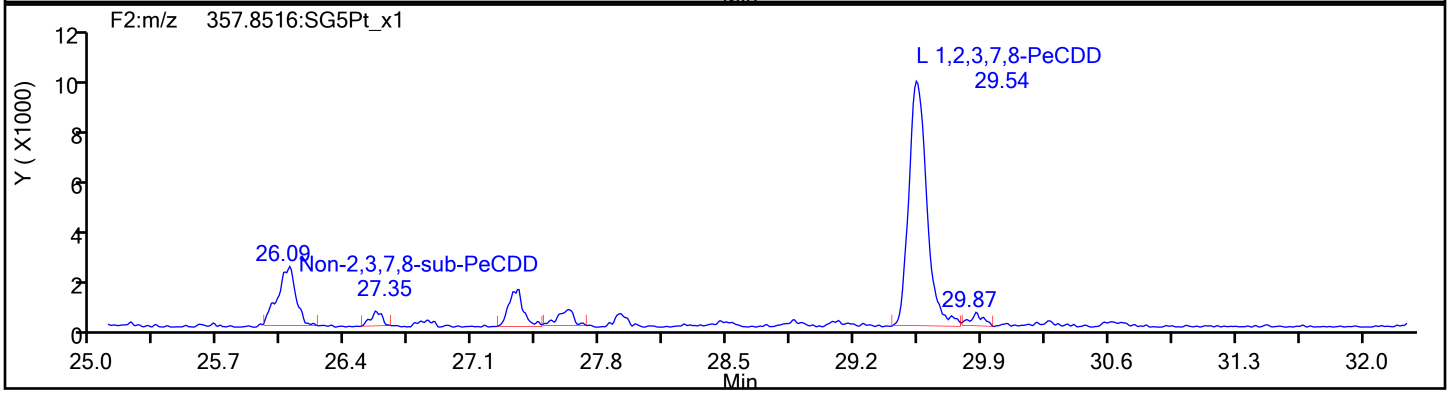

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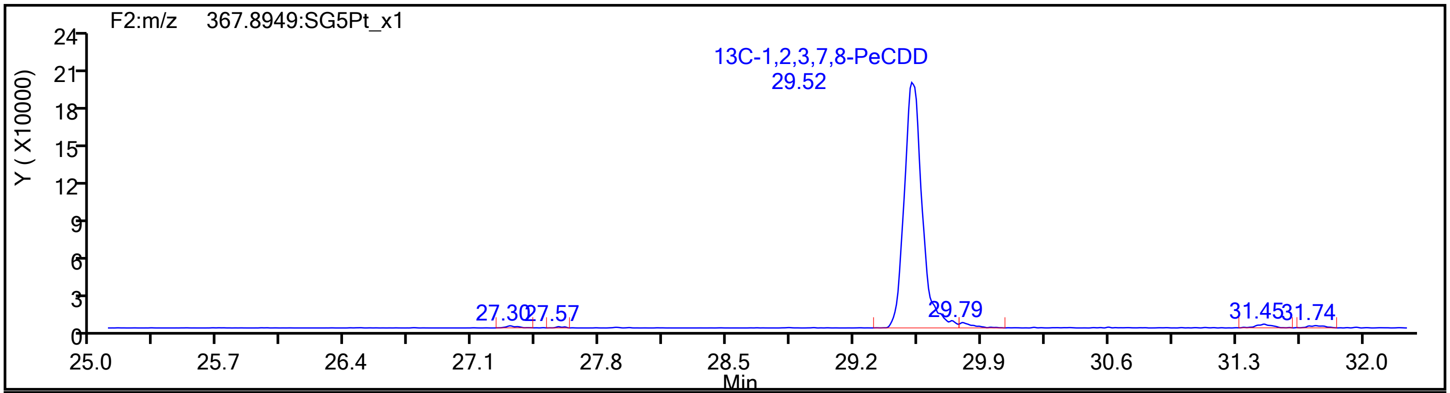

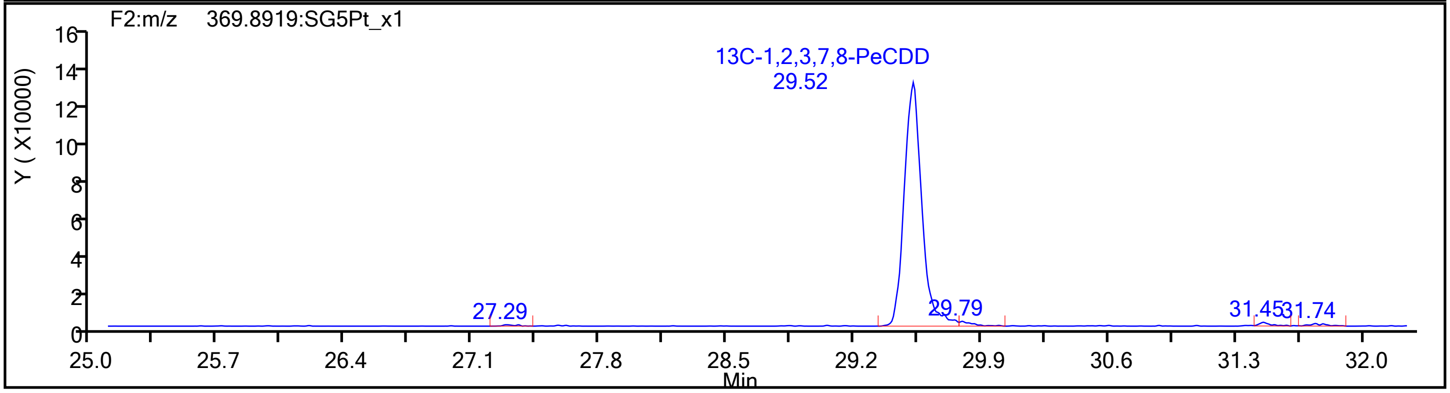

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date: 23-Jan-2021 07:04:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-1-8-21
Worklist#: 454782
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

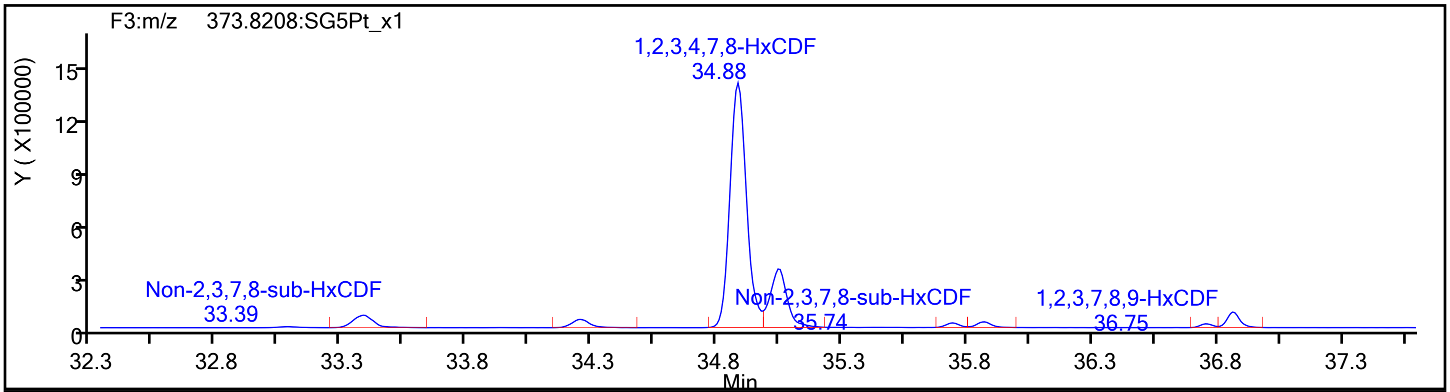

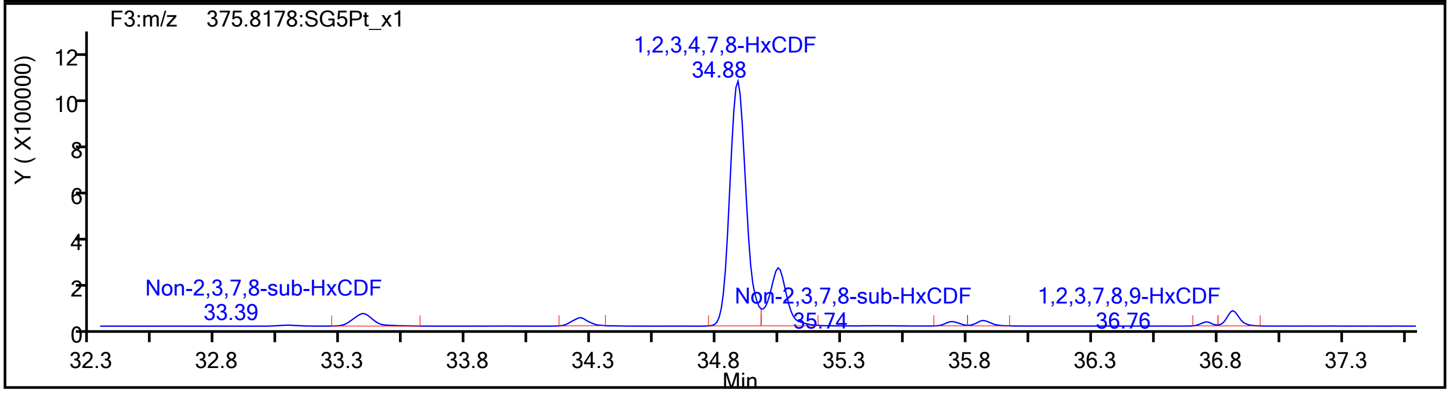

HxCDF Standards

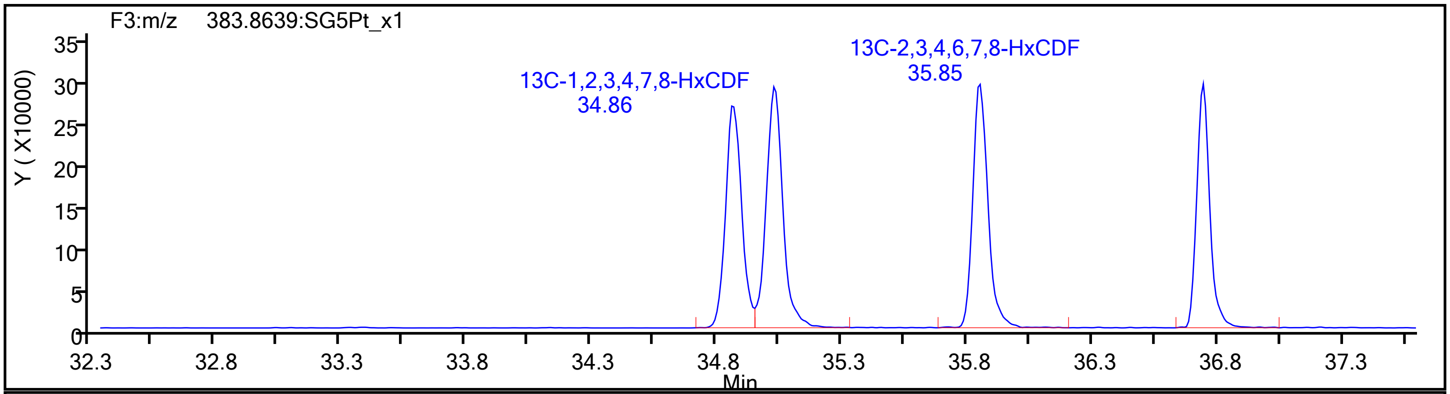

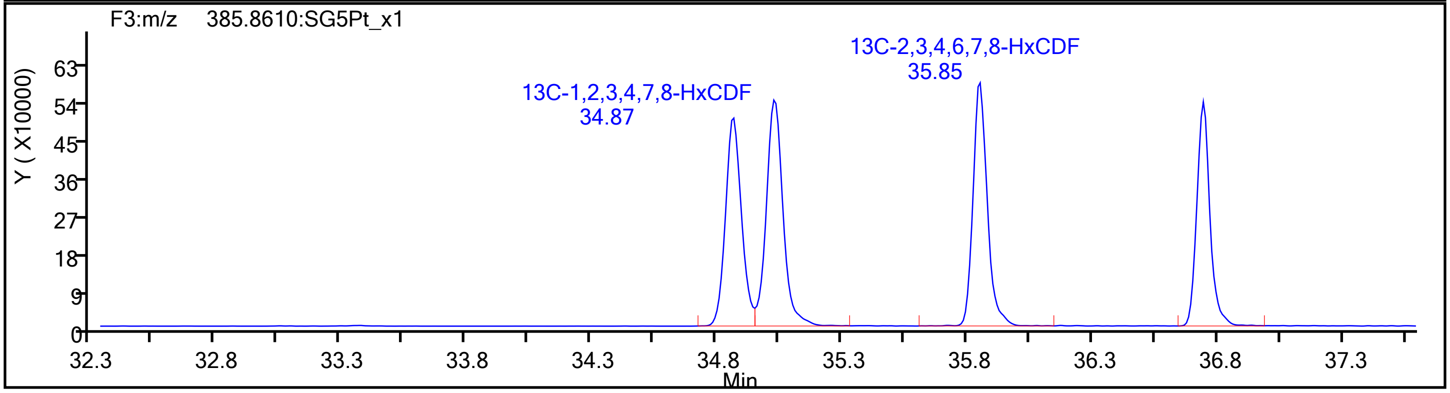

Report Date: 29-Jan-2021 08:49:35   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
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Worklist#: 454782   Sample Line#: 13
Column Type: DB-5   Column Dia: 0.32 mm

HxCDF

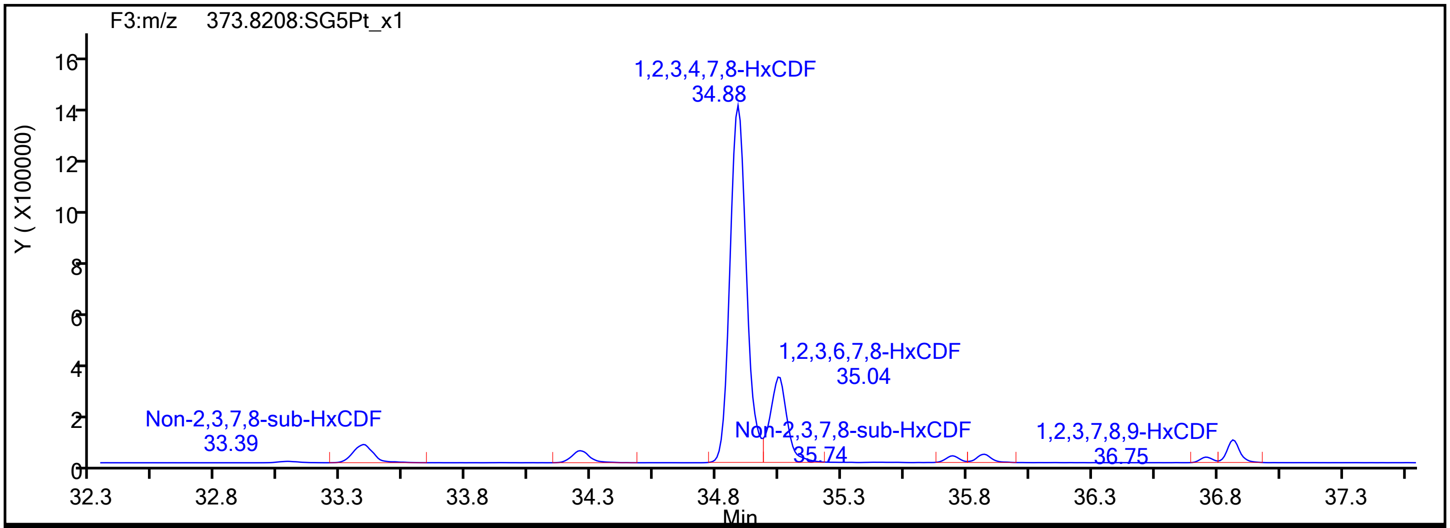

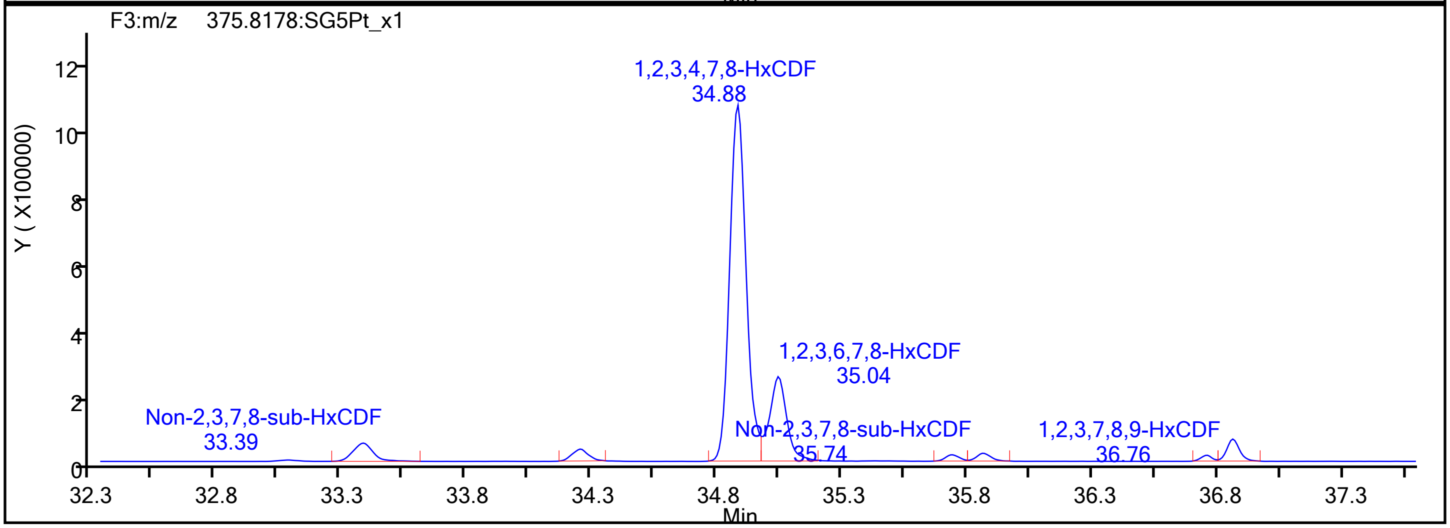

HxCDF Interference Mass

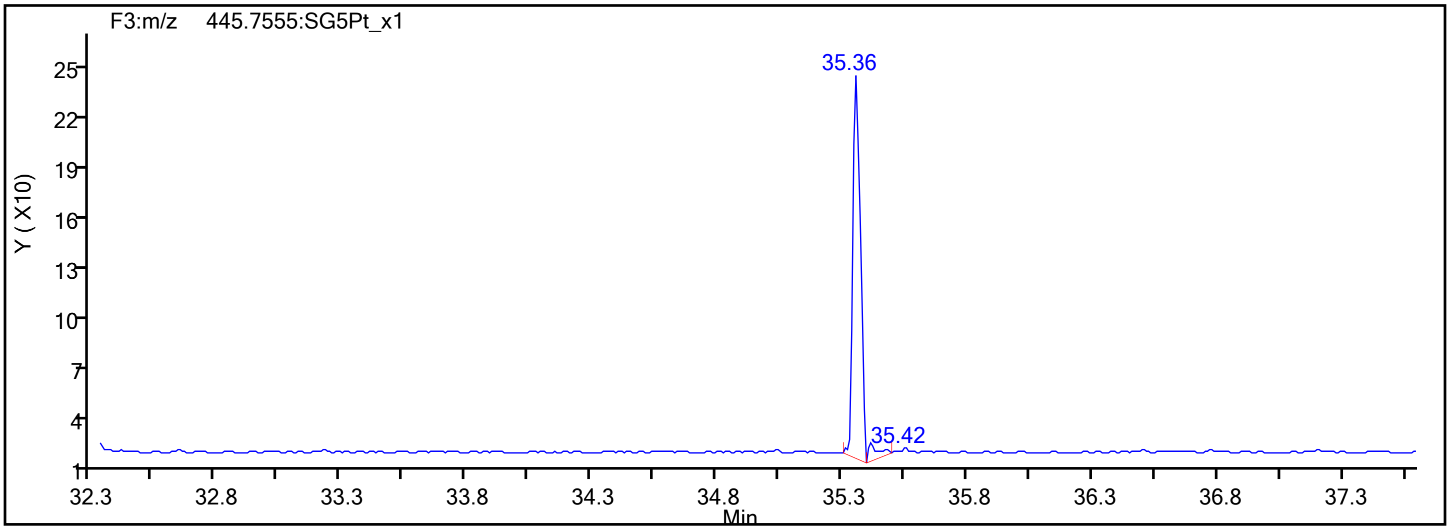

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HxCDD

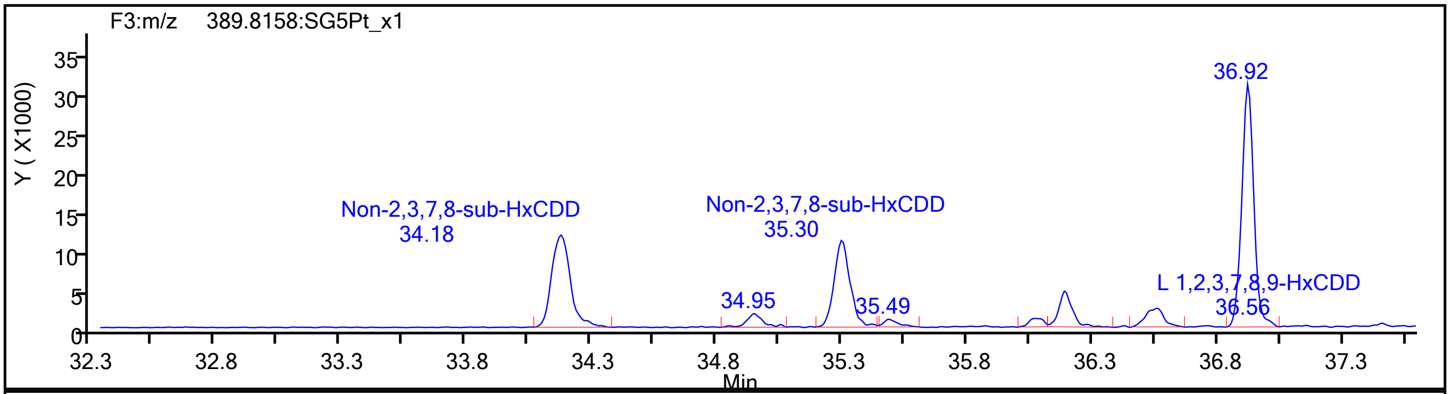

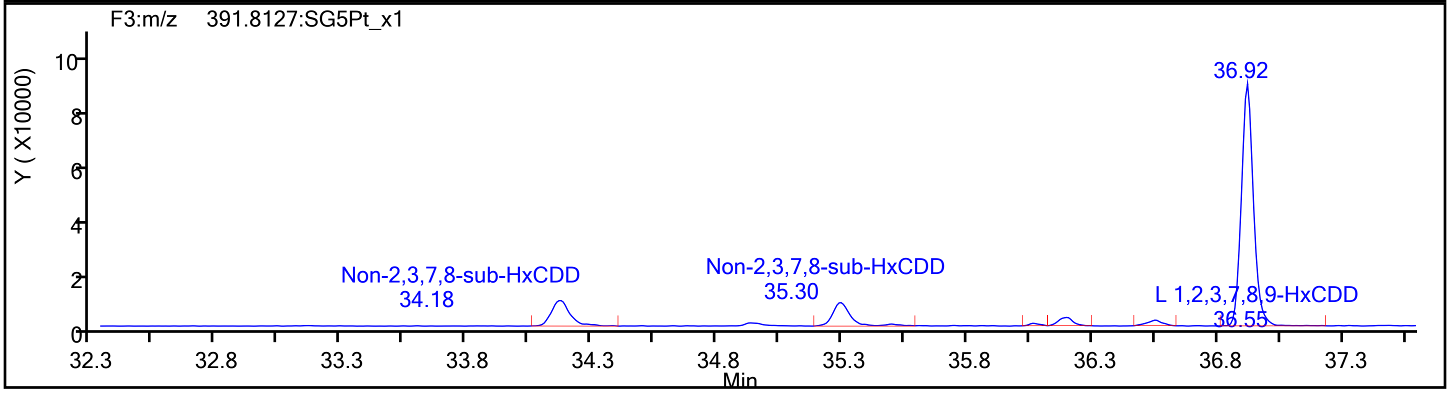

HxCDD Standards

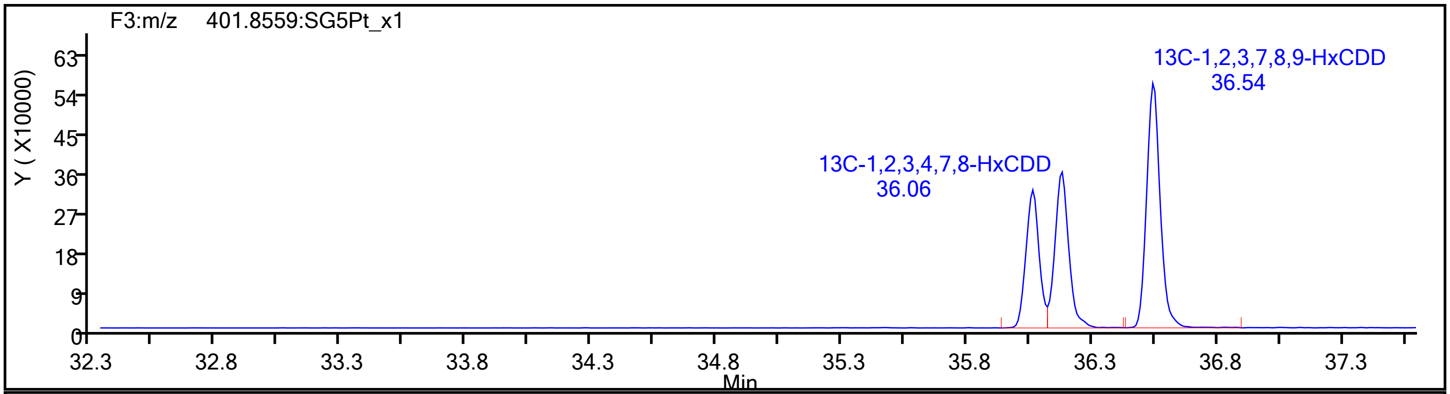

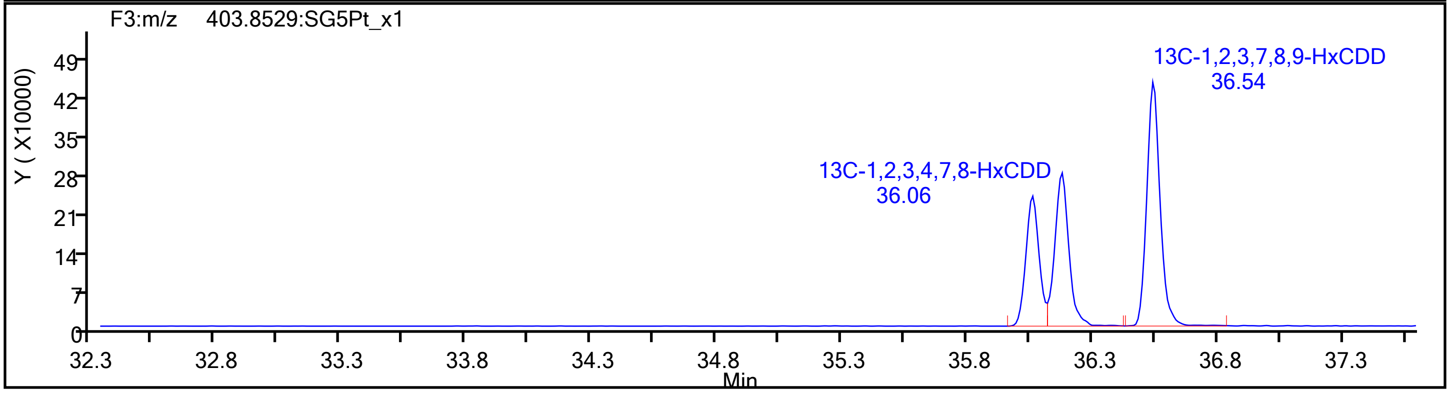

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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HpCDF

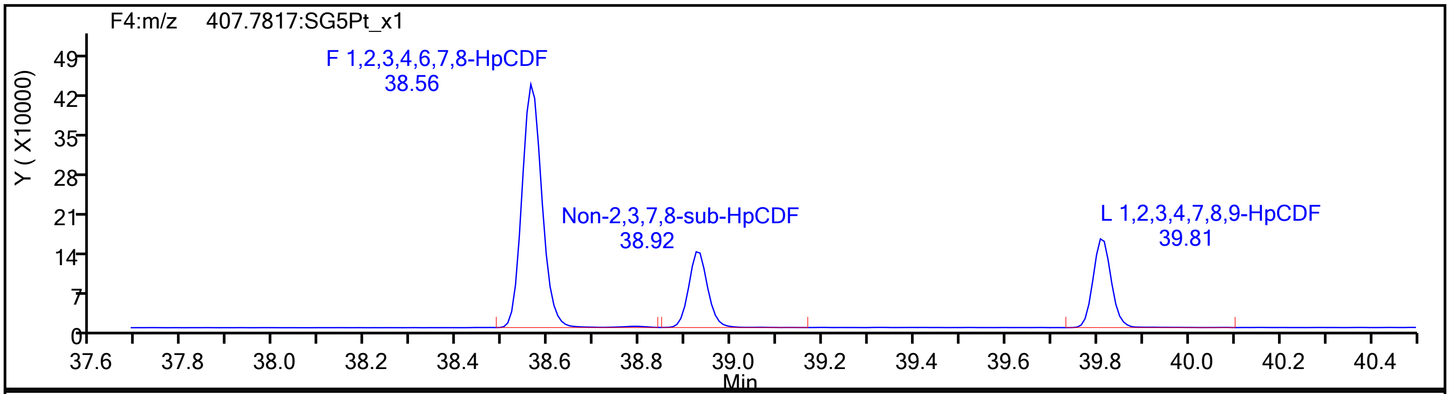

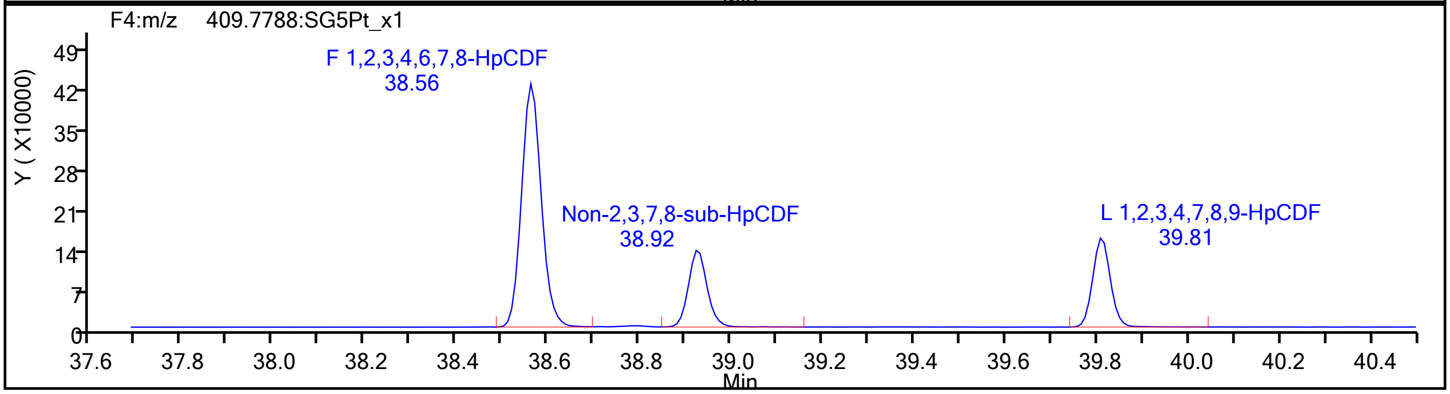

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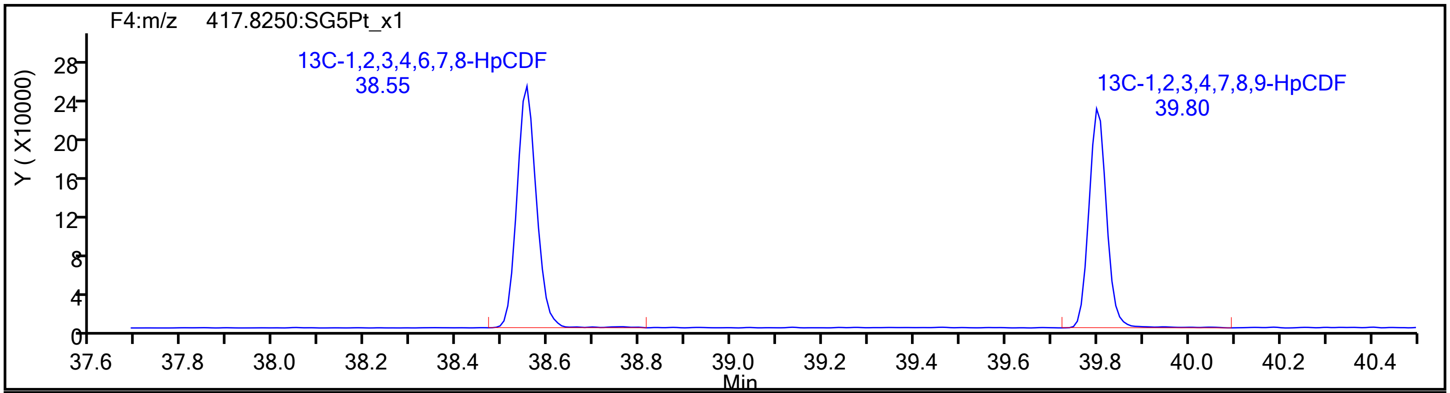

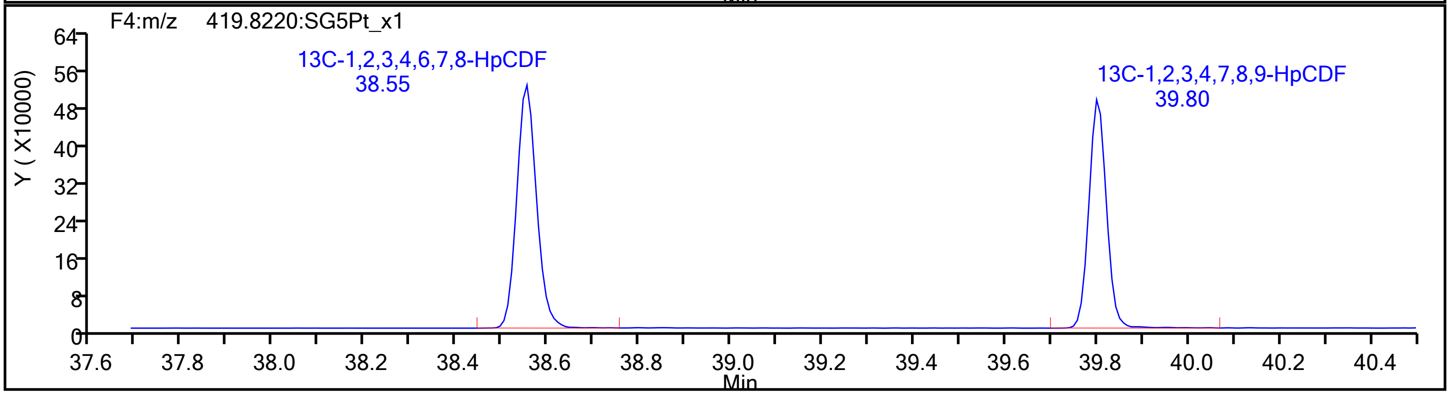

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Eurofins TestAmerica, Sacramento

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HpCDF

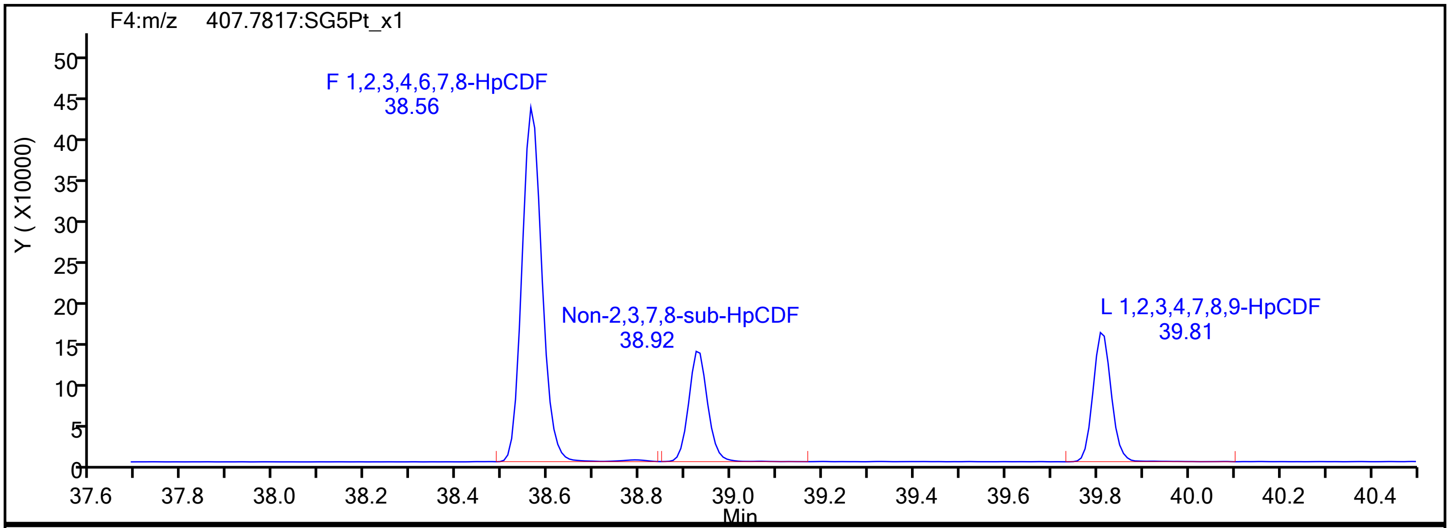

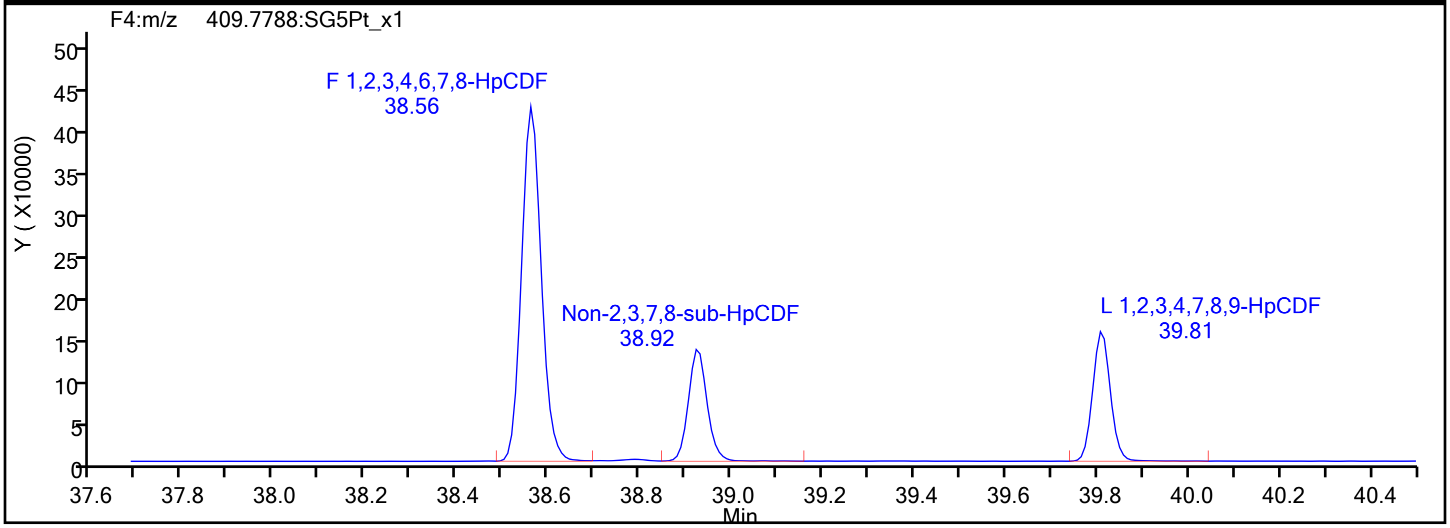

HpCDF Interference Mass

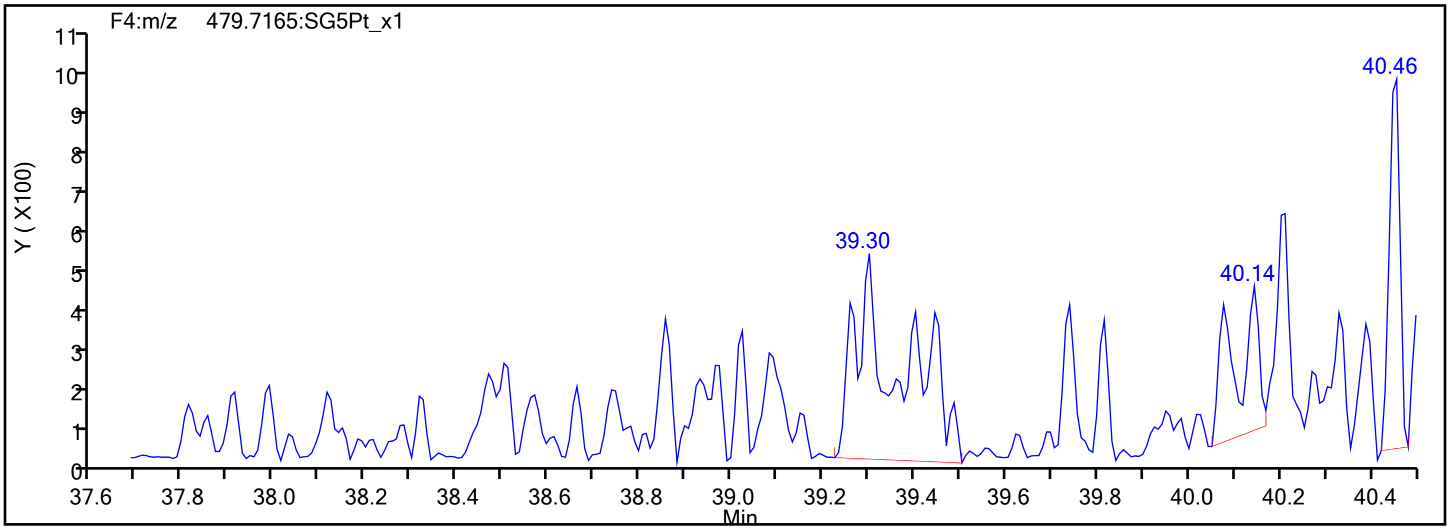

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	454782	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

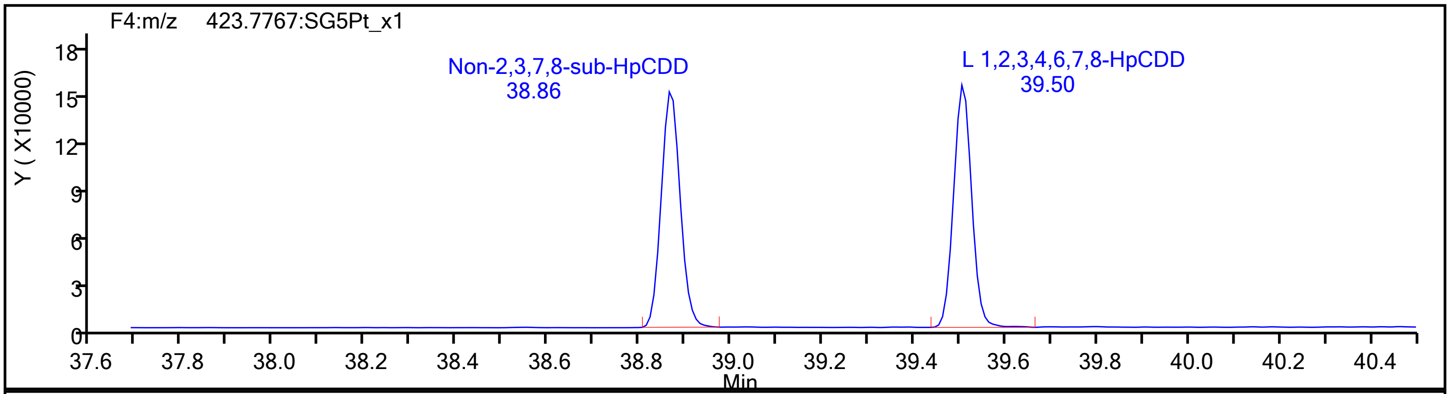

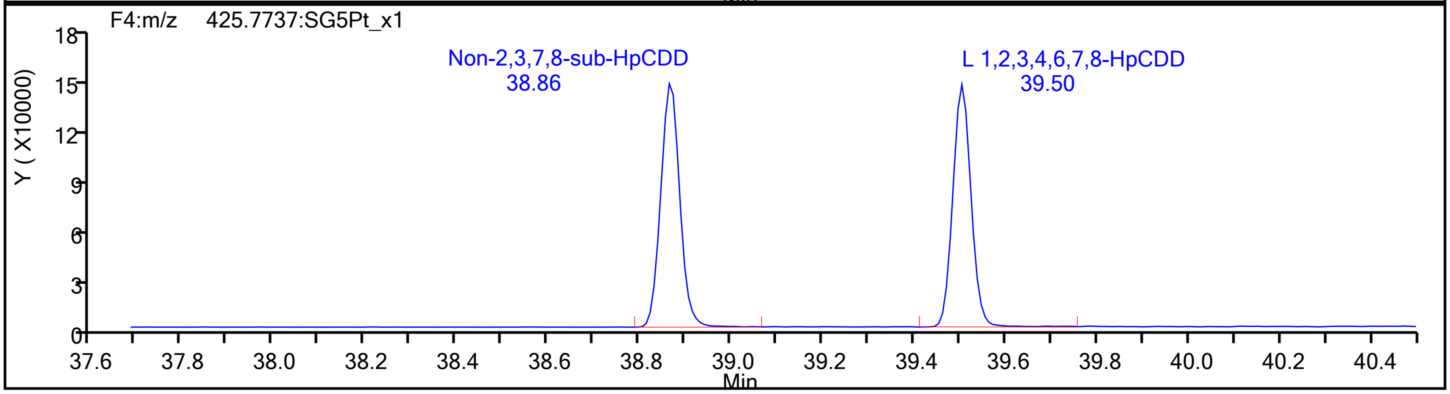

HpCDD Standards

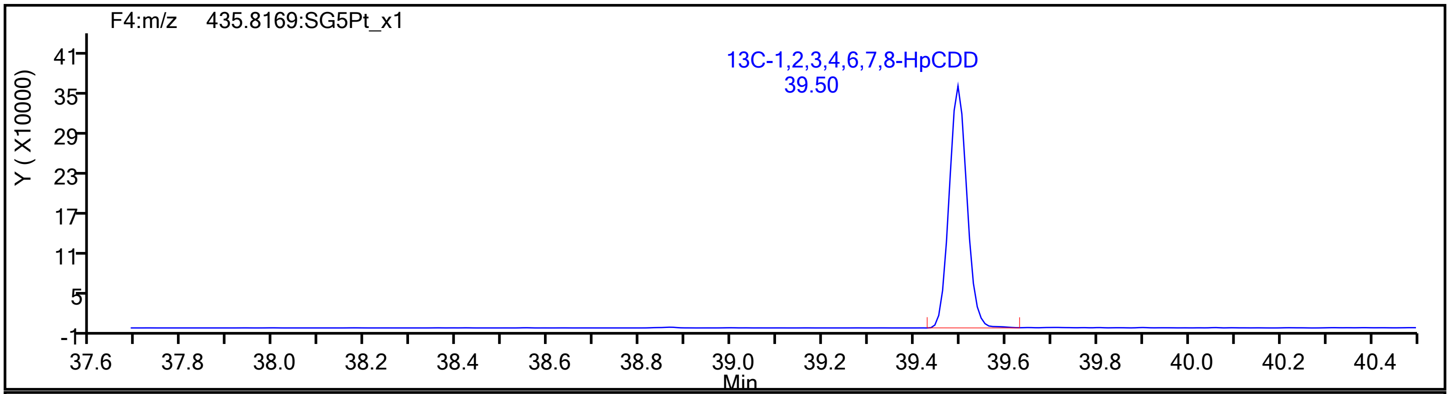

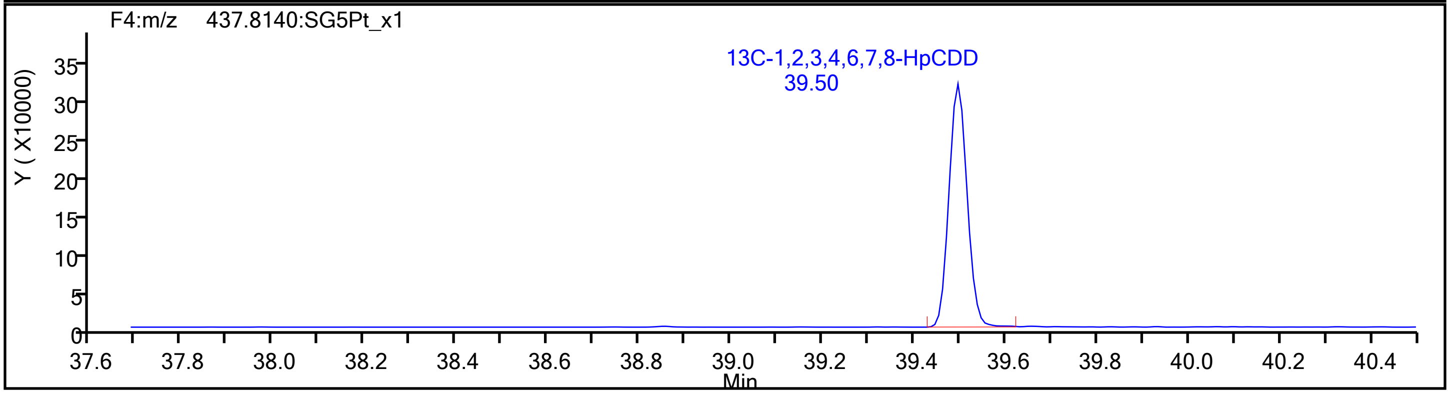

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Eurofins TestAmerica, Sacramento

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Injection Date:	23-Jan-2021 07:04:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

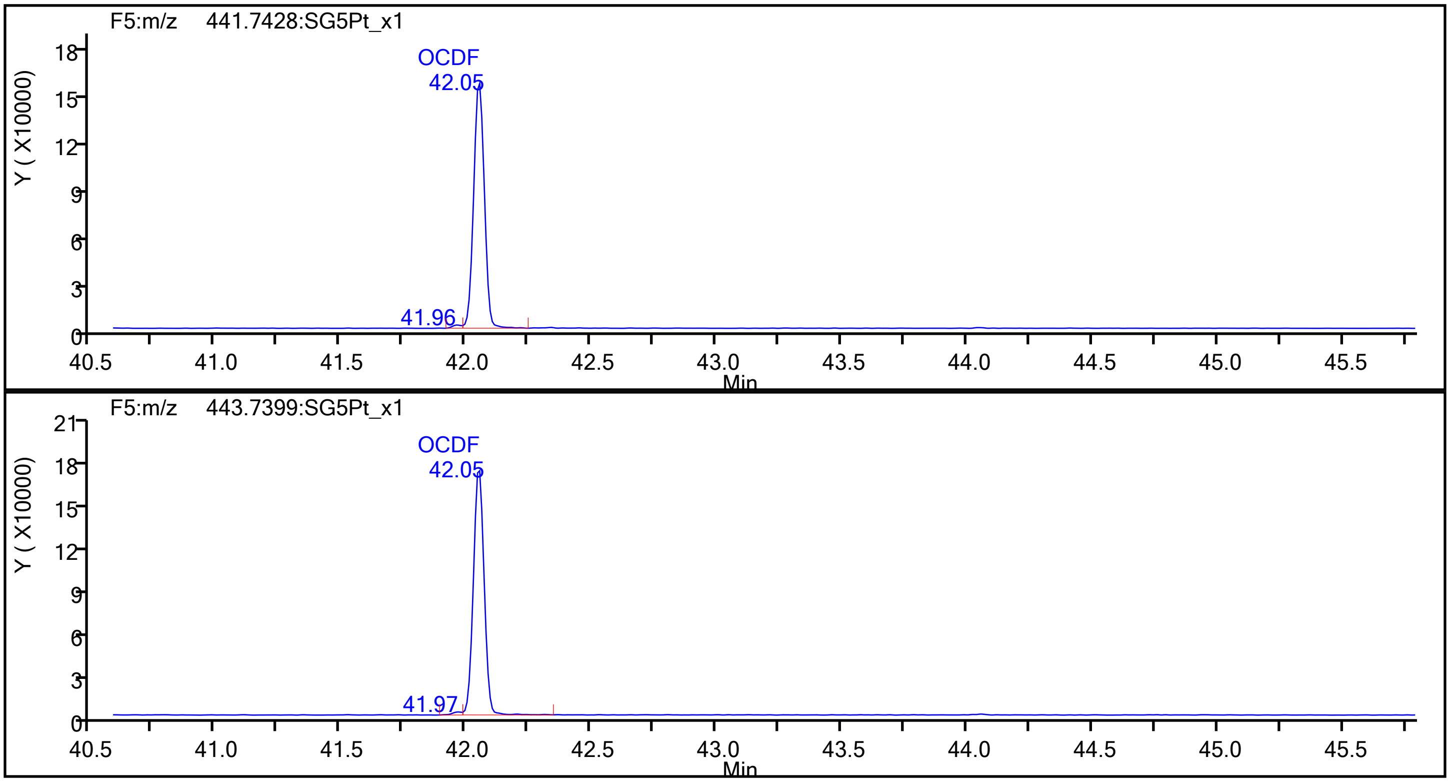

OCDF Standards

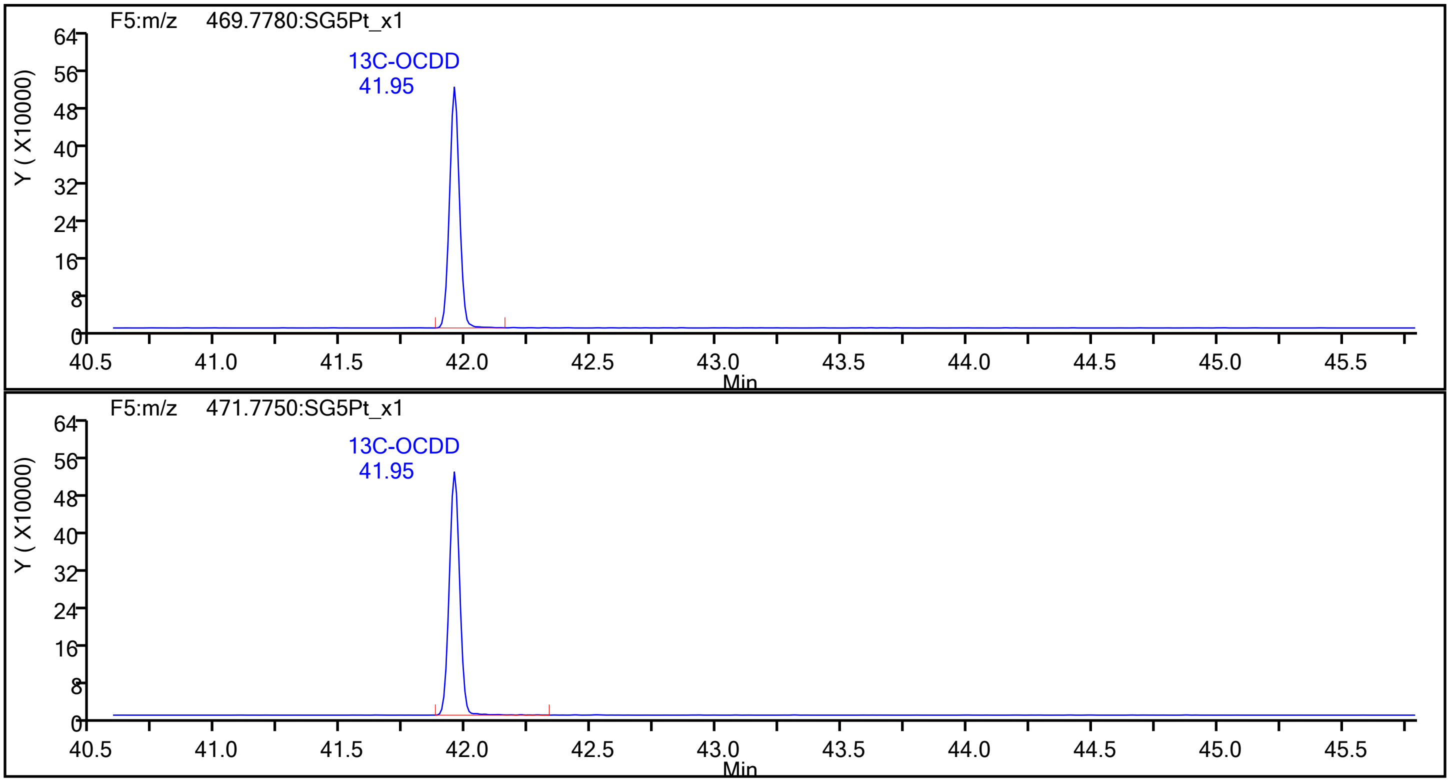

Report Date: 29-Jan-2021 08:49:35 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

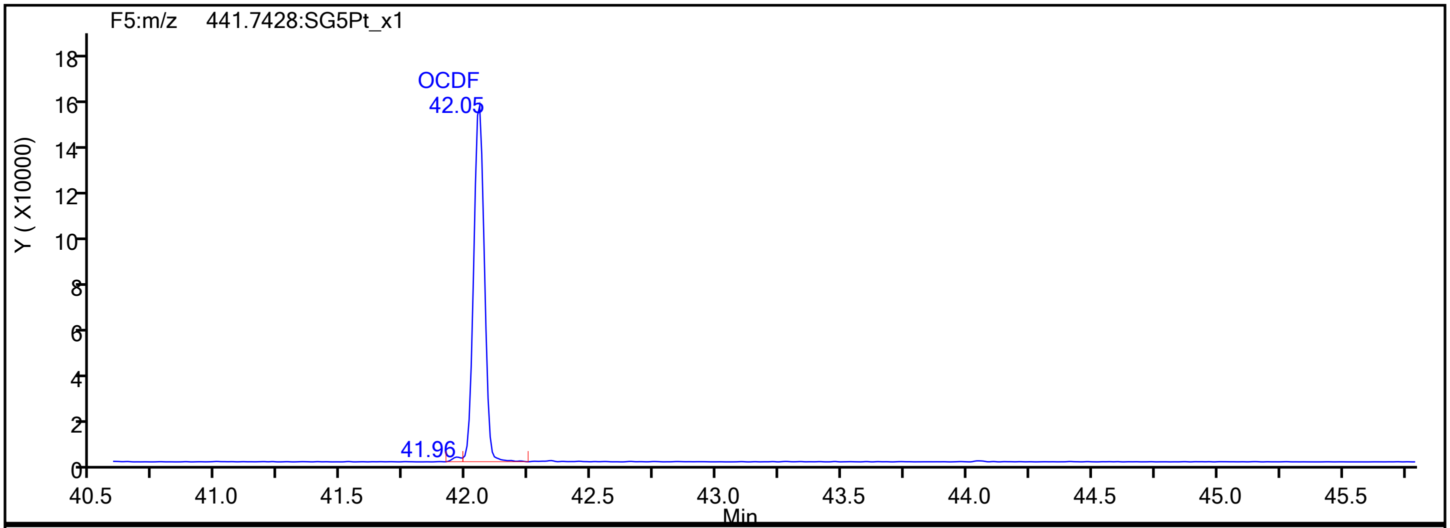

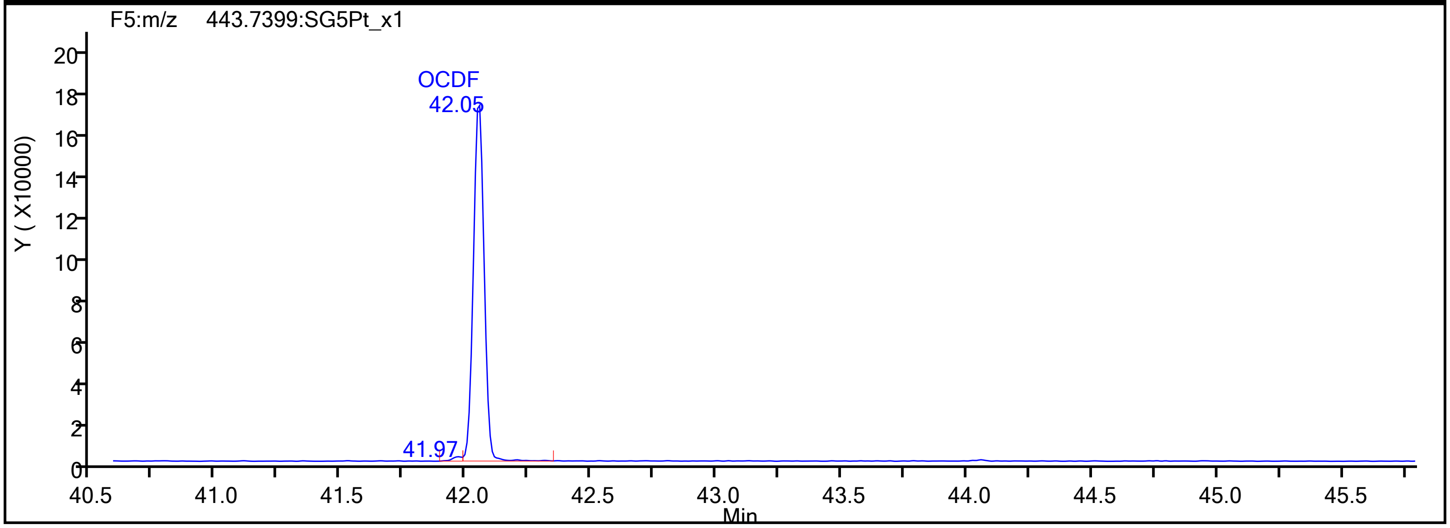

OCDF Interference Mass

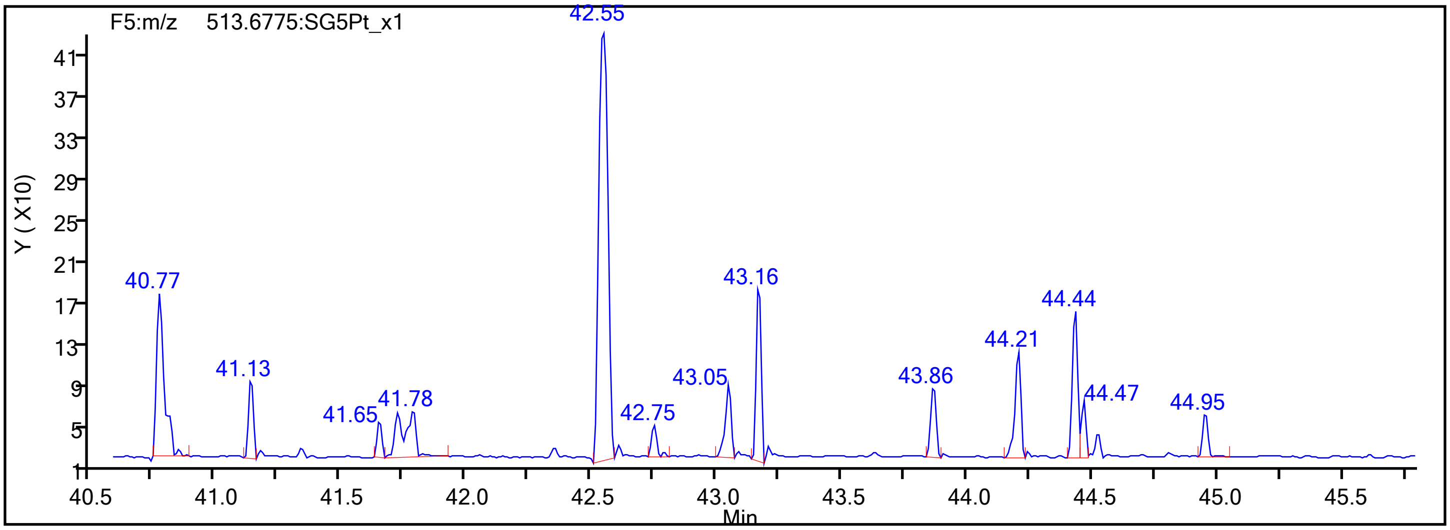

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Eurofins TestAmerica, Sacramento

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Injection Date: 23-Jan-2021 07:04:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-1-8-21

Worklist#: 454782

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

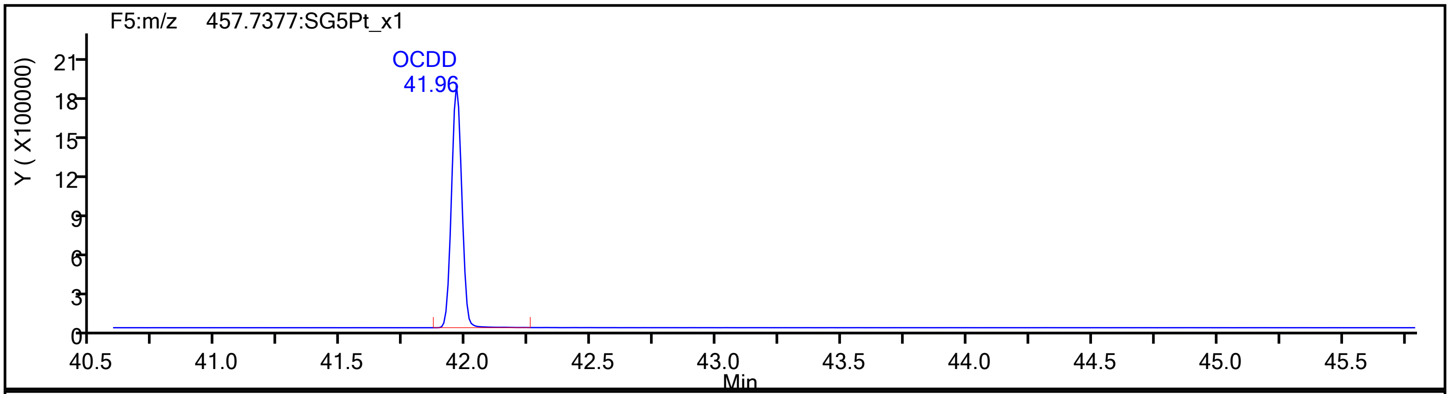

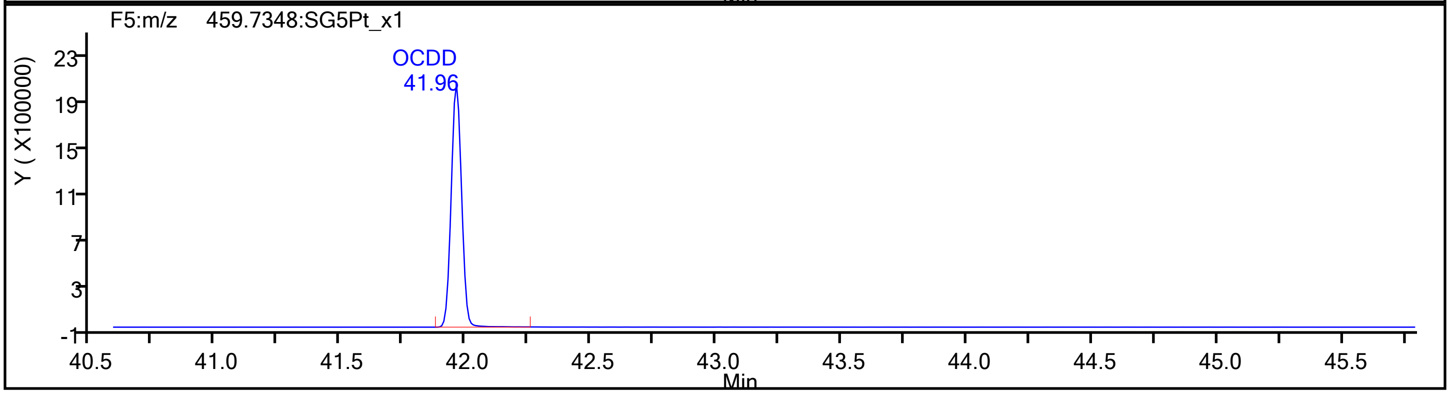

OCDD Standards

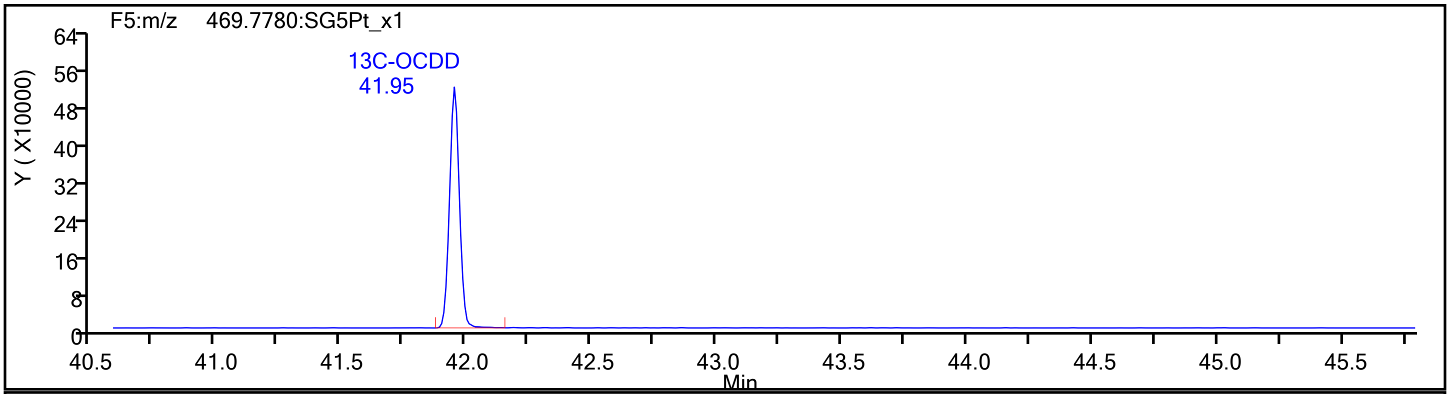

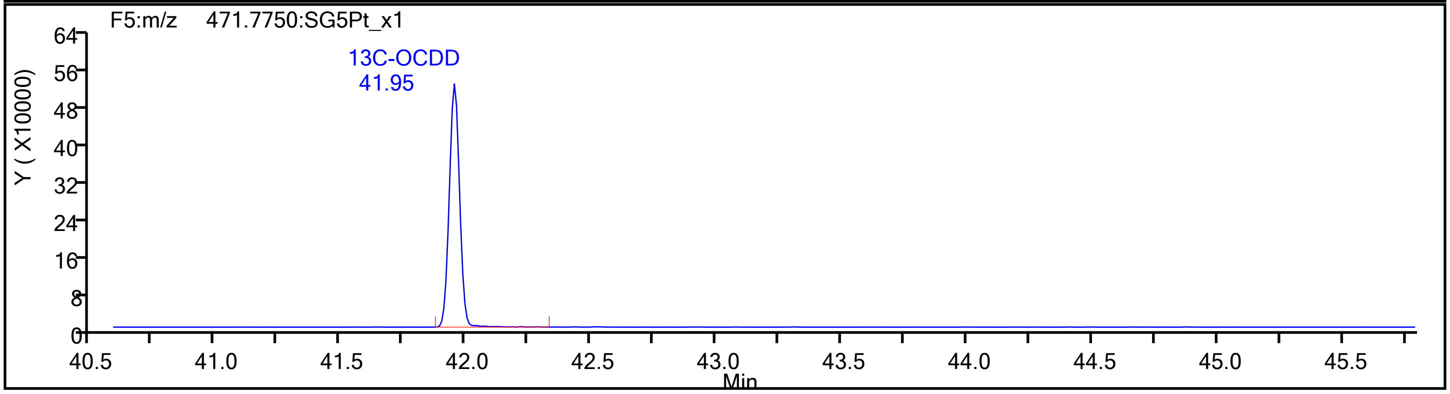

Report Date: 29-Jan-2021 08:49:36 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d		
Injection Date:	23-Jan-2021 07:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	454782	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

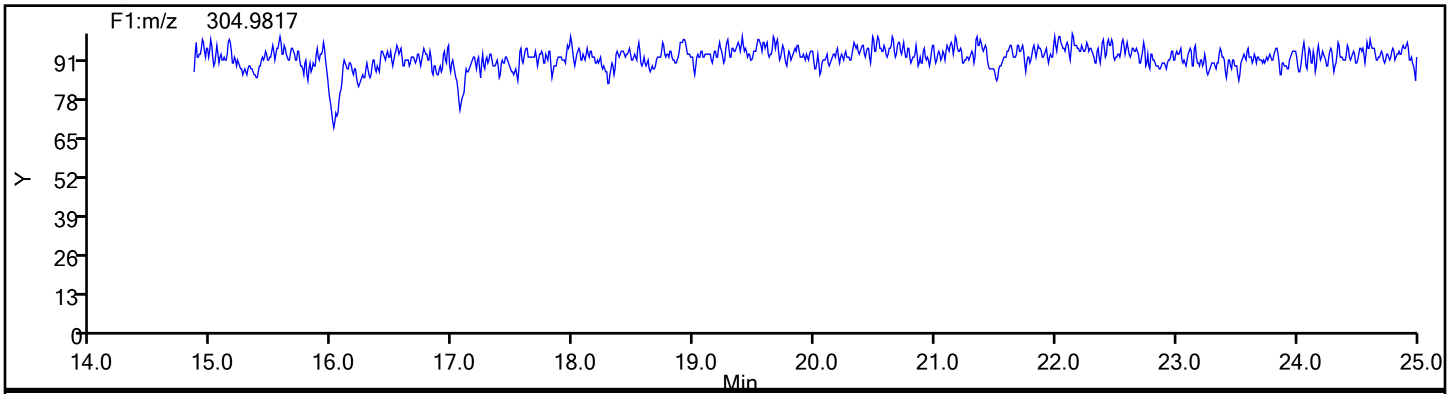

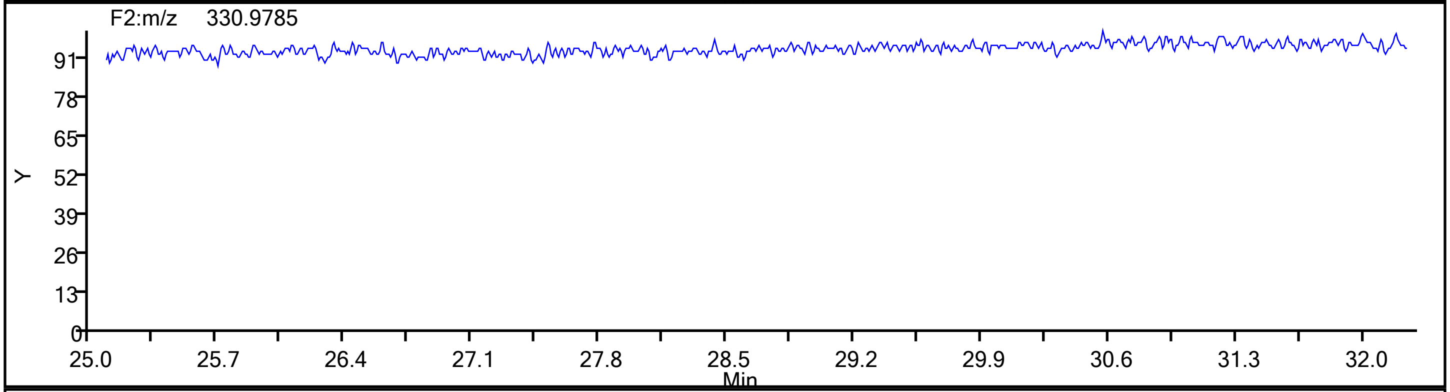

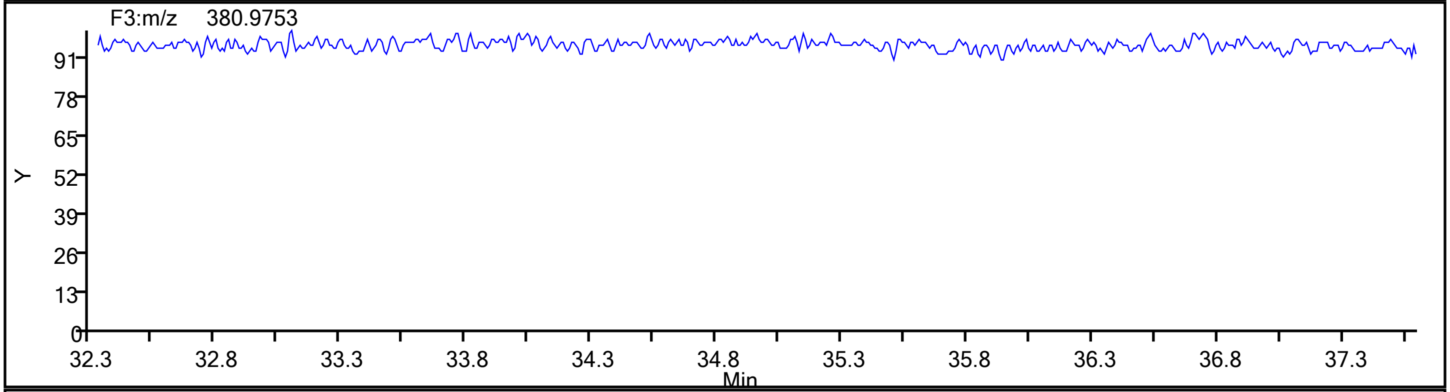

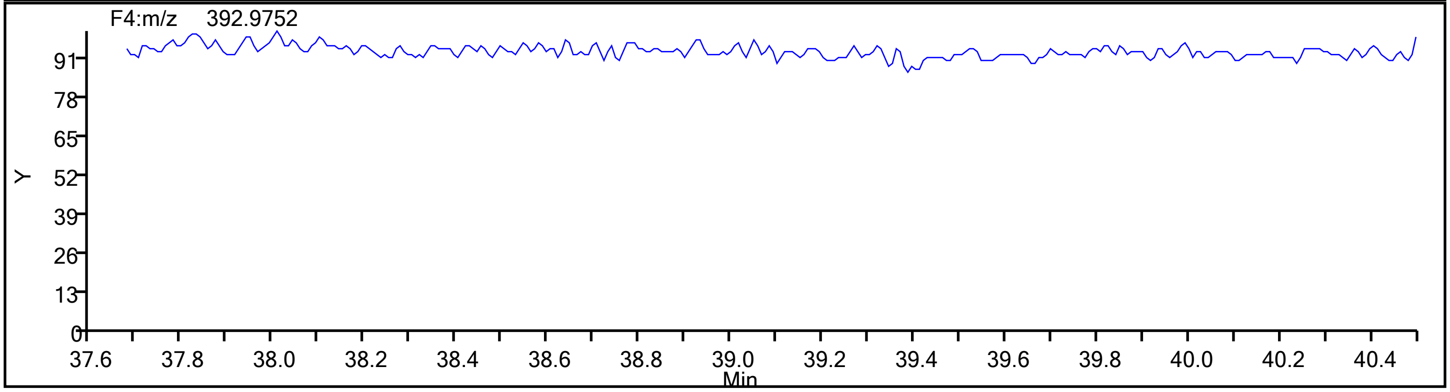

Report Date: 29-Jan-2021 08:49:36 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_14.d

Injection Date:	23-Jan-2021 07:04:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	454782	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

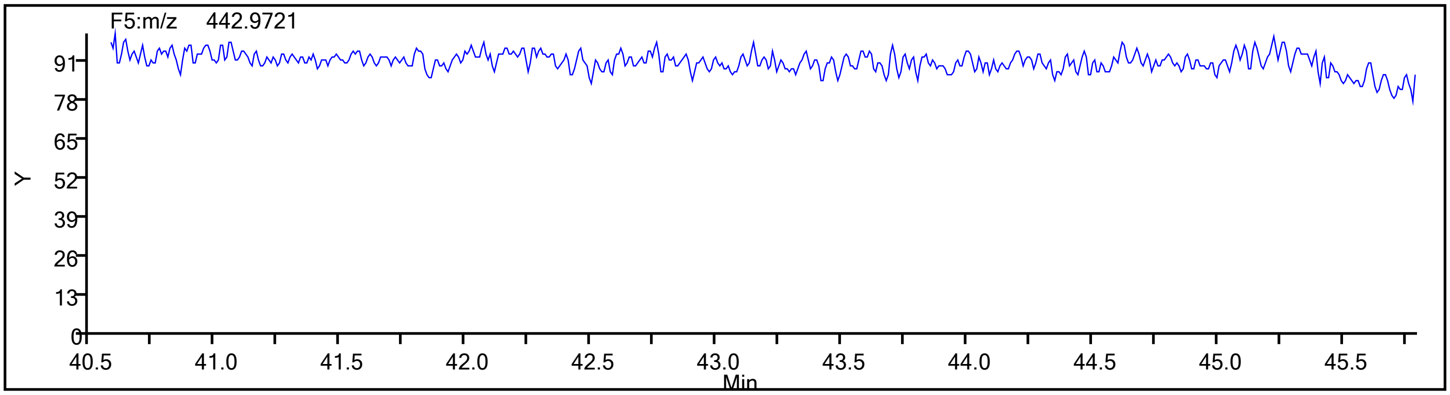

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-68943-1
SDG No.:
Client Sample ID: 11215702-Tank#1-1-8-21 RADL
Lab Sample ID: 320-68943-1 RADL
Matrix: Water
Lab File ID: 25JA2111D2_005.d
Analysis Method: 1613B
Date Collected: 01/08/2021 14:00
Extract. Method: 1613B
Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1051.2(mL)
Date Analyzed: 01/26/2021 02:29
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 20
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 456198
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	39000		190	56

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	111		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_005.d				
Lims ID:	320-68943-A-1-A				
Client ID:	11215702-Tank#1-1-8-21				
Sample Type:	Client				
Inject. Date:	26-Jan-2021 02:29:39	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Sample Info:	320-68943-A-1-A (20X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	27-Jan-2021 20:41:49	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1629	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.141	7632338	0.76	1.2E+06	5.000	5.000				
D 13C-2,3,7,8-TCDF	16.280	8246254	0.79	1.5708	3.439	3.439	0.1727	0.1727	68.78	
2,3,7,8-TCDF	16.294	167888637	0.76	0.9943	102.4	102.4	0.1474	0.1474		
D 13C-2,3,7,8-TCDD	14.881	5299695	0.78	0.9834	3.531	3.531	0.7738	0.7738	70.61	
$ 37Cl4-2,3,7,8-TCDD	14.908	3375382		0.9945	2.223	2.223	0.0257	0.0257	111	
2,3,7,8-TCDD	14.908	41730785	0.79	1.2822	30.7	30.7	0.1374	0.1374		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Report Date: 27-Jan-2021 20:41:51 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_005.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Sample Type: Client
Inject. Date: 26-Jan-2021 02:29:39 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-68943-A-1-A (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.141	15.150	-1		3294170	836385	69626	174065	12		
333.9339	15.141	15.150	-1		4338168	1068327	46323	115807	23	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.280	16.289	-1	1.075	3631670	747940	24408	61020	31		
317.9389	16.280	16.289	-1	1.075	4614584	972324	16920	42300	57	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.294	16.302	-1	1.001	72333823	16331618	7535	18837	2167		
305.8987	16.294	16.302	-1	1.001	95554814	21689377	12638	31595	1716	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.881	14.889	-1	0.983	2326770	538117	69626	174065	8		
333.9339	14.894	14.889	0	0.984	2972925	766695	46323	115807	17	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.908	14.903	0	0.985	3375382	779352	3899	9747	200		
2,3,7,8-TCDD											
319.8965	14.908	14.917	-1	1.002	18461104	4551886	9246	23115	492		
321.8936	14.908	14.917	-1	1.002	23269681	5807304	9150	22875	635	0.79(0.65-0.89)	

Report Date: 27-Jan-2021 20:41:51 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_005.d

Injection Date: 26-Jan-2021 02:29:39 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-1-8-21

Worklist#: 456198 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

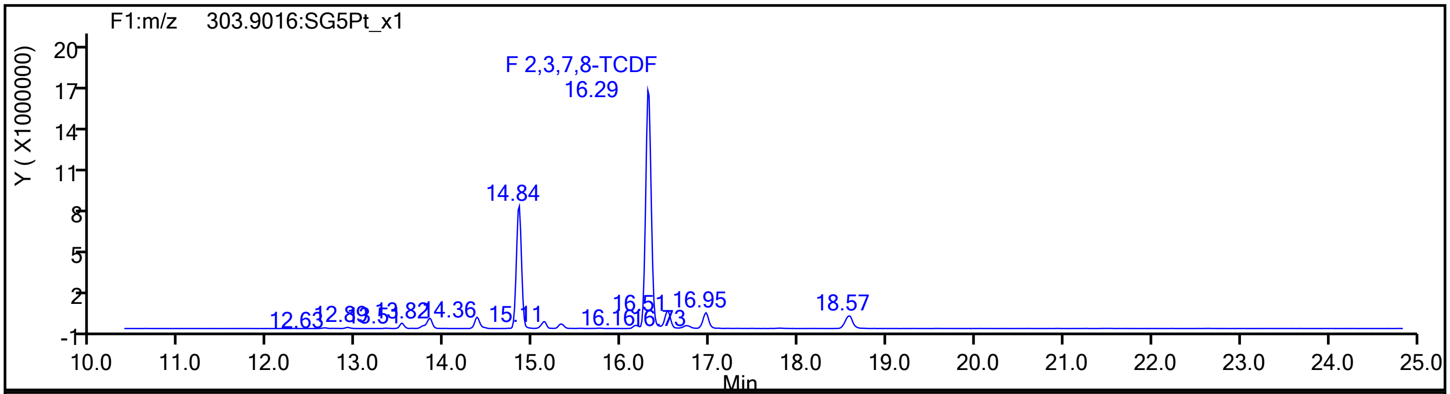

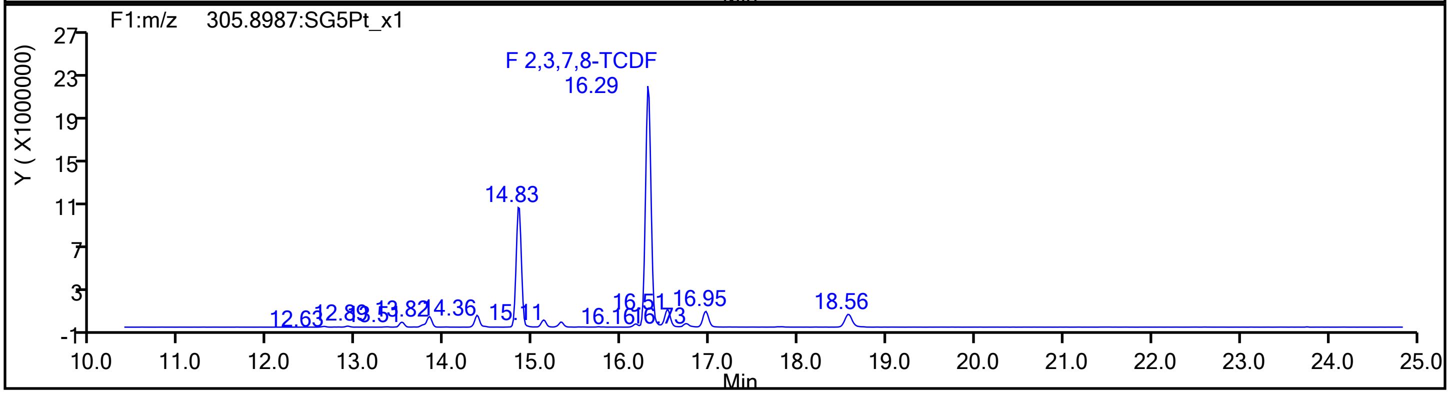

TCDF Standards

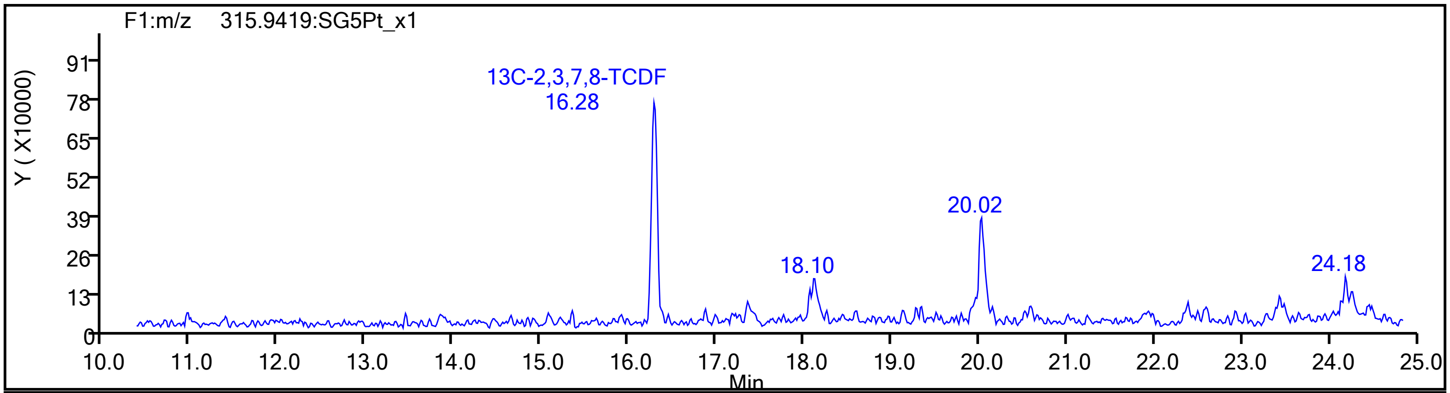

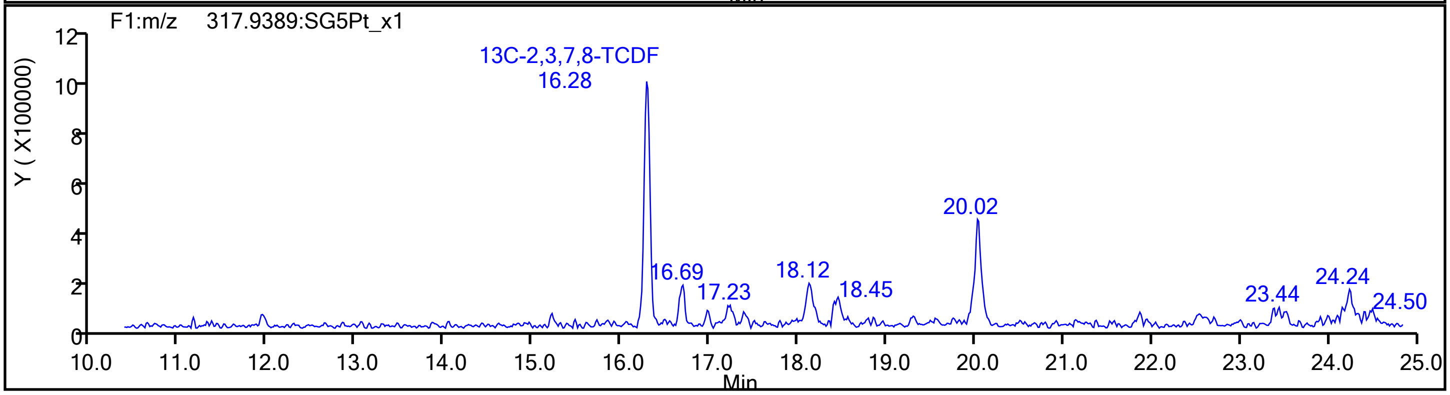

Report Date: 27-Jan-2021 20:41:51 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_005.d

Injection Date: 26-Jan-2021 02:29:39 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-1-8-21

Worklist#: 456198 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

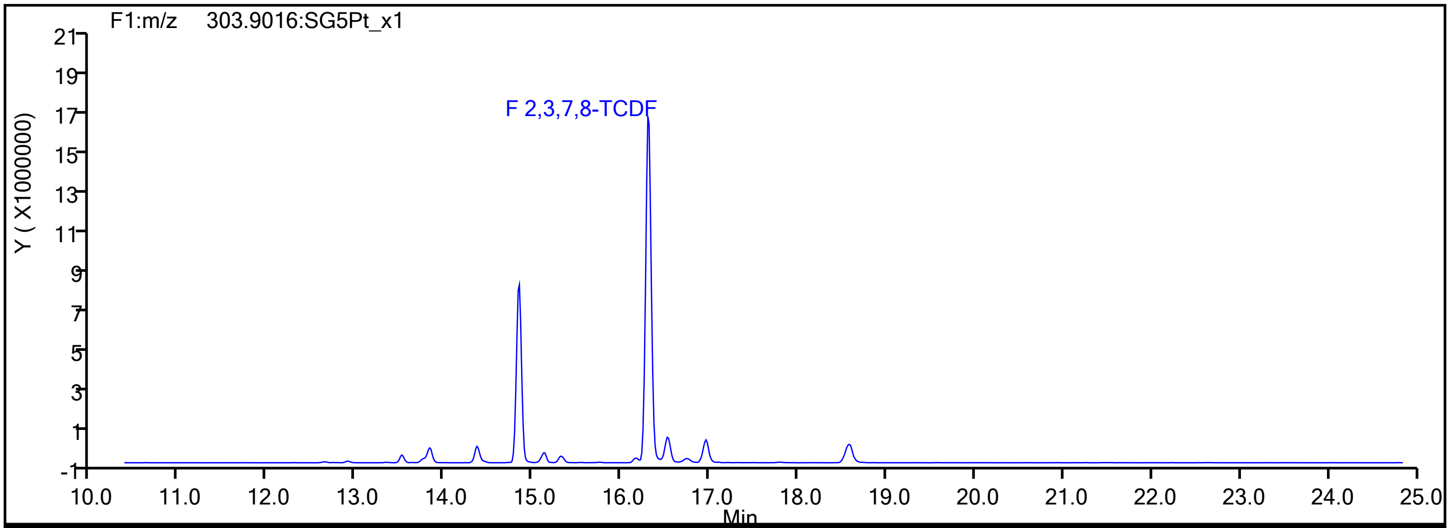

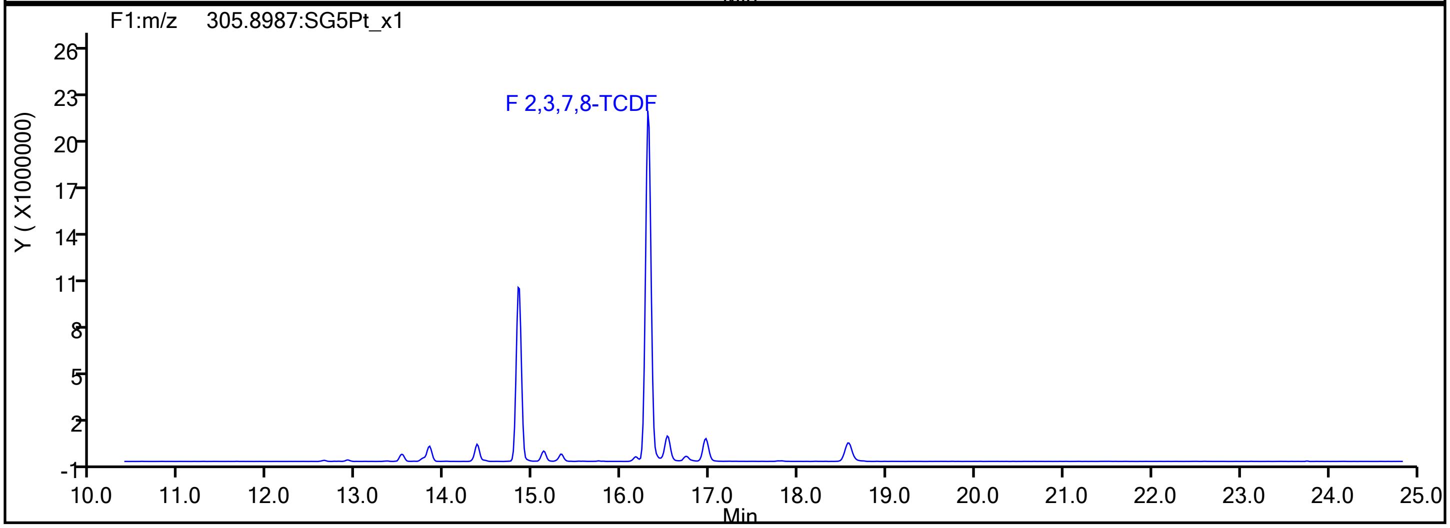

TCDF Interference Mass

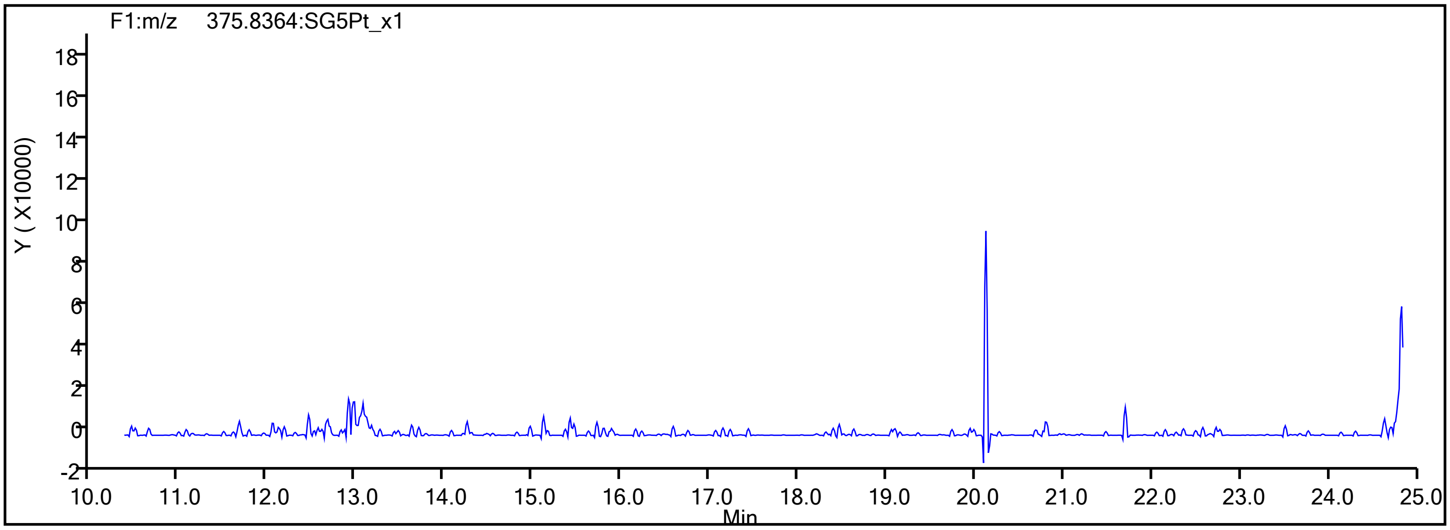

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_005.d		
Injection Date:	26-Jan-2021 02:29:39	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	456198	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

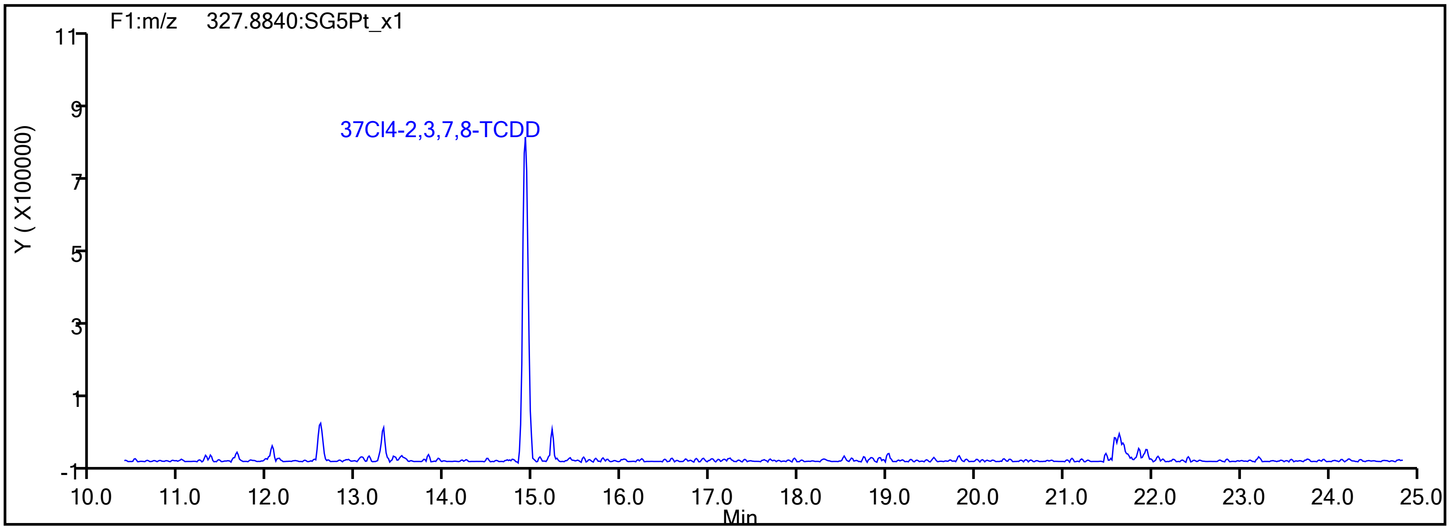

37Cl4-TCDD Standards

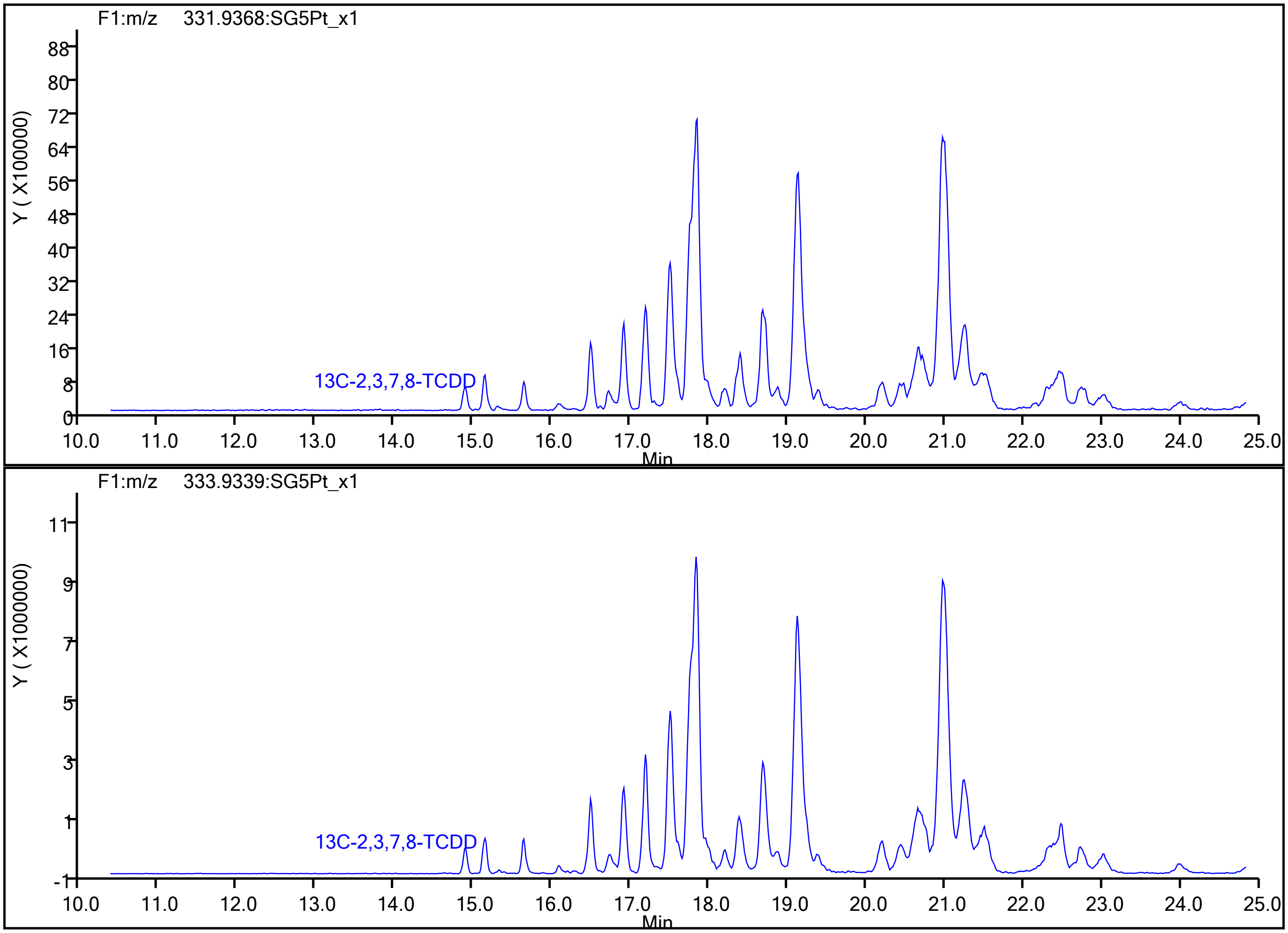

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_005.d		
Injection Date:	26-Jan-2021 02:29:39	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	456198	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

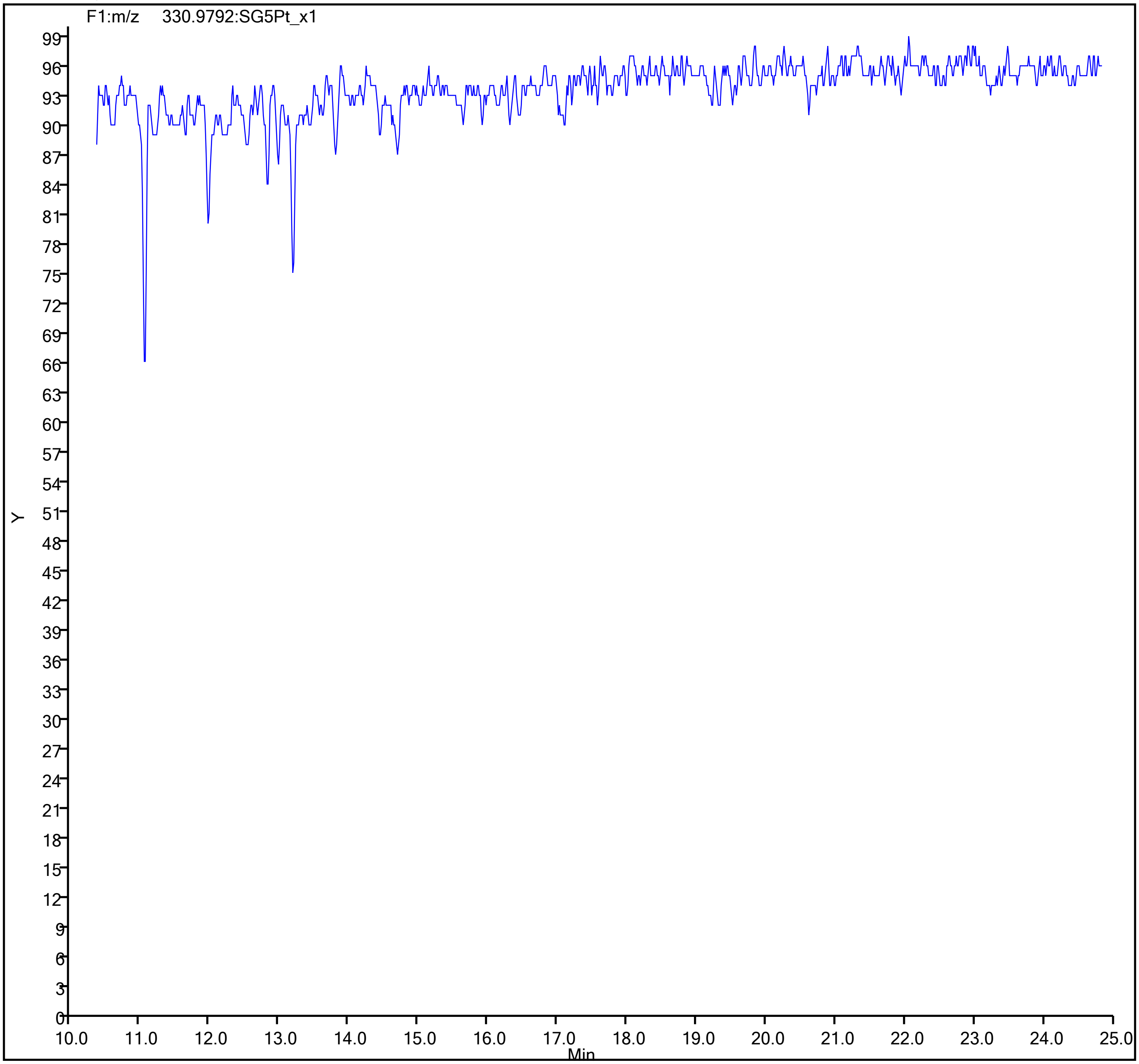

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Client Sample ID: 11215702-Tank#1-1-8-21 DL   Lab Sample ID: 320-68943-1 DL

Matrix: Water   Lab File ID: 27JA2110D5_11.d

Analysis Method: 1613B   Date Collected: 01/08/2021 14:00

Extract. Method: 1613B   Date Extracted: 01/18/2021 11:00

Sample wt/vol: 1051.2(mL)   Date Analyzed: 01/27/2021 22:17

Con. Extract Vol.: 20.0(uL)   Dilution Factor: 20

Injection Volume: 2(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 456215   Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	15000		190	44
41903-57-5	Total TCDD	17000	q B	190	44
30402-14-3	Total TCDF	84000	G	210	210

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		25-164
89059-46-1	13C-2,3,7,8-TCDF	70		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	98		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Sample Type: Client
Inject. Date: 27-Jan-2021 22:17:05 ALS Bottle#: 12 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-68943-A-1-A 20x 320-68943-A-1-A 20x
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 09:29:53 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1613

First Level Reviewer: arghestanis Date: 28-Jan-2021 09:06:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.959	2045357	0.71	3.4E+05	5.000	5.000				
D 13C-2,3,7,8-TCDF	17.445	2441725	0.81	1.7120	3.486	3.486	0.0878	0.0878	69.73	
2,3,7,8-TCDF	17.460	63603334	0.78	1.0173	128.0	128.0	0.5622	0.5622		
A Non-2,3,7,8-sub-TCDF	17.113	46602923	0.78	1.0173	93.8	93.8	0.5622	55.9		
S Total TCDF					221.8	221.8	0.5622	0.5622		
D 13C-2,3,7,8-TCDD	18.156	1443253	0.72	1.0837	3.256	3.256	0.0702	0.0702	65.11	
2,3,7,8-TCDD	18.186	13096940	0.79	1.1543	39.3	39.3	0.1145	0.1145		
$ 37Cl4-2,3,7,8-TCDD	18.171	994362		1.2441	1.954	1.954	0.0124	0.0124	97.69	
A Non-2,3,7,8-sub-TCDD	17.574	1355812	0.77	1.1543	4.130	4.069	0.1145	3.723		RQ
S Total TCDD					43.4	43.4	0.1145	0.1145		RQ
D 13C-1,2,3,7,8-PeCDF	22.549	1625079	1.67	1.3633	2.914	2.914	0.0233	0.0233	58.28	
1,2,3,7,8-PeCDF	22.577	1698810	1.51	1.0268	5.090	5.090	0.0646	0.0646		
D 13C-2,3,4,7,8-PeCDF	23.927	1619392	1.61	1.2714	3.114	3.114	0.0249	0.0249	62.27	
2,3,4,7,8-PeCDF	23.954	958964	1.58	1.0730	2.759	2.759	0.0648	0.0648		
A F1 PeCDFs	19.963	10222	1.38	1.0499	0.0300	0.0300	0.0239	0.0300		
A Non-2,3,7,8-sub-PeCDF	23.171	1638524	1.57	1.0499	4.810	4.810	0.0647	2.074		
S Total PeCDF					12.7	12.7	0.0647	0.0647		
D 13C-1,2,3,7,8-PeCDD	24.649	1071274	1.52	0.8534	3.069	3.069	0.0262	0.0262	61.37	
1,2,3,7,8-PeCDD	24.663	66723	1.55	1.0748	0.3247	0.2897	0.0319	0.0319		RQ
A Non-2,3,7,8-sub-PeCDD	23.511						0.0319	0.0319		
S Total PeCDD					0.3247	0.2897	0.0319	0.0319		RQ
D 13C-1,2,3,4,7,8-HxCDF	30.701	1148421	0.53	1.1403	3.443	3.443	0.0590	0.0590	68.87	
1,2,3,4,7,8-HxCDF	30.714	3660407	1.26	1.2385	12.9	12.9	0.0879	0.0879		
D 13C-1,2,3,6,7,8-HxCDF	30.874	1416512	0.54	1.2841	3.771	3.771	0.0524	0.0524	75.43	
1,2,3,6,7,8-HxCDF	30.887	1004709	1.15	1.1900	2.980	2.980	0.0748	0.0748		
D 13C-2,3,4,6,7,8-HxCDF	31.646	1238249	0.56	1.1825	3.580	3.580	0.0569	0.0569	71.60	
2,3,4,6,7,8-HxCDF	31.672	95658	1.15	1.2132	0.3184	0.3184	0.0682	0.0682		
D 13C-1,2,3,7,8,9-HxCDF	32.431	1129564	0.54	1.0832	3.565	3.565	0.0621	0.0621	71.30	
1,2,3,7,8,9-HxCDF	32.524						0.0748	0.0748		U
A Non-2,3,7,8-sub-HxCDF	30.355	617075	1.24	1.2171	2.105	2.056	0.0757	0.7493		RQa

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					18.3	18.2	0.0764	0.0764		RQ
* 13C-1,2,3,7,8,9-HxCDD	32.245	1462490	1.19	2.8E+05	5.000	5.000				
D 13C-1,2,3,4,7,8-HxCDD	31.832	712438	1.16	0.7757	3.140	3.140	0.0630	0.0630	62.80	
1,2,3,4,7,8-HxCDD	31.938						0.0197	0.0197		U
D 13C-1,2,3,6,7,8-HxCDD	31.938	1010868	1.41	0.9997	3.457	3.457	0.0489	0.0489	69.14	
1,2,3,6,7,8-HxCDD	31.938						0.0188	0.0188		U
1,2,3,7,8,9-HxCDD	32.231						0.0169	0.0169		RQU
A Non-2,3,7,8-sub-HxCDD	31.033	32048	1.22	1.1448	0.1624	0.1624	0.0183	0.1624		M
S Total HxCDD					0.1624	0.1624	0.0185	0.0185		
D 13C-1,2,3,4,6,7,8-HpCDF	33.823	863414	0.47	0.8529	3.461	3.461	0.1025	0.1025	69.22	
1,2,3,4,6,7,8-HpCDF	33.835	866201	1.09	1.4619	3.431	3.431	0.0617	0.0617		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.892	681039	0.38	0.7499	3.105	3.105	0.1166	0.1166	62.10	
1,2,3,4,7,8,9-HpCDF	34.904	326852	1.13	1.4262	1.683	1.683	0.0851	0.0851		
A Non-2,3,7,8-sub-HpCDF	34.351	322132	0.92	1.4441	1.444	1.444	0.0716	1.444		M
S Total HpCDF					6.558	6.558	0.0734	0.0734		
D 13C-1,2,3,4,6,7,8-HpCDD	34.600	736088	0.96	0.7851	3.205	3.205	0.0713	0.0713	64.11	M
1,2,3,4,6,7,8-HpCDD	34.612	299023	1.16	1.1022	1.843	1.843	0.0609	0.0609		M
A Non-2,3,7,8-sub-HpCDD	34.460	326802	1.12	1.1022	2.014	2.014	0.0609	2.014		M
S Total HpCDD					3.857	3.857	0.0609	0.0609		
D 13C-OCDD	36.939	787877	0.98	0.5610	4.802	4.802	0.0541	0.0541	48.02	M
OCDF	37.047	256952	0.92	1.4855	2.195	2.195	0.0523	0.0523		M
OCDD	36.951	3185371	0.91	1.1570	34.9	34.9	0.1191	0.1191		M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 29-Jan-2021 09:29:53   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Sample Type: Client
Inject. Date: 27-Jan-2021 22:17:05   ALS Bottle#: 12   Worklist Smp#: 11
Injection Vol: 2.0 ul   Dil. Factor: 20.0000
Sample Info: 320-68943-A-1-A 20x 320-68943-A-1-A 20x
Misc. Info.: 27JA2110D5
Operator ID: SMA   Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 09:29:53   Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1613

First Level Reviewer: arghestanis   Date: 28-Jan-2021 09:06:47

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.959	17.929	2		850927	209522	1896	4740	111		
333.9339	17.959	17.929	2		1194430	288321	1133	2832	254	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.445	17.400	3	0.971	1091785	265906	3827	9567	69		
317.9389	17.445	17.400	3	0.971	1349940	328315	2162	5405	152	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.460	17.430	2	1.001	27852108	6499511	11918	29795	545		
305.8987	17.460	17.430	2	1.001	35751226	8337965	15272	38180	546	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.024	17.113	-65	0.919	541571	152988	11918	29795	13		
305.8987	16.024	17.113	-65	0.919	711637	187424	15272	38180	12	0.76(0.65-0.89)	
303.9016	16.311	17.113	-48	0.935	1025268	221930	11918	29795	19		
305.8987	16.311	17.113	-48	0.935	1411844	299915	15272	38180	20	0.73(0.65-0.89)	
303.9016	16.538	17.113	-34	0.948	902612	236695	11918	29795	20		
305.8987	16.538	17.113	-34	0.948	1180911	303650	15272	38180	20	0.76(0.65-0.89)	
303.9016	16.780	17.113	-20	0.962	1183664	272790	11918	29795	23		
305.8987	16.780	17.113	-20	0.962	1548775	367657	15272	38180	24	0.76(0.65-0.89)	
303.9016	17.067	17.113	-3	0.978	12256455	3105208	11918	29795	261		
305.8987	17.067	17.113	-3	0.978	15522193	3959480	15272	38180	259	0.79(0.65-0.89)	
303.9016	17.294	17.113	11	0.991	527645	123375	11918	29795	10		
305.8987	17.294	17.113	11	0.991	604476	152245	15272	38180	10	0.87(0.65-0.89)	
303.9016	17.899	17.113	47	1.026	1779549	429173	11918	29795	36		
305.8987	17.899	17.113	47	1.026	2363517	560999	15272	38180	37	0.75(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	18.156	17.113	62	1.041	368511	81067	11918	29795	7		
305.8987	18.156	17.113	62	1.041	470983	107635	15272	38180	7	0.78(0.65-0.89)	
303.9016	19.320	17.113	132	1.107	1828204	402729	11918	29795	34		
305.8987	19.320	17.113	132	1.107	2375108	531770	15272	38180	35	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.156	18.126	2	1.011	604047	130500	1896	4740	69		
333.9339	18.156	18.126	2	1.011	839206	182166	1133	2832	161	0.72(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.186	18.141	3	1.002	5768982	1276352	1872	4680	682		
321.8936	18.171	18.141	2	1.001	7327958	1627532	1435	3587	1134	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.171	18.141	2	1.012	994362	207710	613	1532	339		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	18.065	17.574	29	0.995	50239	18692	1872	4680	10		
321.8936	18.065	17.574	29	0.995	85641	24518	1435	3587	17	0.59(0.65-0.89)	
	Empc Correction				65245	24275	1435	3587	17		
319.8965	18.549	17.574	58	1.022	556238	108254	1872	4680	58		
321.8936	18.549	17.574	58	1.022	684090	143115	1435	3587	100	0.81(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.549	22.522	2	1.256	1015306	164821	634	1585	260		
353.8970	22.549	22.522	2	1.256	609773	102327	629	1572	163	1.67(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.577	22.549	2	1.001	1022526	157115	778	1945	202		
341.8567	22.577	22.549	2	1.001	676284	106862	640	1600	167	1.51(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.927	23.900	2	1.332	997841	162530	634	1585	256		
353.8970	23.927	23.900	2	1.332	621551	92306	629	1572	147	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.954	23.927	2	1.001	587274	93582	778	1945	120		
341.8567	23.940	23.927	1	1.001	371690	57779	640	1600	90	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.607	19.963	-21	0.870	5927	1630	264	660	6		
341.8567	19.607	19.963	-21	0.870	4295	1154	261	652	4	1.38(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	21.199	23.171	-118	0.940	432894	80977	778	1945	104		
341.8567	21.186	23.171	-119	0.940	273476	50888	640	1600	80	1.58(1.32-1.78)	
339.8597	22.440	23.171	-44	0.995	88858	18381	778	1945	24		
341.8567	22.427	23.171	-45	0.995	55472	11889	640	1600	19	1.60(1.32-1.78)	
339.8597	23.108	23.171	-4	1.025	297798	47061	778	1945	60		
341.8567	23.108	23.171	-4	1.025	180158	27483	640	1600	43	1.65(1.32-1.78)	
339.8597	24.295	23.171	67	1.077	147101	20359	778	1945	26		
341.8567	24.309	23.171	68	1.078	102031	14884	640	1600	23	1.44(1.32-1.78)	
339.8597	25.918	23.171	164	1.149	35076	4598	778	1945	6		
341.8567	25.931	23.171	165	1.150	25660	4403	640	1600	7	1.37(1.32-1.78)	

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	24.649	24.636	1	1.373	645879	94800	533	1332	178		
369.8919	24.663	24.636	2	1.373	425395	68803	359	897	192	1.52(1.32-1.78)	
1,2,3,7,8-PeCDD											RQ
355.8546	24.663	24.663	0	1.001	48598	6740	307	767	22		
	Empc Correction				40557	6234	307	767	20		
357.8516	24.704	24.663	2	1.002	26166	4022	142	355	28	1.86(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.511						307	767			
357.8516	23.511						142	355			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.701	30.674	2	0.952	397597	70319	916	2290	77		
385.8610	30.701	30.674	2	0.952	750824	145462	1018	2545	143	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.714	30.700	1	1.000	2042870	386890	1085	2712	357		
375.8178	30.714	30.700	1	1.000	1617537	314635	794	1985	396	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.874	30.847	2	0.957	498533	90689	916	2290	99		
385.8610	30.861	30.847	1	0.957	917979	173303	1018	2545	170	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.887	30.874	1	1.000	537184	98266	1085	2712	91		
375.8178	30.887	30.874	1	1.000	467525	80205	794	1985	101	1.15(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.646	31.632	1	0.981	444925	98839	916	2290	108		
385.8610	31.646	31.632	1	0.981	793324	184841	1018	2545	182	0.56(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.672	31.645	2	1.001	51077	11562	1085	2712	11		
375.8178	31.659	31.645	1	1.000	44581	9821	794	1985	12	1.15(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.431	32.417	1	1.006	394124	92018	916	2290	100		
385.8610	32.431	32.417	1	1.006	735440	163844	1018	2545	161	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											U
373.8208	32.431						1085	2712			
375.8178	32.431						794	1985			
A Non-2,3,7,8-sub-HxCDF											RQa
373.8208	28.664	30.355	-101	0.934	115094	14476	1085	2712	13		
375.8178	28.651	30.355	-102	0.933	106609	14483	794	1985	18	1.08(1.05-1.43)	
373.8208	29.942	30.355	-25	0.975	70762	10646	1085	2712	10		
	Empc Correction				55828	10010	1085	2712	9		
375.8178	29.955	30.355	-24	0.976	45023	8073	794	1985	10	1.57(1.05-1.43)	
373.8208	31.552	30.355	72	1.028	36829	8666	1085	2712	8		
375.8178	31.552	30.355	72	1.028	32769	7208	794	1985	9	1.12(1.05-1.43)	
373.8208	32.524	30.355	130	1.059	121447	27516	1085	2712	25		a
375.8178	32.524	30.355	130	1.059	103476	25655	794	1985	32	1.17(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.245	32.231	1		794980	196579	846	2115	232		
403.8529	32.245	32.231	1		667510	162830	559	1397	291	1.19(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.832	31.819	1	0.987	382432	104959	846	2115	124		
403.8529	31.832	31.819	1	0.987	330006	85843	559	1397	154	1.16(1.05-1.43)	
1,2,3,4,7,8-HxCDD											U
389.8157	31.832						150	375			
391.8127	31.832						200	500			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.938	31.912	2	0.991	591262	125800	846	2115	149		
403.8529	31.925	31.912	1	0.990	419606	100250	559	1397	179	1.41(1.05-1.43)	
1,2,3,6,7,8-HxCDD											U
389.8157	31.925						150	375			
391.8127	31.925						200	500			
1,2,3,7,8,9-HxCDD											RQU
389.8157	32.244						150	375			
391.8127	32.244						200	500			
A Non-2,3,7,8-sub-HxCDD											M
389.8157	31.113	31.033	5	0.974	17642	3726	150	375	25		M
391.8127	31.127	31.033	6	0.975	14406	2998	200	500	15	1.22(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.823	33.810	1	1.049	275283	72653	1060	2650	69		
419.8220	33.823	33.810	1	1.049	588131	164192	1455	3637	113	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.835	33.811	1	1.000	452686	136819	910	2275	150		M
409.7789	33.823	33.811	1	1.000	413515	119230	799	1997	149	1.09(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.892	34.880	1	1.082	187393	49494	1060	2650	47		
419.8220	34.892	34.880	1	1.082	493646	126576	1455	3637	87	0.38(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.904	34.892	1	1.000	173452	42807	910	2275	47		
409.7789	34.904	34.892	1	1.000	153400	41409	799	1997	52	1.13(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7818	34.126	34.351	-13	1.009	154366	43967	910	2275	48		
409.7789	34.126	34.351	-13	1.009	167766	45797	799	1997	57	0.92(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											M
435.8169	34.600	34.588	1	1.073	360474	95083	1088	2720	87		M
437.8140	34.600	34.588	1	1.073	375614	98653	521	1302	189	0.96(0.88-1.20)	M
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.612	34.600	1	1.000	160897	41913	626	1565	67		M
425.7737	34.612	34.600	1	1.000	138126	36938	415	1037	89	1.16(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											M
423.7766	34.066	34.460	-24	0.985	172487	52101	626	1565	83		M
425.7737	34.066	34.460	-24	0.985	154315	47781	415	1037	115	1.12(0.88-1.20)	M
13C-OCDD											M
469.7779	36.939	36.927	1	1.146	389761	87497	472	1180	185		M
471.7750	36.939	36.927	1	1.146	398116	108877	400	1000	272	0.98(0.76-1.02)	

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDF											M
441.7428	37.047	37.022	1	1.003	123350	27874	275	687	101		M
443.7399	37.047	37.022	1	1.003	133602	30994	336	840	92	0.92(0.76-1.02)	M
OCDD											M
457.7377	36.951	36.927	1	1.000	1514329	344939	525	1312	657		M
459.7348	36.951	36.927	1	1.000	1671042	384699	557	1392	691	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 17.113

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.017	D 13C-2,3,7,8-TCDF	100.000	2441725	594221

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.017		5.000	2441725	594221

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.024	541571	152988	711637	187424	2.52	0.76	
16.311	1025268	221930	1411844	299915	4.91	0.73	
16.538	902612	236695	1180911	303650	4.19	0.76	
16.780	1183664	272790	1548775	367657	5.50	0.76	
17.067	12256455	3105208	15522193	3959480	55.9	0.79	
17.294	527645	123375	604476	152245	2.28	0.87	
17.899	1779549	429173	2363517	560999	8.34	0.75	
18.156	368511	81067	470983	107635	1.69	0.78	
19.320	1828204	402729	2375108	531770	8.46	0.77	
Signal Totals:							
	20413479	5025955	26189444	6470775			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	46602923	11496730				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 93.808 = (46602923 * 5.000) / (2441725 * 1.017)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d
Lims ID: 320-68943-A-1-A
Client ID: 11215702-Tank#1-1-8-21
Inject. Date: 27-Jan-2021 22:17:05
Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: SMA
Lims Batch ID: 456215
Lims Sample ID: 11

Non-2,3,7,8-sub-TCDD, RT: 17.574

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.154	D 13C-2,3,7,8-TCDD	100.000	1443253	312666

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.154		5.000	1443253	312666

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.065	50239	18692	85641	24518	0.4078	0.59	RQ
18.065	50239	18692	65245	24275	0.3466		Empc Correction
18.549	556238	108254	684090	143115	3.72	0.81	
Signal Totals:							
	606477	126946	749335	167390			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1376208	294579				0.79	RQ
	1355812	294336					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.130 = (1376208 * 5.000) / (1443253 * 1.154)
Empc Amount: 4.069 = (1355812 * 5.000) / (1443253 * 1.154)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

F1 PeCDFs, RT: 19.963

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027	D 13C-1,2,3,7,8-PeCDF	100.000	1625079	267148
2,3,4,7,8-PeCDF	1.073	D 13C-2,3,4,7,8-PeCDF	100.000	1619392	254836

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.050		5.000	1622235	260992

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
19.607	5927	1630	4295	1154	0.0300	1.38	
Signal Totals:							
	5927	1630	4295	1154			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10222	2784				1.38	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.0300 = (10222 * 5.000) / (1622235 * 1.050)

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 23.171

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027	D 13C-1,2,3,7,8-PeCDF	100.000	1625079	267148
2,3,4,7,8-PeCDF	1.073	D 13C-2,3,4,7,8-PeCDF	100.000	1619392	254836

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.050		5.000	1622235	260992

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.199	432894	80977	273476	50888	2.07	1.58	
22.440	88858	18381	55472	11889	0.4237	1.60	
23.108	297798	47061	180158	27483	1.40	1.65	
24.295	147101	20359	102031	14884	0.7314	1.44	
25.918	35076	4598	25660	4403	0.1783	1.37	
Signal Totals:							
	1001727	171376	636797	109547			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1638524	280923				1.57	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 4.810 = (1638524 * 5.000) / (1622235 * 1.050)

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDF, RT: 30.355

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.238	D 13C-1,2,3,4,7,8-HxCDF	100.000	1148421	215781
1,2,3,6,7,8-HxCDF	1.190	D 13C-1,2,3,6,7,8-HxCDF	100.000	1416512	263992
2,3,4,6,7,8-HxCDF	1.213	D 13C-2,3,4,6,7,8-HxCDF	100.000	1238249	283680
1,2,3,7,8,9-HxCDF	1.227	D 13C-1,2,3,7,8,9-HxCDF	100.000	1129564	255862

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		5.000	1233186	254828

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
28.664	115094	14476	106609	14483	0.7386	1.08	
29.942	70762	10646	45023	8073	0.3857	1.57	RQ
29.942	55828	10010	45023	8073	0.3360		Empc Correction
31.552	36829	8666	32769	7208	0.2319	1.12	
32.524	121447	27516	103476	25655	0.7493	1.17	a
Signal Totals:							
	329198	60668	287877	55419			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	632009	116723				1.20	RQa
	617075	116087					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.105 = (632009 * 5.000) / (1233186 * 1.217)
Empc Amount: 2.056 = (617075 * 5.000) / (1233186 * 1.217)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDD, RT: 31.033

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.162	D 13C-1,2,3,4,7,8-HxCDD	100.000	712438	190802
1,2,3,6,7,8-HxCDD	1.032	D 13C-1,2,3,6,7,8-HxCDD	100.000	1010868	226050
1,2,3,7,8,9-HxCDD	1.241				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		5.000	861653	208426

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
31.113	17642	3726	14406	2998	0.1624	1.22	M
Signal Totals:							
	17642	3726	14406	2998			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	32048	6724				1.22	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1624 = (32048 * 5.000) / (861653 * 1.145)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDF, RT: 34.351

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.462	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	863414	236845
1,2,3,4,7,8,9-HpCDF	1.426	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	681039	176070

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.444		5.000	772226	206457

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
34.126	154366	43967	167766	45797	1.44	0.92	M
Signal Totals:							
	154366	43967	167766	45797			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	322132	89764				0.92	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 1.444 = (322132 * 5.000) / (772226 * 1.444)

QC Flag Legend

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Lims ID:	320-68943-A-1-A		
Client ID:	11215702-Tank#1-1-8-21		
Inject. Date:	27-Jan-2021 22:17:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDD, RT: 34.460

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.102	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	736088	193736

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.102		5.000	736088	193736

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
34.066	172487	52101	154315	47781	2.01	1.12	M
Signal Totals:							
	172487	52101	154315	47781			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	326802	99882				1.12	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.014 = (326802 * 5.000) / (736088 * 1.102)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d

Injection Date: 27-Jan-2021 22:17:05 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#1-1-8-21

Worklist#: 456215 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

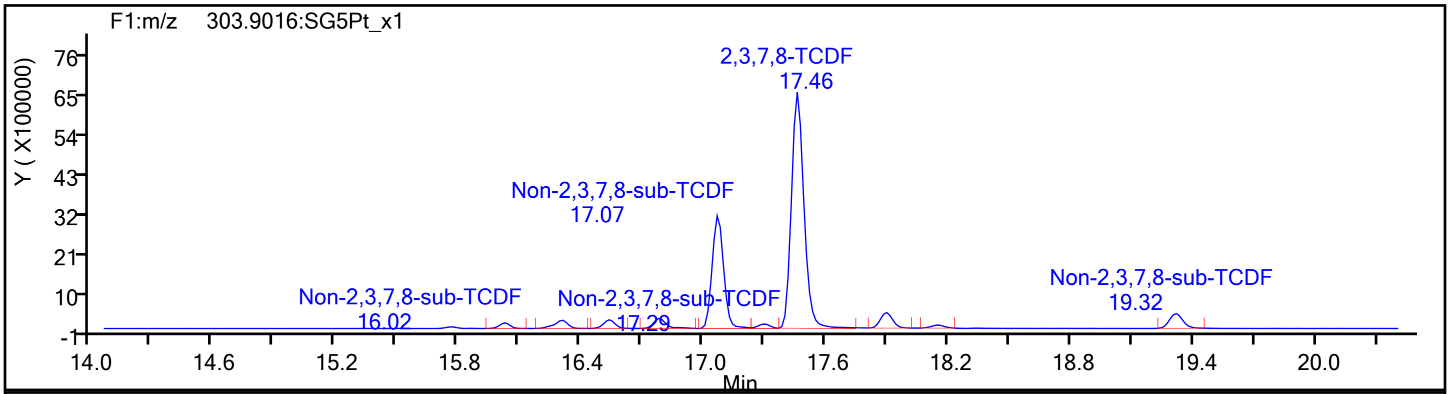

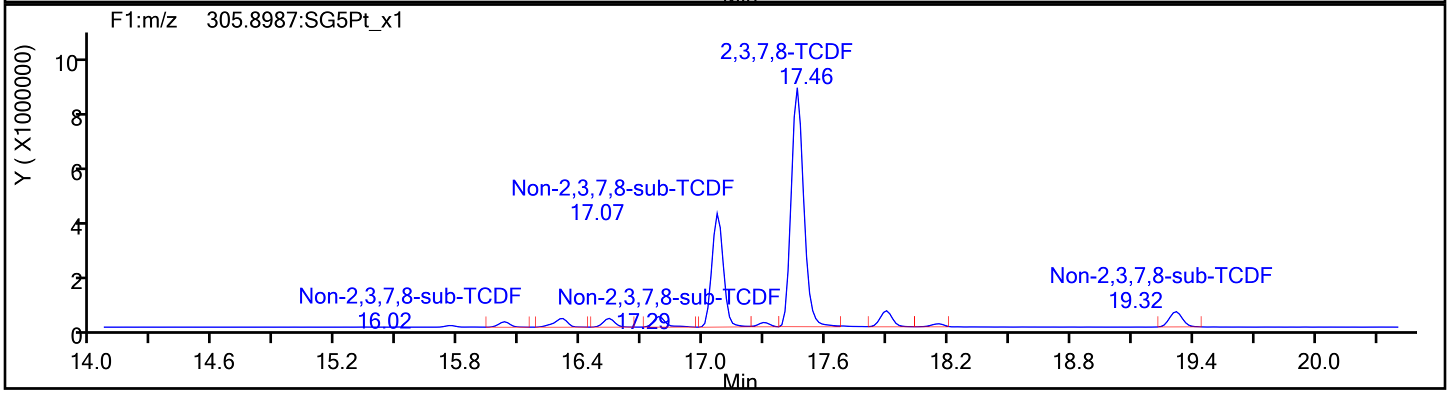

TCDF Standards

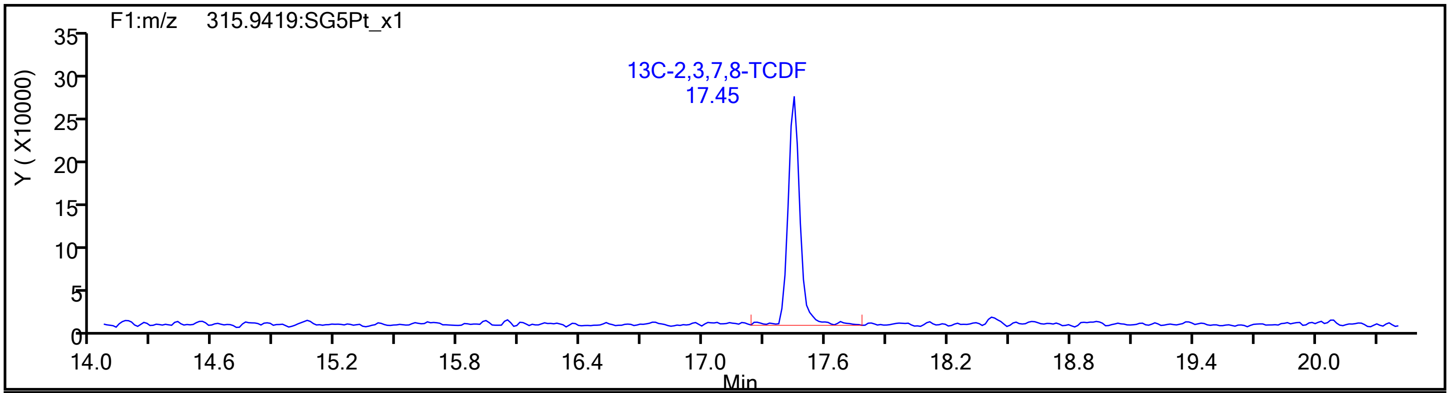

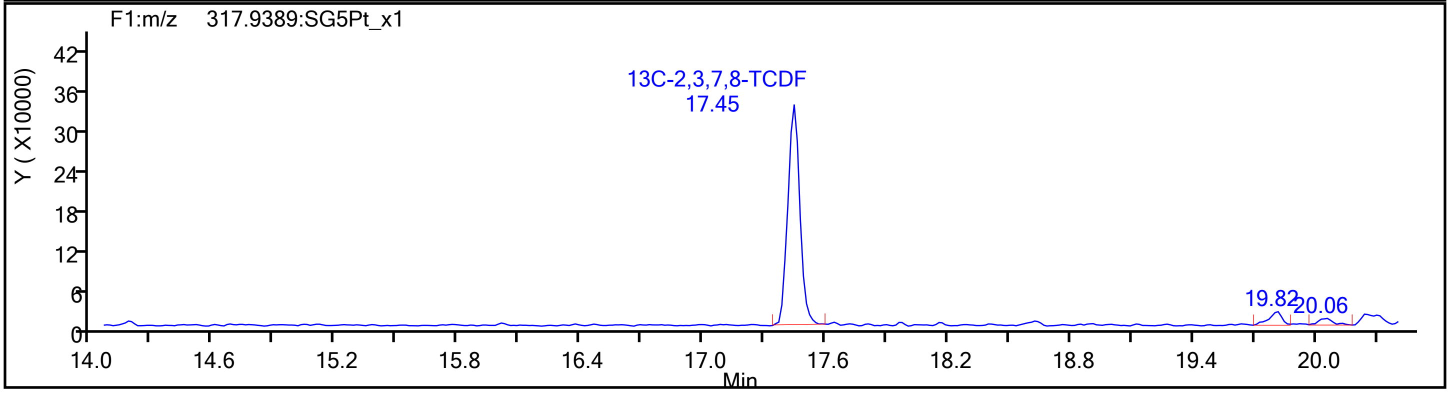

Report Date: 29-Jan-2021 09:29:53 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Injection Date:	27-Jan-2021 22:17:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	456215	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

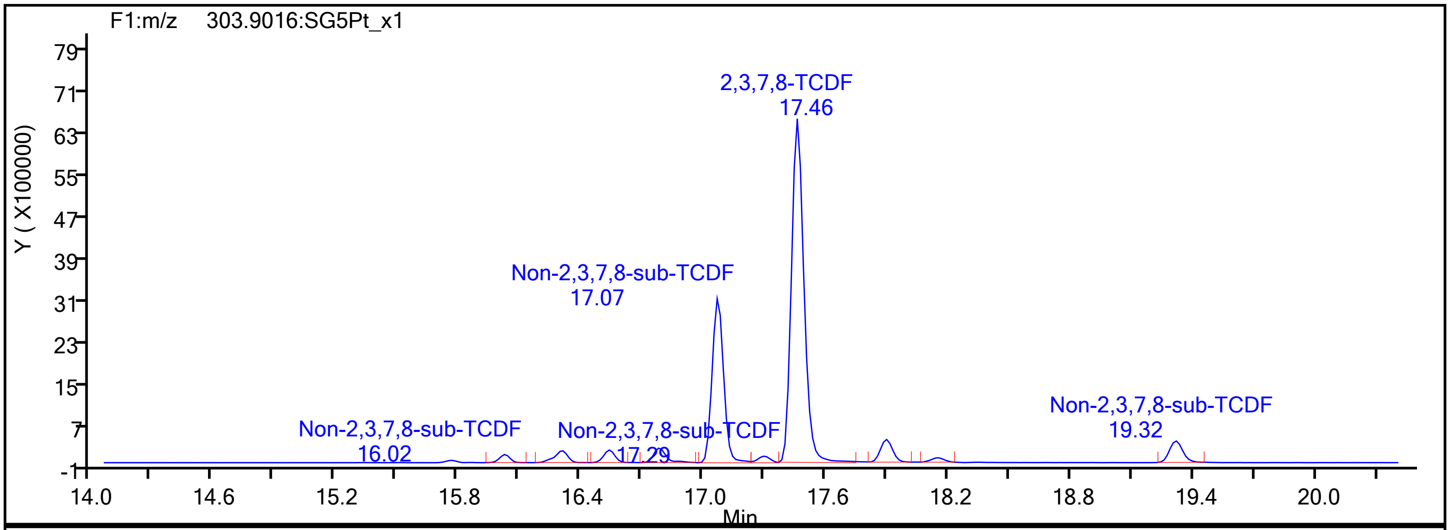

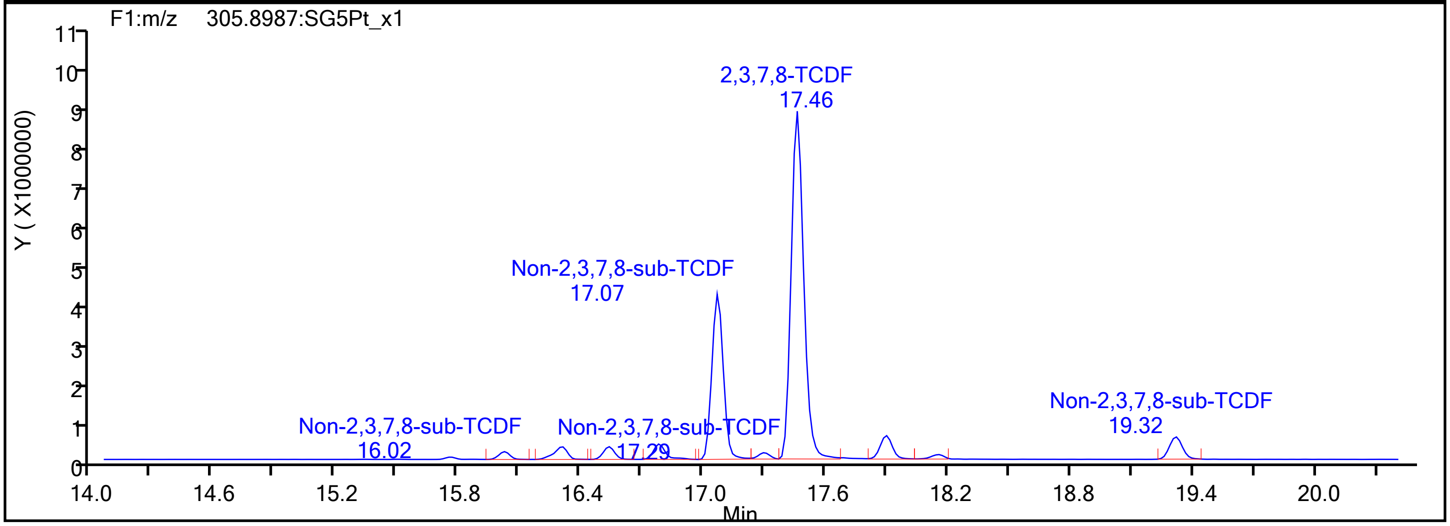

TCDF Interference Mass

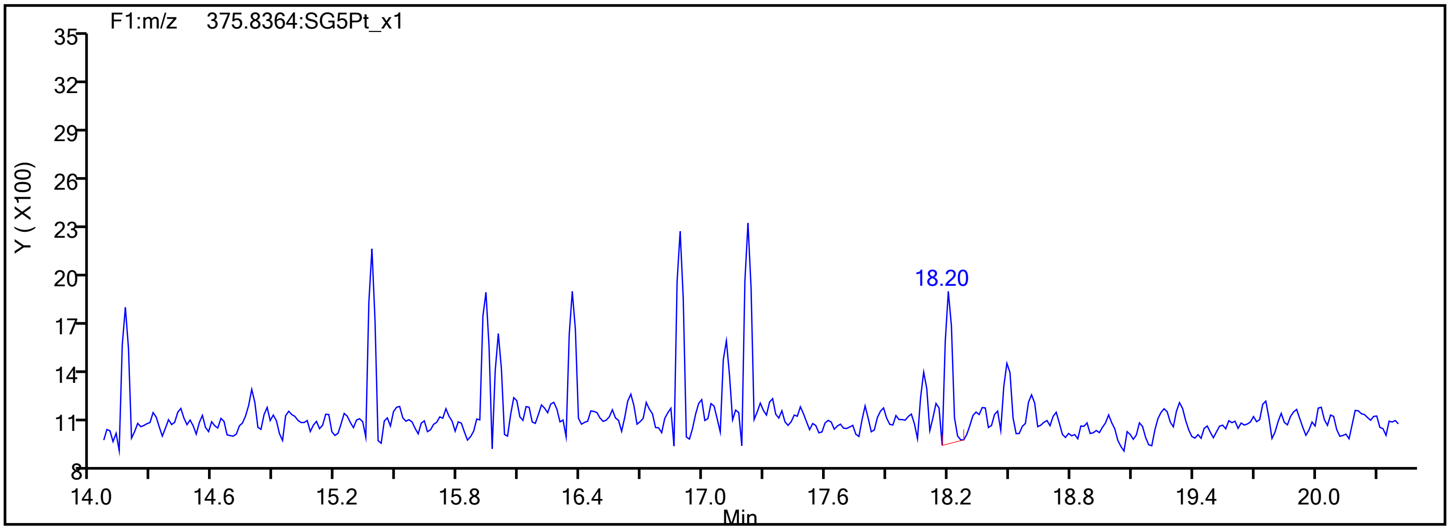

Report Date: 29-Jan-2021 09:29:53
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d
Injection Date: 27-Jan-2021 22:17:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-1-8-21
Worklist#: 456215
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

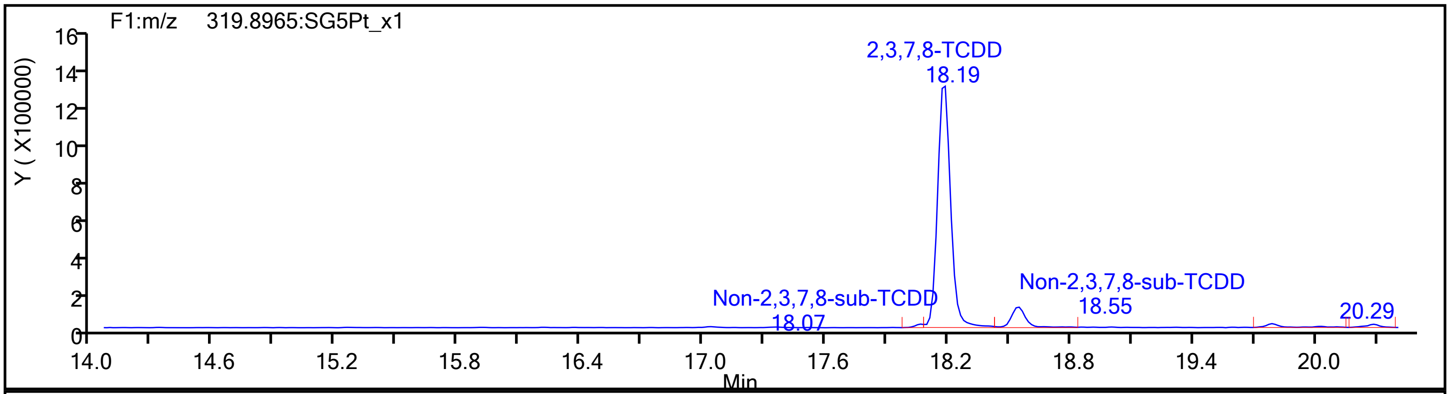

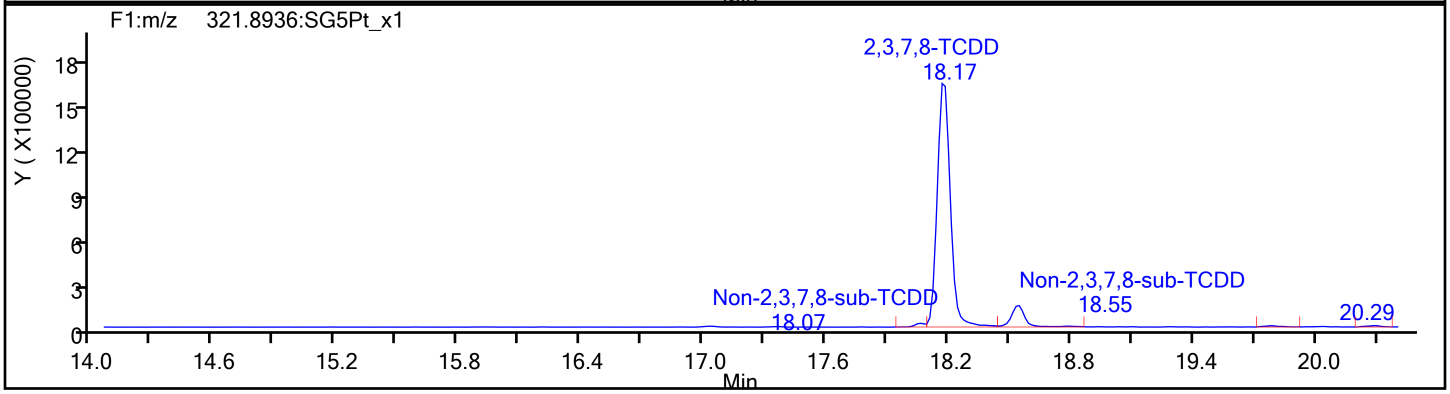

TCDD Standards

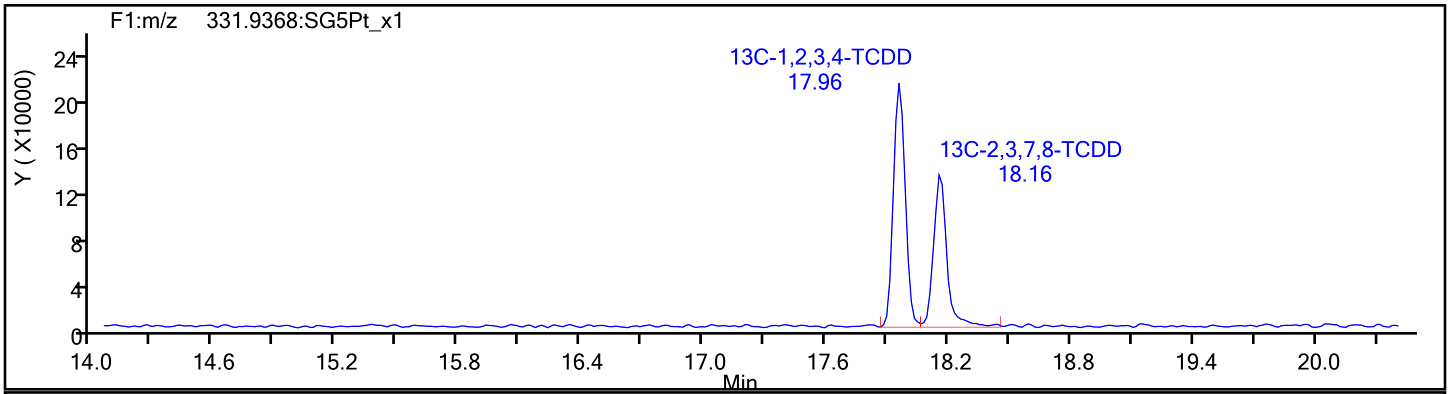

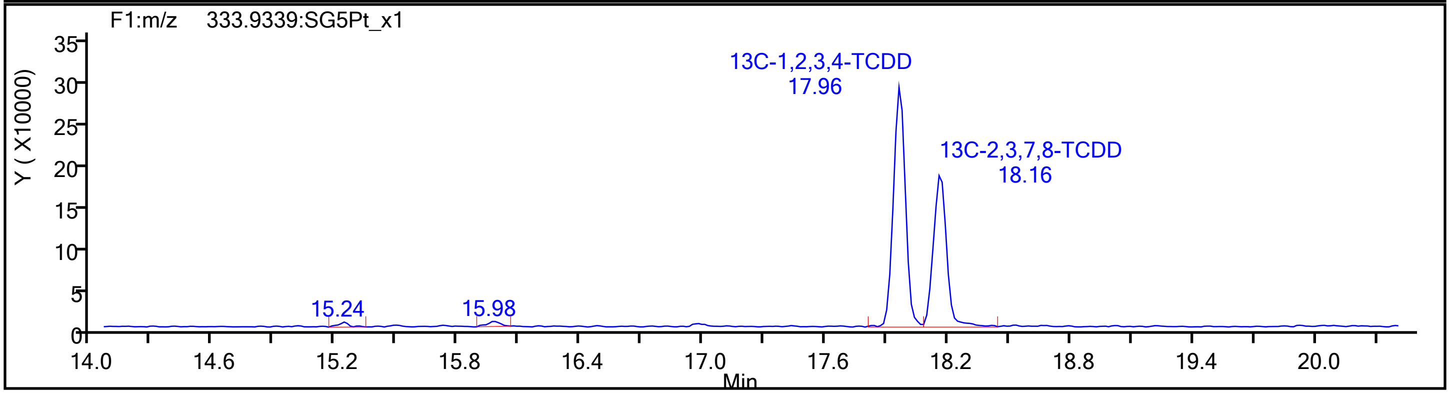

Report Date: 29-Jan-2021 09:29:54 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d

Injection Date: 27-Jan-2021 22:17:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#1-1-8-21
Worklist#: 456215
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

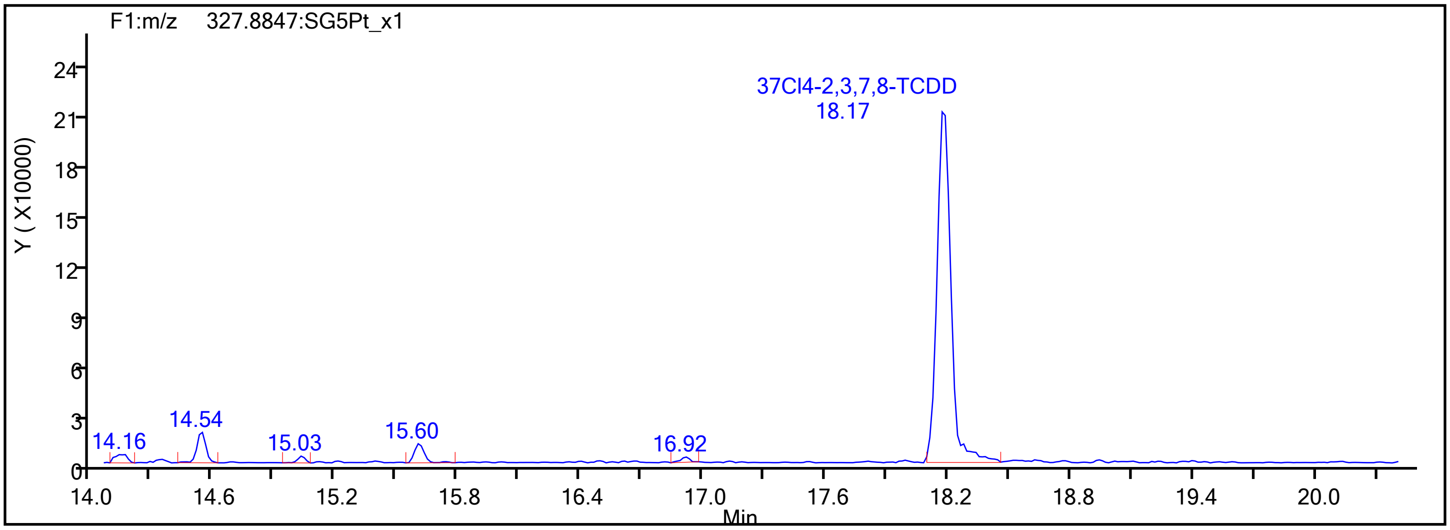

37Cl4-TCDD Standards

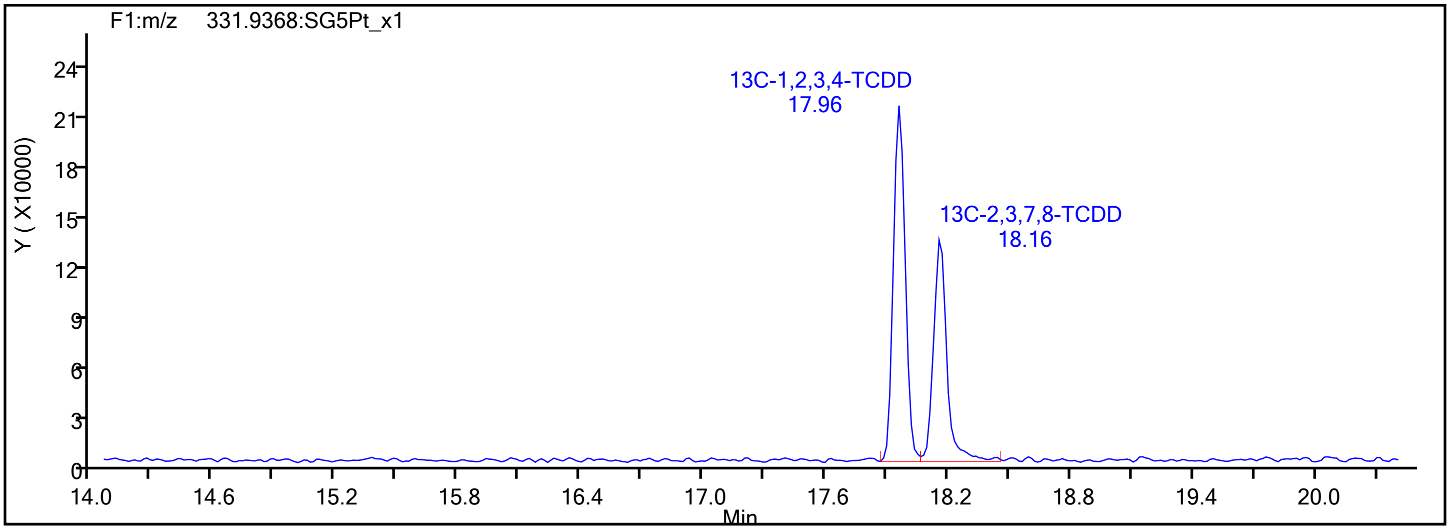

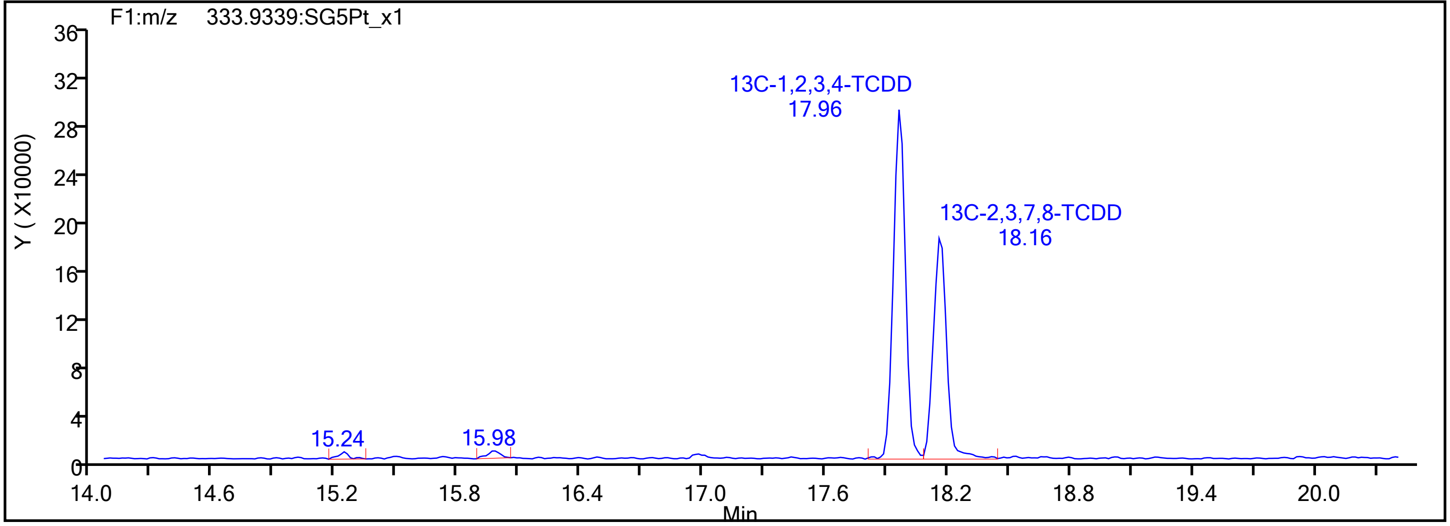

Report Date: 29-Jan-2021 09:29:54 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Injection Date:	27-Jan-2021 22:17:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	456215	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

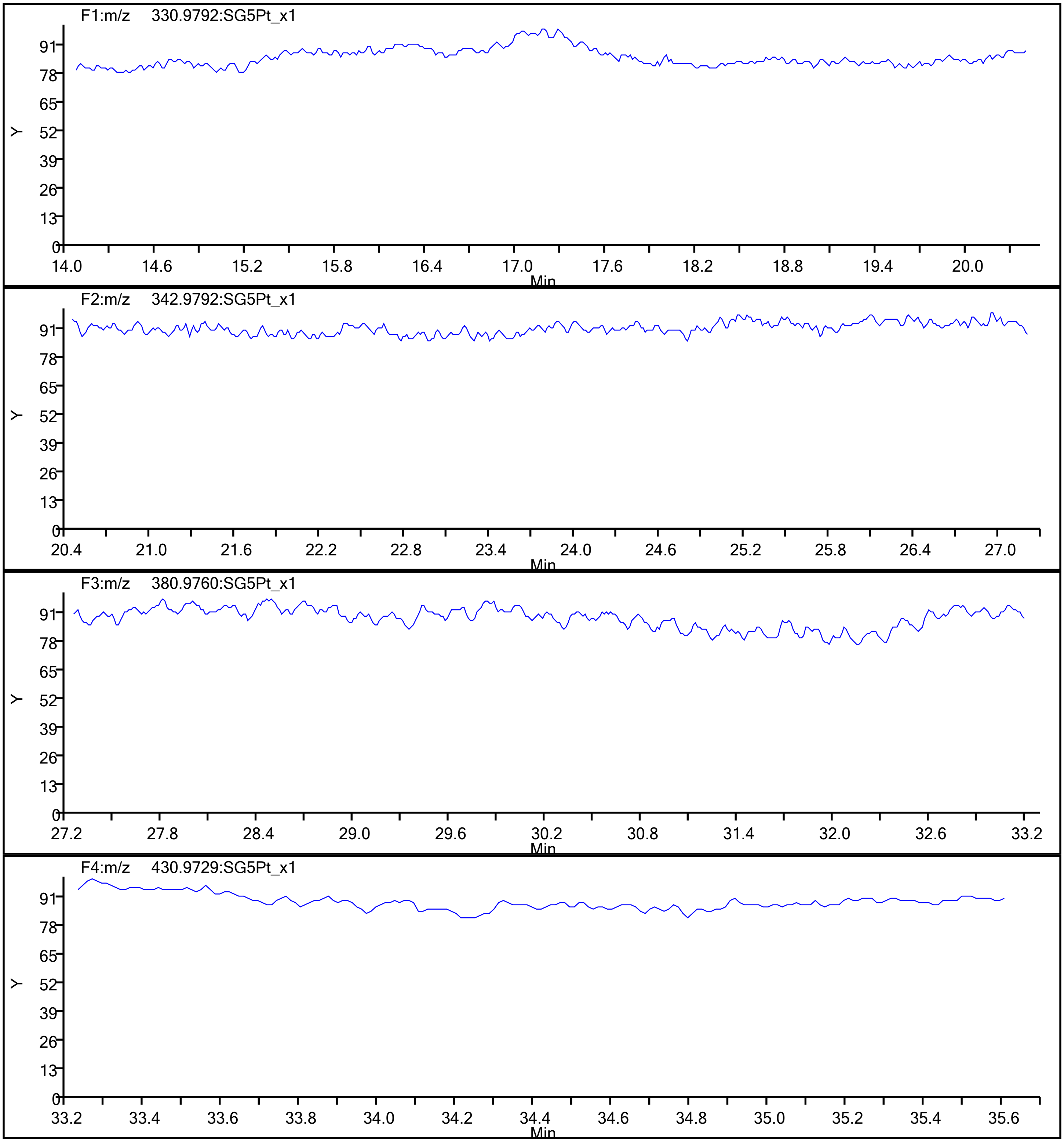

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_11.d		
Injection Date:	27-Jan-2021 22:17:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#1-1-8-21		
Worklist#:	456215	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

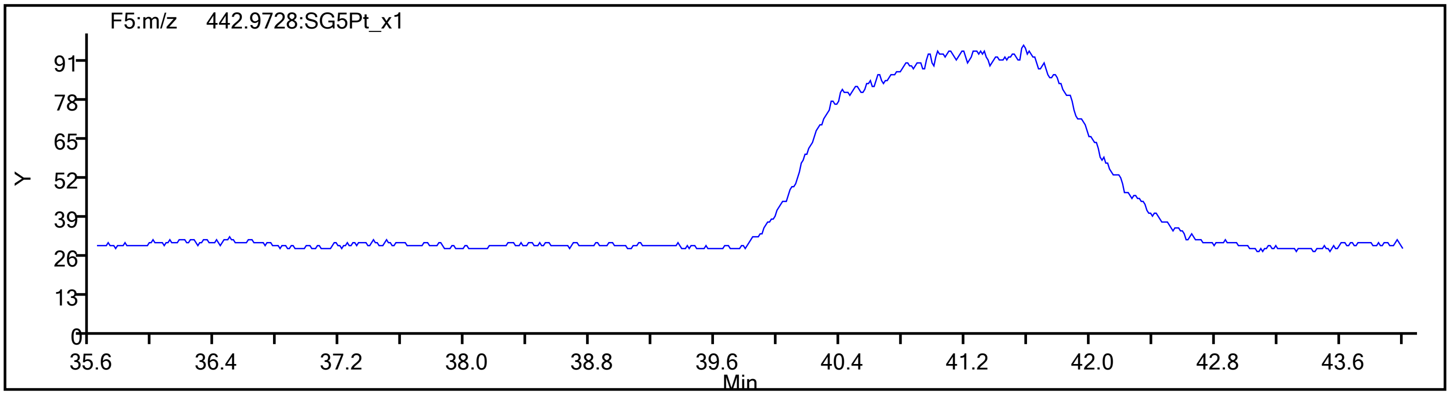

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Client Sample ID: 11215702-Tank#2-1-8-21 Lab Sample ID: 320-68943-2

Matrix: Water Lab File ID: 22ja21dfs1_15.d

Analysis Method: 1613B Date Collected: 01/08/2021 14:30

Extract. Method: 1613B Date Extracted: 01/18/2021 11:00

Sample wt/vol: 1054.9(mL) Date Analyzed: 01/23/2021 07:52

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 454782 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	52		47	1.5
57117-41-6	1,2,3,7,8-PeCDF	910		47	6.1
57117-31-4	2,3,4,7,8-PeCDF	470		47	6.7
39227-28-6	1,2,3,4,7,8-HxCDD	3.0	J	47	0.84
57653-85-7	1,2,3,6,7,8-HxCDD	8.4	J	47	0.84
19408-74-3	1,2,3,7,8,9-HxCDD	5.0	J	47	0.78
70648-26-9	1,2,3,4,7,8-HxCDF	1800		47	4.8
57117-44-9	1,2,3,6,7,8-HxCDF	420		47	4.7
72918-21-9	1,2,3,7,8,9-HxCDF	29	J	47	4.2
60851-34-5	2,3,4,6,7,8-HxCDF	50		47	4.2
35822-46-9	1,2,3,4,6,7,8-HpCDD	280	B	47	1.2
67562-39-4	1,2,3,4,6,7,8-HpCDF	490	B	47	1.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	190		47	1.3
3268-87-9	OCDD	4400	B	95	2.0
39001-02-0	OCDF	270		95	0.76
36088-22-9	Total PeCDD	58		47	1.5
30402-15-4	Total PeCDF	2300		47	6.4
34465-46-8	Total HxCDD	61	q	47	0.82
55684-94-1	Total HxCDF	2500		47	4.5
37871-00-4	Total HpCDD	540	B	47	1.2
38998-75-3	Total HpCDF	840	B	47	1.2

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Client Sample ID: 11215702-Tank#2-1-8-21 Lab Sample ID: 320-68943-2

Matrix: Water Lab File ID: 22ja21dfs1_15.d

Analysis Method: 1613B Date Collected: 01/08/2021 14:30

Extract. Method: 1613B Date Extracted: 01/18/2021 11:00

Sample wt/vol: 1054.9(mL) Date Analyzed: 01/23/2021 07:52

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 454782 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
109719-79-1	13C-1,2,3,7,8-PeCDD	83		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	80		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	78		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	80		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	69		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	73		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	72		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	66		26-138
114423-97-1	13C-OCDD	75		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	99		35-197

Report Date: 29-Jan-2021 09:06:10 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d				
Lims ID:	320-68943-A-2-A				
Client ID:	11215702-Tank#2-1-8-21				
Sample Type:	Client				
Inject. Date:	23-Jan-2021 07:52:00	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-68943-A-2-A				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	29-Jan-2021 09:06:10	Calib Date:	31-Dec-2020 17:29:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1613				

First Level Reviewer: arghestanis Date: 28-Jan-2021 09:16:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.225	4382141	0.83	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.246	6495376	0.82	1.9134	77.5	77.5	0.4500	0.4500	77.46	
2,3,7,8-TCDF	20.263	70758099	0.80	1.1488	948.2	948.2	4.181	4.181		E
A Non-2,3,7,8-sub-TCDF	19.715	54374993	0.81	1.1488	728.7	728.7	4.181	421.2		
S Total TCDF					1676.9	1676.9	4.181	4.181		
D 13C-2,3,7,8-TCDD	21.594	3741487	0.81	1.0908	78.3	78.3	0.4032	0.4032	78.27	
2,3,7,8-TCDD	21.628	13581159	0.82	1.3069	277.7	277.7	0.7389	0.7389		EMa
$ 37Cl4-2,3,7,8-TCDD	21.628	2128259		1.2281	39.5	39.5	0.0863	0.0863	98.86	
A Non-2,3,7,8-sub-TCDD	20.561	1290558	0.77	1.3069	26.7	26.4	0.7389	23.5		RQMa
S Total TCDD					304.5	304.1	0.7389	0.7389		RQ
D 13C-1,2,3,7,8-PeCDF	27.187	5353893	1.60	1.5355	79.6	79.6	0.2752	0.2752	79.56	
1,2,3,7,8-PeCDF	27.212	3020347	1.55	1.1695	48.2	48.2	0.3221	0.3221		
D 13C-2,3,4,7,8-PeCDF	28.703	4902859	1.59	1.4278	78.4	78.4	0.2960	0.2960	78.36	
2,3,4,7,8-PeCDF	28.729	1483747	1.53	1.2244	24.7	24.7	0.3559	0.3559		
A F1 PeCDFs	24.445	18810	1.74	1.1970	0.3064	0.3064	0.0180	0.3064		
A Non-2,3,7,8-sub-PeCDF	27.929	2854682	1.58	1.1970	46.5	46.5	0.3376	20.6		
S Total PeCDF					119.8	119.8	0.3390	0.3390		
D 13C-1,2,3,7,8-PeCDD	29.503	2826501	1.59	0.7800	82.7	82.7	0.1753	0.1753	82.69	
1,2,3,7,8-PeCDD	29.537	97896	1.66	1.2613	2.746	2.746	0.0787	0.0787		M
A Non-2,3,7,8-sub-PeCDD	28.272	11689	1.48	1.2613	0.3279	0.3279	0.0787	0.3279		
S Total PeCDD					3.074	3.074	0.0787	0.0787		
D 13C-1,2,3,4,7,8-HxCDF	34.863	4700784	0.54	1.4248	74.4	74.4	0.1805	0.1805	74.36	
1,2,3,4,7,8-HxCDF	34.880	5907764	1.28	1.3553	92.7	92.7	0.2552	0.2552		
D 13C-1,2,3,6,7,8-HxCDF	35.032	5215458	0.54	1.7108	68.7	68.7	0.1503	0.1503	68.71	
1,2,3,6,7,8-HxCDF	35.049	1507240	1.27	1.3081	22.1	22.1	0.2474	0.2474		
D 13C-2,3,4,6,7,8-HxCDF	35.857	4926748	0.54	1.5455	71.8	71.8	0.1664	0.1664	71.84	
2,3,4,6,7,8-HxCDF	35.874	170530	1.33	1.3248	2.613	2.613	0.2219	0.2219		M
D 13C-1,2,3,7,8,9-HxCDF	36.750	4447508	0.53	1.3772	72.8	72.8	0.1868	0.1868	72.78	
1,2,3,7,8,9-HxCDF	36.766	92007	1.32	1.3372	1.547	1.547	0.2237	0.2237		
A Non-2,3,7,8-sub-HxCDF	34.940	985163	1.28	1.3313	15.3	15.3	0.2361	6.515		
S Total HxCDF					134.3	134.3	0.2371	0.2371		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.548	4437144	1.27	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.067	2923857	1.29	0.8266	79.7	79.7	0.1419	0.1419	79.72	
1,2,3,4,7,8-HxCDD	36.076	6197	1.13	1.3422	0.1579	0.1579	0.0442	0.0442		
D 13C-1,2,3,6,7,8-HxCDD	36.185	3336814	1.29	1.0417	72.2	72.2	0.1126	0.1126	72.19	
1,2,3,6,7,8-HxCDD	36.202	17824	1.11	1.1989	0.4455	0.4455	0.0443	0.0443		
1,2,3,7,8,9-HxCDD	36.564	11200	1.24	1.3636	0.2624	0.2624	0.0411	0.0411		
A Non-2,3,7,8-sub-HxCDD	35.311	95489	1.24	1.3016	2.365	2.344	0.0431	1.125		RQM
S Total HxCDD					3.231	3.209	0.0432	0.0432		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.555	3432971	0.46	1.1053	70.0	70.0	0.1567	0.1567	70.00	
1,2,3,4,6,7,8-HpCDF	38.572	1451151	1.06	1.6487	25.6	25.6	0.0594	0.0594		
D 13C-1,2,3,4,7,8,9-HpCDF	39.810	2863964	0.46	0.9761	66.1	66.1	0.1775	0.1775	66.13	
1,2,3,4,7,8,9-HpCDF	39.818	446900	1.06	1.5723	9.924	9.924	0.0690	0.0690		
A Non-2,3,7,8-sub-HpCDF	39.160	432917	1.04	1.6105	8.538	8.538	0.0639	8.538		
S Total HpCDF					44.1	44.1	0.0642	0.0642		
D 13C-1,2,3,4,6,7,8-HpCDD	39.498	2796457	1.10	0.8768	71.9	71.9	0.0956	0.0956	71.88	
1,2,3,4,6,7,8-HpCDD	39.515	497630	1.06	1.2146	14.7	14.7	0.0614	0.0614		
A Non-2,3,7,8-sub-HpCDD	39.237	473410	1.04	1.2146	13.9	13.9	0.0614	13.9		
S Total HpCDD					28.6	28.6	0.0614	0.0614		
D 13C-OCDD	41.955	4751092	0.91	0.7137	150.0	150.0	0.1060	0.1060	75.01	
OCDF	42.056	618497	0.90	1.8132	14.4	14.4	0.0398	0.0398		
OCDD	41.963	6857169	0.91	1.2562	229.8	229.8	0.1041	0.1041		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 29-Jan-2021 09:06:10 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Sample Type: Client
Inject. Date: 23-Jan-2021 07:52:00 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-68943-A-2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 09:06:10 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: arghestanis Date: 28-Jan-2021 09:16:56

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.225	21.144	5		1983042	292026	612	1530	477		
333.9338	21.225	21.144	5		2399099	349248	516	1290	677	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.246	20.156	5	0.954	2926191	456501	1309	3272	349		
317.9389	20.246	20.156	5	0.954	3569185	557523	900	2250	619	0.82(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	20.263	20.182	5	1.001	31406948	4541069	8745	21862	519		
305.8987	20.263	20.182	5	1.001	39351151	5722111	10736	26840	533	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.721	19.715	-119	0.875	930118	167730	8745	21862	19		
305.8987	17.721	19.715	-119	0.875	1124241	211435	10736	26840	20	0.83(0.65-0.89)	
303.9016	18.210	19.715	-90	0.899	1459442	196443	8745	21862	22		
305.8987	18.210	19.715	-90	0.899	1805045	244476	10736	26840	23	0.81(0.65-0.89)	
303.9016	18.640	19.715	-64	0.921	1108678	156015	8745	21862	18		
305.8987	18.649	19.715	-64	0.921	1380843	193619	10736	26840	18	0.80(0.65-0.89)	
303.9016	19.026	19.715	-41	0.940	1511449	227279	8745	21862	26		
305.8987	19.026	19.715	-41	0.940	1885884	283288	10736	26840	26	0.80(0.65-0.89)	
303.9016	19.533	19.715	-11	0.965	14045426	2183428	8745	21862	250		
305.8987	19.533	19.715	-11	0.965	17383242	2688752	10736	26840	250	0.81(0.65-0.89)	
303.9016	19.945	19.715	14	0.985	765575	107429	8745	21862	12		
305.8987	19.945	19.715	14	0.985	938377	132455	10736	26840	12	0.82(0.65-0.89)	
303.9016	21.061	19.715	81	1.040	2134172	327543	8745	21862	37		
305.8987	21.061	19.715	81	1.040	2649306	403001	10736	26840	38	0.81(0.65-0.89)	
303.9016	23.534	19.715	229	1.162	2350466	424266	8745	21862	49		
305.8987	23.534	19.715	229	1.162	2902729	525001	10736	26840	49	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDD											
331.9368	21.594	21.496	6	1.017	1675754	231621	612	1530	378		
333.9338	21.602	21.496	6	1.018	2065733	296520	516	1290	575	0.81(0.65-0.89)	
2,3,7,8-TCDD											EMa
319.8965	21.628	21.522	6	1.002	6111787	859418	1149	2872	748		M
321.8936	21.628	21.522	6	1.002	7469372	1063133	891	2227	1193	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.628	21.539	5	1.019	2128259	298773	272	680	1098		
A Non-2,3,7,8-sub-TCDD											RQMa
319.8965	21.448	20.561	53	0.993	76182	12073	1149	2872	11		M
	Empc Correction				60571	11181	1149	2872	10		
321.8936	21.431	20.561	52	0.992	78664	14521	891	2227	16	0.97(0.65-0.89)	
319.8965	22.306	20.561	105	1.033	509956	67061	1149	2872	58		
321.8936	22.306	20.561	105	1.033	641367	83564	891	2227	94	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.187	27.119	4	1.281	3294946	538490	626	1565	860		
353.8970	27.187	27.119	4	1.281	2058947	333505	458	1145	728	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.212	27.145	4	1.001	1836971	303230	799	1997	380		
341.8567	27.212	27.145	4	1.001	1183376	190655	515	1287	370	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.703	28.635	4	1.352	3011535	467552	626	1565	747		
353.8970	28.695	28.635	4	1.352	1891324	286266	458	1145	625	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.729	28.660	4	1.001	897221	141705	799	1997	177		
341.8567	28.720	28.660	4	1.001	586526	91838	515	1287	178	1.53(1.32-1.78)	
A F1 PeCDFs											
339.8597	23.981	24.445	-28	0.882	11938	2341	7	17	334		
341.8567	23.972	24.445	-28	0.882	6872	1382	63	157	22	1.74(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	25.730	27.929	-132	0.946	771286	137498	799	1997	172		
341.8567	25.730	27.929	-132	0.946	493930	89664	515	1287	174	1.56(1.32-1.78)	
339.8597	26.640	27.929	-77	0.980	48583	7513	799	1997	9		
341.8567	26.648	27.929	-77	0.980	31099	4764	515	1287	9	1.56(1.32-1.78)	
339.8597	27.069	27.929	-51	0.996	118295	25149	799	1997	31		
341.8567	27.069	27.929	-51	0.996	72679	15879	515	1287	31	1.63(1.32-1.78)	
339.8597	27.802	27.929	-8	1.023	486956	78644	799	1997	98		
341.8567	27.793	27.929	-8	1.022	300993	49481	515	1287	96	1.62(1.32-1.78)	
339.8597	29.065	27.929	68	1.069	271007	39668	799	1997	50		
341.8567	29.074	27.929	69	1.069	172691	26040	515	1287	51	1.57(1.32-1.78)	
339.8597	30.775	27.929	170	1.132	52885	8786	799	1997	11		
341.8567	30.783	27.929	171	1.132	34278	5497	515	1287	11	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.503	29.443	4	1.390	1734568	257144	258	645	997		
369.8919	29.512	29.443	4	1.390	1091933	163157	93	232	1754	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	29.537	29.477	4	1.001	61138	9543	104	260	92		M
357.8516	29.528	29.477	3	1.001	36758	5618	63	157	89	1.66(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.330	28.272	-56	0.926	6982	1482	104	260	14		
357.8516	27.322	28.272	-57	0.926	4707	890	63	157	14	1.48(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.863	34.817	3	0.954	1638451	376673	431	1077	874		
385.8610	34.863	34.817	3	0.954	3062333	704798	829	2072	850	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.880	34.834	3	1.000	3320539	744880	753	1882	989		
375.8178	34.880	34.834	3	1.000	2587225	575855	743	1857	775	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.032	34.985	3	0.959	1832060	412853	431	1077	958		
385.8610	35.032	34.985	3	0.959	3383398	742660	829	2072	896	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.049	35.002	3	1.000	842882	183571	753	1882	244		
375.8178	35.049	35.002	3	1.000	664358	143273	743	1857	193	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.857	35.811	3	0.981	1724372	446592	431	1077	1036		
385.8610	35.857	35.811	3	0.981	3202376	825502	829	2072	996	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	35.874	35.828	3	1.000	97195	25141	753	1882	33		M
375.8178	35.865	35.828	2	1.000	73335	19702	743	1857	27	1.33(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.750	36.703	3	1.006	1534368	429249	431	1077	996		
385.8610	36.750	36.703	3	1.006	2913140	820950	829	2072	990	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.766	36.720	3	1.000	52351	16420	753	1882	22		
375.8178	36.766	36.720	3	1.000	39656	12275	743	1857	17	1.32(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.373	34.940	-94	0.957	237465	42143	753	1882	56		
375.8178	33.373	34.940	-94	0.957	180867	31174	743	1857	42	1.31(1.05-1.43)	
373.8208	34.249	34.940	-41	0.982	112103	24276	753	1882	32		
375.8178	34.249	34.940	-41	0.982	88533	20037	743	1857	27	1.27(1.05-1.43)	
373.8208	36.867	34.940	115	1.057	204097	59897	753	1882	80		
375.8178	36.867	34.940	115	1.057	162098	47007	743	1857	63	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.548	36.501	3		2486374	686952	350	875	1963		
403.8529	36.548	36.501	3		1950770	537845	225	562	2390	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.067	36.021	3	0.987	1646971	439082	350	875	1255		
403.8529	36.067	36.021	3	0.987	1276886	344549	225	562	1531	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.076	36.030	3	1.000	3293	809	94	235	9		
391.8127	36.076	36.030	3	1.000	2904	767	92	230	8	1.13(1.05-1.43)	

Report Date: 29-Jan-2021 09:06:10 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.185	36.139	3	0.990	1877621	494956	350	875	1414		
403.8529	36.185	36.139	3	0.990	1459193	380931	225	562	1693	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.202	36.156	3	1.000	9395	2686	94	235	29		
391.8127	36.202	36.156	3	1.000	8429	2103	92	230	23	1.11(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.564	36.518	3	1.014	6204	1249	94	235	13		
391.8127	36.548	36.518	2	1.013	4996	1015	92	230	11	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	34.173	35.311	-68	0.944	23617	4638	94	235	49		M
391.8127	34.165	35.311	-69	0.944	18824	3837	92	230	42	1.25(1.05-1.43)	M
389.8158	34.948	35.311	-22	0.966	4863	944	94	235	10		M
	Empc Correction				3994	871	94	235	9		
391.8127	34.948	35.311	-22	0.966	3221	703	92	230	8	1.51(1.05-1.43)	
389.8158	35.301	35.311	-1	0.976	25171	5818	94	235	62		M
391.8127	35.309	35.311	0	0.976	20662	4385	92	230	48	1.22(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.555	38.517	2	1.055	1085440	370930	414	1035	896		
419.8220	38.555	38.517	2	1.055	2347531	788862	435	1087	1813	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.572	38.525	3	1.000	745999	254176	272	680	934		
409.7788	38.563	38.525	2	1.000	705152	237879	182	455	1307	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.810	39.772	2	1.089	899937	330523	414	1035	798		
419.8220	39.810	39.772	2	1.089	1964027	715178	435	1087	1644	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.818	39.780	2	1.000	229559	83965	272	680	309		
409.7788	39.818	39.780	2	1.000	217341	79547	182	455	437	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.934	39.160	-14	1.010	220313	77813	272	680	286		
409.7788	38.934	39.160	-14	1.010	212604	74092	182	455	407	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.498	39.460	2	1.081	1462964	530400	203	507	2613		
437.8140	39.498	39.460	2	1.081	1333493	484773	208	520	2331	1.10(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.515	39.477	2	1.000	256572	90504	163	407	555		
425.7737	39.507	39.477	2	1.000	241058	85300	140	350	609	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.875	39.237	-22	0.984	241597	83418	163	407	512		
425.7737	38.866	39.237	-22	0.984	231813	77185	140	350	551	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.955	41.913	2	1.148	2267150	769730	206	515	3737		
471.7750	41.955	41.913	2	1.148	2483942	835818	165	412	5066	0.91(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDF											
441.7428	42.056	42.015	2	1.002	292568	98818	83	207	1191		
443.7399	42.056	42.015	2	1.002	325929	109645	149	372	736	0.90(0.76-1.02)	
OCDD											
457.7377	41.963	41.930	2	1.000	3264961	1109978	187	467	5936		
459.7348	41.963	41.930	2	1.000	3592208	1224960	233	582	5257	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-TCDF, RT: 19.715

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.149	D 13C-2,3,7,8-TCDF	100.000	6495376	1014024

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	6495376	1014024

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.721	930118	167730	1124241	211435	27.5	0.83	
18.210	1459442	196443	1805045	244476	43.7	0.81	
18.640	1108678	156015	1380843	193619	33.4	0.80	
19.026	1511449	227279	1885884	283288	45.5	0.80	
19.533	14045426	2183428	17383242	2688752	421.2	0.81	
19.945	765575	107429	938377	132455	22.8	0.82	
21.061	2134172	327543	2649306	403001	64.1	0.81	
23.534	2350466	424266	2902729	525001	70.4	0.81	
Signal Totals:							
	24305326	3790133	30069667	4682027			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	54374993	8472160				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 728.677 = (54374993 * 100.000) / (6495376 * 1.149)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-TCDD, RT: 20.561

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.307	D 13C-2,3,7,8-TCDD	100.000	3741487	528141

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.307		100.000	3741487	528141

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.448	76182	12073	78664	14521	3.17	0.97	RQMa
21.448	60571	11181	78664	14521	2.85		Empc Correction
22.306	509956	67061	641367	83564	23.5	0.80	
Signal Totals:							
	570527	78242	720031	98085			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1306169	177219				0.81	RQMa
	1290558	176327					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 26.712 = (1306169 * 100.000) / (3741487 * 1.307)
Empc Amount: 26.393 = (1290558 * 100.000) / (3741487 * 1.307)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

F1 PeCDFs, RT: 24.445

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	5353893	871995
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	4902859	753818

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	5128376	812906

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.981	11938	2341	6872	1382	0.3064	1.74	
Signal Totals:							
	11938	2341	6872	1382			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18810	3723				1.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3064 = (18810 * 100.000) / (5128376 * 1.197)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-PeCDF, RT: 27.929

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	5353893	871995
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	4902859	753818

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	5128376	812906

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.730	771286	137498	493930	89664	20.6	1.56	
26.640	48583	7513	31099	4764	1.30	1.56	
27.069	118295	25149	72679	15879	3.11	1.63	
27.802	486956	78644	300993	49481	12.8	1.62	
29.065	271007	39668	172691	26040	7.23	1.57	
30.775	52885	8786	34278	5497	1.42	1.54	
Signal Totals:							
	1749012	297258	1105670	191325			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2854682	488583				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 46.504 = (2854682 * 100.000) / (5128376 * 1.197)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-PeCDD, RT: 28.272

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.261	D 13C-1,2,3,7,8-PeCDD	100.000	2826501	420301

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.261		100.000	2826501	420301

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
27.330	6982	1482	4707	890	0.3279	1.48	
Signal Totals:							
	6982	1482	4707	890			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11689	2372				1.48	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3279 = (11689 * 100.000) / (2826501 * 1.261)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-HxCDF, RT: 34.940

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.355	D 13C-1,2,3,4,7,8-HxCDF	100.000	4700784	1081471
1,2,3,6,7,8-HxCDF	1.308	D 13C-1,2,3,6,7,8-HxCDF	100.000	5215458	1155513
2,3,4,6,7,8-HxCDF	1.325	D 13C-2,3,4,6,7,8-HxCDF	100.000	4926748	1272094
1,2,3,7,8,9-HxCDF	1.337	D 13C-1,2,3,7,8,9-HxCDF	100.000	4447508	1250199

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.331		100.000	4822624	1189819

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.373	237465	42143	180867	31174	6.52	1.31	
34.249	112103	24276	88533	20037	3.12	1.27	
36.867	204097	59897	162098	47007	5.70	1.26	
Signal Totals:							
	553665	126316	431498	98218			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	985163	224534				1.28	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 15.344 = (985163 * 100.000) / (4822624 * 1.331)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Inject. Date: 23-Jan-2021 07:52:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 454782
Lims Sample ID: 14

Non-2,3,7,8-sub-HxCDD, RT: 35.311

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.342	D 13C-1,2,3,4,7,8-HxCDD	100.000	2923857	783631
1,2,3,6,7,8-HxCDD	1.199	D 13C-1,2,3,6,7,8-HxCDD	100.000	3336814	875887
1,2,3,7,8,9-HxCDD	1.364				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.302		100.000	3130335	829759

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.173	23617	4638	18824	3837	1.04	1.25	M
34.948	4863	944	3221	703	0.1984	1.51	RQM
34.948	3994	871	3221	703	0.1771		Empc Correction
35.301	25171	5818	20662	4385	1.12	1.22	M
Signal Totals:							
	52782	11327	42707	8925			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	96358	20325				1.26	RQM
	95489	20252					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.365 = (96358 * 100.000) / (3130335 * 1.302)
Empc Amount: 2.344 = (95489 * 100.000) / (3130335 * 1.302)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-HpCDF, RT: 39.160

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.649	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	3432971	1159792
1,2,3,4,7,8,9-HpCDF	1.572	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2863964	1045701

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.610		100.000	3148467	1102746

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.934	220313	77813	212604	74092	8.54	1.04	
Signal Totals:							
	220313	77813	212604	74092			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	432917	151905				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 8.538 = (432917 * 100.000) / (3148467 * 1.610)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	23-Jan-2021 07:52:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	14

Non-2,3,7,8-sub-HpCDD, RT: 39.237

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.215	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2796457	1015173

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.215		100.000	2796457	1015173

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.875	241597	83418	231813	77185	13.9	1.04	
Signal Totals:							
	241597	83418	231813	77185			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	473410	160603				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 13.938 = (473410 * 100.000) / (2796457 * 1.215)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d				
Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	29.54
Area:	59674
Amount:	2.704856
Amount Units:	pg/ul

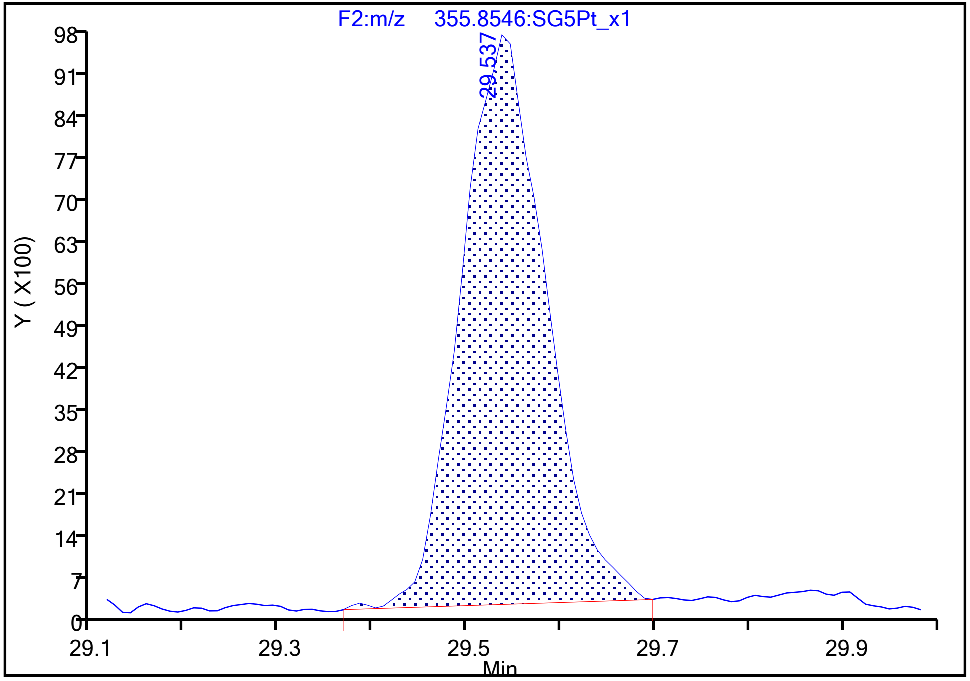

Manual Integration Results

RT:	29.54
Area:	61138
Amount:	2.745921
Amount Units:	pg/ul

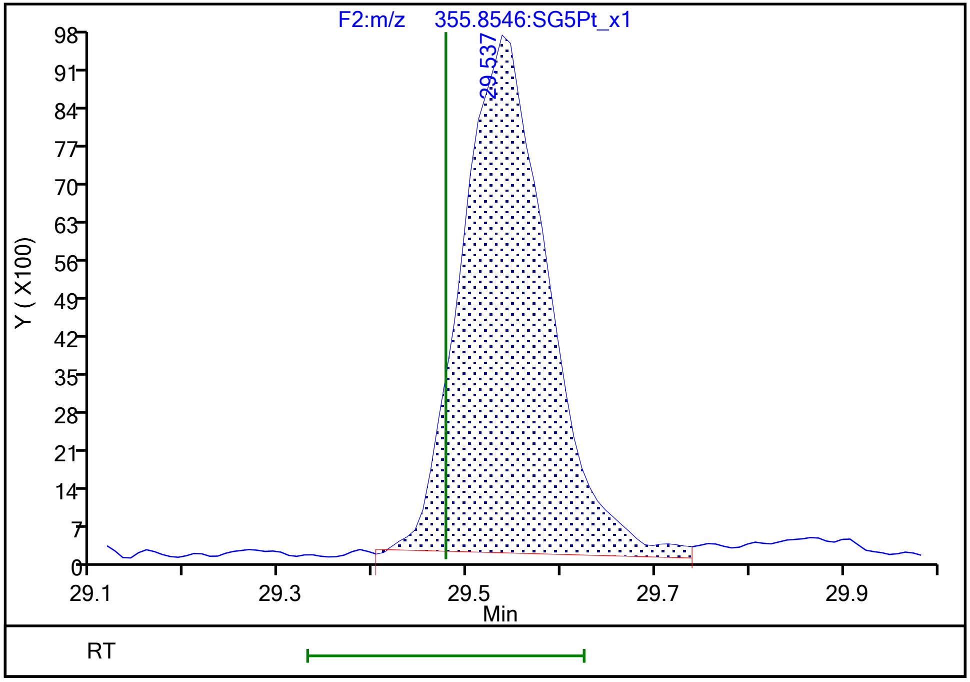

Reviewer: dadunj, 29-Jan-2021 09:03:18

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d				
Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	35.87
Area:	165064
Amount:	4.515854
Amount Units:	pg/ul

Processing Integration Results

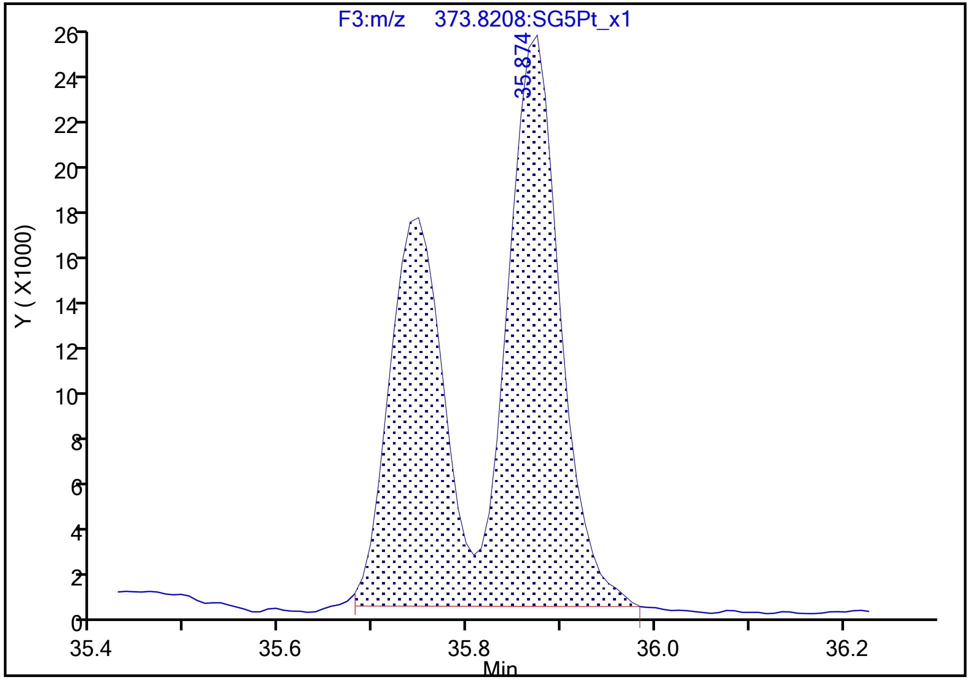

RT:	35.87
Area:	97195
Amount:	2.612791
Amount Units:	pg/ul

Manual Integration Results

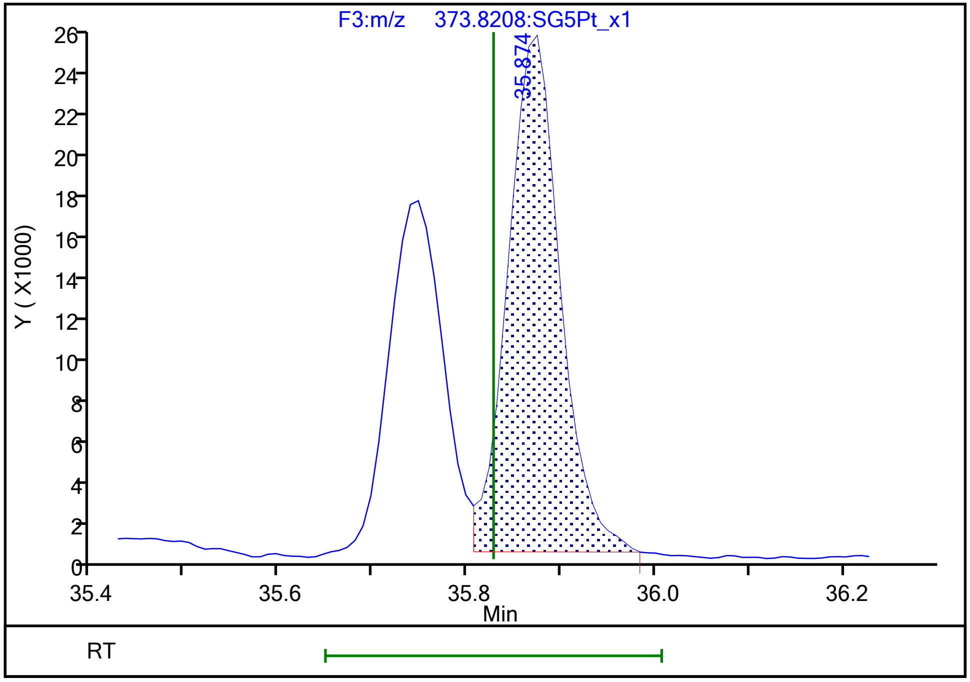

Reviewer: dadunj, 29-Jan-2021 09:03:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d

Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT:	35.87
Area:	129674
Amount:	4.515854
Amount Units:	pg/ul

Processing Integration Results

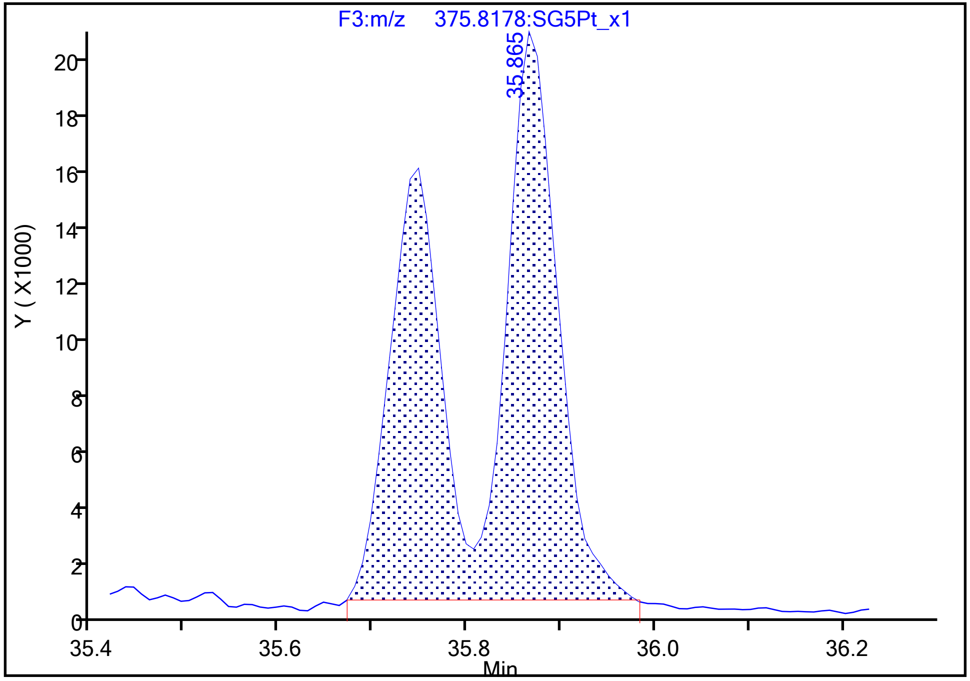

RT:	35.87
Area:	73335
Amount:	2.612791
Amount Units:	pg/ul

Manual Integration Results

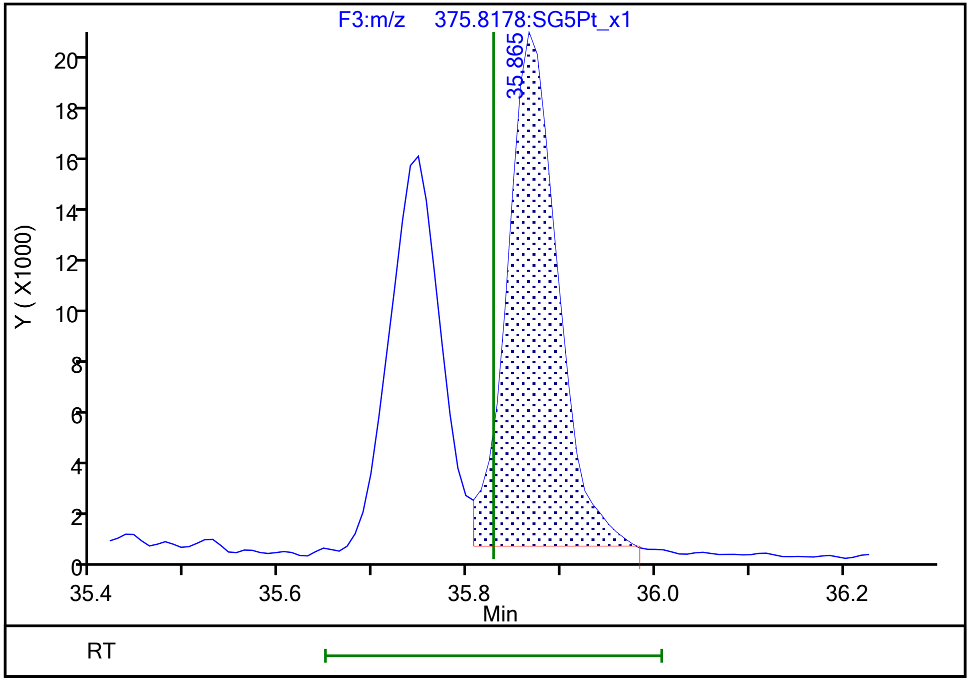

Reviewer: dadunj, 29-Jan-2021 09:04:02

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jan-2021 09:06:11

Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d				
Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (34.11- 36.51)

Signal: 1

Processing Integration Results

RT = 34.173 Area = 24042

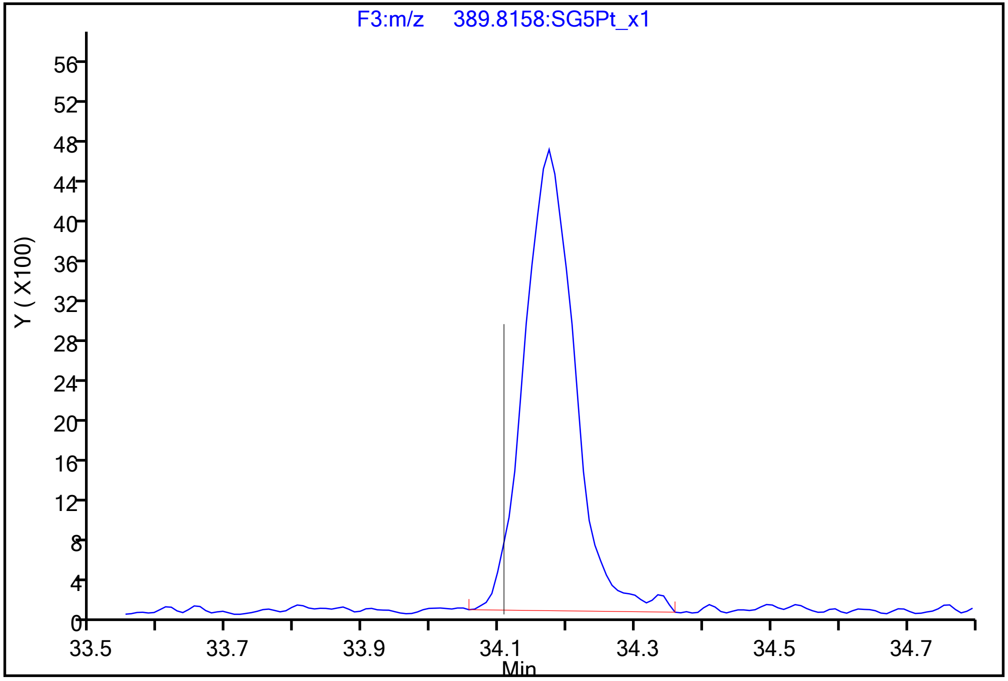

Manual Integration Results

RT = 34.173 Area = 23617 M

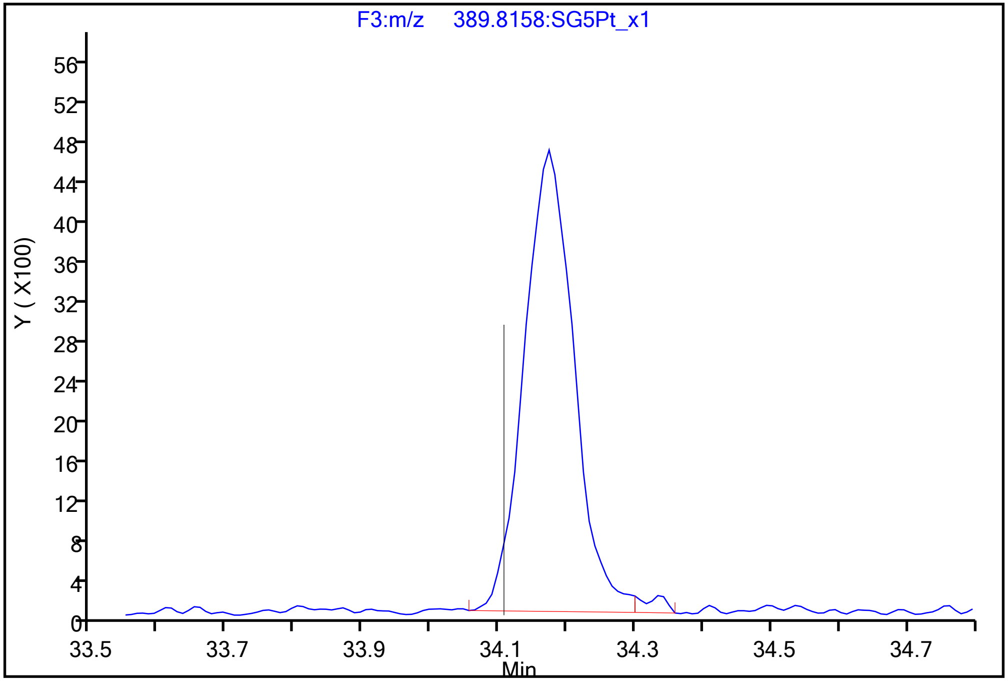

Reviewer: dadunj, 29-Jan-2021 09:04:34

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d				
Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (34.11- 36.51)

Signal: 2

Processing Integration Results

RT = 34.165 Area = 19640

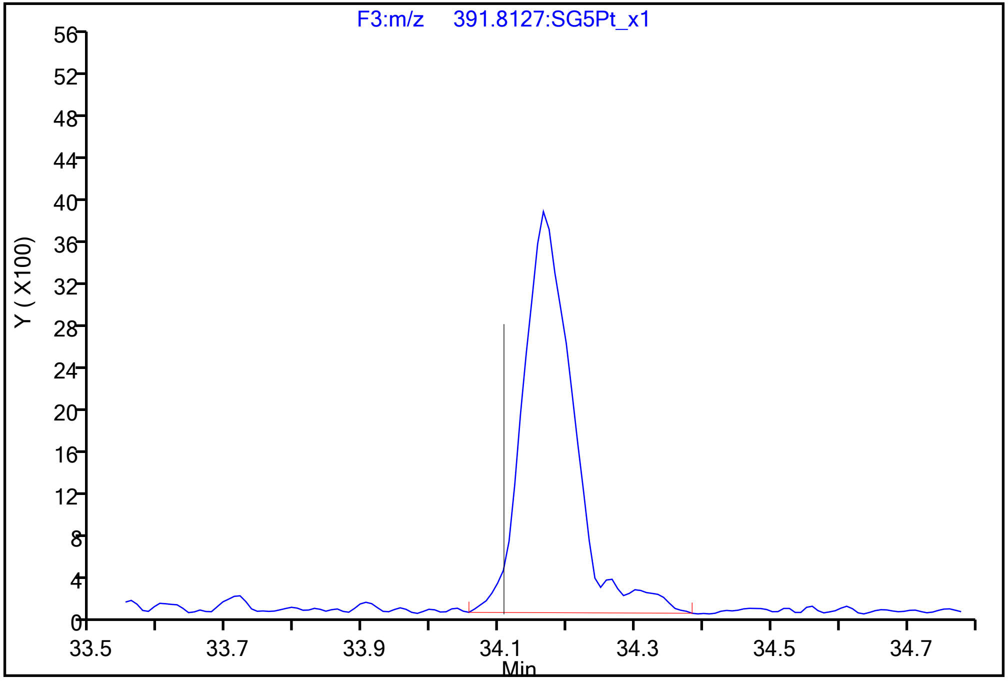

Manual Integration Results

RT = 34.165 Area = 18824 M

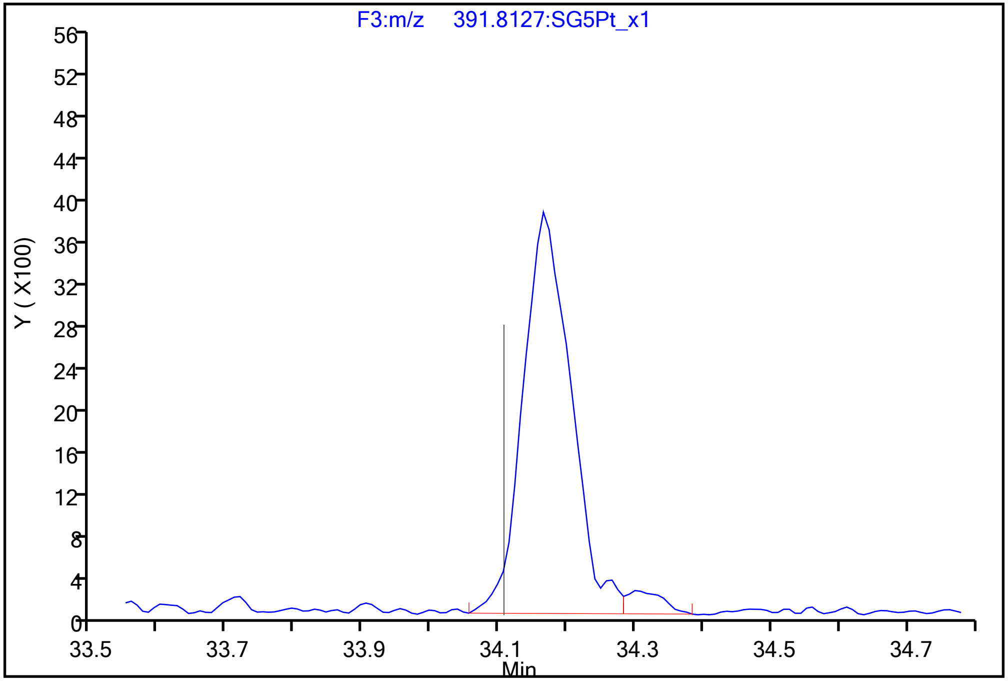

Reviewer: dadunj, 29-Jan-2021 09:04:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d

Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (34.11- 36.51)

Signal: 1

Processing Integration Results

RT = 34.948 Area = 5826

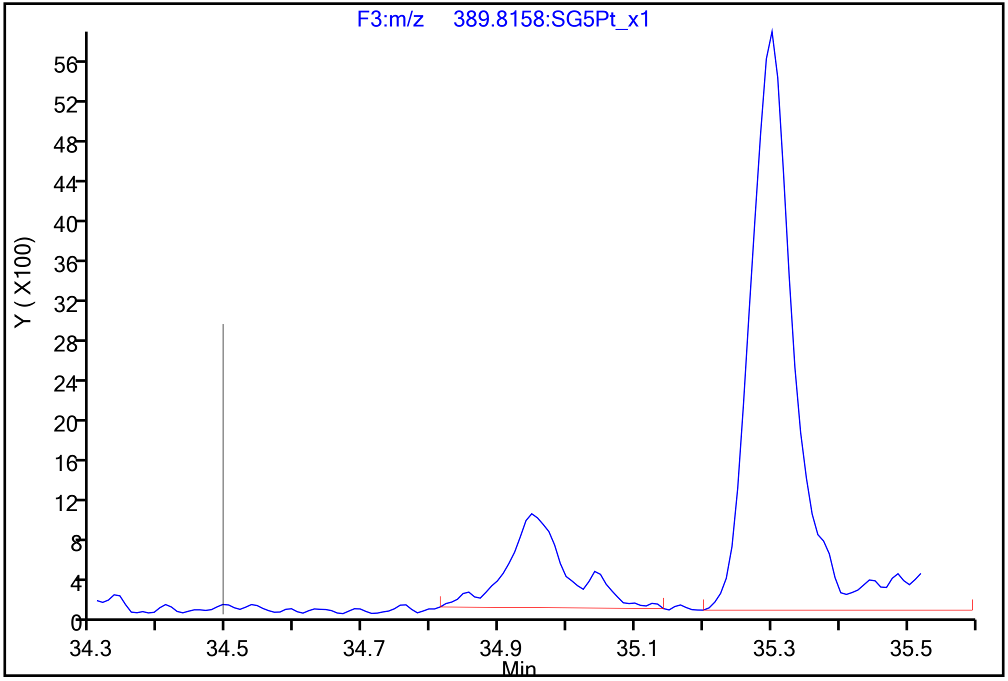

Manual Integration Results

RT = 34.948 Area = 4863 M

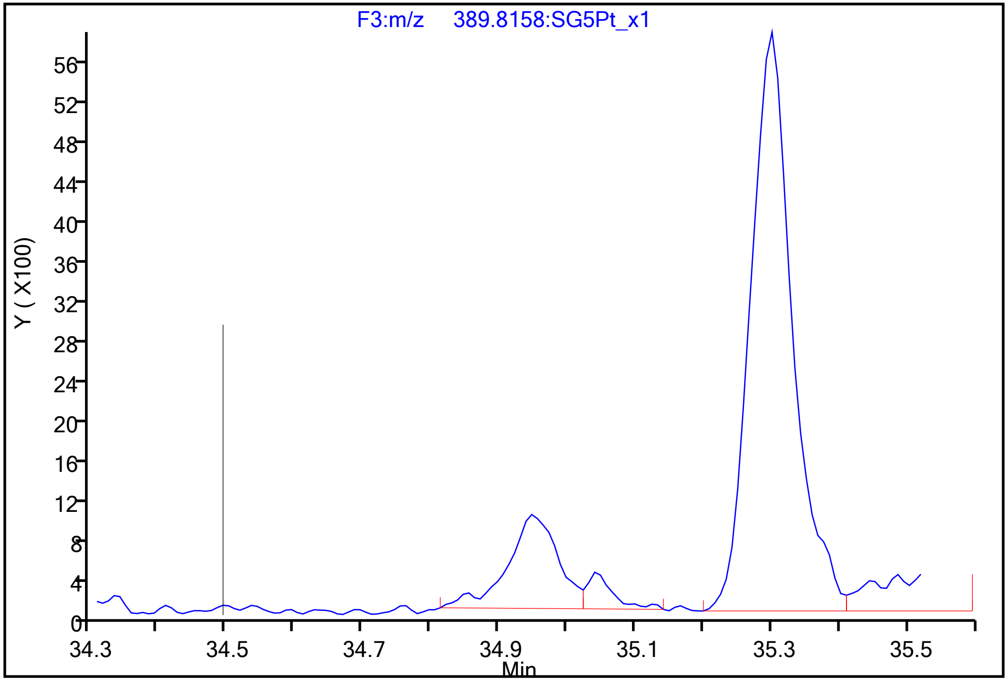

Reviewer: dadunj, 29-Jan-2021 09:04:34

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 29-Jan-2021 09:06:11
Chrom Revision: 2.3 18-Dec-2020 13:34:10
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d				
Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (34.11- 36.51)

Signal: 1

Processing Integration Results

RT = 35.301 Area = 27413

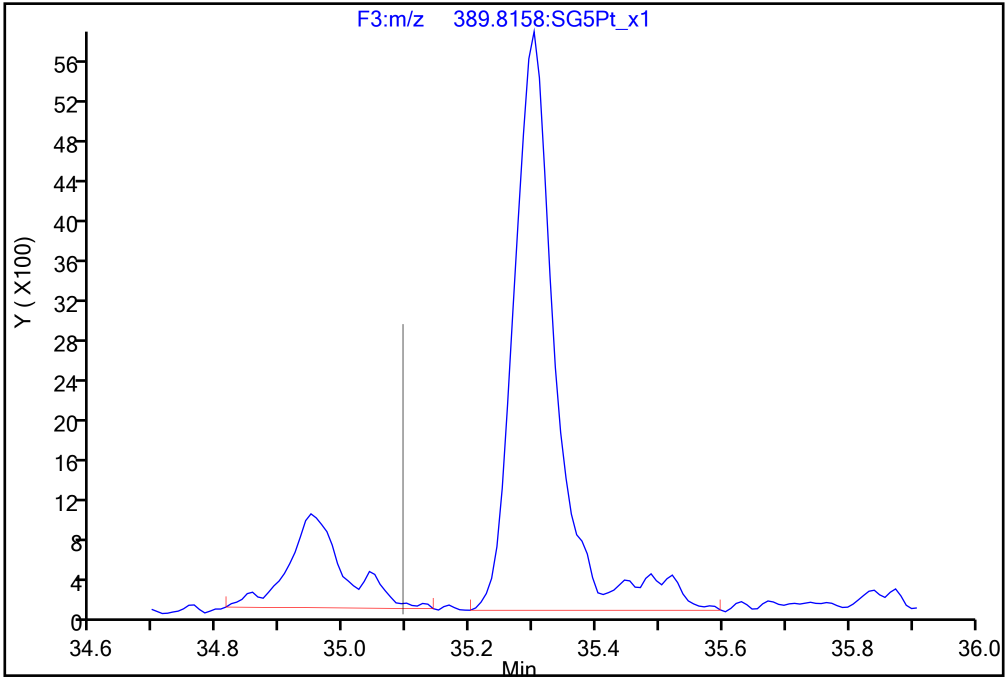

Manual Integration Results

RT = 35.301 Area = 25171 M

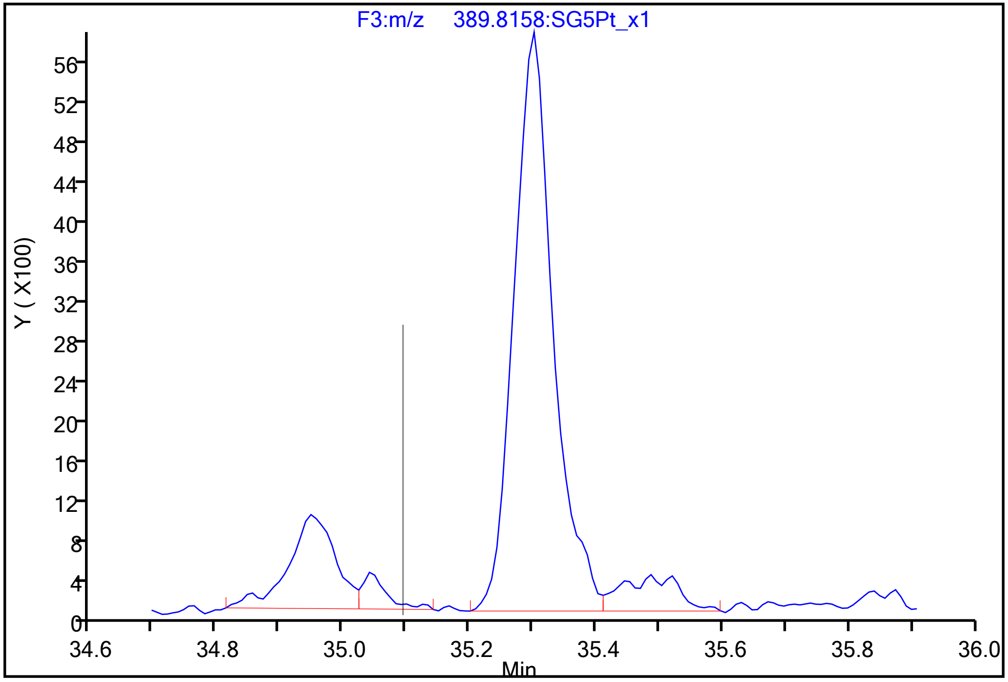

Reviewer: dadunj, 29-Jan-2021 09:04:34

Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Injection Date:	23-Jan-2021 07:52:00	Instrument ID:	DFS 1
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2
Client ID:	11215702-Tank#2-1-8-21		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (34.11- 36.51)

Signal: 2

Processing Integration Results

RT = 35.309 Area = 22455

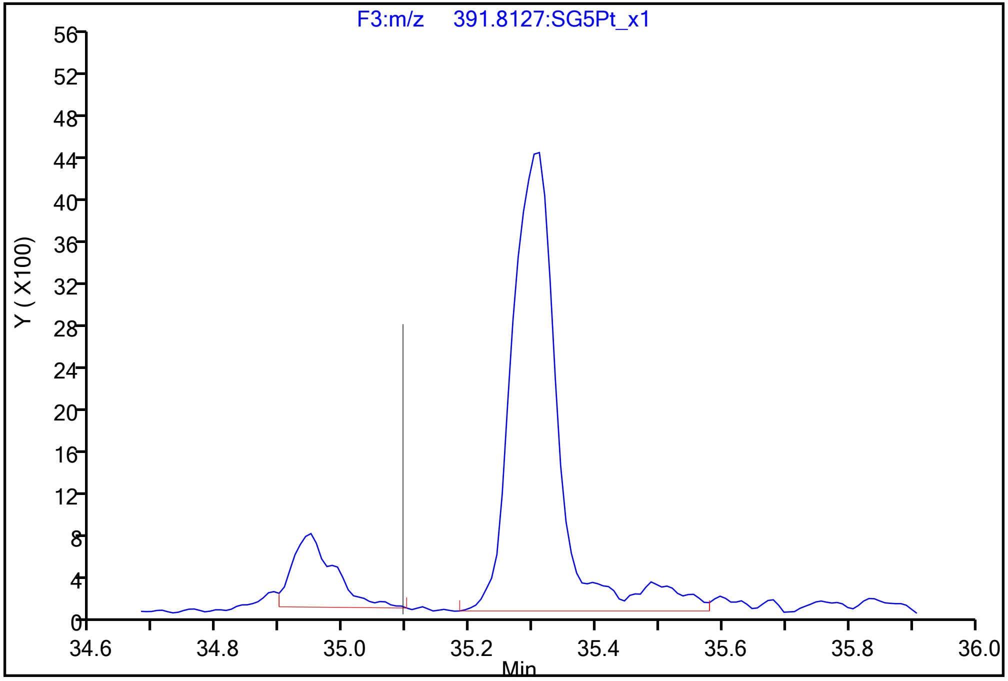

Manual Integration Results

RT = 35.309 Area = 20662 M

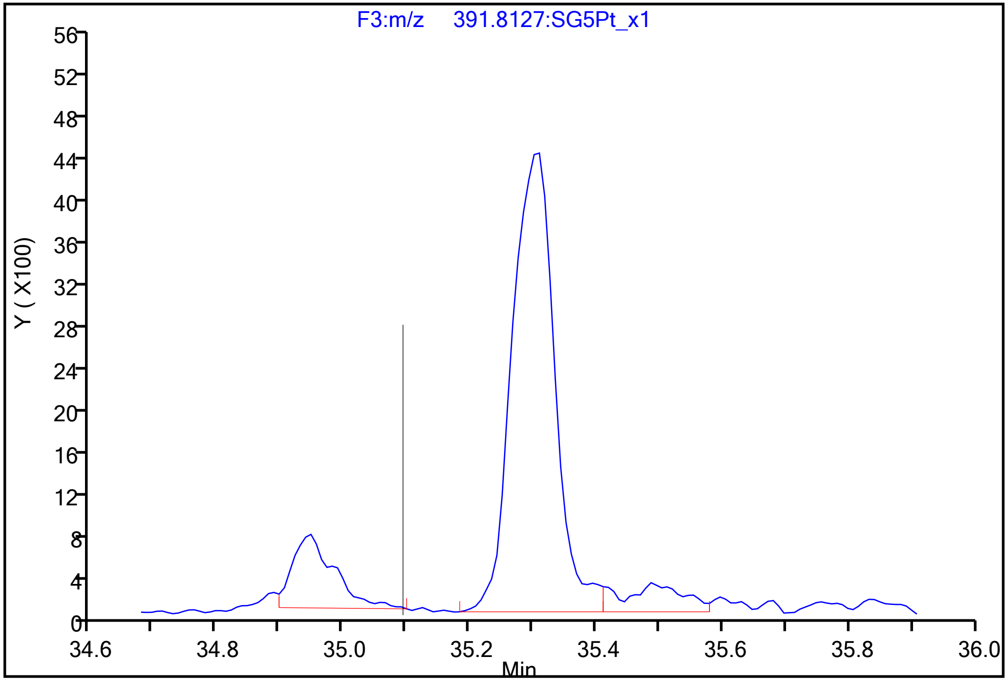

Reviewer: dadunj, 29-Jan-2021 09:04:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Injection Date:	23-Jan-2021 07:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

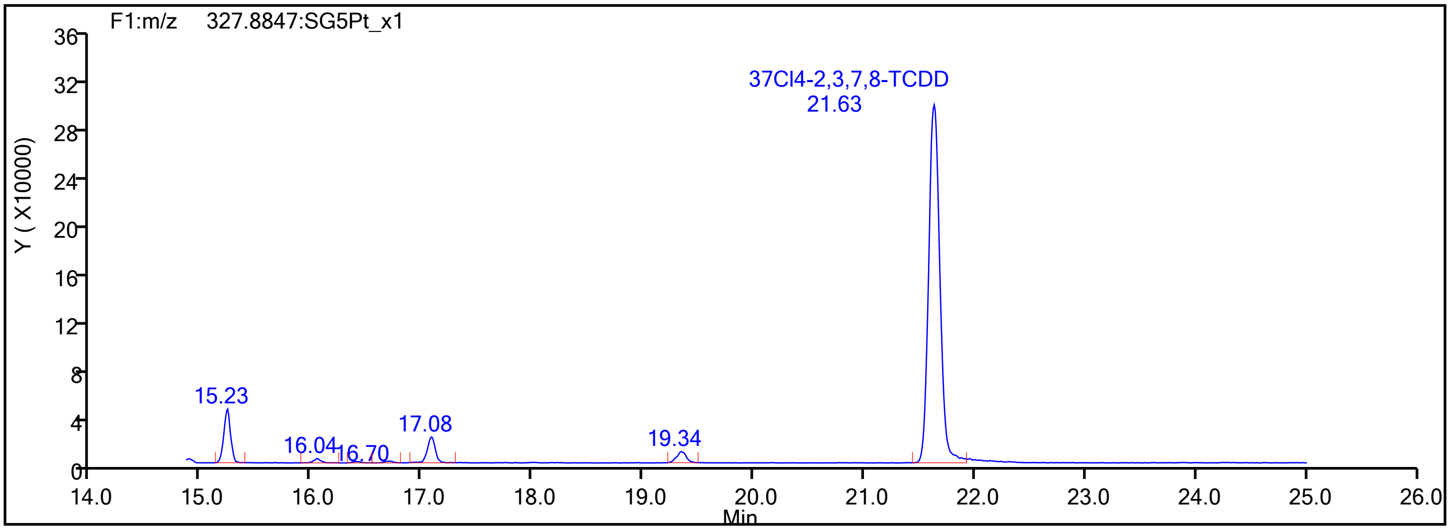

37Cl4-TCDD Standards

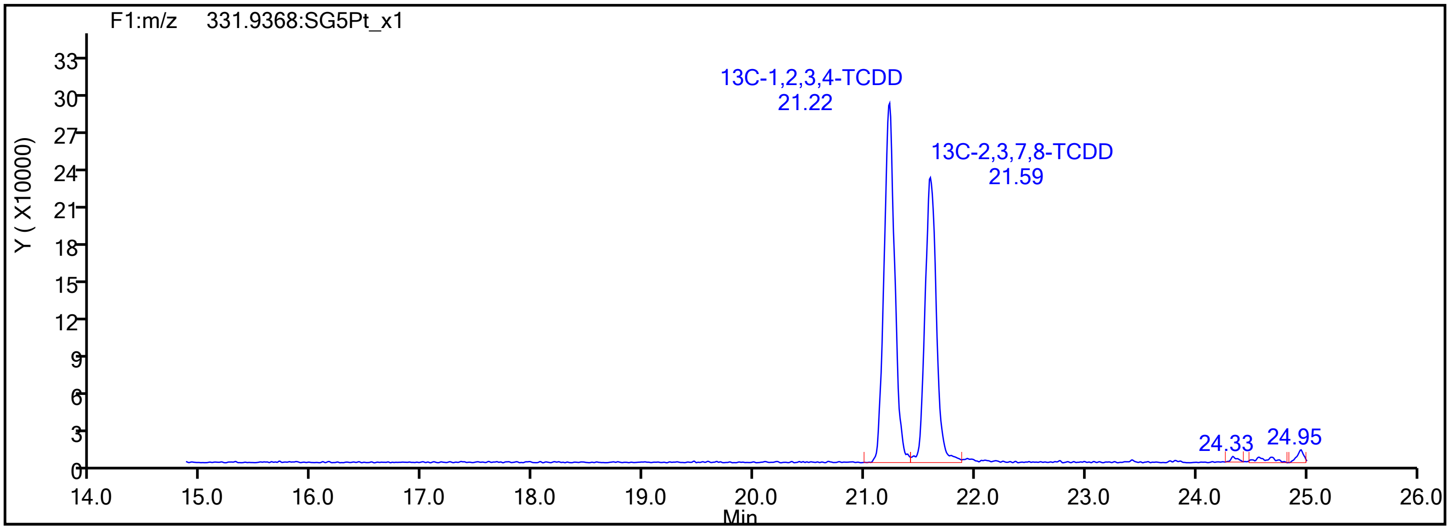

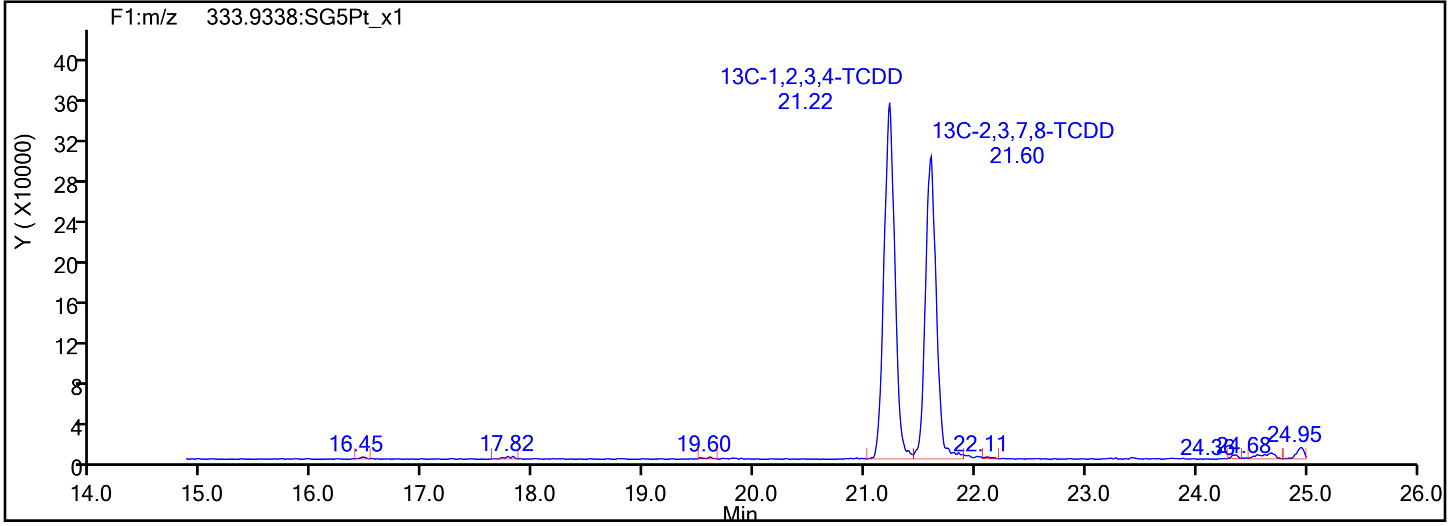

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d

Injection Date: 23-Jan-2021 07:52:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-1-8-21

Worklist#: 454782

Sample Line#: 14

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

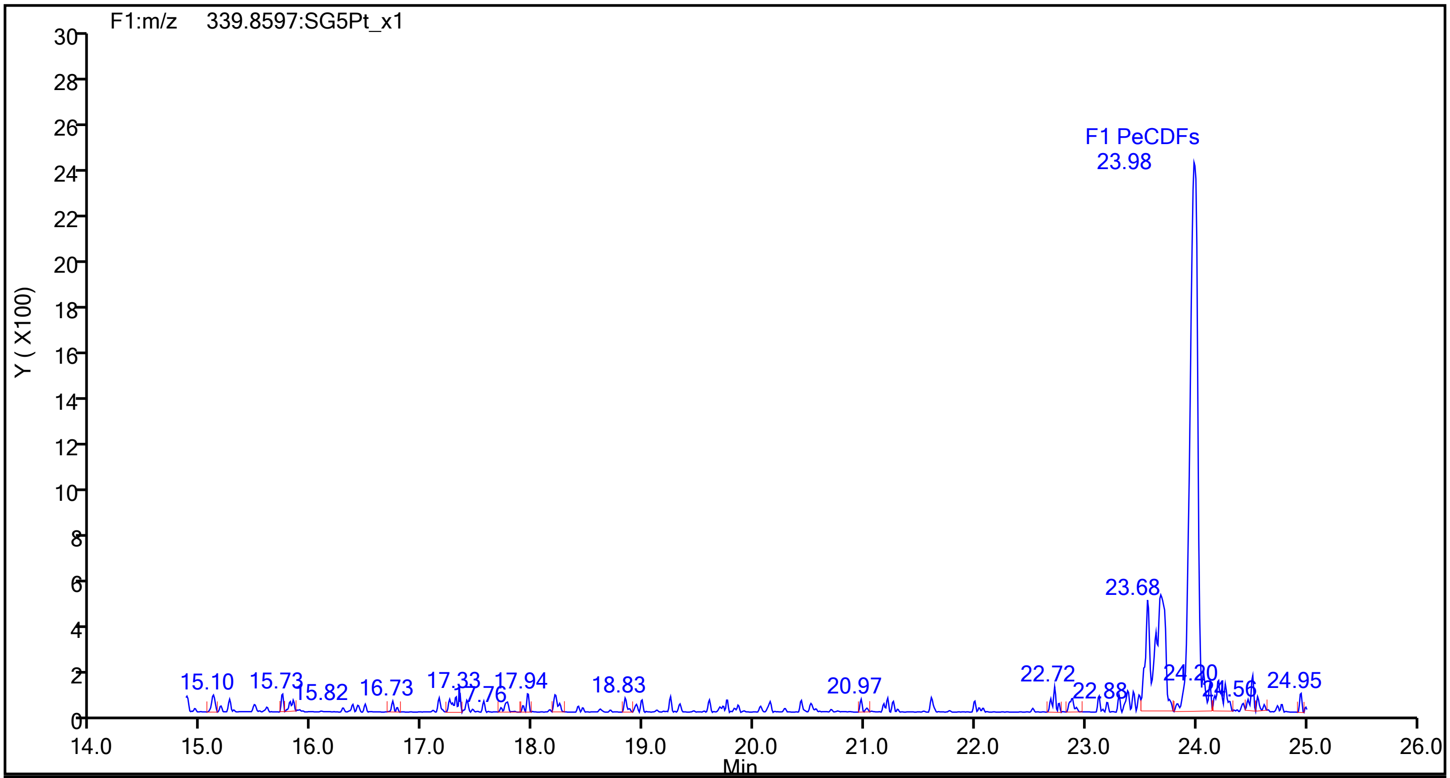

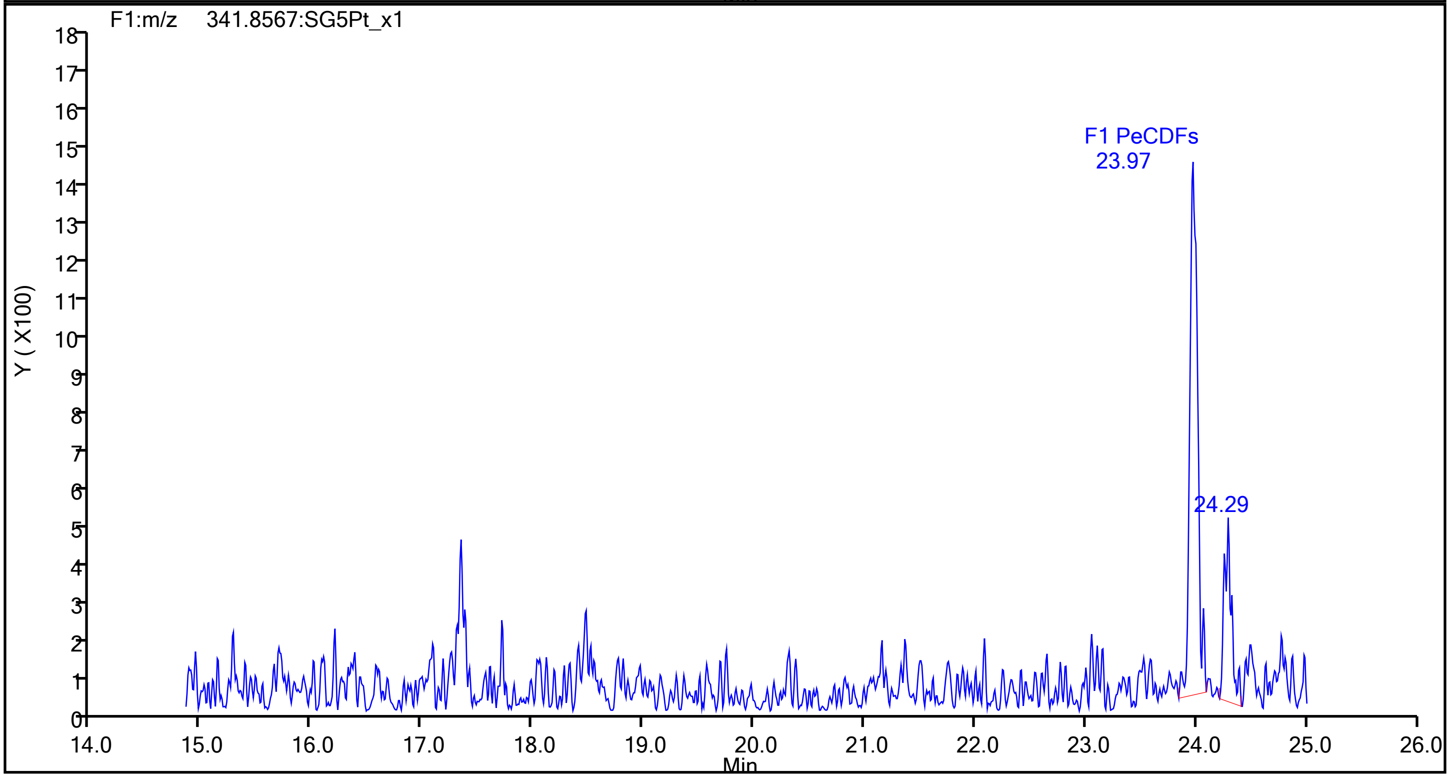

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Injection Date:	23-Jan-2021 07:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

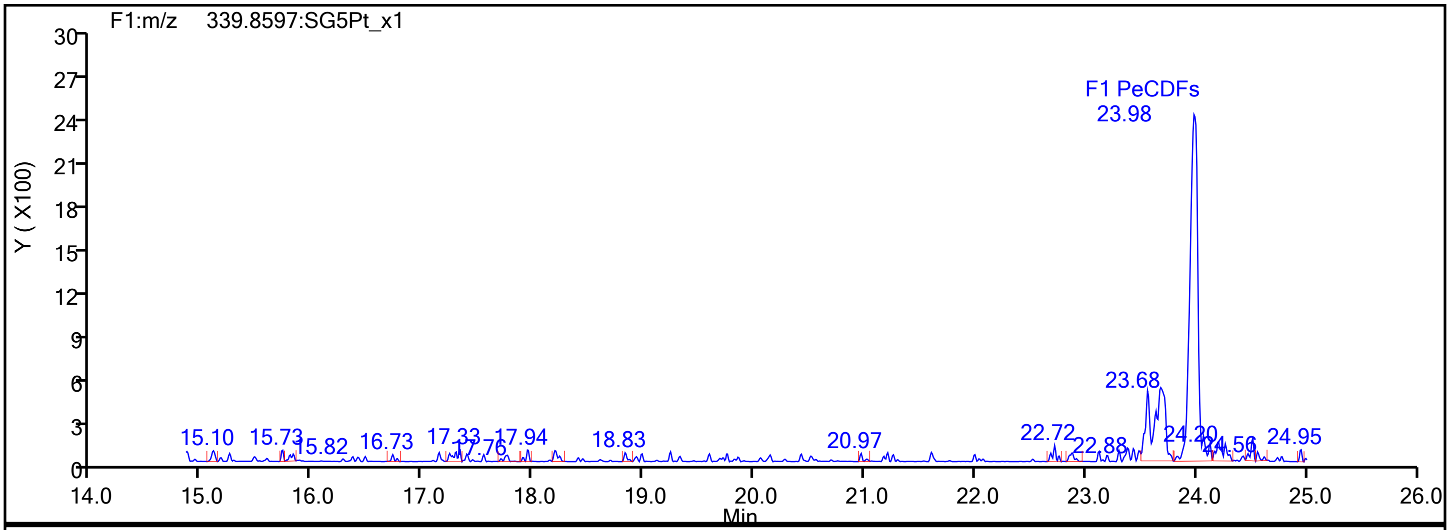

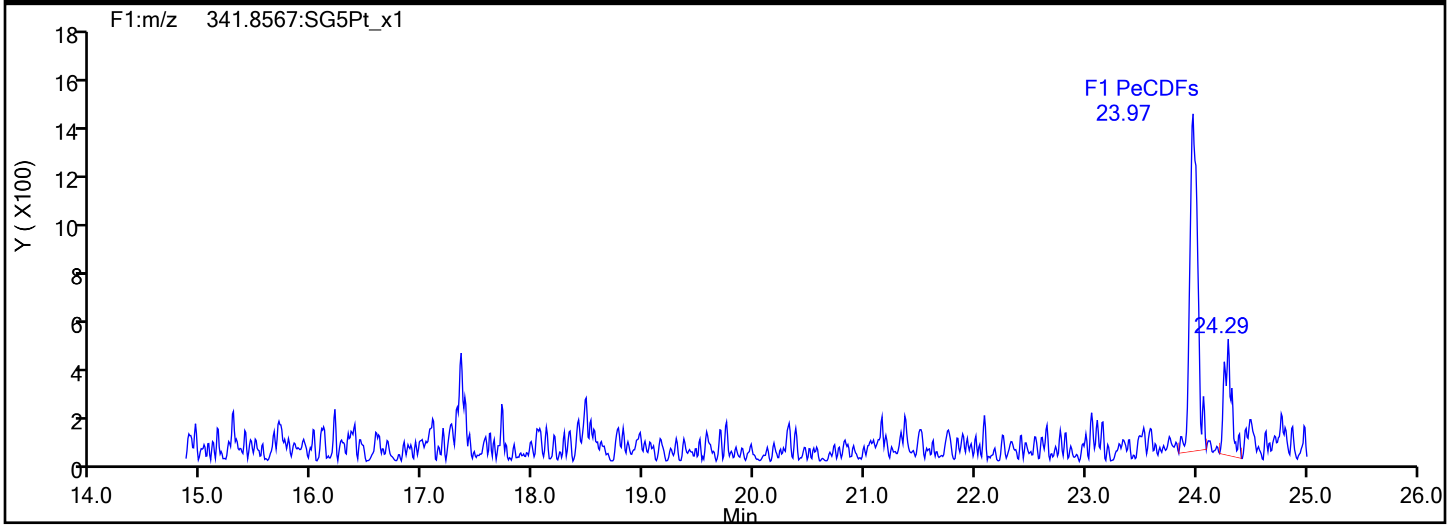

F1 PeCDFs Interference Mass

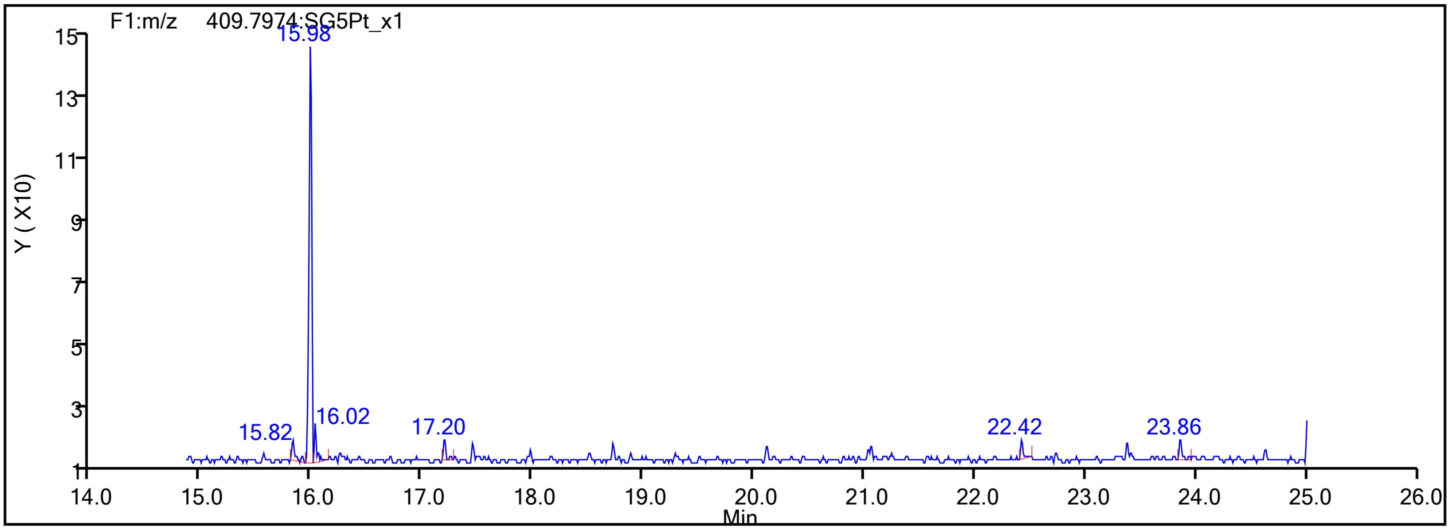

Report Date: 29-Jan-2021 09:06:11
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Injection Date:	23-Jan-2021 07:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

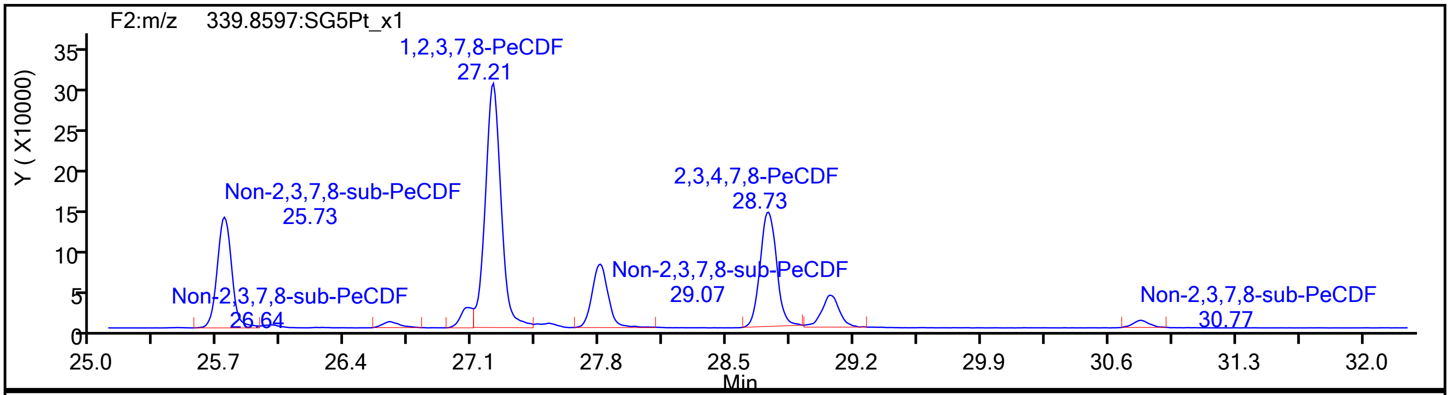

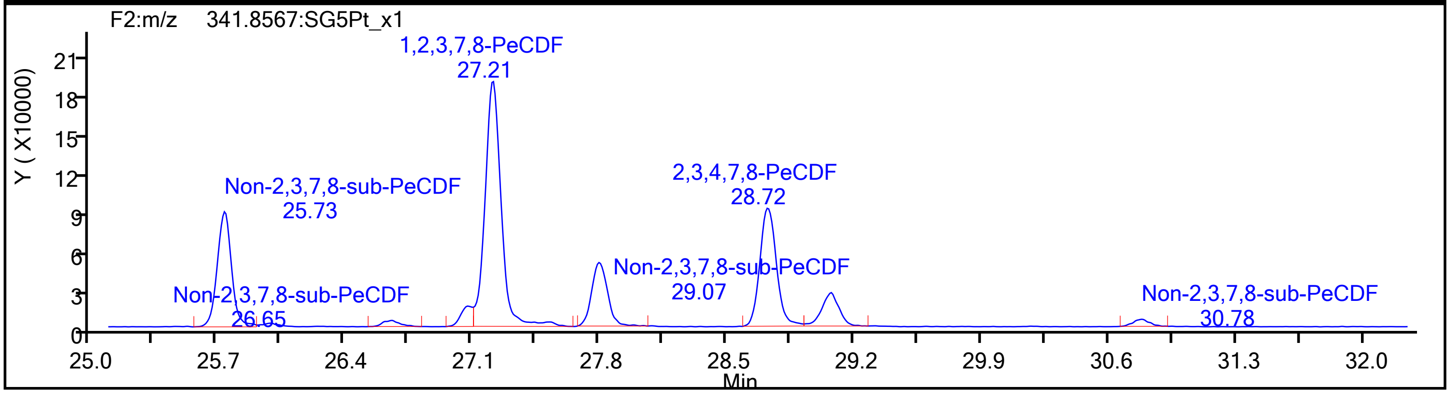

PeCDF Standards

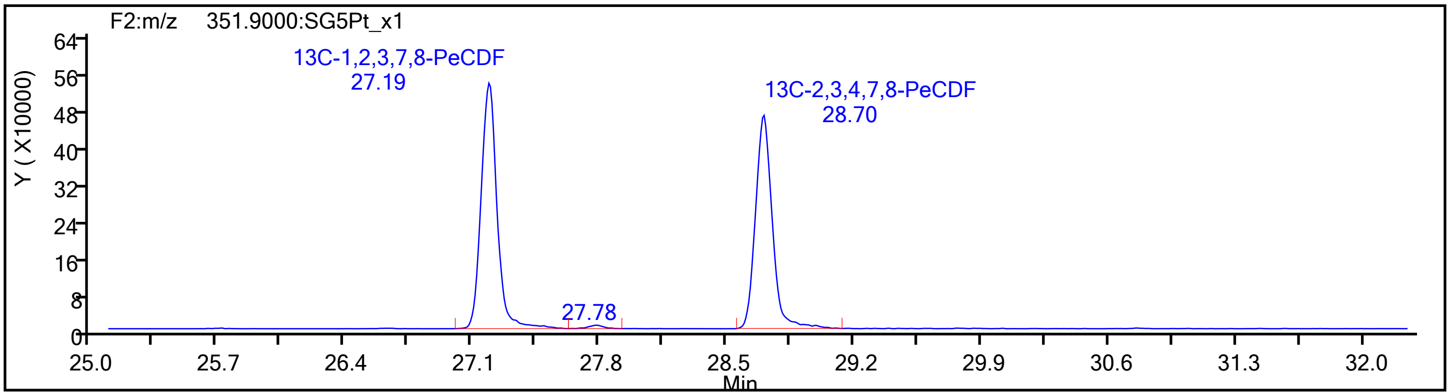

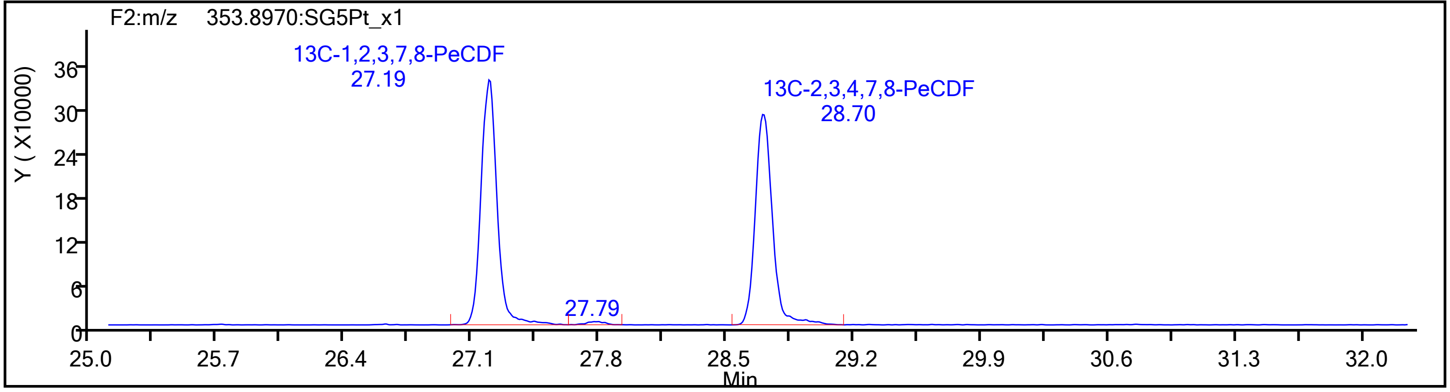

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d
Injection Date: 23-Jan-2021 07:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-1-8-21
Worklist#: 454782
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

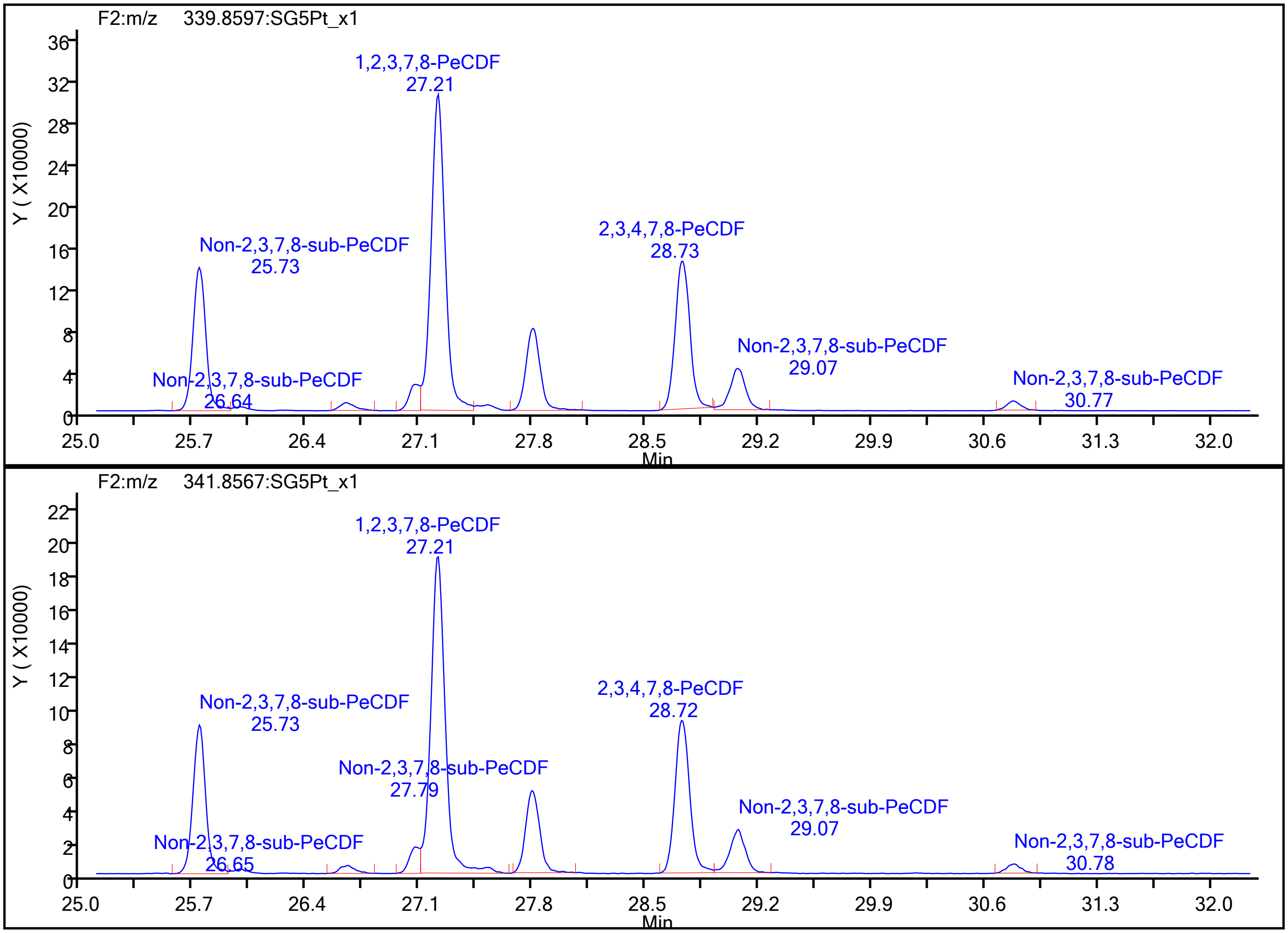

PeCDF Interference Mass

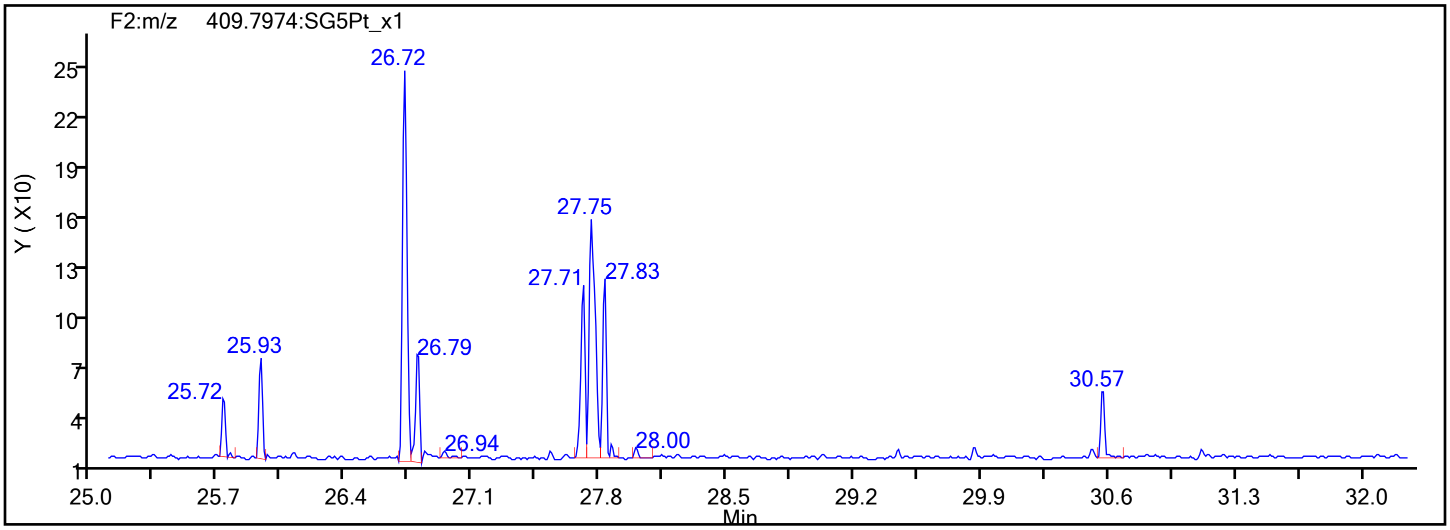

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d

Injection Date: 23-Jan-2021 07:52:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-1-8-21

Worklist#: 454782 Sample Line#: 14

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

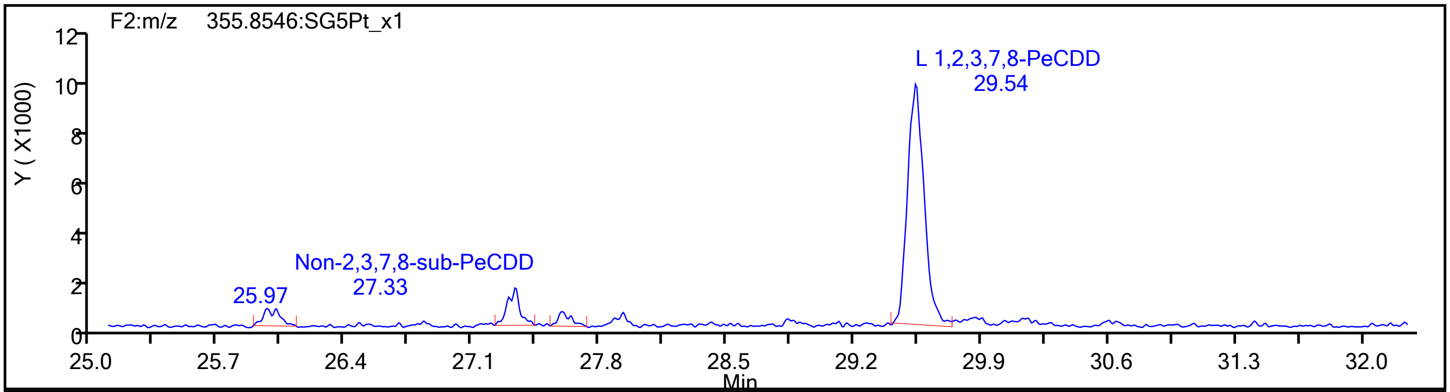

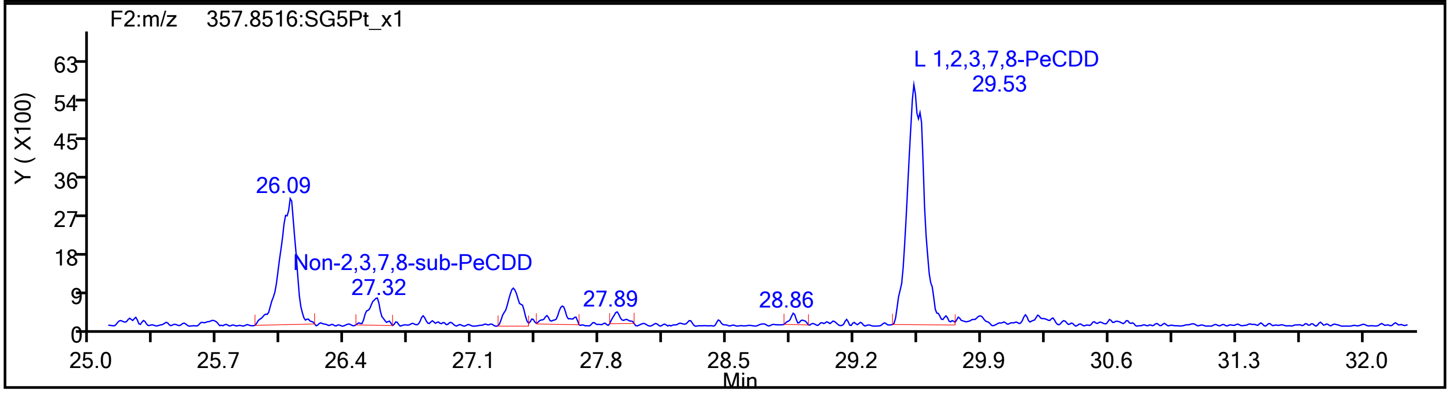

PeCDD Standards

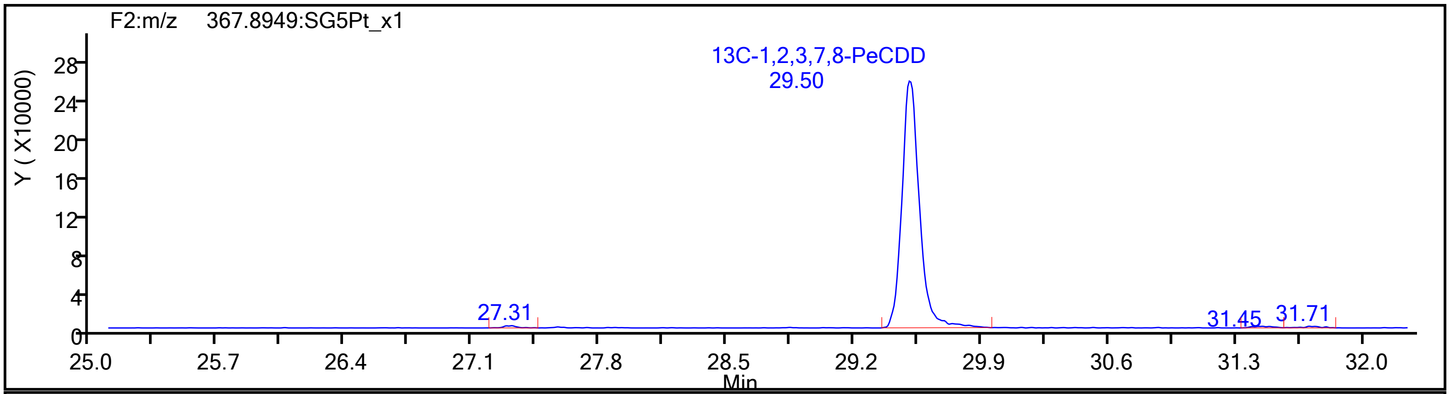

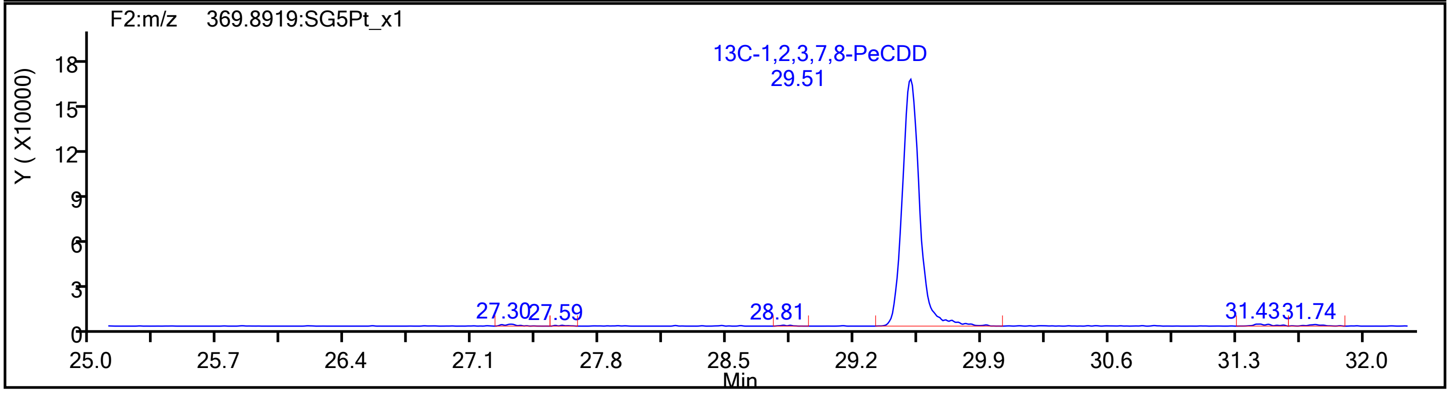

Report Date: 29-Jan-2021 09:06:11　　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

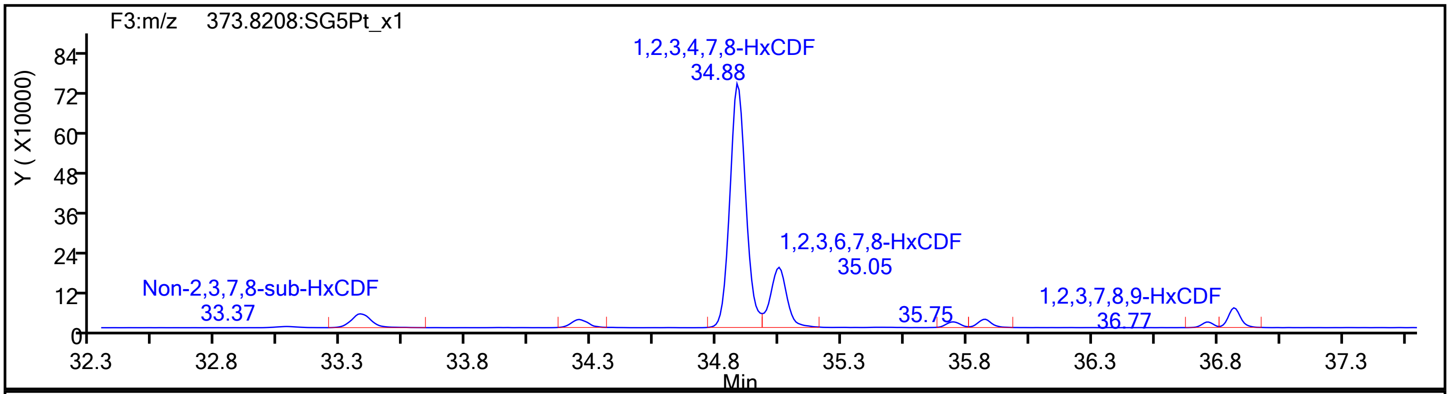

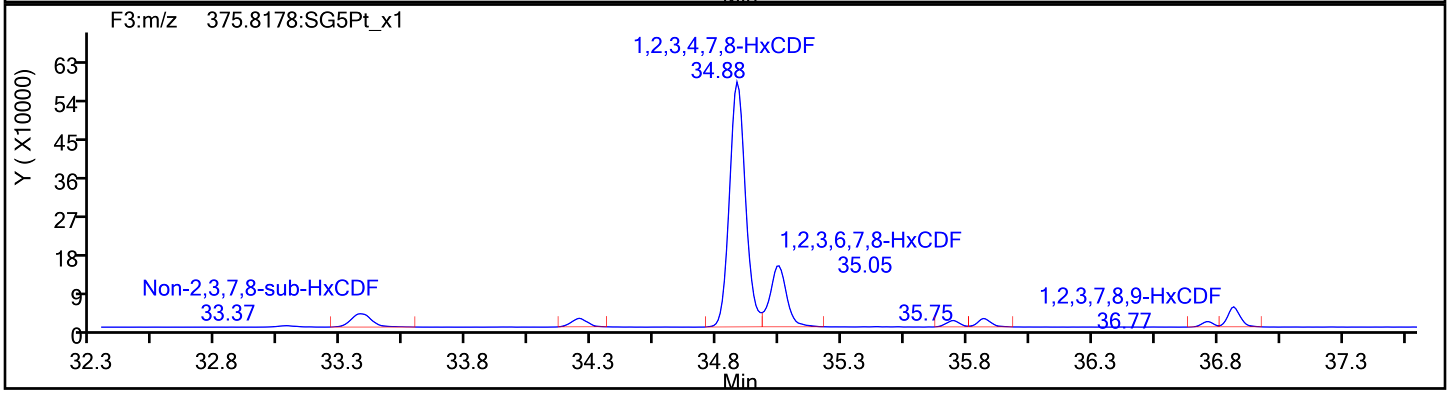

HxCDF Standards

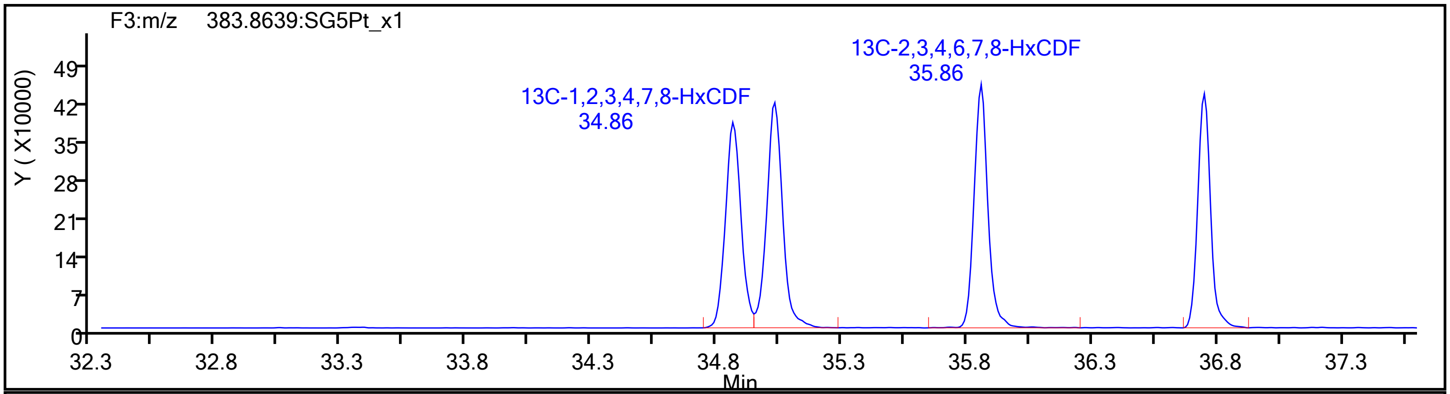

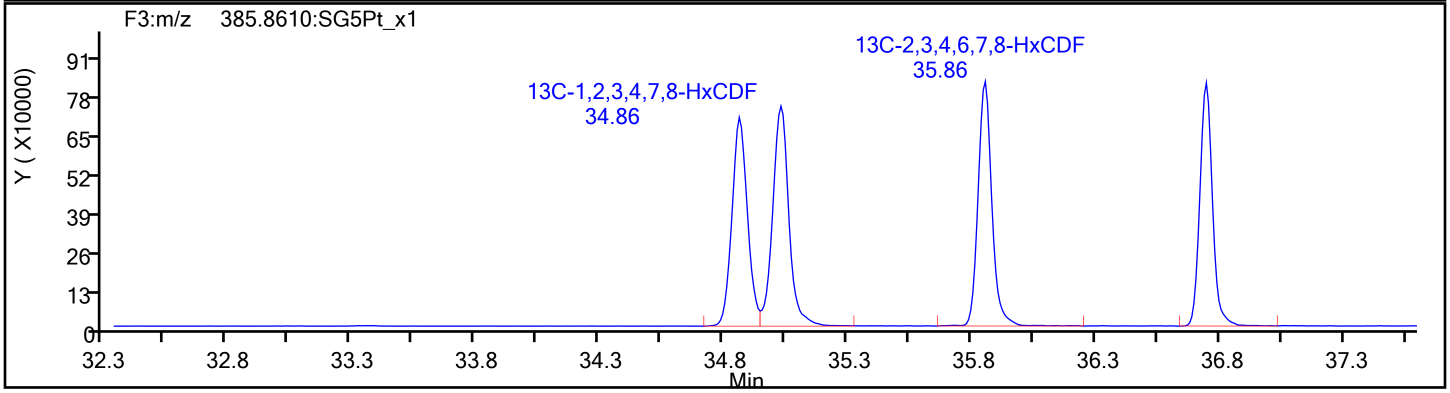

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d

Injection Date: 23-Jan-2021 07:52:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-1-8-21

Worklist#: 454782 Sample Line#: 14

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

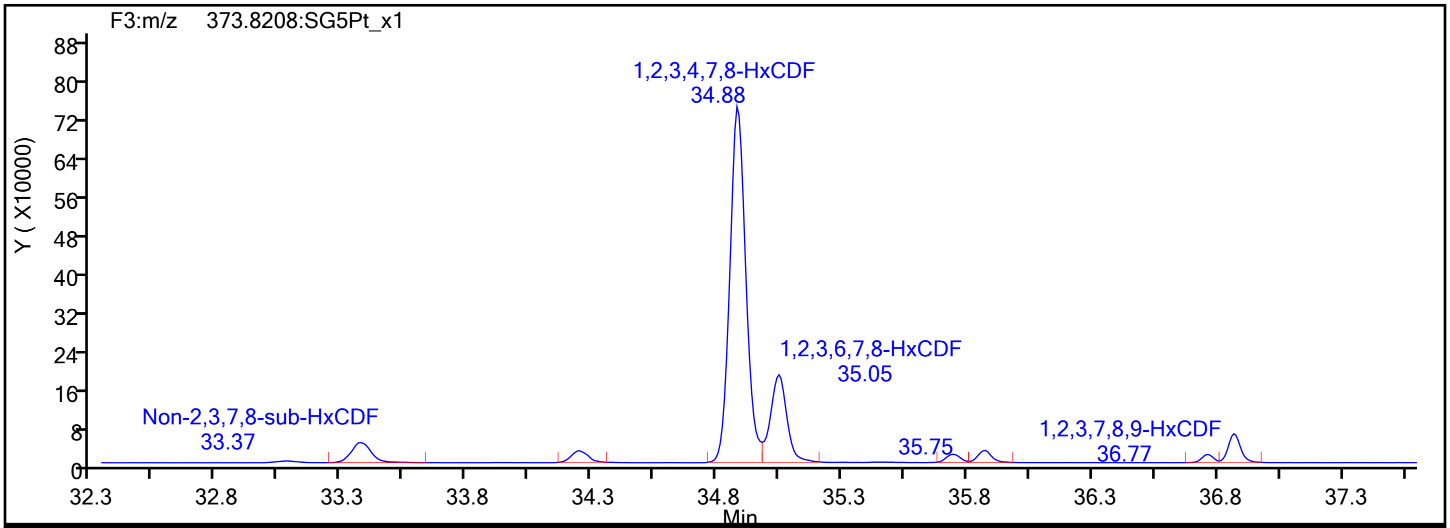

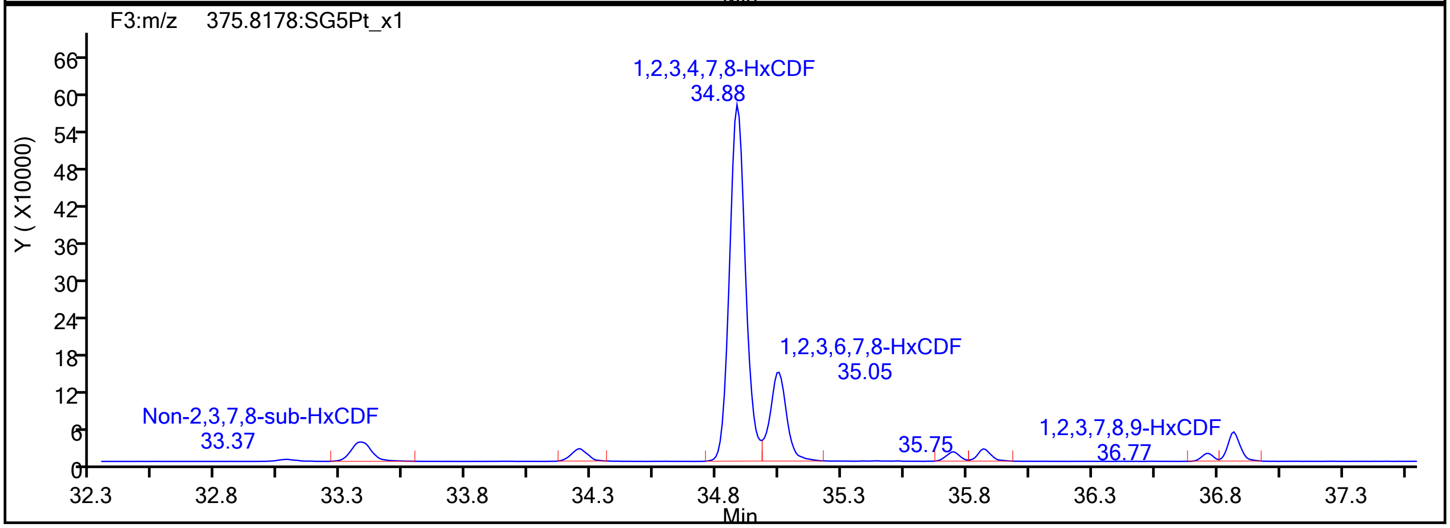

HxCDF Interference Mass

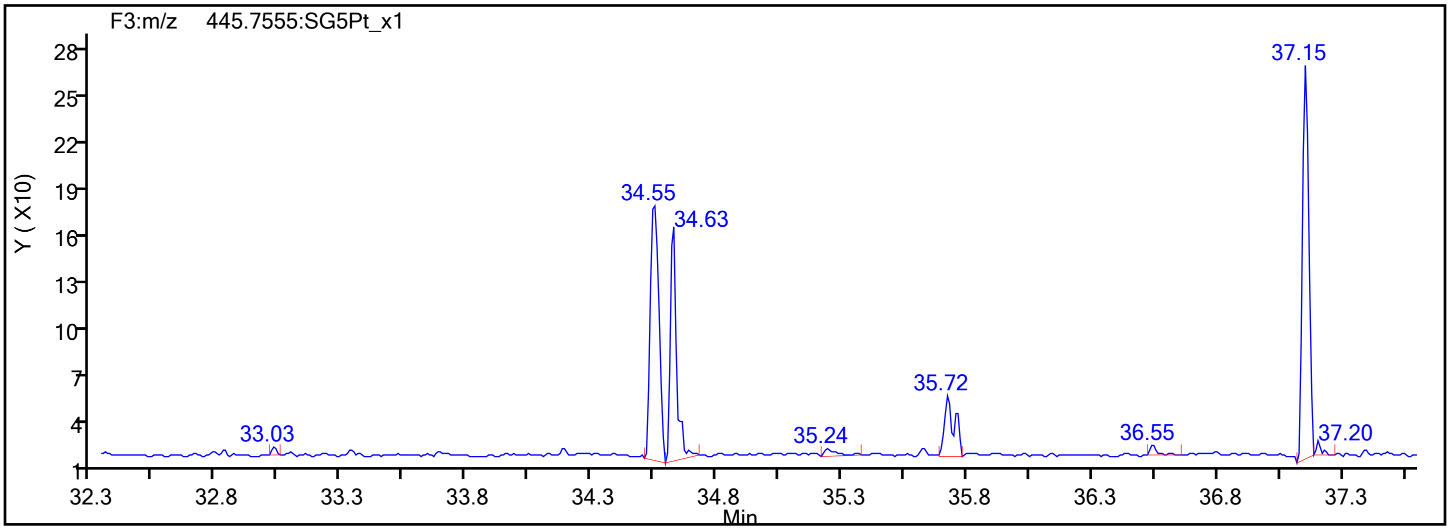

Report Date: 29-Jan-2021 09:06:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d
Injection Date: 23-Jan-2021 07:52:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Column Dia: 0.32 mm

HxCDD

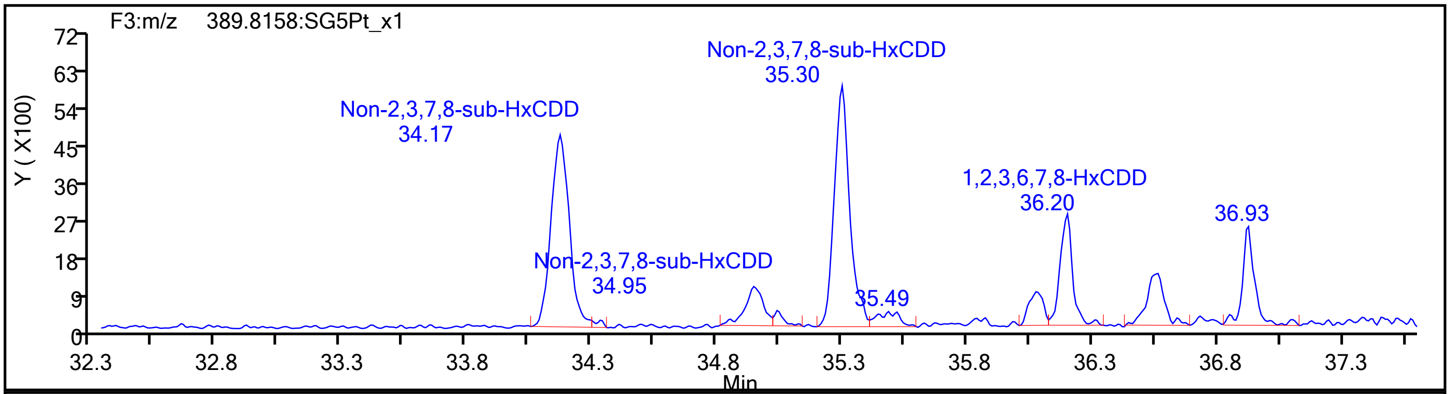

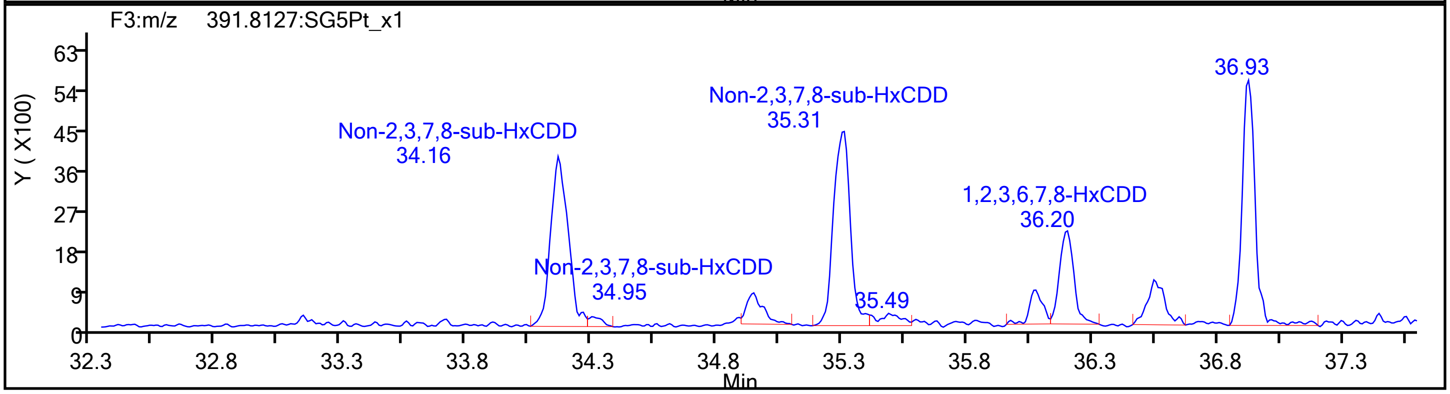

HxCDD Standards

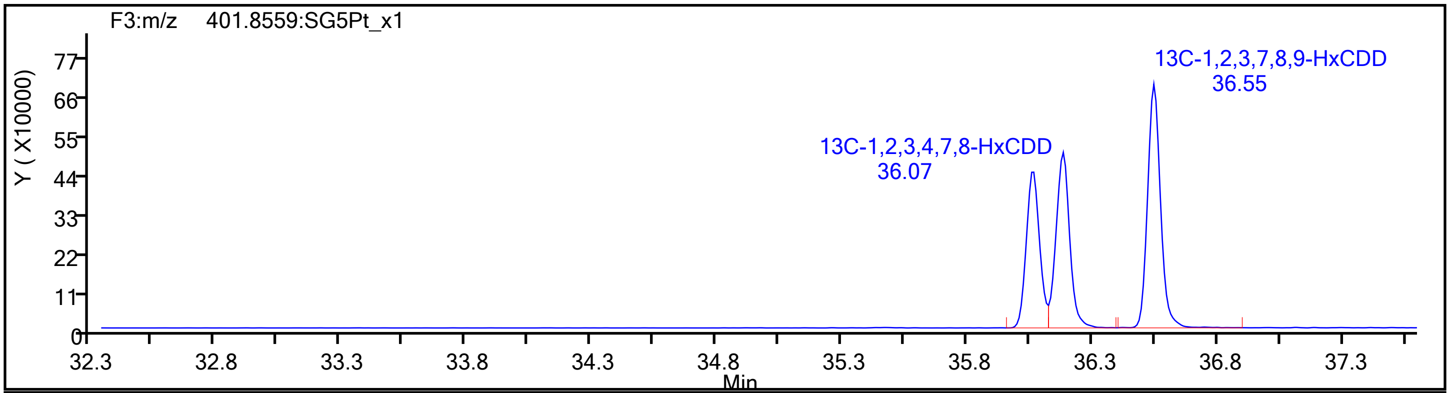

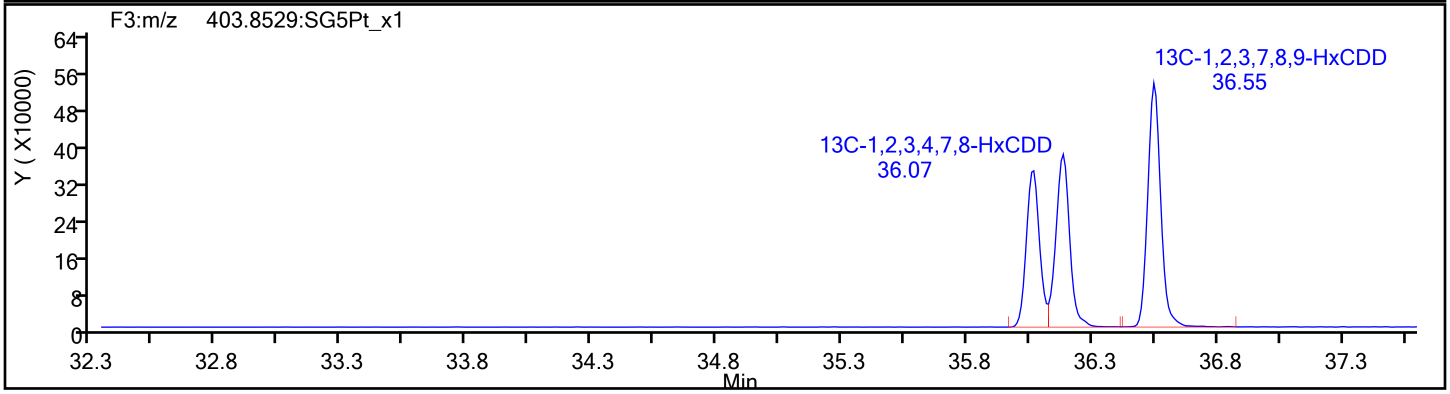

Report Date: 29-Jan-2021 09:06:12 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Injection Date:	23-Jan-2021 07:52:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

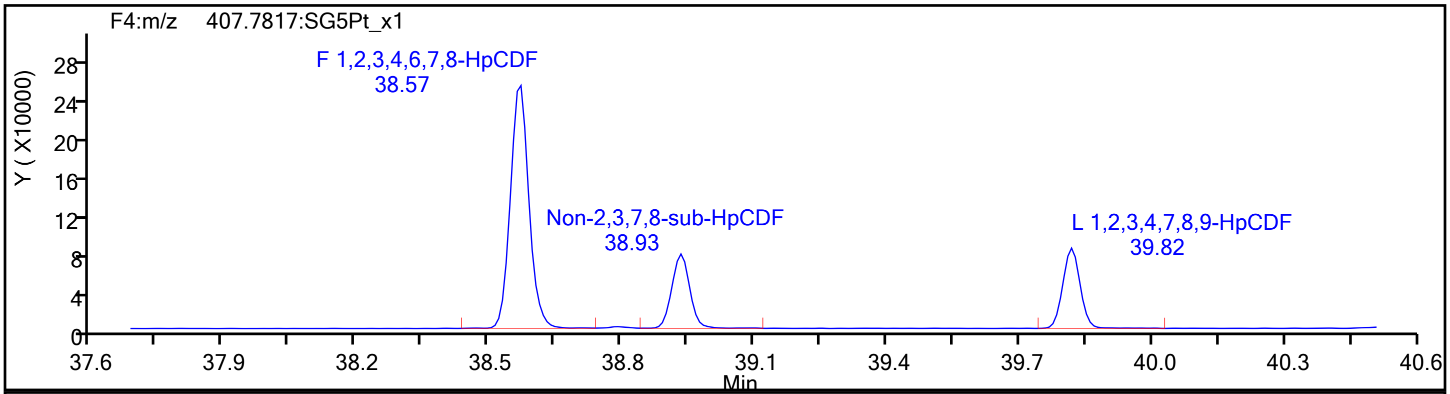

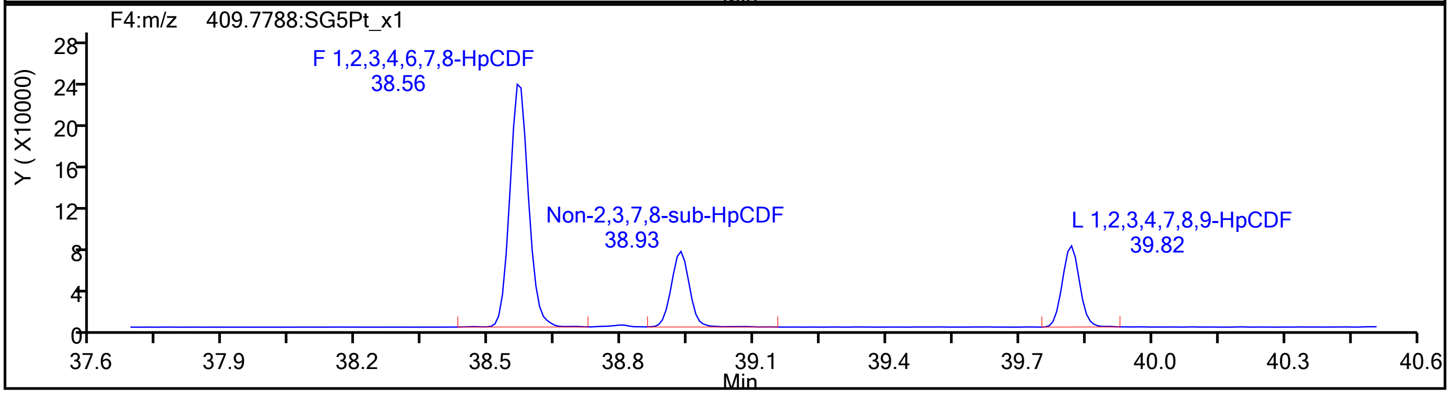

HpCDF Standards

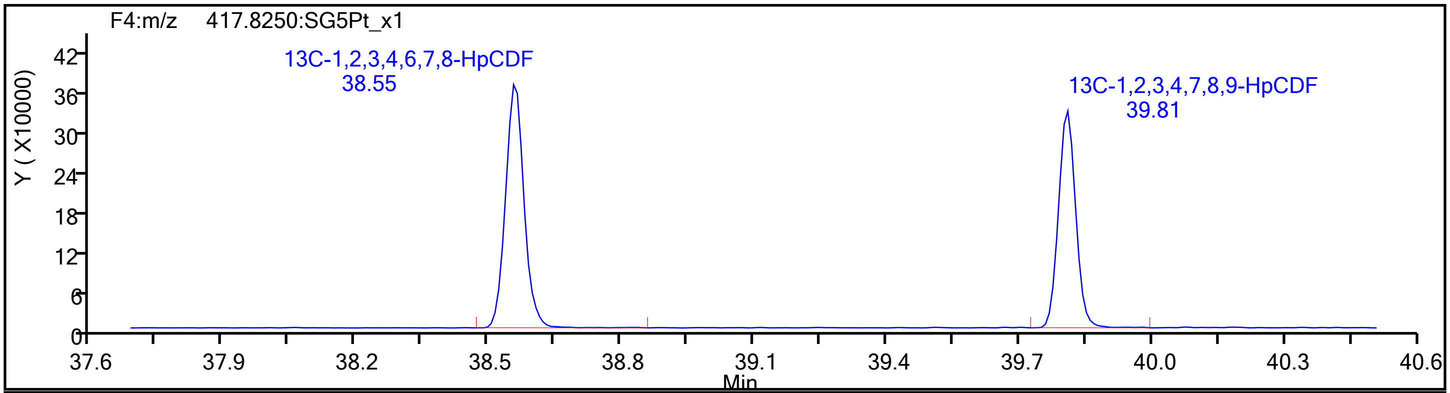

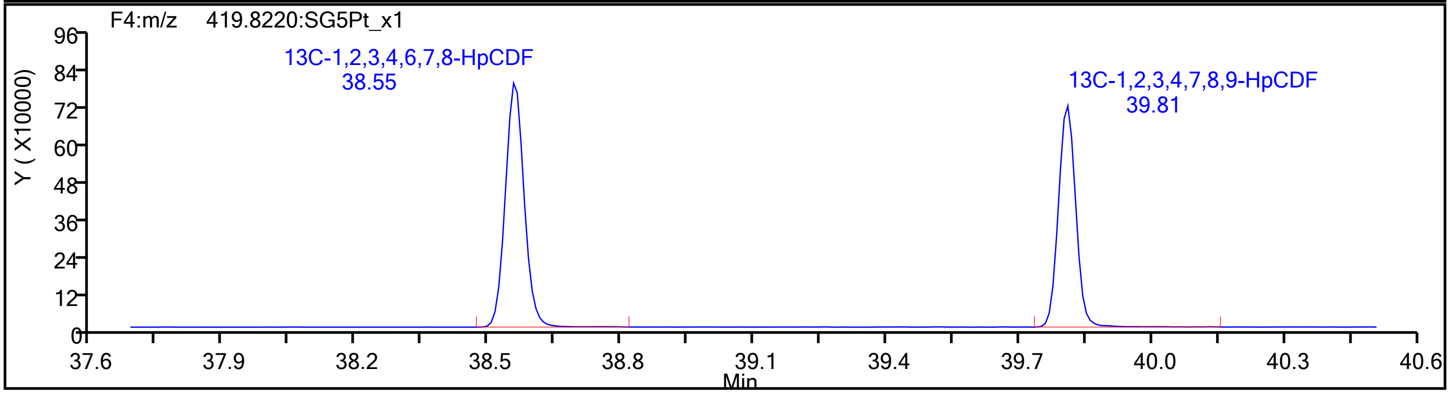

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

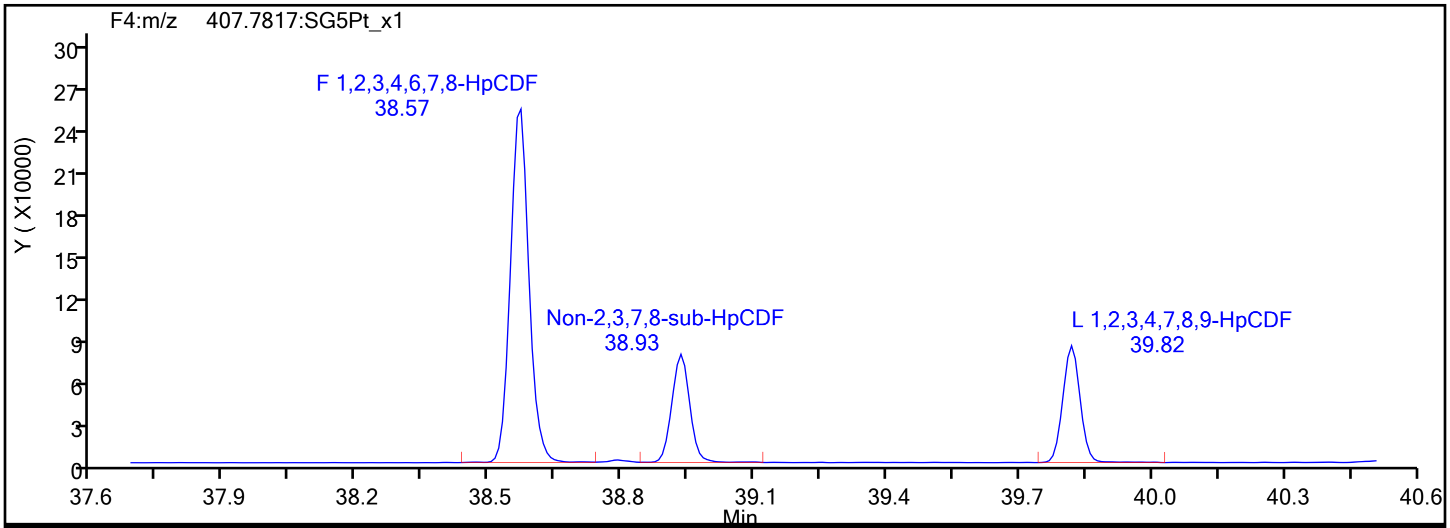

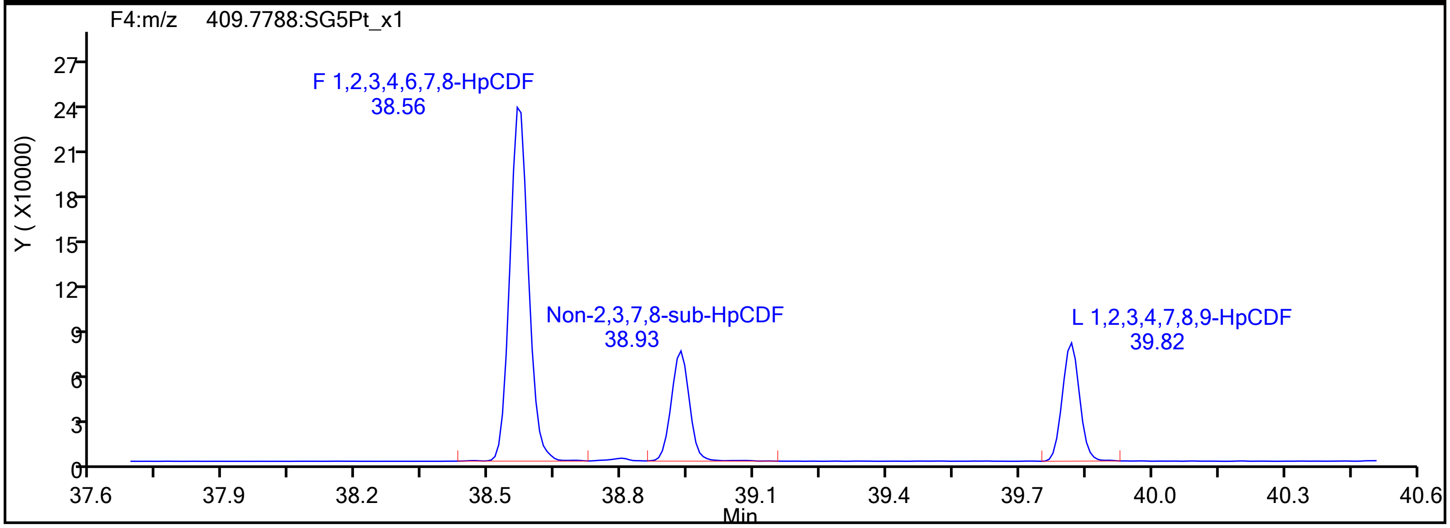

HpCDF Interference Mass

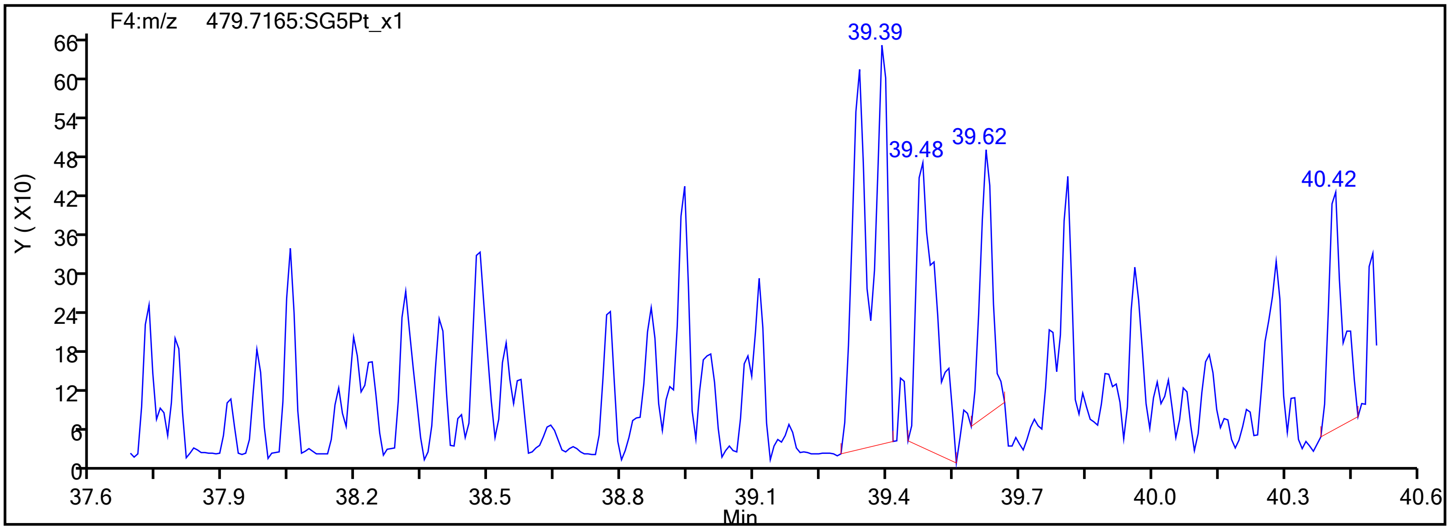

Report Date: 29-Jan-2021 09:06:12
Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento
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Injection Date: 23-Jan-2021 07:52:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 454782
Sample Line#: 14
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

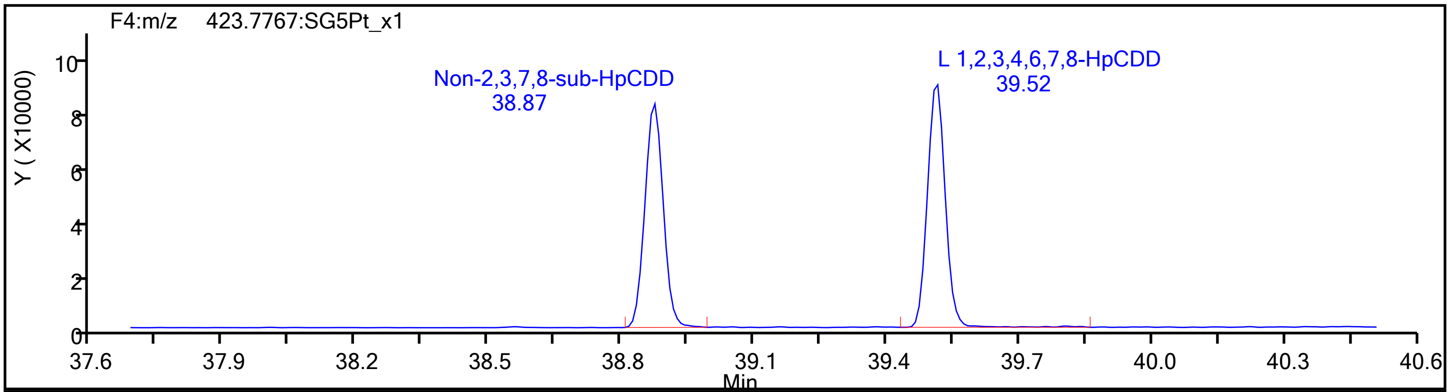

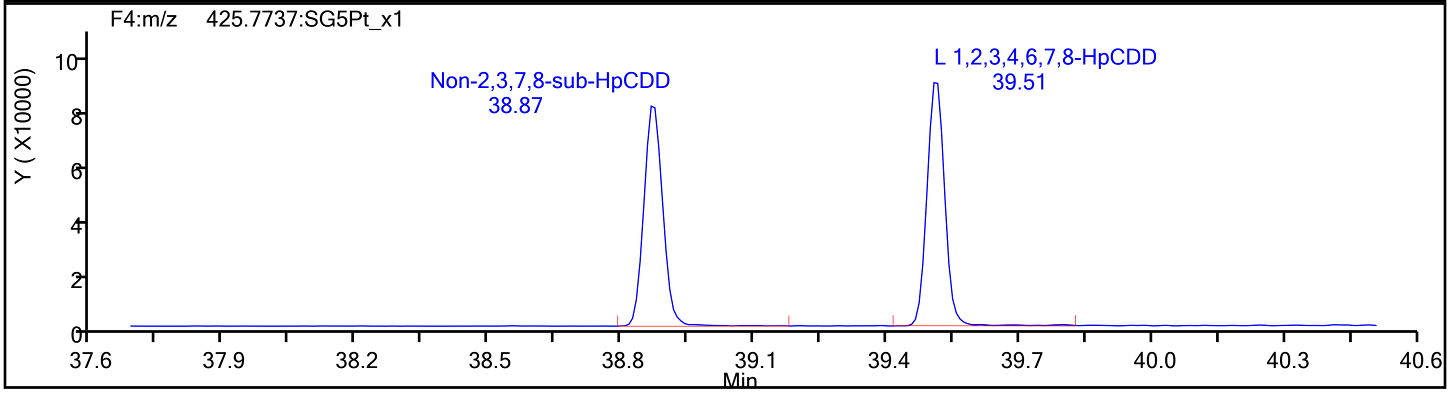

HpCDD Standards

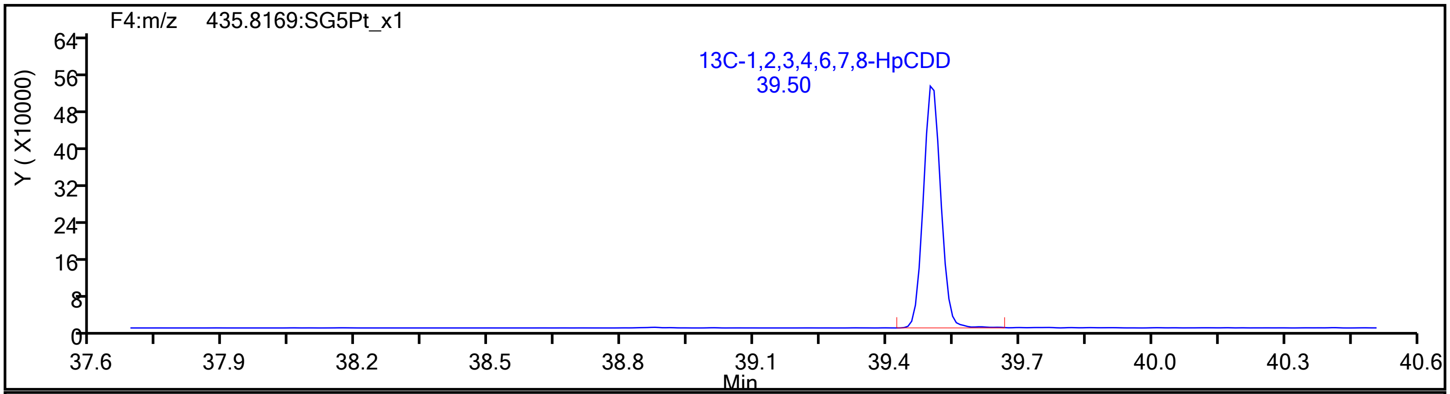

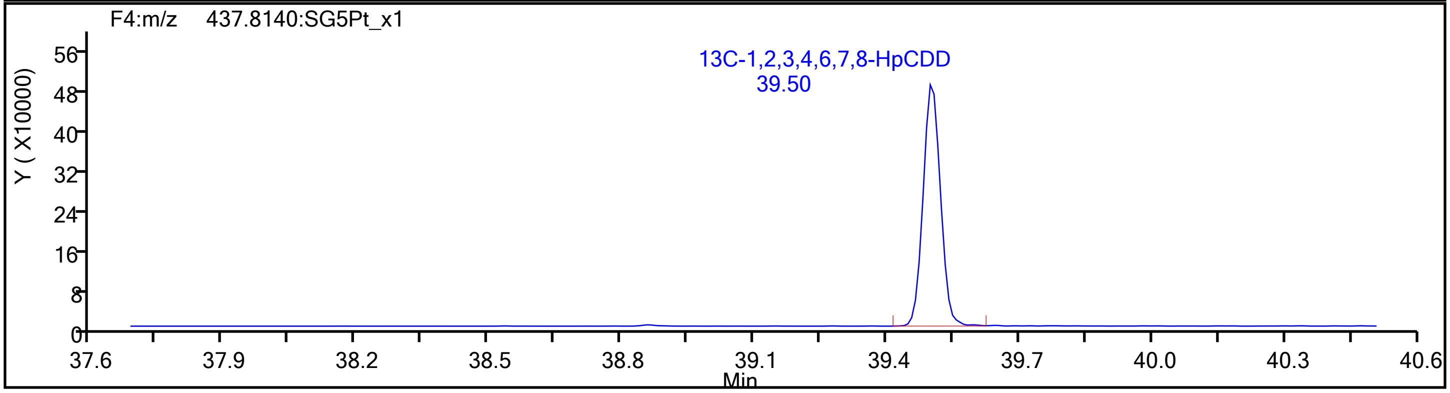

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

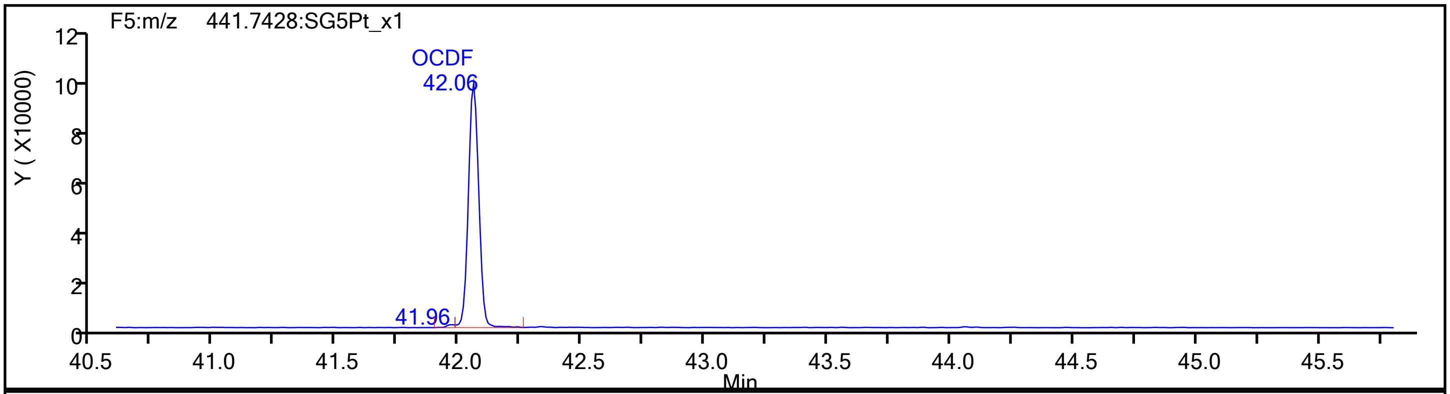

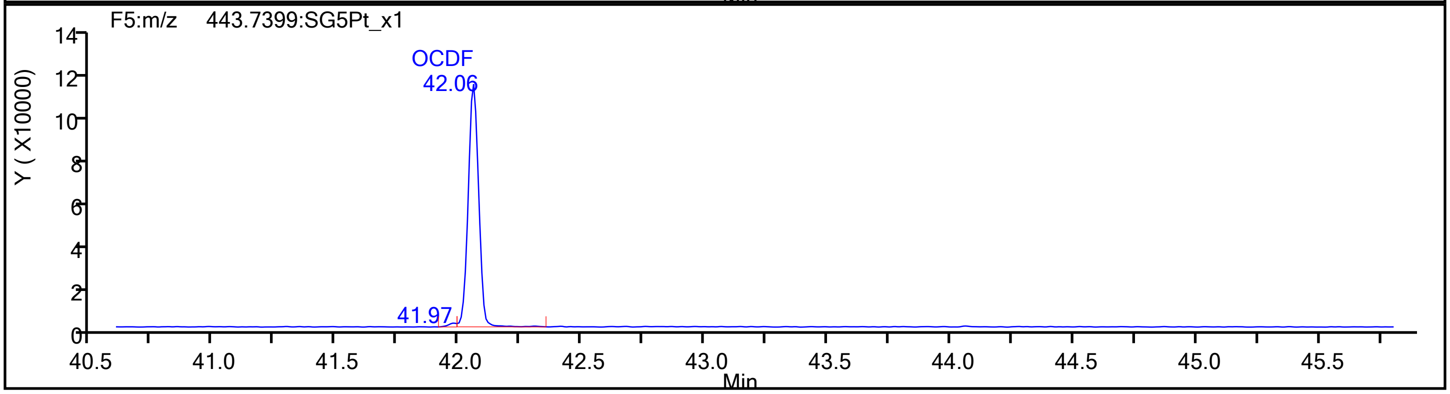

OCDF Standards

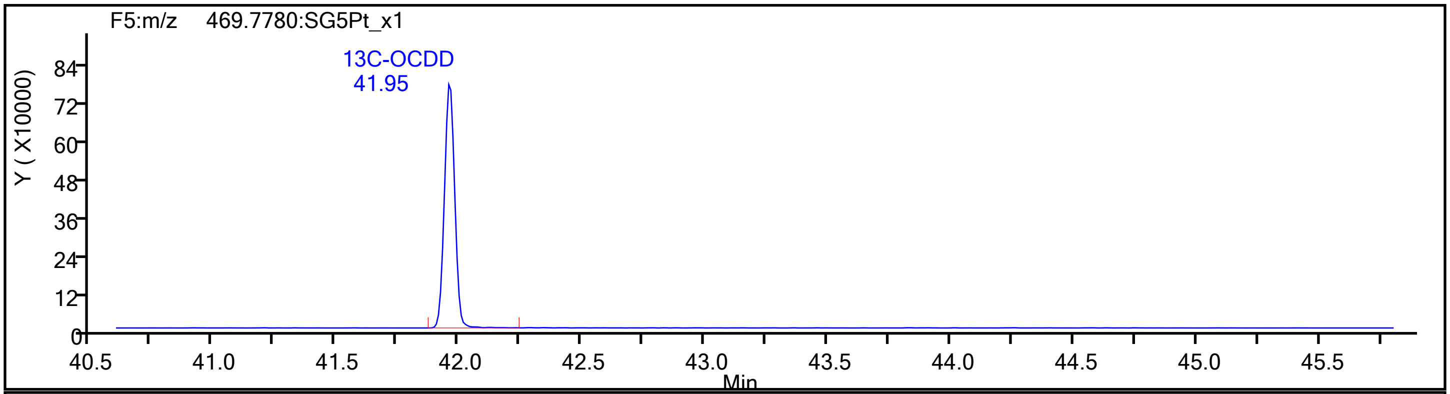

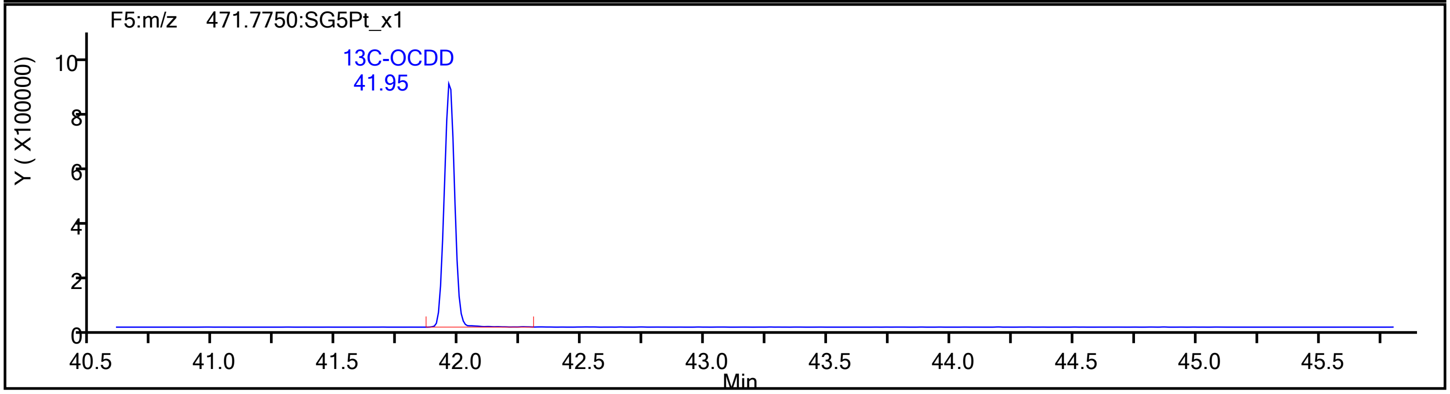

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

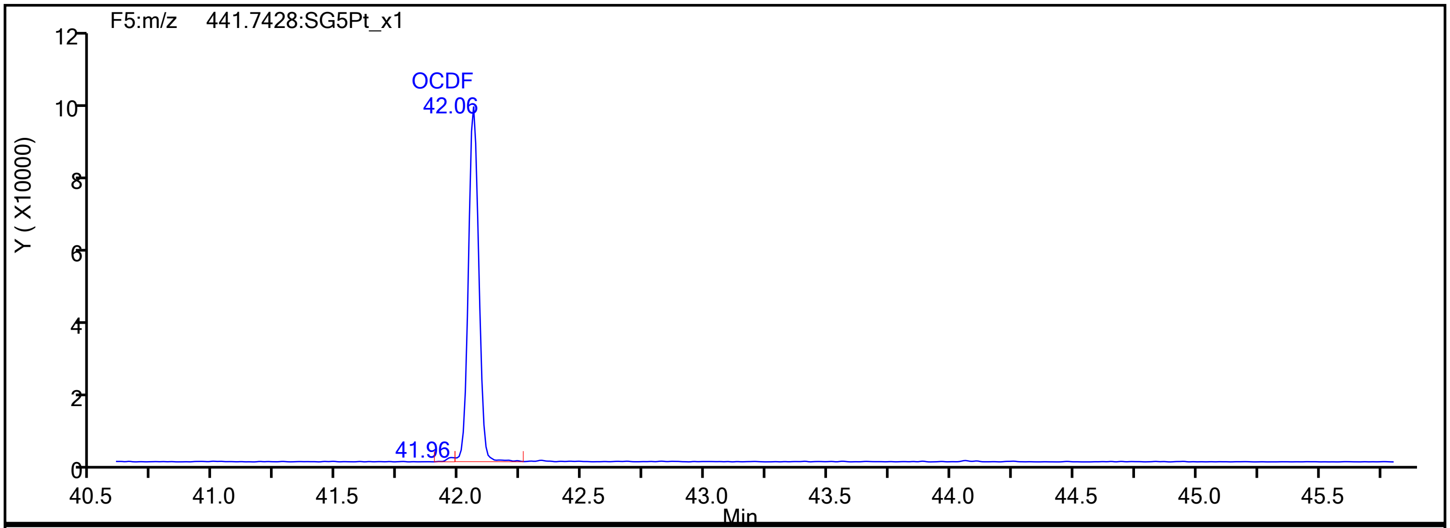

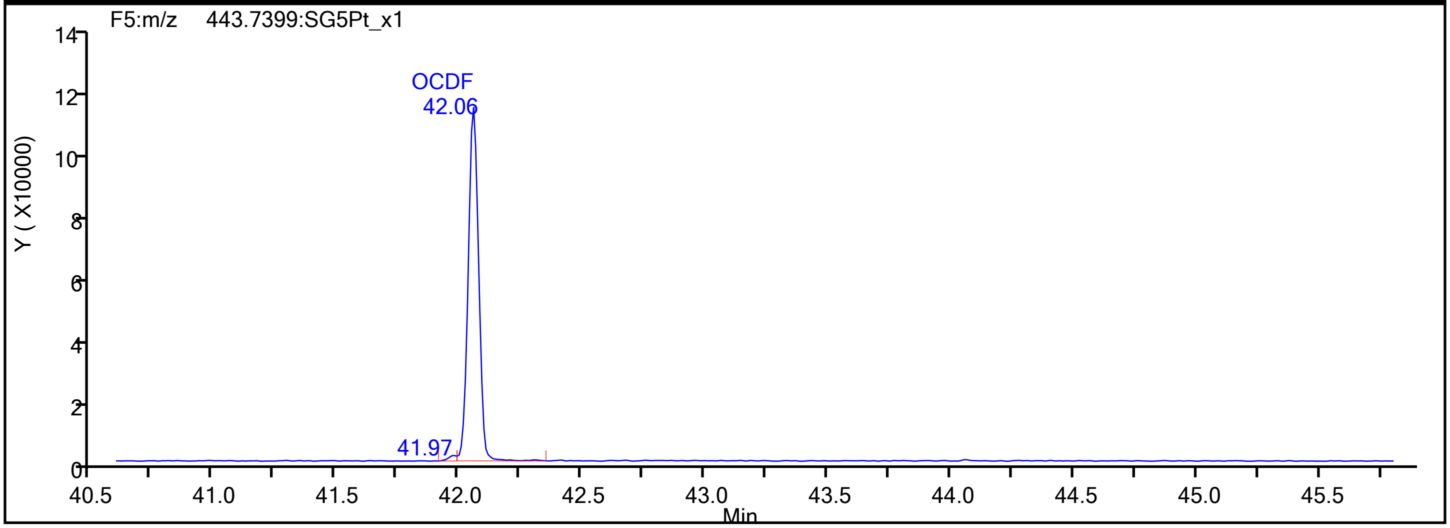

OCDF Interference Mass

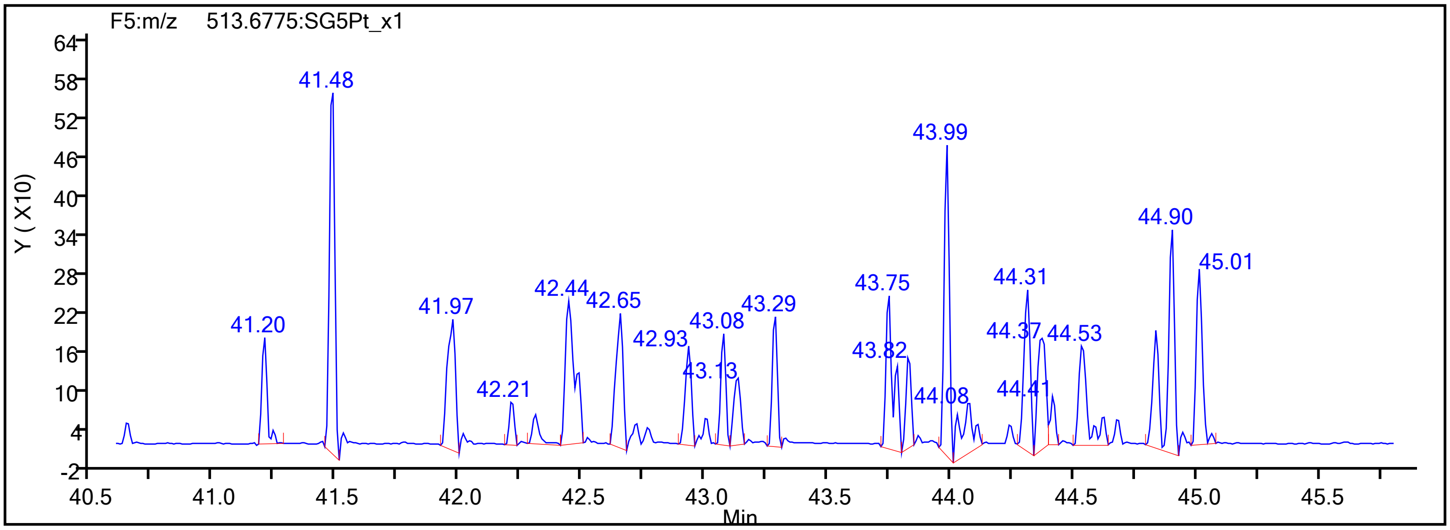

Report Date: 29-Jan-2021 09:06:12   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d
Injection Date: 23-Jan-2021 07:52:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-1-8-21
Worklist#: 454782   Sample Line#: 14
Column Type: DB-5   Column Dia: 0.32 mm

OCDD

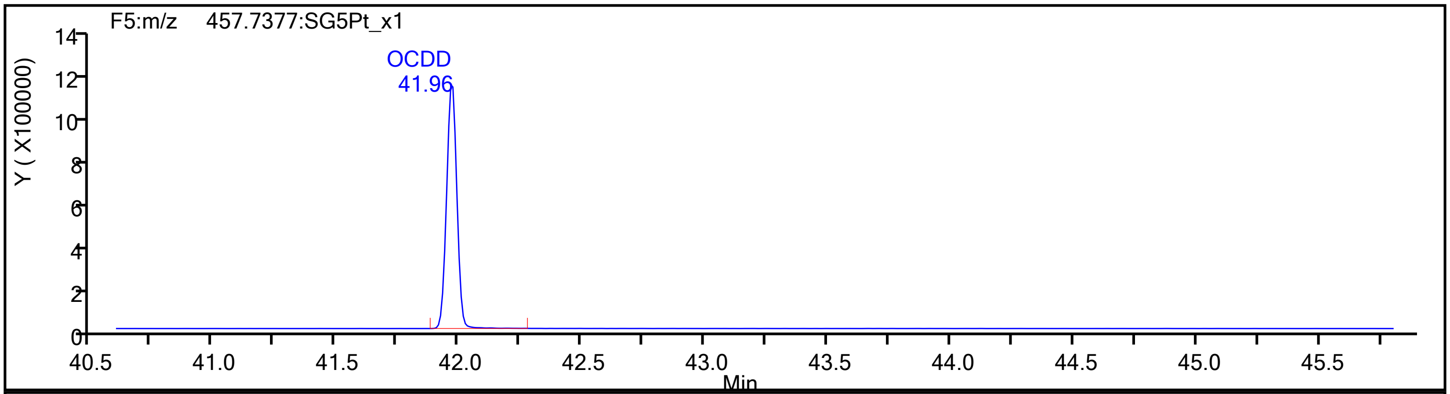

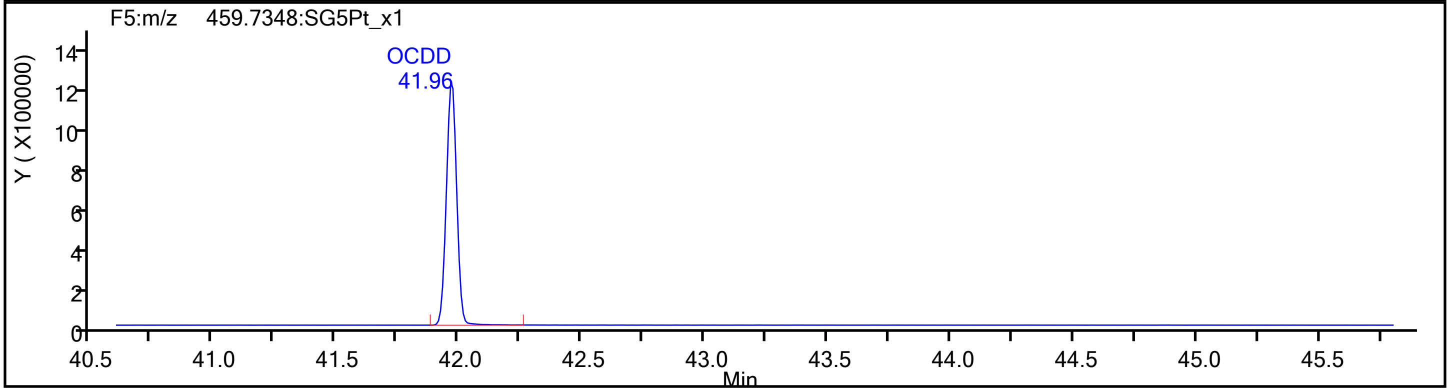

OCDD Standards

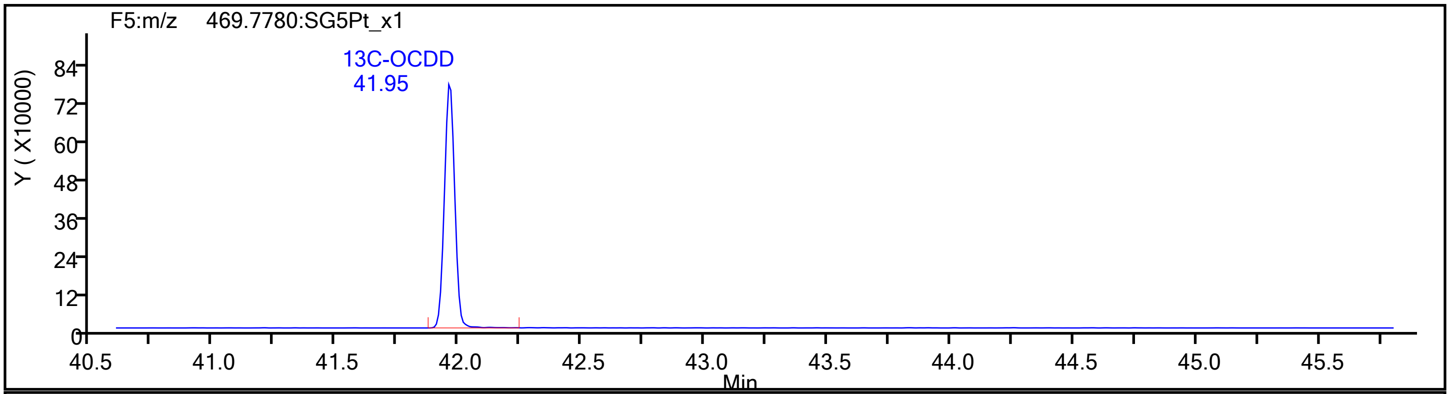

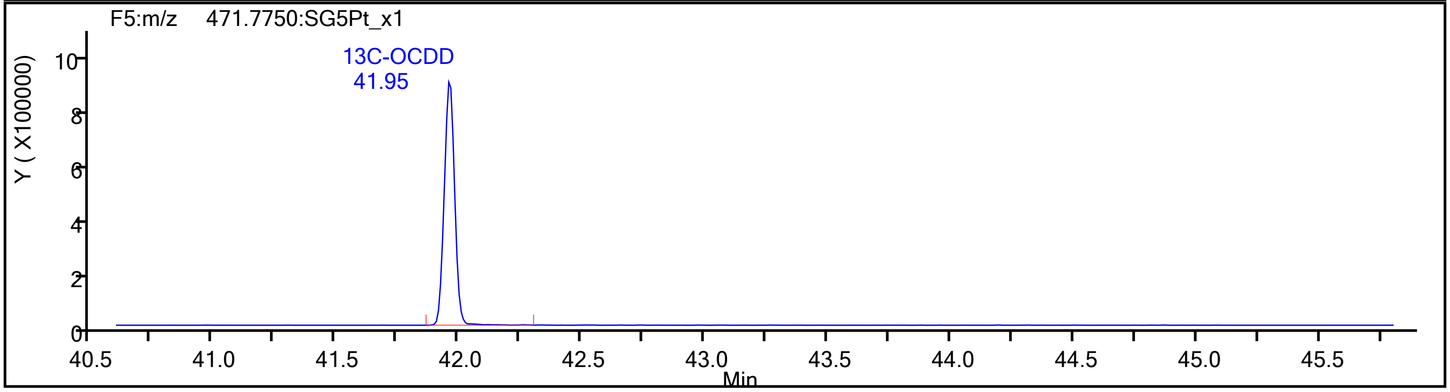

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
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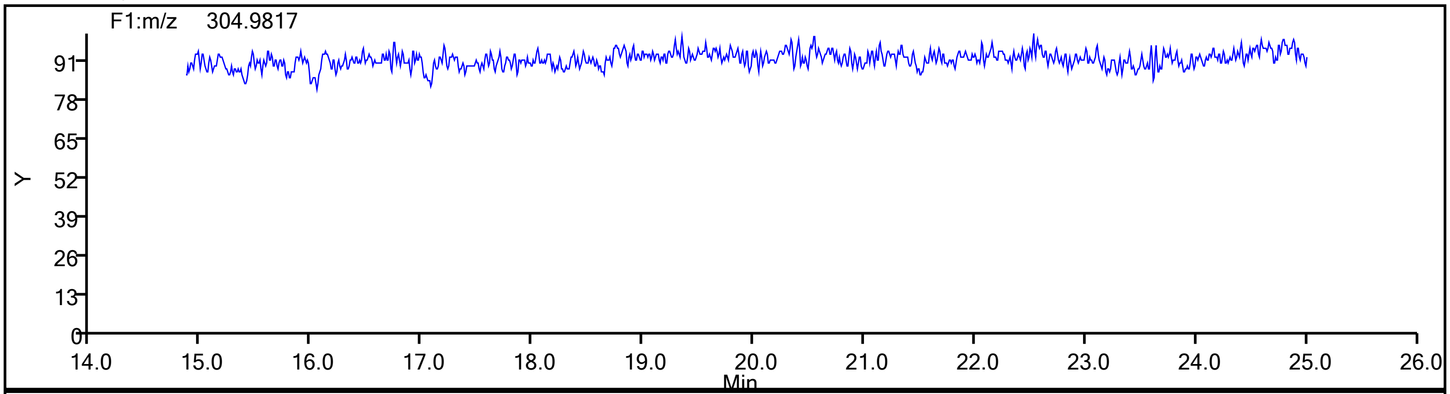

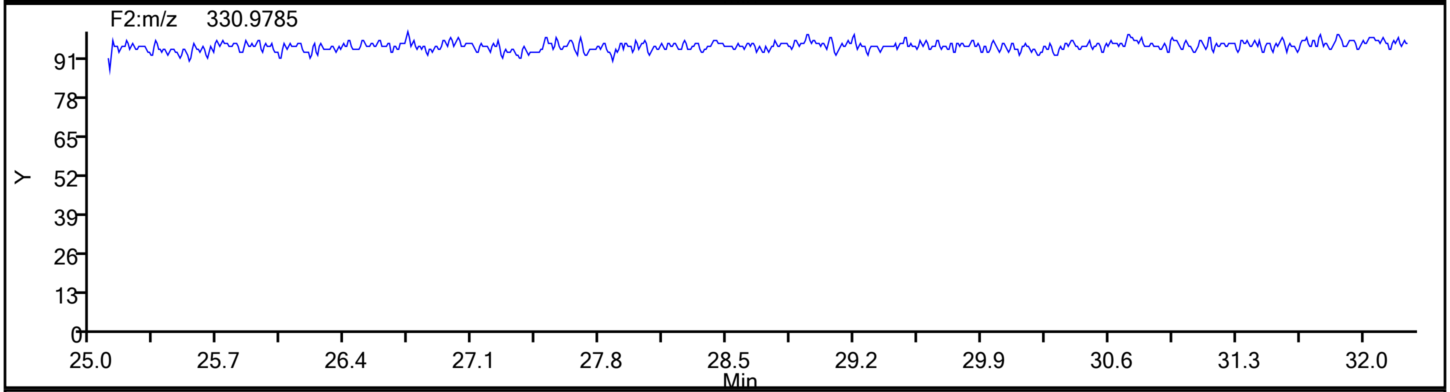

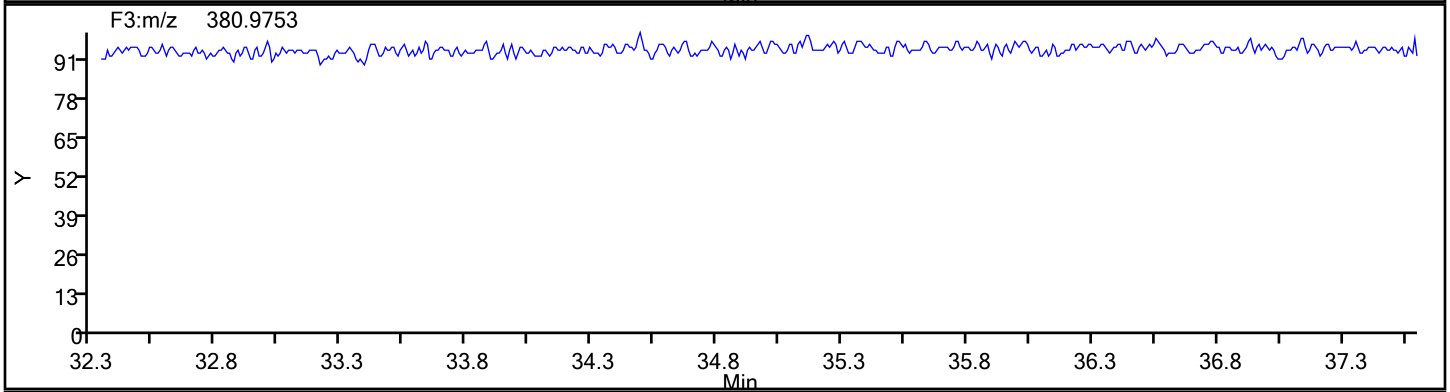

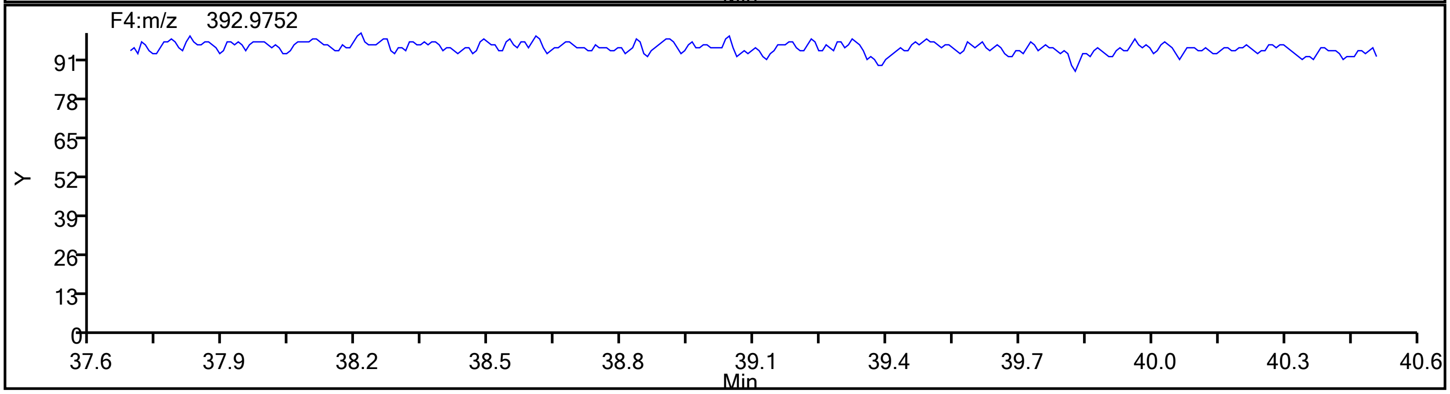

Report Date: 29-Jan-2021 09:06:12 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_15.d		
Injection Date:	23-Jan-2021 07:52:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	454782	Sample Line#:	14
Column Type:	DB-5	Column Dia:	0.32 mm

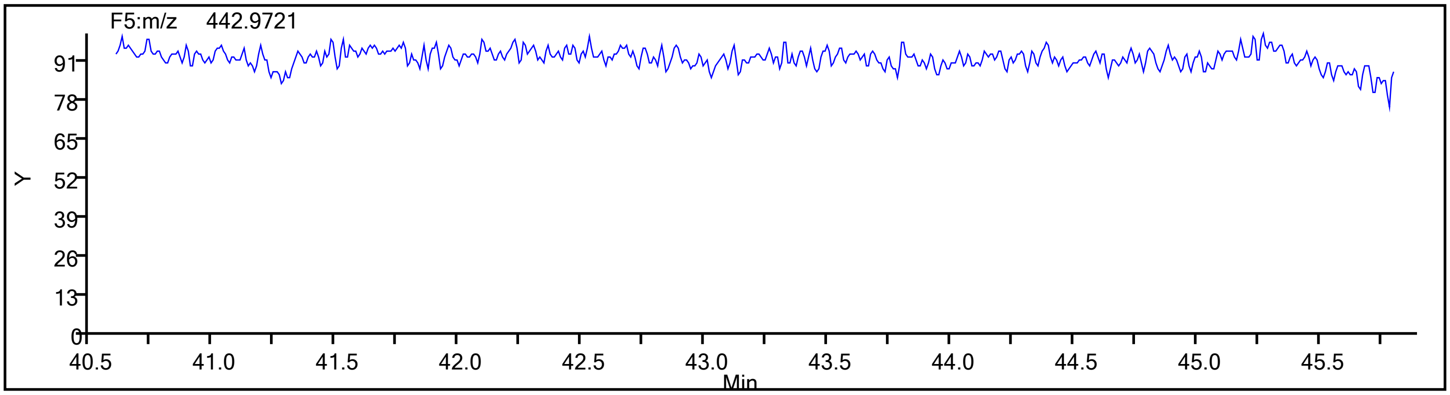

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-1-8-21 RADL	Lab Sample ID: 320-68943-2 RADL
Matrix: Water	Lab File ID: 25JA2111D2_004.d
Analysis Method: 1613B	Date Collected: 01/08/2021 14:30
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1054.9(mL)	Date Analyzed: 01/26/2021 01:51
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 10
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 456198	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	17000		95	23

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	80		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	109		35-197

Report Date: 27-Jan-2021 20:41:50 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_004.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Sample Type: Client
Inject. Date: 26-Jan-2021 01:51:15 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-68943-A-2-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.162	13470915	0.77	1.2E+06	10.0	10.0				
D 13C-2,3,7,8-TCDF	16.315	17006104	0.81	1.5708	8.037	8.037	0.2358	0.2358	80.37	
2,3,7,8-TCDF	16.328	151451971	0.77	0.9943	89.6	89.6	0.1205	0.1205		
D 13C-2,3,7,8-TCDD	14.915	9968406	0.77	0.9834	7.525	7.525	1.359	1.359	75.25	
$ 37Cl4-2,3,7,8-TCDD	14.929	5864483		0.9945	4.378	4.378	0.0302	0.0302	109	
2,3,7,8-TCDD	14.929	38272171	0.78	1.2822	29.9	29.9	0.1345	0.1345		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_004.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Sample Type: Client
Inject. Date: 26-Jan-2021 01:51:15 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-68943-A-2-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.162	15.150	1		5845481	1528985	96177	240442	16		
333.9339	15.162	15.150	1		7625434	1871371	85629	214072	22	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.315	16.289	2	1.076	7634326	1714406	26930	67325	64		
317.9389	16.301	16.289	1	1.075	9371778	1942220	23440	58600	83	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.328	16.302	2	1.001	66118289	15081078	7586	18965	1988		
305.8987	16.328	16.302	2	1.001	85333682	19113258	9936	24840	1924	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.915	14.889	2	0.984	4346944	1097437	96177	240442	11		
333.9339	14.915	14.889	2	0.984	5621462	1398754	85629	214072	16	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.929	14.903	2	0.985	5864483	1433303	4080	10200	351		
2,3,7,8-TCDD											
319.8965	14.929	14.917	1	1.001	16809829	4316248	9332	23330	463		
321.8936	14.929	14.917	1	1.001	21462342	5334176	7889	19722	676	0.78(0.65-0.89)	

Report Date: 27-Jan-2021 20:41:50 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_004.d
Injection Date: 26-Jan-2021 01:51:15 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank#2-1-8-21
Worklist#: 456198 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

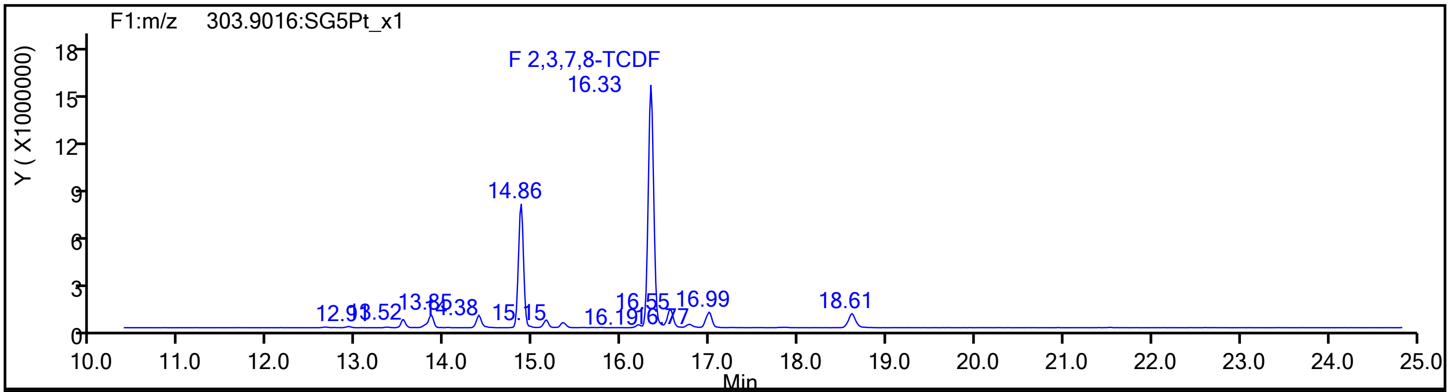

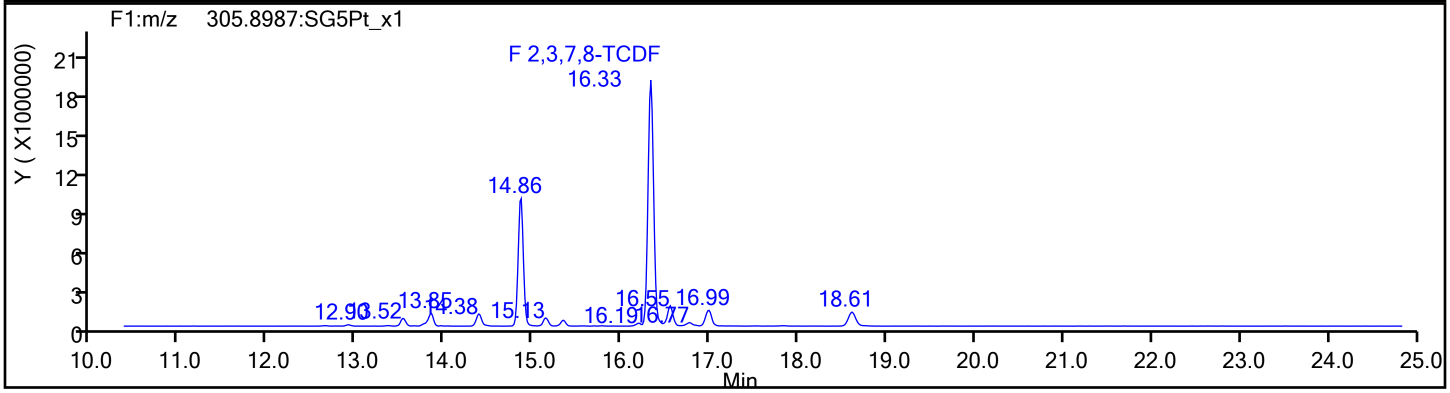

TCDF Standards

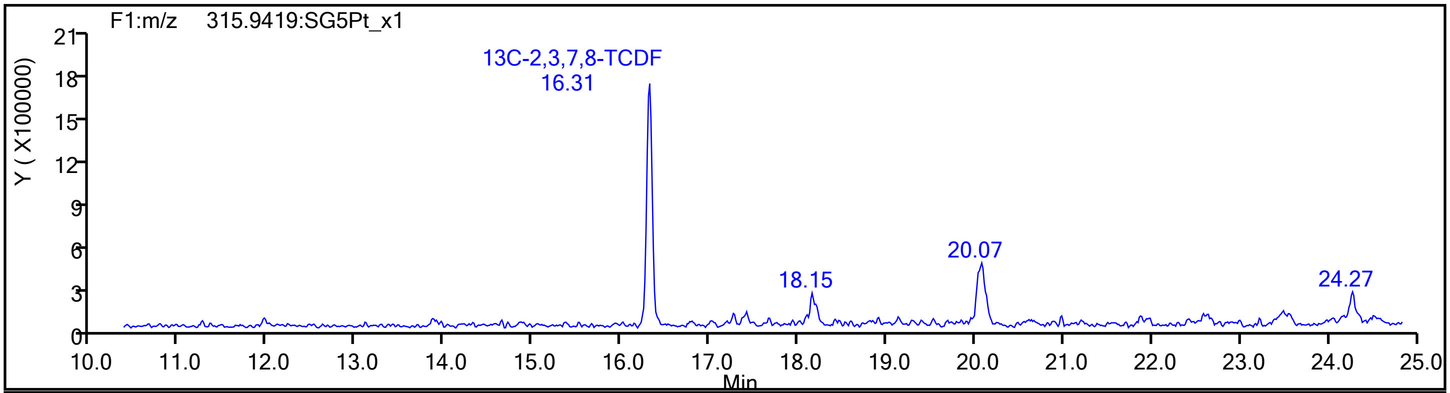

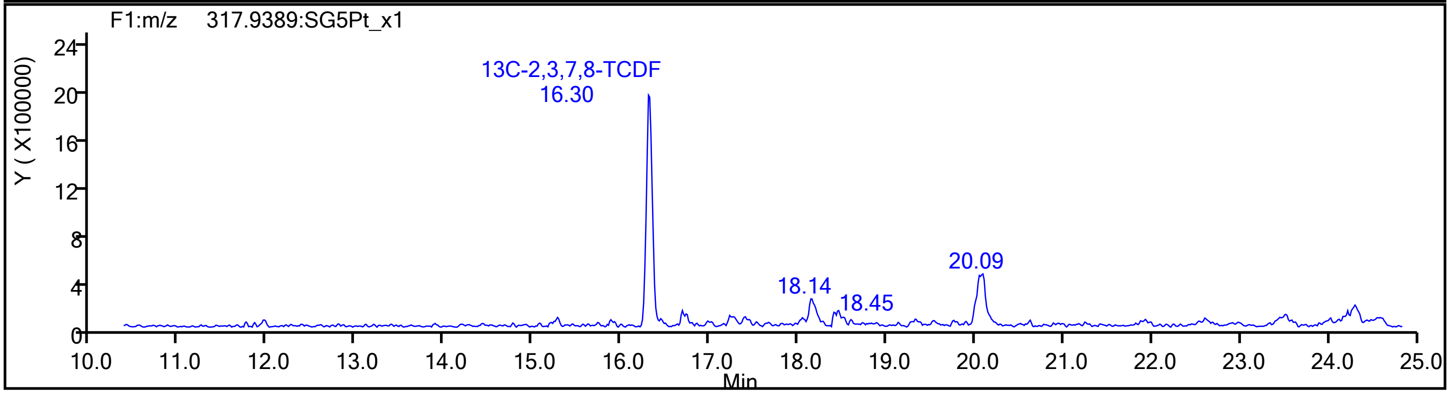

Report Date: 27-Jan-2021 20:41:50 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_004.d		
Injection Date:	26-Jan-2021 01:51:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

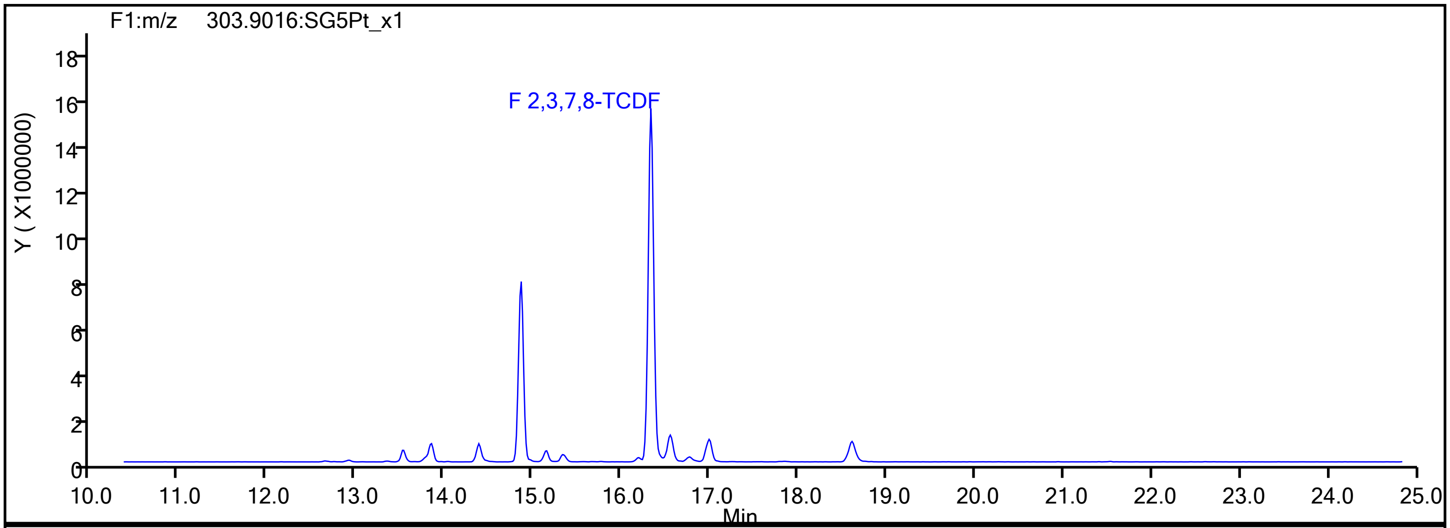

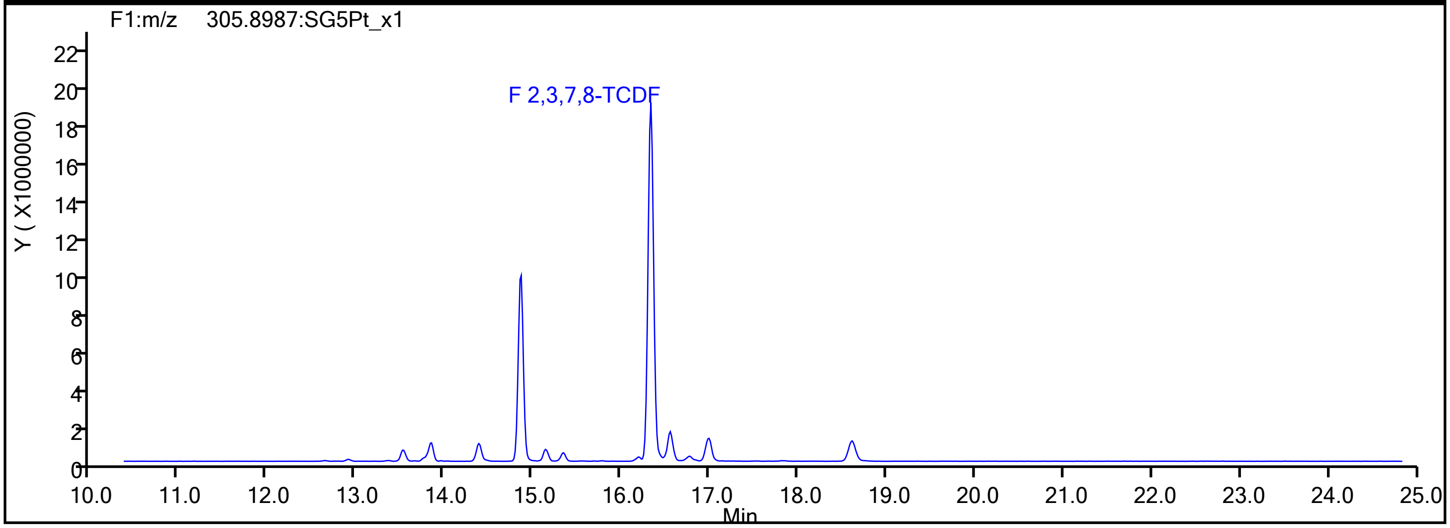

TCDF Interference Mass

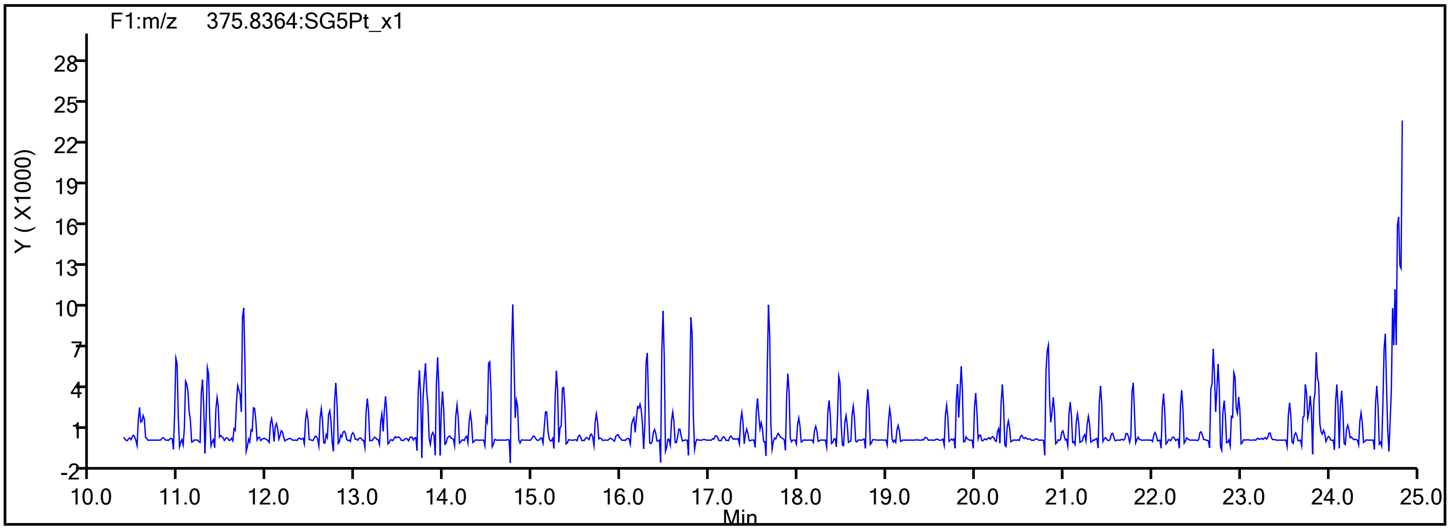

Report Date: 27-Jan-2021 20:41:50 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_004.d		
Injection Date:	26-Jan-2021 01:51:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

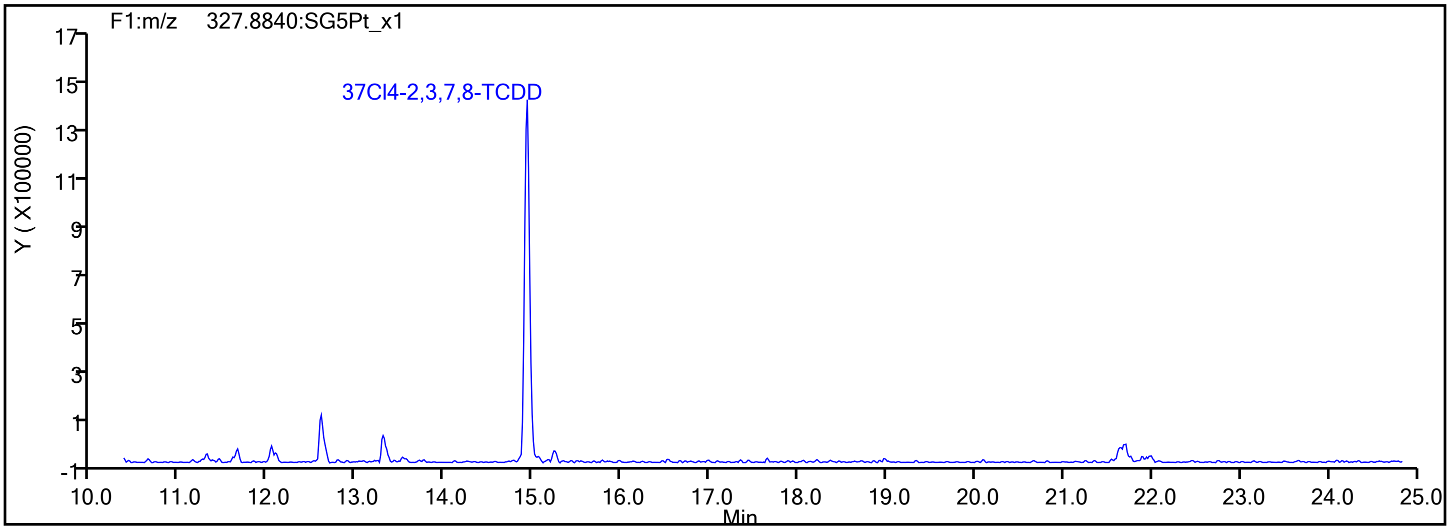

37Cl4-TCDD Standards

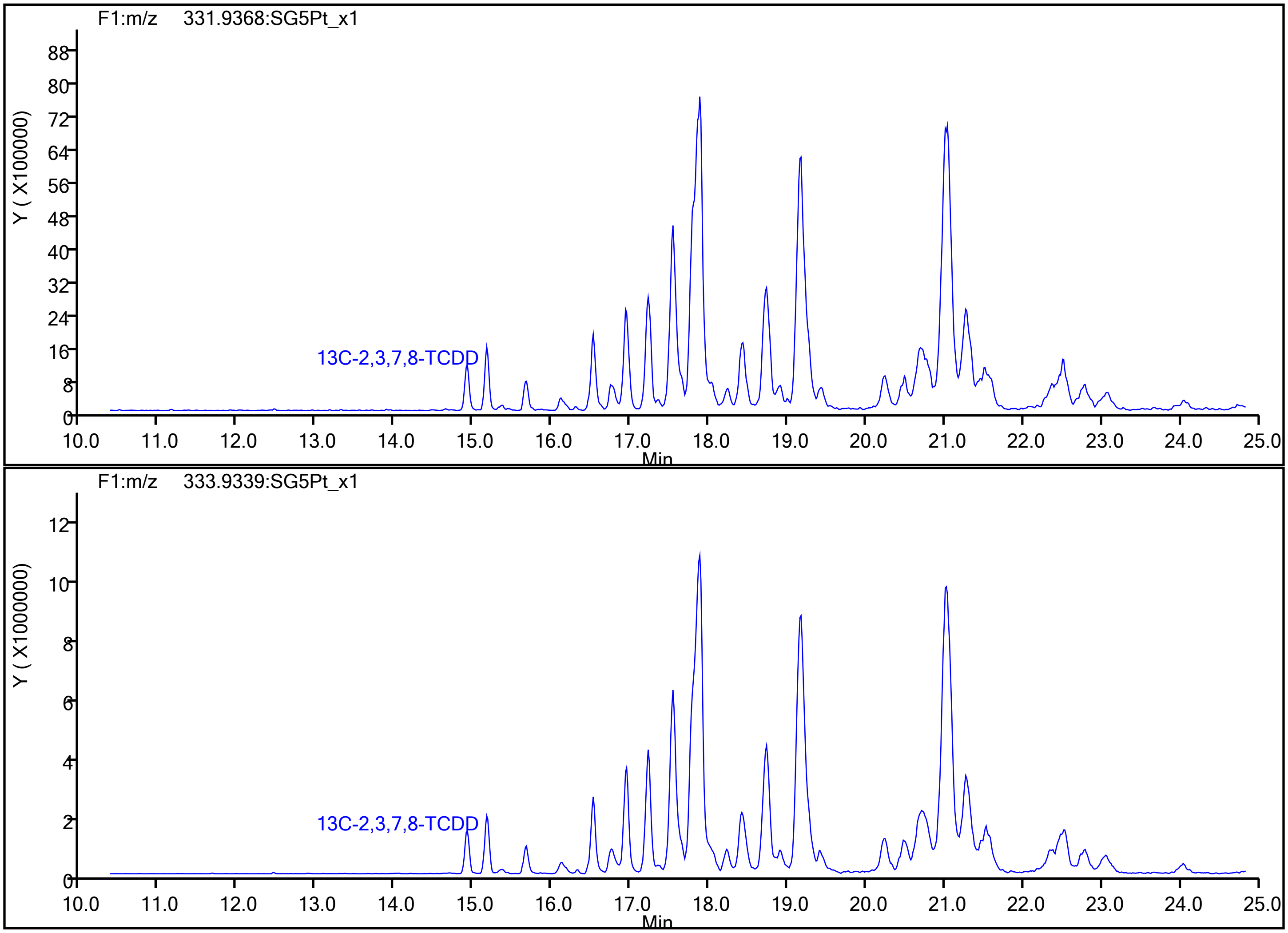

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_004.d		
Injection Date:	26-Jan-2021 01:51:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456198	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

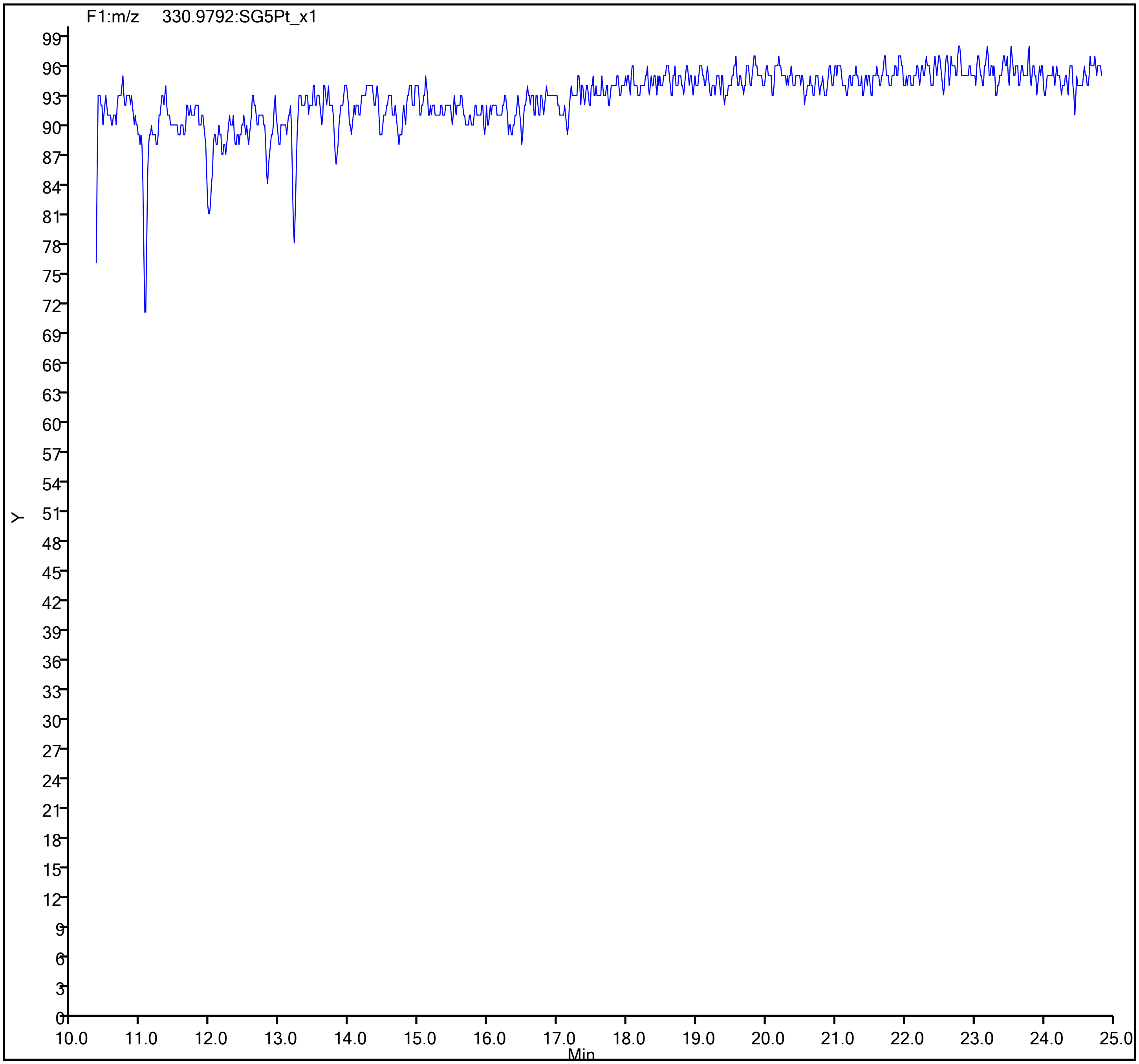

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID: 11215702-Tank#2-1-8-21 DL	Lab Sample ID: 320-68943-2 DL
Matrix: Water	Lab File ID: 27JA2110D5_10.d
Analysis Method: 1613B	Date Collected: 01/08/2021 14:30
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1054.9(mL)	Date Analyzed: 01/27/2021 21:32
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 10
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 456215	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	6600		95	20
41903-57-5	Total TCDD	7300	B	95	20
30402-14-3	Total TCDF	36000	q	95	58

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	72		25-164
89059-46-1	13C-2,3,7,8-TCDF	78		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	97		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Sample Type: Client
Inject. Date: 27-Jan-2021 21:32:02 ALS Bottle#: 11 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-68943-A-2-A 10x 320-68943-A-2-A 10x
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 09:26:18 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1613

First Level Reviewer: messecara Date: 28-Jan-2021 01:59:41

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.959	3452002	0.79	3.4E+05	10.0	10.0				
D 13C-2,3,7,8-TCDF	17.430	4619644	0.79	1.7120	7.817	7.817	0.1101	0.1101	78.17	
2,3,7,8-TCDF	17.460	51295131	0.78	1.0173	109.1	109.1	0.3047	0.3047		
A Non-2,3,7,8-sub-TCDF	17.113	38674859	0.77	1.0173	82.4	82.3	0.3047	46.9		RQMa
S Total TCDF					191.5	191.4	0.3047	0.3047		RQ
D 13C-2,3,7,8-TCDD	18.156	2683995	0.83	1.0837	7.175	7.175	0.0786	0.0786	71.75	
2,3,7,8-TCDD	18.171	10827273	0.77	1.1543	34.9	34.9	0.1040	0.1040		M
$ 37Cl4-2,3,7,8-TCDD	18.171	1664319		1.2441	3.875	3.875	0.0211	0.0211	96.89	
A Non-2,3,7,8-sub-TCDD	17.574	1084356	0.79	1.1543	3.500	3.500	0.1040	3.203		Ma
S Total TCDD					38.4	38.4	0.1040	0.1040		
D 13C-1,2,3,7,8-PeCDF	22.549	3280590	1.57	1.3633	6.971	6.971	0.0344	0.0344	69.71	
1,2,3,7,8-PeCDF	22.577	1742170	1.67	1.0268	5.172	5.172	0.0613	0.0613		
D 13C-2,3,4,7,8-PeCDF	23.927	3113460	1.56	1.2714	7.094	7.094	0.0369	0.0369	70.94	
2,3,4,7,8-PeCDF	23.954	904049	1.52	1.0730	2.706	2.706	0.0651	0.0651		
A F1 PeCDFs	19.963						0.0209	0.0544		U
A Non-2,3,7,8-sub-PeCDF	23.171	1620686	1.55	1.0499	4.828	4.828	0.0630	2.197		
S Total PeCDF					12.7	12.7	0.0632	0.0632		
D 13C-1,2,3,7,8-PeCDD	24.663	2119520	1.61	0.8534	7.194	7.194	0.0419	0.0419	71.94	
1,2,3,7,8-PeCDD	24.704	61501	1.66	1.0748	0.2700	0.2700	0.0356	0.0356		M
A Non-2,3,7,8-sub-PeCDD	23.511						0.0356	0.0356		
S Total PeCDD					0.2700	0.2700	0.0356	0.0356		
D 13C-1,2,3,4,7,8-HxCDF	30.701	2438115	0.52	1.1403	8.001	8.001	0.1136	0.1136	80.01	
1,2,3,4,7,8-HxCDF	30.714	2891713	1.24	1.2385	9.577	9.577	0.0821	0.0821		
D 13C-1,2,3,6,7,8-HxCDF	30.874	2919263	0.55	1.2841	8.507	8.507	0.1009	0.1009	85.07	
1,2,3,6,7,8-HxCDF	30.887	839168	1.15	1.1900	2.416	2.416	0.0729	0.0729		
D 13C-2,3,4,6,7,8-HxCDF	31.659	2728024	0.53	1.1825	8.633	8.633	0.1096	0.1096	86.33	
2,3,4,6,7,8-HxCDF	31.673	97678	1.23	1.2132	0.2951	0.2951	0.0585	0.0585		M
D 13C-1,2,3,7,8,9-HxCDF	32.431	2382723	0.52	1.0832	8.231	8.231	0.1196	0.1196	82.31	
1,2,3,7,8,9-HxCDF	32.444						0.0663	0.0663		QMU
A Non-2,3,7,8-sub-HxCDF	30.355	548343	1.24	1.2171	1.832	1.722	0.0688	0.6539		RQMa

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					14.1	14.0	0.0699	0.0699		RQ
* 13C-1,2,3,7,8,9-HxCDD	32.245	2672417	1.20	2.8E+05	10.0	10.0				
D 13C-1,2,3,4,7,8-HxCDD	31.832	1489791	1.22	0.7757	7.187	7.187	0.1114	0.1114	71.87	
1,2,3,4,7,8-HxCDD	31.952						0.0174	0.0174		RQU
D 13C-1,2,3,6,7,8-HxCDD	31.925	2247634	1.13	0.9997	8.413	8.413	0.0864	0.0864	84.13	
1,2,3,6,7,8-HxCDD	31.952						0.0166	0.0166		RQU
1,2,3,7,8,9-HxCDD	32.244						0.0149	0.0149		
A Non-2,3,7,8-sub-HxCDD	31.033	50147	1.24	1.1448	0.2517	0.2344	0.0162	0.1272		RQ
S Total HxCDD					0.2517	0.2344	0.0163	0.0163		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.823	1657536	0.42	0.8529	7.272	7.272	0.1989	0.1989	72.72	
1,2,3,4,6,7,8-HpCDF	33.823	707244	1.05	1.4619	2.919	2.919	0.0635	0.0635		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.904	1544988	0.39	0.7499	7.709	7.709	0.2262	0.2262	77.09	
1,2,3,4,7,8,9-HpCDF	34.904	231834	1.06	1.4262	1.052	1.052	0.0830	0.0830		
A Non-2,3,7,8-sub-HpCDF	34.351	246494	1.11	1.4441	1.066	1.066	0.0721	1.066		
S Total HpCDF					5.037	5.037	0.0732	0.0732		
D 13C-1,2,3,4,6,7,8-HpCDD	34.612	1623054	1.05	0.7851	7.735	7.735	0.0992	0.0992	77.35	
1,2,3,4,6,7,8-HpCDD	34.612	253685	0.95	1.1022	1.418	1.418	0.0519	0.0519		M
A Non-2,3,7,8-sub-HpCDD	34.460	254353	1.07	1.1022	1.422	1.422	0.0519	1.422		M
S Total HpCDD					2.840	2.840	0.0519	0.0519		
D 13C-OCDD	36.939	1859037	0.98	0.5610	12.4	12.4	0.1098	0.1098	62.00	
OCDF	37.047	231257	0.81	1.4855	1.675	1.675	0.0460	0.0460		M
OCDD	36.951	2681726	0.87	1.1570	24.9	24.9	0.1036	0.1036		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 29-Jan-2021 09:26:18 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Sample Type: Client
Inject. Date: 27-Jan-2021 21:32:02 ALS Bottle#: 11 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-68943-A-2-A 10x 320-68943-A-2-A 10x
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 29-Jan-2021 09:26:18 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1613

First Level Reviewer: messecara Date: 28-Jan-2021 01:59:41

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.959	17.929	2		1524416	362703	1874	4685	194		
333.9339	17.959	17.929	2		1927586	467101	954	2385	490	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.430	17.400	2	0.971	2043370	483662	3697	9242	131		
317.9389	17.430	17.400	2	0.971	2576274	609956	2561	6402	238	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.460	17.430	2	1.002	22477804	5032216	5914	14785	851		
305.8987	17.445	17.430	1	1.001	28817327	6412585	7645	19112	839	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	15.752	17.113	-81	0.904	157228	41350	5914	14785	7		
	Empc Correction				126719	36118	5914	14785	6		
305.8987	15.752	17.113	-81	0.904	164571	46907	7645	19112	6	0.96(0.65-0.89)	
303.9016	16.009	17.113	-66	0.918	642609	168005	5914	14785	28		
305.8987	16.009	17.113	-66	0.918	840897	229091	7645	19112	30	0.76(0.65-0.89)	
303.9016	16.296	17.113	-49	0.935	989541	214975	5914	14785	36		
305.8987	16.296	17.113	-49	0.935	1280912	272514	7645	19112	36	0.77(0.65-0.89)	
303.9016	16.523	17.113	-35	0.948	771083	185819	5914	14785	31		M
305.8987	16.523	17.113	-35	0.948	900717	247727	7645	19112	32	0.86(0.65-0.89)	
303.9016	16.780	17.113	-20	0.963	986794	208590	5914	14785	35		
305.8987	16.780	17.113	-20	0.963	1143248	278432	7645	19112	36	0.86(0.65-0.89)	M
303.9016	17.067	17.113	-3	0.979	9600357	2398087	5914	14785	405		
305.8987	17.067	17.113	-3	0.979	12421590	3022157	7645	19112	395	0.77(0.65-0.89)	
303.9016	17.294	17.113	11	0.992	438723	103613	5914	14785	18		
305.8987	17.294	17.113	11	0.992	554675	137108	7645	19112	18	0.79(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.884	17.113	46	1.026	1527178	348951	5914	14785	59		
305.8987	17.884	17.113	46	1.026	1880535	433106	7645	19112	57	0.81(0.65-0.89)	
303.9016	18.141	17.113	62	1.041	349271	69954	5914	14785	12		
305.8987	18.141	17.113	62	1.041	432217	97461	7645	19112	13	0.81(0.65-0.89)	
303.9016	19.305	17.113	131	1.108	1541221	327252	5914	14785	55		
305.8987	19.305	17.113	131	1.108	2082001	427146	7645	19112	56	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.156	18.126	2	1.011	1216445	274409	1874	4685	146		
333.9339	18.156	18.126	2	1.011	1467550	332709	954	2385	349	0.83(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	18.171	18.141	2	1.001	4714166	1087549	1661	4152	655		
321.8936	18.171	18.141	2	1.001	6113107	1382534	1254	3135	1102	0.77(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8847	18.171	18.141	2	1.012	1664319	388484	872	2180	446		
A Non-2,3,7,8-sub-TCDD											Ma
319.8965	18.065	17.574	29	0.995	40708	14435	1661	4152	9		M
321.8936	18.080	17.574	30	0.996	51222	17653	1254	3135	14	0.79(0.65-0.89)	
319.8965	18.534	17.574	57	1.021	437028	87644	1661	4152	53		
321.8936	18.534	17.574	57	1.021	555398	108882	1254	3135	87	0.79(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.549	22.522	2	1.256	2005283	322438	856	2140	377		
353.8970	22.549	22.522	2	1.256	1275307	209537	700	1750	299	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.577	22.549	2	1.001	1089104	172311	697	1742	247		
341.8567	22.577	22.549	2	1.001	653066	100266	642	1605	156	1.67(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.927	23.900	2	1.332	1895968	287640	856	2140	336		
353.8970	23.927	23.900	2	1.332	1217492	191678	700	1750	274	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.954	23.927	2	1.001	544951	83480	697	1742	120		
341.8567	23.940	23.927	1	1.001	359098	62107	642	1605	97	1.52(1.32-1.78)	
A F1 PeCDFs											U
339.8597	19.622	19.963	-20	0.870	10916	1072	181	452	6		
341.8567	19.622	19.963	-20	0.870	7335	1407	263	657	5	1.49(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											
339.8597	21.199	23.171	-118	0.940	443557	84235	697	1742	121		
341.8567	21.199	23.171	-118	0.940	293889	54150	642	1605	84	1.51(1.32-1.78)	
339.8597	22.454	23.171	-43	0.996	86671	16896	697	1742	24		
341.8567	22.440	23.171	-44	0.995	50289	10026	642	1605	16	1.72(1.32-1.78)	
339.8597	23.122	23.171	-3	1.025	291373	45515	697	1742	65		
341.8567	23.122	23.171	-3	1.025	179646	27281	642	1605	42	1.62(1.32-1.78)	
339.8597	24.309	23.171	68	1.078	164371	25676	697	1742	37		
341.8567	24.295	23.171	67	1.077	110890	17867	642	1605	28	1.48(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.663	24.636	2	1.373	1307712	177388	679	1697	261		
369.8919	24.663	24.636	2	1.373	811808	127233	507	1267	251	1.61(1.32-1.78)	

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Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											M
355.8546	24.704	24.663	2	1.002	38357	5600	289	722	19		M
357.8516	24.690	24.663	2	1.001	23144	4267	177	442	24	1.66(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.511						289	722			
357.8516	23.511						177	442			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.701	30.674	2	0.952	831544	155649	1013	2532	154		
385.8610	30.701	30.674	2	0.952	1606571	298614	2267	5667	132	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.714	30.700	1	1.000	1601710	310479	1201	3002	259		
375.8178	30.714	30.700	1	1.000	1290003	242832	646	1615	376	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.874	30.847	2	0.957	1038945	174291	1013	2532	172		
385.8610	30.874	30.847	2	0.957	1880318	358259	2267	5667	158	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.887	30.874	1	1.000	449223	78326	1201	3002	65		
375.8178	30.887	30.874	1	1.000	389945	67315	646	1615	104	1.15(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.659	31.632	2	0.982	939289	229215	1013	2532	226		
385.8610	31.659	31.632	2	0.982	1788735	421380	2267	5667	186	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	31.673	31.645	2	1.000	53840	11622	1201	3002	10		M
375.8178	31.673	31.645	2	1.000	43838	9075	646	1615	14	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.431	32.417	1	1.006	820248	190412	1013	2532	188		
385.8610	32.431	32.417	1	1.006	1562475	377047	2267	5667	166	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											QMU
373.8208	32.431						1201	3002			
375.8178	32.431						646	1615			
A Non-2,3,7,8-sub-HxCDF											RQMa
373.8208	28.664	30.355	-101	0.934	116876	14306	1201	3002	12		
375.8178	28.651	30.355	-102	0.933	91413	14033	646	1615	22	1.28(1.05-1.43)	
373.8208	29.955	30.355	-24	0.976	56895	9266	1201	3002	8		
375.8178	29.982	30.355	-22	0.977	56107	9557	646	1615	15	1.01(1.05-1.43)	
	Empc Correction				45883	7472	646	1615	12		
373.8208	31.566	30.355	73	1.028	31771	7837	1201	3002	7		M
375.8178	31.566	30.355	73	1.028	31185	7501	646	1615	12	1.02(1.05-1.43)	
	Empc Correction				25621	6320	646	1615	10		
373.8208	32.524	30.355	130	1.059	99579	29246	1201	3002	24		M
375.8178	32.511	30.355	129	1.059	99745	25095	646	1615	39	1.00(1.05-1.43)	
	Empc Correction				80305	23585	646	1615	37		
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.245	32.231	1		1457424	344020	1370	3425	251		
403.8529	32.245	32.231	1		1214993	288927	817	2042	354	1.20(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.832	31.819	1	0.987	819603	238797	1370	3425	174		
403.8529	31.832	31.819	1	0.987	670188	186041	817	2042	228	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQU
389.8157	31.832						160	400			
391.8127	31.832						183	457			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.925	31.912	1	0.990	1191955	263486	1370	3425	192		
403.8529	31.925	31.912	1	0.990	1055679	237217	817	2042	290	1.13(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQU
389.8157	31.925						160	400			
391.8127	31.925						183	457			
1,2,3,7,8,9-HxCDD											
389.8157	32.244						160	400			
391.8127	32.244						183	457			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8157	29.822	31.033	-73	0.934	12417	1903	160	400	12		
391.8127	29.875	31.033	-69	0.936	10513	1499	183	457	8	1.18(1.05-1.43)	
389.8157	31.126	31.033	6	0.975	15067	3513	160	400	22		
391.8127	31.140	31.033	6	0.975	15852	2571	183	457	14	0.95(1.05-1.43)	
	Empc Correction				12150	2833	183	457	15		
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.823	33.810	1	1.049	493774	137722	1396	3490	99		
419.8220	33.823	33.810	1	1.049	1163762	364810	2899	7247	126	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.823	33.811	1	1.000	362416	107665	716	1790	150		M
409.7789	33.823	33.811	1	1.000	344828	109940	1150	2875	96	1.05(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.904	34.880	1	1.082	434128	107699	1396	3490	77		
419.8220	34.892	34.880	1	1.082	1110860	286440	2899	7247	99	0.39(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.904	34.892	1	1.000	119562	30928	716	1790	43		
409.7789	34.904	34.892	1	1.000	112272	28749	1150	2875	25	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.126	34.351	-13	1.009	129458	36796	716	1790	51		
409.7789	34.126	34.351	-13	1.009	117036	30892	1150	2875	27	1.11(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.612	34.588	1	1.073	830973	218093	1127	2817	194		
437.8140	34.600	34.588	1	1.073	792081	208808	845	2112	247	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.612	34.600	1	1.000	123364	37174	440	1100	84		M
425.7737	34.612	34.600	1	1.000	130321	37597	537	1342	70	0.95(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											M
423.7766	34.066	34.460	-24	0.984	131758	43299	440	1100	98		M
425.7737	34.066	34.460	-24	0.984	122595	37571	537	1342	70	1.07(0.88-1.20)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-OCDD											
469.7779	36.939	36.927	1	1.146	921567	198292	897	2242	221		
471.7750	36.939	36.927	1	1.146	937470	224816	662	1655	340	0.98(0.76-1.02)	
OCDF											M
441.7428	37.047	37.022	1	1.003	103621	24271	226	565	107		M
443.7399	37.035	37.022	1	1.003	127636	29356	352	880	83	0.81(0.76-1.02)	
OCDD											
457.7377	36.951	36.927	1	1.000	1247440	277286	509	1272	545		
459.7348	36.951	36.927	1	1.000	1434286	316798	505	1262	627	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Inject. Date: 27-Jan-2021 21:32:02 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 456215 Lims Sample ID: 10

Non-2,3,7,8-sub-TCDF, RT: 17.113

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.017	D 13C-2,3,7,8-TCDF	100.000	4619644	1093618

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.017		10.000	4619644	1093618

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.752	157228	41350	164571	46907	0.6847	0.96	RQ
15.752	126719	36118	164571	46907	0.6198		Empc Correction
16.009	642609	168005	840897	229091	3.16	0.76	
16.296	989541	214975	1280912	272514	4.83	0.77	
16.523	771083	185819	900717	247727	3.56	0.86	Ma
16.780	986794	208590	1143248	278432	4.53	0.86	M
17.067	9600357	2398087	12421590	3022157	46.9	0.77	
17.294	438723	103613	554675	137108	2.11	0.79	
17.884	1527178	348951	1880535	433106	7.25	0.81	
18.141	349271	69954	432217	97461	1.66	0.81	
19.305	1541221	327252	2082001	427146	7.71	0.74	
Signal Totals:							
	16973496	4061364	21701363	5191649			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	38705368	9258245				0.78	RQMa
	38674859	9253013					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 82.360 = (38705368 * 10.000) / (4619644 * 1.017)
Empc Amount: 82.295 = (38674859 * 10.000) / (4619644 * 1.017)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	27-Jan-2021 21:32:02	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDD, RT: 17.574

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.154	D 13C-2,3,7,8-TCDD	100.000	2683995	607118

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.154		10.000	2683995	607118

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.065	40708	14435	51222	17653	0.2967	0.79	Ma
18.534	437028	87644	555398	108882	3.20	0.79	
Signal Totals:							
	477736	102079	606620	126535			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1084356	228614				0.79	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.500 = (1084356 * 10.000) / (2683995 * 1.154)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	27-Jan-2021 21:32:02	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	10

F1 PeCDFs, RT: 19.963

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027	D 13C-1,2,3,7,8-PeCDF	100.000	3280590	531975
2,3,4,7,8-PeCDF	1.073	D 13C-2,3,4,7,8-PeCDF	100.000	3113460	479318

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.050		10.000	3197025	505646

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
19.622	10916	1072	7335	1407	0.0544	1.49	

Compound is Marked ND

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	27-Jan-2021 21:32:02	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	10

Non-2,3,7,8-sub-PeCDF, RT: 23.171

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027	D 13C-1,2,3,7,8-PeCDF	100.000	3280590	531975
2,3,4,7,8-PeCDF	1.073	D 13C-2,3,4,7,8-PeCDF	100.000	3113460	479318

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.050		10.000	3197025	505646

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.199	443557	84235	293889	54150	2.20	1.51	
22.454	86671	16896	50289	10026	0.4080	1.72	
23.122	291373	45515	179646	27281	1.40	1.62	
24.309	164371	25676	110890	17867	0.8201	1.48	
Signal Totals:							
	985972	172322	634714	109324			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1620686	281646				1.55	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 4.828 = (1620686 * 10.000) / (3197025 * 1.050)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Inject. Date: 27-Jan-2021 21:32:02 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 456215 Lims Sample ID: 10

Non-2,3,7,8-sub-HxCDF, RT: 30.355

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.238	D 13C-1,2,3,4,7,8-HxCDF	100.000	2438115	454263
1,2,3,6,7,8-HxCDF	1.190	D 13C-1,2,3,6,7,8-HxCDF	100.000	2919263	532550
2,3,4,6,7,8-HxCDF	1.213	D 13C-2,3,4,6,7,8-HxCDF	100.000	2728024	650595
1,2,3,7,8,9-HxCDF	1.227	D 13C-1,2,3,7,8,9-HxCDF	100.000	2382723	567459

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.217		10.000	2617031	551216

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
28.664	116876	14306	91413	14033	0.6539	1.28	
29.955	56895	9266	56107	9557	0.3548	1.01	RQ
29.955	56895	9266	45883	7472	0.3227		Empc Correction
31.566	31771	7837	31185	7501	0.1977	1.02	RQMa
31.566	31771	7837	25621	6320	0.1802		Empc Correction
32.524	99579	29246	99745	25095	0.6258	1.00	RQMa
32.524	99579	29246	80305	23585	0.5648		Empc Correction
Signal Totals:							
	305121	60655	243222	51410			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	583571	116841				1.10	RQMa
	548343	112065					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.832 = (583571 * 10.000) / (2617031 * 1.217)
Empc Amount: 1.722 = (548343 * 10.000) / (2617031 * 1.217)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 29-Jan-2021 09:26:18 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Lims ID:	320-68943-A-2-A		
Client ID:	11215702-Tank#2-1-8-21		
Inject. Date:	27-Jan-2021 21:32:02	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	456215	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDD, RT: 31.033

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.162	D 13C-1,2,3,4,7,8-HxCDD	100.000	1489791	424838
1,2,3,6,7,8-HxCDD	1.032	D 13C-1,2,3,6,7,8-HxCDD	100.000	2247634	500703
1,2,3,7,8,9-HxCDD	1.241				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.145		10.000	1868712	462770

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
29.822	12417	1903	10513	1499	0.1072	1.18	
31.126	15067	3513	15852	2571	0.1445	0.95	RQ
31.126	15067	3513	12150	2833	0.1272		Empc Correction
Signal Totals:							
	27484	5416	22663	4332			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	53849	9486				1.04	RQ
	50147	9748					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2517 = (53849 * 10.000) / (1868712 * 1.145)
Empc Amount: 0.2344 = (50147 * 10.000) / (1868712 * 1.145)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 29-Jan-2021 09:26:18 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Inject. Date: 27-Jan-2021 21:32:02
Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: SMA
Lims Batch ID: 456215
Lims Sample ID: 10

Non-2,3,7,8-sub-HpCDF, RT: 34.351

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.462	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1657536	502532
1,2,3,4,7,8,9-HpCDF	1.426	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1544988	394139

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.444		10.000	1601262	448335

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
34.126	129458	36796	117036	30892	1.07	1.11	
Signal Totals:							
	129458	36796	117036	30892			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	246494	67688				1.11	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.066 = (246494 * 10.000) / (1601262 * 1.444)

Report Date: 29-Jan-2021 09:26:18 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d
Lims ID: 320-68943-A-2-A
Client ID: 11215702-Tank#2-1-8-21
Inject. Date: 27-Jan-2021 21:32:02 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 456215 Lims Sample ID: 10

Non-2,3,7,8-sub-HpCDD, RT: 34.460

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.102	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1623054	426901

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.102		10.000	1623054	426901

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
34.066	131758	43299	122595	37571	1.42	1.07	M
Signal Totals:							
	131758	43299	122595	37571			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	254353	80870				1.07	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.422 = (254353 * 10.000) / (1623054 * 1.102)

QC Flag Legend

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d				
Injection Date:	27-Jan-2021 21:32:02	Instrument ID:	10D5		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	SMA	ALS Bottle#:	11	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.92- 19.30)

Signal: 1

Processing Integration Results

RT = 16.523 Area = 771083

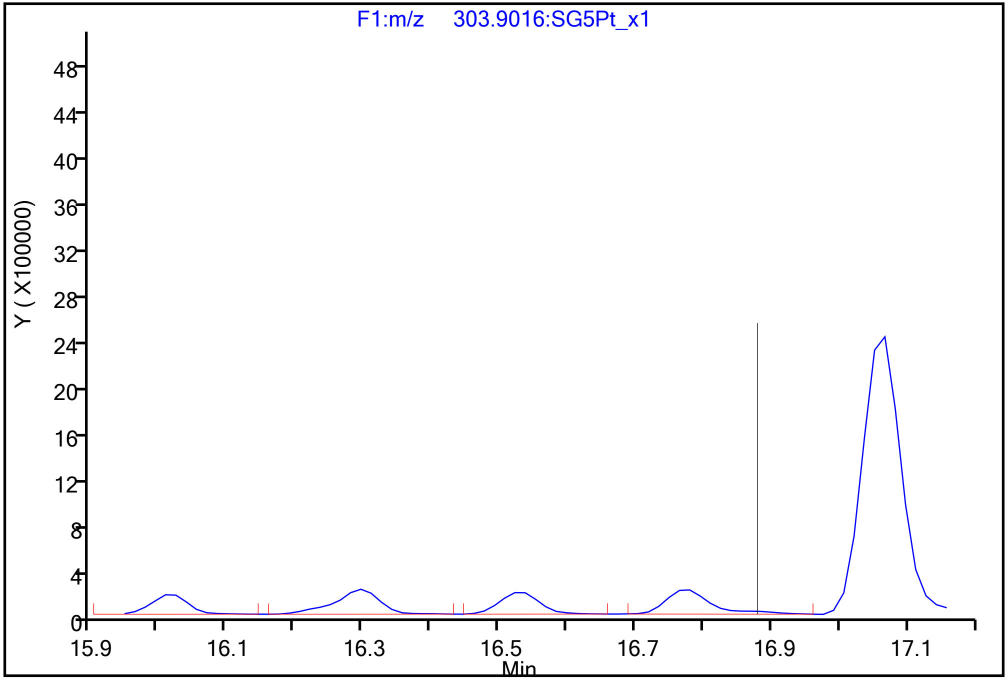

Manual Integration Results

RT = 16.523 Area = 771083

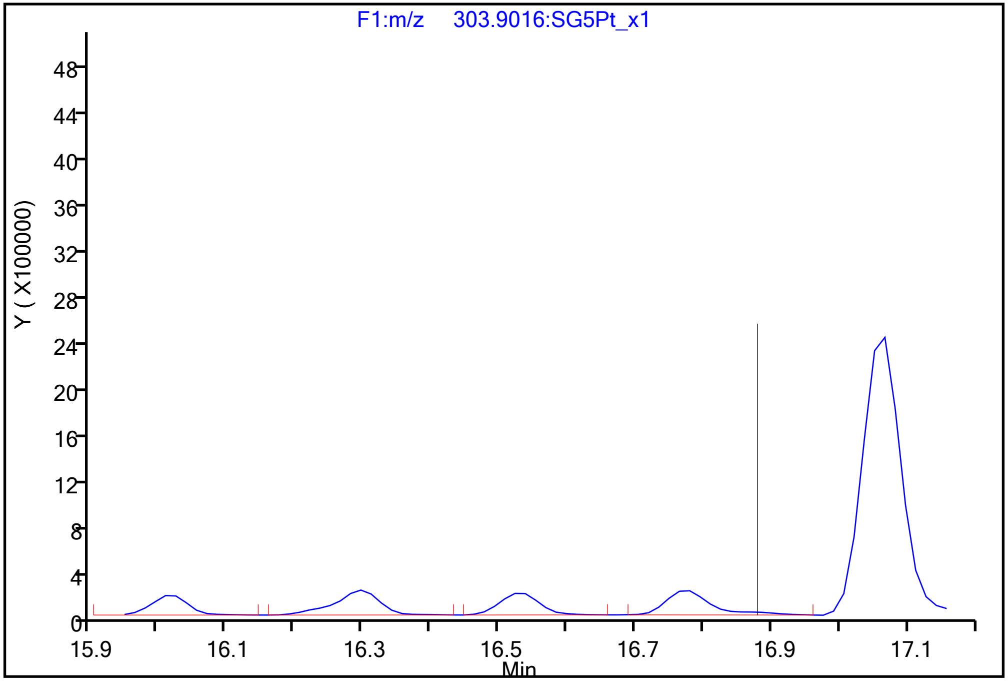

Reviewer: dadunj, 29-Jan-2021 09:22:51

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Injection Date:	27-Jan-2021 21:32:02	Instrument ID:	10D5
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2
Client ID:	11215702-Tank#2-1-8-21		
Operator ID:	SMA	ALS Bottle#:	11 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	10.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (14.92- 19.30)

Signal: 2

RT = 16.765 Area = 641922

Processing Integration Results

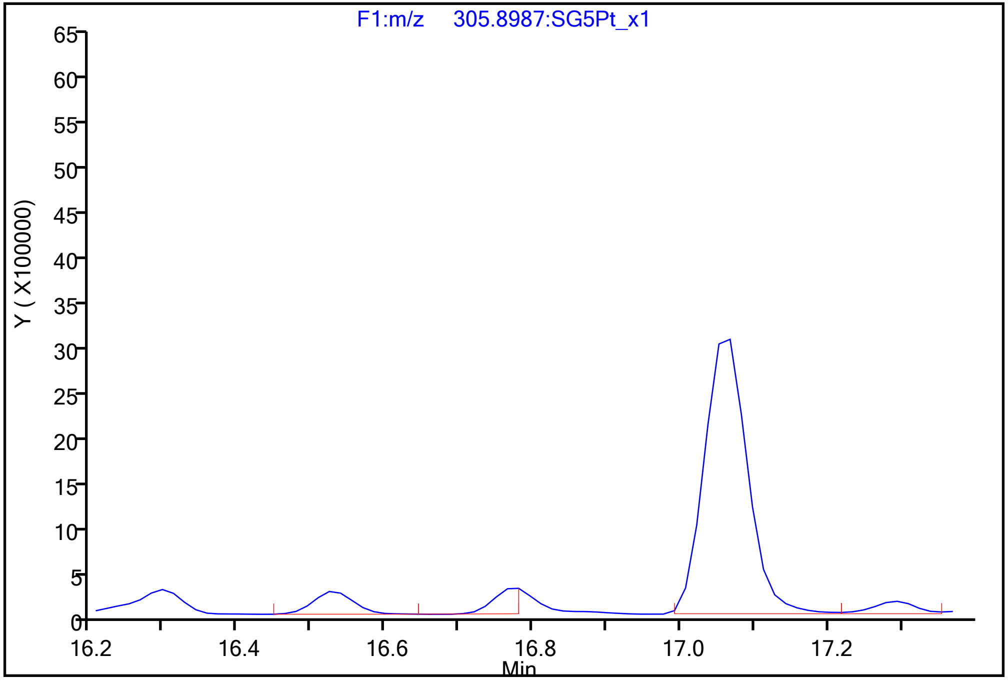

RT = 16.780 Area = 1143248 M

Manual Integration Results

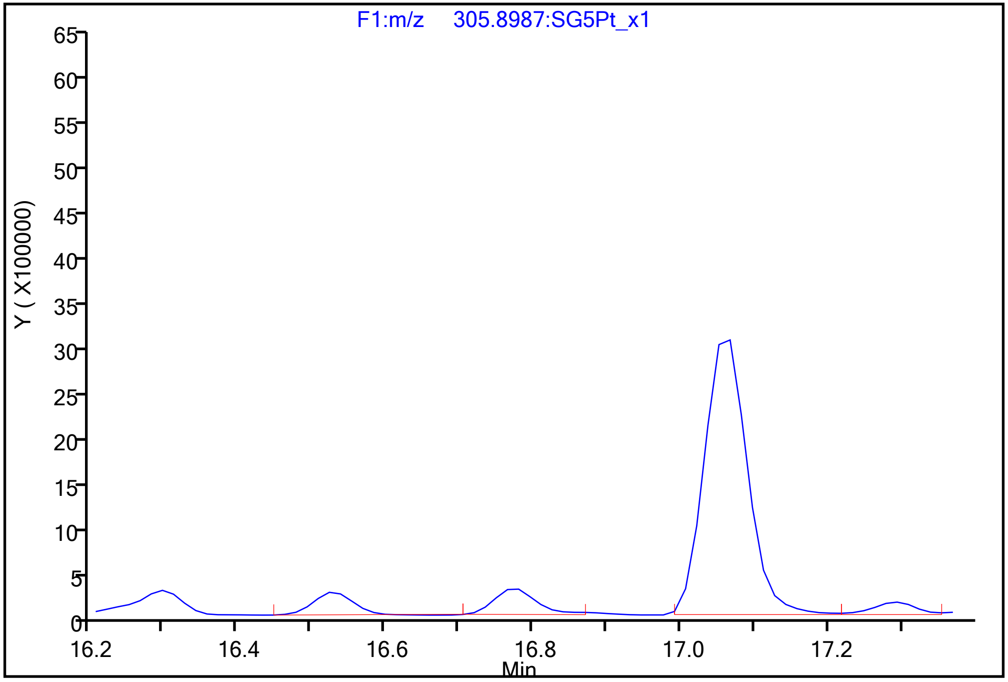

Reviewer: dadunj, 29-Jan-2021 09:22:38

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d				
Injection Date:	27-Jan-2021 21:32:02	Instrument ID:	10D5		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	SMA	ALS Bottle#:	11	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6
Signal: 2

Processing Integration Results

RT: 18.17
Area: 6164344
Amount: 35.113361
Amount Units: pg/ul

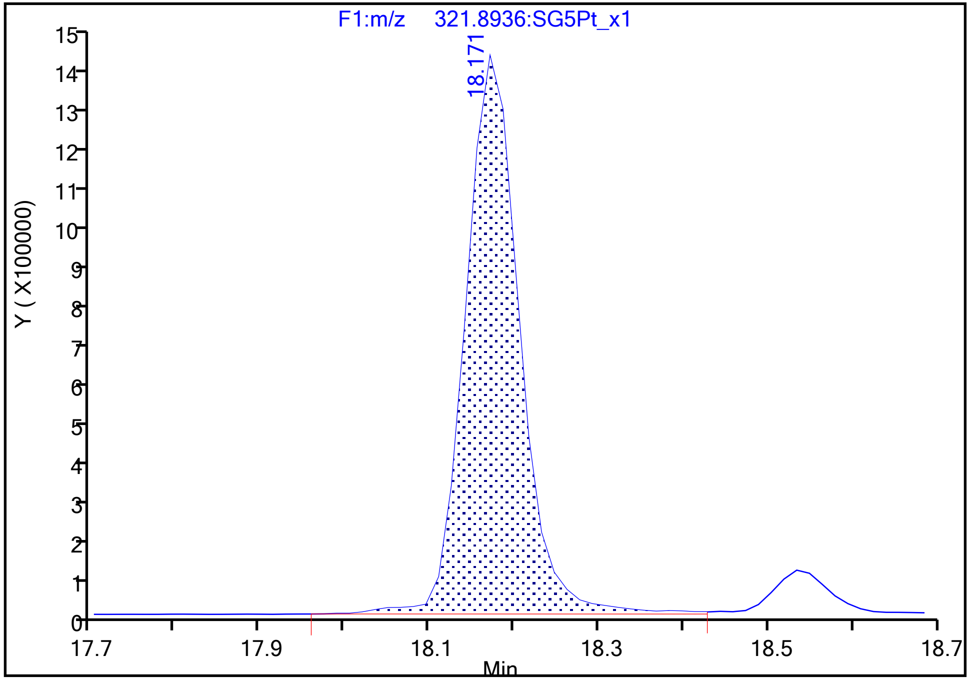

Manual Integration Results

RT: 18.17
Area: 6113107
Amount: 34.947980
Amount Units: pg/ul

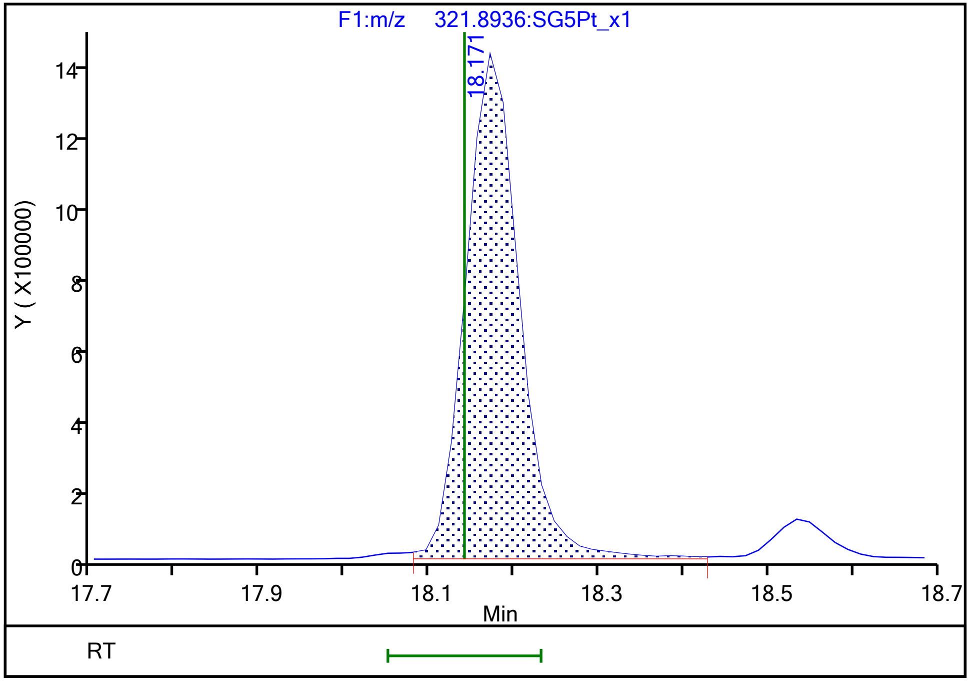

Reviewer: dadunj, 29-Jan-2021 09:23:15
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d				
Injection Date:	27-Jan-2021 21:32:02	Instrument ID:	10D5		
Lims ID:	320-68943-A-2-A	Lab Sample ID:	320-68943-2		
Client ID:	11215702-Tank#2-1-8-21				
Operator ID:	SMA	ALS Bottle#:	11	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.84- 19.30)

Signal: 1

Processing Integration Results

RT = 18.065 Area = 40708

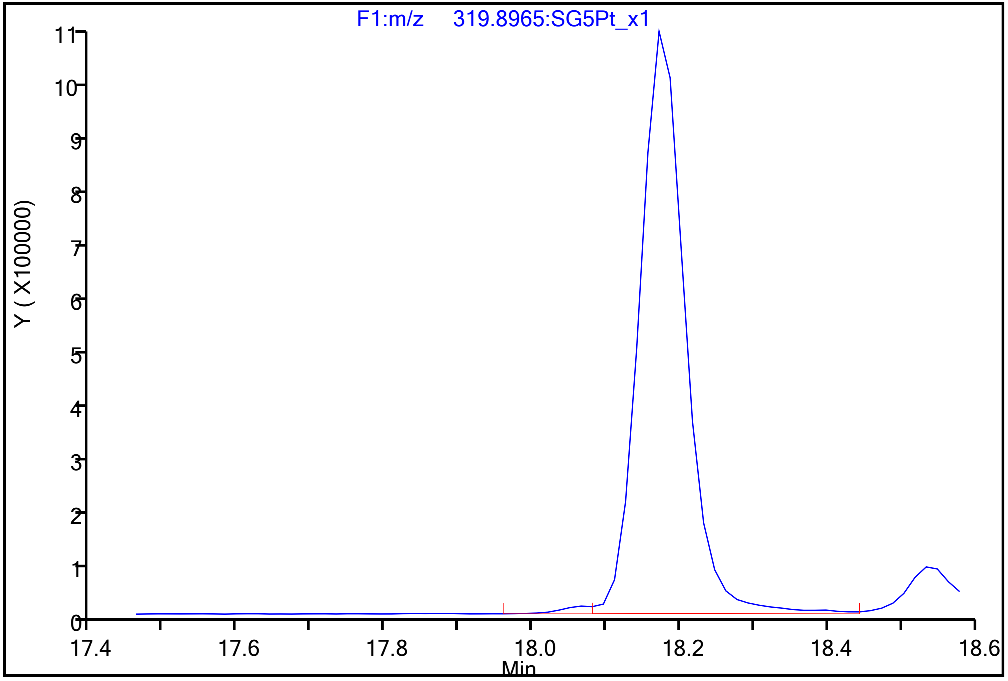

Manual Integration Results

RT = 18.065 Area = 40708

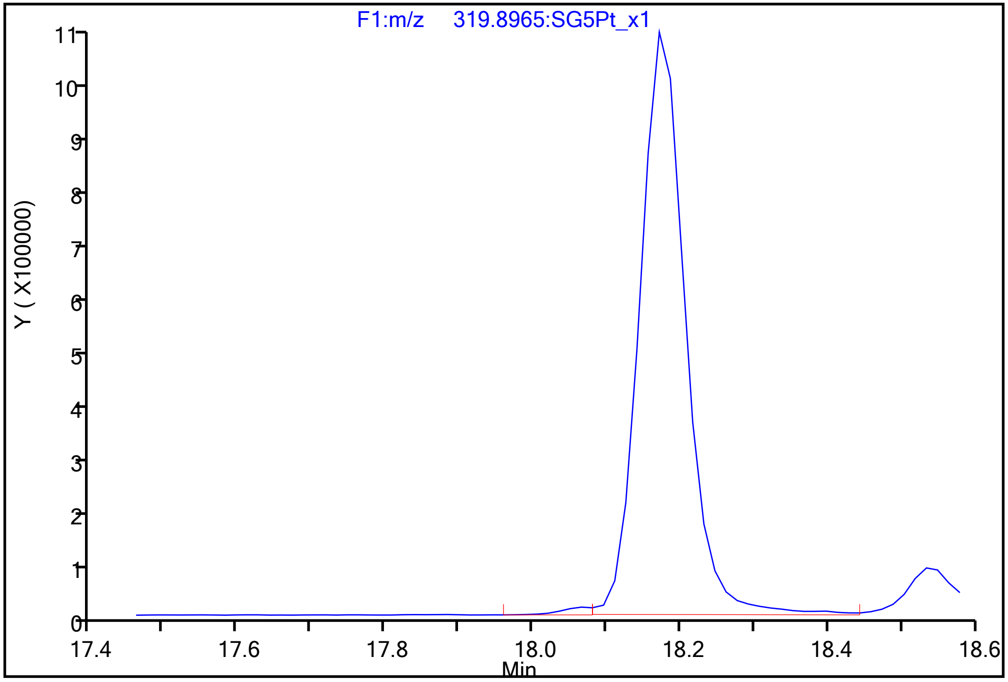

Reviewer: dadunj, 29-Jan-2021 09:23:23

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 29-Jan-2021 09:26:18 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Injection Date:	27-Jan-2021 21:32:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456215	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

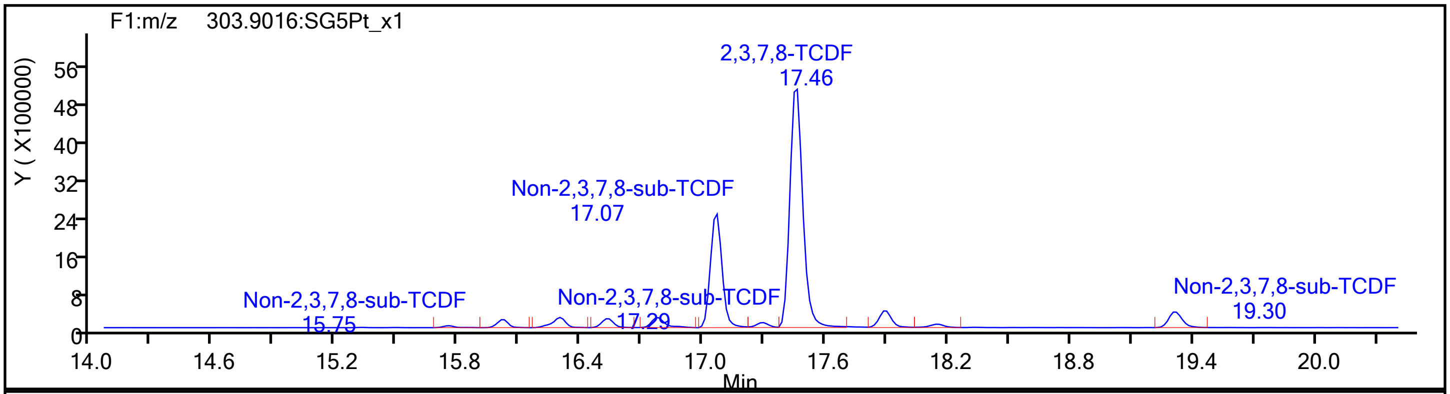

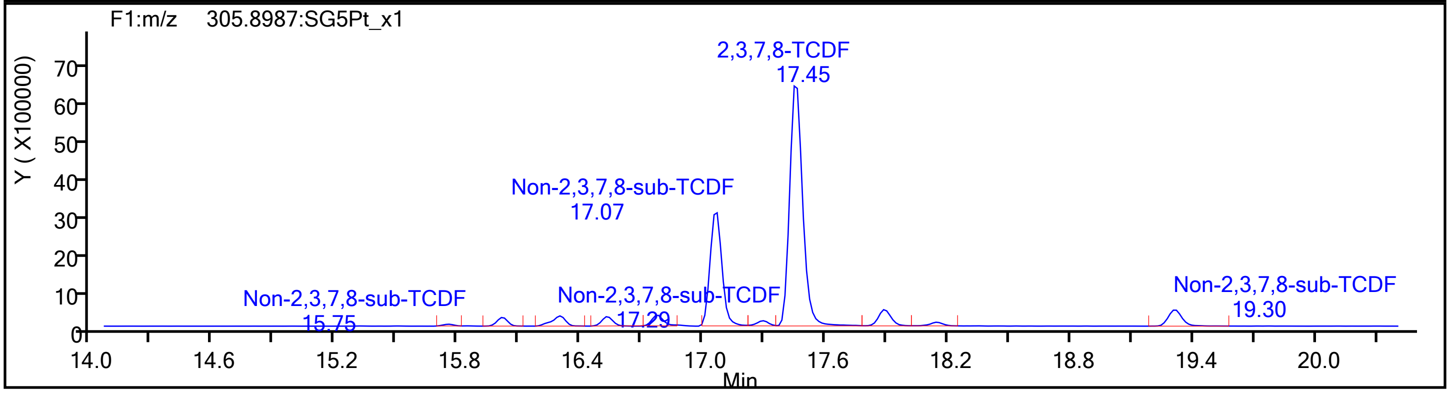

TCDF Standards

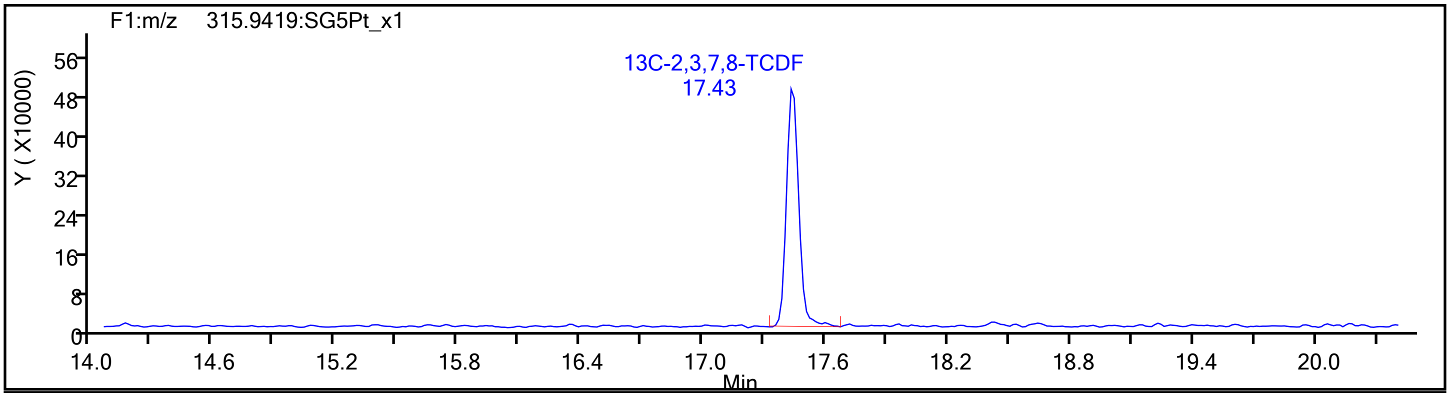

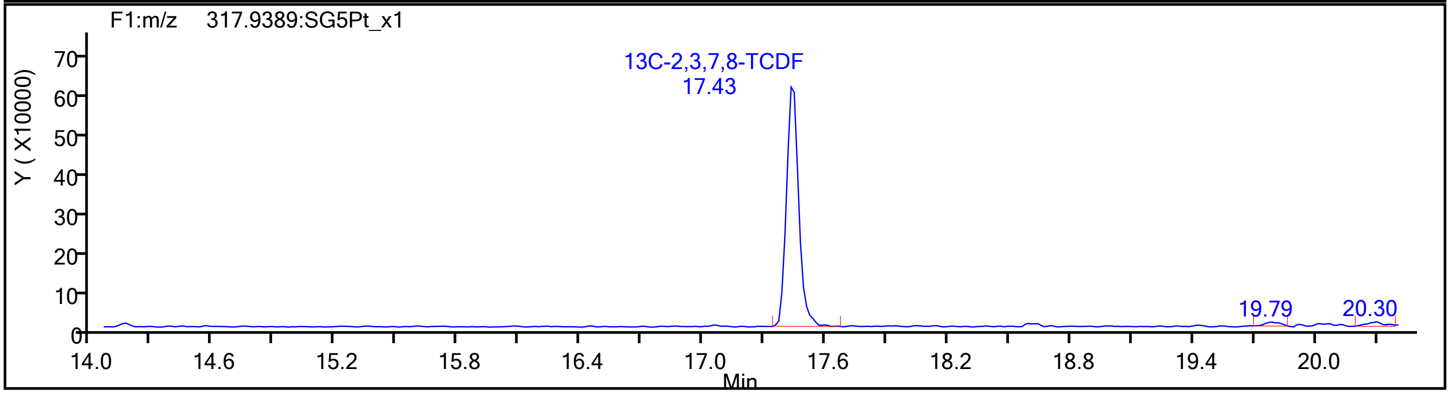

Report Date: 29-Jan-2021 09:26:19 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d

Injection Date: 27-Jan-2021 21:32:02
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-1-8-21

Worklist#: 456215
Sample Line#: 10

Column Type: DB-5
Column Dia: 0.32 mm

TCDF

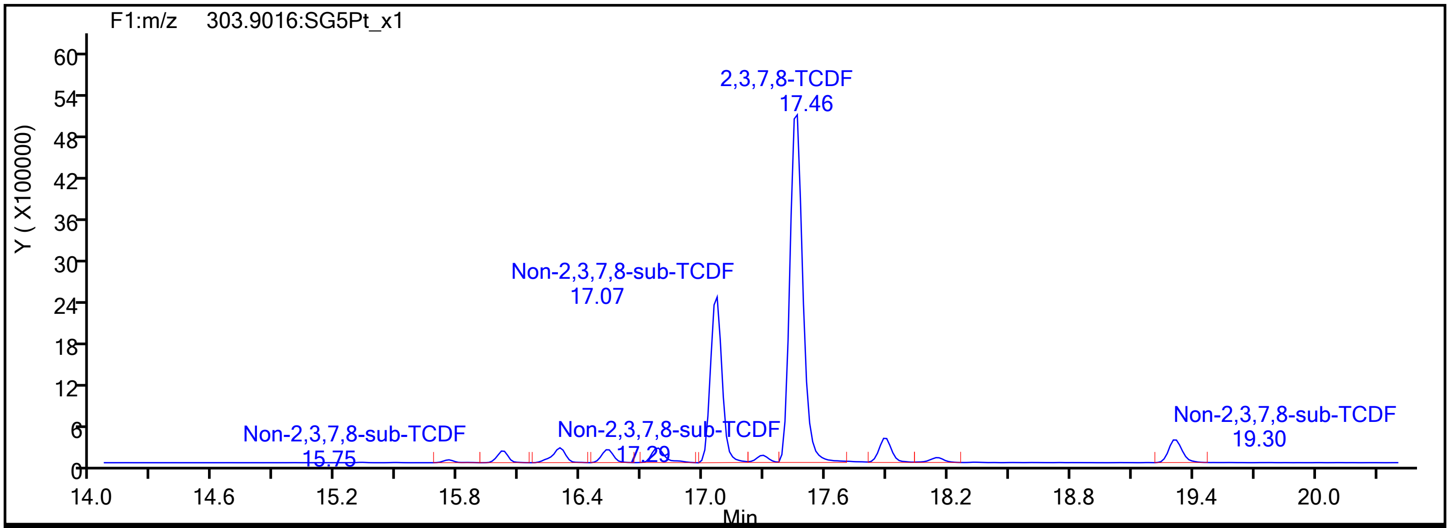

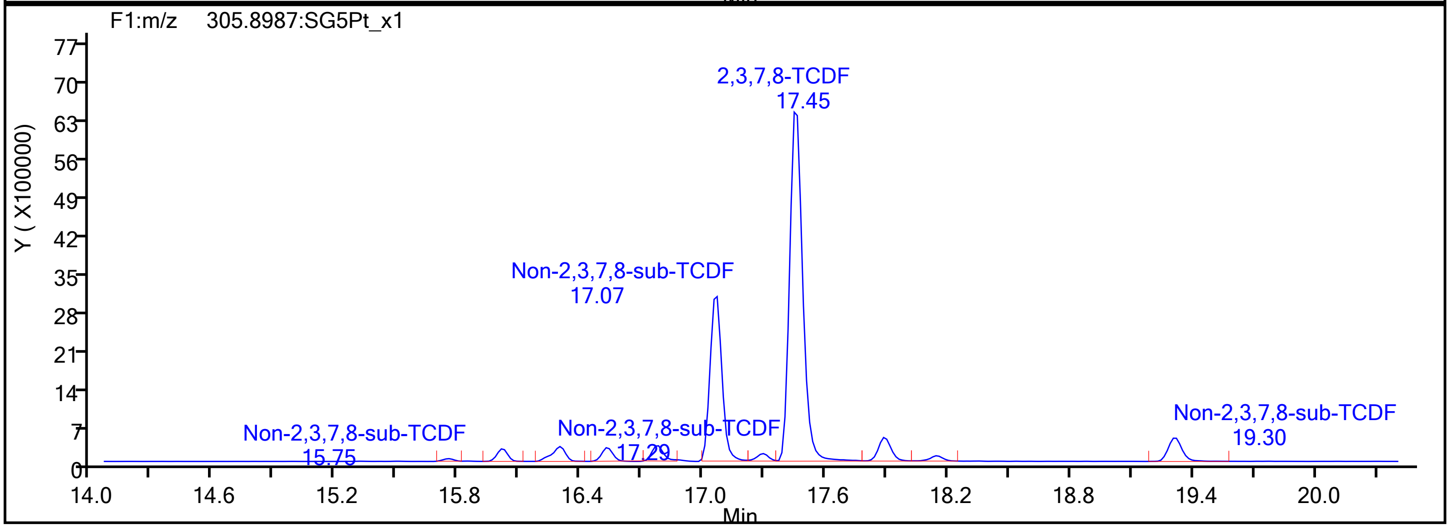

TCDF Interference Mass

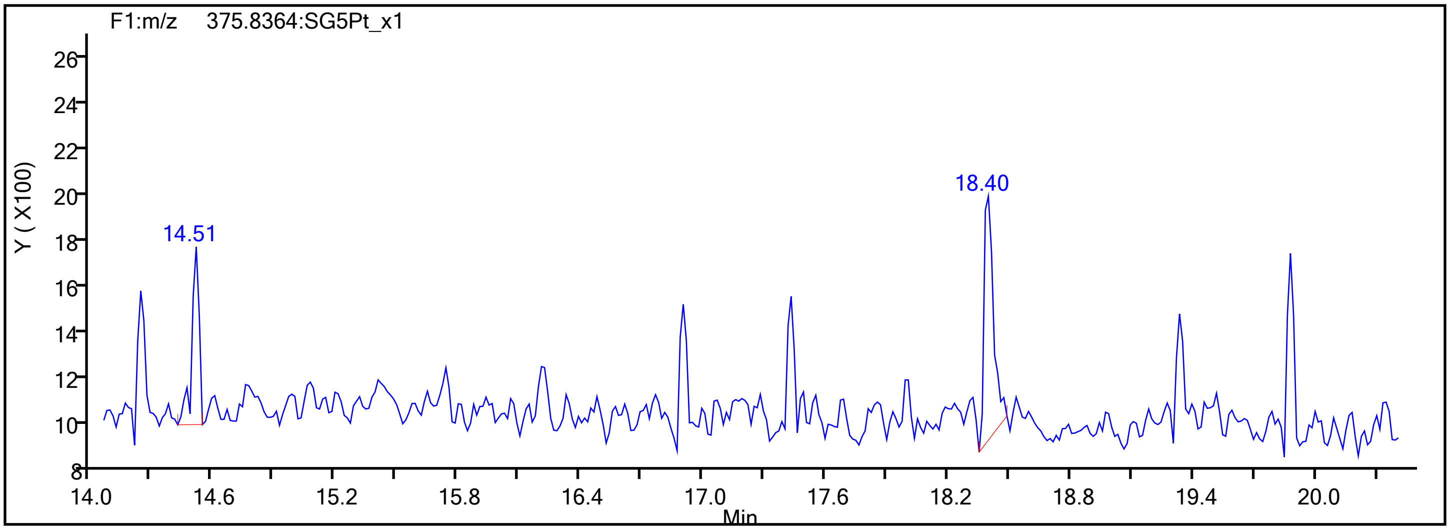

Report Date: 29-Jan-2021 09:26:19 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Injection Date:	27-Jan-2021 21:32:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456215	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

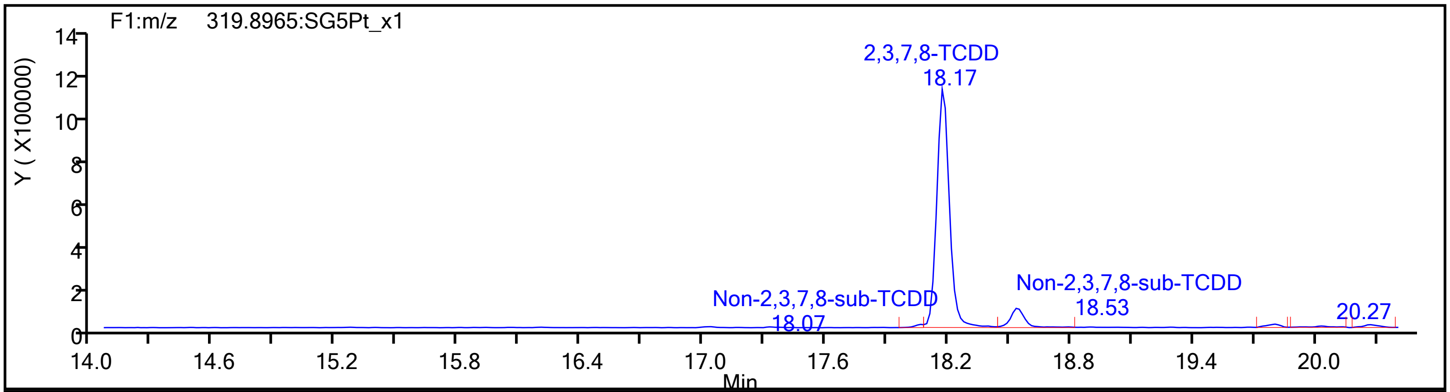

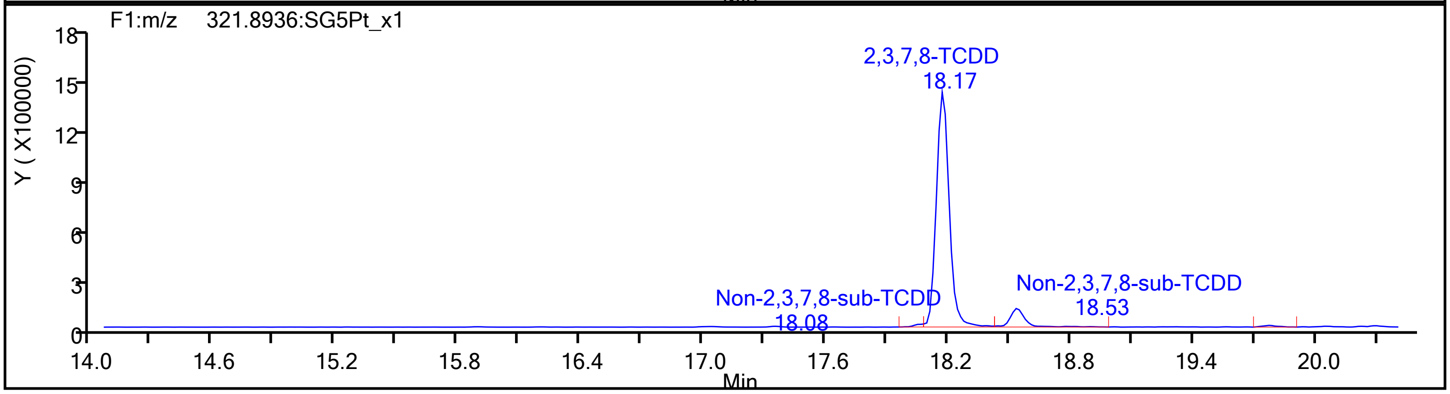

TCDD Standards

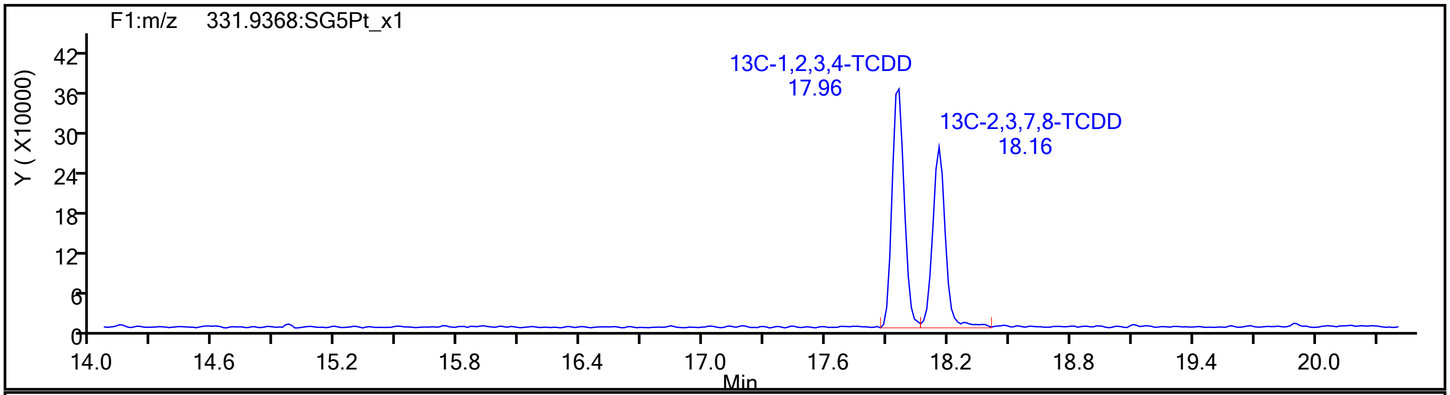

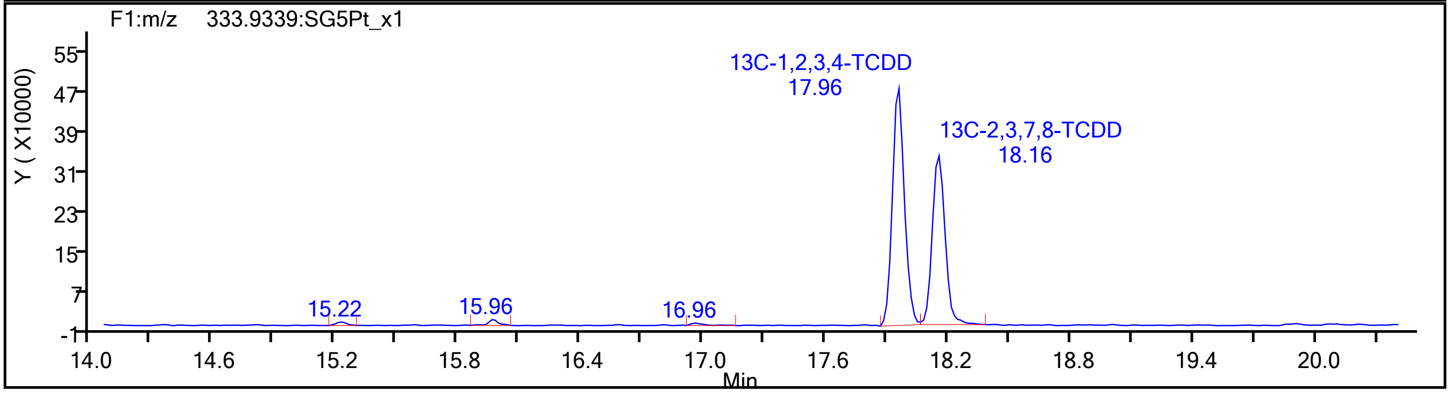

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Injection Date:	27-Jan-2021 21:32:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456215	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

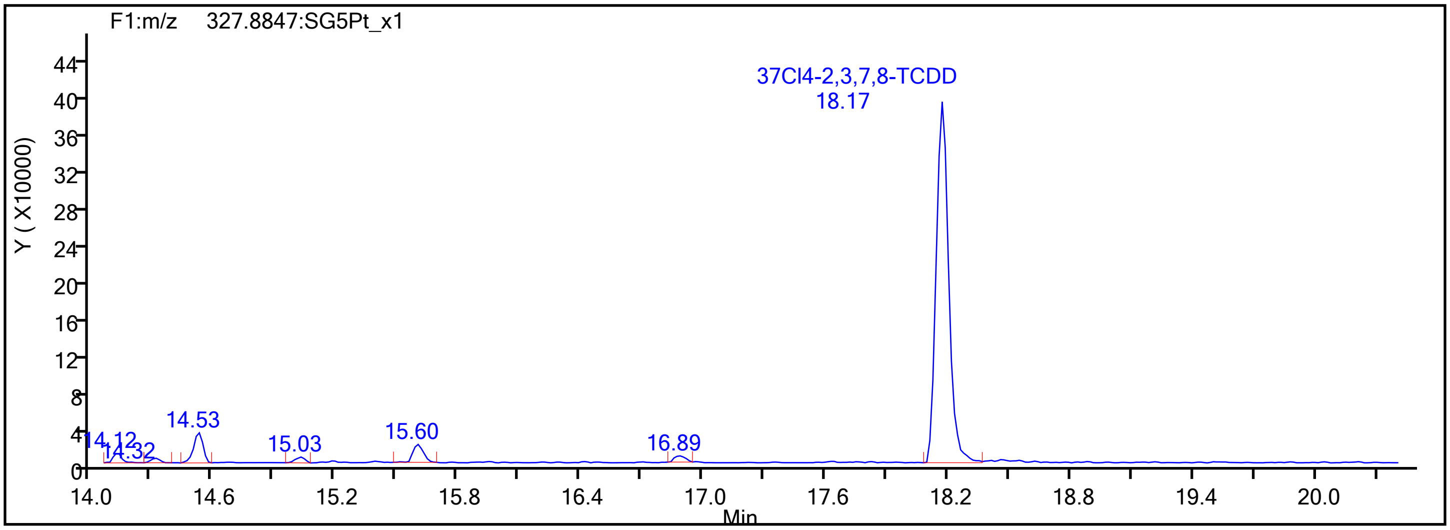

37Cl4-TCDD Standards

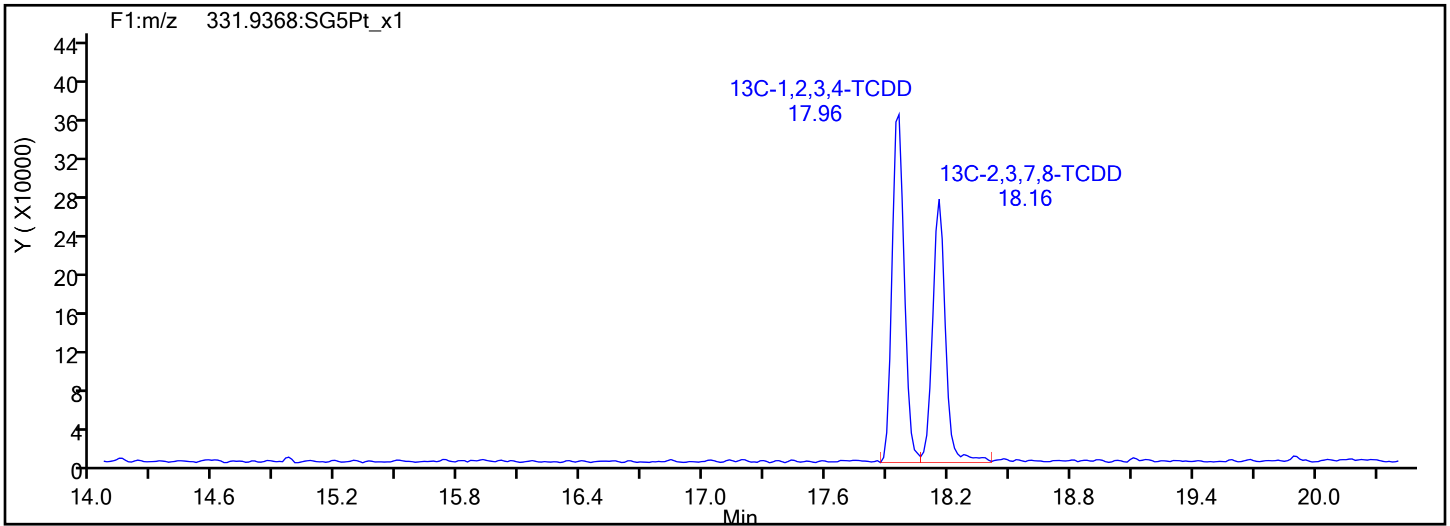

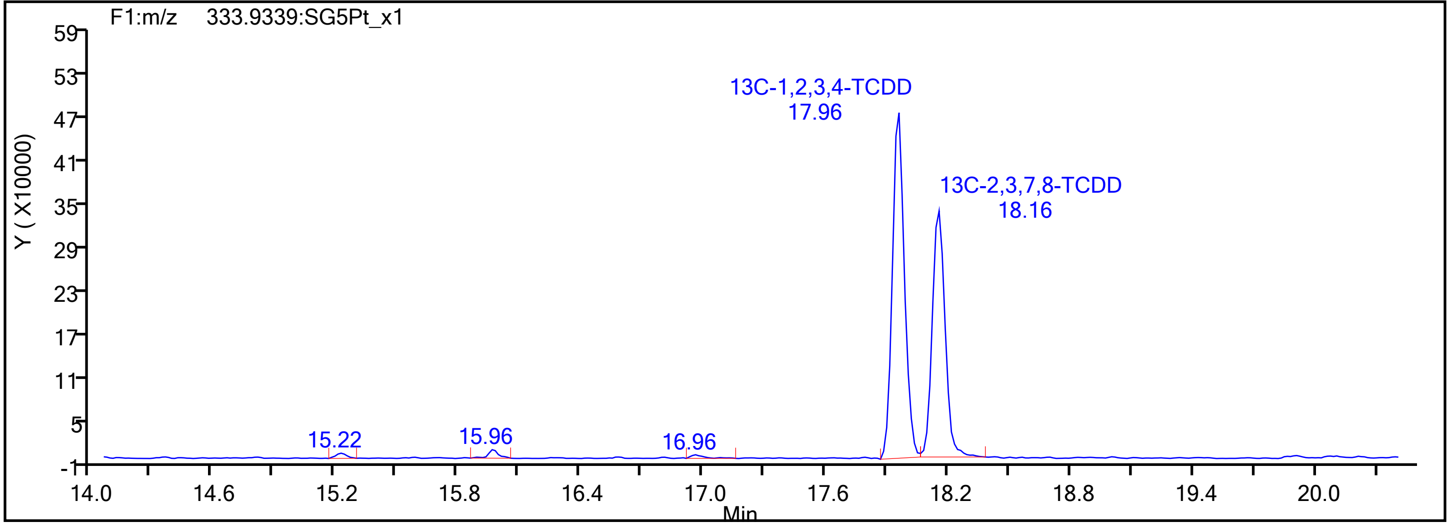

Report Date: 29-Jan-2021 09:26:19 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d

Injection Date: 27-Jan-2021 21:32:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank#2-1-8-21

Worklist#: 456215 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

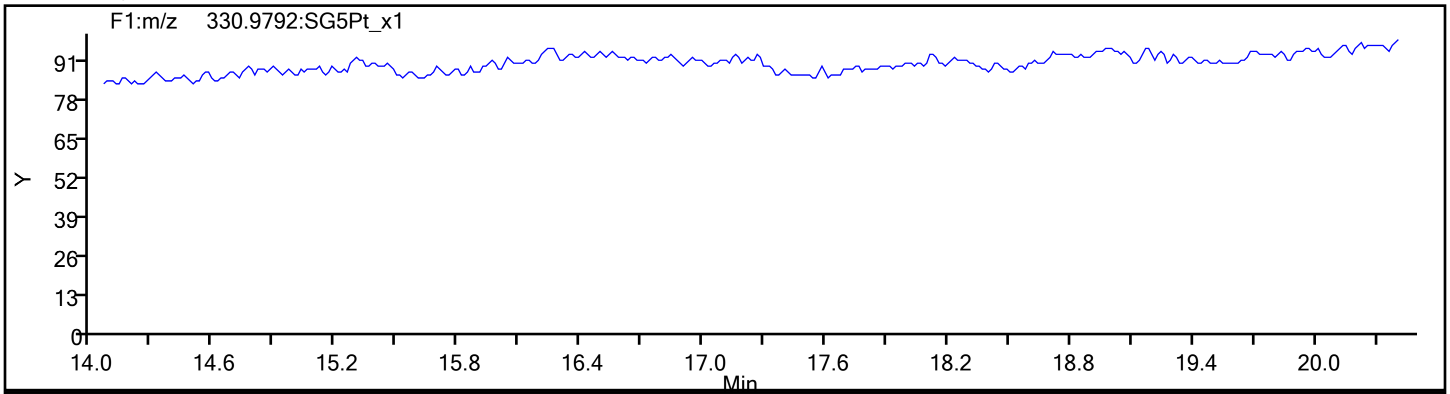

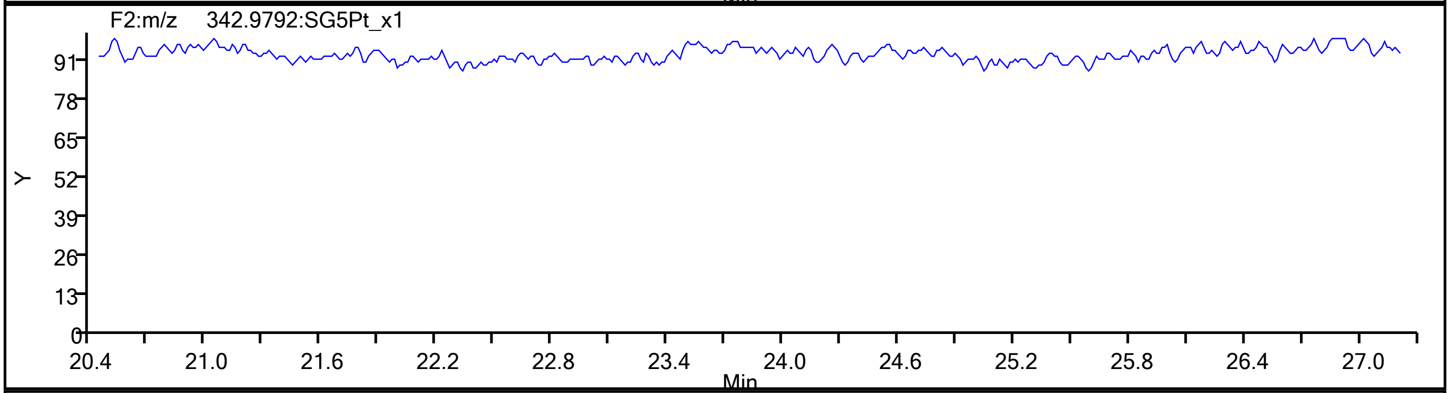

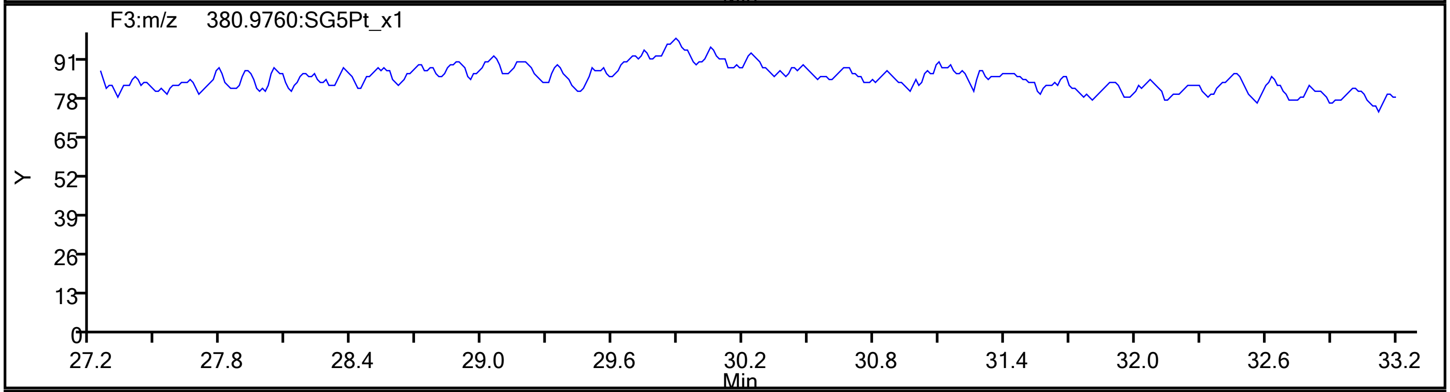

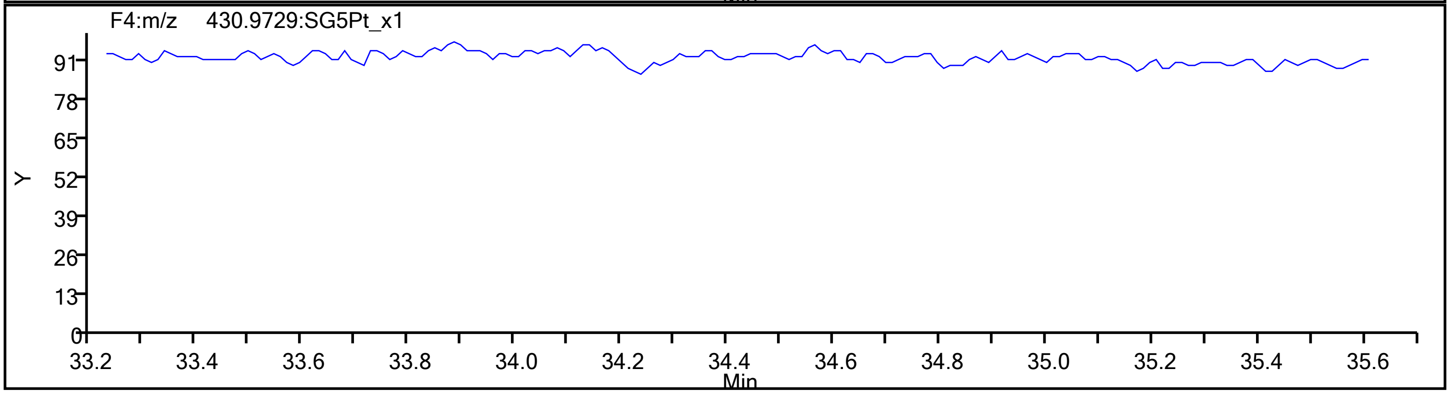

Report Date: 29-Jan-2021 09:26:19 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_10.d		
Injection Date:	27-Jan-2021 21:32:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank#2-1-8-21		
Worklist#:	456215	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

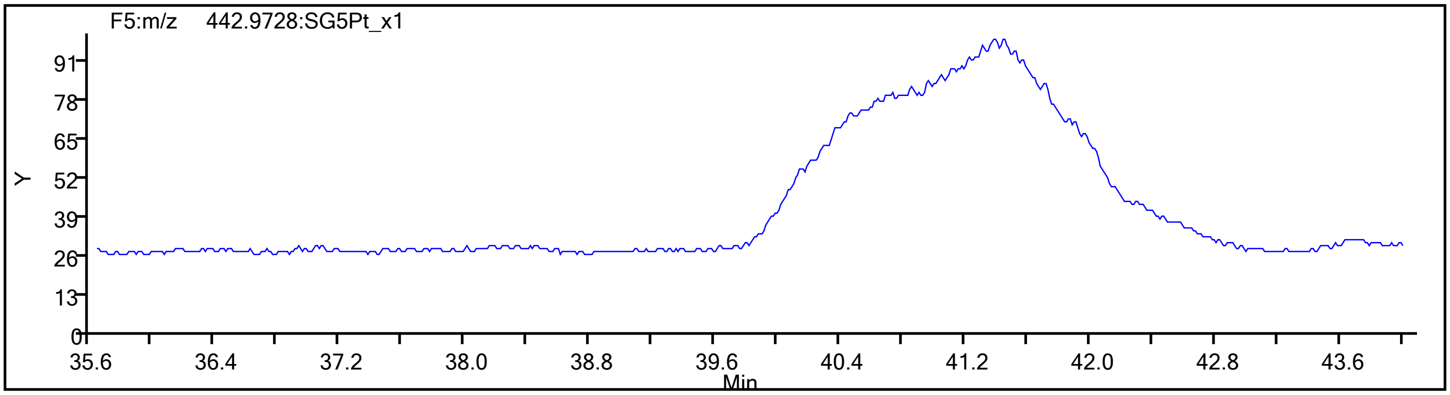

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 440976

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/10/2020 18:27 Calibration End Date: 12/10/2020 21:27 Calibration ID: 53286

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-440976/3	10DE20B10D5_3 .d
Level 2	IC 320-440976/4	10DE20B10D5_4 .d
Level 3	IC 320-440976/5	10DE20B10D5_5 .d
Level 4	IC 320-440976/6	10DE20B10D5_6 .d
Level 5	IC 320-440976/7	10DE20B10D5_7 .d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.0791	0.9882	0.9533	1.0272	1.0388	AveID		1.0173				4.7		20.0			
2,3,7,8-TCDD	1.2075	1.1410	1.1043	1.1379	1.1807	AveID		1.1543				3.5		20.0			
1,2,3,7,8-PeCDF	1.1048	0.9949	0.9868	1.0080	1.0394	AveID		1.0268				4.7		20.0			
2,3,4,7,8-PeCDF	1.1467	1.0225	1.0599	1.0717	1.0642	AveID		1.0730				4.2		20.0			
1,2,3,7,8-PeCDD	1.1443	1.0693	1.0146	1.0694	1.0764	AveID		1.0748				4.3		20.0			
1,2,3,4,7,8-HxCDF	1.3367	1.1767	1.2128	1.2396	1.2265	AveID		1.2385				4.8		20.0			
1,2,3,6,7,8-HxCDF	1.2455	1.1743	1.1641	1.1791	1.1870	AveID		1.1900				2.7		20.0			
2,3,4,6,7,8-HxCDF	1.2743	1.1885	1.1887	1.2060	1.2084	AveID		1.2132				2.9		20.0			
1,2,3,4,7,8-HxCDD	1.2845	1.0906	1.1754	1.1309	1.1275	AveID		1.1618				6.4		20.0			
1,2,3,6,7,8-HxCDD	1.1555	1.0391	0.9333	1.0153	1.0167	AveID		1.0320				7.7		20.0			
1,2,3,7,8,9-HxCDD	1.4382	1.2354	1.1401	1.1998	1.1898	AveID		1.2407				9.3		20.0			
1,2,3,7,8,9-HxCDF	1.3385	1.2195	1.1755	1.2013	1.1983	AveID		1.2266				5.3		20.0			
1,2,3,4,6,7,8-HpCDF	1.5351	1.4350	1.4107	1.4782	1.4503	AveID		1.4619				3.3		20.0			
1,2,3,4,6,7,8-HpCDD	1.2458	1.1038	1.0377	1.0552	1.0683	AveID		1.1022				7.6		20.0			
1,2,3,4,7,8,9-HpCDF	1.5369	1.3475	1.4047	1.4242	1.4180	AveID		1.4262				4.8		20.0			
OCDD	1.2809	1.1402	1.1080	1.1171	1.1388	AveID		1.1570				6.1		20.0			
OCDF	1.4893	1.4603	1.4635	1.4874	1.5269	AveID		1.4855				1.8		20.0			
13C-2,3,7,8-TCDF	1.6760	1.6926	1.7459	1.7318	1.7138	Ave		1.7120				1.7		35.0			
13C-2,3,7,8-TCDD	1.0548	1.0690	1.0958	1.0917	1.1072	Ave		1.0837				2.0		35.0			
13C-1,2,3,7,8-PeCDF	1.2827	1.3331	1.3872	1.3834	1.4301	Ave		1.3633				4.2		35.0			
13C-2,3,4,7,8-PeCDF	1.2133	1.2583	1.2515	1.2730	1.3608	Ave		1.2714				4.3		35.0			
13C-1,2,3,7,8-PeCDD	0.8134	0.8293	0.8637	0.8524	0.9083	Ave		0.8534				4.3		35.0			
13C-1,2,3,4,7,8-HxCDF	1.0822	1.0932	1.2036	1.1212	1.2010	Ave		1.1403				5.1		35.0			
13C-1,2,3,6,7,8-HxCDF	1.2598	1.2329	1.3857	1.2606	1.2816	Ave		1.2841				4.6		35.0			
13C-2,3,4,6,7,8-HxCDF	1.1247	1.1554	1.2508	1.1825	1.1990	Ave		1.1825				4.0		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7314	0.7532	0.7774	0.7798	0.8366	Ave		0.7757				5.1		35.0			
13C-1,2,3,6,7,8-HxCDD	0.9763	0.9770	1.0674	0.9983	0.9794	Ave		0.9997				3.9		35.0			
13C-1,2,3,7,8,9-HxCDF	1.0344	1.0469	1.0946	1.1010	1.1390	Ave		1.0832				3.9		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8279	0.8263	0.8568	0.8738	0.8798	Ave		0.8529				2.9		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7505	0.7551	0.7766	0.8221	0.8214	Ave		0.7851				4.4		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7056	0.7462	0.7177	0.7812	0.7989	Ave		0.7499				5.3		35.0			
13C-OCDD	0.5346	0.5274	0.5417	0.6023	0.5989	Ave		0.5610				6.5		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 440976

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/10/2020 18:27 Calibration End Date: 12/10/2020 21:27 Calibration ID: 53286

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.2237	1.2097	1.2164	1.2717	1.2988	Ave		1.2441				3.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1   Analy Batch No.: 440976

SDG No.:

Instrument ID: 10D5   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 12/10/2020 18:27   Calibration End Date: 12/10/2020 21:27   Calibration ID: 53286

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-440976/3	10DE20B10D5_3 .d
Level 2	IC 320-440976/4	10DE20B10D5_4 .d
Level 3	IC 320-440976/5	10DE20B10D5_5 .d
Level 4	IC 320-440976/6	10DE20B10D5_6 .d
Level 5	IC 320-440976/7	10DE20B10D5_7 .d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	309774	1148759	5318100	25595809	118940306	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	218152	837764	3866888	17874969	87334900	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1213703	4554491	21869960	100323594	496552126	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1191612	4418208	21192341	98146210	483751075	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	797147	3045240	14001615	65585017	326611052	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	956087	3630441	19403087	83349212	425366558	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	1037051	4085775	21442142	89131746	439291285	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	947234	3875381	19763902	85511285	418393477	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	620884	2318218	12146371	52887219	272396717	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	745571	2865328	13241965	60780149	287557805	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	811593	3016333	13979339	63965755	311963663	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	915109	3603238	17104369	79313504	394136105	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	839940	3346386	16066504	77456202	368471057	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	617876	2352427	10711957	52019494	253397415	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	716667	2837744	13401187	66714496	327145412	2.50	10.0	50.0	200	1000
OCDD		AveID	905110	3394111	15956086	80699257	393902361	5.00	20.0	100	400	2000
OCDF		AveID	1052394	4347139	21077054	107447808	528141715	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	57415293	58125681	55787366	62294560	57251353	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	36134136	36710437	35015492	39270249	36985228	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	43942881	45778550	44324423	49761932	47773116	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	41565031	43210454	39991127	45791590	45458823	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	27863795	28478085	27599575	30663088	30343489	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	28610582	30853659	31997609	33618221	34681904	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	33304243	34794172	36839261	37797556	37009896	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	29733284	32608317	33251869	35453396	34623263	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	19335223	21255978	20668498	23382177	24158312	100	100	100	100	100

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1   Analy Batch No.: 440976

SDG No.:

Instrument ID: 10D5   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 12/10/2020 18:27   Calibration End Date: 12/10/2020 21:27   Calibration ID: 53286

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	25809350	27574060	28375971	29930709	28282746	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	27346586	29546725	29100555	33011011	32890081	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	21885932	23318966	22777983	26200346	25406690	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	19839443	21311835	20644971	24649520	23719607	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	18652430	21059921	19080880	23422395	23070614	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	28264836	29768734	28802827	36118968	34589430	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	209606	830864	3886961	18297550	86772141	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\10DE20B10D5.SPL Page 1 of 3
Last Modified: Friday, December 11, 2020 00:27:07 Pacific Standard Time
Printed: Friday, December 11, 2020 00:27:31 Pacific Standard Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	10DE20B10D5_1	WDM HRDXNCP_00042	WDM 121020	Tray01:1	Dioxin	
2	10DE20B10D5_2	Solvent Blank C-14	SB 121020	Tray01:3	---	
3	10DE20B10D5_3	CS-2 HRDXNL2_00030	CS-2 HRDXNL2_00030	Tray01:4	Dioxin	---
4	10DE20B10D5_4	CS-3 HRDXNL3_00028	CS-3 HRDXNL3_00028	Tray01:5	Dioxin	
5	10DE20B10D5_5	CS-4 HRDXNL4_00096	CS-4 HRDXNL4_00096	Tray01:2	Dioxin	
6	10DE20B10D5_6	CS-5 HRDXNL5_00031	CS-5 HRDXNL5_00031	Tray01:6	Dioxin	
7	10DE20B10D5_7	CS-6 HRDXNL6_00027	CS-6 HRDXNL6_00027	Tray01:7	Dioxin	
8	10DE20B10D5_8	Solvent Blank C-14	SB 121020A	Tray01:3	---	
9	10DE20B10D5_9	HRDXNIC_00046	HRDXNIC_00046	Tray01:8	Dioxin	
10	10DE20B10D5_10	WDM HRDXNCP_00042	WDM 120820A	Tray01:1	Dioxin	
11	10DE20B10D5_11	CS-4 HRDXNL4_00096	CS-4 HRDXNL4_00096	Tray01:2	Dioxin	
12	10DE20B10D5_12	Solvent Blank C-14	SB 121020B	Tray01:3	---	
13	10DE20B10D5_13	QC HRDXNIDA_00455	QC HRDXNIDA_00455	Tray01:9	1613B/8290	QC88
14	10DE20B10D5_14	QC HRDXNTA_00128	QC HRDXNTA_00128	Tray01:10	1613B/8290	
15	10DE20B10D5_15	MB 320-440272/1-A	MB 320-440272/1-A	Tray01:15	1613B(T)/Water	D203B
16	10DE20B10D5_16	LCS 320-440272/2-A	LCS 320-440272/2-A	Tray01:16	1613B(T)/Water	
17	10DE20B10D5_17	LCSD 320-440272/3-A	LCSD 320-440272/3-A	Tray01:17	1613B(T)/Water	
18	10DE20B10D5_18	320-67652-A-1-A	320-67652-A-1-A	Tray01:18	1613B_T/Water	
19	10DE20B10D5_19	320-67652-A-2-A	320-67652-A-2-A	Tray01:19	1613B/Water	
20	10DE20B10D5_20	320-67652-B-3-A	320-67652-B-3-A	Tray01:20	1613B_T/Water	
21	10DE20B10D5_21	320-67652-A-4-A	320-67652-A-4-A	Tray01:21	1613B_T/Water	
22	10DE20B10D5_22	320-67661-A-1-A	320-67661-A-1-A	Tray01:22	1613B/Water	
23	10DE20B10D5_23	Solvent Blank C-14	SB 121020C	Tray01:3	---	

Logfile ✓'d
12/11/20
KSS

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck

Process Options	Action On Error	s5
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---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, December 10, 2020 16:17:07 Pacific Standard Time

M 292.9824 R 11256

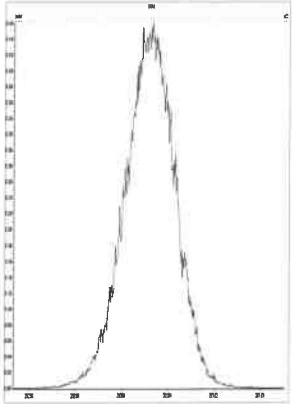

M 304.9824 R 11018

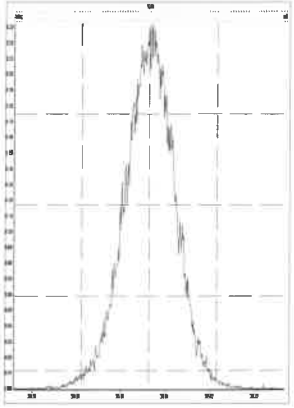

M 318.9792 R 11315

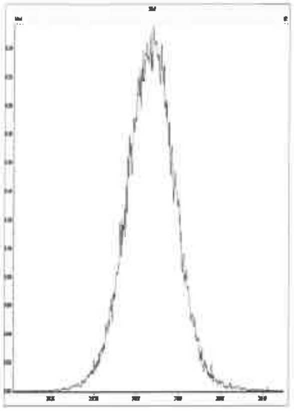

M 330.9792 R 11900

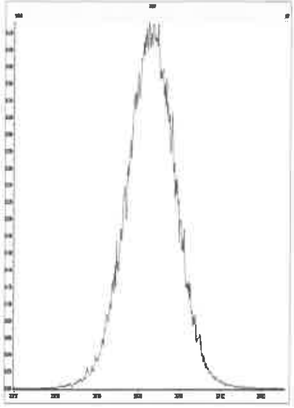

M 342.9792 R 11363

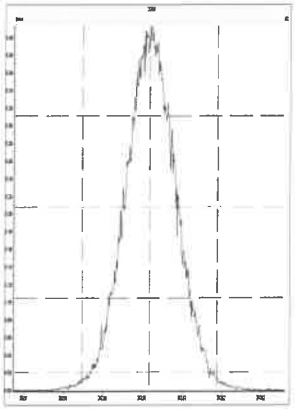

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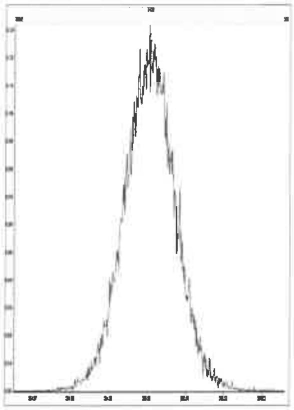

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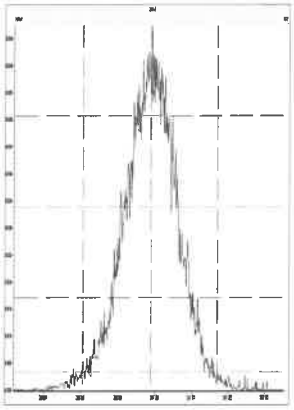

M 380.9760 R 10729

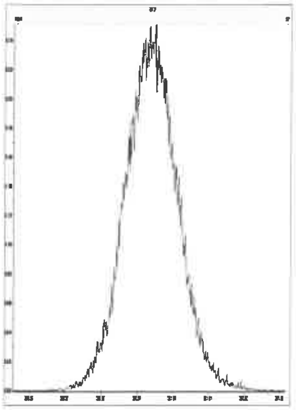

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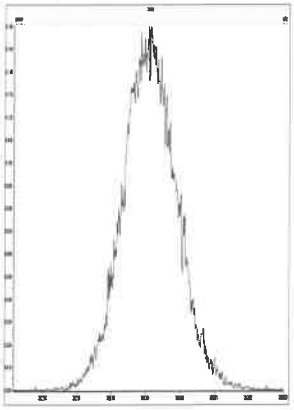

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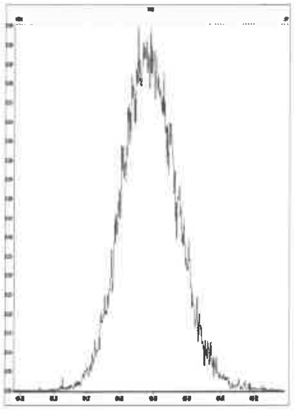

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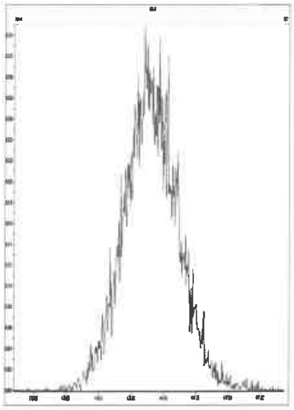

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, December 10, 2020 16:17:41 Pacific Standard Time

M 318.9792 R 11847

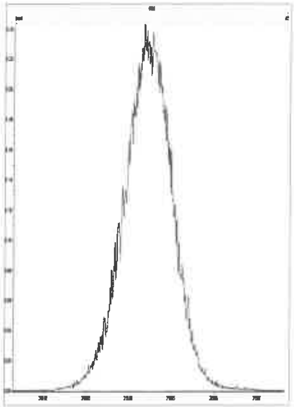

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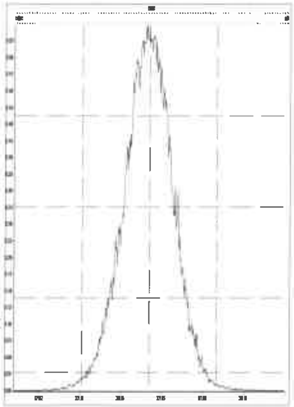

M 342.9792 R 11468

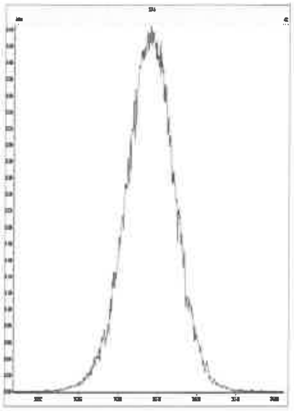

M 354.9792 R 11260

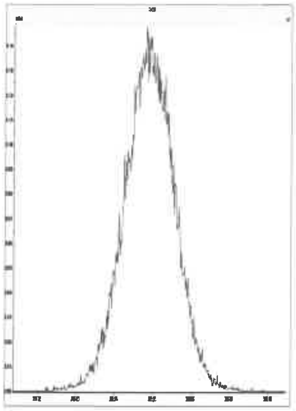

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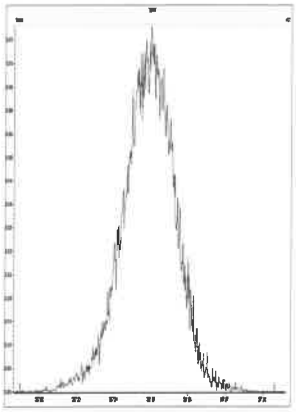

M 380.9760 R 11521

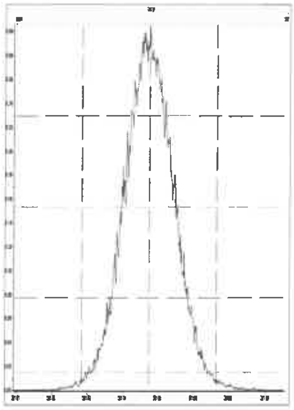

M 392.9760 R 11414

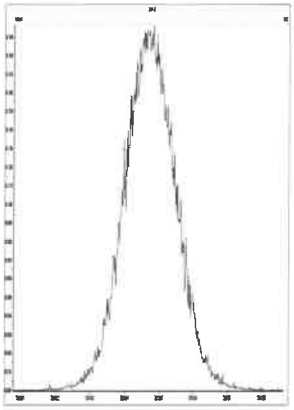

M 404.9760 R 11314

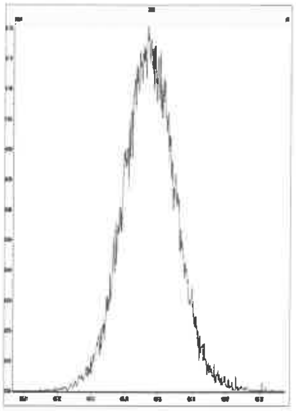

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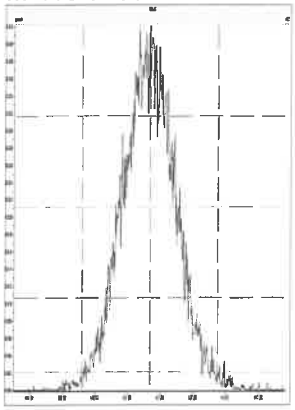

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, December 10, 2020 16:18:21 Pacific Standard Time

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M 366.9792 R 10546

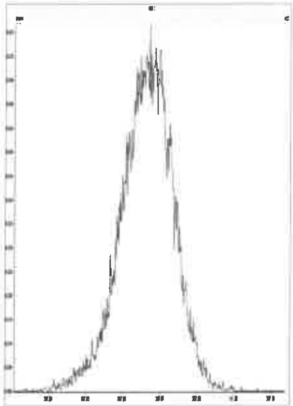

M 380.9760 R 12020

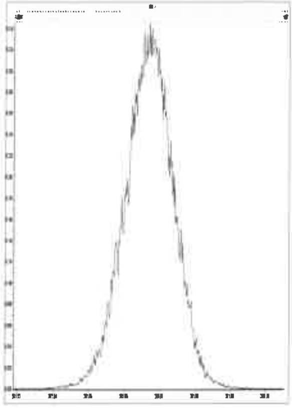

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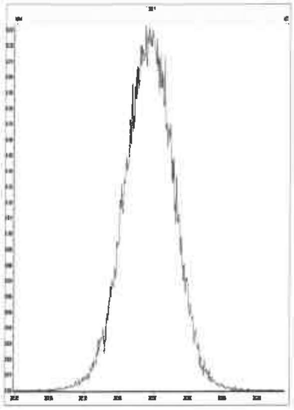

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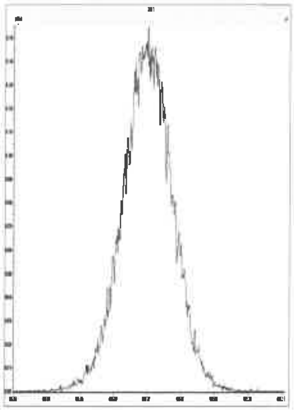

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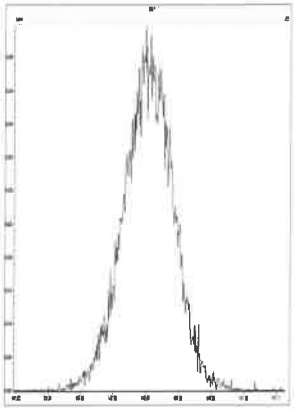

M 430.9728 R 11062

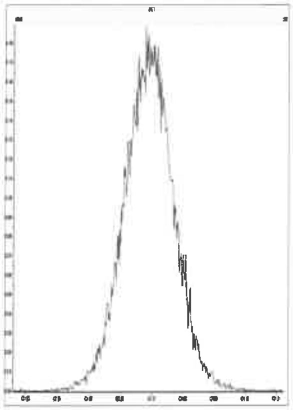

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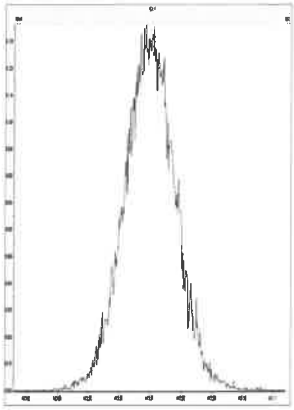

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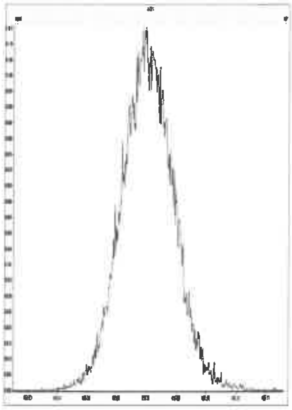

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, December 10, 2020 16:19:11 Pacific Standard Time

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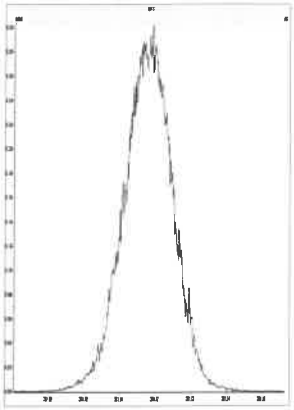

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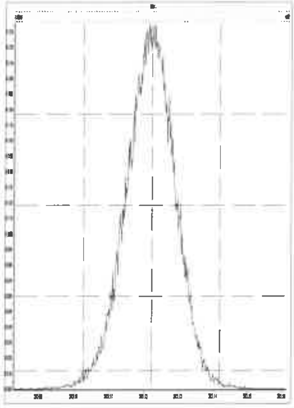

M 404.9760 R 11792

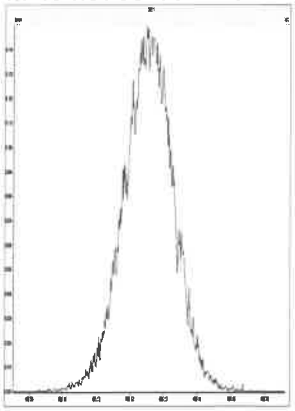

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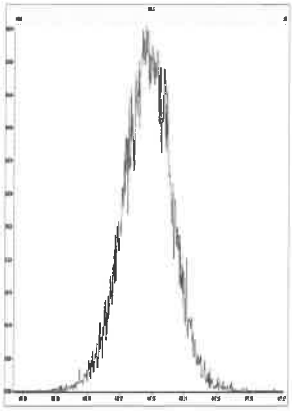

M 430.9728 R 12197

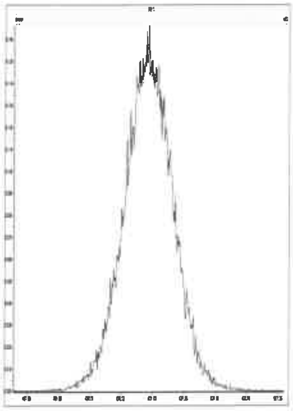

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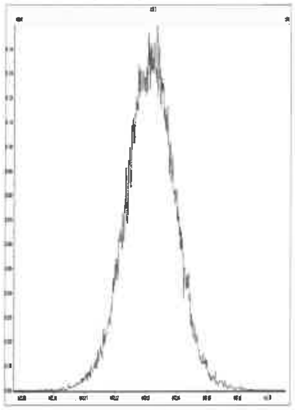

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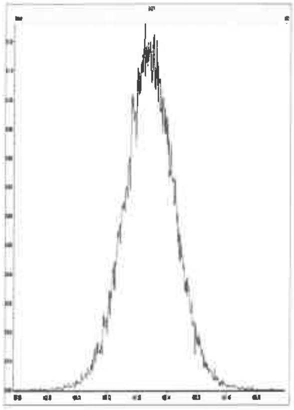

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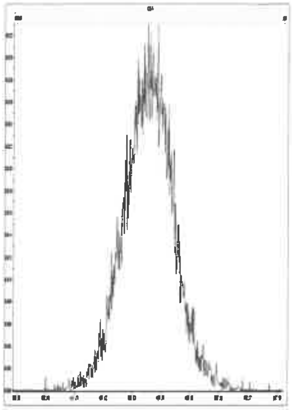

M 480.9696 R 11905

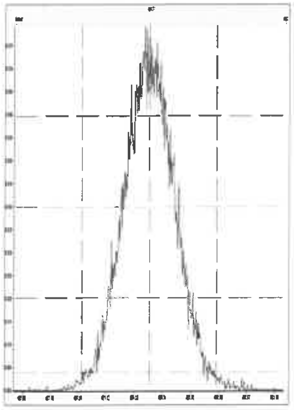

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, December 10, 2020 16:20:09 Pacific Standard Time

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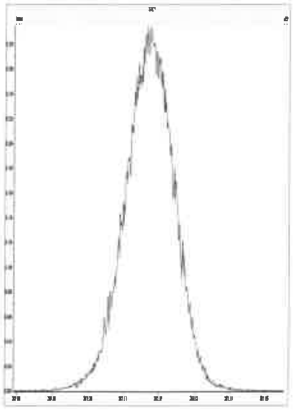

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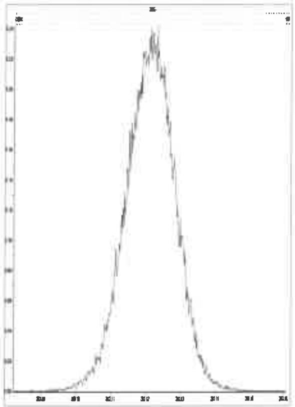

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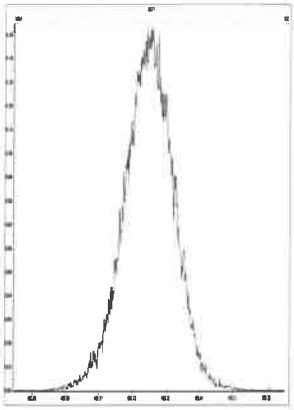

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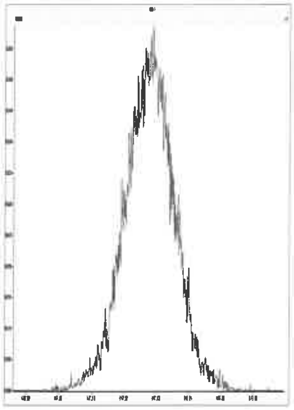

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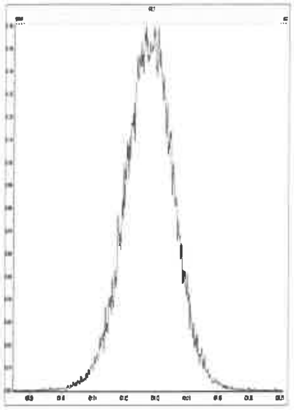

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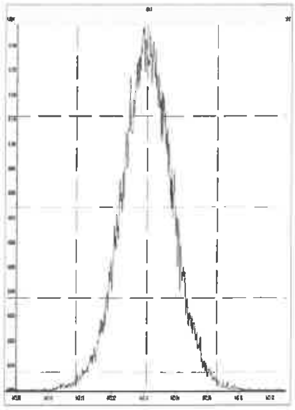

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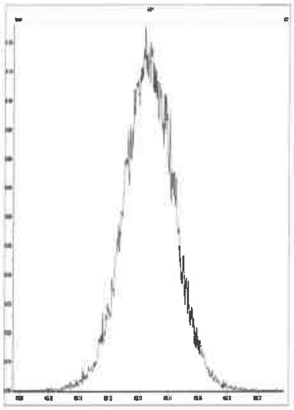

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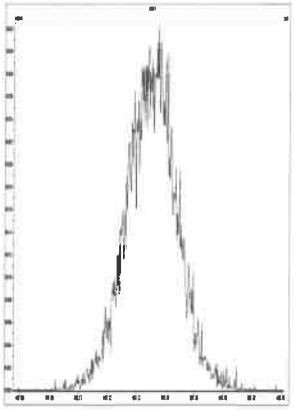

M 480.9696 R 10870

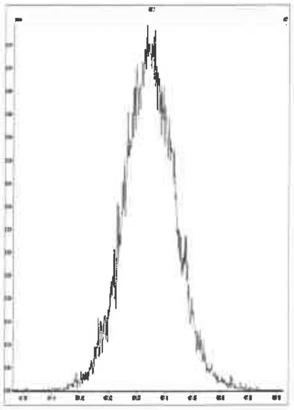

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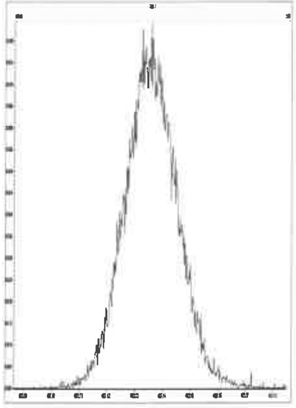

M 504.9696 R 10414

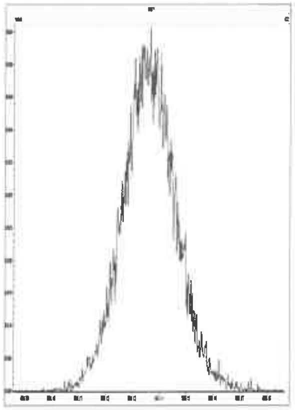

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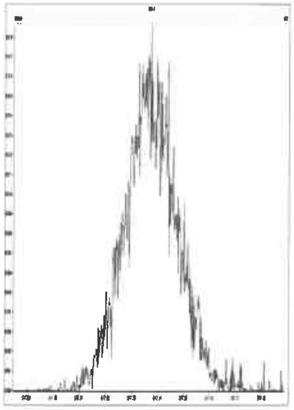

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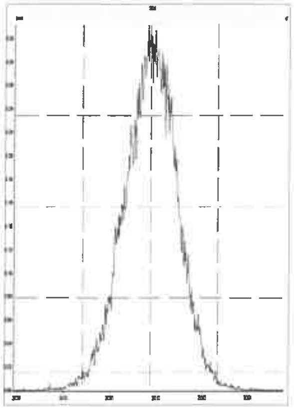

M 304.9824 R 11238

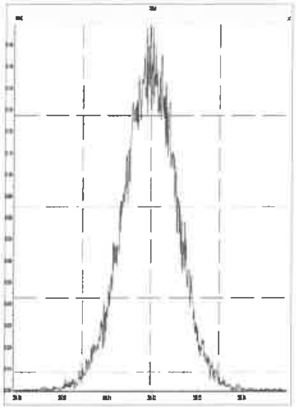

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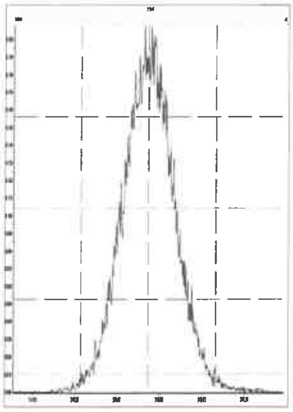

M 330.9792 R 11090

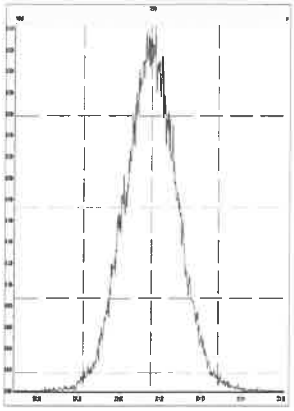

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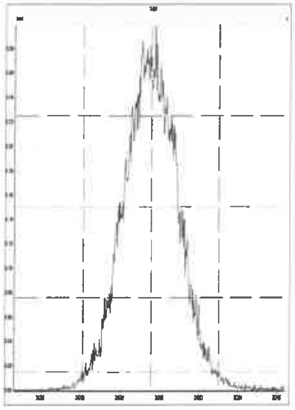

M 354.9792 R 10966

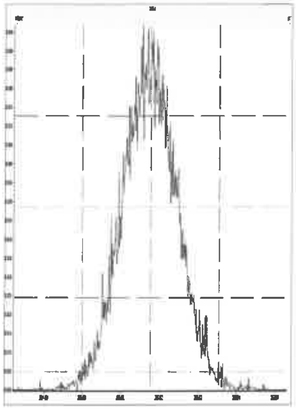

M 366.9792 R 11793

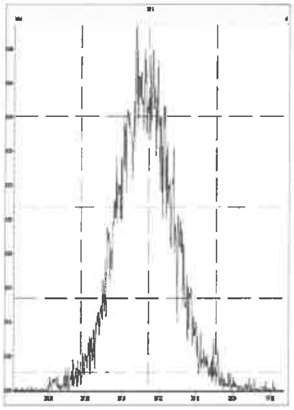

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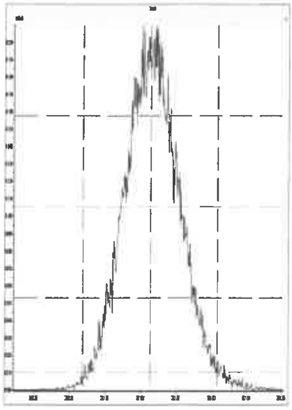

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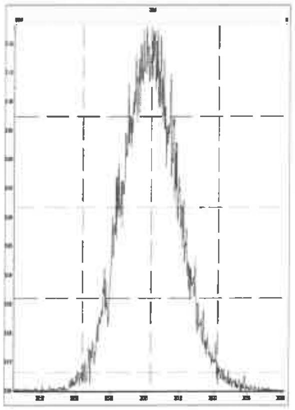

M 404.9760 R 10267

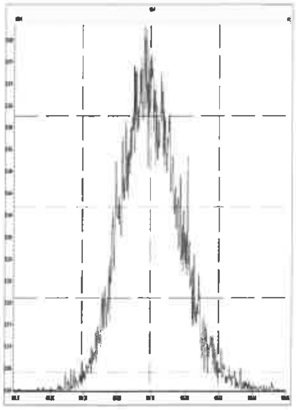

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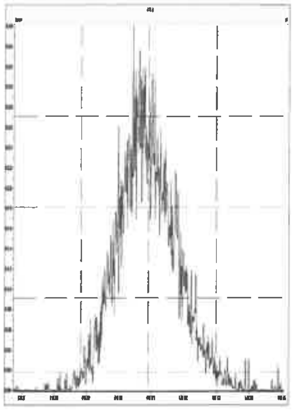

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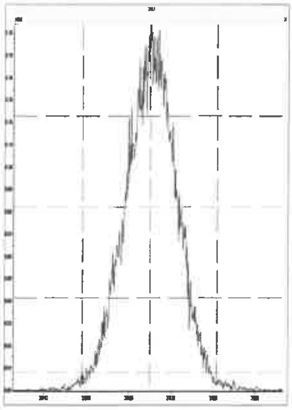

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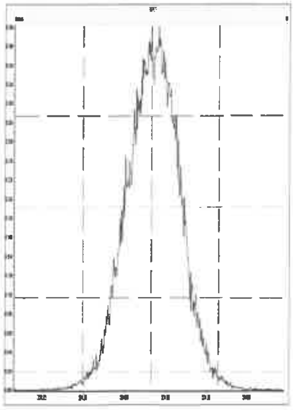

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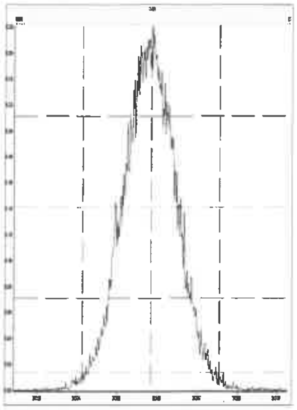

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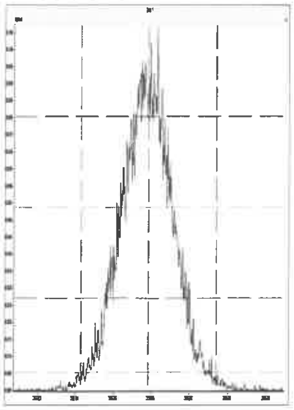

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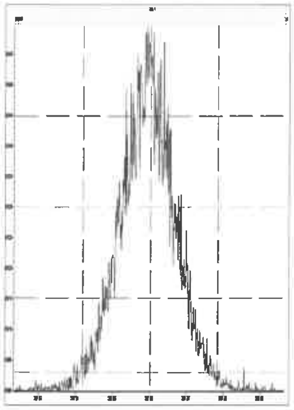

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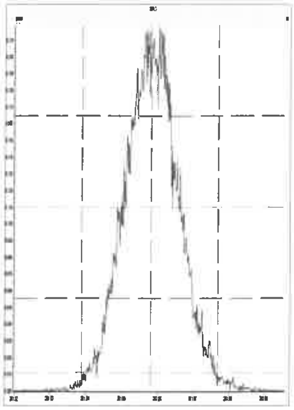

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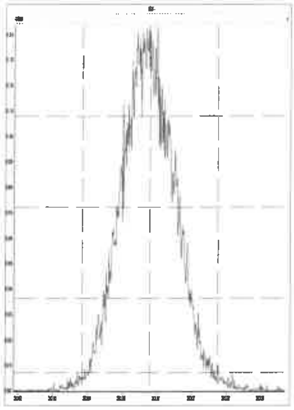

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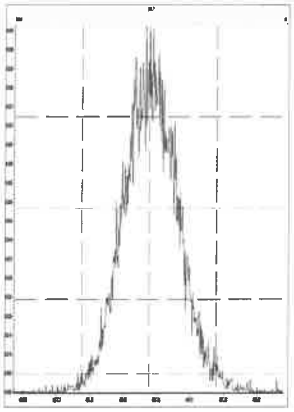

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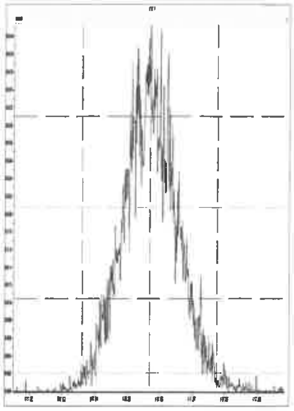

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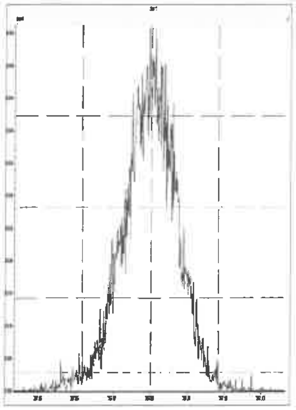

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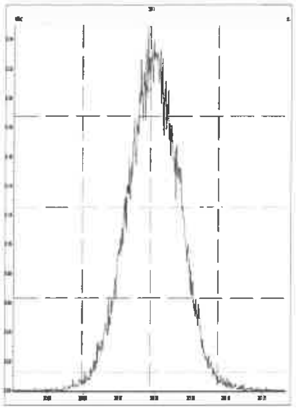

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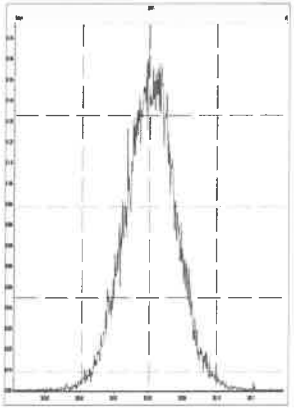

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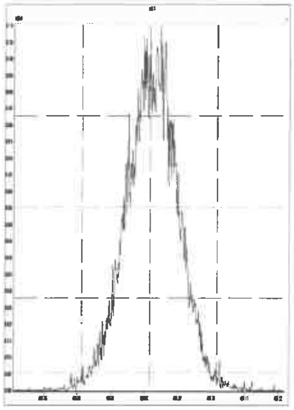

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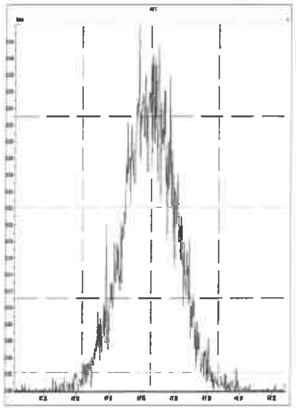

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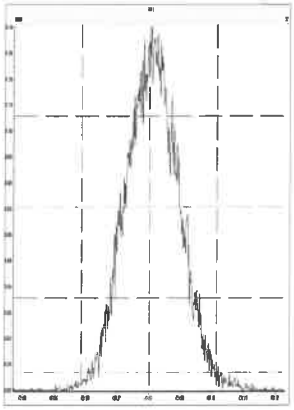

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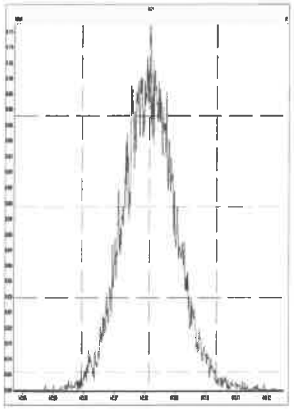

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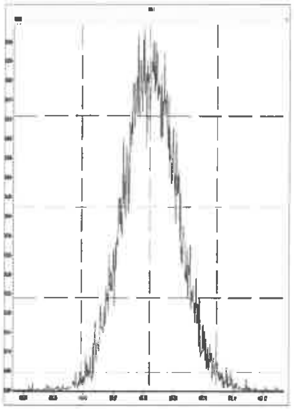

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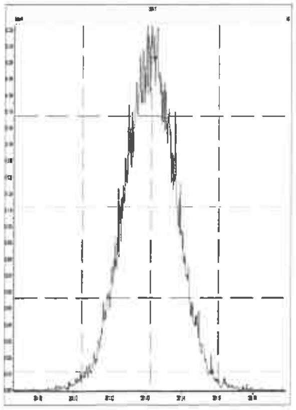

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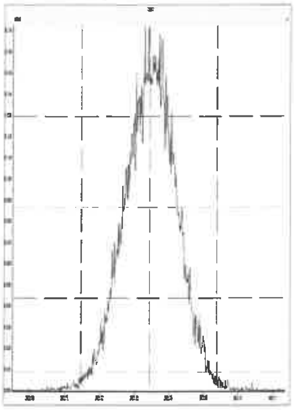

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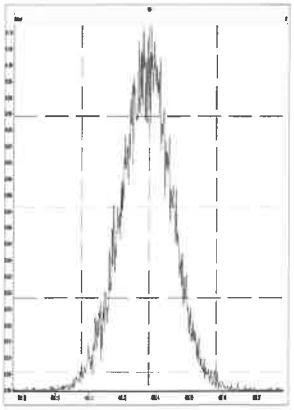

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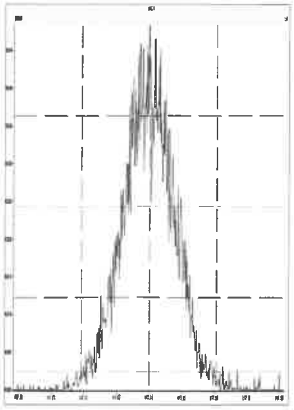

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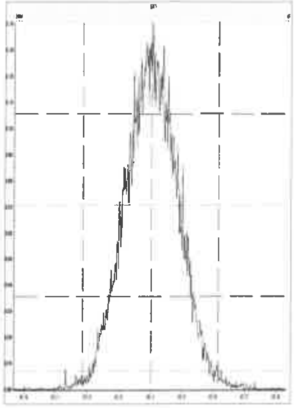

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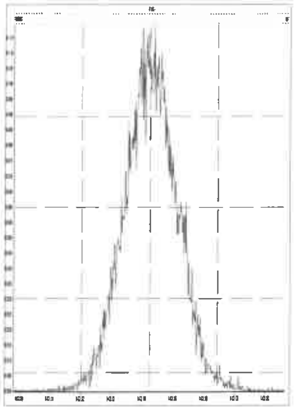

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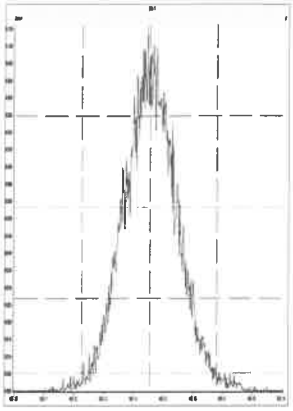

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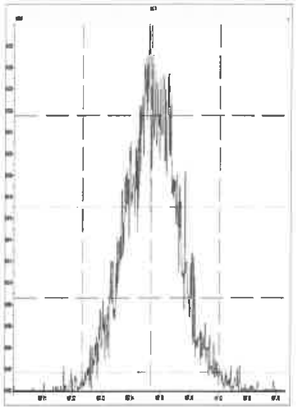

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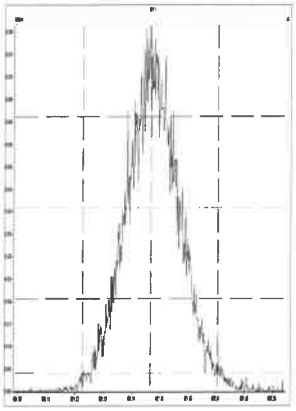

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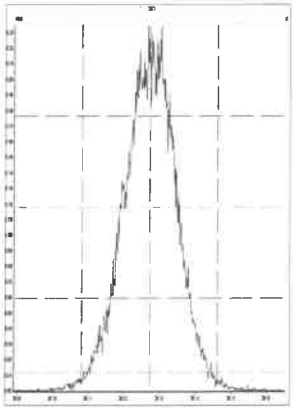

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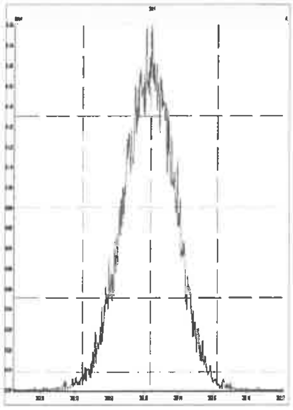

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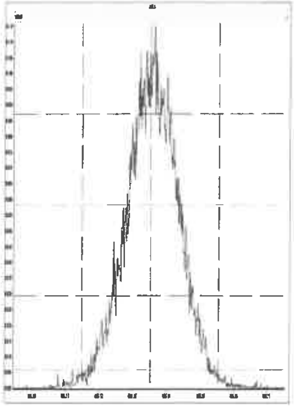

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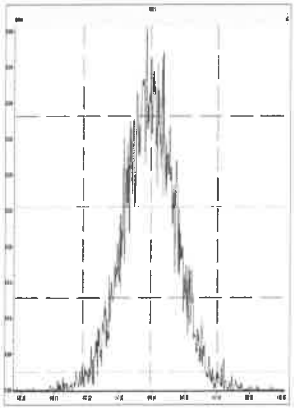

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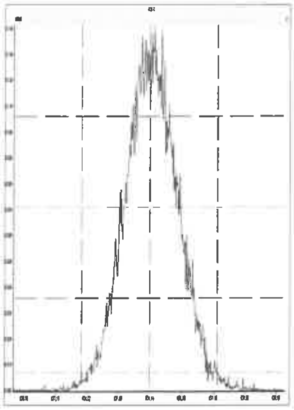

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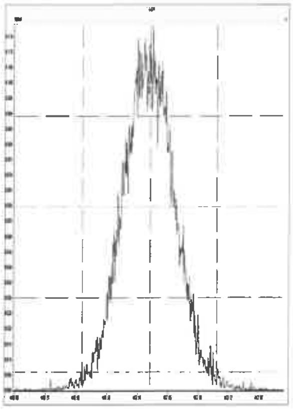

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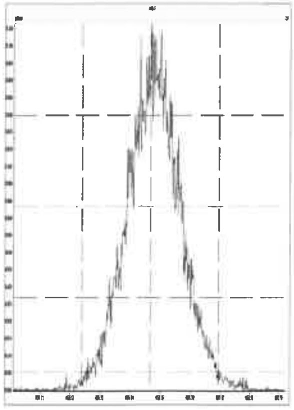

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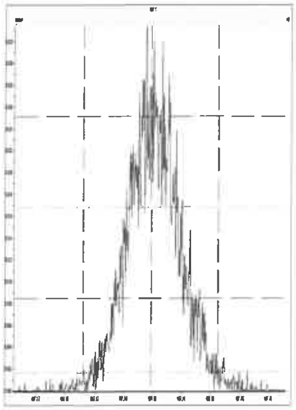

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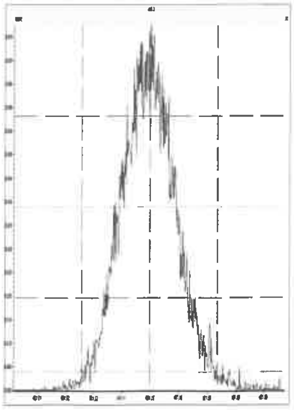

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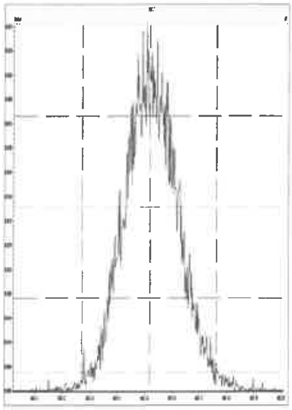

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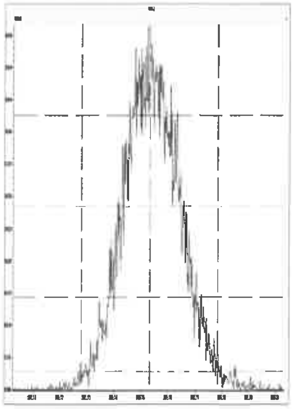

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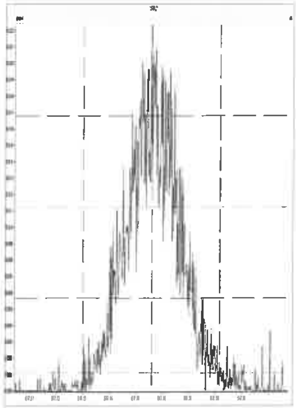

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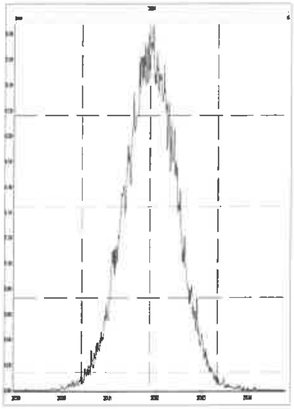

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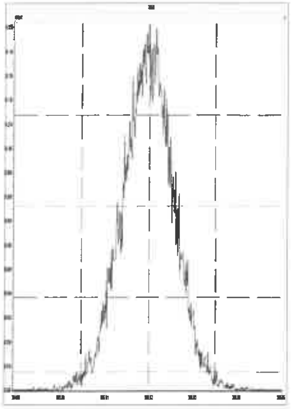

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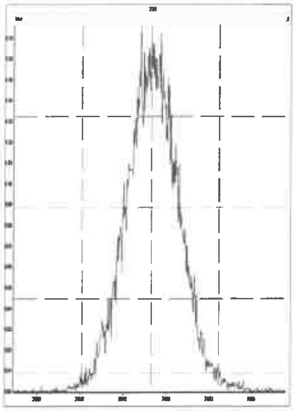

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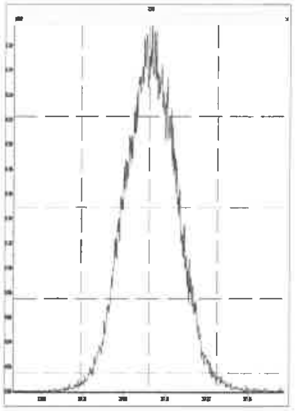

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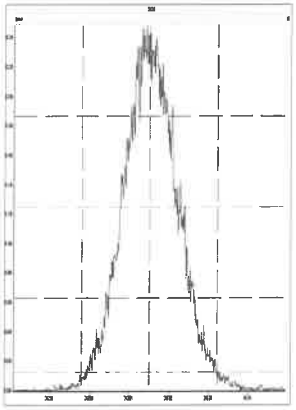

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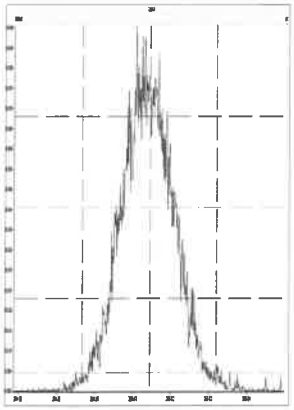

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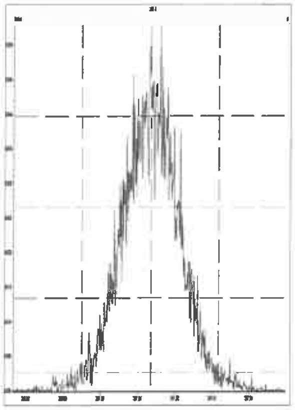

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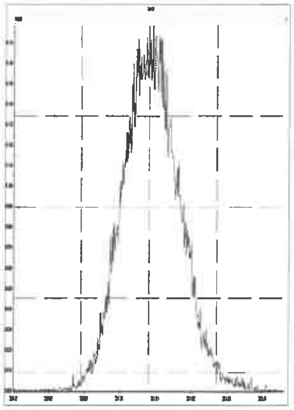

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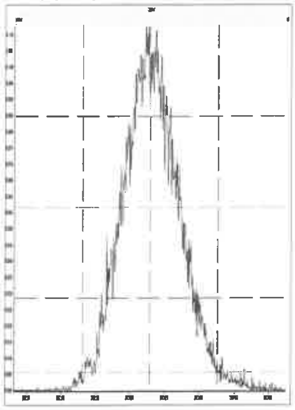

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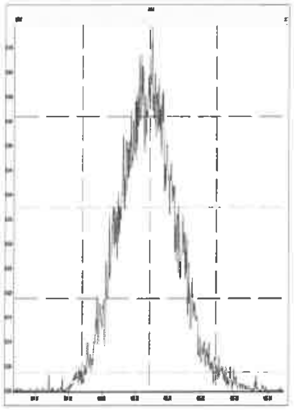

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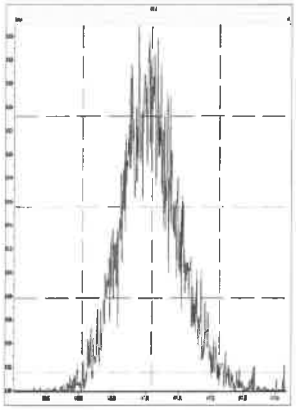

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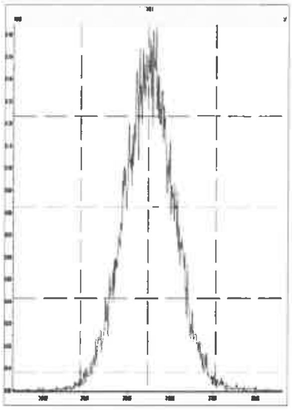

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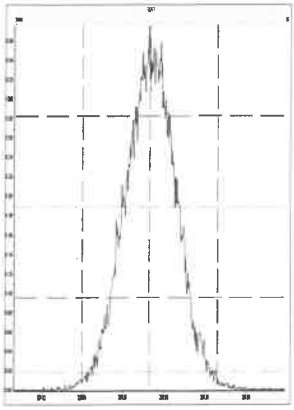

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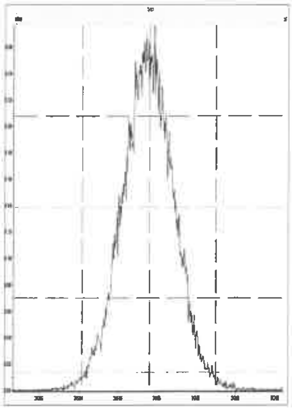

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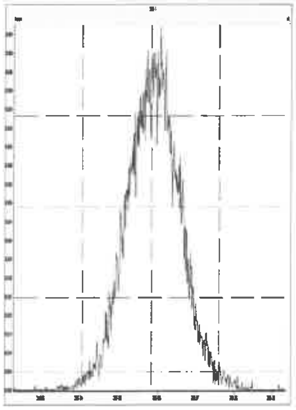

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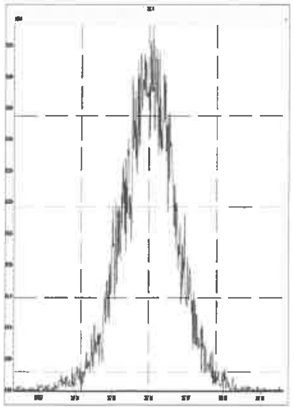

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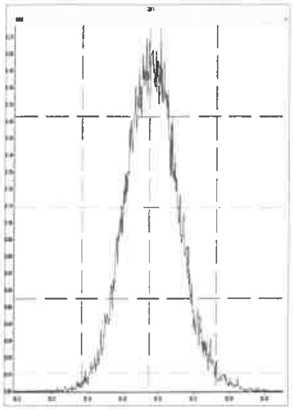

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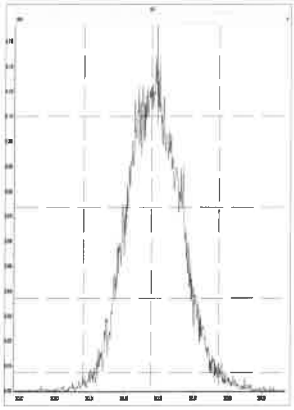

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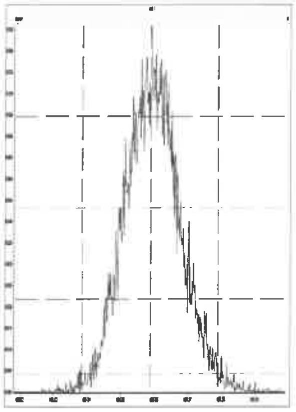

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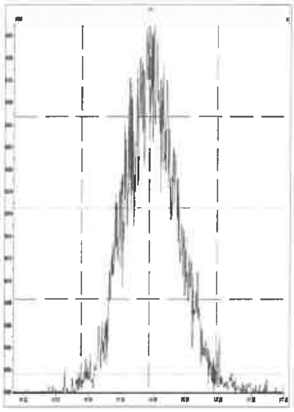

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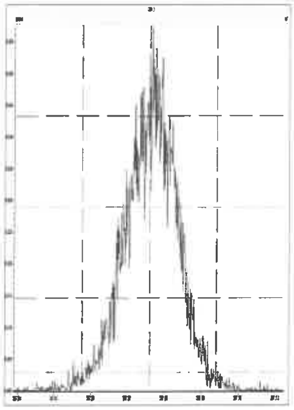

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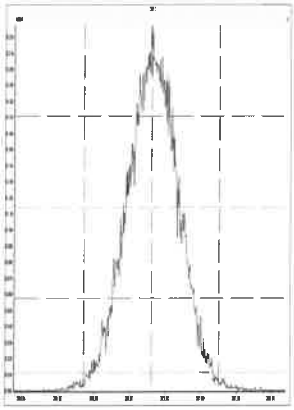

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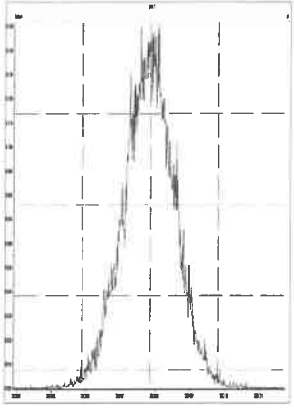

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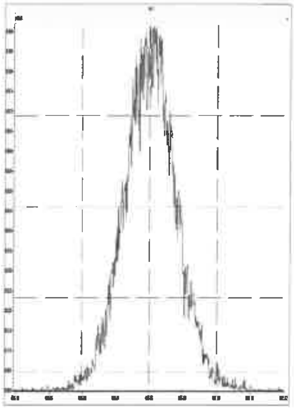

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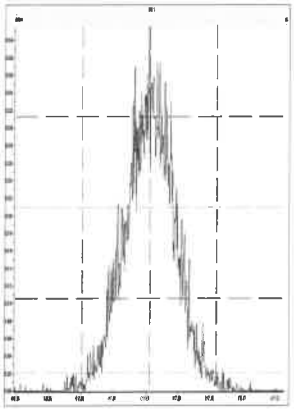

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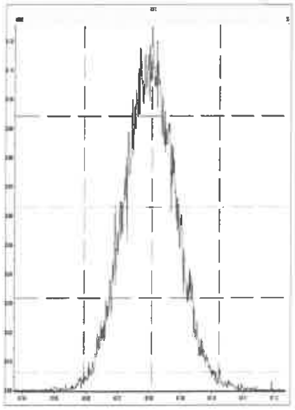

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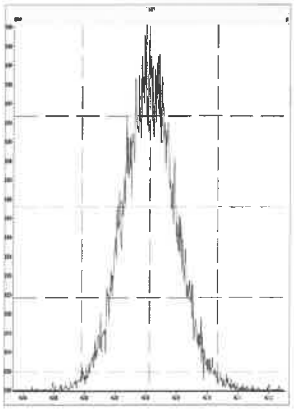

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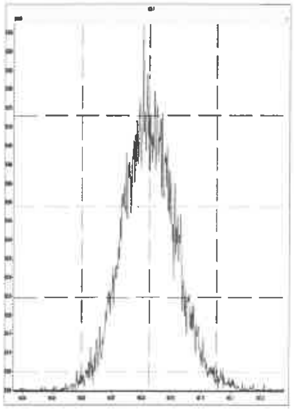

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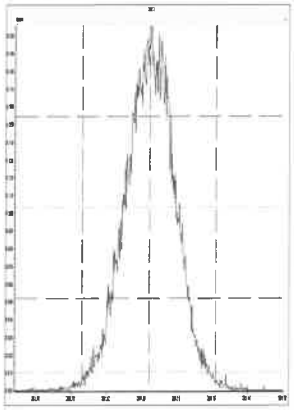

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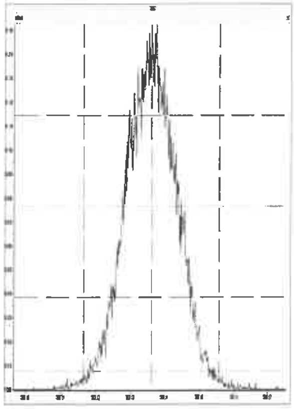

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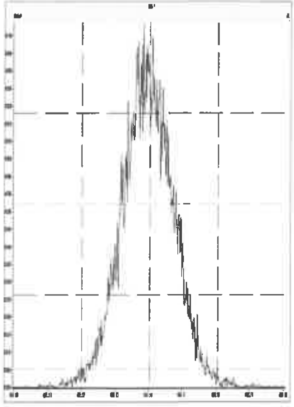

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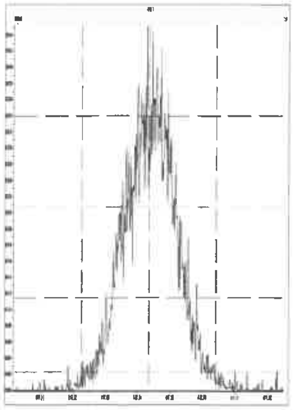

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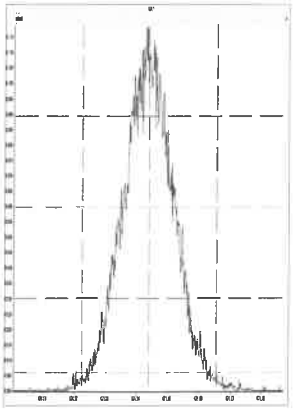

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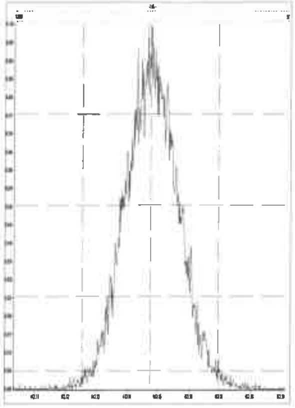

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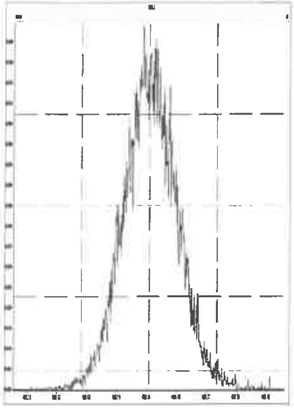

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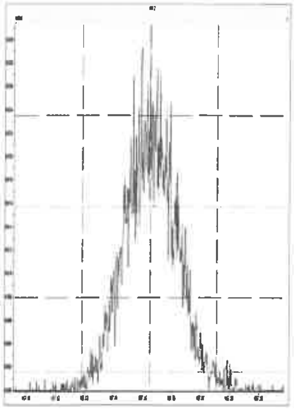

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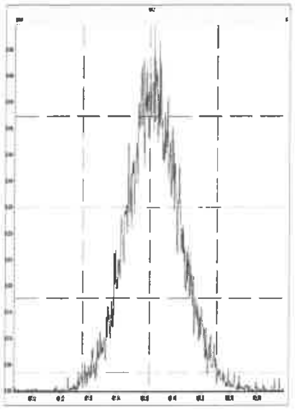

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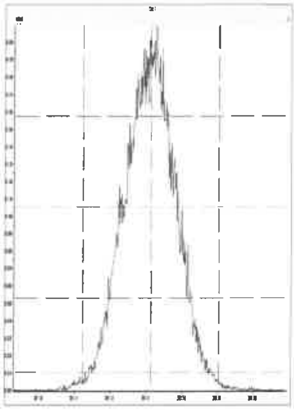

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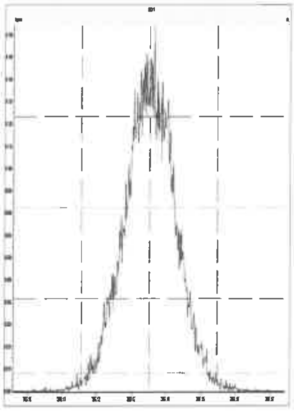

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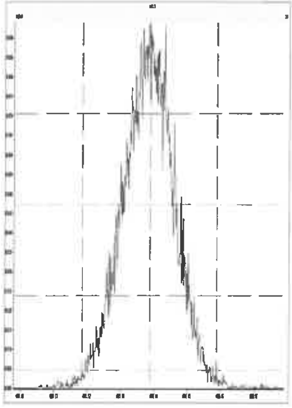

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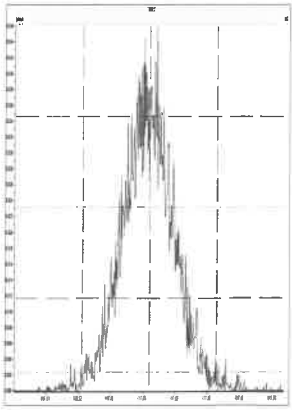

M 430.9728 R 11547

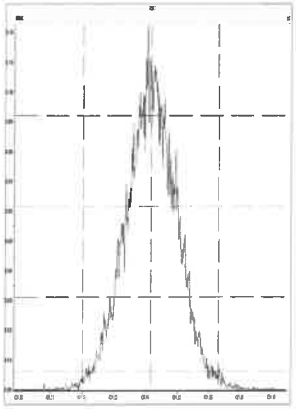

M 442.9728 R 11707

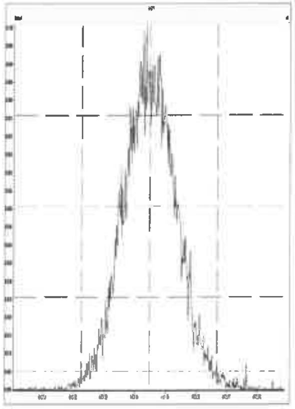

M 454.9728 R 11608

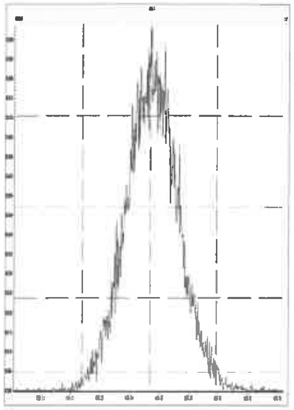

M 466.9728 R 12600

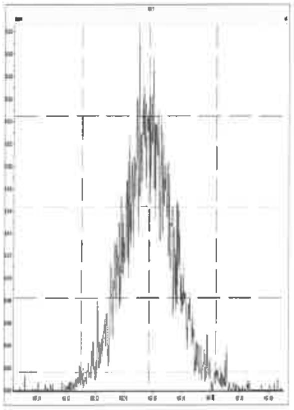

M 480.9696 R 11682

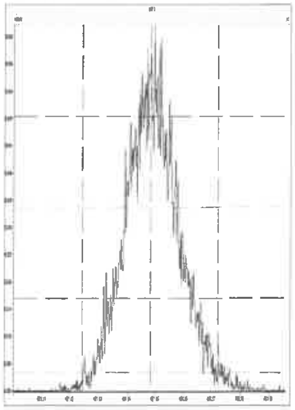

M 492.9696 R 10846

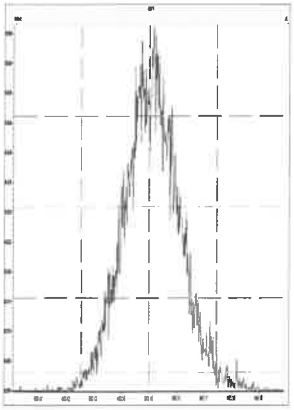

M 504.9696 R 11601

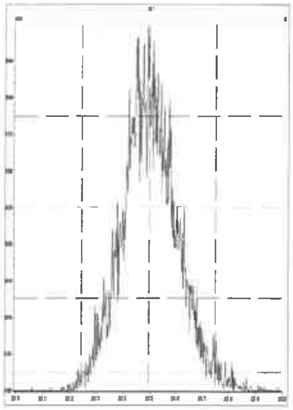

M 516.9697 R 11990

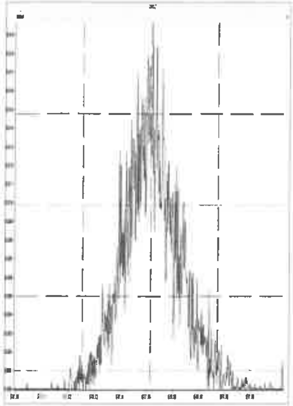

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-Dec-2020 18:27:33 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030 CS-2 HRDXNL2_00030
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:23 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: messecara Date: 10-Dec-2020 23:37:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.733	34257904	0.71	3.4E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.219	57415293	0.78	1.7120	97.9	97.9	0.2134	0.2134	97.89	
2,3,7,8-TCDF	17.233	309774	0.80	1.0173	0.5304	0.5304	0.0187	0.0187	106	
S Total TCDF					0.5304	0.5304	0.0187	0.0187		
D 13C-2,3,7,8-TCDD	17.914	36134136	0.72	1.0837	97.3	97.3	0.2013	0.2013	97.33	
$ 37Cl4-2,3,7,8-TCDD	17.944	209606		1.2441	0.4918	0.4918	0.0108	0.0108	98.36	
2,3,7,8-TCDD	17.944	218152	0.89	1.1543	0.5230	0.5230	0.0421	0.0421	105	M
S Total TCDD					0.5230	0.5230	0.0421	0.0421		
D 13C-1,2,3,7,8-PeCDF	22.192	43942881	1.58	1.3633	94.1	94.1	0.2762	0.2762	94.09	
1,2,3,7,8-PeCDF	22.219	1213703	1.53	1.0268	2.690	2.690	0.0327	0.0327	108	
D 13C-2,3,4,7,8-PeCDF	23.528	41565031	1.59	1.2714	95.4	95.4	0.2962	0.2962	95.43	
2,3,4,7,8-PeCDF	23.556	1191612	1.55	1.0730	2.672	2.672	0.0378	0.0378	107	
S Total PeCDF					5.362	5.362	0.0352	0.0352		
D 13C-1,2,3,7,8-PeCDD	24.251	27863795	1.60	0.8534	95.3	95.3	0.1390	0.1390	95.30	
1,2,3,7,8-PeCDD	24.292	797147	1.51	1.0748	2.662	2.662	0.0616	0.0616	106	
S Total PeCDD					2.662	2.662	0.0616	0.0616		
D 13C-1,2,3,4,7,8-HxCDF	30.386	28610582	0.52	1.1403	94.9	94.9	0.6888	0.6888	94.91	
1,2,3,4,7,8-HxCDF	30.400	956087	1.27	1.2385	2.698	2.698	0.0463	0.0463	108	
D 13C-1,2,3,6,7,8-HxCDF	30.573	33304243	0.52	1.2841	98.1	98.1	0.6117	0.6117	98.10	
1,2,3,6,7,8-HxCDF	30.599	1037051	1.25	1.1900	2.617	2.617	0.0426	0.0426	105	
D 13C-2,3,4,6,7,8-HxCDF	31.424	29733284	0.52	1.1825	95.1	95.1	0.6642	0.6642	95.11	
2,3,4,6,7,8-HxCDF	31.451	947234	1.23	1.2132	2.626	2.626	0.0361	0.0361	105	
D 13C-1,2,3,7,8,9-HxCDF	32.263	27346586	0.52	1.0832	95.5	95.5	0.7251	0.7251	95.50	
1,2,3,7,8,9-HxCDF	32.277	915109	1.22	1.2266	2.728	2.728	0.0414	0.0414	109	
S Total HxCDF					10.7	10.7	0.0416	0.0416		
* 13C-1,2,3,7,8,9-HxCDD	32.063	26436609	1.28	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.624	19335223	1.26	0.7757	94.3	94.3	0.4294	0.4294	94.29	
1,2,3,4,7,8-HxCDD	31.638	620884	1.23	1.1618	2.764	2.764	0.1115	0.1115	111	
D 13C-1,2,3,6,7,8-HxCDD	31.731	25809350	1.29	0.9997	97.7	97.7	0.3332	0.3332	97.66	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.744	745571	1.25	1.0320	2.799	2.799	0.1047	0.1047	112	
1,2,3,7,8,9-HxCDD	32.077	811593	1.21	1.2407	2.898	2.898	0.0950	0.0950	116	
S Total HxCDD					8.461	8.461	0.1037	0.1037		
D 13C-1,2,3,4,6,7,8-HpCDF	33.709	21885932	0.43	0.8529	97.1	97.1	1.273	1.273	97.06	
1,2,3,4,6,7,8-HpCDF	33.722	839940	1.06	1.4619	2.625	2.625	0.0478	0.0478	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.815	18652430	0.43	0.7499	94.1	94.1	1.447	1.447	94.08	
1,2,3,4,7,8,9-HpCDF	34.827	716667	1.04	1.4262	2.694	2.694	0.0744	0.0744	108	
S Total HpCDF					5.319	5.319	0.0611	0.0611		
D 13C-1,2,3,4,6,7,8-HpCDD	34.511	19839443	1.06	0.7851	95.6	95.6	0.5615	0.5615	95.58	
1,2,3,4,6,7,8-HpCDD	34.523	617876	1.07	1.1022	2.826	2.826	0.2762	0.2762	113	
S Total HpCDD					2.826	2.826	0.2762	0.2762		
D 13C-OCDD	36.878	28264836	0.86	0.5610	190.6	190.6	0.2233	0.2233	95.29	
OCDF	36.986	1052394	0.96	1.4855	5.013	5.013	0.0603	0.0603	100	
OCDD	36.890	905110	0.86	1.1570	5.535	5.535	0.1450	0.1450	111	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated
a - User Assigned ID

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-Dec-2020 18:27:33 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030 CS-2 HRDXNL2_00030
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:23 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: messecara Date: 10-Dec-2020 23:37:59

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.733	17.708	1		14260543	3539453	3907	9767	906		a
333.9339	17.733	17.708	1		19997361	4958985	3508	8770	1414	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.219	17.206	1	0.971	25155710	6205789	7144	17860	869		
317.9389	17.219	17.206	1	0.971	32259583	7952984	5273	13182	1508	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.233	17.222	1	1.001	137333	32374	354	885	91		
305.8987	17.233	17.222	1	1.001	172441	42945	726	1815	59	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.010	15185664	3524351	3907	9767	902		
333.9339	17.929	17.905	1	1.011	20948472	4804671	3508	8770	1370	0.72(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.944	17.923	1	1.012	209606	53429	456	1140	117		
2,3,7,8-TCDD											M
319.8965	17.944	17.926	1	1.002	102641	26106	1076	2690	24		M
321.8936	17.944	17.926	1	1.002	115511	25106	545	1362	46	0.89(0.65-0.89)	M
13C-1,2,3,7,8-PeCDF											
351.9000	22.192	22.173	1	1.251	26905245	4660442	7742	19355	602		
353.8970	22.192	22.173	1	1.251	17037636	2945323	5060	12650	582	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.219	22.200	1	1.001	733608	122449	455	1137	269		
341.8567	22.219	22.200	1	1.001	480095	80969	567	1417	143	1.53(1.32-1.78)	

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.528	23.509	1	1.327	25489149	3855424	7742	19355	498		
353.8970	23.528	23.509	1	1.327	16075882	2450386	5060	12650	484	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.556	23.534	1	1.001	724742	107557	455	1137	236		
341.8567	23.569	23.534	2	1.002	466870	65836	567	1417	116	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.251	24.226	1	1.368	17157293	2495581	2469	6172	1011		
369.8919	24.251	24.226	1	1.368	10706502	1522808	1563	3907	974	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.292	24.254	2	1.002	480065	68000	690	1725	99		
357.8516	24.278	24.254	1	1.001	317082	43324	375	937	116	1.51(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.386	30.362	1	0.948	9767443	1771353	6937	17342	255		
385.8610	30.386	30.362	1	0.948	18843139	3385267	12608	31520	269	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.400	30.376	1	1.000	534287	94926	733	1832	130		
375.8178	30.400	30.376	1	1.000	421800	72062	450	1125	160	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.573	30.549	1	0.954	11376222	2017844	6937	17342	291		
385.8610	30.573	30.549	1	0.954	21928021	3812586	12608	31520	302	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.599	30.575	1	1.001	576076	97006	733	1832	132		
375.8178	30.599	30.575	1	1.001	460975	75578	450	1125	168	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.424	31.411	1	0.980	10128726	2266099	6937	17342	327		
385.8610	31.424	31.411	1	0.980	19604558	4487906	12608	31520	356	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.451	31.430	1	1.001	522231	116083	733	1832	158		
375.8178	31.451	31.430	1	1.001	425003	91375	450	1125	203	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.263	32.242	1	1.006	9336889	2009926	6937	17342	290		
385.8610	32.263	32.242	1	1.006	18009697	3813275	12608	31520	302	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.277	32.255	1	1.000	503518	105861	733	1832	144		
375.8178	32.263	32.255	0	1.000	411591	92225	450	1125	205	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.063	32.050	1		14861082	3474724	4900	12250	709		
403.8529	32.063	32.050	1		11575527	2746270	3389	8472	810	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.624	31.603	1	0.986	10768907	2883028	4900	12250	588		
403.8529	31.624	31.603	1	0.986	8566316	2251240	3389	8472	664	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.638	31.619	1	1.000	342427	89921	1464	3660	61		
391.8127	31.638	31.619	1	1.000	278457	70632	1197	2992	59	1.23(1.05-1.43)	

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.731	31.709	1	0.990	14547323	3443186	4900	12250	703		
403.8529	31.731	31.709	1	0.990	11262027	2712395	3389	8472	800	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.744	31.725	1	1.000	413768	99894	1464	3660	68		
391.8127	31.744	31.725	1	1.000	331803	76193	1197	2992	64	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.077	32.063	1	1.014	444662	94475	1464	3660	65		
391.8127	32.077	32.063	1	1.014	366931	74917	1197	2992	63	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.709	33.695	1	1.051	6592721	1951149	8450	21125	231		
419.8220	33.709	33.695	1	1.051	15293211	4460690	18561	46402	240	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.722	33.707	1	1.000	432087	127233	909	2272	140		
409.7789	33.722	33.707	1	1.000	407853	121245	883	2207	137	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.815	34.798	1	1.086	5630785	1302993	8450	21125	154		
419.8220	34.815	34.798	1	1.086	13021645	2921009	18561	46402	157	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.827	34.805	1	1.000	364958	80426	909	2272	88		
409.7789	34.827	34.805	1	1.000	351709	76943	883	2207	87	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.511	34.497	1	1.076	10185601	2558354	6120	15300	418		
437.8140	34.511	34.497	1	1.076	9653842	2424165	4850	12125	500	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.523	34.509	1	1.000	320079	73399	3427	8567	21		
425.7737	34.523	34.509	1	1.000	297797	69528	2640	6600	26	1.07(0.88-1.20)	
13C-OCDD											
469.7779	36.878	36.861	1	1.150	13100382	2516740	1630	4075	1544		
471.7750	36.878	36.861	1	1.150	15164454	2830522	1487	3717	1904	0.86(0.76-1.02)	
OCDF											
441.7428	36.986	36.962	1	1.003	514668	84374	419	1047	201		
443.7399	36.986	36.962	1	1.003	537726	95763	539	1347	178	0.96(0.76-1.02)	
OCDD											
457.7377	36.890	36.868	1	1.000	419194	83389	884	2210	94		
459.7348	36.890	36.868	1	1.000	485916	89088	910	2275	98	0.86(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNL2_00030 Amount Added: 2.00 Units: uL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d
Injection Date: 10-Dec-2020 18:27:33
Instrument ID: 10D5
Lims ID: IC
Client ID:
Operator ID: SMA
ALS Bottle#: 4
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 17.71

Processing Integration Results

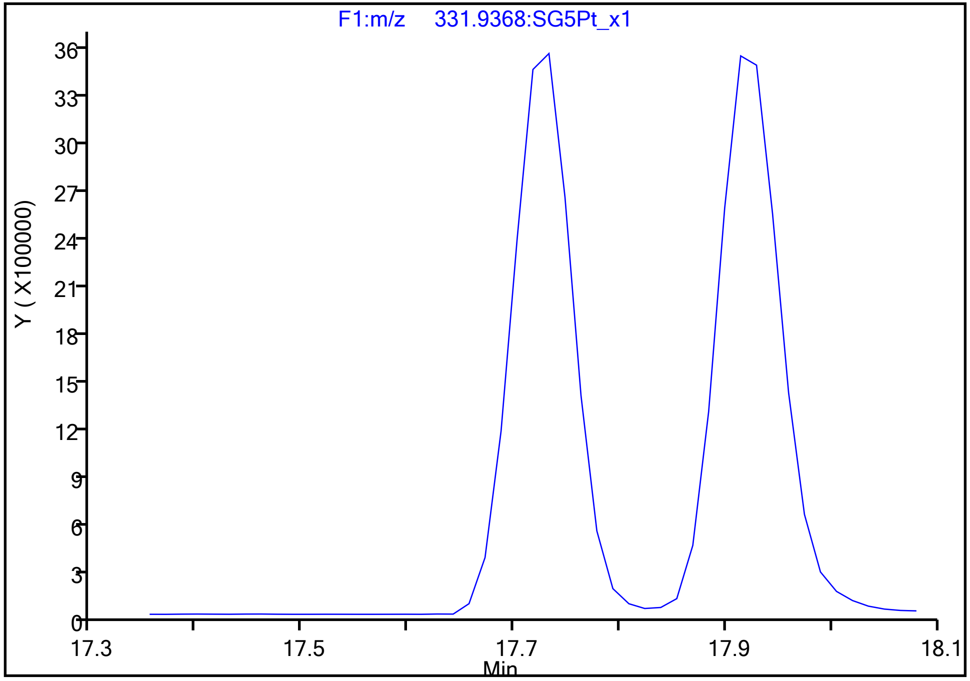

RT: 17.73
Area: 14260543
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

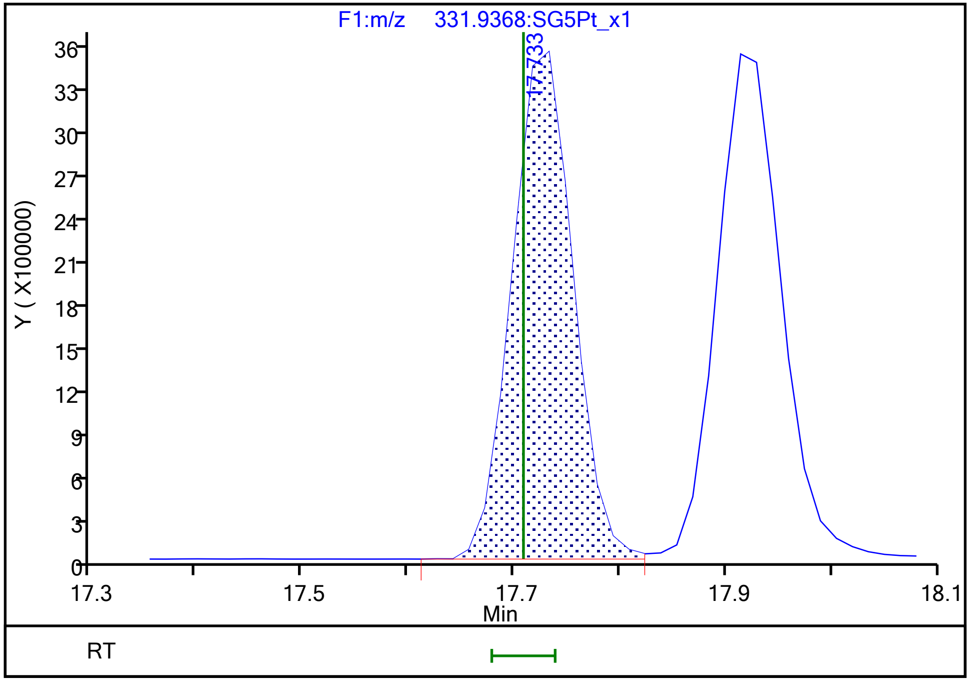

Reviewer: messecara, 10-Dec-2020 23:37:49
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d				
Injection Date:	10-Dec-2020 18:27:33	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	17.94
Area:	118518
Amount:	0.567172
Amount Units:	pg/ul

Processing Integration Results

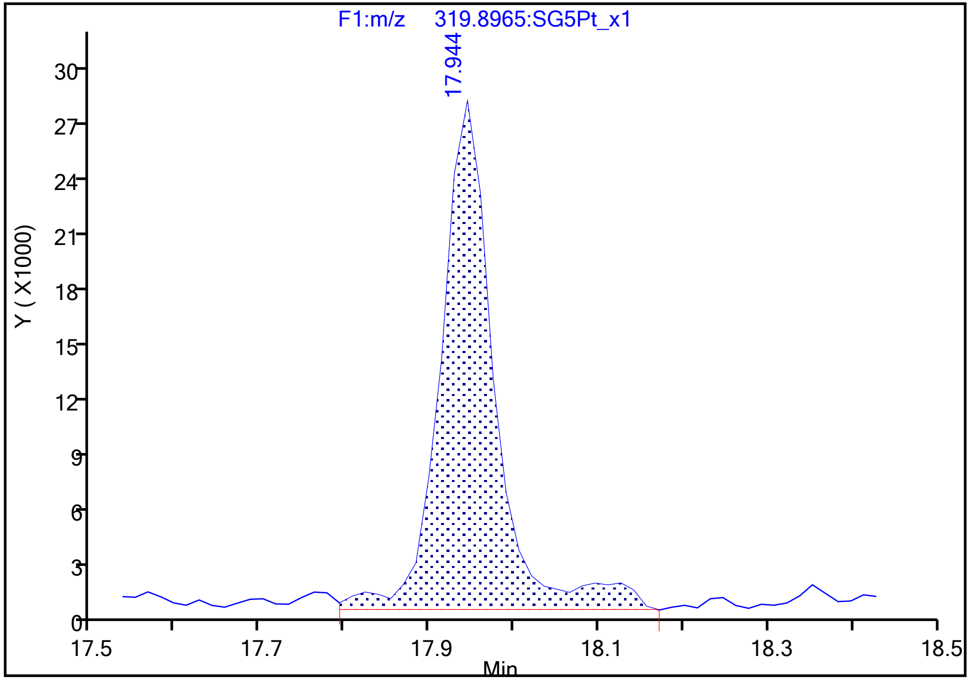

RT:	17.94
Area:	102641
Amount:	0.523030
Amount Units:	pg/ul

Manual Integration Results

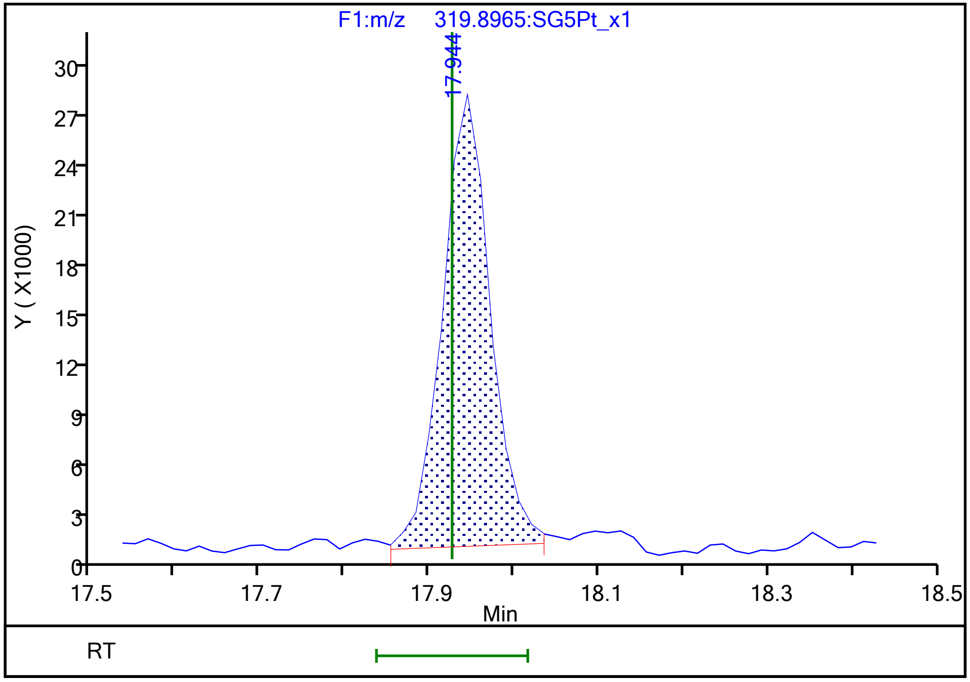

Reviewer: arghestanis, 11-Dec-2020 08:28:45

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 11-Dec-2020 10:12:29

Chrom Revision: 2.3 09-Dec-2020 16:22:14

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d				
Injection Date:	10-Dec-2020 18:27:33	Instrument ID:	10D5		
Lims ID:	IC				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	4	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT:	17.94
Area:	123448
Amount:	0.567172
Amount Units:	pg/ul

Processing Integration Results

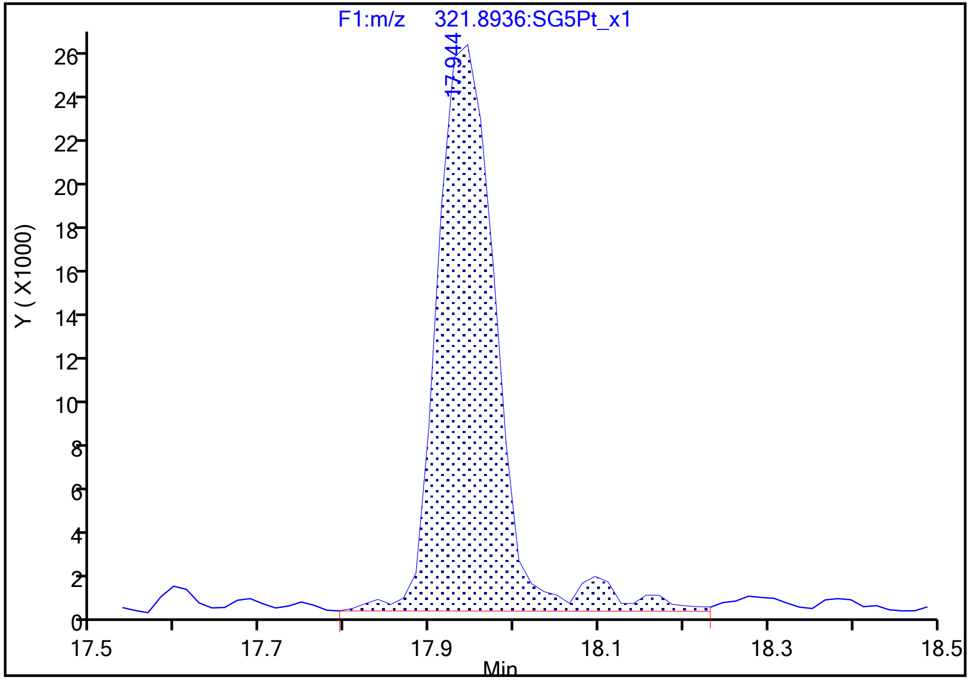

RT:	17.94
Area:	115511
Amount:	0.523030
Amount Units:	pg/ul

Manual Integration Results

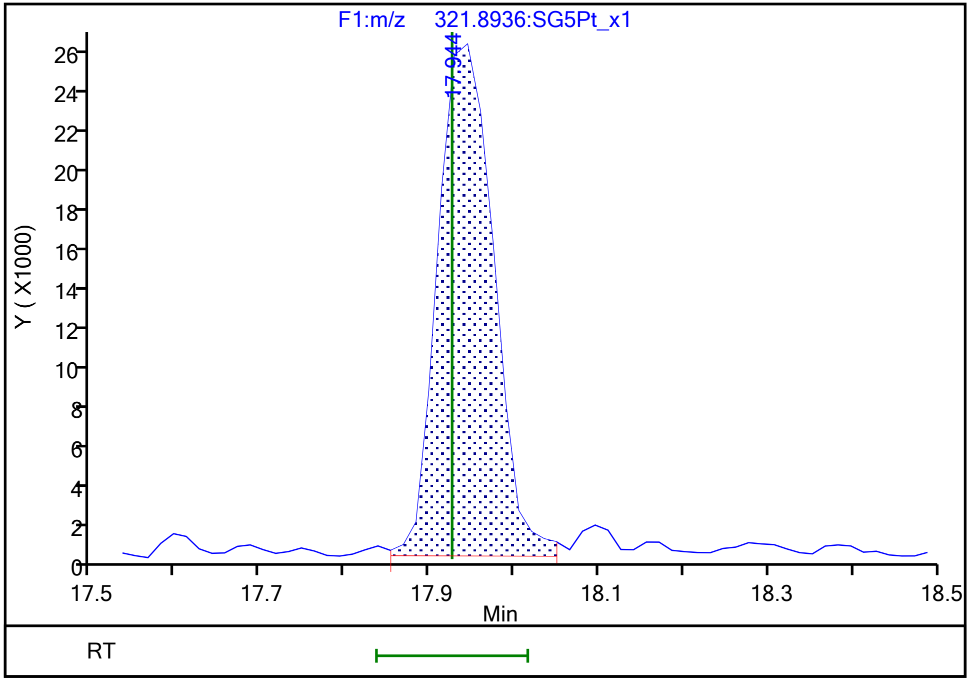

Reviewer: arghestanis, 11-Dec-2020 08:29:49

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

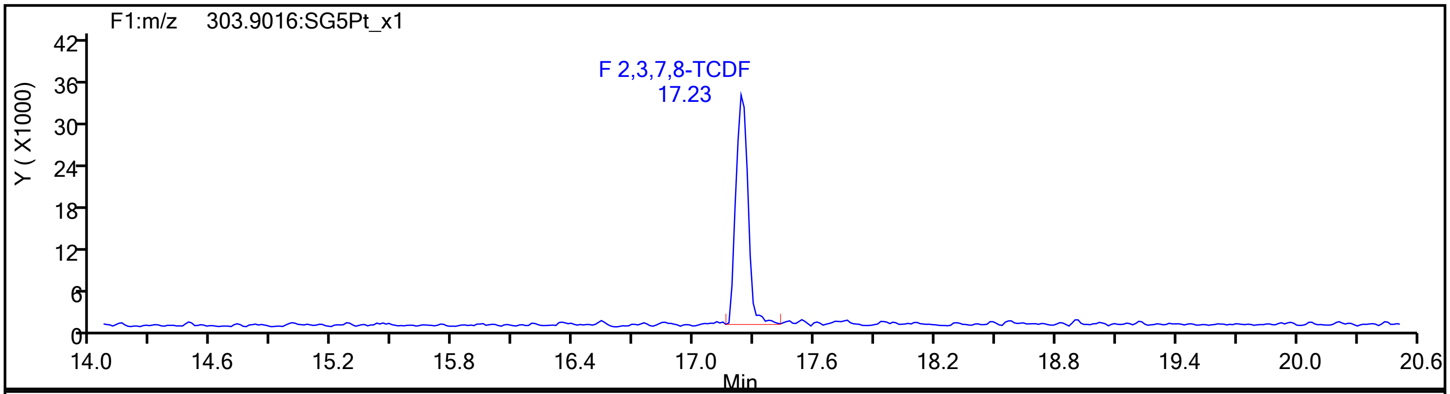

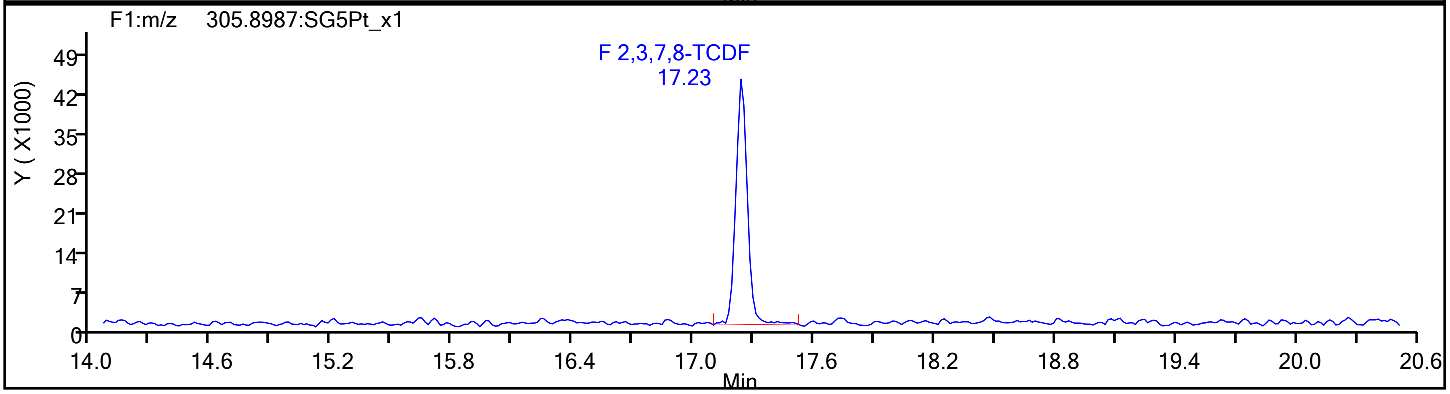

TCDF Standards

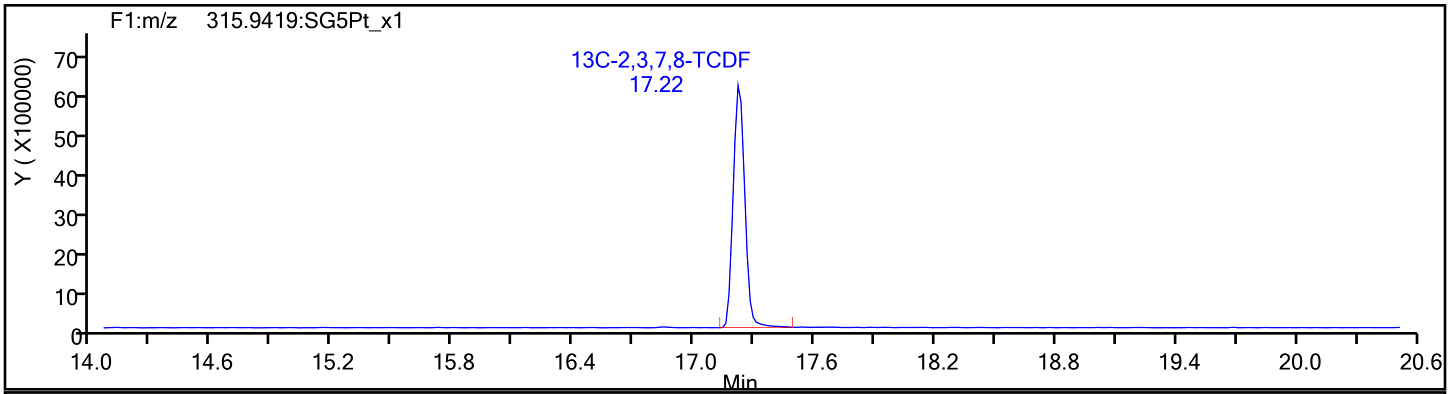

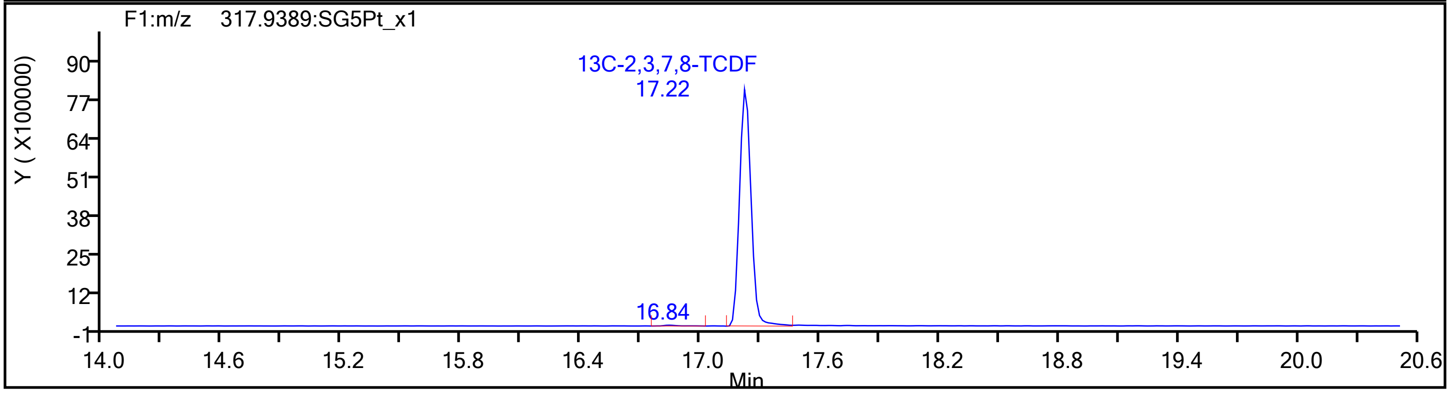

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

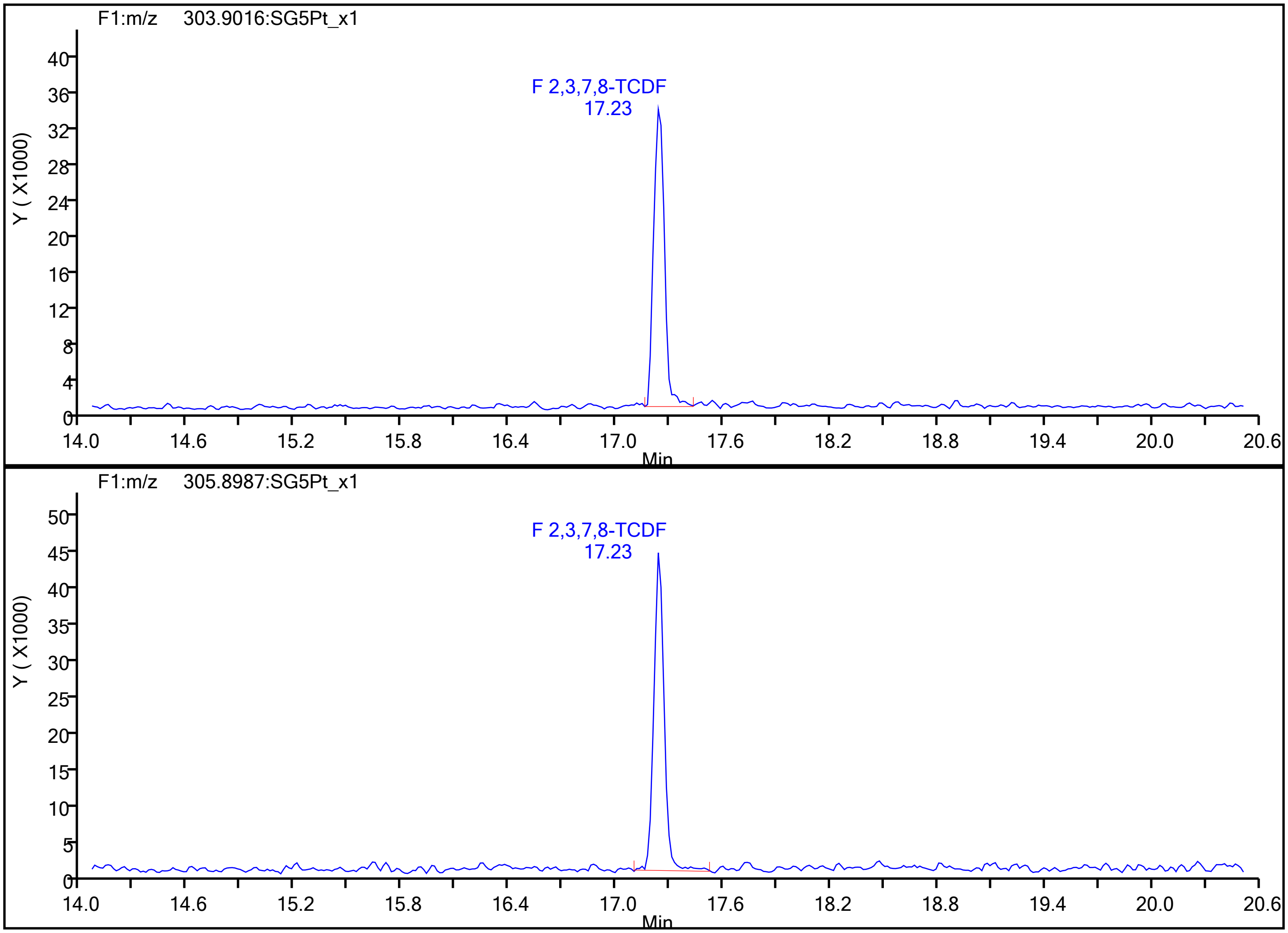

TCDF Interference Mass

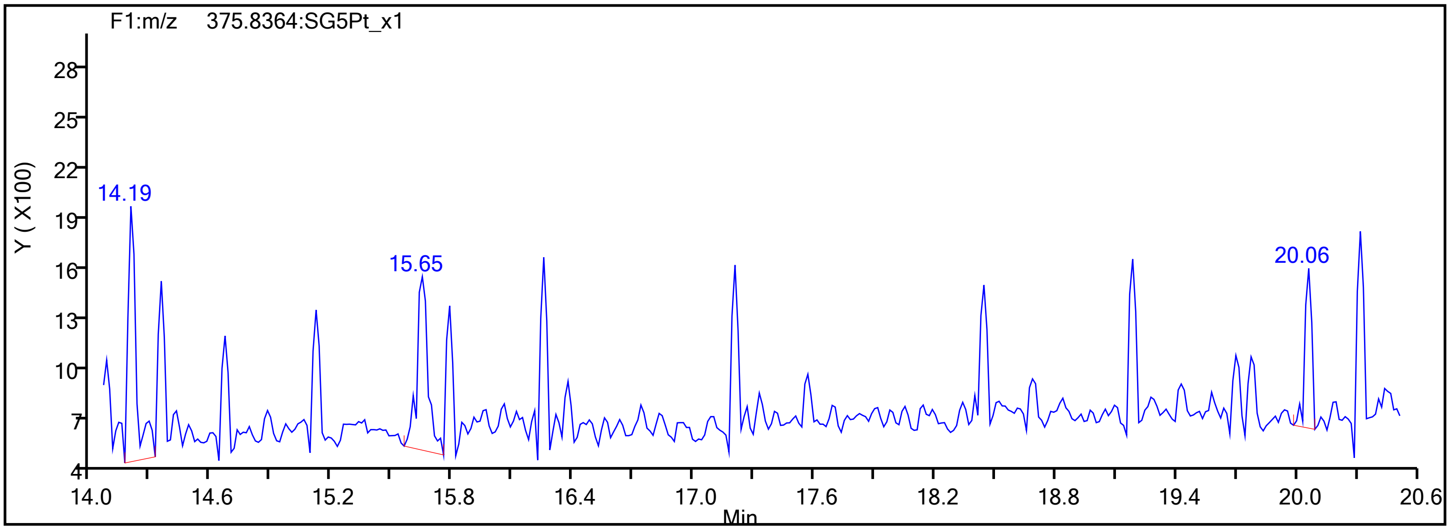

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

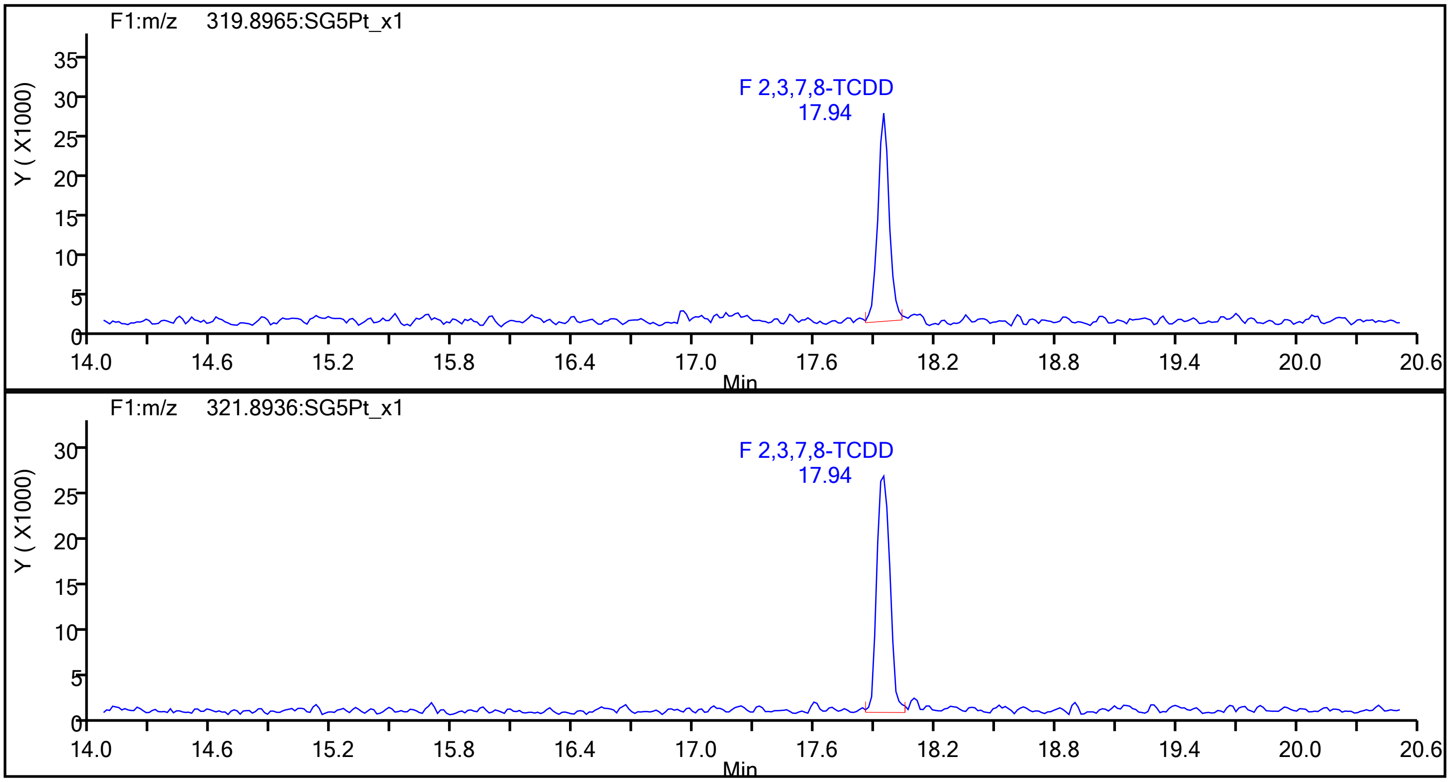

TCDD Standards

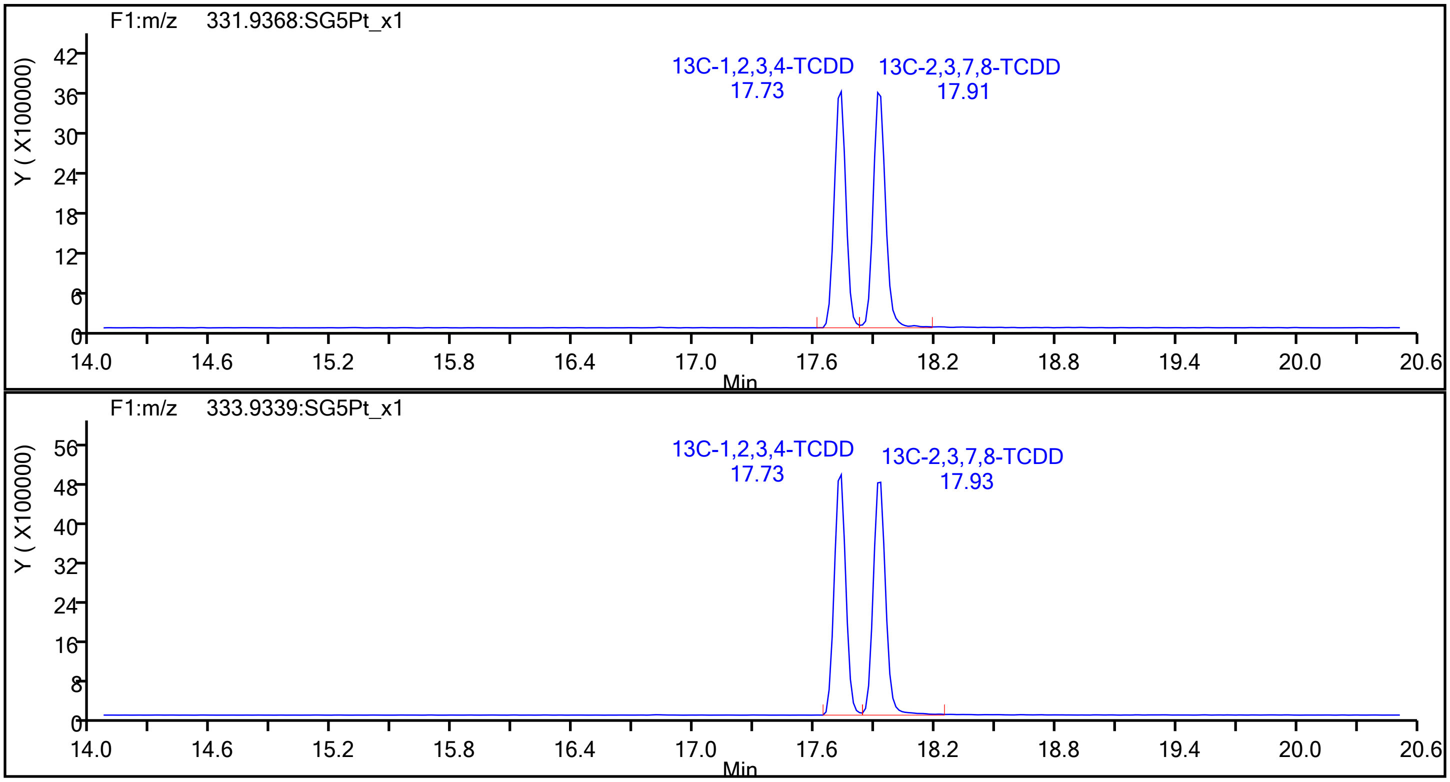

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d
Injection Date: 10-Dec-2020 18:27:33
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

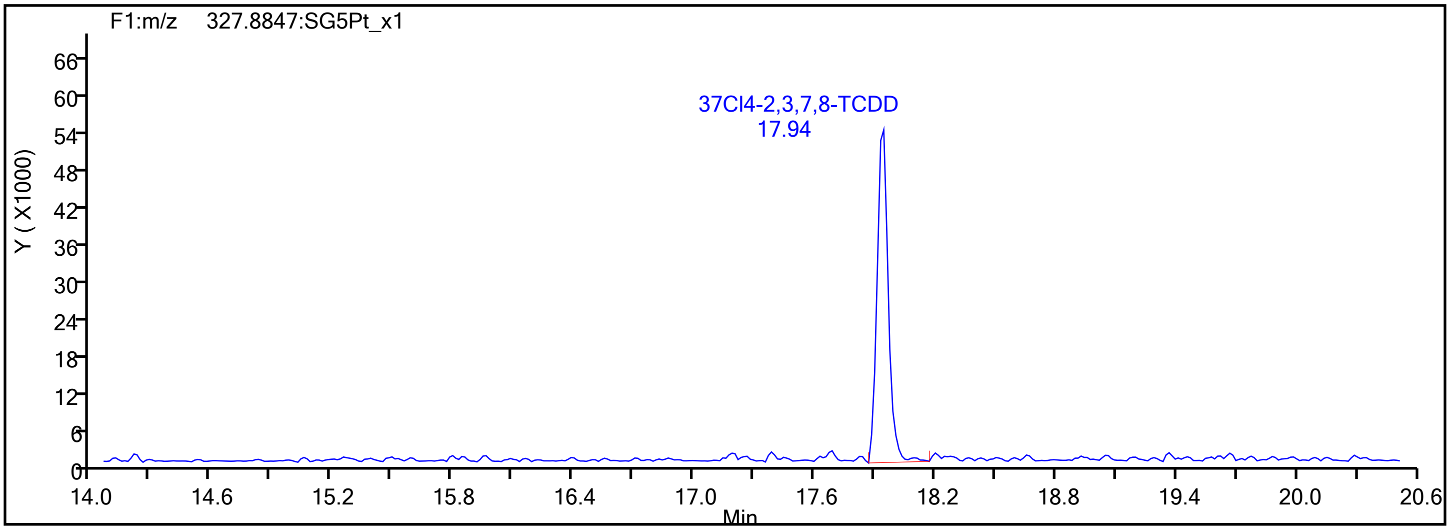

37Cl4-TCDD Standards

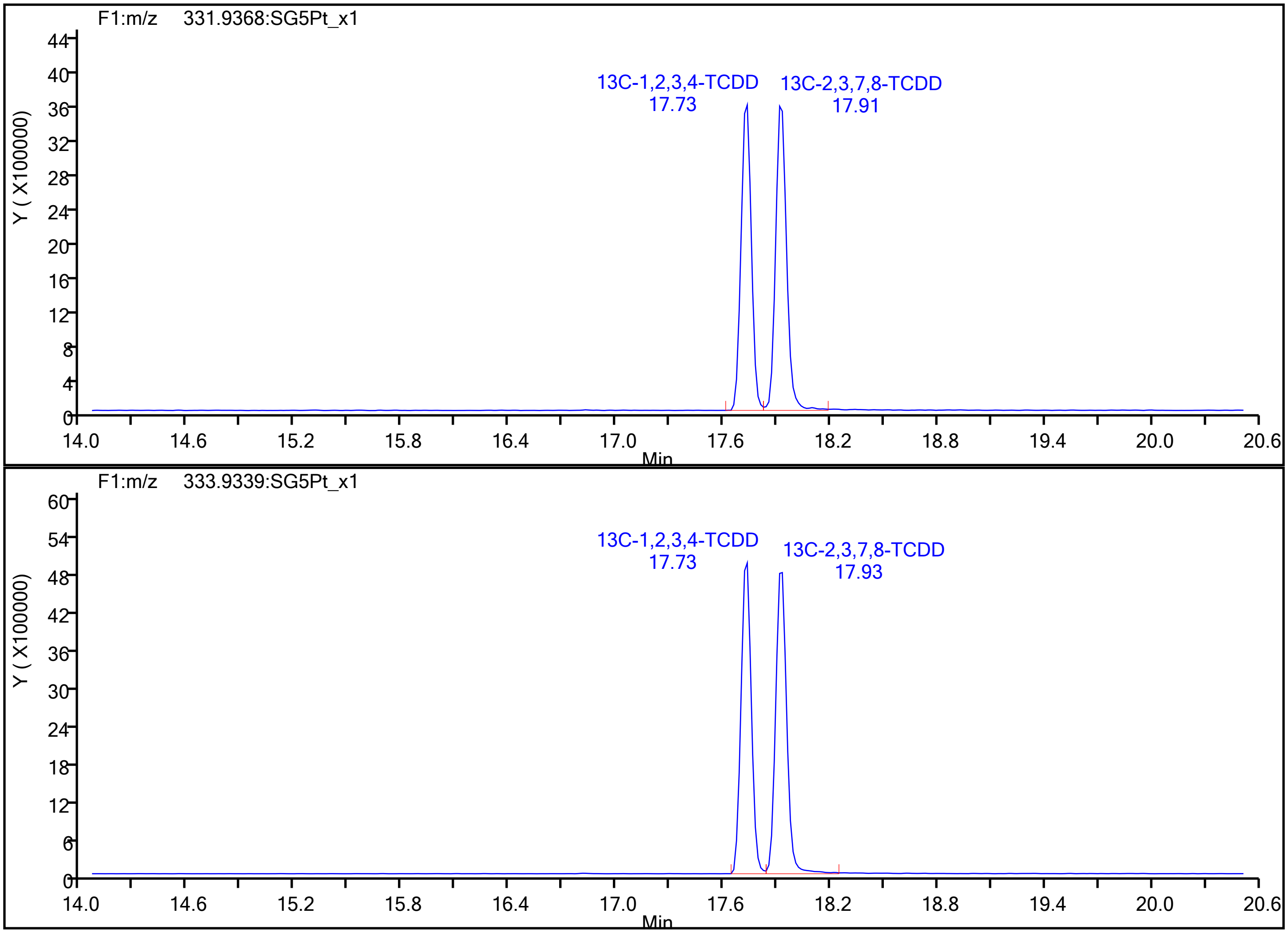

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

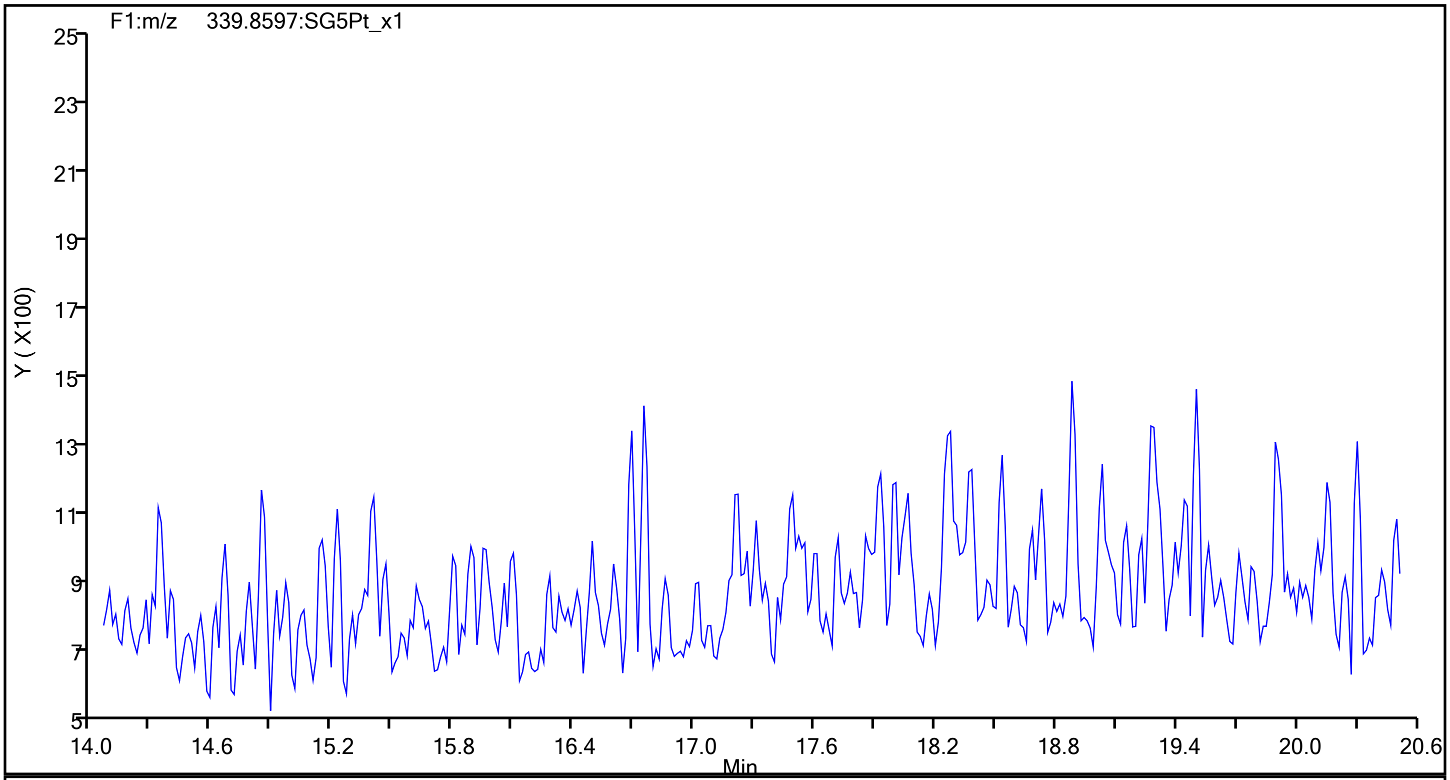

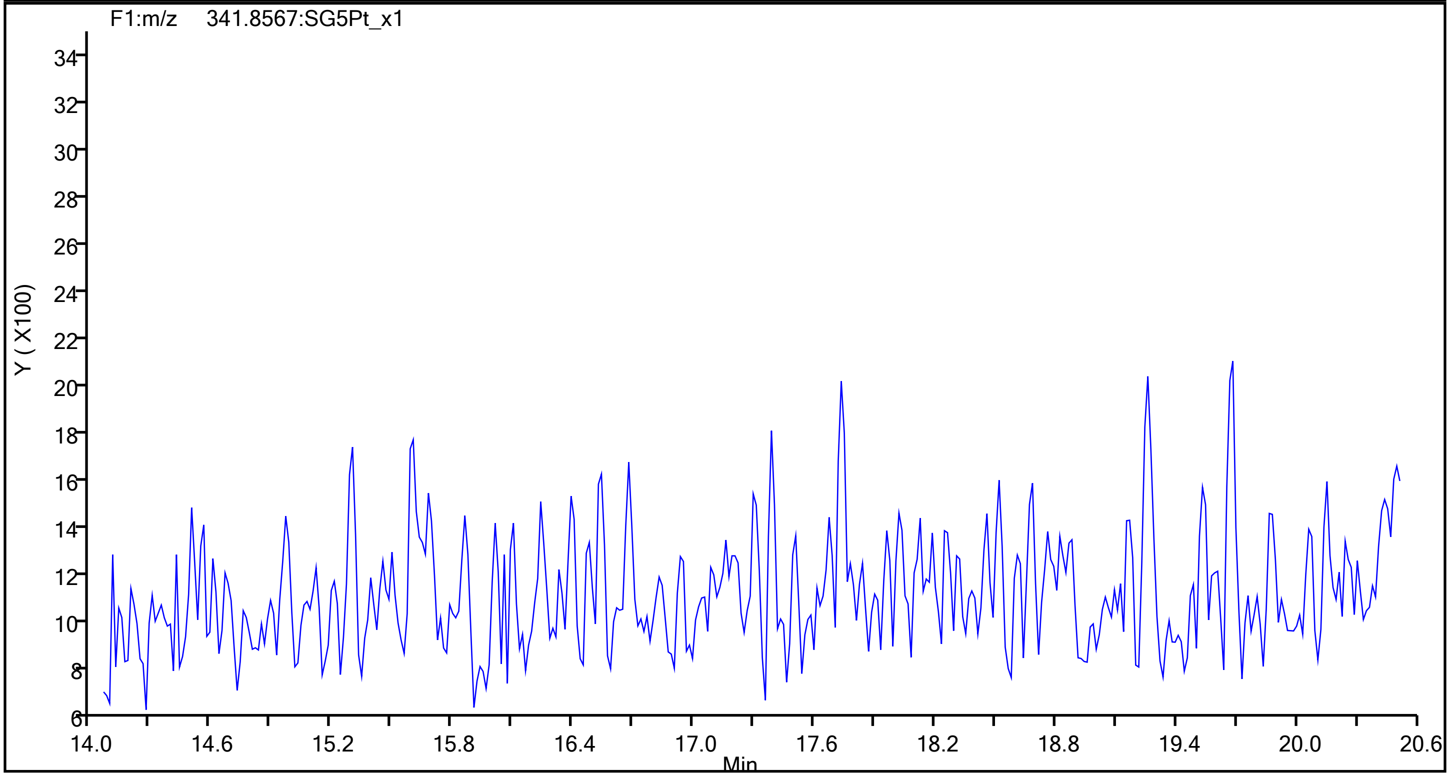

Report Date: 11-Dec-2020 10:12:29
Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

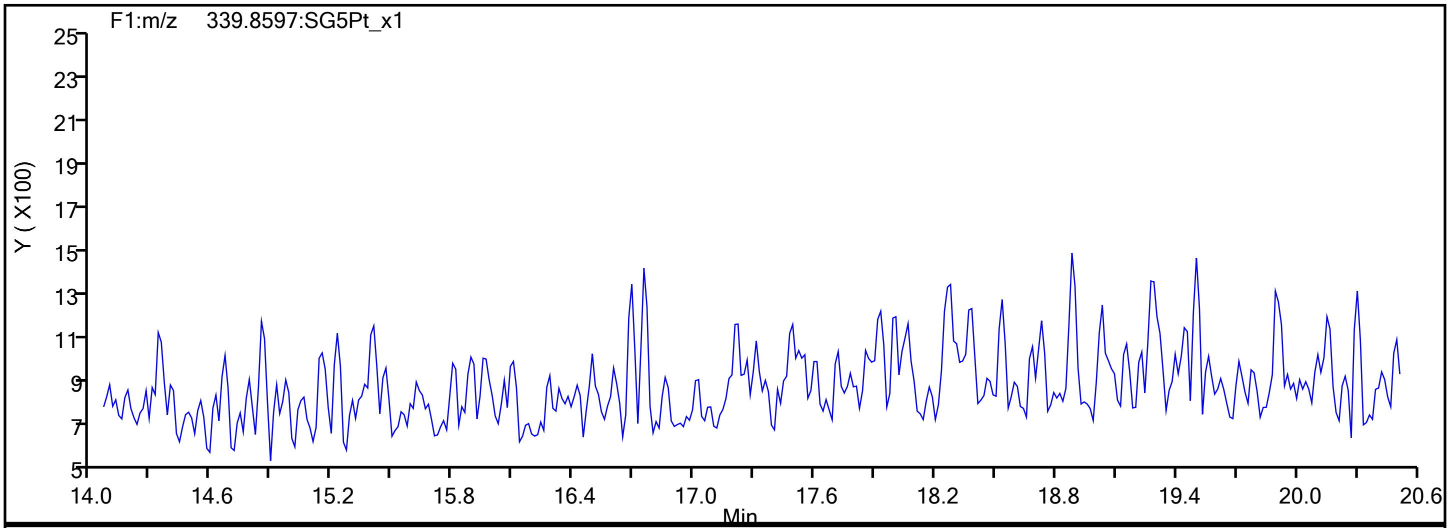

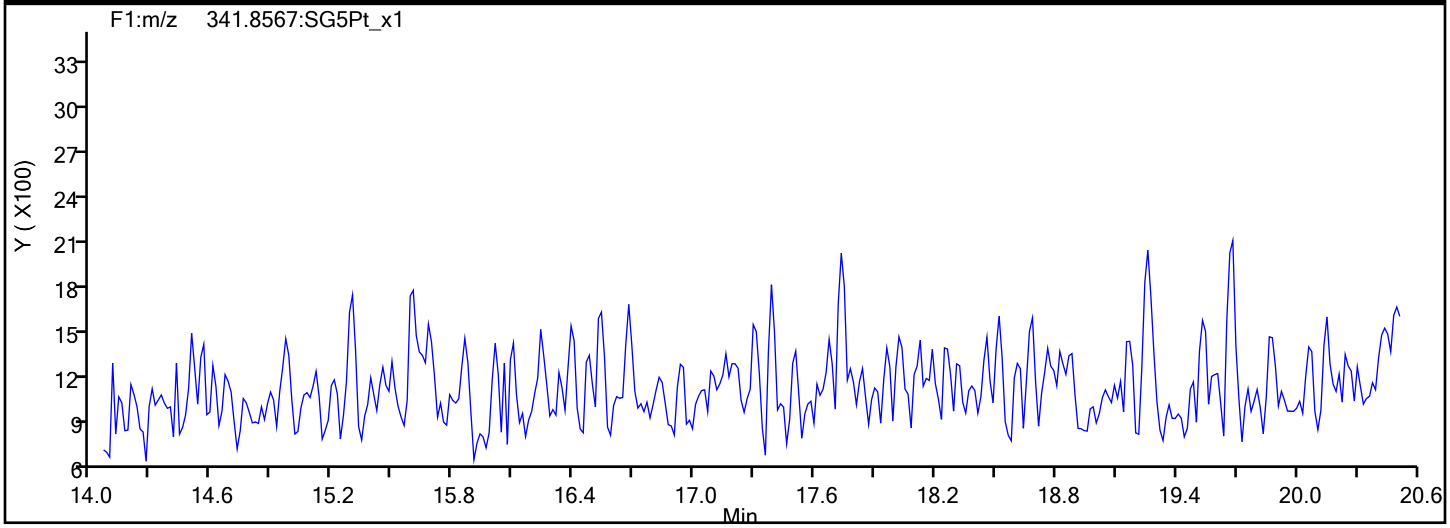

F1 PeCDFs Interference Mass

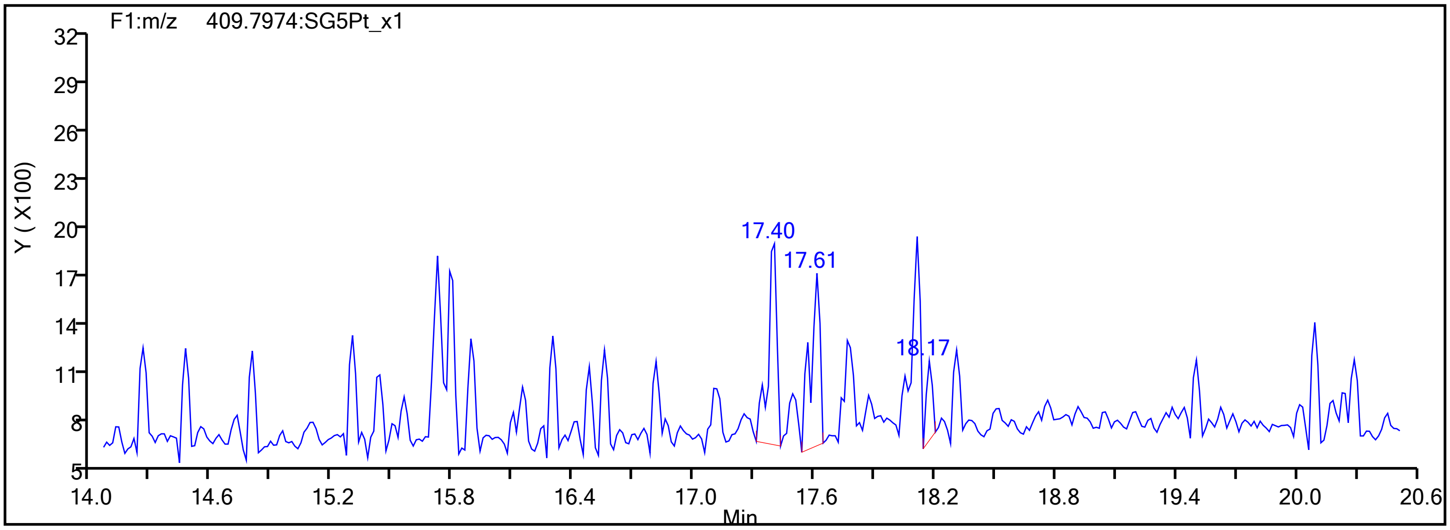

Report Date: 11-Dec-2020 10:12:29		Chrom Revision: 2.3 09-Dec-2020 16:22:14	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

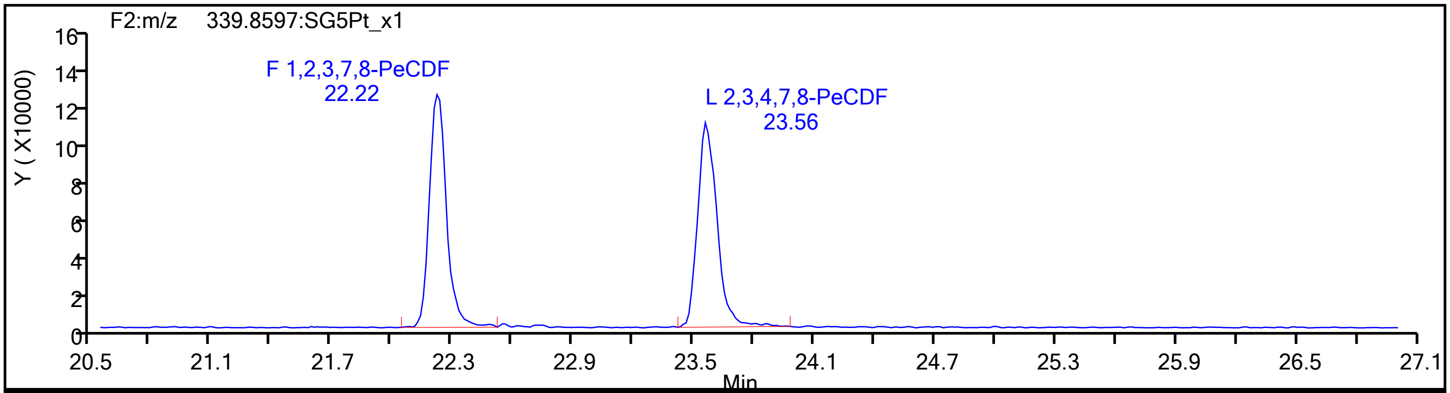

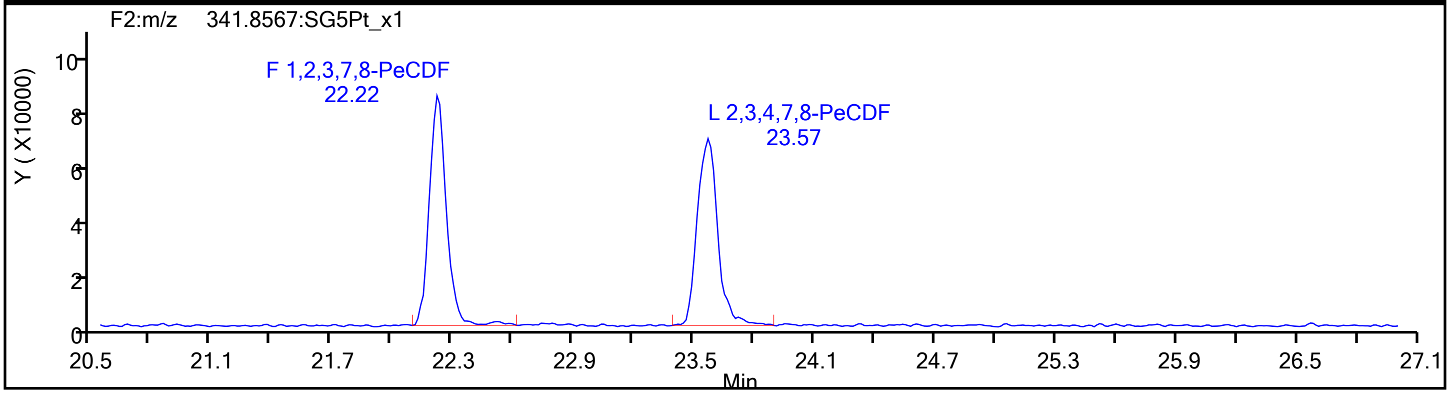

PeCDF Standards

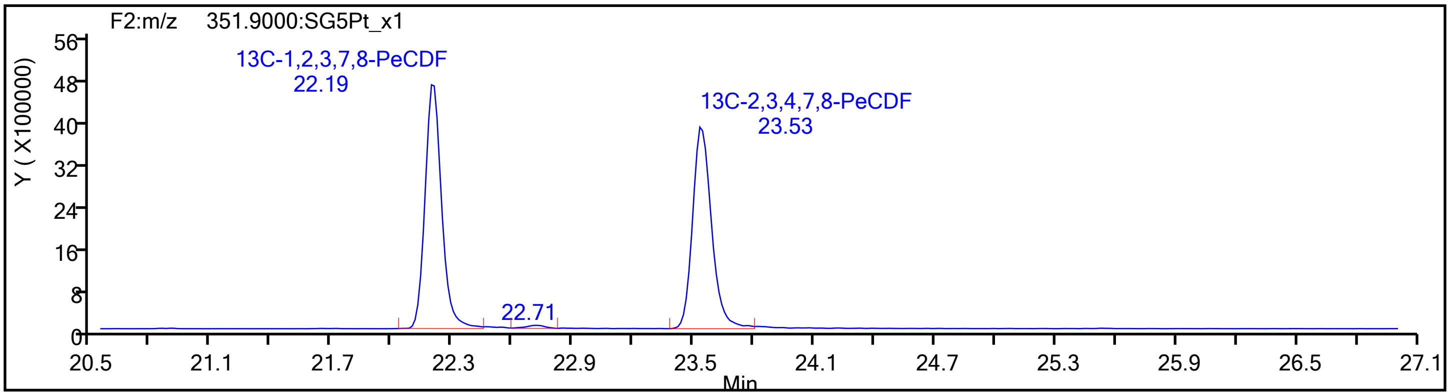

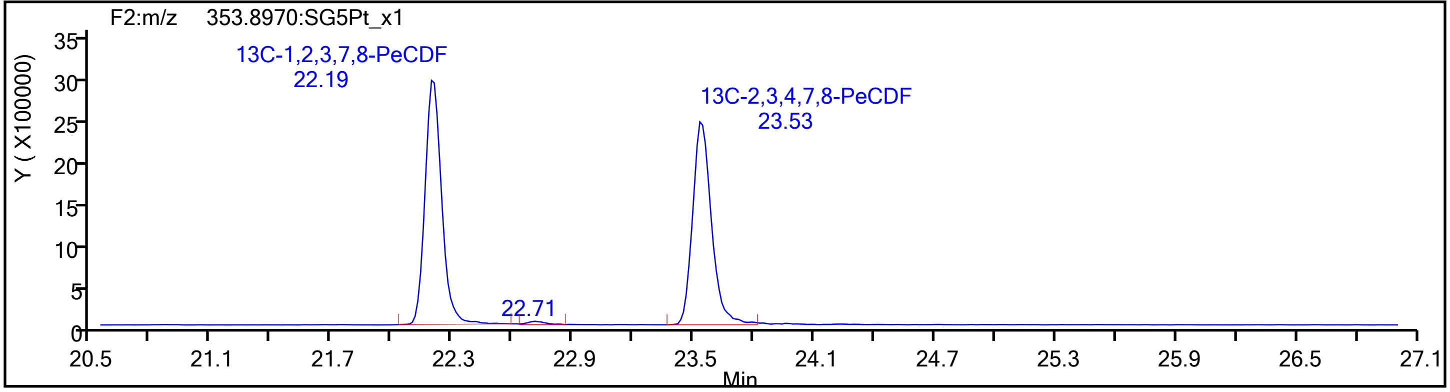

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d
Injection Date: 10-Dec-2020 18:27:33
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

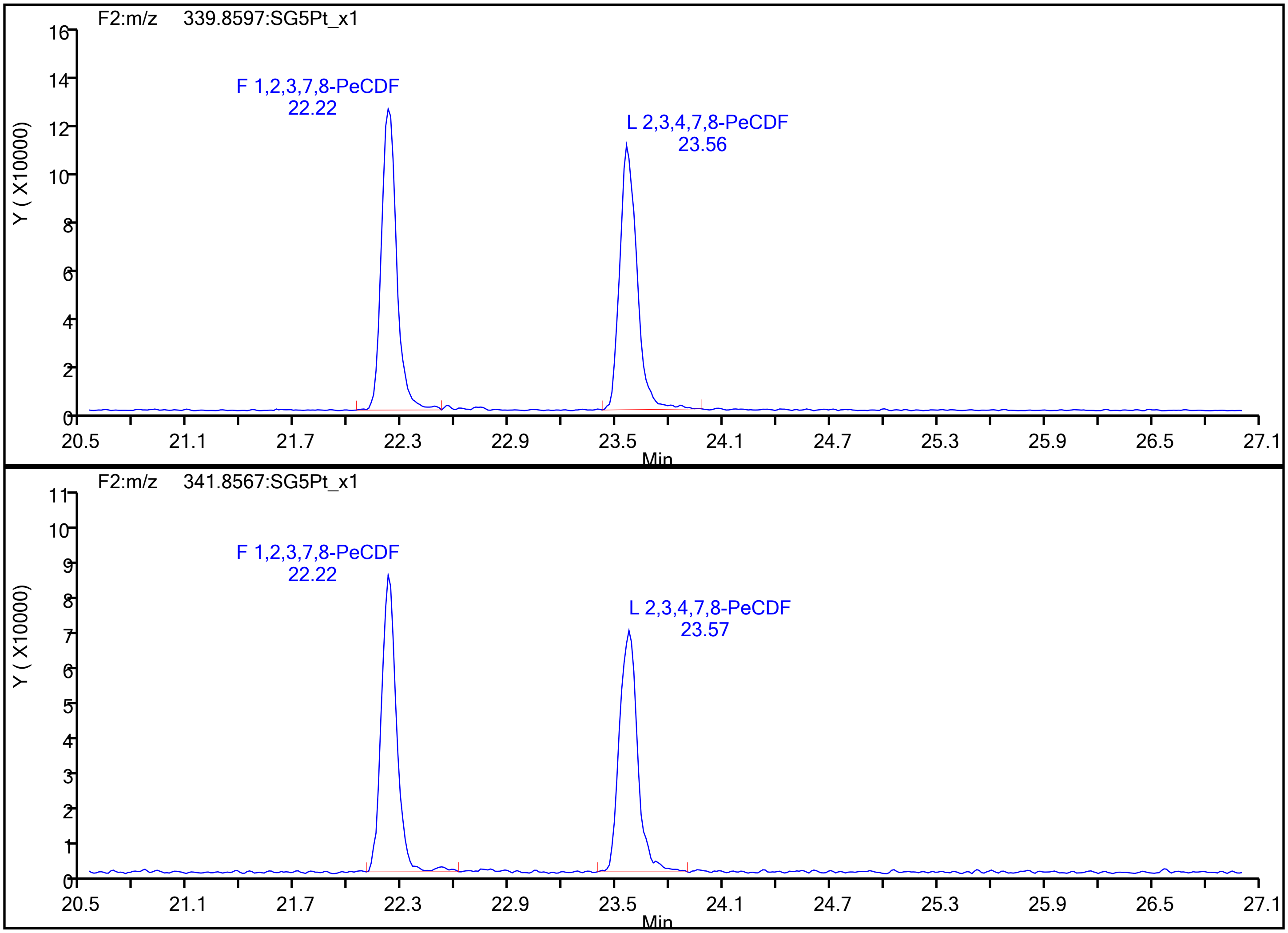

PeCDF Interference Mass

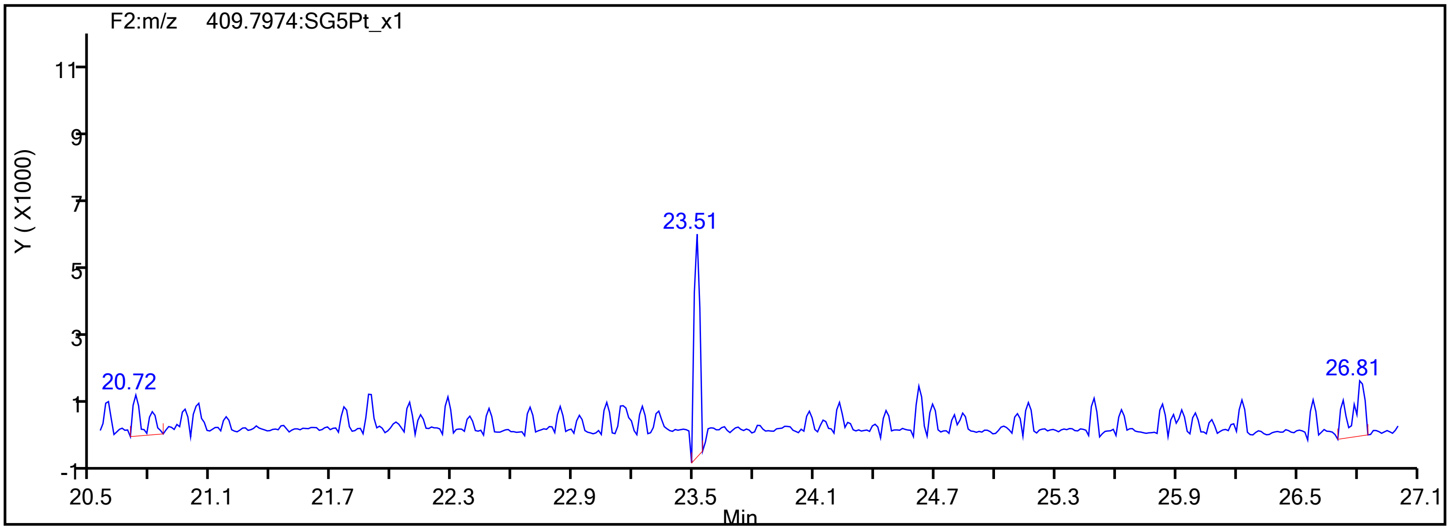

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

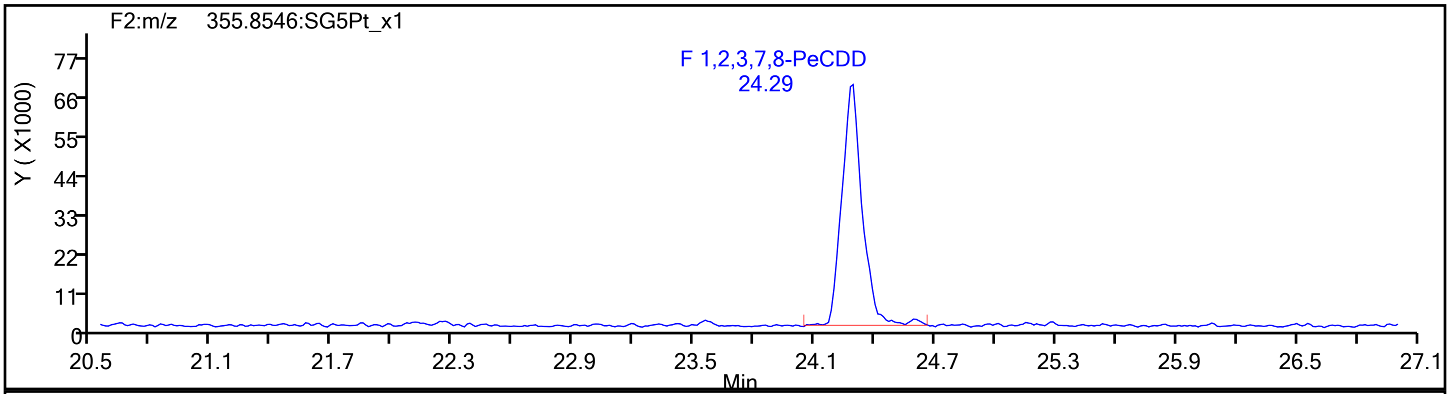

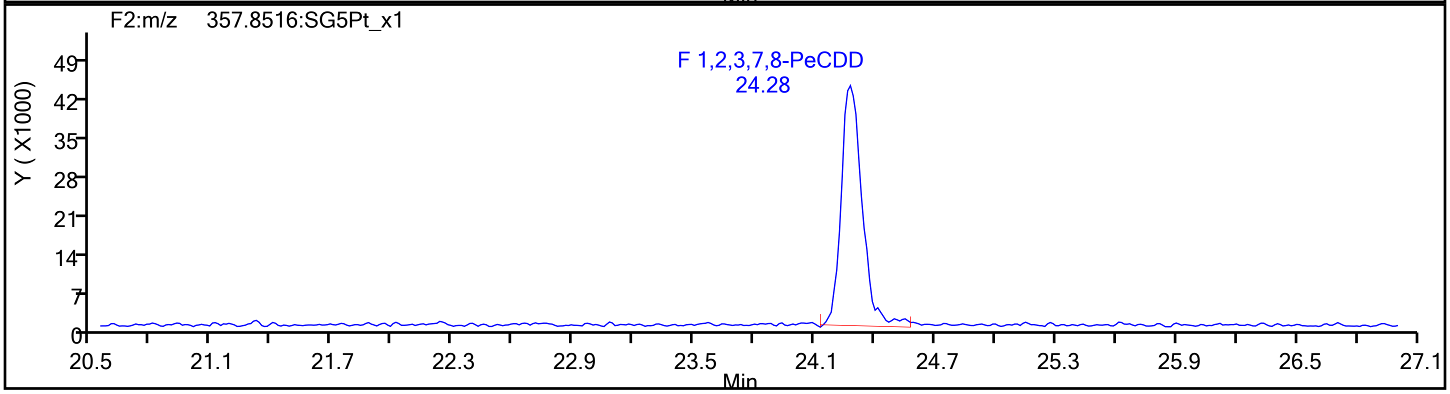

PeCDD Standards

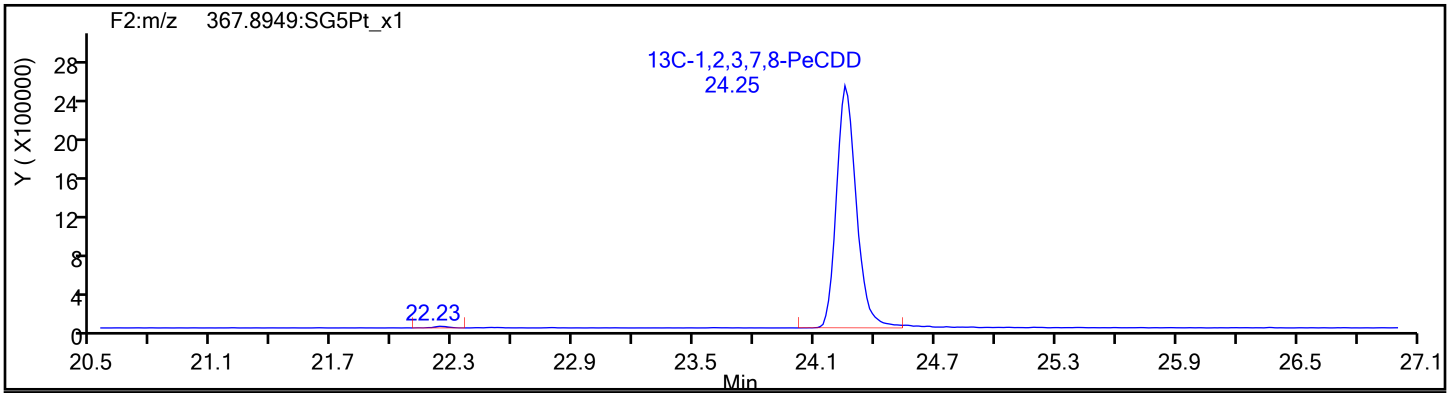

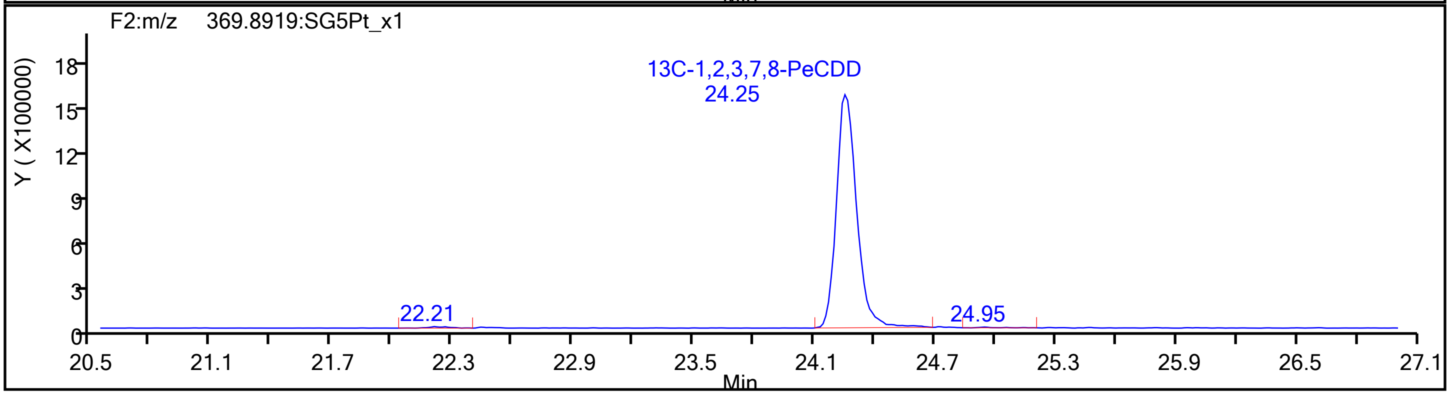

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

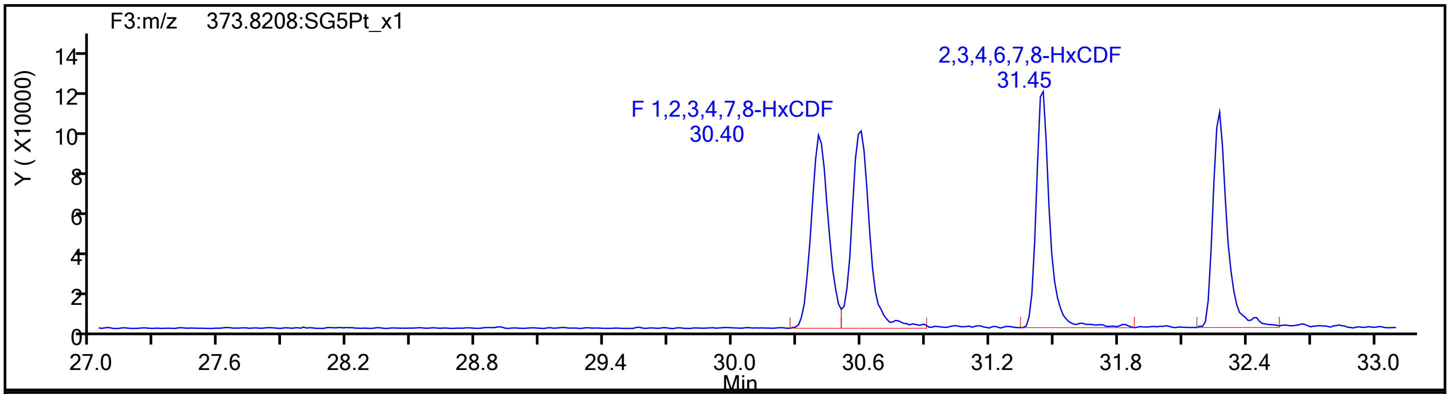

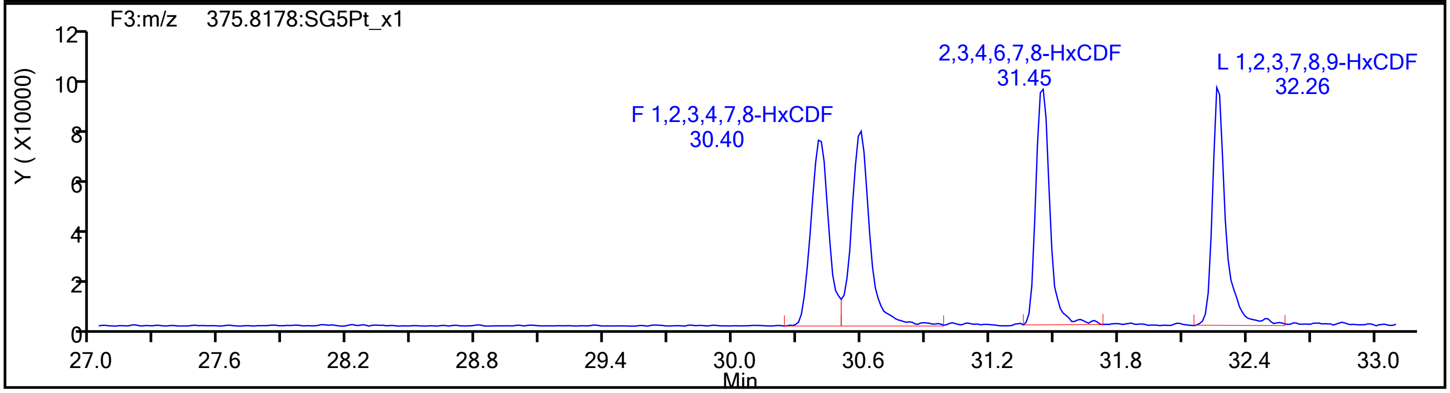

HxCDF Standards

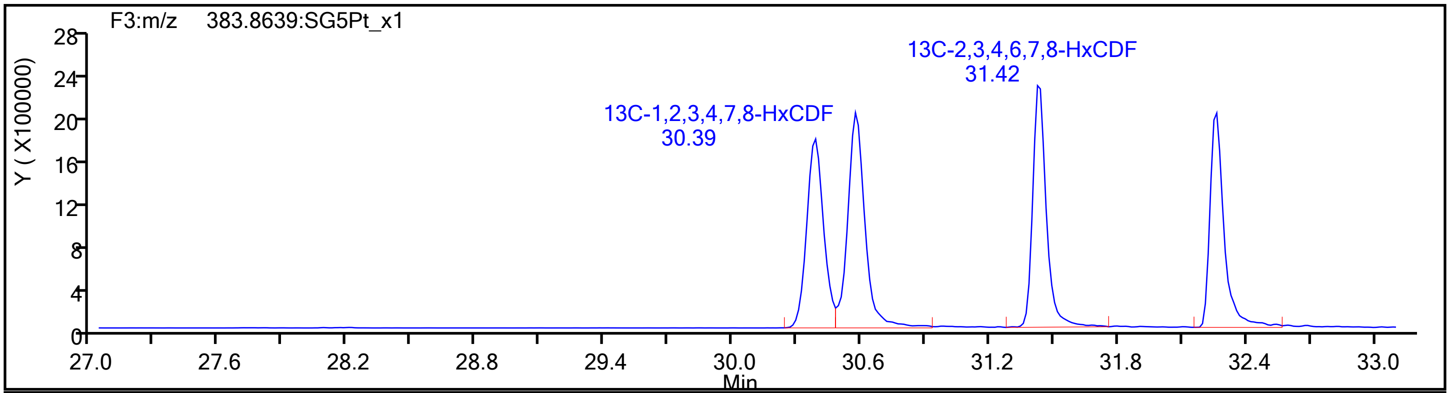

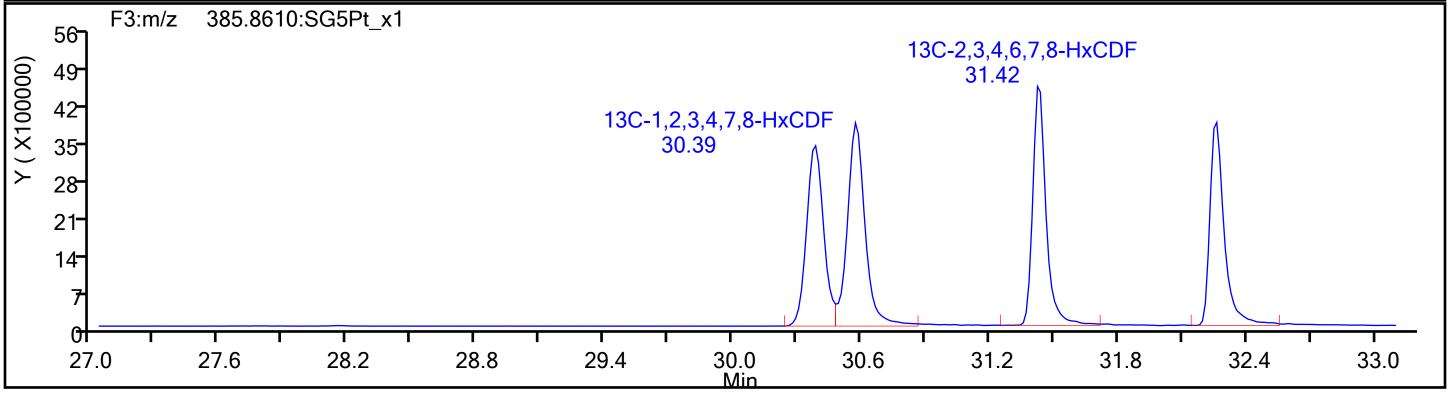

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d

Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

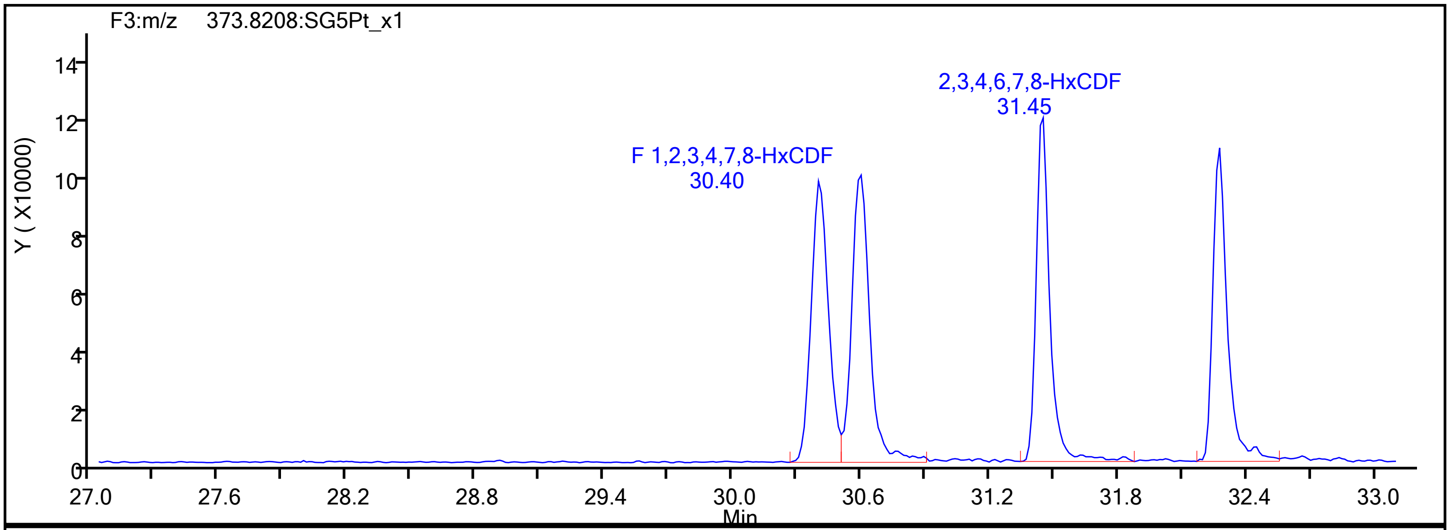

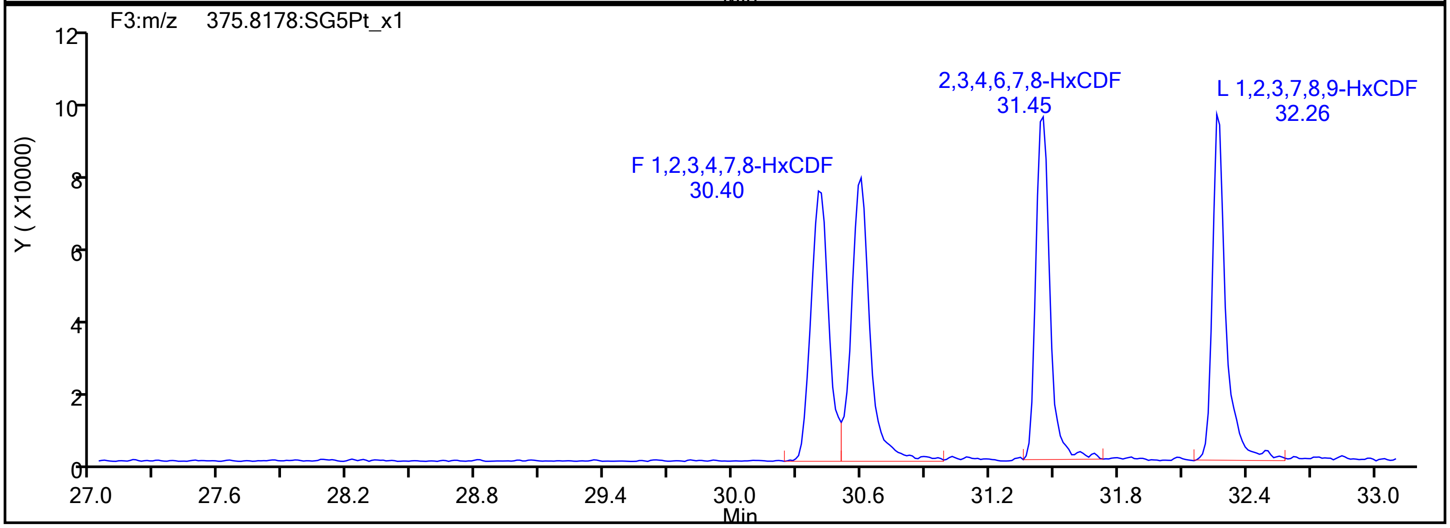

HxCDF Interference Mass

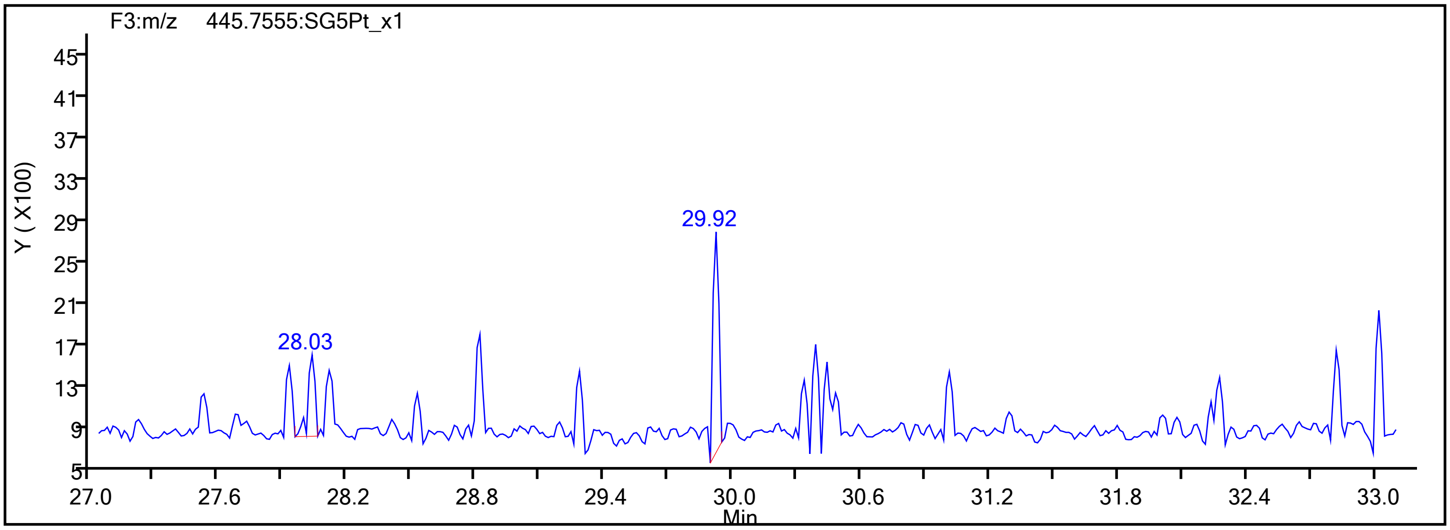

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

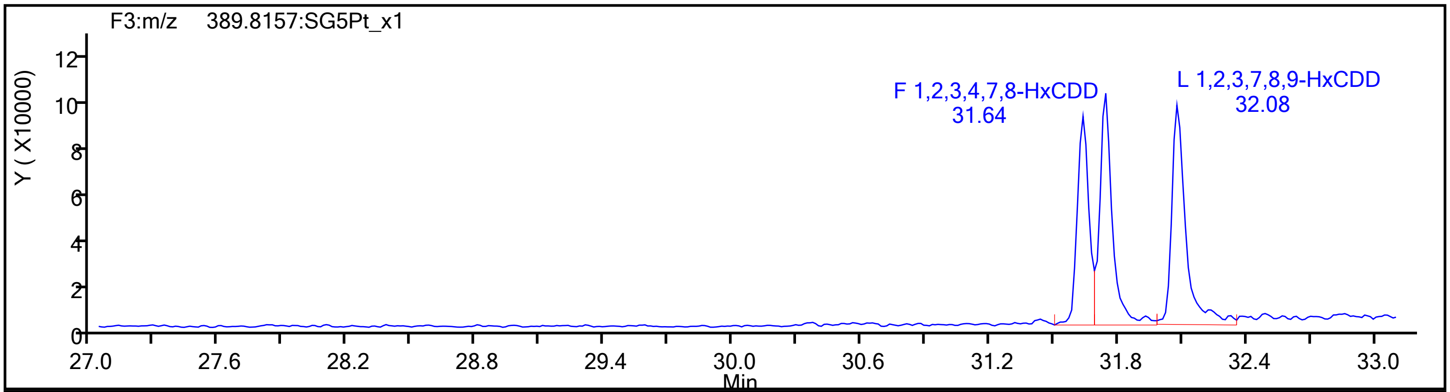

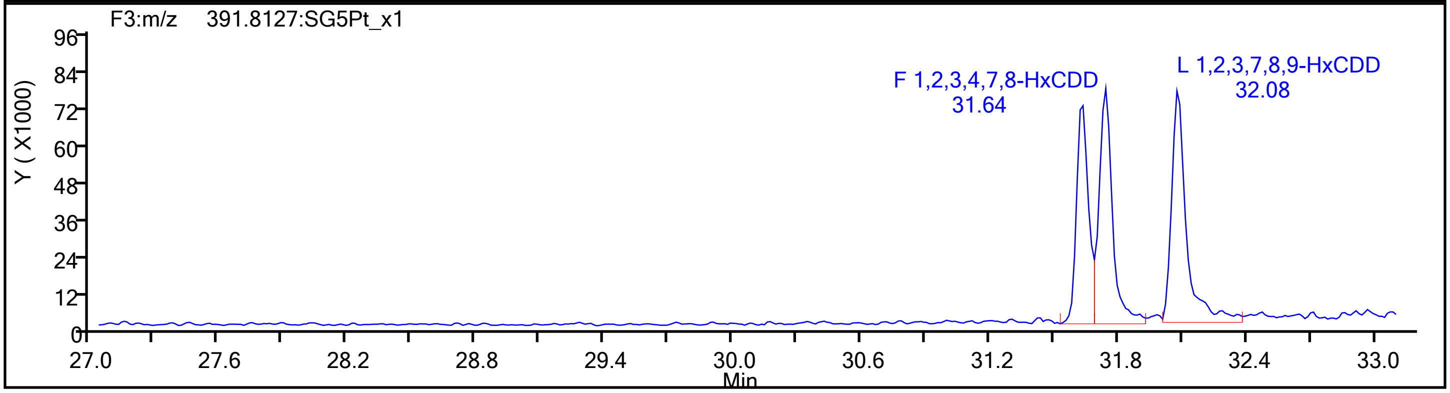

HxCDD Standards

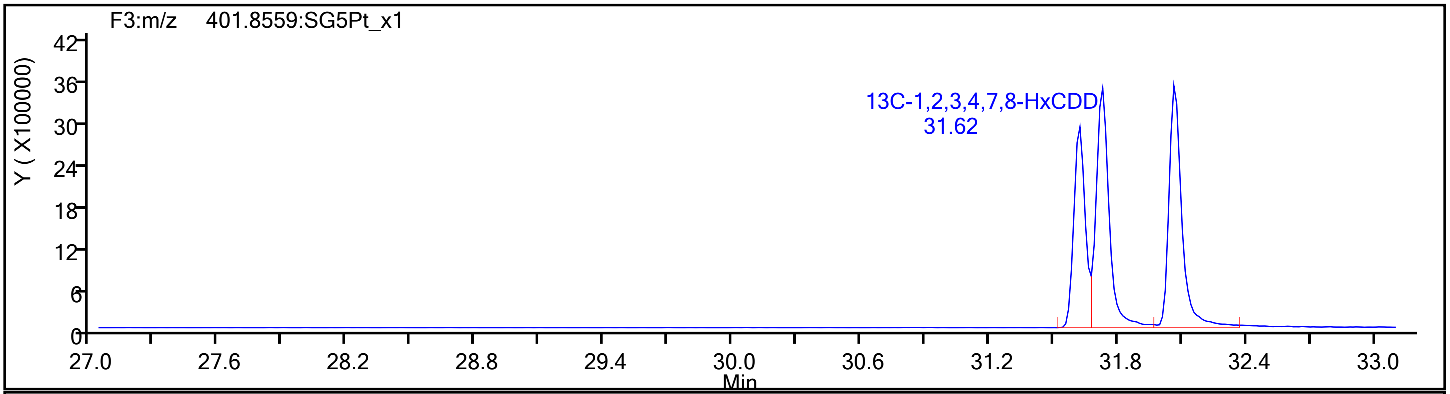

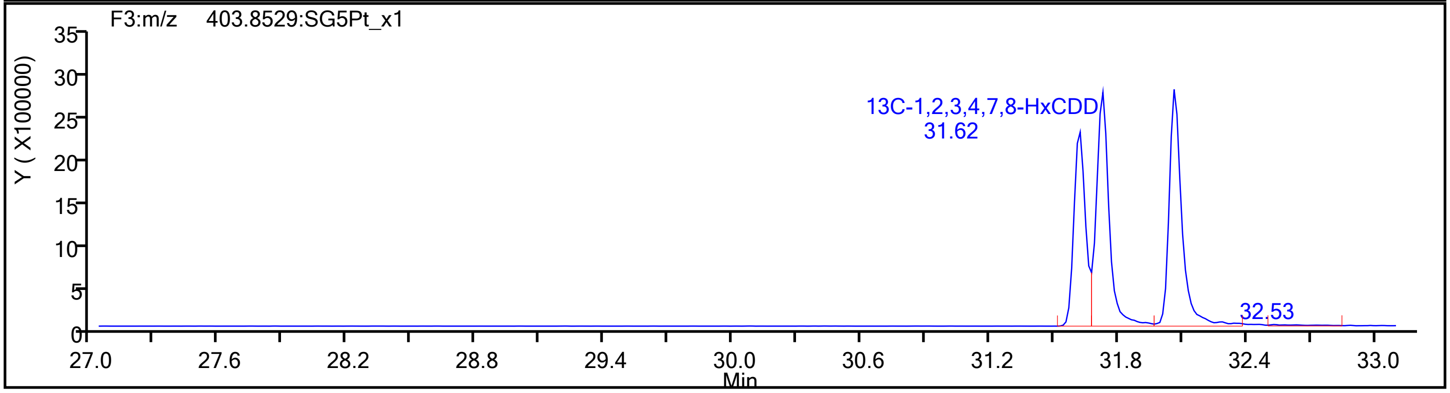

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

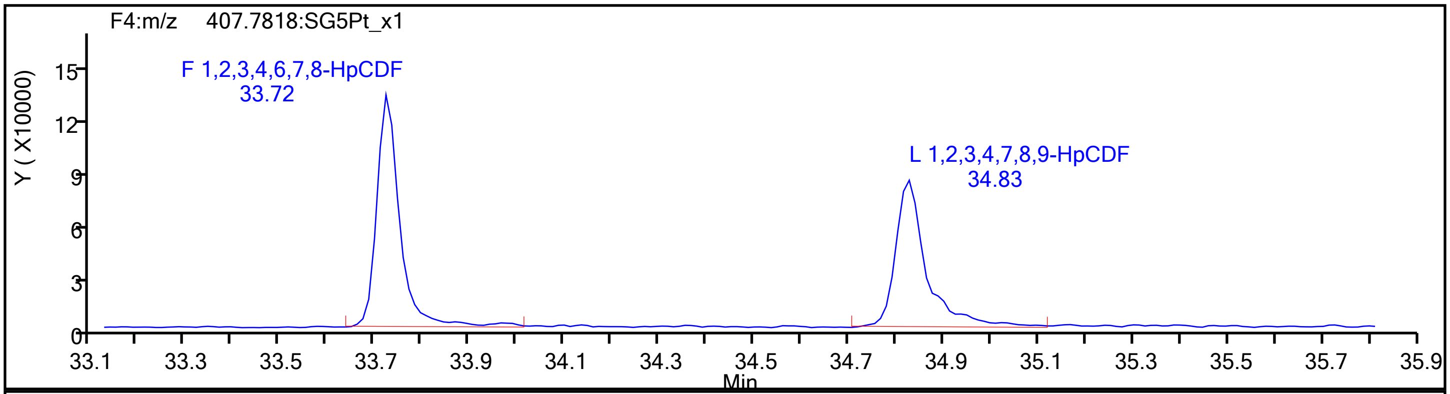

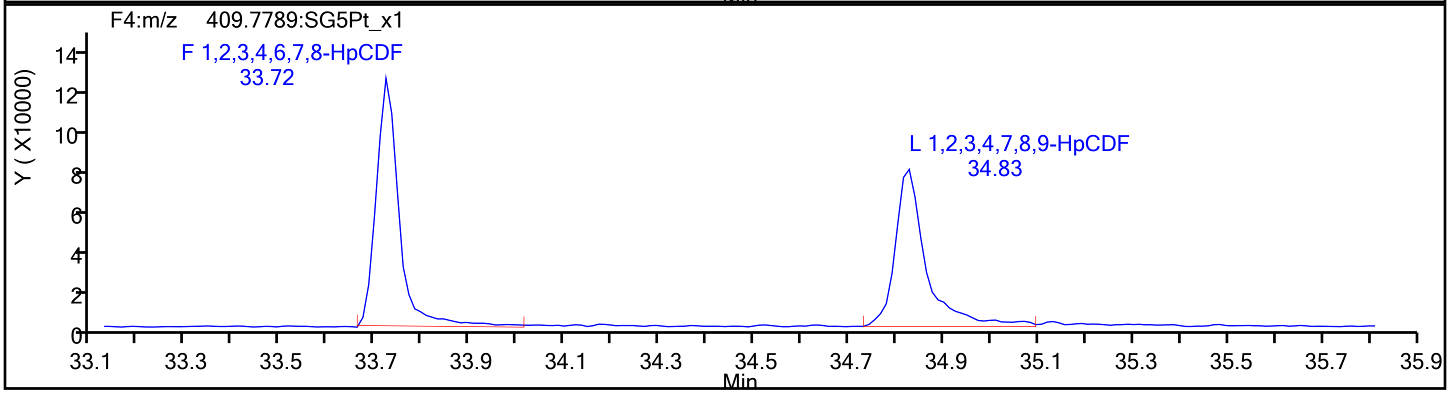

HpCDF Standards

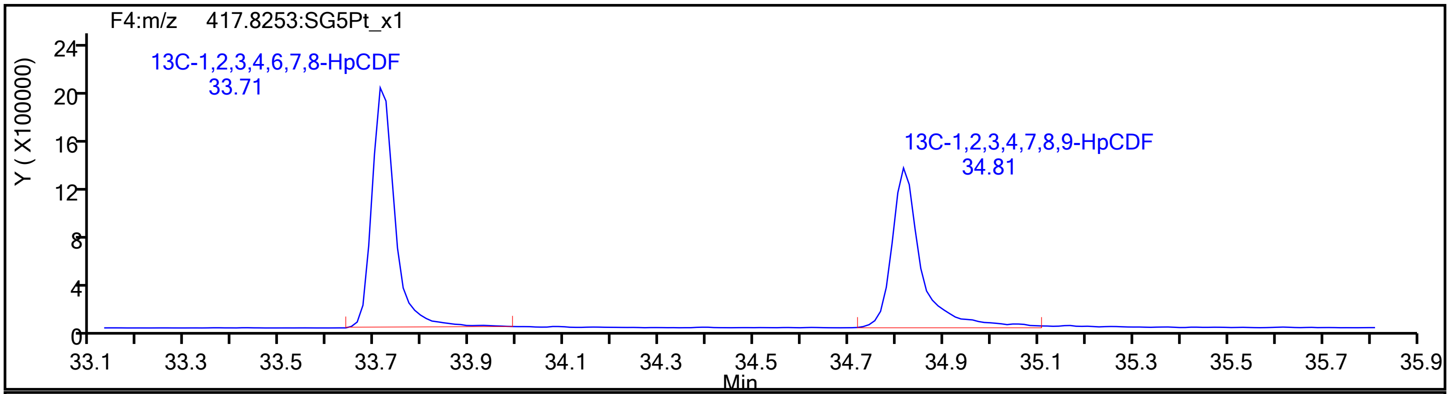

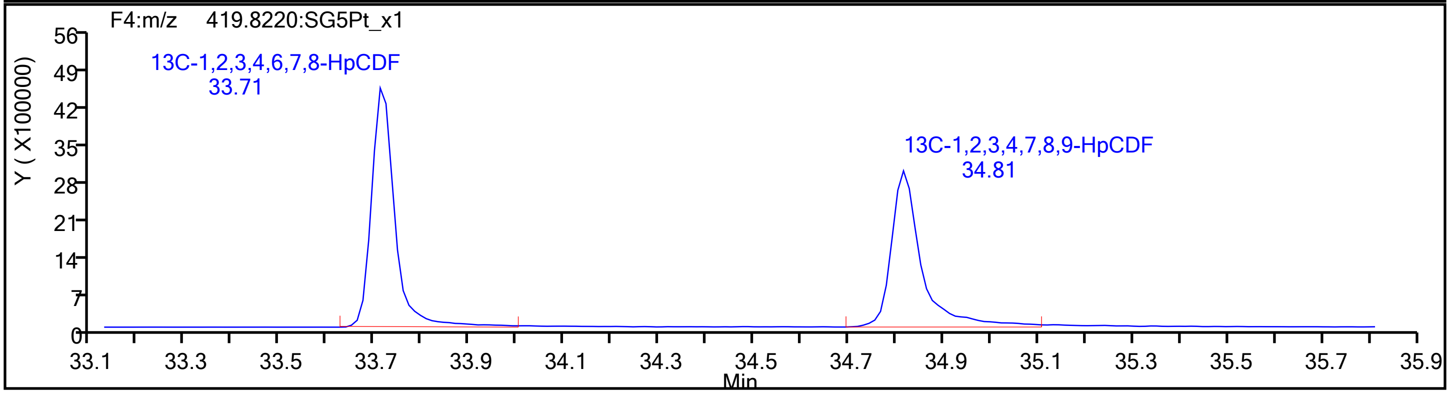

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d

Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

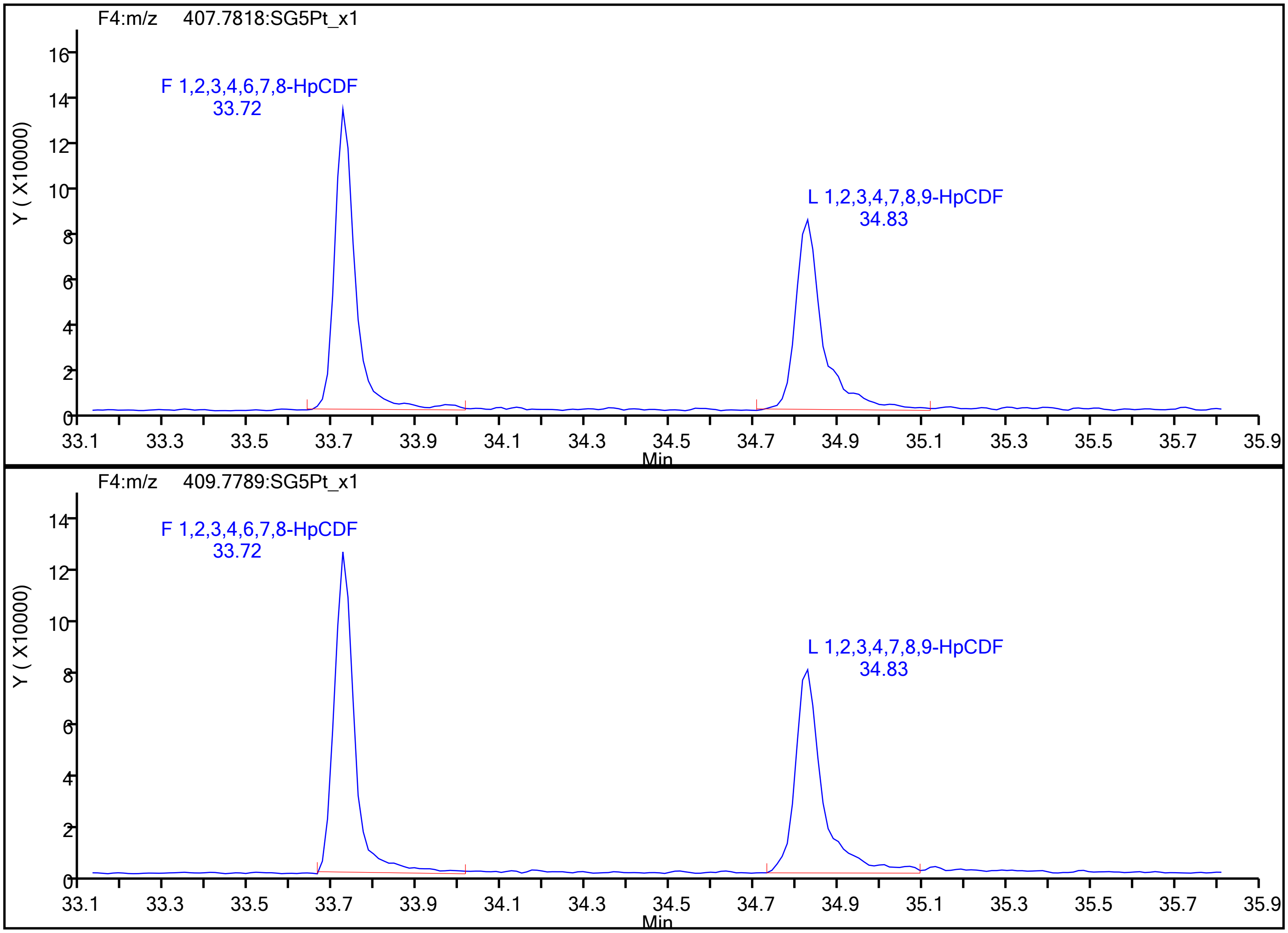

HpCDF Interference Mass

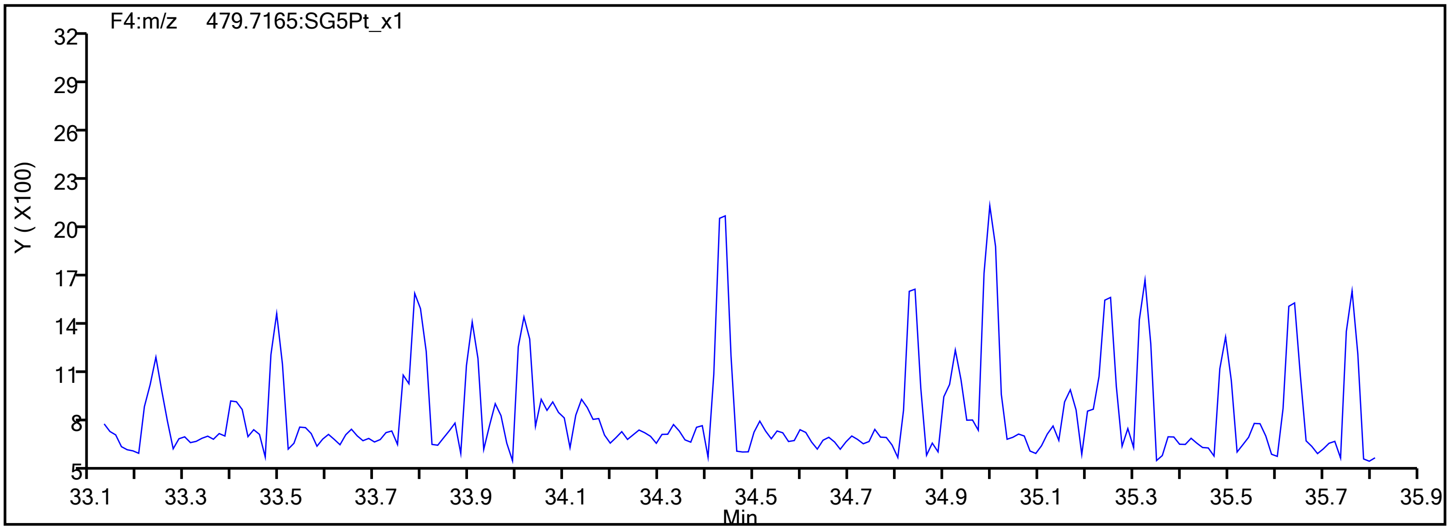

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

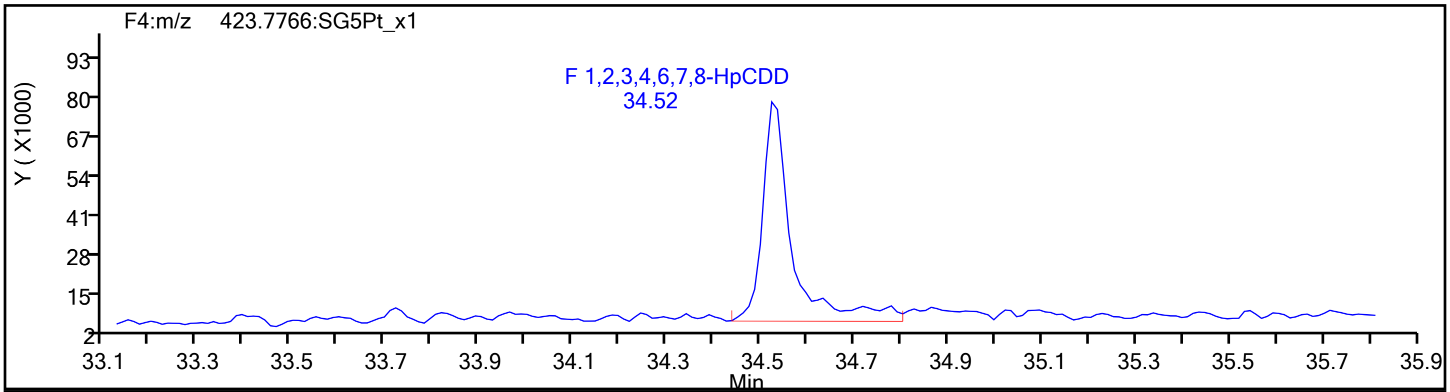

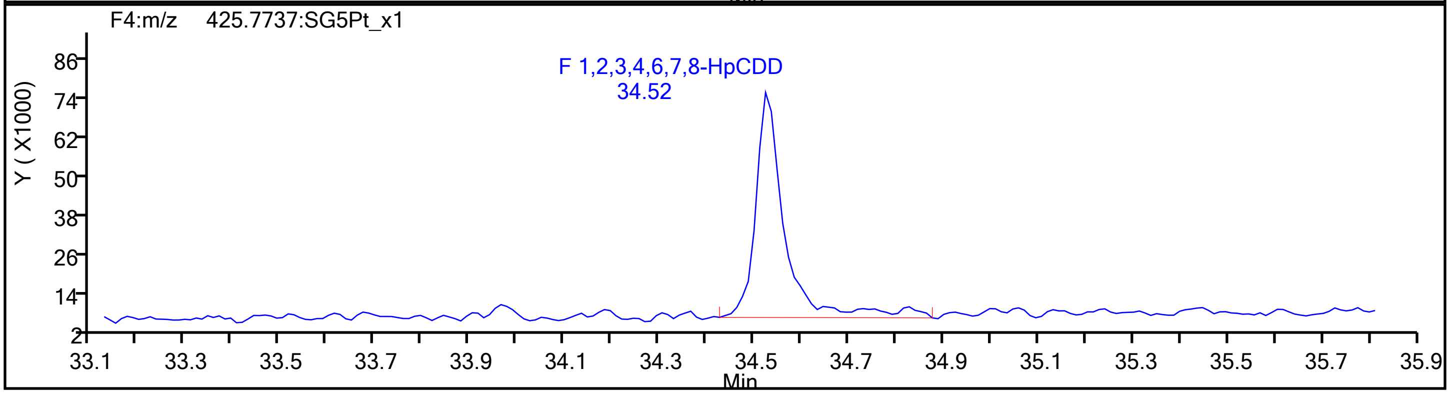

HpCDD Standards

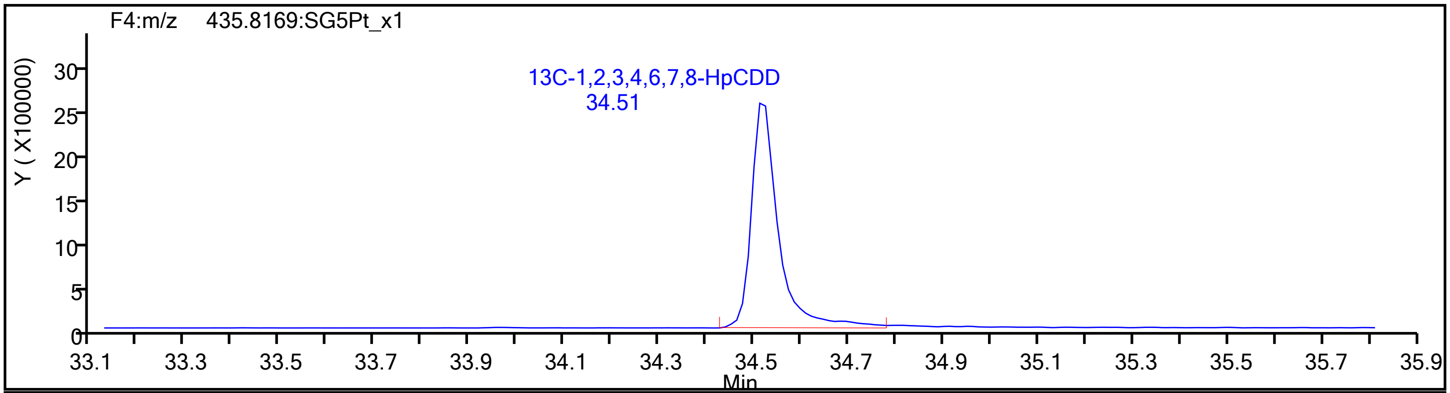

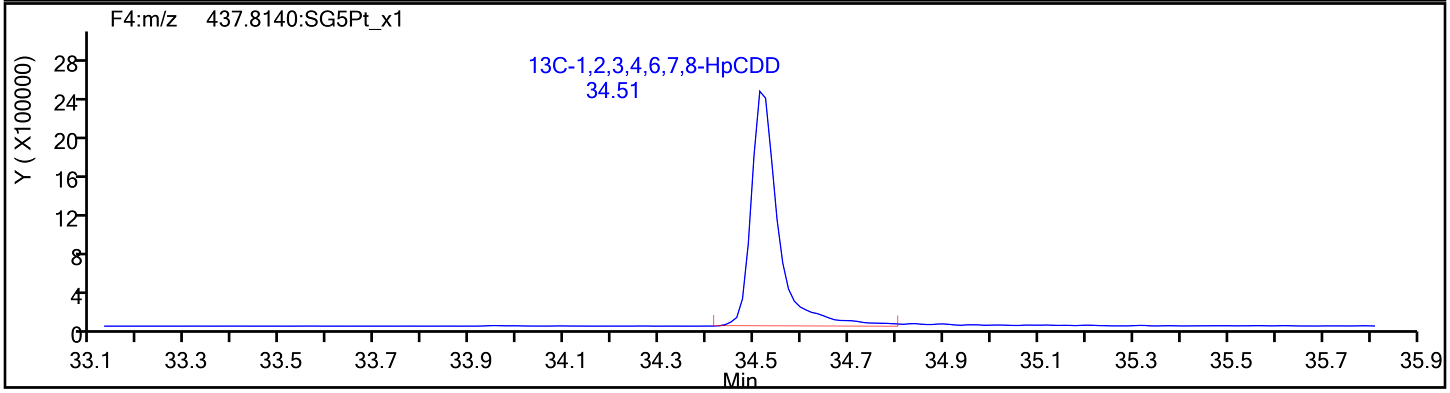

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d

Injection Date: 10-Dec-2020 18:27:33 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

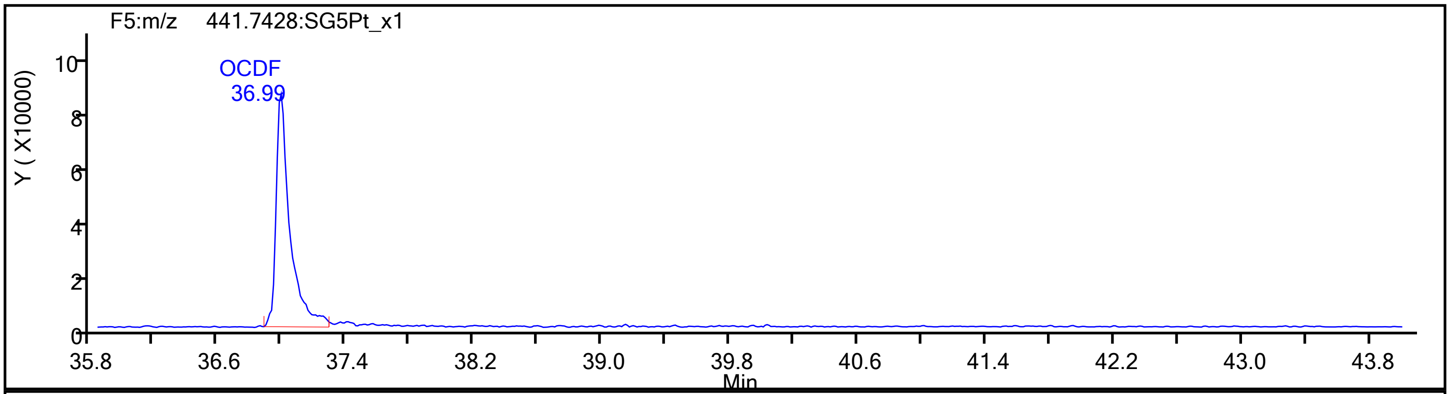

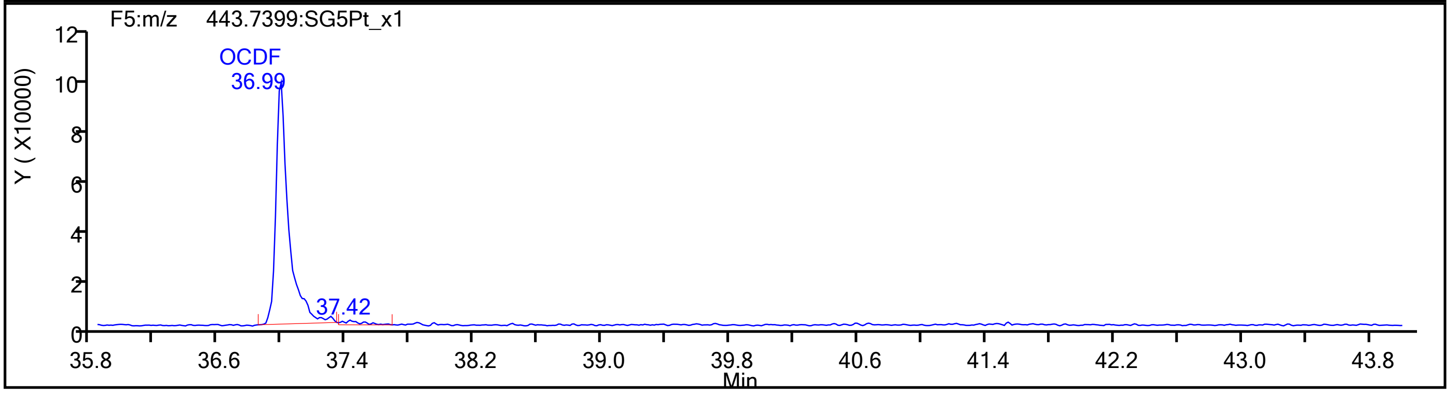

OCDF Standards

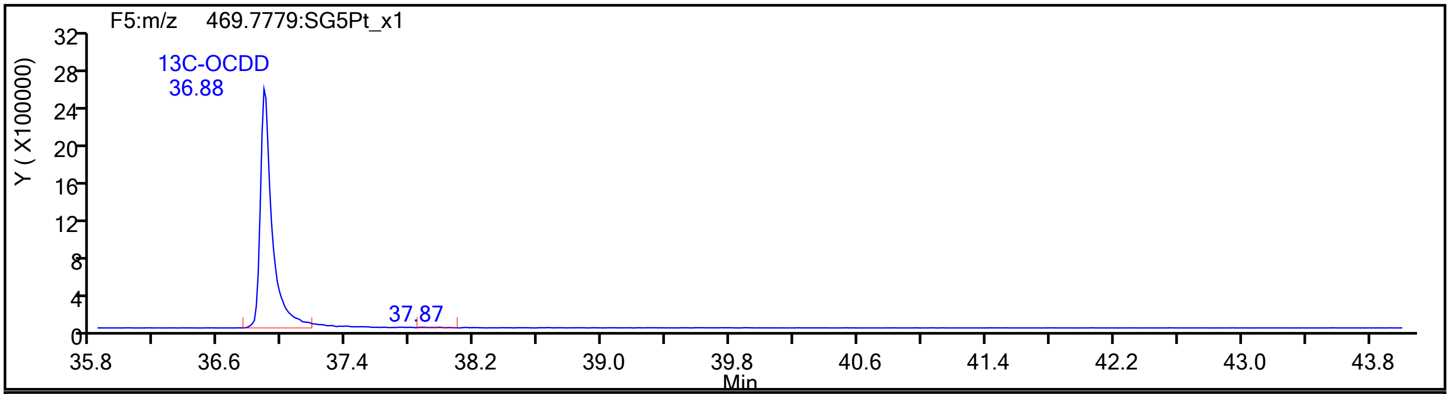

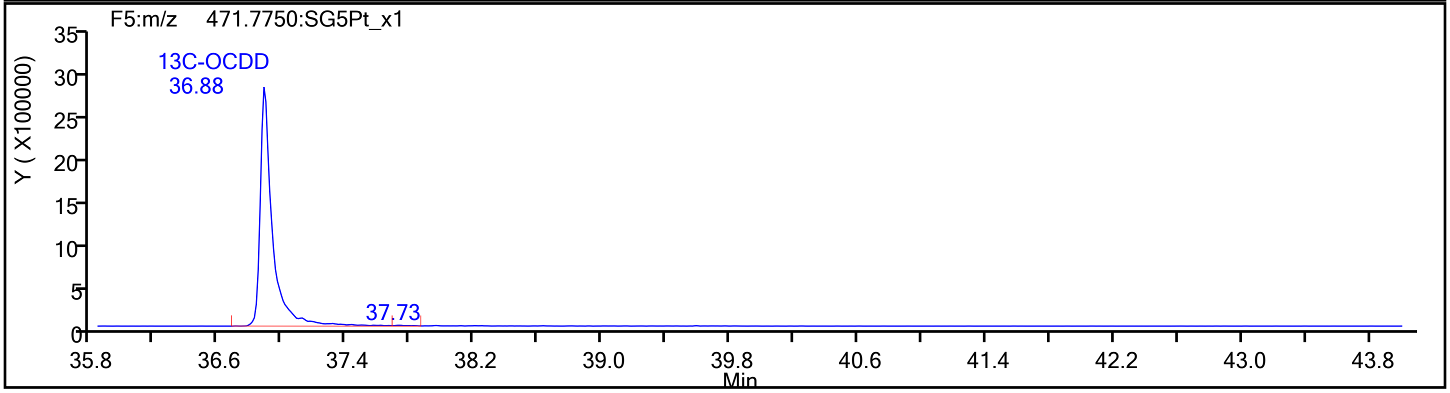

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

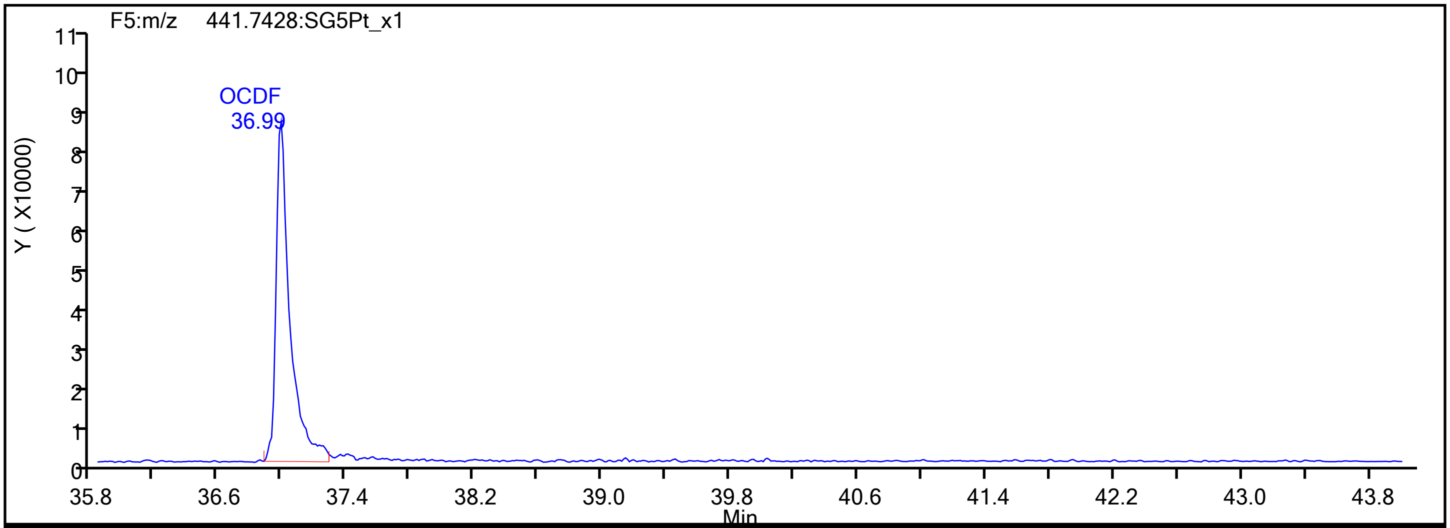

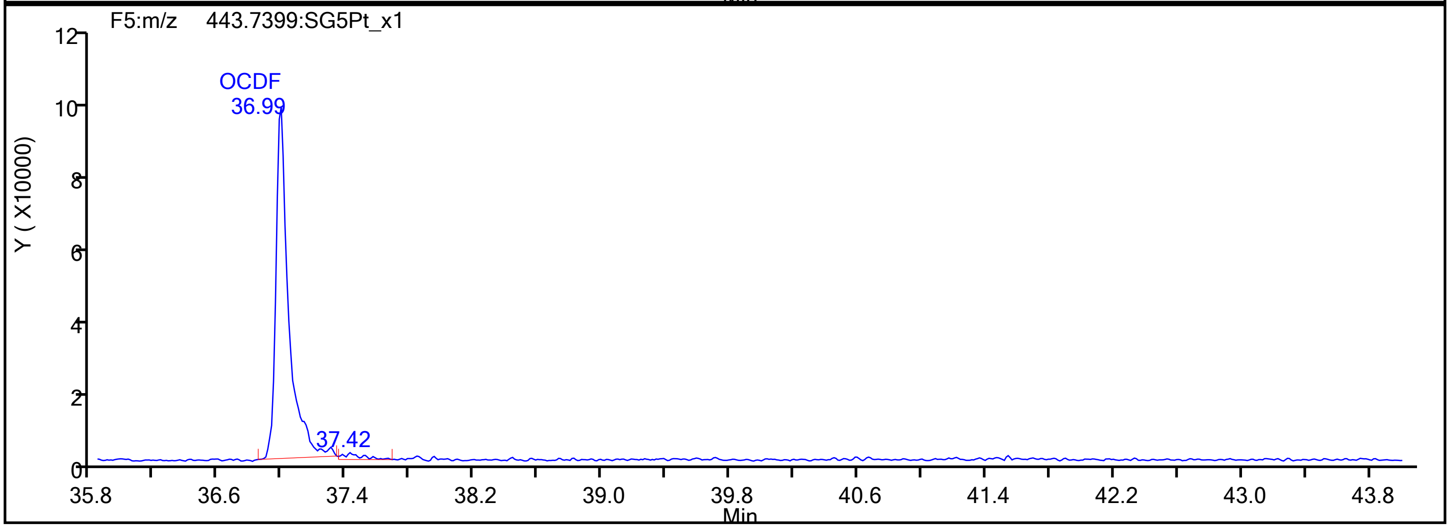

OCDF Interference Mass

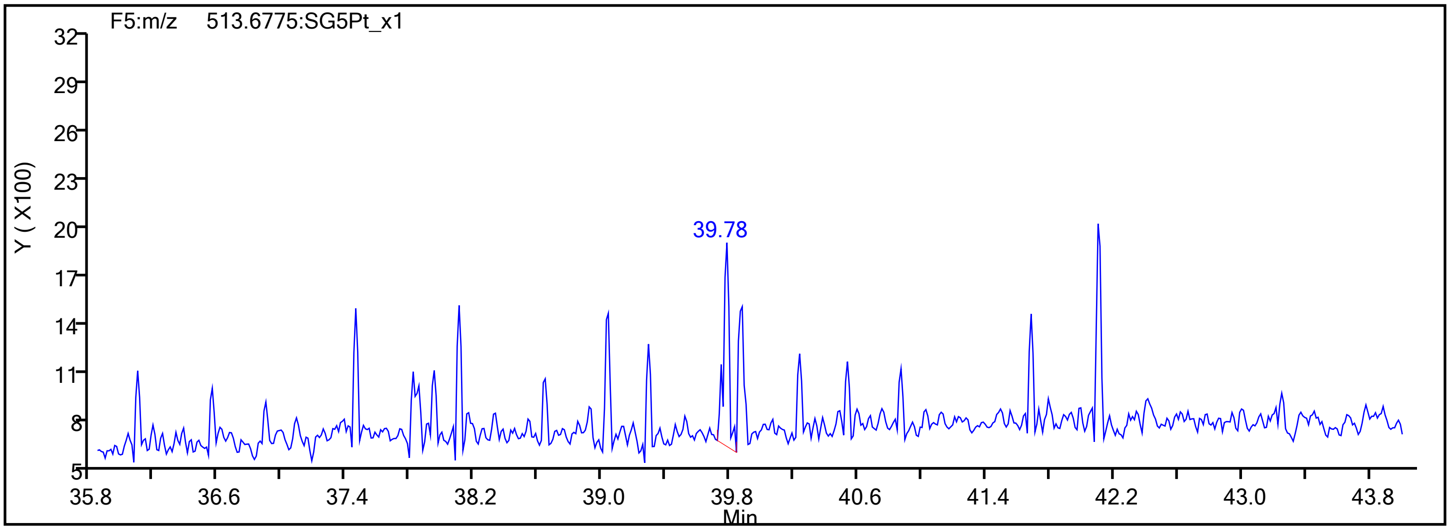

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d

Injection Date: 10-Dec-2020 18:27:33 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

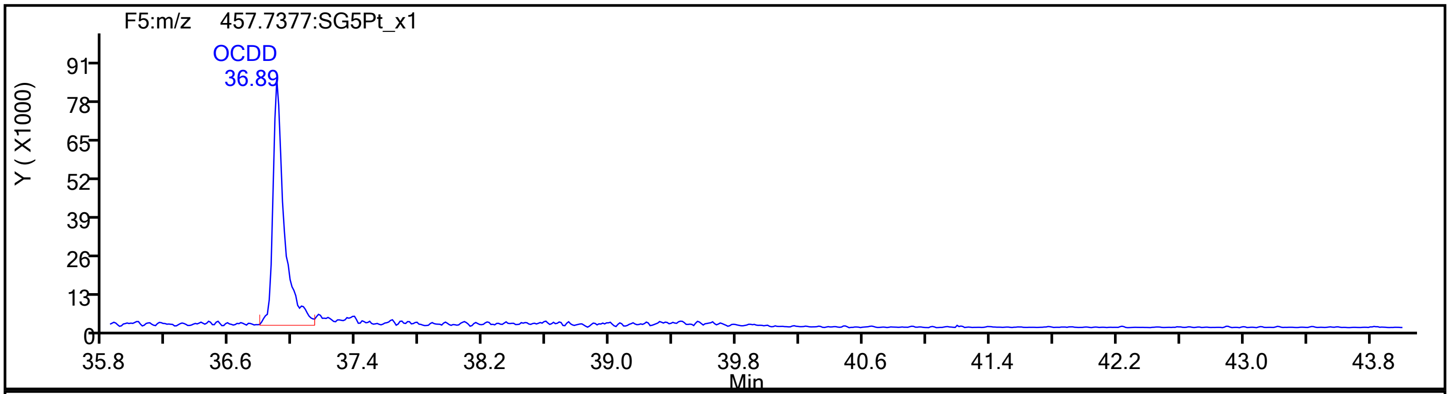

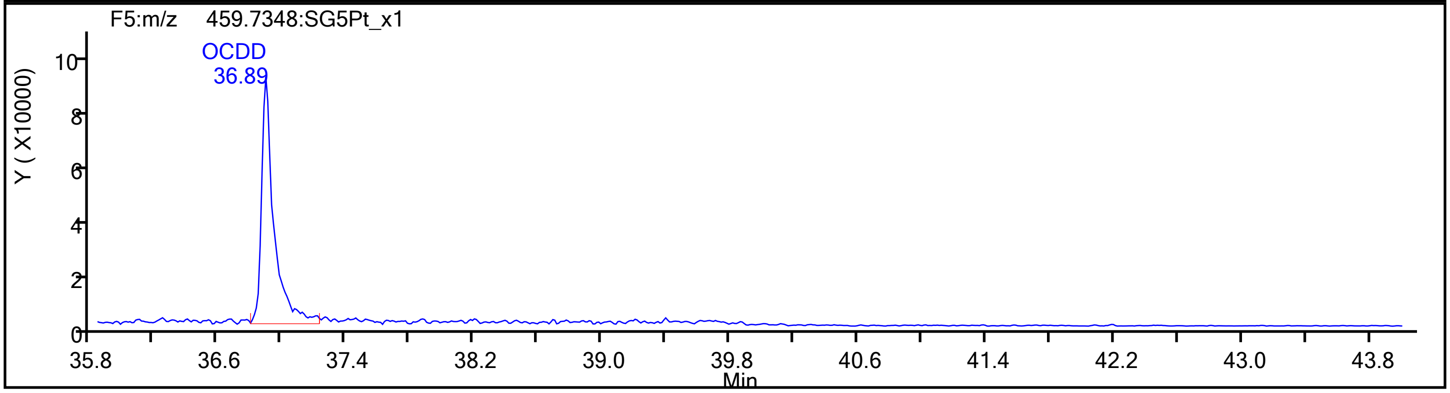

OCDD Standards

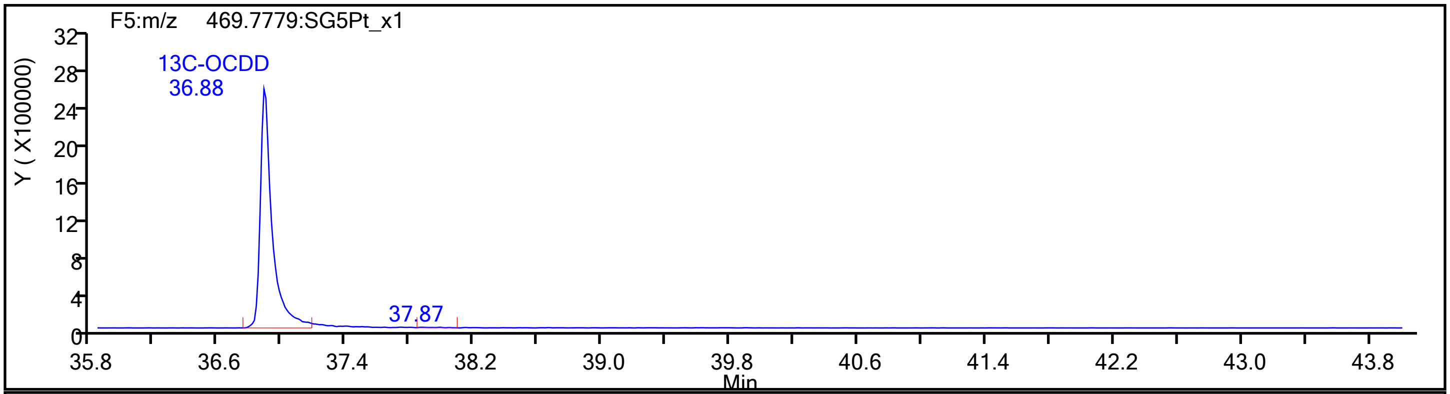

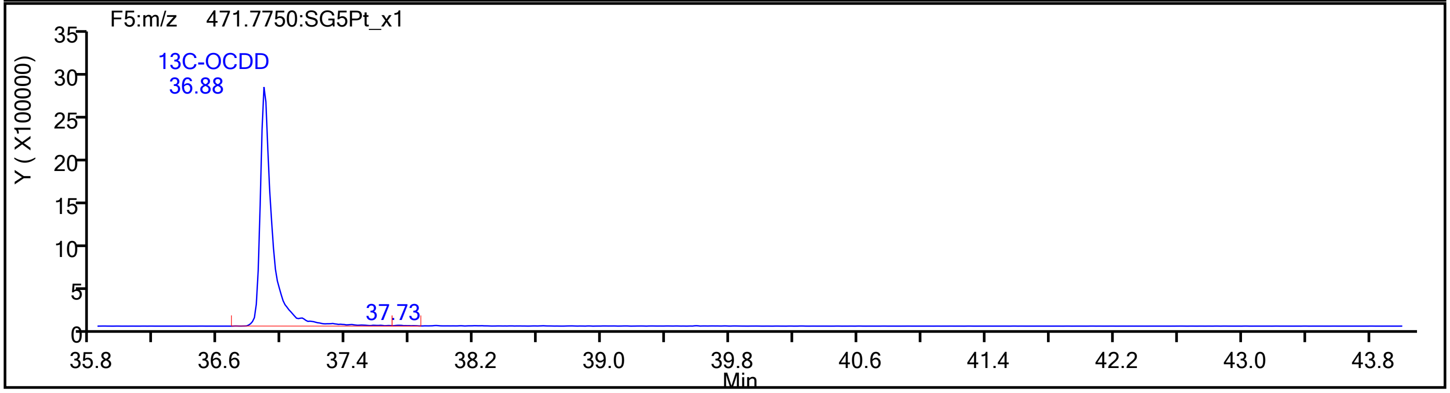

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

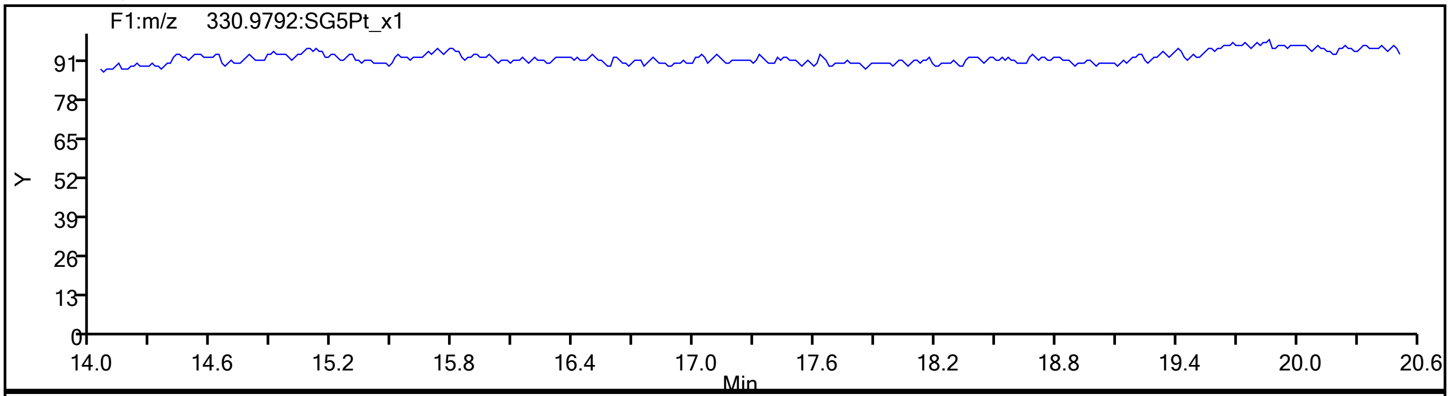

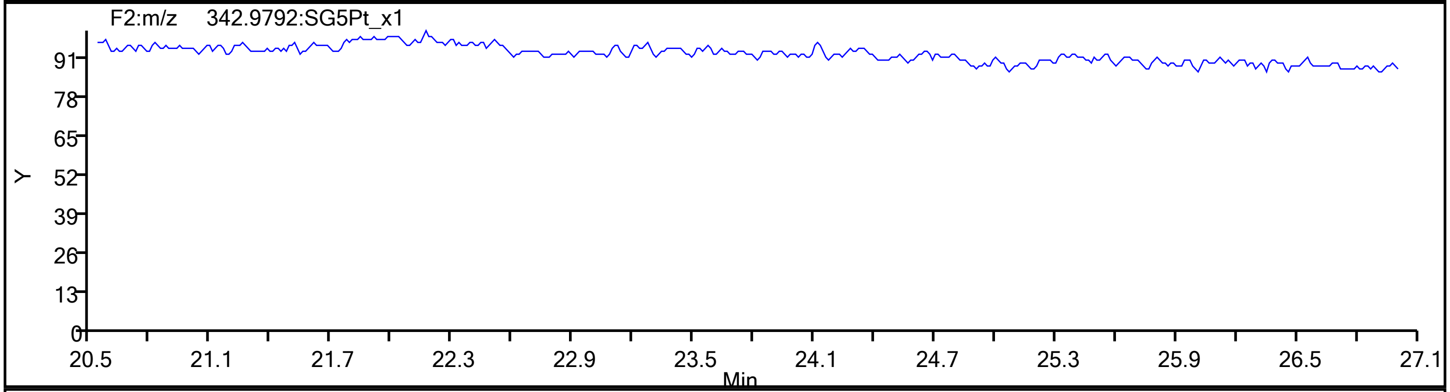

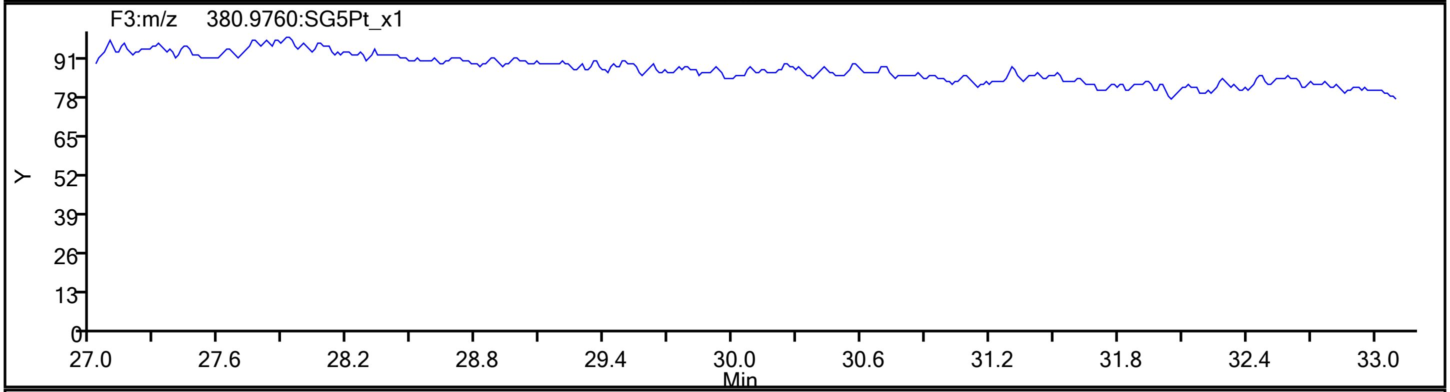

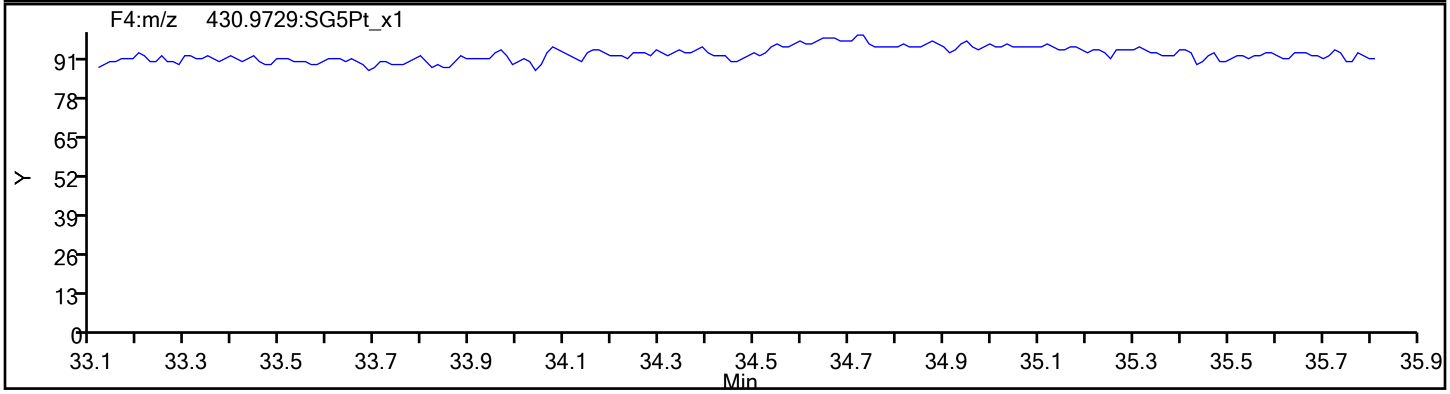

Report Date: 11-Dec-2020 10:12:29 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_3 .d		
Injection Date:	10-Dec-2020 18:27:33	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

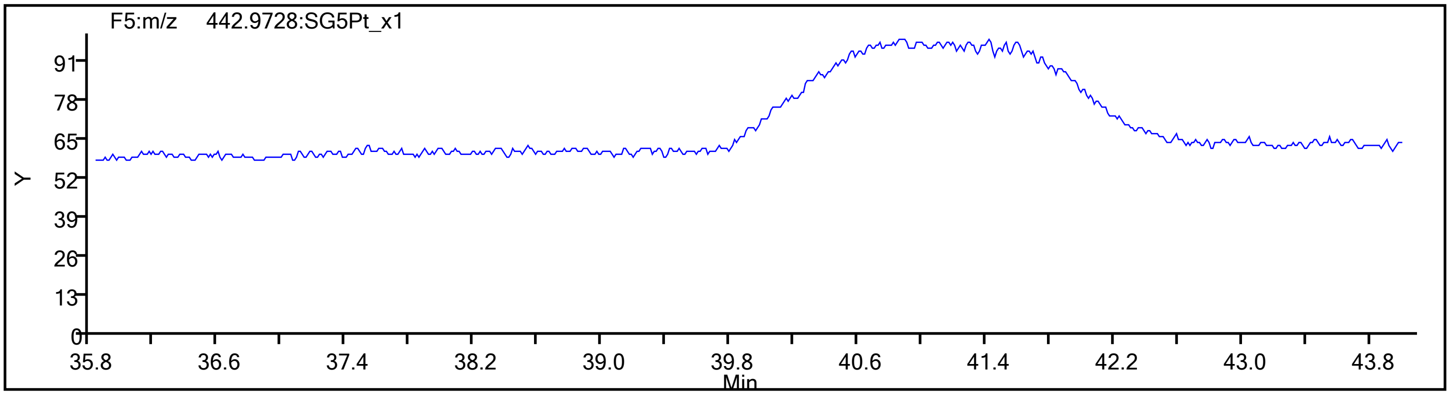

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-Dec-2020 19:12:38 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028 CS-3 HRDXNL3_00028
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:33 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: arghestanis Date: 11-Dec-2020 08:31:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	34340857	0.73	3.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	58125681	0.78	1.7120	98.9	98.9	0.2046	0.2046	98.87	
2,3,7,8-TCDF	17.219	1148759	0.79	1.0173	1.943	1.943	0.0171	0.0171	97.14	
S Total TCDF					1.943	1.943	0.0171	0.0171		
D 13C-2,3,7,8-TCDD	17.899	36710437	0.72	1.0837	98.6	98.6	0.1995	0.1995	98.64	
$ 37Cl4-2,3,7,8-TCDD	17.914	830864		1.2441	1.945	1.945	0.009488	0.009488	97.24	
2,3,7,8-TCDD	17.914	837764	0.82	1.1543	1.977	1.977	0.0308	0.0308	98.85	
S Total TCDD					1.977	1.977	0.0308	0.0308		
D 13C-1,2,3,7,8-PeCDF	22.165	45778550	1.61	1.3633	97.8	97.8	0.2755	0.2755	97.78	
1,2,3,7,8-PeCDF	22.192	4554491	1.61	1.0268	9.689	9.689	0.0556	0.0556	96.89	
D 13C-2,3,4,7,8-PeCDF	23.501	43210454	1.59	1.2714	99.0	99.0	0.2954	0.2954	98.97	
2,3,4,7,8-PeCDF	23.528	4418208	1.62	1.0730	9.529	9.529	0.0633	0.0633	95.29	
S Total PeCDF					19.2	19.2	0.0595	0.0595		
D 13C-1,2,3,7,8-PeCDD	24.224	28478085	1.63	0.8534	97.2	97.2	0.1518	0.1518	97.17	
1,2,3,7,8-PeCDD	24.237	3045240	1.55	1.0748	9.949	9.949	0.0679	0.0679	99.49	
S Total PeCDD					9.949	9.949	0.0679	0.0679		
D 13C-1,2,3,4,7,8-HxCDF	30.360	30853659	0.52	1.1403	95.9	95.9	0.6589	0.6589	95.88	
1,2,3,4,7,8-HxCDF	30.373	3630441	1.28	1.2385	9.501	9.501	0.1082	0.1082	95.01	
D 13C-1,2,3,6,7,8-HxCDF	30.546	34794172	0.51	1.2841	96.0	96.0	0.5851	0.5851	96.01	
1,2,3,6,7,8-HxCDF	30.573	4085775	1.25	1.1900	9.868	9.868	0.1004	0.1004	98.68	
D 13C-2,3,4,6,7,8-HxCDF	31.411	32608317	0.51	1.1825	97.7	97.7	0.6354	0.6354	97.71	
2,3,4,6,7,8-HxCDF	31.425	3875381	1.29	1.2132	9.796	9.796	0.0803	0.0803	97.96	
D 13C-1,2,3,7,8,9-HxCDF	32.236	29546725	0.52	1.0832	96.7	96.7	0.6936	0.6936	96.65	
1,2,3,7,8,9-HxCDF	32.250	3603238	1.31	1.2266	9.942	9.942	0.0916	0.0916	99.42	
S Total HxCDF					39.1	39.1	0.0951	0.0951		
* 13C-1,2,3,7,8,9-HxCDD	32.050	28222301	1.27	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.598	21255978	1.26	0.7757	97.1	97.1	0.4388	0.4388	97.10	
1,2,3,4,7,8-HxCDD	31.611	2318218	1.22	1.1618	9.387	9.387	0.1362	0.1362	93.87	
D 13C-1,2,3,6,7,8-HxCDD	31.704	27574060	1.28	0.9997	97.7	97.7	0.3405	0.3405	97.74	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.718	2865328	1.28	1.0320	10.1	10.1	0.1363	0.1363	101	
1,2,3,7,8,9-HxCDD	32.063	3016333	1.26	1.2407	9.958	9.958	0.1201	0.1201	99.58	
S Total HxCDD					29.4	29.4	0.1309	0.1309		
D 13C-1,2,3,4,6,7,8-HpCDF	33.697	23318966	0.44	0.8529	96.9	96.9	1.357	1.357	96.87	
1,2,3,4,6,7,8-HpCDF	33.709	3346386	1.06	1.4619	9.817	9.817	0.1283	0.1283	98.17	
D 13C-1,2,3,4,7,8,9-HpCDF	34.803	21059921	0.43	0.7499	99.5	99.5	1.543	1.543	99.51	
1,2,3,4,7,8,9-HpCDF	34.803	2837744	1.03	1.4262	9.448	9.448	0.1948	0.1948	94.48	
S Total HpCDF					19.3	19.3	0.1616	0.1616		
D 13C-1,2,3,4,6,7,8-HpCDD	34.499	21311835	1.04	0.7851	96.2	96.2	0.5694	0.5694	96.18	
1,2,3,4,6,7,8-HpCDD	34.511	2352427	1.01	1.1022	10.0	10.0	0.2873	0.2873	100	
S Total HpCDD					10.0	10.0	0.2873	0.2873		
D 13C-OCDD	36.866	29768734	0.91	0.5610	188.0	188.0	0.2223	0.2223	94.01	
OCDF	36.962	4347139	0.94	1.4855	19.7	19.7	0.0588	0.0588	98.30	
OCDD	36.878	3394111	0.87	1.1570	19.7	19.7	0.1548	0.1548	98.55	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-Dec-2020 19:12:38 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028 CS-3 HRDXNL3_00028
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:33 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: arghestanis Date: 11-Dec-2020 08:31:57

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.708	0		14491979	3709112	4198	10495	884		
333.9339	17.702	17.708	0		19848878	5075916	3401	8502	1492	0.73(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.206	0	0.972	25474370	6393633	7300	18250	876		
317.9389	17.203	17.206	0	0.972	32651311	8051427	5006	12515	1608	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.222	0	1.001	508216	122470	357	892	343		
305.8987	17.219	17.222	0	1.001	640543	155169	651	1627	238	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	15353717	3784397	4198	10495	901		
333.9339	17.899	17.905	0	1.011	21356720	5194631	3401	8502	1527	0.72(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	830864	183408	415	1037	442		
2,3,7,8-TCDD											
319.8965	17.914	17.926	-1	1.001	376287	89178	768	1920	116		
321.8936	17.914	17.926	-1	1.001	461477	108824	511	1277	213	0.82(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.165	22.173	0	1.252	28258809	4983433	7911	19777	630		
353.8970	22.165	22.173	0	1.252	17519741	3128104	5288	13220	592	1.61(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.192	22.200	0	1.001	2810387	498514	969	2422	514		
341.8567	22.192	22.200	0	1.001	1744104	302805	884	2210	343	1.61(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.501	23.509	0	1.328	26501533	4209219	7911	19777	532		
353.8970	23.501	23.509	0	1.328	16708921	2605847	5288	13220	493	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.528	23.534	0	1.001	2729137	420949	969	2422	434		
341.8567	23.528	23.534	0	1.001	1689071	263898	884	2210	299	1.62(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.224	24.226	0	1.368	17647169	2704002	2451	6127	1103		
369.8919	24.224	24.226	0	1.368	10830916	1616315	2101	5252	769	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.237	24.254	-1	1.001	1850506	254410	775	1937	328		
357.8516	24.251	24.254	0	1.001	1194734	179101	487	1217	368	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.360	30.362	0	0.947	10539103	1860064	6745	16862	276		
385.8610	30.360	30.362	0	0.947	20314556	3512920	12511	31277	281	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.373	30.376	0	1.000	2037868	356812	1572	3930	227		
375.8178	30.373	30.376	0	1.000	1592573	271752	1308	3270	208	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.546	30.549	0	0.953	11685055	2013622	6745	16862	299		
385.8610	30.546	30.549	0	0.953	23109117	4014516	12511	31277	321	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.573	30.575	0	1.001	2272442	391006	1572	3930	249		
375.8178	30.573	30.575	0	1.001	1813333	302413	1308	3270	231	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.411	31.411	0	0.980	10973495	2494410	6745	16862	370		
385.8610	31.411	31.411	0	0.980	21634822	4897522	12511	31277	391	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.425	31.430	0	1.000	2181808	482769	1572	3930	307		
375.8178	31.425	31.430	0	1.000	1693573	368184	1308	3270	281	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.236	32.242	0	1.006	10139615	2184181	6745	16862	324		
385.8610	32.236	32.242	0	1.006	19407110	4224353	12511	31277	338	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.250	32.255	0	1.000	2046153	432188	1572	3930	275		
375.8178	32.250	32.255	0	1.000	1557085	330330	1308	3270	253	1.31(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.050	32.050	0		15816701	3597284	4795	11987	750		
403.8529	32.050	32.050	0		12405600	2809854	3928	9820	715	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.598	31.603	0	0.986	11867914	3150915	4795	11987	657		
403.8529	31.598	31.603	0	0.986	9388064	2486601	3928	9820	633	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.611	31.619	0	1.000	1274215	336881	1945	4862	173		
391.8127	31.611	31.619	0	1.000	1044003	274525	1624	4060	169	1.22(1.05-1.43)	

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.704	31.709	0	0.989	15475521	3586589	4795	11987	748		
403.8529	31.704	31.709	0	0.989	12098539	2754259	3928	9820	701	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.718	31.725	0	1.000	1607627	348158	1945	4862	179		
391.8127	31.718	31.725	0	1.000	1257701	280700	1624	4060	173	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.063	32.063	0	1.015	1680930	374375	1945	4862	192		
391.8127	32.063	32.063	0	1.015	1335403	292459	1624	4060	180	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.697	33.695	0	1.051	7129264	2043080	9410	23525	217		
419.8220	33.697	33.695	0	1.051	16189702	4633063	20252	50630	229	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.709	33.707	0	1.000	1718650	474532	2587	6467	183		
409.7789	33.709	33.707	0	1.000	1627736	439935	2421	6052	182	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.803	34.798	0	1.086	6322205	1337507	9410	23525	142		
419.8220	34.803	34.798	0	1.086	14737716	3167701	20252	50630	156	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.803	34.805	0	1.000	1442012	307153	2587	6467	119		
409.7789	34.803	34.805	0	1.000	1395732	300115	2421	6052	124	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.499	34.497	0	1.076	10865231	2681196	5613	14032	478		
437.8140	34.499	34.497	0	1.076	10446604	2588121	5844	14610	443	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.511	34.509	0	1.000	1179424	281771	3547	8867	79		
425.7737	34.511	34.509	0	1.000	1173003	273535	3127	7817	87	1.01(0.88-1.20)	
13C-OCDD											
469.7779	36.866	36.861	0	1.150	14207960	2681247	1631	4077	1644		
471.7750	36.866	36.861	0	1.150	15560774	2963516	1565	3912	1894	0.91(0.76-1.02)	
OCDF											
441.7428	36.962	36.962	0	1.003	2104552	354357	422	1055	840		
443.7399	36.962	36.962	0	1.003	2242587	380443	564	1410	675	0.94(0.76-1.02)	
OCDD											
457.7377	36.878	36.868	1	1.000	1580142	286376	1041	2602	275		
459.7348	36.866	36.868	0	1.000	1813969	321657	981	2452	328	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

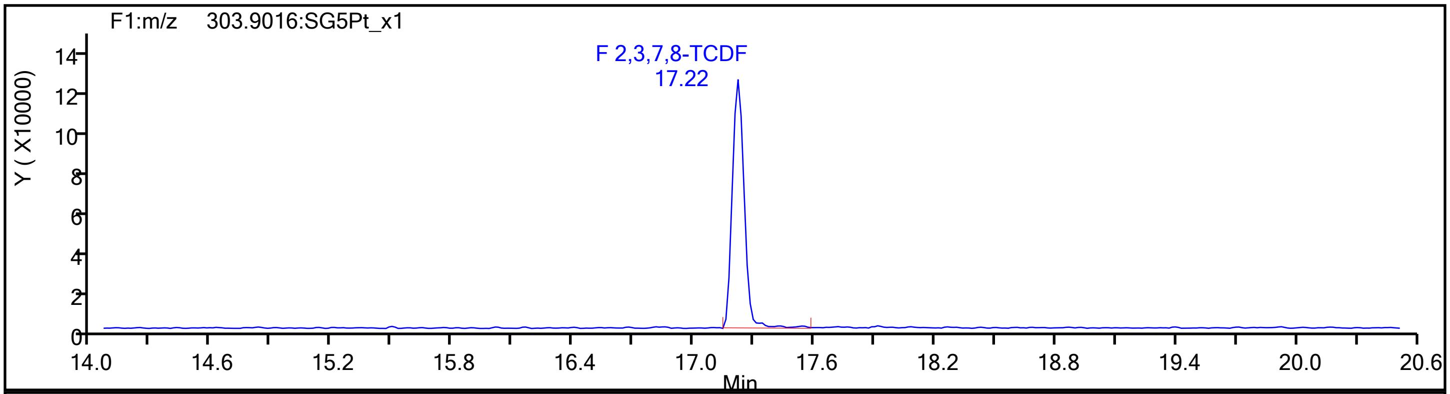

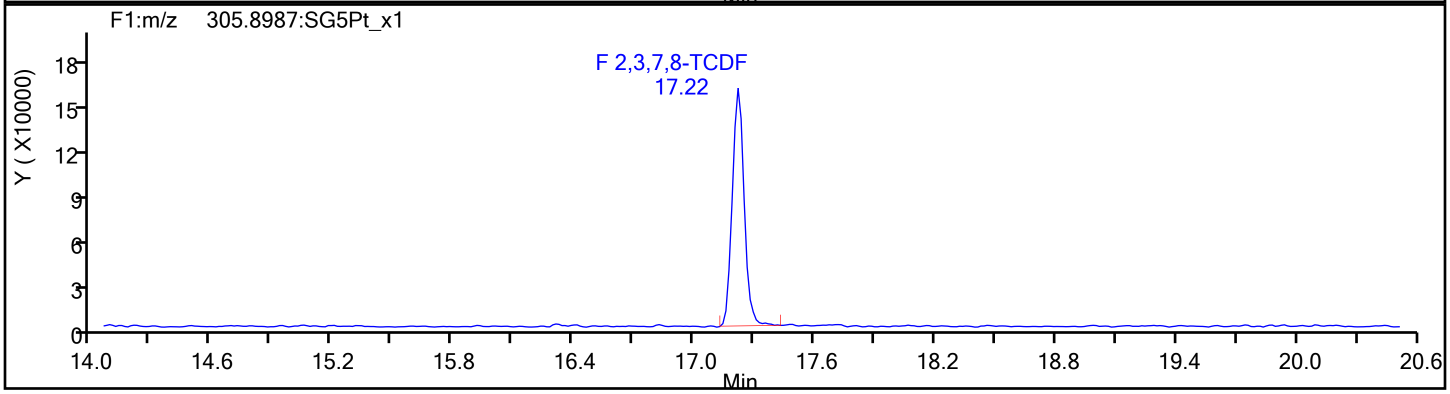

TCDF Standards

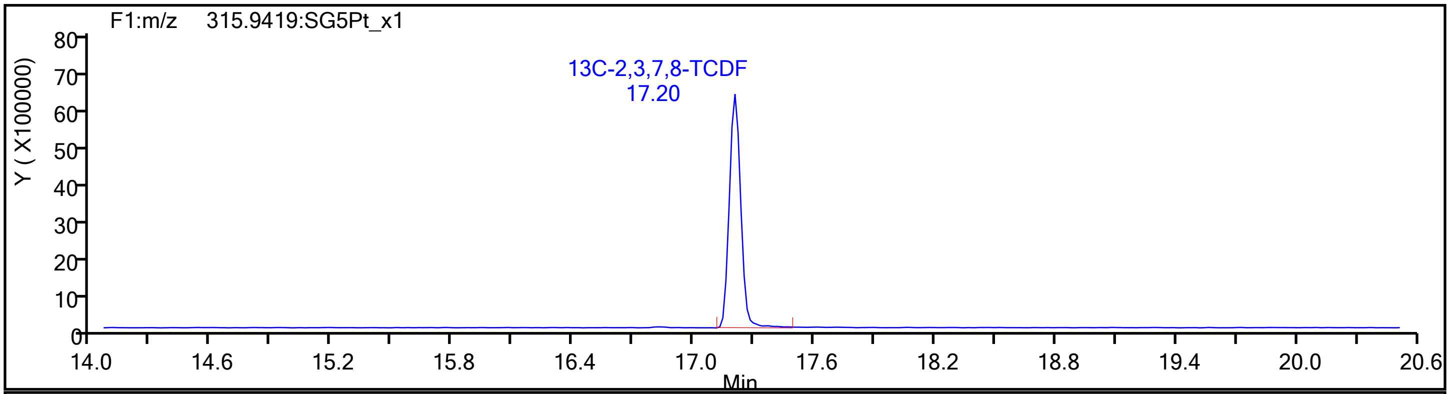

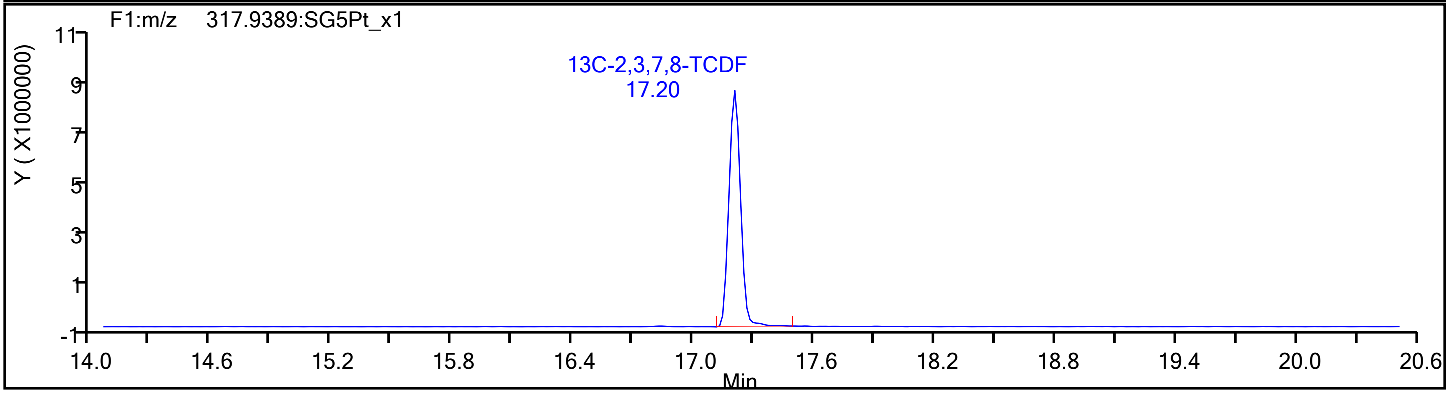

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

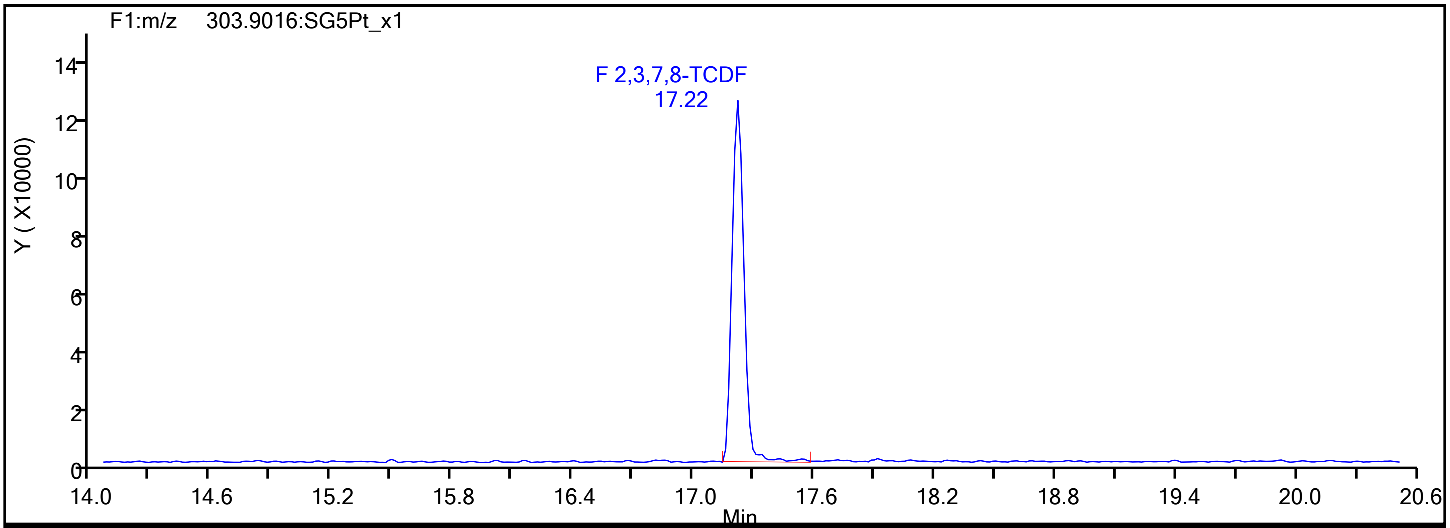

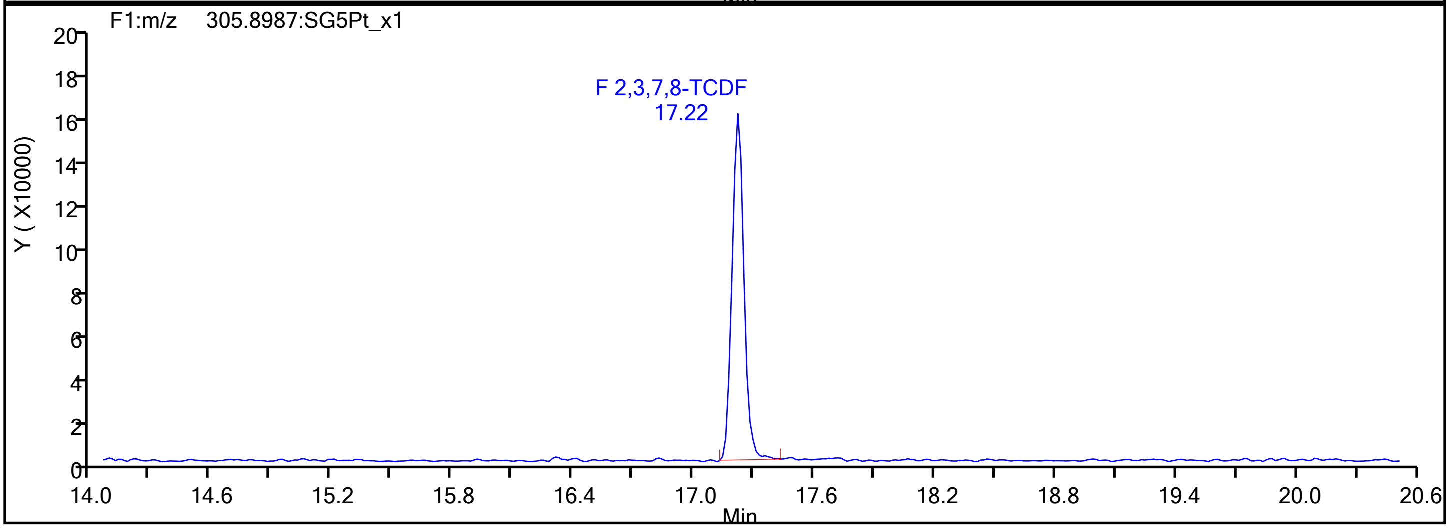

TCDF Interference Mass

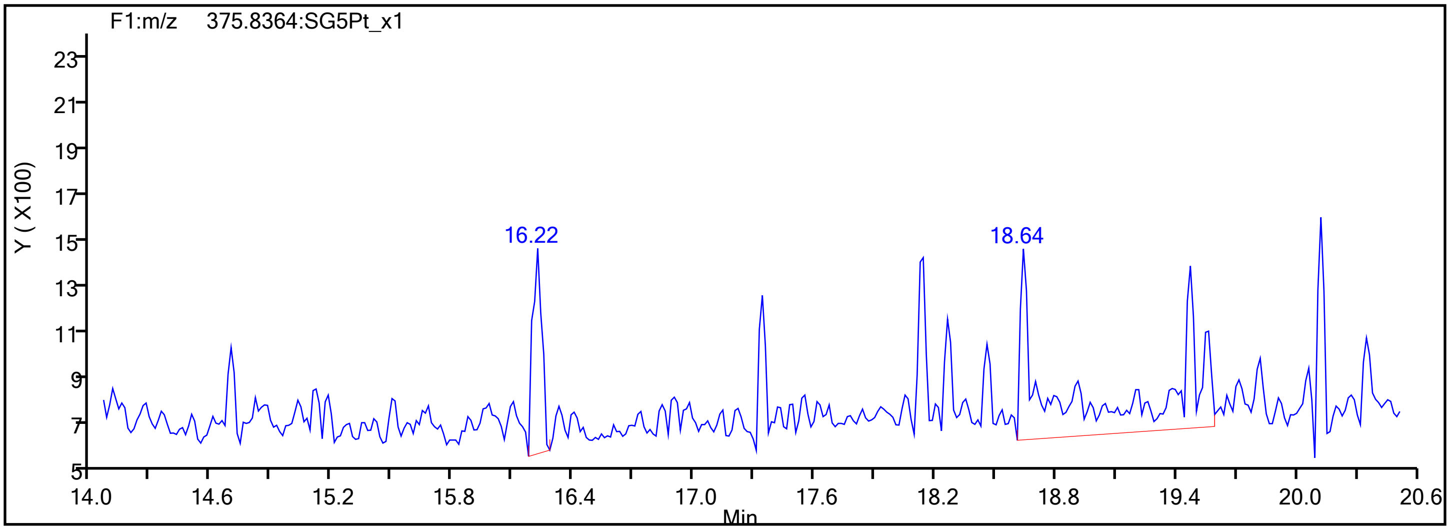

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

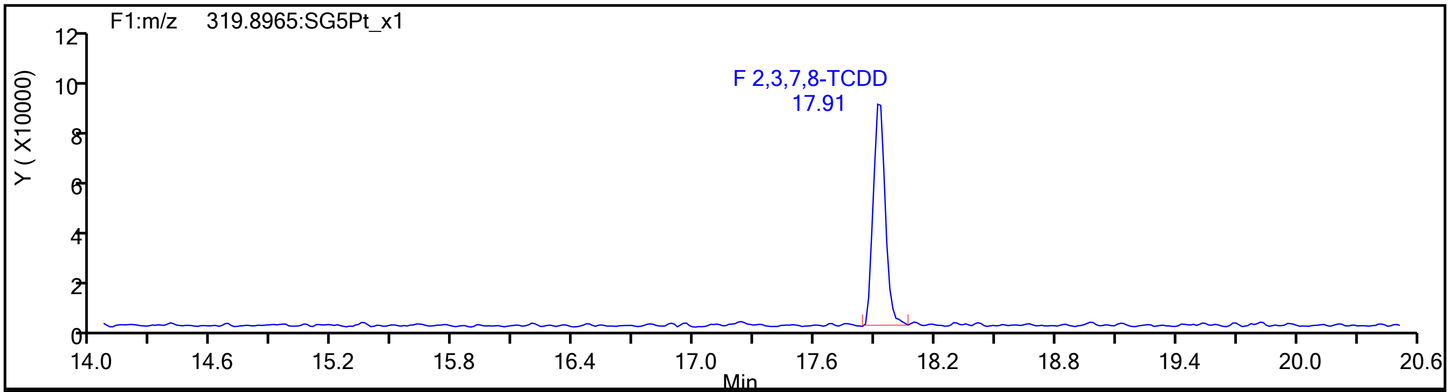

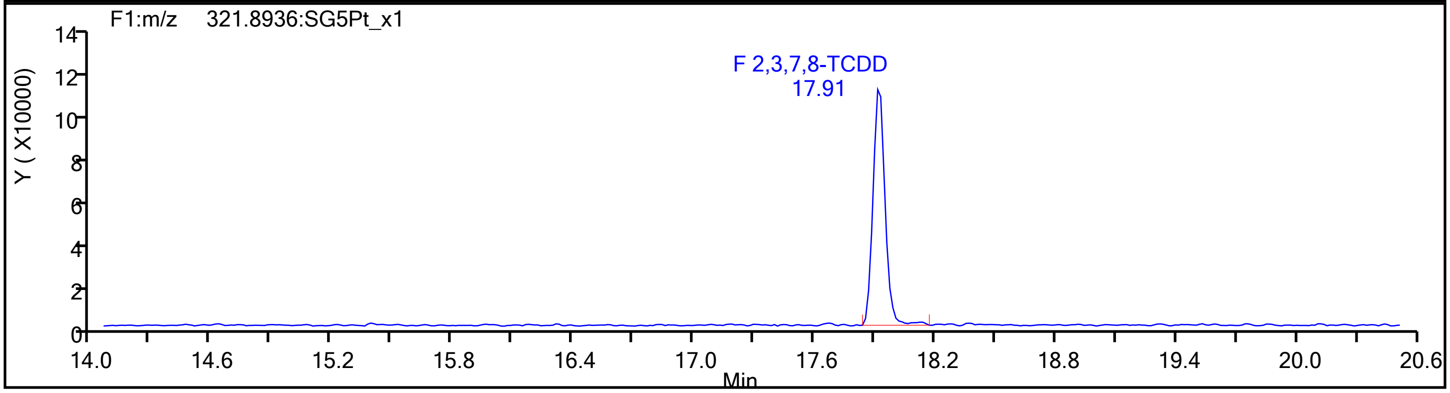

TCDD Standards

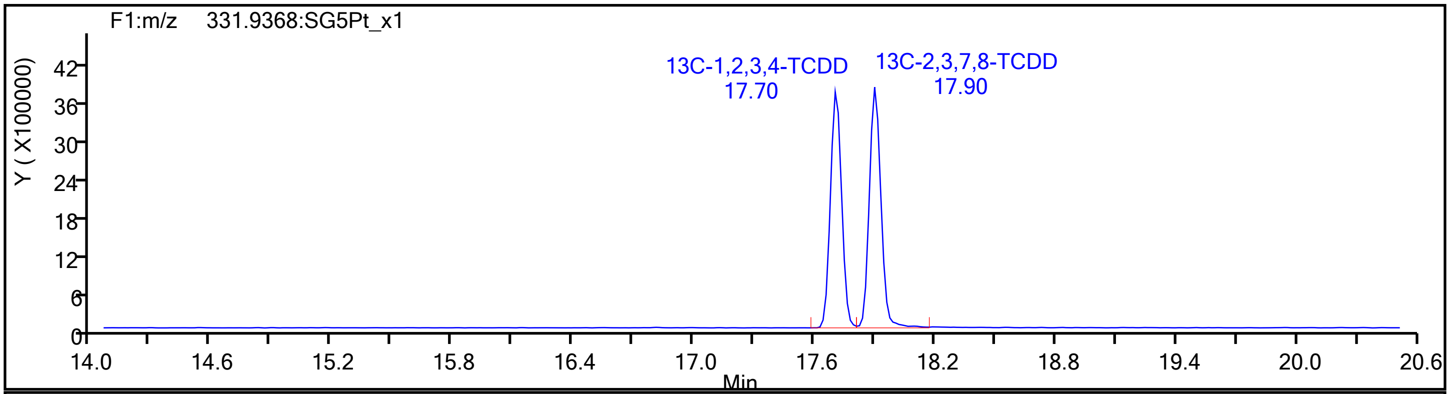

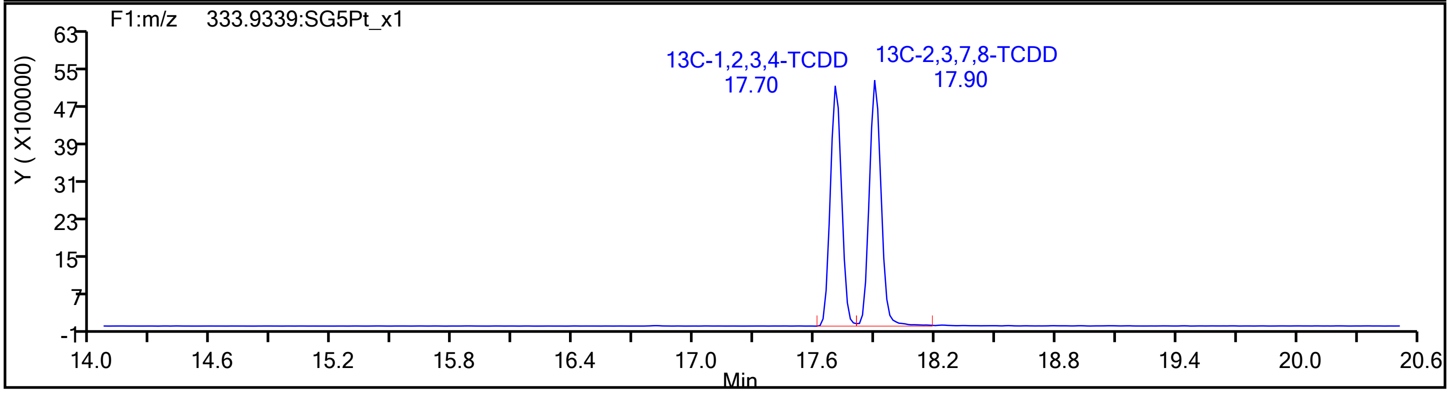

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

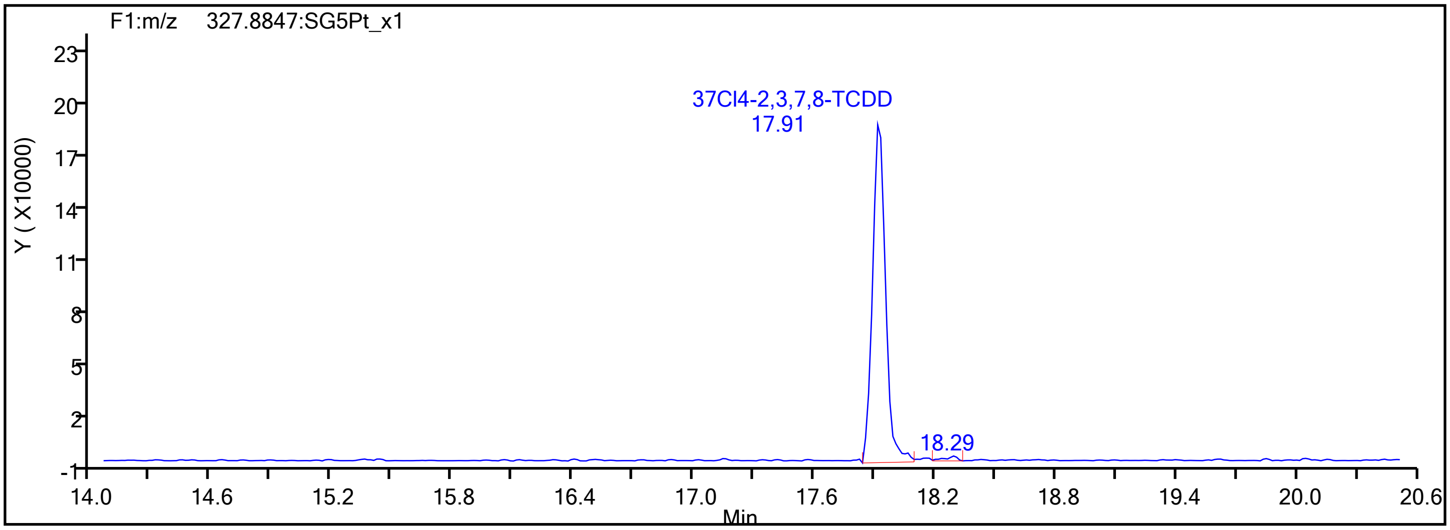

37Cl4-TCDD Standards

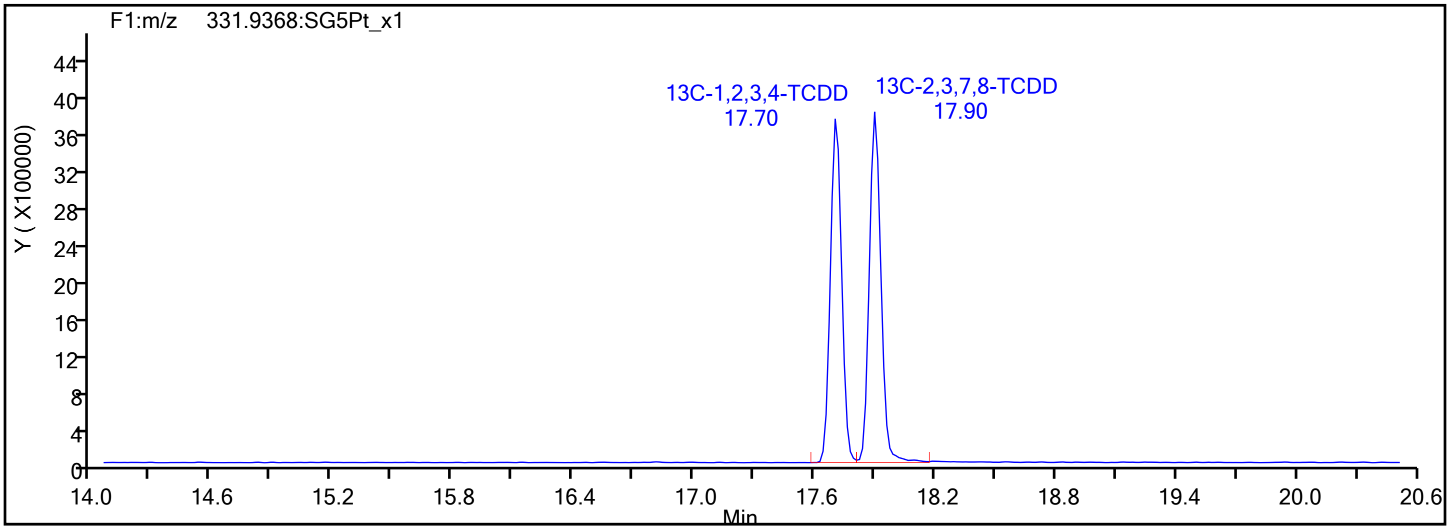

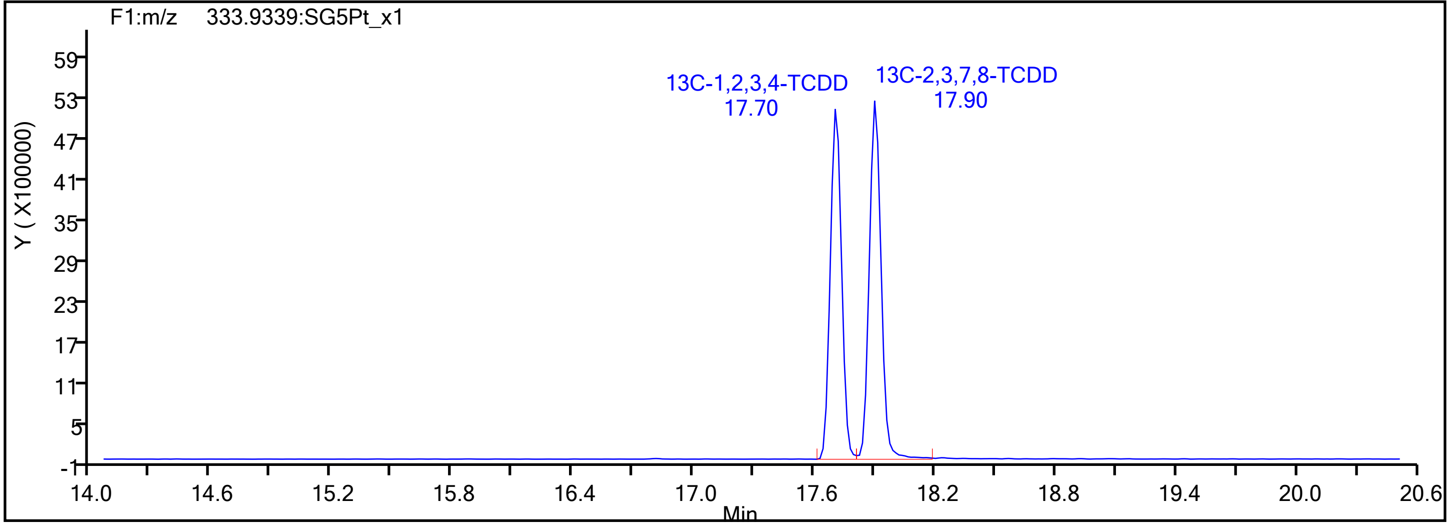

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Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

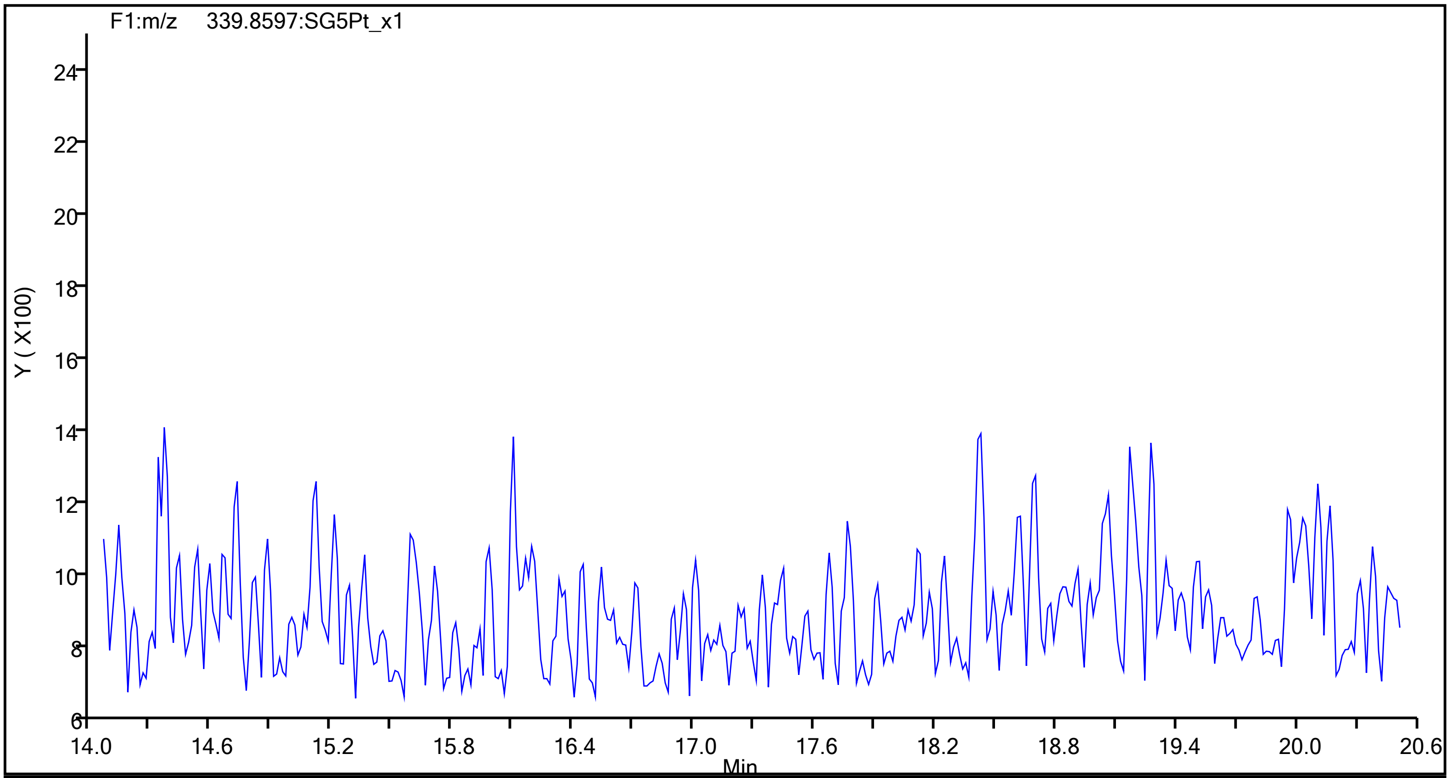

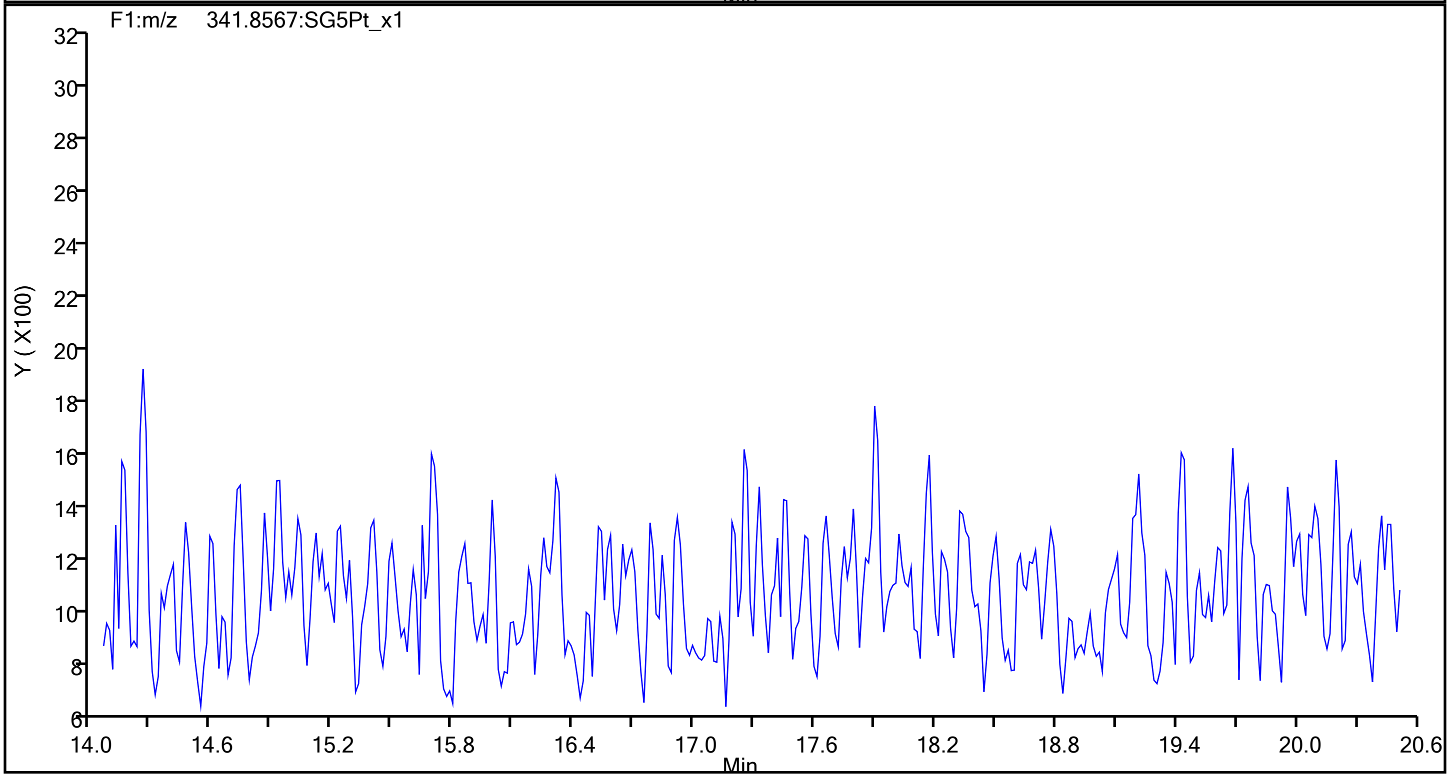

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

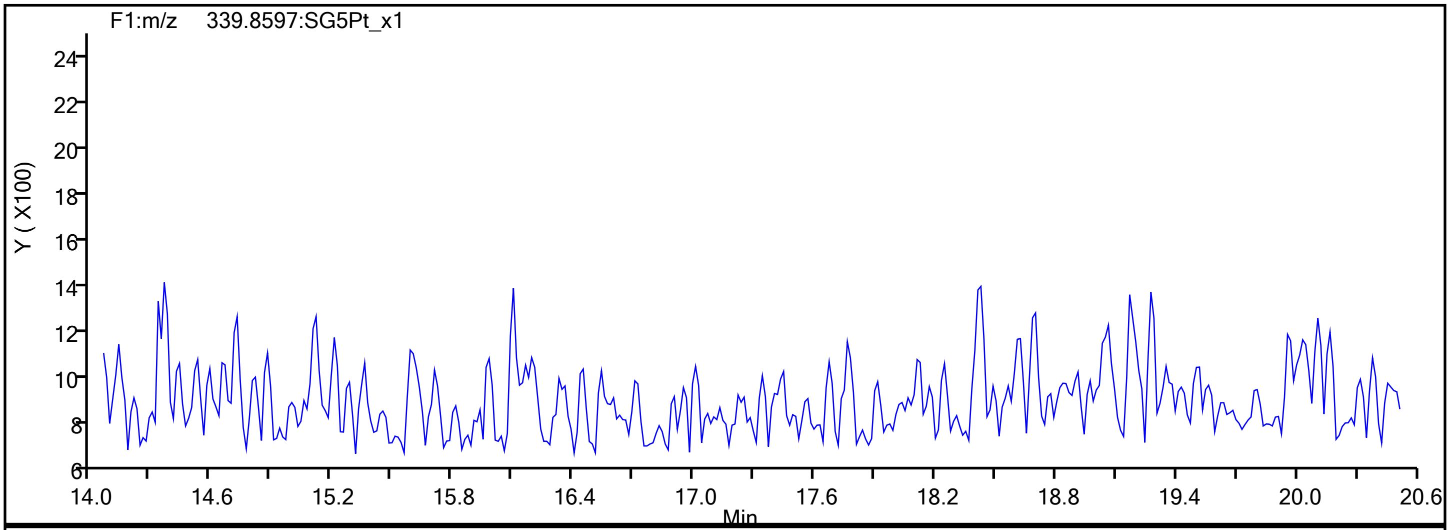

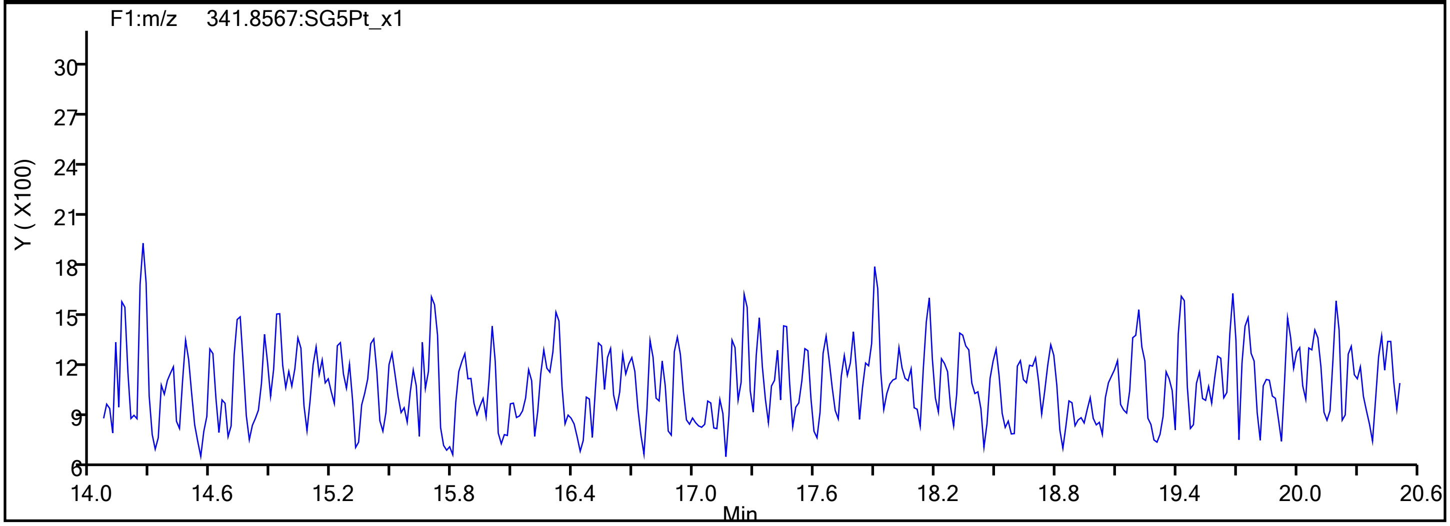

F1 PeCDFs Interference Mass

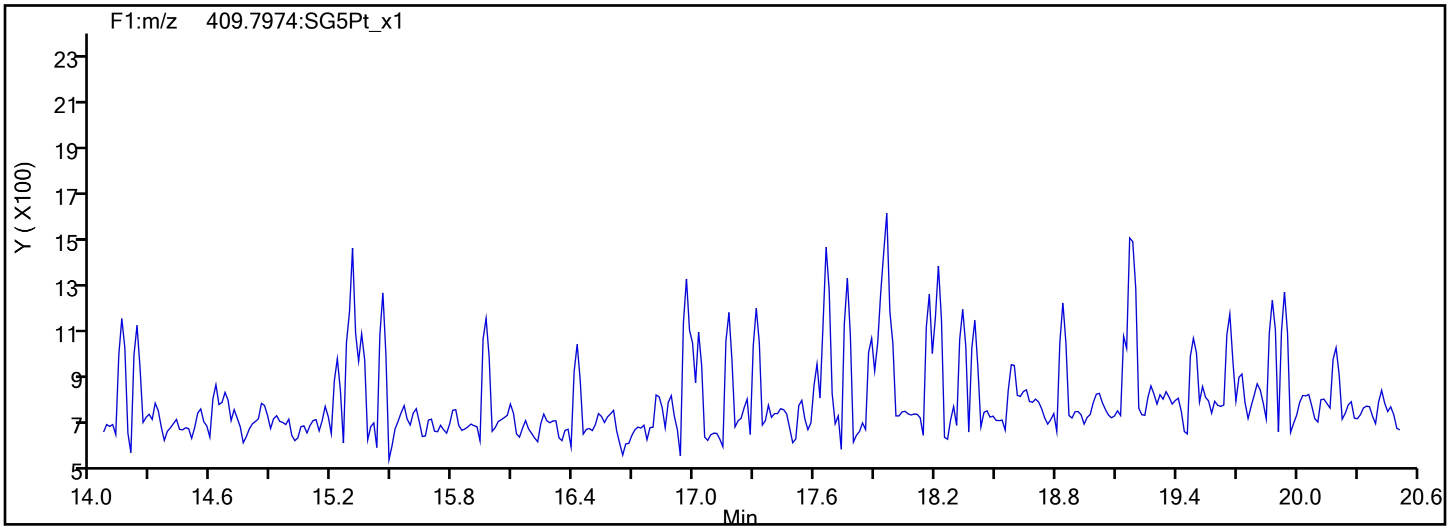

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

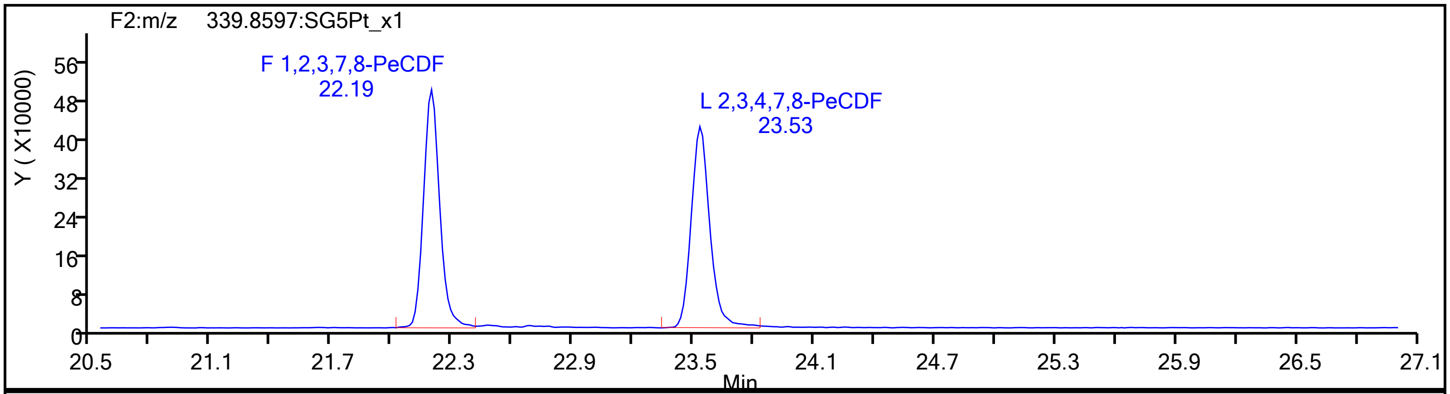

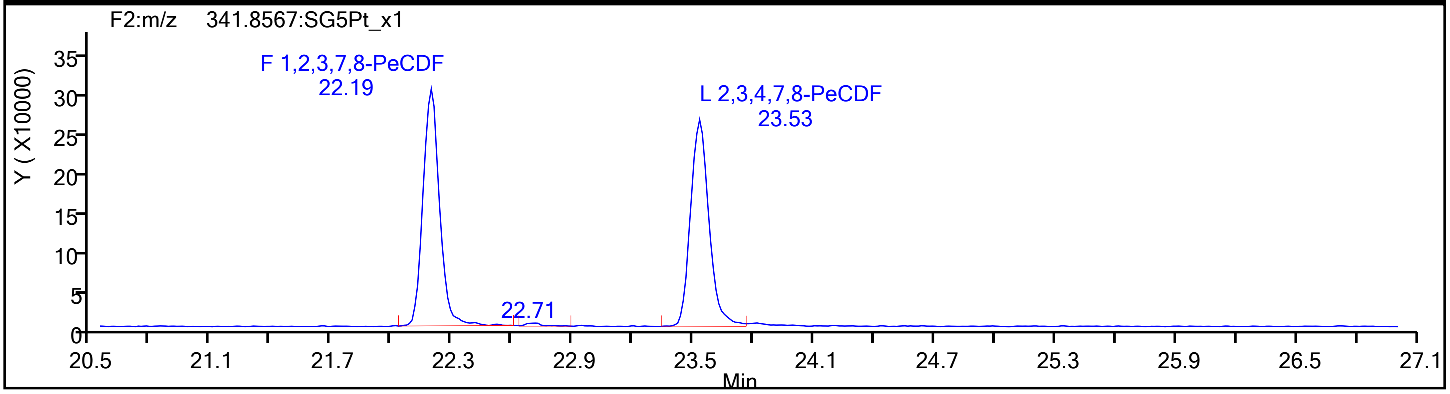

PeCDF Standards

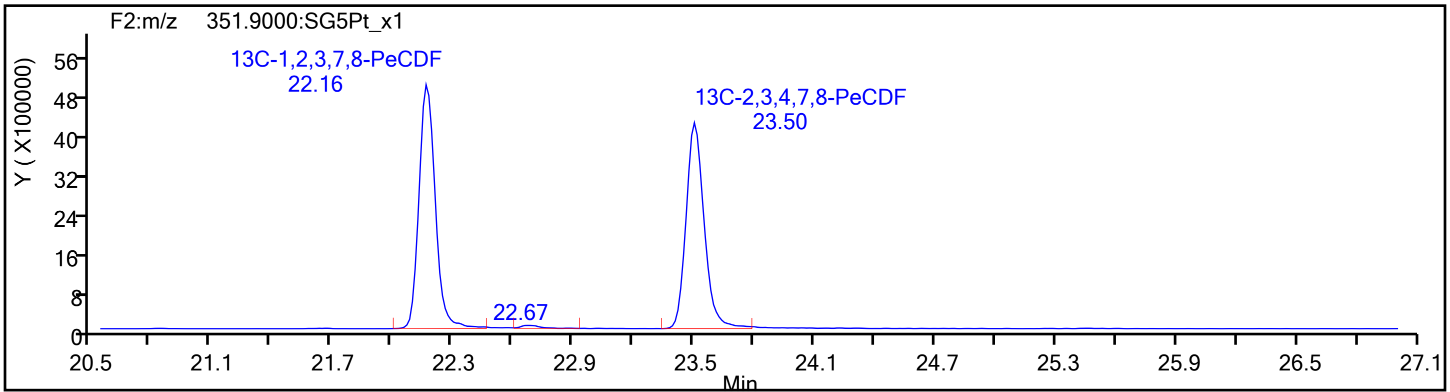

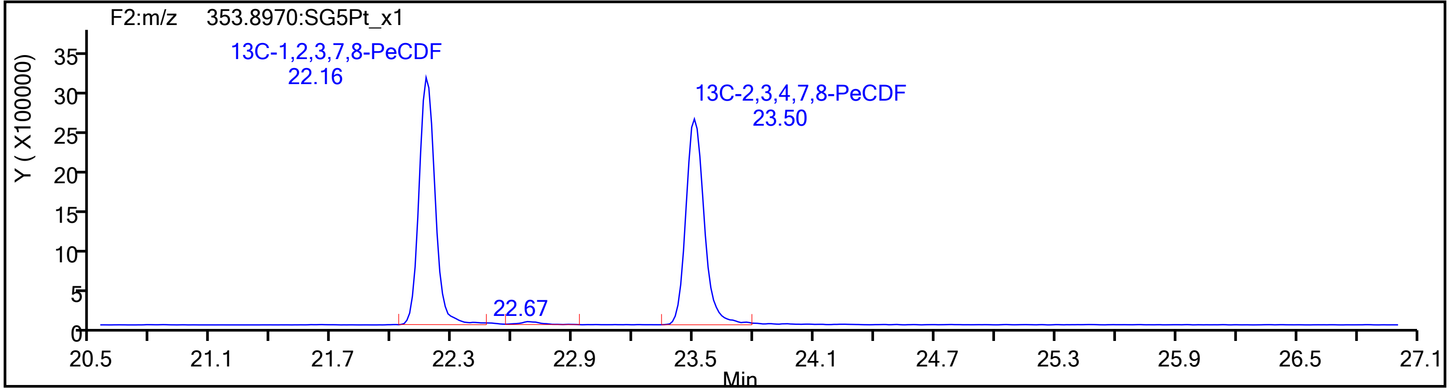

Report Date: 11-Dec-2020 10:12:38 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

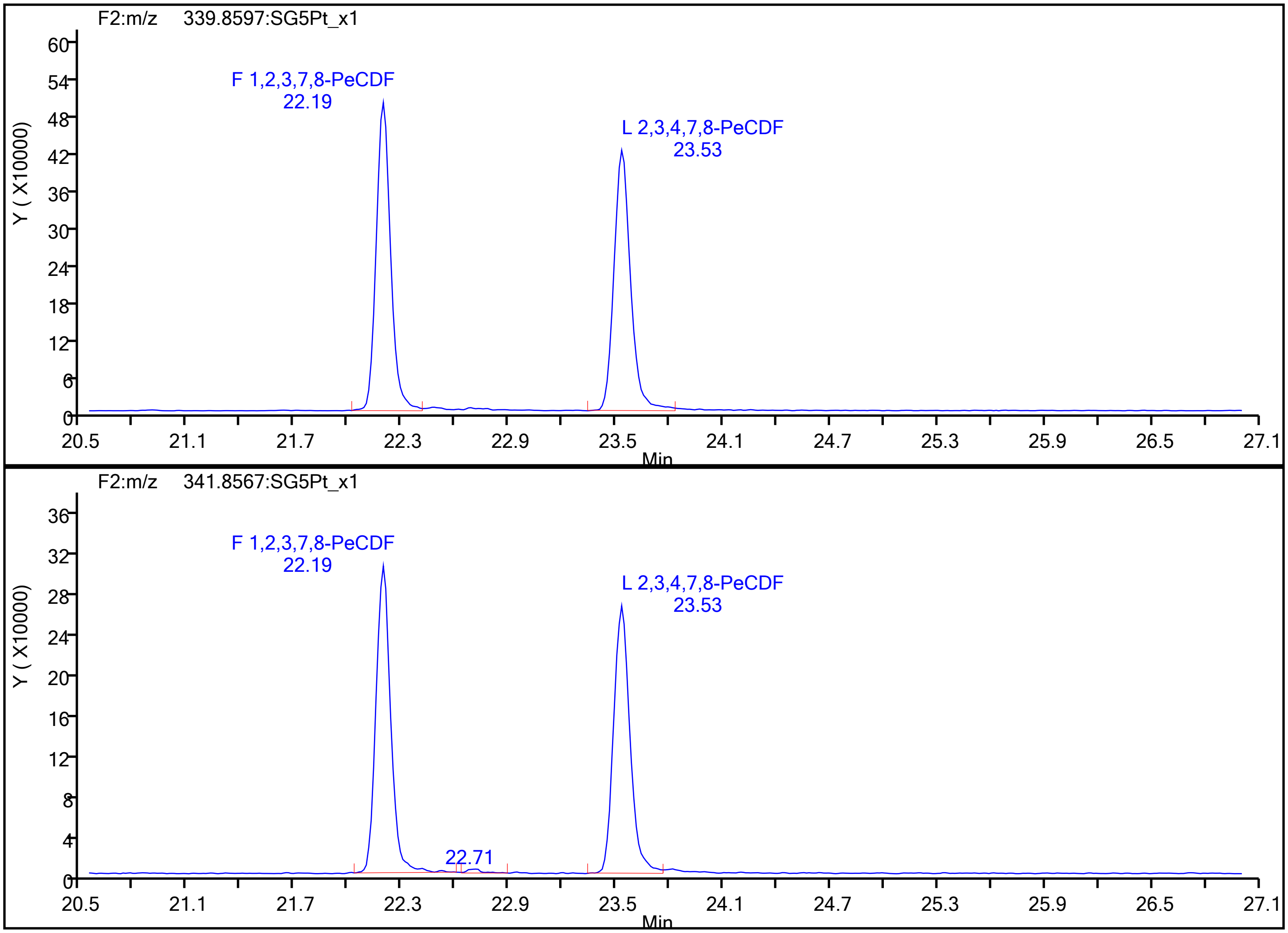

PeCDF Interference Mass

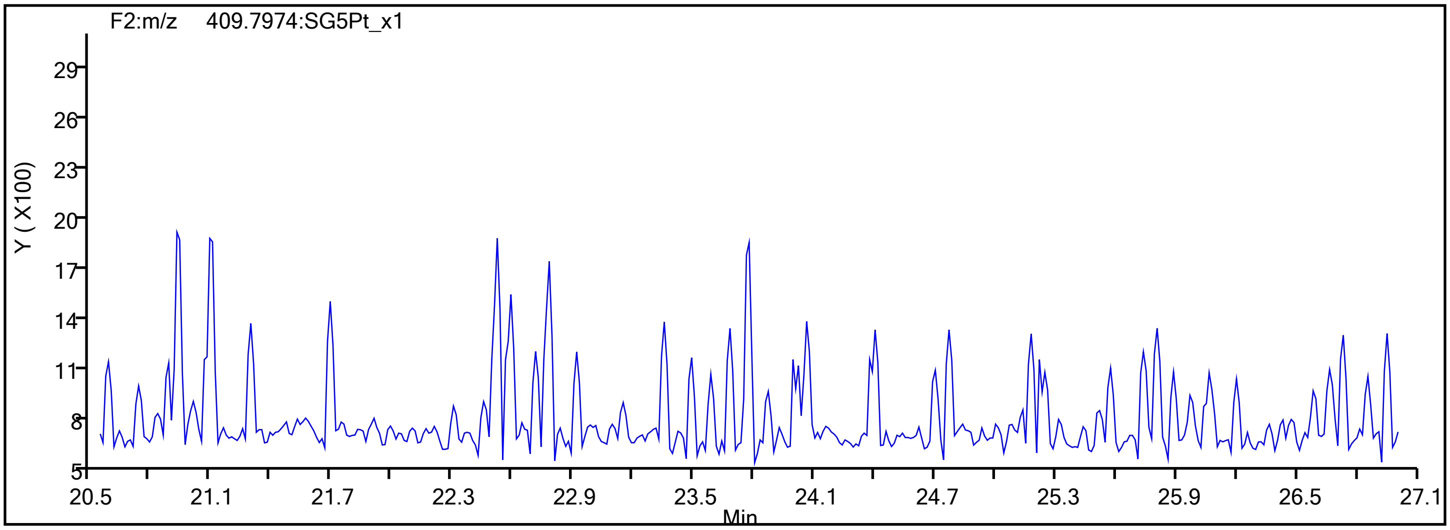

Report Date: 11-Dec-2020 10:12:38　　Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d
Injection Date: 10-Dec-2020 19:12:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

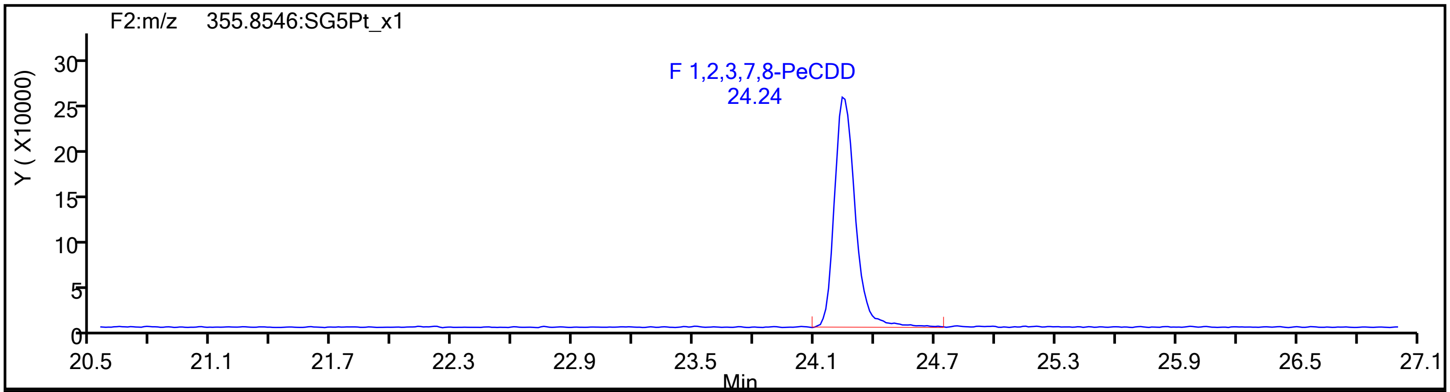

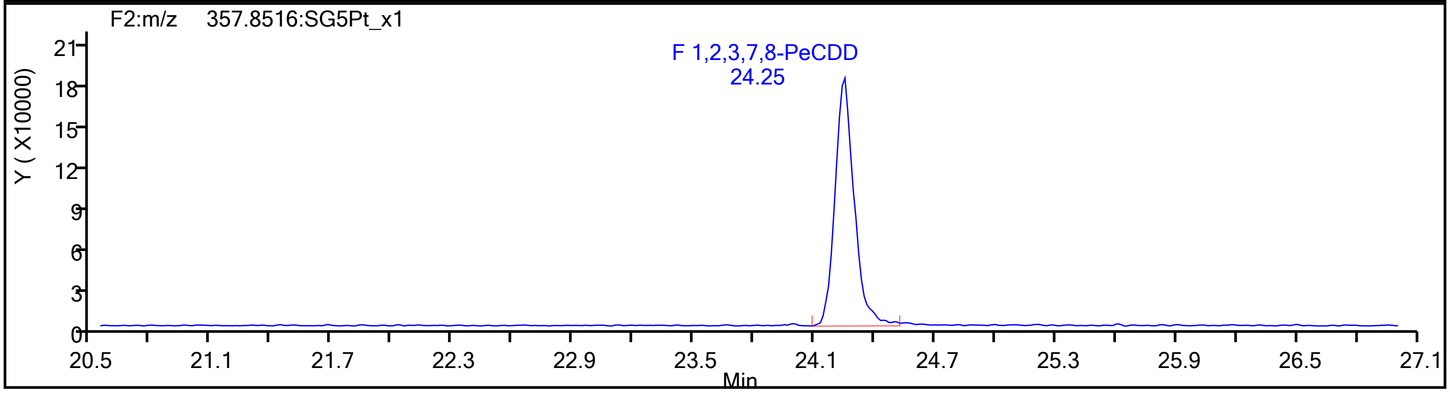

PeCDD Standards

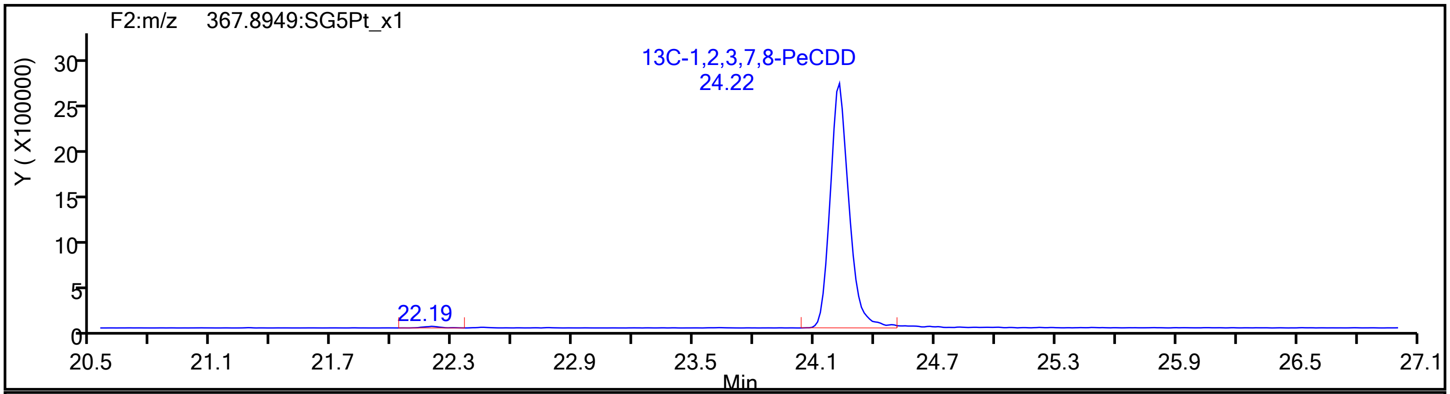

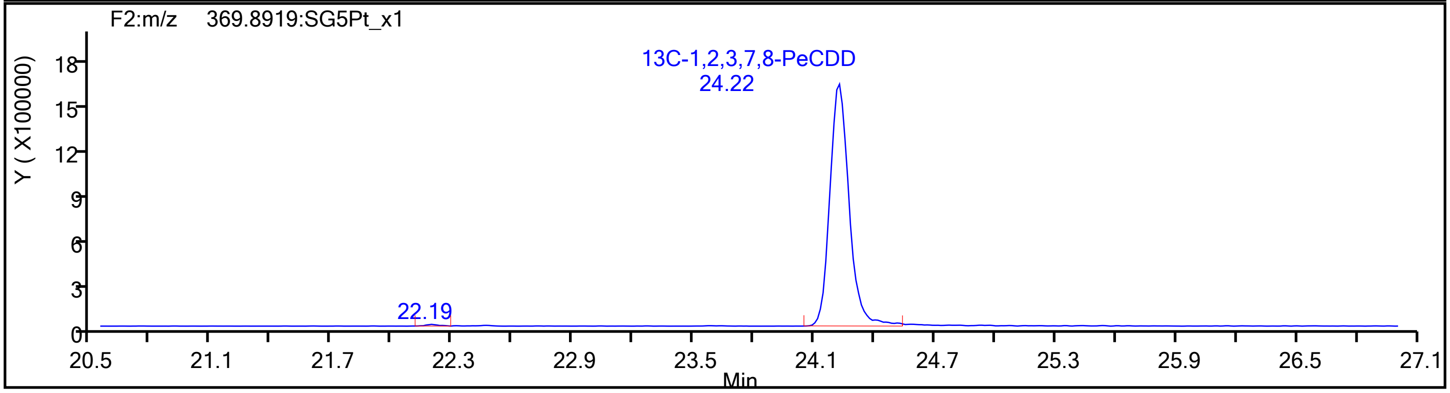

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

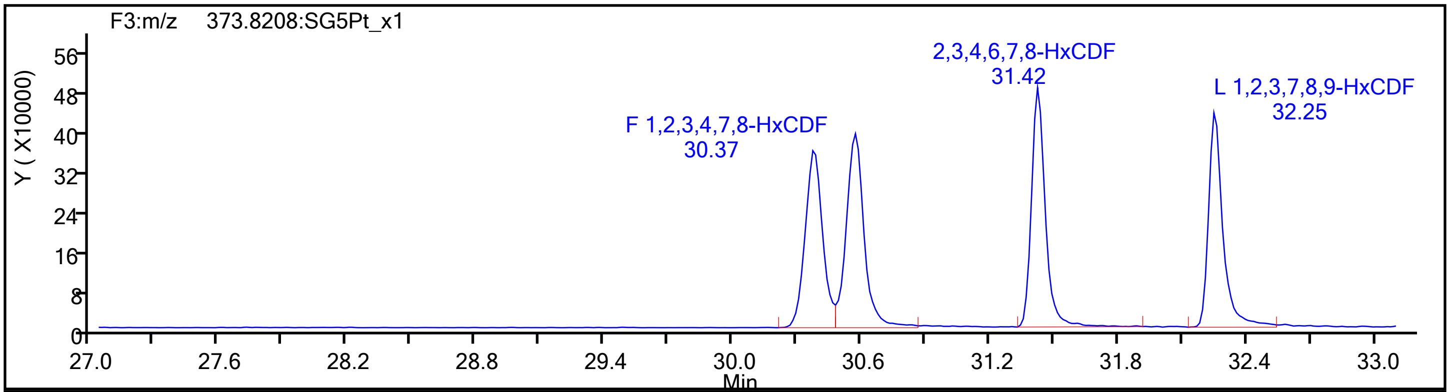

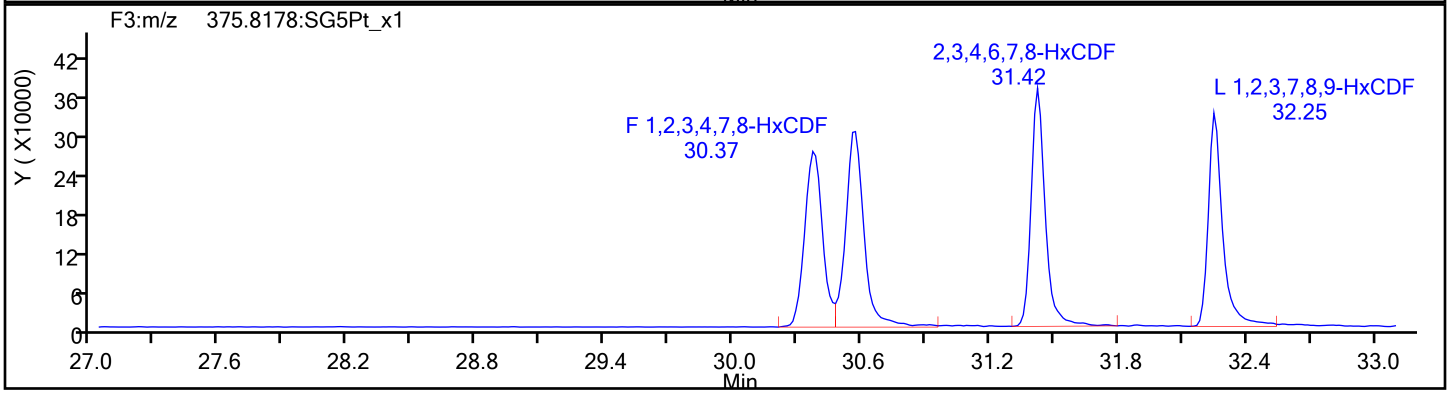

HxCDF Standards

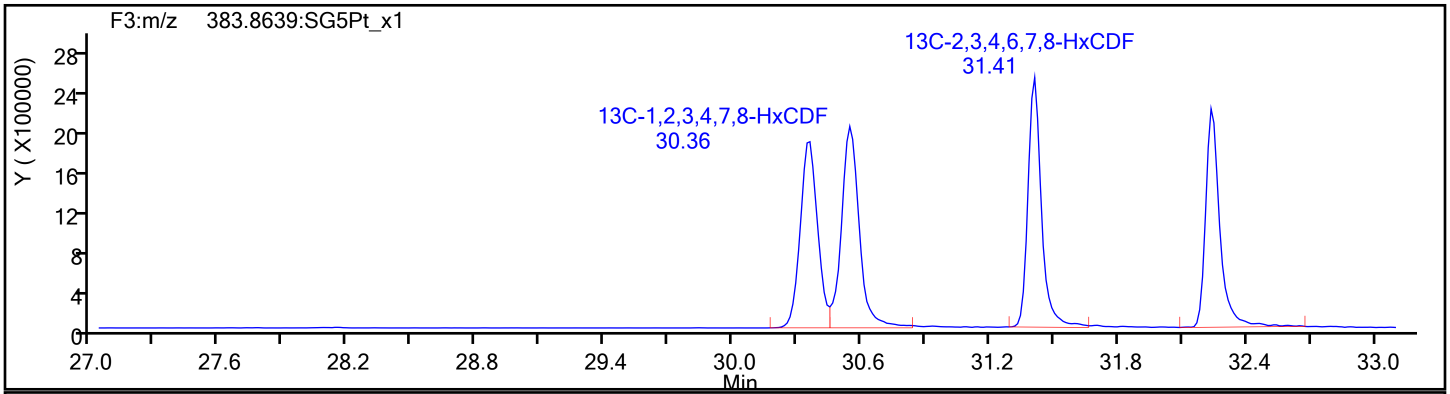

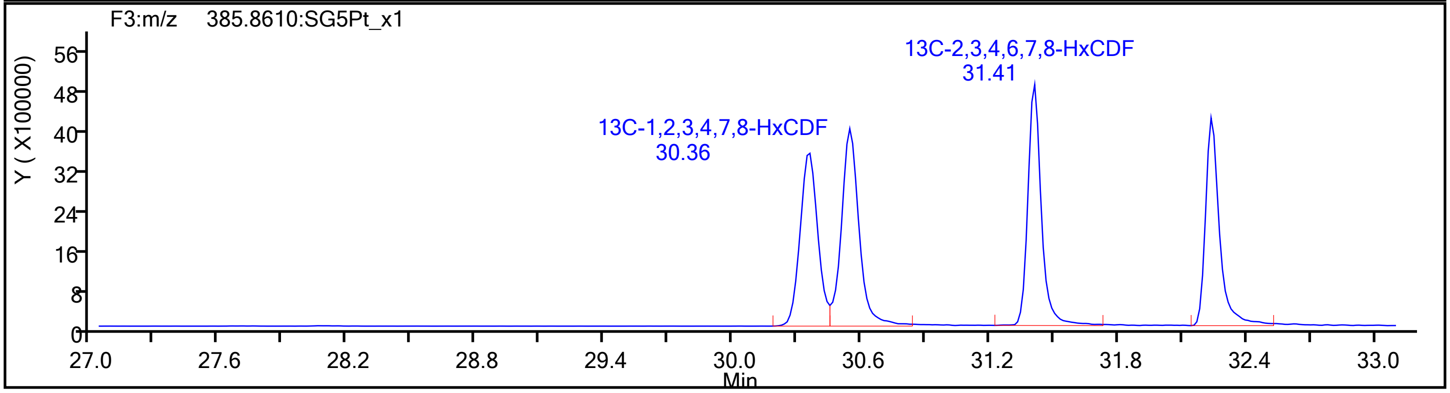

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

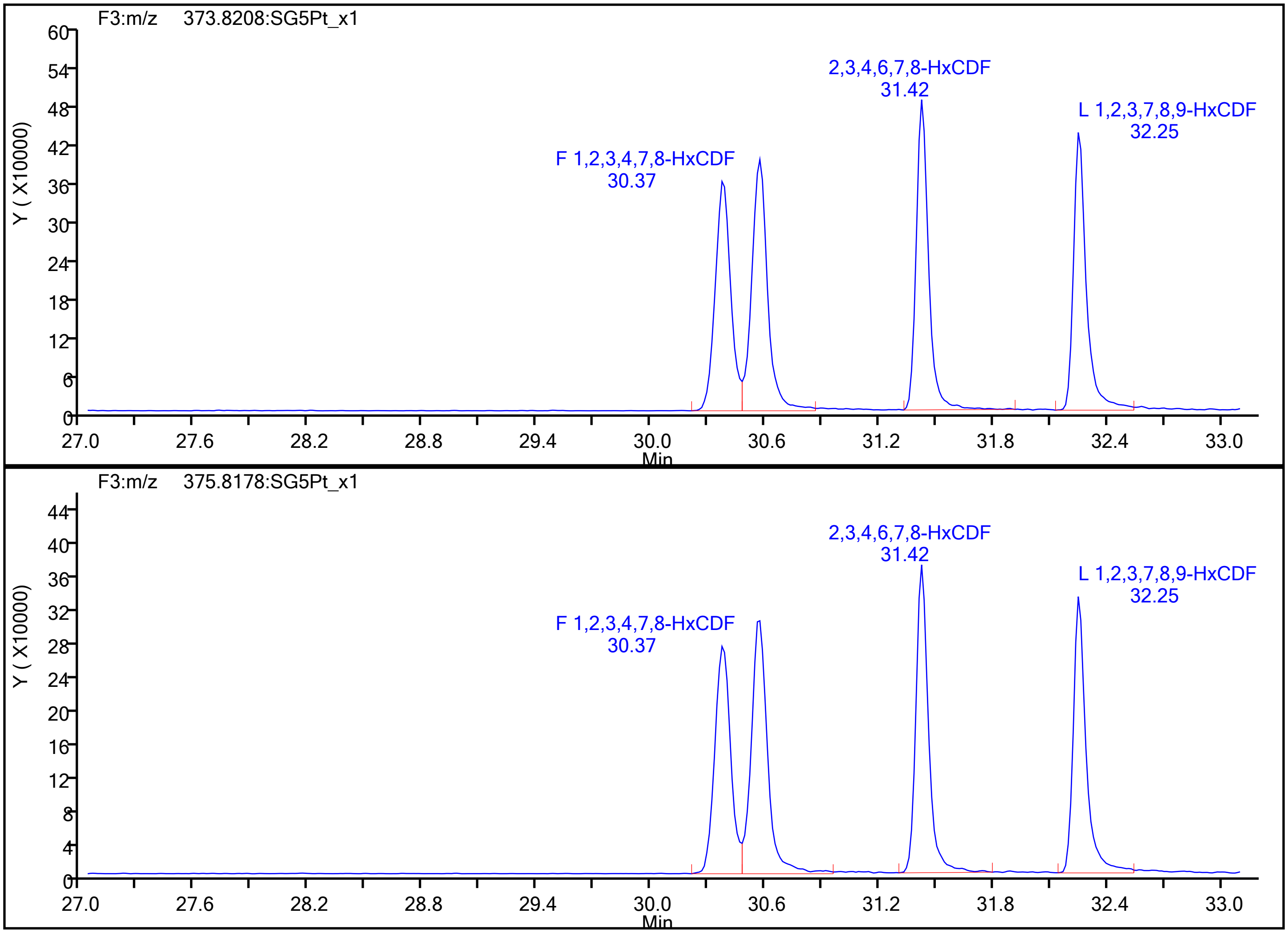

HxCDF Interference Mass

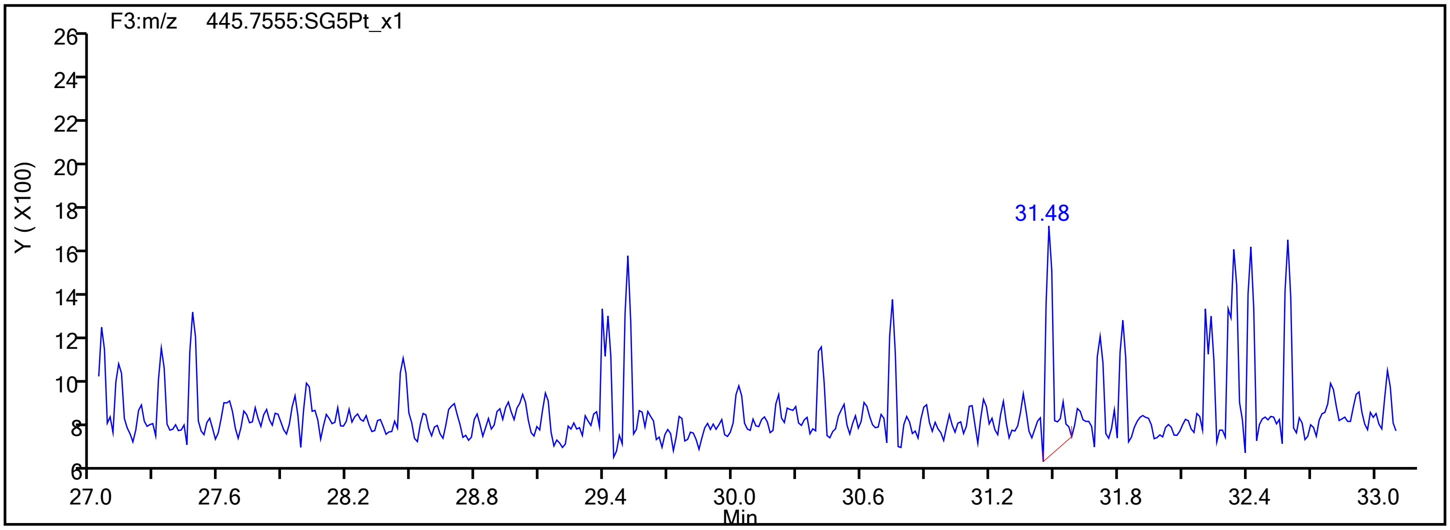

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

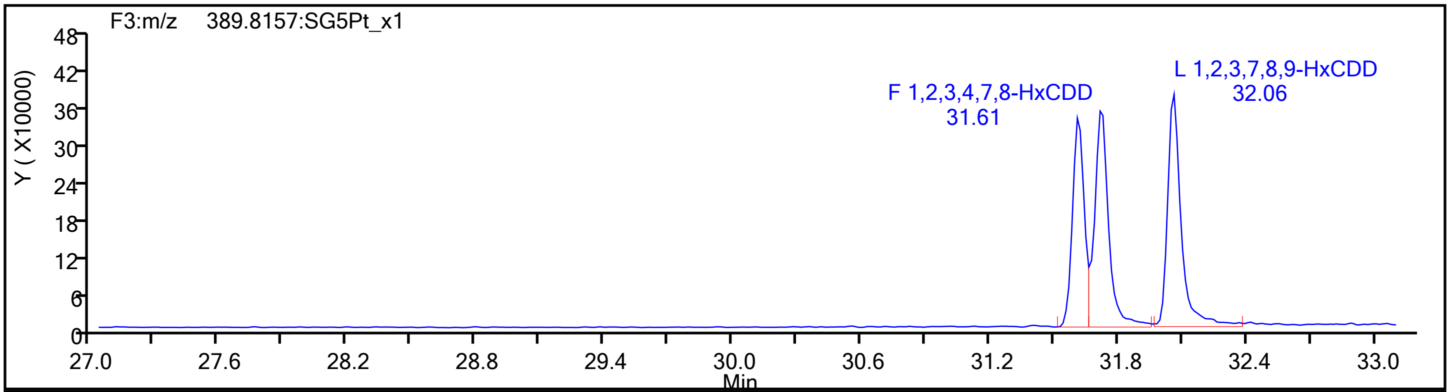

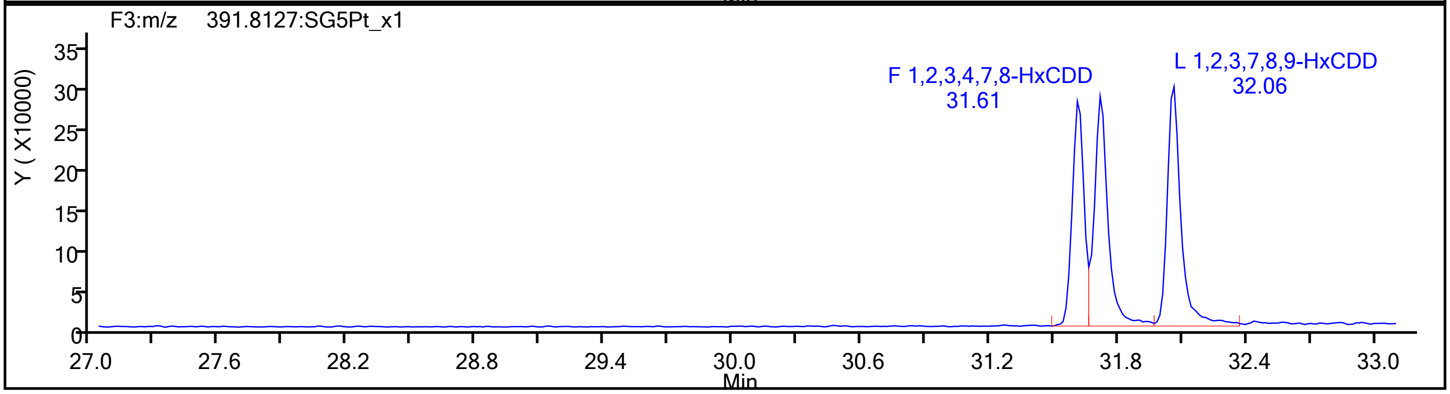

HxCDD Standards

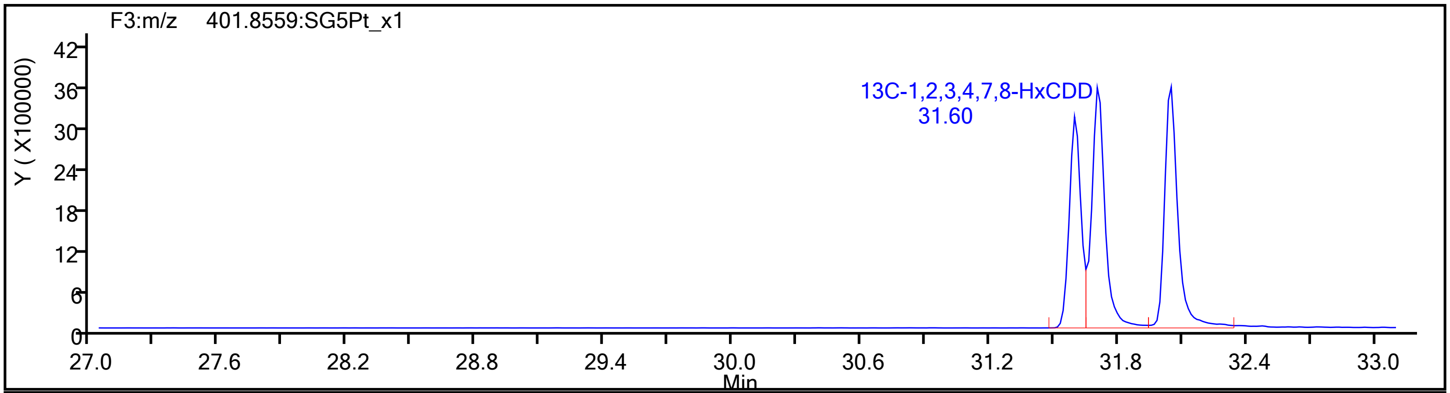

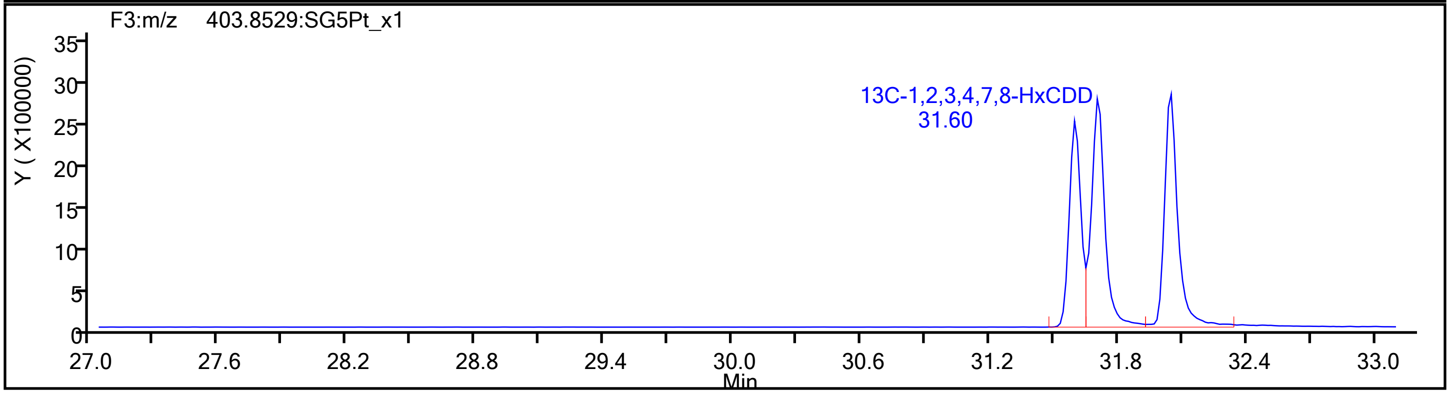

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d
Injection Date: 10-Dec-2020 19:12:38 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

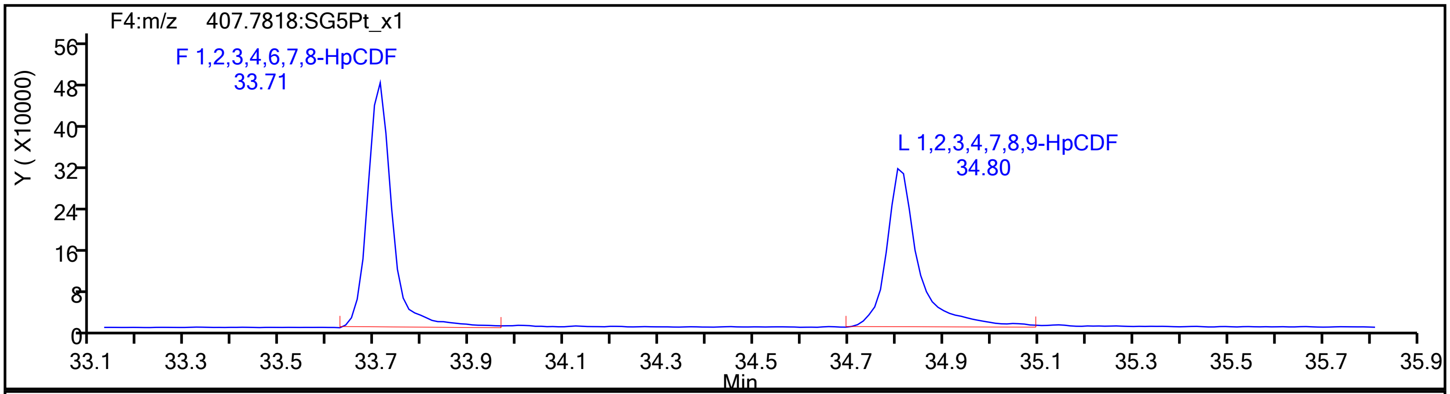

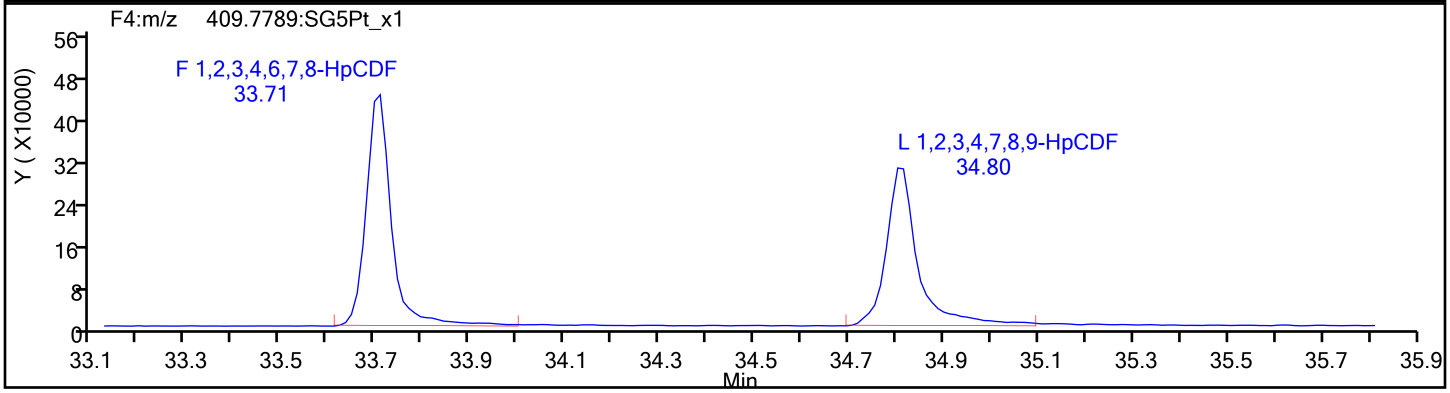

HpCDF Standards

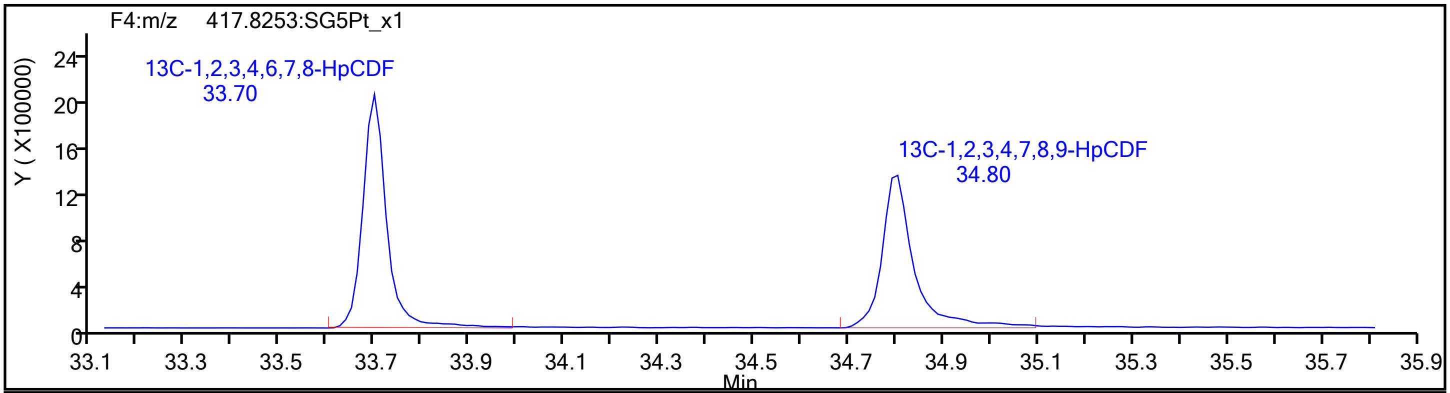

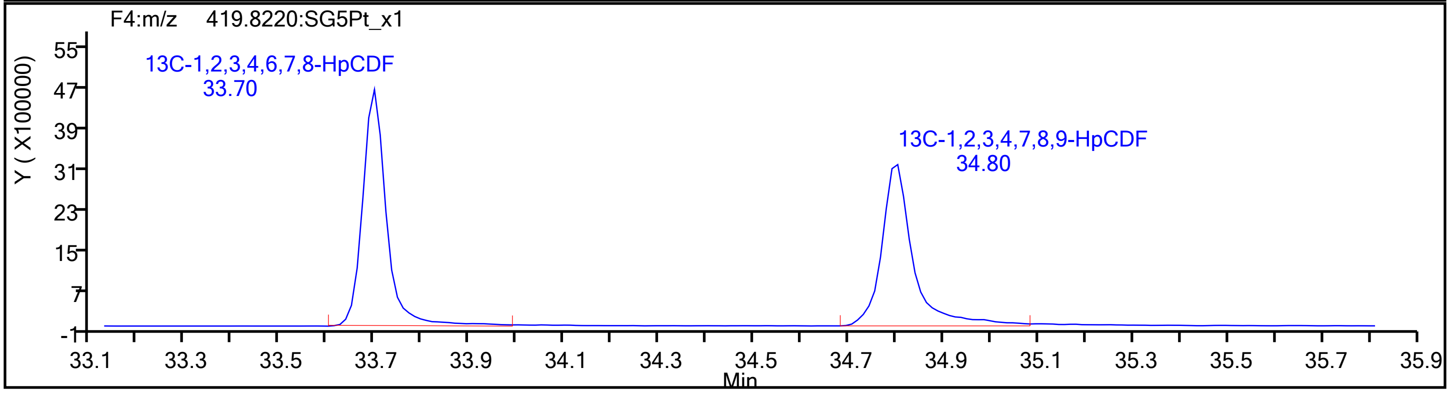

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Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

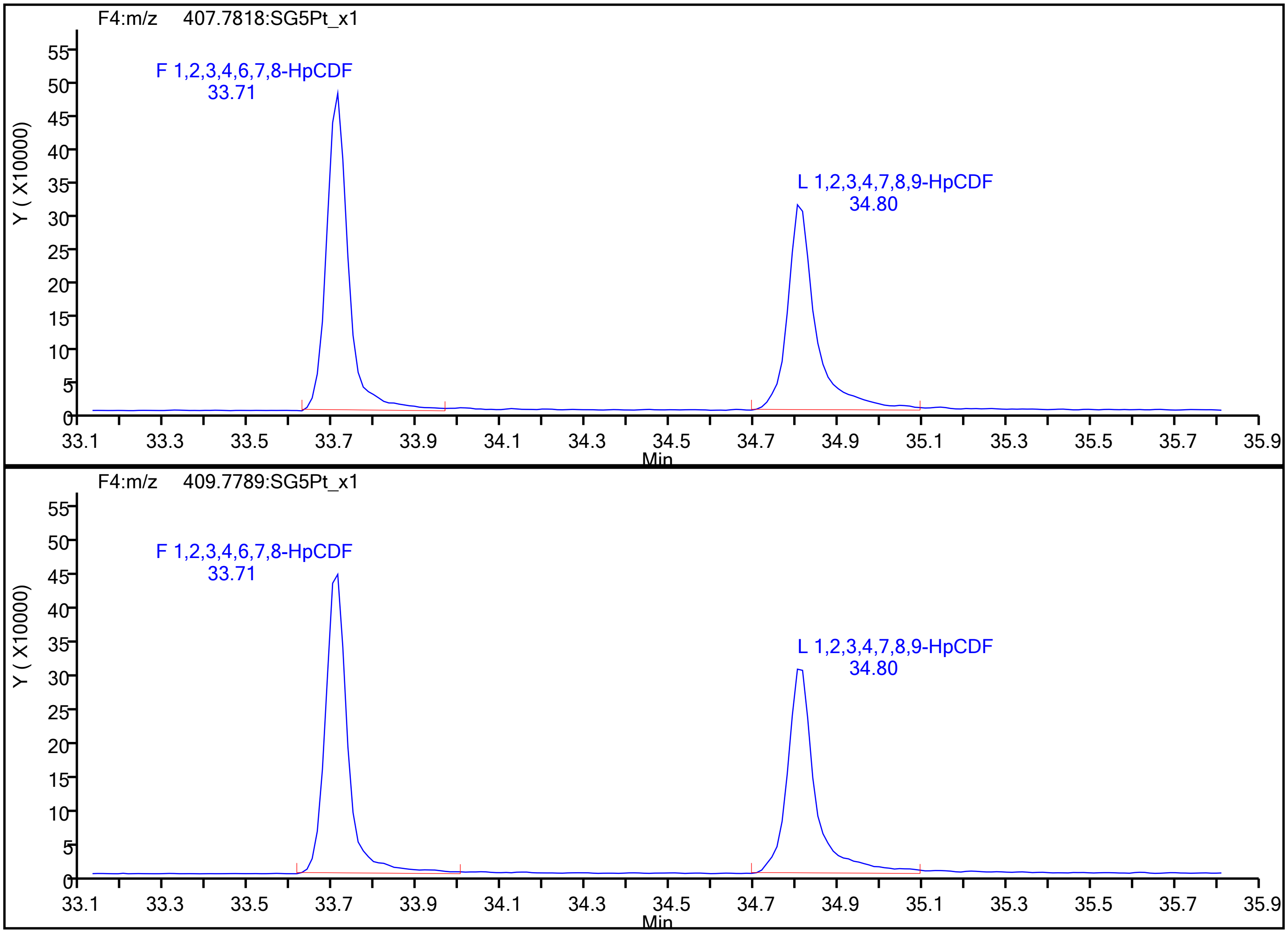

HpCDF Interference Mass

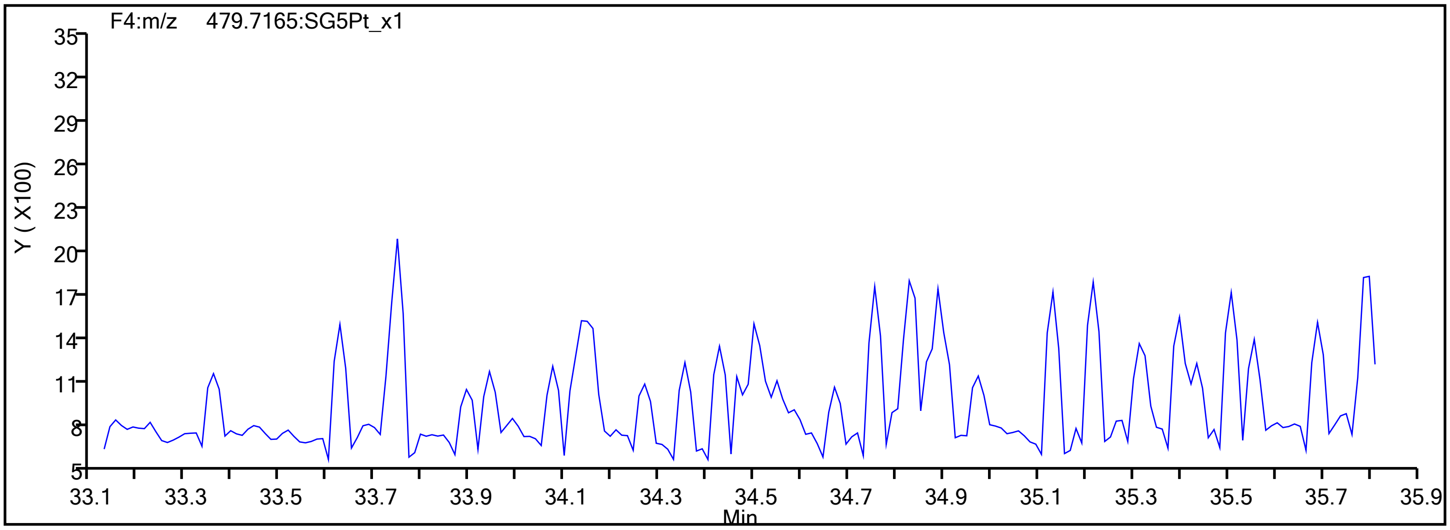

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d
Injection Date: 10-Dec-2020 19:12:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

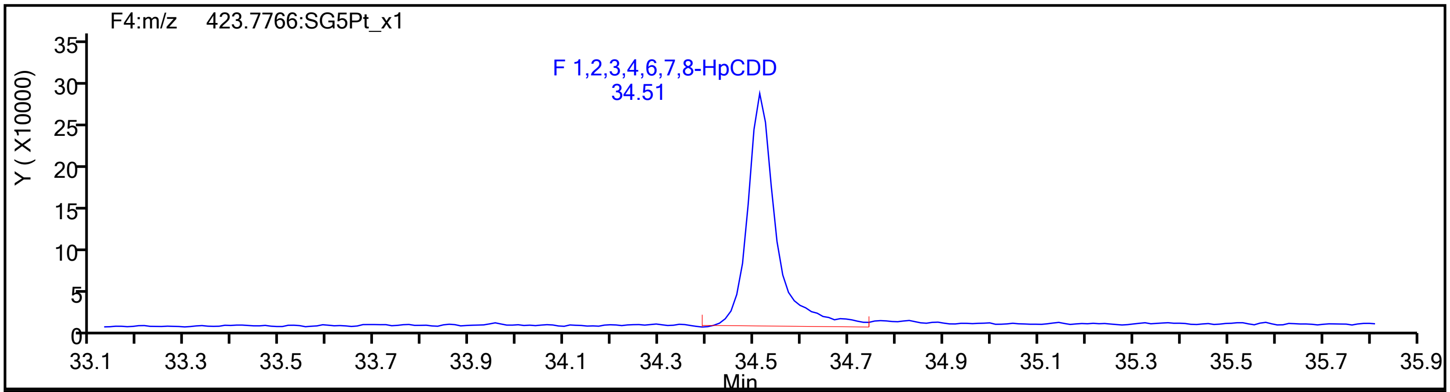

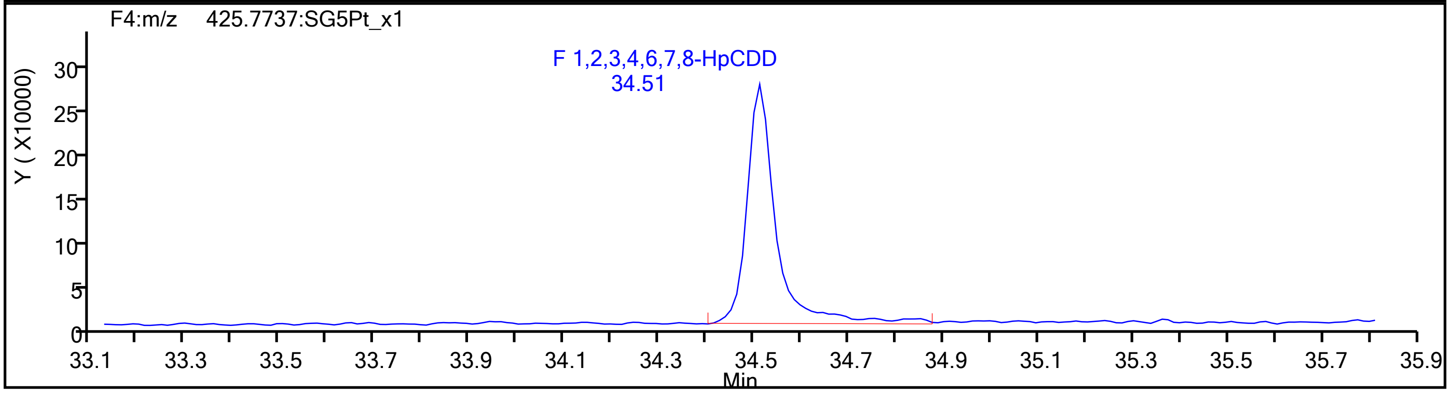

HpCDD Standards

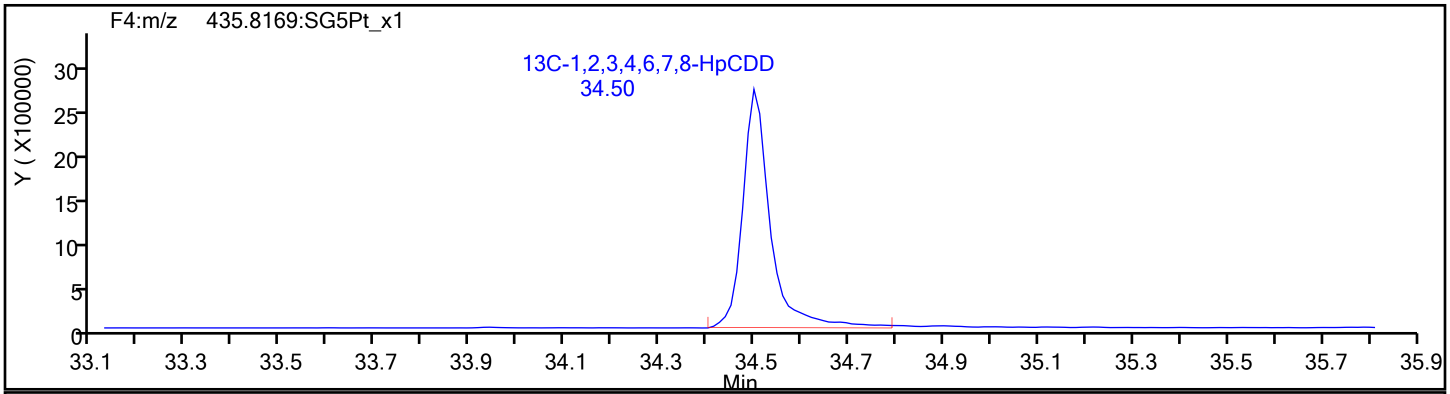

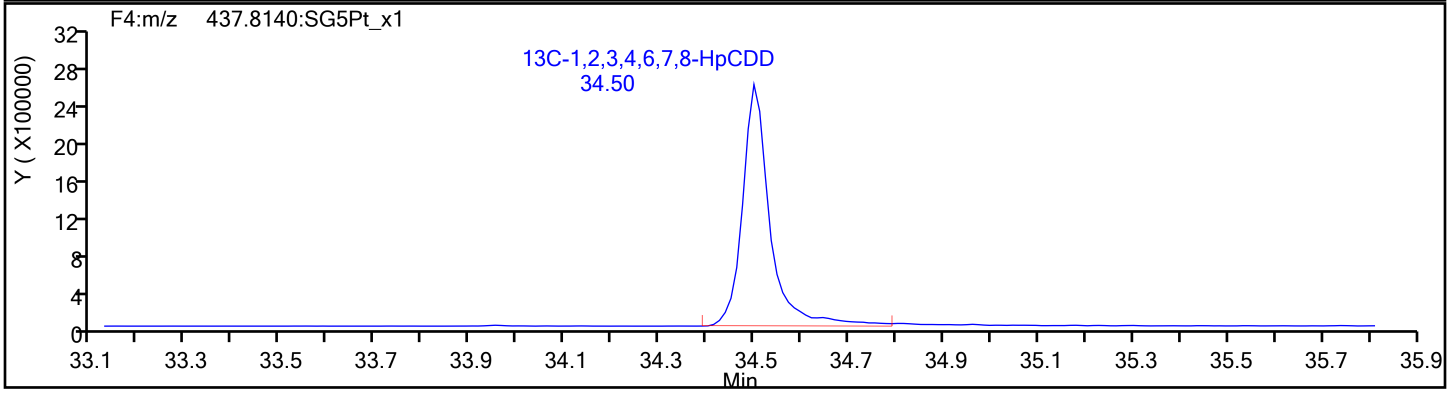

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

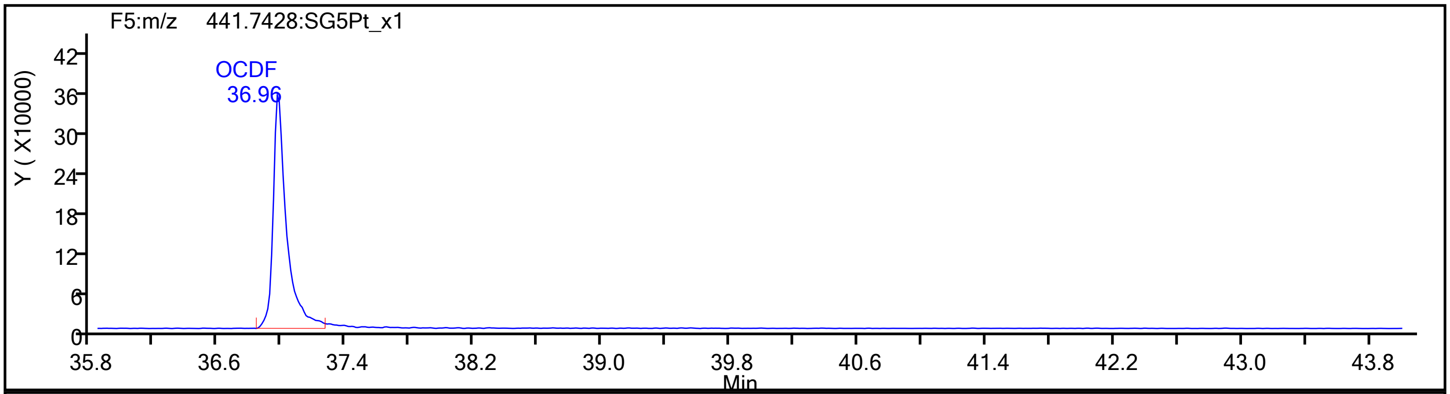

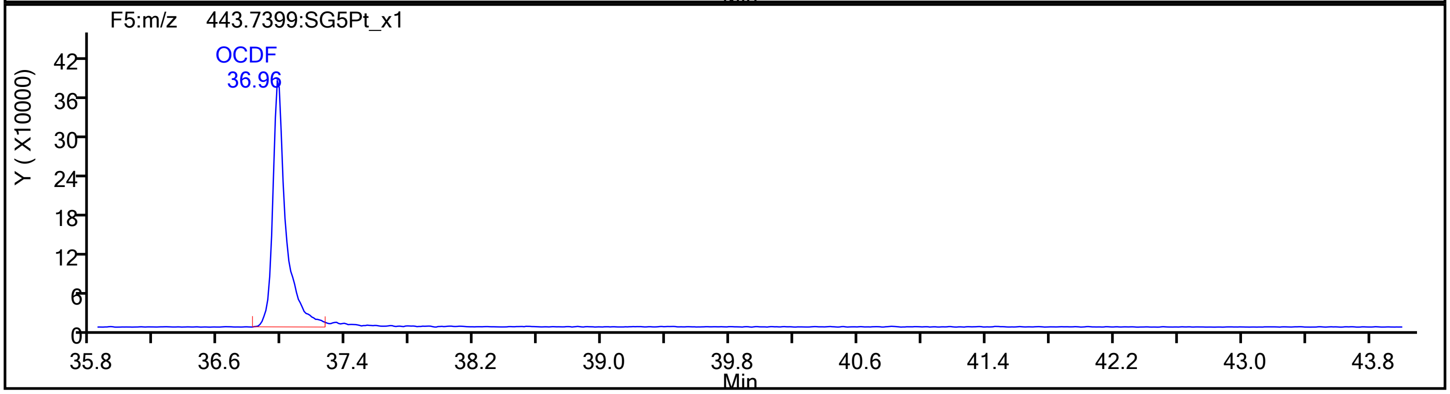

OCDF Standards

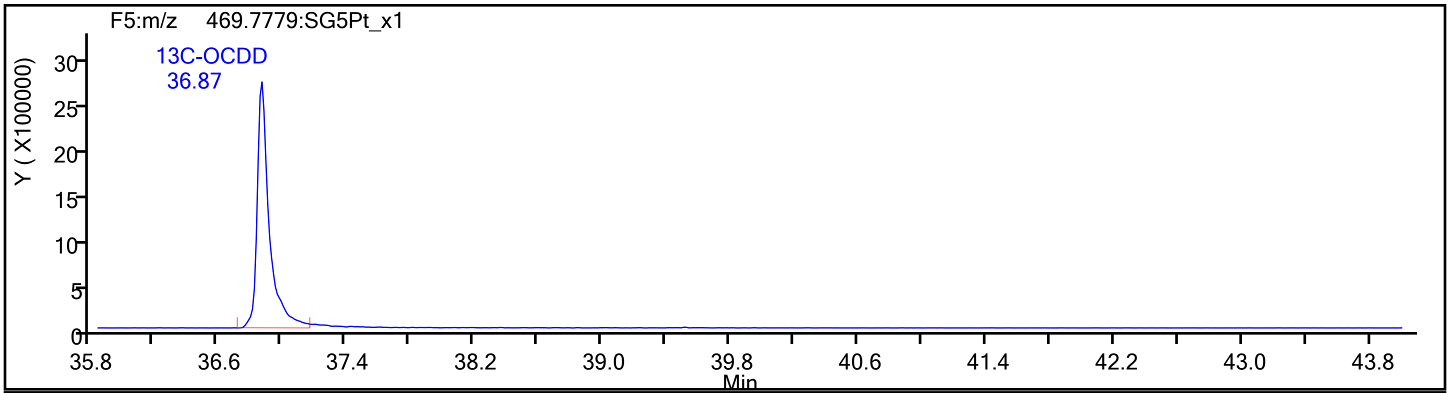

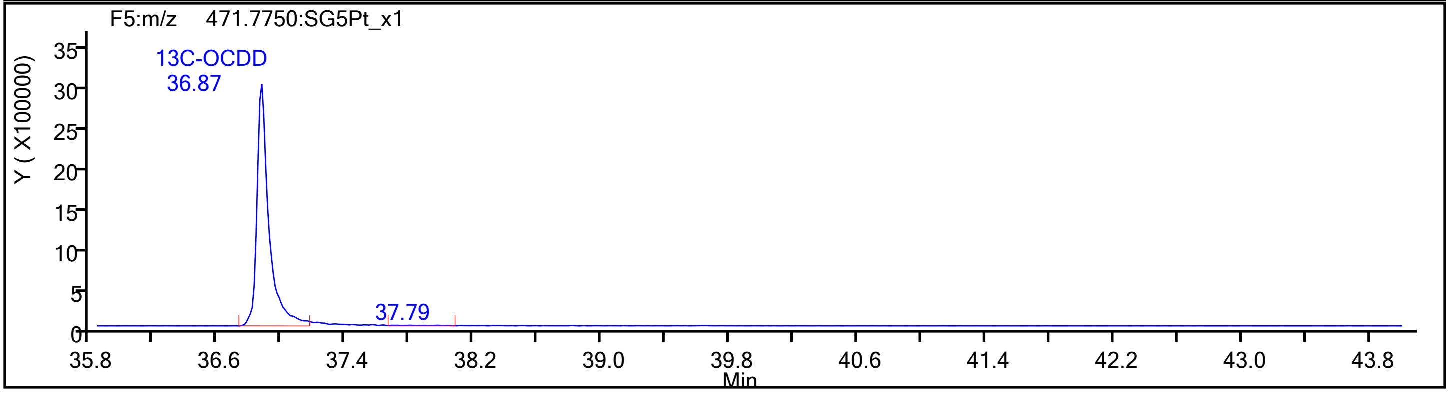

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

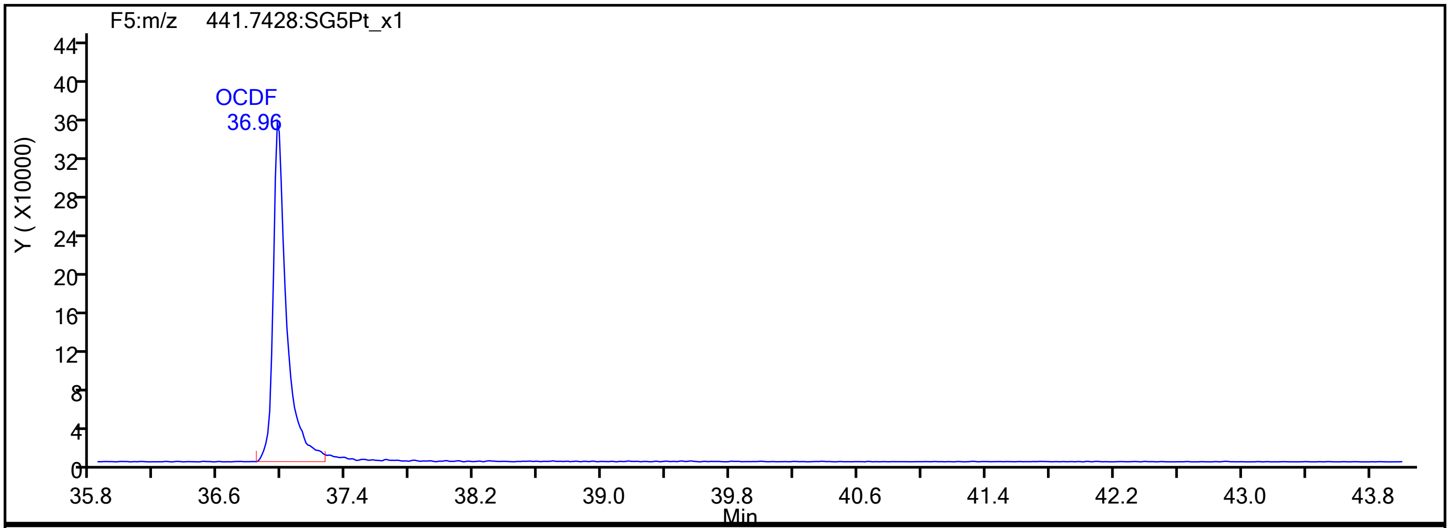

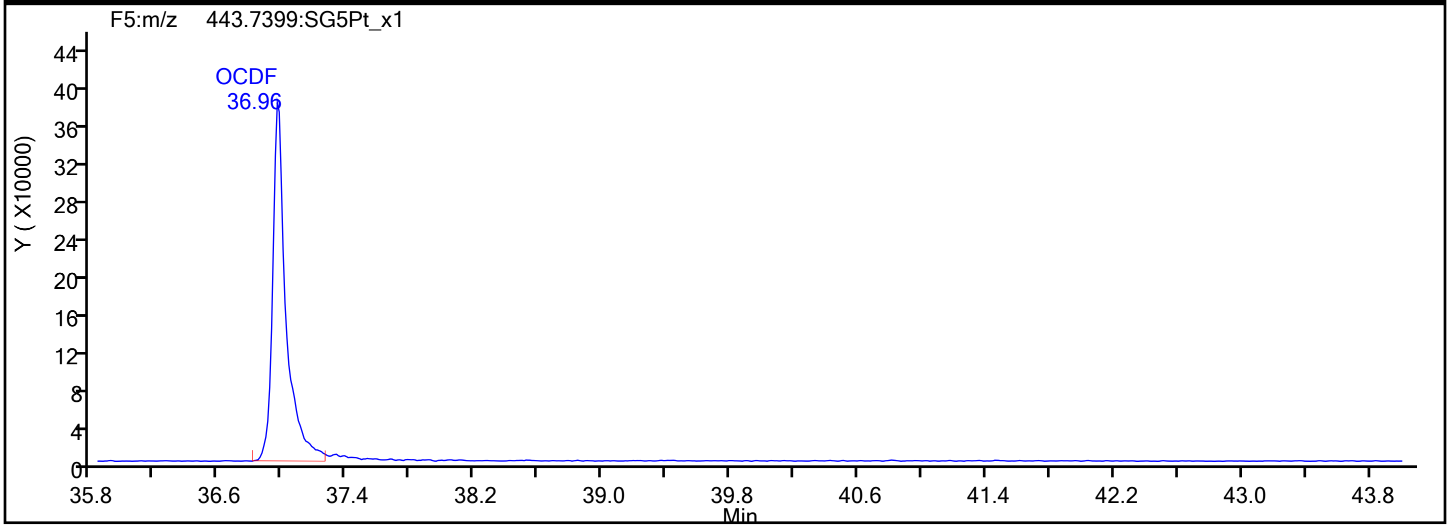

OCDF Interference Mass

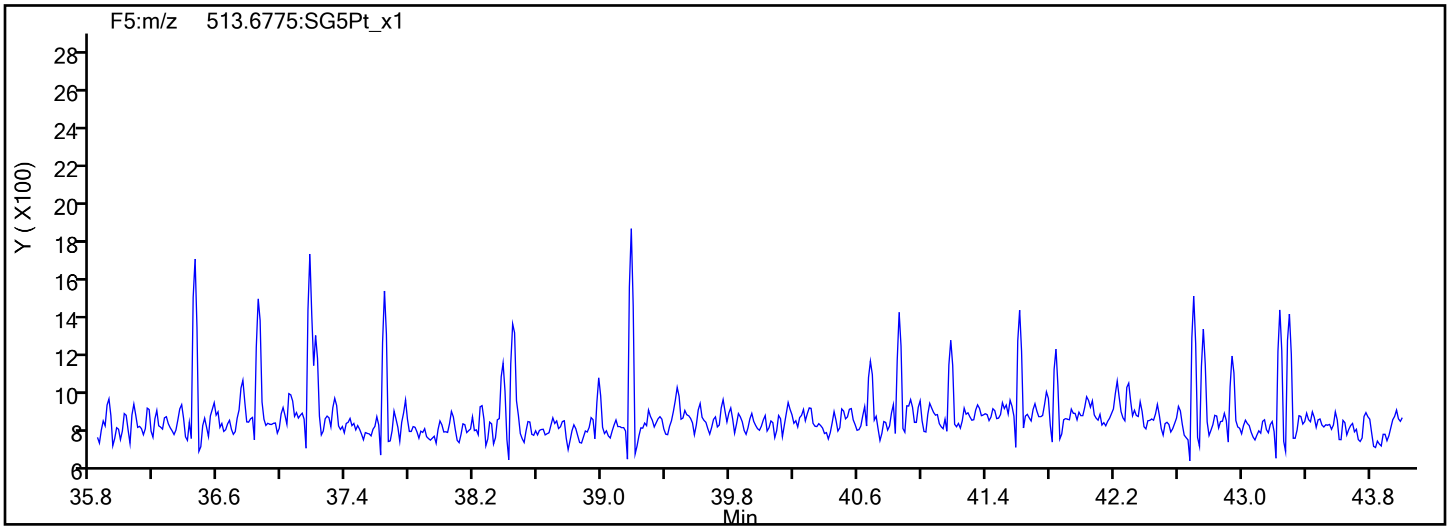

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

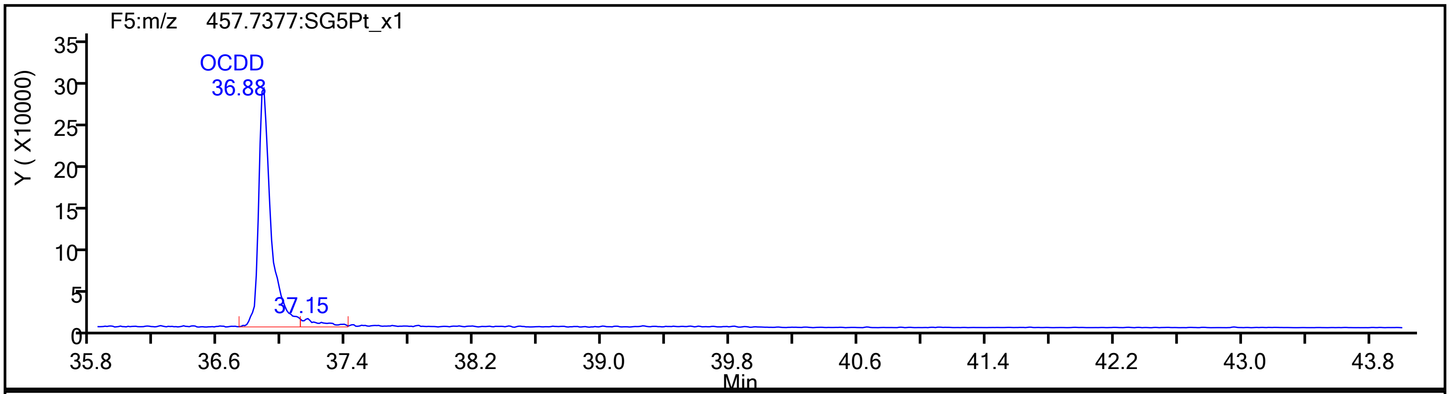

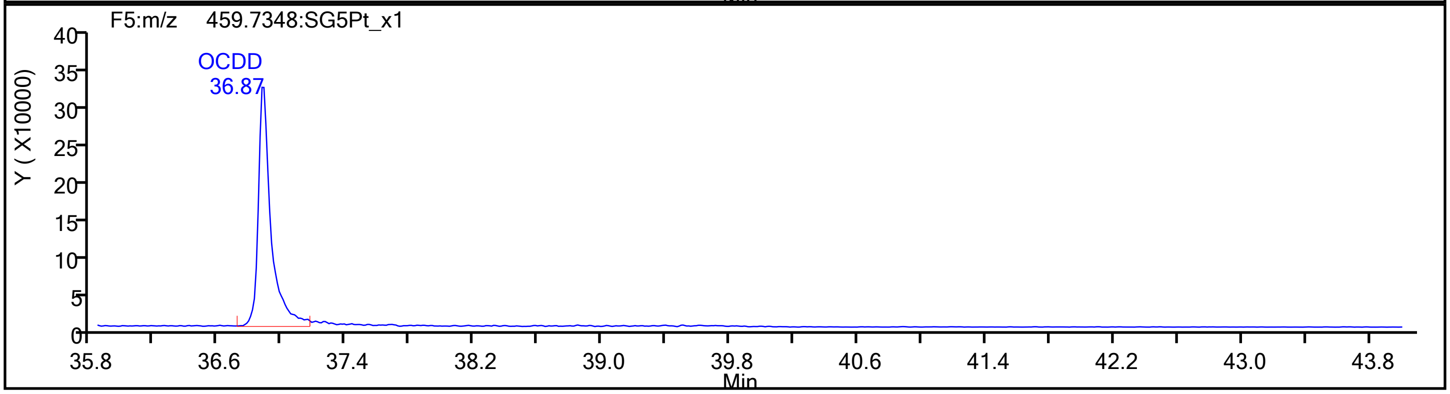

OCDD Standards

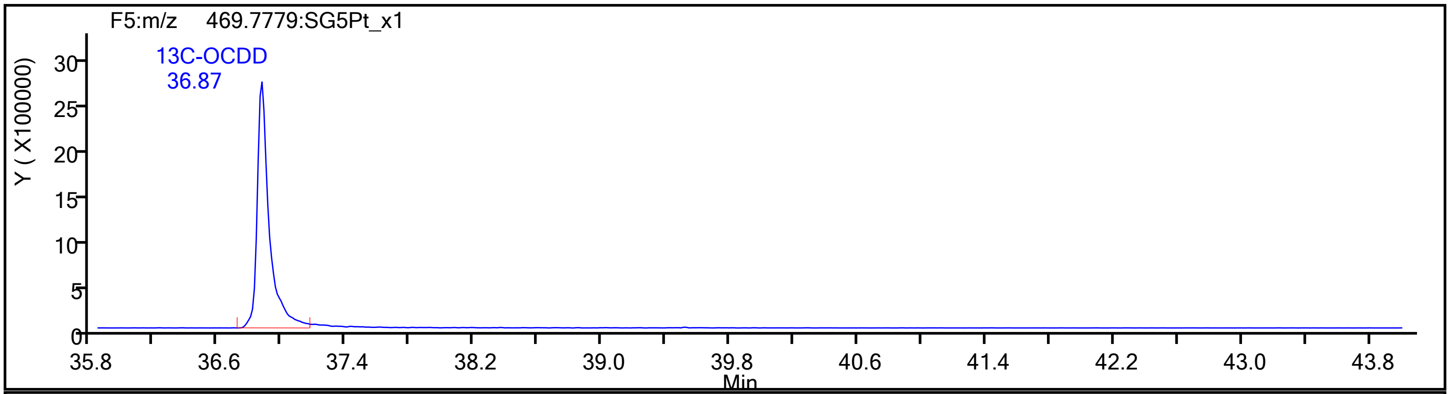

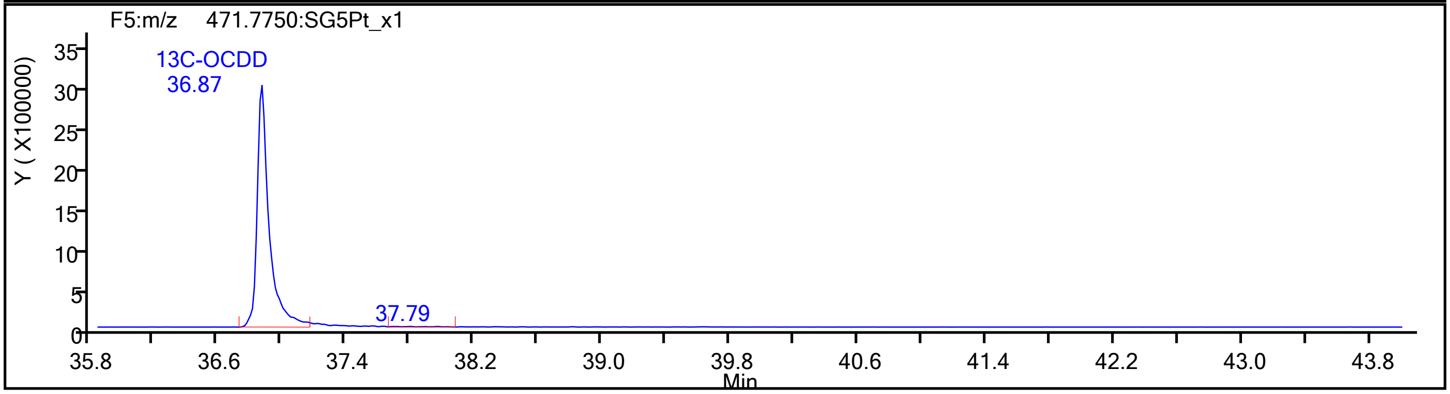

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d

Injection Date: 10-Dec-2020 19:12:38

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

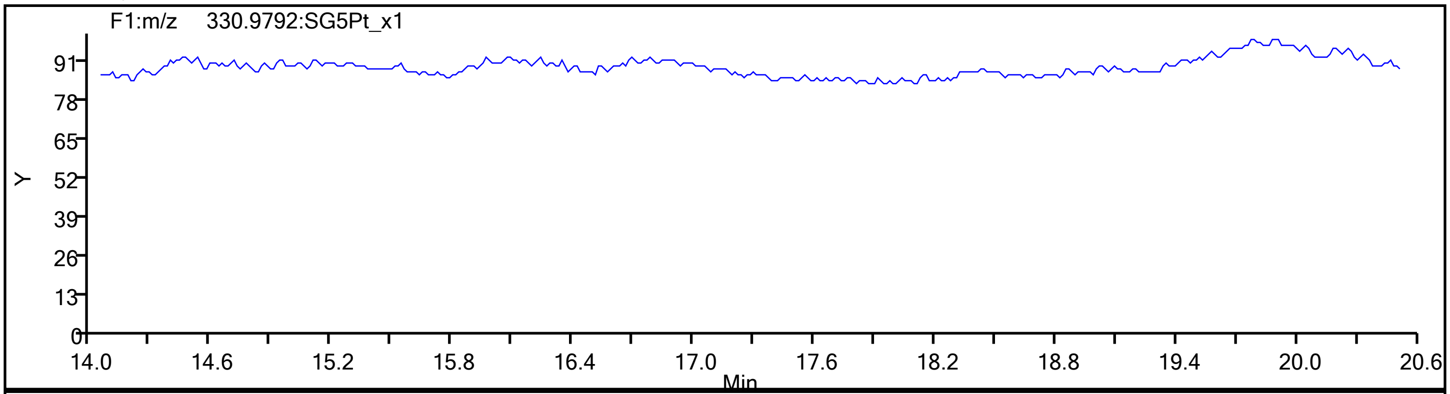

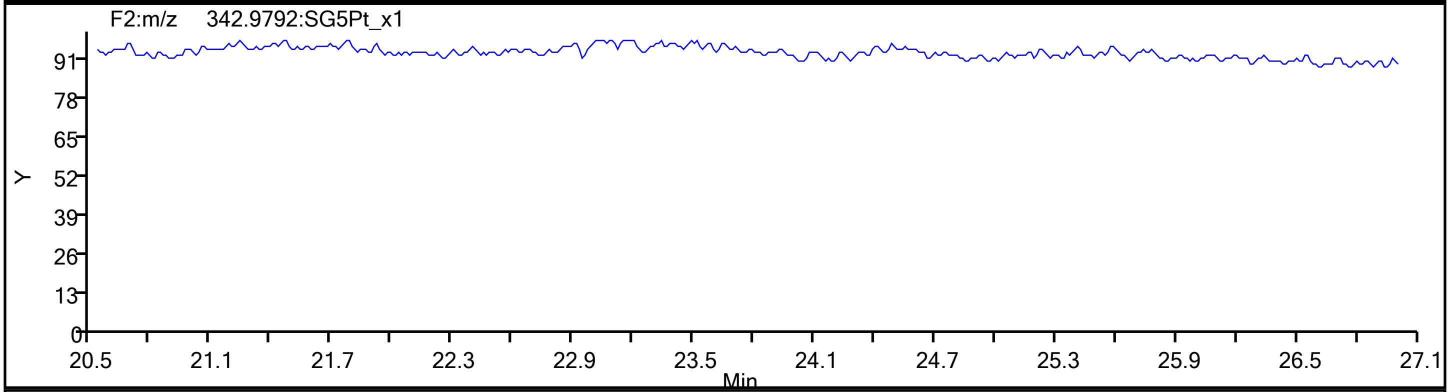

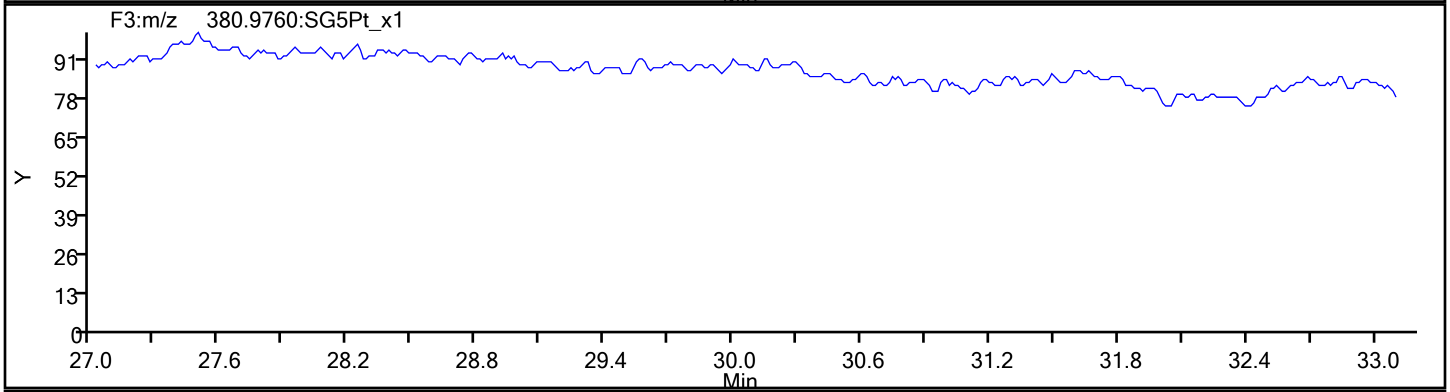

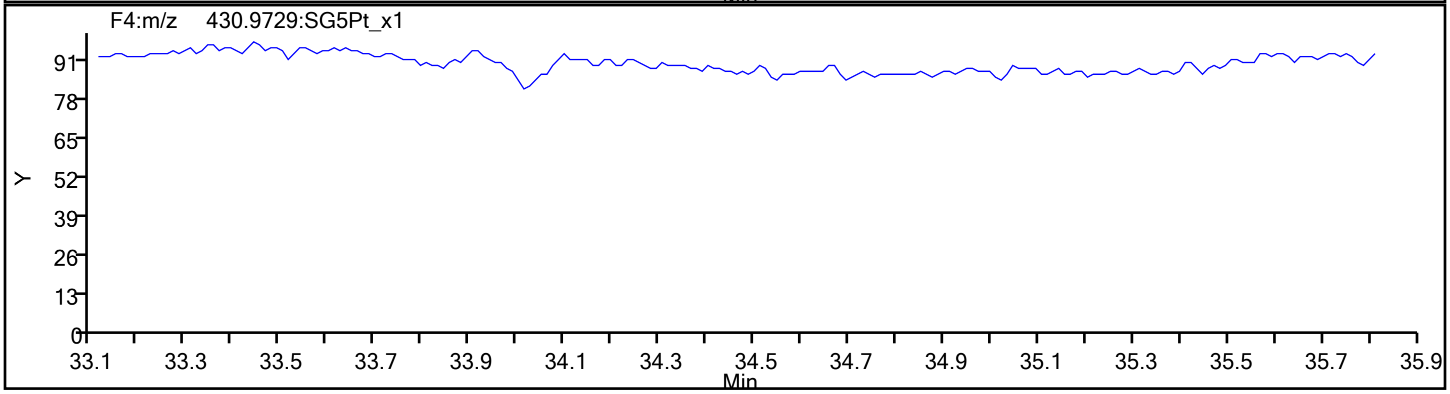

Report Date: 11-Dec-2020 10:12:39 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_4 .d		
Injection Date:	10-Dec-2020 19:12:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

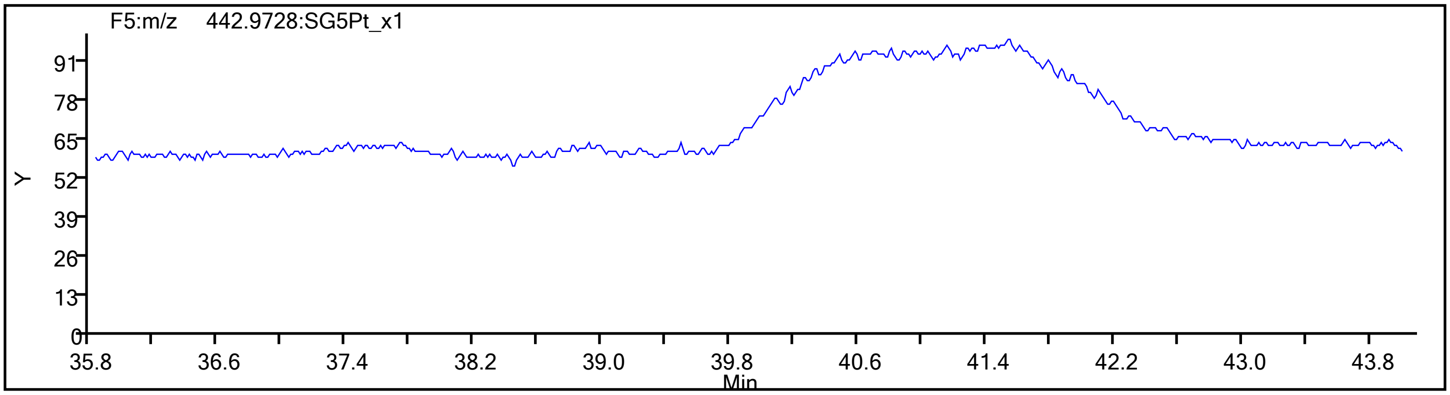

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 10-Dec-2020 19:57:43 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00096 CS-4 HRDXNL4_00096
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:42 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: stephensk Date: 11-Dec-2020 10:11:04

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	31953429	0.73	3.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	55787366	0.78	1.7120	102.0	102.0	0.2734	0.2734	102	
2,3,7,8-TCDF	17.219	5318100	0.78	1.0173	9.371	9.371	0.0301	0.0301	93.71	
S Total TCDF					9.371	9.371	0.0301	0.0301		
D 13C-2,3,7,8-TCDD	17.899	35015492	0.73	1.0837	101.1	101.1	0.2151	0.2151	101	
$ 37Cl4-2,3,7,8-TCDD	17.914	3886961		1.2441	9.778	9.778	0.0141	0.0141	97.78	
2,3,7,8-TCDD	17.914	3866888	0.75	1.1543	9.567	9.567	0.0404	0.0404	95.67	
S Total TCDD					9.567	9.567	0.0404	0.0404		
D 13C-1,2,3,7,8-PeCDF	22.164	44324423	1.58	1.3633	101.8	101.8	0.2654	0.2654	102	
1,2,3,7,8-PeCDF	22.192	21869960	1.60	1.0268	48.1	48.1	0.1939	0.1939	96.11	
D 13C-2,3,4,7,8-PeCDF	23.501	39991127	1.61	1.2714	98.4	98.4	0.2845	0.2845	98.44	
2,3,4,7,8-PeCDF	23.528	21192341	1.61	1.0730	49.4	49.4	0.2278	0.2278	98.78	
S Total PeCDF					97.4	97.4	0.2109	0.2109		
D 13C-1,2,3,7,8-PeCDD	24.223	27599575	1.65	0.8534	101.2	101.2	0.1576	0.1576	101	
1,2,3,7,8-PeCDD	24.251	14001615	1.58	1.0748	47.2	47.2	0.1268	0.1268	94.40	
S Total PeCDD					47.2	47.2	0.1268	0.1268		
D 13C-1,2,3,4,7,8-HxCDF	30.360	31997609	0.52	1.1403	105.6	105.6	0.6317	0.6317	106	
1,2,3,4,7,8-HxCDF	30.373	19403087	1.26	1.2385	49.0	49.0	0.3874	0.3874	97.93	
D 13C-1,2,3,6,7,8-HxCDF	30.546	36839261	0.51	1.2841	107.9	107.9	0.5609	0.5609	108	
1,2,3,6,7,8-HxCDF	30.573	21442142	1.24	1.1900	48.9	48.9	0.3512	0.3512	97.82	
D 13C-2,3,4,6,7,8-HxCDF	31.411	33251869	0.52	1.1825	105.8	105.8	0.6091	0.6091	106	
2,3,4,6,7,8-HxCDF	31.424	19763902	1.27	1.2132	49.0	49.0	0.2879	0.2879	97.99	
D 13C-1,2,3,7,8,9-HxCDF	32.236	29100555	0.52	1.0832	101.1	101.1	0.6650	0.6650	101	
1,2,3,7,8,9-HxCDF	32.250	17104369	1.29	1.2266	47.9	47.9	0.3391	0.3391	95.83	
S Total HxCDF					194.8	194.8	0.3414	0.3414		
* 13C-1,2,3,7,8,9-HxCDD	32.050	26585249	1.26	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.597	20668498	1.30	0.7757	100.2	100.2	0.3837	0.3837	100	
1,2,3,4,7,8-HxCDD	31.624	12146371	1.25	1.1618	50.6	50.6	0.2422	0.2422	101	
D 13C-1,2,3,6,7,8-HxCDD	31.704	28375971	1.26	0.9997	106.8	106.8	0.2977	0.2977	107	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.731	13241965	1.27	1.0320	45.2	45.2	0.2242	0.2242	90.44	
1,2,3,7,8,9-HxCDD	32.063	13979339	1.24	1.2407	45.9	45.9	0.2047	0.2047	91.90	
S Total HxCDD					141.8	141.8	0.2237	0.2237		
D 13C-1,2,3,4,6,7,8-HpCDF	33.697	22777983	0.44	0.8529	100.5	100.5	1.162	1.162	100	
1,2,3,4,6,7,8-HpCDF	33.709	16066504	1.04	1.4619	48.3	48.3	0.4676	0.4676	96.50	
D 13C-1,2,3,4,7,8,9-HpCDF	34.803	19080880	0.43	0.7499	95.7	95.7	1.322	1.322	95.71	
1,2,3,4,7,8,9-HpCDF	34.815	13401187	1.06	1.4262	49.2	49.2	0.7185	0.7185	98.49	
S Total HpCDF					97.5	97.5	0.5931	0.5931		
D 13C-1,2,3,4,6,7,8-HpCDD	34.499	20644971	1.04	0.7851	98.9	98.9	0.4887	0.4887	98.91	
1,2,3,4,6,7,8-HpCDD	34.511	10711957	1.02	1.1022	47.1	47.1	0.4464	0.4464	94.15	
S Total HpCDD					47.1	47.1	0.4464	0.4464		
D 13C-OCDD	36.866	28802827	0.90	0.5610	193.1	193.1	0.1970	0.1970	96.56	
OCDF	36.961	21077054	0.91	1.4855	98.5	98.5	0.1277	0.1277	98.52	
OCDD	36.866	15956086	0.90	1.1570	95.8	95.8	0.1895	0.1895	95.76	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 10-Dec-2020 19:57:43 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00096 CS-4 HRDXNL4_00096
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:42 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: stephensk Date: 11-Dec-2020 10:11:04

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.708	0		13435062	3427840	4298	10745	798		
333.9339	17.702	17.708	0		18518367	4672174	3255	8137	1435	0.73(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.206	0	0.972	24438812	6003461	8597	21492	698		
317.9389	17.188	17.206	-1	0.971	31348554	7604849	6571	16427	1157	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.222	0	1.001	2323905	562242	723	1807	778		
305.8987	17.219	17.222	0	1.001	2994195	709226	944	2360	751	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	14746517	3576909	4298	10745	832		
333.9339	17.899	17.905	0	1.011	20268975	4888431	3255	8137	1502	0.73(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	3886961	939414	569	1422	1651		
2,3,7,8-TCDD											
319.8965	17.914	17.926	-1	1.001	1653613	392886	1005	2512	391		
321.8936	17.914	17.926	-1	1.001	2213275	517118	575	1437	899	0.75(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.164	22.173	0	1.252	27157391	4755230	7130	17825	667		
353.8970	22.164	22.173	0	1.252	17167032	3018268	4591	11477	657	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.192	22.200	0	1.001	13464527	2333168	3672	9180	635		
341.8567	22.178	22.200	-1	1.001	8405433	1438795	2520	6300	571	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.501	23.509	0	1.328	24697592	3964176	7130	17825	556		
353.8970	23.501	23.509	0	1.328	15293535	2369661	4591	11477	516	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.528	23.534	0	1.001	13063641	2018649	3672	9180	550		
341.8567	23.528	23.534	0	1.001	8128700	1238654	2520	6300	492	1.61(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.223	24.226	0	1.368	17176369	2526661	2530	6325	999		
369.8919	24.210	24.226	-1	1.368	10423206	1517275	1827	4567	830	1.65(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.251	24.254	0	1.001	8566606	1269989	1276	3190	995		
357.8516	24.251	24.254	0	1.001	5435009	796967	929	2322	858	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.360	30.362	0	0.947	10988213	1838777	6805	17012	270		
385.8610	30.360	30.362	0	0.947	21009396	3782329	11812	29530	320	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.373	30.376	0	1.000	10799388	1883309	6119	15297	308		
375.8178	30.373	30.376	0	1.000	8603699	1537318	4668	11670	329	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.546	30.549	0	0.953	12385136	2189256	6805	17012	322		
385.8610	30.546	30.549	0	0.953	24454125	4263560	11812	29530	361	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.573	30.575	0	1.001	11876392	2107400	6119	15297	344		
375.8178	30.573	30.575	0	1.001	9565750	1723149	4668	11670	369	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.411	31.411	0	0.980	11341944	2650156	6805	17012	389		
385.8610	31.411	31.411	0	0.980	21909925	5071719	11812	29530	429	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.424	31.430	0	1.000	11045702	2546722	6119	15297	416		
375.8178	31.424	31.430	0	1.000	8718200	1978185	4668	11670	424	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.236	32.242	0	1.006	9913938	2193131	6805	17012	322		
385.8610	32.236	32.242	0	1.006	19186617	4289658	11812	29530	363	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.250	32.255	0	1.000	9642369	2129388	6119	15297	348		
375.8178	32.250	32.255	0	1.000	7462000	1652372	4668	11670	354	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.050	32.050	0		14813727	3575774	3916	9790	913		
403.8529	32.050	32.050	0		11771522	2885740	3777	9442	764	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.597	31.603	0	0.986	11683818	3063701	3916	9790	782		
403.8529	31.597	31.603	0	0.986	8984680	2370952	3777	9442	628	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.624	31.619	0	1.001	6752666	1715964	3388	8470	506		
391.8127	31.611	31.619	0	1.000	5393705	1367807	2730	6825	501	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.704	31.709	0	0.989	15792424	3705700	3916	9790	946		
403.8529	31.704	31.709	0	0.989	12583547	2904215	3777	9442	769	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.731	31.725	0	1.001	7405028	1774611	3388	8470	524		
391.8127	31.717	31.725	0	1.000	5836937	1394504	2730	6825	511	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.063	32.063	0	1.015	7744893	1889975	3388	8470	558		
391.8127	32.063	32.063	0	1.015	6234446	1463592	2730	6825	536	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.697	33.695	0	1.051	6916166	2107466	7963	19907	265		
419.8220	33.697	33.695	0	1.051	15861817	4802711	17655	44137	272	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.709	33.707	0	1.000	8181987	2478146	9885	24712	251		
409.7789	33.709	33.707	0	1.000	7884517	2354904	9009	22522	261	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.803	34.798	0	1.086	5739366	1408010	7963	19907	177		
419.8220	34.803	34.798	0	1.086	13341514	3201298	17655	44137	181	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.815	34.805	1	1.000	6883178	1621756	9885	24712	164		
409.7789	34.803	34.805	0	1.000	6518009	1574486	9009	22522	175	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.499	34.497	0	1.076	10542139	2840740	5161	12902	550		
437.8140	34.499	34.497	0	1.076	10102832	2618169	4757	11892	550	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.511	34.509	0	1.000	5416694	1445403	5132	12830	282		
425.7737	34.511	34.509	0	1.000	5295263	1419209	5611	14027	253	1.02(0.88-1.20)	
13C-OCDD											
469.7779	36.866	36.861	0	1.150	13645730	2723810	1659	4147	1642		
471.7750	36.866	36.861	0	1.150	15157097	3047071	1198	2995	2543	0.90(0.76-1.02)	
OCDF											
441.7428	36.961	36.962	0	1.003	10070310	1957817	1005	2512	1948		
443.7399	36.961	36.962	0	1.003	11006744	2184696	1185	2962	1844	0.91(0.76-1.02)	
OCDD											
457.7377	36.866	36.868	0	1.000	7542295	1508244	1188	2970	1270		
459.7348	36.866	36.868	0	1.000	8413791	1713266	1343	3357	1276	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

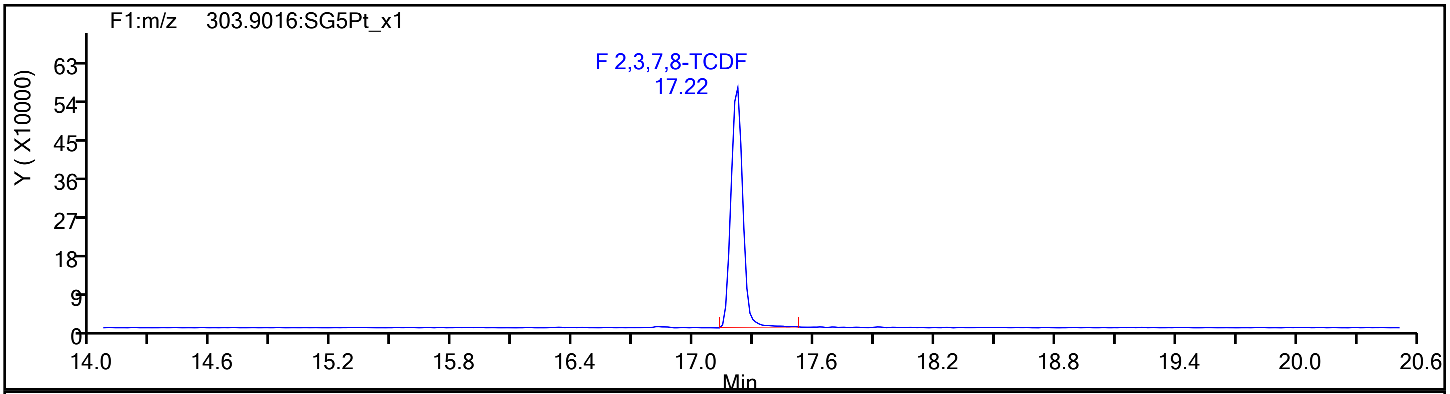

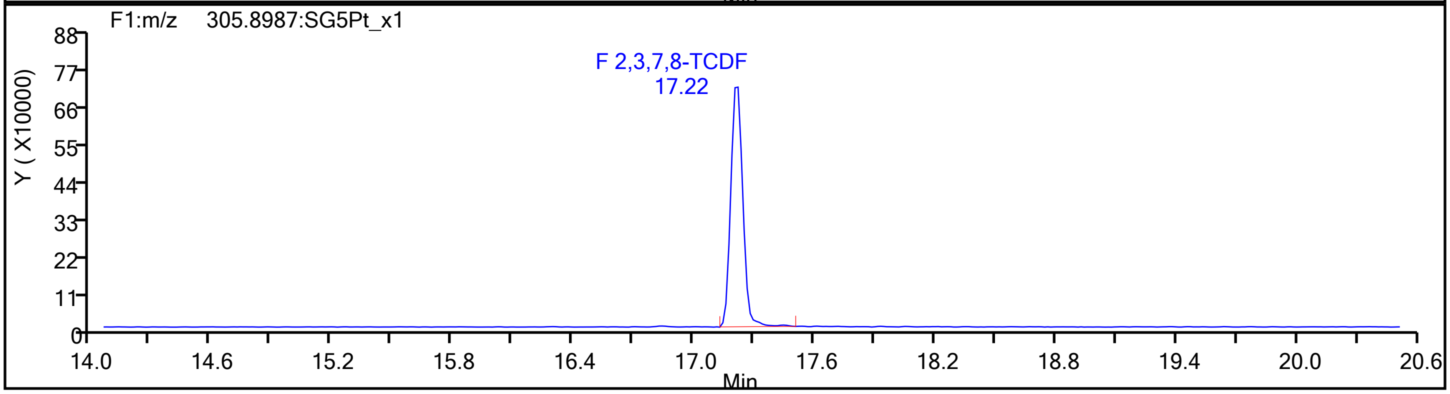

TCDF Standards

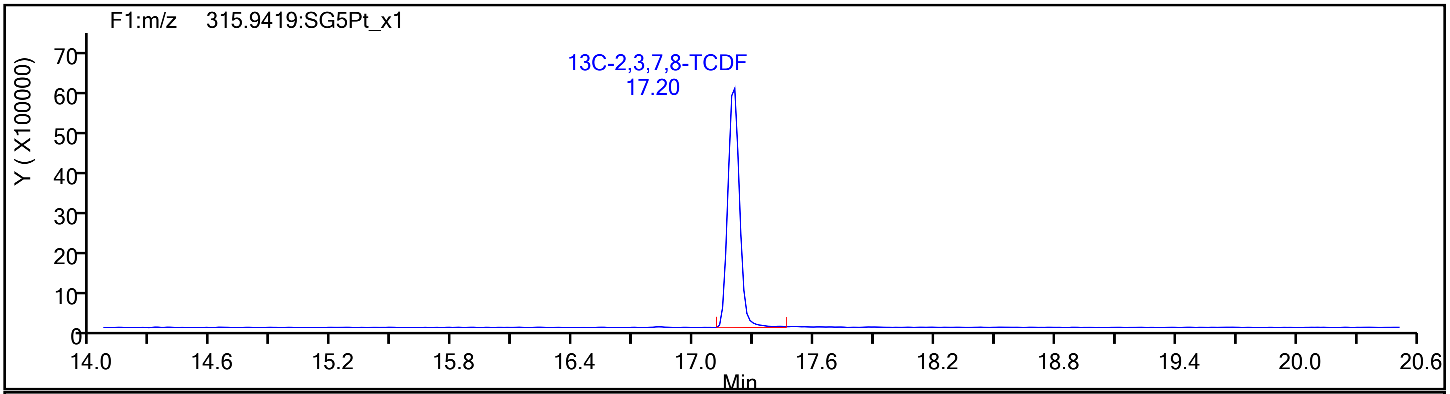

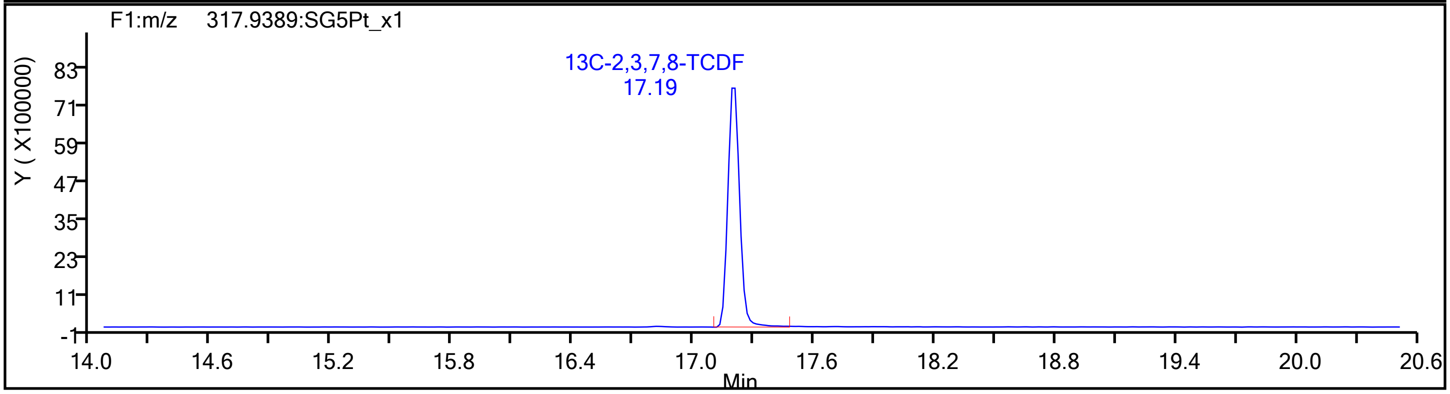

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

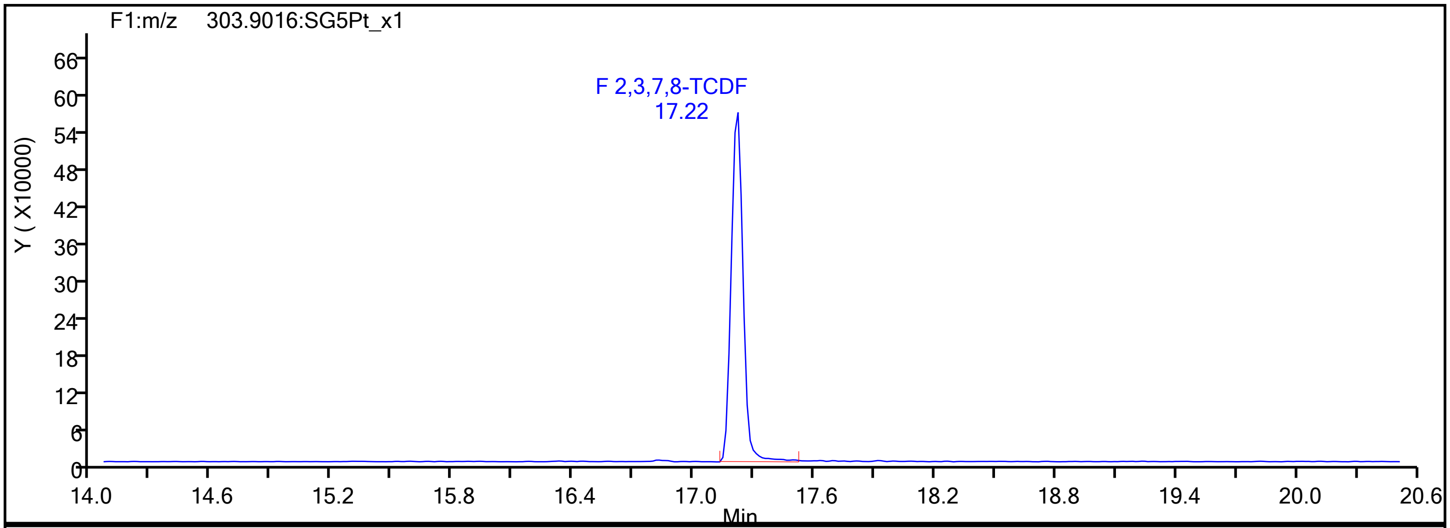

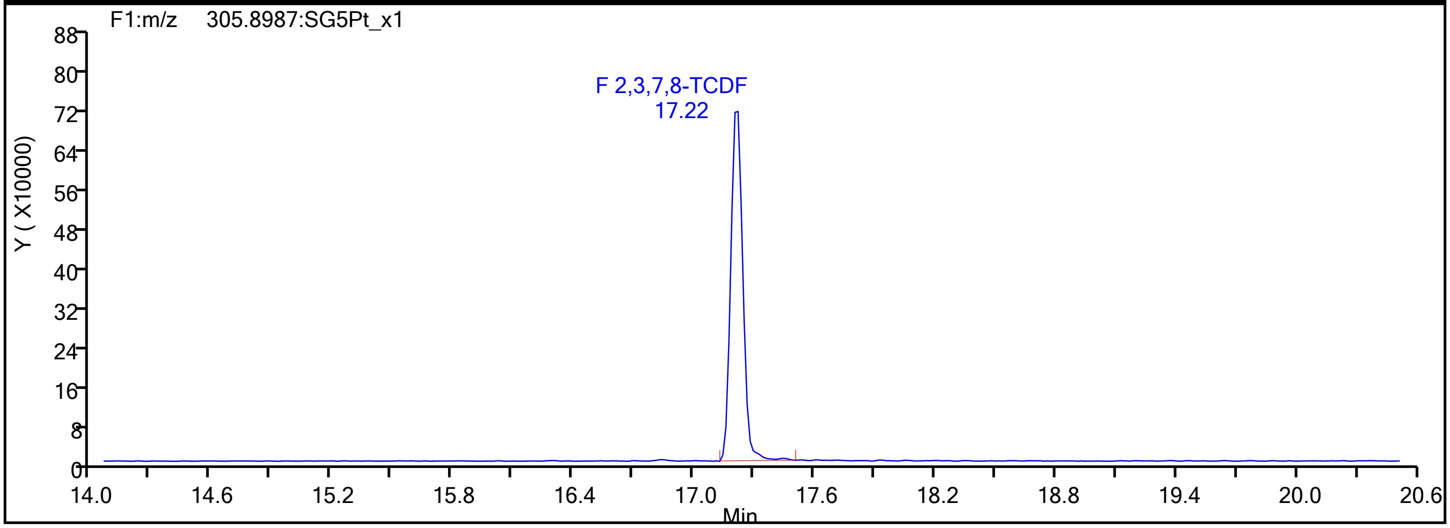

TCDF Interference Mass

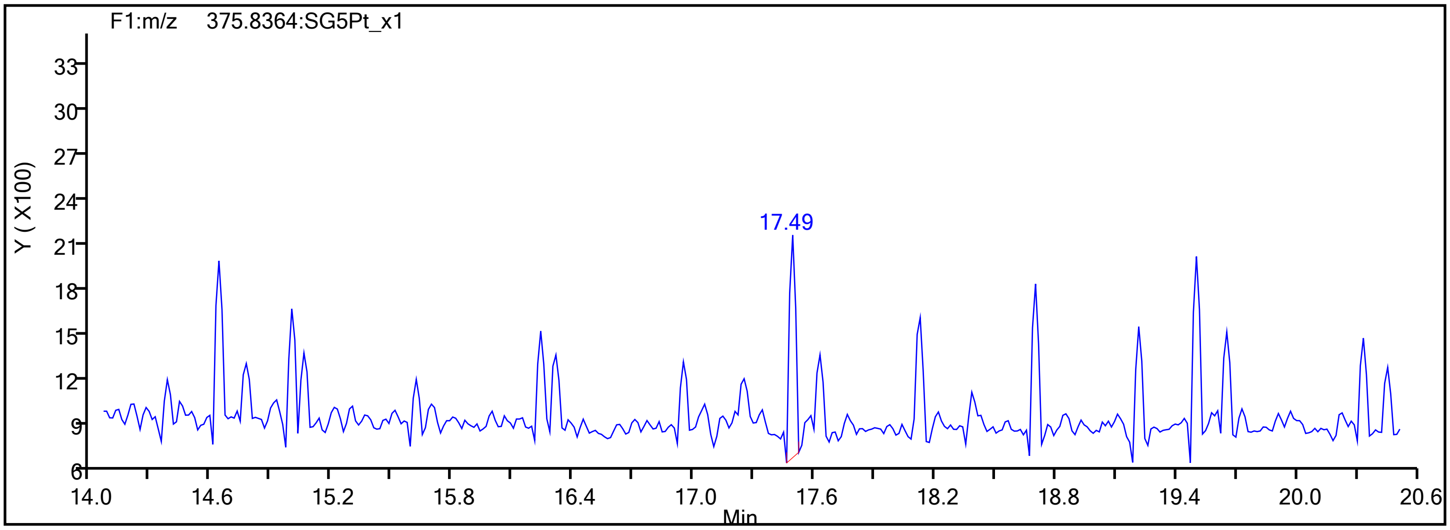

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d
Injection Date: 10-Dec-2020 19:57:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

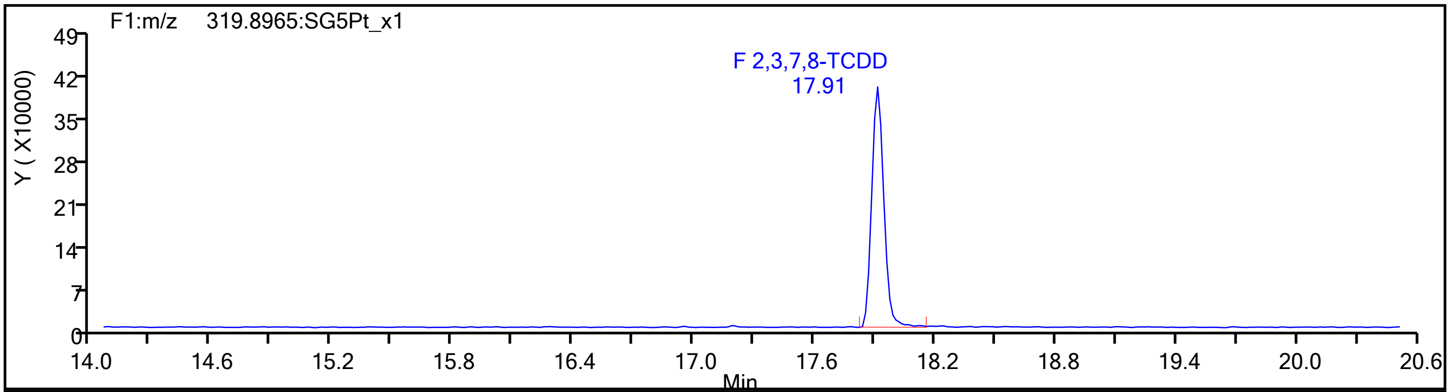

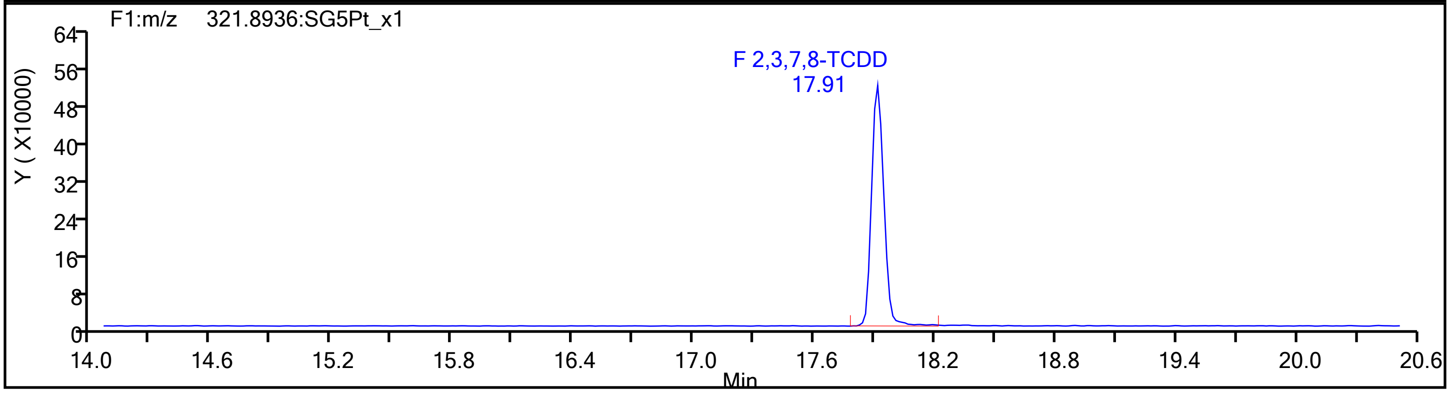

TCDD Standards

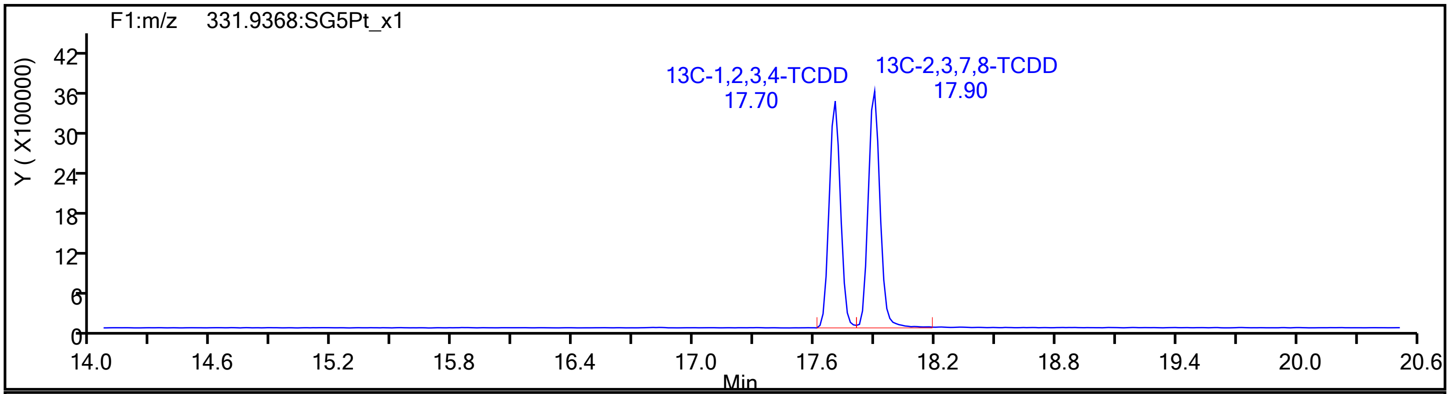

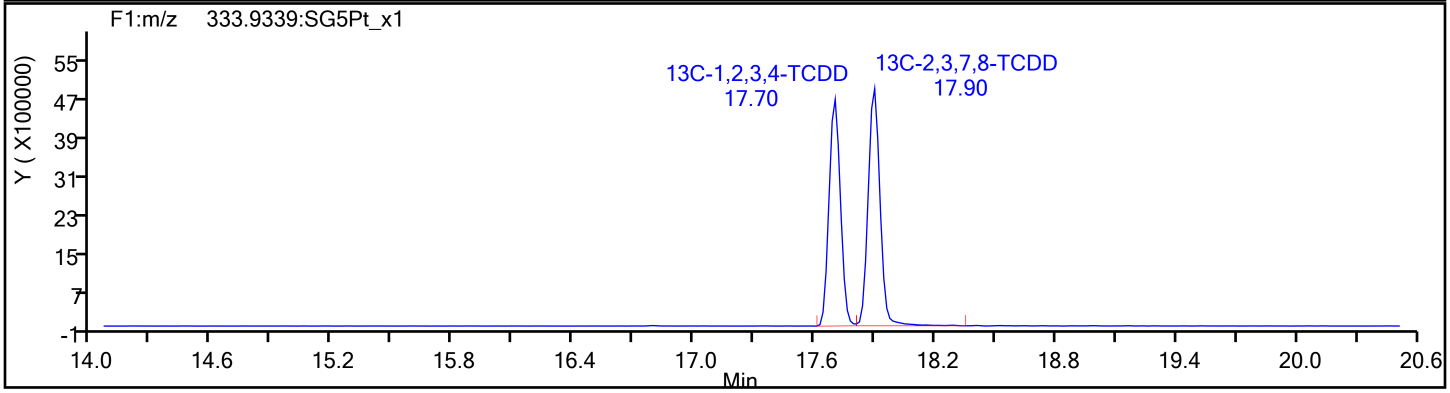

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

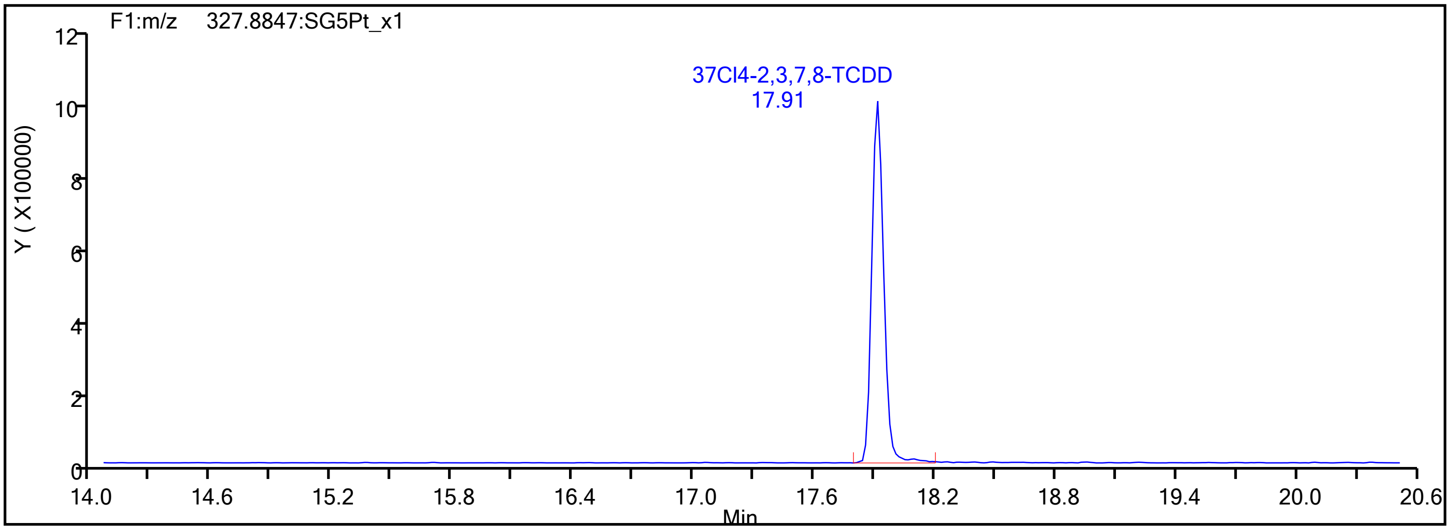

37Cl4-TCDD Standards

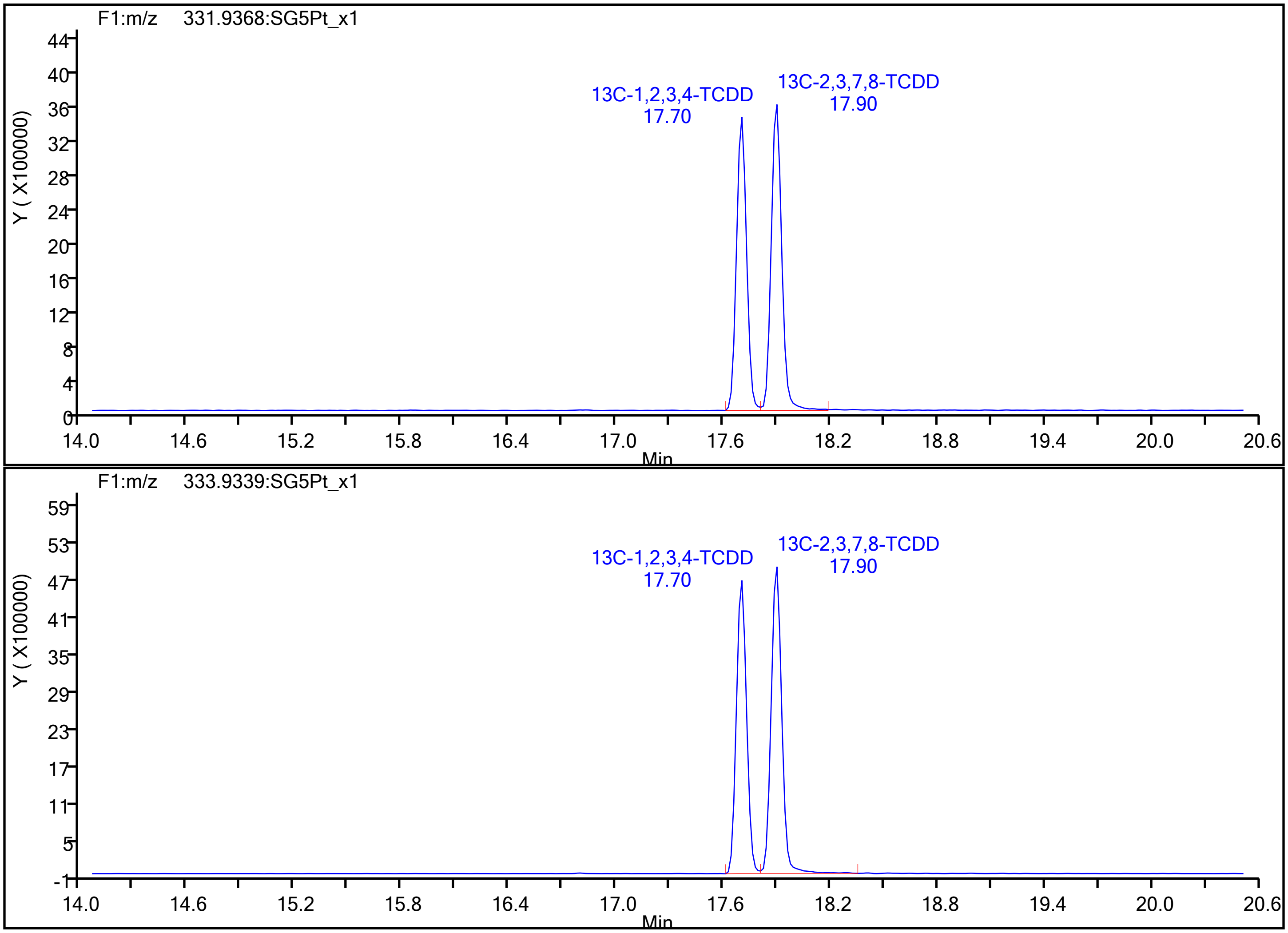

Report Date: 11-Dec-2020 10:12:47
Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d

Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

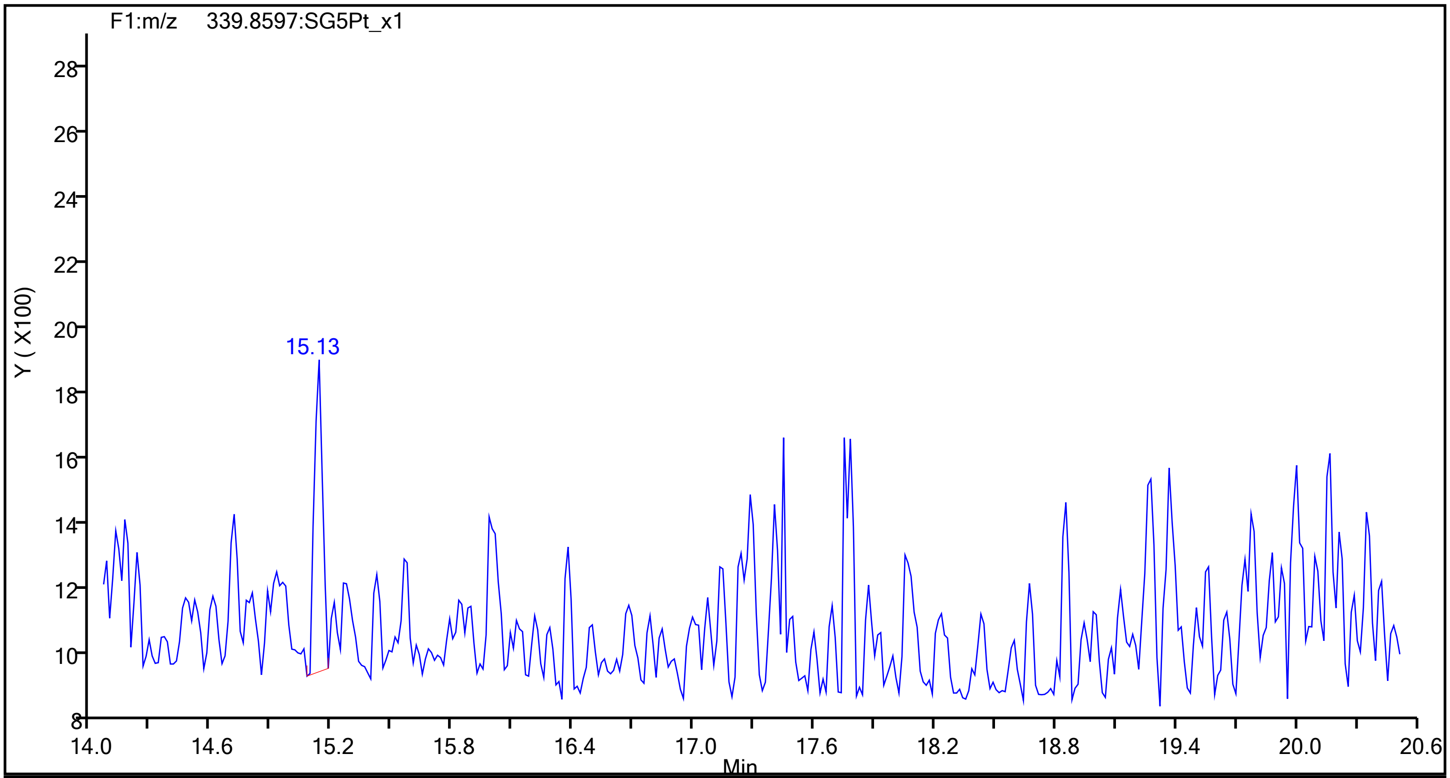

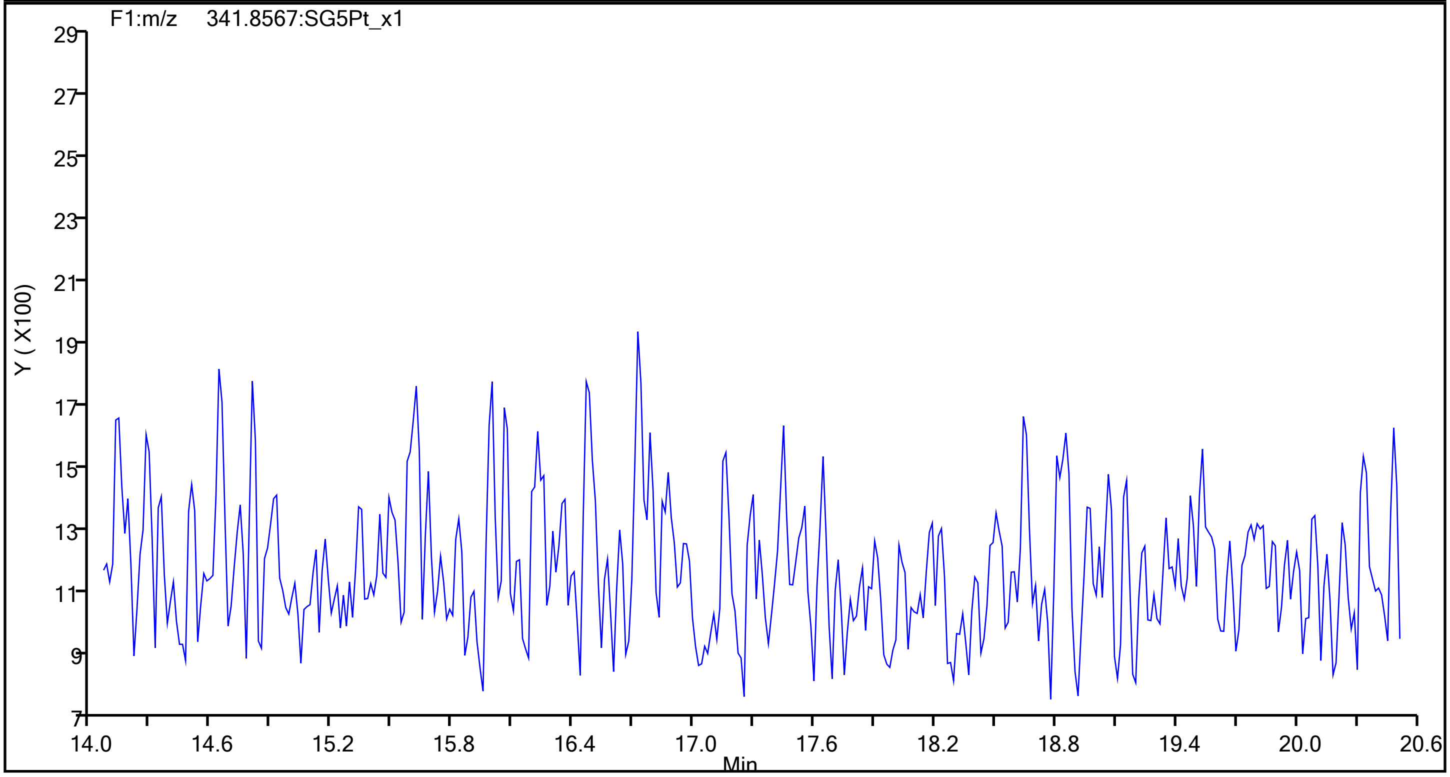

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

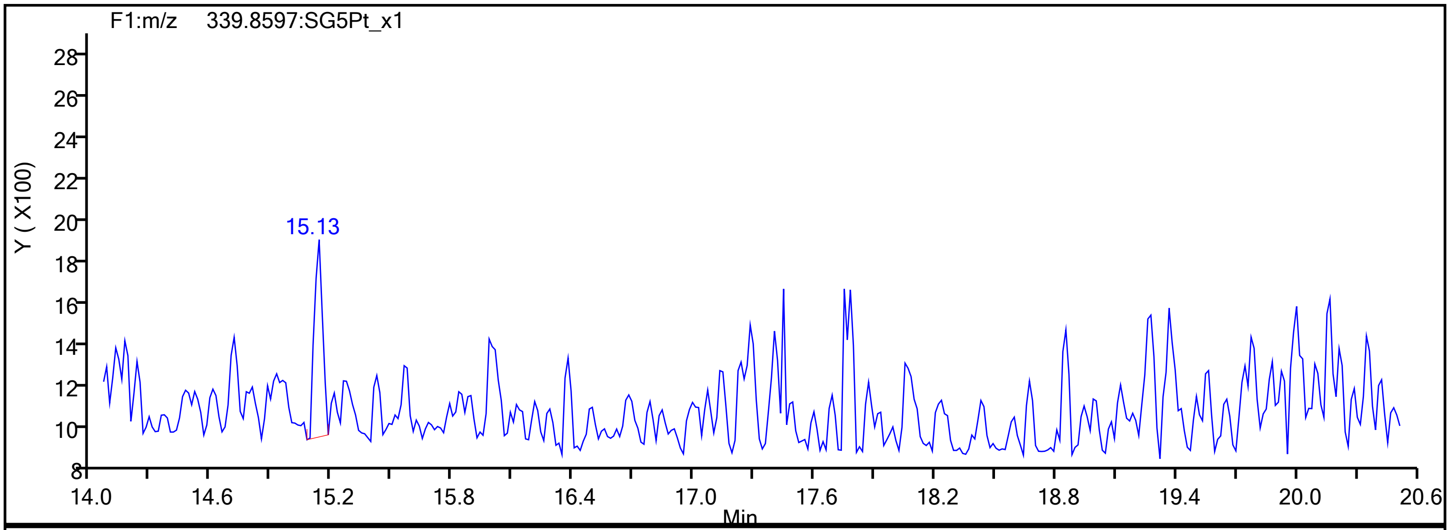

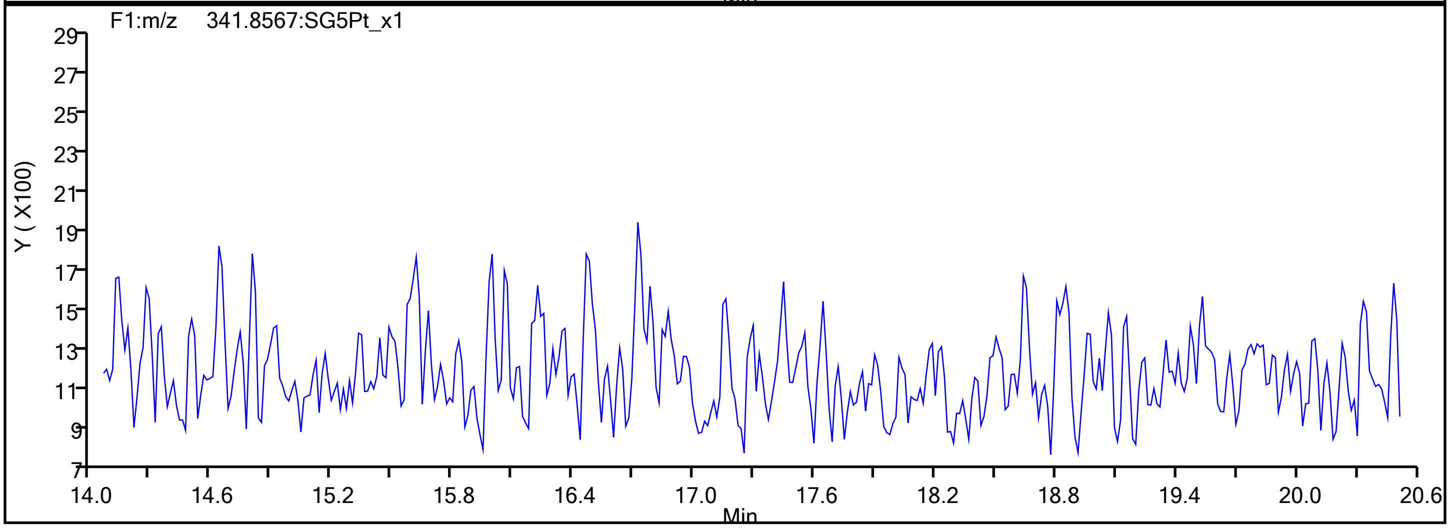

F1 PeCDFs Interference Mass

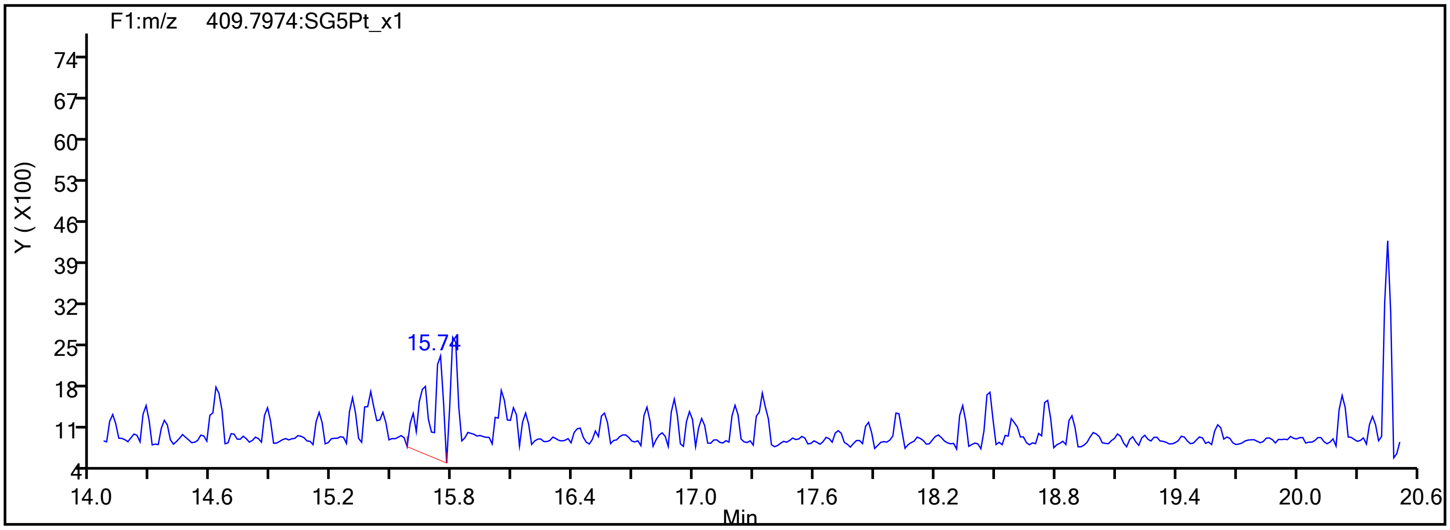

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d
Injection Date: 10-Dec-2020 19:57:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

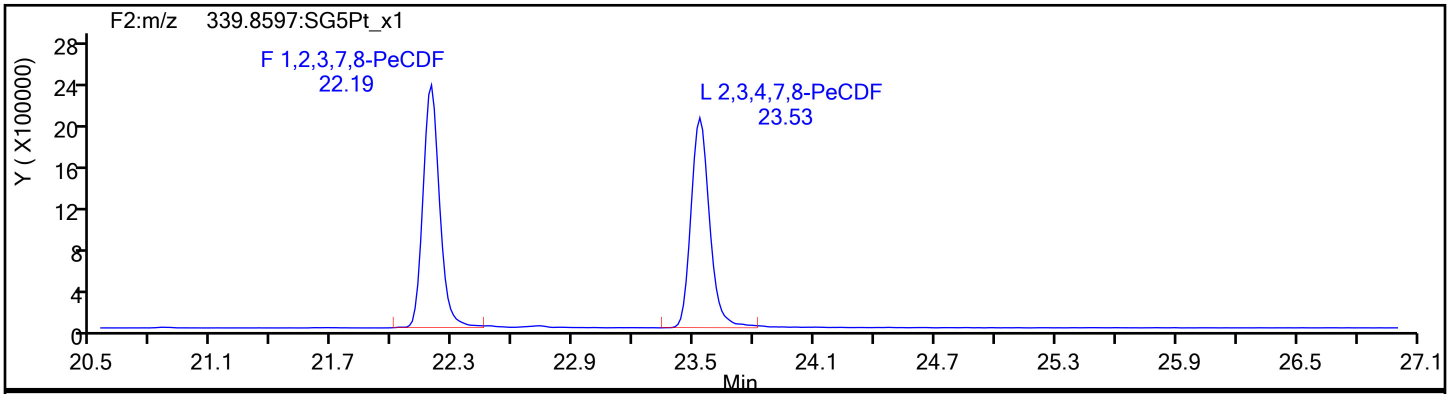

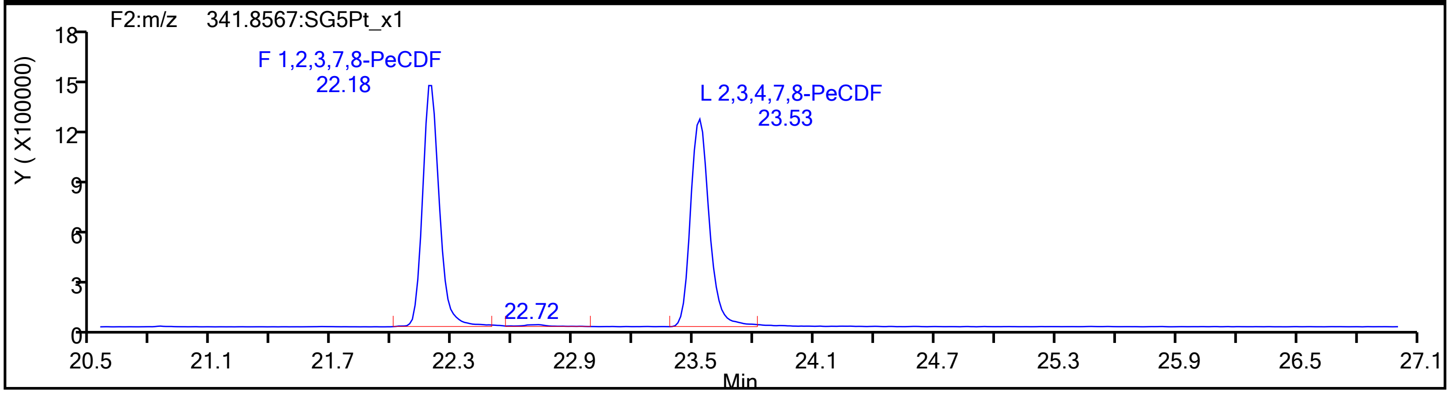

PeCDF Standards

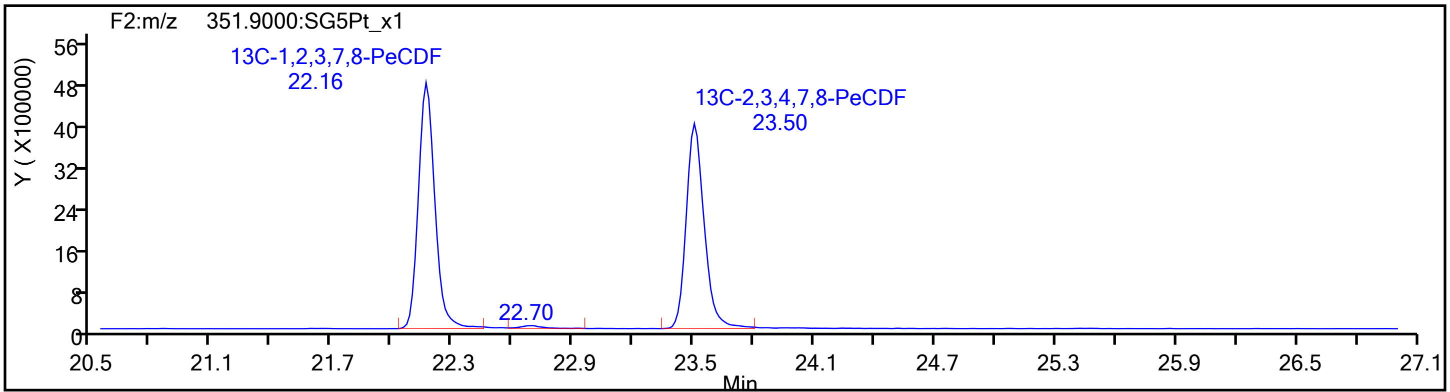

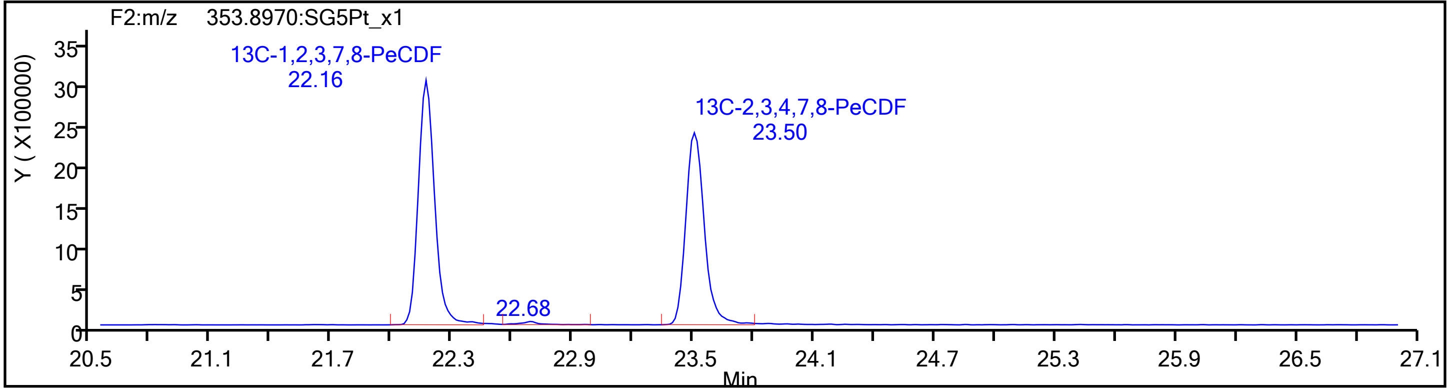

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d
Injection Date: 10-Dec-2020 19:57:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

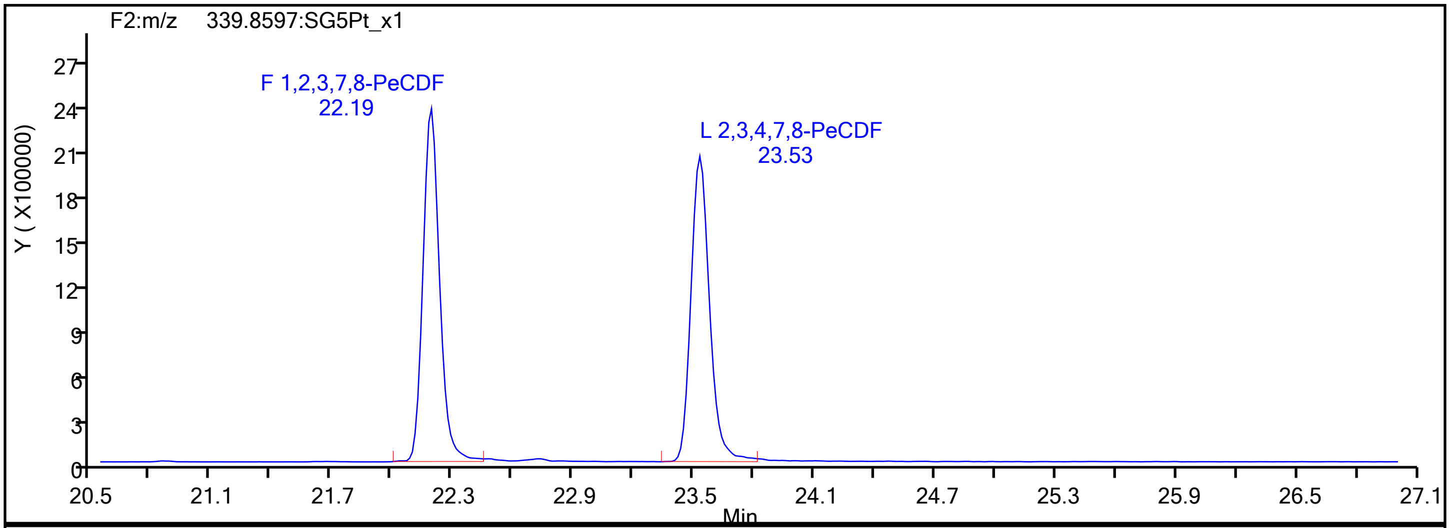

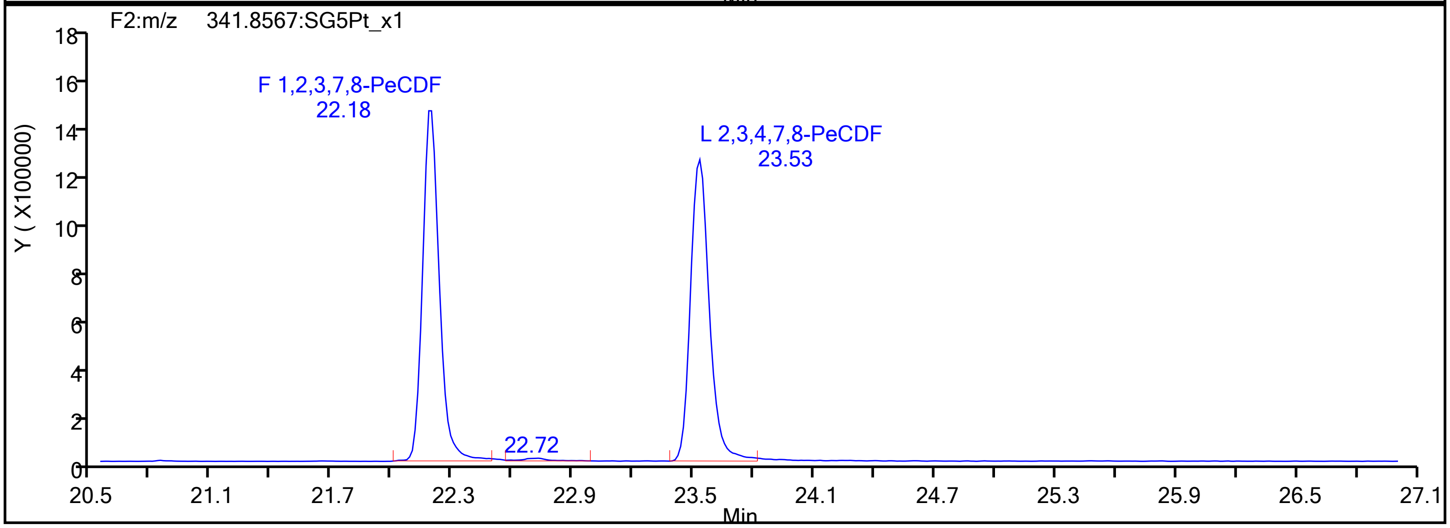

PeCDF Interference Mass

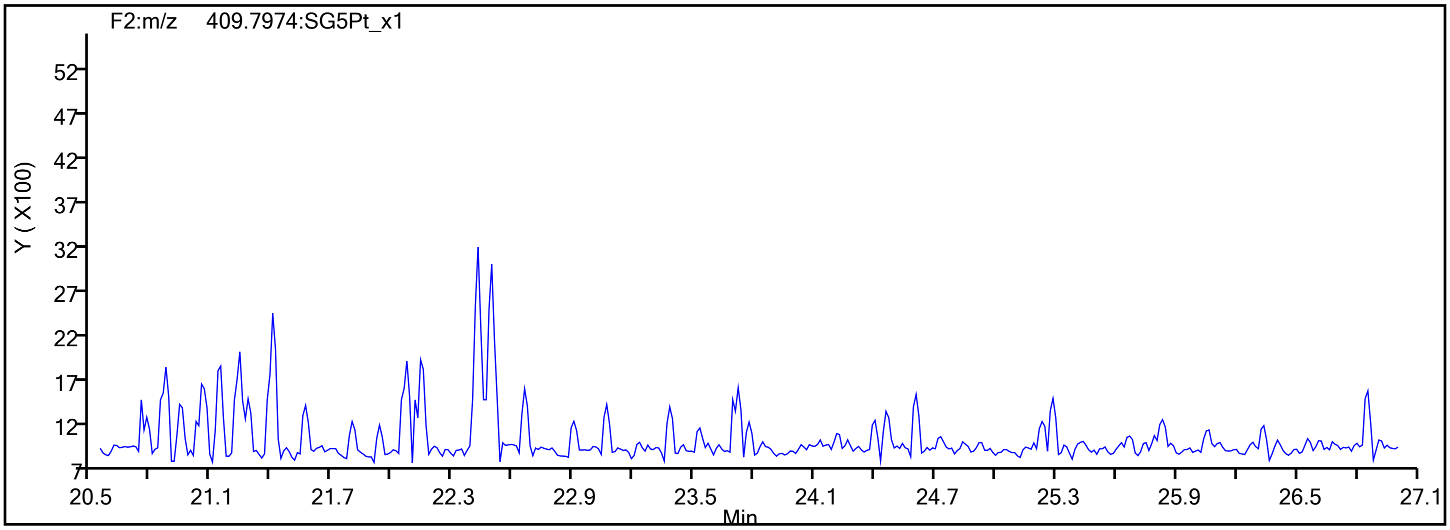

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
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Column Dia: 0.32 mm

PeCDD

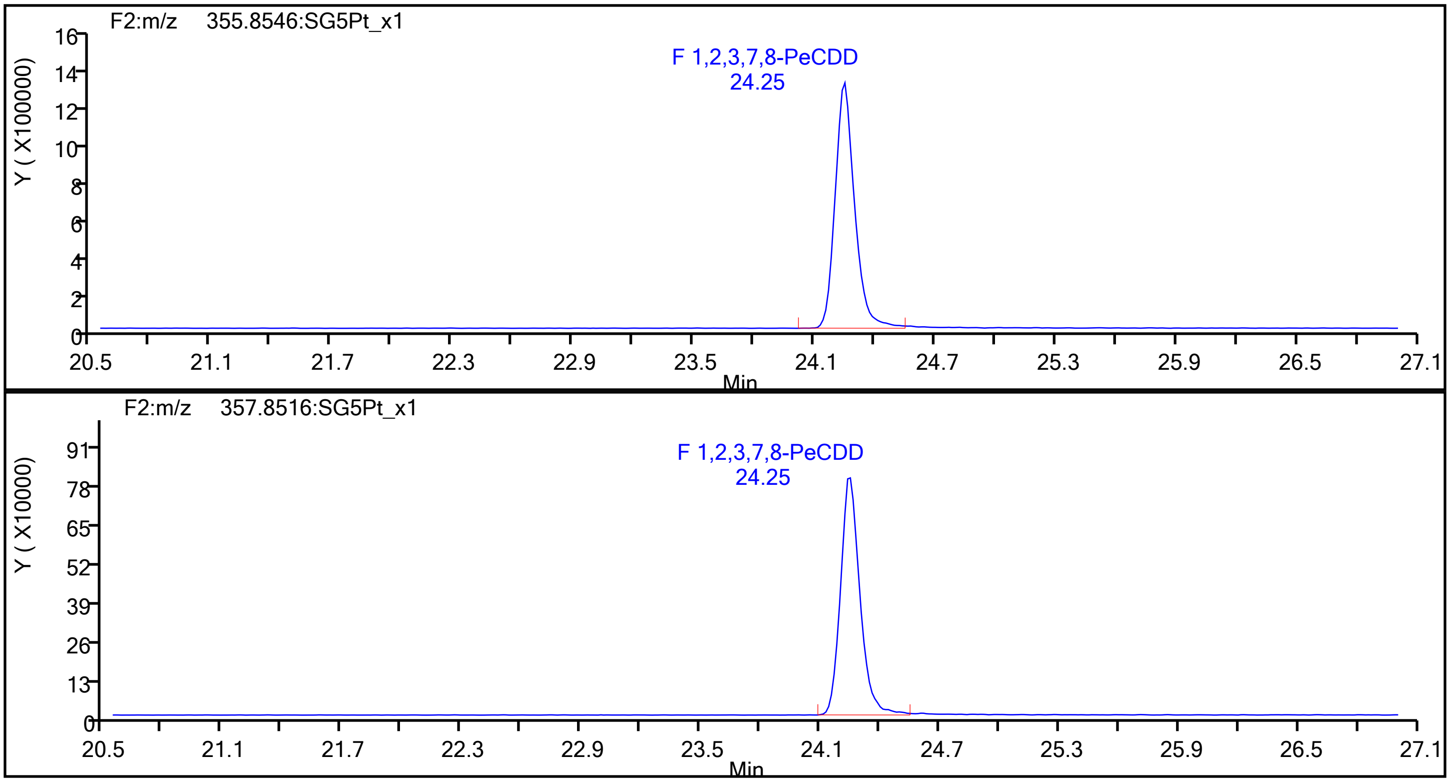

PeCDD Standards

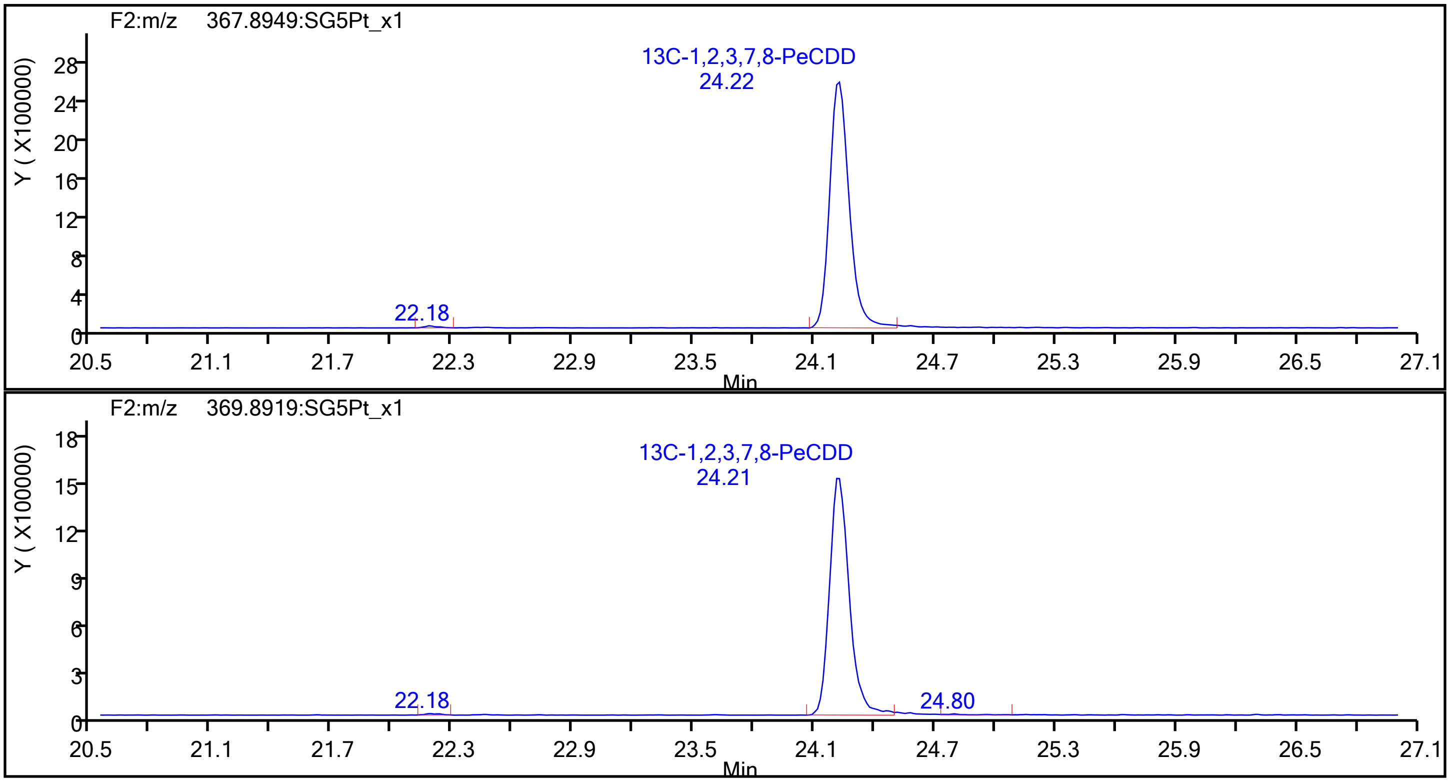

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Dec-2020 19:57:43
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Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

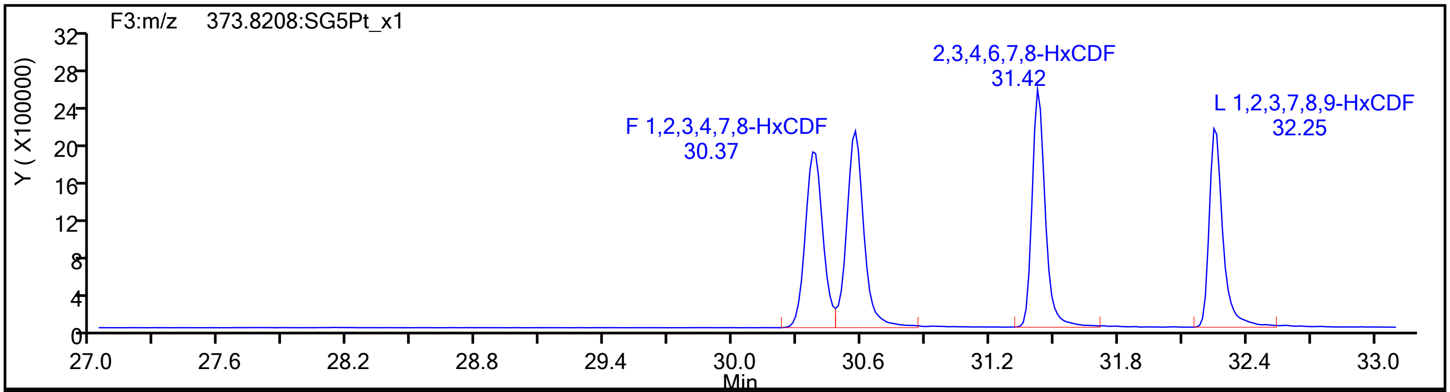

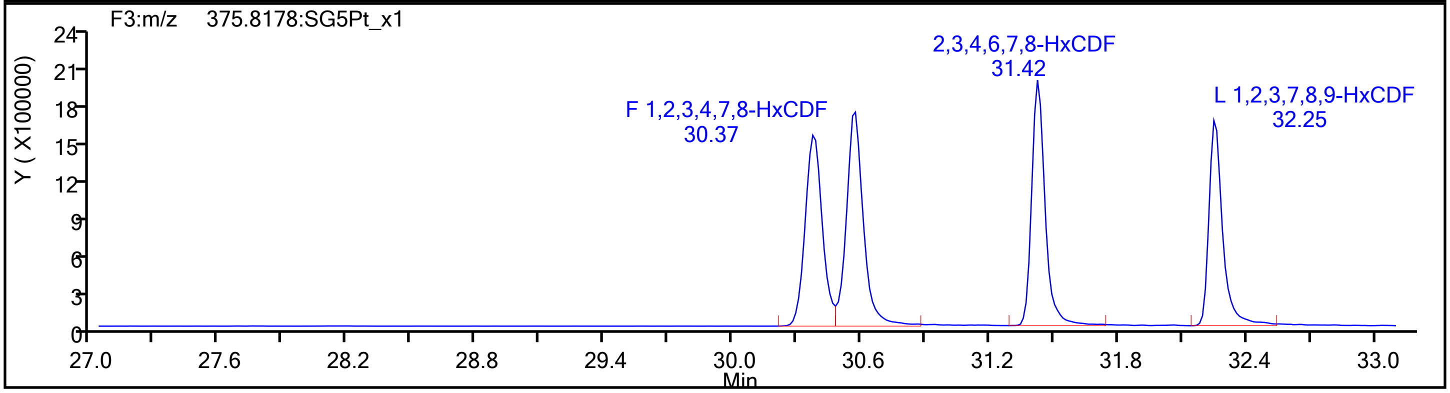

HxCDF Standards

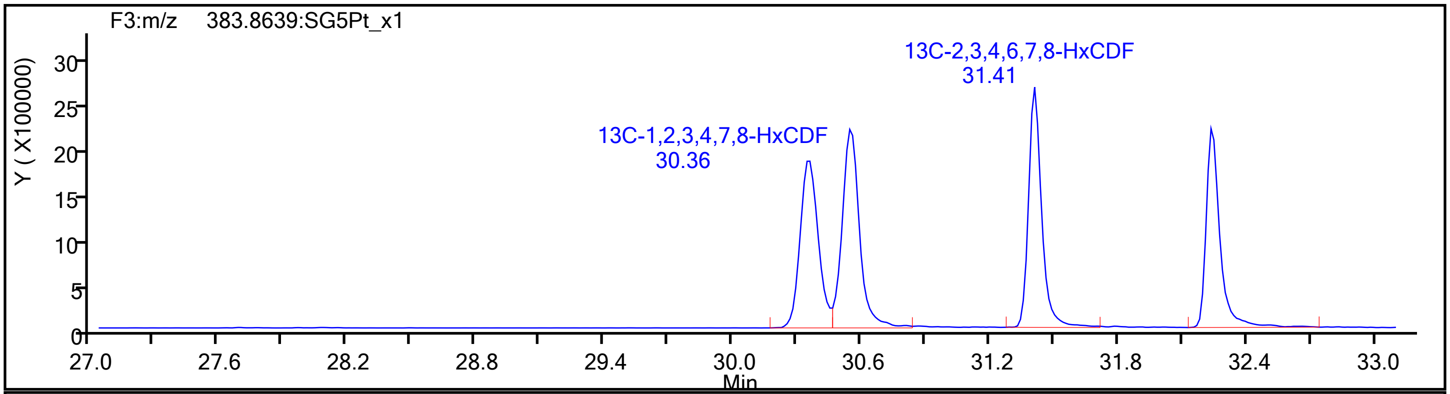

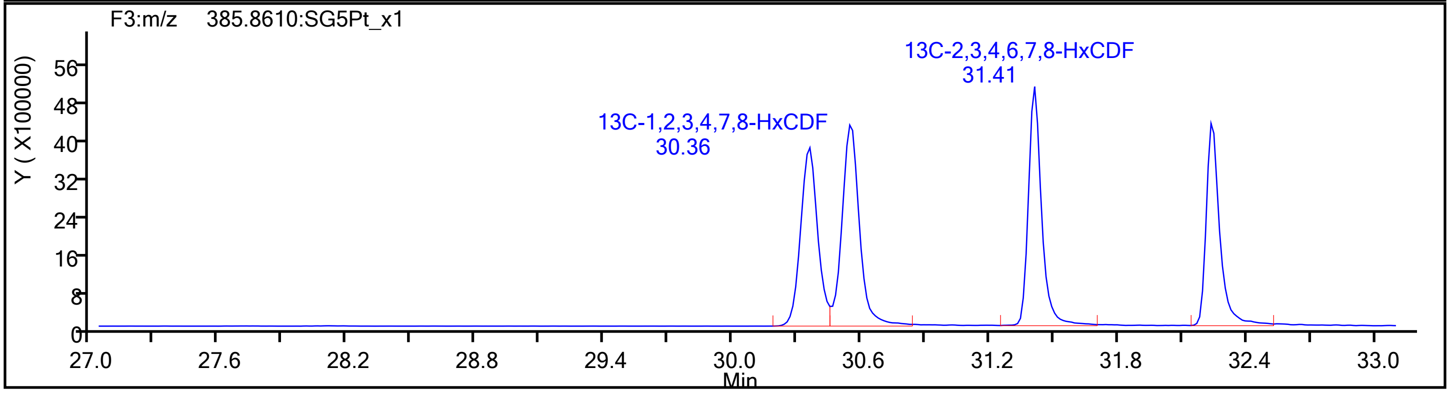

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

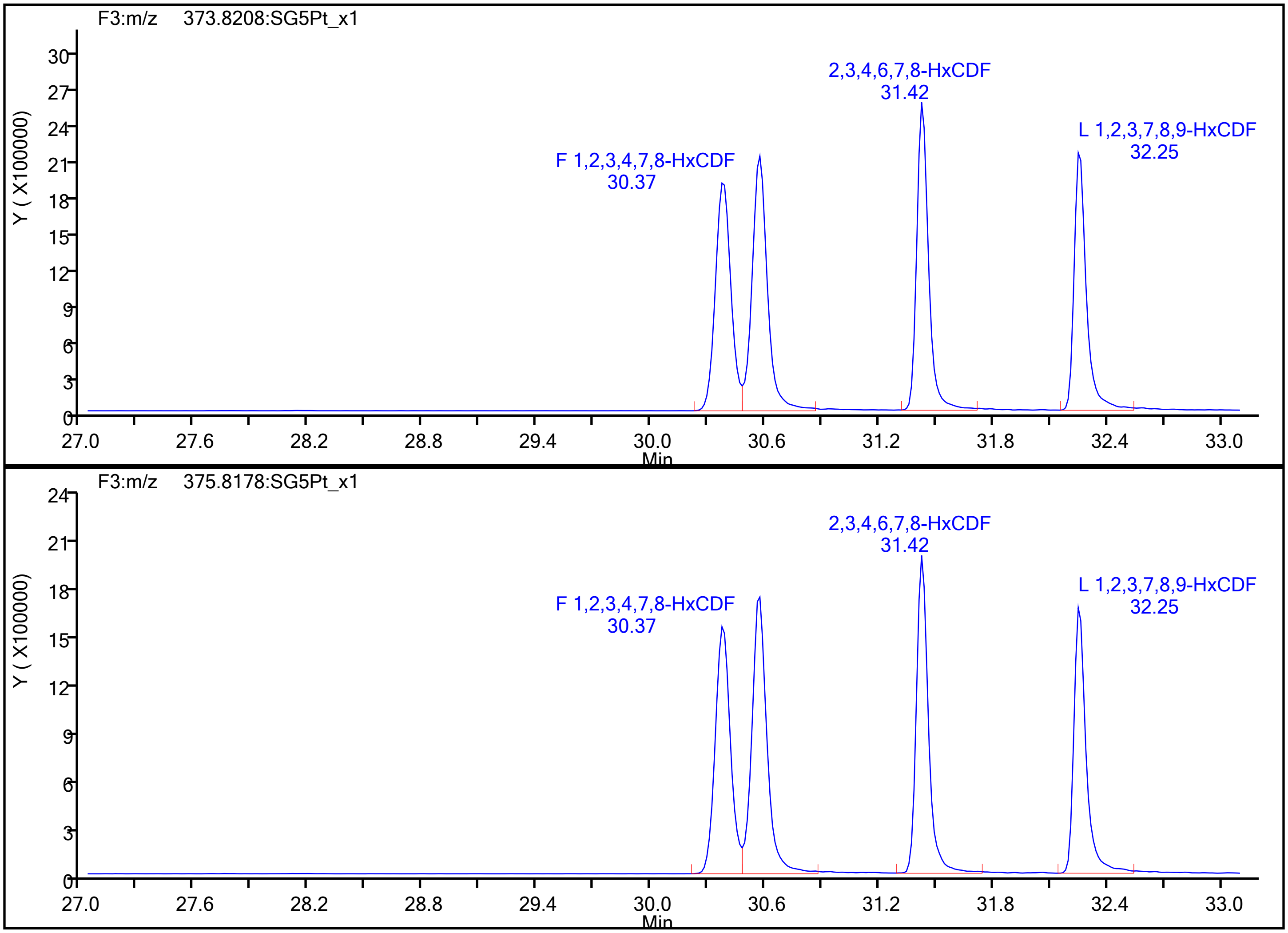

HxCDF Interference Mass

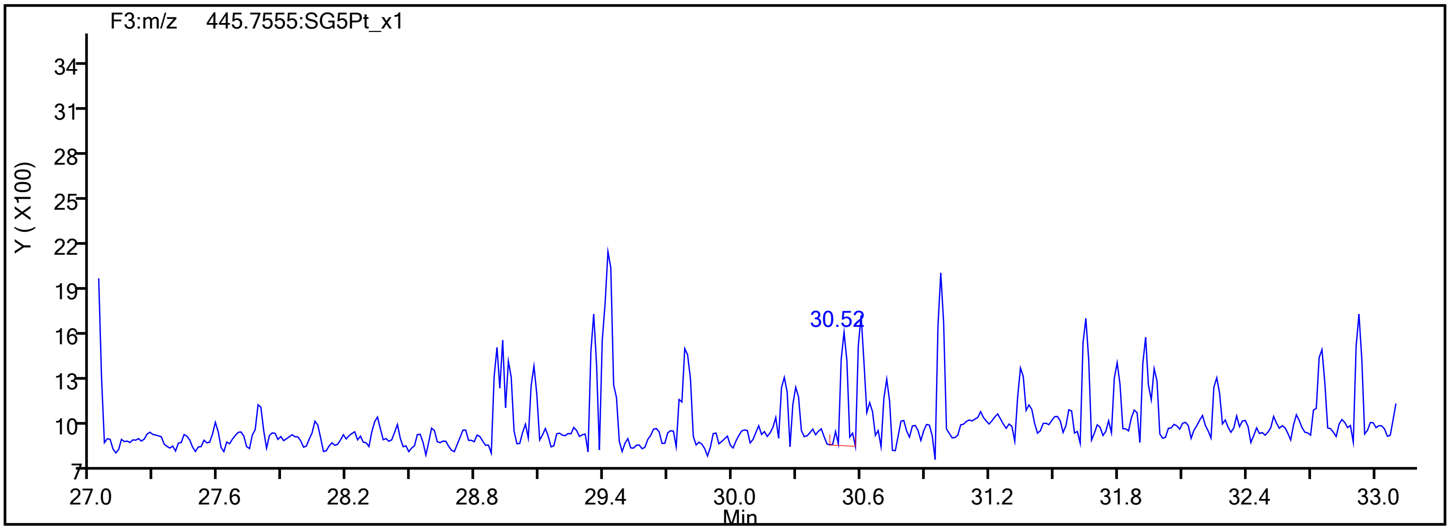

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

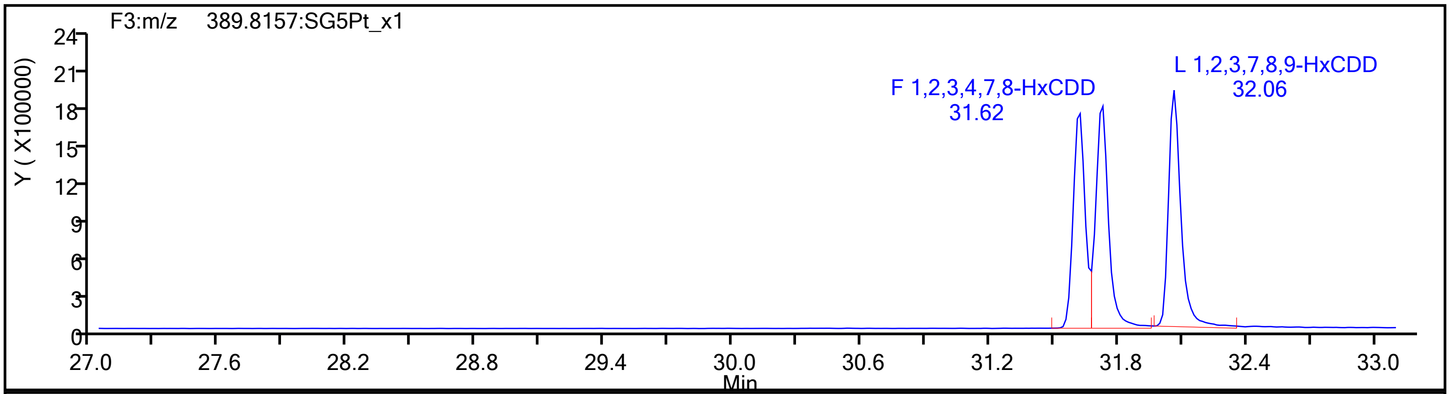

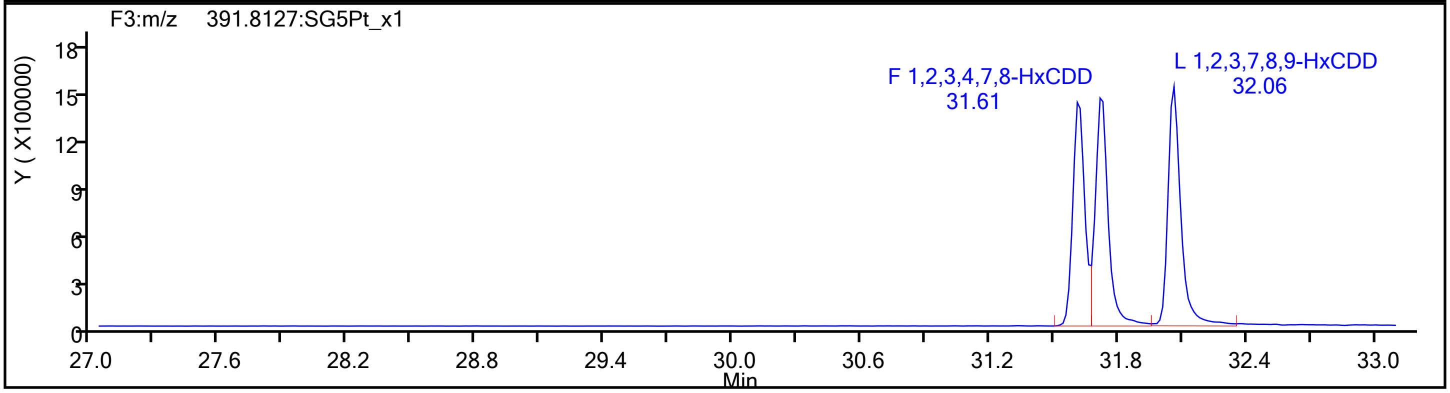

HxCDD Standards

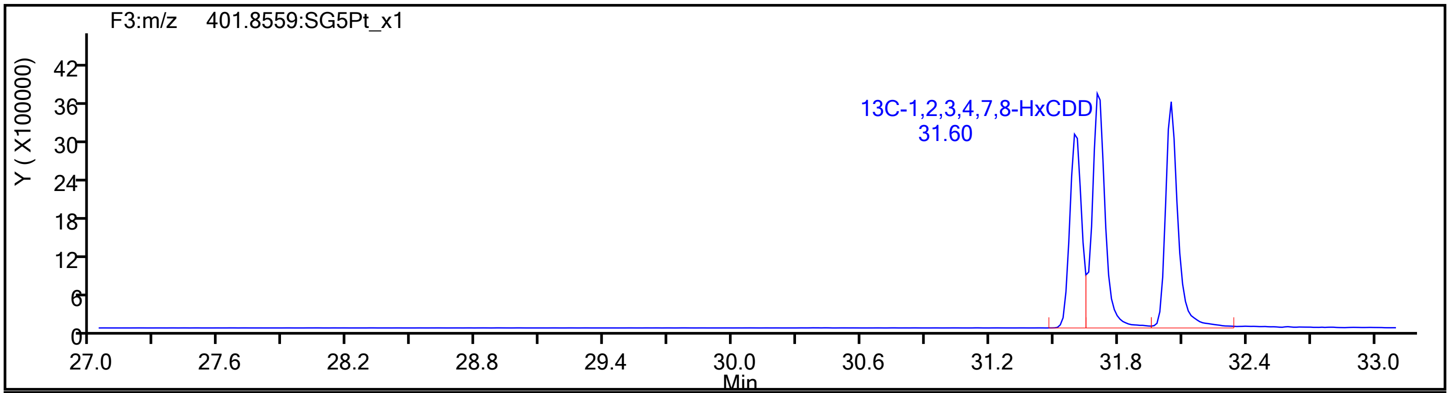

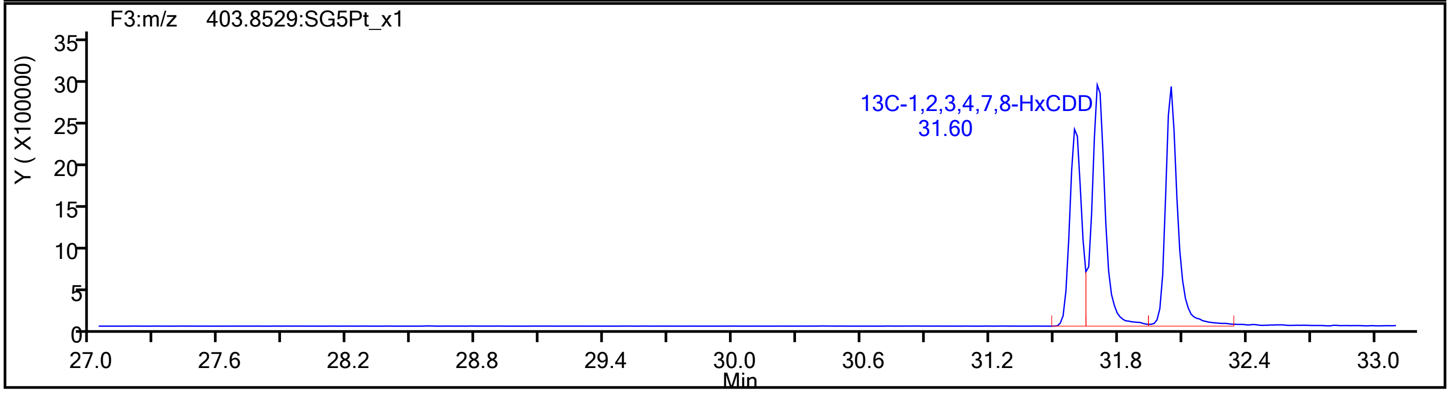

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Dec-2020 19:57:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

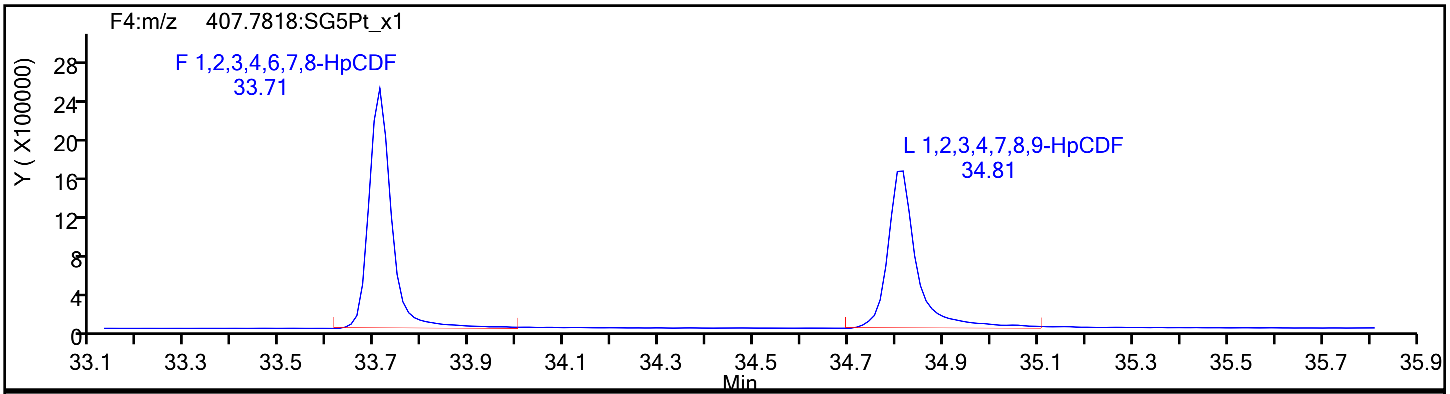

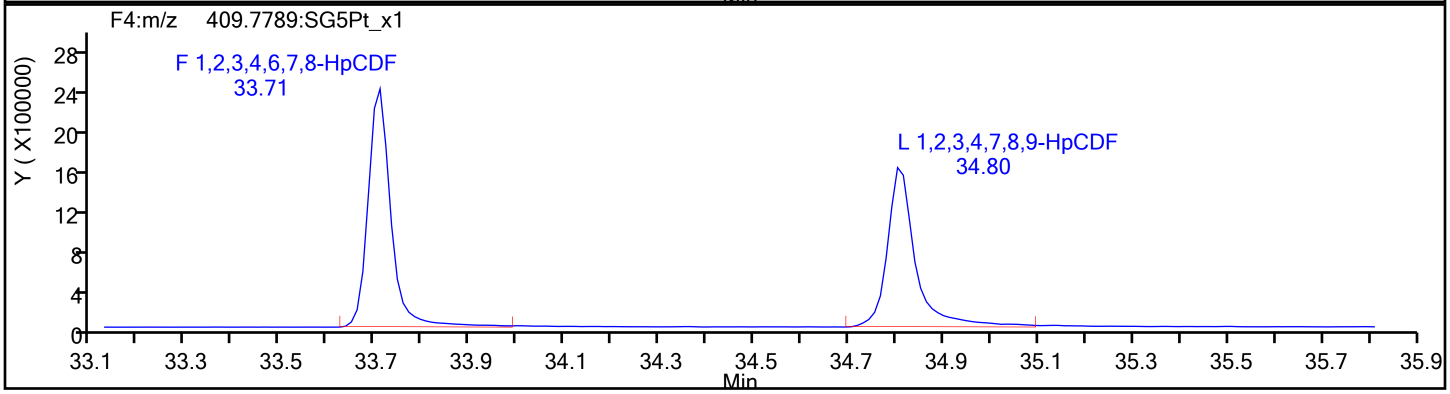

HpCDF Standards

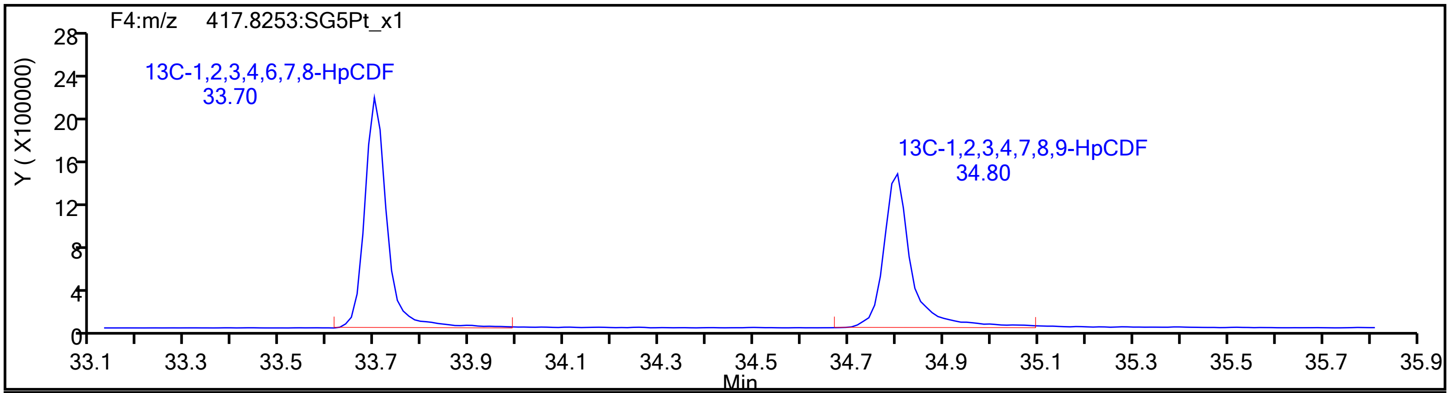

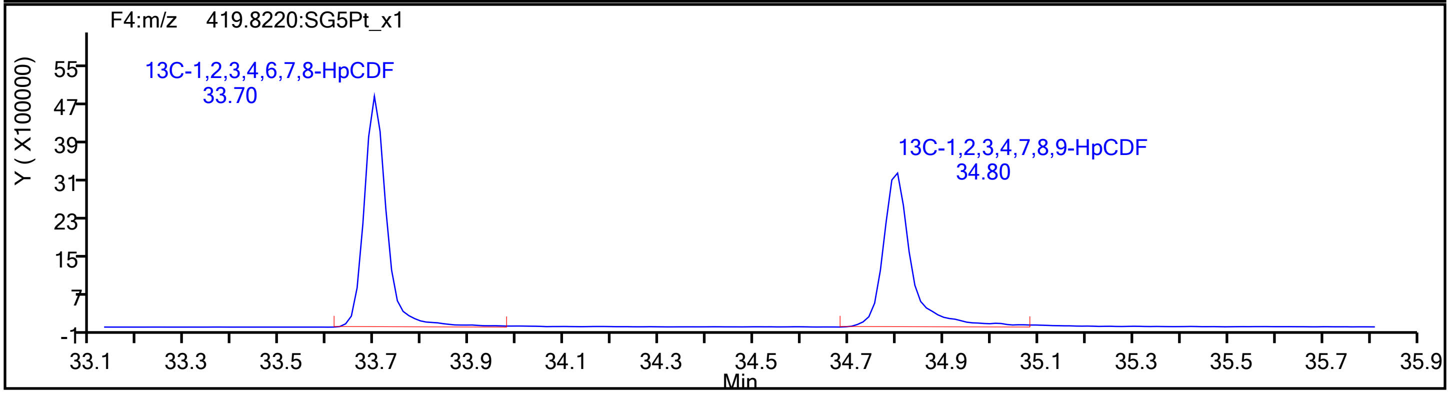

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

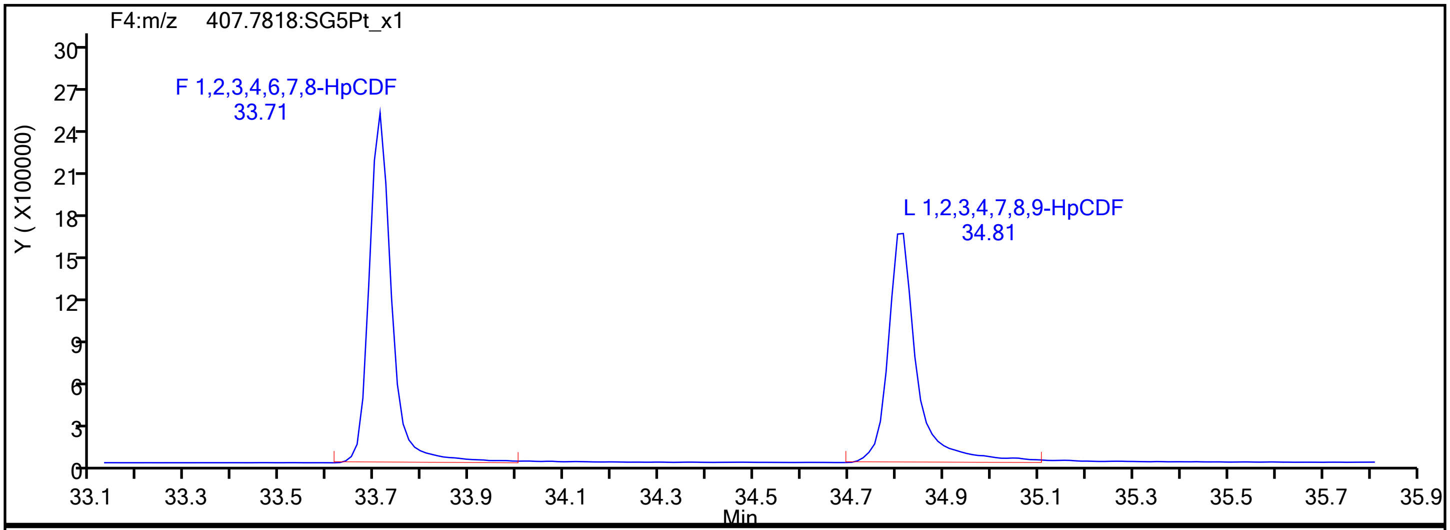

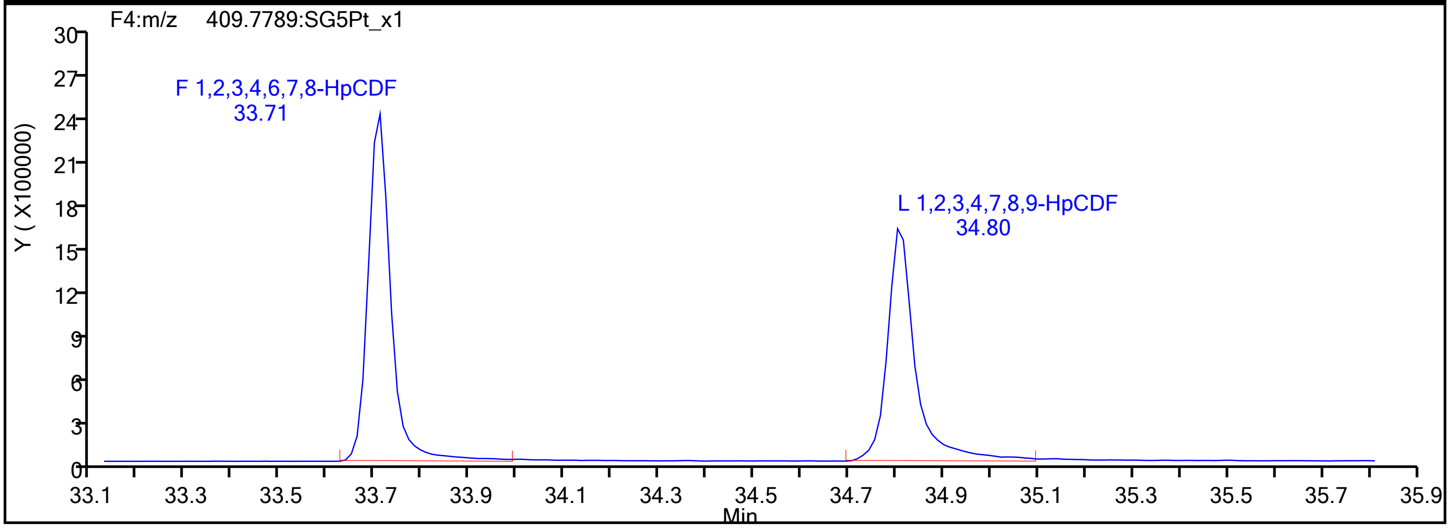

HpCDF Interference Mass

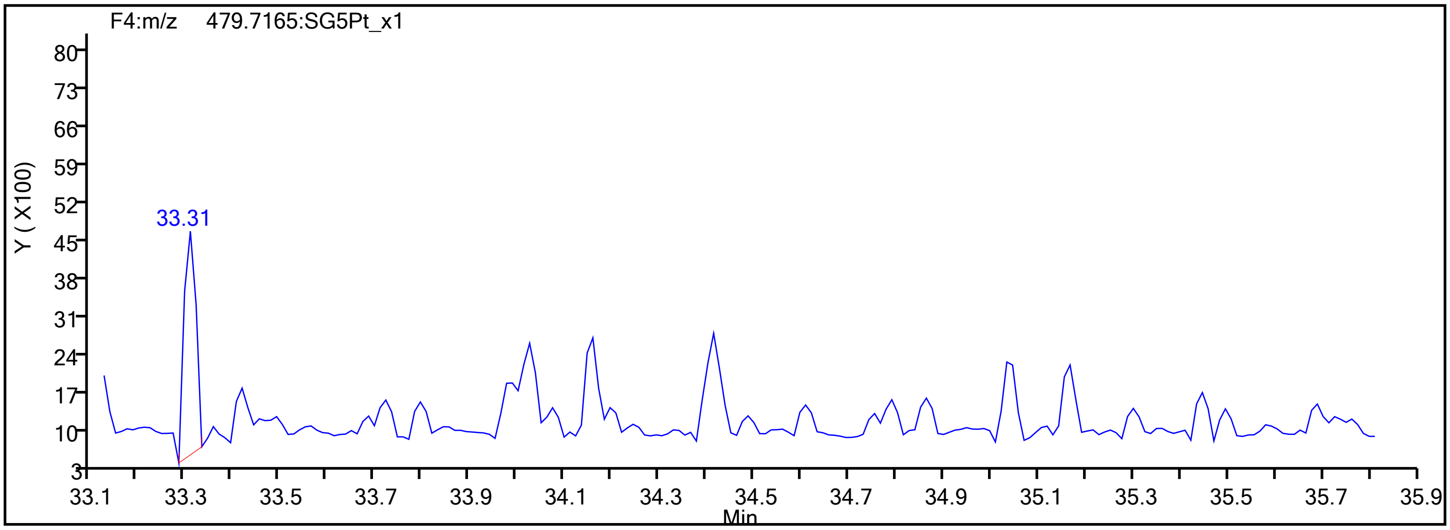

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDD

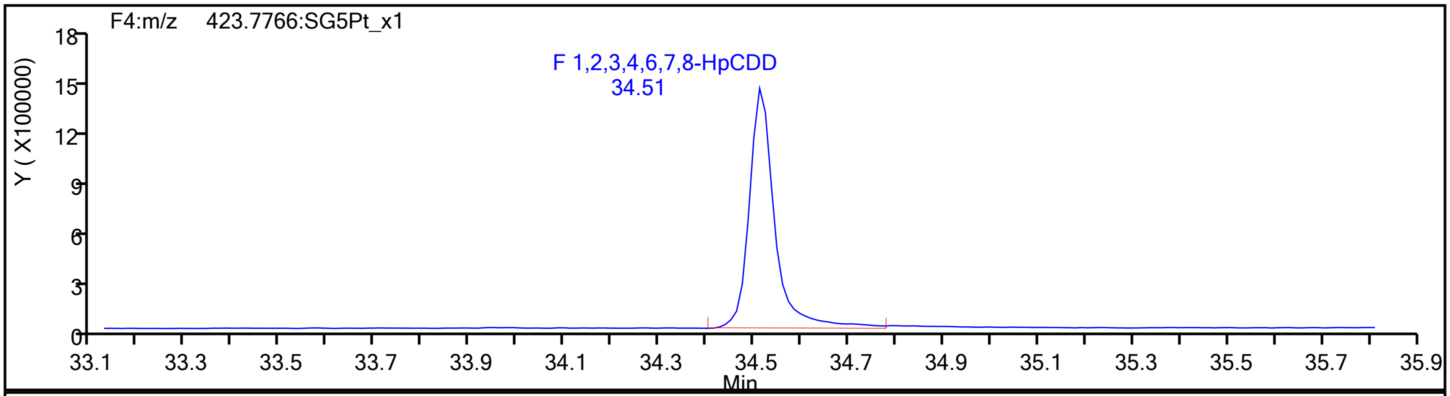

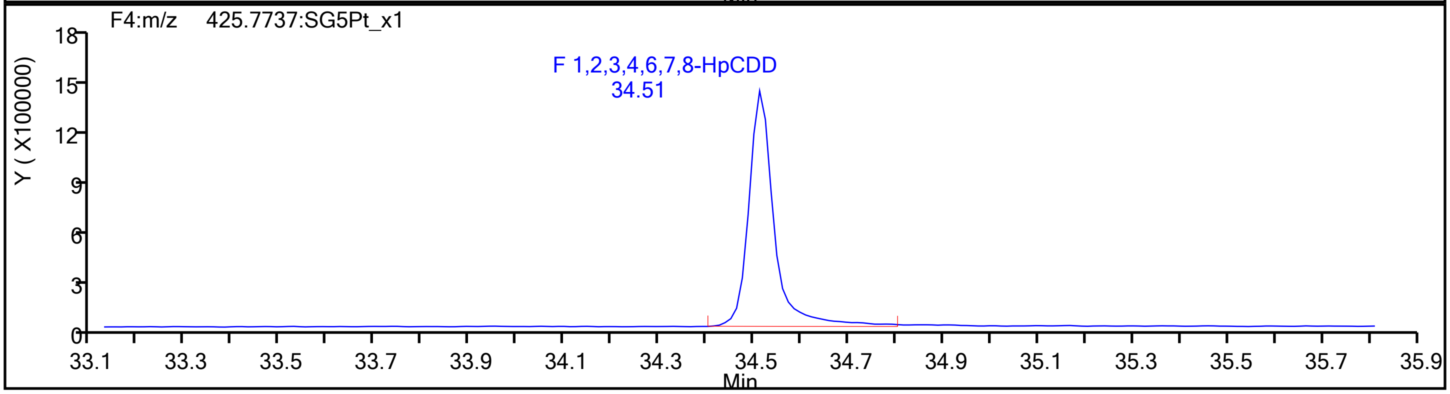

HpCDD Standards

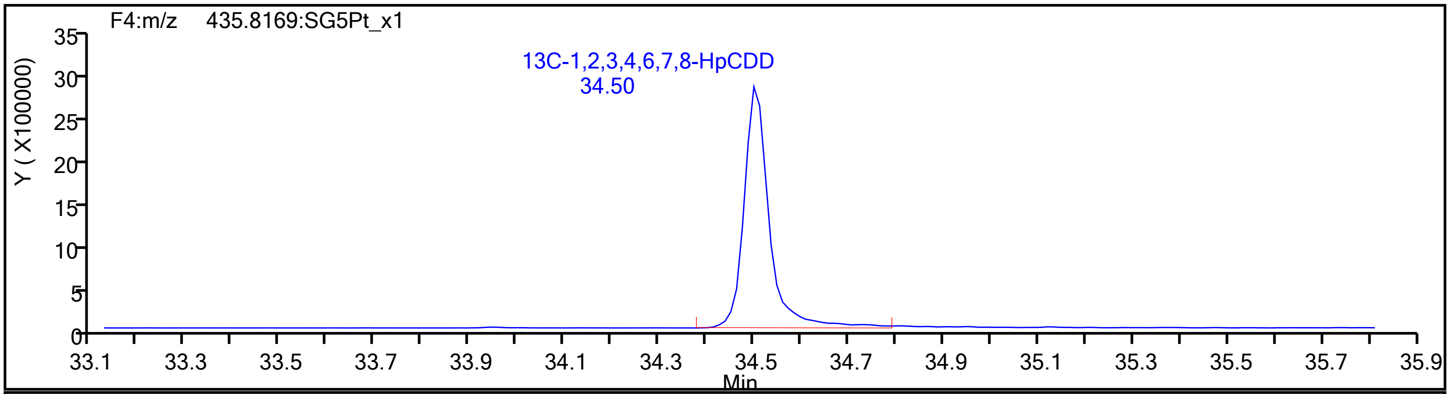

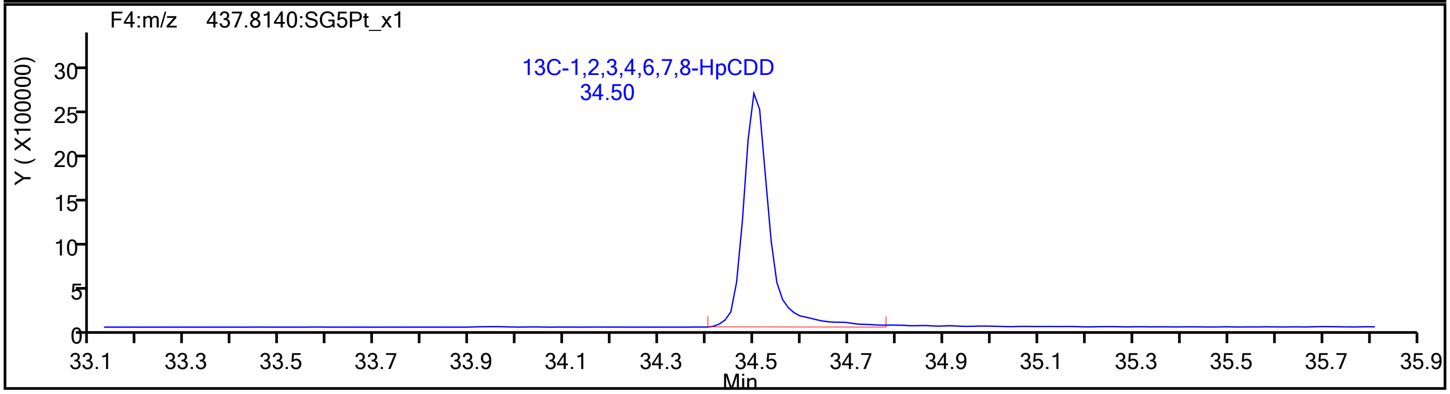

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Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

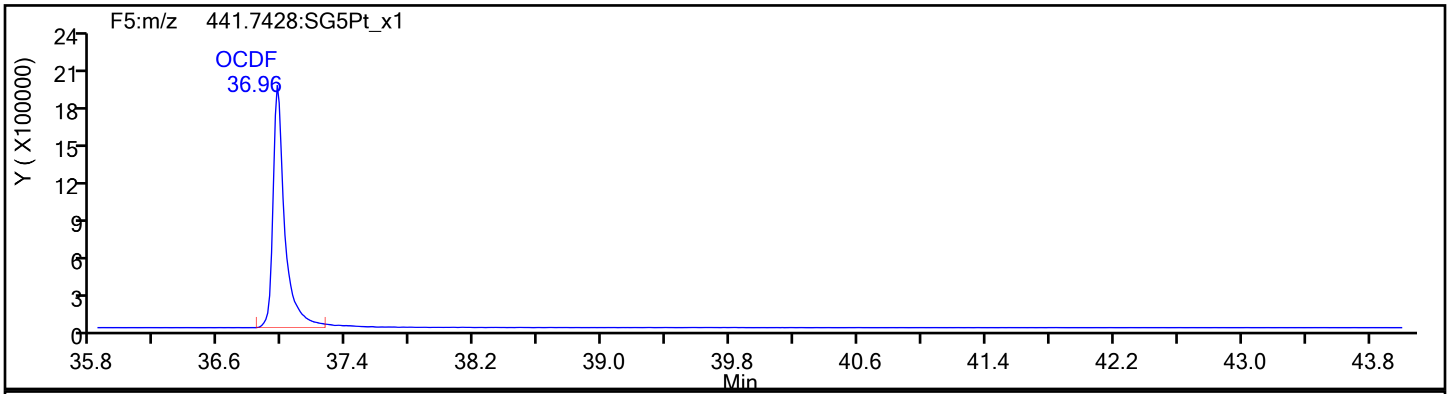

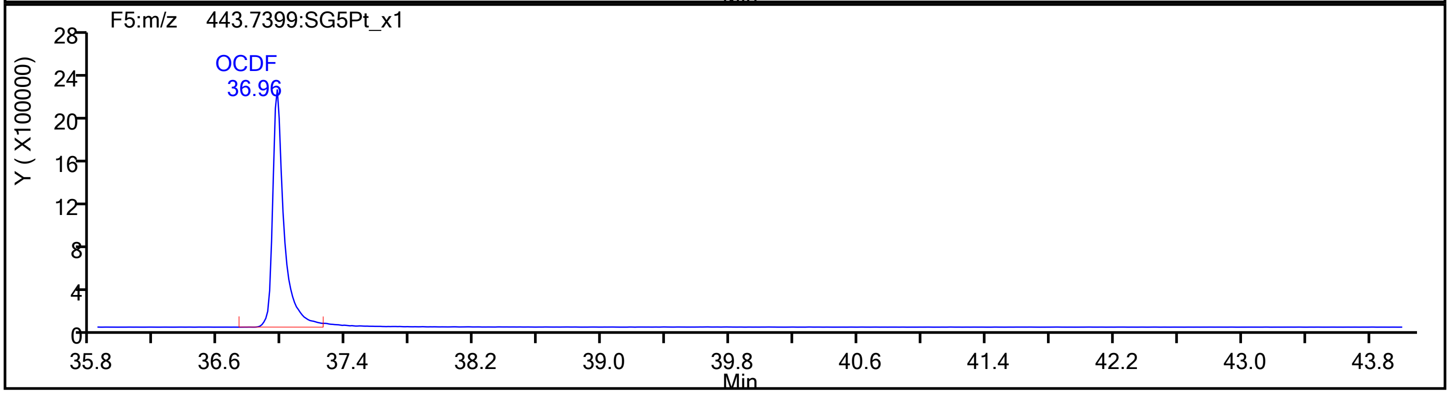

OCDF Standards

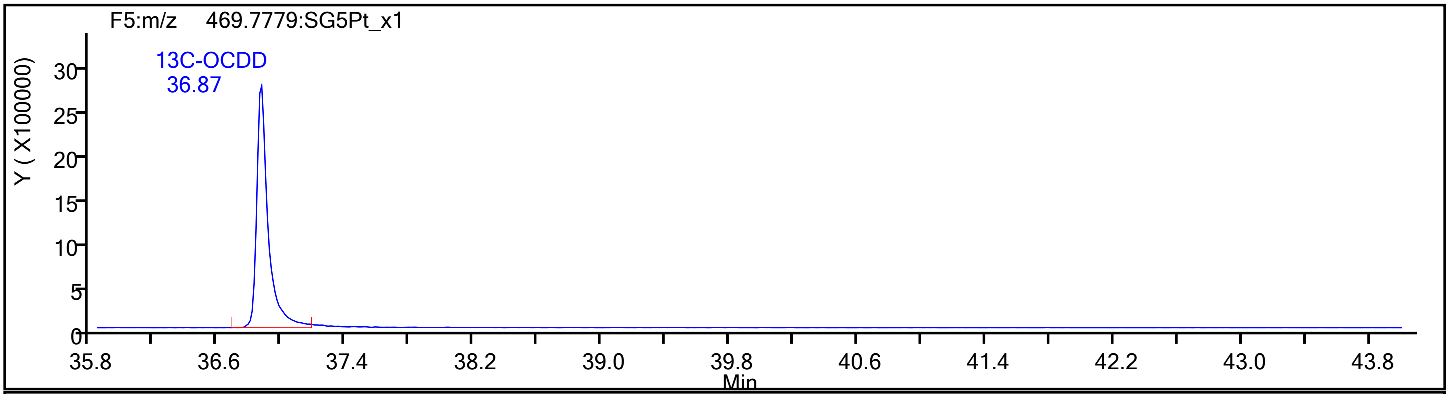

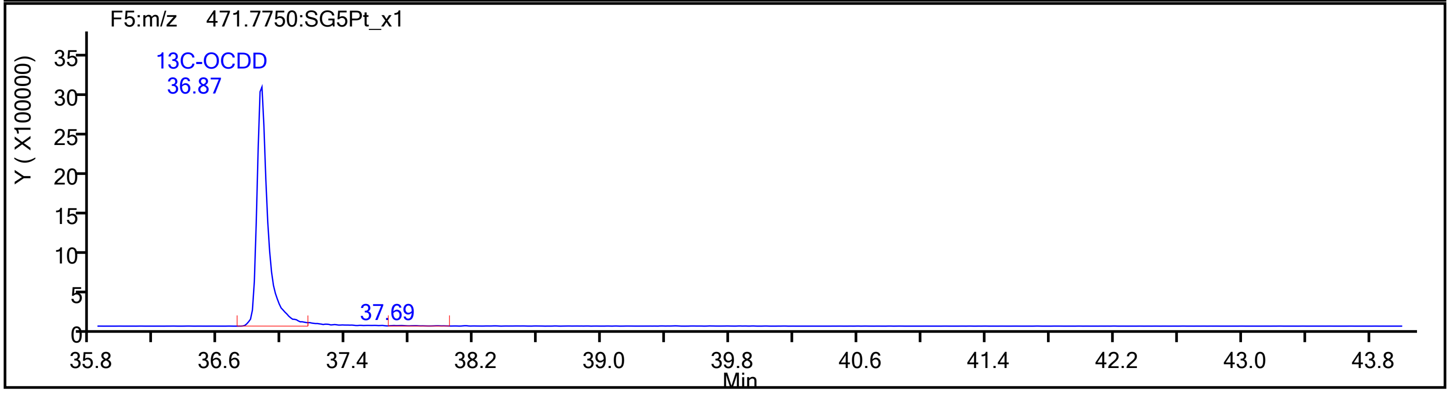

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d

Injection Date: 10-Dec-2020 19:57:43 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

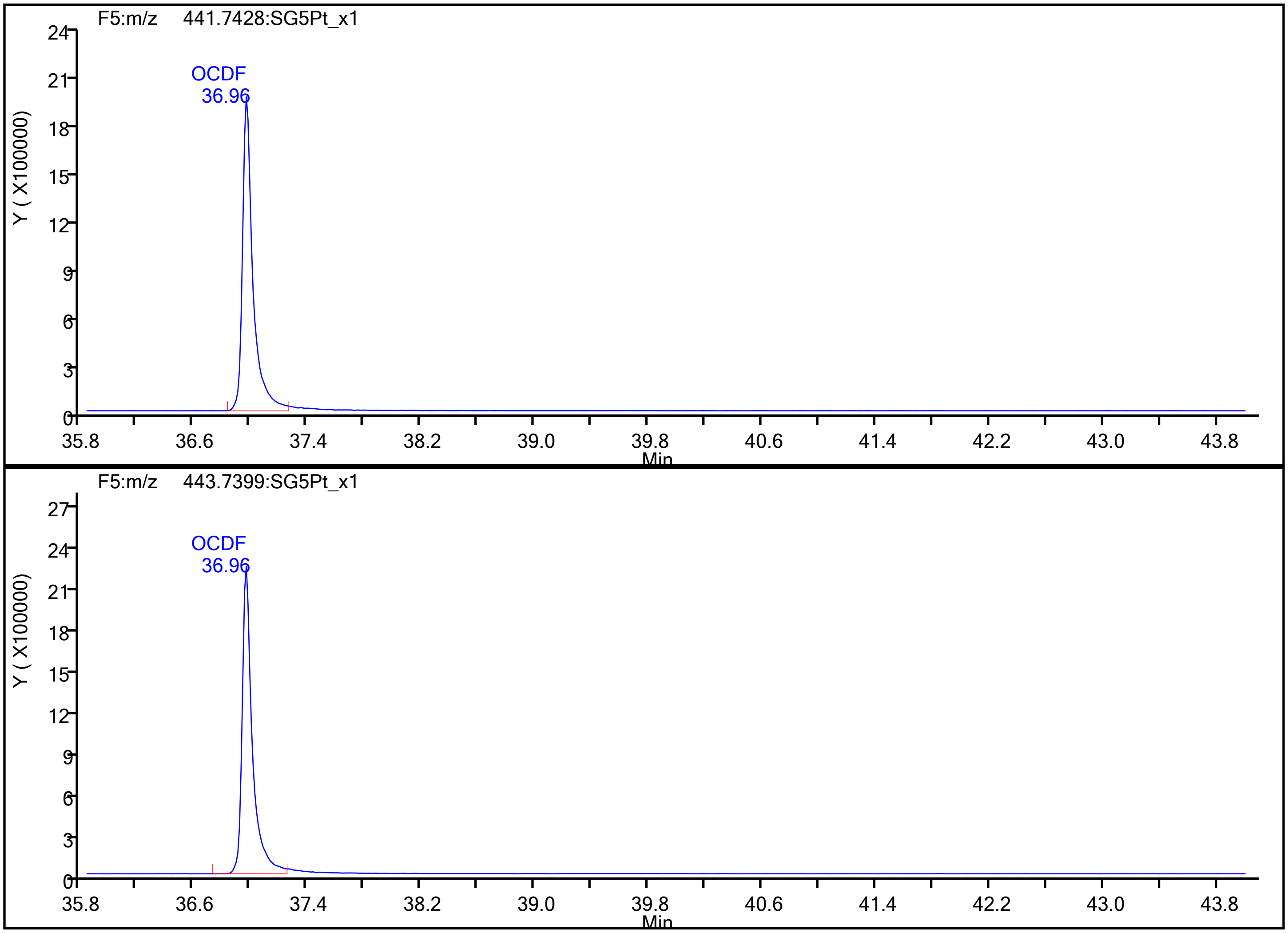

OCDF Interference Mass

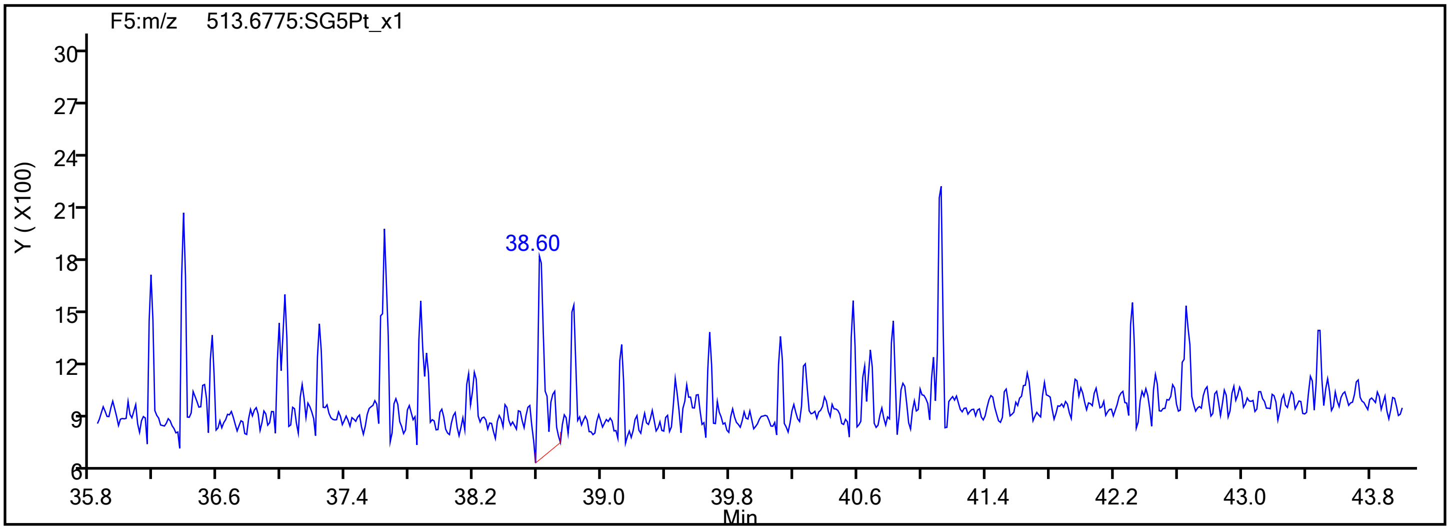

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Date: 10-Dec-2020 19:57:43
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
Worklist#: 440976
Sample Line#: 5
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Column Dia: 0.32 mm

OCDD

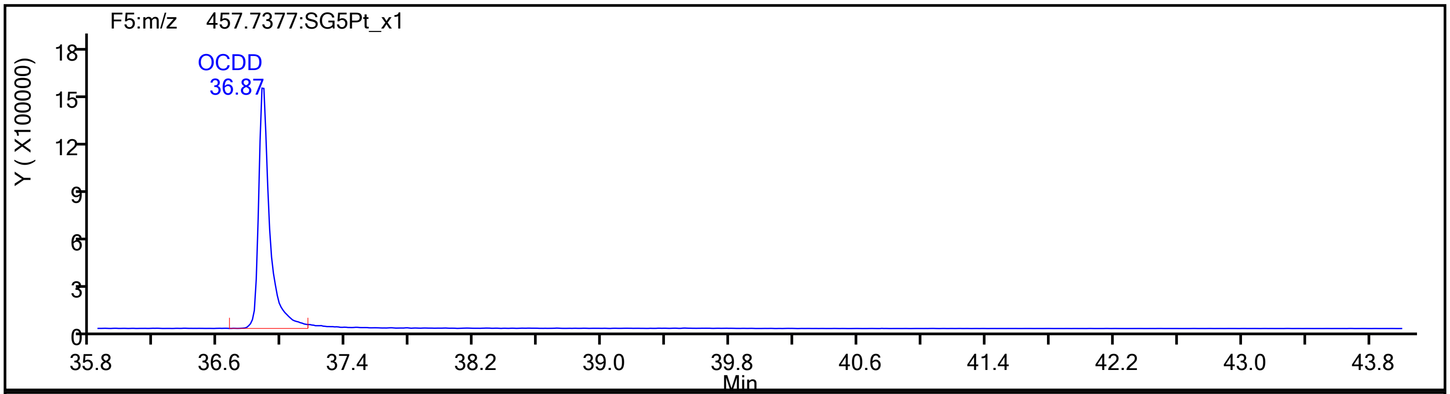

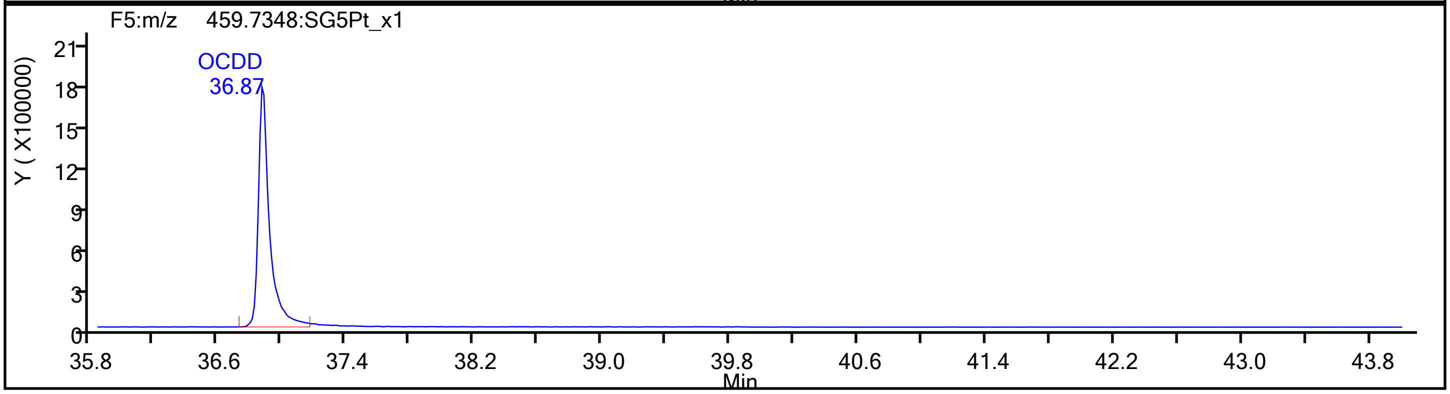

OCDD Standards

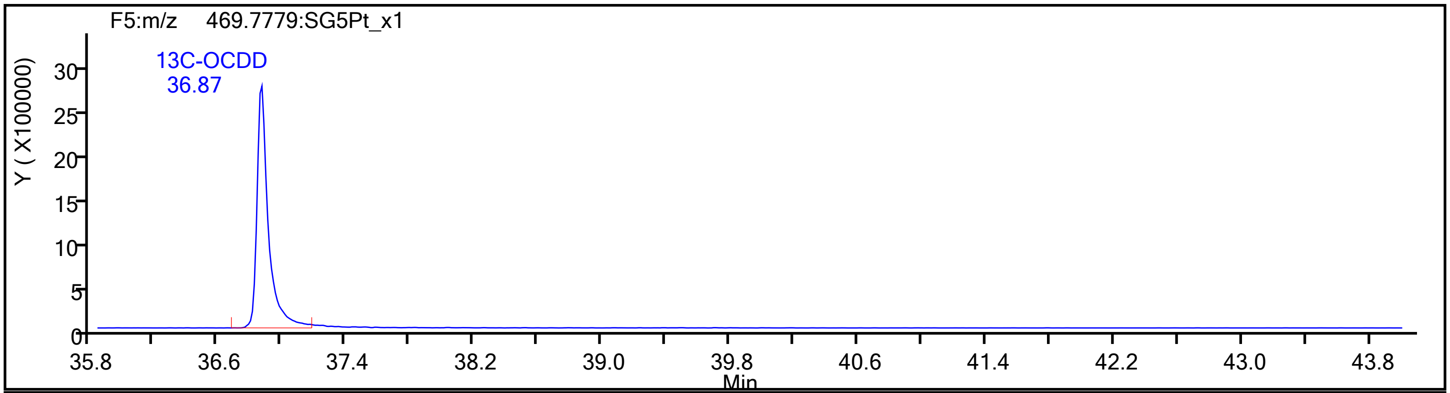

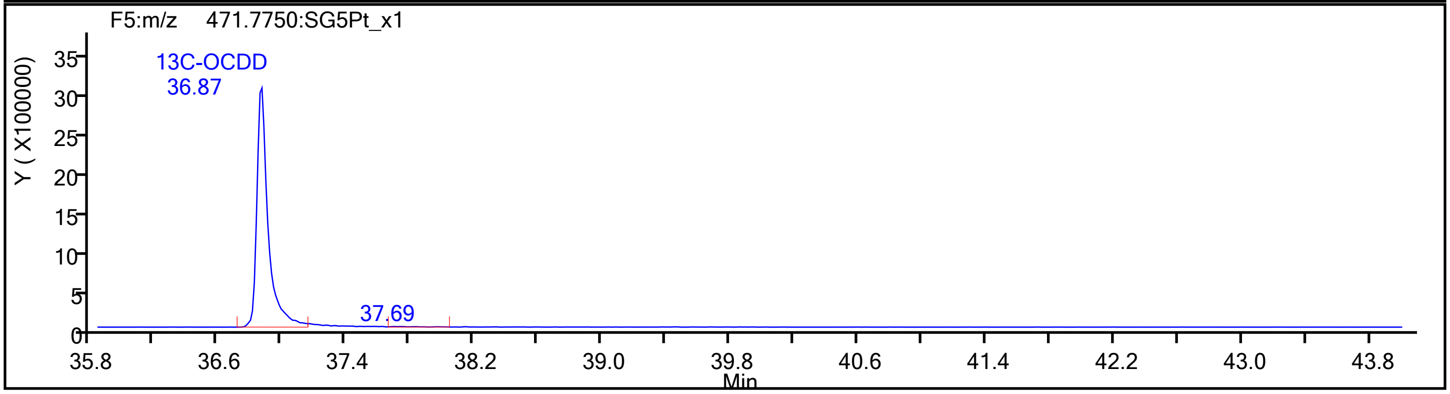

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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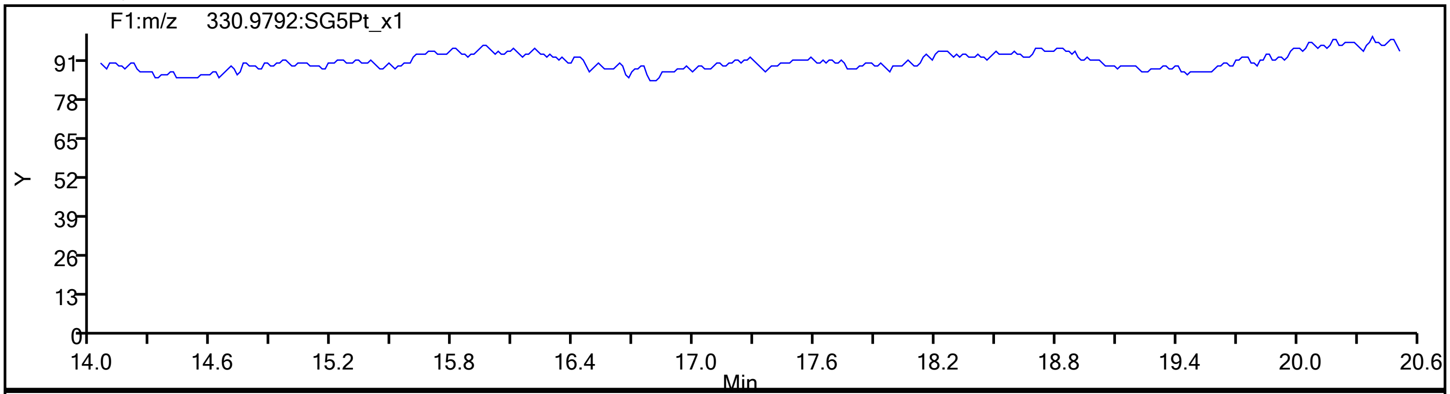

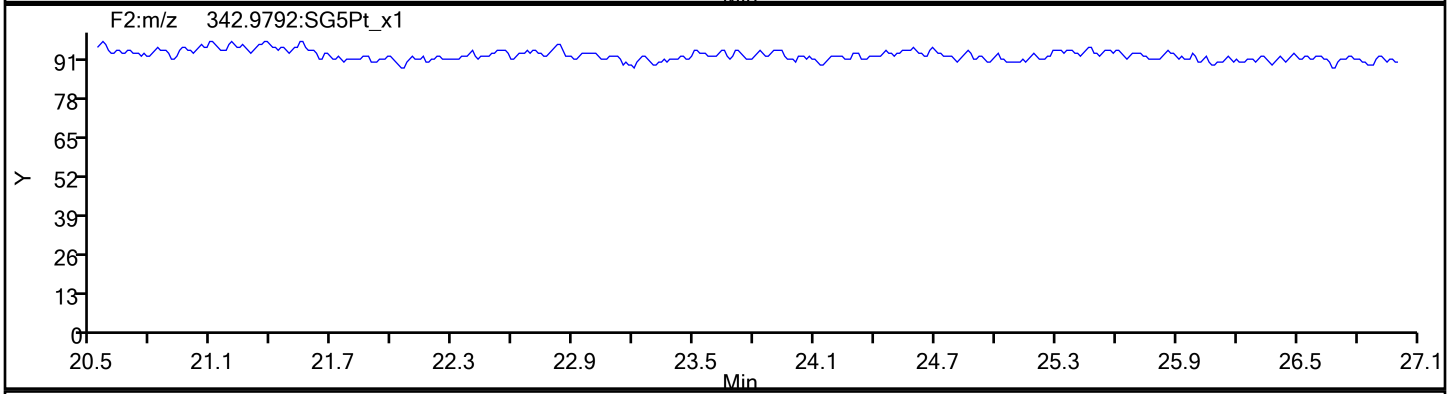

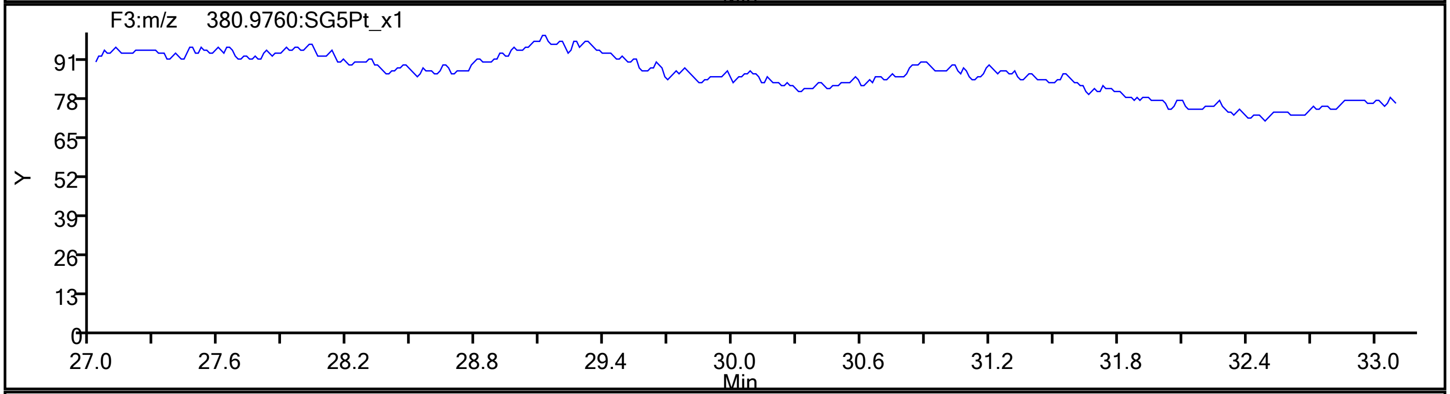

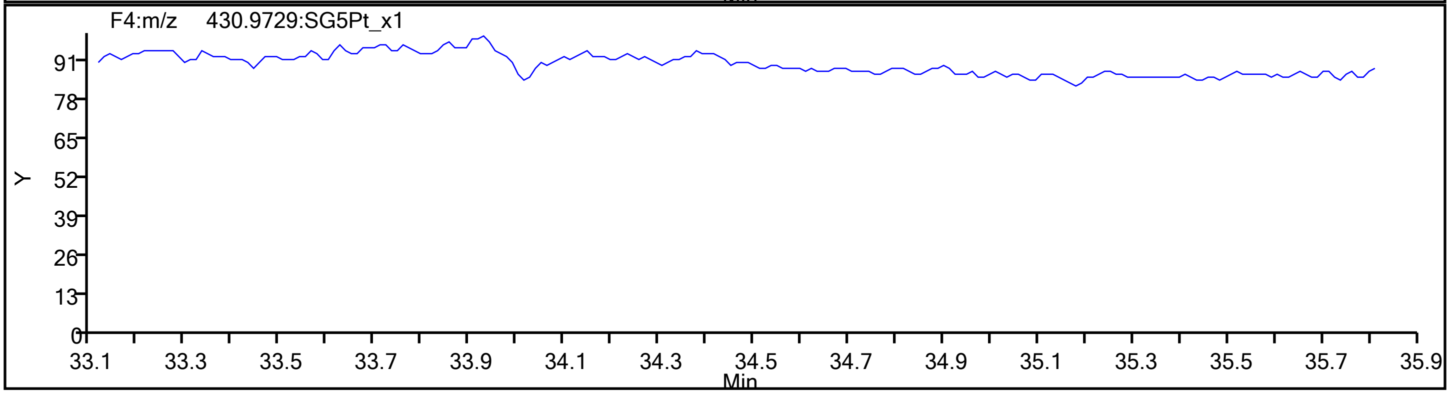

Report Date: 11-Dec-2020 10:12:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_5 .d		
Injection Date:	10-Dec-2020 19:57:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	5
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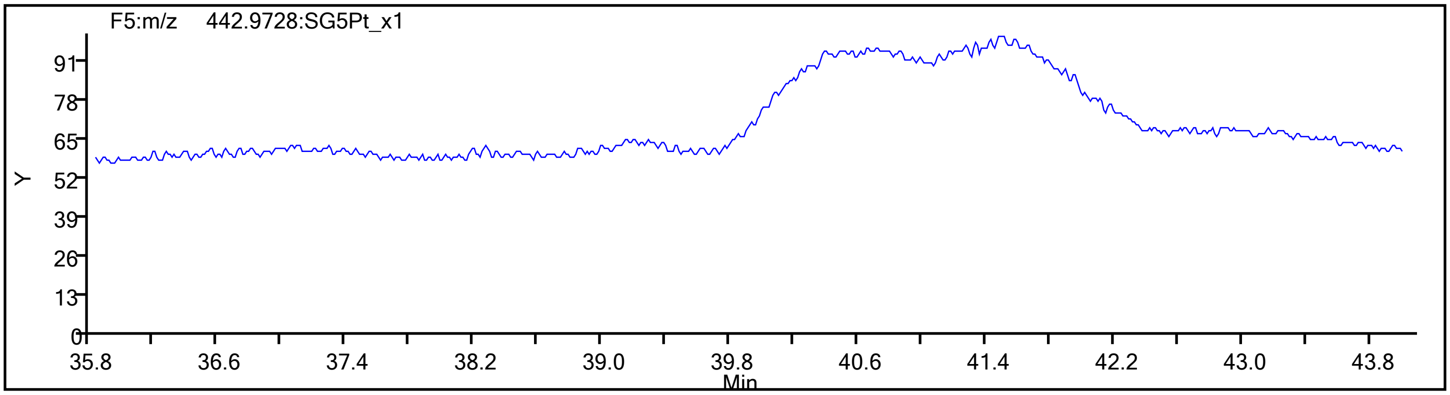

Report Date: 11-Dec-2020 10:12:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 10-Dec-2020 20:42:49 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031 CS-5 HRDXNL5_00031
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:51 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: arghestanis Date: 11-Dec-2020 08:35:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	35970601	0.72	3.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	62294560	0.78	1.7120	101.2	101.2	0.1736	0.1736	101	
2,3,7,8-TCDF	17.219	25595809	0.77	1.0173	40.4	40.4	0.0570	0.0570	101	
S Total TCDF					40.4	40.4	0.0570	0.0570		
D 13C-2,3,7,8-TCDD	17.914	39270249	0.72	1.0837	100.7	100.7	0.1805	0.1805	101	
$ 37Cl4-2,3,7,8-TCDD	17.929	18297550		1.2441	40.9	40.9	0.0420	0.0420	102	
2,3,7,8-TCDD	17.929	17874969	0.78	1.1543	39.4	39.4	0.0661	0.0661	98.58	
S Total TCDD					39.4	39.4	0.0661	0.0661		
D 13C-1,2,3,7,8-PeCDF	22.178	49761932	1.58	1.3633	101.5	101.5	0.2344	0.2344	101	
1,2,3,7,8-PeCDF	22.205	100323594	1.58	1.0268	196.3	196.3	0.5647	0.5647	98.17	
D 13C-2,3,4,7,8-PeCDF	23.514	45791590	1.59	1.2714	100.1	100.1	0.2514	0.2514	100	
2,3,4,7,8-PeCDF	23.528	98146210	1.59	1.0730	199.8	199.8	0.6412	0.6412	99.88	
S Total PeCDF					396.1	396.1	0.6029	0.6029		
D 13C-1,2,3,7,8-PeCDD	24.224	30663088	1.59	0.8534	99.9	99.9	0.1142	0.1142	99.88	
1,2,3,7,8-PeCDD	24.251	65585017	1.61	1.0748	199.0	199.0	0.2132	0.2132	99.50	
S Total PeCDD					199.0	199.0	0.2132	0.2132		
D 13C-1,2,3,4,7,8-HxCDF	30.360	33618221	0.52	1.1403	98.3	98.3	0.4572	0.4572	98.33	
1,2,3,4,7,8-HxCDF	30.373	83349212	1.26	1.2385	200.2	200.2	1.156	1.156	100	
D 13C-1,2,3,6,7,8-HxCDF	30.546	37797556	0.52	1.2841	98.2	98.2	0.4060	0.4060	98.17	
1,2,3,6,7,8-HxCDF	30.573	89131746	1.25	1.1900	198.2	198.2	1.034	1.034	99.08	
D 13C-2,3,4,6,7,8-HxCDF	31.411	35453396	0.52	1.1825	100.0	100.0	0.4409	0.4409	100	
2,3,4,6,7,8-HxCDF	31.424	85511285	1.25	1.2132	198.8	198.8	0.8397	0.8397	99.41	
D 13C-1,2,3,7,8,9-HxCDF	32.236	33011011	0.51	1.0832	101.6	101.6	0.4813	0.4813	102	
1,2,3,7,8,9-HxCDF	32.250	79313504	1.26	1.2266	195.9	195.9	0.8507	0.8507	97.94	
S Total HxCDF					793.0	793.0	0.9701	0.9701		
* 13C-1,2,3,7,8,9-HxCDD	32.050	29982937	1.28	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.597	23382177	1.28	0.7757	100.5	100.5	0.3257	0.3257	101	
1,2,3,4,7,8-HxCDD	31.611	52887219	1.26	1.1618	194.7	194.7	0.5362	0.5362	97.34	
D 13C-1,2,3,6,7,8-HxCDD	31.704	29930709	1.27	0.9997	99.9	99.9	0.2527	0.2527	99.86	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.717	60780149	1.27	1.0320	196.8	196.8	0.5007	0.5007	98.39	
1,2,3,7,8,9-HxCDD	32.063	63965755	1.28	1.2407	193.4	193.4	0.4553	0.4553	96.71	
S Total HxCDD					584.9	584.9	0.4974	0.4974		
D 13C-1,2,3,4,6,7,8-HpCDF	33.685	26200346	0.44	0.8529	102.5	102.5	0.9124	0.9124	102	
1,2,3,4,6,7,8-HpCDF	33.697	77456202	1.05	1.4619	202.2	202.2	1.382	1.382	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.791	23422395	0.44	0.7499	104.2	104.2	1.038	1.038	104	
1,2,3,4,7,8,9-HpCDF	34.791	66714496	1.05	1.4262	199.7	199.7	1.896	1.896	99.85	
S Total HpCDF					401.9	401.9	1.639	1.639		
D 13C-1,2,3,4,6,7,8-HpCDD	34.487	24649520	1.07	0.7851	104.7	104.7	0.3813	0.3813	105	
1,2,3,4,6,7,8-HpCDD	34.499	52019494	1.05	1.1022	191.5	191.5	0.7373	0.7373	95.74	
S Total HpCDD					191.5	191.5	0.7373	0.7373		
D 13C-OCDD	36.854	36118968	0.91	0.5610	214.7	214.7	0.1792	0.1792	107	
OCDF	36.950	107447808	0.92	1.4855	400.5	400.5	0.3217	0.3217	100	
OCDD	36.854	80699257	0.89	1.1570	386.2	386.2	0.3828	0.3828	96.56	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:12:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 10-Dec-2020 20:42:49 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031 CS-5 HRDXNL5_00031
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:12:51 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: arghestanis Date: 11-Dec-2020 08:35:17

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.708	0		15083101	3609840	3925	9812	920		
333.9339	17.702	17.708	0		20887500	5123466	2909	7272	1761	0.72(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.206	0	0.972	27278785	6950480	5753	14382	1208		
317.9389	17.203	17.206	0	0.972	35015775	8841946	4630	11575	1910	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.222	0	1.001	11117048	2786148	1710	4275	1629		
305.8987	17.219	17.222	0	1.001	14478761	3656528	1952	4880	1873	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.914	17.905	1	1.012	16453470	3825909	3925	9812	975		
333.9339	17.899	17.905	0	1.011	22816779	5364683	2909	7272	1844	0.72(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.929	17.923	0	1.013	18297550	4326403	1827	4567	2368		
2,3,7,8-TCDD											
319.8965	17.929	17.926	0	1.001	7812057	1888271	1196	2990	1579		
321.8936	17.929	17.926	0	1.001	10062912	2409476	1608	4020	1498	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.178	22.173	0	1.253	30489758	5463222	6652	16630	821		
353.8970	22.178	22.173	0	1.253	19272174	3492336	4513	11282	774	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.205	22.200	0	1.001	61366743	10852999	12740	31850	852		
341.8567	22.205	22.200	0	1.001	38956851	6801973	8031	20077	847	1.58(1.32-1.78)	

Report Date: 11-Dec-2020 10:12:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.514	23.509	0	1.328	28109108	4624233	6652	16630	695		
353.8970	23.514	23.509	0	1.328	17682482	2923759	4513	11282	648	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.528	23.534	0	1.001	60292421	9737604	12740	31850	764		
341.8567	23.528	23.534	0	1.001	37853789	6172779	8031	20077	769	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.224	24.226	0	1.368	18835469	2931018	1735	4337	1689		
369.8919	24.224	24.226	0	1.368	11827619	1850200	1670	4175	1108	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.251	24.254	0	1.001	40438610	6220349	2664	6660	2335		
357.8516	24.251	24.254	0	1.001	25146407	3879948	1718	4295	2258	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.360	30.362	0	0.947	11472823	2065795	5366	13415	385		
385.8610	30.346	30.362	-1	0.947	22145398	4017493	10489	26222	383	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.373	30.376	0	1.000	46405119	8523168	19551	48877	436		
375.8178	30.373	30.376	0	1.000	36944093	6743828	15292	38230	441	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.546	30.549	0	0.953	12893214	2402578	5366	13415	448		
385.8610	30.546	30.549	0	0.953	24904342	4677018	10489	26222	446	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.573	30.575	0	1.001	49507422	9090415	19551	48877	465		
375.8178	30.559	30.575	-1	1.000	39624324	7372588	15292	38230	482	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.411	31.411	0	0.980	12154078	2943937	5366	13415	549		
385.8610	31.411	31.411	0	0.980	23299318	5607089	10489	26222	535	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.424	31.430	0	1.000	47540137	11393321	19551	48877	583		
375.8178	31.424	31.430	0	1.000	37971148	9063757	15292	38230	593	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.236	32.242	0	1.006	11202037	2818449	5366	13415	525		
385.8610	32.236	32.242	0	1.006	21808974	5528598	10489	26222	527	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.250	32.255	0	1.000	44161433	11189759	19551	48877	572		
375.8178	32.250	32.255	0	1.000	35152071	8932471	15292	38230	584	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.050	32.050	0		16818819	4273965	4418	11045	967		
403.8529	32.050	32.050	0		13164118	3329388	3266	8165	1019	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.597	31.603	0	0.986	13121347	3557379	4418	11045	805		
403.8529	31.597	31.603	0	0.986	10260830	2783404	3266	8165	852	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.611	31.619	0	1.000	29511135	8150123	9021	22552	903		
391.8127	31.611	31.619	0	1.000	23376084	6449401	6779	16947	951	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.704	31.709	0	0.989	16769381	4312407	4418	11045	976		
403.8529	31.704	31.709	0	0.989	13161328	3332166	3266	8165	1020	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.717	31.725	0	1.000	34062333	8243613	9021	22552	914		
391.8127	31.717	31.725	0	1.000	26717816	6559585	6779	16947	968	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.063	32.063	0	1.015	35968553	9185395	9021	22552	1018		
391.8127	32.063	32.063	0	1.015	27997202	7062251	6779	16947	1042	1.28(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.685	33.695	-1	1.051	7986052	2547044	7618	19045	334		
419.8220	33.685	33.695	-1	1.051	18214294	5853427	16049	40122	365	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.697	33.707	-1	1.000	39643677	12894920	34166	85415	377		
409.7789	33.697	33.707	-1	1.000	37812525	12363227	33696	84240	367	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.791	34.798	0	1.086	7136140	1895120	7618	19045	249		
419.8220	34.791	34.798	0	1.086	16286255	4378406	16049	40122	273	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.791	34.805	-1	1.000	34200110	9105524	34166	85415	267		
409.7789	34.791	34.805	-1	1.000	32514386	8777650	33696	84240	260	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.487	34.497	-1	1.076	12729575	3713307	4802	12005	773		
437.8140	34.487	34.497	-1	1.076	11919945	3454906	4302	10755	803	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.499	34.509	-1	1.000	26656017	7832747	11709	29272	669		
425.7737	34.499	34.509	-1	1.000	25363477	7488356	11592	28980	646	1.05(0.88-1.20)	
13C-OCDD											
469.7779	36.854	36.861	0	1.150	17189835	3996639	1480	3700	2700		
471.7750	36.854	36.861	0	1.150	18929133	4323282	1578	3945	2740	0.91(0.76-1.02)	
OCDF											
441.7428	36.950	36.962	-1	1.003	51439403	11691009	4433	11082	2637		
443.7399	36.950	36.962	-1	1.003	56008405	12381970	3520	8800	3518	0.92(0.76-1.02)	
OCDD											
457.7377	36.854	36.868	-1	1.000	38047039	8639743	2891	7227	2988		
459.7348	36.854	36.868	-1	1.000	42652218	9857640	4479	11197	2201	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:12:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d		
Injection Date:	10-Dec-2020 20:42:49	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

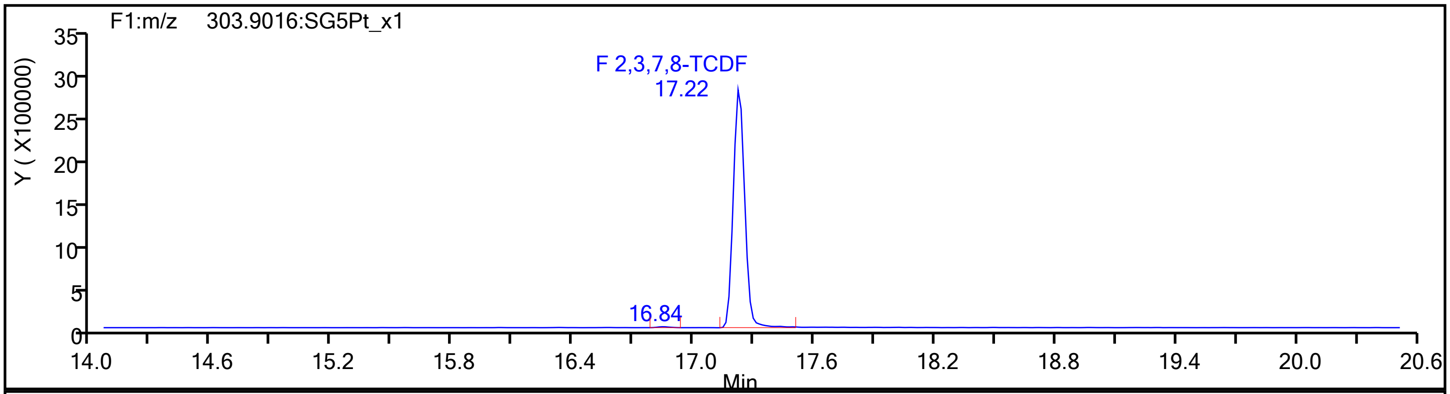

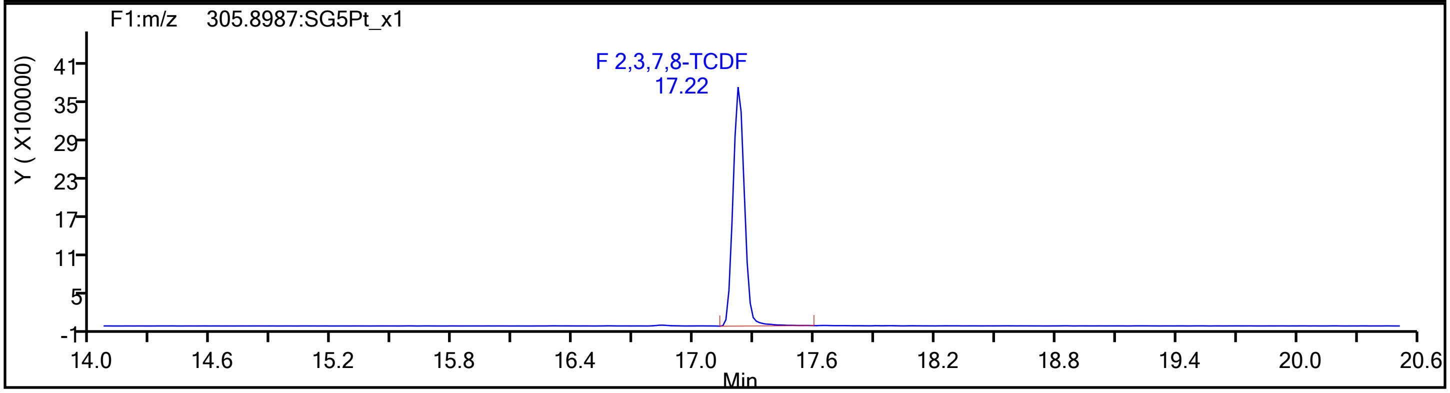

TCDF Standards

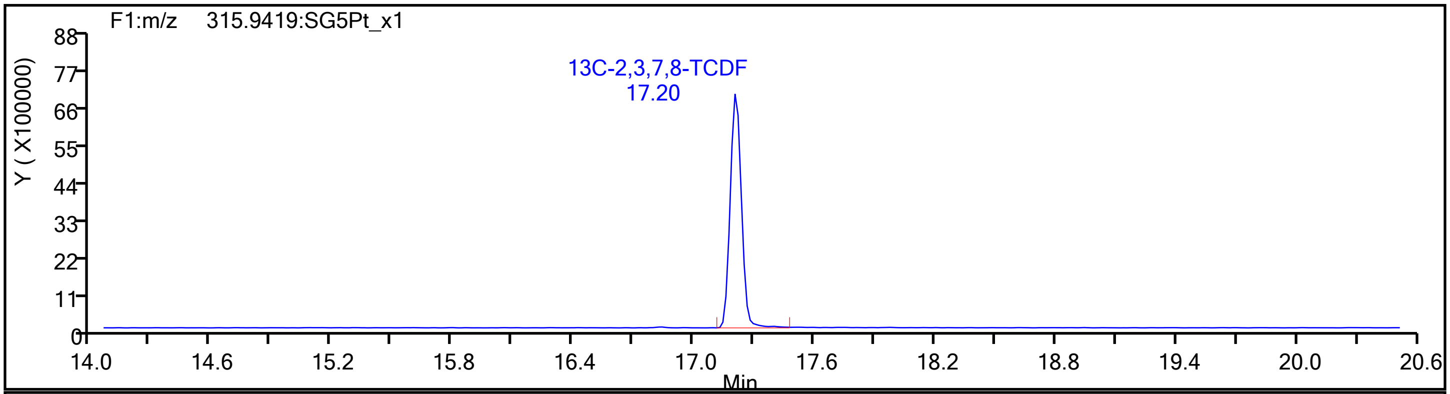

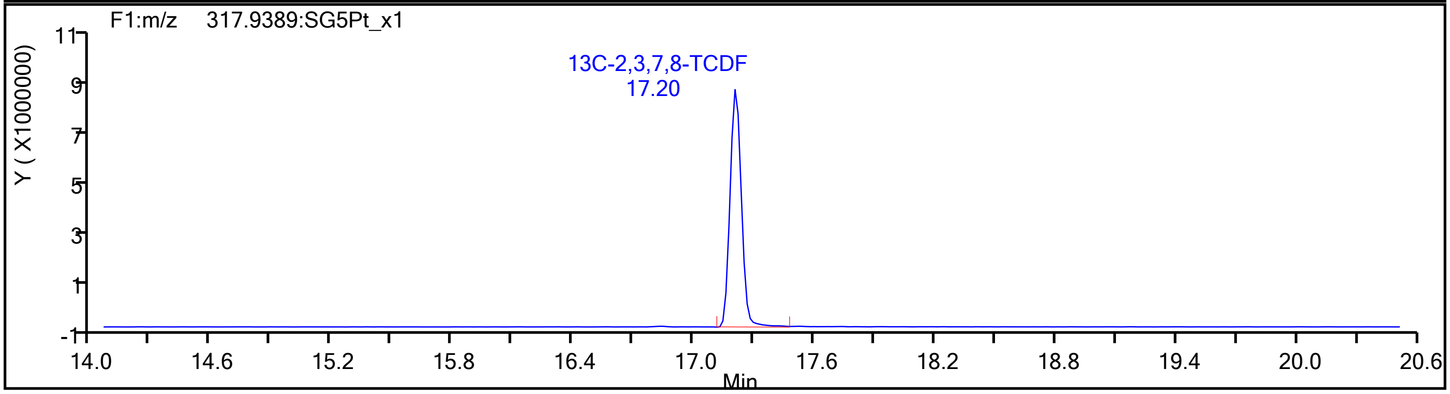

Report Date: 11-Dec-2020 10:12:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d		
Injection Date:	10-Dec-2020 20:42:49	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

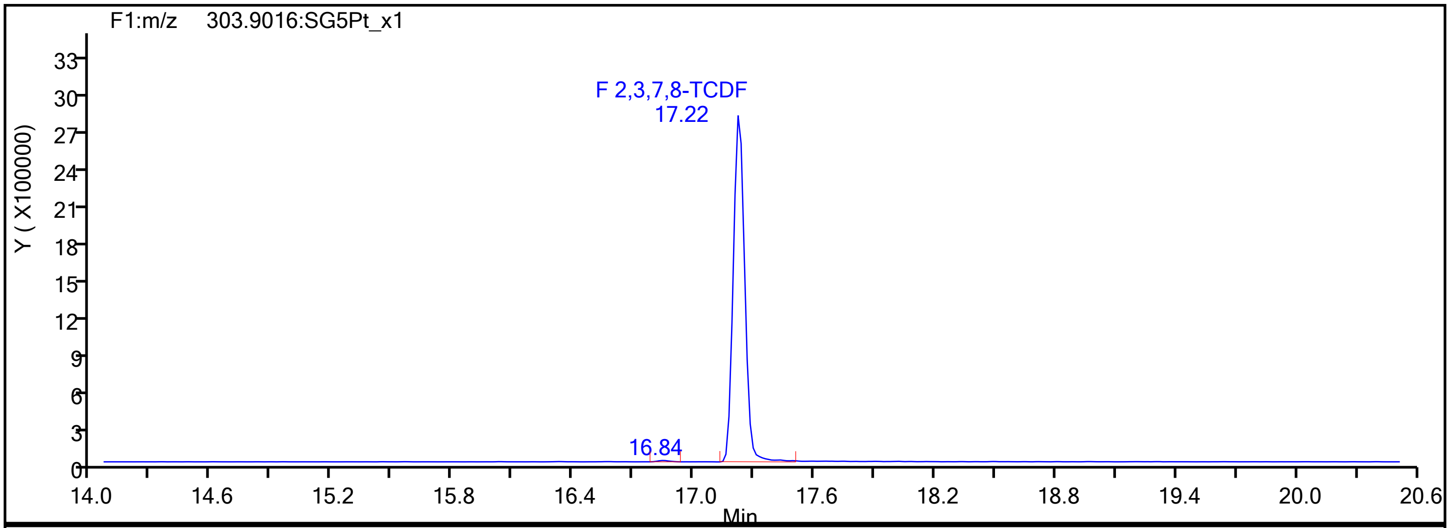

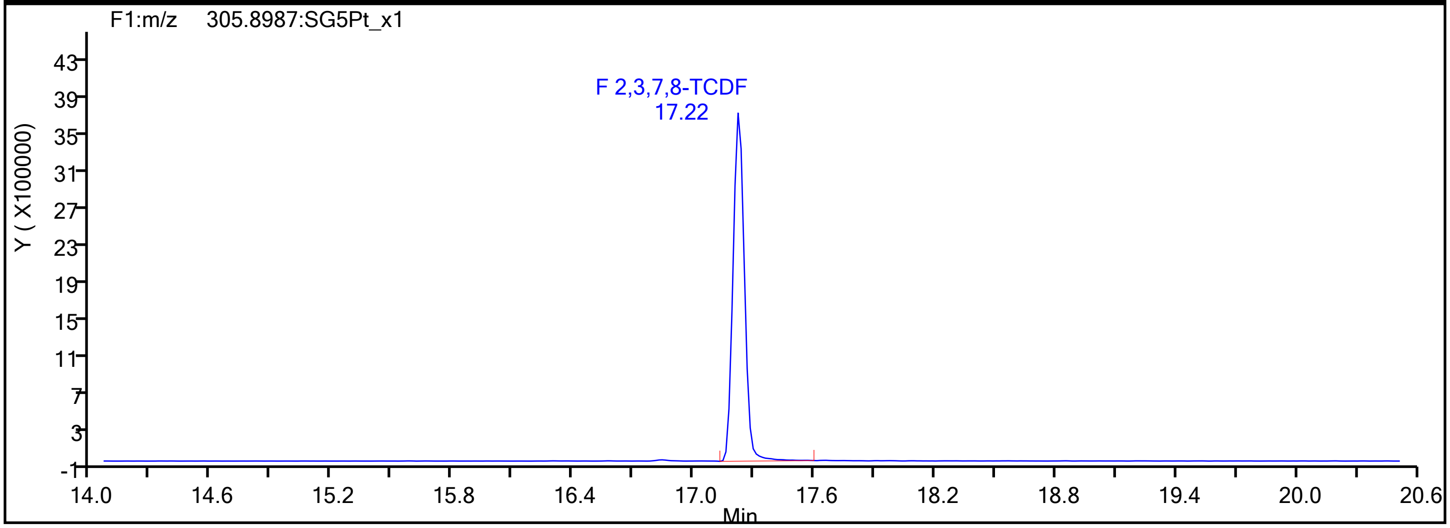

TCDF Interference Mass

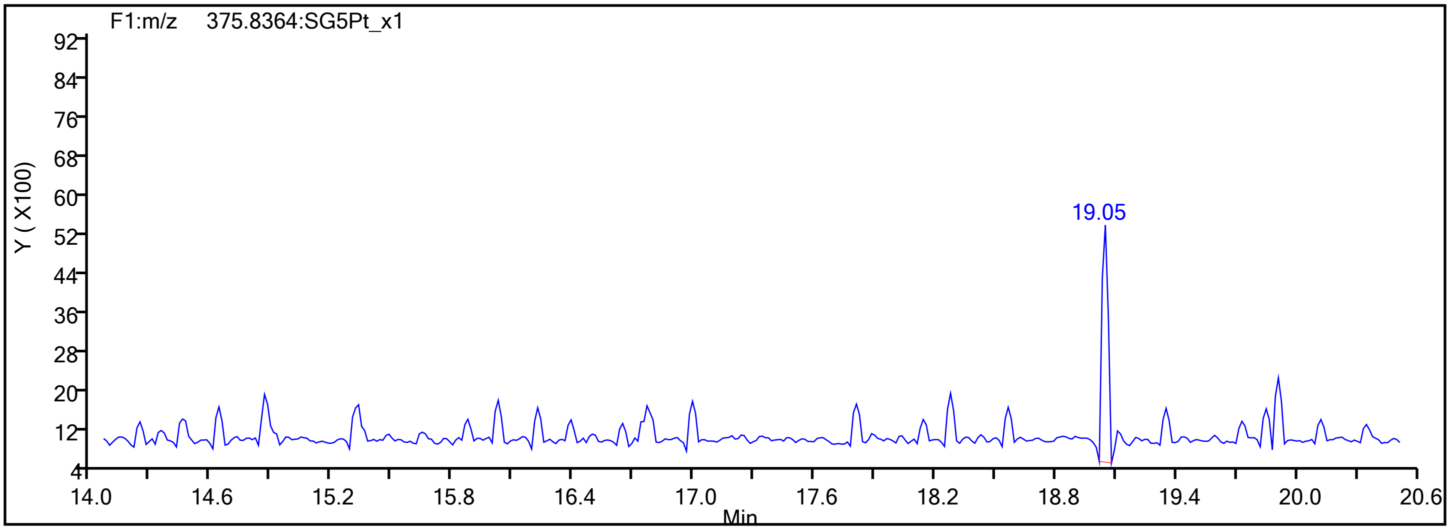

Report Date: 11-Dec-2020 10:12:57 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d		
Injection Date:	10-Dec-2020 20:42:49	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

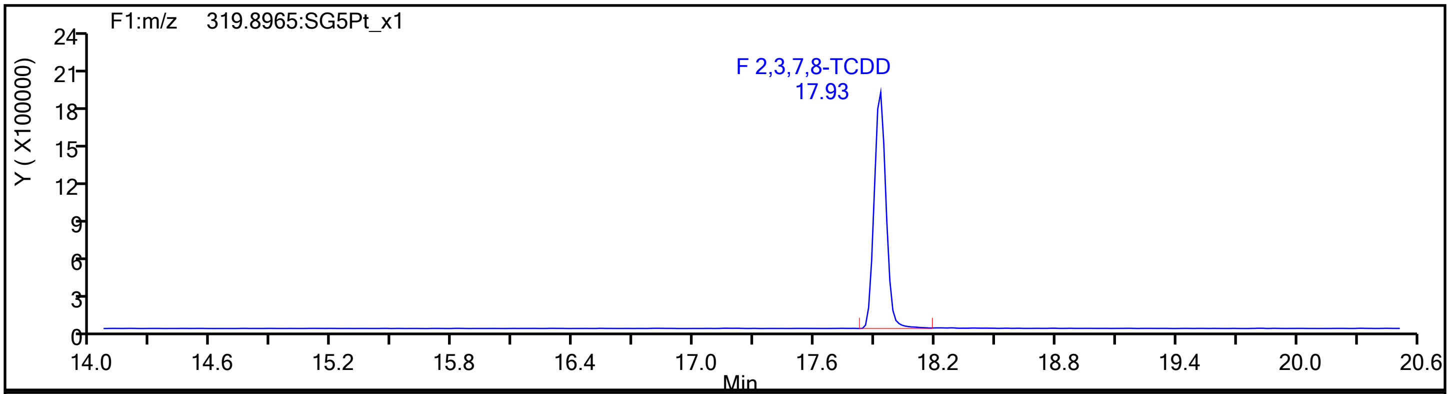

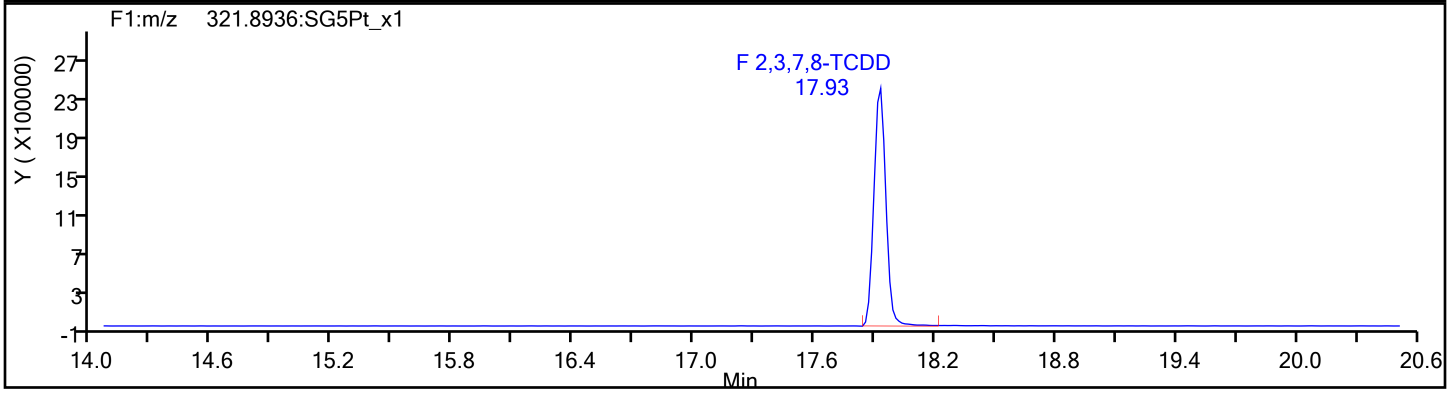

TCDD Standards

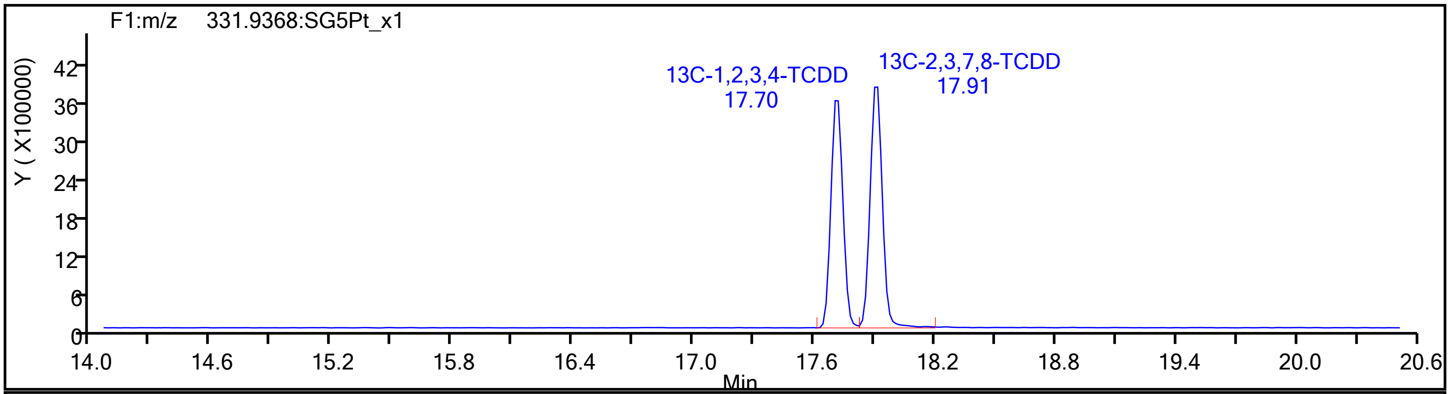

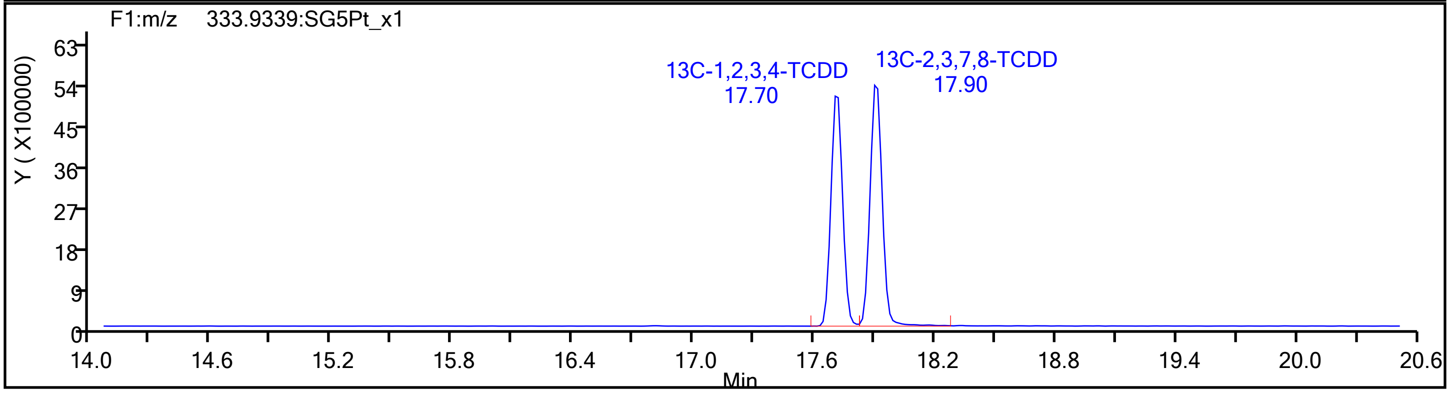

Report Date: 11-Dec-2020 10:12:57 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_6 .d		
Injection Date:	10-Dec-2020 20:42:49	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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37Cl4-TCDD

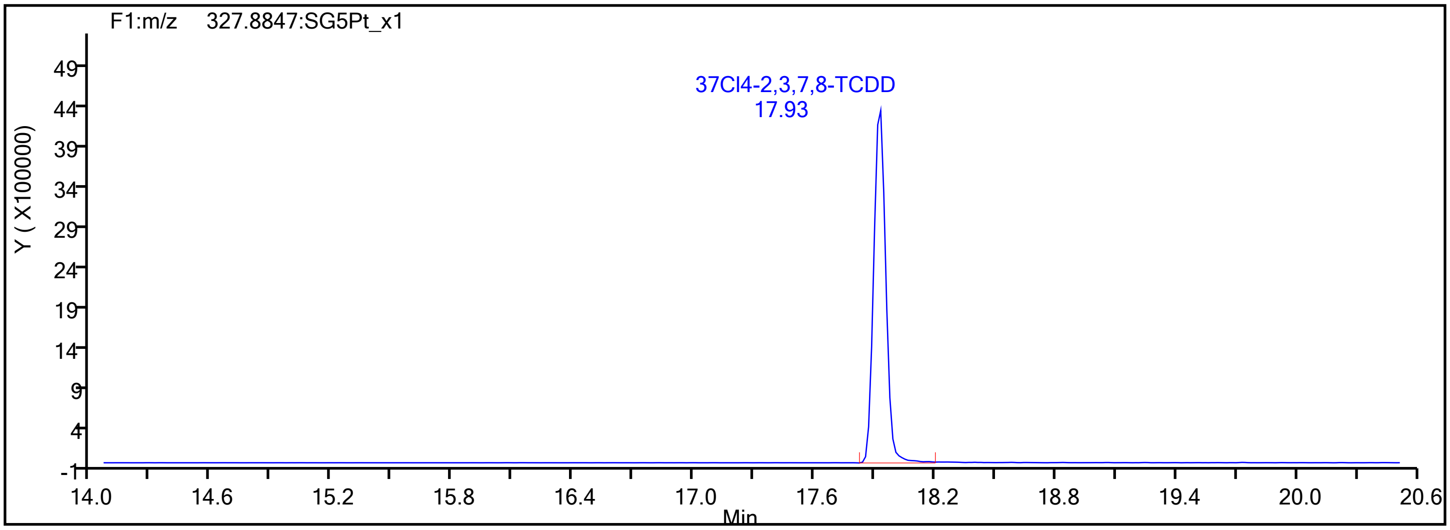

37Cl4-TCDD Standards

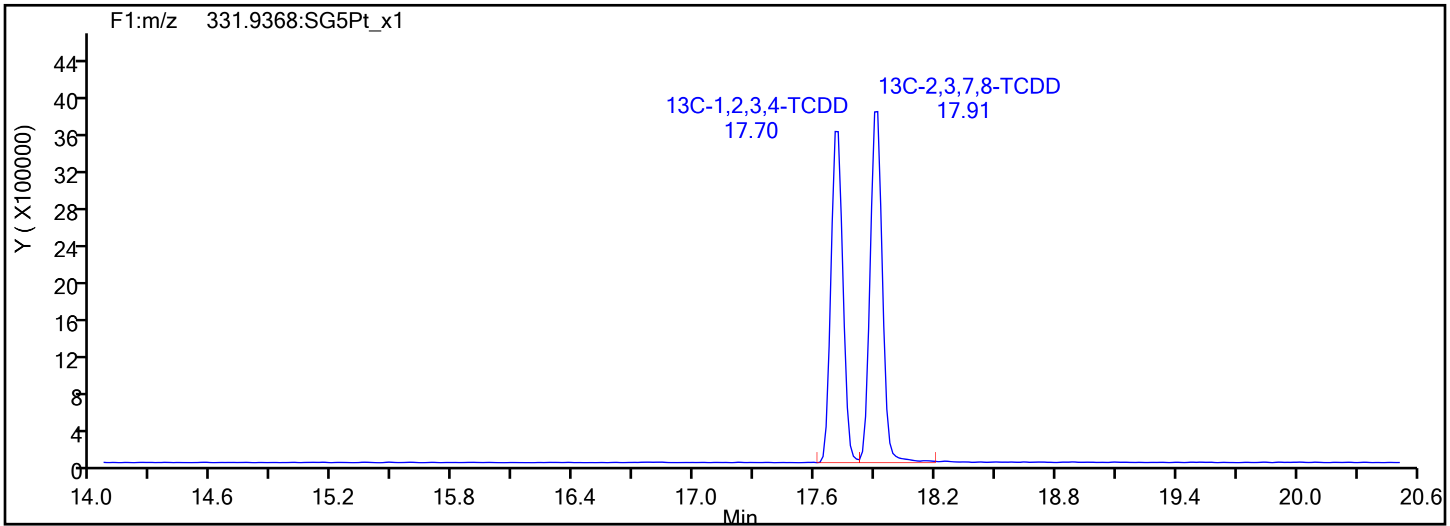

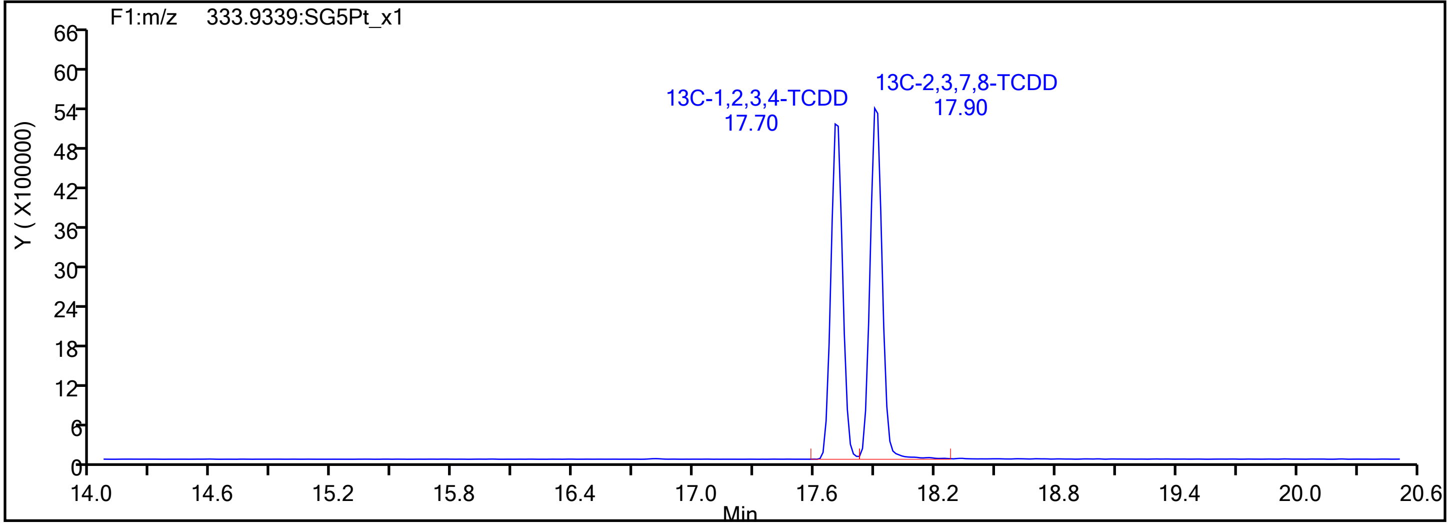

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Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: SMA

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

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Sample Line#: 6

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F1 PeCDFs

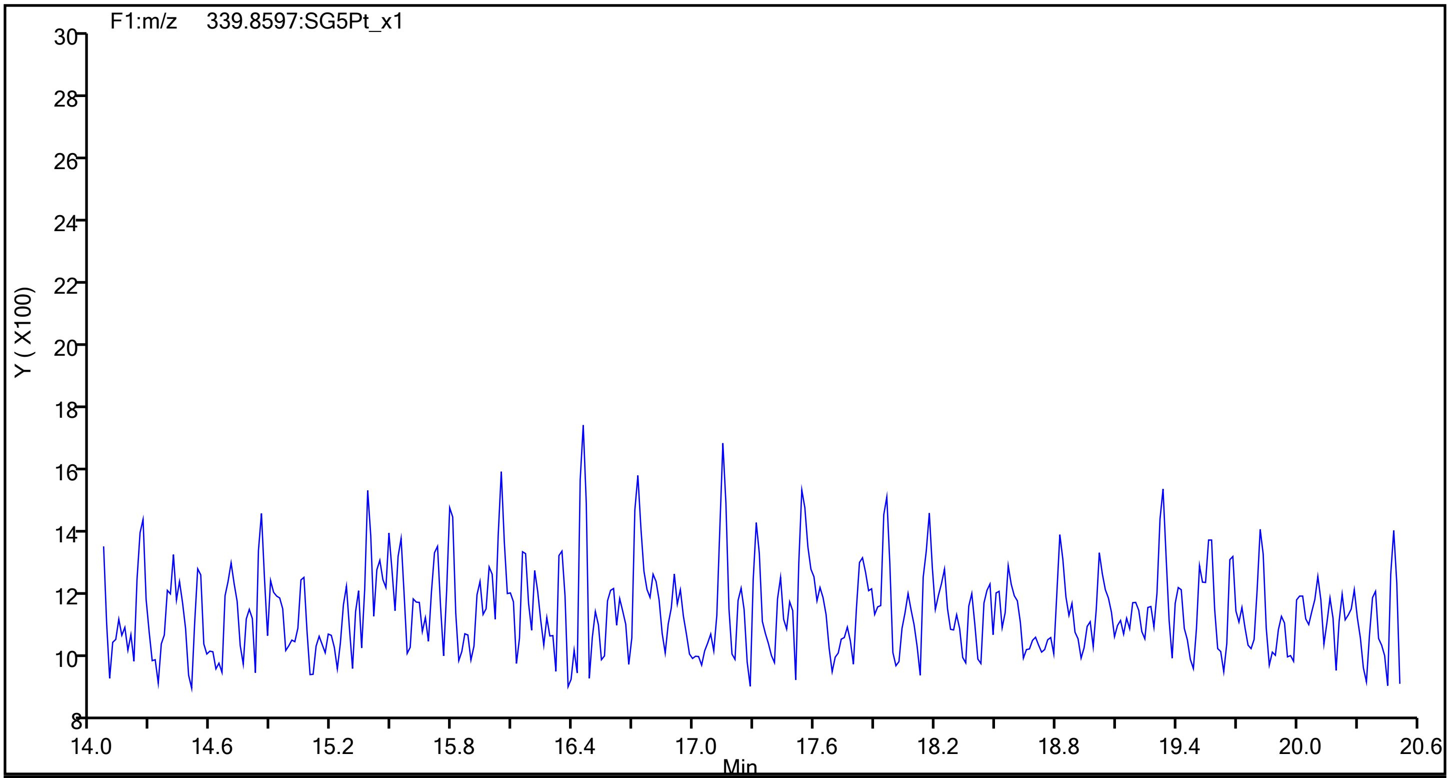

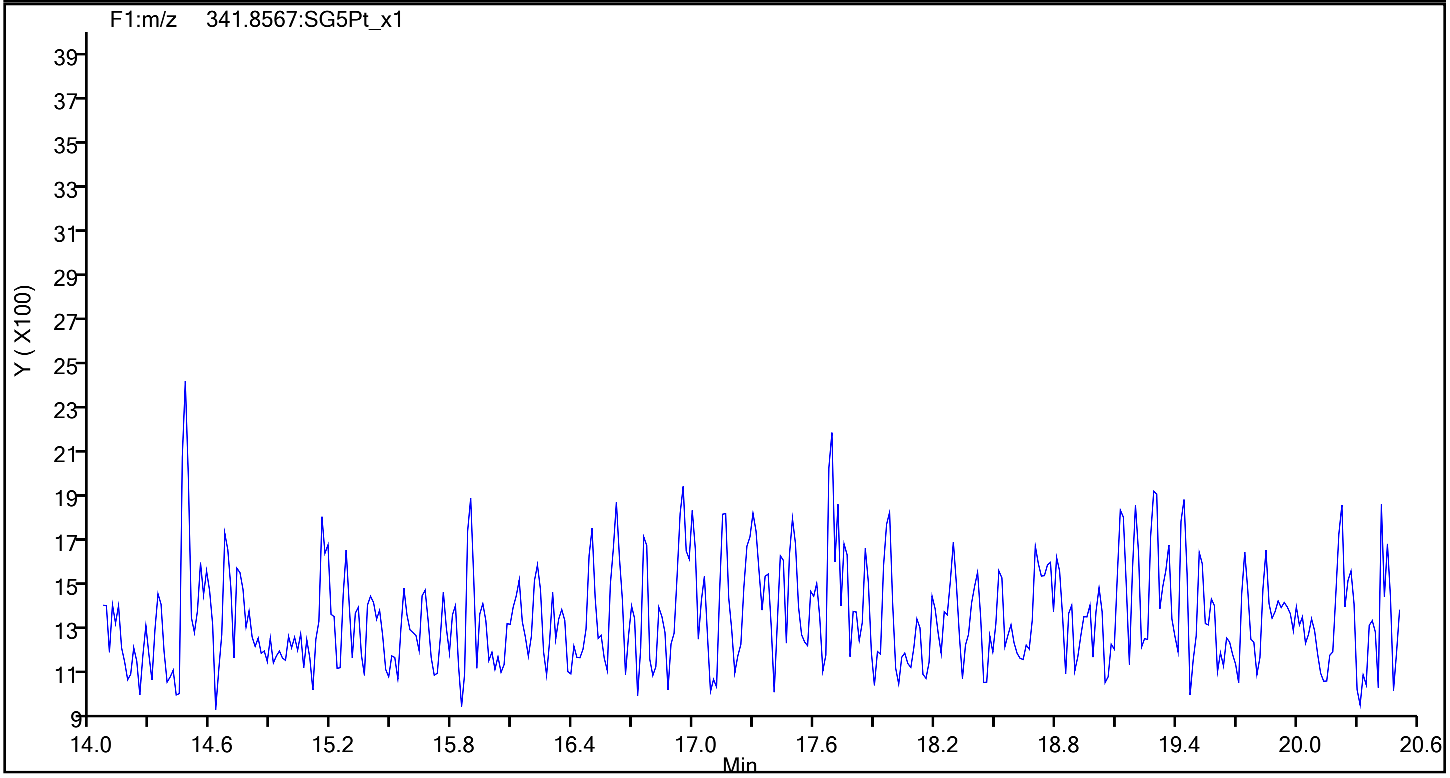

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

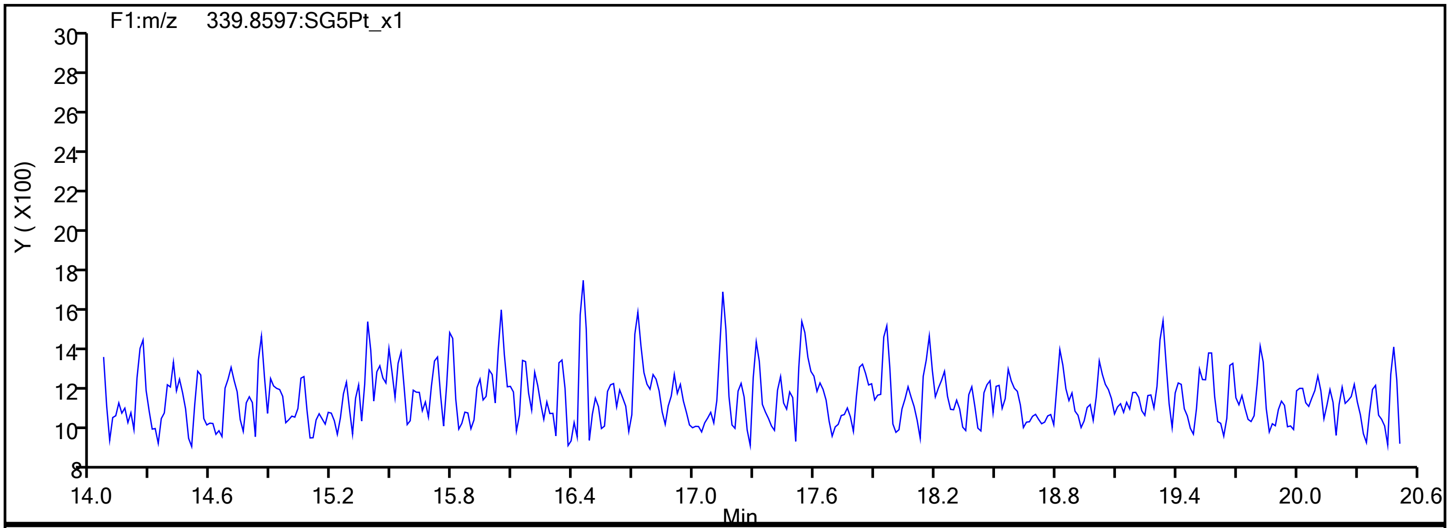

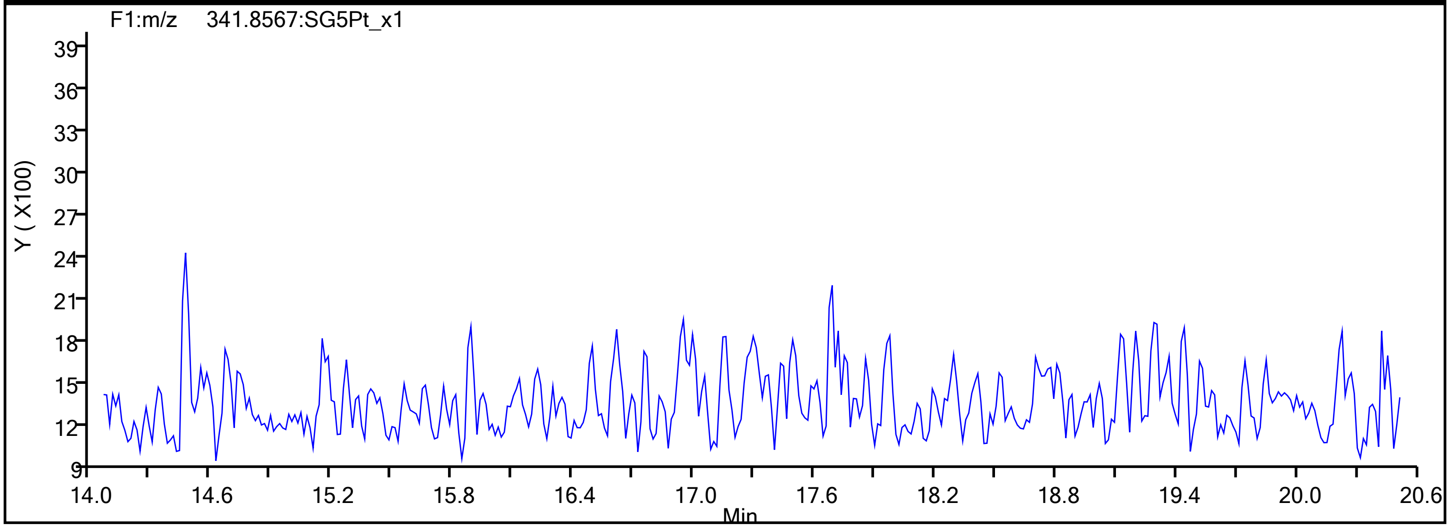

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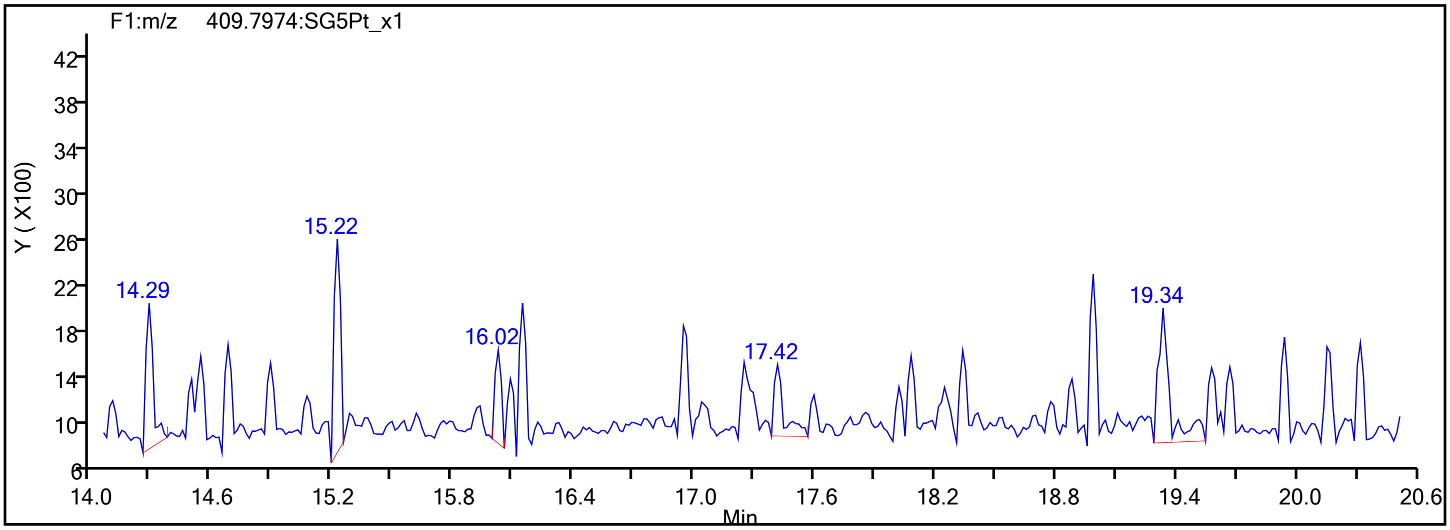

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Eurofins TestAmerica, Sacramento

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PeCDF

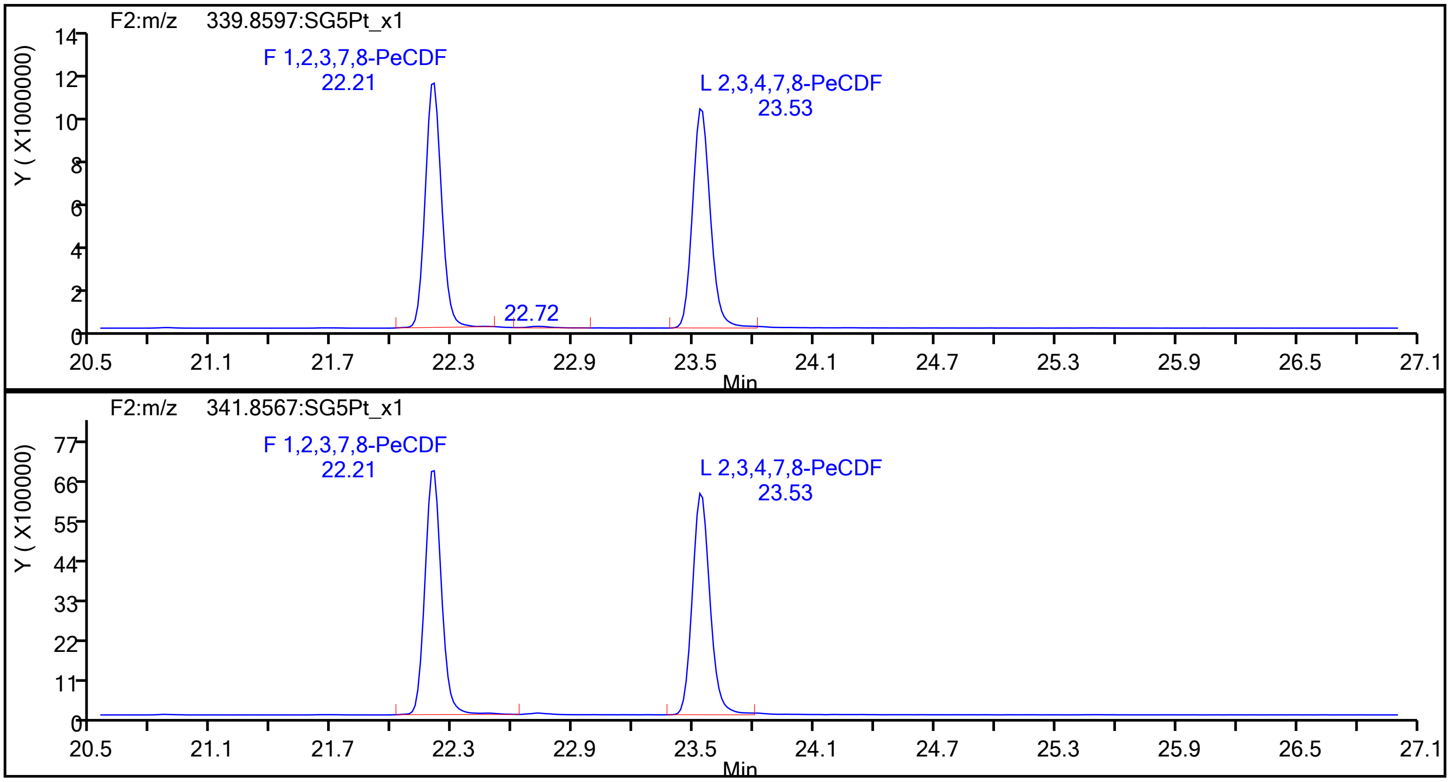

PeCDF Standards

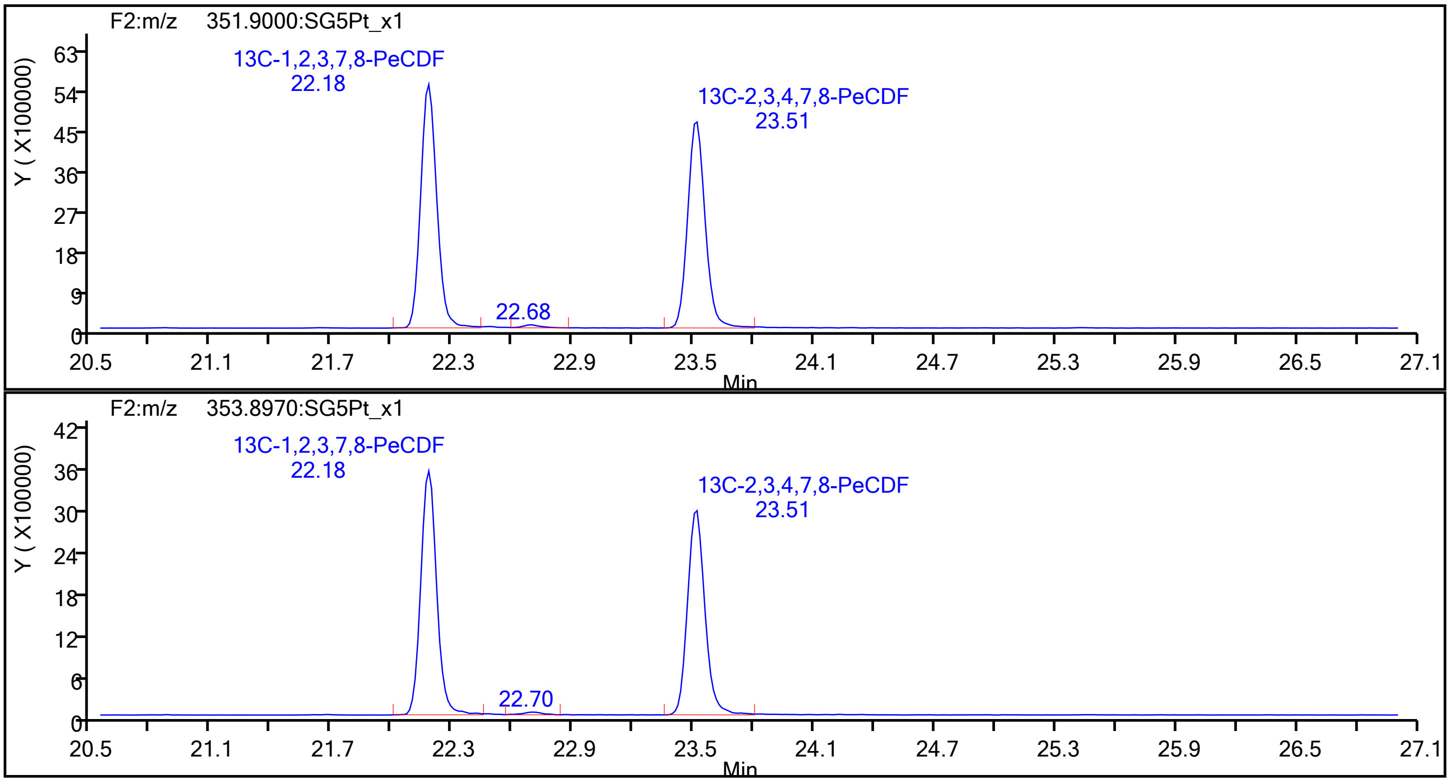

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

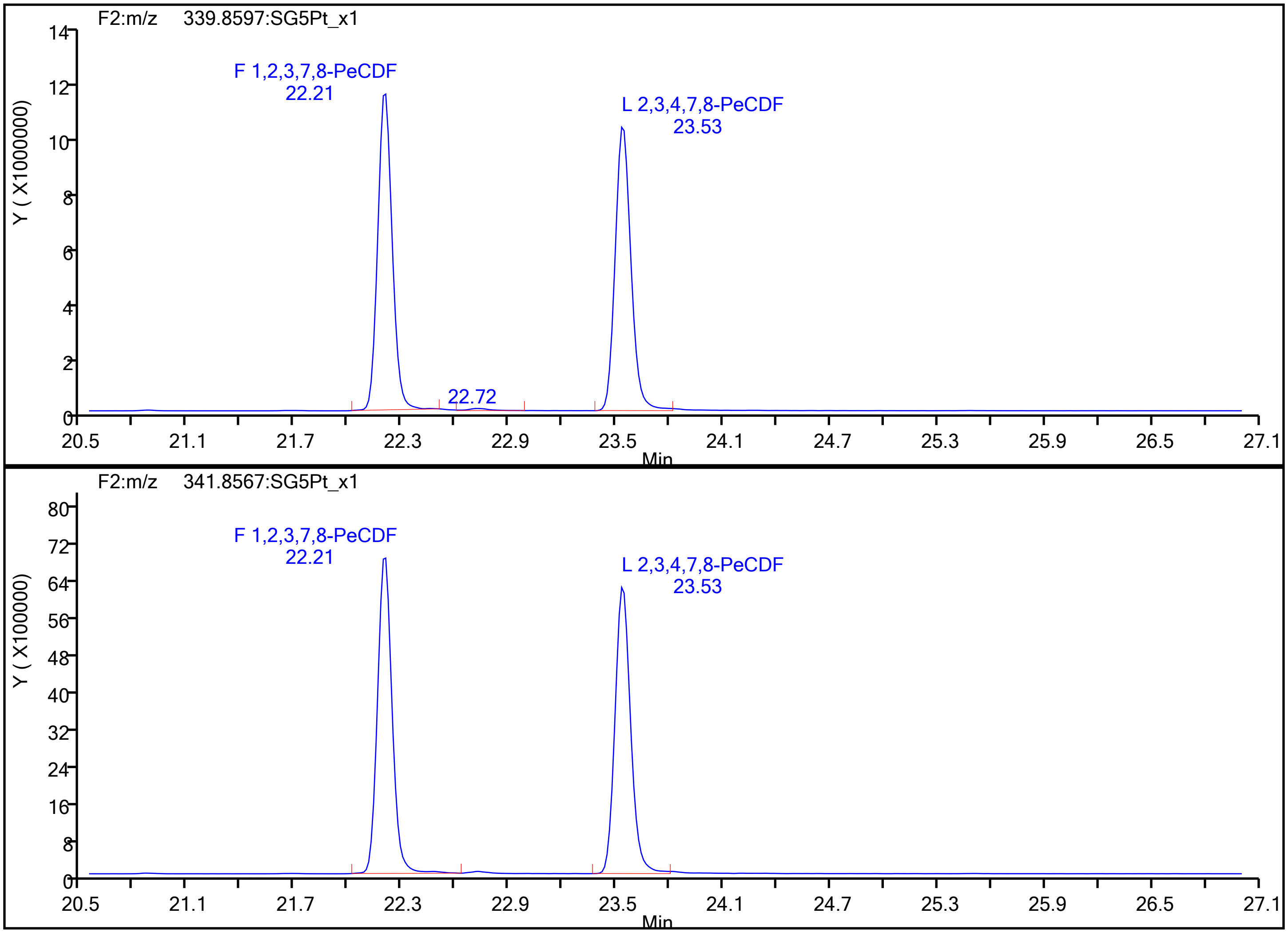

PeCDF Interference Mass

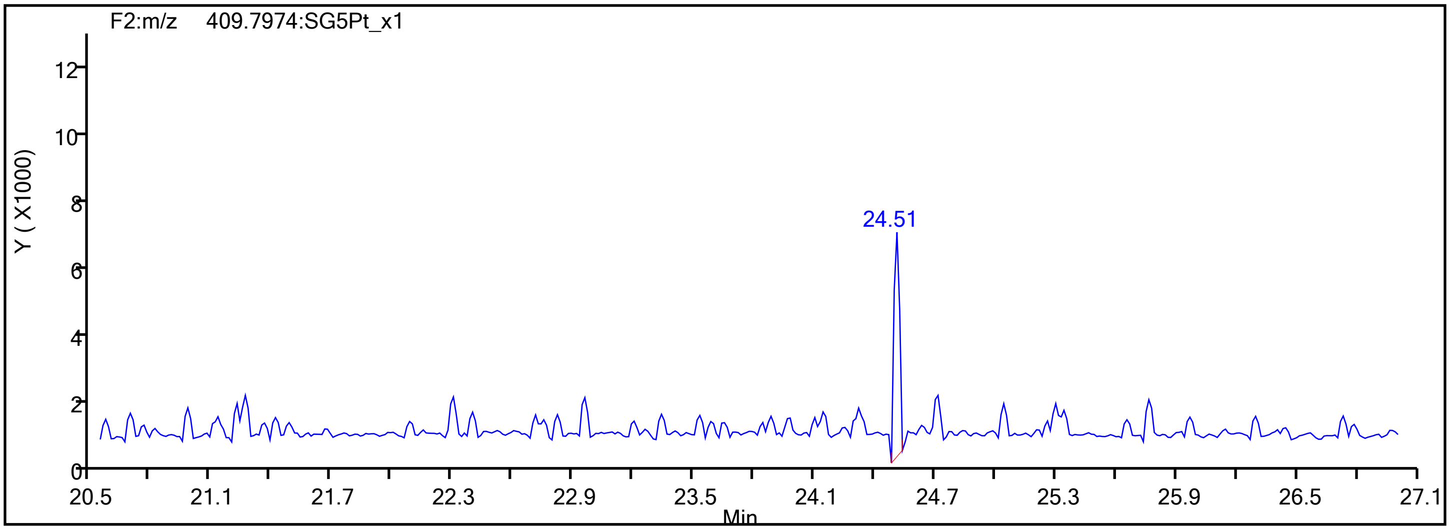

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Eurofins TestAmerica, Sacramento

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Injection Date: 10-Dec-2020 20:42:49 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976 Sample Line#: 6

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PeCDD

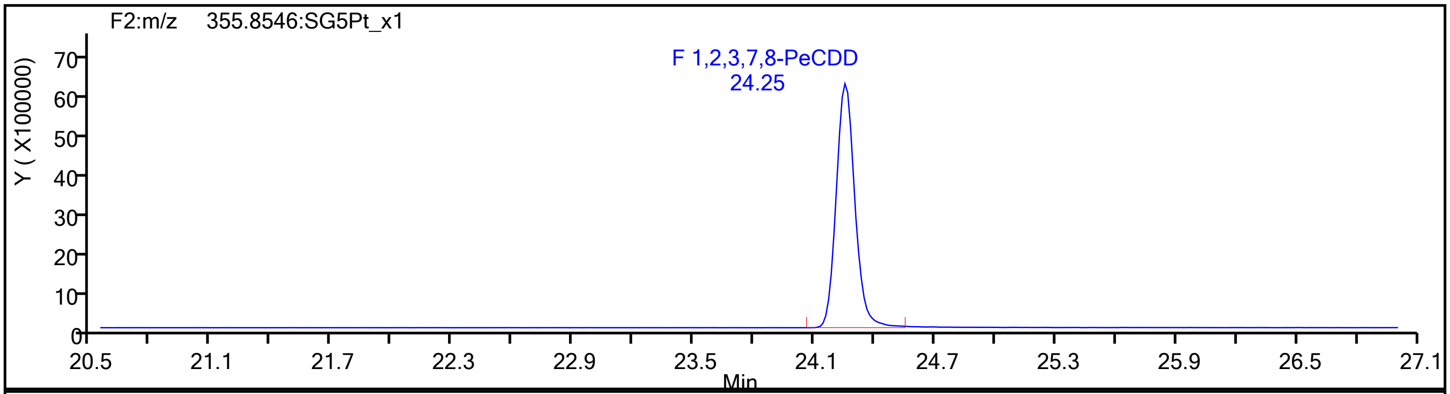

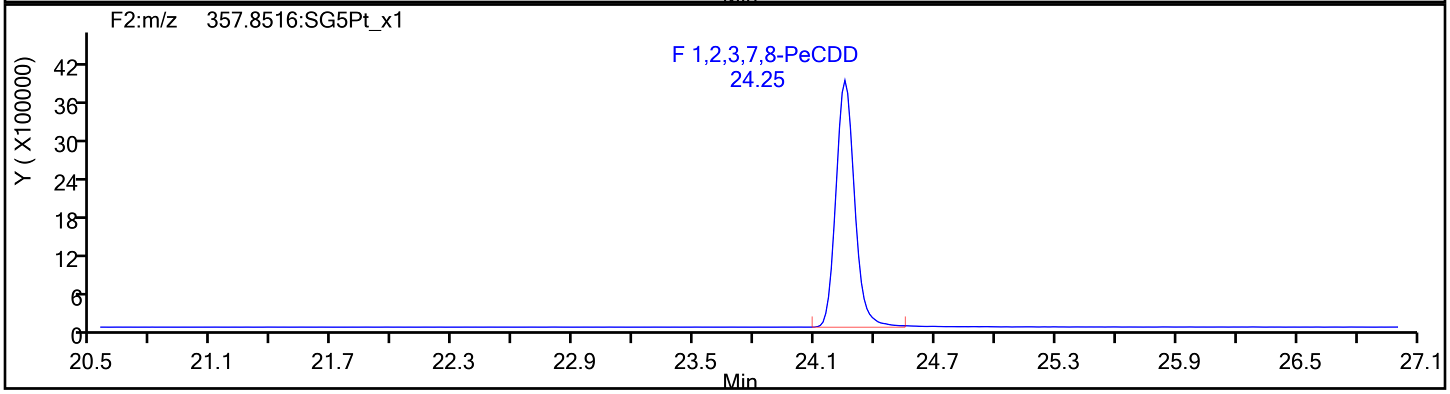

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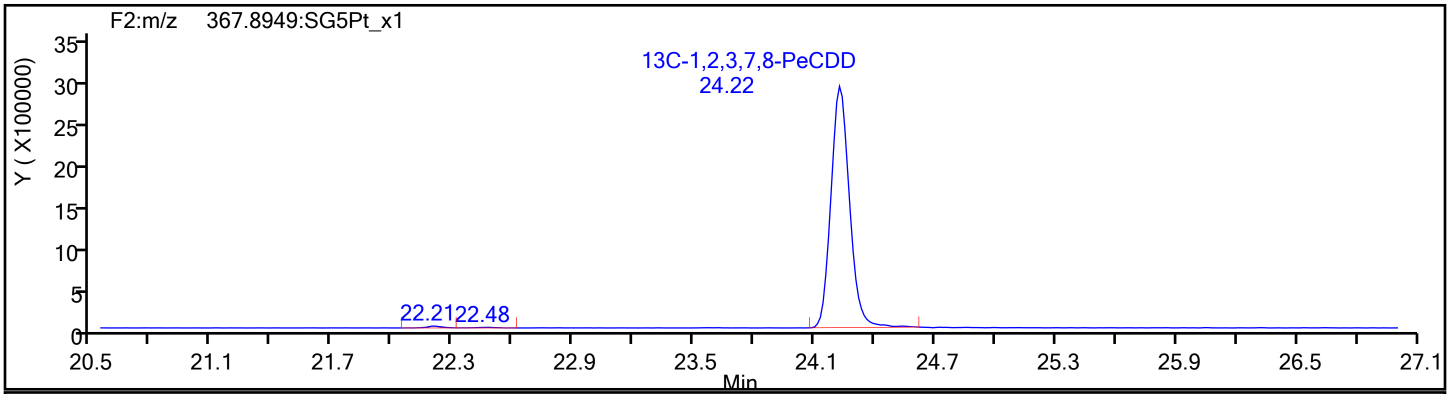

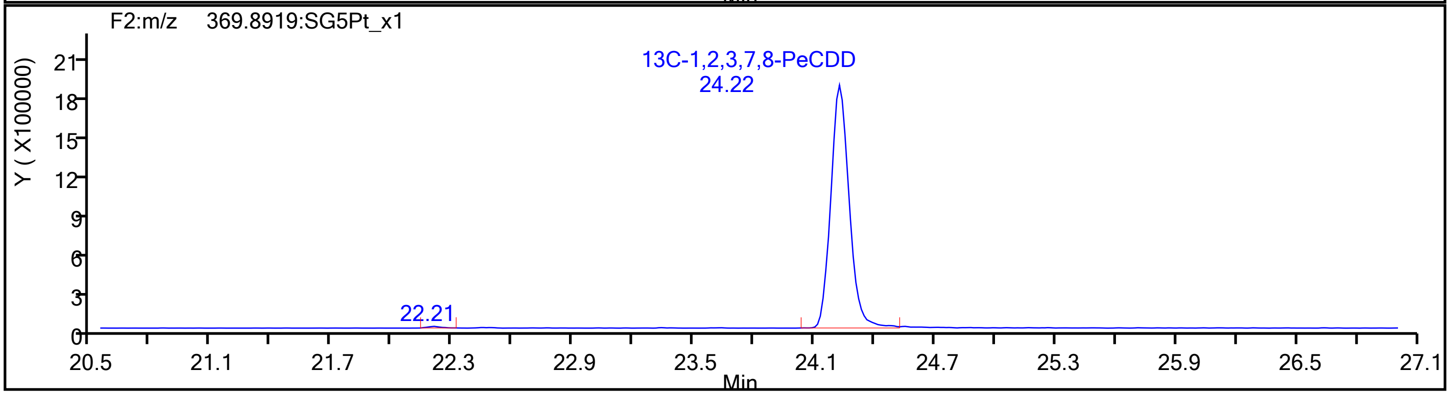

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_10D5
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Sample Line#: 6
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HxCDF

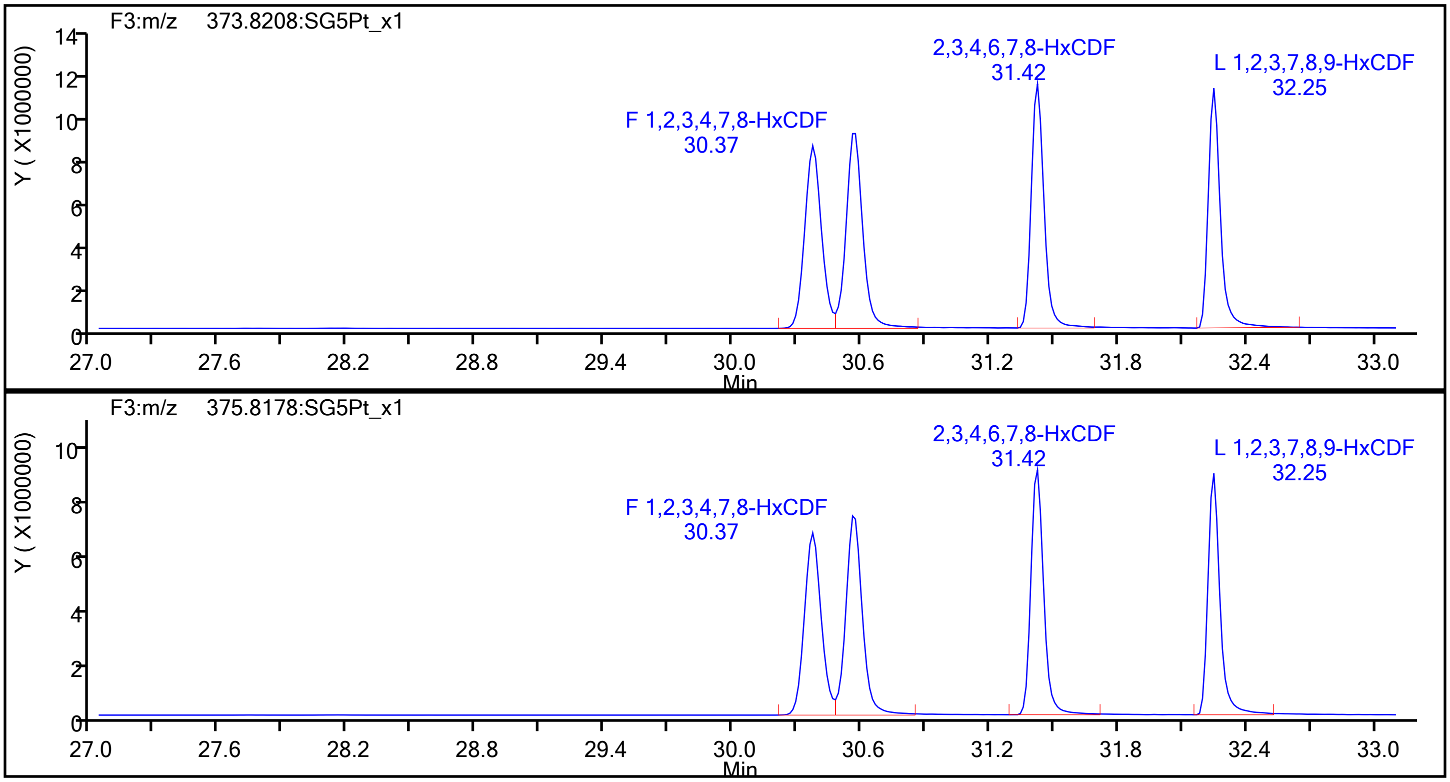

HxCDF Standards

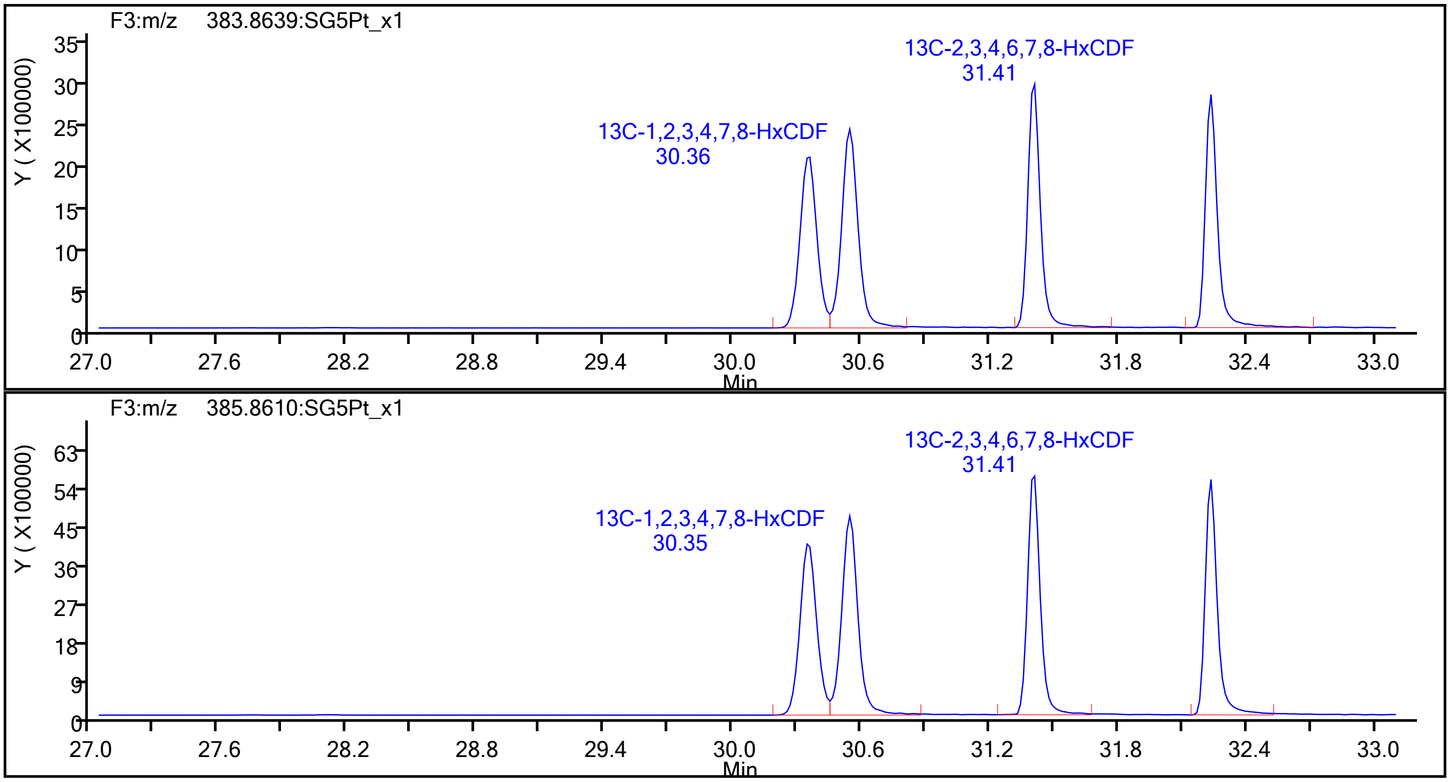

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Eurofins TestAmerica, Sacramento

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HxCDF

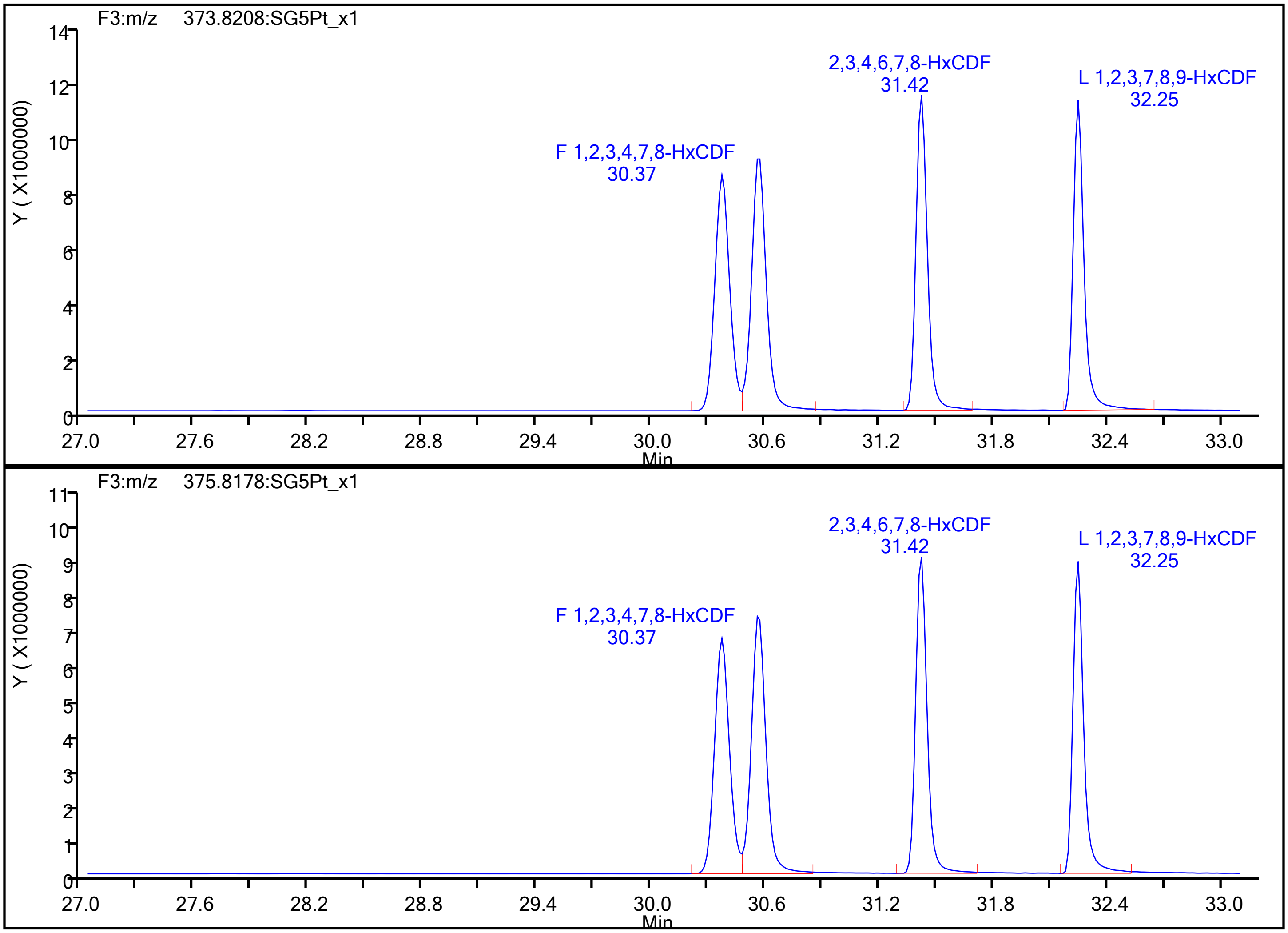

HxCDF Interference Mass

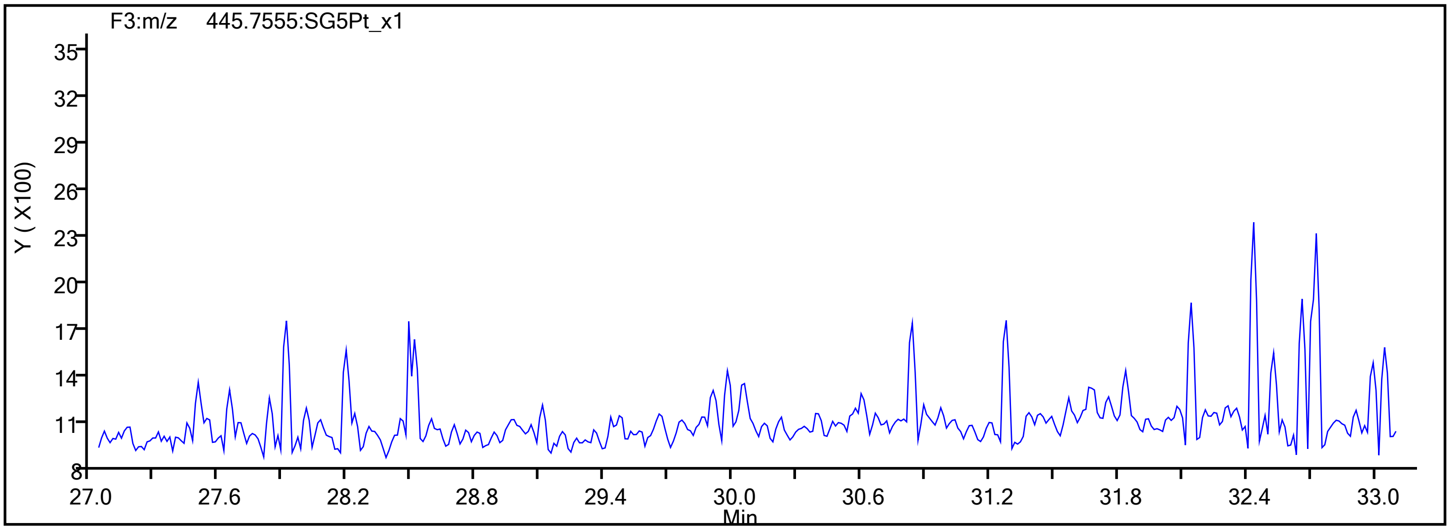

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HxCDD

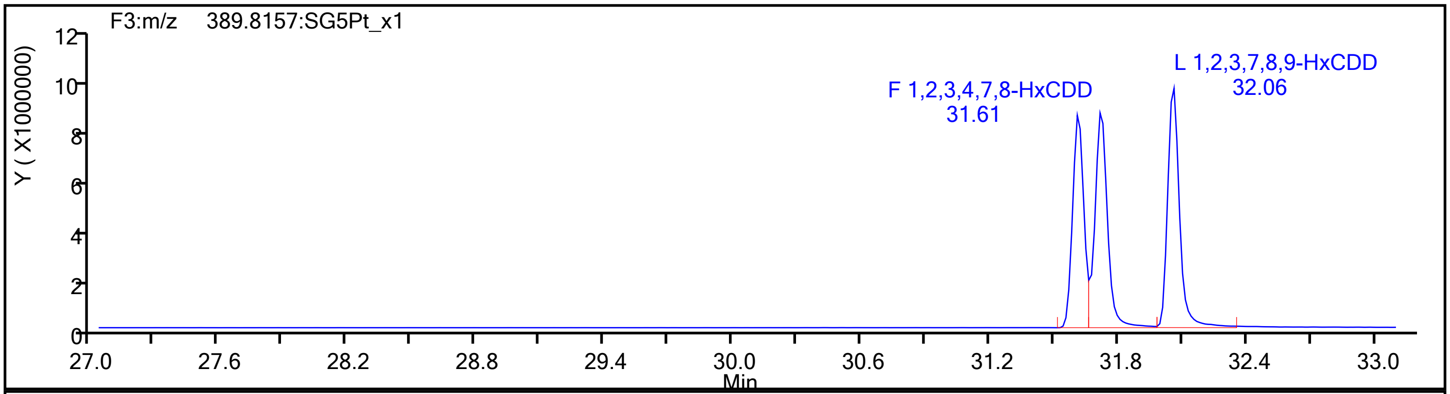

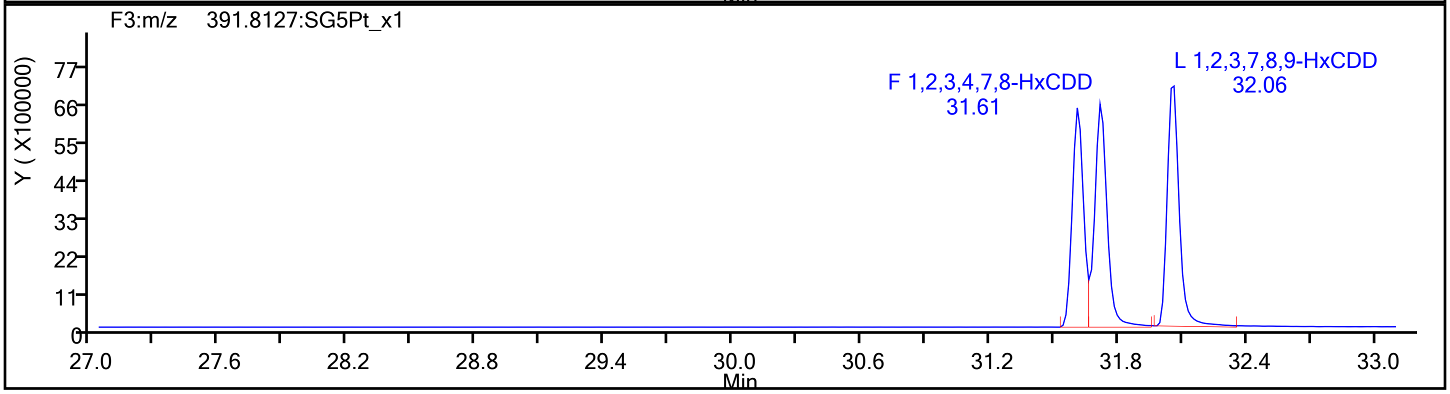

HxCDD Standards

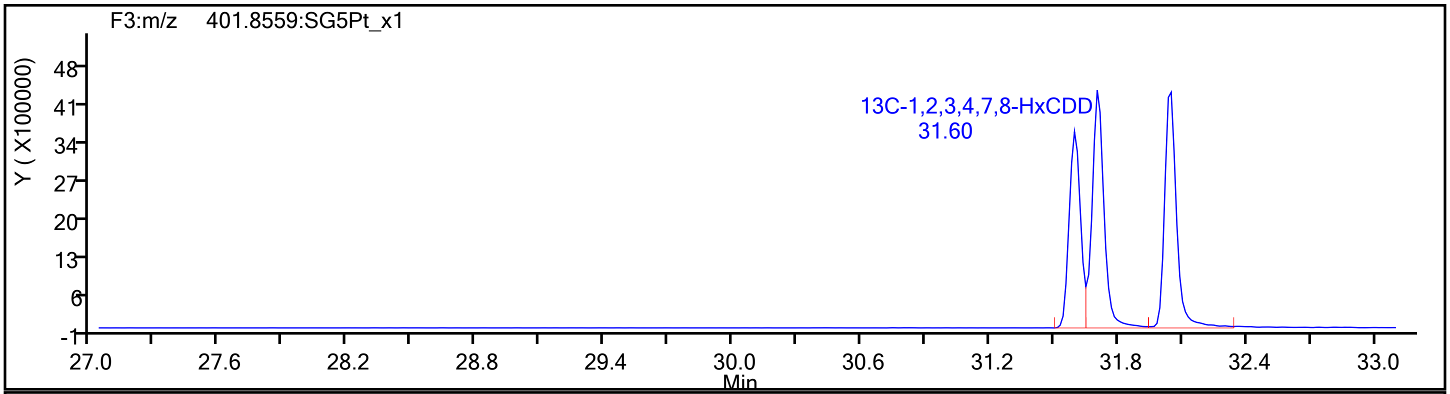

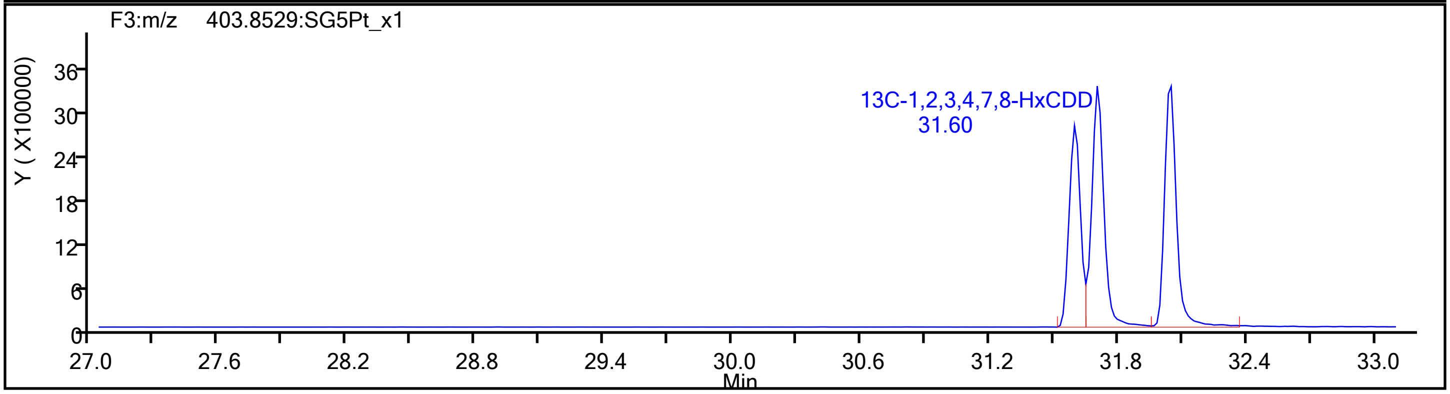

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Eurofins TestAmerica, Sacramento

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HpCDF

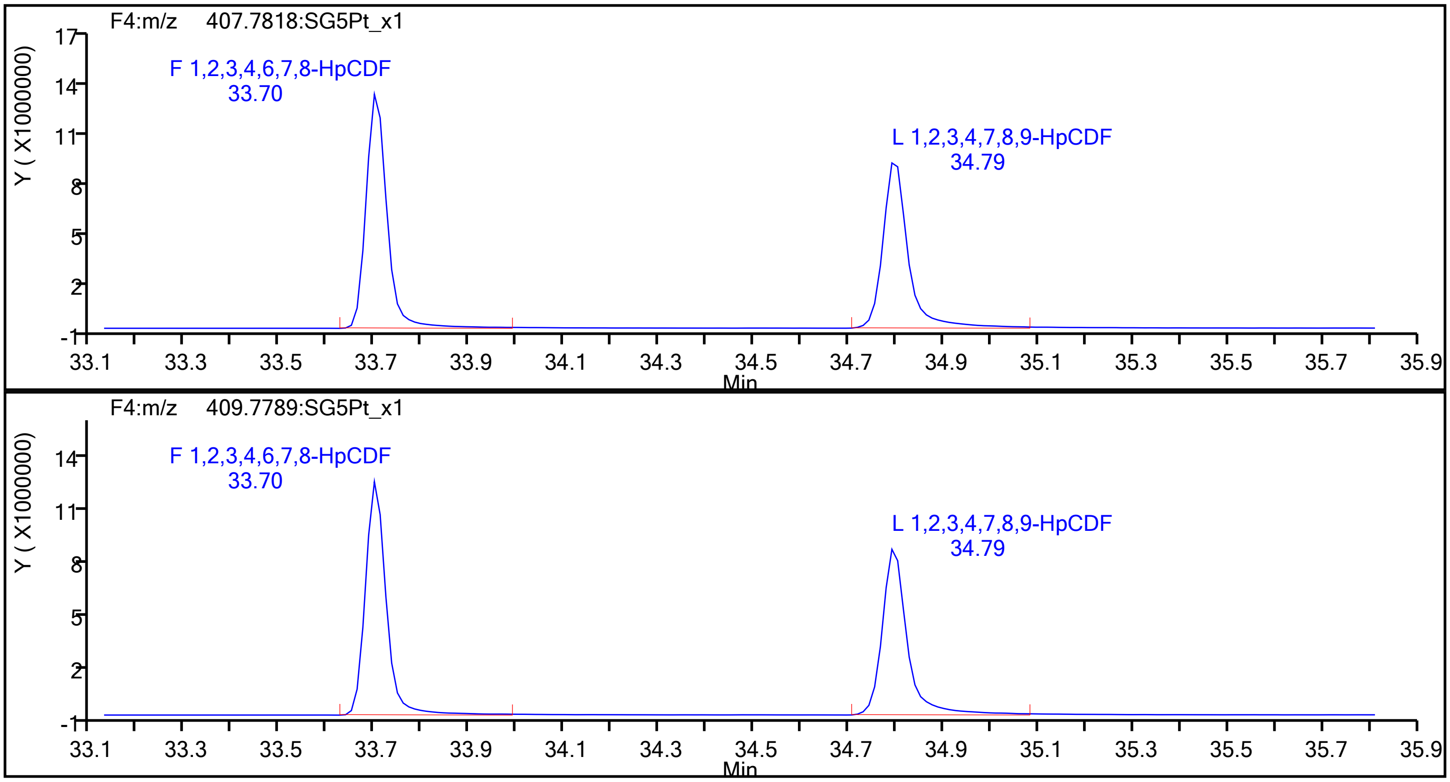

HpCDF Standards

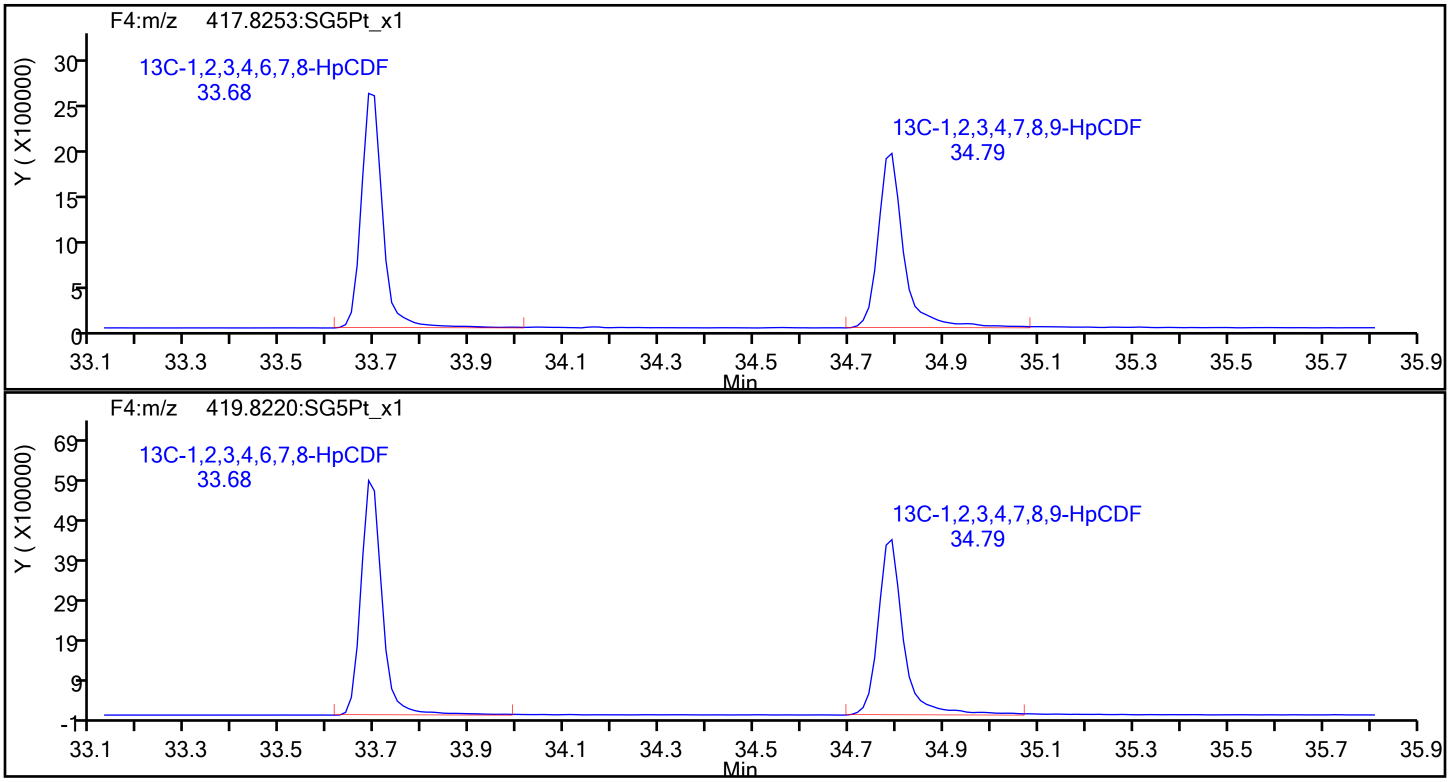

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: SMA

Method: Dioxin_10D5

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Client ID:

Worklist#: 440976

Sample Line#: 6

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HpCDF

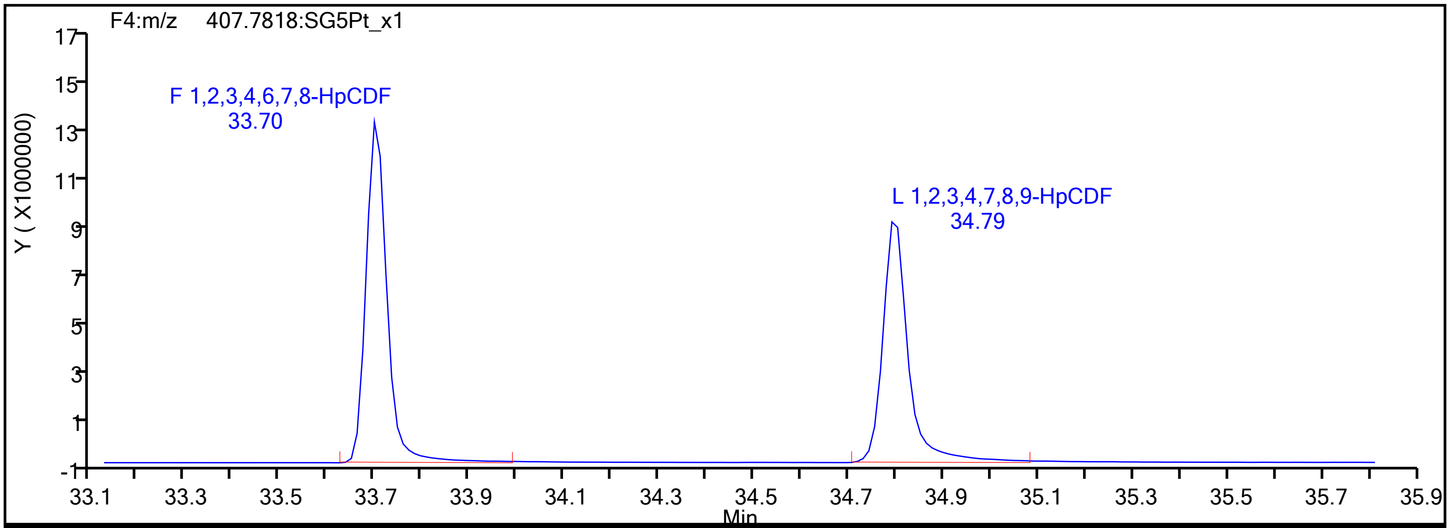

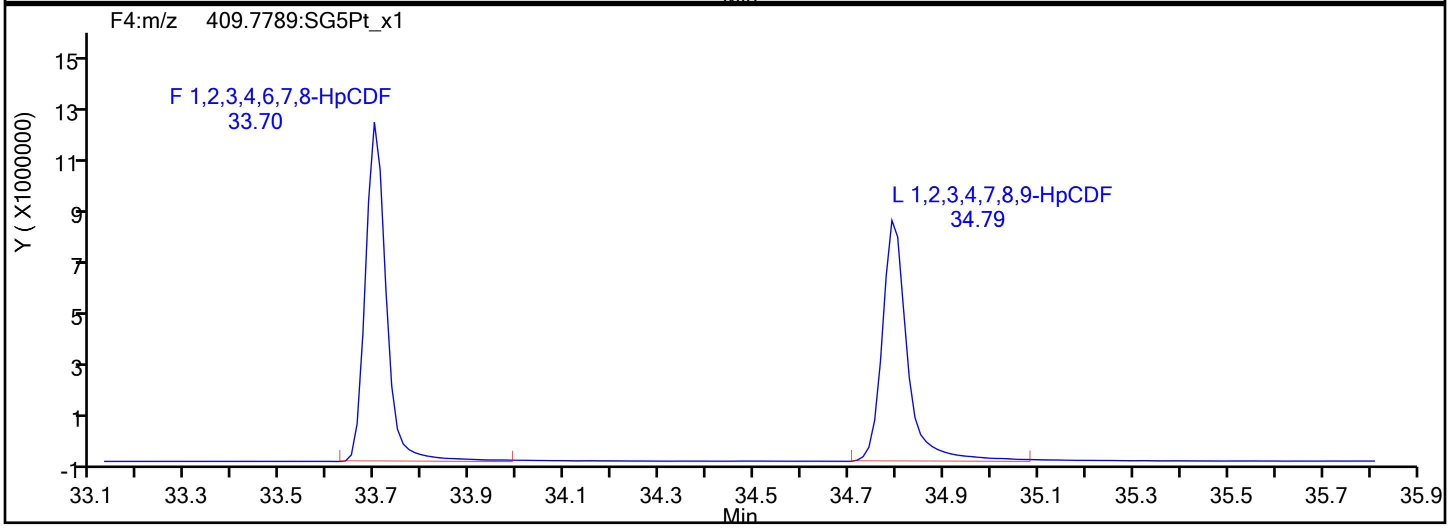

HpCDF Interference Mass

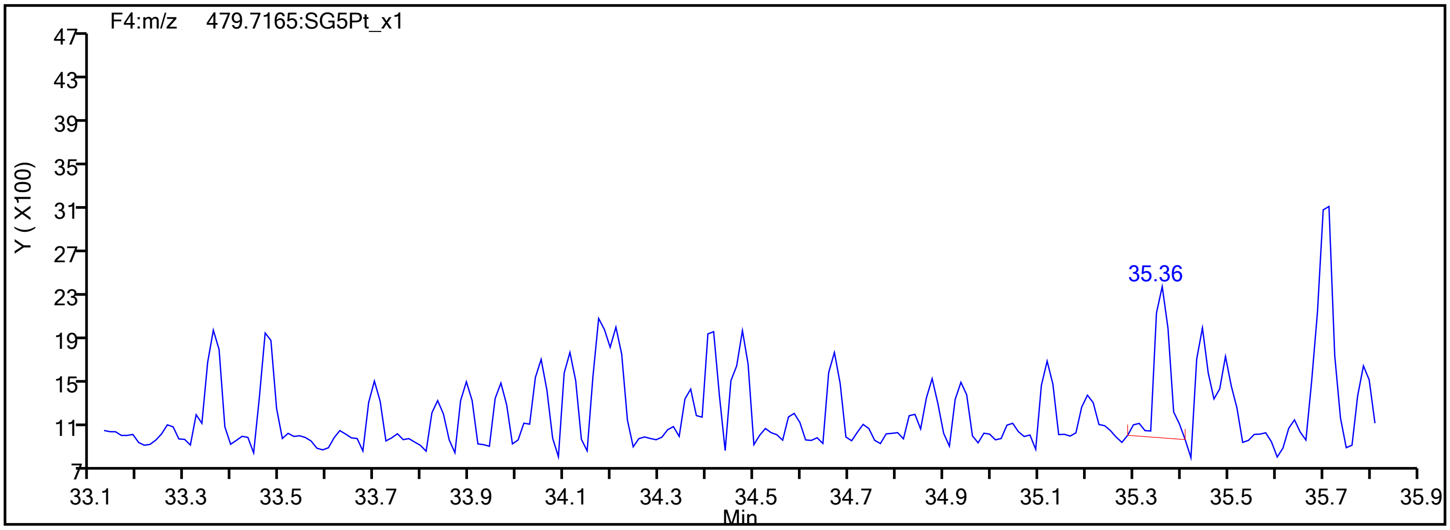

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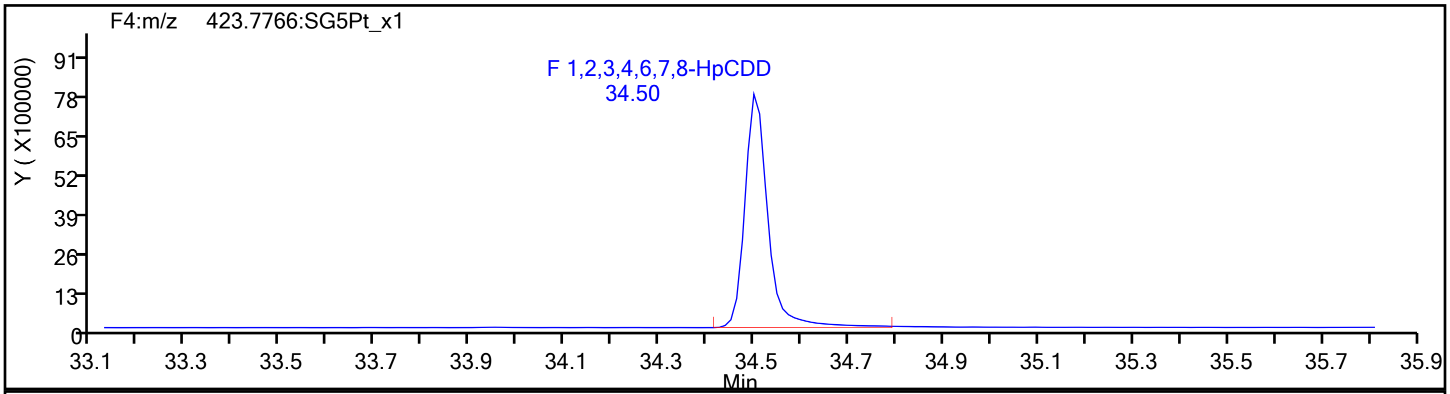

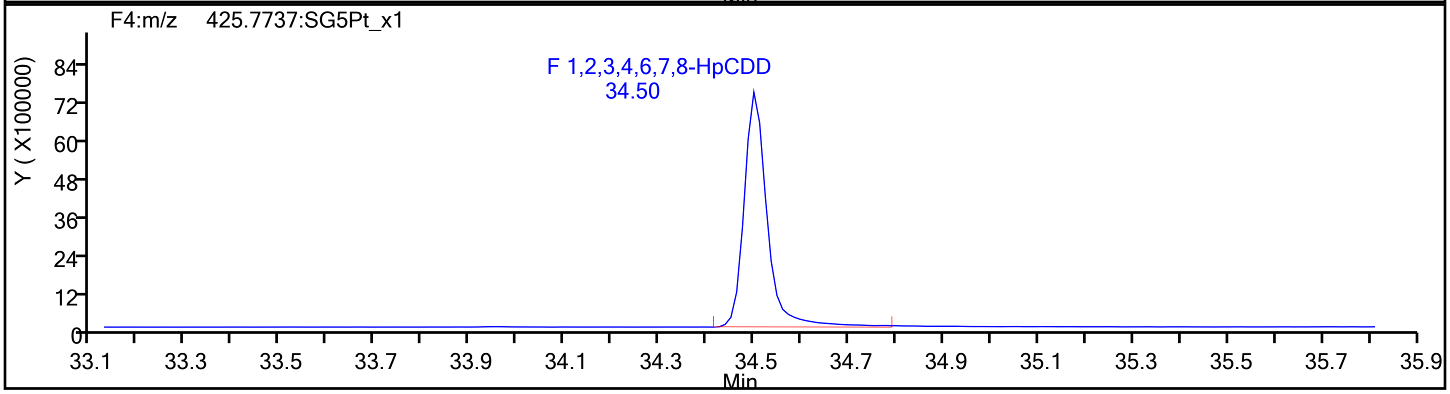

HpCDD Standards

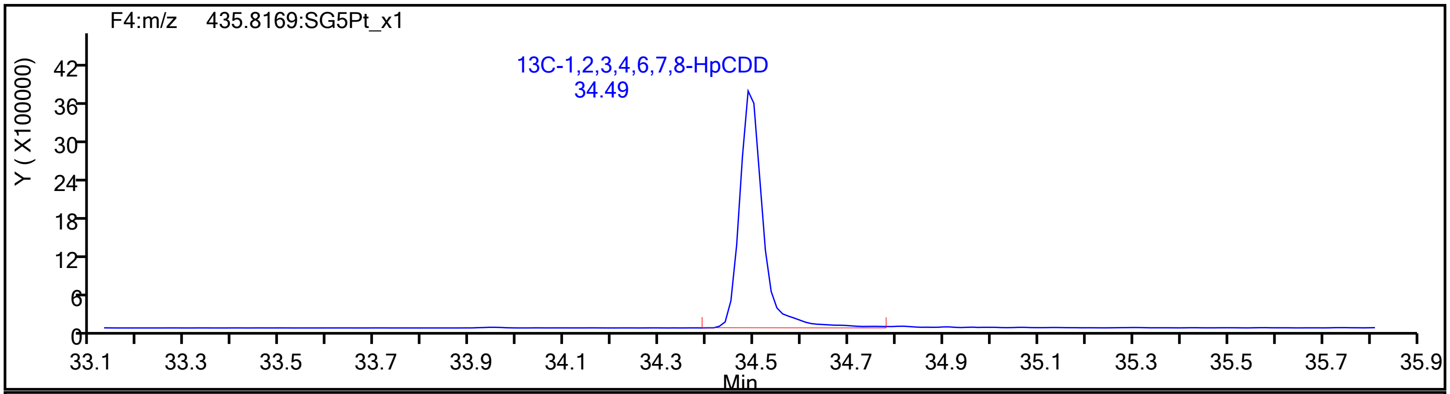

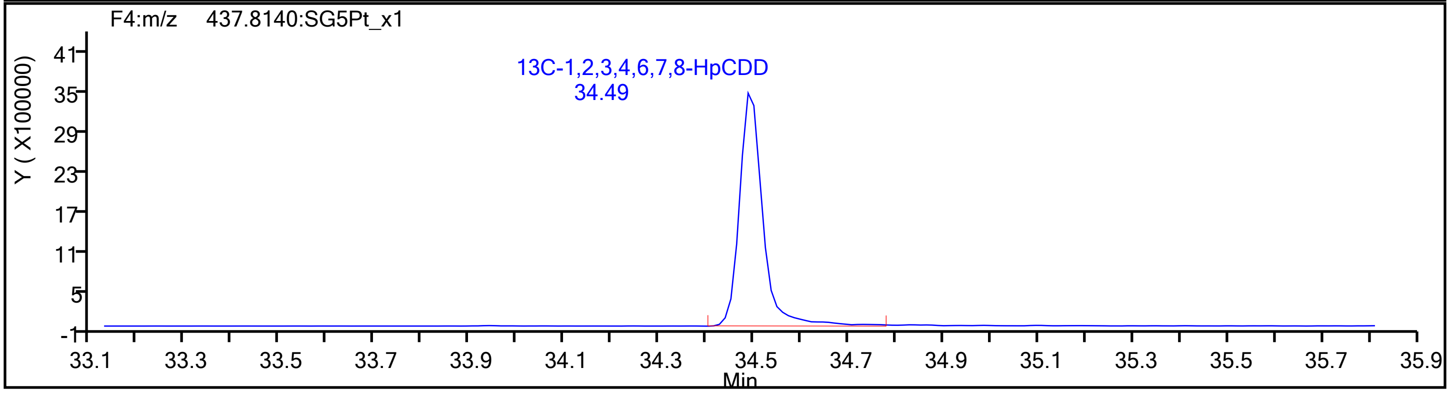

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Eurofins TestAmerica, Sacramento

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OCDF

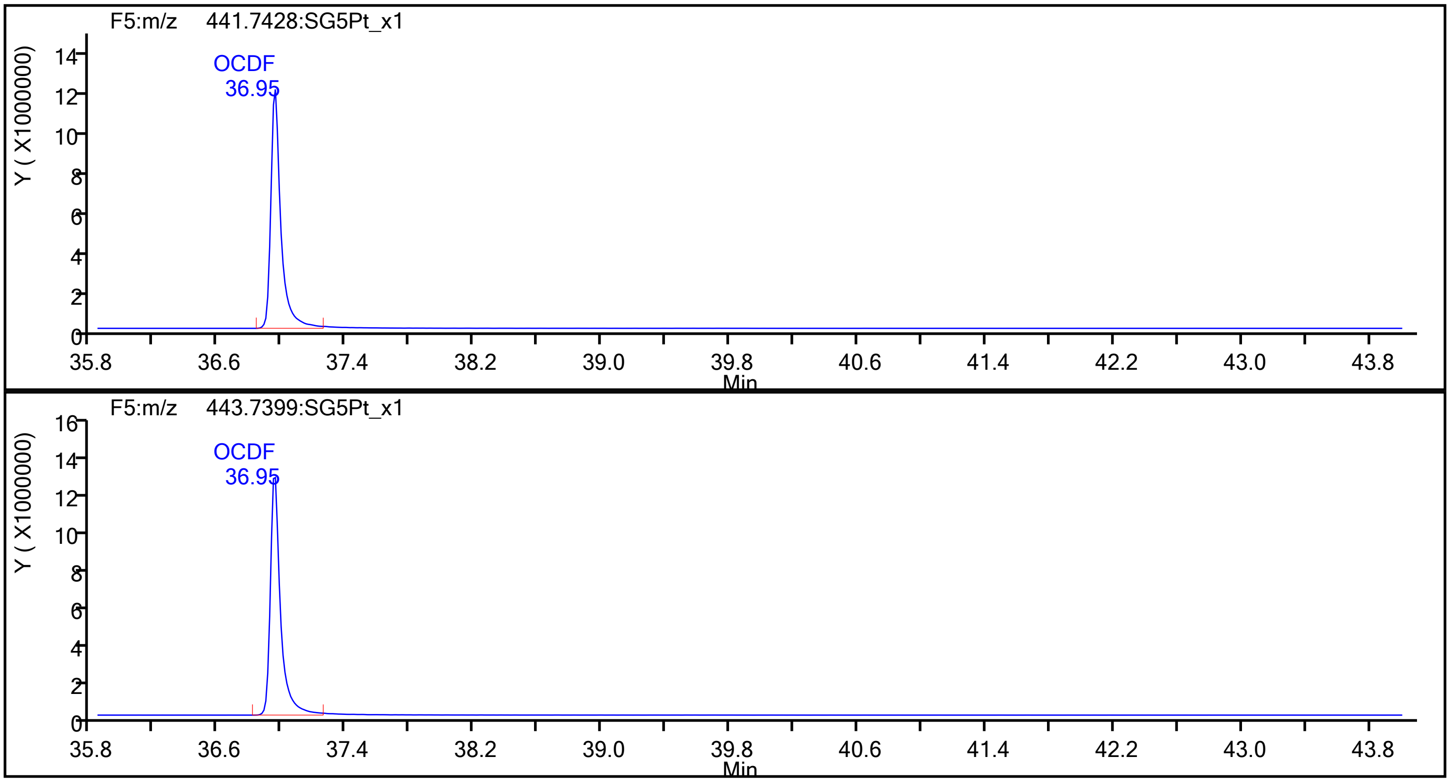

OCDF Standards

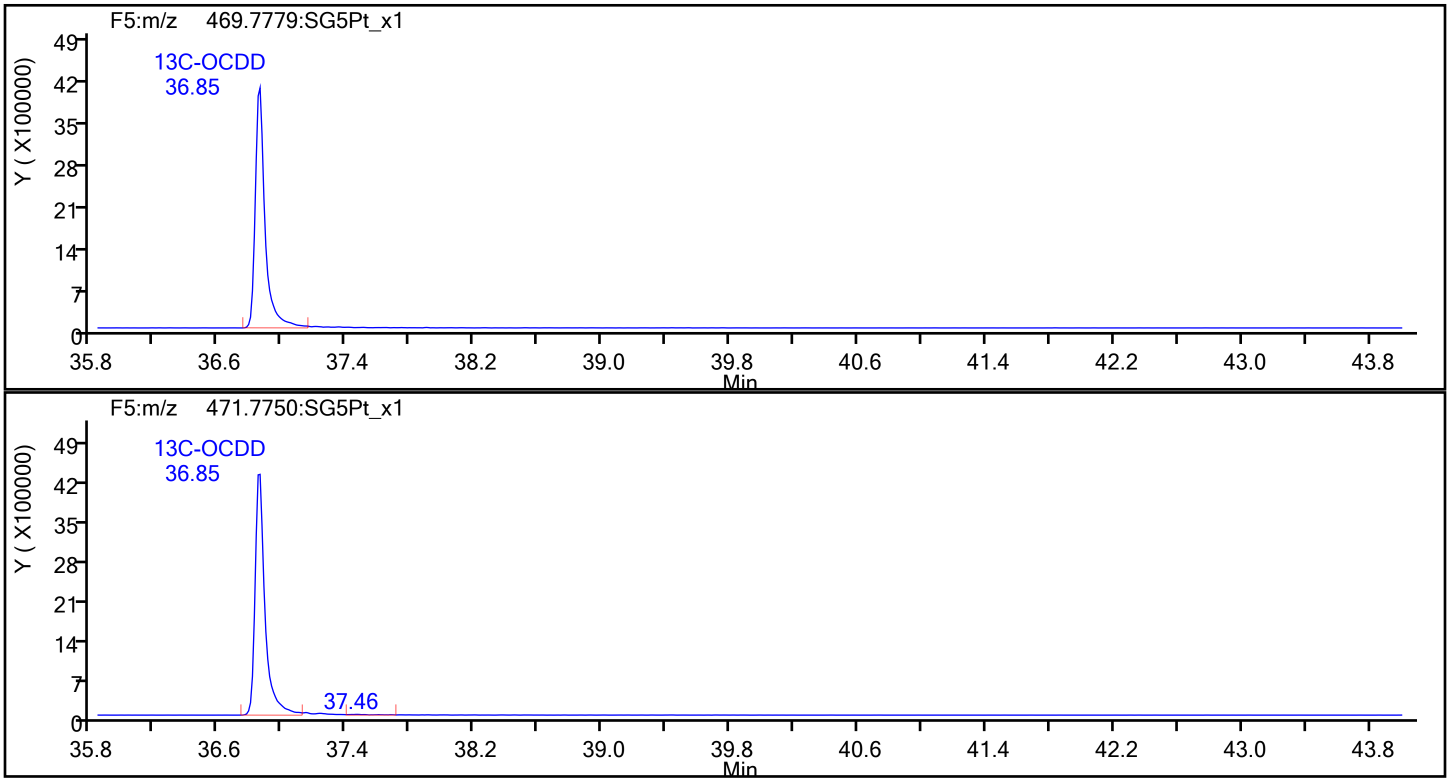

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OCDF

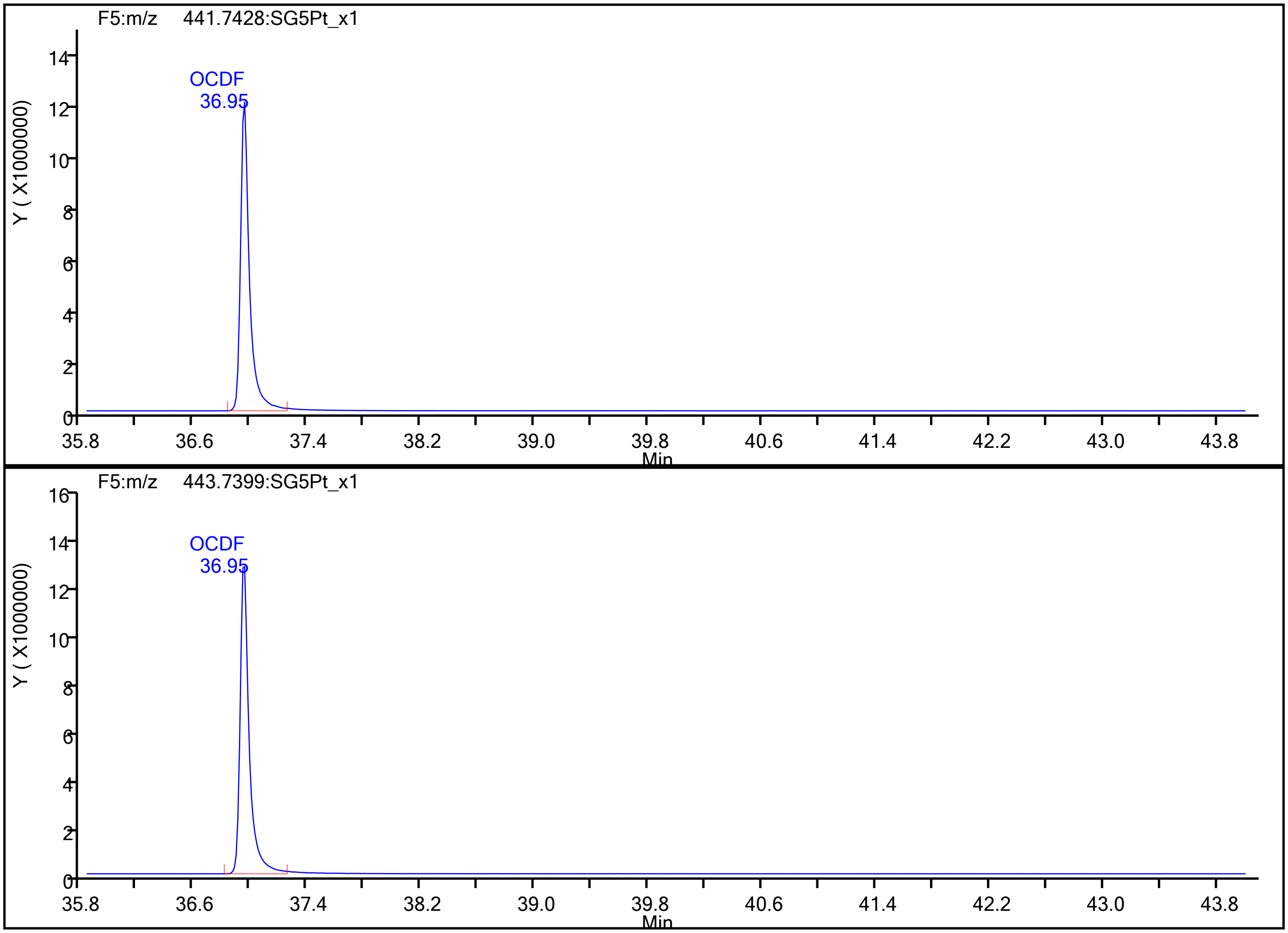

OCDF Interference Mass

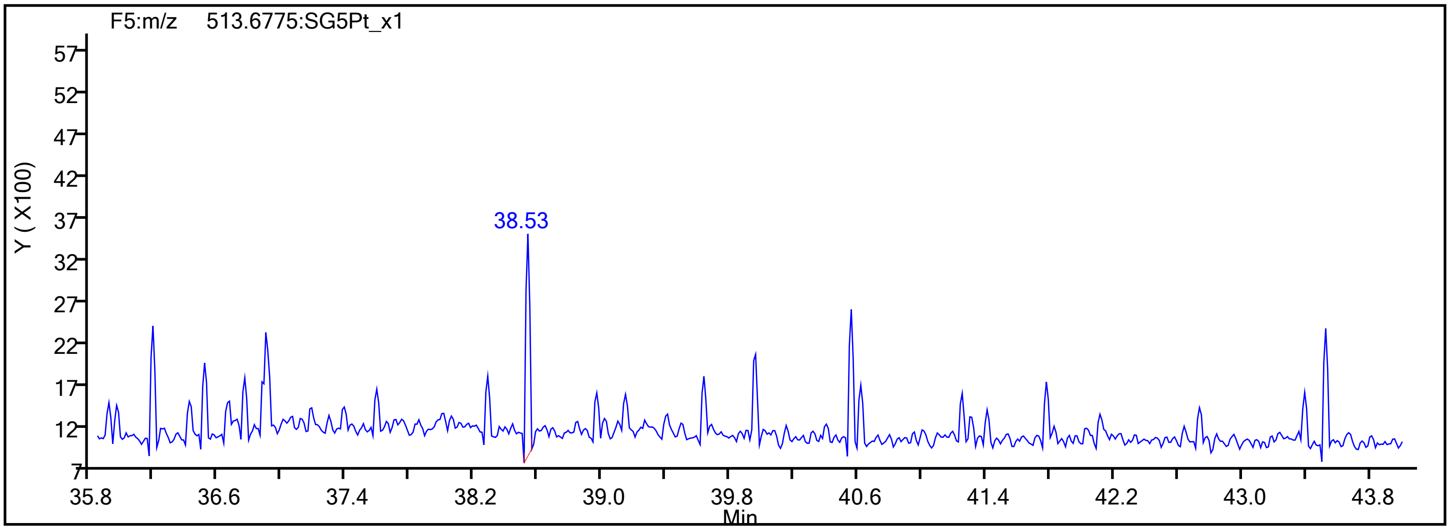

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Eurofins TestAmerica, Sacramento

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Injection Date: 10-Dec-2020 20:42:49 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

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Client ID:

Worklist#: 440976 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

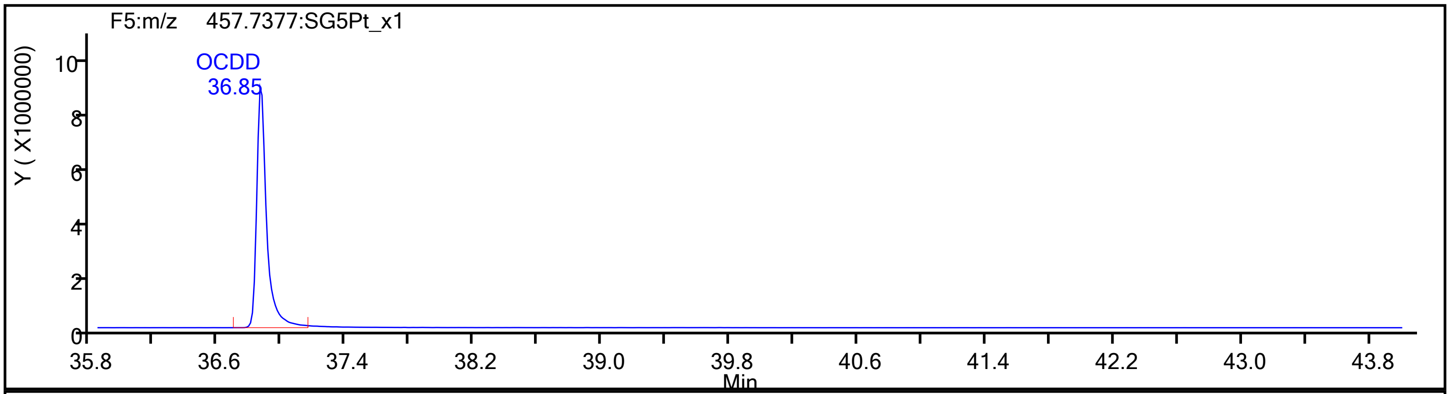

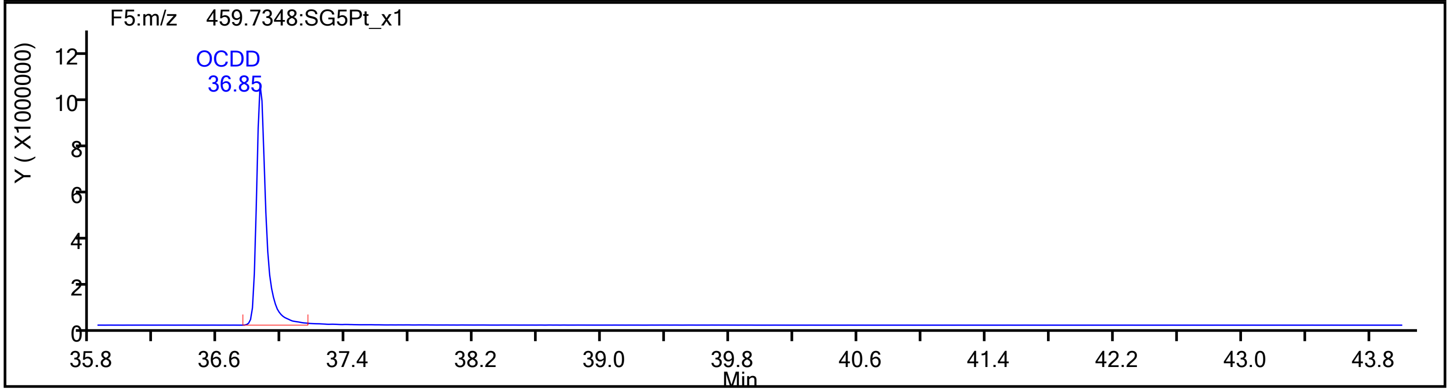

OCDD Standards

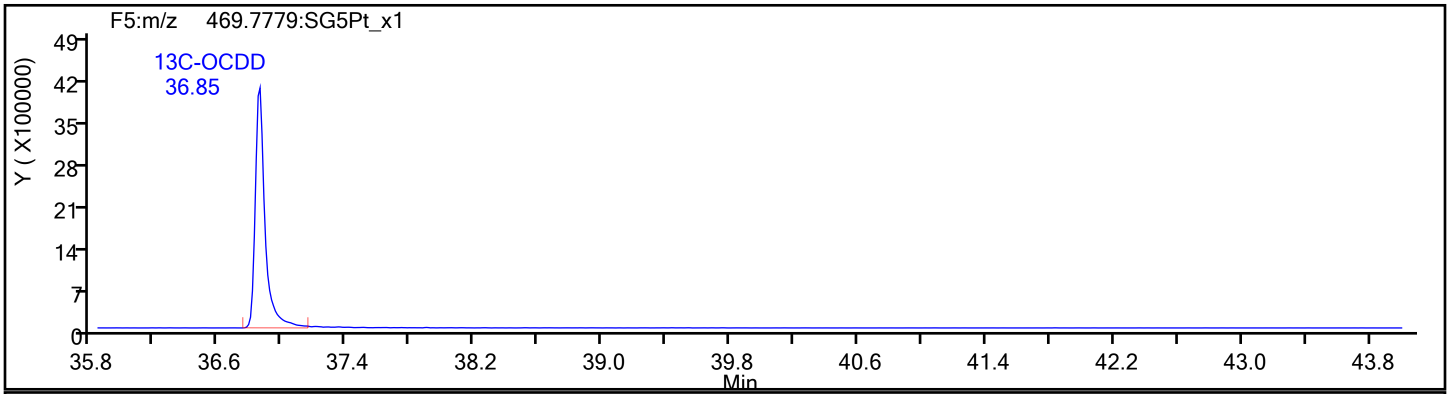

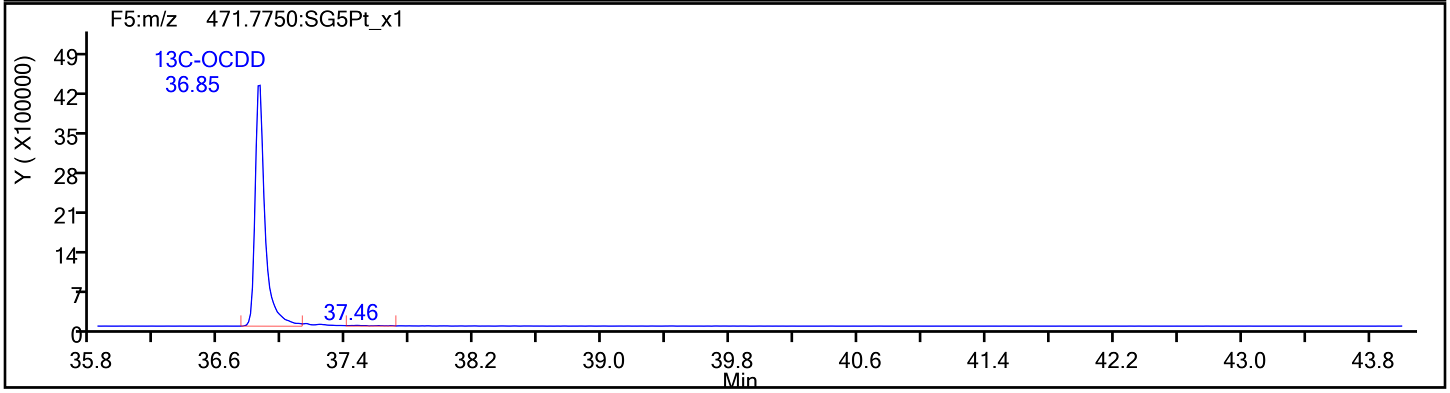

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Operator ID: SMA
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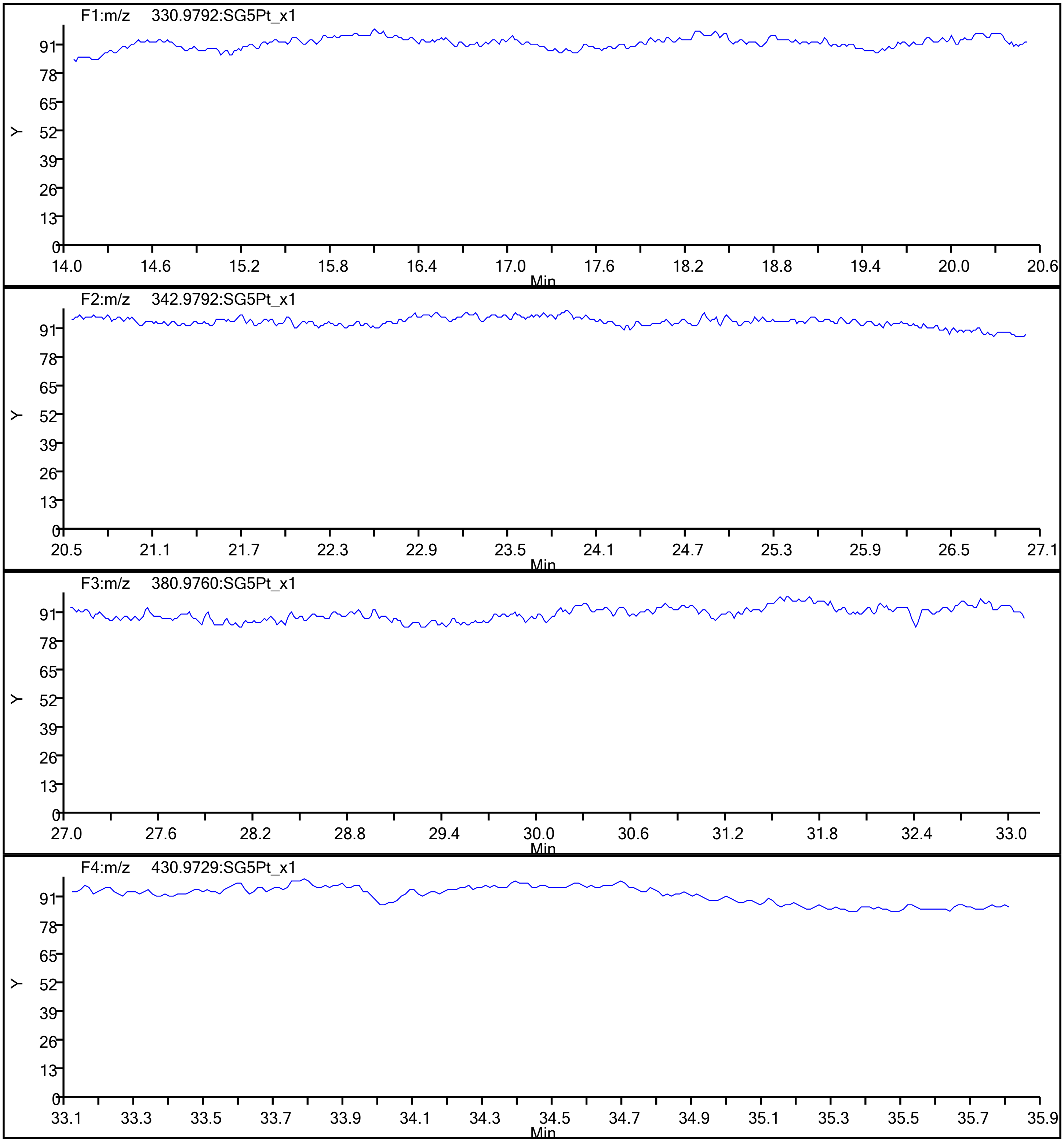

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Eurofins TestAmerica, Sacramento

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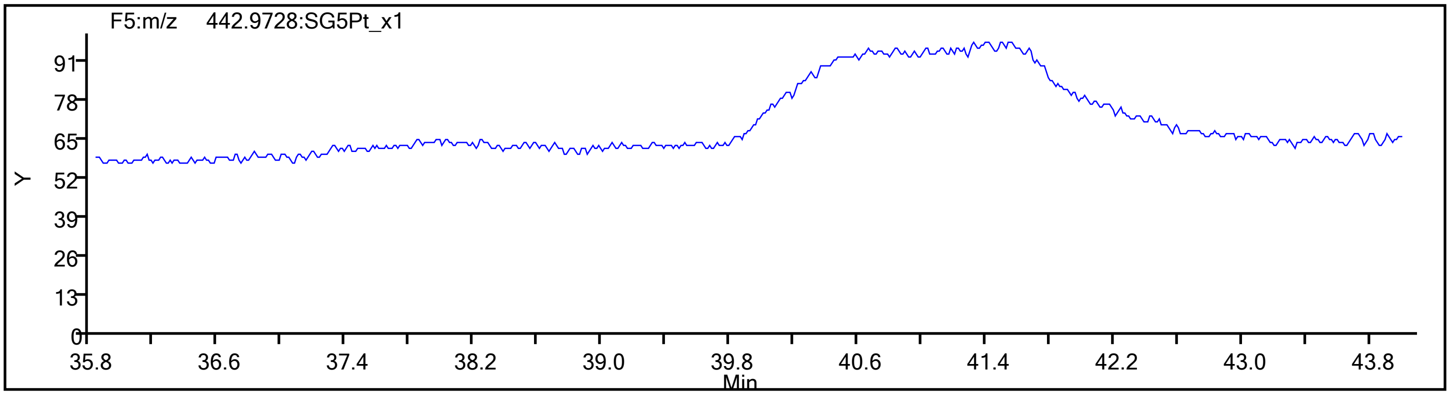

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

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Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-Dec-2020 21:27:54 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00027 CS-6 HRDXNL6_00027
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 10:13:00 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1604

First Level Reviewer: arghestanis Date: 11-Dec-2020 08:35:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.702	33405559	0.71	3.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.203	57251353	0.77	1.7120	100.1	100.1	0.1835	0.1835	100	
2,3,7,8-TCDF	17.219	118940306	0.78	1.0173	204.2	204.2	0.2313	0.2313	102	
S Total TCDF					204.2	204.2	0.2313	0.2313		
D 13C-2,3,7,8-TCDD	17.899	36985228	0.72	1.0837	102.2	102.2	0.1792	0.1792	102	
$ 37Cl4-2,3,7,8-TCDD	17.914	86772141		1.2441	208.8	208.8	0.1376	0.1376	104	
2,3,7,8-TCDD	17.929	87334900	0.78	1.1543	204.6	204.6	0.1237	0.1237	102	
S Total TCDD					204.6	204.6	0.1237	0.1237		
D 13C-1,2,3,7,8-PeCDF	22.164	47773116	1.60	1.3633	104.9	104.9	0.1923	0.1923	105	
1,2,3,7,8-PeCDF	22.192	496552126	1.60	1.0268	1012.3	1012.3	2.048	2.048	101	
D 13C-2,3,4,7,8-PeCDF	23.501	45458823	1.59	1.2714	107.0	107.0	0.2062	0.2062	107	
2,3,4,7,8-PeCDF	23.528	483751075	1.59	1.0730	991.8	991.8	2.270	2.270	99.18	
S Total PeCDF					2004.1	2004.1	2.159	2.159		
D 13C-1,2,3,7,8-PeCDD	24.210	30343489	1.62	0.8534	106.4	106.4	0.0965	0.0965	106	
1,2,3,7,8-PeCDD	24.237	326611052	1.58	1.0748	1001.4	1001.4	0.6993	0.6993	100	
S Total PeCDD					1001.4	1001.4	0.6993	0.6993		
D 13C-1,2,3,4,7,8-HxCDF	30.346	34681904	0.52	1.1403	105.3	105.3	0.2812	0.2812	105	
1,2,3,4,7,8-HxCDF	30.360	425366558	1.24	1.2385	990.3	990.3	3.501	3.501	99.03	
D 13C-1,2,3,6,7,8-HxCDF	30.533	37009896	0.52	1.2841	99.8	99.8	0.2497	0.2497	99.81	
1,2,3,6,7,8-HxCDF	30.559	439291285	1.25	1.1900	997.5	997.5	3.254	3.254	99.75	
D 13C-2,3,4,6,7,8-HxCDF	31.398	34623263	0.51	1.1825	101.4	101.4	0.2712	0.2712	101	
2,3,4,6,7,8-HxCDF	31.424	418393477	1.26	1.2132	996.1	996.1	2.563	2.563	99.61	
D 13C-1,2,3,7,8,9-HxCDF	32.236	32890081	0.51	1.0832	105.2	105.2	0.2960	0.2960	105	
1,2,3,7,8,9-HxCDF	32.250	394136105	1.25	1.2266	976.9	976.9	2.482	2.482	97.69	
S Total HxCDF					3960.8	3960.8	2.950	2.950		
* 13C-1,2,3,7,8,9-HxCDD	32.037	28876863	1.26	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.597	24158312	1.27	0.7757	107.9	107.9	0.2183	0.2183	108	
1,2,3,4,7,8-HxCDD	31.611	272396717	1.26	1.1618	970.5	970.5	1.488	1.488	97.05	
D 13C-1,2,3,6,7,8-HxCDD	31.704	28282746	1.27	0.9997	98.0	98.0	0.1694	0.1694	97.97	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.717	287557805	1.27	1.0320	985.2	985.2	1.430	1.430	98.52	
1,2,3,7,8,9-HxCDD	32.050	311963663	1.26	1.2407	959.0	959.0	1.283	1.283	95.90	
S Total HxCDD					2914.7	2914.7	1.400	1.400		
D 13C-1,2,3,4,6,7,8-HpCDF	33.685	25406690	0.44	0.8529	103.2	103.2	0.5727	0.5727	103	
1,2,3,4,6,7,8-HpCDF	33.697	368471057	1.05	1.4619	992.1	992.1	4.832	4.832	99.21	
D 13C-1,2,3,4,7,8,9-HpCDF	34.778	23070614	0.44	0.7499	106.5	106.5	0.6514	0.6514	107	
1,2,3,4,7,8,9-HpCDF	34.790	327145412	1.04	1.4262	994.2	994.2	6.189	6.189	99.42	
S Total HpCDF					1986.3	1986.3	5.511	5.511		
D 13C-1,2,3,4,6,7,8-HpCDD	34.487	23719607	1.05	0.7851	104.6	104.6	0.2964	0.2964	105	
1,2,3,4,6,7,8-HpCDD	34.499	253397415	1.03	1.1022	969.3	969.3	1.866	1.866	96.93	
S Total HpCDD					969.3	969.3	1.866	1.866		
D 13C-OCDD	36.842	34589430	0.89	0.5610	213.5	213.5	0.1646	0.1646	107	
OCDF	36.950	528141715	0.92	1.4855	2055.7	2055.7	0.8642	0.8642	103	
OCDD	36.854	393902361	0.89	1.1570	1968.6	1968.6	0.991	0.991	98.43	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:13:05 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	10-Dec-2020 21:27:54	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00027 CS-6 HRDXNL6_00027				
Misc. Info.:	10DE20B10D5				
Operator ID:	SMA	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	11-Dec-2020 10:13:00	Calib Date:	10-Dec-2020 21:27:54		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1604				
First Level Reviewer: arghestanis		Date:	11-Dec-2020 08:35:51		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.702	17.708	0		13903710	3447661	3525	8812	978		
333.9339	17.702	17.708	0		19501849	4793786	2877	7192	1666	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.203	17.206	0	0.972	24908032	6412099	6413	16032	1000		
317.9389	17.203	17.206	0	0.972	32343321	8369802	3943	9857	2123	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.219	17.222	0	1.001	51954503	13250209	5765	14412	2298		
305.8987	17.219	17.222	0	1.001	66985803	17105410	8147	20367	2100	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.899	17.905	0	1.011	15424226	3746585	3525	8812	1063		
333.9339	17.899	17.905	0	1.011	21561002	5299933	2877	7192	1842	0.72(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.914	17.923	-1	1.012	86772141	20624721	5643	14107	3655		
2,3,7,8-TCDD											
319.8965	17.929	17.926	0	1.002	38212045	9042824	2376	5940	3806		
321.8936	17.914	17.926	-1	1.001	49122855	11625336	2790	6975	4167	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.164	22.173	0	1.252	29430892	5502014	4958	12395	1110		
353.8970	22.164	22.173	0	1.252	18342224	3470894	3683	9207	942	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.192	22.200	0	1.001	305247688	55901459	46253	115632	1209		
341.8567	22.192	22.200	0	1.001	191304438	34909873	29229	73072	1194	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.501	23.509	0	1.328	27921433	4750338	4958	12395	958		
353.8970	23.501	23.509	0	1.328	17537390	2996978	3683	9207	814	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.528	23.534	0	1.001	296894416	49601011	46253	115632	1072		
341.8567	23.514	23.534	-1	1.001	186856659	31312029	29229	73072	1071	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.210	24.226	-1	1.368	18752449	3064633	1619	4047	1893		
369.8919	24.210	24.226	-1	1.368	11591040	1883766	1097	2742	1717	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.237	24.254	-1	1.001	200070912	32031755	9074	22685	3530		
357.8516	24.237	24.254	-1	1.001	126540140	20067819	5804	14510	3458	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.346	30.362	-1	0.947	11842440	2142461	3638	9095	589		
385.8610	30.333	30.362	-2	0.947	22839464	4107748	6691	16727	614	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.360	30.376	-1	1.000	235760949	43232968	60643	151607	713		
375.8178	30.360	30.376	-1	1.000	189605609	34574718	47748	119370	724	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.533	30.549	-1	0.953	12628427	2423135	3638	9095	666		
385.8610	30.533	30.549	-1	0.953	24381469	4574860	6691	16727	684	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.559	30.575	-1	1.001	244438237	47007335	60643	151607	775		
375.8178	30.559	30.575	-1	1.001	194853048	37404114	47748	119370	783	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.398	31.411	-1	0.980	11680495	2951563	3638	9095	811		
385.8610	31.398	31.411	-1	0.980	22942768	5763797	6691	16727	861	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.424	31.430	0	1.001	233038990	56920253	60643	151607	939		
375.8178	31.411	31.430	-1	1.000	185354487	45895584	47748	119370	961	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.236	32.242	0	1.006	11134925	3036905	3638	9095	835		
385.8610	32.236	32.242	0	1.006	21755156	5864623	6691	16727	876	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.250	32.255	0	1.000	219330875	59230900	60643	151607	977		
375.8178	32.236	32.255	-1	1.000	174805230	46927778	47748	119370	983	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.037	32.050	-1		16109517	4472433	3196	7990	1399		
403.8529	32.037	32.050	-1		12767346	3580234	2259	5647	1585	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.597	31.603	0	0.986	13531991	3715754	3196	7990	1163		
403.8529	31.597	31.603	0	0.986	10626321	2886717	2259	5647	1278	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.611	31.619	0	1.000	151840070	41831010	25591	63977	1635		
391.8127	31.611	31.619	0	1.000	120556647	32996132	20064	50160	1645	1.26(1.05-1.43)	

Report Date: 11-Dec-2020 10:13:05 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.704	31.709	0	0.990	15807821	4295532	3196	7990	1344		
403.8529	31.704	31.709	0	0.990	12474925	3438586	2259	5647	1522	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.717	31.725	0	1.000	160789068	42270785	25591	63977	1652		
391.8127	31.717	31.725	0	1.000	126768737	33611559	20064	50160	1675	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.050	32.063	-1	1.014	173672690	47483456	25591	63977	1855		
391.8127	32.050	32.063	-1	1.014	138290973	38276605	20064	50160	1908	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.685	33.695	-1	1.051	7798251	2754488	5173	12932	532		
419.8220	33.685	33.695	-1	1.051	17608439	6250662	10562	26405	592	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.697	33.707	-1	1.000	188610324	67140325	127386	318465	527		
409.7789	33.697	33.707	-1	1.000	179860733	64186390	127058	317645	505	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.778	34.798	-1	1.086	7027341	2218032	5173	12932	429		
419.8220	34.778	34.798	-1	1.086	16043273	4988395	10562	26405	472	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.790	34.805	-1	1.000	166854661	50668276	127386	318465	398		
409.7789	34.790	34.805	-1	1.000	160290751	48655454	127058	317645	383	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.487	34.497	-1	1.076	12136194	4021117	3847	9617	1045		
437.8140	34.487	34.497	-1	1.076	11583413	3854027	3649	9122	1056	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.499	34.509	-1	1.000	128787888	42213579	31800	79500	1327		
425.7737	34.499	34.509	-1	1.000	124609527	40576092	32977	82442	1230	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.842	36.861	-1	1.150	16334805	4458098	1480	3700	3012		
471.7750	36.842	36.861	-1	1.150	18254625	4933518	1494	3735	3302	0.89(0.76-1.02)	
OCDF											
441.7428	36.950	36.962	-1	1.003	252956660	66609018	11879	29697	5607		
443.7399	36.938	36.962	-1	1.003	275185055	73651632	12233	30582	6021	0.92(0.76-1.02)	
OCDD											
457.7377	36.854	36.868	-1	1.000	185742751	50348261	9524	23810	5286		
459.7348	36.854	36.868	-1	1.000	208159610	56739172	12003	30007	4727	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 2.00 Units: uL

Report Date: 11-Dec-2020 10:13:05 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d
Injection Date: 10-Dec-2020 21:27:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

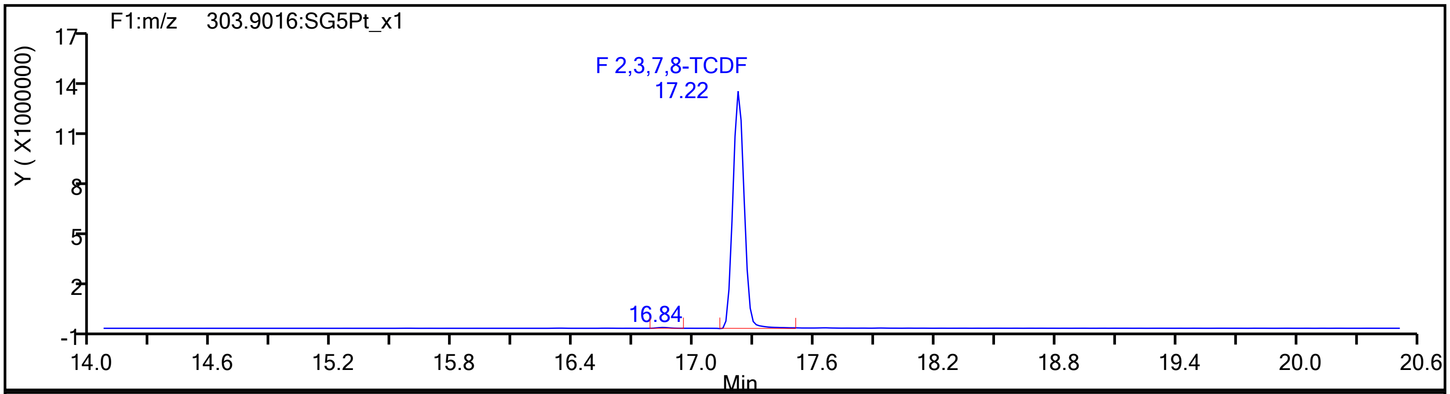

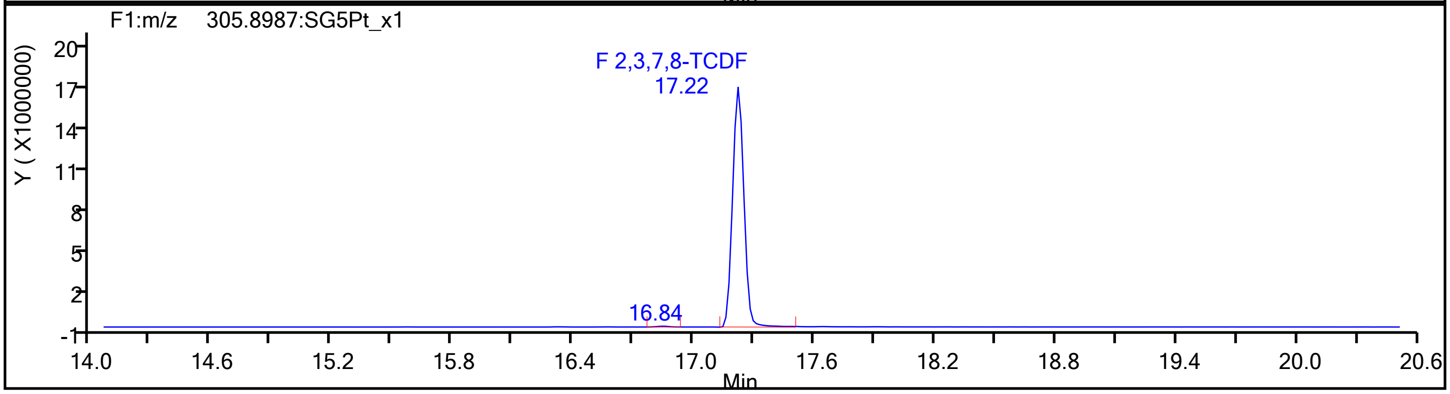

TCDF Standards

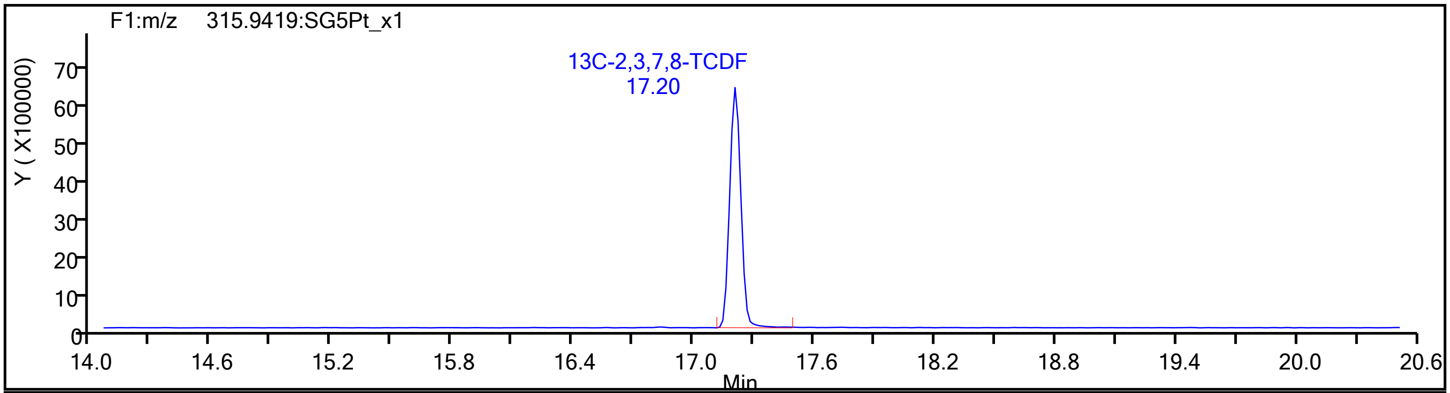

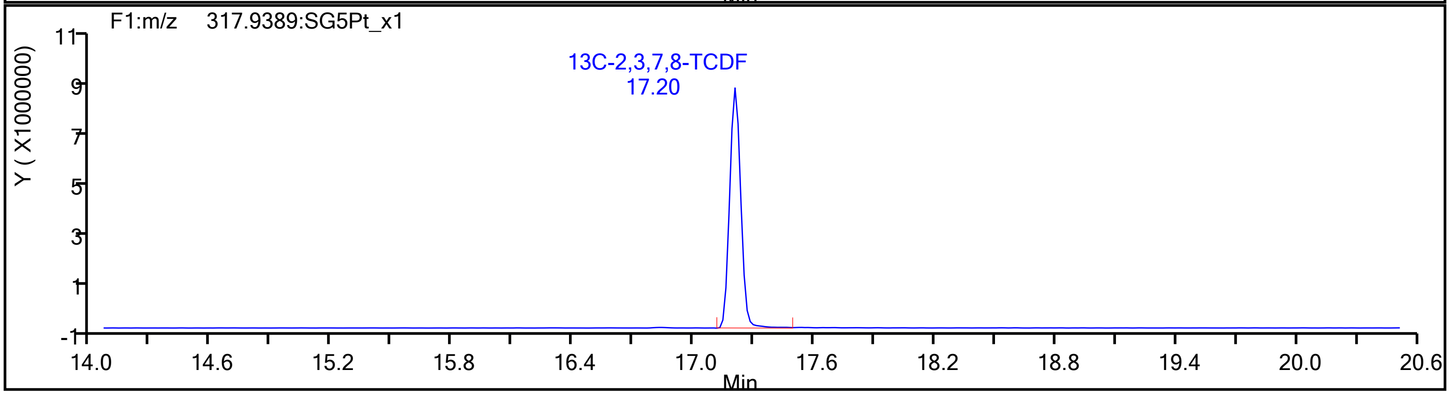

Report Date: 11-Dec-2020 10:13:05 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d		
Injection Date:	10-Dec-2020 21:27:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

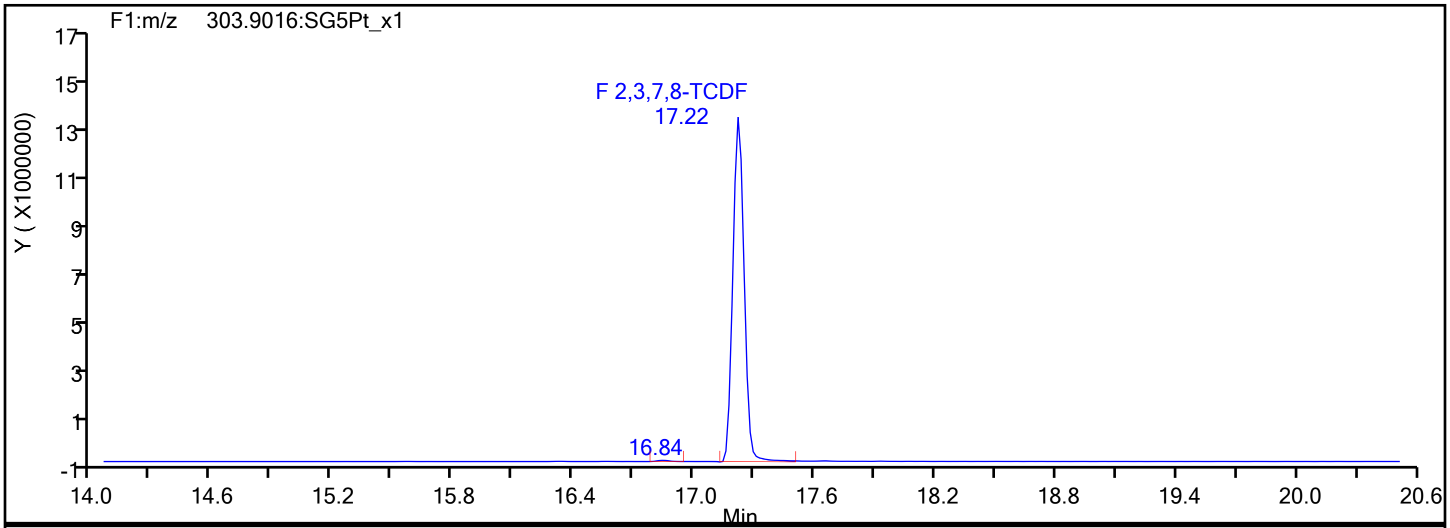

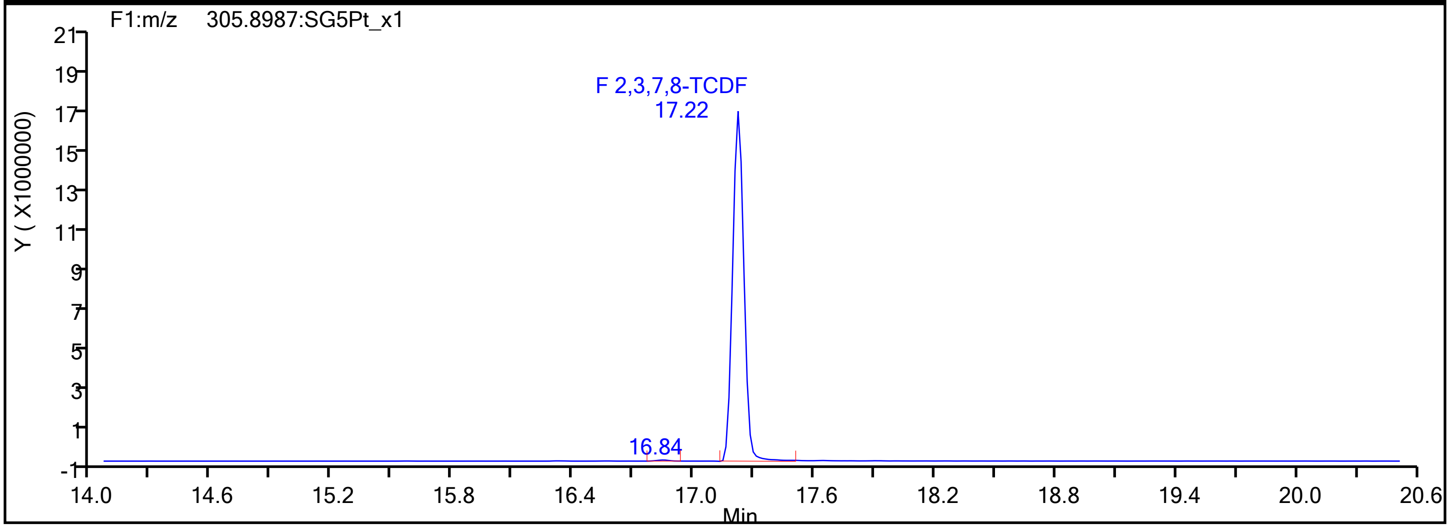

TCDF Interference Mass

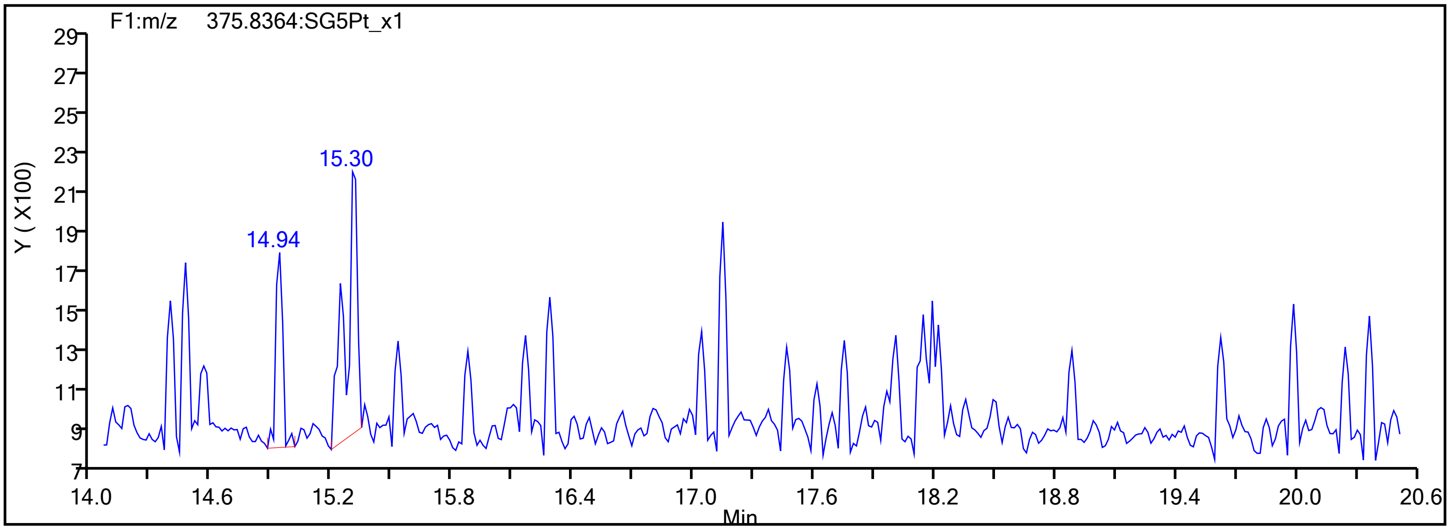

Report Date: 11-Dec-2020 10:13:05 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Date:	10-Dec-2020 21:27:54	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

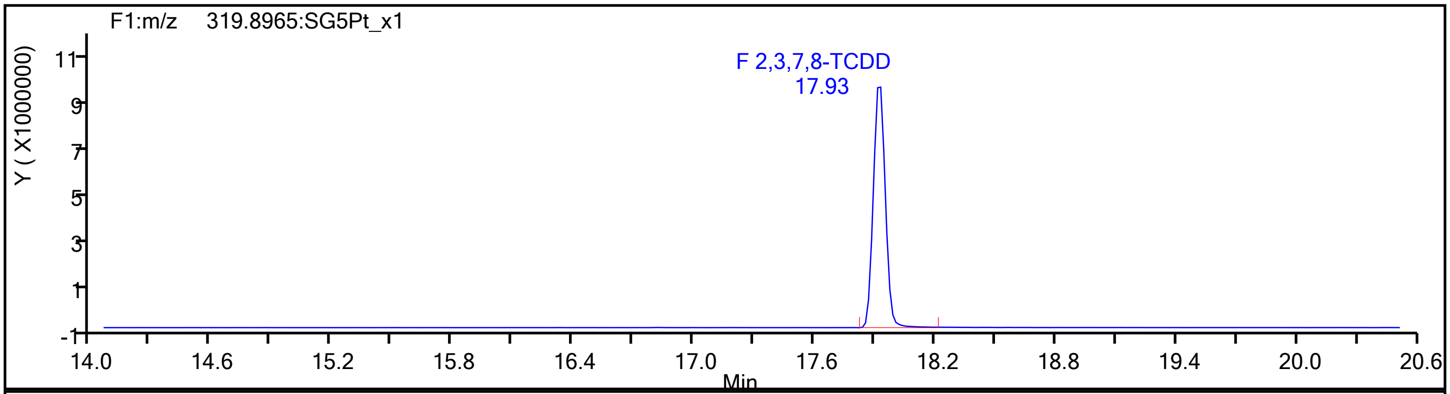

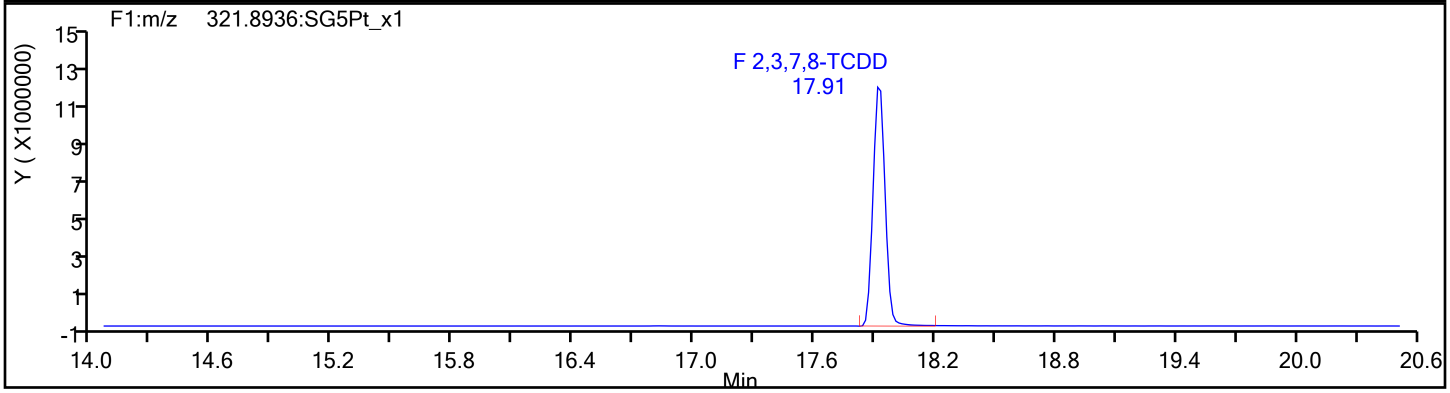

TCDD Standards

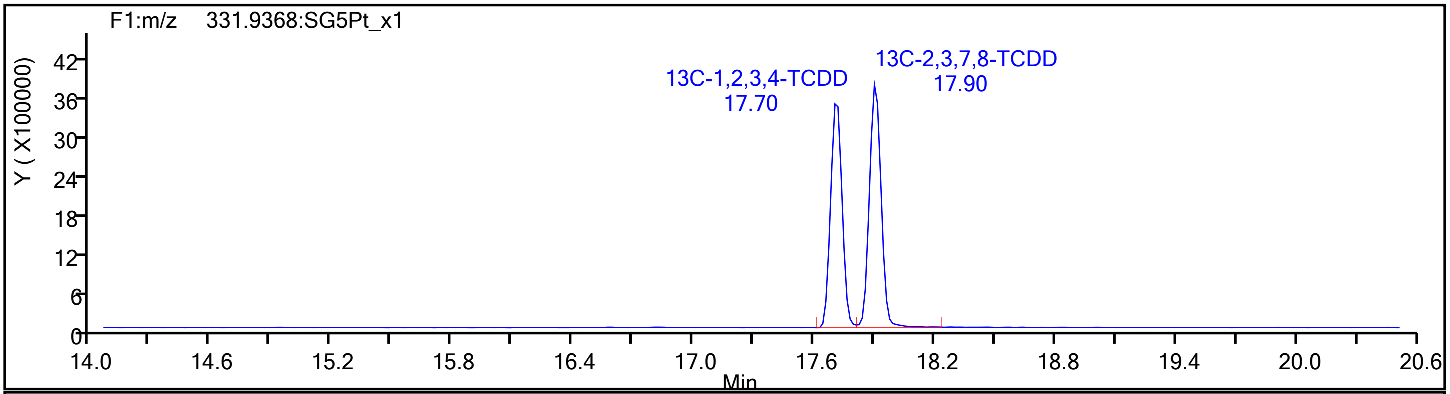

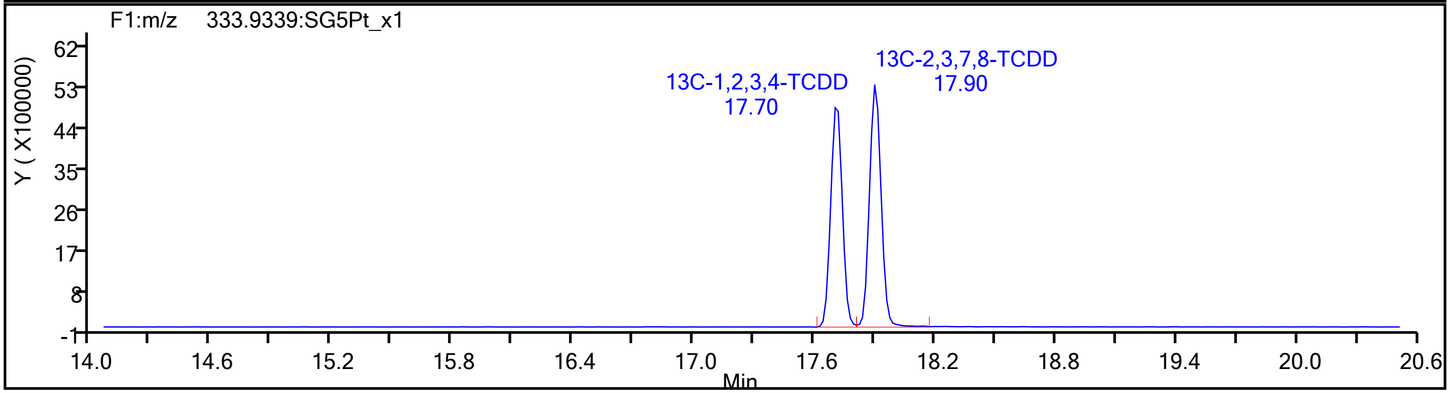

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

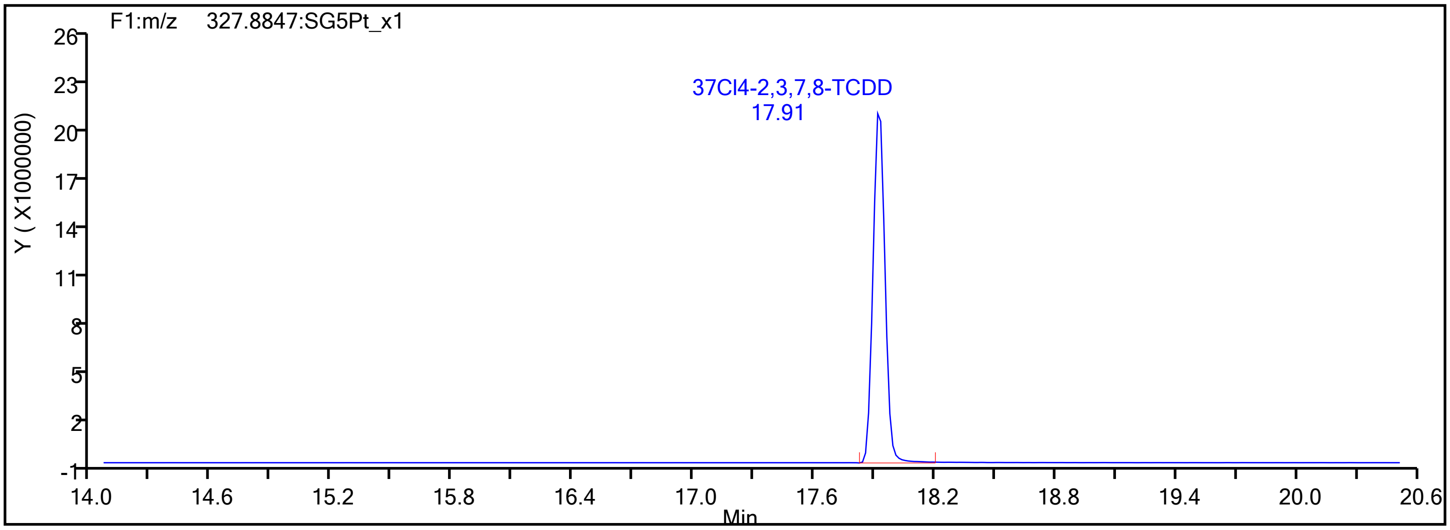

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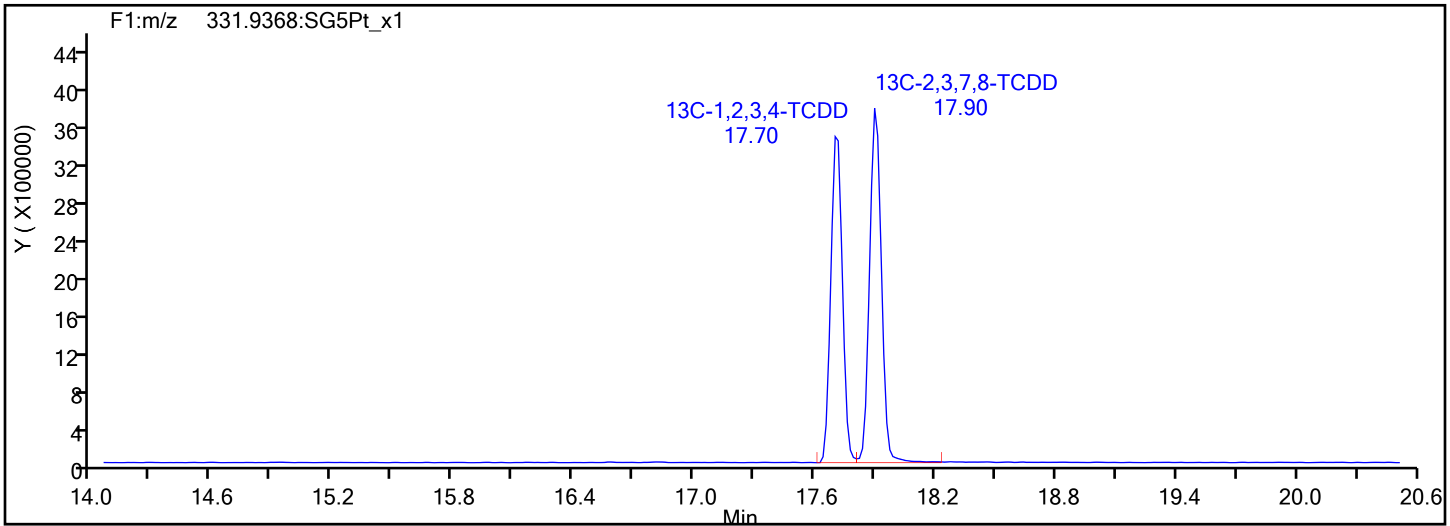

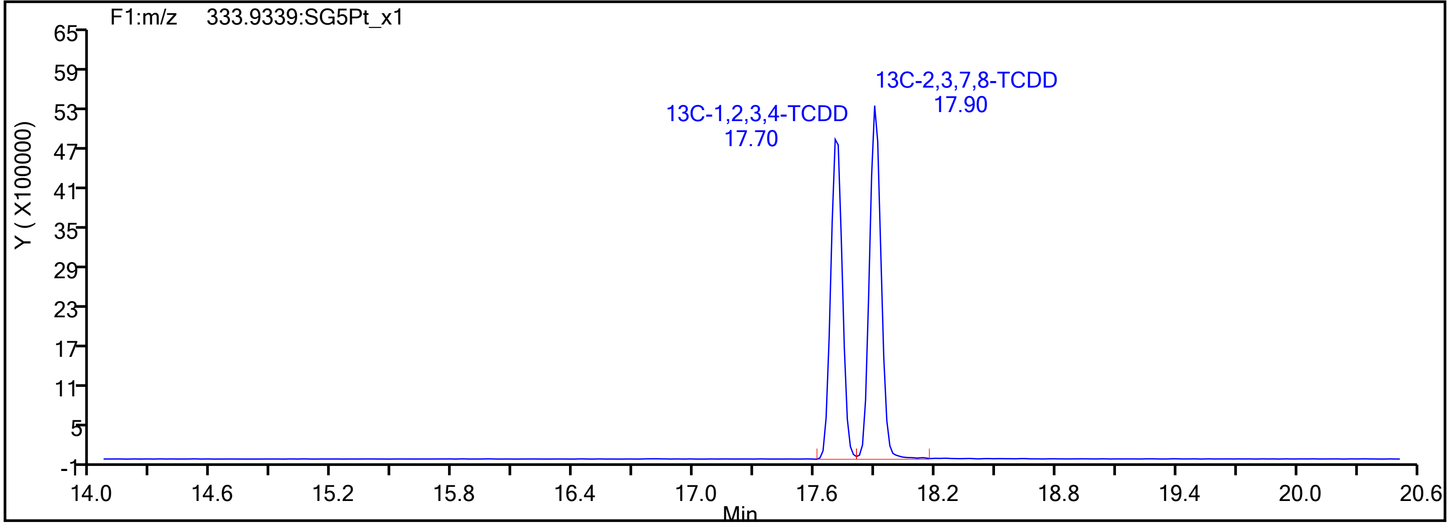

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F1 PeCDFs

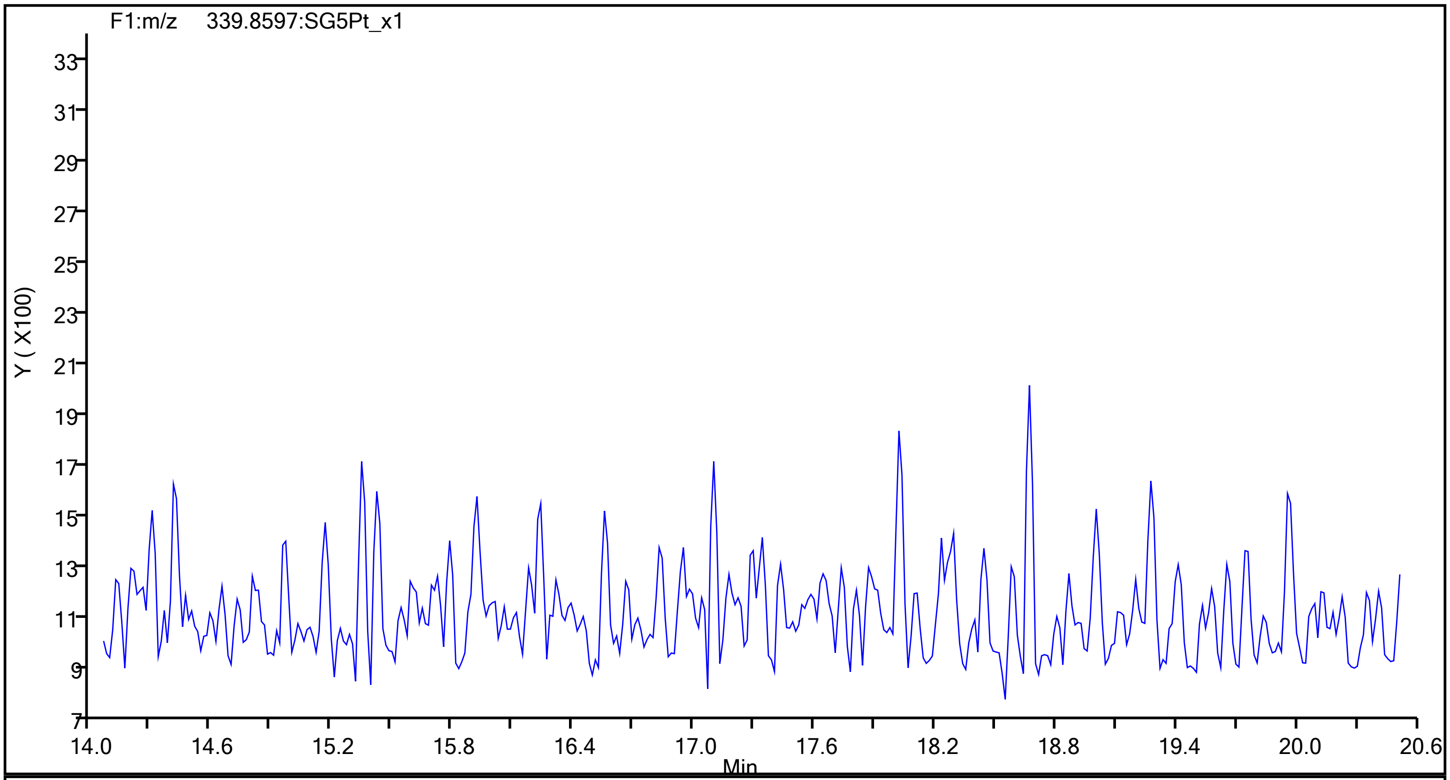

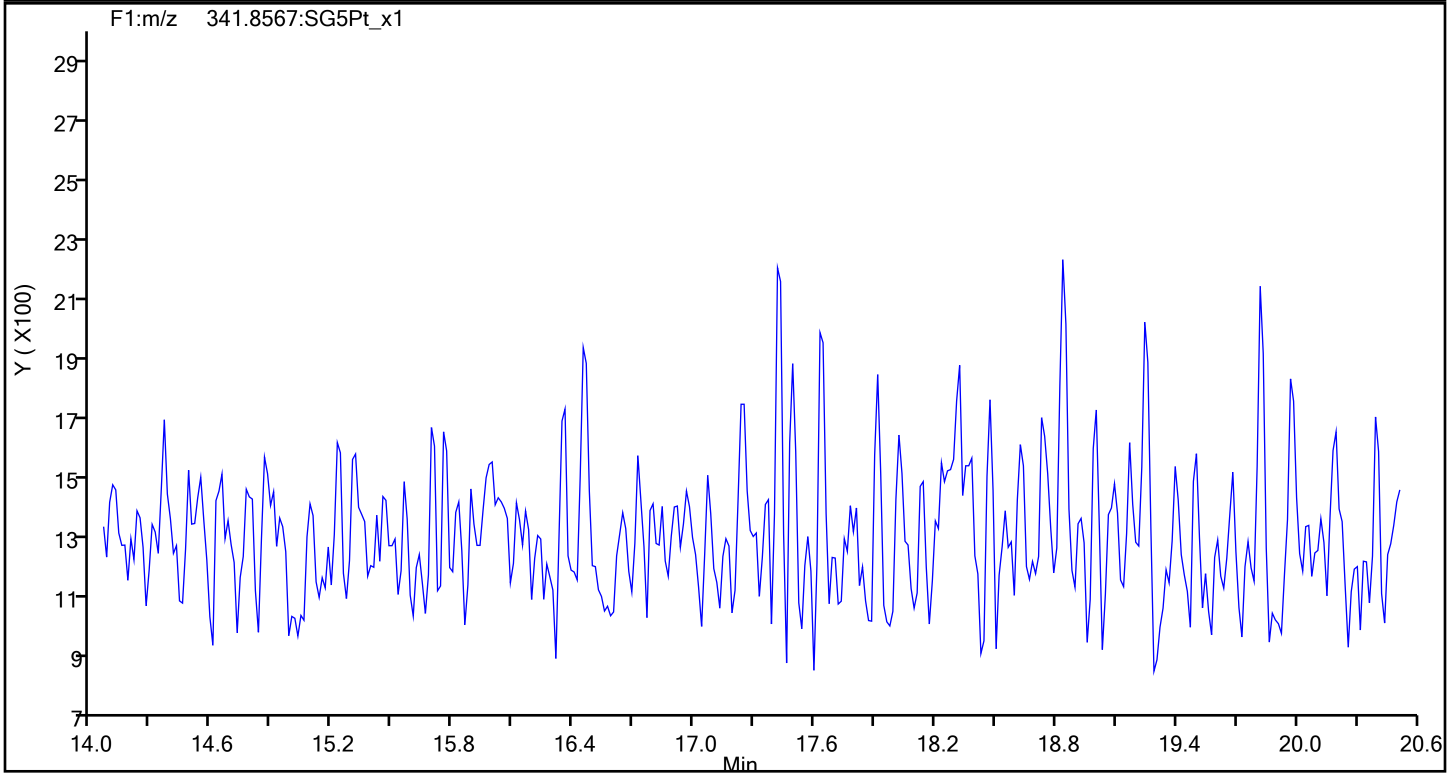

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F1 PeCDFs

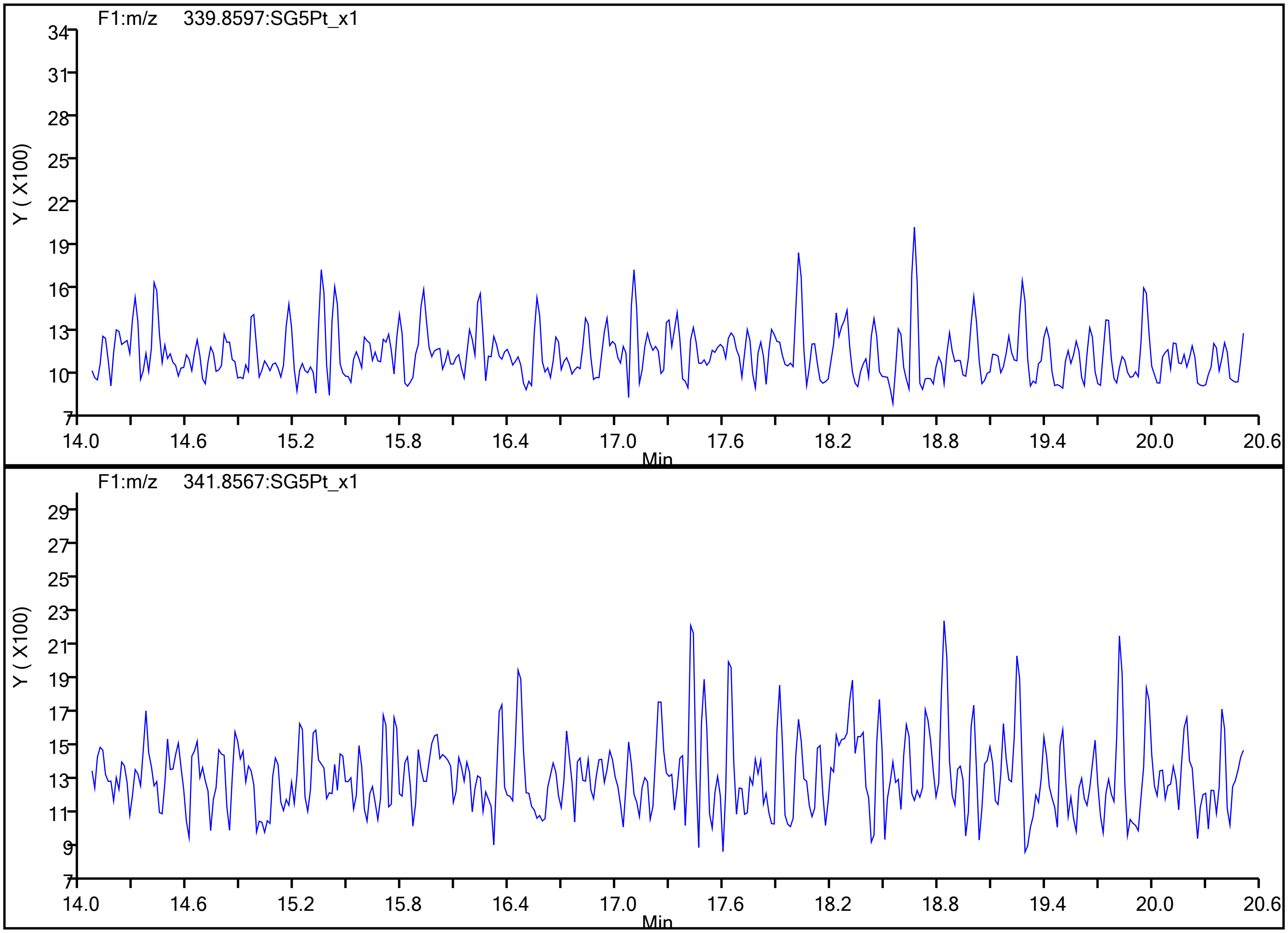

F1 PeCDFs Interference Mass

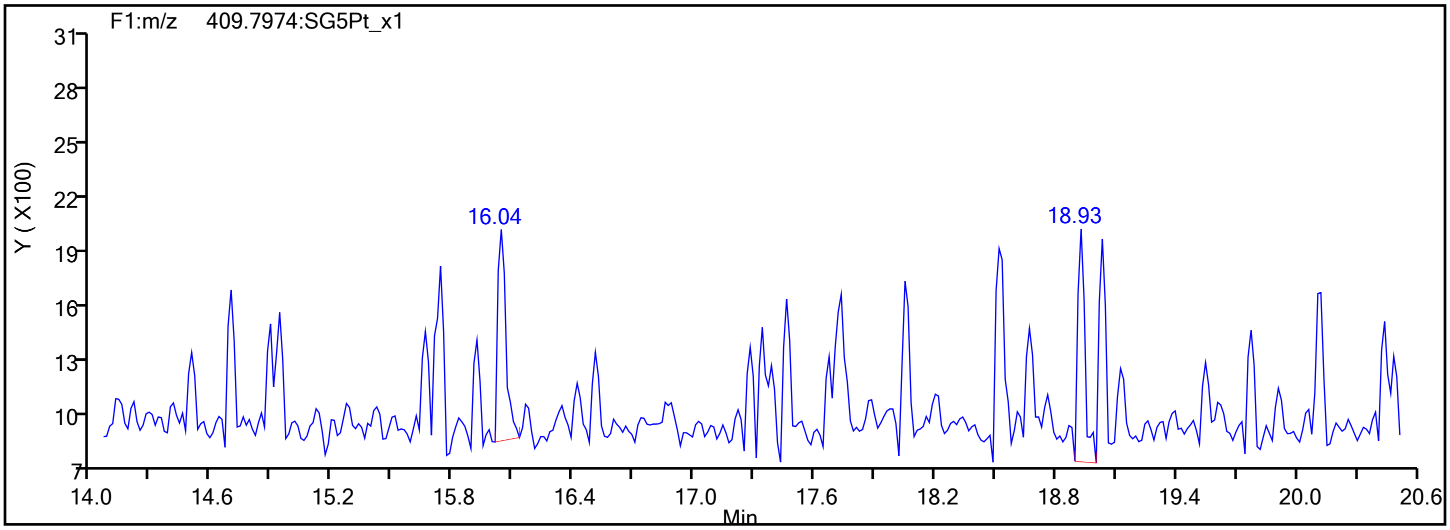

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Eurofins TestAmerica, Sacramento

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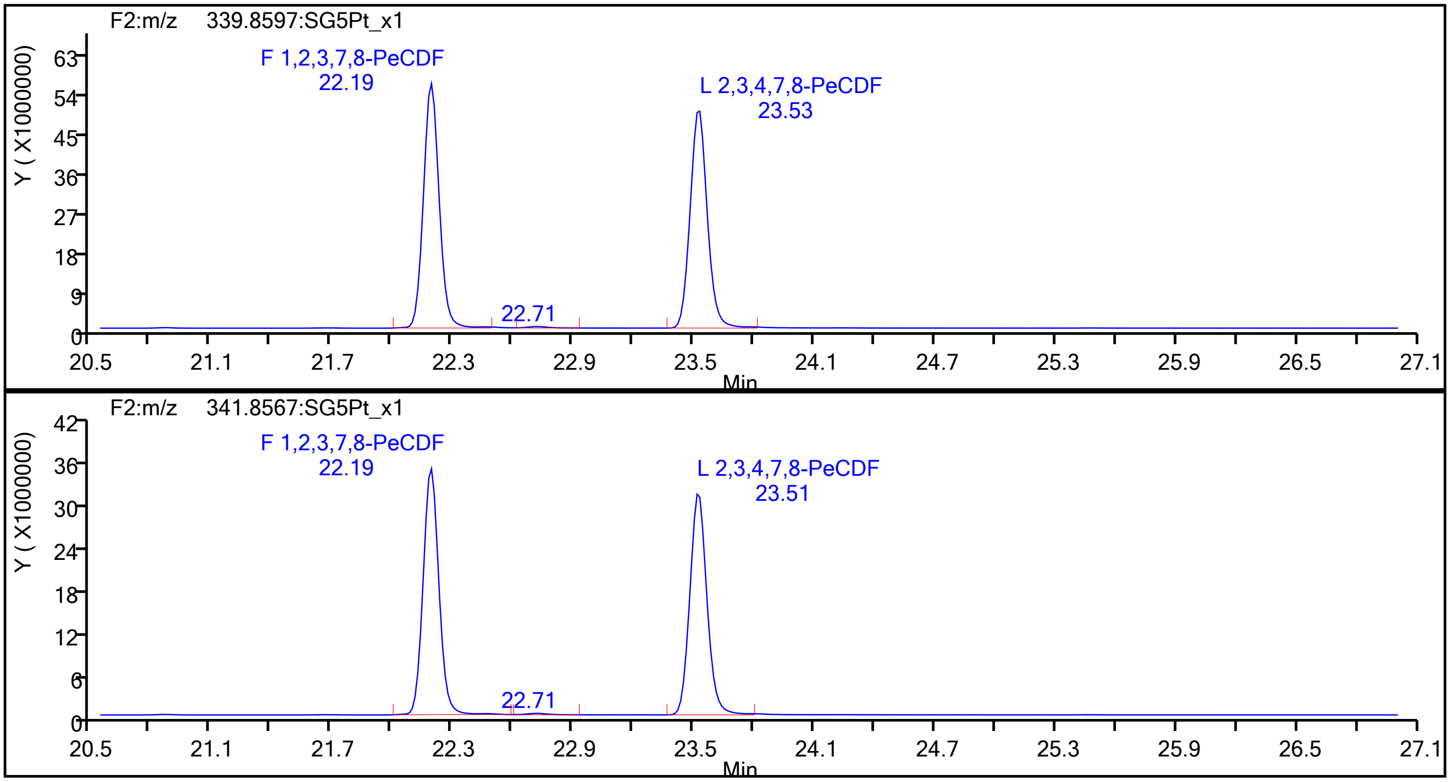

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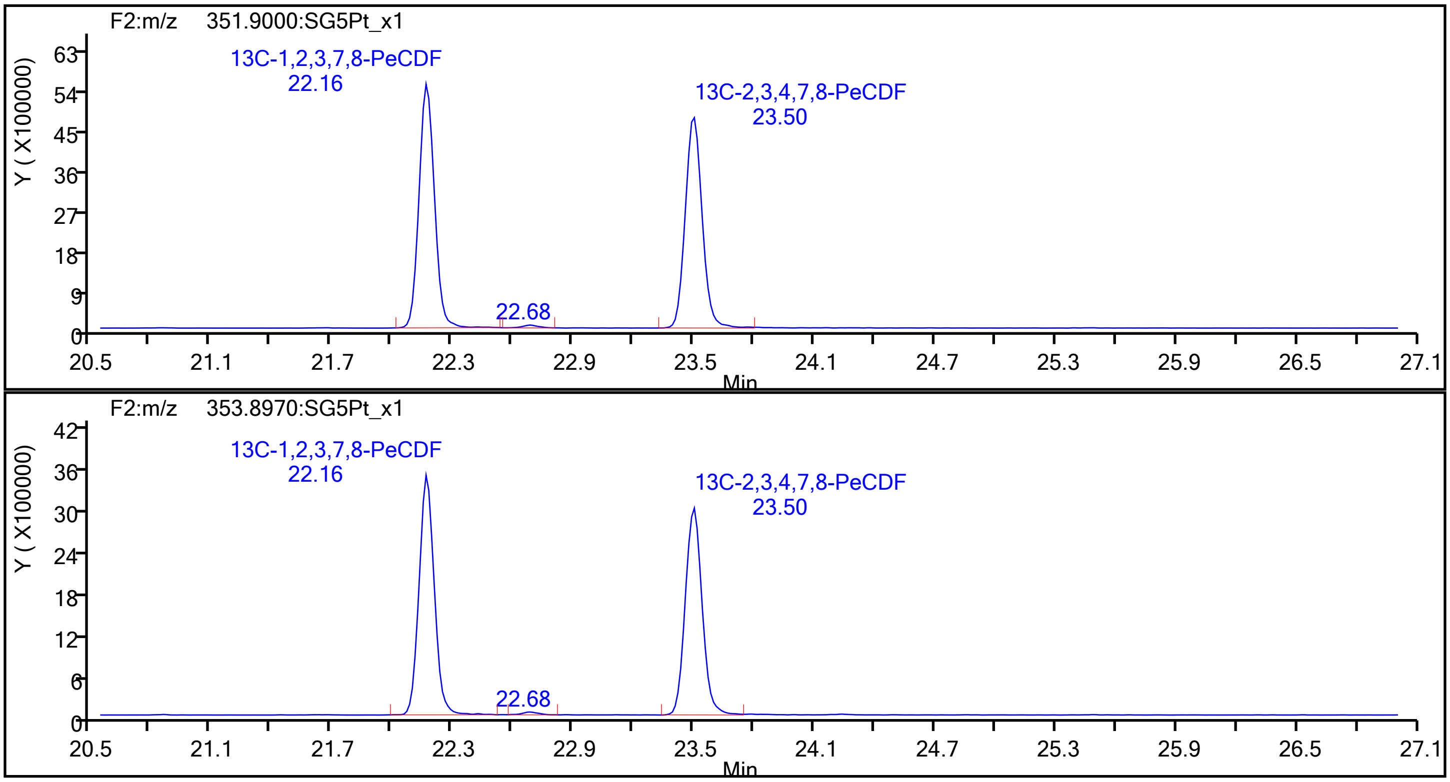

Eurofins TestAmerica, Sacramento

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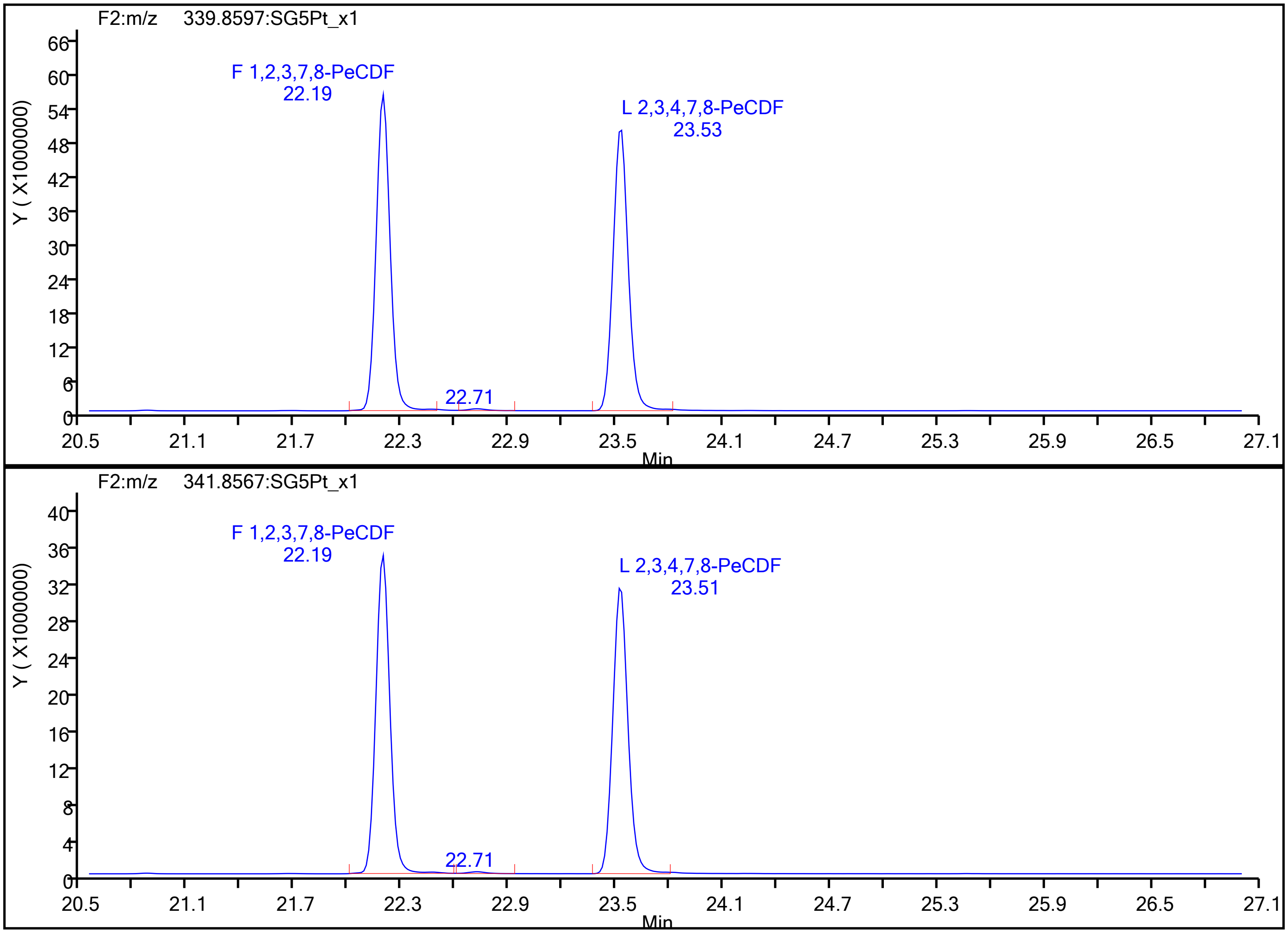

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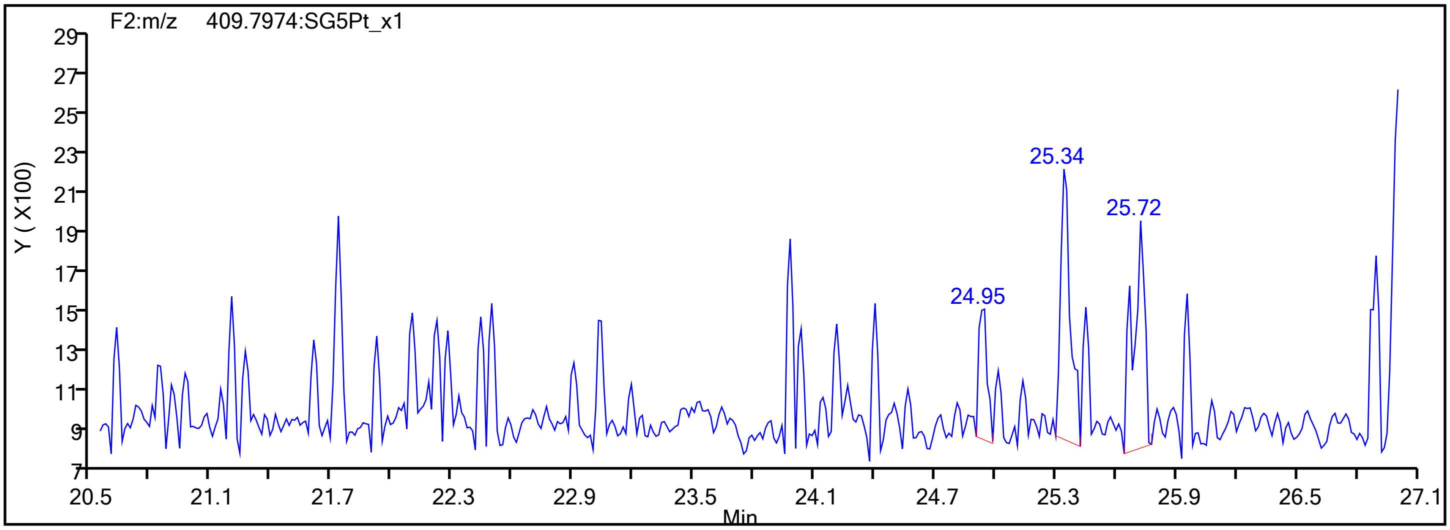

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Eurofins TestAmerica, Sacramento

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PeCDD

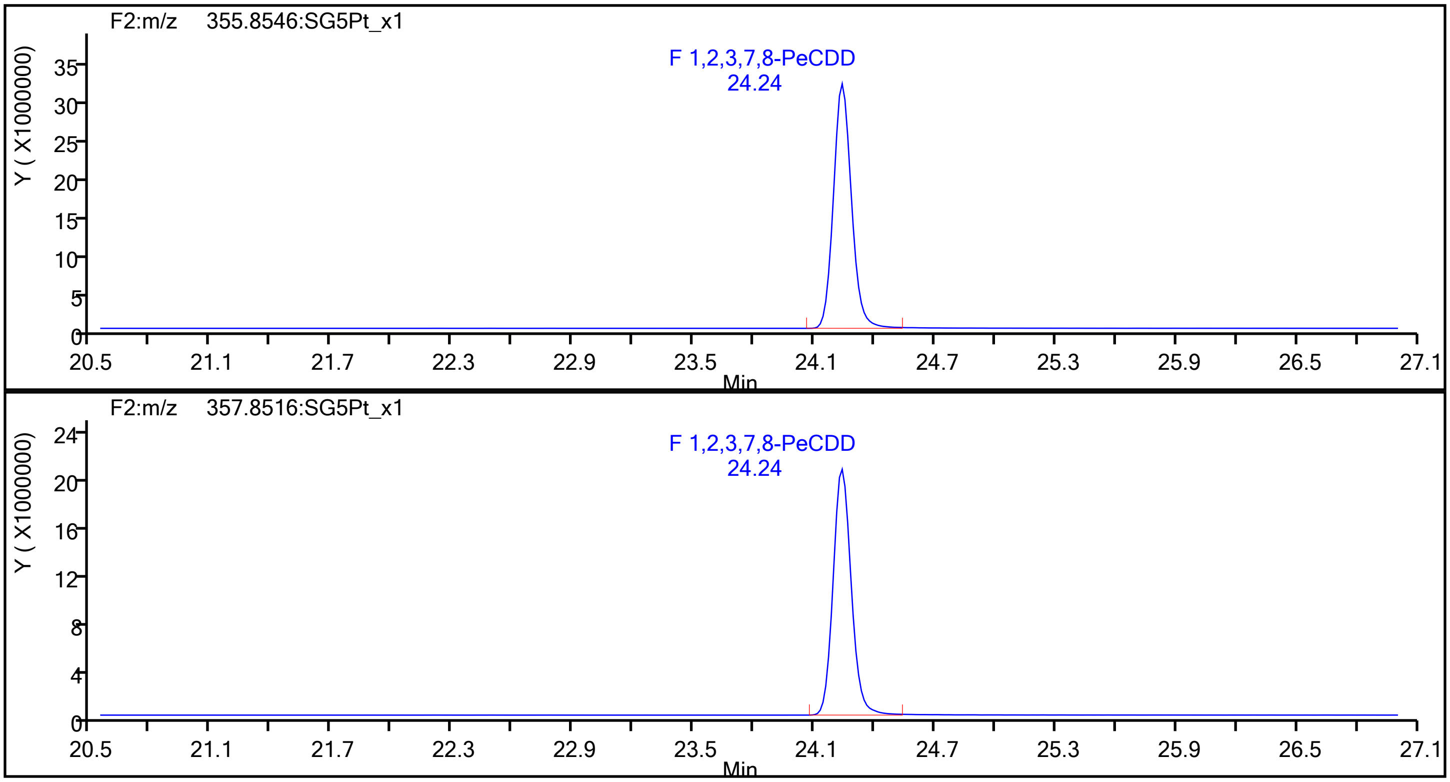

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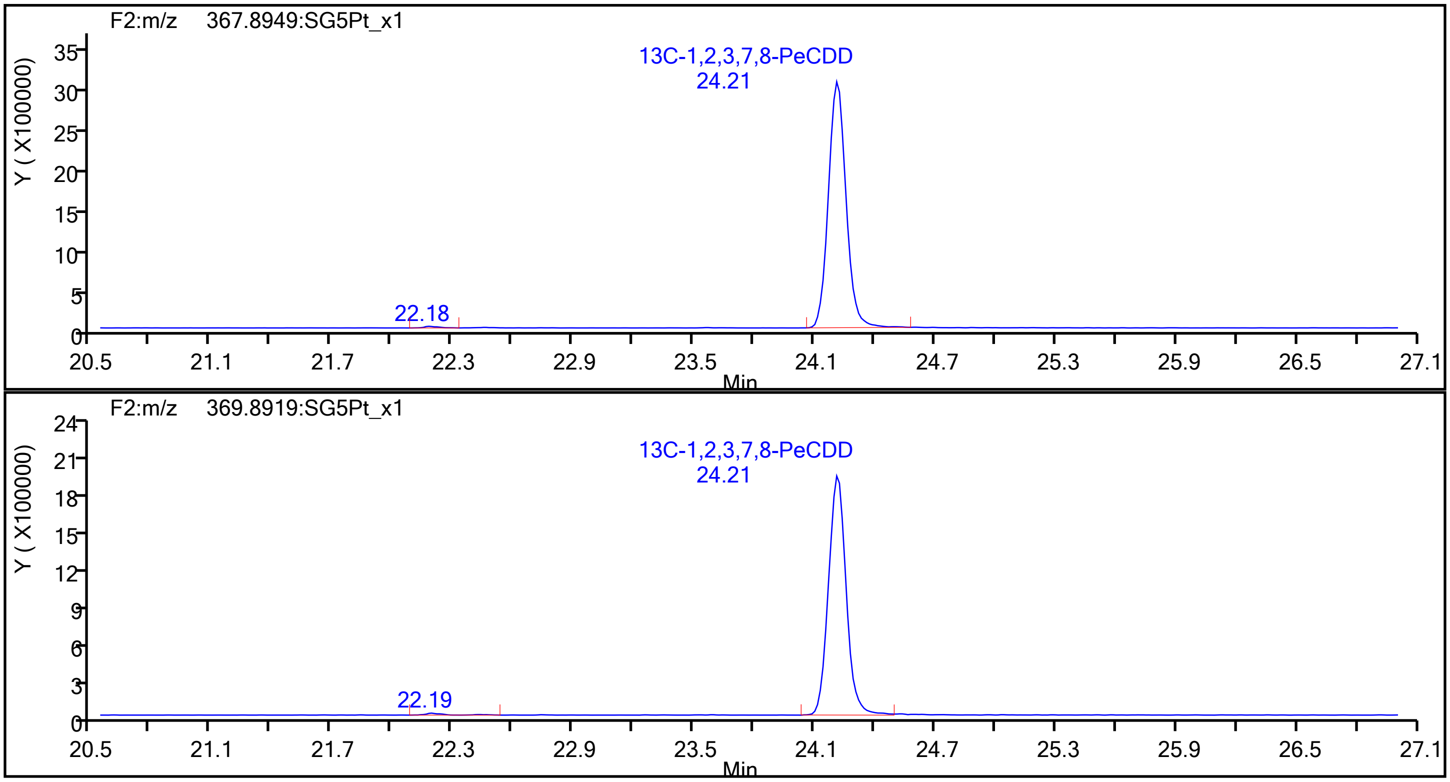

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Eurofins TestAmerica, Sacramento

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HxCDF

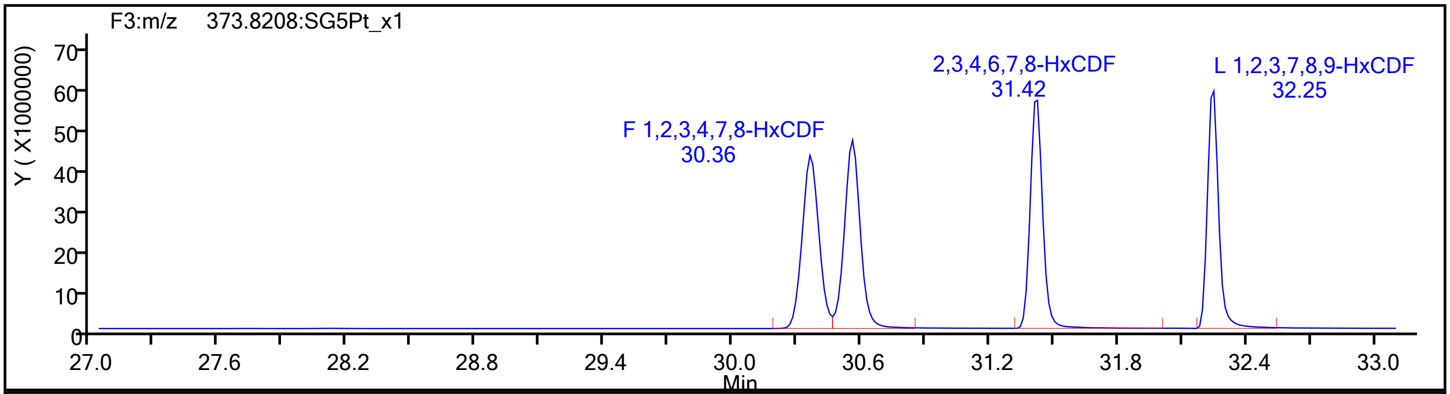

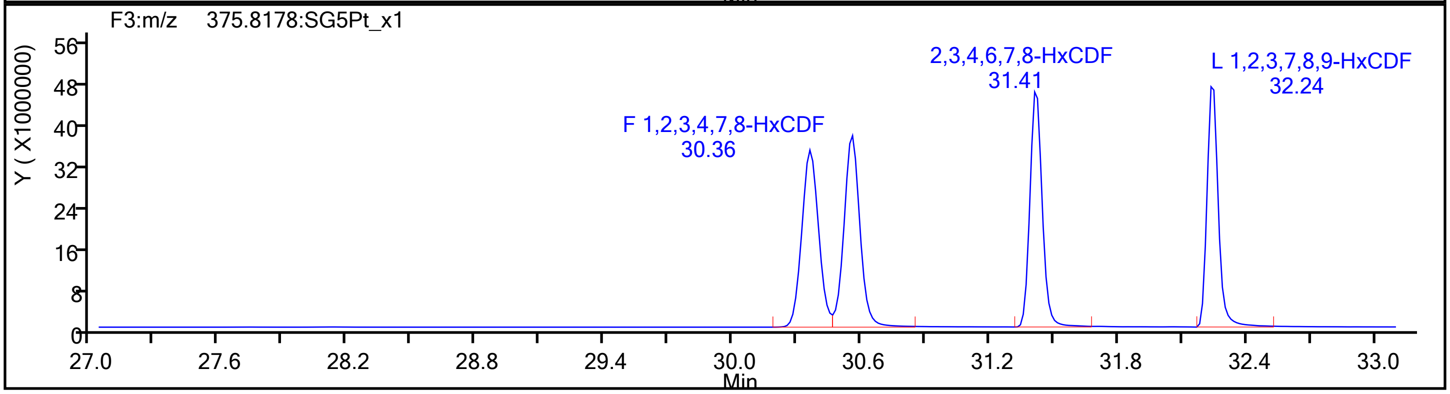

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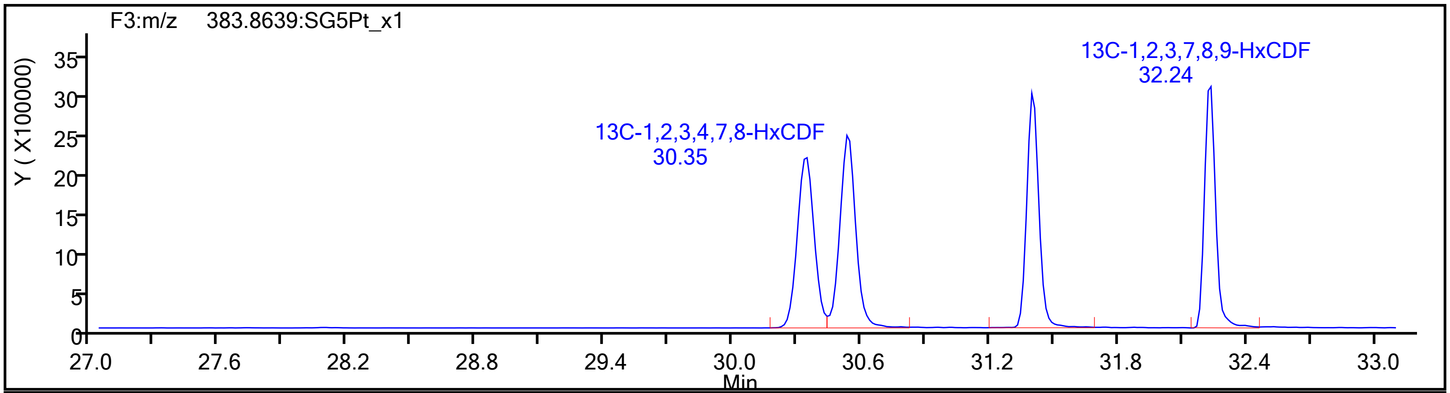

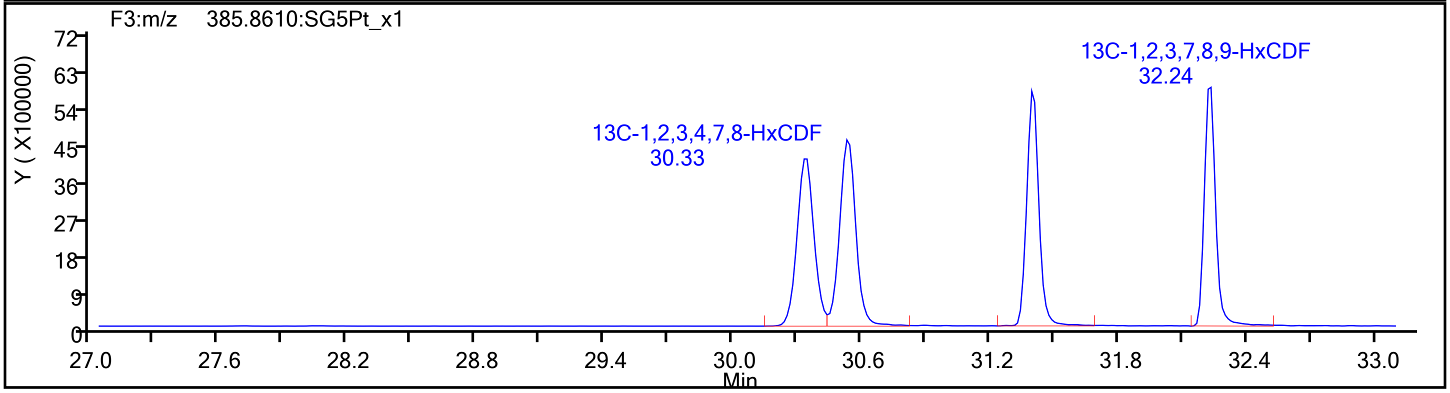

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Eurofins TestAmerica, Sacramento

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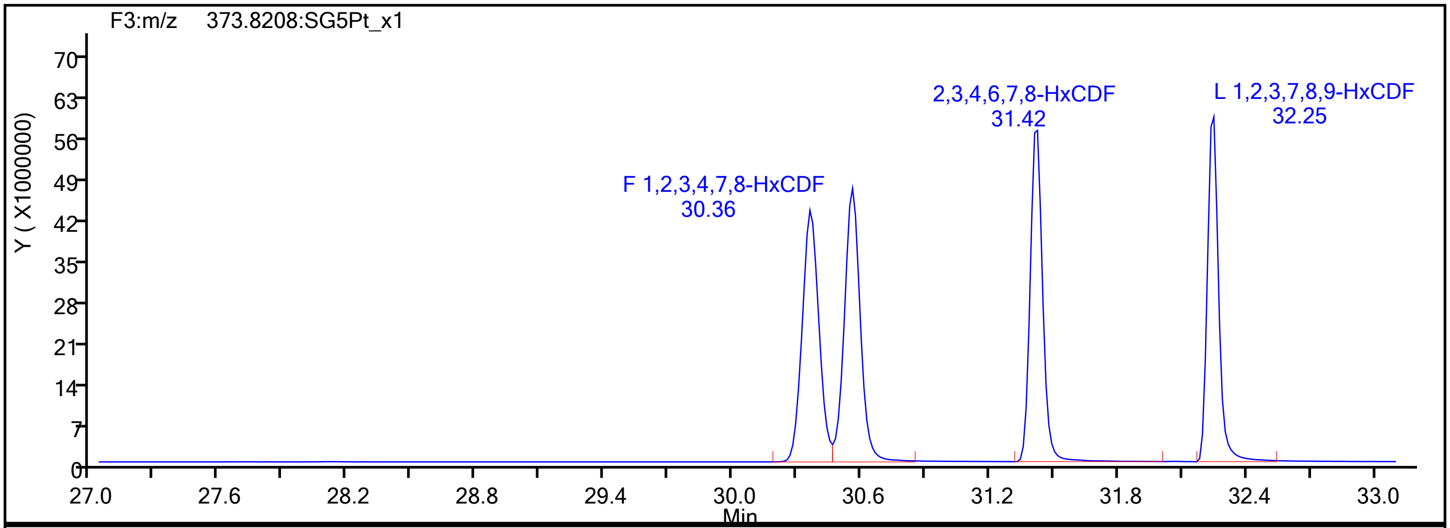

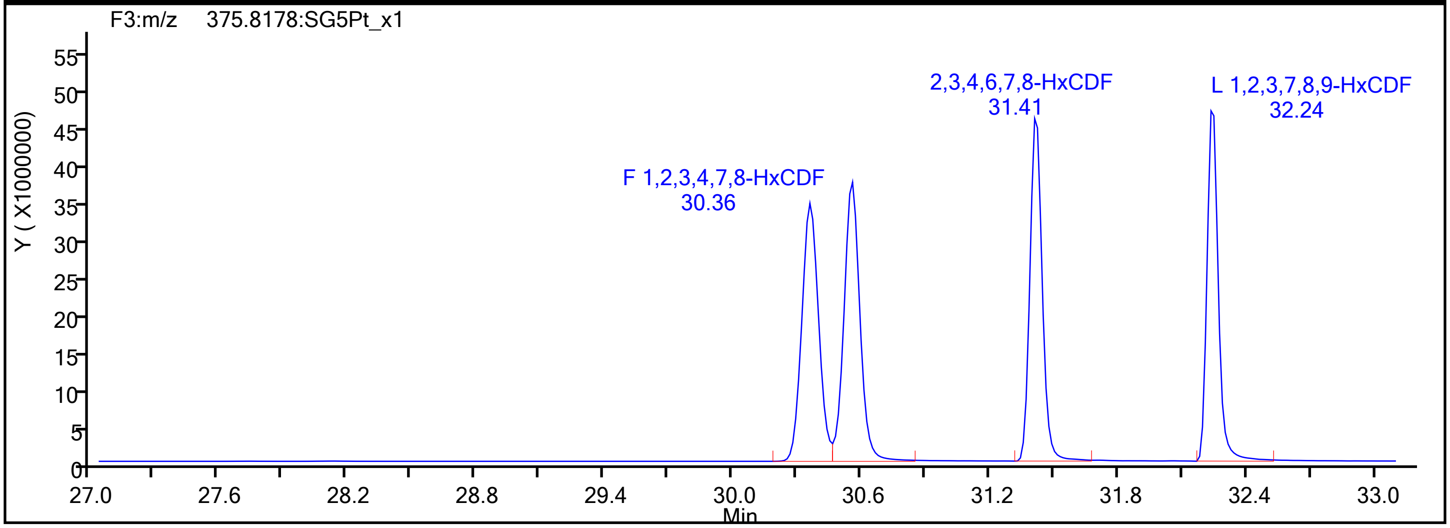

HxCDF Interference Mass

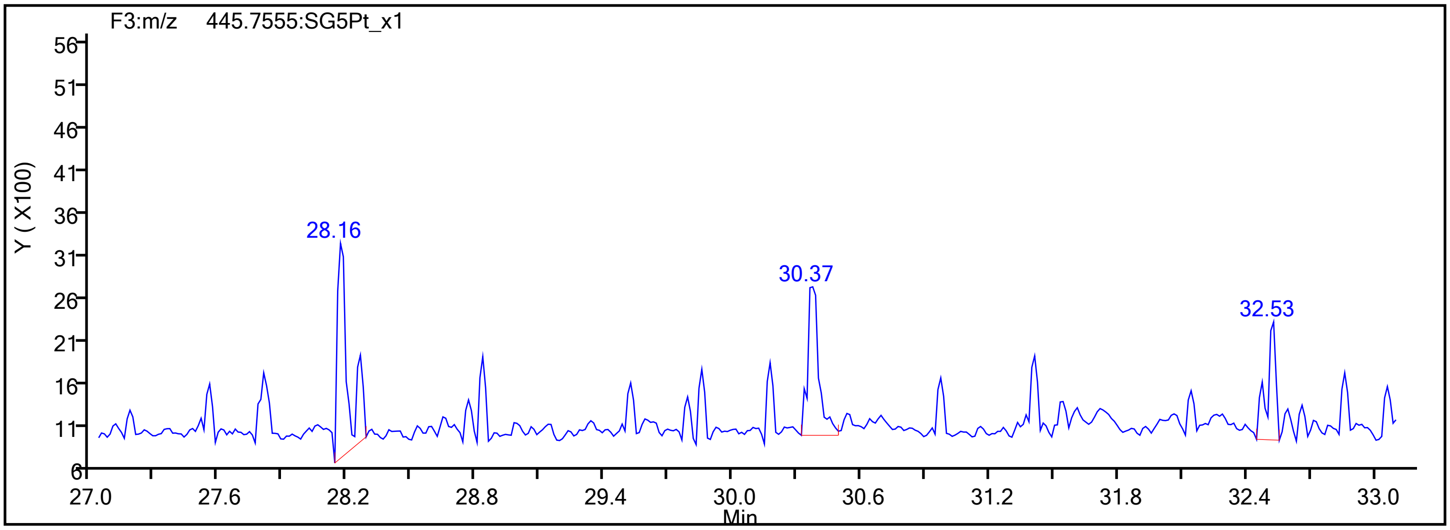

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Eurofins TestAmerica, Sacramento

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HxCDD

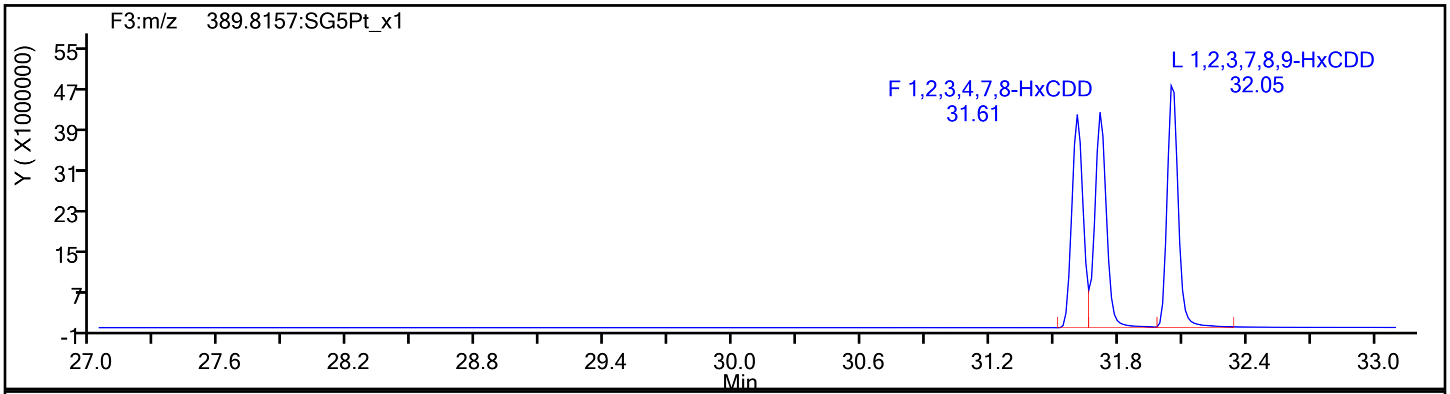

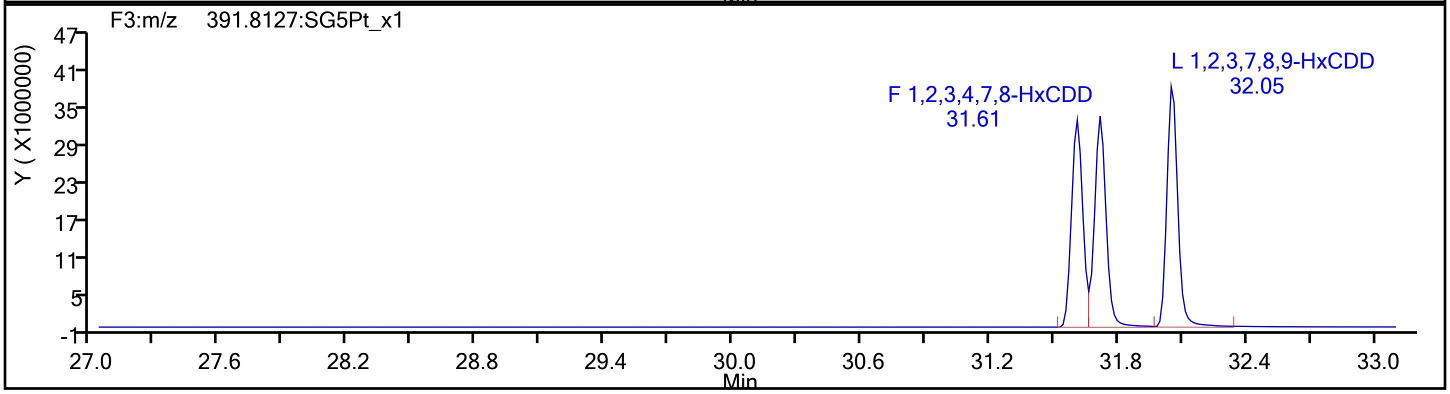

HxCDD Standards

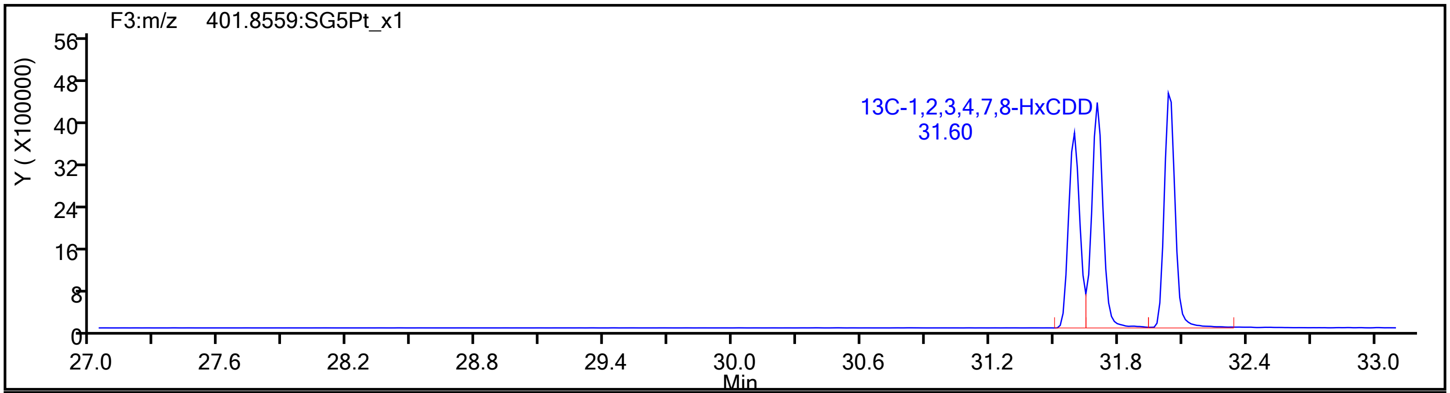

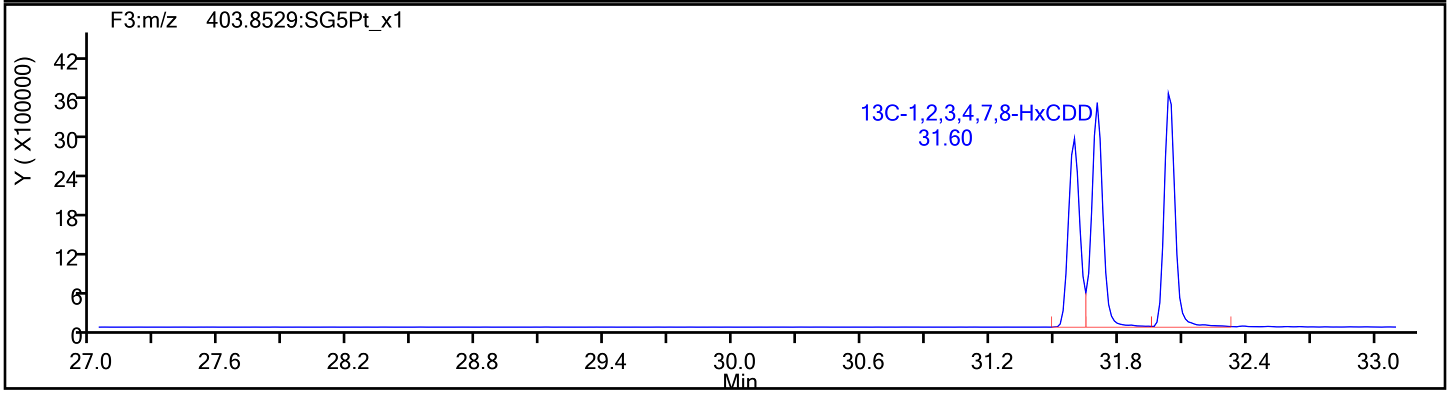

Eurofins TestAmerica, Sacramento

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HpCDF

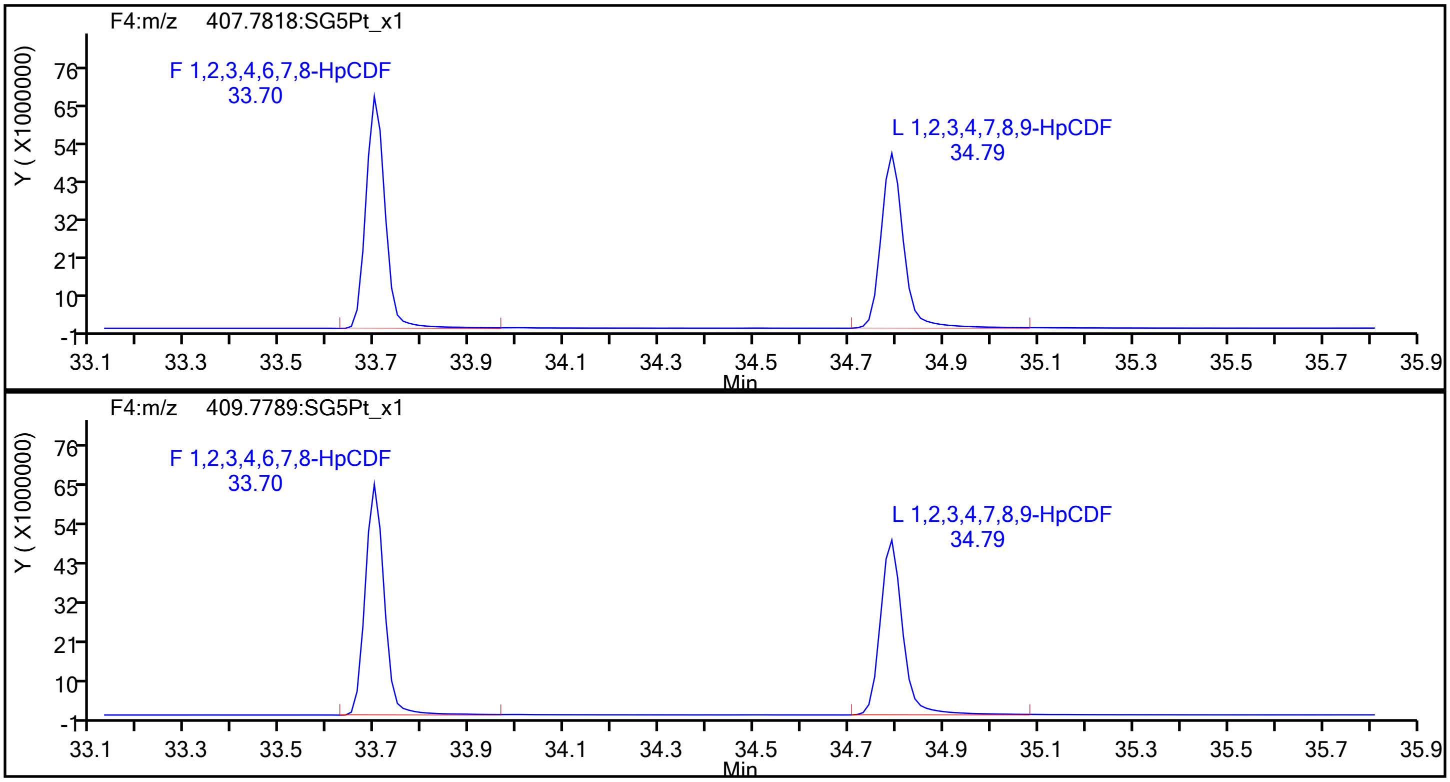

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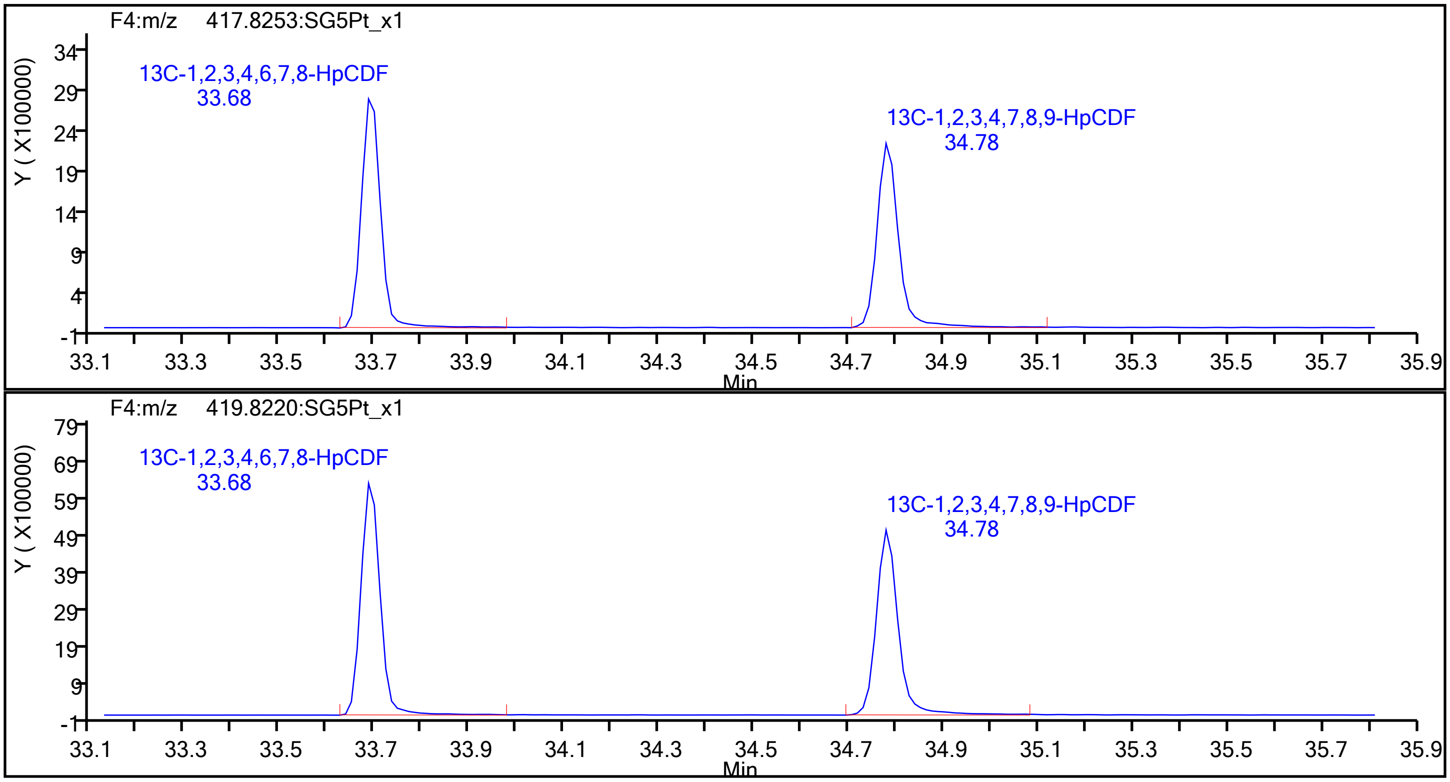

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 7

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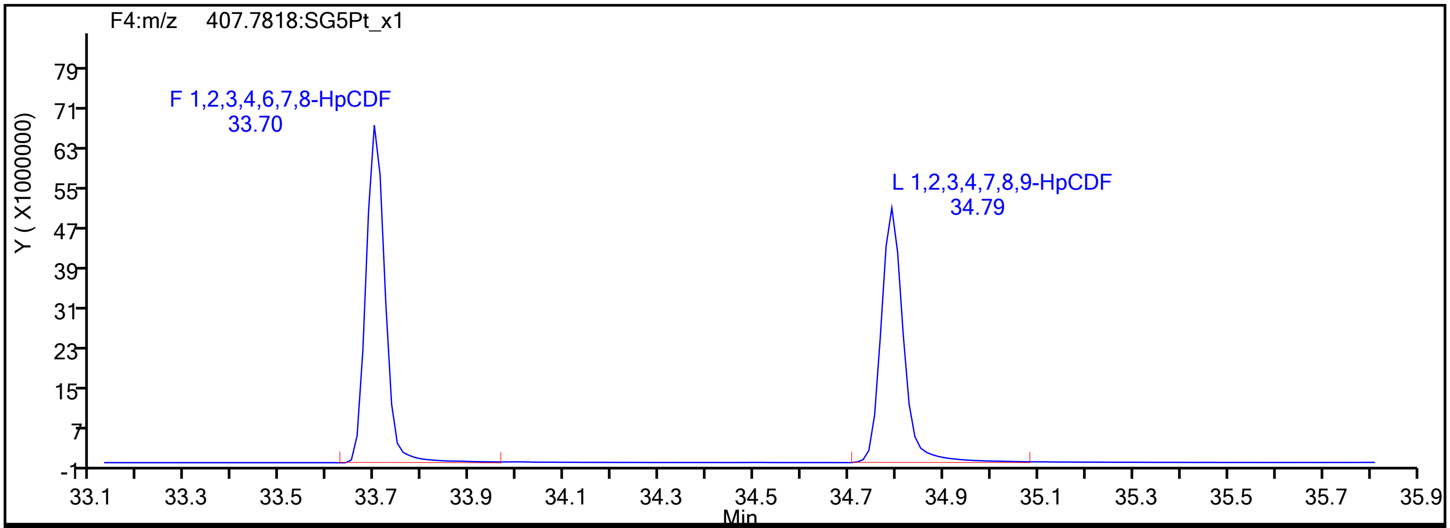

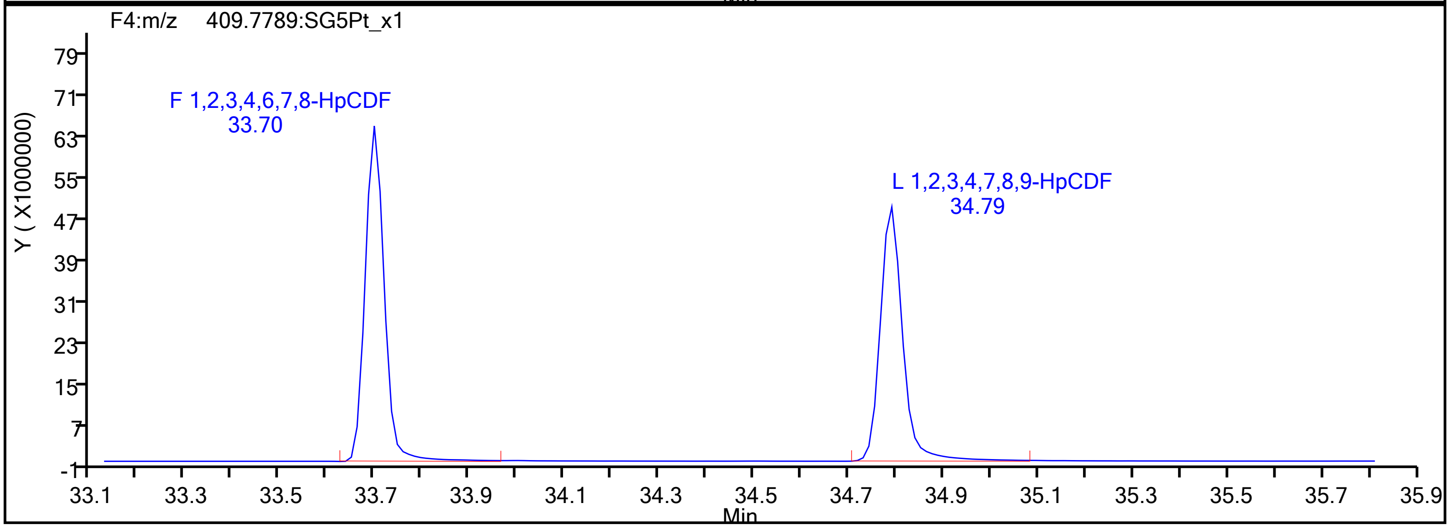

HpCDF Interference Mass

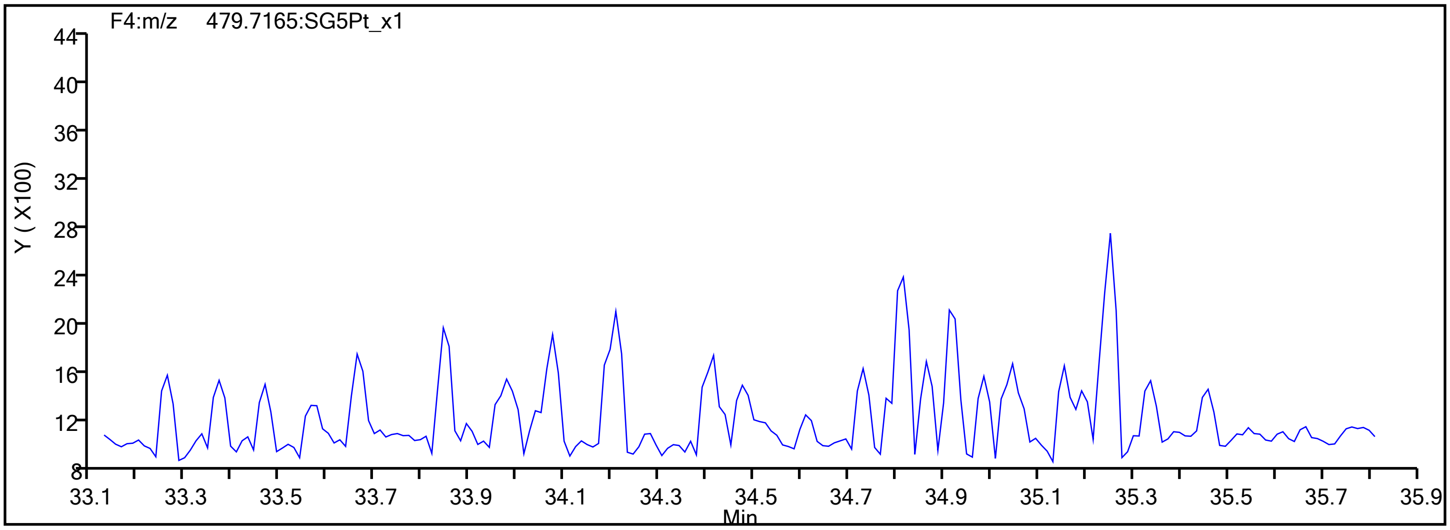

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HpCDD

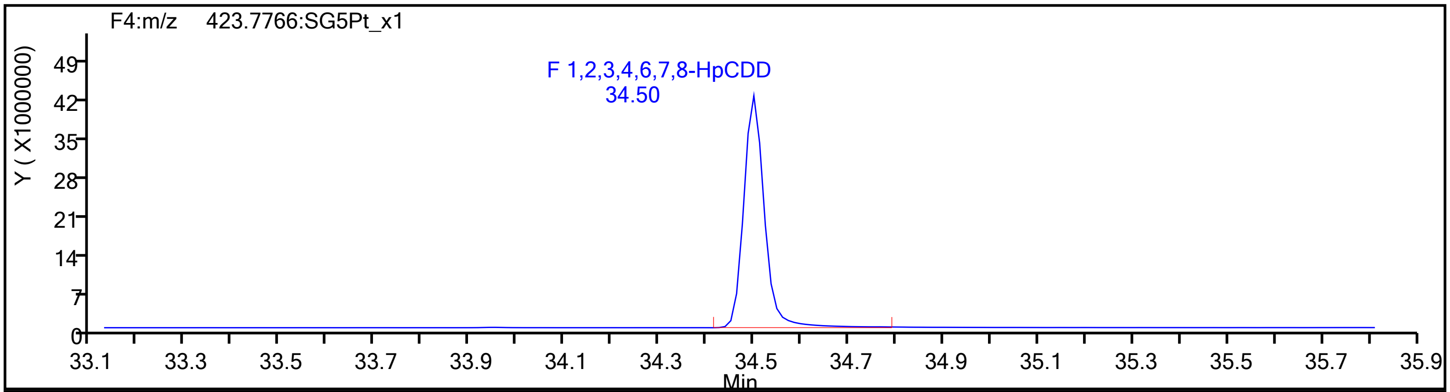

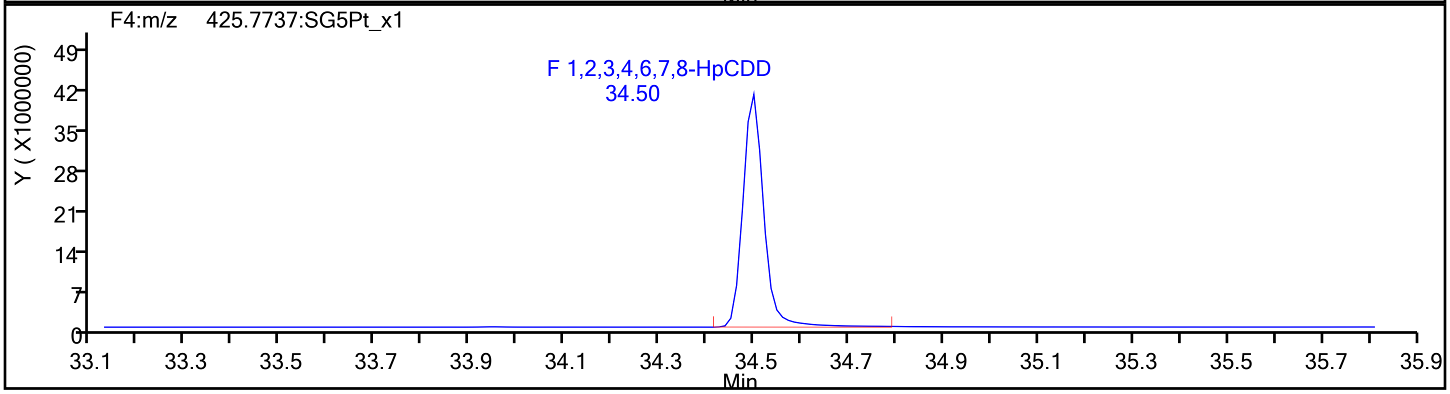

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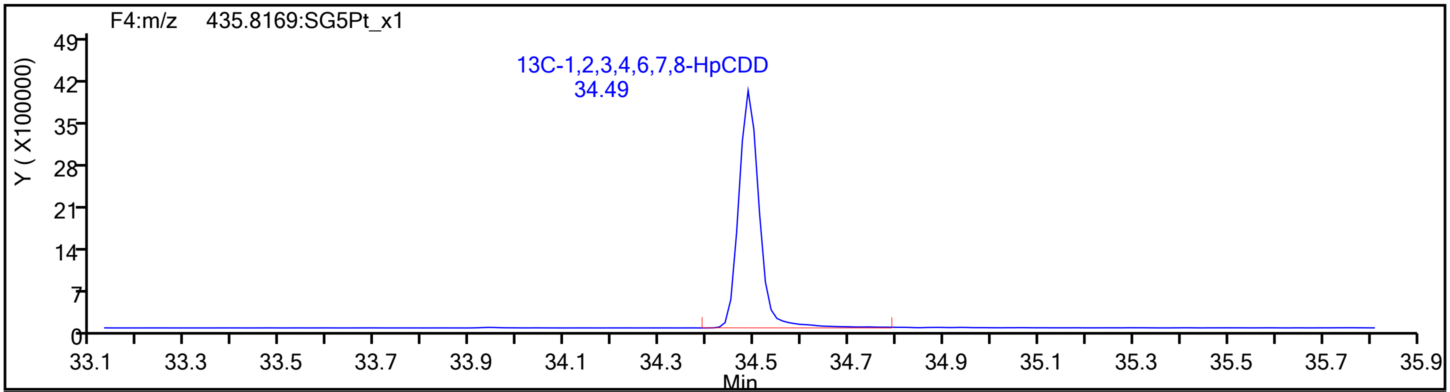

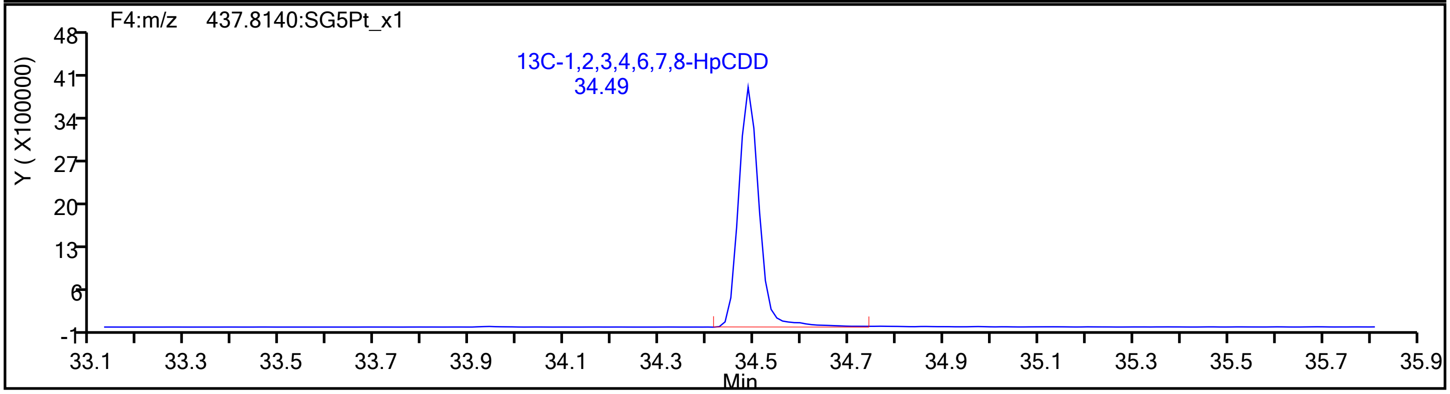

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Eurofins TestAmerica, Sacramento

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OCDF

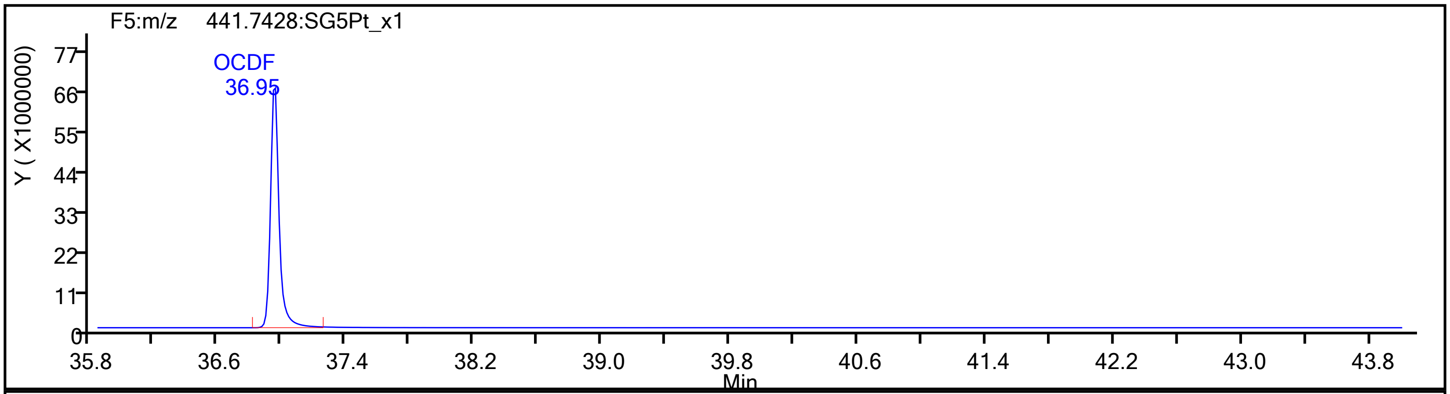

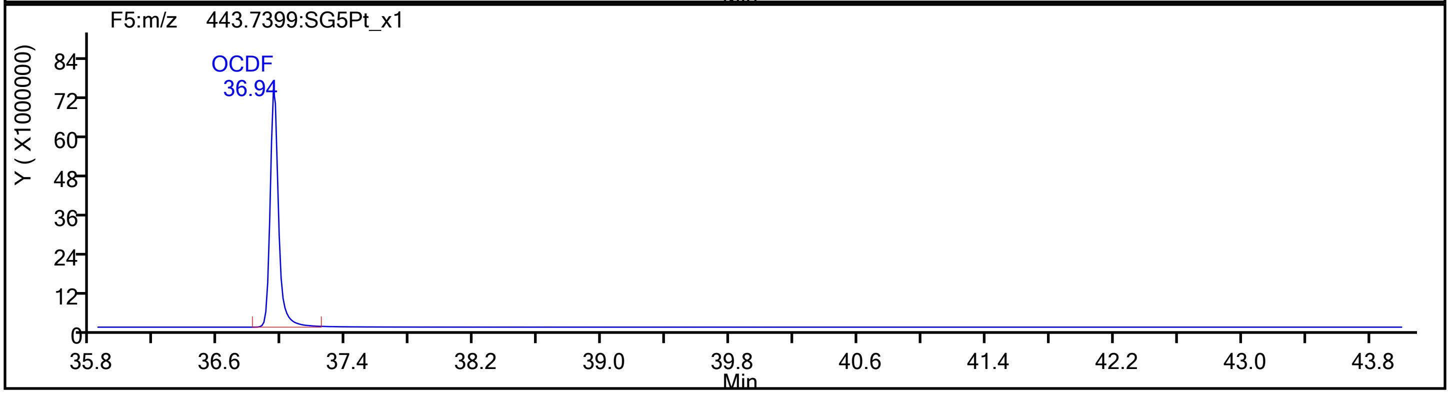

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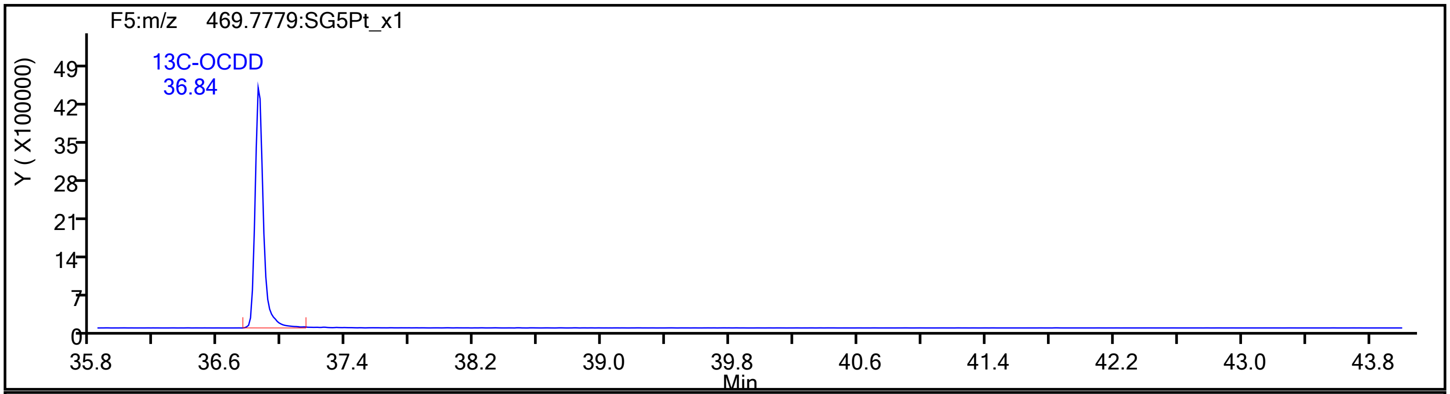

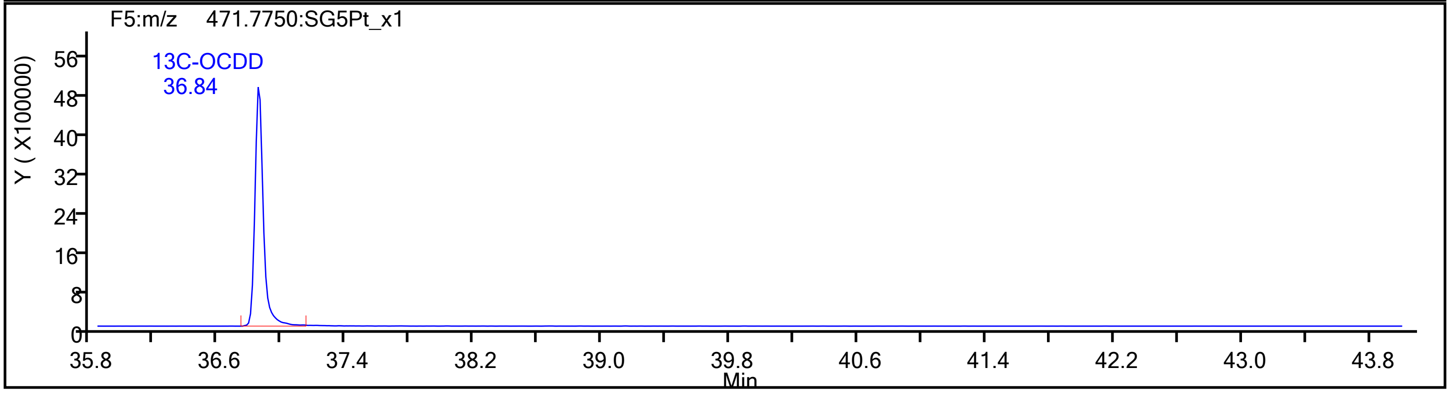

Eurofins TestAmerica, Sacramento

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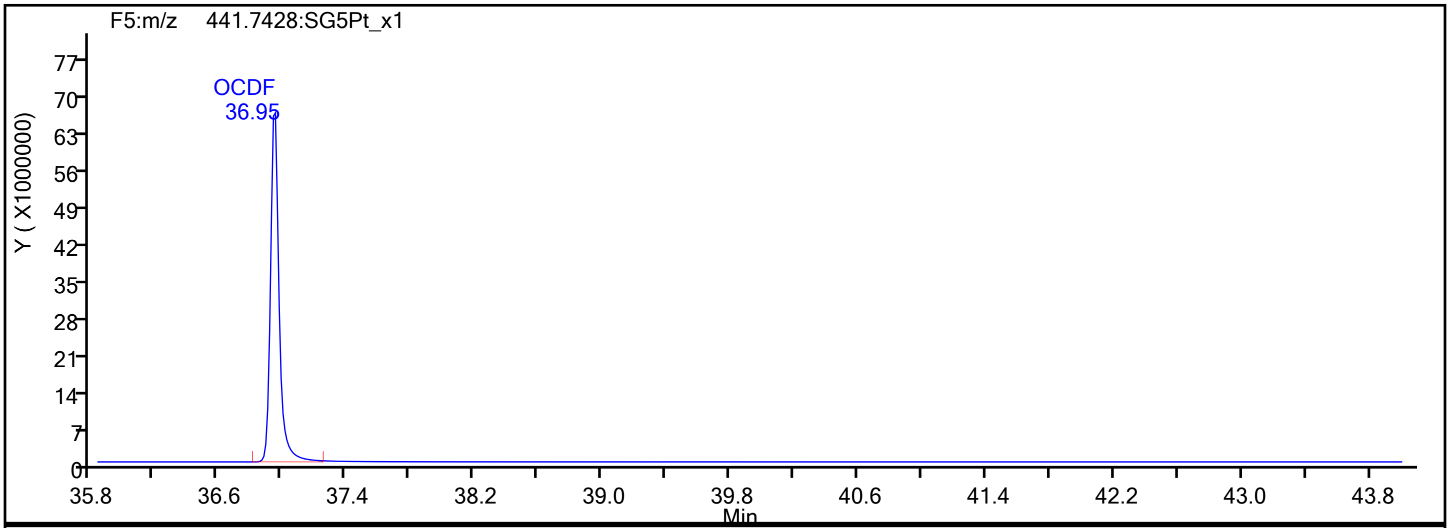

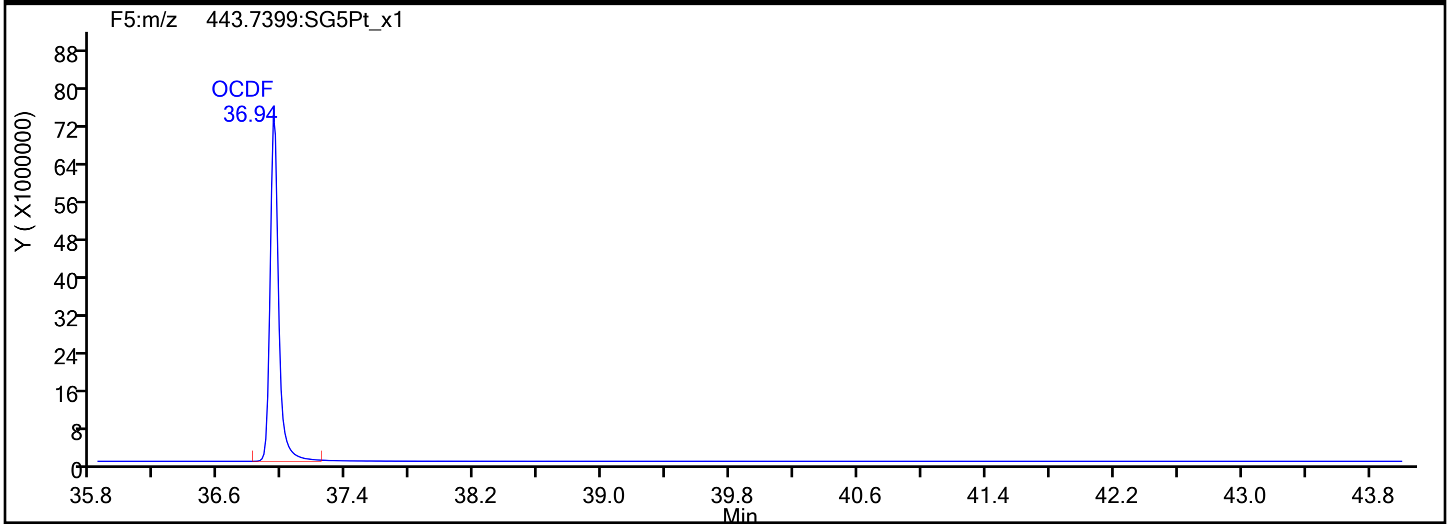

OCDF Interference Mass

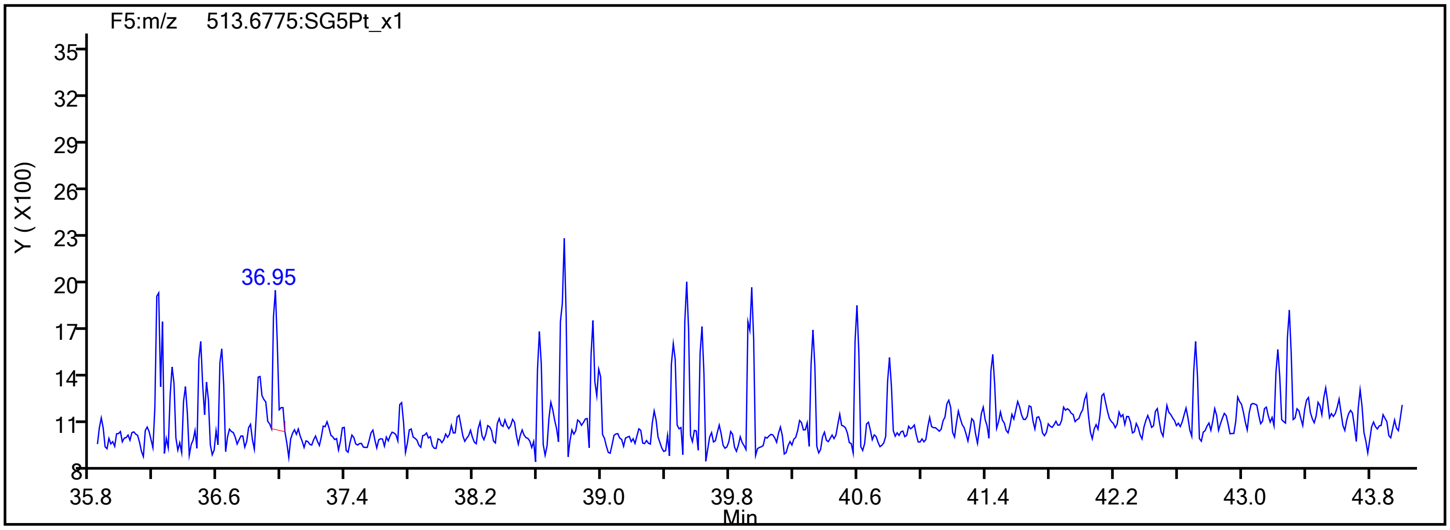

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

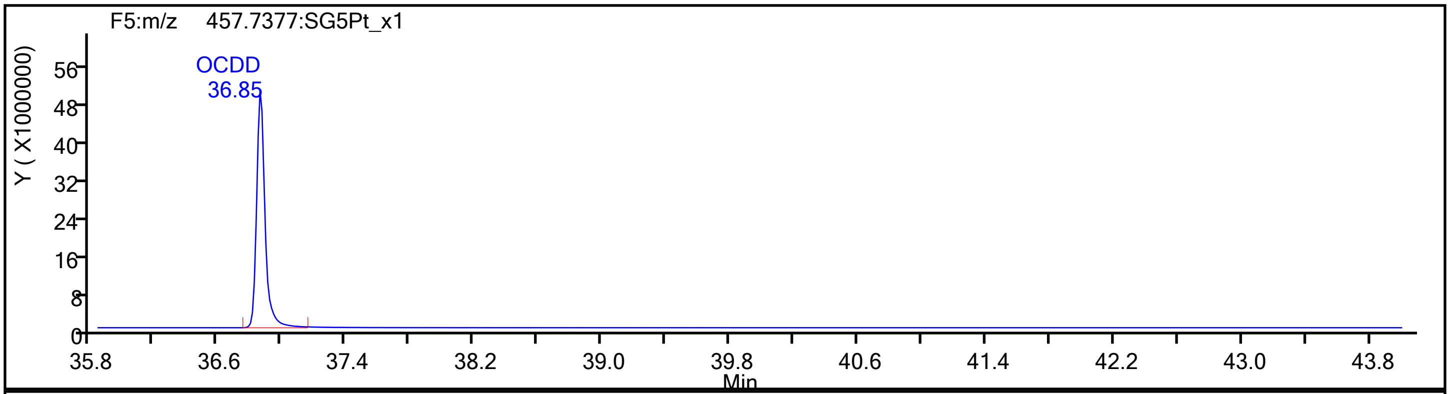

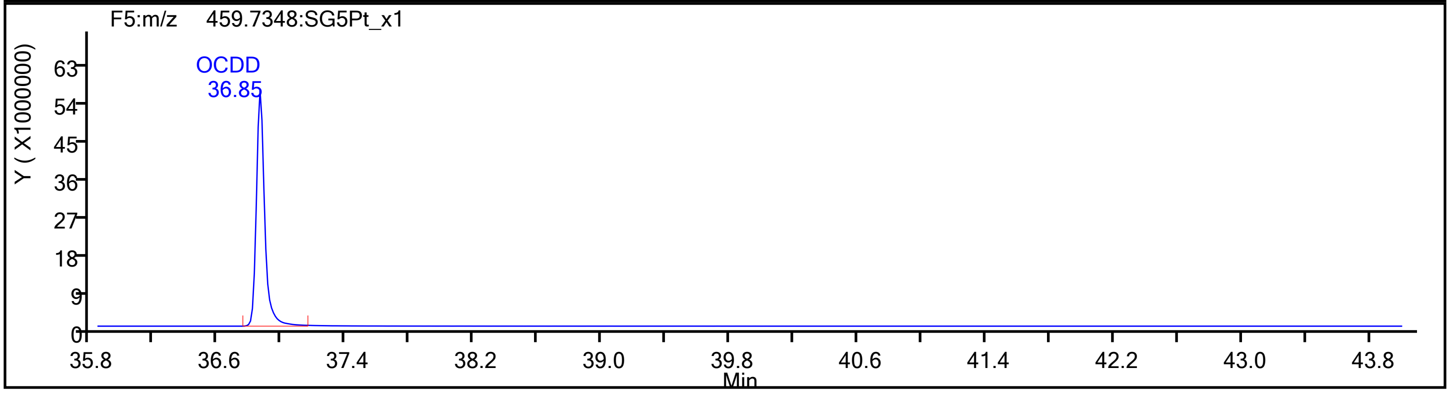

OCDD Standards

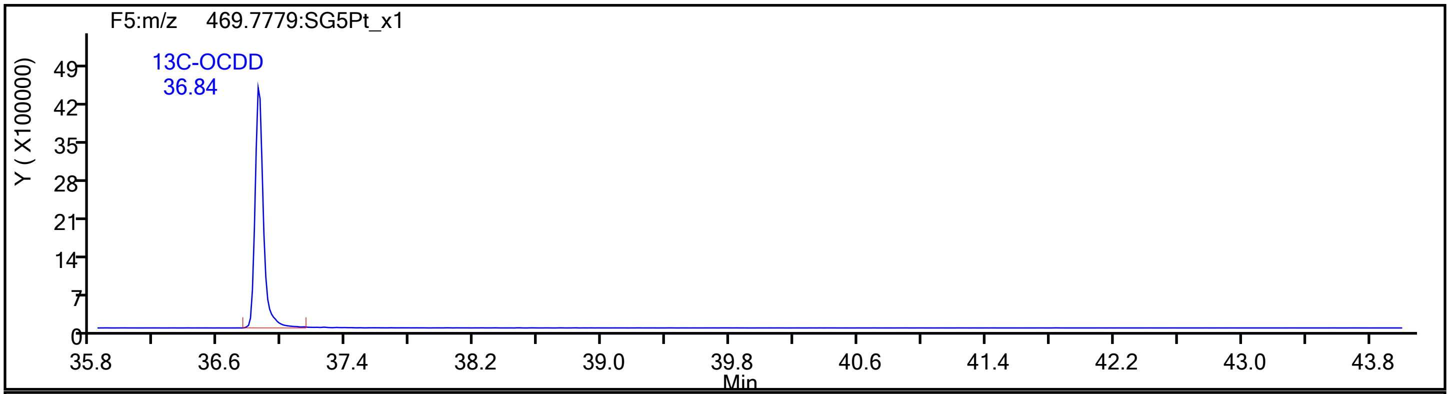

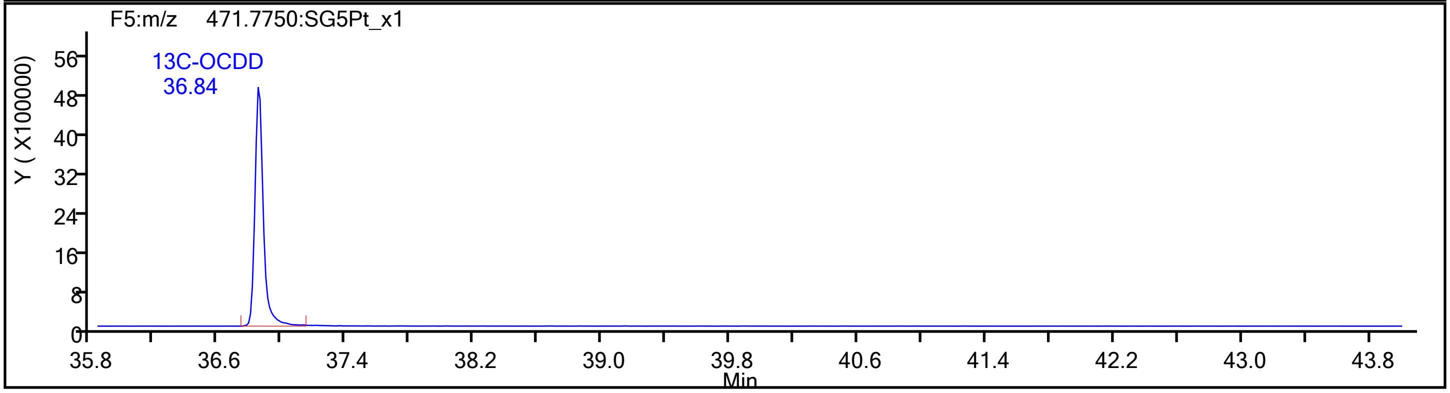

Report Date: 11-Dec-2020 10:13:06 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d		
Injection Date:	10-Dec-2020 21:27:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

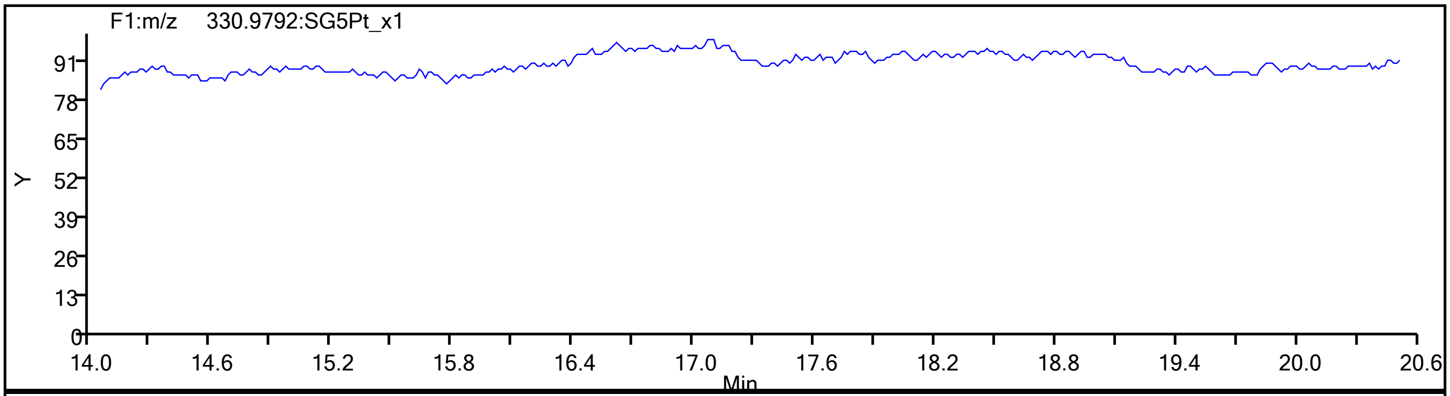

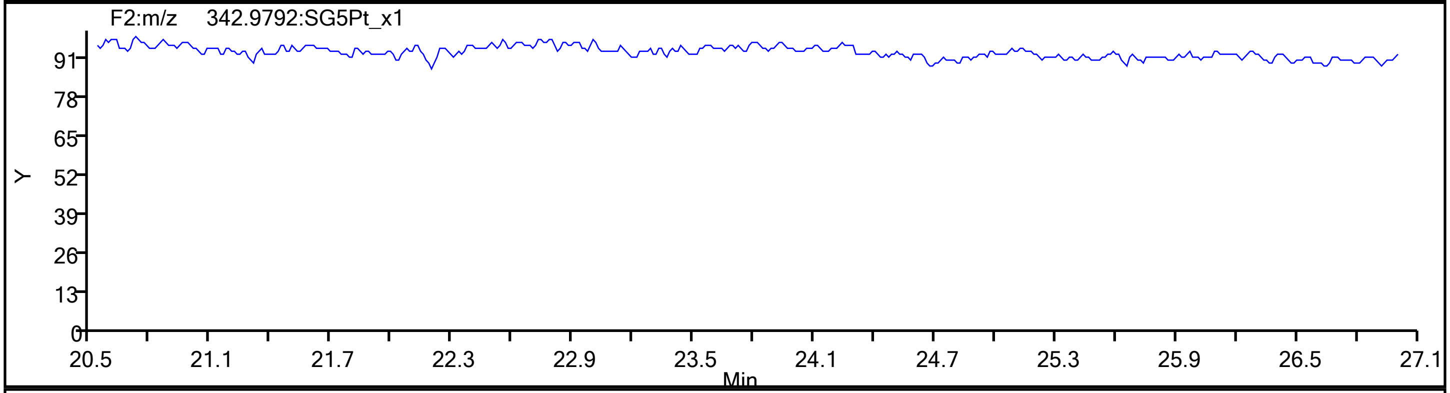

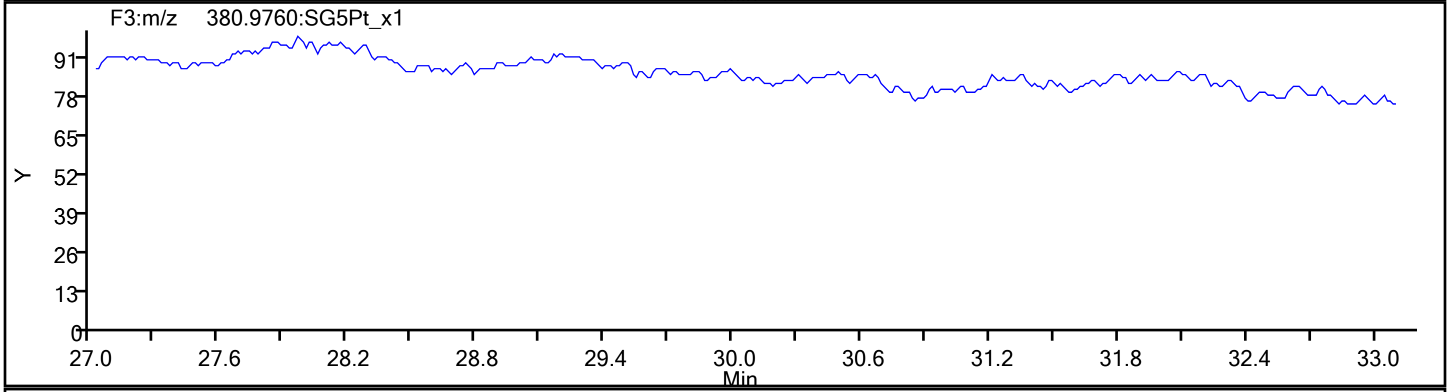

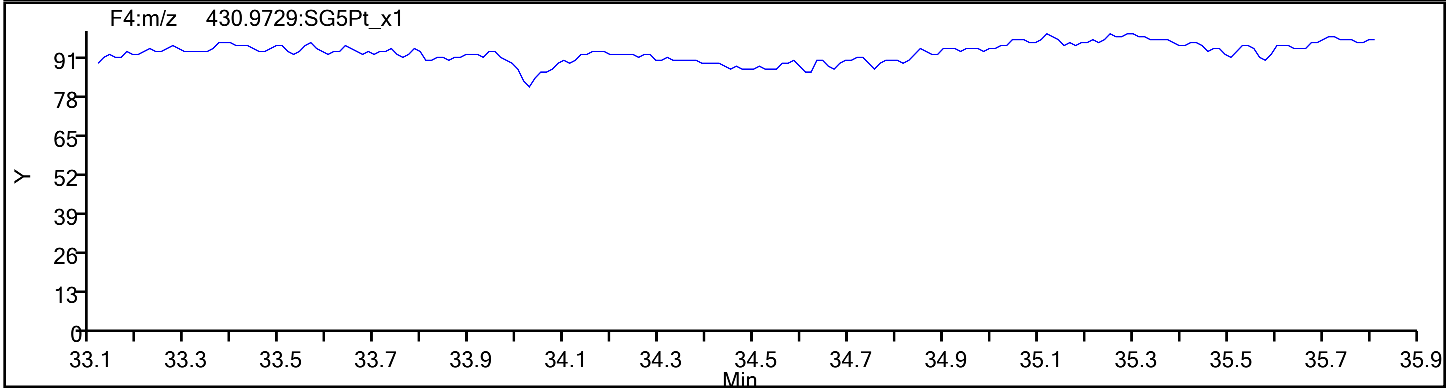

Report Date: 11-Dec-2020 10:13:06 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d		
Injection Date:	10-Dec-2020 21:27:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

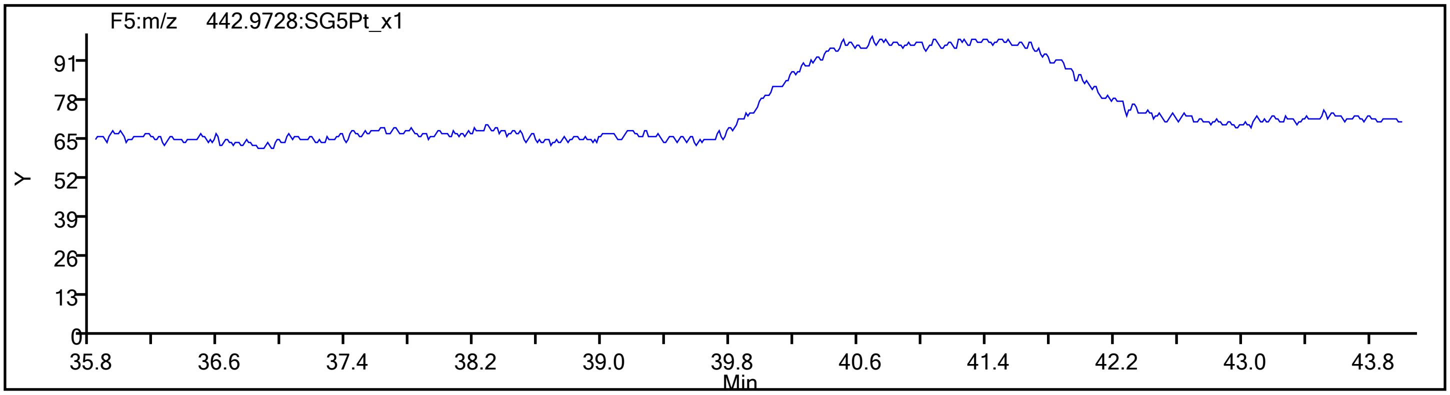

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.102

Error Coefficients

Standard Error:	129000000
Relative Standard Error:	7.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.114382	100.0	19839443.0	1.245753	Y
2	IC 320-440976/4	10.0	11.038125	100.0	21311835.0	1.103813	Y
3	IC 320-440976/5	50.0	51.88652	100.0	20644971.0	1.03773	Y
4	IC 320-440976/6	200.0	211.036539	100.0	24649520.0	1.055183	Y
5	IC 320-440976/7	1000.0	1068.303598	100.0	23719607.0	1.068304	Y

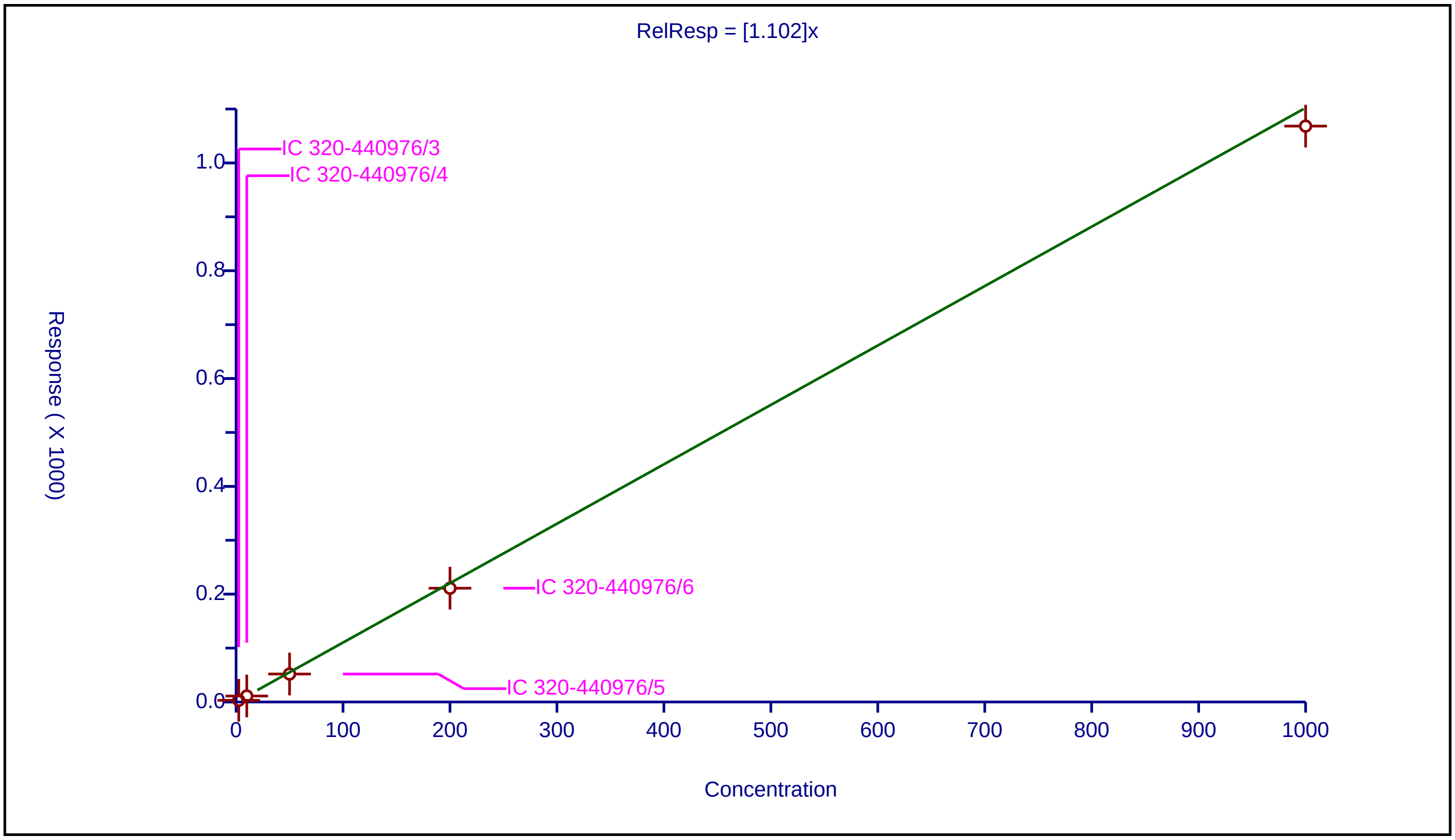

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.462

Error Coefficients

Standard Error:	188000000
Relative Standard Error:	3.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.837808	100.0	21885932.0	1.535123	Y
2	IC 320-440976/4	10.0	14.35049	100.0	23318966.0	1.435049	Y
3	IC 320-440976/5	50.0	70.535236	100.0	22777983.0	1.410705	Y
4	IC 320-440976/6	200.0	295.630455	100.0	26200346.0	1.478152	Y
5	IC 320-440976/7	1000.0	1450.291467	100.0	25406690.0	1.450291	Y

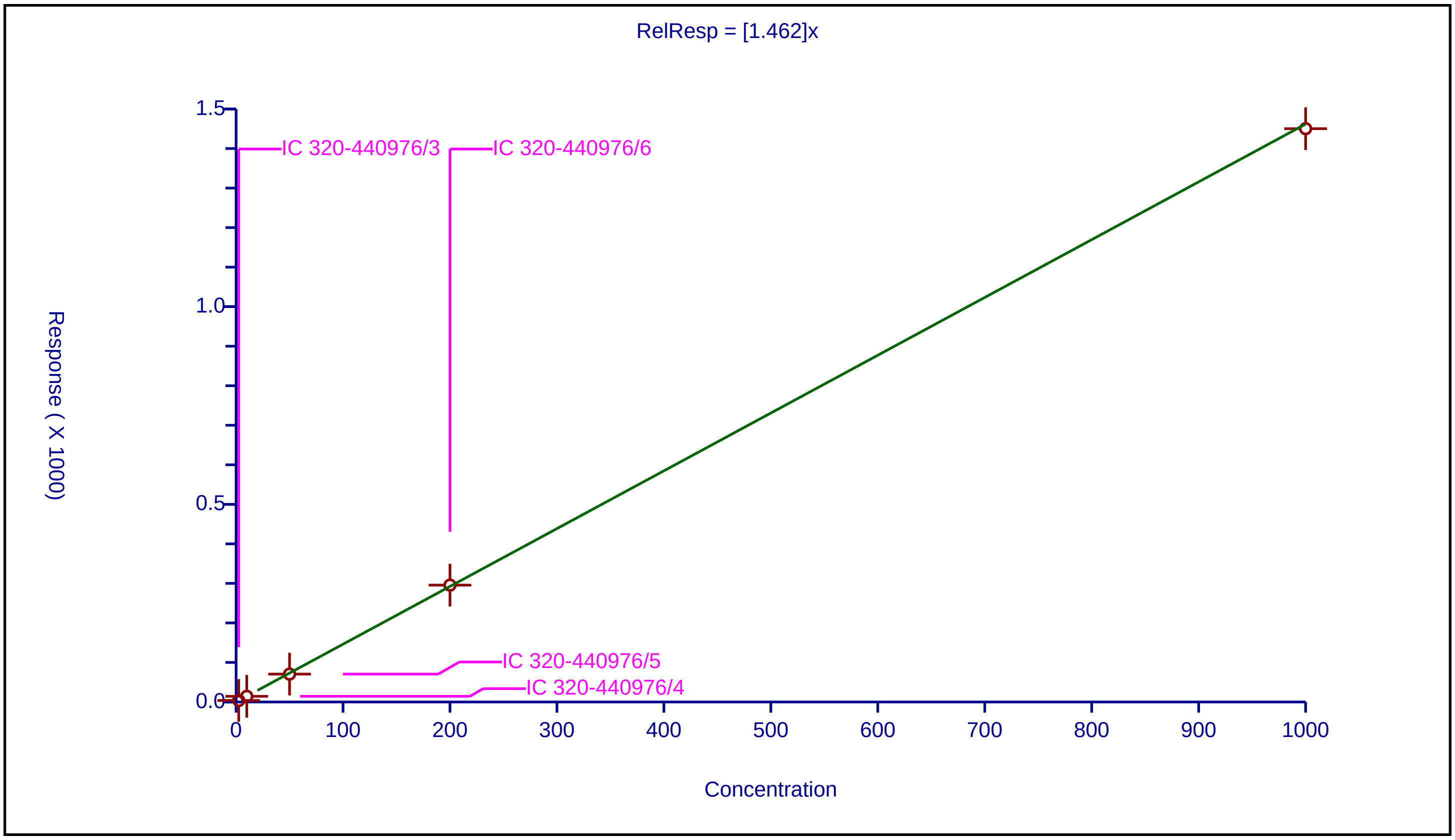

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.426

Error Coefficients

Standard Error:	167000000
Relative Standard Error:	4.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.842218	100.0	18652430.0	1.536887	Y
2	IC 320-440976/4	10.0	13.474618	100.0	21059921.0	1.347462	Y
3	IC 320-440976/5	50.0	70.23359	100.0	19080880.0	1.404672	Y
4	IC 320-440976/6	200.0	284.832085	100.0	23422395.0	1.42416	Y
5	IC 320-440976/7	1000.0	1418.017795	100.0	23070614.0	1.418018	Y

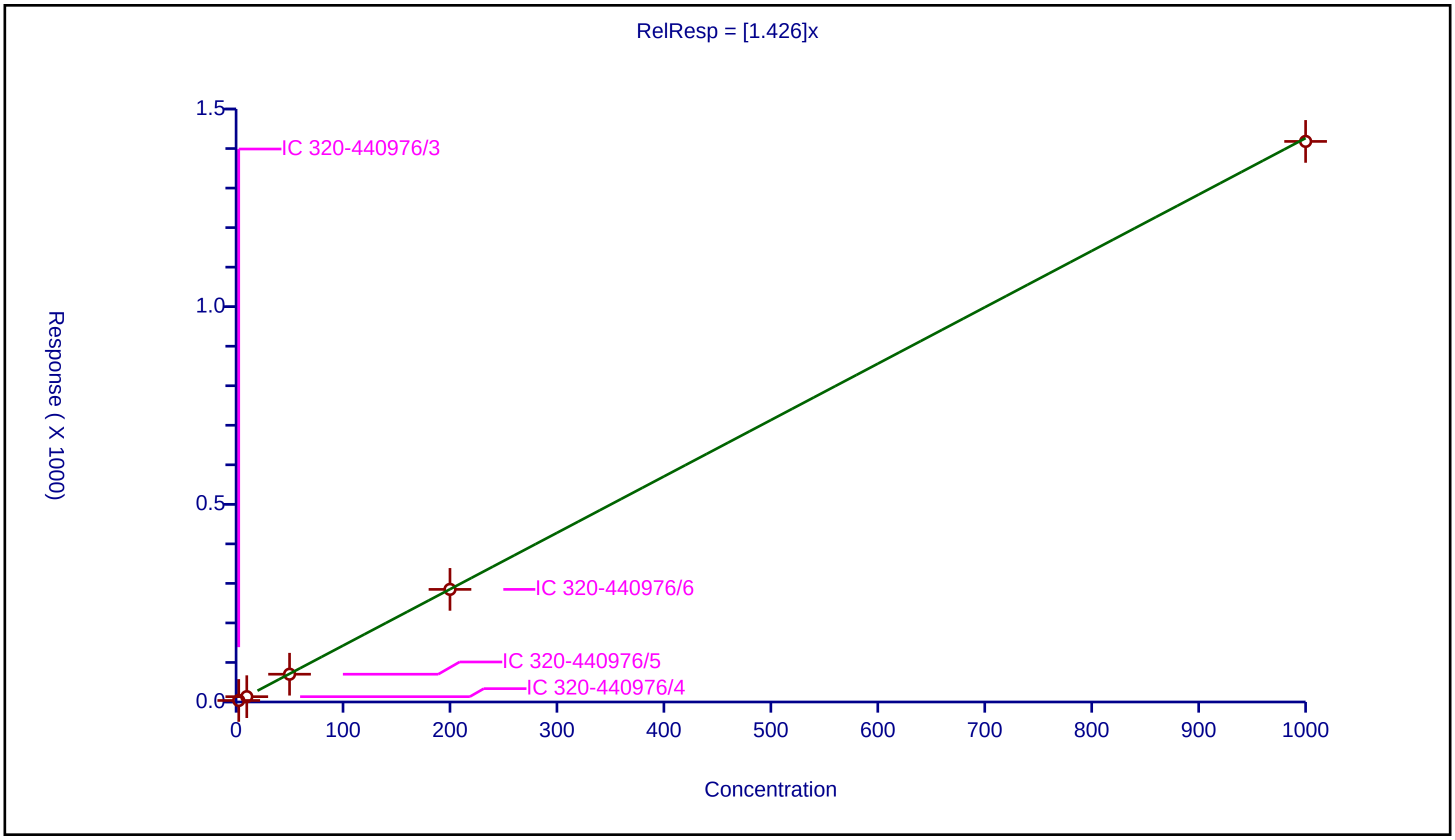

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.162

Error Coefficients

Standard Error:	139000000
Relative Standard Error:	6.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.211155	100.0	19335223.0	1.284462	Y
2	IC 320-440976/4	10.0	10.906193	100.0	21255978.0	1.090619	Y
3	IC 320-440976/5	50.0	58.767555	100.0	20668498.0	1.175351	Y
4	IC 320-440976/6	200.0	226.186035	100.0	23382177.0	1.13093	Y
5	IC 320-440976/7	1000.0	1127.548634	100.0	24158312.0	1.127549	Y

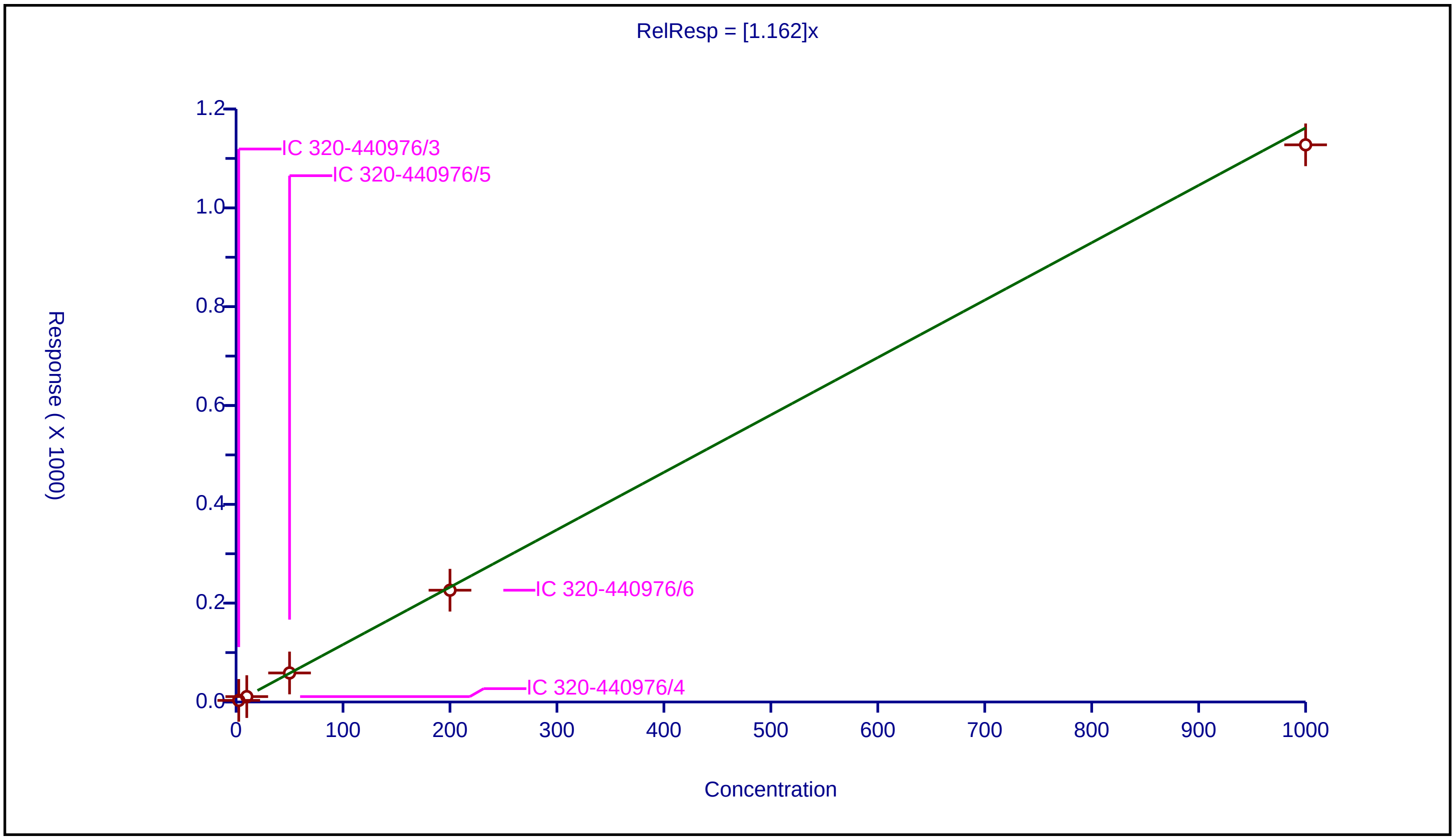

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.238

Error Coefficients

Standard Error:	217000000
Relative Standard Error:	4.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.341725	100.0	28610582.0	1.33669	Y
2	IC 320-440976/4	10.0	11.766647	100.0	30853659.0	1.176665	Y
3	IC 320-440976/5	50.0	60.639178	100.0	31997609.0	1.212784	Y
4	IC 320-440976/6	200.0	247.928681	100.0	33618221.0	1.239643	Y
5	IC 320-440976/7	1000.0	1226.479832	100.0	34681904.0	1.22648	Y

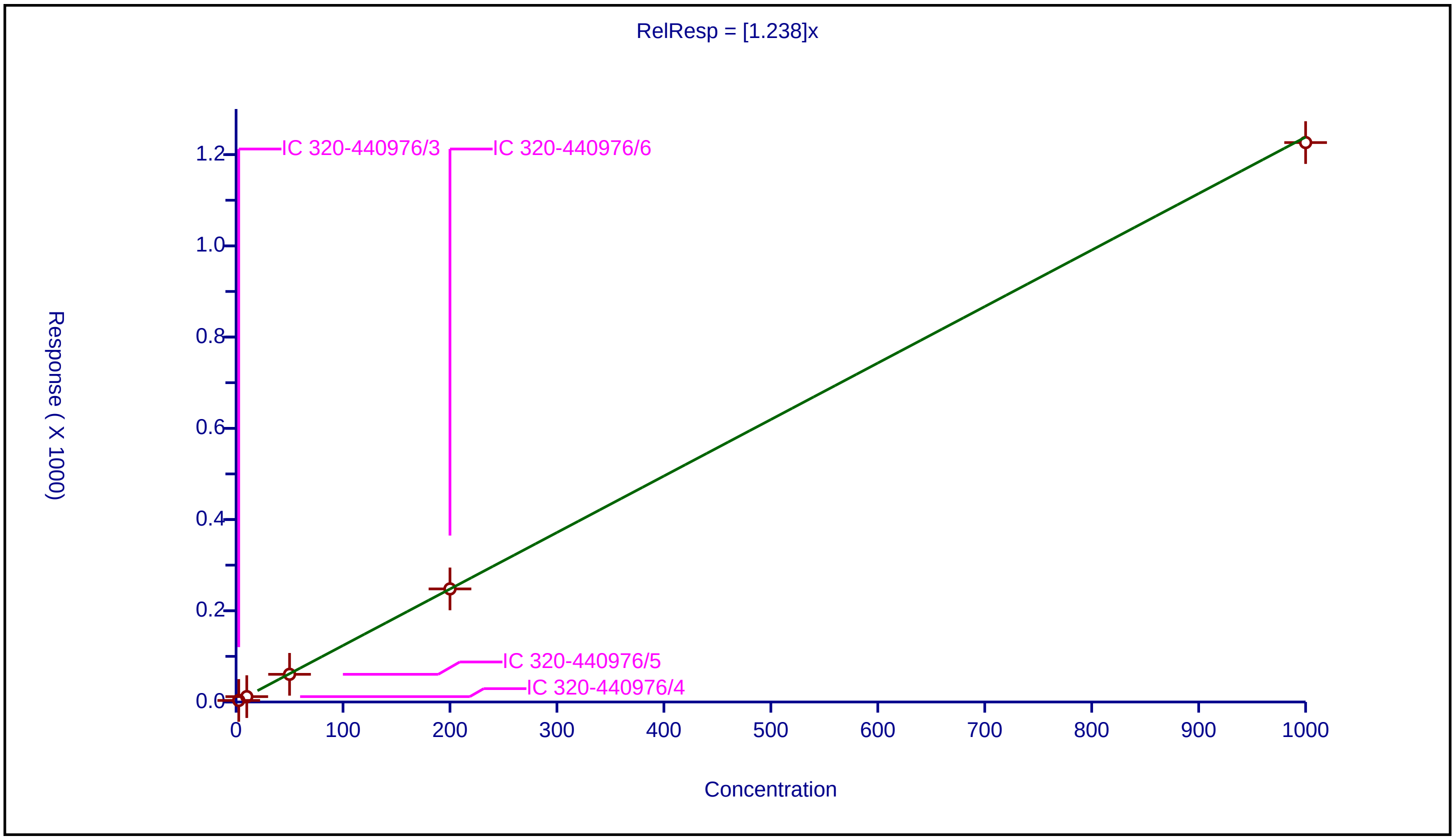

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.032

Error Coefficients

Standard Error:	147000000
Relative Standard Error:	7.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	2.888763	100.0	25809350.0	1.155505	Y
2	IC 320-440976/4	10.0	10.39139	100.0	27574060.0	1.039139	Y
3	IC 320-440976/5	50.0	46.666121	100.0	28375971.0	0.933322	Y
4	IC 320-440976/6	200.0	203.069526	100.0	29930709.0	1.015348	Y
5	IC 320-440976/7	1000.0	1016.725197	100.0	28282746.0	1.016725	Y

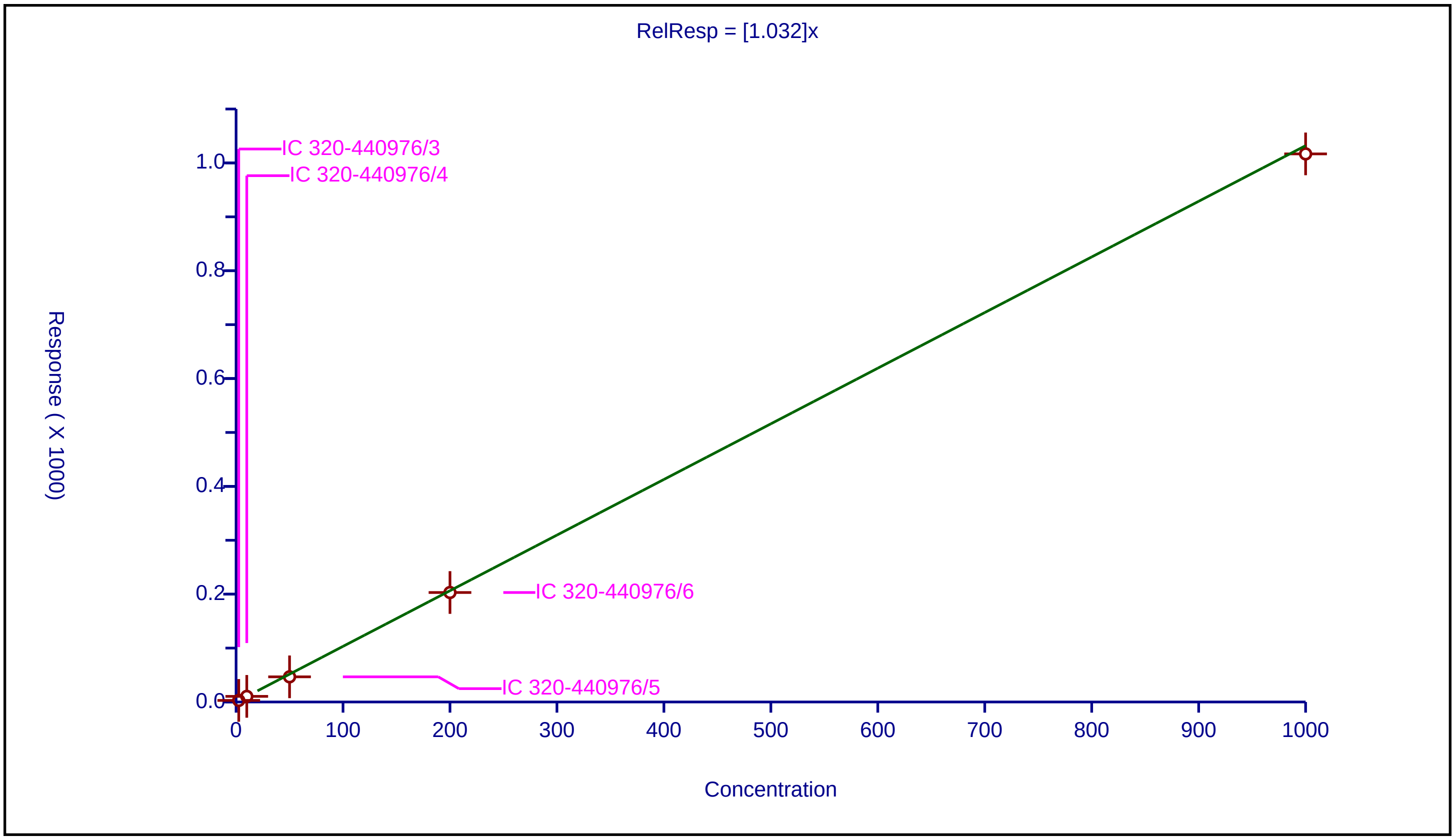

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.19

Error Coefficients

Standard Error:	224000000
Relative Standard Error:	2.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.113871	100.0	33304243.0	1.245548	Y
2	IC 320-440976/4	10.0	11.742699	100.0	34794172.0	1.17427	Y
3	IC 320-440976/5	50.0	58.204593	100.0	36839261.0	1.164092	Y
4	IC 320-440976/6	200.0	235.813517	100.0	37797556.0	1.179068	Y
5	IC 320-440976/7	1000.0	1186.956281	100.0	37009896.0	1.186956	Y

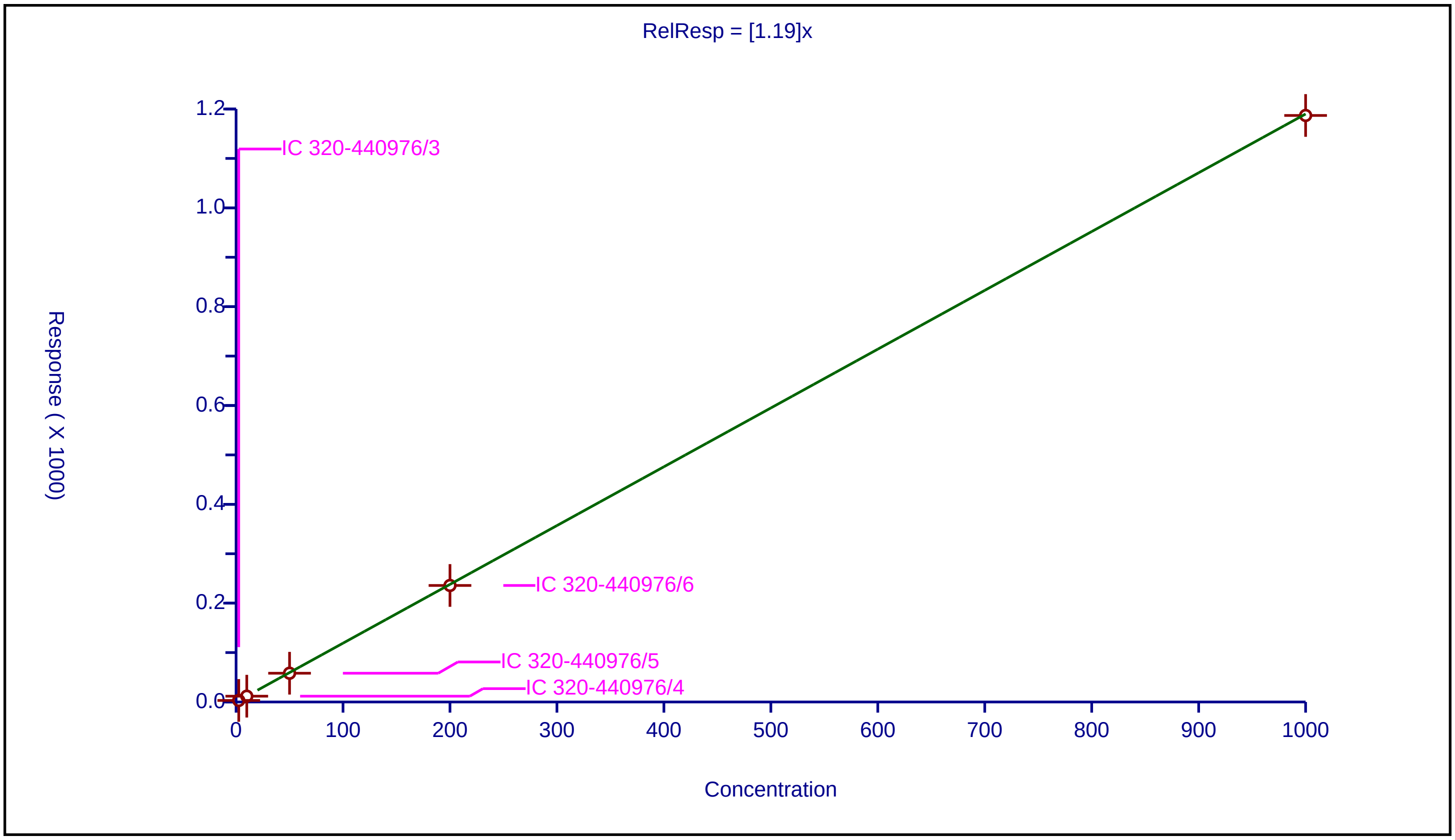

Calibration / 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.422

Error Coefficients

Standard Error:	159000000
Relative Standard Error:	10.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.985

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	4.197485	100.0	19335223.0	1.678994	Y
2	IC 320-440976/4	10.0	14.190516	100.0	21255978.0	1.419052	Y
3	IC 320-440976/5	50.0	67.635969	100.0	20668498.0	1.352719	Y
4	IC 320-440976/6	200.0	273.566294	100.0	23382177.0	1.367831	Y
5	IC 320-440976/7	1000.0	1291.330549	100.0	24158312.0	1.291331	Y

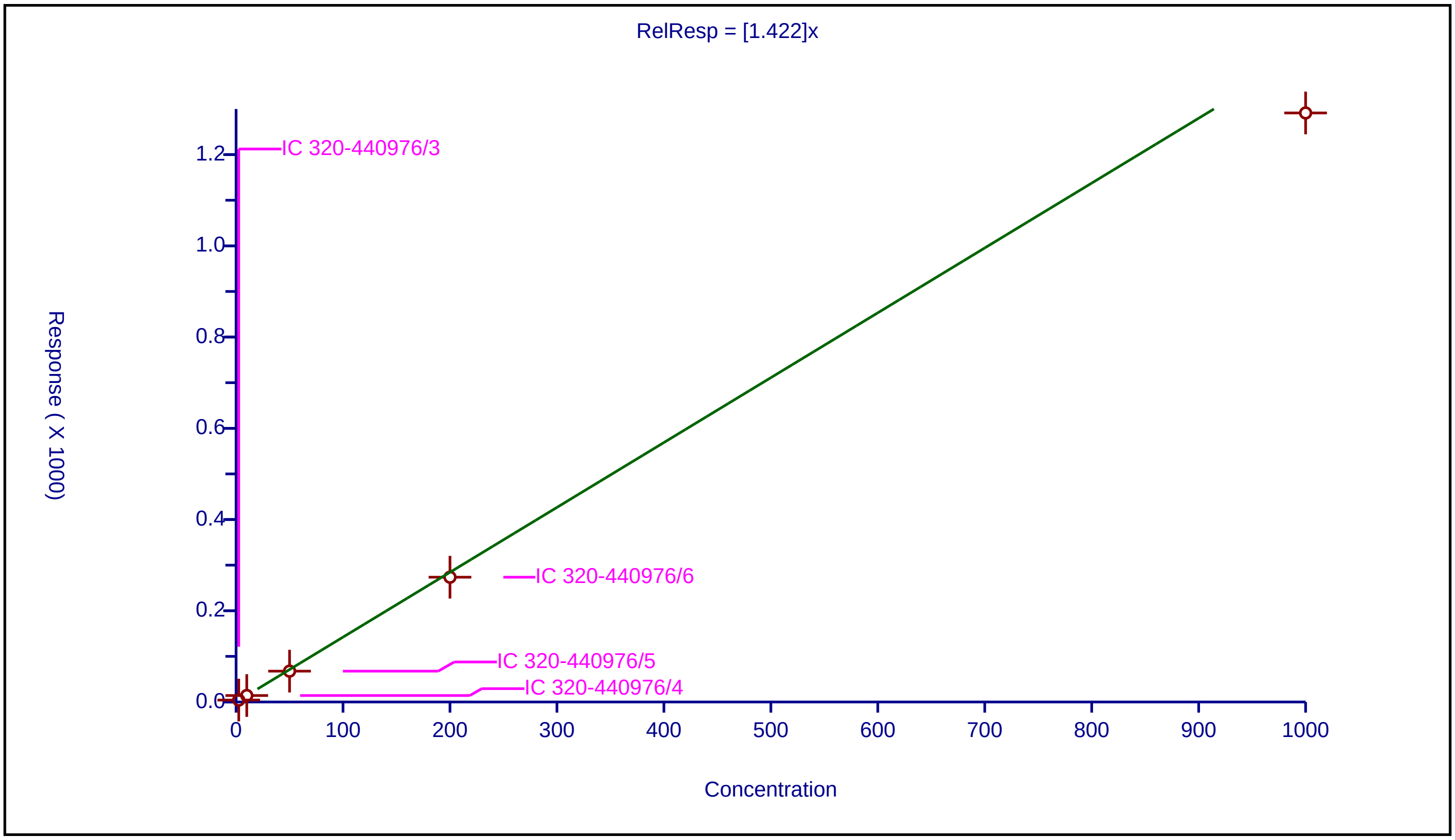

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.227

Error Coefficients

Standard Error:	201000000
Relative Standard Error:	5.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.346337	100.0	27346586.0	1.338535	Y
2	IC 320-440976/4	10.0	12.19505	100.0	29546725.0	1.219505	Y
3	IC 320-440976/5	50.0	58.776779	100.0	29100555.0	1.175536	Y
4	IC 320-440976/6	200.0	240.263783	100.0	33011011.0	1.201319	Y
5	IC 320-440976/7	1000.0	1198.34337	100.0	32890081.0	1.198343	Y

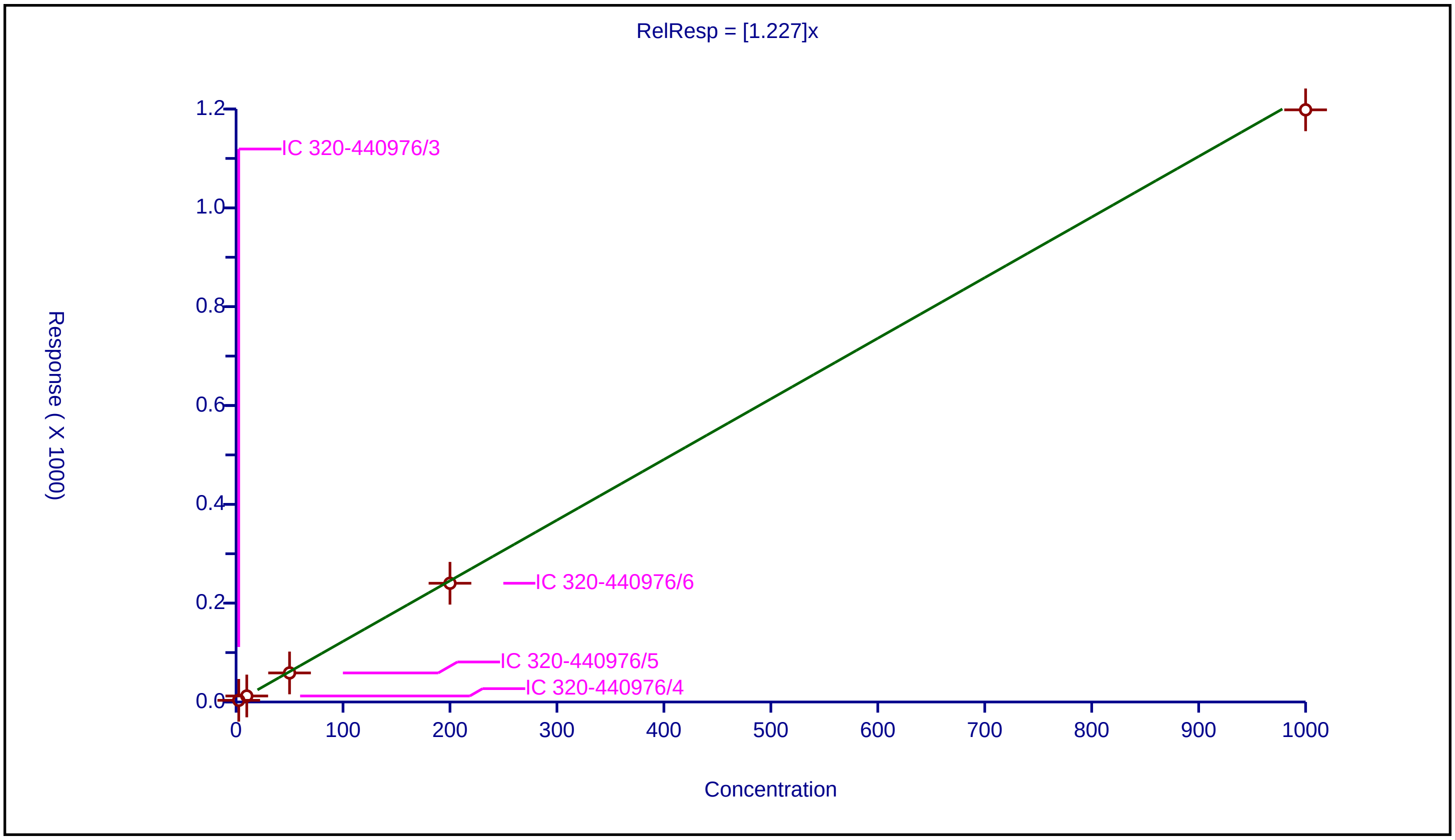

Calibration

/ 1,2,3,7,8-PeCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.075

Error Coefficients

Standard Error:	167000000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	2.86087	100.0	27863795.0	1.144348	Y
2	IC 320-440976/4	10.0	10.693275	100.0	28478085.0	1.069328	Y
3	IC 320-440976/5	50.0	50.73127	100.0	27599575.0	1.014625	Y
4	IC 320-440976/6	200.0	213.889146	100.0	30663088.0	1.069446	Y
5	IC 320-440976/7	1000.0	1076.379358	100.0	30343489.0	1.076379	Y

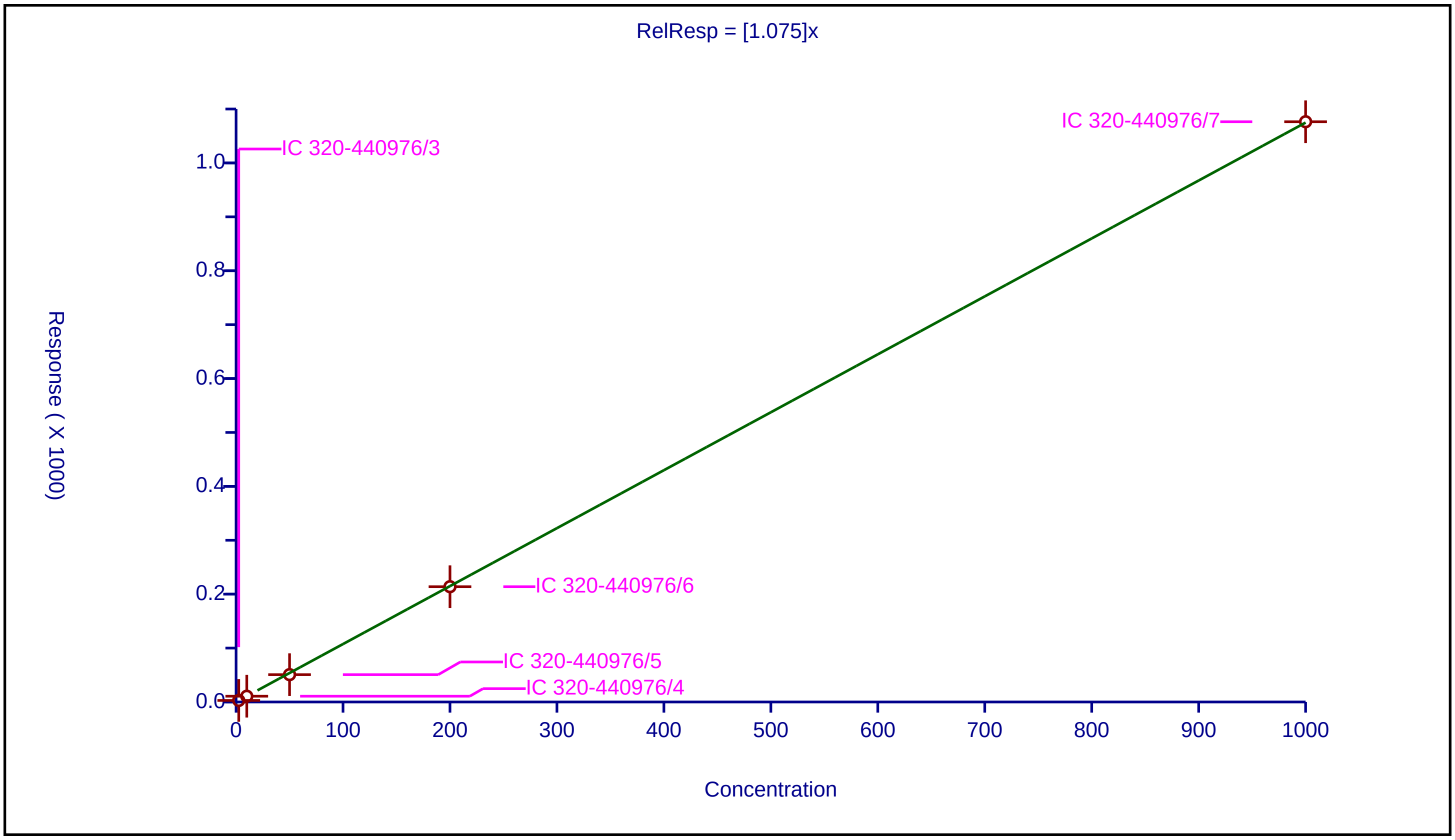

Calibration / 1,2,3,7,8-PeCDF

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept: 0
Slope: 1.027

Error Coefficients

Standard Error: 254000000
Relative Standard Error: 4.7
Correlation Coefficient: 1.000
Coefficient of Determination (Adjusted): 0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	2.762001	100.0	43942881.0	1.104801	Y
2	IC 320-440976/4	10.0	9.948963	100.0	45778550.0	0.994896	Y
3	IC 320-440976/5	50.0	49.340654	100.0	44324423.0	0.986813	Y
4	IC 320-440976/6	200.0	201.607112	100.0	49761932.0	1.008036	Y
5	IC 320-440976/7	1000.0	1039.396564	100.0	47773116.0	1.039397	Y

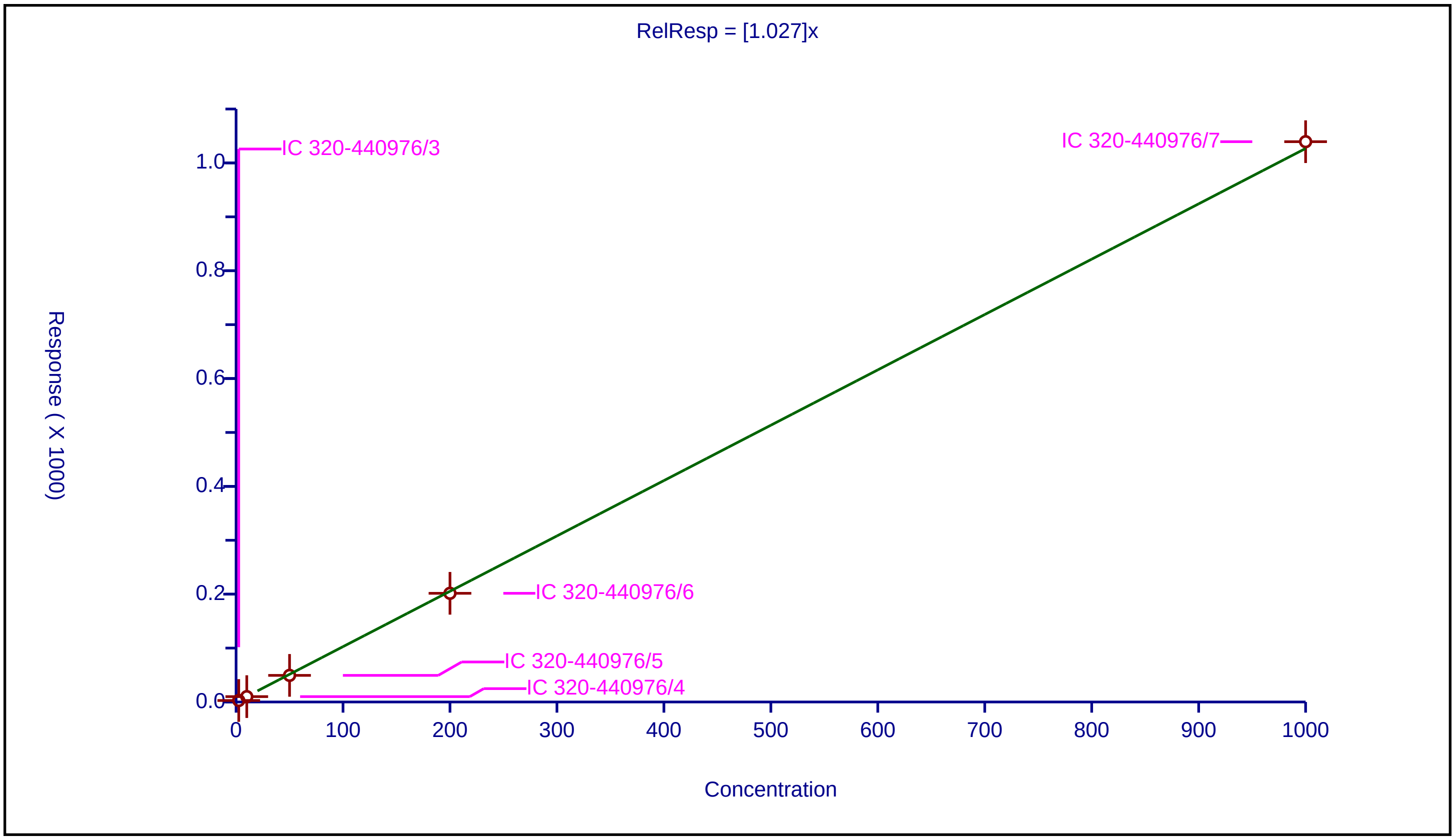

Calibration

/ 2,3,4,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.213

Error Coefficients

Standard Error:	214000000
Relative Standard Error:	2.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	3.18577	100.0	29733284.0	1.274308	Y
2	IC 320-440976/4	10.0	11.88464	100.0	32608317.0	1.188464	Y
3	IC 320-440976/5	50.0	59.436966	100.0	33251869.0	1.188739	Y
4	IC 320-440976/6	200.0	241.193495	100.0	35453396.0	1.205967	Y
5	IC 320-440976/7	1000.0	1208.417234	100.0	34623263.0	1.208417	Y

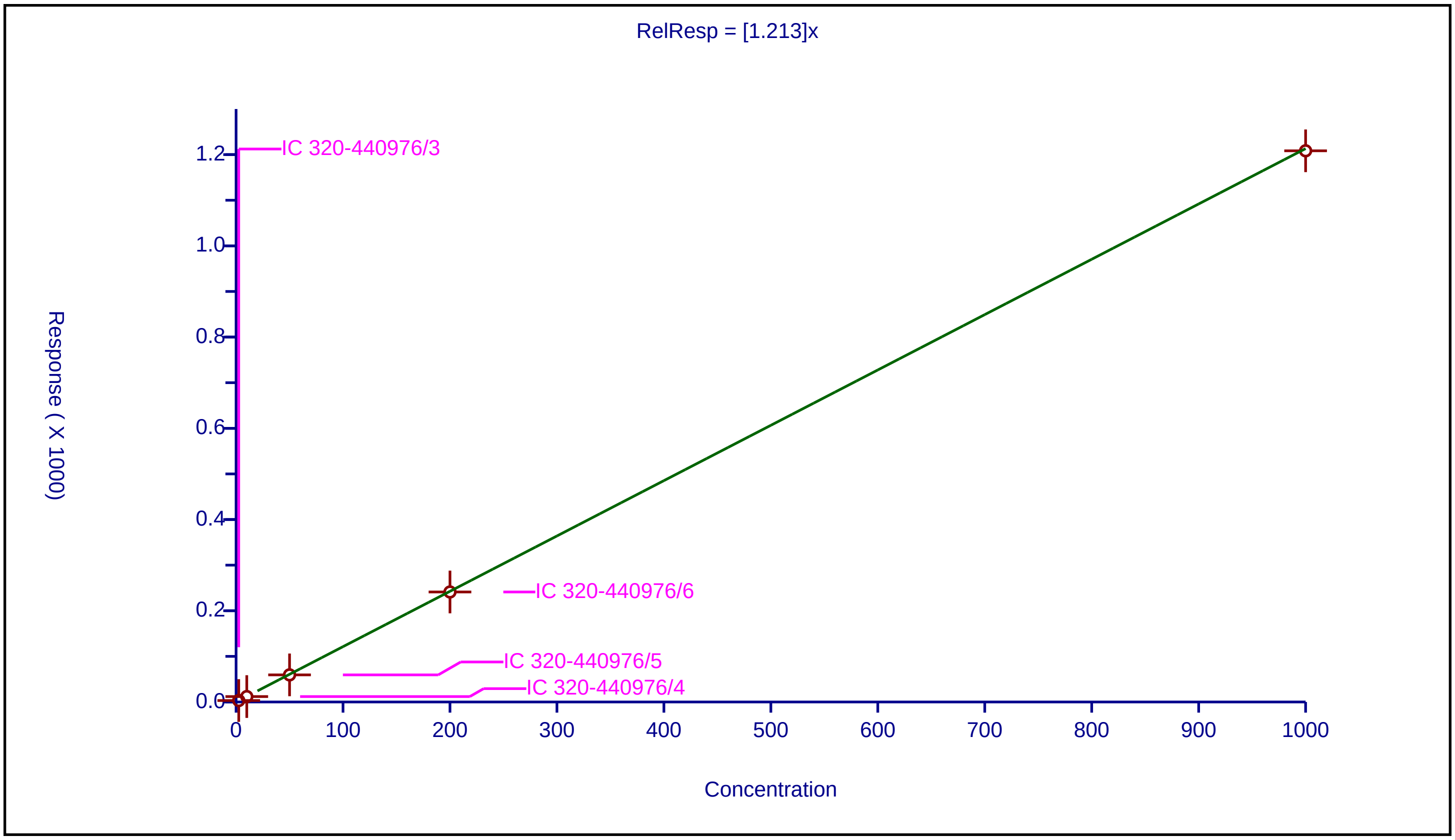

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.073

Error Coefficients

Standard Error:	247000000
Relative Standard Error:	4.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	2.5	2.866862	100.0	41565031.0	1.146745	Y
2	IC 320-440976/4	10.0	10.224859	100.0	43210454.0	1.022486	Y
3	IC 320-440976/5	50.0	52.992608	100.0	39991127.0	1.059852	Y
4	IC 320-440976/6	200.0	214.332392	100.0	45791590.0	1.071662	Y
5	IC 320-440976/7	1000.0	1064.152222	100.0	45458823.0	1.064152	Y

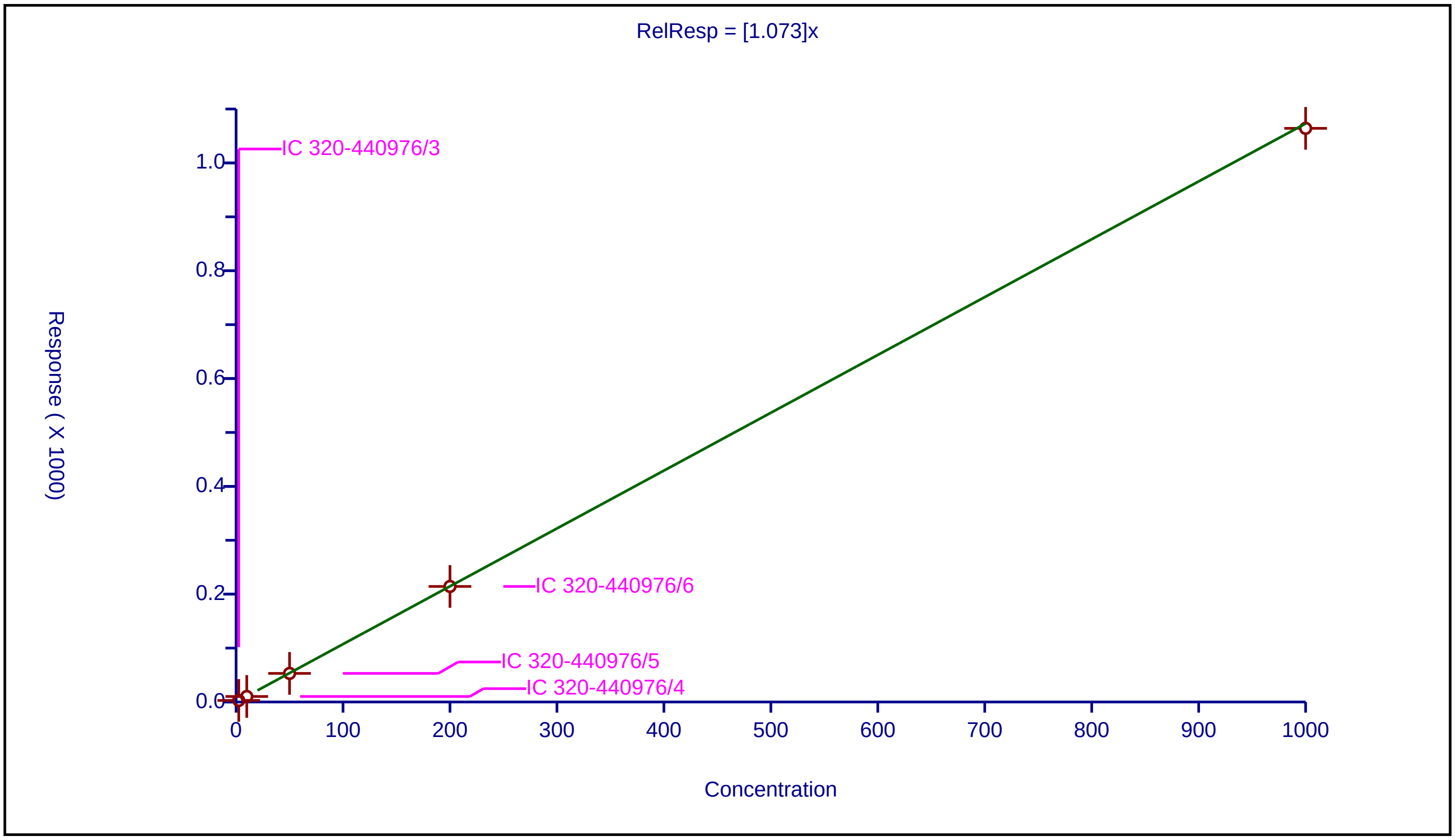

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.154

Error Coefficients

Standard Error:	44600000
Relative Standard Error:	3.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	0.5	0.603728	100.0	36134136.0	1.207457	Y
2	IC 320-440976/4	2.0	2.282087	100.0	36710437.0	1.141043	Y
3	IC 320-440976/5	10.0	11.043363	100.0	35015492.0	1.104336	Y
4	IC 320-440976/6	40.0	45.51784	100.0	39270249.0	1.137946	Y
5	IC 320-440976/7	200.0	236.134545	100.0	36985228.0	1.180673	Y

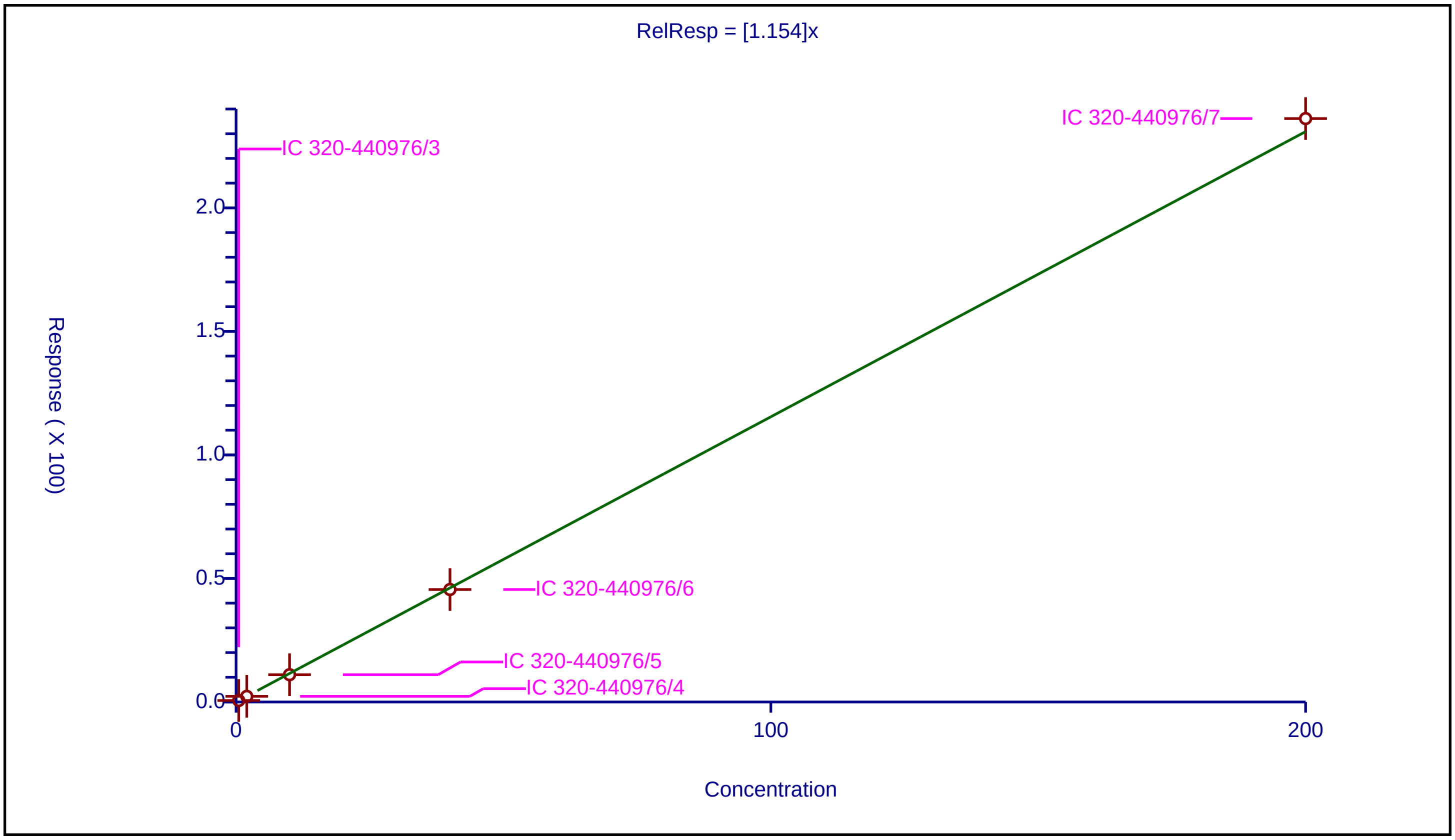

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.017

Error Coefficients

Standard Error:	60900000
Relative Standard Error:	4.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	0.5	0.539532	100.0	57415293.0	1.079064	Y
2	IC 320-440976/4	2.0	1.976336	100.0	58125681.0	0.988168	Y
3	IC 320-440976/5	10.0	9.532804	100.0	55787366.0	0.95328	Y
4	IC 320-440976/6	40.0	41.088353	100.0	62294560.0	1.027209	Y
5	IC 320-440976/7	200.0	207.751083	100.0	57251353.0	1.038755	Y

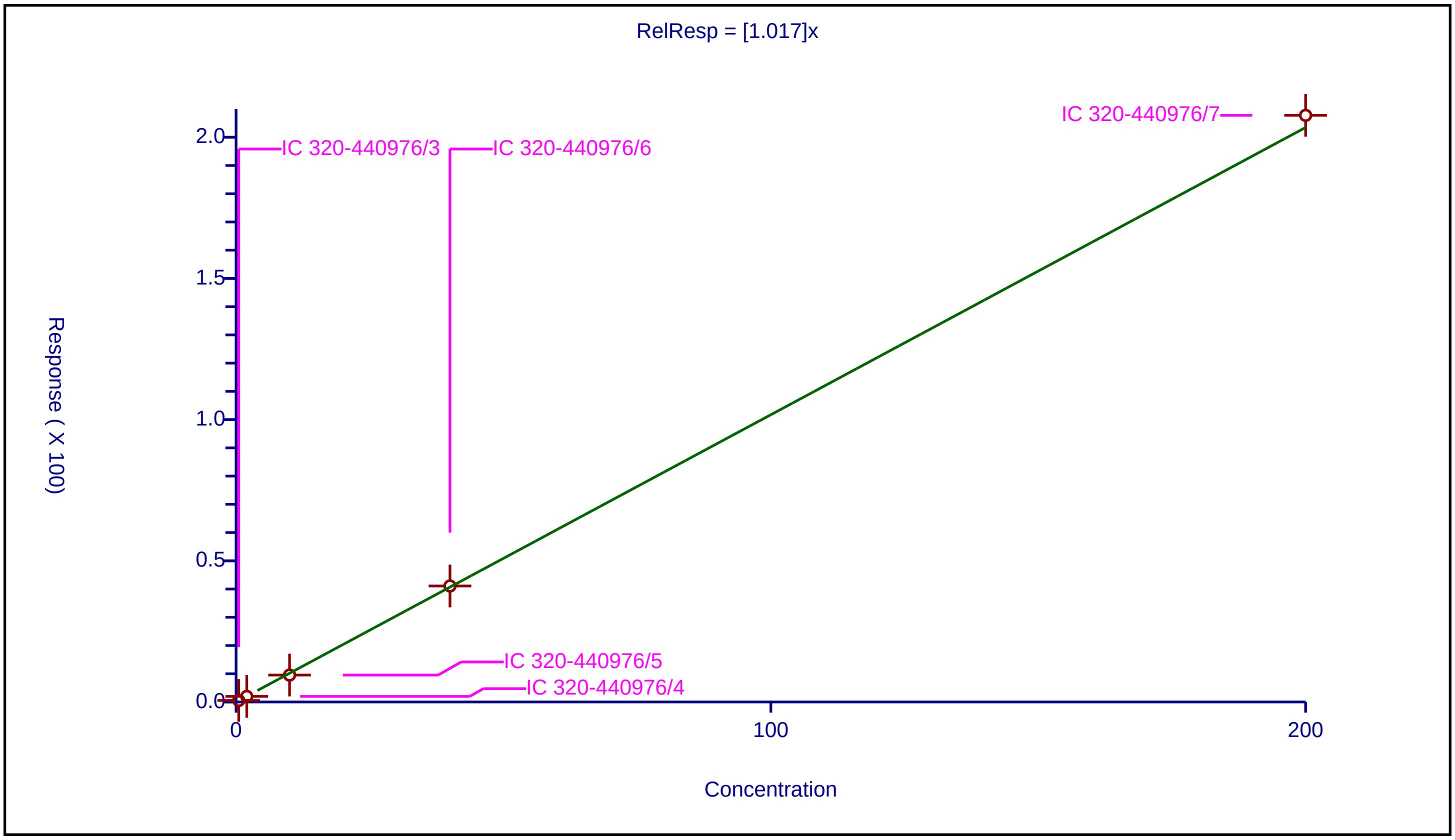

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.244

Error Coefficients

Standard Error:	44400000
Relative Standard Error:	3.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	0.5	0.611847	100.0	34257904.0	1.223694	Y
2	IC 320-440976/4	2.0	2.419462	100.0	34340857.0	1.209731	Y
3	IC 320-440976/5	10.0	12.164457	100.0	31953429.0	1.216446	Y
4	IC 320-440976/6	40.0	50.868069	100.0	35970601.0	1.271702	Y
5	IC 320-440976/7	200.0	259.753597	100.0	33405559.0	1.298768	Y

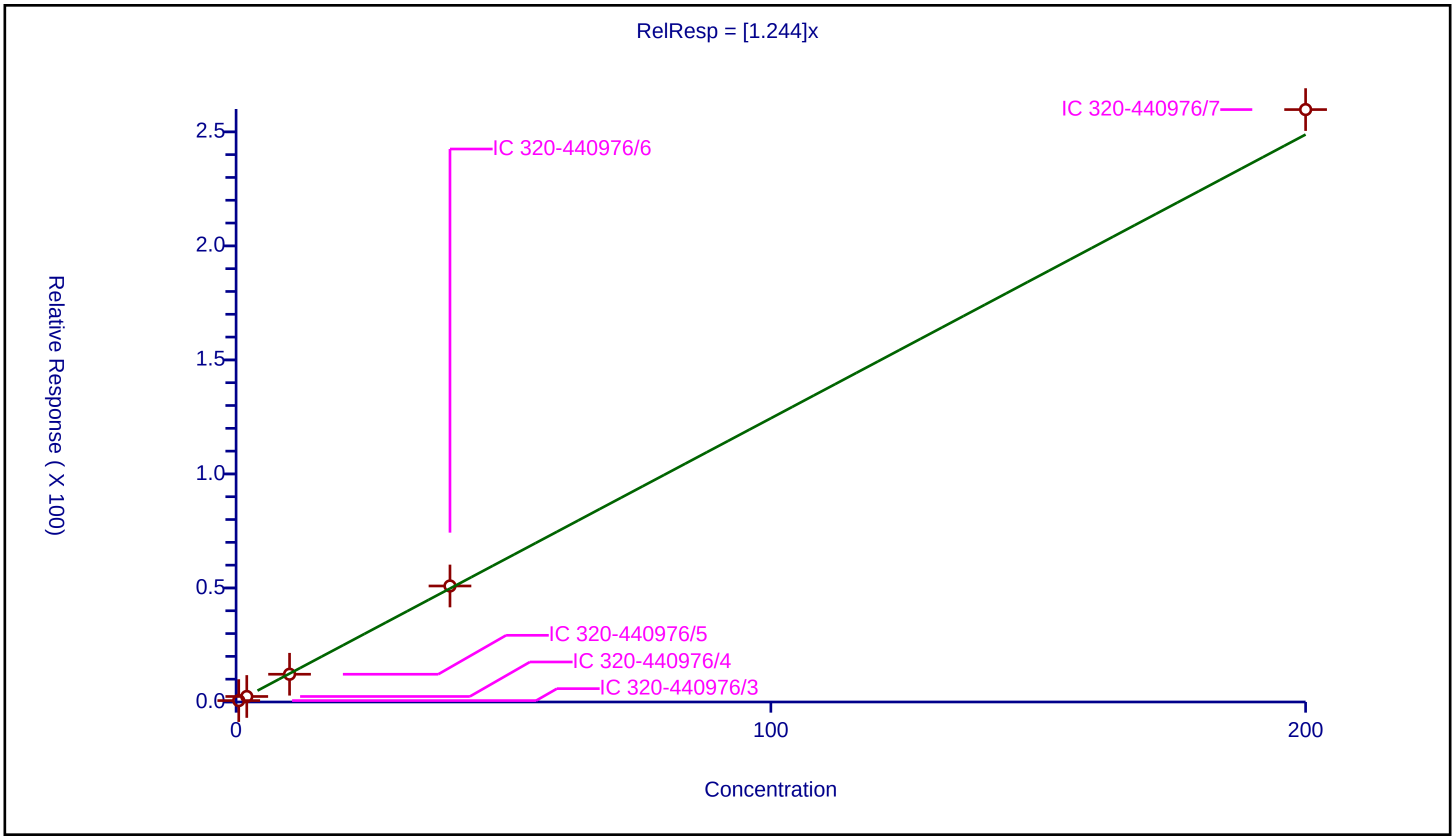

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.157

Error Coefficients

Standard Error:	201000000
Relative Standard Error:	6.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	5.0	6.404495	200.0	28264836.0	1.280899	Y
2	IC 320-440976/4	20.0	22.803193	200.0	29768734.0	1.14016	Y
3	IC 320-440976/5	100.0	110.795277	200.0	28802827.0	1.107953	Y
4	IC 320-440976/6	400.0	446.852507	200.0	36118968.0	1.117131	Y
5	IC 320-440976/7	2000.0	2277.588044	200.0	34589430.0	1.138794	Y

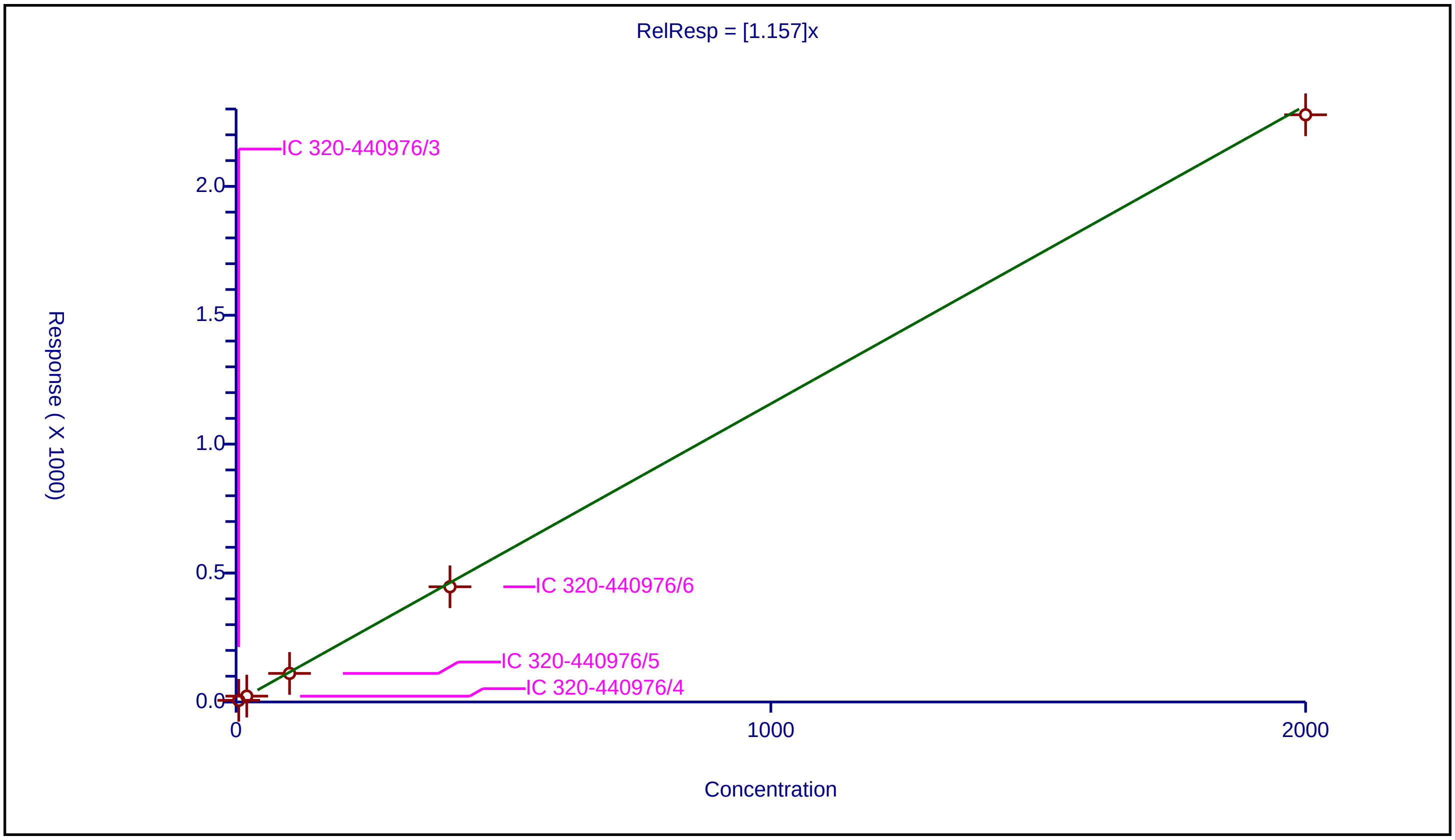

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.485

Error Coefficients

Standard Error:	270000000
Relative Standard Error:	1.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-440976/3	5.0	7.446666	200.0	28264836.0	1.489333	Y
2	IC 320-440976/4	20.0	29.206072	200.0	29768734.0	1.460304	Y
3	IC 320-440976/5	100.0	146.354064	200.0	28802827.0	1.463541	Y
4	IC 320-440976/6	400.0	594.966102	200.0	36118968.0	1.487415	Y
5	IC 320-440976/7	2000.0	3053.775185	200.0	34589430.0	1.526888	Y

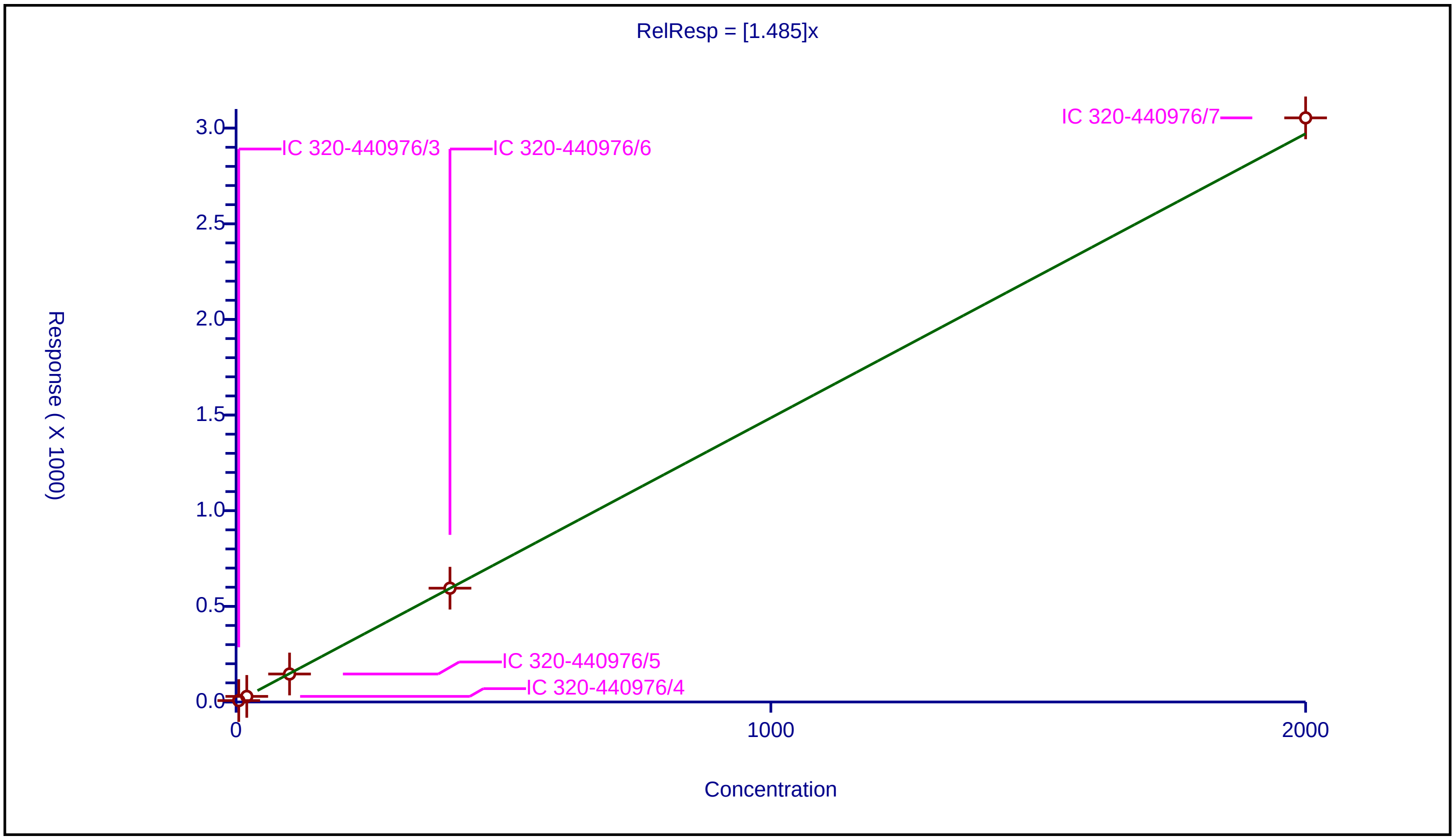

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5389	1.2639	1.1469	1.2196	1.2417	AveID		1.2822				11.7		20.0			
2,3,7,8-TCDF	1.0643	0.9882	0.9272	0.9762	1.0154	AveID		0.9943				5.1		20.0			
13C-2,3,7,8-TCDD	0.9886	0.9642	0.9993	0.9653	0.9993	Ave		0.9834				1.8		35.0			
13C-2,3,7,8-TCDF	1.6355	1.5599	1.5294	1.5485	1.5806	Ave		1.5708				2.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9087	0.9400	1.0056	1.0330	1.0852	Ave		0.9945				7.1					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 398641

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/24/2020 23:50 Calibration End Date: 07/25/2020 02:23 Calibration ID: 51282

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-398641/3	24JL2011D2_003.d
Level 2	IC 320-398641/4	24JL2011D2_004.d
Level 3	IC 320-398641/5	24JL2011D2_005.d
Level 4	IC 320-398641/6	24JL2011D2_006.d
Level 5	IC 320-398641/7	24JL2011D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	974944	3155522	6496502	62670373	320296763	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1115496	3991633	8037628	80467943	414295806	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCDD	Ave	126703300	124829346	56642851	128468155	128972522	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCDD	Ave	209617047	201961331	86689661	206071781	203996891	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	582282	2433901	5699752	54991386	280119629	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
24JL2011D2	1	CPS 072420	CPS HRDXNCP_00040		Dioxin		1.00000	
24JL2011D2	2	SB 072420	SB Solvent Blank C-14				1.00000	
24JL2011D2	3	IC 072420	CS-2 HRDXNL2_00029		Dioxin	ICAL	1.00000	
24JL2011D2	4	IC 072420A	CS-3 HRDXNL3_00027		Dioxin		1.00000	
24JL2011D2	5	IC 072420B	CS-4 HRDXNL4_00094		Dioxin		1.00000	
24JL2011D2	6	IC 072420C	CS-5 HRDXNL5_00030		Dioxin		1.00000	
24JL2011D2	7	IC 072420D	CS-6 HRDXNL6_00026		Dioxin		1.00000	
24JL2011D2	8	SB 072420C	SB Solvent Blank C-14				1.00000	
24JL2011D2	9	ICV 072420	ICV HRDXNIC_00045		Dioxin		1.00000	
24JL2011D2	10						1.00000	
24JL2011D2	11						1.00000	
24JL2011D2	12						1.00000	
24JL2011D2	13						1.00000	
24JL2011D2	14						1.00000	
24JL2011D2	15						1.00000	
24JL2011D2	16						1.00000	
24JL2011D2	17						1.00000	
24JL2011D2	18		ALM 07-24-20				1.00000	
24JL2011D2	19						1.00000	

Logfile ✓'d
7/27/20
KSS

Peak Locate Examination:24-JUL-2020:22:30 File:24JL2011D2
Experiment:DB225RES Function:1 Reference:PFK

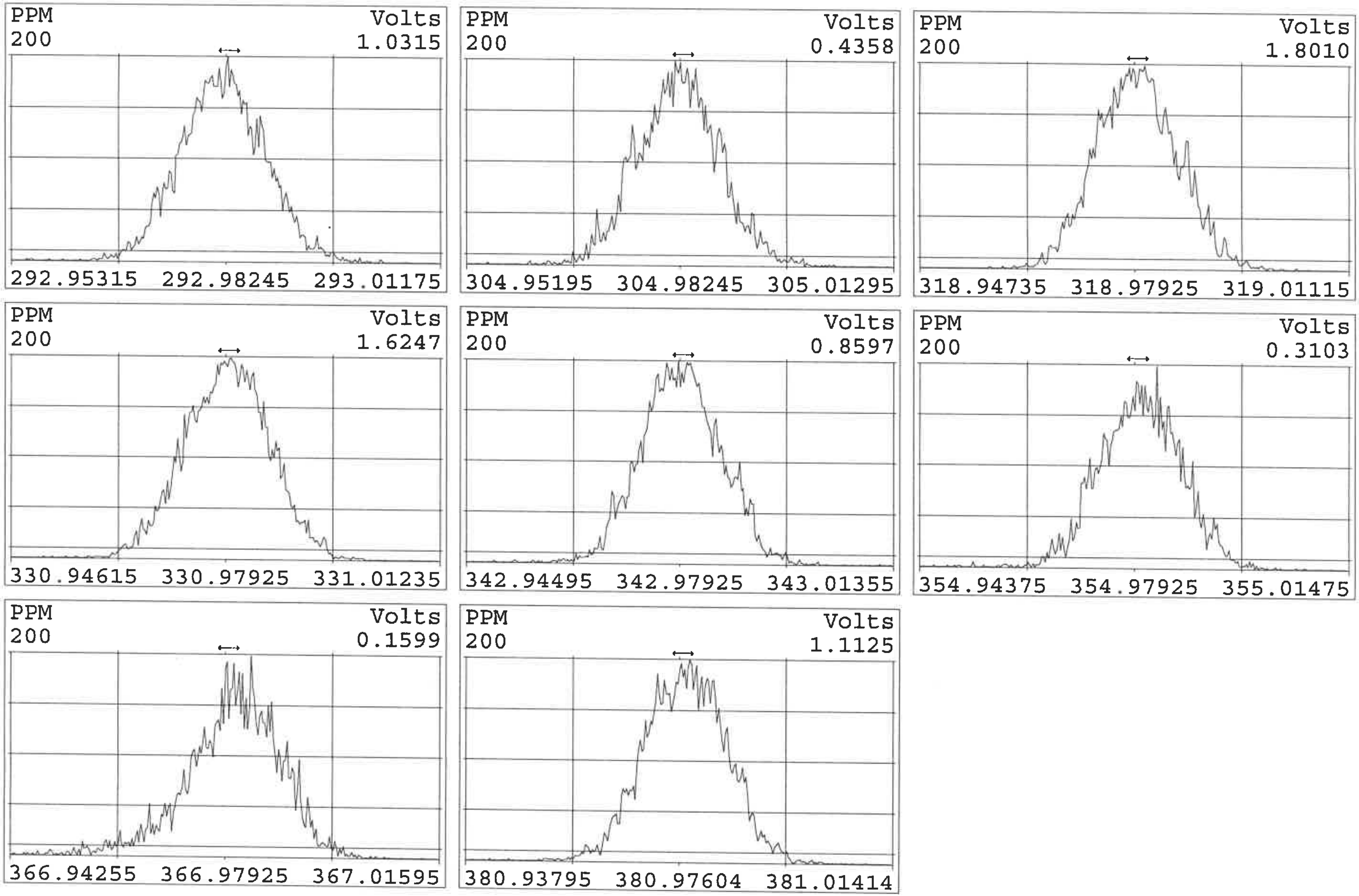

Peak Locate Examination:25-JUL-2020:05:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

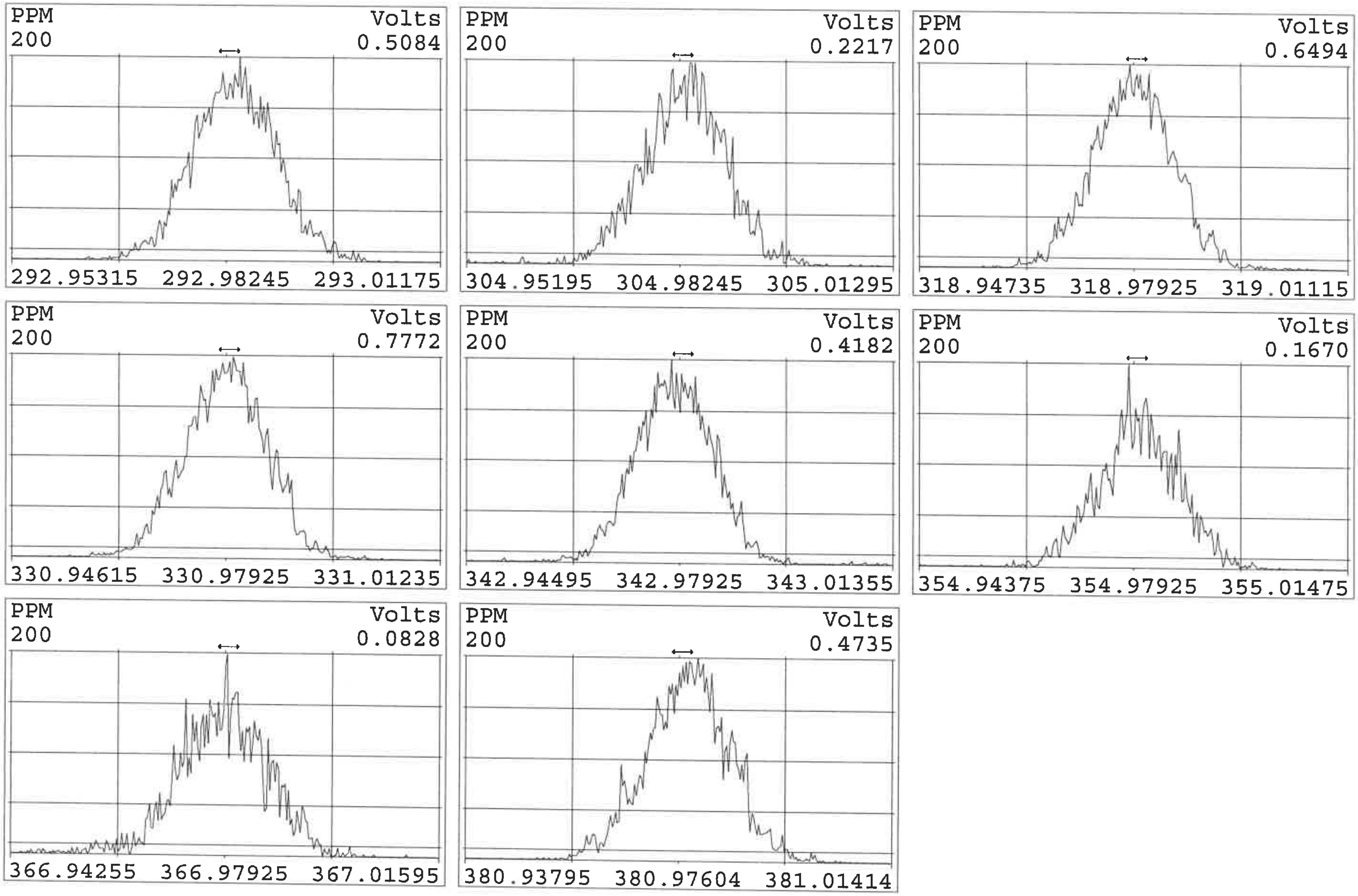

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Jul-2020 23:50:17 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	128163493	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.972	209617047	0.78	1.5708	104.1	104.1	0.1676	0.1676	104	
2,3,7,8-TCDF	16.985	1115496	0.84	0.9943	0.5352	0.5352	0.0139	0.0139	107	
D 13C-2,3,7,8-TCDD	15.531	126703300	0.80	0.9834	100.5	100.5	0.1548	0.1548	101	
2,3,7,8-TCDD	15.545	974944	0.71	1.2822	0.6001	0.6001	0.0312	0.0312	120	
$ 37Cl4-2,3,7,8-TCDD	15.545	582282		0.9945	0.4568	0.4568	0.0159	0.0159	91.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d				
Lims ID:	IC 2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	24-Jul-2020 23:50:17	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:49	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:37		

Signal	RT (min.)	Adj RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.780	0		56699747	12230838	9316	23290	1313		
333.9339	15.778	15.780	0		71463746	15574902	7617	19042	2045	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.972	16.985	-1	1.076	91569066	17279199	18303	45757	944		
317.9389	16.972	16.985	-1	1.076	118047981	22786152	10978	27445	2076	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.985	17.001	-1	1.001	510664	95619	779	1947	123		
305.8987	16.999	17.001	0	1.002	604832	114986	1441	3602	80	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.542	-1	0.984	56163116	12562900	9316	23290	1349		
333.9339	15.531	15.542	-1	0.984	70540184	15749914	7617	19042	2068	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.555	-1	1.001	406210	85511	2827	7067	30		
321.8936	15.545	15.555	-1	1.001	568734	116289	1698	4245	68	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.555	-1	0.985	582282	144507	1755	4387	82		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

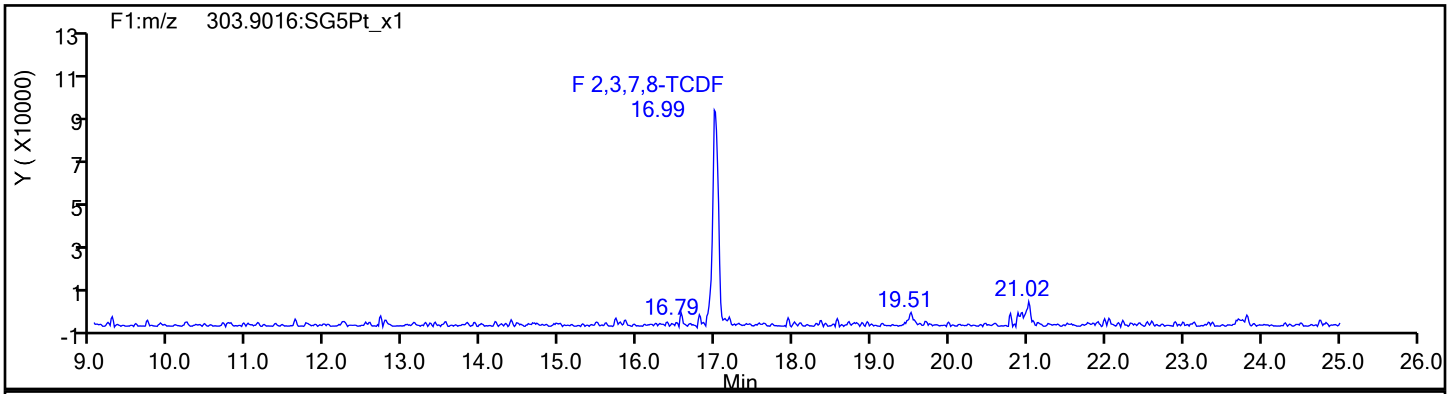

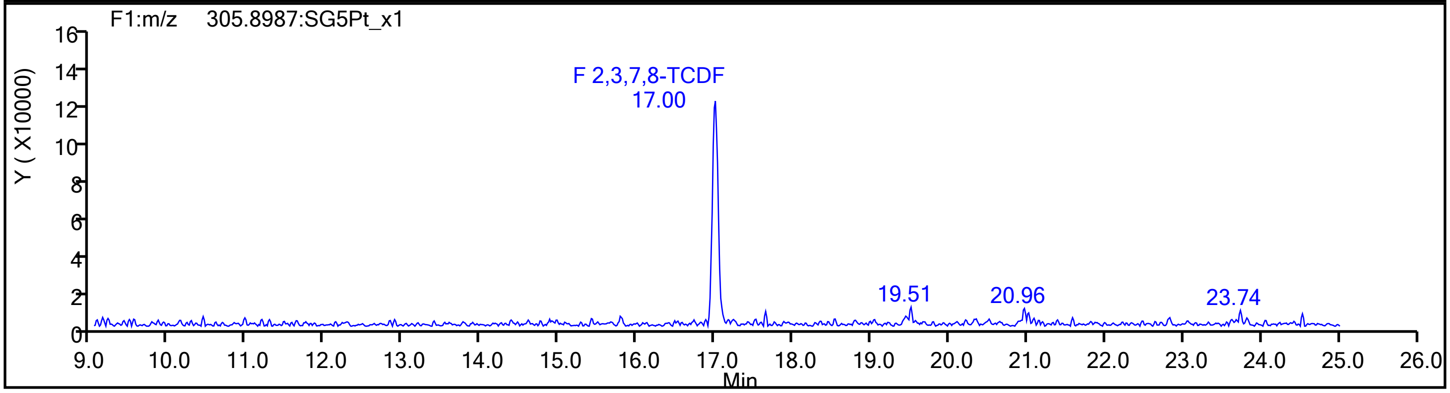

TCDF Standards

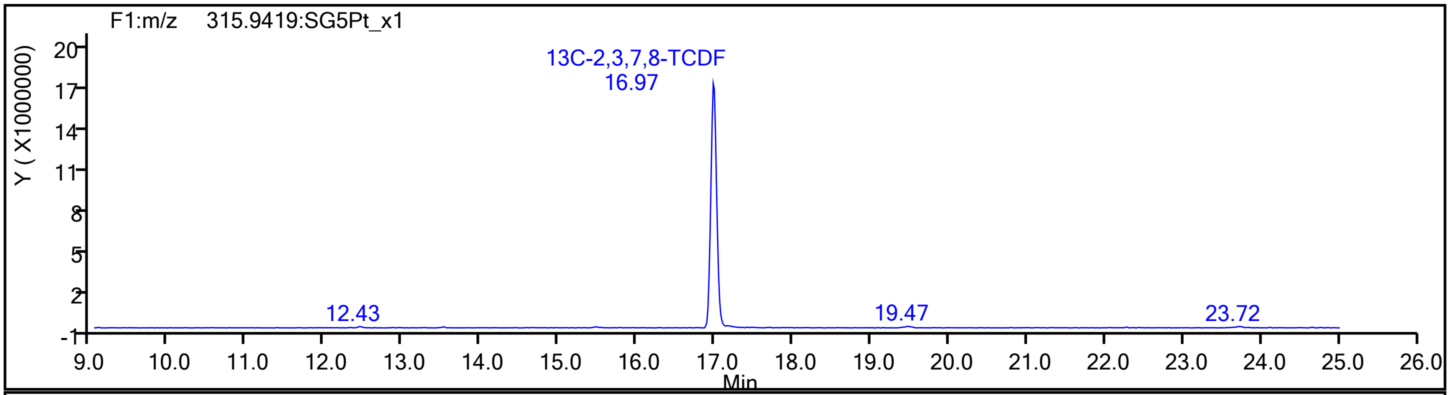

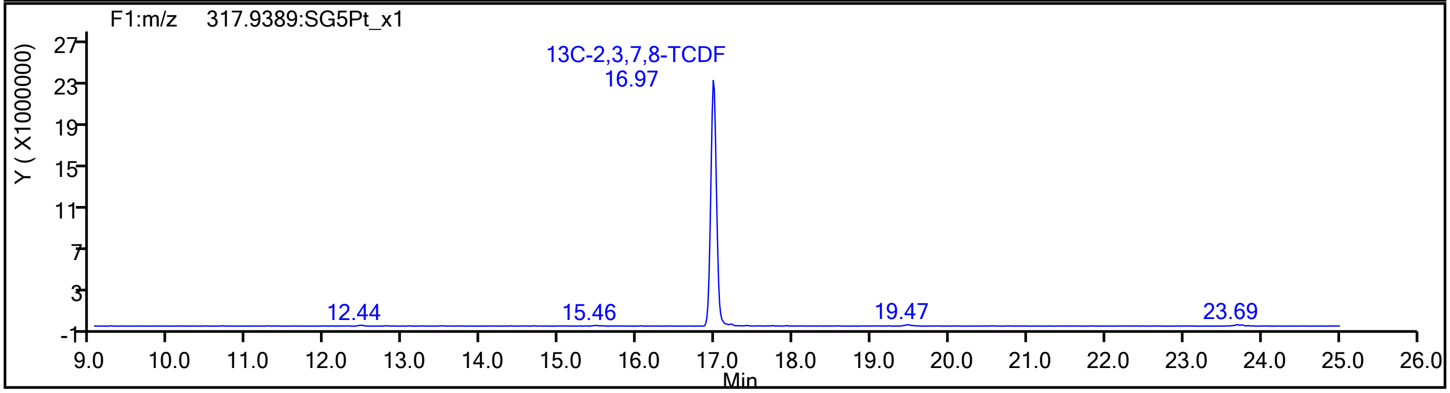

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

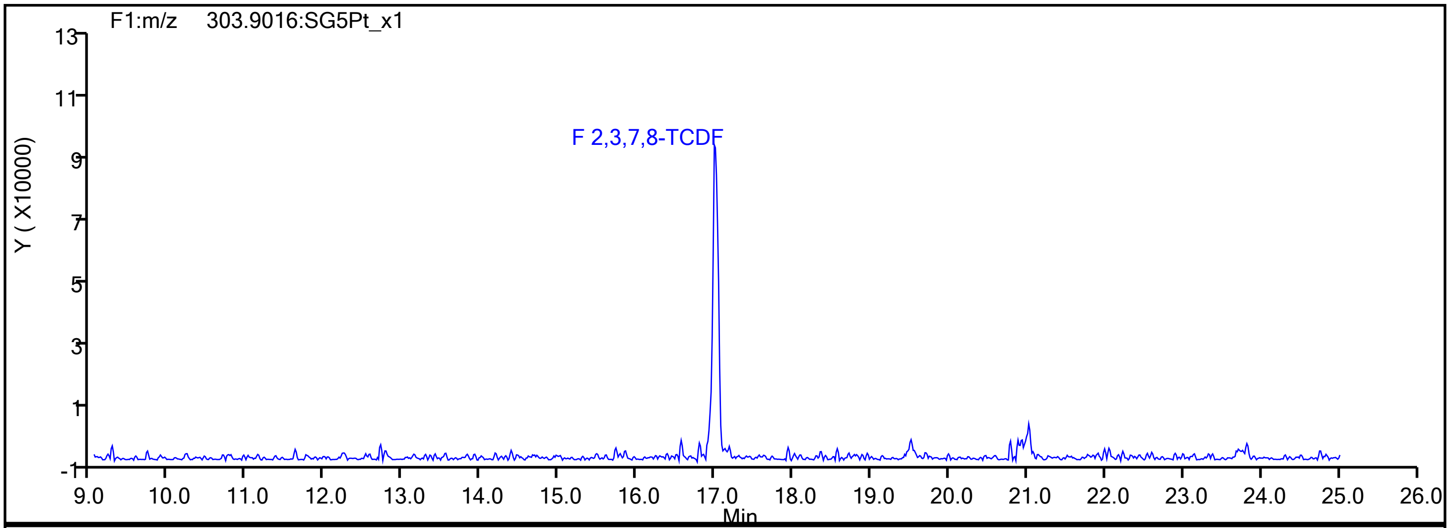

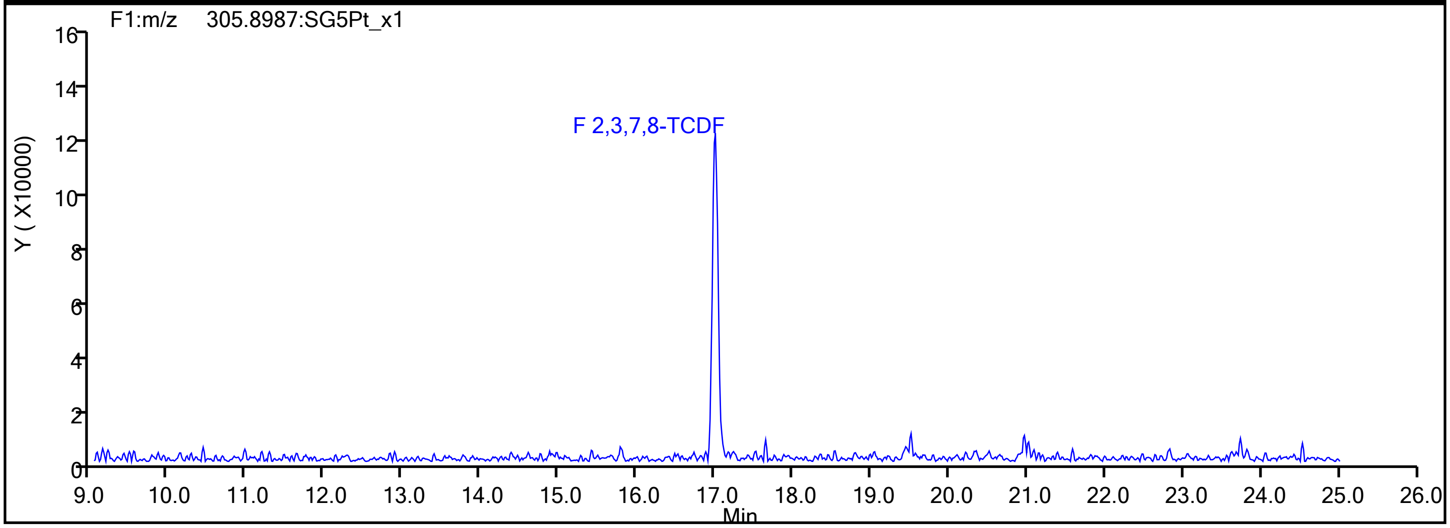

TCDF Interference Mass

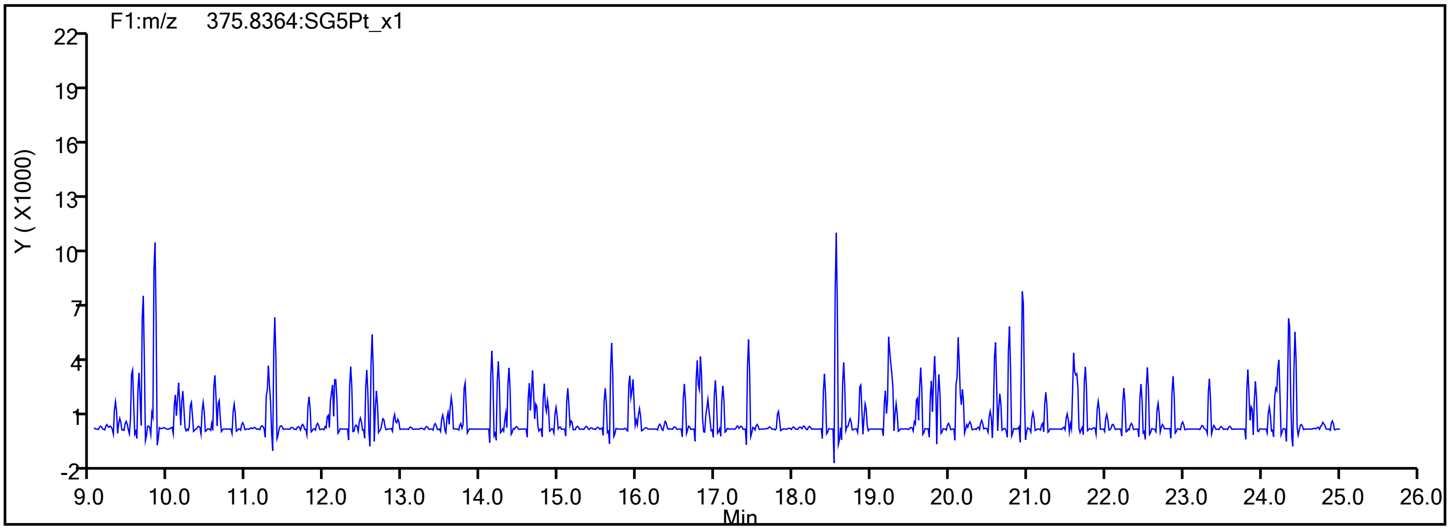

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d
Injection Date: 24-Jul-2020 23:50:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

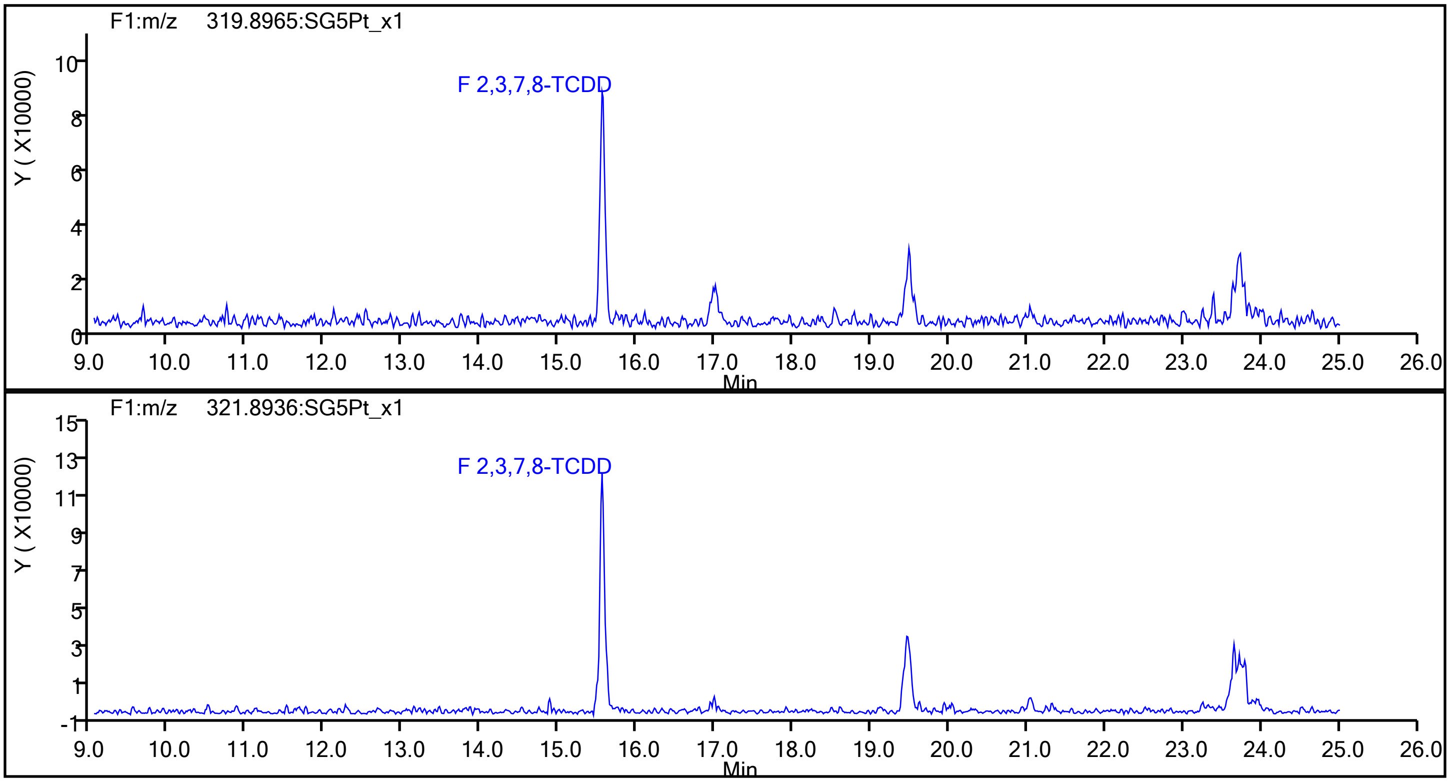

TCDD Standards

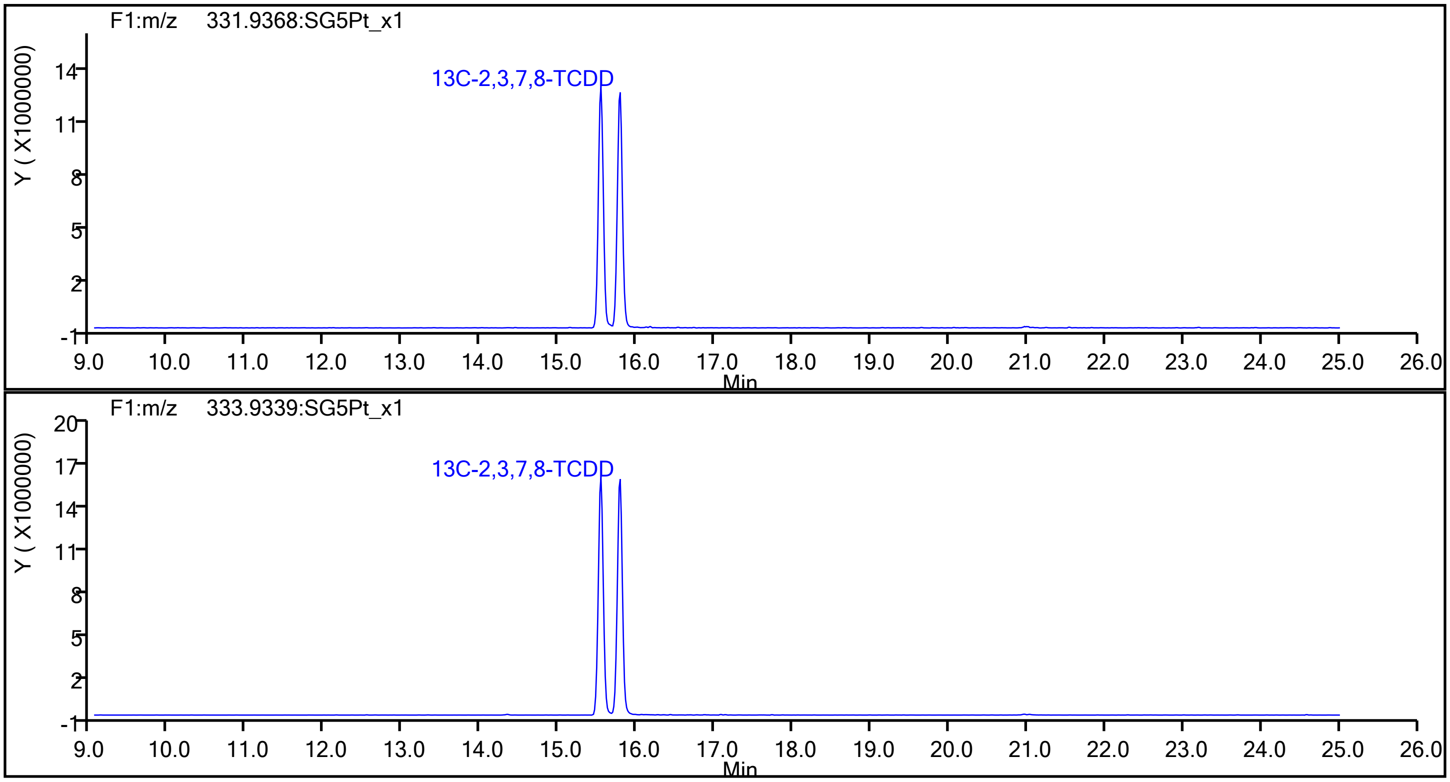

Report Date: 27-Jul-2020 12:42:51 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_003.d		
Injection Date:	24-Jul-2020 23:50:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

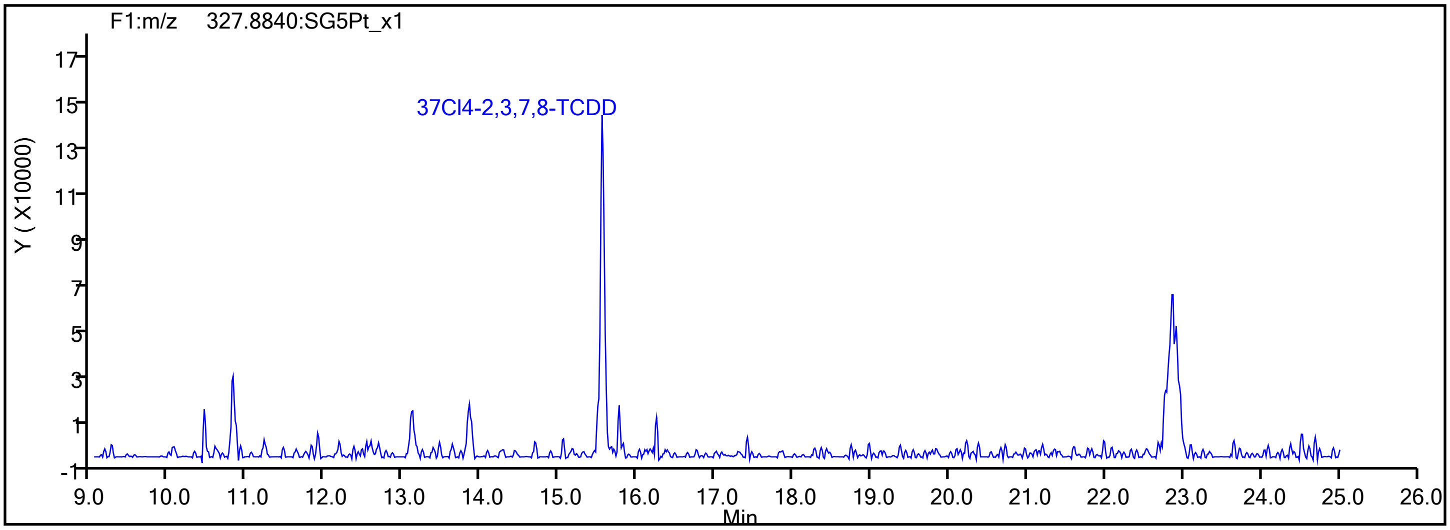

37Cl4-TCDD Standards

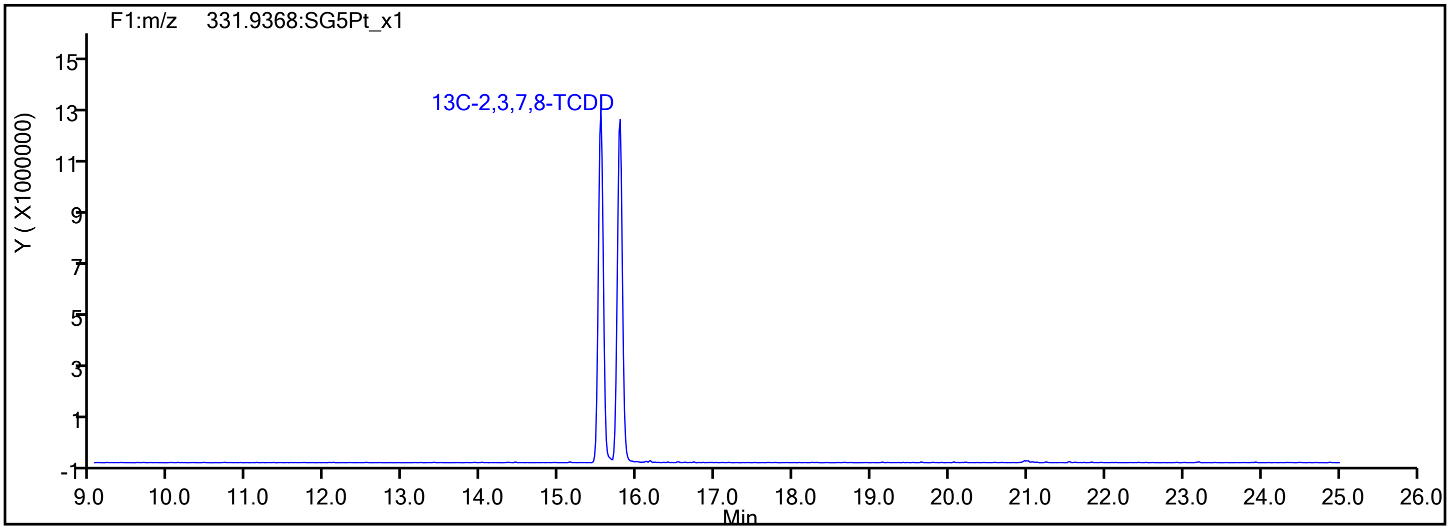

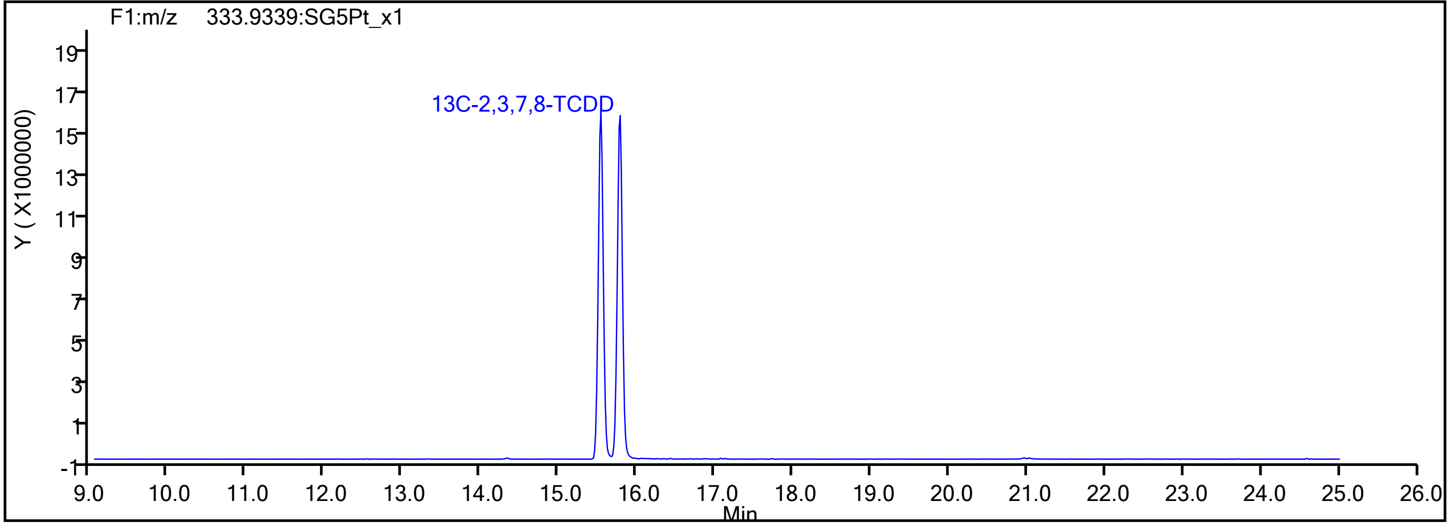

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Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

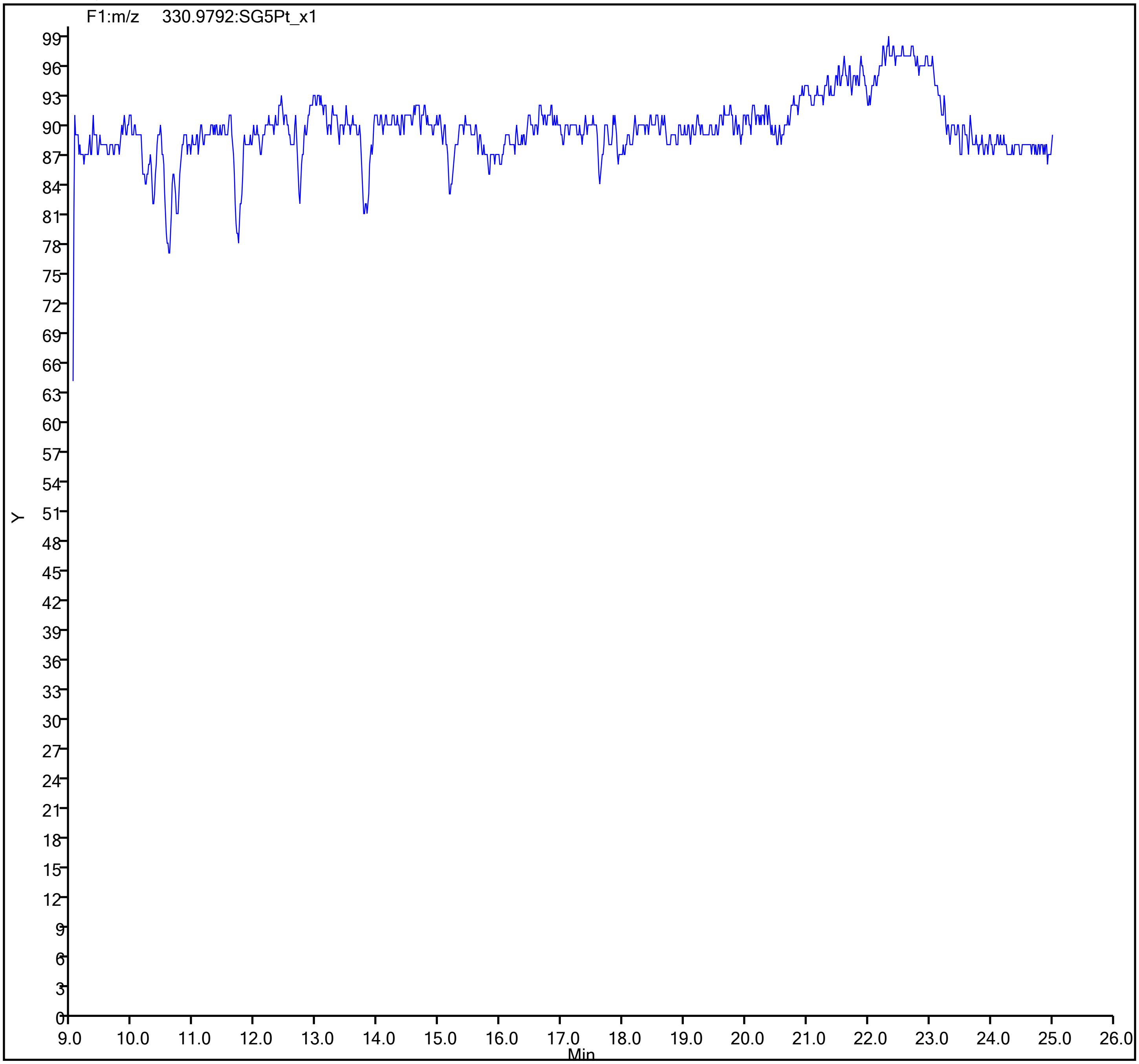

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	25-Jul-2020 00:28:40	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:53	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.790	129466753	0.85	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.997	201961331	0.81	1.5708	99.3	99.3	0.1770	0.1770	99.31	
2,3,7,8-TCDF	16.997	3991633	0.80	0.9943	1.988	1.988	0.0168	0.0168	99.39	
D 13C-2,3,7,8-TCDD	15.543	124829346	0.82	0.9834	98.1	98.1	0.1599	0.1599	98.05	
2,3,7,8-TCDD	15.557	3155522	0.79	1.2822	1.971	1.971	0.0372	0.0372	98.57	
$ 37Cl4-2,3,7,8-TCDD	15.557	2433901		0.9945	1.890	1.890	0.0196	0.0196	94.52	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 25-Jul-2020 00:28:40 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00027
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:53 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:47

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.790	15.780	1		59389672	12905063	12239	30597	1054		
333.9339	15.790	15.780	1		70077081	15112774	5386	13465	2806	0.85(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.997	16.985	1	1.076	90110487	17169484	17895	44737	959		
317.9389	16.997	16.985	1	1.076	111850844	20861060	13262	33155	1573	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.000	1775896	305918	1010	2525	303		
305.8987	17.011	17.001	1	1.001	2215737	427761	1537	3842	278	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.984	56414576	12394473	12239	30597	1013		
333.9339	15.543	15.542	0	0.984	68414770	14800852	5386	13465	2748	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.557	15.555	0	1.001	1394607	268016	3445	8612	78		
321.8936	15.570	15.555	1	1.002	1760915	369892	1745	4362	212	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.557	15.555	0	0.985	2433901	533305	2189	5472	244		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

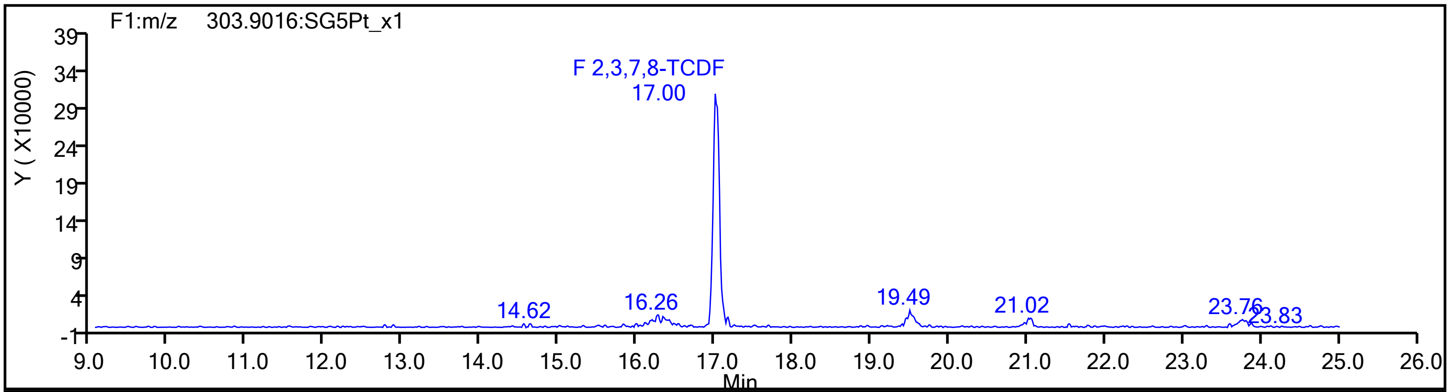

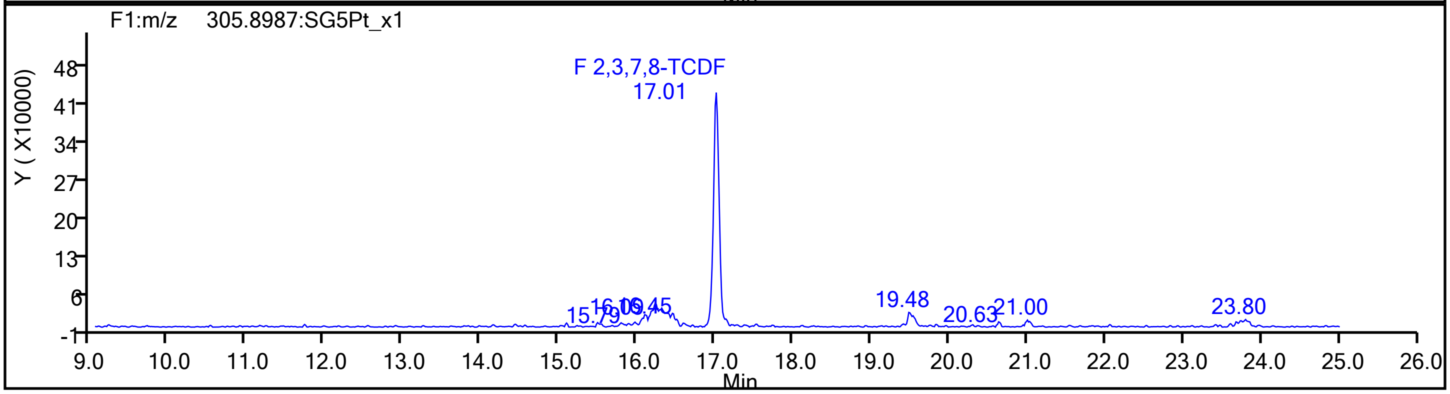

TCDF Standards

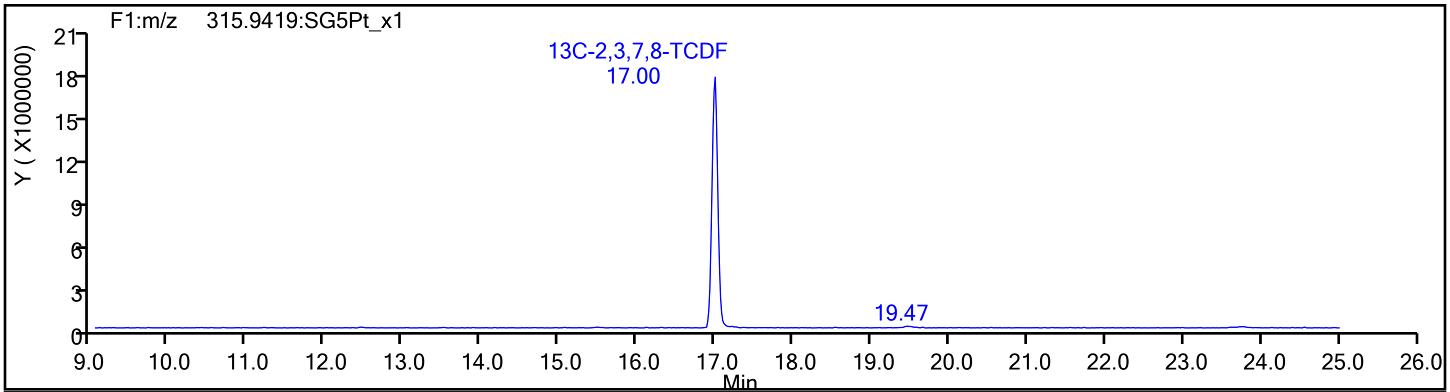

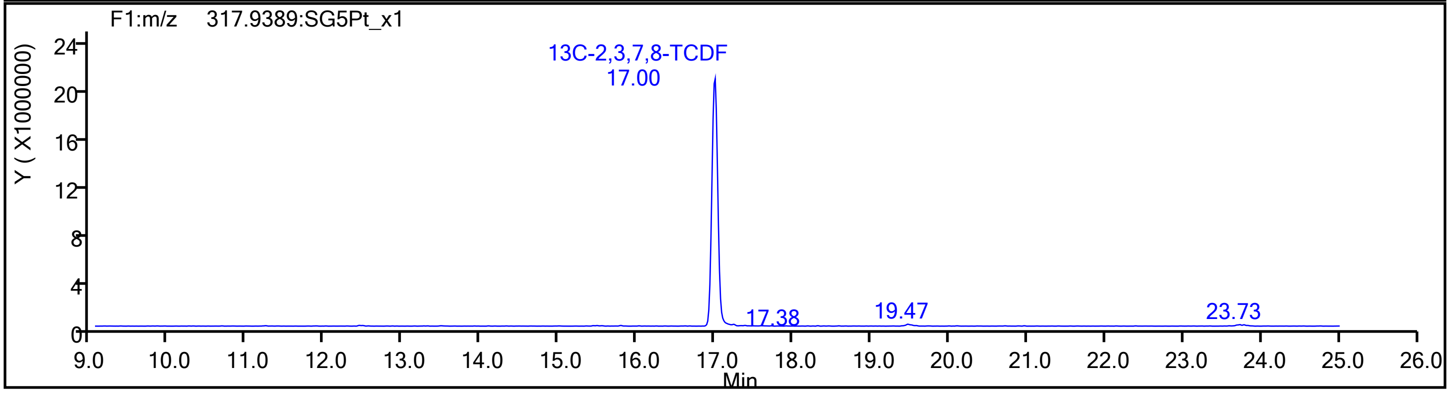

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

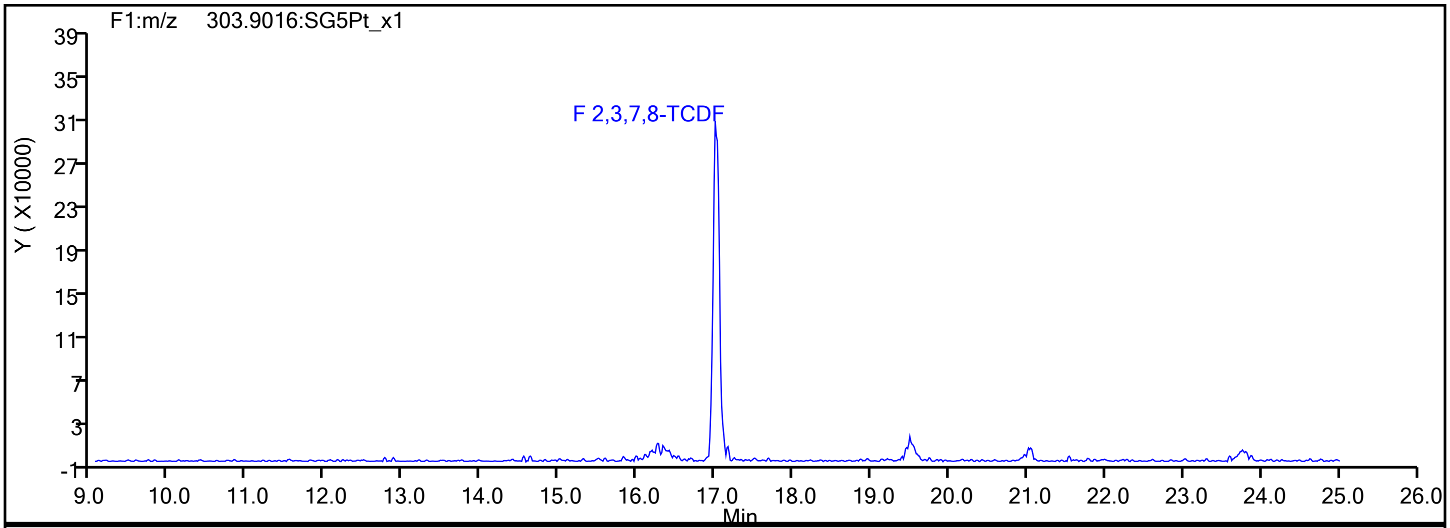

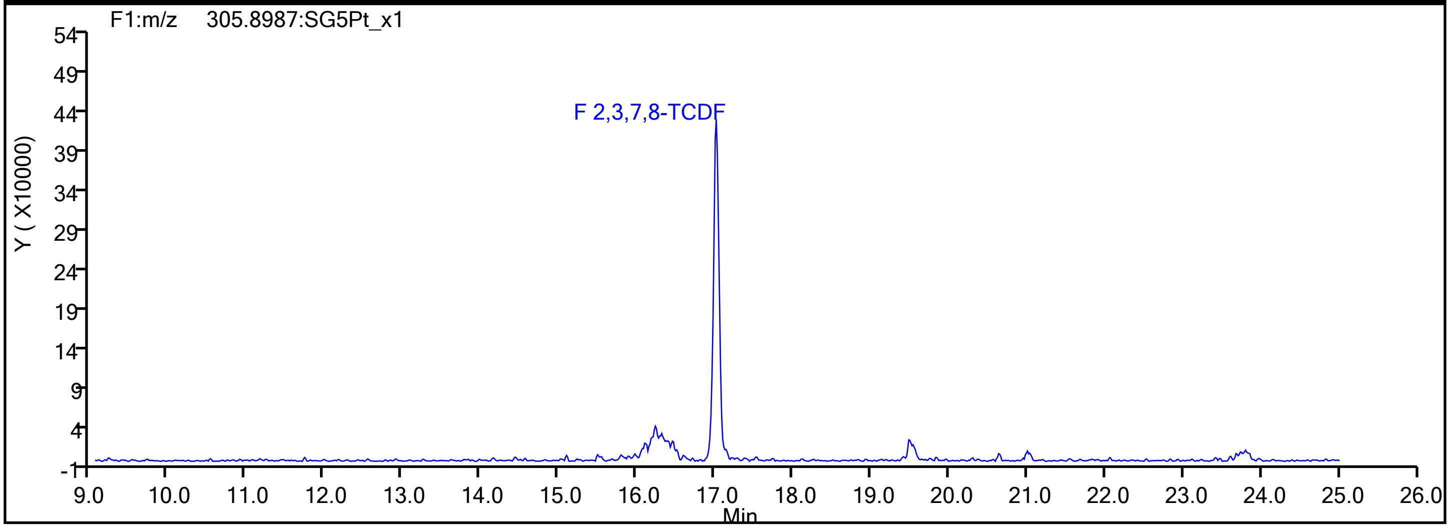

TCDF Interference Mass

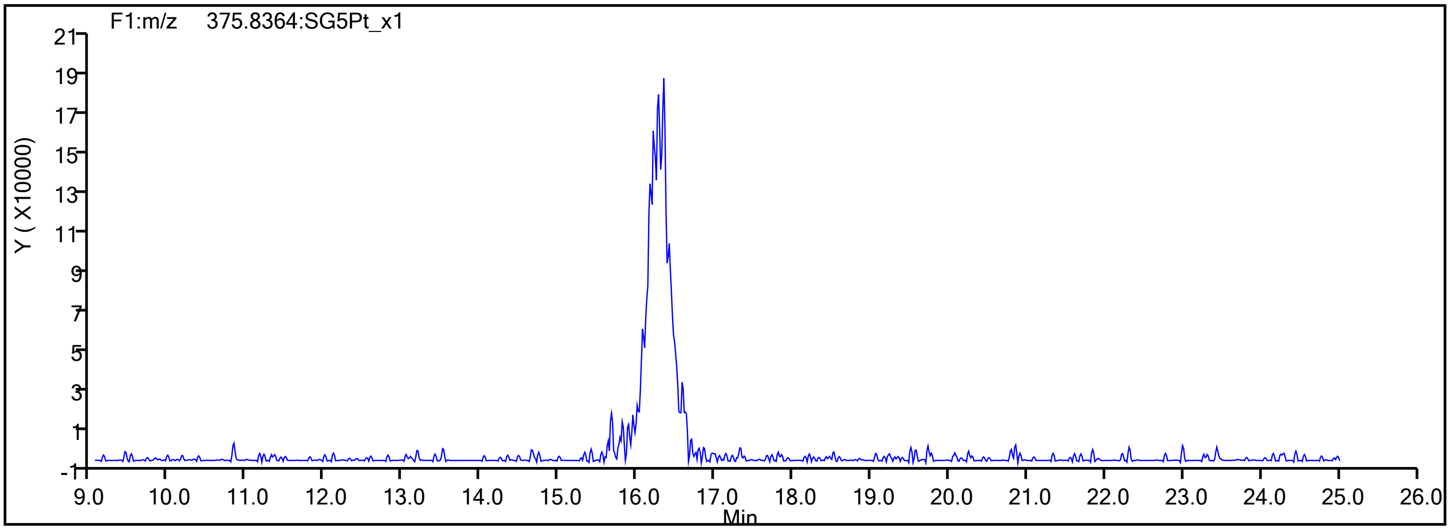

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

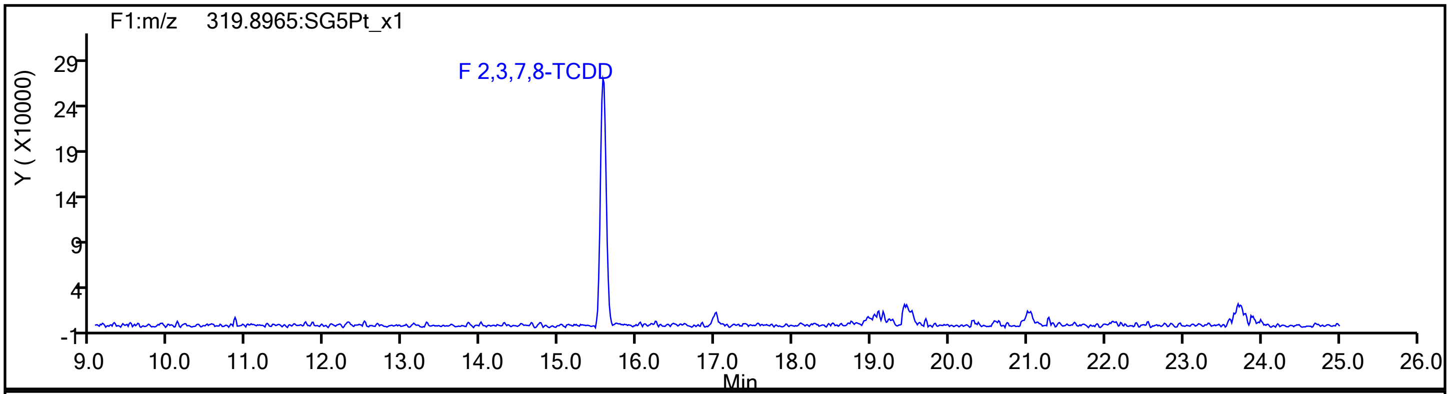

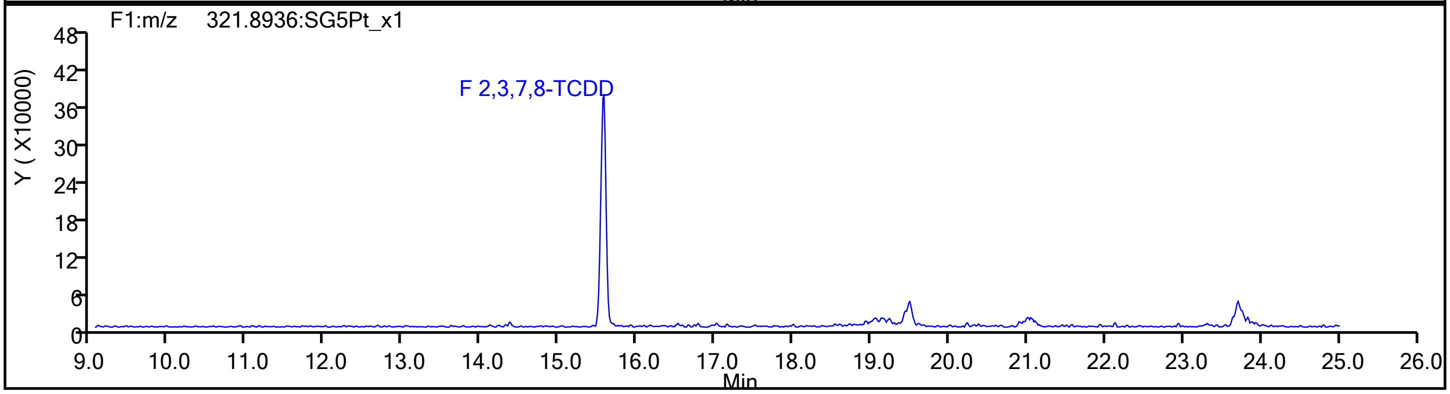

TCDD Standards

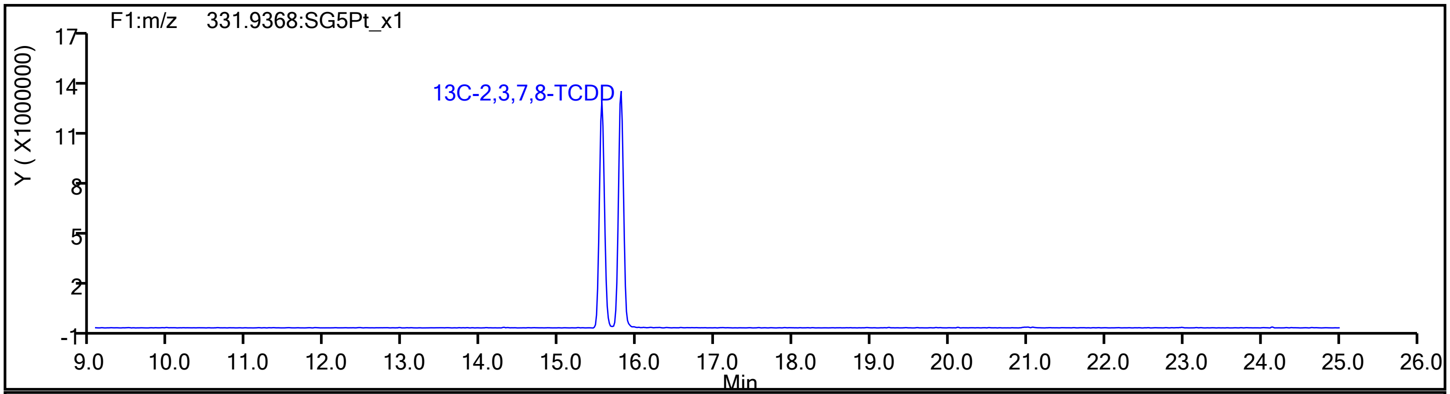

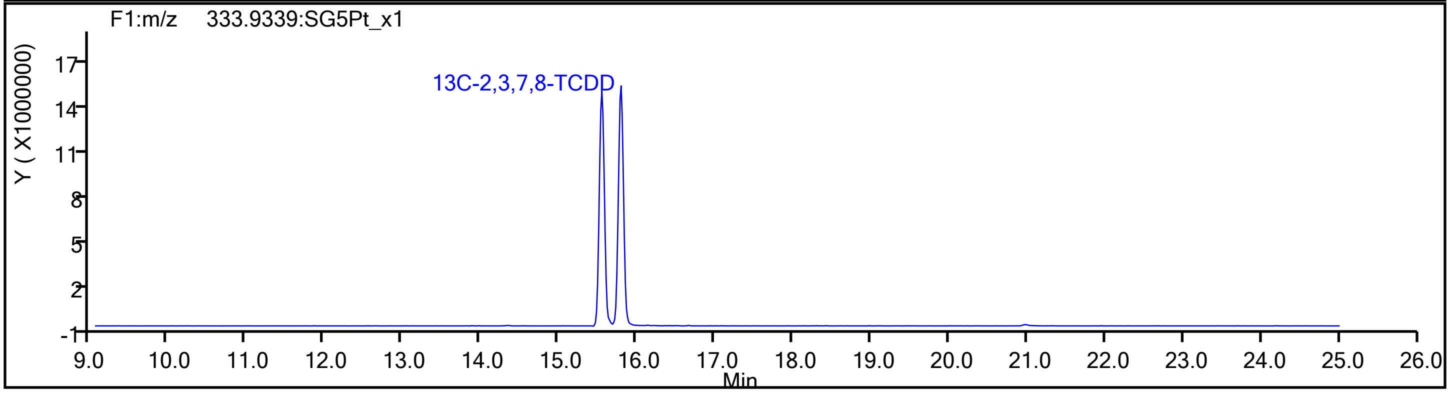

Report Date: 27-Jul-2020 12:42:55 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

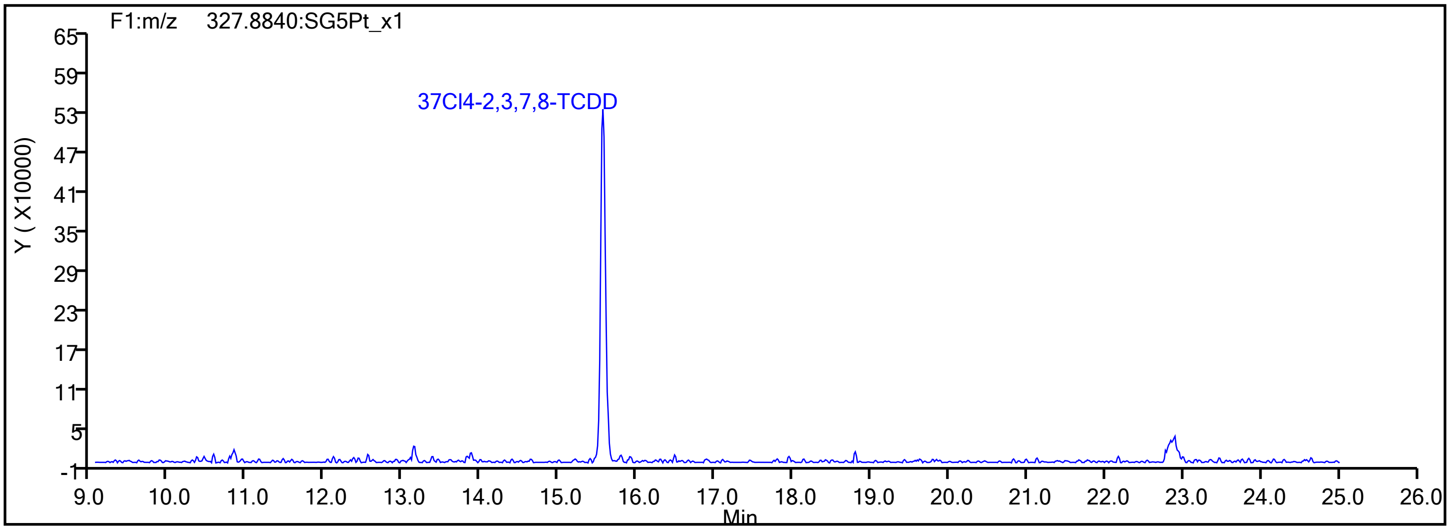

37Cl4-TCDD Standards

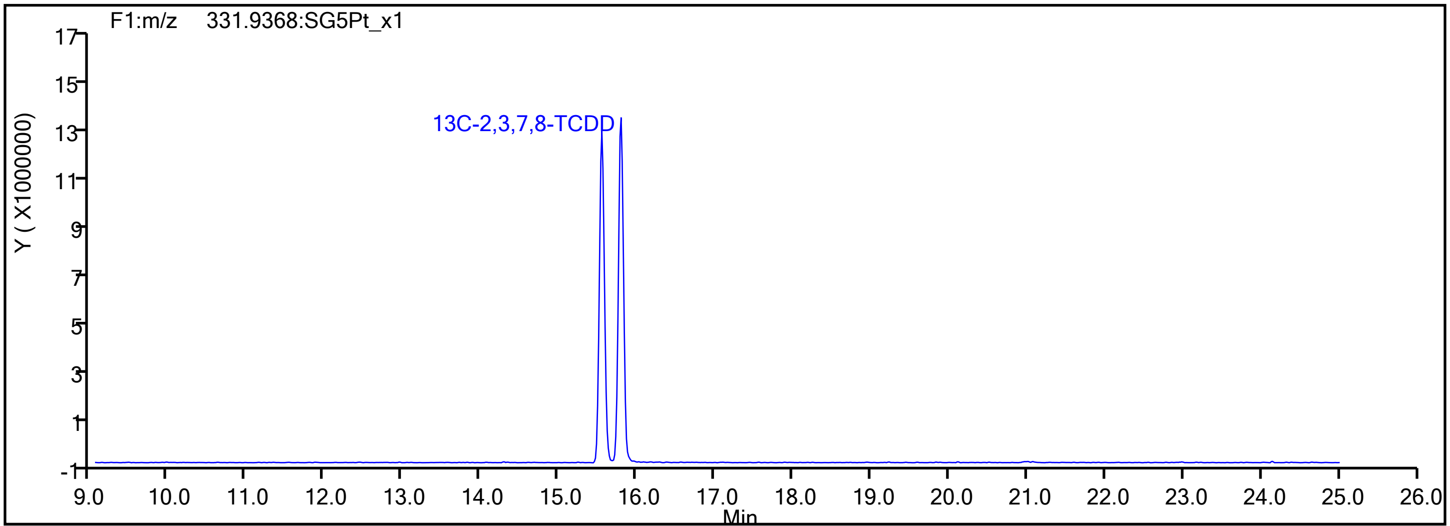

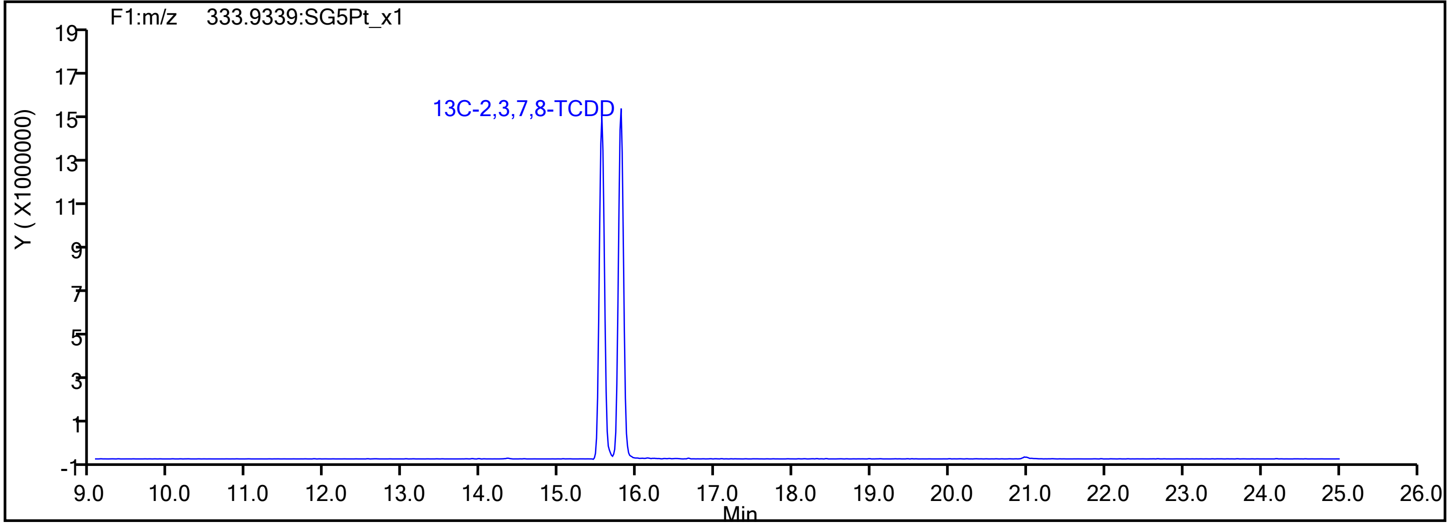

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_004.d		
Injection Date:	25-Jul-2020 00:28:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

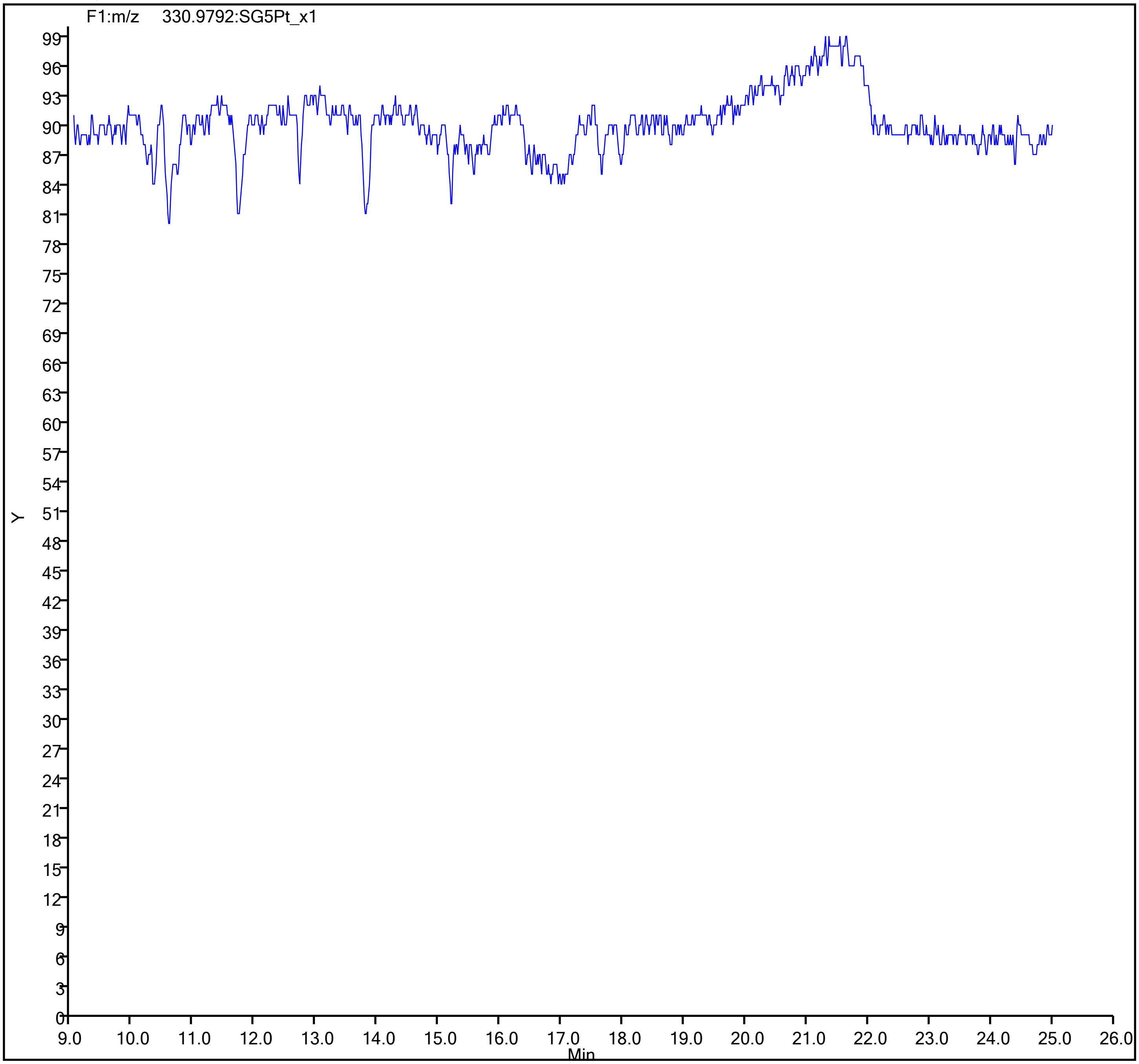

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.776	56680761	0.79	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.983	86689661	0.78	1.5708	97.4	97.4	0.3230	0.3230	97.37	
2,3,7,8-TCDF	16.997	8037628	0.79	0.9943	9.325	9.325	0.0611	0.0611	93.25	
D 13C-2,3,7,8-TCDD	15.543	56642851	0.80	0.9834	101.6	101.6	0.3180	0.3180	102	
2,3,7,8-TCDD	15.556	6496502	0.76	1.2822	8.945	8.945	0.0800	0.0800	89.45	
$ 37Cl4-2,3,7,8-TCDD	15.556	5699752		0.9945	10.1	10.1	0.0603	0.0603	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 25-Jul-2020 01:07:02 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00094
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:57 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:57

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.776	15.780	0		24976261	5434346	9269	23172	586		
333.9339	15.776	15.780	0		31704500	6945501	6218	15545	1117	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.983	16.985	0	1.077	38105233	7234495	13354	33385	542		
317.9389	16.983	16.985	0	1.077	48584428	8888469	11767	29417	755	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.997	17.001	0	1.001	3559032	660757	1507	3767	438		
305.8987	16.997	17.001	0	1.001	4478596	835746	2412	6030	346	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.543	15.542	0	0.985	25222395	5540322	9269	23172	598		
333.9339	15.543	15.542	0	0.985	31420456	6732855	6218	15545	1083	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.556	15.555	0	1.001	2806811	616932	2699	6747	229		
321.8936	15.556	15.555	0	1.001	3689691	765743	2335	5837	328	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.556	15.555	0	0.986	5699752	1215479	2969	7422	409		

Reagents:

HRDXNL4_00094 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d
Injection Date: 25-Jul-2020 01:07:02
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

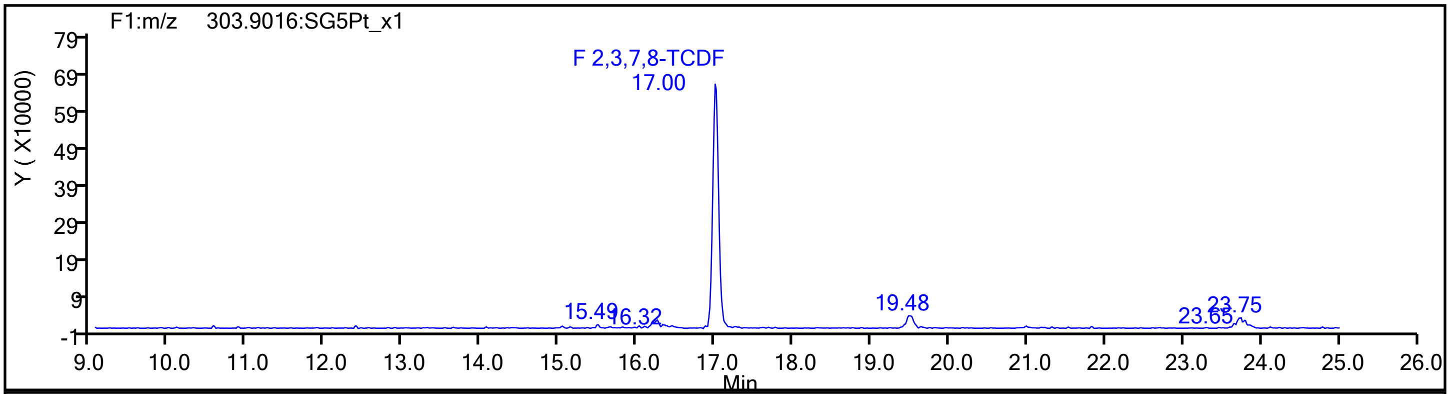

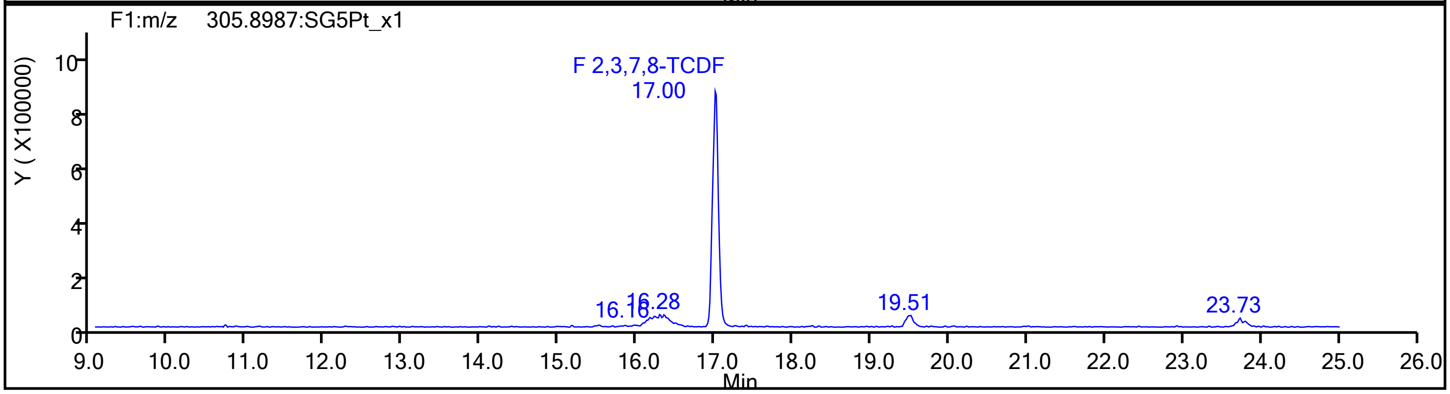

TCDF Standards

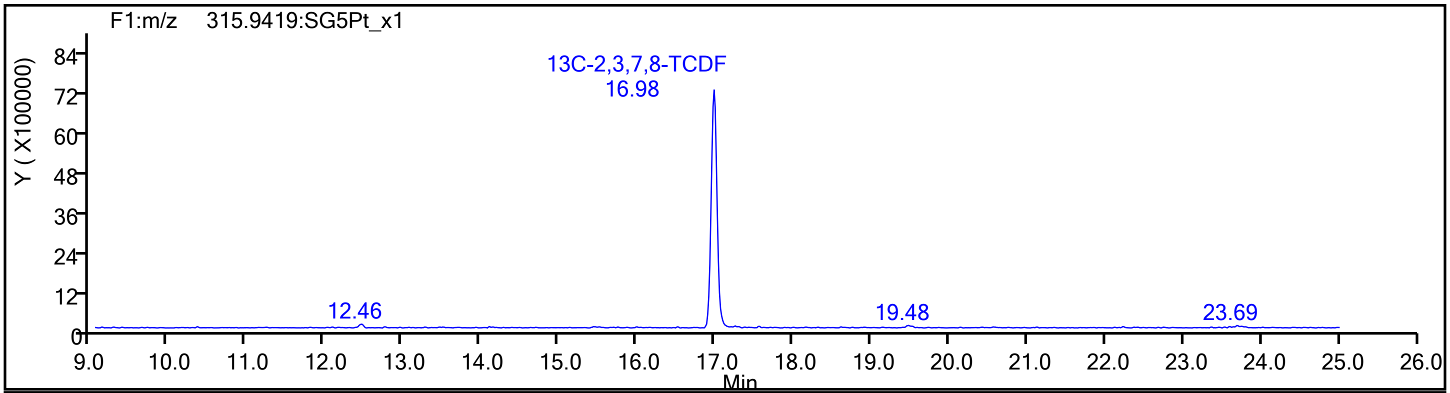

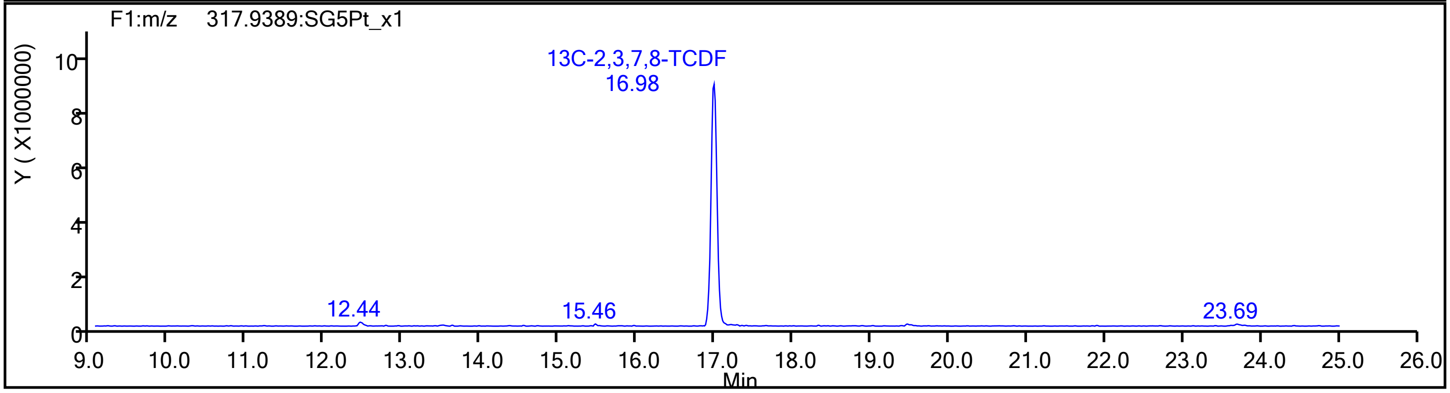

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

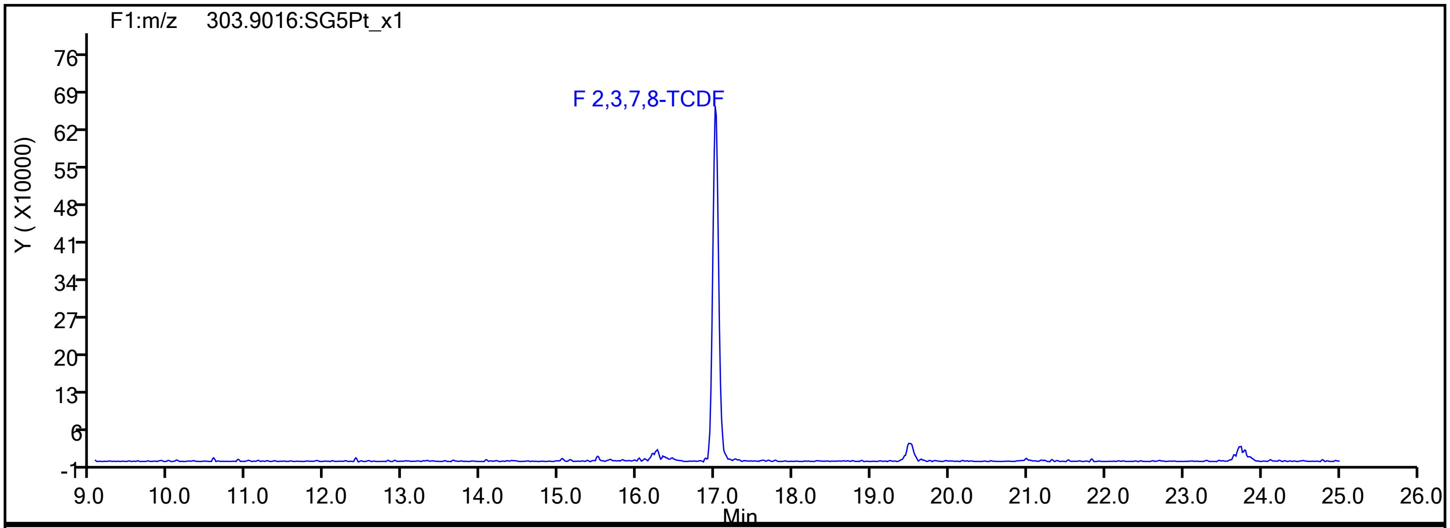

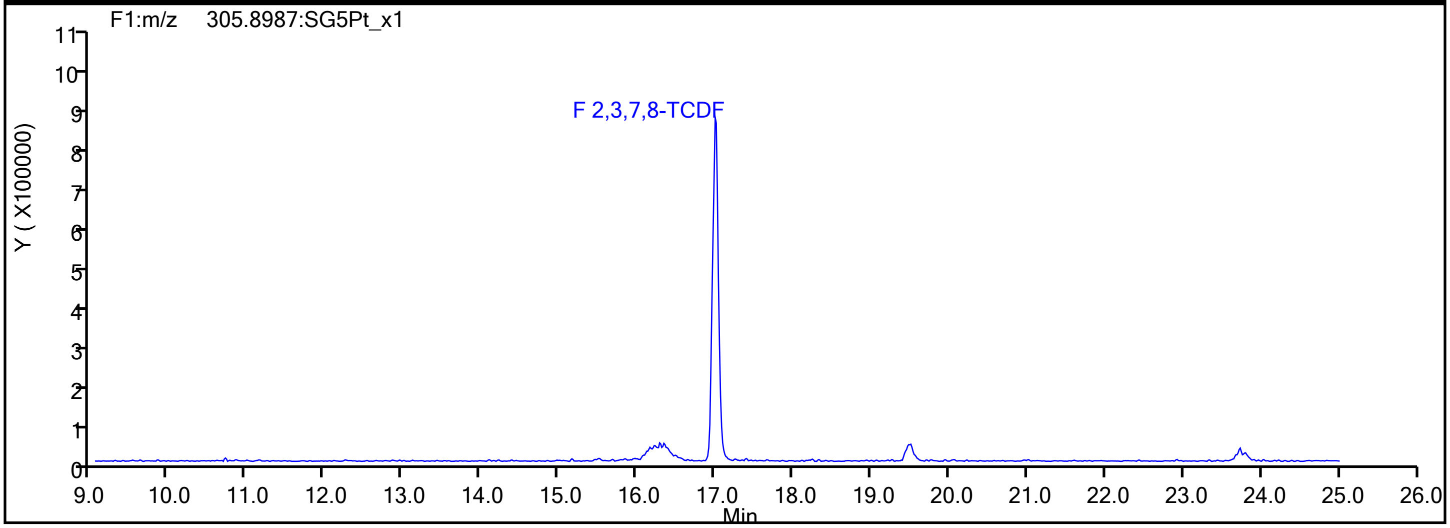

TCDF Interference Mass

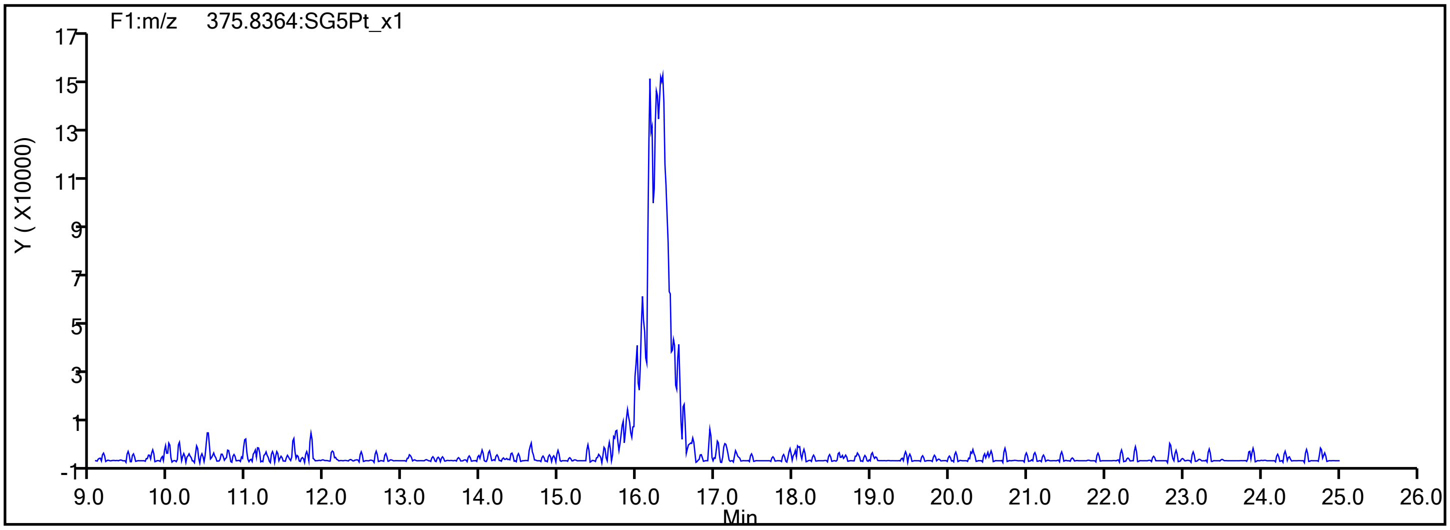

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

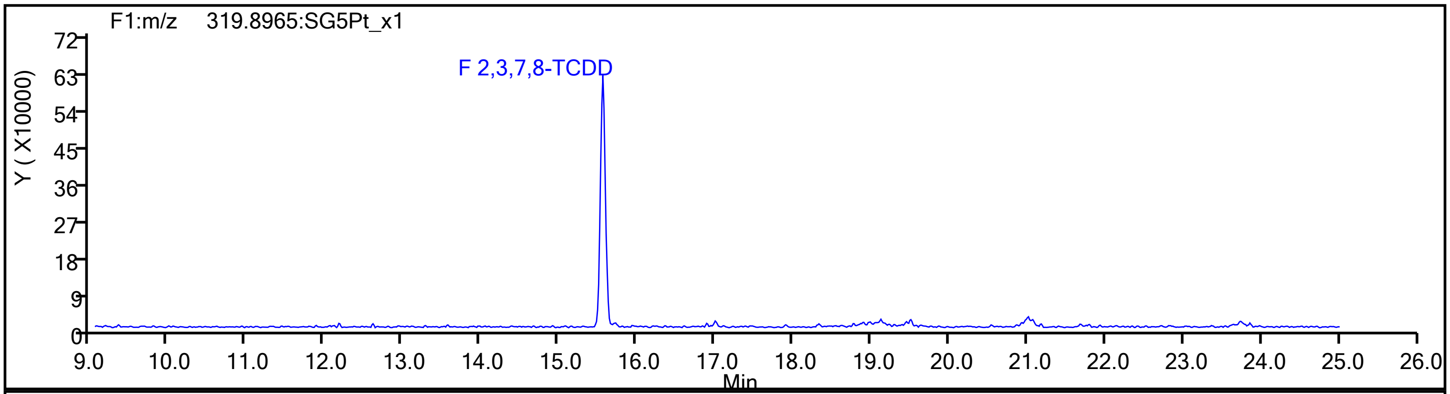

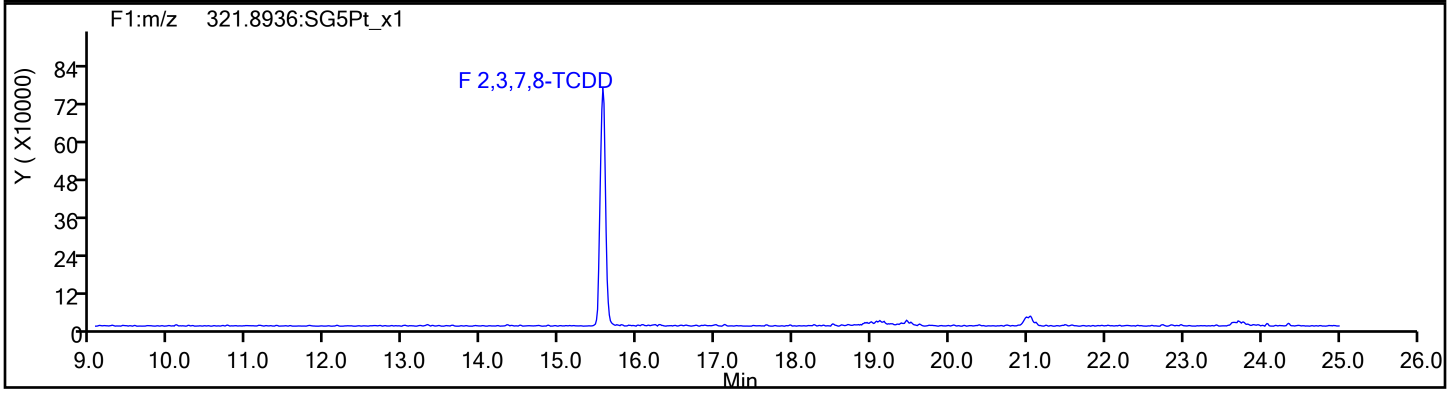

TCDD Standards

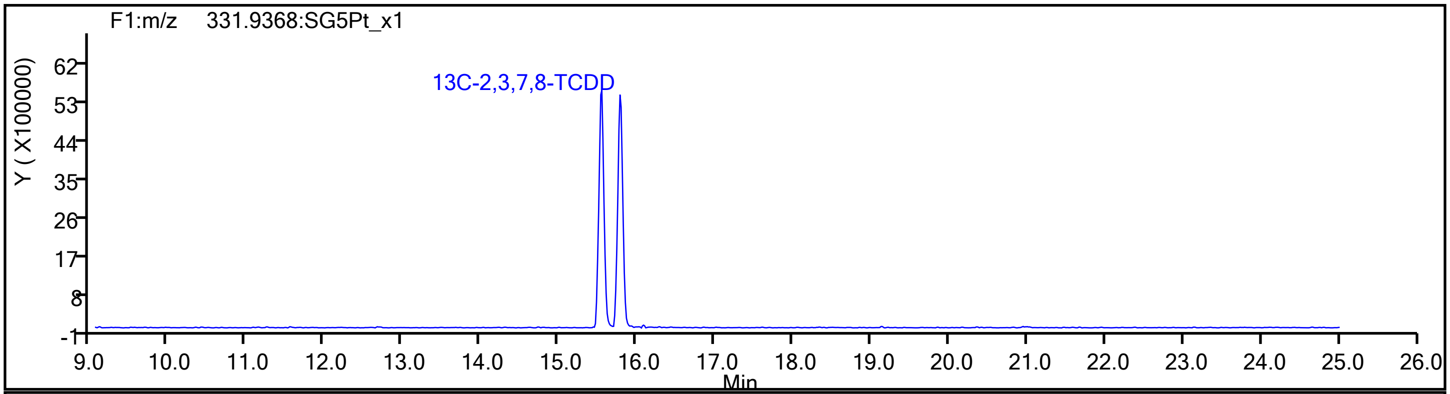

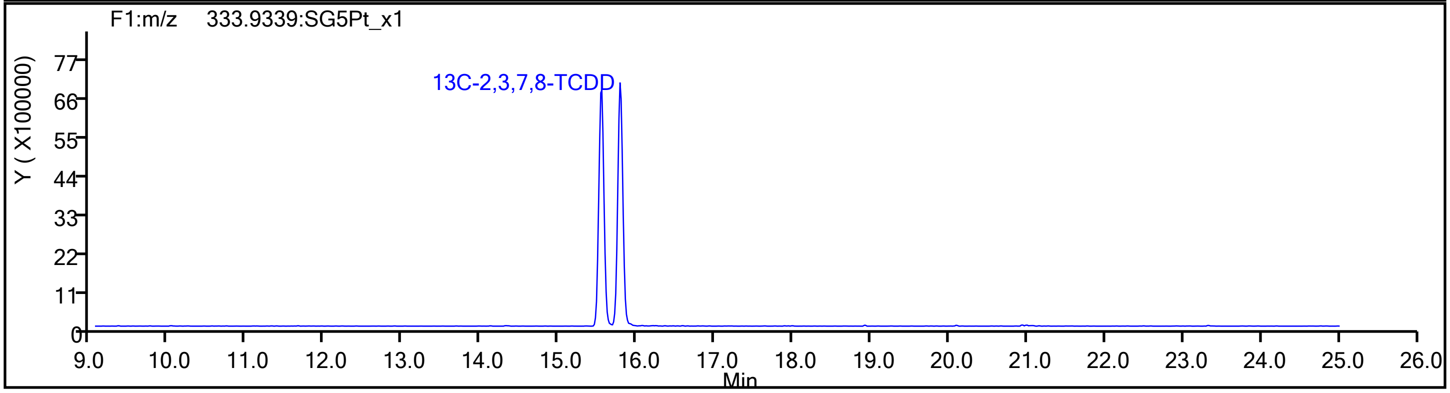

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

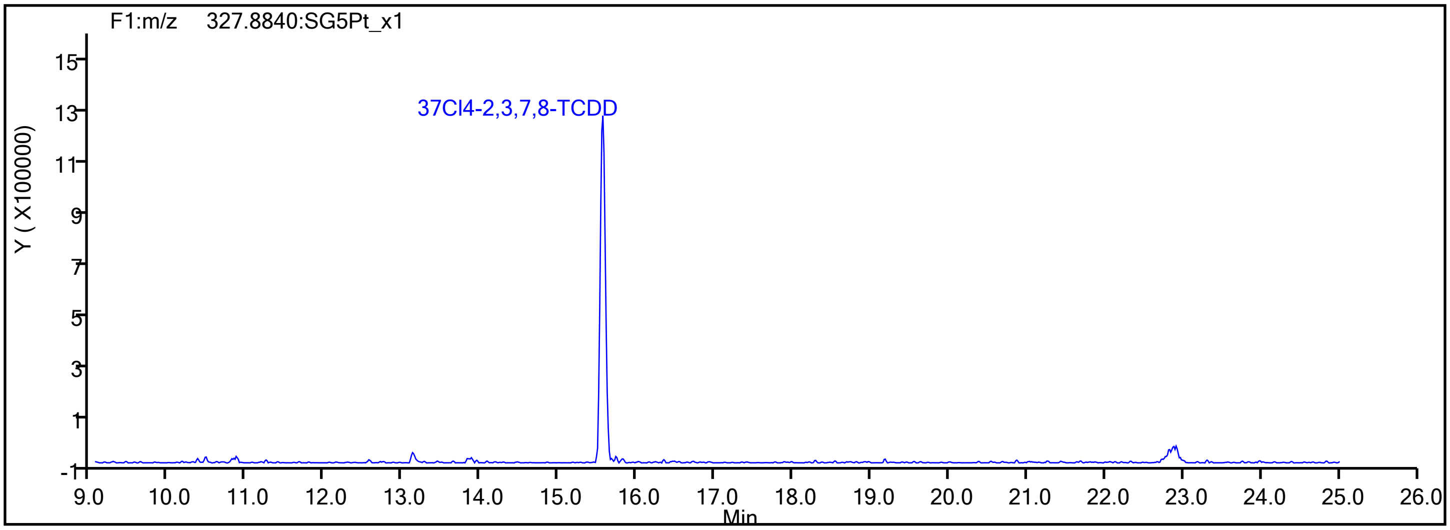

37Cl4-TCDD Standards

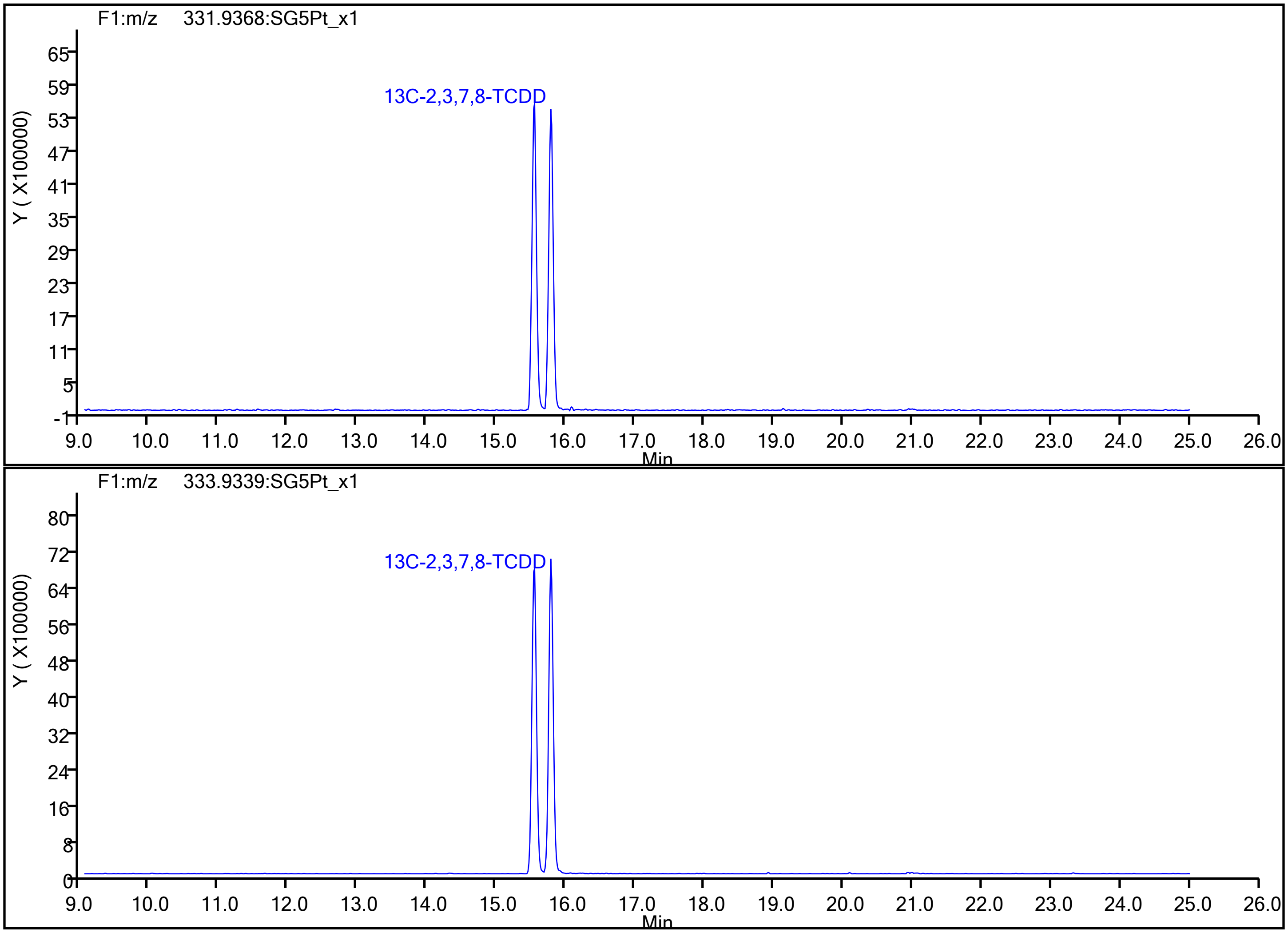

Report Date: 27-Jul-2020 12:43:00 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_005.d		
Injection Date:	25-Jul-2020 01:07:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

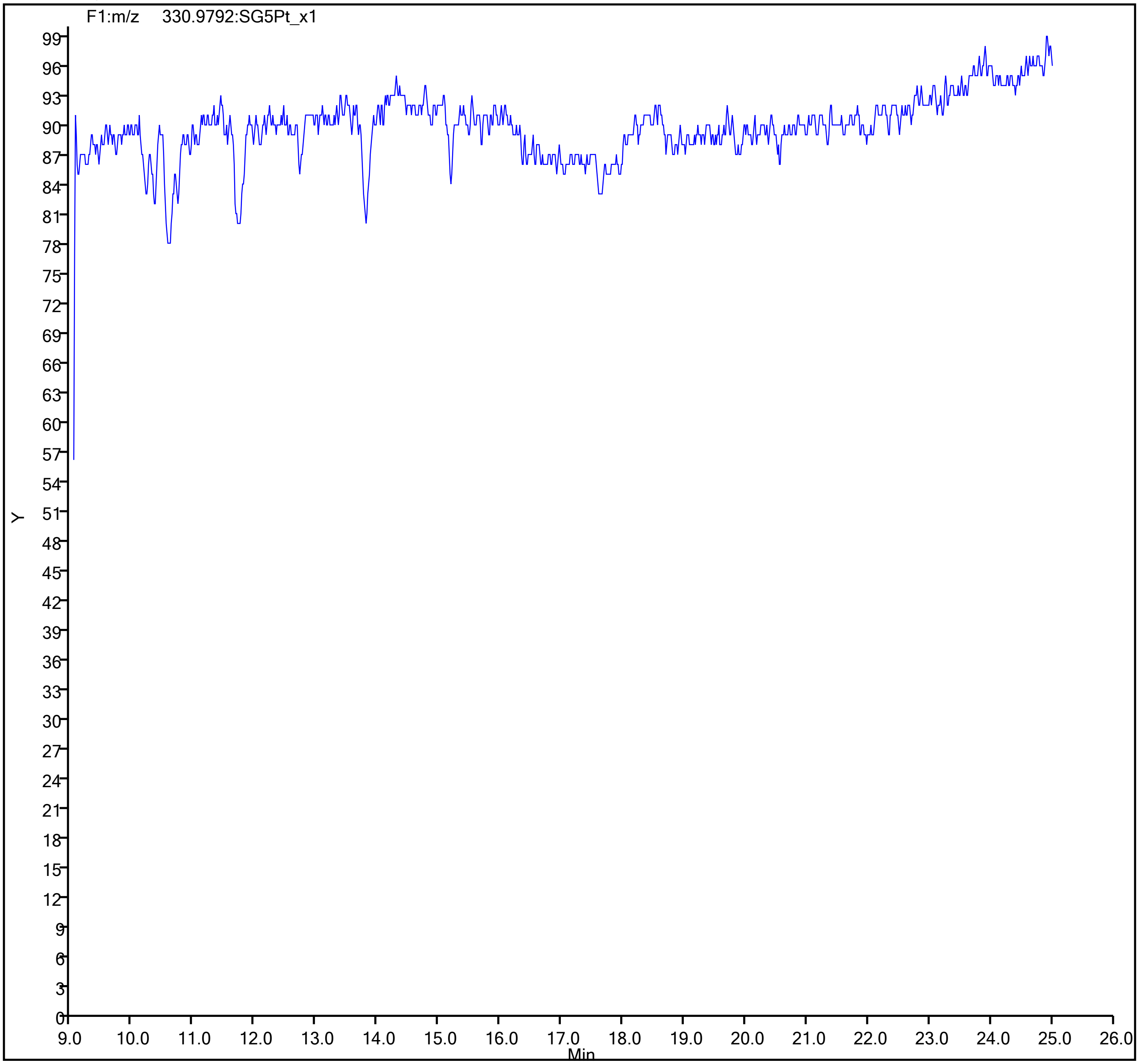

Report Date: 27-Jul-2020 12:43:05 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				

First Level Reviewer: shardaa Date: 27-Jul-2020 12:34:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	133080889	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	206071781	0.77	1.5708	98.6	98.6	0.1655	0.1655	98.58	
2,3,7,8-TCDF	17.014	80467943	0.78	0.9943	39.3	39.3	0.0357	0.0357	98.18	
D 13C-2,3,7,8-TCDD	15.546	128468155	0.79	0.9834	98.2	98.2	0.1253	0.1253	98.17	
2,3,7,8-TCDD	15.560	62670373	0.78	1.2822	38.0	38.0	0.0511	0.0511	95.11	
$ 37Cl4-2,3,7,8-TCDD	15.560	54991386		0.9945	41.6	41.6	0.0621	0.0621	104	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	25-Jul-2020 01:45:24	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:03	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:34:06		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		59948252	12881413	8719	21797	1477		
333.9339	15.779	15.780	0		73132637	15354131	5201	13002	2952	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89907266	16551360	17219	43047	961		
317.9389	16.986	16.985	0	1.077	116164515	22427599	12140	30350	1847	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	35338718	6543287	2528	6320	2588		
305.8987	17.000	17.001	0	1.001	45129225	8342521	3005	7512	2776	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	56652608	12121441	8719	21797	1390		
333.9339	15.532	15.542	-1	0.984	71815547	15645361	5201	13002	3008	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	27442497	5988289	4011	10027	1493		
321.8936	15.560	15.555	0	1.001	35227876	7750443	3264	8160	2375	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	54991386	12213515	6976	17440	1751		

Reagents:

HRDXNL5_00030	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Injection Date: 25-Jul-2020 01:45:24
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

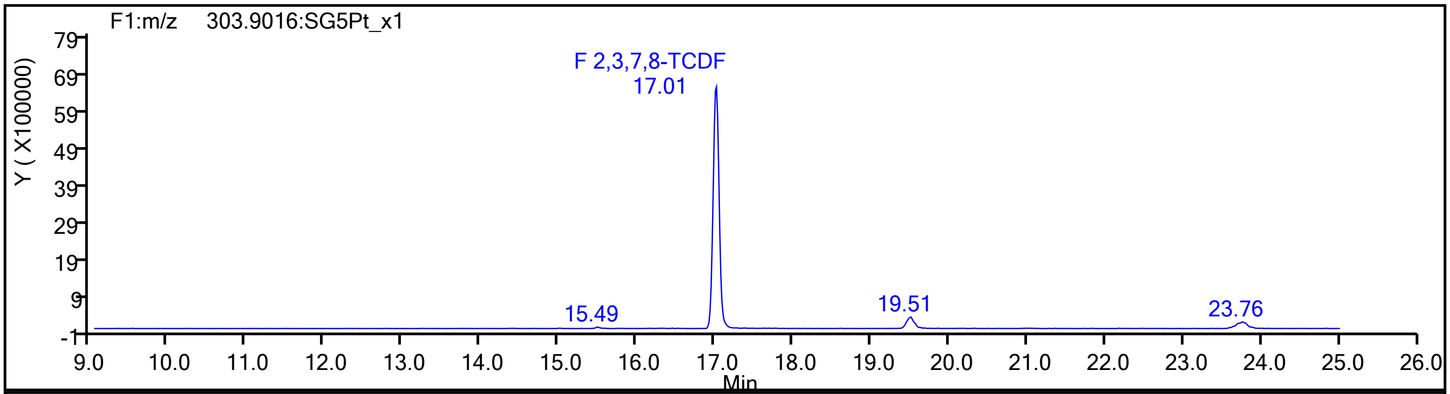

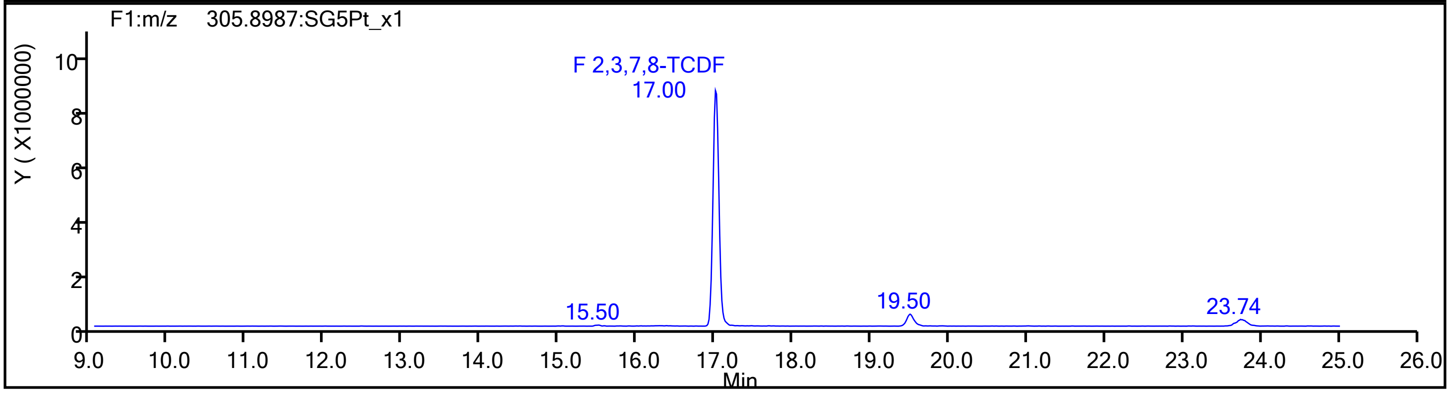

TCDF Standards

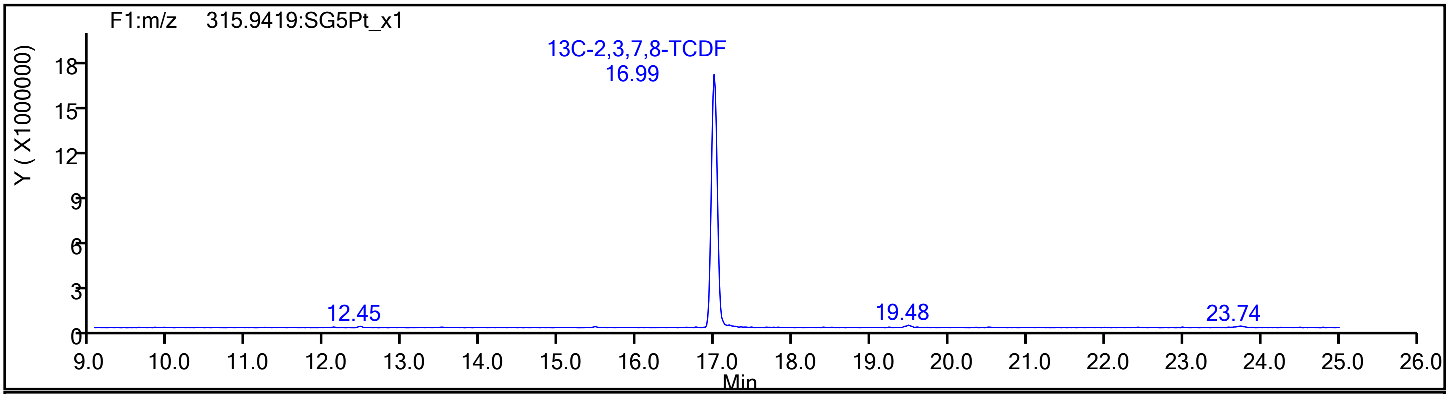

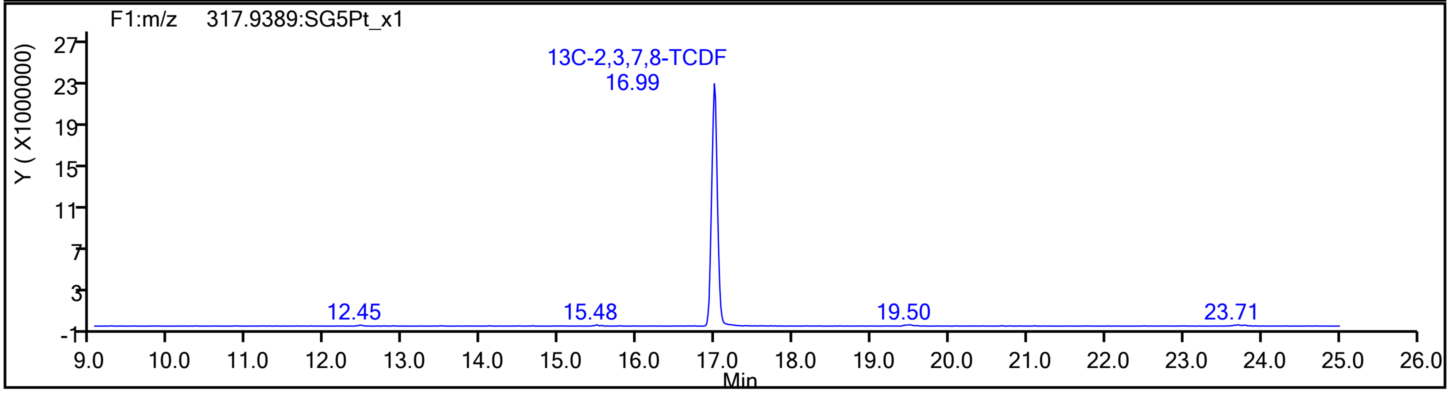

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

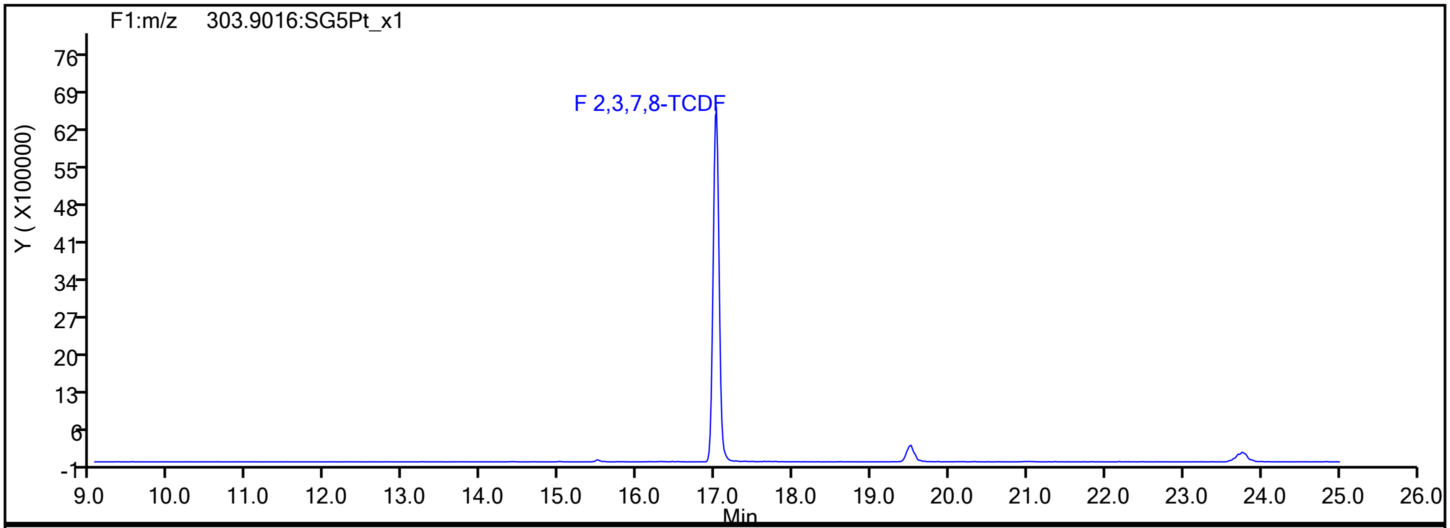

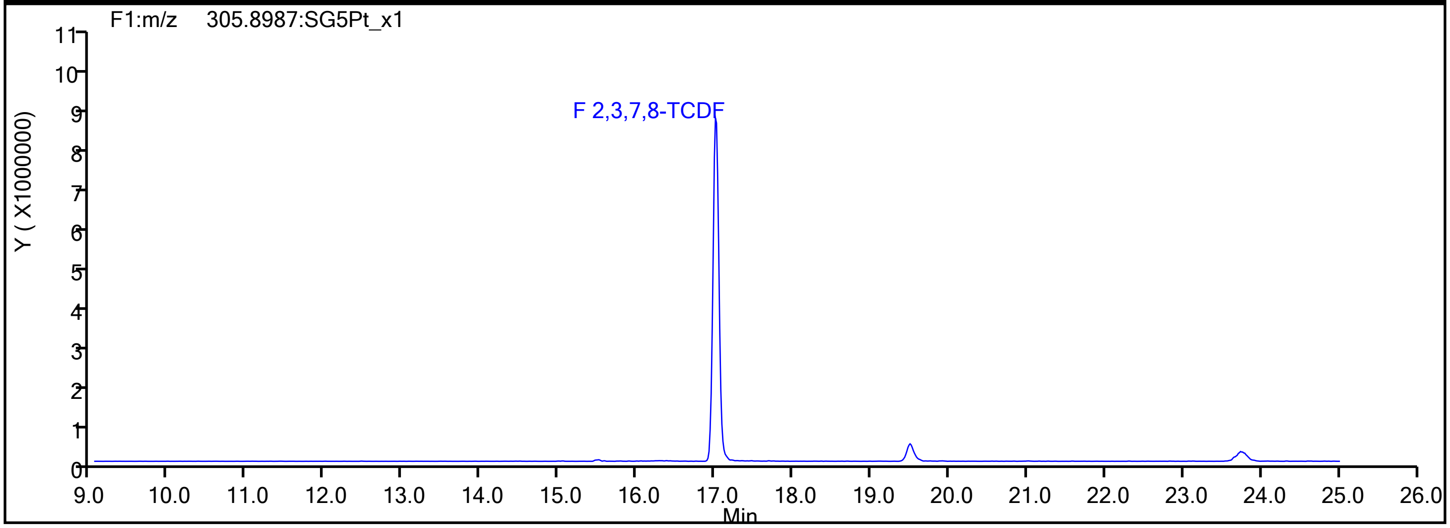

TCDF Interference Mass

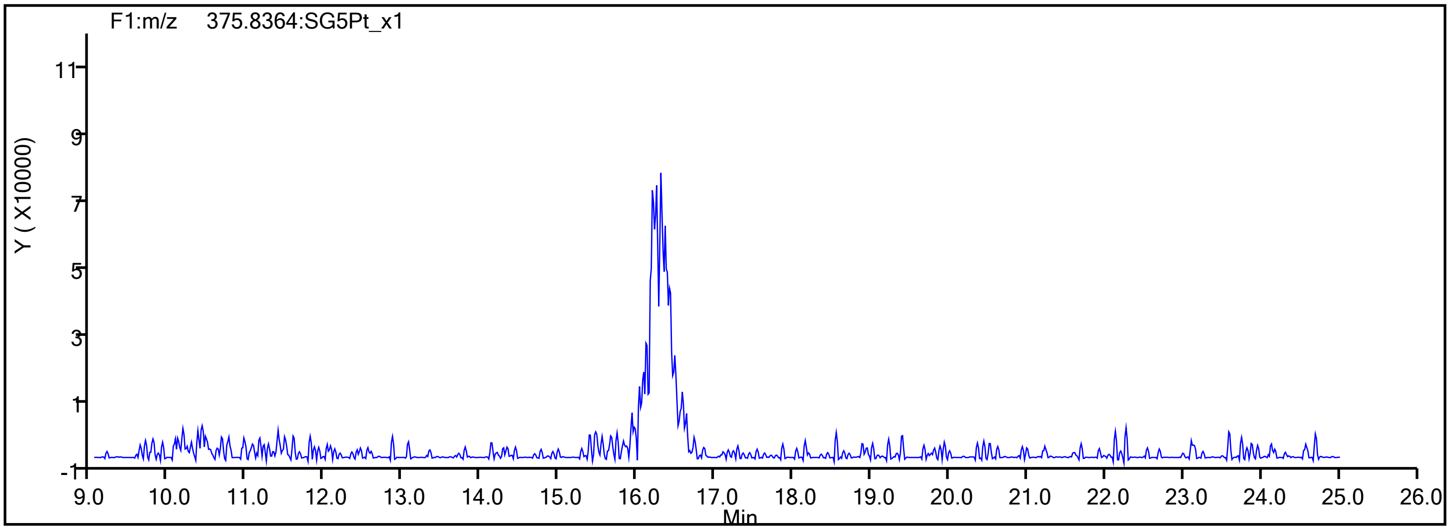

Report Date: 27-Jul-2020 12:43:06 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d		
Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

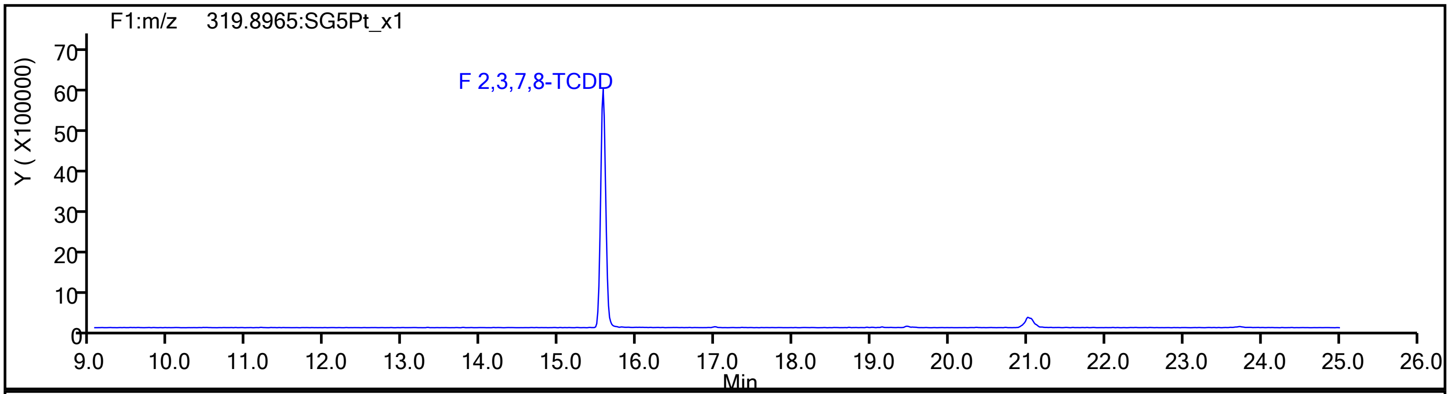

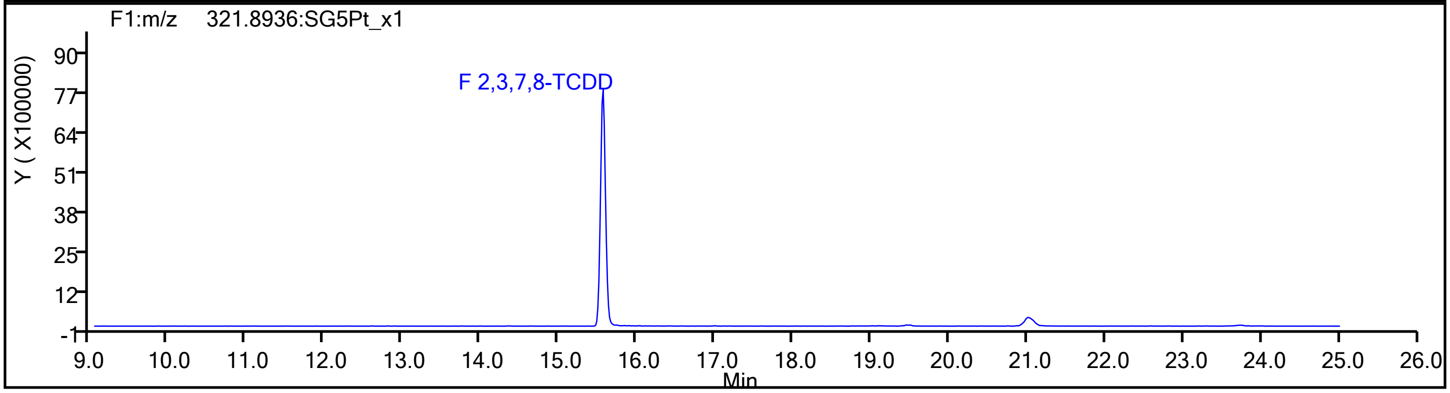

TCDD Standards

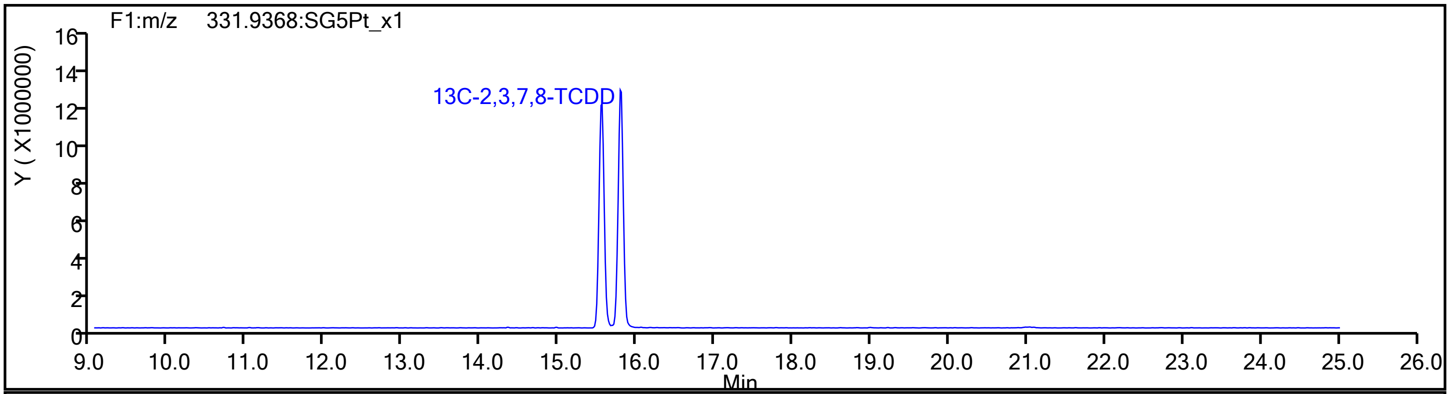

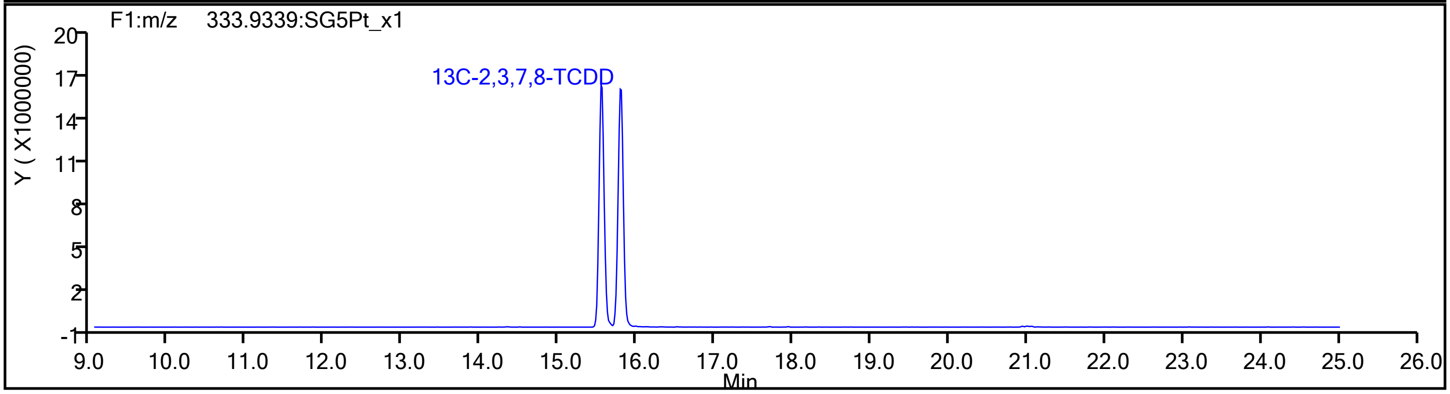

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d
Injection Date: 25-Jul-2020 01:45:24
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

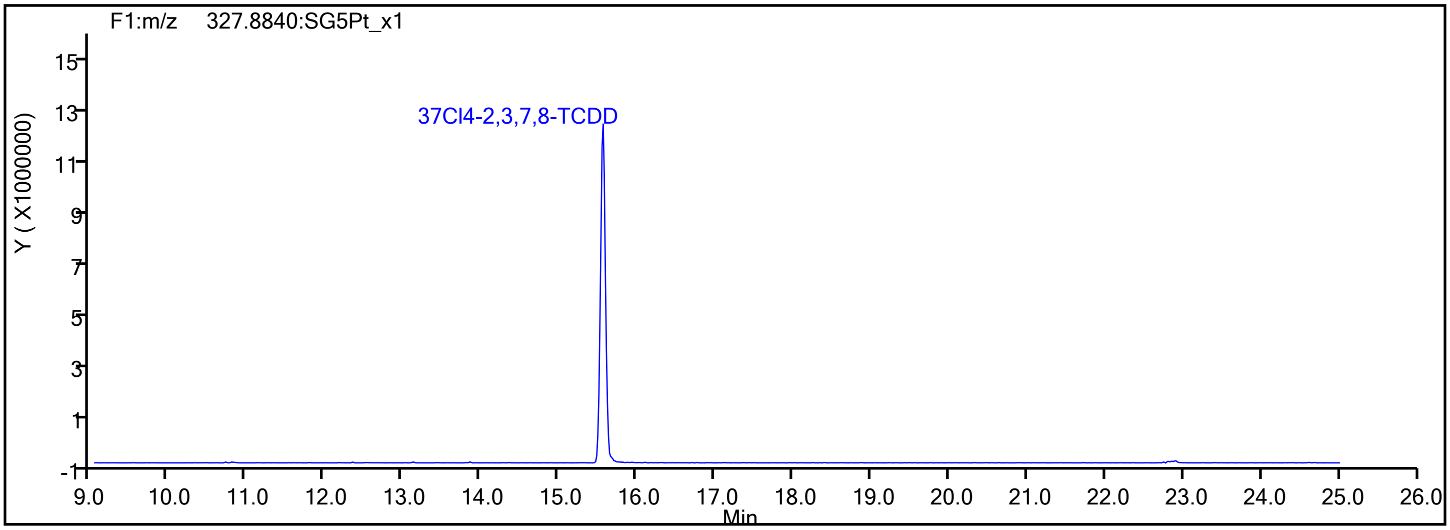

37Cl4-TCDD Standards

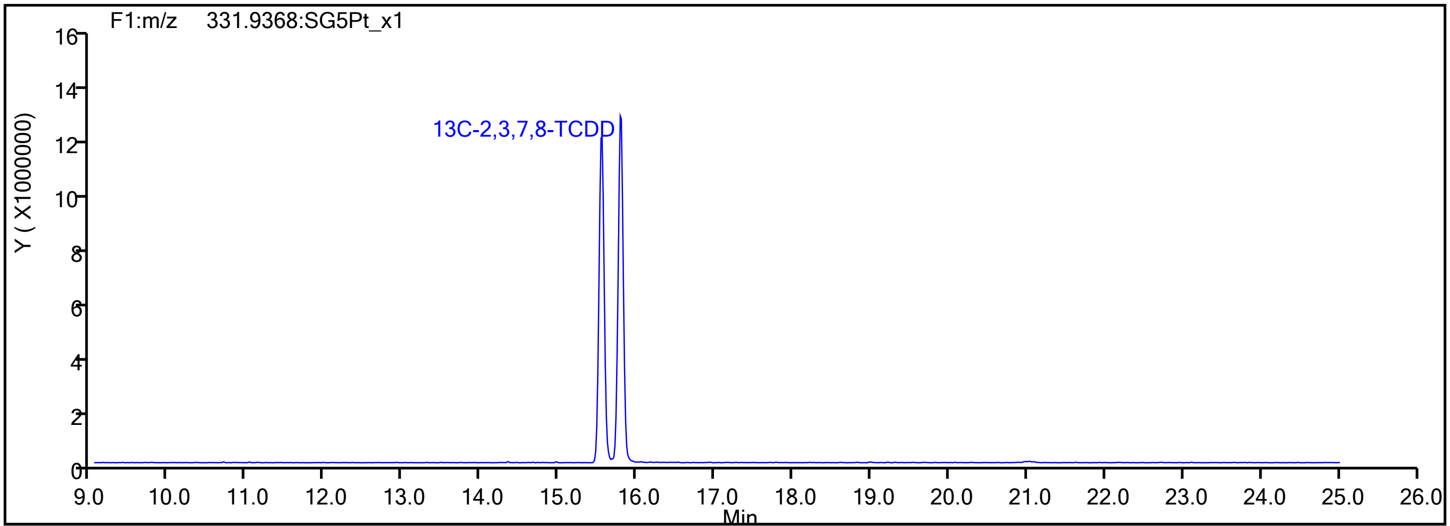

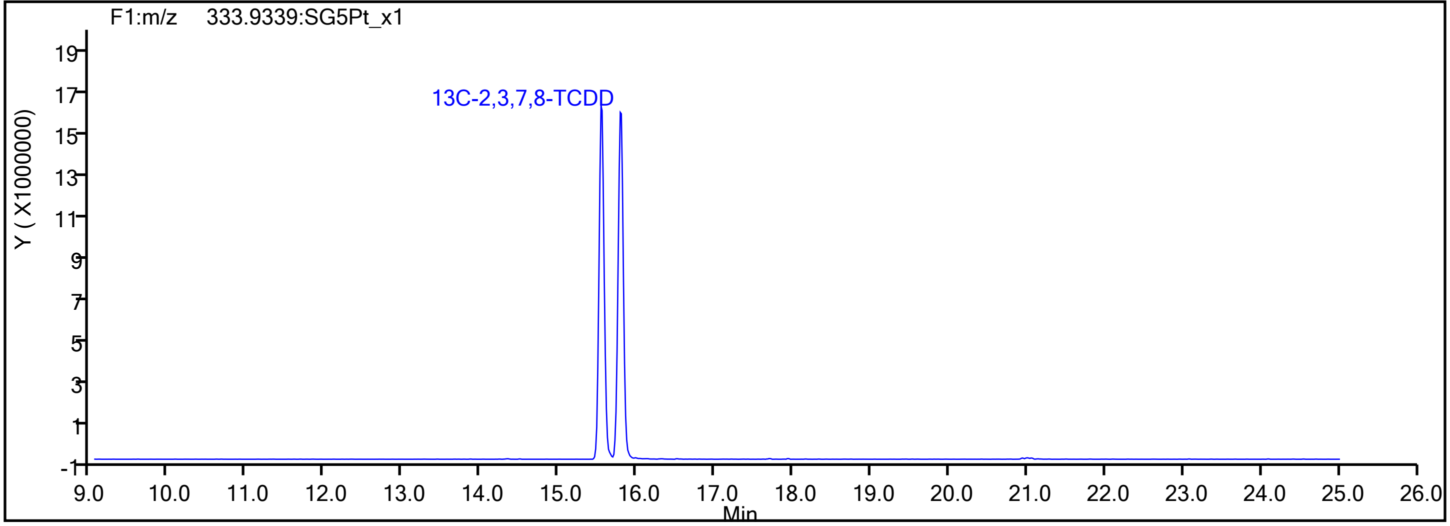

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_006.d

Injection Date:	25-Jul-2020 01:45:24	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

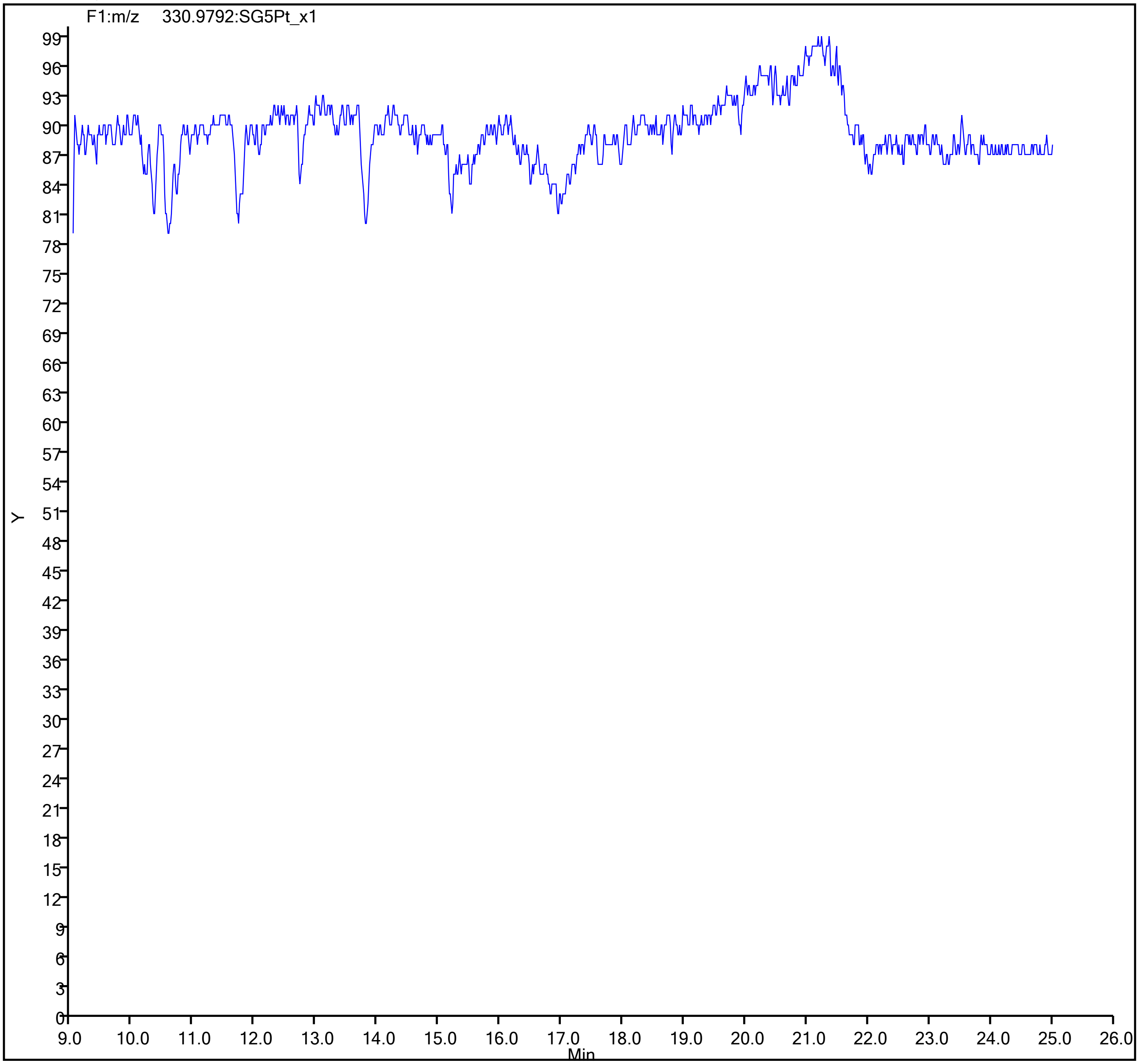

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:39:57		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.779	129060538	0.81	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	203996891	0.79	1.5708	100.6	100.6	0.1614	0.1614	101	
2,3,7,8-TCDF	17.014	414295806	0.79	0.9943	204.3	204.3	0.2312	0.2312	102	
D 13C-2,3,7,8-TCDD	15.546	128972522	0.81	0.9834	101.6	101.6	0.1474	0.1474	102	
2,3,7,8-TCDD	15.560	320296763	0.78	1.2822	193.7	193.7	0.0983	0.0983	96.84	
$ 37Cl4-2,3,7,8-TCDD	15.560	280119629		0.9945	218.2	218.2	0.1000	0.1000	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	25-Jul-2020 02:23:46	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:43:08	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer:	shardaa	Date:	27-Jul-2020 12:39:57		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.779	15.780	0		57589310	12129332	10333	25832	1174		
333.9339	15.779	15.780	0		71471228	15346425	5602	14005	2739	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.985	0	1.077	89930010	17236599	15970	39925	1079		
317.9389	16.986	16.985	0	1.077	114066881	21652078	11895	29737	1820	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.014	17.001	1	1.002	182516761	34030426	15497	38742	2196		
305.8987	17.000	17.001	0	1.001	231779045	43567419	20259	50647	2151	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.546	15.542	0	0.985	57524559	12194809	10333	25832	1180		
333.9339	15.546	15.542	0	0.985	71447963	14961435	5602	14005	2671	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.560	15.555	0	1.001	140244936	30140042	6235	15587	4834		
321.8936	15.560	15.555	0	1.001	180051827	38784630	7451	18627	5205	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.560	15.555	0	0.986	280119629	59728150	10927	27317	5466		

Reagents:

HRDXNL6_00026	Amount Added: 2.00	Units: uL

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

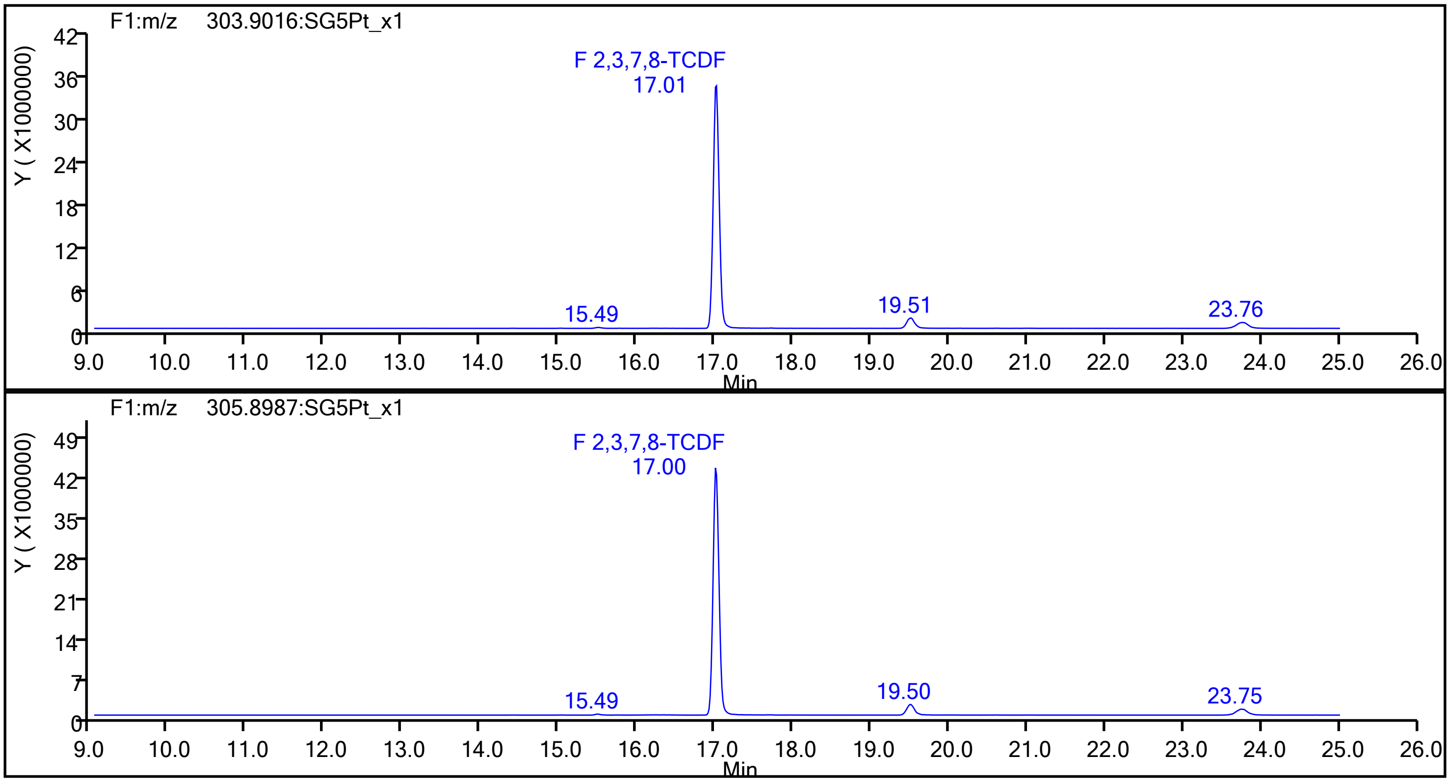

TCDF Standards

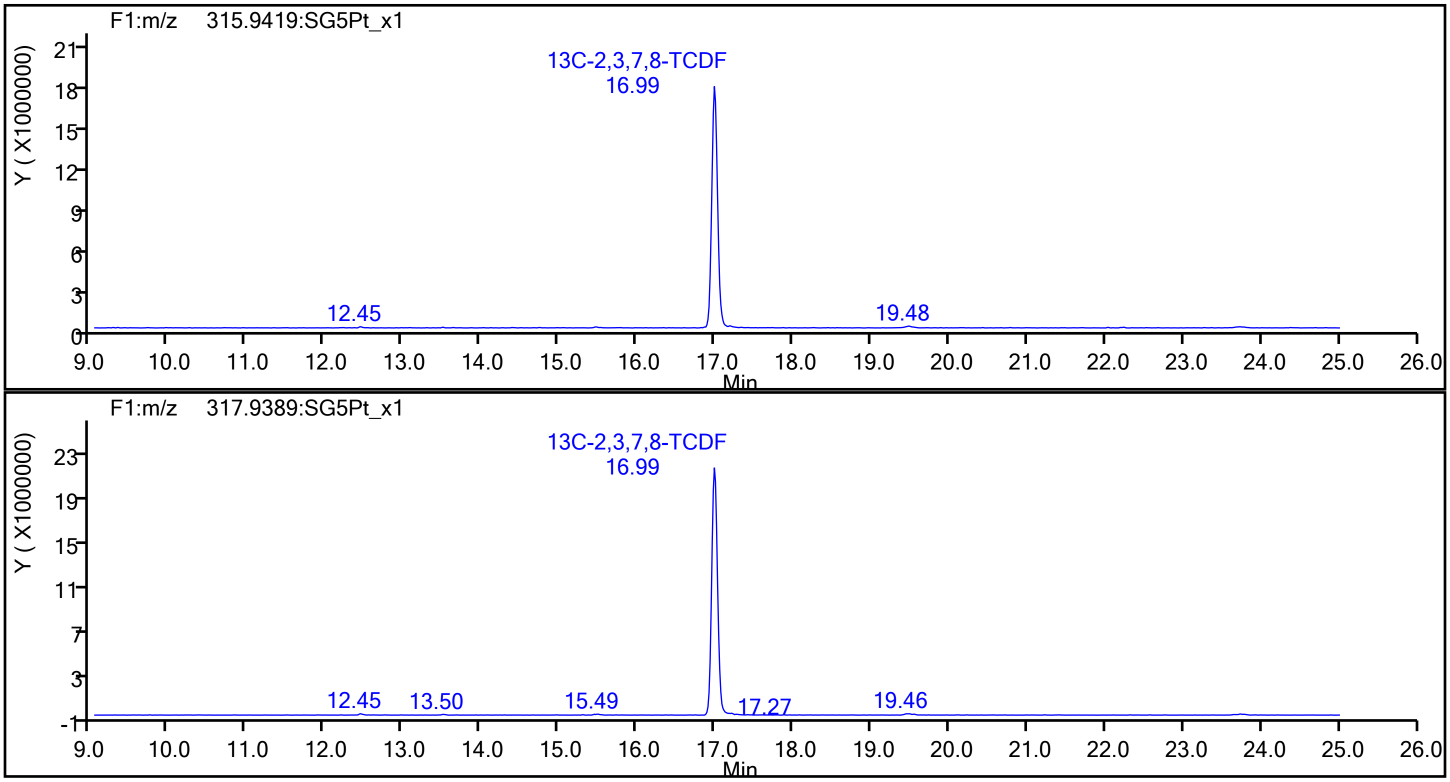

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

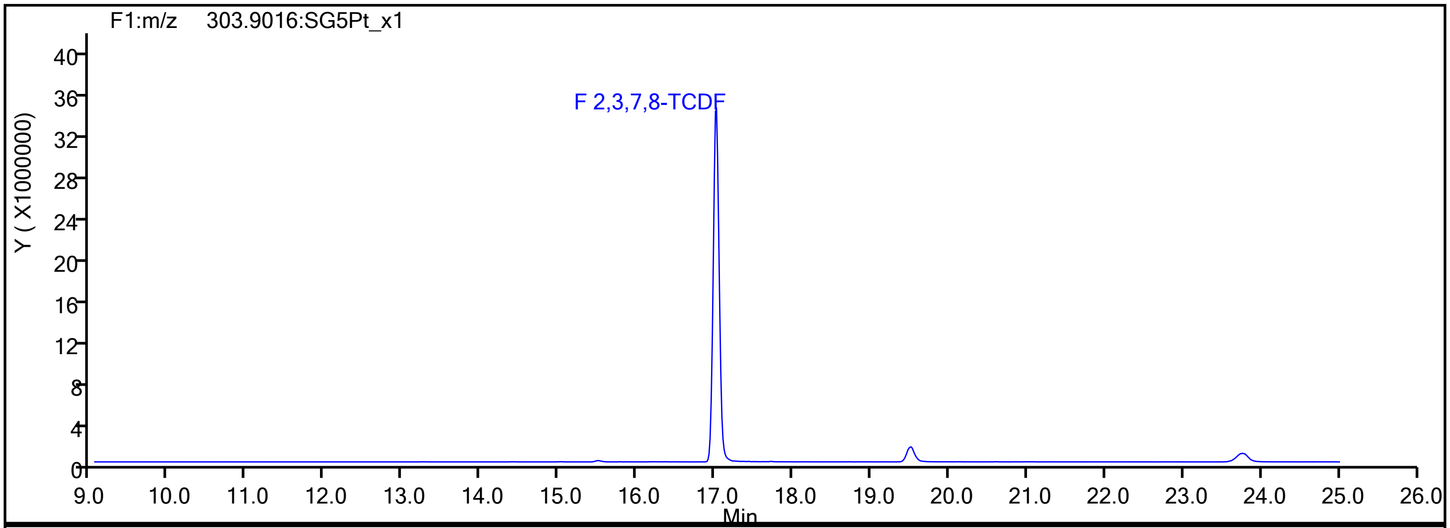

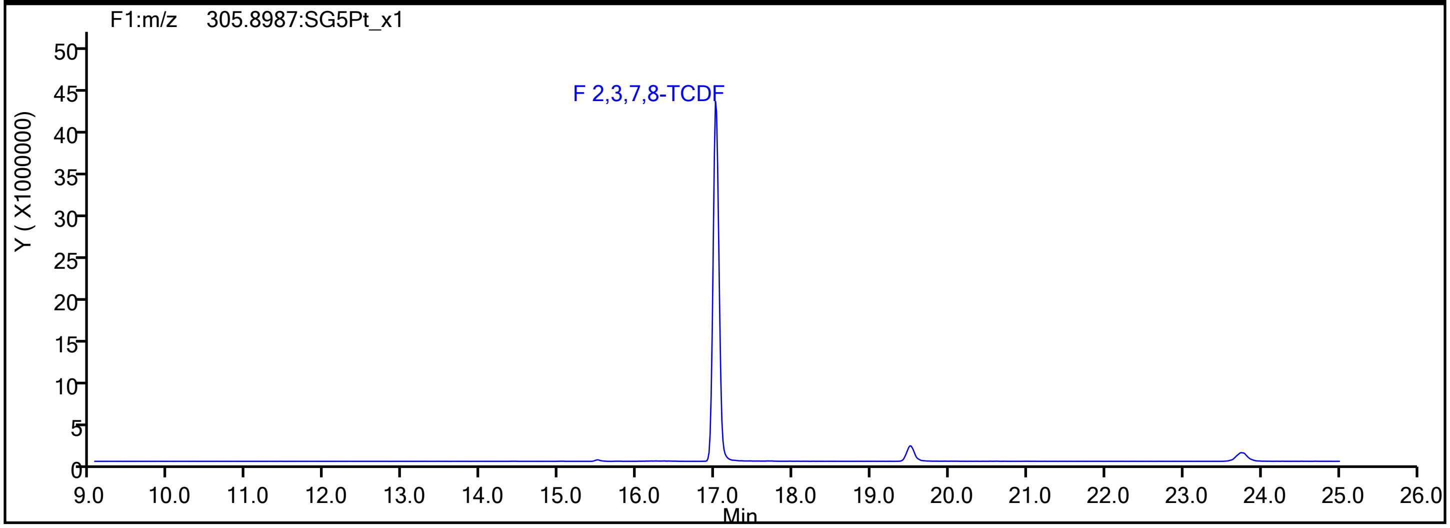

TCDF Interference Mass

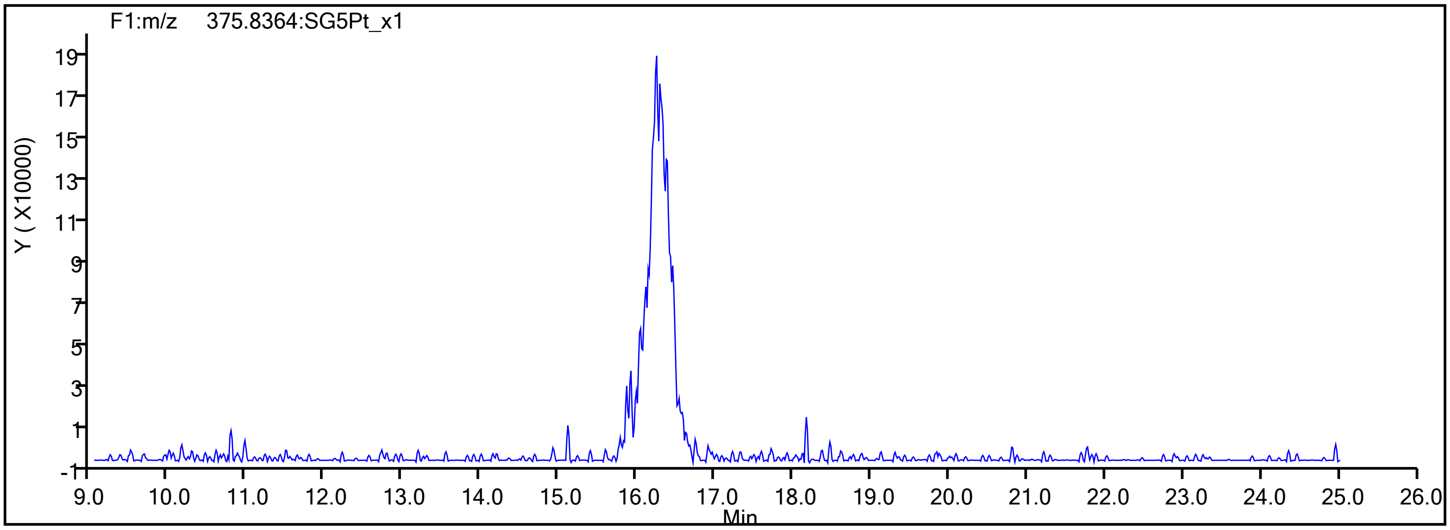

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d
Injection Date: 25-Jul-2020 02:23:46
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

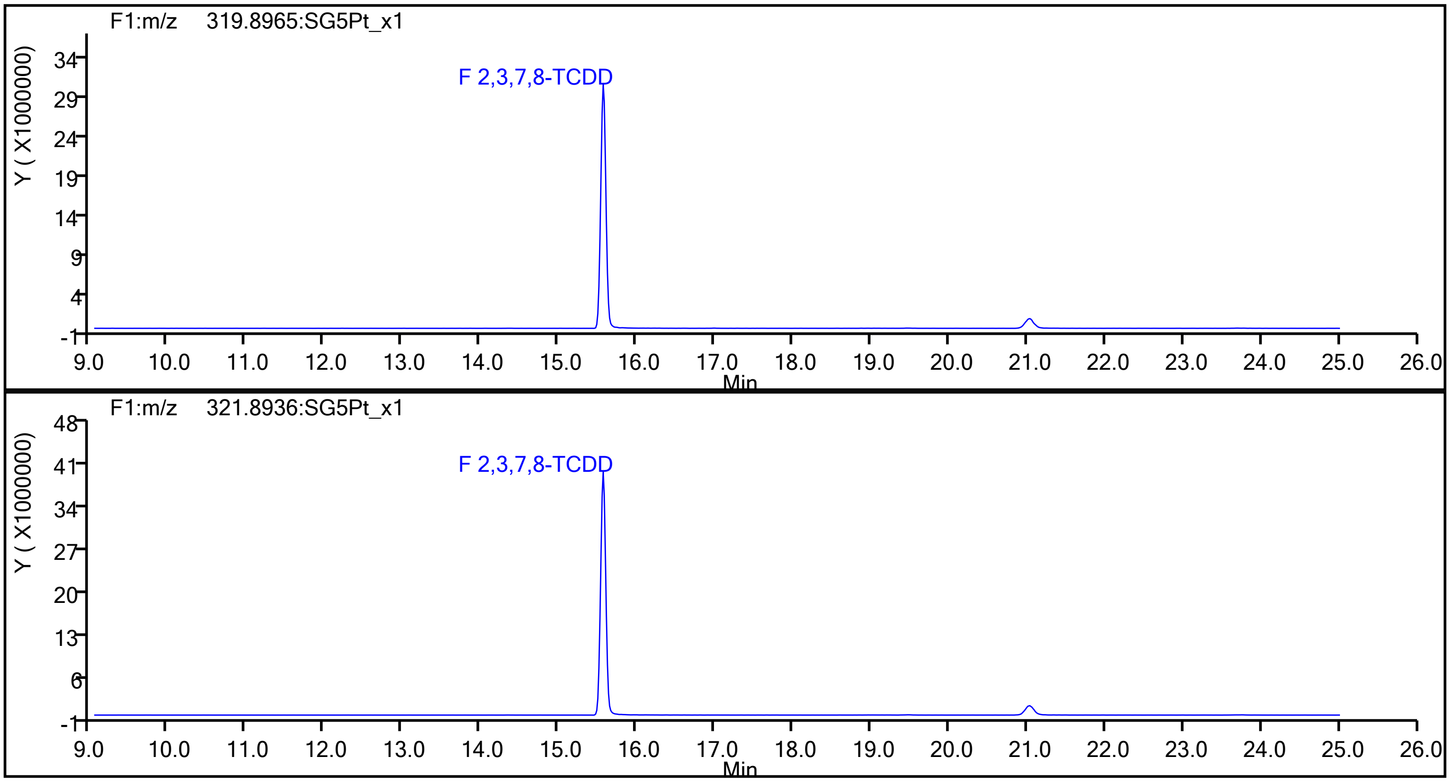

TCDD Standards

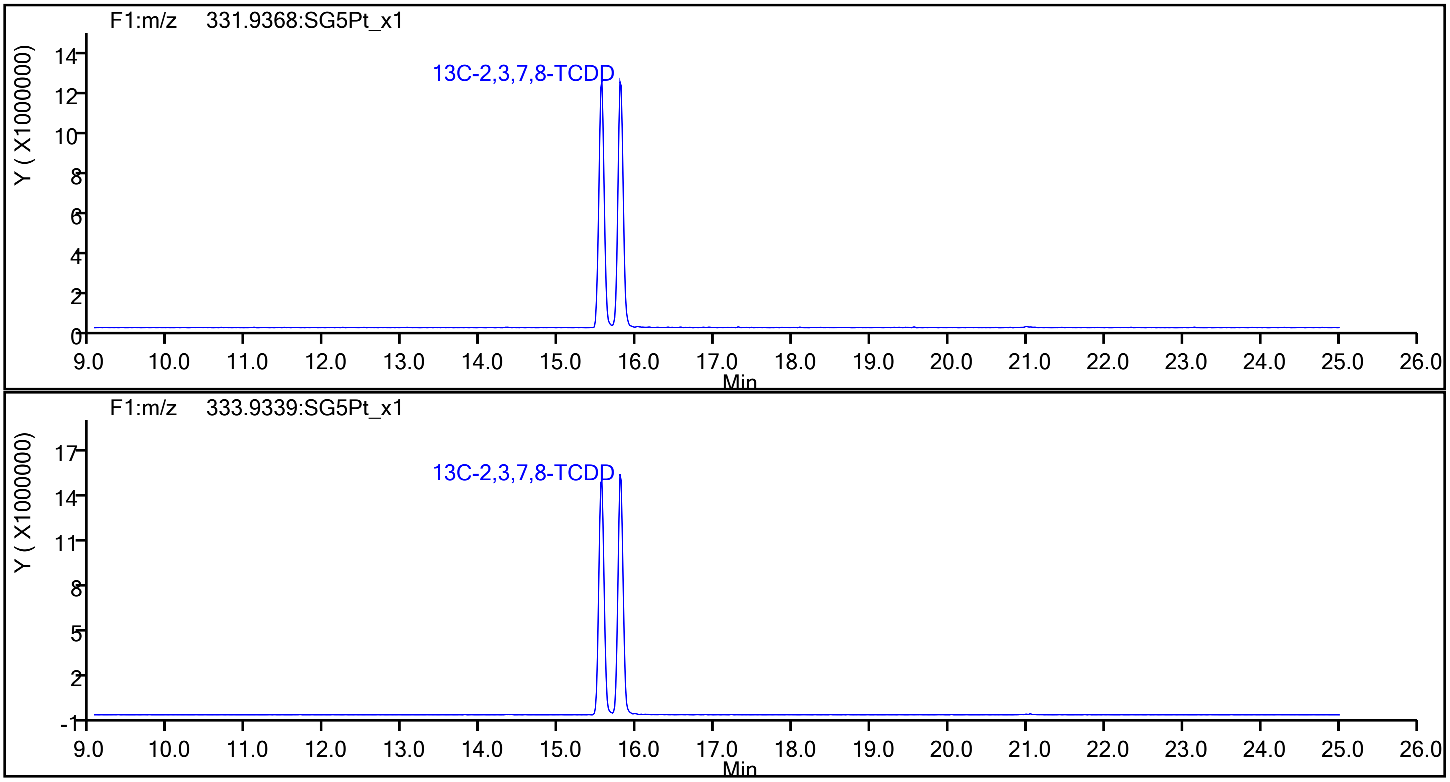

Report Date: 27-Jul-2020 12:43:10 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Injection Date: 25-Jul-2020 02:23:46 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 7

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

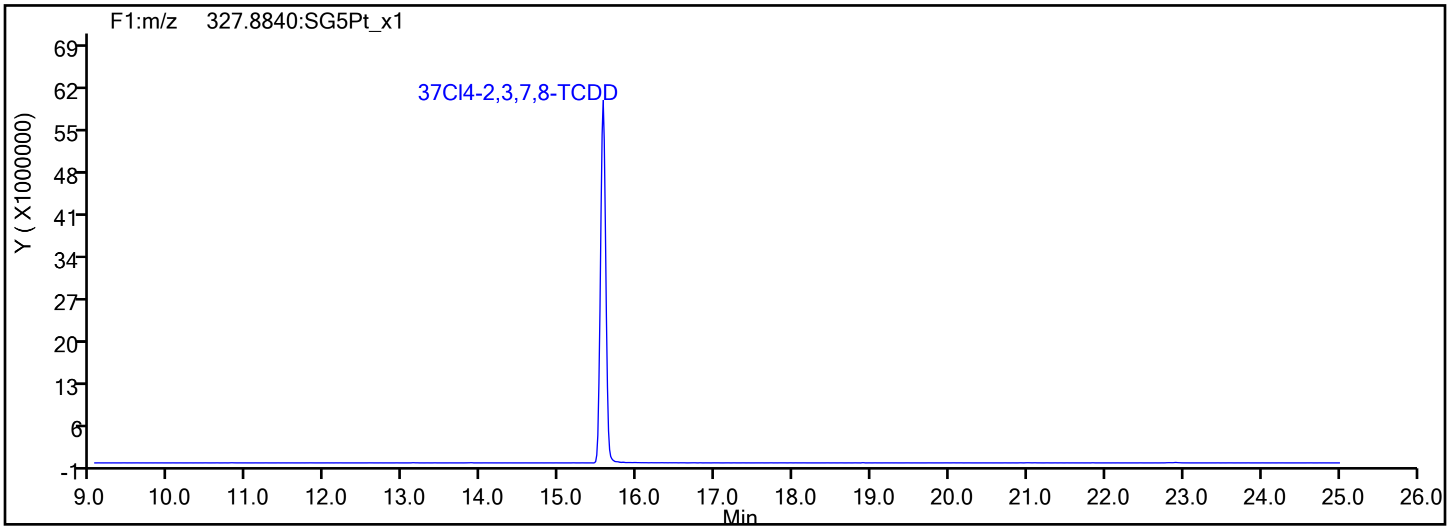

37Cl4-TCDD Standards

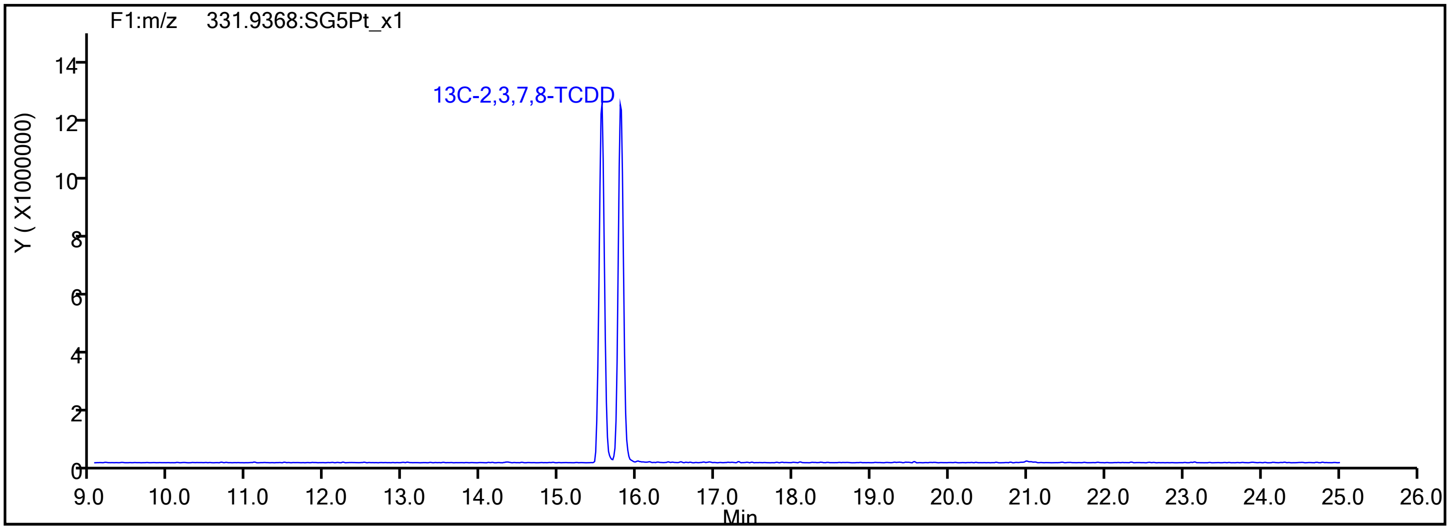

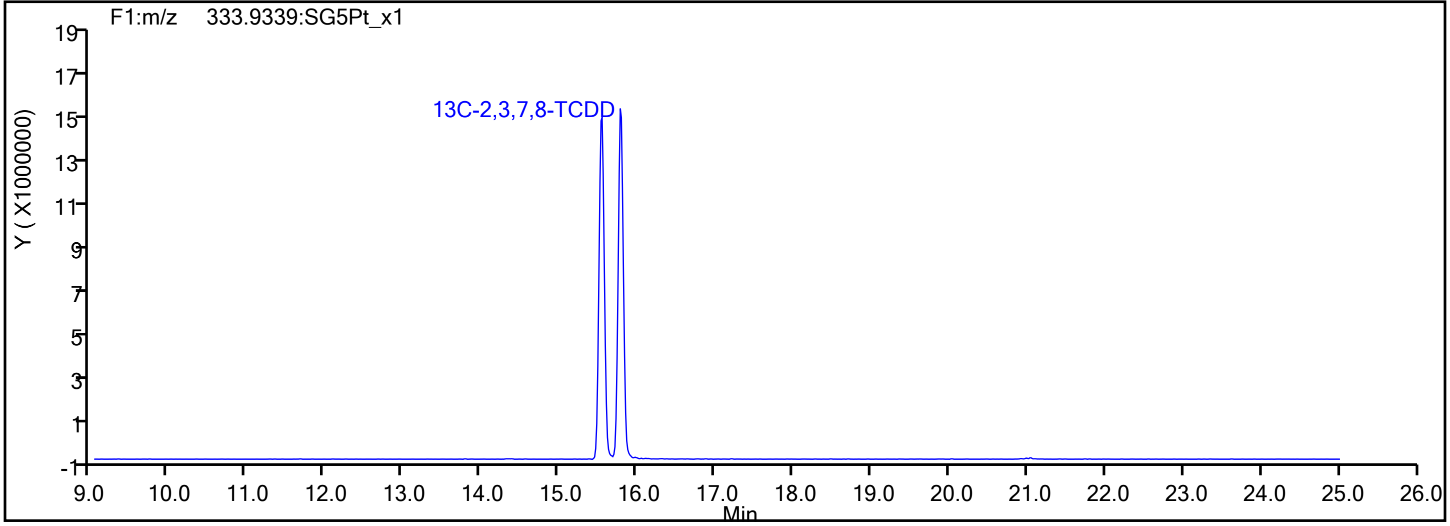

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		
Injection Date:	25-Jul-2020 02:23:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

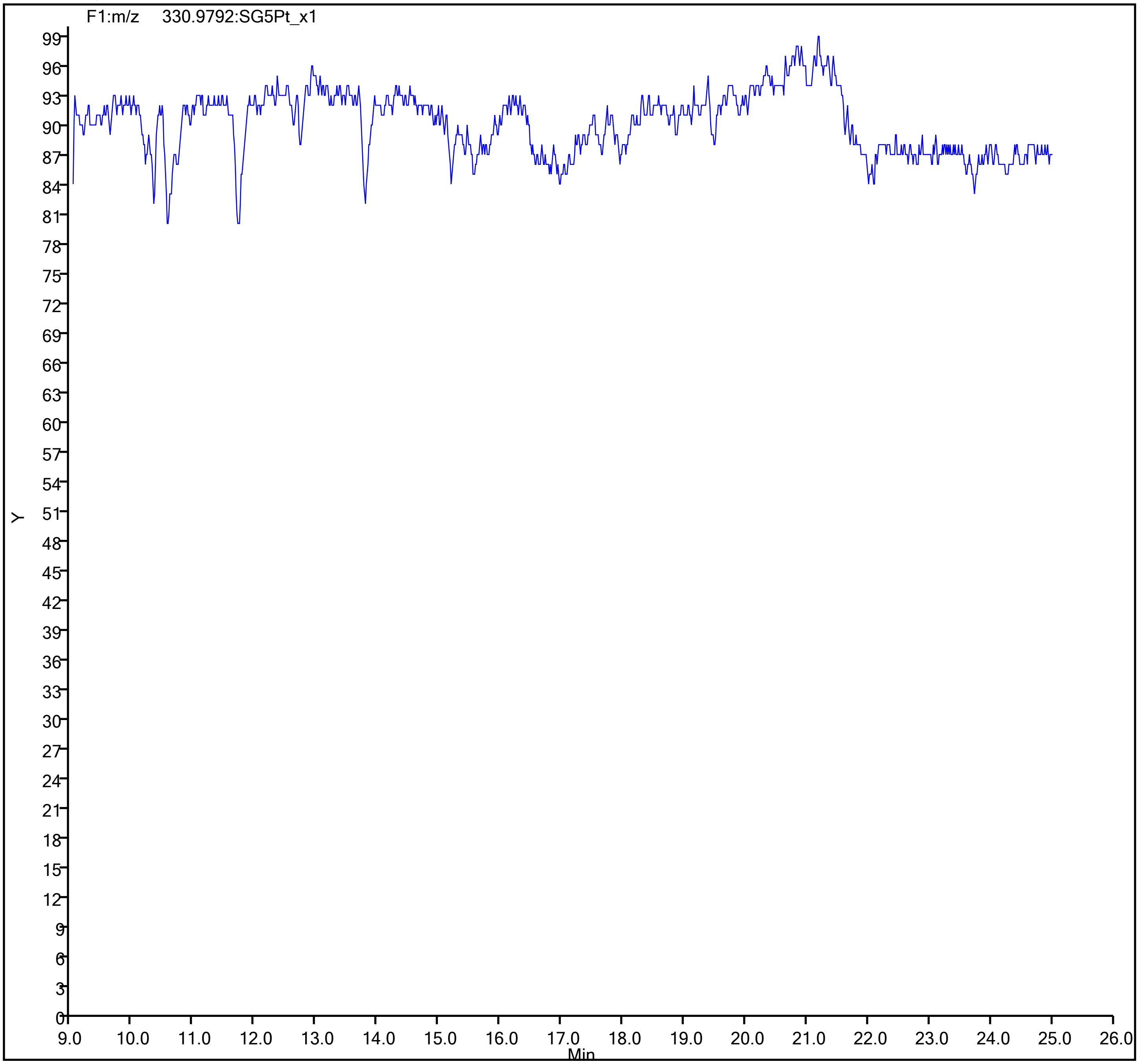

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 447767

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/31/2020 14:17 Calibration End Date: 12/31/2020 17:29 Calibration ID: 53498

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-447767/3	31de20bdfs1_4.d
Level 2	IC 320-447767/4	31de20bdfs1_5.d
Level 3	IC 320-447767/5	31de20bdfs1_6.d
Level 4	IC 320-447767/6	31de20bdfs1_7.d
Level 5	IC 320-447767/7	31de20bdfs1_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.3308	1.1788	1.0580	1.1119	1.0648	AveID		1.1488				9.8		20.0			
2,3,7,8-TCDD	1.5676	1.2383	1.2558	1.2407	1.2322	AveID		1.3069				11.2		20.0			
1,2,3,7,8-PeCDF	1.3158	1.2298	1.1272	1.1126	1.0624	AveID		1.1695				8.7		20.0			
2,3,4,7,8-PeCDF	1.3650	1.2717	1.1850	1.1976	1.1027	AveID		1.2244				8.1		20.0			
1,2,3,7,8-PeCDD	1.3788	1.3486	1.2148	1.2172	1.1472	AveID		1.2613				7.8		20.0			
1,2,3,4,7,8-HxCDF	1.5337	1.3622	1.3100	1.3131	1.2577	AveID		1.3553				7.8		20.0			
1,2,3,6,7,8-HxCDF	1.4389	1.3811	1.2627	1.2492	1.2085	AveID		1.3081				7.4		20.0			
2,3,4,6,7,8-HxCDF	1.4990	1.3687	1.2551	1.2566	1.2444	AveID		1.3248				8.3		20.0			
1,2,3,4,7,8-HxCDD	1.5710	1.3660	1.2983	1.2474	1.2284	AveID		1.3422				10.3		20.0			
1,2,3,6,7,8-HxCDD	1.3603	1.2284	1.1624	1.1600	1.0836	AveID		1.1989				8.7		20.0			
1,2,3,7,8,9-HxCDD	1.5865	1.4013	1.3009	1.2869	1.2423	AveID		1.3636				10.1		20.0			
1,2,3,7,8,9-HxCDF	1.5170	1.3991	1.2689	1.2597	1.2414	AveID		1.3372				8.9		20.0			
1,2,3,4,6,7,8-HpCDF	1.8687	1.7229	1.5711	1.5606	1.5201	AveID		1.6487				8.8		20.0			
1,2,3,4,6,7,8-HpCDD	1.3631	1.2721	1.1592	1.1644	1.1141	AveID		1.2146				8.3		20.0			
1,2,3,4,7,8,9-HpCDF	1.7990	1.6054	1.5439	1.5125	1.4008	AveID		1.5723				9.3		20.0			
OCDD	1.3914	1.2922	1.2075	1.2124	1.1774	AveID		1.2562				6.9		20.0			
OCDF	2.0015	1.8259	1.7337	1.7408	1.7641	AveID		1.8132				6.1		20.0			
13C-2,3,7,8-TCDF	1.8584	1.8712	1.9243	1.9507	1.9626	Ave		1.9134				2.4		35.0			
13C-2,3,7,8-TCDD	1.0704	1.0862	1.0924	1.0951	1.1097	Ave		1.0908				1.3		35.0			
13C-1,2,3,7,8-PeCDF	1.4584	1.4384	1.5396	1.5838	1.6576	Ave		1.5355				5.9		35.0			
13C-2,3,4,7,8-PeCDF	1.3531	1.3980	1.4180	1.4123	1.5578	Ave		1.4278				5.4		35.0			
13C-1,2,3,7,8-PeCDD	0.7581	0.7308	0.7950	0.7731	0.8431	Ave		0.7800				5.4		35.0			
13C-1,2,3,4,7,8-HxCDF	1.4145	1.4453	1.3703	1.4062	1.4877	Ave		1.4248				3.1		35.0			
13C-1,2,3,6,7,8-HxCDF	1.7476	1.6870	1.7220	1.6934	1.7038	Ave		1.7108				1.4		35.0			
13C-2,3,4,6,7,8-HxCDF	1.5253	1.5397	1.5407	1.5519	1.5700	Ave		1.5455				1.1		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7929	0.8074	0.8227	0.8423	0.8677	Ave		0.8266				3.6		35.0			
13C-1,2,3,6,7,8-HxCDD	1.0185	1.0478	1.0699	1.0388	1.0334	Ave		1.0417				1.8		35.0			
13C-1,2,3,7,8,9-HxCDF	1.3767	1.3658	1.3483	1.3753	1.4197	Ave		1.3772				1.9		35.0			
13C-1,2,3,4,6,7,8-HpCDF	1.0842	1.0798	1.0981	1.1101	1.1543	Ave		1.1053				2.7		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8489	0.8608	0.8892	0.8720	0.9133	Ave		0.8768				2.9		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.9421	0.9692	0.9383	0.9650	1.0658	Ave		0.9761				5.3		35.0			
13C-OCDD	0.6959	0.6902	0.6945	0.7111	0.7767	Ave		0.7137				5.1		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 447767

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/31/2020 14:17 Calibration End Date: 12/31/2020 17:29 Calibration ID: 53498

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	1.3034	1.1782	1.2176	1.2205	1.2210	Ave		1.2281				3.7					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 447767

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/31/2020 14:17 Calibration End Date: 12/31/2020 17:29 Calibration ID: 53498

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-447767/3	31de20bdfs1_4.d
Level 2	IC 320-447767/4	31de20bdfs1_5.d
Level 3	IC 320-447767/5	31de20bdfs1_6.d
Level 4	IC 320-447767/6	31de20bdfs1_7.d
Level 5	IC 320-447767/7	31de20bdfs1_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	41037	129424	458483	2094790	12963977	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	27844	78921	308932	1312267	8482515	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	159205	518973	1954038	8509119	54621831	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	153244	521591	1892098	8167670	53281339	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	86721	289167	1087433	4544291	30002492	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	151159	503572	1803705	8180355	55436127	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	175206	595922	2184830	9372021	61009083	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	159311	538995	1943051	8639912	57884480	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	86791	282107	1073188	4655097	31583468	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	96531	329199	1249589	5338510	33178381	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	100115	332463	1236941	5362583	34988400	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	145515	488756	1719189	7674883	52218610	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	141160	475847	1733602	7674927	51988267	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	80619	280064	1035687	4498134	30150355	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	118085	397986	1455616	6466215	44235838	2.50	10.0	50.0	200	1000
OCDD		AveID	134936	456257	1685349	7639110	54189745	5.00	20.0	100	400	2000
OCDF		AveID	194101	644707	2419781	10969156	81195665	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	6167451	5489816	4333339	4710060	6087652	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	3552526	3186763	2460119	2644140	3442110	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	4839906	4219926	3467186	3824037	5141591	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	4490556	4101407	3193341	3409961	4832116	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	2515862	2144159	1790365	1866622	2615255	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCDD	Ave	3942229	3696713	2753850	3114871	4407903	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCDD	Ave	4870548	4314908	3460582	3751135	5048362	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCDD	Ave	4251070	3938054	3096274	3437727	4651769	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCDD	Ave	2209857	2065215	1653238	1865857	2571012	100	100	100	100	100

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1 Analy Batch No.: 447767

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/31/2020 14:17 Calibration End Date: 12/31/2020 17:29 Calibration ID: 53498

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	2838555	2679878	2150022	2301157	3061906	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	3836874	3493327	2709678	3046379	4206539	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	3021638	2761919	2206848	2458986	3420059	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	2365808	2201663	1786919	1931487	2706216	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	2625609	2478971	1885632	2137527	3157997	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	3879165	3530807	2791421	3150529	4602647	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	21628	69130	274188	1178750	7574625	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

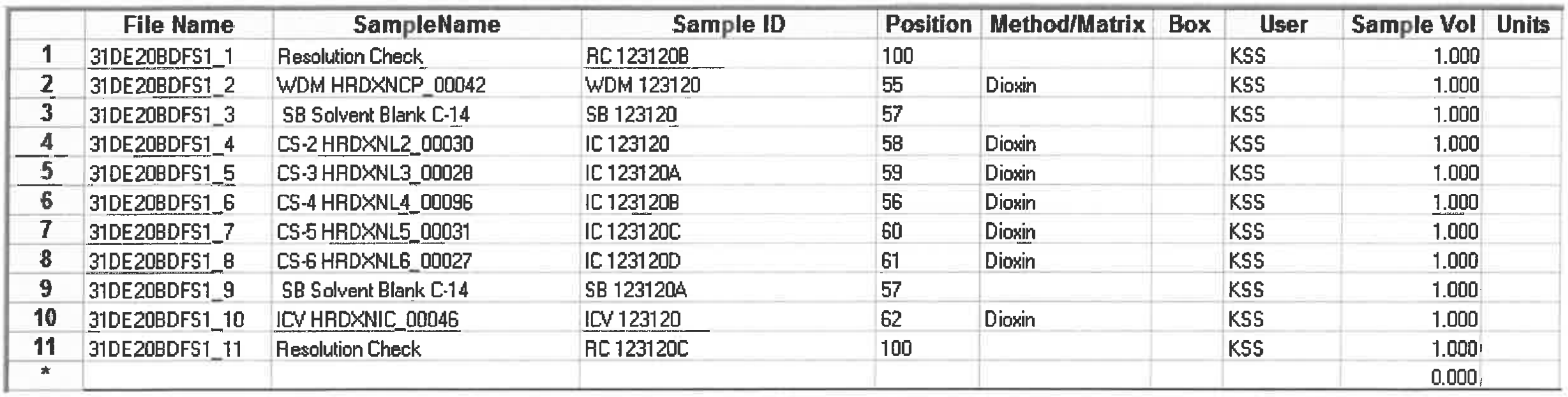

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	31DE20BDFS1_1	Resolution Check	RC 123120B	100			KSS	1.000	
2	31DE20BDFS1_2	WDM HRDXNCP_00042	WDM 123120	55	Dioxin		KSS	1.000	
3	31DE20BDFS1_3	SB Solvent Blank C-14	SB 123120	57			KSS	1.000	
4	31DE20BDFS1_4	CS-2 HRDXNL2_00030	IC 123120	58	Dioxin		KSS	1.000	
5	31DE20BDFS1_5	CS-3 HRDXNL3_00028	IC 123120A	59	Dioxin		KSS	1.000	
6	31DE20BDFS1_6	CS-4 HRDXNL4_00096	IC 123120B	56	Dioxin		KSS	1.000	
7	31DE20BDFS1_7	CS-5 HRDXNL5_00031	IC 123120C	60	Dioxin		KSS	1.000	
8	31DE20BDFS1_8	CS-6 HRDXNL6_00027	IC 123120D	61	Dioxin		KSS	1.000	
9	31DE20BDFS1_9	SB Solvent Blank C-14	SB 123120A	57			KSS	1.000	
10	31DE20BDFS1_10	ICV HRDXNIC_00046	ICV 123120	62	Dioxin		KSS	1.000	
11	31DE20BDFS1_11	Resolution Check	RC 123120C	100			KSS	1.000	
*								0.000	

logfile checked
12-31-20 ALM

Resolution Check Report (DFS SN: 3487)

Date: 31 Dec 2020 12:22

MID Experiment: 5w_db5_pfk_singleGC01_RS

Target Resolution: 10000

Resolution Warning : 9500

Resolution Error : 8000

Reference: pfk

Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11896 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11955 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11788 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12063 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12327 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12448 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11393 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12237 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11819 [5%height]

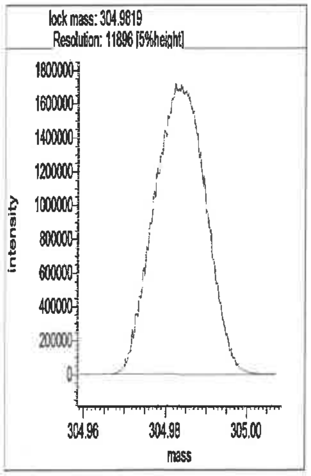

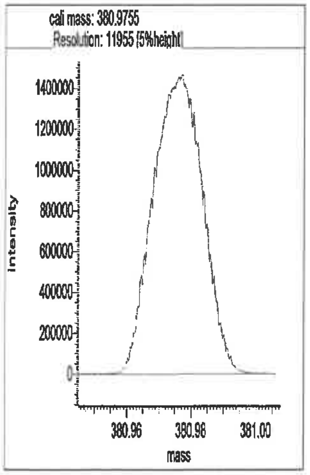

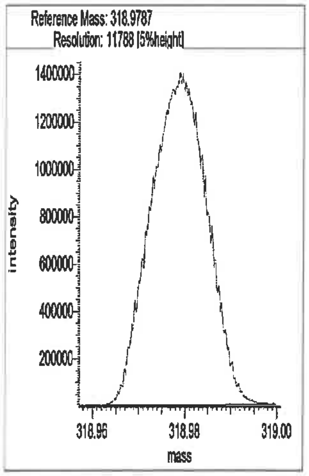

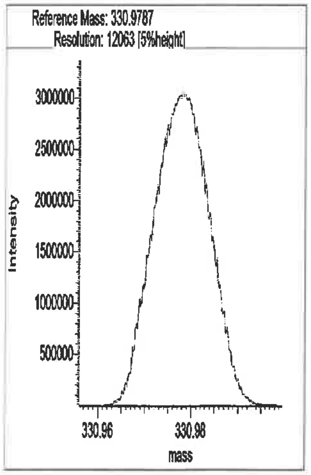

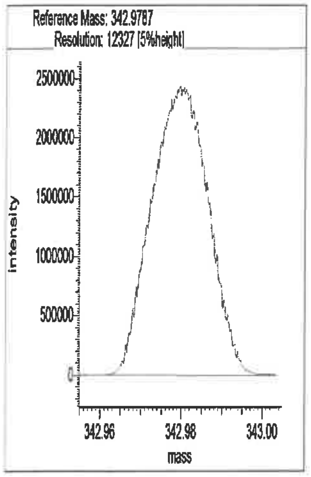

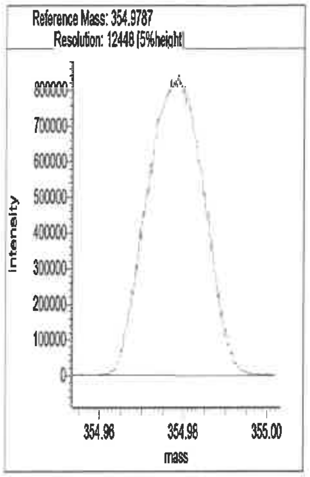

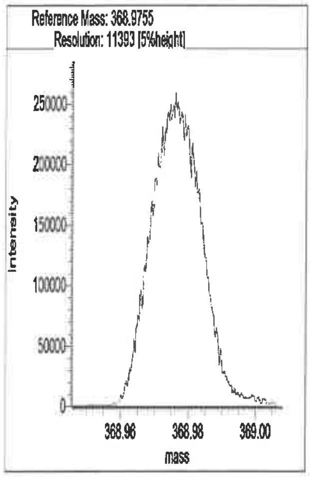

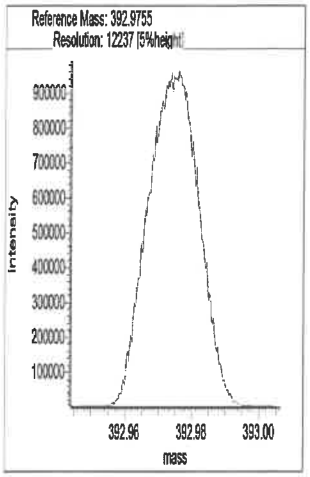

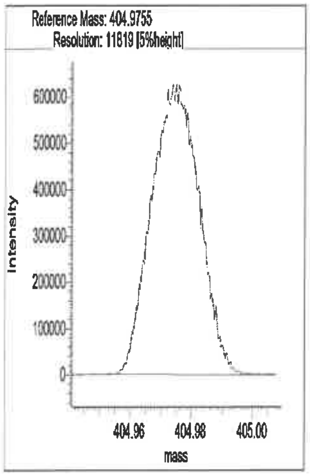

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11948 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12433 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12043 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12231 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11211 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12319 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12221 [5%height]

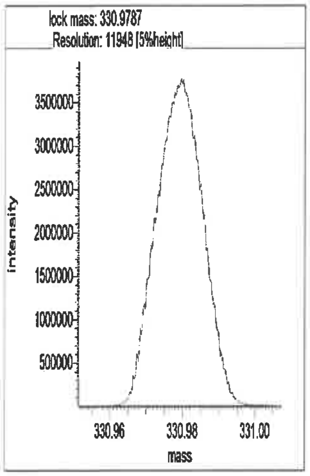

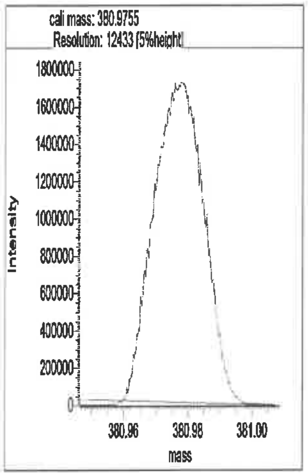

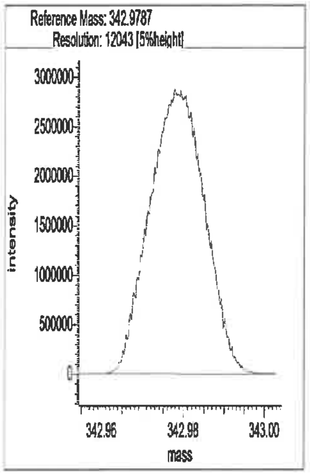

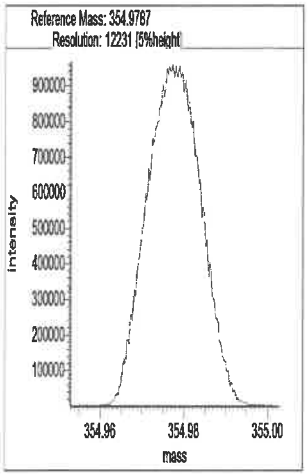

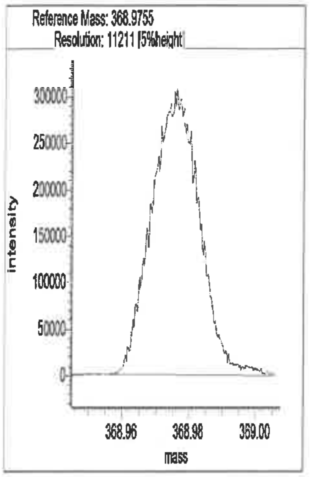

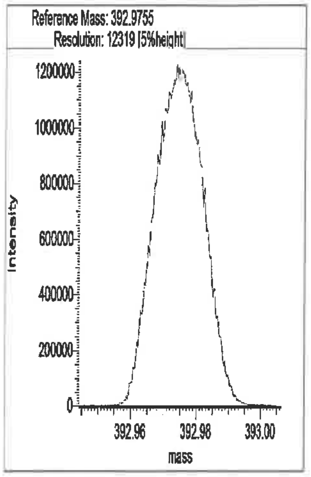

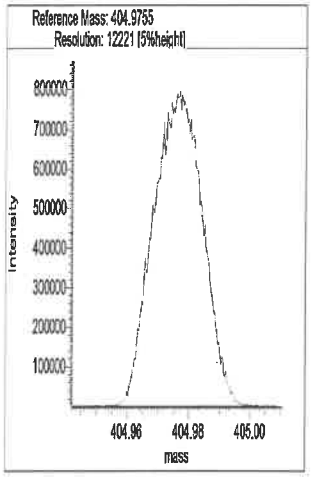

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12259 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12081 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12341 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12336 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12366 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12136 [5%height]

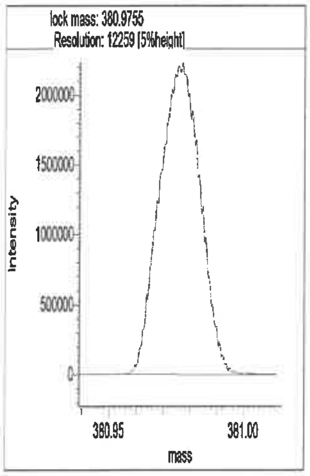

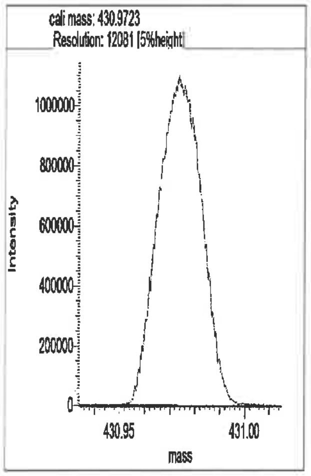

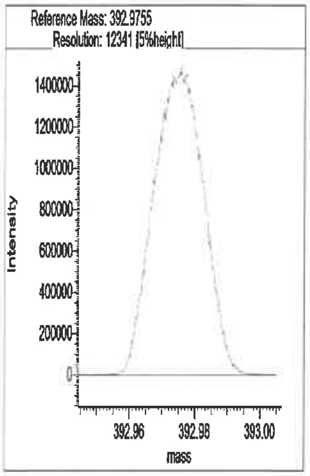

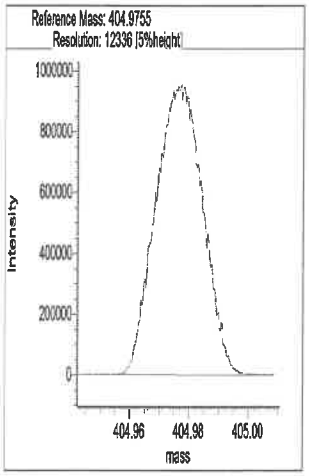

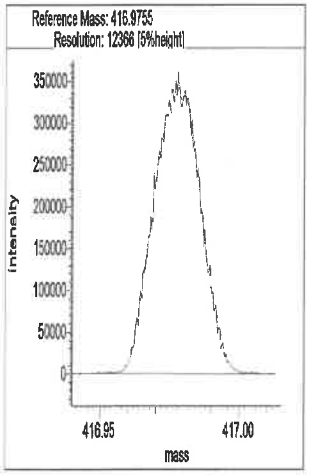

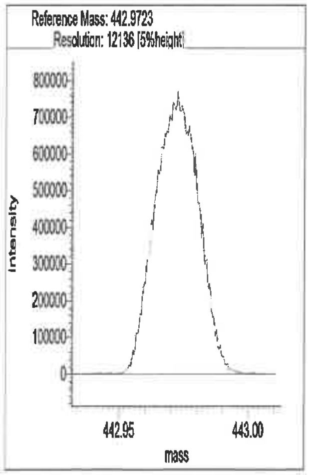

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12022 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12331 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12300 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12122 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12449 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12067 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12269 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11899 [5%height]

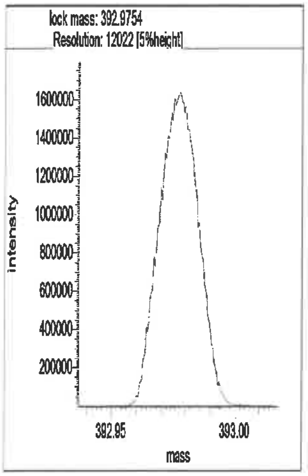

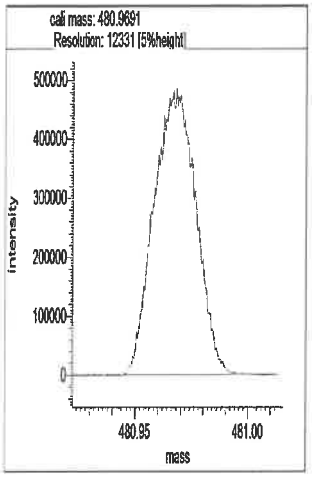

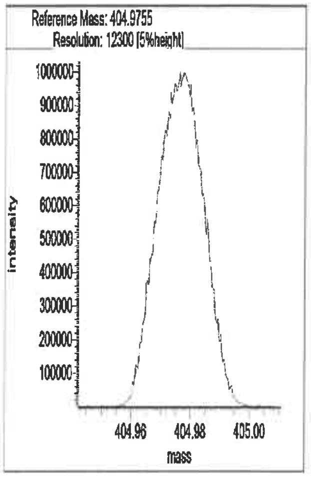

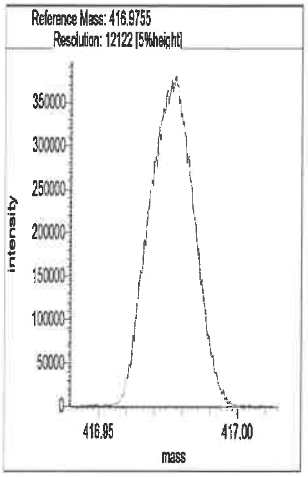

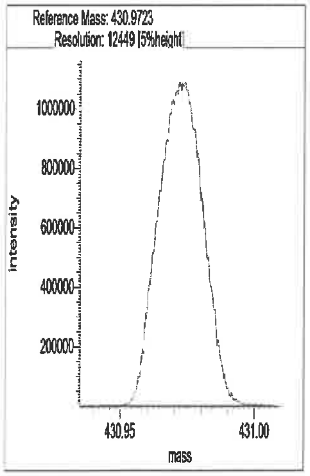

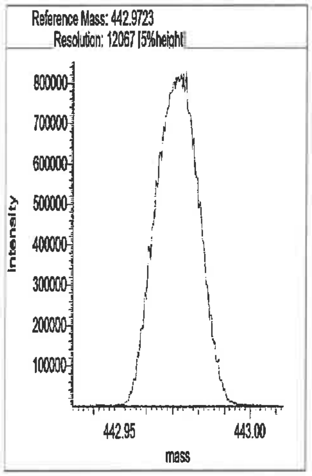

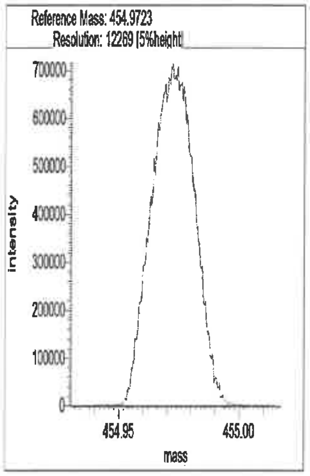

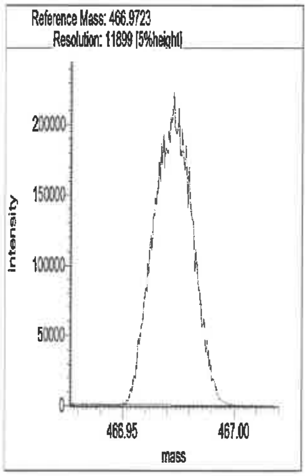

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12359 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12127 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12113 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11981 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11823 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12041 [5%height]

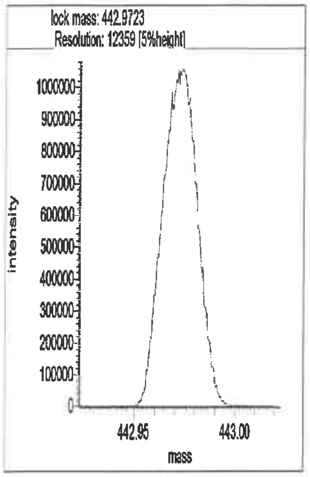
lock mass: 442.9723
Resolution: 12359 [5%height]
intensity
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

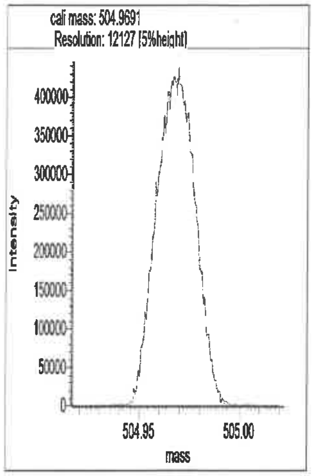
cali mass: 504.9691
Resolution: 12127 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

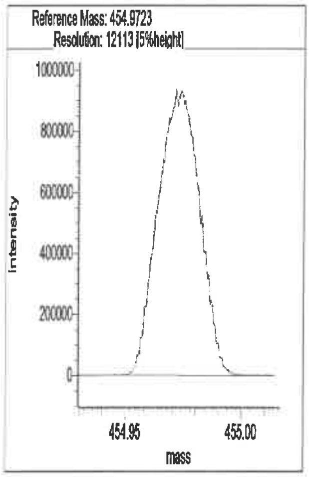
Reference Mass: 454.9723
Resolution: 12113 [5%height]
intensity
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

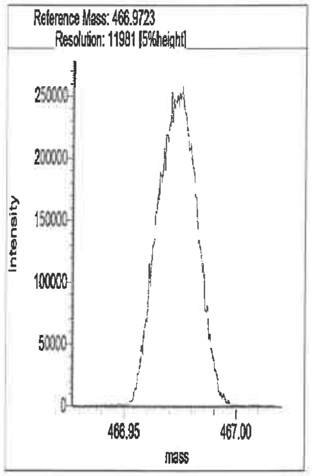
Reference Mass: 466.9723
Resolution: 11981 [5%height]
intensity
250000
200000
150000
100000
50000
0
466.95
467.00
mass

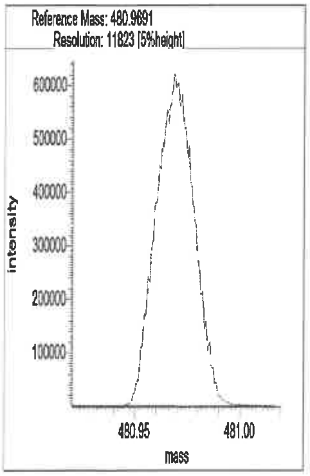
Reference Mass: 480.9691
Resolution: 11823 [5%height]
intensity
600000
500000
400000
300000
200000
100000
480.95
481.00
mass

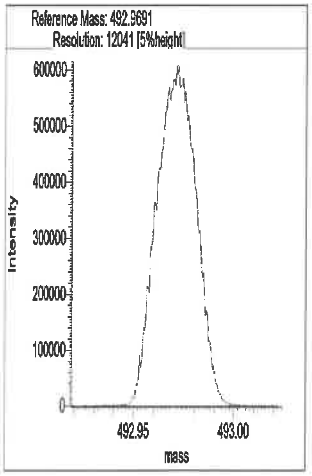
Reference Mass: 492.9691
Resolution: 12041 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	31 Dec 2020 19:53
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12985 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12523 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12754 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12749 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12771 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12731 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12208 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12453 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12394 [5%height]

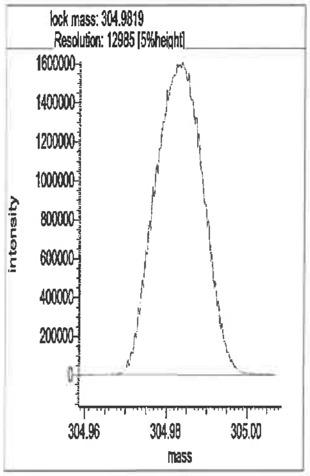

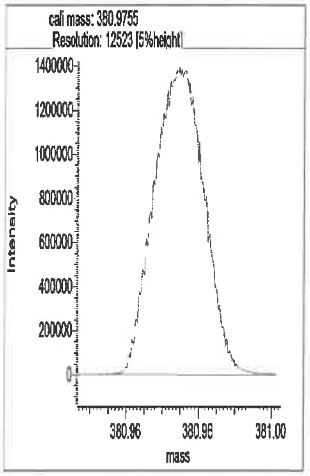

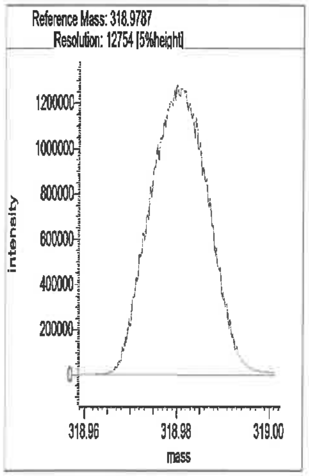

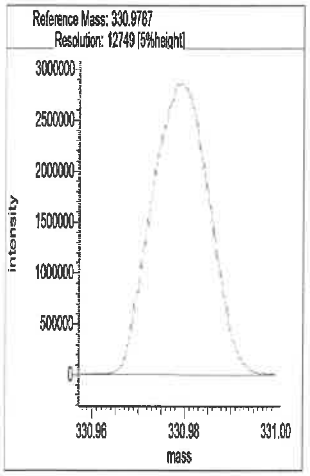

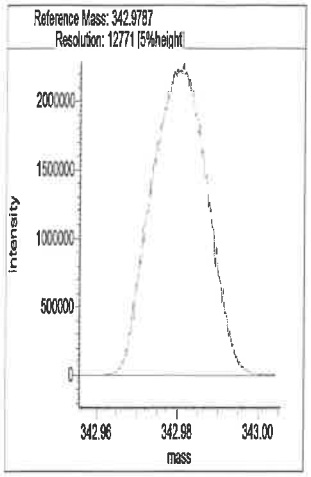

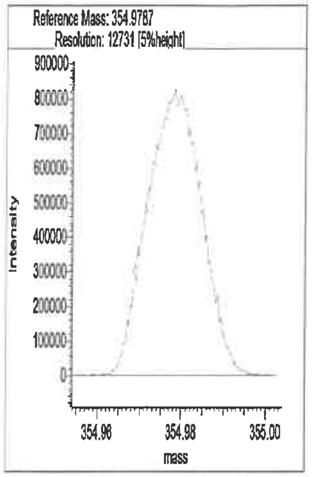

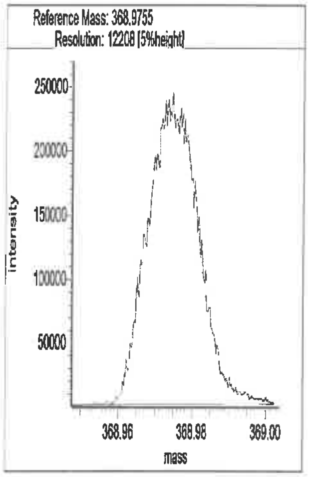

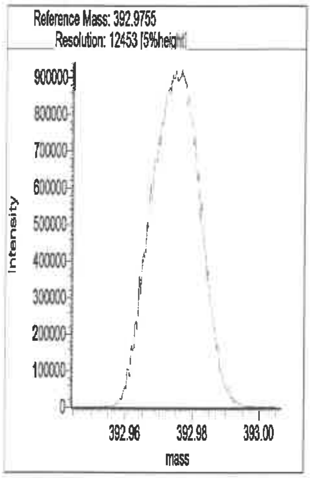

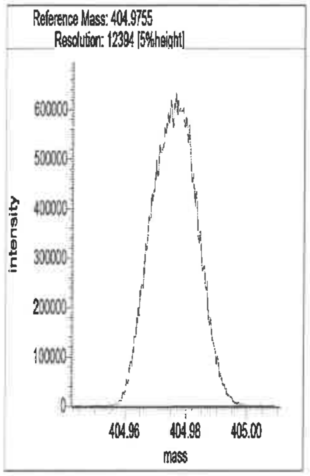

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12909 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12926 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12707 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12816 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12141 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12720 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12661 [5%height]

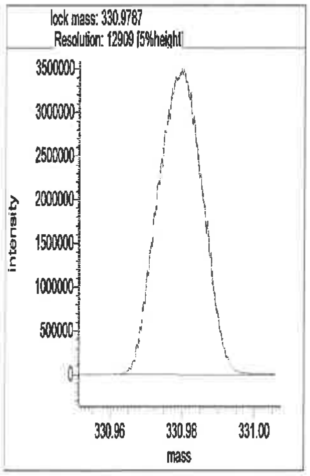

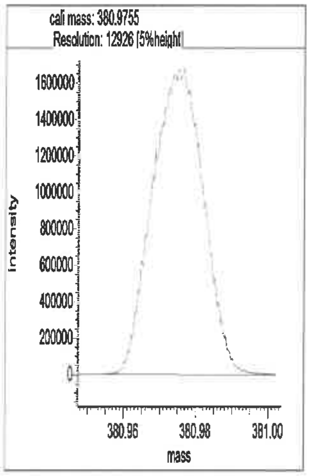

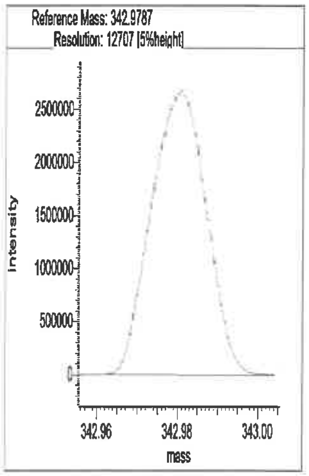

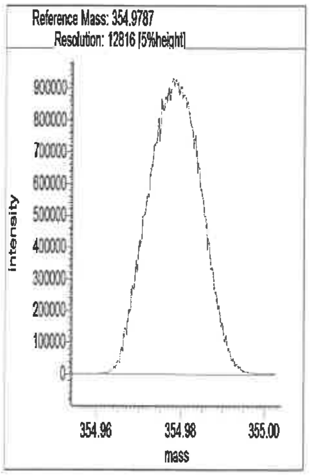

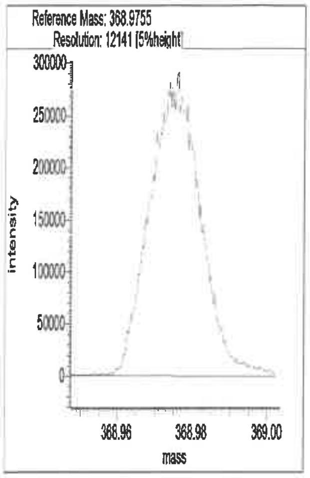

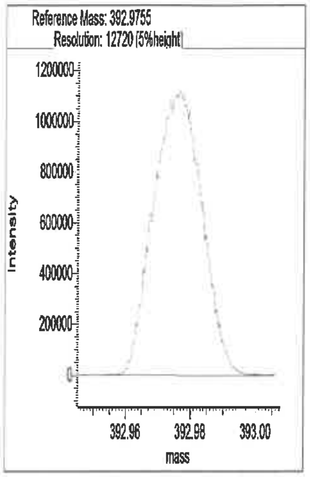

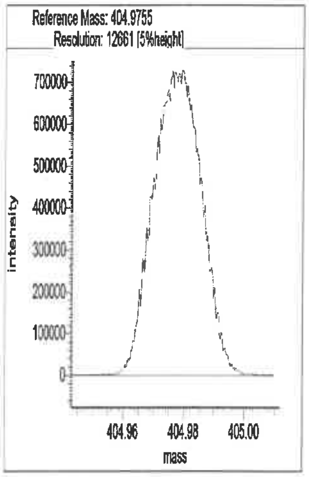

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12792 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12782 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12837 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12871 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13162 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13018 [5%height]

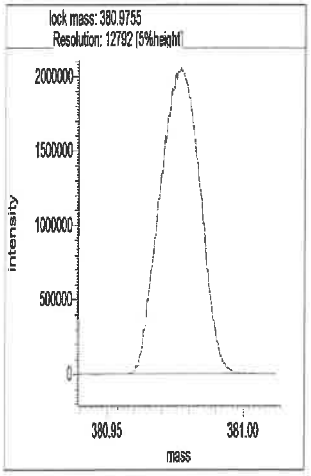

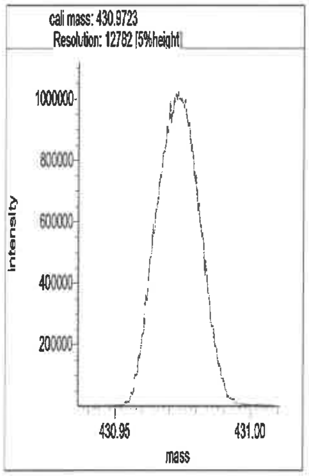

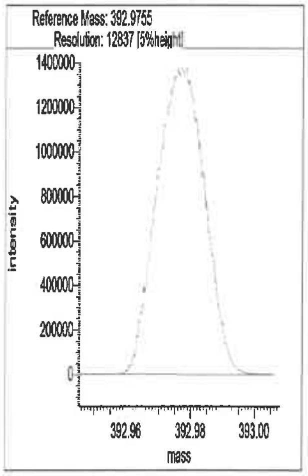

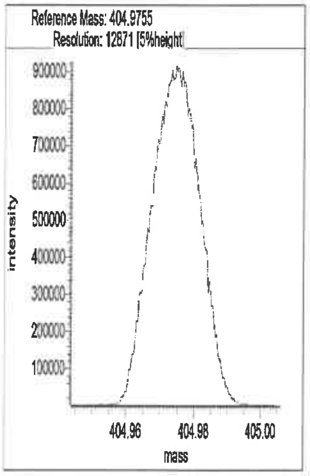

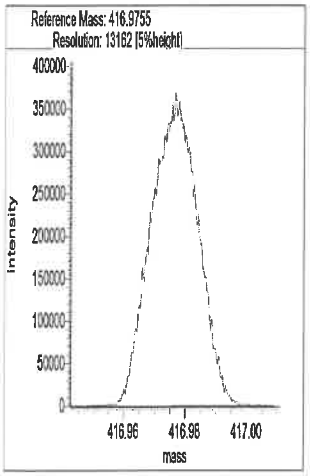

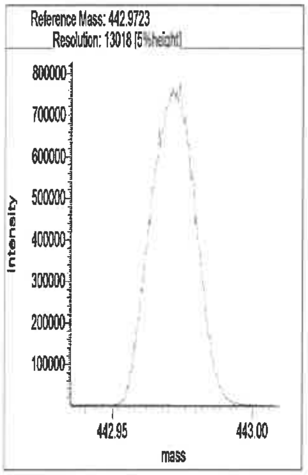

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12773 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12402 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12836 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12845 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12855 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12787 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12852 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12801 [5%height]

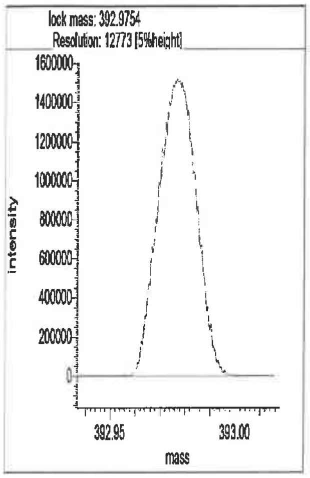

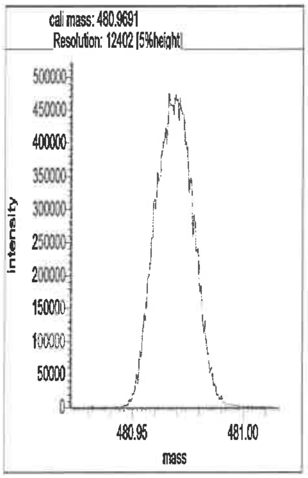

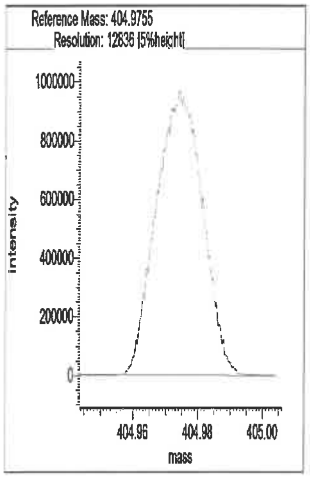

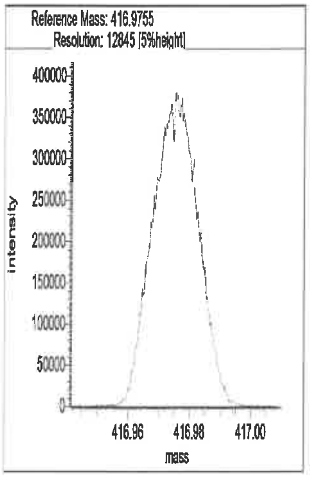

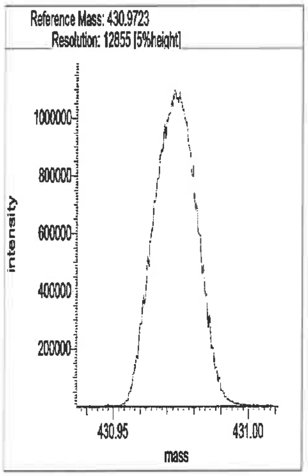

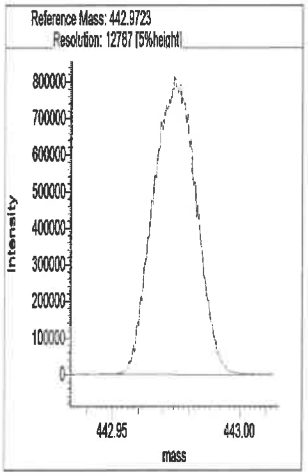

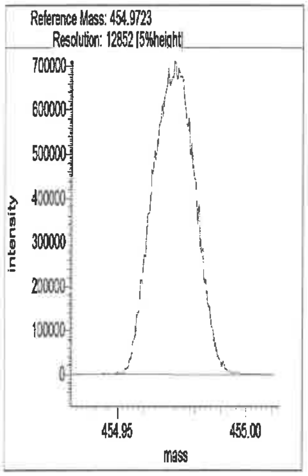

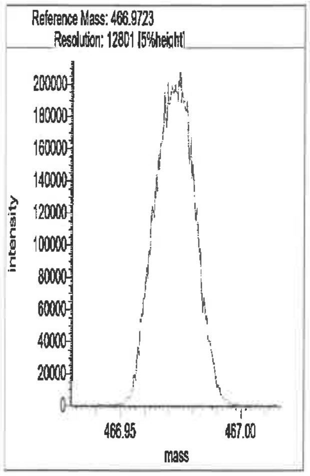

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13052 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12797 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12800 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12862 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12615 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12699 [5%height]

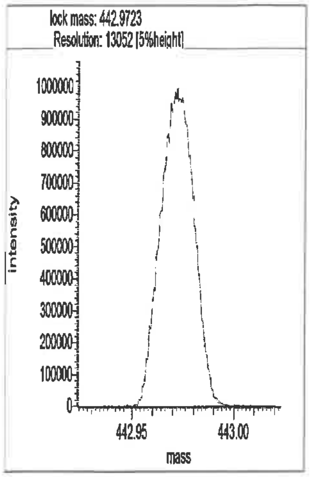
lock mass: 442.9723
Resolution: 13052 [5%height]
intensity
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900000
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

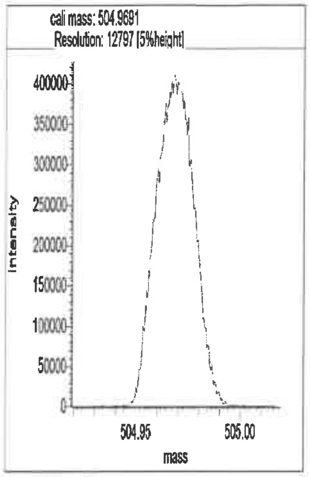
cali mass: 504.9691
Resolution: 12797 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

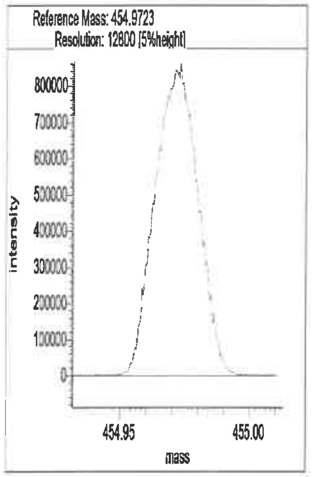
Reference Mass: 454.9723
Resolution: 12800 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

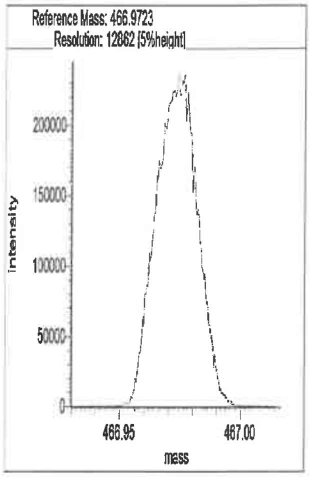
Reference Mass: 466.9723
Resolution: 12862 [5%height]
intensity
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100000
50000
0
466.95
467.00
mass

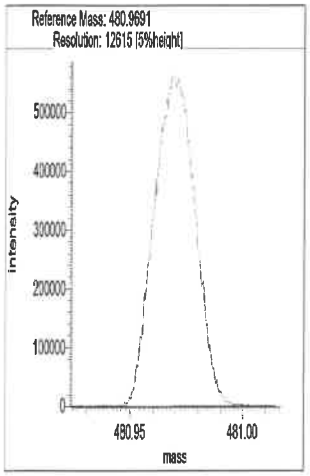
Reference Mass: 480.9691
Resolution: 12615 [5%height]
intensity
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400000
300000
200000
100000
0
480.95
481.00
mass

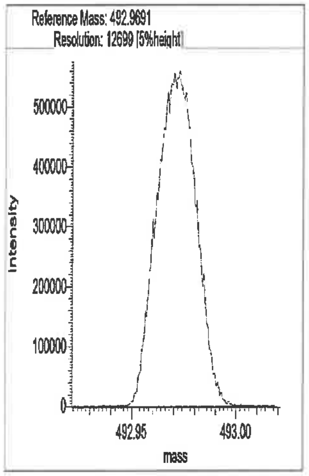
Reference Mass: 492.9691
Resolution: 12699 [5%height]
intensity
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 31-Dec-2020 14:17:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:32:56 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:31:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.248	3318747	0.83	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.277	6167451	0.81	1.9134	97.1	97.1	0.2955	0.2955	97.12	
2,3,7,8-TCDF	20.303	41037	0.76	1.1488	0.5792	0.5792	0.0194	0.0194	116	
S Total TCDF					0.5792	0.5792	0.0194	0.0194		
D 13C-2,3,7,8-TCDD	21.634	3552526	0.83	1.0908	98.1	98.1	0.3094	0.3094	98.14	
2,3,7,8-TCDD	21.677	27844	0.88	1.3069	0.5997	0.5997	0.0440	0.0440	120	
$ 37Cl4-2,3,7,8-TCDD	21.677	21628		1.2281	0.5306	0.5306	0.0149	0.0149	106	
S Total TCDD					0.5997	0.5997	0.0440	0.0440		
D 13C-1,2,3,7,8-PeCDF	27.209	4839906	1.62	1.5355	95.0	95.0	0.3391	0.3391	94.97	
1,2,3,7,8-PeCDF	27.234	159205	1.58	1.1695	2.813	2.813	0.0319	0.0319	113	
D 13C-2,3,4,7,8-PeCDF	28.726	4490556	1.61	1.4278	94.8	94.8	0.3646	0.3646	94.76	
2,3,4,7,8-PeCDF	28.751	153244	1.56	1.2244	2.787	2.787	0.0345	0.0345	111	
S Total PeCDF					5.600	5.600	0.0332	0.0332		
D 13C-1,2,3,7,8-PeCDD	29.552	2515862	1.64	0.7800	97.2	97.2	0.1736	0.1736	97.19	
1,2,3,7,8-PeCDD	29.585	86721	1.51	1.2613	2.733	2.733	0.0557	0.0557	109	
S Total PeCDD					2.733	2.733	0.0557	0.0557		
D 13C-1,2,3,4,7,8-HxCDF	34.895	3942229	0.53	1.4248	99.3	99.3	0.6430	0.6430	99.28	
1,2,3,4,7,8-HxCDF	34.912	151159	1.29	1.3553	2.829	2.829	0.0319	0.0319	113	
D 13C-1,2,3,6,7,8-HxCDF	35.055	4870548	0.54	1.7108	102.2	102.2	0.5355	0.5355	102	
1,2,3,6,7,8-HxCDF	35.081	175206	1.27	1.3081	2.750	2.750	0.0287	0.0287	110	
D 13C-2,3,4,6,7,8-HxCDF	35.873	4251070	0.54	1.5455	98.7	98.7	0.5928	0.5928	98.69	
2,3,4,6,7,8-HxCDF	35.889	159311	1.27	1.3248	2.829	2.829	0.0284	0.0284	113	
D 13C-1,2,3,7,8,9-HxCDF	36.766	3836874	0.53	1.3772	100.0	100.0	0.6652	0.6652	99.97	
1,2,3,7,8,9-HxCDF	36.782	145515	1.25	1.3372	2.836	2.836	0.0293	0.0293	113	
S Total HxCDF					11.2	11.2	0.0296	0.0296		
* 13C-1,2,3,7,8,9-HxCDD	36.572	2786974	1.30	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.092	2209857	1.33	0.8266	95.9	95.9	0.3730	0.3730	95.92	
1,2,3,4,7,8-HxCDD	36.108	86791	1.25	1.3422	2.926	2.926	0.0338	0.0338	117	
D 13C-1,2,3,6,7,8-HxCDD	36.210	2838555	1.29	1.0417	97.8	97.8	0.2960	0.2960	97.78	
1,2,3,6,7,8-HxCDD	36.218	96531	1.24	1.1989	2.836	2.836	0.0325	0.0325	113	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.589	100115	1.28	1.3636	2.909	2.909	0.0307	0.0307	116	
S Total HxCDD					8.671	8.671	0.0323	0.0323		
D 13C-1,2,3,4,6,7,8-HpCDF	38.580	3021638	0.46	1.1053	98.1	98.1	0.9283	0.9283	98.09	
1,2,3,4,6,7,8-HpCDF	38.597	141160	1.03	1.6487	2.834	2.834	0.0398	0.0398	113	
D 13C-1,2,3,4,7,8,9-HpCDF	39.836	2625609	0.46	0.9761	96.5	96.5	1.051	1.051	96.52	
1,2,3,4,7,8,9-HpCDF	39.844	118085	1.12	1.5723	2.860	2.860	0.0438	0.0438	114	
S Total HpCDF					5.694	5.694	0.0418	0.0418		
D 13C-1,2,3,4,6,7,8-HpCDD	39.533	2365808	1.11	0.8768	96.8	96.8	0.4403	0.4403	96.81	
1,2,3,4,6,7,8-HpCDD	39.541	80619	1.06	1.2146	2.806	2.806	0.0280	0.0280	112	
S Total HpCDD					2.806	2.806	0.0280	0.0280		
D 13C-OCDD	42.017	3879165	0.91	0.7137	195.0	195.0	0.3650	0.3650	97.51	
OCDF	42.118	194101	0.92	1.8132	5.519	5.519	0.0453	0.0453	110	
OCDD	42.025	134936	0.90	1.2562	5.538	5.538	0.0434	0.0434	111	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Report Date: 04-Jan-2021 09:33:07 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 31-Dec-2020 14:17:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:32:56 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:31:23

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.248	21.272	-1		1500402	209422	476	1190	440		
333.9338	21.248	21.272	-1		1818345	255759	152	380	1683	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.277	20.286	0	0.954	2764774	403093	728	1820	554		
317.9389	20.269	20.286	-1	0.954	3402677	504915	324	810	1558	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.303	20.313	-1	1.001	17729	2641	17	42	155		
305.8987	20.286	20.313	-2	1.000	23308	3113	64	160	49	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.634	21.646	-1	1.018	1614965	214757	476	1190	451		
333.9338	21.634	21.646	-1	1.018	1937561	257885	152	380	1697	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.677	21.677	0	1.002	13036	1642	91	227	18		
321.8936	21.668	21.677	-1	1.002	14808	2340	18	45	130	0.88(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.677	21.684	0	1.020	21628	3086	34	85	91		
13C-1,2,3,7,8-PeCDF											
351.9000	27.209	27.219	-1	1.281	2993958	437826	533	1332	821		
353.8970	27.209	27.219	-1	1.281	1845948	272766	436	1090	626	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.234	27.244	-1	1.001	97418	14906	23	57	648		
341.8567	27.234	27.244	-1	1.001	61787	9995	83	207	120	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.726	28.742	-1	1.352	2772027	389252	533	1332	730		
353.8970	28.726	28.742	-1	1.352	1718529	237238	436	1090	544	1.61(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.751	28.767	-1	1.001	93282	12419	23	57	540		
341.8567	28.751	28.767	-1	1.001	59962	7785	83	207	94	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.552	29.564	-1	1.391	1564552	201230	139	347	1448		
369.8919	29.560	29.564	0	1.391	951310	126367	113	282	1118	1.64(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.585	29.593	0	1.001	52131	7283	67	167	109		
357.8516	29.568	29.593	-1	1.001	34590	4590	25	62	184	1.51(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.895	34.899	0	0.954	1359504	282349	828	2070	341		
385.8610	34.895	34.899	0	0.954	2582725	532184	1599	3997	333	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.912	34.916	0	1.000	85087	17172	86	215	200		
375.8178	34.912	34.916	0	1.000	66072	13104	55	137	238	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.055	35.061	0	0.959	1716949	327438	828	2070	395		
385.8610	35.055	35.061	0	0.959	3153599	610484	1599	3997	382	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.081	35.079	0	1.001	98049	18819	86	215	219		
375.8178	35.072	35.079	0	1.000	77157	15322	55	137	279	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.873	35.878	0	0.981	1497752	326754	828	2070	395		
385.8610	35.873	35.878	0	0.981	2753318	609124	1599	3997	381	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.889	35.893	0	1.000	89094	18751	86	215	218		
375.8178	35.889	35.893	0	1.000	70217	15588	55	137	283	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.766	36.769	0	1.005	1329431	306184	828	2070	370		
385.8610	36.774	36.769	0	1.006	2507443	590912	1599	3997	370	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.782	36.786	0	1.000	80716	17995	86	215	209		
375.8178	36.782	36.786	0	1.000	64799	14673	55	137	267	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.572	36.576	0		1575214	376090	462	1155	814		
403.8529	36.572	36.576	0		1211760	286166	355	887	806	1.30(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.092	36.092	0	0.987	1260246	311231	462	1155	674		
403.8529	36.092	36.092	0	0.987	949611	233896	355	887	659	1.33(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.108	36.107	0	1.000	48286	12193	54	135	226		
391.8127	36.100	36.107	0	1.000	38505	9482	45	112	211	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.210	36.210	0	0.990	1600762	355996	462	1155	771		
403.8529	36.210	36.210	0	0.990	1237793	278623	355	887	785	1.29(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.218	36.223	0	1.000	53492	11477	54	135	213		
391.8127	36.227	36.223	0	1.000	43039	9679	45	112	215	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.589	36.589	0	1.014	56166	12921	54	135	239		
391.8127	36.580	36.589	-1	1.014	43949	10423	45	112	232	1.28(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.580	38.584	0	1.055	953948	248707	902	2255	276		
419.8220	38.589	38.584	0	1.055	2067690	531145	1816	4540	292	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.597	38.598	0	1.000	71489	18514	123	307	151		
409.7788	38.597	38.598	0	1.000	69671	17828	82	205	217	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.836	39.838	0	1.089	827678	234083	902	2255	260		
419.8220	39.836	39.838	0	1.089	1797931	509532	1816	4540	281	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.844	39.846	0	1.000	62508	16831	123	307	137		
409.7788	39.844	39.846	0	1.000	55577	15446	82	205	188	1.12(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.533	39.533	0	1.081	1242925	352437	499	1247	706		
437.8140	39.533	39.533	0	1.081	1122883	324846	524	1310	620	1.11(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.541	39.541	0	1.000	41437	11293	51	127	221		
425.7737	39.541	39.541	0	1.000	39182	11383	41	102	278	1.06(0.88-1.20)	
13C-OCDD											
469.7780	42.017	42.021	0	1.149	1848207	438113	341	852	1285		
471.7750	42.017	42.021	0	1.149	2030958	486738	349	872	1395	0.91(0.76-1.02)	
OCDF											
441.7428	42.118	42.115	0	1.002	93267	22168	40	100	554		
443.7399	42.118	42.115	0	1.002	100834	23618	112	280	211	0.92(0.76-1.02)	
OCDD											
457.7377	42.025	42.029	0	1.000	63827	15901	41	102	388		
459.7348	42.034	42.029	0	1.000	71109	17364	60	150	289	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00030 Amount Added: 1.00 Units: mL

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d		
Injection Date:	31-Dec-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

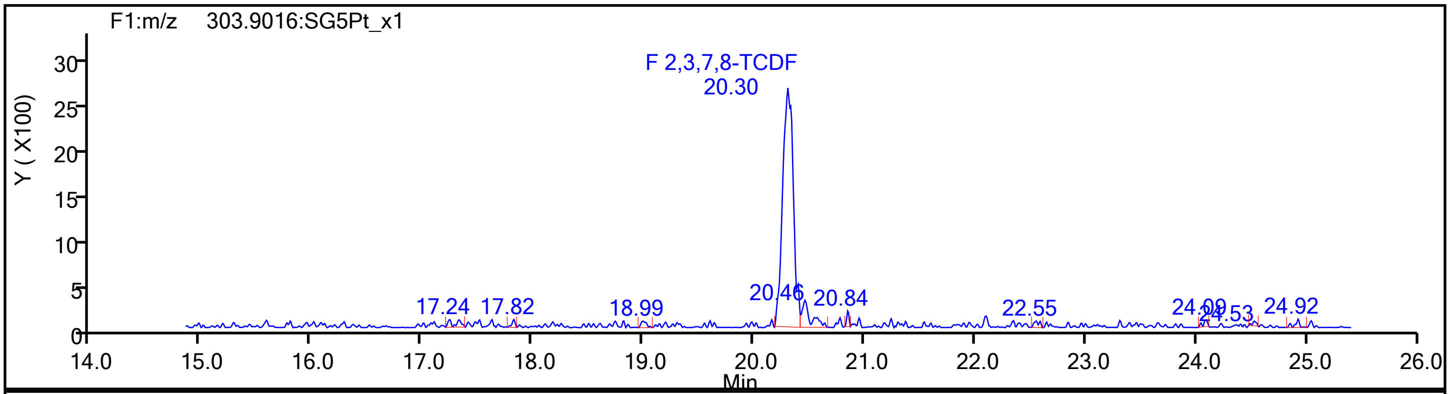

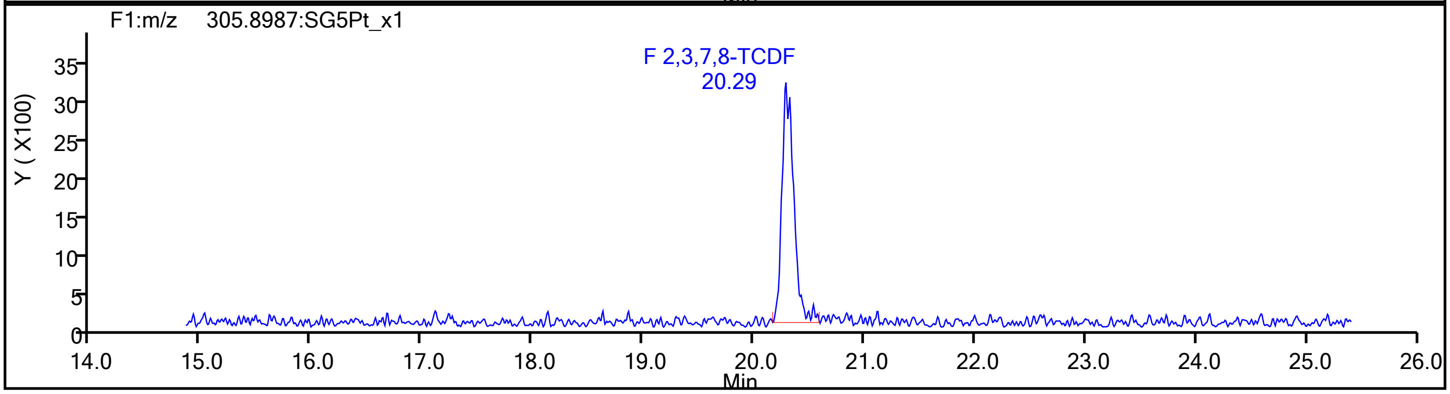

TCDF Standards

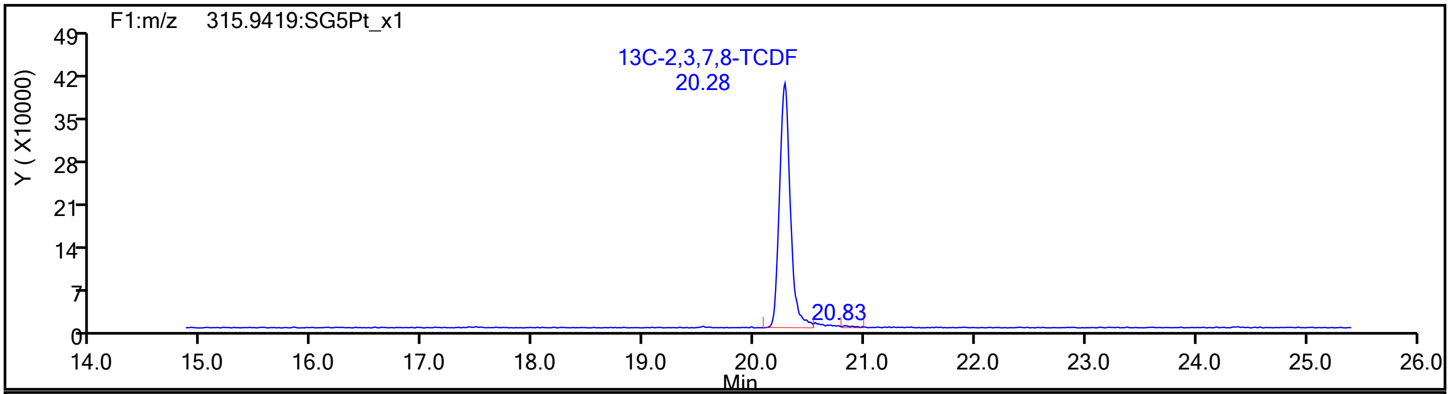

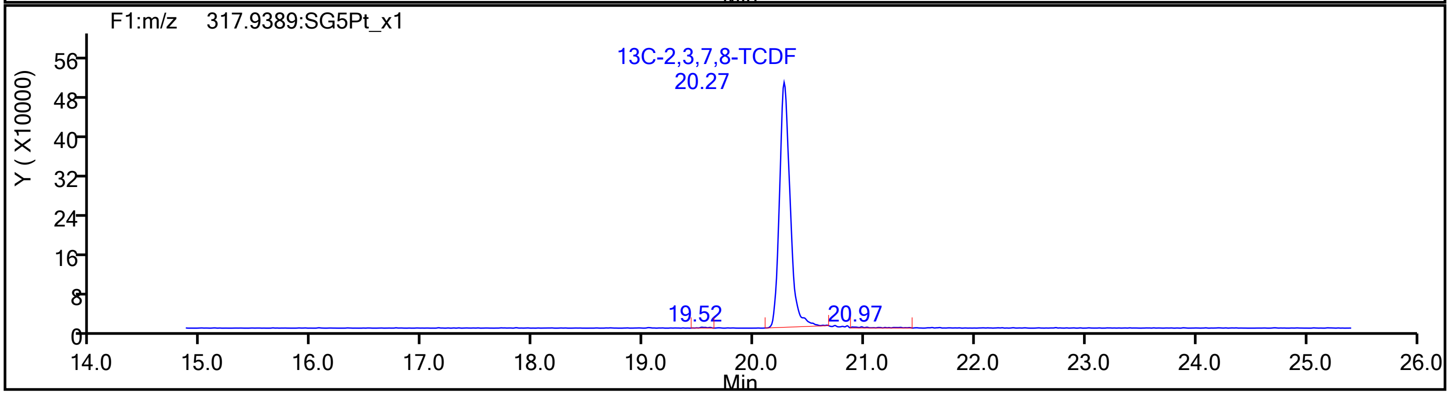

Report Date: 04-Jan-2021 09:33:07 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

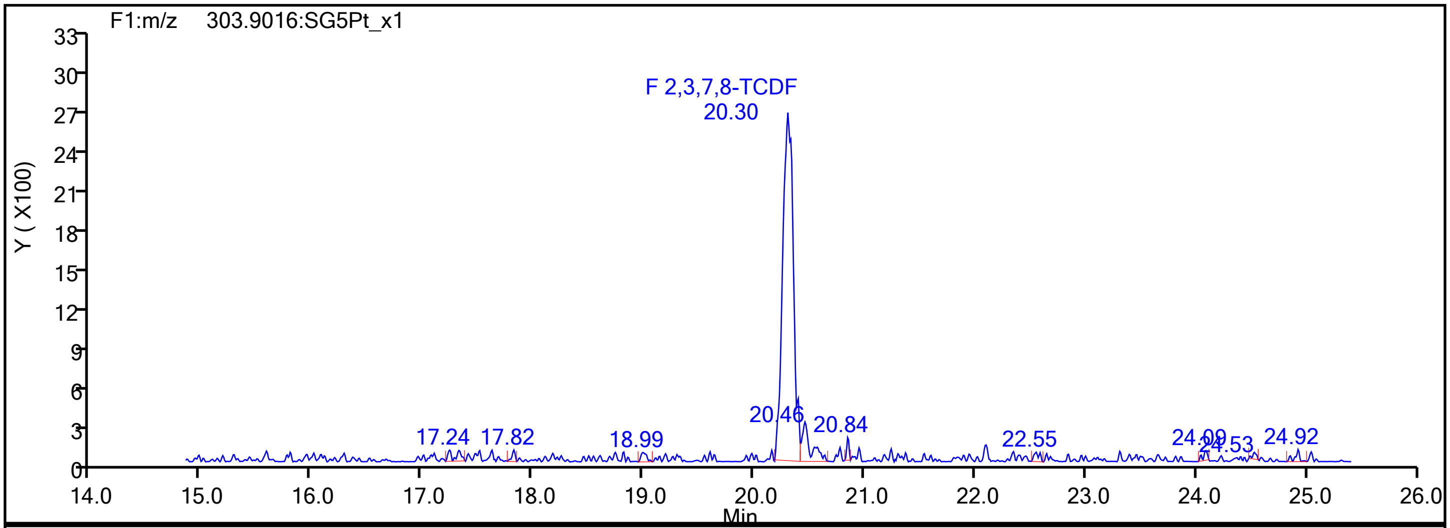

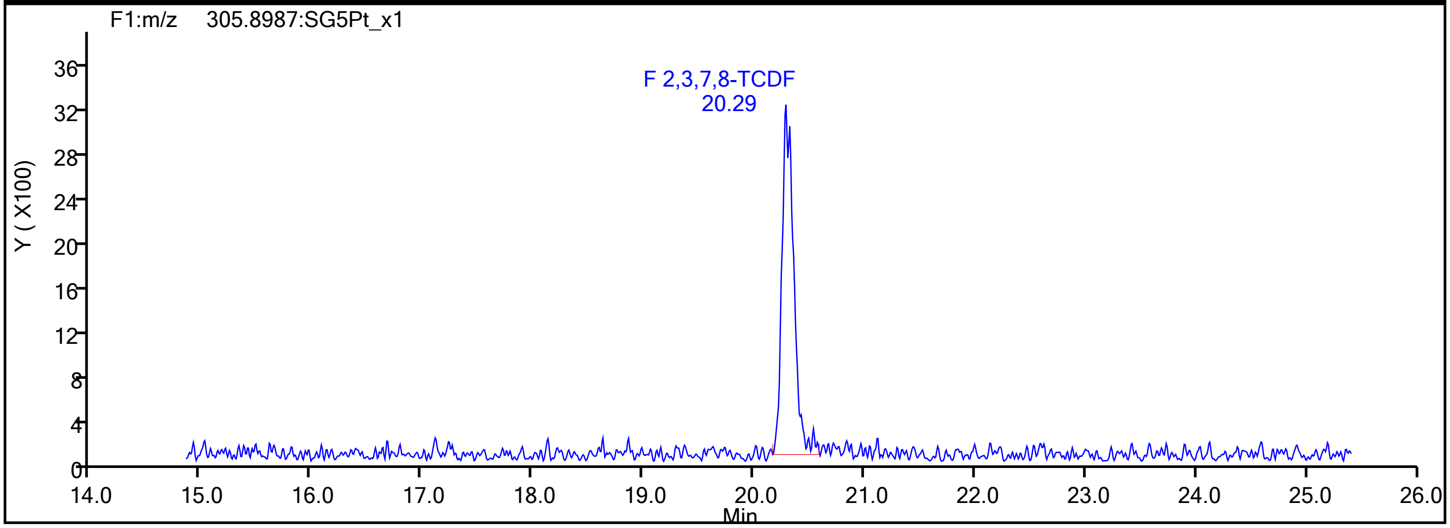

TCDF Interference Mass

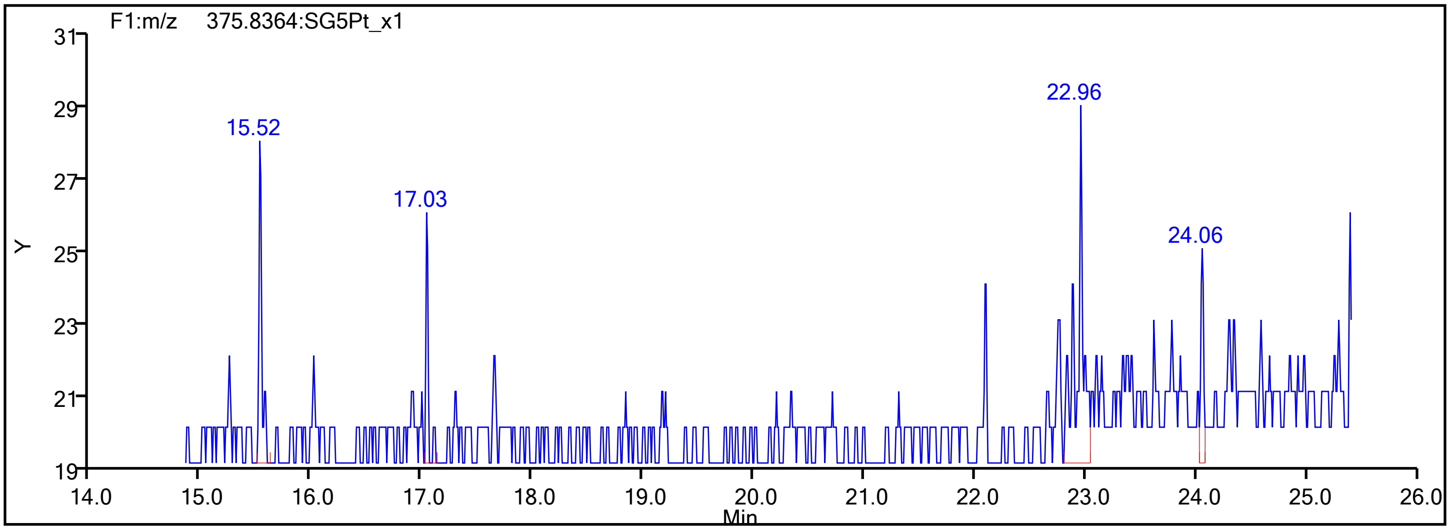

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Eurofins TestAmerica, Sacramento

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Sample Line#: 3
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TCDD

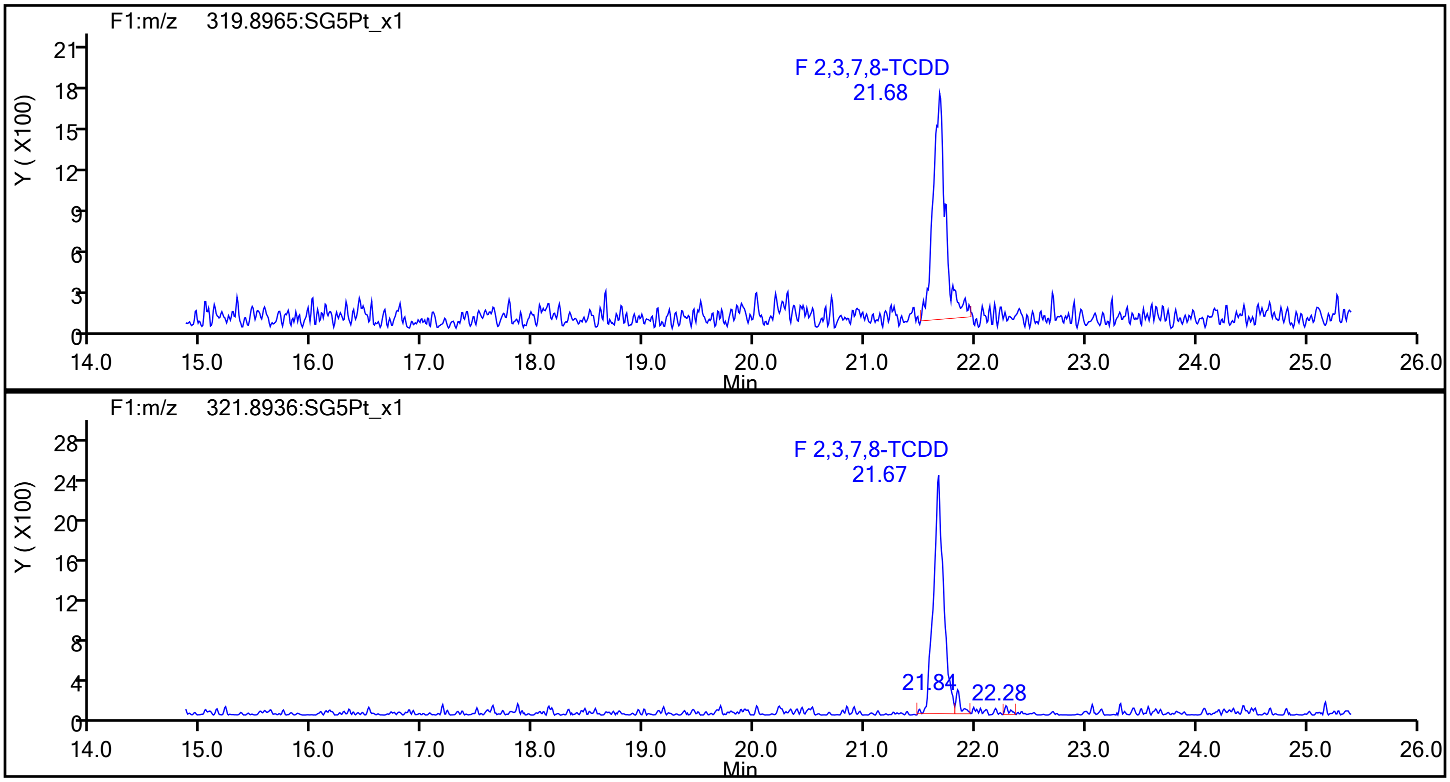

TCDD Standards

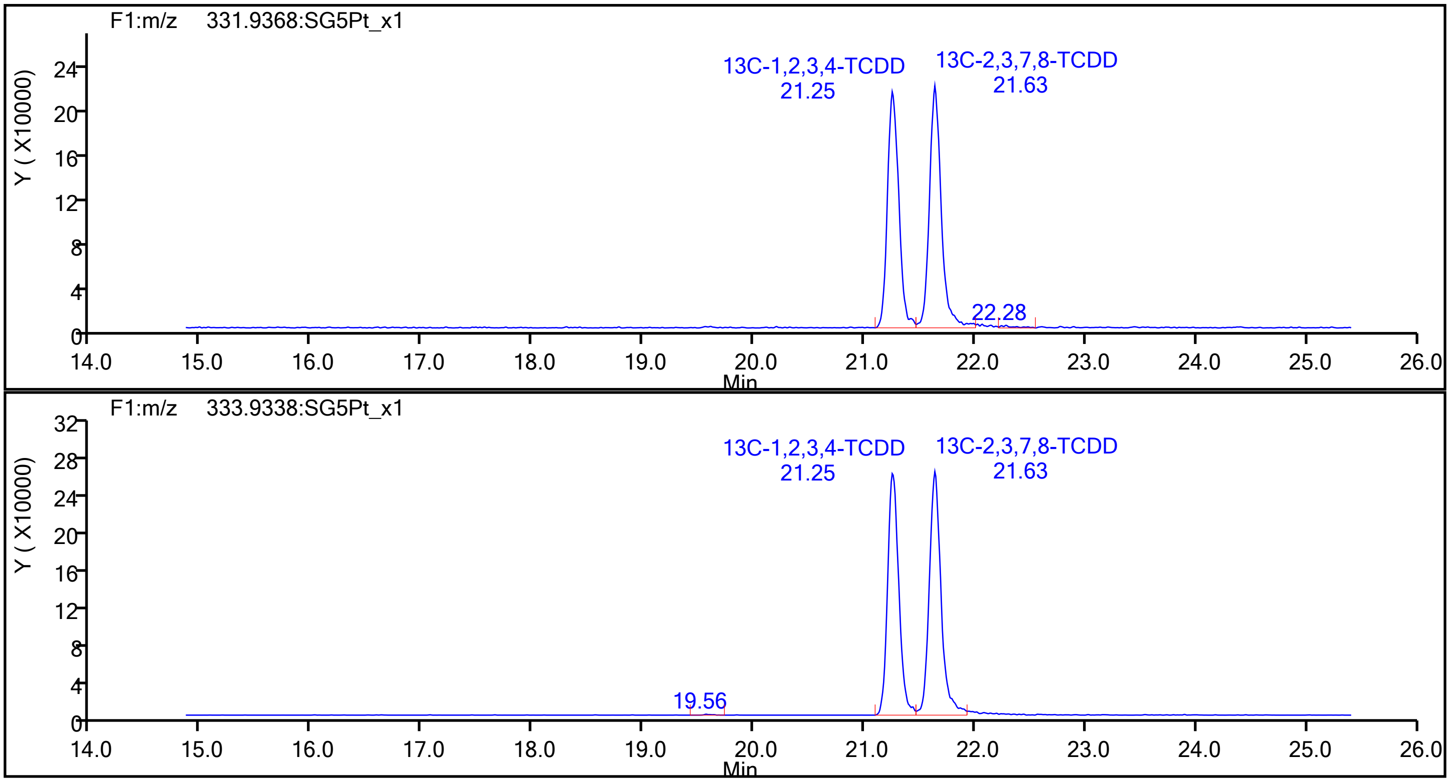

Report Date: 04-Jan-2021 09:33:08 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

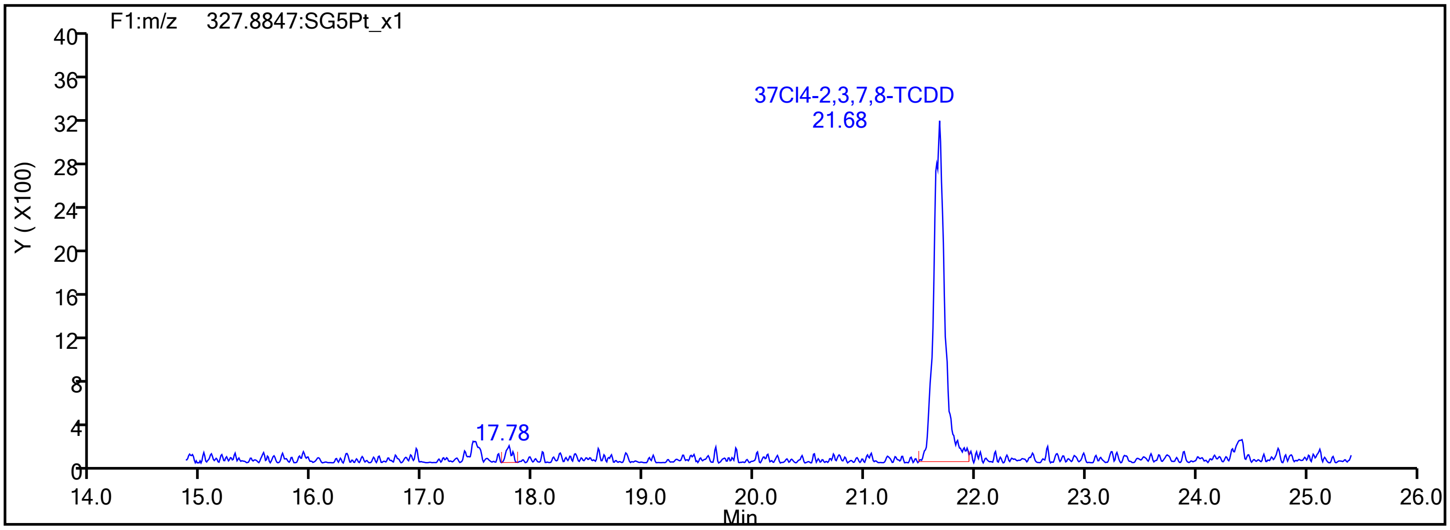

37Cl4-TCDD Standards

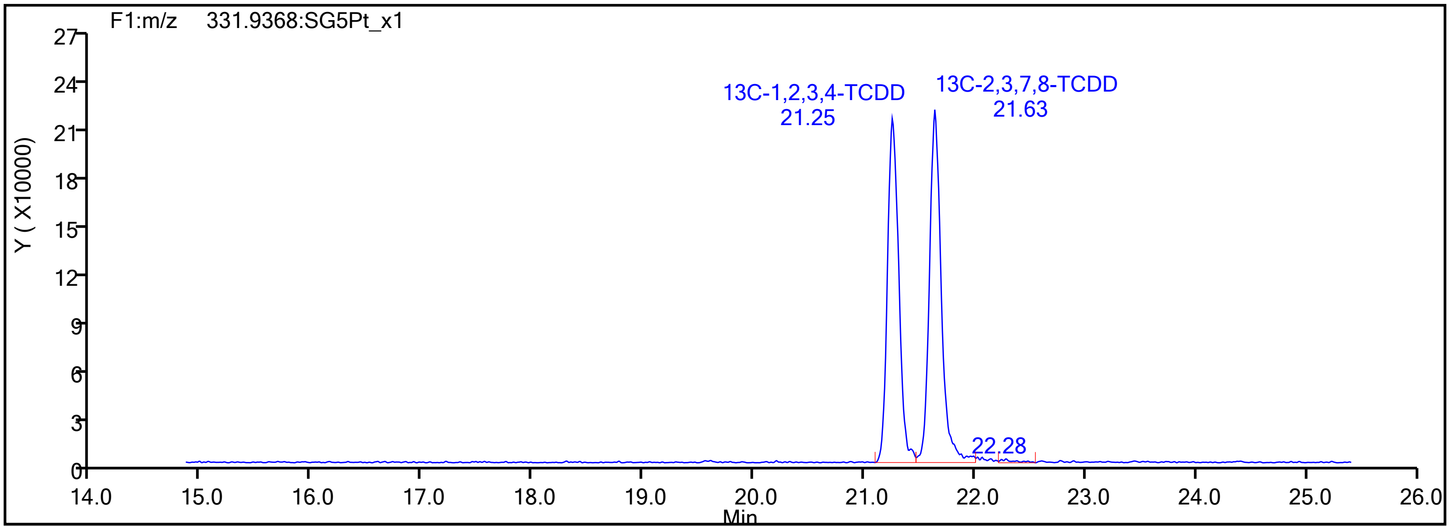

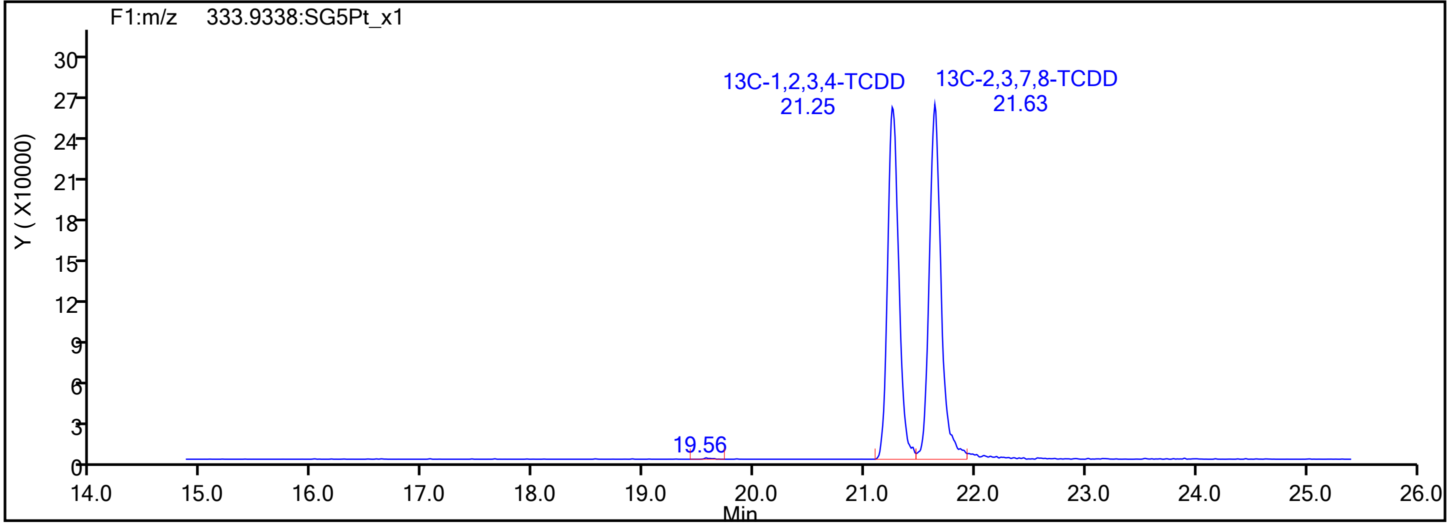

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

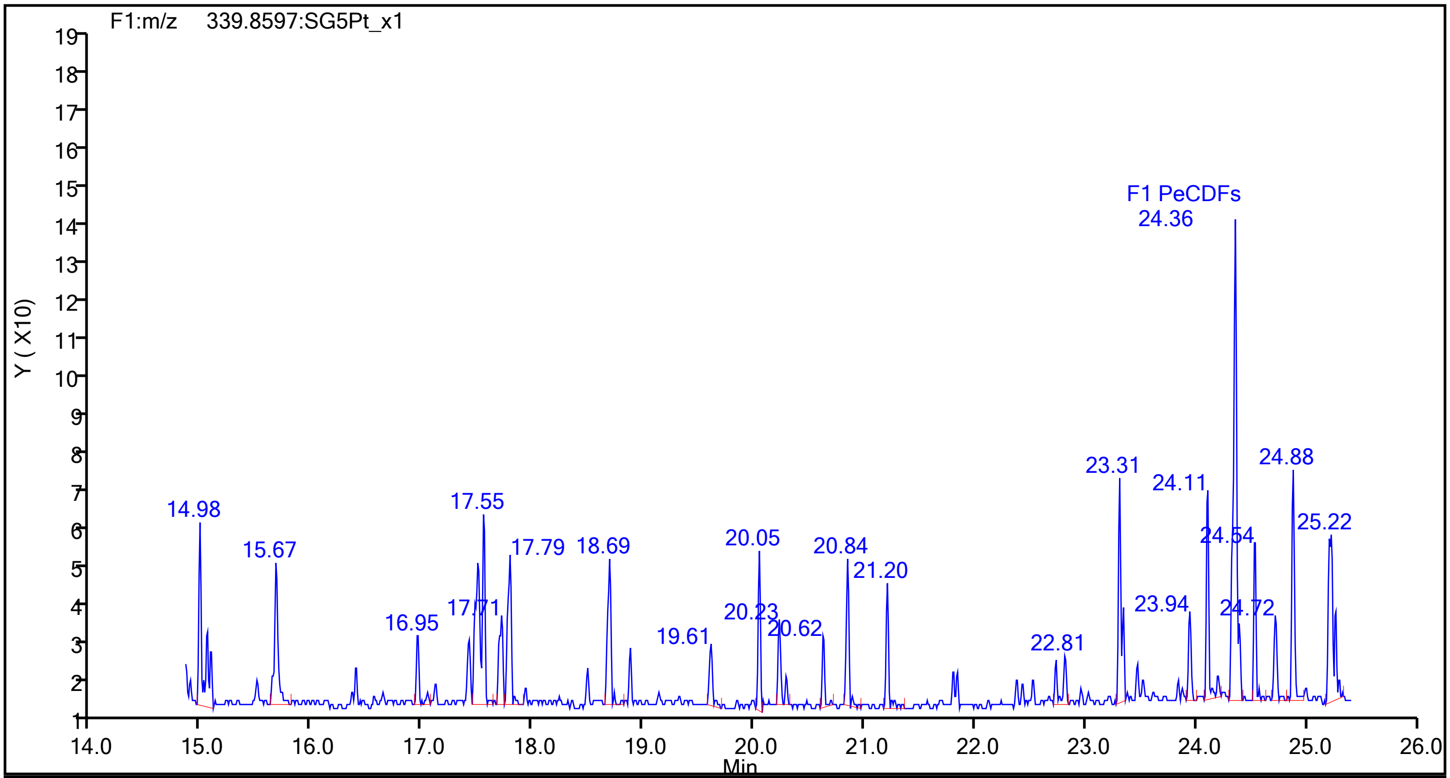

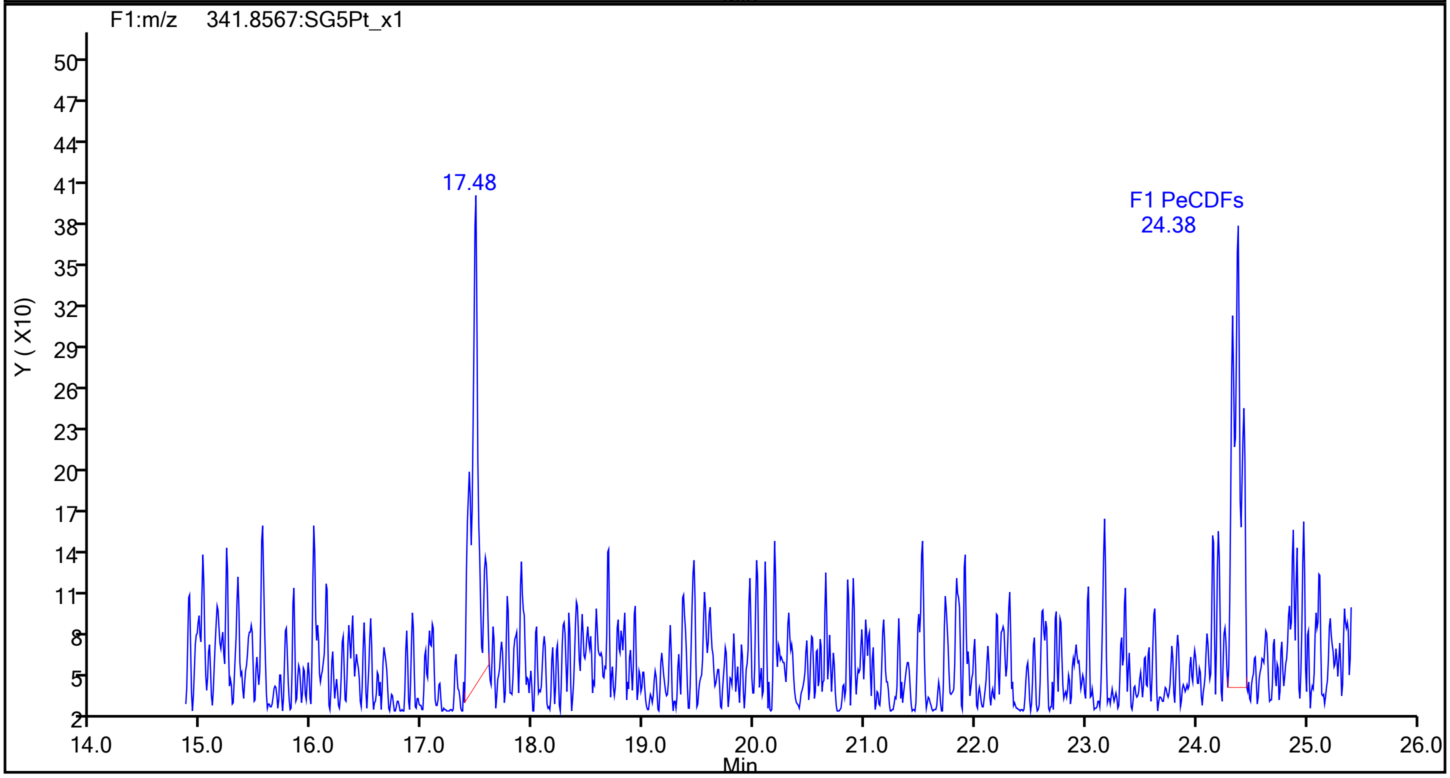

Report Date: 04-Jan-2021 09:33:08 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Limit Group: HR - 1613B - ICAL

Client ID:

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Sample Line#: 3

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

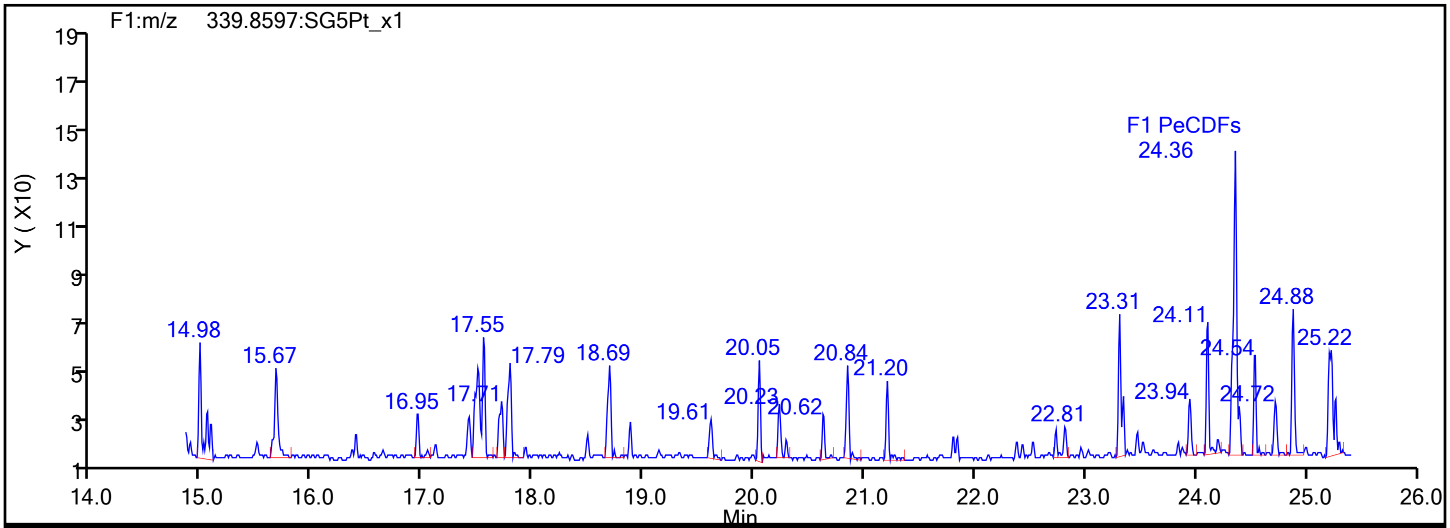

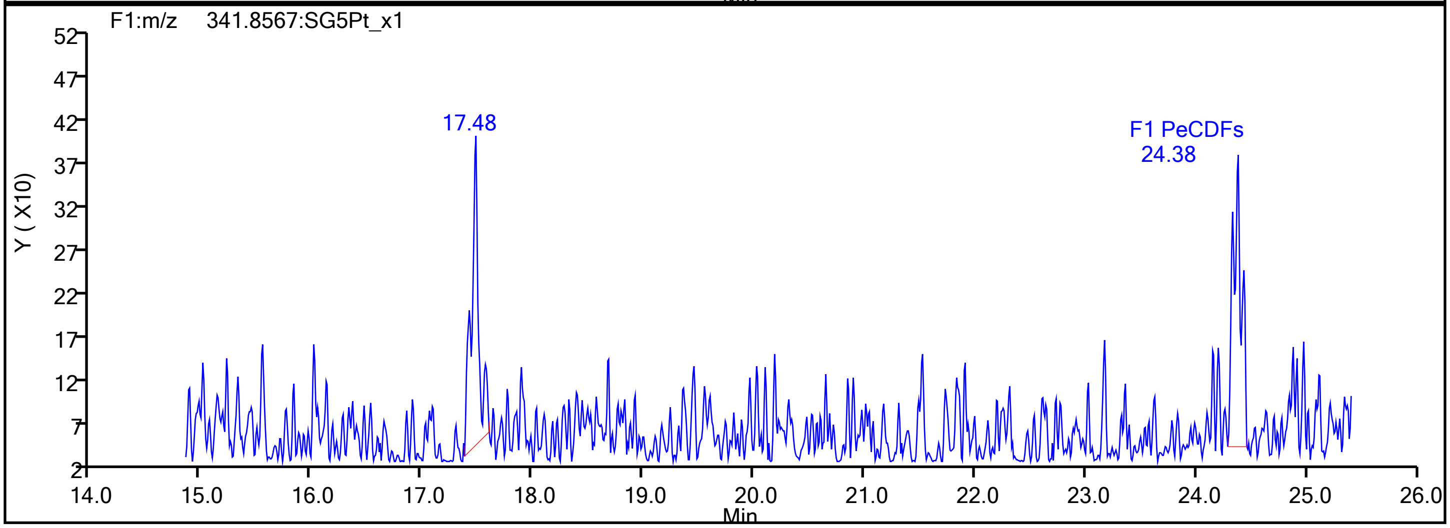

F1 PeCDFs Interference Mass

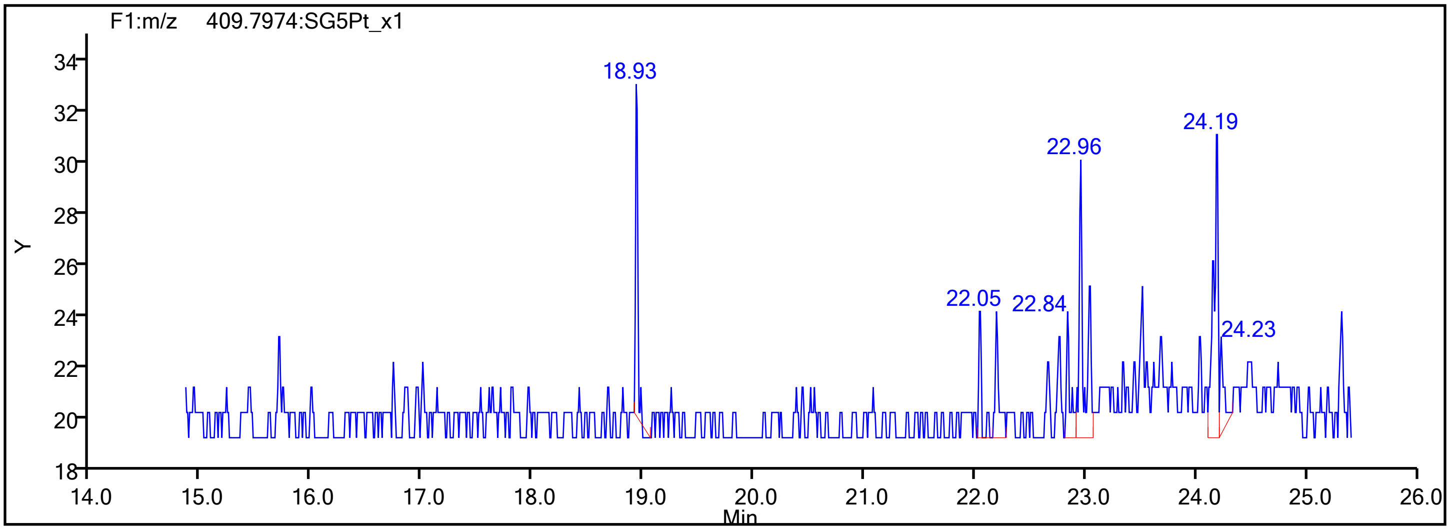

Eurofins TestAmerica, Sacramento

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PeCDF

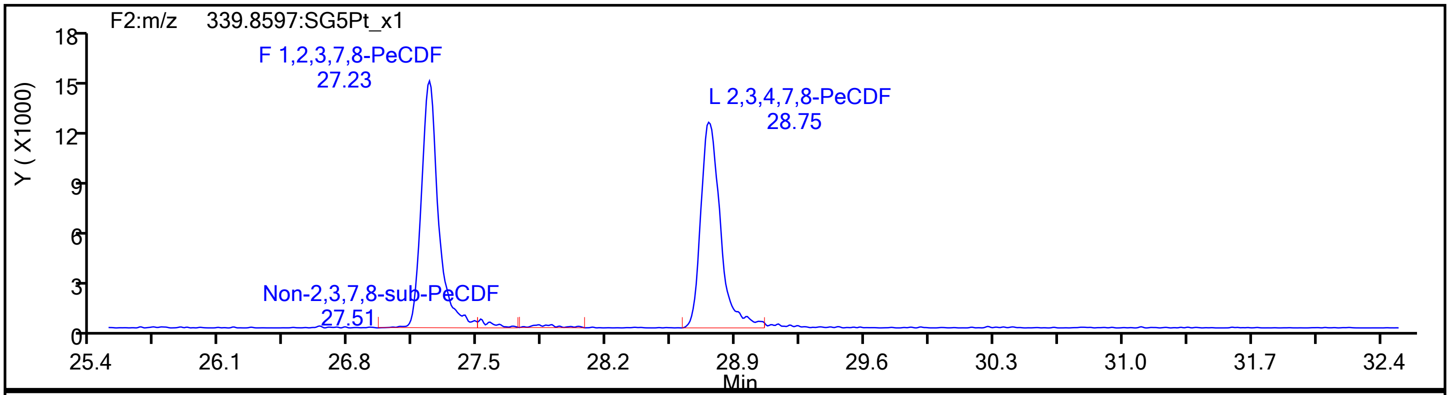

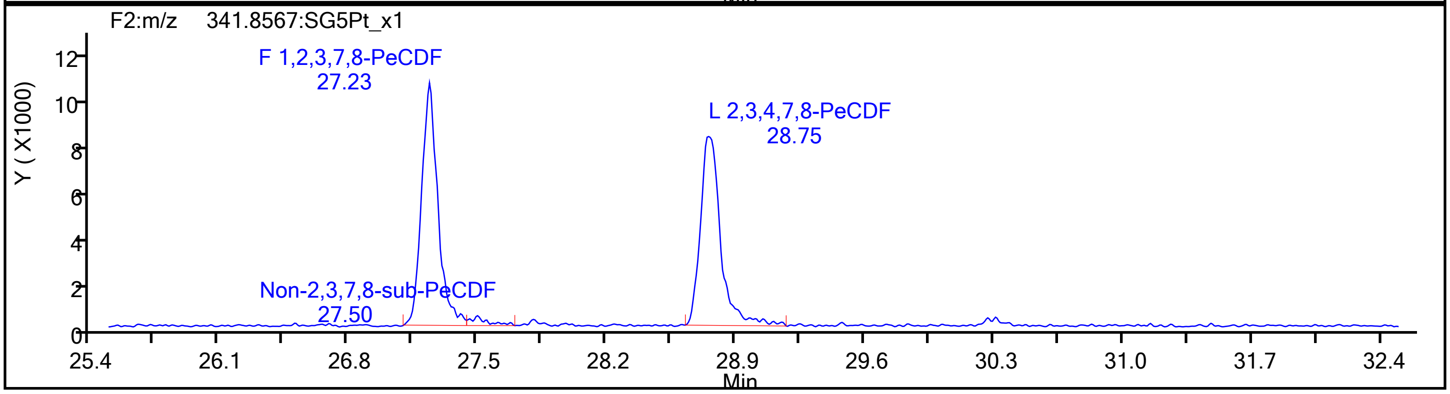

PeCDF Standards

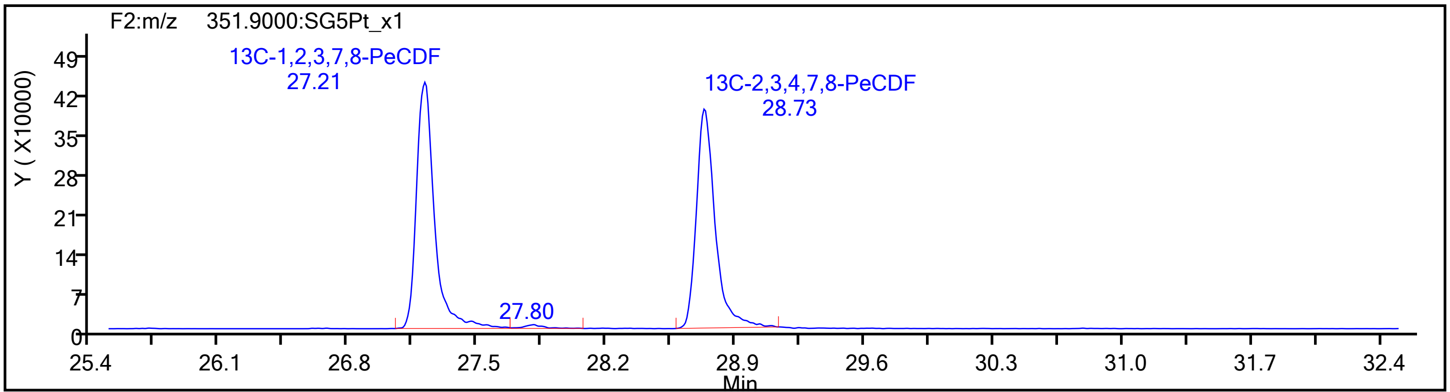

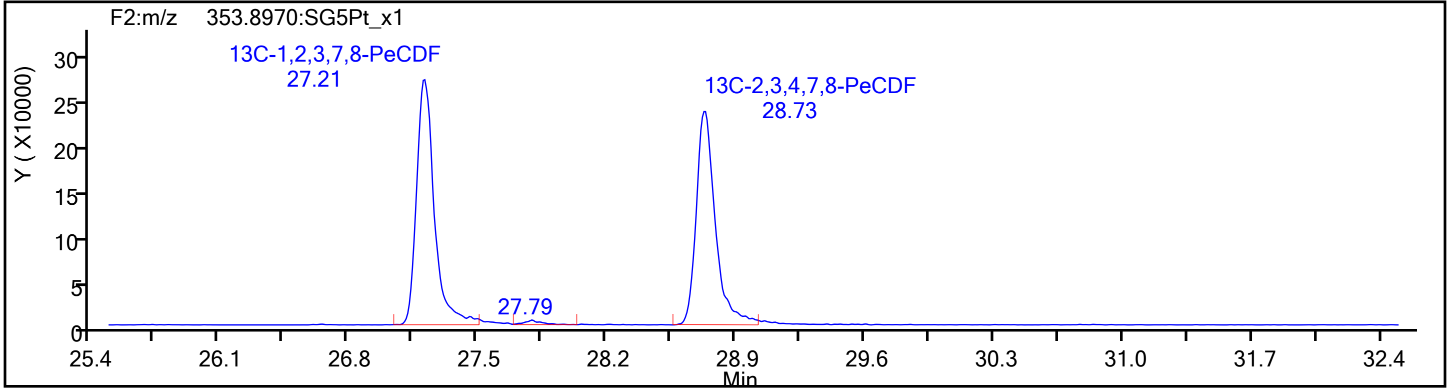

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PeCDF

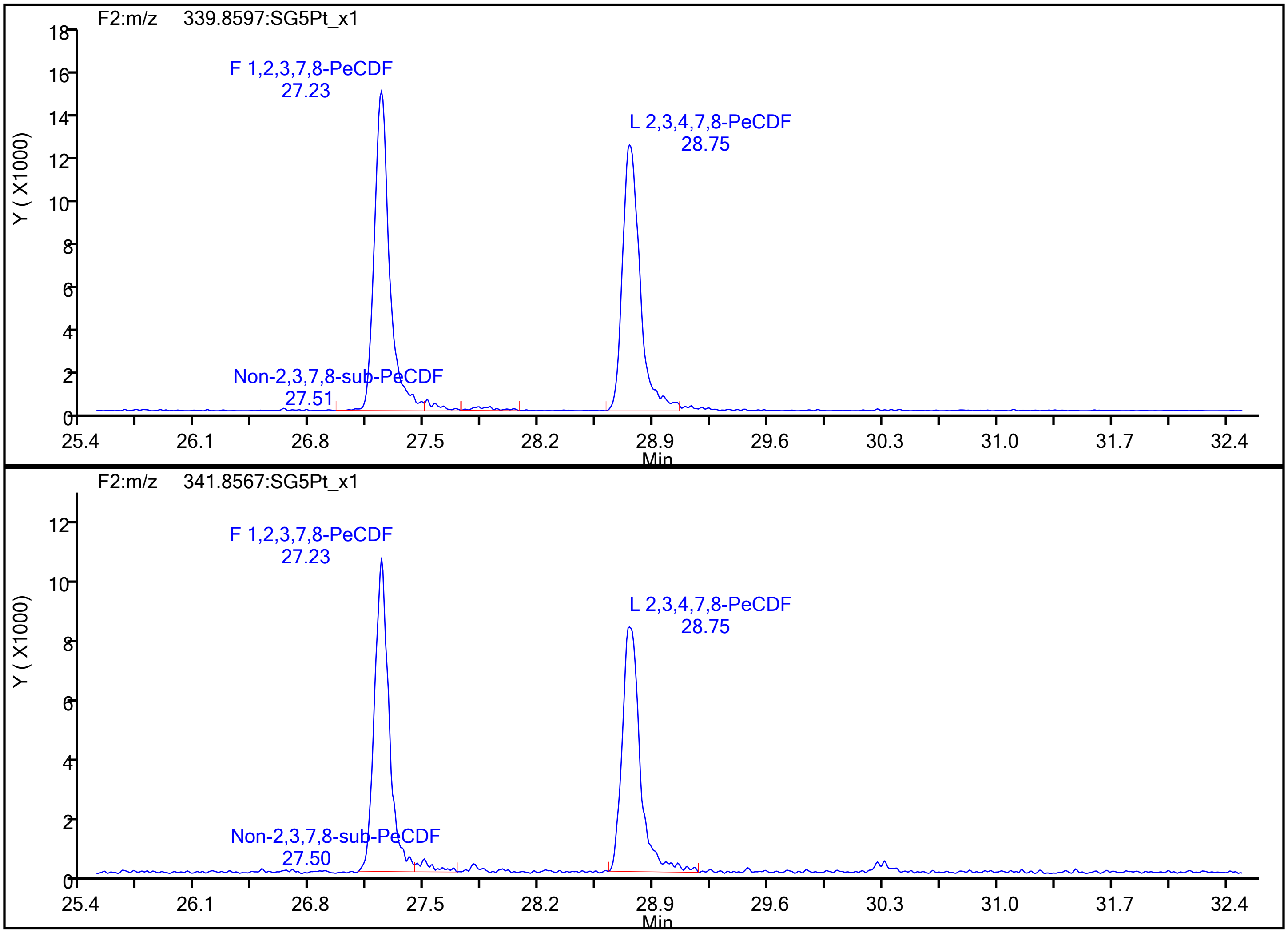

PeCDF Interference Mass

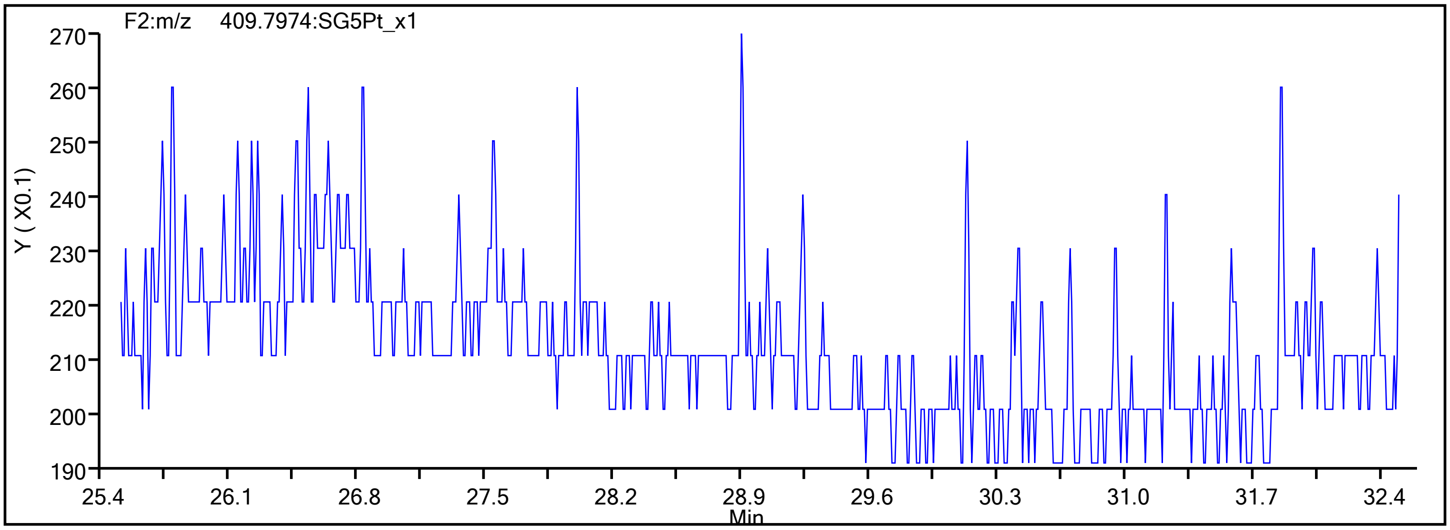

Report Date: 04-Jan-2021 09:33:08
Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDD

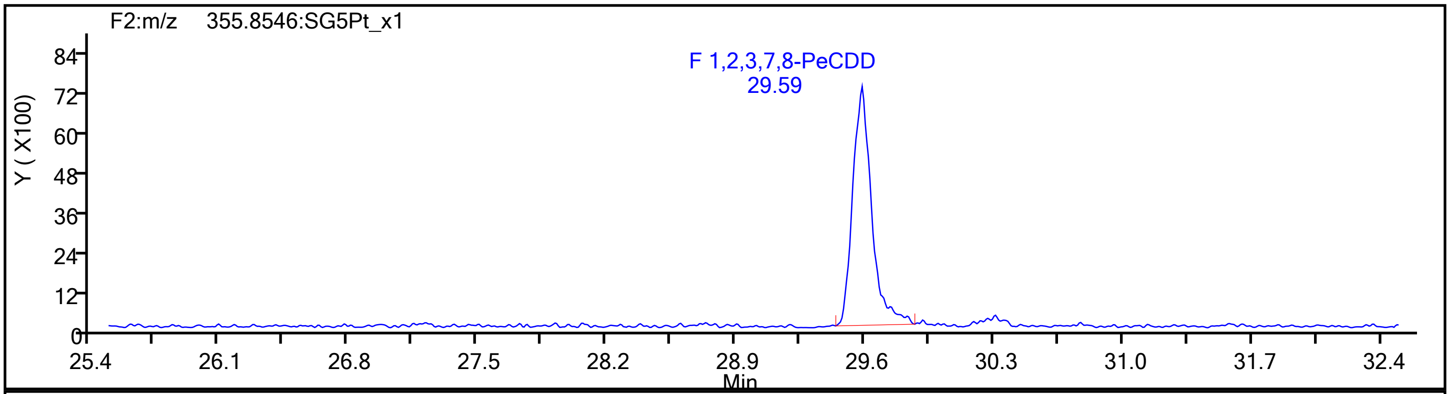

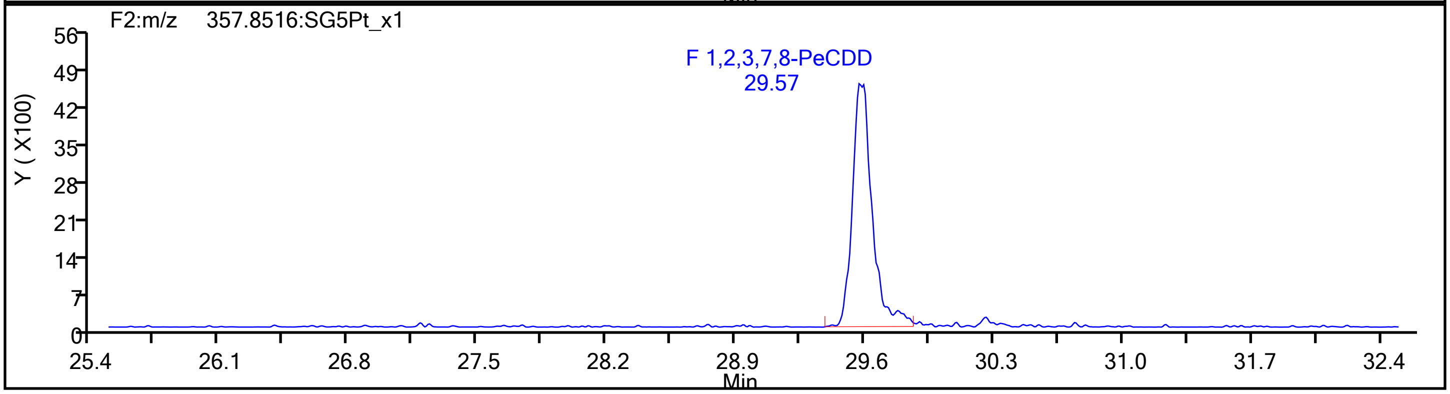

PeCDD Standards

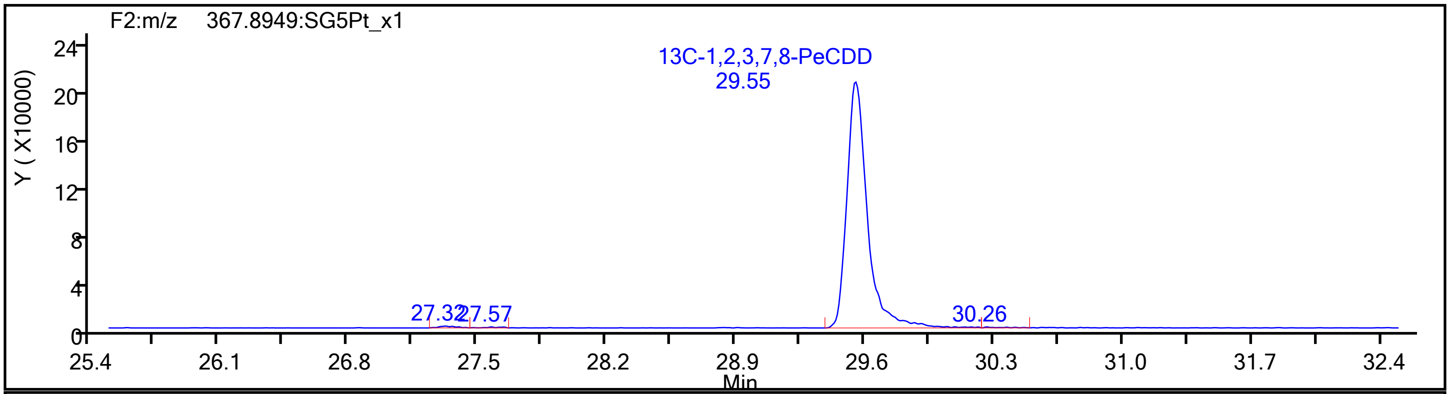

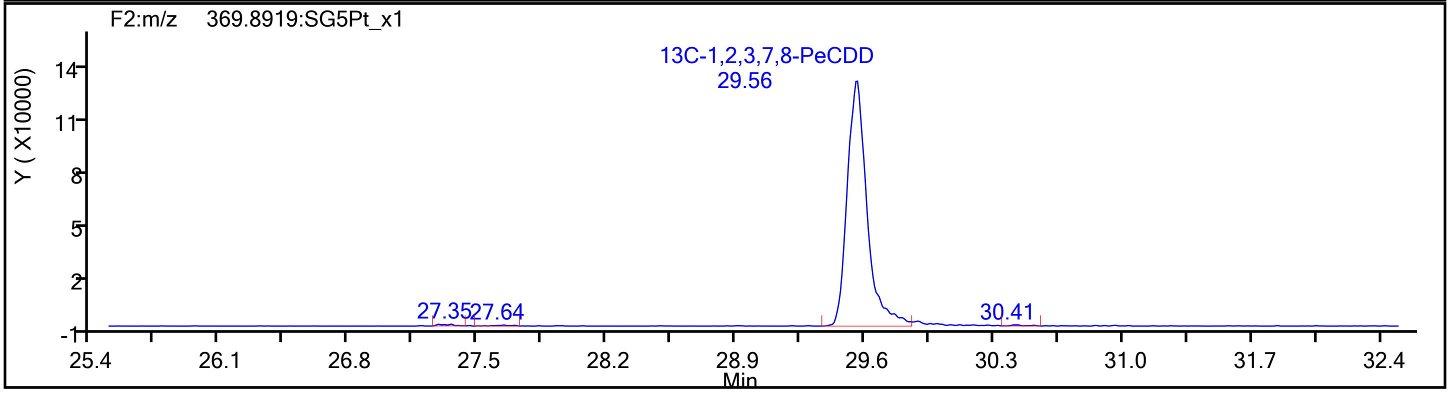

Report Date: 04-Jan-2021 09:33:08 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
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Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

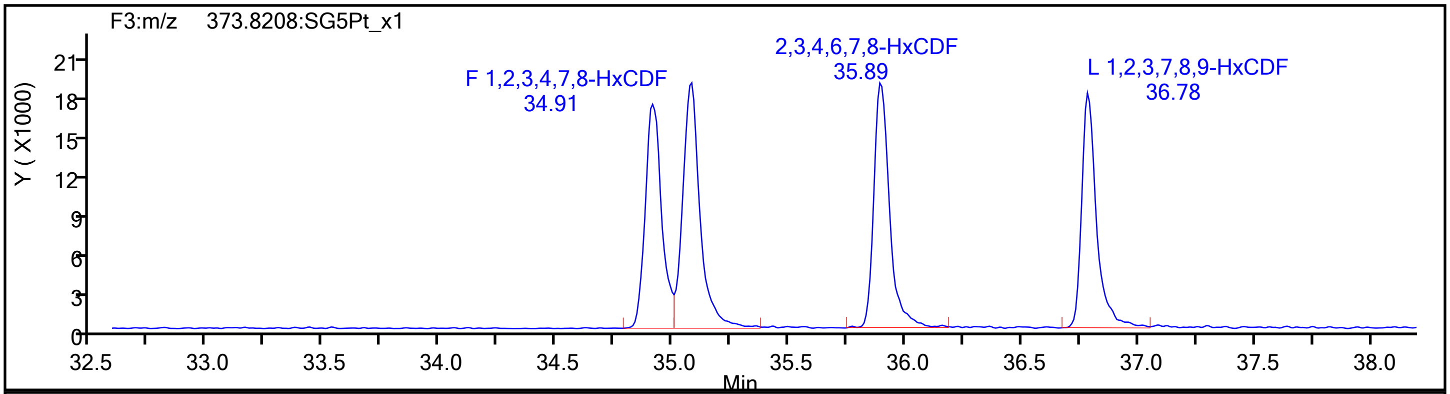

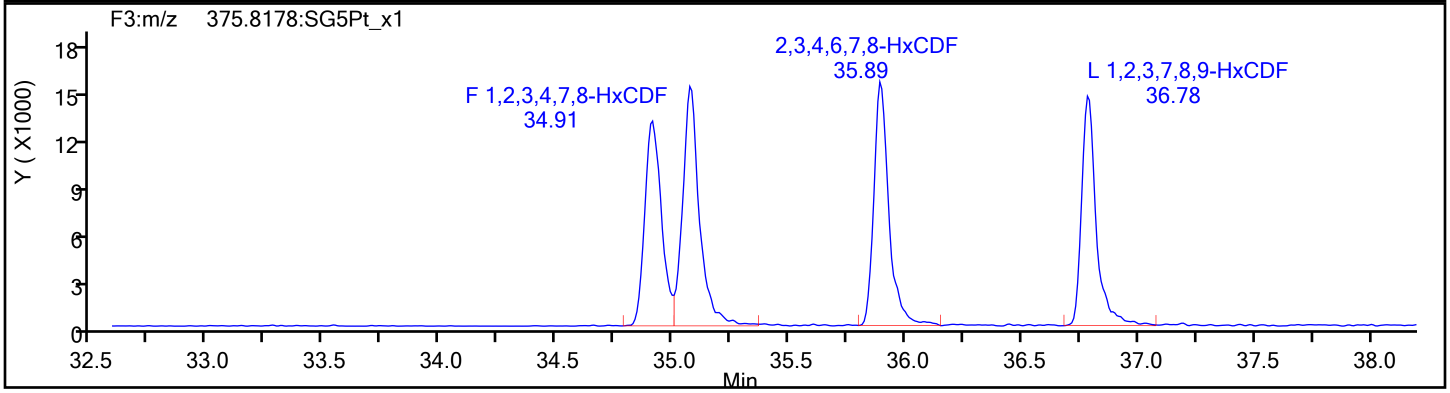

HxCDF Standards

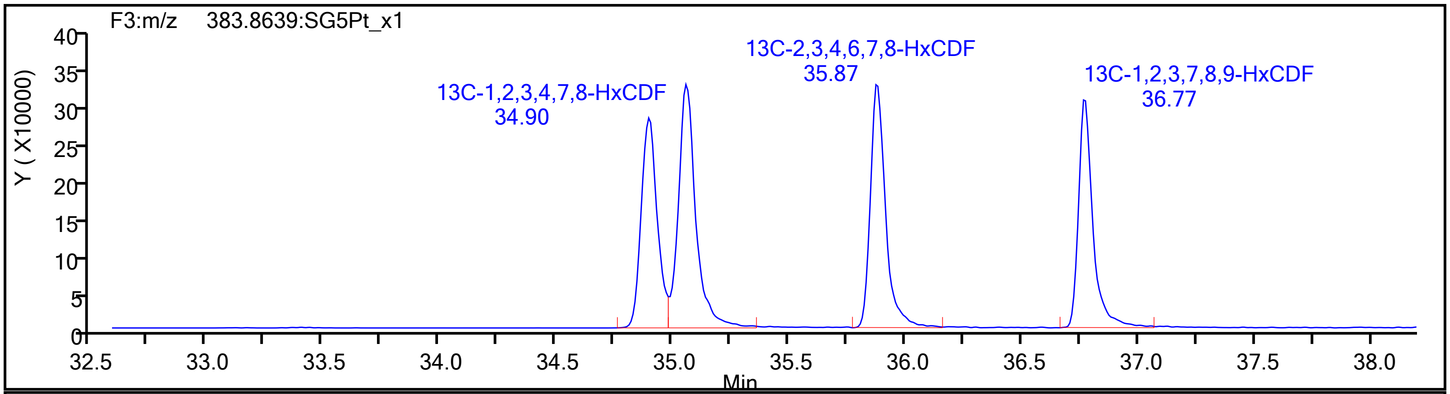

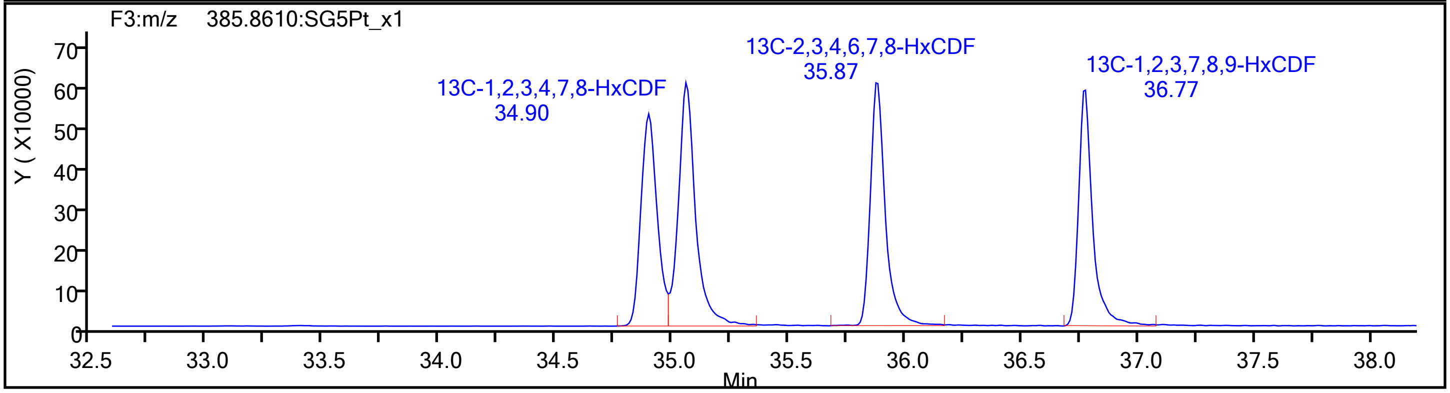

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Eurofins TestAmerica, Sacramento

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HxCDF

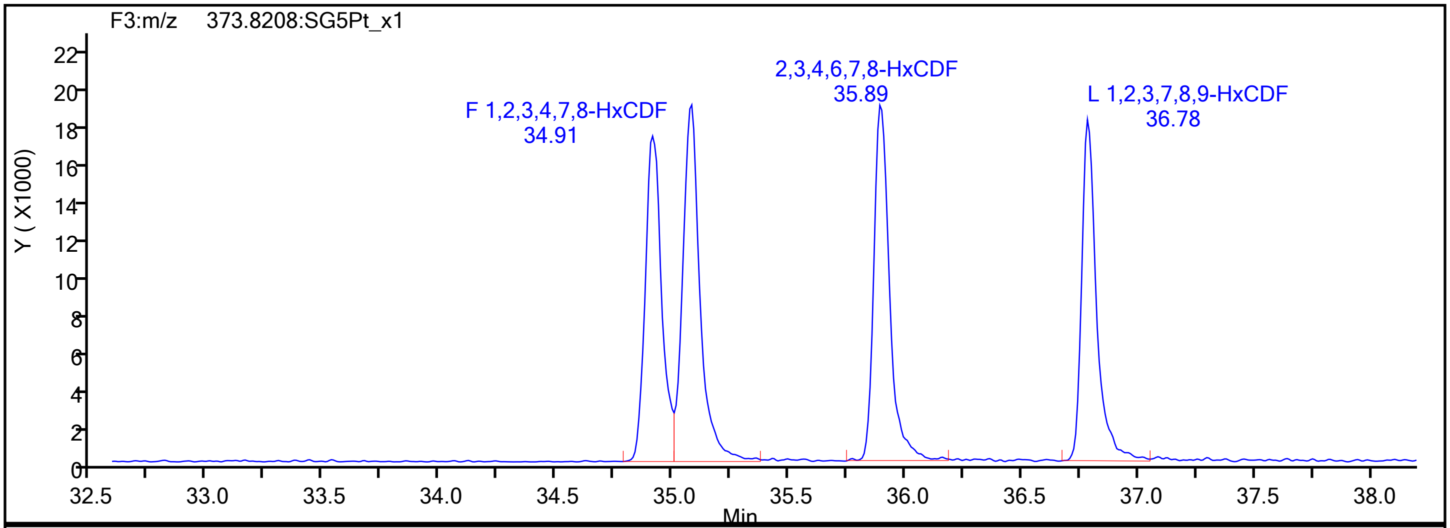

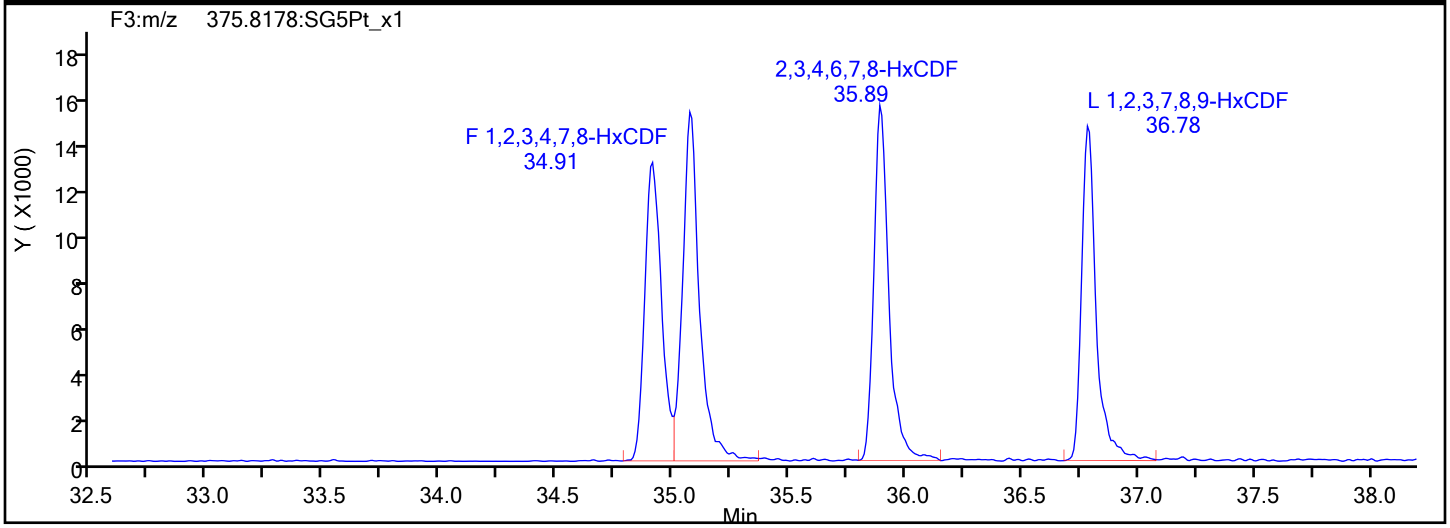

HxCDF Interference Mass

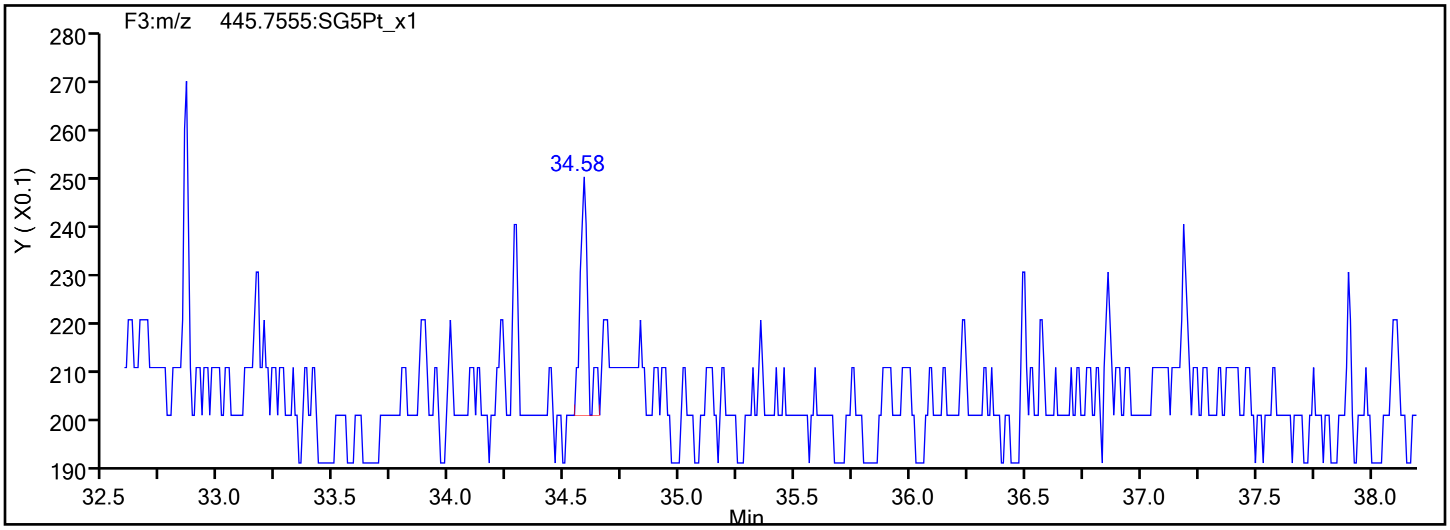

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HxCDD

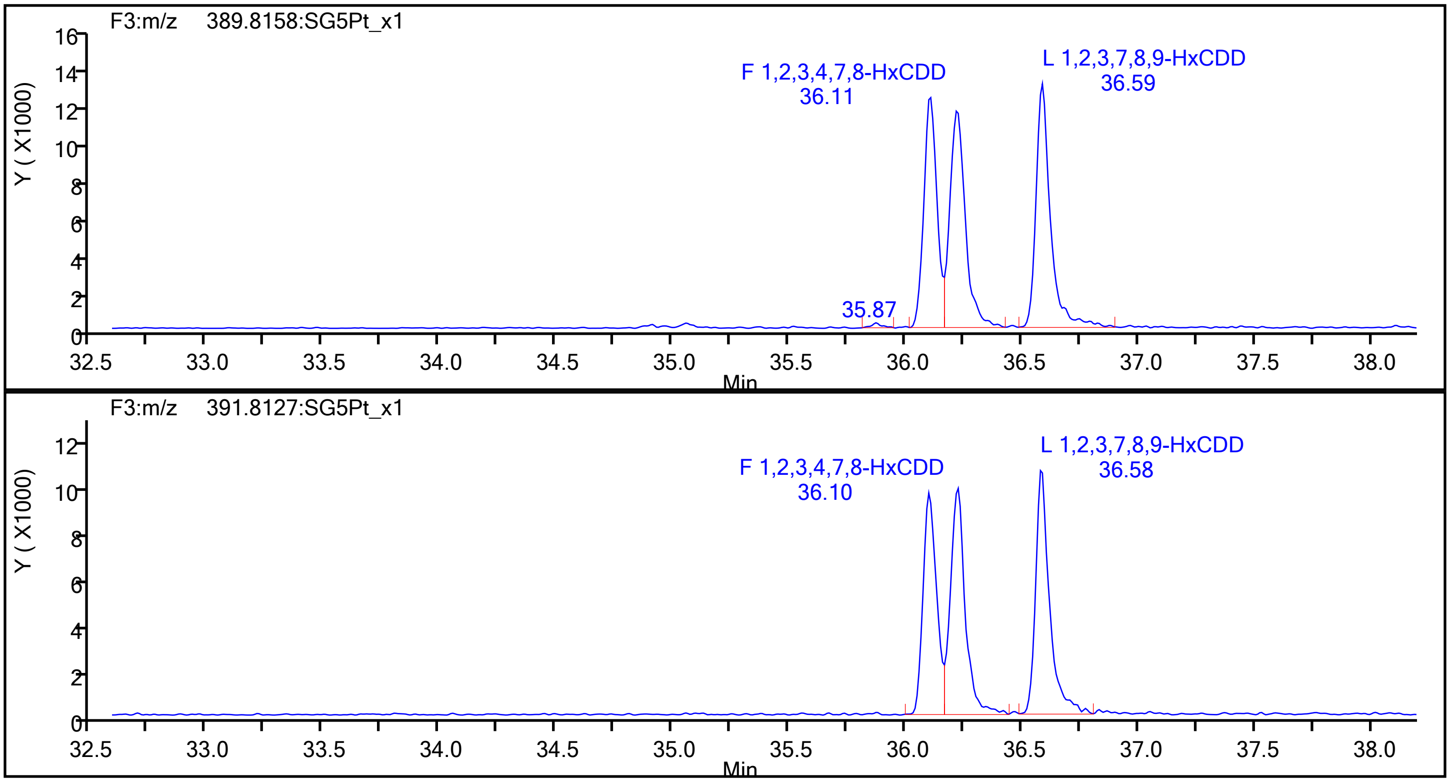

HxCDD Standards

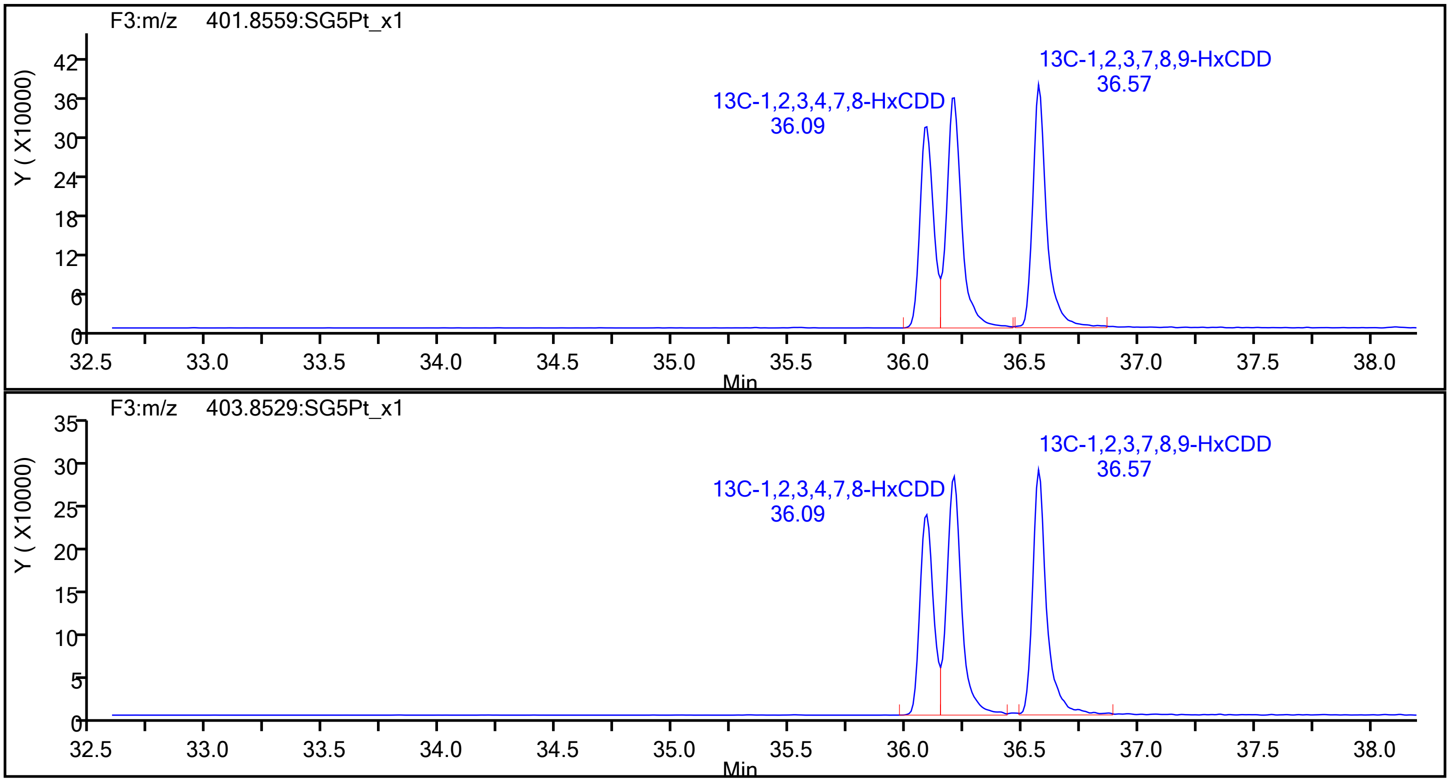

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Eurofins TestAmerica, Sacramento

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HpCDF

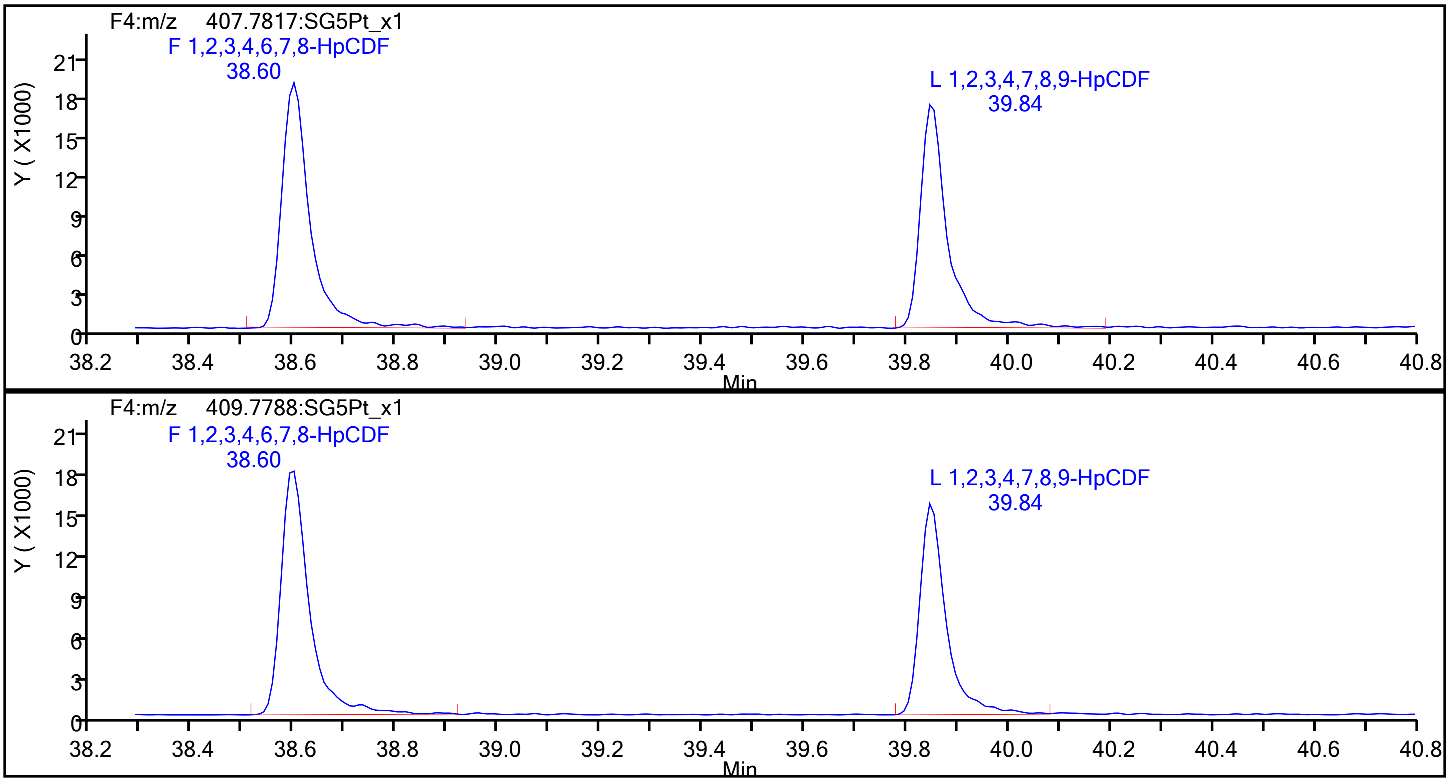

HpCDF Standards

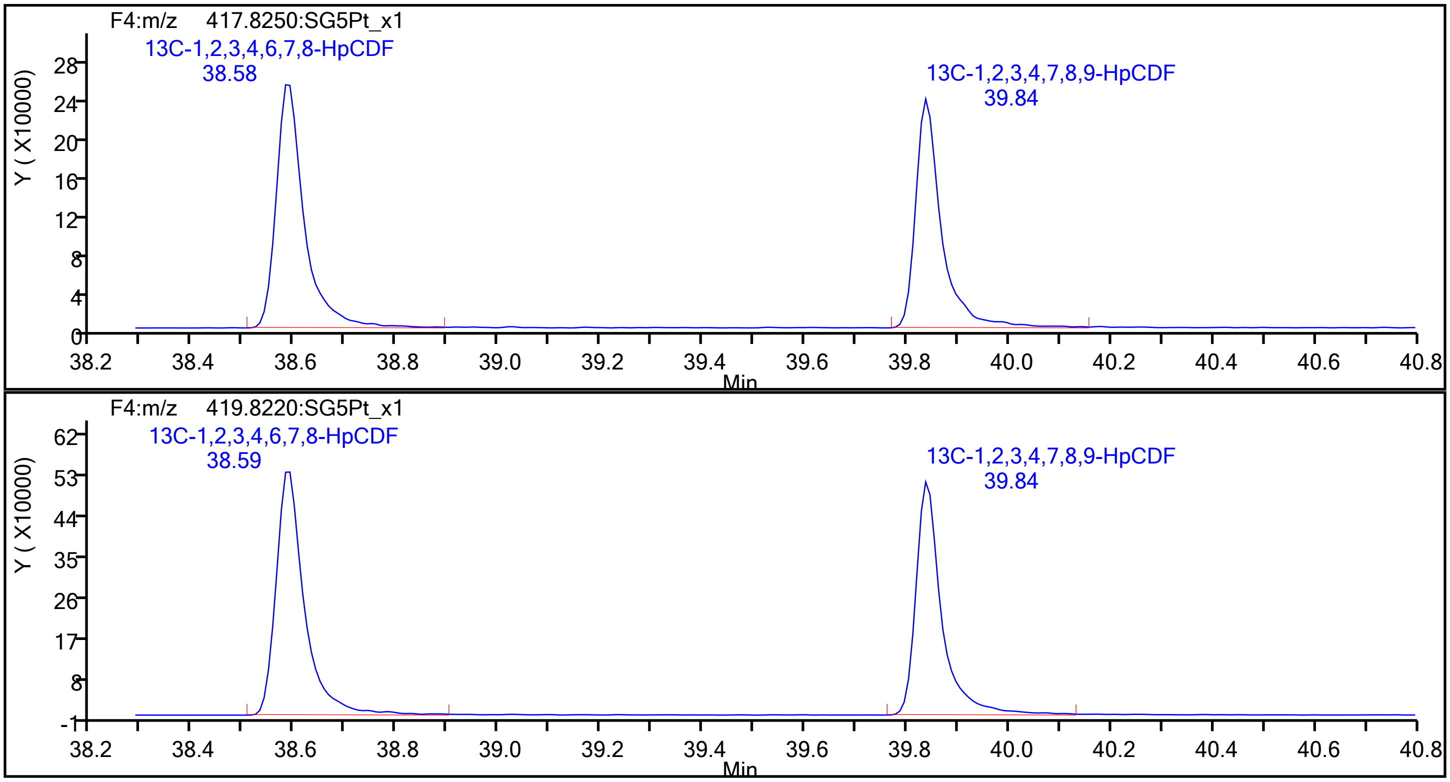

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HpCDF

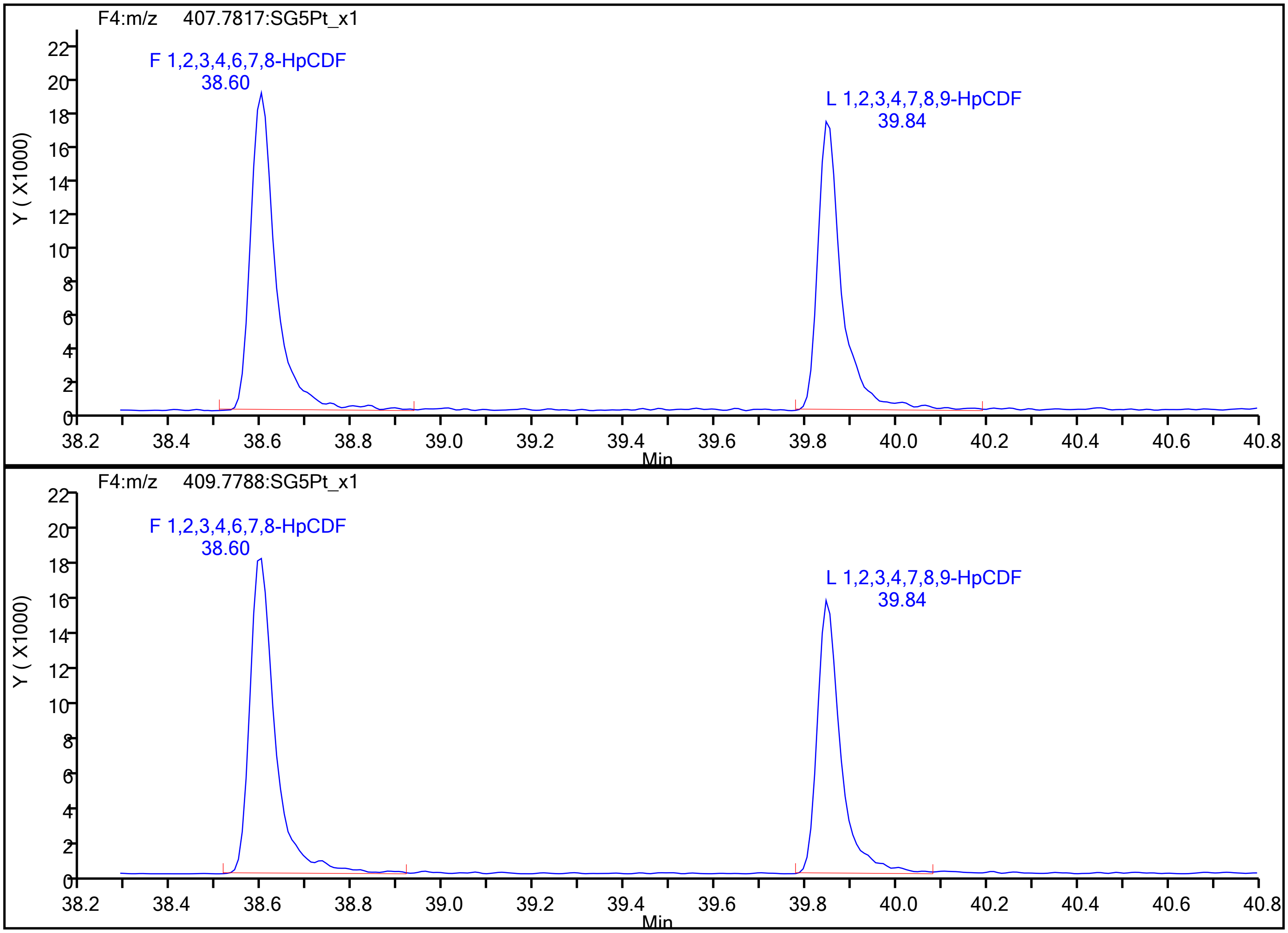

HpCDF Interference Mass

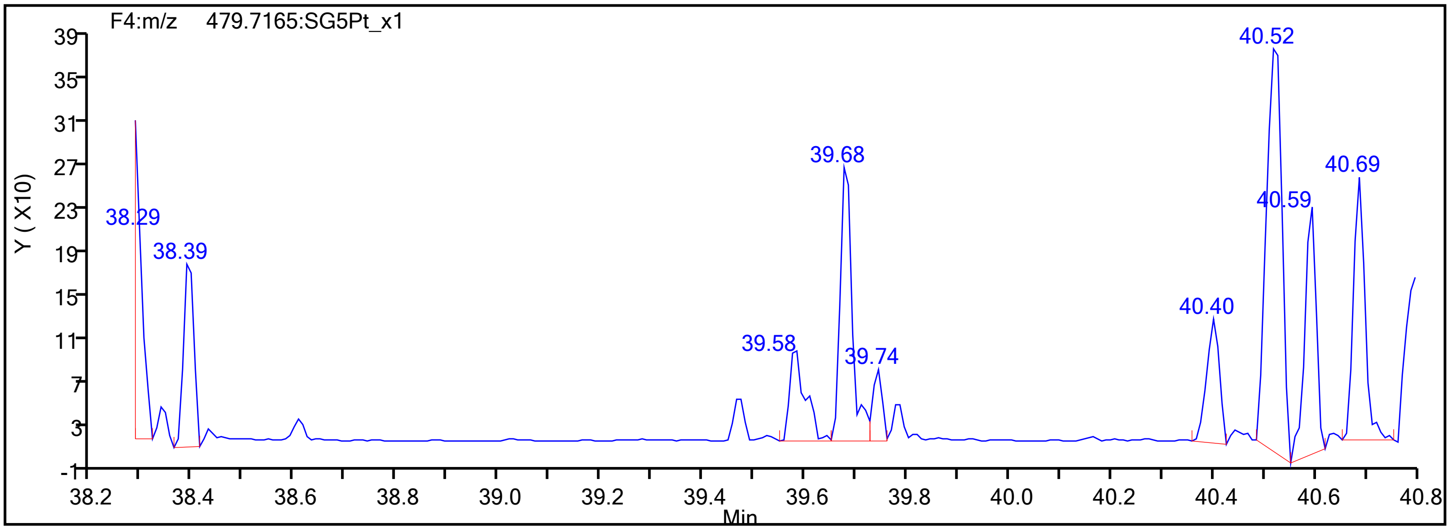

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Eurofins TestAmerica, Sacramento

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HpCDD

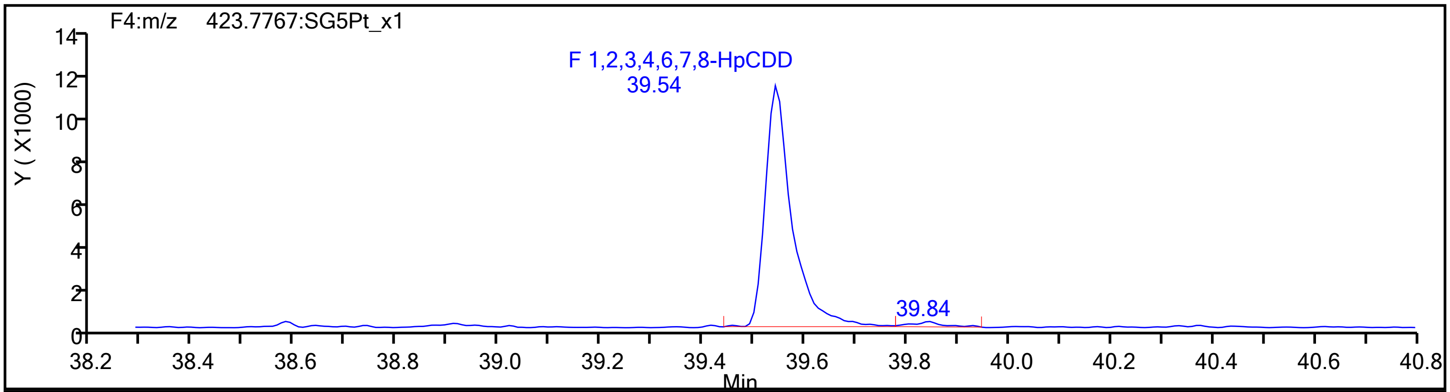

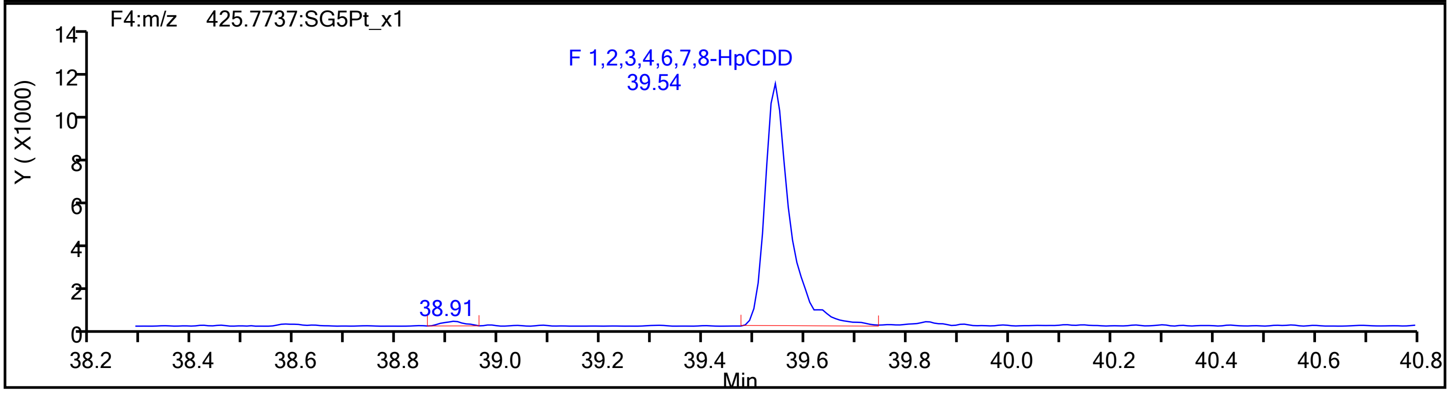

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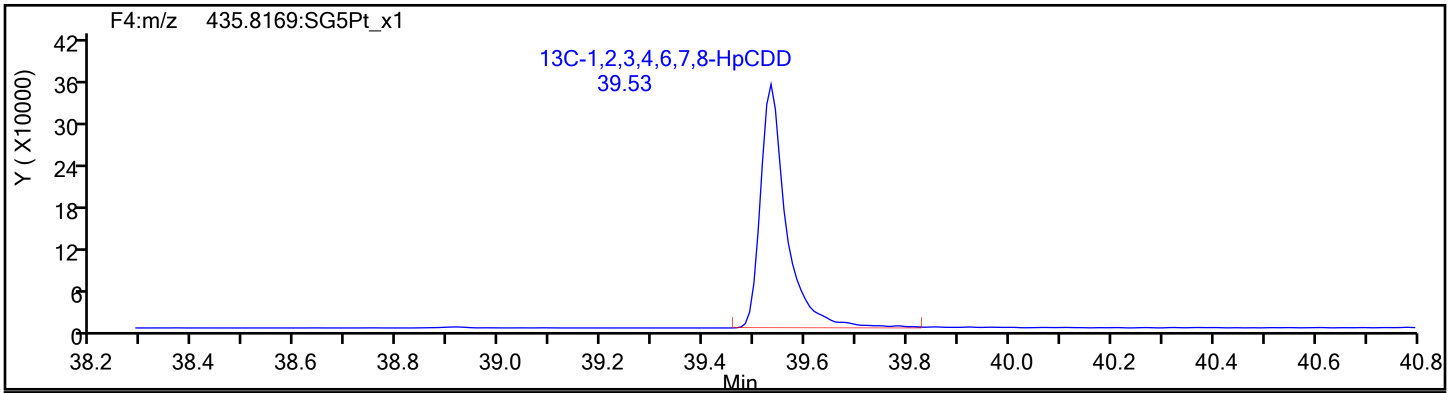

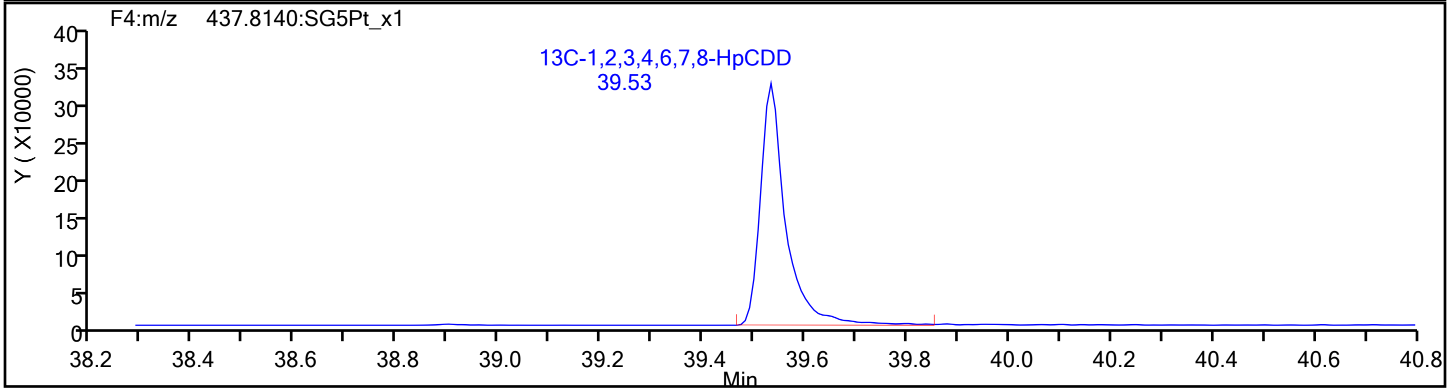

Eurofins TestAmerica, Sacramento

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OCDF

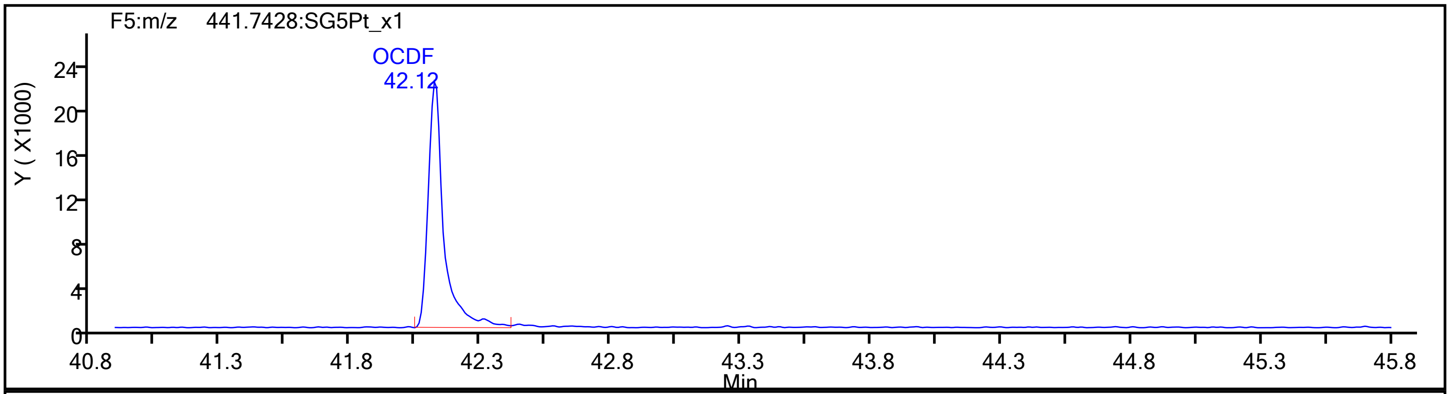

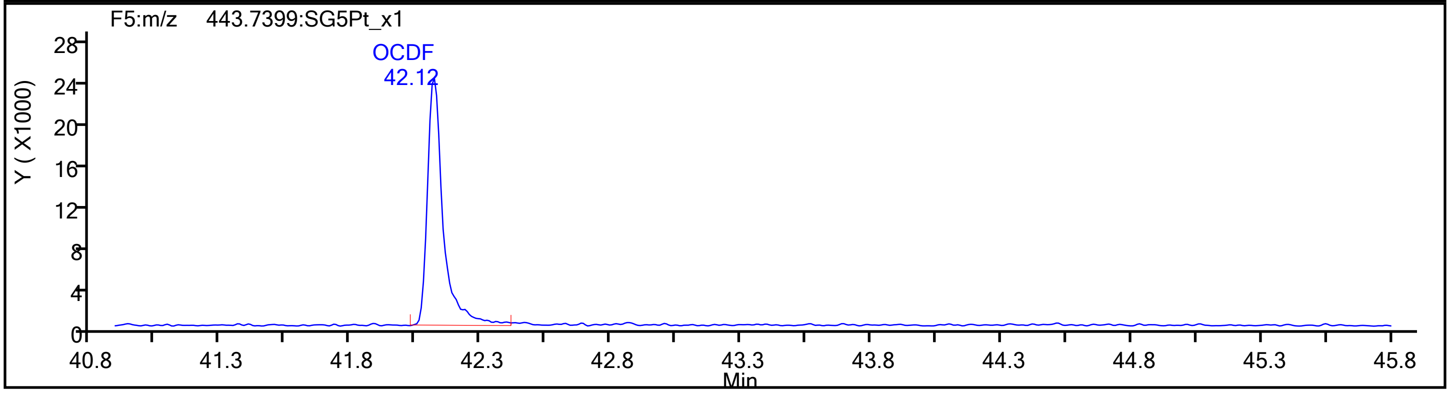

OCDF Standards

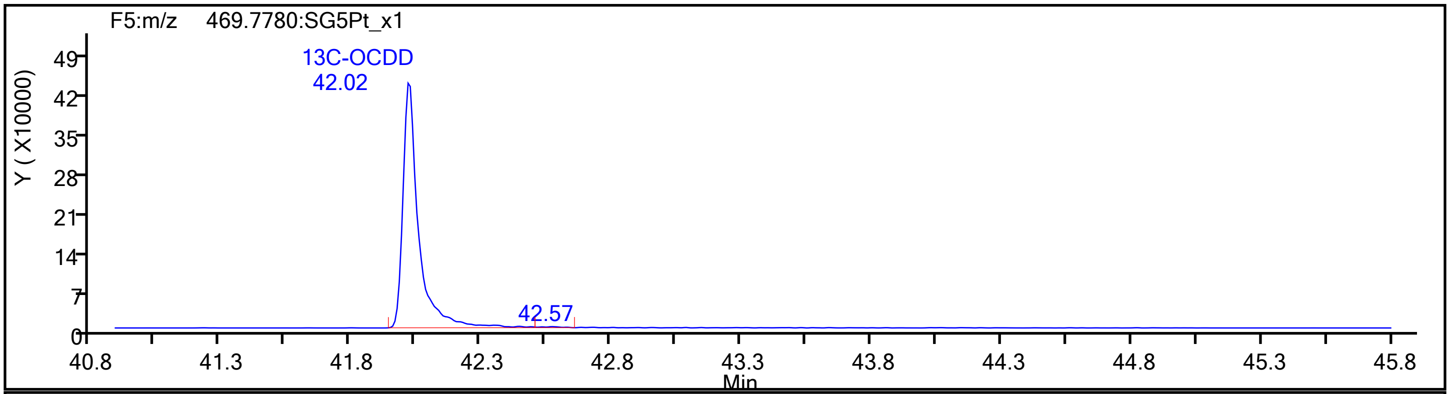

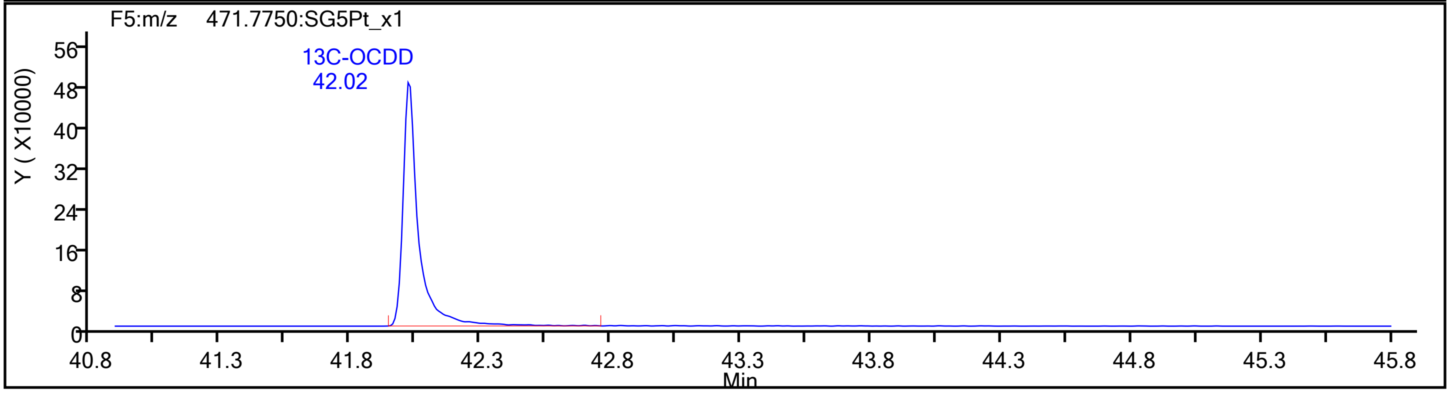

Report Date: 04-Jan-2021 09:33:08 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d		
Injection Date:	31-Dec-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

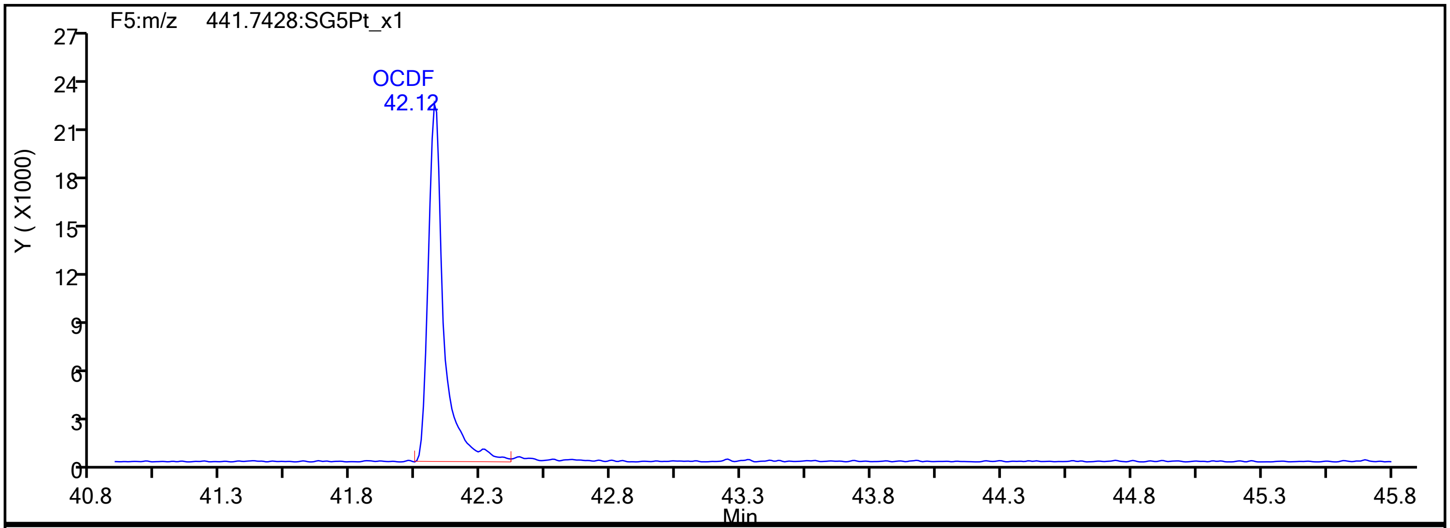

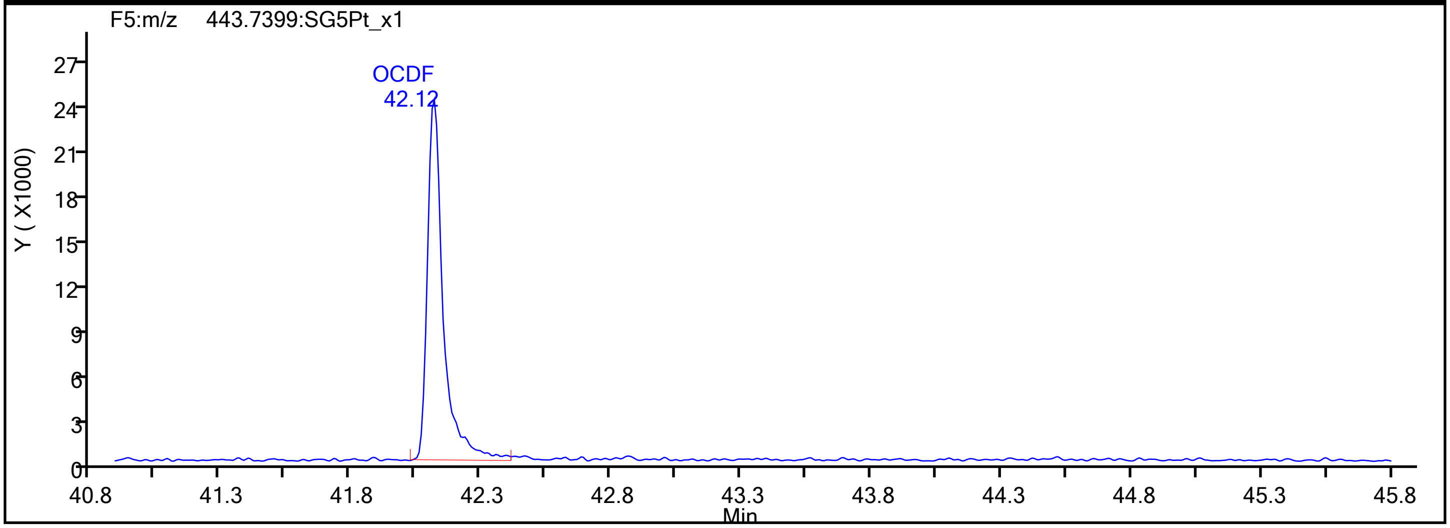

OCDF Interference Mass

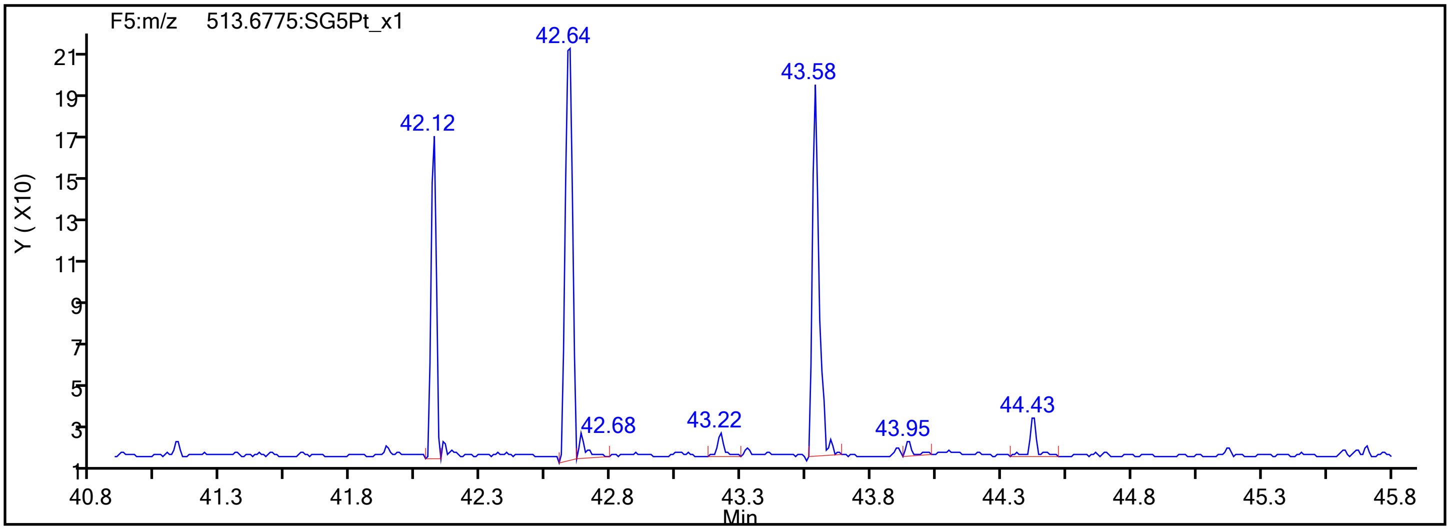

Report Date: 04-Jan-2021 09:33:09 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d
Injection Date: 31-Dec-2020 14:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

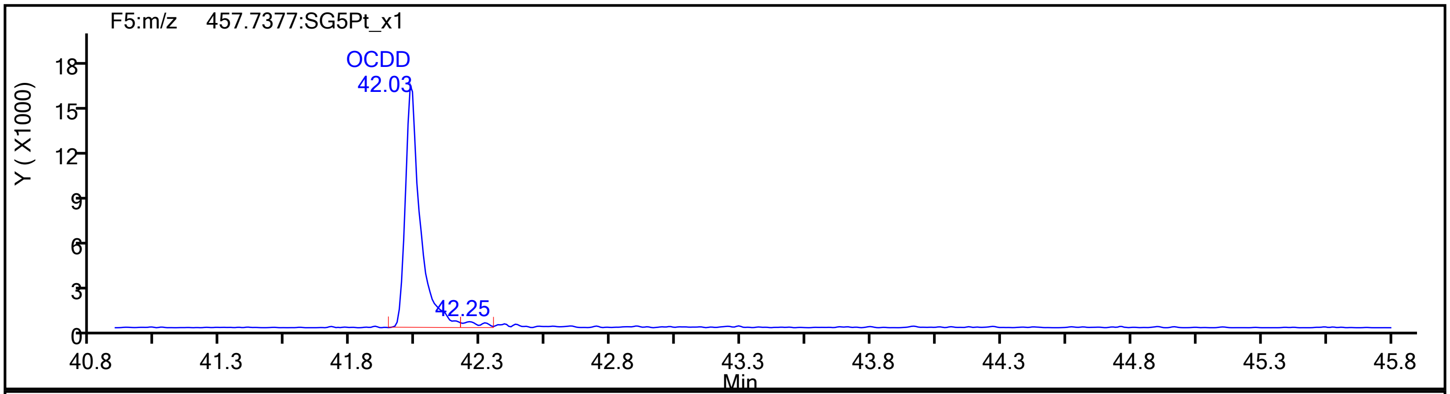

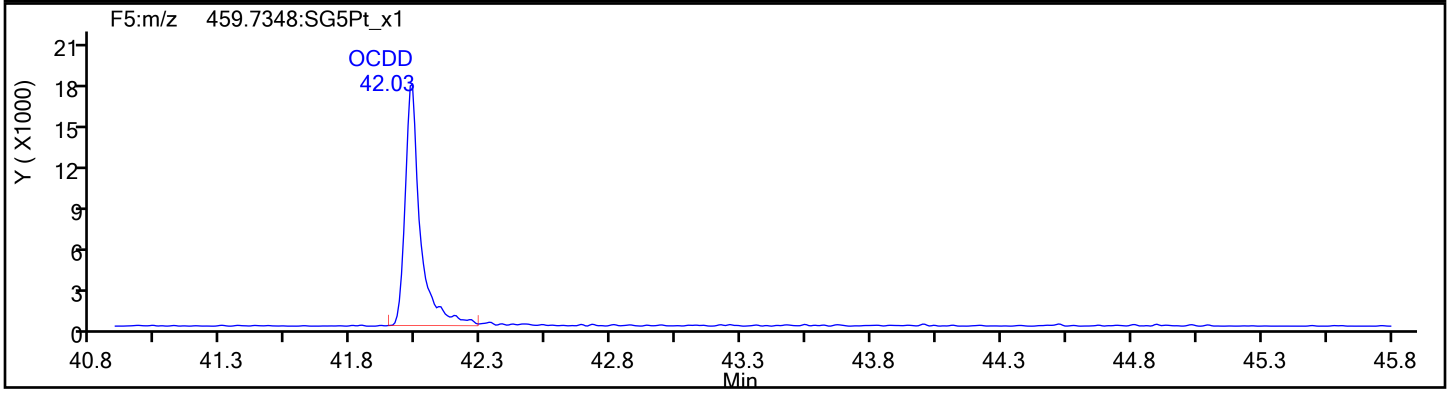

OCDD Standards

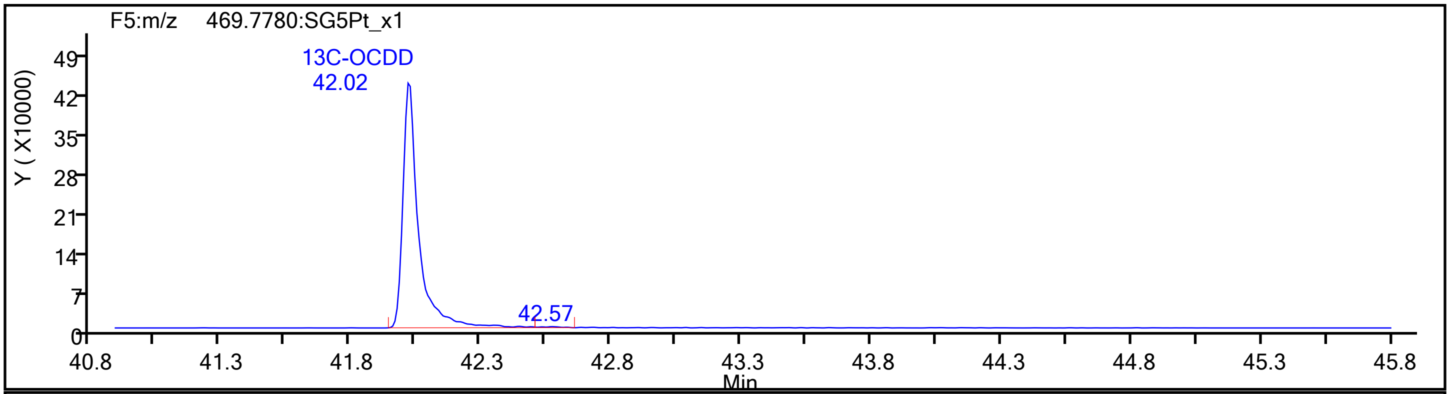

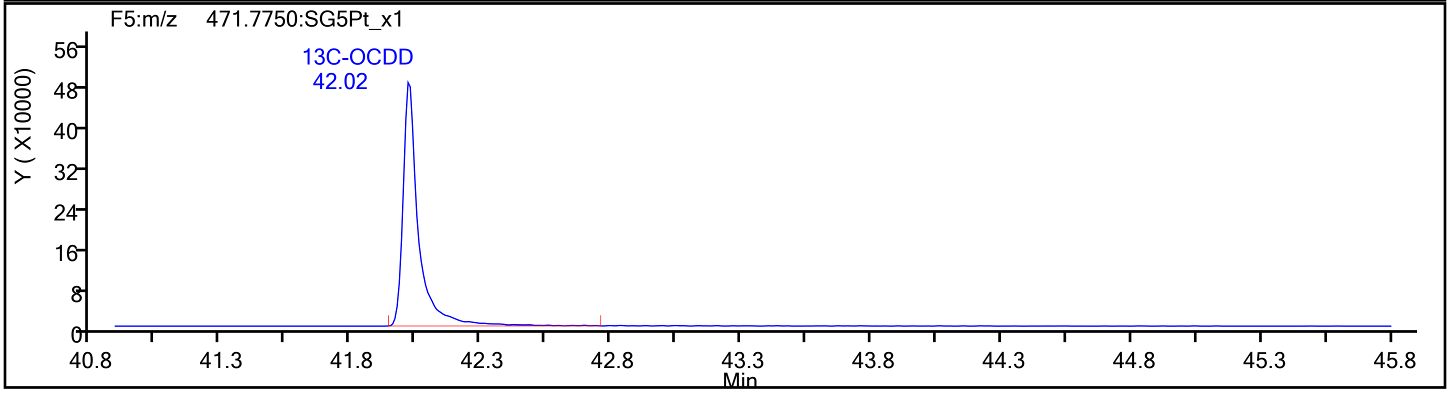

Report Date: 04-Jan-2021 09:33:09 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d		
Injection Date:	31-Dec-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

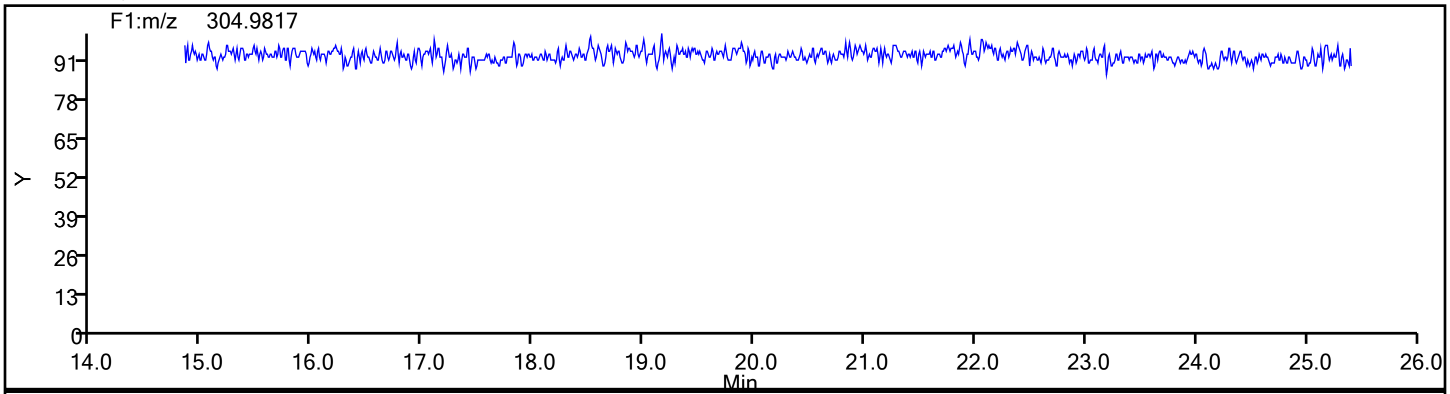

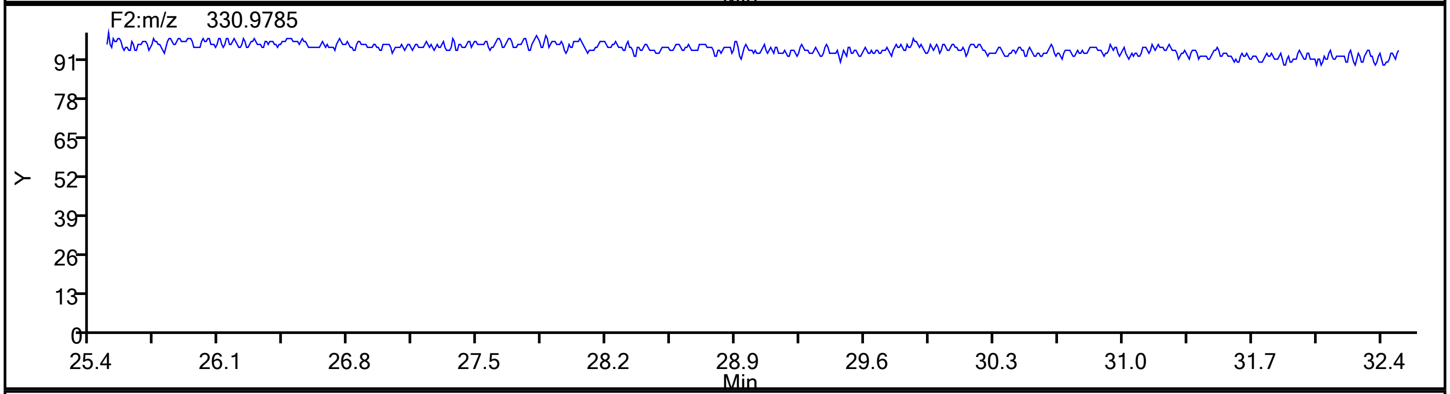

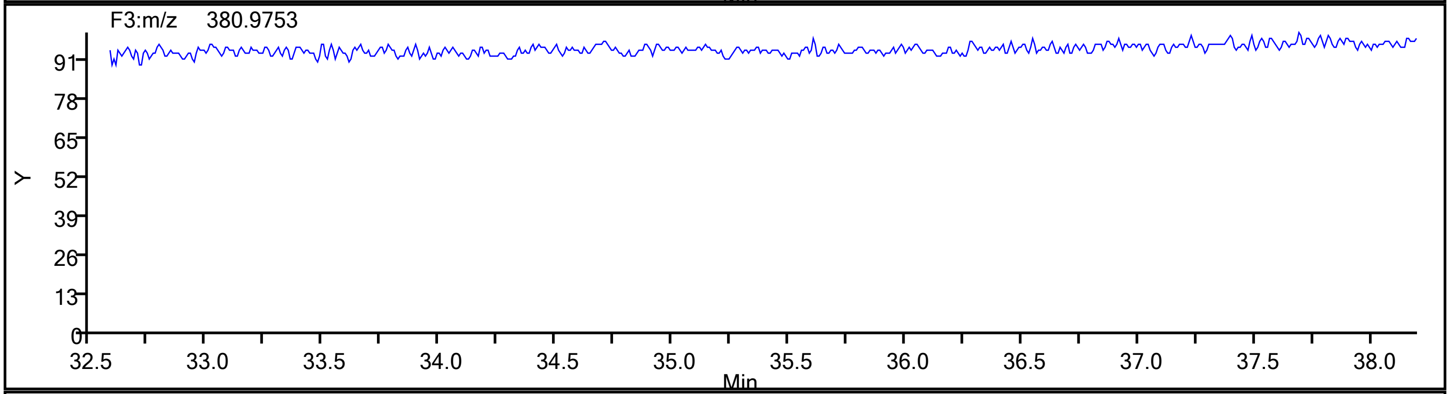

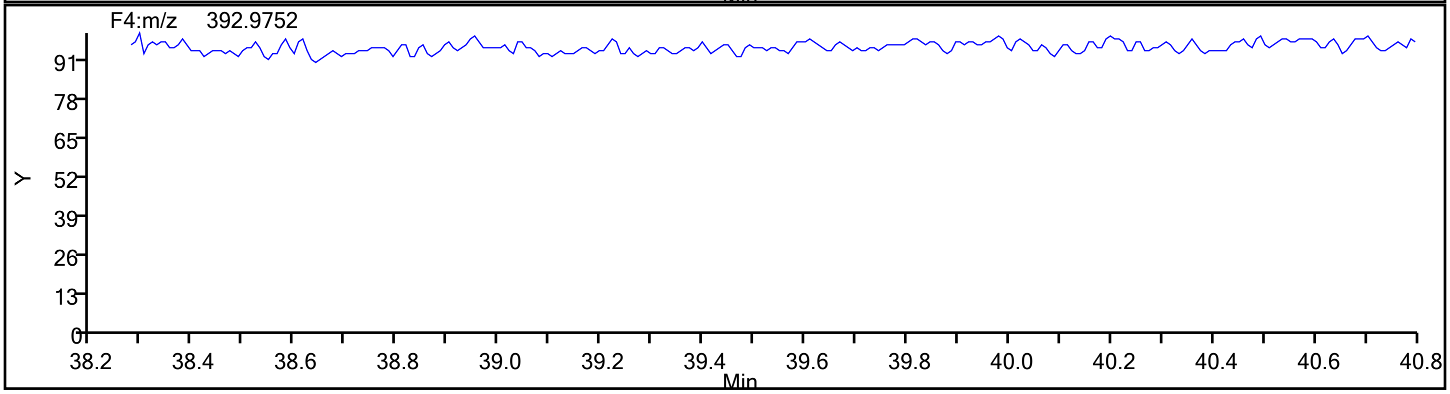

Report Date: 04-Jan-2021 09:33:09 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_4.d		
Injection Date:	31-Dec-2020 14:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

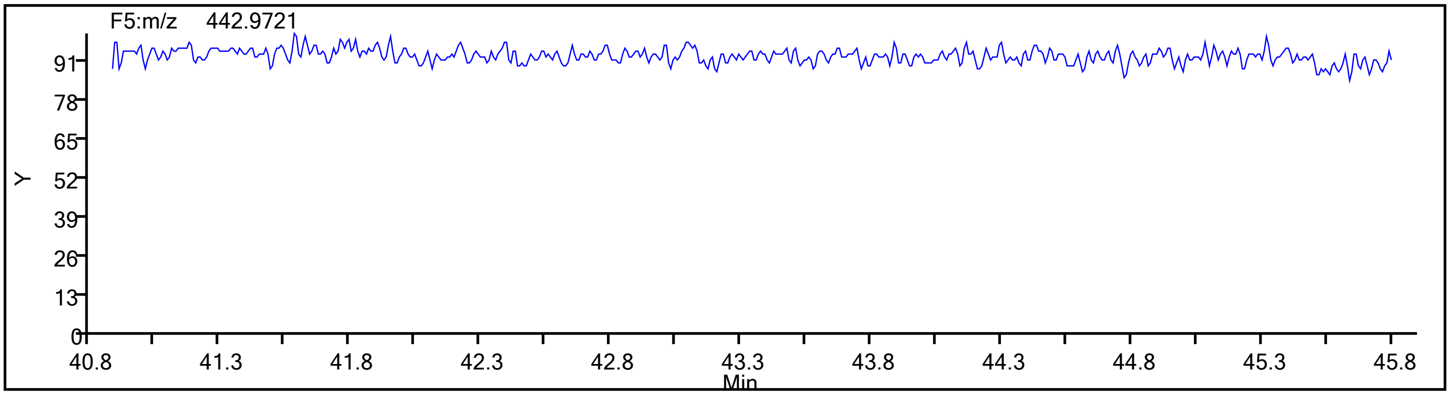

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC
Calib Level: 3
Inject. Date: 31-Dec-2020 15:05:00
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System
Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:33:14
Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm)
Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara
Date: 31-Dec-2020 18:33:16

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.277	2933805	0.84	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.289	5489816	0.80	1.9134	97.8	97.8	0.3431	0.3431	97.79	
2,3,7,8-TCDF	20.306	129424	0.74	1.1488	2.052	2.052	0.0260	0.0260	103	
S Total TCDF					2.052	2.052	0.0260	0.0260		
D 13C-2,3,7,8-TCDD	21.646	3186763	0.81	1.0908	99.6	99.6	0.2931	0.2931	99.58	
2,3,7,8-TCDD	21.663	78921	0.89	1.3069	1.895	1.895	0.0478	0.0478	94.75	
$ 37Cl4-2,3,7,8-TCDD	21.689	69130		1.2281	1.919	1.919	0.0158	0.0158	95.93	
S Total TCDD					1.895	1.895	0.0478	0.0478		
D 13C-1,2,3,7,8-PeCDF	27.223	4219926	1.66	1.5355	93.7	93.7	0.4063	0.4063	93.67	
1,2,3,7,8-PeCDF	27.248	518973	1.62	1.1695	10.5	10.5	0.0591	0.0591	105	
D 13C-2,3,4,7,8-PeCDF	28.747	4101407	1.63	1.4278	97.9	97.9	0.4369	0.4369	97.91	
2,3,4,7,8-PeCDF	28.773	521591	1.65	1.2244	10.4	10.4	0.0625	0.0625	104	
S Total PeCDF					20.9	20.9	0.0608	0.0608		
D 13C-1,2,3,7,8-PeCDD	29.573	2144159	1.67	0.7800	93.7	93.7	0.1891	0.1891	93.69	
1,2,3,7,8-PeCDD	29.598	289167	1.63	1.2613	10.7	10.7	0.0557	0.0557	107	
S Total PeCDD					10.7	10.7	0.0557	0.0557		
D 13C-1,2,3,4,7,8-HxCDF	34.900	3696713	0.54	1.4248	101.4	101.4	0.6364	0.6364	101	
1,2,3,4,7,8-HxCDF	34.917	503572	1.28	1.3553	10.1	10.1	0.0876	0.0876	101	
D 13C-1,2,3,6,7,8-HxCDF	35.060	4314908	0.55	1.7108	98.6	98.6	0.5300	0.5300	98.61	
1,2,3,6,7,8-HxCDF	35.077	595922	1.29	1.3081	10.6	10.6	0.0869	0.0869	106	
D 13C-2,3,4,6,7,8-HxCDF	35.878	3938054	0.54	1.5455	99.6	99.6	0.5867	0.5867	99.62	
2,3,4,6,7,8-HxCDF	35.894	538995	1.25	1.3248	10.3	10.3	0.0781	0.0781	103	
D 13C-1,2,3,7,8,9-HxCDF	36.771	3493327	0.54	1.3772	99.2	99.2	0.6584	0.6584	99.17	
1,2,3,7,8,9-HxCDF	36.787	488756	1.28	1.3372	10.5	10.5	0.0836	0.0836	105	
S Total HxCDF					41.4	41.4	0.0841	0.0841		
* 13C-1,2,3,7,8,9-HxCDD	36.577	2557725	1.31	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.088	2065215	1.29	0.8266	97.7	97.7	0.4364	0.4364	97.68	
1,2,3,4,7,8-HxCDD	36.105	282107	1.25	1.3422	10.2	10.2	0.0473	0.0473	102	
D 13C-1,2,3,6,7,8-HxCDD	36.206	2679878	1.29	1.0417	100.6	100.6	0.3463	0.3463	101	
1,2,3,6,7,8-HxCDD	36.223	329199	1.30	1.1989	10.2	10.2	0.0478	0.0478	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.585	332463	1.25	1.3636	10.3	10.3	0.0442	0.0442	103	
S Total HxCDD					30.7	30.7	0.0464	0.0464		
D 13C-1,2,3,4,6,7,8-HpCDF	38.577	2761919	0.47	1.1053	97.7	97.7	0.8969	0.8969	97.70	
1,2,3,4,6,7,8-HpCDF	38.594	475847	1.05	1.6487	10.5	10.5	0.0960	0.0960	105	
D 13C-1,2,3,4,7,8,9-HpCDF	39.833	2478971	0.47	0.9761	99.3	99.3	1.016	1.016	99.30	
1,2,3,4,7,8,9-HpCDF	39.841	397986	1.04	1.5723	10.2	10.2	0.1066	0.1066	102	
S Total HpCDF					20.7	20.7	0.1013	0.1013		
D 13C-1,2,3,4,6,7,8-HpCDD	39.529	2201663	1.07	0.8768	98.2	98.2	0.3675	0.3675	98.17	
1,2,3,4,6,7,8-HpCDD	39.537	280064	1.09	1.2146	10.5	10.5	0.0513	0.0513	105	
S Total HpCDD					10.5	10.5	0.0513	0.0513		
D 13C-OCDD	42.019	3530807	0.90	0.7137	193.4	193.4	0.5423	0.5423	96.71	
OCDF	42.111	644707	0.92	1.8132	20.1	20.1	0.0853	0.0853	101	
OCDD	42.027	456257	0.92	1.2562	20.6	20.6	0.0792	0.0792	103	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 31-Dec-2020 15:05:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:33:14 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:33:16

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.277	21.272	0		1343104	193646	364	910	532		
333.9338	21.268	21.272	0		1590701	219905	165	412	1333	0.84(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.289	20.286	0	0.954	2440706	345463	671	1677	515		
317.9389	20.289	20.286	0	0.954	3049110	432409	415	1037	1042	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.306	20.313	0	1.001	55107	8009	23	57	348		
305.8987	20.323	20.313	1	1.002	74317	10286	70	175	147	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.646	21.646	0	1.017	1421342	182653	364	910	502		
333.9338	21.655	21.646	0	1.018	1765421	228522	165	412	1385	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.663	21.677	-1	1.001	37210	5242	78	195	67		
321.8936	21.672	21.677	0	1.001	41711	6471	25	62	259	0.89(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.689	21.684	0	1.019	69130	9531	32	80	298		
13C-1,2,3,7,8-PeCDF											
351.9000	27.223	27.219	0	1.279	2633164	389998	620	1550	629		
353.8970	27.223	27.219	0	1.279	1586762	239374	412	1030	581	1.66(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.248	27.244	0	1.001	320929	47857	75	187	638		
341.8567	27.239	27.244	0	1.001	198044	29075	99	247	294	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.747	28.742	0	1.351	2540409	348363	620	1550	562		
353.8970	28.747	28.742	0	1.351	1560998	219825	412	1030	534	1.63(1.32-1.78)	

Report Date: 04-Jan-2021 09:33:25 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.773	28.767	0	1.001	324596	43994	75	187	587		
341.8567	28.773	28.767	0	1.001	196995	27738	99	247	280	1.65(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.573	29.564	1	1.390	1340217	181674	168	420	1081		
369.8919	29.573	29.564	1	1.390	803942	103095	76	190	1357	1.67(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.598	29.593	0	1.001	179230	23539	62	155	380		
357.8516	29.590	29.593	0	1.001	109937	14411	18	45	801	1.63(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.900	34.899	0	0.954	1298347	274059	786	1965	349		
385.8610	34.900	34.899	0	0.954	2398366	489707	1381	3452	355	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.917	34.916	0	1.000	282407	59387	213	532	279		
375.8178	34.917	34.916	0	1.000	221165	44365	150	375	296	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.060	35.061	0	0.959	1533281	287993	786	1965	366		
385.8610	35.060	35.061	0	0.959	2781627	510225	1381	3452	369	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.077	35.079	0	1.000	335399	62235	213	532	292		
375.8178	35.077	35.079	0	1.000	260523	49799	150	375	332	1.29(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.878	35.878	0	0.981	1378699	307799	786	1965	392		
385.8610	35.878	35.878	0	0.981	2559355	568302	1381	3452	412	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.894	35.893	0	1.000	299331	66724	213	532	313		
375.8178	35.894	35.893	0	1.000	239664	53817	150	375	359	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.771	36.769	0	1.005	1230341	284996	786	1965	363		
385.8610	36.771	36.769	0	1.005	2262986	526583	1381	3452	381	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.787	36.786	0	1.000	273990	64442	213	532	303		
375.8178	36.779	36.786	0	1.000	214766	48485	150	375	323	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.577	36.576	0		1449514	335053	467	1167	717		
403.8529	36.568	36.576	0		1108211	262338	395	987	664	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.088	36.092	0	0.987	1164635	308466	467	1167	661		
403.8529	36.088	36.092	0	0.987	900580	229836	395	987	582	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.105	36.107	0	1.000	156477	39474	80	200	493		
391.8127	36.096	36.107	-1	1.000	125630	30896	57	142	542	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.206	36.210	0	0.990	1511510	339883	467	1167	728		
403.8529	36.206	36.210	0	0.990	1168368	257443	395	987	652	1.29(1.05-1.43)	

Report Date: 04-Jan-2021 09:33:25 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.223	36.223	0	1.000	185998	40918	80	200	511		
391.8127	36.223	36.223	0	1.000	143201	31974	57	142	561	1.30(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.585	36.589	0	1.014	184835	43053	80	200	538		
391.8127	36.585	36.589	0	1.014	147628	34957	57	142	613	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.577	38.584	0	1.055	883433	232329	817	2042	284		
419.8220	38.577	38.584	0	1.055	1878486	504759	1552	3880	325	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.594	38.598	0	1.000	244153	64338	252	630	255		
409.7788	38.585	38.598	-1	1.000	231694	60934	215	537	283	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.833	39.838	0	1.089	793472	227076	817	2042	278		
419.8220	39.833	39.838	0	1.089	1685499	469134	1552	3880	302	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.841	39.846	0	1.000	203333	57245	252	630	227		
409.7788	39.841	39.846	0	1.000	194653	54342	215	537	253	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.529	39.533	0	1.081	1138000	313219	390	975	803		
437.8140	39.529	39.533	0	1.081	1063663	299282	380	950	788	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.537	39.541	0	1.000	145880	41387	89	222	465		
425.7737	39.537	39.541	0	1.000	134184	37245	64	160	582	1.09(0.88-1.20)	
13C-OCDD											
469.7780	42.019	42.021	0	1.149	1672625	397945	586	1465	679		
471.7750	42.019	42.021	0	1.149	1858182	436399	339	847	1287	0.90(0.76-1.02)	
OCDF											
441.7428	42.111	42.115	0	1.002	308943	75411	106	265	711		
443.7399	42.111	42.115	0	1.002	335764	80465	152	380	529	0.92(0.76-1.02)	
OCDD											
457.7377	42.027	42.029	0	1.000	218392	53853	98	245	550		
459.7348	42.027	42.029	0	1.000	237865	57478	68	170	845	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00028 Amount Added: 1.00 Units: mL

Report Date: 04-Jan-2021 09:33:26

Chrom Revision: 2.3 18-Dec-2020 13:34:10
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d				
Injection Date:	31-Dec-2020 15:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT:	21.67
Area:	41711
Amount:	1.894967
Amount Units:	pg/ul

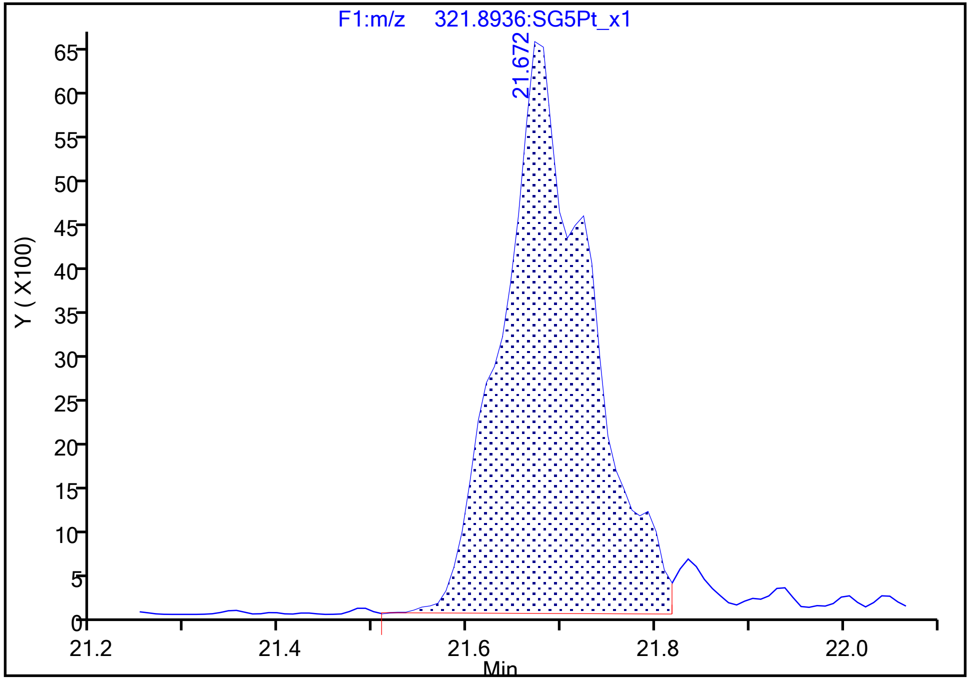

Manual Integration Results

RT:	21.67
Area:	41711
Amount:	1.894967
Amount Units:	pg/ul

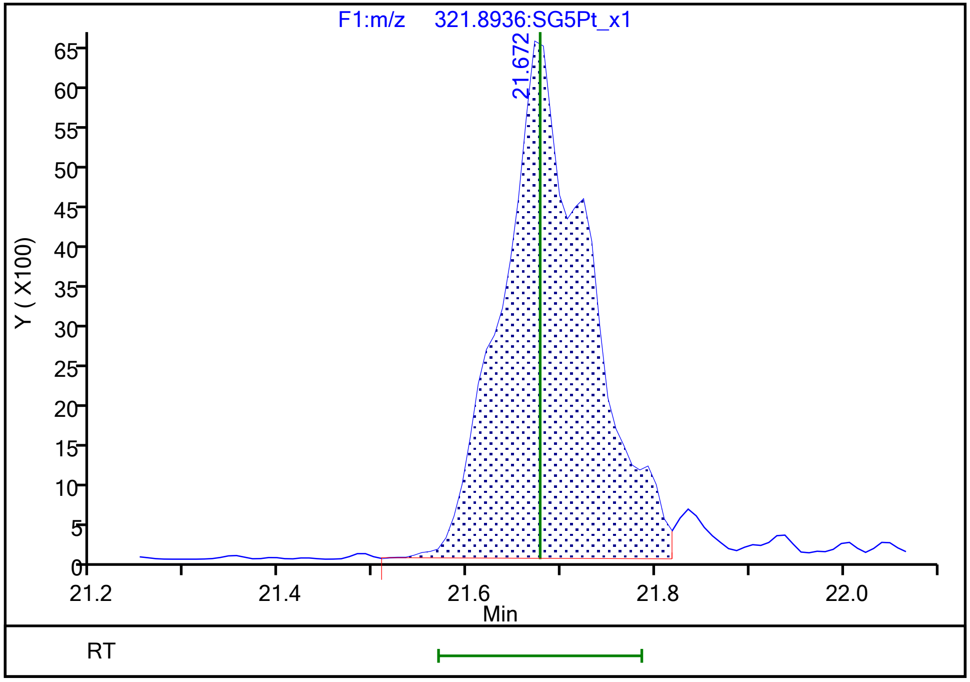

Reviewer: stephensk, 04-Jan-2021 09:20:26

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d				
Injection Date:	31-Dec-2020 15:05:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 3

Processing Integration Results

RT:	21.66
Area:	78921
Amount:	1.894967
Amount Units:	pg/ul

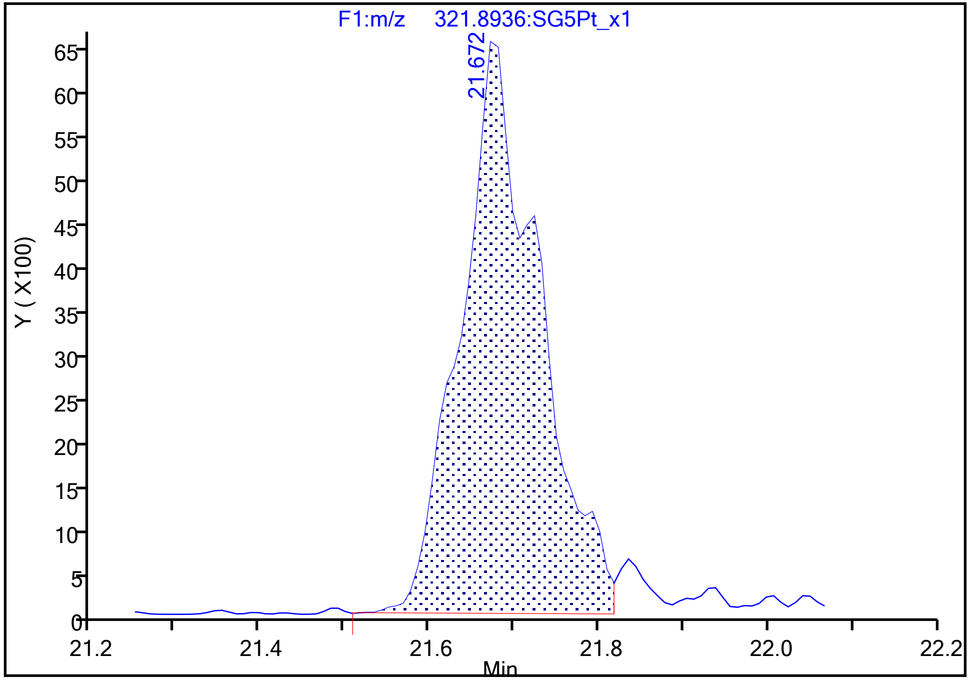

Manual Integration Results

RT:	21.66
Area:	78921
Amount:	1.894967
Amount Units:	pg/ul

Reviewer: stephensk, 04-Jan-2021 09:20:26

Audit Action: Marked Compound Undetected
Audit Reason: Invalid Compound ID

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

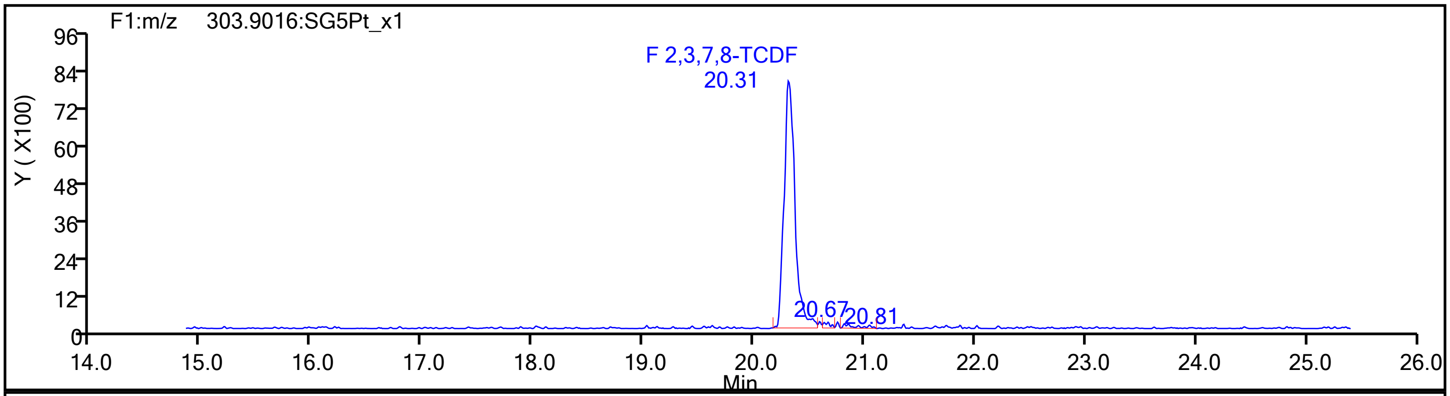

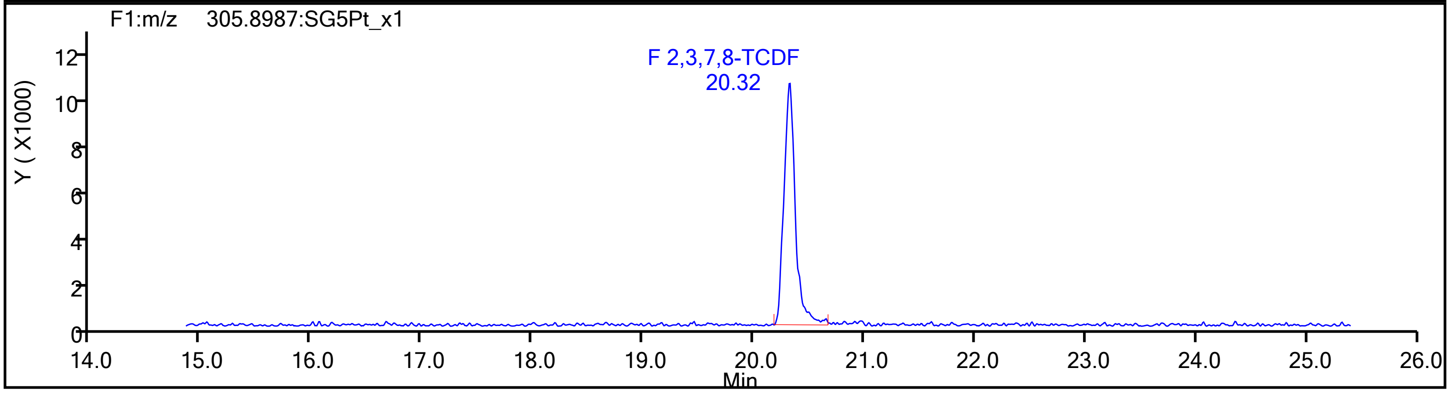

TCDF Standards

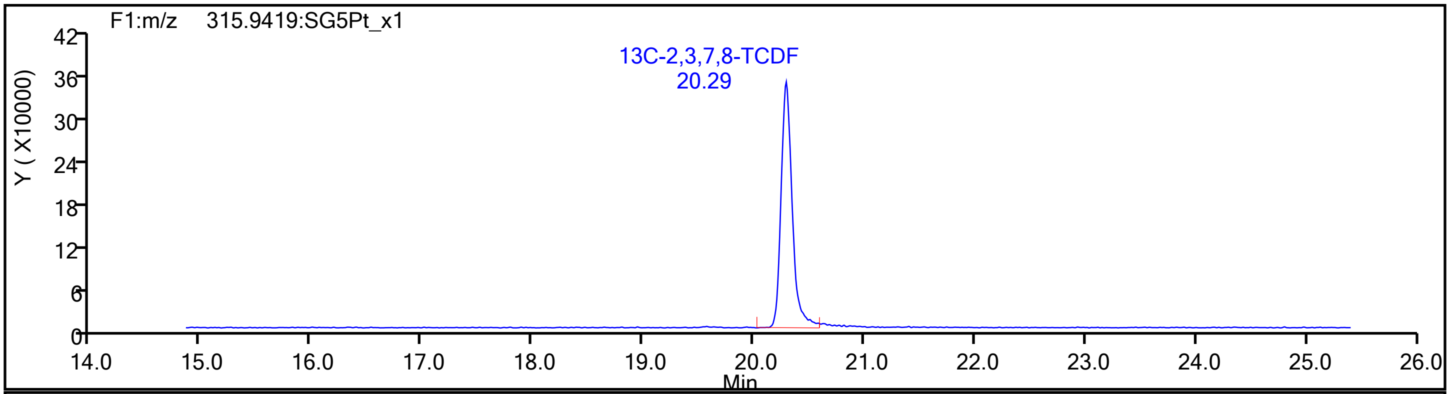

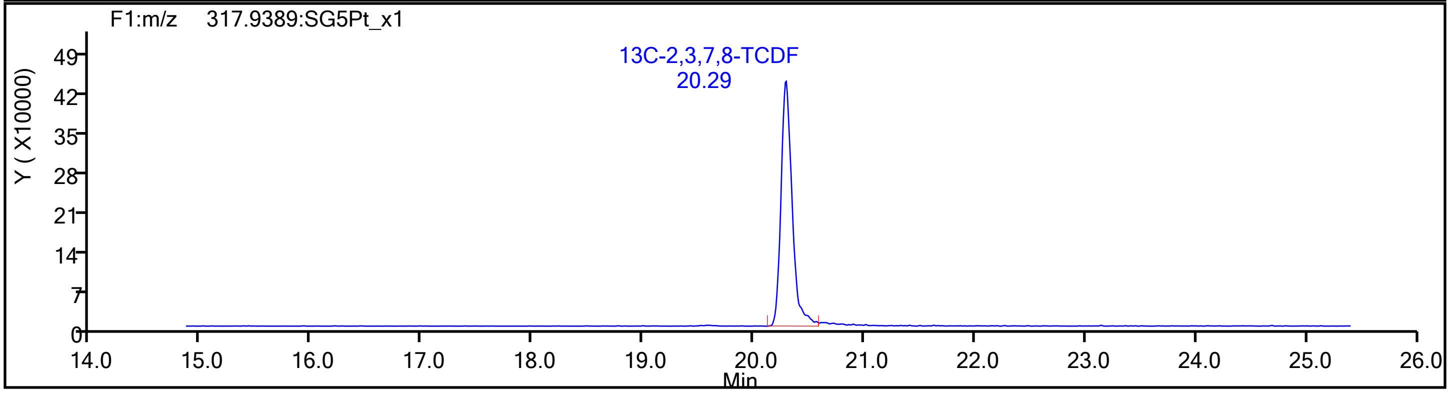

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

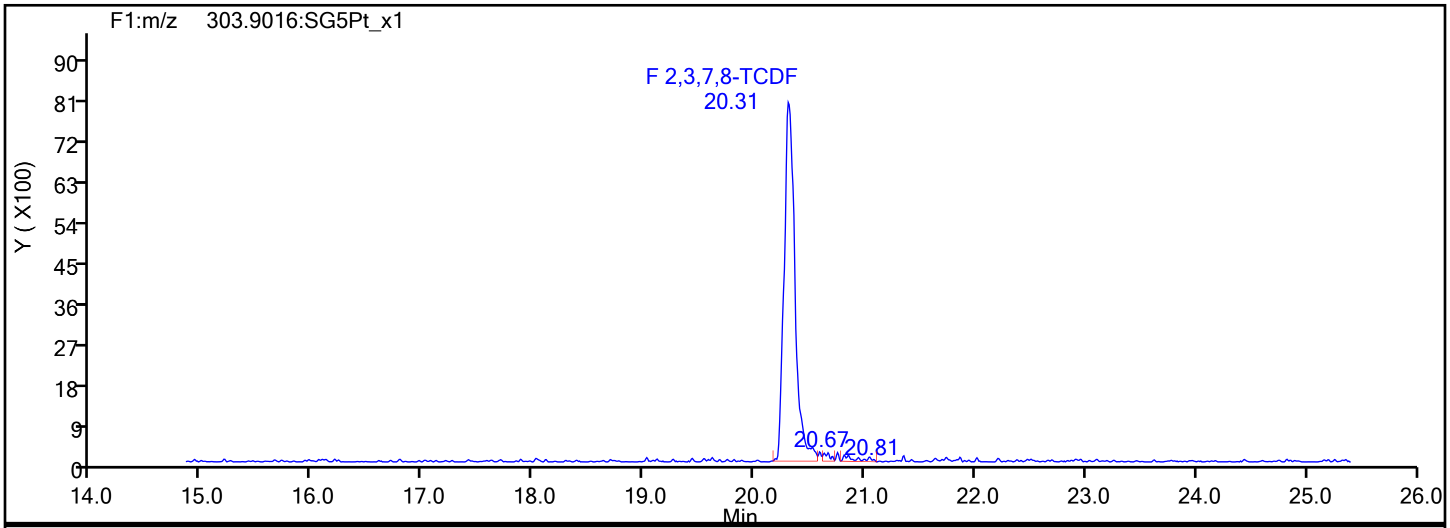

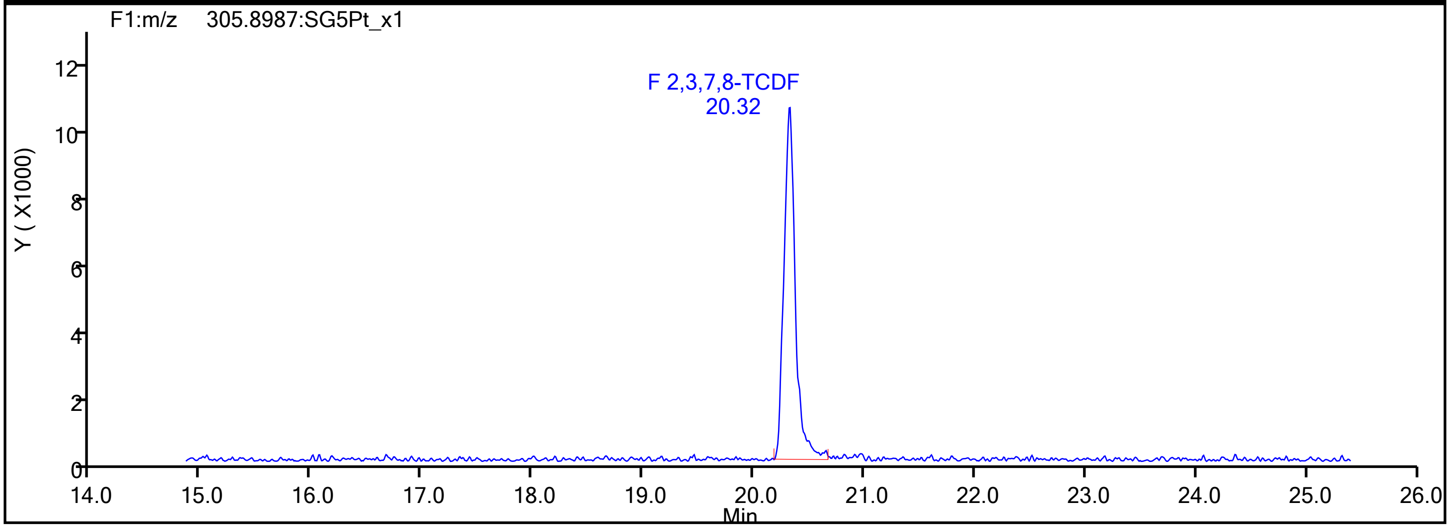

TCDF Interference Mass

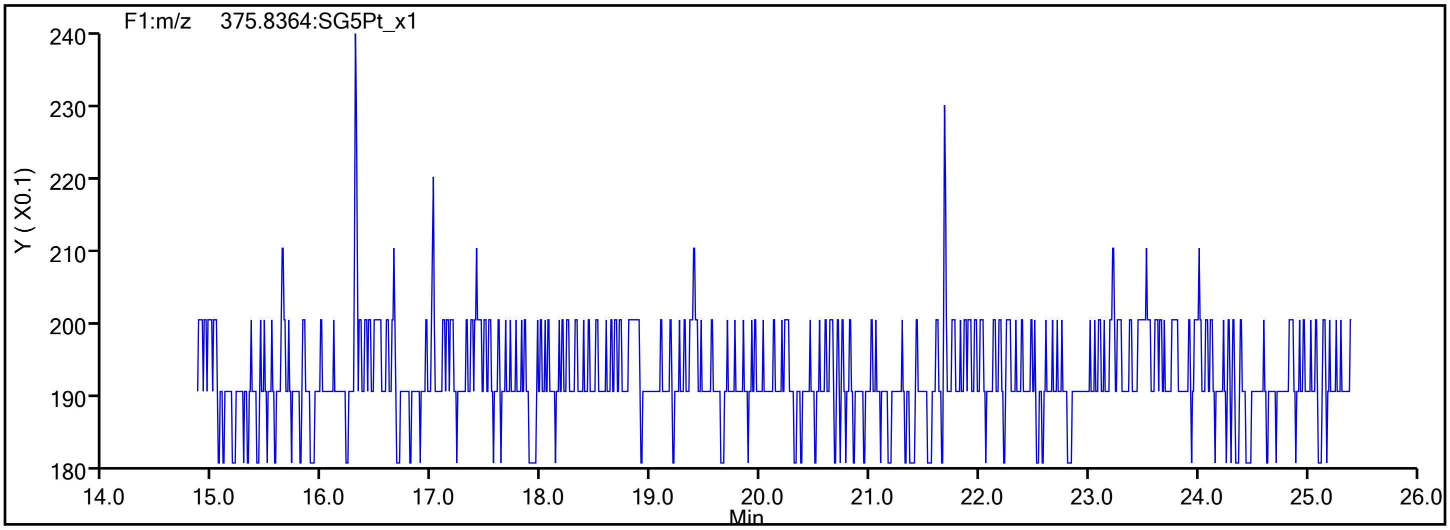

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

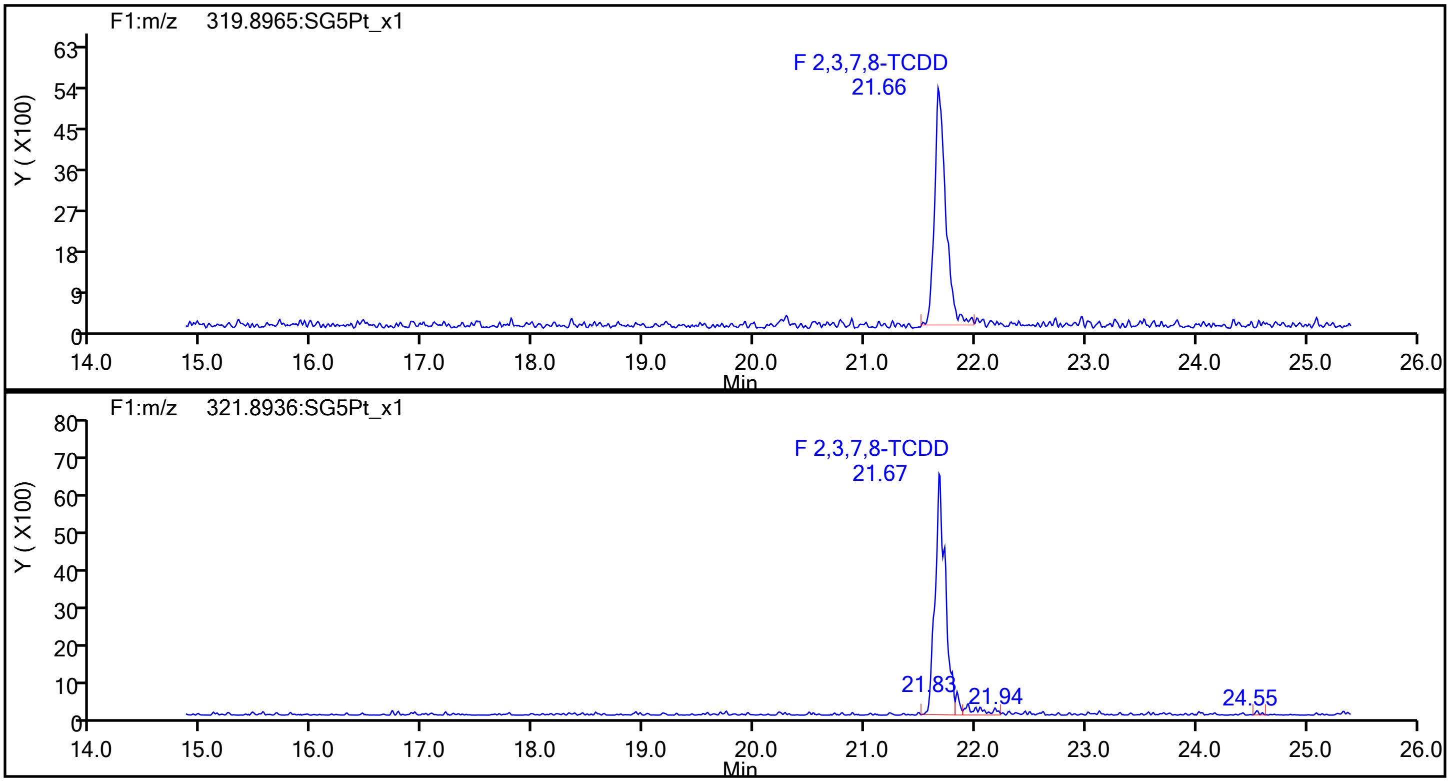

TCDD Standards

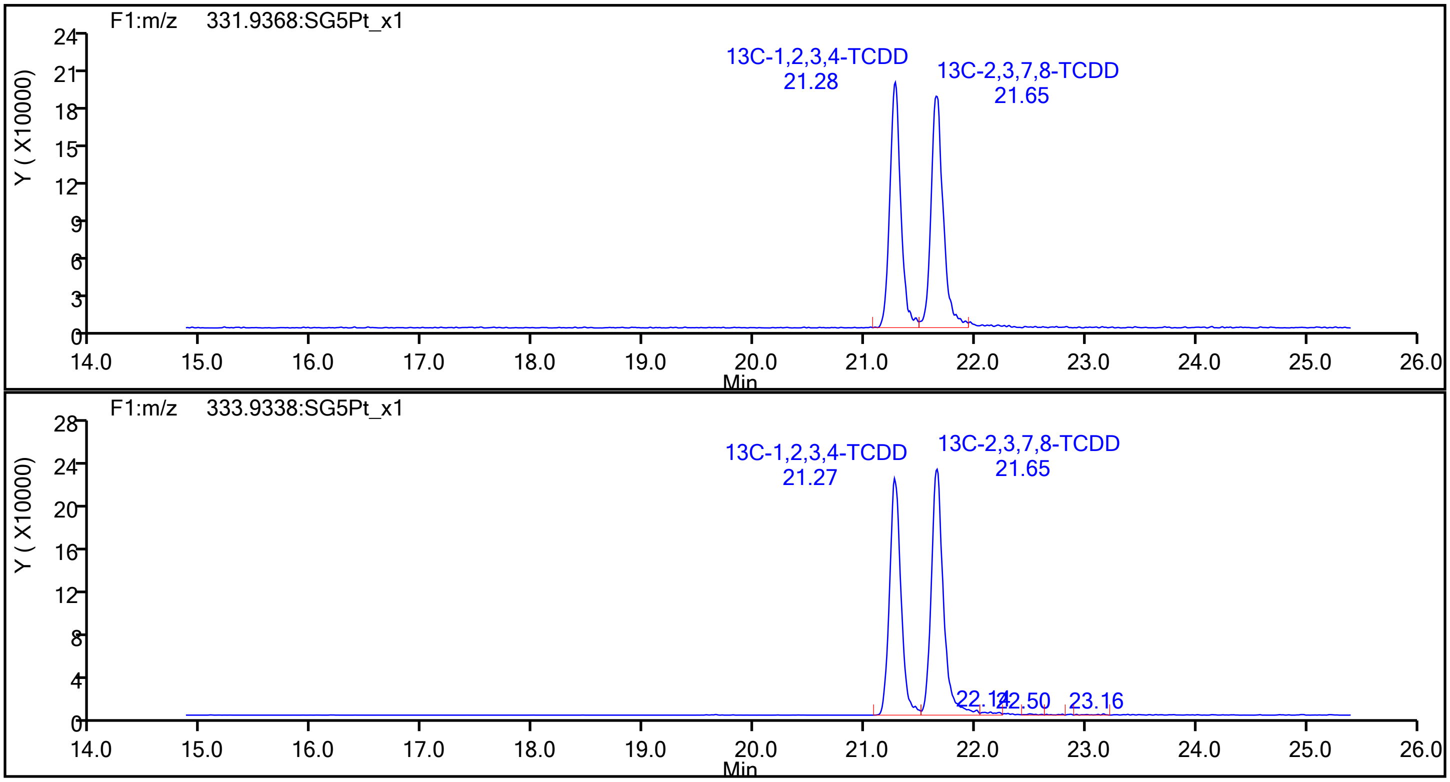

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d
Injection Date: 31-Dec-2020 15:05:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

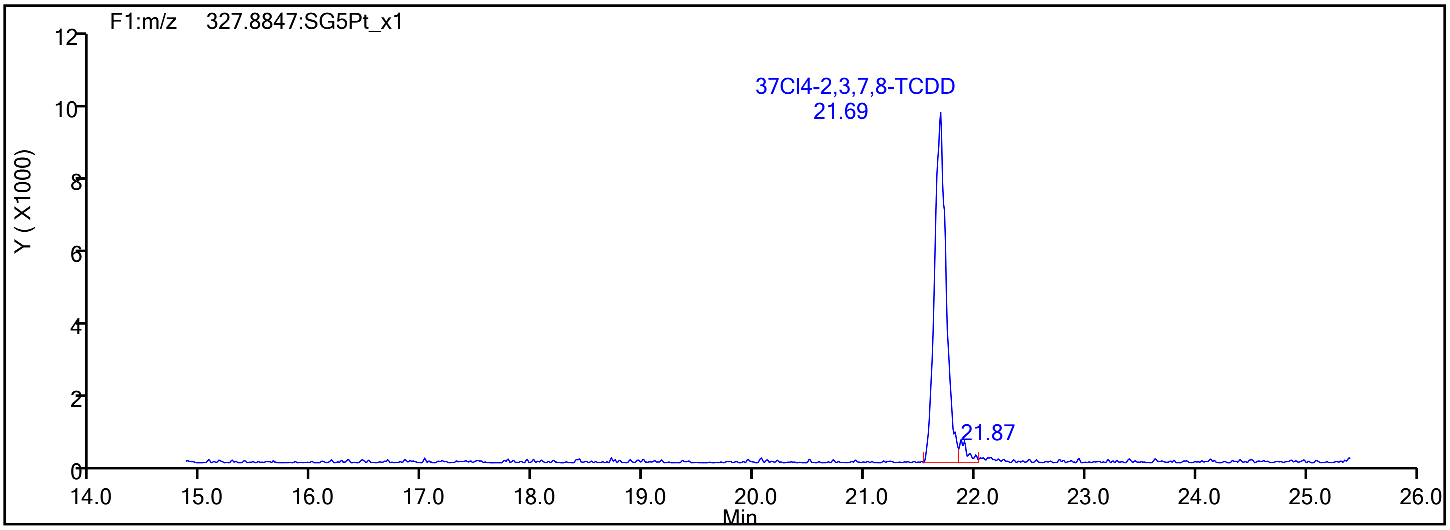

37Cl4-TCDD Standards

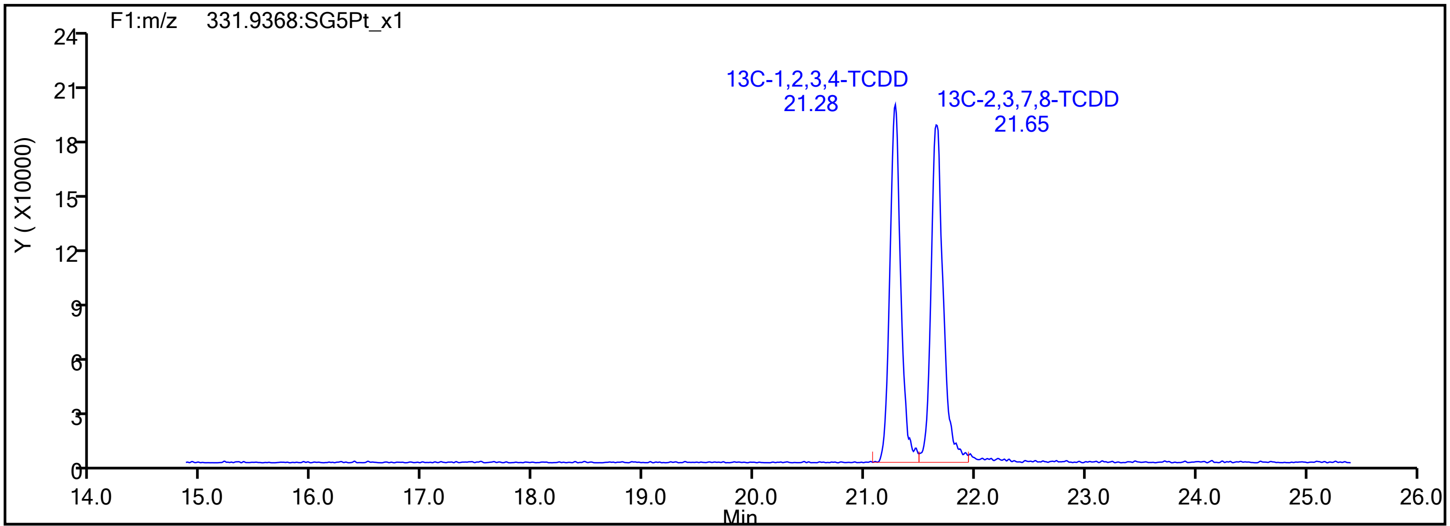

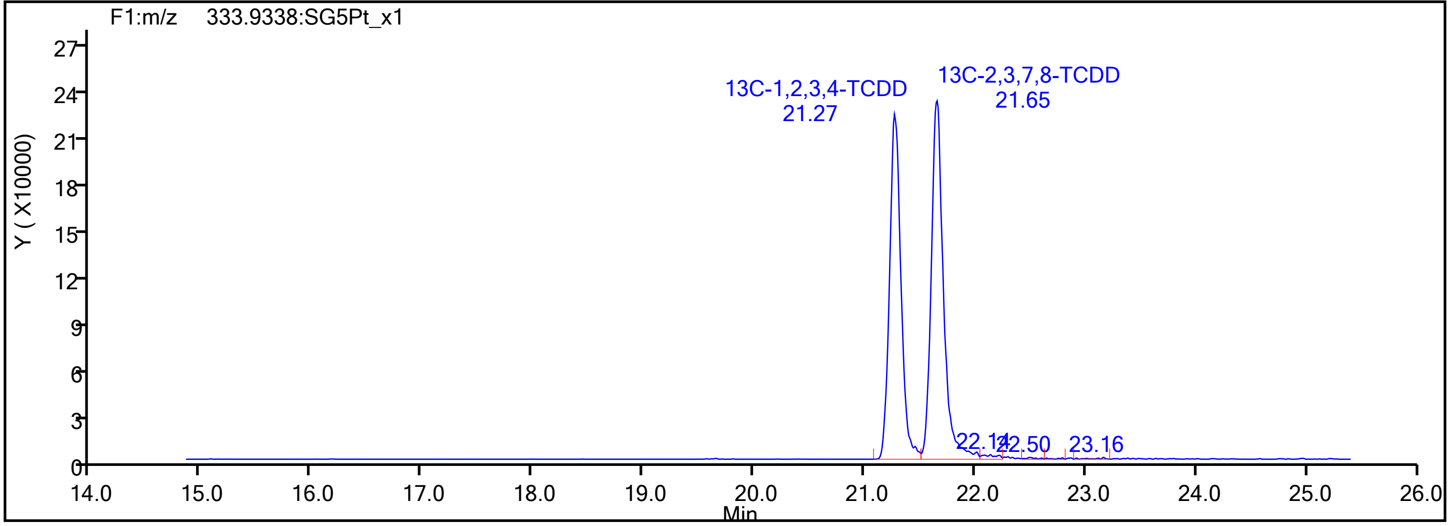

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

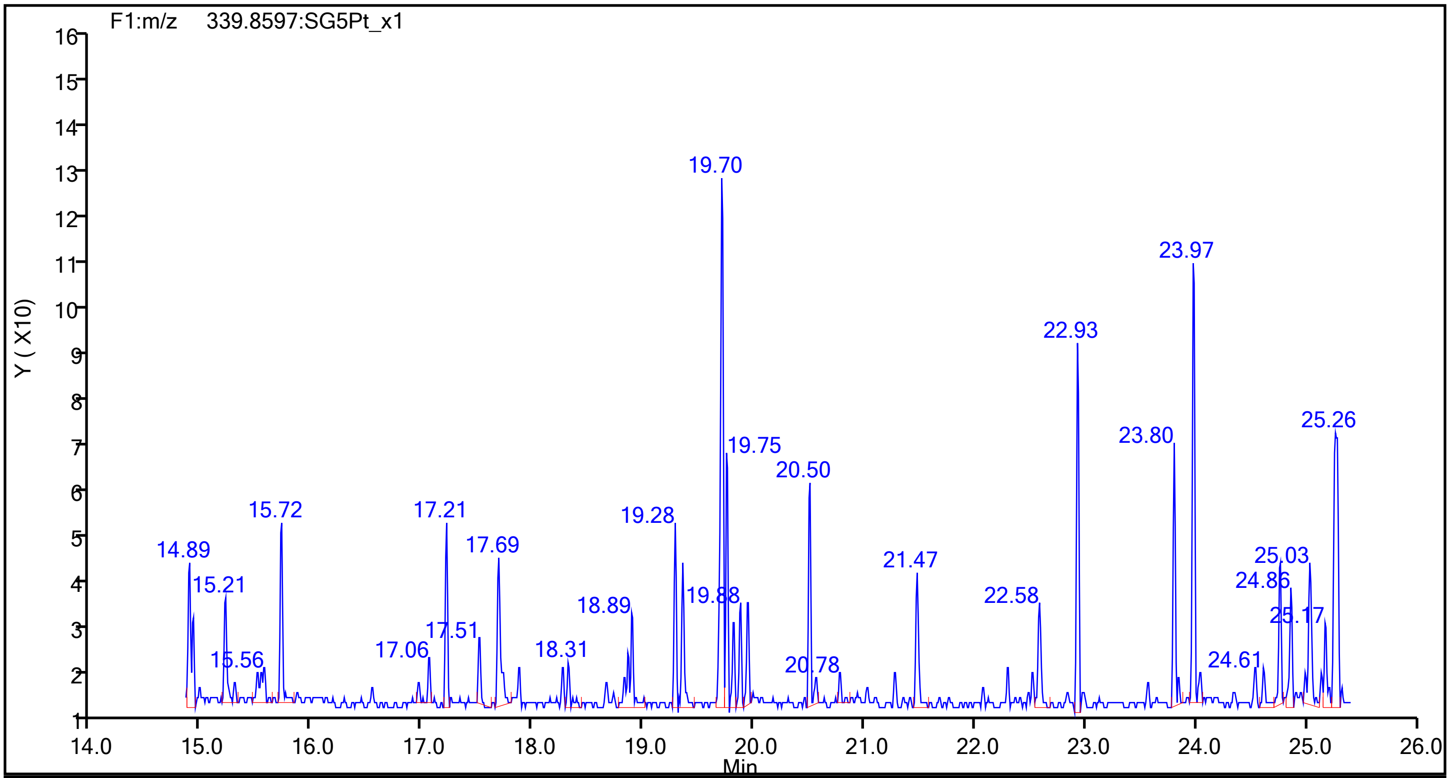

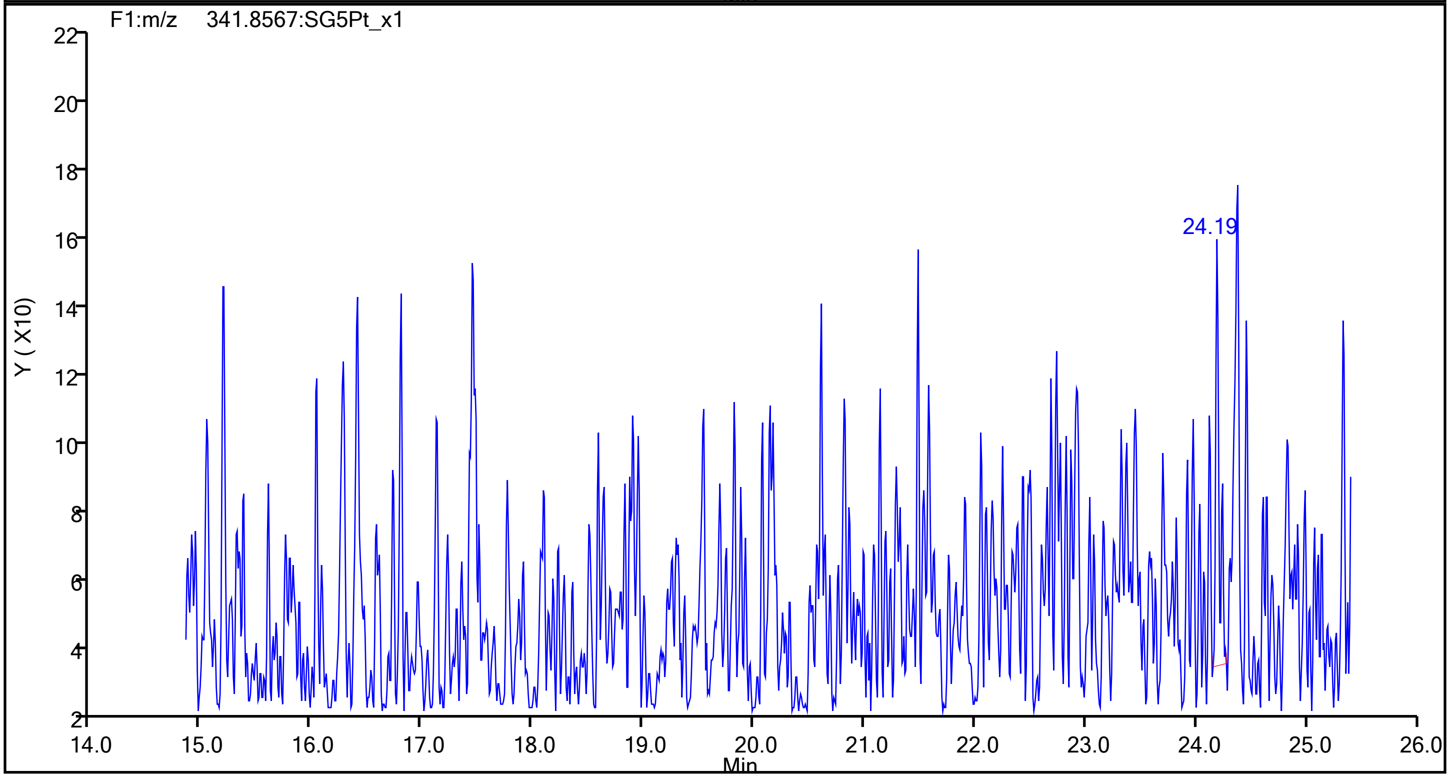

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d

Injection Date: 31-Dec-2020 15:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

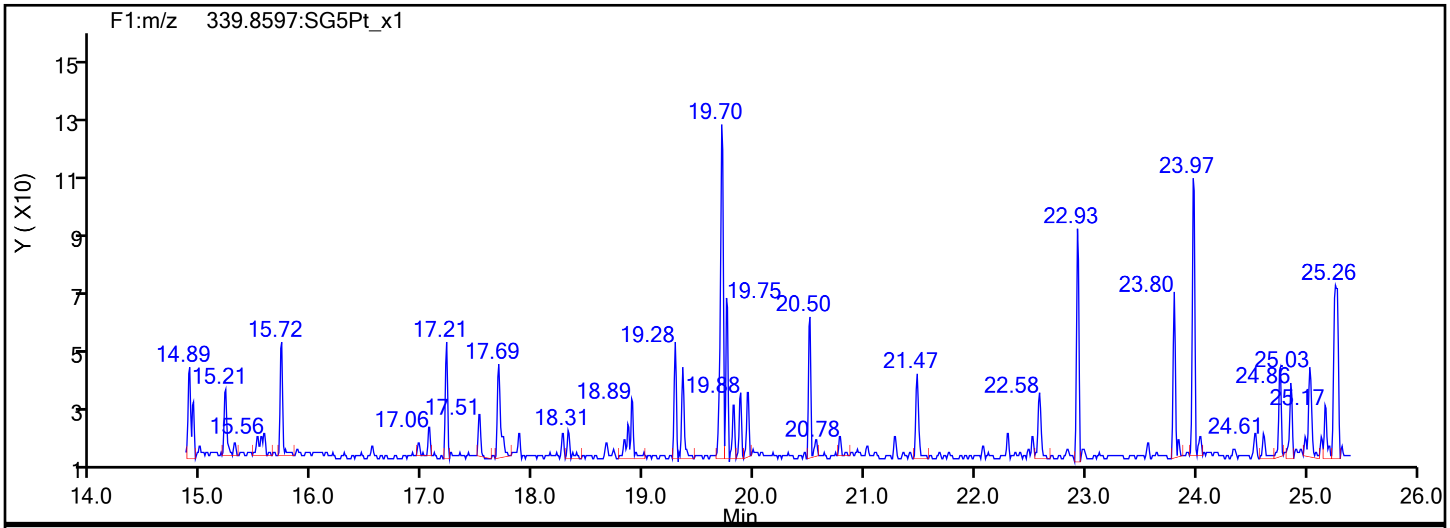

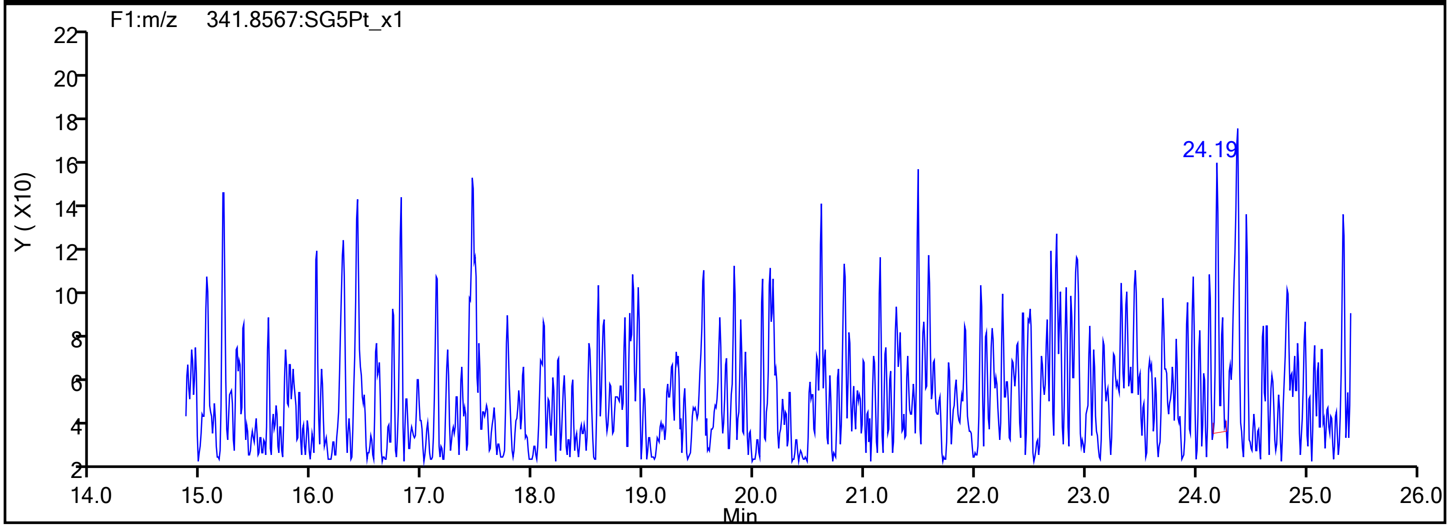

F1 PeCDFs Interference Mass

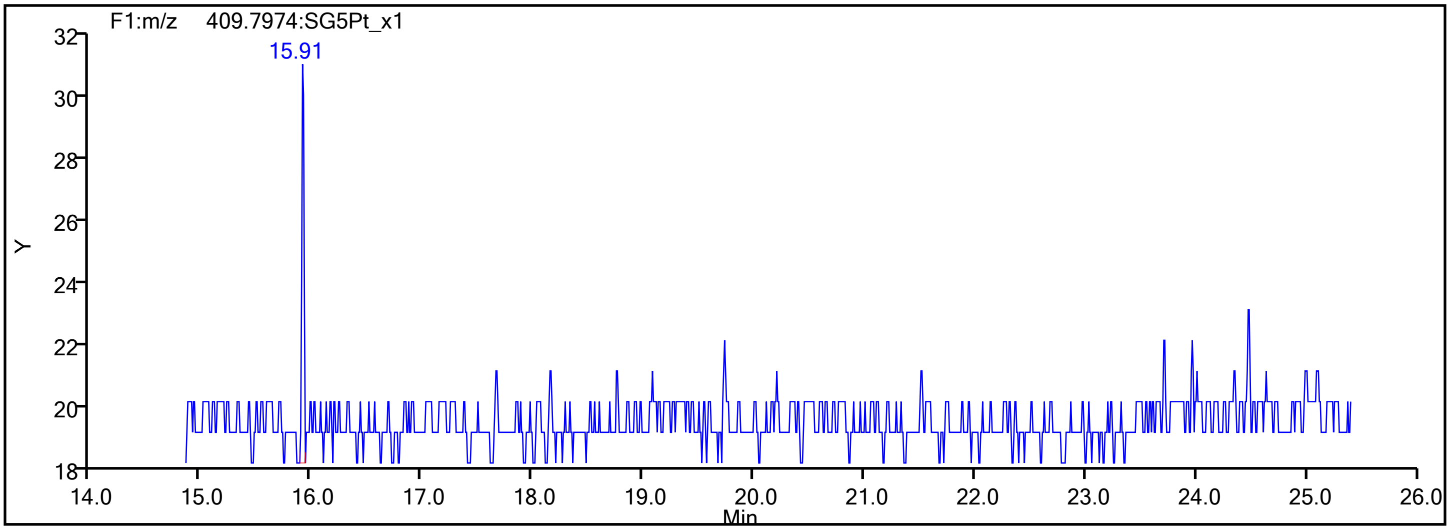

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

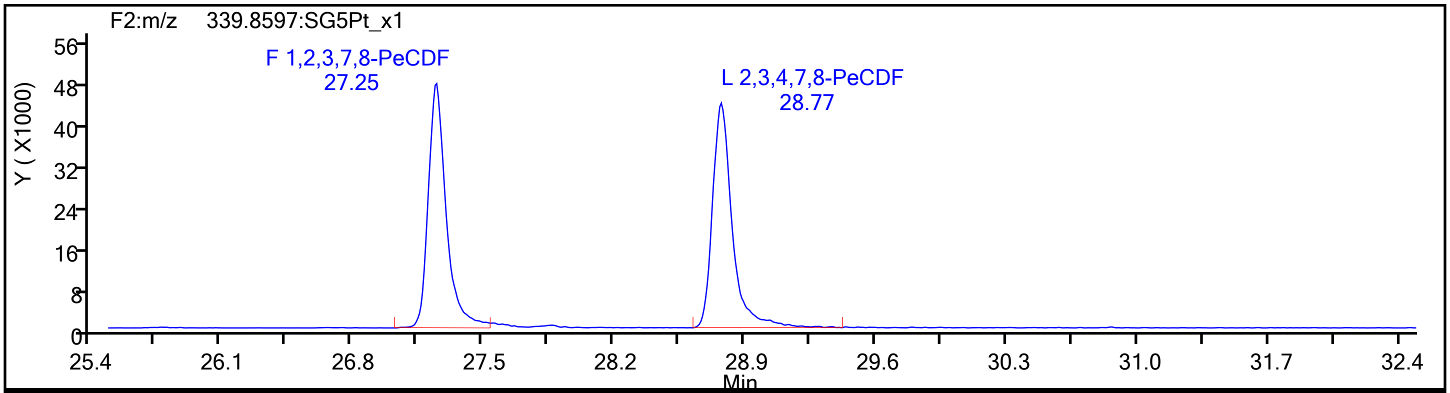

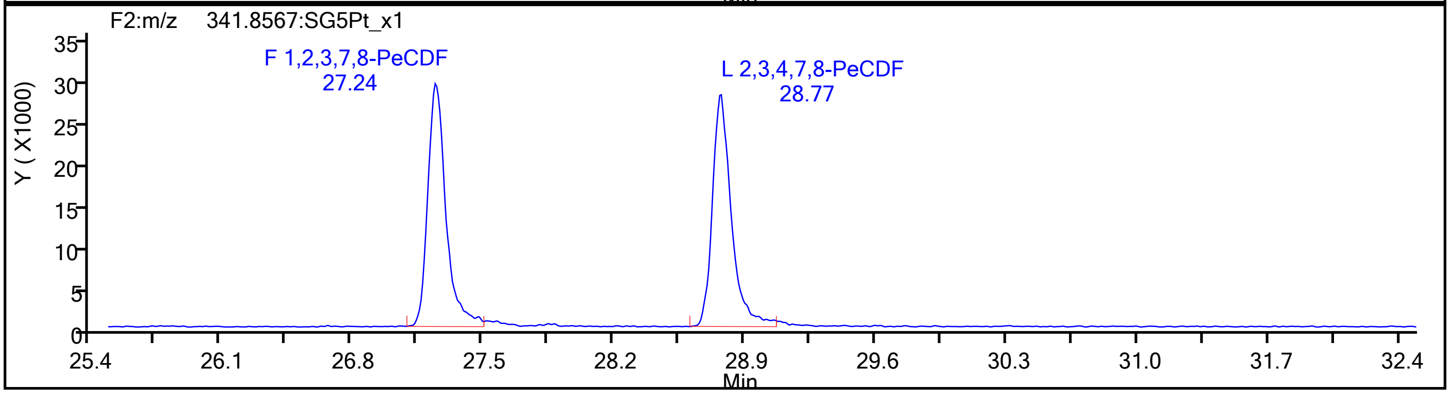

PeCDF Standards

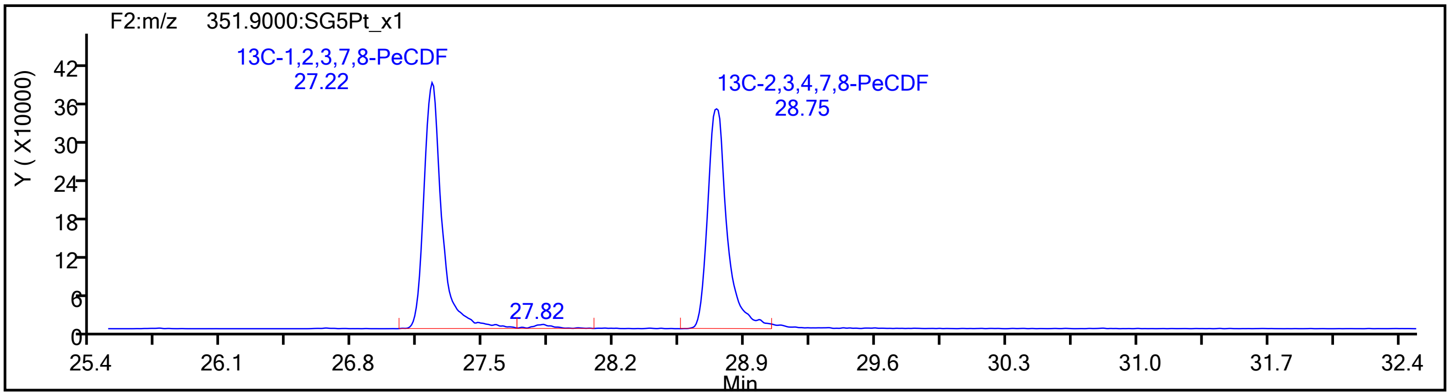

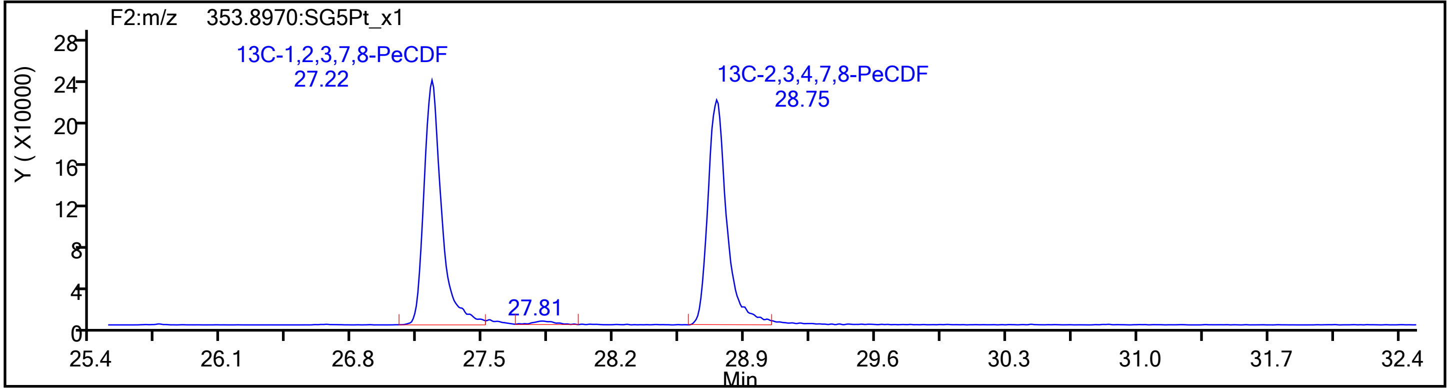

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Injection Date: 31-Dec-2020 15:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

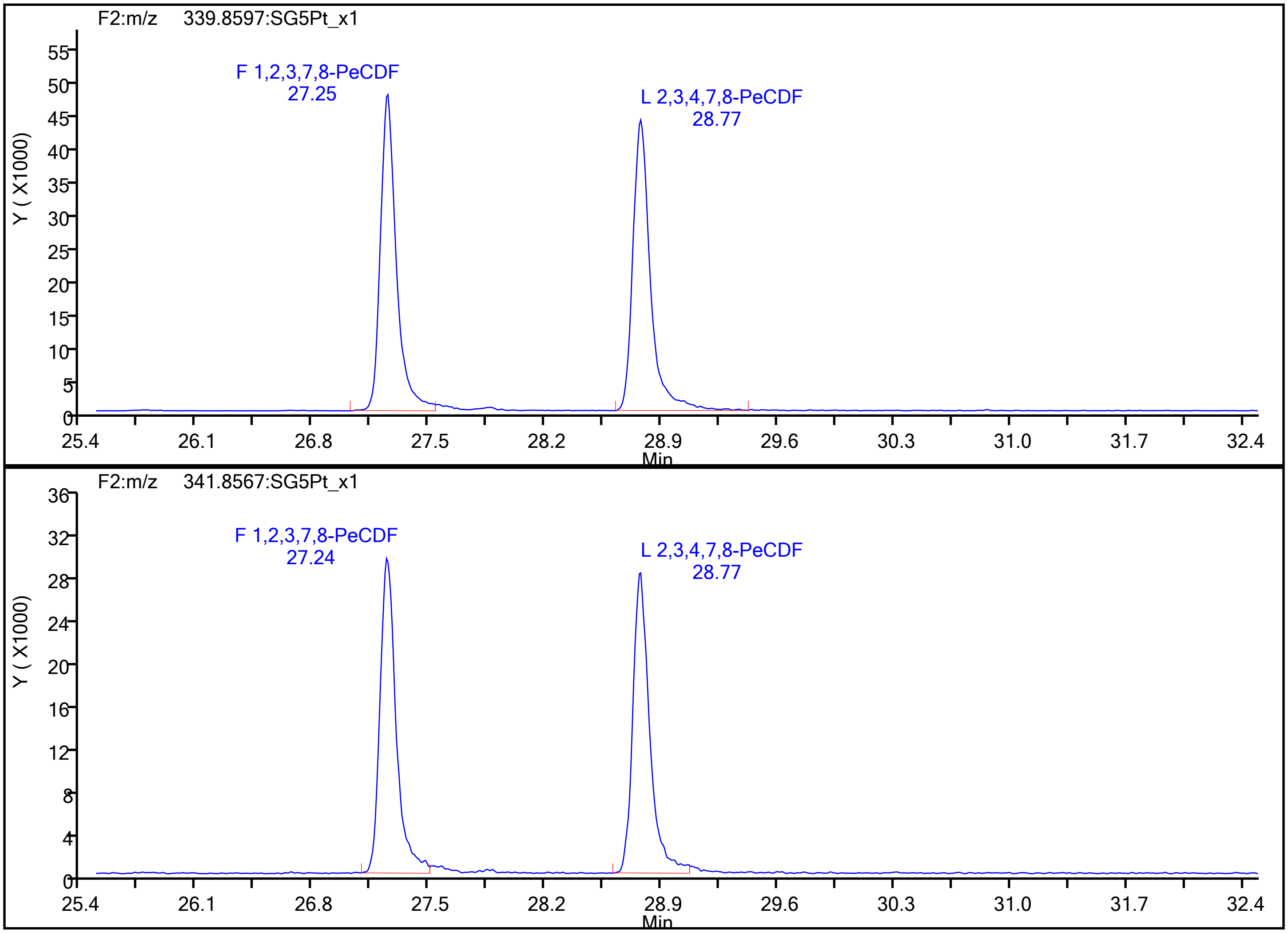

PeCDF Interference Mass

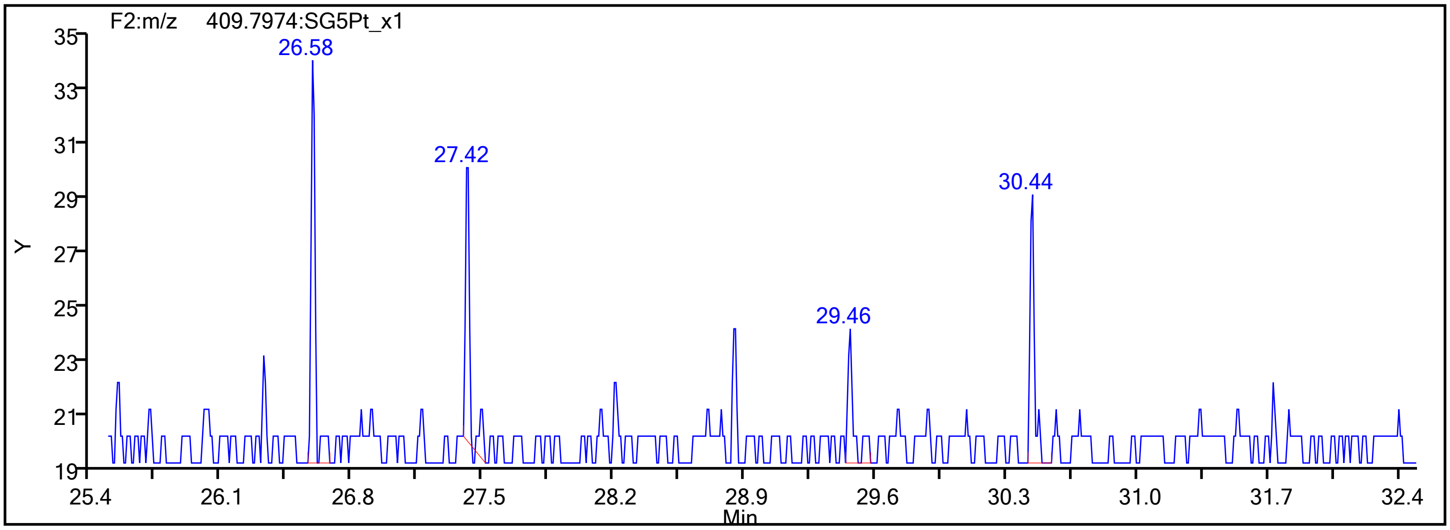

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

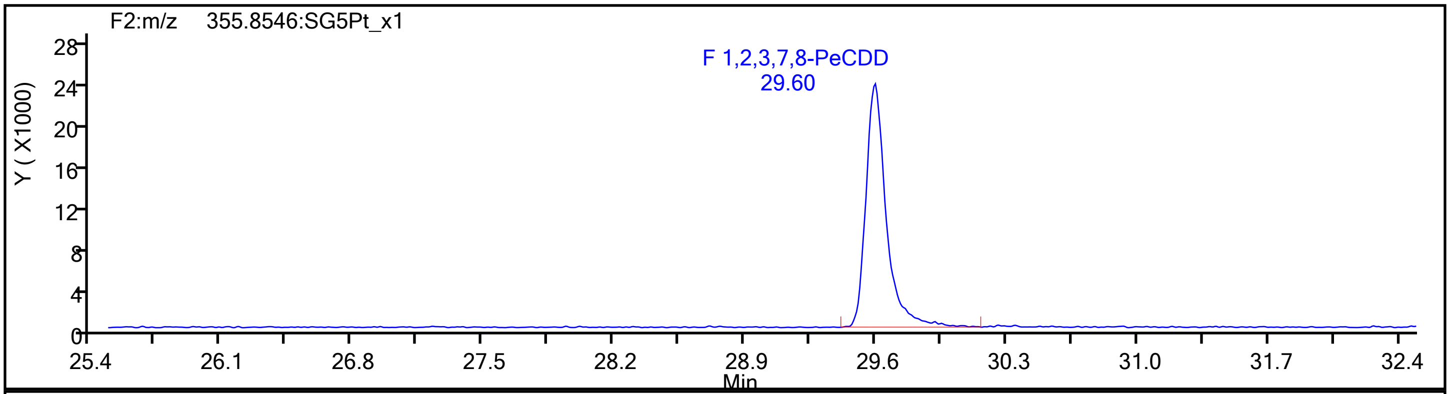

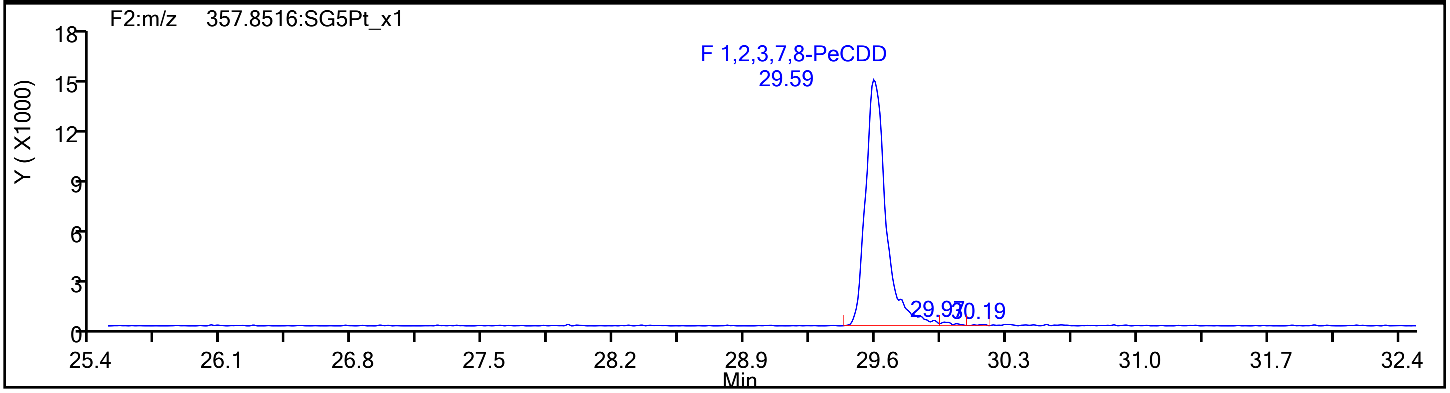

PeCDD Standards

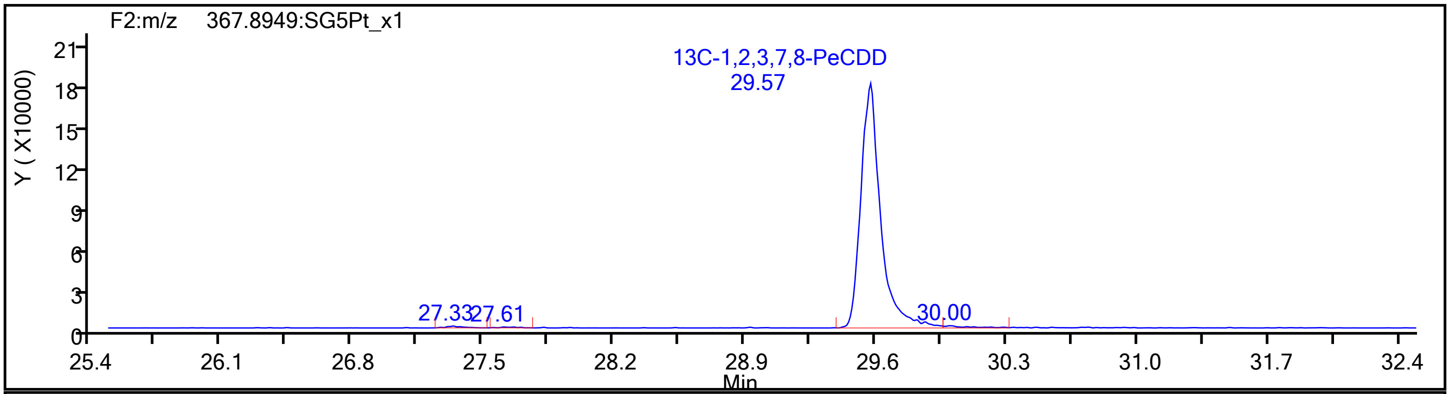

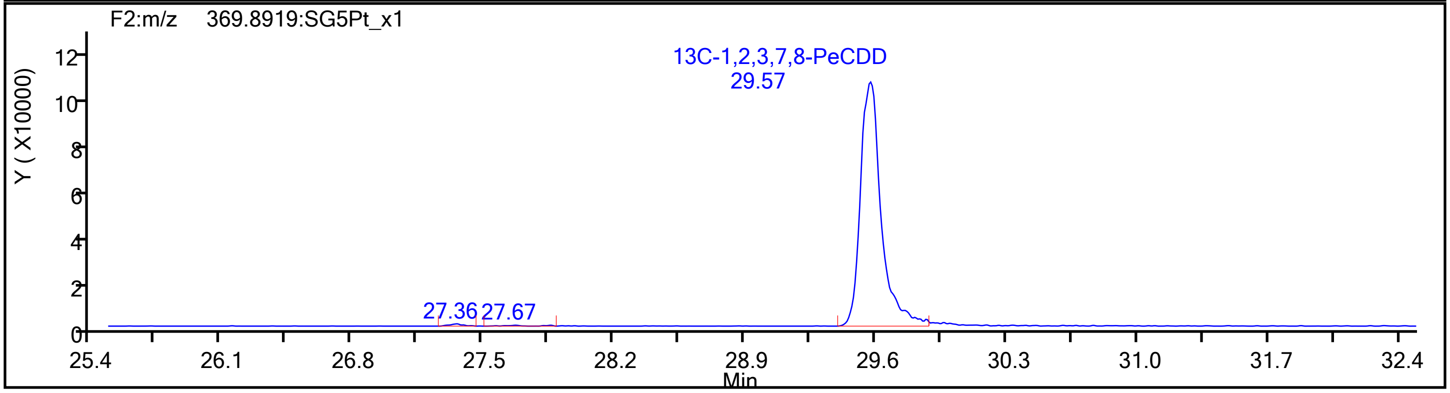

Report Date: 04-Jan-2021 09:33:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

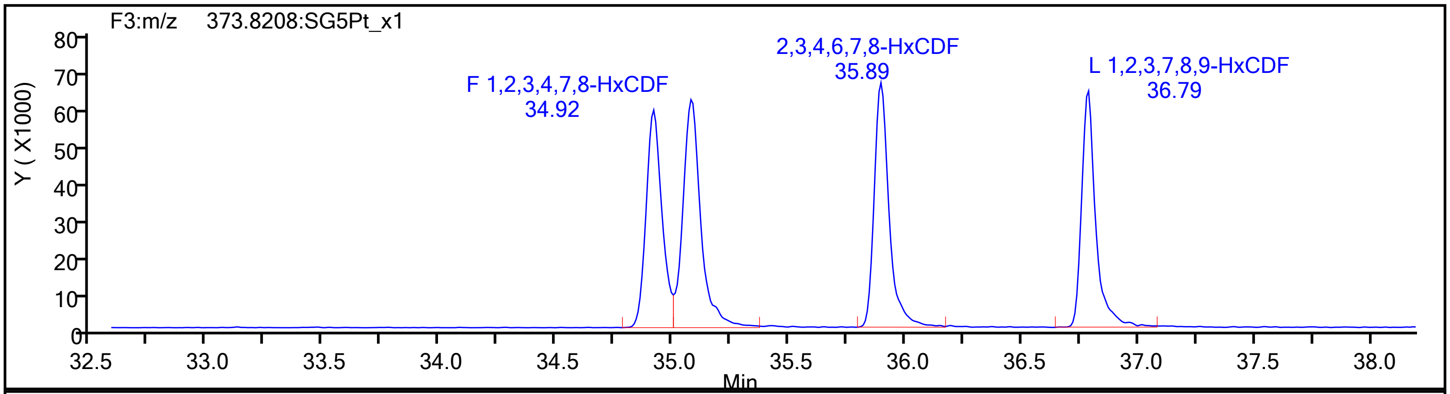

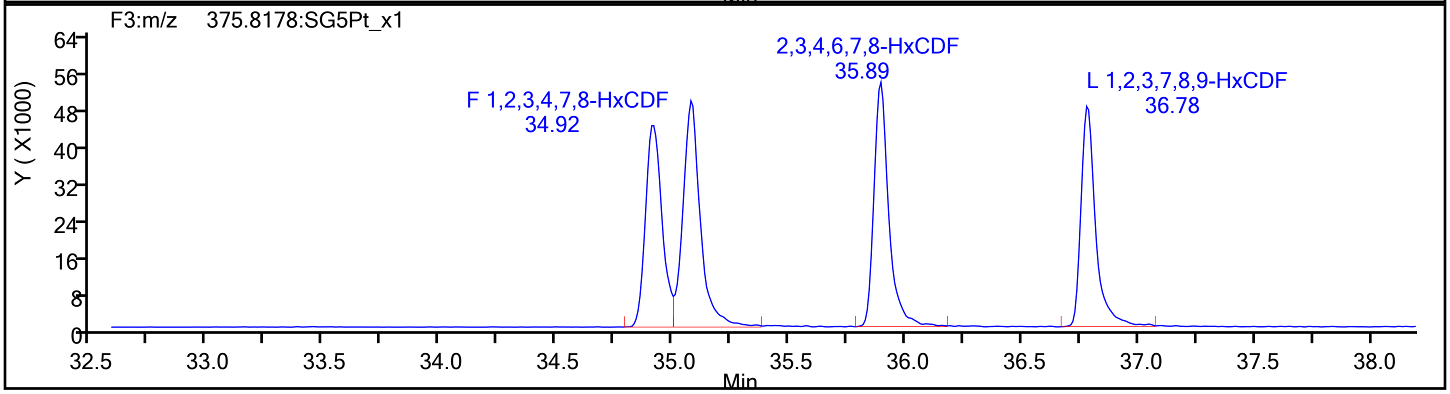

HxCDF Standards

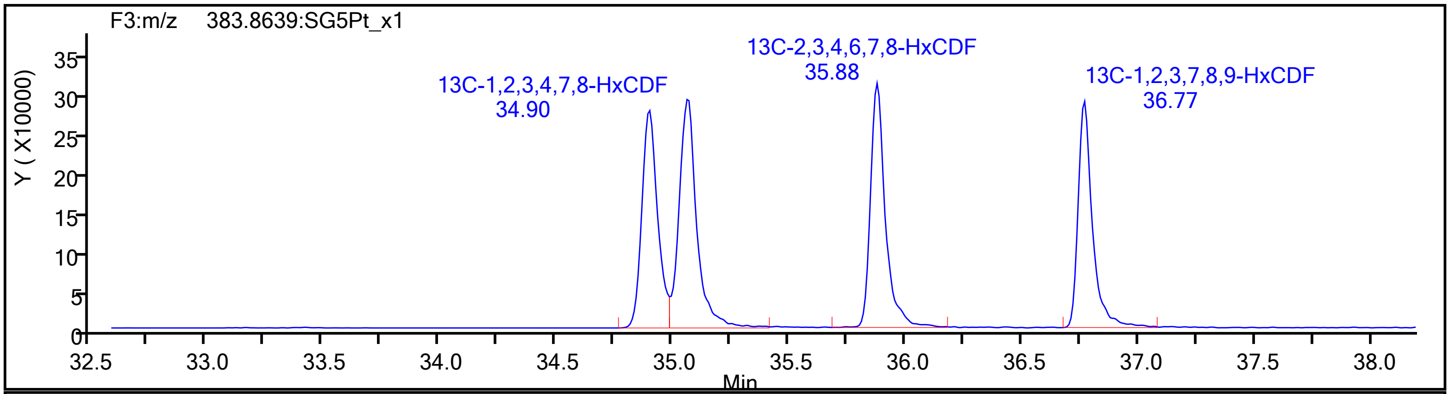

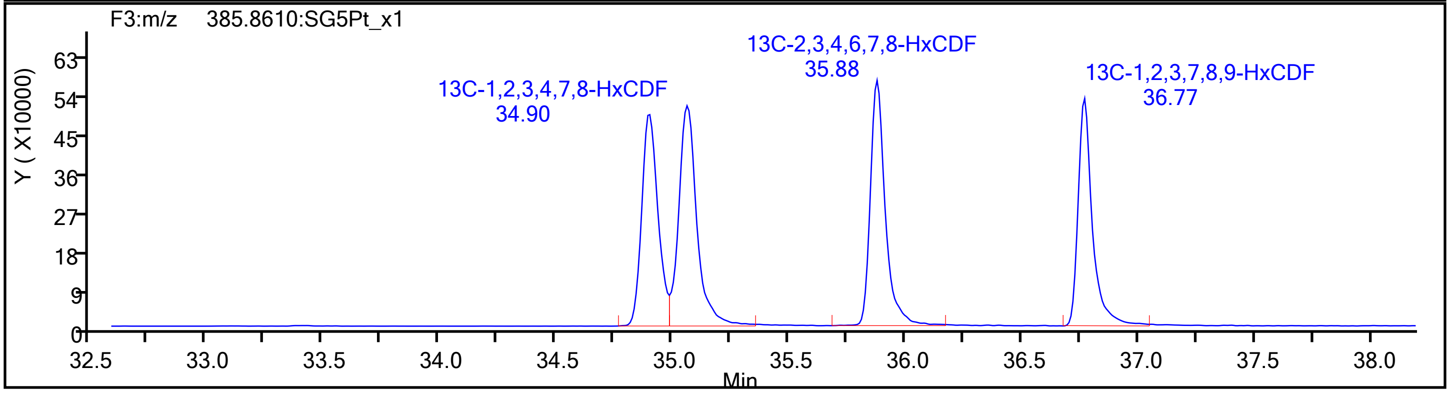

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

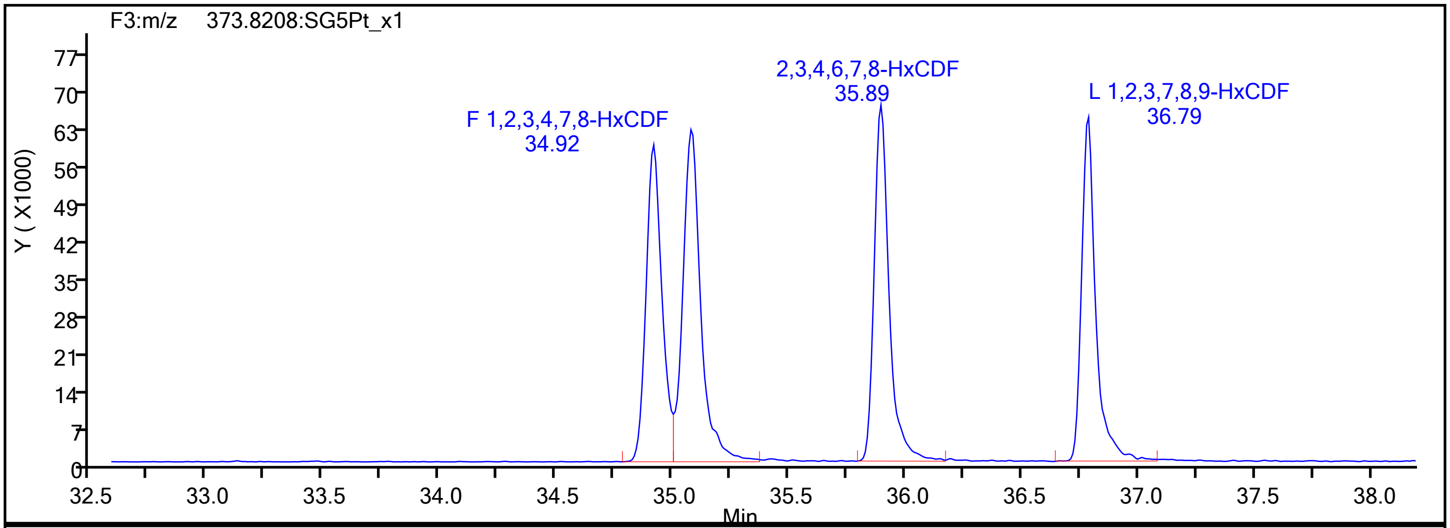

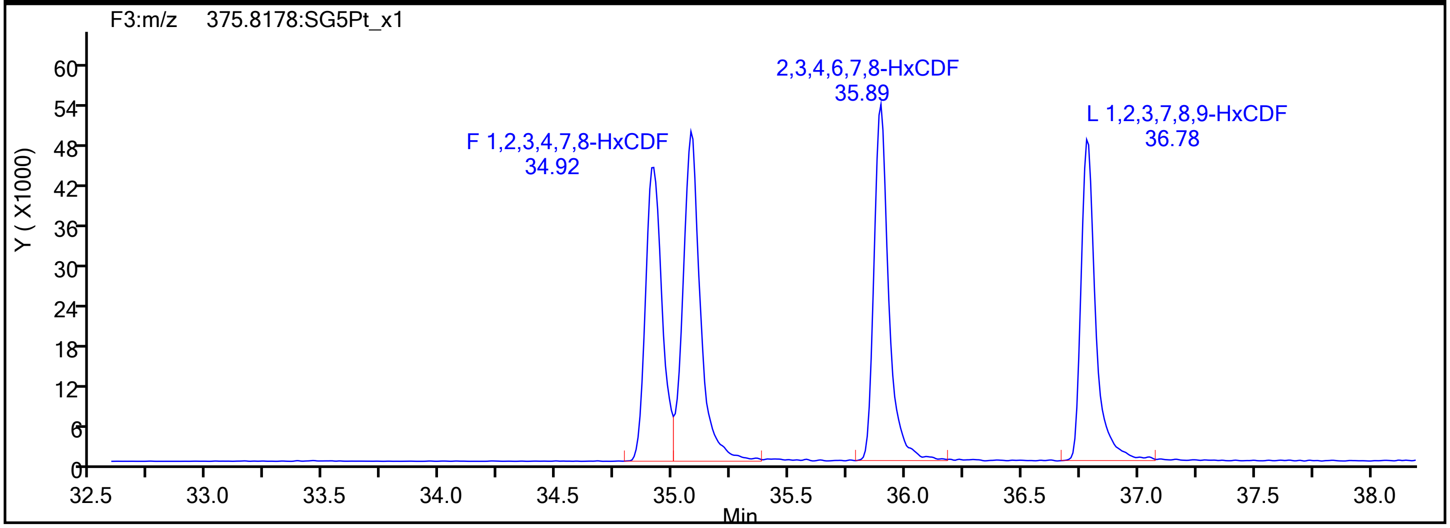

HxCDF Interference Mass

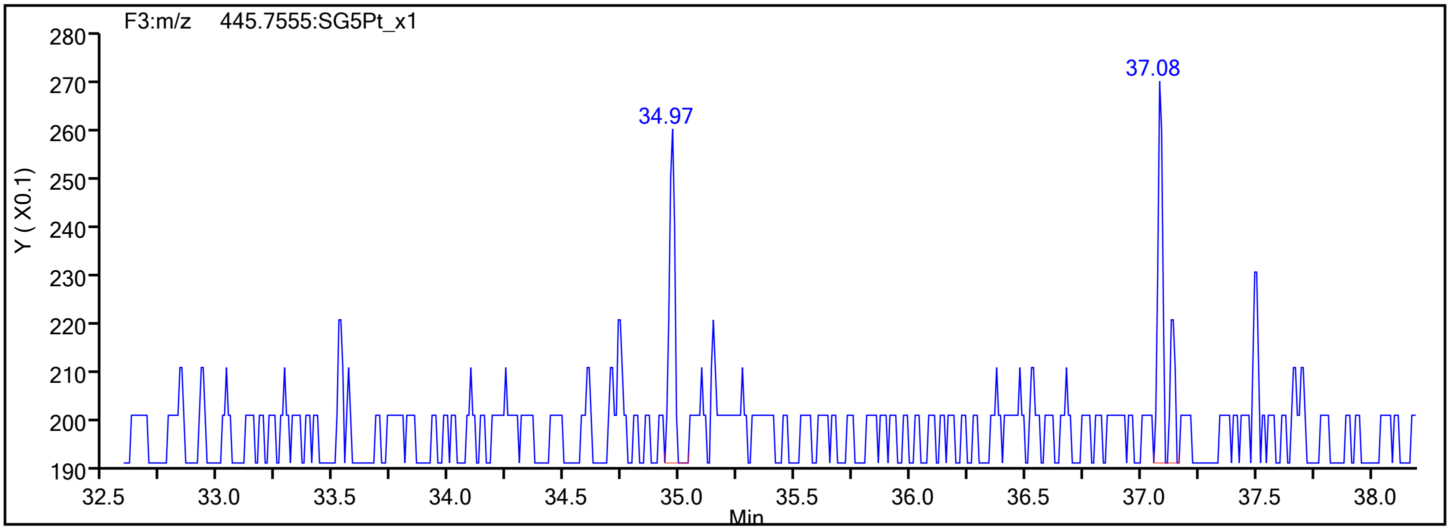

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

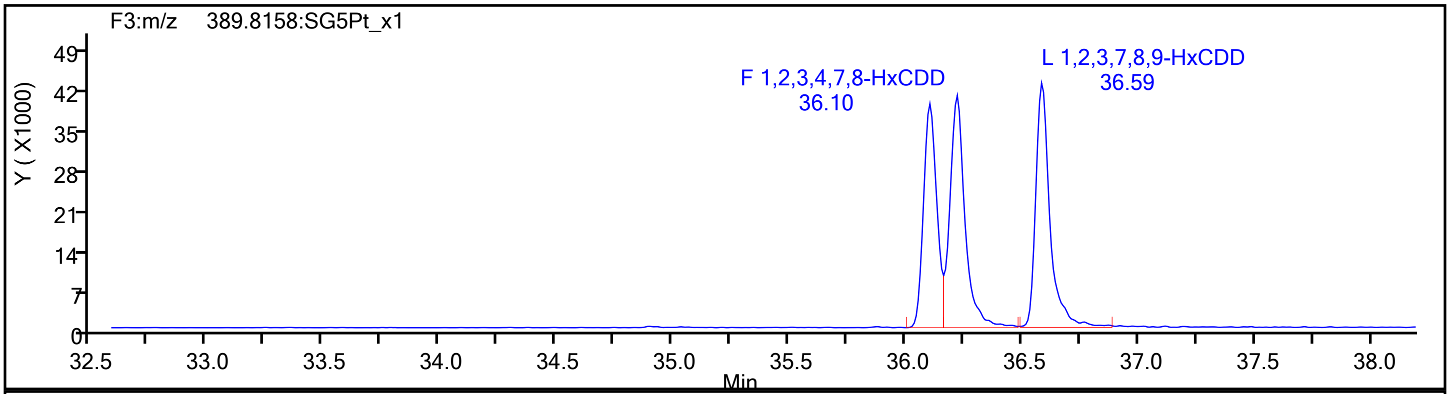

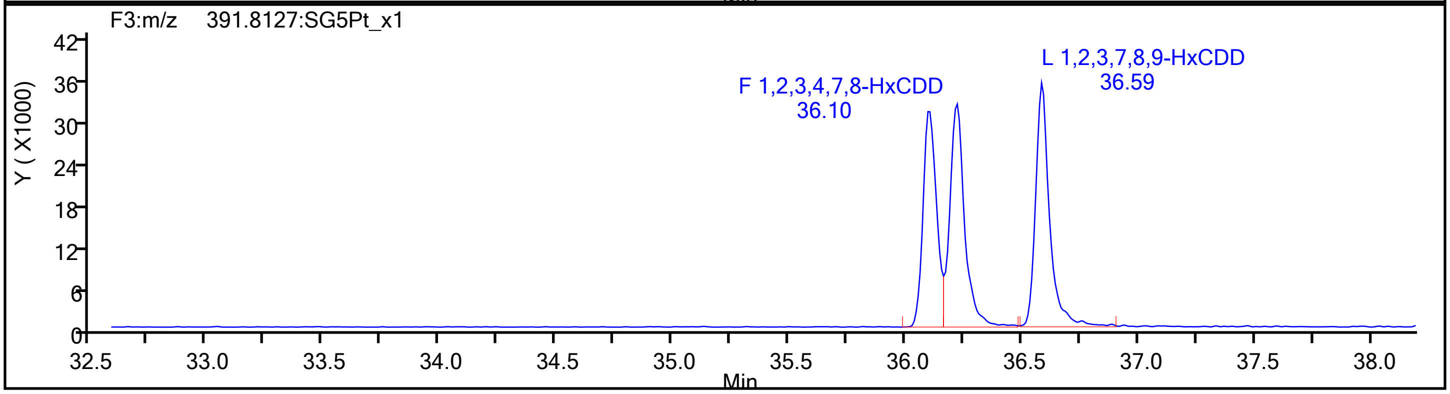

HxCDD Standards

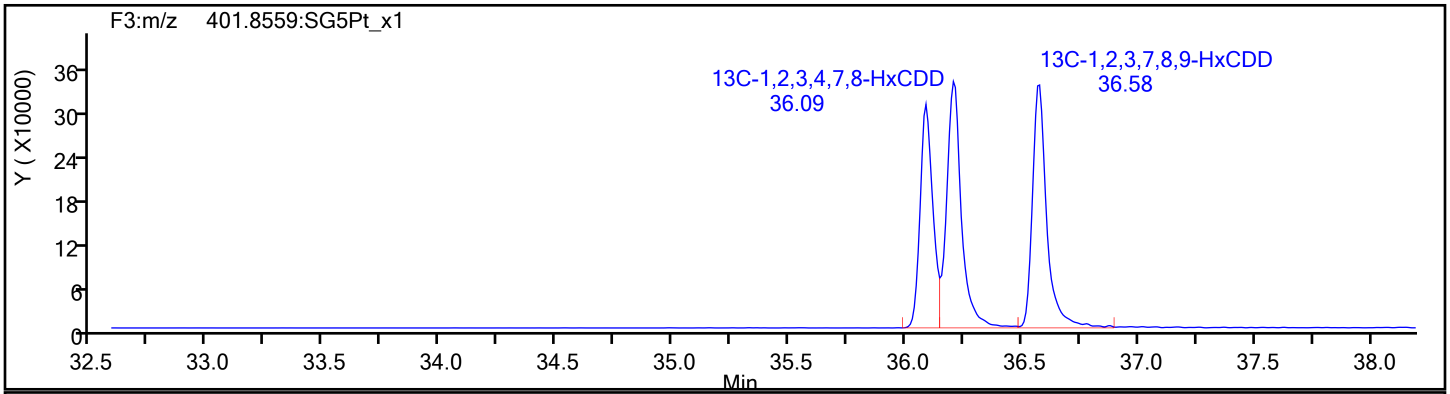

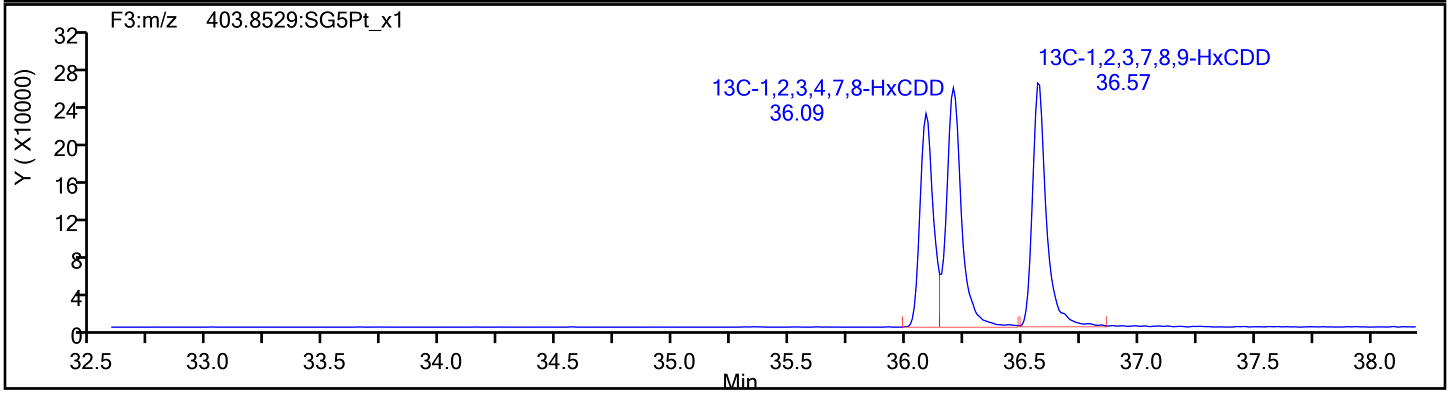

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

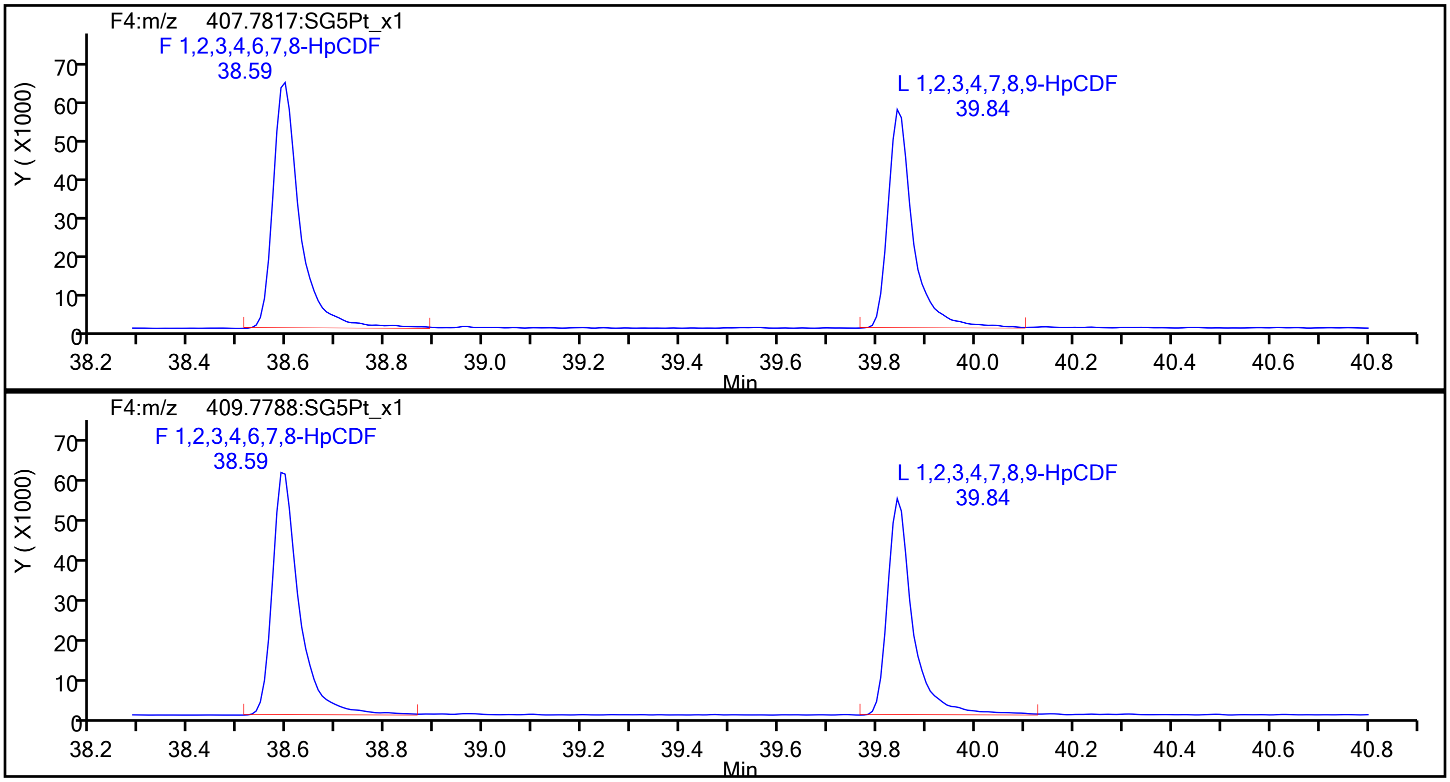

HpCDF Standards

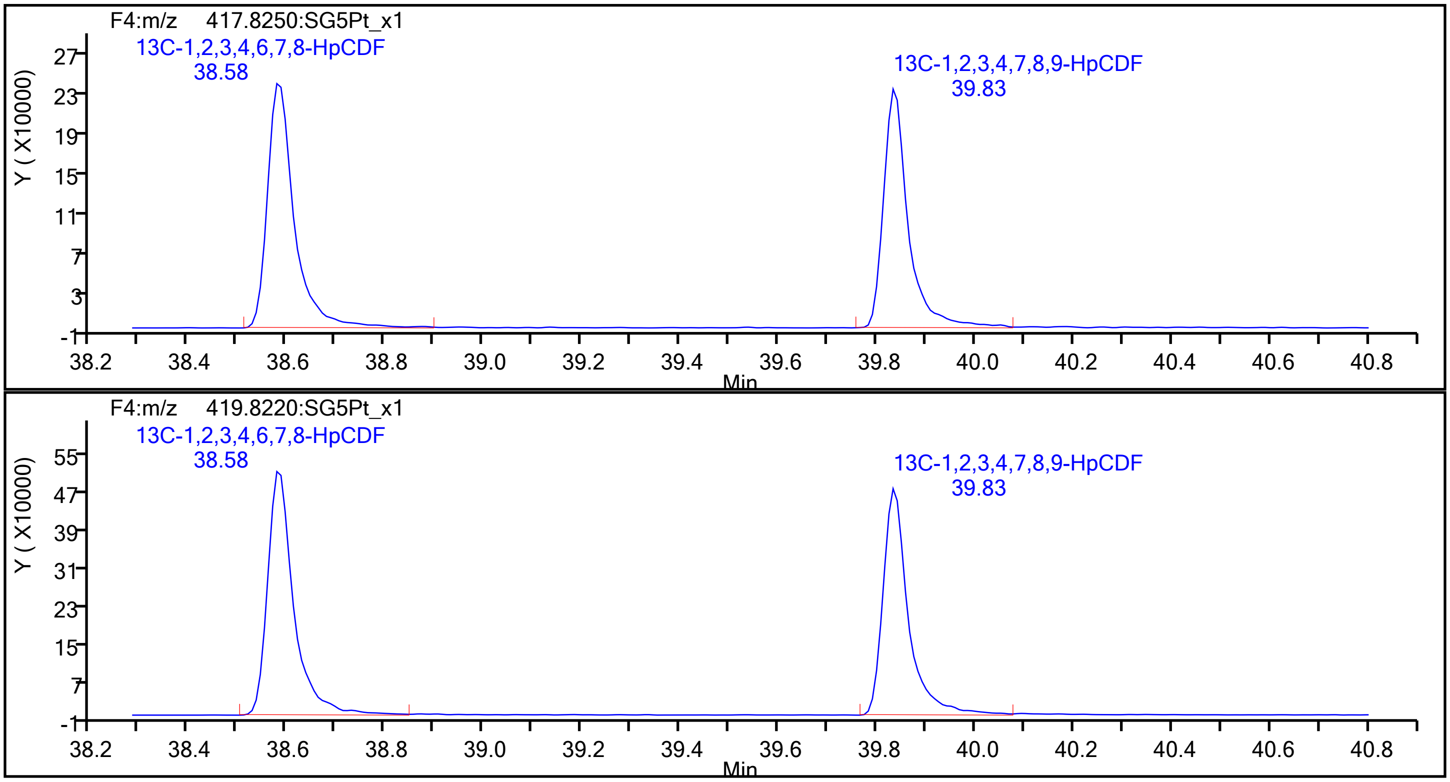

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d
Injection Date: 31-Dec-2020 15:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

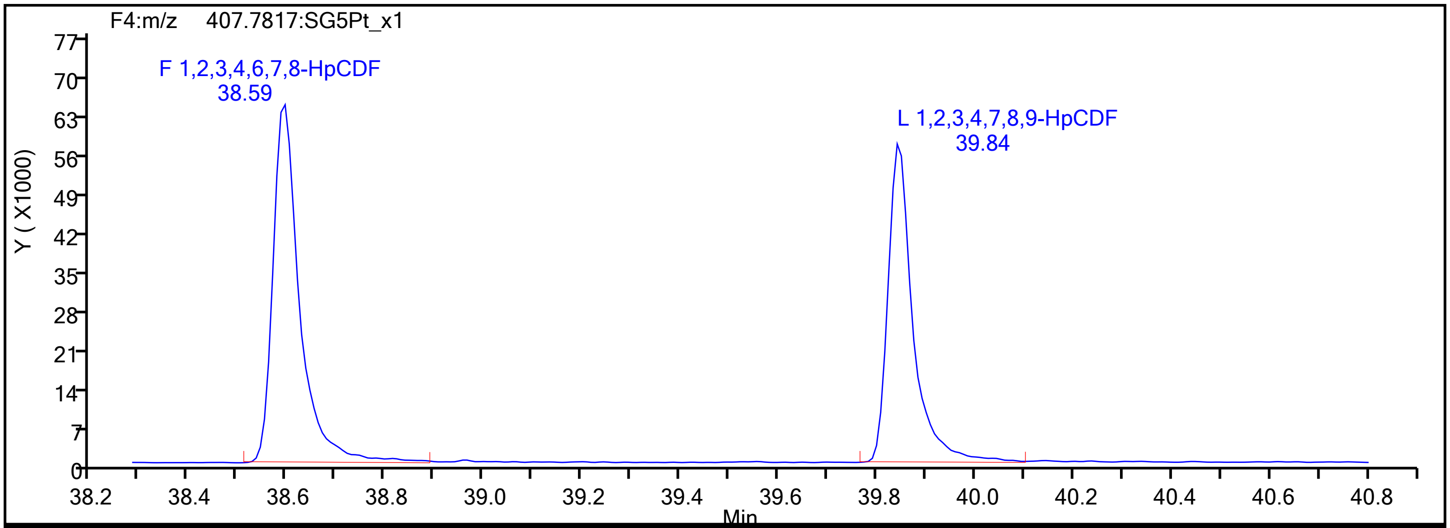

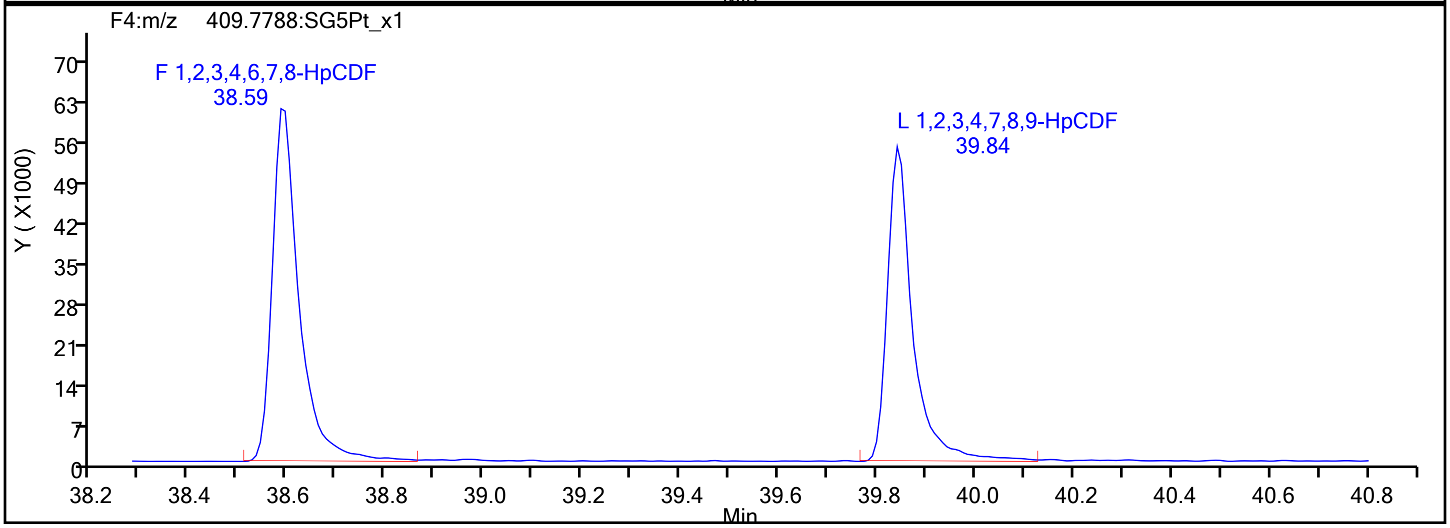

HpCDF Interference Mass

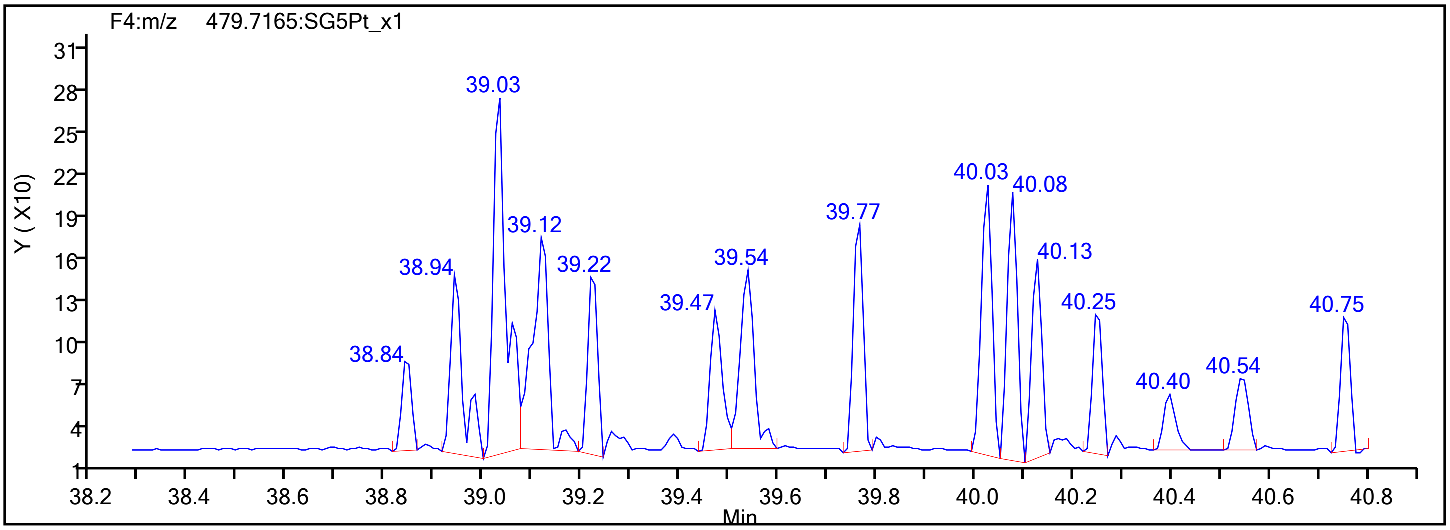

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

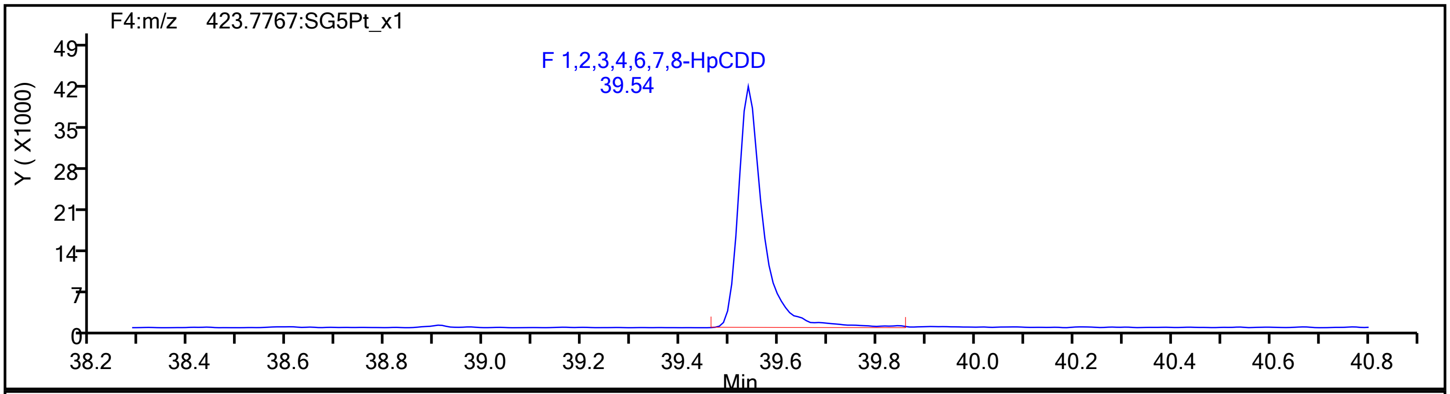

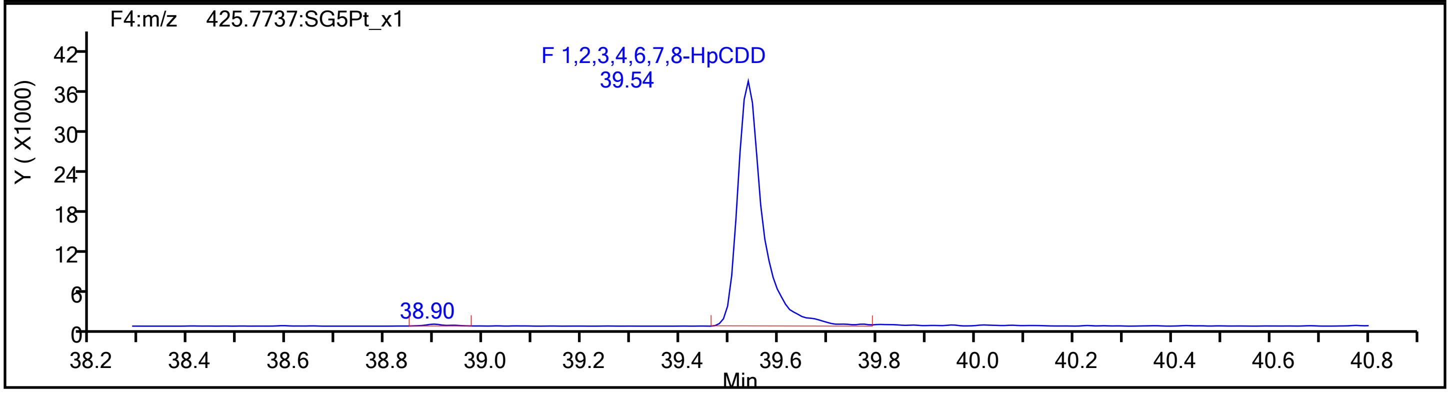

HpCDD Standards

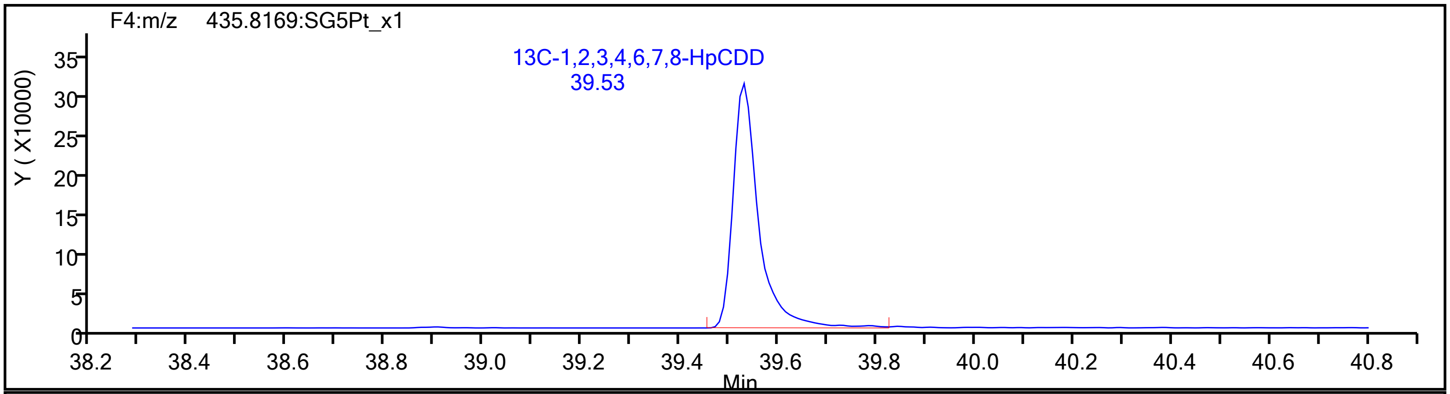

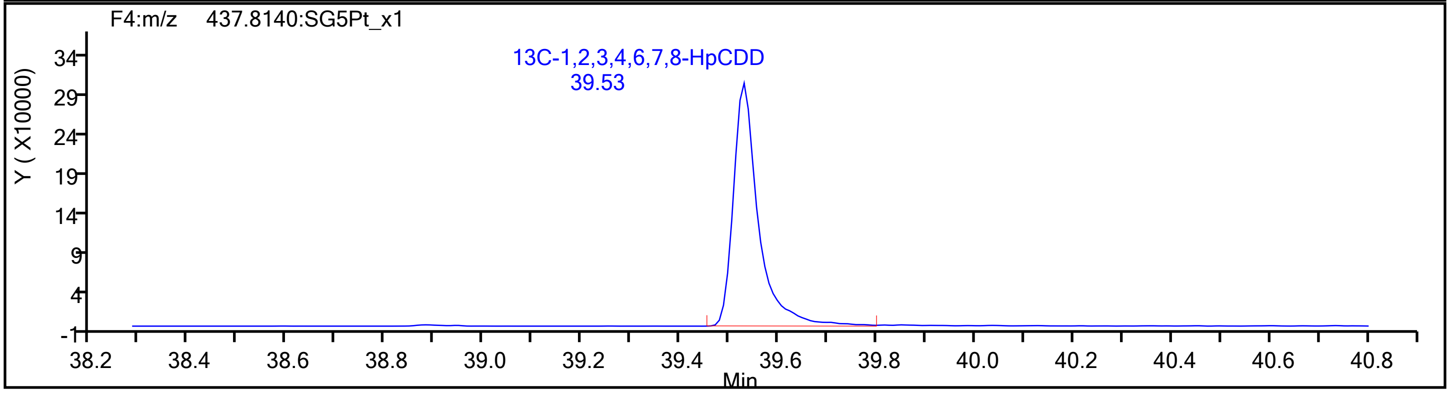

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d
Injection Date: 31-Dec-2020 15:05:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

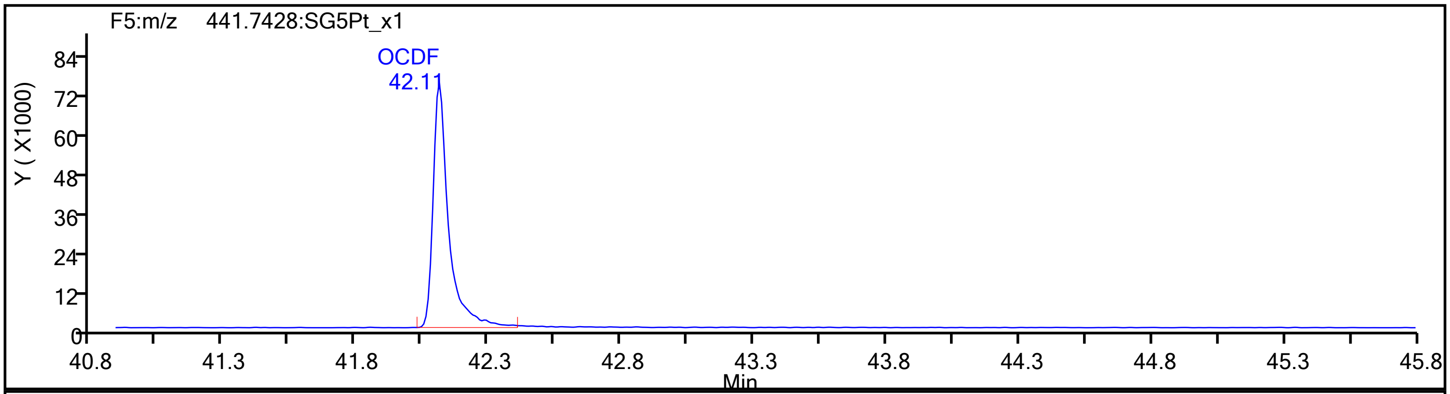

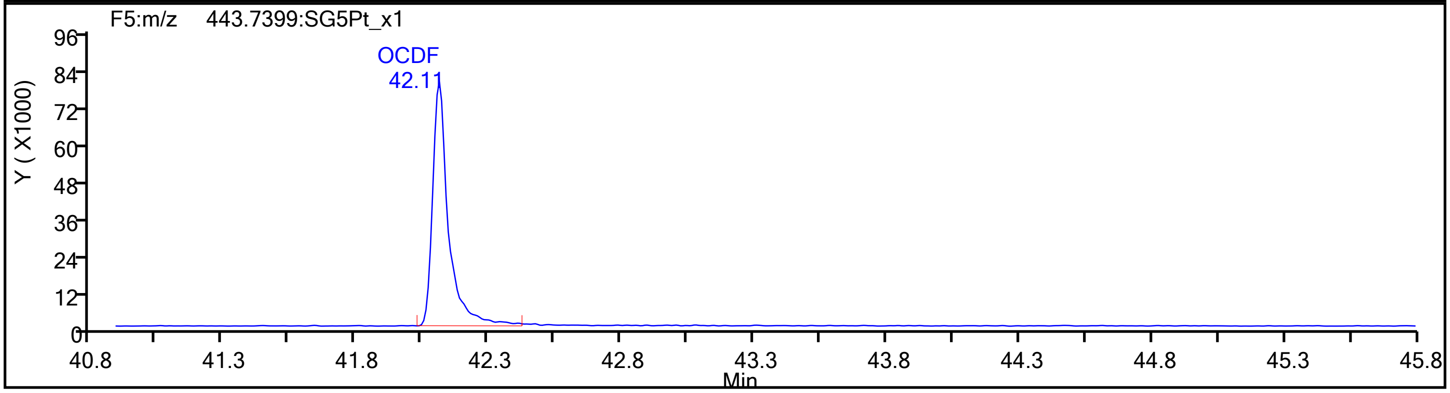

OCDF Standards

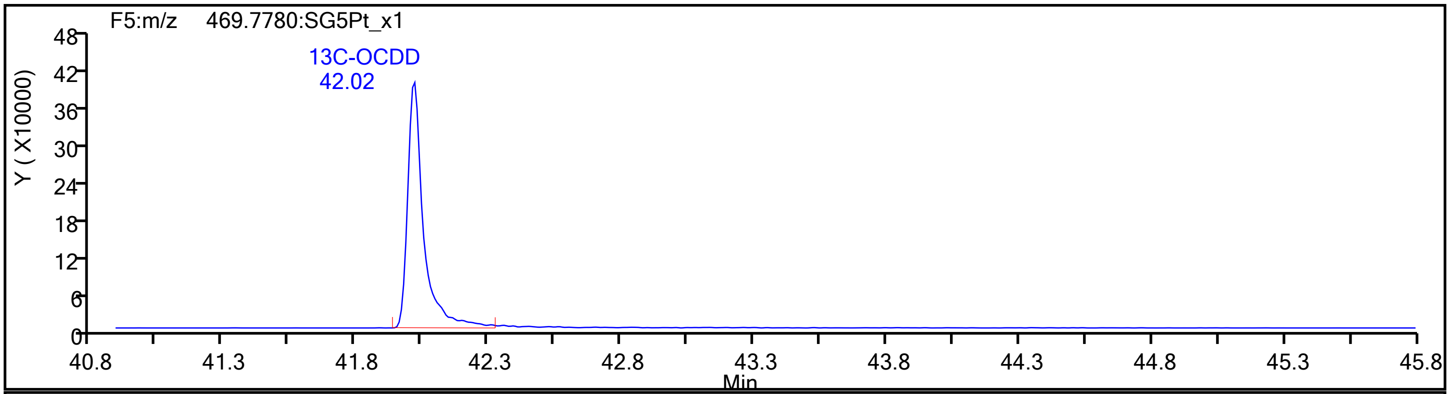

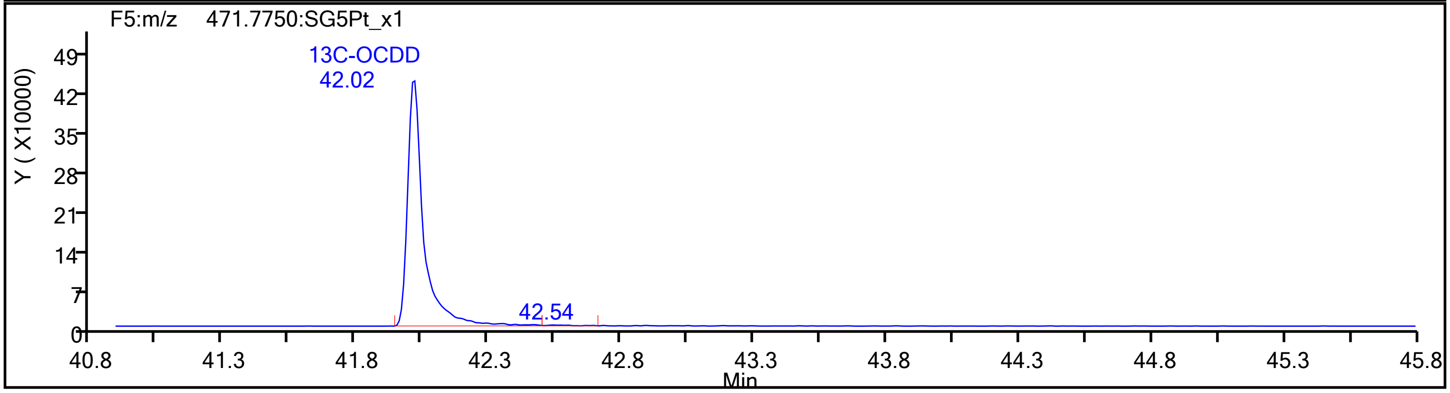

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

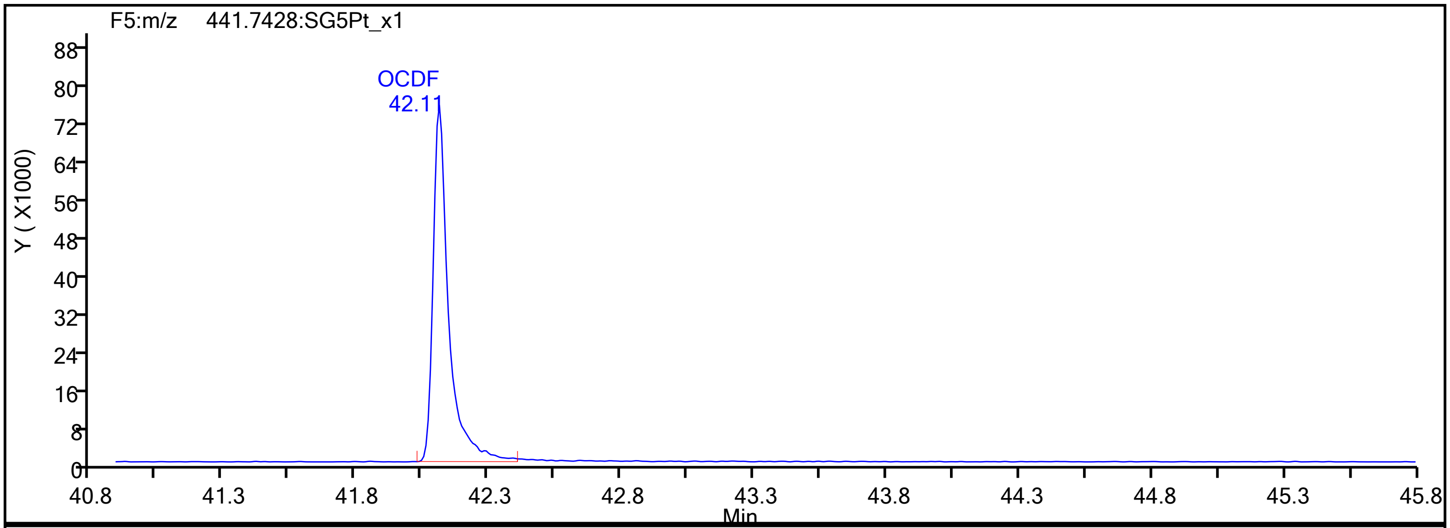

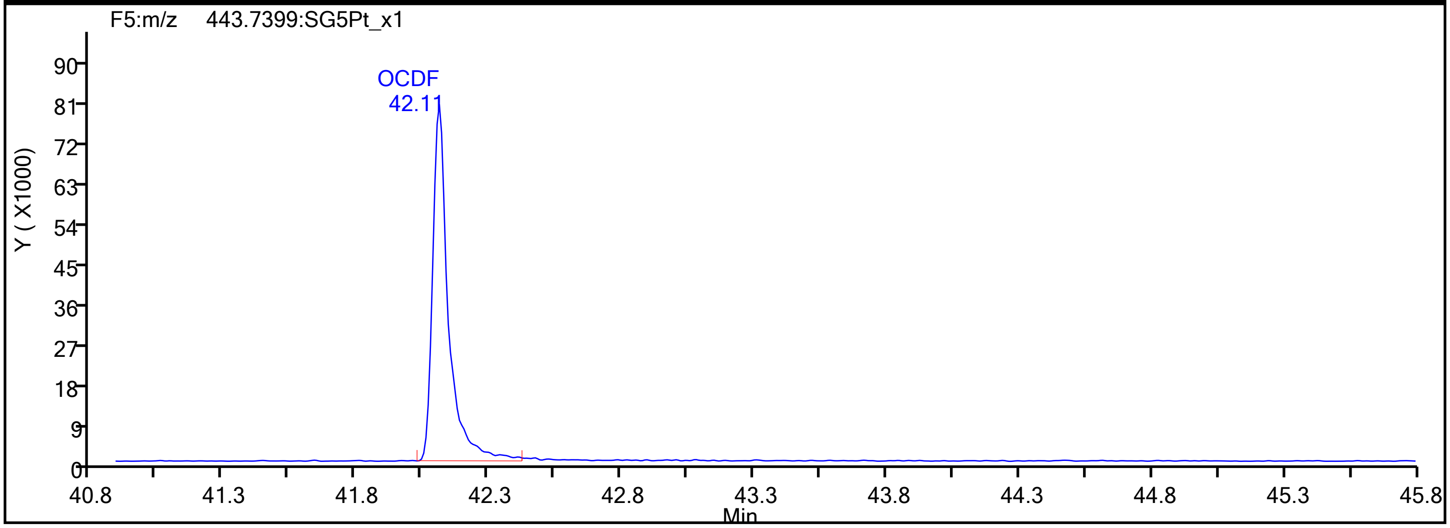

OCDF Interference Mass

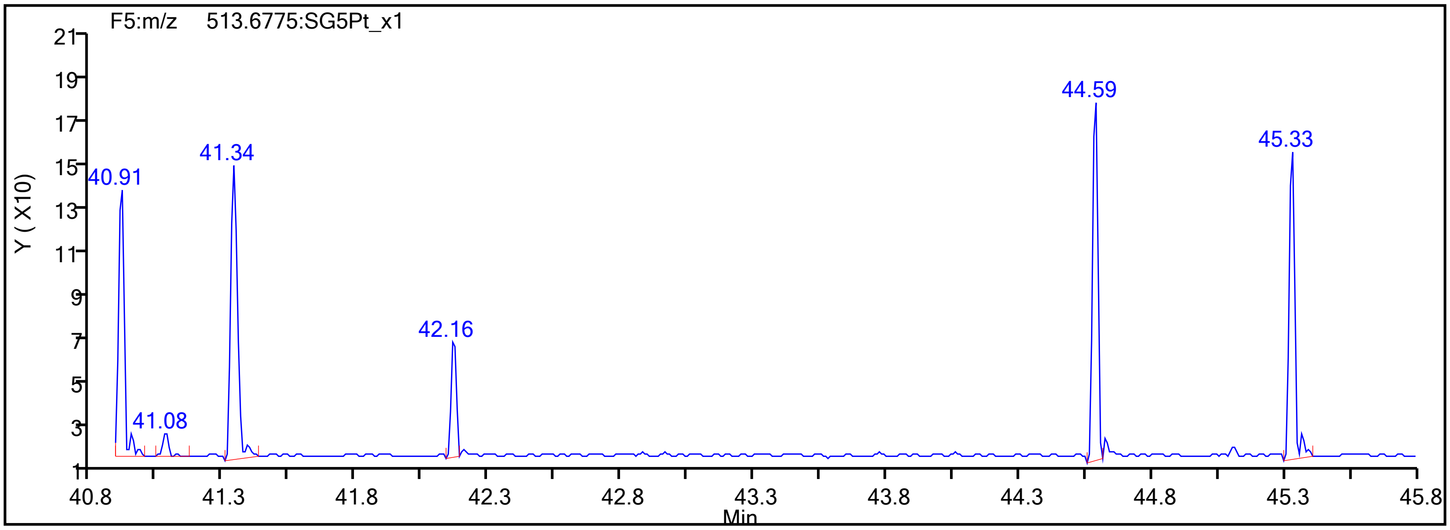

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

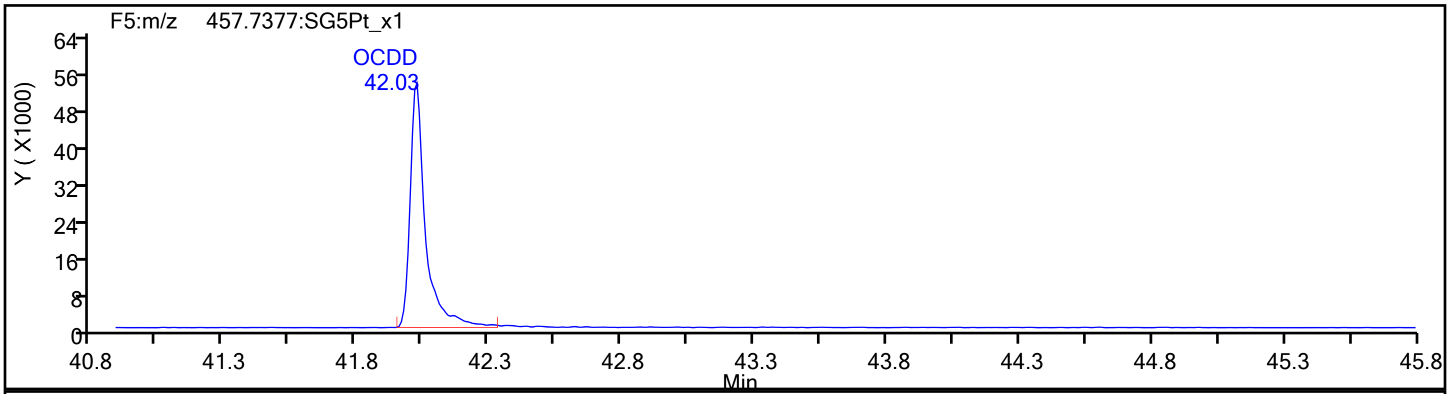

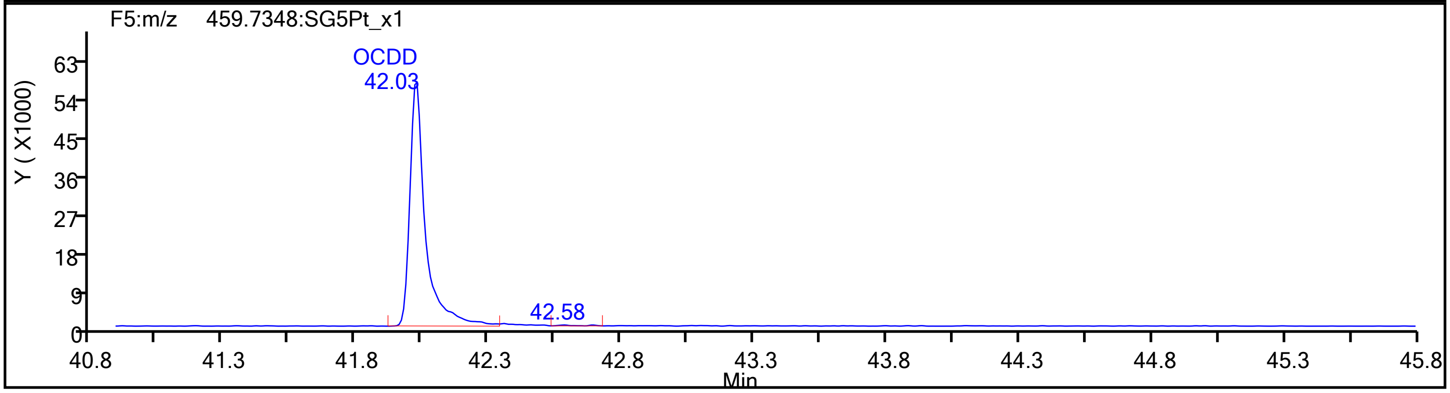

OCDD Standards

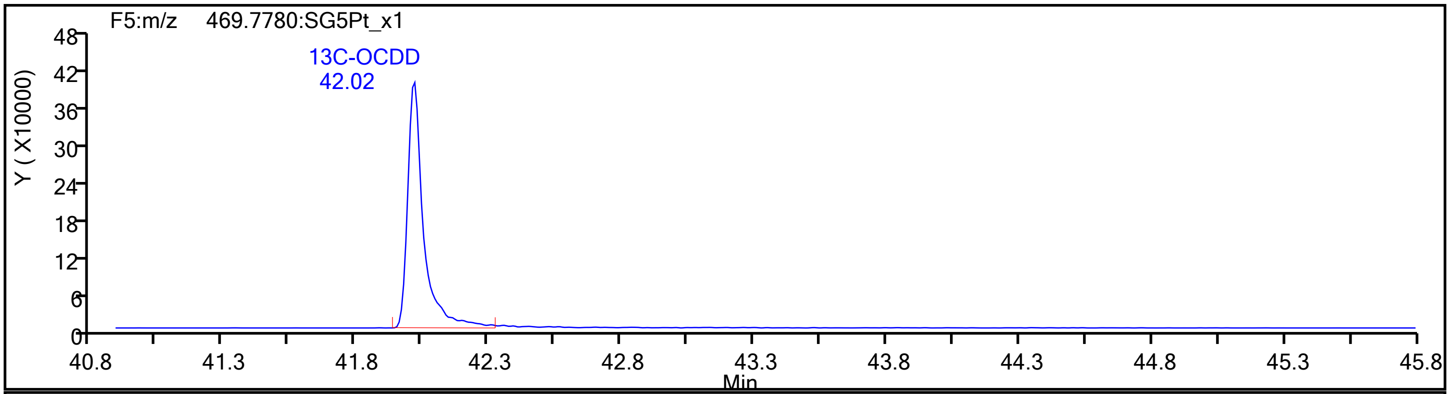

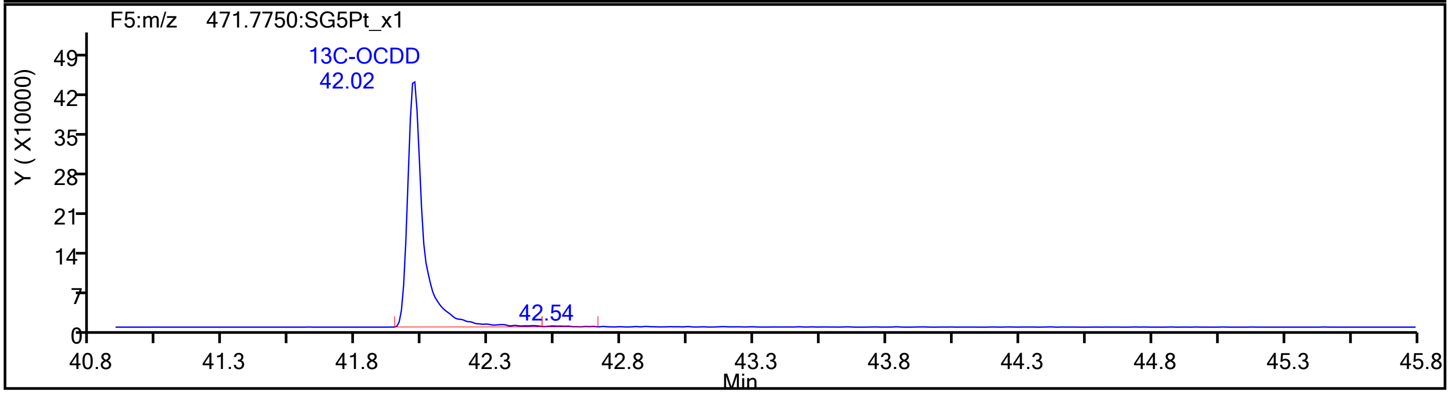

Report Date: 04-Jan-2021 09:33:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

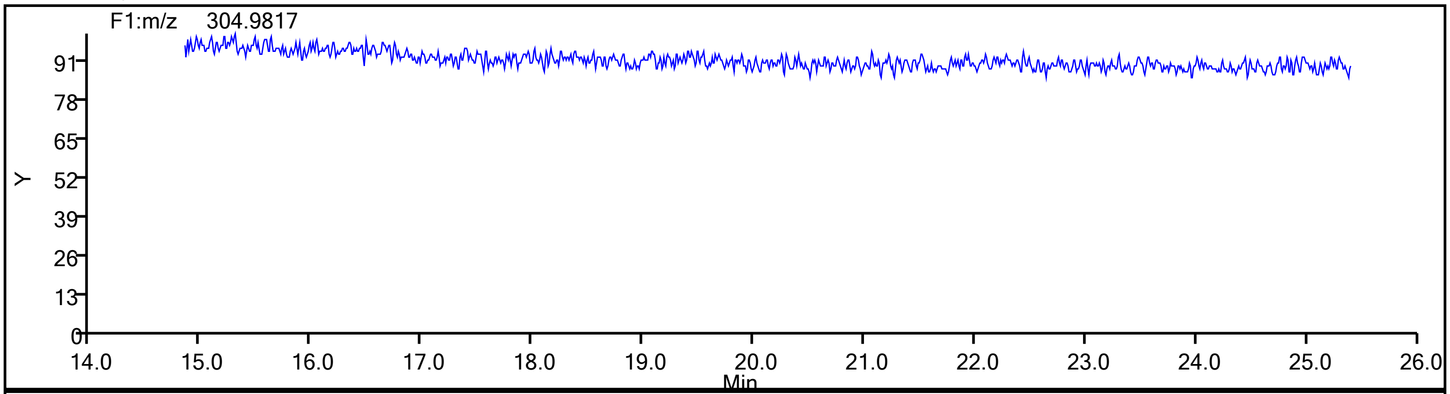

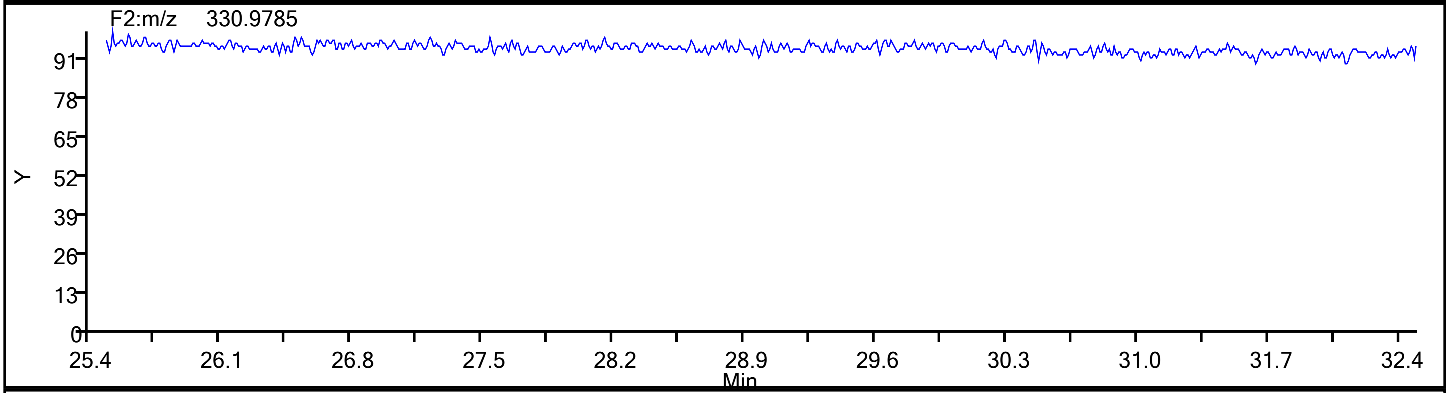

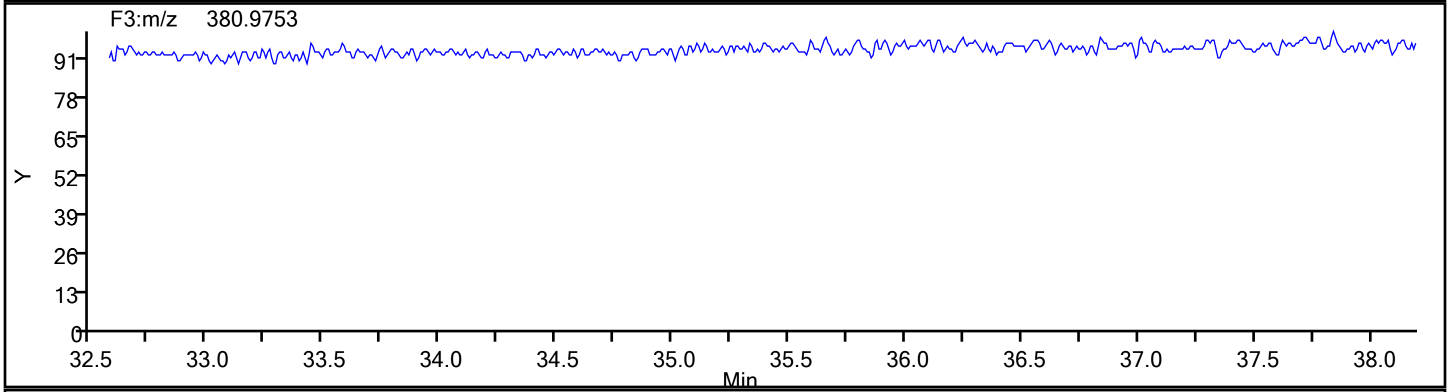

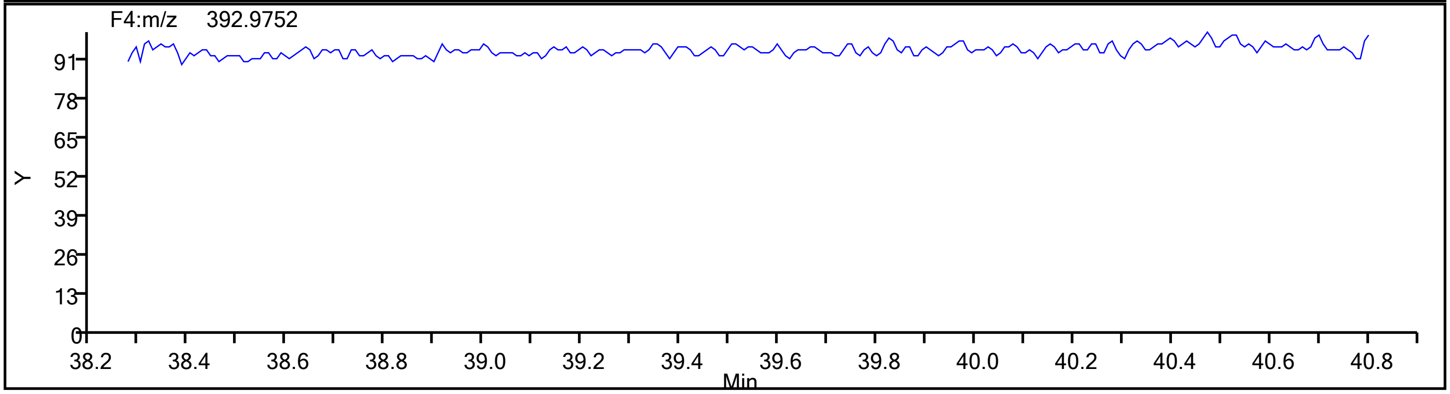

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_5.d		
Injection Date:	31-Dec-2020 15:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

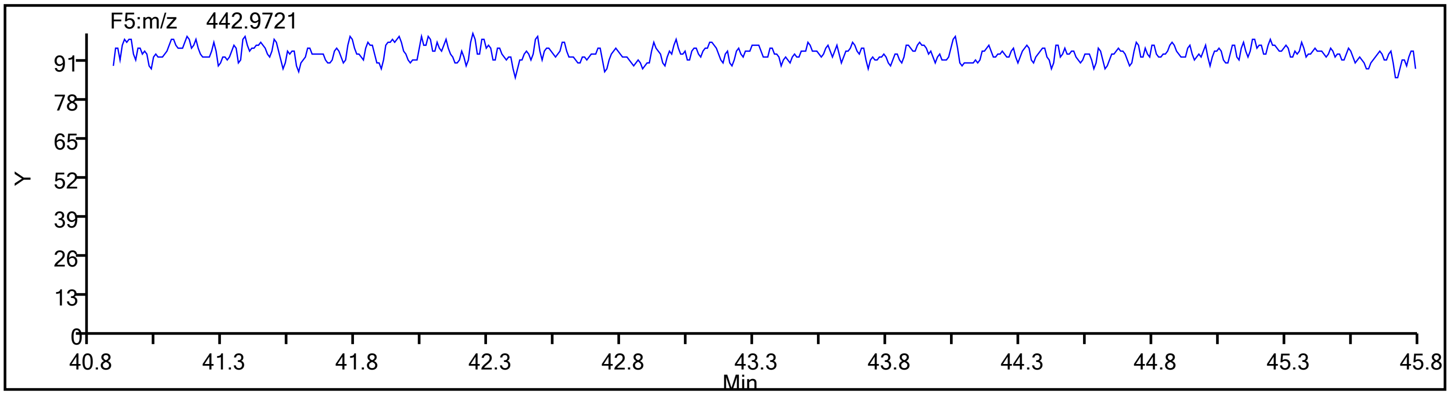

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 31-Dec-2020 15:53:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00096
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:33:31 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:33:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.275	2251934	0.83	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.287	4333339	0.80	1.9134	100.6	100.6	0.4359	0.4359	101	
2,3,7,8-TCDF	20.321	458483	0.77	1.1488	9.210	9.210	0.0414	0.0414	92.10	
S Total TCDF					9.210	9.210	0.0414	0.0414		
D 13C-2,3,7,8-TCDD	21.644	2460119	0.82	1.0908	100.2	100.2	0.3306	0.3306	100	
2,3,7,8-TCDD	21.678	308932	0.82	1.3069	9.609	9.609	0.0784	0.0784	96.09	
$ 37Cl4-2,3,7,8-TCDD	21.687	274188		1.2281	9.914	9.914	0.0370	0.0370	99.14	
S Total TCDD					9.609	9.609	0.0784	0.0784		
D 13C-1,2,3,7,8-PeCDF	27.220	3467186	1.66	1.5355	100.3	100.3	0.5369	0.5369	100	
1,2,3,7,8-PeCDF	27.246	1954038	1.56	1.1695	48.2	48.2	0.2445	0.2445	96.38	
D 13C-2,3,4,7,8-PeCDF	28.745	3193341	1.63	1.4278	99.3	99.3	0.5774	0.5774	99.31	
2,3,4,7,8-PeCDF	28.770	1892098	1.58	1.2244	48.4	48.4	0.2748	0.2748	96.78	
S Total PeCDF					96.6	96.6	0.2597	0.2597		
D 13C-1,2,3,7,8-PeCDD	29.571	1790365	1.66	0.7800	101.9	101.9	0.2367	0.2367	102	
1,2,3,7,8-PeCDD	29.596	1087433	1.62	1.2613	48.2	48.2	0.1003	0.1003	96.31	
S Total PeCDD					48.2	48.2	0.1003	0.1003		
D 13C-1,2,3,4,7,8-HxCDF	34.899	2753850	0.54	1.4248	96.2	96.2	0.6862	0.6862	96.18	
1,2,3,4,7,8-HxCDF	34.916	1803705	1.25	1.3553	48.3	48.3	0.3722	0.3722	96.65	
D 13C-1,2,3,6,7,8-HxCDF	35.059	3460582	0.53	1.7108	100.7	100.7	0.5715	0.5715	101	
1,2,3,6,7,8-HxCDF	35.076	2184830	1.28	1.3081	48.3	48.3	0.3427	0.3427	96.53	
D 13C-2,3,4,6,7,8-HxCDF	35.885	3096274	0.53	1.5455	99.7	99.7	0.6326	0.6326	99.69	
2,3,4,6,7,8-HxCDF	35.893	1943051	1.27	1.3248	47.4	47.4	0.3191	0.3191	94.74	
D 13C-1,2,3,7,8,9-HxCDF	36.769	2709678	0.54	1.3772	97.9	97.9	0.7100	0.7100	97.91	
1,2,3,7,8,9-HxCDF	36.786	1719189	1.28	1.3372	47.4	47.4	0.3407	0.3407	94.89	
S Total HxCDF					191.4	191.4	0.3437	0.3437		
* 13C-1,2,3,7,8,9-HxCDD	36.576	2009640	1.29	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.096	1653238	1.29	0.8266	99.5	99.5	0.4556	0.4556	99.52	
1,2,3,4,7,8-HxCDD	36.104	1073188	1.31	1.3422	48.4	48.4	0.1778	0.1778	96.73	
D 13C-1,2,3,6,7,8-HxCDD	36.214	2150022	1.28	1.0417	102.7	102.7	0.3615	0.3615	103	
1,2,3,6,7,8-HxCDD	36.222	1249589	1.25	1.1989	48.5	48.5	0.1706	0.1706	96.95	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.592	1236941	1.26	1.3636	47.7	47.7	0.1616	0.1616	95.41	
S Total HxCDD					144.5	144.5	0.1700	0.1700		
D 13C-1,2,3,4,6,7,8-HpCDF	38.587	2206848	0.46	1.1053	99.4	99.4	0.8872	0.8872	99.35	
1,2,3,4,6,7,8-HpCDF	38.596	1733602	1.06	1.6487	47.6	47.6	0.3978	0.3978	95.30	
D 13C-1,2,3,4,7,8,9-HpCDF	39.842	1885632	0.46	0.9761	96.1	96.1	1.005	1.005	96.13	
1,2,3,4,7,8,9-HpCDF	39.851	1455616	1.05	1.5723	49.1	49.1	0.4703	0.4703	98.19	
S Total HpCDF					96.7	96.7	0.4340	0.4340		
D 13C-1,2,3,4,6,7,8-HpCDD	39.530	1786919	1.11	0.8768	101.4	101.4	0.4444	0.4444	101	
1,2,3,4,6,7,8-HpCDD	39.539	1035687	1.06	1.2146	47.7	47.7	0.1546	0.1546	95.44	
S Total HpCDD					47.7	47.7	0.1546	0.1546		
D 13C-OCDD	42.020	2791421	0.92	0.7137	194.6	194.6	0.3479	0.3479	97.31	
OCDF	42.112	2419781	0.93	1.8132	95.6	95.6	0.1775	0.1775	95.62	
OCDD	42.028	1685349	0.92	1.2562	96.1	96.1	0.1667	0.1667	96.13	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00096 Amount Added: 1.00 Units: mL

Report Date: 04-Jan-2021 09:33:43 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 31-Dec-2020 15:53:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00096
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:33:31 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:33:59

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.275	21.272	0		1023779	144195	342	855	422		
333.9338	21.266	21.272	0		1228155	168358	109	272	1545	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.287	20.286	0	0.954	1930689	280974	671	1677	419		
317.9389	20.287	20.286	0	0.954	2402650	339045	372	930	911	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.321	20.313	0	1.002	199669	28503	32	80	891		
305.8987	20.321	20.313	0	1.002	258814	36849	86	215	428	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.644	21.646	0	1.017	1106724	141037	342	855	412		
333.9338	21.653	21.646	0	1.018	1353395	173322	109	272	1590	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.678	21.677	0	1.002	139208	18660	92	230	203		
321.8936	21.678	21.677	0	1.002	169724	23286	37	92	629	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.687	21.684	0	1.019	274188	35814	57	142	628		
13C-1,2,3,7,8-PeCDF											
351.9000	27.220	27.219	0	1.279	2162069	318093	626	1565	508		
353.8970	27.229	27.219	1	1.280	1305117	194238	405	1012	480	1.66(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.246	27.244	0	1.001	1191802	177737	351	877	506		
341.8567	27.246	27.244	0	1.001	762236	111320	235	587	474	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.745	28.742	0	1.351	1979259	273881	626	1565	438		
353.8970	28.754	28.742	1	1.352	1214082	161483	405	1012	399	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.770	28.767	0	1.001	1159593	162416	351	877	463		
341.8567	28.770	28.767	0	1.001	732505	102961	235	587	438	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.571	29.564	0	1.390	1116399	147253	127	317	1159		
369.8919	29.562	29.564	0	1.390	673966	93723	104	260	901	1.66(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.596	29.593	0	1.001	672359	88446	89	222	994		
357.8516	29.596	29.593	0	1.001	415074	55120	33	82	1670	1.62(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.899	34.899	0	0.954	969739	196621	597	1492	329		
385.8610	34.899	34.899	0	0.954	1784111	371743	1202	3005	309	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.916	34.916	0	1.000	1003427	209332	660	1650	317		
375.8178	34.916	34.916	0	1.000	800278	166316	487	1217	342	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.059	35.061	0	0.959	1197175	222738	597	1492	373		
385.8610	35.059	35.061	0	0.959	2263407	416732	1202	3005	347	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.076	35.079	0	1.000	1225124	226305	660	1650	343		
375.8178	35.076	35.079	0	1.000	959706	180220	487	1217	370	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.885	35.878	0	0.981	1077319	232732	597	1492	390		
385.8610	35.876	35.878	0	0.981	2018955	445472	1202	3005	371	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.893	35.893	0	1.000	1085262	238851	660	1650	362		
375.8178	35.893	35.893	0	1.000	857789	188814	487	1217	388	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.769	36.769	0	1.005	954889	223198	597	1492	374		
385.8610	36.769	36.769	0	1.005	1754789	406081	1202	3005	338	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.786	36.786	0	1.000	966061	220543	660	1650	334		
375.8178	36.786	36.786	0	1.000	753128	171785	487	1217	353	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.576	36.576	0		1133977	256182	395	987	649		
403.8529	36.576	36.576	0		875663	203753	298	745	684	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.096	36.092	0	0.987	930095	231444	395	987	586		
403.8529	36.096	36.092	0	0.987	723143	179163	298	745	601	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.104	36.107	0	1.000	608581	155514	208	520	748		
391.8127	36.104	36.107	0	1.000	464607	122524	184	460	666	1.31(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.214	36.210	0	0.990	1207867	265573	395	987	672		
403.8529	36.205	36.210	0	0.990	942155	213425	298	745	716	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.222	36.223	0	1.000	694977	154795	208	520	744		
391.8127	36.222	36.223	0	1.000	554612	119649	184	460	650	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.592	36.589	0	1.014	690697	156206	208	520	751		
391.8127	36.592	36.589	0	1.014	546244	122925	184	460	668	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.587	38.584	0	1.055	696694	187645	598	1495	314		
419.8220	38.587	38.584	0	1.055	1510154	405516	1206	3015	336	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.596	38.598	0	1.000	892689	238071	818	2045	291		
409.7788	38.596	38.598	0	1.000	840913	225723	738	1845	306	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.842	39.838	0	1.089	590004	164843	598	1495	276		
419.8220	39.842	39.838	0	1.089	1295628	361200	1206	3015	300	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.851	39.846	0	1.000	744781	209533	818	2045	256		
409.7788	39.842	39.846	0	1.000	710835	196673	738	1845	266	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.530	39.533	0	1.081	939043	260274	342	855	761		
437.8140	39.530	39.533	0	1.081	847876	241466	375	937	644	1.11(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.539	39.541	0	1.000	532077	147003	222	555	662		
425.7737	39.539	39.541	0	1.000	503610	140805	155	387	908	1.06(0.88-1.20)	
13C-OCDD											
469.7780	42.020	42.021	0	1.149	1336645	332696	256	640	1300		
471.7750	42.020	42.021	0	1.149	1454776	357059	201	502	1776	0.92(0.76-1.02)	
OCDF											
441.7428	42.112	42.115	0	1.002	1165649	282639	182	455	1553		
443.7399	42.112	42.115	0	1.002	1254132	305797	262	655	1167	0.93(0.76-1.02)	
OCDD											
457.7377	42.028	42.029	0	1.000	807862	199273	141	352	1413		
459.7348	42.028	42.029	0	1.000	877487	218072	148	370	1473	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00096 Amount Added: 1.00 Units: mL

Report Date: 04-Jan-2021 09:33:43 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d		
Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

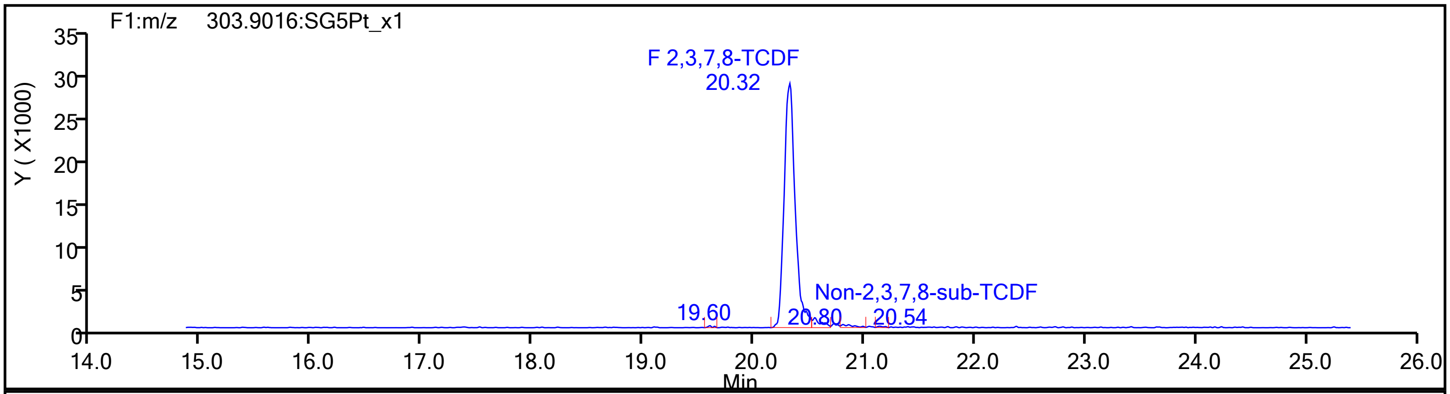

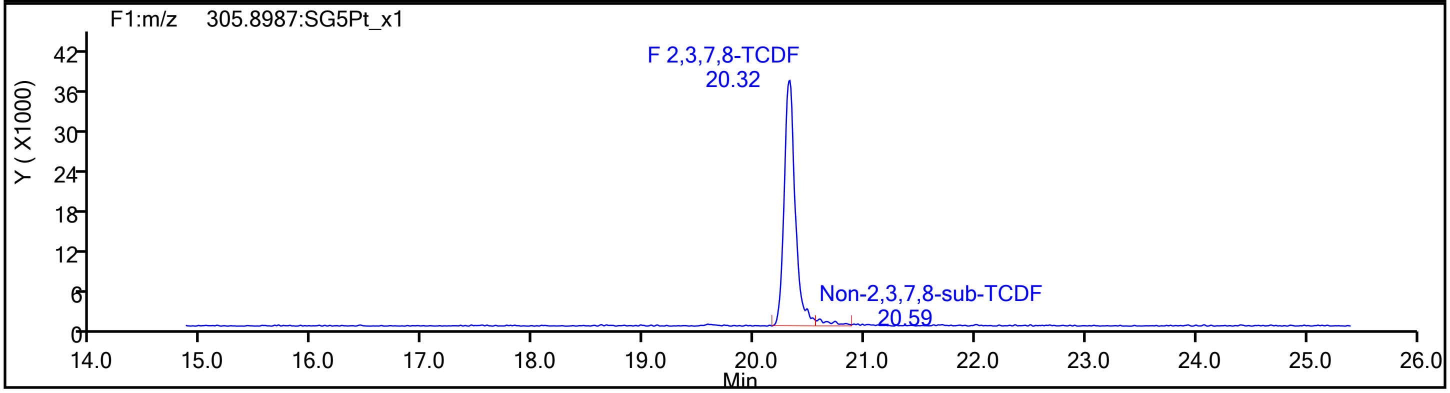

TCDF Standards

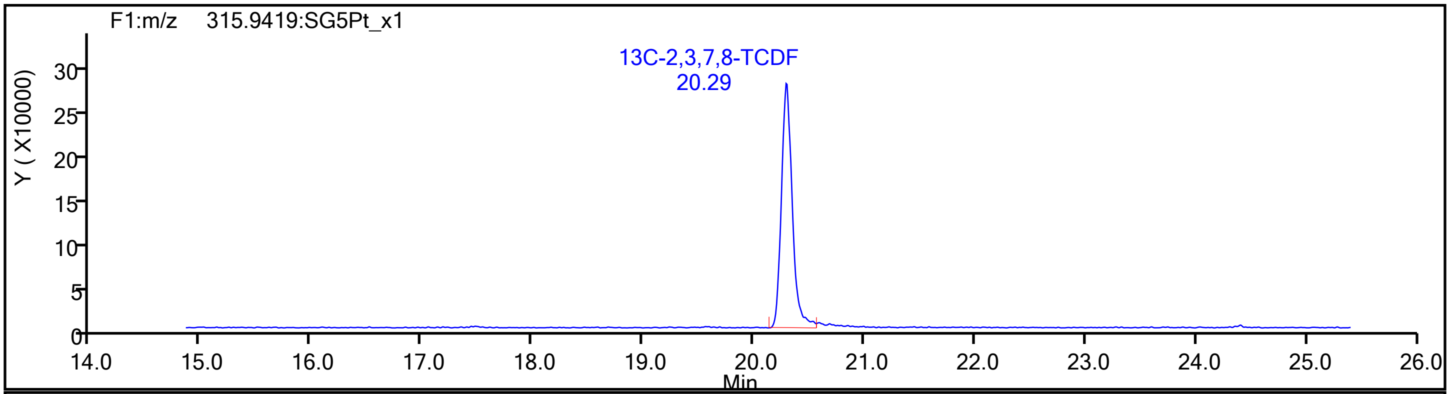

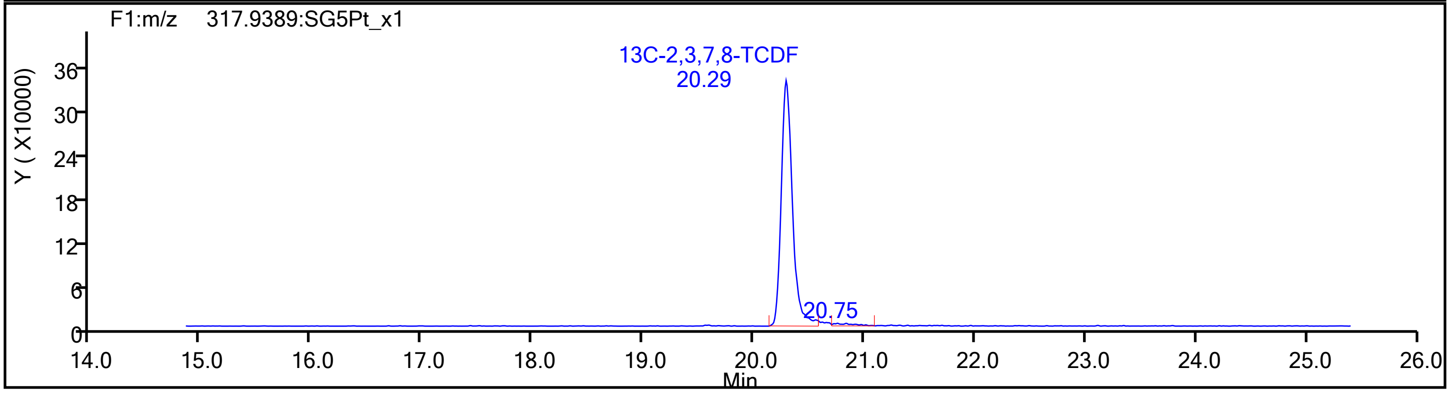

Report Date: 04-Jan-2021 09:33:43 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

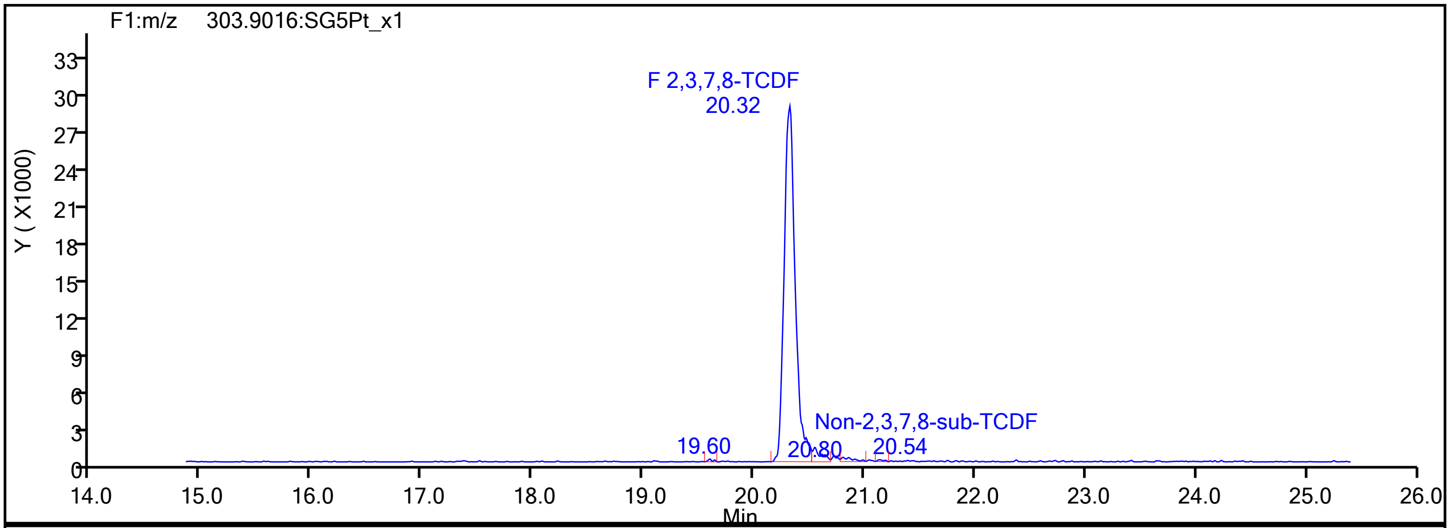

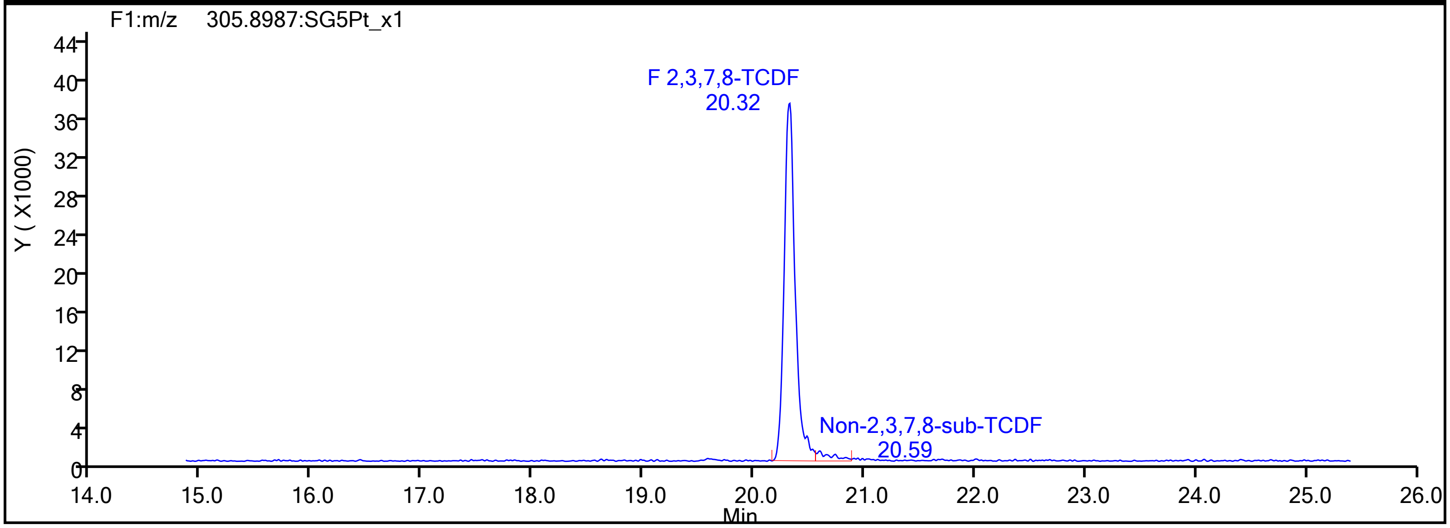

TCDF Interference Mass

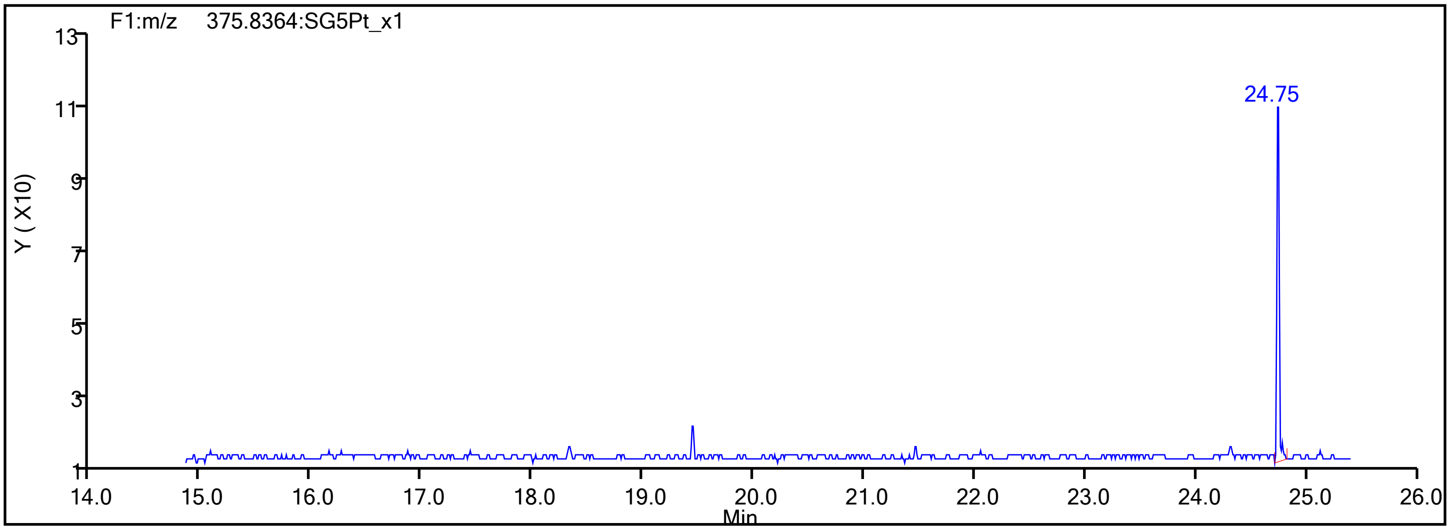

Report Date: 04-Jan-2021 09:33:43 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date: 31-Dec-2020 15:53:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 447767
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

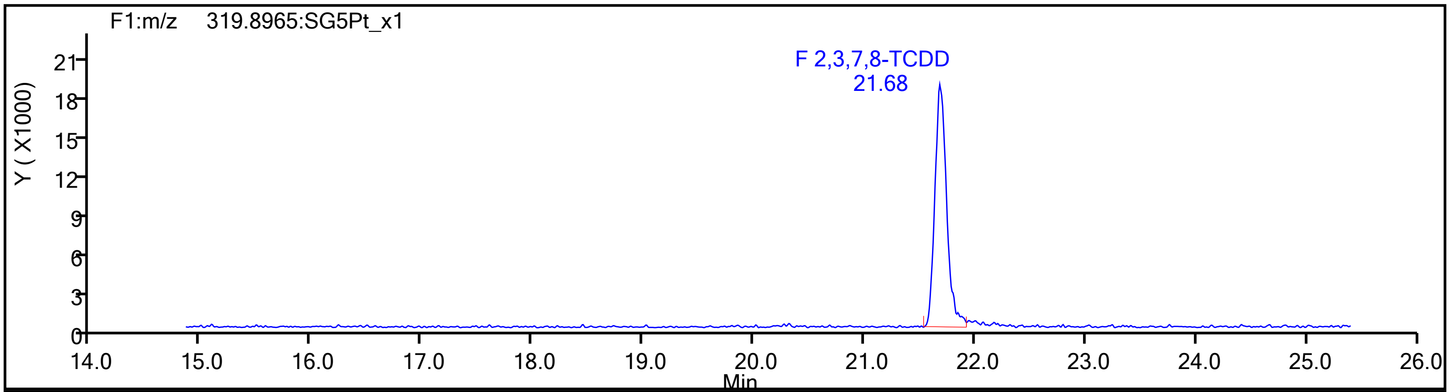

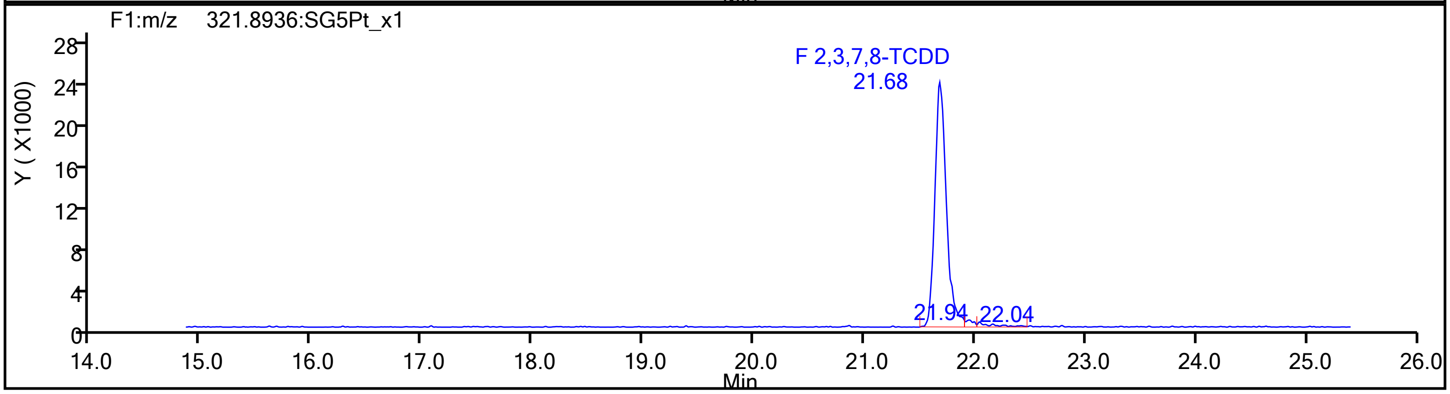

TCDD Standards

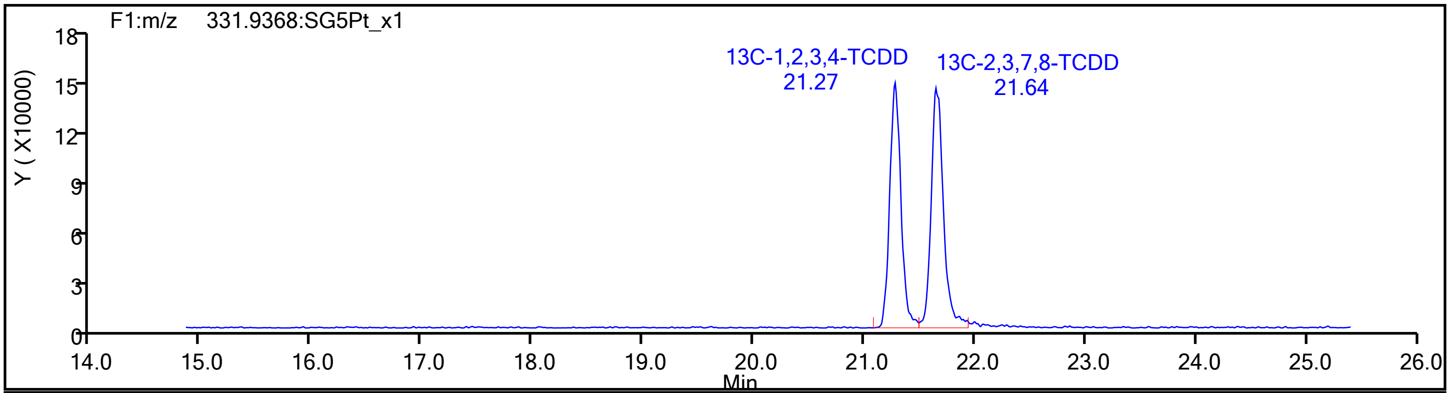

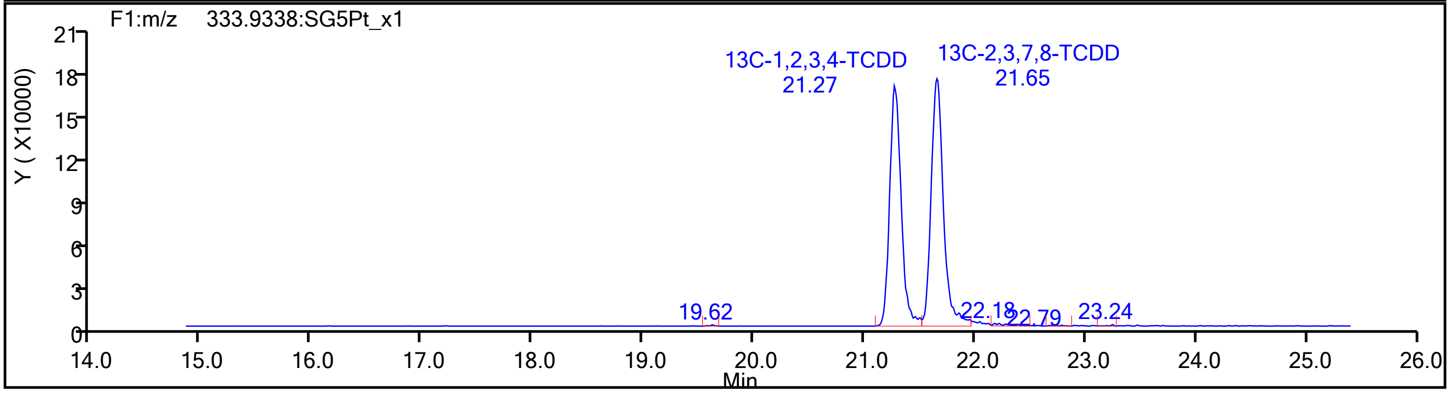

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Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

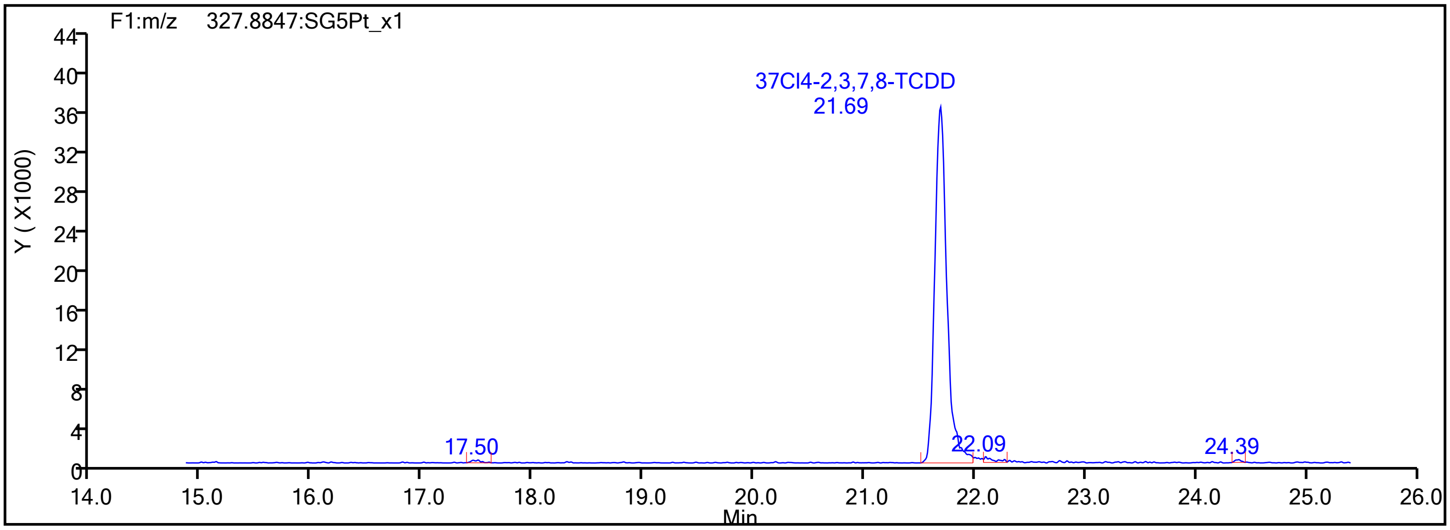

37Cl4-TCDD Standards

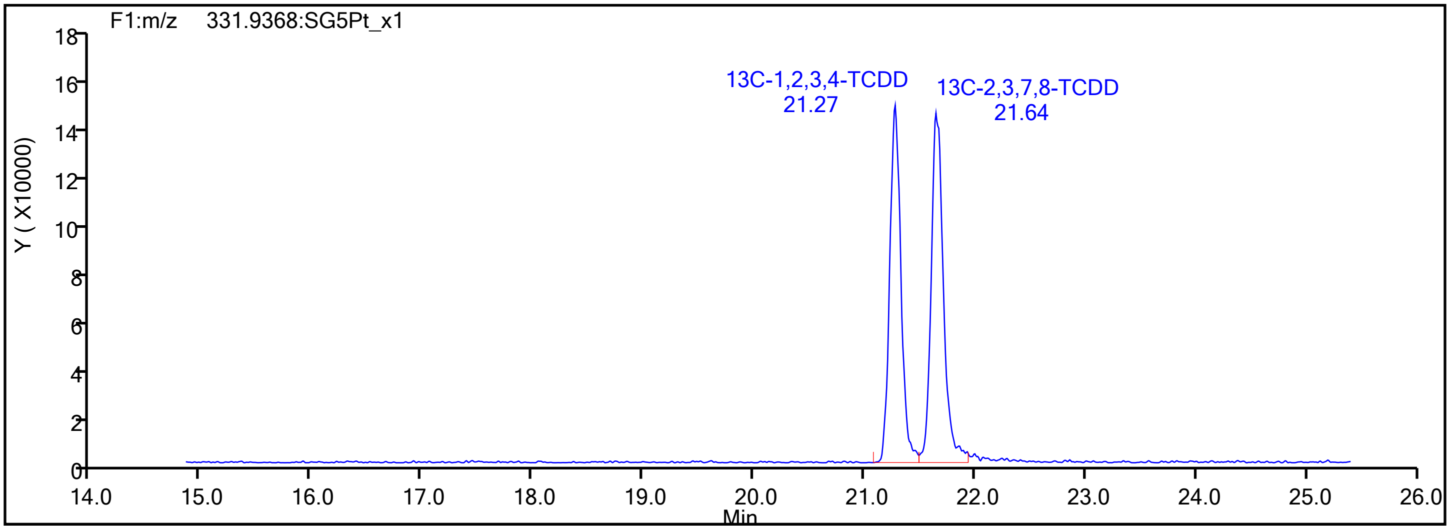

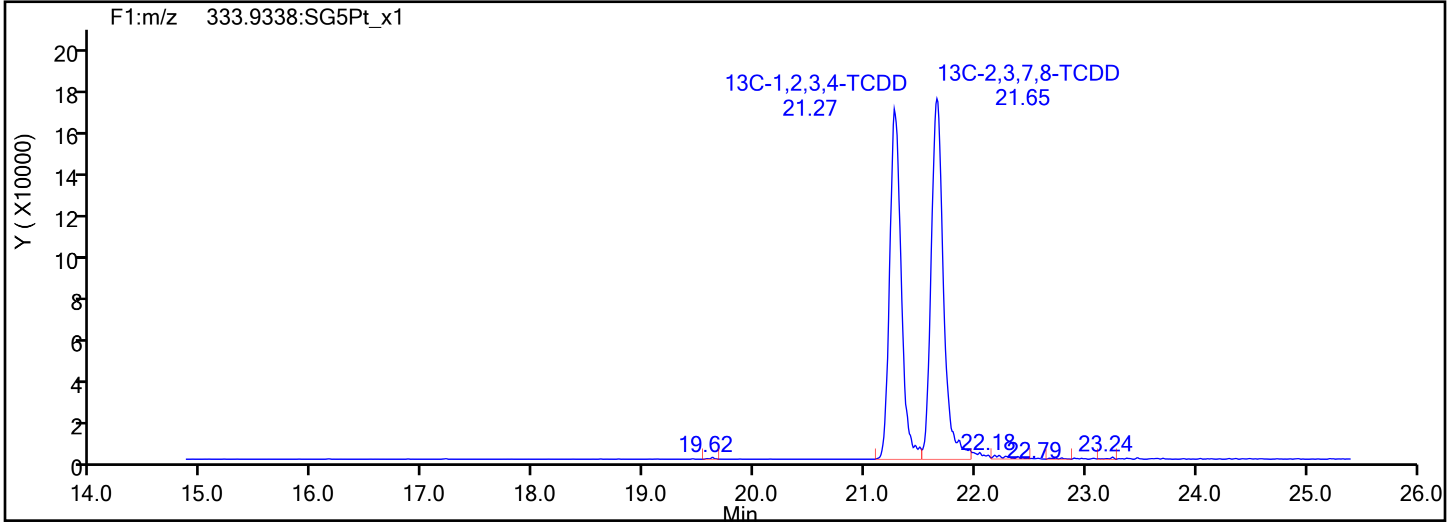

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

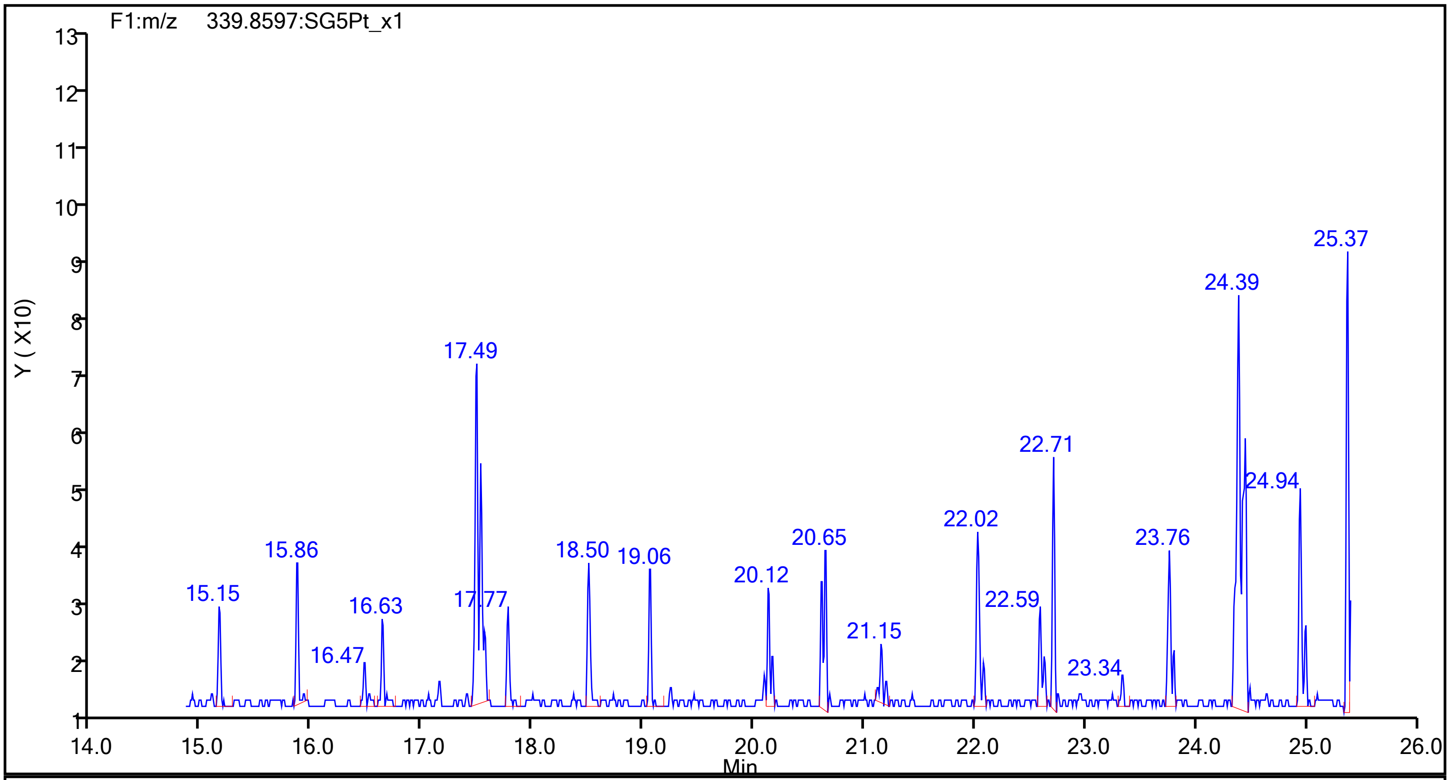

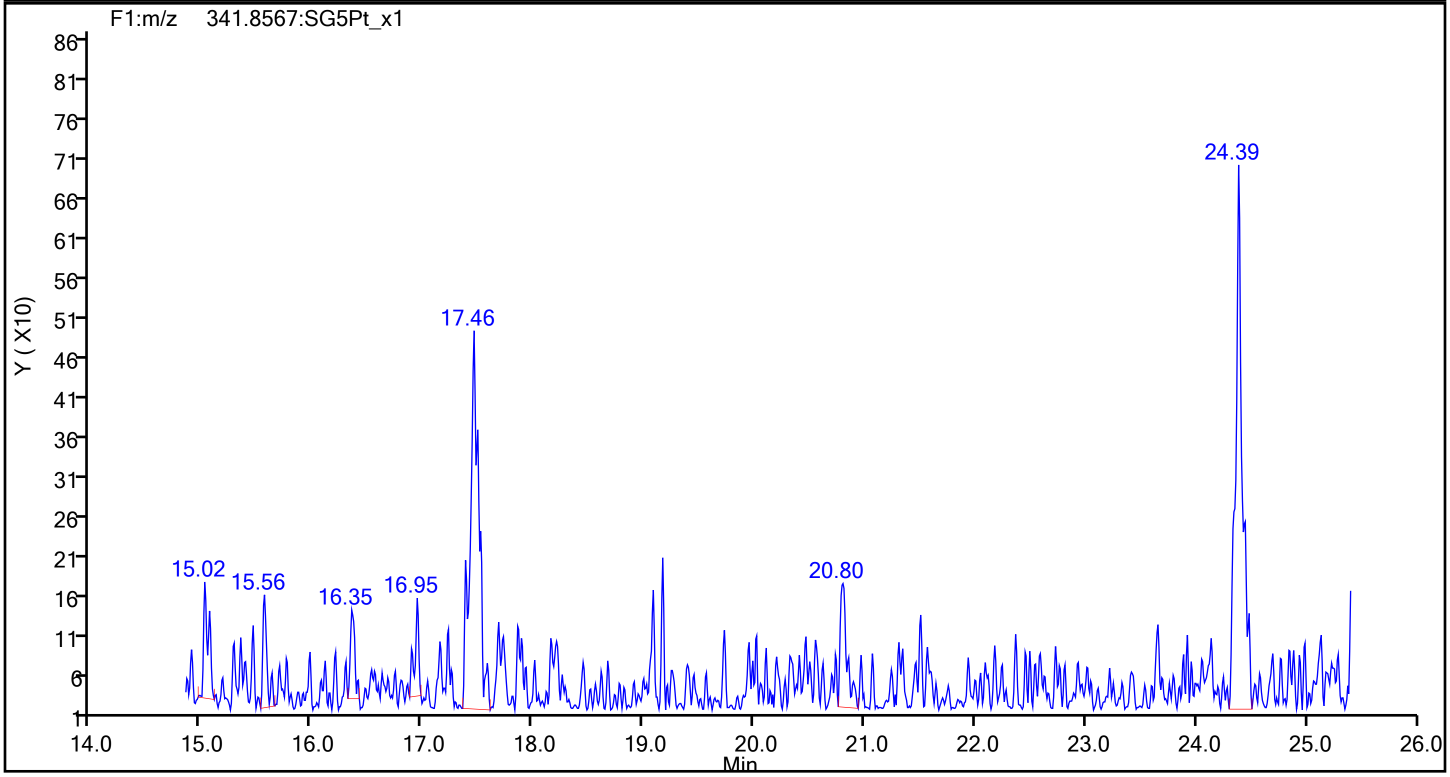

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

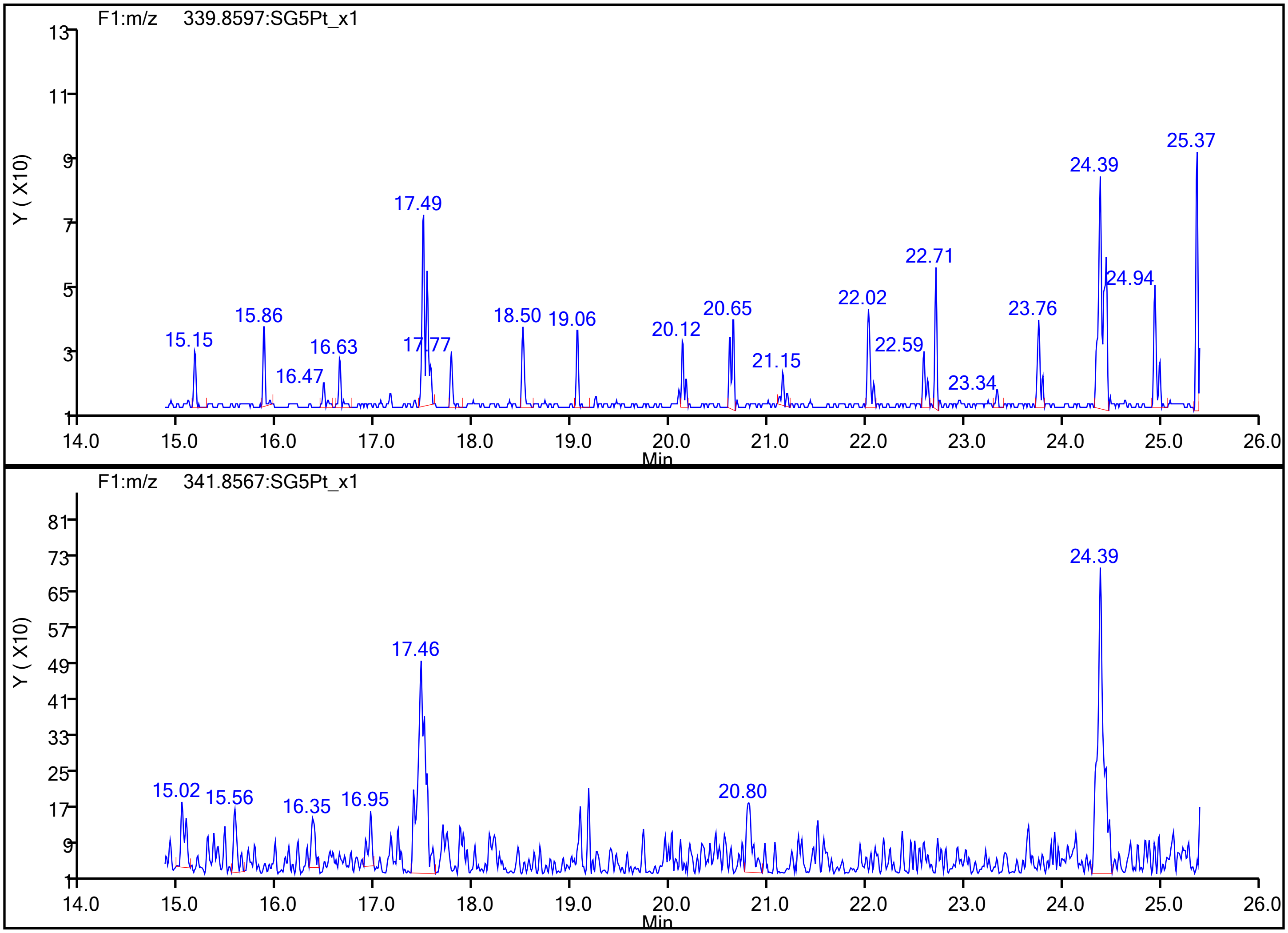

F1 PeCDFs Interference Mass

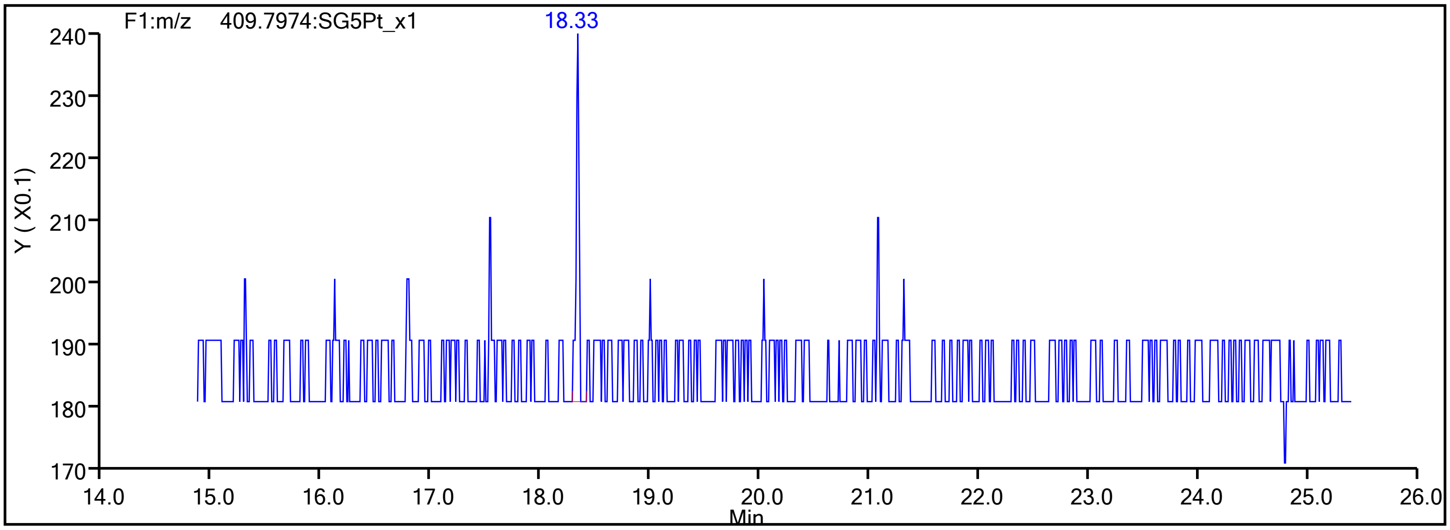

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Eurofins TestAmerica, Sacramento

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Injection Date: 31-Dec-2020 15:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

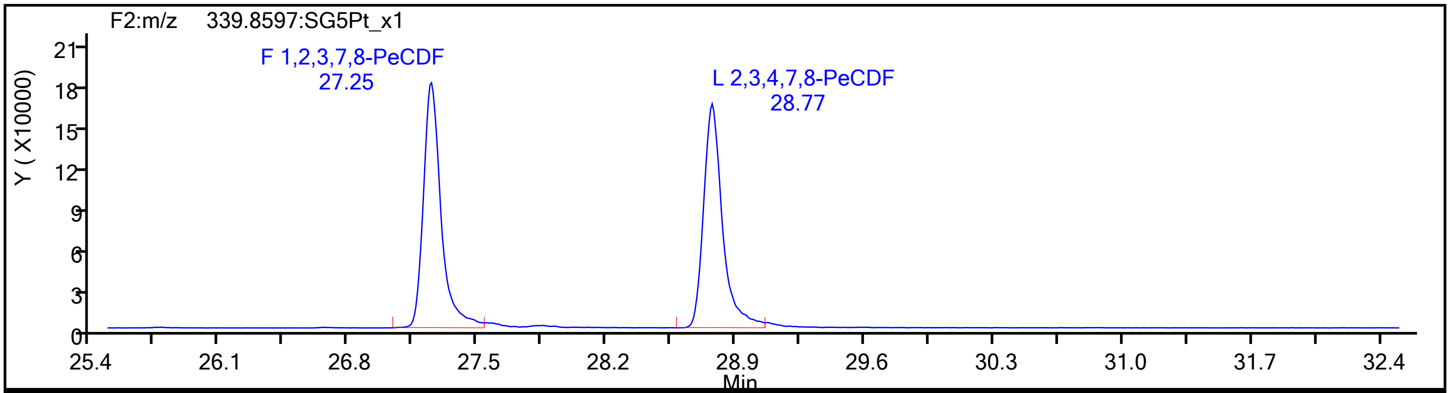

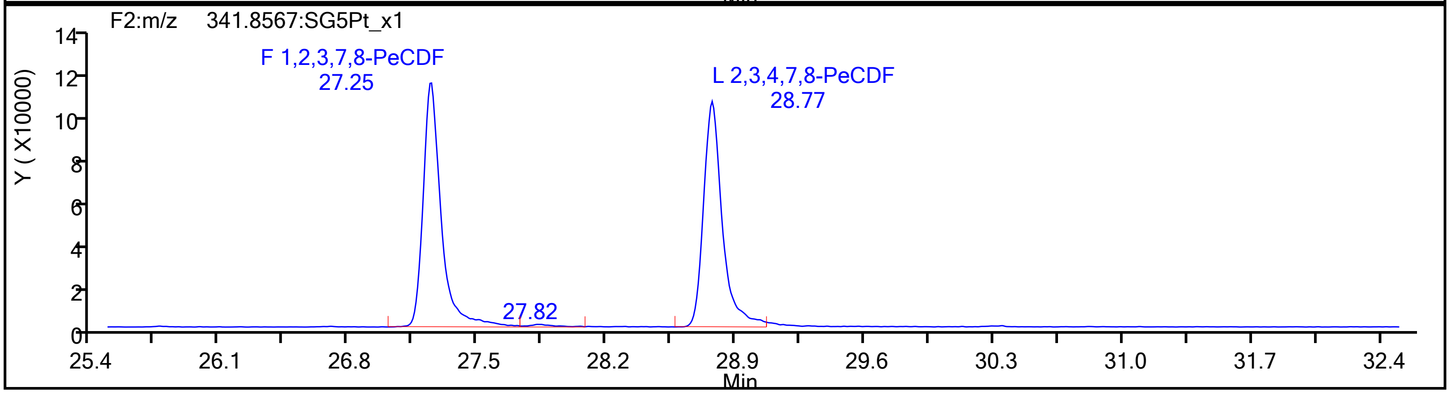

PeCDF Standards

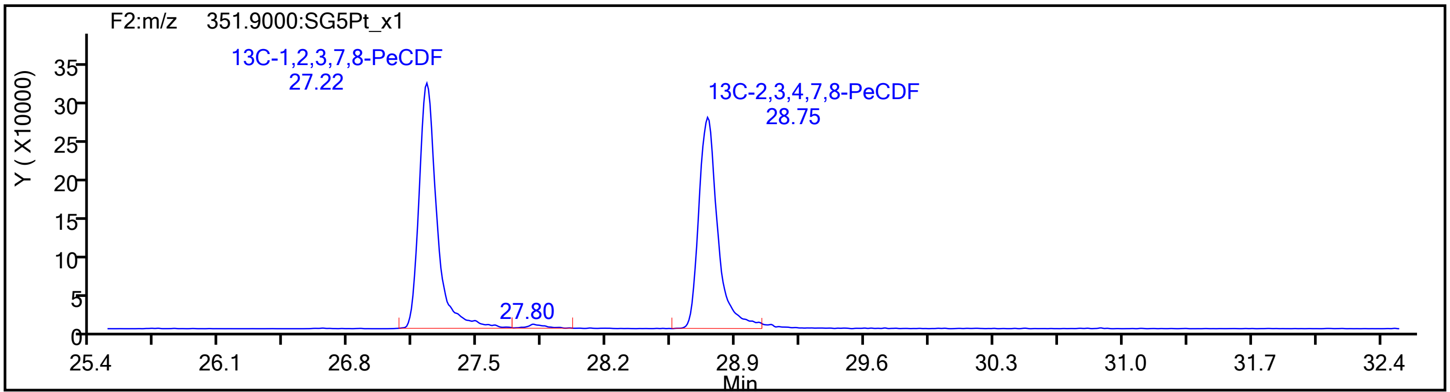

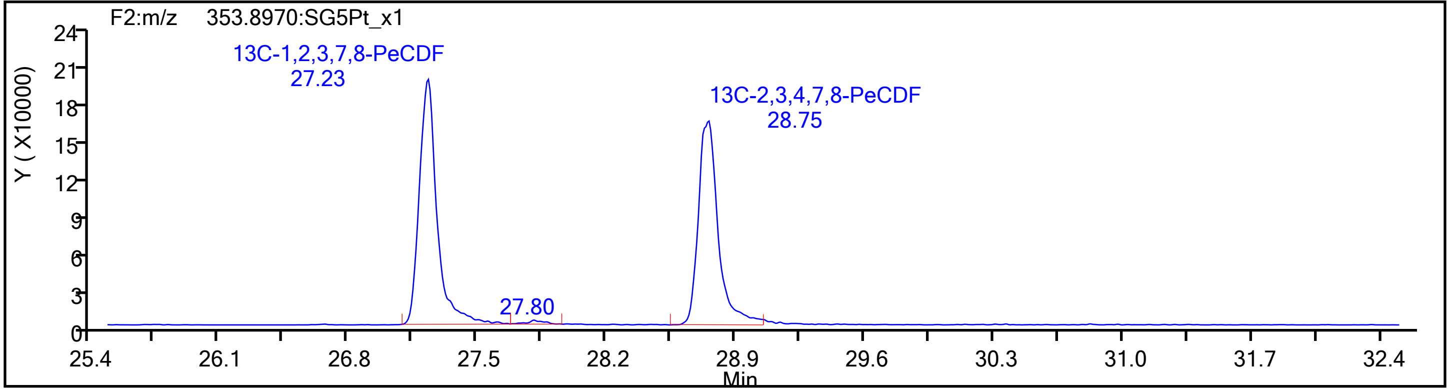

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

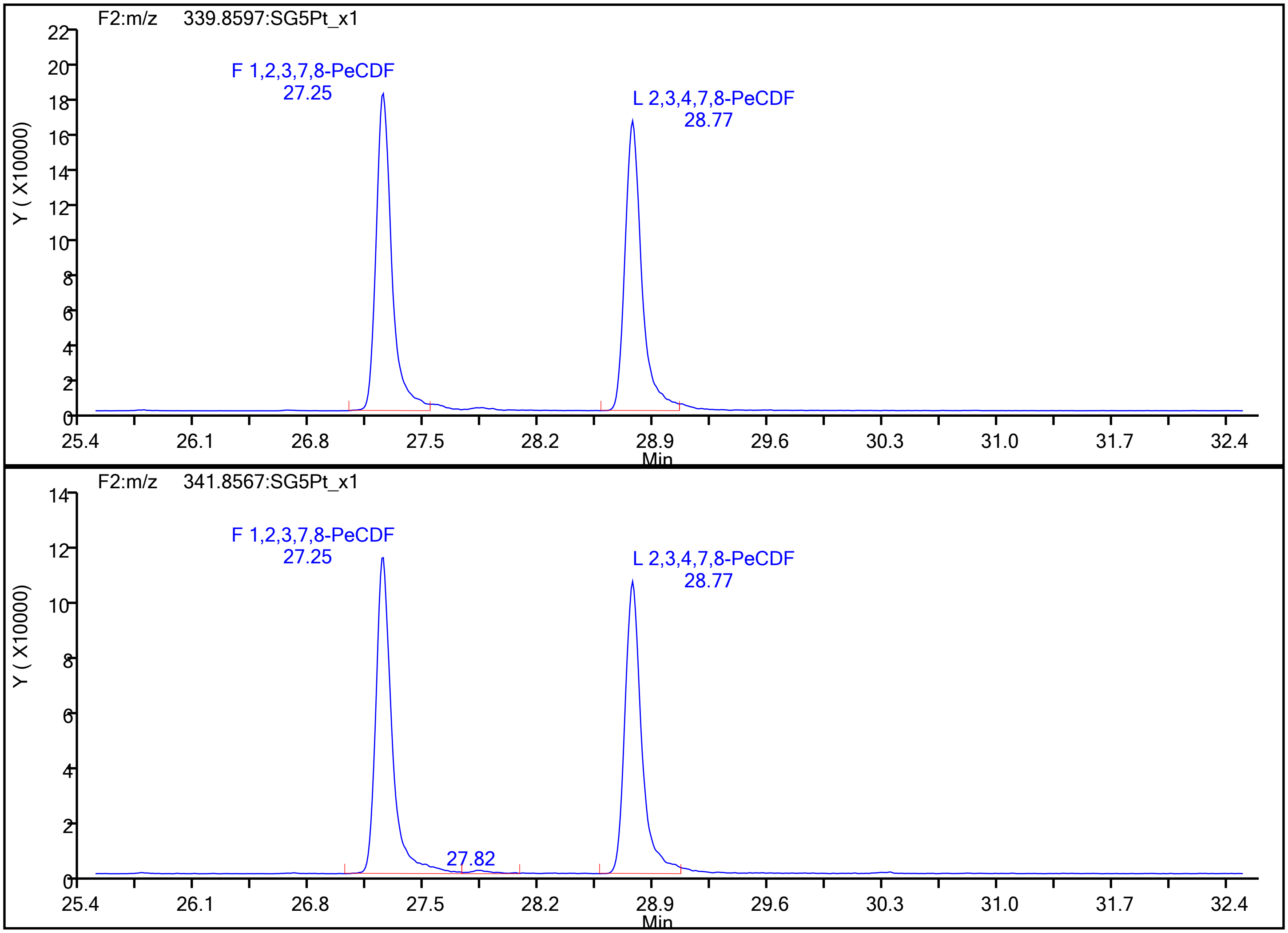

PeCDF Interference Mass

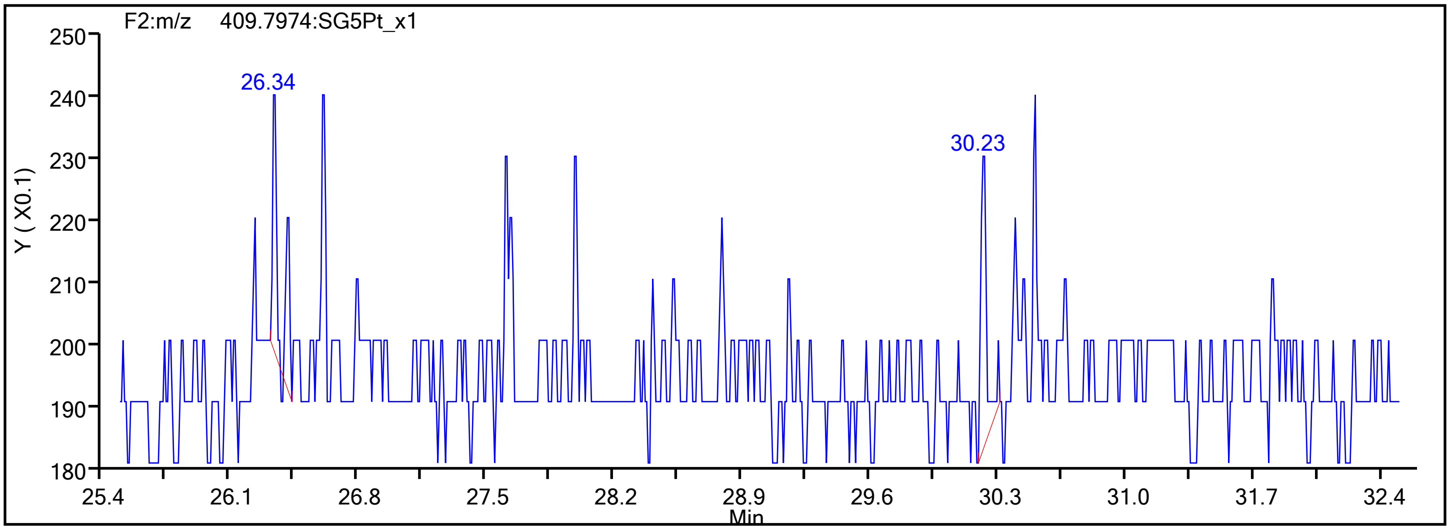

Report Date: 04-Jan-2021 09:33:44　　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
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Column Type: DB-5　　Column Dia: 0.32 mm

PeCDD

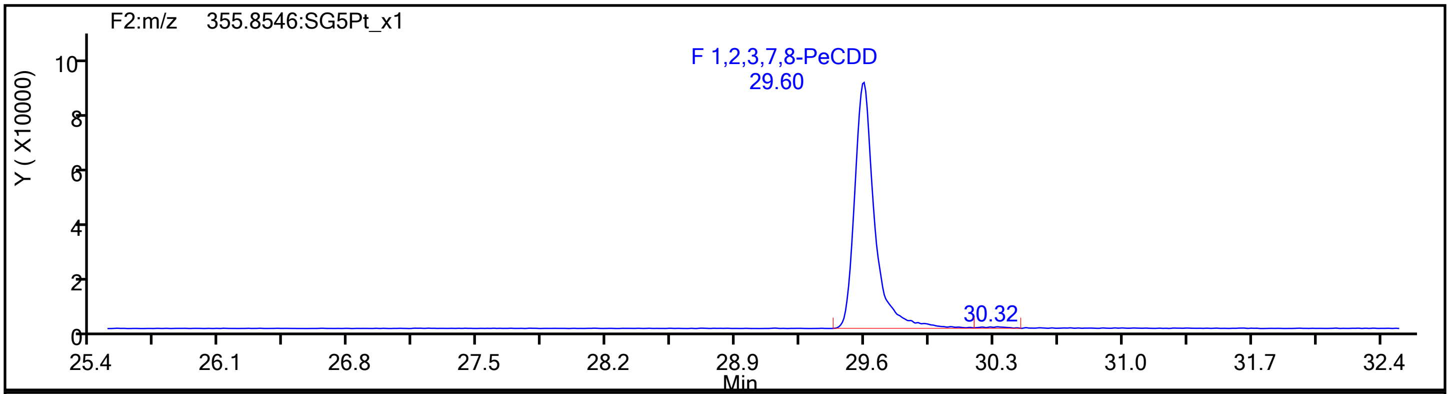

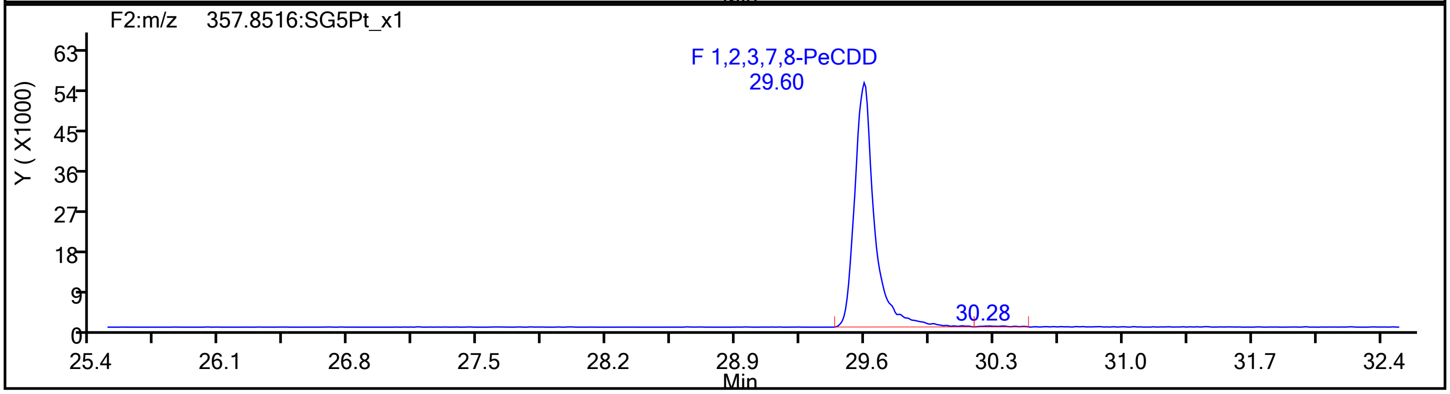

PeCDD Standards

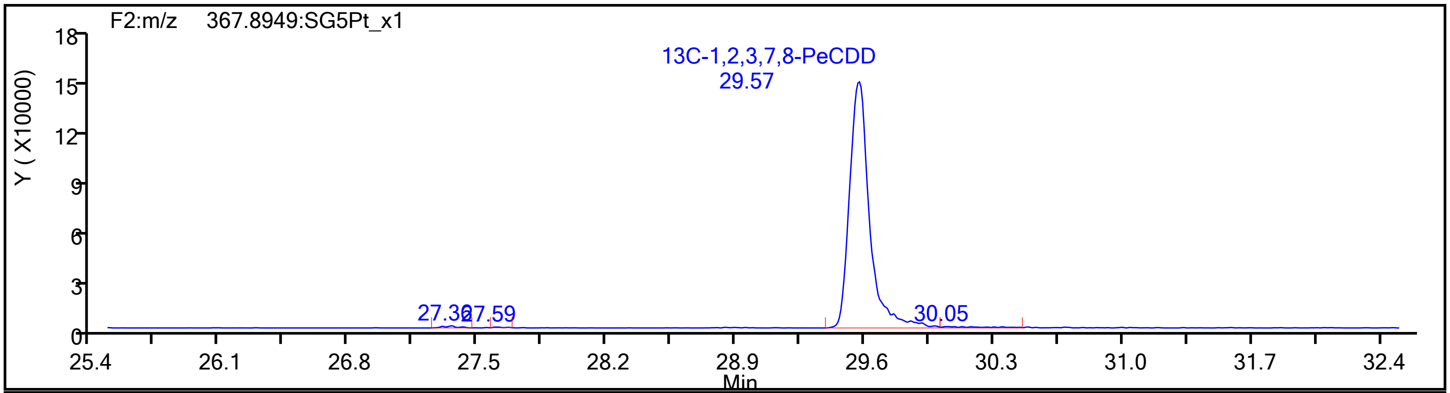

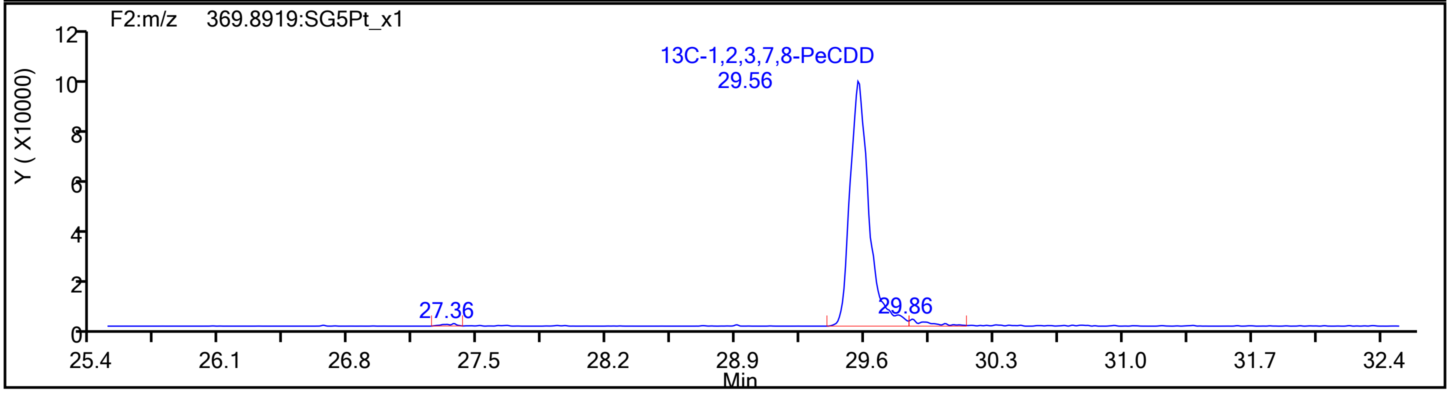

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d

Injection Date: 31-Dec-2020 15:53:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

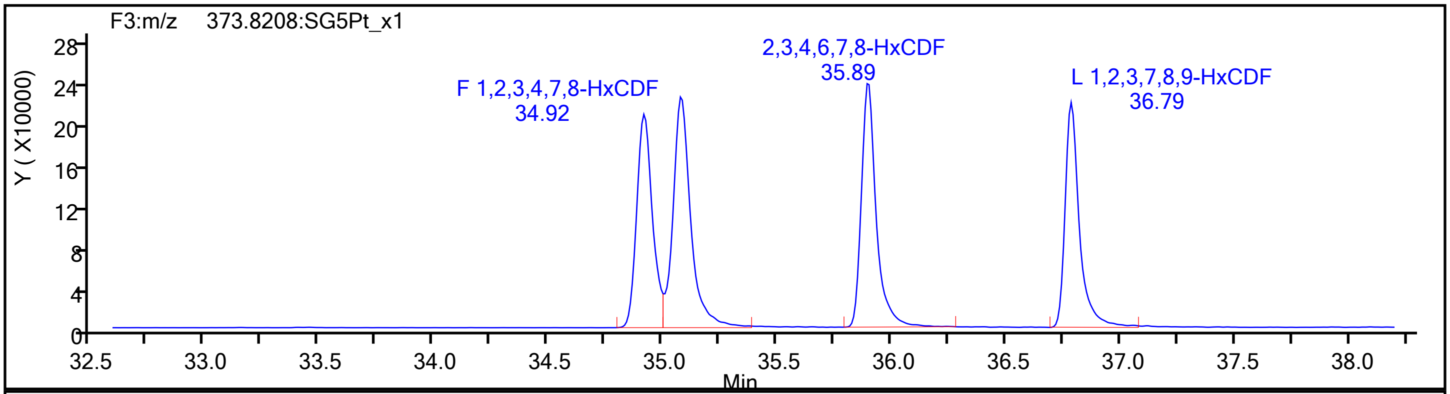

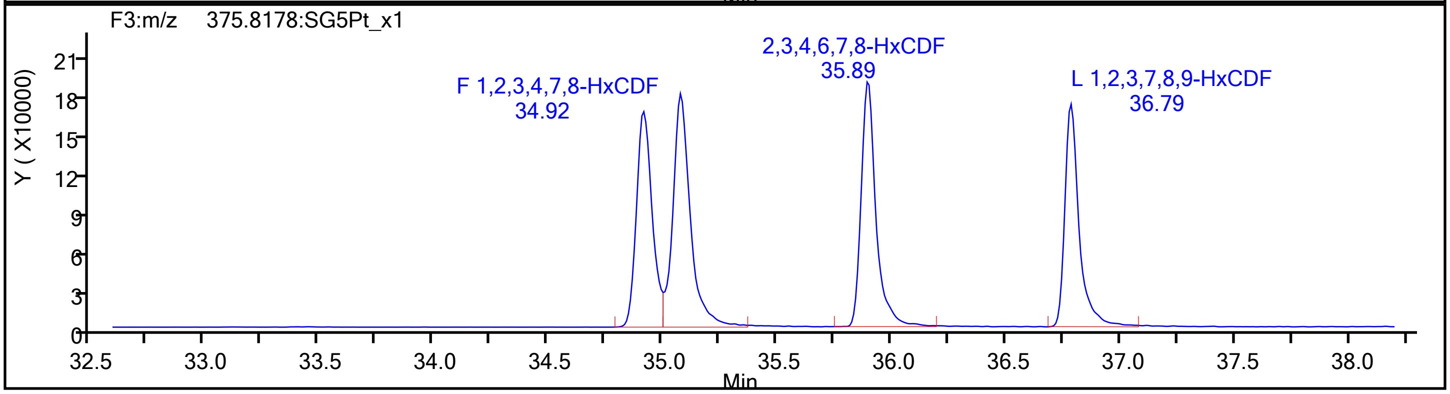

HxCDF Standards

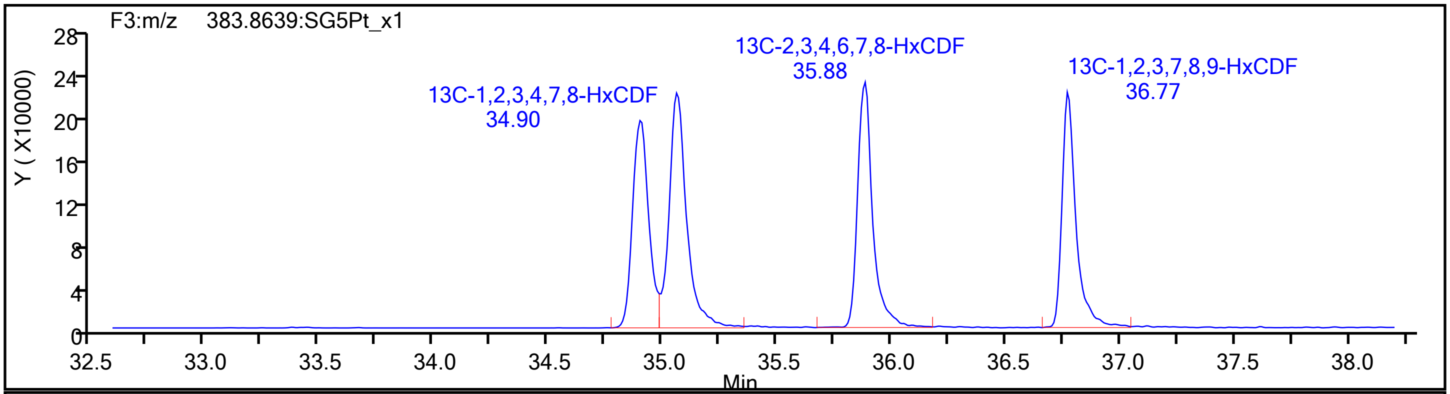

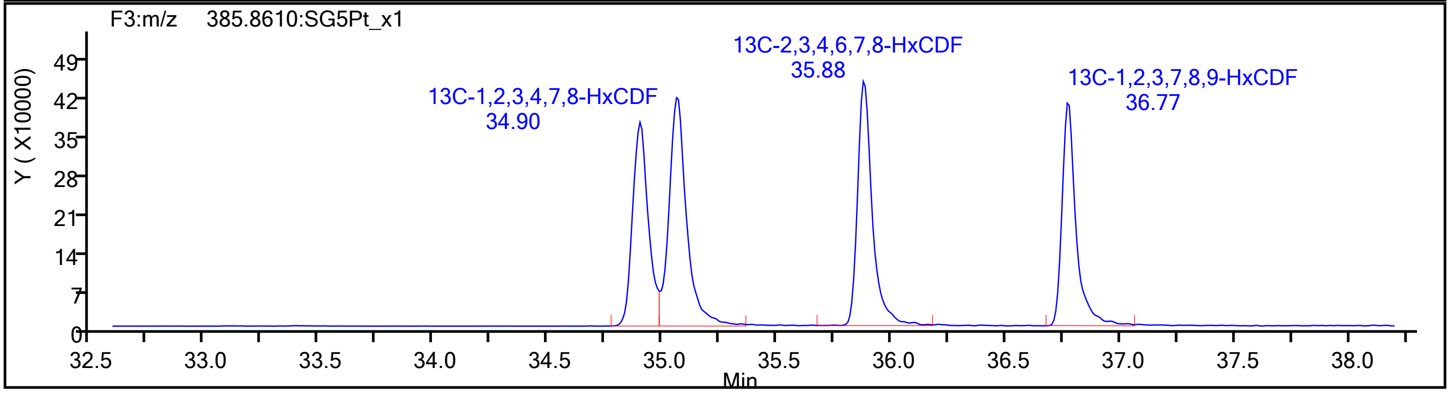

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d		
Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

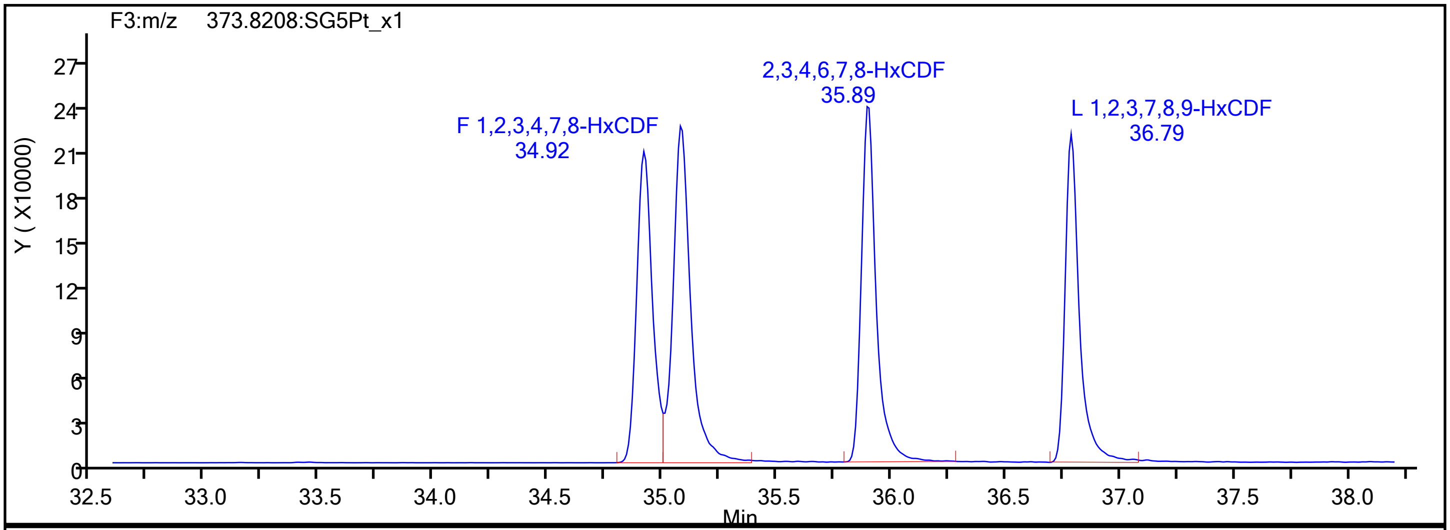

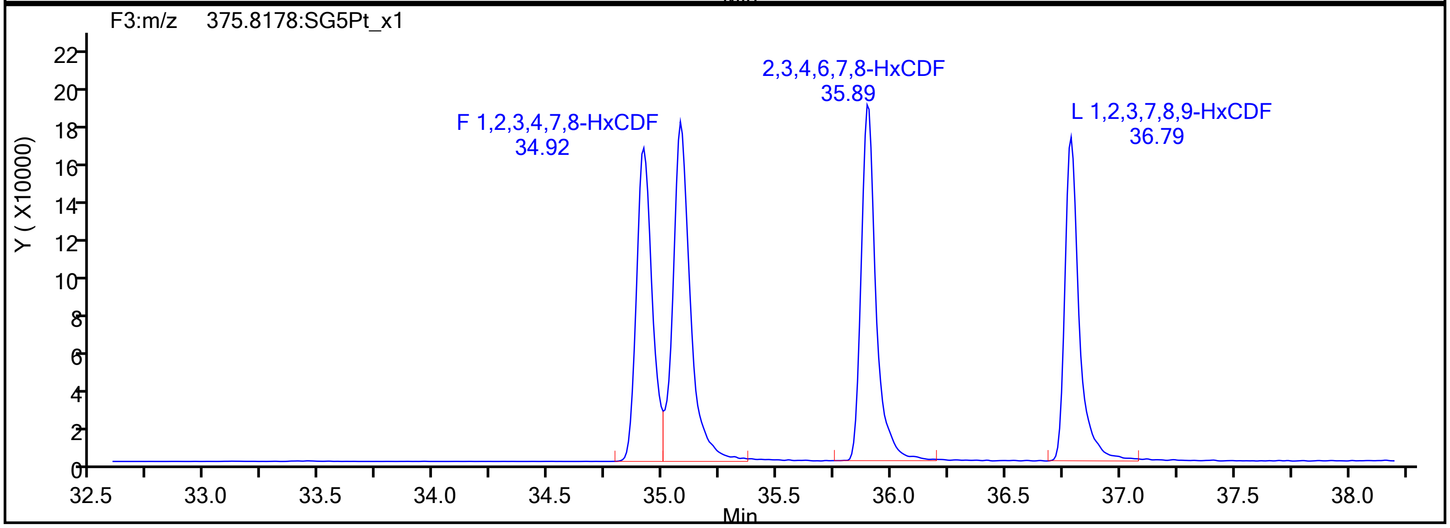

HxCDF Interference Mass

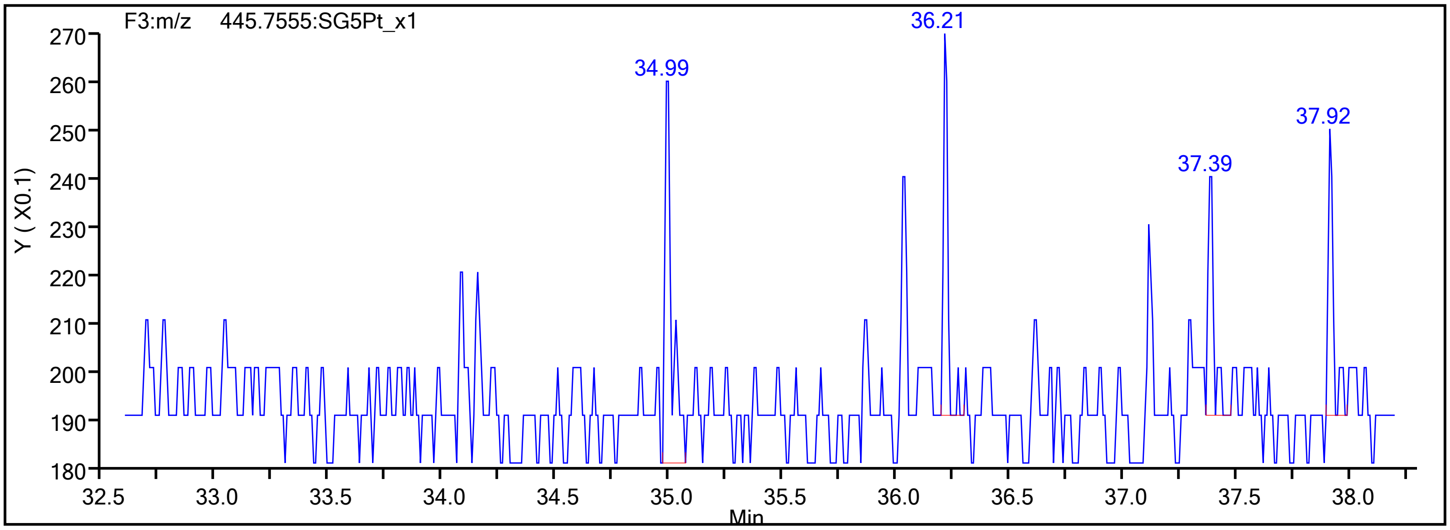

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d		
Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

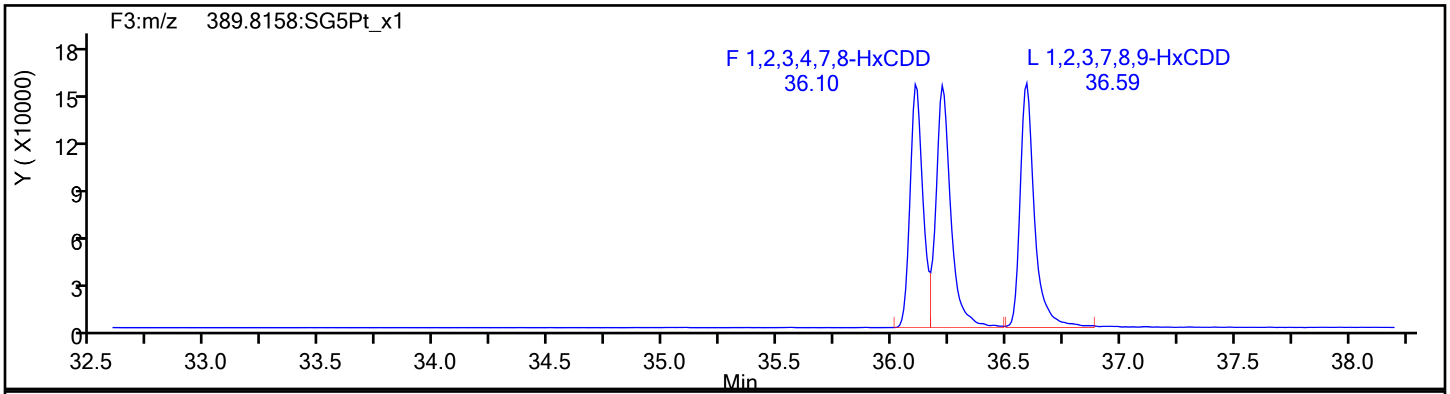

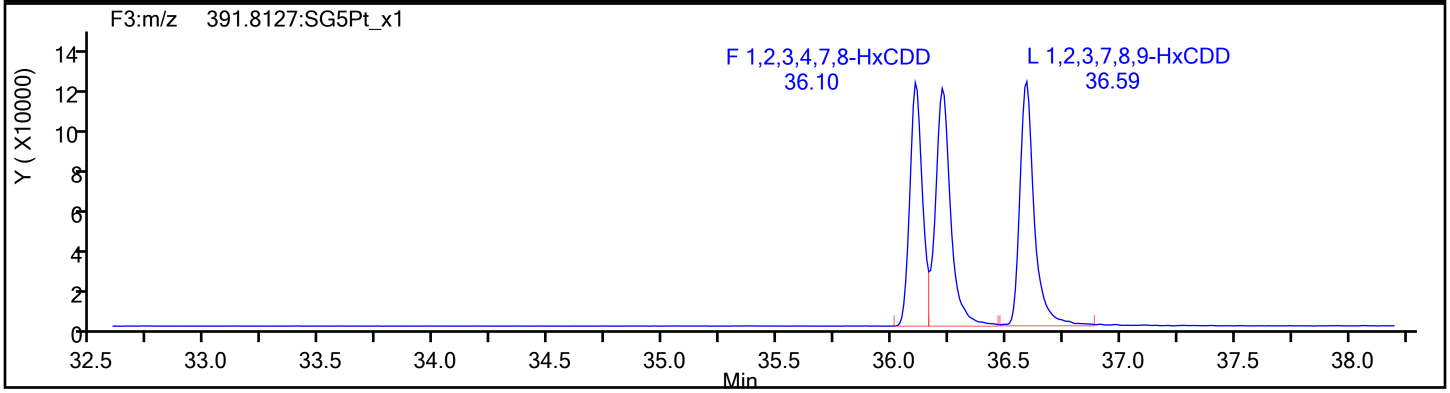

HxCDD Standards

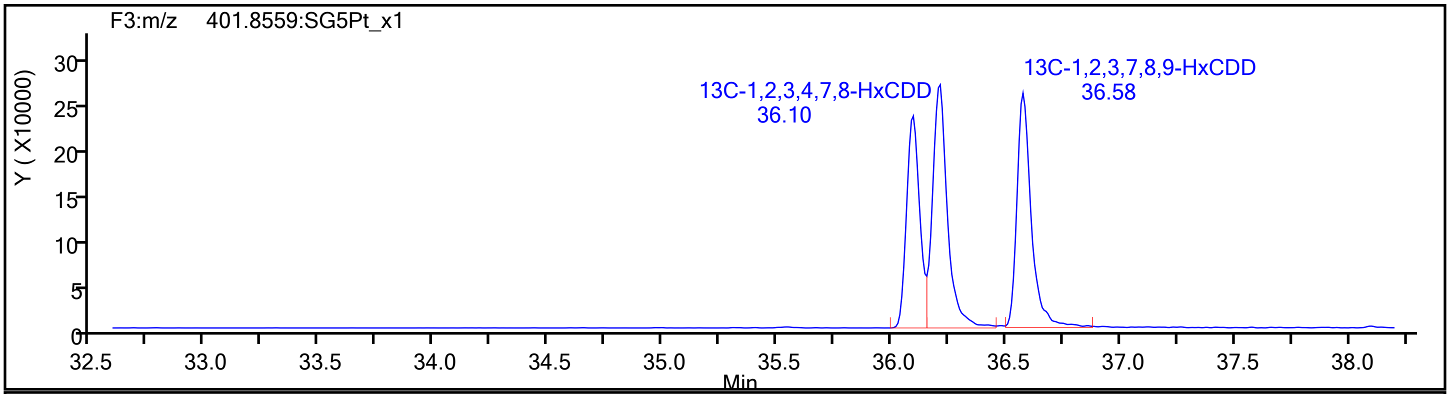

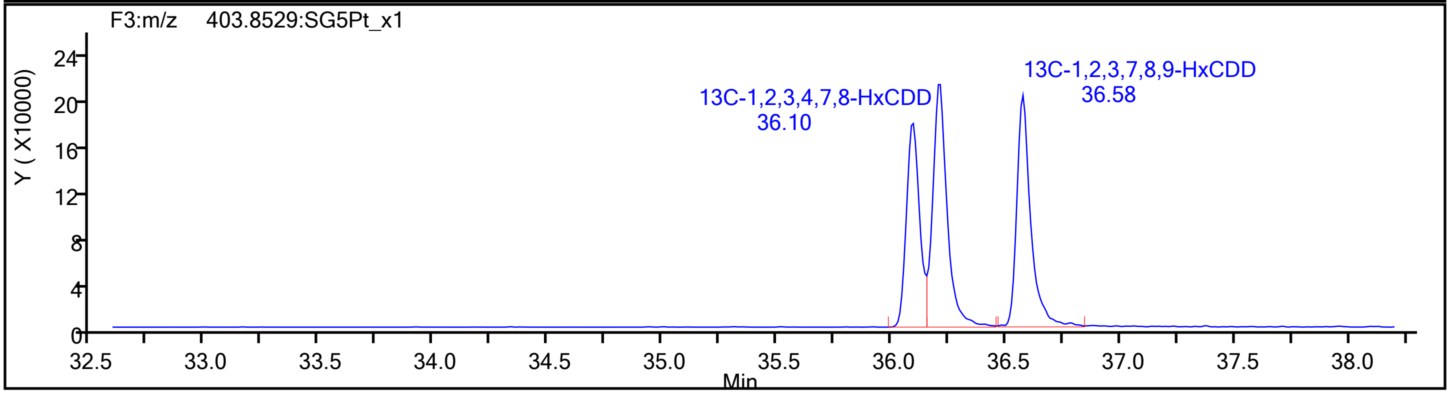

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d
Injection Date: 31-Dec-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

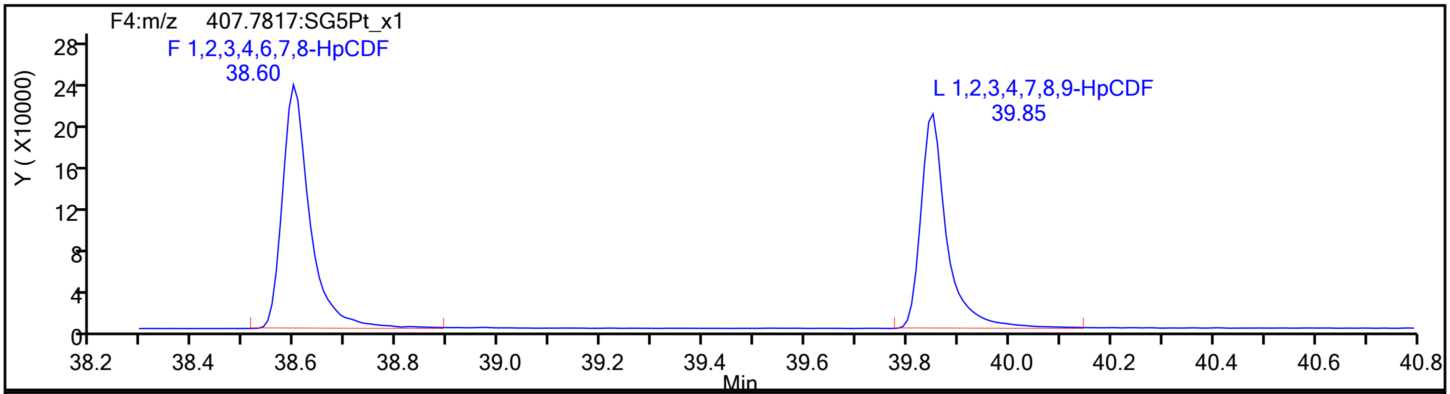

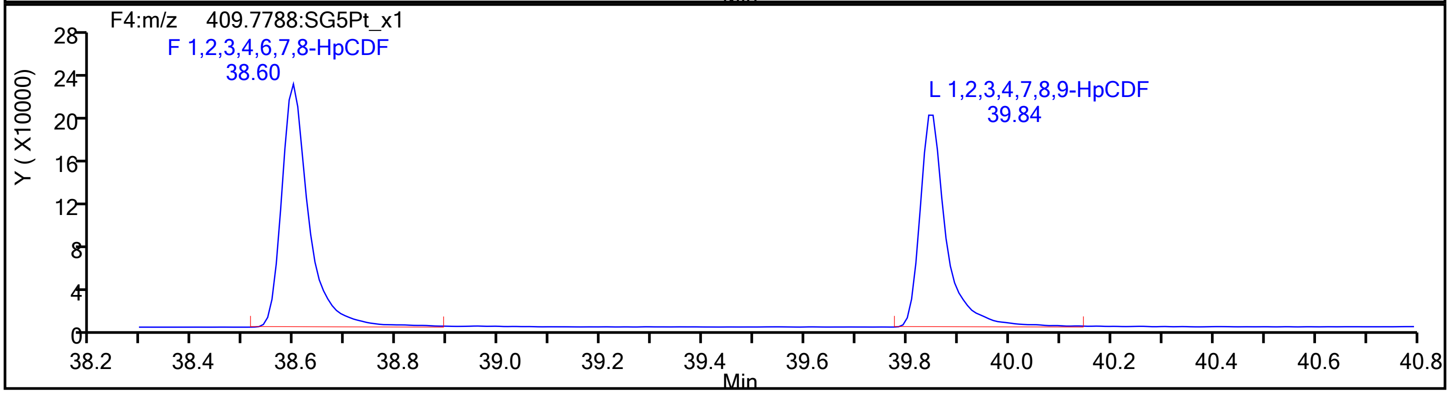

HpCDF Standards

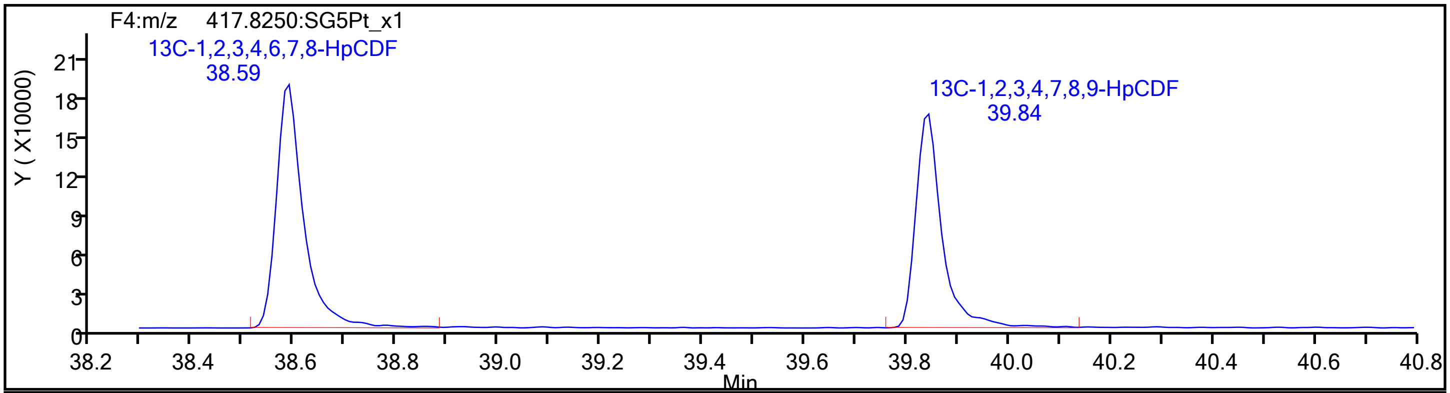

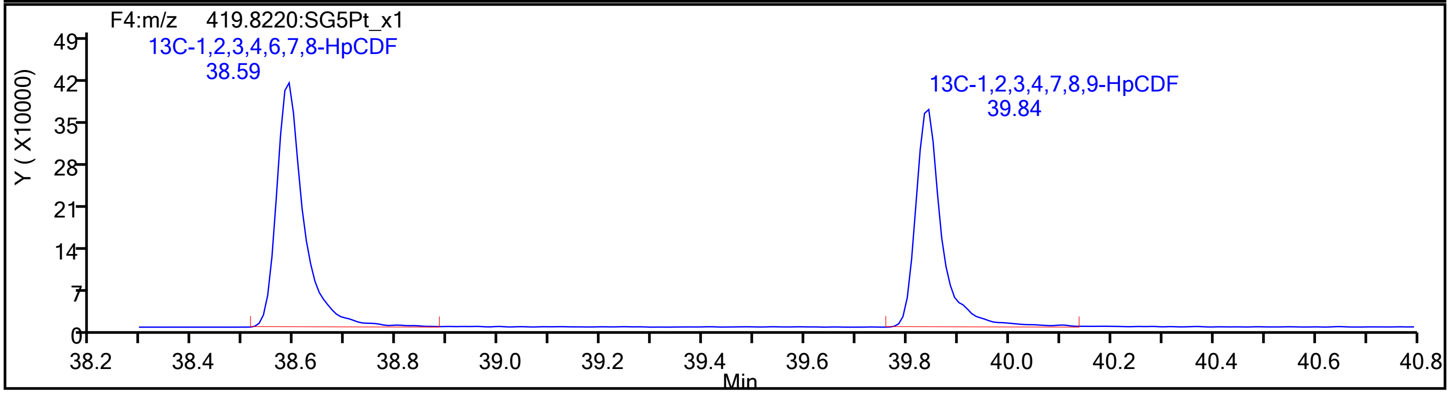

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d		
Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

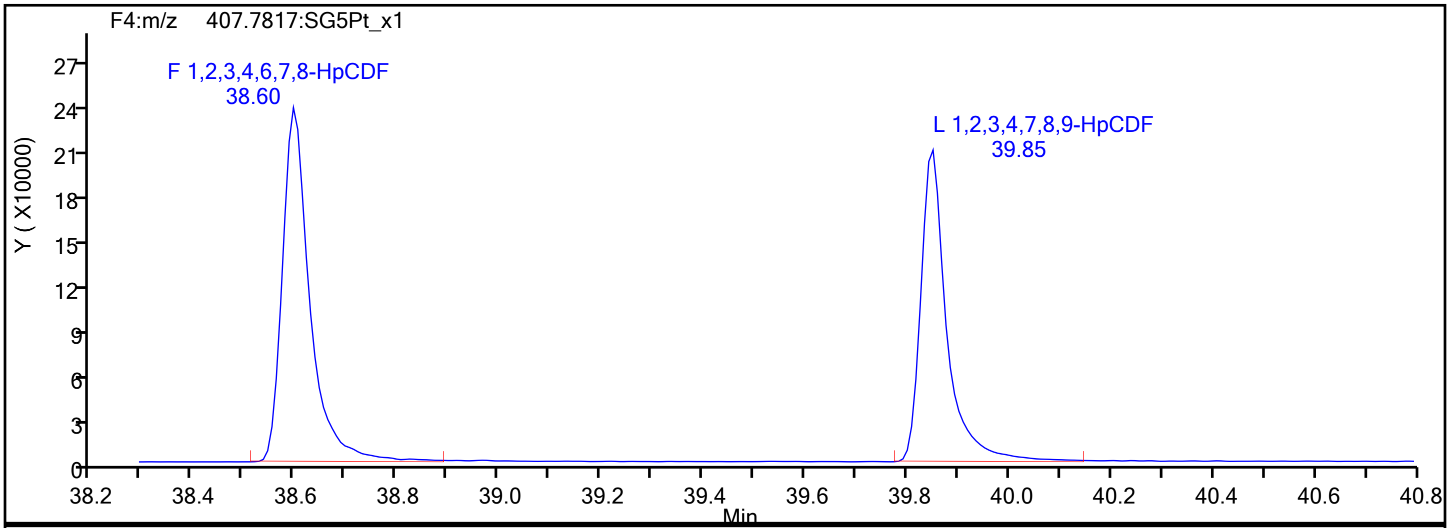

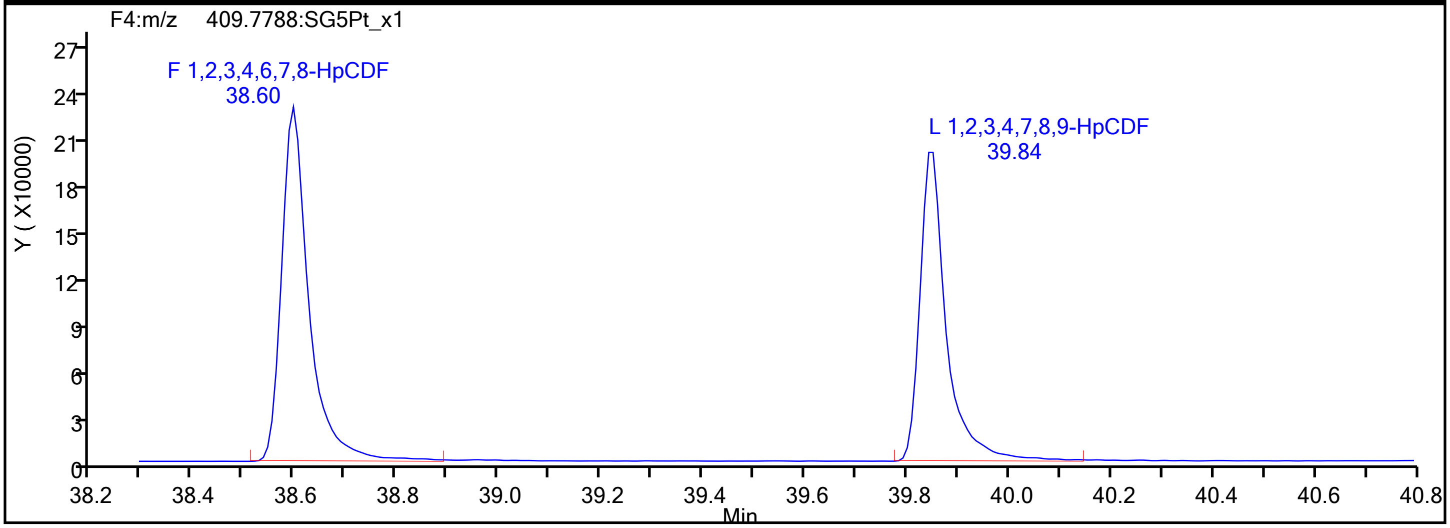

HpCDF Interference Mass

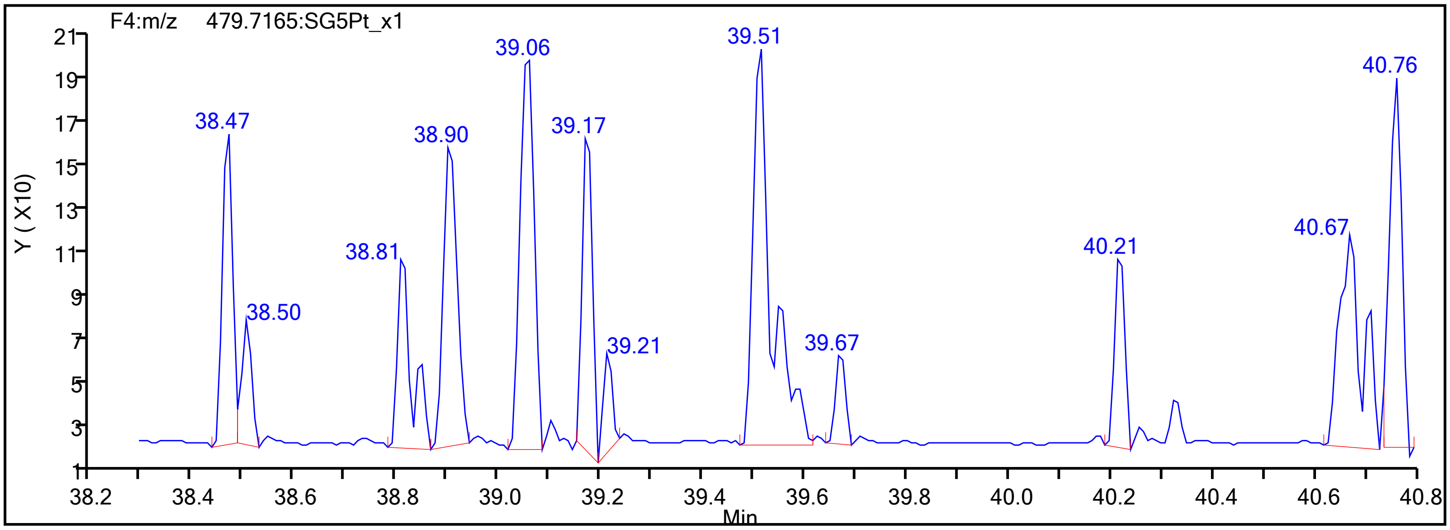

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d

Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

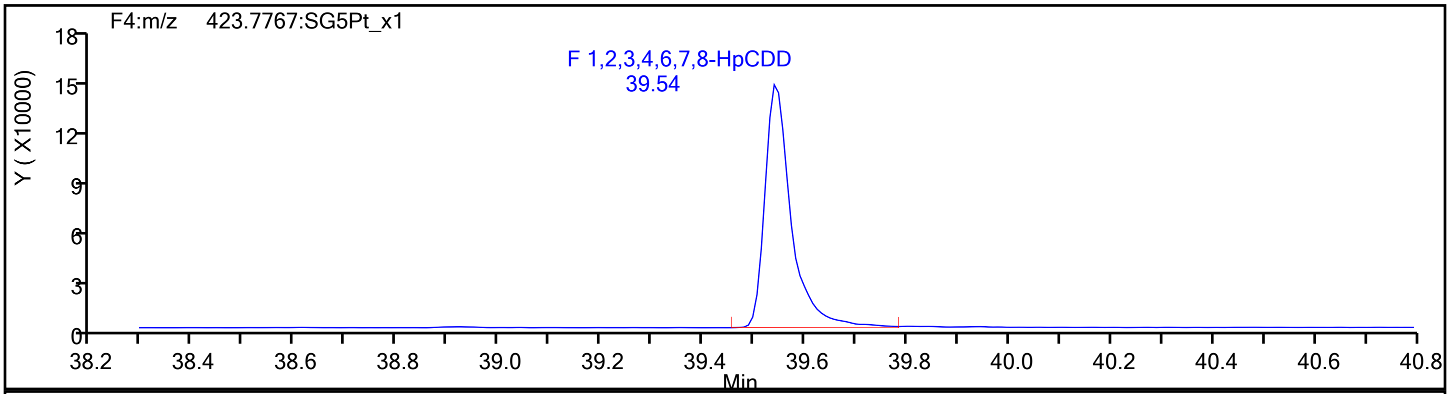

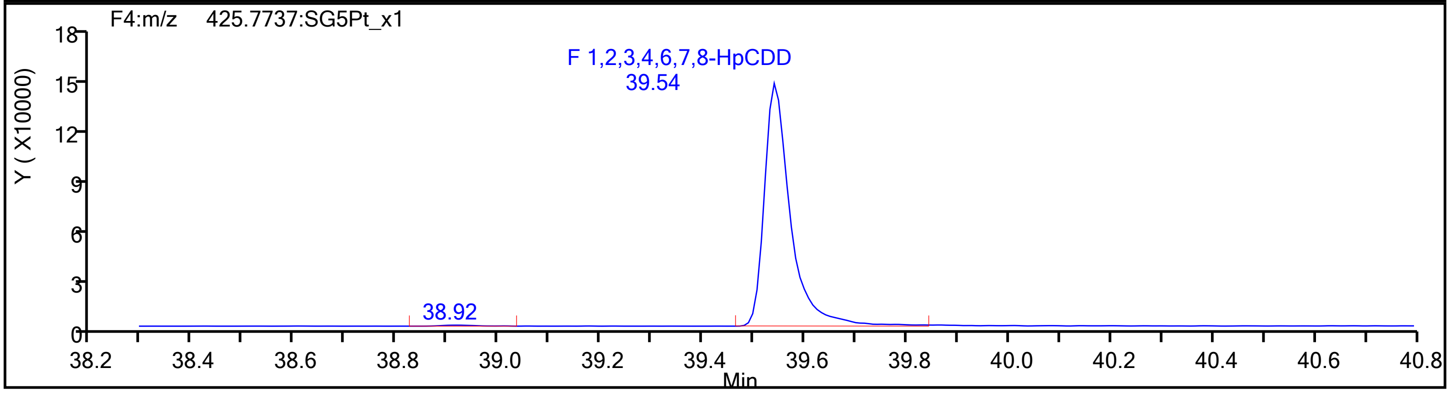

HpCDD Standards

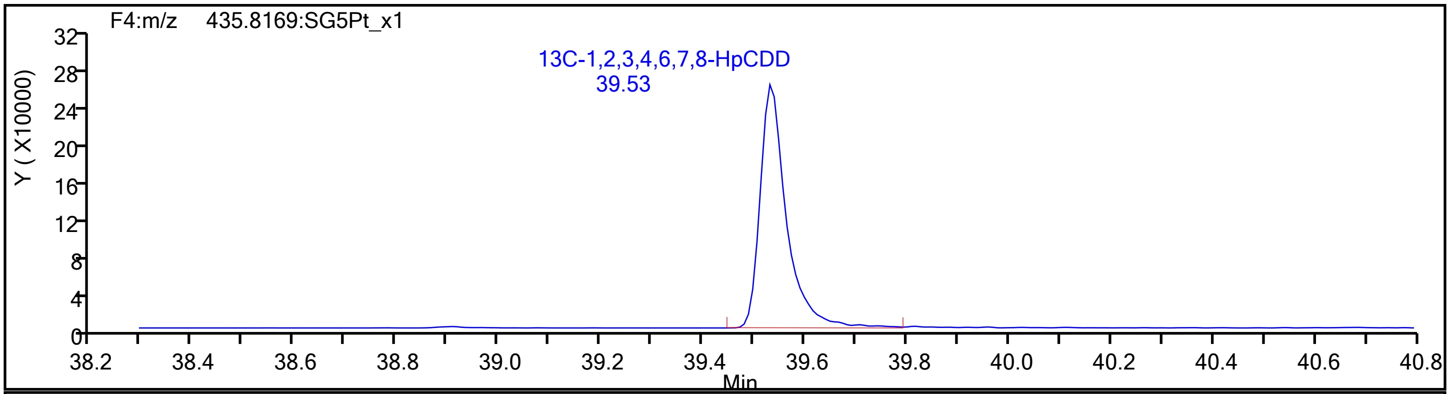

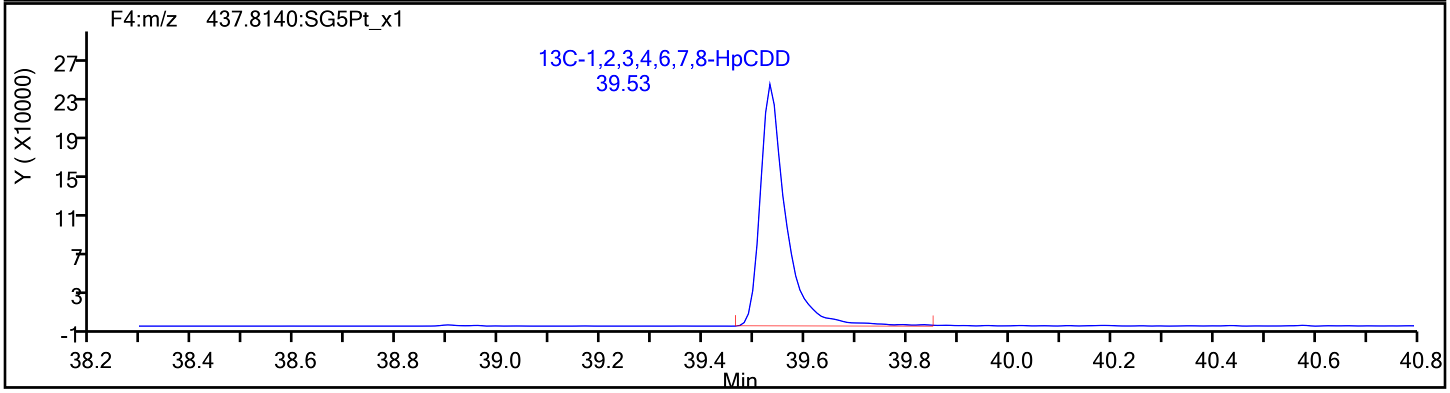

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d

Injection Date: 31-Dec-2020 15:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

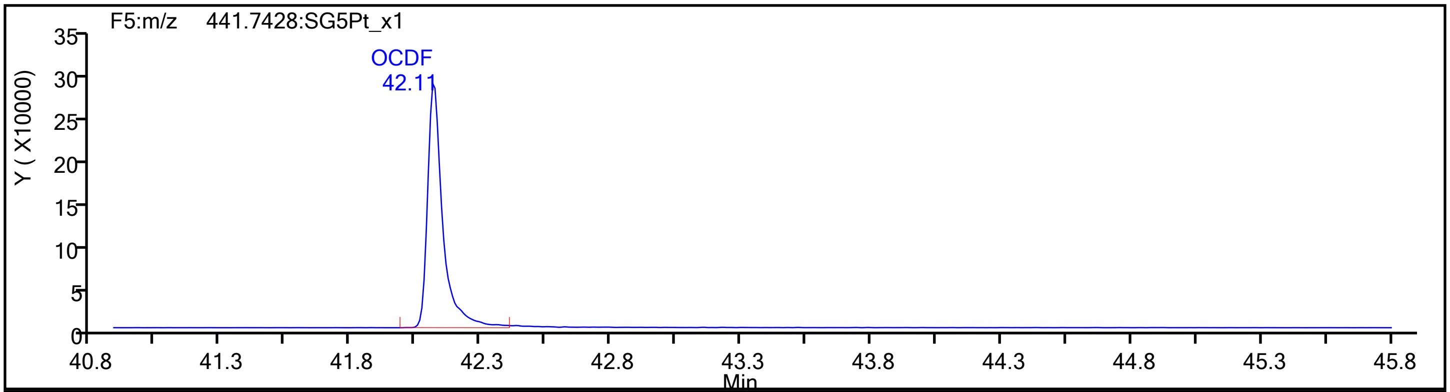

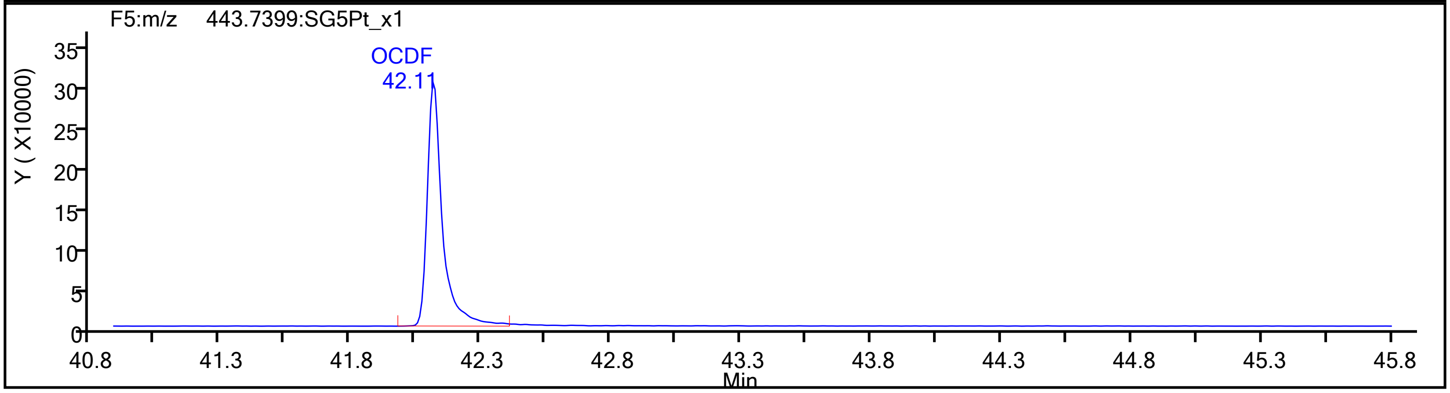

OCDF Standards

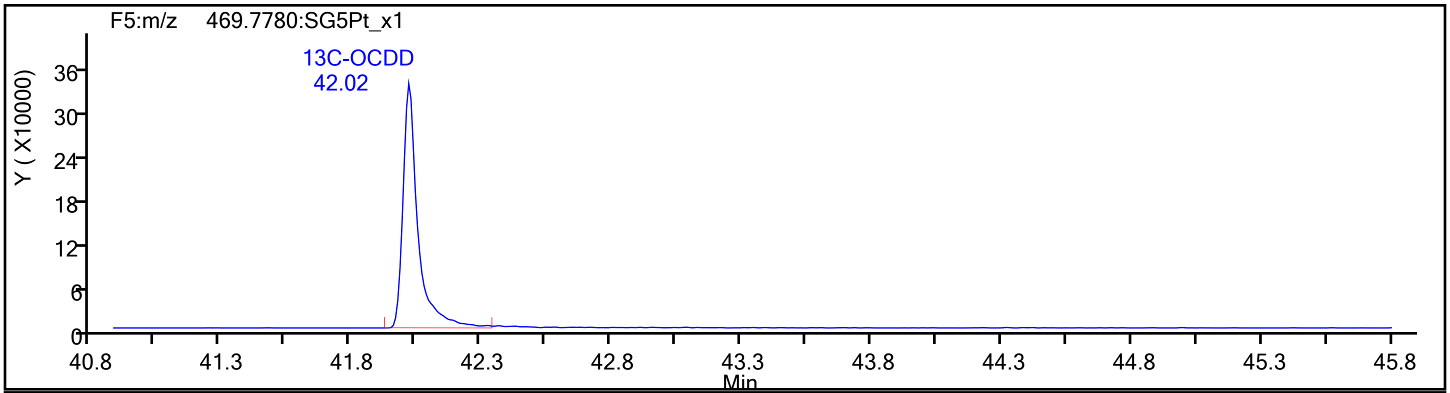

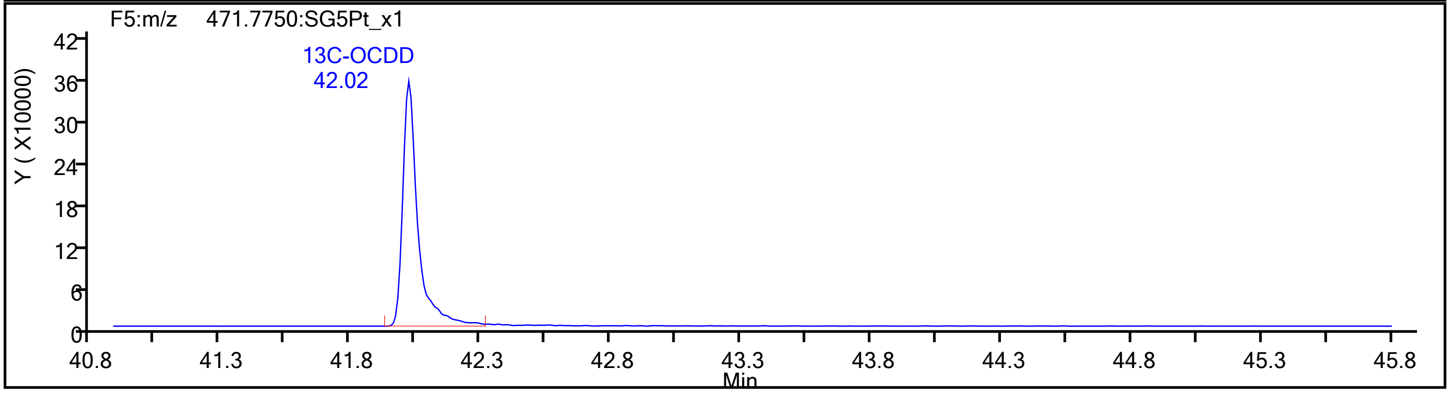

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d
Injection Date: 31-Dec-2020 15:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

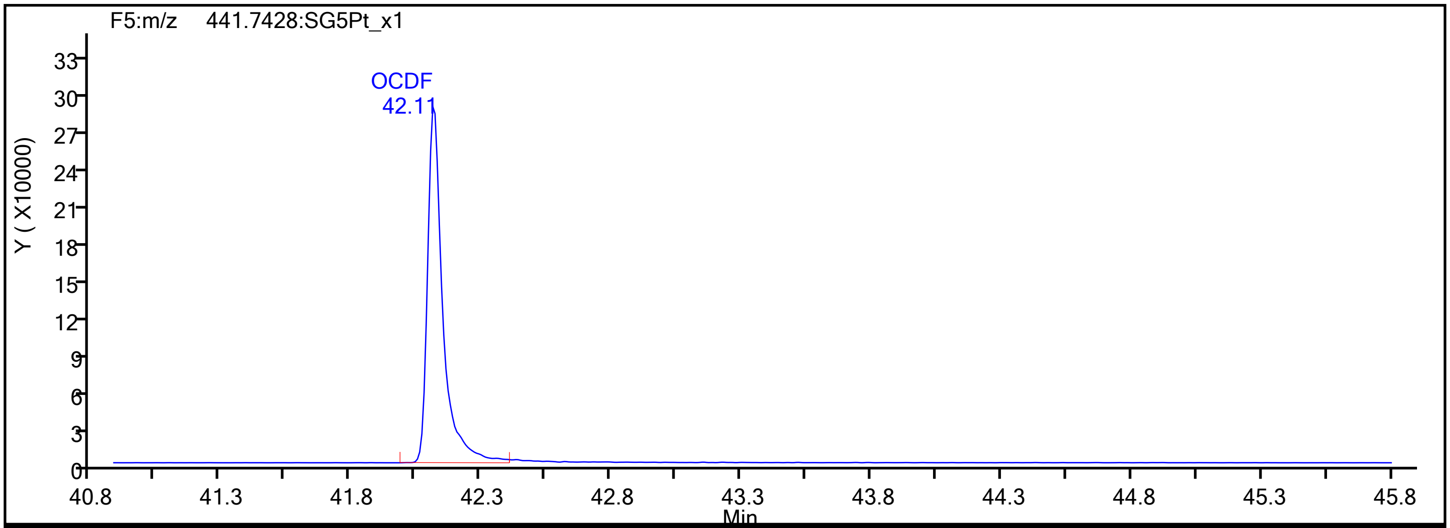

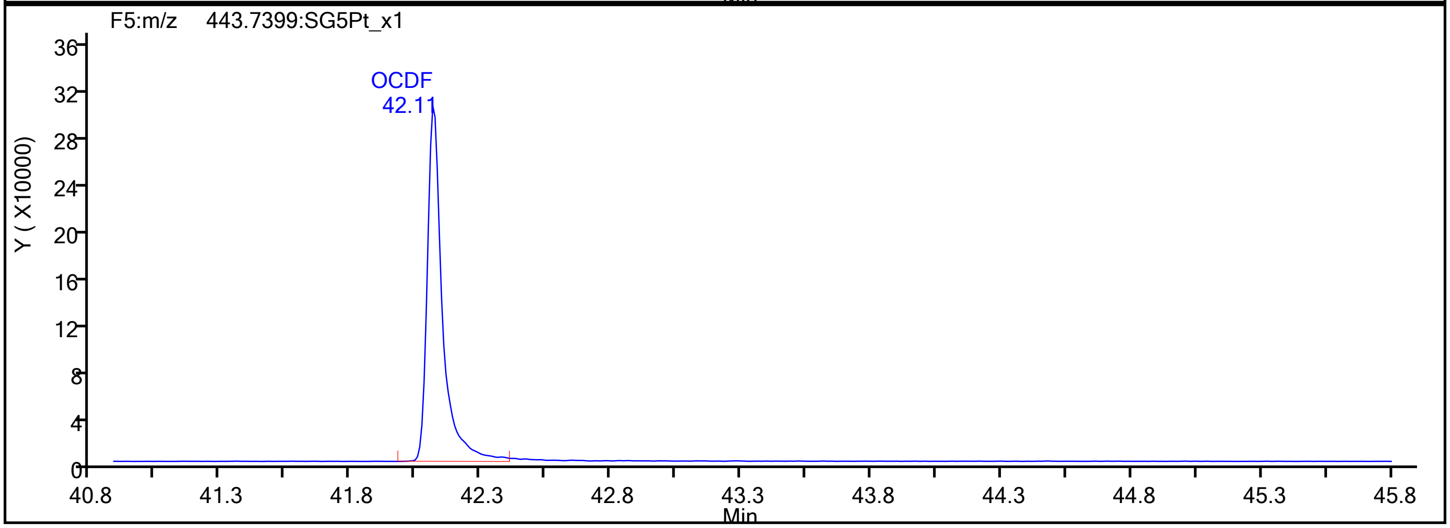

OCDF Interference Mass

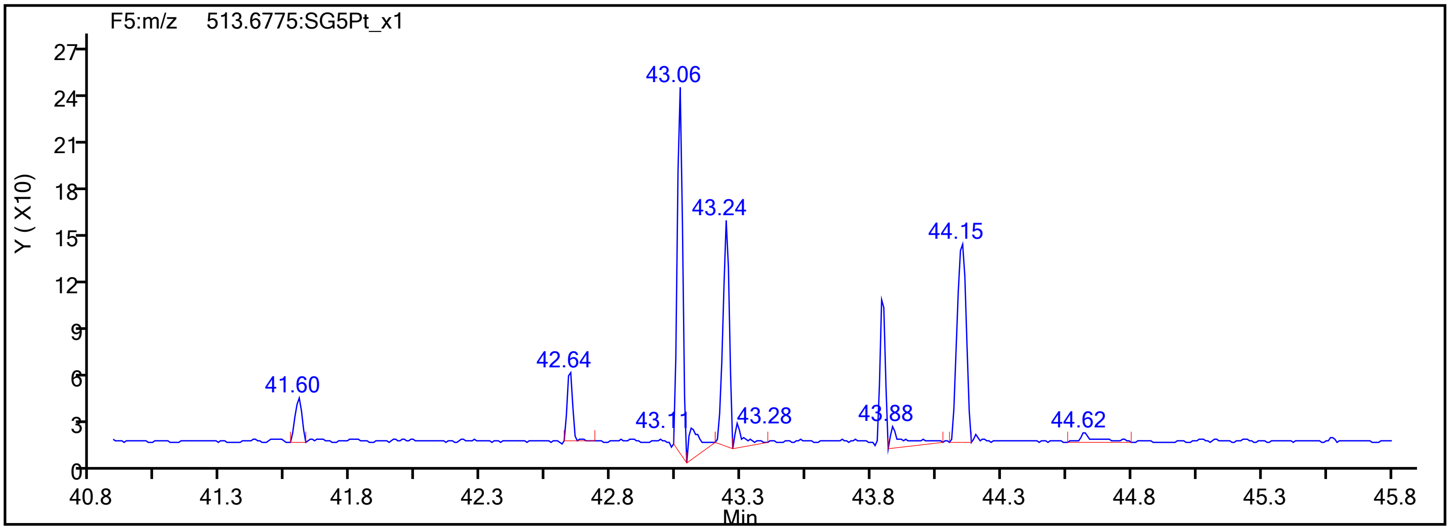

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

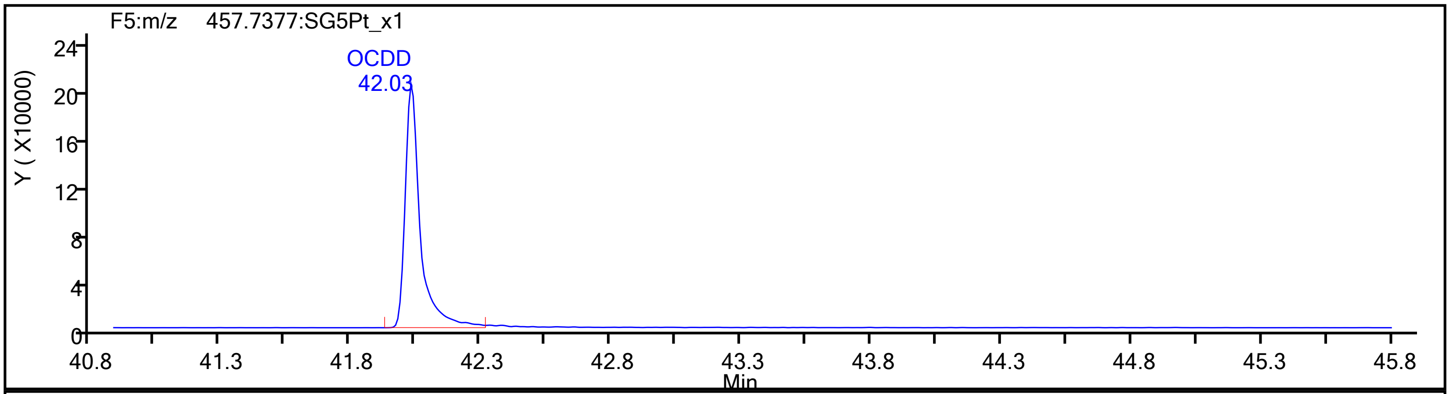

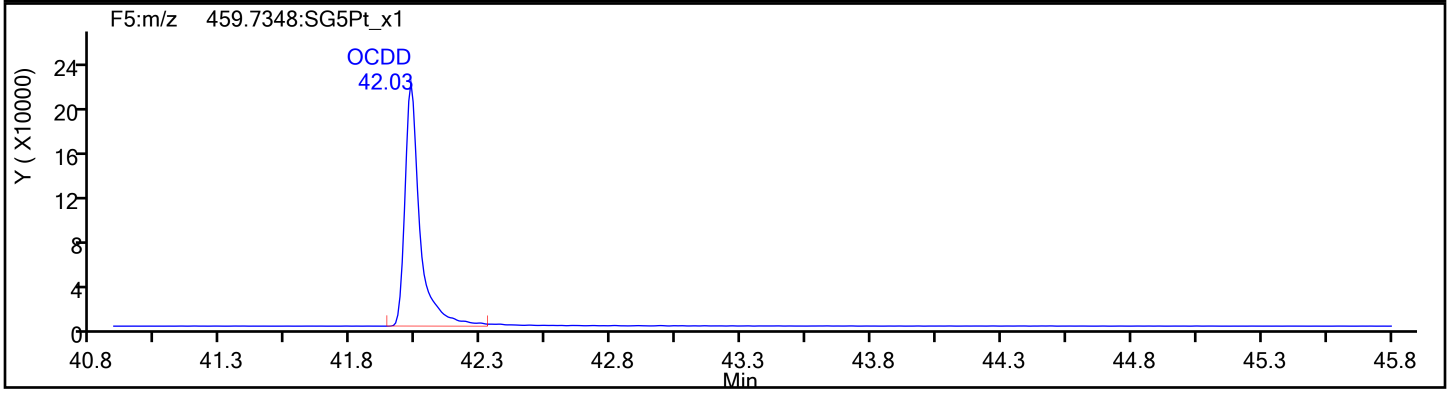

OCDD Standards

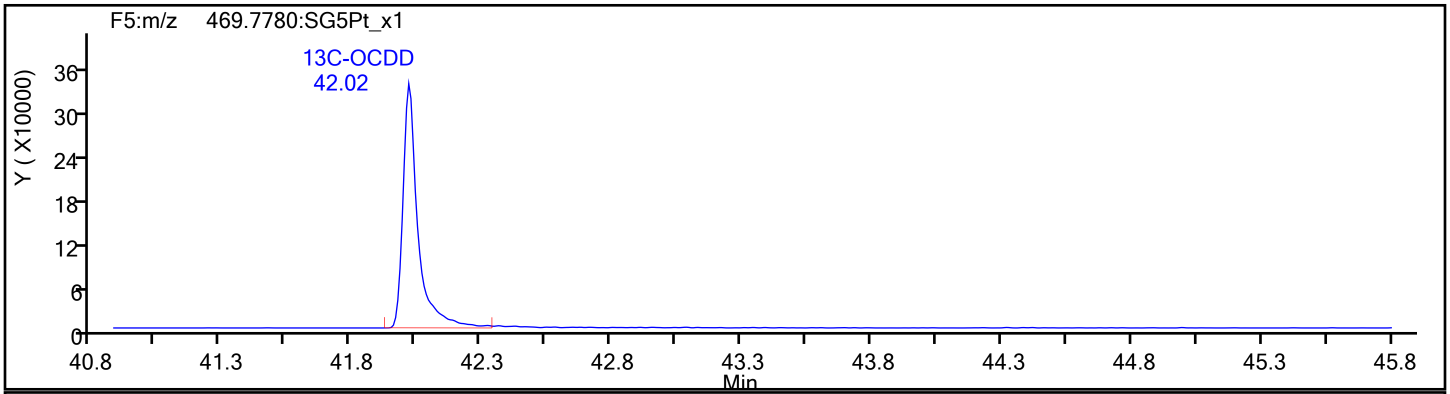

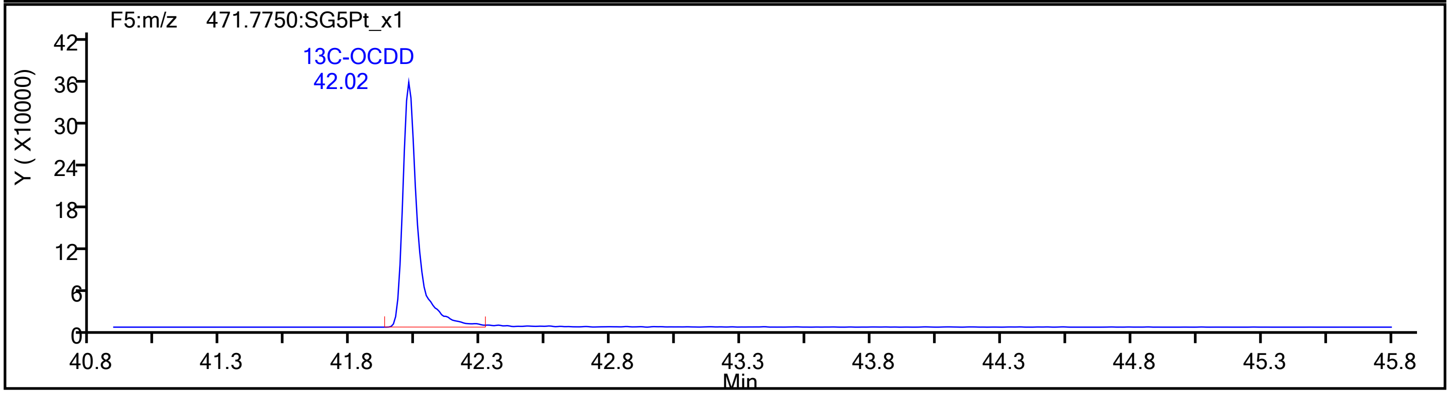

Report Date: 04-Jan-2021 09:33:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d		
Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

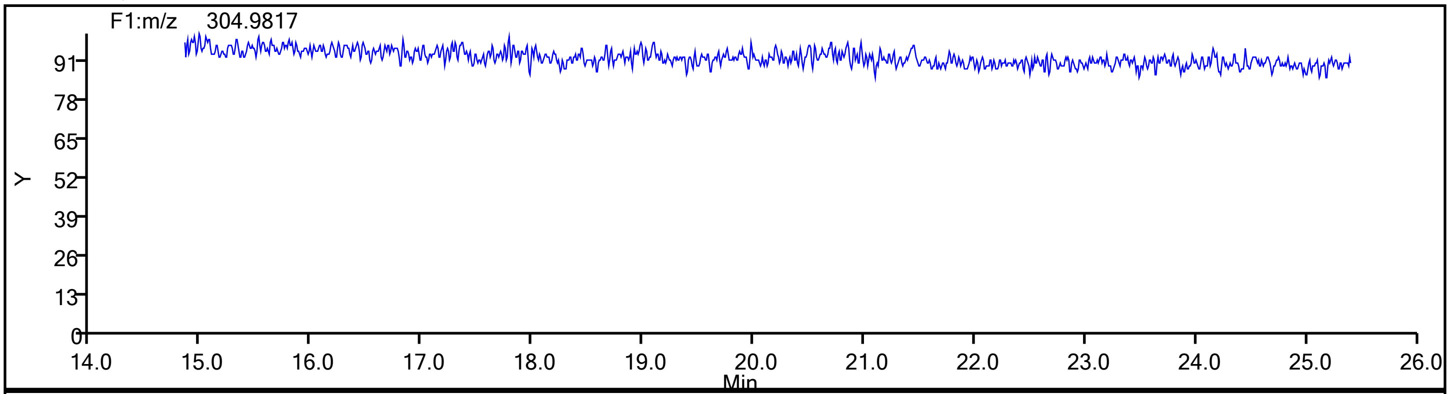

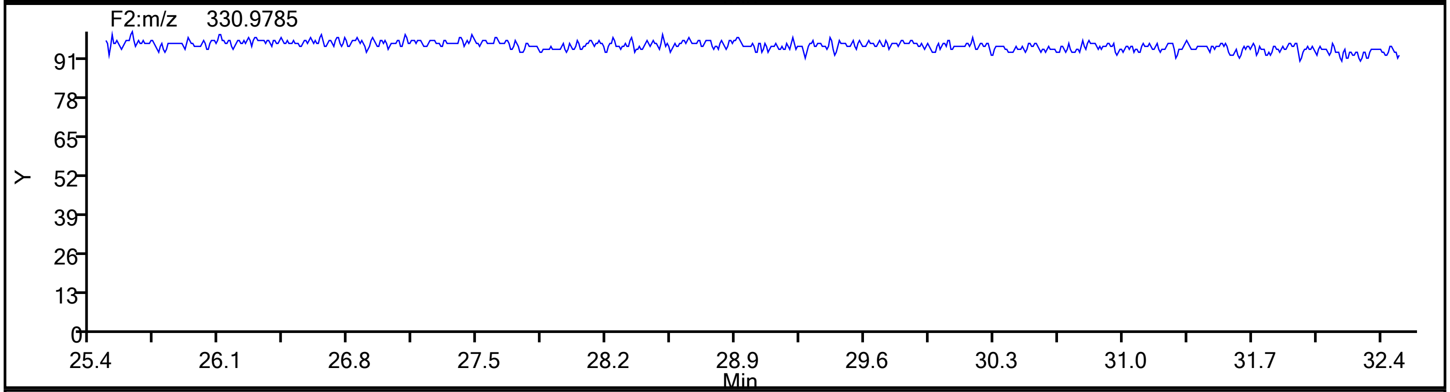

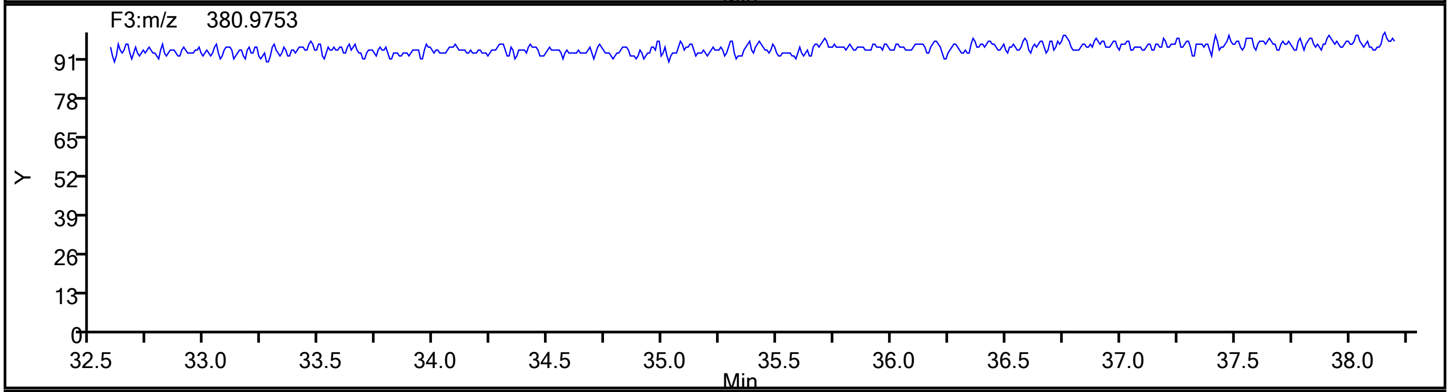

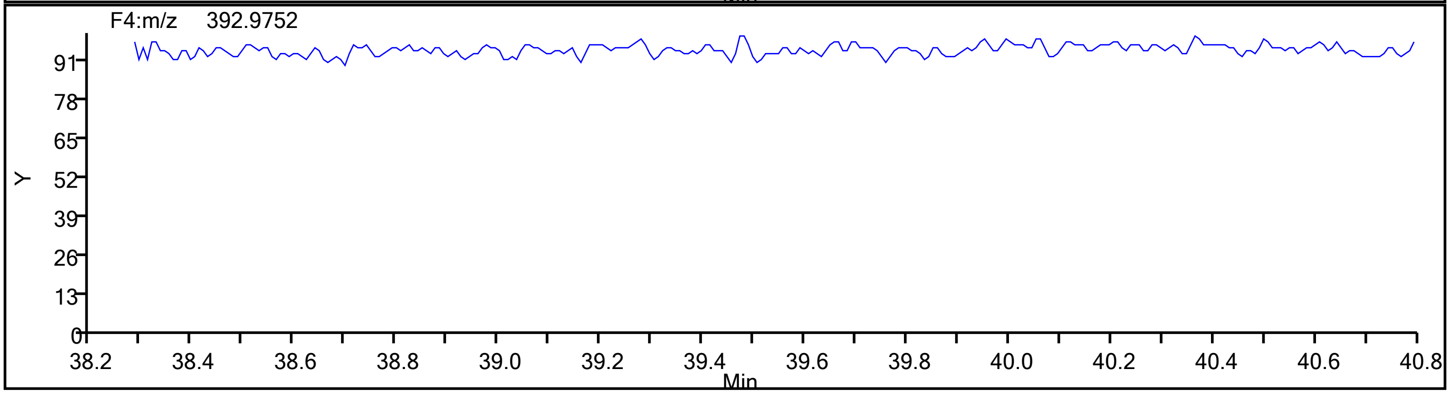

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_6.d

Injection Date:	31-Dec-2020 15:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

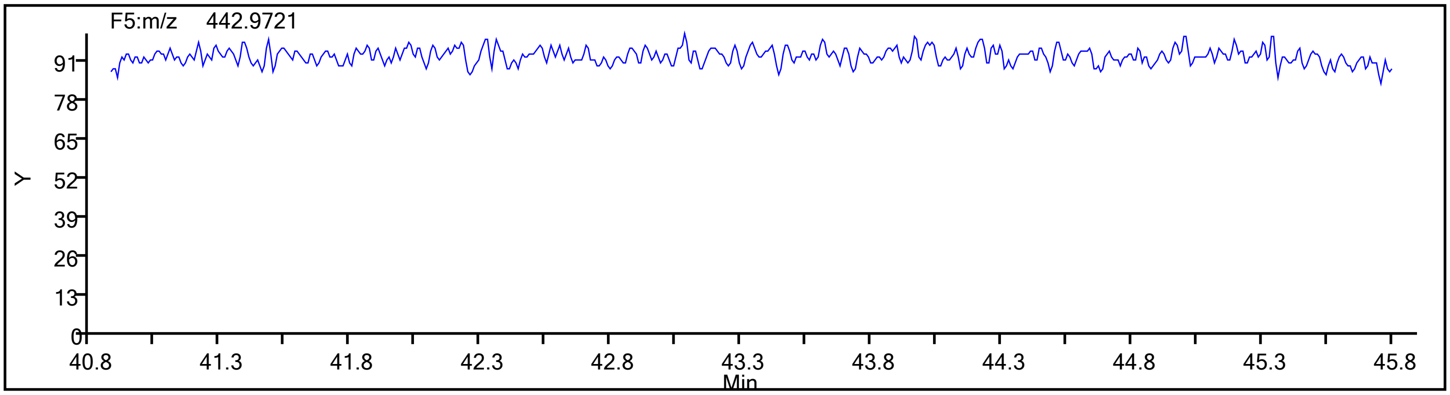

Report Date: 04-Jan-2021 09:34:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 31-Dec-2020 16:41:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:33:49 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:34:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.276	2414493	0.82	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.280	4710060	0.81	1.9134	101.9	101.9	0.3670	0.3670	102	
2,3,7,8-TCDF	20.314	2094790	0.79	1.1488	38.7	38.7	0.0722	0.0722	96.78	
S Total TCDF					38.7	38.7	0.0722	0.0722		
D 13C-2,3,7,8-TCDD	21.654	2644140	0.82	1.0908	100.4	100.4	0.3425	0.3425	100	
2,3,7,8-TCDD	21.680	1312267	0.80	1.3069	38.0	38.0	0.0802	0.0802	94.94	
$ 37Cl4-2,3,7,8-TCDD	21.680	1178750		1.2281	39.8	39.8	0.0432	0.0432	99.38	
S Total TCDD					38.0	38.0	0.0802	0.0802		
D 13C-1,2,3,7,8-PeCDF	27.213	3824037	1.65	1.5355	103.1	103.1	0.4516	0.4516	103	
1,2,3,7,8-PeCDF	27.238	8509119	1.58	1.1695	190.3	190.3	0.6084	0.6084	95.13	
D 13C-2,3,4,7,8-PeCDF	28.737	3409961	1.64	1.4278	98.9	98.9	0.4857	0.4857	98.91	
2,3,4,7,8-PeCDF	28.763	8167670	1.58	1.2244	195.6	195.6	0.6877	0.6877	97.81	
S Total PeCDF					385.9	385.9	0.6481	0.6481		
D 13C-1,2,3,7,8-PeCDD	29.554	1866622	1.69	0.7800	99.1	99.1	0.2344	0.2344	99.11	
1,2,3,7,8-PeCDD	29.588	4544291	1.61	1.2613	193.0	193.0	0.1936	0.1936	96.51	
S Total PeCDD					193.0	193.0	0.1936	0.1936		
D 13C-1,2,3,4,7,8-HxCDF	34.896	3114871	0.54	1.4248	98.7	98.7	0.5065	0.5065	98.69	
1,2,3,4,7,8-HxCDF	34.913	8180355	1.27	1.3553	193.8	193.8	1.086	1.086	96.88	
D 13C-1,2,3,6,7,8-HxCDF	35.056	3751135	0.54	1.7108	99.0	99.0	0.4219	0.4219	98.99	
1,2,3,6,7,8-HxCDF	35.073	9372021	1.26	1.3081	191.0	191.0	0.994	0.994	95.50	
D 13C-2,3,4,6,7,8-HxCDF	35.873	3437727	0.54	1.5455	100.4	100.4	0.4670	0.4670	100	
2,3,4,6,7,8-HxCDF	35.890	8639912	1.27	1.3248	189.7	189.7	0.9330	0.9330	94.86	
D 13C-1,2,3,7,8,9-HxCDF	36.766	3046379	0.53	1.3772	99.9	99.9	0.5241	0.5241	99.86	
1,2,3,7,8,9-HxCDF	36.783	7674883	1.27	1.3372	188.4	188.4	0.9814	0.9814	94.20	
S Total HxCDF					762.9	762.9	0.999	0.999		
* 13C-1,2,3,7,8,9-HxCDD	36.572	2215127	1.27	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.084	1865857	1.29	0.8266	101.9	101.9	0.3466	0.3466	102	
1,2,3,4,7,8-HxCDD	36.101	4655097	1.28	1.3422	185.9	185.9	0.4407	0.4407	92.94	
D 13C-1,2,3,6,7,8-HxCDD	36.202	2301157	1.30	1.0417	99.7	99.7	0.2750	0.2750	99.73	
1,2,3,6,7,8-HxCDD	36.218	5338510	1.29	1.1989	193.5	193.5	0.4323	0.4323	96.75	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.581	5362583	1.30	1.3636	188.8	188.8	0.4052	0.4052	94.38	
S Total HxCDD					568.1	568.1	0.4260	0.4260		
D 13C-1,2,3,4,6,7,8-HpCDF	38.579	2458986	0.46	1.1053	100.4	100.4	0.6585	0.6585	100	
1,2,3,4,6,7,8-HpCDF	38.596	7674927	1.06	1.6487	189.3	189.3	1.072	1.072	94.66	
D 13C-1,2,3,4,7,8,9-HpCDF	39.834	2137527	0.47	0.9761	98.9	98.9	0.7457	0.7457	98.86	
1,2,3,4,7,8,9-HpCDF	39.843	6466215	1.06	1.5723	192.4	192.4	1.227	1.227	96.20	
S Total HpCDF					381.7	381.7	1.149	1.149		
D 13C-1,2,3,4,6,7,8-HpCDD	39.531	1931487	1.07	0.8768	99.4	99.4	0.2796	0.2796	99.44	
1,2,3,4,6,7,8-HpCDD	39.540	4498134	1.06	1.2146	191.7	191.7	0.4742	0.4742	95.87	
S Total HpCDD					191.7	191.7	0.4742	0.4742		
D 13C-OCDD	42.019	3150529	0.93	0.7137	199.3	199.3	0.2798	0.2798	99.64	
OCDF	42.112	10969156	0.93	1.8132	384.0	384.0	0.4426	0.4426	96.01	
OCDD	42.027	7639110	0.90	1.2562	386.0	386.0	0.4742	0.4742	96.51	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 31-Dec-2020 16:41:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00031
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:33:49 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:34:40

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.276	21.272	0		1085060	150942	387	967	390		
333.9338	21.268	21.272	0		1329433	188219	120	300	1568	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.280	20.286	0	0.953	2105110	302010	586	1465	515		
317.9389	20.289	20.286	0	0.954	2604950	372817	367	917	1016	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.314	20.313	0	1.002	921622	128947	82	205	1573		
305.8987	20.314	20.313	0	1.002	1173168	162568	142	355	1145	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.654	21.646	0	1.018	1188596	162220	387	967	419		
333.9338	21.645	21.646	0	1.017	1455544	192670	120	300	1606	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.680	21.677	0	1.001	584200	76509	94	235	814		
321.8936	21.680	21.677	0	1.001	728067	97939	55	137	1781	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.680	21.684	0	1.019	1178750	155051	72	180	2153		
13C-1,2,3,7,8-PeCDF											
351.9000	27.213	27.219	0	1.279	2382718	369275	592	1480	624		
353.8970	27.221	27.219	0	1.279	1441319	223052	349	872	639	1.65(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.238	27.244	0	1.001	5213414	798704	1017	2542	785		
341.8567	27.238	27.244	0	1.001	3295705	509030	669	1672	761	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.737	28.742	0	1.351	2117110	309511	592	1480	523		
353.8970	28.737	28.742	0	1.351	1292851	191072	349	872	547	1.64(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.763	28.767	0	1.001	5004573	716589	1017	2542	705		
341.8567	28.763	28.767	0	1.001	3163097	451060	669	1672	674	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.554	29.564	-1	1.389	1171942	158925	115	287	1382		
369.8919	29.554	29.564	-1	1.389	694680	99038	133	332	745	1.69(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.588	29.593	0	1.001	2800279	386017	170	425	2271		
357.8516	29.588	29.593	0	1.001	1744012	240283	82	205	2930	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.896	34.899	0	0.954	1098283	228661	572	1430	400		
385.8610	34.888	34.899	-1	0.954	2016588	432927	985	2462	440	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.913	34.916	0	1.000	4574337	978751	2155	5387	454		
375.8178	34.913	34.916	0	1.000	3606018	763938	1741	4352	439	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.056	35.061	0	0.959	1313645	262896	572	1430	460		
385.8610	35.056	35.061	0	0.959	2437490	486187	985	2462	494	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.073	35.079	0	1.000	5234090	1045140	2155	5387	485		
375.8178	35.073	35.079	0	1.000	4137931	832027	1741	4352	478	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.873	35.878	0	0.981	1203013	275206	572	1430	481		
385.8610	35.873	35.878	0	0.981	2234714	512811	985	2462	521	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.890	35.893	0	1.000	4834683	1102264	2155	5387	511		
375.8178	35.890	35.893	0	1.000	3805229	872658	1741	4352	501	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.766	36.769	0	1.005	1059888	260164	572	1430	455		
385.8610	36.766	36.769	0	1.005	1986491	482055	985	2462	489	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.783	36.786	0	1.000	4298895	1011463	2155	5387	469		
375.8178	36.783	36.786	0	1.000	3375988	798796	1741	4352	459	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.572	36.576	0		1238946	304676	355	887	858		
403.8529	36.564	36.576	-1		976181	234593	263	657	892	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.084	36.092	-1	0.987	1052739	270979	355	887	763		
403.8529	36.084	36.092	-1	0.987	813118	207495	263	657	789	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.101	36.107	0	1.000	2611992	680932	633	1582	1076		
391.8127	36.101	36.107	0	1.000	2043105	528355	499	1247	1059	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.202	36.210	-1	0.990	1302087	308640	355	887	869		
403.8529	36.202	36.210	-1	0.990	999070	237383	263	657	903	1.30(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.218	36.223	0	1.000	3002664	684140	633	1582	1081		
391.8127	36.218	36.223	0	1.000	2335846	533054	499	1247	1068	1.29(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.581	36.589	-1	1.014	3033199	719861	633	1582	1137		
391.8127	36.581	36.589	-1	1.014	2329384	557892	499	1247	1118	1.30(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.579	38.584	0	1.055	778076	217497	541	1352	402		
419.8220	38.579	38.584	0	1.055	1680910	476702	1029	2572	463	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.596	38.598	0	1.000	3944208	1091212	2549	6372	428		
409.7788	38.588	38.598	-1	1.000	3730719	1030218	2357	5892	437	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.834	39.838	0	1.089	687727	209526	541	1352	387		
419.8220	39.834	39.838	0	1.089	1449800	426256	1029	2572	414	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.843	39.846	0	1.000	3322423	987008	2549	6372	387		
409.7788	39.843	39.846	0	1.000	3143792	936379	2357	5892	397	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.531	39.533	0	1.081	999646	295472	274	685	1078		
437.8140	39.531	39.533	0	1.081	931841	271746	255	637	1066	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.540	39.541	0	1.000	2314670	687701	682	1705	1008		
425.7737	39.540	39.541	0	1.000	2183464	648421	625	1562	1037	1.06(0.88-1.20)	
13C-OCDD											
469.7780	42.019	42.021	0	1.149	1522326	391910	218	545	1798		
471.7750	42.019	42.021	0	1.149	1628203	424689	213	532	1994	0.93(0.76-1.02)	
OCDF											
441.7428	42.112	42.115	0	1.002	5281875	1379596	630	1575	2190		
443.7399	42.112	42.115	0	1.002	5687281	1496435	681	1702	2197	0.93(0.76-1.02)	
OCDD											
457.7377	42.027	42.029	0	1.000	3626538	921001	449	1122	2051		
459.7348	42.019	42.029	-1	1.000	4012572	1031177	524	1310	1968	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00031 Amount Added: 1.00 Units: mL

Report Date: 04-Jan-2021 09:34:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d		
Injection Date:	31-Dec-2020 16:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

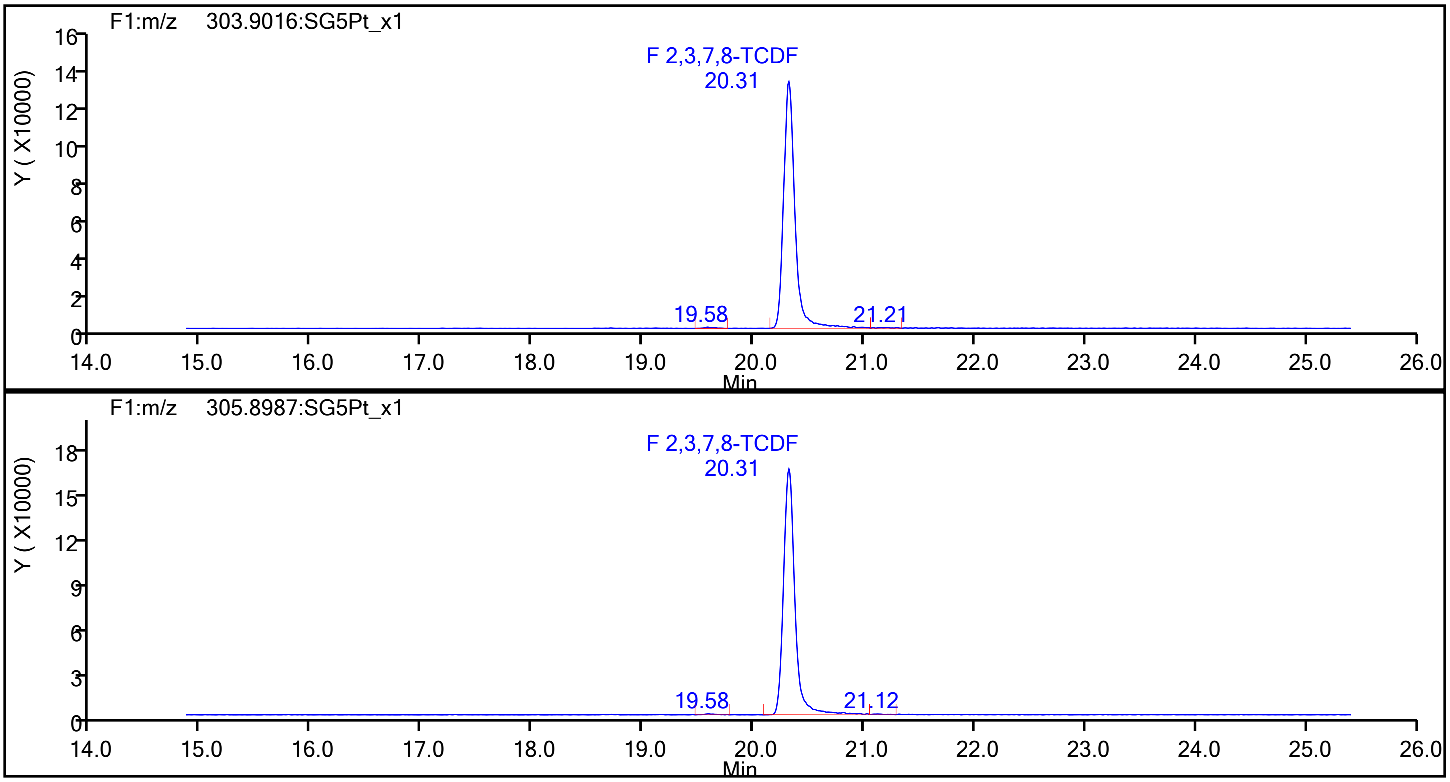

TCDF Standards

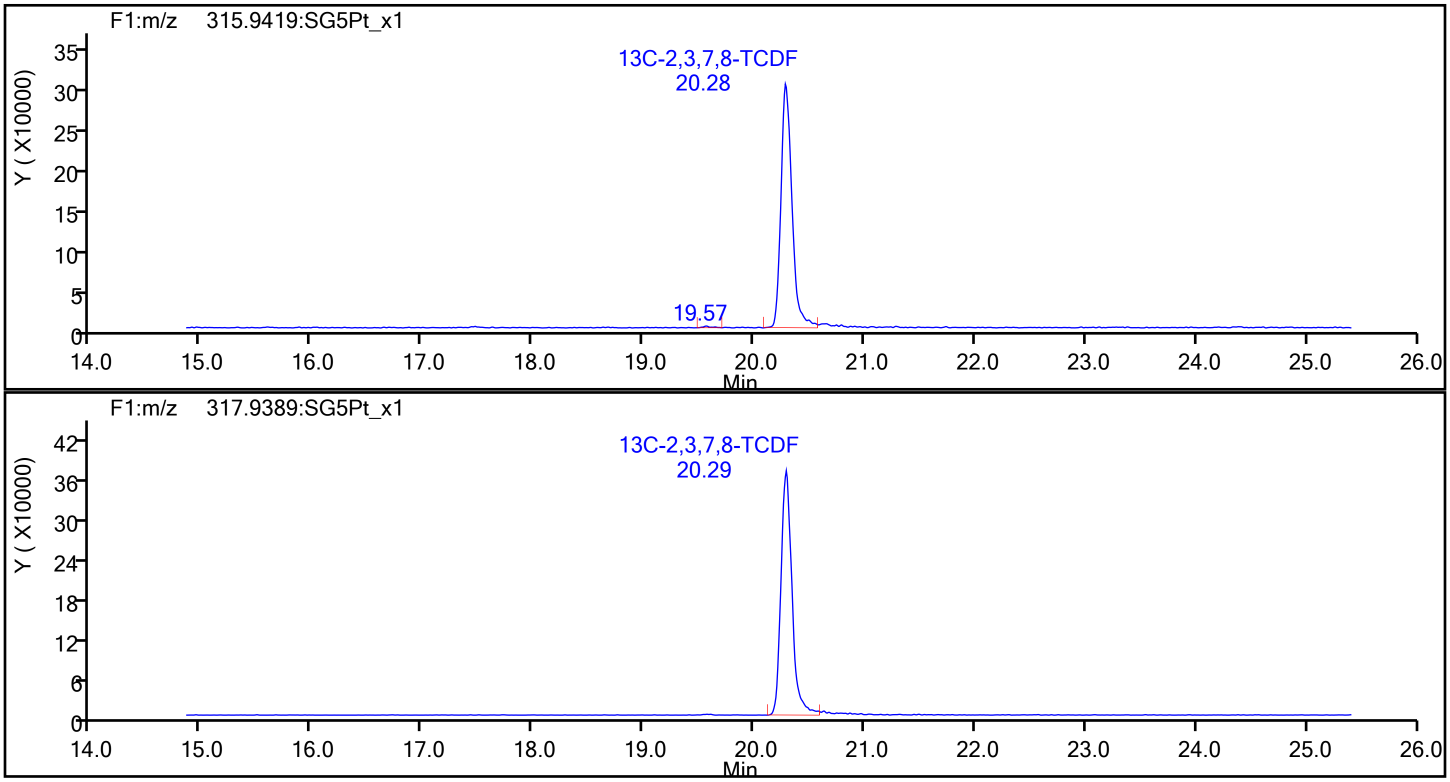

Report Date: 04-Jan-2021 09:34:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d		
Injection Date:	31-Dec-2020 16:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

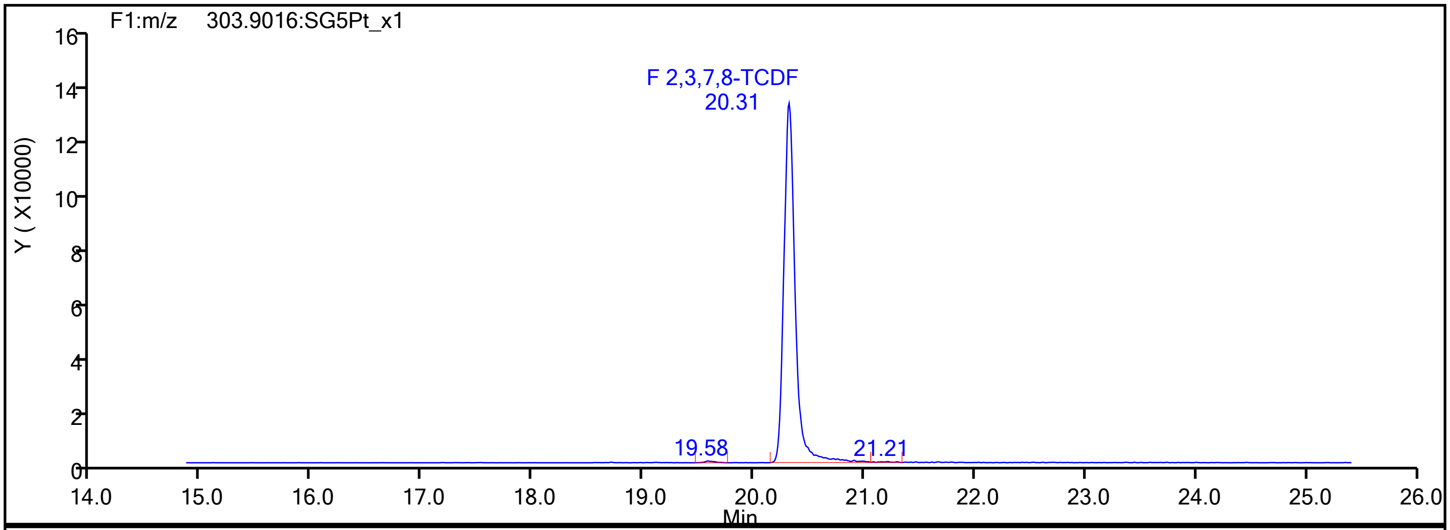

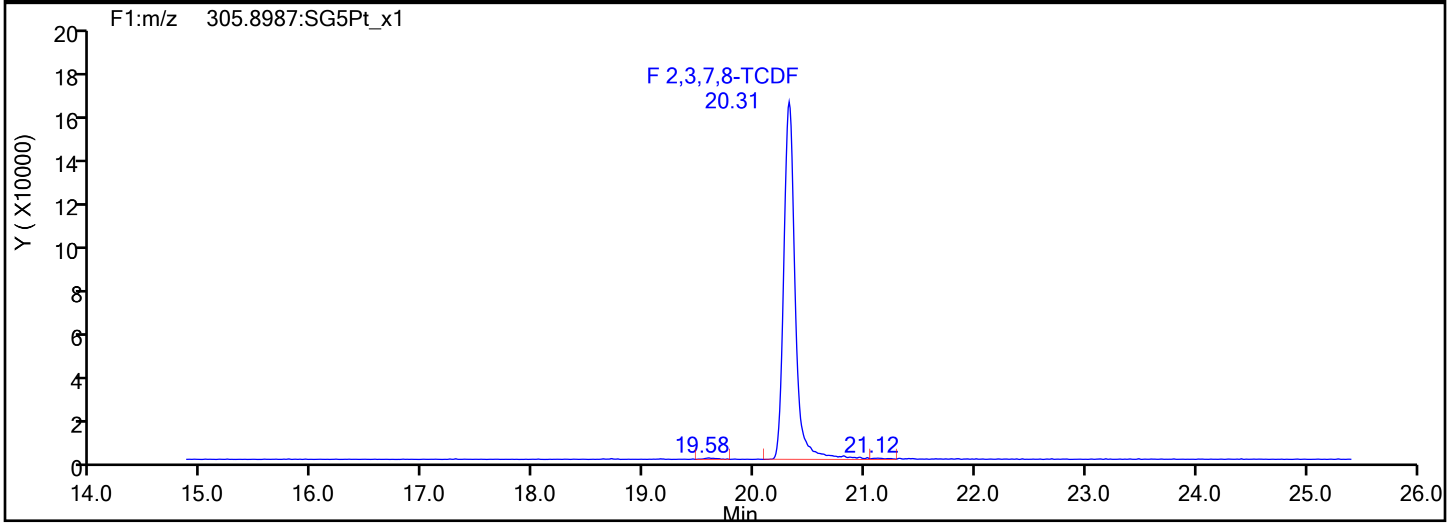

TCDF Interference Mass

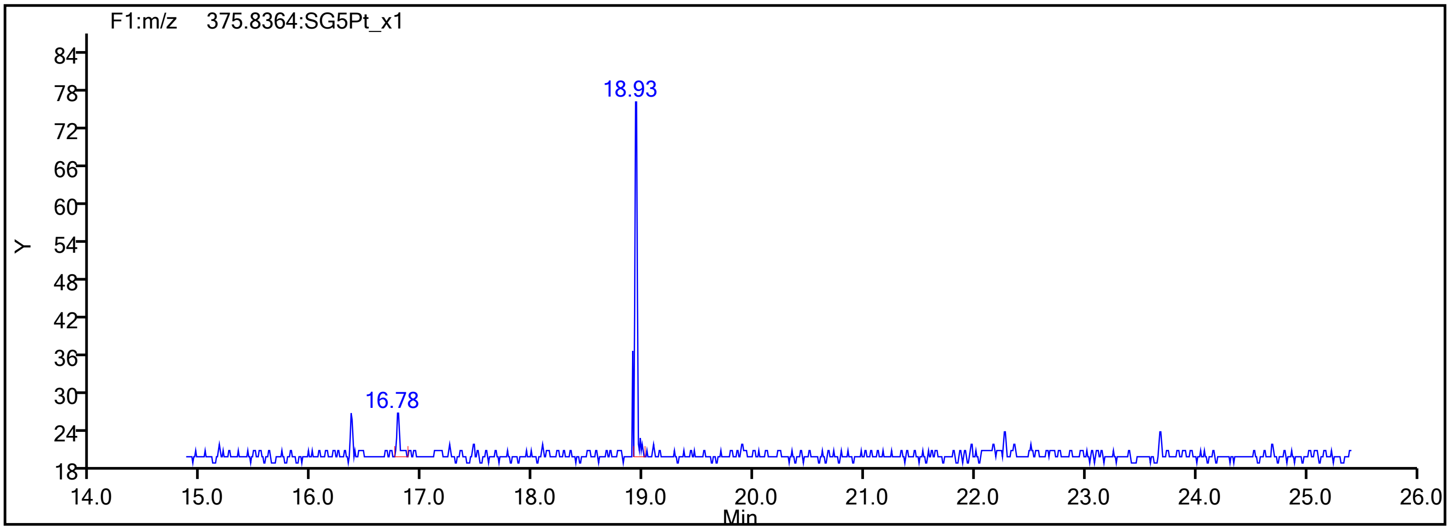

Report Date: 04-Jan-2021 09:34:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d

Injection Date: 31-Dec-2020 16:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

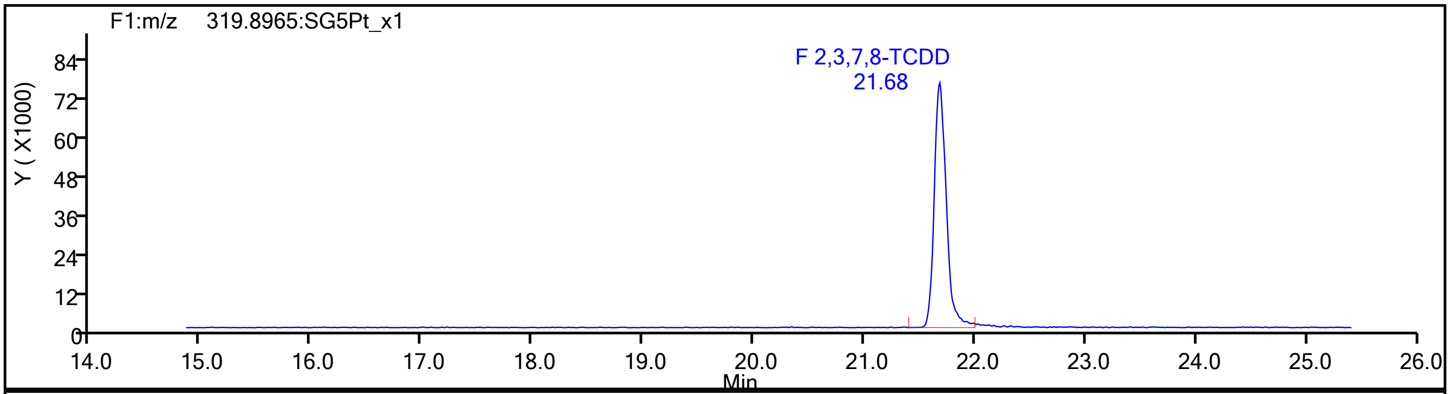

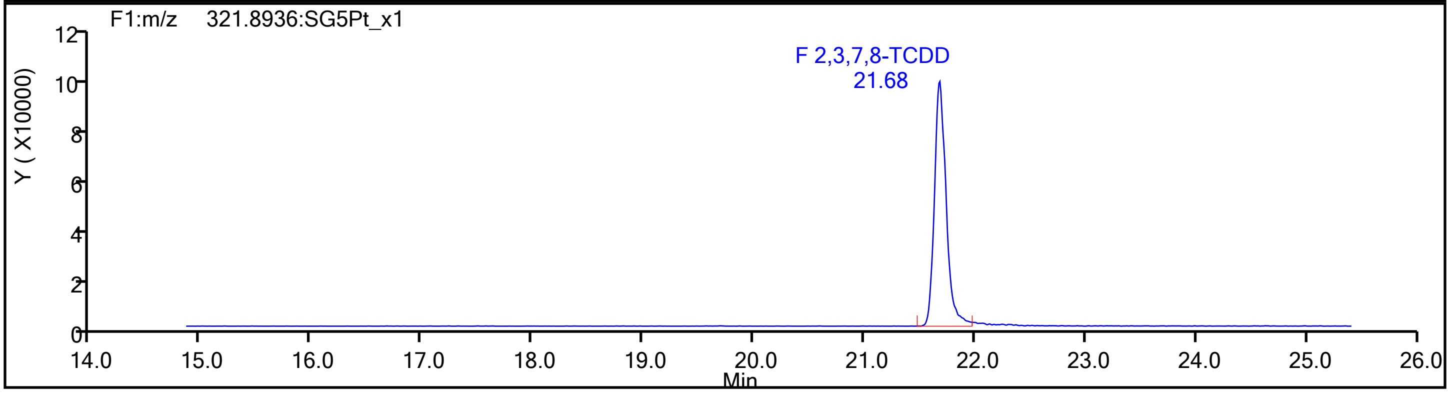

TCDD Standards

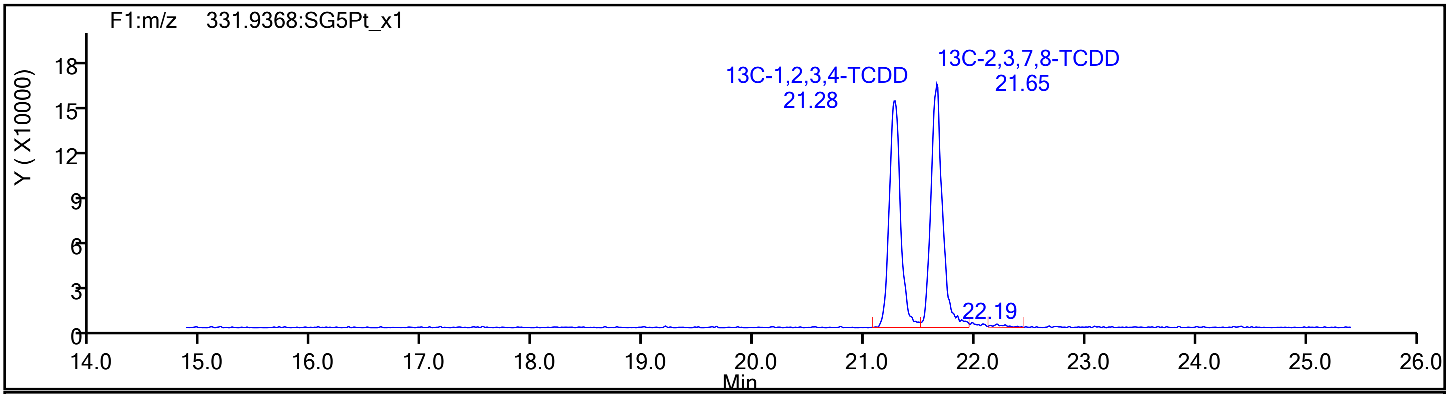

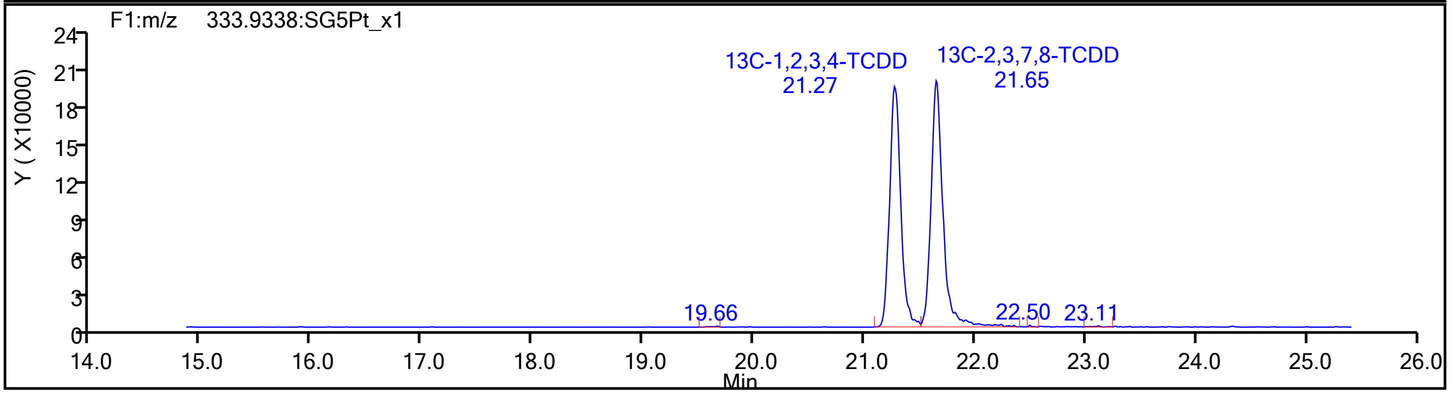

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Injection Date:	31-Dec-2020 16:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

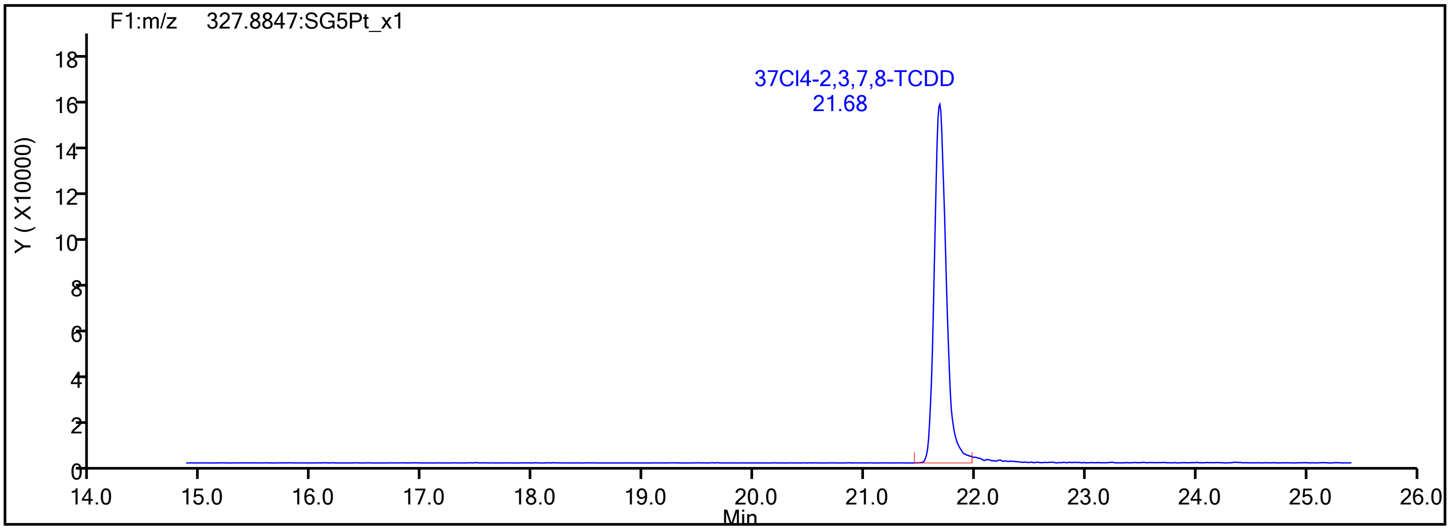

37Cl4-TCDD Standards

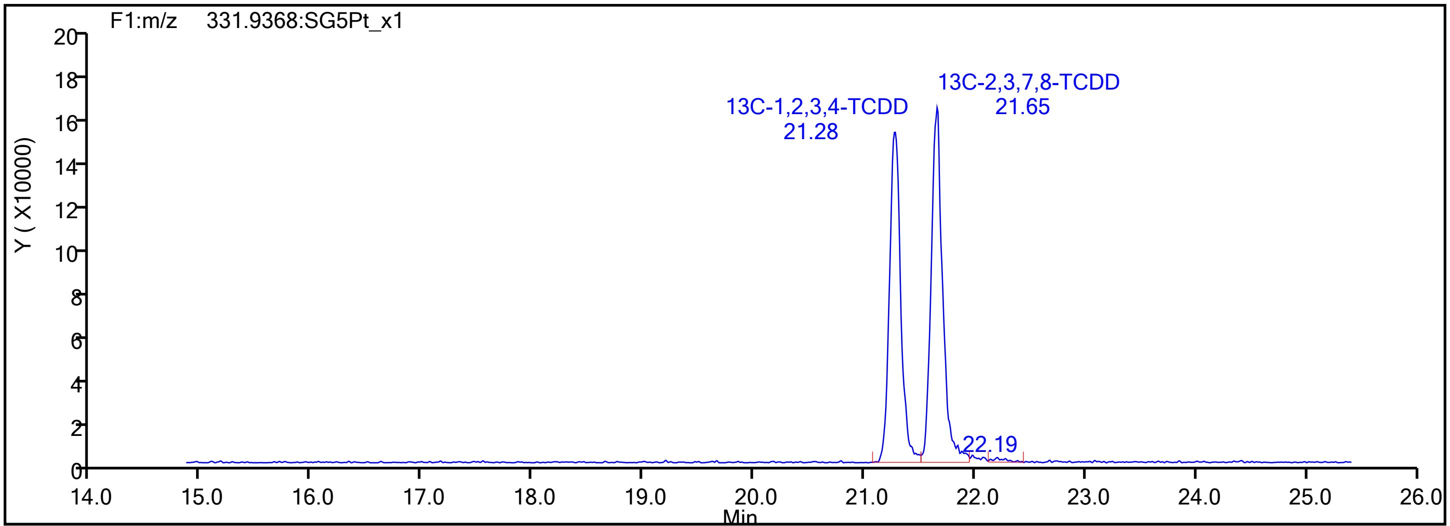

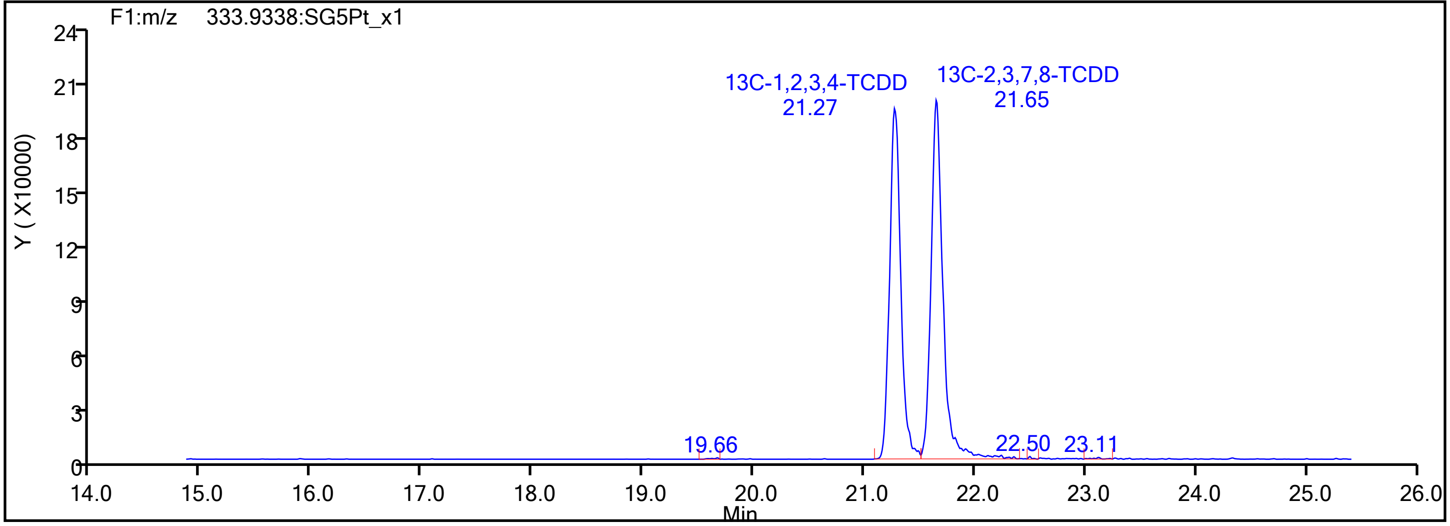

Report Date: 04-Jan-2021 09:34:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d
Injection Date: 31-Dec-2020 16:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

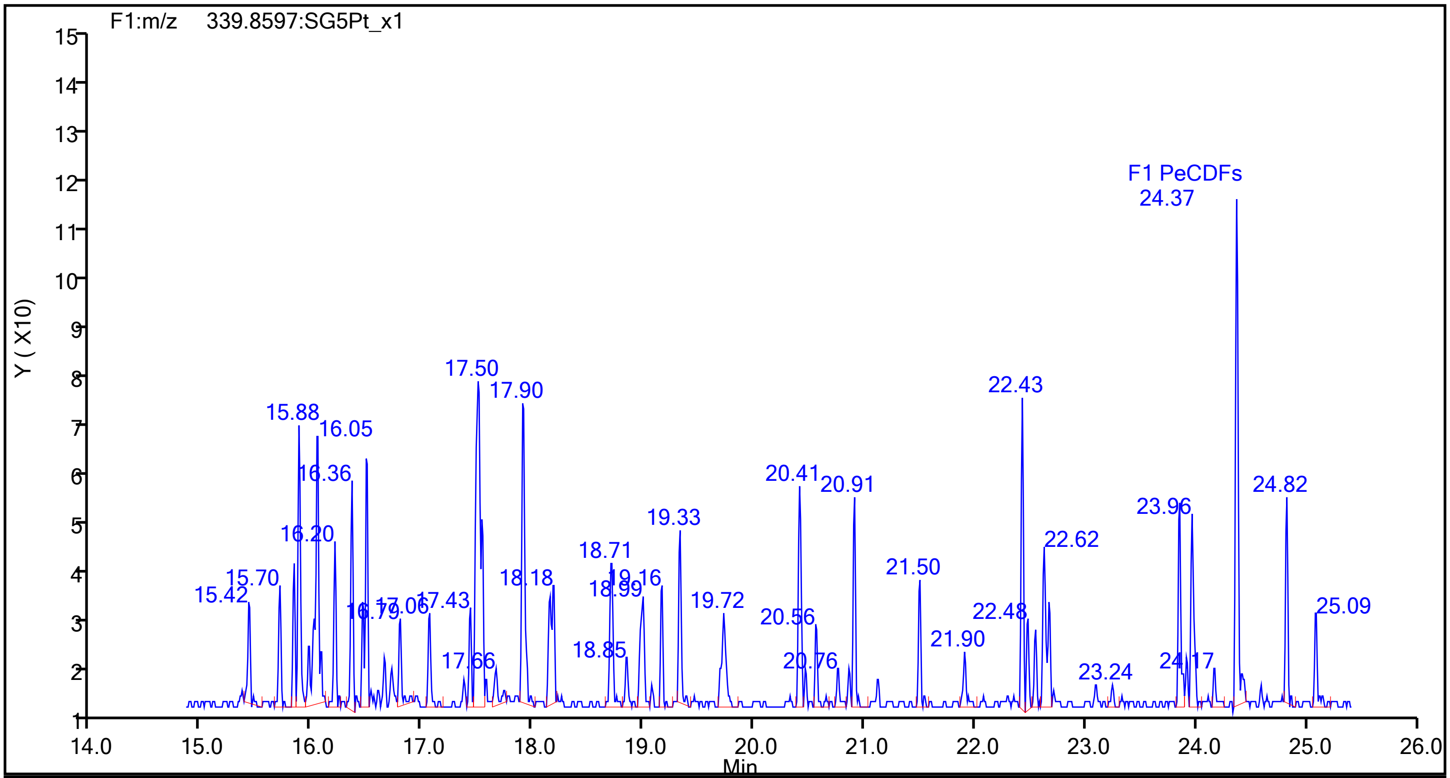

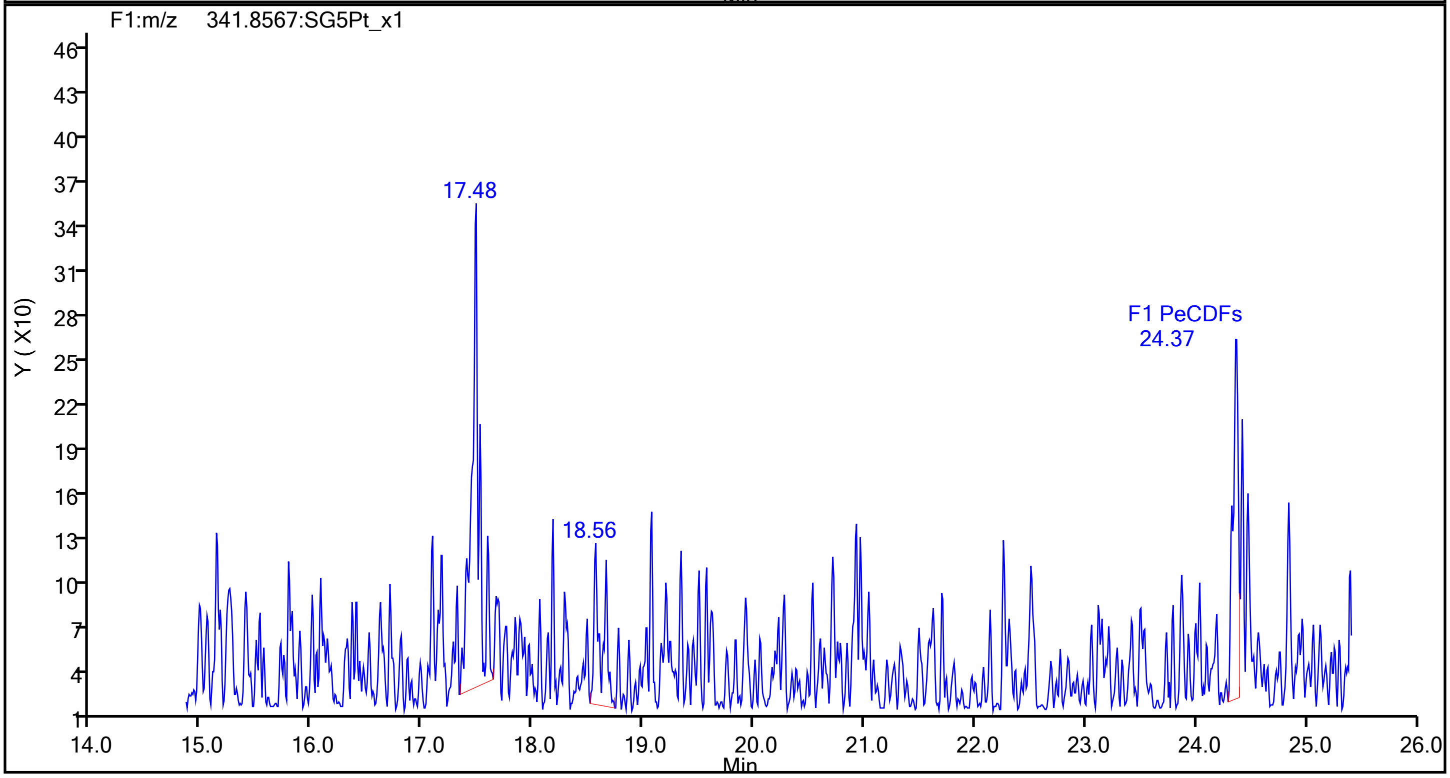

Report Date: 04-Jan-2021 09:34:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_7.d		
Injection Date:	31-Dec-2020 16:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

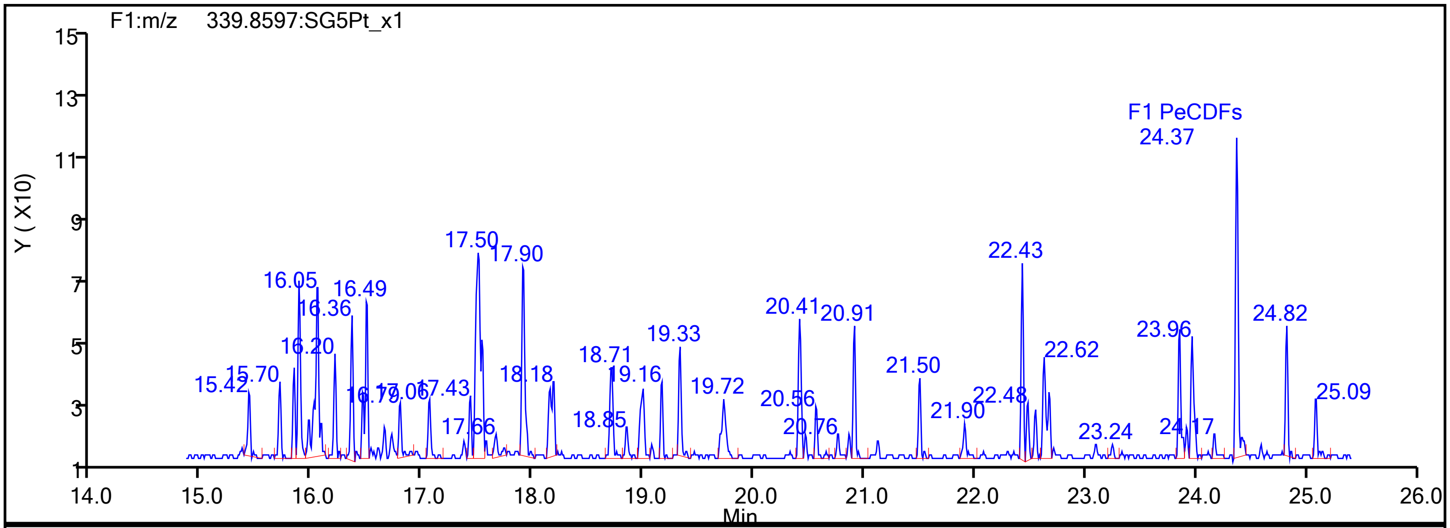

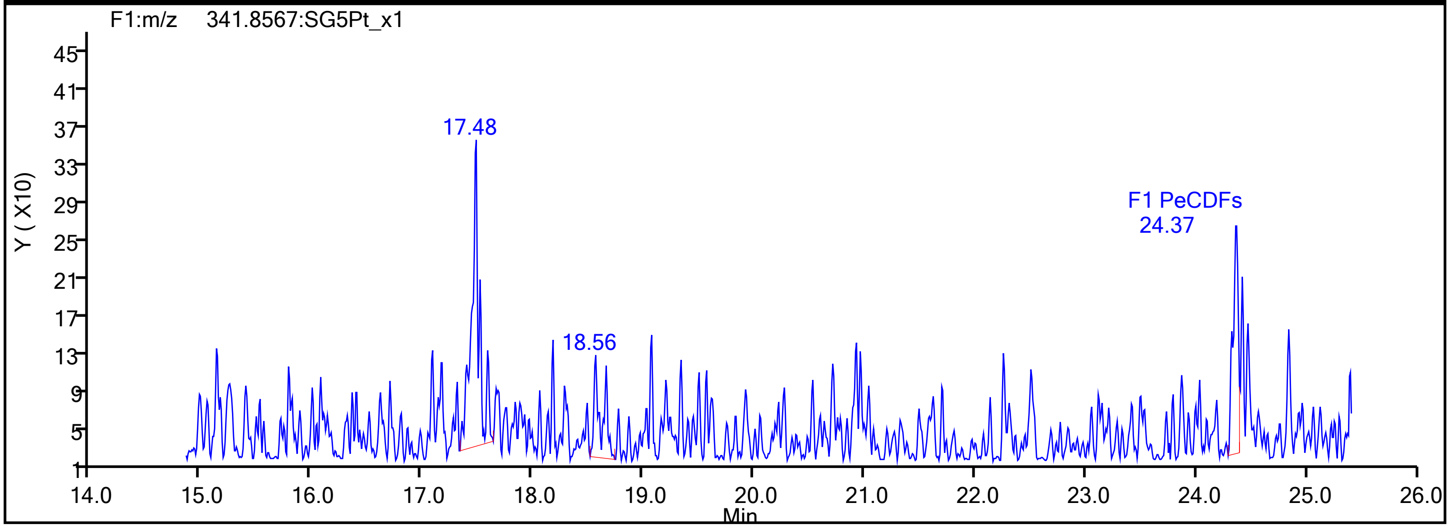

F1 PeCDFs Interference Mass

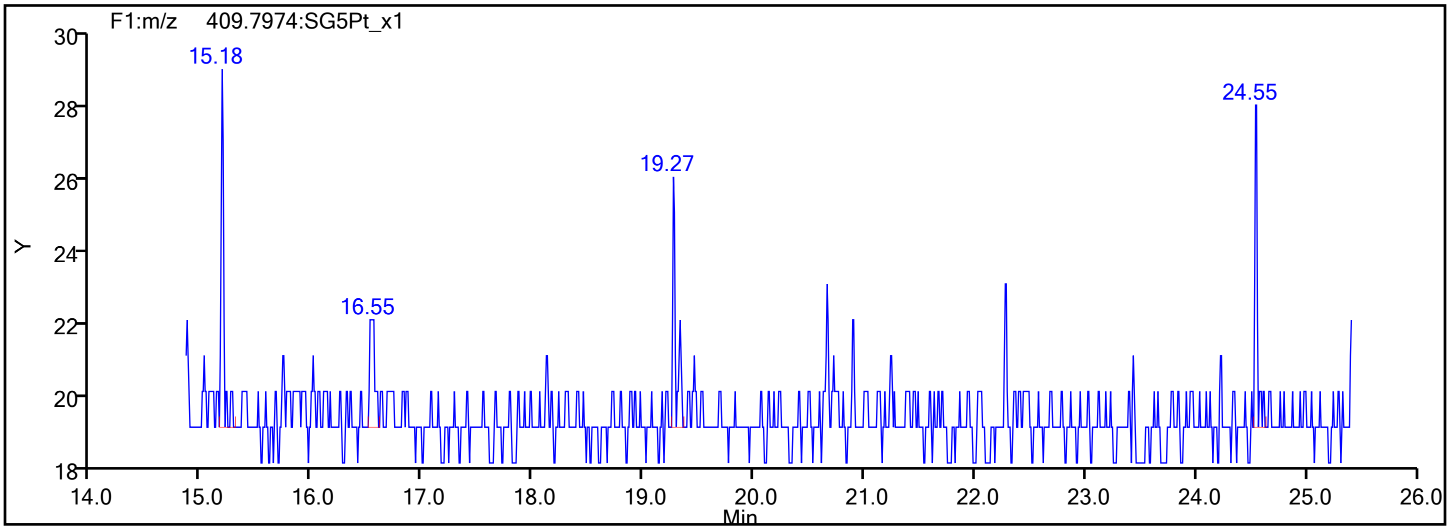

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Eurofins TestAmerica, Sacramento

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Injection Date: 31-Dec-2020 16:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

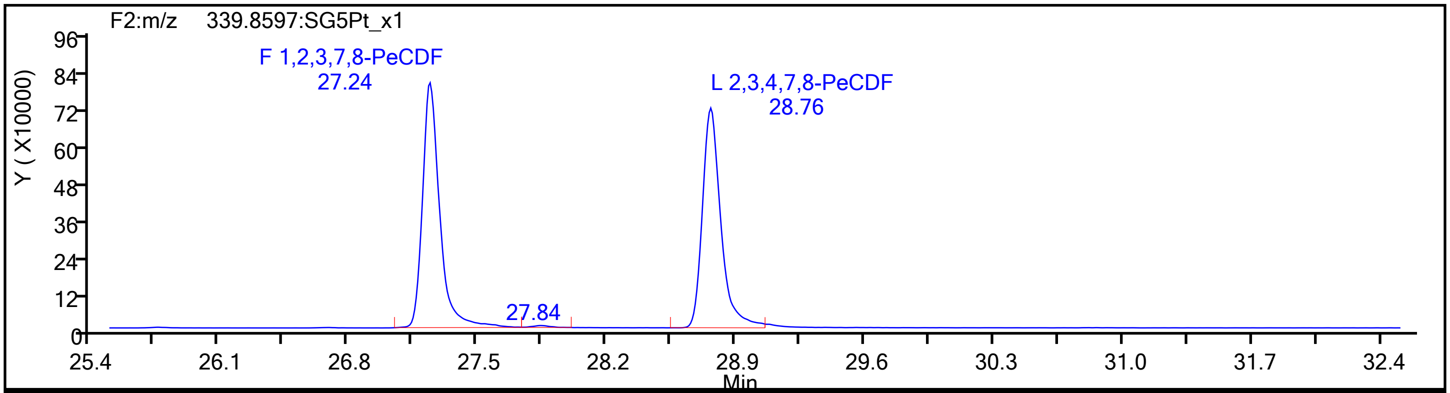

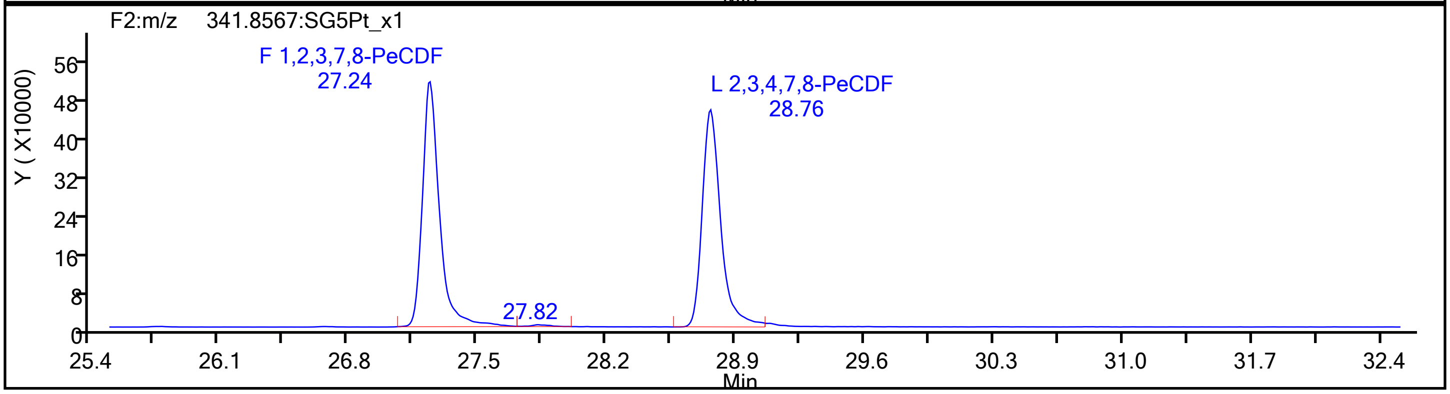

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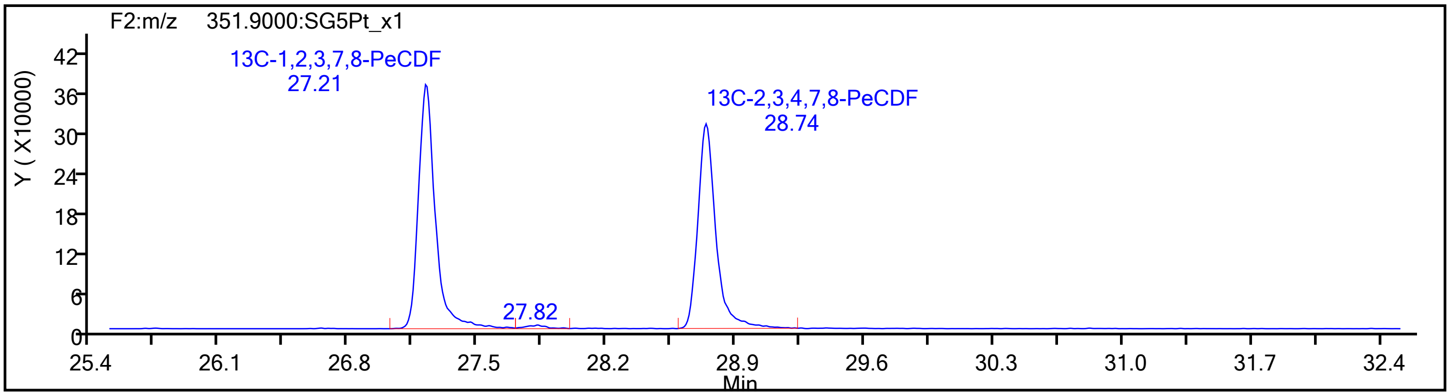

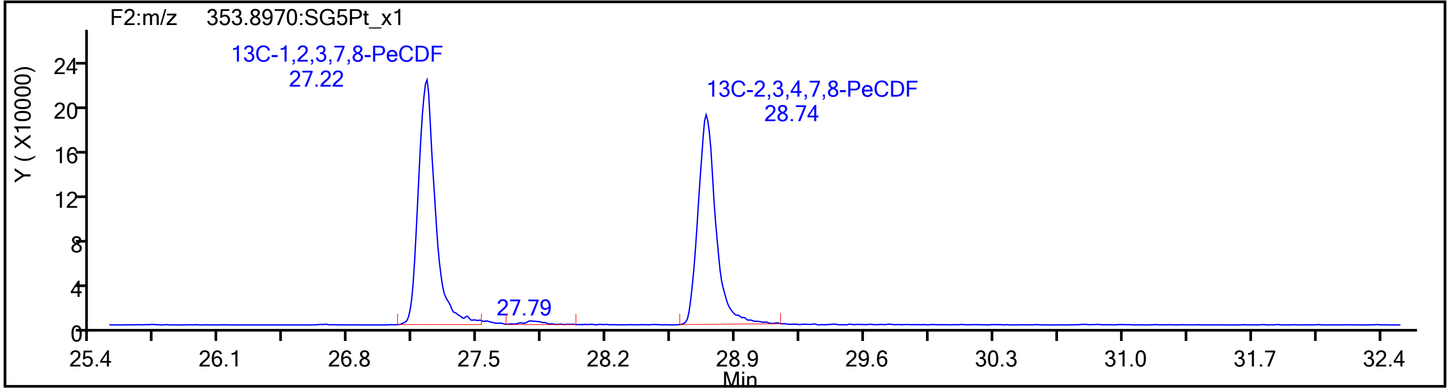

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Eurofins TestAmerica, Sacramento

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PeCDF

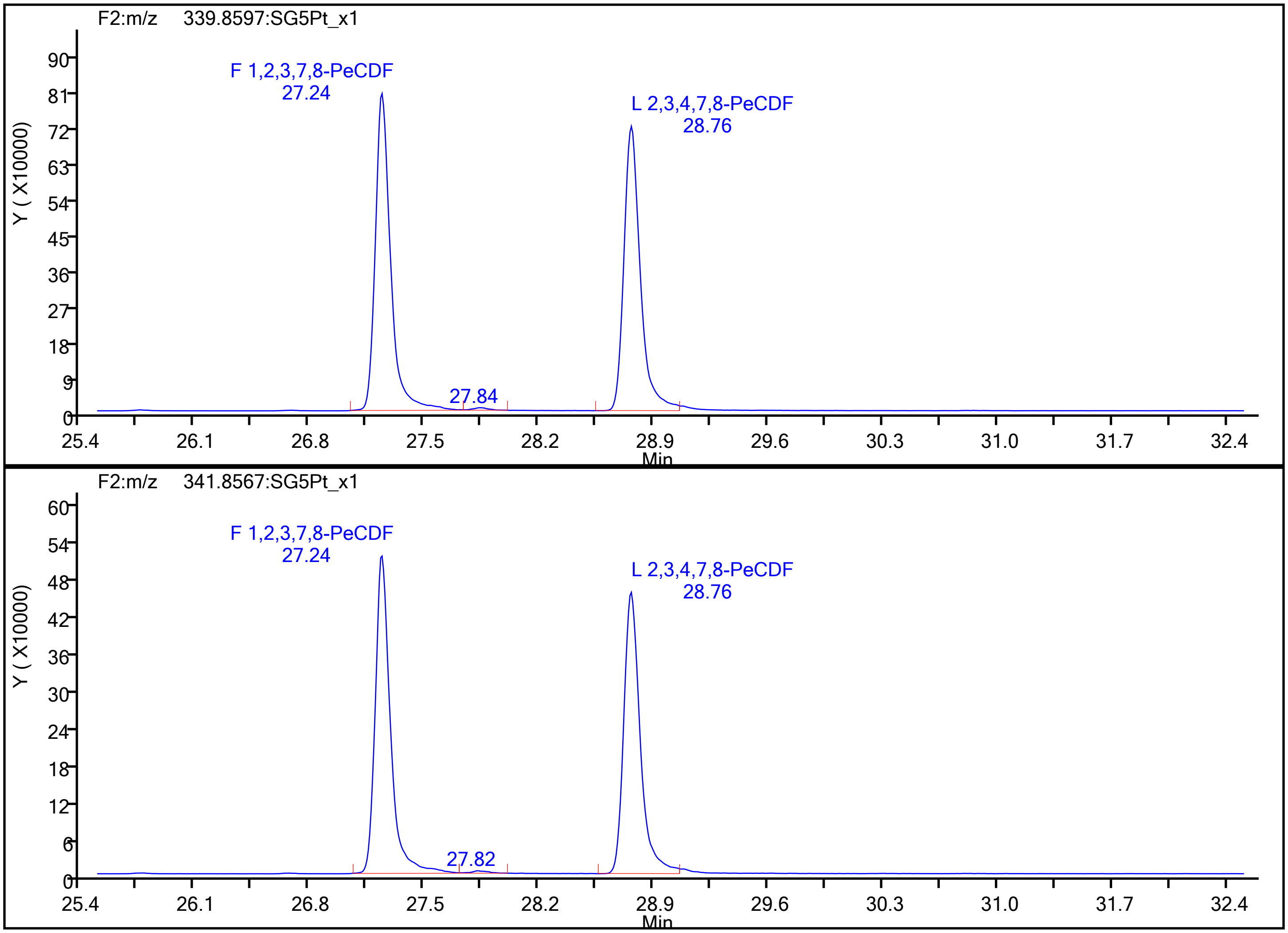

PeCDF Interference Mass

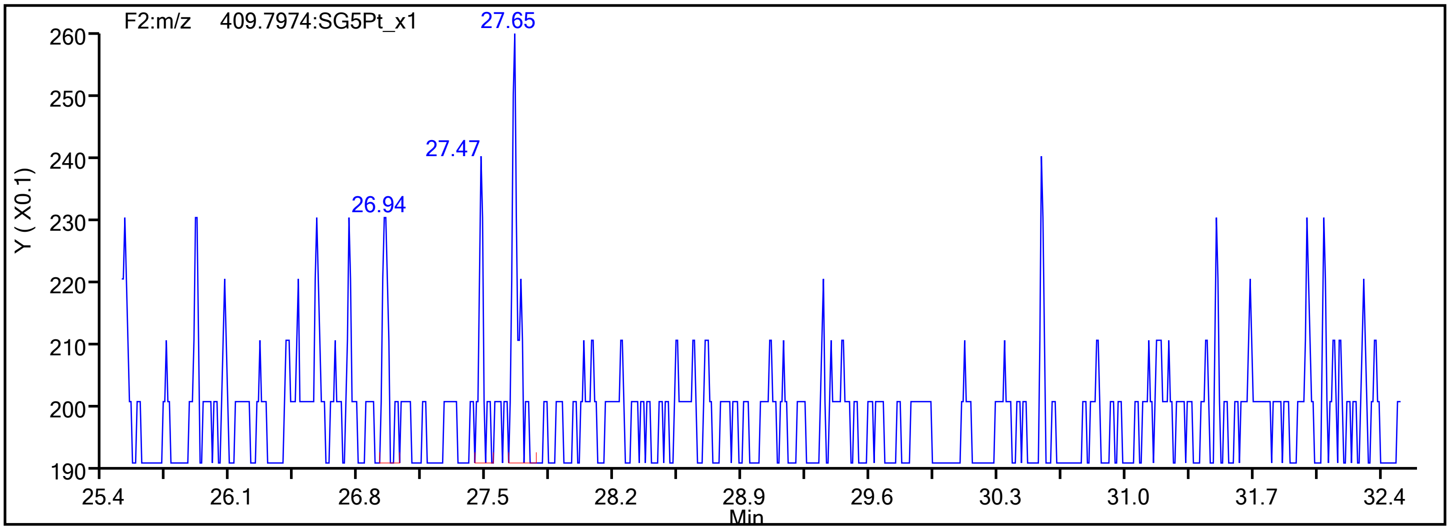

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Eurofins TestAmerica, Sacramento

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PeCDD

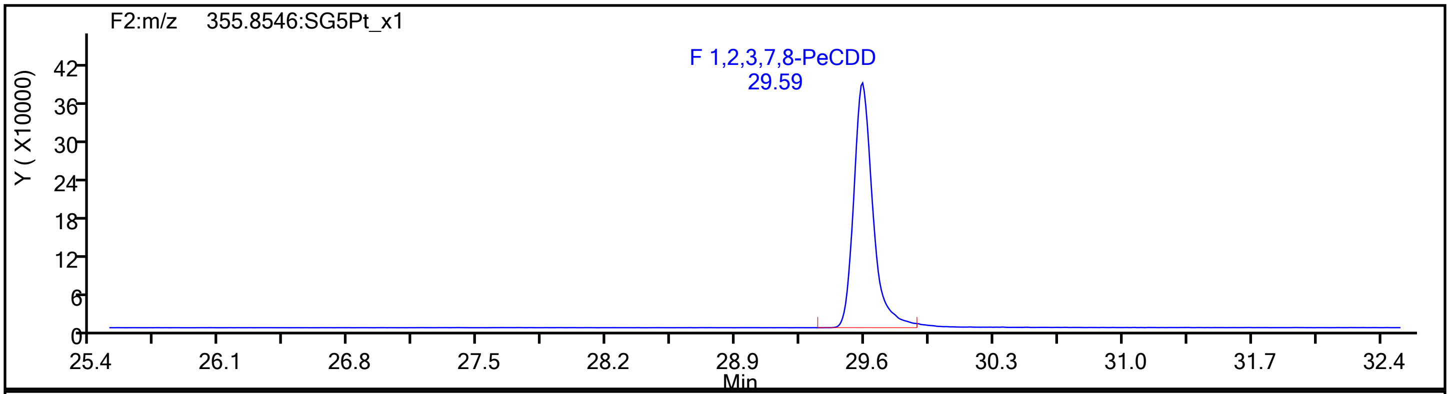

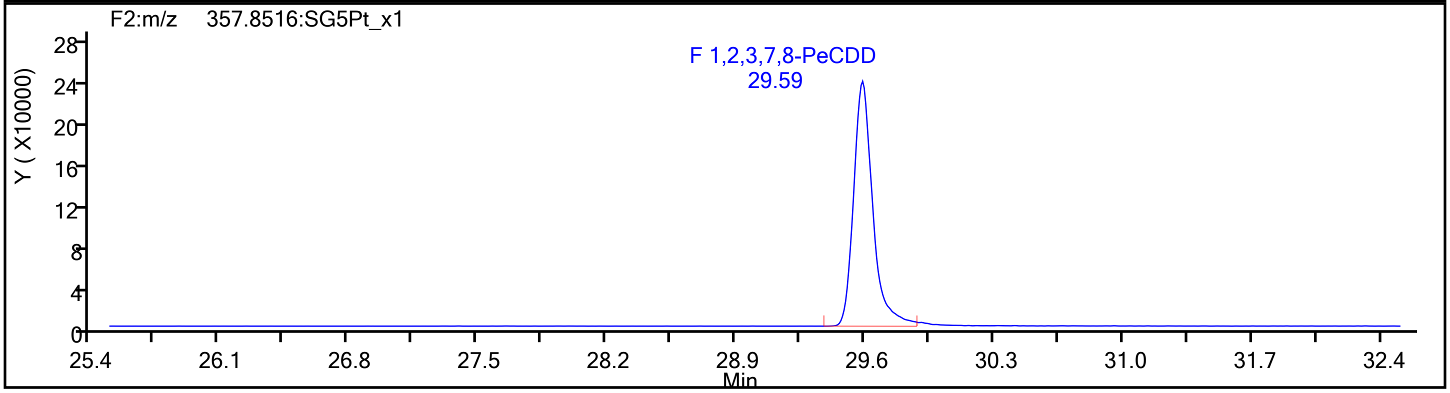

PeCDD Standards

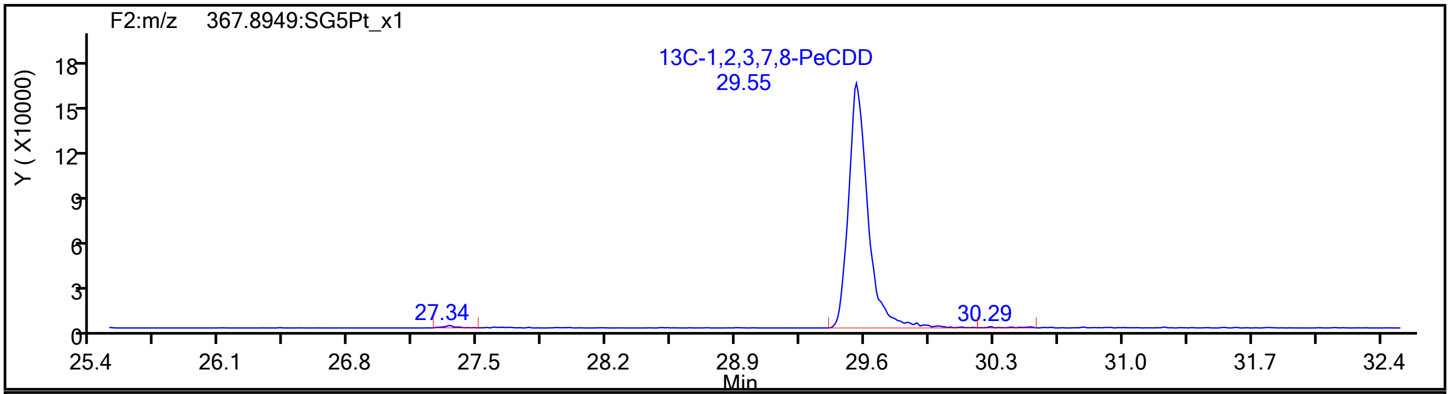

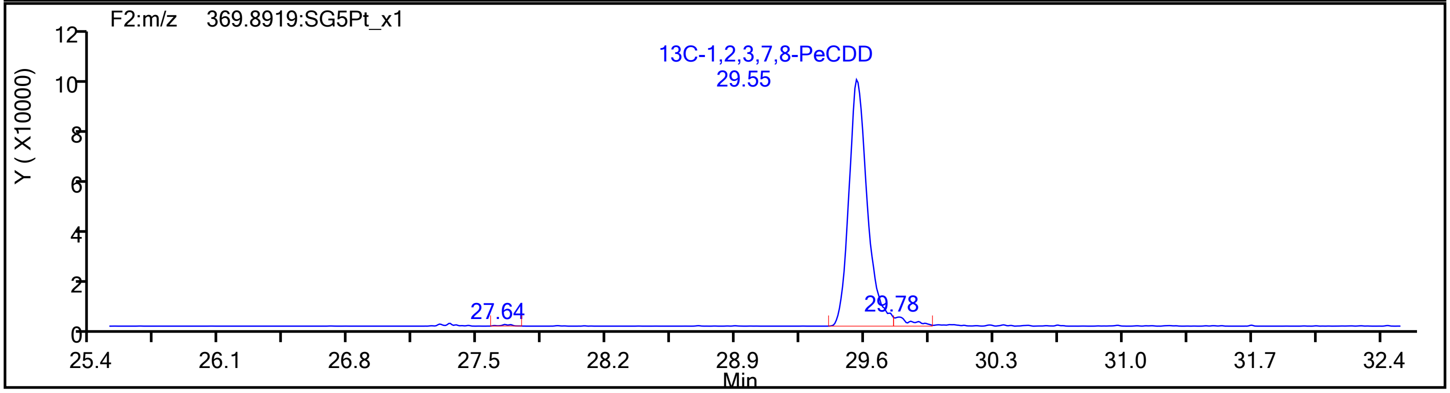

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HxCDF

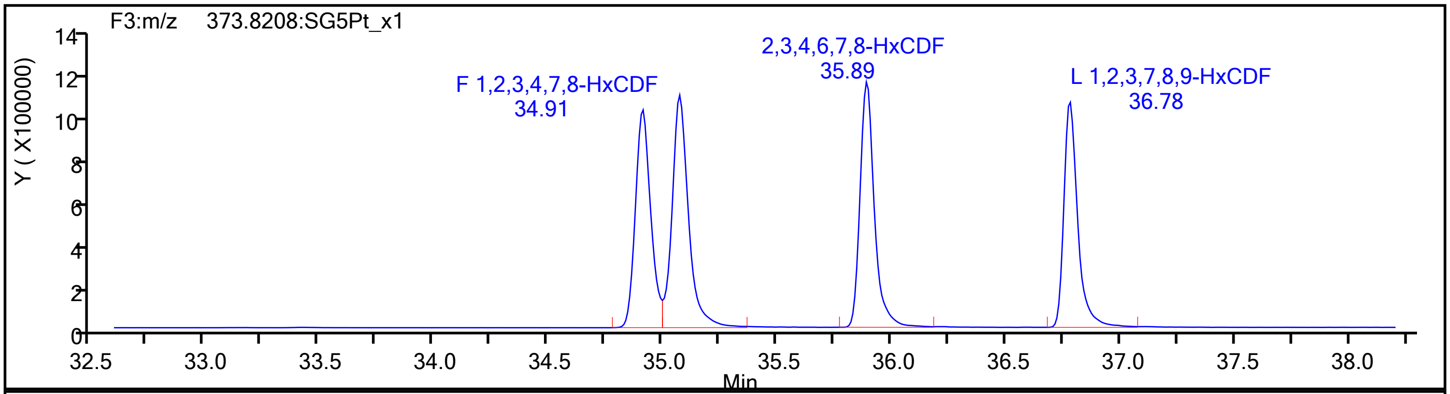

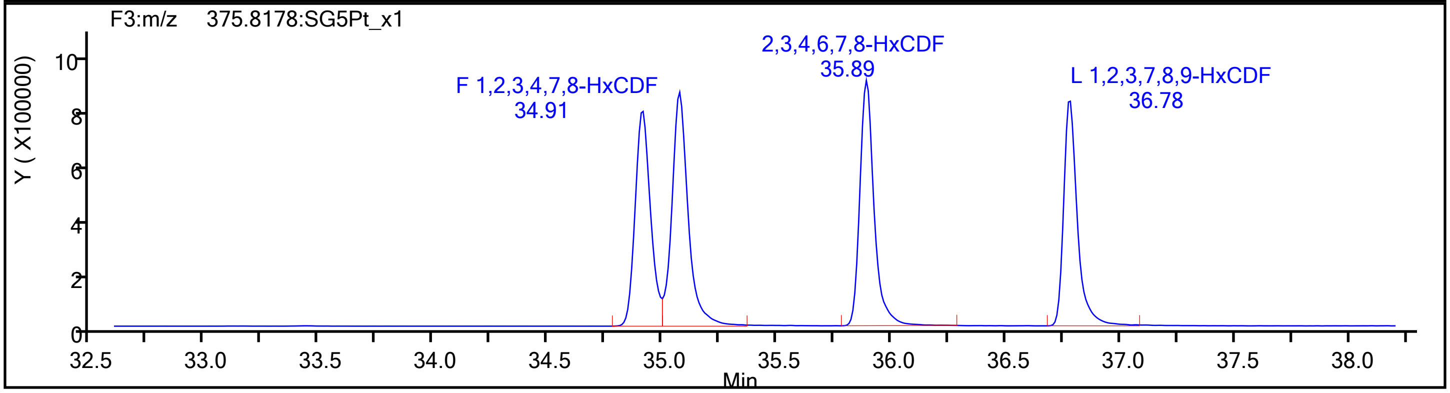

HxCDF Standards

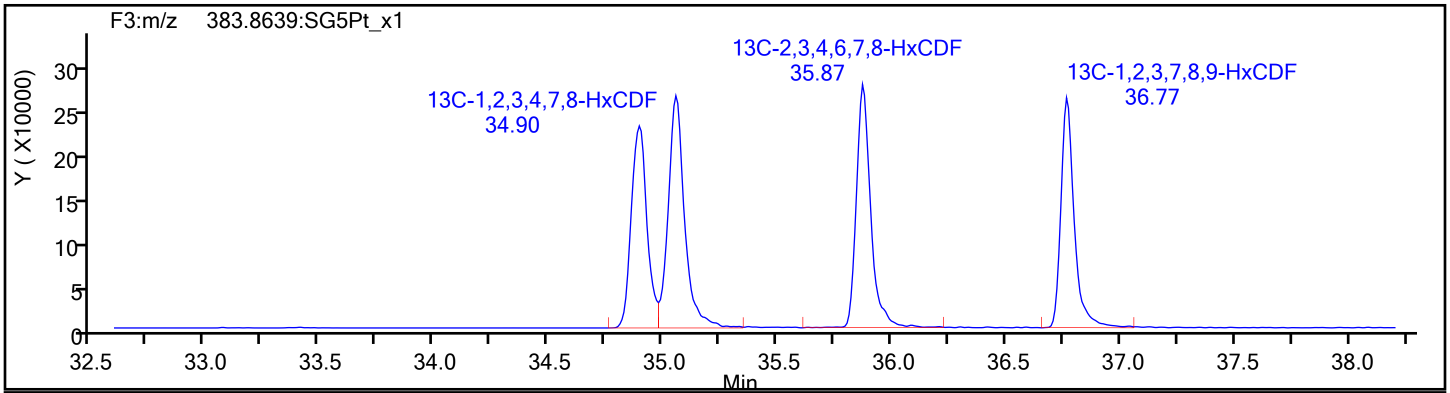

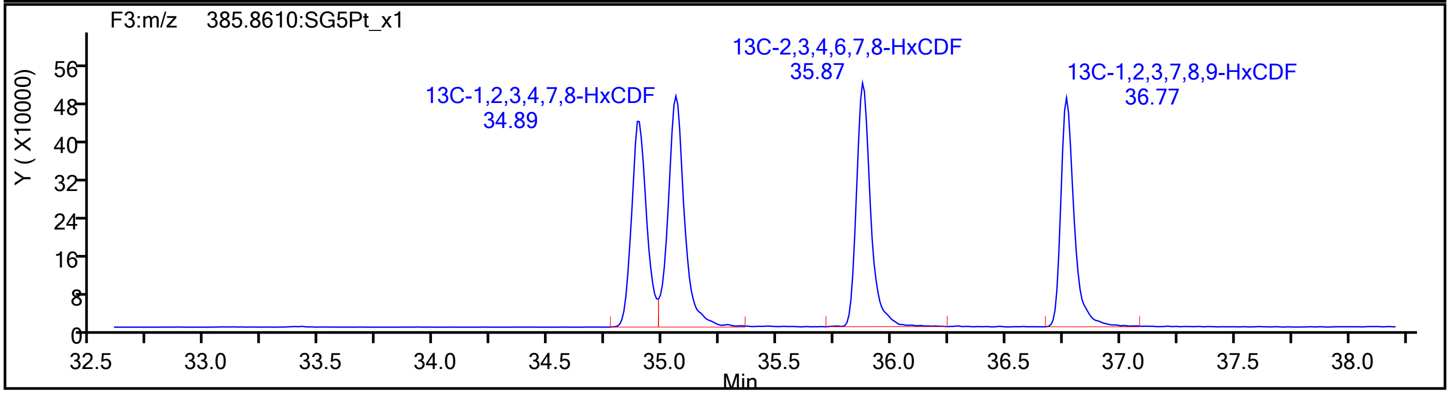

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Eurofins TestAmerica, Sacramento

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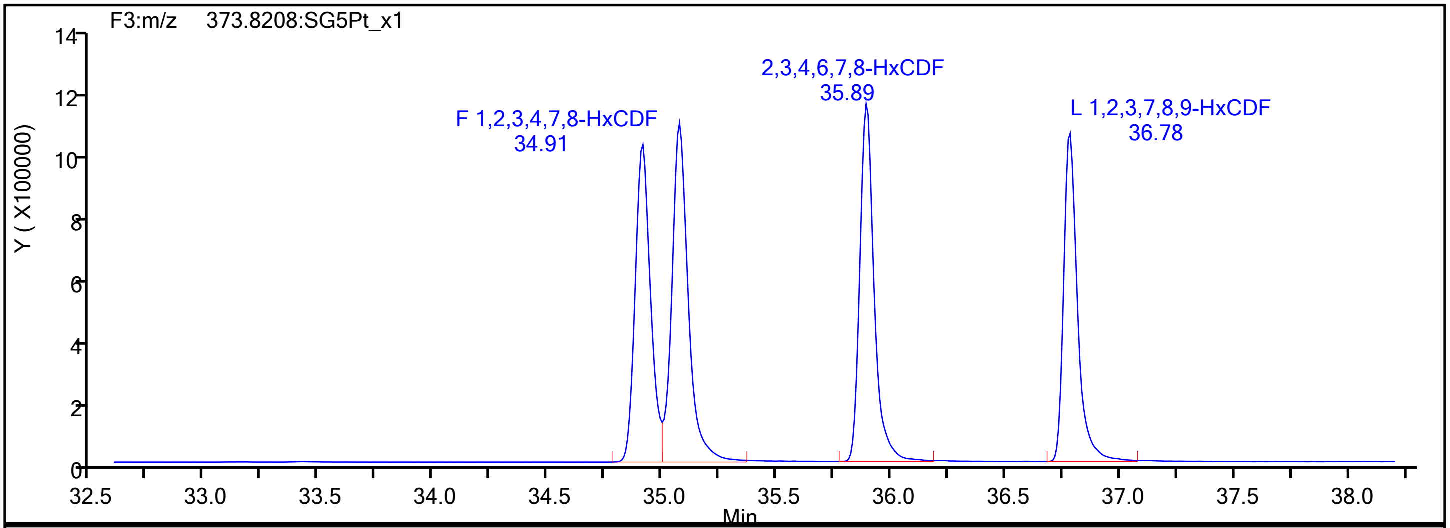

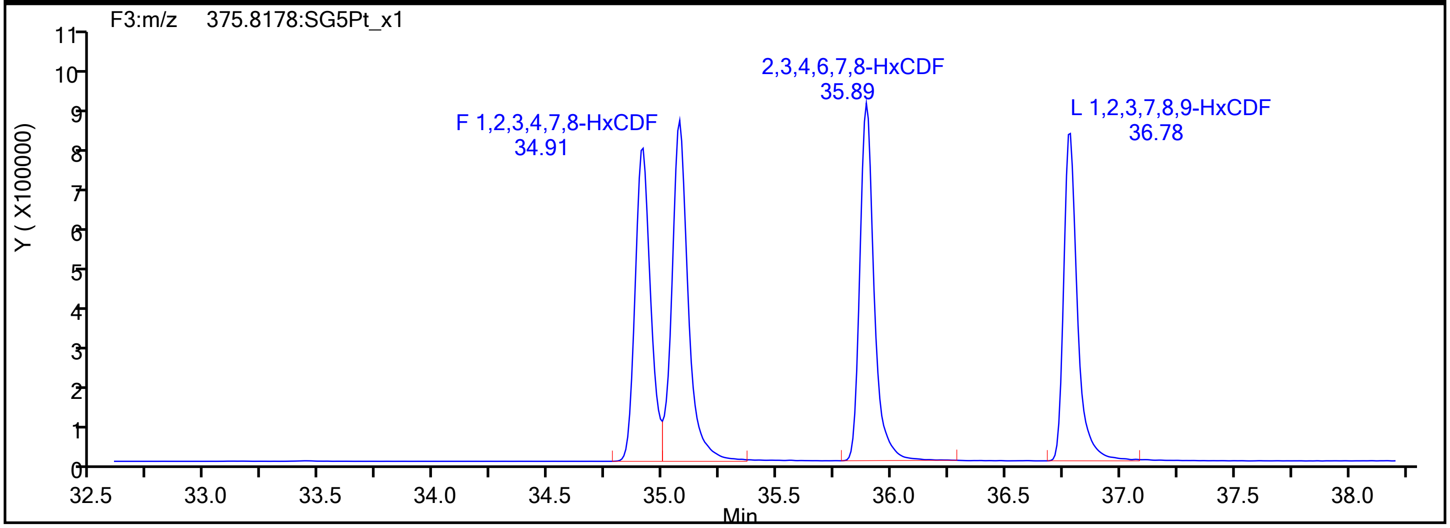

HxCDF Interference Mass

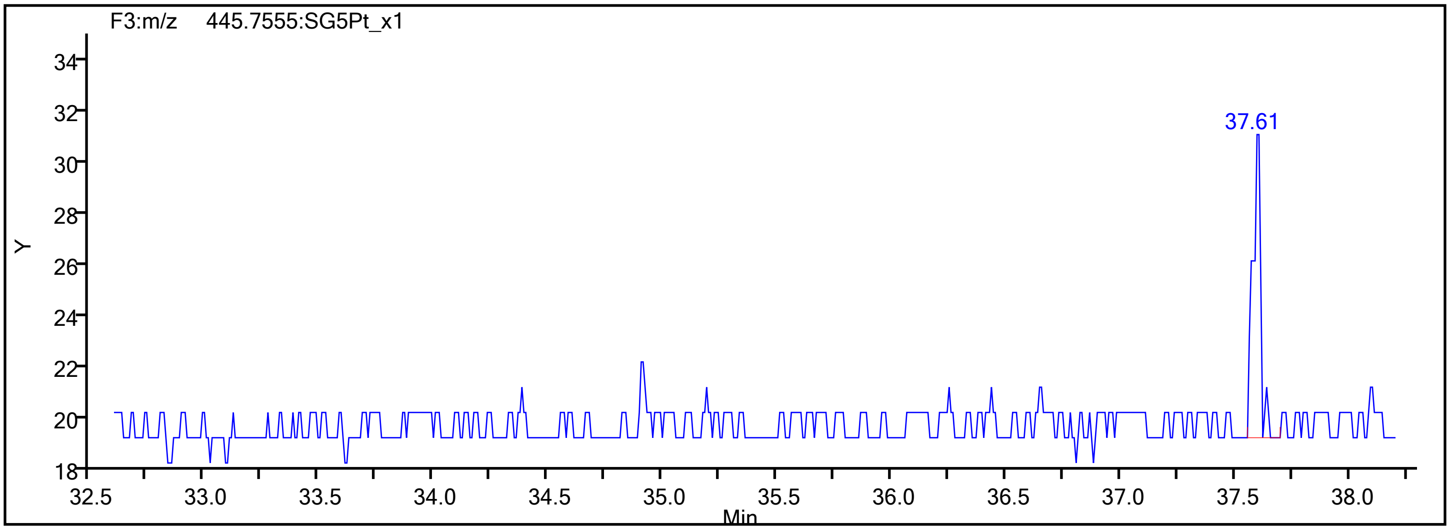

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Eurofins TestAmerica, Sacramento

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Injection Date: 31-Dec-2020 16:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

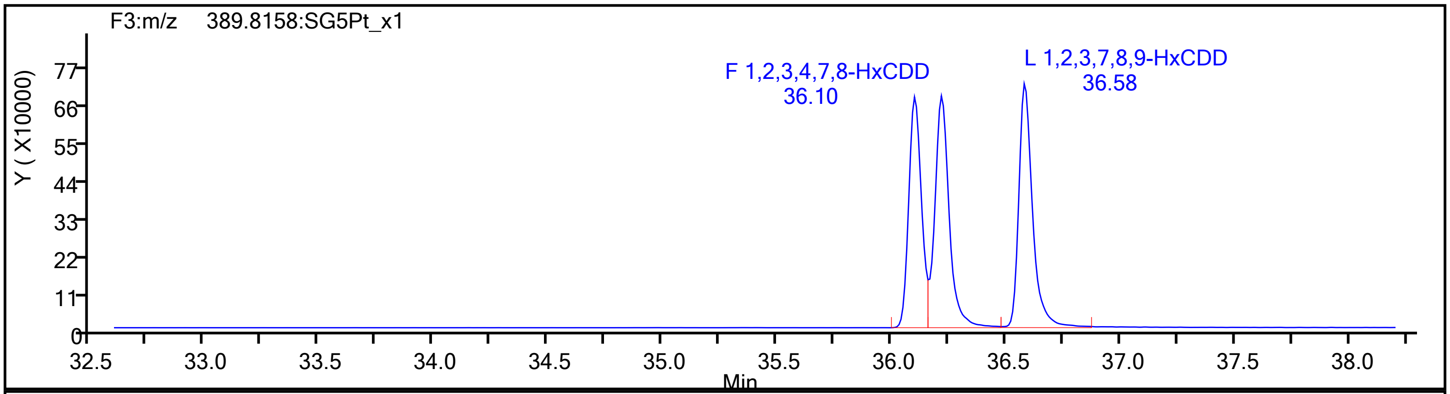

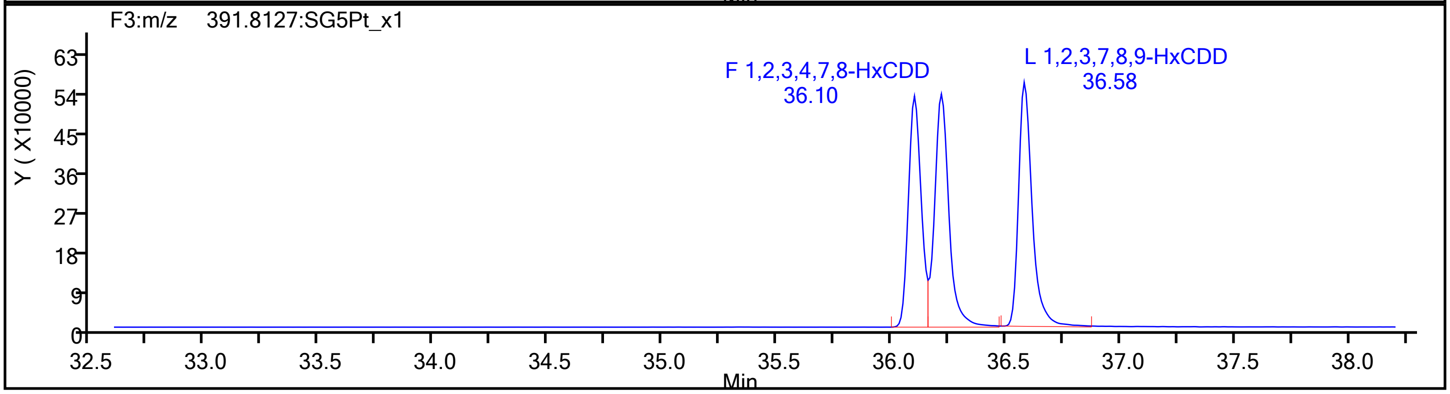

HxCDD Standards

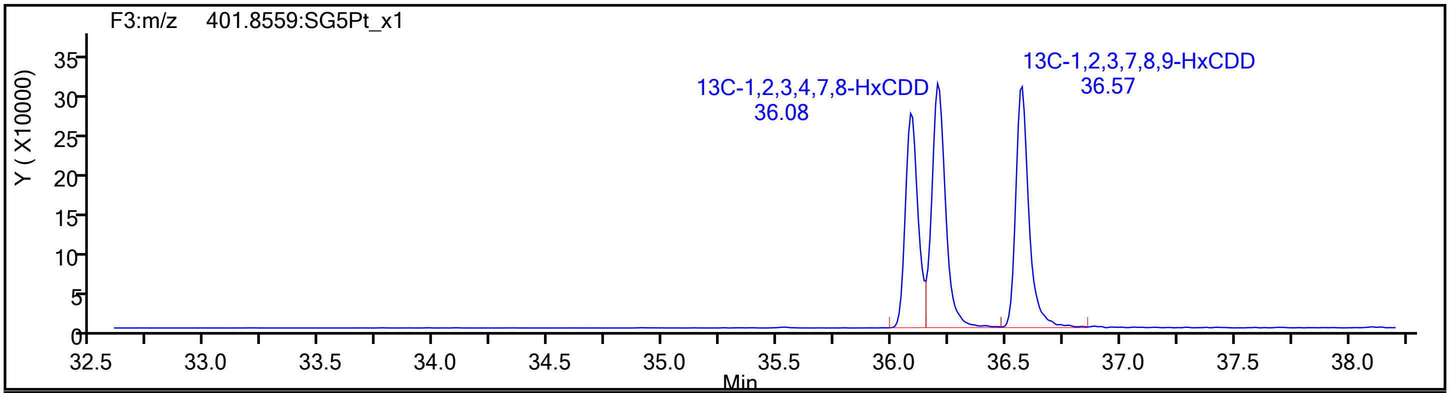

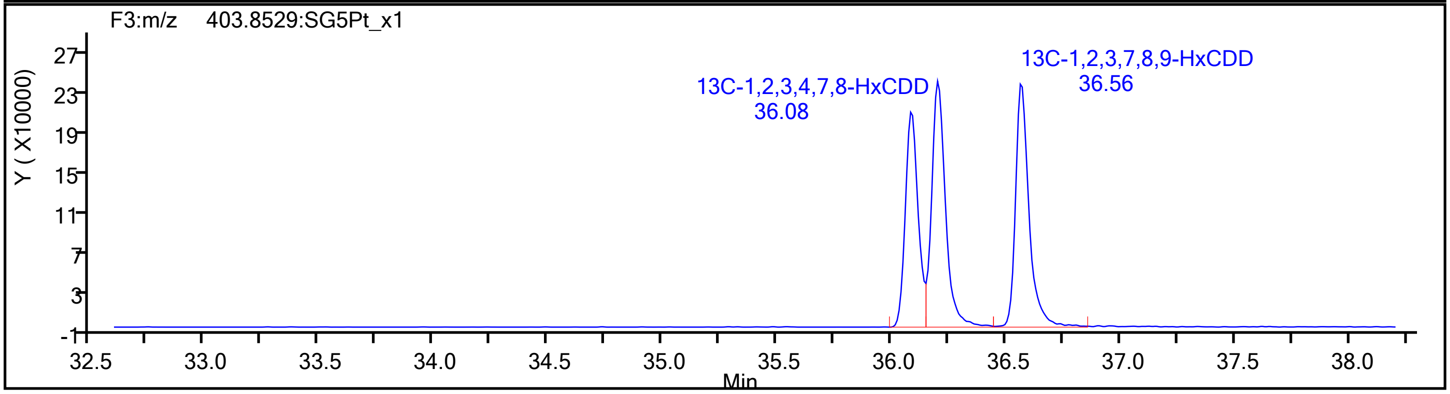

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Eurofins TestAmerica, Sacramento

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HpCDF

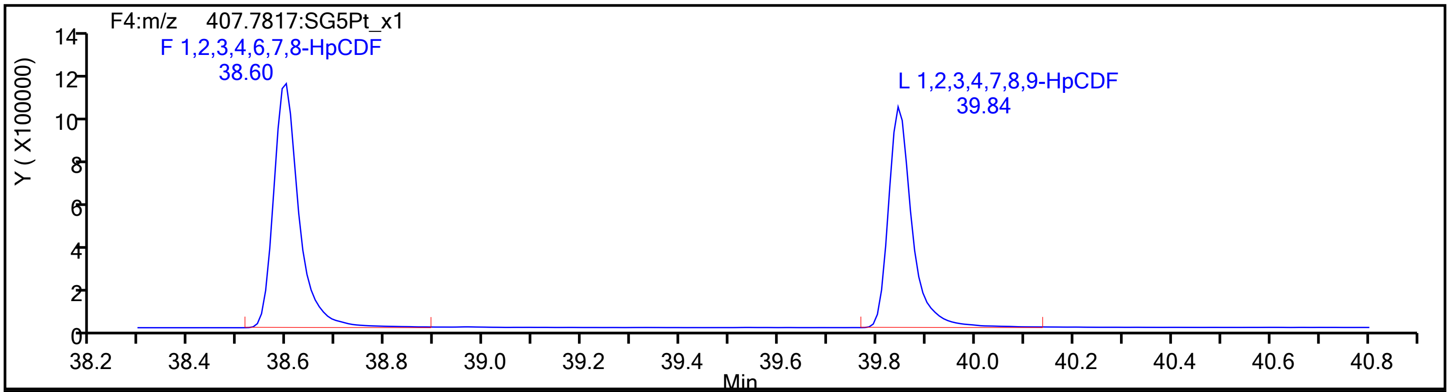

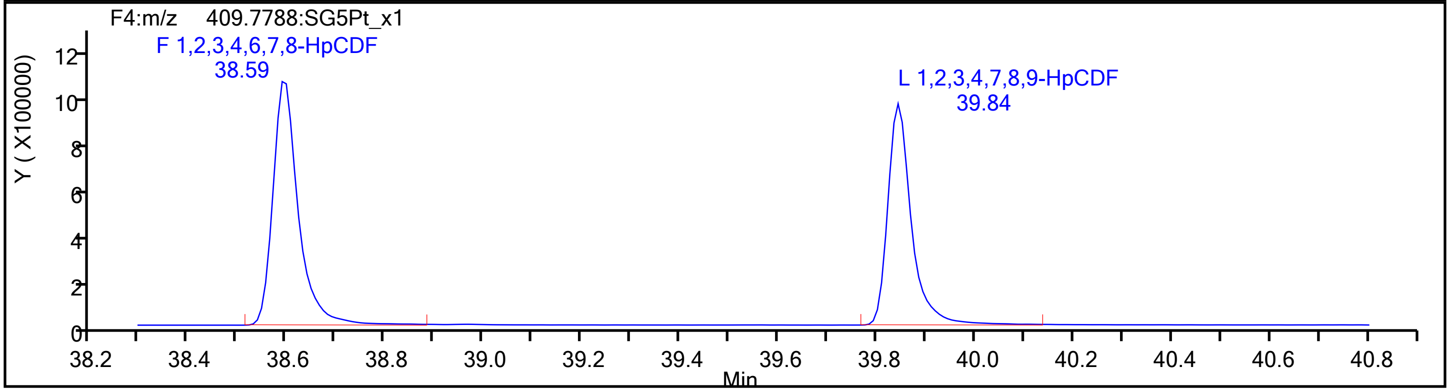

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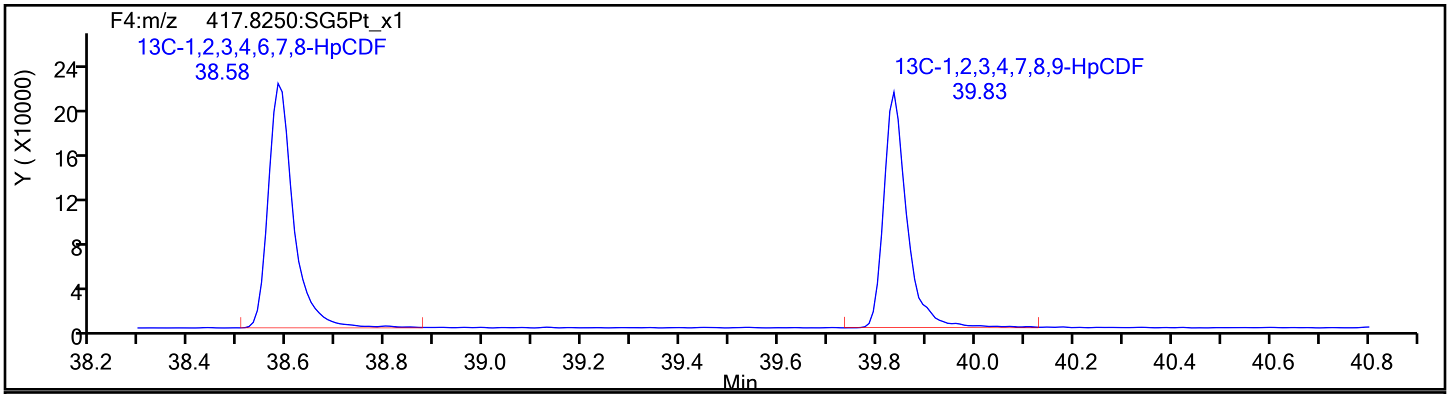

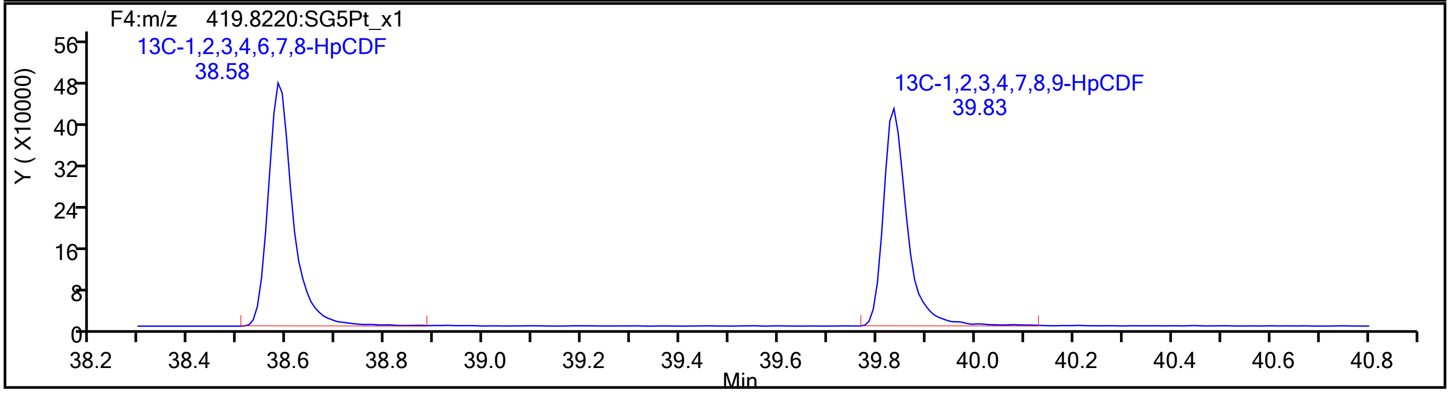

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Eurofins TestAmerica, Sacramento

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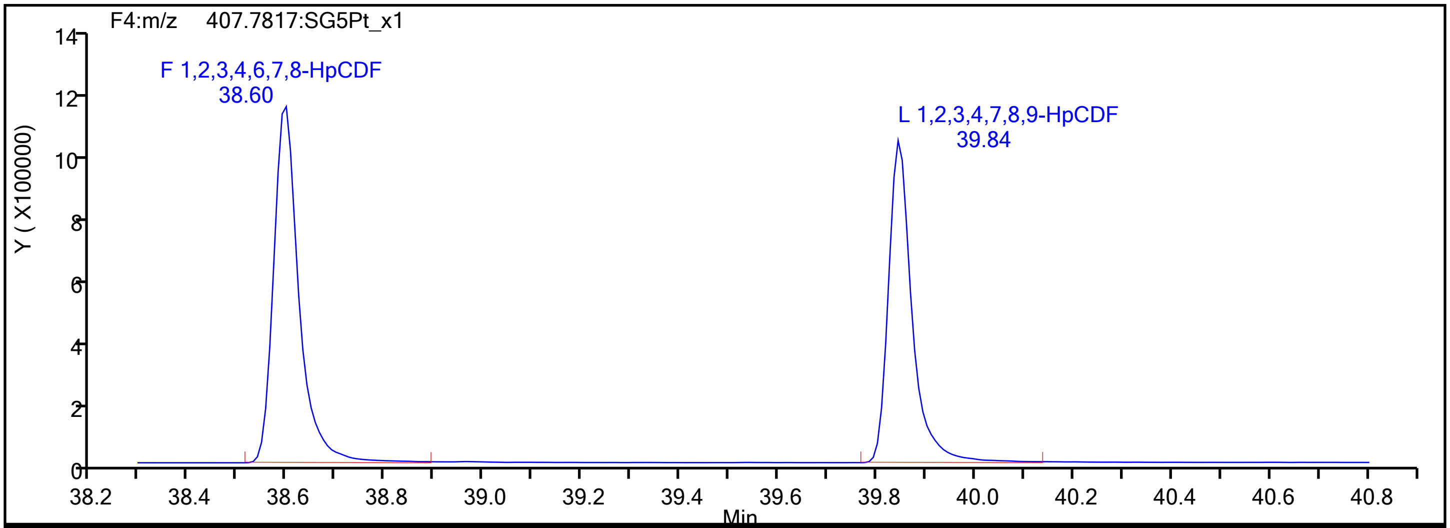

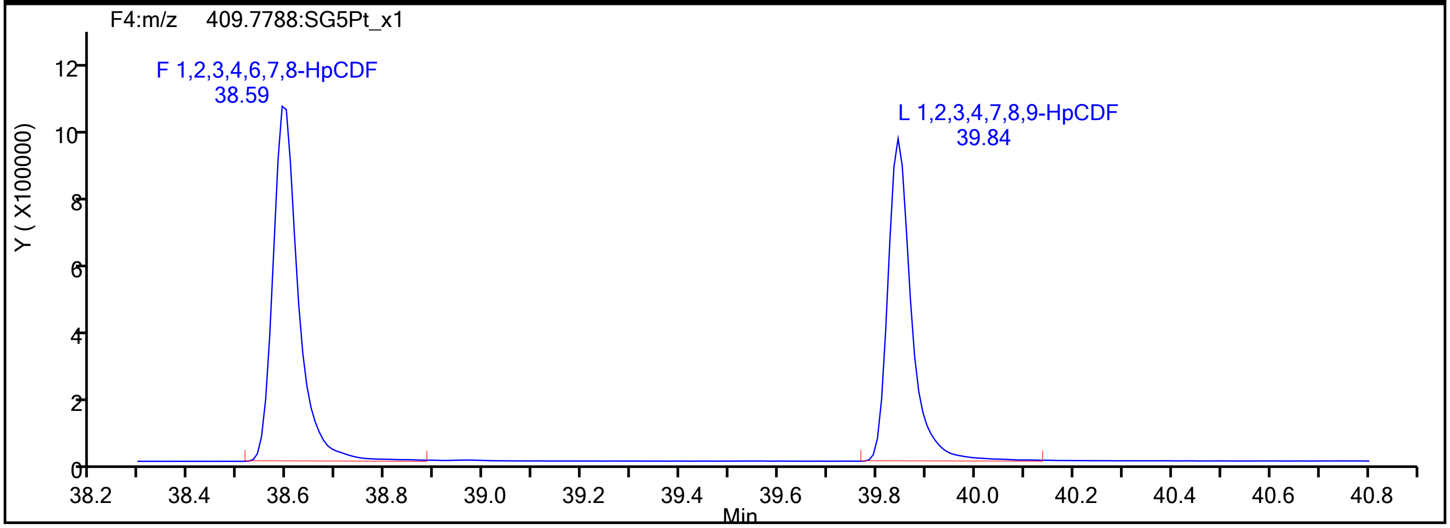

HpCDF Interference Mass

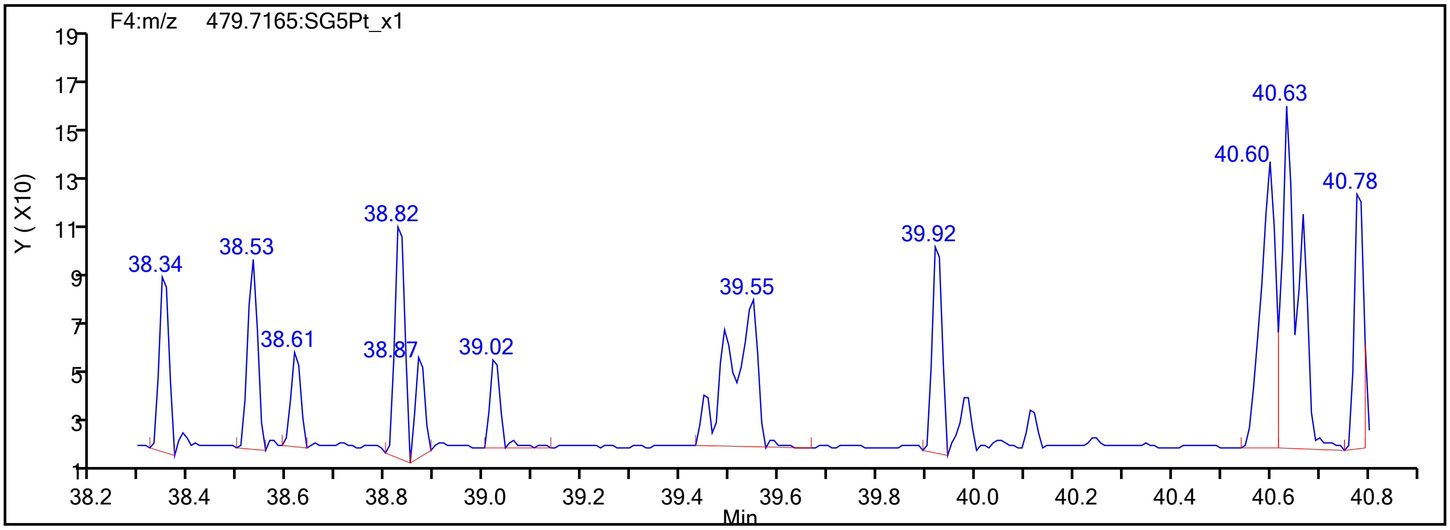

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Eurofins TestAmerica, Sacramento

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HpCDD

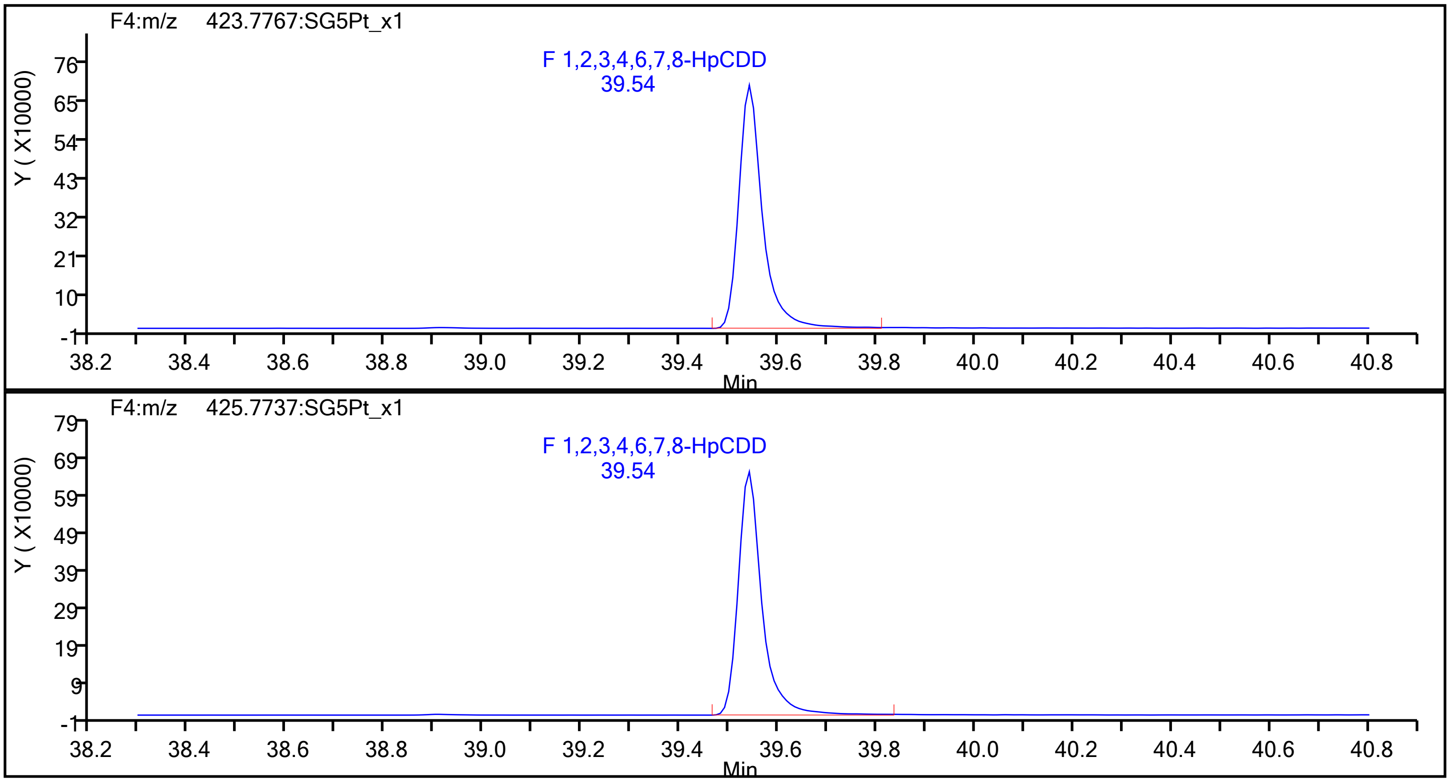

HpCDD Standards

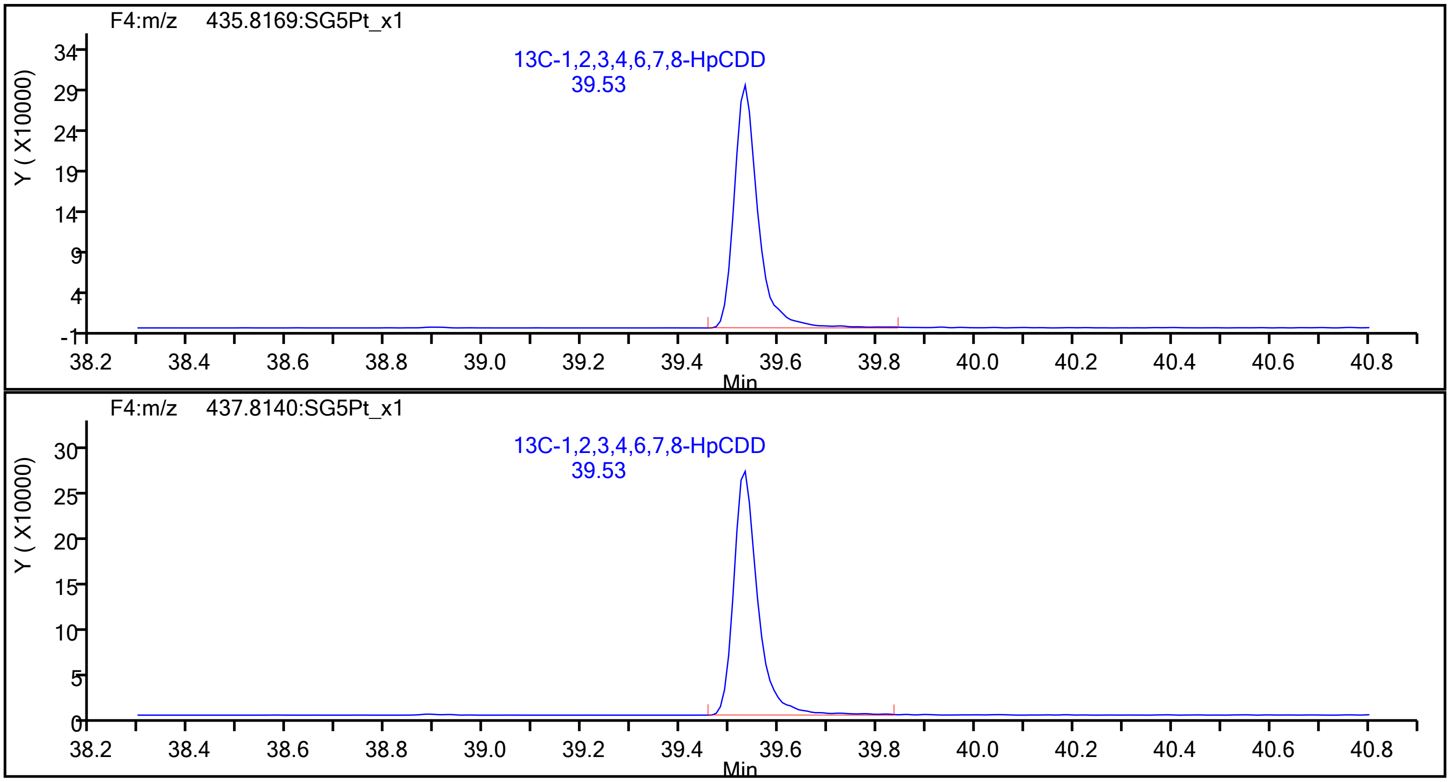

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OCDF

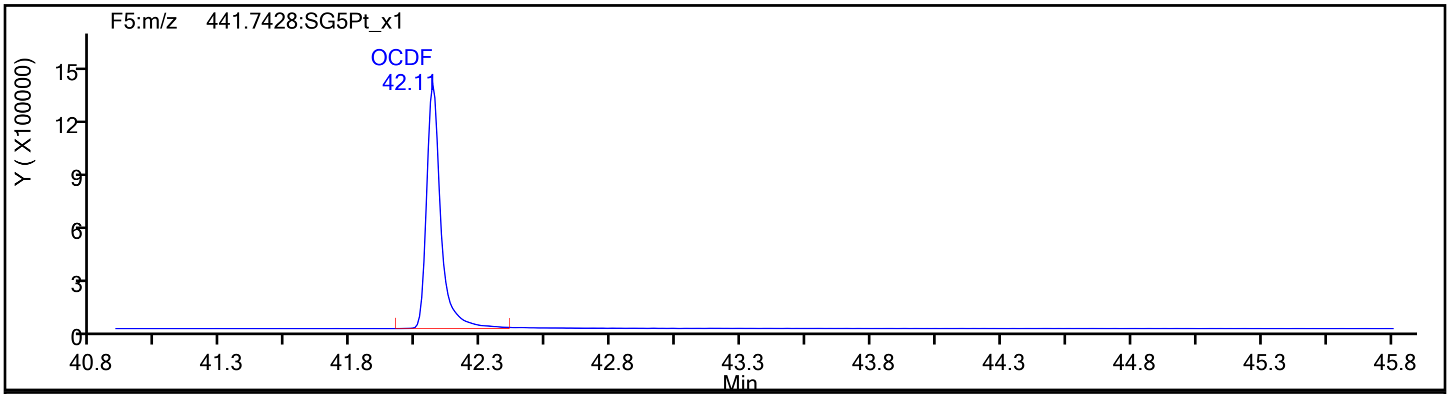

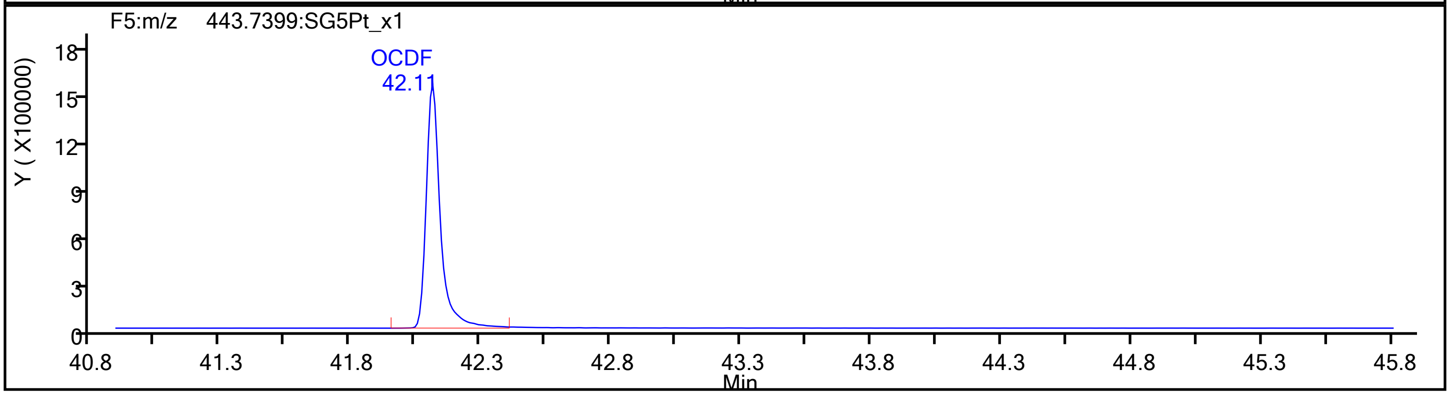

OCDF Standards

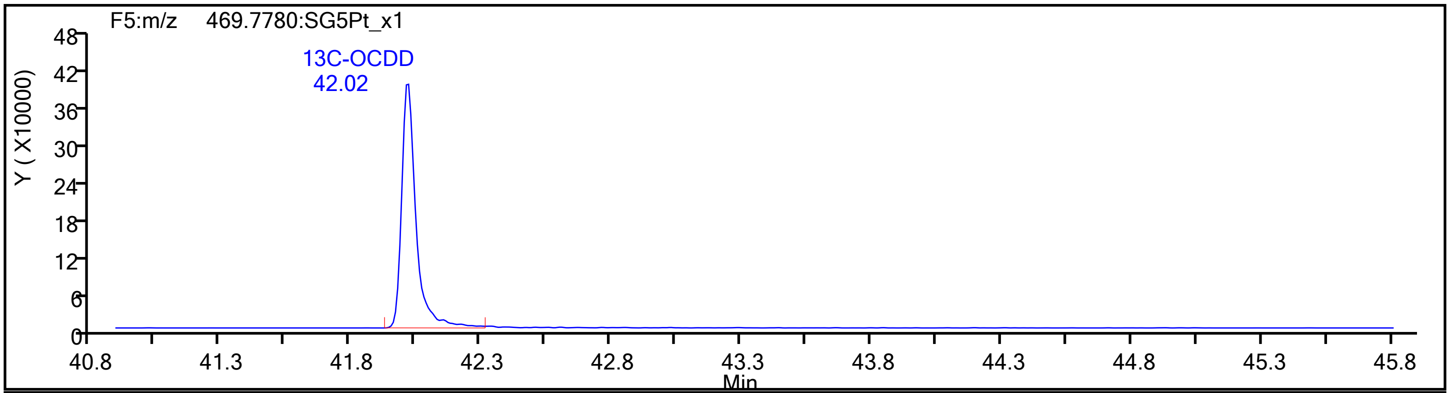

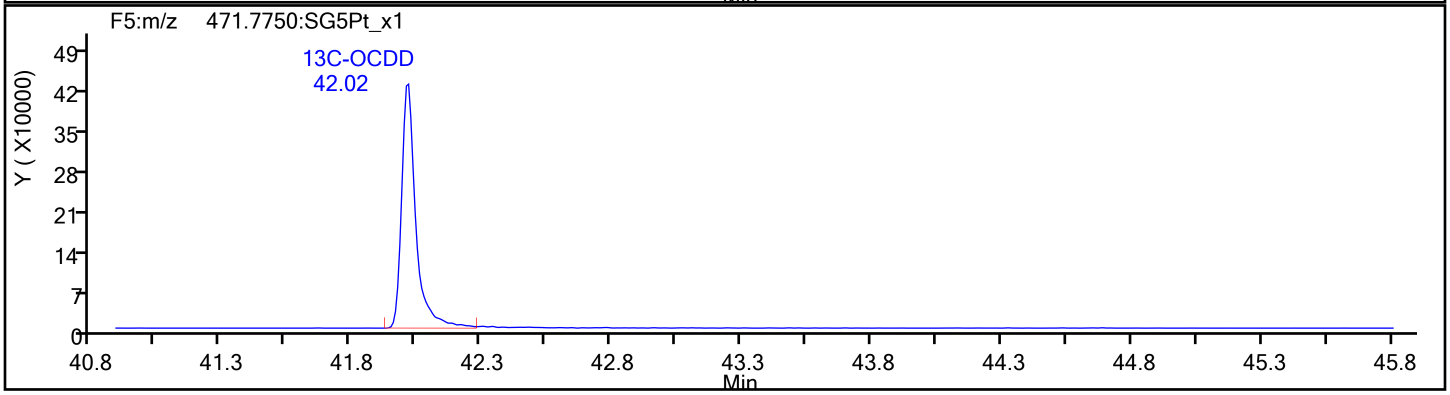

Eurofins TestAmerica, Sacramento

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Client ID:			
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OCDF

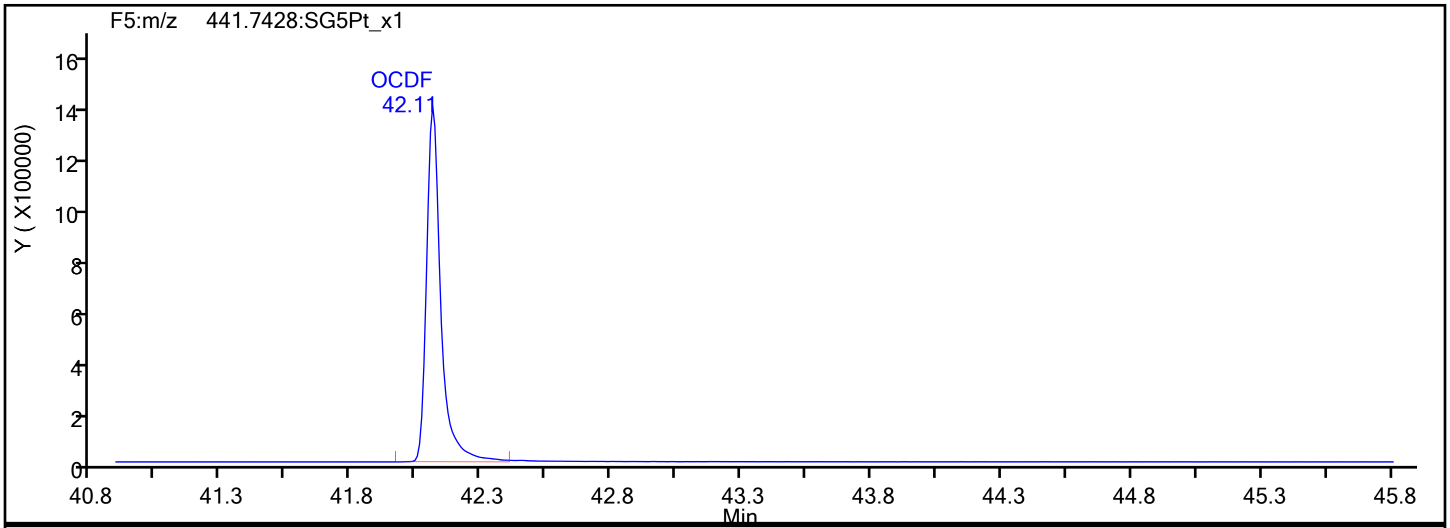

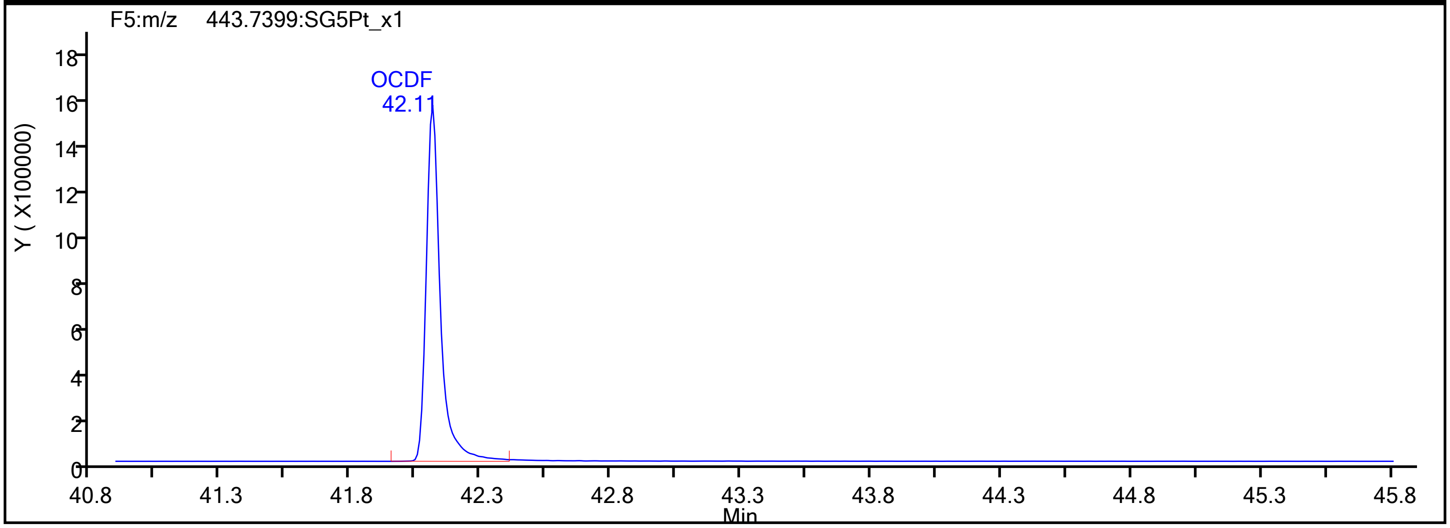

OCDF Interference Mass

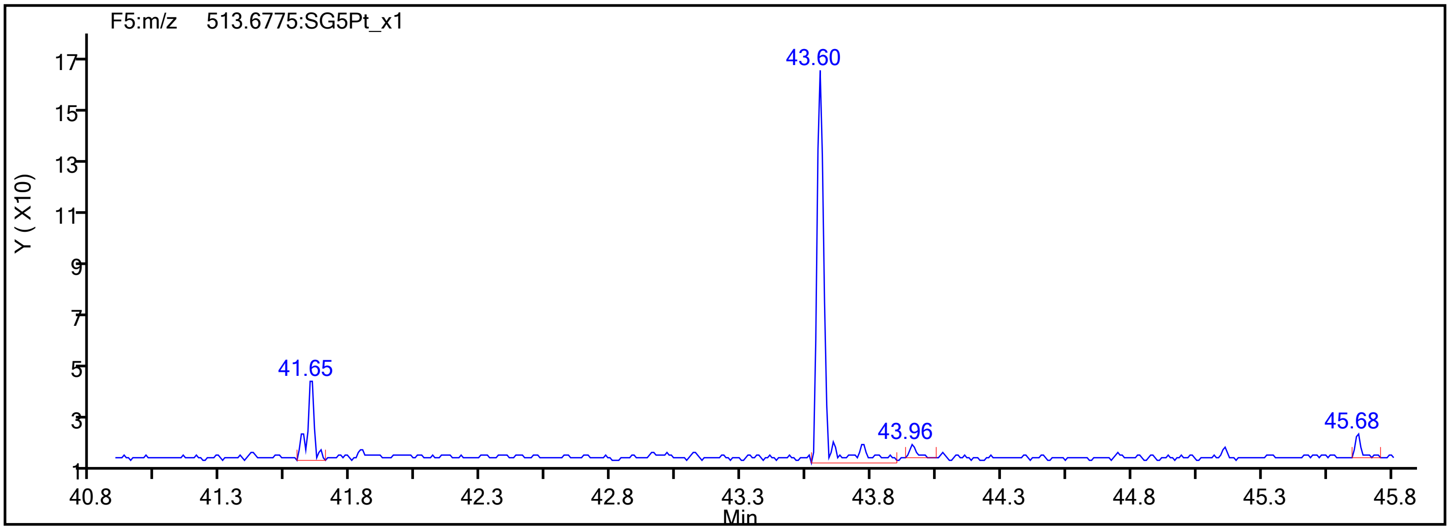

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Eurofins TestAmerica, Sacramento

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OCDD

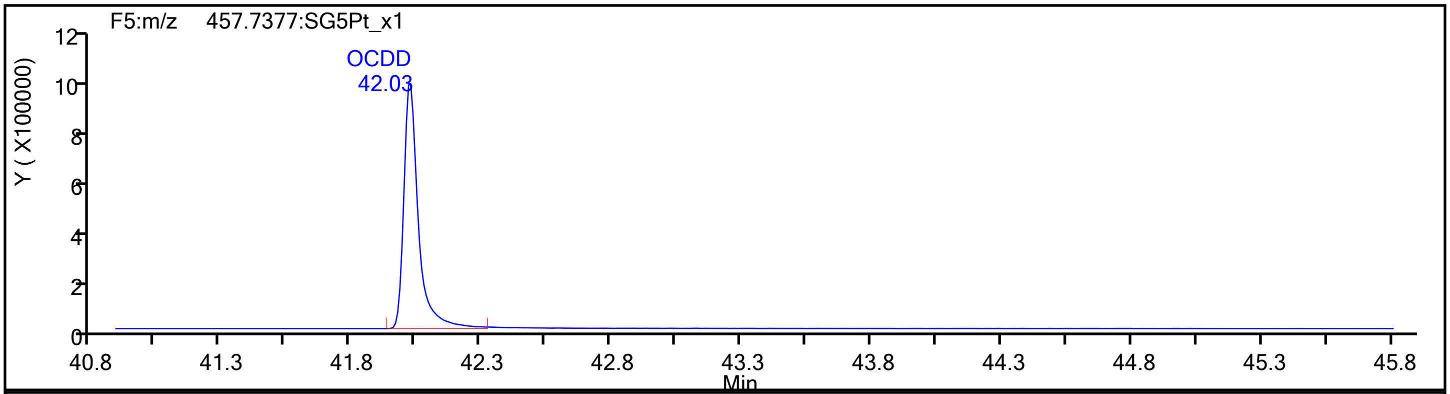

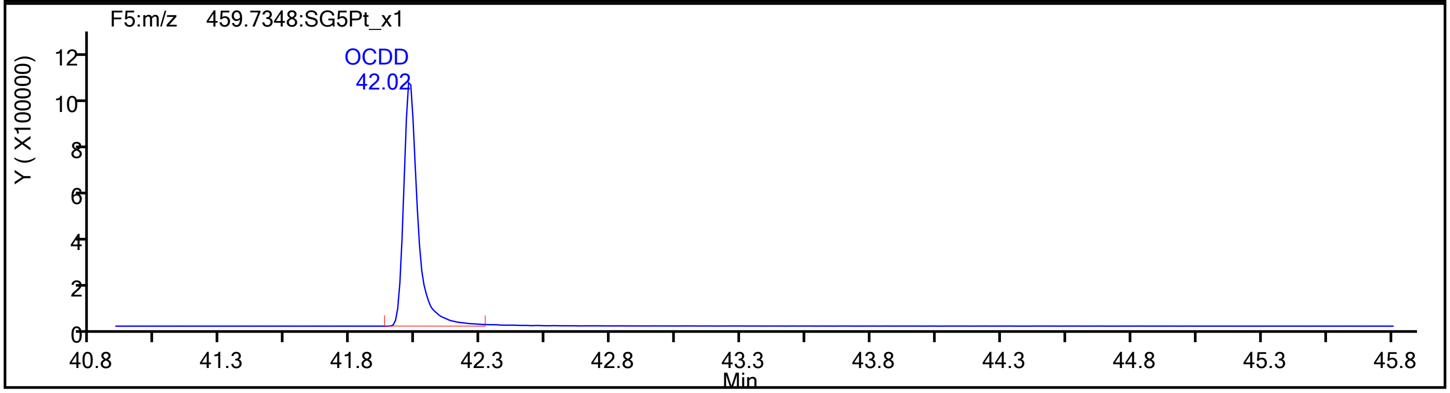

OCDD Standards

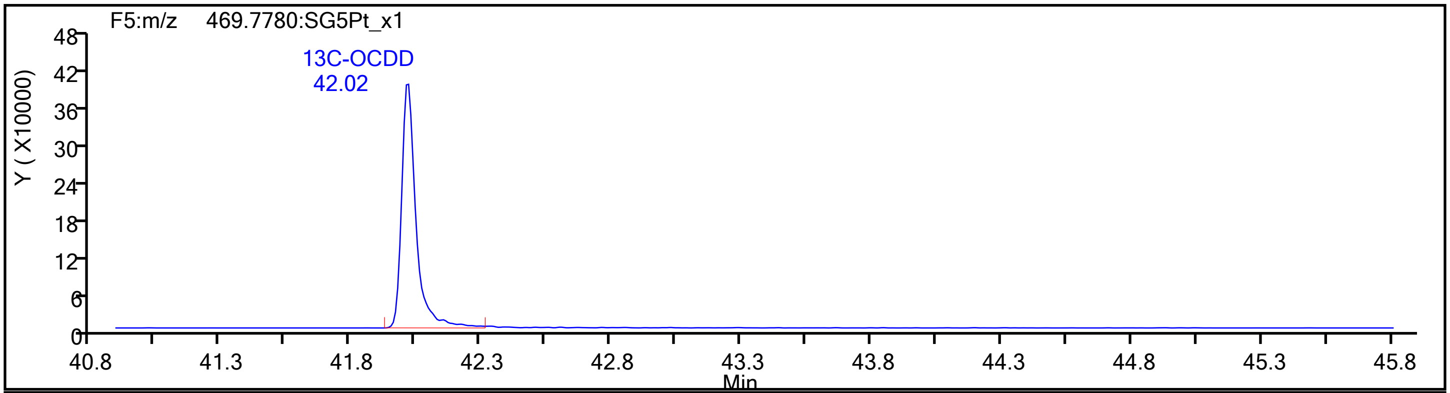

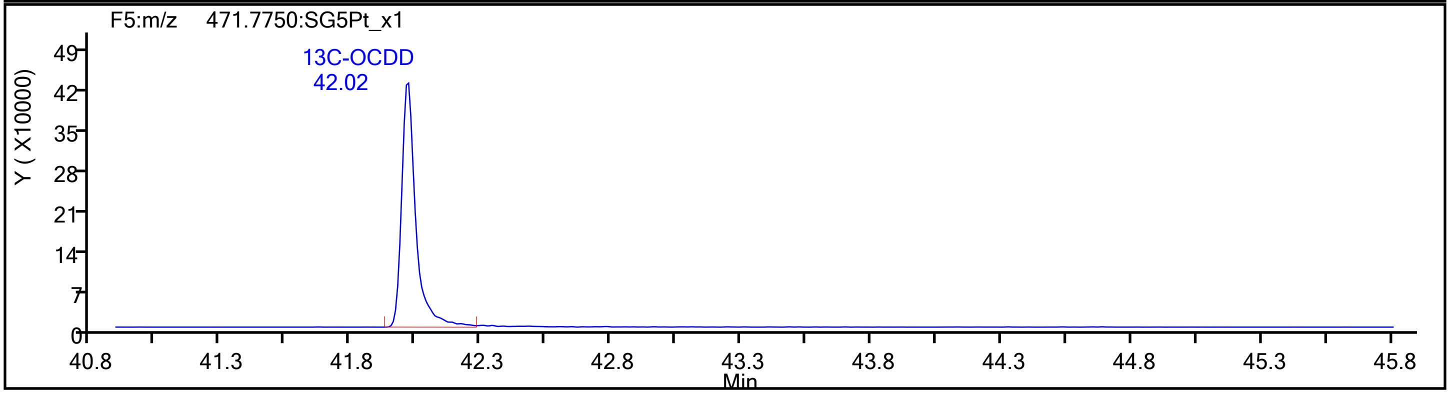

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Eurofins TestAmerica, Sacramento

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Injection Date: 31-Dec-2020 16:41:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

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Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767
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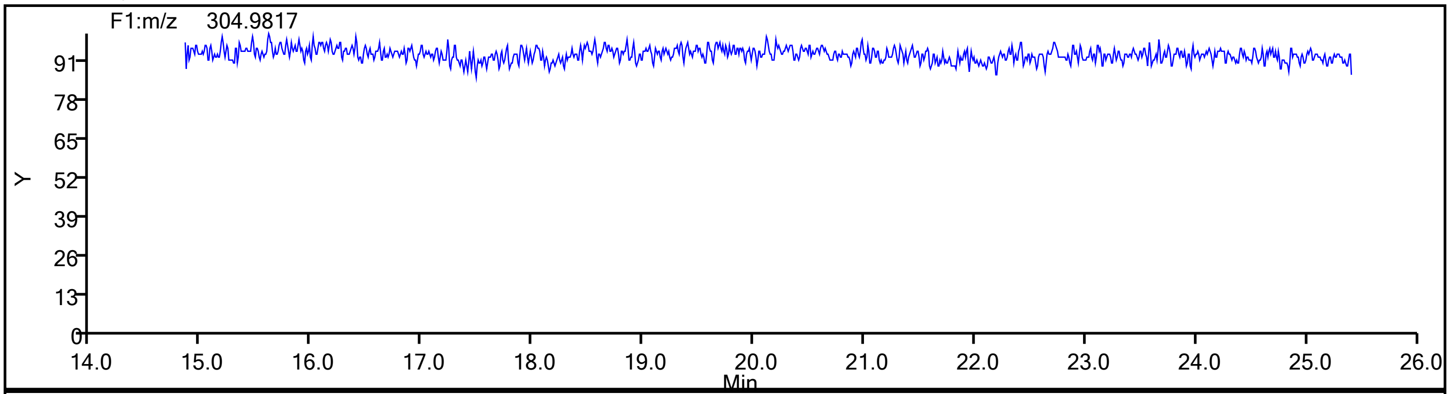

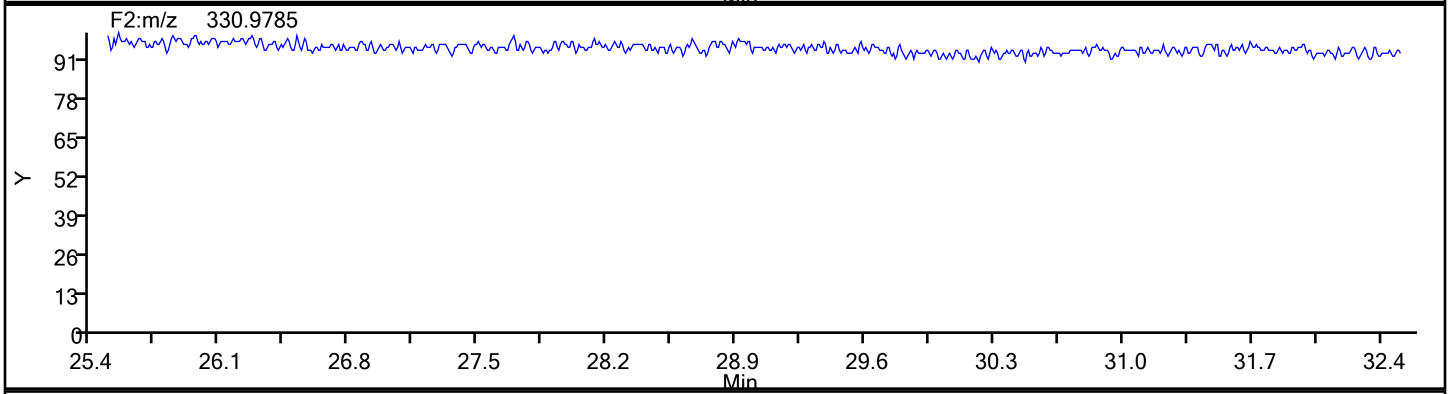

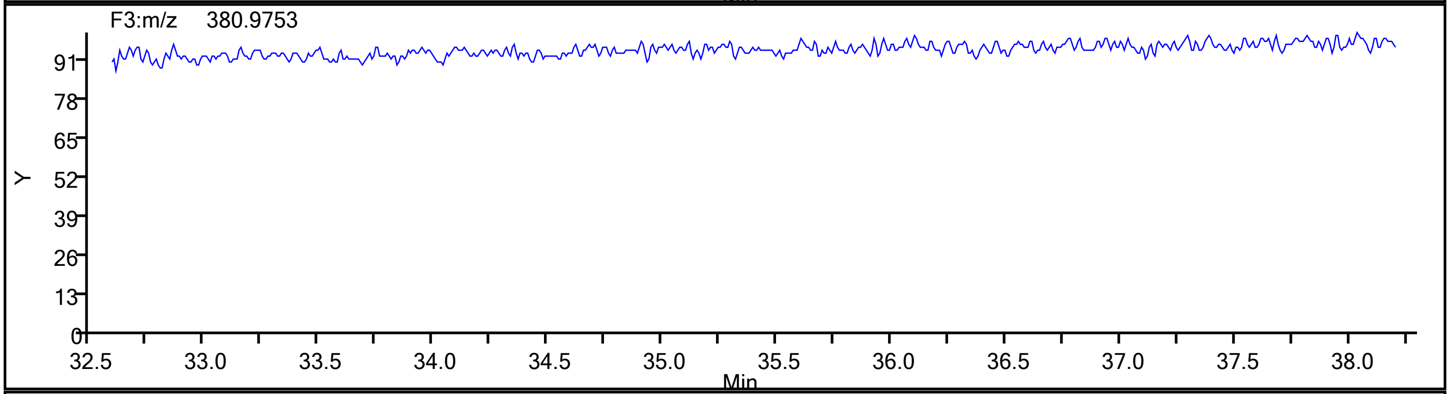

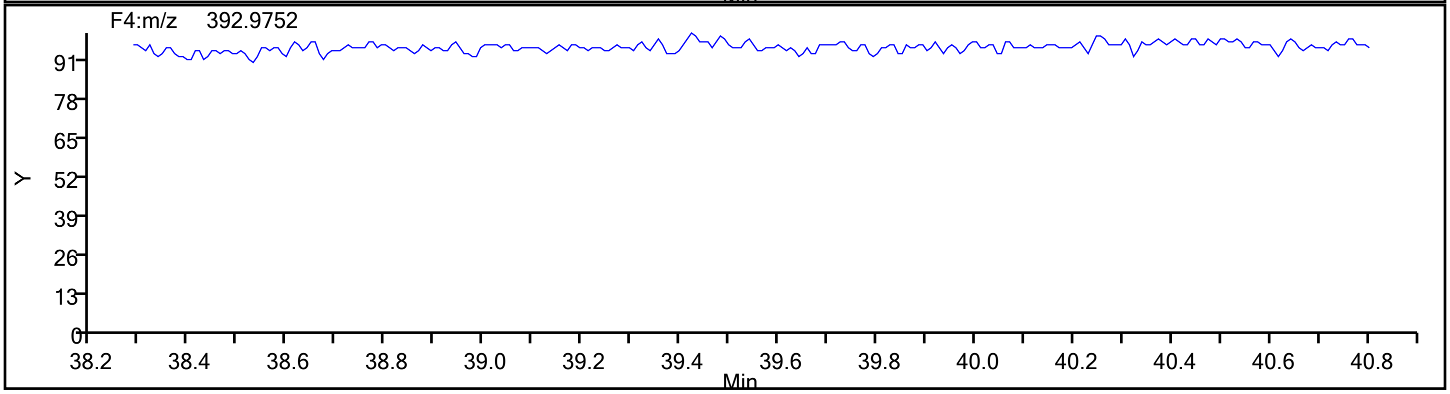

Eurofins TestAmerica, Sacramento

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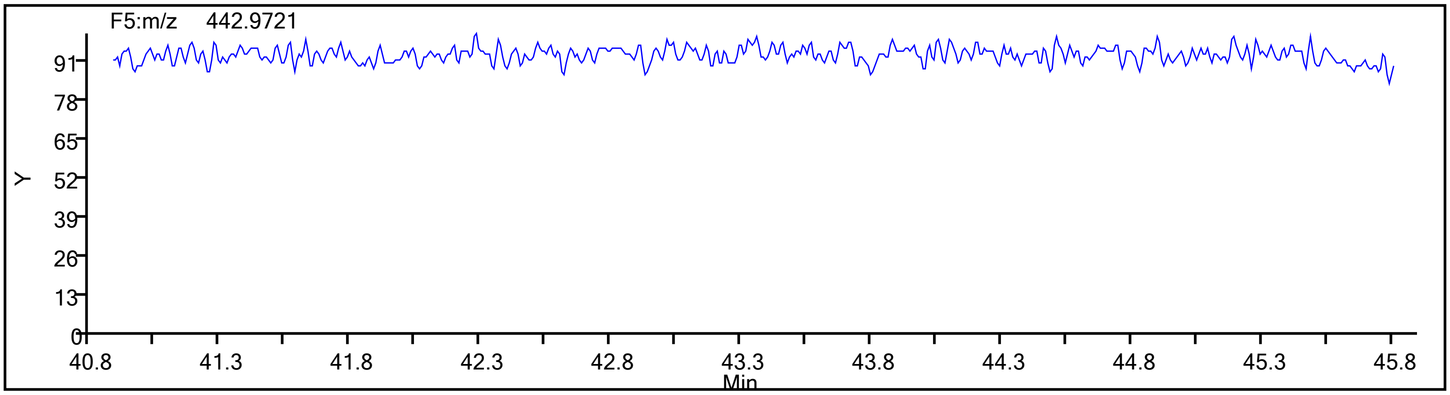

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

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Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00027				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Jan-2021 09:34:07	Calib Date:	31-Dec-2020 17:29:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1633				
First Level Reviewer: messecara		Date:	31-Dec-2020 18:35:14		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.284	3101875	0.81	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.295	6087652	0.81	1.9134	102.6	102.6	0.2911	0.2911	103	
2,3,7,8-TCDF	20.321	12963977	0.79	1.1488	185.4	185.4	0.1992	0.1992	92.68	
S Total TCDF					185.4	185.4	0.1992	0.1992		
D 13C-2,3,7,8-TCDD	21.654	3442110	0.84	1.0908	101.7	101.7	0.3264	0.3264	102	
2,3,7,8-TCDD	21.688	8482515	0.81	1.3069	188.6	188.6	0.1578	0.1578	94.28	
$ 37Cl4-2,3,7,8-TCDD	21.688	7574625		1.2281	198.8	198.8	0.0996	0.0996	99.42	
S Total TCDD					188.6	188.6	0.1578	0.1578		
D 13C-1,2,3,7,8-PeCDF	27.229	5141591	1.63	1.5355	107.9	107.9	0.3986	0.3986	108	
1,2,3,7,8-PeCDF	27.254	54621831	1.59	1.1695	908.4	908.4	2.889	2.889	90.84	
D 13C-2,3,4,7,8-PeCDF	28.753	4832116	1.60	1.4278	109.1	109.1	0.4287	0.4287	109	
2,3,4,7,8-PeCDF	28.779	53281339	1.58	1.2244	900.6	900.6	3.242	3.242	90.06	
S Total PeCDF					1808.9	1808.9	3.065	3.065		
D 13C-1,2,3,7,8-PeCDD	29.570	2615255	1.59	0.7800	108.1	108.1	0.1441	0.1441	108	
1,2,3,7,8-PeCDD	29.596	30002492	1.58	1.2613	909.5	909.5	0.5733	0.5733	90.95	
S Total PeCDD					909.5	909.5	0.5733	0.5733		
D 13C-1,2,3,4,7,8-HxCDF	34.906	4407903	0.55	1.4248	104.4	104.4	0.3728	0.3728	104	
1,2,3,4,7,8-HxCDF	34.922	55436127	1.29	1.3553	927.9	927.9	3.488	3.488	92.79	
D 13C-1,2,3,6,7,8-HxCDF	35.074	5048362	0.54	1.7108	99.6	99.6	0.3105	0.3105	99.59	
1,2,3,6,7,8-HxCDF	35.091	61009083	1.27	1.3081	923.9	923.9	3.426	3.426	92.39	
D 13C-2,3,4,6,7,8-HxCDF	35.883	4651769	0.53	1.5455	101.6	101.6	0.3437	0.3437	102	
2,3,4,6,7,8-HxCDF	35.899	57884480	1.27	1.3248	939.3	939.3	3.216	3.216	93.93	
D 13C-1,2,3,7,8,9-HxCDF	36.775	4206539	0.54	1.3772	103.1	103.1	0.3857	0.3857	103	
1,2,3,7,8,9-HxCDF	36.792	52218610	1.29	1.3372	928.3	928.3	3.298	3.298	92.83	
S Total HxCDF					3719.4	3719.4	3.357	3.357		
* 13C-1,2,3,7,8,9-HxCDD	36.582	2962989	1.31	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.102	2571012	1.28	0.8266	105.0	105.0	0.2121	0.2121	105	
1,2,3,4,7,8-HxCDD	36.118	31583468	1.28	1.3422	915.2	915.2	1.477	1.477	91.52	
D 13C-1,2,3,6,7,8-HxCDD	36.219	3061906	1.30	1.0417	99.2	99.2	0.1683	0.1683	99.20	
1,2,3,6,7,8-HxCDD	36.236	33178381	1.28	1.1989	903.8	903.8	1.463	1.463	90.38	

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.598	34988400	1.28	1.3636	911.0	911.0	1.365	1.365	91.10	
S Total HxCDD					2730.1	2730.1	1.435	1.435		
D 13C-1,2,3,4,6,7,8-HpCDF	38.597	3420059	0.47	1.1053	104.4	104.4	0.4079	0.4079	104	
1,2,3,4,6,7,8-HpCDF	38.606	51988267	1.05	1.6487	922.0	922.0	3.094	3.094	92.20	
D 13C-1,2,3,4,7,8,9-HpCDF	39.844	3157997	0.47	0.9761	109.2	109.2	0.4620	0.4620	109	
1,2,3,4,7,8,9-HpCDF	39.853	44235838	1.05	1.5723	890.9	890.9	3.243	3.243	89.09	
S Total HpCDF					1812.9	1812.9	3.169	3.169		
D 13C-1,2,3,4,6,7,8-HpCDD	39.541	2706216	1.09	0.8768	104.2	104.2	0.2147	0.2147	104	
1,2,3,4,6,7,8-HpCDD	39.549	30150355	1.07	1.2146	917.3	917.3	1.395	1.395	91.73	
S Total HpCDD					917.3	917.3	1.395	1.395		
D 13C-OCDD	42.029	4602647	0.95	0.7137	217.7	217.7	0.2772	0.2772	109	
OCDF	42.122	81195665	0.92	1.8132	1945.8	1945.8	1.457	1.457	97.29	
OCDD	42.038	54189745	0.90	1.2562	1874.5	1874.5	1.650	1.650	93.73	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 31-Dec-2020 17:29:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00027
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:34:07 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: messecara Date: 31-Dec-2020 18:35:14

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.284	21.272	1		1390369	202343	414	1035	489		
333.9338	21.284	21.272	1		1711506	251310	232	580	1083	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.295	20.286	1	0.954	2732904	407000	687	1717	592		
317.9389	20.295	20.286	1	0.954	3354748	500364	324	810	1544	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.321	20.313	0	1.001	5731701	839991	341	852	2463		
305.8987	20.321	20.313	0	1.001	7232276	1057829	490	1225	2159	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.654	21.646	0	1.017	1569151	207154	414	1035	500		
333.9338	21.662	21.646	1	1.018	1872959	252077	232	580	1087	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.688	21.677	1	1.002	3786396	514088	230	575	2235		
321.8936	21.688	21.677	1	1.002	4696119	636952	149	372	4275	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.688	21.684	0	1.019	7574625	1021966	222	555	4603		
13C-1,2,3,7,8-PeCDF											
351.9000	27.229	27.219	1	1.279	3188198	520082	717	1792	725		
353.8970	27.221	27.219	0	1.279	1953393	317995	394	985	807	1.63(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.254	27.244	1	1.001	33536159	5493995	6962	17405	789		
341.8567	27.246	27.244	0	1.001	21085672	3409325	4363	10907	781	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.753	28.742	1	1.351	2972891	435398	717	1792	607		
353.8970	28.753	28.742	1	1.351	1859225	277817	394	985	705	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.779	28.767	1	1.001	32617639	4905735	6962	17405	705		
341.8567	28.779	28.767	1	1.001	20663700	3066903	4363	10907	703	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.570	29.564	0	1.389	1606889	232050	114	285	2036		
369.8919	29.570	29.564	0	1.389	1008366	149238	90	225	1658	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.596	29.593	0	1.001	18383984	2653347	692	1730	3834		
357.8516	29.596	29.593	0	1.001	11618508	1693439	411	1027	4120	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.906	34.899	0	0.954	1555742	359907	591	1477	609		
385.8610	34.906	34.899	0	0.954	2852161	664269	1076	2690	617	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.922	34.916	0	1.000	31177609	7079650	10809	27022	655		
375.8178	34.922	34.916	0	1.000	24258518	5512152	8558	21395	644	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.074	35.061	1	0.959	1767145	372896	591	1477	631		
385.8610	35.074	35.061	1	0.959	3281217	707436	1076	2690	657	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.091	35.079	1	1.000	34099809	7489326	10809	27022	693		
375.8178	35.082	35.079	0	1.000	26909274	5789710	8558	21395	677	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.883	35.878	0	0.981	1618993	396133	591	1477	670		
385.8610	35.891	35.878	1	0.981	3032776	740335	1076	2690	688	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.899	35.893	0	1.000	32408937	8076640	10809	27022	747		
375.8178	35.899	35.893	0	1.000	25475543	6343192	8558	21395	741	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.775	36.769	0	1.005	1481774	382620	591	1477	647		
385.8610	36.775	36.769	0	1.005	2724765	715170	1076	2690	665	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.792	36.786	0	1.000	29390387	7995567	10809	27022	740		
375.8178	36.792	36.786	0	1.000	22828223	6142018	8558	21395	718	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.582	36.576	0		1680170	448091	312	780	1436		
403.8529	36.582	36.576	0		1282819	336326	238	595	1413	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.102	36.092	1	0.987	1445830	389523	312	780	1248		
403.8529	36.102	36.092	1	0.987	1125182	308051	238	595	1294	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.118	36.107	1	1.000	17757545	4737851	3120	7800	1519		
391.8127	36.118	36.107	1	1.000	13825923	3632103	2410	6025	1507	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.219	36.210	1	0.990	1730211	441956	312	780	1417		
403.8529	36.219	36.210	1	0.990	1331695	345980	238	595	1454	1.30(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.236	36.223	1	1.000	18637098	4711307	3120	7800	1510		
391.8127	36.228	36.223	0	1.000	14541283	3651394	2410	6025	1515	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.598	36.589	1	1.014	19649972	5178591	3120	7800	1660		
391.8127	36.598	36.589	1	1.014	15338428	4005838	2410	6025	1662	1.28(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.597	38.584	1	1.055	1086940	341110	493	1232	692		
419.8220	38.597	38.584	1	1.055	2333119	720234	922	2305	781	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.606	38.598	0	1.000	26616861	8428395	11154	27885	756		
409.7788	38.606	38.598	0	1.000	25371406	8031246	10502	26255	765	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.844	39.838	0	1.089	1009009	339392	493	1232	688		
419.8220	39.844	39.838	0	1.089	2148988	722287	922	2305	783	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.853	39.846	0	1.000	22639256	7846968	11154	27885	704		
409.7788	39.853	39.846	0	1.000	21596582	7538388	10502	26255	718	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.541	39.533	0	1.081	1408845	463764	309	772	1501		
437.8140	39.541	39.533	0	1.081	1297371	421805	282	705	1496	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.549	39.541	0	1.000	15554954	5119149	3084	7710	1660		
425.7737	39.549	39.541	0	1.000	14595401	4772300	2918	7295	1635	1.07(0.88-1.20)	
13C-OCDD											
469.7780	42.029	42.021	1	1.149	2236605	670913	280	700	2396		
471.7750	42.029	42.021	1	1.149	2366042	715484	341	852	2098	0.95(0.76-1.02)	
OCDF											
441.7428	42.122	42.115	0	1.002	38863222	12228330	3511	8777	3483		
443.7399	42.122	42.115	0	1.002	42332443	13346552	3813	9532	3500	0.92(0.76-1.02)	
OCDD											
457.7377	42.038	42.029	1	1.000	25653709	7910159	2809	7022	2816		
459.7348	42.038	42.029	1	1.000	28536036	8776371	2939	7347	2986	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00027 Amount Added: 1.00 Units: mL

Report Date: 04-Jan-2021 09:34:18
Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d
Injection Date: 31-Dec-2020 17:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

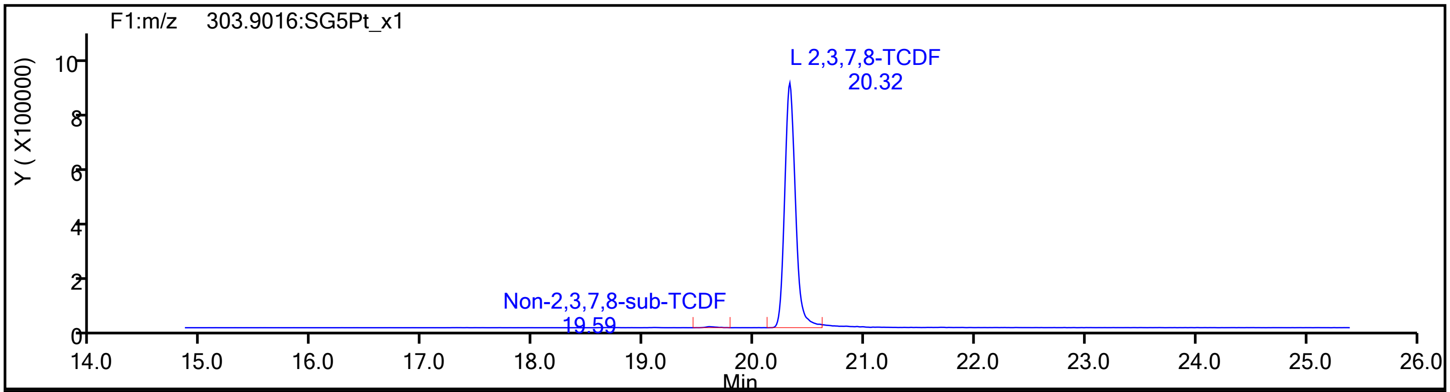

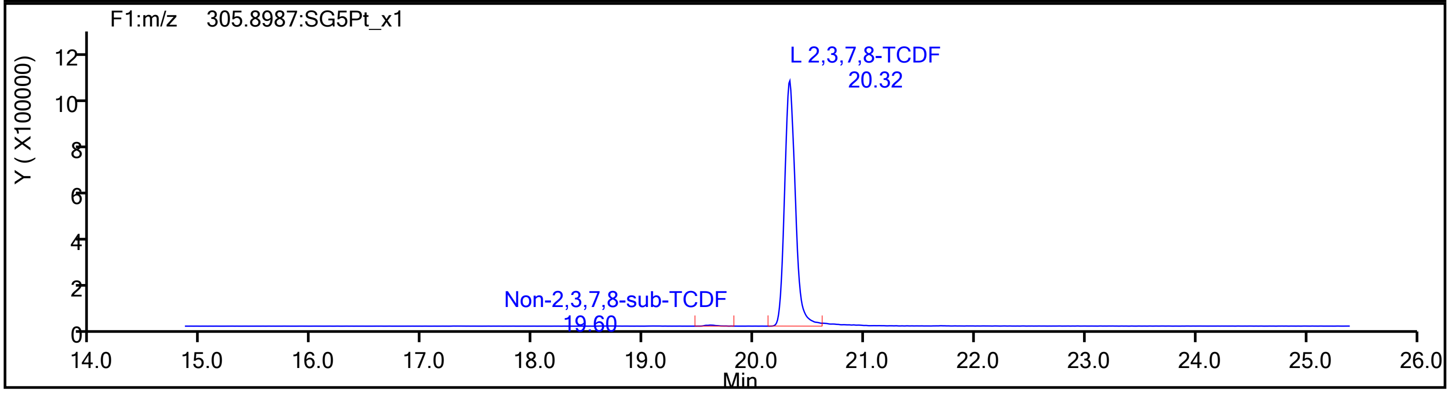

TCDF Standards

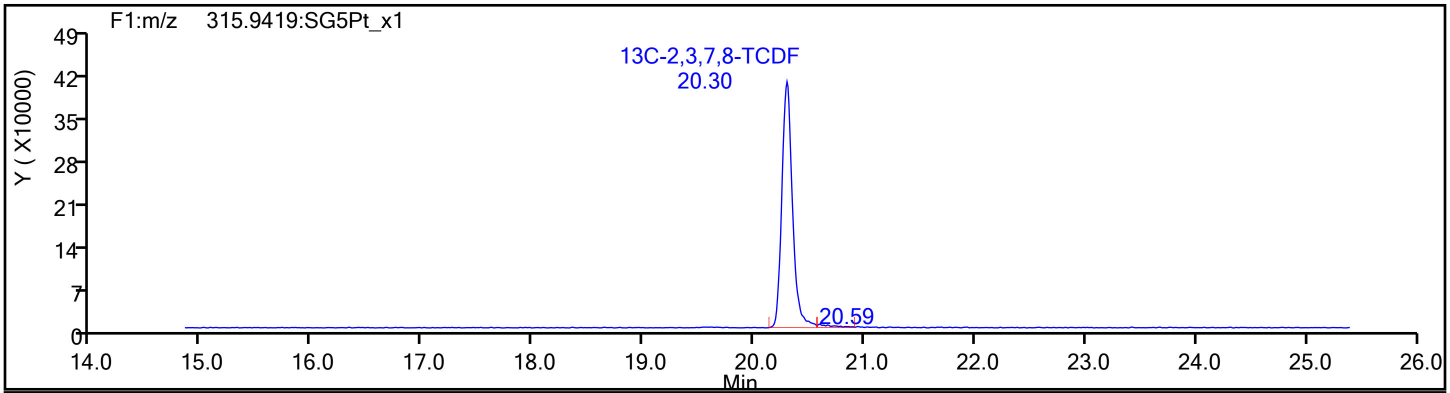

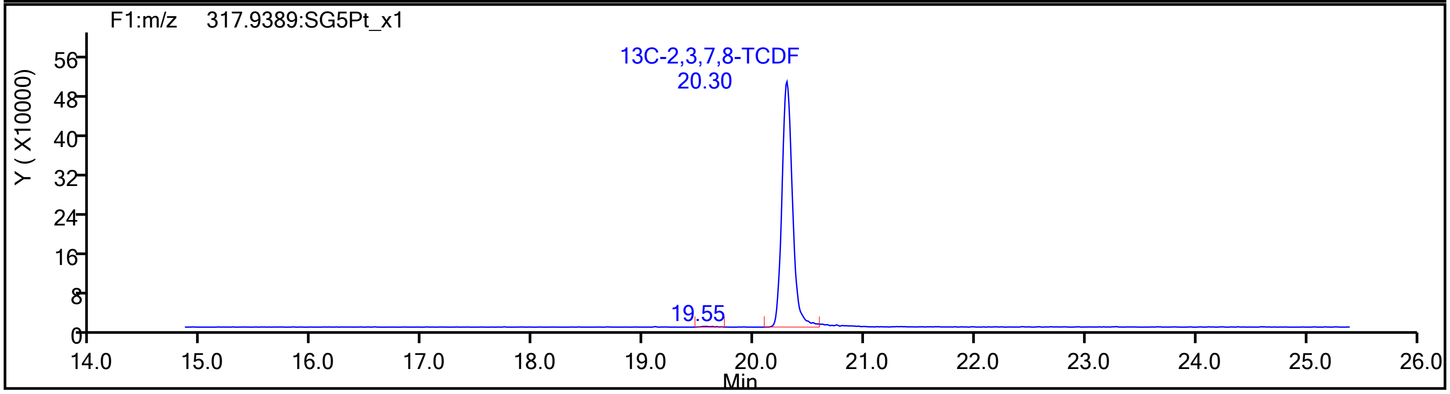

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d
Injection Date: 31-Dec-2020 17:29:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

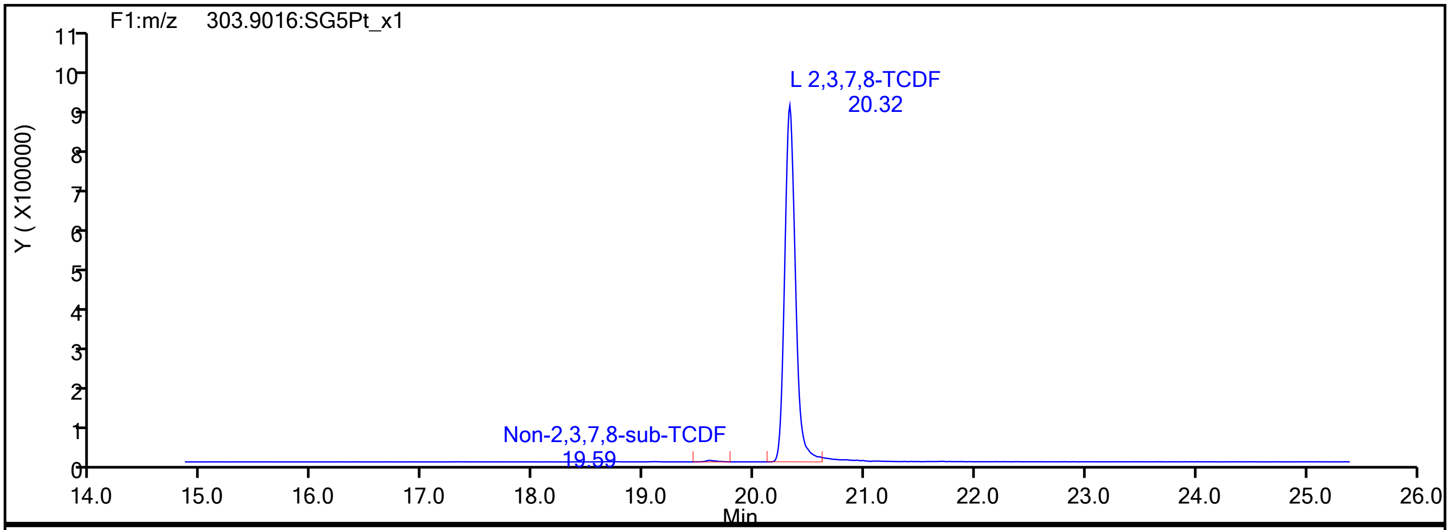

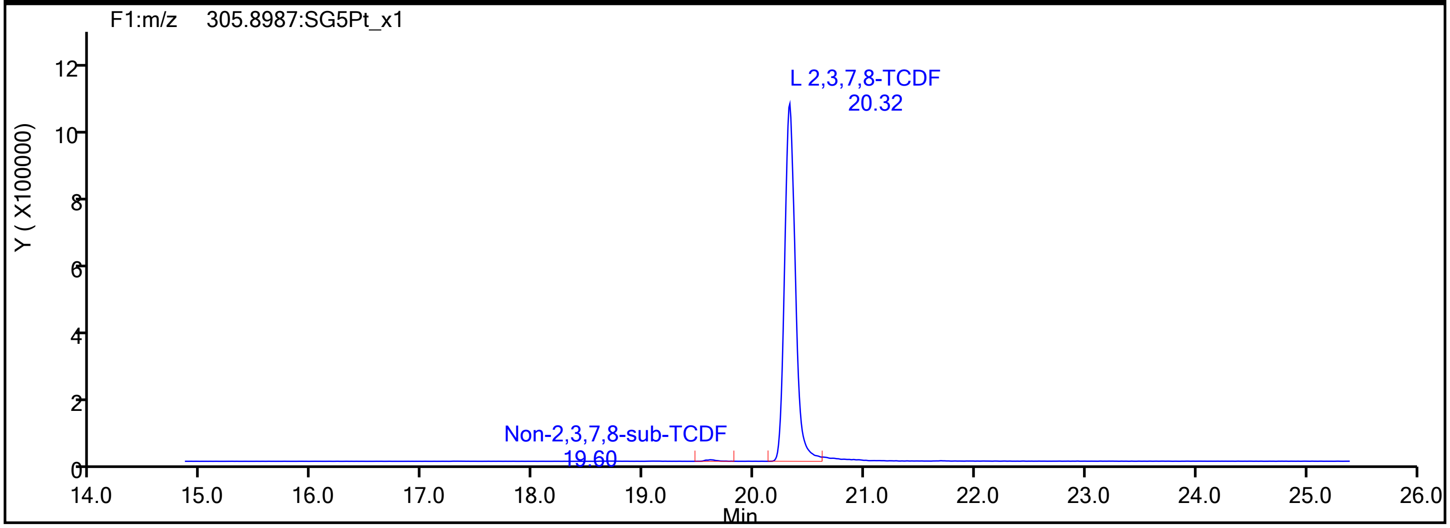

TCDF Interference Mass

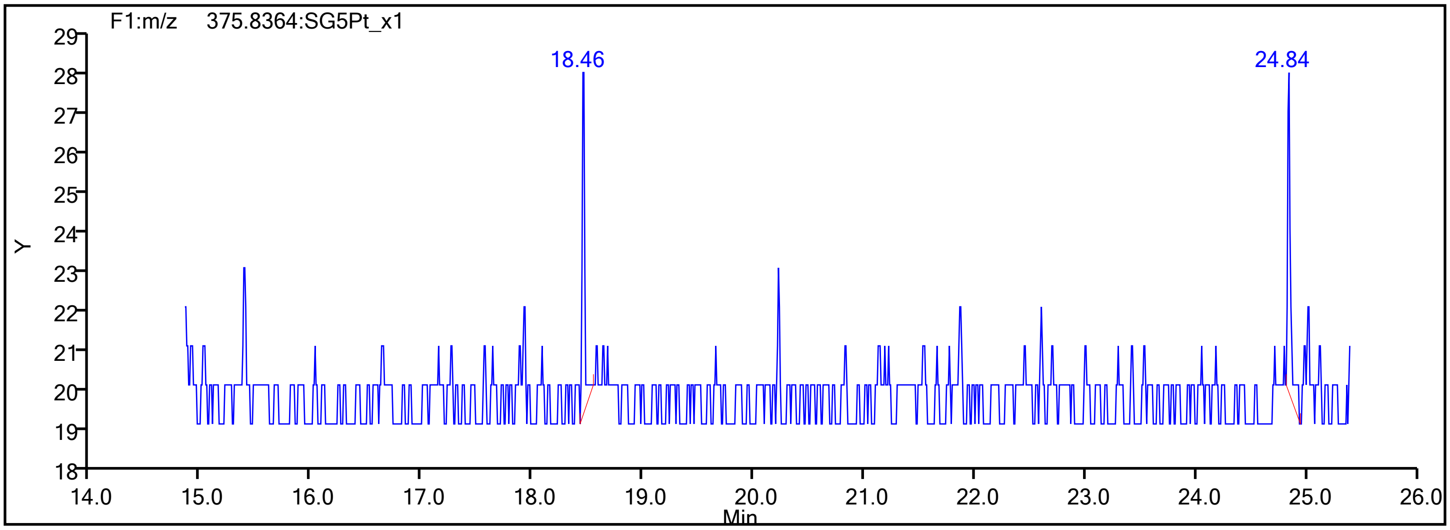

Report Date: 04-Jan-2021 09:34:18 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d		
Injection Date:	31-Dec-2020 17:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

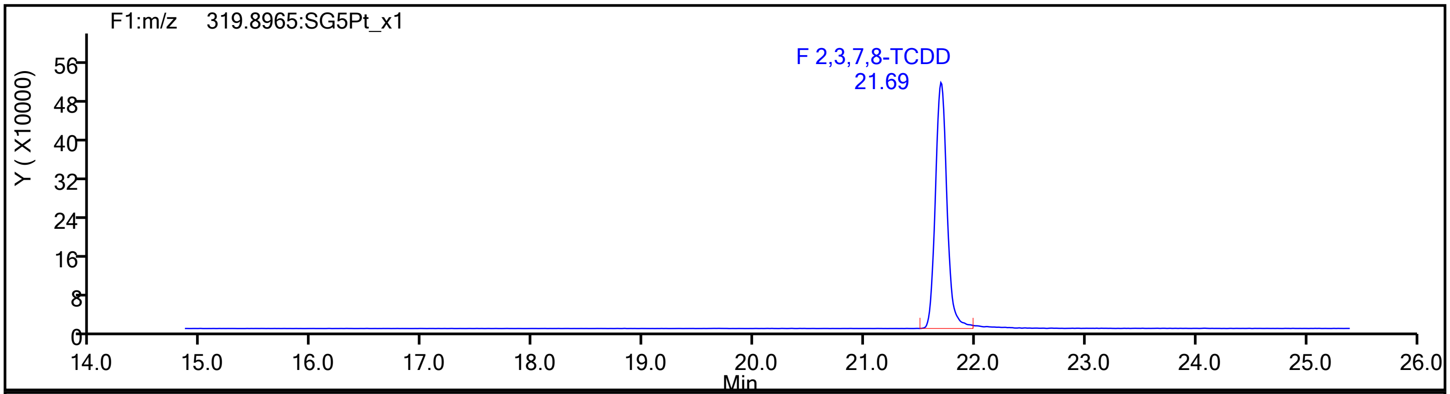

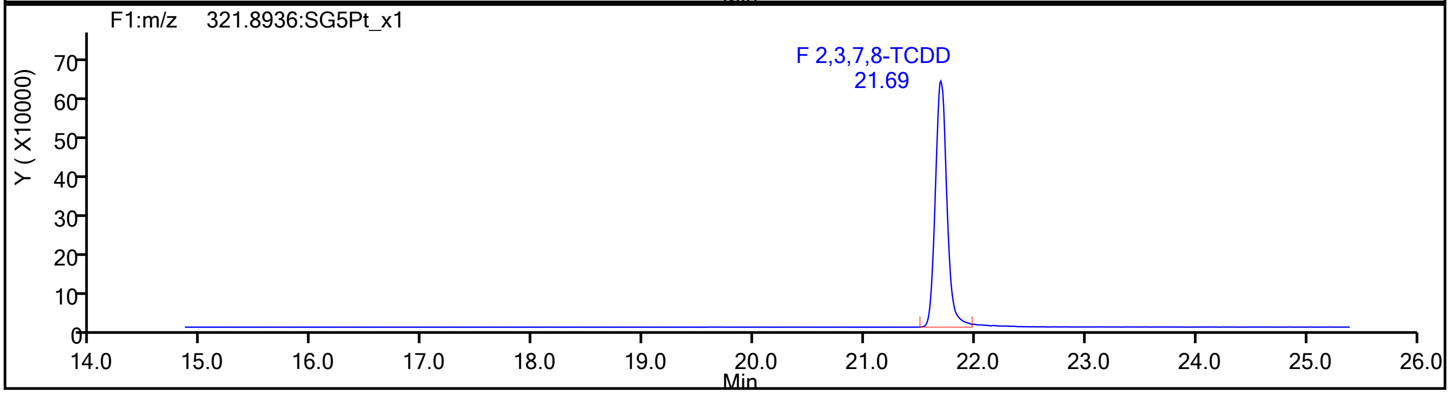

TCDD Standards

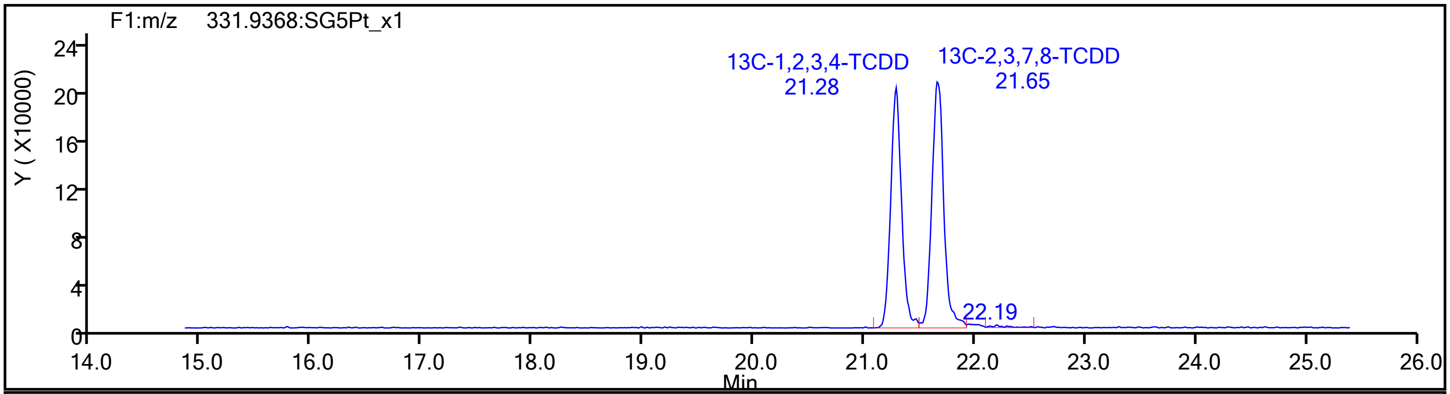

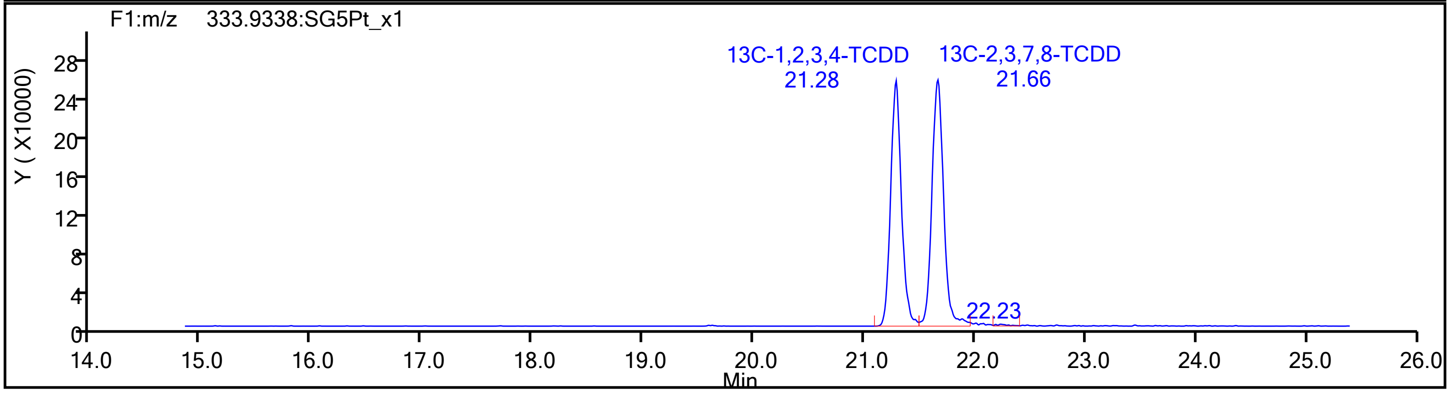

Report Date: 04-Jan-2021 09:34:18
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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37Cl4-TCDD

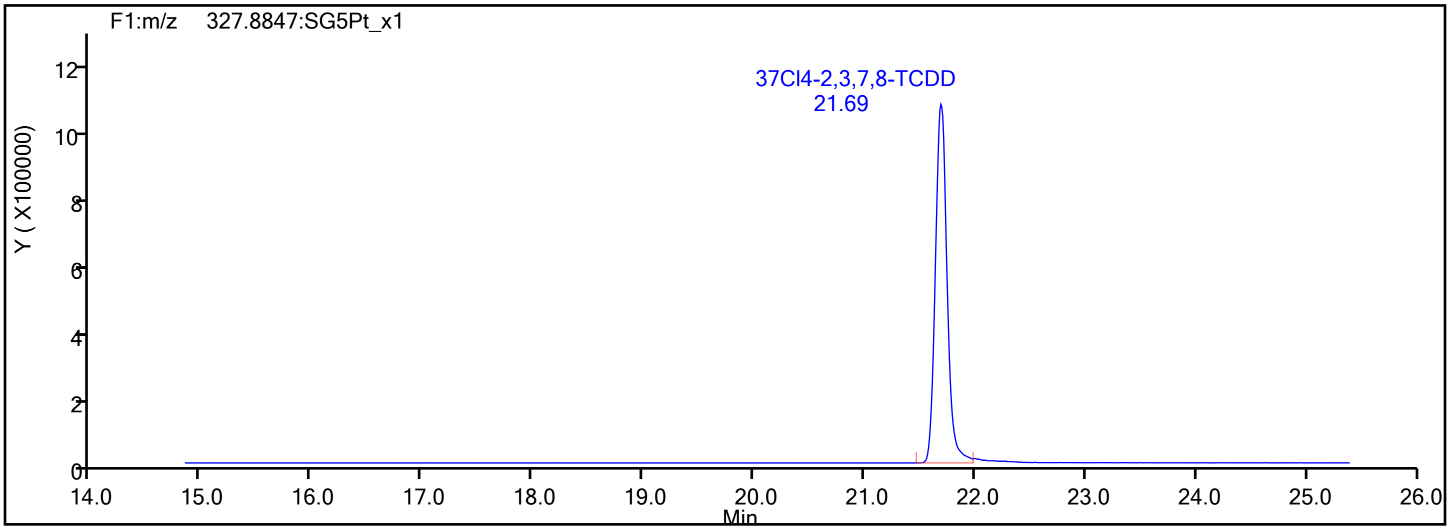

37Cl4-TCDD Standards

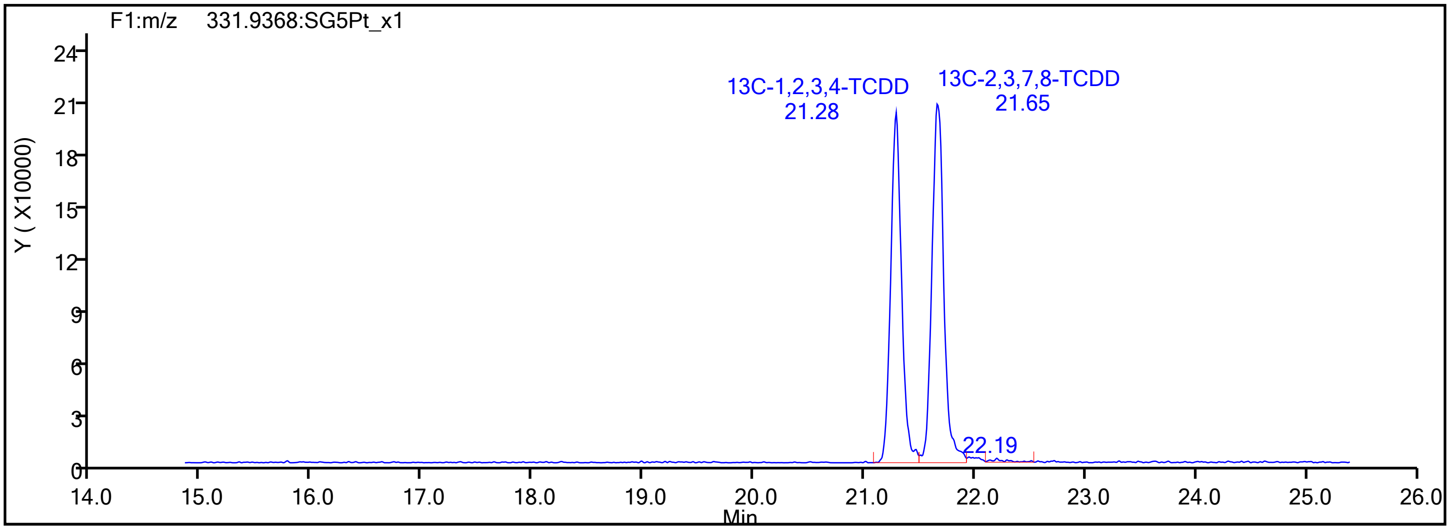

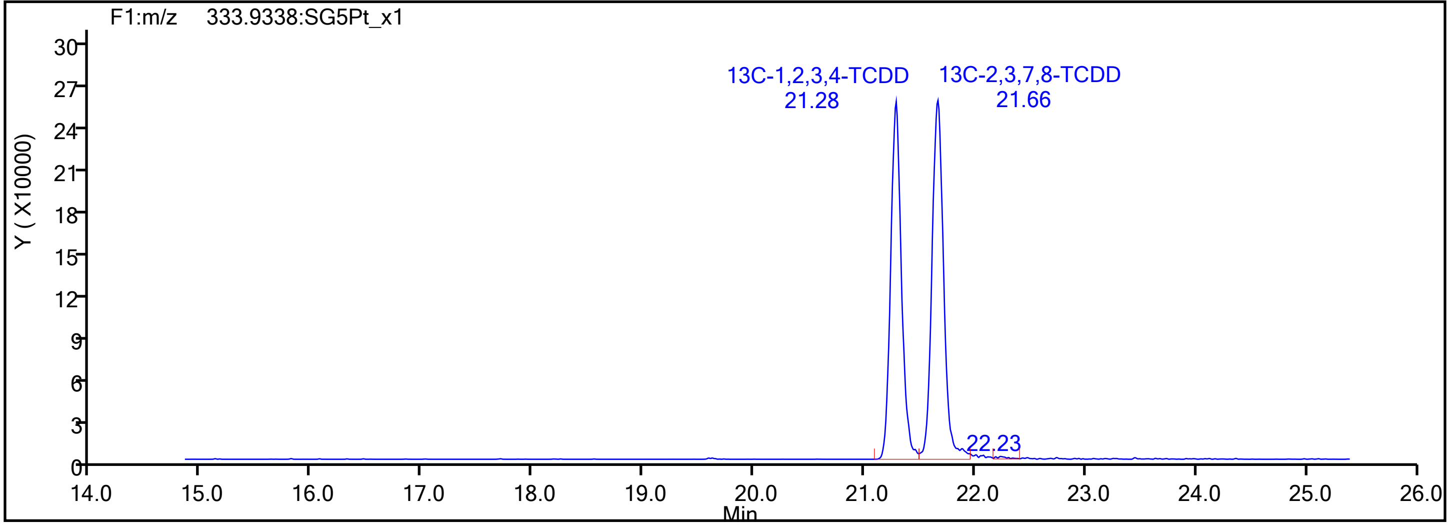

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

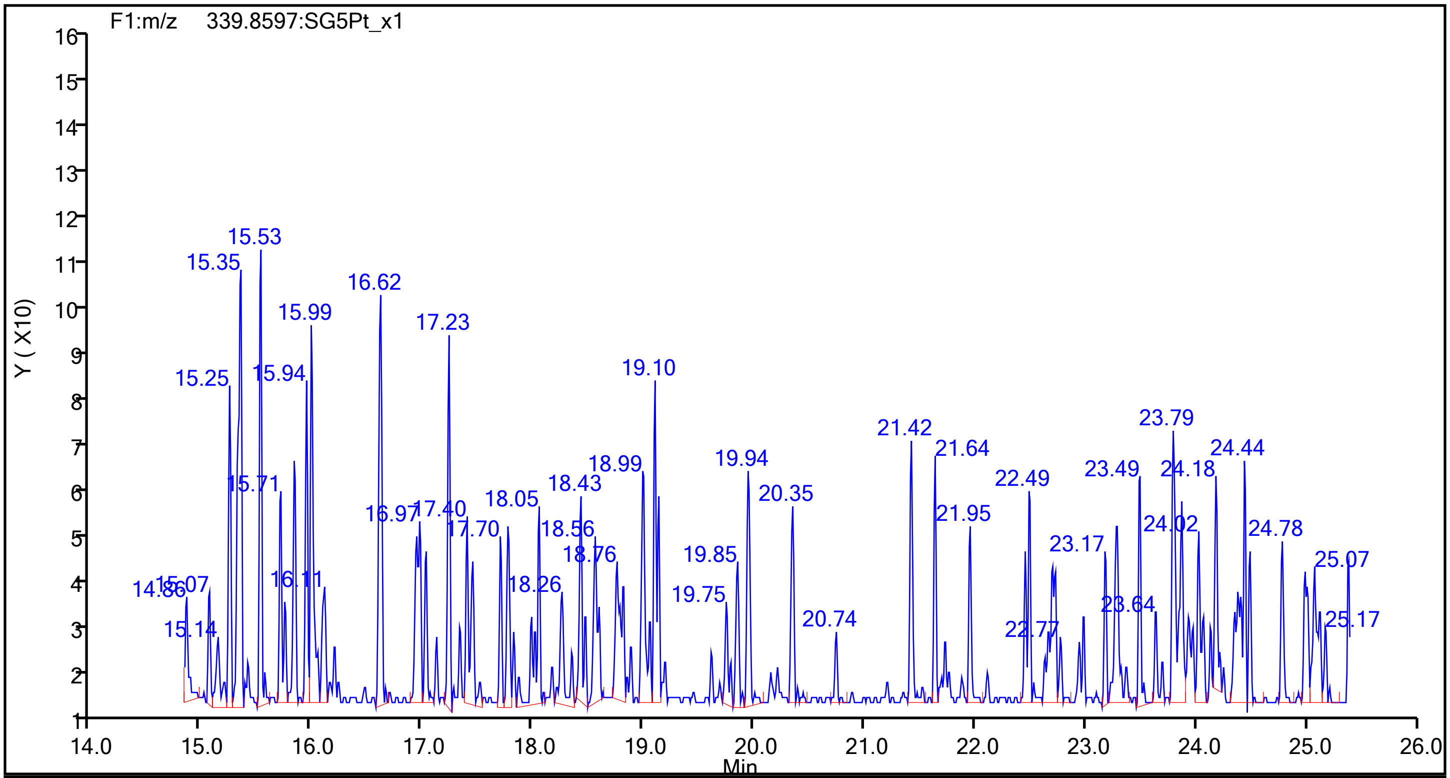

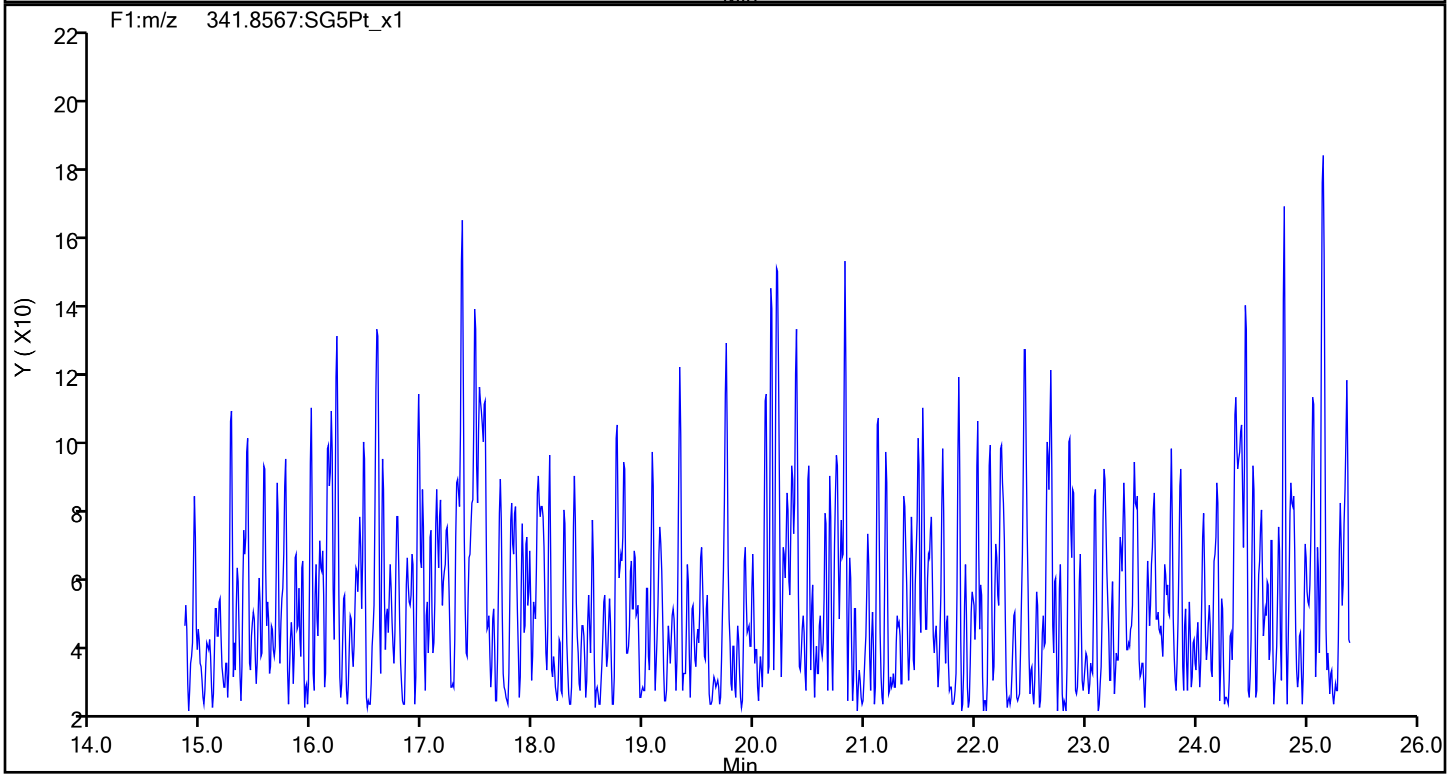

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F1 PeCDFs

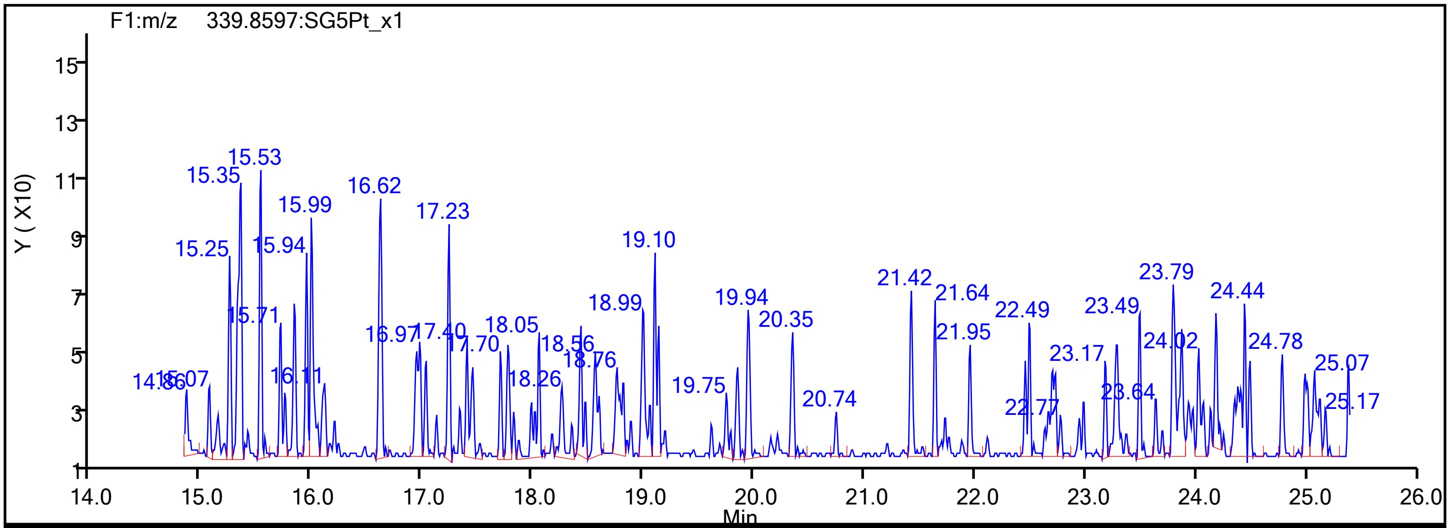

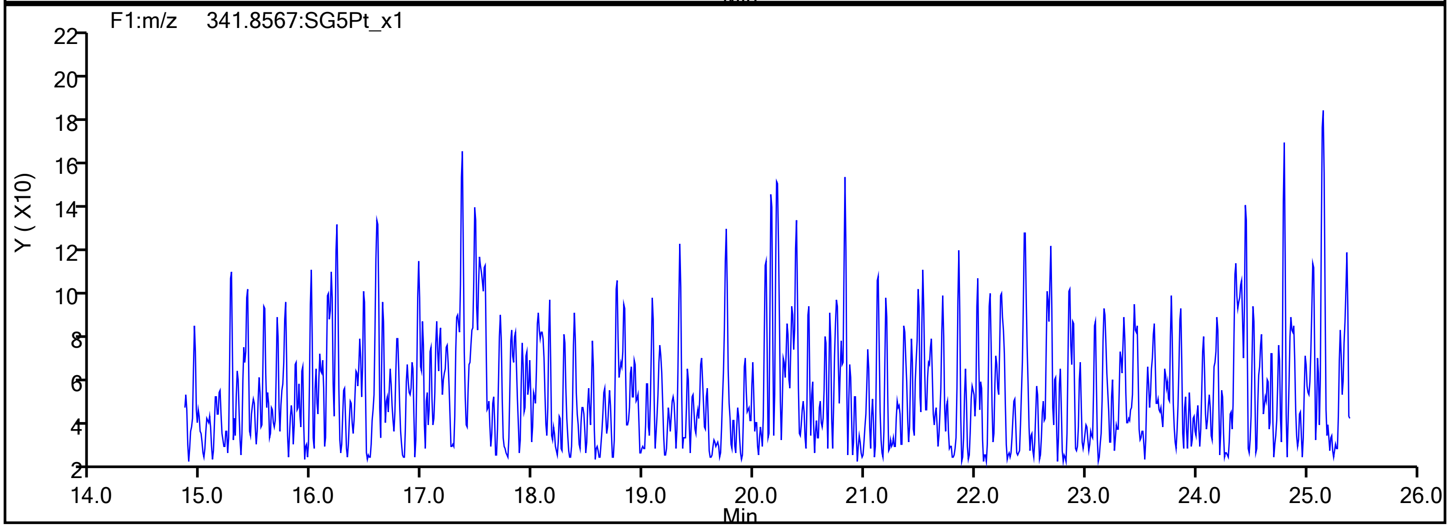

F1 PeCDFs Interference Mass

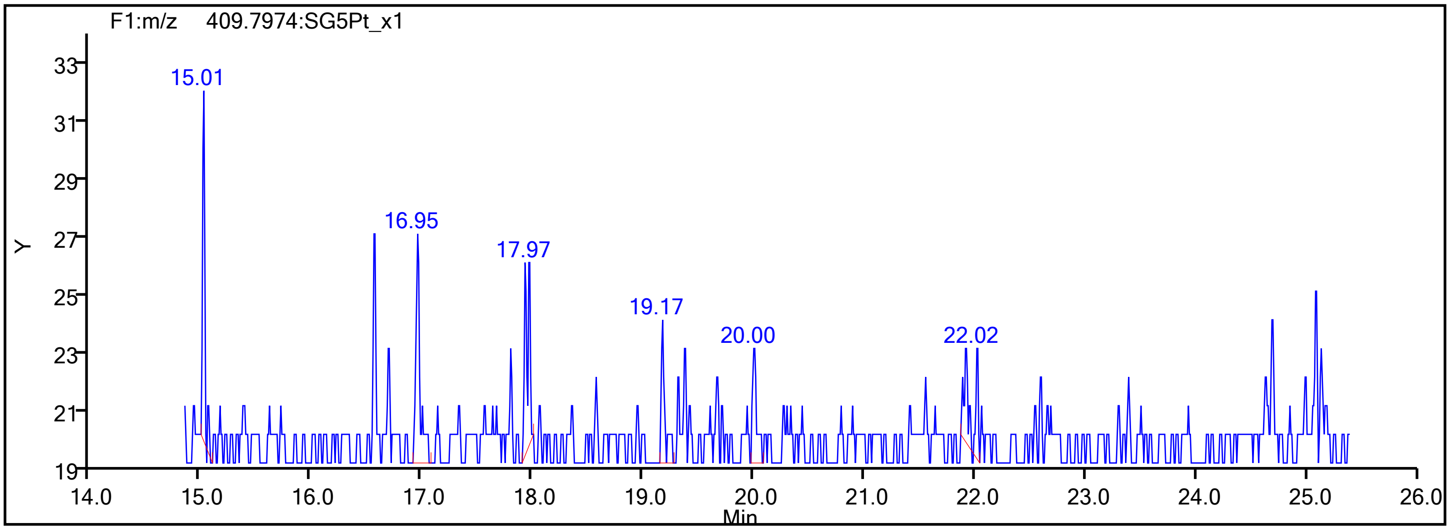

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Eurofins TestAmerica, Sacramento

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PeCDF

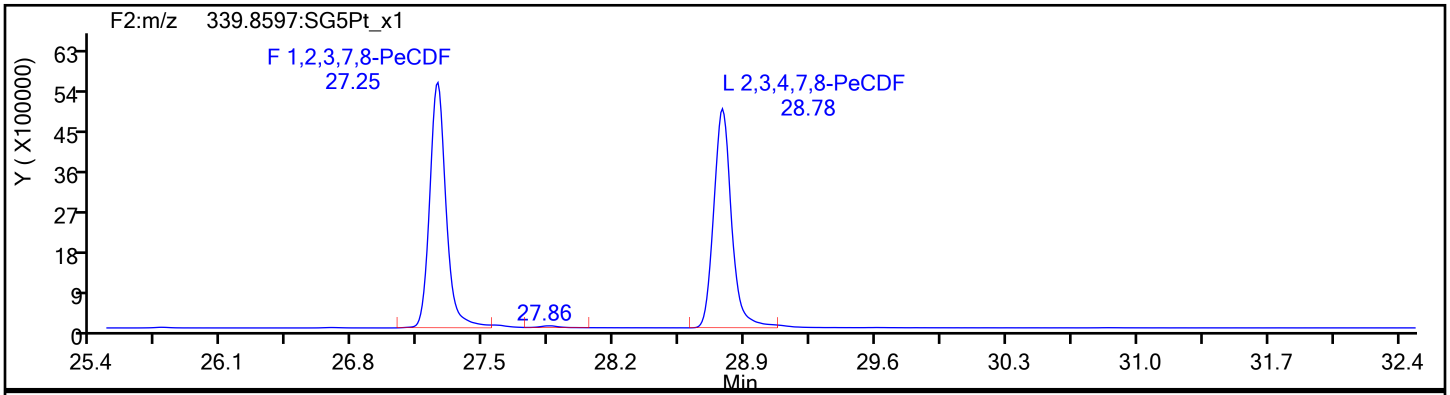

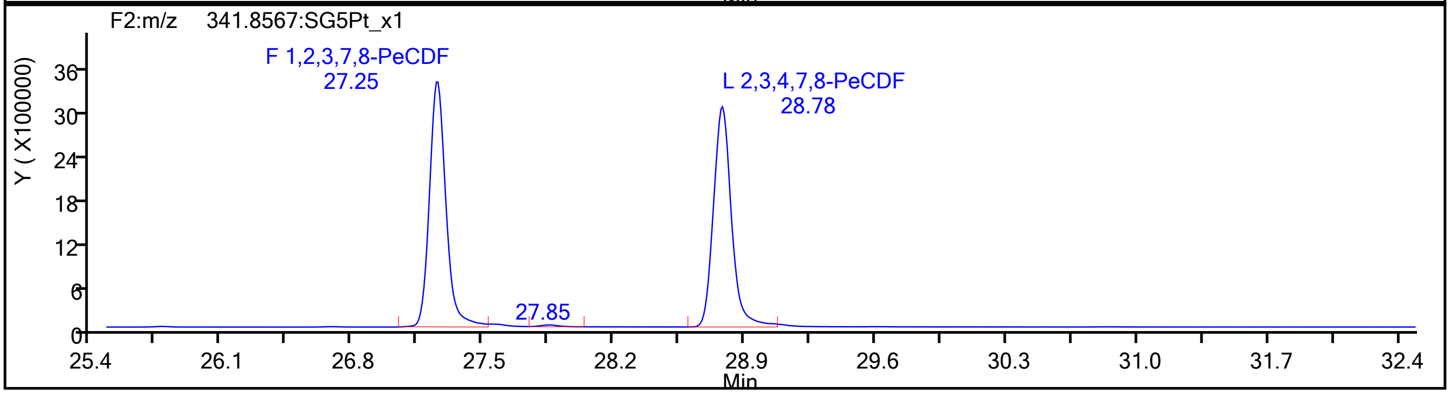

PeCDF Standards

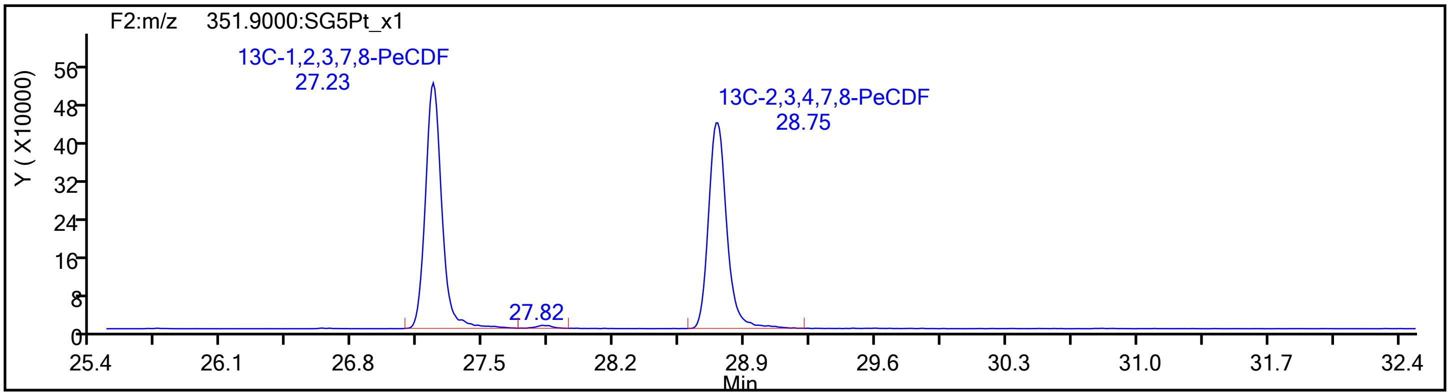

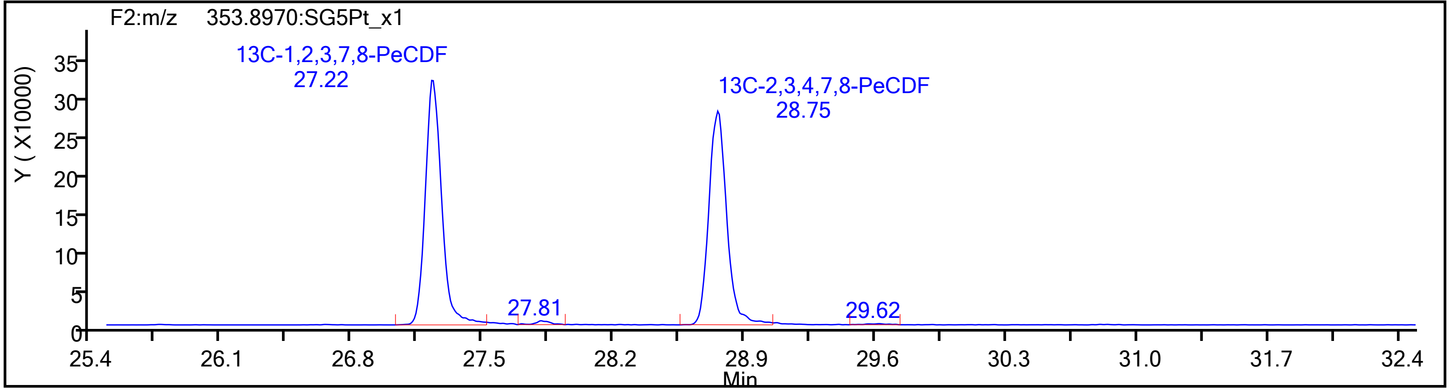

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Eurofins TestAmerica, Sacramento

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PeCDF

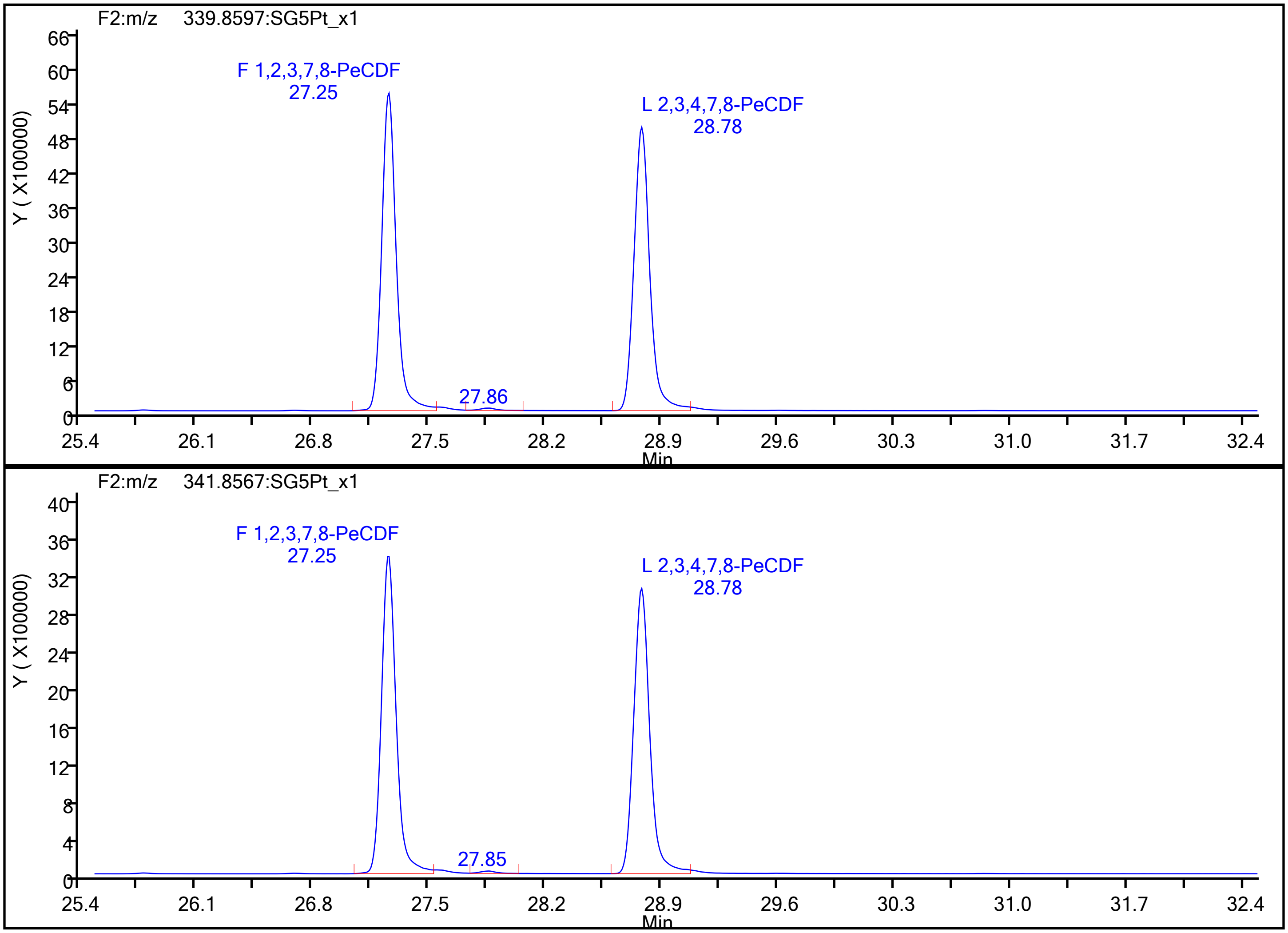

PeCDF Interference Mass

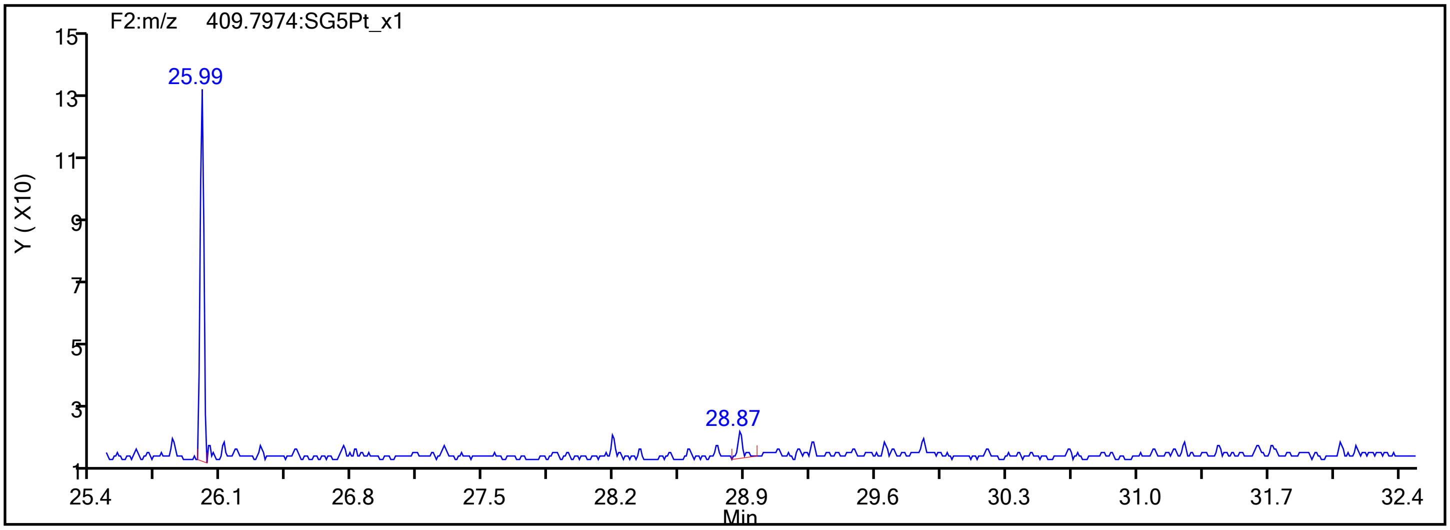

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PeCDD

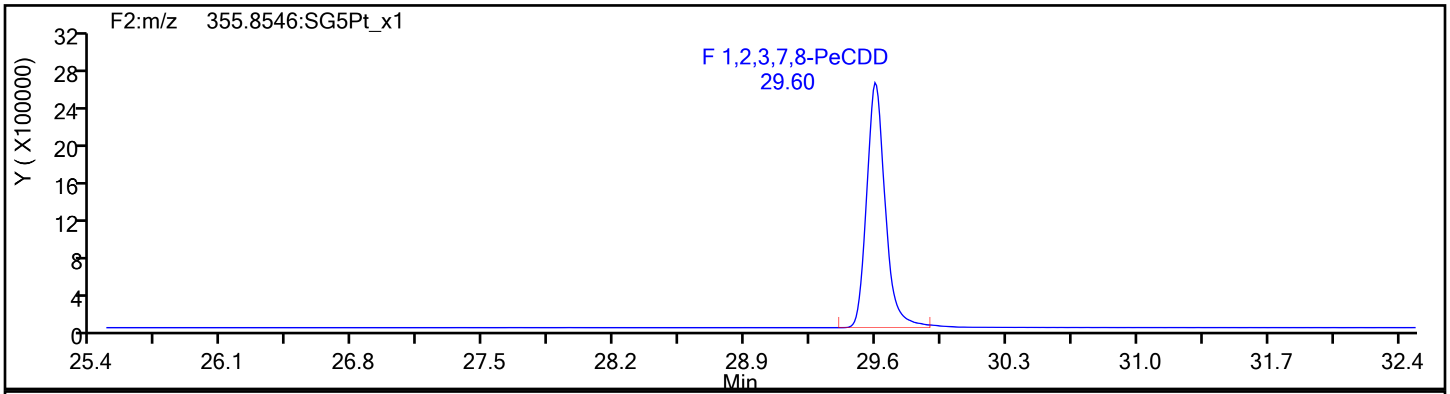

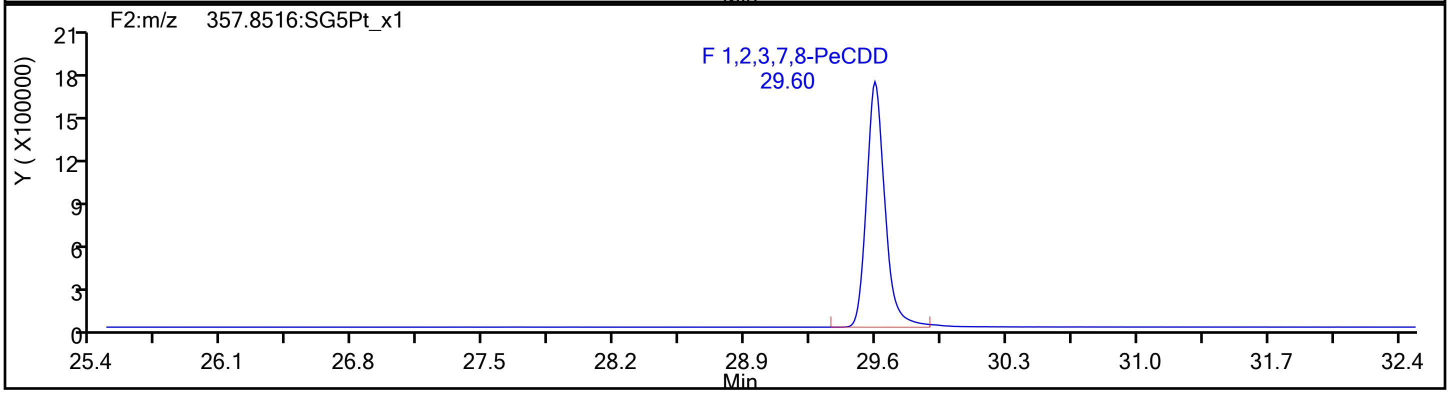

PeCDD Standards

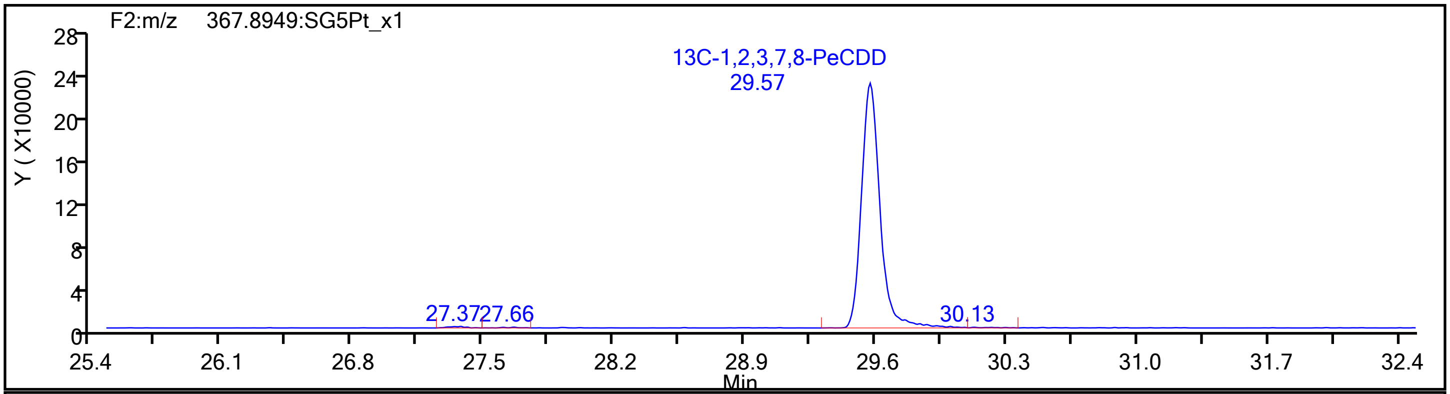

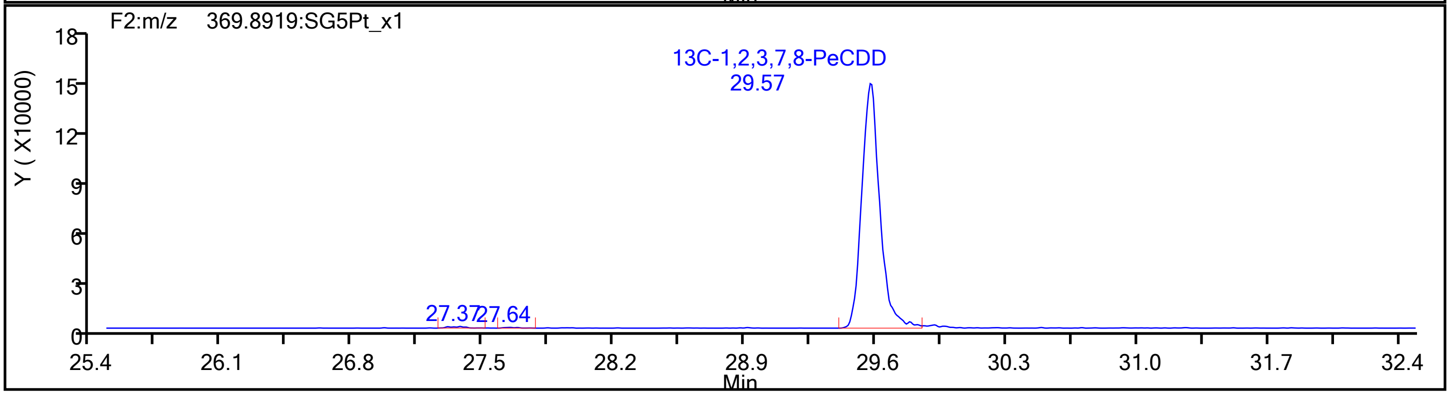

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Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

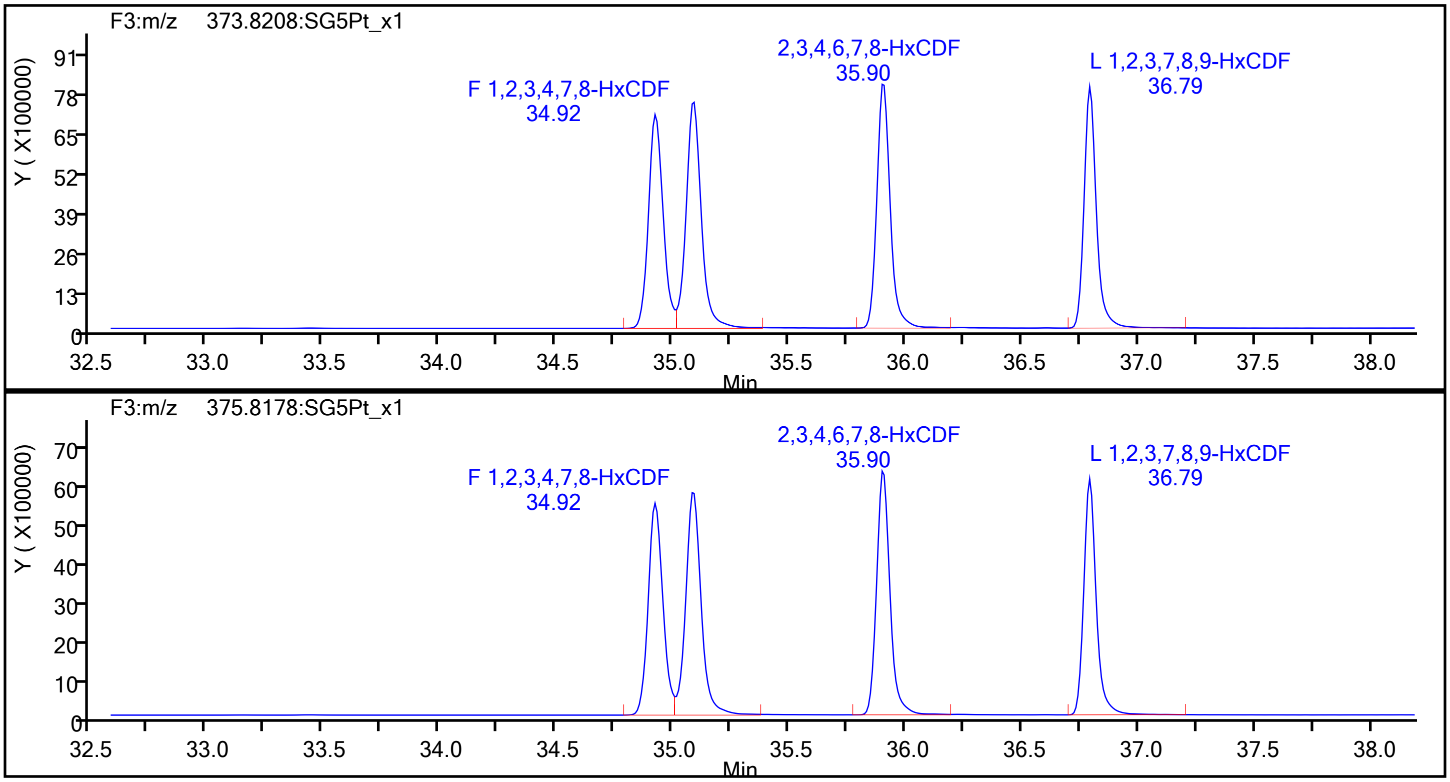

HxCDF Standards

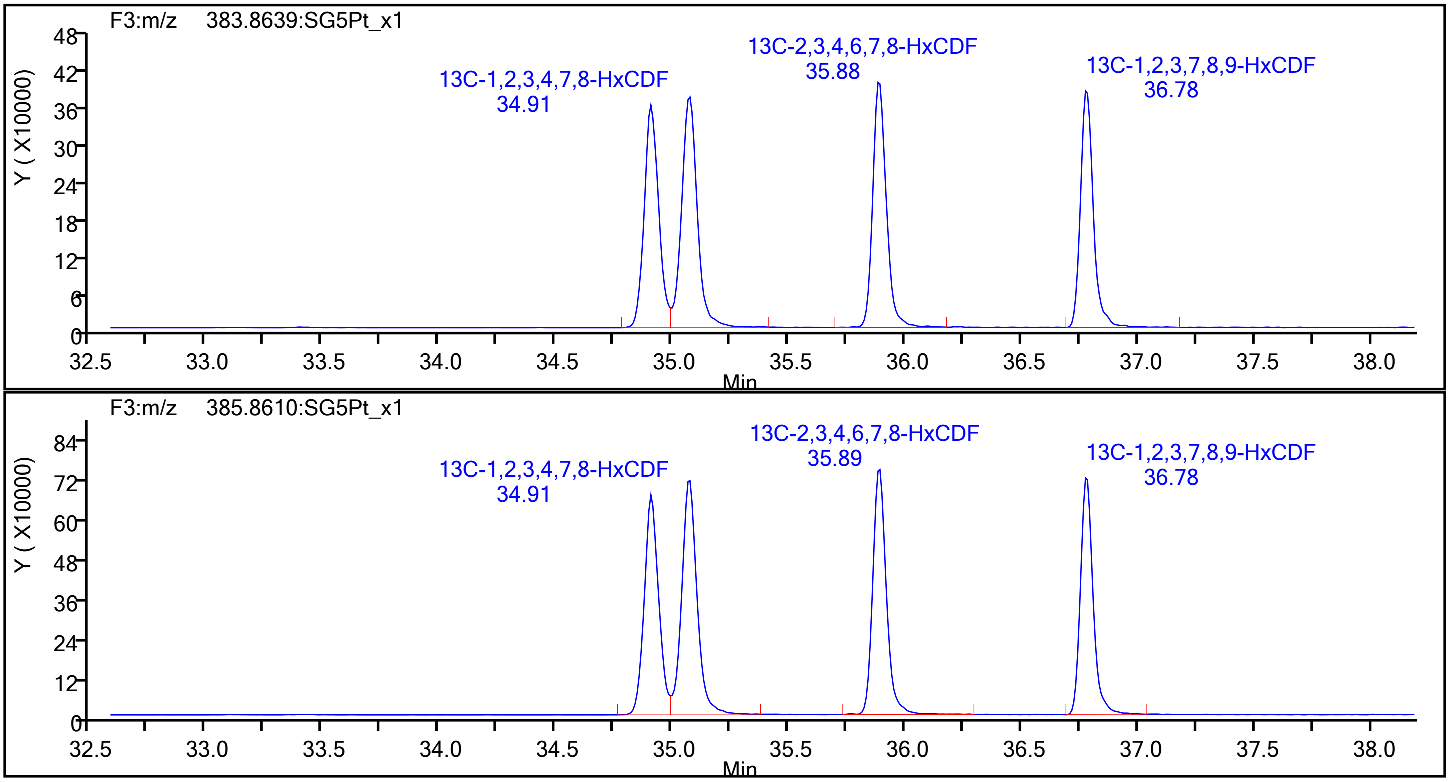

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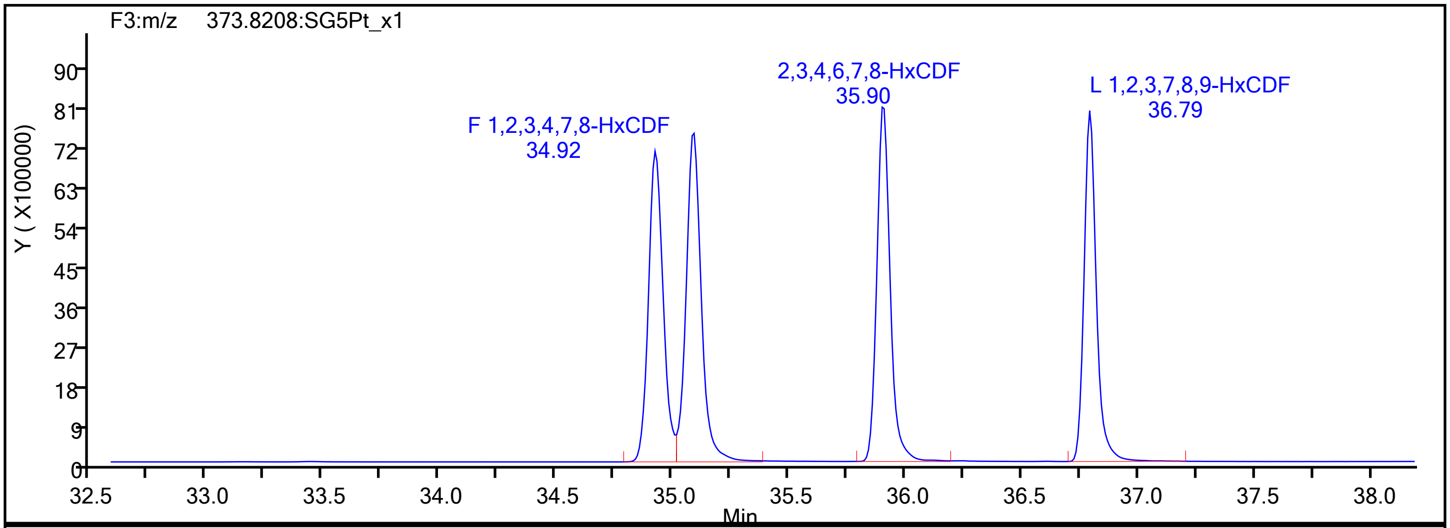

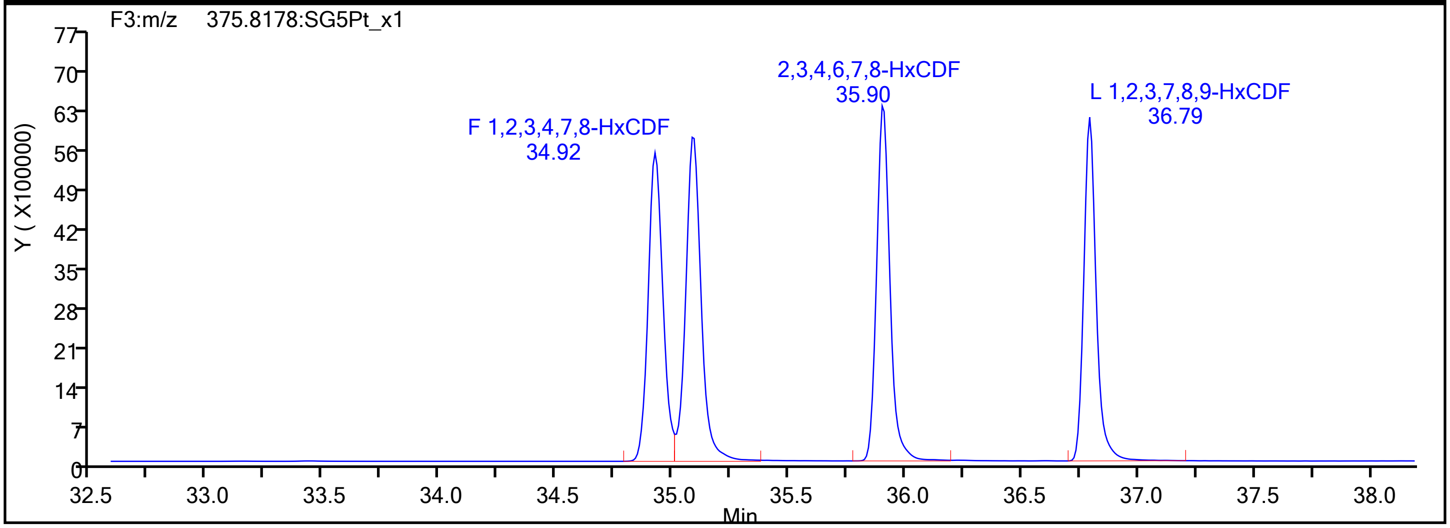

HxCDF Interference Mass

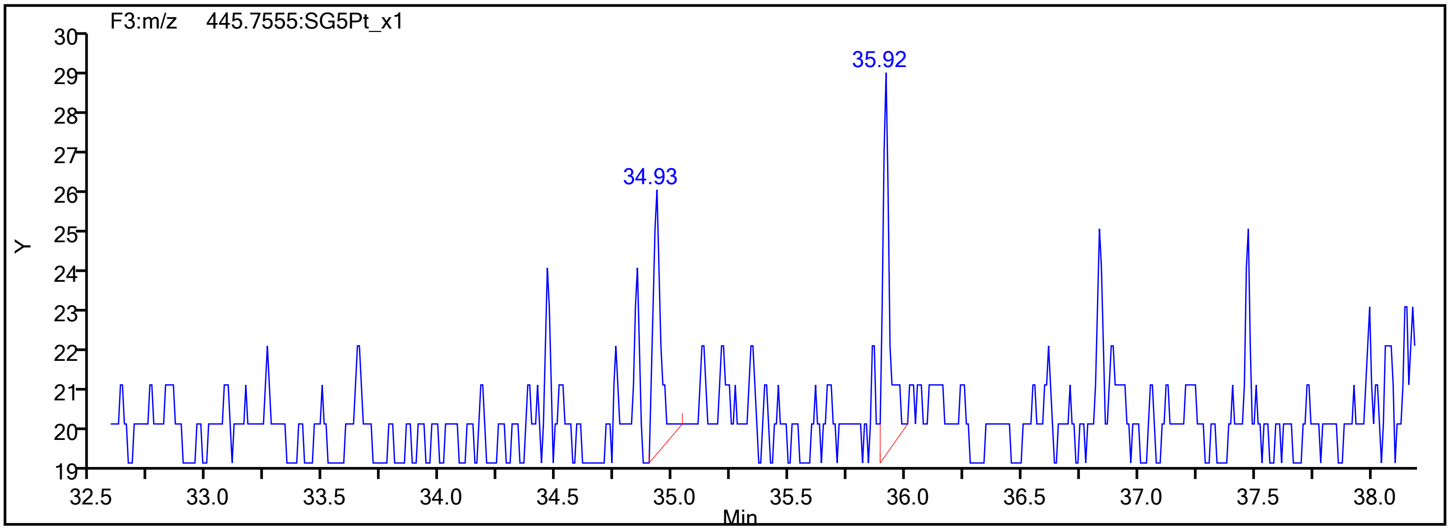

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Eurofins TestAmerica, Sacramento

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HxCDD

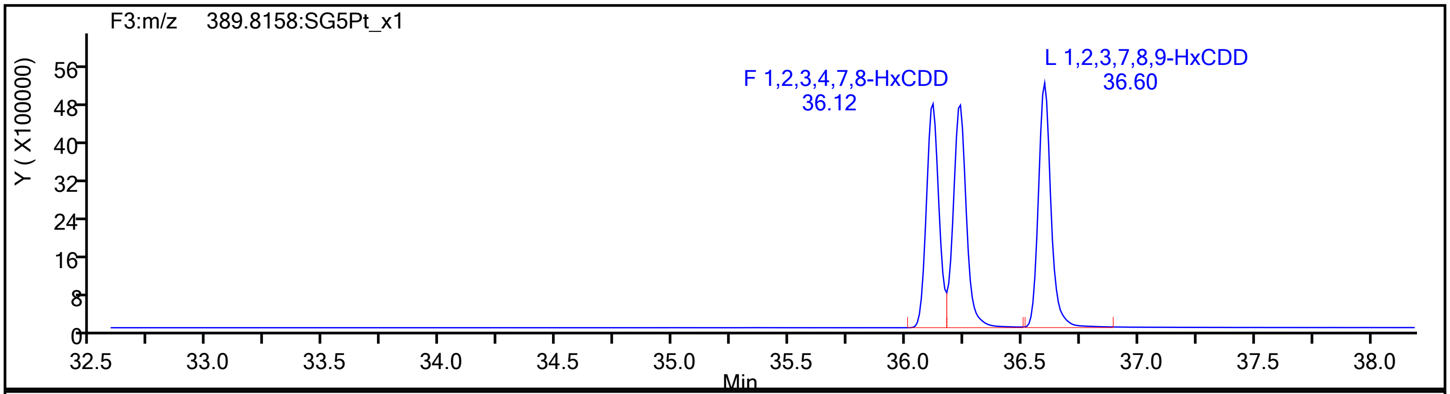

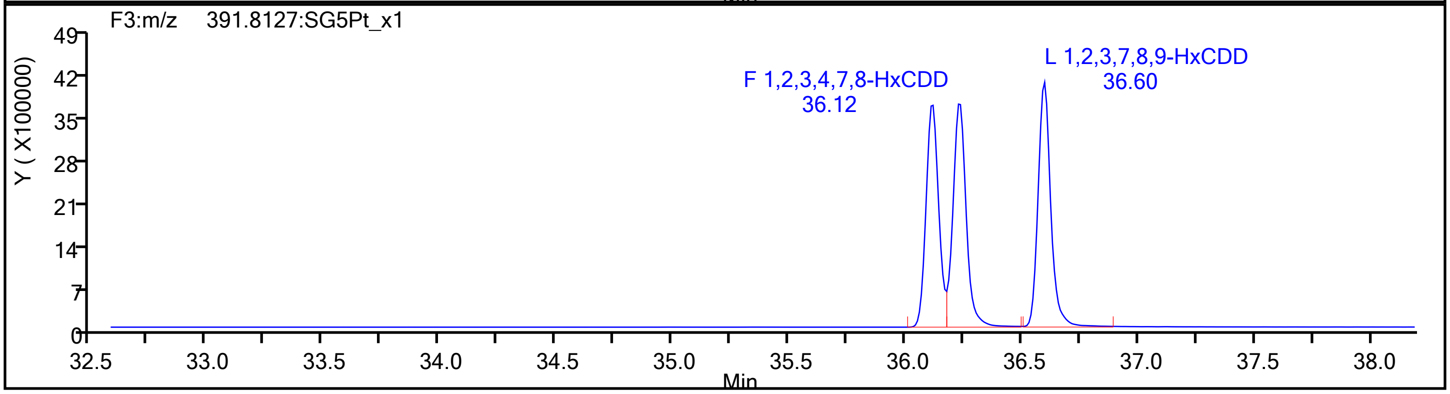

HxCDD Standards

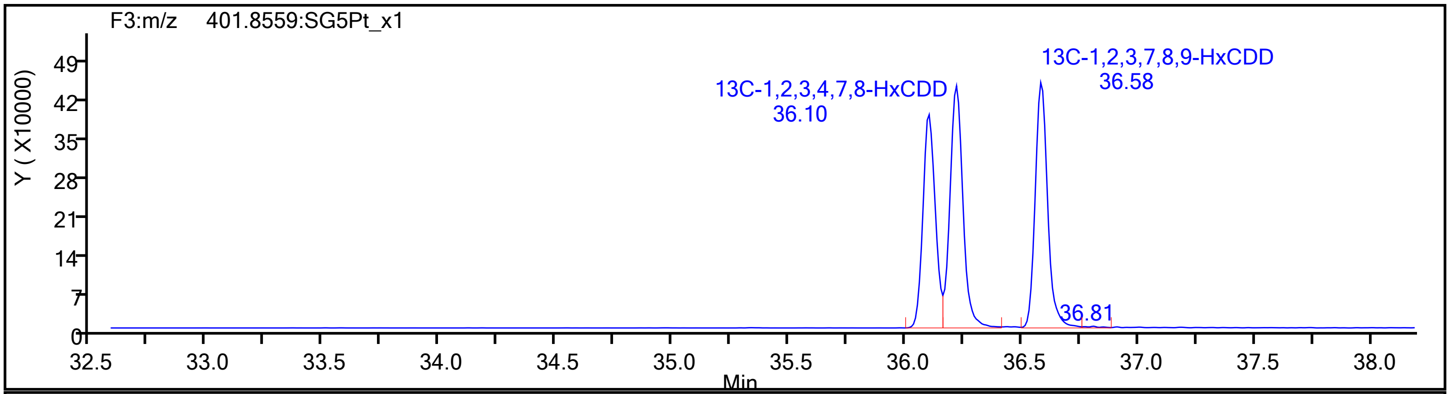

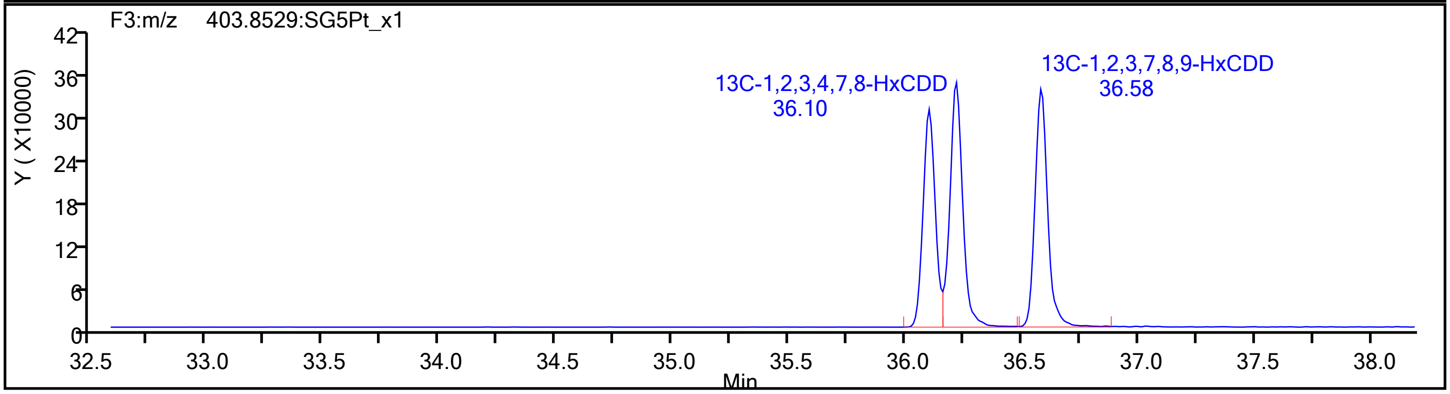

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HpCDF

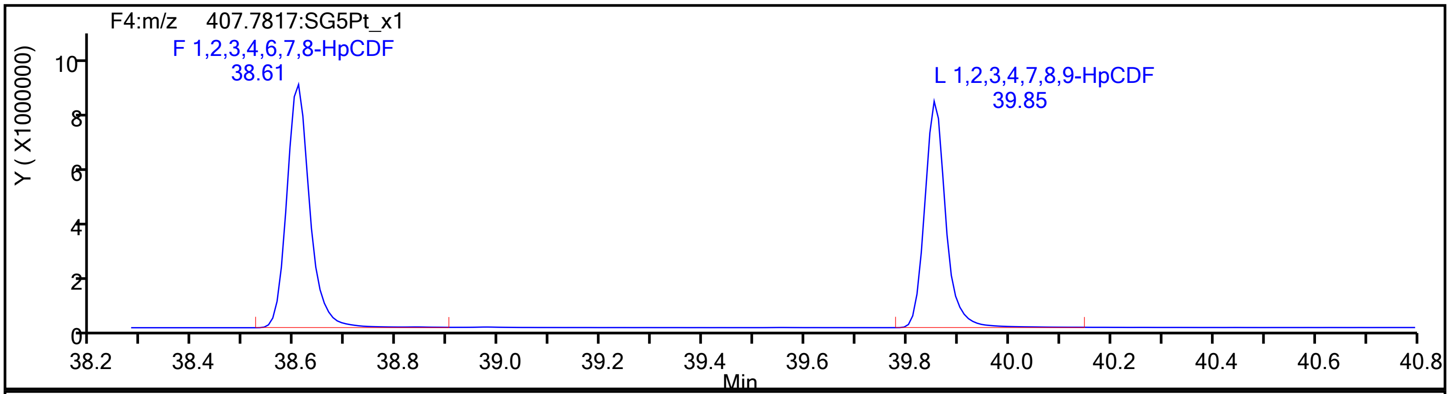

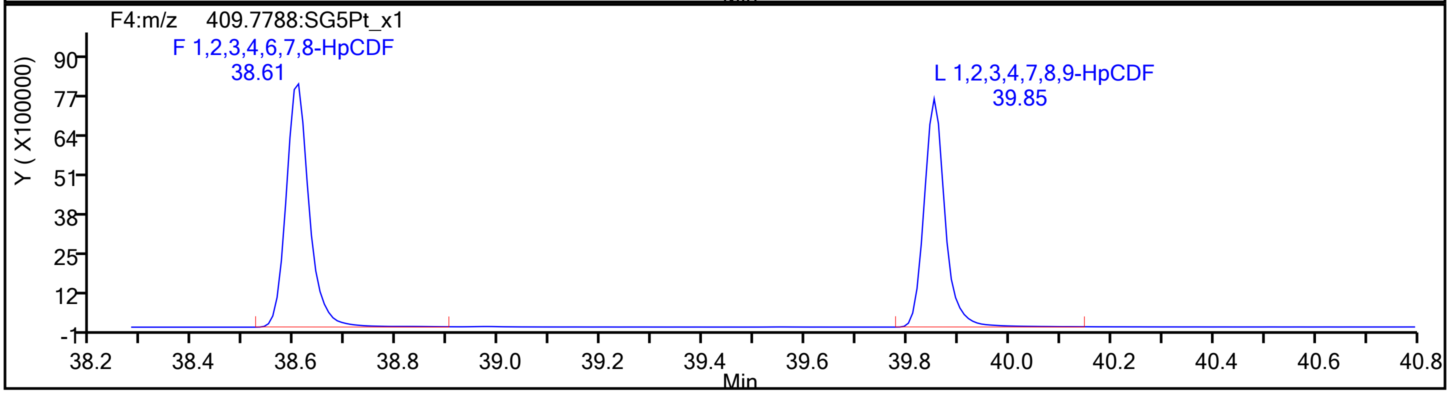

HpCDF Standards

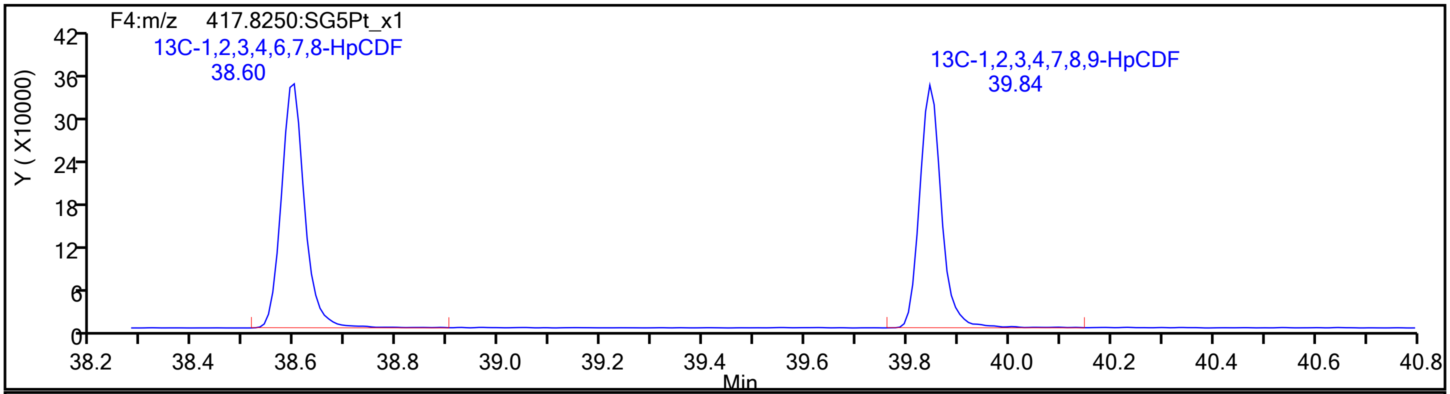

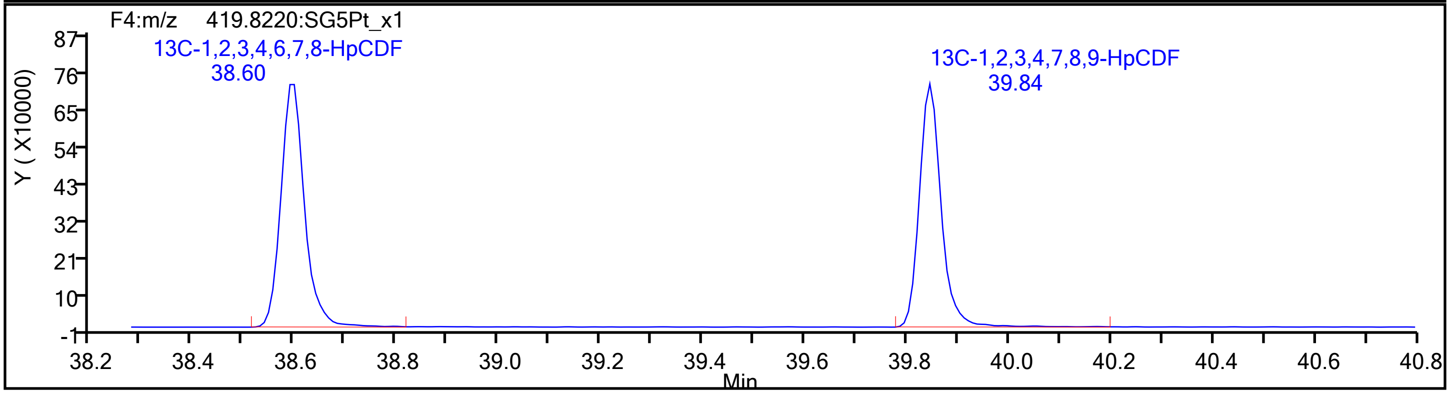

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HpCDF

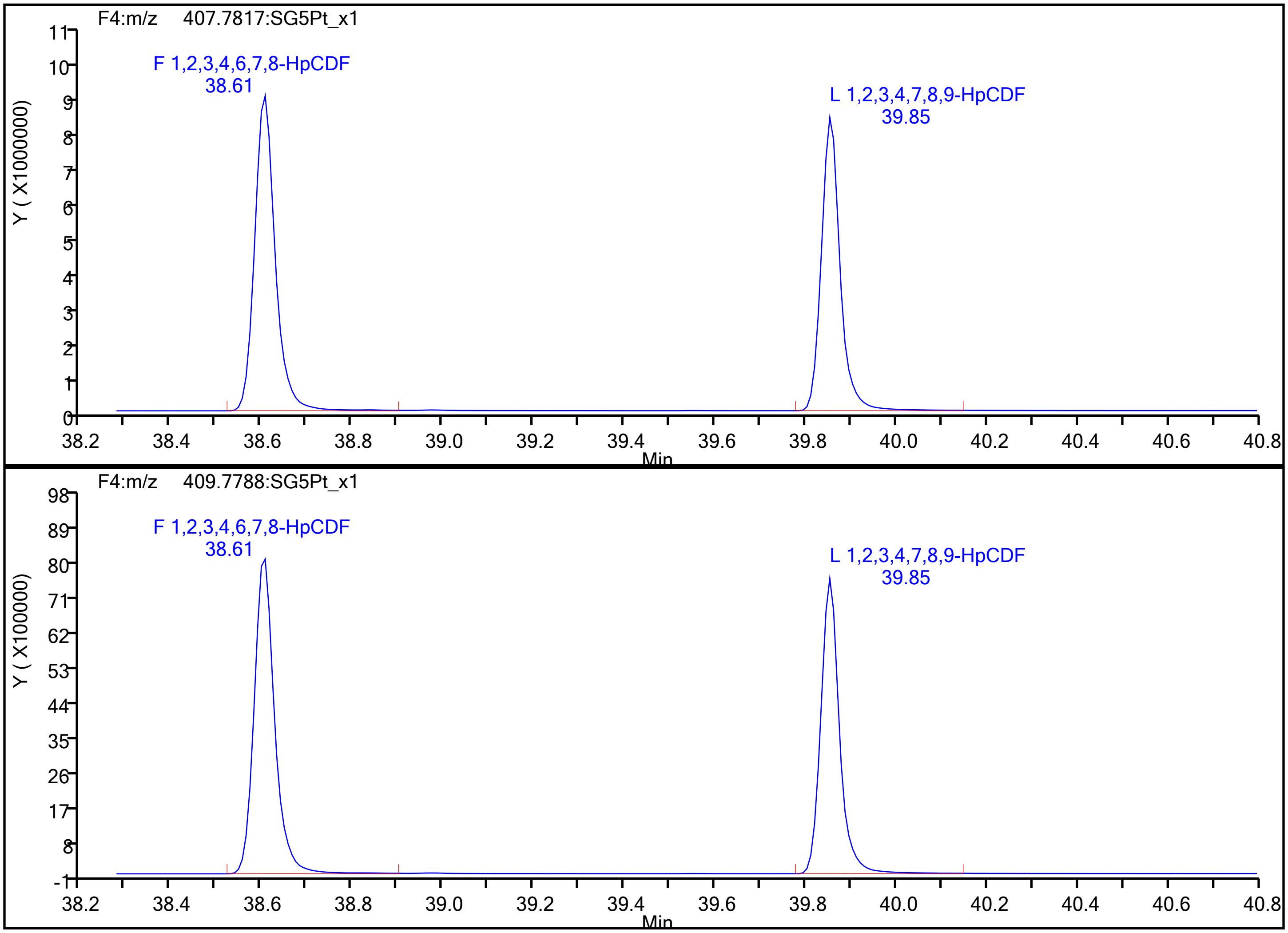

HpCDF Interference Mass

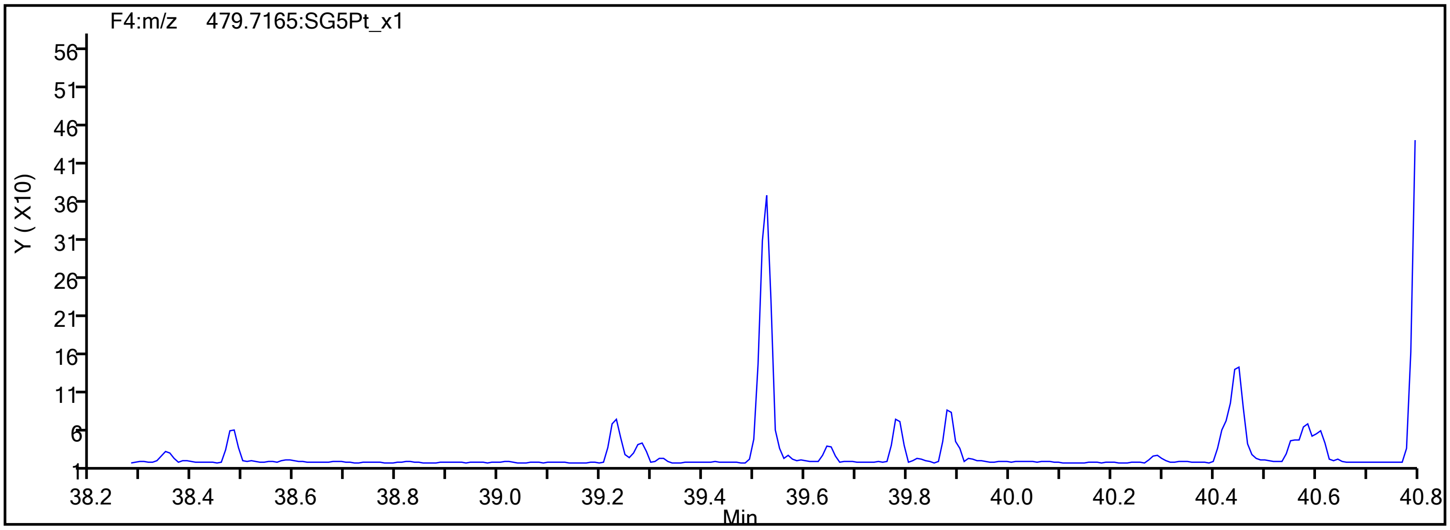

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HpCDD

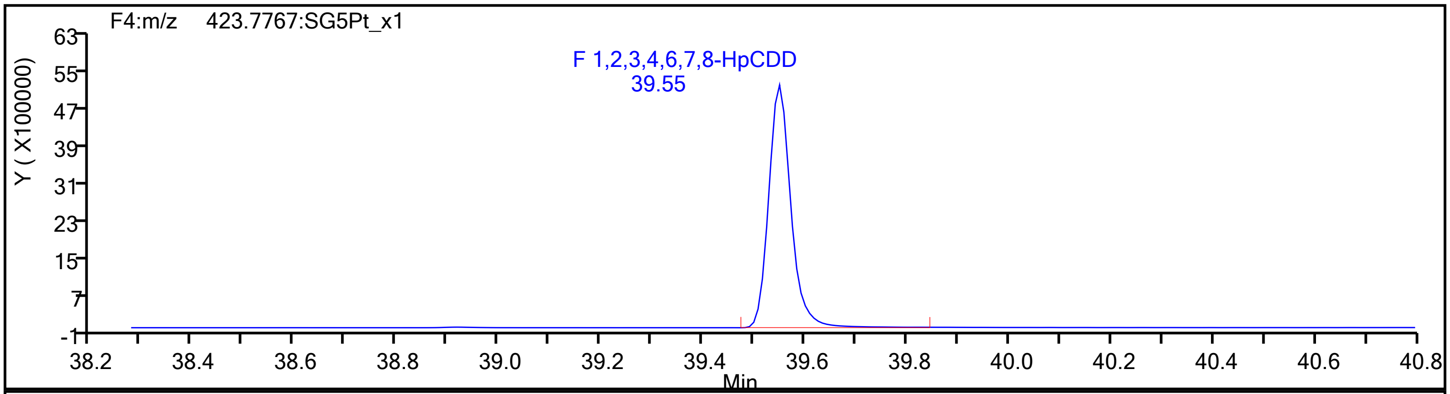

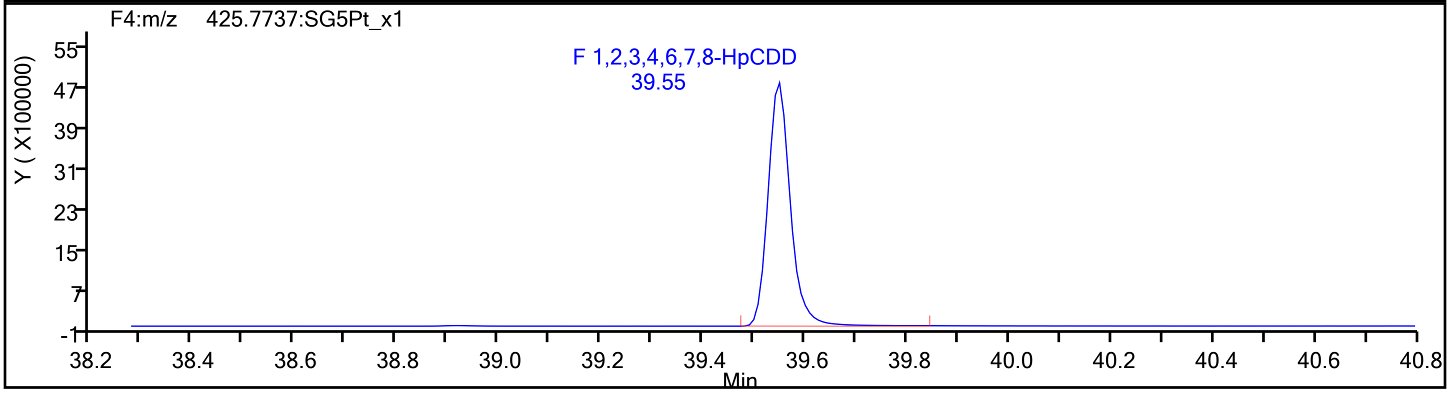

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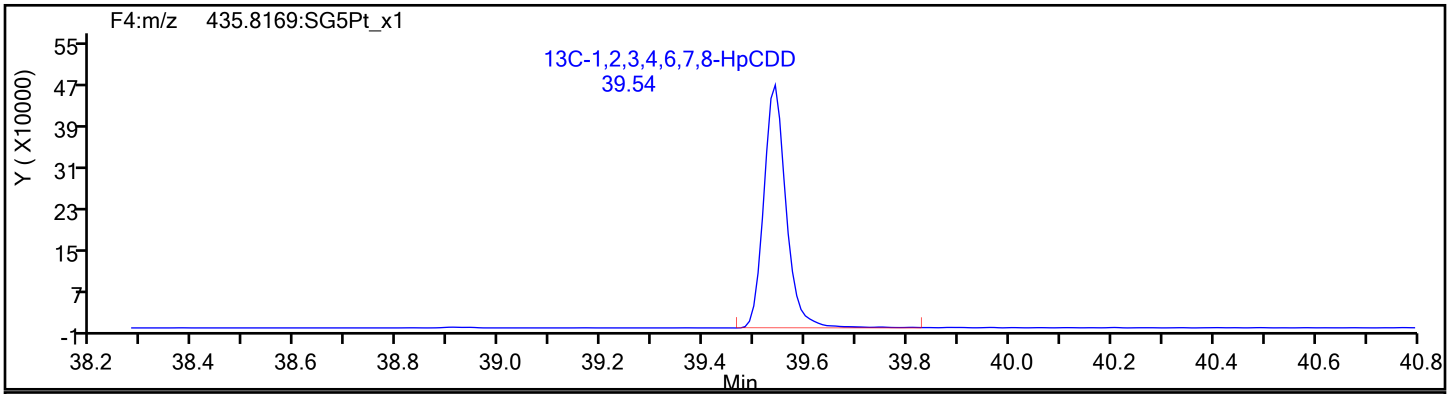

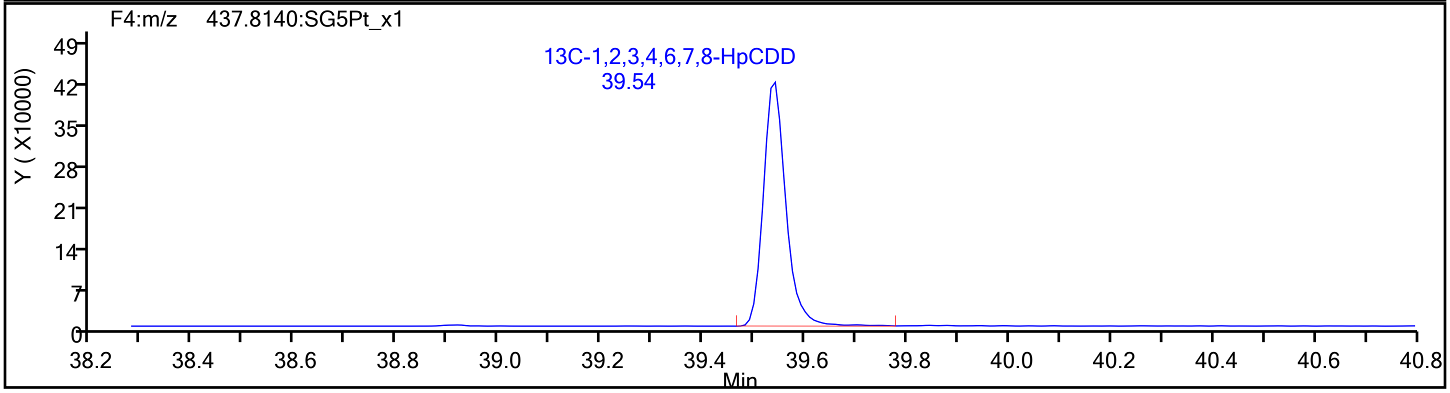

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OCDF

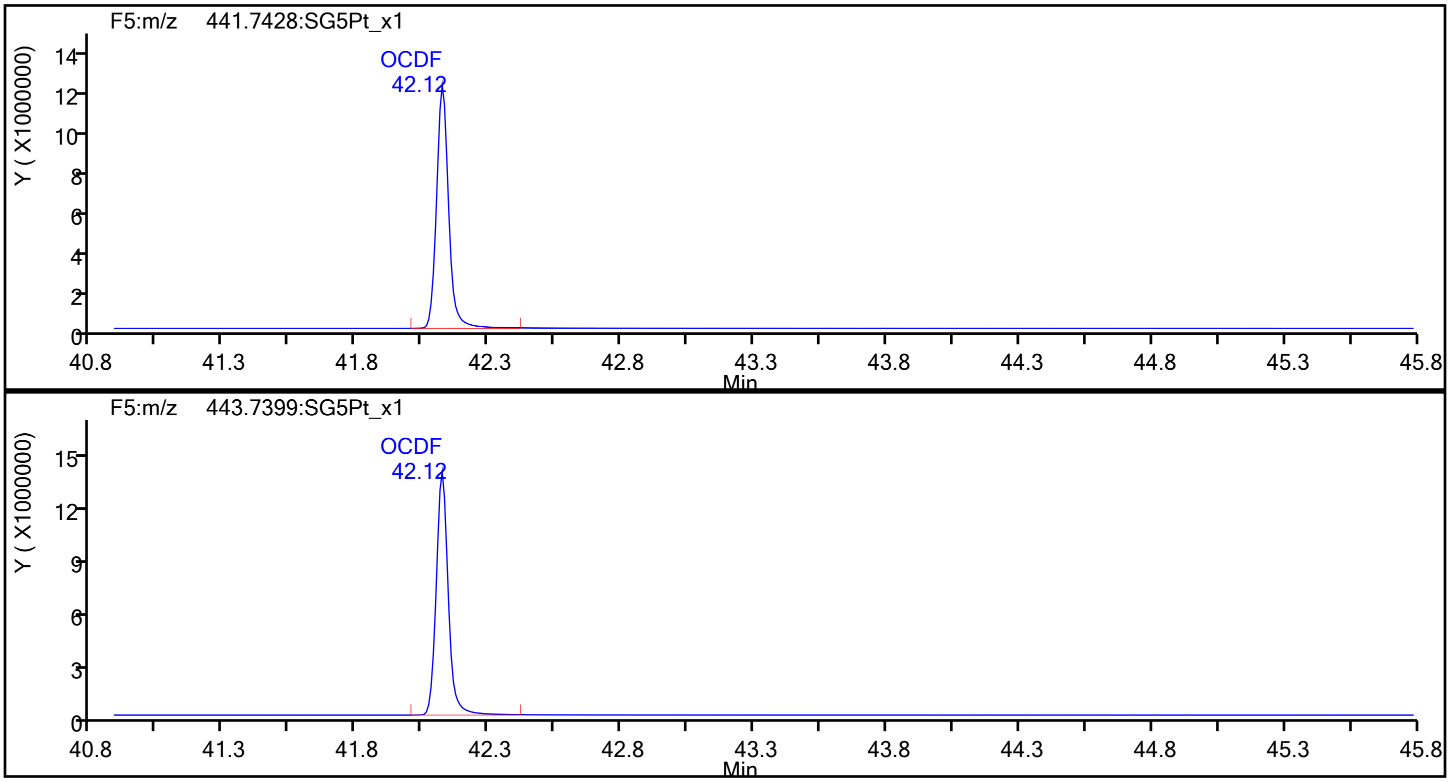

OCDF Standards

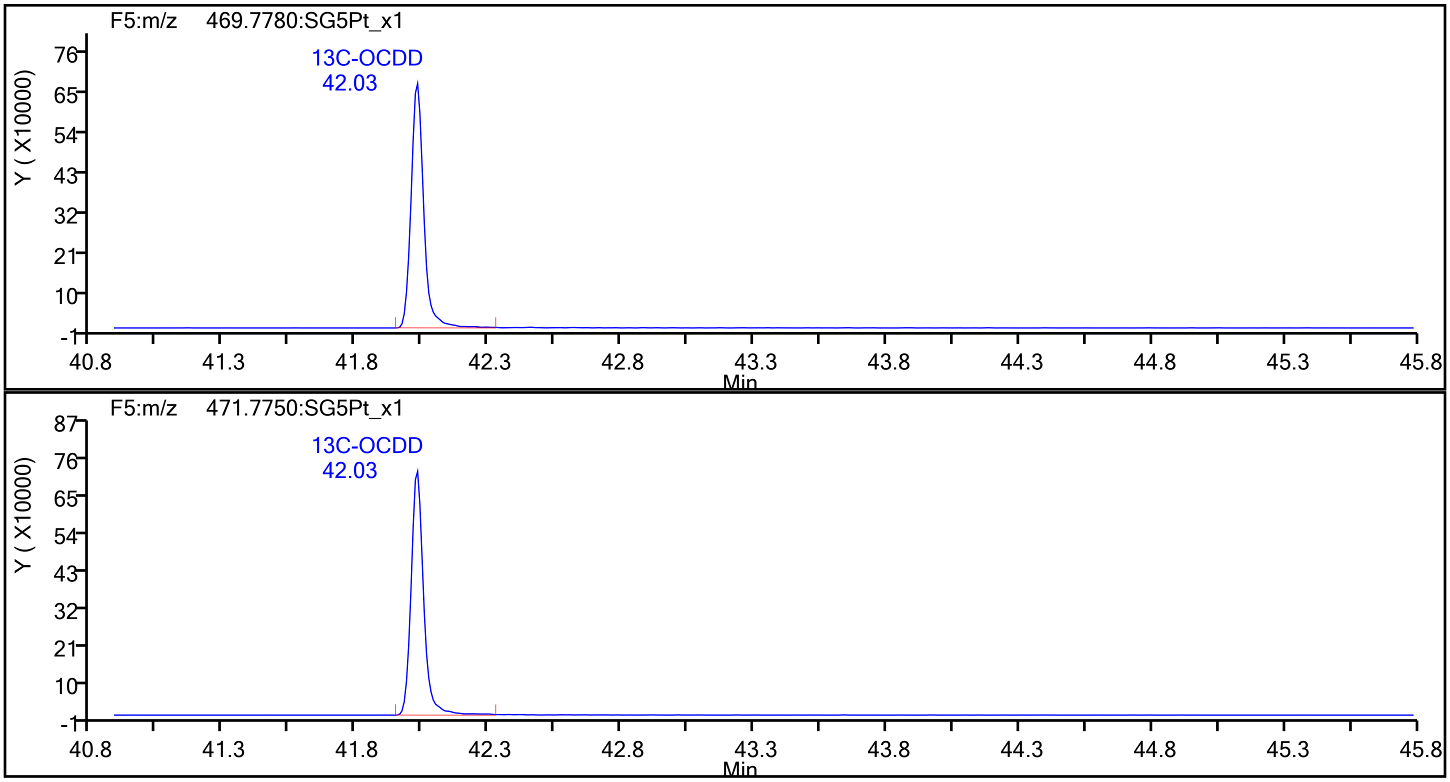

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Eurofins TestAmerica, Sacramento

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OCDF

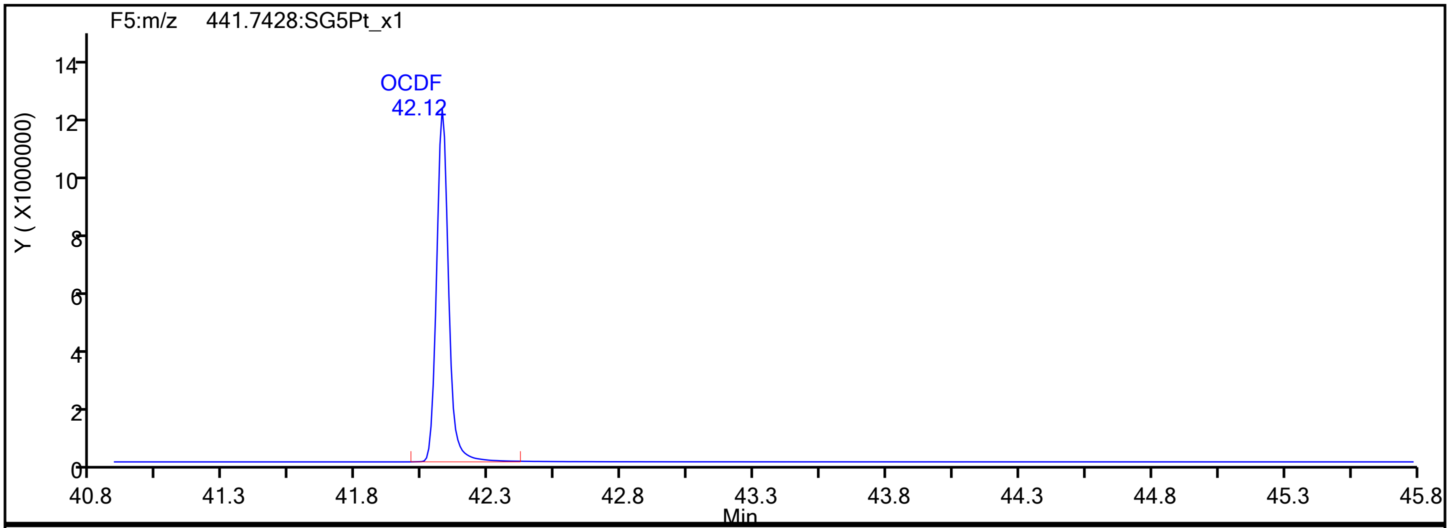

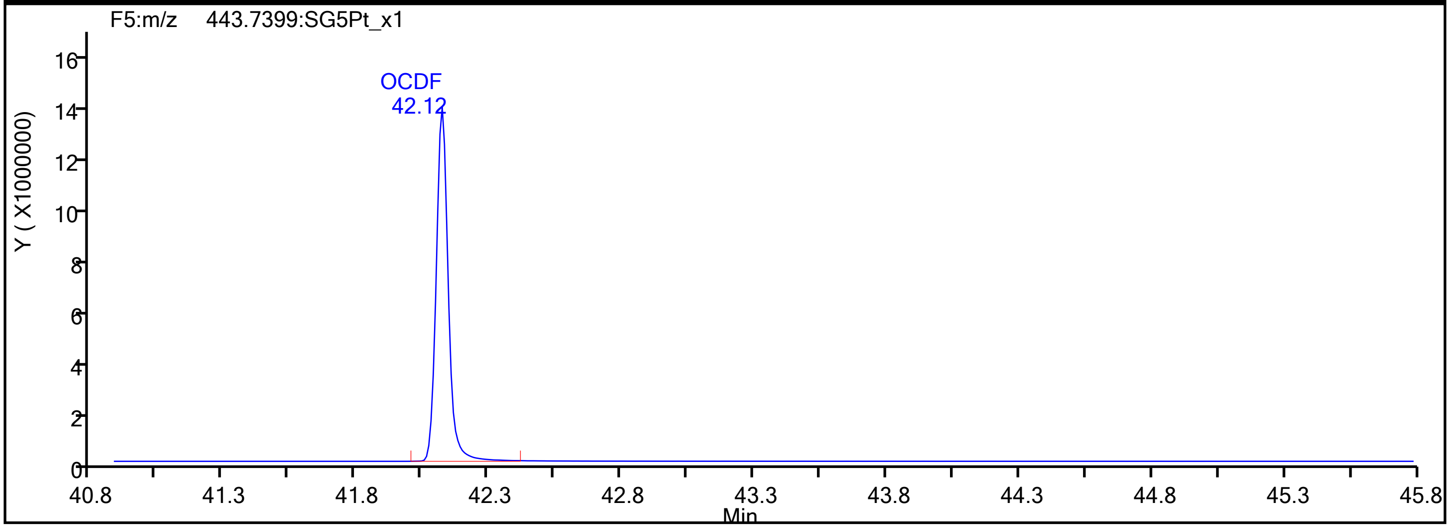

OCDF Interference Mass

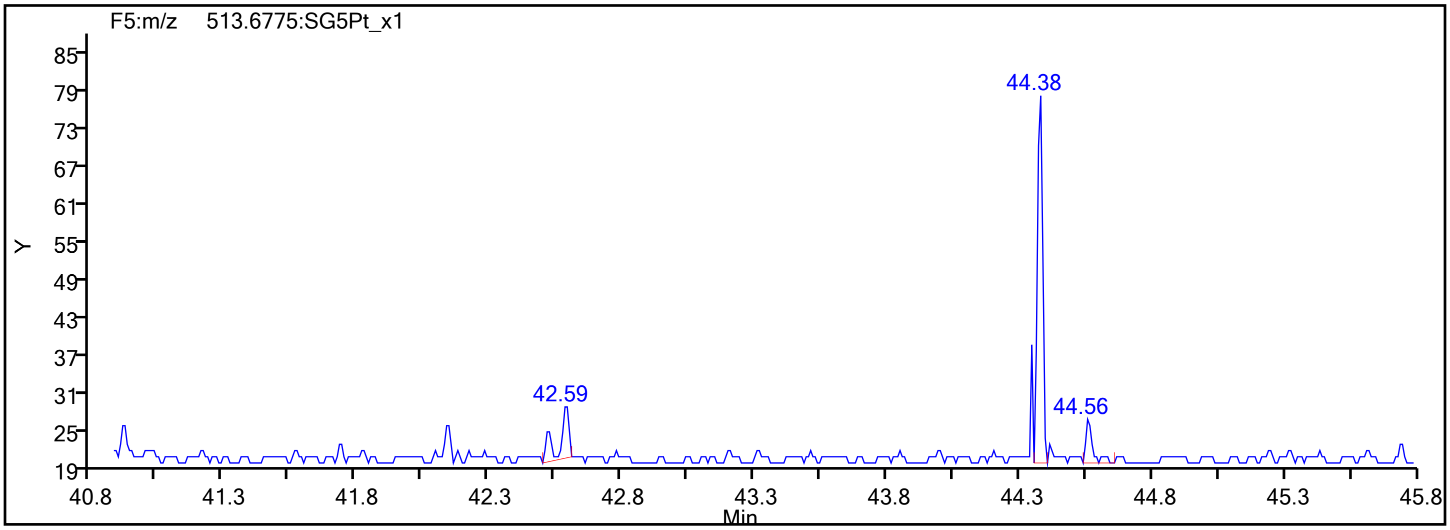

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OCDD

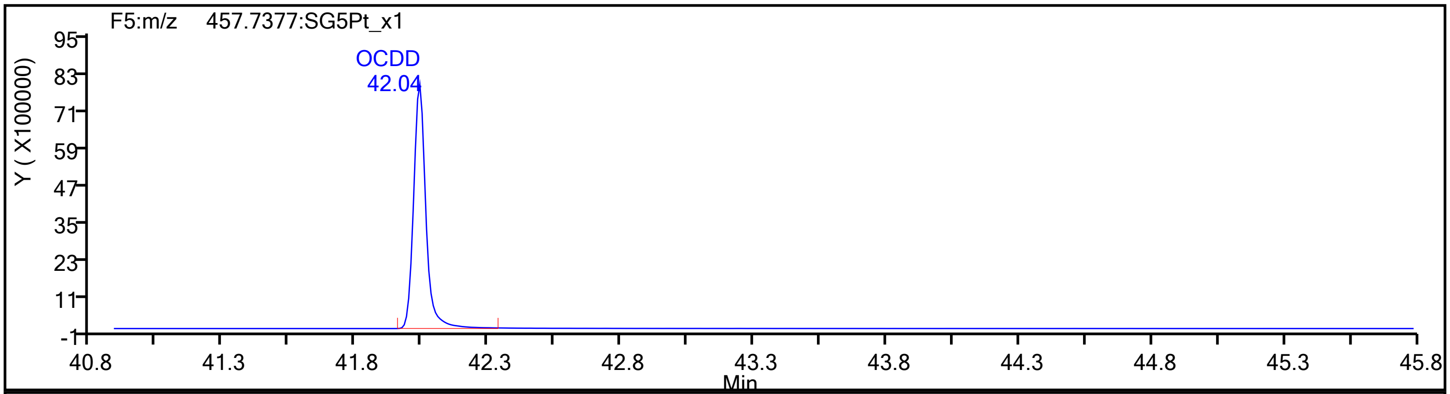

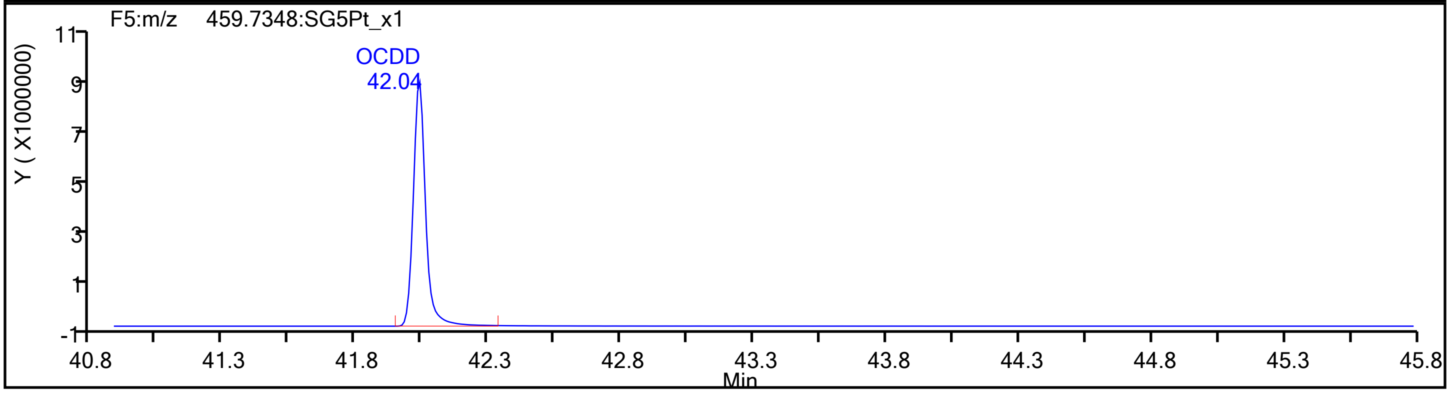

OCDD Standards

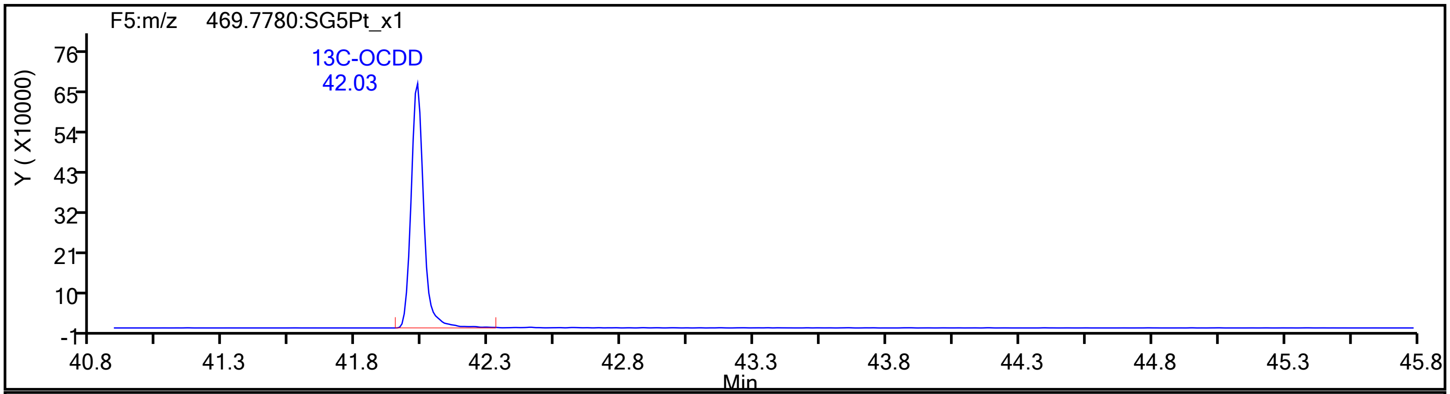

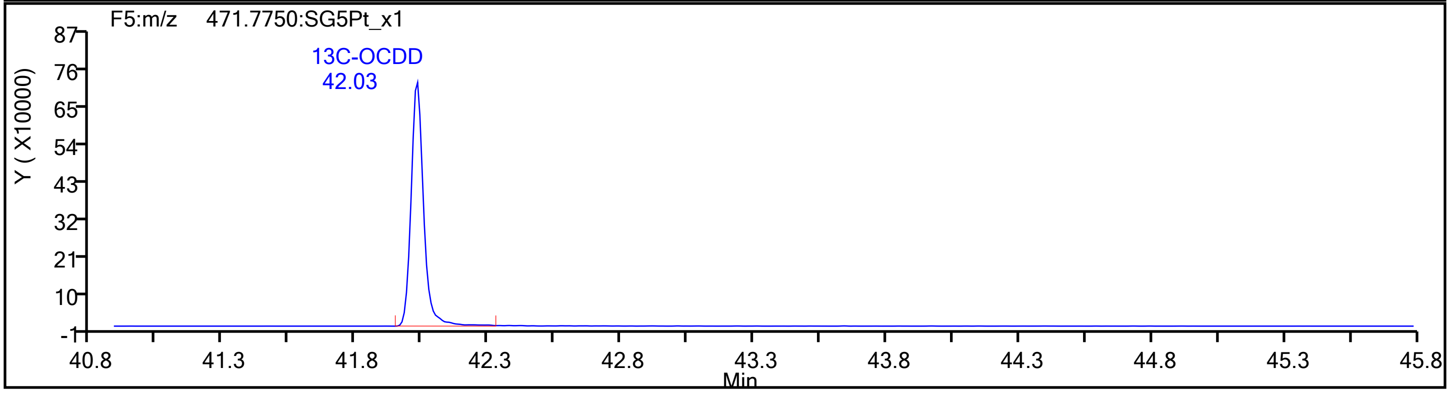

Report Date: 04-Jan-2021 09:34:19		Chrom Revision: 2.3 18-Dec-2020 13:34:10	

Eurofins TestAmerica, Sacramento

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Injection Date:	31-Dec-2020 17:29:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

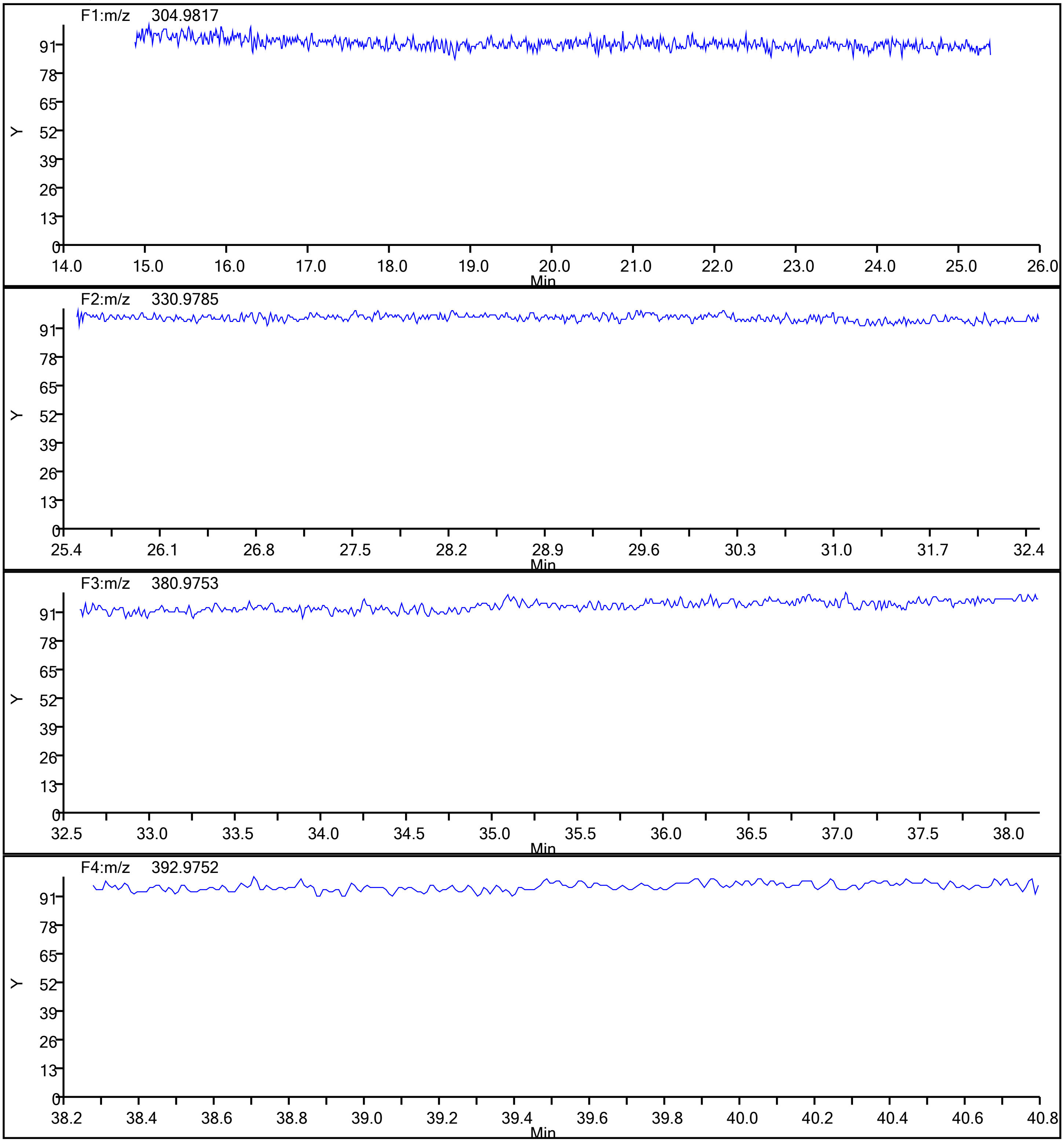

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Injection Date: 31-Dec-2020 17:29:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

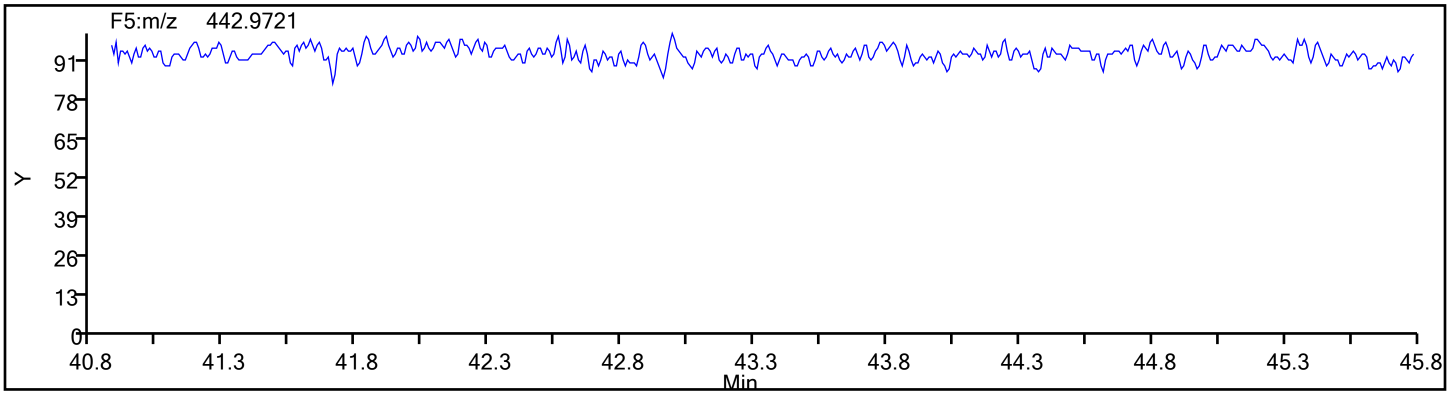

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.215

Error Coefficients

Standard Error:	15300000
Relative Standard Error:	8.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.407673	100.0	2365808.0	1.363069	Y
2	IC 320-447767/4	10.0	12.720566	100.0	2201663.0	1.272057	Y
3	IC 320-447767/5	50.0	57.95937	100.0	1786919.0	1.159187	Y
4	IC 320-447767/6	200.0	232.884508	100.0	1931487.0	1.164423	Y
5	IC 320-447767/7	1000.0	1114.114875	100.0	2706216.0	1.114115	Y

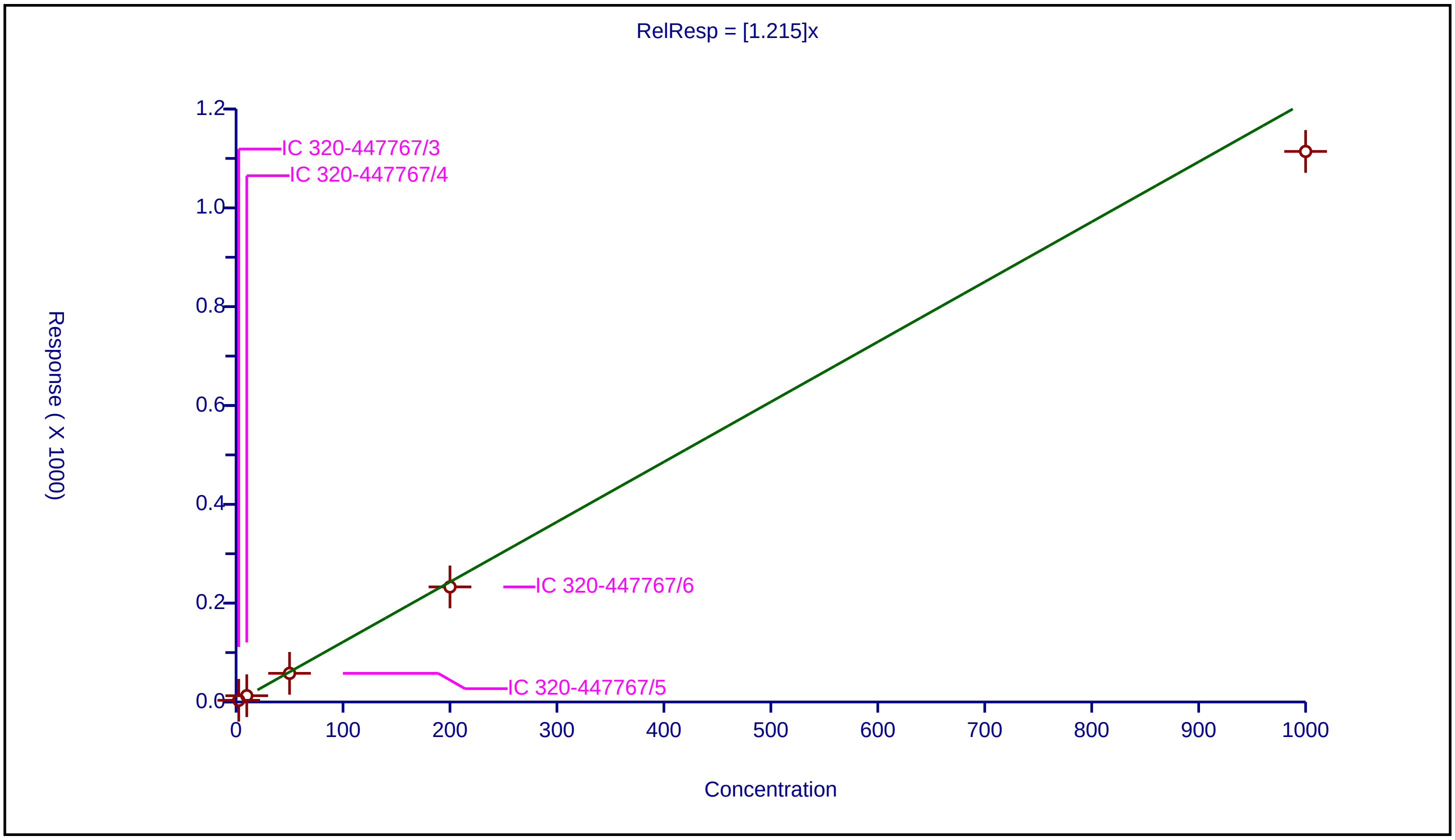

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.649

Error Coefficients

Standard Error:	26300000
Relative Standard Error:	8.8
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	4.671638	100.0	3021638.0	1.868655	Y
2	IC 320-447767/4	10.0	17.228854	100.0	2761919.0	1.722885	Y
3	IC 320-447767/5	50.0	78.555569	100.0	2206848.0	1.571111	Y
4	IC 320-447767/6	200.0	312.117556	100.0	2458986.0	1.560588	Y
5	IC 320-447767/7	1000.0	1520.098542	100.0	3420059.0	1.520099	Y

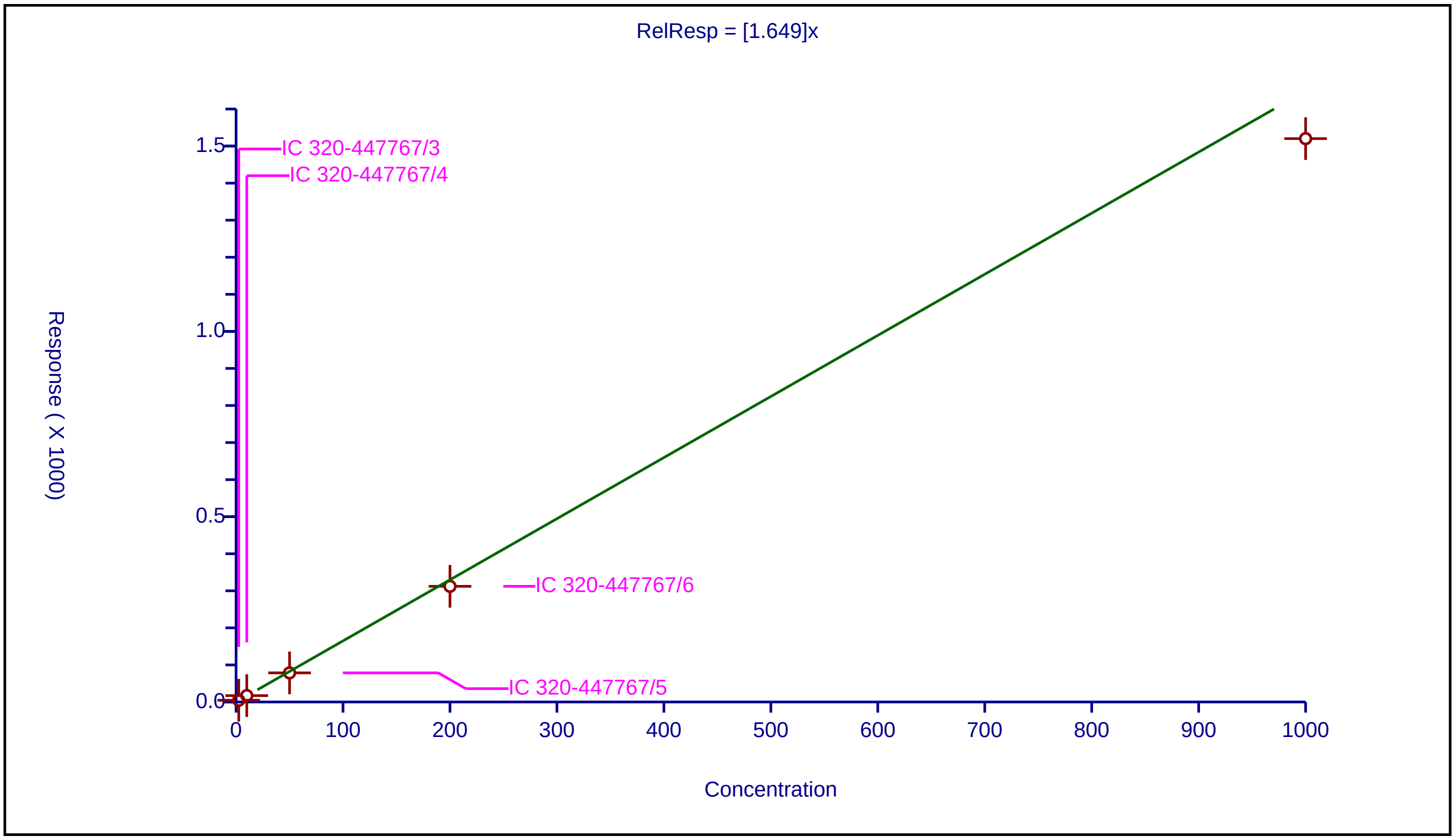

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.572

Error Coefficients

Standard Error:	22400000
Relative Standard Error:	9.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	4.497433	100.0	2625609.0	1.798973	Y
2	IC 320-447767/4	10.0	16.054484	100.0	2478971.0	1.605448	Y
3	IC 320-447767/5	50.0	77.195126	100.0	1885632.0	1.543903	Y
4	IC 320-447767/6	200.0	302.509161	100.0	2137527.0	1.512546	Y
5	IC 320-447767/7	1000.0	1400.756176	100.0	3157997.0	1.400756	Y

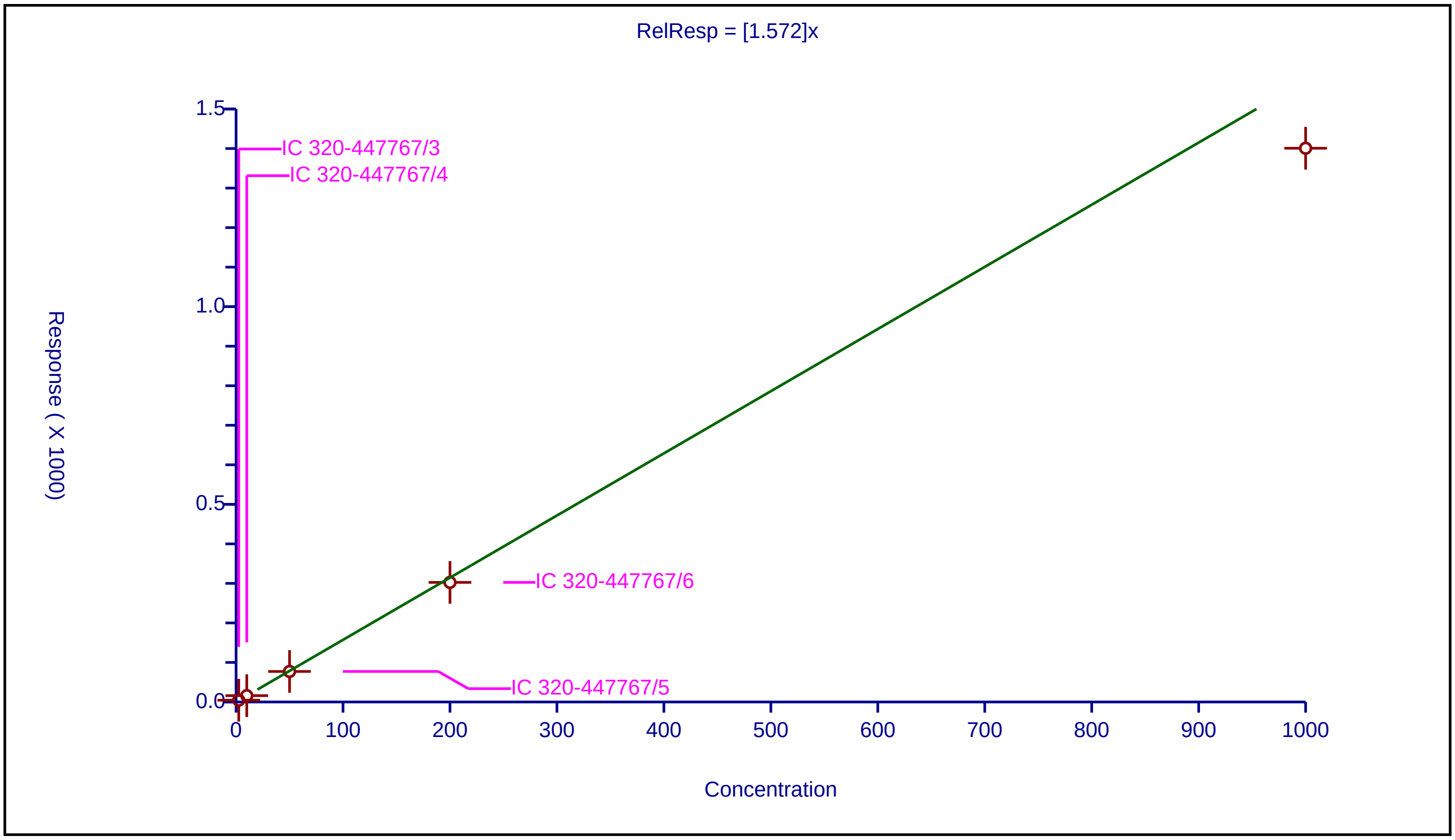

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.342

Error Coefficients

Standard Error:	16000000
Relative Standard Error:	10.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.986

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.927449	100.0	2209857.0	1.570979	Y
2	IC 320-447767/4	10.0	13.659934	100.0	2065215.0	1.365993	Y
3	IC 320-447767/5	50.0	64.914308	100.0	1653238.0	1.298286	Y
4	IC 320-447767/6	200.0	249.488412	100.0	1865857.0	1.247442	Y
5	IC 320-447767/7	1000.0	1228.444986	100.0	2571012.0	1.228445	Y

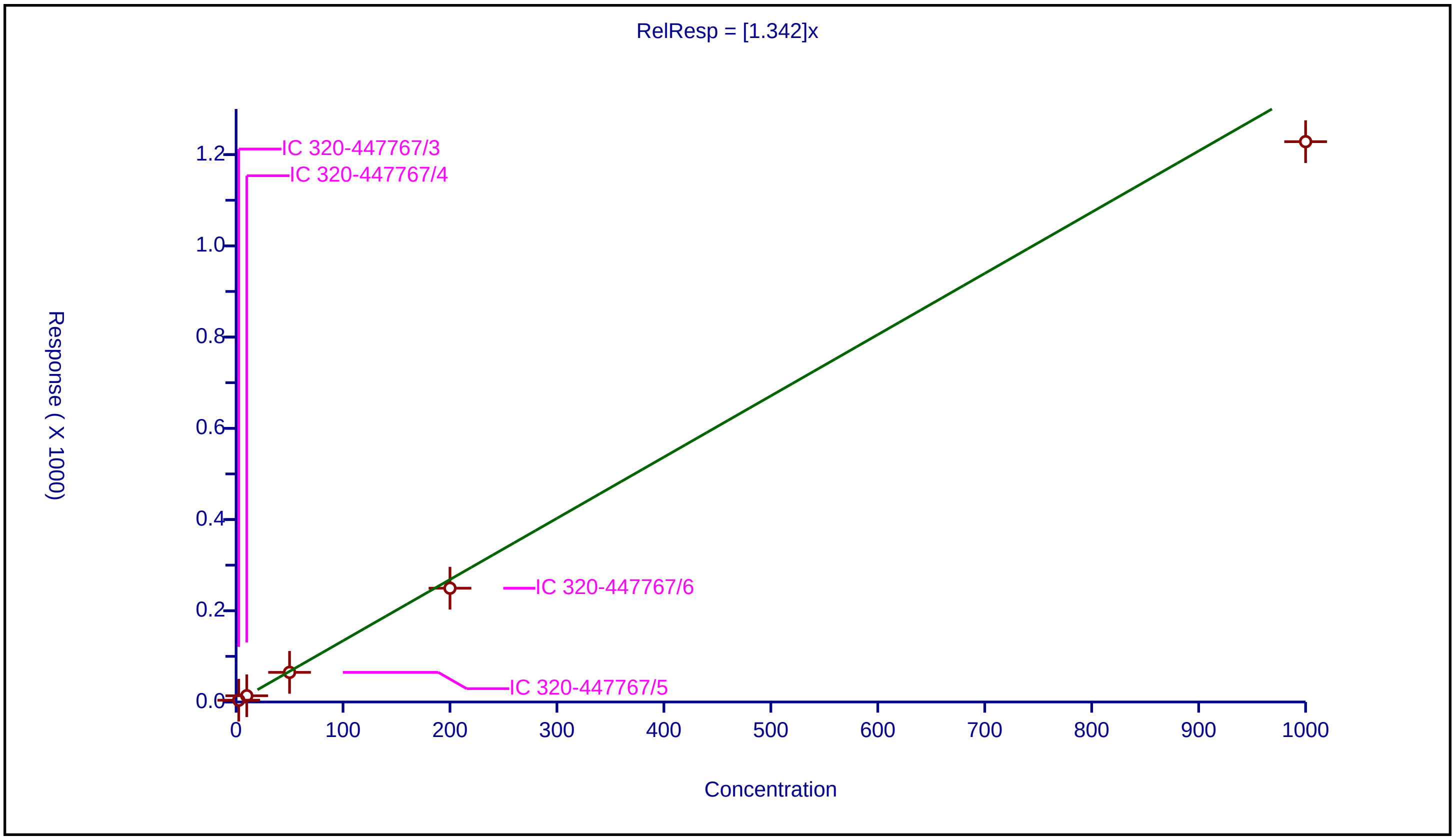

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.355

Error Coefficients

Standard Error:	28000000
Relative Standard Error:	7.8
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.834354	100.0	3942229.0	1.533741	Y
2	IC 320-447767/4	10.0	13.622156	100.0	3696713.0	1.362216	Y
3	IC 320-447767/5	50.0	65.497576	100.0	2753850.0	1.309952	Y
4	IC 320-447767/6	200.0	262.622593	100.0	3114871.0	1.313113	Y
5	IC 320-447767/7	1000.0	1257.653061	100.0	4407903.0	1.257653	Y

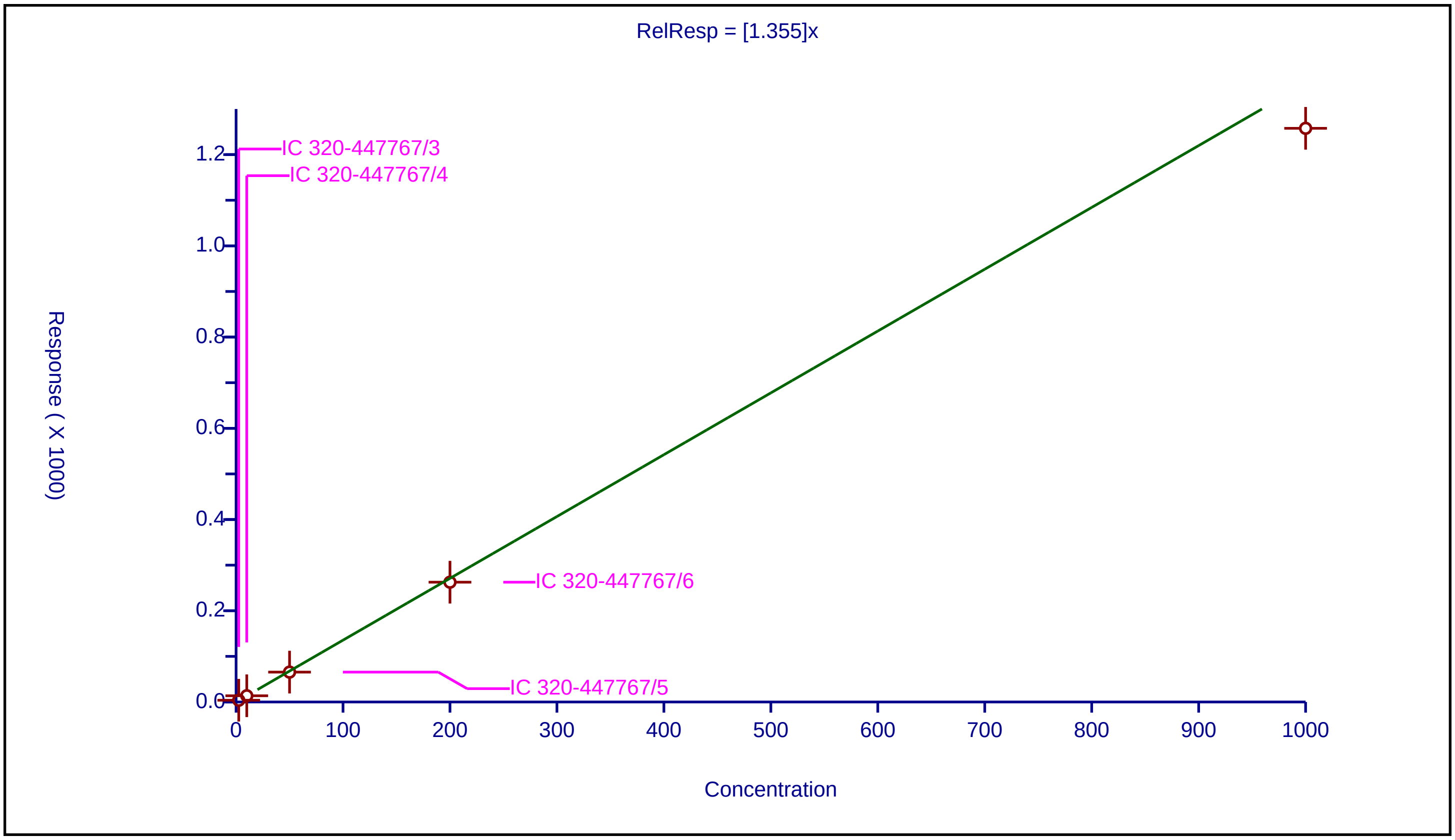

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.199

Error Coefficients

Standard Error:	16800000
Relative Standard Error:	8.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.400709	100.0	2838555.0	1.360284	Y
2	IC 320-447767/4	10.0	12.284104	100.0	2679878.0	1.22841	Y
3	IC 320-447767/5	50.0	58.119824	100.0	2150022.0	1.162396	Y
4	IC 320-447767/6	200.0	231.992428	100.0	2301157.0	1.159962	Y
5	IC 320-447767/7	1000.0	1083.585878	100.0	3061906.0	1.083586	Y

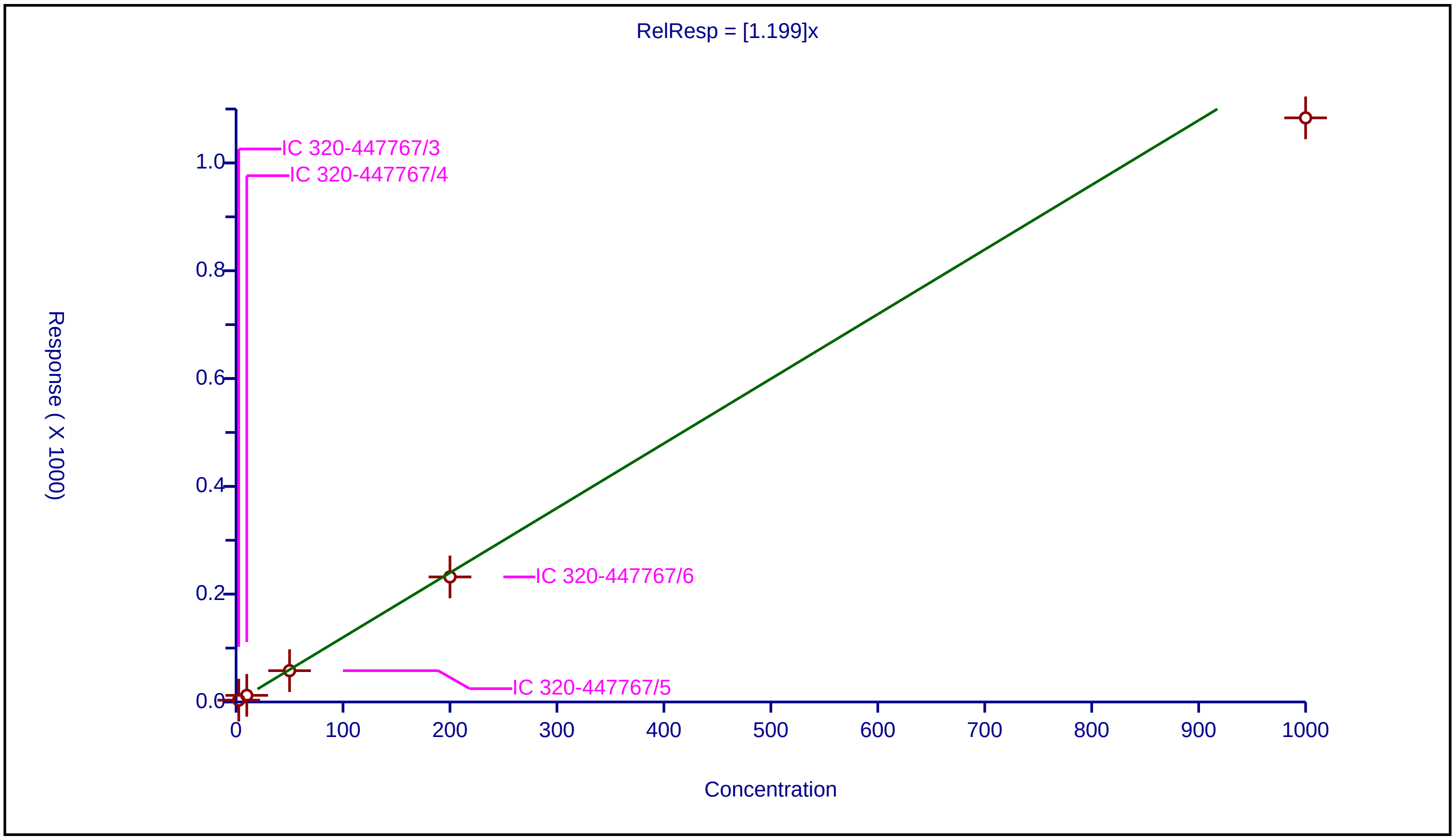

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.308

Error Coefficients

Standard Error:	30900000
Relative Standard Error:	7.4
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.597254	100.0	4870548.0	1.438902	Y
2	IC 320-447767/4	10.0	13.81077	100.0	4314908.0	1.381077	Y
3	IC 320-447767/5	50.0	63.134756	100.0	3460582.0	1.262695	Y
4	IC 320-447767/6	200.0	249.84494	100.0	3751135.0	1.249225	Y
5	IC 320-447767/7	1000.0	1208.492636	100.0	5048362.0	1.208493	Y

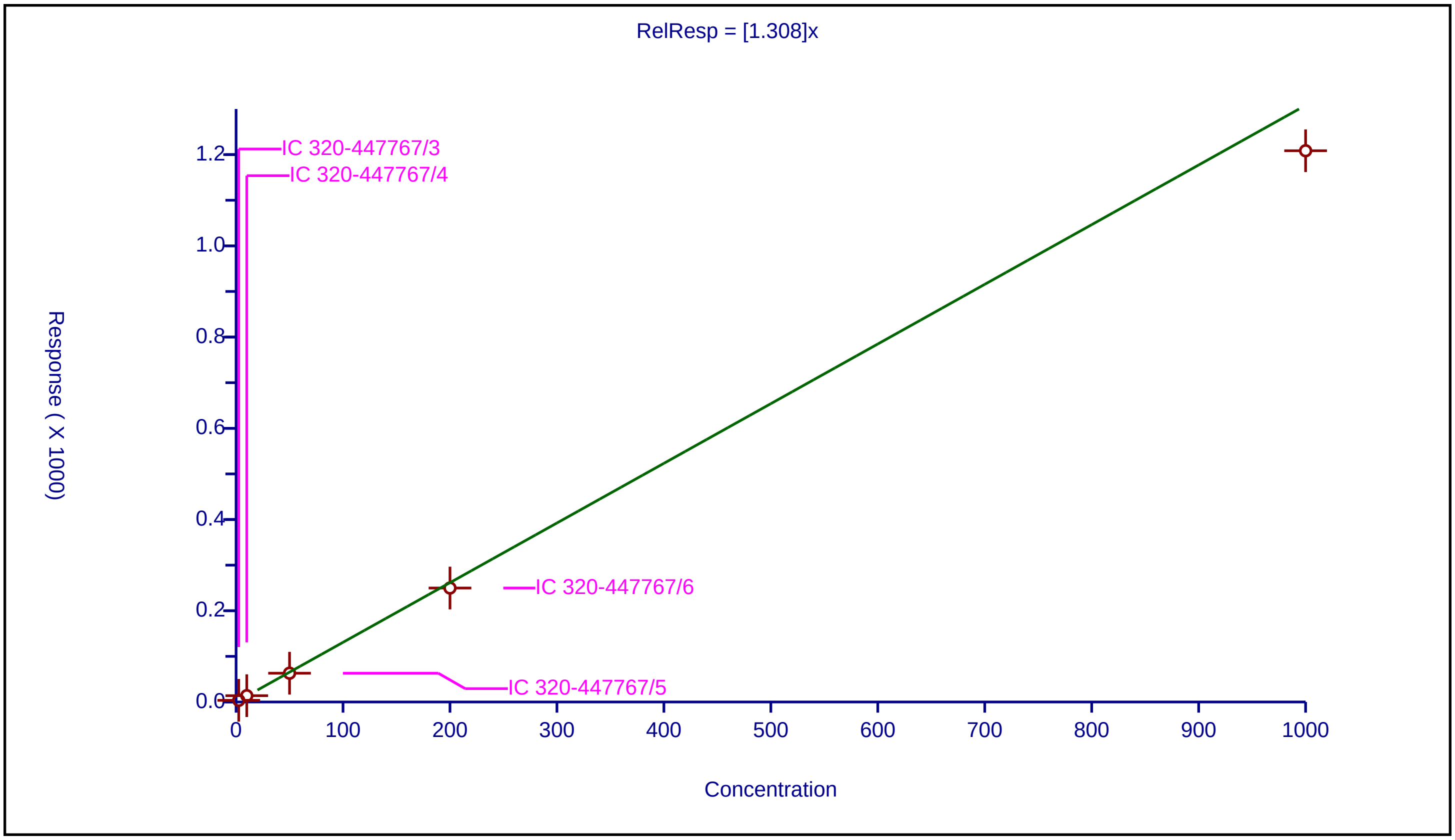

Calibration

/ 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.543

Error Coefficients

Standard Error:	17700000
Relative Standard Error:	11.4
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.982

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	4.530384	100.0	2209857.0	1.812153	Y
2	IC 320-447767/4	10.0	16.098227	100.0	2065215.0	1.609823	Y
3	IC 320-447767/5	50.0	74.819294	100.0	1653238.0	1.496386	Y
4	IC 320-447767/6	200.0	287.405894	100.0	1865857.0	1.437029	Y
5	IC 320-447767/7	1000.0	1360.880463	100.0	2571012.0	1.36088	Y

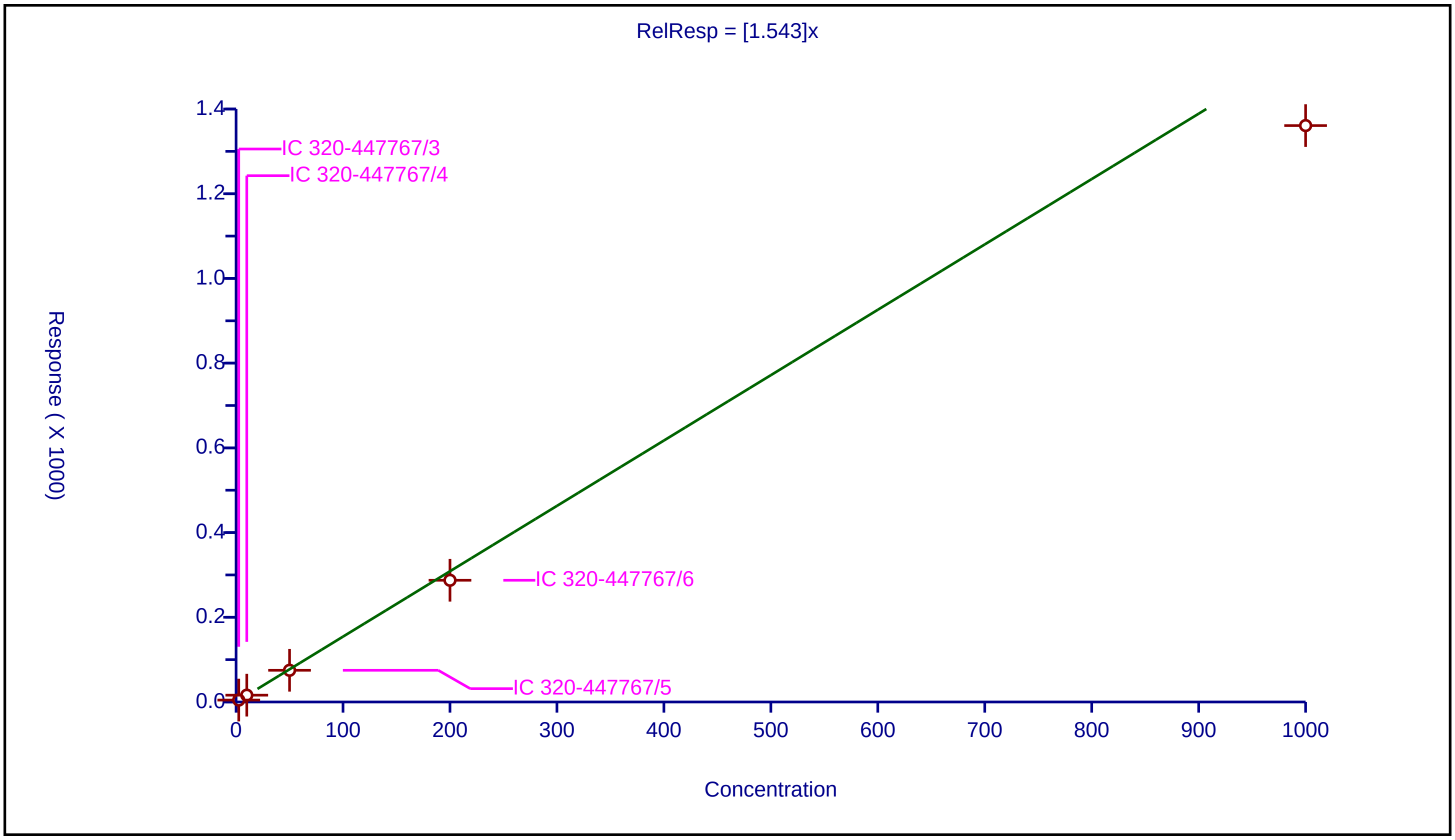

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.337

Error Coefficients

Standard Error:	26400000
Relative Standard Error:	8.9
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.79254	100.0	3836874.0	1.517016	Y
2	IC 320-447767/4	10.0	13.991132	100.0	3493327.0	1.399113	Y
3	IC 320-447767/5	50.0	63.446247	100.0	2709678.0	1.268925	Y
4	IC 320-447767/6	200.0	251.934608	100.0	3046379.0	1.259673	Y
5	IC 320-447767/7	1000.0	1241.367547	100.0	4206539.0	1.241368	Y

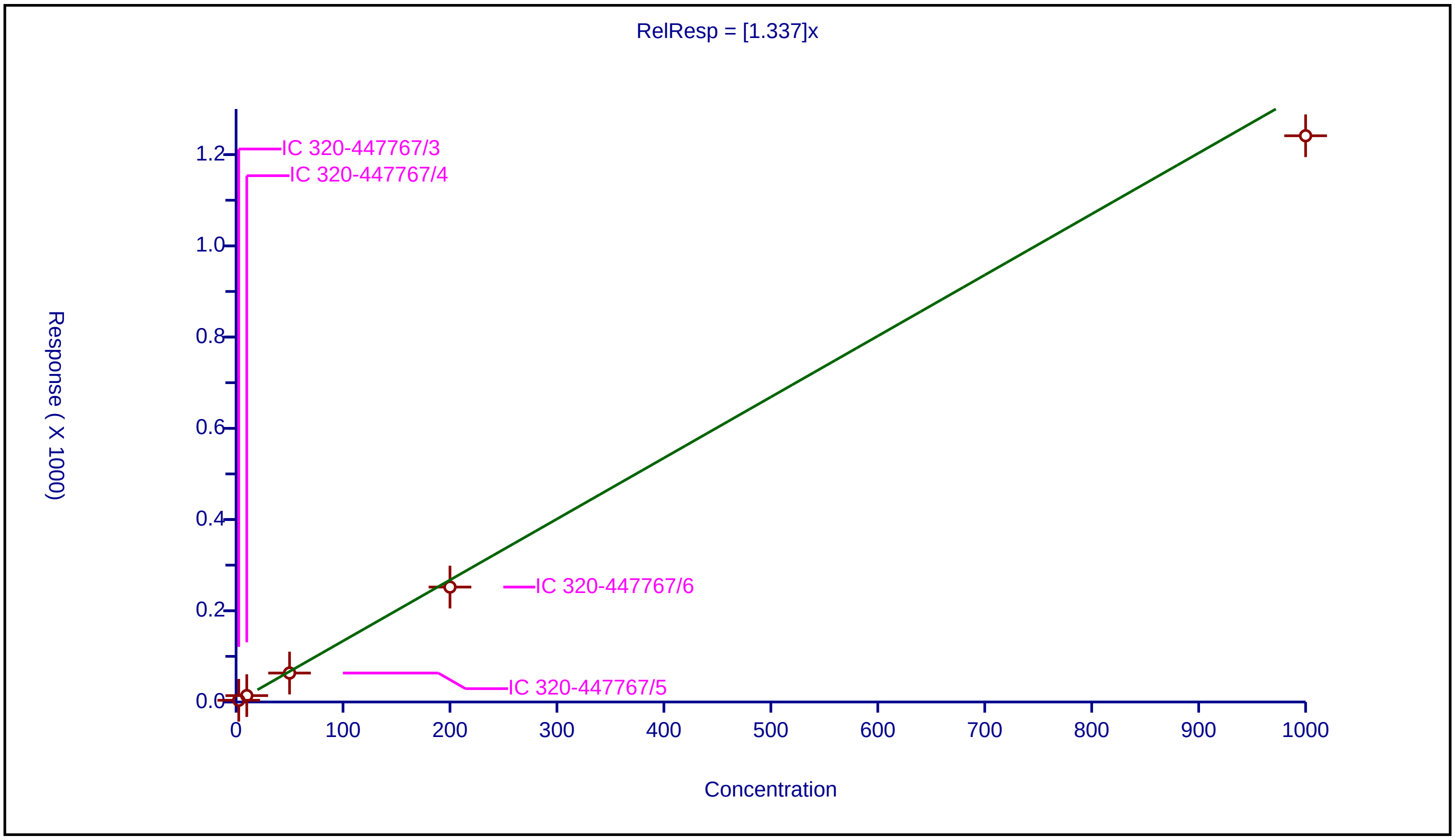

Calibration

/ 1,2,3,7,8-PeCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.261

Error Coefficients

Standard Error:	15200000
Relative Standard Error:	7.8
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.44697	100.0	2515862.0	1.378788	Y
2	IC 320-447767/4	10.0	13.486267	100.0	2144159.0	1.348627	Y
3	IC 320-447767/5	50.0	60.738062	100.0	1790365.0	1.214761	Y
4	IC 320-447767/6	200.0	243.449986	100.0	1866622.0	1.21725	Y
5	IC 320-447767/7	1000.0	1147.21096	100.0	2615255.0	1.147211	Y

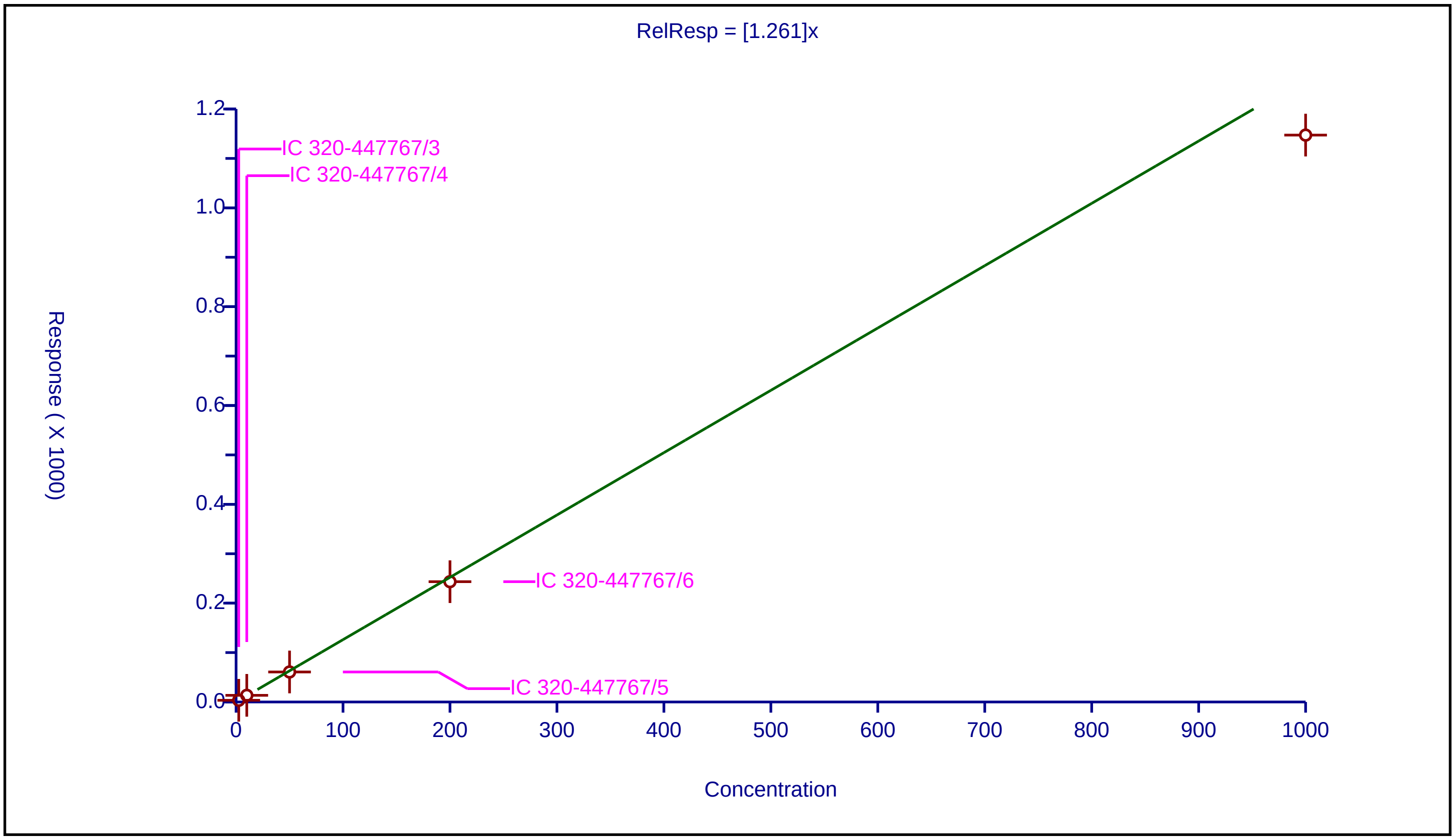

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.17

Error Coefficients

Standard Error:	27700000
Relative Standard Error:	8.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.289423	100.0	4839906.0	1.315769	Y
2	IC 320-447767/4	10.0	12.298154	100.0	4219926.0	1.229815	Y
3	IC 320-447767/5	50.0	56.358038	100.0	3467186.0	1.127161	Y
4	IC 320-447767/6	200.0	222.516649	100.0	3824037.0	1.112583	Y
5	IC 320-447767/7	1000.0	1062.352704	100.0	5141591.0	1.062353	Y

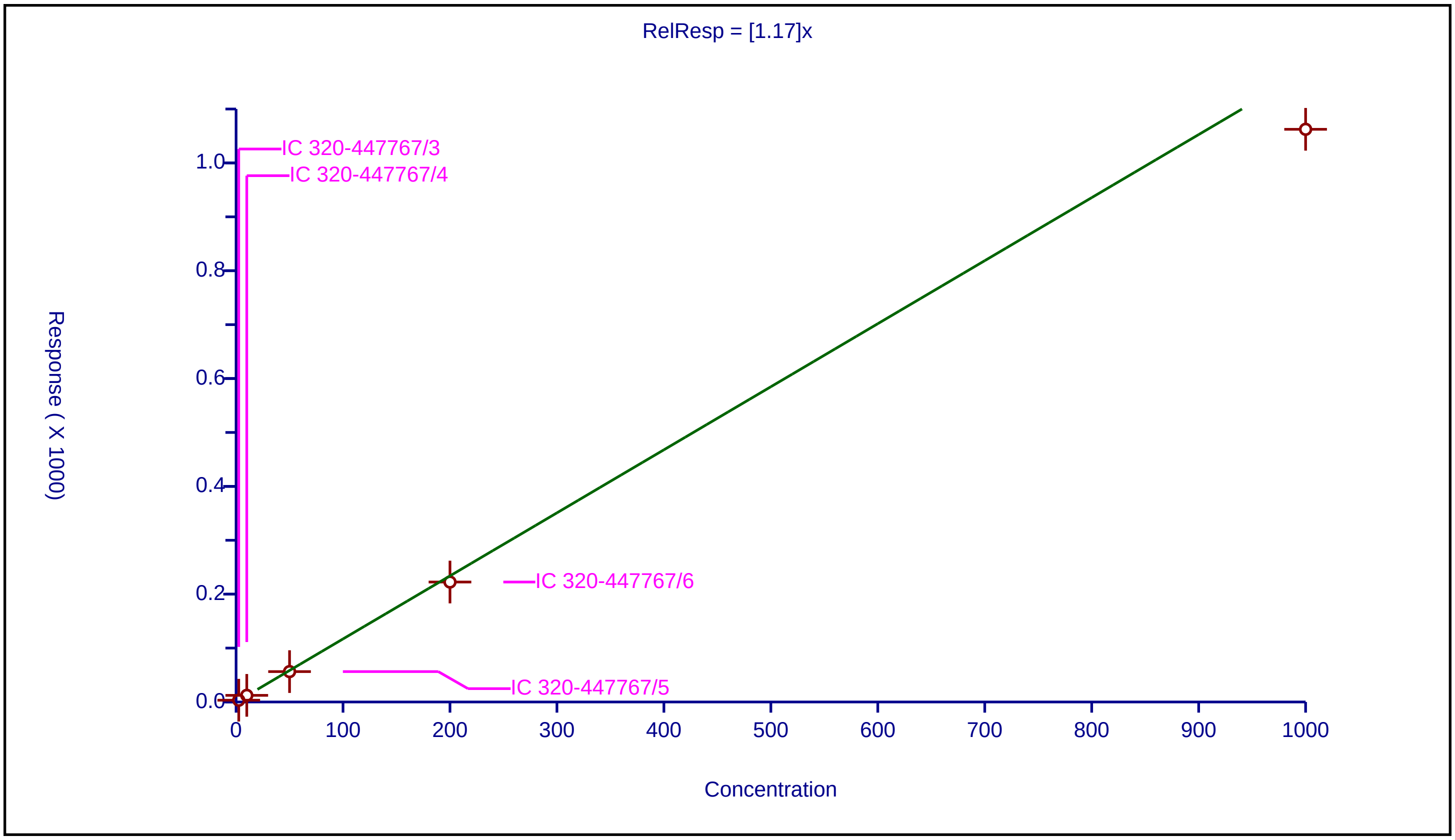

Calibration / 2,3,4,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.325

Error Coefficients

Standard Error:	29300000
Relative Standard Error:	8.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.747551	100.0	4251070.0	1.49902	Y
2	IC 320-447767/4	10.0	13.686836	100.0	3938054.0	1.368684	Y
3	IC 320-447767/5	50.0	62.754491	100.0	3096274.0	1.25509	Y
4	IC 320-447767/6	200.0	251.326298	100.0	3437727.0	1.256631	Y
5	IC 320-447767/7	1000.0	1244.354137	100.0	4651769.0	1.244354	Y

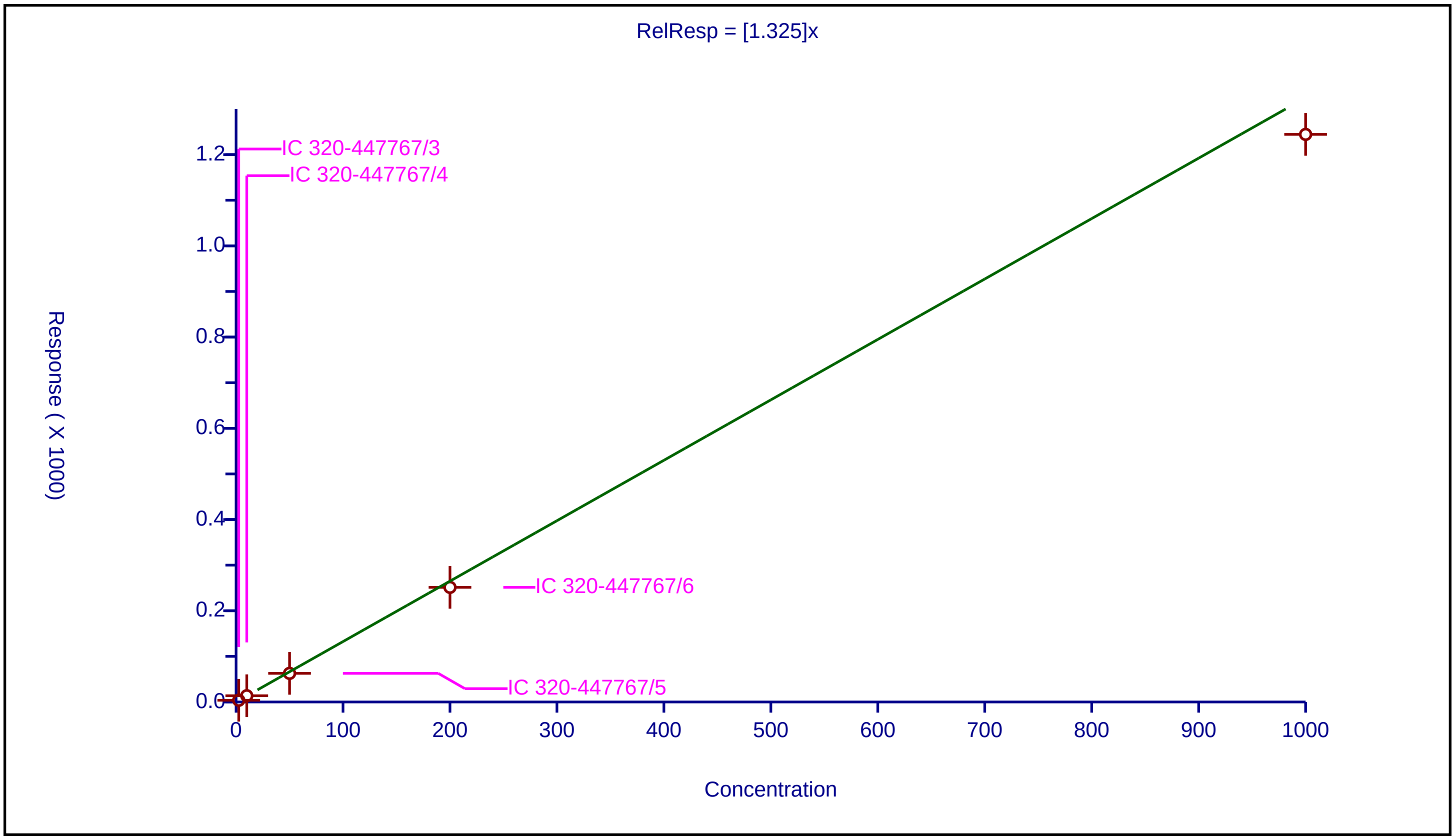

Calibration / 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.224

Error Coefficients

Standard Error:	27000000
Relative Standard Error:	8.1
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	2.5	3.412584	100.0	4490556.0	1.365034	Y
2	IC 320-447767/4	10.0	12.717367	100.0	4101407.0	1.271737	Y
3	IC 320-447767/5	50.0	59.251361	100.0	3193341.0	1.185027	Y
4	IC 320-447767/6	200.0	239.523854	100.0	3409961.0	1.197619	Y
5	IC 320-447767/7	1000.0	1102.650247	100.0	4832116.0	1.10265	Y

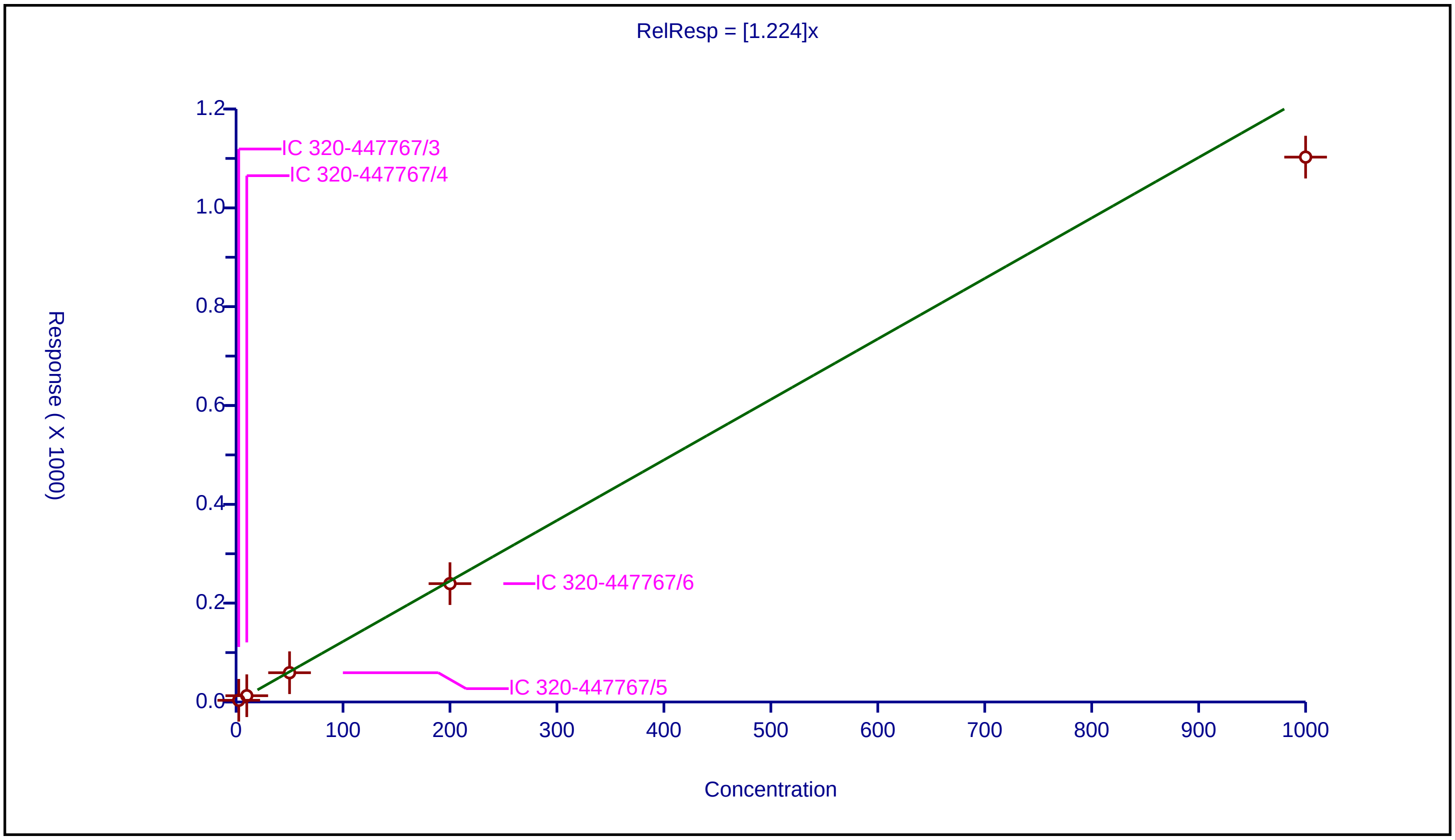

Calibration

/ 2,3,7,8-TCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.307

Error Coefficients

Standard Error:	4290000
Relative Standard Error:	11.2
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.983

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	0.5	0.78378	100.0	3552526.0	1.567561	Y
2	IC 320-447767/4	2.0	2.476526	100.0	3186763.0	1.238263	Y
3	IC 320-447767/5	10.0	12.557604	100.0	2460119.0	1.25576	Y
4	IC 320-447767/6	40.0	49.629256	100.0	2644140.0	1.240731	Y
5	IC 320-447767/7	200.0	246.433583	100.0	3442110.0	1.232168	Y

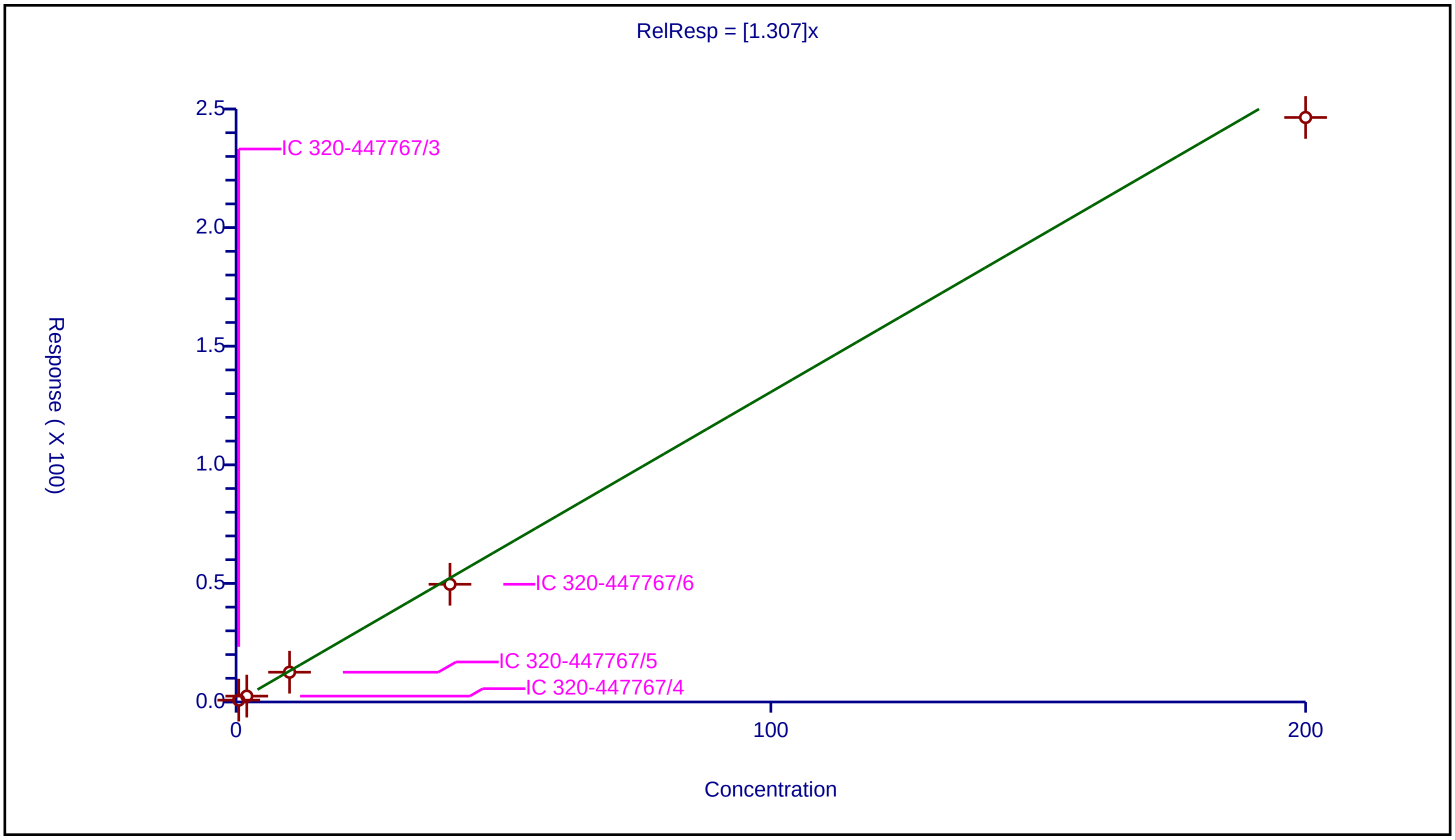

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.149

Error Coefficients

Standard Error:	6570000
Relative Standard Error:	9.8
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.987

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	0.5	0.66538	100.0	6167451.0	1.33076	Y
2	IC 320-447767/4	2.0	2.357529	100.0	5489816.0	1.178764	Y
3	IC 320-447767/5	10.0	10.580363	100.0	4333339.0	1.058036	Y
4	IC 320-447767/6	40.0	44.474805	100.0	4710060.0	1.11187	Y
5	IC 320-447767/7	200.0	212.95529	100.0	6087652.0	1.064776	Y

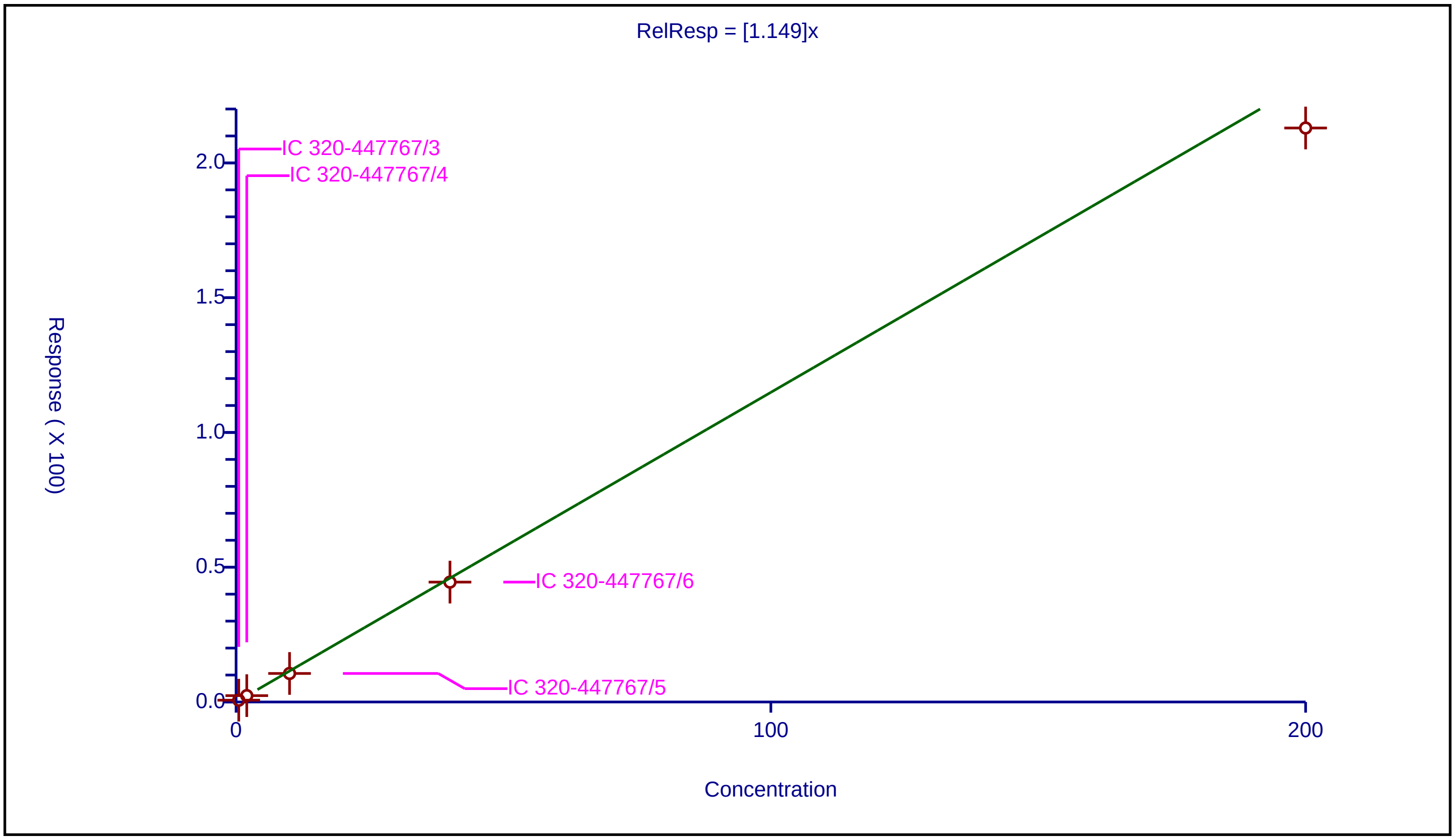

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.228

Error Coefficients

Standard Error:	3840000
Relative Standard Error:	3.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	0.5	0.651692	100.0	3318747.0	1.303383	Y
2	IC 320-447767/4	2.0	2.356326	100.0	2933805.0	1.178163	Y
3	IC 320-447767/5	10.0	12.175668	100.0	2251934.0	1.217567	Y
4	IC 320-447767/6	40.0	48.819773	100.0	2414493.0	1.220494	Y
5	IC 320-447767/7	200.0	244.195043	100.0	3101875.0	1.220975	Y

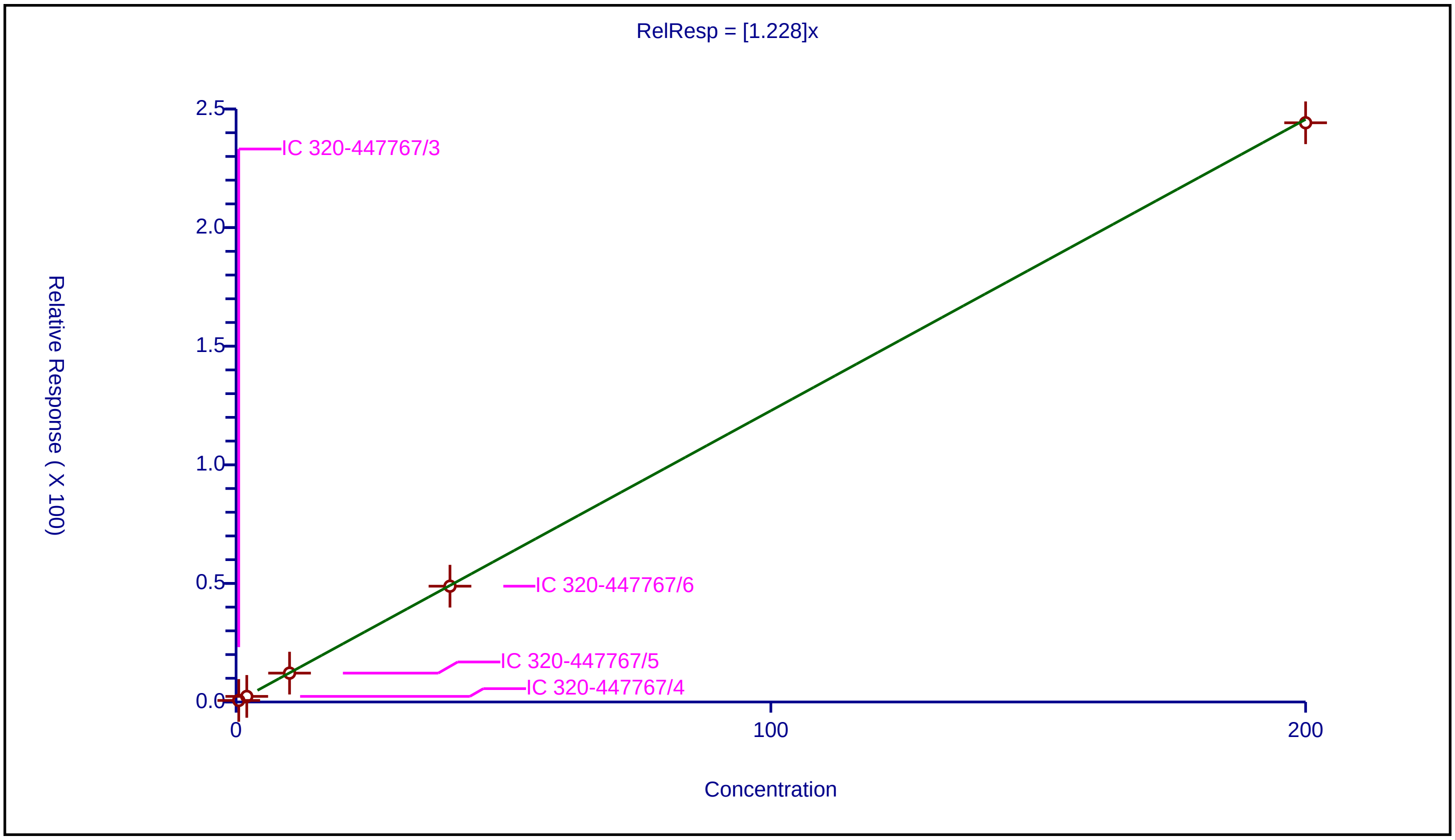

Calibration

/ OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.256

Error Coefficients

Standard Error:	27400000
Relative Standard Error:	6.9
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	5.0	6.956961	200.0	3879165.0	1.391392	Y
2	IC 320-447767/4	20.0	25.844347	200.0	3530807.0	1.292217	Y
3	IC 320-447767/5	100.0	120.752047	200.0	2791421.0	1.20752	Y
4	IC 320-447767/6	400.0	484.941418	200.0	3150529.0	1.212354	Y
5	IC 320-447767/7	2000.0	2354.720881	200.0	4602647.0	1.17736	Y

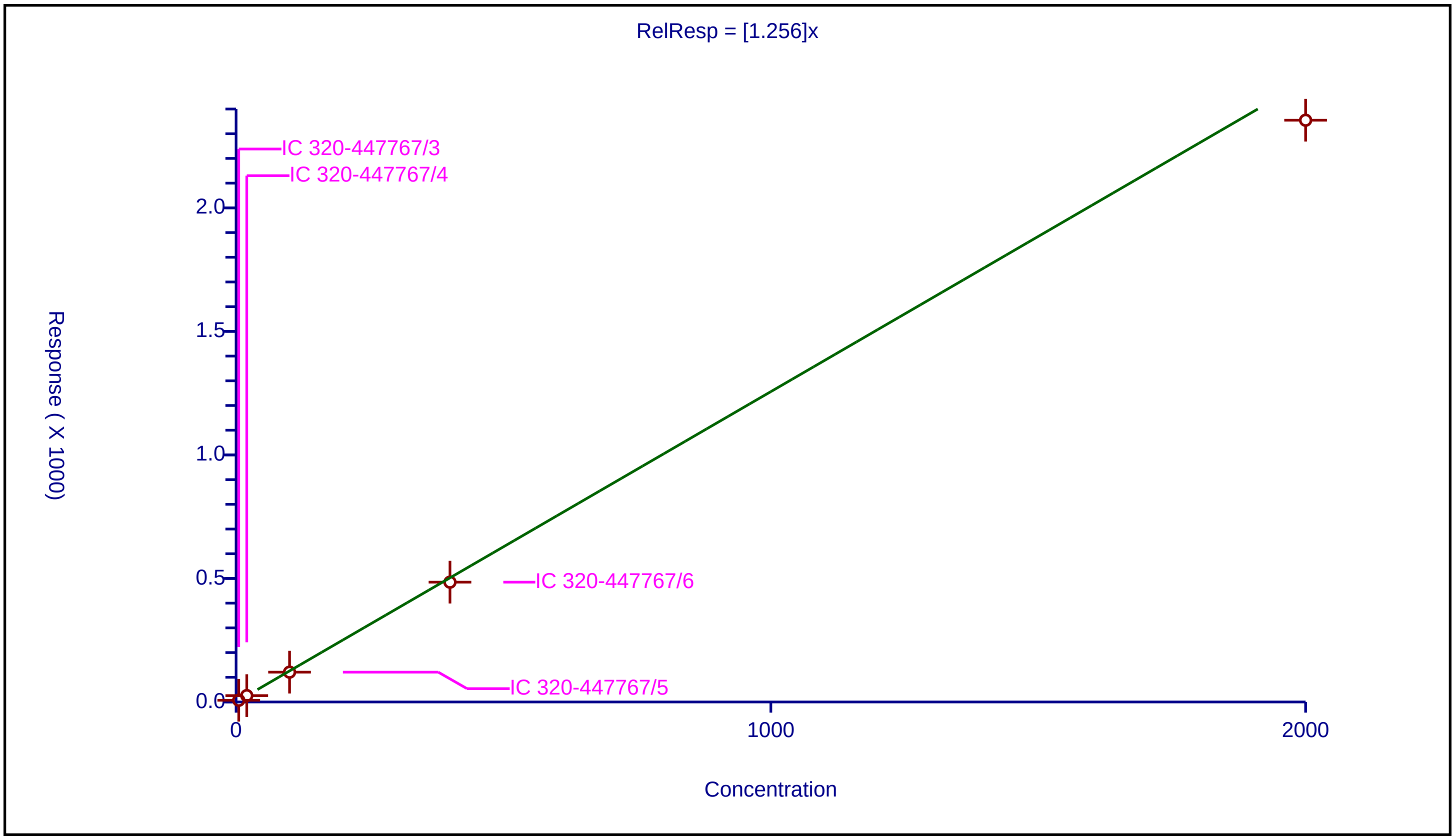

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.813

Error Coefficients

Standard Error:	41000000
Relative Standard Error:	6.1
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-447767/3	5.0	10.00736	200.0	3879165.0	2.001472	Y
2	IC 320-447767/4	20.0	36.51896	200.0	3530807.0	1.825948	Y
3	IC 320-447767/5	100.0	173.372702	200.0	2791421.0	1.733727	Y
4	IC 320-447767/6	400.0	696.337409	200.0	3150529.0	1.740844	Y
5	IC 320-447767/7	2000.0	3528.216046	200.0	4602647.0	1.764108	Y

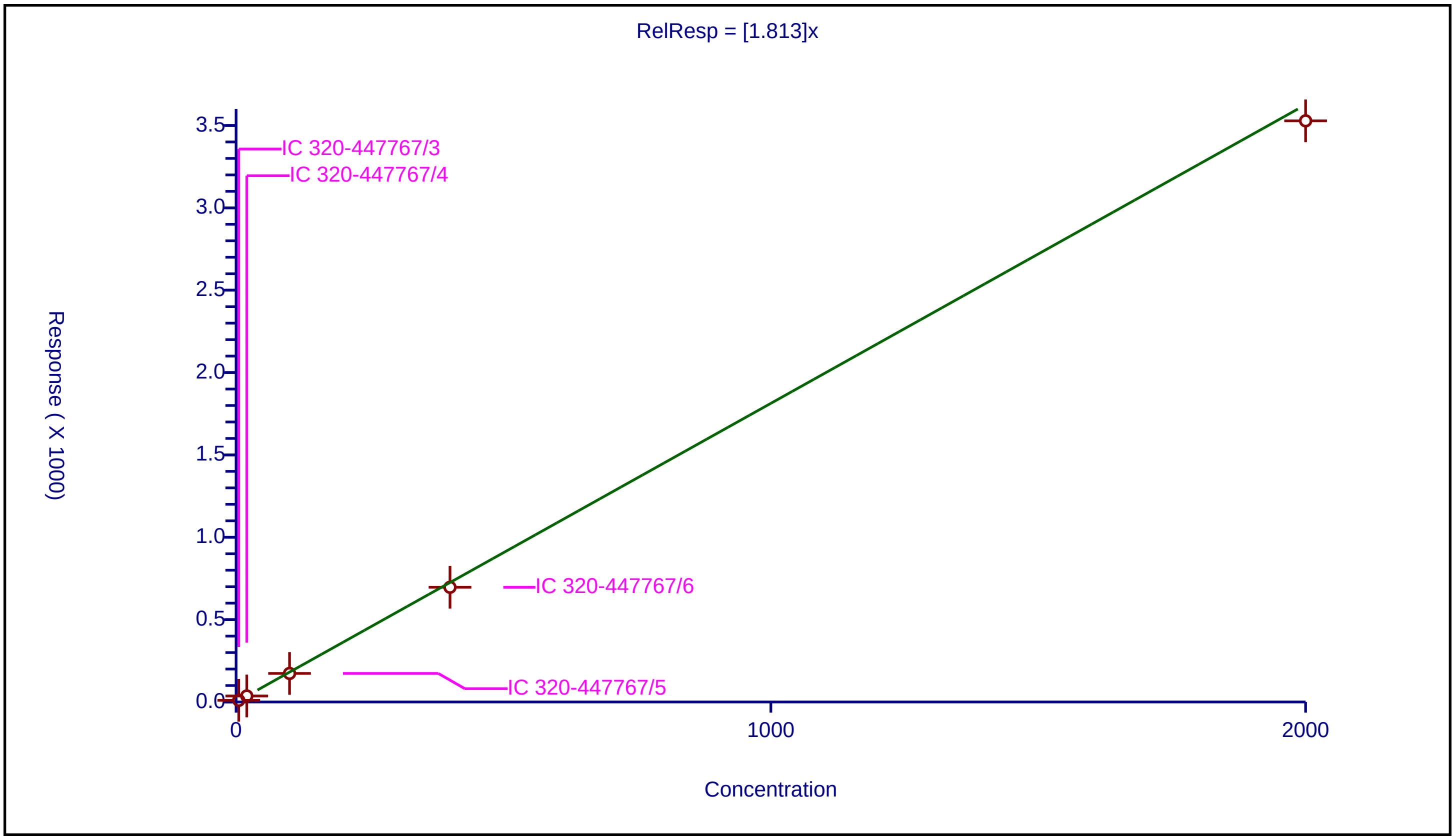

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID (1): CPS 320-398641/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 07/24/2020 22:33

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.00	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1724324
H (Peak Height) = 10494443

%R = 16 <= 25
Passed

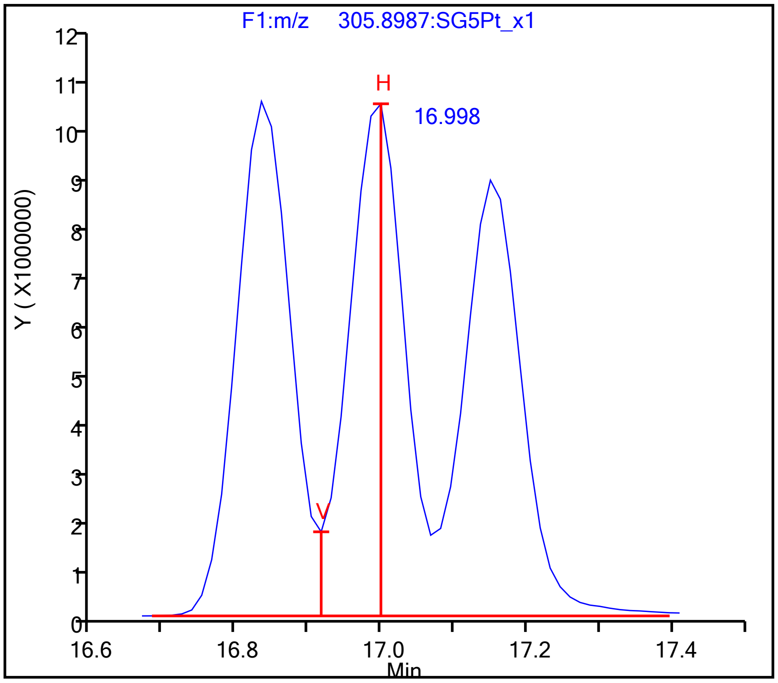

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Injection Date:	24-Jul-2020 22:33:34	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID (1): WDM 320-440976/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/10/2020 16:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.93	17

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d				
Injection Date:	10-Dec-2020 16:57:16	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 342514
H (Peak Height) = 1985046

%R = 17 <= 25
Passed

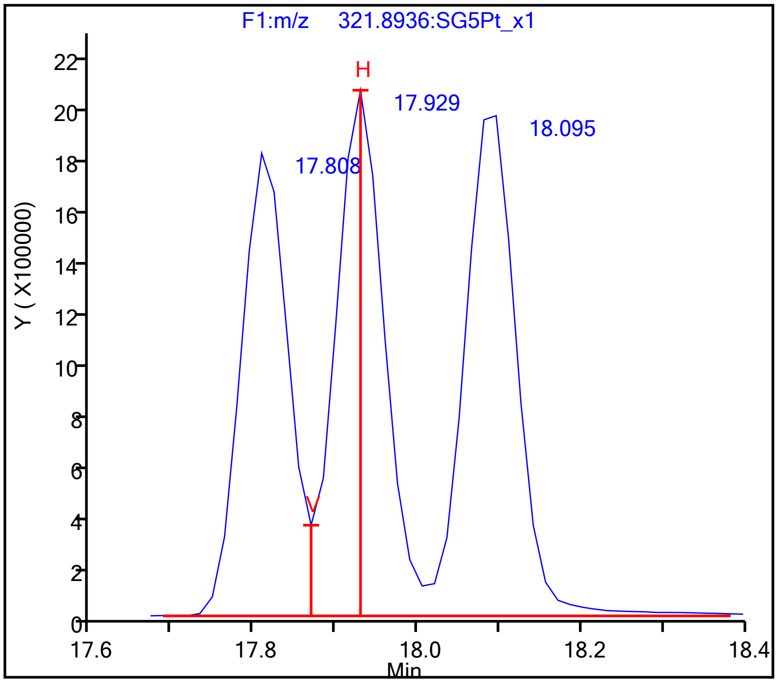

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Lab Sample ID (1): WDM 320-447767/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 12/31/2020 12:42

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.75	19

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d				
Injection Date:	31-Dec-2020 12:42:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 12362
H (Peak Height) = 65018

%R = 19 <= 25
Passed

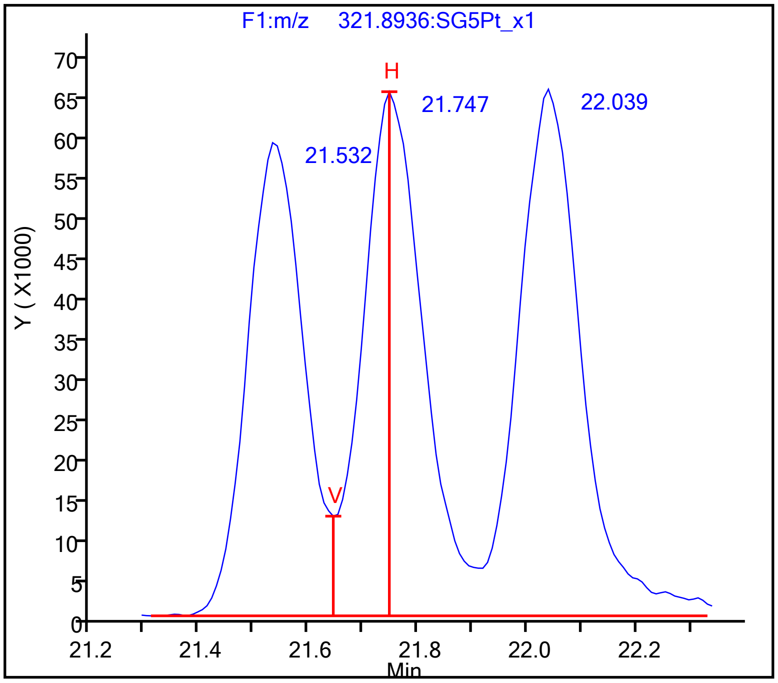

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Lab Sample ID (1): WDM 320-454782/2   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 01/22/2021 22:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.65	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d
Injection Date: 22-Jan-2021 22:12:00 Instrument ID: DFS 1
Lims ID: WDM
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Column: DB-5 (0.32 mm)
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 17035
H (Peak Height) = 104708

%R = 16 <= 25
Passed

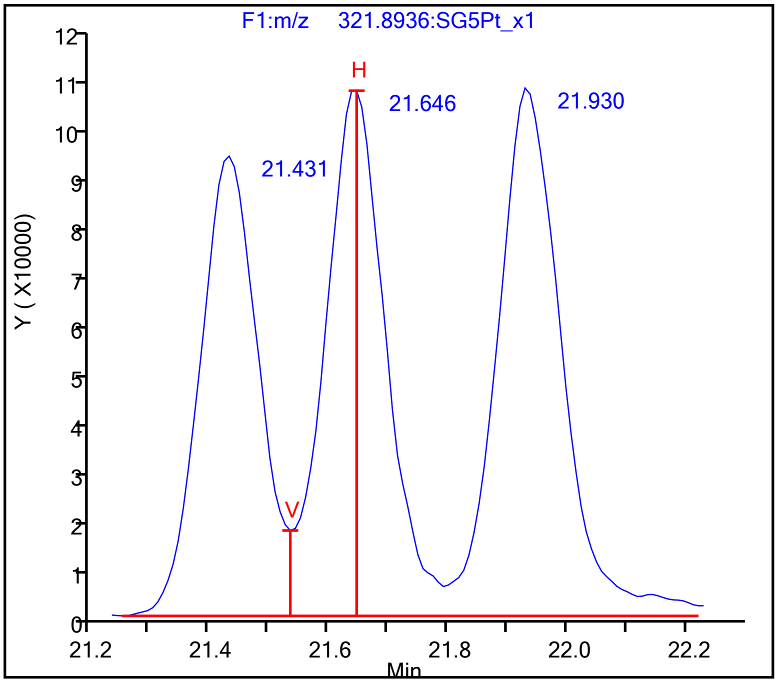

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID (1): CPS 320-456198/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/25/2021 23:56

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.30	18

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d				
Injection Date:	25-Jan-2021 23:56:01	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1703289
H (Peak Height) = 9739293

%R = 18 <= 25
Passed

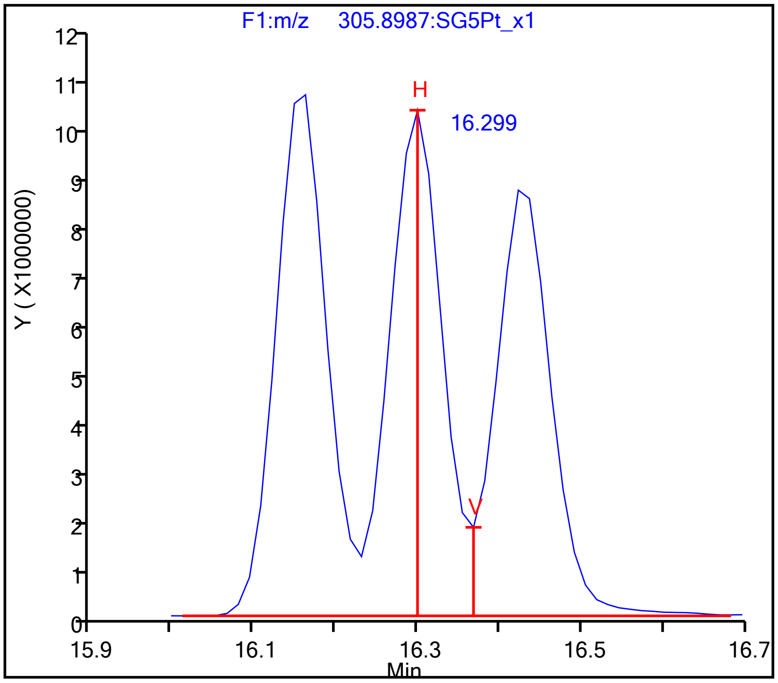

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d				
Injection Date:	25-Jan-2021 23:56:01	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID (1): WDM 320-456215/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/27/2021 14:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.16	23

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d				
Injection Date:	27-Jan-2021 14:47:04	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 549000
H (Peak Height) = 2428539

%R = 23 <= 25
Passed

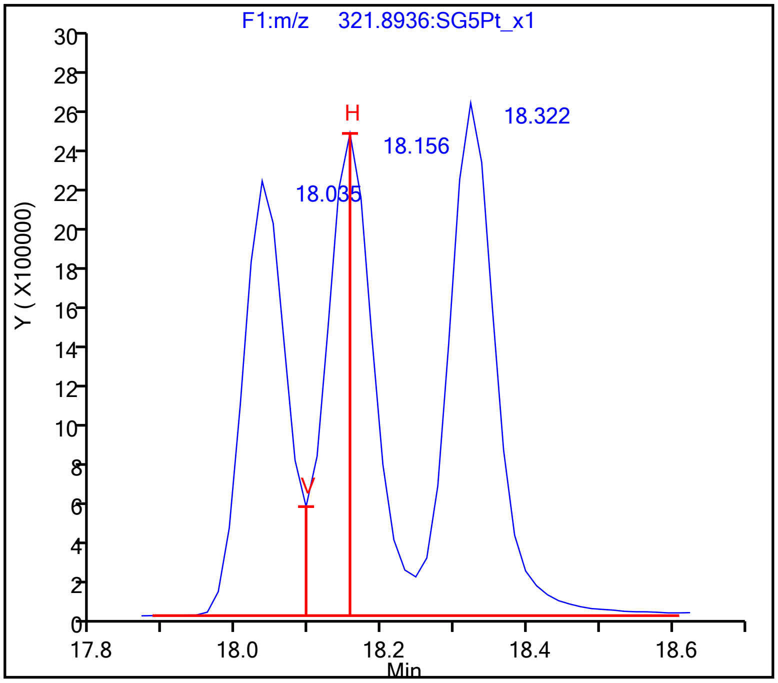

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-68943-1

SDG No.:

Lab Sample ID: ICV 320-440976/9   Calibration Date: 12/10/2020 23:07

Instrument ID: 10D5   Calib Start Date: 12/10/2020 18:27

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 12/10/2020 21:27

Lab File ID: 10DE20B10D5_9 .d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.017	1.022		40.2	40.0	100	70-130
2,3,7,8-TCDD	AveID	1.154	1.175		40.7	40.0	102	70-130
1,2,3,7,8-PeCDF	AveID	1.027	0.9936		194	200	97	70-130
2,3,4,7,8-PeCDF	AveID	1.073	1.127		210	200	105	70-130
1,2,3,7,8-PeCDD	AveID	1.075	1.005		187	200	94	70-130
1,2,3,4,7,8-HxCDF	AveID	1.238	1.189		192	200	96	70-130
1,2,3,6,7,8-HxCDF	AveID	1.190	1.203		202	200	101	70-130
2,3,4,6,7,8-HxCDF	AveID	1.213	1.246		205	200	103	70-130
1,2,3,4,7,8-HxCDD	AveID	1.162	1.099		189	200	95	70-130
1,2,3,6,7,8-HxCDD	AveID	1.032	1.080		209	200	105	70-130
1,2,3,7,8,9-HxCDD	AveID	1.241	1.170		189	200	94	70-130
1,2,3,7,8,9-HxCDF	AveID	1.227	1.179		192	200	96	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.462	1.487		204	200	102	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.102	1.082		196	200	98	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.426	1.358		190	200	95	70-130
OCDD	AveID	1.157	1.173		405	400	101	70-130
OCDF	AveID	1.485	1.520		409	400	102	70-130
13C-2,3,7,8-TCDF	Ave	1.712	1.672		97.7	100	98	71-140
13C-2,3,7,8-TCDD	Ave	1.084	1.078		99.5	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.363	1.374		101	100	101	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.271	1.345		106	100	106	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8534	0.8732		102	100	102	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.177		103	100	103	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.284	1.255		97.7	100	98	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.182	1.173		99.2	100	99	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7757	0.8166		105	100	105	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.000	0.9698		97.0	100	97	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.083	1.085		100	100	100	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8529	0.8463		99.2	100	99	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7851	0.7402		94.3	100	94	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7499	0.7385		98.5	100	98	77-129
13C-OCDD	Ave	0.5610	0.5089		181	200	91	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.244	1.231		39.6	40.0	99	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 10-Dec-2020 23:07:57 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: HRDXNIC_00046 HRDXNIC_00046
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 09:52:24 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1617

First Level Reviewer: arghestanis Date: 11-Dec-2020 09:48:04

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.672	30347173	0.71	3.4E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.173	50744082	0.78	1.7120	97.7	97.7	0.2179	0.2179	97.67	
2,3,7,8-TCDF	17.188	20741909	0.77	1.0173	40.2	40.2	0.0688	0.0688	100	
A Non-2,3,7,8-sub-TCDF	16.924	171897	0.84	1.0173	0.3330	0.3330	0.0688	0.3330		
S Total TCDF					40.5	40.5	0.0688	0.0688		
D 13C-2,3,7,8-TCDD	17.868	32713743	0.73	1.0837	99.5	99.5	0.2195	0.2195	99.47	
$ 37Cl4-2,3,7,8-TCDD	17.899	14945952		1.2441	39.6	39.6	0.0353	0.0353	98.97	
2,3,7,8-TCDD	17.899	15376406	0.78	1.1543	40.7	40.7	0.0560	0.0560	102	
A Non-2,3,7,8-sub-TCDD	17.377	250325	0.74	1.1543	0.6629	0.6629	0.0560	0.6629		
S Total TCDD					41.4	41.4	0.0560	0.0560		
D 13C-1,2,3,7,8-PeCDF	22.151	41681868	1.58	1.3633	100.7	100.7	0.2468	0.2468	101	
1,2,3,7,8-PeCDF	22.164	82832046	1.60	1.0268	193.5	193.5	0.7852	0.7852	96.77	
D 13C-2,3,4,7,8-PeCDF	23.487	40830838	1.59	1.2714	105.8	105.8	0.2647	0.2647	106	
2,3,4,7,8-PeCDF	23.501	92066742	1.59	1.0730	210.1	210.1	0.8609	0.8609	105	
A F1 PeCDFs	19.895						0.0216	0.0216		
A Non-2,3,7,8-sub-PeCDF	23.032	1926069	1.48	1.0499	4.447	4.447	0.8201	4.447		
S Total PeCDF					408.1	408.1	0.8231	0.8231		
D 13C-1,2,3,7,8-PeCDD	24.196	26498469	1.61	0.8534	102.3	102.3	0.1245	0.1245	102	
1,2,3,7,8-PeCDD	24.224	53270551	1.59	1.0748	187.0	187.0	0.2599	0.2599	93.52	
A Non-2,3,7,8-sub-PeCDD	23.174						0.2599	0.2599		
S Total PeCDD					187.0	187.0	0.2599	0.2599		
D 13C-1,2,3,4,7,8-HxCDF	30.333	33126482	0.51	1.1403	103.2	103.2	0.4336	0.4336	103	
1,2,3,4,7,8-HxCDF	30.346	78762531	1.27	1.2385	192.0	192.0	1.086	1.086	95.99	
D 13C-1,2,3,6,7,8-HxCDF	30.533	35319792	0.51	1.2841	97.7	97.7	0.3850	0.3850	97.74	
1,2,3,6,7,8-HxCDF	30.546	85012628	1.26	1.1900	202.3	202.3	1.035	1.035	101	
D 13C-2,3,4,6,7,8-HxCDF	31.398	33000213	0.51	1.1825	99.2	99.2	0.4181	0.4181	99.17	
2,3,4,6,7,8-HxCDF	31.411	82210819	1.26	1.2132	205.3	205.3	0.8400	0.8400	103	
D 13C-1,2,3,7,8,9-HxCDF	32.223	30534952	0.52	1.0832	100.2	100.2	0.4564	0.4564	100	
1,2,3,7,8,9-HxCDF	32.236	72018045	1.26	1.2266	192.3	192.3	0.8516	0.8516	96.14	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	30.074						0.9405	0.9405		
S Total HxCDF					791.9	791.9	0.9530	0.9530		
* 13C-1,2,3,7,8,9-HxCDD	32.037	28140994	1.27	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.584	22978561	1.31	0.7757	105.3	105.3	0.3304	0.3304	105	
1,2,3,4,7,8-HxCDD	31.597	50512328	1.27	1.1618	189.2	189.2	0.5019	0.5019	94.61	
D 13C-1,2,3,6,7,8-HxCDD	31.691	27289907	1.28	0.9997	97.0	97.0	0.2564	0.2564	97.01	
1,2,3,6,7,8-HxCDD	31.704	58963550	1.27	1.0320	209.4	209.4	0.5196	0.5196	105	
1,2,3,7,8,9-HxCDD	32.050	58825966	1.25	1.2407	188.6	188.6	0.4503	0.4503	94.32	
A Non-2,3,7,8-sub-HxCDD	30.739						0.4880	0.4880		
S Total HxCDD					587.2	587.2	0.4906	0.4906		
D 13C-1,2,3,4,6,7,8-HpCDF	33.685	23815702	0.44	0.8529	99.2	99.2	0.8759	0.8759	99.22	
1,2,3,4,6,7,8-HpCDF	33.697	70850799	1.06	1.4619	203.5	203.5	1.567	1.567	102	
D 13C-1,2,3,4,7,8,9-HpCDF	34.778	20782848	0.44	0.7499	98.5	98.5	0.996	0.996	98.48	
1,2,3,4,7,8,9-HpCDF	34.791	56436254	1.06	1.4262	190.4	190.4	2.172	2.172	95.20	
A Non-2,3,7,8-sub-HpCDF	34.292						1.824	1.824		
S Total HpCDF					393.9	393.9	1.870	1.870		
D 13C-1,2,3,4,6,7,8-HpCDD	34.487	20829987	1.07	0.7851	94.3	94.3	0.4016	0.4016	94.28	
1,2,3,4,6,7,8-HpCDD	34.499	45084806	1.04	1.1022	196.4	196.4	0.8730	0.8730	98.19	
A Non-2,3,7,8-sub-HpCDD	34.262						0.8730	0.8730		
S Total HpCDD					196.4	196.4	0.8730	0.8730		
D 13C-OCDD	36.842	28640488	0.88	0.5610	181.4	181.4	0.1752	0.1752	90.71	
OCDF	36.938	87090659	0.91	1.4855	409.4	409.4	0.2744	0.2744	102	
OCDD	36.854	67173549	0.90	1.1570	405.4	405.4	0.4135	0.4135	101	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNIC_00046 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	10-Dec-2020 23:07:57	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	HRDXNIC_00046 HRDXNIC_00046				
Misc. Info.:	10DE20B10D5				
Operator ID:	SMA	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	11-Dec-2020 09:52:24	Calib Date:	10-Dec-2020 21:27:54		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1617				

First Level Reviewer: arghestanis Date: 11-Dec-2020 09:48:04

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.672	17.702	-2		12647708	3067715	3488	8720	880		a
333.9339	17.672	17.702	-2		17699465	4342556	3564	8910	1218	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.173	17.203	-2	0.972	22236795	5707826	6752	16880	845		
317.9389	17.173	17.203	-2	0.972	28507287	7163718	4307	10767	1663	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.188	17.233	-3	1.001	9020628	2303021	1772	4430	1300		
305.8987	17.188	17.233	-3	1.001	11721281	2956467	1832	4580	1614	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.538	16.924	-23	0.963	78359	20271	1772	4430	11		
305.8987	16.523	16.924	-24	0.962	93538	22764	1832	4580	12	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.868	17.914	-3	1.011	13782648	3300173	3488	8720	946		
333.9339	17.868	17.914	-3	1.011	18931095	4487464	3564	8910	1259	0.73(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.899	17.914	-1	1.013	14945952	3536096	1301	3252	2718		
2,3,7,8-TCDD											
319.8965	17.899	17.929	-2	1.002	6735669	1607174	1066	2665	1508		
321.8936	17.899	17.929	-2	1.002	8640737	2041636	947	2367	2156	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.778	17.377	24	0.995	106518	30808	1066	2665	29		
321.8936	17.793	17.377	25	0.996	143807	44723	947	2367	47	0.74(0.65-0.89)	

Report Date: 11-Dec-2020 09:52:30 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	22.151	22.164	-1	1.253	25544477	4666072	6030	15075	774		
353.8970	22.151	22.164	-1	1.253	16137391	2891938	3945	9862	733	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.164	22.192	-2	1.001	50945541	9053359	14895	37237	608		
341.8567	22.164	22.192	-2	1.001	31886505	5717633	9480	23700	603	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.487	23.501	-1	1.329	25060077	4040154	6030	15075	670		
353.8970	23.487	23.501	-1	1.329	15770761	2556777	3945	9862	648	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.501	23.528	-2	1.001	56534793	9261446	14895	37237	622		
341.8567	23.501	23.528	-2	1.001	35531949	5784624	9480	23700	610	1.59(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.895						230	575			
341.8567	19.895						412	1030			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.683	23.032	-21	1.024	1148174	193657	14895	37237	13		
341.8567	22.683	23.032	-21	1.024	777895	121901	9480	23700	13	1.48(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.196	24.210	-1	1.369	16344473	2612004	1678	4195	1557		
369.8919	24.196	24.210	-1	1.369	10153996	1619952	1472	3680	1101	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.224	24.237	-1	1.001	32740061	5163972	2639	6597	1957		
357.8516	24.224	24.237	-1	1.001	20530490	3177706	2090	5225	1520	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.174						2639	6597			
357.8516	23.174						2090	5225			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.333	30.346	-1	0.947	11141363	2024125	5194	12985	390		
385.8610	30.333	30.346	-1	0.947	21985119	3903321	9331	23327	418	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.346	30.360	-1	1.000	44001378	7890737	17584	43960	449		
375.8178	30.346	30.360	-1	1.000	34761153	6288489	14291	35727	440	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.533	30.533	0	0.953	11964229	2214602	5194	12985	426		
385.8610	30.519	30.533	-1	0.953	23355563	4256998	9331	23327	456	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.546	30.559	-1	1.000	47345112	8818845	17584	43960	502		
375.8178	30.546	30.559	-1	1.000	37667516	7030194	14291	35727	492	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.398	31.398	0	0.980	11197439	2665727	5194	12985	513		
385.8610	31.385	31.398	-1	0.980	21802774	5153817	9331	23327	552	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.411	31.424	-1	1.000	45871883	11141767	17584	43960	634		
375.8178	31.411	31.424	-1	1.000	36338936	8762073	14291	35727	613	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.223	32.236	-1	1.006	10420502	2637548	5194	12985	508		
385.8610	32.223	32.236	-1	1.006	20114450	4990741	9331	23327	535	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.236	32.250	-1	1.000	40125429	9881388	17584	43960	562		
375.8178	32.236	32.250	-1	1.000	31892616	7906966	14291	35727	553	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.074						17584	43960			
375.8178	30.074						14291	35727			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.037	32.037	0		15769120	4106710	3568	8920	1151		
403.8529	32.037	32.037	0		12371874	3238073	3962	9905	817	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.584	31.597	-1	0.986	13017802	3593945	3568	8920	1007		
403.8529	31.584	31.597	-1	0.986	9960759	2727655	3962	9905	688	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.597	31.611	-1	1.000	28251277	7713769	8262	20655	934		
391.8127	31.597	31.611	-1	1.000	22261051	6117041	6482	16205	944	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.691	31.704	-1	0.989	15301639	3871567	3568	8920	1085		
403.8529	31.691	31.704	-1	0.989	11988268	3002148	3962	9905	758	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.704	31.717	-1	1.000	33010372	8074738	8262	20655	977		
391.8127	31.704	31.717	-1	1.000	25953178	6493317	6482	16205	1002	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.050	32.050	0	1.015	32720512	8365105	8262	20655	1012		
391.8127	32.050	32.050	0	1.015	26105454	6616032	6482	16205	1021	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.739						8262	20655			
391.8127	30.739						6482	16205			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.685	33.685	0	1.051	7237931	2234255	6286	15715	355		
419.8220	33.685	33.685	0	1.051	16577771	5210829	15662	39155	333	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.697	33.734	-2	1.000	36385932	11190709	34386	85965	325		
409.7789	33.685	33.734	-3	1.000	34464867	10347854	33837	84592	306	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.778	34.778	0	1.086	6315692	1639285	6286	15715	261		
419.8220	34.778	34.778	0	1.086	14467156	3865611	15662	39155	247	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.791	34.851	-4	1.000	29043327	7586578	34386	85965	221		
409.7789	34.791	34.851	-4	1.000	27392927	7059566	33837	84592	209	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.292						34386	85965			
409.7789	34.292						33837	84592			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.487	34.487	0	1.076	10767227	3102975	4944	12360	628		
437.8140	34.487	34.487	0	1.076	10062760	2833394	4320	10800	656	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.499	34.548	-3	1.000	23018353	6471383	11703	29257	553		
425.7737	34.499	34.548	-3	1.000	22066453	6082611	11144	27860	546	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.262						11703	29257			
425.7737	34.262						11144	27860			
13C-OCDD											
469.7779	36.842	36.842	0	1.150	13414514	3040396	1622	4055	1874		
471.7750	36.842	36.842	0	1.150	15225974	3356654	1266	3165	2651	0.88(0.76-1.02)	
OCDF											
441.7428	36.938	36.950	-1	1.003	41562933	9171844	2601	6502	3526		
443.7399	36.938	36.950	-1	1.003	45527726	10023594	2615	6537	3833	0.91(0.76-1.02)	
OCDD											
457.7377	36.854	36.854	0	1.000	31819072	7165069	2377	5942	3014		
459.7348	36.854	36.854	0	1.000	35354477	7786594	3744	9360	2080	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNIC_00046	Amount Added: 2.00	Units: uL

Report Date: 11-Dec-2020 09:52:30 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d
Lims ID: ICV
Client ID:
Inject. Date: 10-Dec-2020 23:07:57 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 440976 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-TCDF, RT: 16.924

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.017	D 13C-2,3,7,8-TCDF	100.000	50744082	12871544

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.017		100.000	50744082	12871544

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.538	78359	20271	93538	22764	0.3330	0.84	
Signal Totals:							
	78359	20271	93538	22764			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	171897	43035				0.84	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3330 = (171897 * 100.000) / (50744082 * 1.017)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d
Lims ID: ICV
Client ID:
Inject. Date: 10-Dec-2020 23:07:57
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5
Operator: SMA
Lims Batch ID: 440976
Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-TCDD, RT: 17.377

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.154	D 13C-2,3,7,8-TCDD	100.000	32713743	7787637

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.154		100.000	32713743	7787637

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.778	106518	30808	143807	44723	0.6629	0.74	
Signal Totals:							
	106518	30808	143807	44723			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	250325	75531				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6629 = (250325 * 100.000) / (32713743 * 1.154)

Report Date: 11-Dec-2020 09:52:30 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	10-Dec-2020 23:07:57	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	440976	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-PeCDF, RT: 23.032

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027	D 13C-1,2,3,7,8-PeCDF	100.000	41681868	7558010
2,3,4,7,8-PeCDF	1.073	D 13C-2,3,4,7,8-PeCDF	100.000	40830838	6596931

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.050		100.000	41256353	7077470

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.683	1148174	193657	777895	121901	4.45	1.48	
Signal Totals:							
	1148174	193657	777895	121901			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1926069	315558				1.48	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 4.447 = (1926069 * 100.000) / (41256353 * 1.050)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d				
Injection Date:	10-Dec-2020 23:07:57	Instrument ID:	10D5		
Lims ID:	ICV				
Client ID:					
Operator ID:	SMA	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 17.70

Processing Integration Results

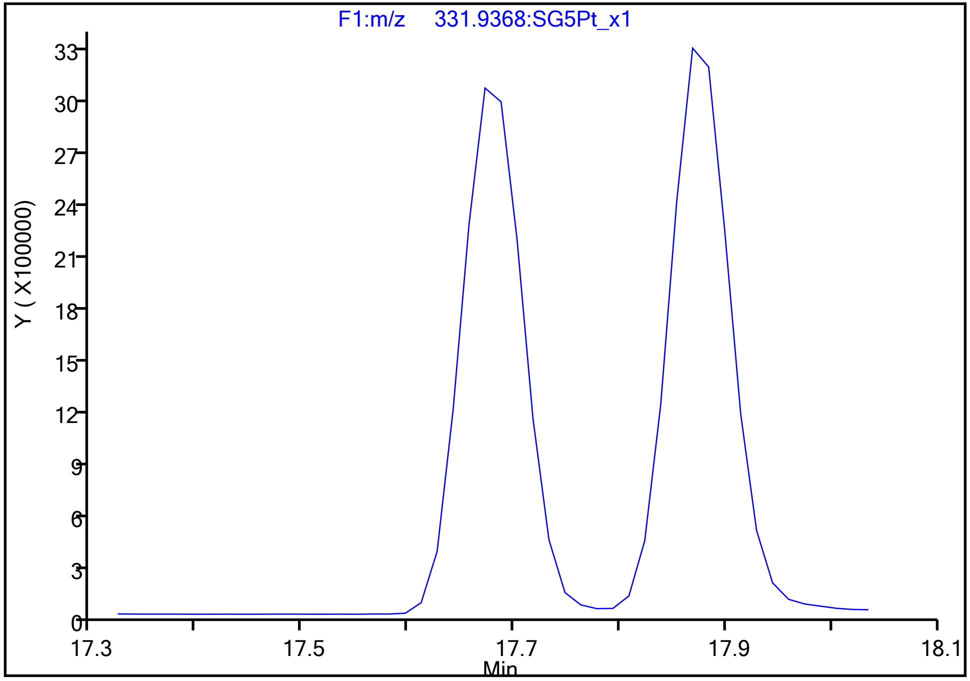

RT: 17.67

Area: 12647708

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

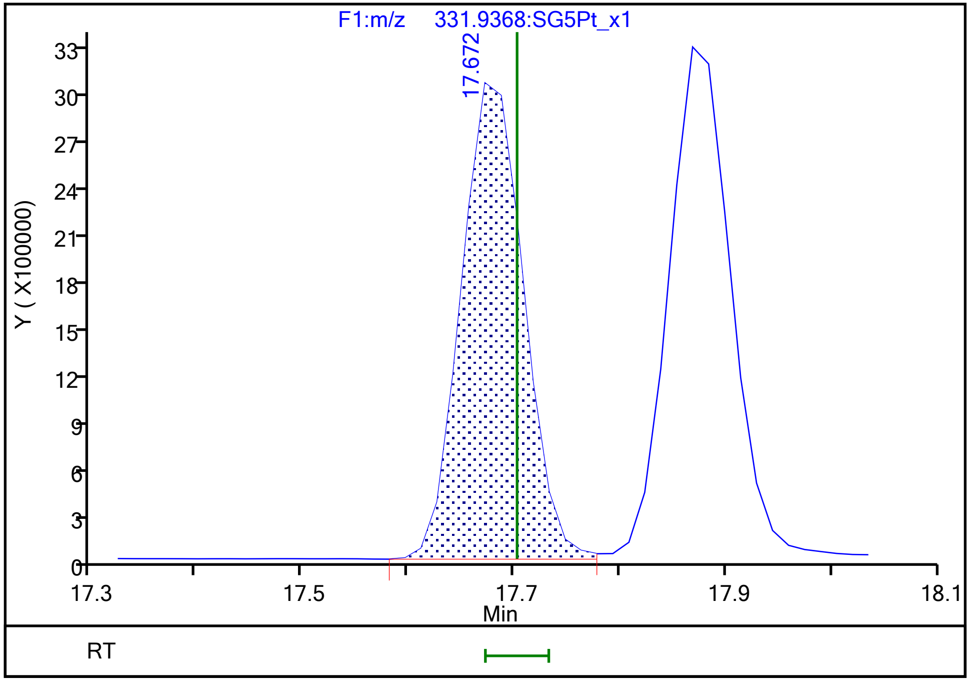

Reviewer: arghestanis, 11-Dec-2020 09:47:31

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 11-Dec-2020 09:52:30
Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d
Injection Date: 10-Dec-2020 23:07:57
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

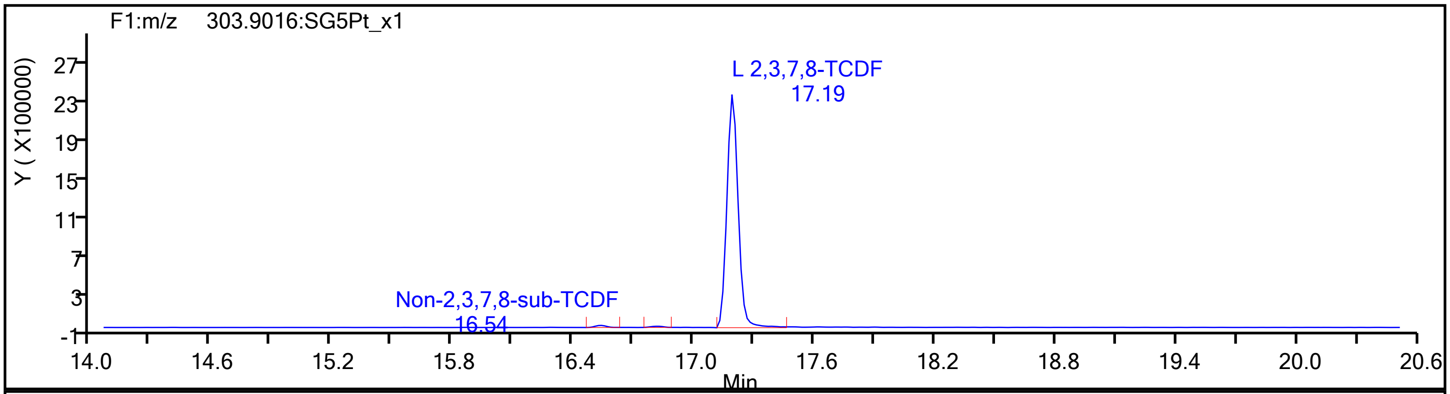

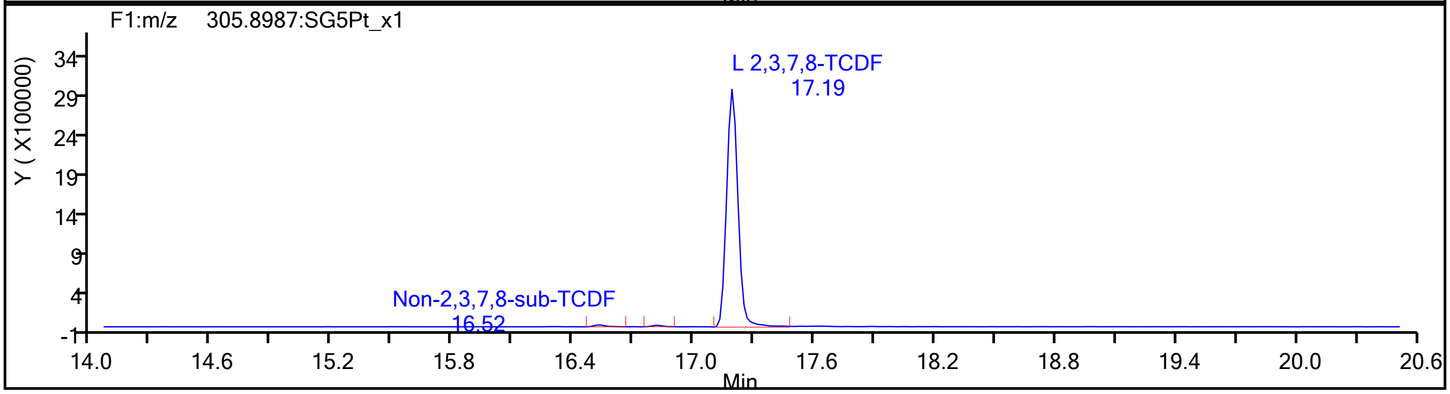

TCDF Standards

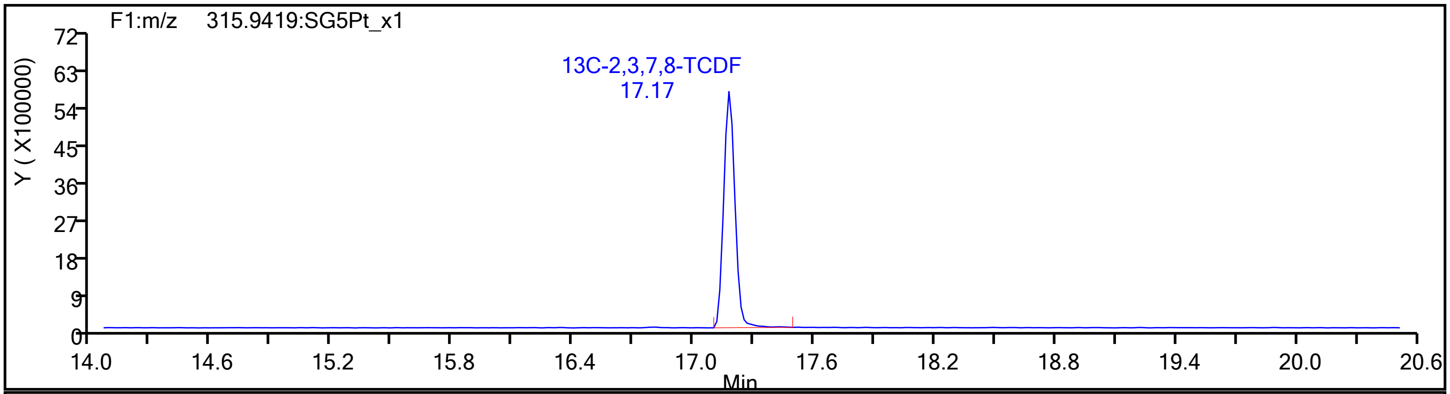

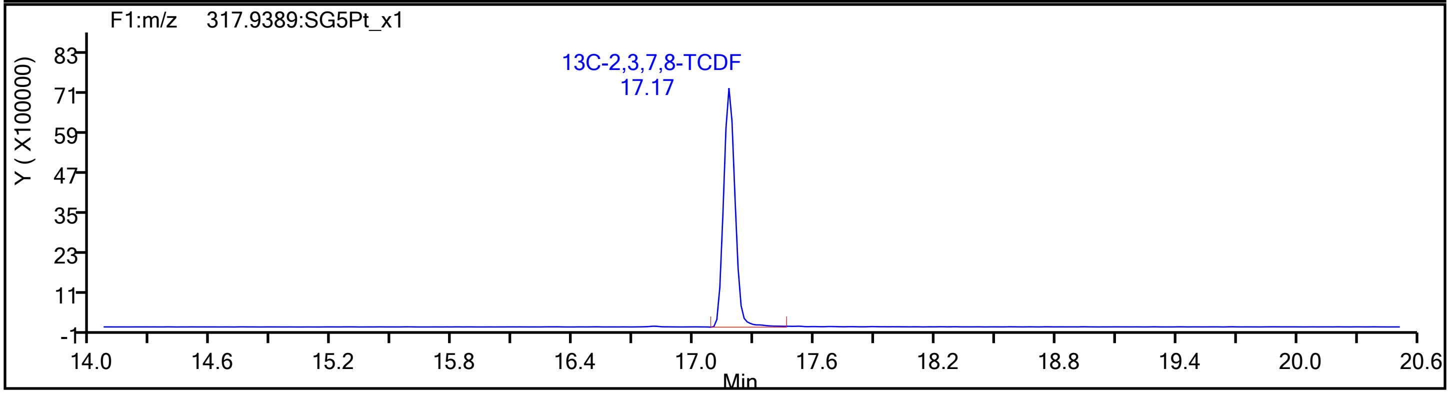

Report Date: 11-Dec-2020 09:52:30
Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: SMA
Method: Dioxin_10D5
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Client ID:
Worklist#: 440976
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

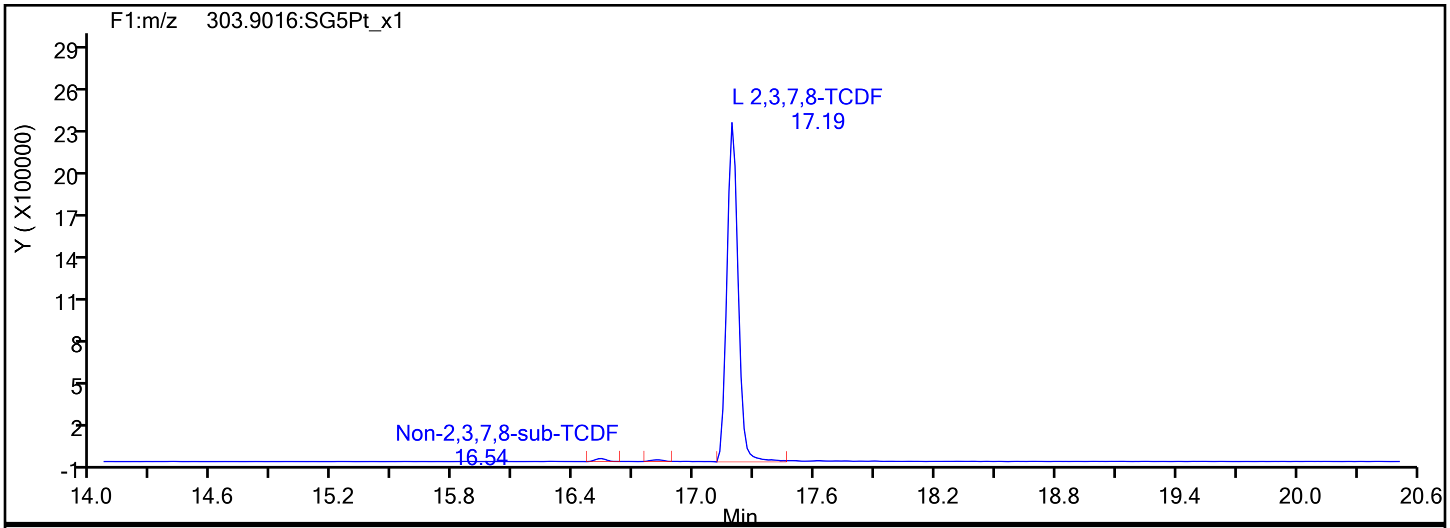

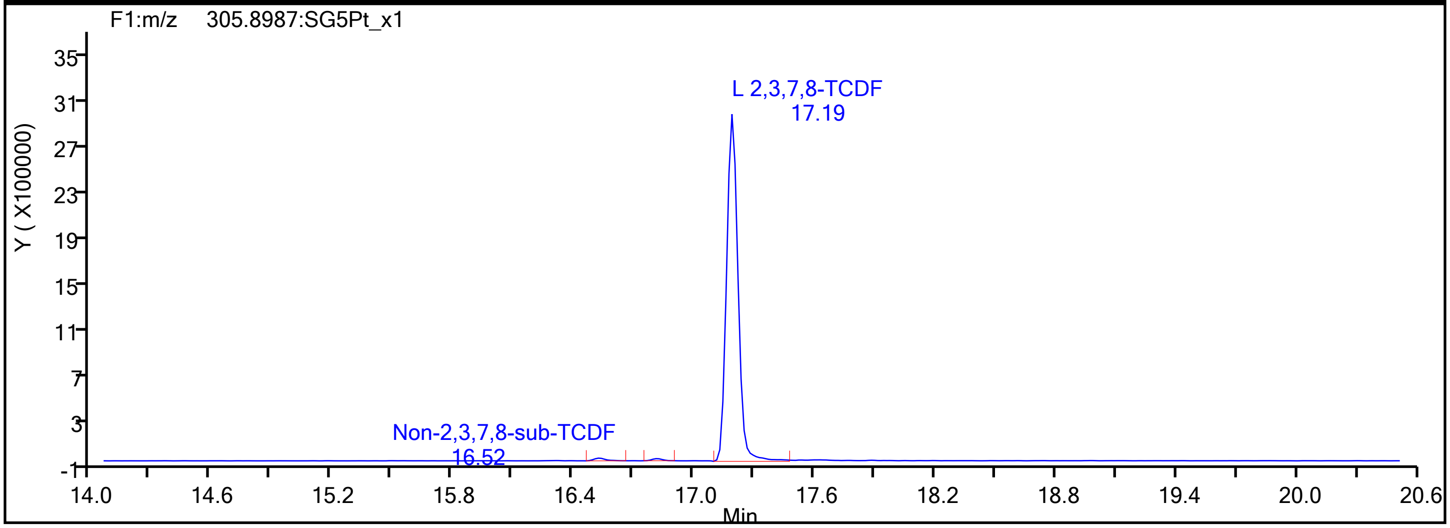

TCDF Interference Mass

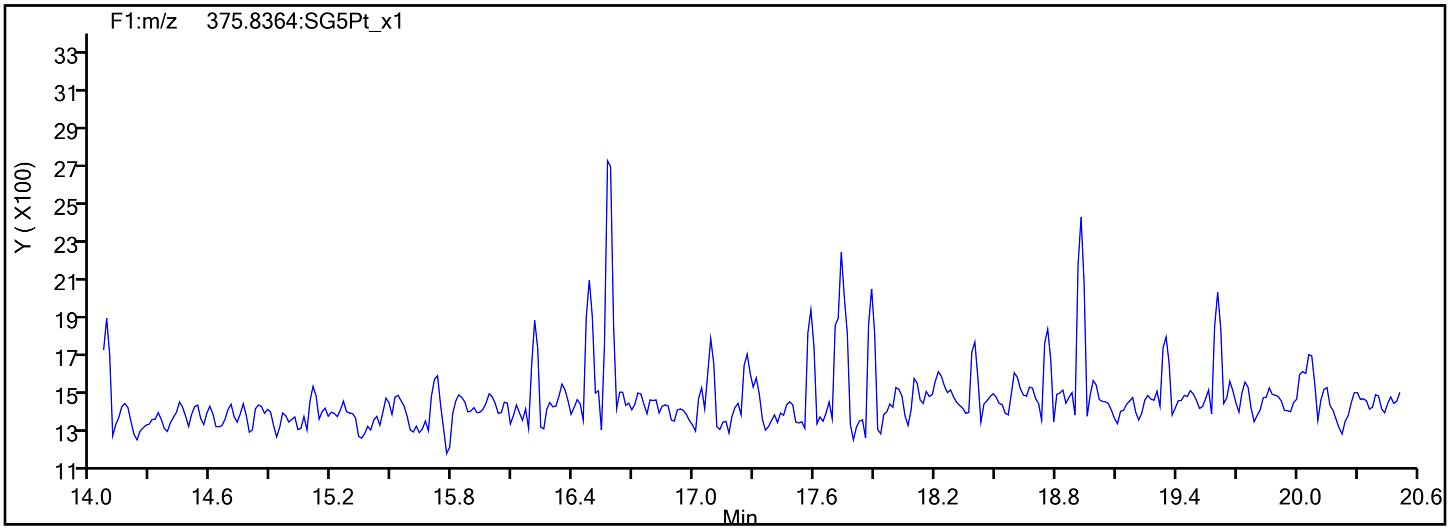

Report Date: 11-Dec-2020 09:52:30 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

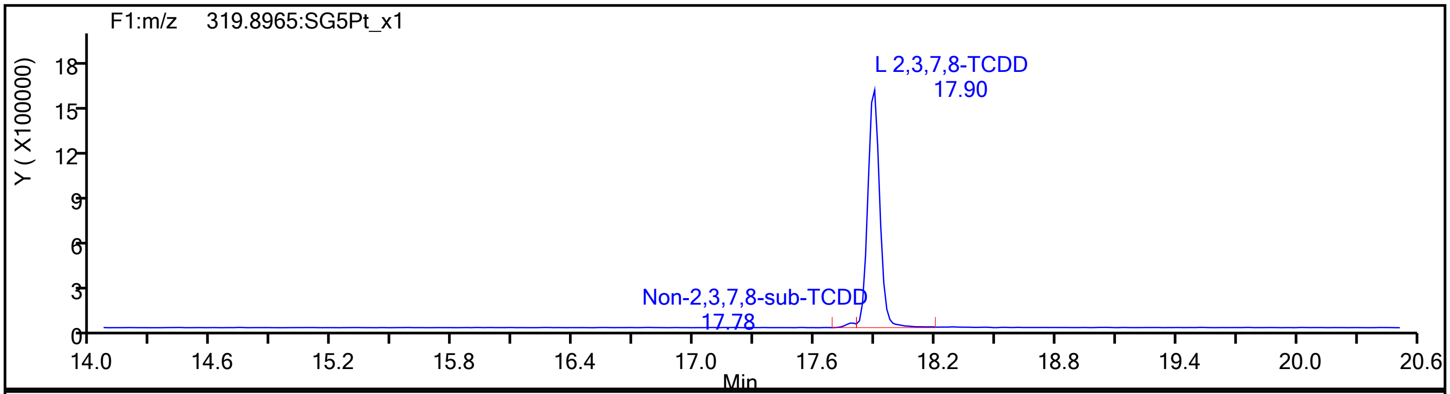

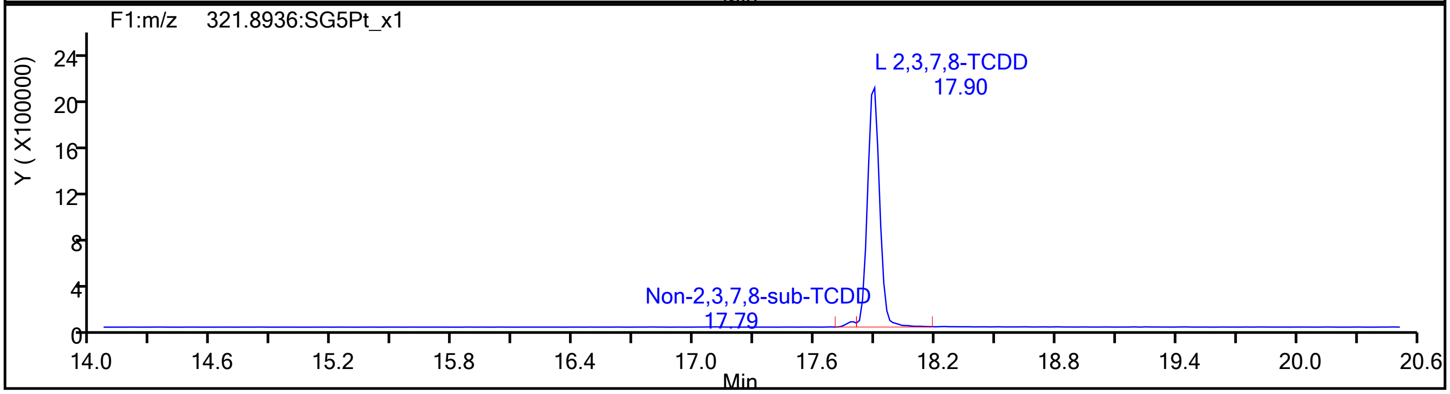

TCDD Standards

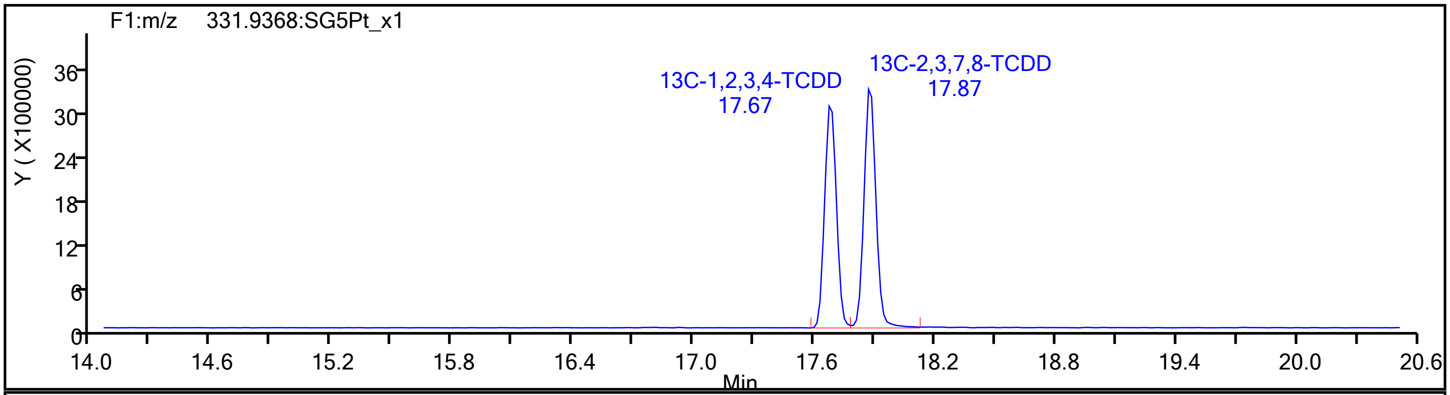

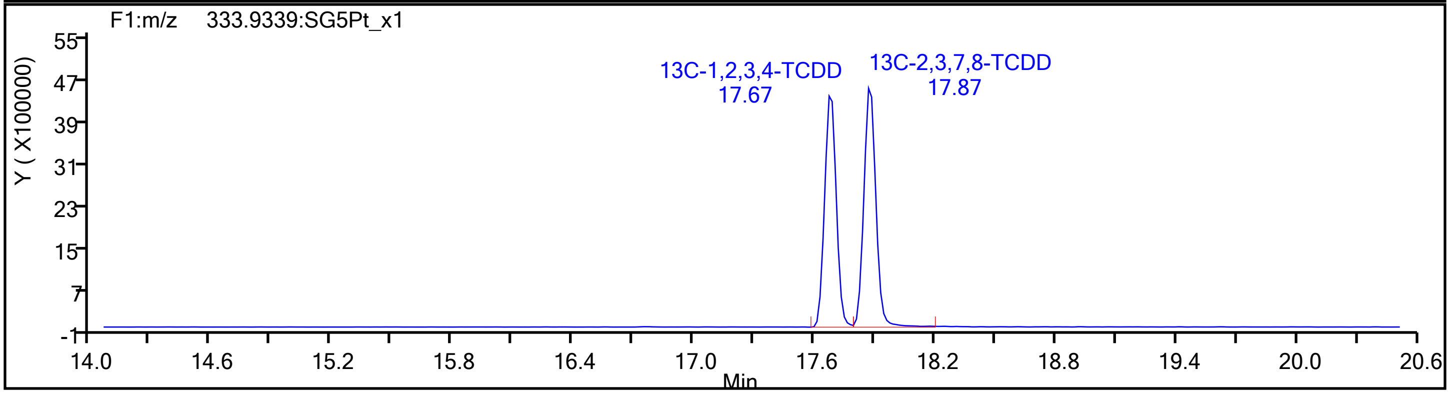

Report Date: 11-Dec-2020 09:52:30
Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

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Operator ID: SMA
Method: Dioxin_10D5
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Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

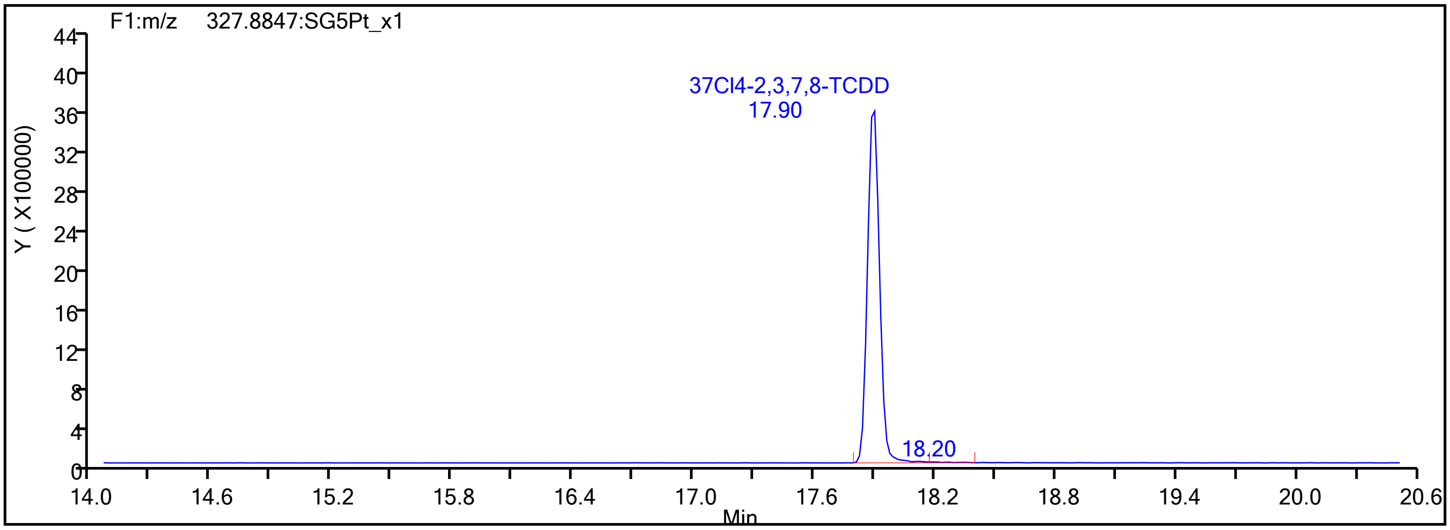

37Cl4-TCDD Standards

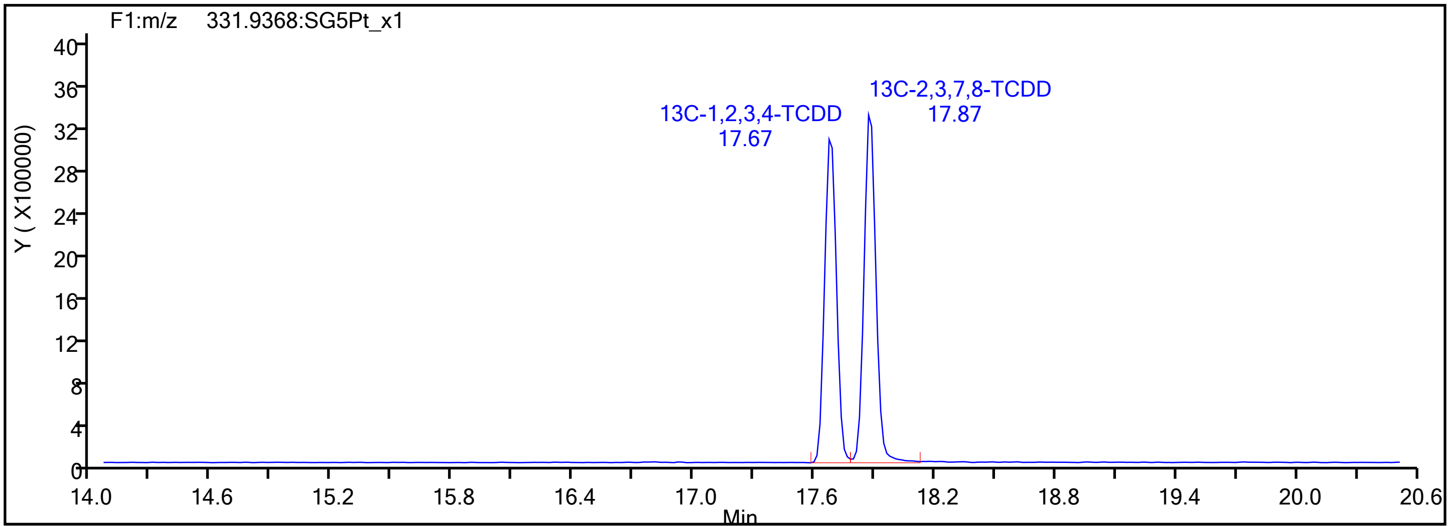

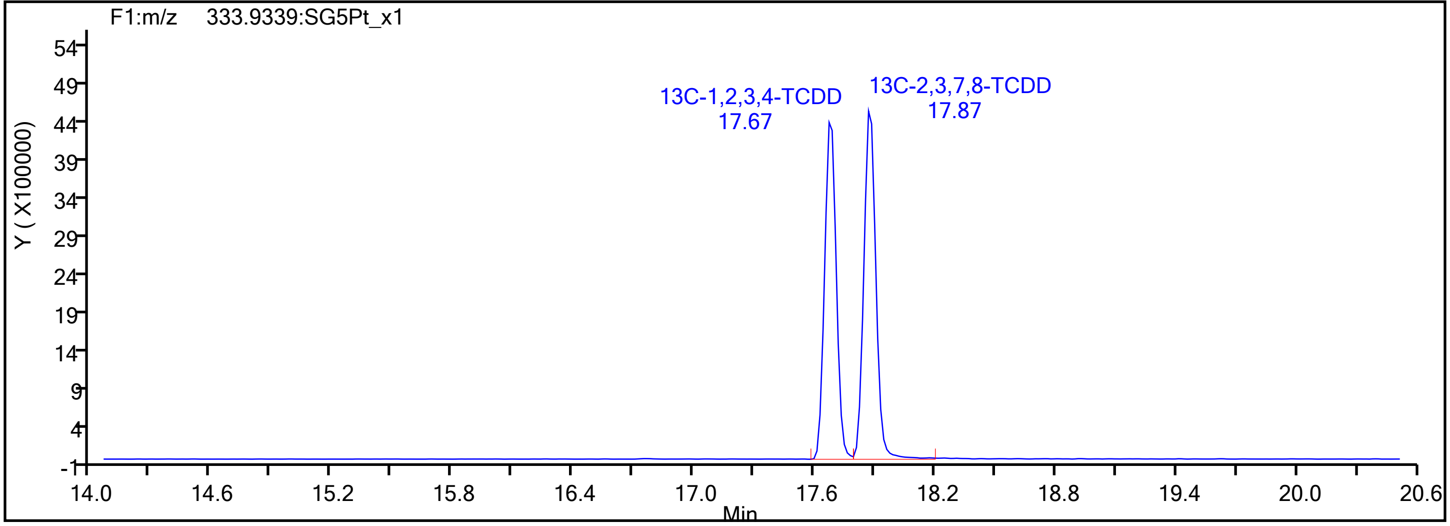

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

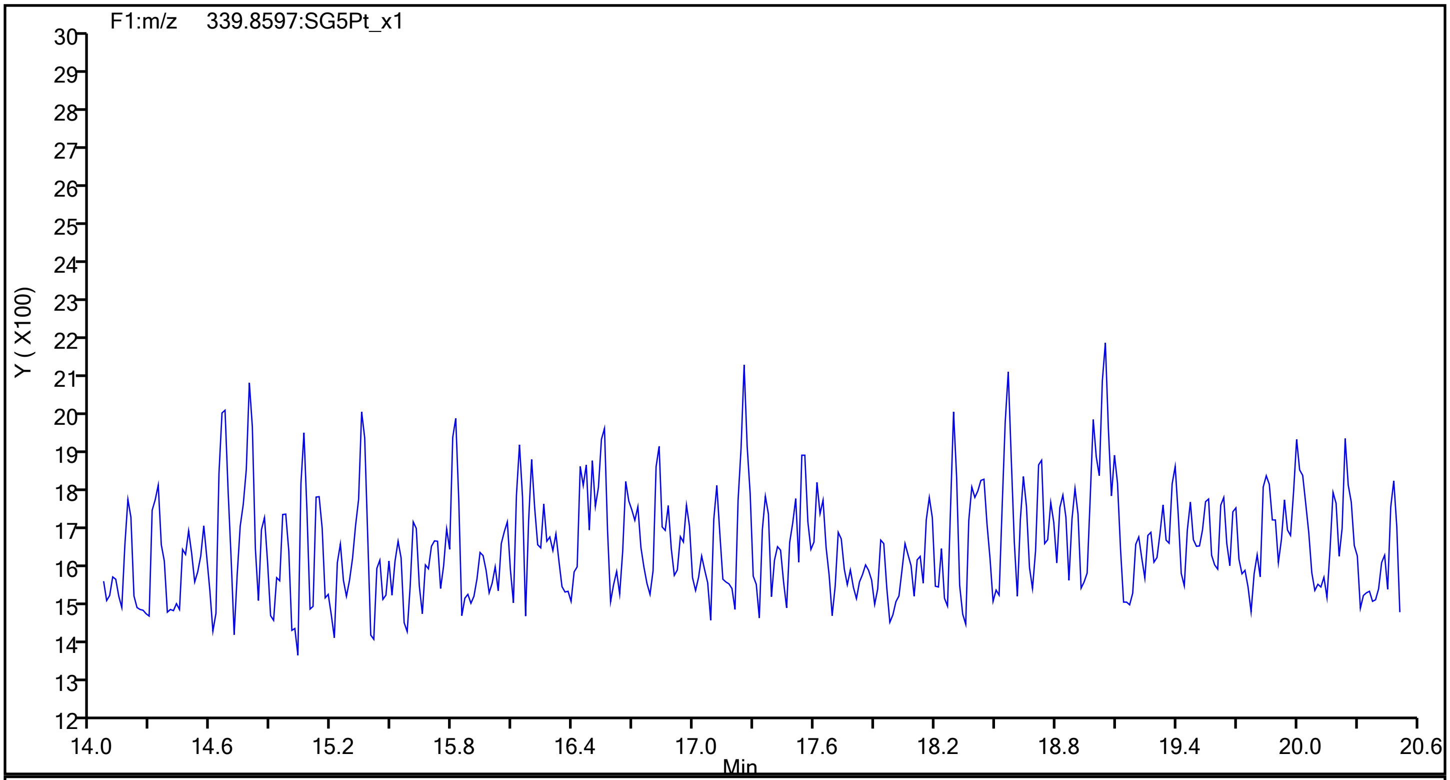

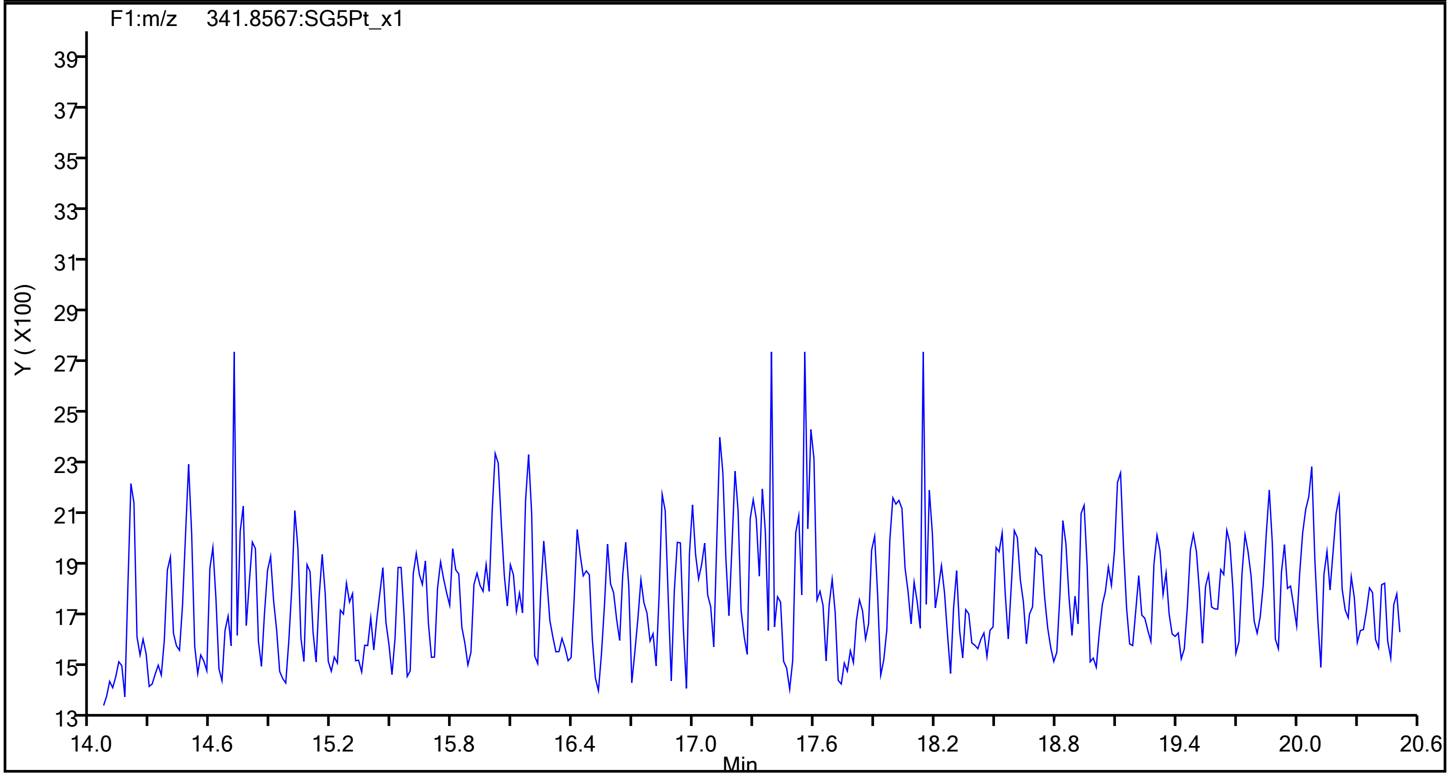

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

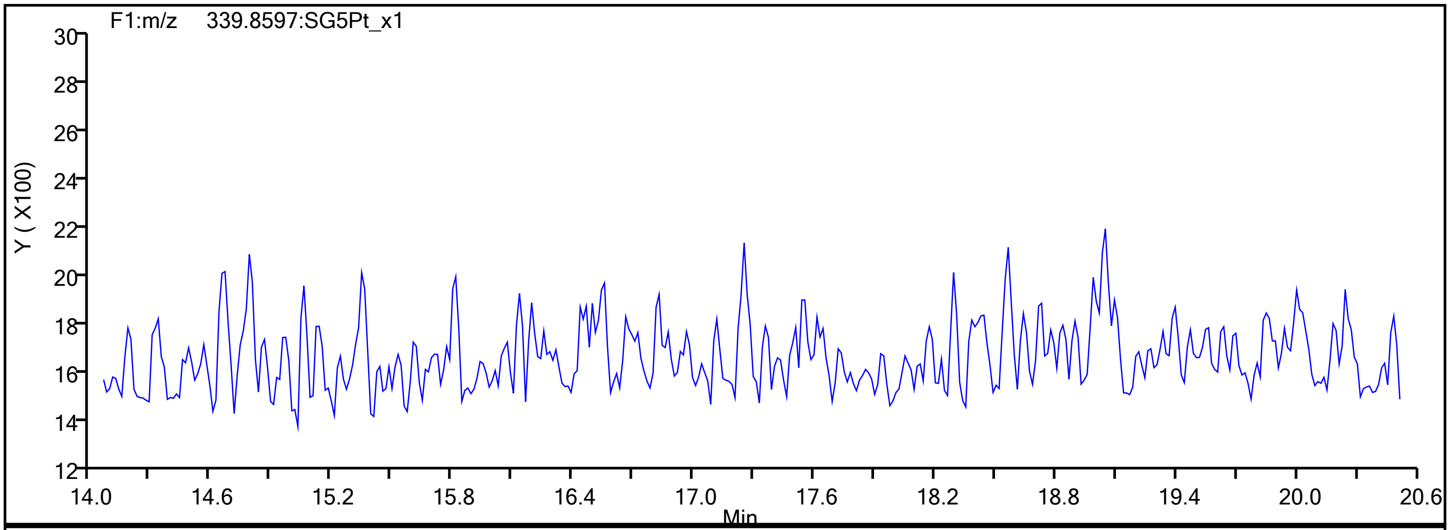

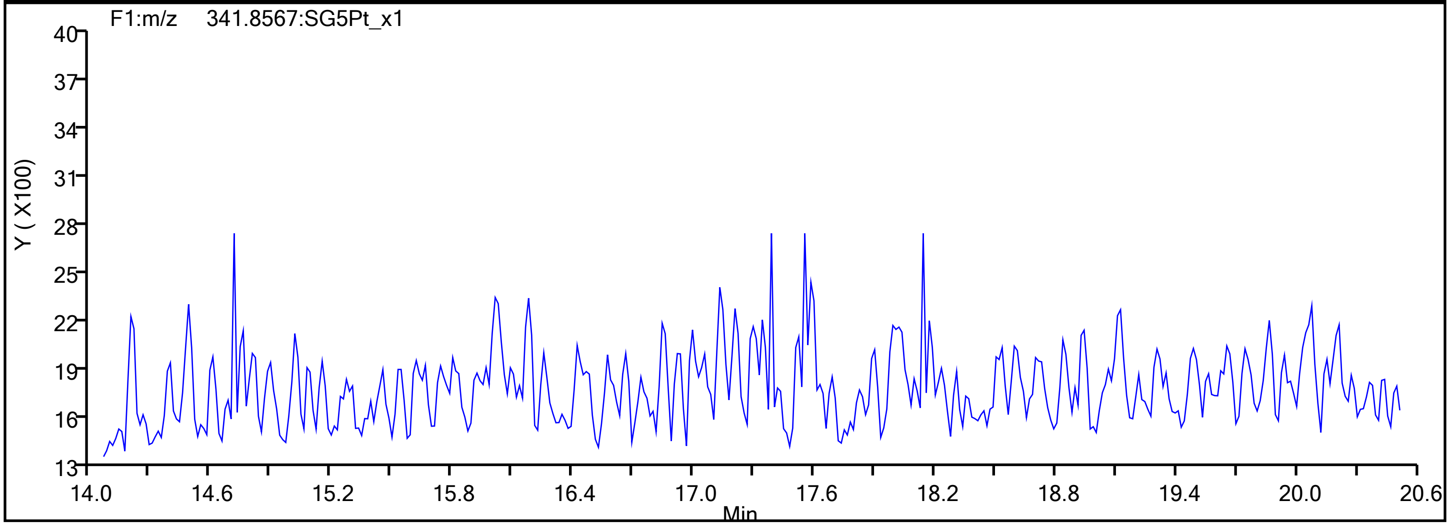

F1 PeCDFs Interference Mass

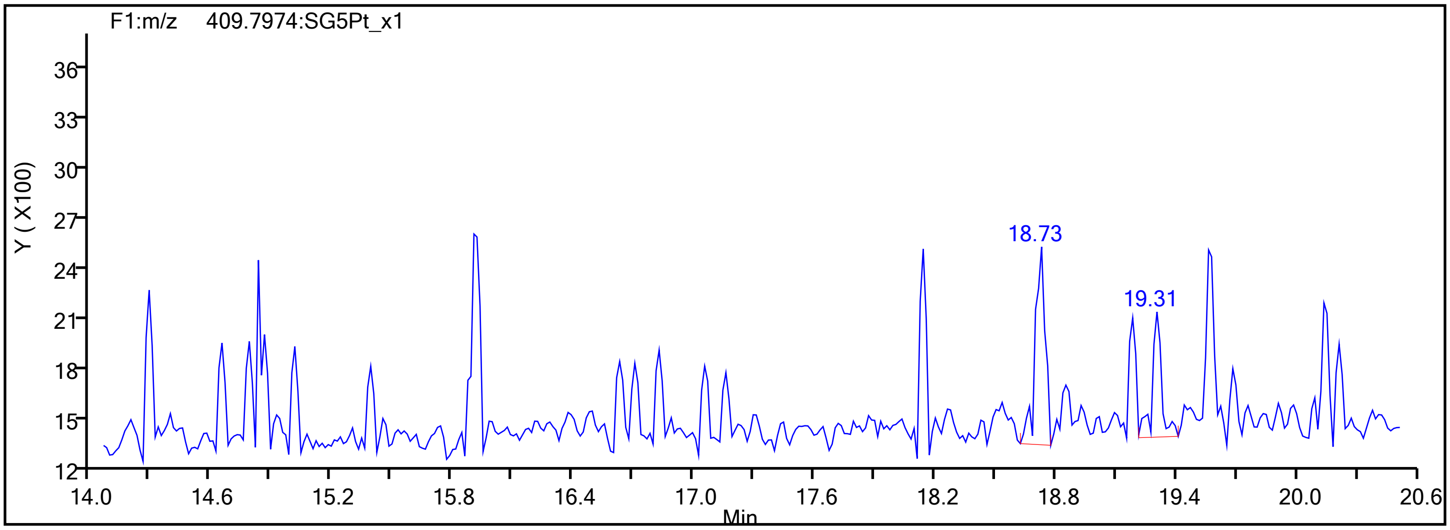

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Eurofins TestAmerica, Sacramento

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PeCDF

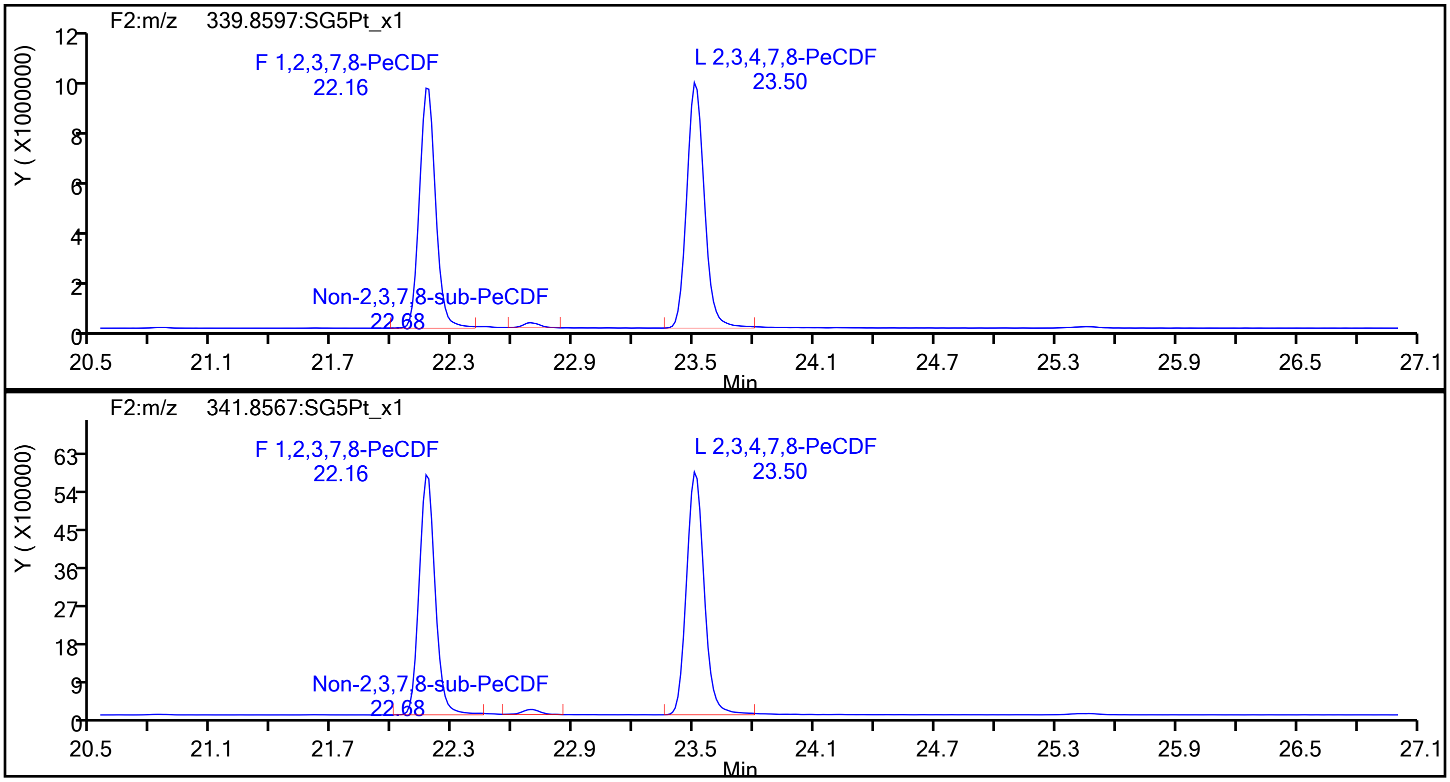

PeCDF Standards

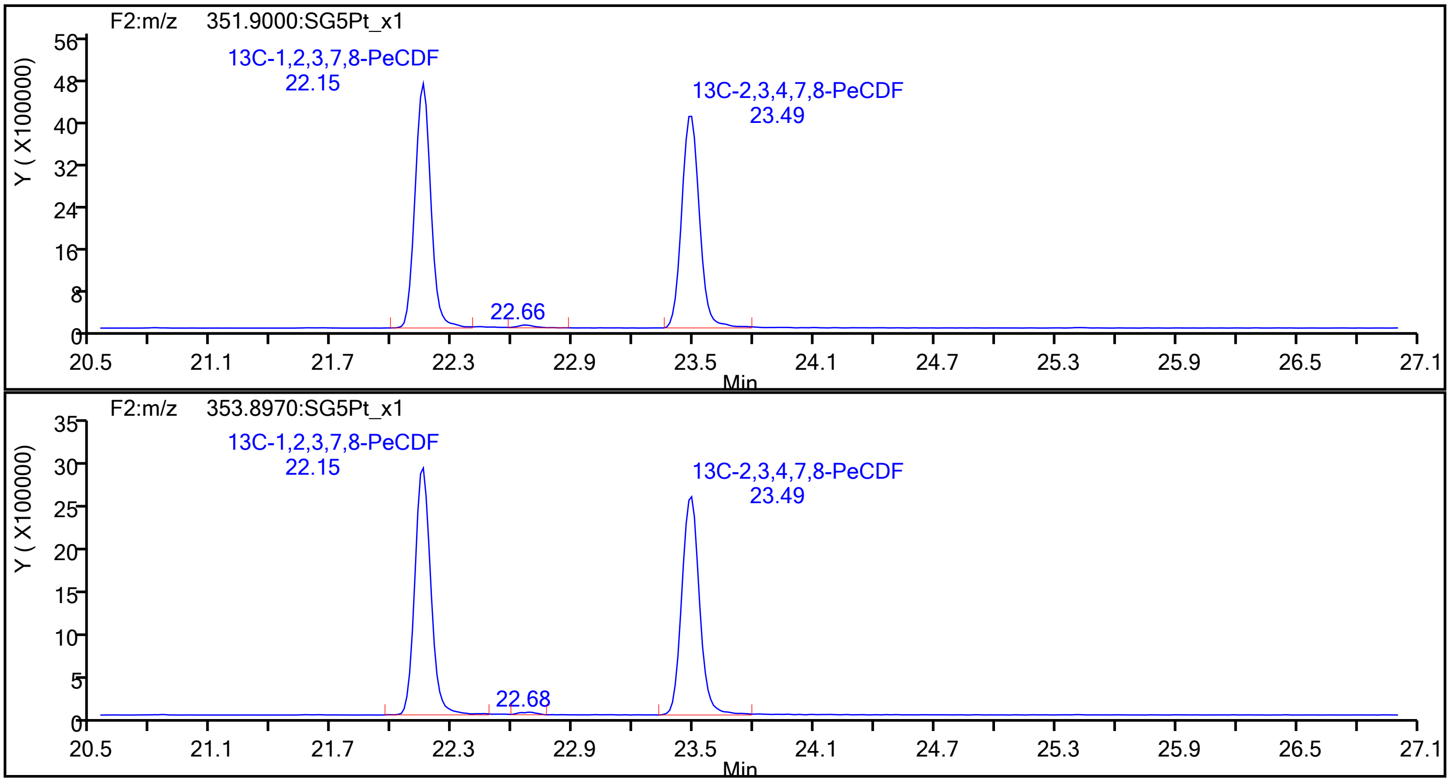

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Eurofins TestAmerica, Sacramento

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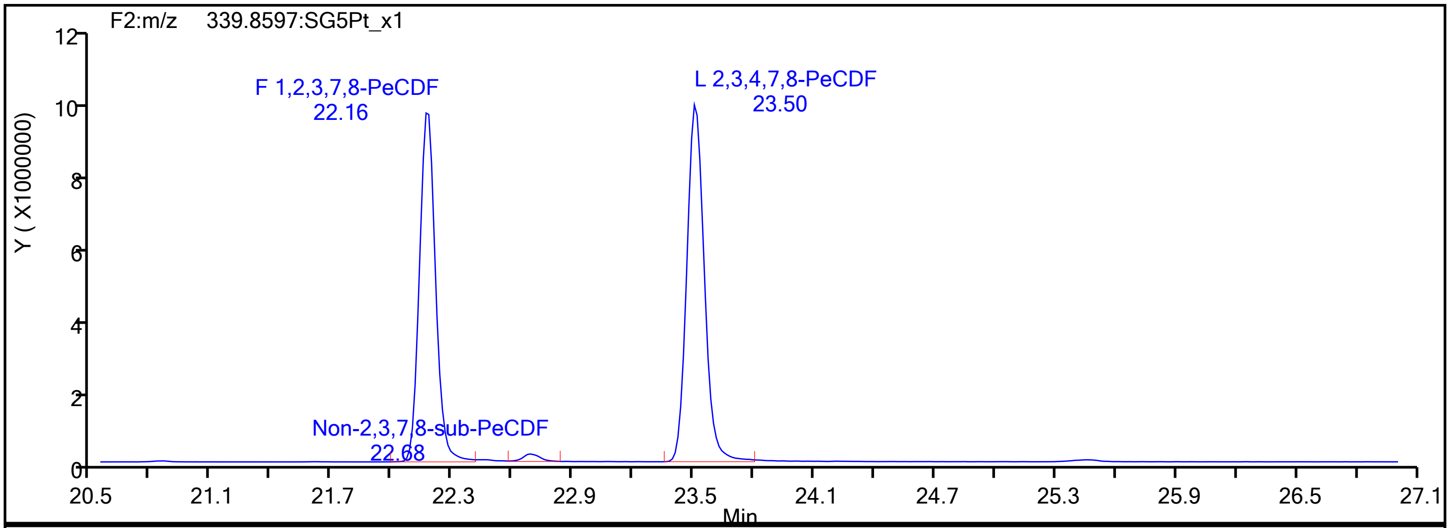

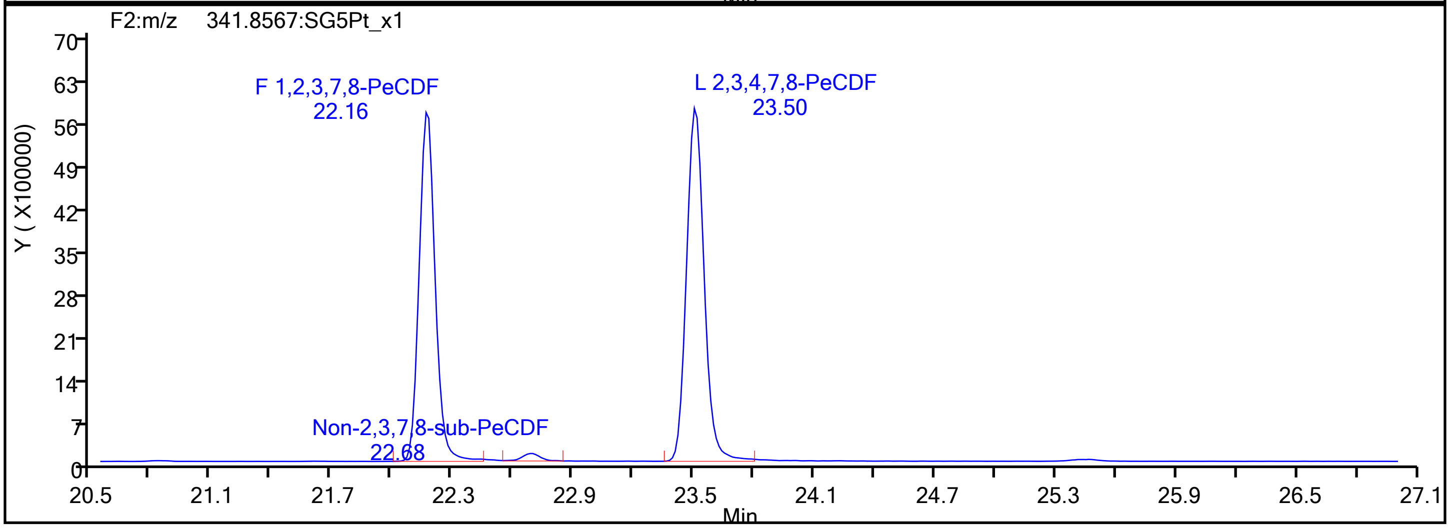

PeCDF Interference Mass

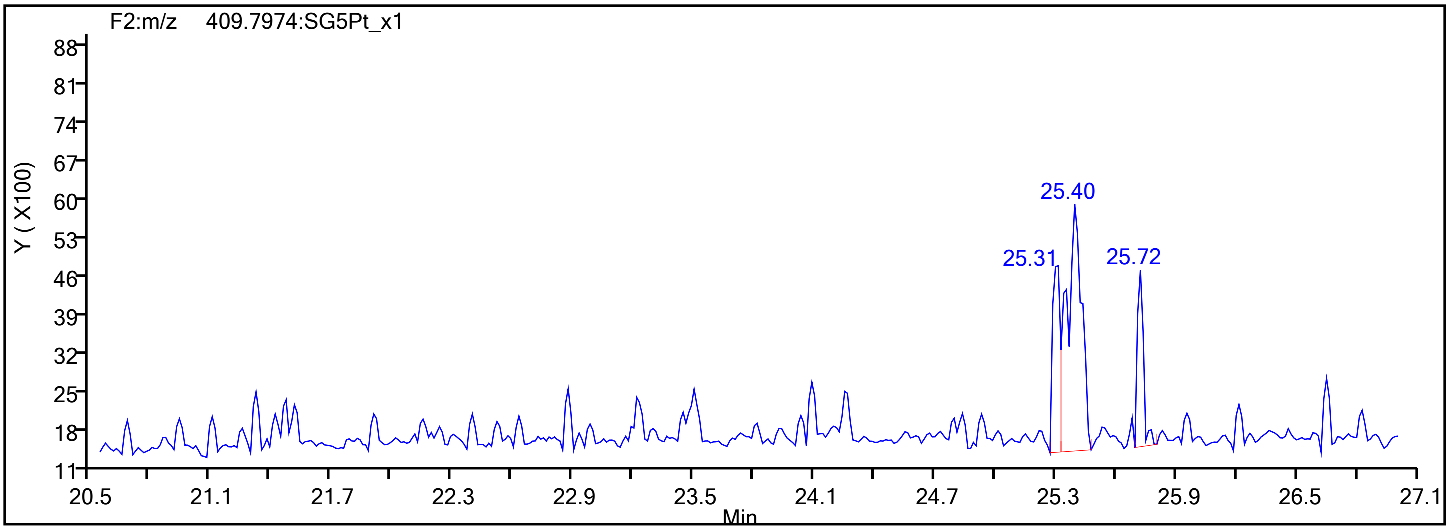

Report Date: 11-Dec-2020 09:52:30 Chrom Revision: 2.3 09-Dec-2020 16:22:14
Eurofins TestAmerica, Sacramento
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Injection Date: 10-Dec-2020 23:07:57 Injection Vol: 2.0 ul
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Client ID:
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PeCDD

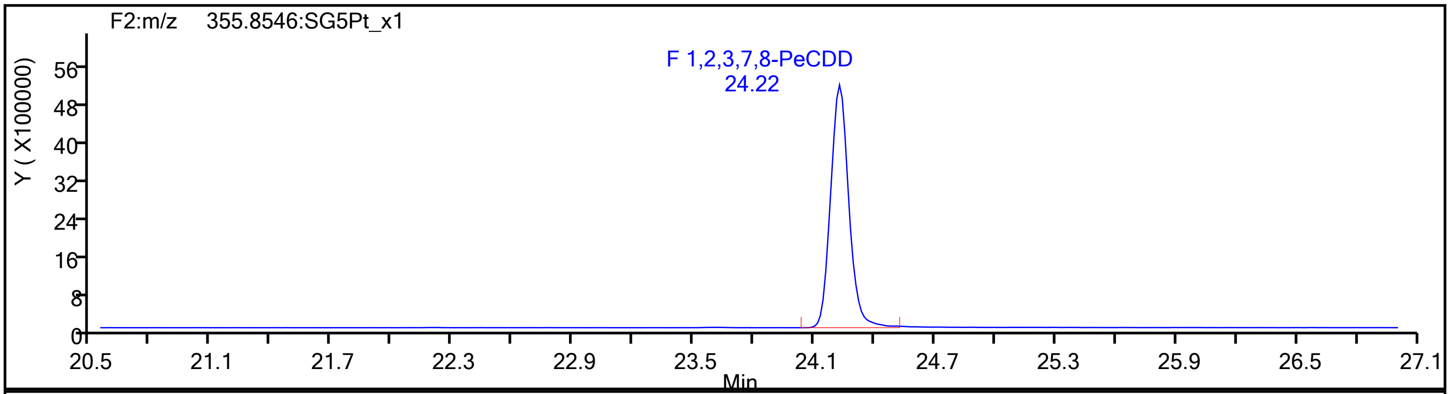

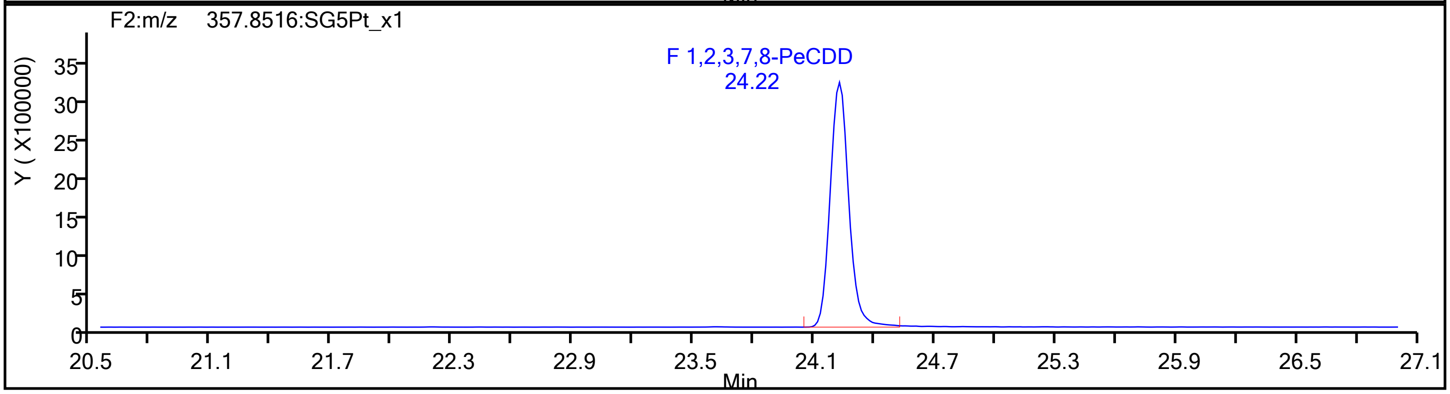

PeCDD Standards

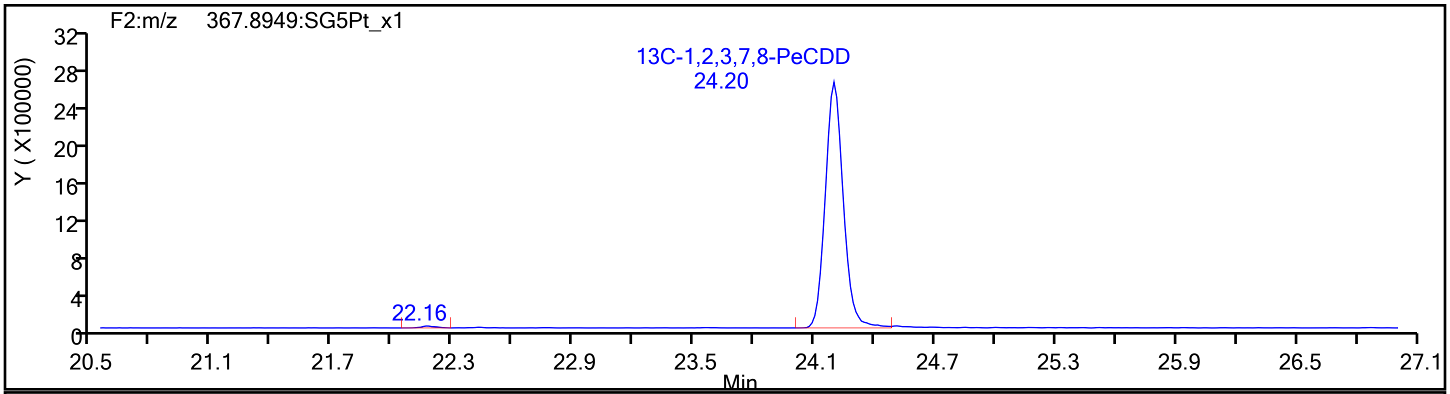

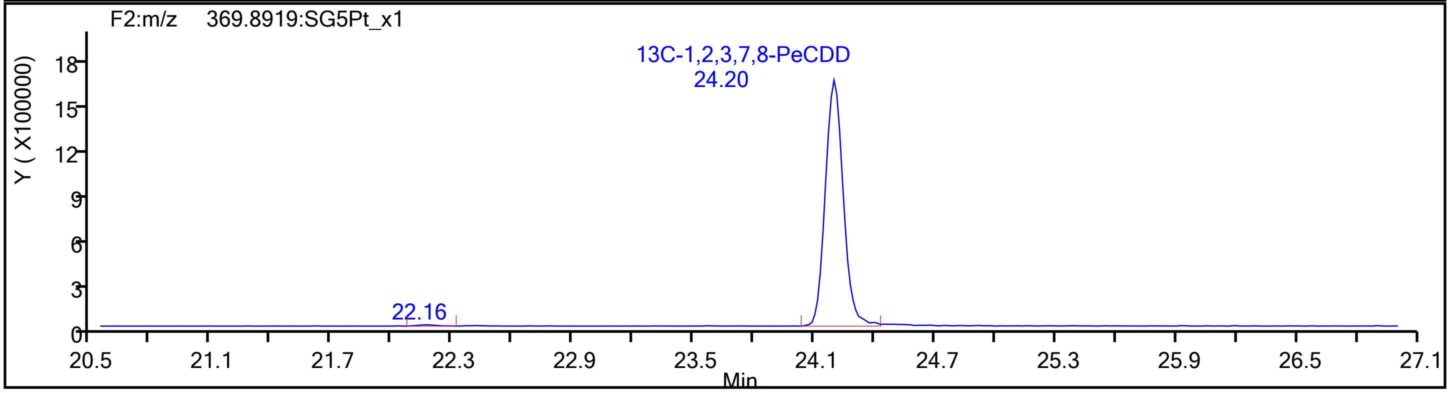

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Eurofins TestAmerica, Sacramento

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Client ID:			
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HxCDF

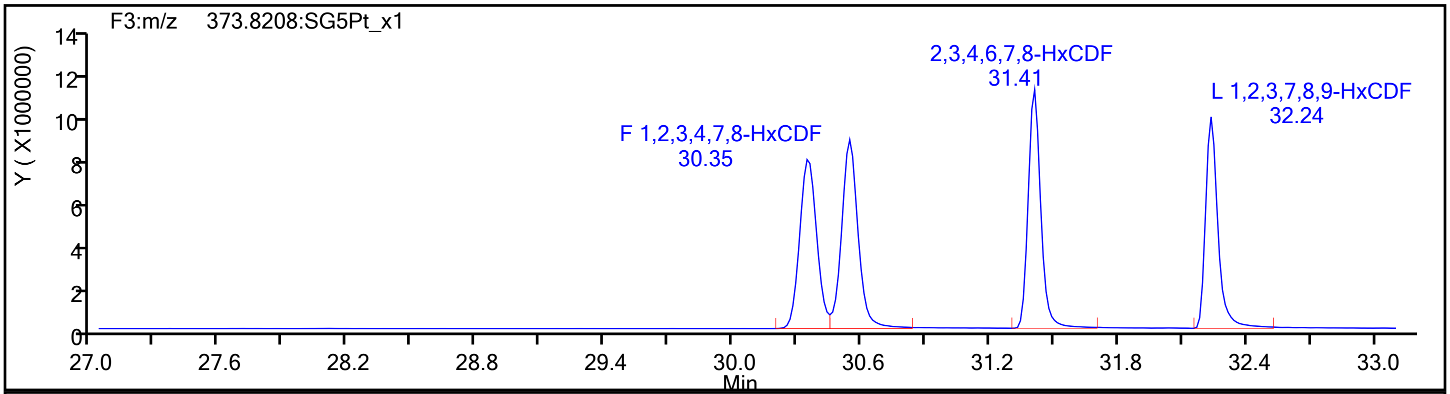

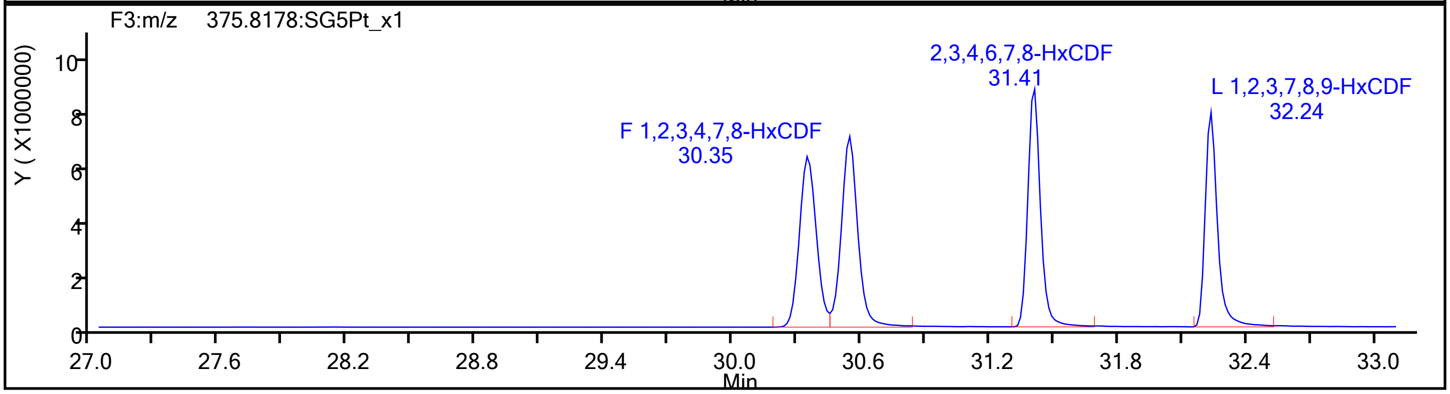

HxCDF Standards

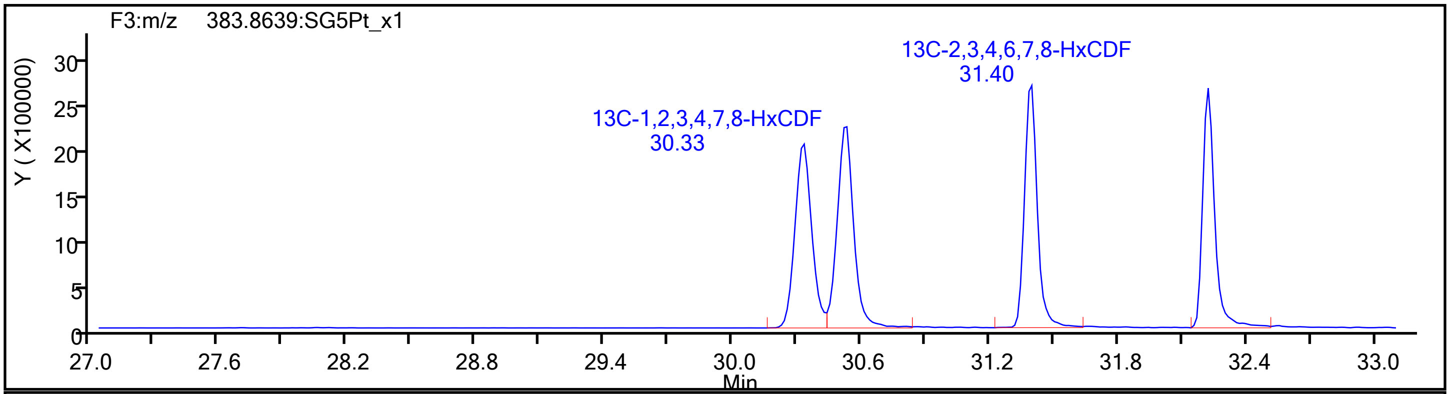

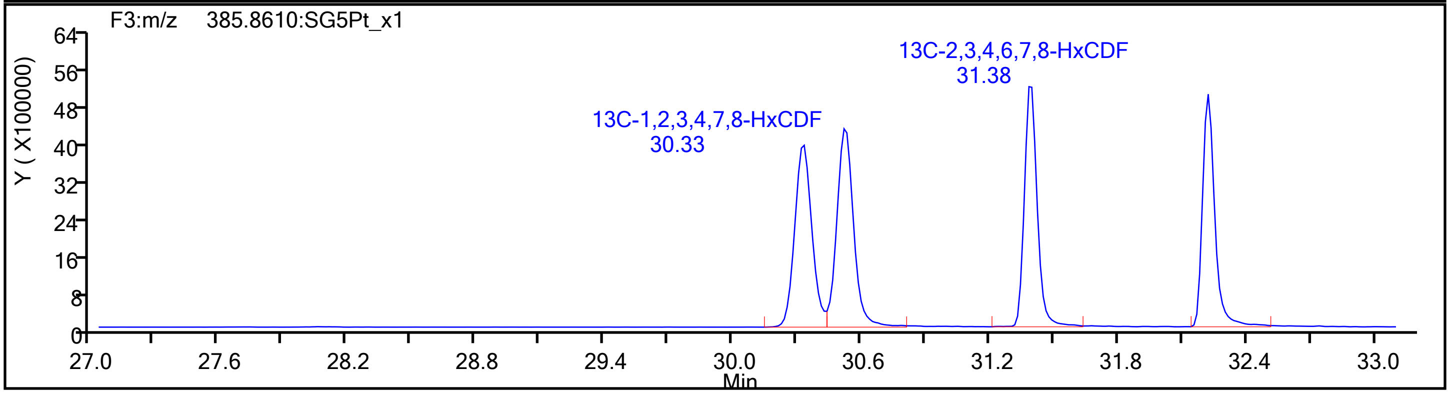

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_10D5
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Worklist#: 440976
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

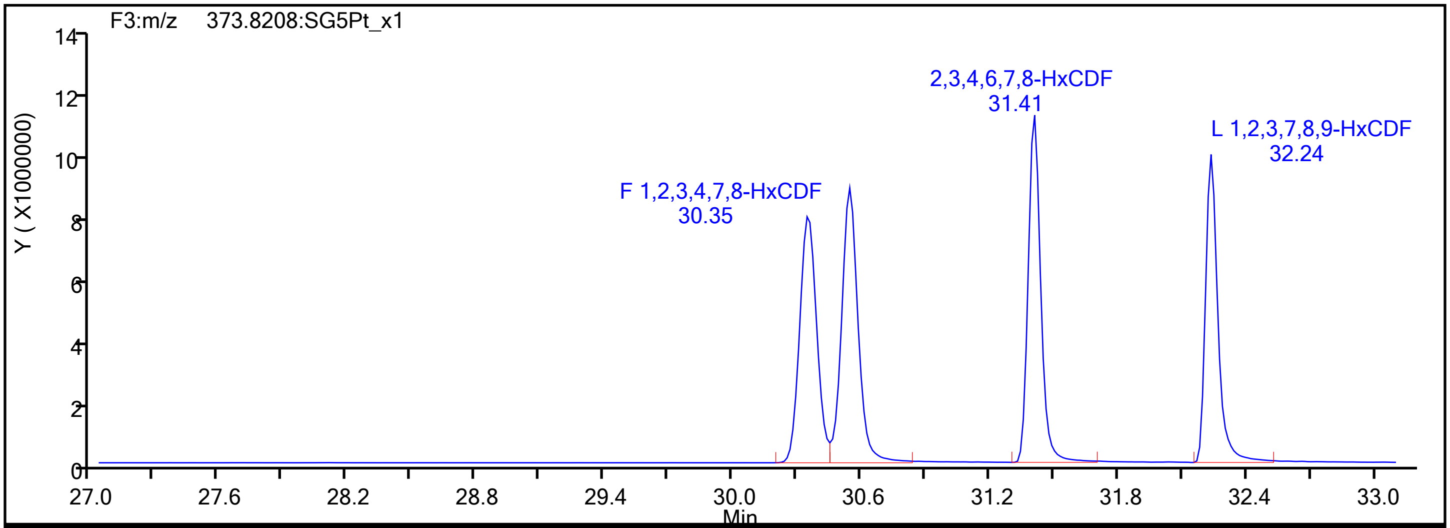

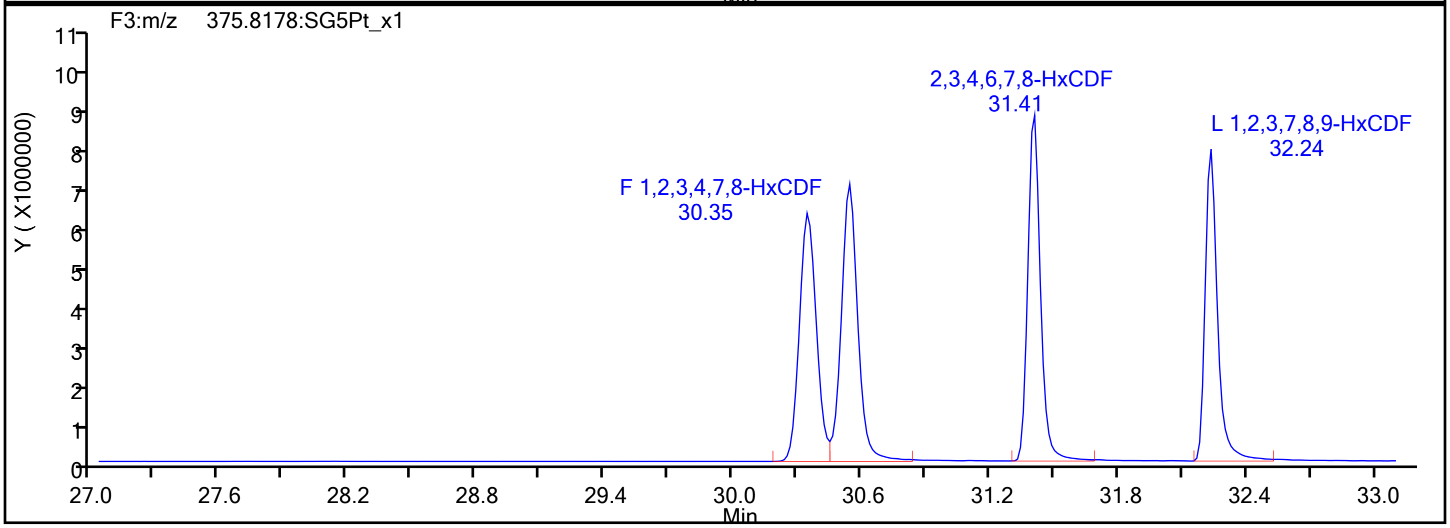

HxCDF Interference Mass

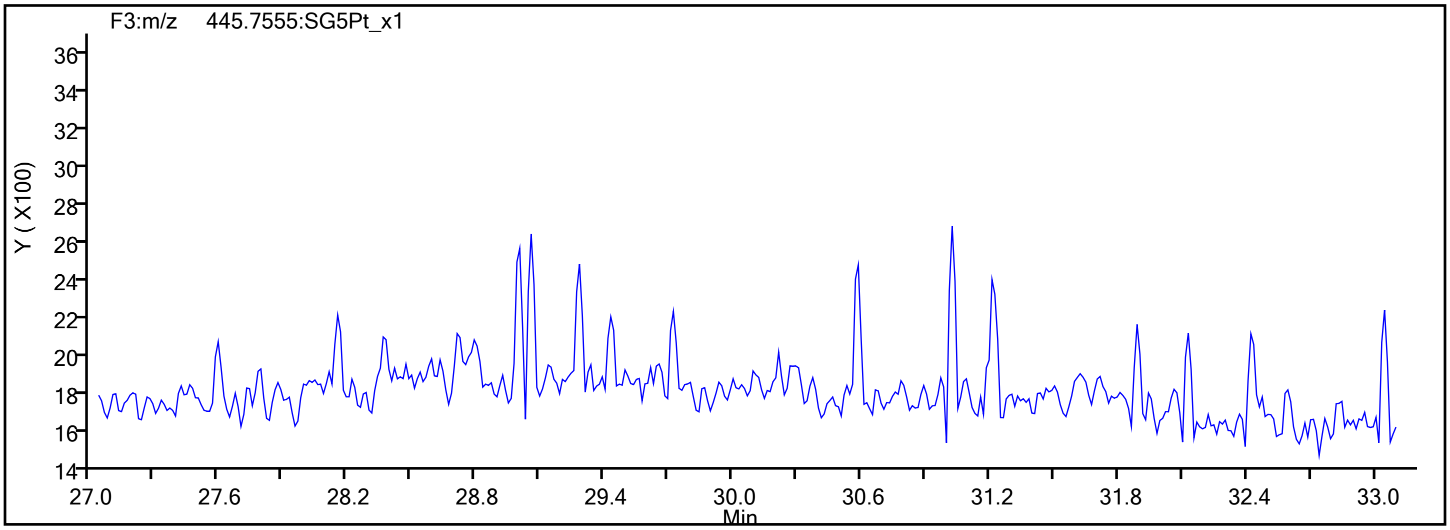

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Eurofins TestAmerica, Sacramento

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HxCDD

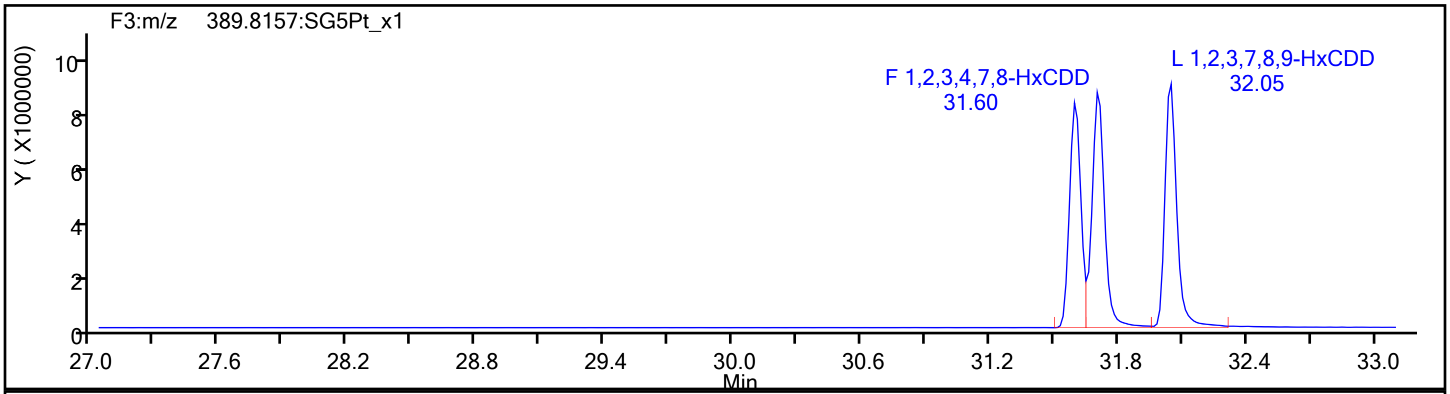

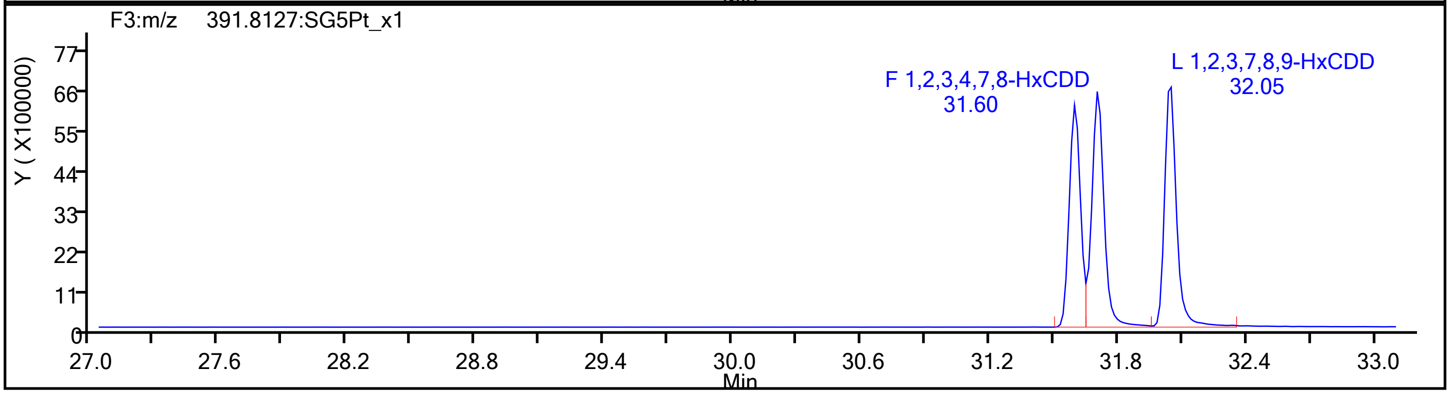

HxCDD Standards

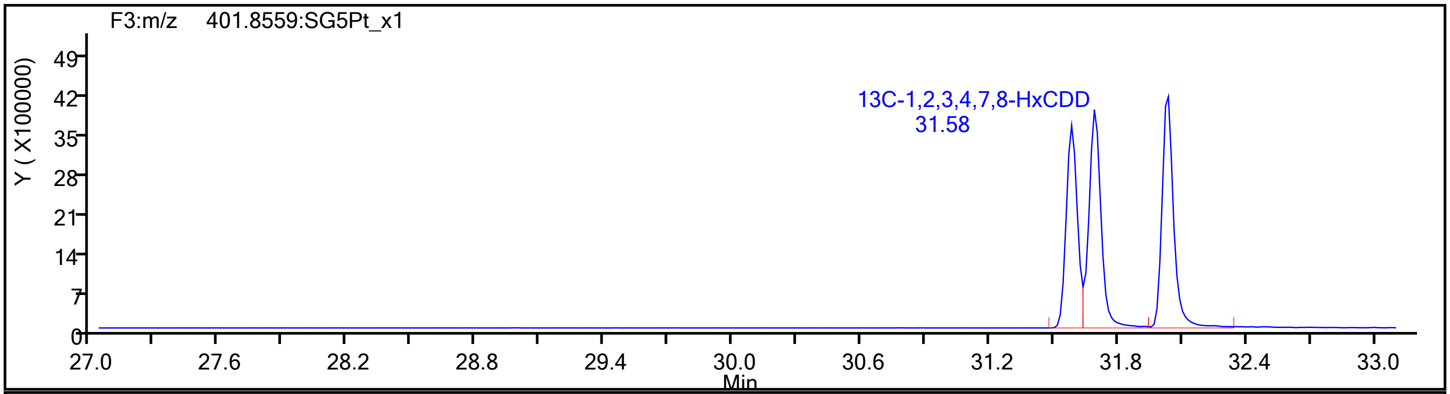

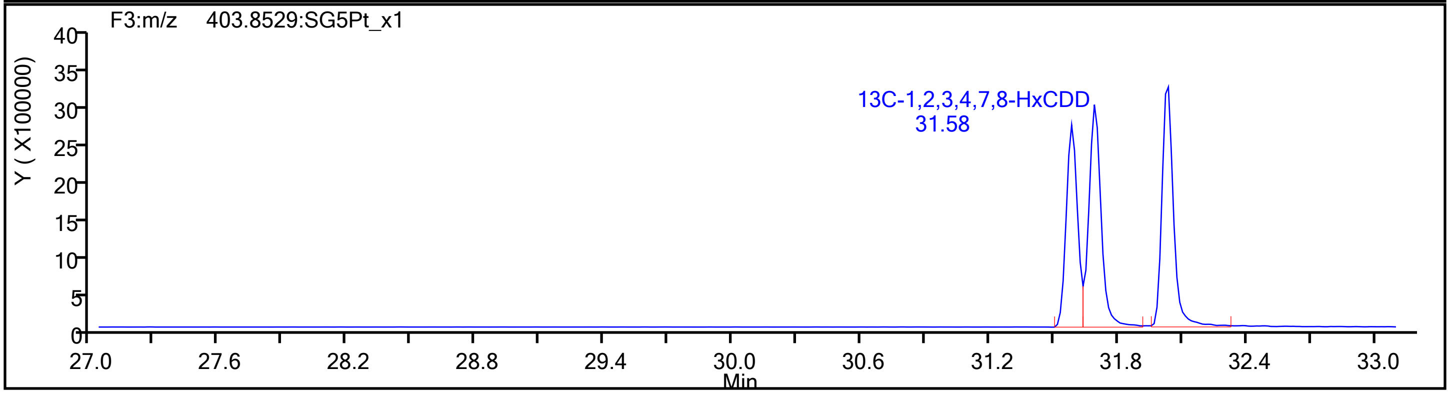

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Eurofins TestAmerica, Sacramento

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HpCDF

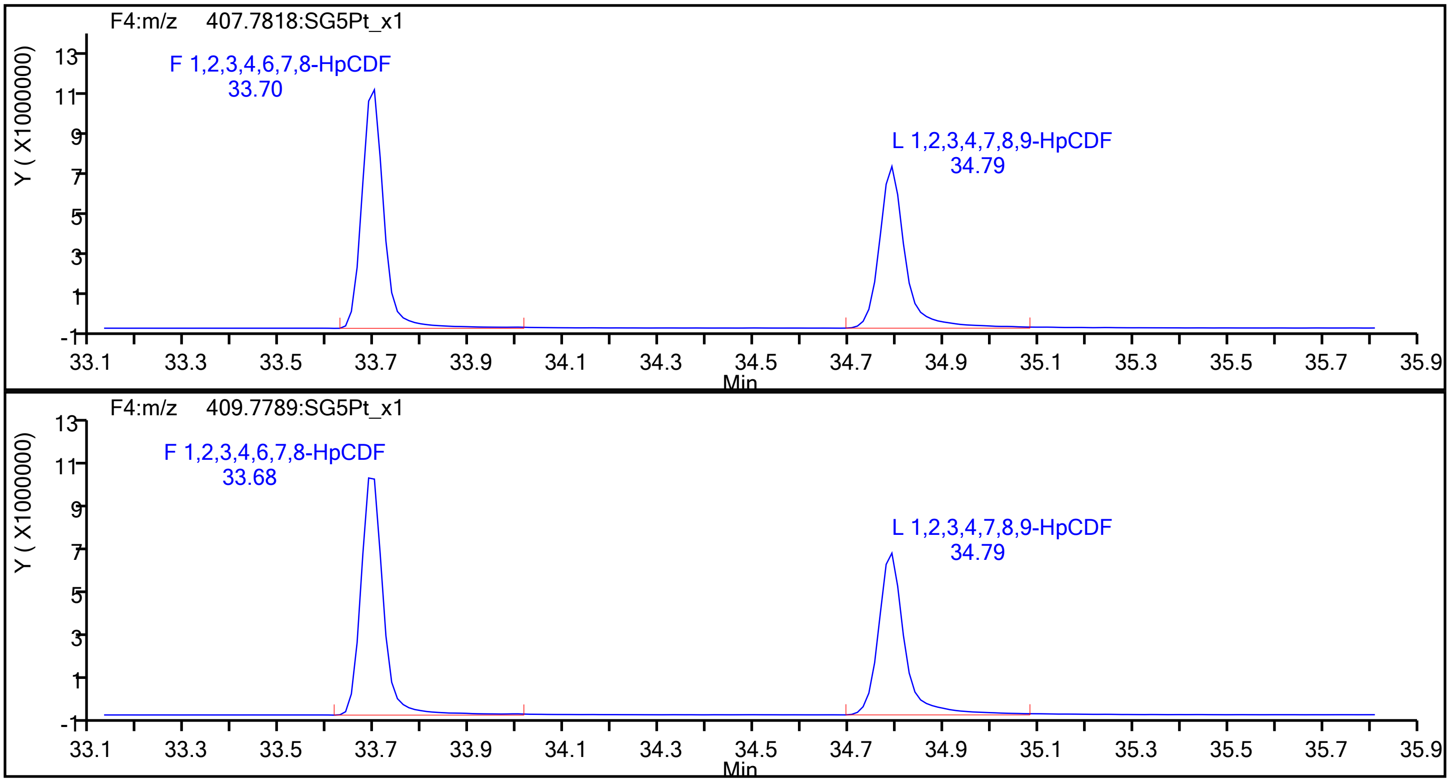

HpCDF Standards

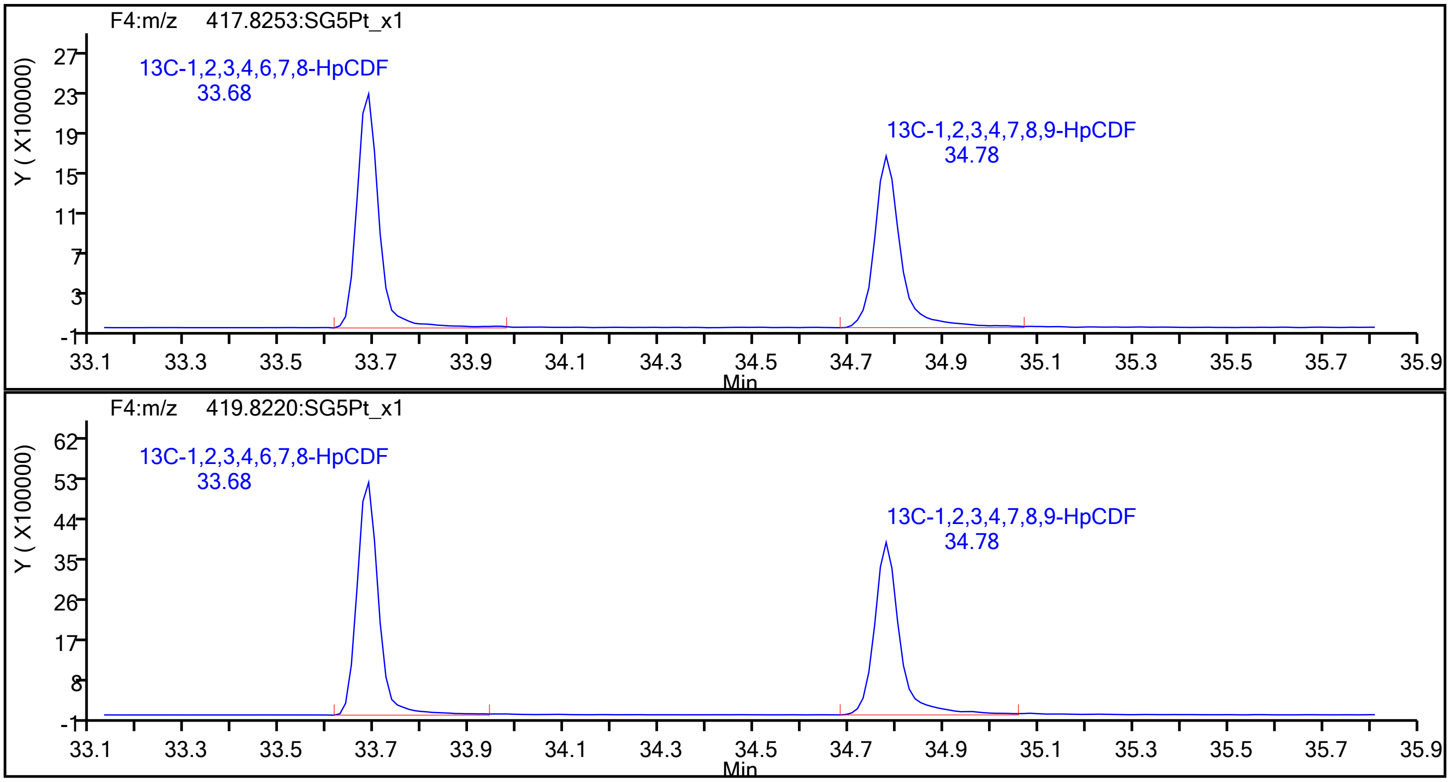

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Eurofins TestAmerica, Sacramento

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HpCDF

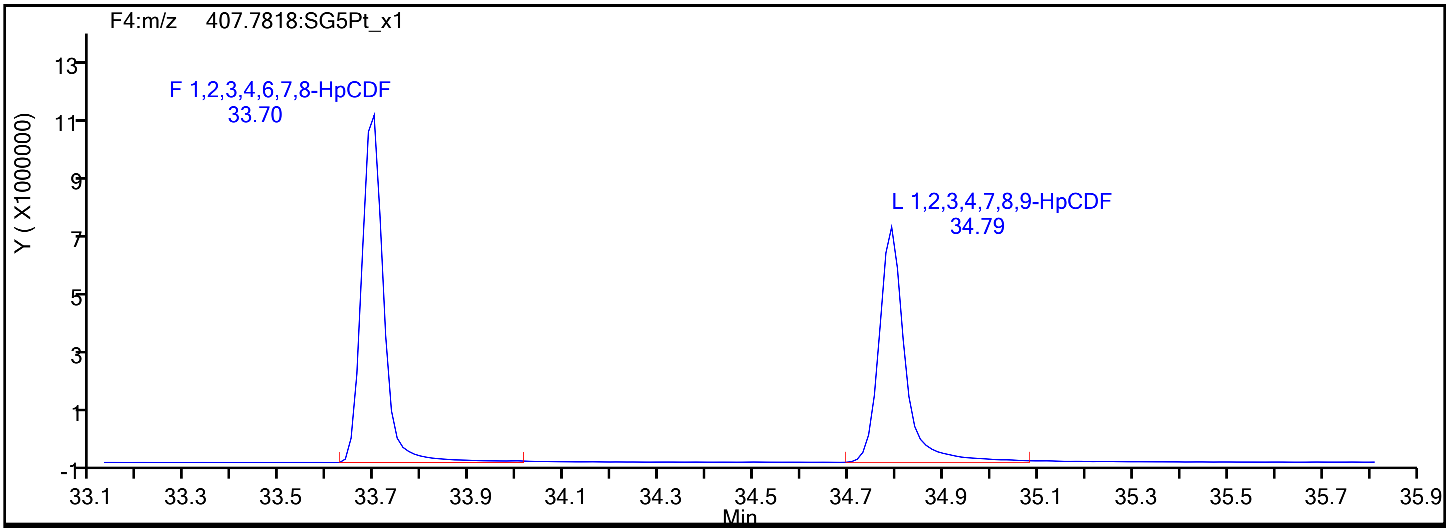

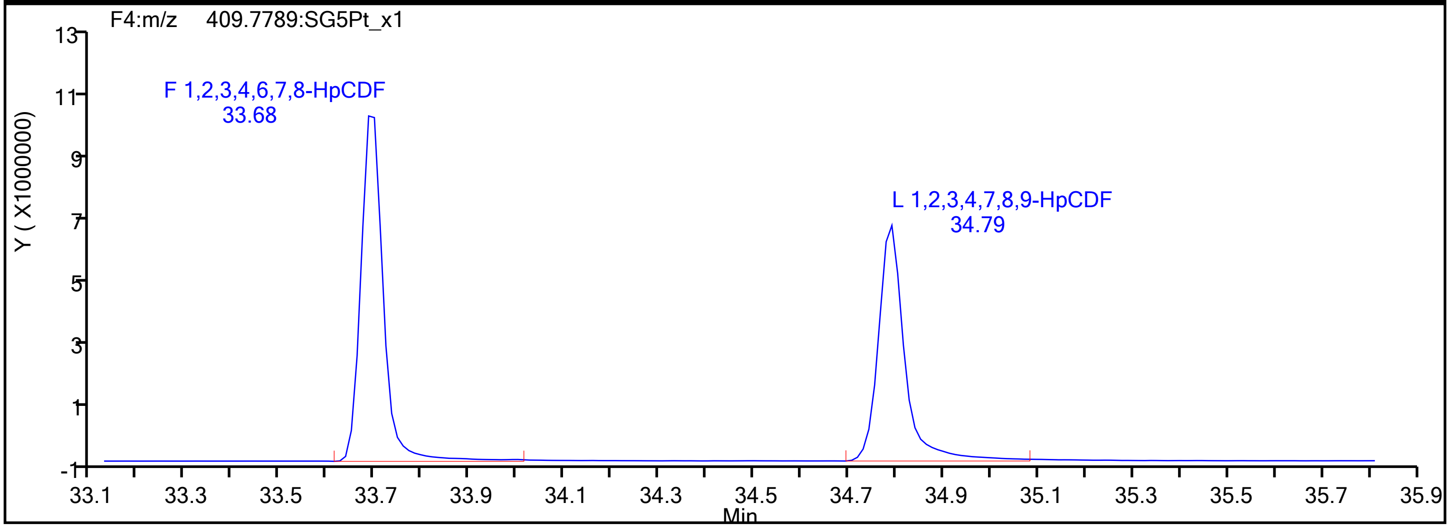

HpCDF Interference Mass

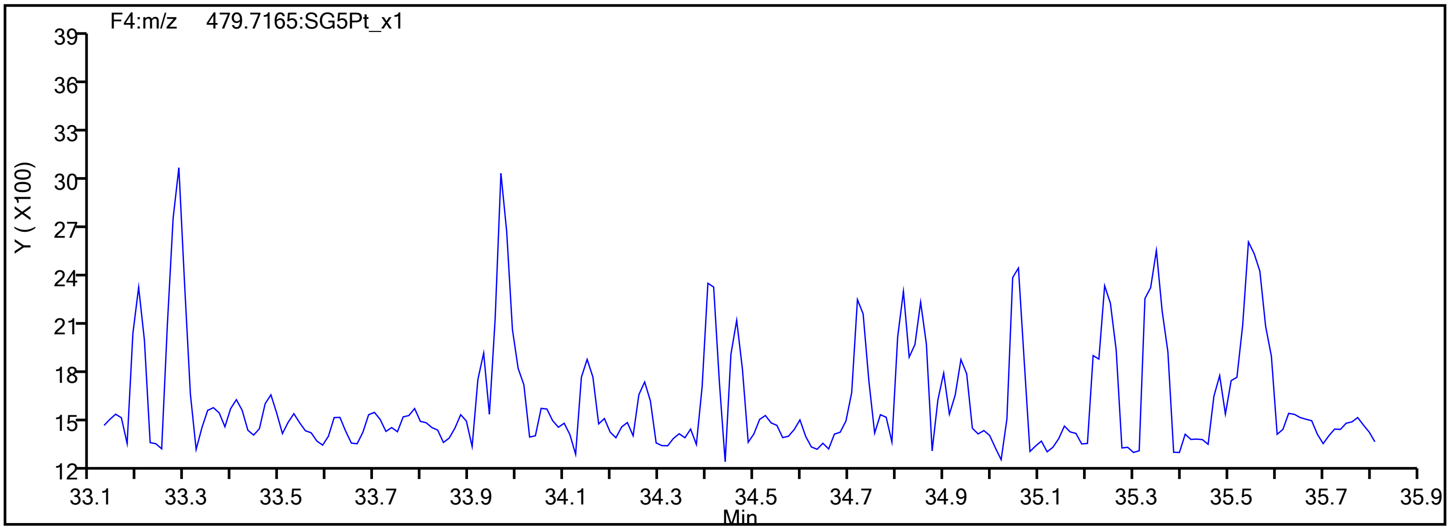

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HpCDD

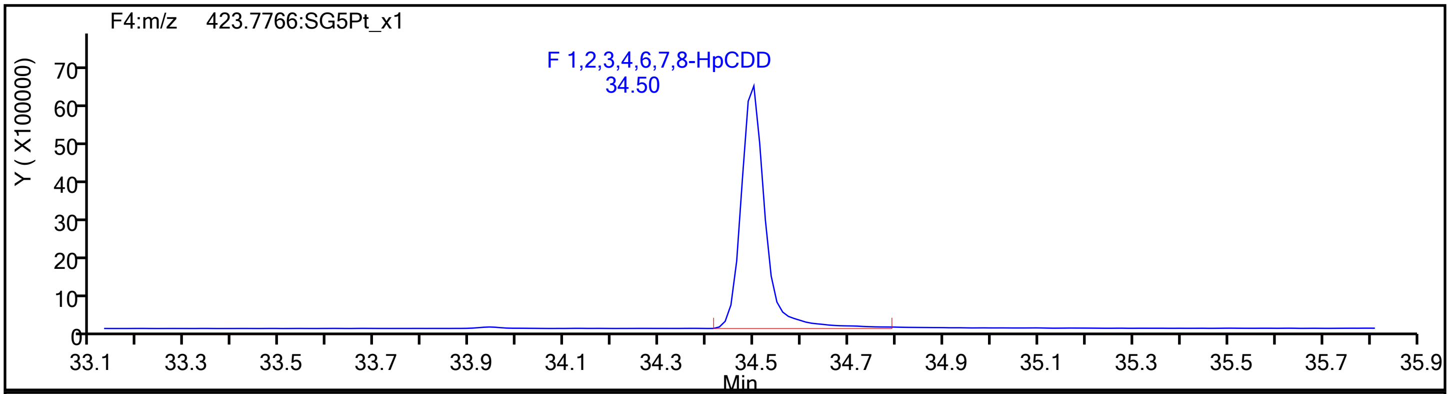

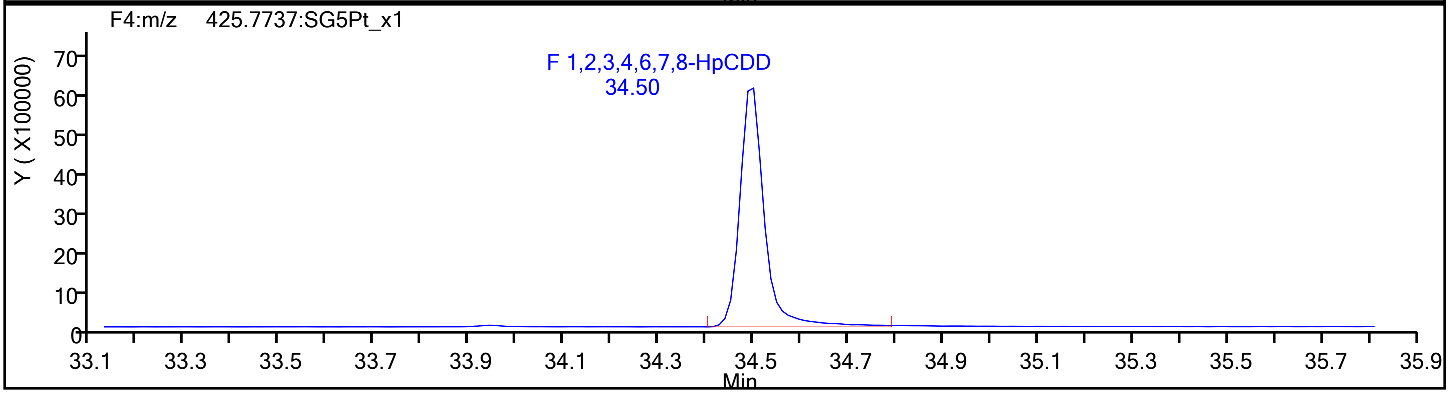

HpCDD Standards

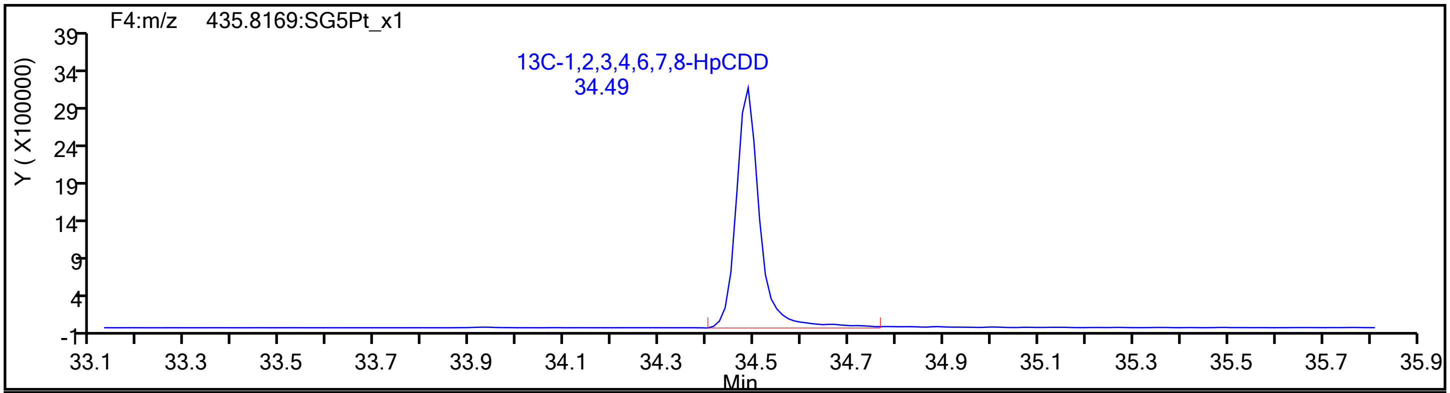

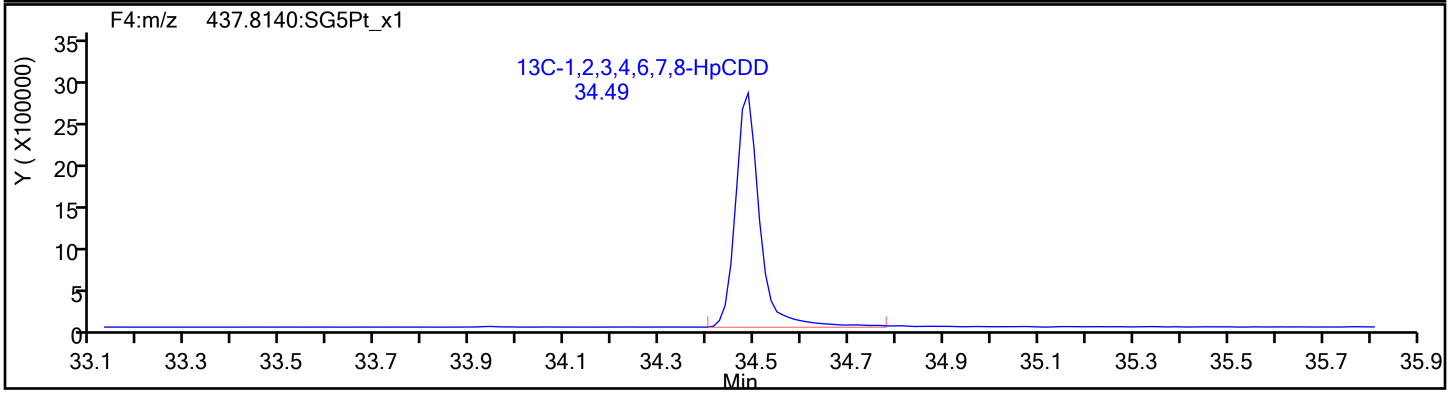

Report Date: 11-Dec-2020 09:52:31
Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d		
Injection Date:	10-Dec-2020 23:07:57	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

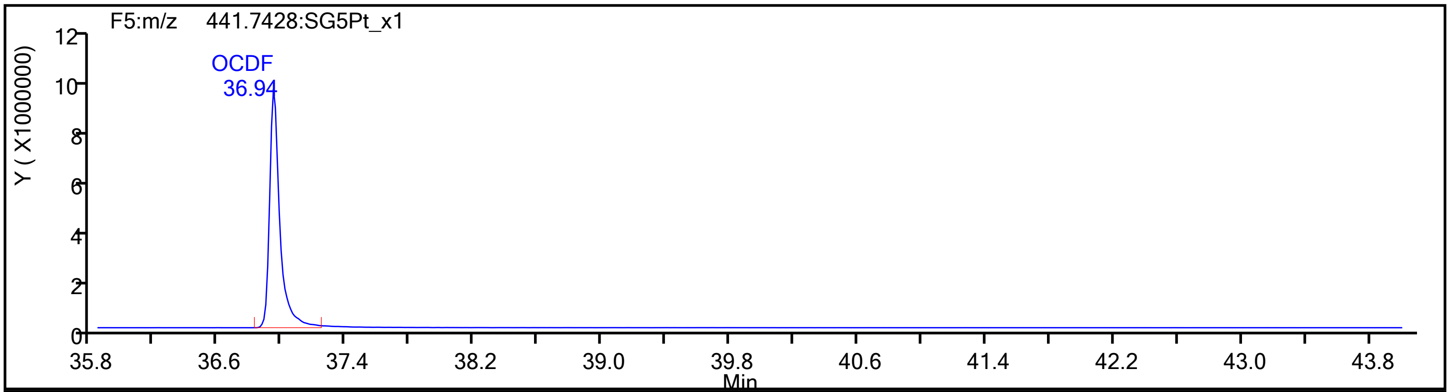

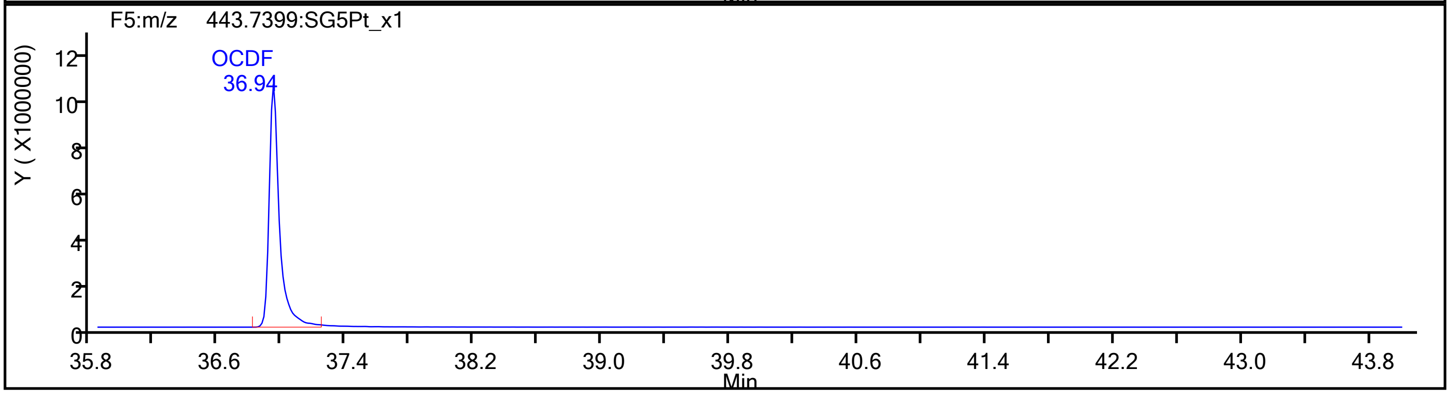

OCDF Standards

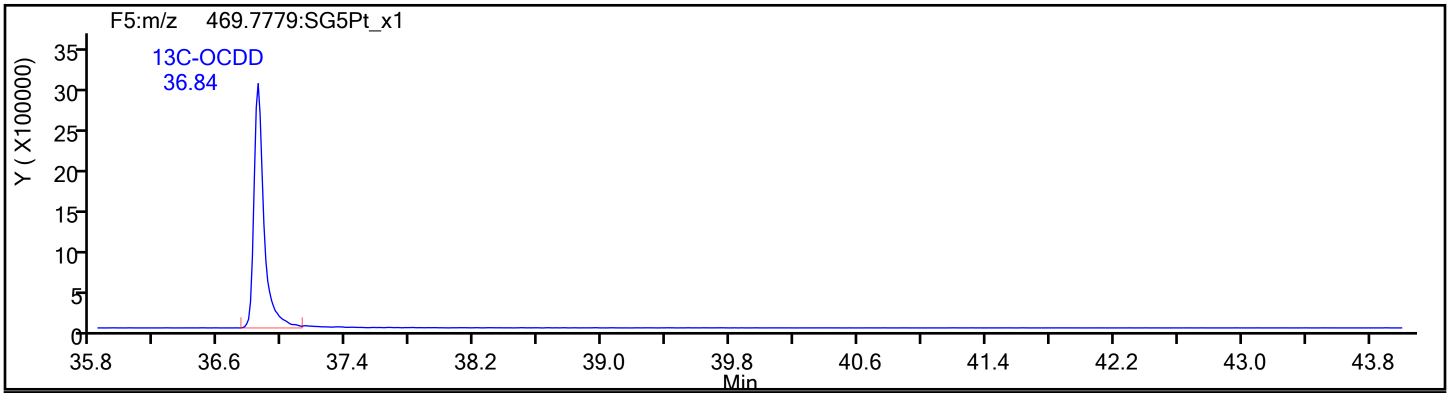

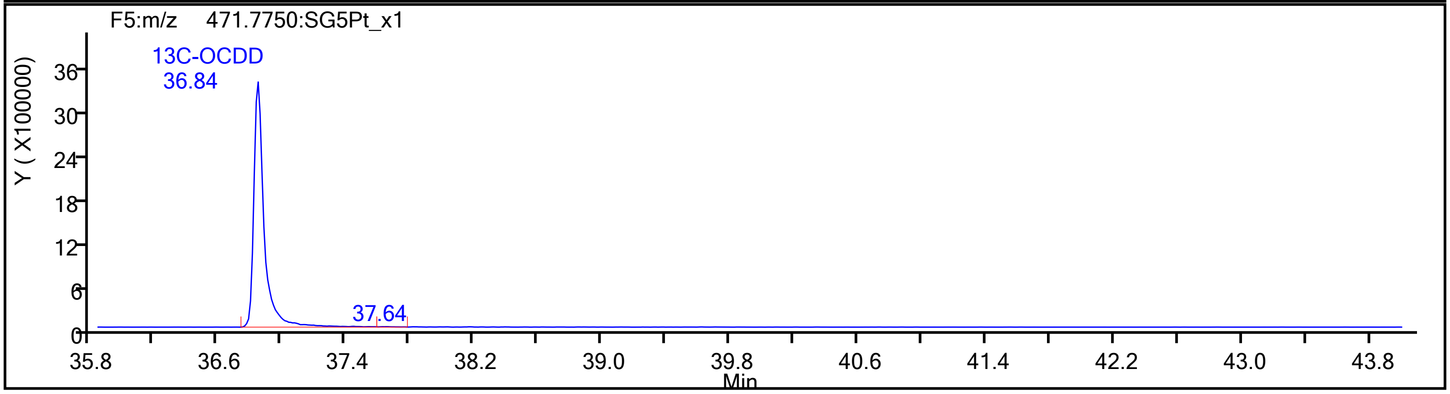

Report Date: 11-Dec-2020 09:52:31 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d
Injection Date: 10-Dec-2020 23:07:57
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

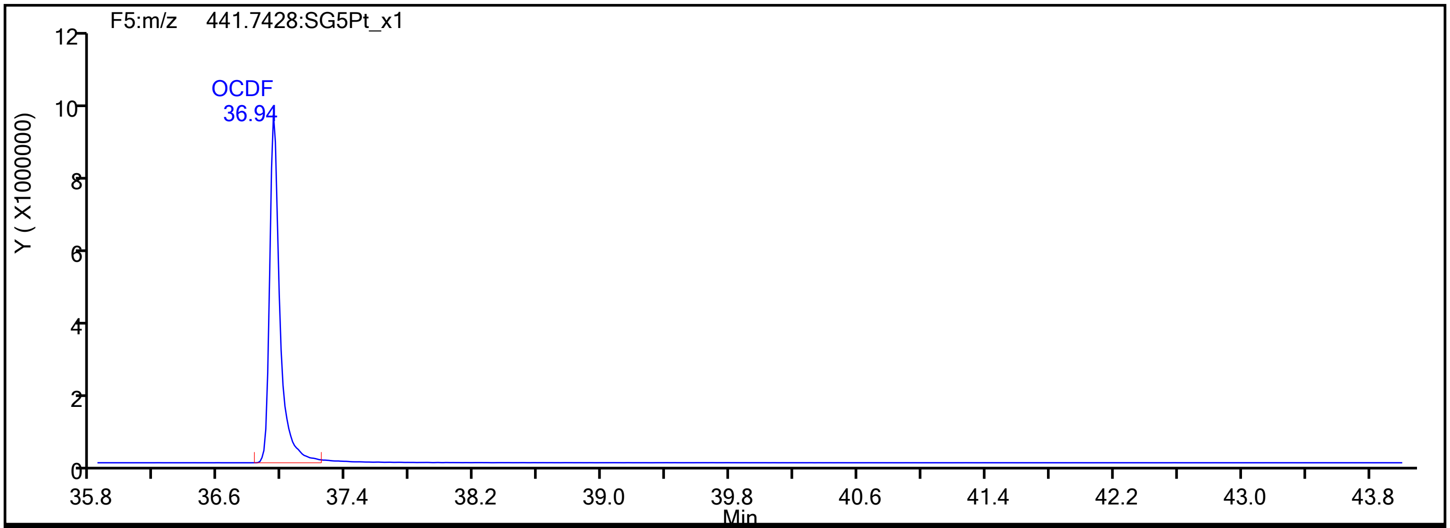

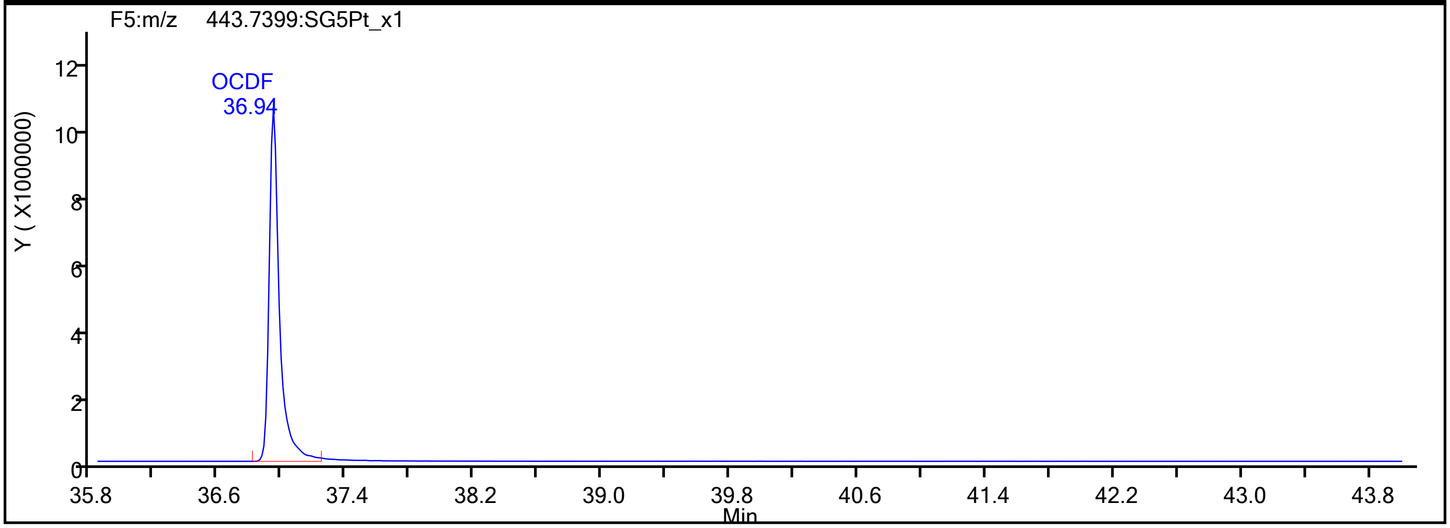

OCDF Interference Mass

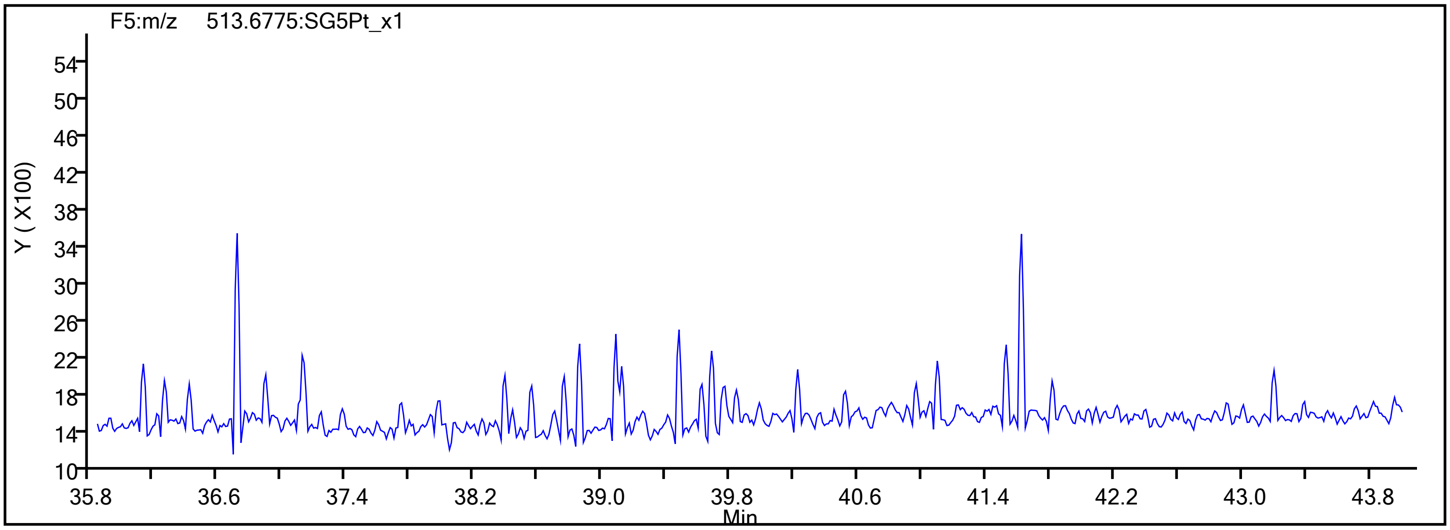

Report Date: 11-Dec-2020 09:52:31 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d		
Injection Date:	10-Dec-2020 23:07:57	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

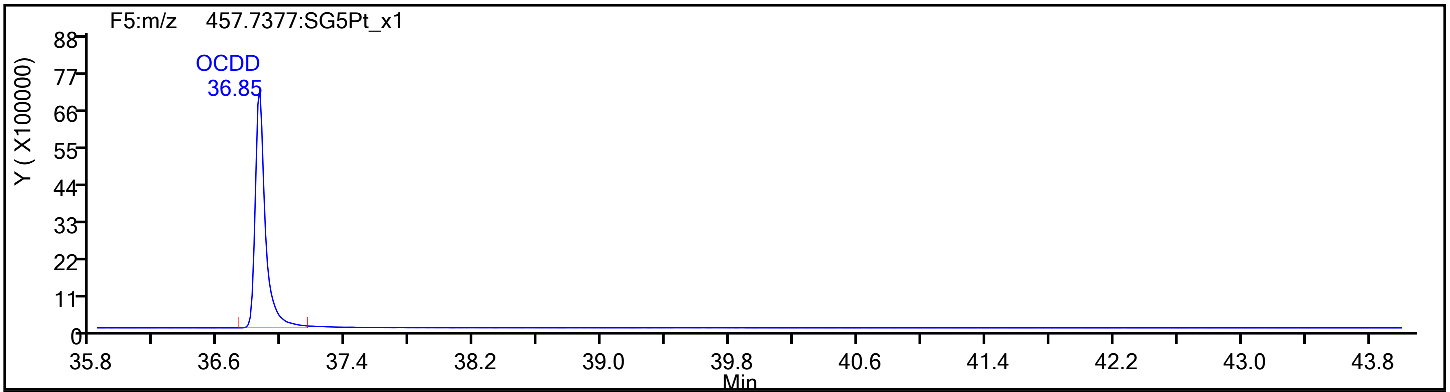

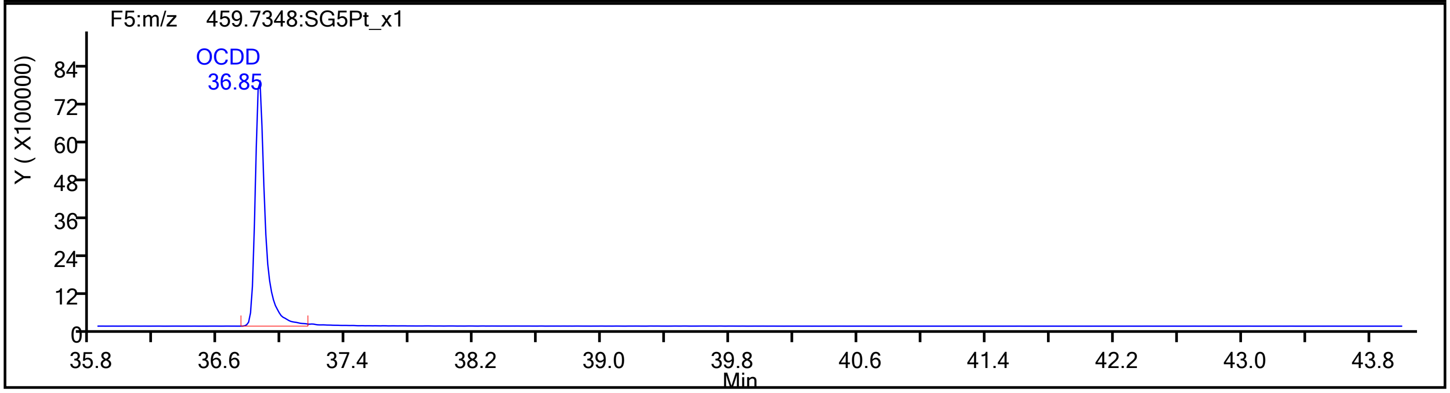

OCDD Standards

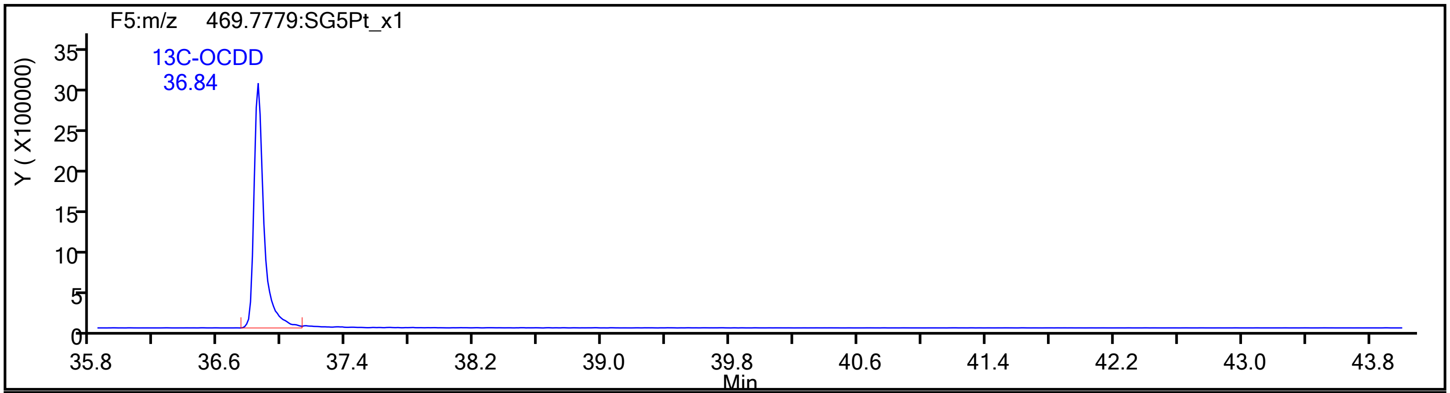

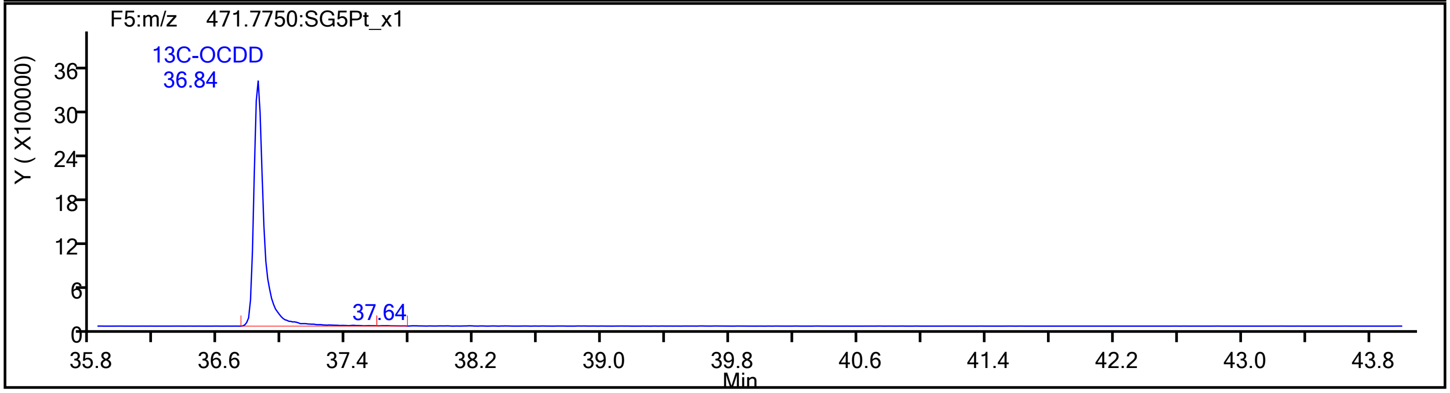

Report Date: 11-Dec-2020 09:52:31 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d

Injection Date: 10-Dec-2020 23:07:57

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

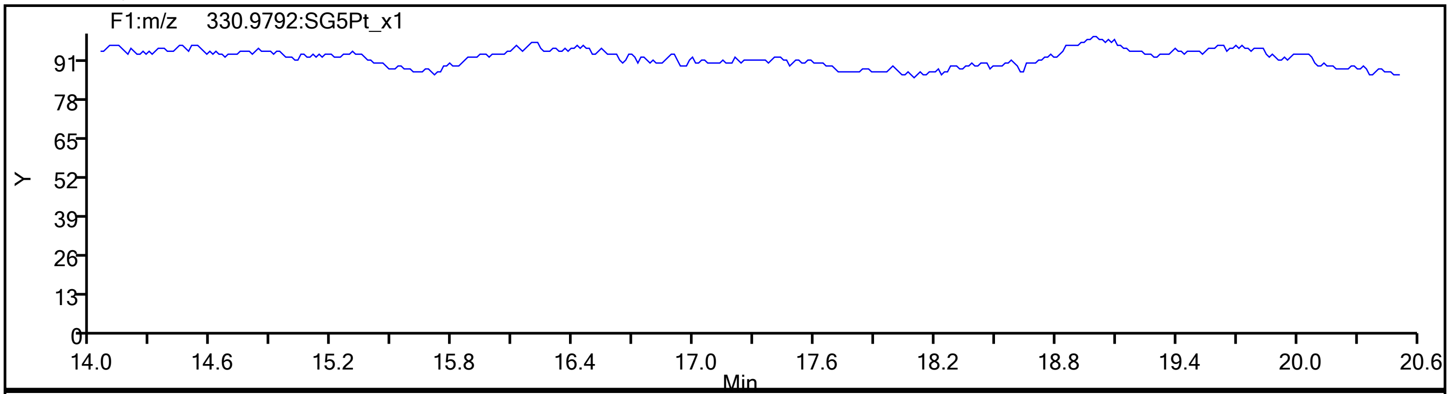

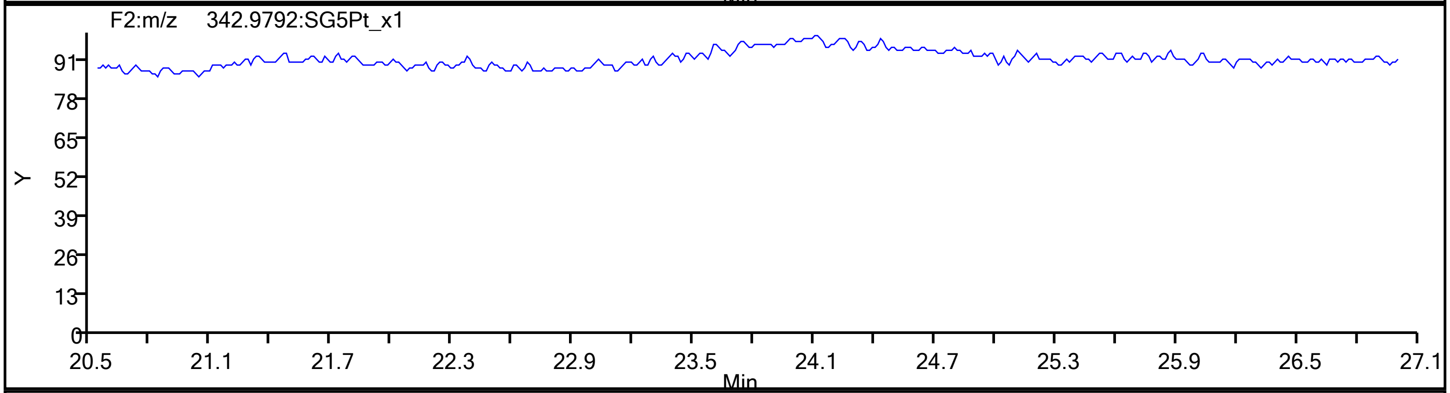

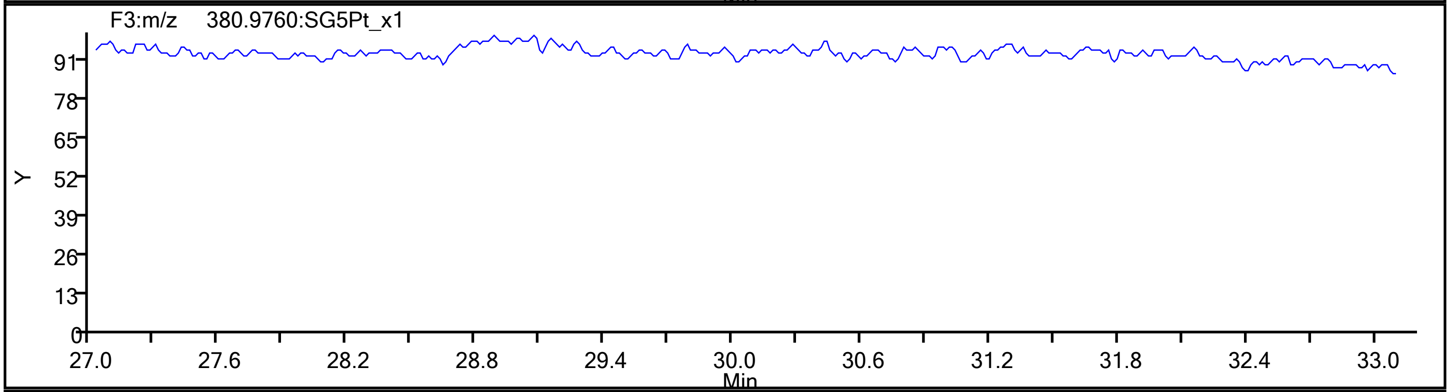

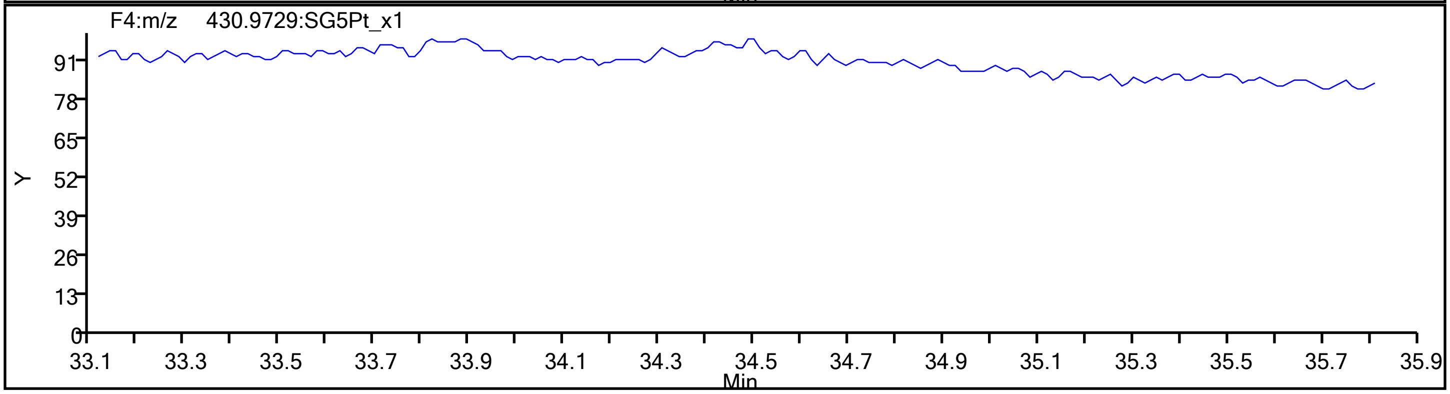

Report Date: 11-Dec-2020 09:52:31 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_9 .d		
Injection Date:	10-Dec-2020 23:07:57	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

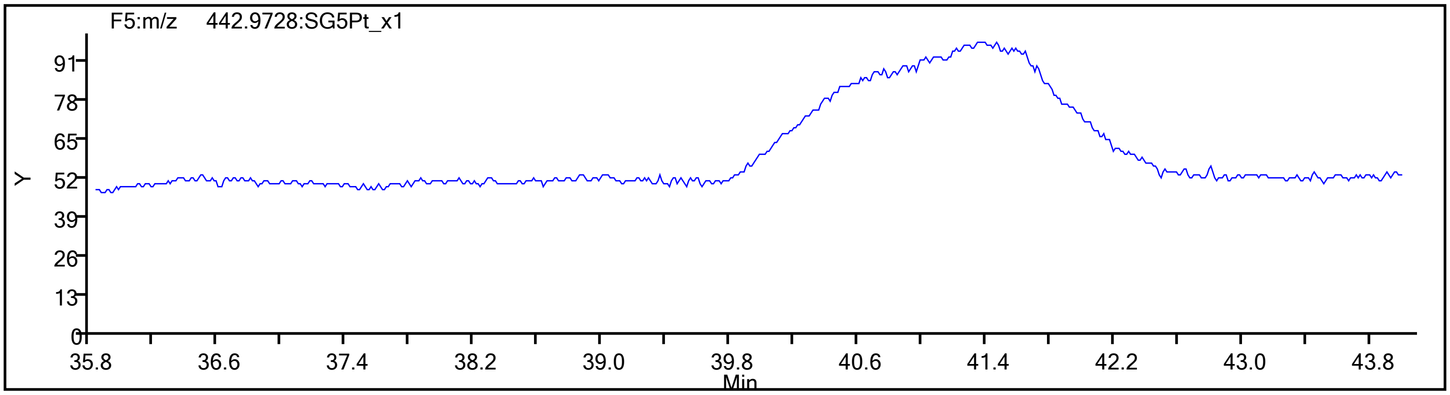

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID: CCV 320-456215/2 Calibration Date: 01/27/2021 15:32

Instrument ID: 10D5 Calib Start Date: 12/10/2020 18:27

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/10/2020 21:27

Lab File ID: 27JA2110D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.017	1.004		9.87	10.0	99	84-120
2,3,7,8-TCDD	AveID	1.154	1.204		10.4	10.0	104	78-129
1,2,3,7,8-PeCDF	AveID	1.027	1.030		50.2	50.0	100	82-120
2,3,4,7,8-PeCDF	AveID	1.073	1.110		51.7	50.0	103	82-122
1,2,3,7,8-PeCDD	AveID	1.075	1.046		48.6	50.0	97	78-130
1,2,3,4,7,8-HxCDF	AveID	1.238	1.244		50.2	50.0	100	90-112
1,2,3,6,7,8-HxCDF	AveID	1.190	1.173		49.3	50.0	99	88-114
2,3,4,6,7,8-HxCDF	AveID	1.213	1.191		49.1	50.0	98	88-114
1,2,3,4,7,8-HxCDD	AveID	1.162	1.166		50.2	50.0	100	78-128
1,2,3,6,7,8-HxCDD	AveID	1.032	1.034		50.1	50.0	100	78-128
1,2,3,7,8,9-HxCDD	AveID	1.241	1.207		48.7	50.0	97	82-122
1,2,3,7,8,9-HxCDF	AveID	1.227	1.204		49.1	50.0	98	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.462	1.471		50.3	50.0	101	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.102	1.043		47.3	50.0	95	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.426	1.456		51.0	50.0	102	86-116
OCDD	AveID	1.157	1.111		96.0	100	96	79-126
OCDF	AveID	1.485	1.519		102	100	102	63-159
13C-2,3,7,8-TCDF	Ave	1.712	1.861		109	100	109	71-140
13C-2,3,7,8-TCDD	Ave	1.084	1.078		99.5	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.363	1.386		102	100	102	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.271	1.267		99.7	100	100	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.8534	0.8903		104	100	104	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.054		92.4	100	92	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.284	1.384		108	100	108	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.182	1.255		106	100	106	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7757	0.6730		86.8	100	87	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.000	1.129		113	100	113	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.083	1.099		101	100	101	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8529	0.8447		99.0	100	99	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7851	0.7160		91.2	100	91	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7499	0.6877		91.7	100	92	77-129
13C-OCDD	Ave	0.5610	0.4672		167	200	83	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.244	1.245		10.0	10.0	100	79-127

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\27JA2110D5.SPL
Last Modified: Thursday, January 28, 2021 00:01:02 Pacific Standard Time
Printed: Thursday, January 28, 2021 00:03:00 Pacific Standard Time

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	27JA2110D5_1	WDM HRDXNCP_00042	WDM 012721	Tray01:1	Dioxin	
2	27JA2110D5_2	CS-4 HRDXNL4_00096	CCV 012721	Tray01:2	Dioxin	
3	27JA2110D5_3	HRDXNIDA_00466 QC	HRDXNIDA_00466 QC	Tray01:4	1613B/8290	
4	27JA2110D5_4	LCS 320-454337/2-A RI	LCS 320-454337/2-A RI	Tray01:5	1613B[T]/Water	D211
5	27JA2110D5_5	LCSD 320-454337/3-A RI	LCSD 320-454337/3-A RI	Tray01:6	1613B[T]/Water	
6	27JA2110D5_6	MB 320-455244/1-A	MB 320-455244/1-A	Tray01:7	1613B_DW	---
7	27JA2110D5_7	LCS 320-455244/2-A	LCS 320-455244/2-A	Tray01:8	1613B_DW	D212
8	27JA2110D5_8	LCSD 320-455244/3-A	LCSD 320-455244/3-A	Tray01:9	1613B_DW	---
9	27JA2110D5_9	320-69134-B-1-A	320-69134-B-1-A	Tray01:10	1613B_DW	---
10	27JA2110D5_10	320-68943-A-2-A 10x	320-68943-A-2-A 10x	Tray01:11	1613B/Water	D211
11	27JA2110D5_11	320-68943-A-1-A 20x	320-68943-A-1-A 20x	Tray01:12	1613B/Water	
12	27JA2110D5_12	Solvent Blank C-14	SB 012721	Tray01:3	---	
13	27JA2110D5_13	CS-4 HRDXNL4_00096	CCV 012721A	Tray01:2	Dioxin	
14	27JA2110D5_14	WDM HRDXNCP_00042	WDM 012721A	Tray01:1	Dioxin	
15	27JA2110D5_15	Solvent Blank C-14	SB 012721A	Tray01:3	---	
16	27JA2110D5_16	MB 320-455660/1-A	MB 320-455660/1-A	Tray01:15	8290A/Solid	D211
17	27JA2110D5_17	LCS 320-455660/2-A	LCS 320-455660/2-A	Tray01:16	8290A/Solid	
18	27JA2110D5_18	LCSD 320-455660/3-A	LCSD 320-455660/3-A	Tray01:17	8290A/Solid	---
19	27JA2110D5_19	310-199445-D-1-A	310-199445-D-1-A	Tray01:18	8290A/Solid	---
20	27JA2110D5_20	310-199445-D-2-A	310-199445-D-2-A	Tray01:19	8290A/Solid	---
21	27JA2110D5_21	310-199445-D-3-A	310-199445-D-3-A	Tray01:20	8290A/Solid	---
22	27JA2110D5_22	310-199445-D-4-A	310-199445-D-4-A	Tray01:21	8290A/Solid	---
23	27JA2110D5_23	310-199445-D-5-A	310-199445-D-5-A	Tray01:22	8290A/Solid	
24	27JA2110D5_24	Solvent Blank C-14	SB 012721B	Tray01:3	---	
25	27JA2110D5_25	CS-4 HRDXNL4_00096	CCV 012721B	Tray01:2	Dioxin	
26	27JA2110D5_26	WDM HRDXNCP_00042	WDM 012721B	Tray01:1	Dioxin	
27	27JA2110D5_27	Solvent Blank C-14	SB 012721C	Tray01:3	---	
28	27JA2110D5_28	310-199445-D-6-A	310-199445-D-6-A	Tray01:29	8290A/Solid	D211
29	27JA2110D5_29	310-199445-D-7-A	310-199445-D-7-A	Tray01:30	8290A/Solid	
30	27JA2110D5_30	310-199445-D-8-A	310-199445-D-8-A	Tray01:31	8290A/Solid	---
31	27JA2110D5_31	310-199445-D-9-A	310-199445-D-9-A	Tray01:32	8290A/Solid	---
32	27JA2110D5_32	310-199445-D-10-A	310-199445-D-10-A	Tray01:33	8290A/Solid	---
33	27JA2110D5_33	310-199445-D-11-A	310-199445-D-11-A	Tray01:34	8290A/Solid	---
34	27JA2110D5_34	310-199445-D-12-A	310-199445-D-12-A	Tray01:35	8290A/Solid	---
35	27JA2110D5_35	310-199445-E-13-A	310-199445-E-13-A	Tray01:36	8290A/Solid	
36	27JA2110D5_36	Solvent Blank C-14	SB 012721D	Tray01:3	---	
37	27JA2110D5_37	CS-4 HRDXNL4_00096	CCV 012721C	Tray01:2	Dioxin	
38	27JA2110D5_38	WDM HRDXNCP_00042	WDM 012721C	Tray01:1	Dioxin	
39	27JA2110D5_39	Solvent Blank C-14	SB 012721E	Tray01:3	---	

logfile checked
1-28-21 ALM

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
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SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
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SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000	---	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
SMA, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

Process Options	Action On Error	s5
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
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Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, January 27, 2021 14:42:40 Pacific Standard Time

M 292.9824 R 11904

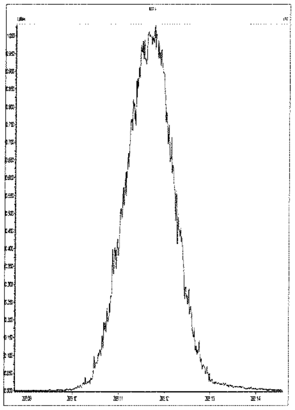

M 304.9824 R 11908

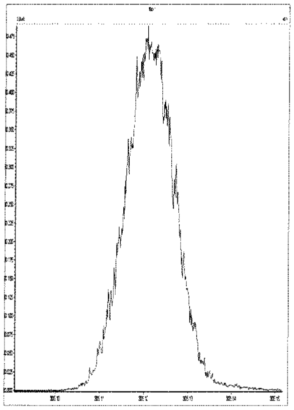

M 318.9792 R 11964

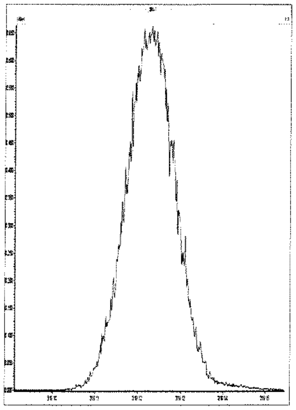

M 330.9792 R 12072

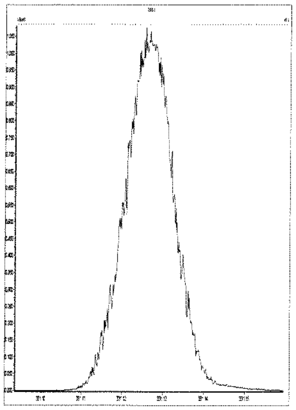

M 342.9792 R 12017

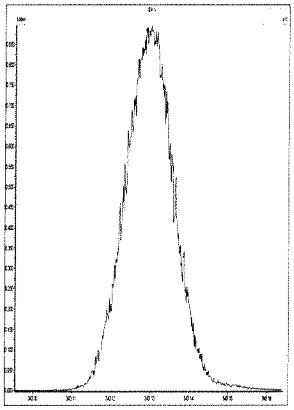

M 354.9792 R 11958

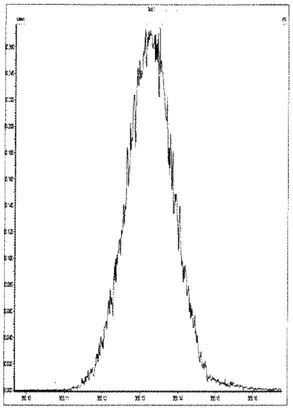

M 366.9792 R 11160

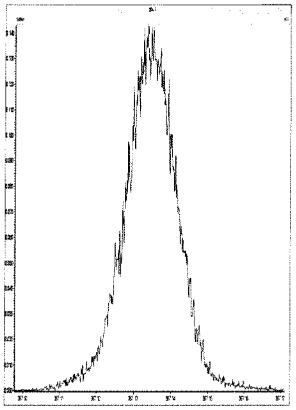

M 380.9760 R 11519

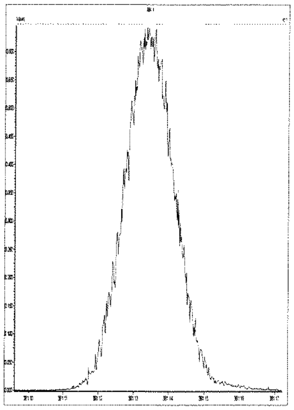

M 392.9760 R 11902

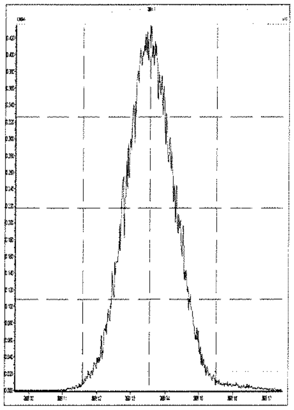

M 404.9760 R 11905

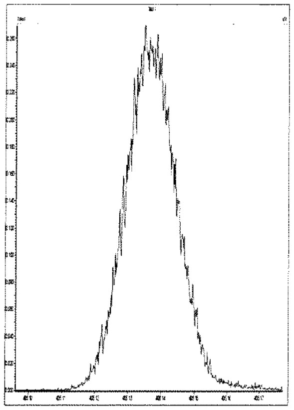

M 416.9760 R 11573

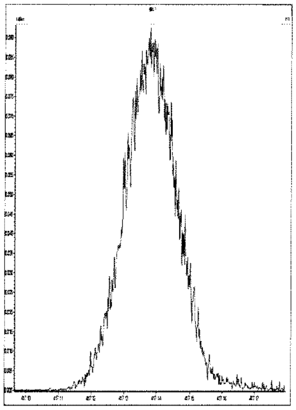

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, January 27, 2021 14:43:05 Pacific Standard Time

M 318.9792 R 12378

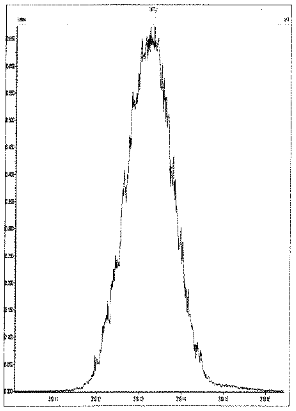

M 330.9792 R 12136

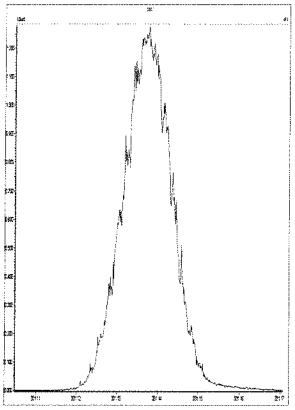

M 342.9792 R 11791

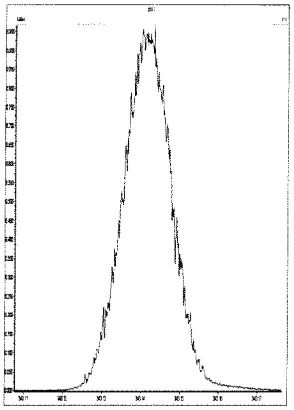

M 354.9792 R 11734

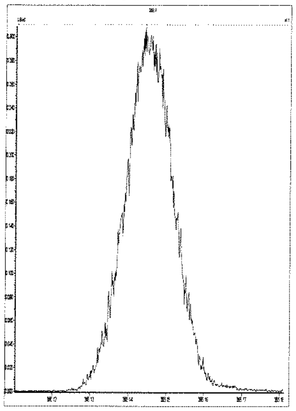

M 366.9792 R 11905

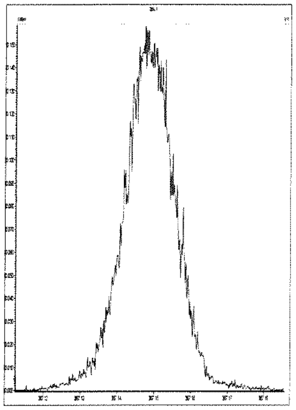

M 380.9760 R 11792

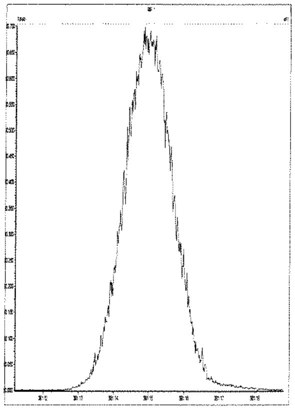

M 392.9760 R 11964

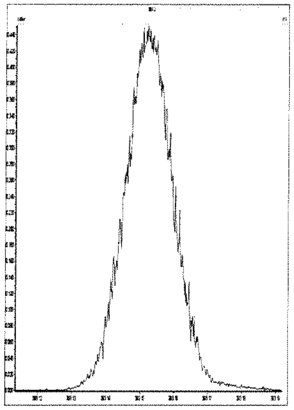

M 404.9760 R 11416

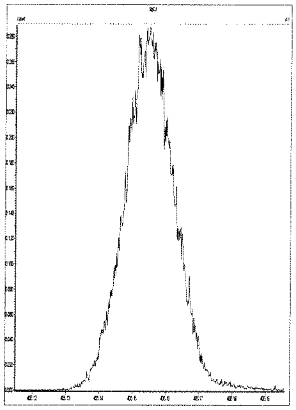

M 416.9760 R 11415

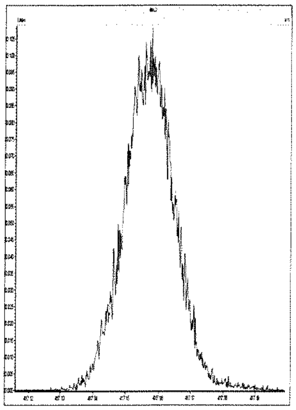

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, January 27, 2021 14:43:49 Pacific Standard Time

M 366.9792 R 11361

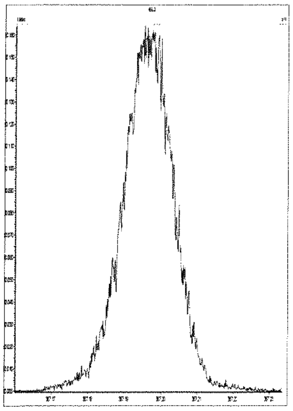

M 380.9760 R 12137

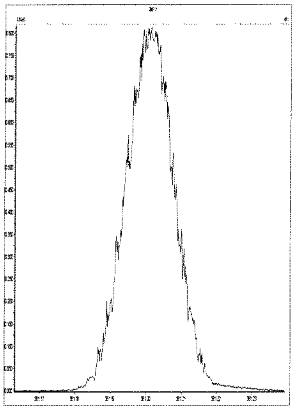

M 392.9760 R 12018

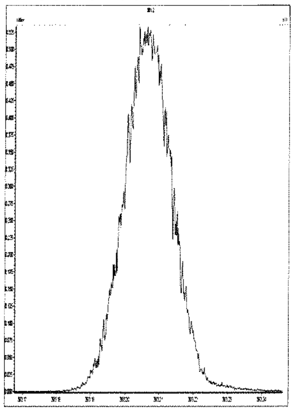

M 404.9760 R 11964

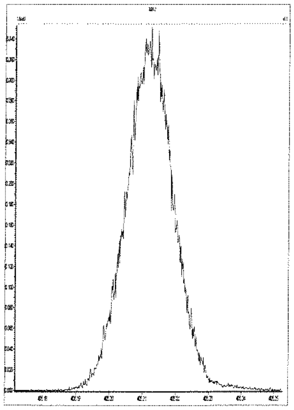

M 416.9760 R 12137

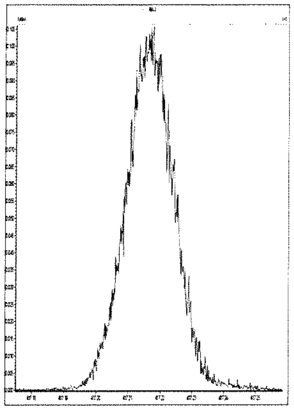

M 430.9728 R 11904

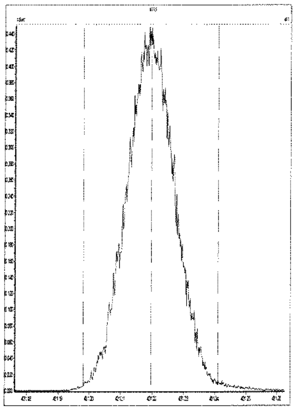

M 442.9728 R 11681

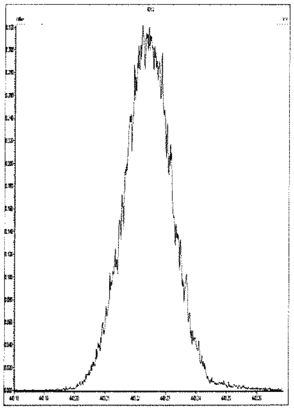

M 454.9728 R 12377

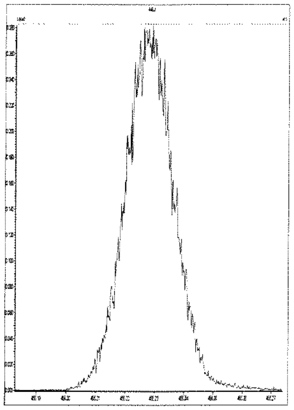

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, January 27, 2021 14:44:53 Pacific Standard Time

M 380.9760 R 12252

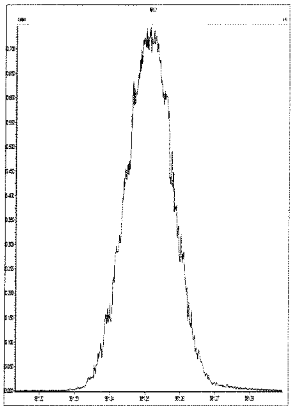

M 392.9760 R 11575

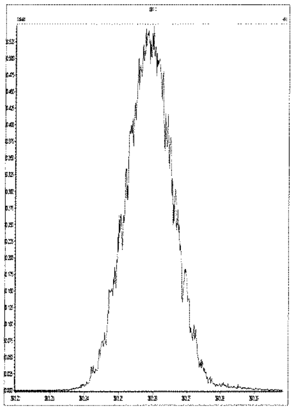

M 404.9760 R 12194

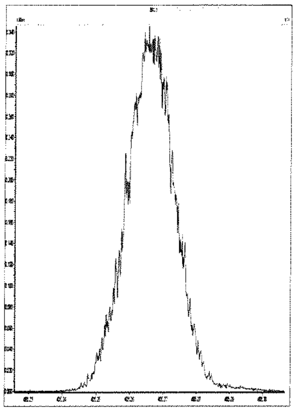

M 416.9760 R 12629

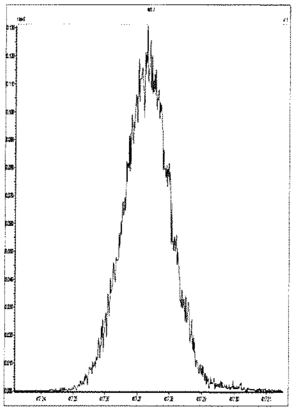

M 430.9728 R 11906

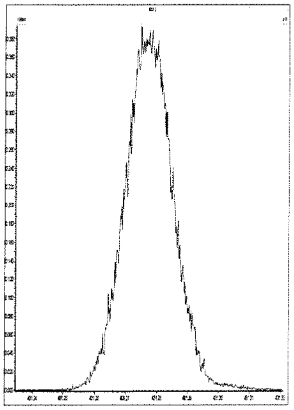

M 442.9728 R 11682

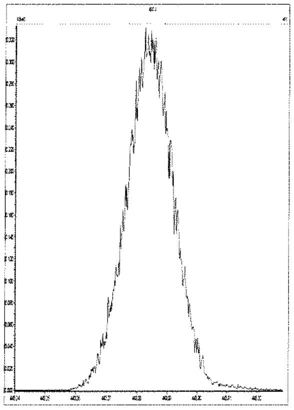

M 454.9728 R 12314

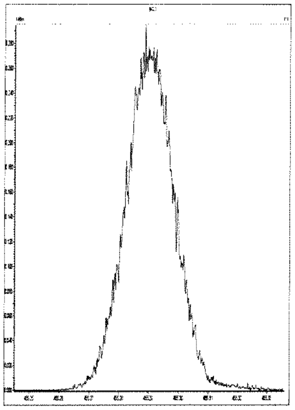

M 466.9728 R 12624

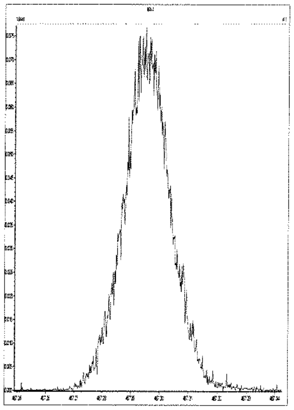

M 480.9696 R 12500

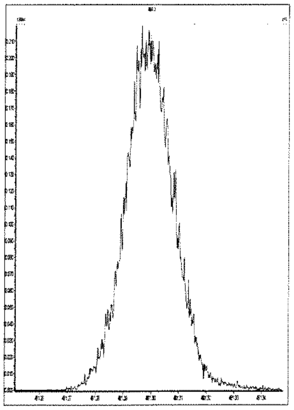

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, January 27, 2021 14:45:29 Pacific Standard Time

M 380.9760 R 12079

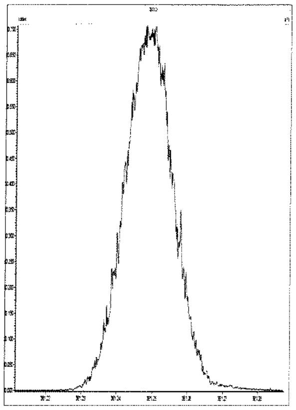

M 392.9760 R 12020

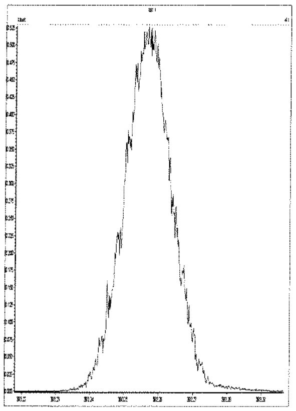

M 404.9760 R 11792

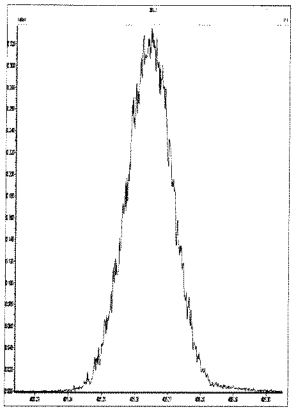

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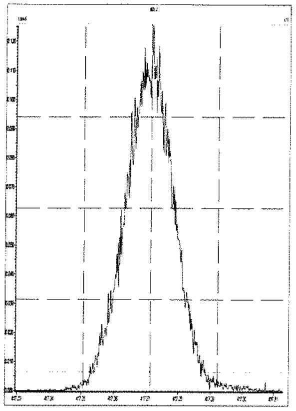

M 430.9728 R 12256

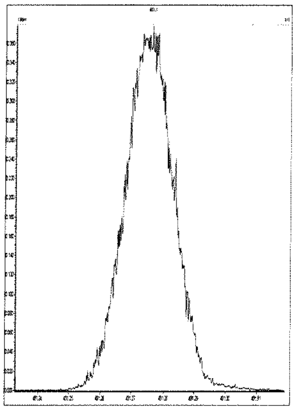

M 442.9728 R 11905

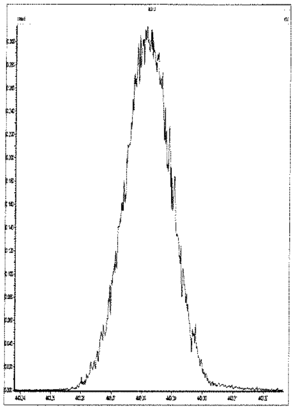

M 454.9728 R 11795

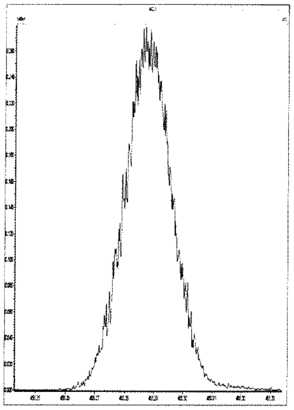

M 466.9728 R 12021

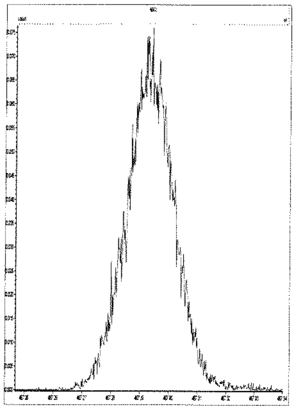

M 480.9696 R 11793

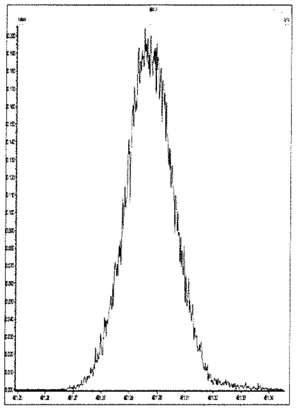

M 492.9696 R 11520

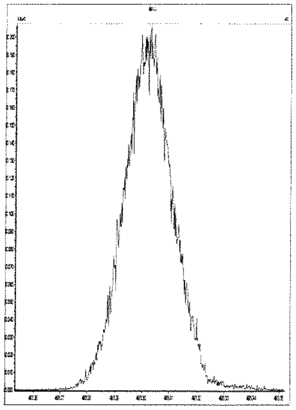

M 504.9696 R 11522

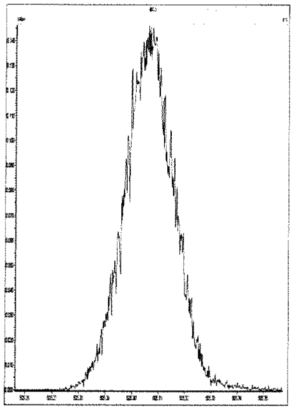

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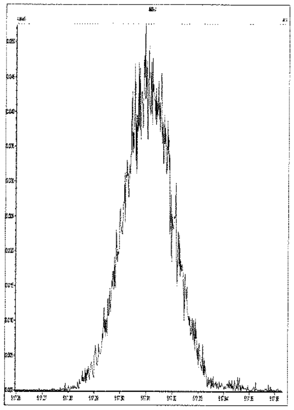

M 292.9824 R 12634

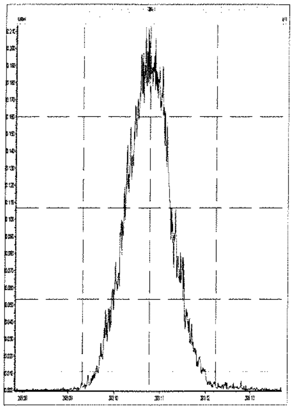

M 304.9824 R 12544

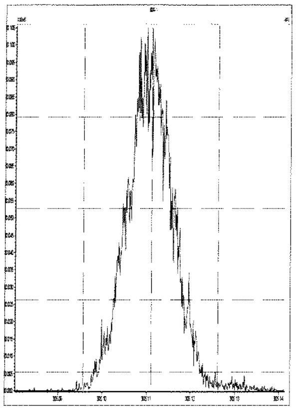

M 318.9792 R 12965

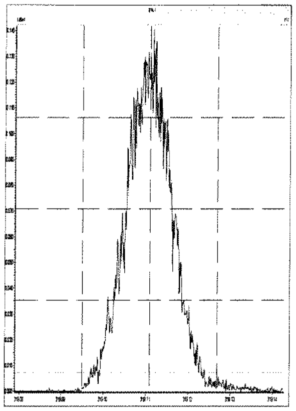

M 330.9792 R 12254

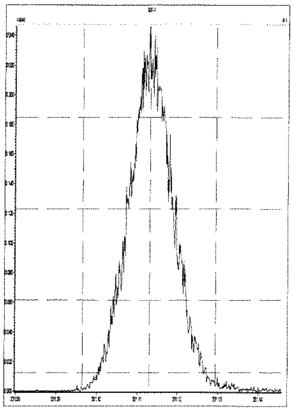

M 342.9792 R 12345

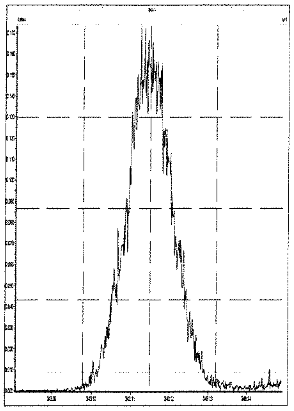

M 354.9792 R 12823

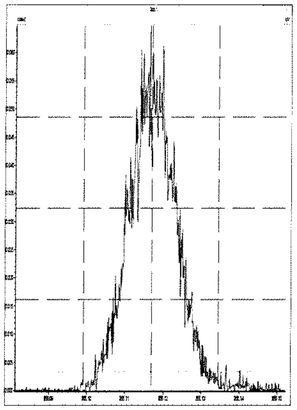

M 366.9792 R 13481

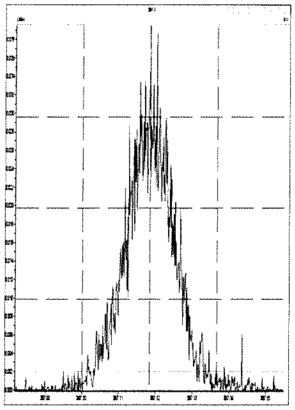

M 380.9760 R 11878

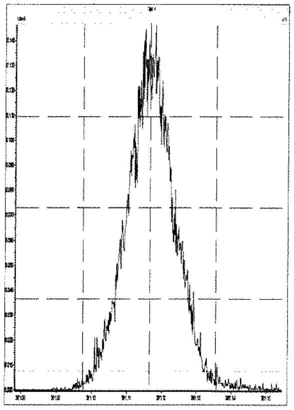

M 392.9760 R 12051

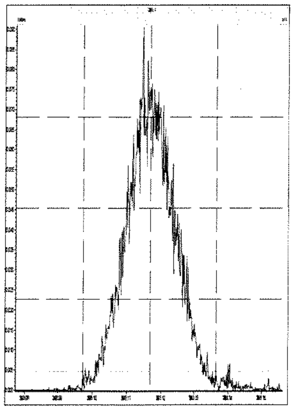

M 404.9760 R 12316

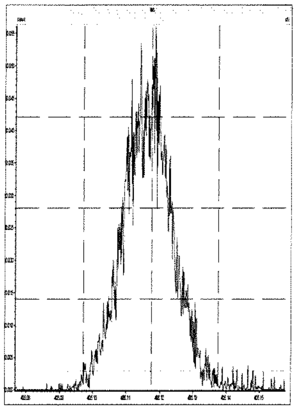

M 416.9760 R 13143

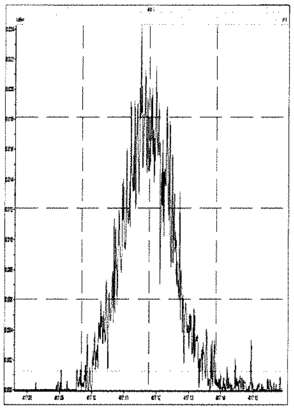

M 318.9792 R 12760

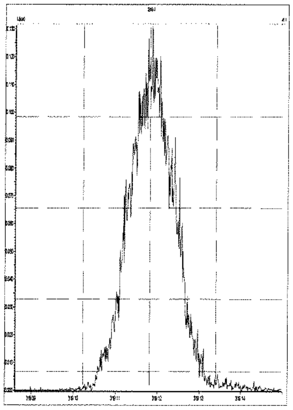

M 330.9792 R 12788

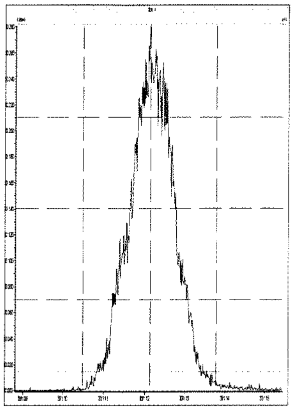

M 342.9792 R 12823

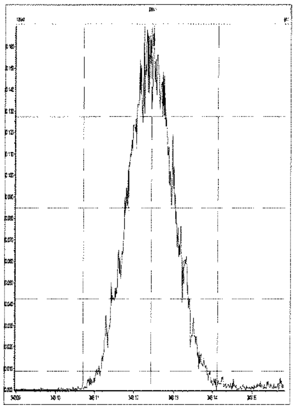

M 354.9792 R 12817

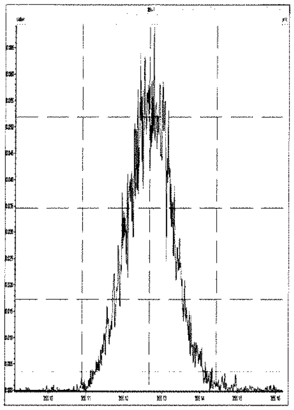

M 366.9792 R 12920

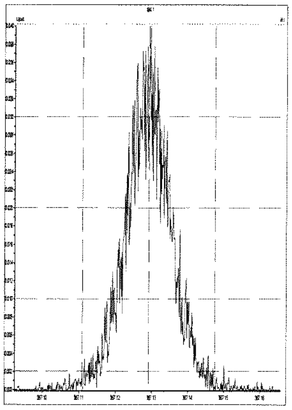

M 380.9760 R 12563

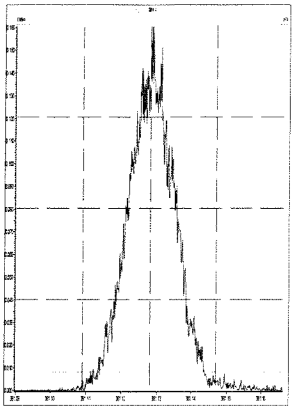

M 392.9760 R 12284

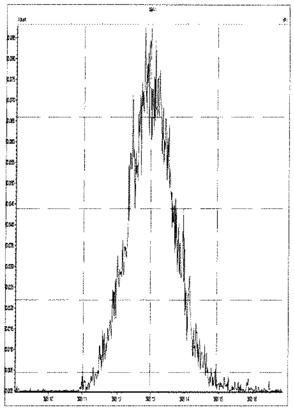

M 404.9760 R 12794

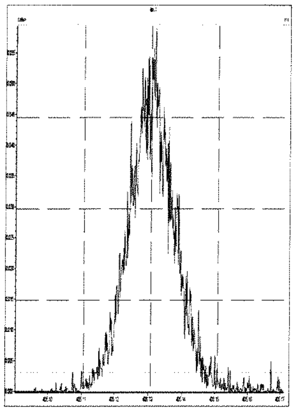

M 416.9760 R 14384

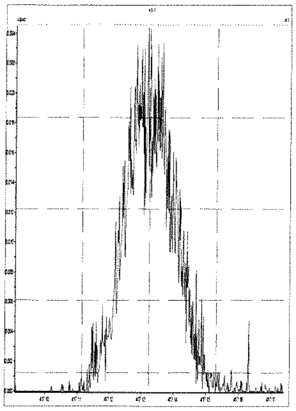

M 366.9792 R 13899

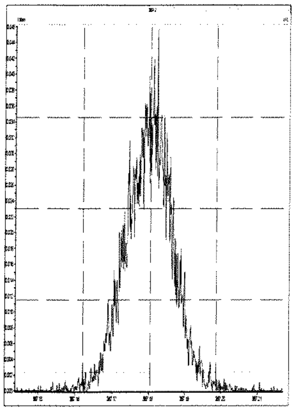

M 380.9760 R 12535

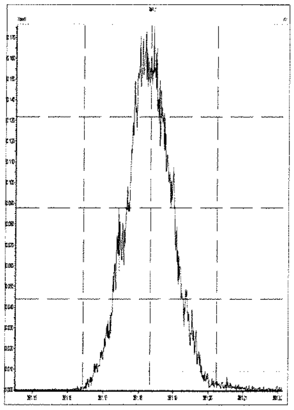

M 392.9760 R 13055

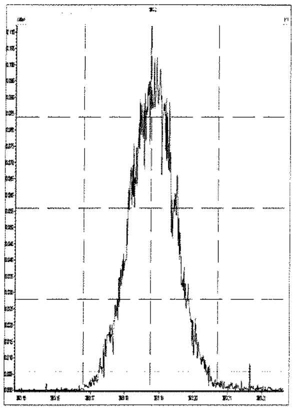

M 404.9760 R 13063

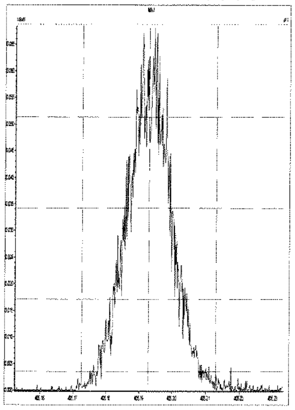

M 416.9760 R 13850

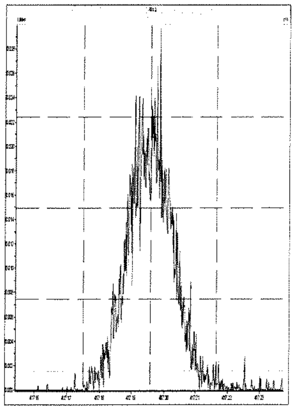

M 430.9728 R 12570

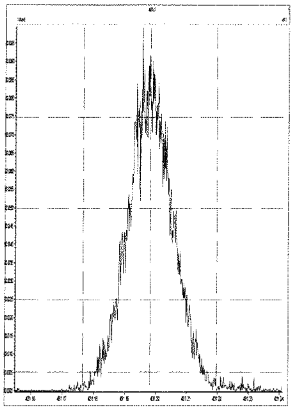

M 442.9728 R 12811

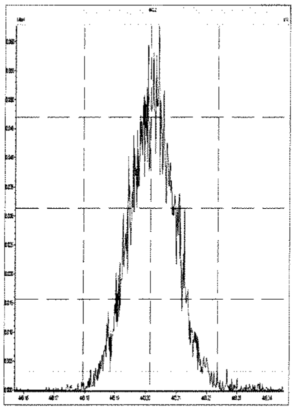

M 454.9728 R 12855

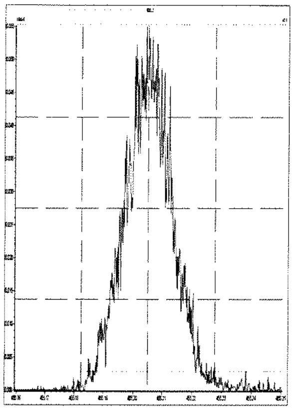

M 380.9760 R 12953

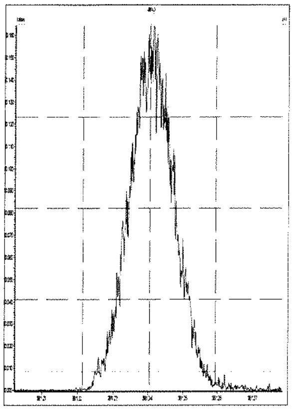

M 392.9760 R 13088

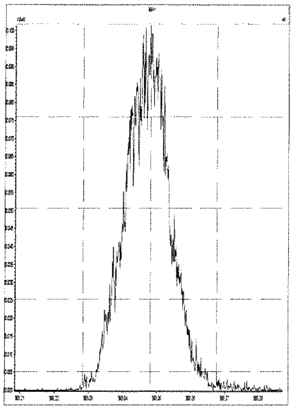

M 404.9760 R 13441

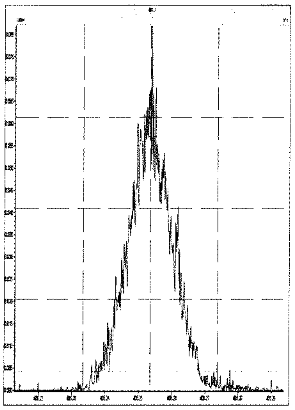

M 416.9760 R 13968

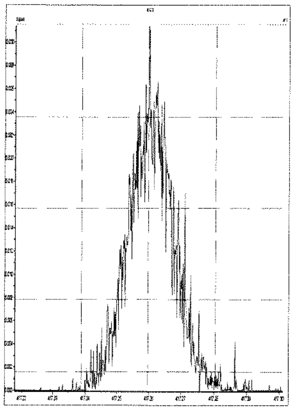

M 430.9728 R 13368

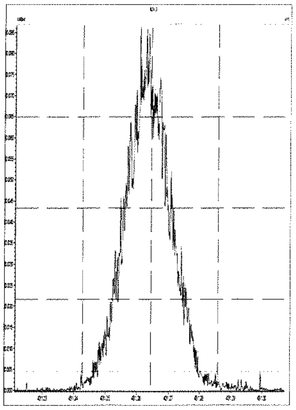

M 442.9728 R 12906

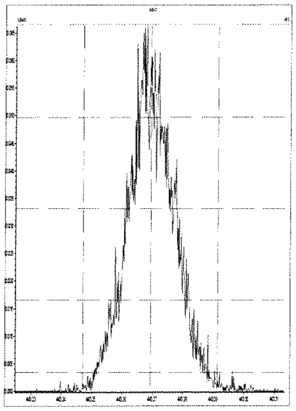

M 454.9728 R 13055

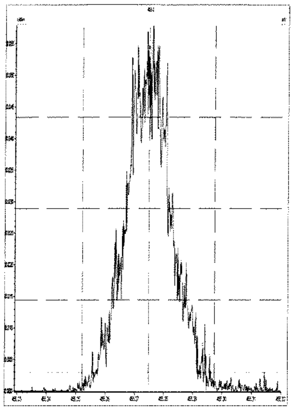

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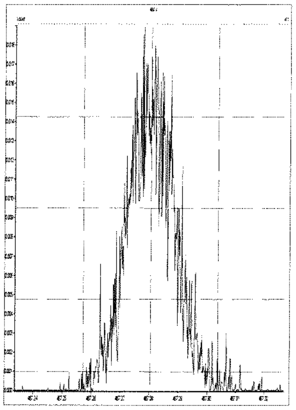

M 480.9696 R 12146

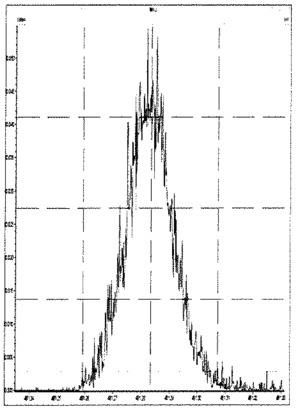

M 380.9760 R 13101

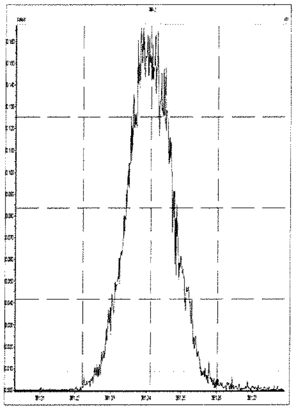

M 392.9760 R 12407

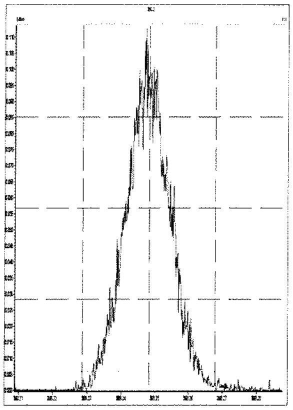

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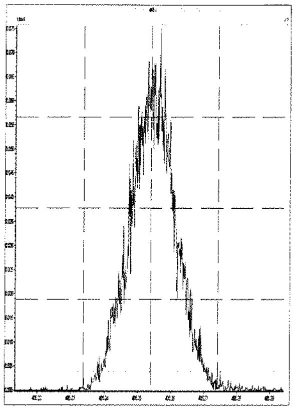

M 416.9760 R 13441

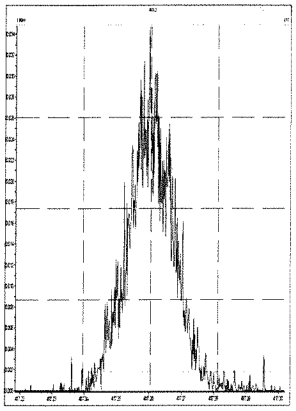

M 430.9728 R 12565

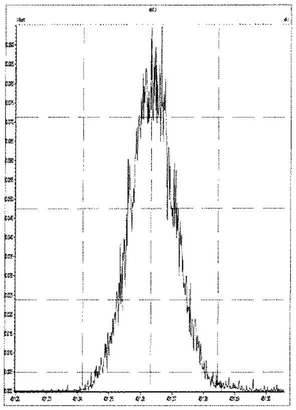

M 442.9728 R 13264

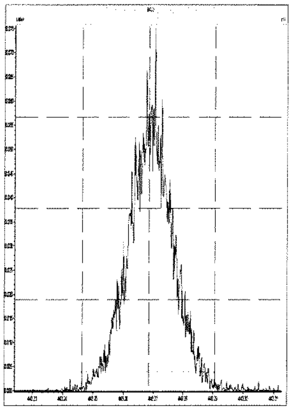

M 454.9728 R 12986

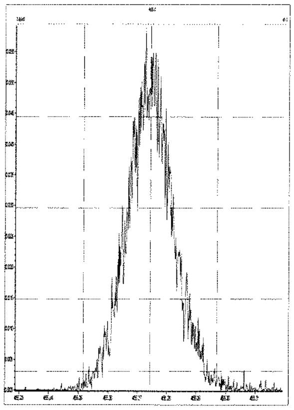

M 466.9728 R 13699

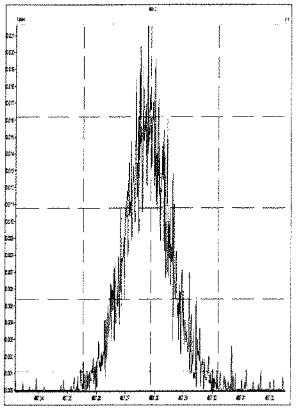

M 480.9696 R 13301

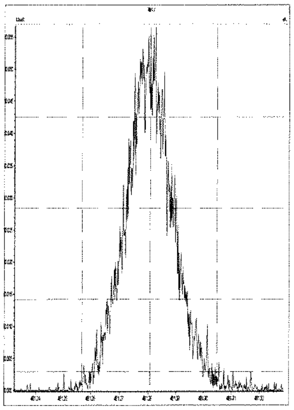

M 492.9696 R 12408

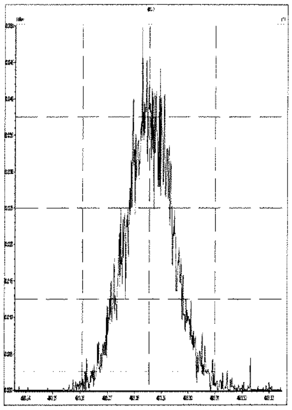

M 504.9696 R 13093

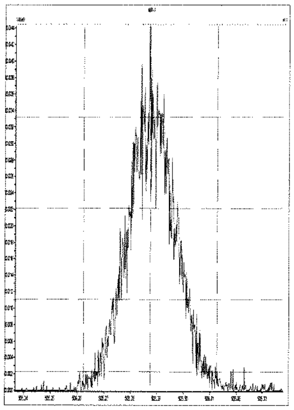

M 516.9697 R 14384

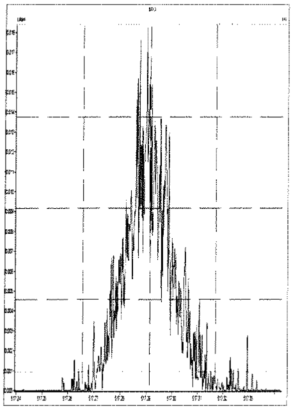

Report Date: 28-Jan-2021 02:01:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Jan-2021 15:32:05 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 012721 CS-4 HRDXNL4_00096
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jan-2021 02:01:02 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.944	39980815	0.77	3.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.430	74399356	0.77	1.7120	108.7	108.7	0.2278	0.2278	109	
2,3,7,8-TCDF	17.445	7467576	0.77	1.0173	9.867	9.867	0.0247	0.0247	98.67	
A Non-2,3,7,8-sub-TCDF	17.135						0.0247	0.0247		Rn
S Total TCDF					9.867	9.867	0.0247	0.0247		
D 13C-2,3,7,8-TCDD	18.141	43092755	0.75	1.0837	99.5	99.5	0.1854	0.1854	99.46	
$ 37Cl4-2,3,7,8-TCDD	18.156	4977578		1.2441	10.0	10.0	0.0175	0.0175	100	
2,3,7,8-TCDD	18.171	5188577	0.81	1.1543	10.4	10.4	0.0432	0.0432	104	
A Non-2,3,7,8-sub-TCDD	17.589						0.0432	0.0432		
S Total TCDD					10.4	10.4	0.0432	0.0432		
D 13C-1,2,3,7,8-PeCDF	22.536	55432159	1.57	1.3633	101.7	101.7	0.2949	0.2949	102	
1,2,3,7,8-PeCDF	22.563	28554567	1.62	1.0268	50.2	50.2	0.2359	0.2359	100	
D 13C-2,3,4,7,8-PeCDF	23.913	50655845	1.59	1.2714	99.7	99.7	0.3163	0.3163	99.65	
2,3,4,7,8-PeCDF	23.941	28112477	1.62	1.0730	51.7	51.7	0.2602	0.2602	103	
A F1 PeCDFs	19.978						0.0211	0.0211		
A Non-2,3,7,8-sub-PeCDF	23.192						0.2470	0.2470		
S Total PeCDF					101.9	101.9	0.2480	0.2480		
D 13C-1,2,3,7,8-PeCDD	24.650	35595241	1.60	0.8534	104.3	104.3	0.1417	0.1417	104	
1,2,3,7,8-PeCDD	24.677	18610176	1.57	1.0748	48.6	48.6	0.0793	0.0793	97.29	
A Non-2,3,7,8-sub-PeCDD	23.538						0.0793	0.0793		
S Total PeCDD					48.6	48.6	0.0793	0.0793		
D 13C-1,2,3,4,7,8-HxCDF	30.701	40234366	0.52	1.1403	92.4	92.4	1.165	1.165	92.40	
1,2,3,4,7,8-HxCDF	30.714	25030539	1.24	1.2385	50.2	50.2	0.6784	0.6784	100	
D 13C-1,2,3,6,7,8-HxCDF	30.874	52837339	0.52	1.2841	107.8	107.8	1.035	1.035	108	
1,2,3,6,7,8-HxCDF	30.887	30982361	1.23	1.1900	49.3	49.3	0.5879	0.5879	98.55	
D 13C-2,3,4,6,7,8-HxCDF	31.646	47912969	0.51	1.1825	106.1	106.1	1.124	1.124	106	
2,3,4,6,7,8-HxCDF	31.672	28525978	1.24	1.2132	49.1	49.1	0.4926	0.4926	98.15	
D 13C-1,2,3,7,8,9-HxCDF	32.431	41970448	0.52	1.0832	101.5	101.5	1.227	1.227	101	
1,2,3,7,8,9-HxCDF	32.444	25264113	1.24	1.2266	49.1	49.1	0.5727	0.5727	98.15	
A Non-2,3,7,8-sub-HxCDF	30.388						0.5749	0.5749		
S Total HxCDF					197.7	197.7	0.5829	0.5829		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	32.244	38185565	1.26	2.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.832	25700231	1.28	0.7757	86.8	86.8	0.7357	0.7357	86.77	
1,2,3,4,7,8-HxCDD	31.845	14987674	1.25	1.1618	50.2	50.2	0.3262	0.3262	100	
D 13C-1,2,3,6,7,8-HxCDD	31.925	43096336	1.26	0.9997	112.9	112.9	0.5708	0.5708	113	
1,2,3,6,7,8-HxCDD	31.938	22272252	1.28	1.0320	50.1	50.1	0.2813	0.2813	100	
1,2,3,7,8,9-HxCDD	32.258	20765359	1.26	1.2407	48.7	48.7	0.2650	0.2650	97.31	
A Non-2,3,7,8-sub-HxCDD	31.073						0.2871	0.2871		
S Total HxCDD					148.9	148.9	0.2908	0.2908		
D 13C-1,2,3,4,6,7,8-HpCDF	33.822	32256959	0.43	0.8529	99.0	99.0	2.939	2.939	99.04	
1,2,3,4,6,7,8-HpCDF	33.822	23717754	1.05	1.4619	50.3	50.3	1.293	1.293	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.892	26259765	0.43	0.7499	91.7	91.7	3.343	3.343	91.70	
1,2,3,4,7,8,9-HpCDF	34.904	19112643	1.06	1.4262	51.0	51.0	1.788	1.788	102	
A Non-2,3,7,8-sub-HpCDF	34.369						1.503	1.503		
S Total HpCDF					101.3	101.3	1.540	1.540		
D 13C-1,2,3,4,6,7,8-HpCDD	34.600	27339524	1.04	0.7851	91.2	91.2	1.211	1.211	91.19	
1,2,3,4,6,7,8-HpCDD	34.612	14256089	1.06	1.1022	47.3	47.3	0.5830	0.5830	94.62	
A Non-2,3,7,8-sub-HpCDD	34.460						0.5830	0.5830		
S Total HpCDD					47.3	47.3	0.5830	0.5830		
D 13C-OCDD	36.939	35680769	0.87	0.5610	166.6	166.6	0.4600	0.4600	83.28	
OCDF	37.047	27102996	0.92	1.4855	102.3	102.3	0.2099	0.2099	102	
OCDD	36.951	19823974	0.89	1.1570	96.0	96.0	0.2586	0.2586	96.04	

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Jan-2021 15:32:05 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 012721 CS-4 HRDXNL4_00096
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jan-2021 02:01:02 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.944	17.944	0		17395509	4144465	4058	10145	1021		
333.9339	17.944	17.944	0		22585306	5508692	3699	9247	1489	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.430	17.430	0	0.971	32289749	7405736	7918	19795	935		
317.9389	17.430	17.430	0	0.971	42109607	9708734	7138	17845	1360	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.445	17.445	0	1.001	3240782	755311	713	1782	1059		
305.8987	17.445	17.445	0	1.001	4226794	960408	1005	2512	956	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.067	17.135	-4	0.979	13913	3769	713	1782	5		
305.8987	17.052	17.135	-5	0.978	12819	4271	1005	2512	4	1.09(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.141	18.141	0	1.011	18418780	4050620	4058	10145	998		
333.9339	18.141	18.141	0	1.011	24673975	5417016	3699	9247	1464	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.156	18.156	0	1.012	4977578	1081479	843	2107	1283		
2,3,7,8-TCDD											
319.8965	18.171	18.171	0	1.002	2324742	490726	1138	2845	431		
321.8936	18.156	18.171	-1	1.001	2863835	602383	750	1875	803	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.589						1138	2845			
321.8936	17.589						750	1875			
13C-1,2,3,7,8-PeCDF											
351.9000	22.536	22.536	0	1.256	33847432	5362563	9131	22827	587		
353.8970	22.550	22.536	1	1.257	21584727	3442879	6395	15987	538	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.563	22.563	0	1.001	17651197	2844390	5131	12827	554		
341.8567	22.563	22.563	0	1.001	10903370	1792296	3399	8497	527	1.62(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.913	23.913	0	1.333	31076284	4684758	9131	22827	513		
353.8970	23.913	23.913	0	1.333	19579561	2954217	6395	15987	462	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.941	23.941	0	1.001	17375291	2622278	5131	12827	511		
341.8567	23.941	23.941	0	1.001	10737186	1638392	3399	8497	482	1.62(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.978						256	640			
341.8567	19.978						474	1185			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.192						5131	12827			
341.8567	23.192						3399	8497			
13C-1,2,3,7,8-PeCDD											
367.8949	24.650	24.650	0	1.374	21899135	3200309	2592	6480	1235		
369.8919	24.650	24.650	0	1.374	13696106	1865110	2079	5197	897	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.677	24.677	0	1.001	11361239	1573251	1076	2690	1462		
357.8516	24.677	24.677	0	1.001	7248937	1010541	651	1627	1552	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.538						1076	2690			
357.8516	23.538						651	1627			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.701	30.701	0	0.952	13827549	2594538	14859	37147	175		
385.8610	30.701	30.701	0	0.952	26406817	5003856	28658	71645	175	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.714	30.714	0	1.000	13868239	2719642	14629	36572	186		
375.8178	30.714	30.714	0	1.000	11162300	2139161	10907	27267	196	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.874	30.874	0	0.957	18017863	3143940	14859	37147	212		
385.8610	30.860	30.874	-1	0.957	34819476	5980995	28658	71645	209	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.887	30.887	0	1.000	17114037	2989381	14629	36572	204		
375.8178	30.887	30.887	0	1.000	13868324	2432937	10907	27267	223	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.646	31.646	0	0.981	16136195	3599487	14859	37147	242		
385.8610	31.646	31.646	0	0.981	31776774	7083180	28658	71645	247	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.672	31.672	0	1.001	15789263	3482045	14629	36572	238		
375.8178	31.659	31.672	-1	1.000	12736715	2814024	10907	27267	258	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.431	32.431	0	1.006	14334694	3124948	14859	37147	210		
385.8610	32.431	32.431	0	1.006	27635754	5962255	28658	71645	208	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.444	32.444	0	1.000	13996953	3082389	14629	36572	211		
375.8178	32.431	32.444	-1	1.000	11267160	2446972	10907	27267	224	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.388						14629	36572			
375.8178	30.388						10907	27267			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.244	32.244	0		21282185	4584728	10992	27480	417		
403.8529	32.244	32.244	0		16903380	3602910	7697	19242	468	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.832	31.832	0	0.987	14426416	3967288	10992	27480	361		
403.8529	31.819	31.832	-1	0.987	11273815	3027105	7697	19242	393	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.845	31.845	0	1.000	8317171	2348627	5606	14015	419		
391.8127	31.845	31.845	0	1.000	6670503	1859899	4997	12492	372	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.925	31.925	0	0.990	23990759	5052035	10992	27480	460		
403.8529	31.925	31.925	0	0.990	19105577	4080287	7697	19242	530	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.938	31.938	0	1.000	12517694	2583351	5606	14015	461		
391.8127	31.938	31.938	0	1.000	9754558	2050670	4997	12492	410	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.258	32.258	0	1.013	11593602	2507434	5606	14015	447		
391.8127	32.258	32.258	0	1.013	9171757	2000871	4997	12492	400	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.073						5606	14015			
391.8127	31.073						4997	12492			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.822	33.822	0	1.049	9736010	2643960	25517	63792	104		
419.8220	33.822	33.822	0	1.049	22520949	5999707	56591	141477	106	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.822	33.822	0	1.000	12157395	3226837	33032	82580	98		
409.7789	33.822	33.822	0	1.000	11560359	3143120	32309	80772	97	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.892	34.892	0	1.082	7888832	1922173	25517	63792	75		
419.8220	34.892	34.892	0	1.082	18370933	4482908	56591	141477	79	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.904	34.904	0	1.000	9853875	2420725	33032	82580	73		
409.7789	34.904	34.904	0	1.000	9258768	2298505	32309	80772	71	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.369						33032	82580			
409.7789	34.369						32309	80772			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.600	34.600	0	1.073	13940723	3337349	18822	47055	177		
437.8140	34.600	34.600	0	1.073	13398801	3241086	12323	30807	263	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.612	34.612	0	1.000	7347656	1776306	7933	19832	224		
425.7737	34.612	34.612	0	1.000	6908433	1723915	8974	22435	192	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.460						7933	19832			
425.7737	34.460						8974	22435			
13C-OCDD											
469.7779	36.939	36.939	0	1.146	16633516	3539355	5462	13655	648		
471.7750	36.939	36.939	0	1.146	19047253	3932488	2989	7472	1316	0.87(0.76-1.02)	
OCDF											
441.7428	37.047	37.047	0	1.003	12970313	2799629	2180	5450	1284		
443.7399	37.035	37.047	-1	1.003	14132683	3124214	2480	6200	1260	0.92(0.76-1.02)	
OCDD											
457.7377	36.951	36.951	0	1.000	9359453	1939544	1671	4177	1161		
459.7348	36.951	36.951	0	1.000	10464521	2146000	2800	7000	766	0.89(0.76-1.02)	

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d
Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

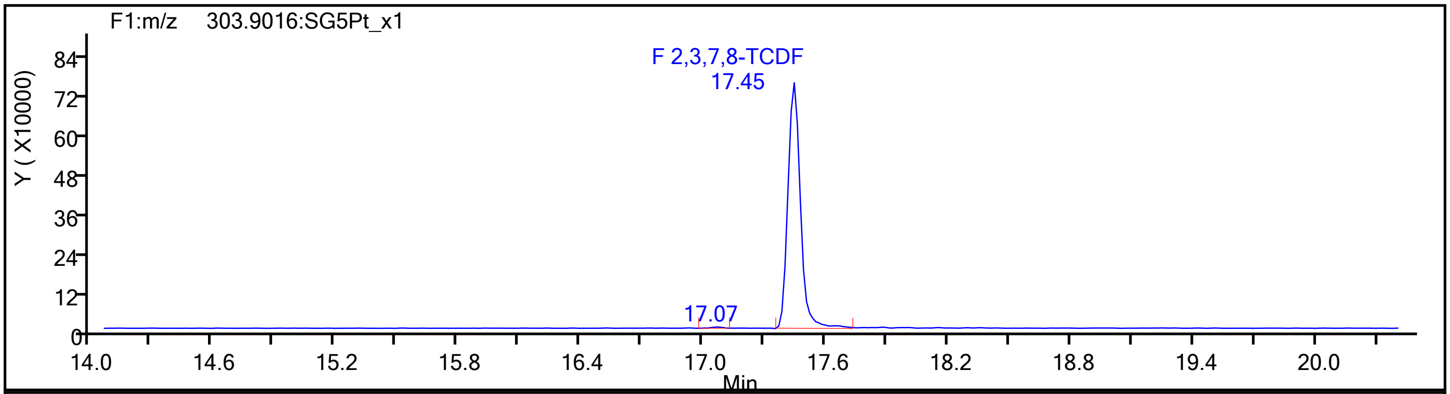

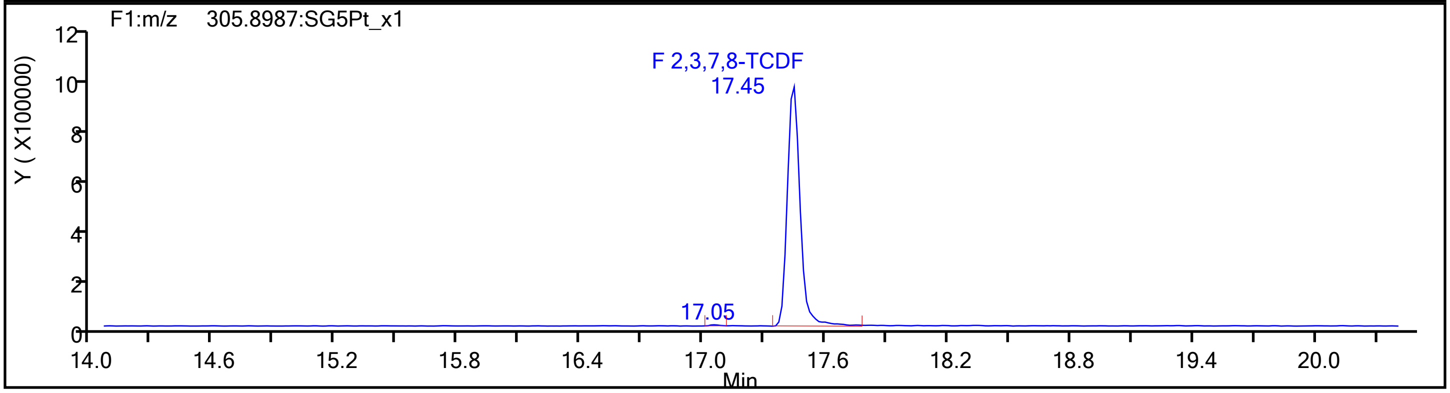

TCDF Standards

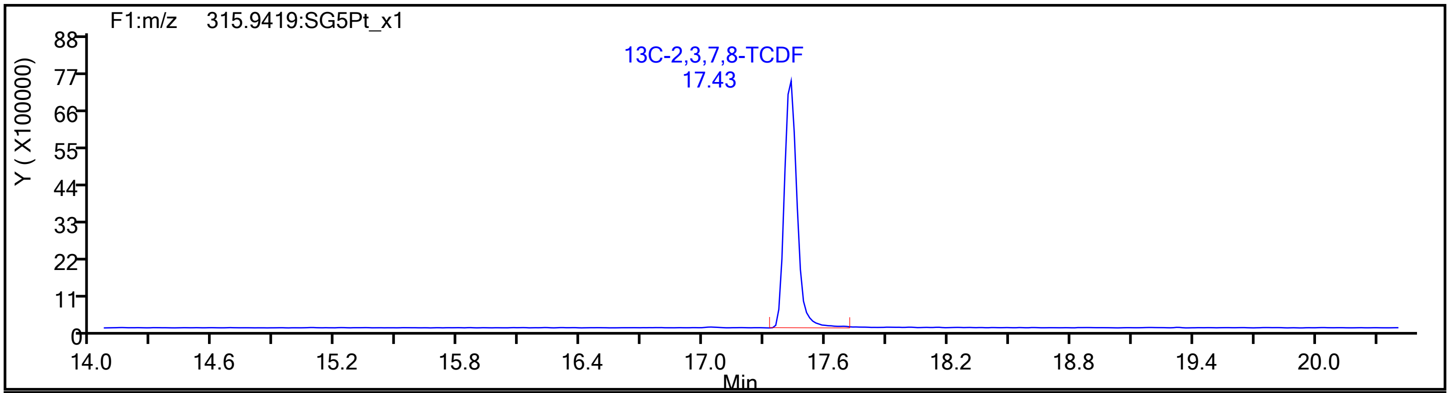

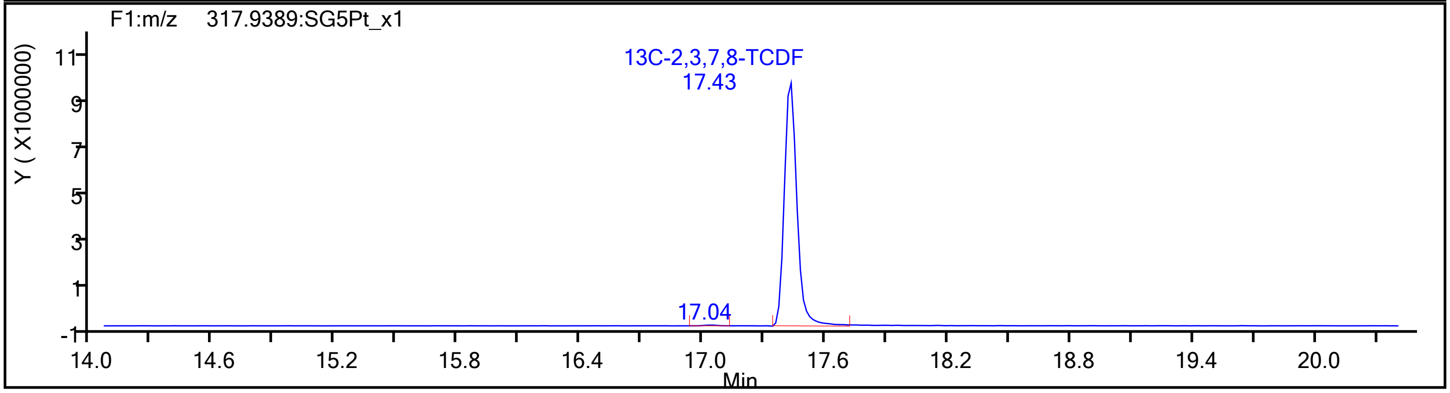

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

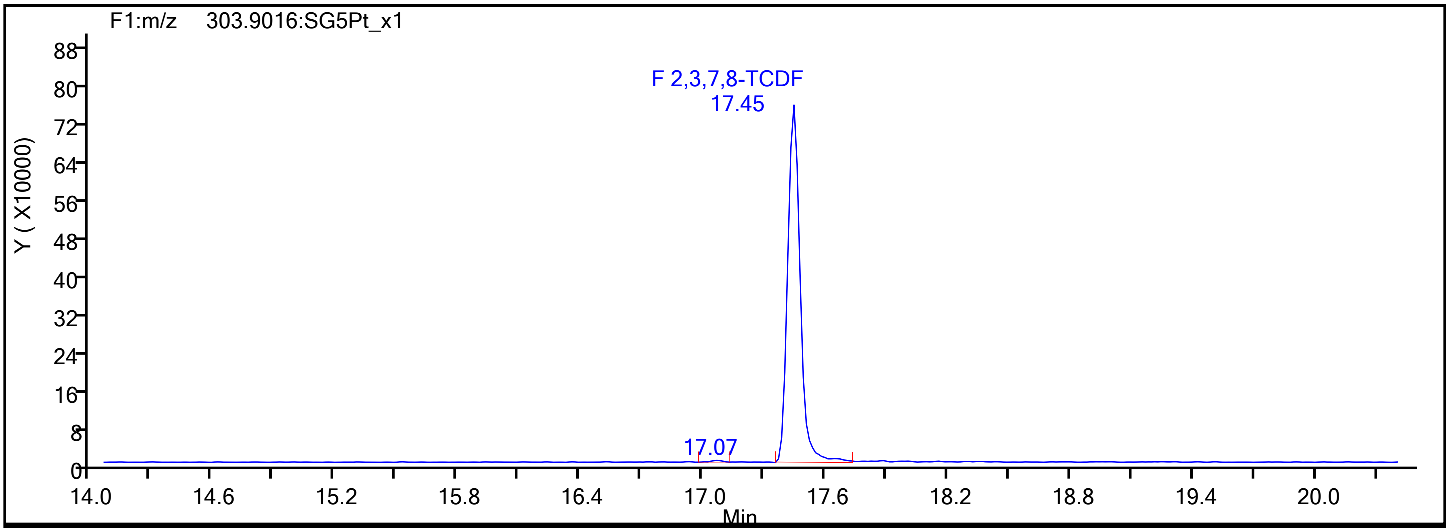

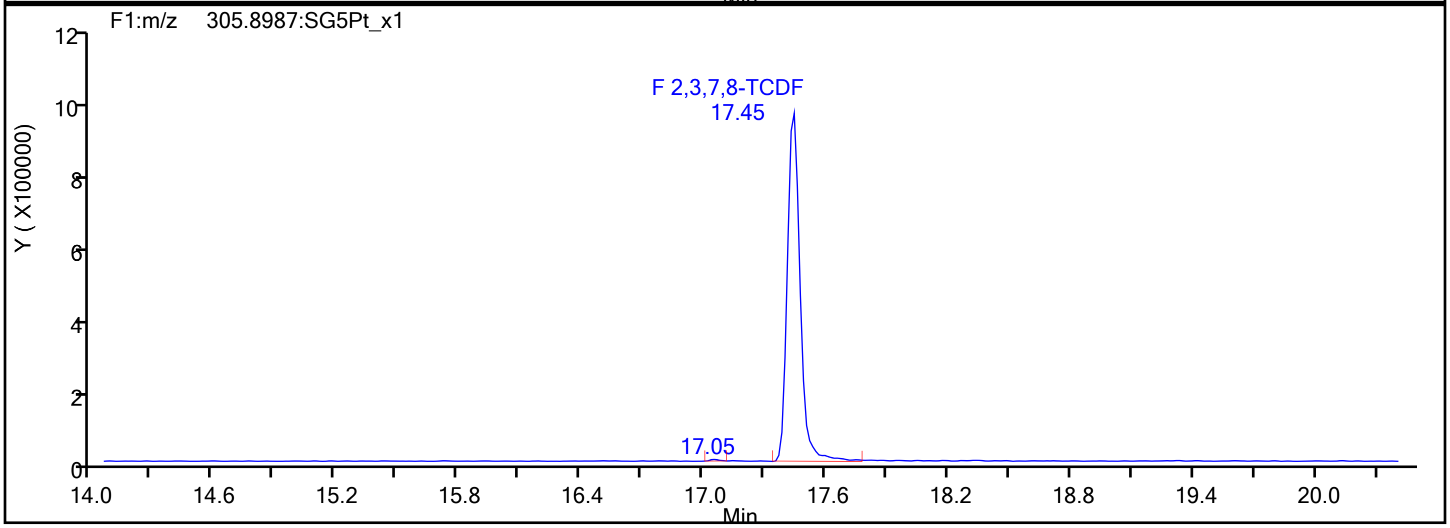

TCDF Interference Mass

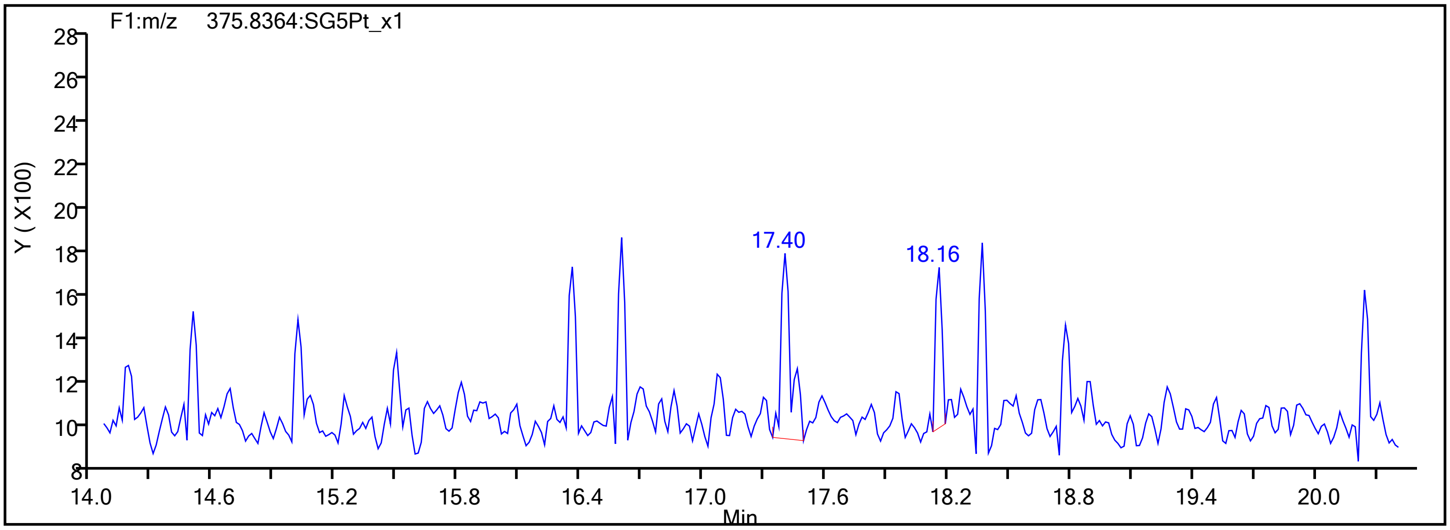

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d

Injection Date: 27-Jan-2021 15:32:05 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

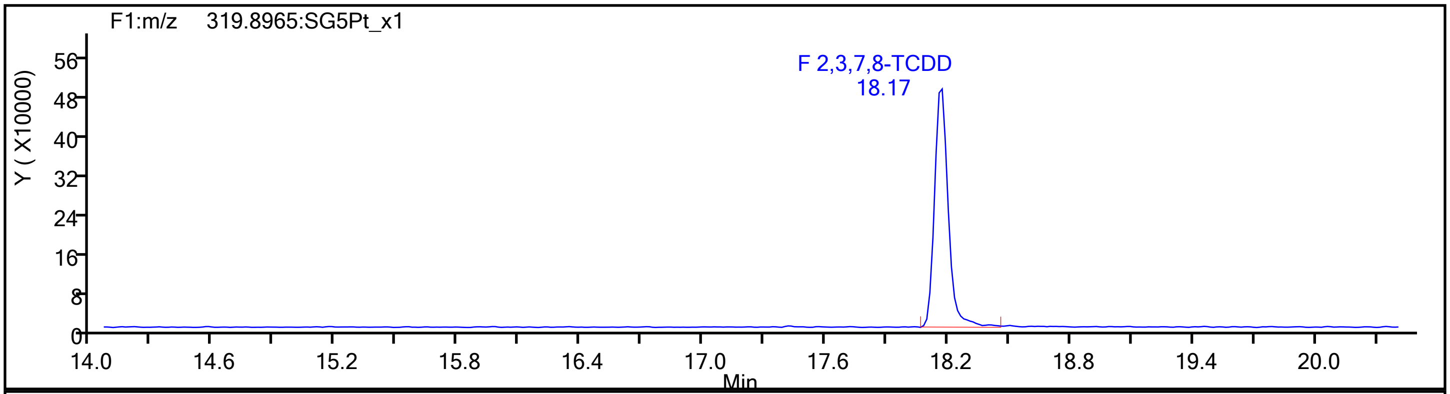

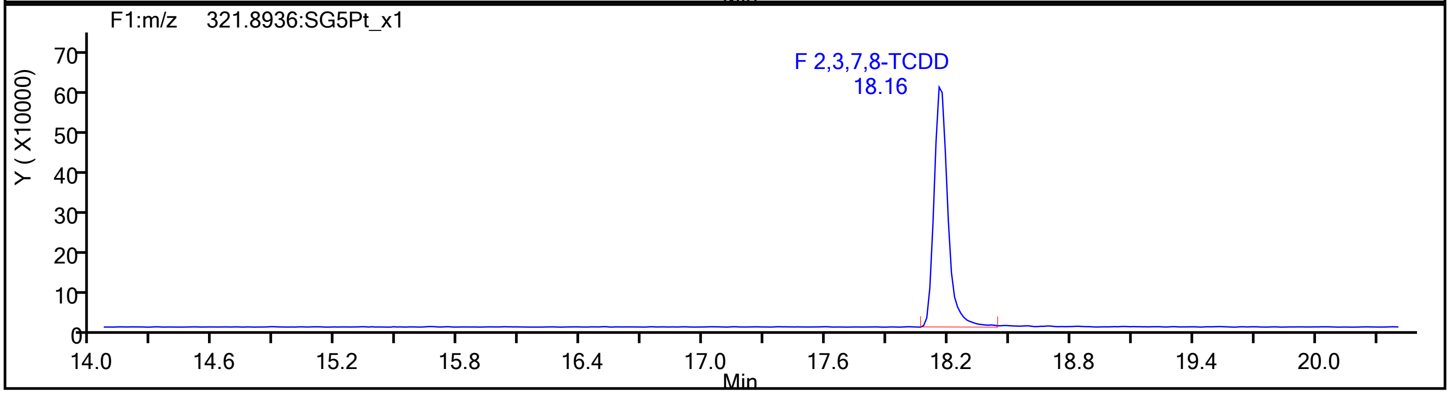

TCDD Standards

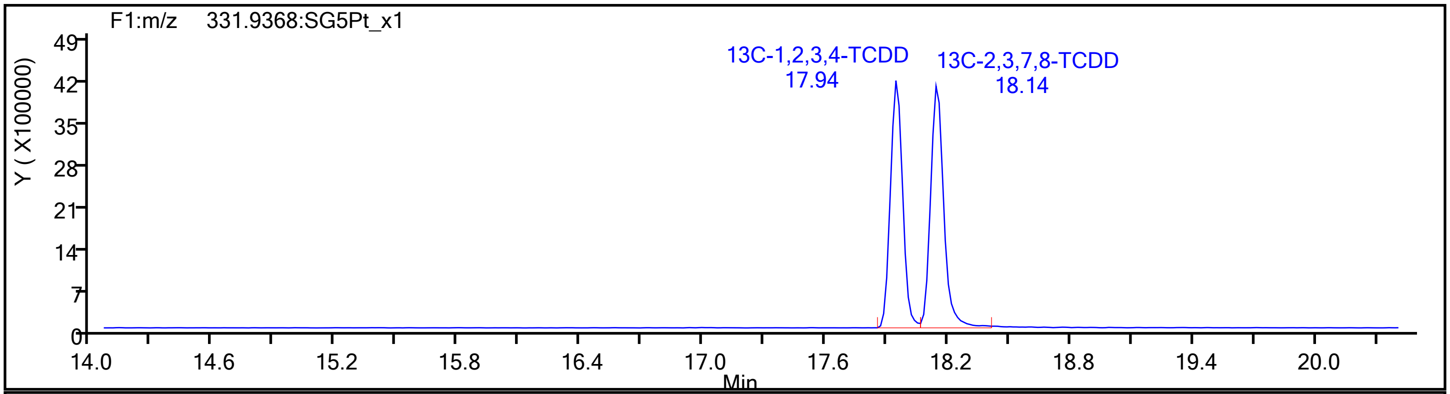

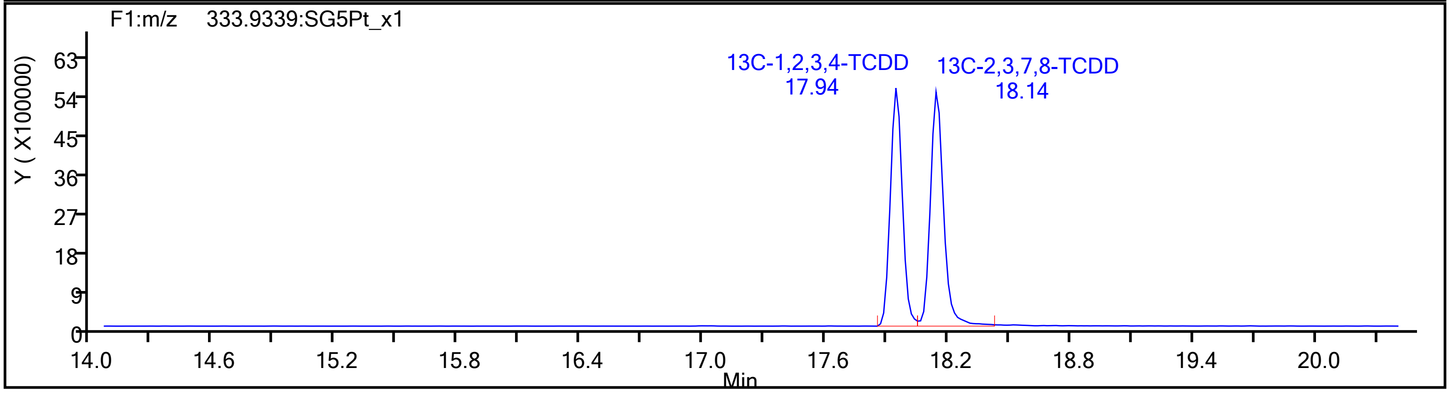

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

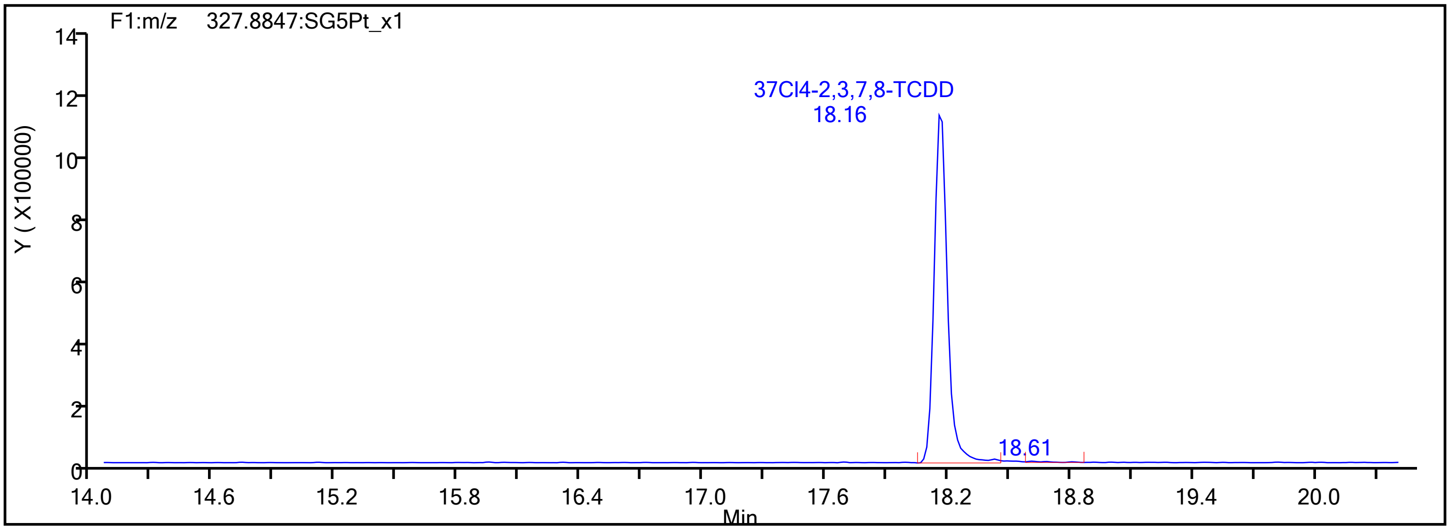

37Cl4-TCDD Standards

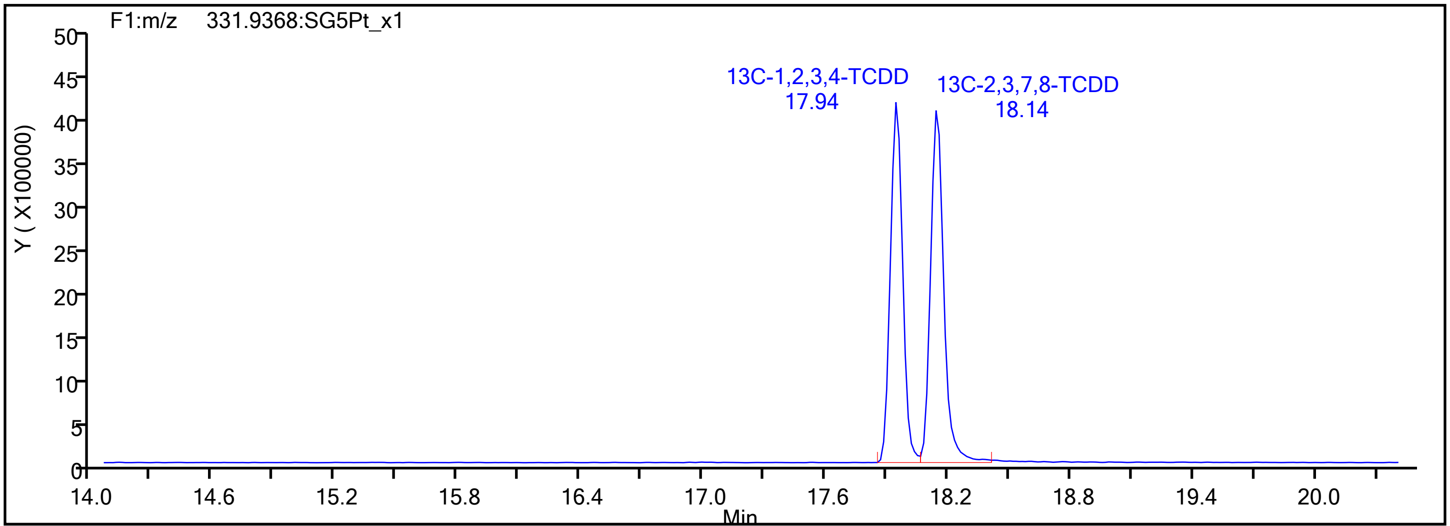

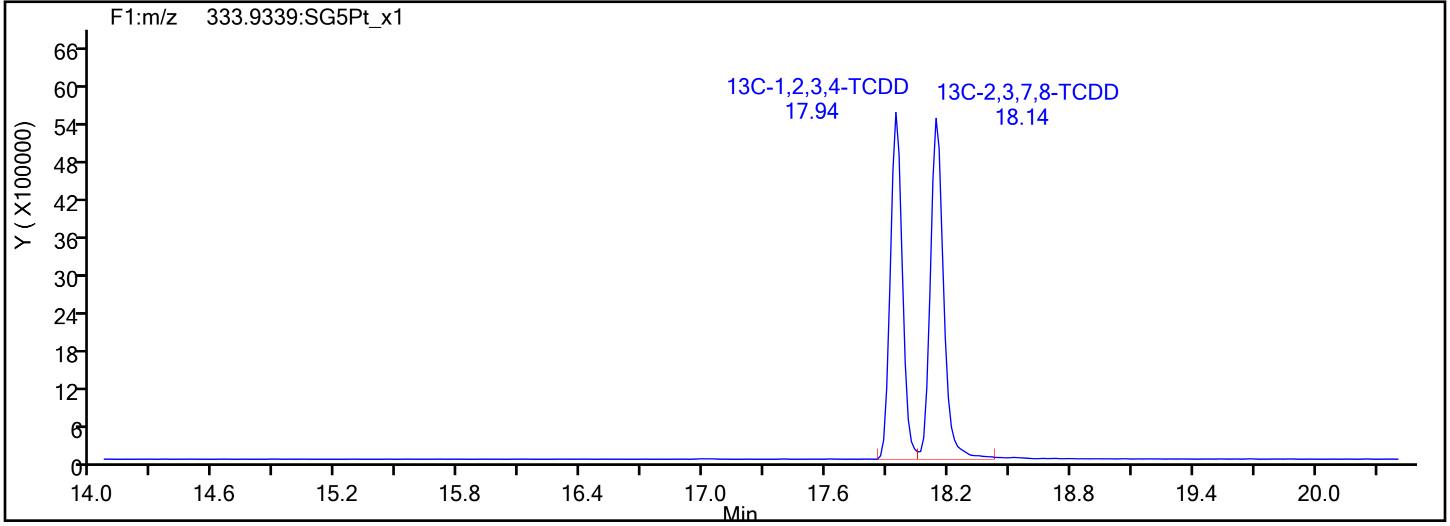

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Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

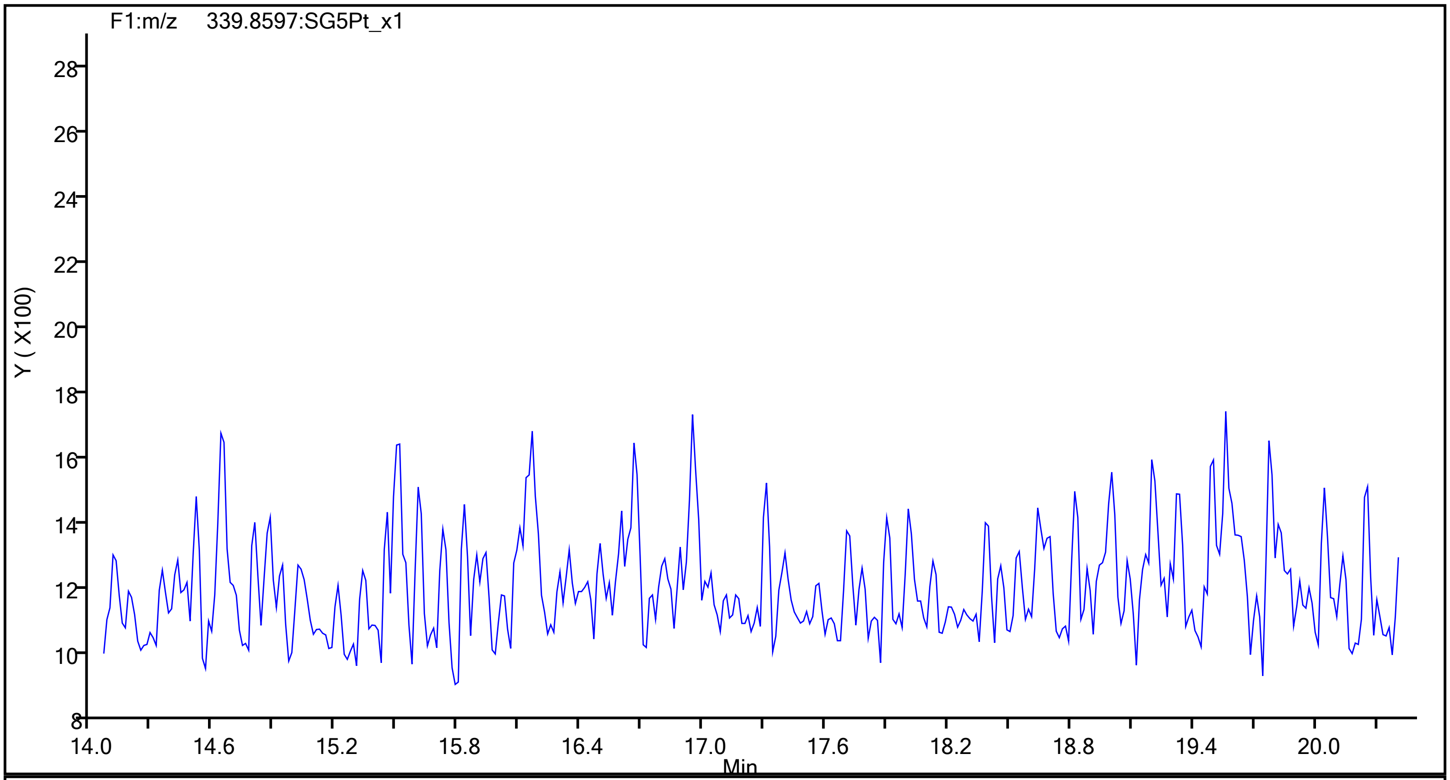

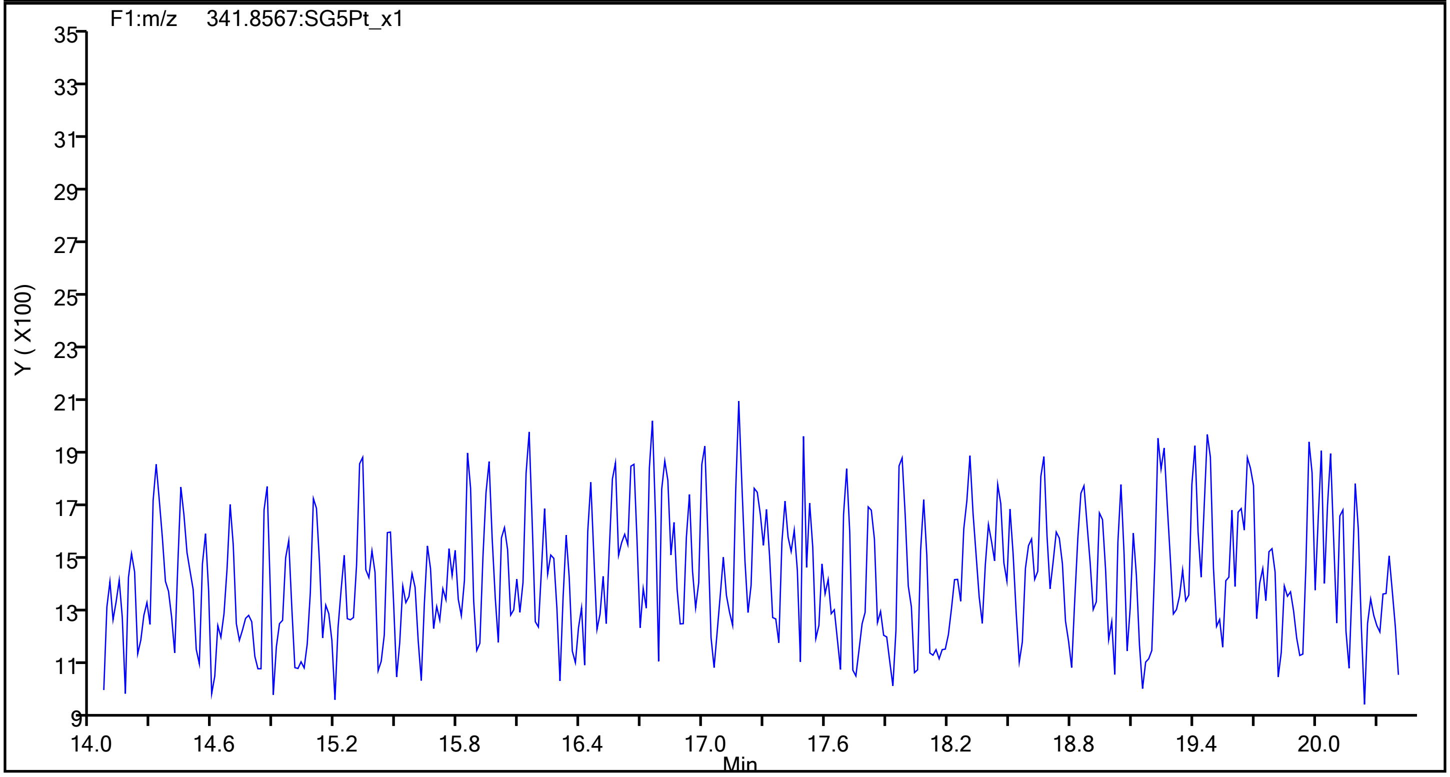

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d
Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

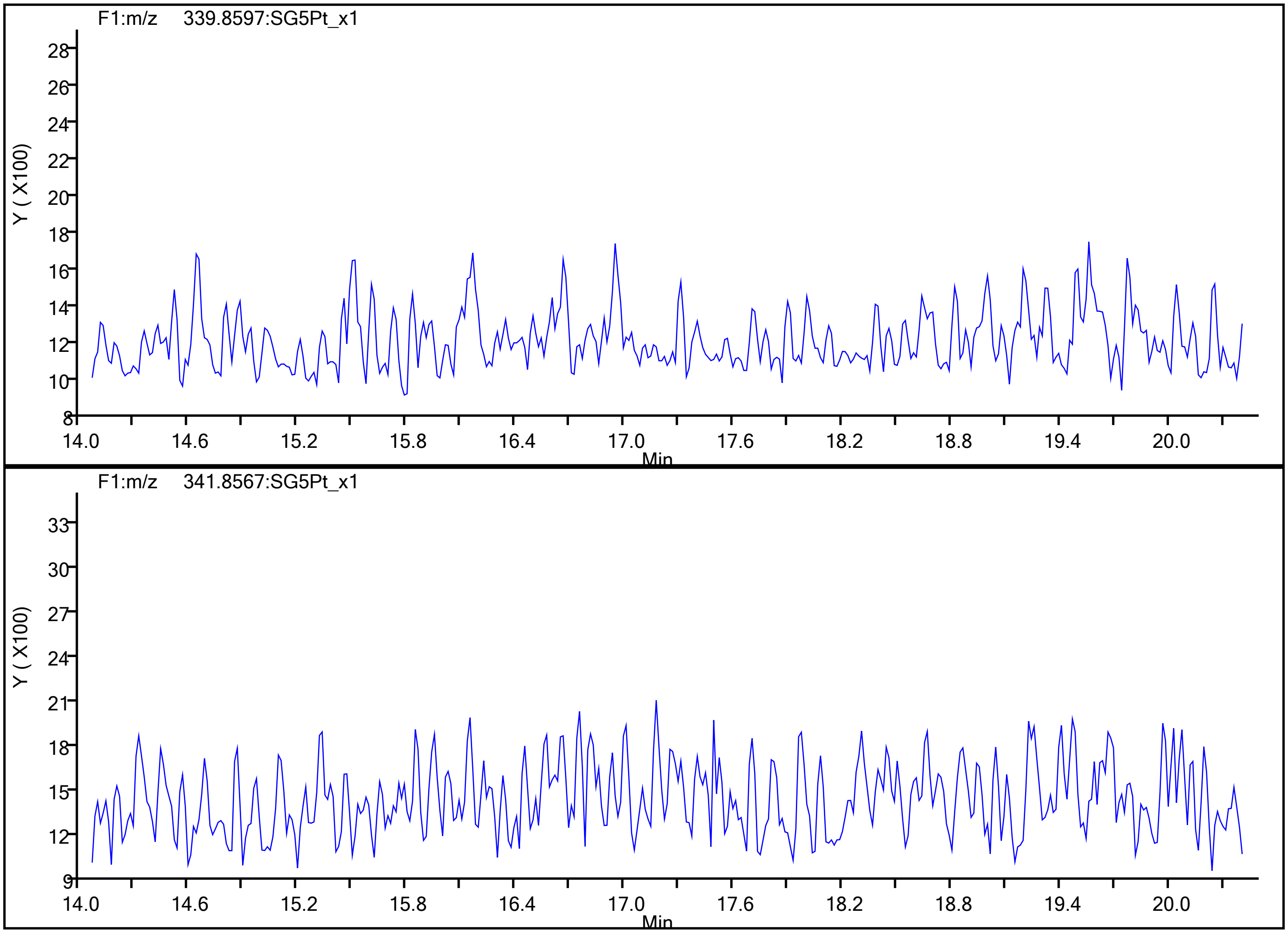

F1 PeCDFs Interference Mass

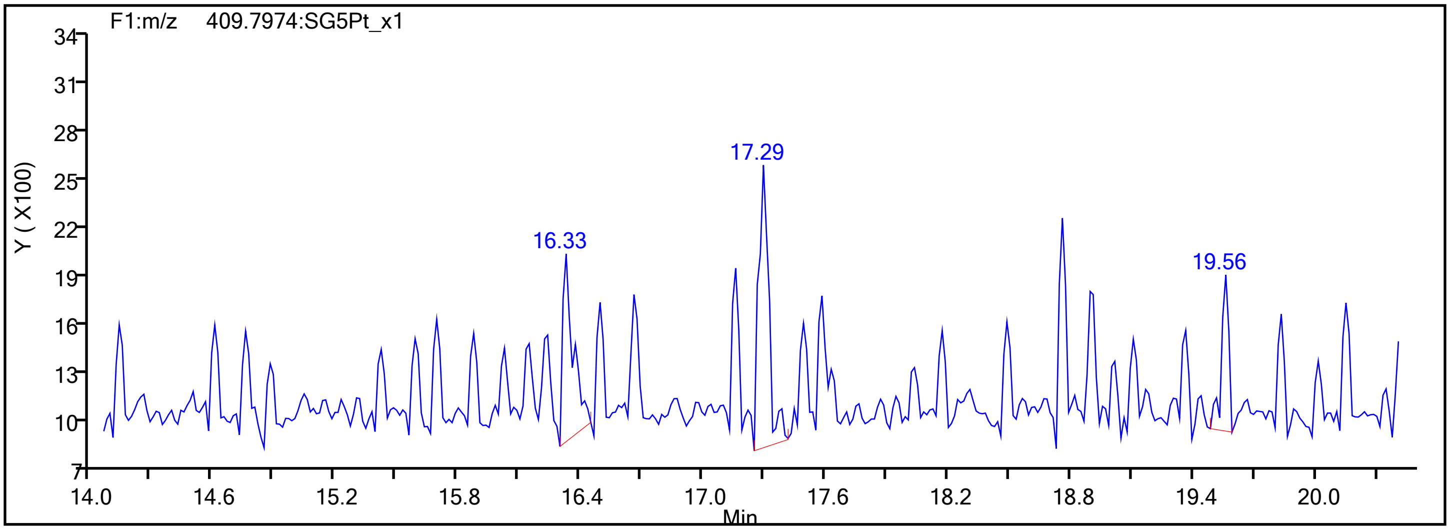

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

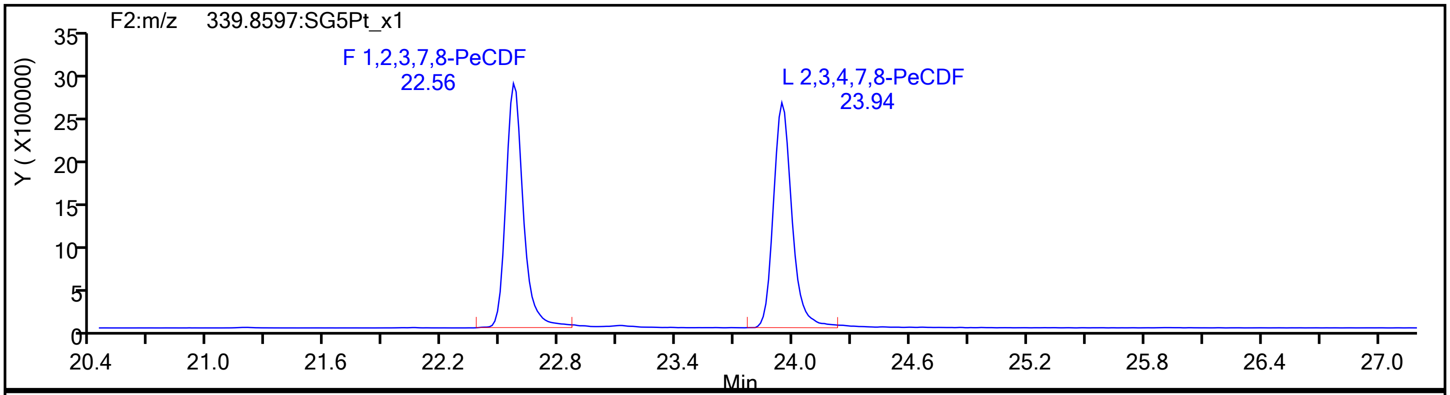

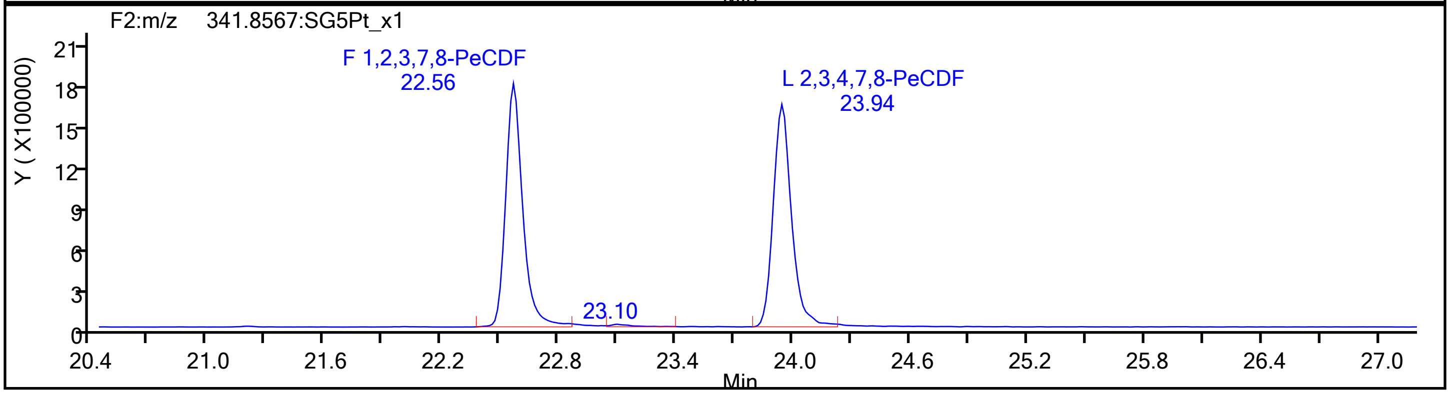

PeCDF Standards

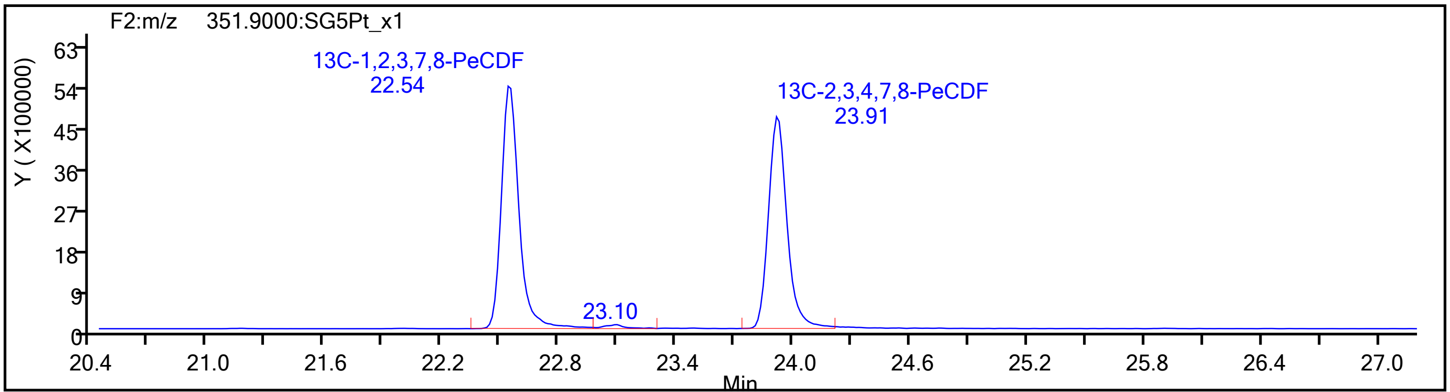

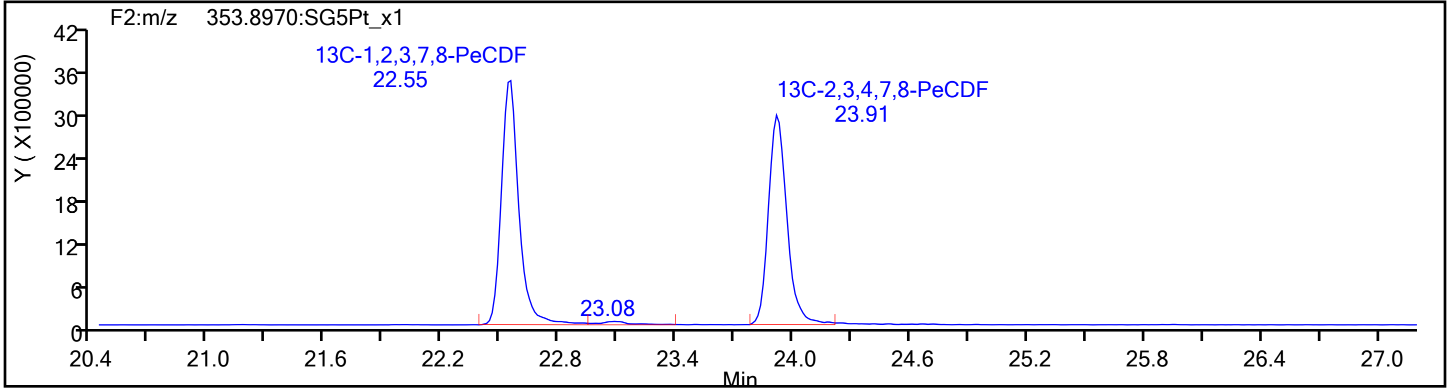

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

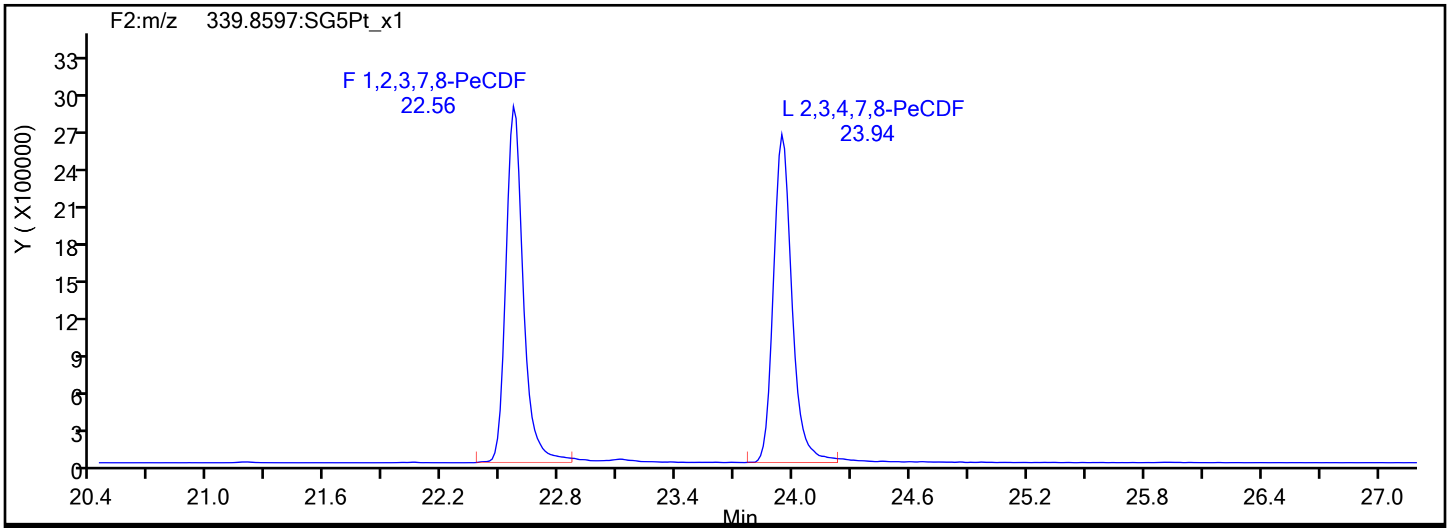

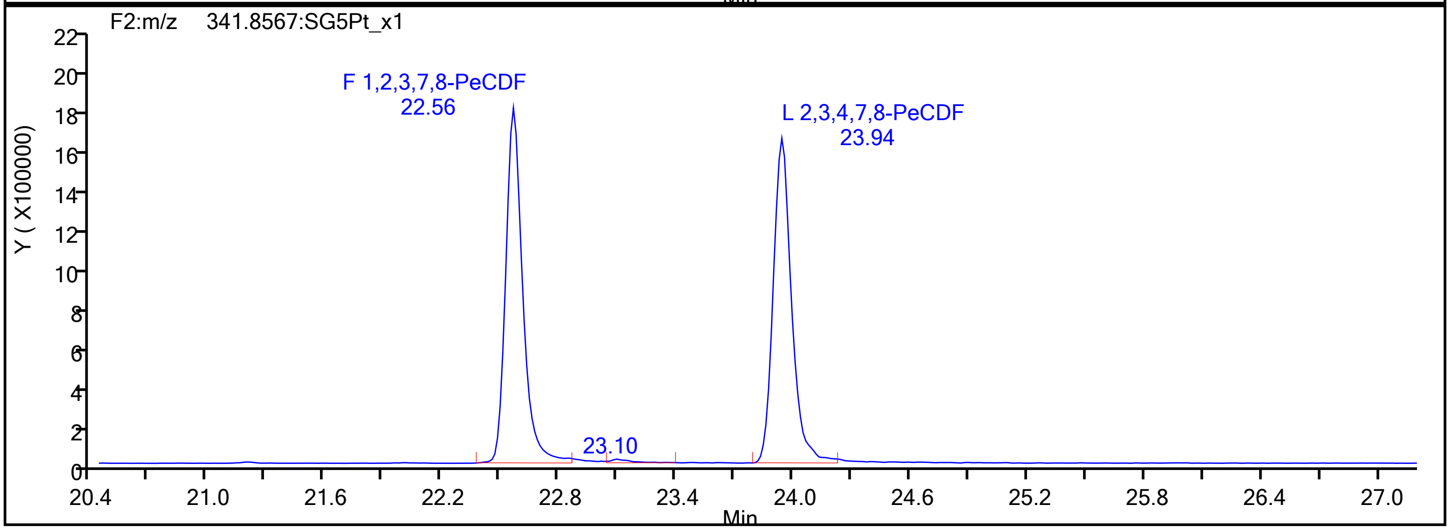

PeCDF Interference Mass

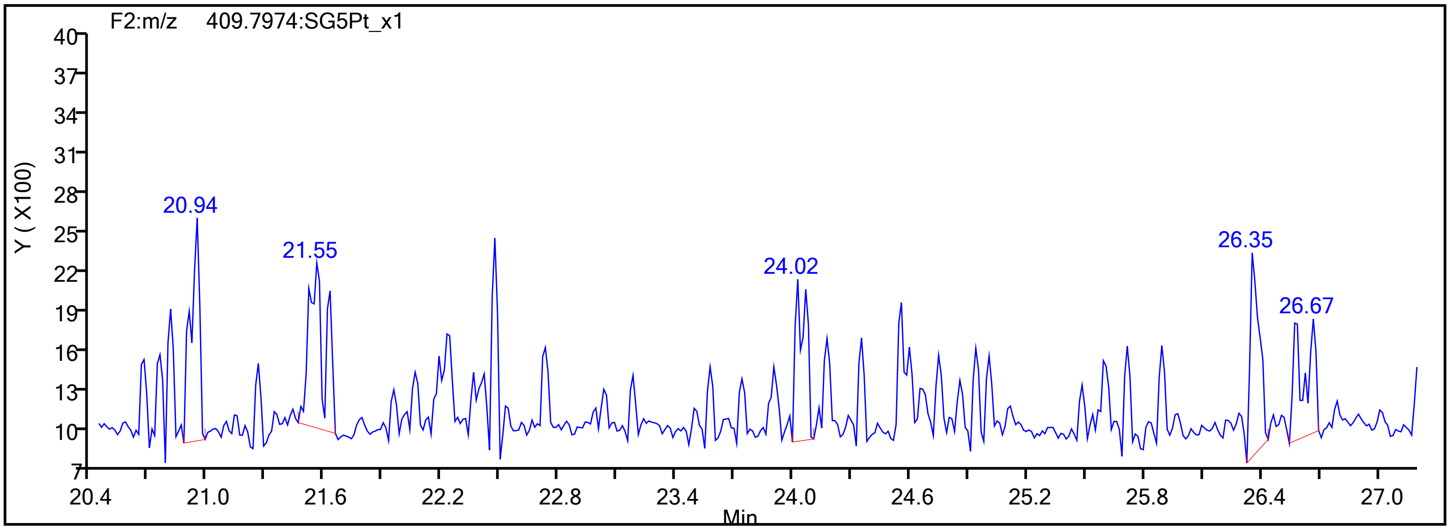

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

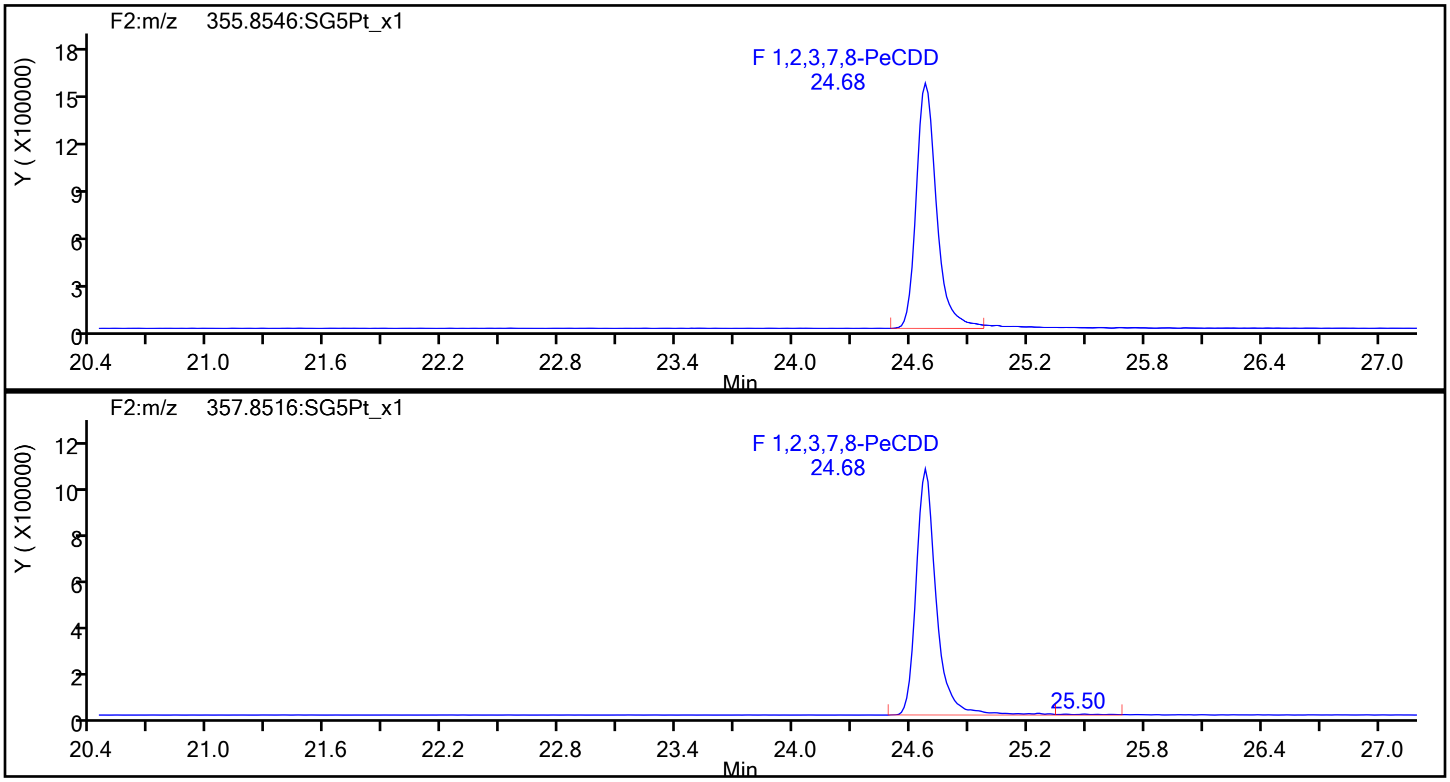

PeCDD Standards

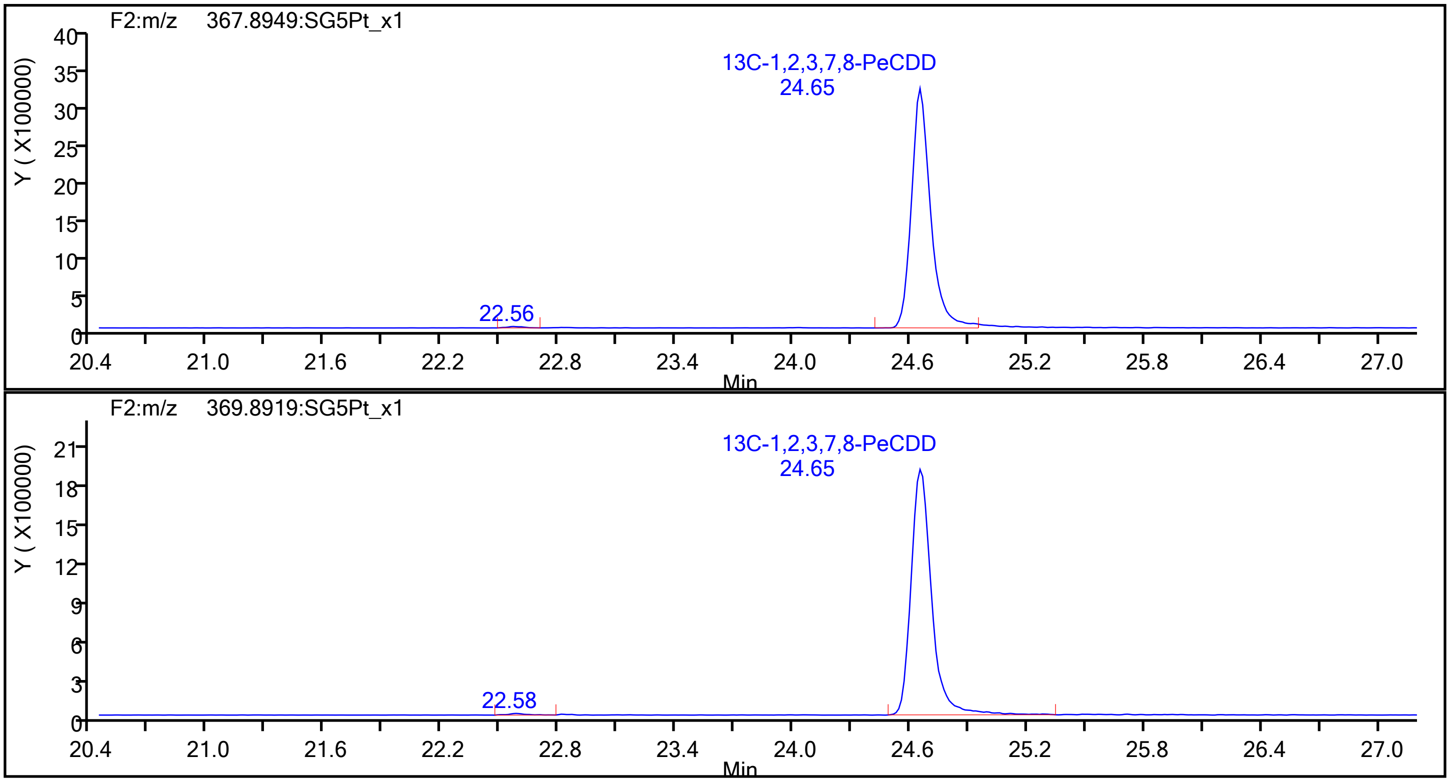

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

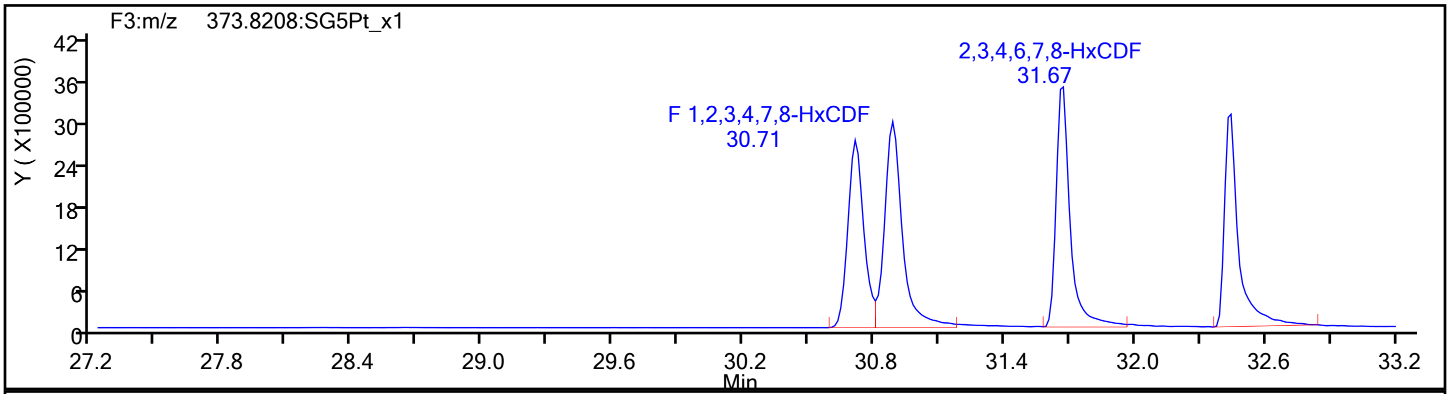

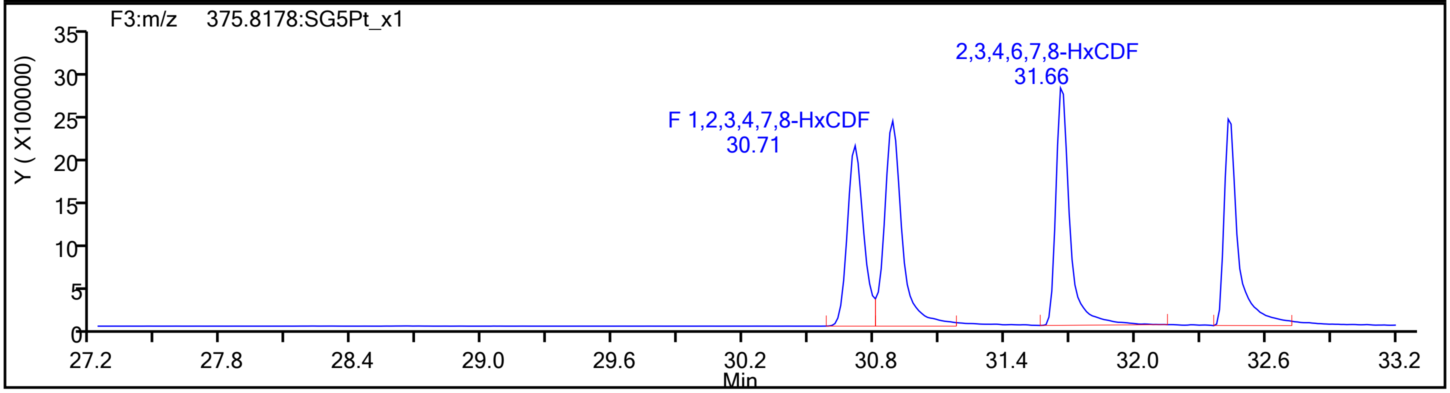

HxCDF Standards

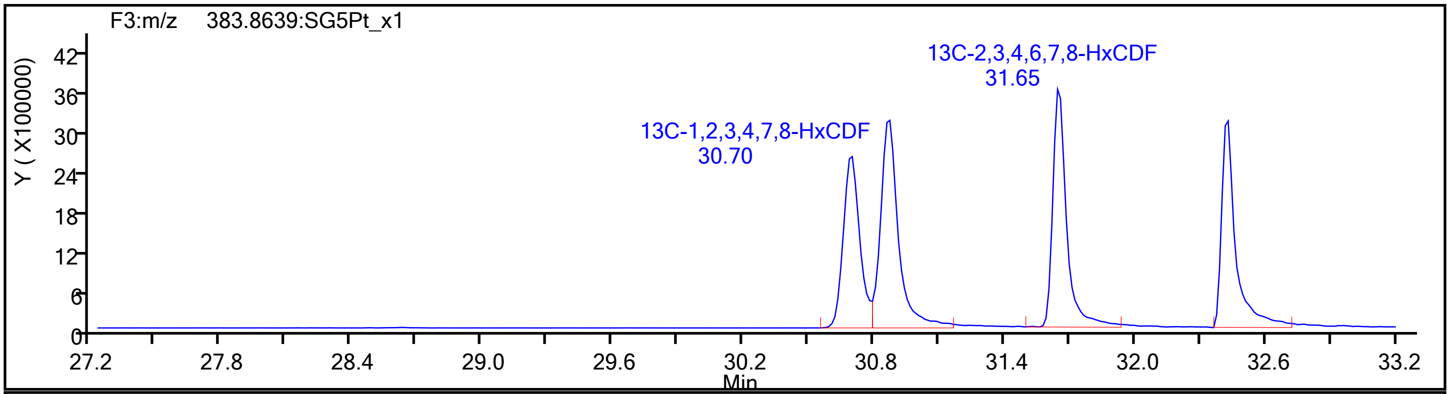

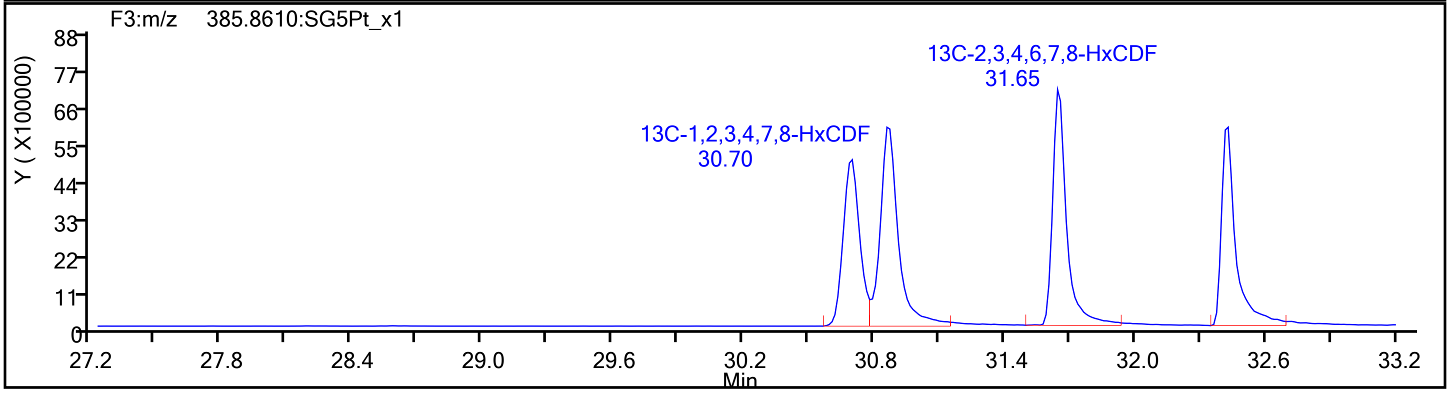

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

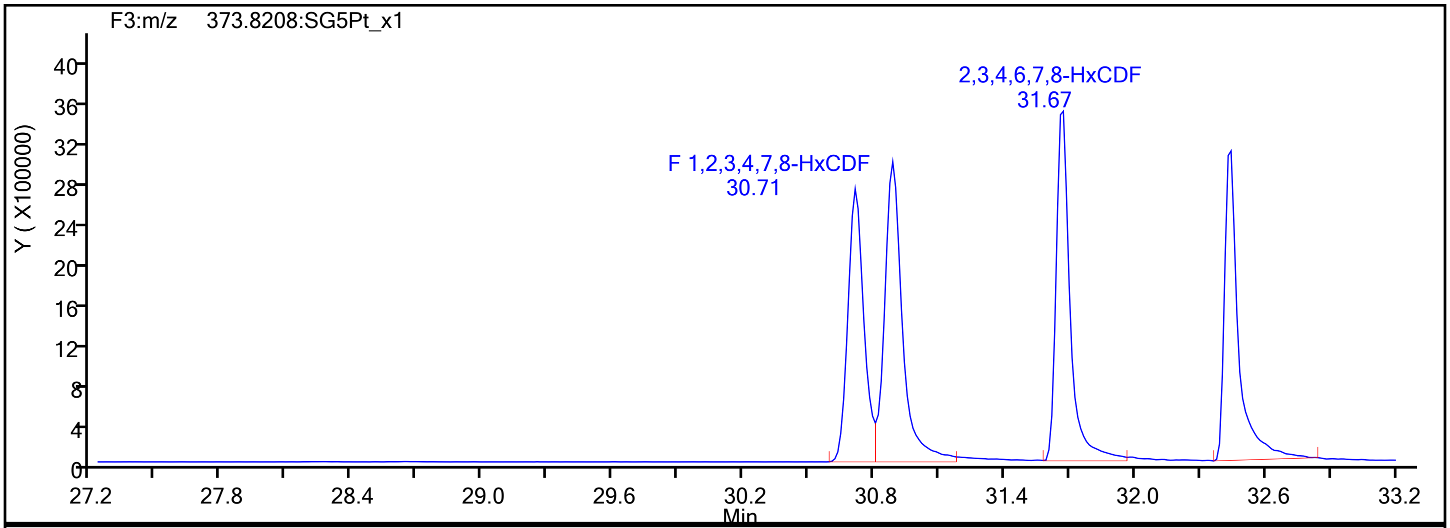

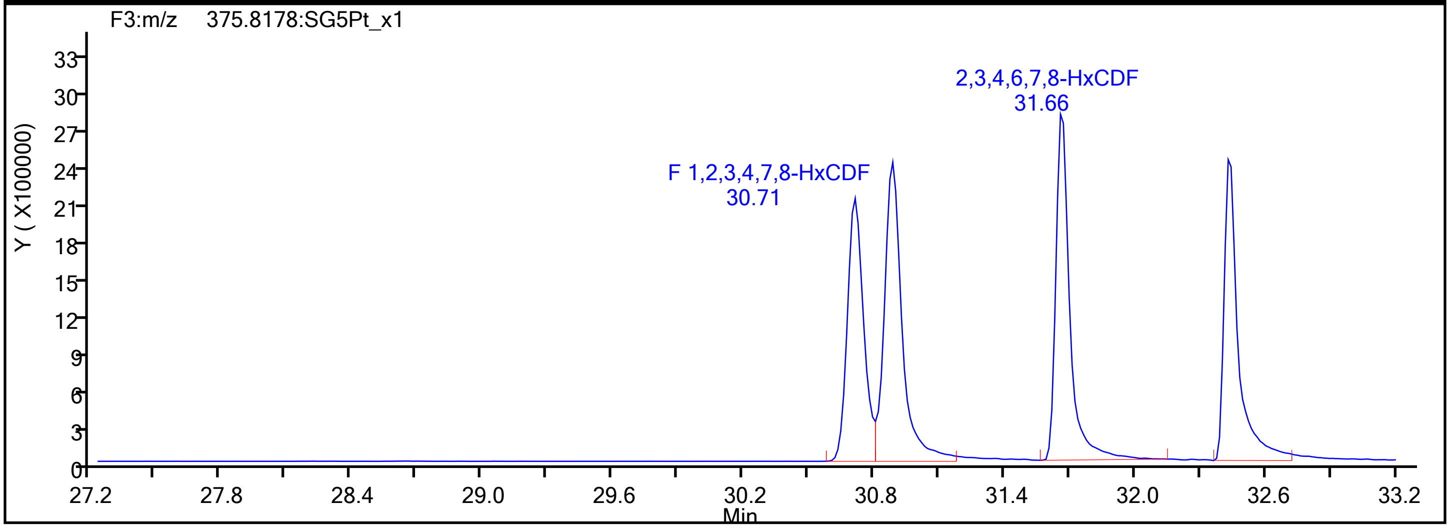

HxCDF Interference Mass

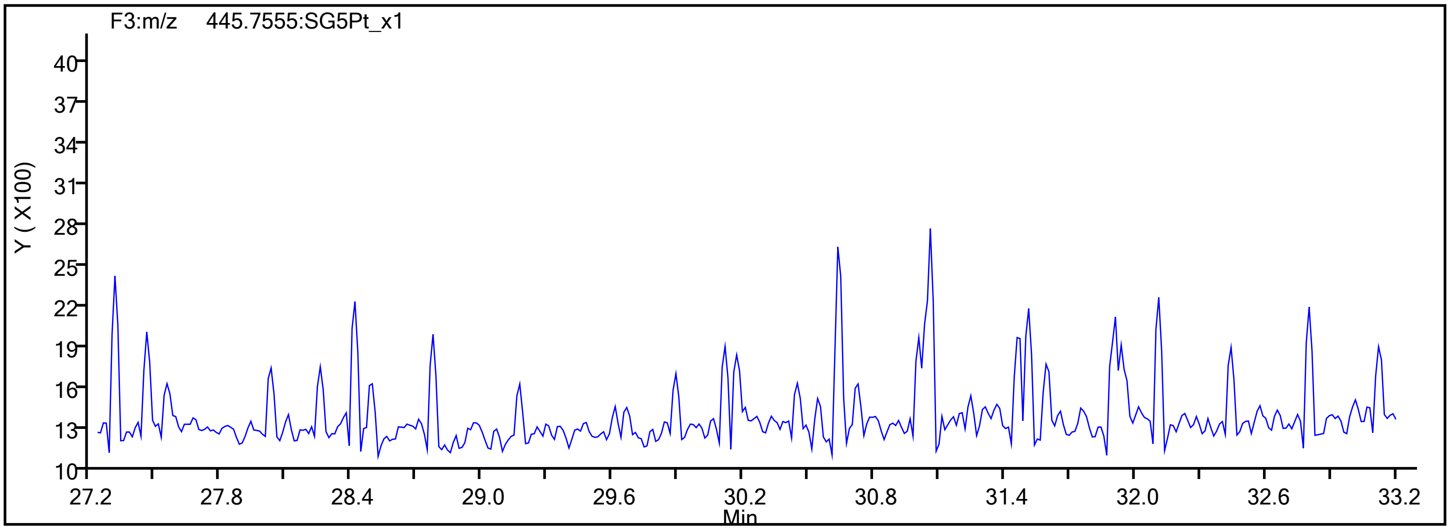

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

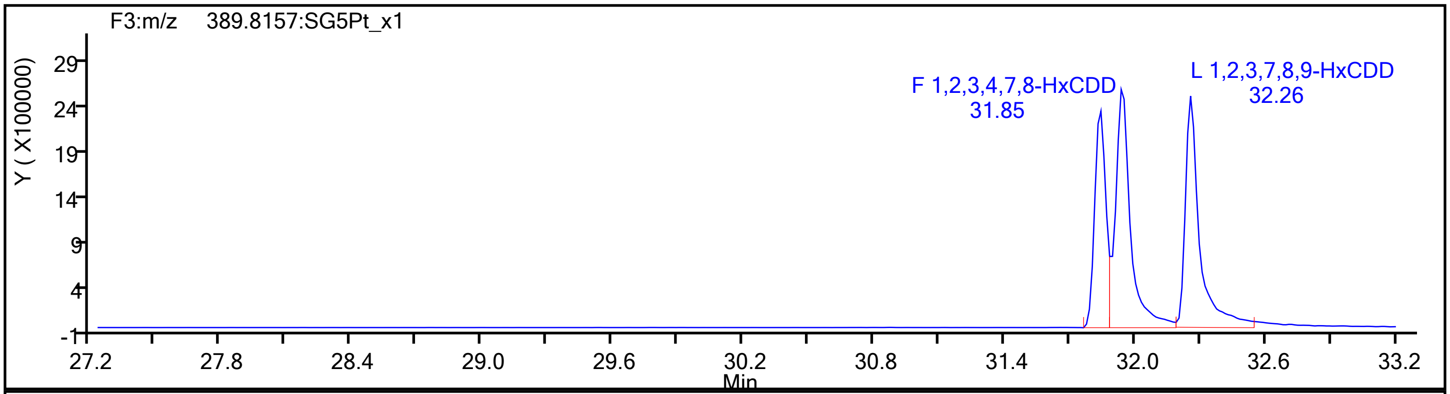

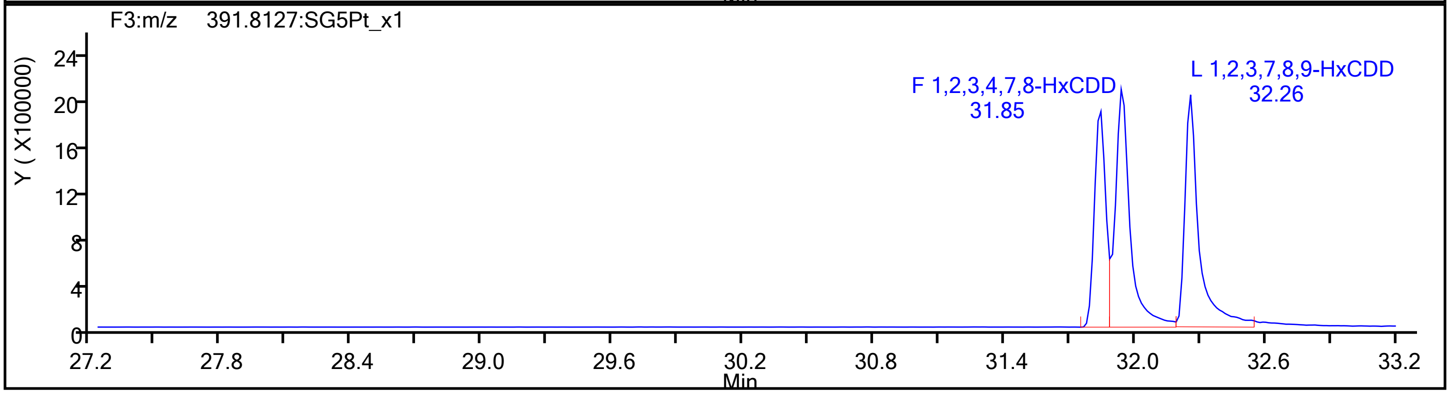

HxCDD Standards

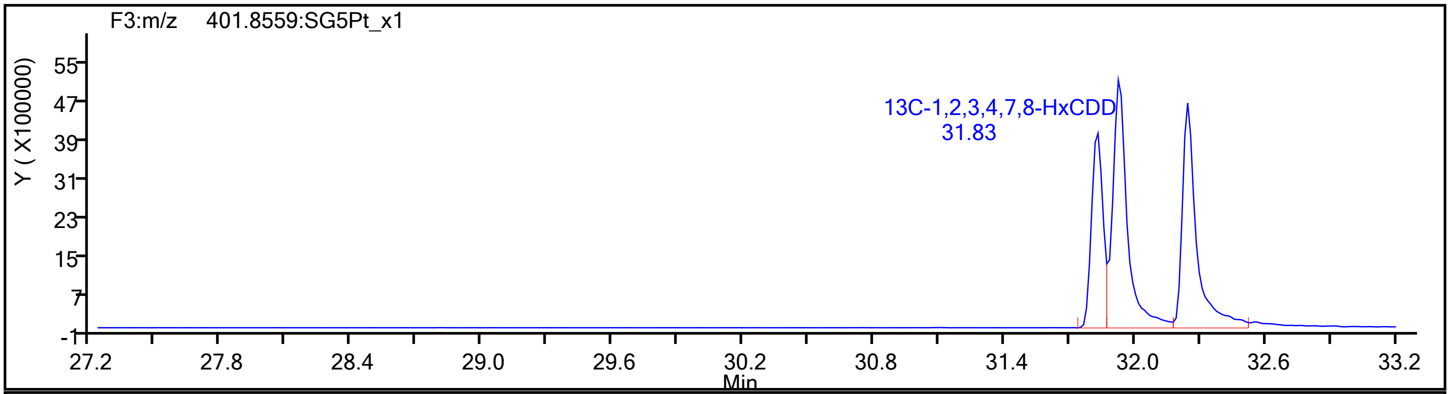

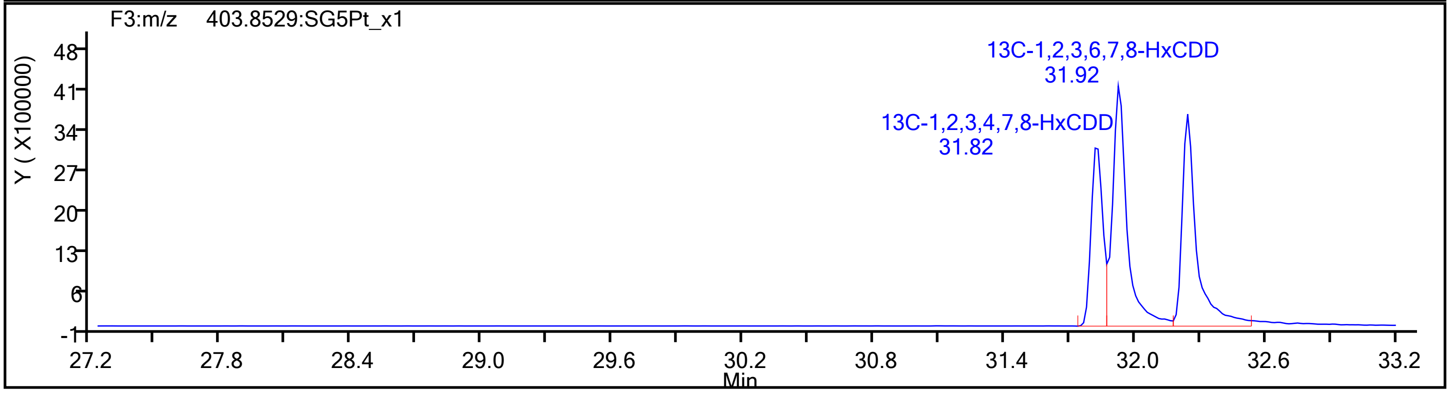

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

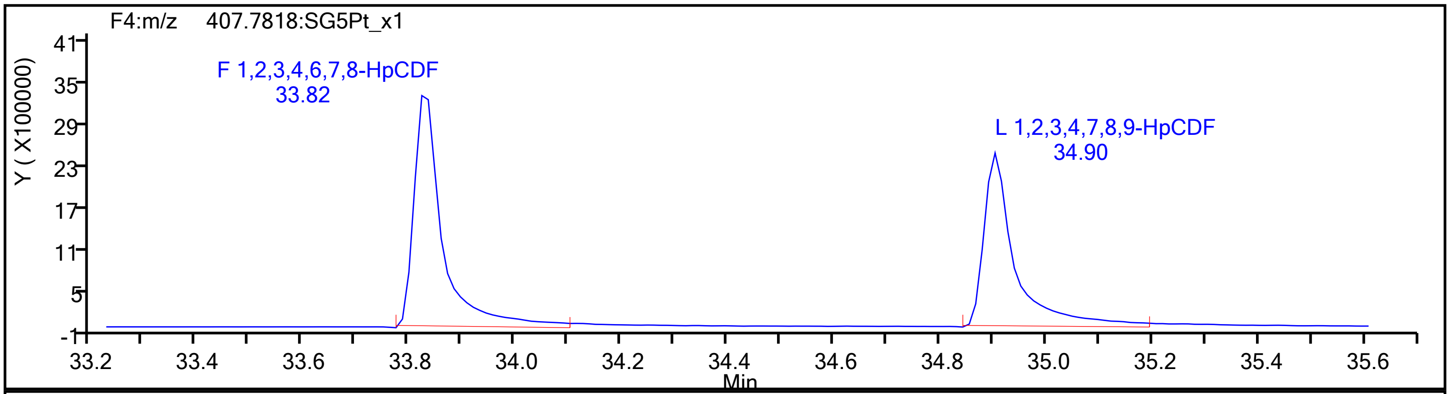

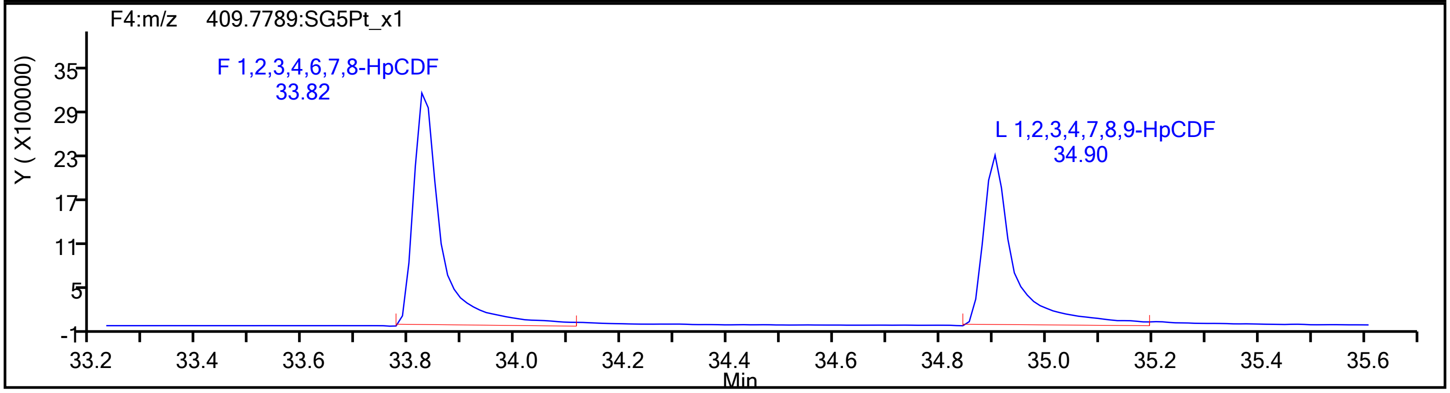

HpCDF Standards

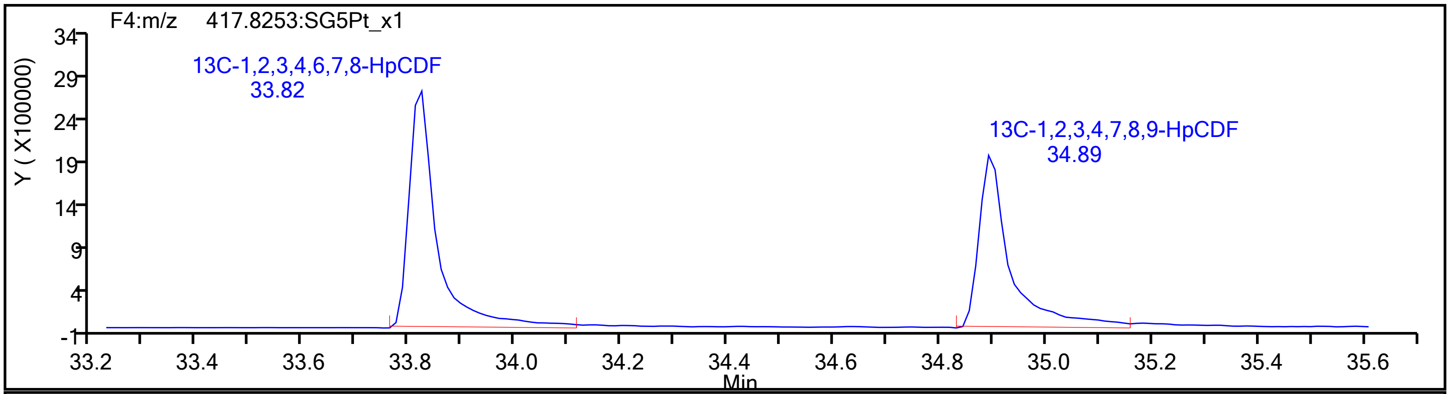

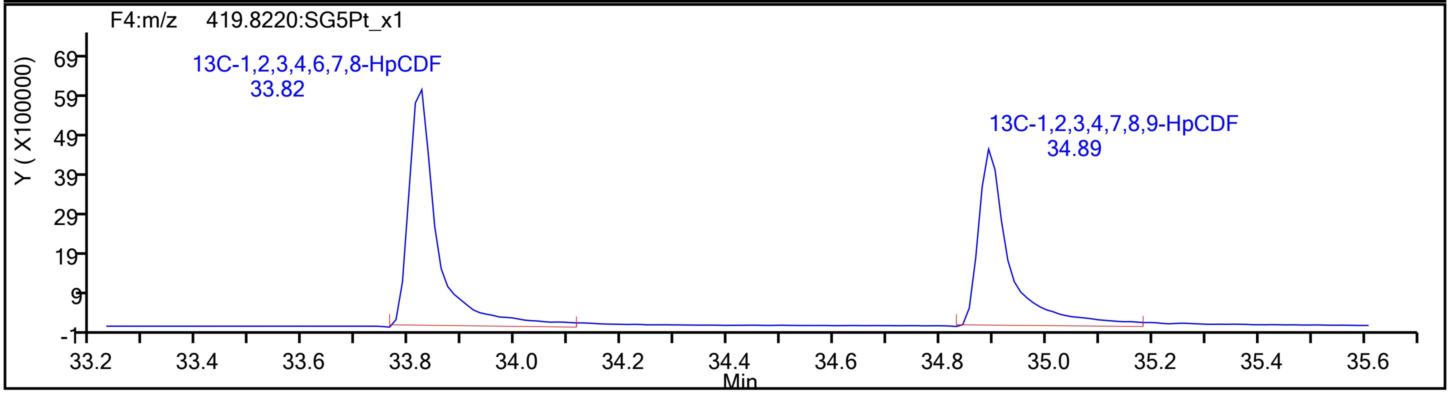

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d
Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

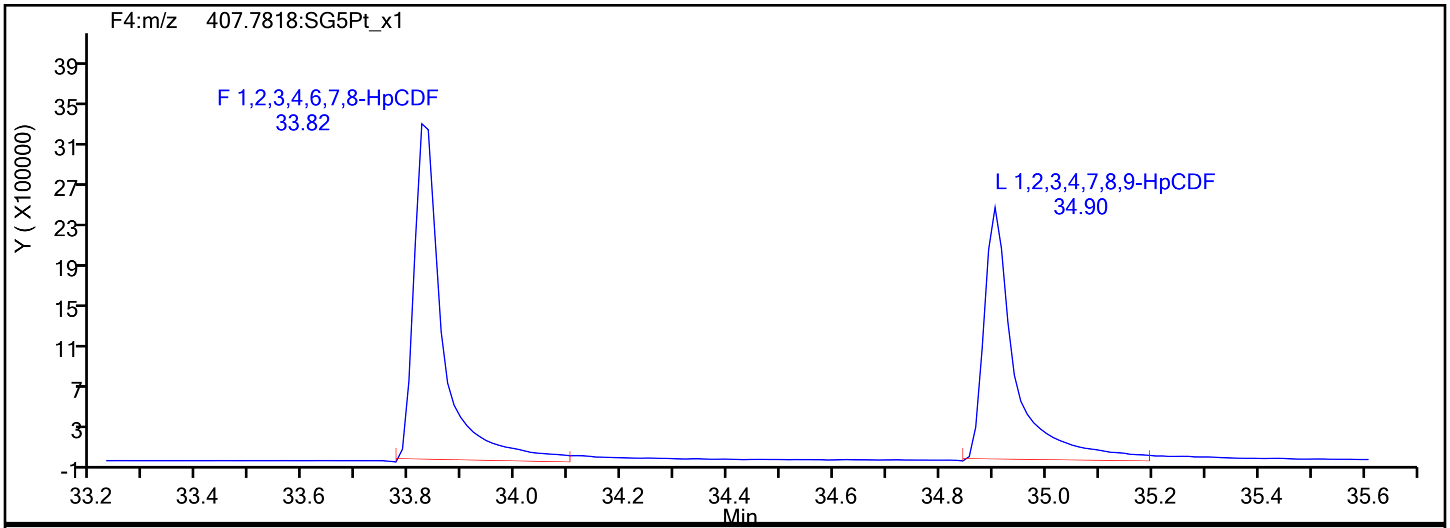

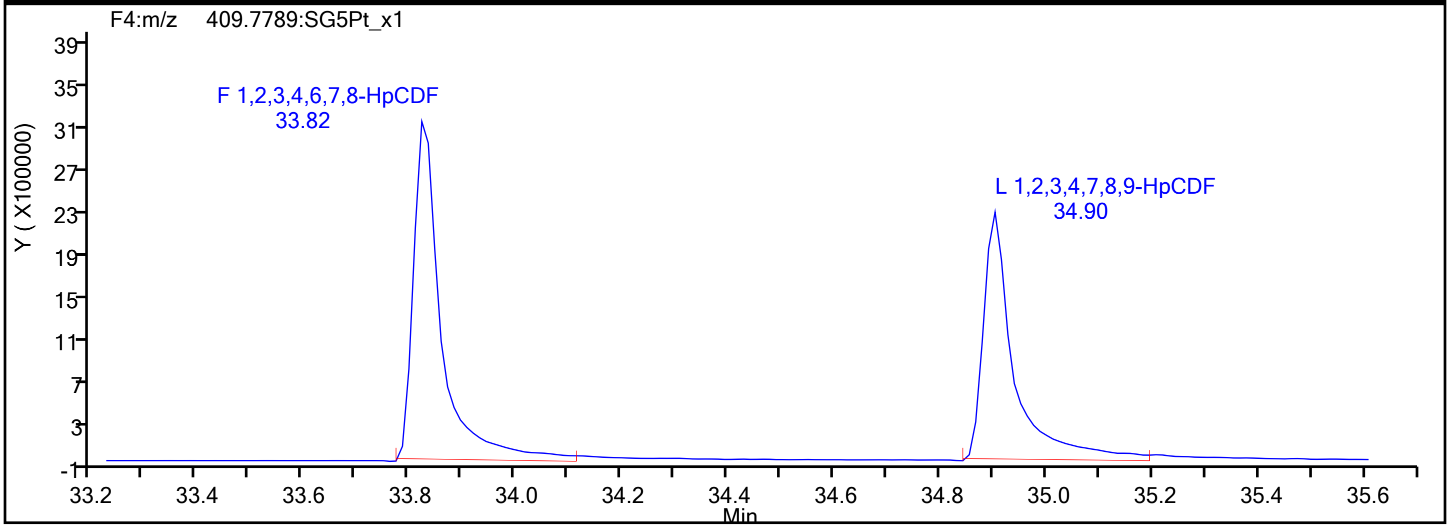

HpCDF Interference Mass

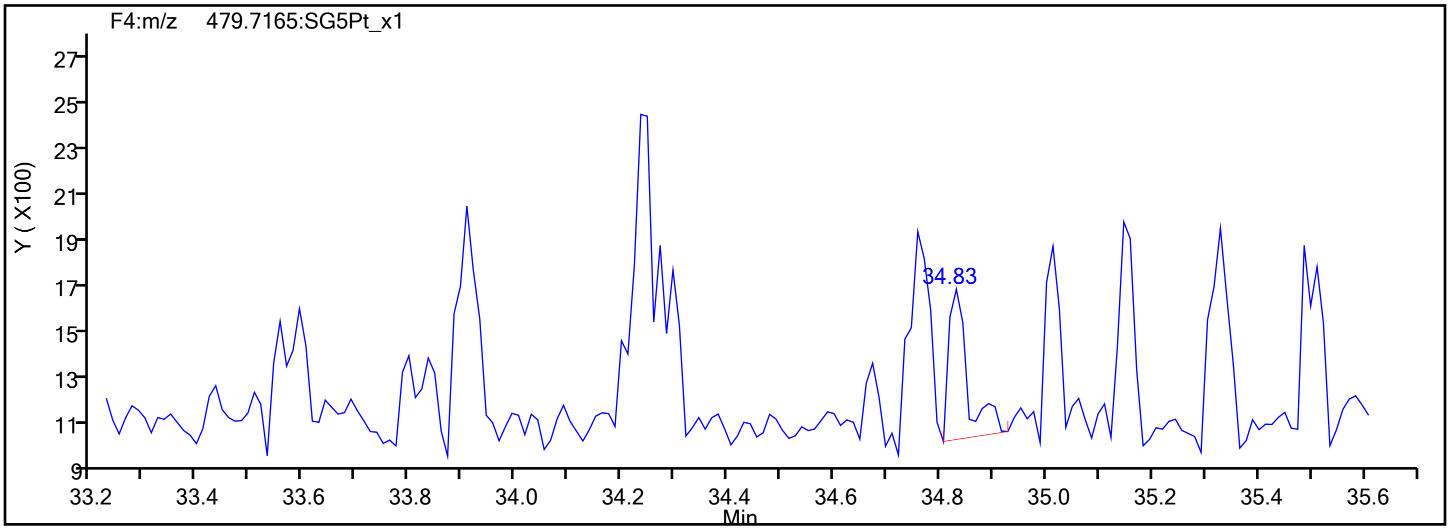

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d

Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: SMA

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215
Sample Line#: 2

Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

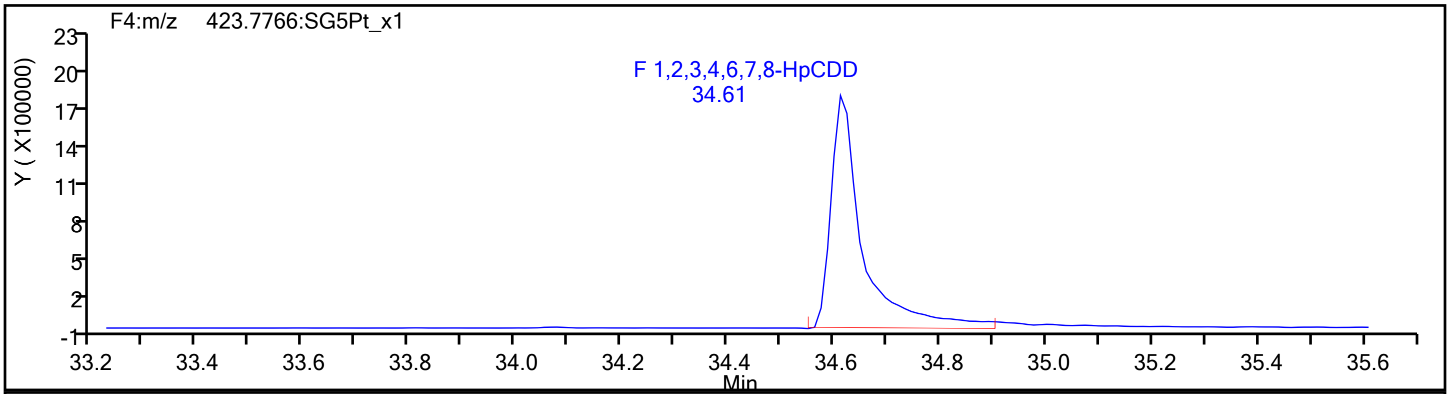

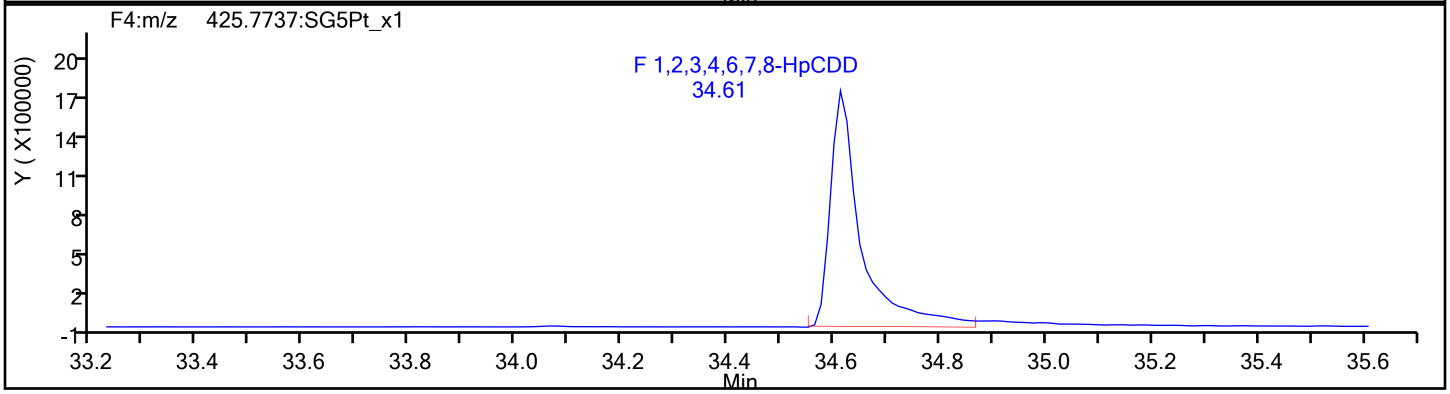

HpCDD Standards

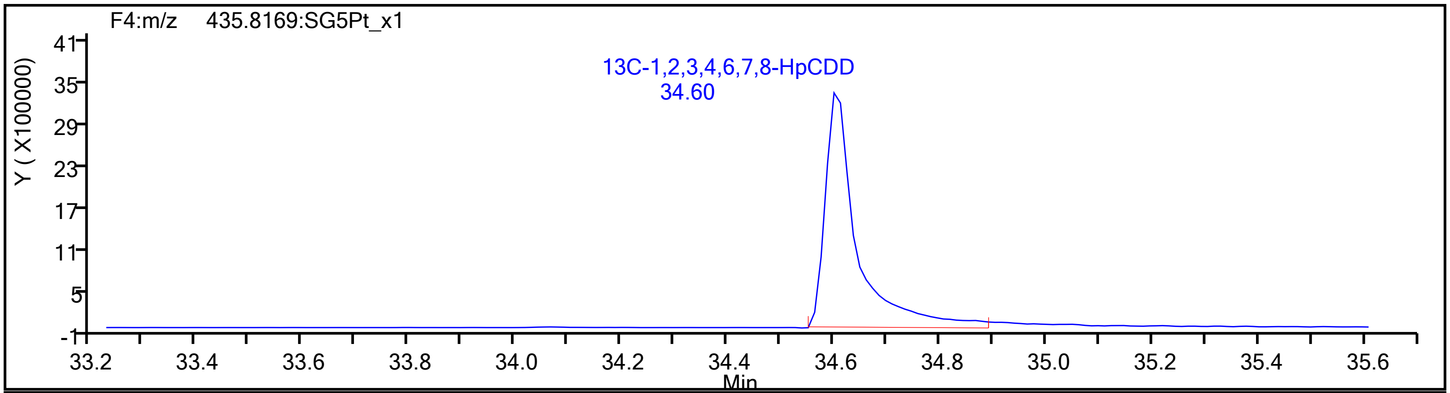

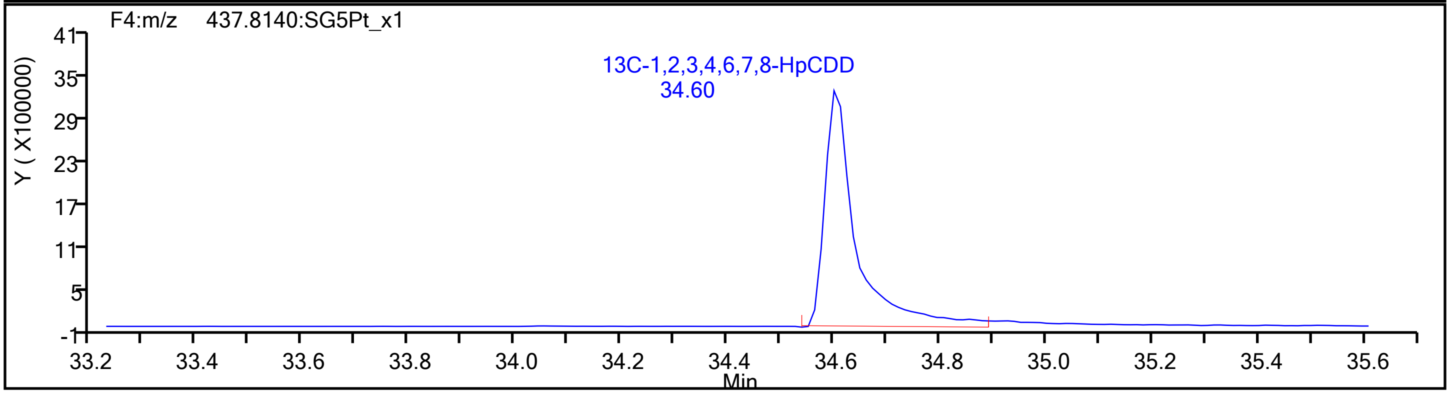

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d
Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

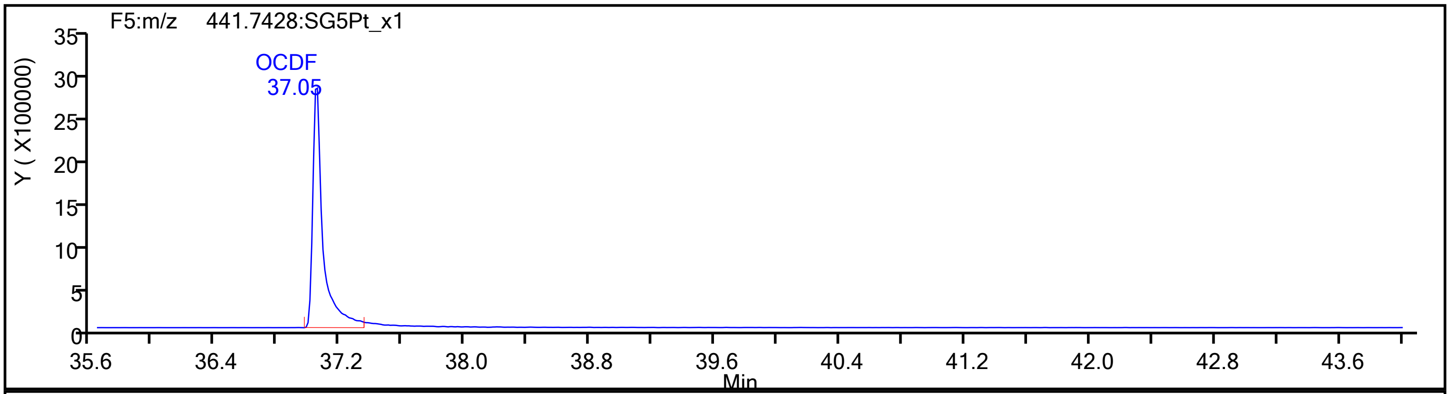

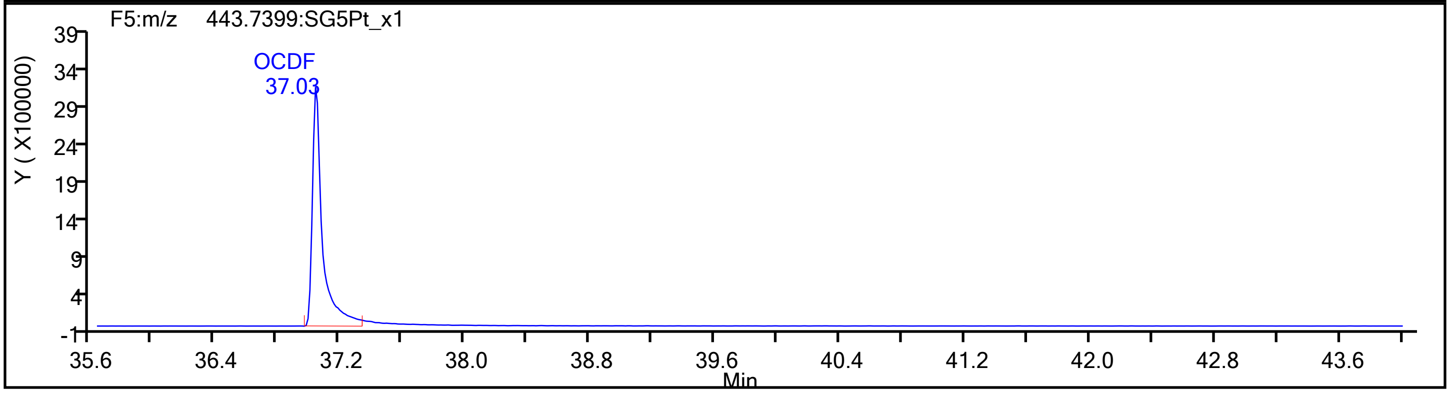

OCDF Standards

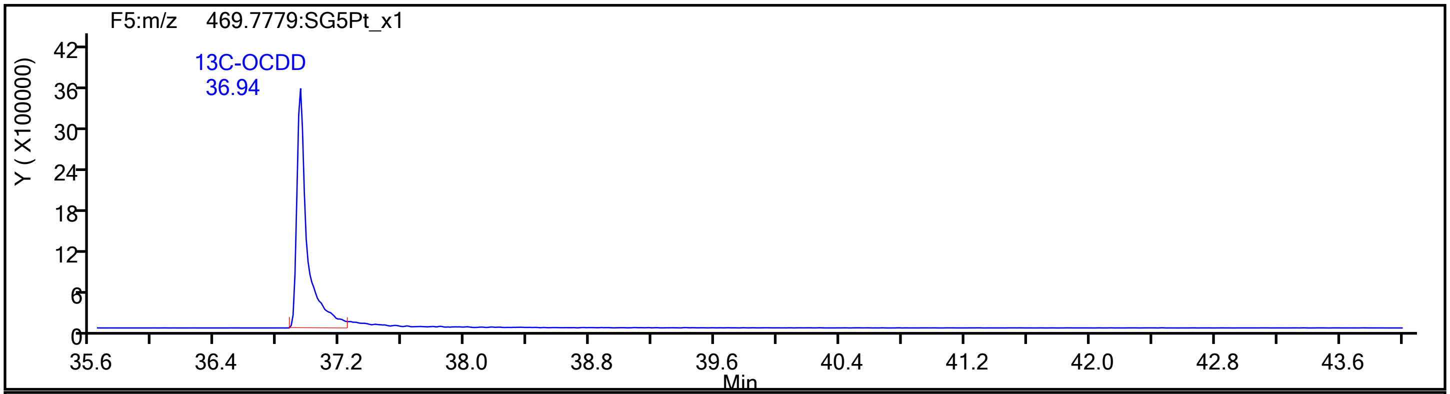

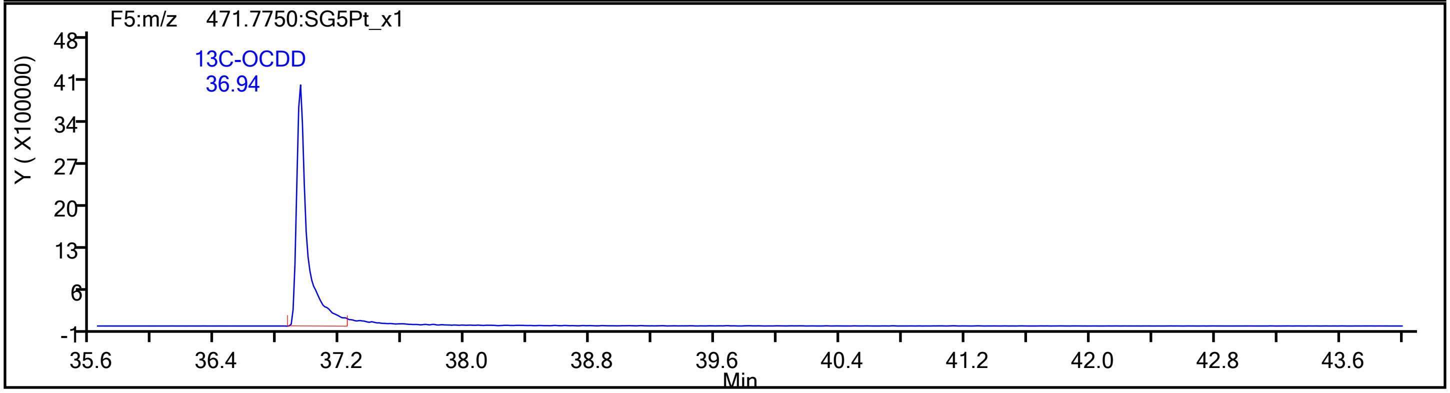

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

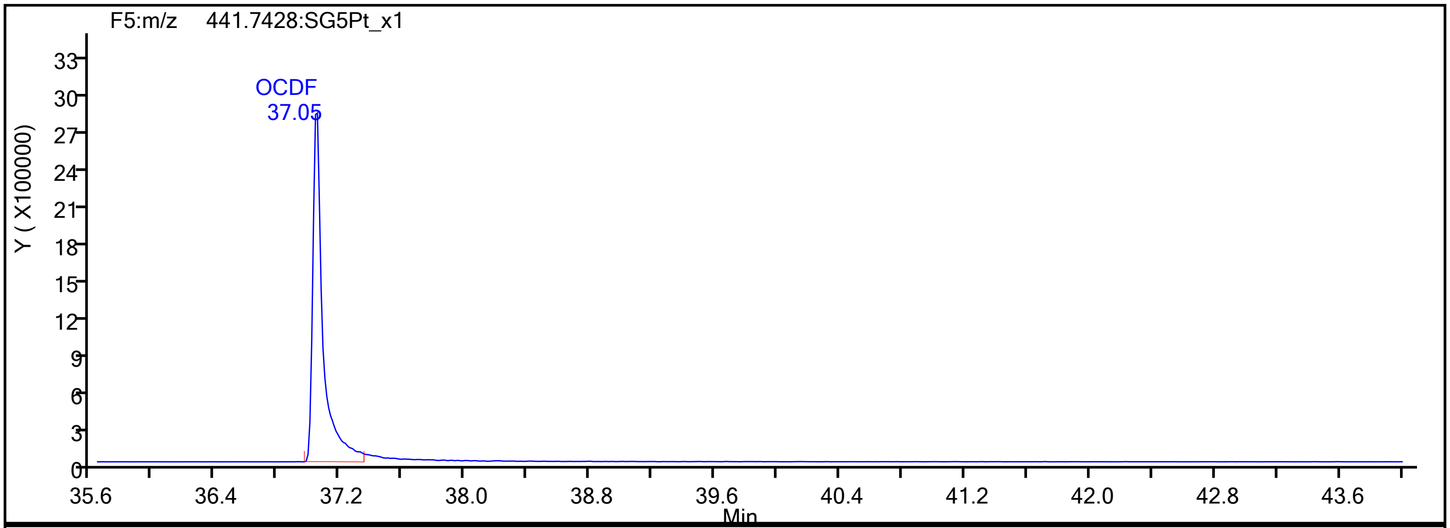

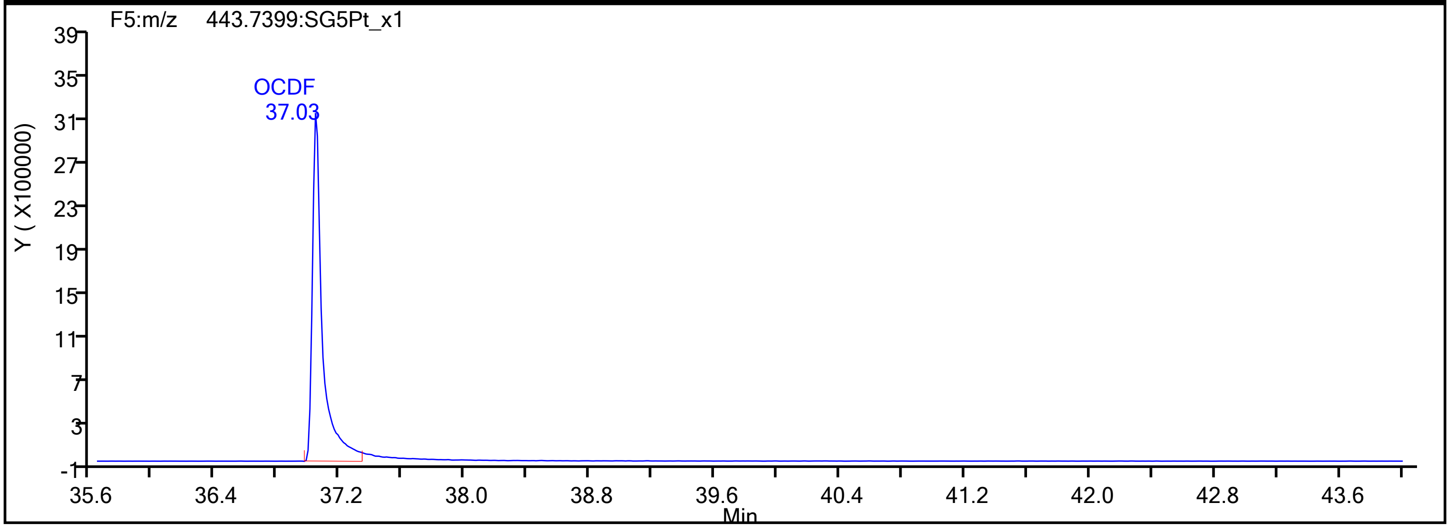

OCDF Interference Mass

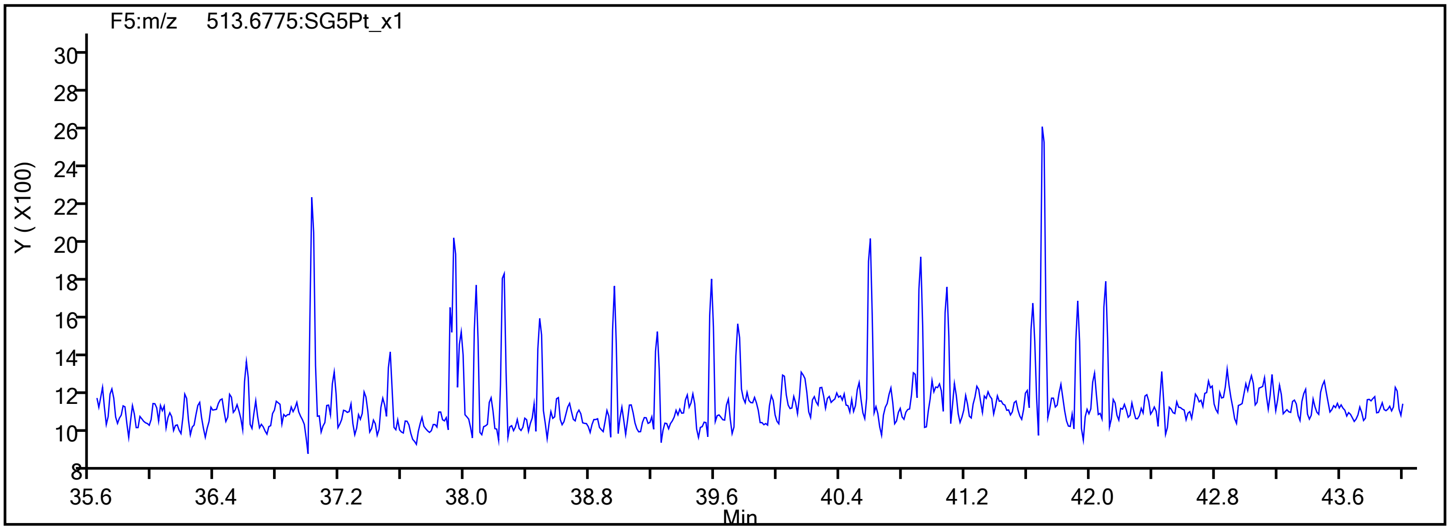

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date: 27-Jan-2021 15:32:05
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

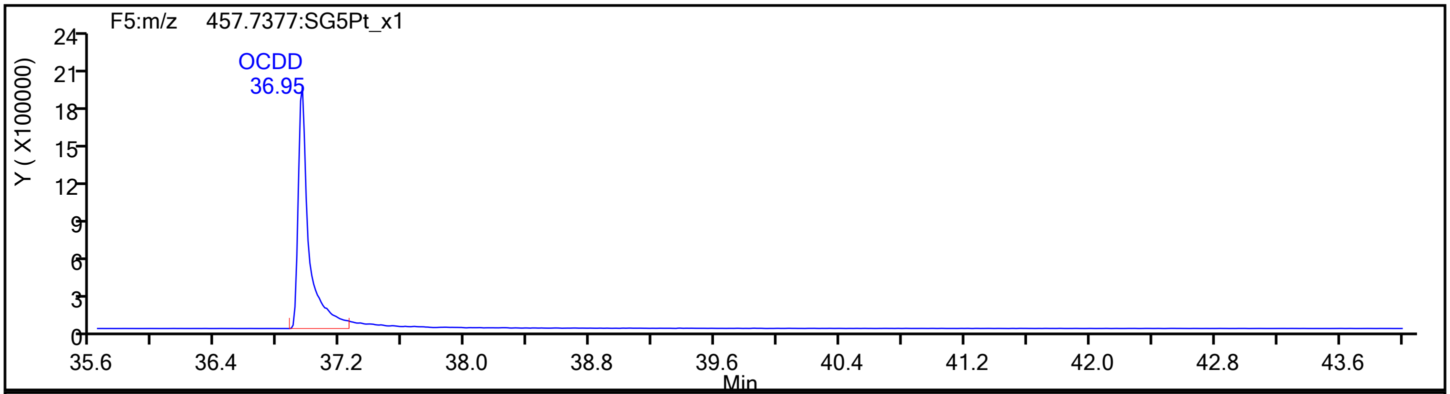

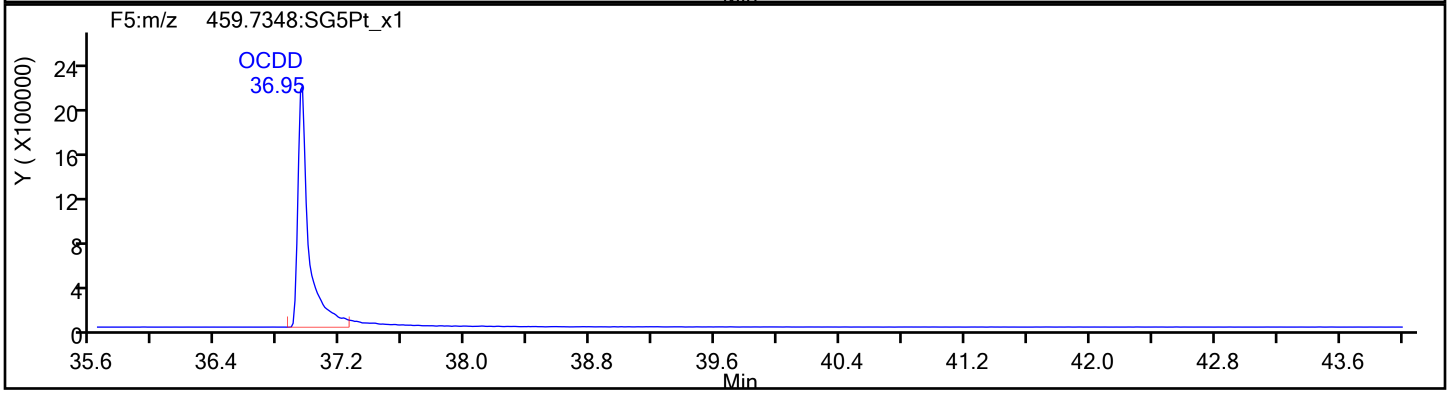

OCDD Standards

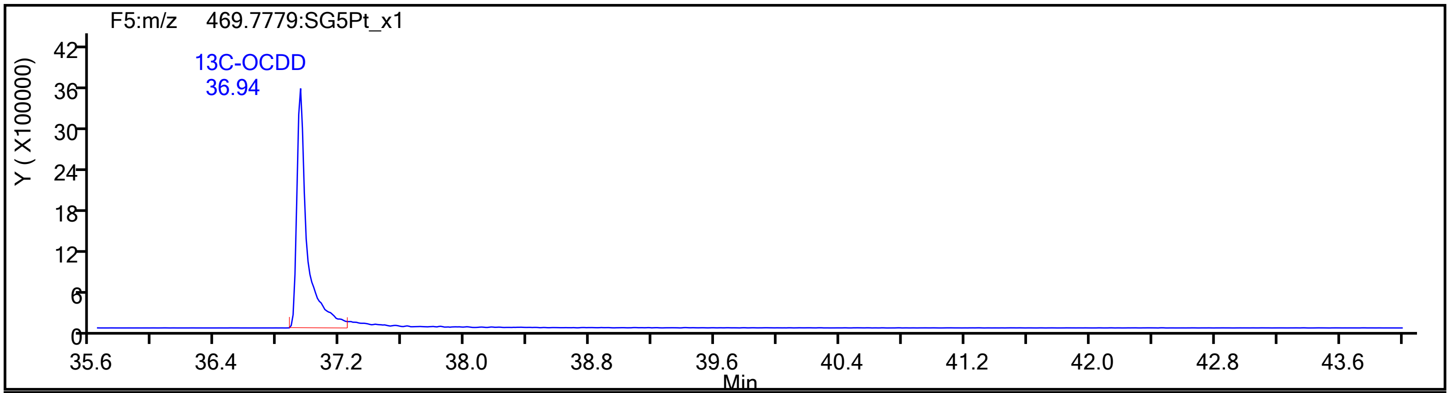

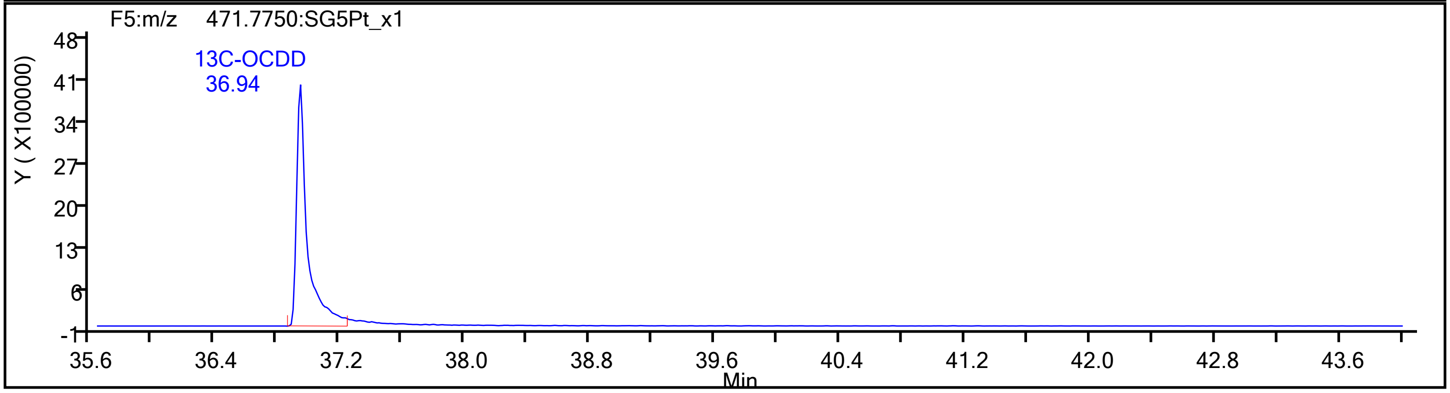

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d

Injection Date: 27-Jan-2021 15:32:05

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

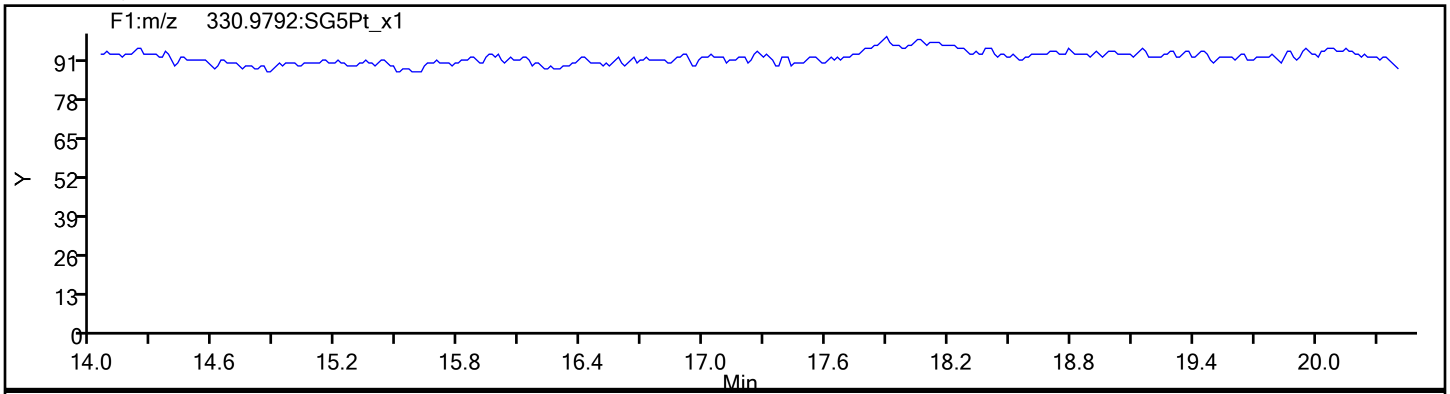

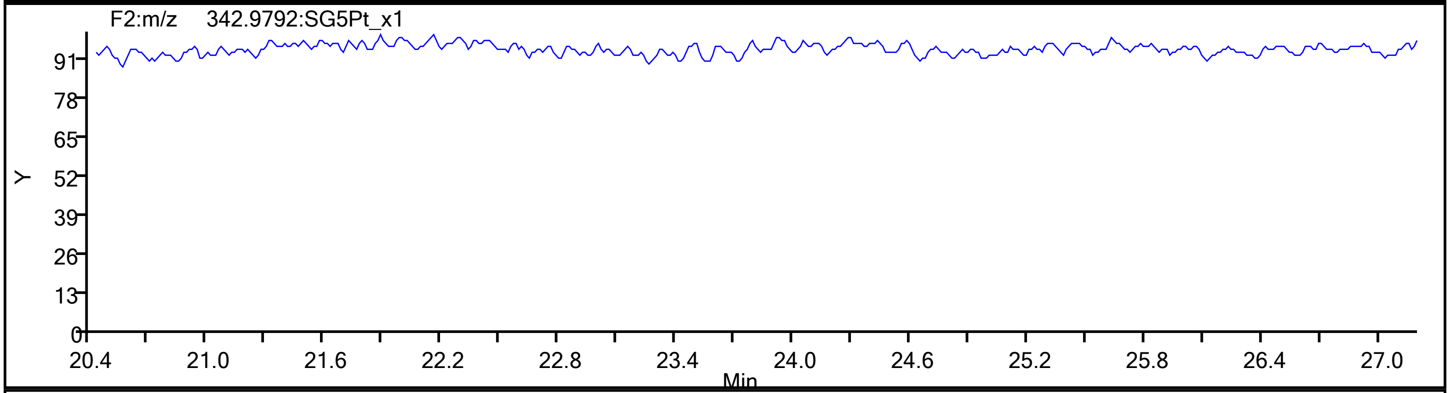

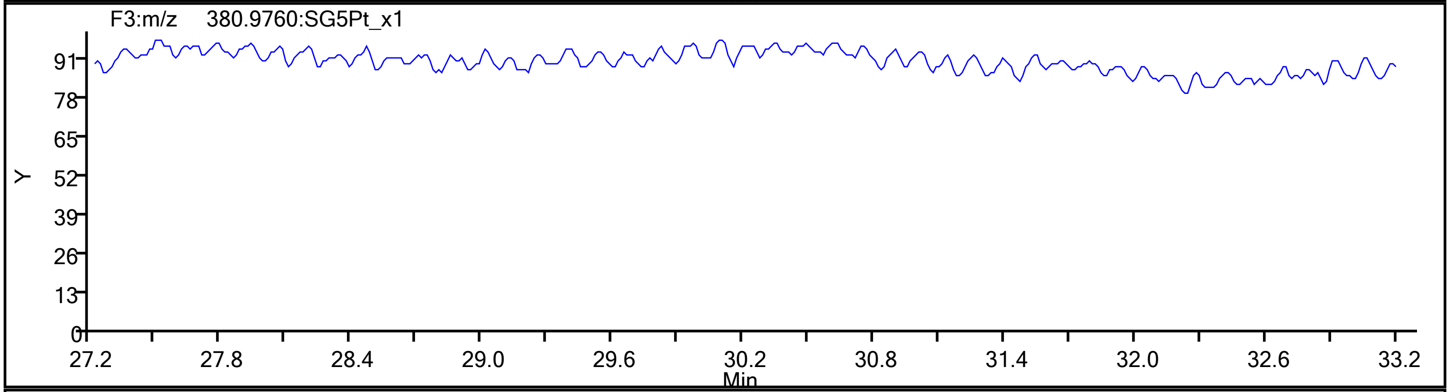

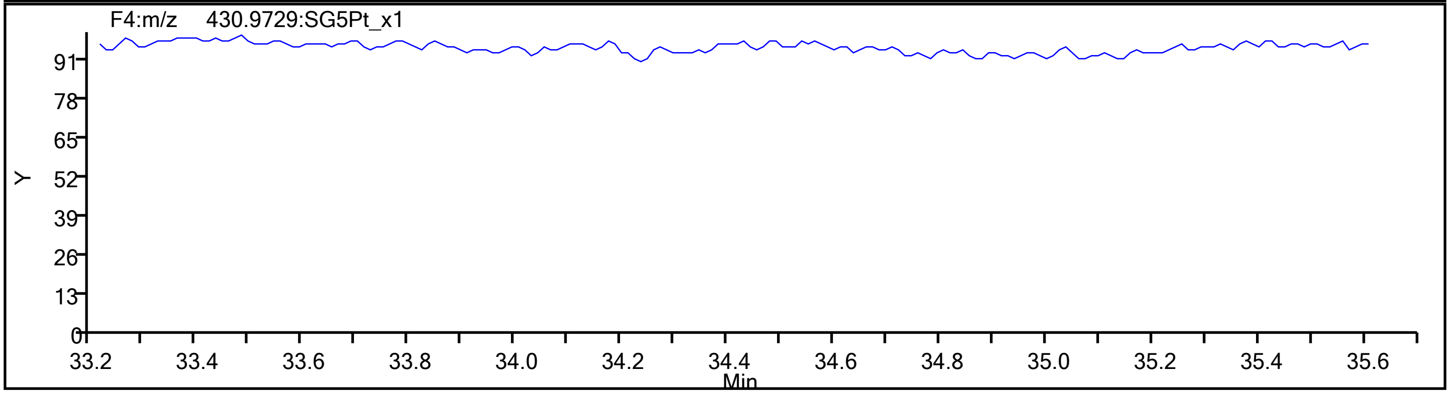

Report Date: 28-Jan-2021 02:01:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_2.d		
Injection Date:	27-Jan-2021 15:32:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

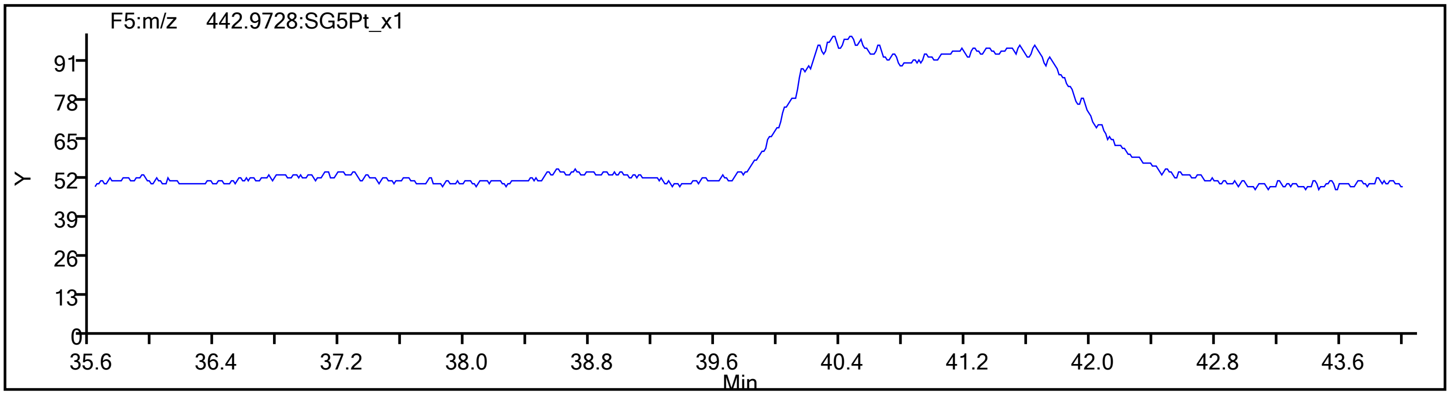

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID: ICV 320-398641/9 Calibration Date: 07/25/2020 03:40

Instrument ID: 11D2 Calib Start Date: 07/24/2020 23:50

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 07/25/2020 02:23

Lab File ID: 24JL2011D2_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.289		40.2	40.0	101	70-130
2,3,7,8-TCDF	AveID	0.9943	1.020		41.0	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.9834	0.9837		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.441		91.8	100	92	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	0.9783		39.3	40.0	98	79-127

Report Date: 27-Jul-2020 12:55:25　　Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	25-Jul-2020 03:40:30	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00045				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:					

Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	27-Jul-2020 12:55:22	Calib Date:	25-Jul-2020 02:23:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d		

Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR
Process Host:	CTX1056		

First Level Reviewer: shardaa　　Date: 27-Jul-2020 12:55:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.778	116560592	0.82	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	168015280	0.75	1.5708	91.8	91.8	0.1647	0.1647	91.76	
2,3,7,8-TCDF	16.999	68560975	0.78	0.9943	41.0	41.0	0.0790	0.0790	103	
D 13C-2,3,7,8-TCDD	15.532	114661040	0.82	0.9834	100.0	100.0	0.5906	0.5906	100	
2,3,7,8-TCDD	15.559	59104173	0.78	1.2822	40.2	40.2	0.1058	0.1058	101	
$ 37Cl4-2,3,7,8-TCDD	15.545	45610530		0.9945	39.3	39.3	0.0631	0.0631	98.37	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045　　Amount Added: 2.00　　Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 25-Jul-2020 03:40:30 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:55:22 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:55:14

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.778	15.779	0		52359952	11252952	38127	95317	295		
333.9339	15.778	15.779	0		64200640	13653626	19733	49332	692	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.970	1	1.077	72084522	13773722	14045	35112	981		
317.9389	16.986	16.970	1	1.077	95930758	18516238	11732	29330	1578	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.999	17.013	0	1.001	29971114	5553334	5398	13495	1029		
305.8987	16.999	17.013	0	1.001	38589861	7327979	4741	11852	1546	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.516	1	0.984	51753611	11252271	38127	95317	295		
333.9339	15.532	15.516	1	0.984	62907429	13583017	19733	49332	688	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.559	15.574	0	1.002	25827866	5369408	4331	10827	1240		
321.8936	15.545	15.574	-1	1.001	33276307	6996771	9142	22855	765	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.572	-2	0.985	45610530	9783965	6253	15632	1565		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

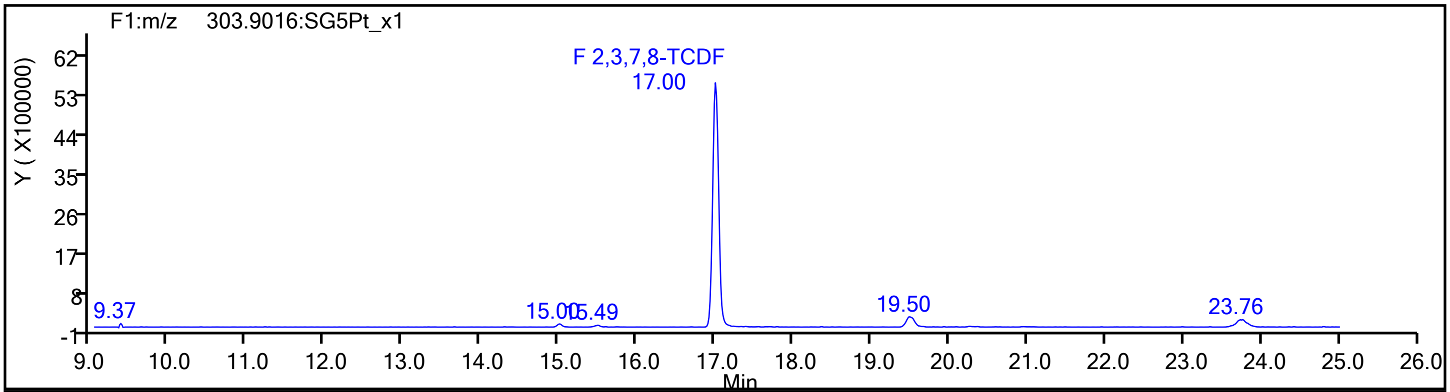

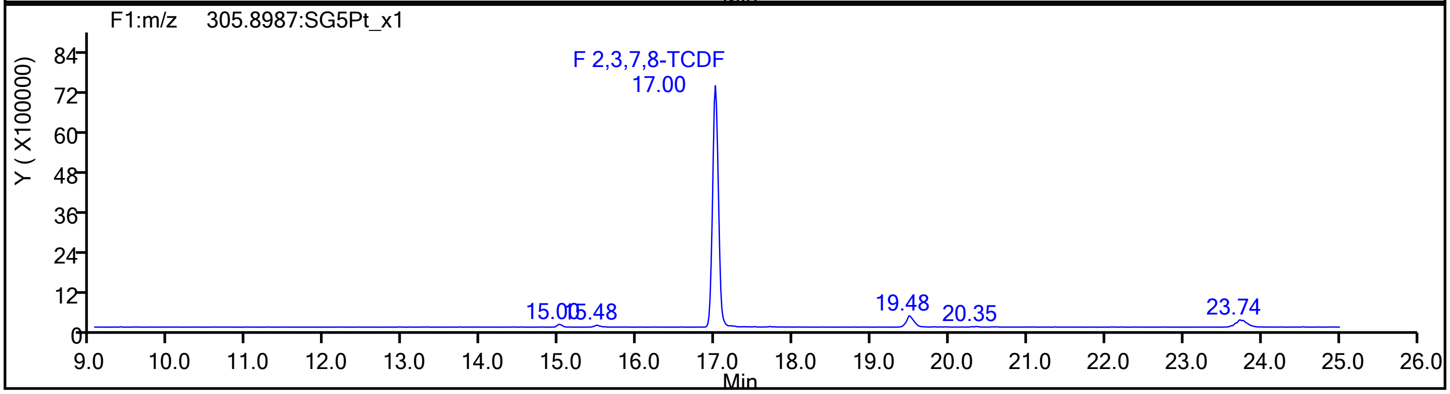

TCDF Standards

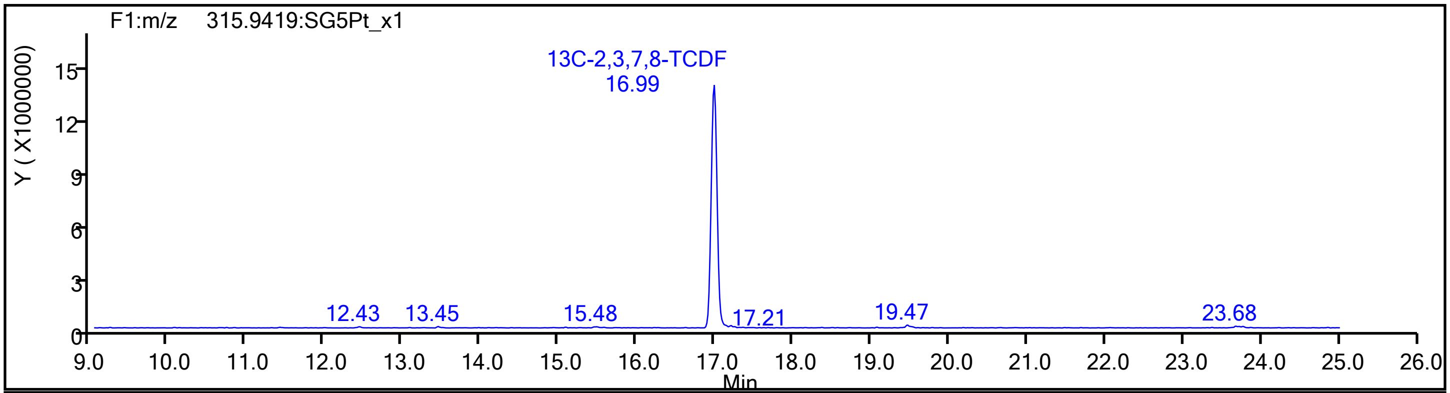

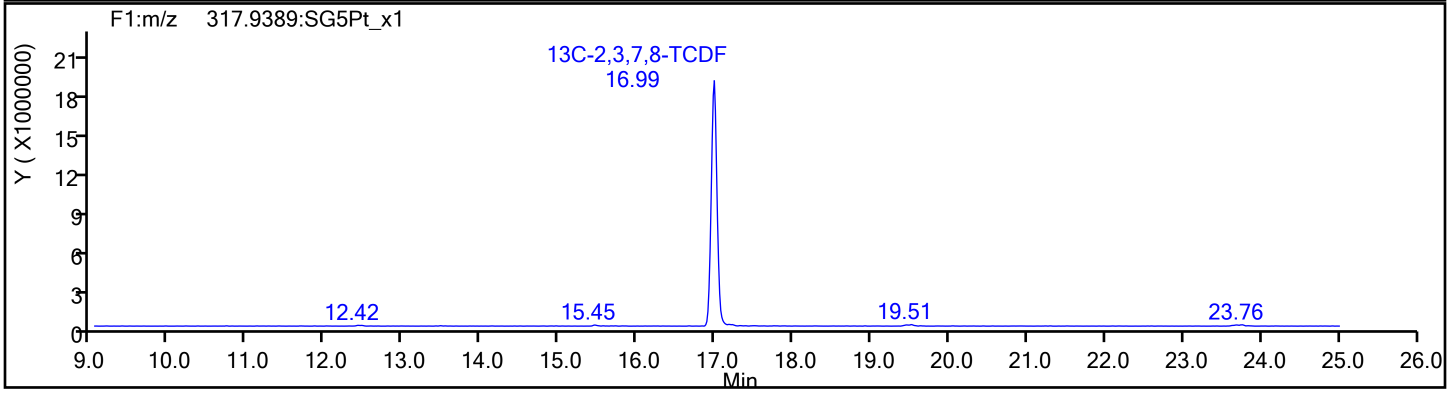

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

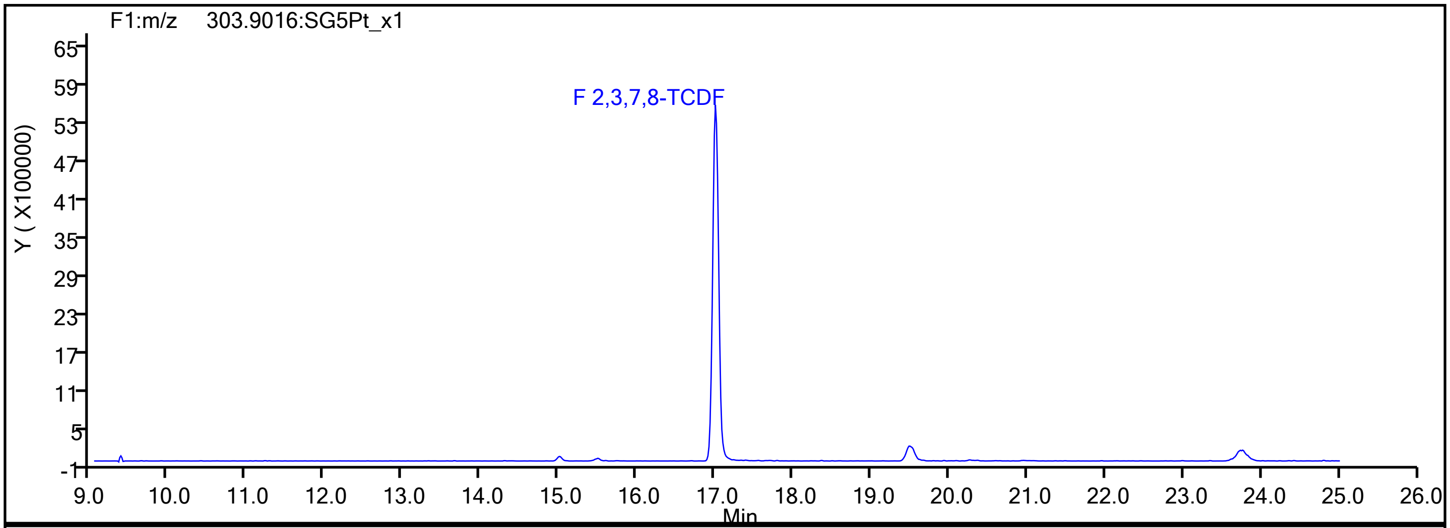

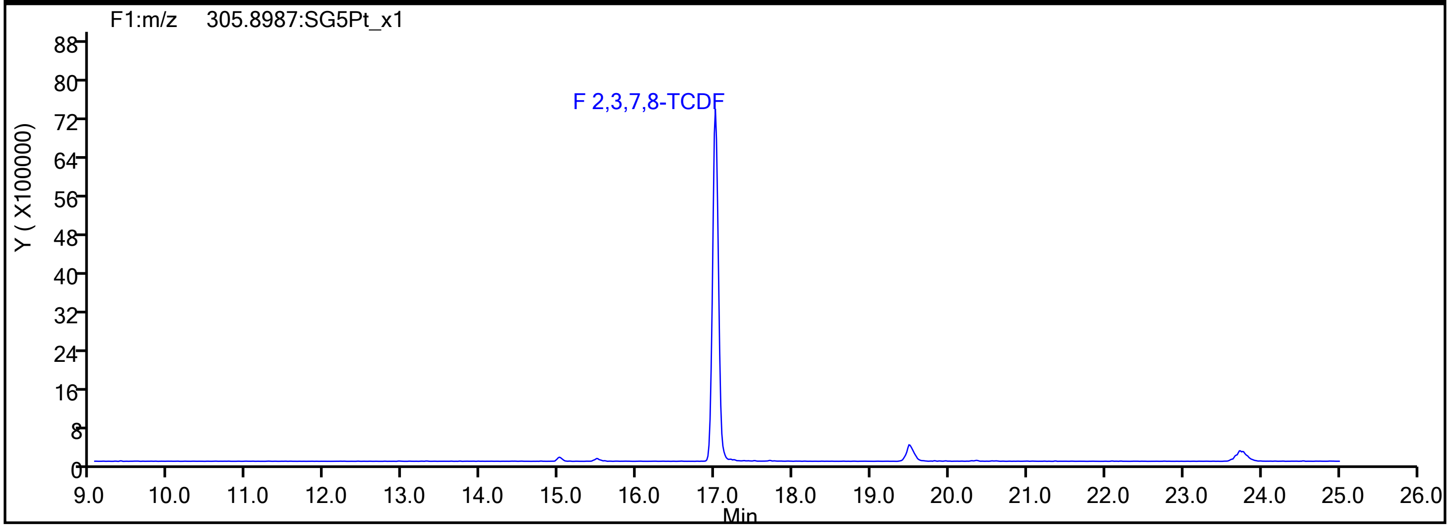

TCDF Interference Mass

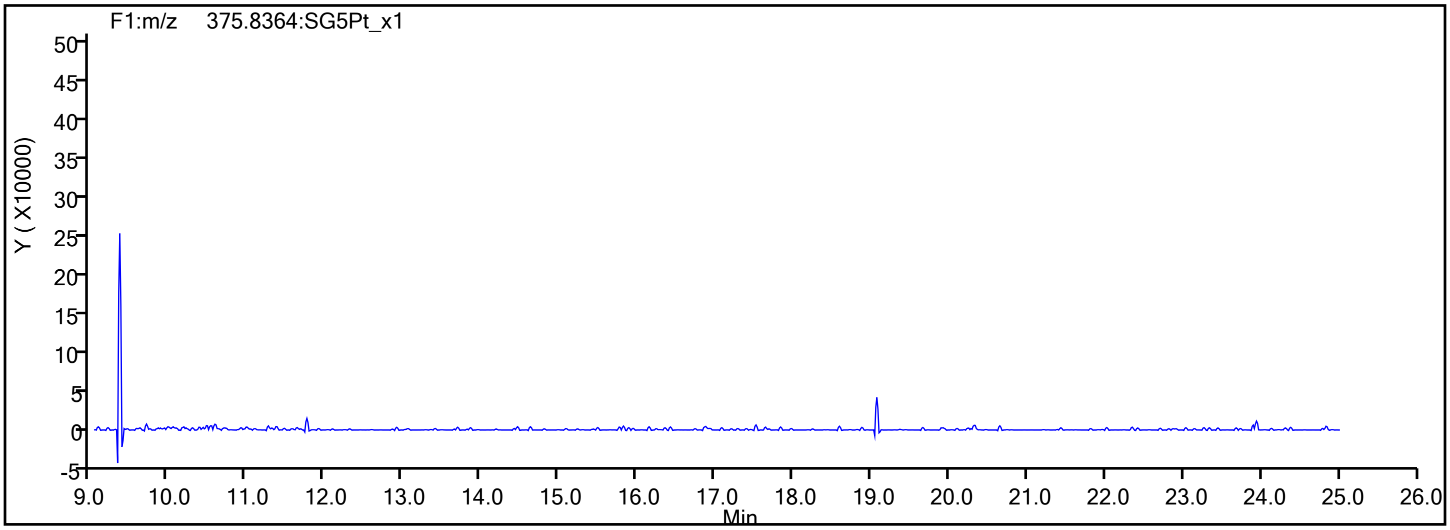

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d

Injection Date: 25-Jul-2020 03:40:30 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 398641 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

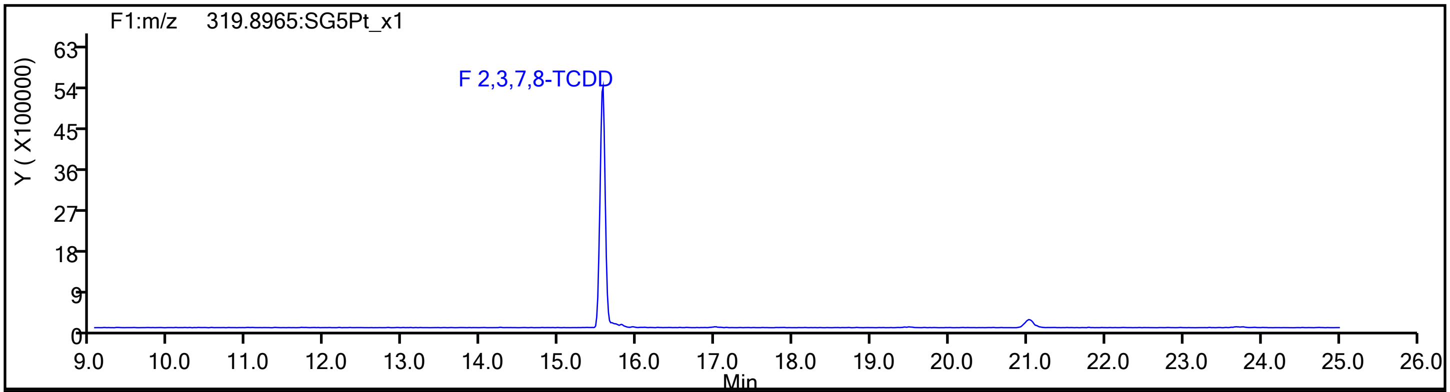

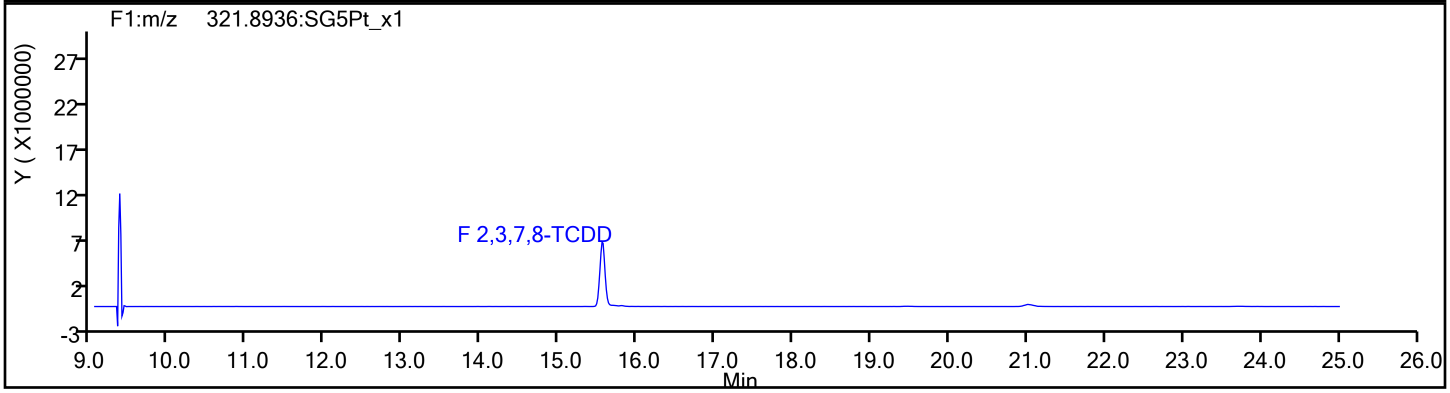

TCDD Standards

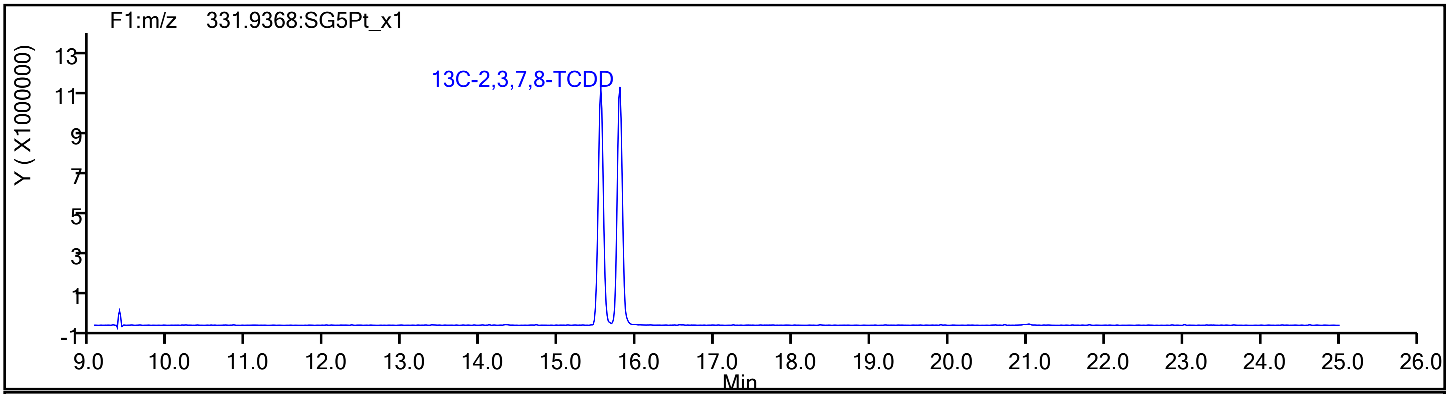

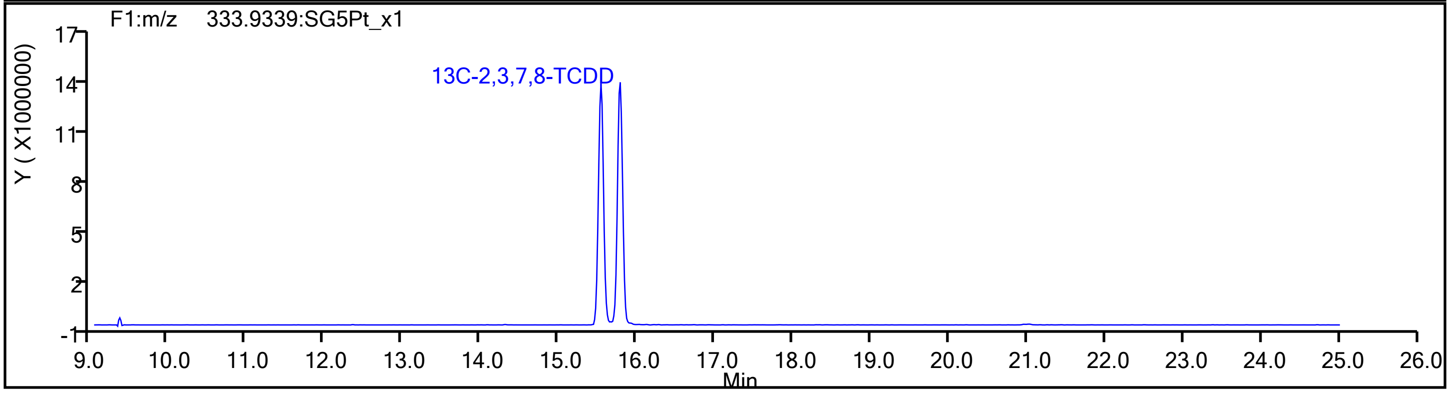

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

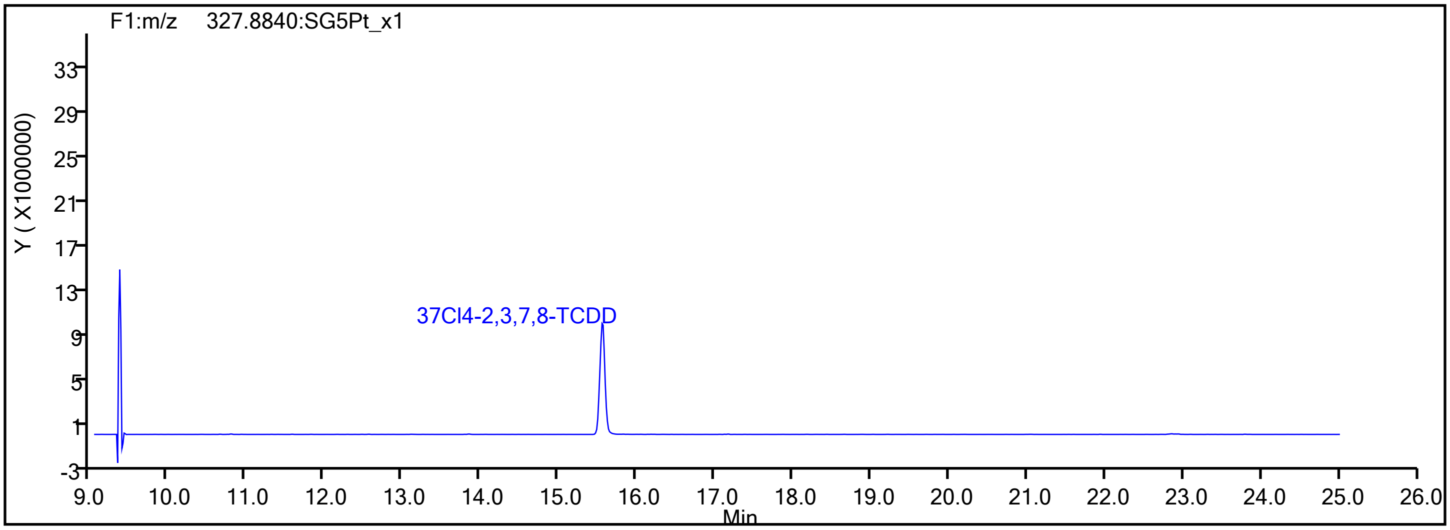

37Cl4-TCDD Standards

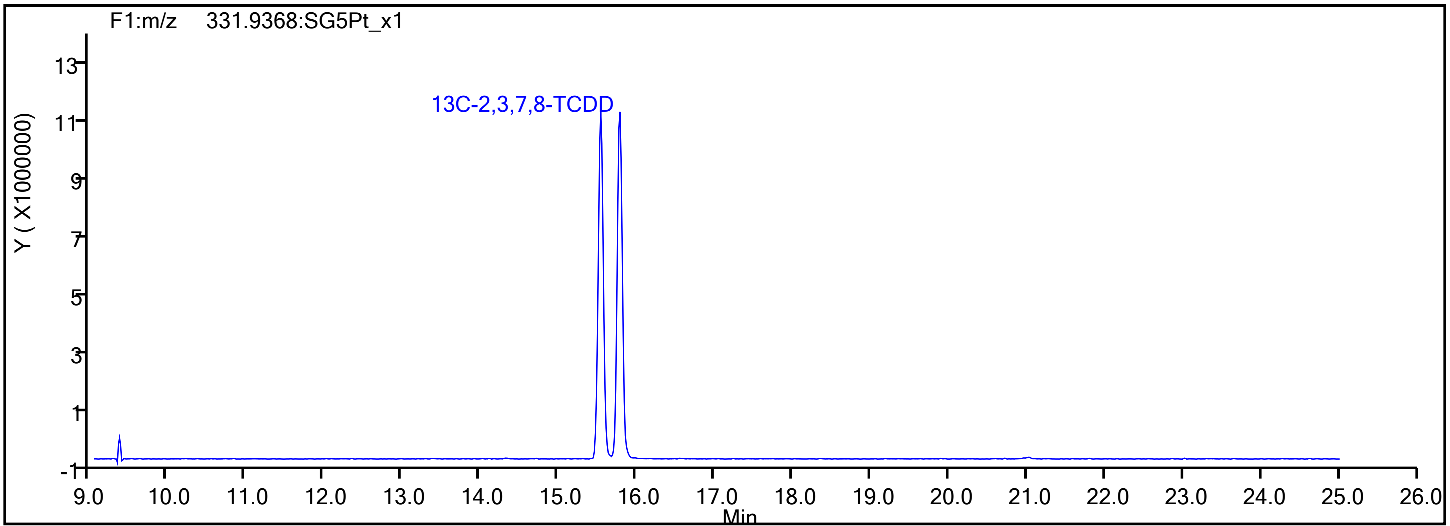

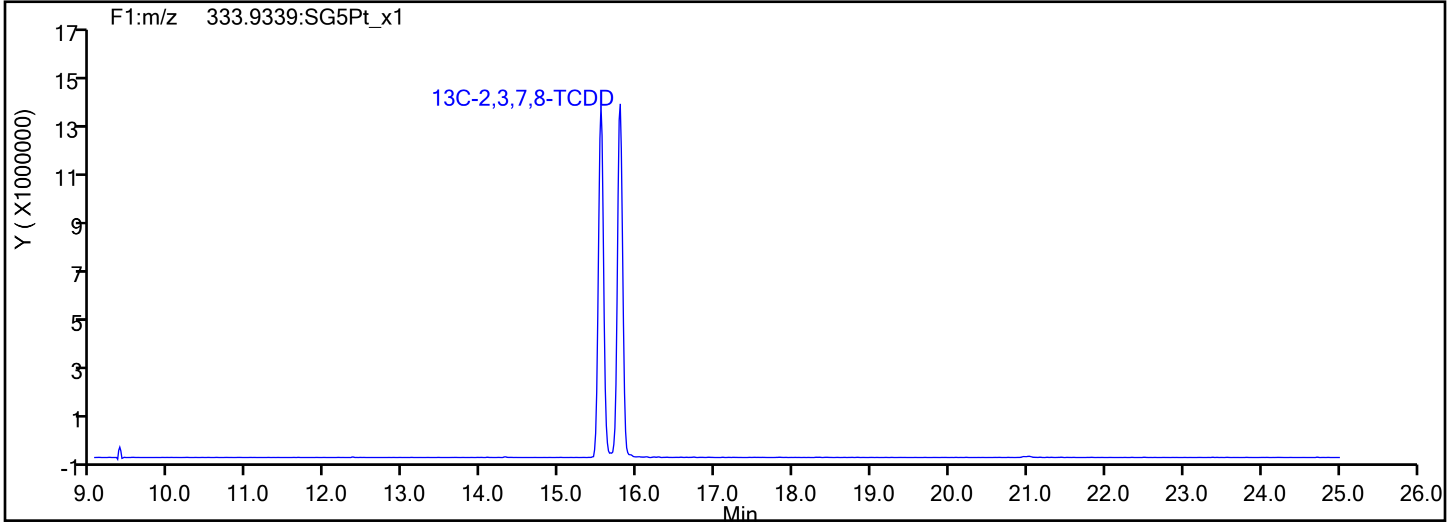

Report Date: 27-Jul-2020 12:55:25 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_009.d		
Injection Date:	25-Jul-2020 03:40:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

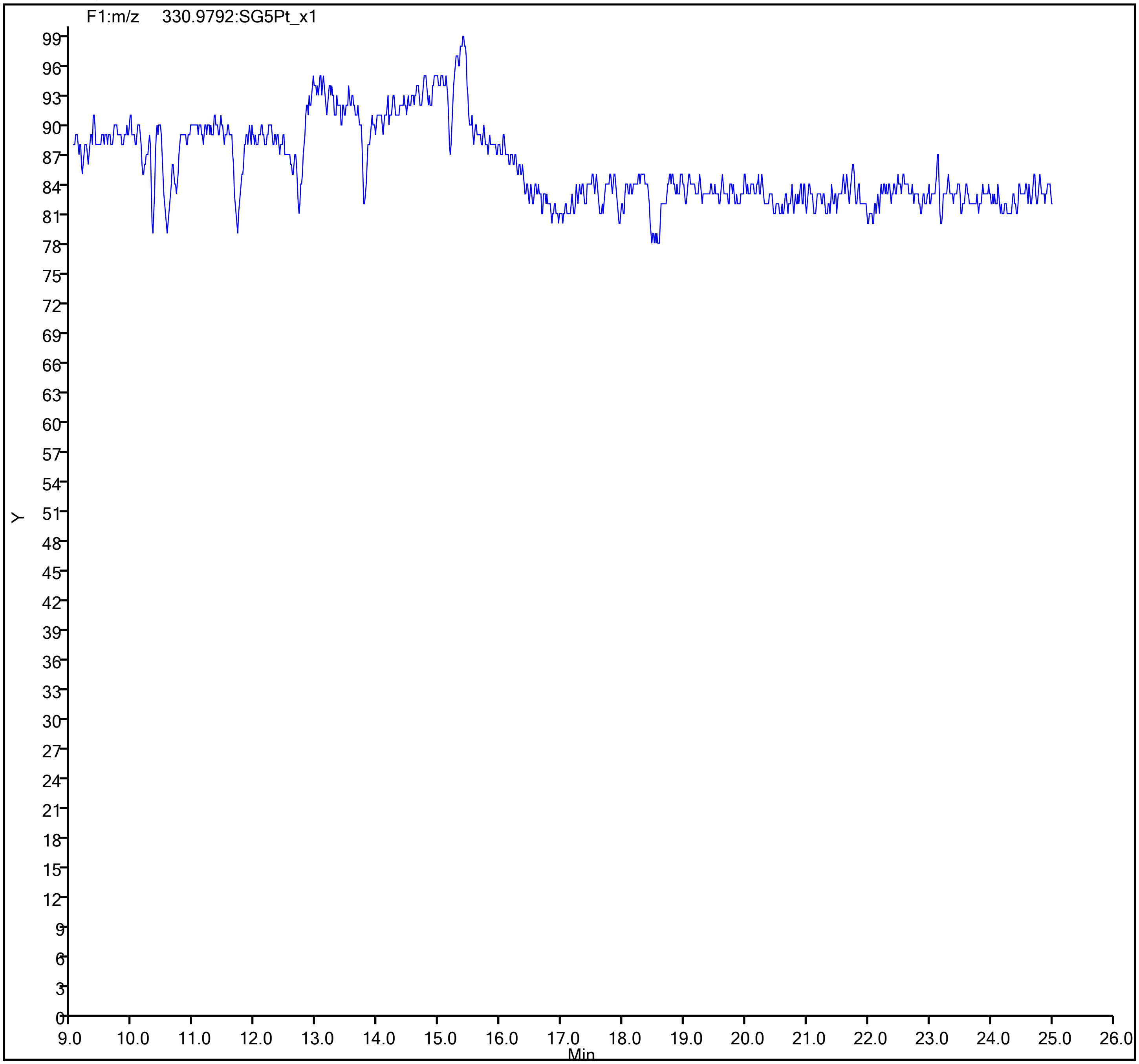

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-68943-1

SDG No.:

Lab Sample ID: CCV 320-456198/2

Calibration Date: 01/26/2021 00:34

Instrument ID: 11D2

Calib Start Date: 07/24/2020 23:50

GC Column: DB-225

ID: 0.32(mm)

Calib End Date: 07/25/2020 02:23

Lab File ID: 25JA2111D2_002.d

Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.282	1.081		8.43	10.0	84	78-129
2,3,7,8-TCDF	AveID	0.9943	0.9123		9.18	10.0	92	84-120
13C-2,3,7,8-TCDD	Ave	0.9834	1.036		105	100	105	82-121
13C-2,3,7,8-TCDF	Ave	1.571	1.647		105	100	105	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9945	1.000		10.1	10.0	101	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
25JA2111D2	1	CPS 012521	CPS HRDXNCP_00042				1.00000	
25JA2111D2	2	CCV 012521	CCV CS-4 HRDXNL4_00096				1.00000	
25JA2111D2	3	SB 012521	SB Solvent Blank C-14				1.00000	
25JA2111D2	4	320-452668	320-68943-A-2-A (10X)	20	1613B/Water	D211	1.00000	L
25JA2111D2	5	320-452668	320-68943-A-1-A (20X)	20	1613B/Water		1.00000	L
25JA2111D2	6	SB 012521A	SB Solvent Blank C-14				1.00000	
25JA2111D2	7						1.00000	
25JA2111D2	8						1.00000	
25JA2111D2	9						1.00000	
25JA2111D2	10						1.00000	
25JA2111D2	11						1.00000	
25JA2111D2	12						1.00000	
25JA2111D2	13						1.00000	
25JA2111D2	14						1.00000	
25JA2111D2	15		ALM 01-25-21				1.00000	
25JA2111D2	16						1.00000	

Logfile checked
01/26/21 SMA

Peak Locate Examination:25-JAN-2021:23:53 File:25JA2111D2
Experiment:DB225RES Function:1 Reference:PFK

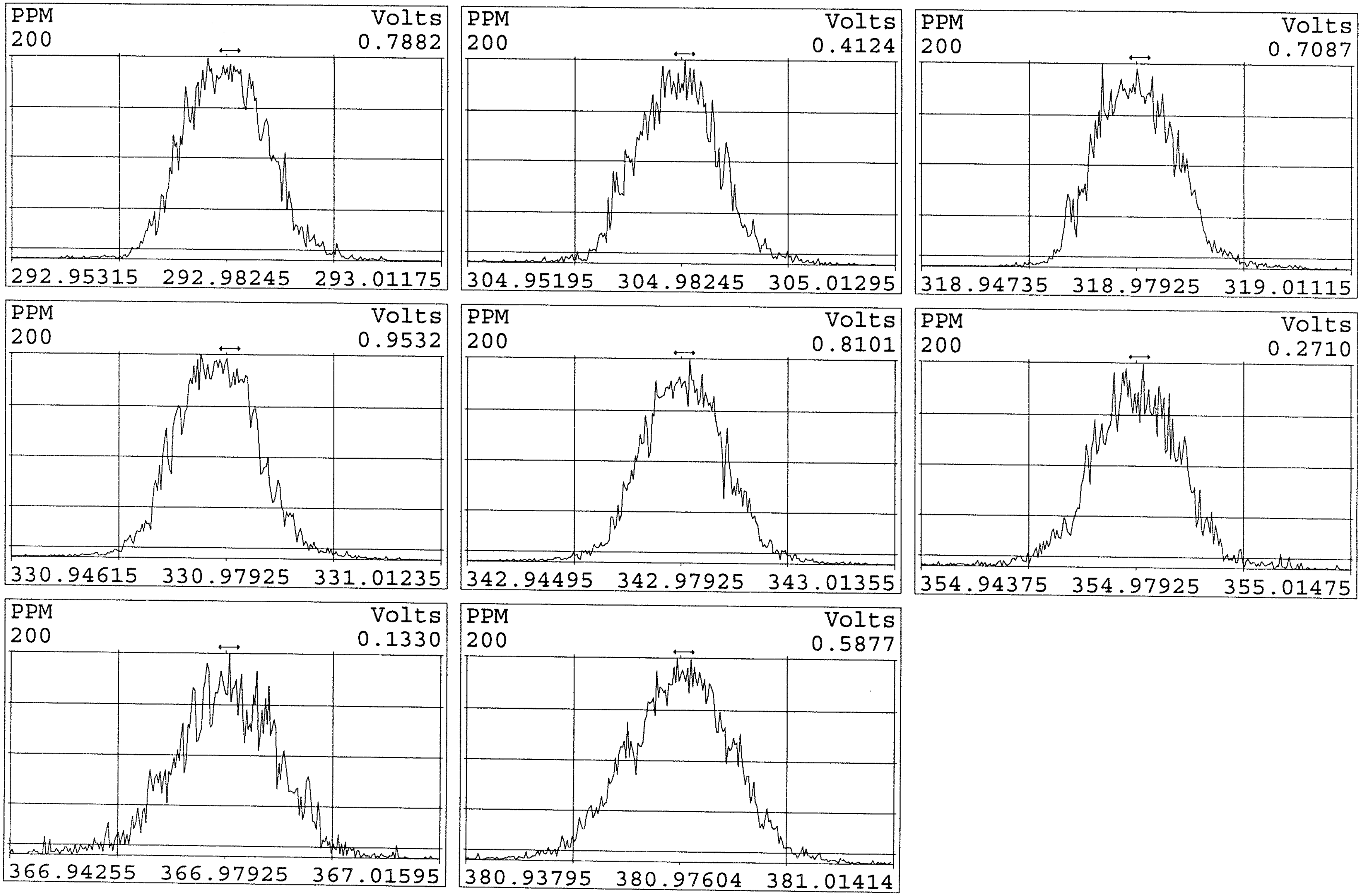

Peak Locate Examination:26-JAN-2021:04:27 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

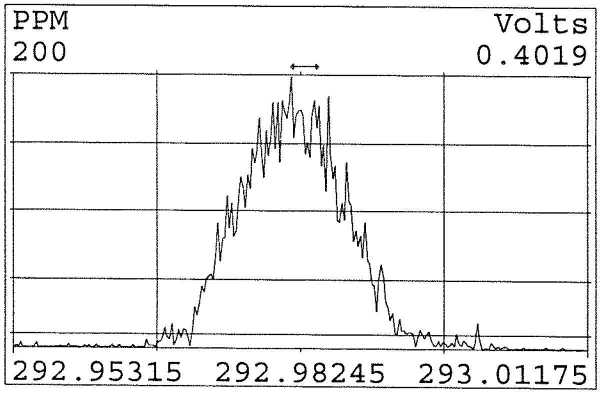

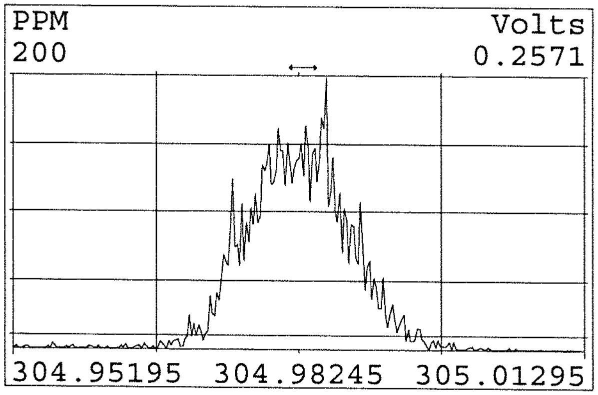

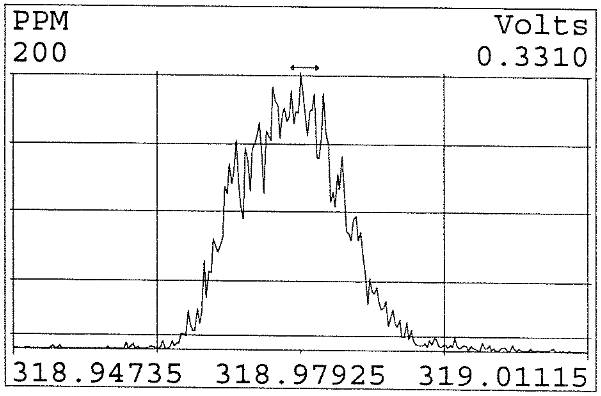

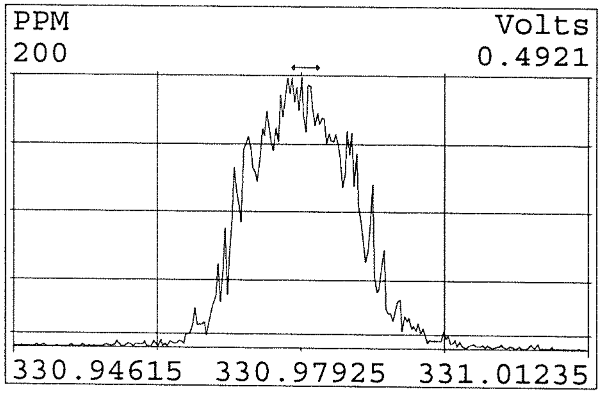

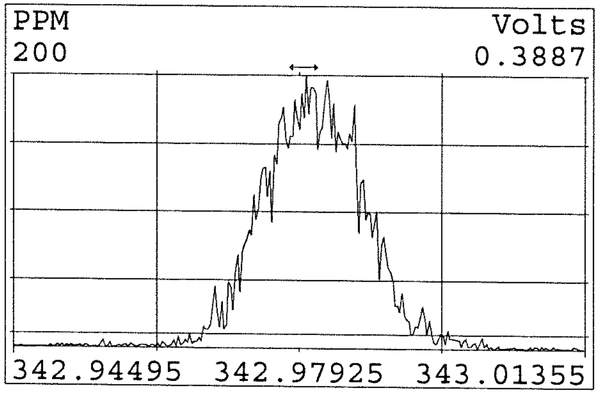

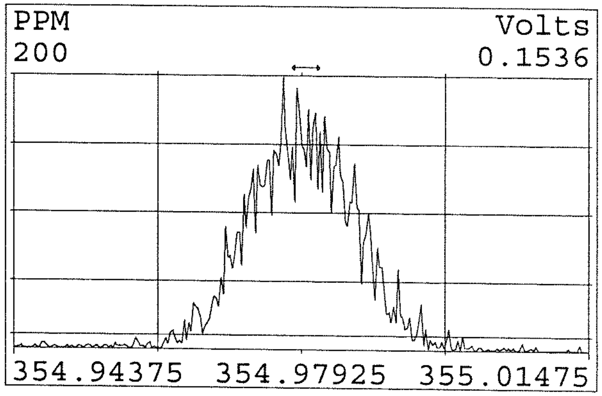

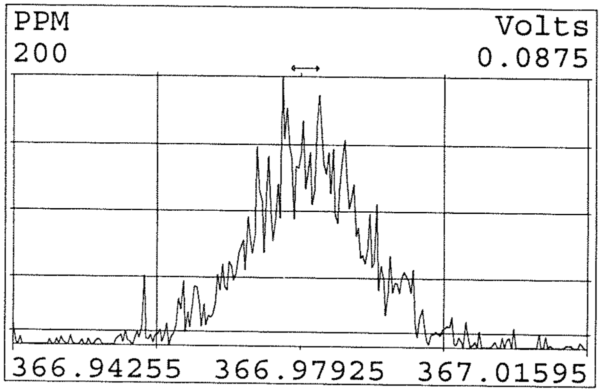

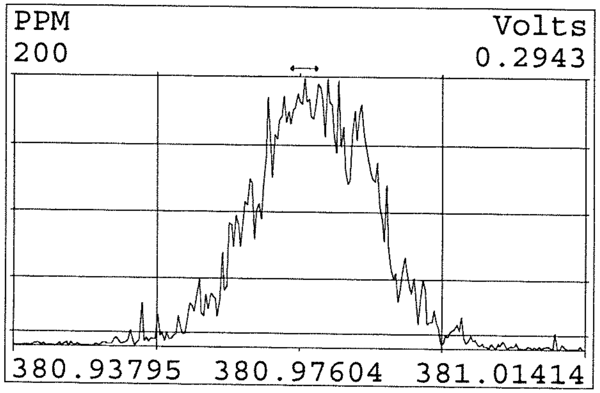

Report Date: 27-Jan-2021 20:41:50 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 26-Jan-2021 00:34:23 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00096
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.150	105975187	0.78	1.2E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.289	174496725	0.81	1.5708	104.8	104.8	0.2587	0.2587	105	
2,3,7,8-TCDF	16.302	15919653	0.77	0.9943	9.176	9.176	0.0427	0.0427	91.76	
D 13C-2,3,7,8-TCDD	14.889	109804541	0.76	0.9834	105.4	105.4	0.3969	0.3969	105	
$ 37Cl4-2,3,7,8-TCDD	14.903	10602668		0.9945	10.1	10.1	0.0447	0.0447	101	
2,3,7,8-TCDD	14.917	11867988	0.82	1.2822	8.429	8.429	0.1977	0.1977	84.29	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00096 Amount Added: 2.00 Units: uL

Report Date: 27-Jan-2021 20:41:50		Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 26-Jan-2021 00:34:23		ALS Bottle#: 0		Worklist Smp#: 2
Injection Vol: 2.0 ul		Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00096
Misc. Info.: DB225RES
Operator ID:		Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49		Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution		Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm)		Det: F1:HRSIR
Process Host: CTX1629

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.150	15.150	0		46419917	11569038	12150	30375	952		
333.9339	15.150	15.150	0		59555270	14242938	28146	70365	506	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.289	16.289	0	1.075	78317897	17333485	24034	60085	721		
317.9389	16.289	16.289	0	1.075	96178828	20802325	17924	44810	1161	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.302	16.302	0	1.001	6939474	1487734	3046	7615	488		
305.8987	16.302	16.302	0	1.001	8980179	1975123	3426	8565	577	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.889	14.889	0	0.983	47556204	11793900	12150	30375	971		
333.9339	14.889	14.889	0	0.983	62248337	15199093	28146	70365	540	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.903	14.903	0	0.984	10602668	2545758	4594	11485	554		
2,3,7,8-TCDD											
319.8965	14.917	14.917	0	1.002	5360683	1335855	11676	29190	114		
321.8936	14.917	14.917	0	1.002	6507305	1622995	15692	39230	103	0.82(0.65-0.89)	

Reagents:

HRDXNL4_00096		Amount Added: 2.00		Units: uL

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d		
Injection Date:	26-Jan-2021 00:34:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456198	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

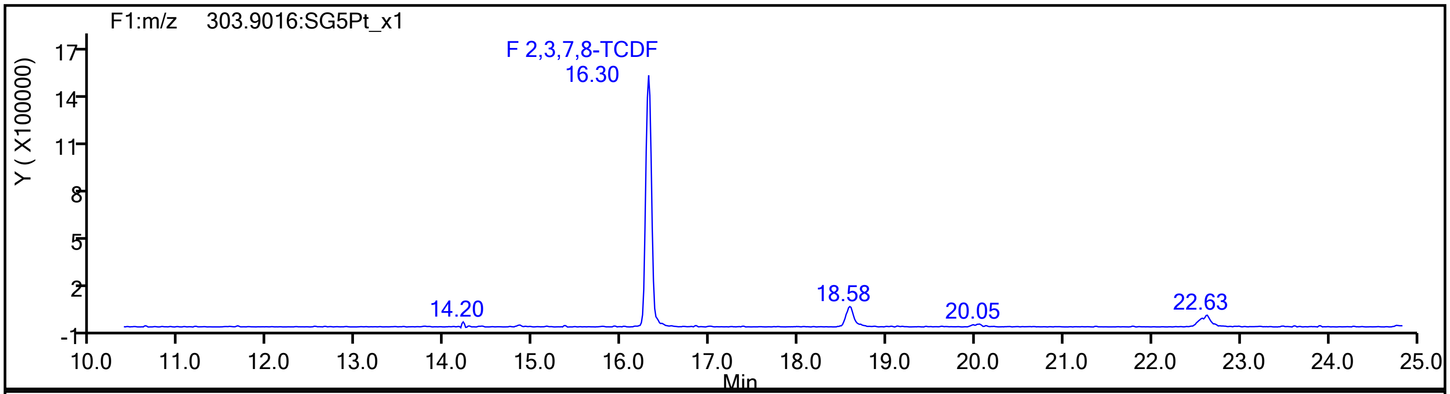

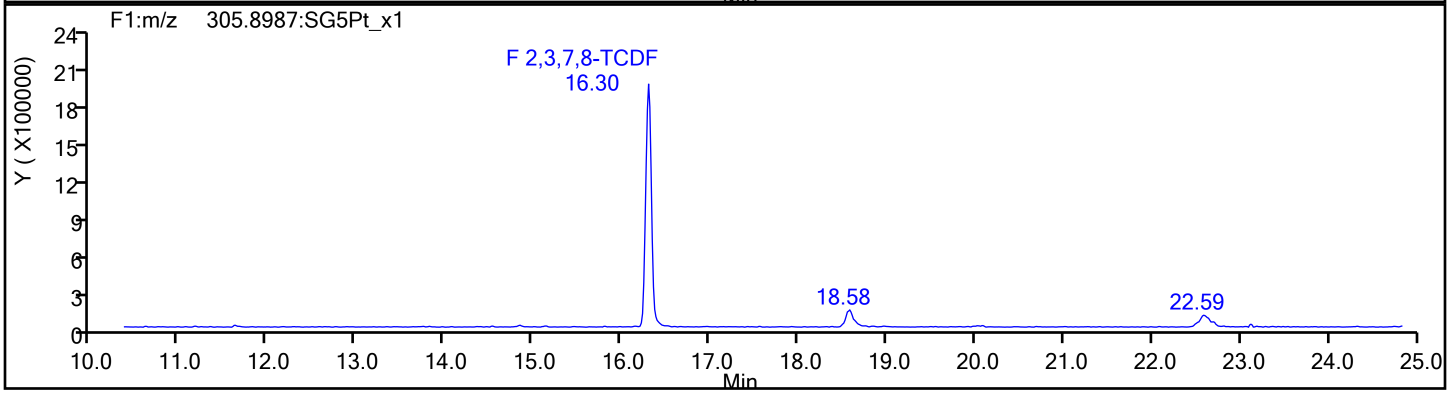

TCDF Standards

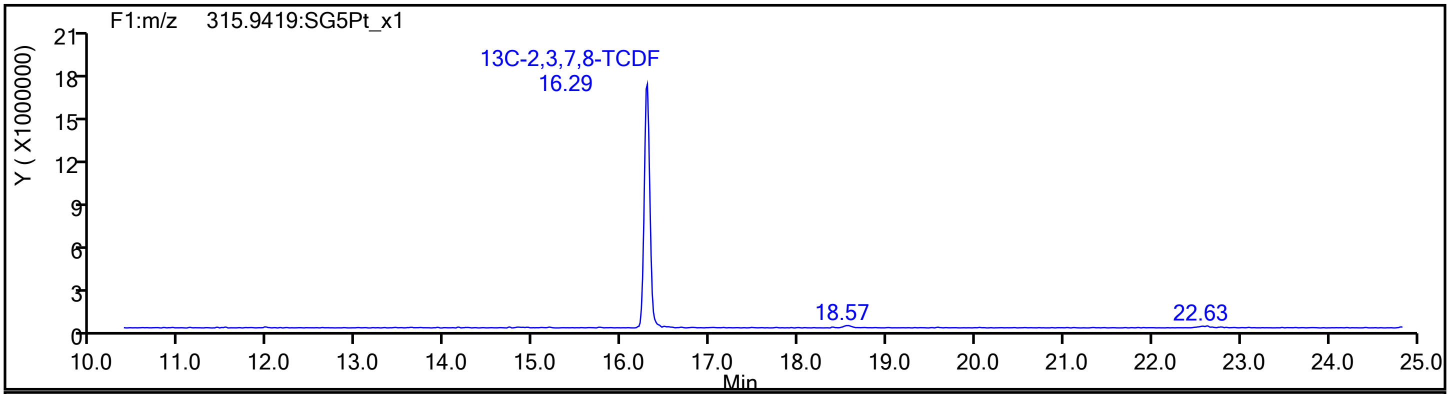

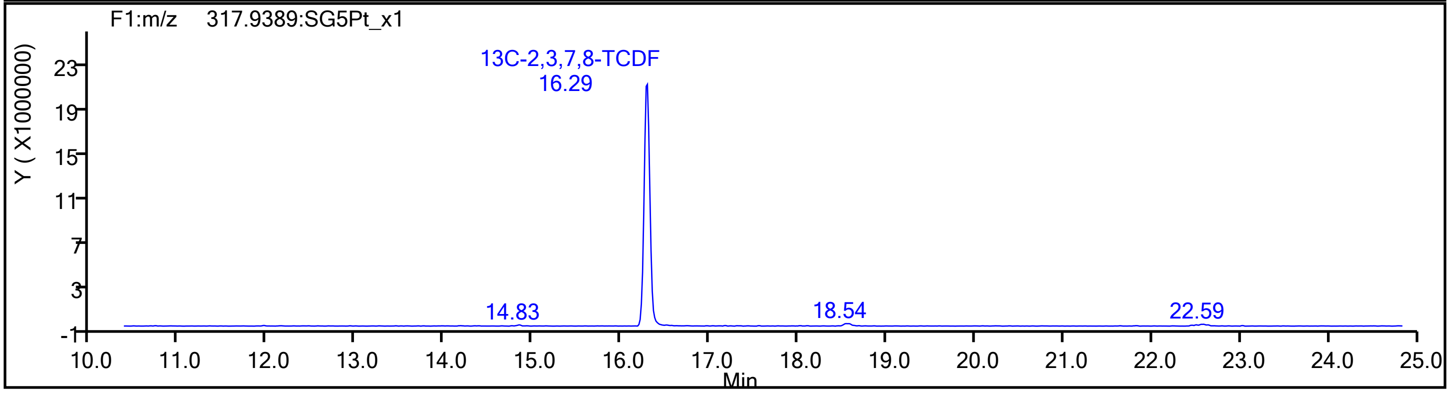

Report Date: 27-Jan-2021 20:41:50   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d		
Injection Date:	26-Jan-2021 00:34:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456198	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

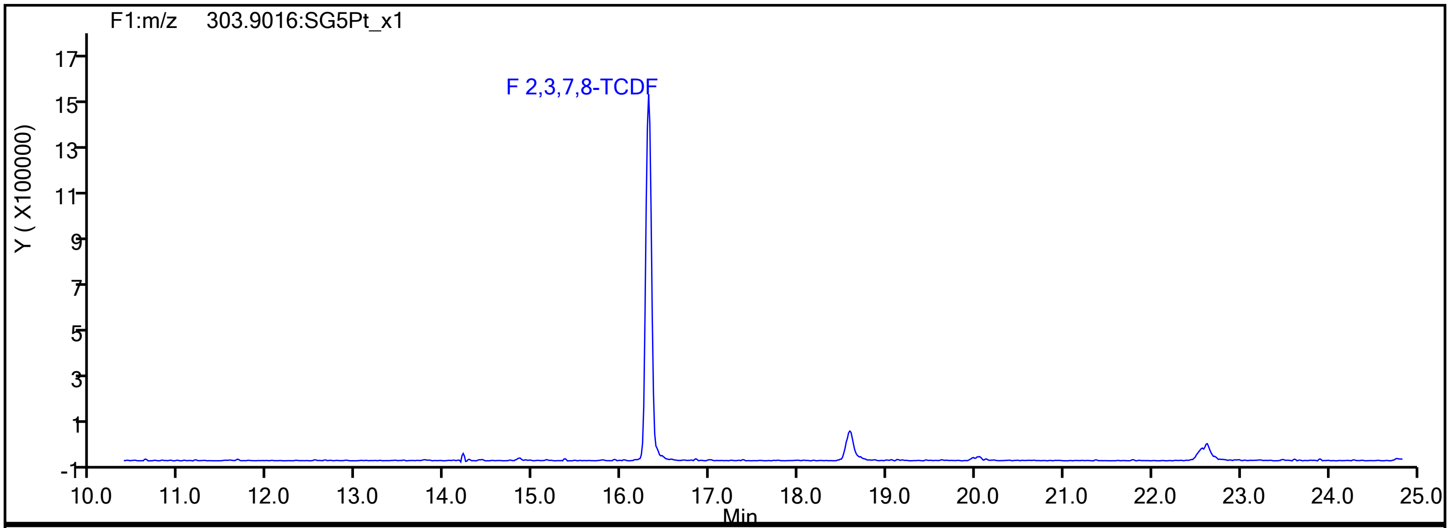

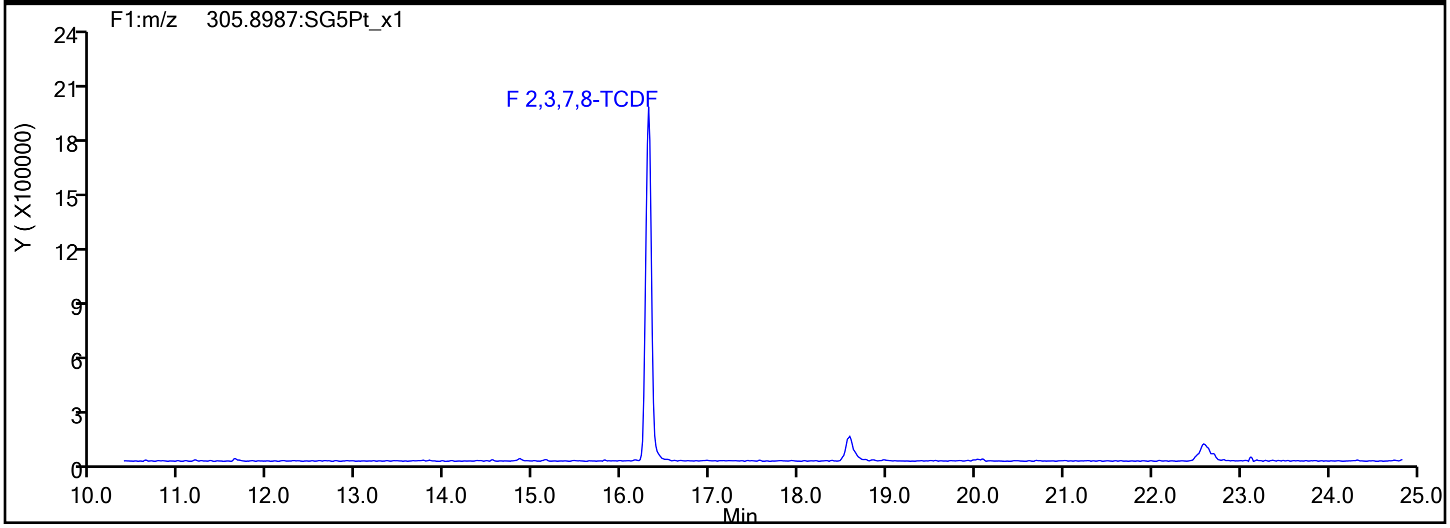

TCDF Interference Mass

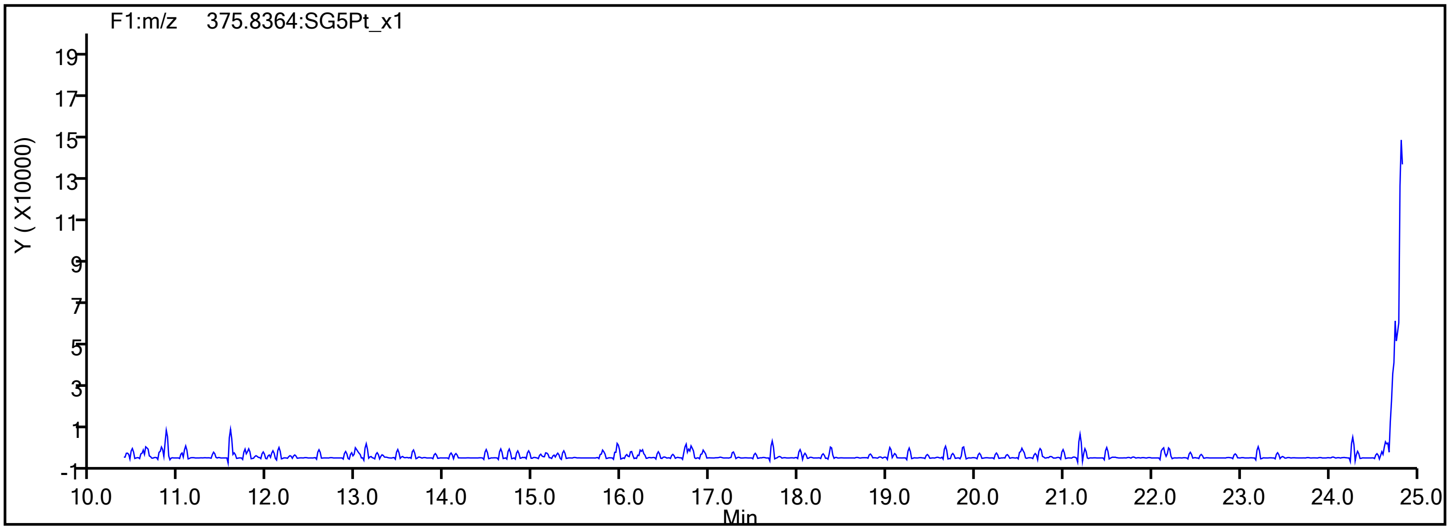

Report Date: 27-Jan-2021 20:41:50 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d

Injection Date: 26-Jan-2021 00:34:23 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456198 Sample Line#: 2

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

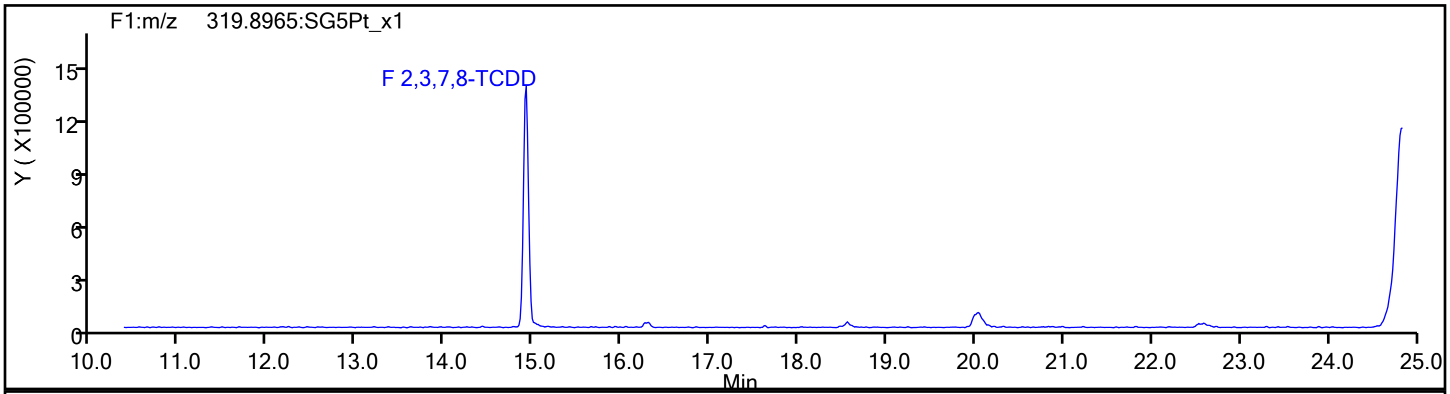

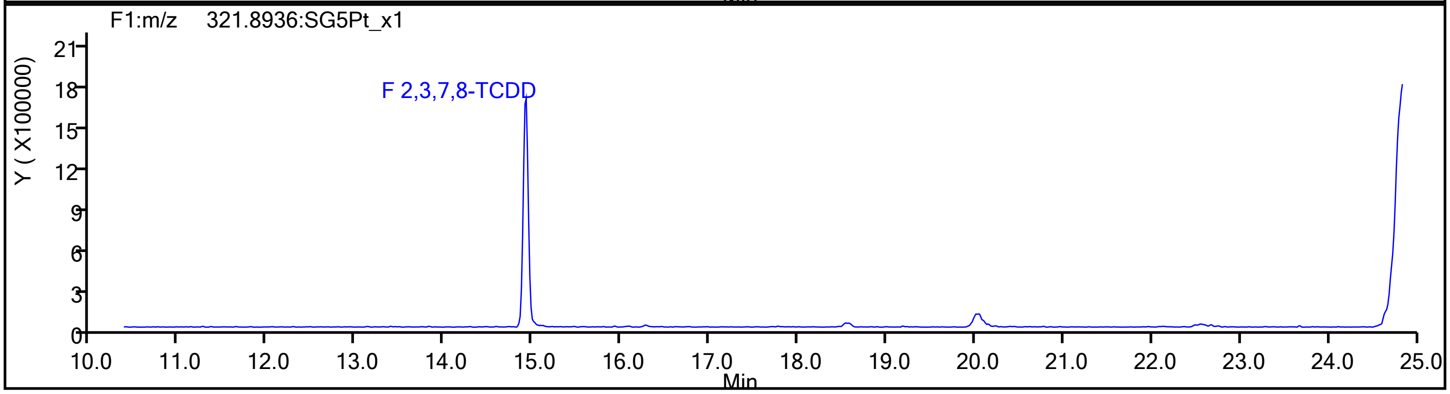

TCDD Standards

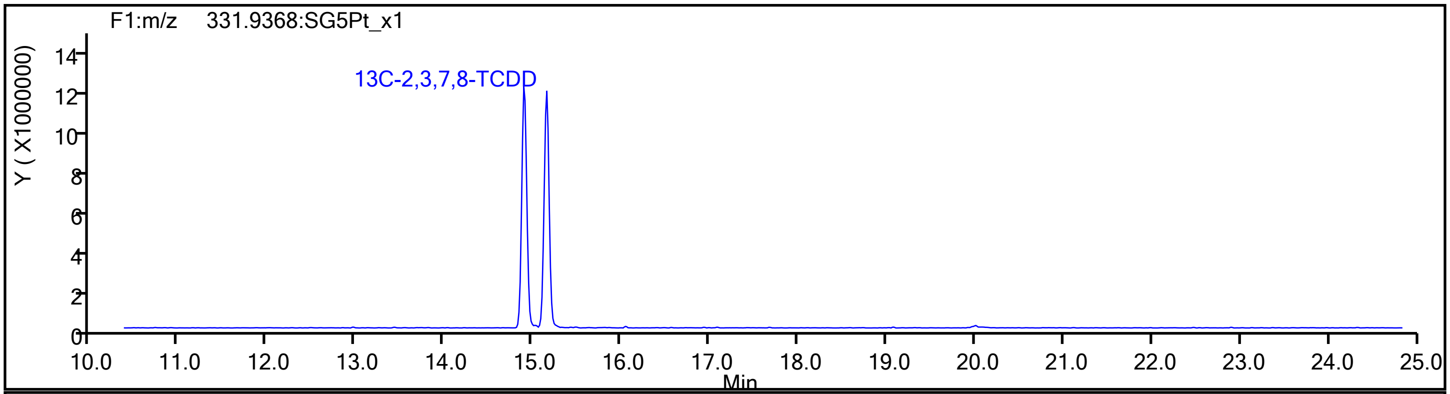

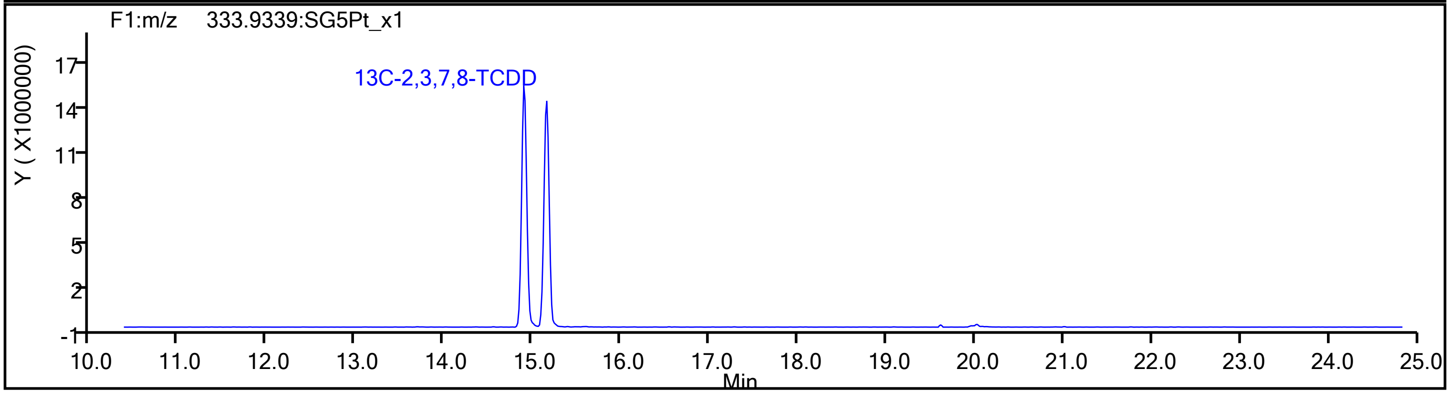

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d
Injection Date: 26-Jan-2021 00:34:23
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456198
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

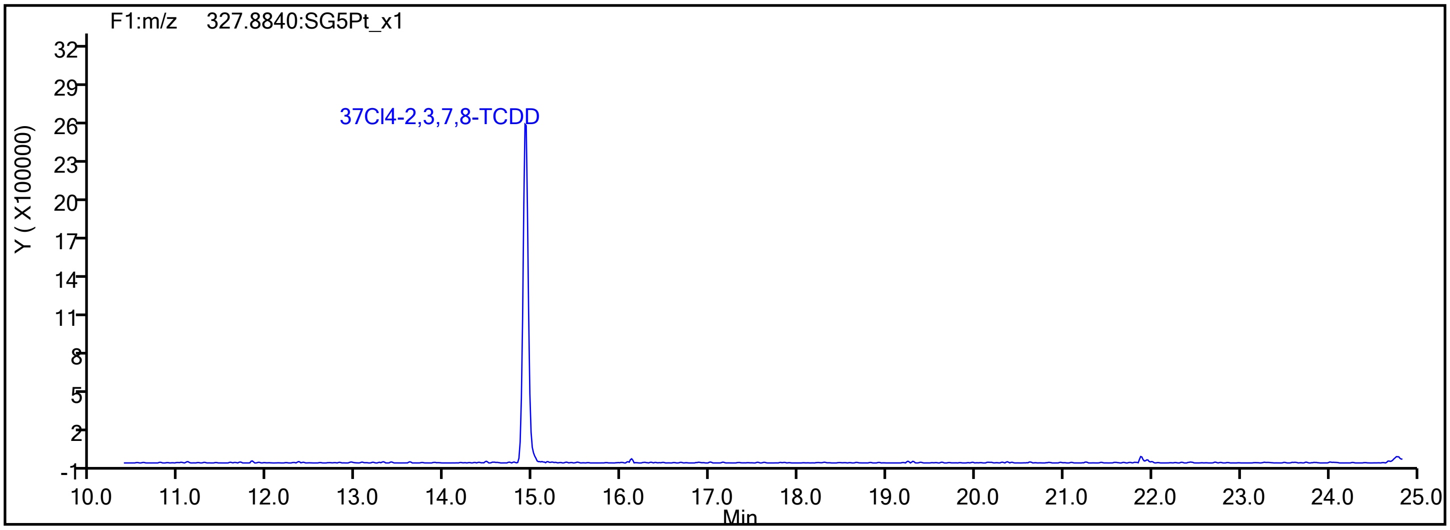

37Cl4-TCDD Standards

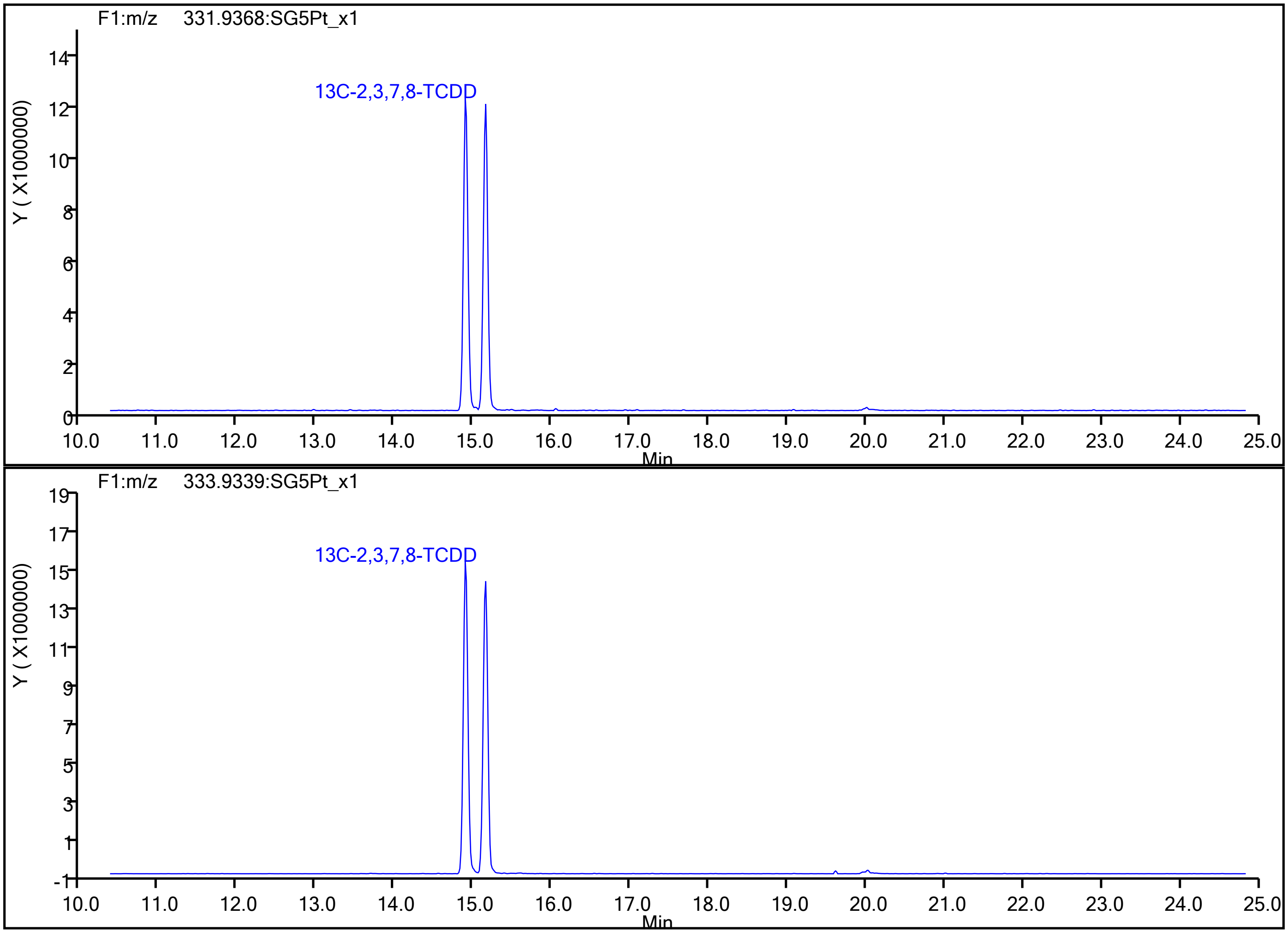

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_002.d		
Injection Date:	26-Jan-2021 00:34:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456198	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

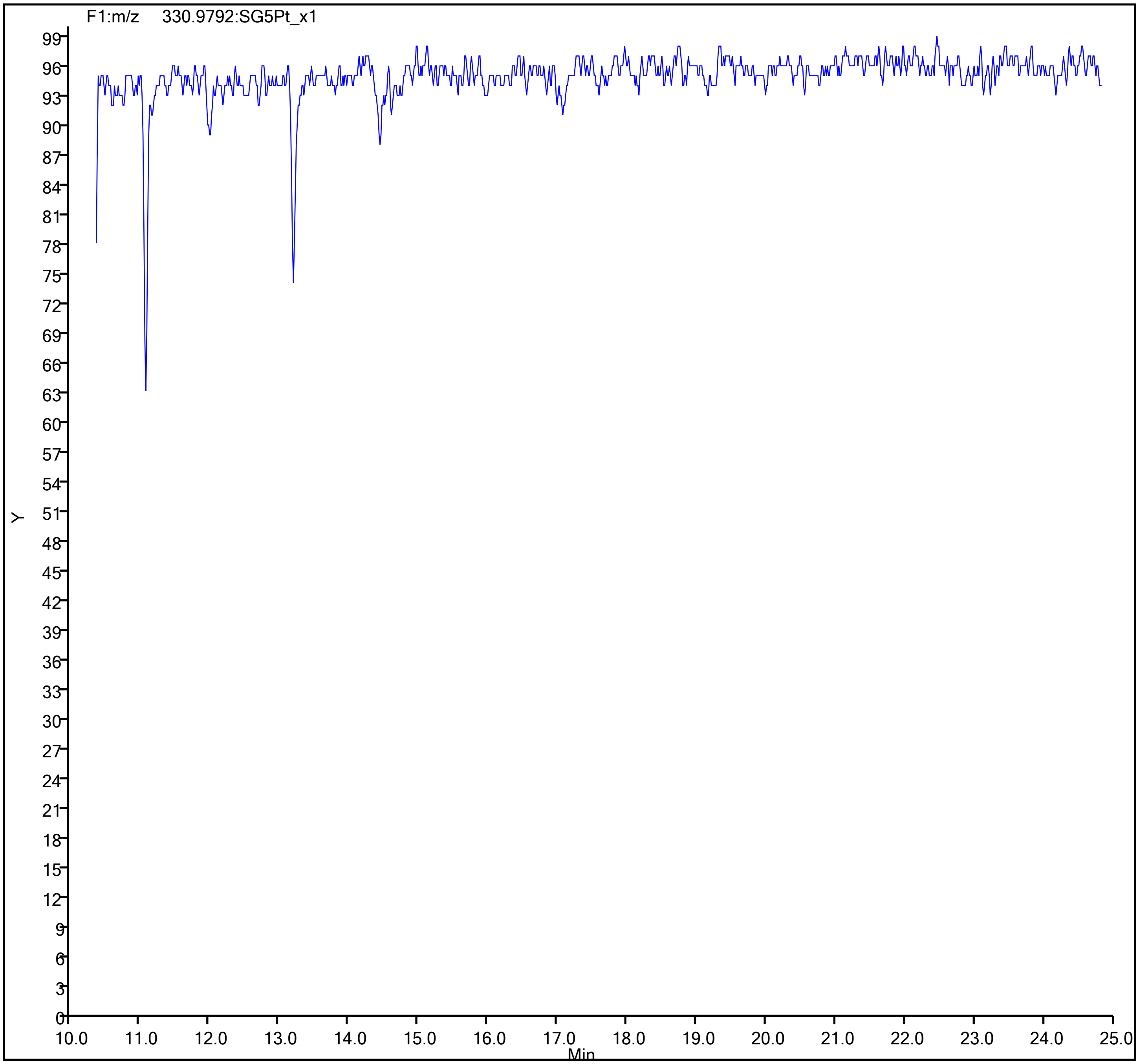

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID: ICV 320-447767/9 Calibration Date: 12/31/2020 19:05

Instrument ID: DFS 1 Calib Start Date: 12/31/2020 14:17

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/31/2020 17:29

Lab File ID: 31de20bdfs1_10.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.149	1.095		38.1	40.0	95	70-130
2,3,7,8-TCDD	AveID	1.307	1.297		39.7	40.0	99	70-130
1,2,3,7,8-PeCDF	AveID	1.170	1.061		182	200	91	70-130
2,3,4,7,8-PeCDF	AveID	1.224	1.219		199	200	100	70-130
1,2,3,7,8-PeCDD	AveID	1.261	1.138		180	200	90	70-130
1,2,3,4,7,8-HxCDF	AveID	1.355	1.246		184	200	92	70-130
1,2,3,6,7,8-HxCDF	AveID	1.308	1.251		191	200	96	70-130
2,3,4,6,7,8-HxCDF	AveID	1.325	1.278		193	200	96	70-130
1,2,3,4,7,8-HxCDD	AveID	1.342	1.203		179	200	90	70-130
1,2,3,6,7,8-HxCDD	AveID	1.199	1.174		196	200	98	70-130
1,2,3,7,8,9-HxCDD	AveID	1.364	1.232		181	200	90	70-130
1,2,3,7,8,9-HxCDF	AveID	1.337	1.207		181	200	90	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.649	1.558		189	200	94	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.215	1.183		195	200	97	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.572	1.399		178	200	89	70-130
OCDD	AveID	1.256	1.217		388	400	97	70-130
OCDF	AveID	1.813	1.670		368	400	92	70-130
13C-2,3,7,8-TCDF	Ave	1.913	1.905		99.6	100	100	71-140
13C-2,3,7,8-TCDD	Ave	1.091	1.086		99.6	100	100	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.536	1.565		102	100	102	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.428	1.514		106	100	106	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7800	0.8012		103	100	103	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.425	1.403		98.5	100	98	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.711	1.572		91.9	100	92	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.546	1.454		94.1	100	94	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8266	0.8615		104	100	104	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	1.011		97.0	100	97	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.377	1.338		97.2	100	97	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.105	1.059		95.8	100	96	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8768	0.8232		93.9	100	94	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9761	0.9808		100	100	100	77-129
13C-OCDD	Ave	0.7137	0.7001		196	200	98	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.228	1.209		39.4	40.0	98	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 31-Dec-2020 19:05:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:37:49 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: stephensk Date: 04-Jan-2021 09:28:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.249	3178416	0.83	2.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.269	6055251	0.80	1.9134	99.6	99.6	0.2997	0.2997	99.57	
2,3,7,8-TCDF	20.303	2651164	0.79	1.1488	38.1	38.1	0.0723	0.0723	95.28	
A Non-2,3,7,8-sub-TCDF	19.833	38235	0.77	1.1488	0.5736	0.5496	0.0723	0.2982		RQ
S Total TCDF					38.7	38.7	0.0723	0.0723		RQ
$ 37Cl4-2,3,7,8-TCDD	21.662	1537384		1.2281	39.4	39.4	0.0438	0.0438	98.46	
D 13C-2,3,7,8-TCDD	21.628	3452305	0.81	1.0908	99.6	99.6	0.2694	0.2694	99.58	
2,3,7,8-TCDD	21.653	1790930	0.80	1.3069	39.7	39.7	0.0797	0.0797	99.24	
A Non-2,3,7,8-sub-TCDD	20.681	19474	0.77	1.3069	0.6070	0.4316	0.0797	0.4316		RQ
S Total TCDD					40.3	40.1	0.0797	0.0797		RQ
D 13C-1,2,3,7,8-PeCDF	27.207	4973376	1.60	1.5355	101.9	101.9	0.4244	0.4244	102	
1,2,3,7,8-PeCDF	27.223	10557921	1.59	1.1695	181.5	181.5	0.9117	0.9117	90.76	
D 13C-2,3,4,7,8-PeCDF	28.722	4813453	1.60	1.4278	106.1	106.1	0.4564	0.4564	106	
2,3,4,7,8-PeCDF	28.747	11736377	1.58	1.2244	199.1	199.1	0.9602	0.9602	99.57	
A F1 PeCDFs	24.699	251	1.55	1.1970	0.0202	0.004285	0.0106	0.0106		RQ
A Non-2,3,7,8-sub-PeCDF	28.198	249423	1.63	1.1970	4.258	4.258	0.9343	4.258		
S Total PeCDF					384.9	384.9	0.9360	0.9360		RQ
D 13C-1,2,3,7,8-PeCDD	29.547	2546633	1.58	0.7800	102.7	102.7	0.1795	0.1795	103	
1,2,3,7,8-PeCDD	29.572	5795843	1.61	1.2613	180.4	180.4	0.1902	0.1902	90.22	
A Non-2,3,7,8-sub-PeCDD	28.389						0.1902	0.1902		
S Total PeCDD					180.4	180.4	0.1902	0.1902		
D 13C-1,2,3,4,7,8-HxCDF	34.886	4440659	0.54	1.4248	98.5	98.5	0.4633	0.4633	98.49	
1,2,3,4,7,8-HxCDF	34.903	11065564	1.27	1.3553	183.9	183.9	0.9358	0.9358	91.93	
D 13C-1,2,3,6,7,8-HxCDF	35.055	4973704	0.54	1.7108	91.9	91.9	0.3858	0.3858	91.87	
1,2,3,6,7,8-HxCDF	35.071	12447863	1.25	1.3081	191.3	191.3	0.9370	0.9370	95.66	
D 13C-2,3,4,6,7,8-HxCDF	35.871	4600222	0.53	1.5455	94.1	94.1	0.4271	0.4271	94.06	
2,3,4,6,7,8-HxCDF	35.888	11757984	1.25	1.3248	192.9	192.9	0.8481	0.8481	96.47	
D 13C-1,2,3,7,8,9-HxCDF	36.764	4235404	0.54	1.3772	97.2	97.2	0.4793	0.4793	97.18	
1,2,3,7,8,9-HxCDF	36.781	10223463	1.26	1.3372	180.5	180.5	0.8885	0.8885	90.25	
A Non-2,3,7,8-sub-HxCDF	35.033						0.9006	0.9006		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					748.6	748.6	0.9023	0.9023		
* 13C-1,2,3,7,8,9-HxCDD	36.570	3164618	1.31	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.082	2726300	1.33	0.8266	104.2	104.2	0.2949	0.2949	104	
1,2,3,4,7,8-HxCDD	36.099	6557403	1.27	1.3422	179.2	179.2	0.3902	0.3902	89.60	
D 13C-1,2,3,6,7,8-HxCDD	36.208	3198775	1.25	1.0417	97.0	97.0	0.2340	0.2340	97.04	
1,2,3,6,7,8-HxCDD	36.217	7507799	1.28	1.1989	195.8	195.8	0.4240	0.4240	97.88	
1,2,3,7,8,9-HxCDD	36.587	7298078	1.26	1.3636	180.7	180.7	0.3783	0.3783	90.33	
A Non-2,3,7,8-sub-HxCDD	35.395						0.3964	0.3964		
S Total HxCDD					555.6	555.6	0.3975	0.3975		
D 13C-1,2,3,4,6,7,8-HpCDF	38.580	3352578	0.46	1.1053	95.8	95.8	0.5740	0.5740	95.85	
1,2,3,4,6,7,8-HpCDF	38.588	10445985	1.05	1.6487	189.0	189.0	1.011	1.011	94.49	
D 13C-1,2,3,4,7,8,9-HpCDF	39.834	3103767	0.46	0.9761	100.5	100.5	0.6500	0.6500	100	
1,2,3,4,7,8,9-HpCDF	39.842	8683104	1.05	1.5723	177.9	177.9	1.068	1.068	88.96	
A Non-2,3,7,8-sub-HpCDF	39.228						1.038	1.038		
S Total HpCDF					366.9	366.9	1.039	1.039		
D 13C-1,2,3,4,6,7,8-HpCDD	39.531	2605166	1.08	0.8768	93.9	93.9	0.2706	0.2706	93.89	
1,2,3,4,6,7,8-HpCDD	39.539	6166249	1.07	1.2146	194.9	194.9	0.5088	0.5088	97.44	
A Non-2,3,7,8-sub-HpCDD	39.533						0.5088	0.5088		
S Total HpCDD					194.9	194.9	0.5088	0.5088		
D 13C-OCDD	42.019	4430802	0.92	0.7137	196.2	196.2	0.2657	0.2657	98.09	
OCDF	42.111	14796372	0.92	1.8132	368.3	368.3	0.3824	0.3824	92.09	
OCDD	42.027	10787792	0.91	1.2562	387.6	387.6	0.4619	0.4619	96.91	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 31-Dec-2020 19:05:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00046
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:37:49 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

First Level Reviewer: stephensk Date: 04-Jan-2021 09:28:39

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.249	21.284	-2		1446094	204243	343	857	595		a
333.9338	21.258	21.284	-2		1732322	245670	186	465	1321	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.269	20.355	-5	0.954	2683474	392672	686	1715	572		
317.9389	20.269	20.355	-5	0.954	3371777	492484	346	865	1423	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.303	20.398	-6	1.002	1165945	166287	113	282	1472		
305.8987	20.294	20.398	-6	1.001	1485219	215018	181	452	1188	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	19.072	19.833	-46	0.941	10691	1686	113	282	15		
	Empc Correction				9025	1549	113	282	14		
305.8987	19.055	19.833	-47	0.940	11722	2012	181	452	11	0.91(0.65-0.89)	
303.9016	19.589	19.833	-15	0.966	7442	1266	113	282	11		
305.8987	19.597	19.833	-14	0.967	10046	1657	181	452	9	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.662	21.688	-2	1.019	1537384	204174	97	242	2105		
13C-2,3,7,8-TCDD											
331.9368	21.628	21.712	-5	1.018	1543720	201634	343	857	588		
333.9338	21.636	21.712	-5	1.018	1908585	261163	186	465	1404	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.653	21.747	-6	1.001	795800	105786	124	310	853		
321.8936	21.653	21.747	-6	1.001	995130	135663	69	172	1966	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											RQ

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	21.447	20.681	46	0.992	8472	2252	124	310	18		
321.8936	21.464	20.681	47	0.992	18916	3361	69	172	49	0.45(0.65-0.89)	
	Empc Correction				11002	2924	69	172	42		
13C-1,2,3,7,8-PeCDF											
351.9000	27.207	27.229	-1	1.280	3062205	483575	735	1837	658		
353.8970	27.198	27.229	-2	1.280	1911171	300162	438	1095	685	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.223	27.254	-2	1.001	6486036	1036969	1998	4995	519		
341.8567	27.223	27.254	-2	1.001	4071885	657103	1345	3362	489	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.722	28.753	-2	1.352	2961922	436196	735	1837	593		
353.8970	28.722	28.753	-2	1.352	1851531	274628	438	1095	627	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.747	28.779	-2	1.001	7186549	1054507	1998	4995	528		
341.8567	28.739	28.779	-2	1.001	4549828	662545	1345	3362	493	1.58(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	24.388	24.699	-19	0.896	153	59	5	12	12		
341.8567	24.337	24.699	-22	0.895	1031	250	33	82	8	0.15(1.32-1.78)	
	Empc Correction				98	38	33	82	1		
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.821	28.198	-23	1.023	154743	25213	1998	4995	13		
341.8567	27.813	28.198	-23	1.022	94680	15395	1345	3362	11	1.63(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.547	29.570	-1	1.390	1560335	222169	169	422	1315		
369.8919	29.547	29.570	-1	1.390	986298	136265	83	207	1642	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.572	29.596	-1	1.001	3573951	495093	221	552	2240		
357.8516	29.572	29.596	-1	1.001	2221892	308783	123	307	2510	1.61(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.389						221	552			
357.8516	28.389						123	307			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.886	34.906	-1	0.954	1559491	346312	700	1750	495		
385.8610	34.886	34.906	-1	0.954	2881168	625194	1333	3332	469	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.903	34.922	-1	1.000	6197781	1324905	2773	6932	478		
375.8178	34.903	34.922	-1	1.000	4867783	1055168	2156	5390	489	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.055	35.074	-1	0.959	1739491	347857	700	1750	497		
385.8610	35.055	35.074	-1	0.959	3234213	657505	1333	3332	493	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.071	35.091	-1	1.000	6909709	1365476	2773	6932	492		
375.8178	35.071	35.091	-1	1.000	5538154	1084420	2156	5390	503	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.871	35.883	-1	0.981	1593888	378616	700	1750	541		
385.8610	35.871	35.883	-1	0.981	3006334	718053	1333	3332	539	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	35.888	35.899	-1	1.000	6543686	1547116	2773	6932	558		
375.8178	35.888	35.899	-1	1.000	5214298	1233490	2156	5390	572	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.764	36.775	-1	1.005	1482594	363088	700	1750	519		
385.8610	36.764	36.775	-1	1.005	2752810	674057	1333	3332	506	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.781	36.792	-1	1.000	5693421	1389656	2773	6932	501		
375.8178	36.781	36.792	-1	1.000	4530042	1113504	2156	5390	516	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.033						2773	6932			
375.8178	35.033						2156	5390			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.570	36.582	-1		1794388	436026	436	1090	1000		
403.8529	36.570	36.582	-1		1370230	333889	315	787	1060	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.082	36.102	-1	0.987	1556539	411131	436	1090	943		
403.8529	36.082	36.102	-1	0.987	1169761	320207	315	787	1017	1.33(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.099	36.118	-1	1.000	3663700	967721	871	2177	1111		
391.8127	36.099	36.118	-1	1.000	2893703	763862	661	1652	1156	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.208	36.219	-1	0.990	1777877	421225	436	1090	966		
403.8529	36.200	36.219	-1	0.990	1420898	332261	315	787	1055	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.217	36.236	-1	1.000	4207809	1009842	871	2177	1159		
391.8127	36.217	36.236	-1	1.000	3299990	802936	661	1652	1215	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.587	36.598	-1	1.014	4066836	1000544	871	2177	1149		
391.8127	36.579	36.598	-1	1.014	3231242	790403	661	1652	1196	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.395						871	2177			
391.8127	35.395						661	1652			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.580	38.597	-1	1.055	1063695	304680	690	1725	442		
419.8220	38.580	38.597	-1	1.055	2288883	655697	1264	3160	519	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.588	38.605	-1	1.000	5361131	1479233	3260	8150	454		
409.7788	38.588	38.605	-1	1.000	5084854	1416415	3140	7850	451	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.834	39.844	-1	1.089	979465	302146	690	1725	438		
419.8220	39.834	39.844	-1	1.089	2124302	650892	1264	3160	515	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.842	39.851	-1	1.000	4455591	1332389	3260	8150	409		
409.7788	39.842	39.851	-1	1.000	4227513	1279574	3140	7850	408	1.05(0.88-1.20)	

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.228						3260	8150			
409.7788	39.228						3140	7850			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.531	39.541	-1	1.081	1354748	414938	381	952	1089		
437.8140	39.531	39.541	-1	1.081	1250418	380650	350	875	1088	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.539	39.548	-1	1.000	3185079	976156	1037	2592	941		
425.7737	39.539	39.548	-1	1.000	2981170	909012	930	2325	977	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.533						1037	2592			
425.7737	39.533						930	2325			
13C-OCDD											
469.7780	42.019	42.029	-1	1.149	2123655	573184	313	782	1831		
471.7750	42.019	42.029	-1	1.149	2307147	622963	271	677	2299	0.92(0.76-1.02)	
OCDF											
441.7428	42.111	42.122	-1	1.002	7093882	1865556	782	1955	2386		
443.7399	42.111	42.122	-1	1.002	7702490	2027636	877	2192	2312	0.92(0.76-1.02)	
OCDD											
457.7377	42.027	42.038	-1	1.000	5129187	1356134	639	1597	2122		
459.7348	42.027	42.038	-1	1.000	5658605	1492318	749	1872	1992	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- n - Failed Sig-To-Noise Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- a - User Assigned ID

Reagents:

HRDXNIC_00046 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	31-Dec-2020 19:05:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	447767	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-TCDF, RT: 19.833

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.149	D 13C-2,3,7,8-TCDF	100.000	6055251	885156

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	6055251	885156

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.072	10691	1686	11722	2012	0.3222	0.91	RQ
19.072	9025	1549	11722	2012	0.2982		Empc Correction
19.589	7442	1266	10046	1657	0.2514	0.74	n
Signal Totals:							
	16467	2815	21768	3669			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	39901	6621				0.83	RQ
	38235	6484					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5736 = (39901 * 100.000) / (6055251 * 1.149)
Empc Amount: 0.5496 = (38235 * 100.000) / (6055251 * 1.149)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	31-Dec-2020 19:05:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	447767	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-TCDD, RT: 20.681

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.307	D 13C-2,3,7,8-TCDD	100.000	3452305	462797

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.307		100.000	3452305	462797

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.447	8472	2252	18916	3361	0.6070	0.45	RQ
21.447	8472	2252	11002	2924	0.4316		Empc Correction
Signal Totals:							
	8472	2252	11002	2924			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27388	5613				0.45	RQ
	19474	5176					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6070 = (27388 * 100.000) / (3452305 * 1.307)
Empc Amount: 0.4316 = (19474 * 100.000) / (3452305 * 1.307)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d
Lims ID: ICV
Client ID:
Inject. Date: 31-Dec-2020 19:05:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 447767 Lims Sample ID: 9
Sublist:

F1 PeCDFs, RT: 24.699

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	4973376	783737
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	4813453	710824

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	4893414	747280

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.388	153	59	1031	250	0.0202	0.15	RnQ
24.388	153	59	98	38	0.004285		Empc Correction
Signal Totals:							
	153	59	98	38			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1184	309				0.15	RQ
	251	97					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0202 = (1184 * 100.000) / (4893414 * 1.197)
Empc Amount: 0.004285 = (251 * 100.000) / (4893414 * 1.197)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	31-Dec-2020 19:05:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	447767	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 28.198

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	4973376	783737
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	4813453	710824

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	4893414	747280

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.821	154743	25213	94680	15395	4.26	1.63	
Signal Totals:							
	154743	25213	94680	15395			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	249423	40608				1.63	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.258 = (249423 * 100.000) / (4893414 * 1.197)

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d				
Injection Date:	31-Dec-2020 19:05:00	Instrument ID:	DFS 1		
Lims ID:	ICV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 21.28

Processing Integration Results

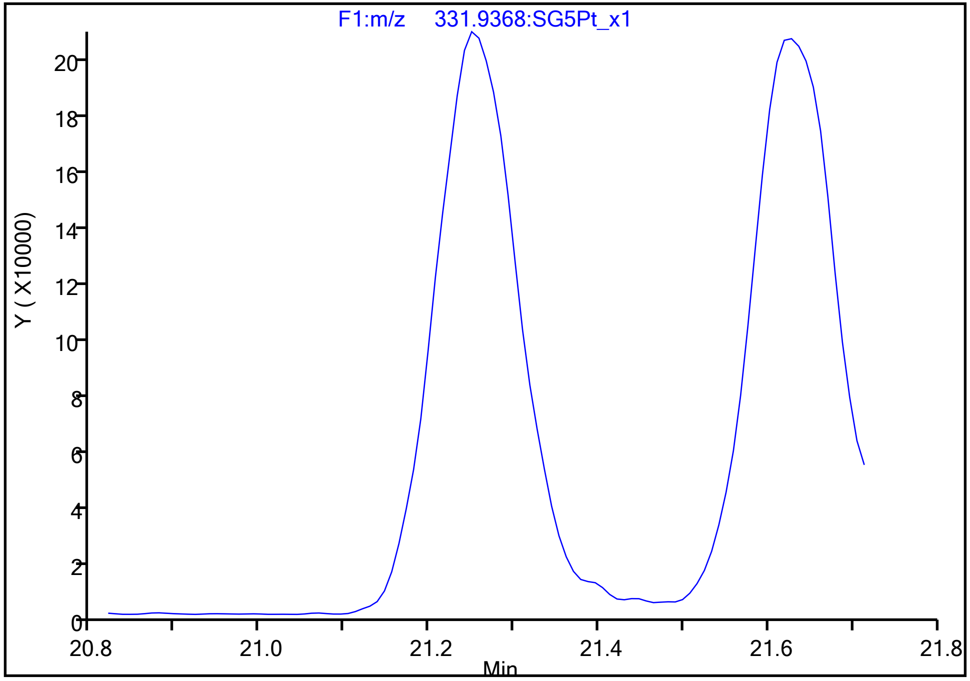

RT: 21.25
Area: 1446094
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

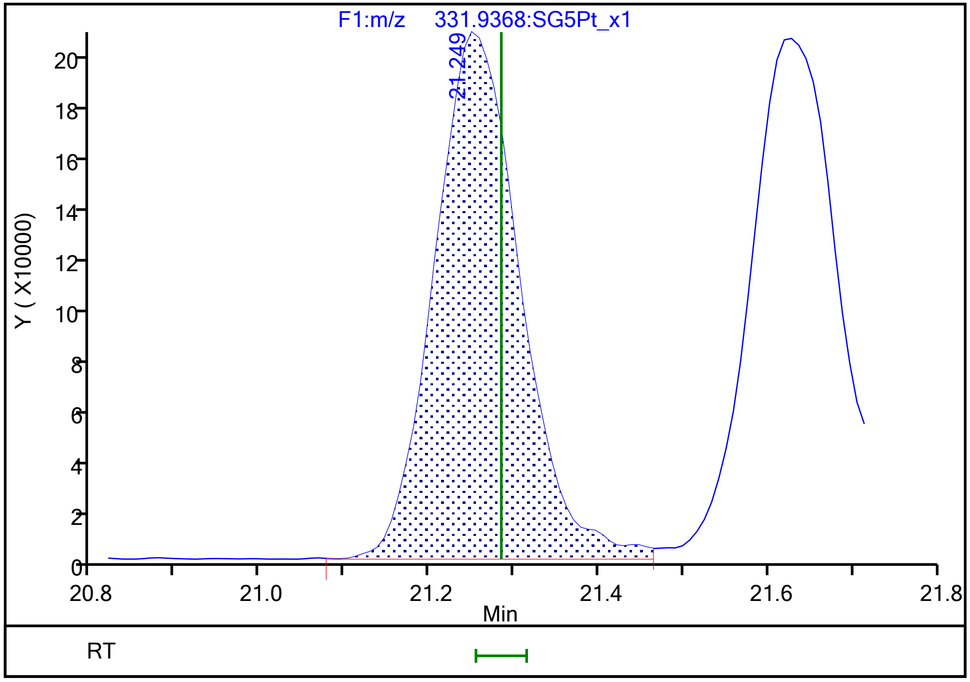

Reviewer: stephensk, 04-Jan-2021 09:28:22
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Injection Date:	31-Dec-2020 19:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

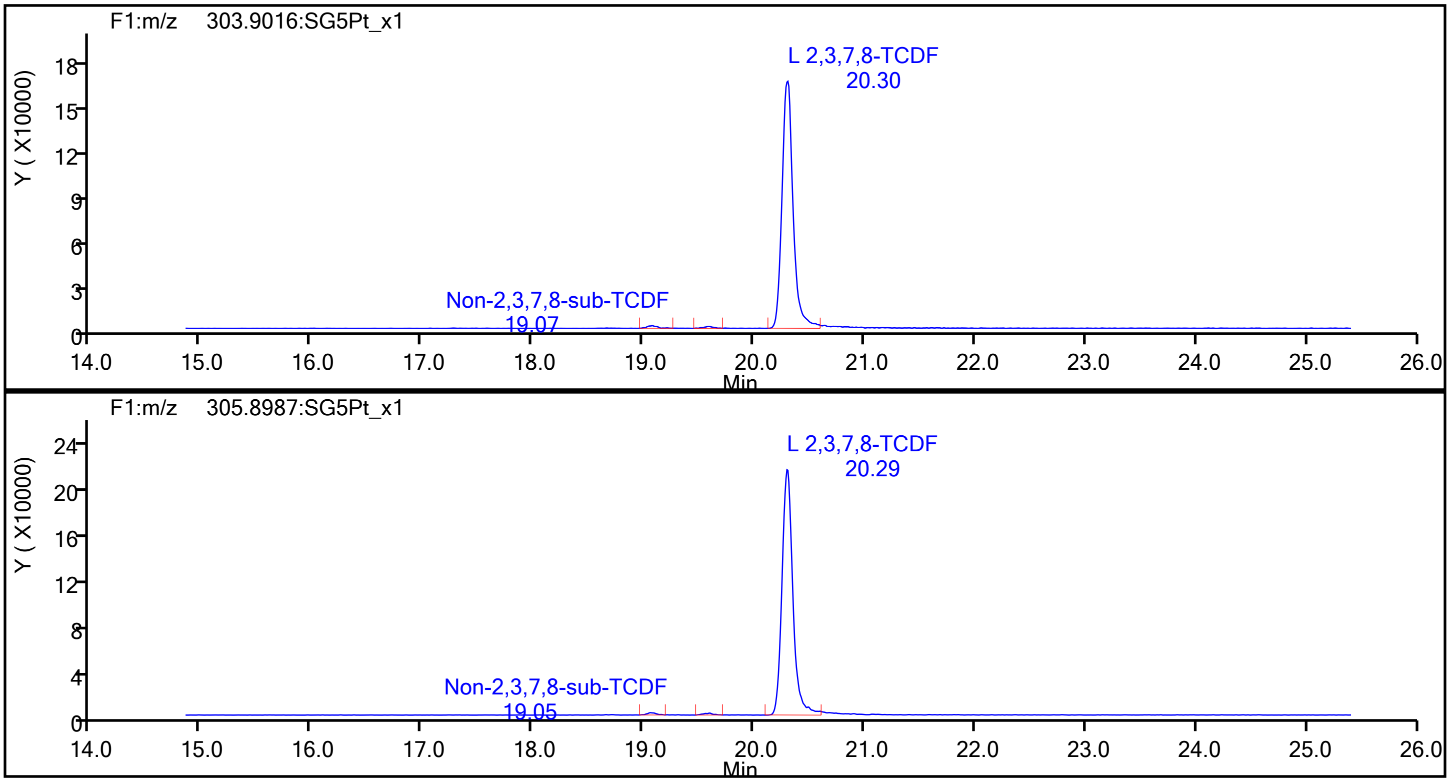

TCDF Standards

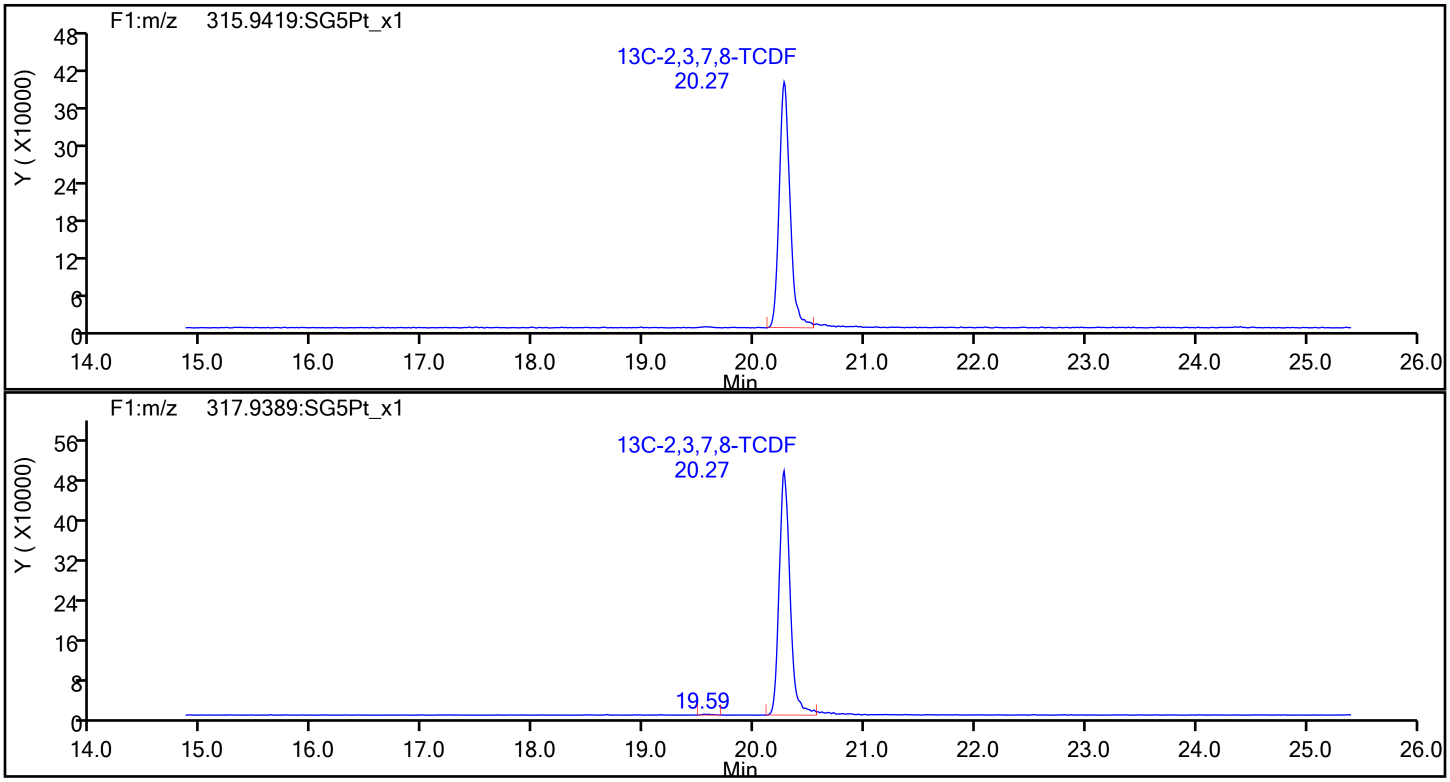

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Injection Date:	31-Dec-2020 19:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

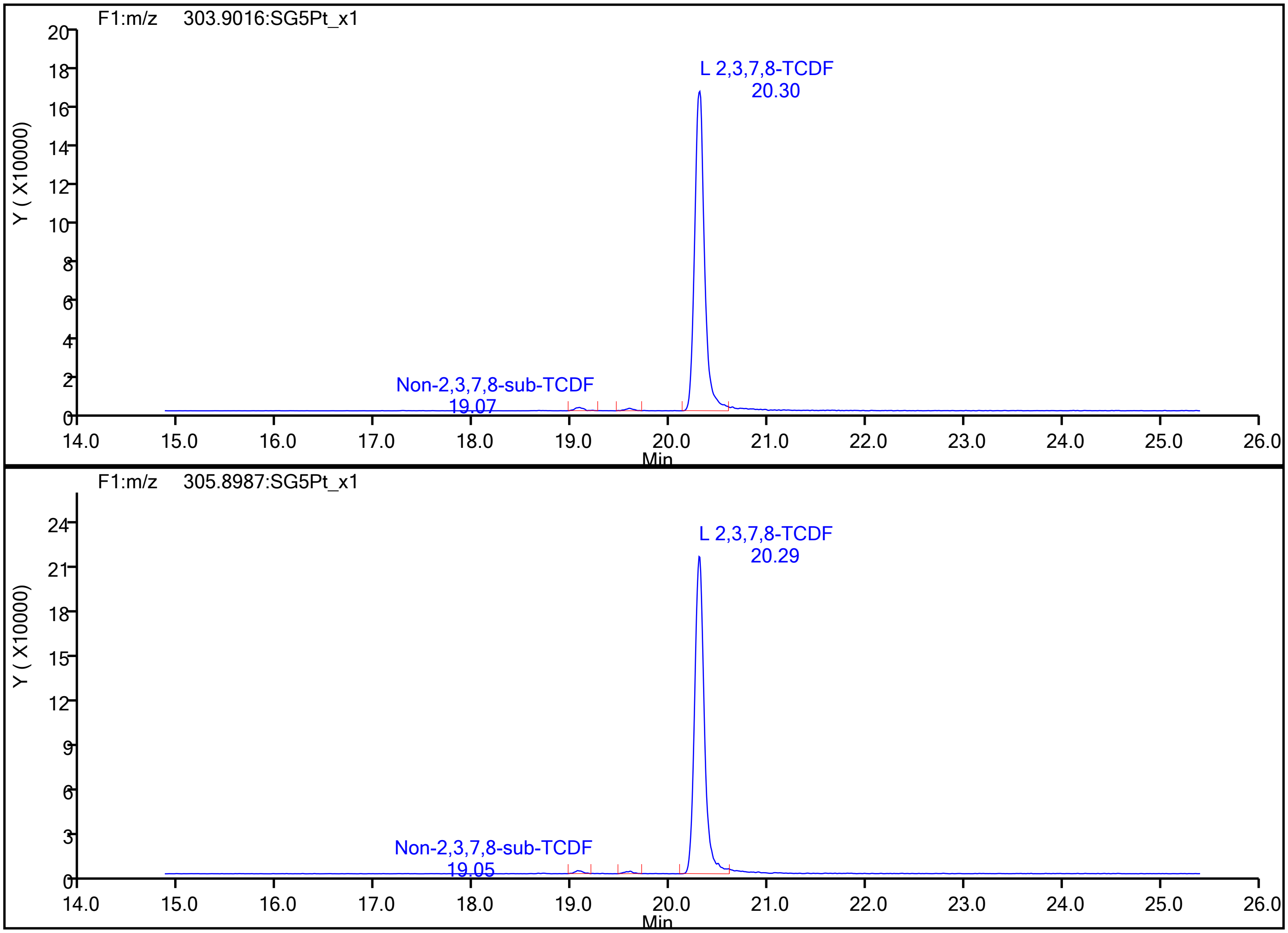

TCDF Interference Mass

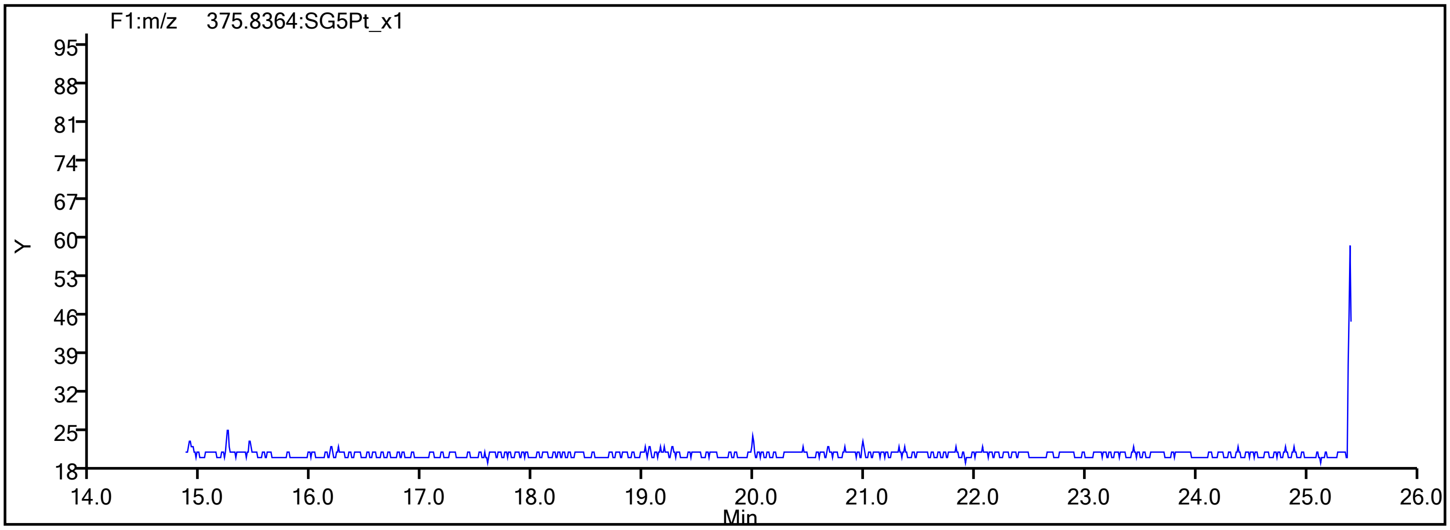

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Injection Date:	31-Dec-2020 19:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

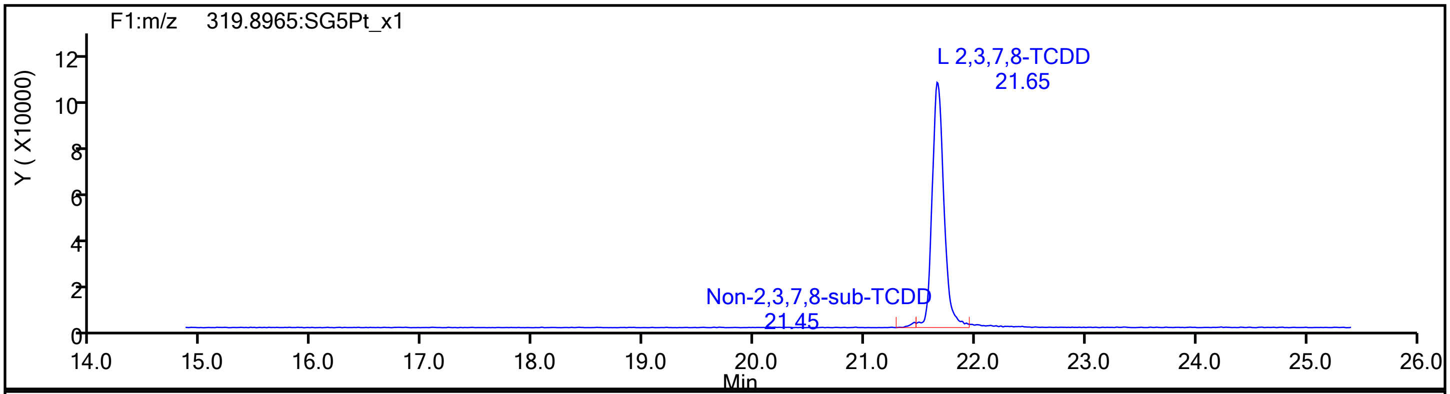

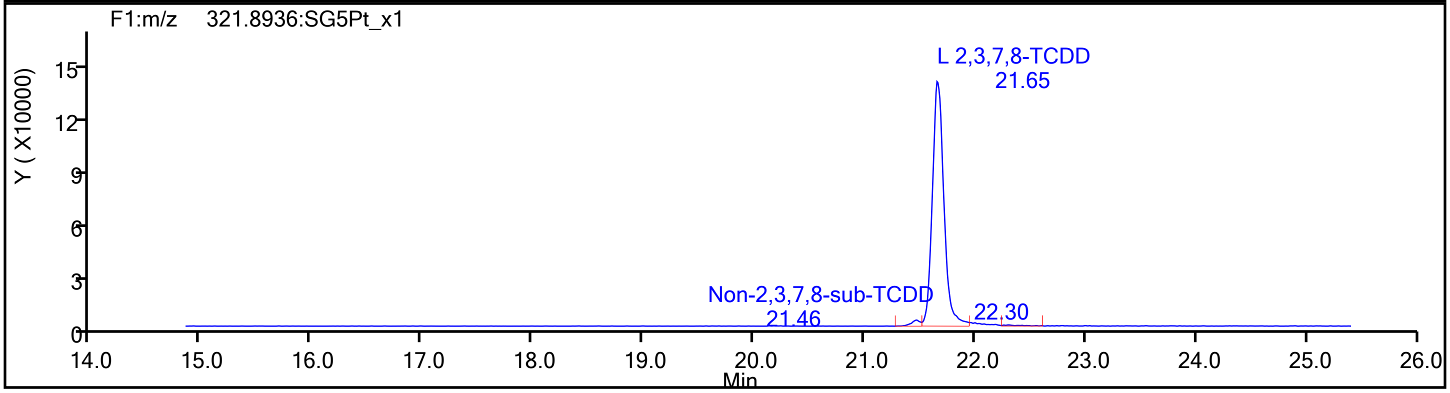

TCDD Standards

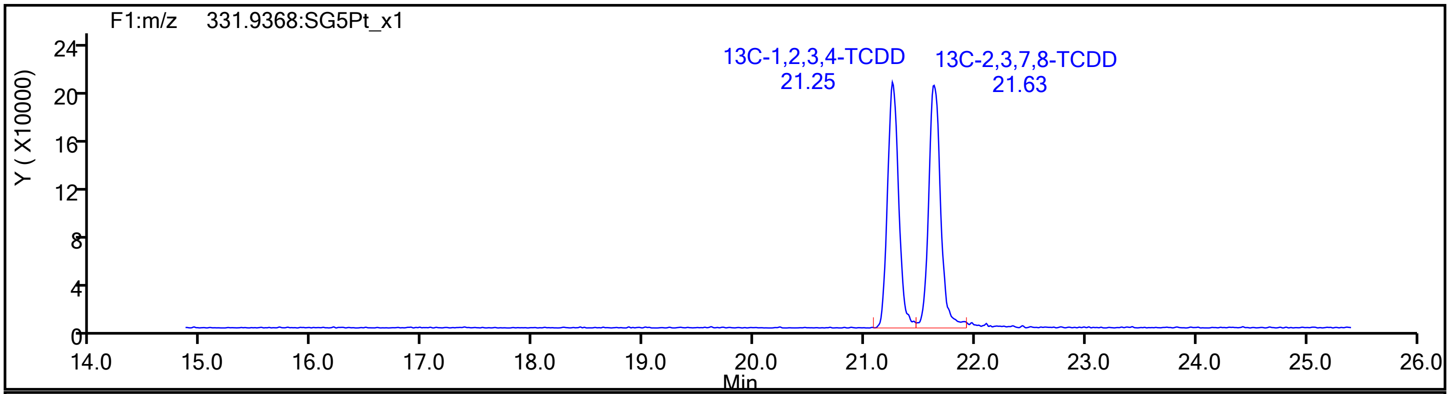

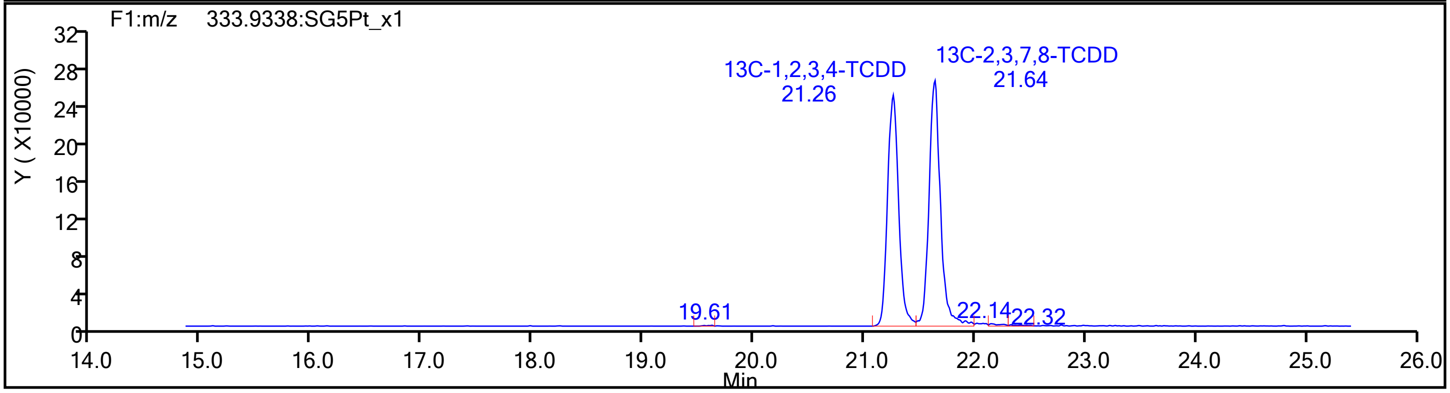

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d
Injection Date: 31-Dec-2020 19:05:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

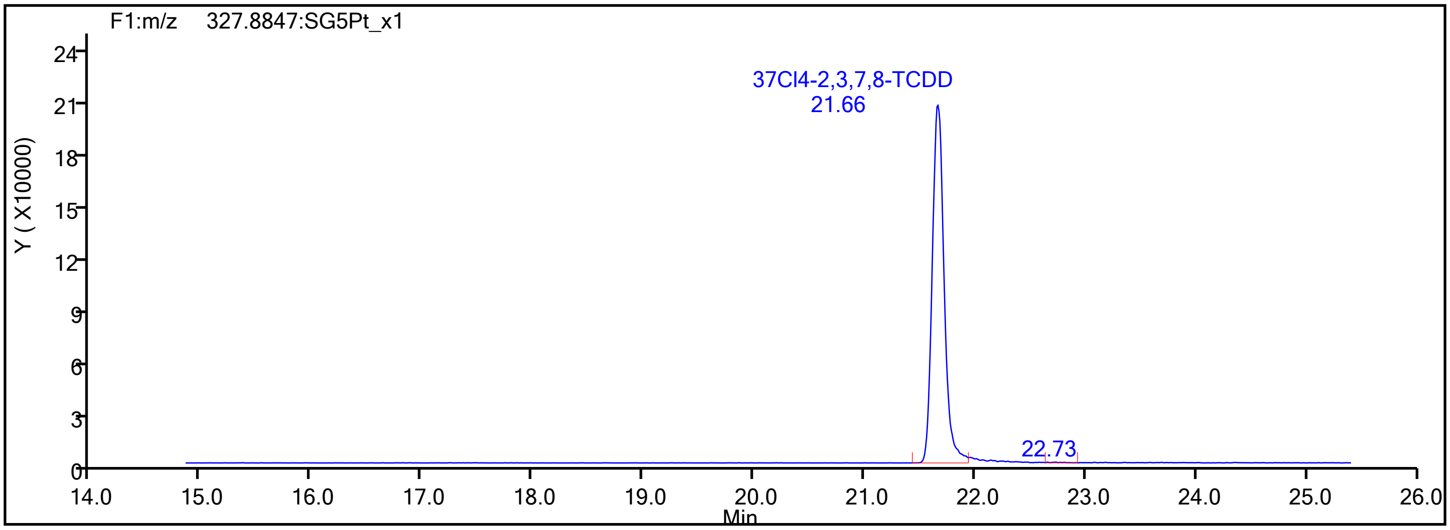

37Cl4-TCDD Standards

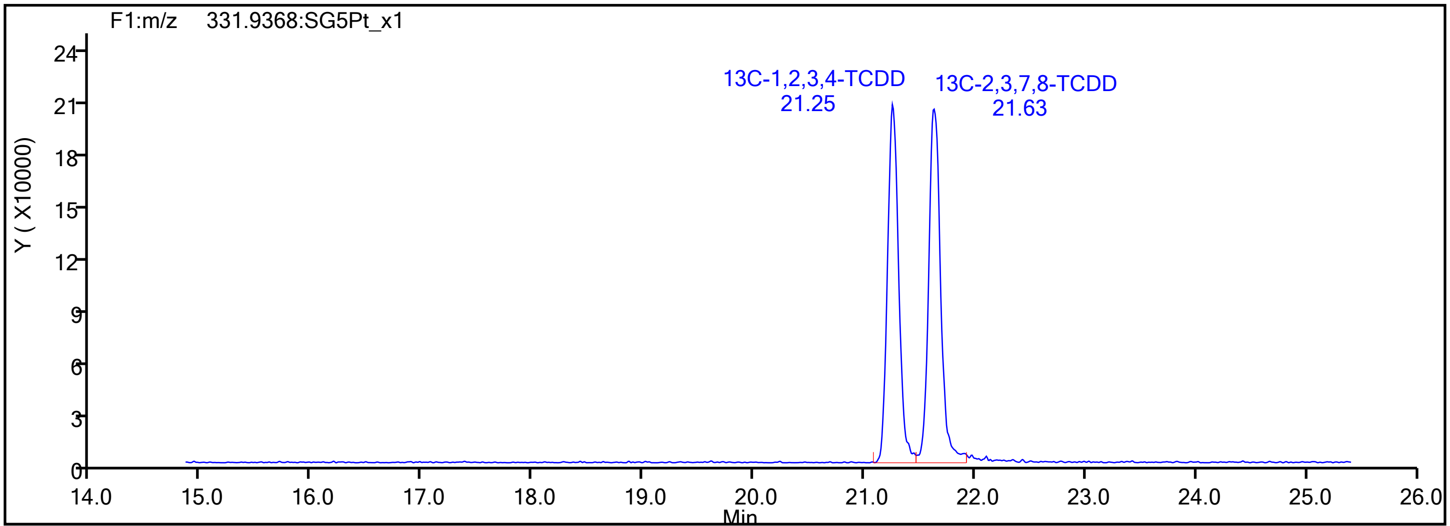

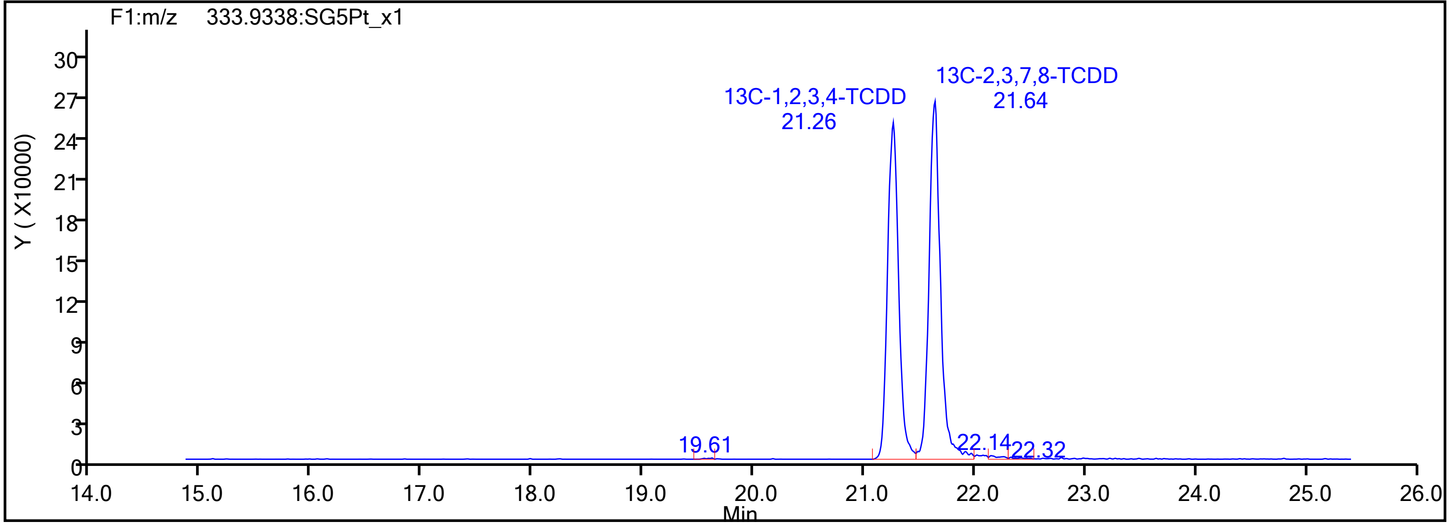

Report Date: 04-Jan-2021 09:38:02   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d
Injection Date: 31-Dec-2020 19:05:00   Injection Vol: 1.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767   Sample Line#: 9
Column Type: DB-5   Column Dia: 0.32 mm
F1 PeCDFs

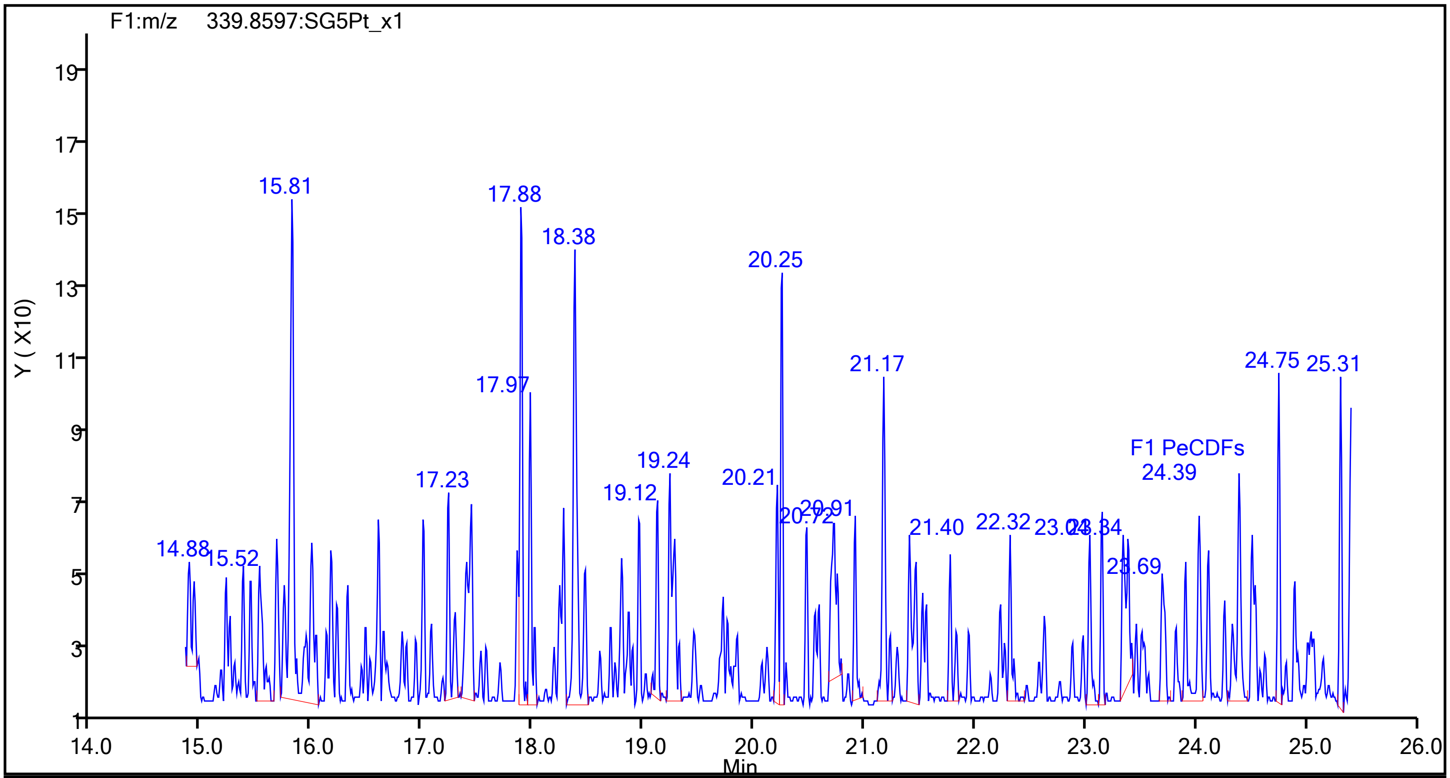

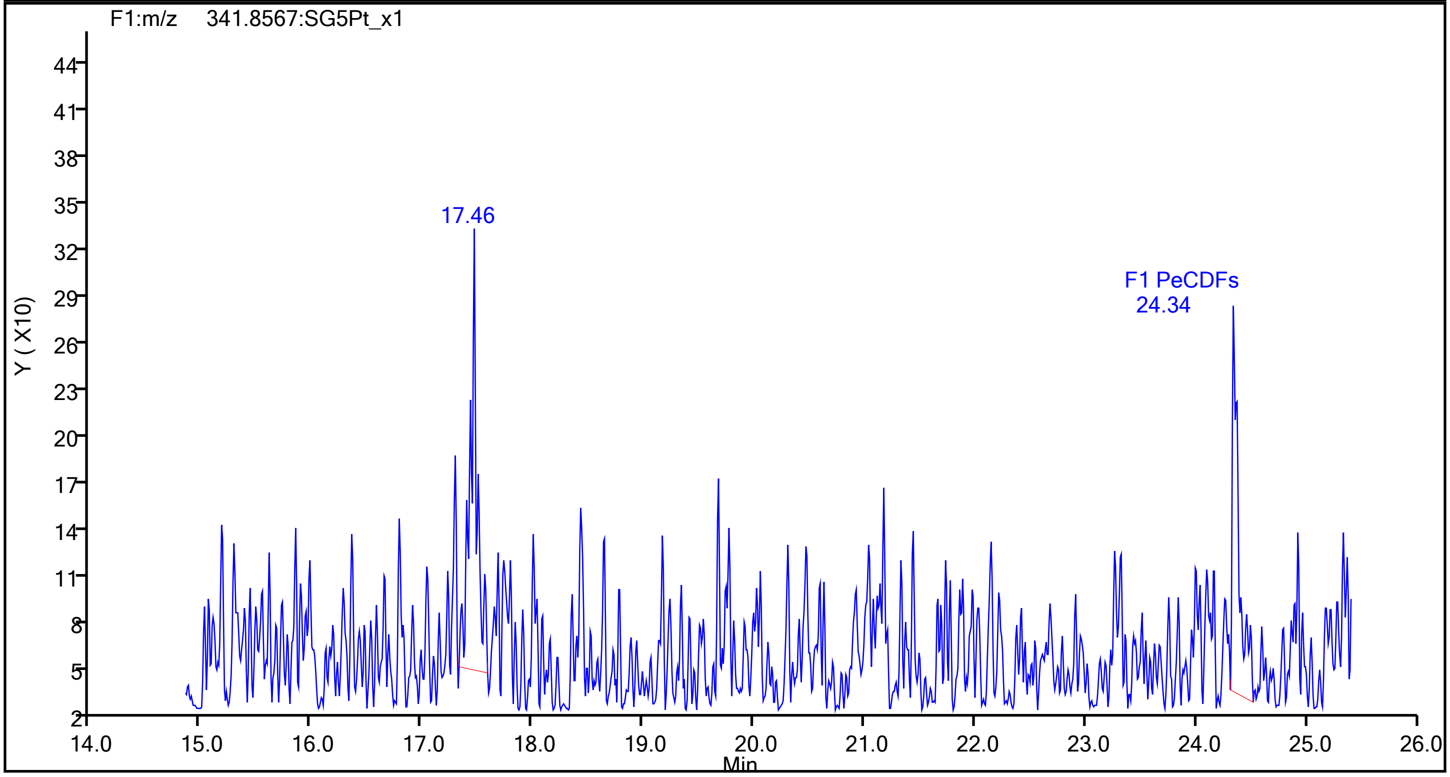

Report Date: 04-Jan-2021 09:38:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	9
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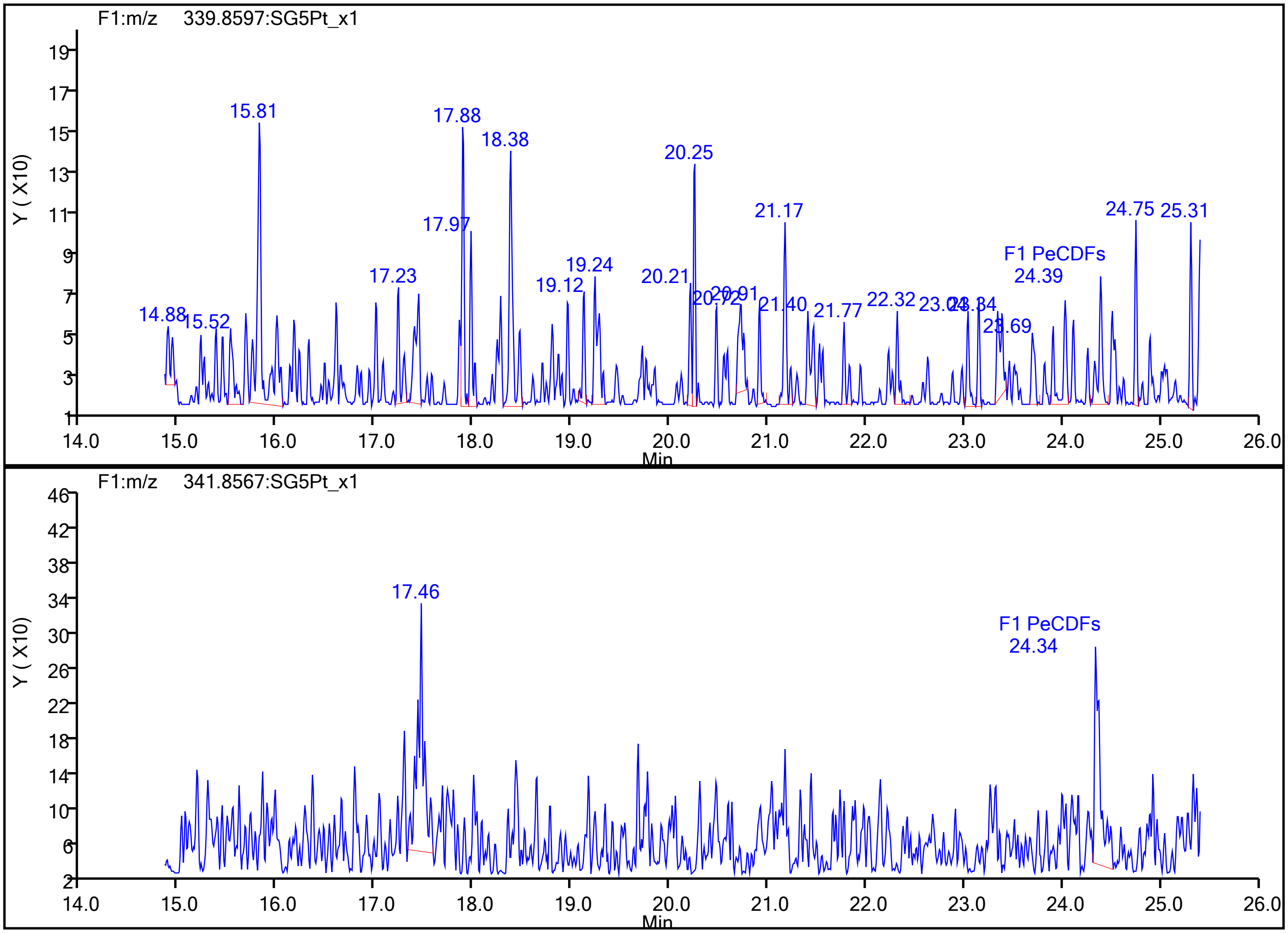

F1 PeCDFs Interference Mass

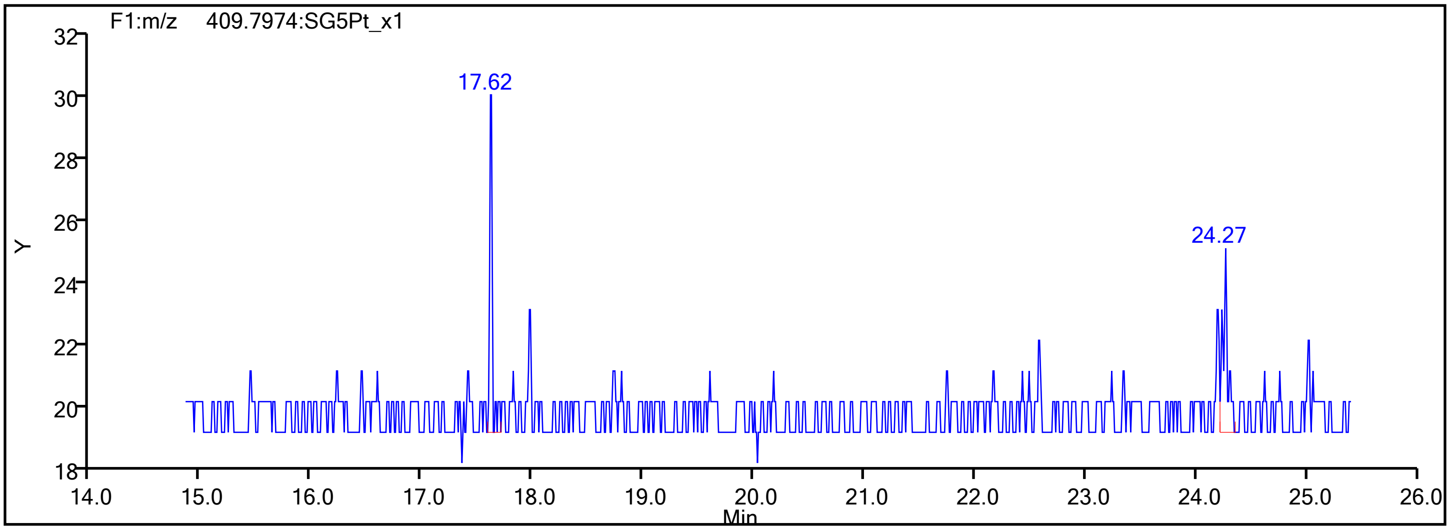

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Eurofins TestAmerica, Sacramento

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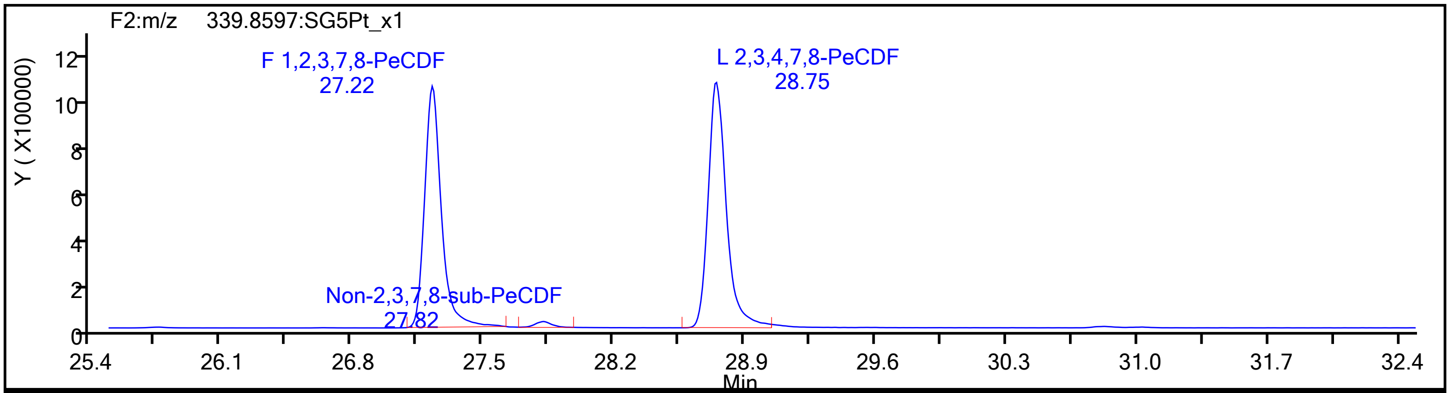

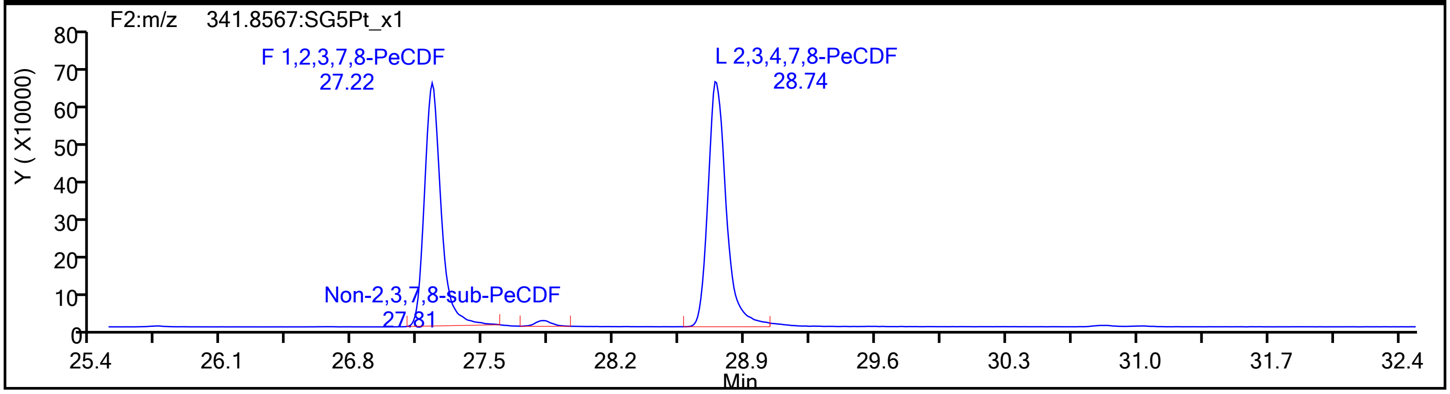

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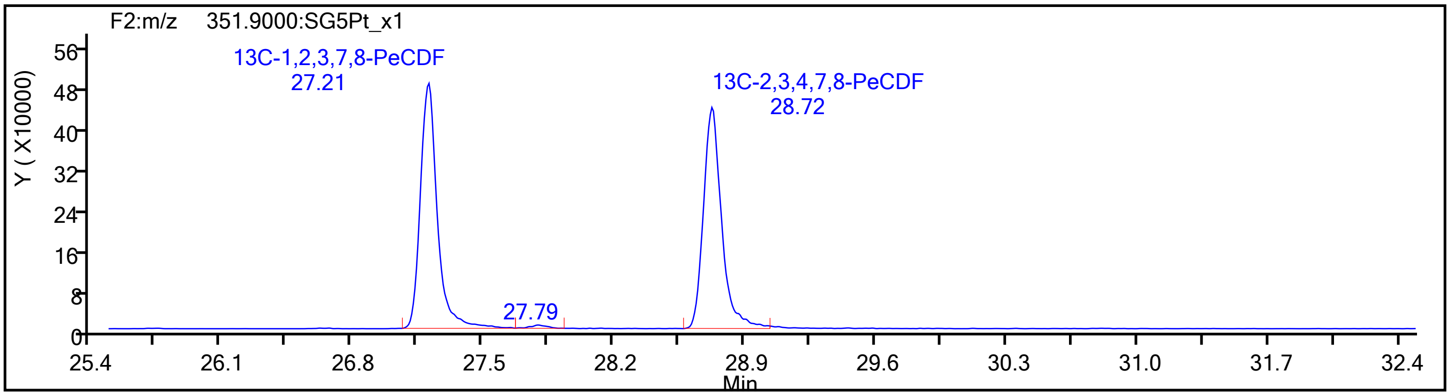

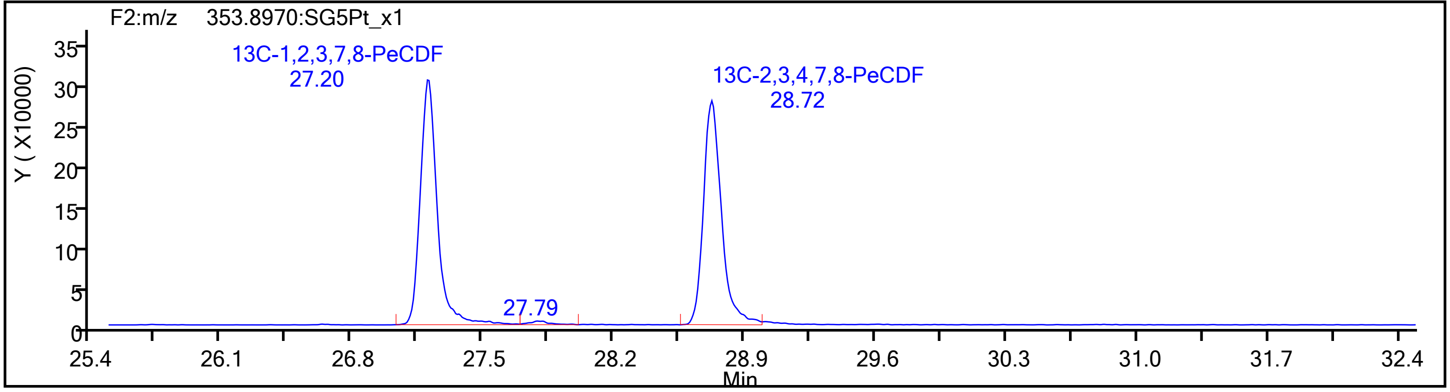

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Eurofins TestAmerica, Sacramento

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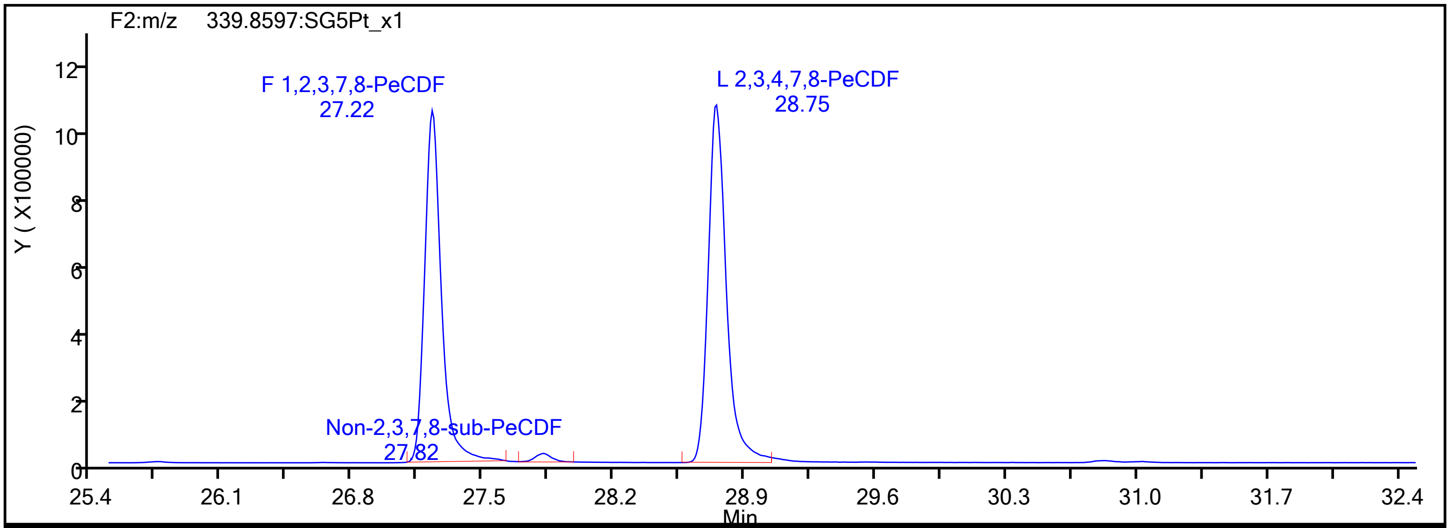

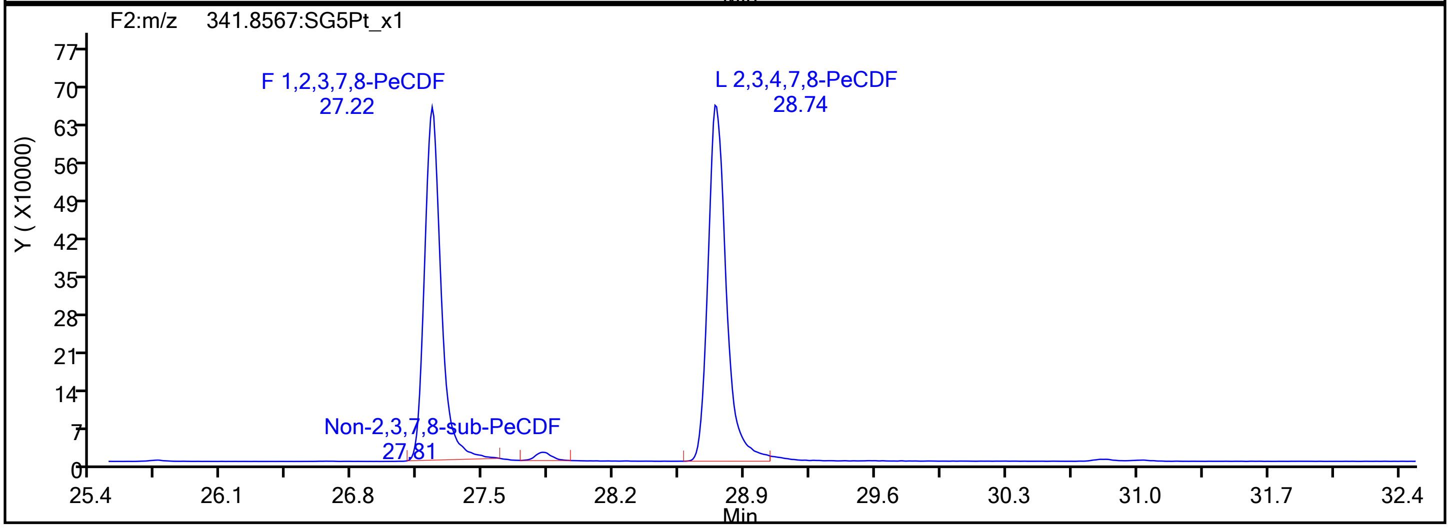

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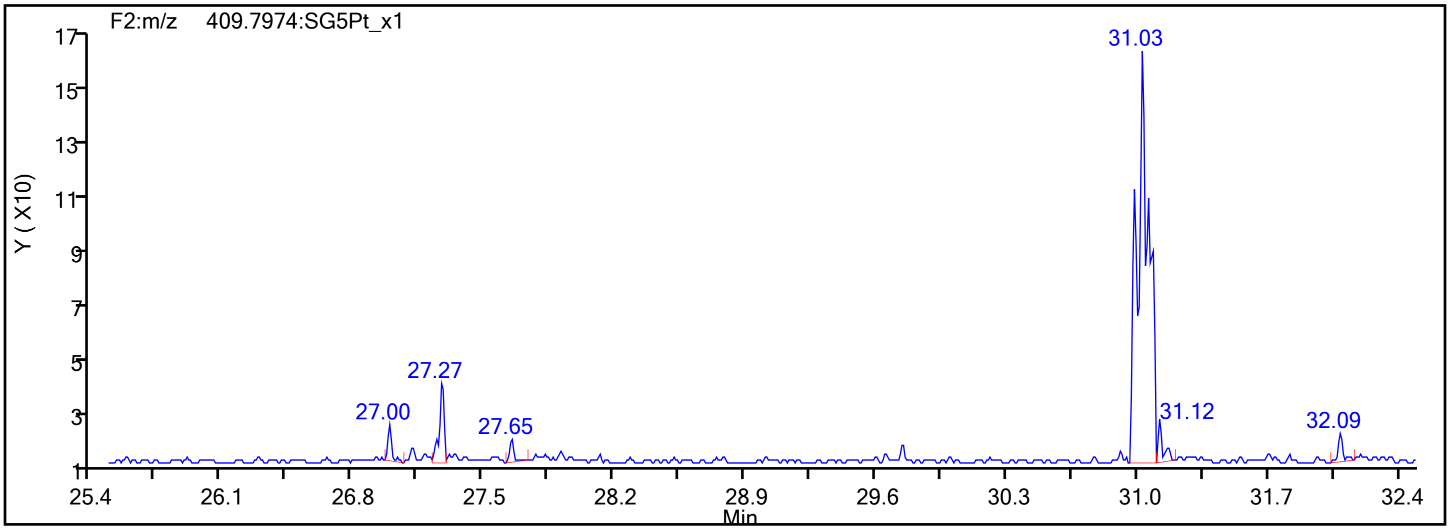

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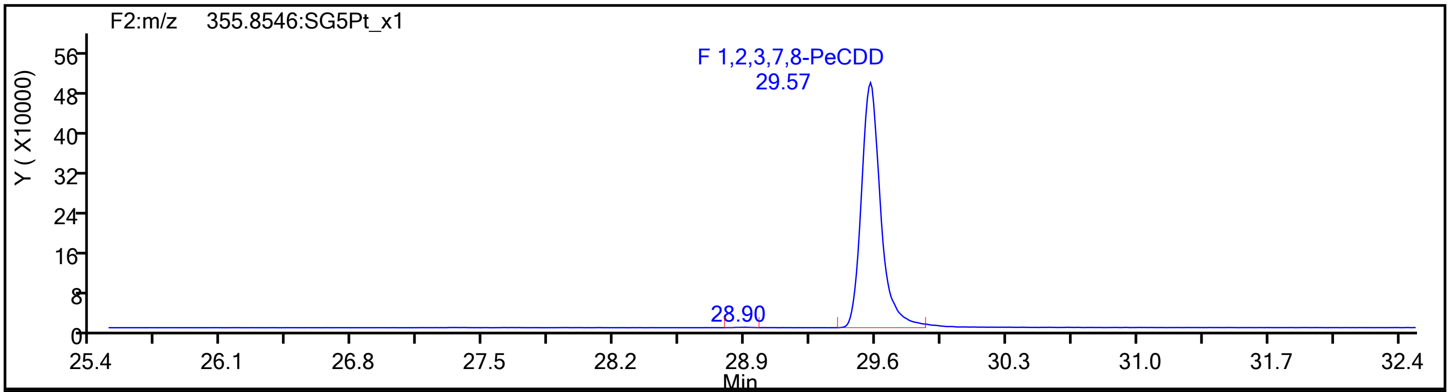

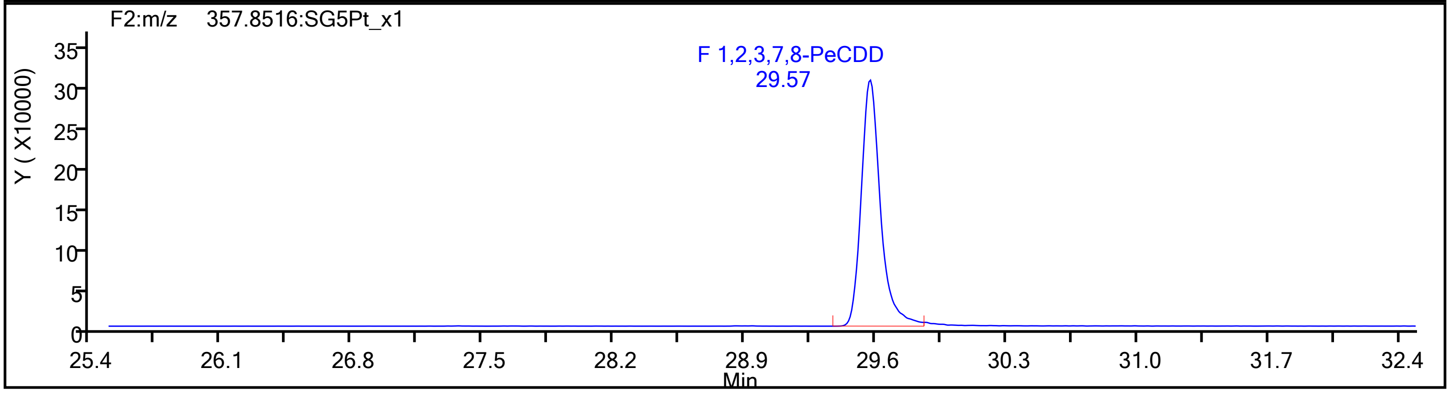

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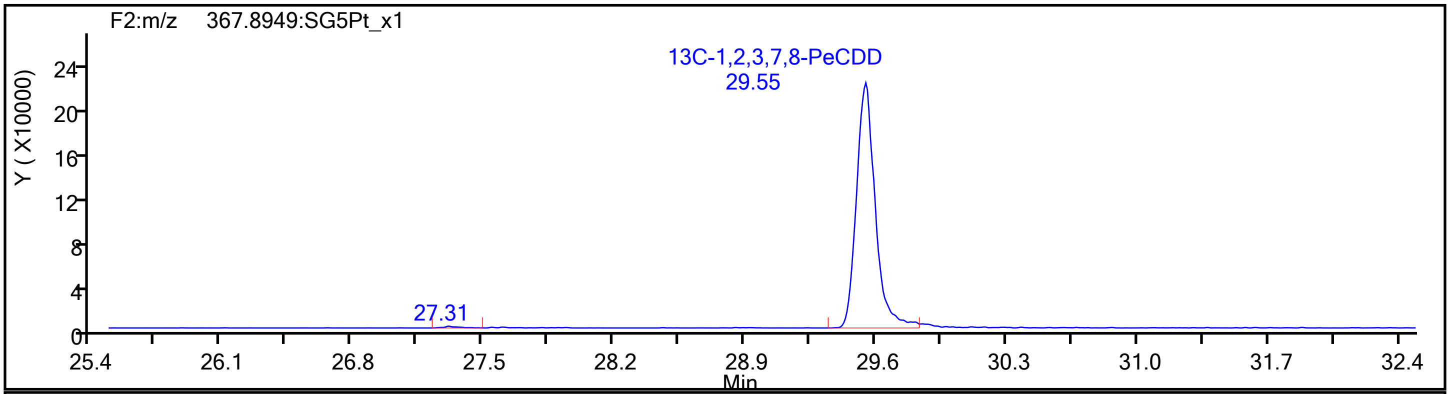

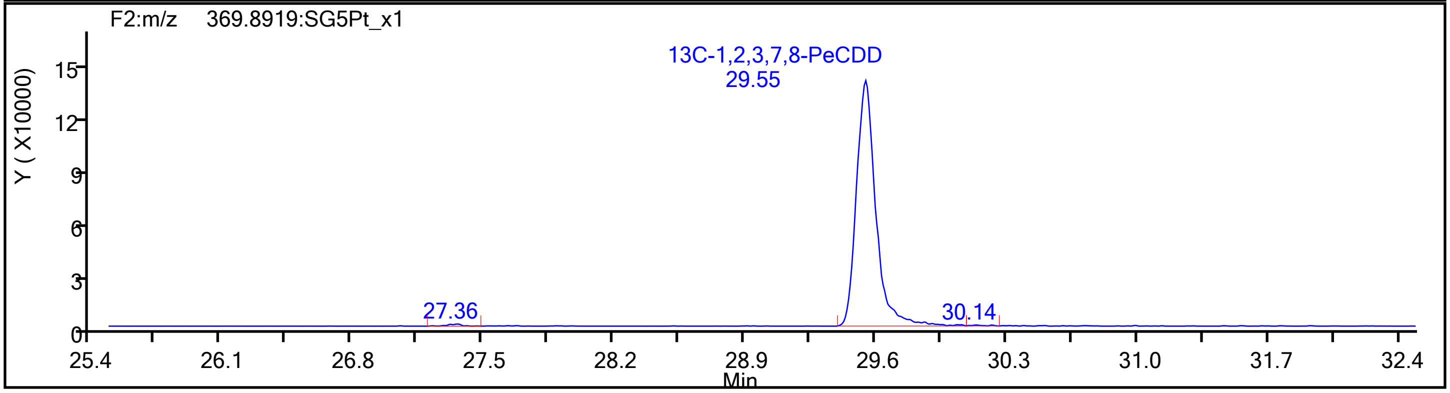

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Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

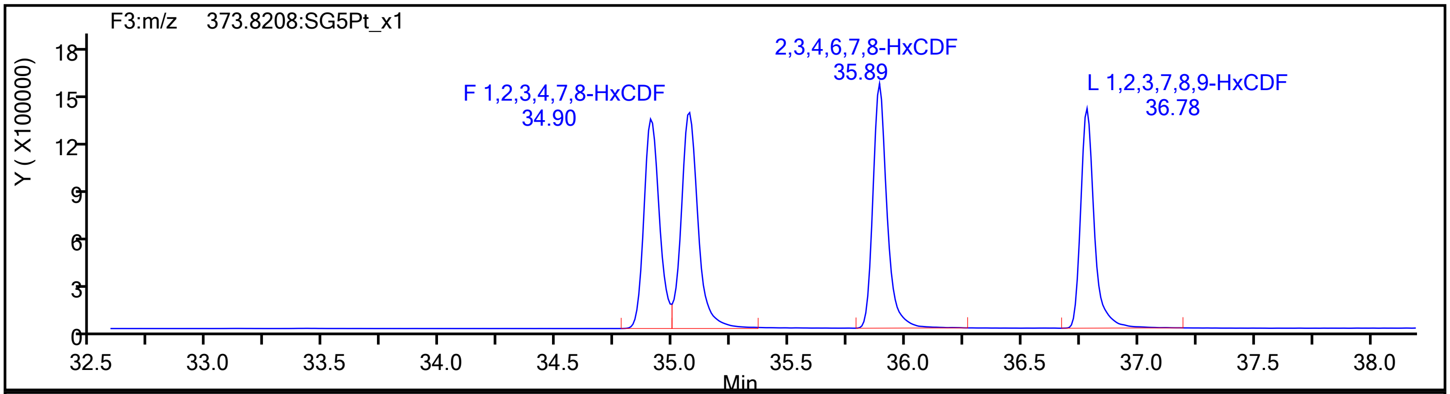

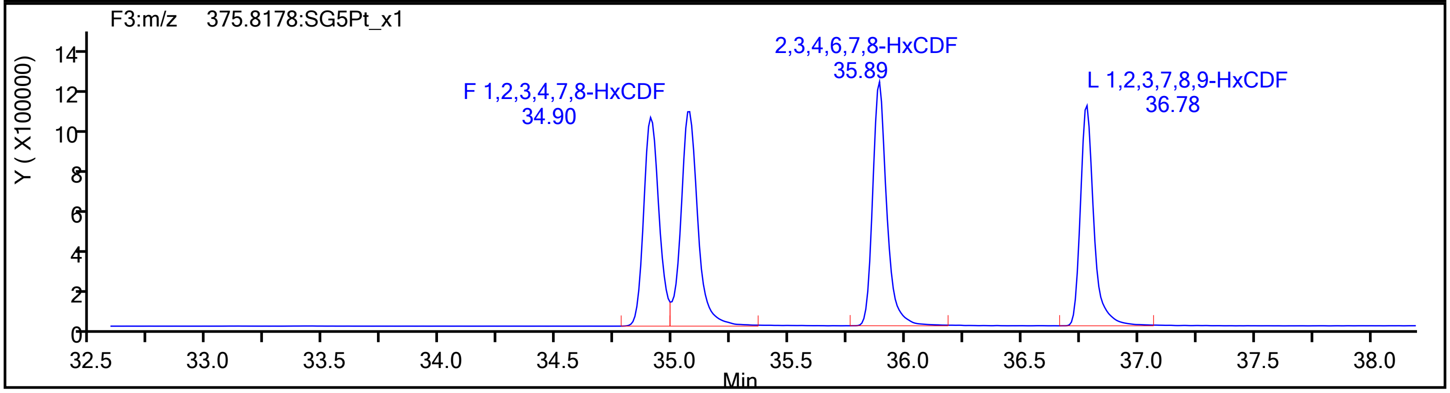

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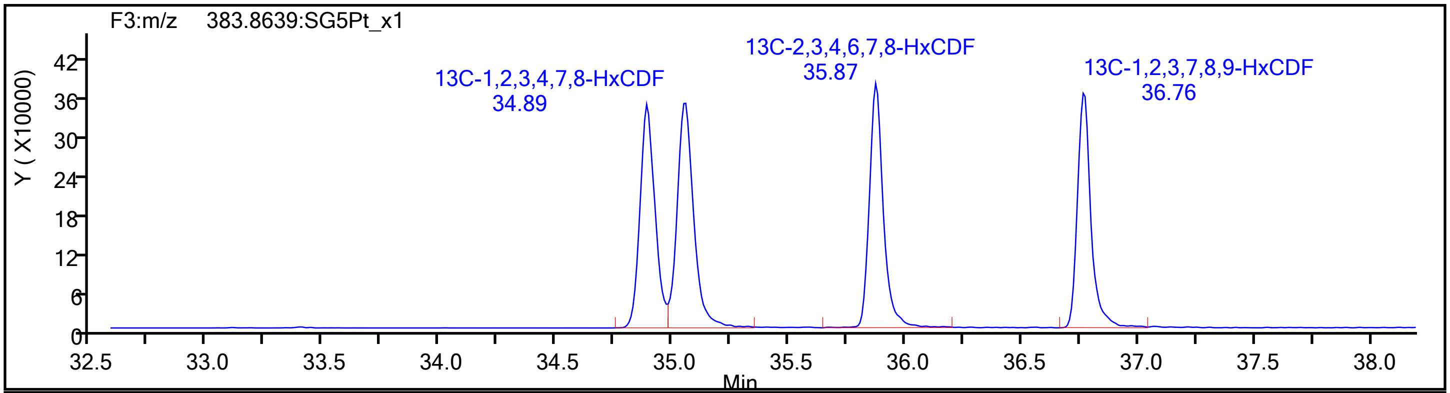

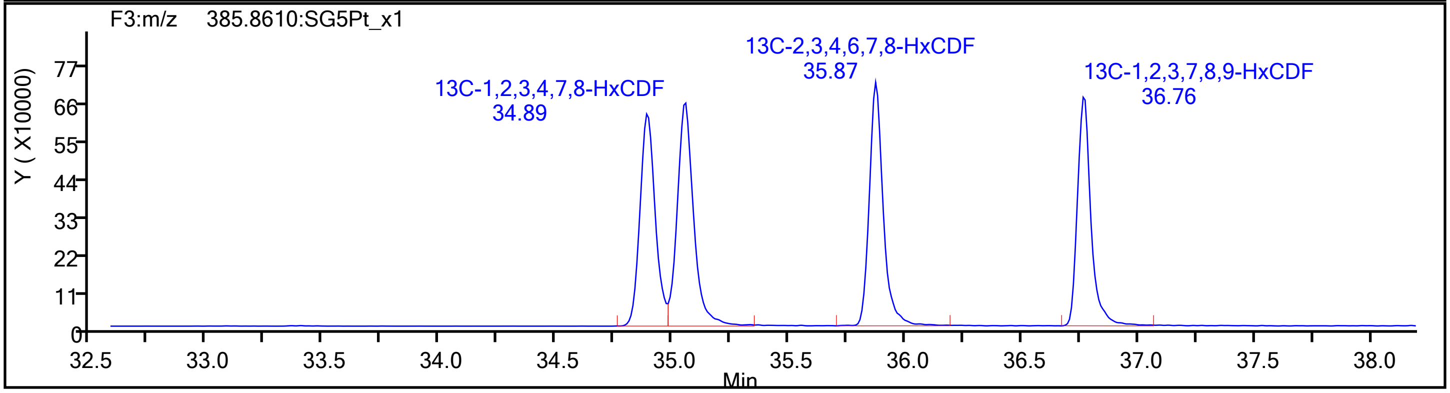

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Eurofins TestAmerica, Sacramento

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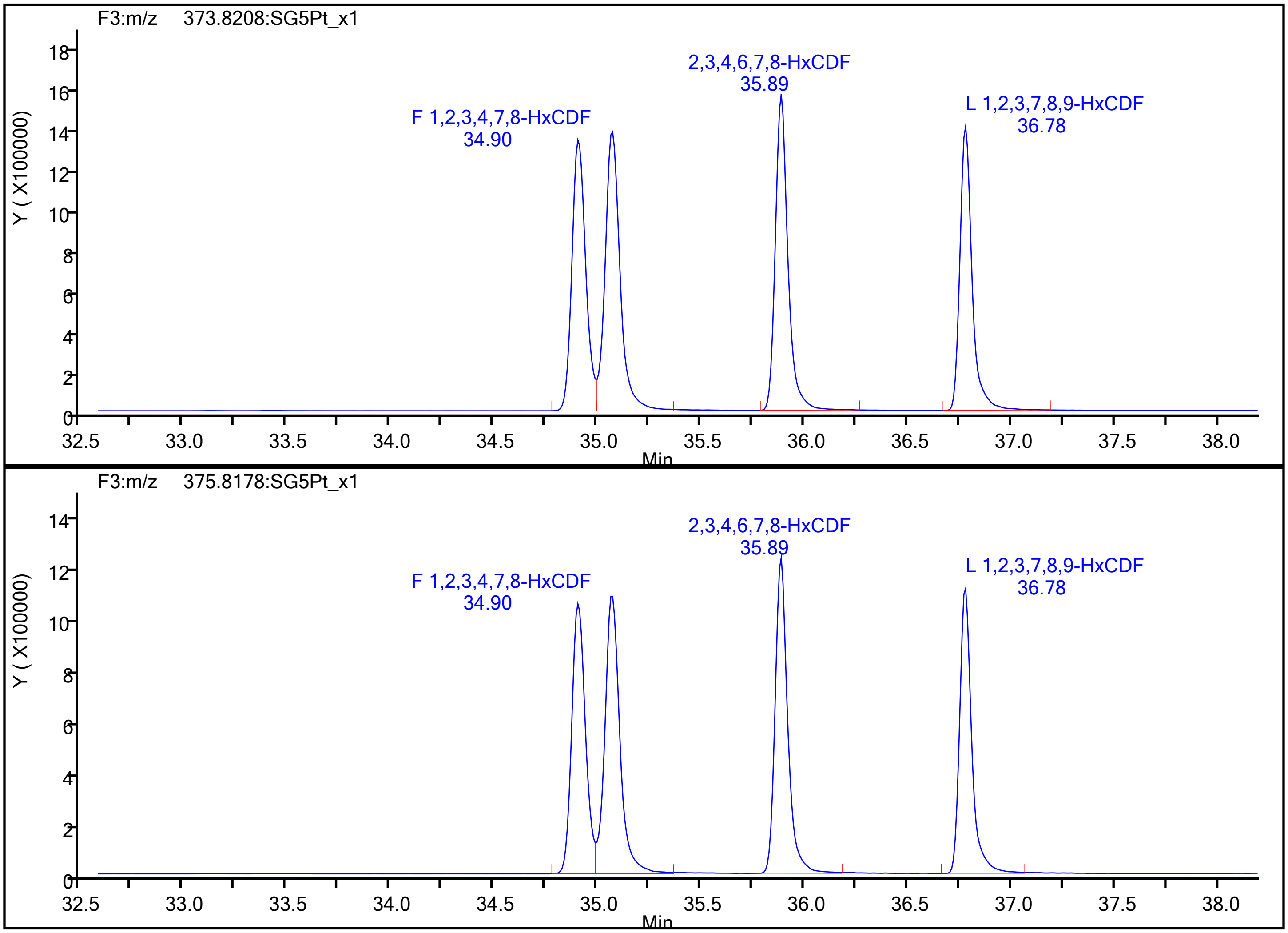

HxCDF Interference Mass

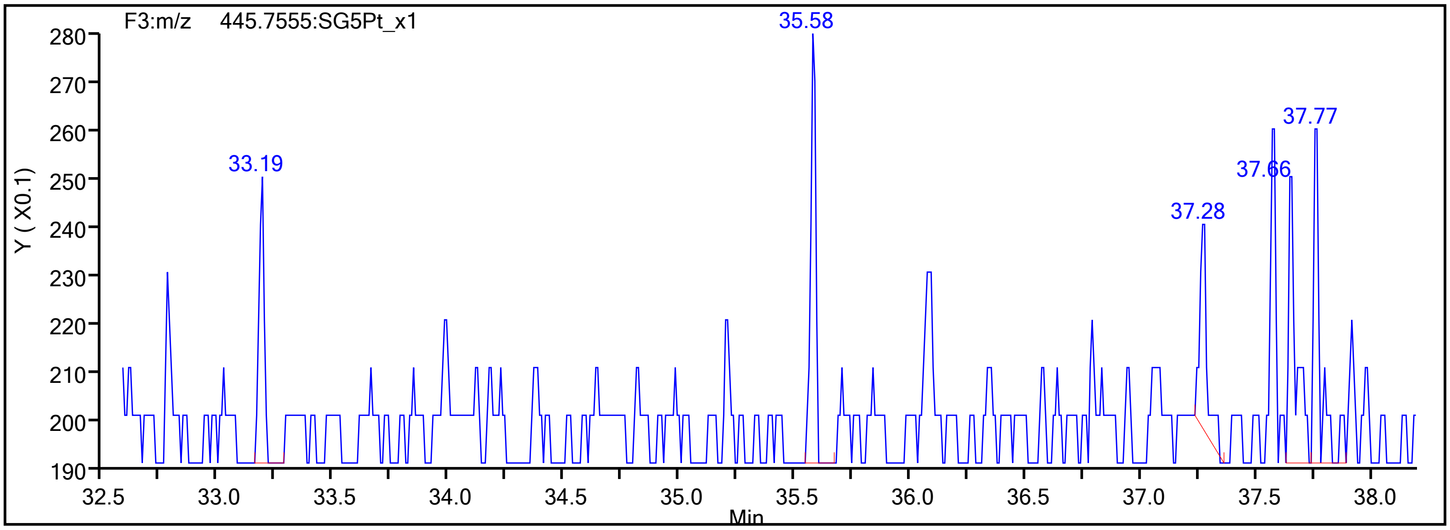

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Eurofins TestAmerica, Sacramento

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HxCDD

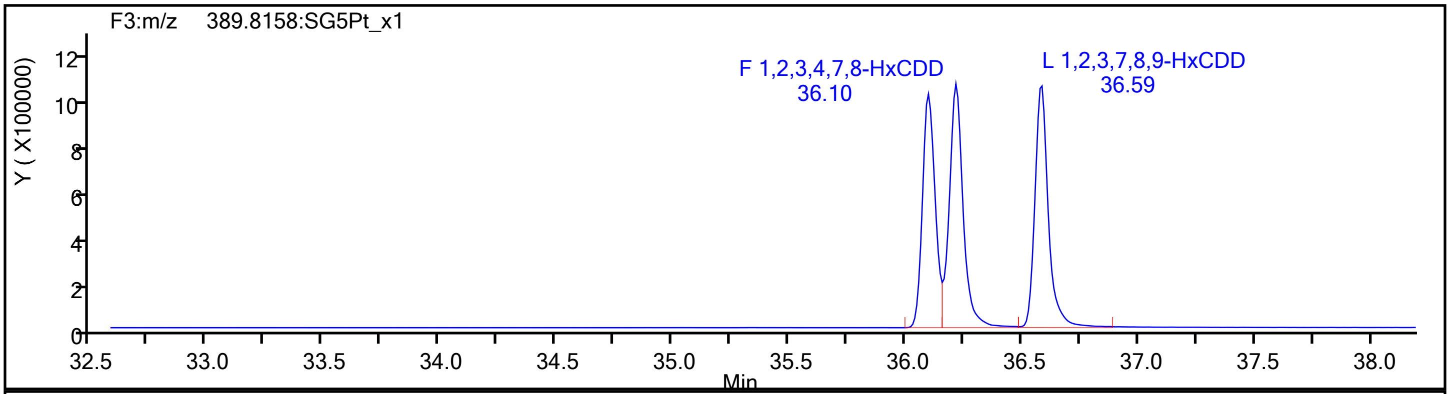

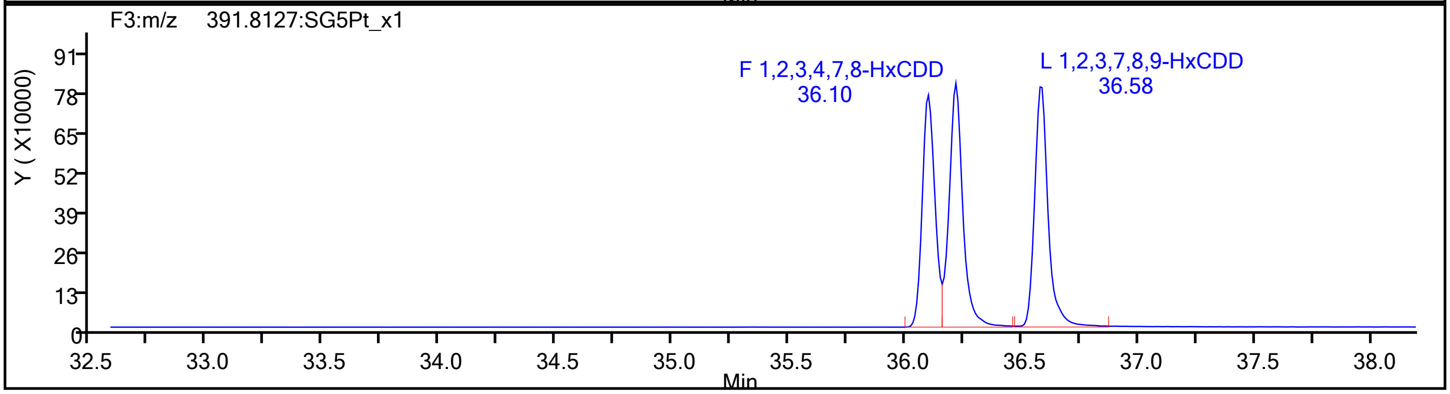

HxCDD Standards

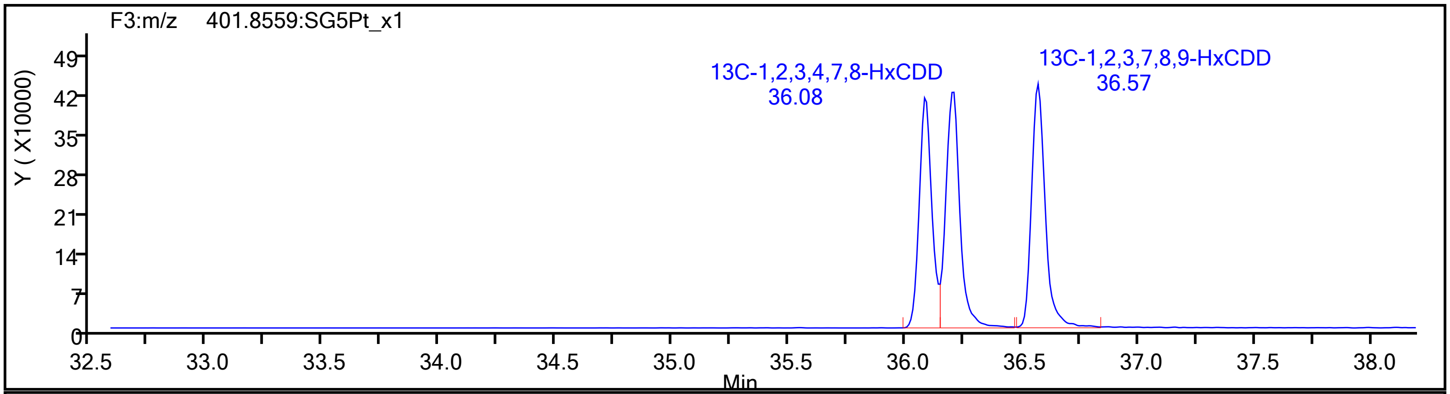

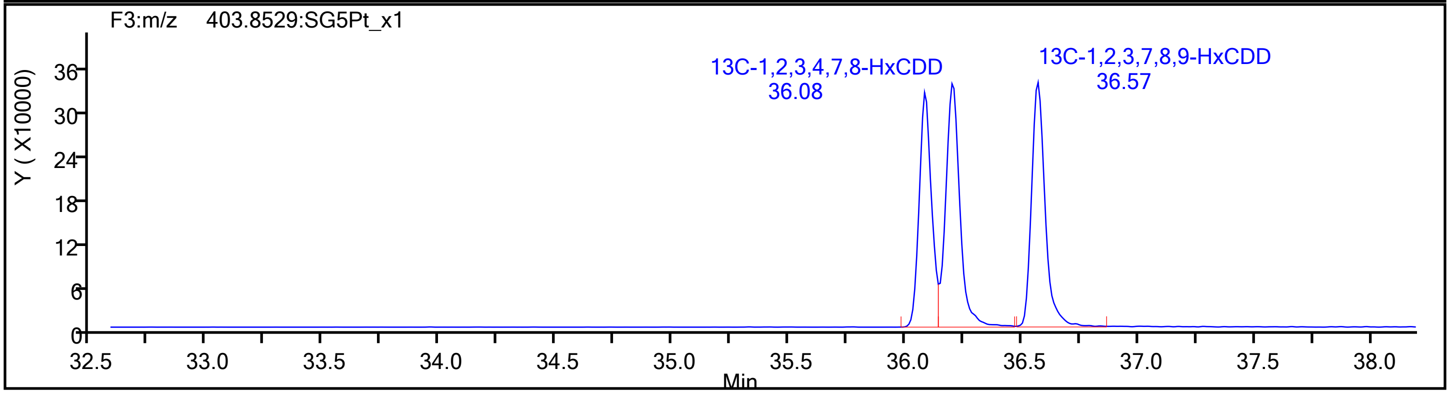

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767

Sample Line#: 9

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Column Dia: 0.32 mm

HpCDF

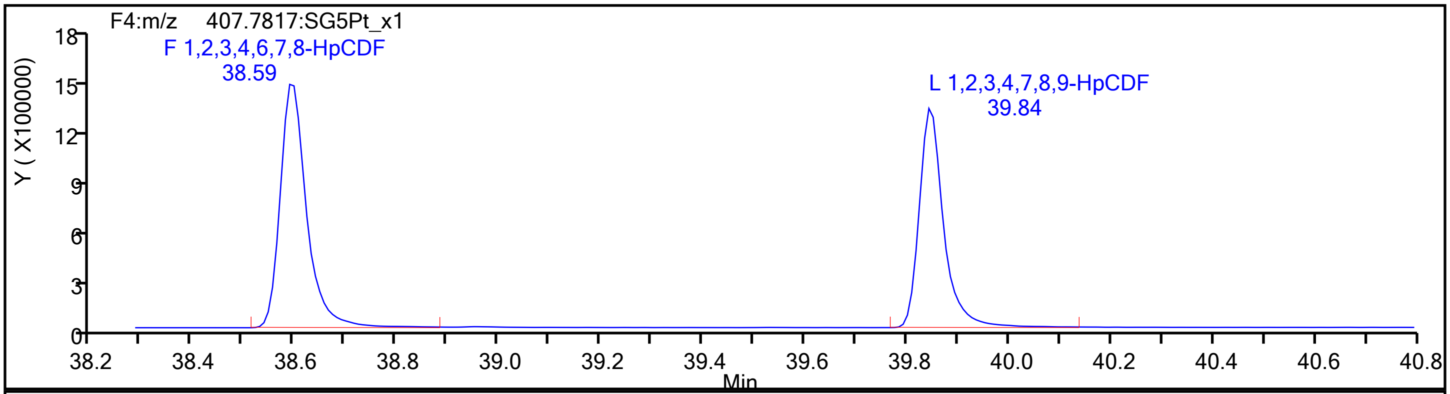

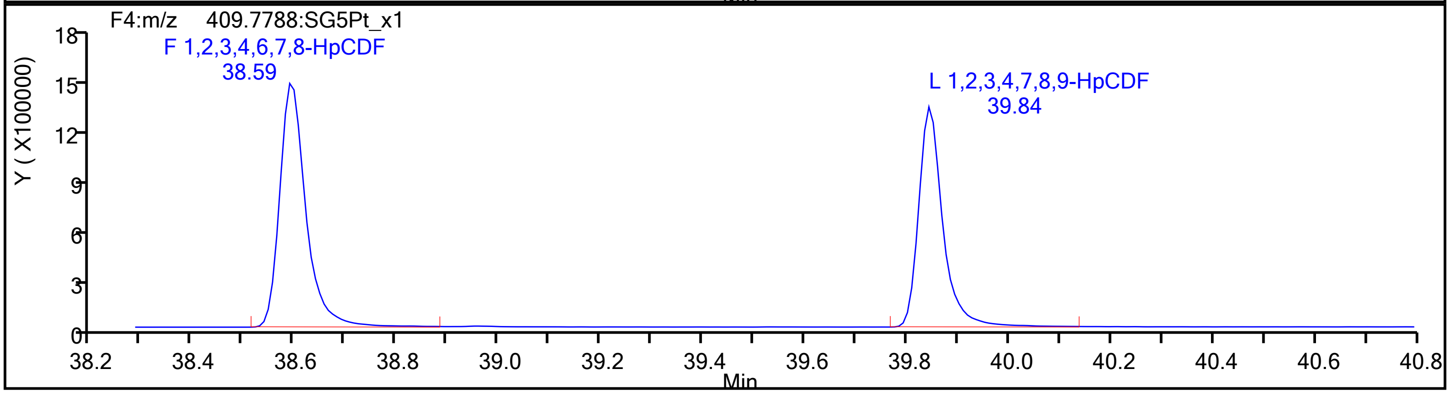

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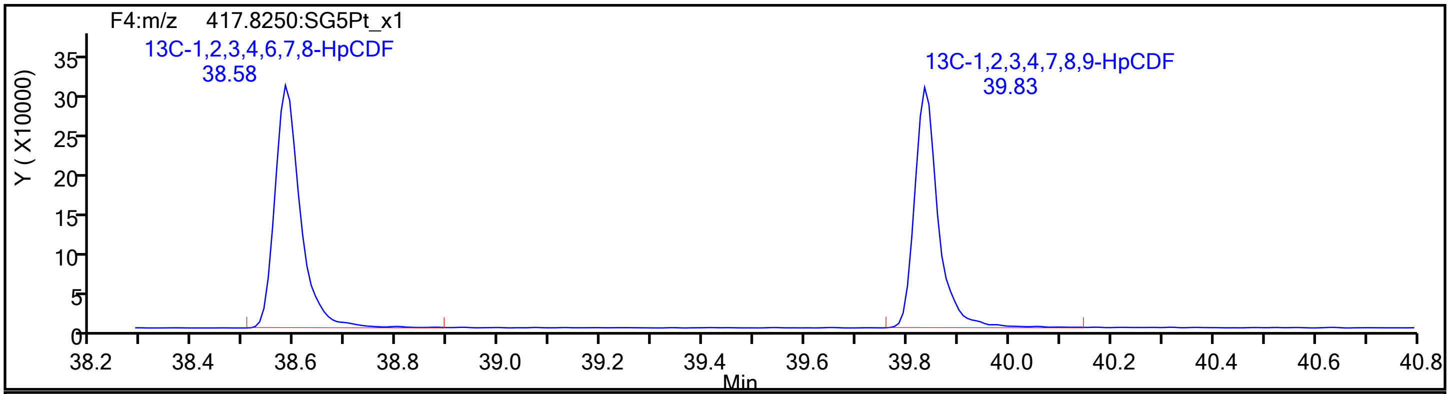

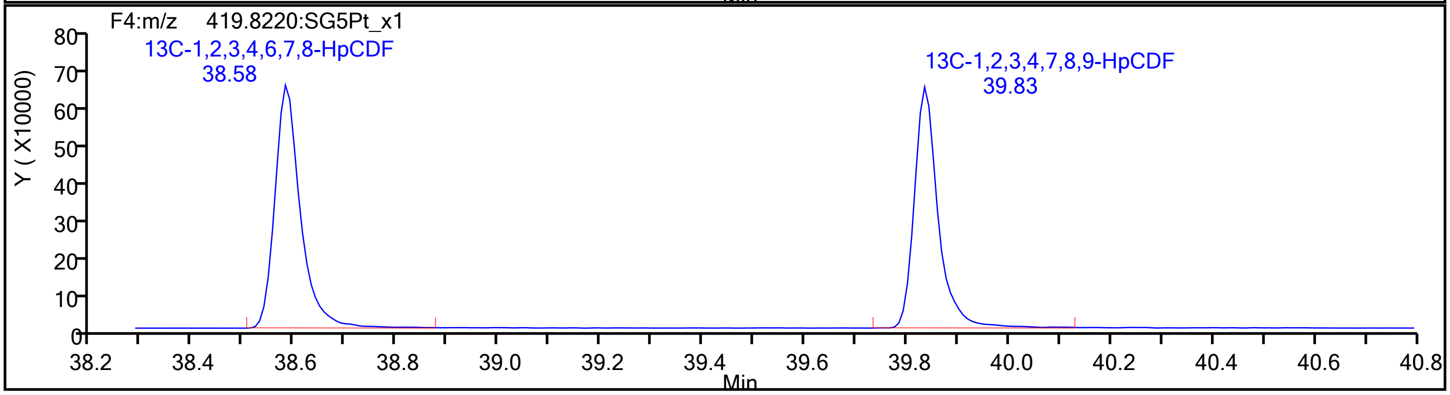

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HpCDF

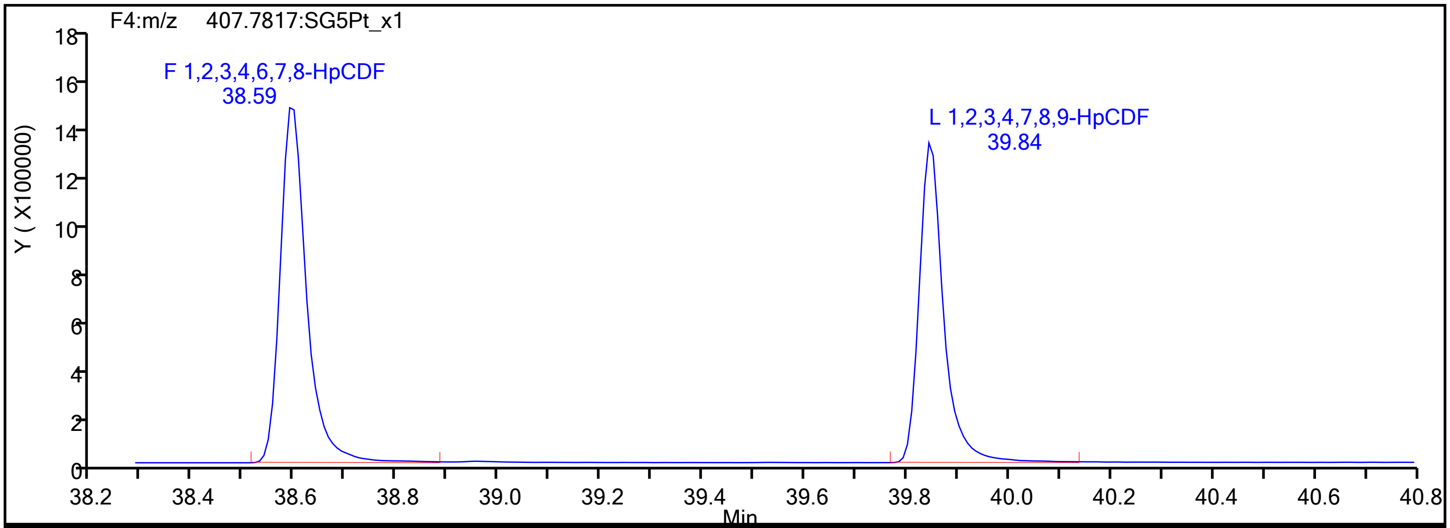

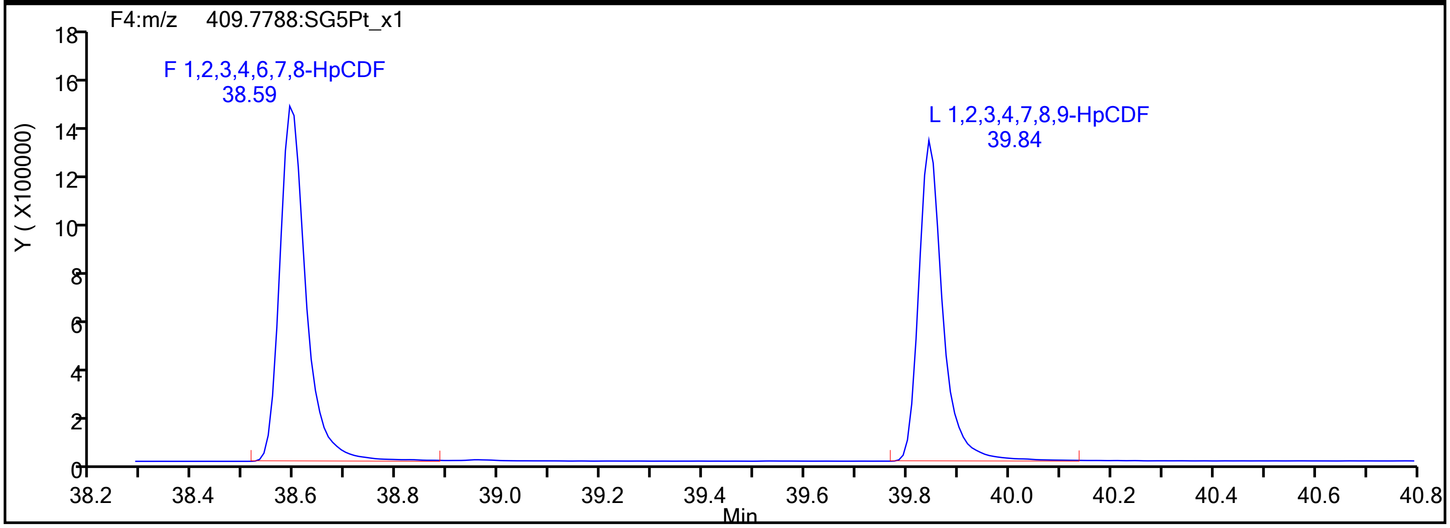

HpCDF Interference Mass

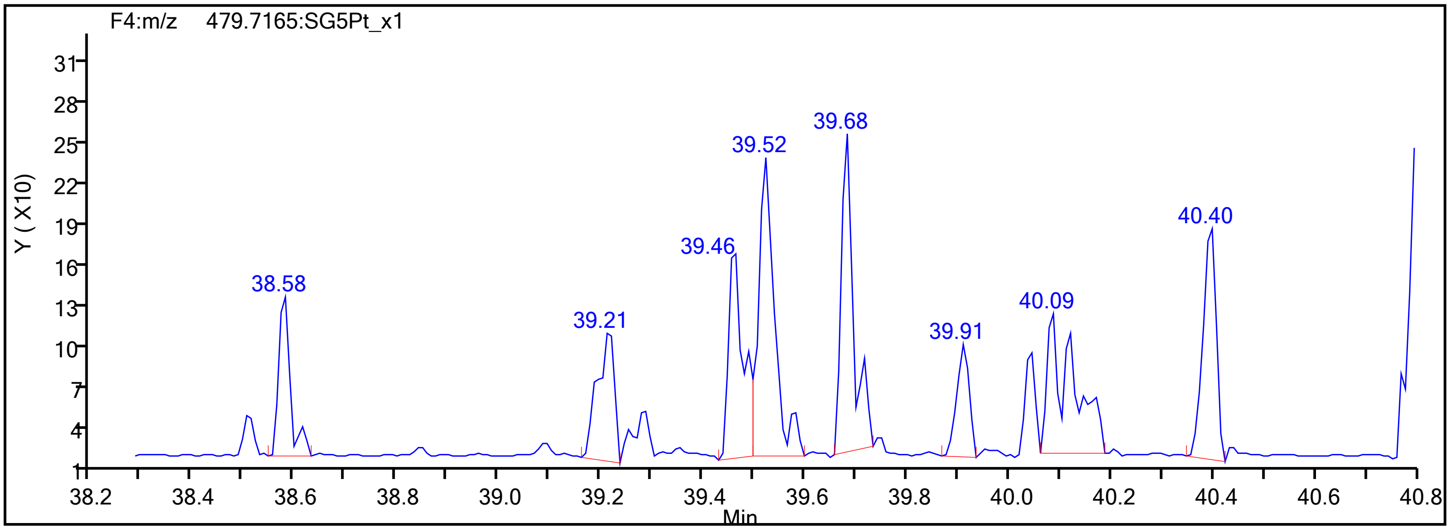

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HpCDD

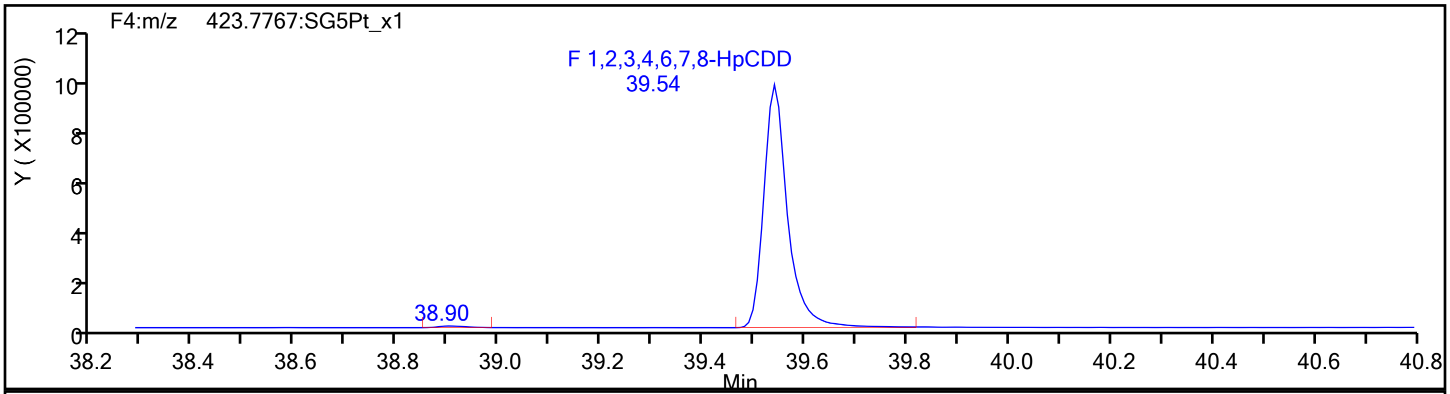

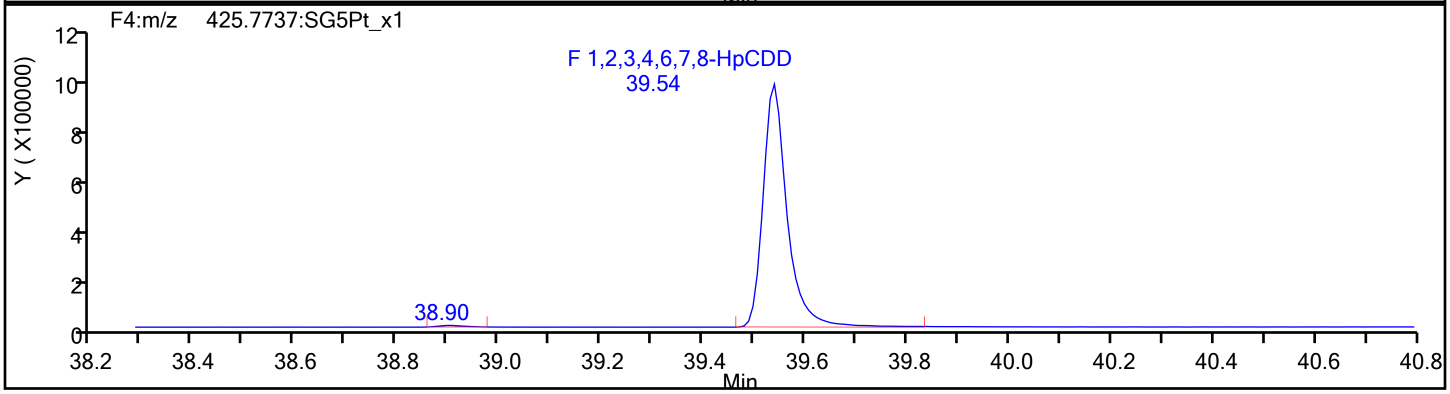

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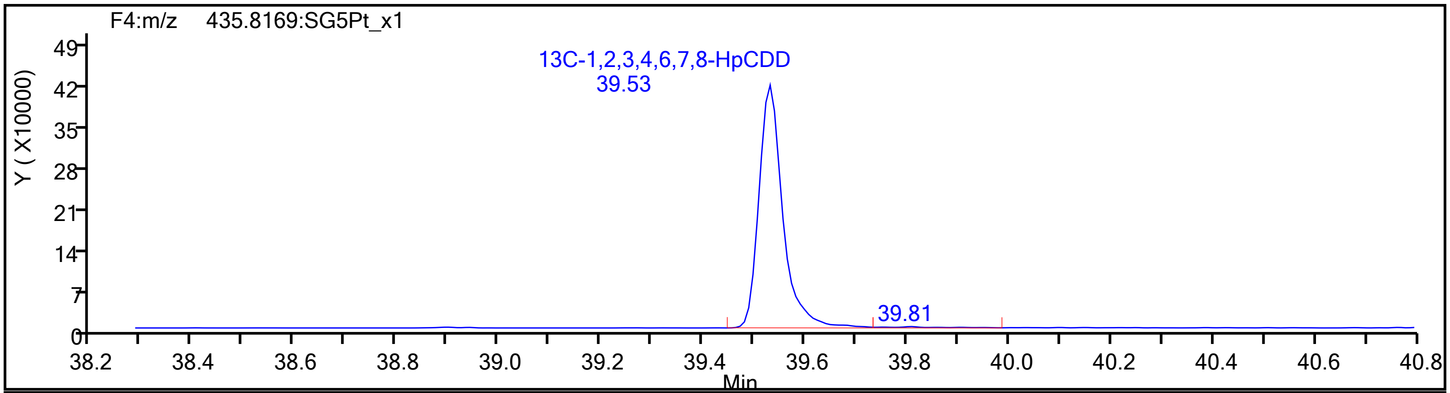

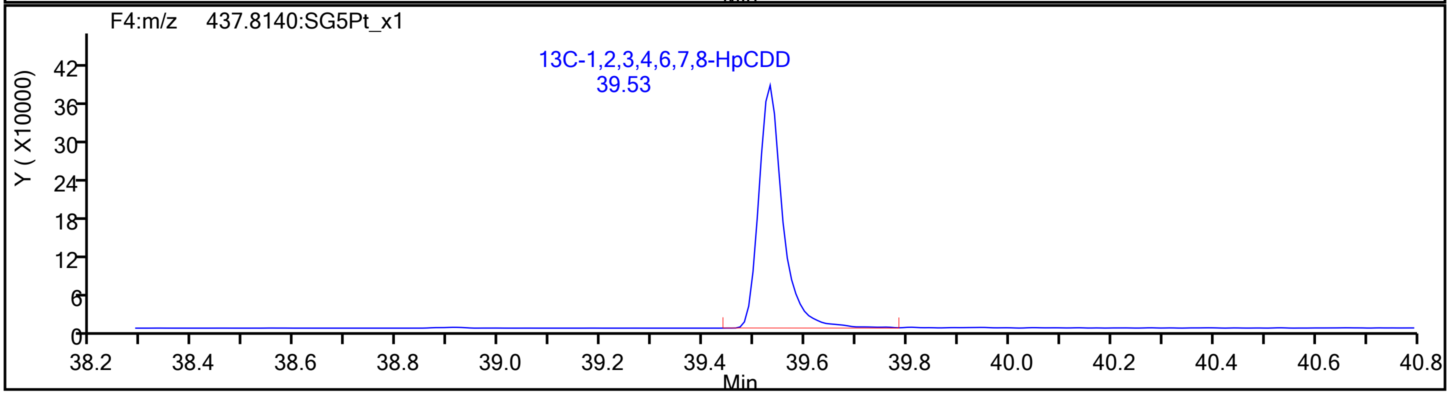

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Eurofins TestAmerica, Sacramento

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OCDF

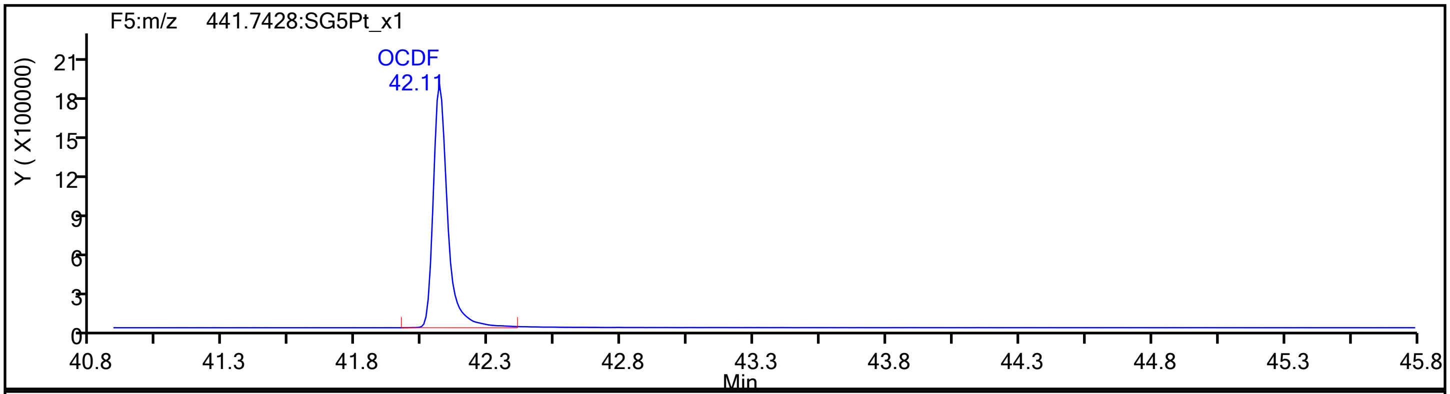

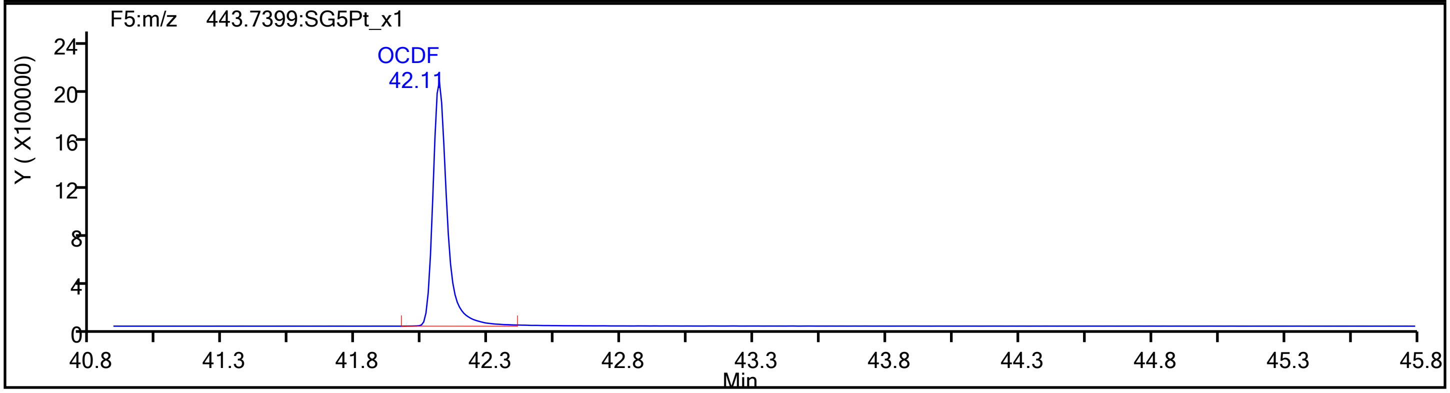

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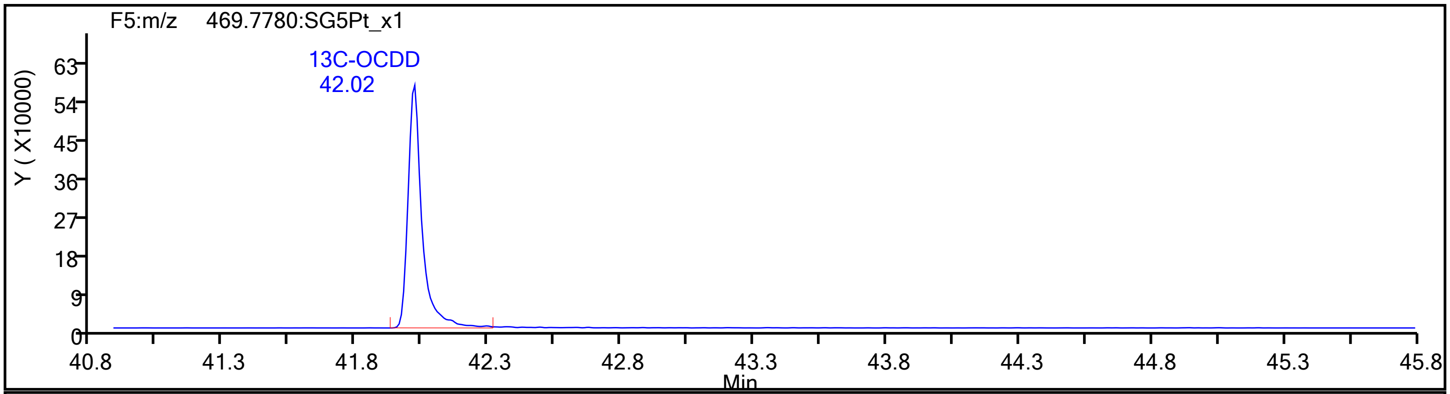

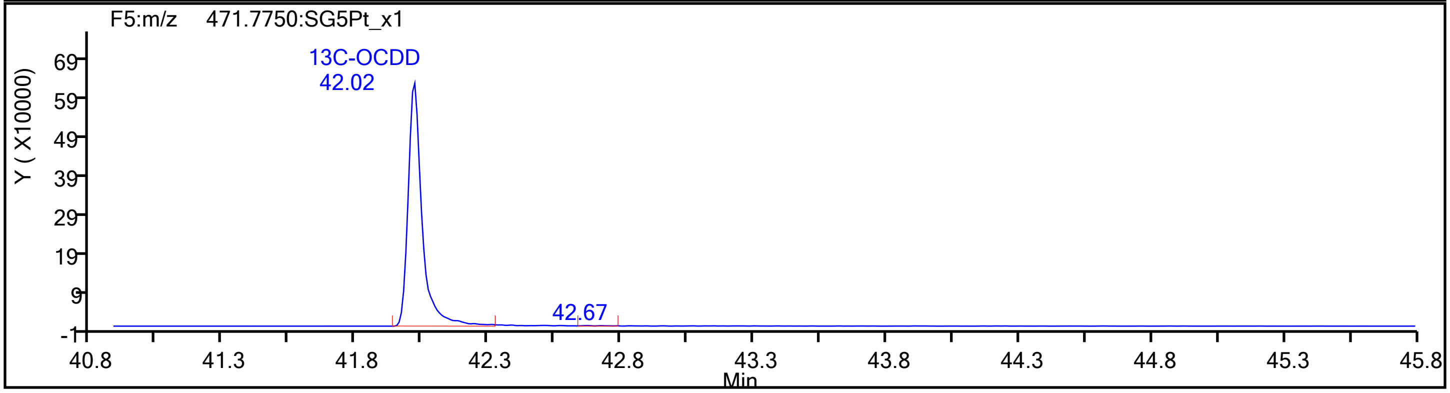

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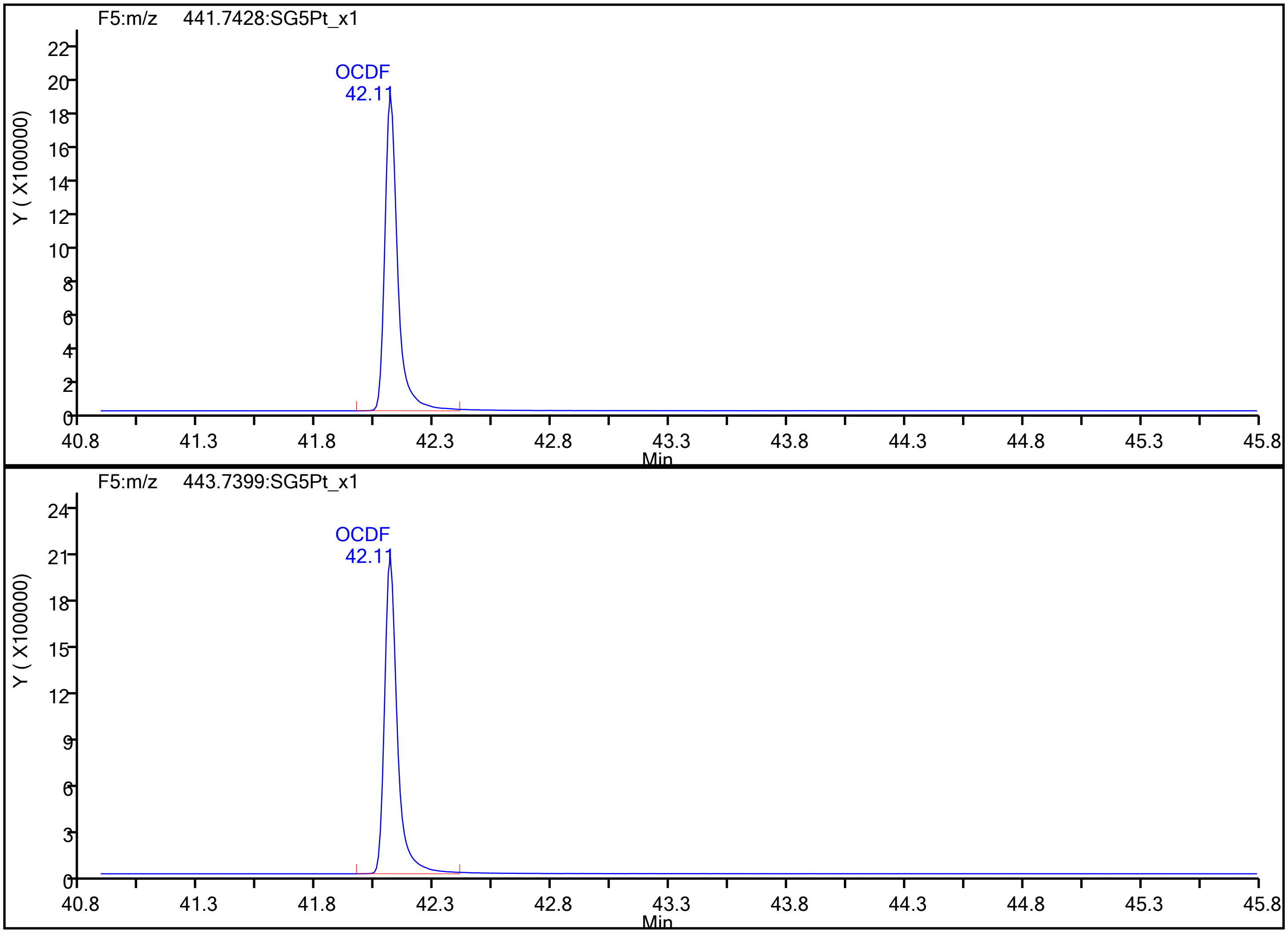

OCDF Interference Mass

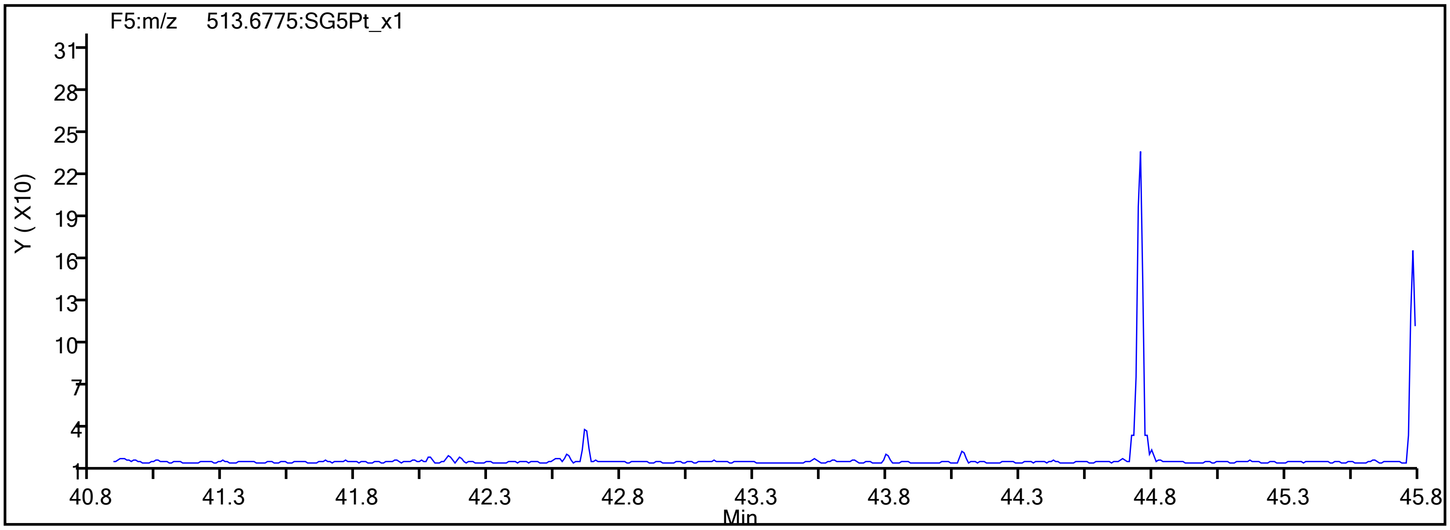

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Eurofins TestAmerica, Sacramento

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OCDD

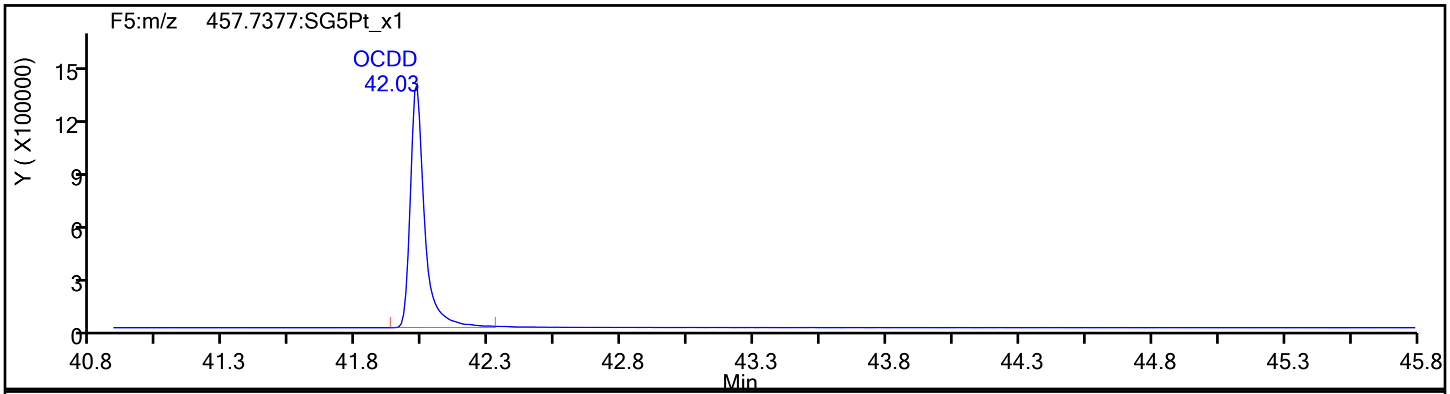

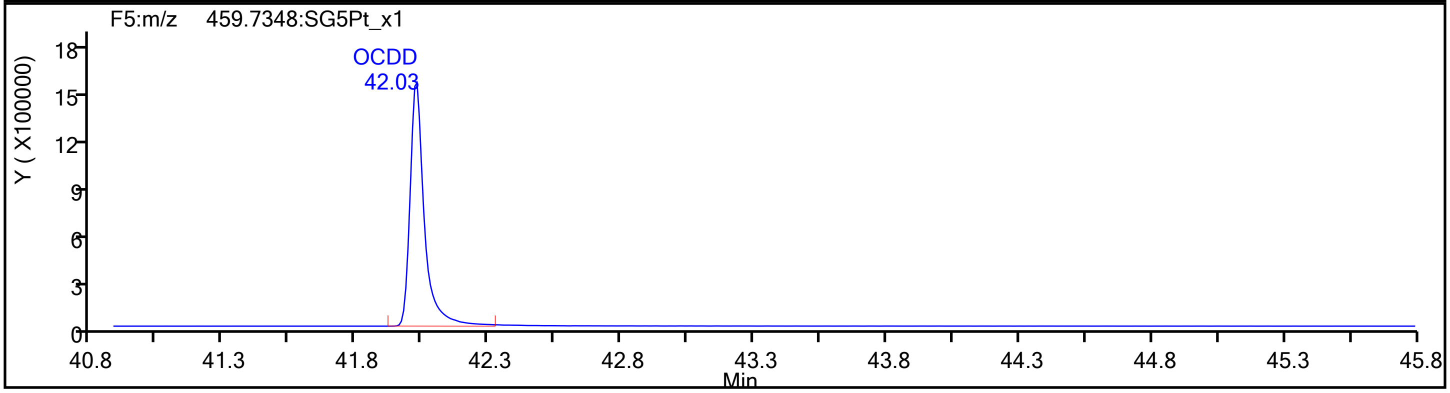

OCDD Standards

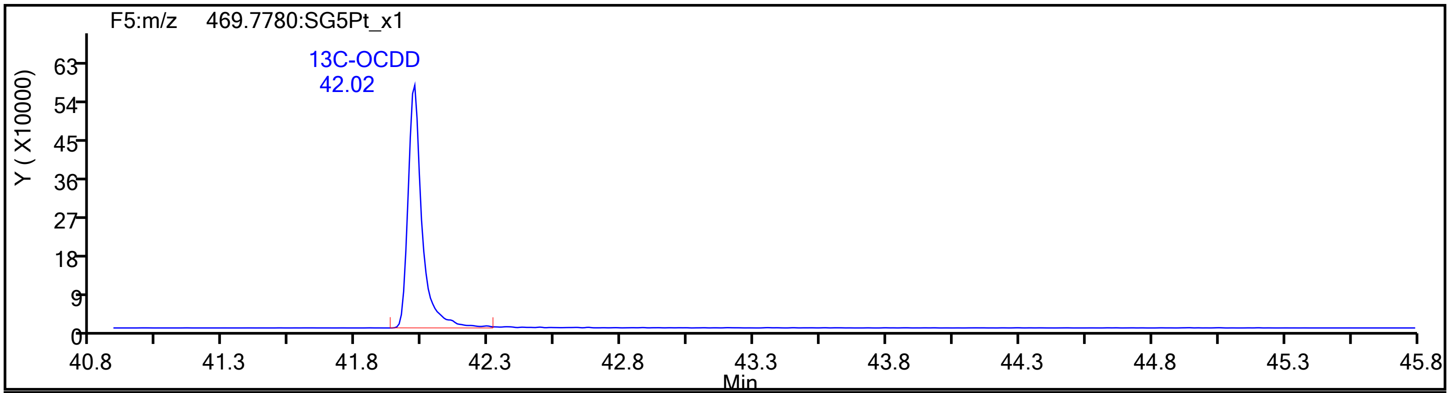

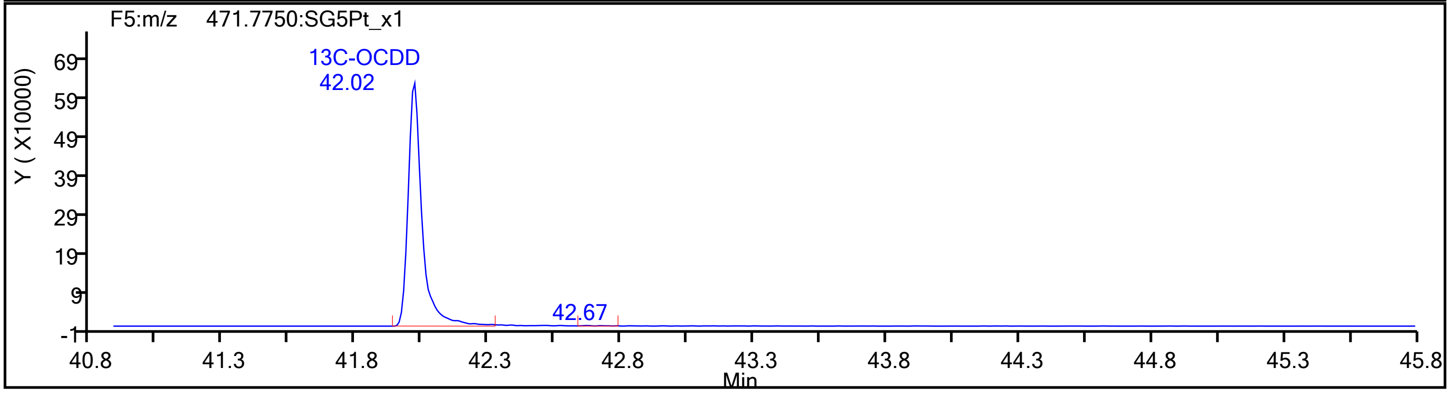

Eurofins TestAmerica, Sacramento

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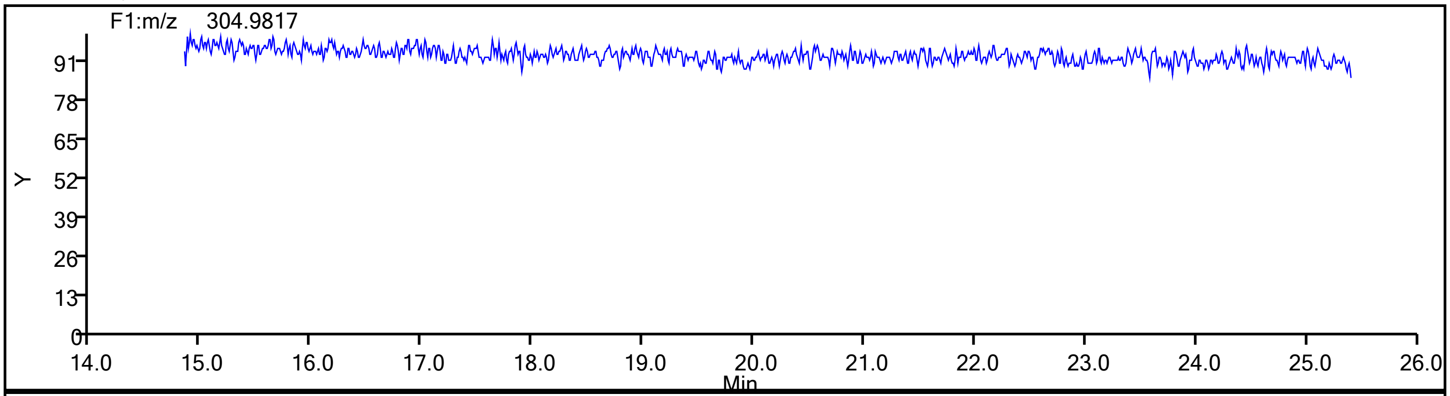

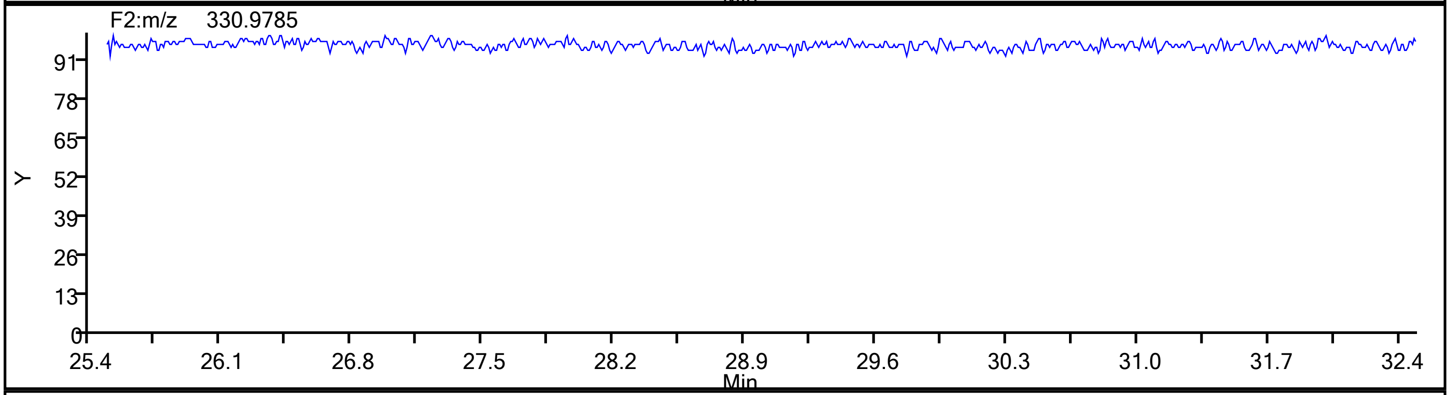

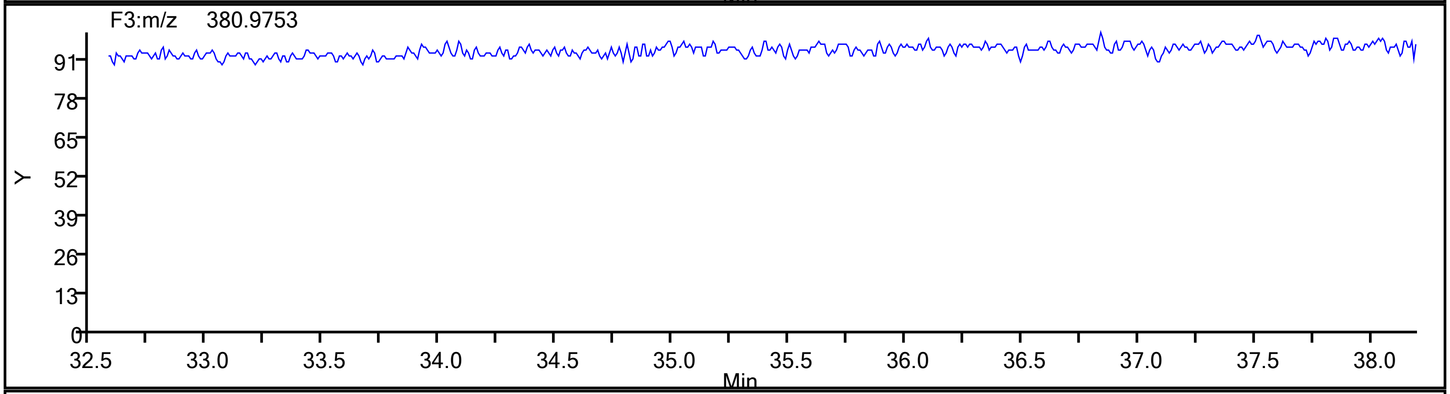

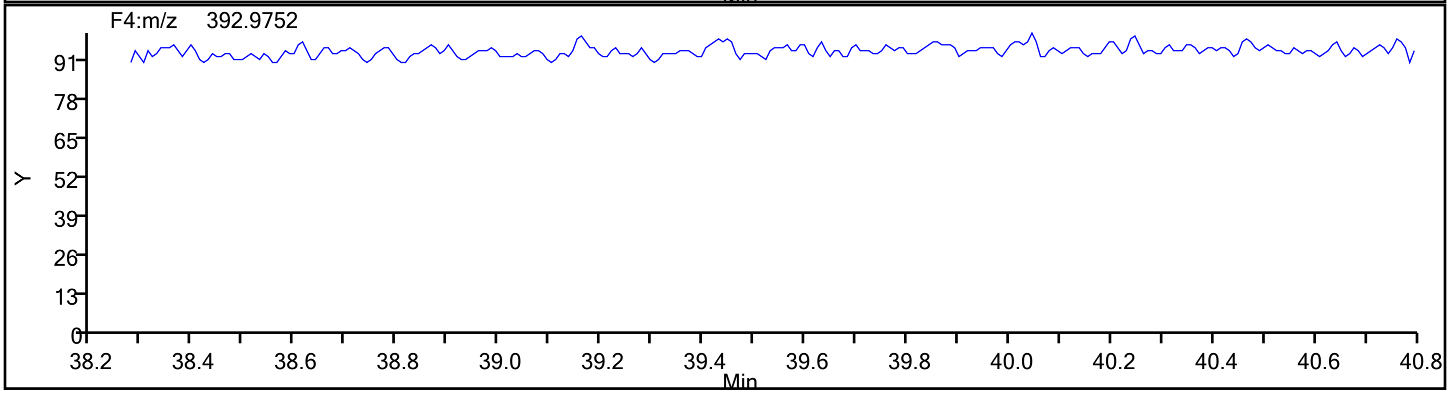

Report Date: 04-Jan-2021 09:38:03 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_10.d		
Injection Date:	31-Dec-2020 19:05:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

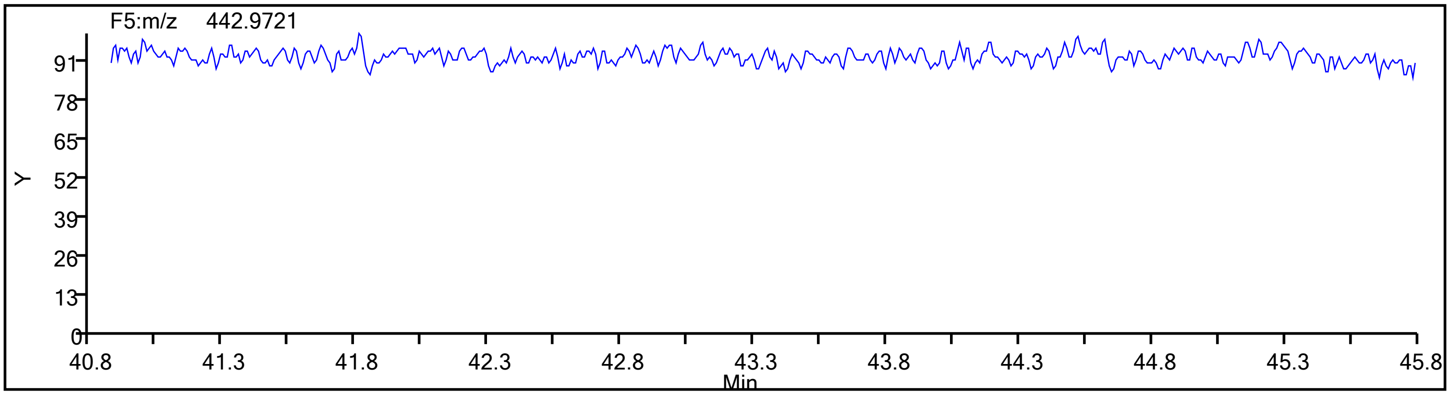

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Lab Sample ID: CCV 320-454782/1 Calibration Date: 01/22/2021 21:17

Instrument ID: DFS 1 Calib Start Date: 12/31/2020 14:17

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/31/2020 17:29

Lab File ID: 22ja21dfs1_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.149	1.121		9.76	10.0	98	84-120
2,3,7,8-TCDD	AveID	1.307	1.183		9.06	10.0	91	78-129
1,2,3,7,8-PeCDF	AveID	1.170	1.120		47.9	50.0	96	82-120
2,3,4,7,8-PeCDF	AveID	1.224	1.196		48.8	50.0	98	82-122
1,2,3,7,8-PeCDD	AveID	1.261	1.102		43.7	50.0	87	78-130
1,2,3,4,7,8-HxCDF	AveID	1.355	1.287		47.5	50.0	95	90-112
1,2,3,6,7,8-HxCDF	AveID	1.308	1.233		47.1	50.0	94	88-114
2,3,4,6,7,8-HxCDF	AveID	1.325	1.214		45.8	50.0	92	88-114
1,2,3,4,7,8-HxCDD	AveID	1.342	1.218		45.4	50.0	91	78-128
1,2,3,6,7,8-HxCDD	AveID	1.199	1.071		44.7	50.0	89	78-128
1,2,3,7,8,9-HxCDD	AveID	1.364	1.204		44.1	50.0	88	82-122
1,2,3,7,8,9-HxCDF	AveID	1.337	1.219		45.6	50.0	91	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.649	1.515		46.0	50.0	92	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.215	1.073		44.2	50.0	88	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.572	1.508		48.0	50.0	96	86-116
OCDD	AveID	1.256	1.152		91.7	100	92	79-126
OCDF	AveID	1.813	1.447		79.8	100	80	63-159
13C-2,3,7,8-TCDF	Ave	1.913	1.873		97.9	100	98	71-140
13C-2,3,7,8-TCDD	Ave	1.091	1.109		102	100	102	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.536	1.524		99.3	100	99	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.428	1.390		97.4	100	97	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7800	0.8719		112	100	112	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.425	1.315		92.3	100	92	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.711	1.534		89.7	100	90	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.546	1.418		91.8	100	92	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8266	0.8640		105	100	105	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	1.042	1.040		99.8	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	1.377	1.169		84.9	100	85	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.105	1.026		92.8	100	93	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8768	0.9186		105	100	105	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.9761	0.8656		88.7	100	89	77-129
13C-OCDD	Ave	0.7137	0.7620		214	200	107	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.228	1.190		9.69	10.0	97	79-127

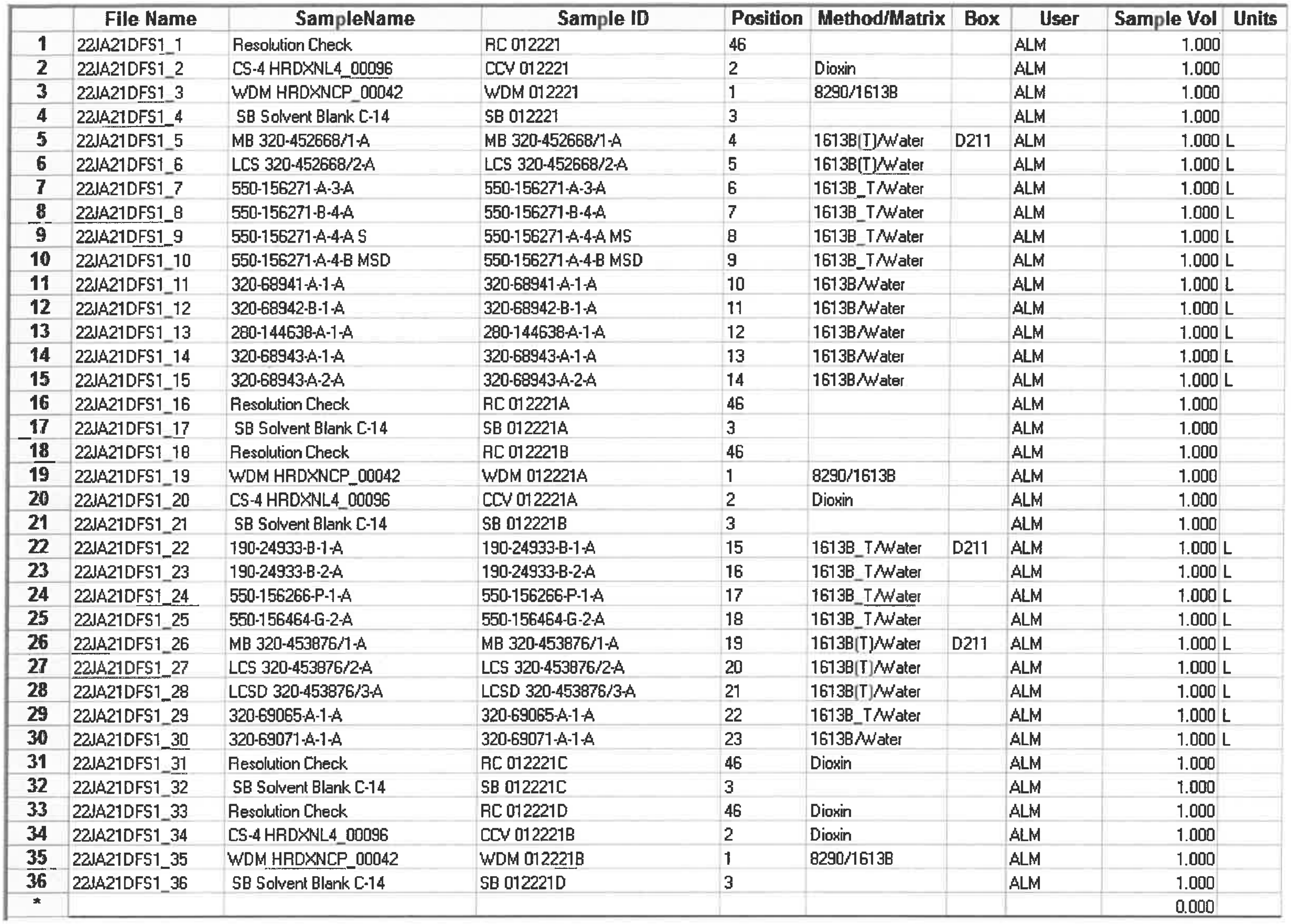

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2	22JA21DFS1_2	CS-4 HRDXNL4_00096	CCV 012221	2	Dioxin		ALM	1.000	
3	22JA21DFS1_3	WDM HRDXNCP_00042	WDM 012221	1	8290/1613B		ALM	1.000	
4	22JA21DFS1_4	SB Solvent Blank C-14	SB 012221	3			ALM	1.000	
5	22JA21DFS1_5	MB 320-452668/1-A	MB 320-452668/1-A	4	1613B(T)/Water	D211	ALM	1.000	L
6	22JA21DFS1_6	LCS 320-452668/2-A	LCS 320-452668/2-A	5	1613B(T)/Water		ALM	1.000	L
7	22JA21DFS1_7	550-156271-A-3-A	550-156271-A-3-A	6	1613B_T/Water		ALM	1.000	L
8	22JA21DFS1_8	550-156271-B-4-A	550-156271-B-4-A	7	1613B_T/Water		ALM	1.000	L
9	22JA21DFS1_9	550-156271-A-4-A S	550-156271-A-4-A MS	8	1613B_T/Water		ALM	1.000	L
10	22JA21DFS1_10	550-156271-A-4-B MSD	550-156271-A-4-B MSD	9	1613B_T/Water		ALM	1.000	L
11	22JA21DFS1_11	320-68941-A-1-A	320-68941-A-1-A	10	1613B/Water		ALM	1.000	L
12	22JA21DFS1_12	320-68942-B-1-A	320-68942-B-1-A	11	1613B/Water		ALM	1.000	L
13	22JA21DFS1_13	280-144638-A-1-A	280-144638-A-1-A	12	1613B/Water		ALM	1.000	L
14	22JA21DFS1_14	320-68943-A-1-A	320-68943-A-1-A	13	1613B/Water		ALM	1.000	L
15	22JA21DFS1_15	320-68943-A-2-A	320-68943-A-2-A	14	1613B/Water		ALM	1.000	L
16	22JA21DFS1_16	Resolution Check	RC 012221A	46			ALM	1.000	
17	22JA21DFS1_17	SB Solvent Blank C-14	SB 012221A	3			ALM	1.000	
18	22JA21DFS1_18	Resolution Check	RC 012221B	46			ALM	1.000	
19	22JA21DFS1_19	WDM HRDXNCP_00042	WDM 012221A	1	8290/1613B		ALM	1.000	
20	22JA21DFS1_20	CS-4 HRDXNL4_00096	CCV 012221A	2	Dioxin		ALM	1.000	
21	22JA21DFS1_21	SB Solvent Blank C-14	SB 012221B	3			ALM	1.000	
22	22JA21DFS1_22	190-24933-B-1-A	190-24933-B-1-A	15	1613B_T/Water	D211	ALM	1.000	L
23	22JA21DFS1_23	190-24933-B-2-A	190-24933-B-2-A	16	1613B_T/Water		ALM	1.000	L
24	22JA21DFS1_24	550-156266-P-1-A	550-156266-P-1-A	17	1613B_T/Water		ALM	1.000	L
25	22JA21DFS1_25	550-156464-G-2-A	550-156464-G-2-A	18	1613B_T/Water		ALM	1.000	L
26	22JA21DFS1_26	MB 320-453876/1-A	MB 320-453876/1-A	19	1613B(T)/Water	D211	ALM	1.000	L
27	22JA21DFS1_27	LCS 320-453876/2-A	LCS 320-453876/2-A	20	1613B(T)/Water		ALM	1.000	L
28	22JA21DFS1_28	LCSD 320-453876/3-A	LCSD 320-453876/3-A	21	1613B(T)/Water		ALM	1.000	L
29	22JA21DFS1_29	320-69065-A-1-A	320-69065-A-1-A	22	1613B_T/Water		ALM	1.000	L
30	22JA21DFS1_30	320-69071-A-1-A	320-69071-A-1-A	23	1613B/Water		ALM	1.000	L
31	22JA21DFS1_31	Resolution Check	RC 012221C	46	Dioxin		ALM	1.000	
32	22JA21DFS1_32	SB Solvent Blank C-14	SB 012221C	3			ALM	1.000	
33	22JA21DFS1_33	Resolution Check	RC 012221D	46	Dioxin		ALM	1.000	
34	22JA21DFS1_34	CS-4 HRDXNL4_00096	CCV 012221B	2	Dioxin		ALM	1.000	
35	22JA21DFS1_35	WDM HRDXNCP_00042	WDM 012221B	1	8290/1613B		ALM	1.000	
36	22JA21DFS1_36	SB Solvent Blank C-14	SB 012221D	3			ALM	1.000	
*								0.000	

Logfile checked
01/25/21 SMA

Resolution Check Report (DFS SN: 3487)

Date:	22 Jan 2021 20:57
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12160 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11518 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11733 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11743 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11707 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11653 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10986 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11230 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11272 [5%height]

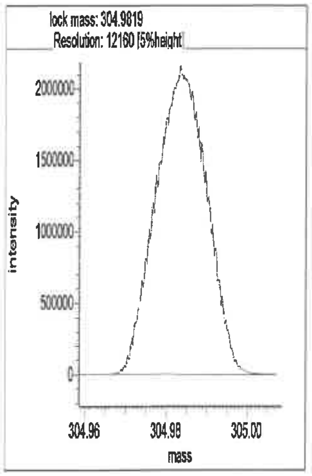

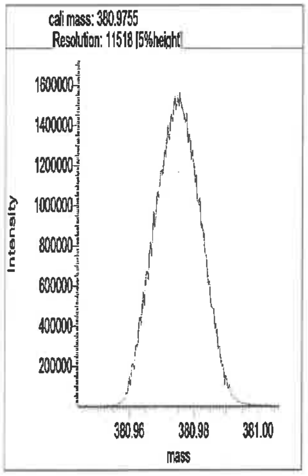

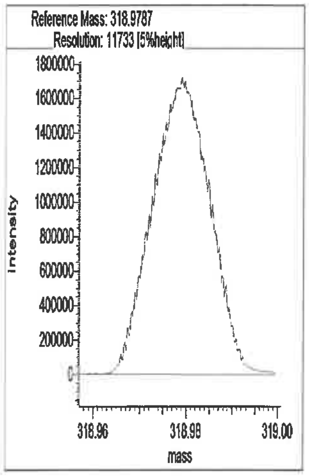

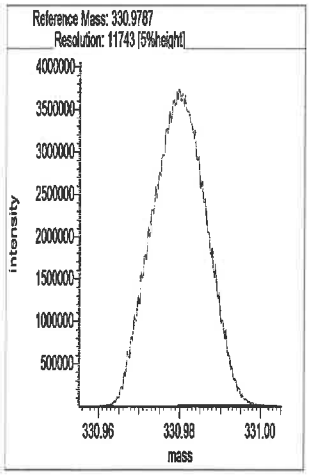

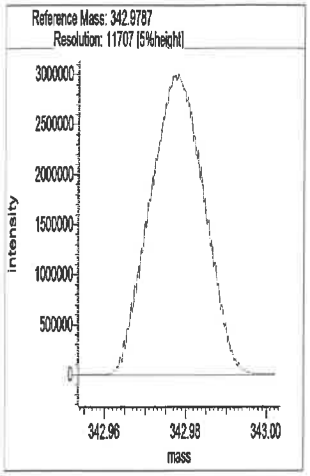

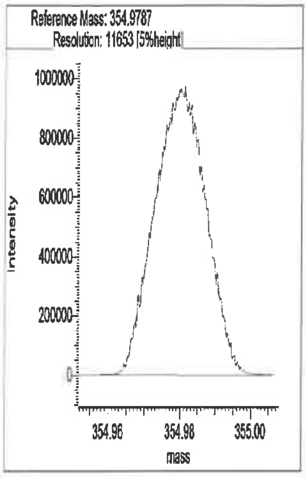

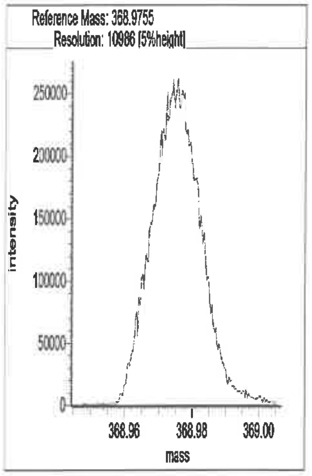

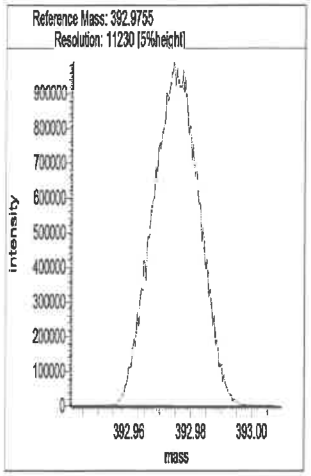

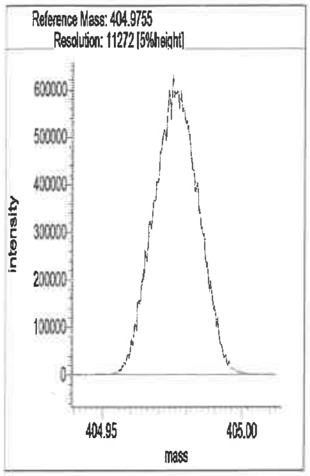

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12141 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11583 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11813 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11740 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10817 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11676 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11551 [5%height]

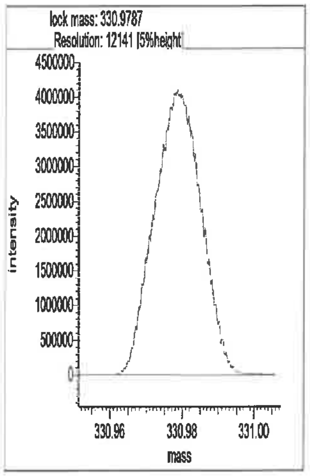

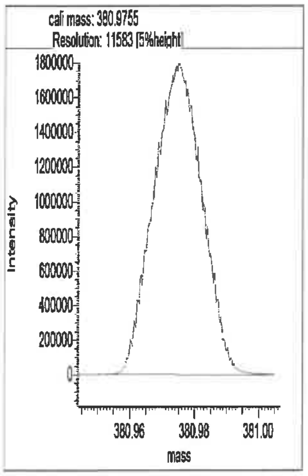

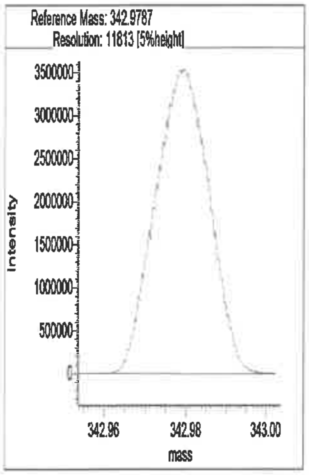

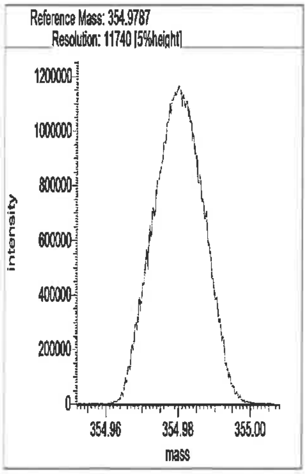

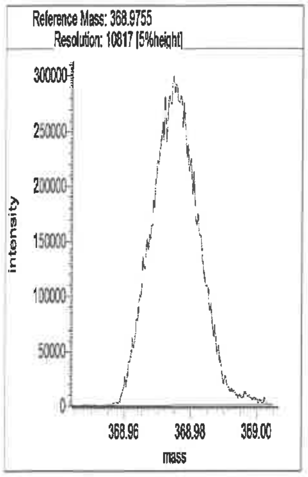

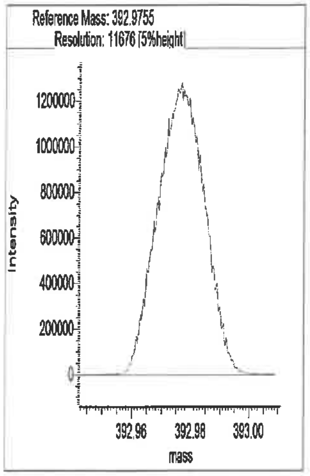

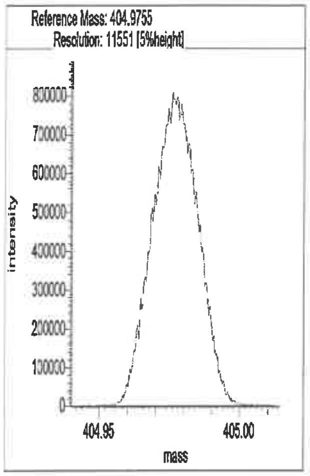

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12169 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11889 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12127 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11771 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11782 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11539 [5%height]

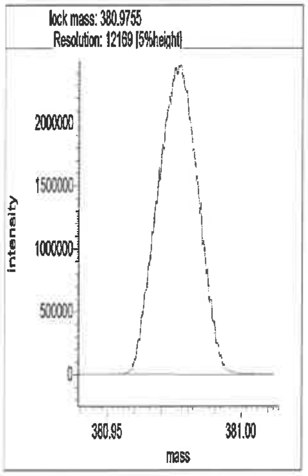

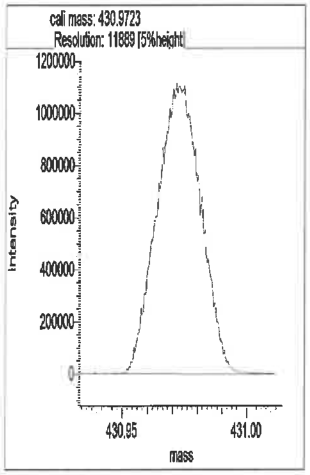

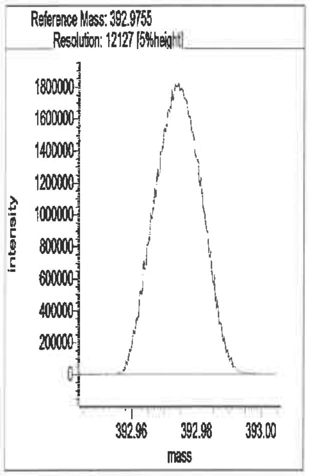

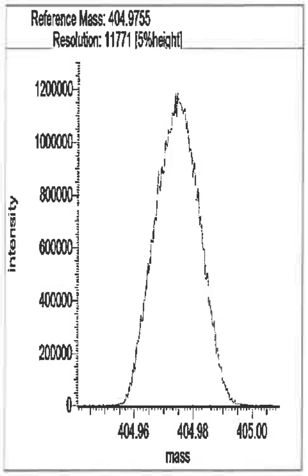

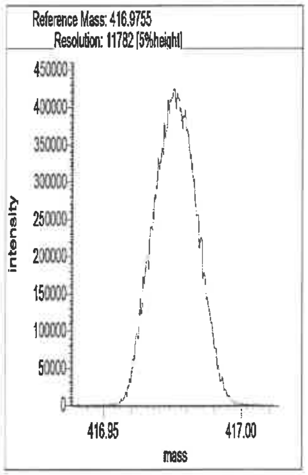

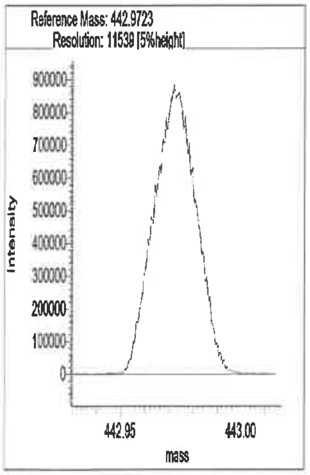

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11941 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11319 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12089 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11760 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11597 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11655 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11605 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11786 [5%height]

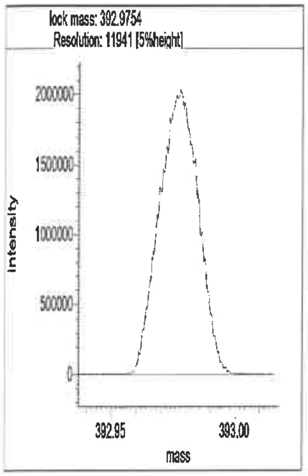

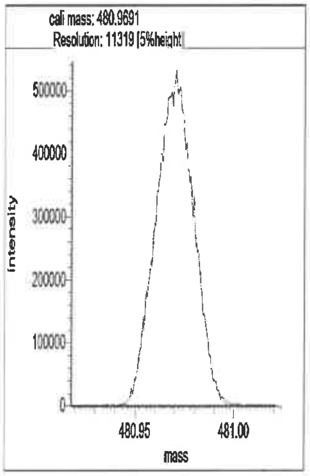

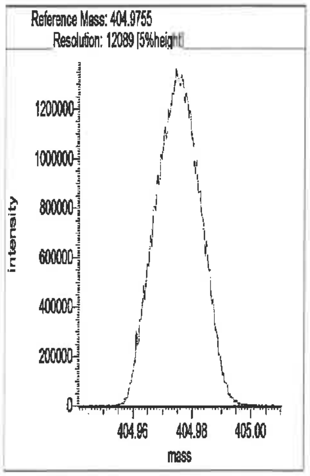

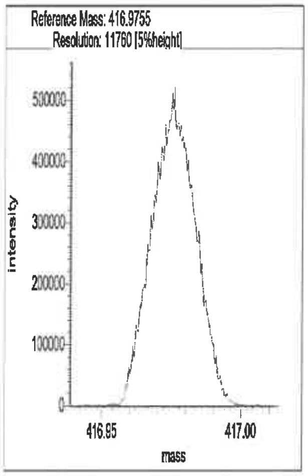

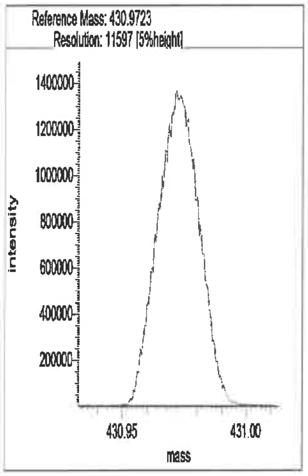

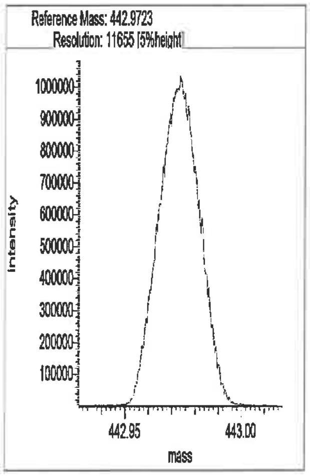

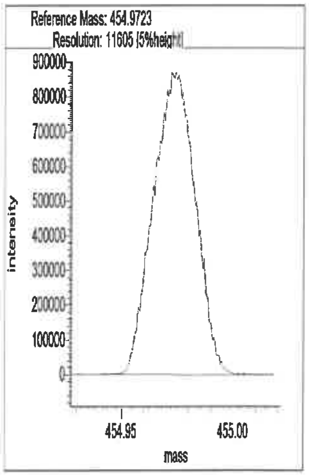

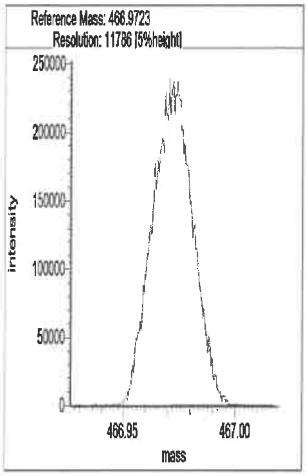

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12121 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11676 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12064 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11746 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11930 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11770 [5%height]

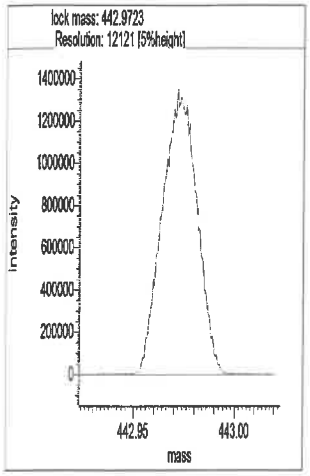
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800000
600000
400000
200000
0
442.95
443.00
mass

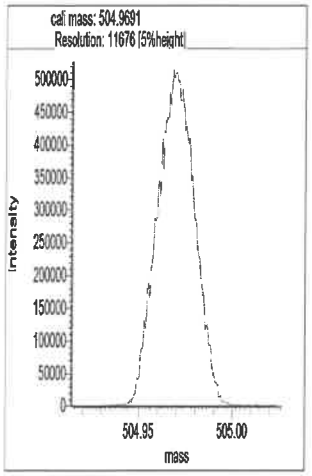
cali mass: 504.9691
Resolution: 11676 [5%height]
intensity
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

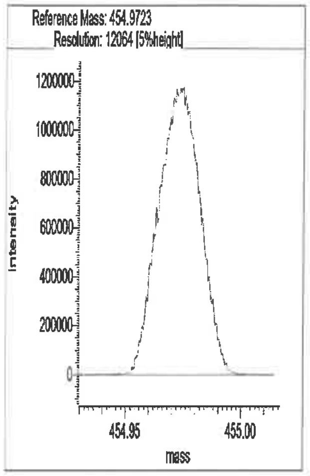
Reference Mass: 454.9723
Resolution: 12064 [5%height]
intensity
1200000
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

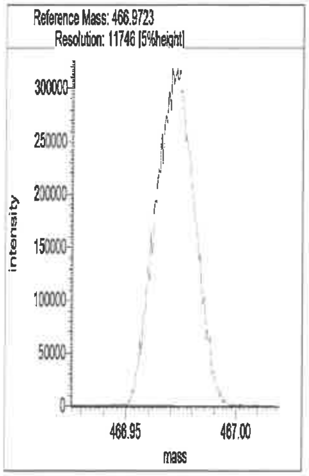
Reference Mass: 466.9723
Resolution: 11746 [5%height]
intensity
300000
250000
200000
150000
100000
50000
0
466.95
467.00
mass

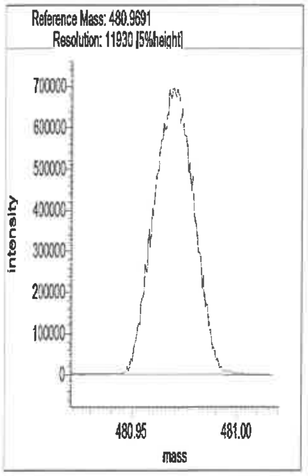
Reference Mass: 480.9691
Resolution: 11930 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

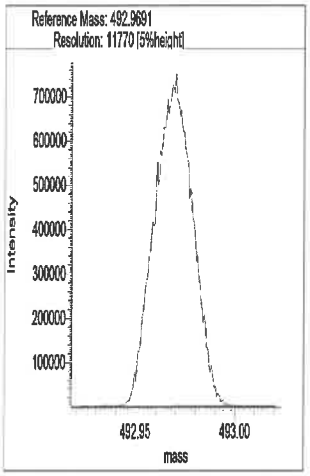
Reference Mass: 492.9691
Resolution: 11770 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date: 23 Jan 2021 08:39

MID Experiment: 5w_db5_pfk_singleGC01_RS

Target Resolution: 10000

Resolution Warning : 9500

Resolution Error : 8000

Reference: pfk

Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12435 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12025 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12604 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12375 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12573 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12539 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11536 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12068 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11720 [5%height]

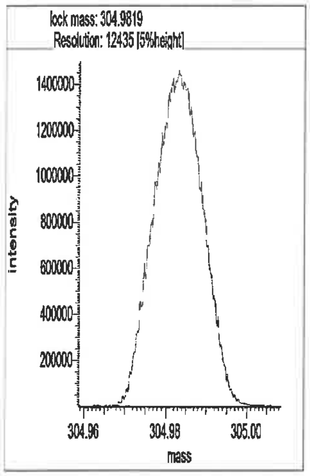

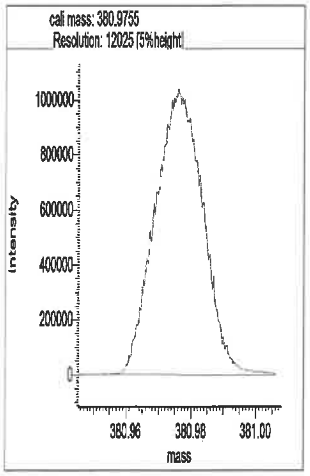

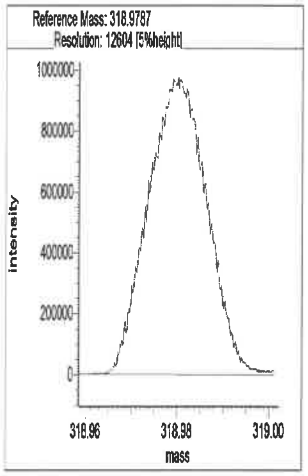

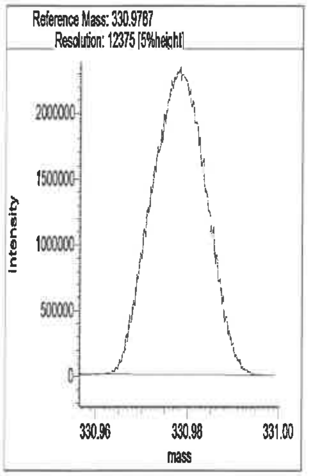

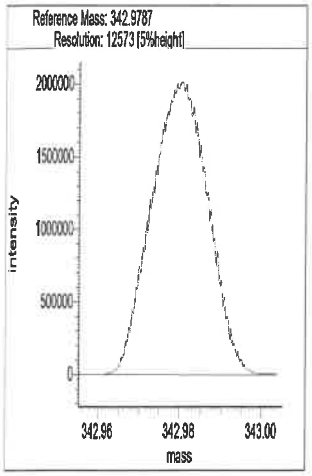

Reference Mass: 342.9787
Resolution: 12573 [5%height]

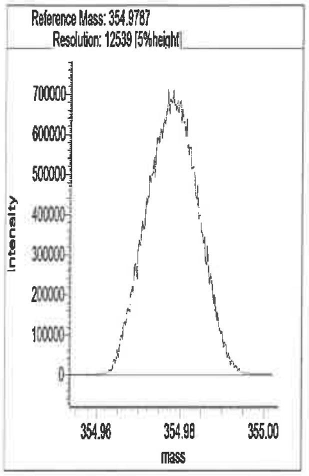

Reference Mass: 354.9787
Resolution: 12539 [5%height]

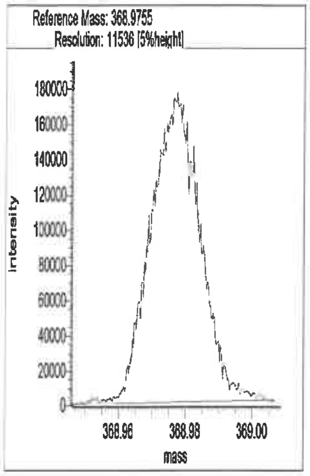

Reference Mass: 368.9755
Resolution: 11536 [5%height]

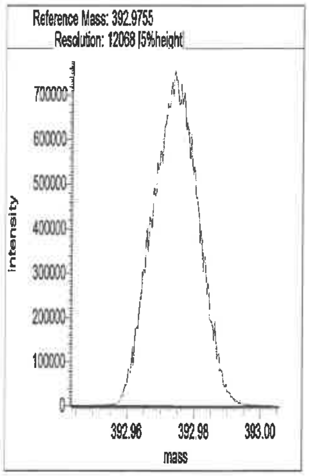

Reference Mass: 392.9755
Resolution: 12068 [5%height]

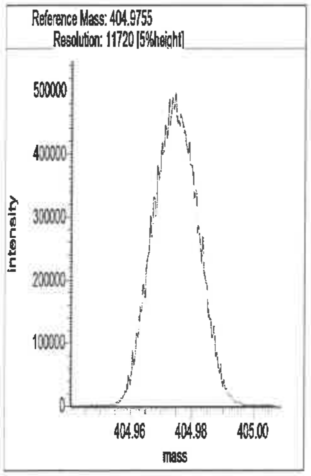

Reference Mass: 404.9755
Resolution: 11720 [5%height]

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12567 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12022 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12453 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12611 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10869 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12483 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11953 [5%height]

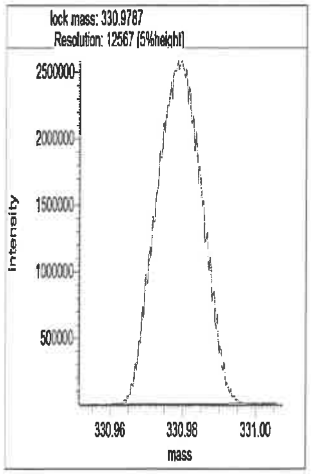

lock mass: 330.9787
Resolution: 12567 [5%height]

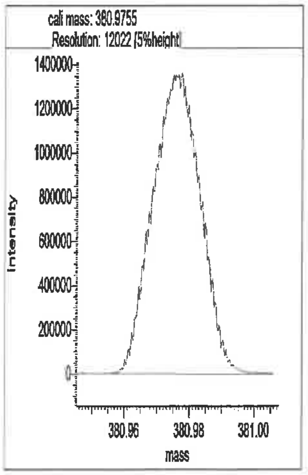

cali mass: 380.9755
Resolution: 12022 [5%height]

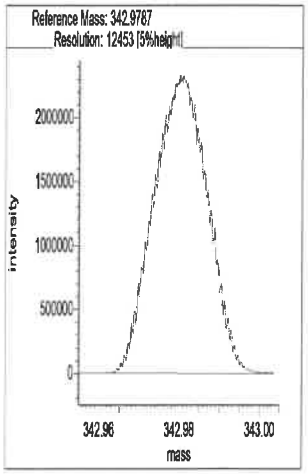

Reference Mass: 342.9787
Resolution: 12453 [5%height]

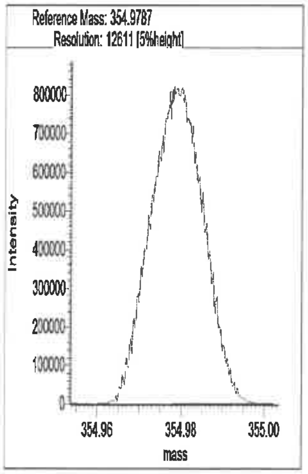

Reference Mass: 354.9787
Resolution: 12611 [5%height]

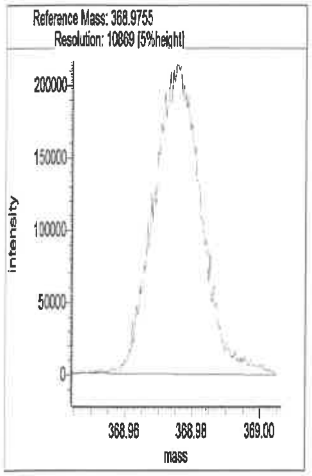

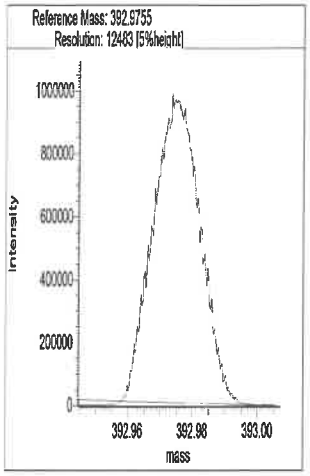

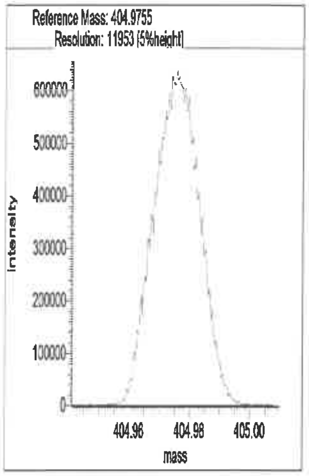

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12508 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12355 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12653 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12545 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12309 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12327 [5%height]

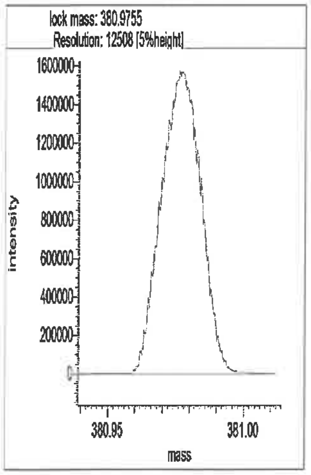

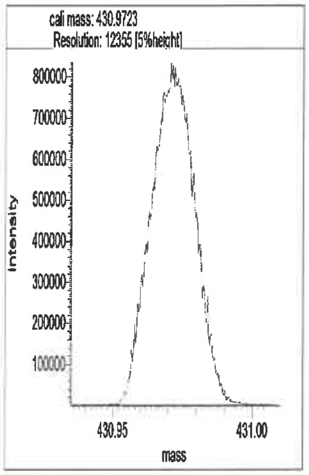

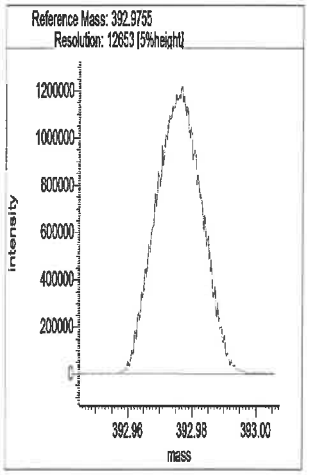

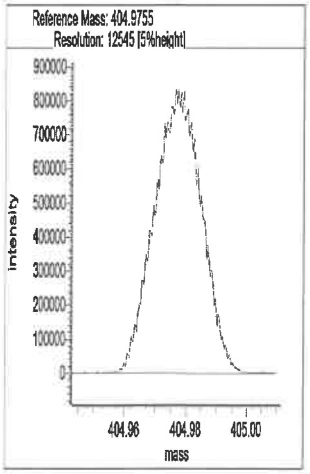

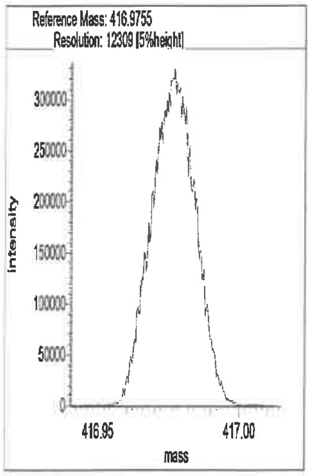

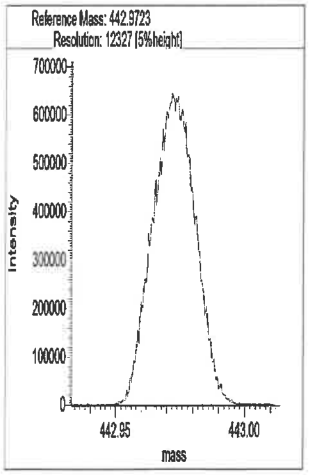

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12636 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11692 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12618 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12611 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12629 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12638 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12373 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12424 [5%height]

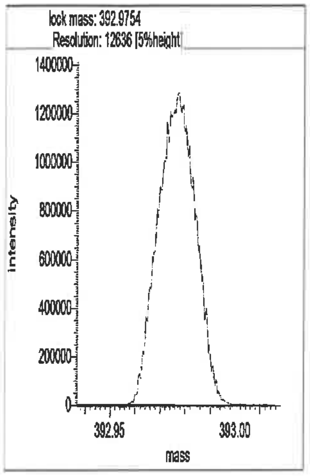

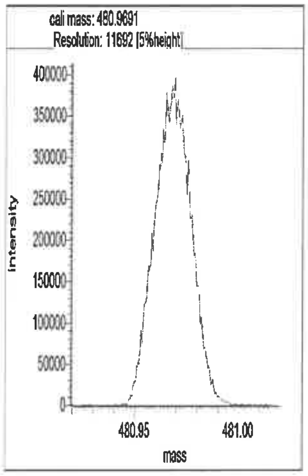

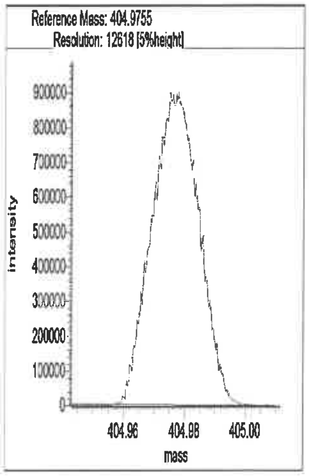

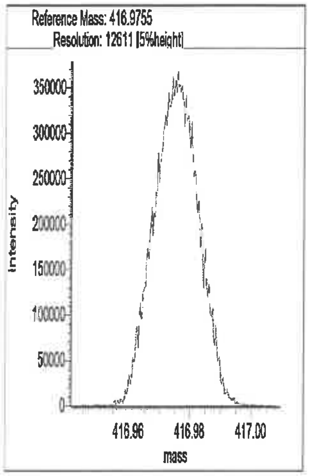

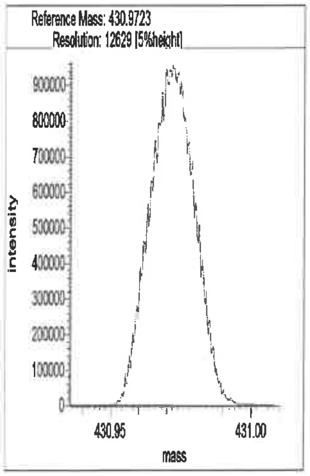

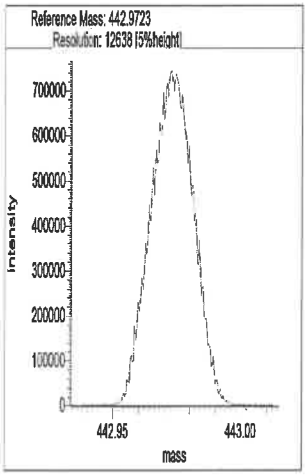

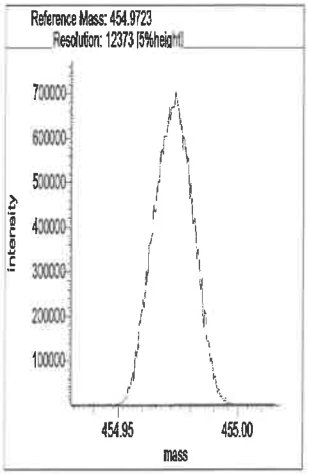

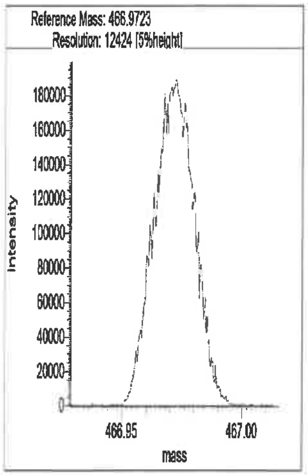

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12574 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12566 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12665 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12686 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12519 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12390 [5%height]

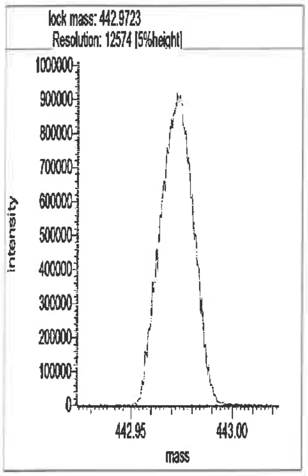
lock mass: 442.9723
Resolution: 12574 [5%height]
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
442.95
443.00
mass

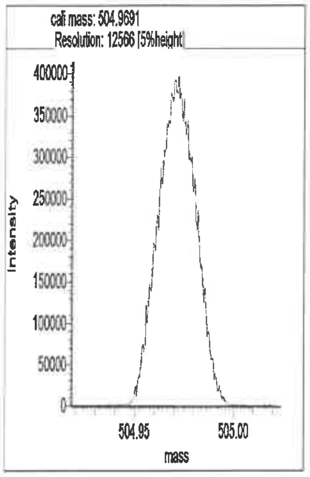
cali mass: 504.9691
Resolution: 12566 [5%height]
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

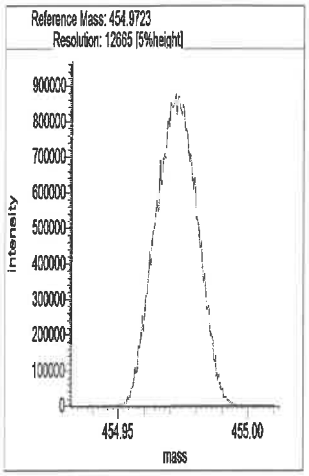
Reference Mass: 454.9723
Resolution: 12665 [5%height]
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
454.95
455.00
mass

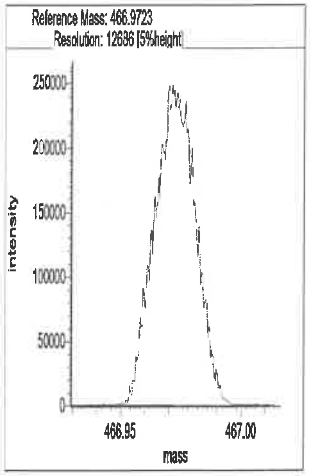
Reference Mass: 466.9723
Resolution: 12686 [5%height]
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

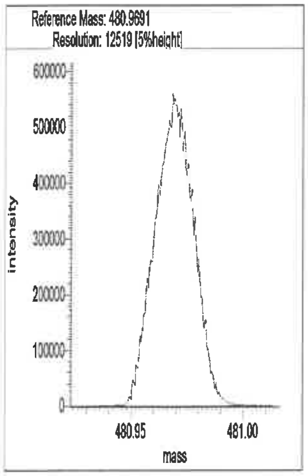
Reference Mass: 480.9691
Resolution: 12519 [5%height]
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

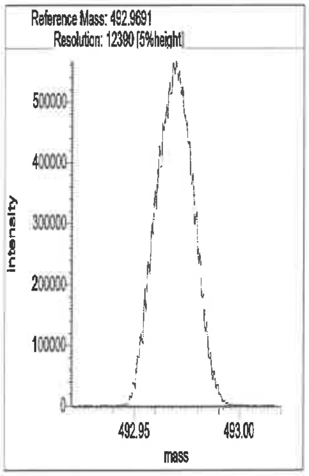
Reference Mass: 492.9691
Resolution: 12390 [5%height]
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	23 Jan 2021 09:47
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12493 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11948 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12254 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12156 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12128 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12520 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10841 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11948 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11947 [5%height]

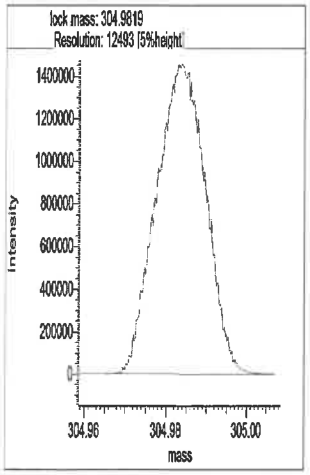

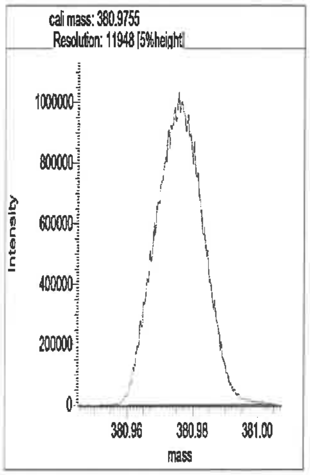

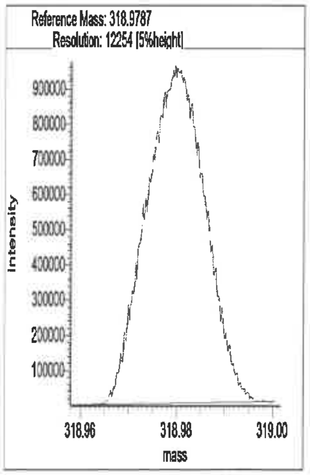

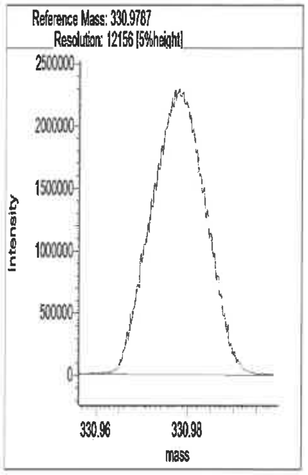

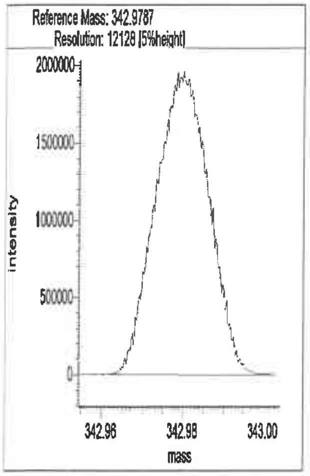

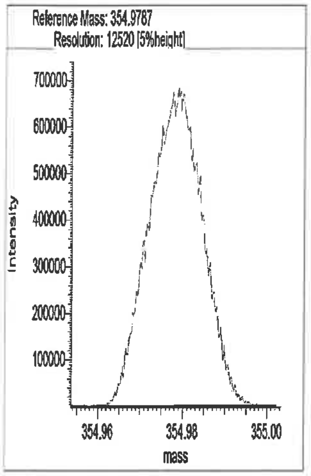

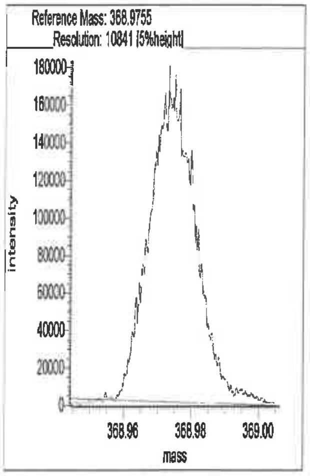

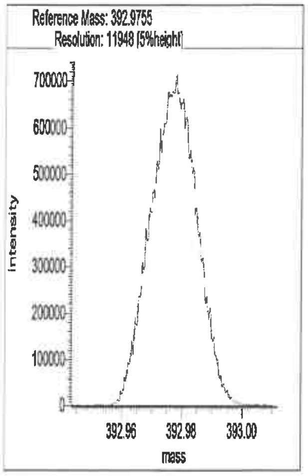

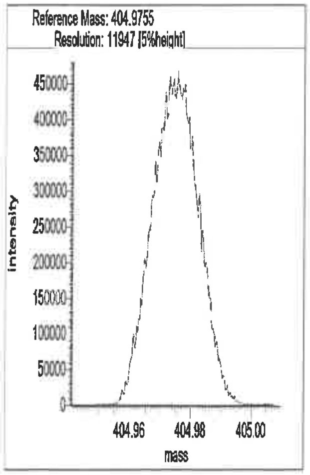

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12624 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12159 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12286 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12337 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10656 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12510 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12177 [5%height]

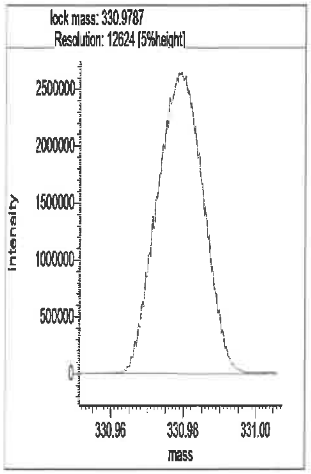

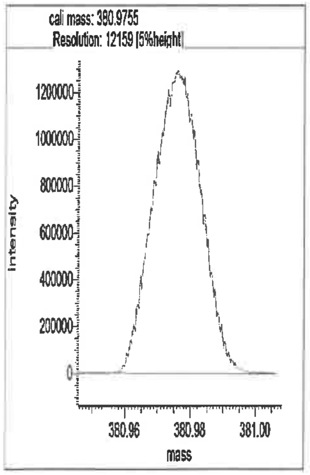

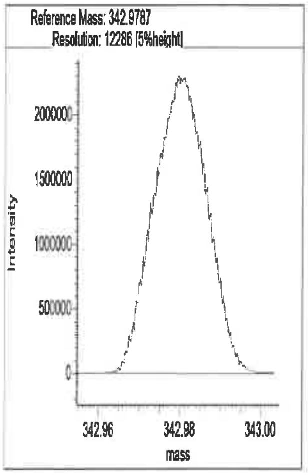

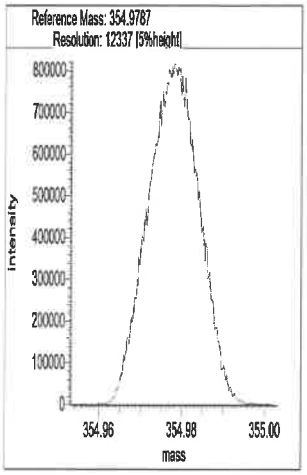

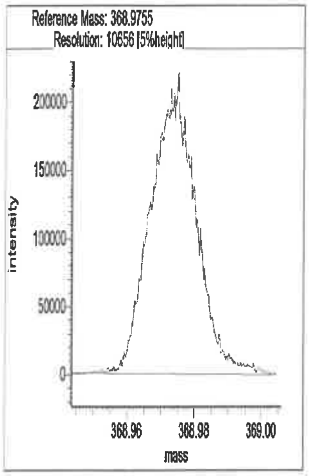

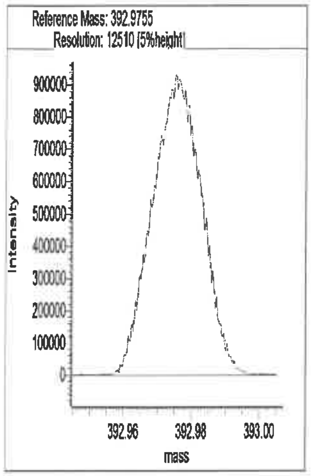

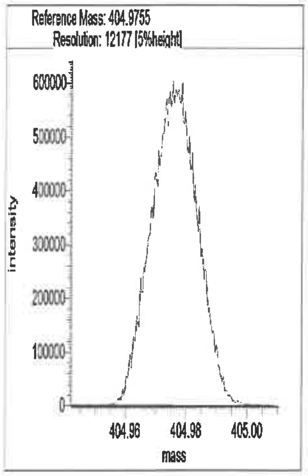

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12281 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12056 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12621 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12661 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12707 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12292 [5%height]

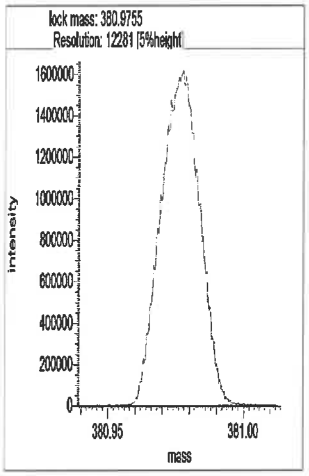

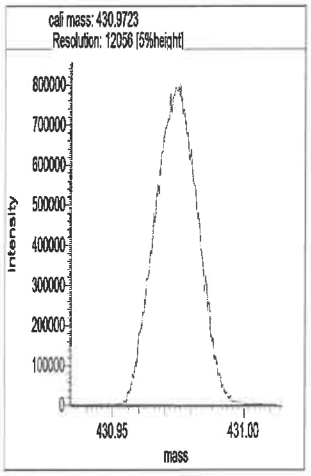

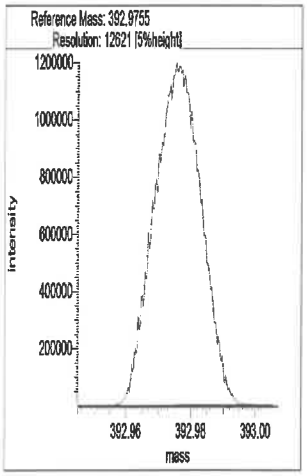

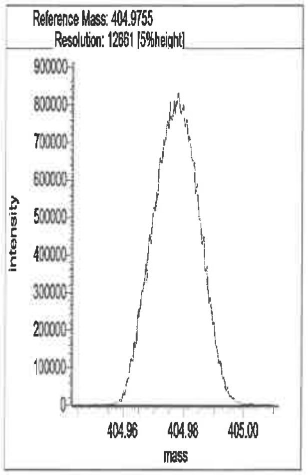

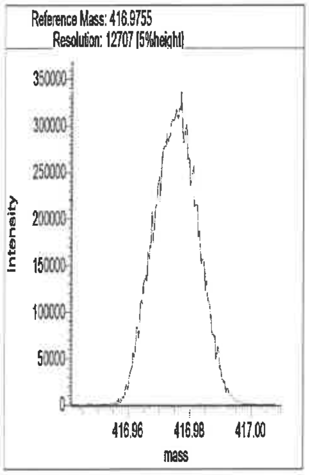

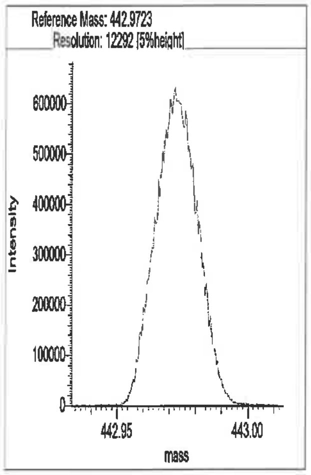

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12631 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11836 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12451 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12775 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12373 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12261 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12354 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12538 [5%height]

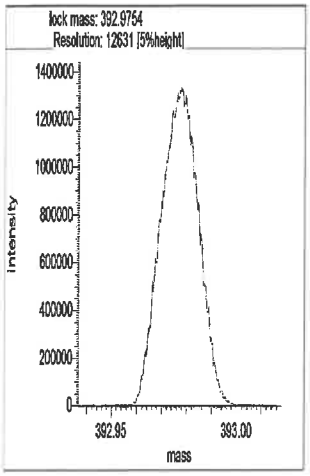

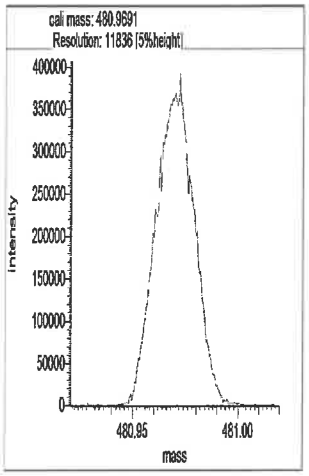

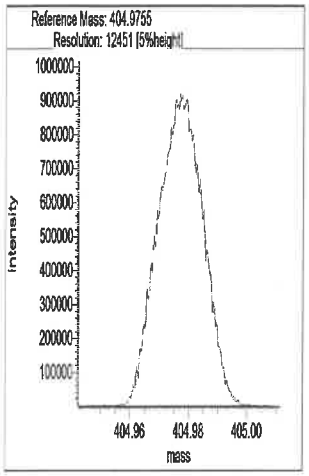

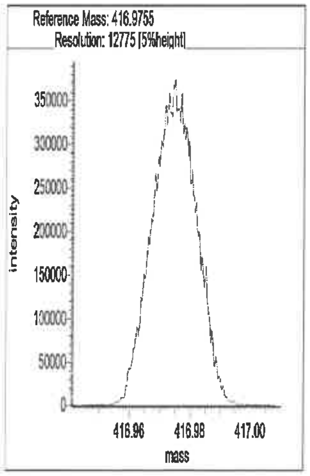

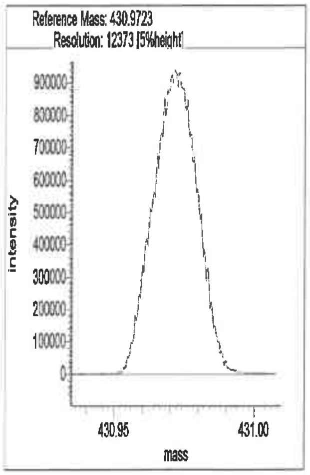

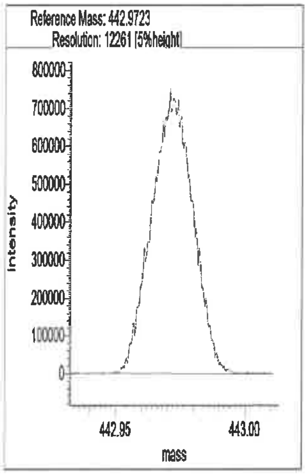

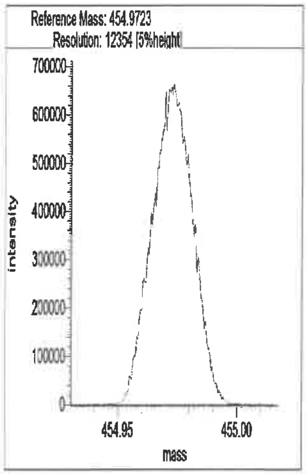

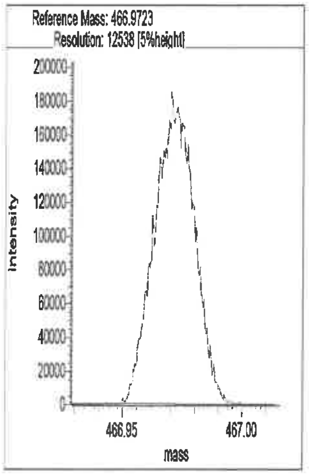

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12177 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12321 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12471 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12313 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12095 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12166 [5%height]

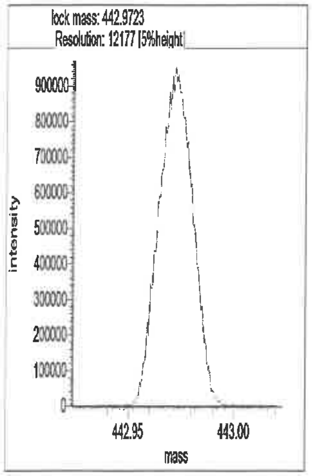
lock mass: 442.9723
Resolution: 12177 [5%height]
intensity
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

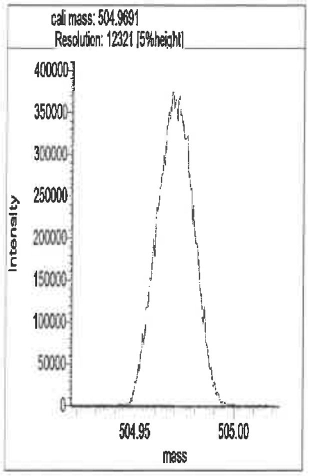
cali mass: 504.9691
Resolution: 12321 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

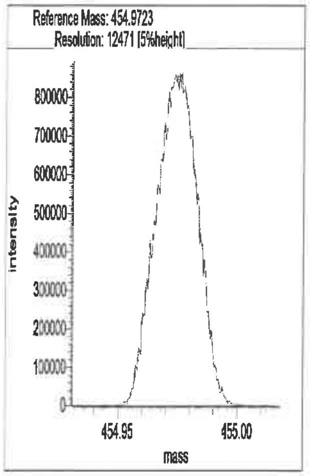
Reference Mass: 454.9723
Resolution: 12471 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

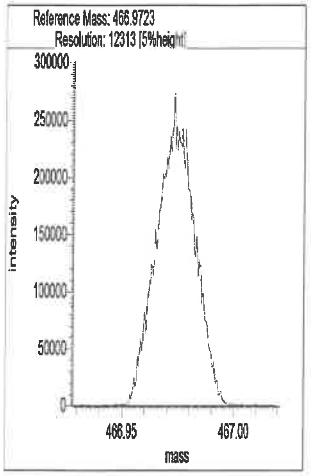
Reference Mass: 466.9723
Resolution: 12313 [5%height]
intensity
300000
250000
200000
150000
100000
50000
0
466.95
467.00
mass

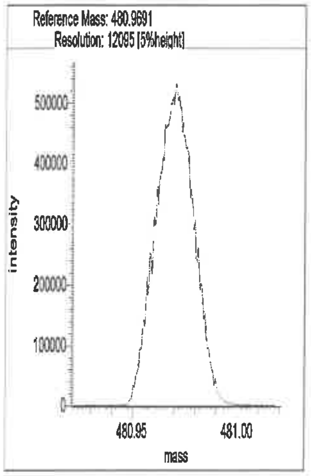
Reference Mass: 480.9691
Resolution: 12095 [5%height]
intensity
500000
400000
300000
200000
100000
0
480.95
481.00
mass

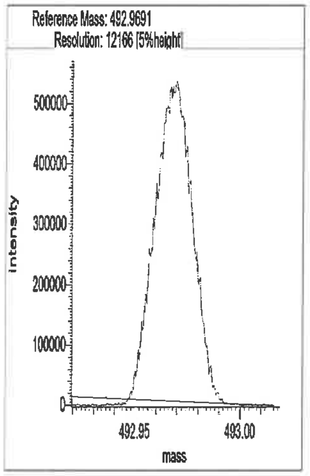
Reference Mass: 492.9691
Resolution: 12166 [5%height]
intensity
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	23 Jan 2021 20:50
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13400 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12359 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12985 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12796 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12900 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 13013 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10849 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12732 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12474 [5%height]

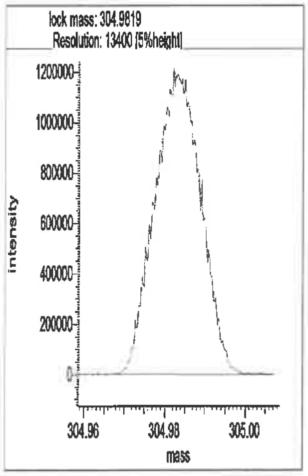

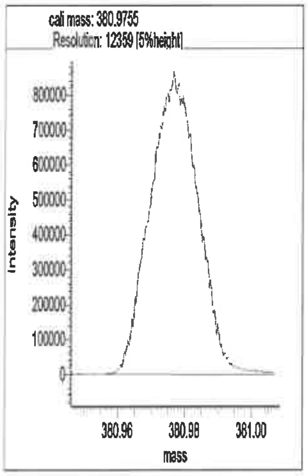

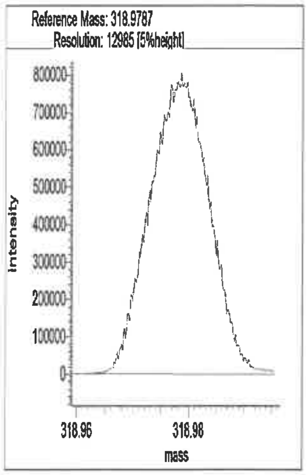

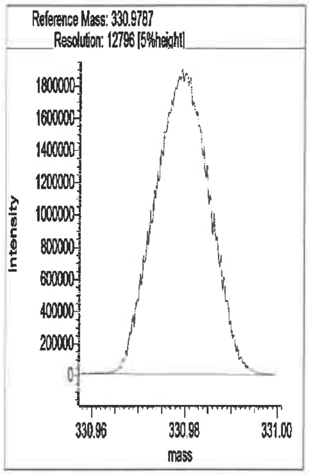

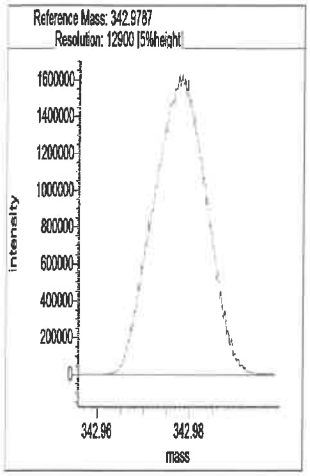

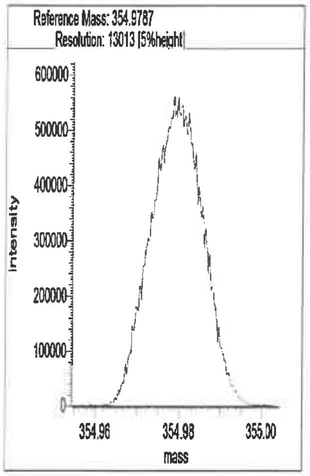

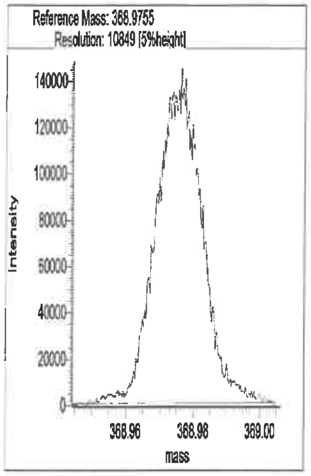

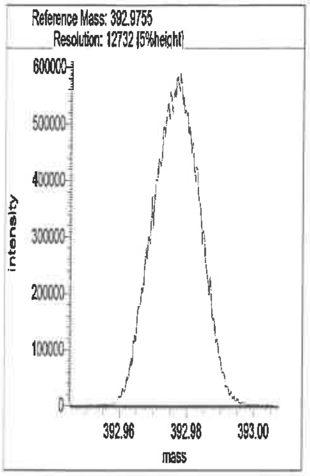

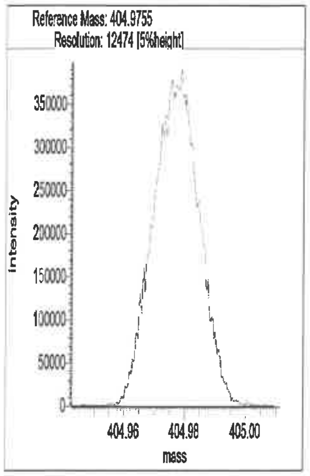

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12881 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12643 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13106 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12939 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11378 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12748 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12543 [5%height]

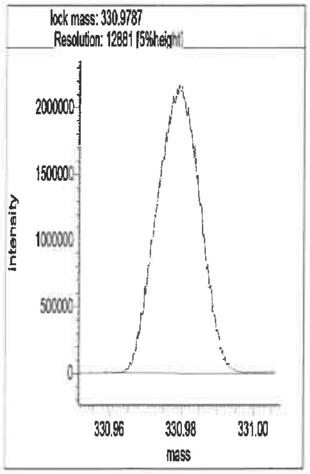

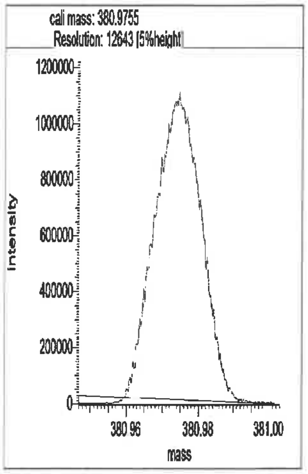

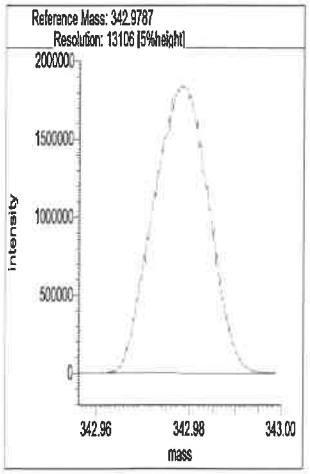

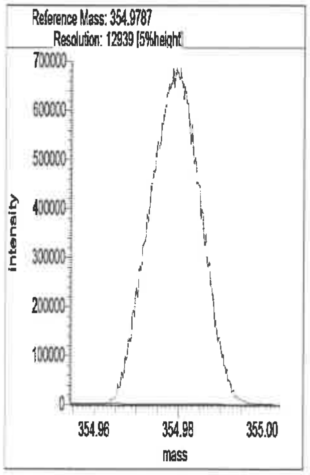

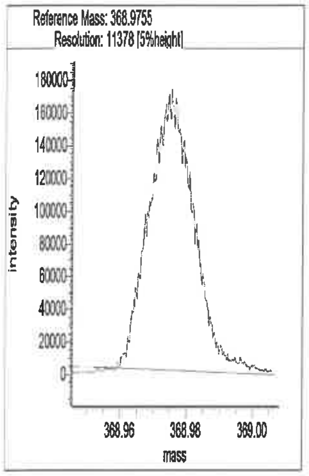

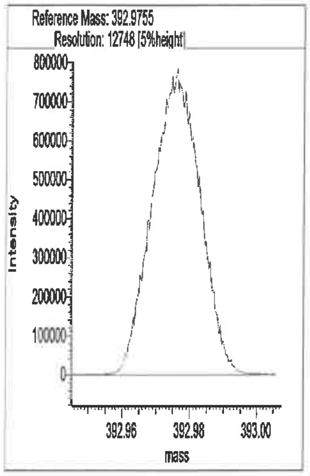

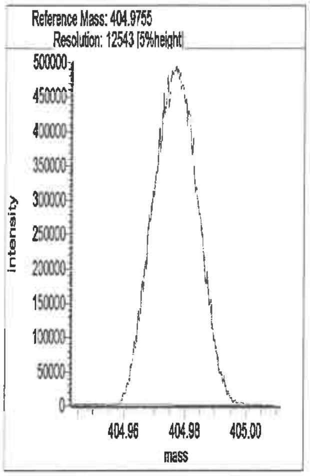

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12946 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12756 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12913 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13041 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12770 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12774 [5%height]

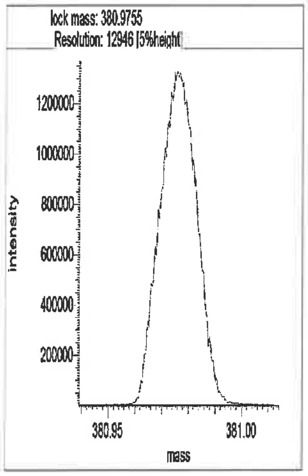

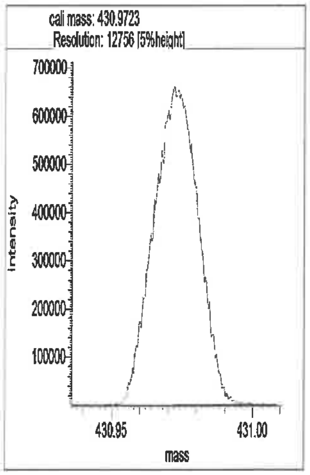

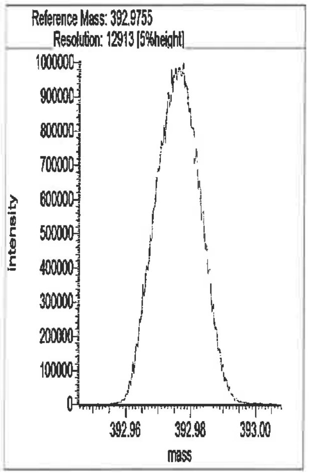

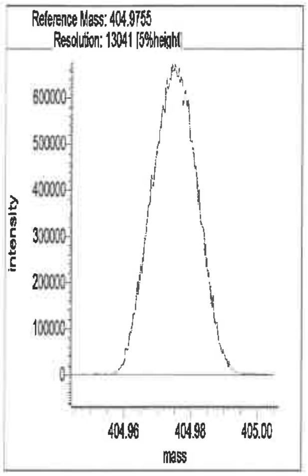

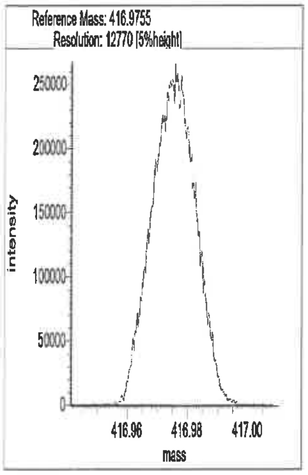

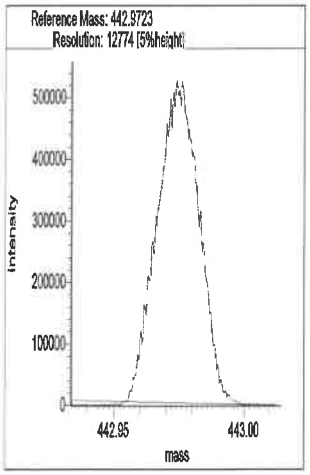

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13140 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12603 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13179 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 13361 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12773 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12772 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12893 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12869 [5%height]

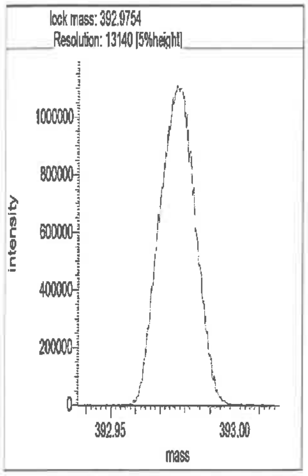

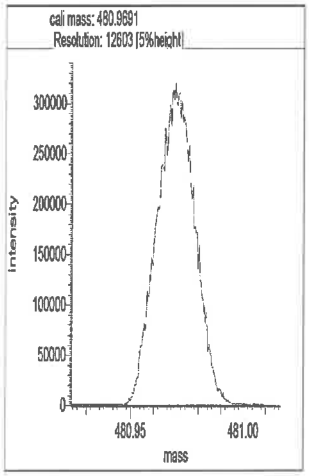

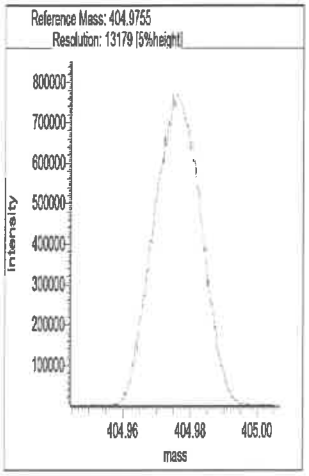

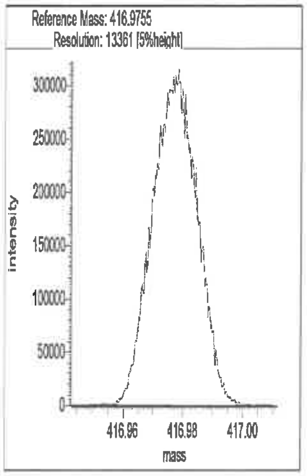

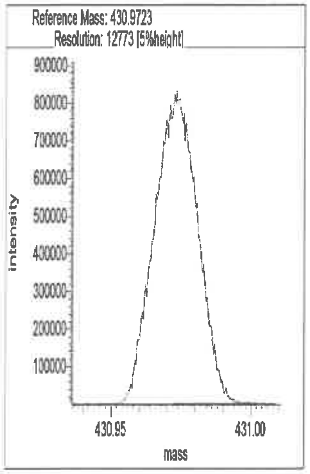

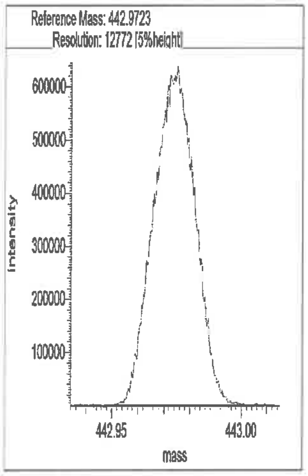

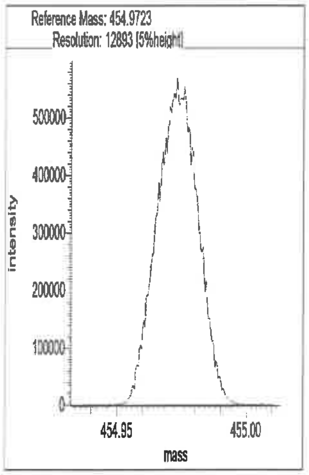

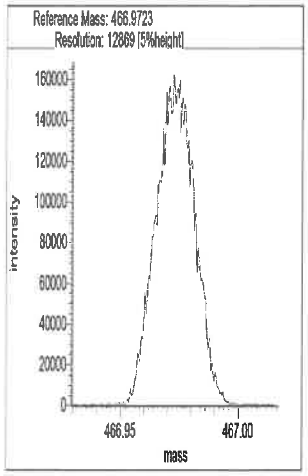

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13252 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12878 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13011 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13126 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12406 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 13185 [5%height]

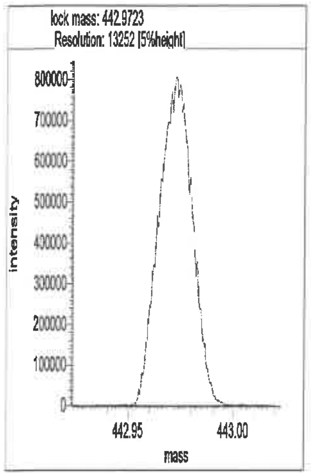
lock mass: 442.9723
Resolution: 13252 [5%height]

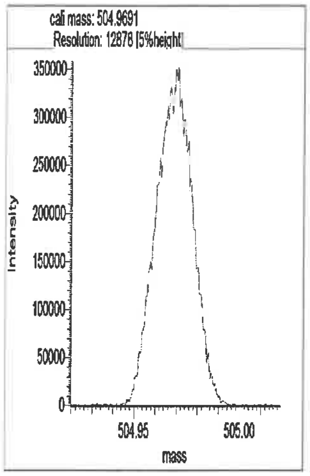
cali mass: 504.9691
Resolution: 12878 [5%height]

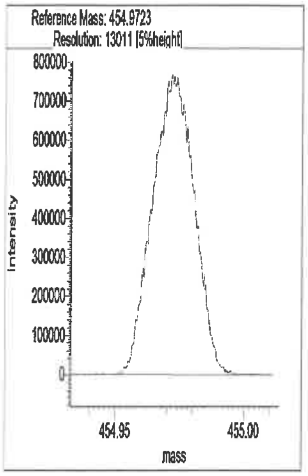
Reference Mass: 454.9723
Resolution: 13011 [5%height]

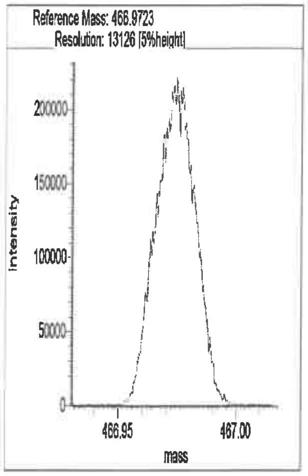
Reference Mass: 466.9723
Resolution: 13126 [5%height]

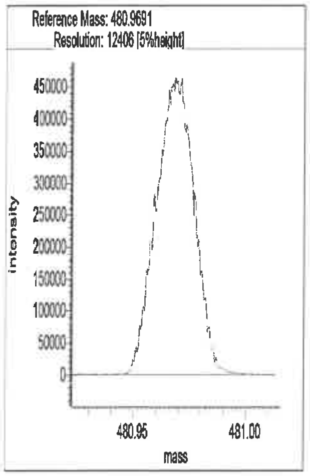
Reference Mass: 480.9691
Resolution: 12406 [5%height]

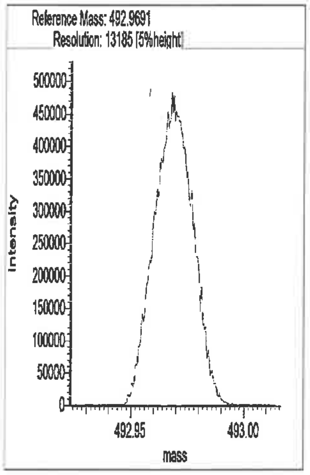
Reference Mass: 492.9691
Resolution: 13185 [5%height]

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 22-Jan-2021 21:17:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00096
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Jan-2021 20:04:56 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1673

First Level Reviewer: messecara Date: 25-Jan-2021 19:13:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.248	649934	0.82	2.8E+04	100.0	100.0				a
D 13C-2,3,7,8-TCDF	20.269	1217352	0.80	1.9134	97.9	97.9	1.467	1.467	97.89	
2,3,7,8-TCDF	20.278	136460	0.83	1.1488	9.757	9.757	0.1548	0.1548	97.57	
A Non-2,3,7,8-sub-TCDF	19.715						0.1548	0.1548		
S Total TCDF					9.757	9.757	0.1548	0.1548		
D 13C-2,3,7,8-TCDD	21.618	720570	0.86	1.0908	101.6	101.6	1.082	1.082	102	M
2,3,7,8-TCDD	21.661	85276	0.81	1.3069	9.055	9.055	0.2584	0.2584	90.55	
$ 37Cl4-2,3,7,8-TCDD	21.661	77315		1.2281	9.686	9.686	0.1121	0.1121	96.86	
A Non-2,3,7,8-sub-TCDD	20.561						0.2584	0.2584		
S Total TCDD					9.055	9.055	0.2584	0.2584		
D 13C-1,2,3,7,8-PeCDF	27.220	990581	1.59	1.5355	99.3	99.3	0.4733	0.4733	99.26	
1,2,3,7,8-PeCDF	27.237	554939	1.57	1.1695	47.9	47.9	0.2922	0.2922	95.80	
D 13C-2,3,4,7,8-PeCDF	28.744	903662	1.69	1.4278	97.4	97.4	0.5090	0.5090	97.38	
2,3,4,7,8-PeCDF	28.769	540286	1.57	1.2244	48.8	48.8	0.3150	0.3150	97.66	
A F1 PeCDFs	24.447						0.0651	0.0651		
A Non-2,3,7,8-sub-PeCDF	27.962						0.3028	0.3028		Rn
S Total PeCDF					96.7	96.7	0.3036	0.3036		
D 13C-1,2,3,7,8-PeCDD	29.552	566651	1.61	0.7800	111.8	111.8	0.3981	0.3981	112	
1,2,3,7,8-PeCDD	29.594	312309	1.63	1.2613	43.7	43.7	0.2952	0.2952	87.39	
A Non-2,3,7,8-sub-PeCDD	28.272						0.2952	0.2952		
S Total PeCDD					43.7	43.7	0.2952	0.2952		
D 13C-1,2,3,4,7,8-HxCDF	34.893	858882	0.55	1.4248	92.3	92.3	0.3733	0.3733	92.27	
1,2,3,4,7,8-HxCDF	34.910	552762	1.26	1.3553	47.5	47.5	0.2225	0.2225	94.97	
D 13C-1,2,3,6,7,8-HxCDF	35.053	1002360	0.54	1.7108	89.7	89.7	0.3109	0.3109	89.68	
1,2,3,6,7,8-HxCDF	35.070	617727	1.27	1.3081	47.1	47.1	0.2141	0.2141	94.23	
D 13C-2,3,4,6,7,8-HxCDF	35.879	926658	0.54	1.5455	91.8	91.8	0.3442	0.3442	91.77	
2,3,4,6,7,8-HxCDF	35.887	562255	1.24	1.3248	45.8	45.8	0.1983	0.1983	91.60	
D 13C-1,2,3,7,8,9-HxCDF	36.763	763980	0.53	1.3772	84.9	84.9	0.3862	0.3862	84.91	
1,2,3,7,8,9-HxCDF	36.780	465572	1.27	1.3372	45.6	45.6	0.2044	0.2044	91.14	
A Non-2,3,7,8-sub-HxCDF	34.940						0.2094	0.2094		
S Total HxCDF					186.0	186.0	0.2098	0.2098		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.561	653323	1.31	2.5E+04	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.081	564487	1.24	0.8266	104.5	104.5	0.5577	0.5577	105	
1,2,3,4,7,8-HxCDD	36.098	343734	1.23	1.3422	45.4	45.4	0.1780	0.1780	90.73	
D 13C-1,2,3,6,7,8-HxCDD	36.199	679246	1.30	1.0417	99.8	99.8	0.4425	0.4425	99.81	
1,2,3,6,7,8-HxCDD	36.216	363615	1.24	1.1989	44.7	44.7	0.1809	0.1809	89.30	
1,2,3,7,8,9-HxCDD	36.578	374210	1.25	1.3636	44.1	44.1	0.1667	0.1667	88.26	
A Non-2,3,7,8-sub-HxCDD	35.311						0.1747	0.1747		
S Total HxCDD					134.1	134.1	0.1752	0.1752		
D 13C-1,2,3,4,6,7,8-HpCDF	38.569	670376	0.45	1.1053	92.8	92.8	0.5148	0.5148	92.83	
1,2,3,4,6,7,8-HpCDF	38.578	507901	1.05	1.6487	46.0	46.0	0.1643	0.1643	91.91	
D 13C-1,2,3,4,7,8,9-HpCDF	39.815	565547	0.46	0.9761	88.7	88.7	0.5830	0.5830	88.69	
1,2,3,4,7,8,9-HpCDF	39.824	426494	1.03	1.5723	48.0	48.0	0.1820	0.1820	95.93	
A Non-2,3,7,8-sub-HpCDF	39.160						0.1728	0.1728		
S Total HpCDF					93.9	93.9	0.1732	0.1732		
D 13C-1,2,3,4,6,7,8-HpCDD	39.504	600154	1.03	0.8768	104.8	104.8	0.3172	0.3172	105	
1,2,3,4,6,7,8-HpCDD	39.512	321918	1.09	1.2146	44.2	44.2	0.1196	0.1196	88.33	
A Non-2,3,7,8-sub-HpCDD	39.237						0.1196	0.1196		
S Total HpCDD					44.2	44.2	0.1196	0.1196		
D 13C-OCDD	41.958	995667	0.93	0.7137	213.5	213.5	0.4441	0.4441	107	
OCDF	42.059	720592	0.92	1.8132	79.8	79.8	0.1951	0.1951	79.83	
OCDD	41.967	573532	0.90	1.2562	91.7	91.7	0.1811	0.1811	91.71	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated
a - User Assigned ID

Reagents:

HRDXNL4_00096 Amount Added: 1.00 Units: uL

Report Date: 25-Jan-2021 20:04:56 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 22-Jan-2021 21:17:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00096
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Jan-2021 20:04:56 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1673

First Level Reviewer: messecara Date: 25-Jan-2021 19:13:42

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	21.248	21.248	0		292779	39297	345	862	114		a
333.9338	21.248	21.248	0		357155	51518	84	210	613	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.269	20.269	0	0.954	540484	75155	794	1985	95		
317.9389	20.261	20.269	-1	0.954	676868	93578	226	565	414	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.278	20.278	0	1.000	61845	8901	26	65	342		
305.8987	20.303	20.278	2	1.002	74615	10051	94	235	107	0.83(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.715						26	65			
305.8987	19.715						94	235			
13C-2,3,7,8-TCDD											M
331.9368	21.618	21.618	0	1.017	332860	40354	345	862	117		
333.9338	21.635	21.618	1	1.018	387710	48468	84	210	577	0.86(0.65-0.89)	M
2,3,7,8-TCDD											
319.8965	21.661	21.661	0	1.002	38266	5521	95	237	58		
321.8936	21.669	21.661	1	1.002	47010	6720	25	62	269	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.661	21.661	0	1.019	77315	10795	50	125	216		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.561						95	237			
321.8936	20.561						25	62			
13C-1,2,3,7,8-PeCDF											
351.9000	27.220	27.220	0	1.281	607477	98135	159	397	617		
353.8970	27.220	27.220	0	1.281	383104	58425	105	262	556	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	27.237	27.237	0	1.001	339270	53509	89	222	601		
341.8567	27.246	27.237	1	1.001	215669	32889	125	312	263	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.744	28.744	0	1.353	567738	85964	159	397	541		
353.8970	28.744	28.744	0	1.353	335924	52738	105	262	502	1.69(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.769	28.769	0	1.001	329942	47874	89	222	538		
341.8567	28.778	28.769	1	1.001	210344	30039	125	312	240	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.447						2	5			
341.8567	24.447						44	110			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.860	27.931	-4	1.024	4069	577	89	222	6		
341.8567	27.826	27.931	-6	1.022	3604	446	125	312	4	1.13(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.552	29.552	0	1.391	349443	46523	64	160	727		
369.8919	29.544	29.552	-1	1.390	217208	28687	49	122	585	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.594	29.594	0	1.001	193771	27496	76	190	362		
357.8516	29.586	29.594	-1	1.001	118538	16374	36	90	455	1.63(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.272						76	190			
357.8516	28.272						36	90			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.893	34.893	0	0.954	303343	70931	119	297	596		
385.8610	34.893	34.893	0	0.954	555539	126341	265	662	477	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.910	34.910	0	1.000	308322	71742	138	345	520		
375.8178	34.910	34.910	0	1.000	244440	54616	100	250	546	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.053	35.053	0	0.959	352531	74180	119	297	623		
385.8610	35.053	35.053	0	0.959	649829	138273	265	662	522	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.070	35.070	0	1.000	345543	73133	138	345	530		
375.8178	35.070	35.070	0	1.000	272184	57852	100	250	579	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.879	35.879	0	0.981	326752	78076	119	297	656		
385.8610	35.871	35.879	-1	0.981	599906	148441	265	662	560	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.887	35.887	0	1.000	311365	76325	138	345	553		
375.8178	35.887	35.887	0	1.000	250890	61358	100	250	614	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.763	36.763	0	1.006	265704	76757	119	297	645		
385.8610	36.763	36.763	0	1.006	498276	140901	265	662	532	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.780	36.780	0	1.000	260413	72678	138	345	527		
375.8178	36.780	36.780	0	1.000	205159	56756	100	250	568	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.940						138	345			
375.8178	34.940						100	250			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.561	36.561	0		370516	104114	199	497	523		
403.8529	36.569	36.561	1		282807	76371	134	335	570	1.31(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.081	36.081	0	0.987	312422	84140	199	497	423		
403.8529	36.081	36.081	0	0.987	252065	69480	134	335	519	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.098	36.098	0	1.000	189565	51565	69	172	747		
391.8127	36.098	36.098	0	1.000	154169	41508	78	195	532	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.199	36.199	0	0.990	383555	95248	199	497	479		
403.8529	36.207	36.199	1	0.990	295691	73977	134	335	552	1.30(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.216	36.216	0	1.000	201129	52139	69	172	756		
391.8127	36.216	36.216	0	1.000	162486	41979	78	195	538	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.578	36.578	0	1.014	208024	55856	69	172	810		
391.8127	36.578	36.578	0	1.014	166186	45192	78	195	579	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.311						69	172			
391.8127	35.311						78	195			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.569	38.569	0	1.055	206735	69073	258	645	268		
419.8220	38.569	38.569	0	1.055	463641	152408	153	382	996	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.578	38.578	0	1.000	260115	90212	155	387	582		
409.7788	38.578	38.578	0	1.000	247786	85115	85	212	1001	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.815	39.815	0	1.089	176883	64780	258	645	251		
419.8220	39.815	39.815	0	1.089	388664	144859	153	382	947	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.824	39.824	0	1.000	216712	81155	155	387	524		
409.7788	39.824	39.824	0	1.000	209782	78598	85	212	925	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.160						155	387			
409.7788	39.160						85	212			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.504	39.504	0	1.080	305190	111036	116	290	957		
437.8140	39.504	39.504	0	1.080	294964	105817	85	212	1245	1.03(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.512	39.512	0	1.000	167997	60500	71	177	852		
425.7737	39.512	39.512	0	1.000	153921	56130	55	137	1021	1.09(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.237						71	177			
425.7737	39.237						55	137			
13C-OCDD											
469.7780	41.958	41.958	0	1.148	479742	165493	142	355	1165		
471.7750	41.958	41.958	0	1.148	515925	186196	87	217	2140	0.93(0.76-1.02)	
OCDF											
441.7428	42.059	42.059	0	1.002	345509	123142	78	195	1579		
443.7399	42.051	42.059	-1	1.002	375083	129203	171	427	756	0.92(0.76-1.02)	
OCDD											
457.7377	41.967	41.967	0	1.000	272164	97712	72	180	1357		
459.7348	41.967	41.967	0	1.000	301368	108800	88	220	1236	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

HRDXNL4_00096 Amount Added: 1.00 Units: uL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d				
Injection Date:	22-Jan-2021 21:17:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 21.25

Processing Integration Results

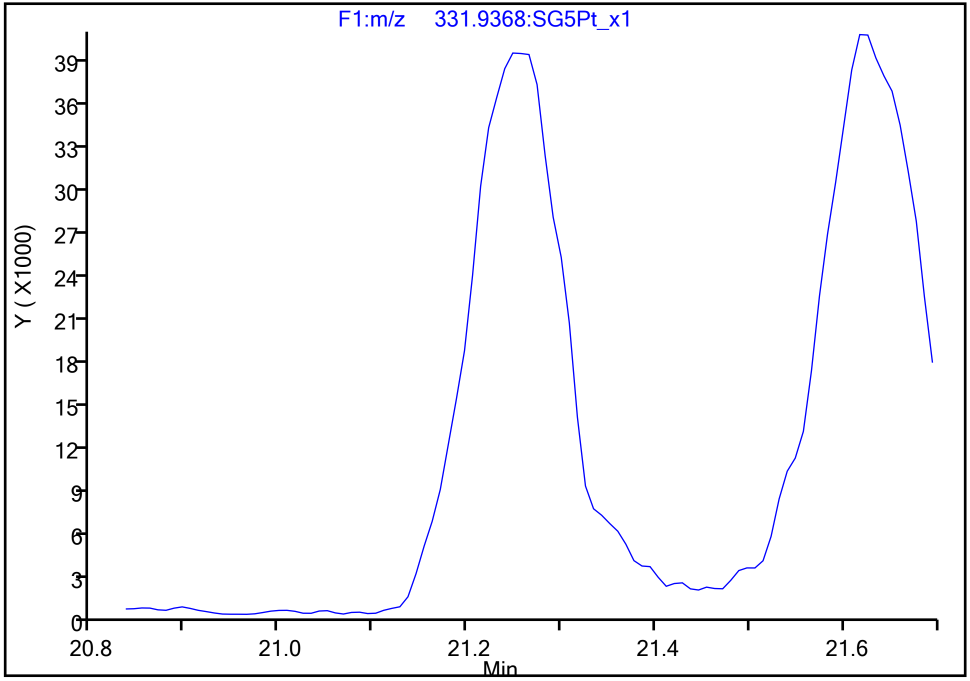

RT: 21.25

Area: 292779

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

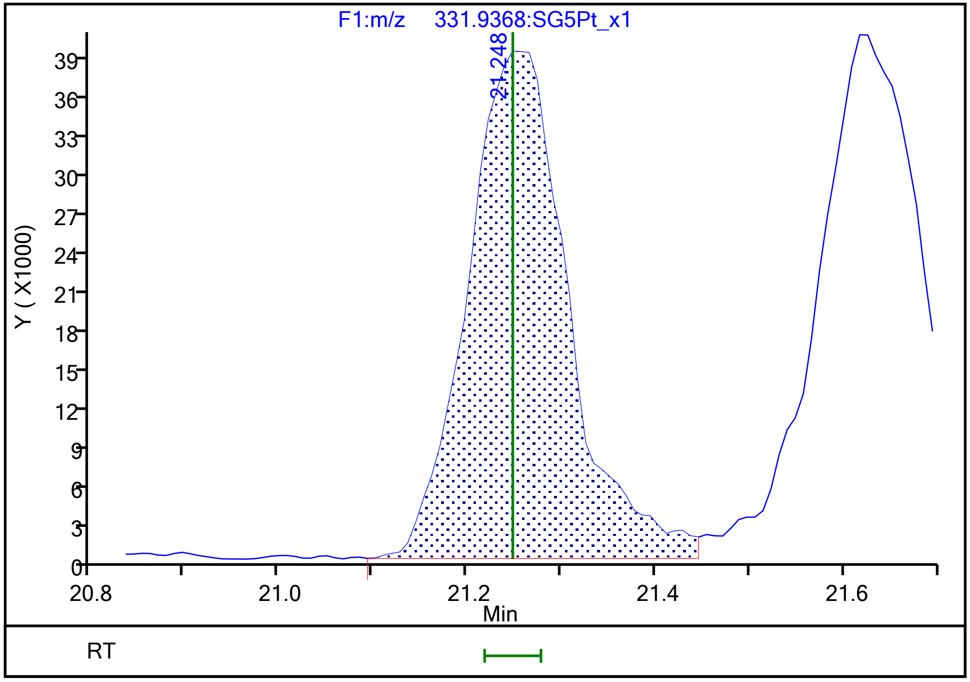

Reviewer: messecara, 25-Jan-2021 19:09:46

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Injection Date: 22-Jan-2021 21:17:00 Instrument ID: DFS 1
Lims ID: CCV
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1(14.80 :26.00)

13C-2,3,7,8-TCDD, CAS: 76523-40-5

Signal: 2

RT: 21.63
Area: 358094
Amount: 97.463485
Amount Units: pg/ul

Processing Integration Results

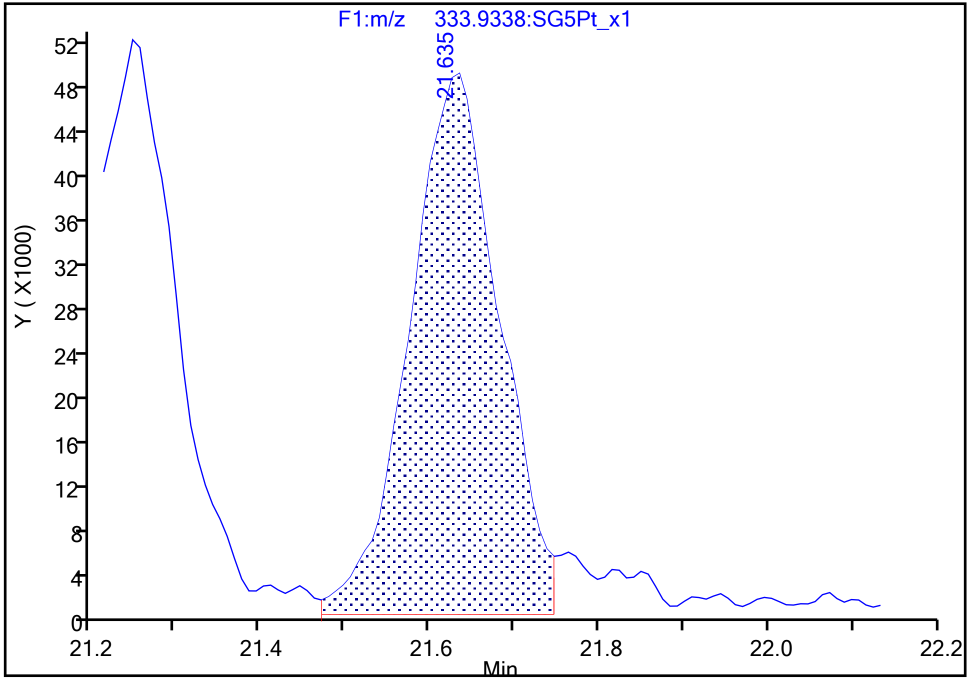

RT: 21.63
Area: 387710
Amount: 101.6410
Amount Units: pg/ul

Manual Integration Results

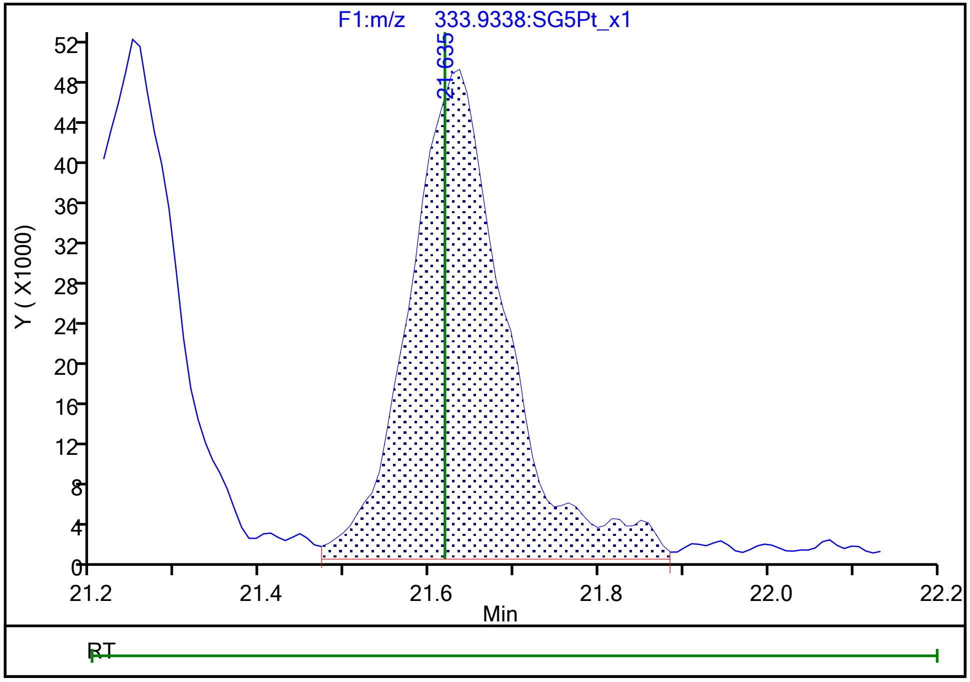

Reviewer: messecara, 25-Jan-2021 19:10:37
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 25-Jan-2021 20:04:56 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Injection Date: 22-Jan-2021 21:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

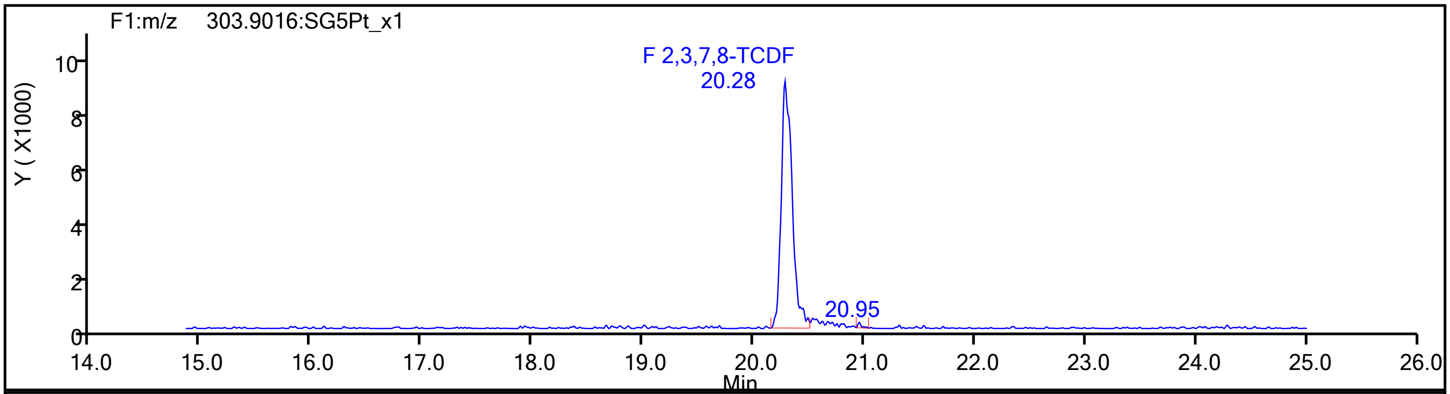

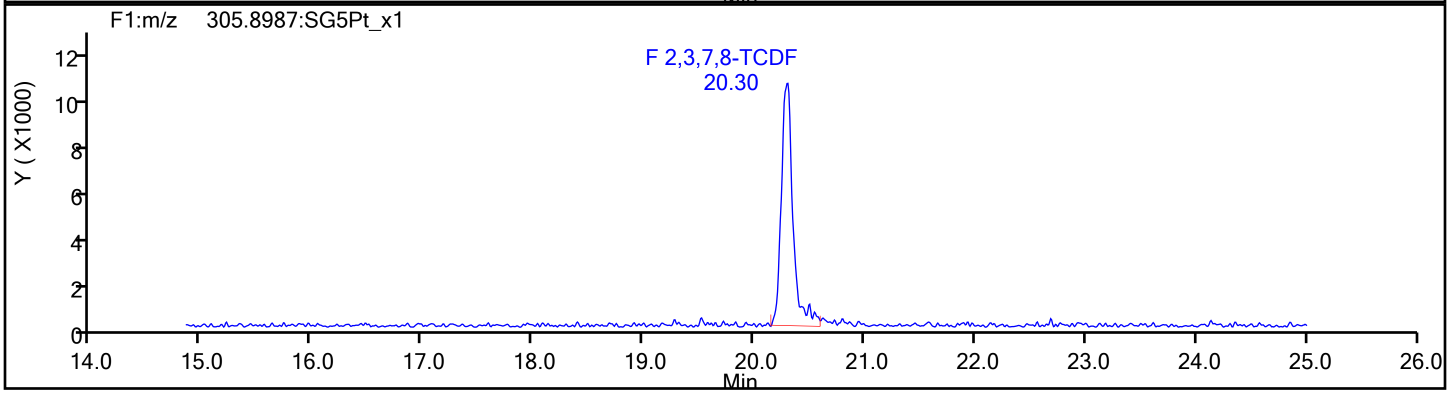

TCDF Standards

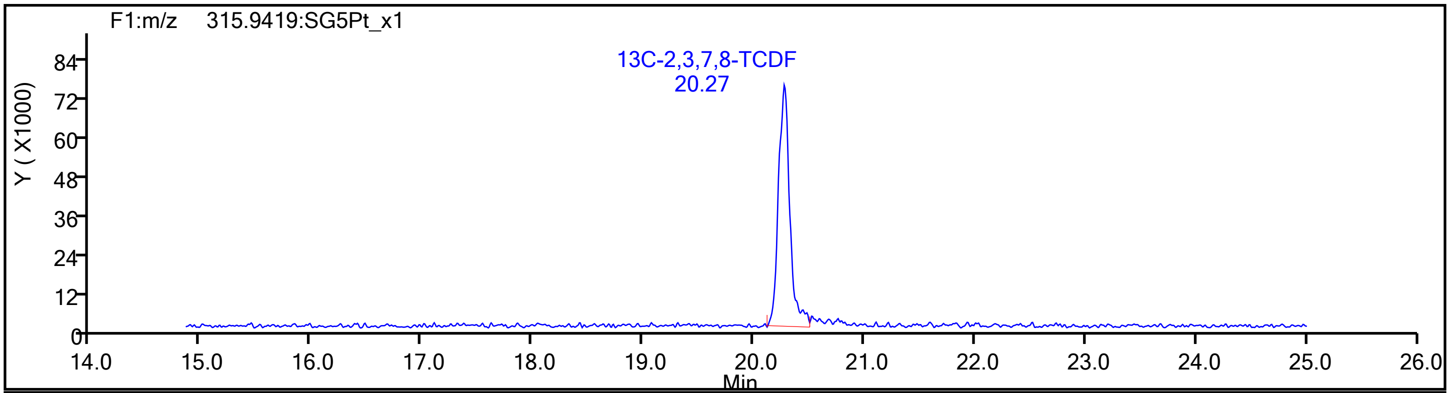

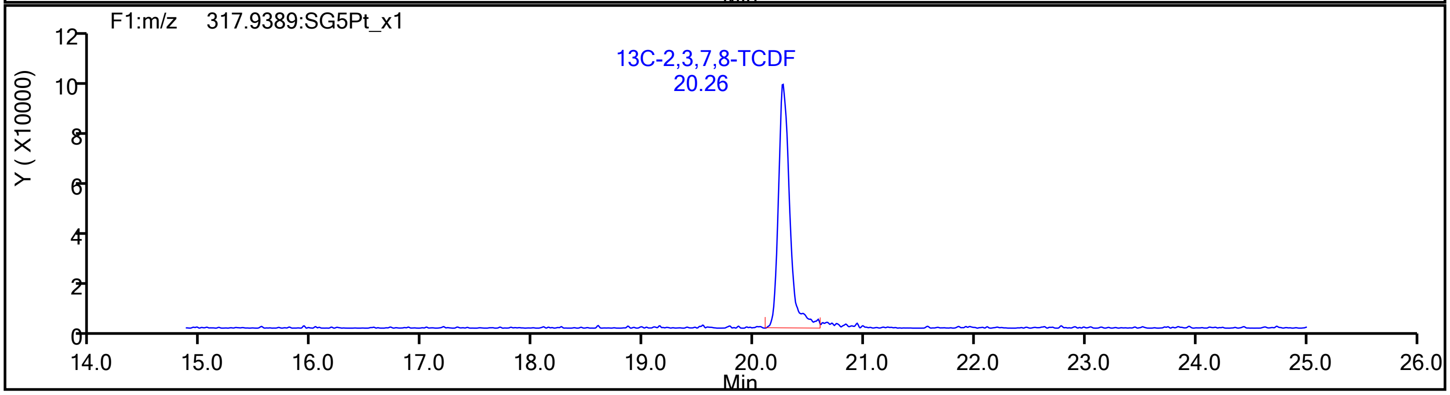

Report Date: 25-Jan-2021 20:04:56 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

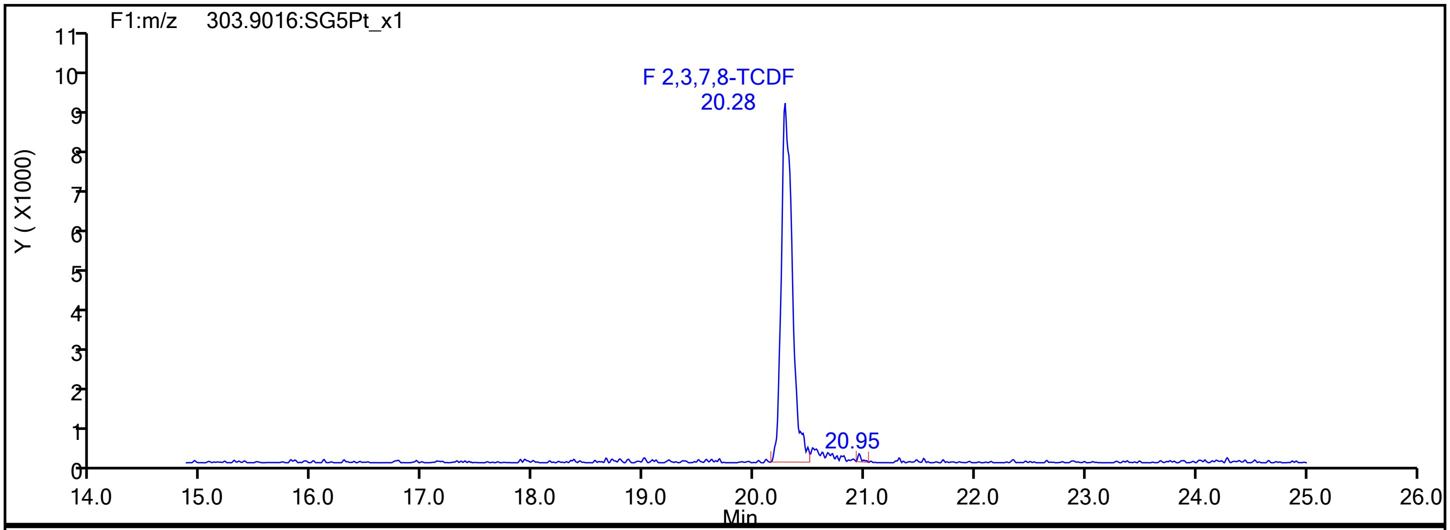

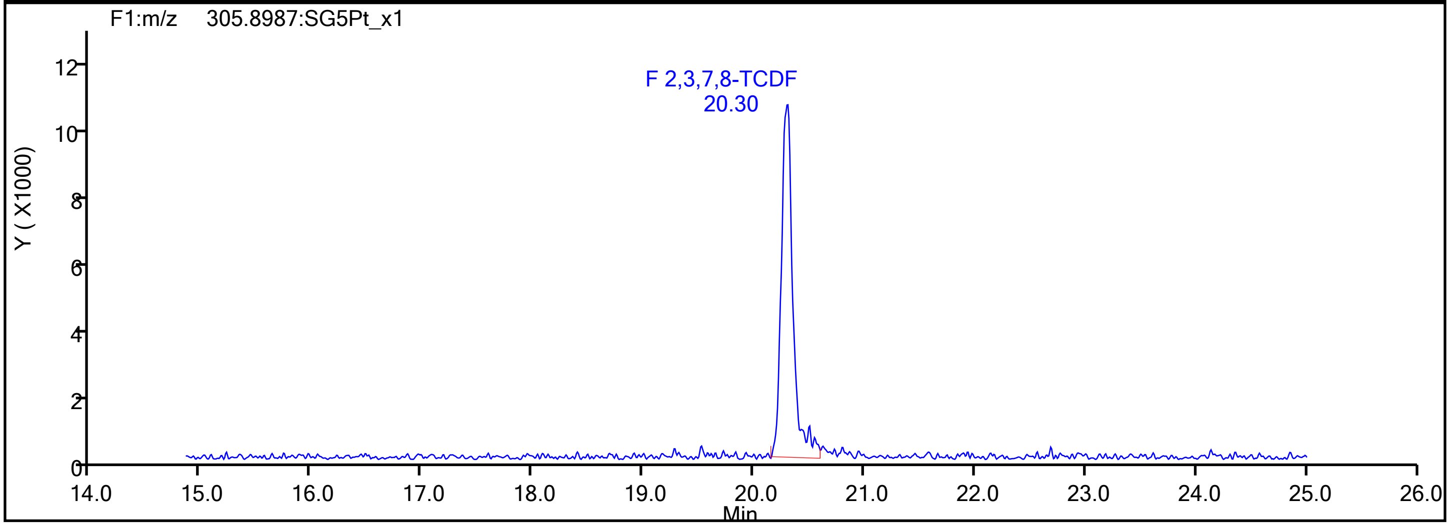

TCDF Interference Mass

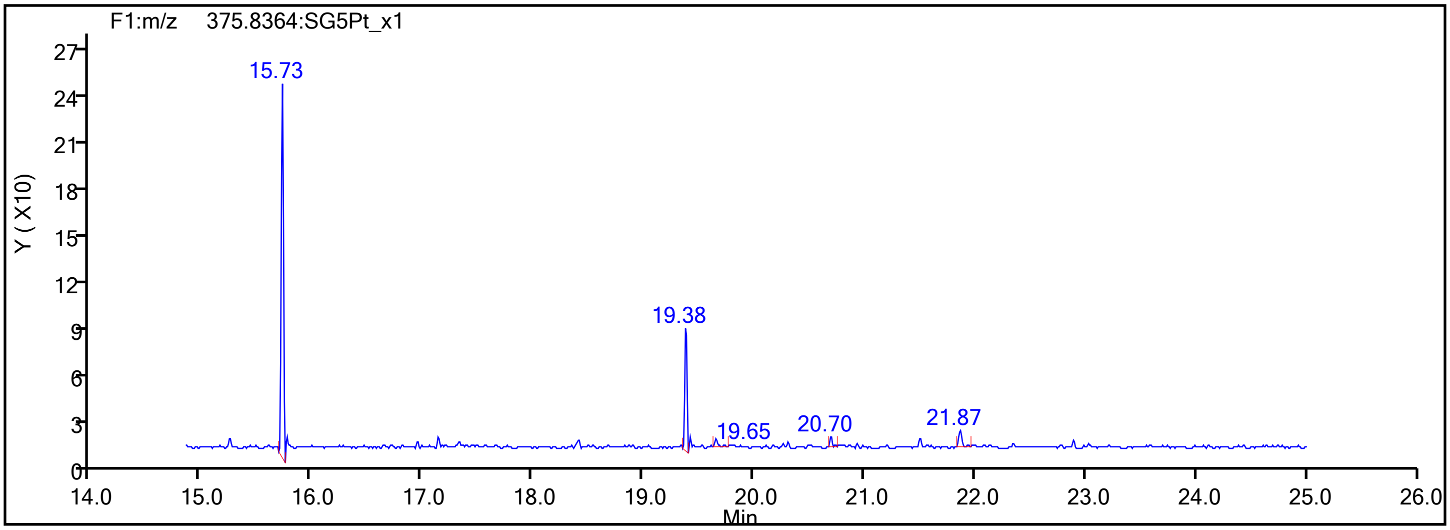

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

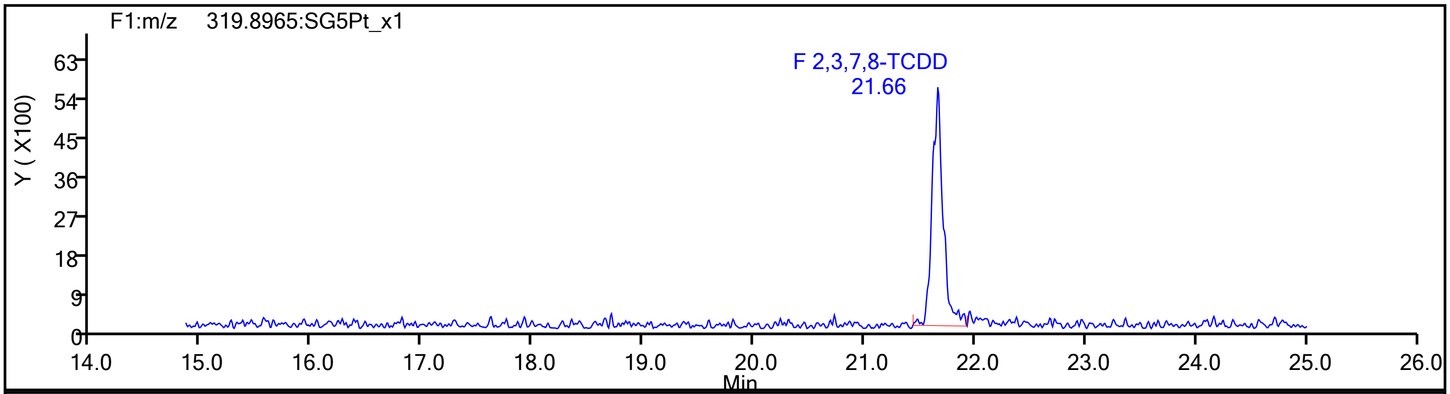

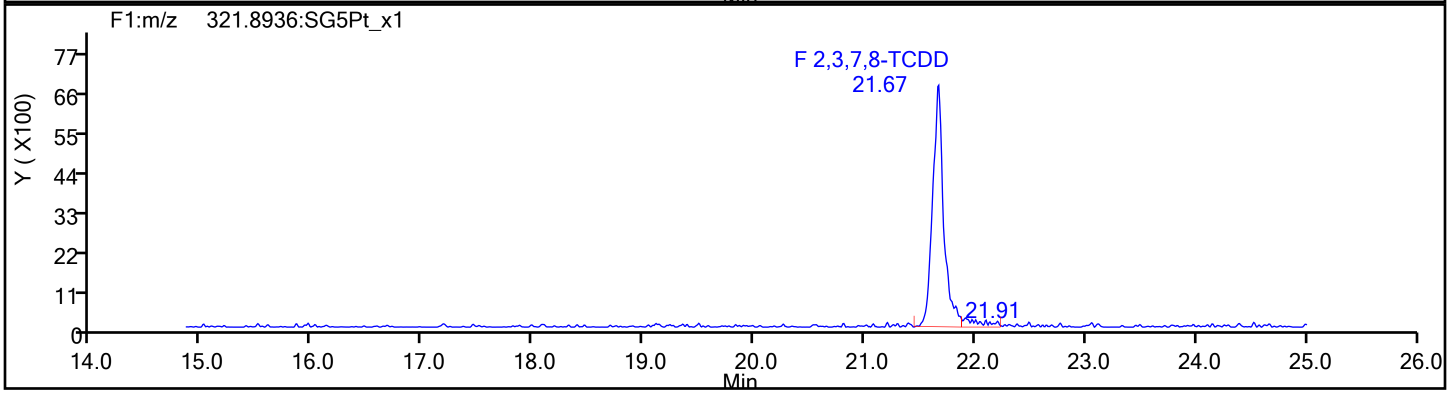

TCDD Standards

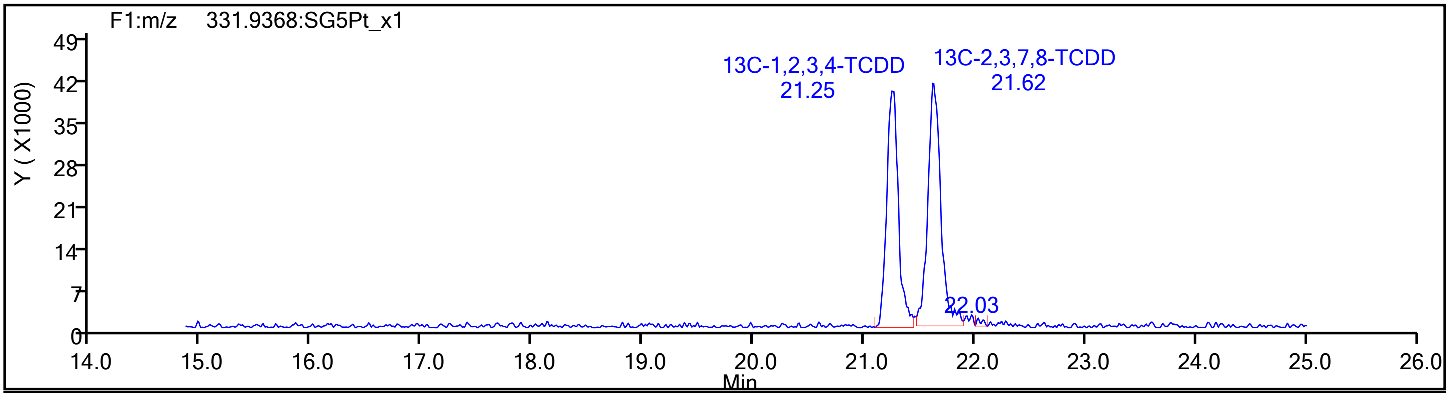

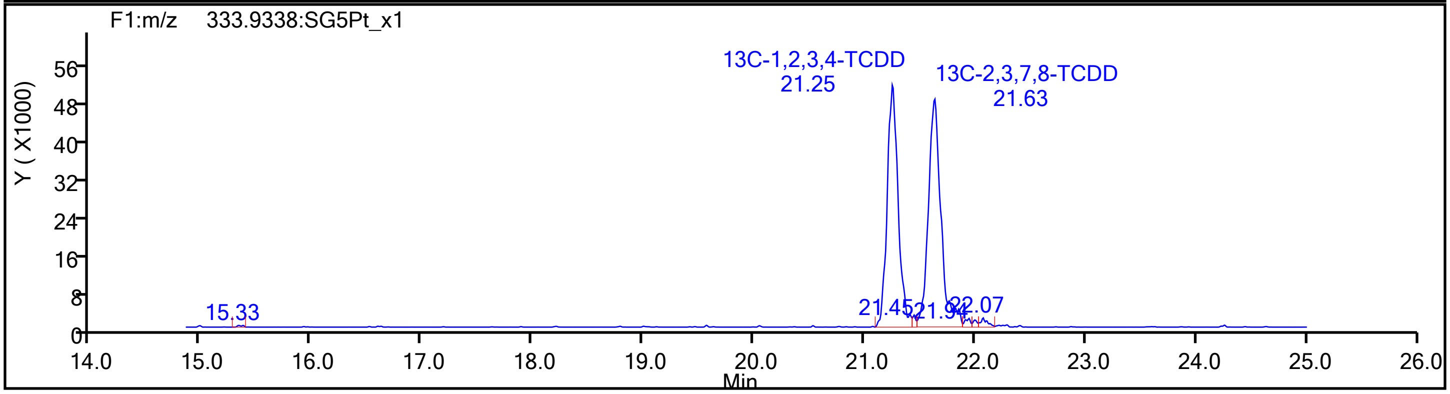

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

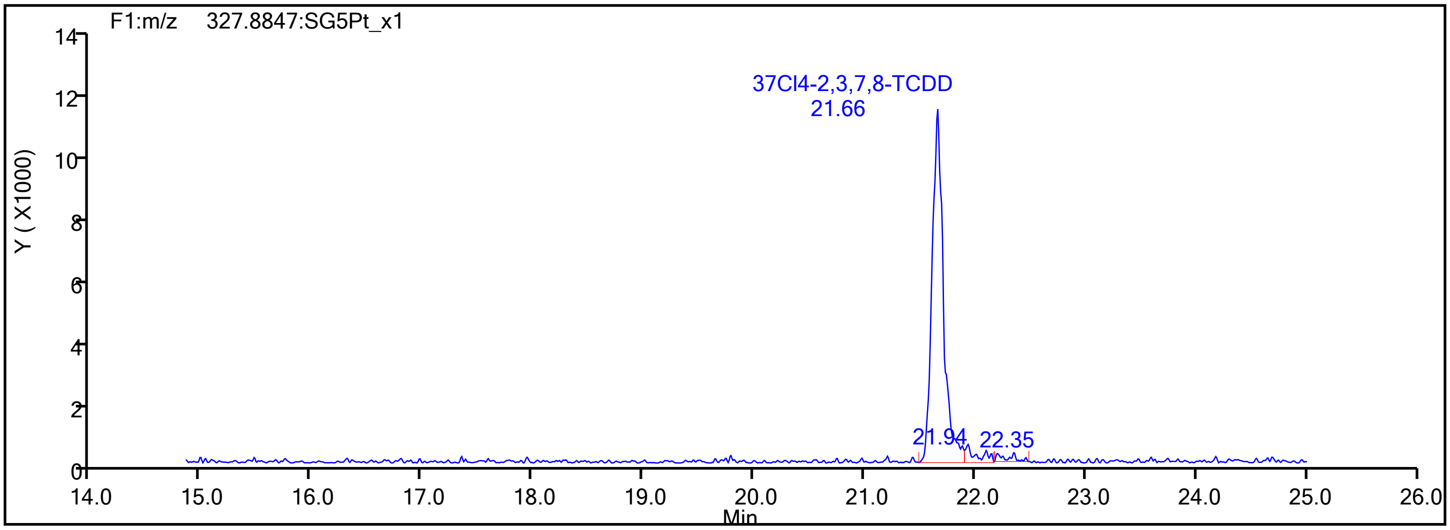

37Cl4-TCDD Standards

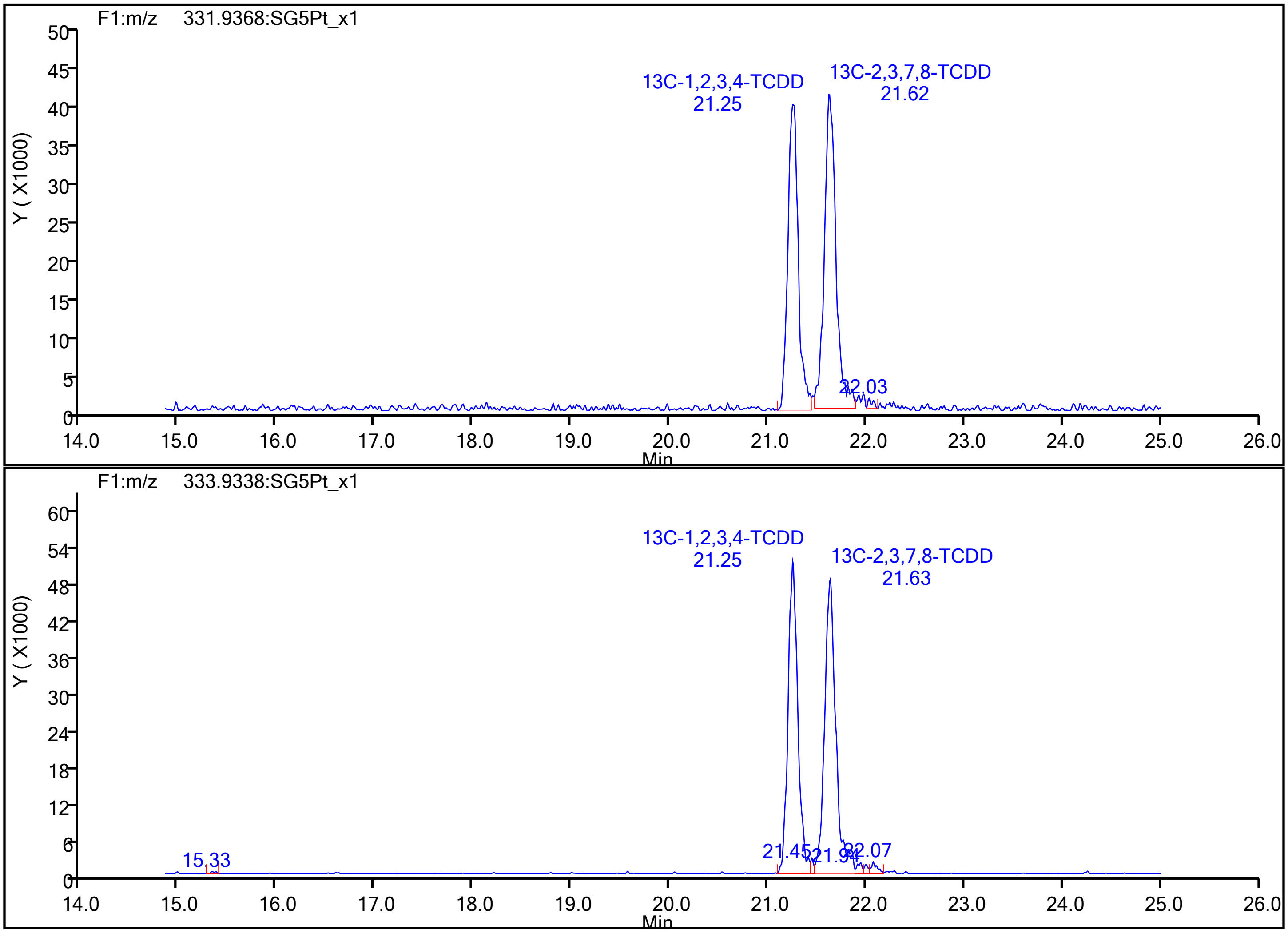

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Injection Date: 22-Jan-2021 21:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

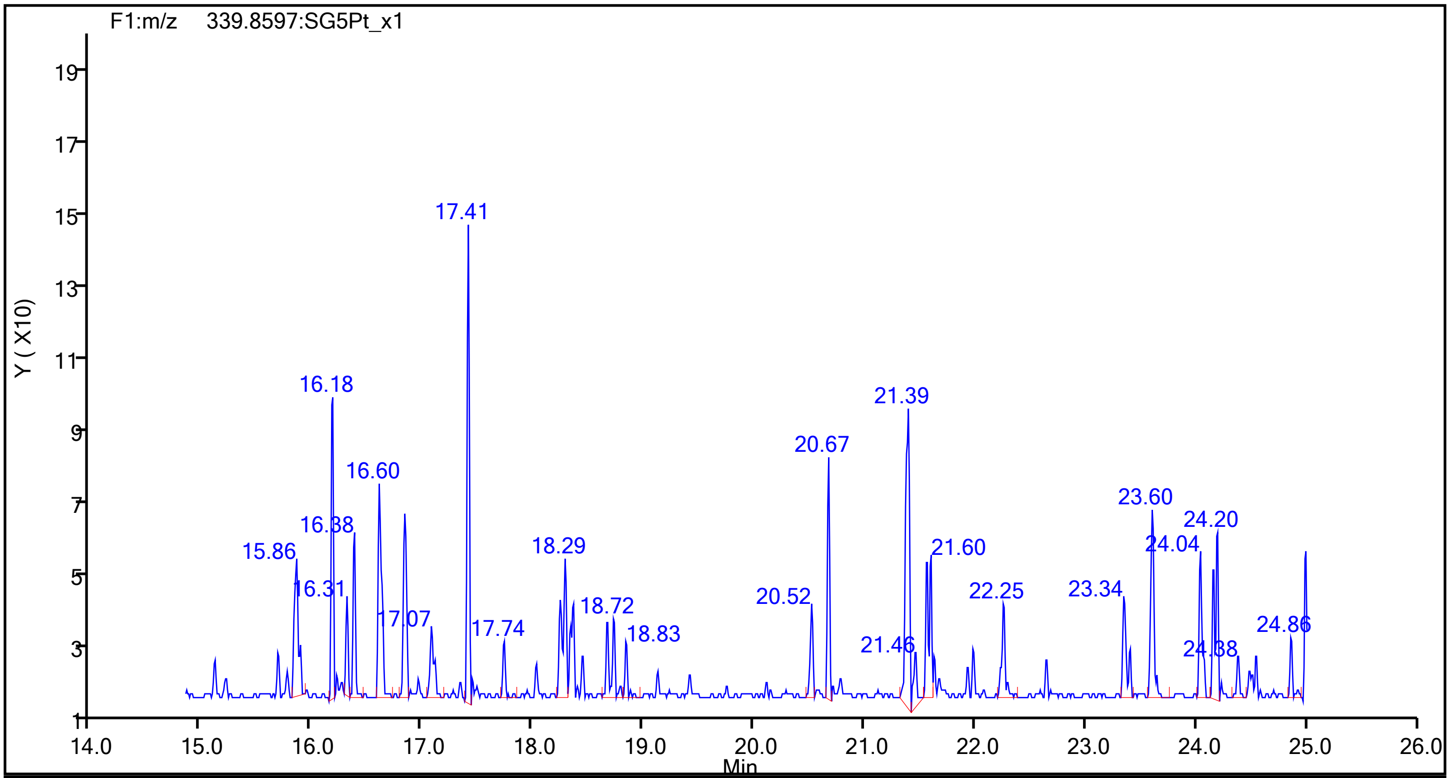

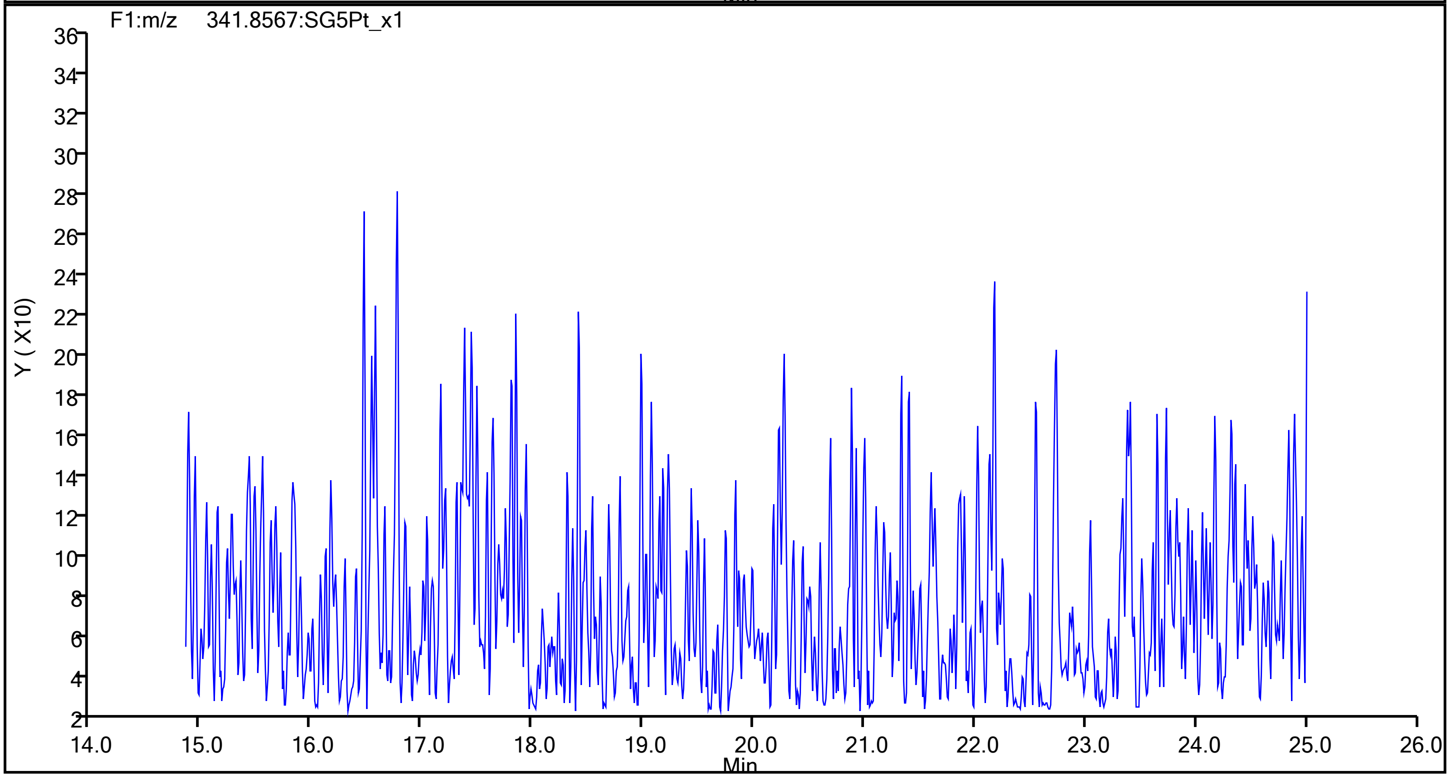

Report Date: 25-Jan-2021 20:04:57
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Injection Date: 22-Jan-2021 21:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

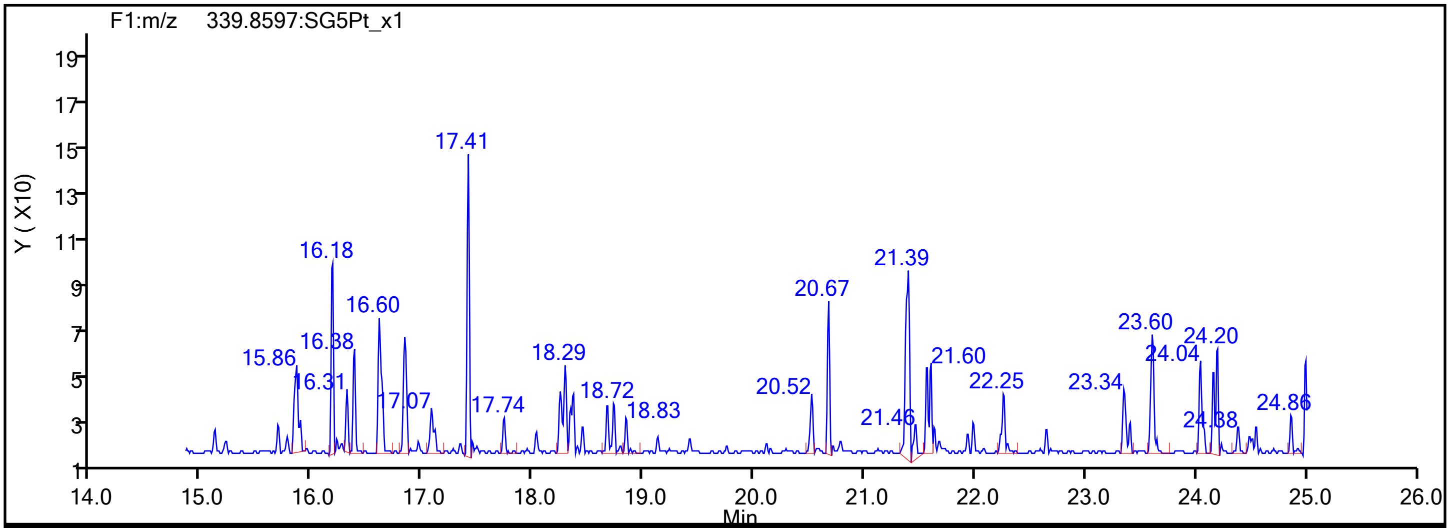

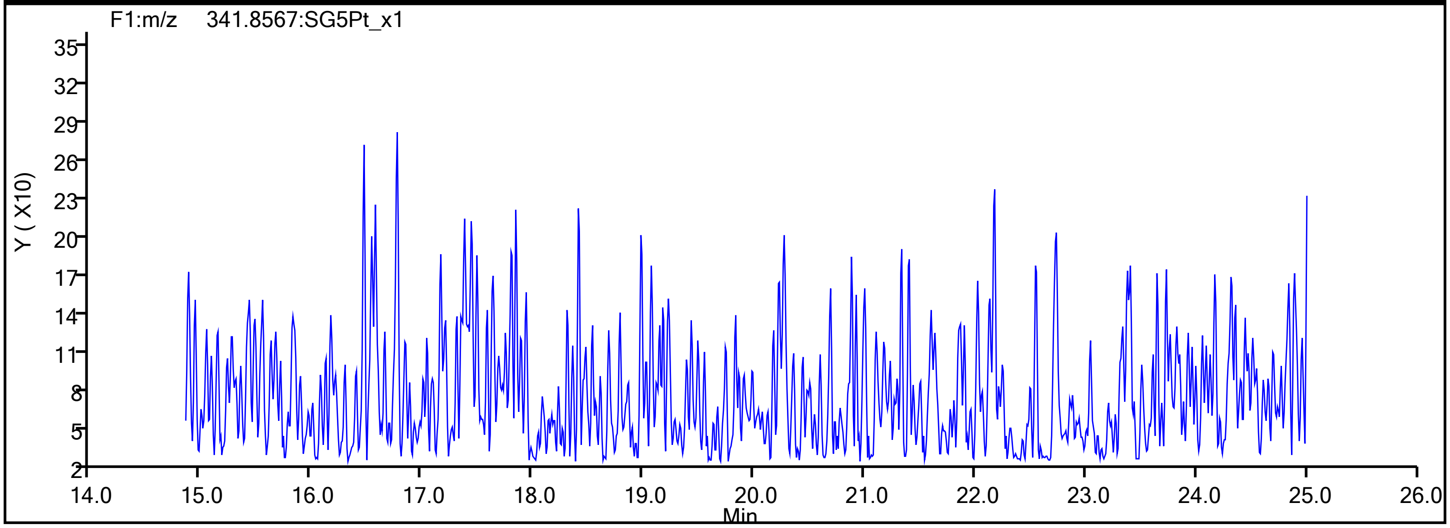

F1 PeCDFs Interference Mass

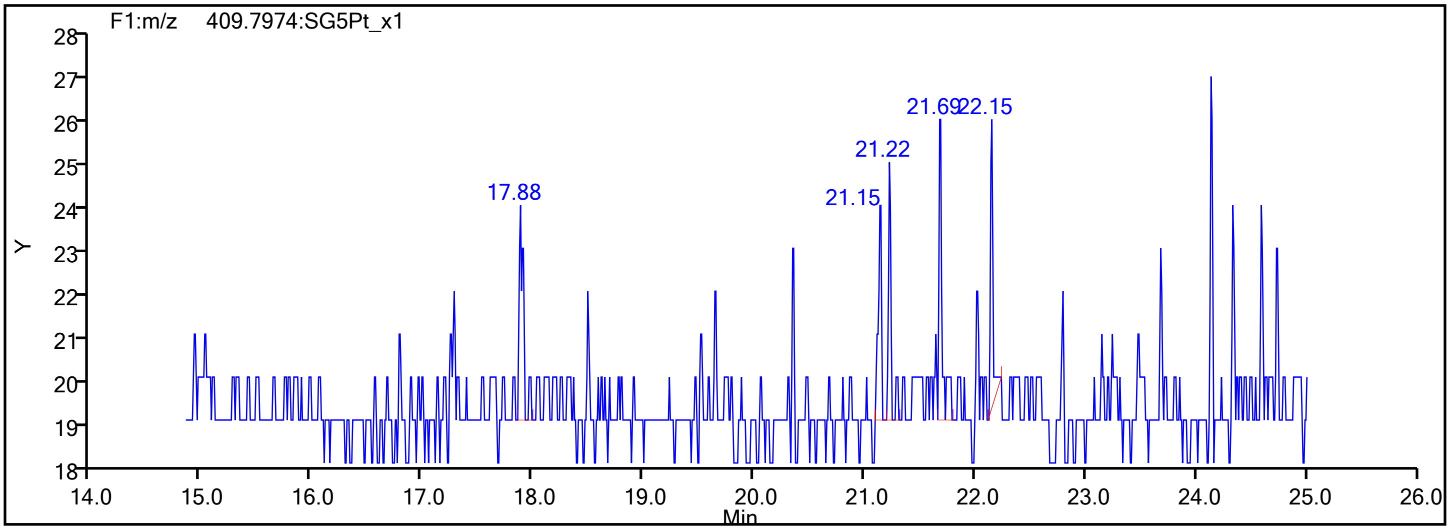

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

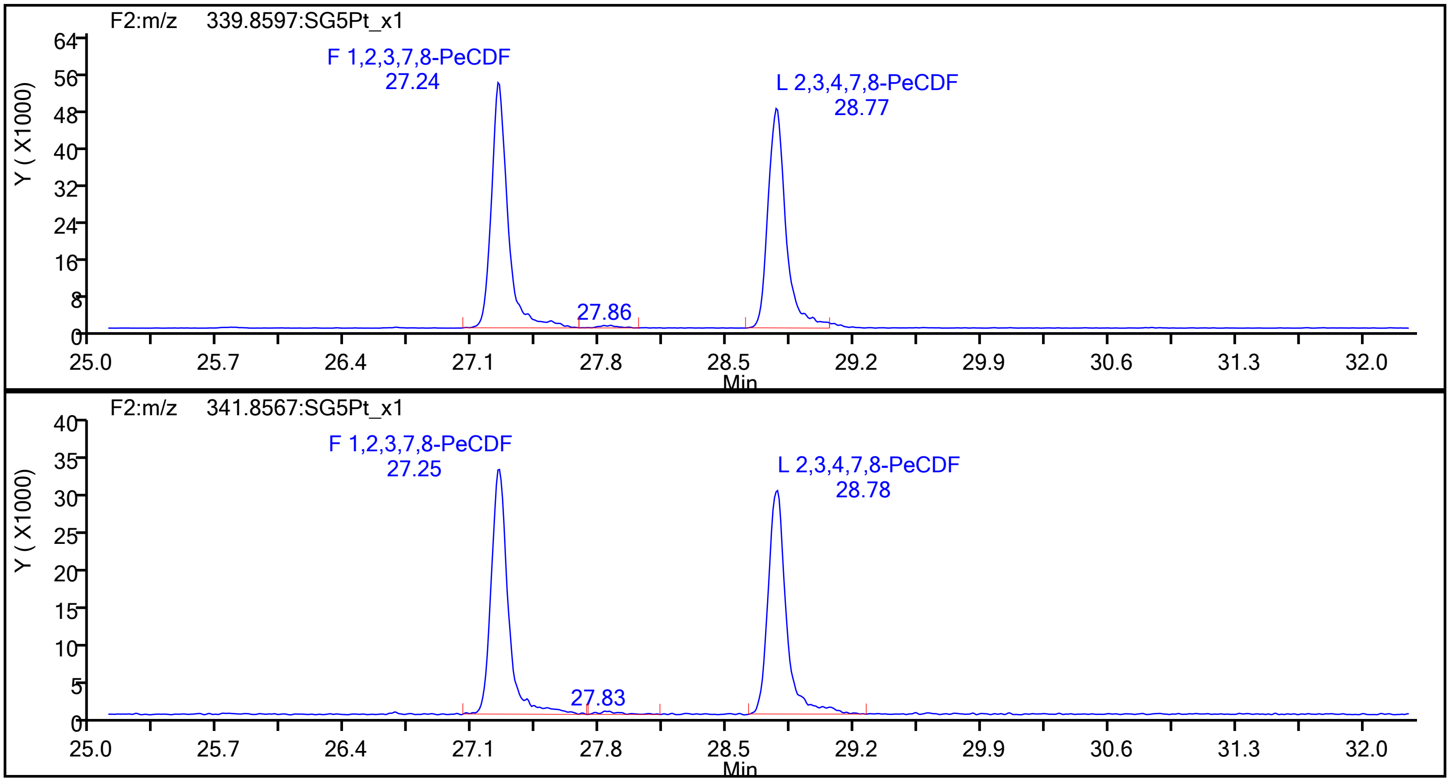

PeCDF Standards

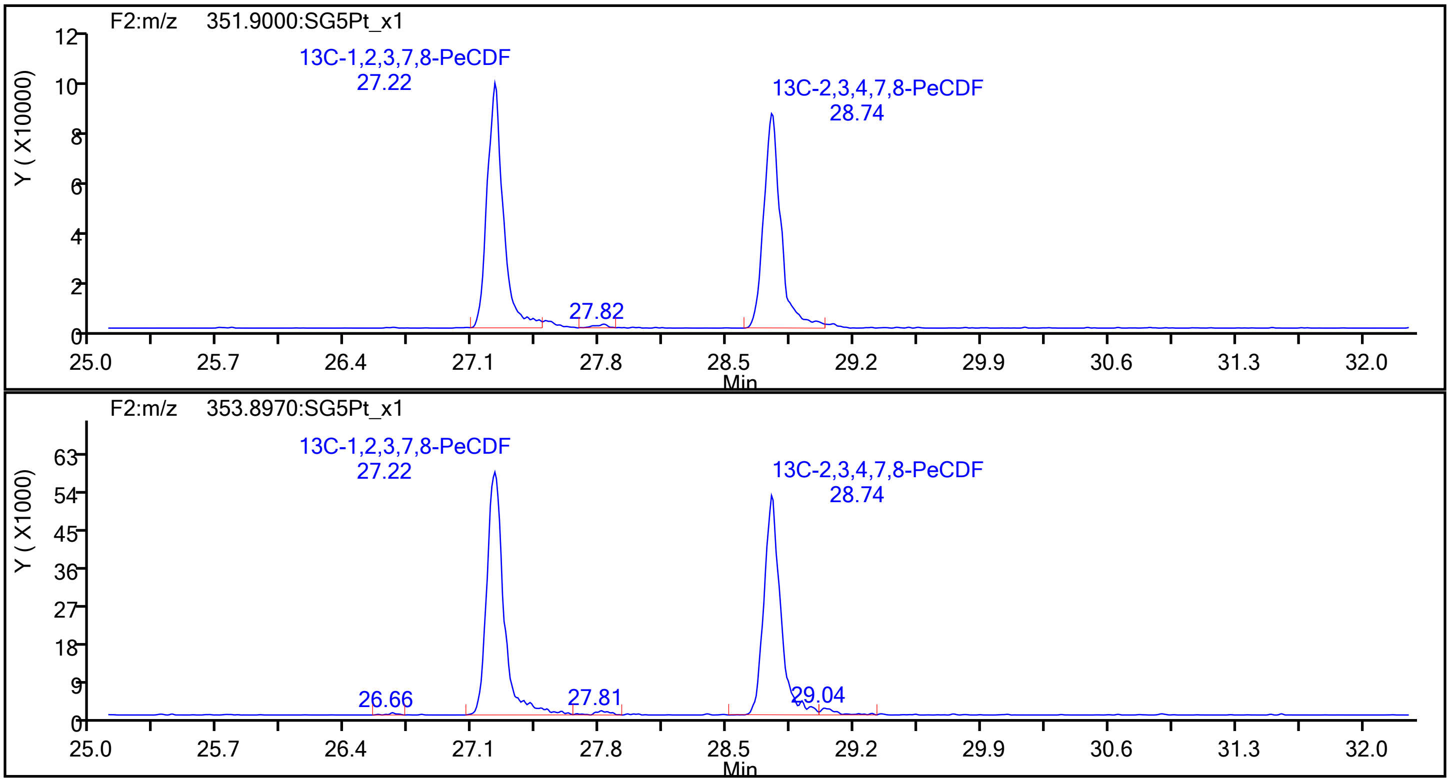

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Injection Date: 22-Jan-2021 21:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

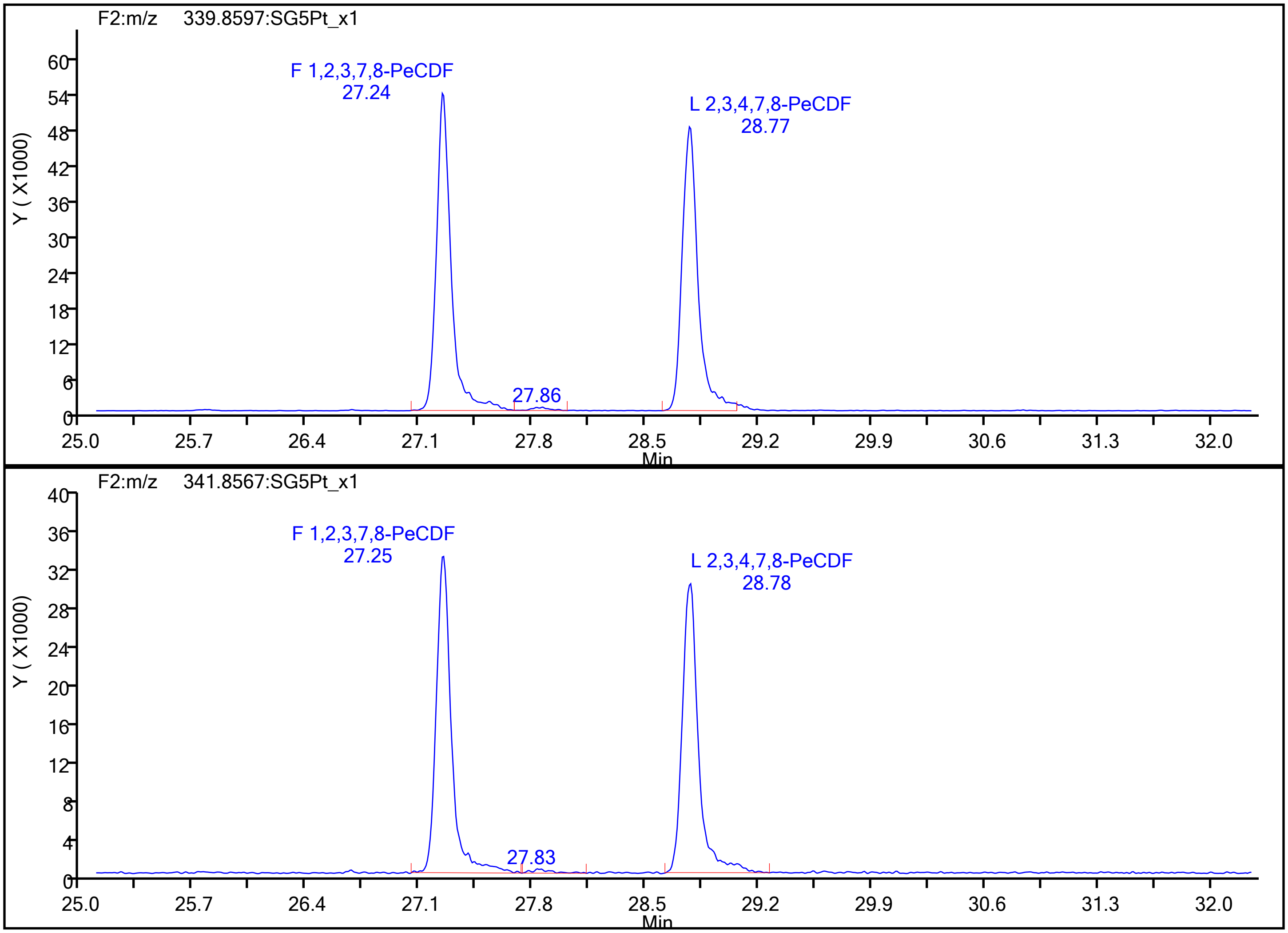

PeCDF Interference Mass

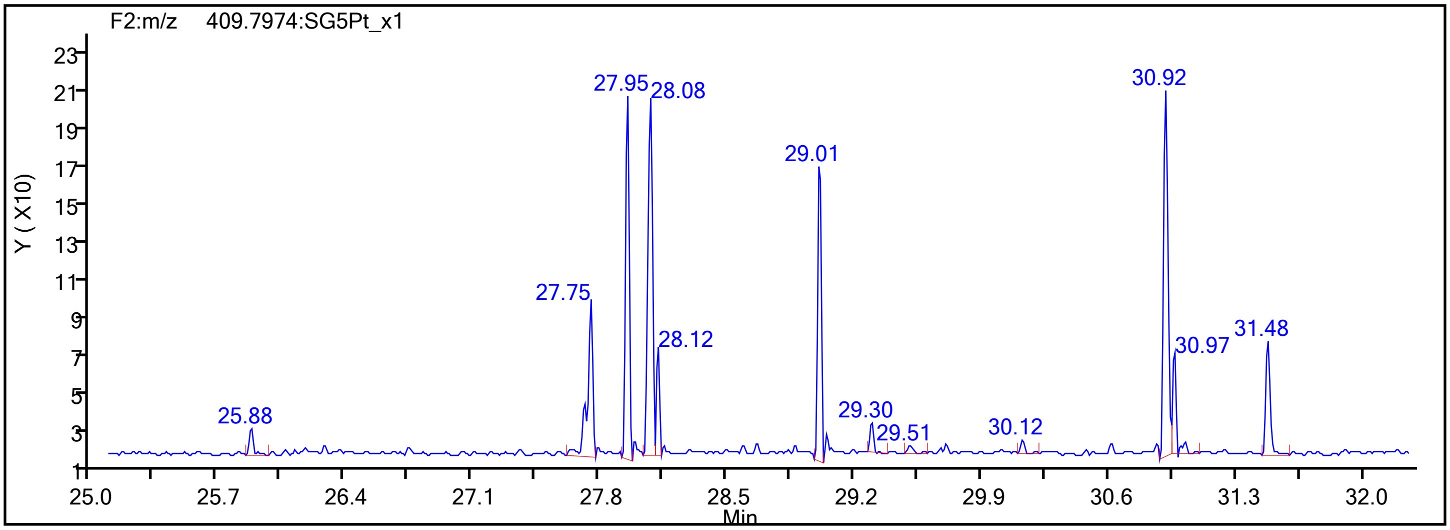

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

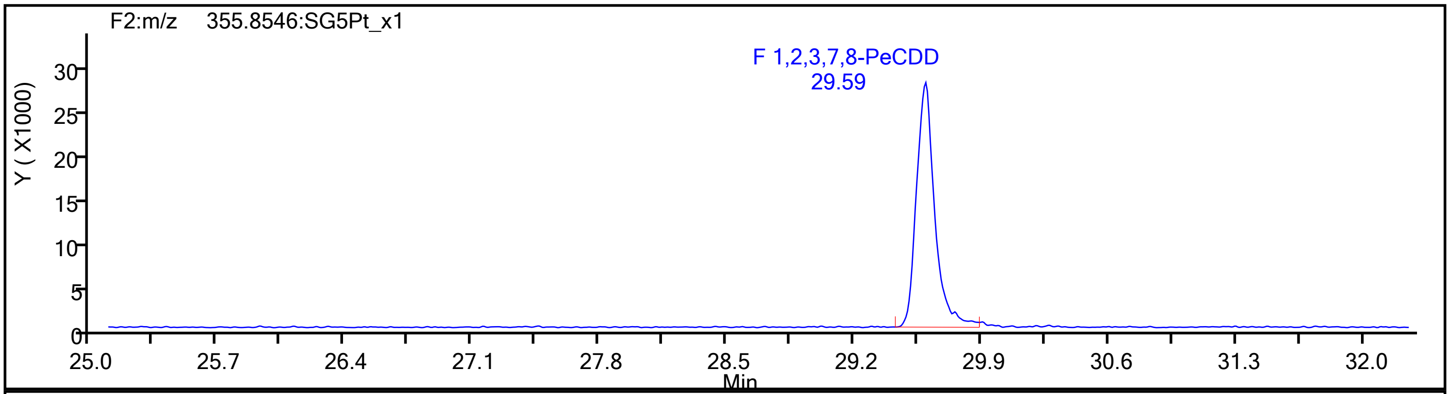

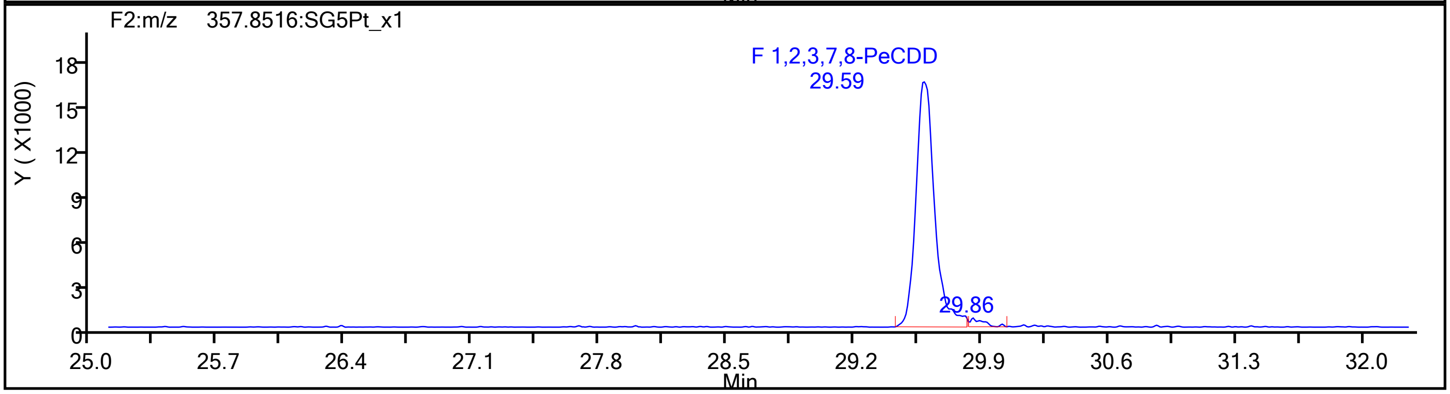

PeCDD Standards

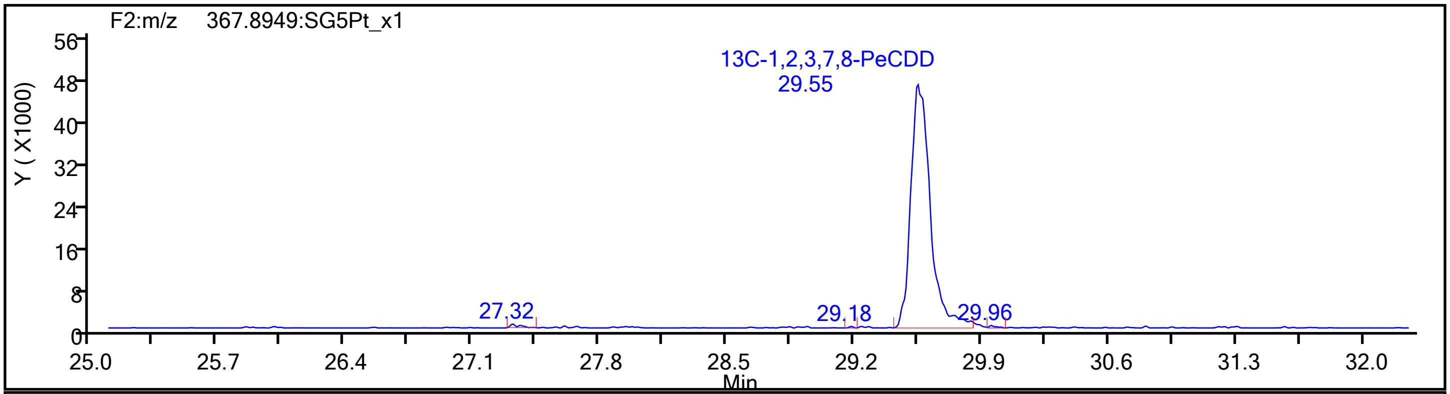

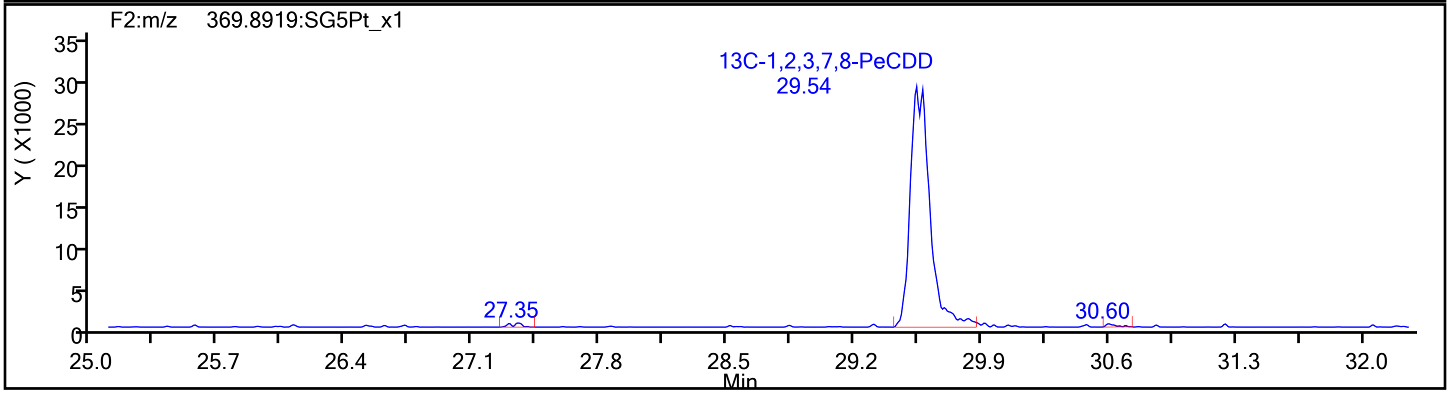

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

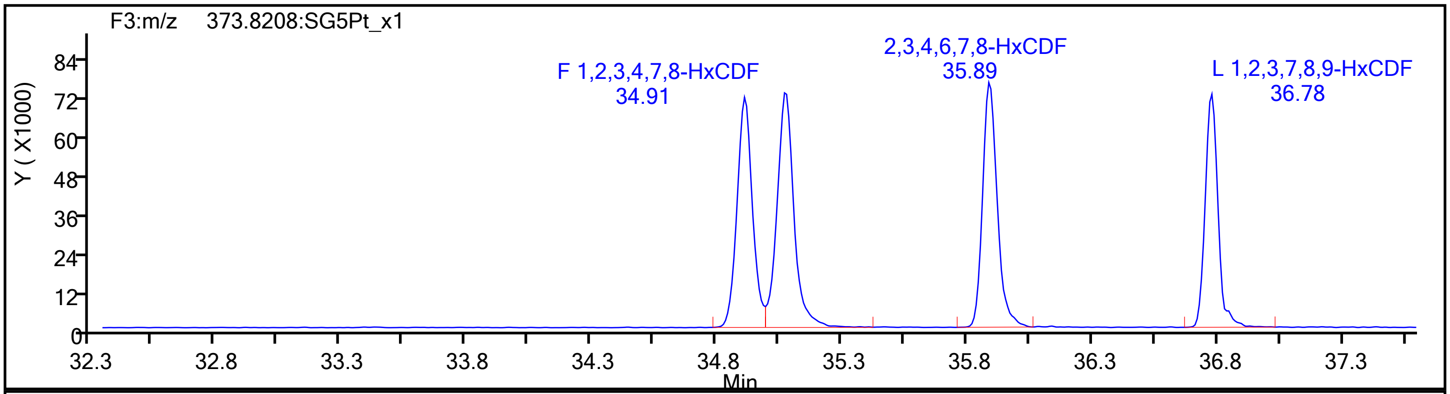

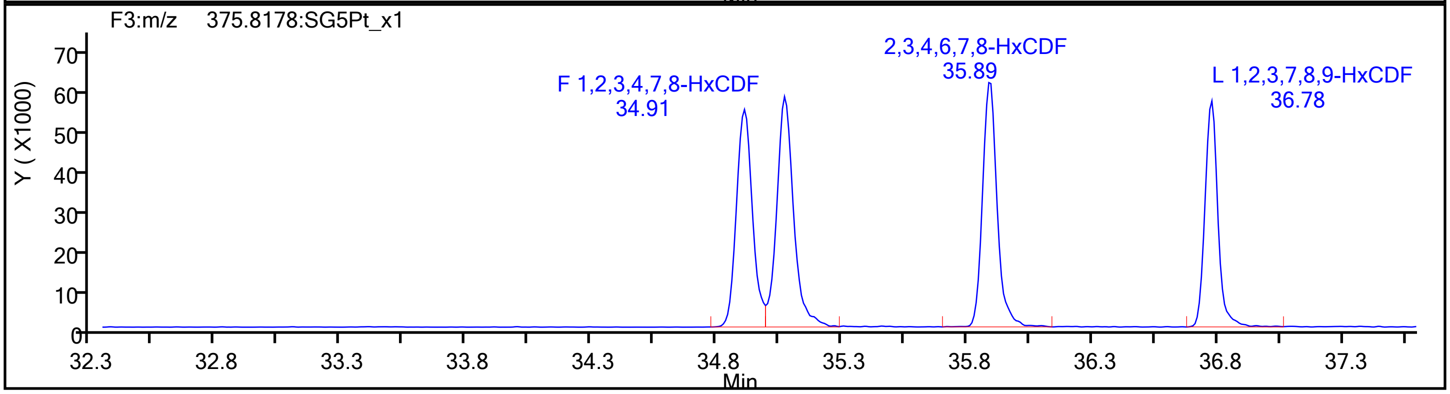

HxCDF Standards

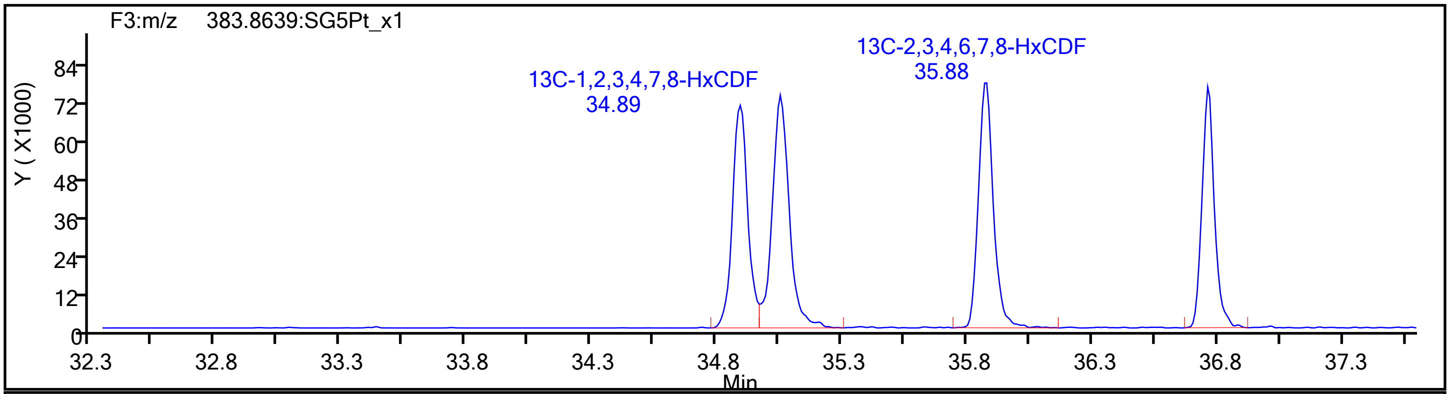

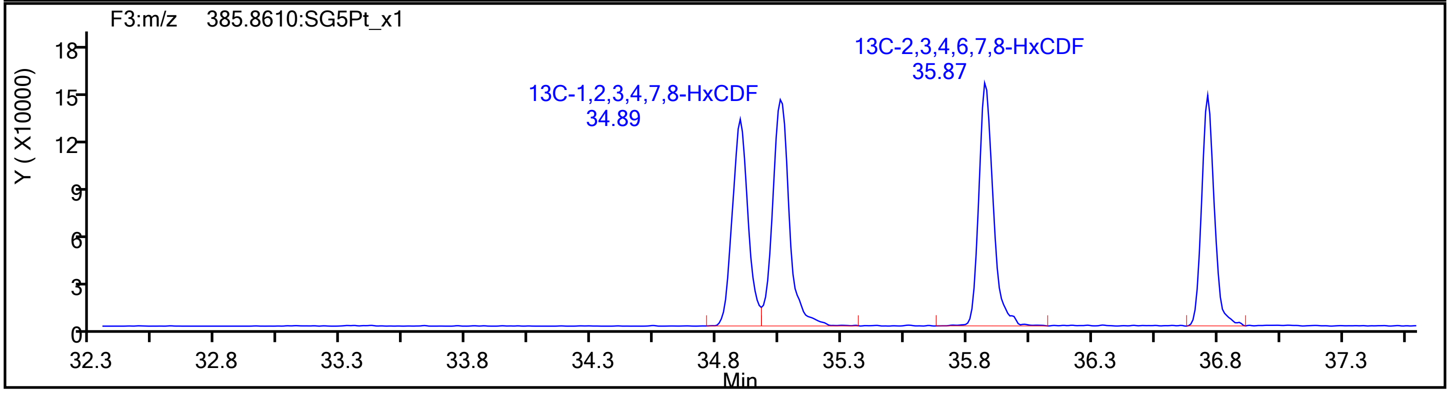

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

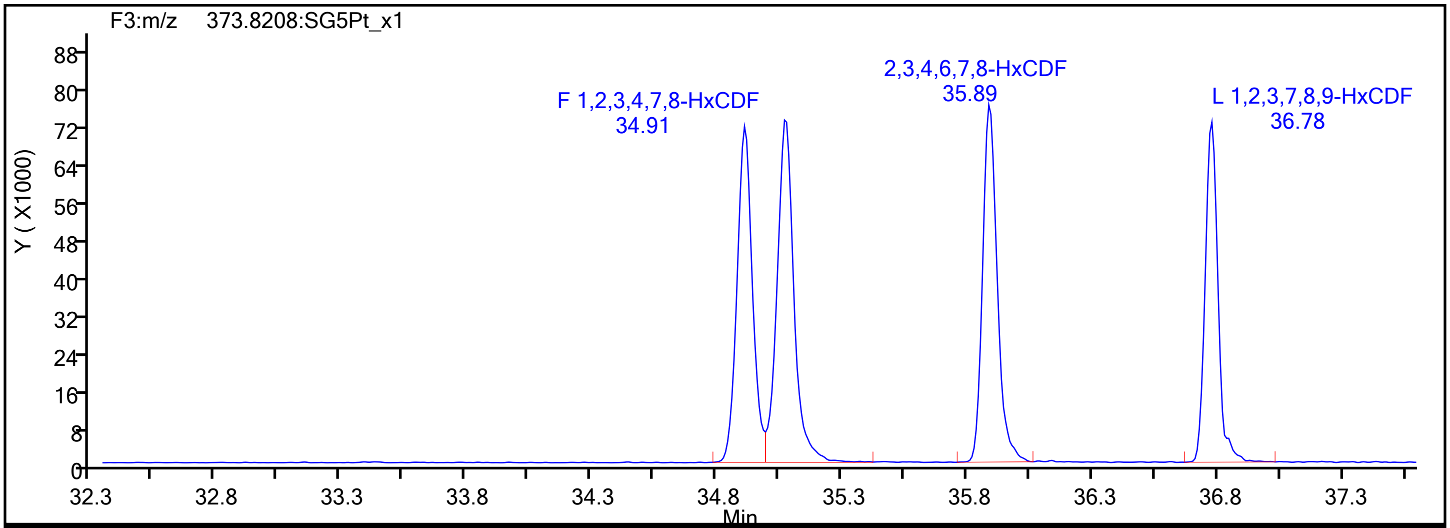

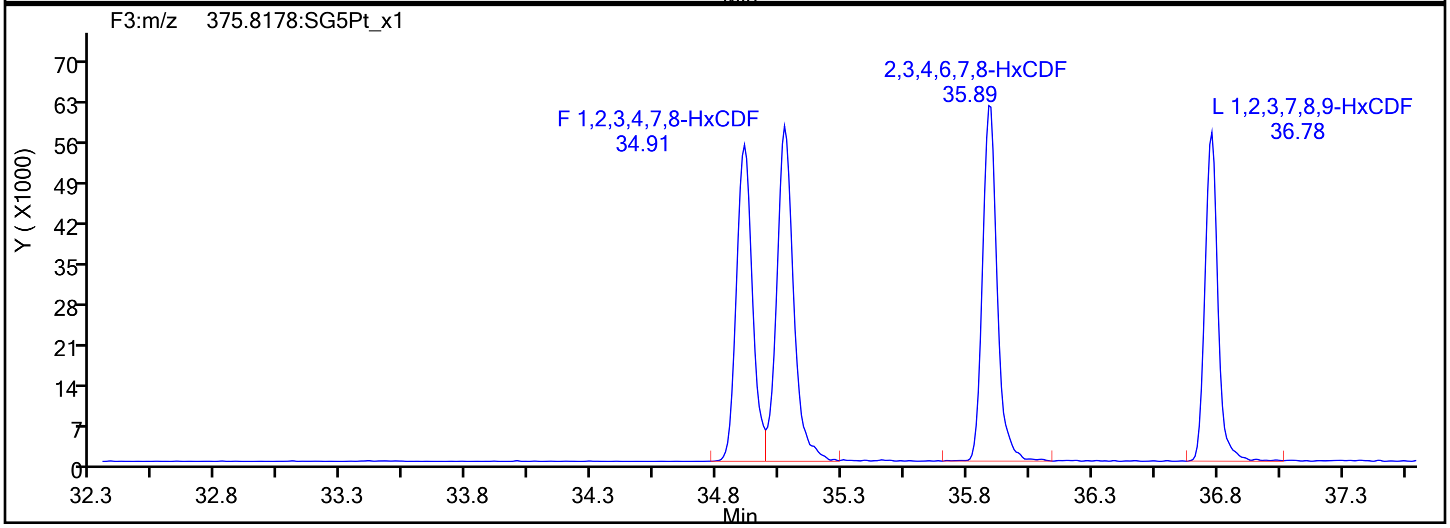

HxCDF Interference Mass

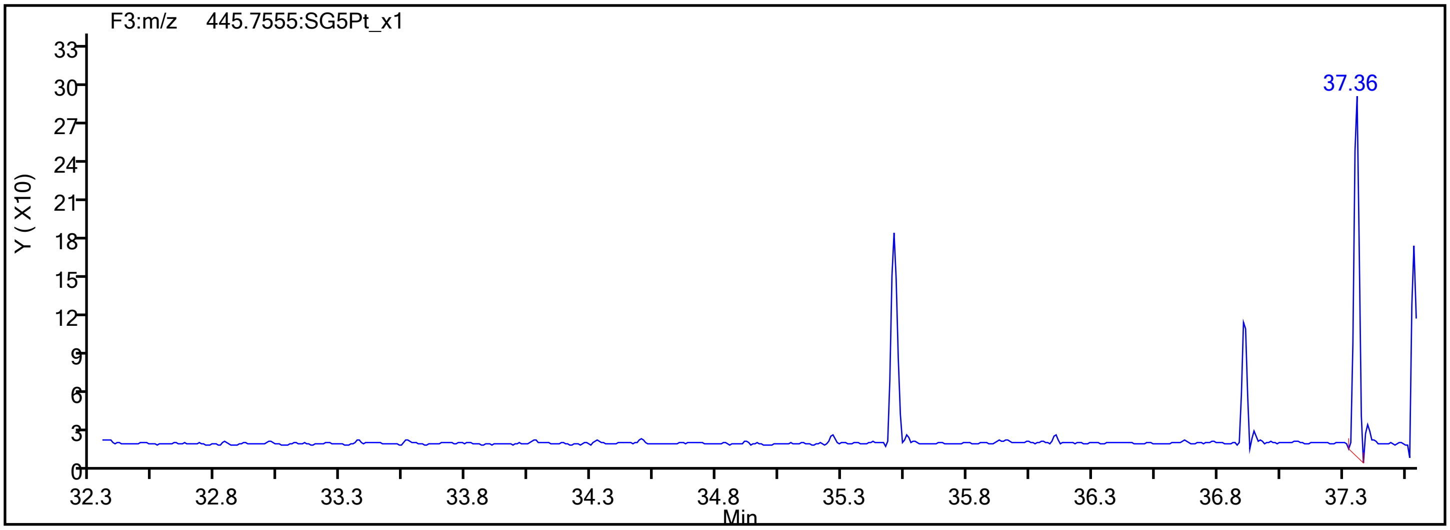

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

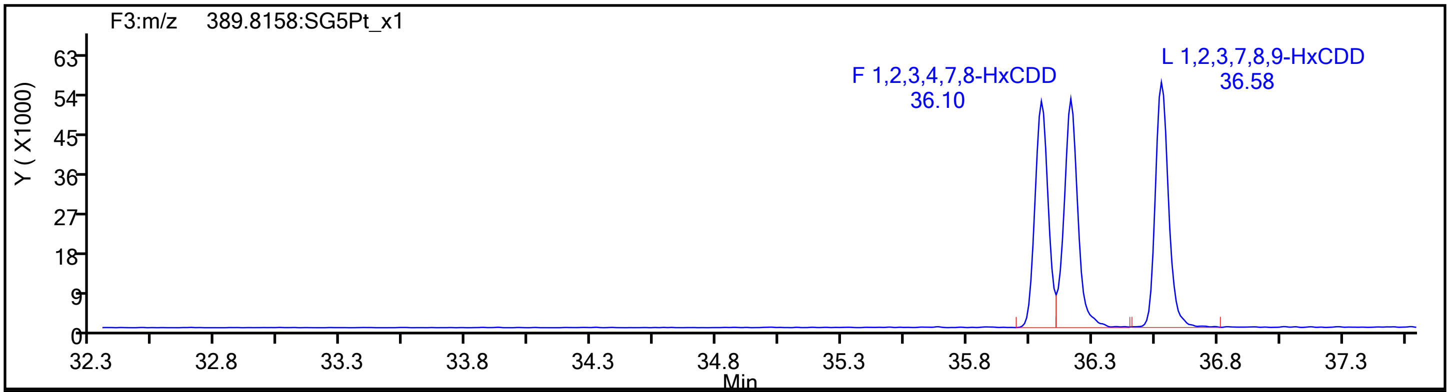

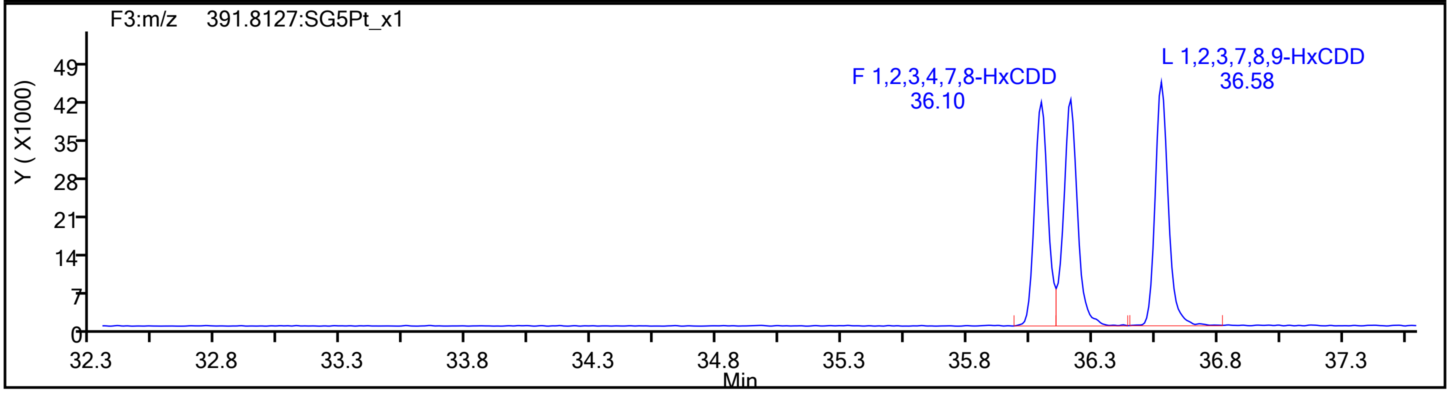

HxCDD Standards

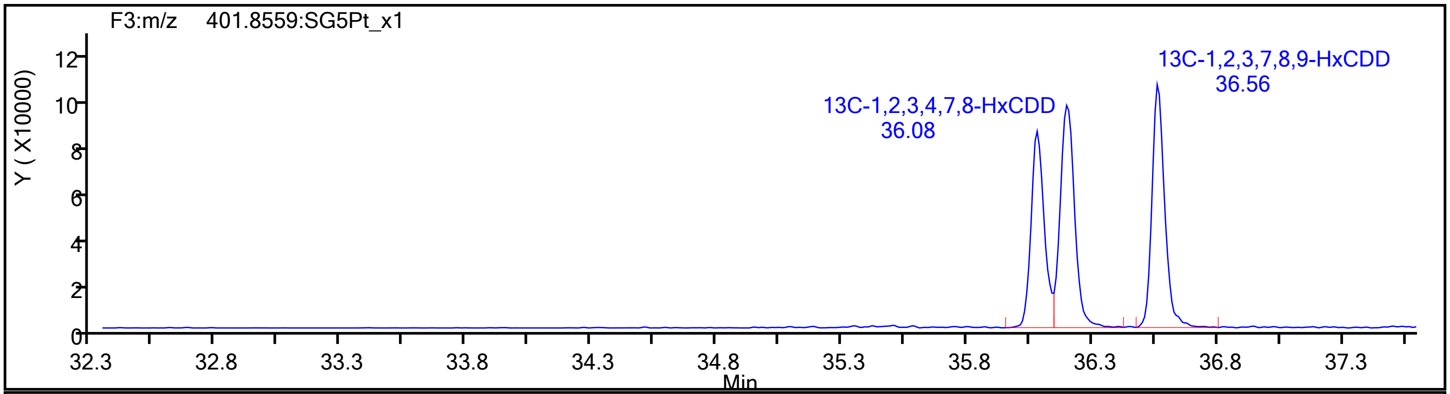

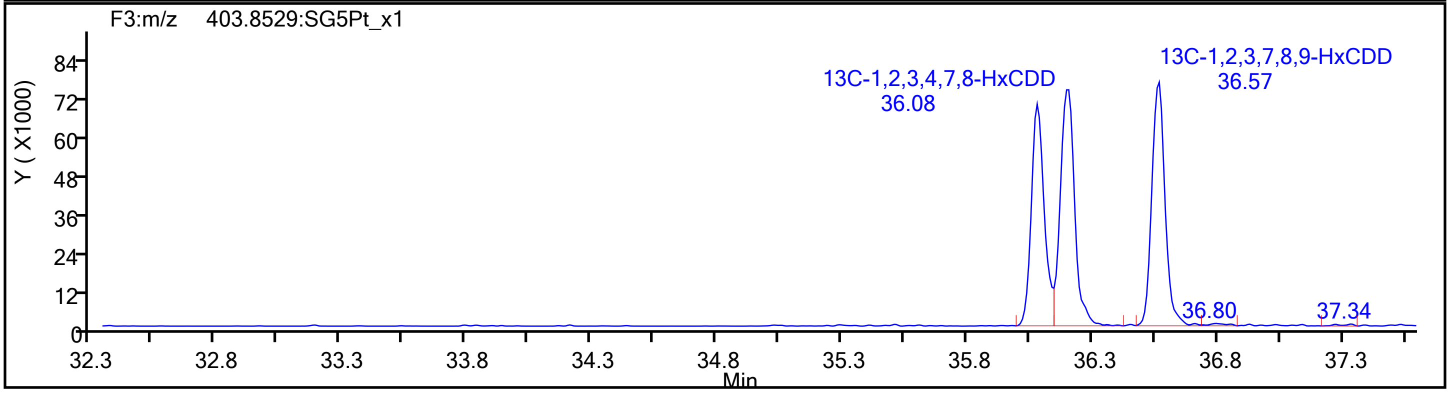

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

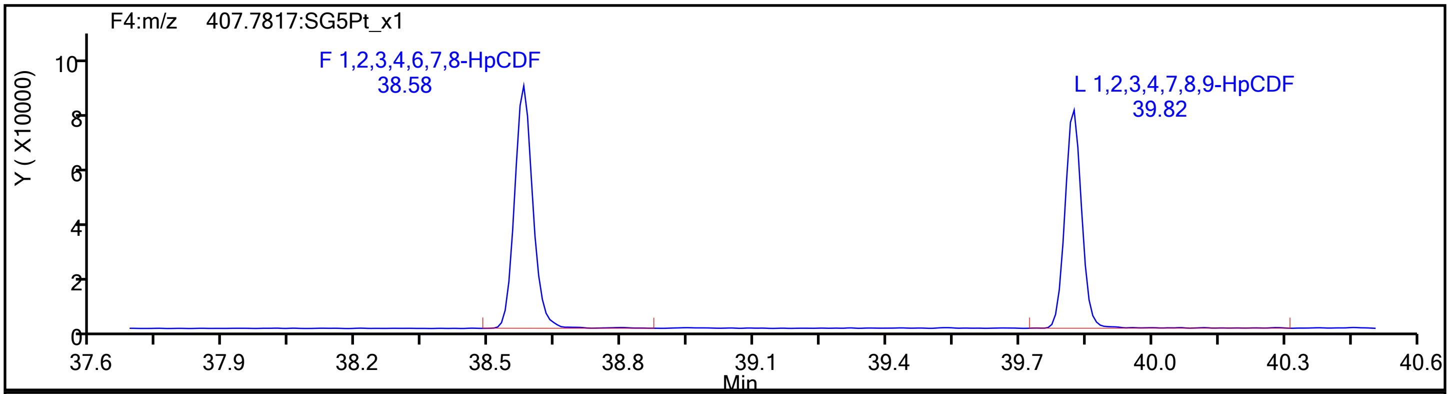

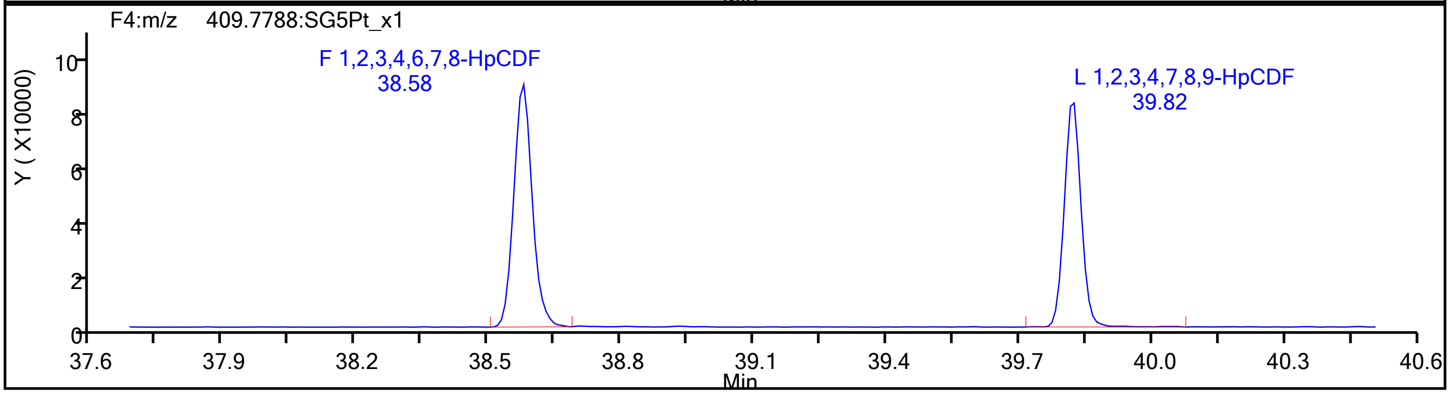

HpCDF Standards

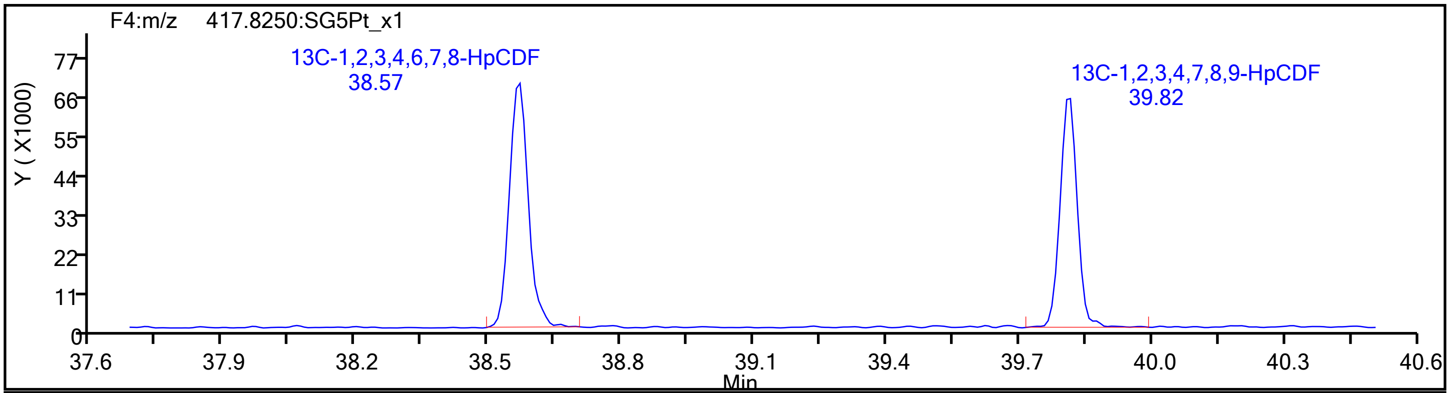

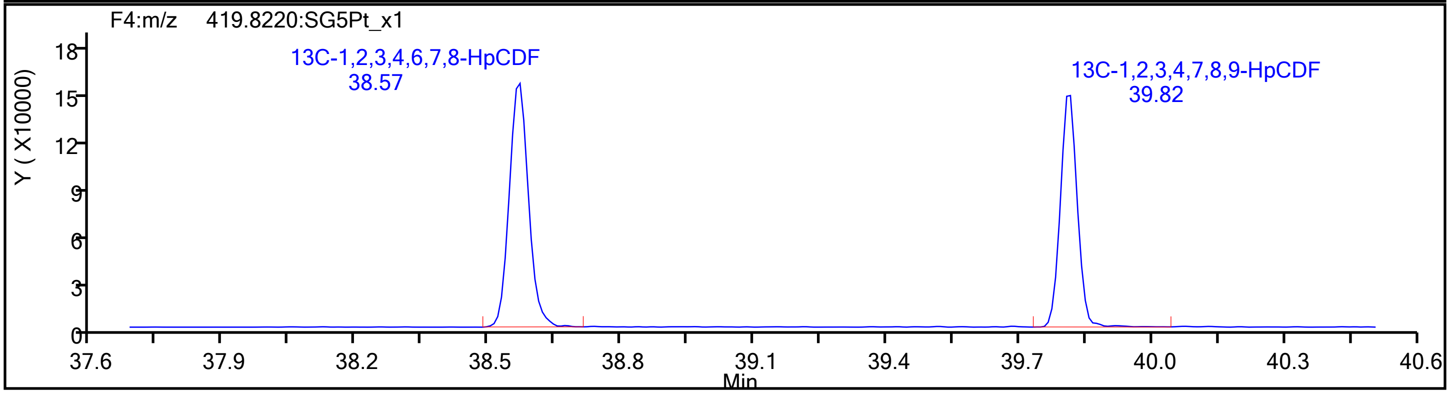

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDF

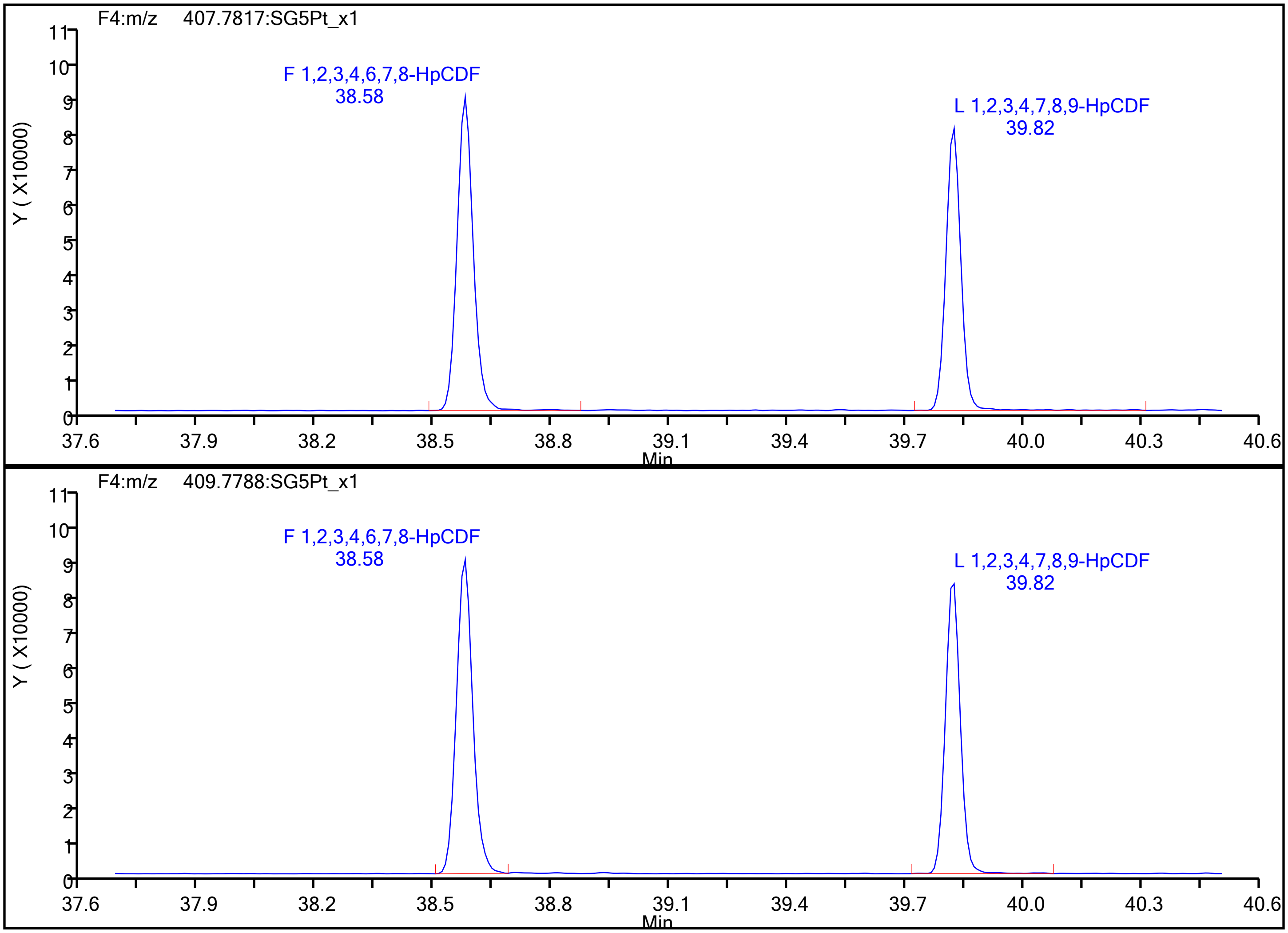

HpCDF Interference Mass

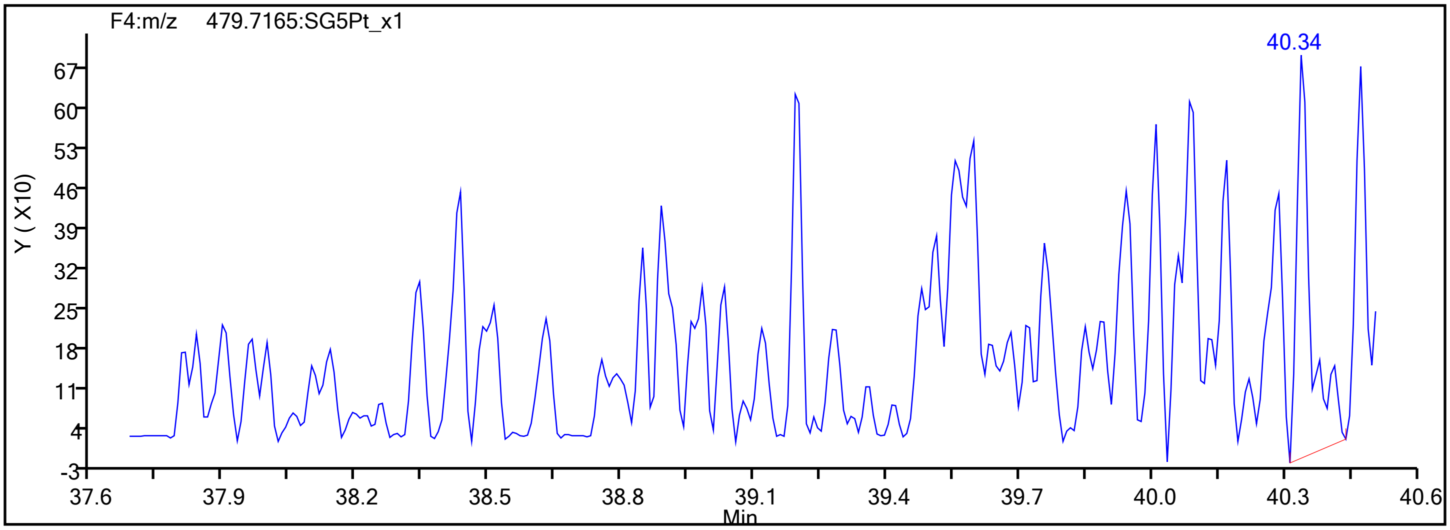

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

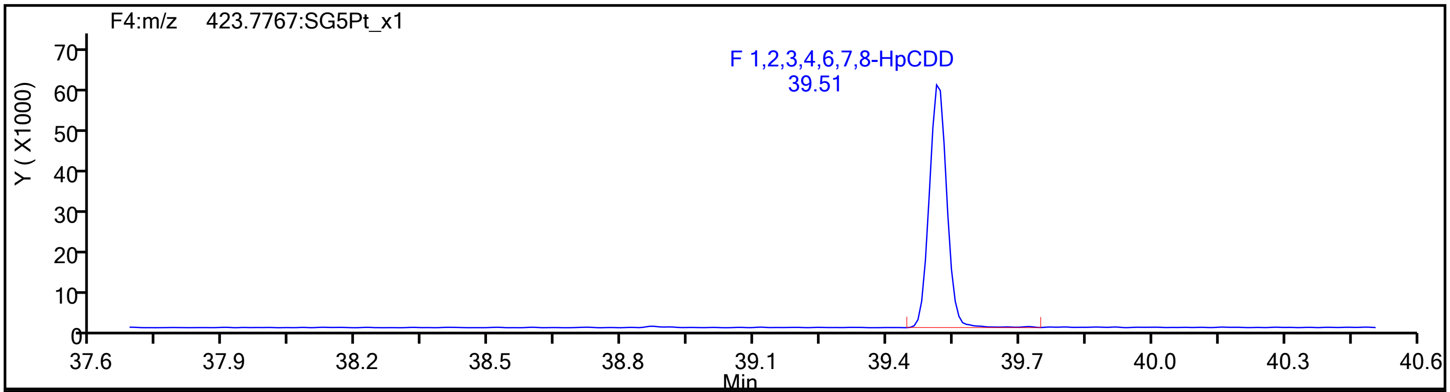

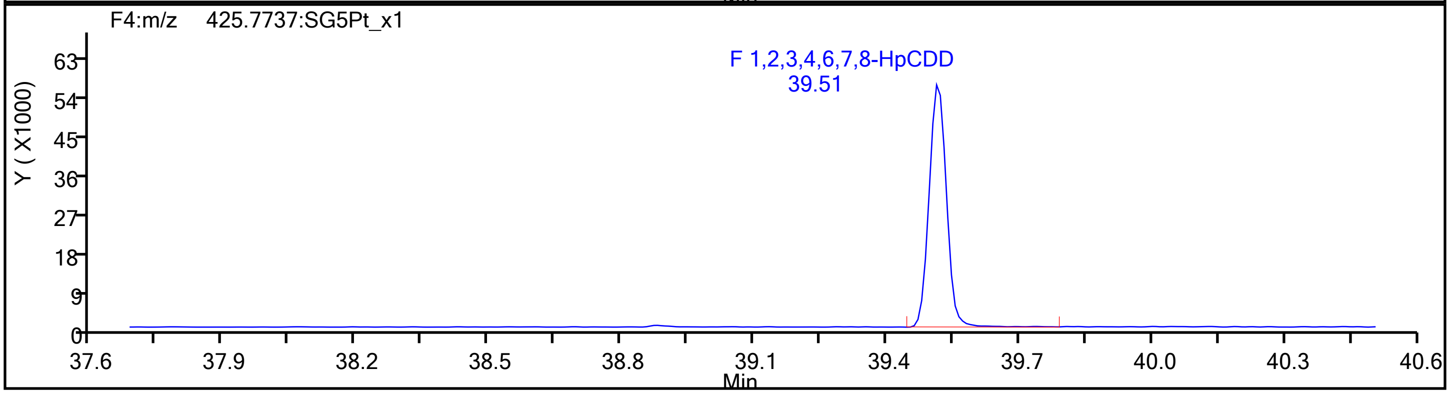

HpCDD Standards

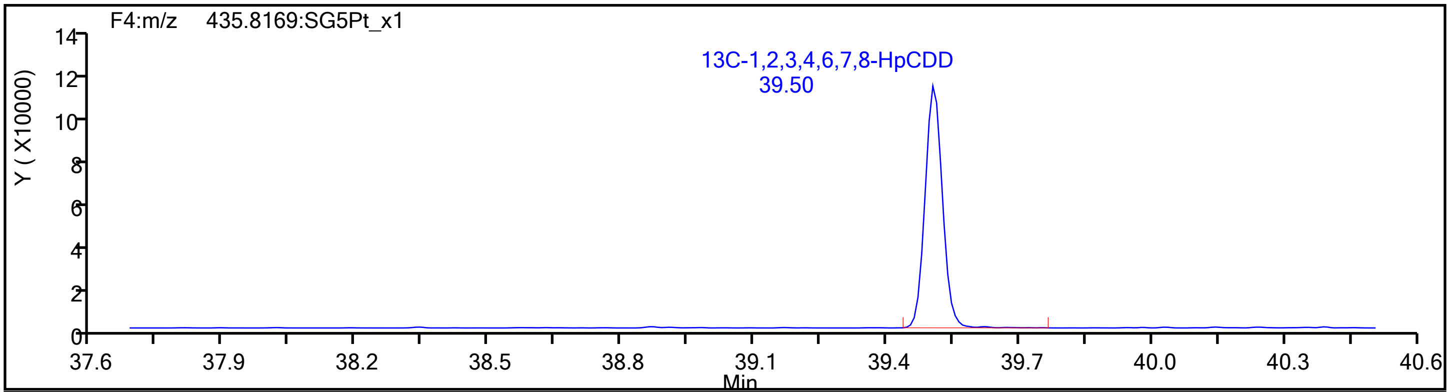

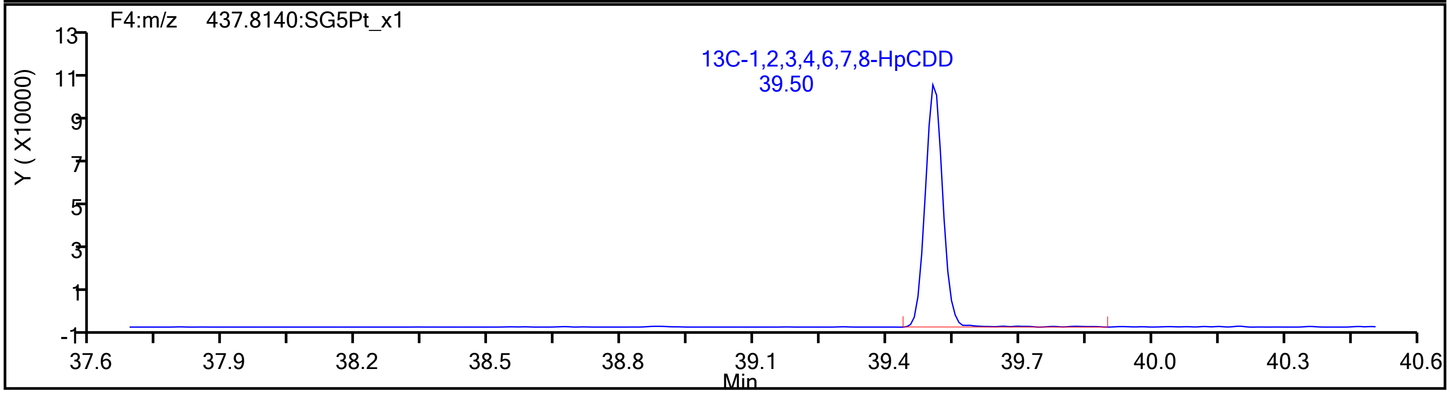

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

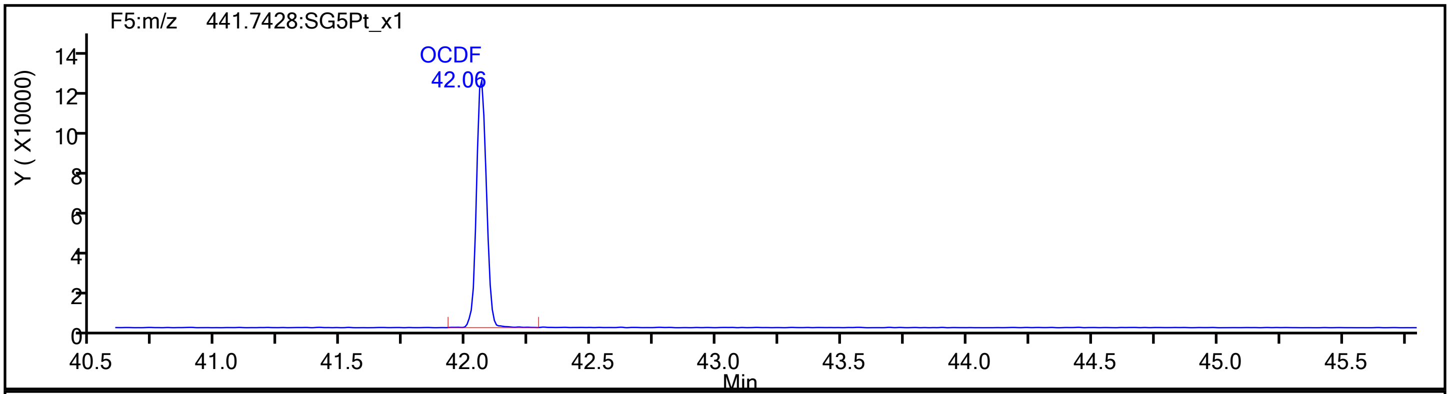

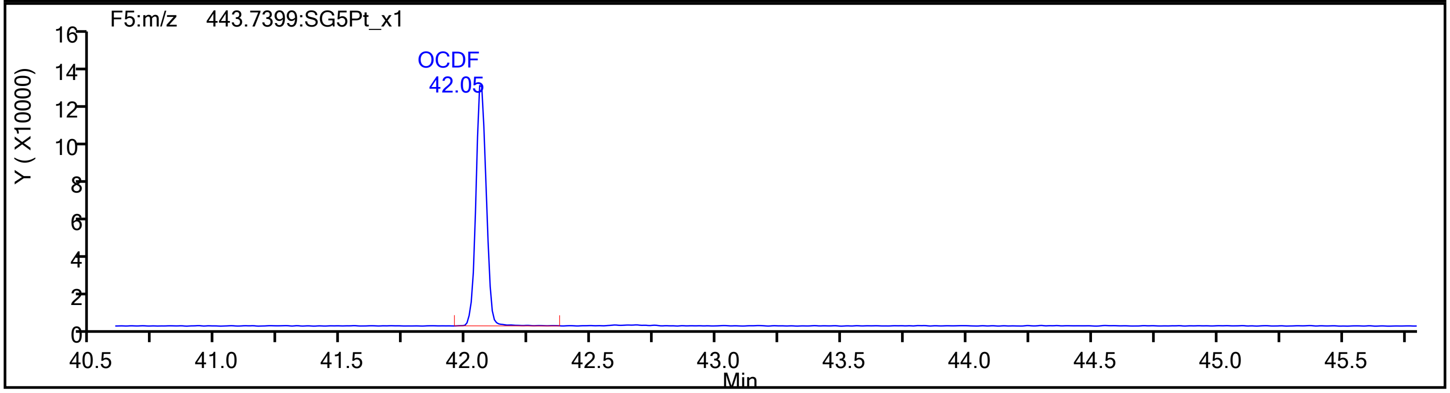

OCDF Standards

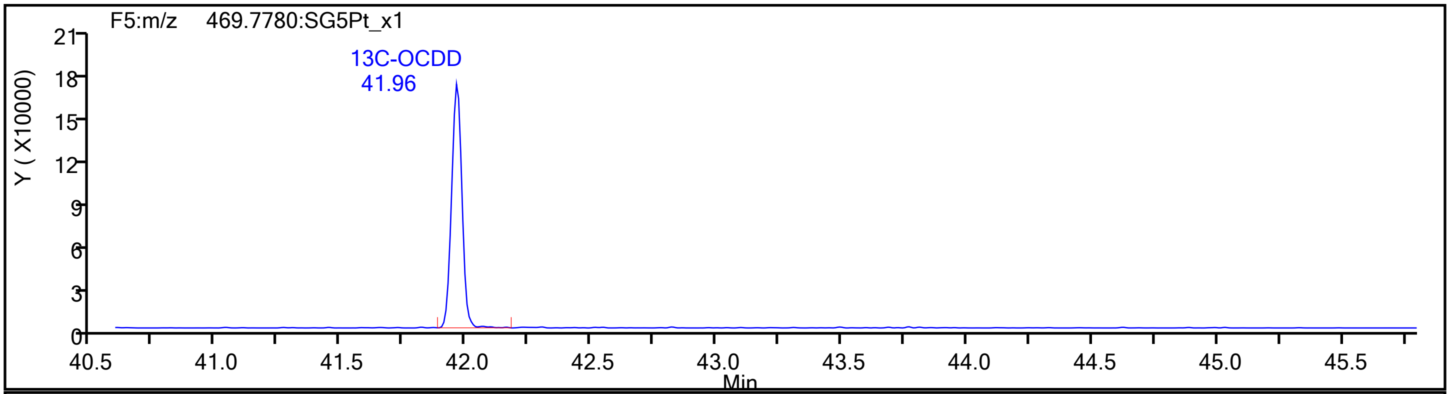

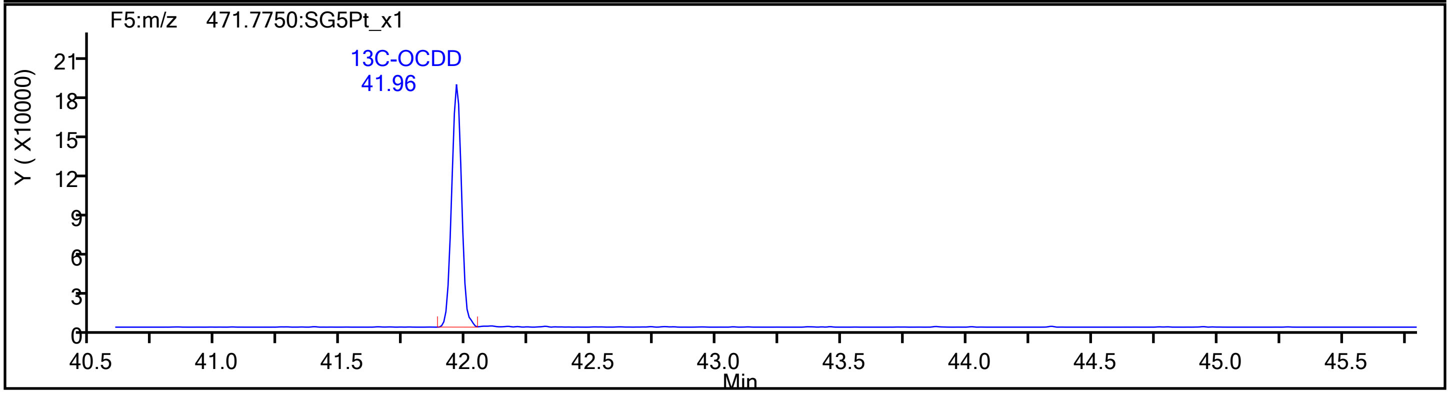

Report Date: 25-Jan-2021 20:04:57　　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d
Injection Date: 22-Jan-2021 21:17:00　　Injection Vol: 1.0 ul
Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782　　Sample Line#: 1
Column Type: DB-5　　Column Dia: 0.32 mm

OCDF

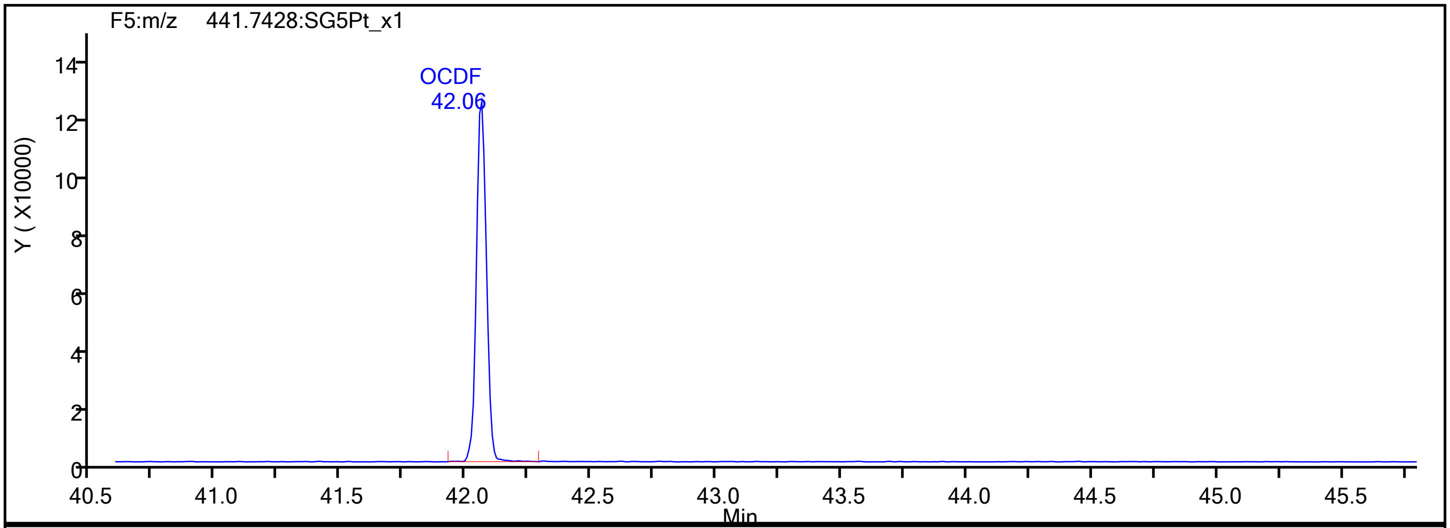

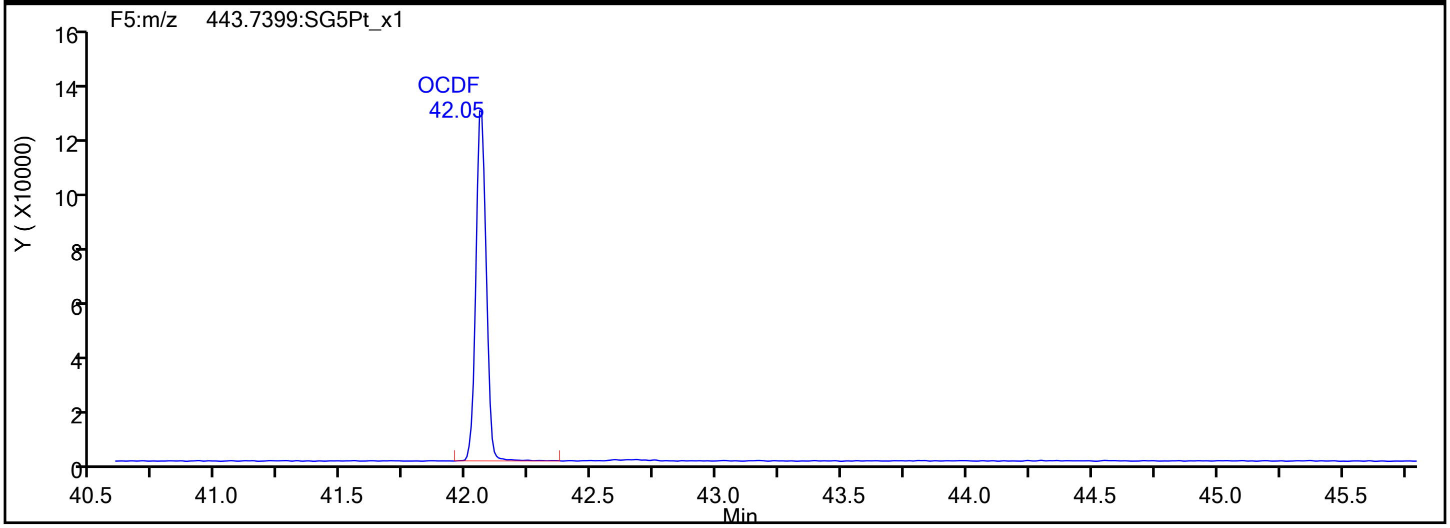

OCDF Interference Mass

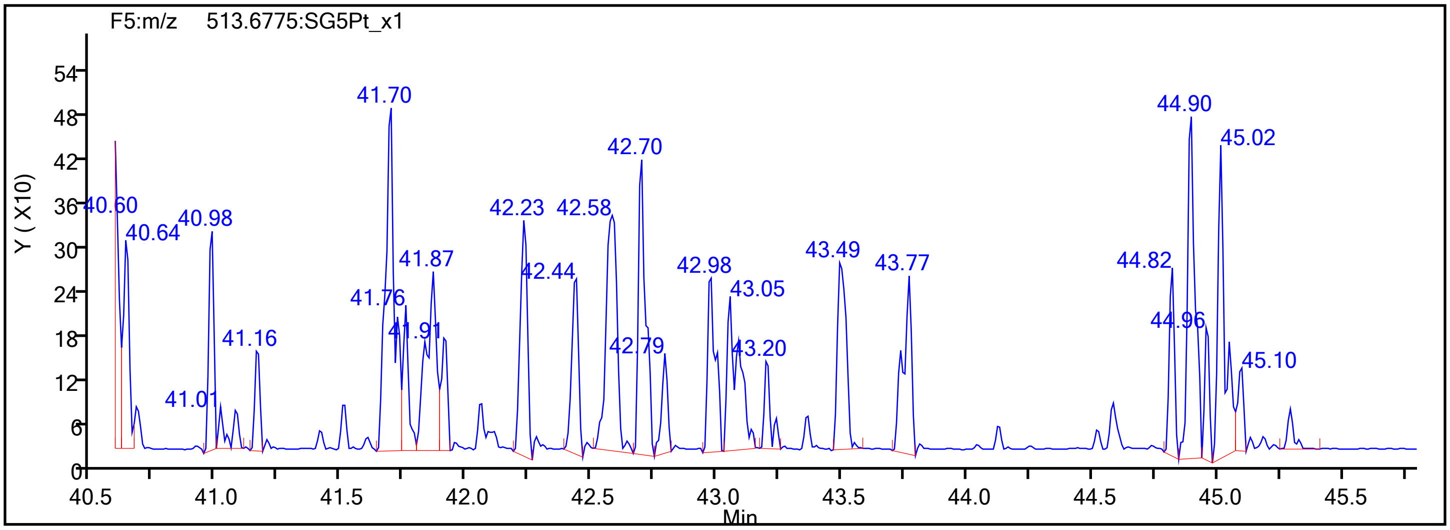

Report Date: 25-Jan-2021 20:04:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

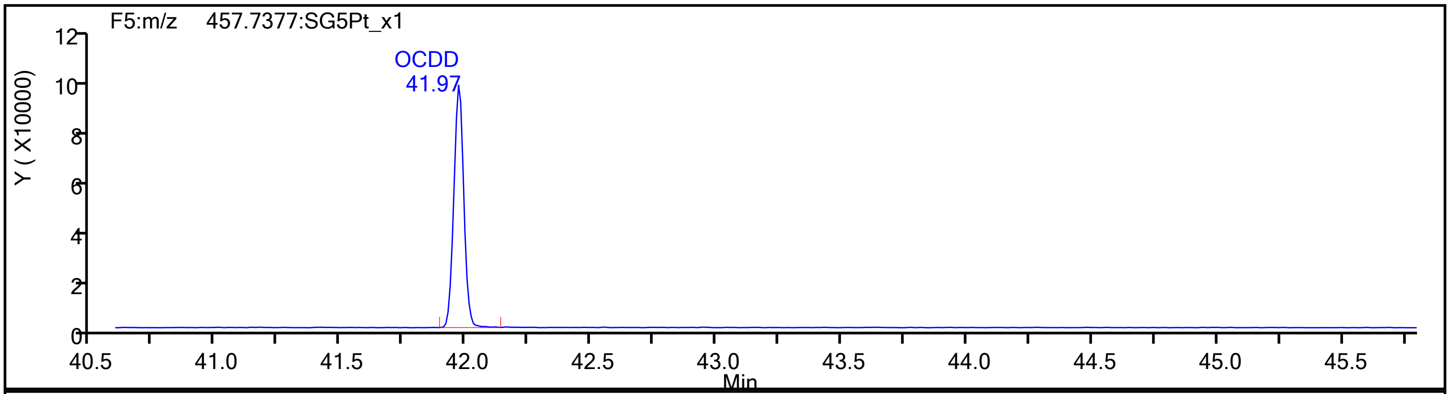

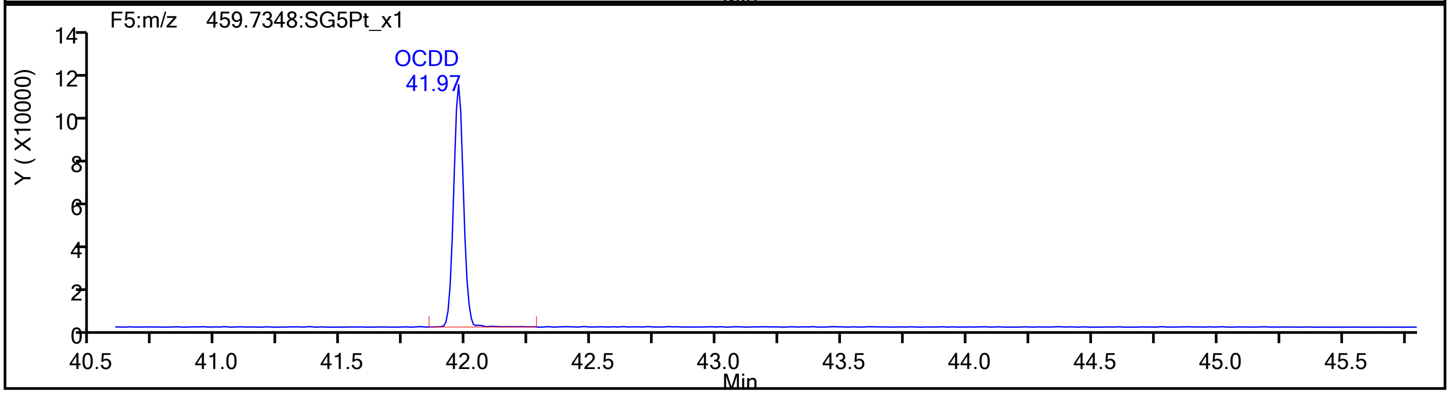

OCDD Standards

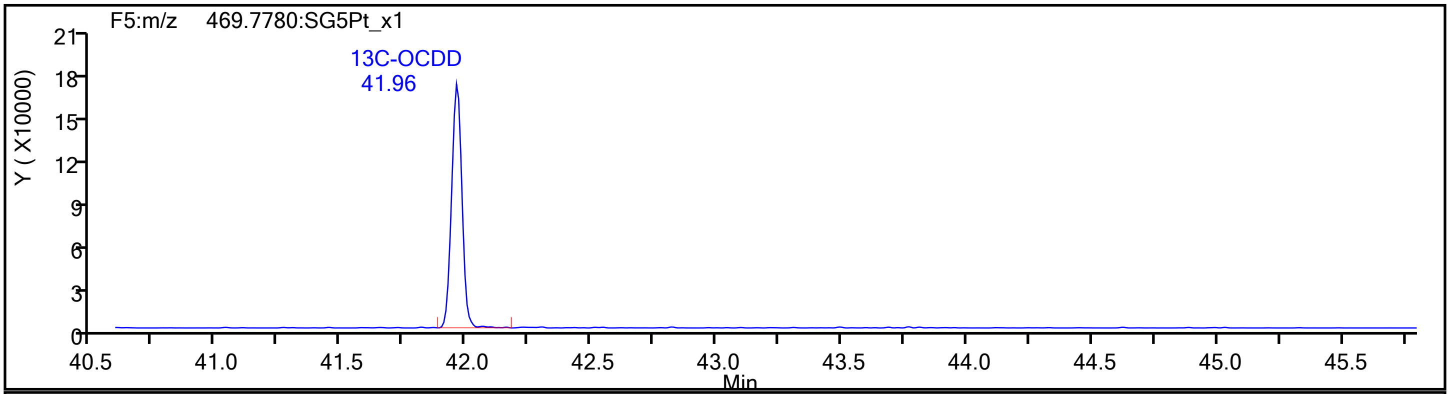

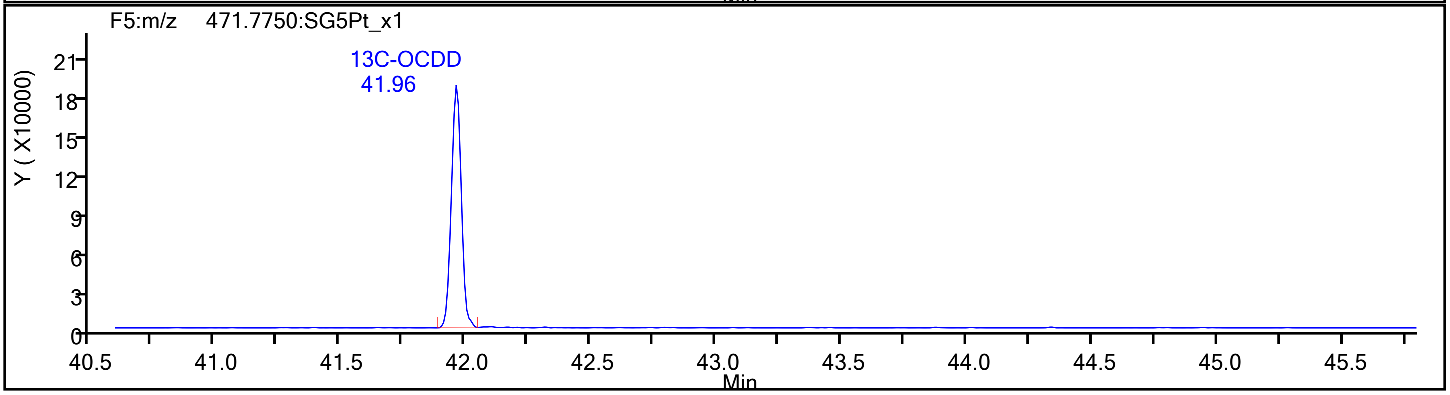

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d

Injection Date: 22-Jan-2021 21:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

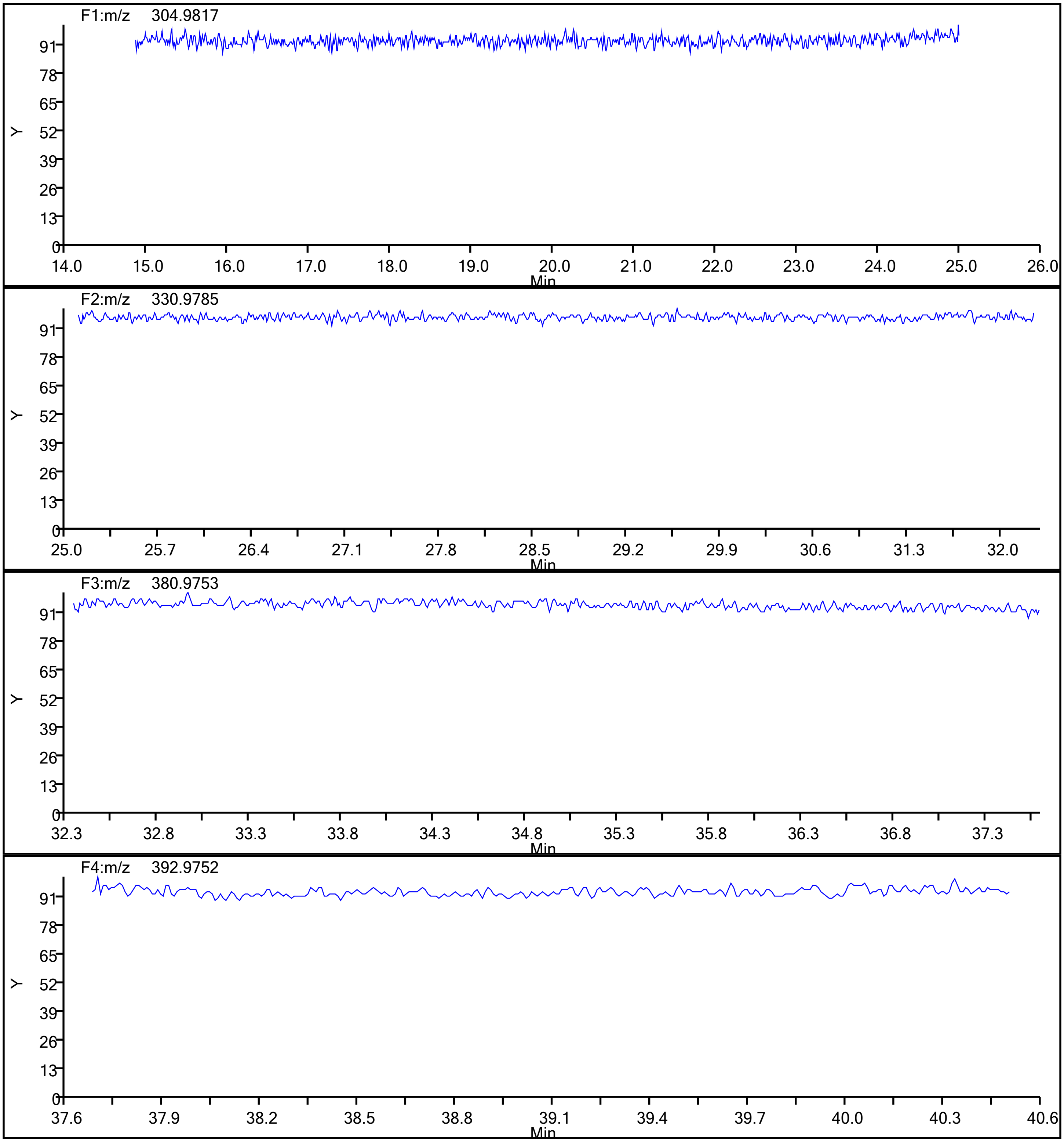

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_2.d		
Injection Date:	22-Jan-2021 21:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

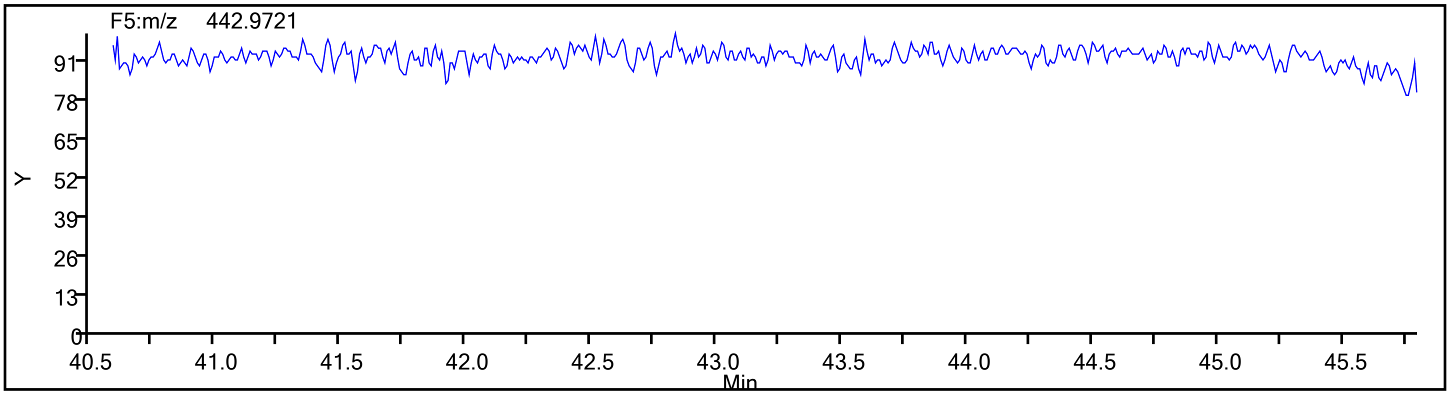

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 10-Dec-2020 16:57:16 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 121020 WDM HRDXNCP_00042
Misc. Info.: 10DE20B10D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Dec-2020 09:52:12 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1617

First Level Reviewer: messecara Date: 10-Dec-2020 23:48:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.203	20276005	0.79	1.7120					0.00	
2,3,7,8-TCDF	17.233	44471691	0.77	1.0173	86.2	86.2	0.2776	0.2776		
A Non-2,3,7,8-sub-TCDF	16.924						0.2776	0.2776		
S Total TCDF					86.2	86.2	0.2776	0.2776		
D 13C-2,3,7,8-TCDD	17.914	12010331	0.72	1.0837					0.00	
2,3,7,8-TCDD	17.929	14544211	0.79	1.1543	42.0	42.0	0.2255	0.2255		
A Non-2,3,7,8-sub-TCDD	17.377						0.2255	0.2255		
S Total TCDD					42.0	42.0	0.2255	0.2255		
A F1 PeCDFs	19.895						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	23.032	13599954	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.174	10833460	1.62	0.0000						
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.074	15011527	1.26	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.739	10390611	1.27	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.734	13151905	1.05	1.4619						
1,2,3,4,7,8,9-HpCDF	34.851	10731941	1.03	1.4262						
A Non-2,3,7,8-sub-HpCDF	34.292						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.548	8802373	1.02	1.1022						
A Non-2,3,7,8-sub-HpCDD	34.262						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.814	24494600	0.78							
1,3,6,8-TCDD	15.722	14543861	0.79							
2,3,4,7-TCDF	17.233	44471691	0.77							
1,2,3,7-TCDD	17.808	12525869	0.78							
1,2,3,9-TCDF	18.080	18651430	0.77							
1,2,3,9-TCDD	18.095	15188184	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.033	6022495								
1,2,8,9-TCDF	19.033	19485763	0.77							
1,3,4,6,8-PeCDF	19.305	17857590	1.59							
1,2,4,7,9-PeCDD	21.060	11689107	1.59							
1,2,3,8,9-PeCDD	25.287	10833460	1.62							a
1,2,3,8,9-PeCDF	25.506	13517439	1.62							a
1,2,3,4,6,8-HxCDF	27.778	15011527	1.26							a
1,2,4,6,7,9-HxCDD	29.361	10390611	1.27							a
1,2,3,4,6,7-HxCDD	32.050	10615498	1.25							
1,2,3,4,8,9-HxCDF	32.370	14307196	1.27							
1,2,3,4,6,7,9-HpCDD	33.977	9987382	1.06							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	10-Dec-2020 16:57:16	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM 121020 WDM HRDXNCP_00042				
Misc. Info.:	10DE20B10D5				
Operator ID:	SMA	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	11-Dec-2020 09:52:12	Calib Date:	10-Dec-2020 21:27:54		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1617				
First Level Reviewer: messecara		Date:	10-Dec-2020 23:48:37		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.203	17.203	0	1.000	8922344	2253170	6169	15422	365		
317.9389	17.203	17.203	0	1.000	11353661	2881426	3376	8440	854	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.233	17.222	1	1.002	19394161	4623369	6694	16735	691		
305.8987	17.233	17.222	1	1.002	25077530	5939330	7805	19512	761	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.924						6694	16735			
305.8987	16.924						7805	19512			
13C-2,3,7,8-TCDD											
331.9368	17.914	17.914	0	1.000	5036124	1207841	2968	7420	407		
333.9339	17.914	17.914	0	1.000	6974207	1664252	1361	3402	1223	0.72(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.929	17.926	0	1.001	6402508	1540630	2713	6782	568		
321.8936	17.929	17.926	0	1.001	8141703	1984629	4764	11910	417	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.377						2713	6782			
321.8936	17.377						4764	11910			
A F1 PeCDFs											
339.8597	19.895						567	1417			
341.8567	19.895						675	1687			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	22.205	23.032	-49	1.000	57897	8499	1850	4625	5		
341.8567	22.219	23.032	-49	1.000	32359	6017	1227	3067	5	1.79(1.32-1.78)	
339.8597	25.506	23.032	148	1.000	8352652	988793	1850	4625	534		
341.8567	25.519	23.032	149	1.000	5164787	603461	1227	3067	492	1.62(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	25.287	23.174	127	1.000	6701966	852377	2389	5972	357		
357.8516	25.274	23.174	126	1.000	4131494	527596	1480	3700	356	1.62(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.778	30.074	-137	1.000	8379416	938962	4074	10185	230		
375.8178	27.778	30.074	-137	1.000	6632111	758177	3057	7642	248	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	29.361	30.739	-82	1.000	5812604	582600	4933	12332	118		
391.8127	29.361	30.739	-82	1.000	4578007	463971	4095	10237	113	1.27(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.734	33.707	2	1.000	6747687	1715606	11561	28902	148		
409.7789	33.734	33.707	2	1.000	6404218	1653649	11797	29492	140	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.851	34.805	3	1.000	5438027	838802	11561	28902	73		
409.7789	34.851	34.805	3	1.000	5293914	803322	11797	29492	68	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.292						11561	28902			
409.7789	34.292						11797	29492			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.548	34.509	2	1.000	4451655	847737	11547	28867	73		
425.7737	34.548	34.509	2	1.000	4350718	800292	10274	25685	78	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.262						11547	28867			
425.7737	34.262						10274	25685			
1,3,6,8-TCDF											
303.9016	14.814	14.814	0		10754283	3404002	6694	16735	509		
305.8987	14.814	14.814	0		13740317	4342372	7805	19512	556	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.722	15.722	0		6398013	1897039	2713	6782	699		
321.8936	15.722	15.722	0		8145848	2419259	4764	11910	508	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.233	17.233	0		19394161	4623369	6694	16735	691		
305.8987	17.233	17.233	0		25077530	5939330	7805	19512	761	0.77(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.808	17.808	0		5503284	1382837	2713	6782	510		
321.8936	17.808	17.808	0		7022585	1746845	4764	11910	367	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.080	18.080	0		8112110	1888940	6694	16735	282		
305.8987	18.080	18.080	0		10539320	2436672	7805	19512	312	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.095	18.095	0		6687262	1496252	2713	6782	552		
321.8936	18.095	18.095	0		8500922	1889062	4764	11910	397	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	19.033	19.033	0		6022495	1314128	2713	6782	484		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	19.033	19.033	0		8456876	1875516	6694	16735	280		
305.8987	19.033	19.033	0		11028887	2446726	7805	19512	313	0.77(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.305	19.305	0		10971598	2378082	567	1417	4194		
341.8567	19.305	19.305	0		6885992	1501000	675	1687	2224	1.59(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.060	21.060	0		7178856	1239576	2389	5972	519		
357.8516	21.060	21.060	0		4510251	780048	1480	3700	527	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											a
355.8546	25.287	25.287	0		6701966	852377	2389	5972	357		a
357.8516	25.274	25.287	-1		4131494	527596	1480	3700	356	1.62(1.32-1.78)	
1,2,3,8,9-PeCDF											a
339.8597	25.506	25.506	0		8352652	988793	1850	4625	534		a
341.8567	25.519	25.506	1		5164787	603461	1227	3067	492	1.62(1.32-1.78)	
1,2,3,4,6,8-HxCDF											a
373.8208	27.778	27.778	0		8379416	938962	4074	10185	230		a
375.8178	27.778	27.778	0		6632111	758177	3057	7642	248	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											a
389.8157	29.361	29.361	0		5812604	582600	4933	12332	118		a
391.8127	29.361	29.361	0		4578007	463971	4095	10237	113	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.050	32.050	0		5907414	1289957	4933	12332	261		
391.8127	32.050	32.050	0		4708084	1031664	4095	10237	252	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.370	32.370	0		8012192	1714554	4074	10185	421		
375.8178	32.370	32.370	0		6295004	1343078	3057	7642	439	1.27(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.977	33.977	0		5137886	1244036	11547	28867	108		
425.7737	33.977	33.977	0		4849496	1151551	10274	25685	112	1.06(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d
Lims ID: WDM
Client ID:
Inject. Date: 10-Dec-2020 16:57:16 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 440976 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 23.032

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027				
2,3,4,7,8-PeCDF	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.205	57897	8499	32359	6017		1.79	R
25.506	8352652	988793	5164787	603461		1.62	
Signal Totals:							
	8410549	997292	5197146	609478			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13607695	1606770				1.62	RQ
	13599954	1607597					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13607695 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (13599954 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	10-Dec-2020 16:57:16	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	440976	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDD, RT: 23.174

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.075				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
25.287	6701966	852377	4131494	527596		1.62	
Signal Totals:							
	6701966	852377	4131494	527596			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10833460	1379973				1.62	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (10833460 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	10-Dec-2020 16:57:16	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	SMA
Lims Batch ID:	440976	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDF, RT: 30.074

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.238				
1,2,3,6,7,8-HxCDF	1.190				
2,3,4,6,7,8-HxCDF	1.213				
1,2,3,7,8,9-HxCDF	1.227				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.778	8379416	938962	6632111	758177		1.26	
Signal Totals:							
	8379416	938962	6632111	758177			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15011527	1697139				1.26	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (15011527 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d
Lims ID: WDM
Client ID:
Inject. Date: 10-Dec-2020 16:57:16
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5
Operator: SMA
Lims Batch ID: 440976
Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 30.739

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.162				
1,2,3,6,7,8-HxCDD	1.032				
1,2,3,7,8,9-HxCDD	1.241				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
29.361	5812604	582600	4578007	463971		1.27	
Signal Totals:							
	5812604	582600	4578007	463971			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10390611	1046571				1.27	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (10390611 * 0.0) / (0 * 0.000)

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d

Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

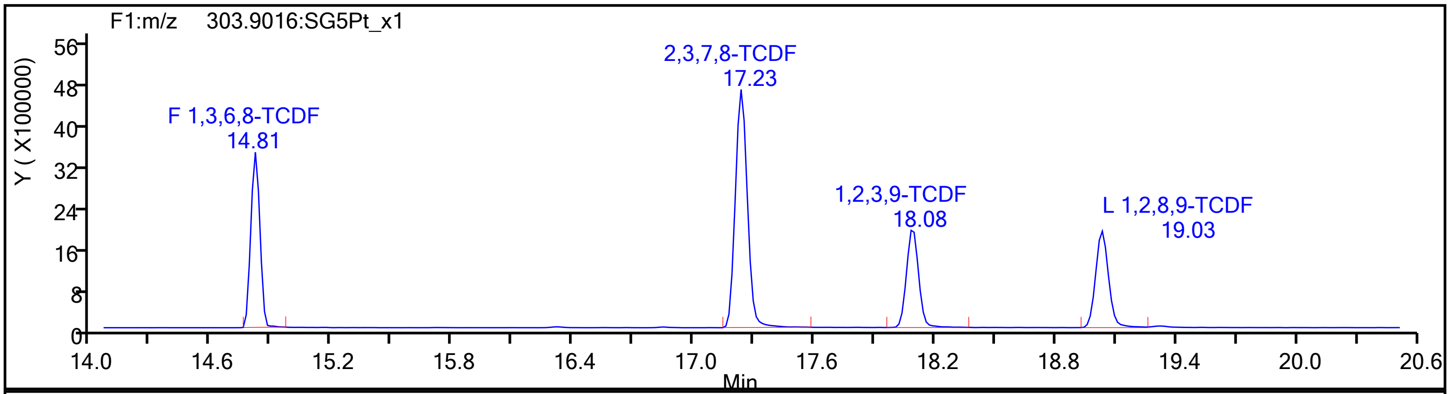

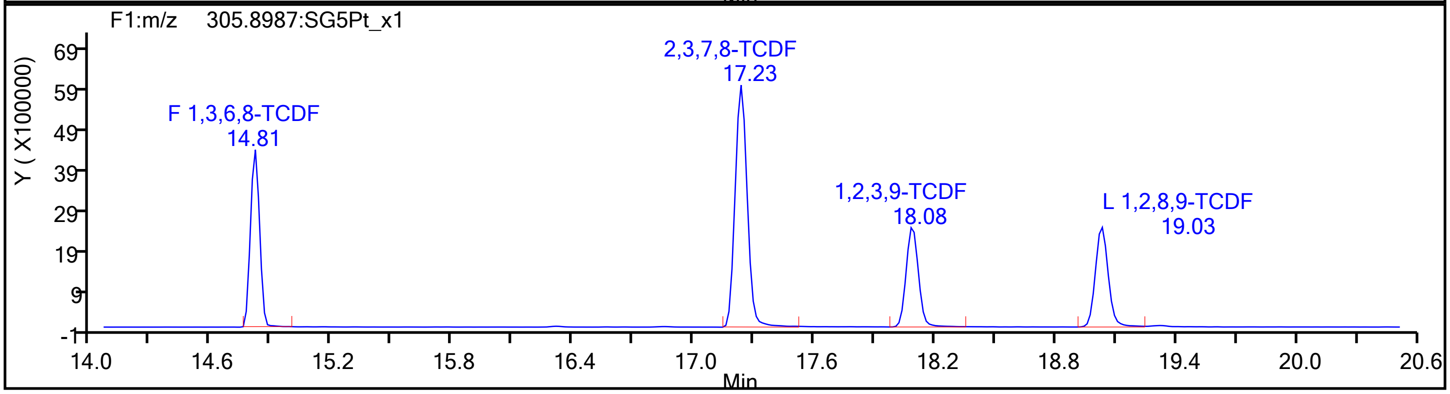

TCDF Standards

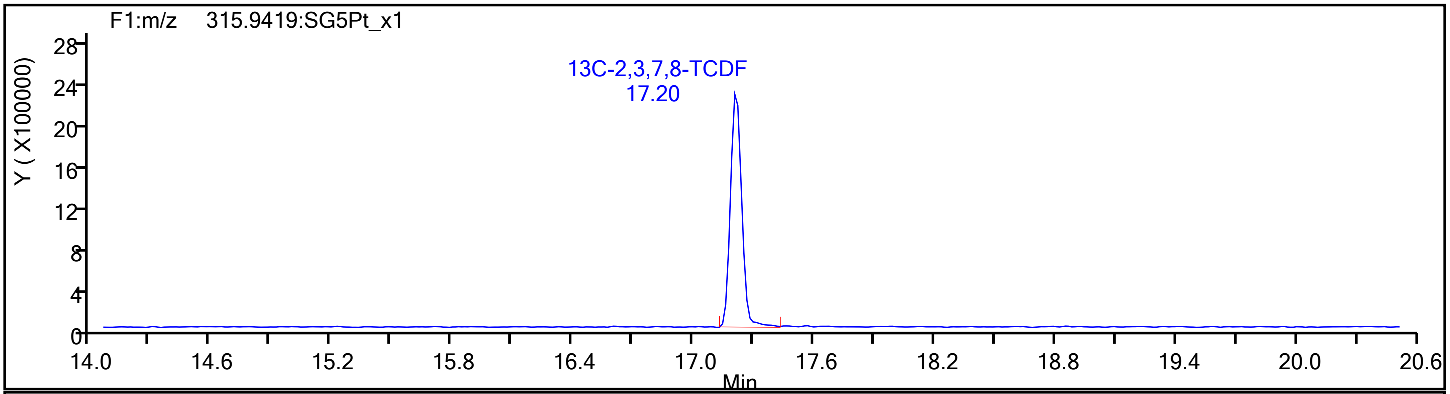

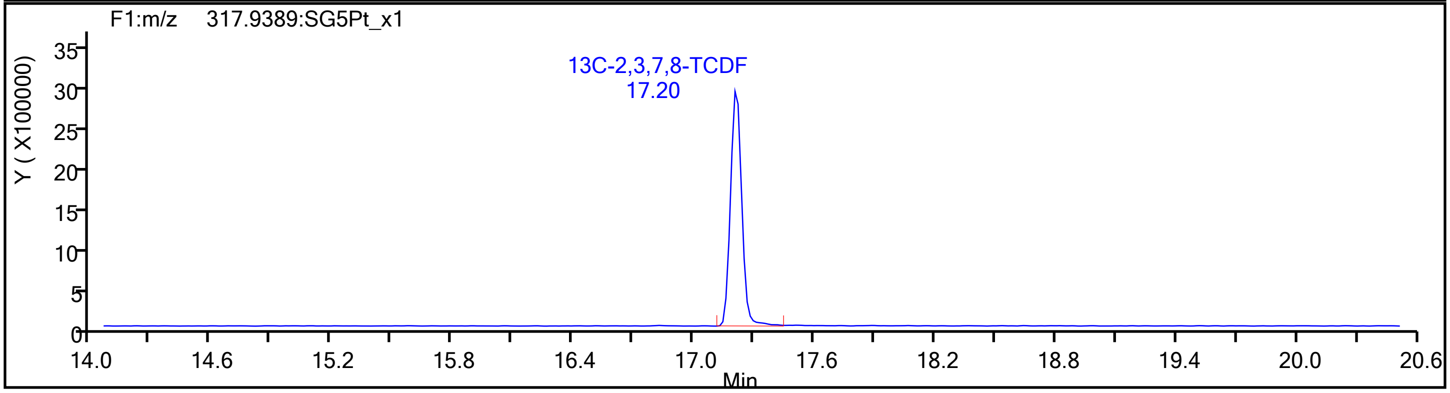

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

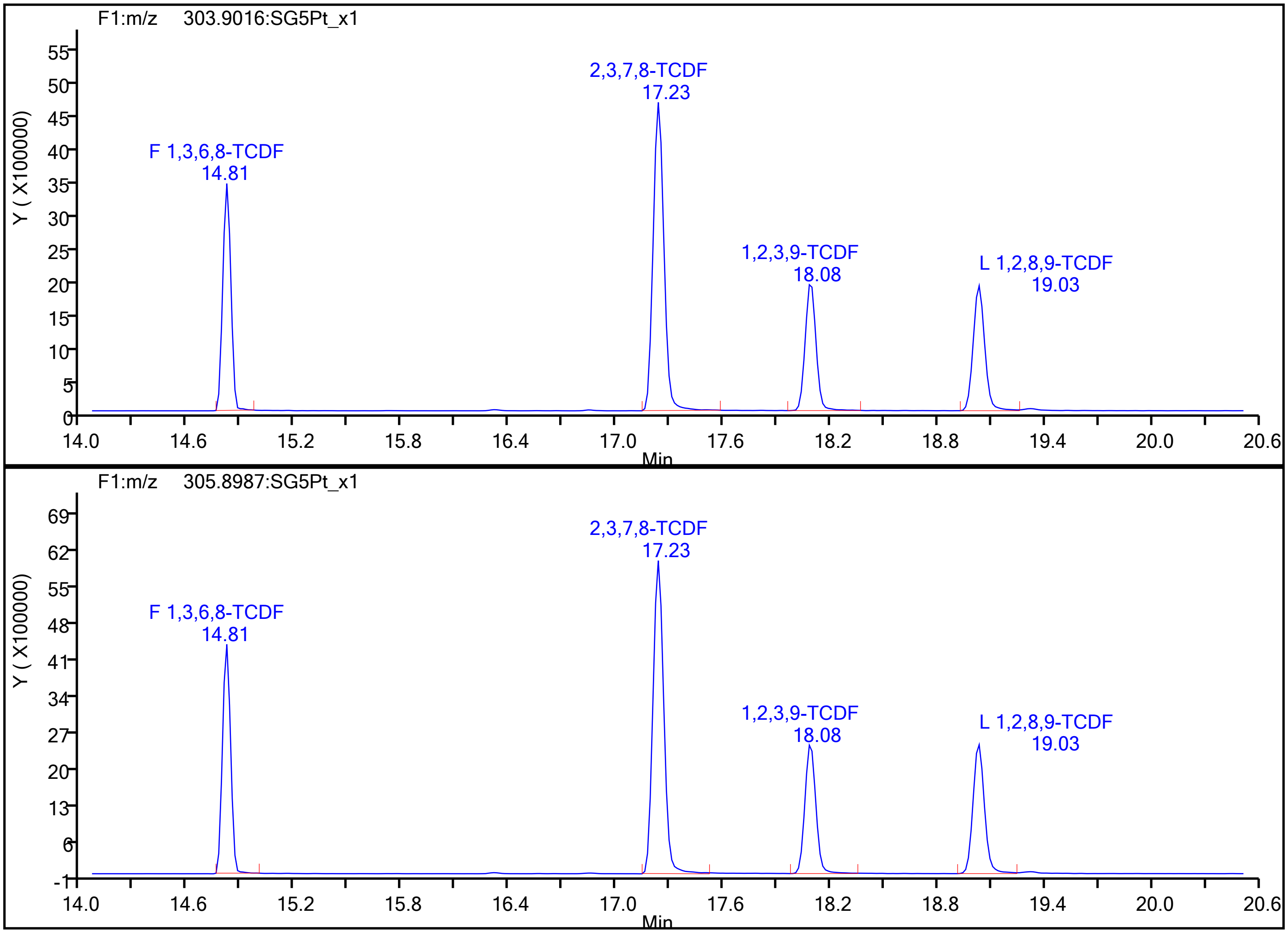

TCDF Interference Mass

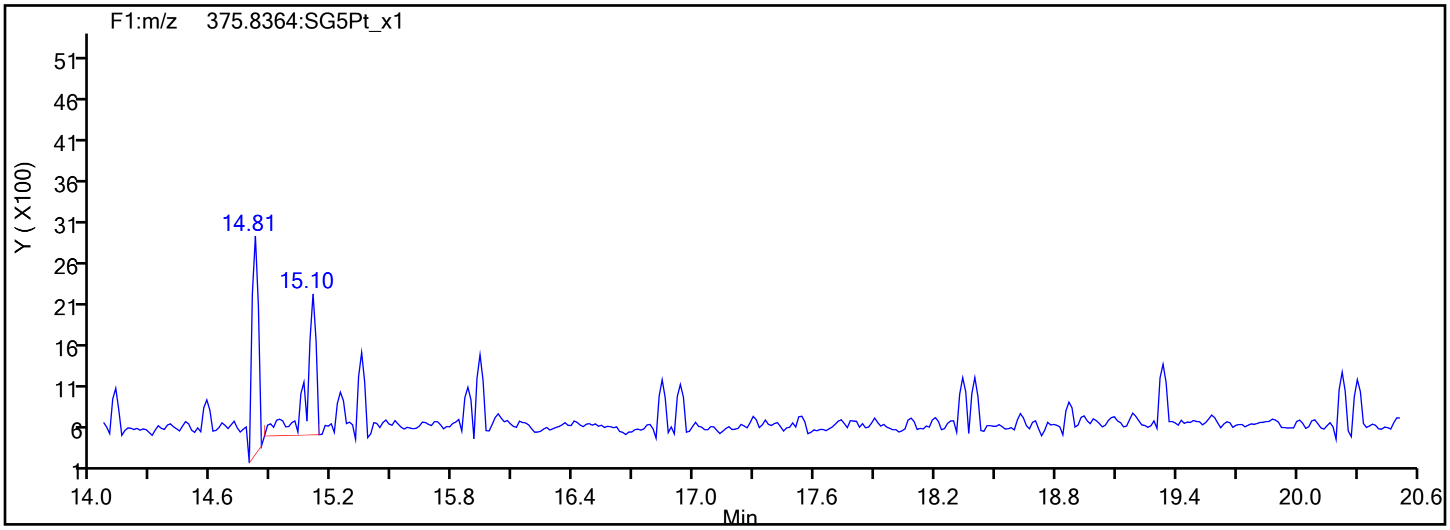

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

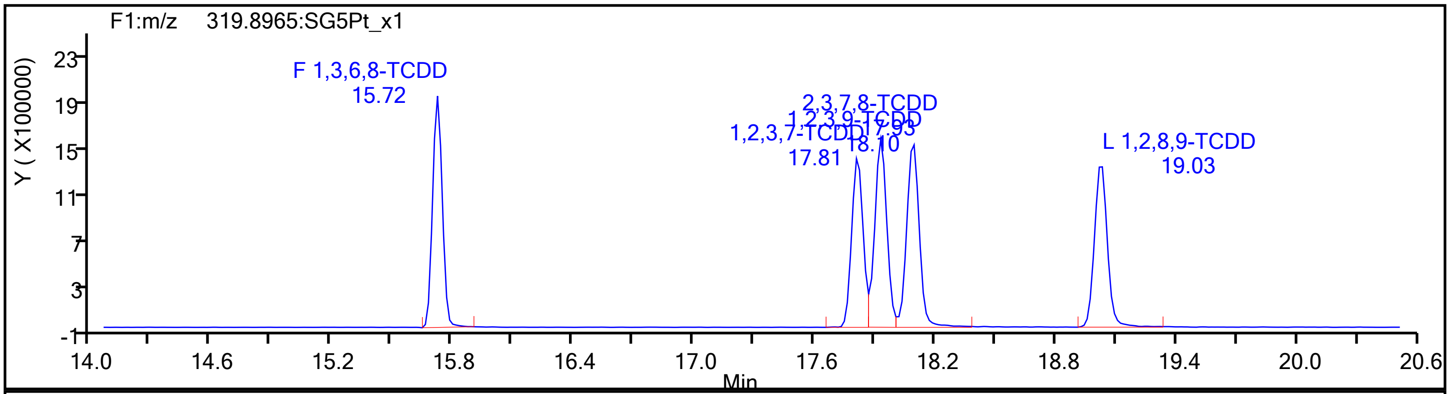

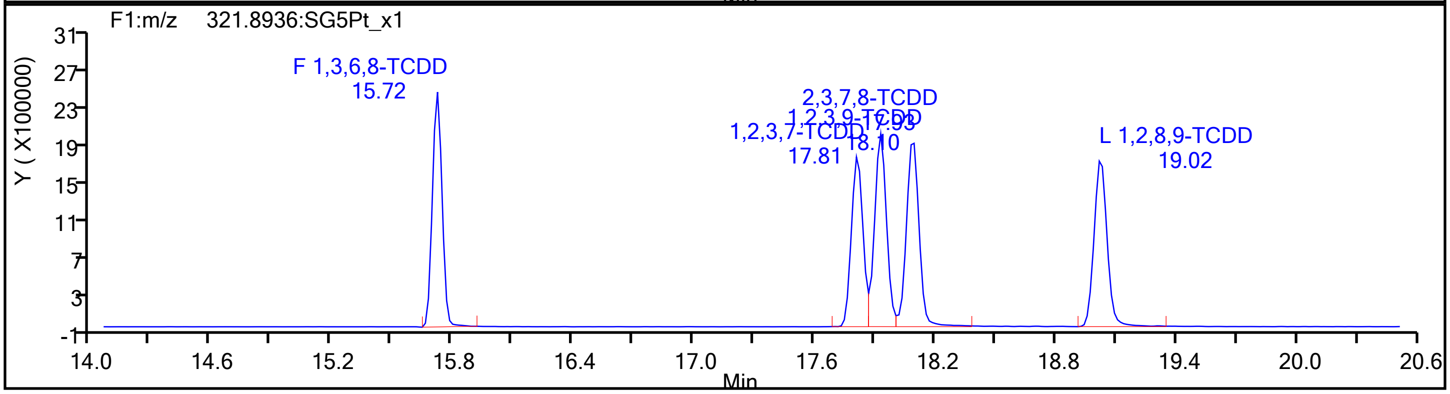

TCDD Standards

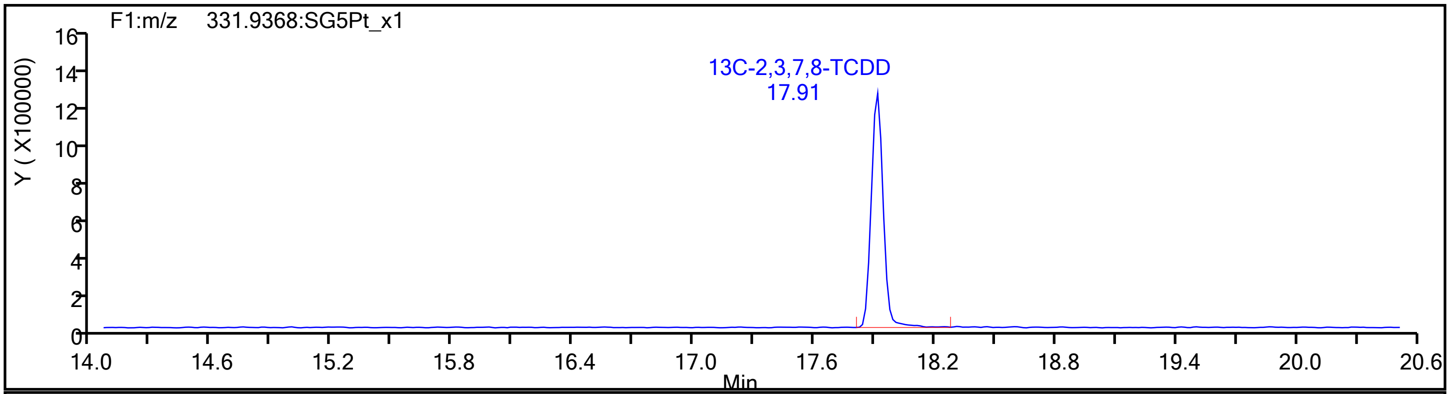

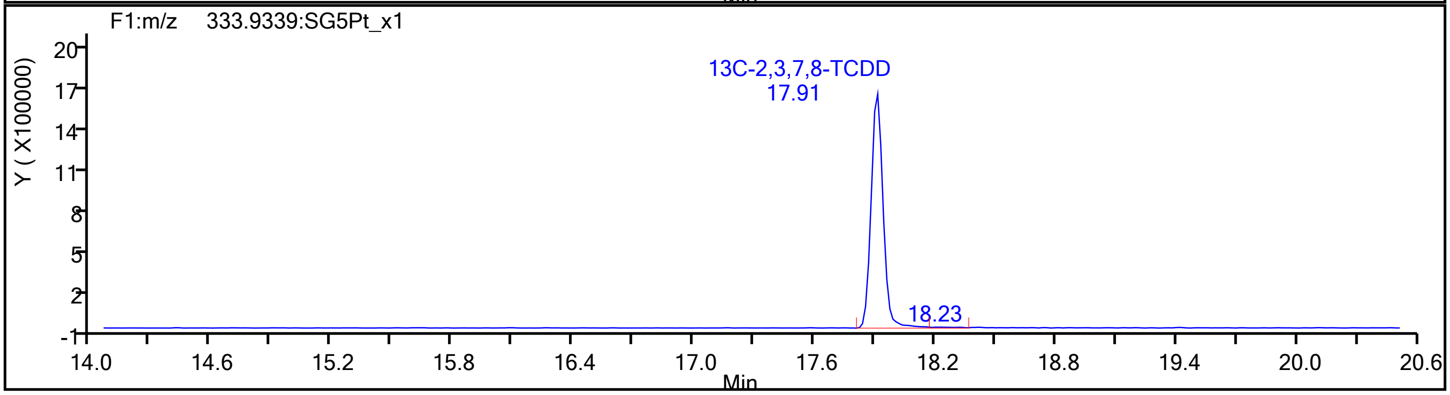

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

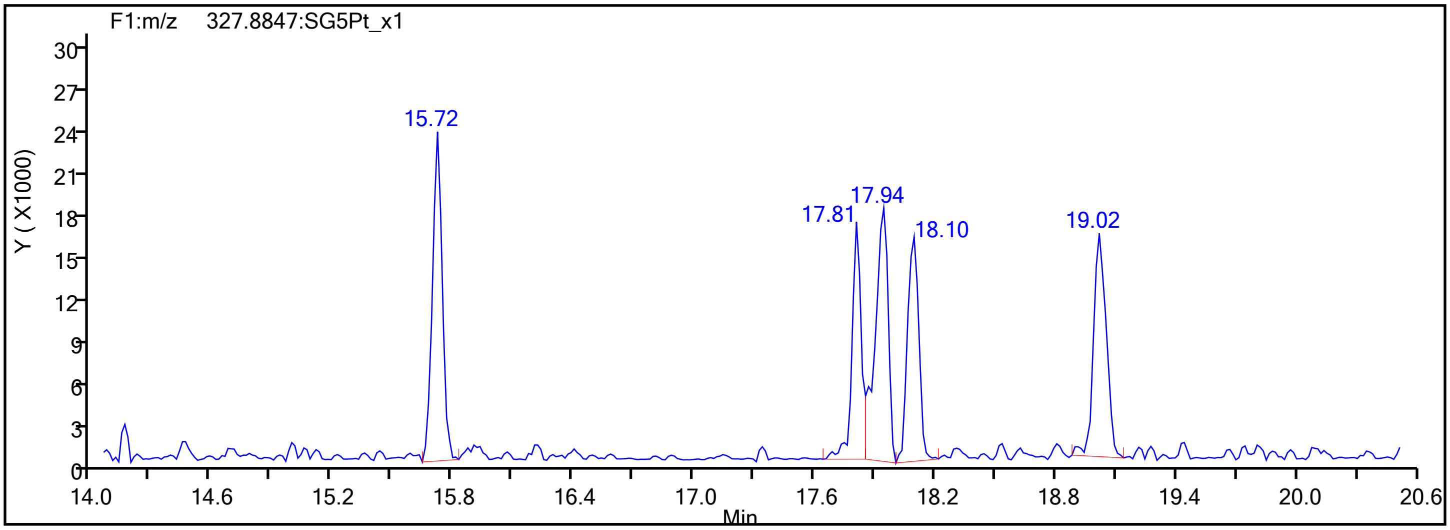

37Cl4-TCDD Standards

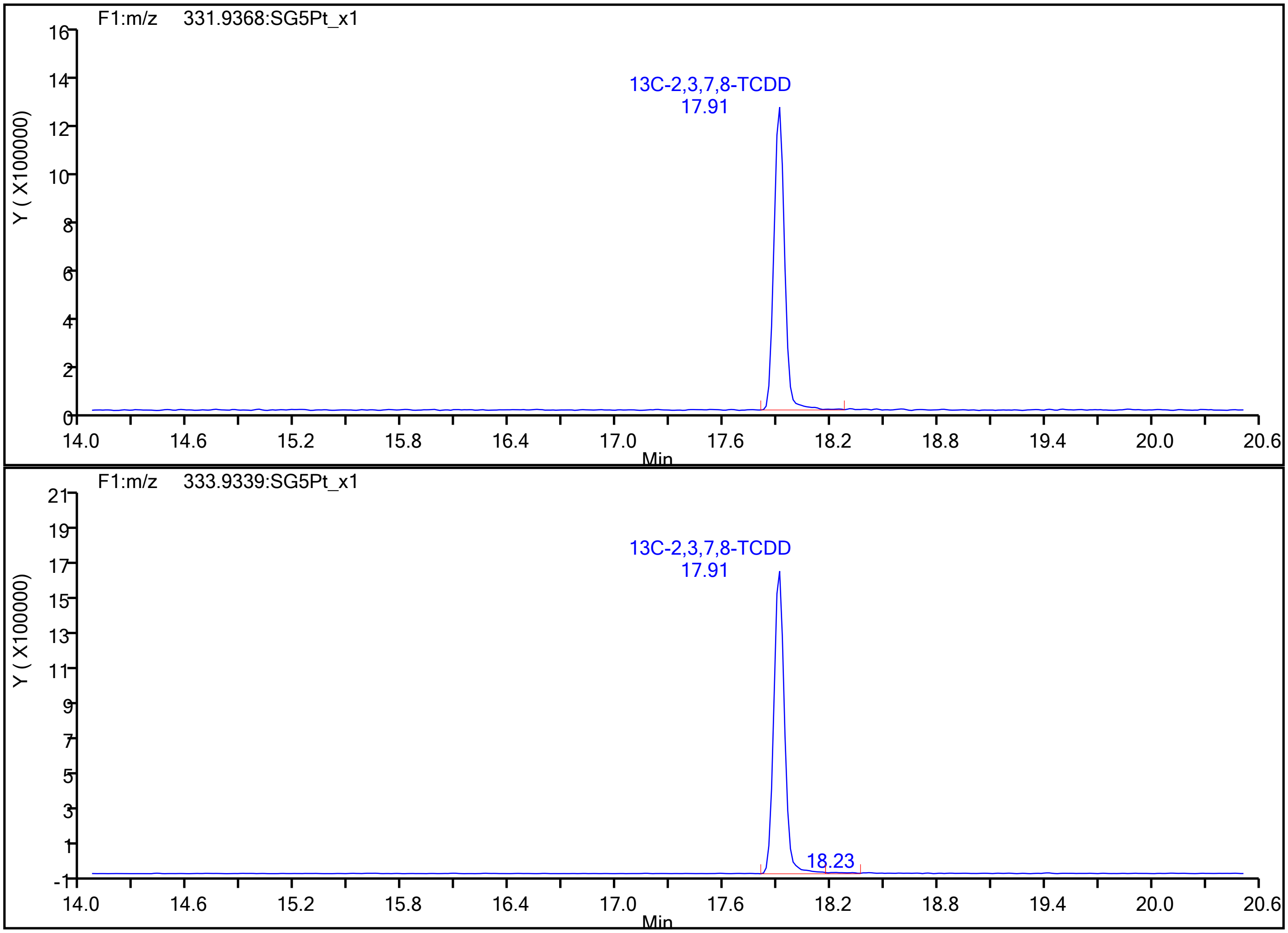

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

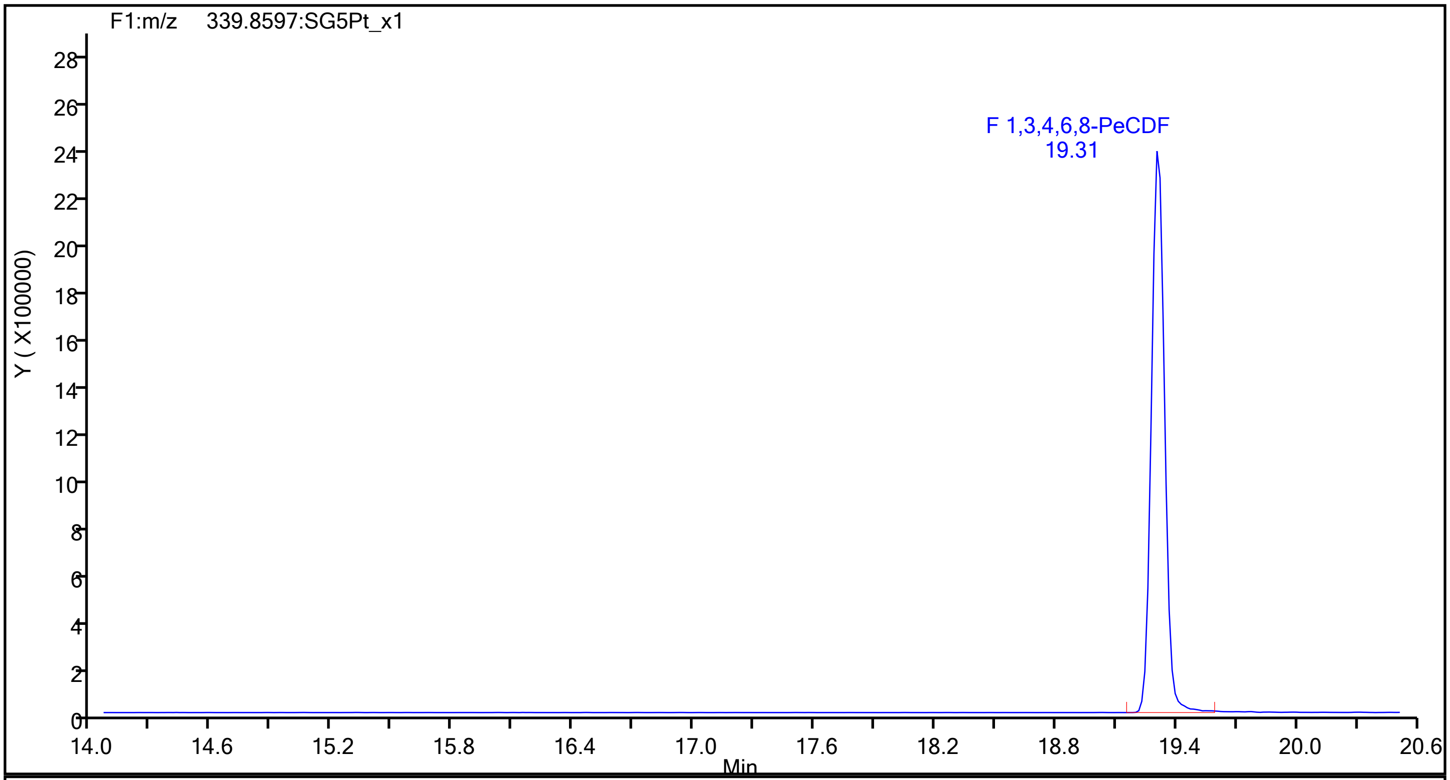

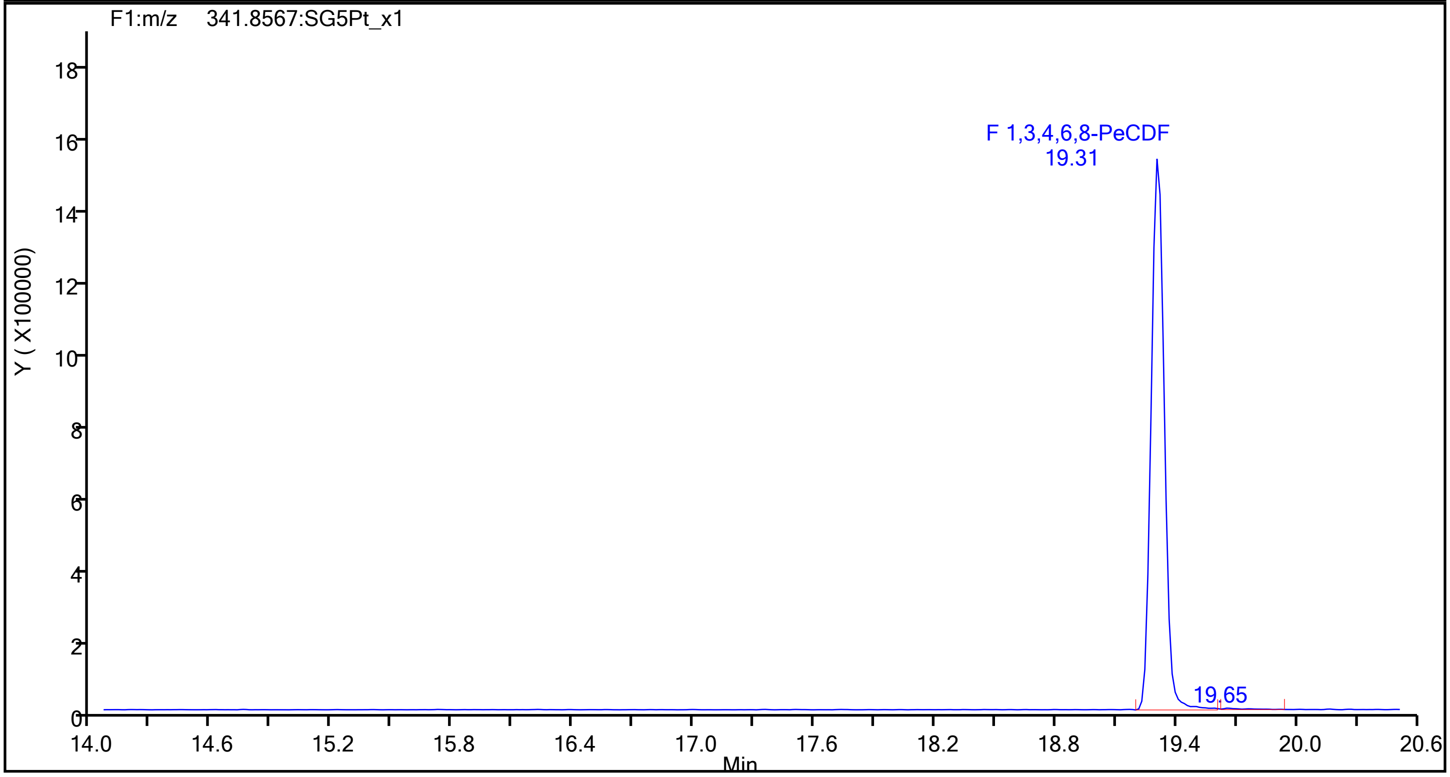

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

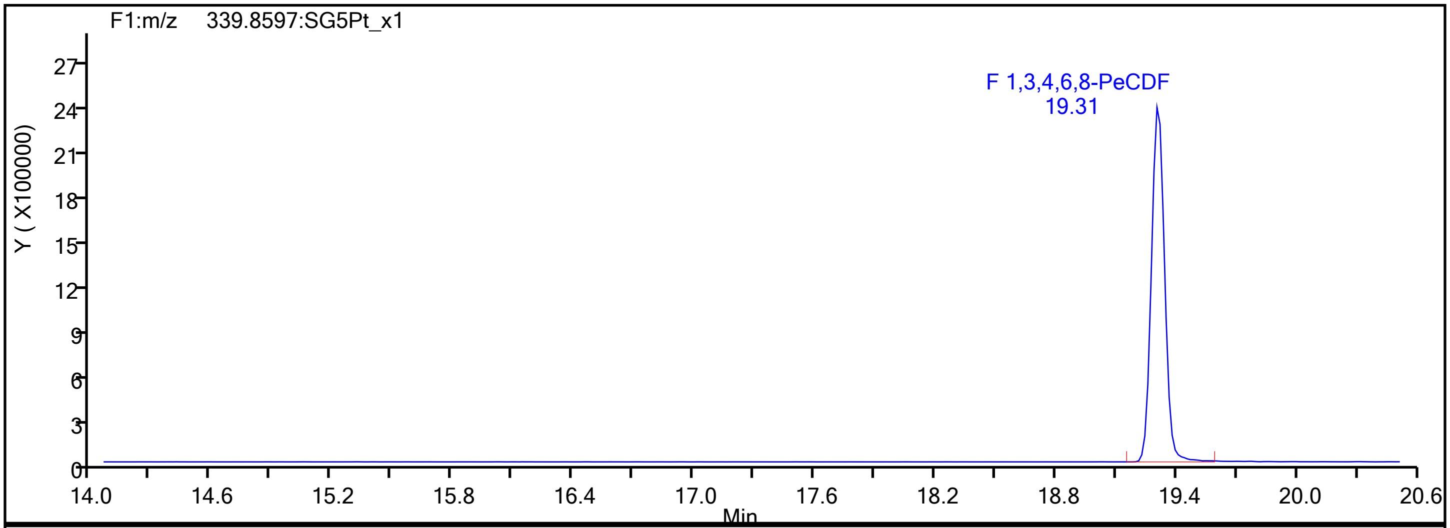

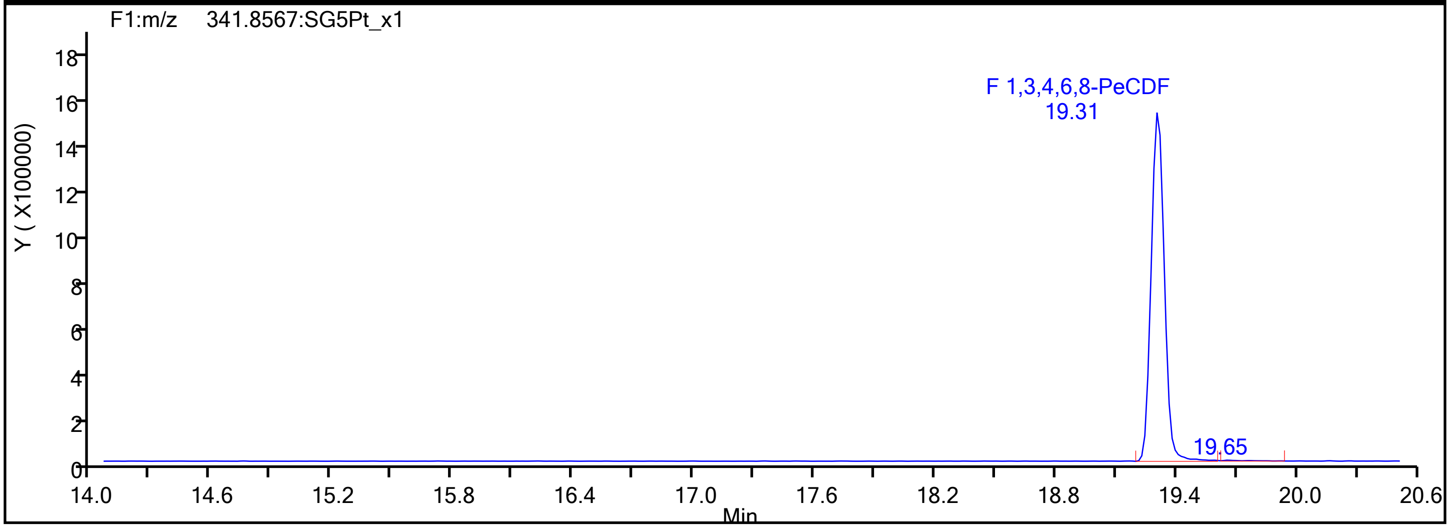

F1 PeCDFs Interference Mass

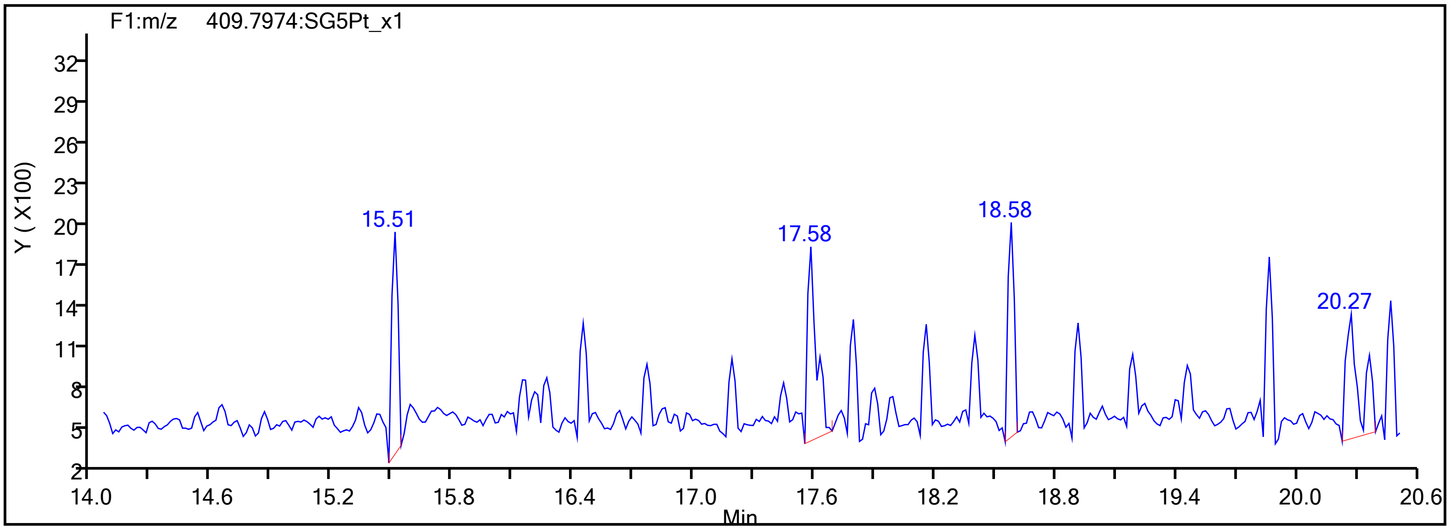

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

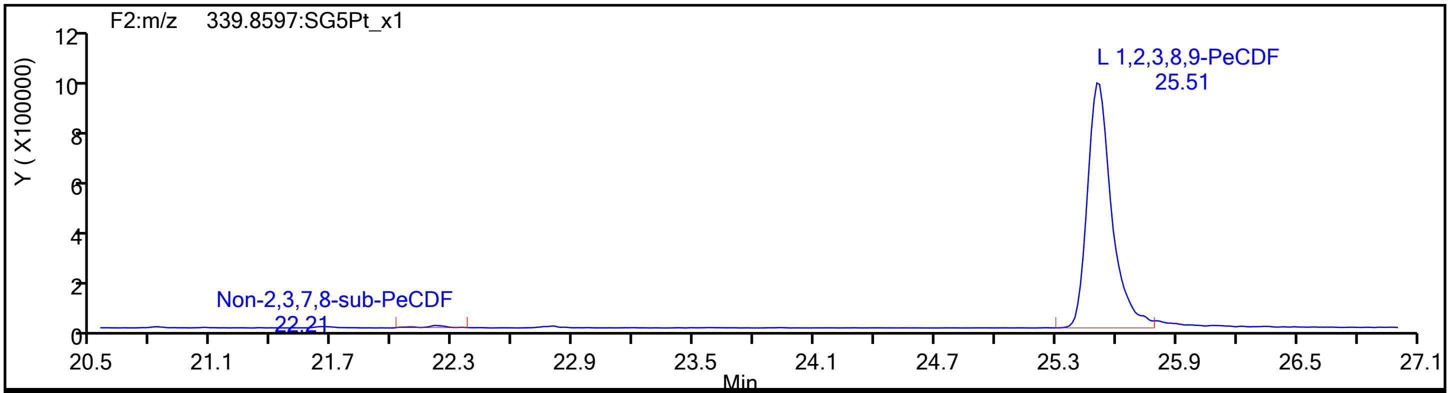

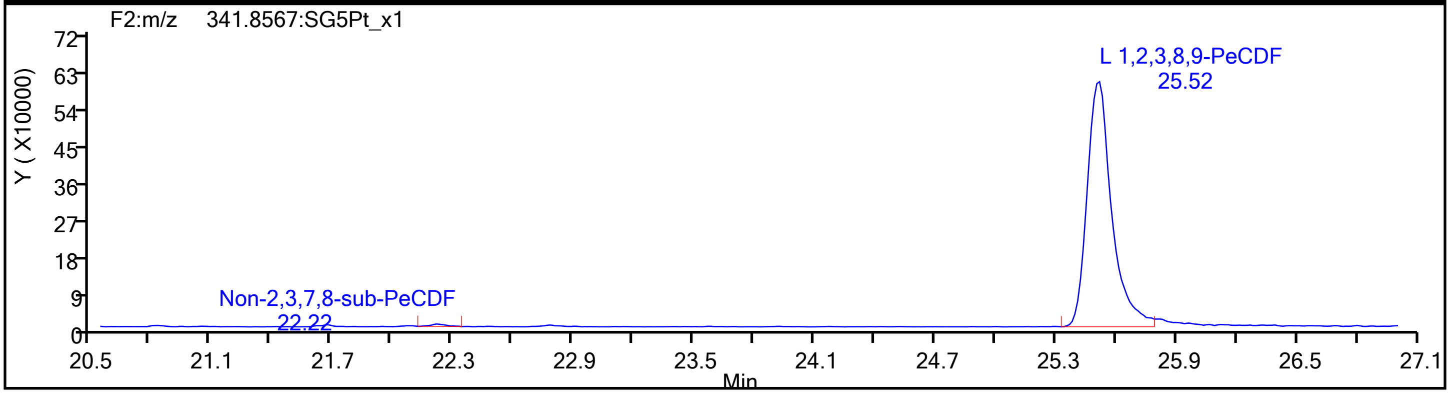

PeCDF Standards

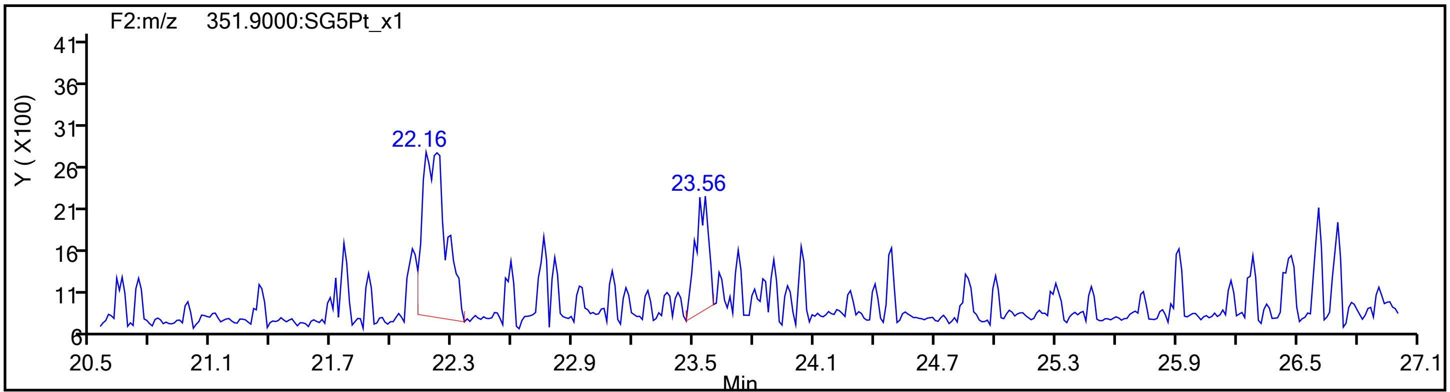

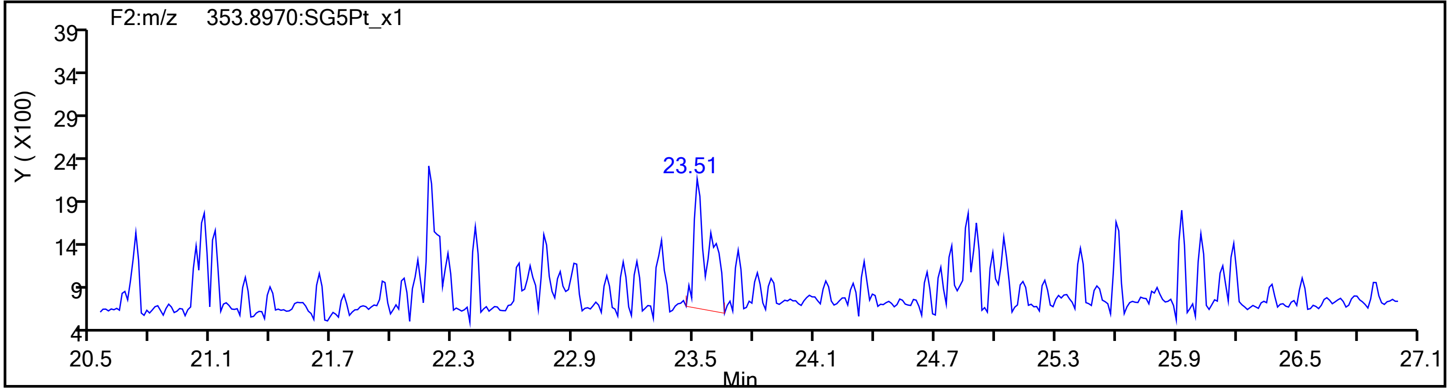

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

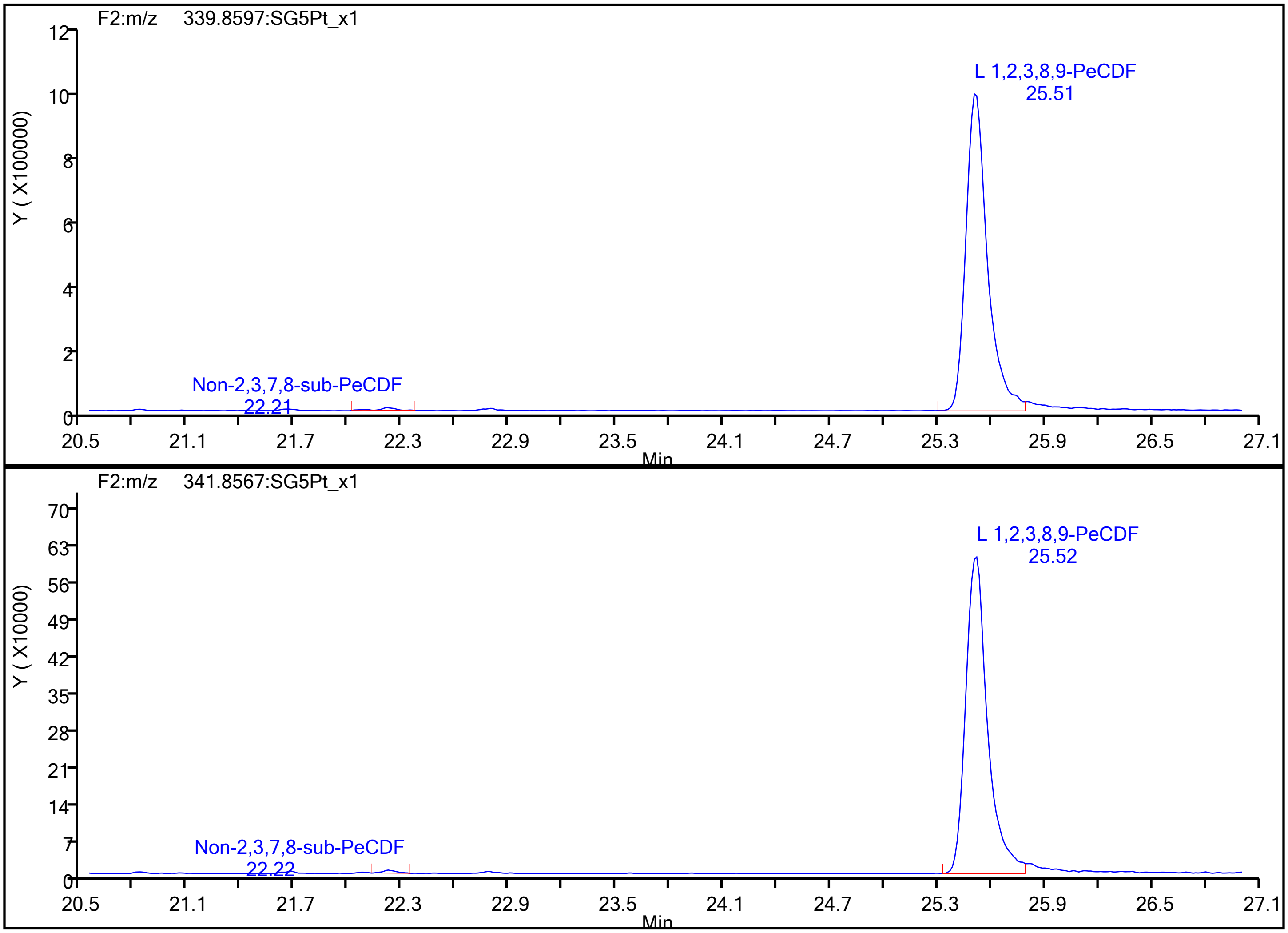

PeCDF Interference Mass

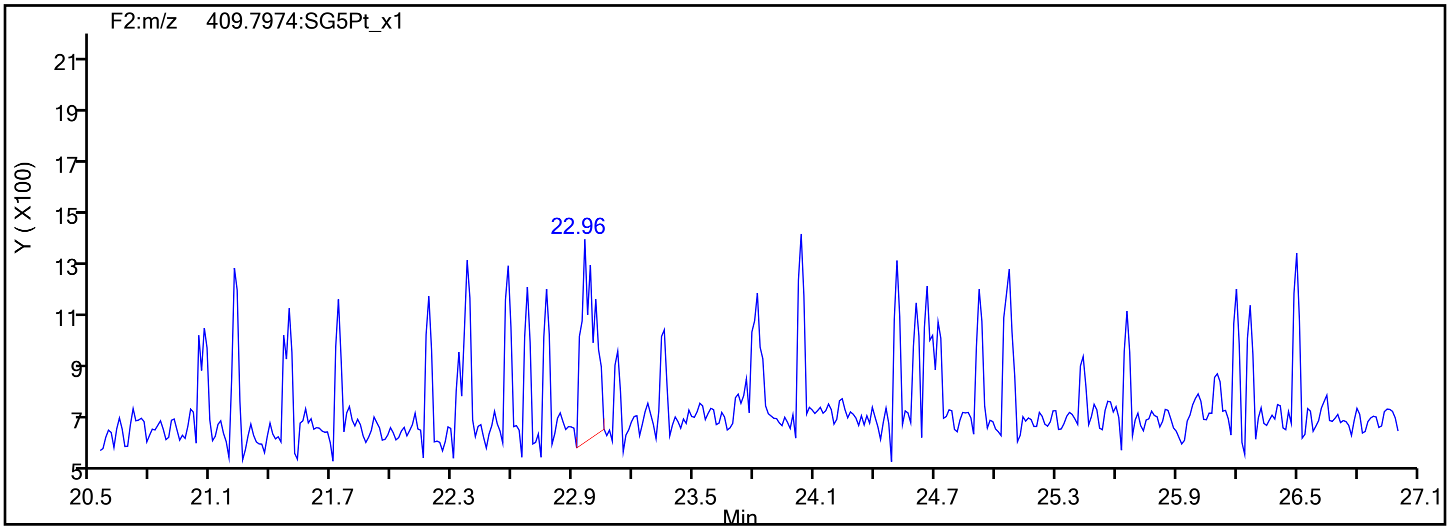

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

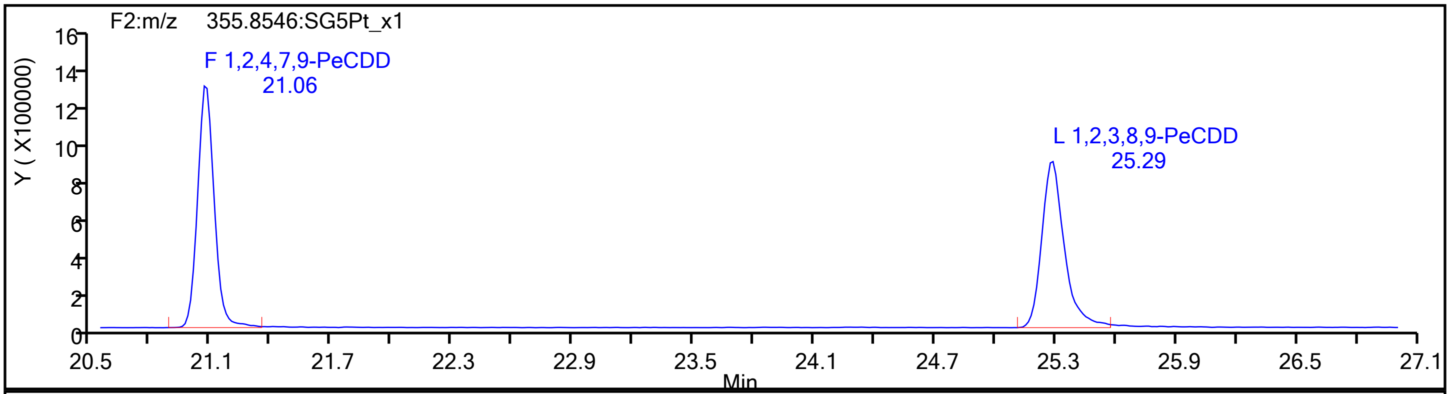

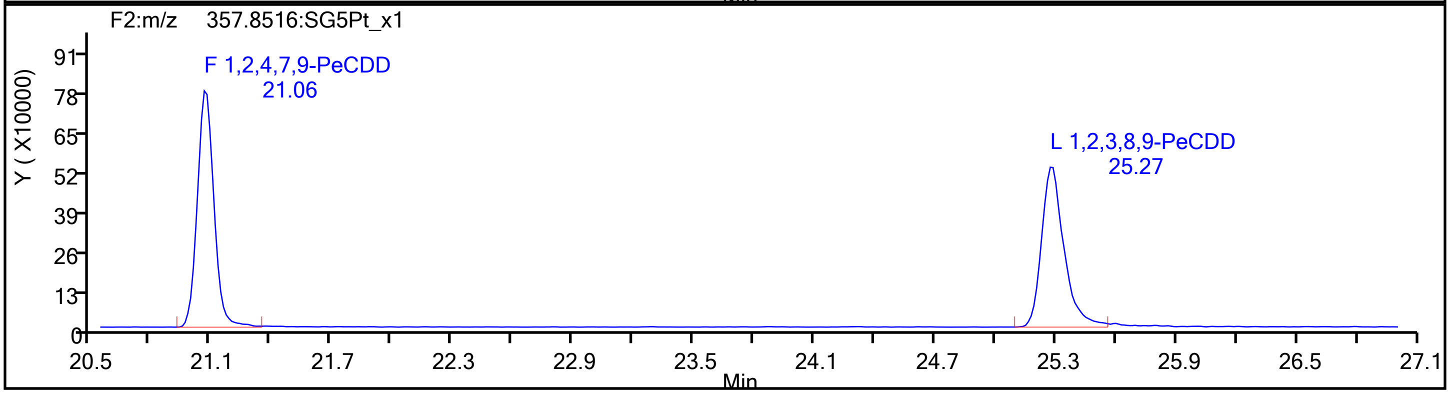

PeCDD Standards

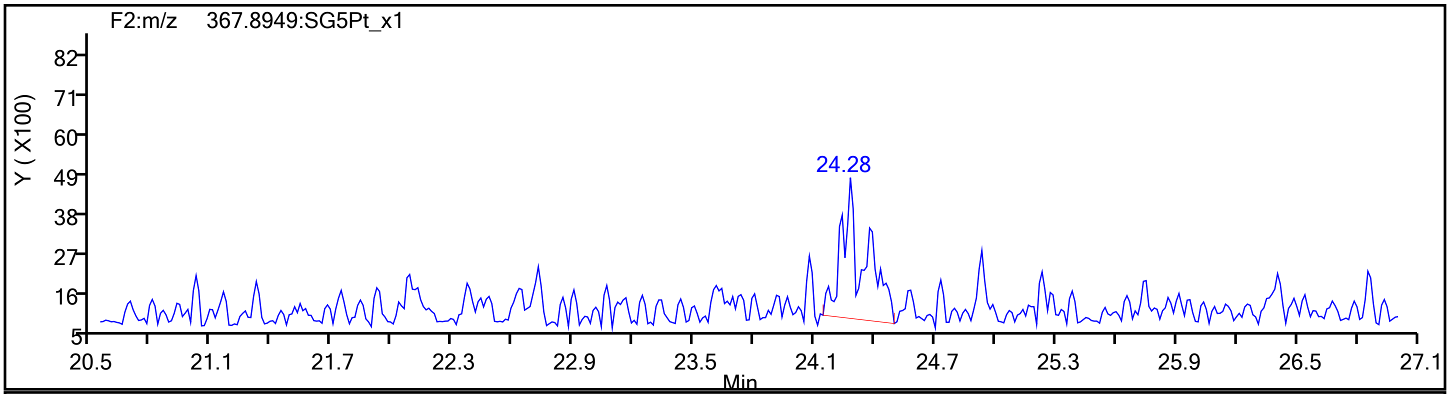

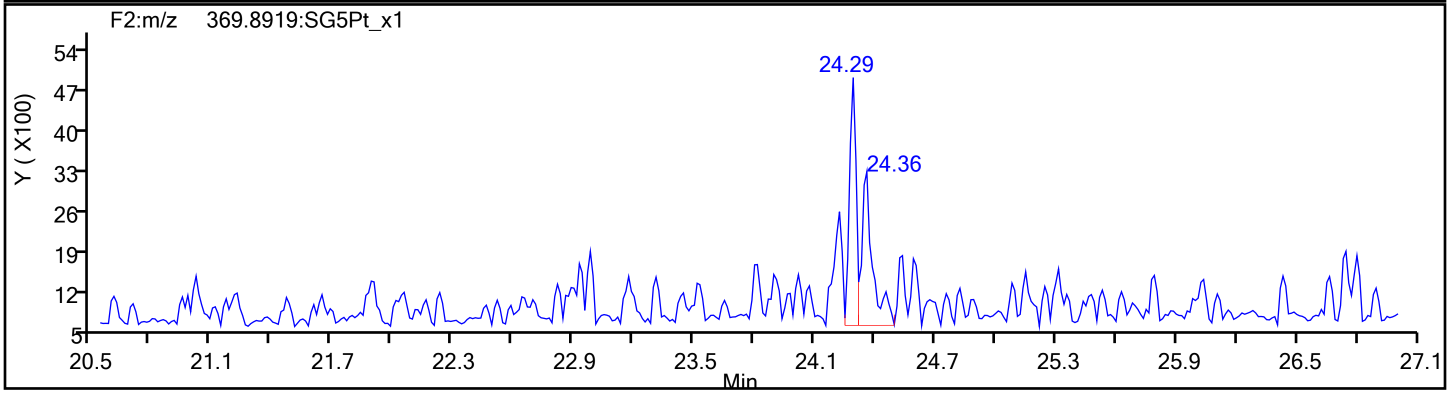

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

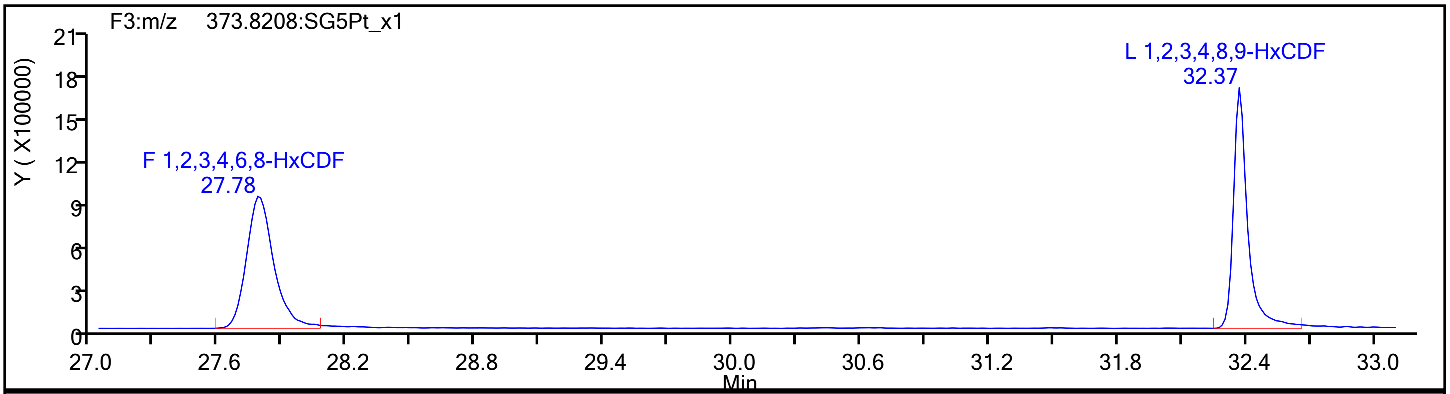

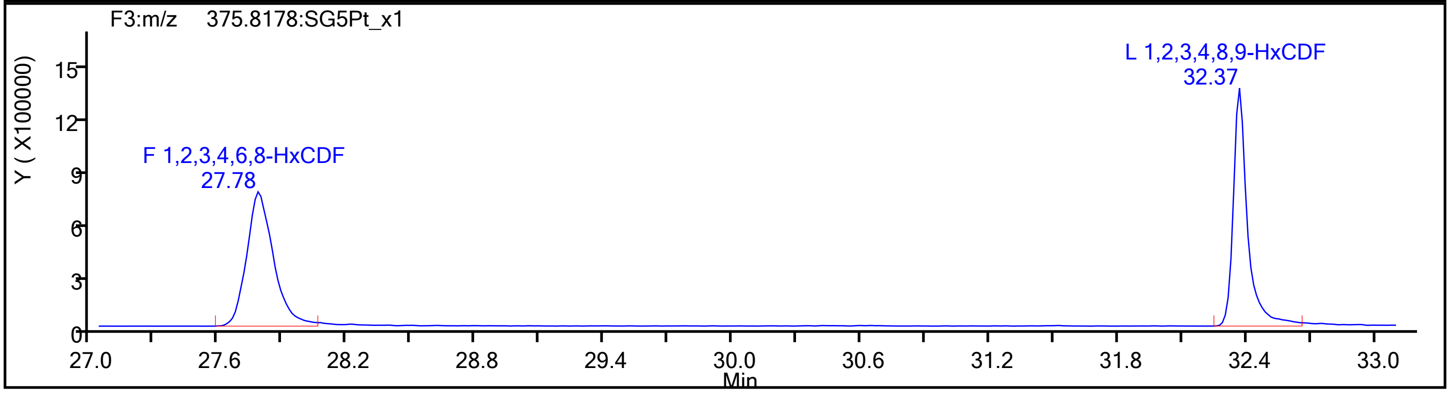

HxCDF Standards

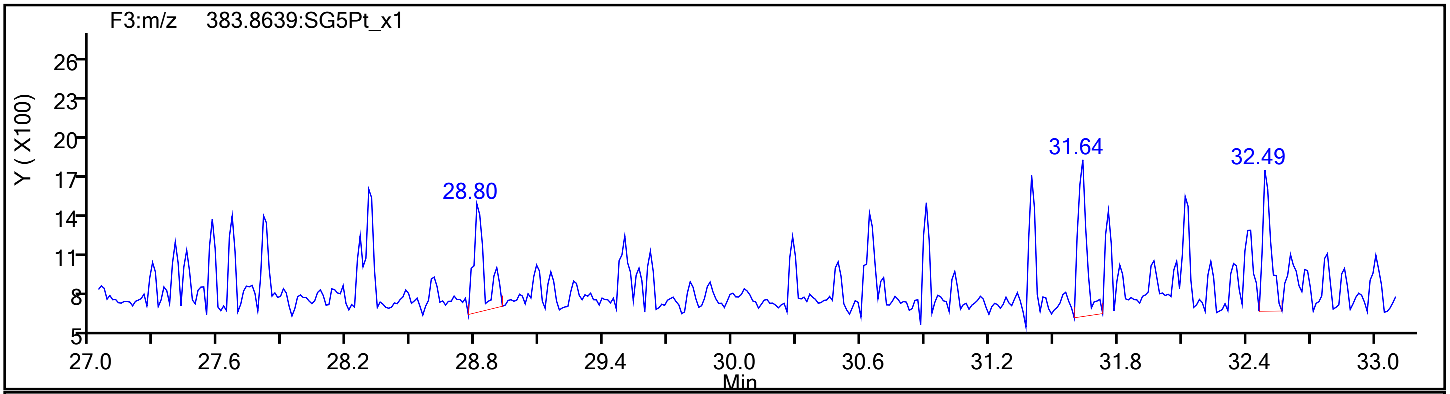

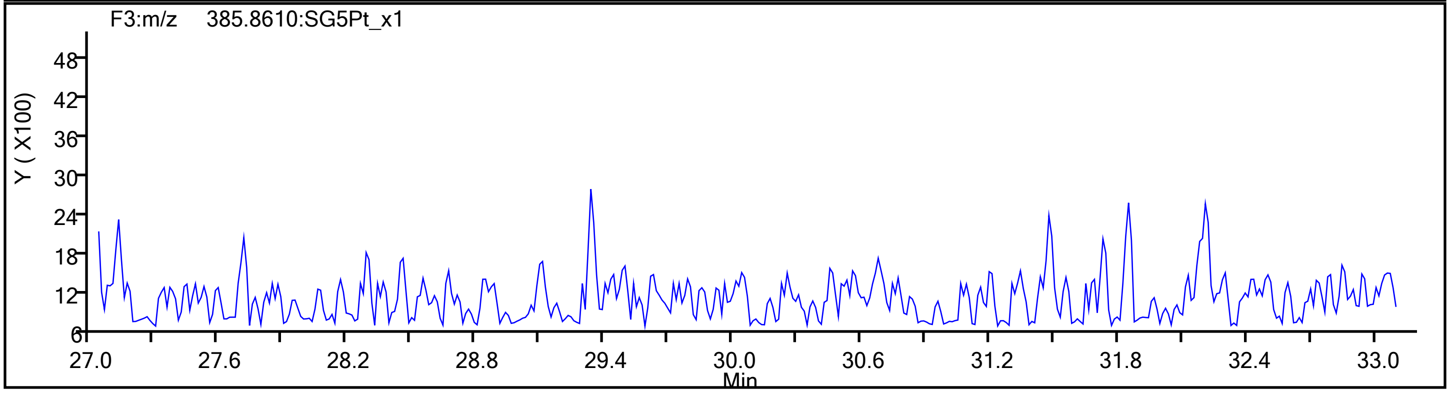

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

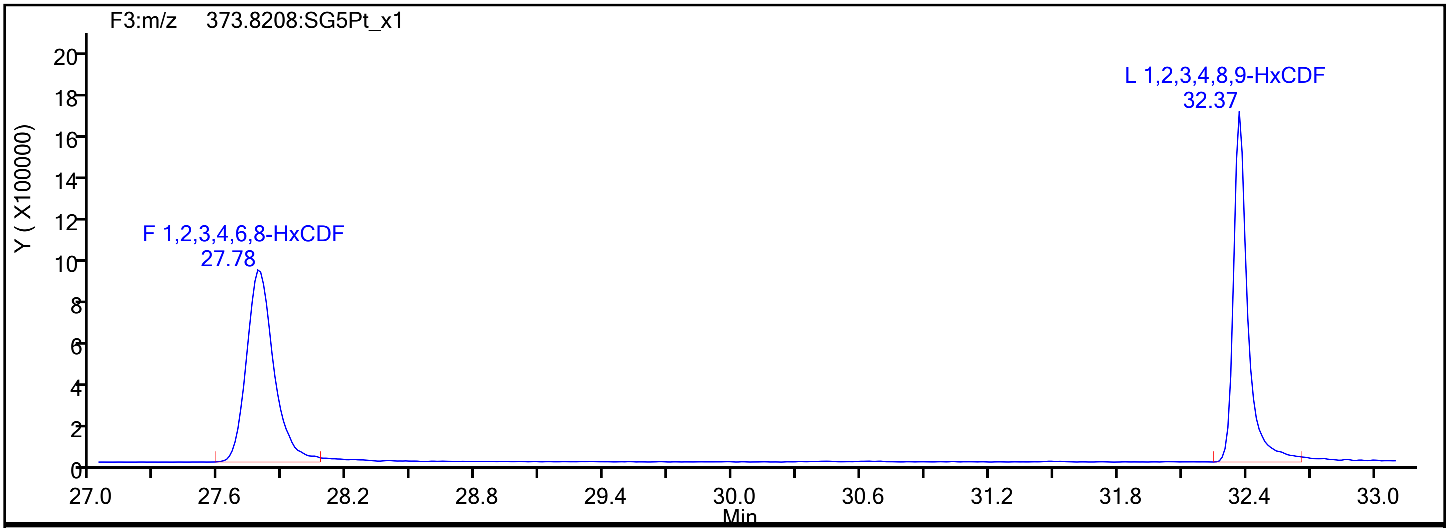

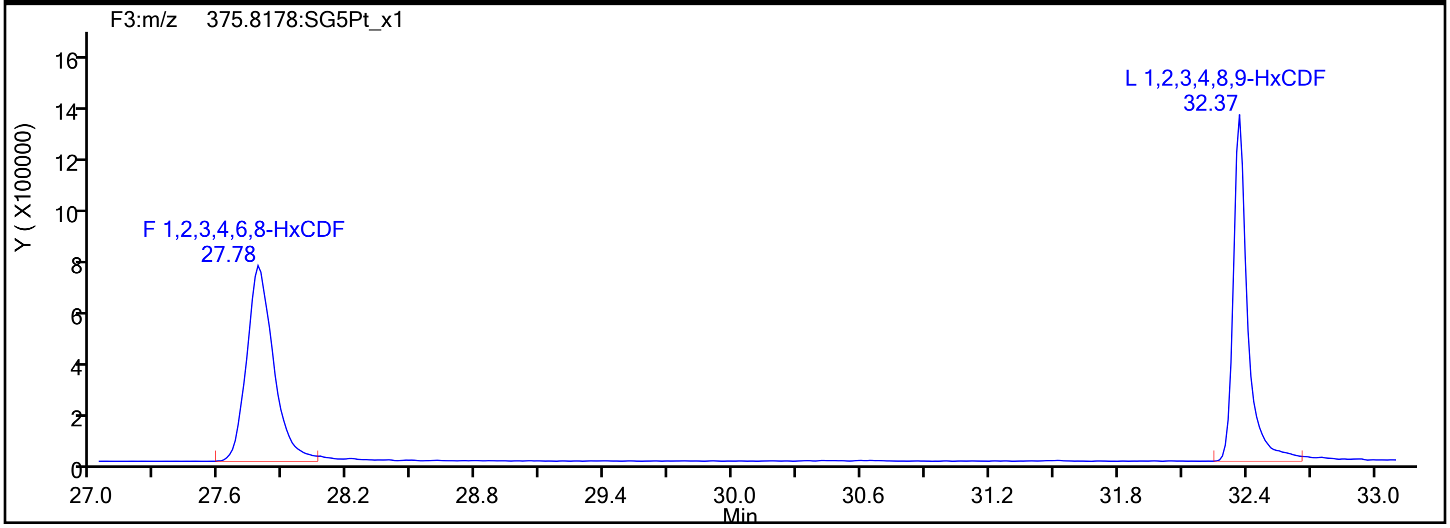

HxCDF Interference Mass

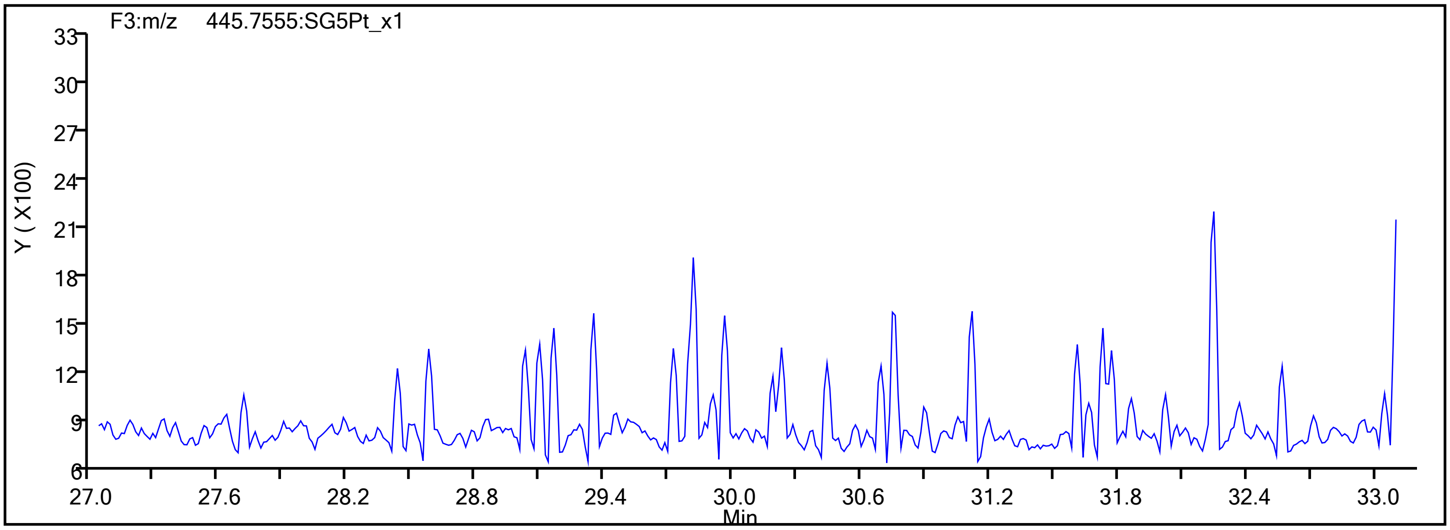

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d		
Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

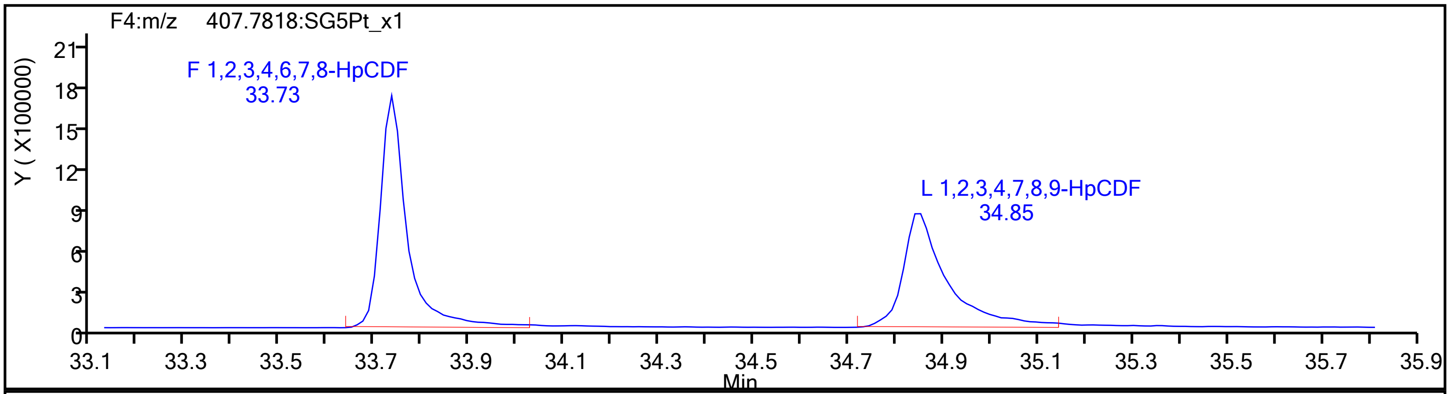

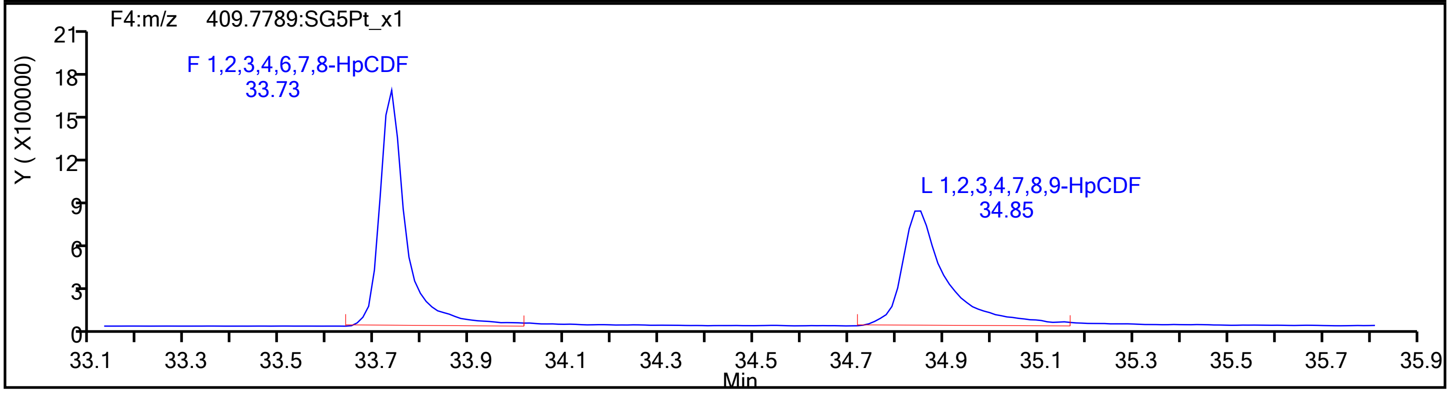

HpCDF Standards

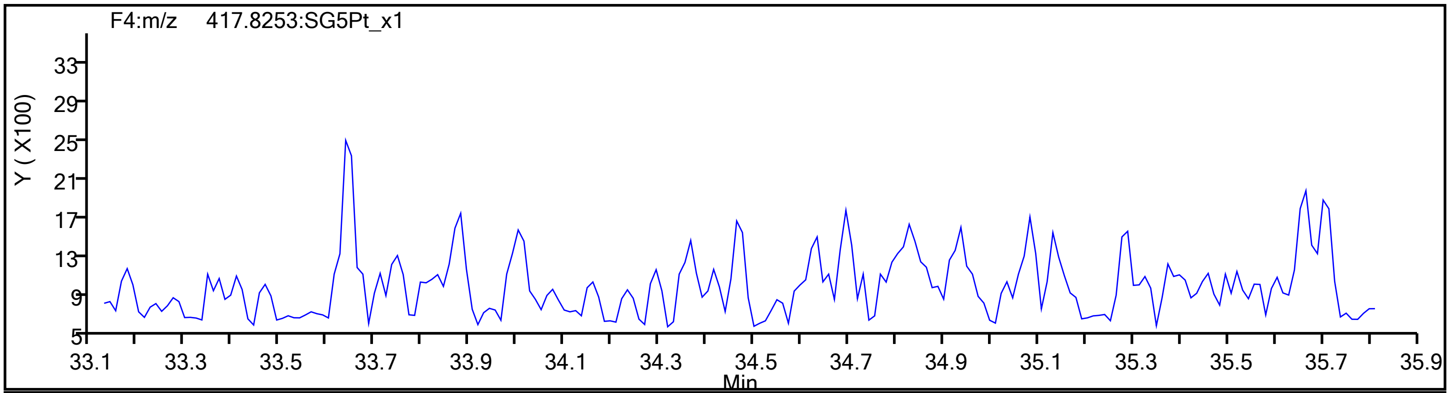

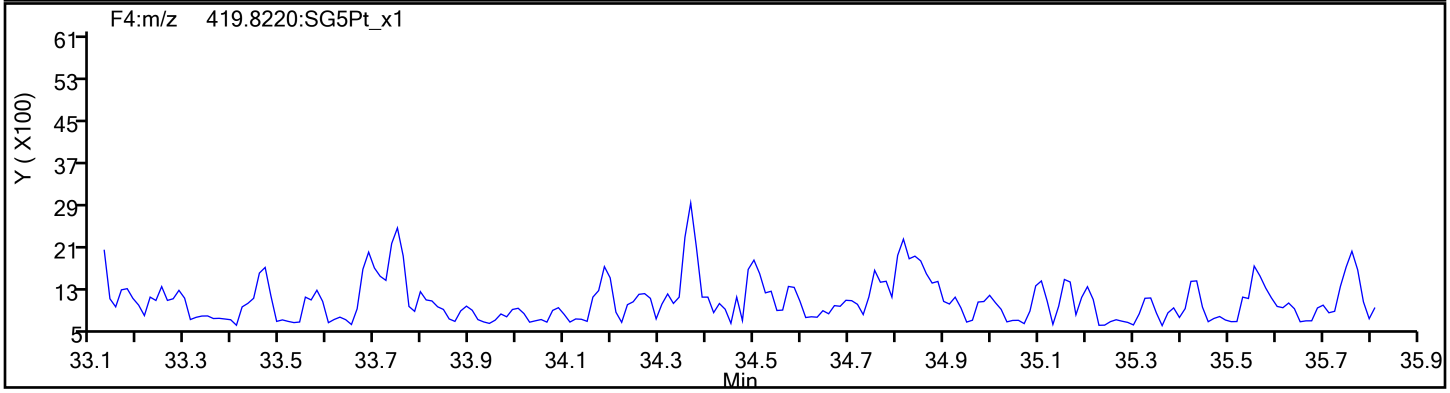

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d
Injection Date: 10-Dec-2020 16:57:16 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 440976 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

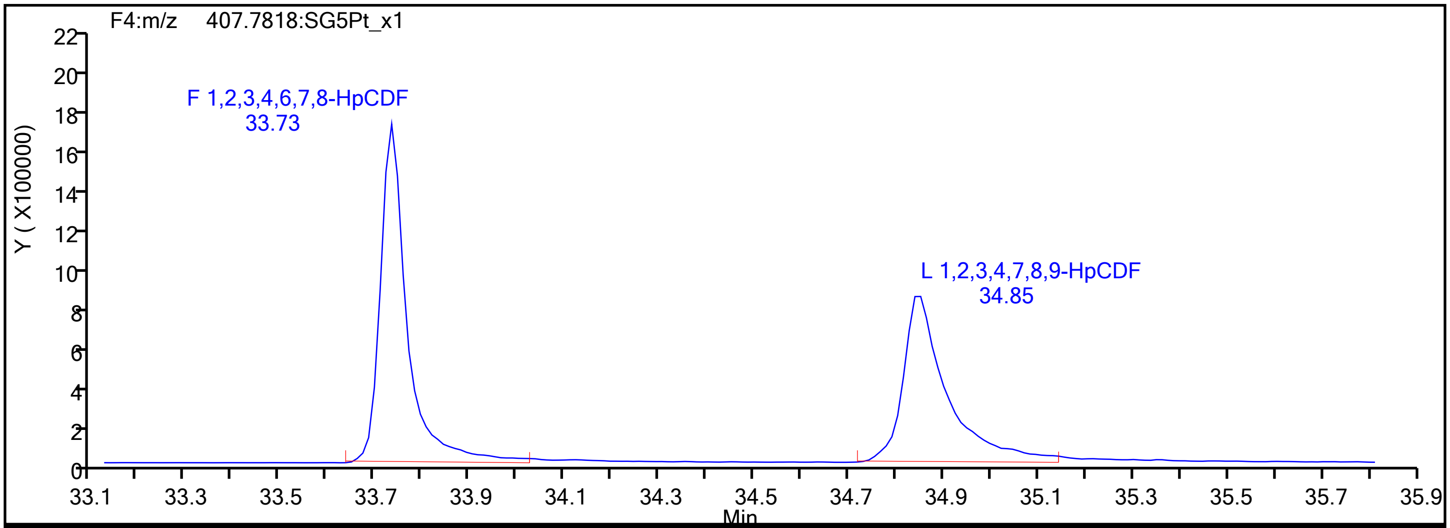

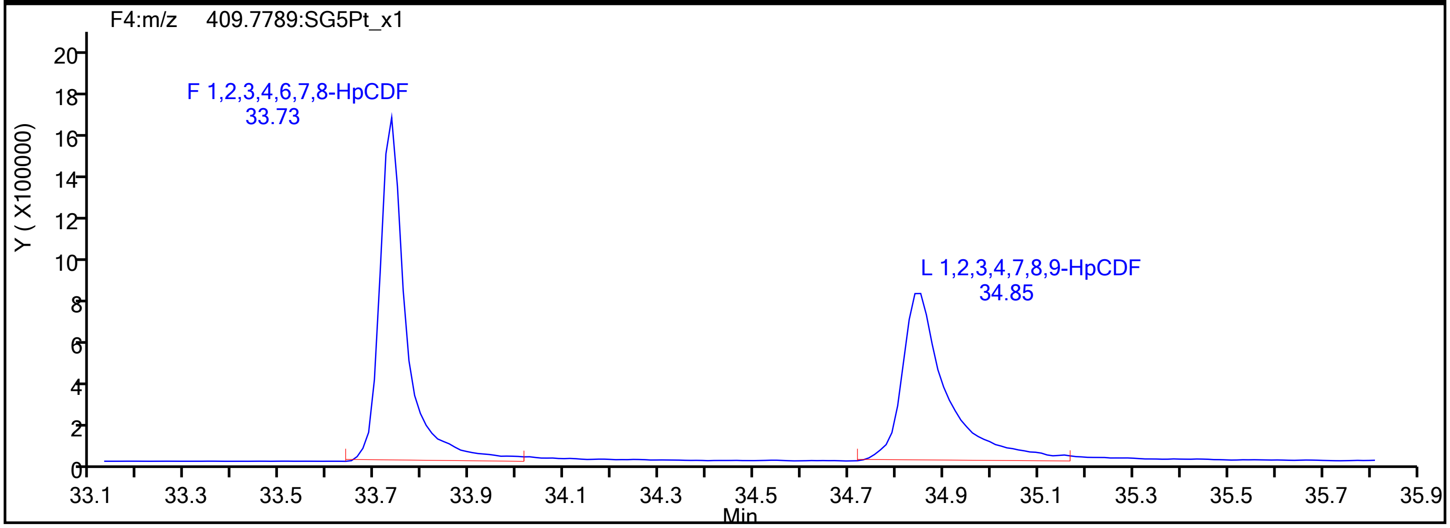

HpCDF Interference Mass

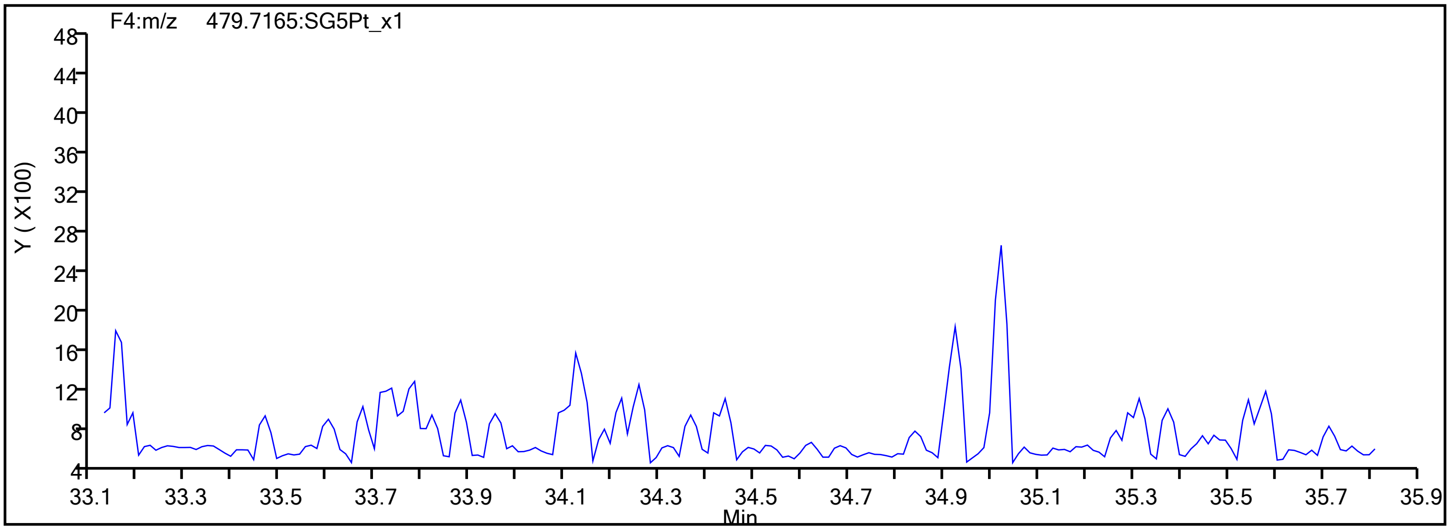

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d

Injection Date: 10-Dec-2020 16:57:16

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

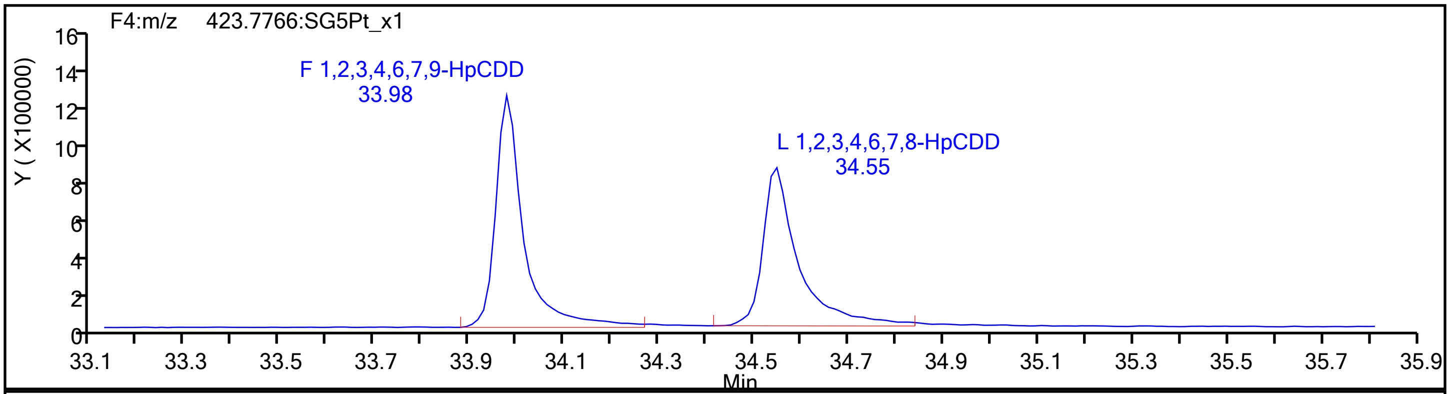

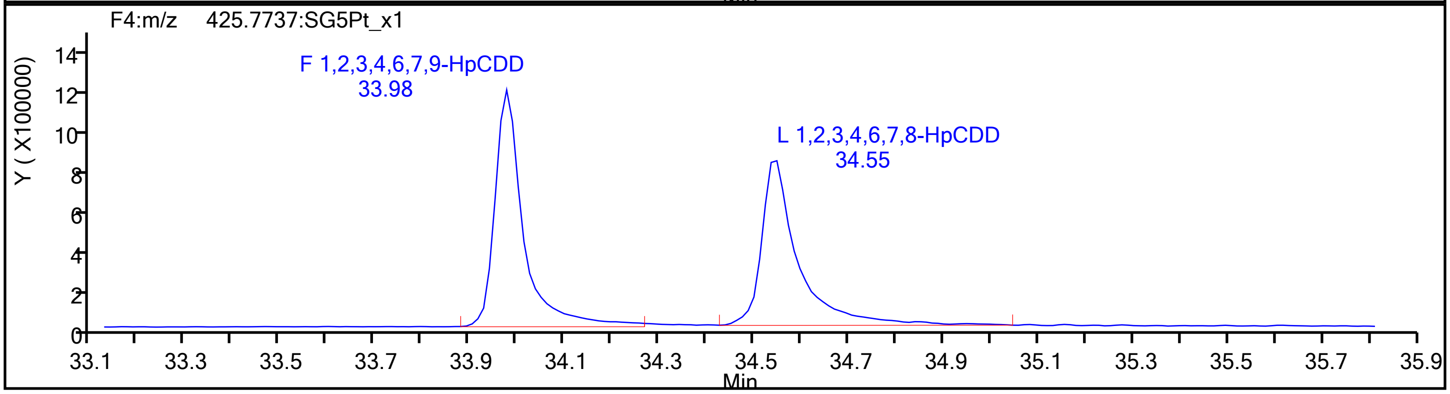

HpCDD Standards

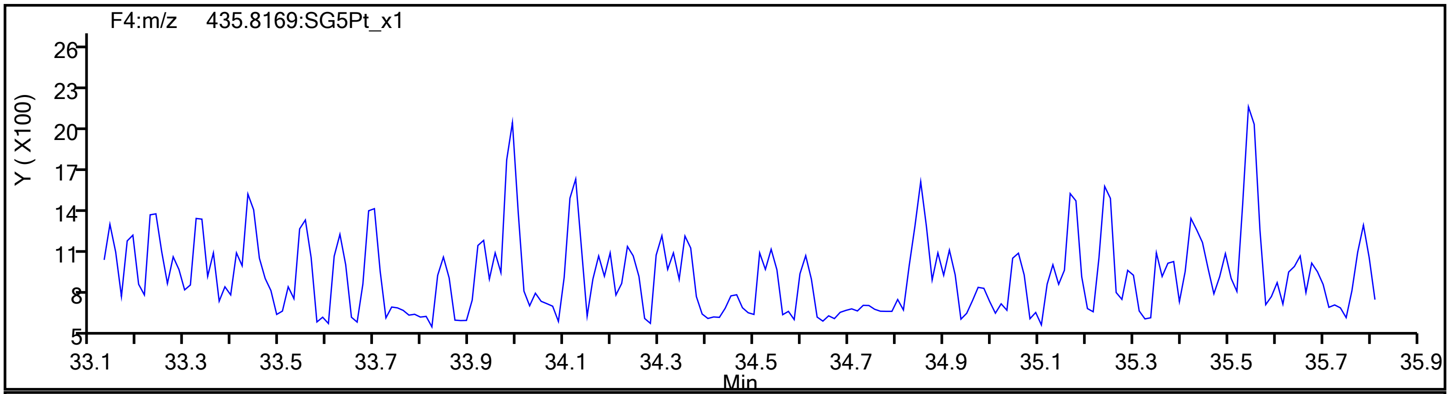

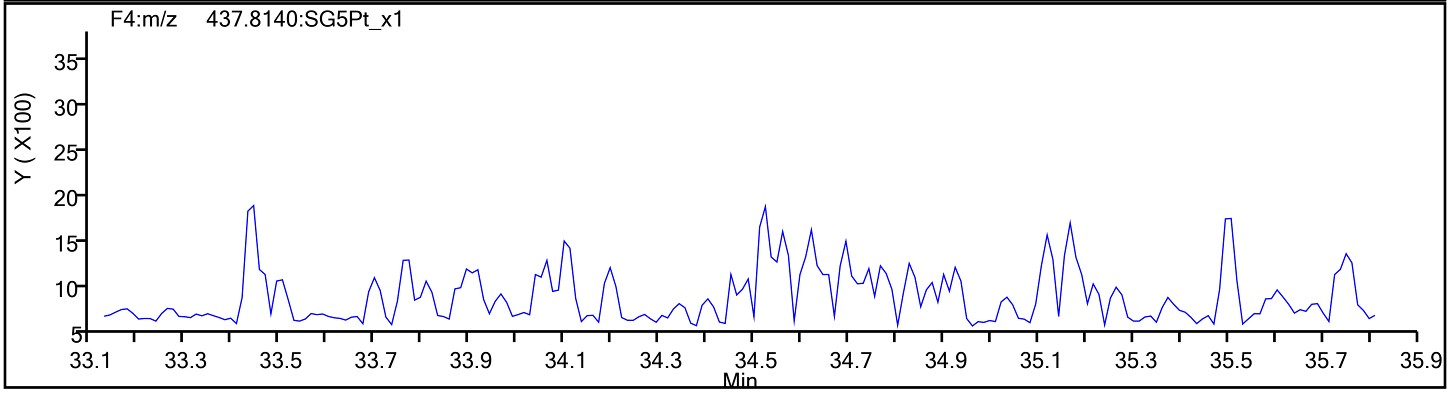

Report Date: 11-Dec-2020 09:52:18 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d

Injection Date: 10-Dec-2020 16:57:16 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 440976 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

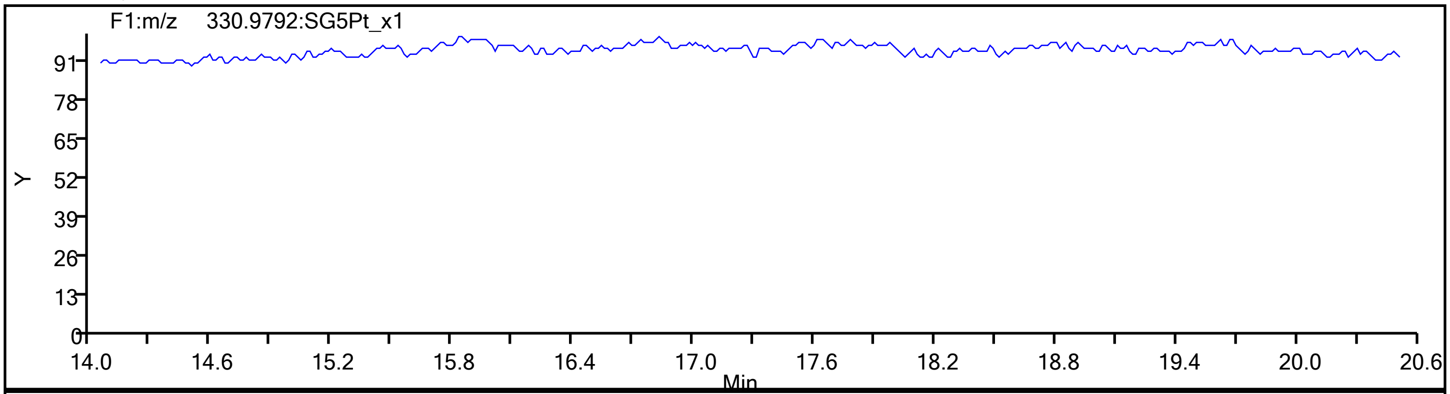

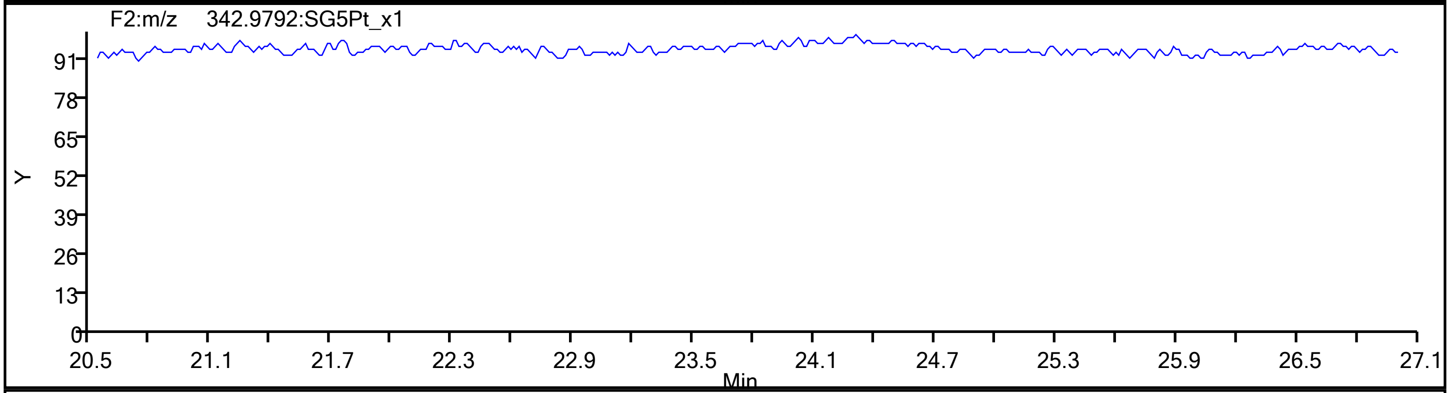

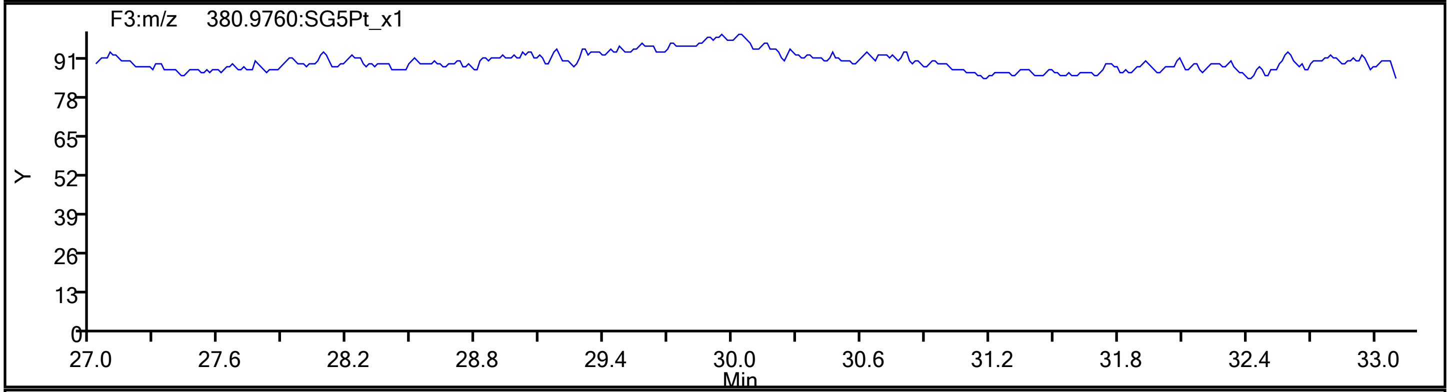

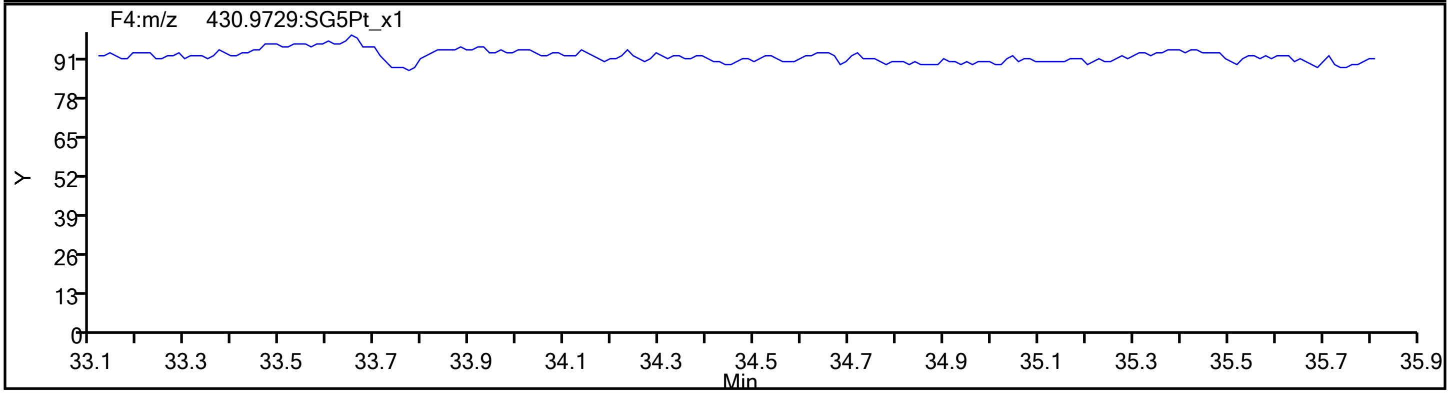

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_1 .d

Injection Date:	10-Dec-2020 16:57:16	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	440976	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

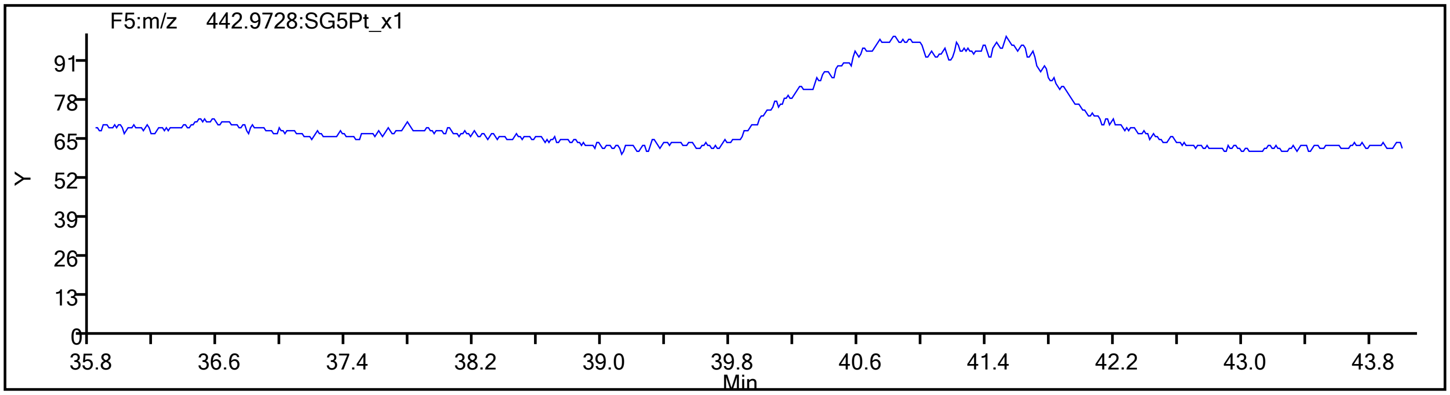

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jan-2021 14:47:04 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 012721 WDM HRDXNCP_00042
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jan-2021 02:01:01 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

First Level Reviewer: messecara Date: 28-Jan-2021 01:28:18

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.415	25520985	0.76	1.7120					0.00	
2,3,7,8-TCDF	17.445	57859919	0.76	1.0173	89.1	89.1	0.4235	0.4235		
A Non-2,3,7,8-sub-TCDF	17.135	947109	0.77	1.0173	1.583	1.459	0.4235	1.459		RQ
S Total TCDF					90.7	90.6	0.4235	0.4235		RQ
D 13C-2,3,7,8-TCDD	18.141	14703014	0.71	1.0837					0.00	
2,3,7,8-TCDD	18.156	19604095	0.79	1.1543	46.2	46.2	0.2595	0.2595		
A Non-2,3,7,8-sub-TCDD	17.589						0.2595	0.2595		
S Total TCDD					46.2	46.2	0.2595	0.2595		
A F1 PeCDFs	19.978						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	23.192	287276	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.538						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.388						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	31.073						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.835	15988721	1.06	1.4619						
1,2,3,4,7,8,9-HpCDF	34.904	12202443	1.06	1.4262						
A Non-2,3,7,8-sub-HpCDF	34.369						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.612	9513877	1.05	1.1022						
A Non-2,3,7,8-sub-HpCDD	34.460						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.966	33817676	0.76							
1,3,6,8-TCDD	15.888	20317981	0.79							
2,3,4,7-TCDF	17.445	57859919	0.76							
1,2,3,7-TCDD	18.035	16197582	0.78							
1,2,3,9-TCDF	18.322	25355933	0.77							
1,2,3,9-TCDD	18.322	21266510	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.290	8052275								
1,2,8,9-TCDF	19.305	26218665	0.76							
1,3,4,6,8-PeCDF	19.577	22327894	1.61							
1,2,4,7,9-PeCDD	21.377	15352949	1.58							
1,2,3,8,9-PeCDD	25.699	13105440	1.56							
1,2,3,8,9-PeCDF	25.931	17825705	1.61							
1,2,3,4,6,8-HxCDF	28.251	20071413	1.27							
1,2,4,6,7,9-HxCDD	29.822	14019404	1.27							
1,2,3,4,6,7-HxCDD	32.218	12878430	1.28							
1,2,3,4,8,9-HxCDF	32.524	18276014	1.26							
1,2,3,4,6,7,9-HpCDD	34.066	11356591	1.03							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 27-Jan-2021 14:47:04 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 012721 WDM HRDXNCP_00042
Misc. Info.: 27JA2110D5
Operator ID: SMA Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-Jan-2021 02:01:01 Calib Date: 10-Dec-2020 21:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20201210-109230.b\10DE20B10D5_7 .d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

First Level Reviewer: messecara Date: 28-Jan-2021 01:28:18

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.415	17.415	0	1.000	11046003	2585209	8118	20295	318		
317.9389	17.415	17.415	0	1.000	14474982	3433252	4252	10630	807	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.445	17.445	0	1.002	25051805	5428579	10762	26905	504		
305.8987	17.445	17.445	0	1.002	32808114	7136194	15170	37925	470	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	19.592	17.135	147	1.125	492372	66042	10762	26905	6		
	Empc Correction				412019	56238	10762	26905	5		
305.8987	19.592	17.135	147	1.125	535090	73037	15170	37925	5	0.92(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.141	18.141	0	1.000	6124782	1328544	2726	6815	487		
333.9339	18.141	18.141	0	1.000	8578232	1825027	2143	5357	852	0.71(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.156	18.156	0	1.001	8648085	1921776	3717	9292	517		
321.8936	18.156	18.156	0	1.001	10956010	2427860	5730	14325	424	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.589						3717	9292			
321.8936	17.589						5730	14325			
A F1 PeCDFs											
339.8597	19.978						701	1752			
341.8567	19.978						804	2010			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	22.004	23.192	-71	1.000	46747	7319	1839	4597	4		
341.8567	21.977	23.192	-73	1.000	34905	6674	1444	3610	5	1.34(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	22.549	23.192	-38	1.000	66441	11230	1839	4597	6		
341.8567	22.563	23.192	-38	1.000	48272	6954	1444	3610	5	1.38(1.32-1.78)	
339.8597	23.109	23.192	-5	1.000	55260	8841	1839	4597	5		
341.8567	23.136	23.192	-3	1.000	45315	6765	1444	3610	5	1.22(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.538						2506	6265			
357.8516	23.538						1435	3587			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.388						5120	12800			
375.8178	30.388						3365	8412			
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.073						3571	8927			
391.8127	31.073						3489	8722			
1,2,3,4,6,7,8-HpCDF											
407.7818	33.835	33.835	0	1.000	8244046	2145843	23871	59677	90		
409.7789	33.835	33.835	0	1.000	7744675	1994445	23482	58705	85	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.904	34.904	0	1.000	6272210	1526241	23871	59677	64		
409.7789	34.904	34.904	0	1.000	5930233	1421902	23482	58705	61	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.369						23871	59677			
409.7789	34.369						23482	58705			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.612	34.612	0	1.000	4883106	1154750	18508	46270	62		
425.7737	34.612	34.612	0	1.000	4630771	1151625	20283	50707	57	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.460						18508	46270			
425.7737	34.460						20283	50707			
1,3,6,8-TCDF											
303.9016	14.966	14.966	0		14655326	4349833	10762	26905	404		
305.8987	14.966	14.966	0		19162350	5641068	15170	37925	372	0.76(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.888	15.888	0		8947897	2478570	3717	9292	667		
321.8936	15.888	15.888	0		11370084	3134004	5730	14325	547	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.445	17.445	0		25051805	5428579	10762	26905	504		
305.8987	17.445	17.445	0		32808114	7136194	15170	37925	470	0.76(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	18.035	18.035	0		7103918	1688497	3717	9292	454		
321.8936	18.035	18.035	0		9093664	2188600	5730	14325	382	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.322	18.322	0		11027125	2450218	10762	26905	228		
305.8987	18.322	18.322	0		14328808	3205978	15170	37925	211	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.322	18.322	0		9379705	2016694	3717	9292	543		
321.8936	18.322	18.322	0		11886805	2581539	5730	14325	451	0.79(0.65-0.89)	

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	19.290	19.290	0		8052275	1623537	3717	9292	437		
1,2,8,9-TCDF											
303.9016	19.305	19.305	0		11354736	2313001	10762	26905	215		
305.8987	19.290	19.305	-1		14863929	3030775	15170	37925	200	0.76(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.577	19.577	0		13786716	2844760	701	1752	4058		
341.8567	19.577	19.577	0		8541178	1772650	804	2010	2205	1.61(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.377	21.377	0		9410200	1529312	2506	6265	610		
357.8516	21.377	21.377	0		5942749	947442	1435	3587	660	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.699	25.699	0		7991152	1022260	2506	6265	408		
357.8516	25.699	25.699	0		5114288	667196	1435	3587	465	1.56(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.931	25.931	0		10987482	1422283	1839	4597	773		
341.8567	25.931	25.931	0		6838223	868738	1444	3610	602	1.61(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	28.251	28.251	0		11223350	1337523	5120	12800	261		
375.8178	28.251	28.251	0		8848063	1046523	3365	8412	311	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.822	29.822	0		7847142	1031178	3571	8927	289		
391.8127	29.822	29.822	0		6172262	818414	3489	8722	235	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.218	32.218	0		7240119	1689314	3571	8927	473		
391.8127	32.218	32.218	0		5638311	1304487	3489	8722	374	1.28(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.524	32.524	0		10196611	2431973	5120	12800	475		
375.8178	32.524	32.524	0		8079403	1926084	3365	8412	572	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	34.066	34.066	0		5770674	1456805	18508	46270	79		
425.7737	34.066	34.066	0		5585917	1424041	20283	50707	70	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 27-Jan-2021 14:47:04 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 456215 Lims Sample ID: 1

Non-2,3,7,8-sub-TCDF, RT: 17.135

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.017	D 13C-2,3,7,8-TCDF	40.000	25520985	6018461

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.017		40.000	25520985	6018461

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.592	492372	66042	535090	73037	1.58	0.92	RQ
19.592	412019	56238	535090	73037	1.46		Empc Correction
Signal Totals:							
	412019	56238	535090	73037			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1027462	139079				0.92	RQ
	947109	129275					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.583 = (1027462 * 40.000) / (25520985 * 1.017)
Empc Amount: 1.459 = (947109 * 40.000) / (25520985 * 1.017)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 27-Jan-2021 14:47:04 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: SMA
Lims Batch ID: 456215 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 23.192

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.027				
2,3,4,7,8-PeCDF	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.004	46747	7319	34905	6674		1.34	
22.549	66441	11230	48272	6954		1.38	
23.109	55260	8841	45315	6765		1.22	R
Signal Totals:							
	168448	27390	128492	20393			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	296940	47783				1.31	RQ
	287276	46721					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (296940 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (287276 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Injection Date: 27-Jan-2021 14:47:04 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

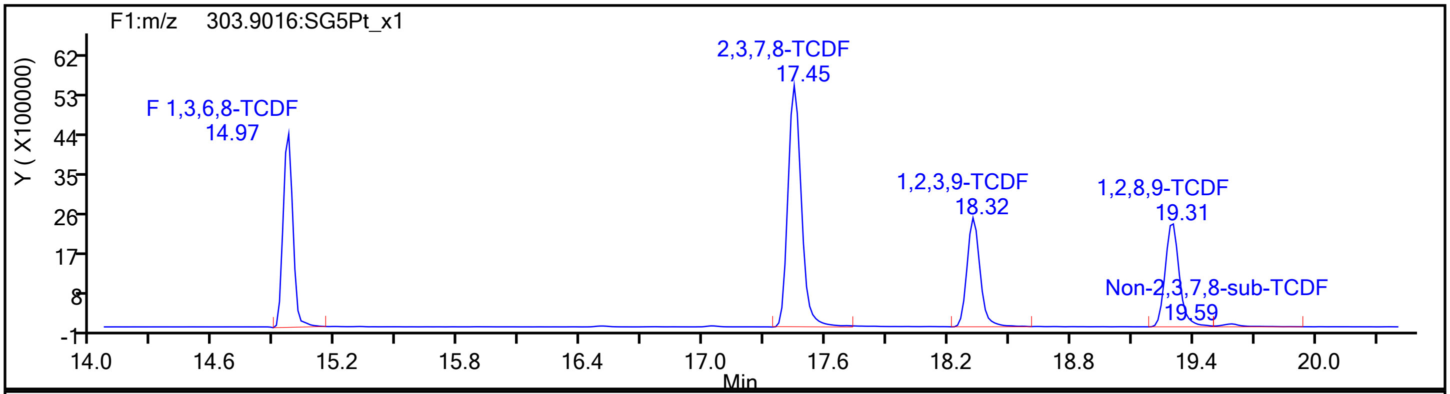

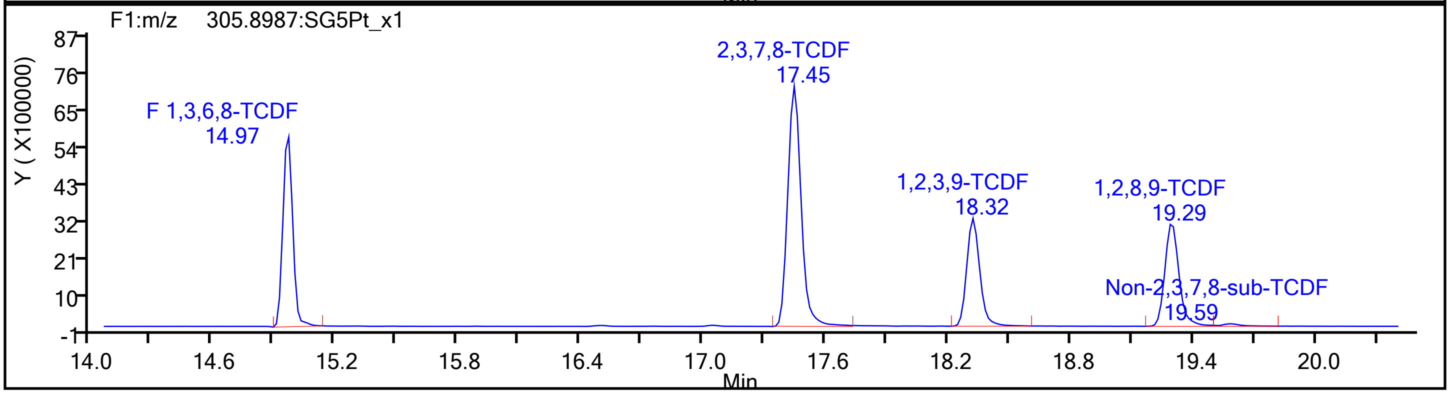

TCDF Standards

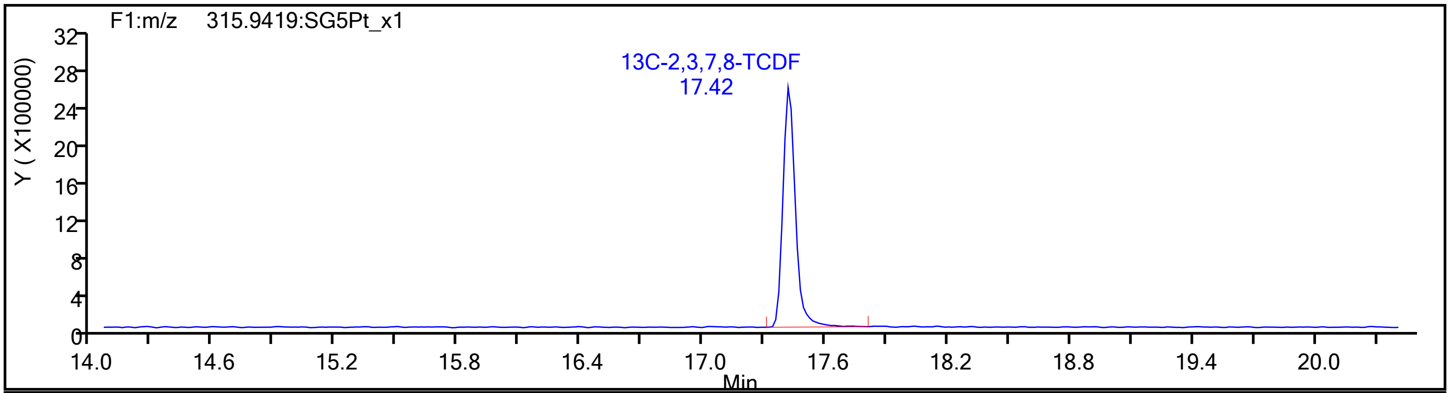

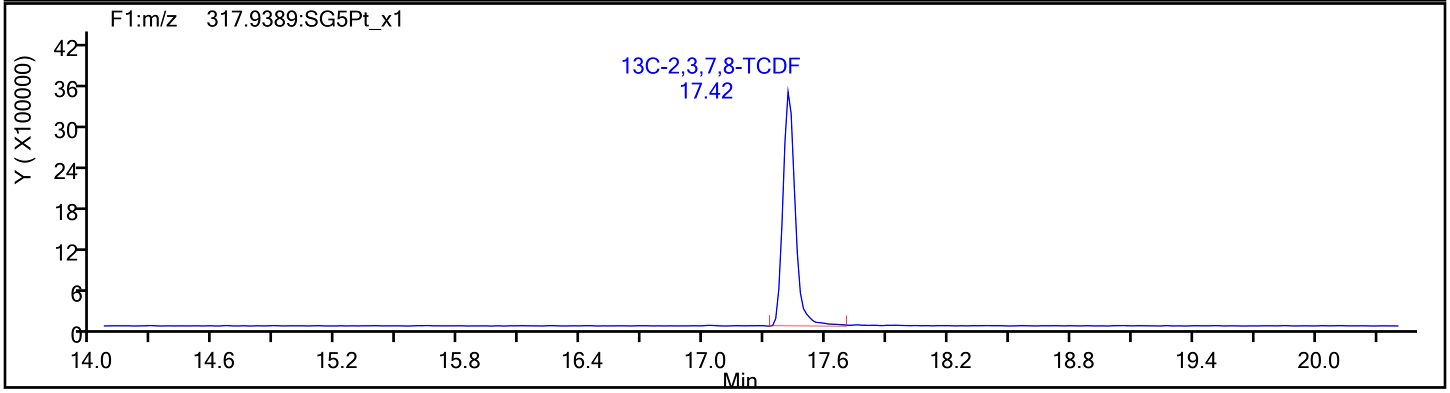

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Injection Date: 27-Jan-2021 14:47:04
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

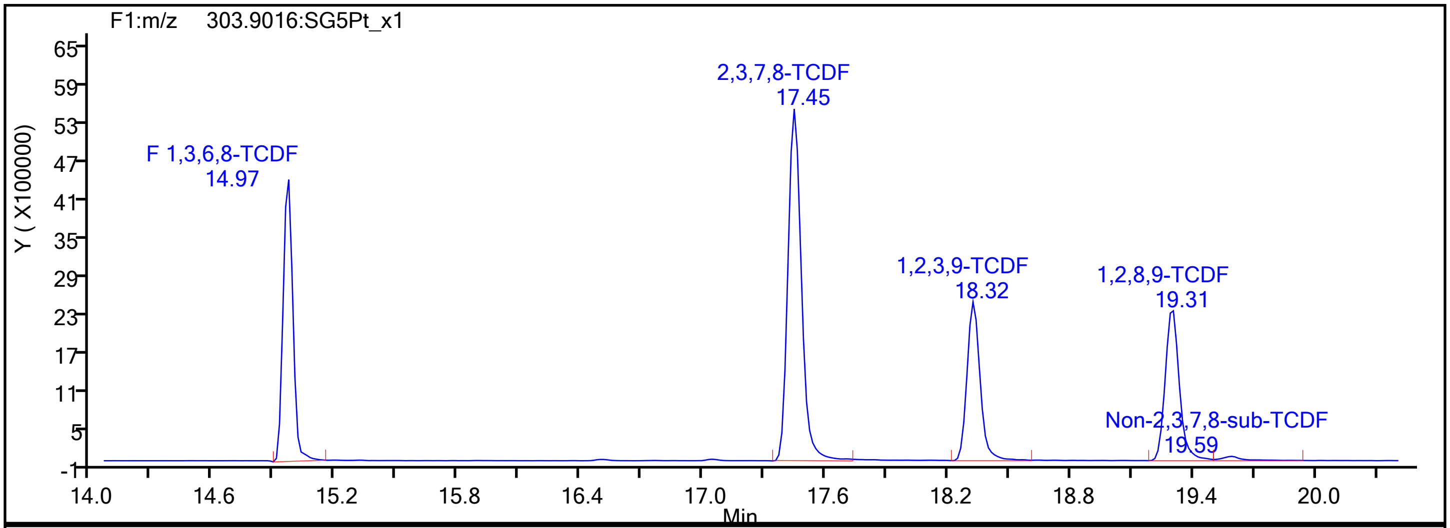

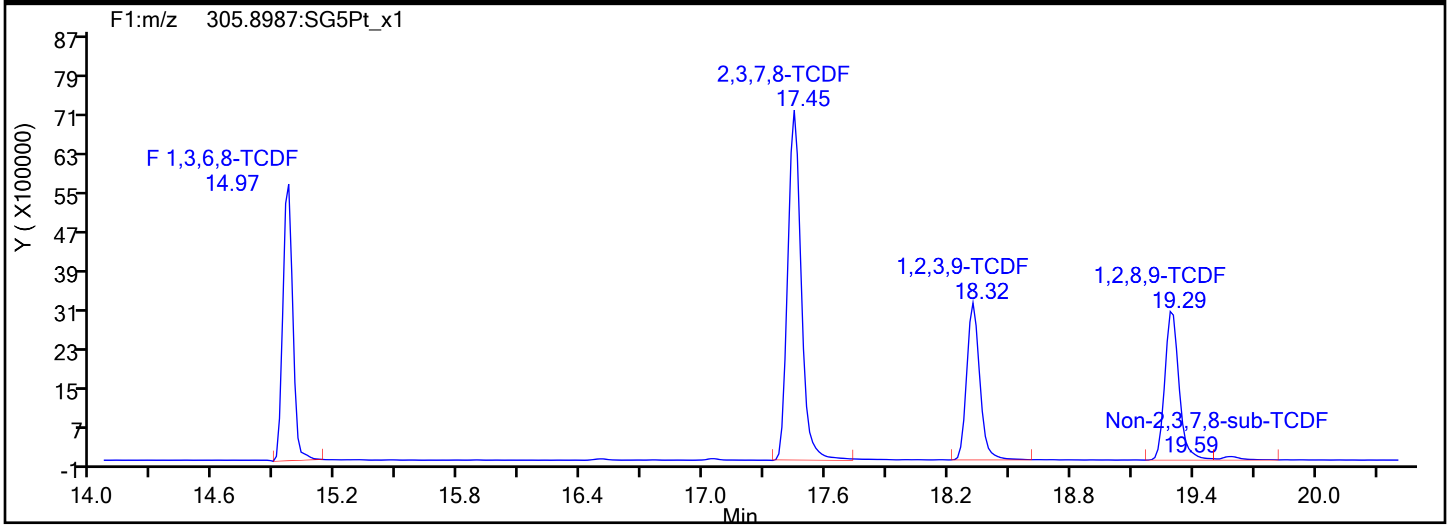

TCDF Interference Mass

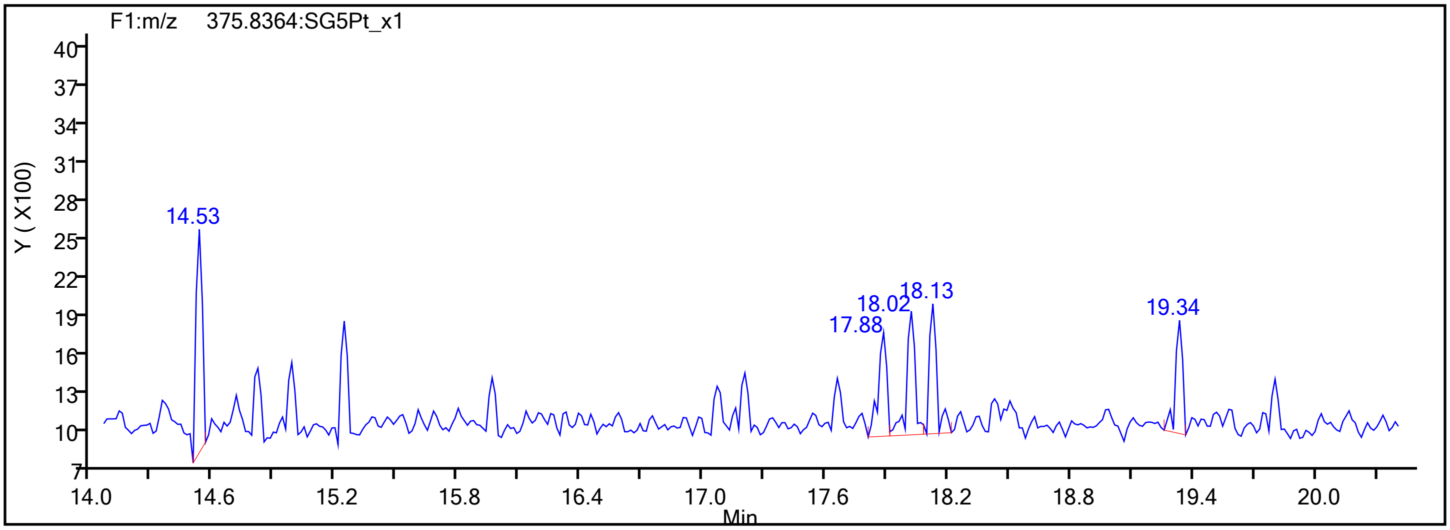

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Injection Date: 27-Jan-2021 14:47:04

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: SMA

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

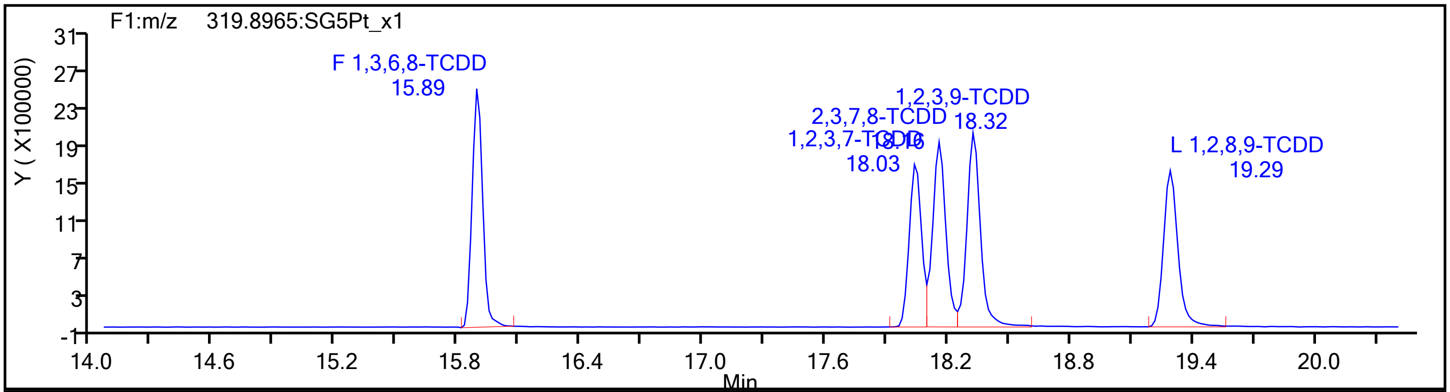

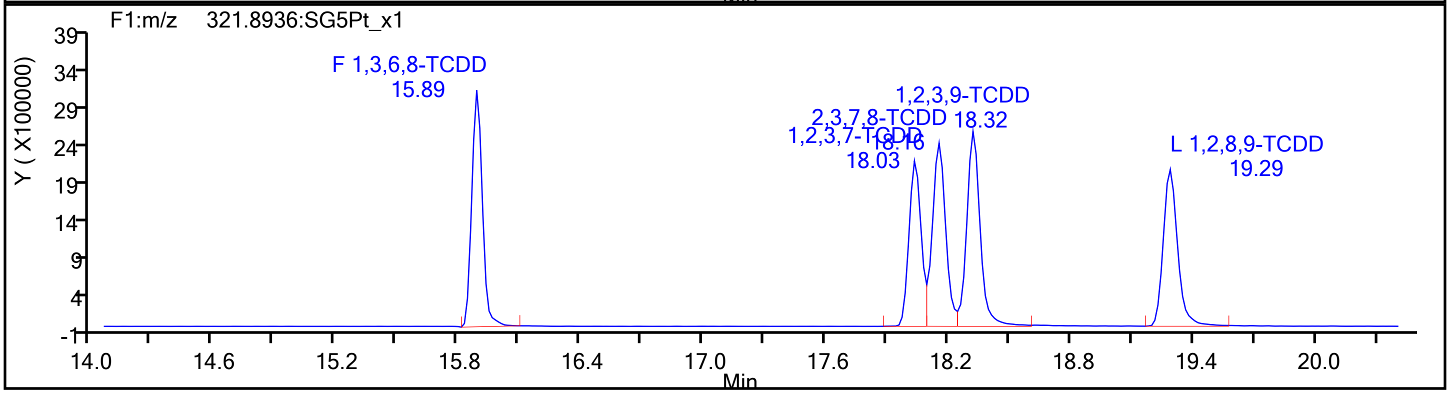

TCDD Standards

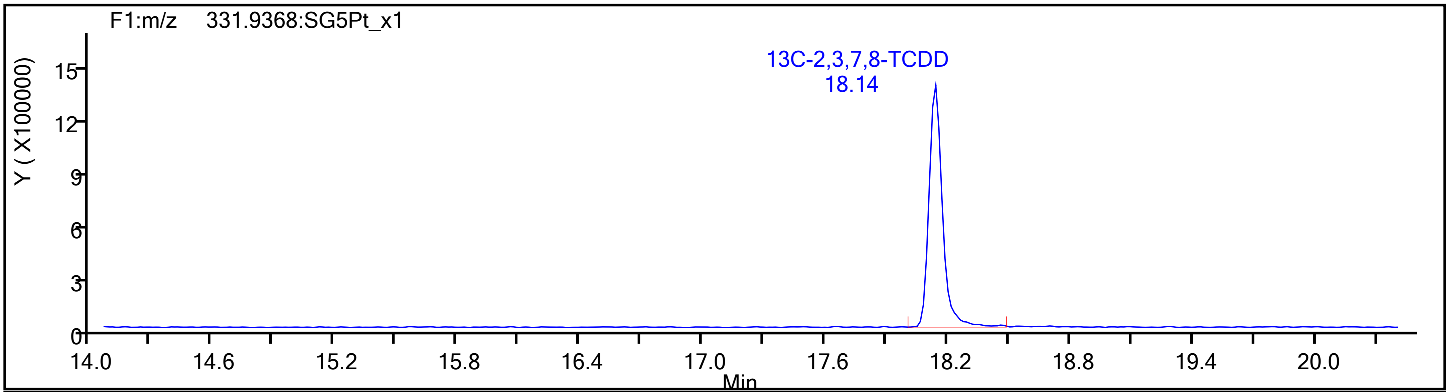

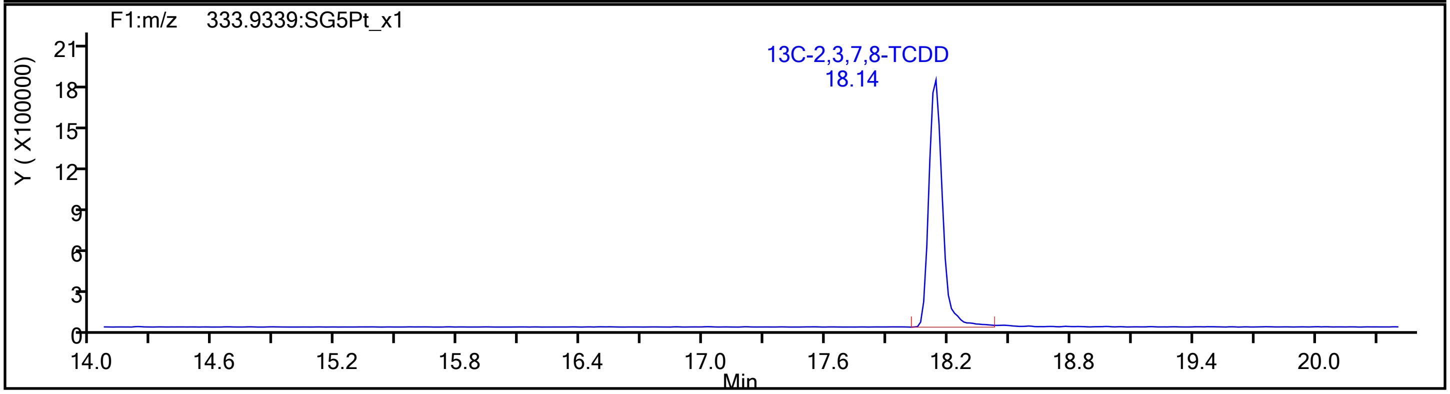

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d		
Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

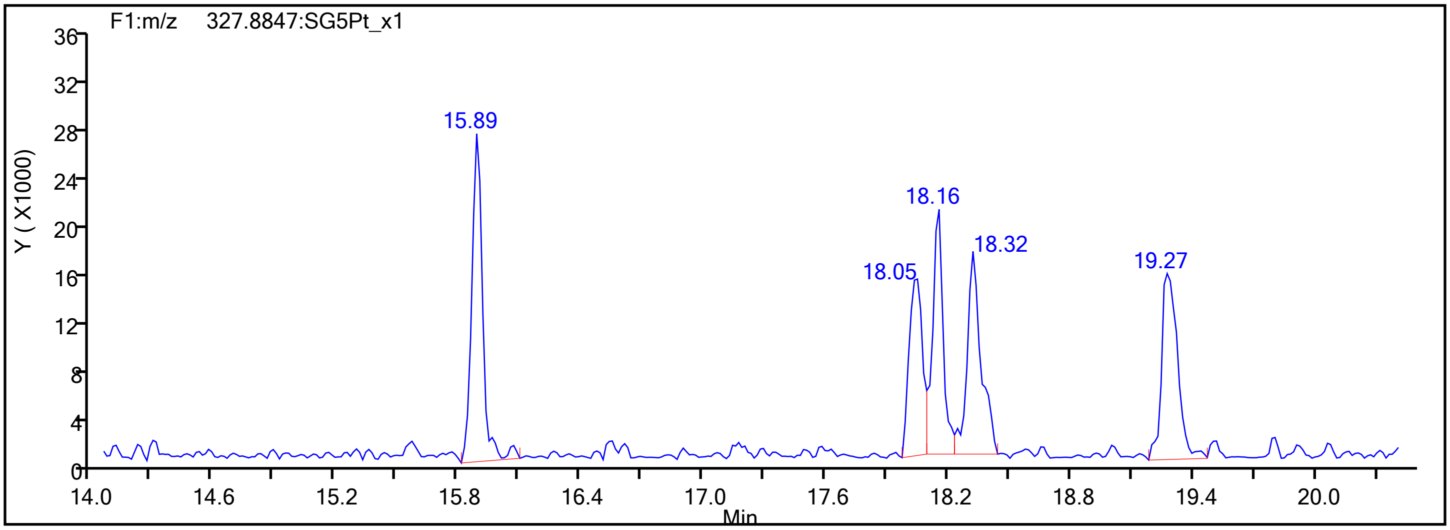

37Cl4-TCDD Standards

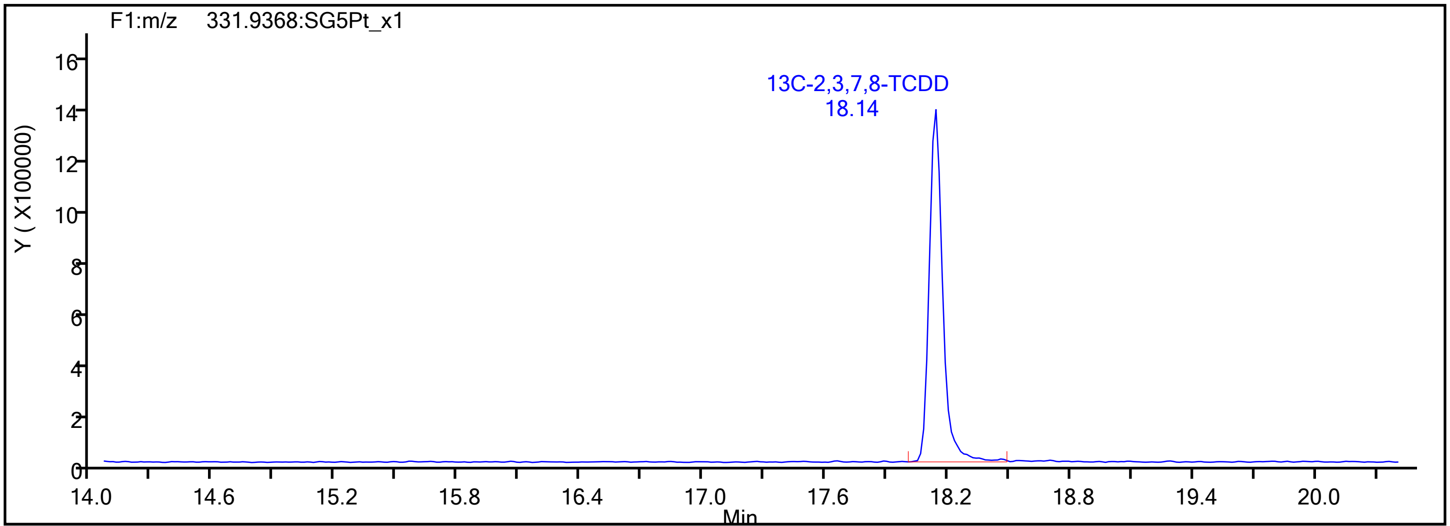

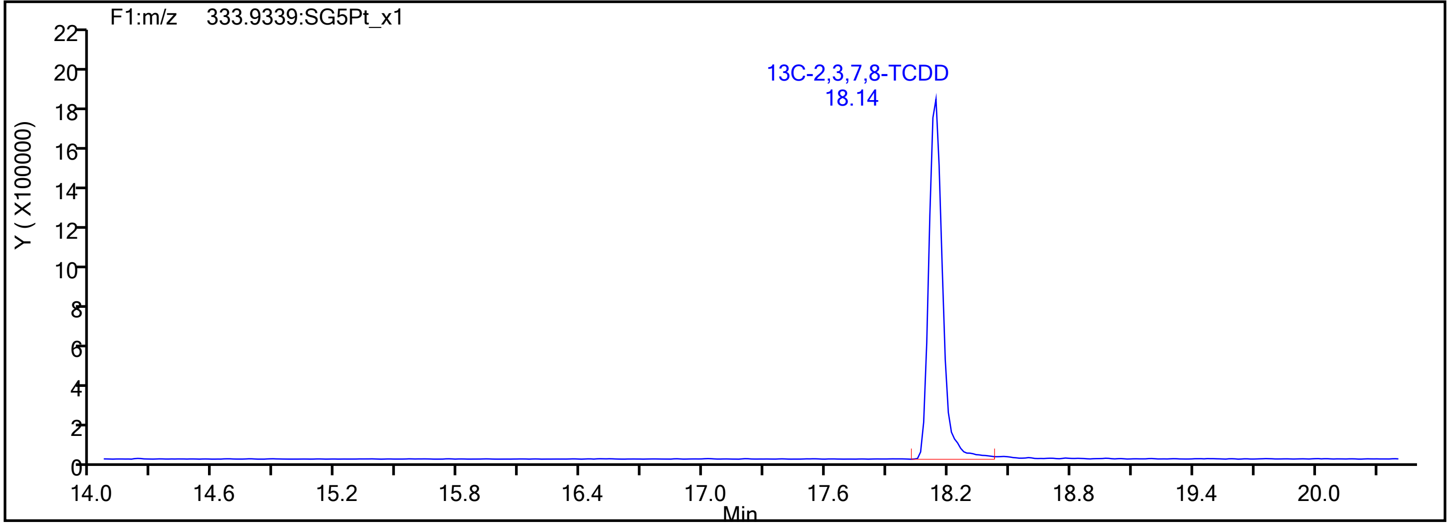

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Injection Date: 27-Jan-2021 14:47:04 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

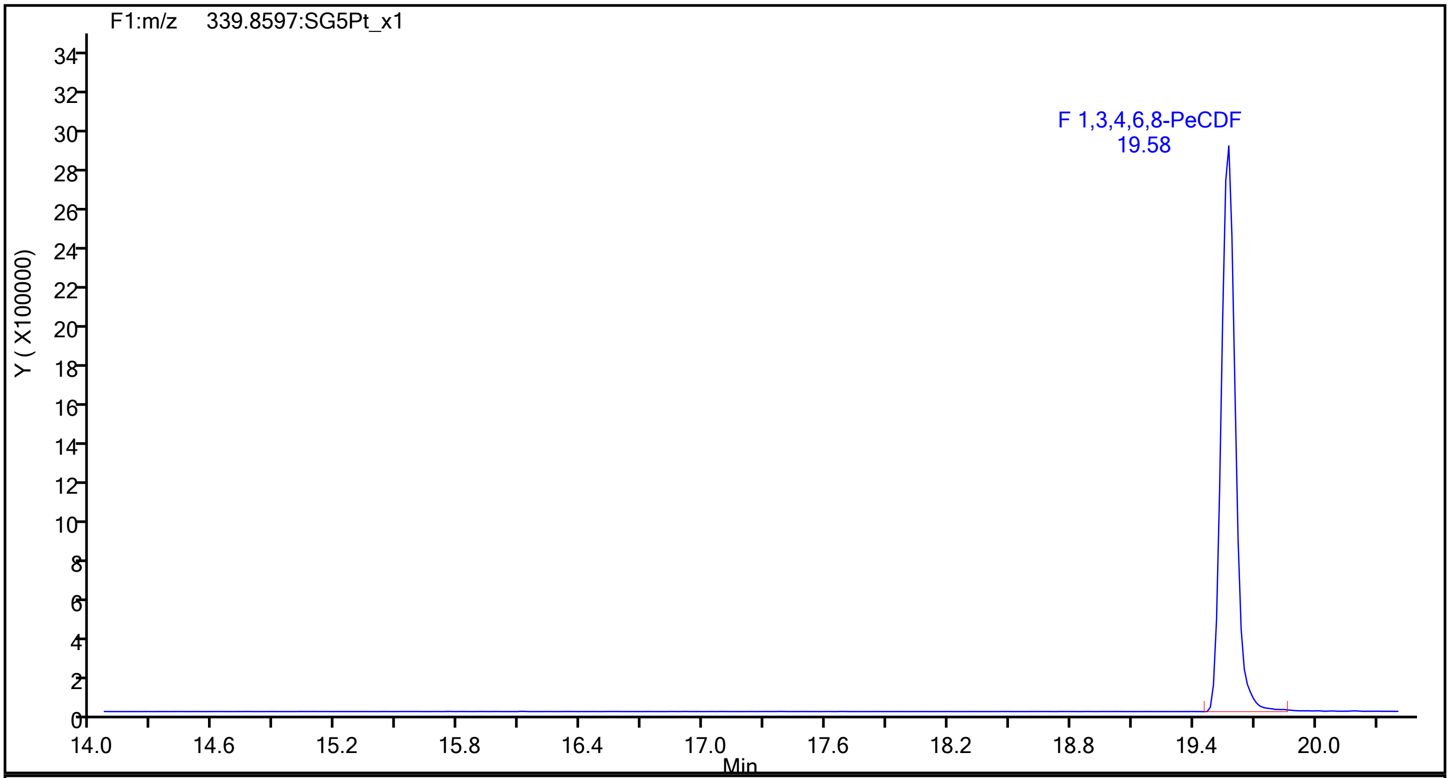

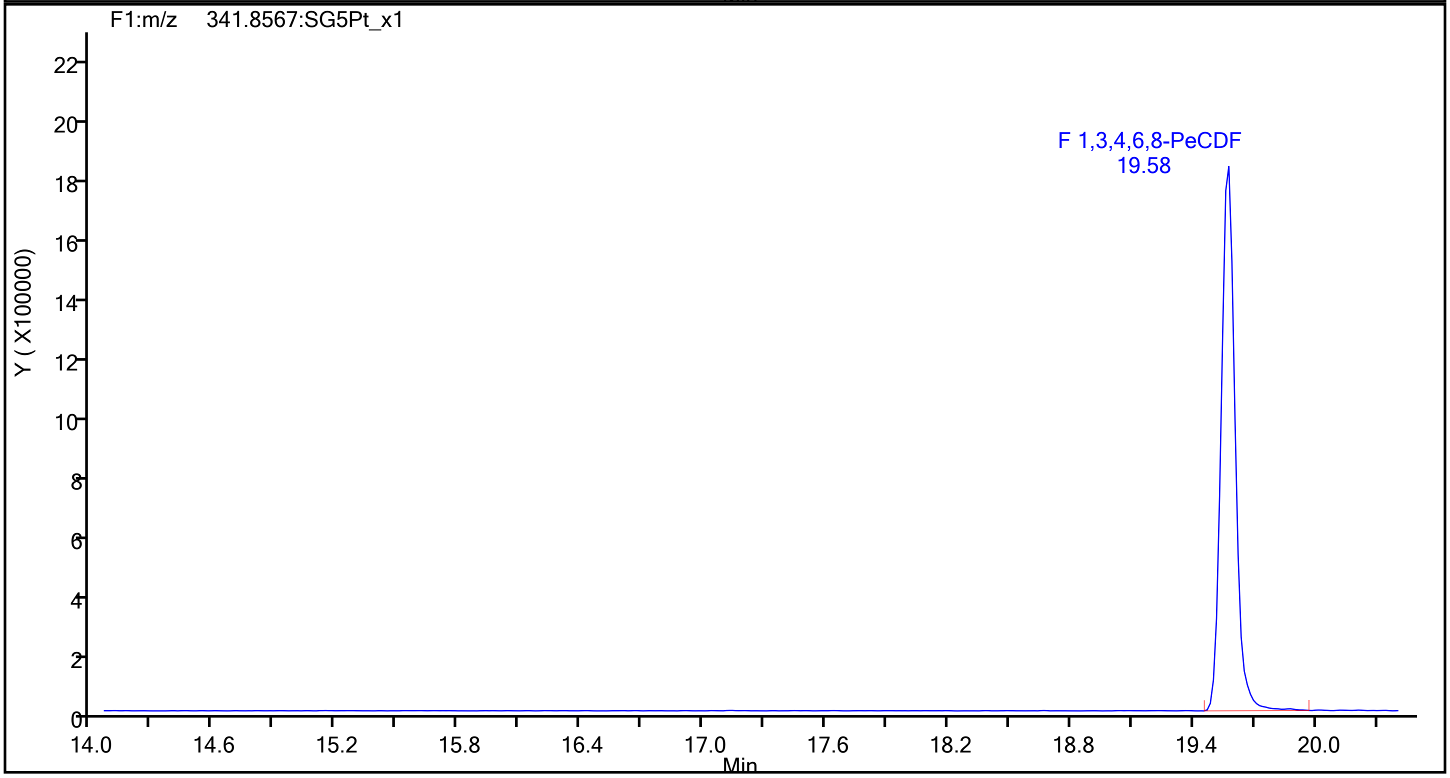

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Injection Date: 27-Jan-2021 14:47:04 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

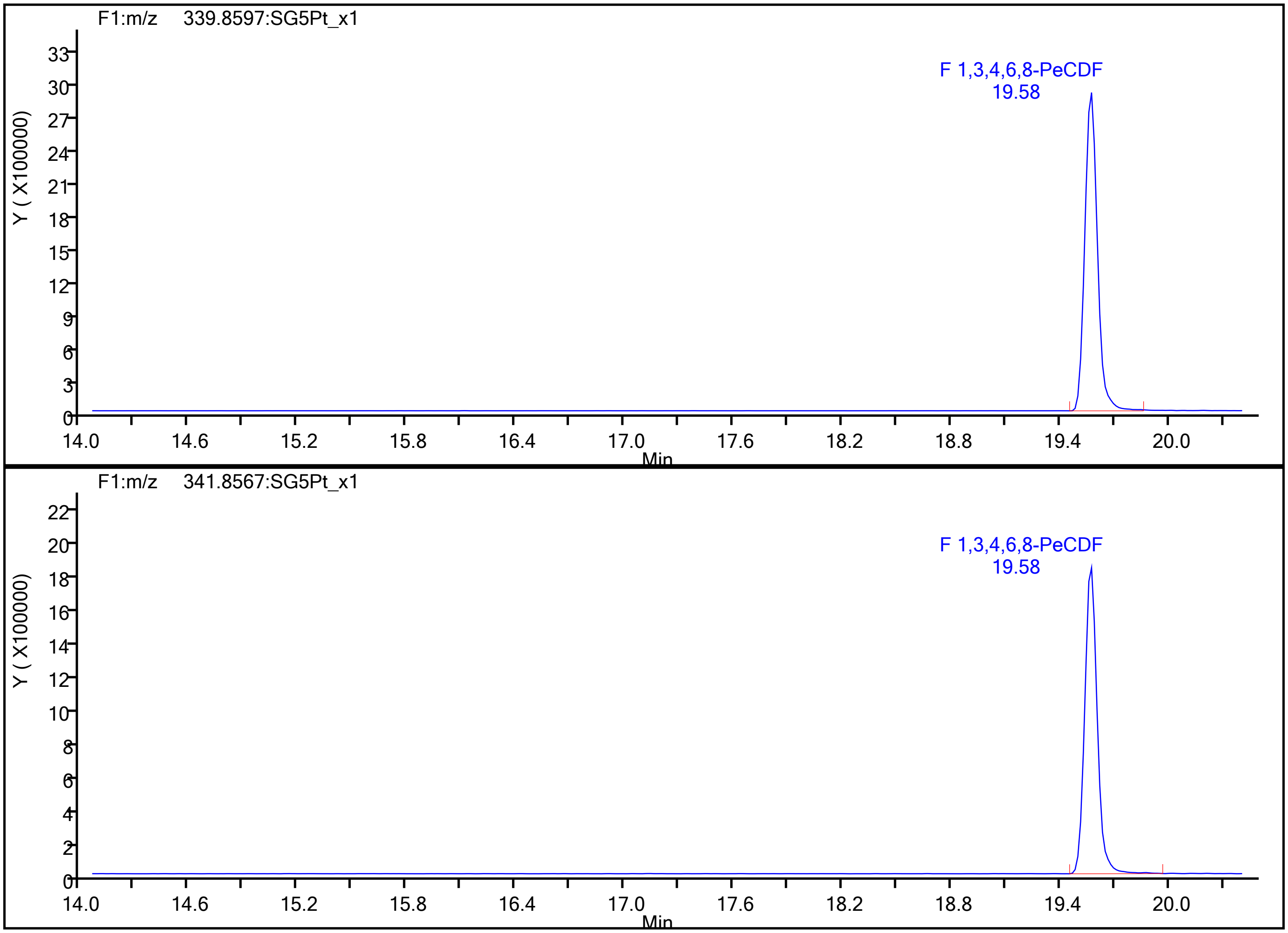

F1 PeCDFs Interference Mass

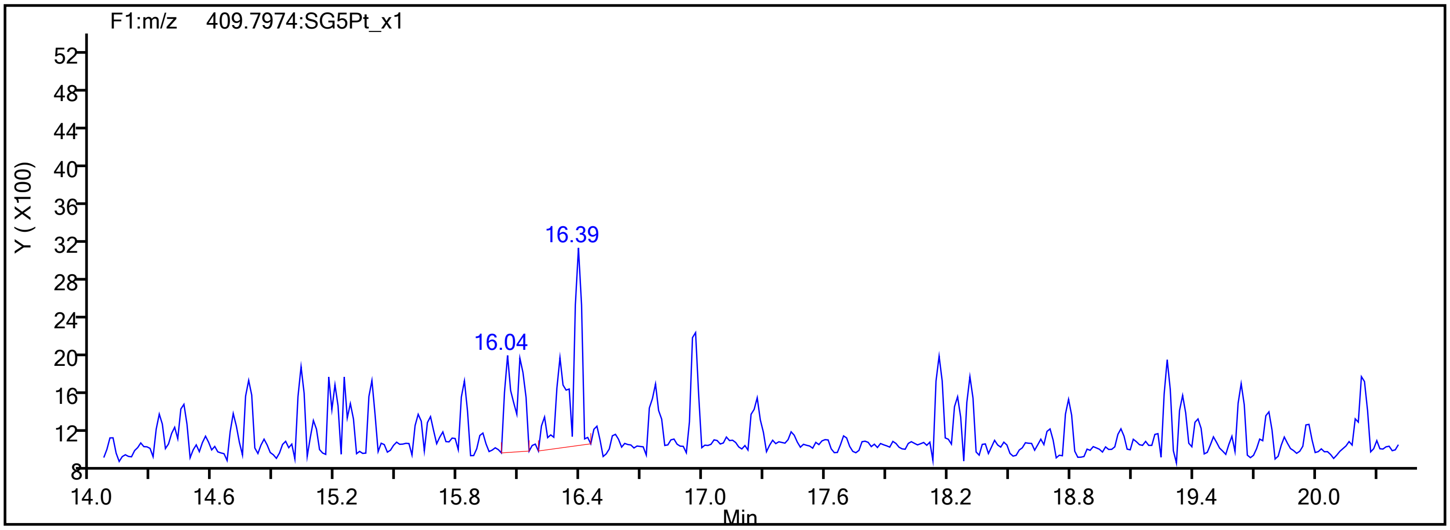

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d		
Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

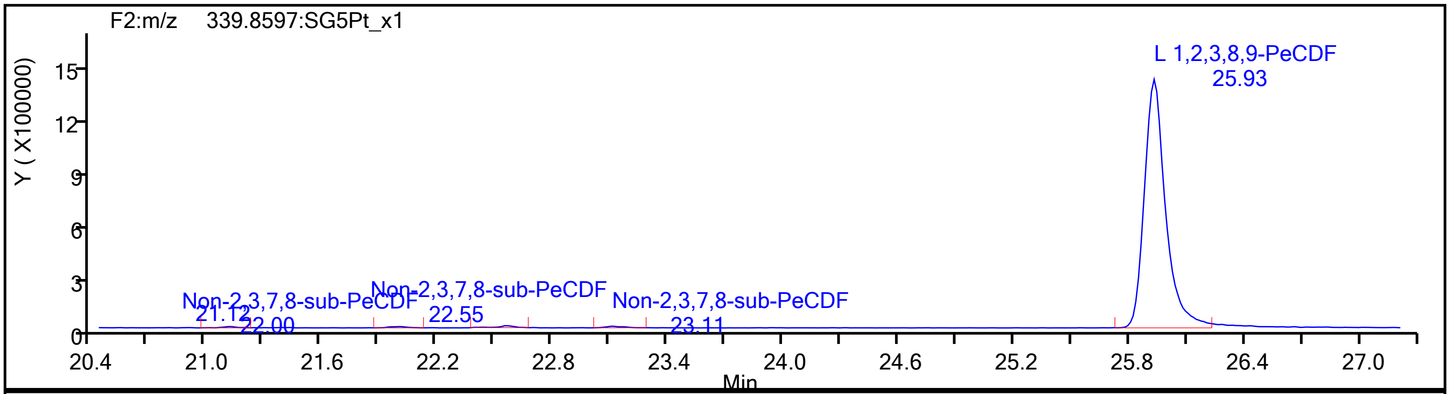

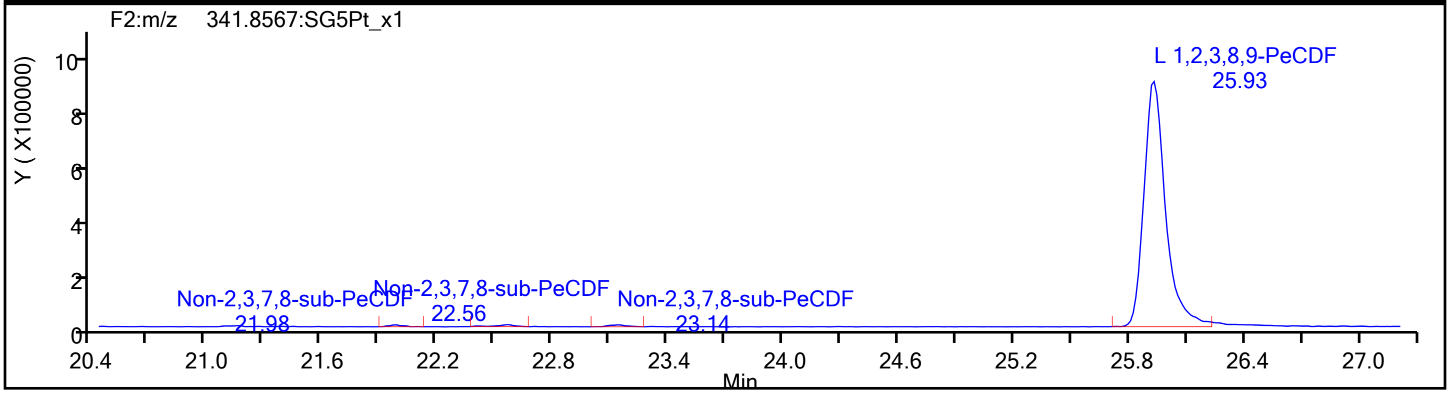

PeCDF Standards

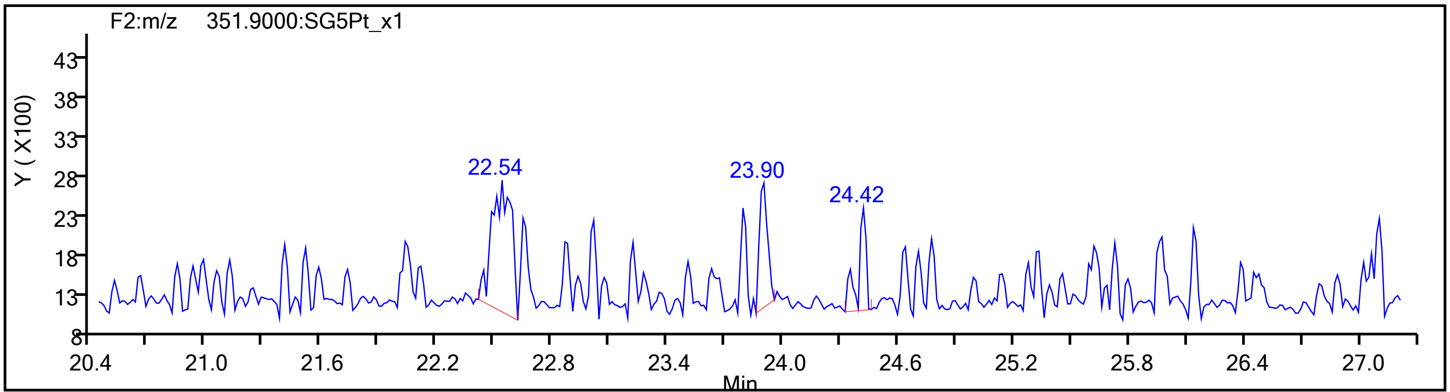

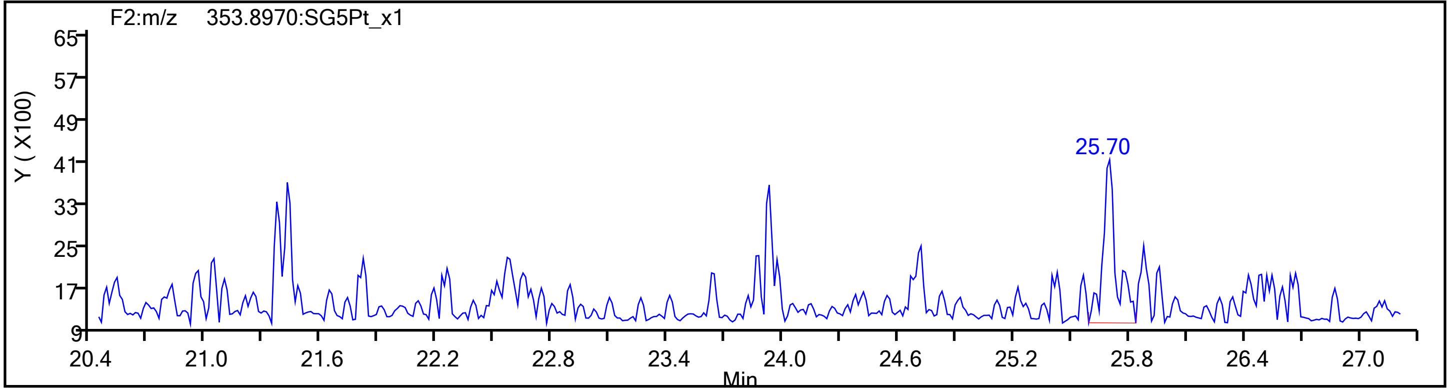

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Injection Date: 27-Jan-2021 14:47:04 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: SMA
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

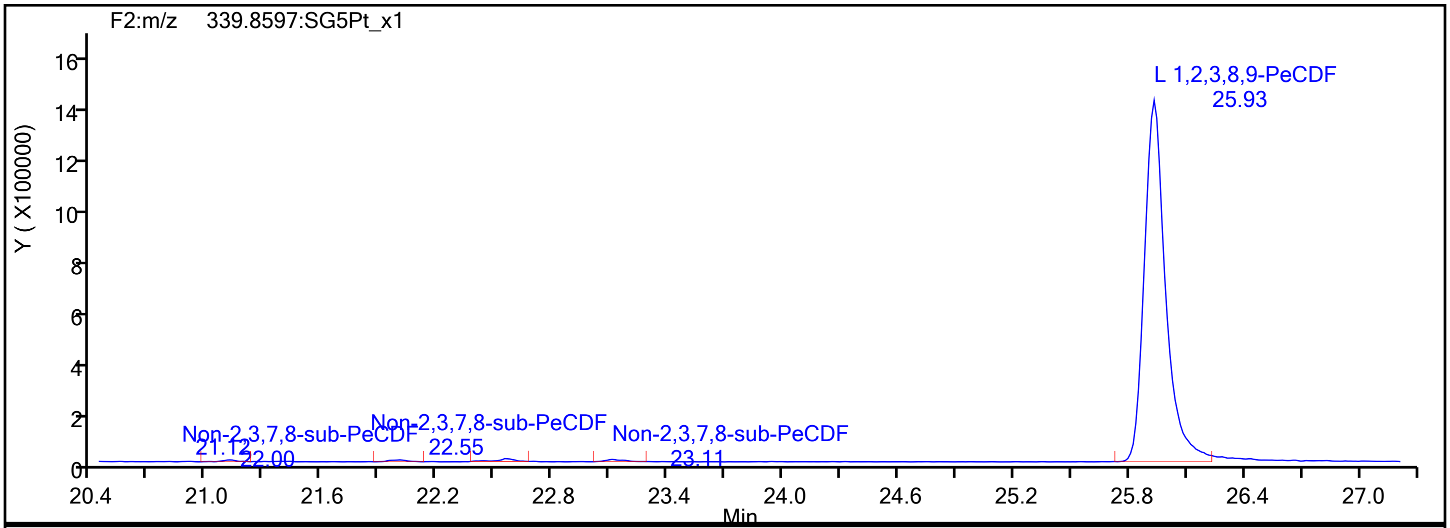

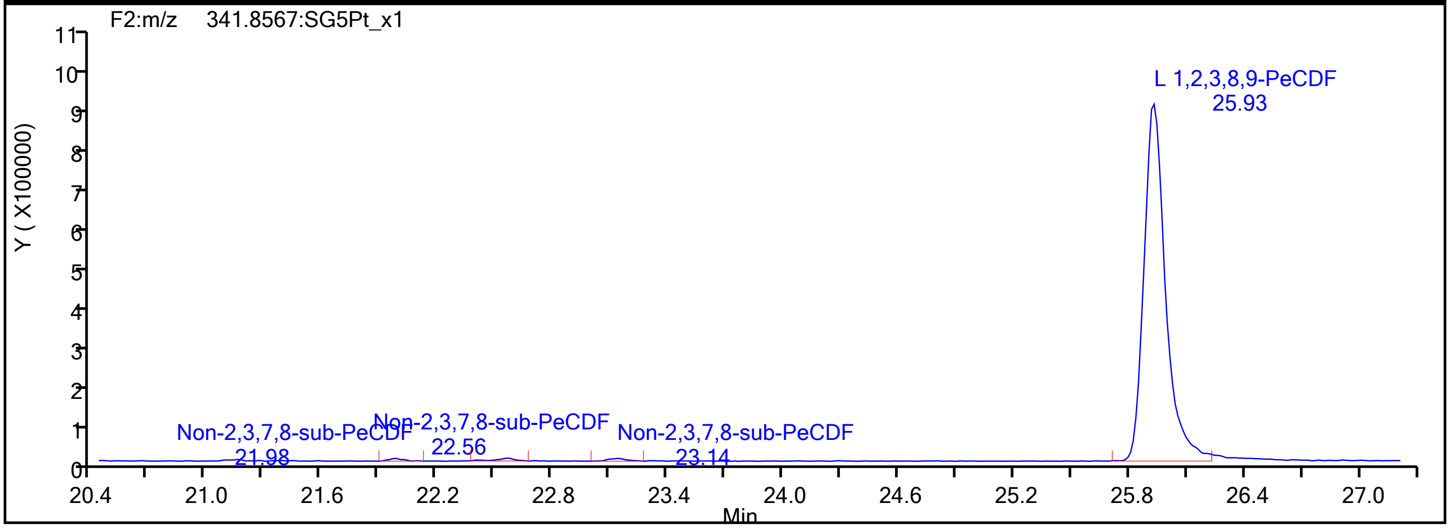

PeCDF Interference Mass

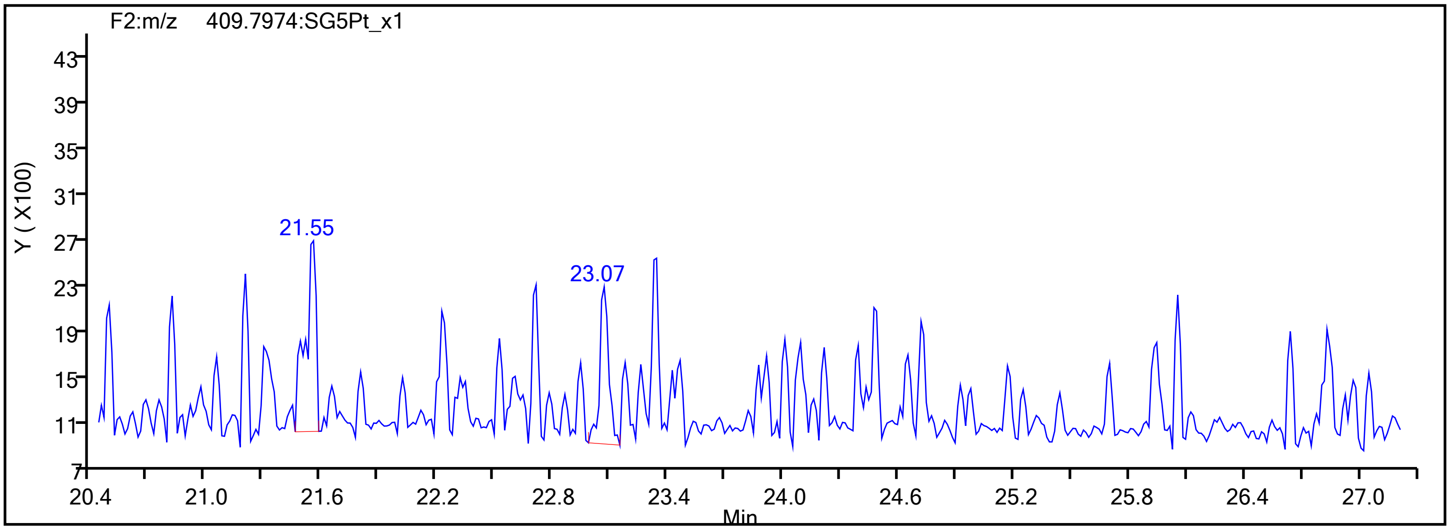

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d		
Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

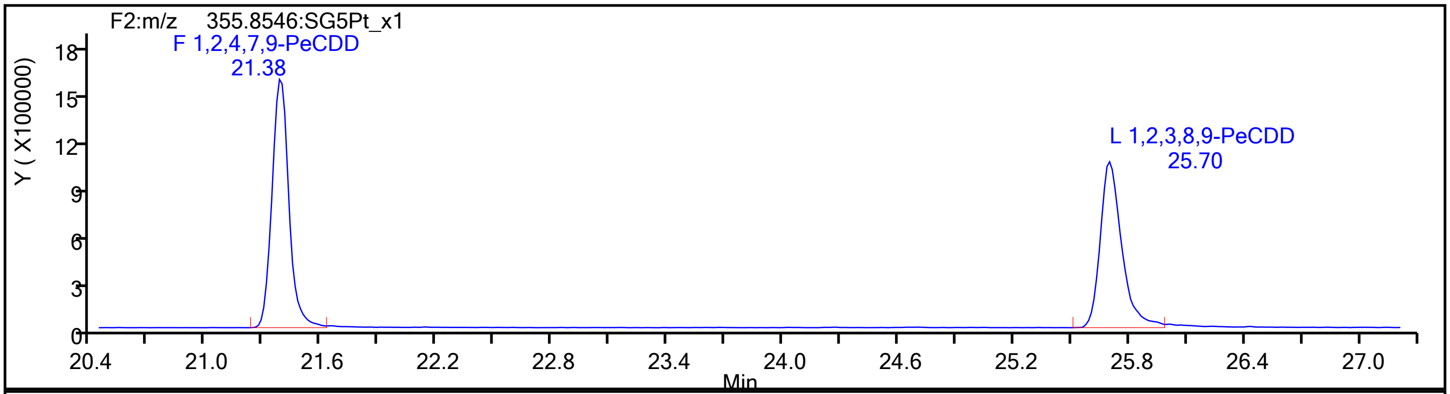

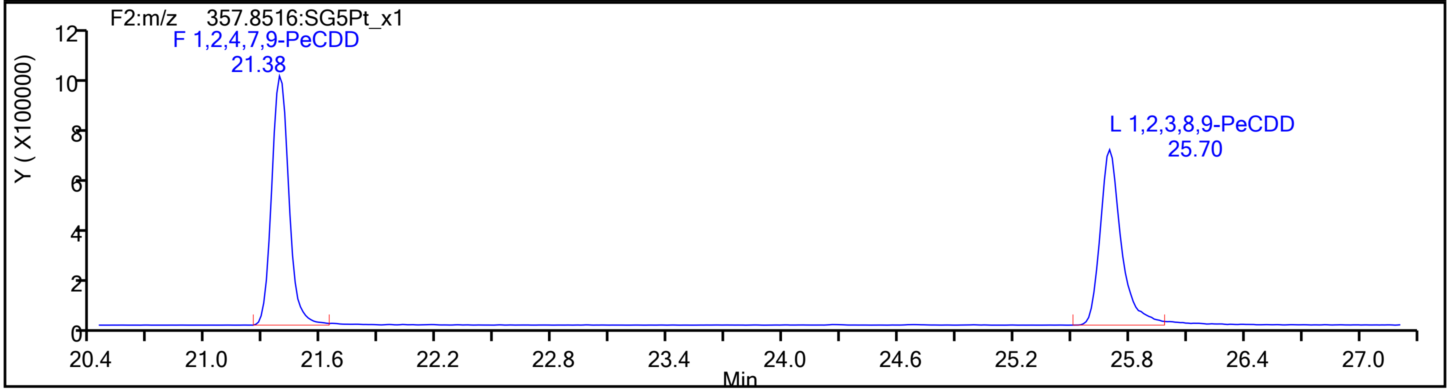

PeCDD Standards

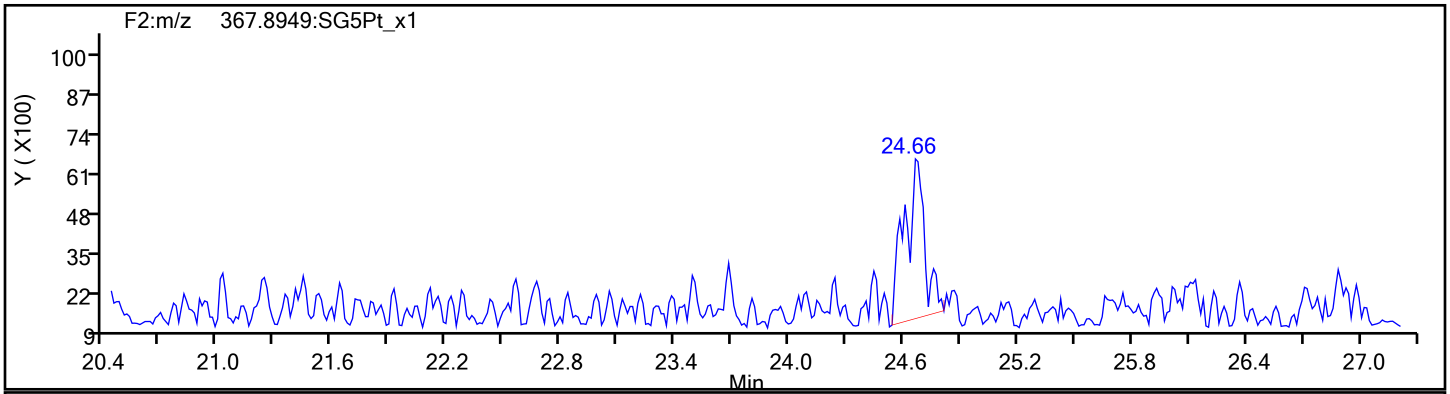

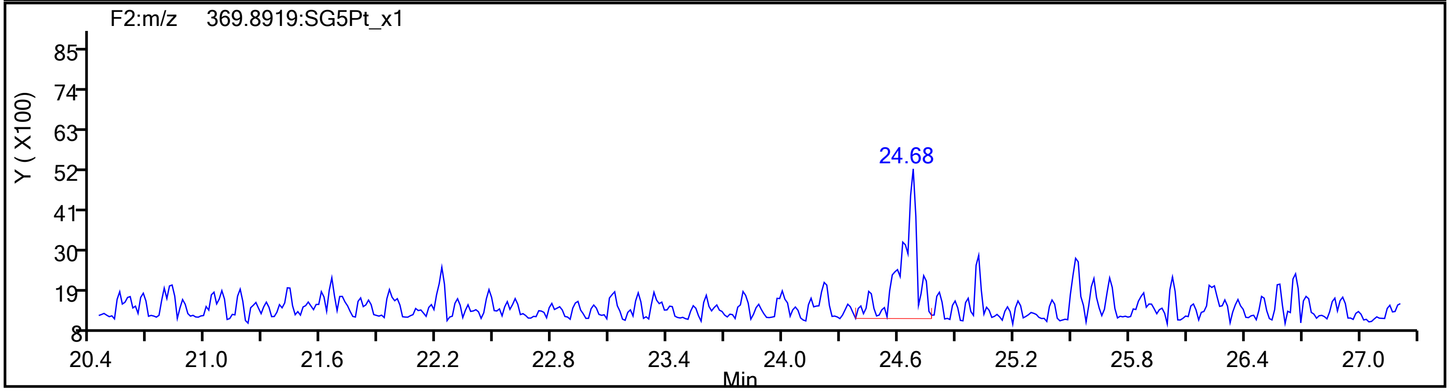

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Injection Date: 27-Jan-2021 14:47:04 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

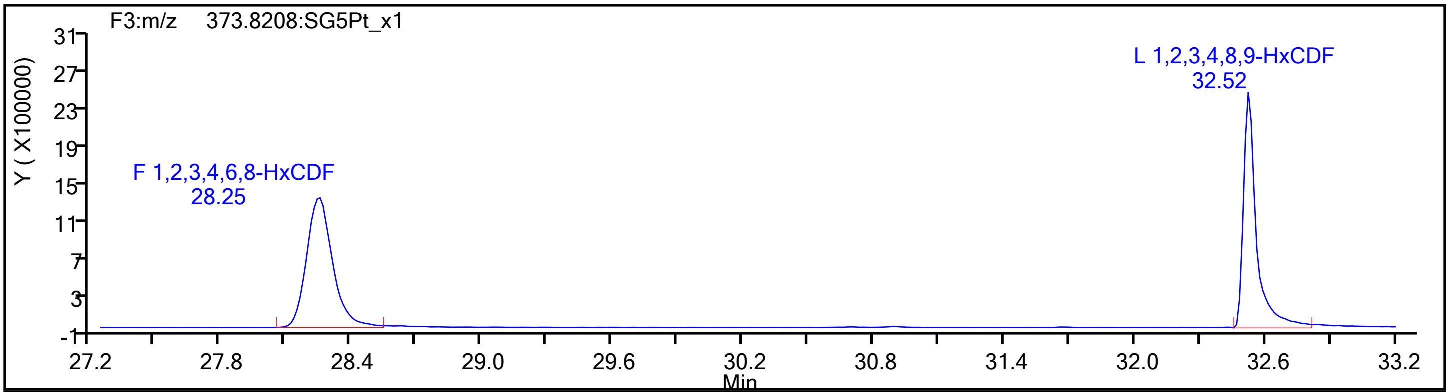

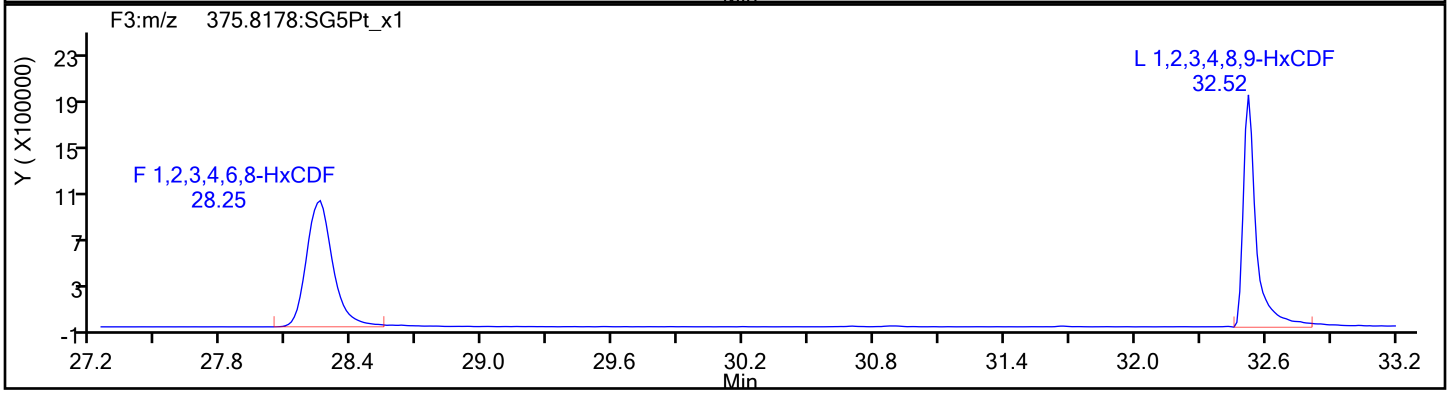

HxCDF Standards

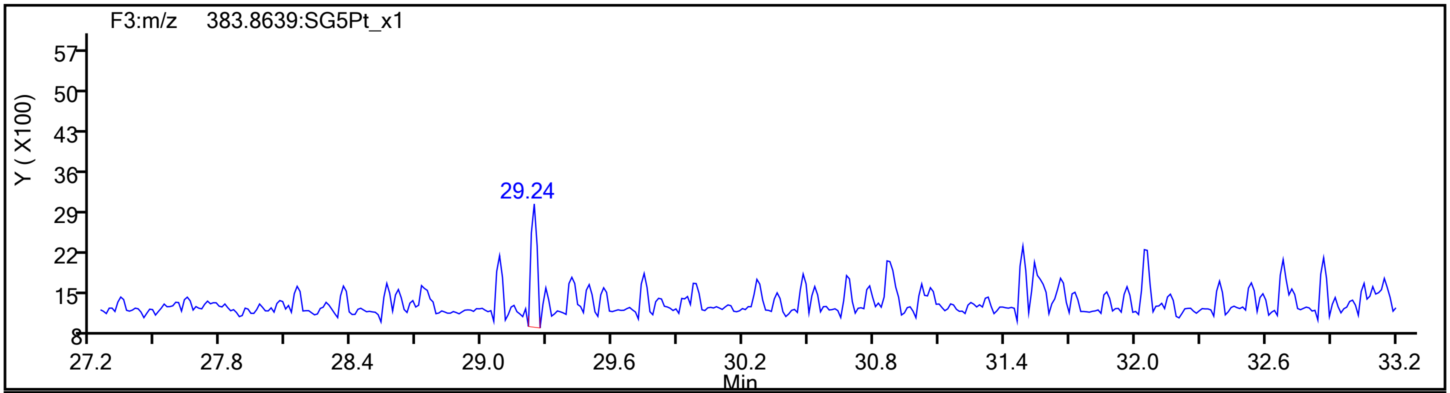

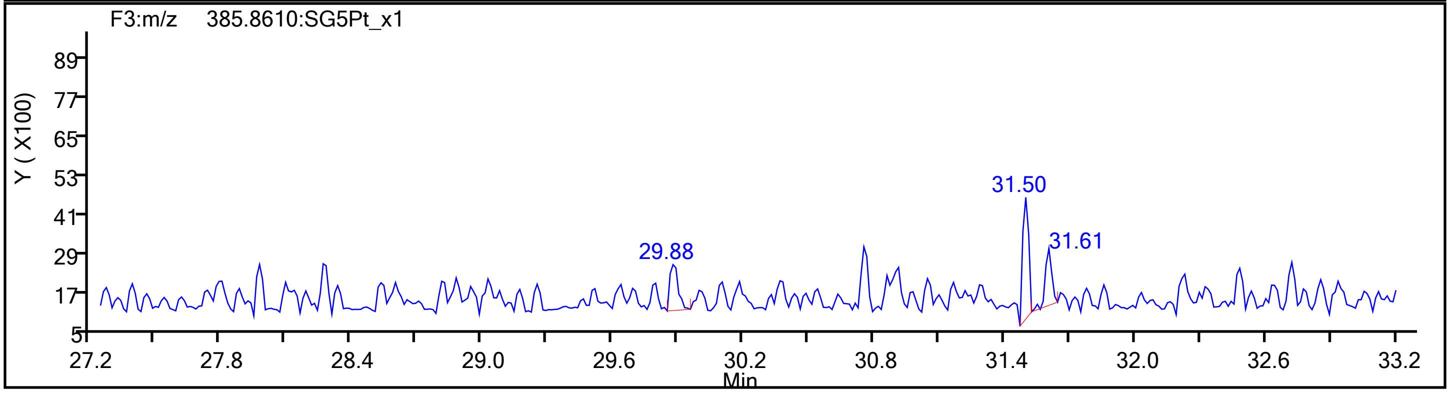

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d
Injection Date: 27-Jan-2021 14:47:04
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: SMA
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456215
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

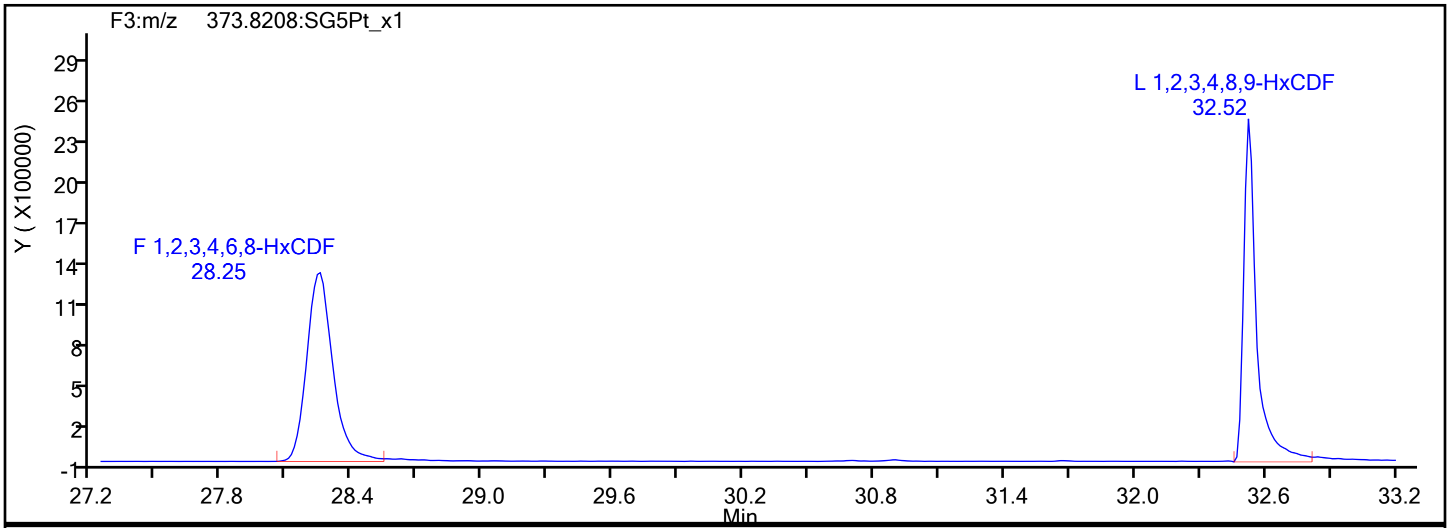

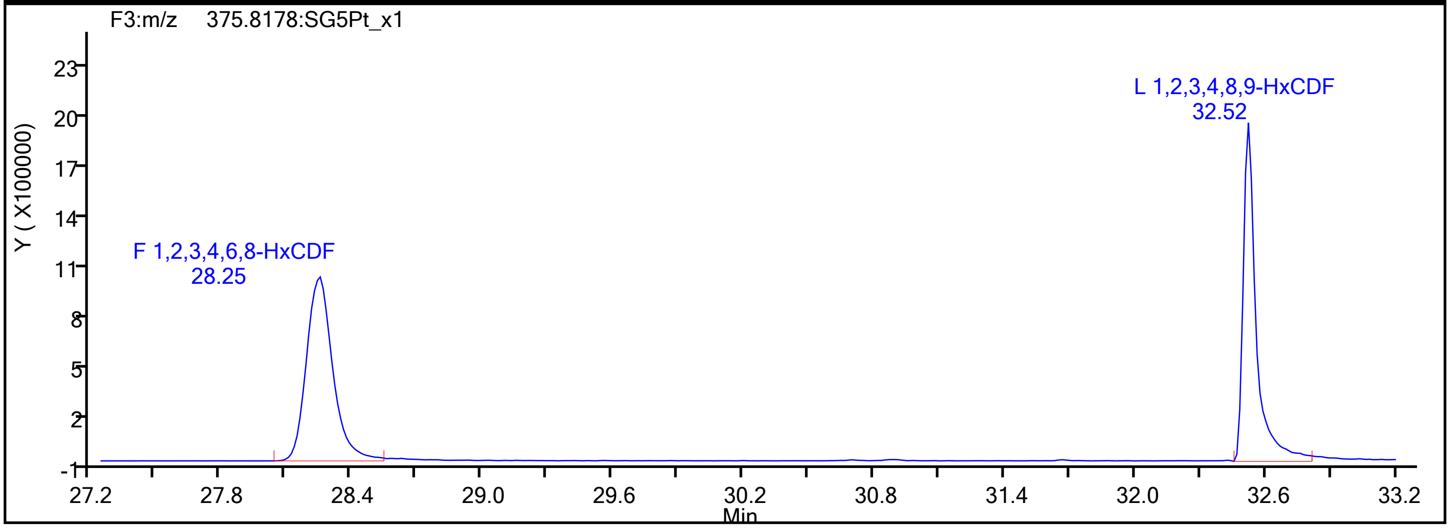

HxCDF Interference Mass

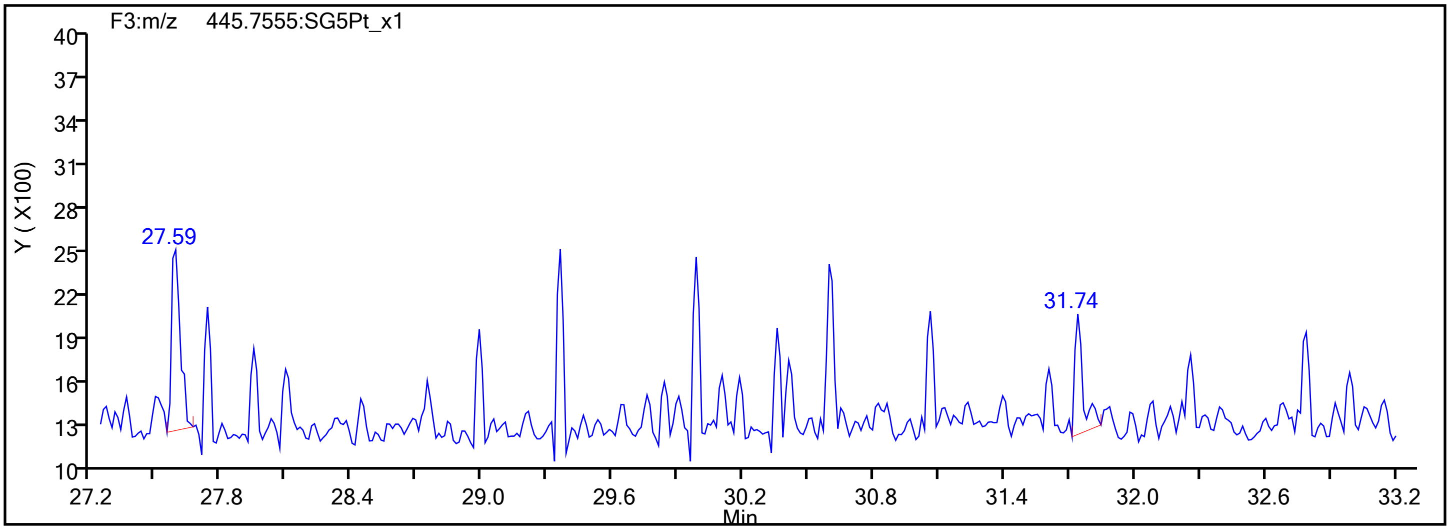

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d		
Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

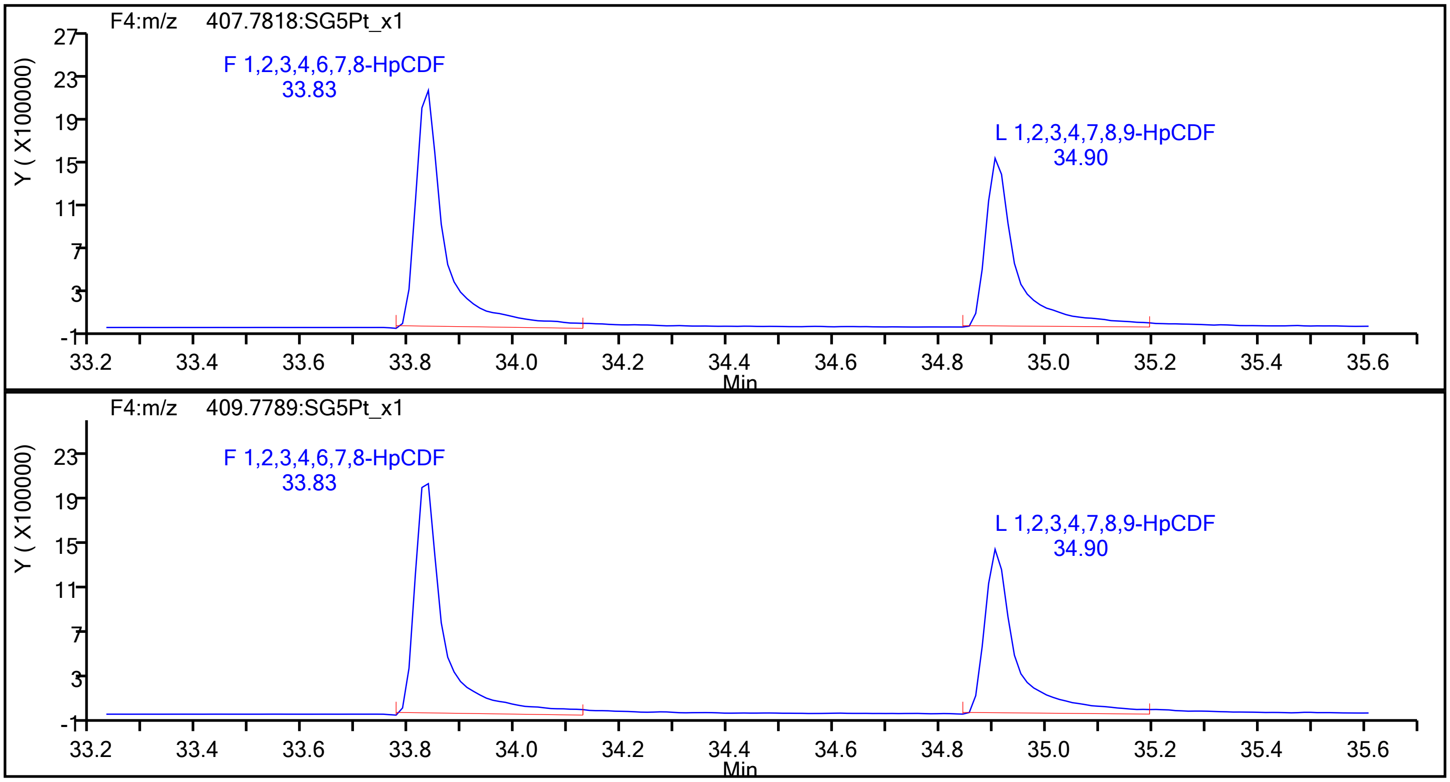

HpCDF Standards

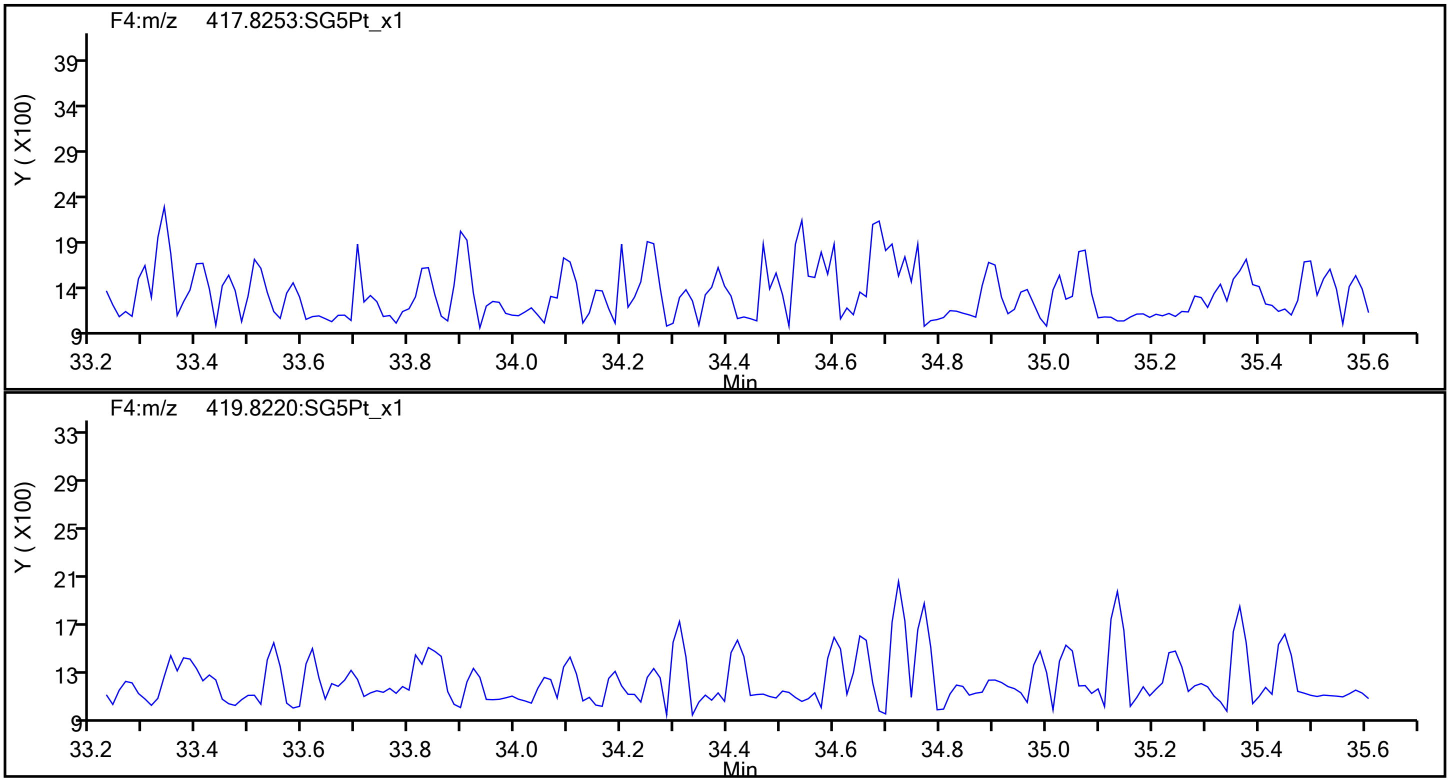

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d		
Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

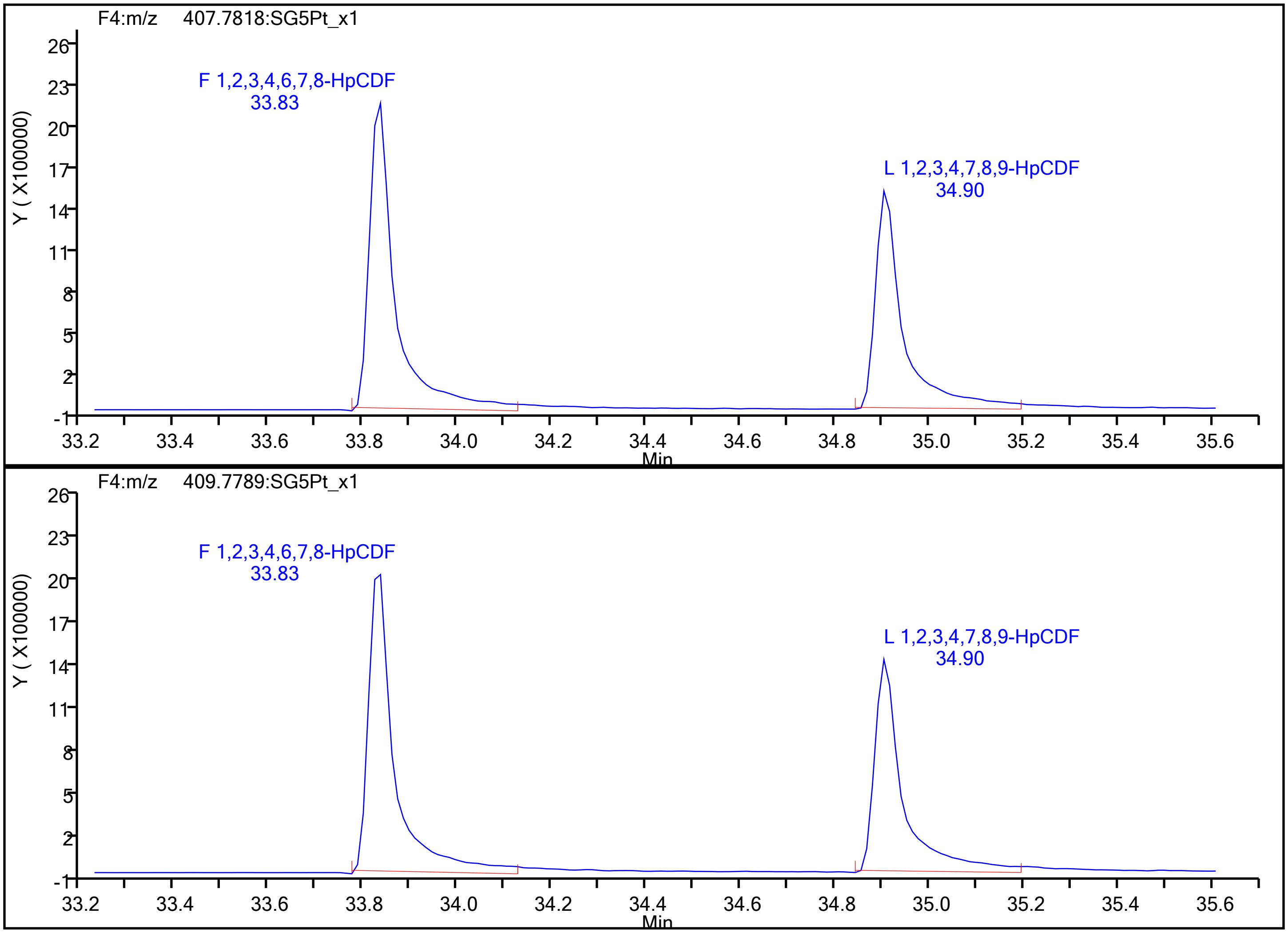

HpCDF Interference Mass

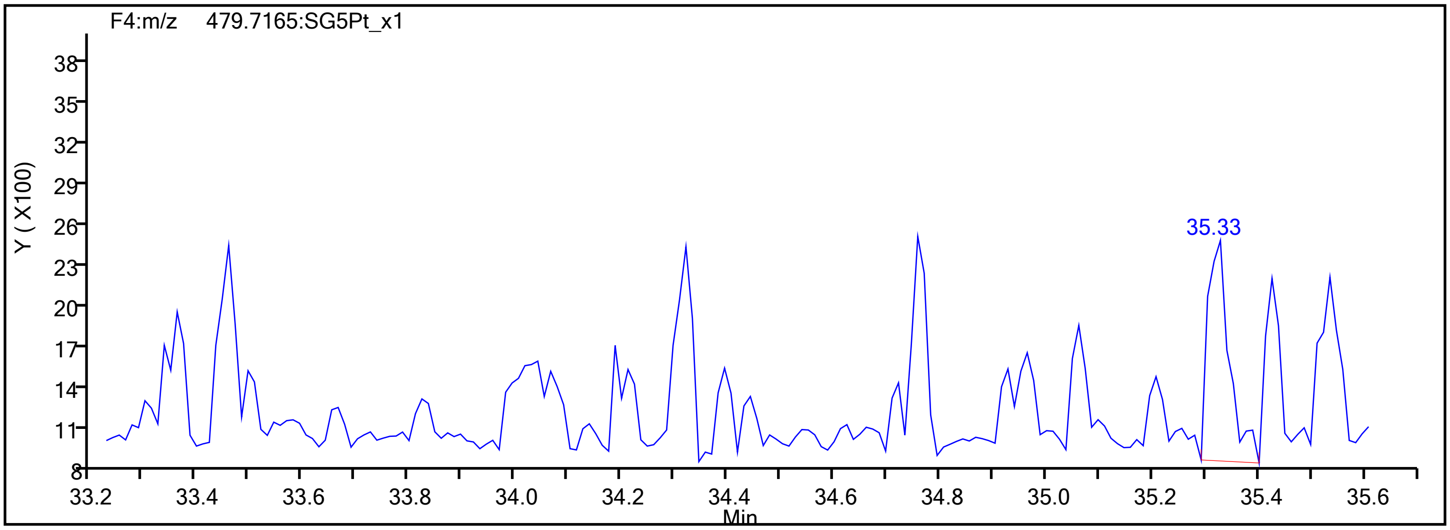

Report Date: 28-Jan-2021 02:01:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Injection Date: 27-Jan-2021 14:47:04 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: SMA

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456215 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

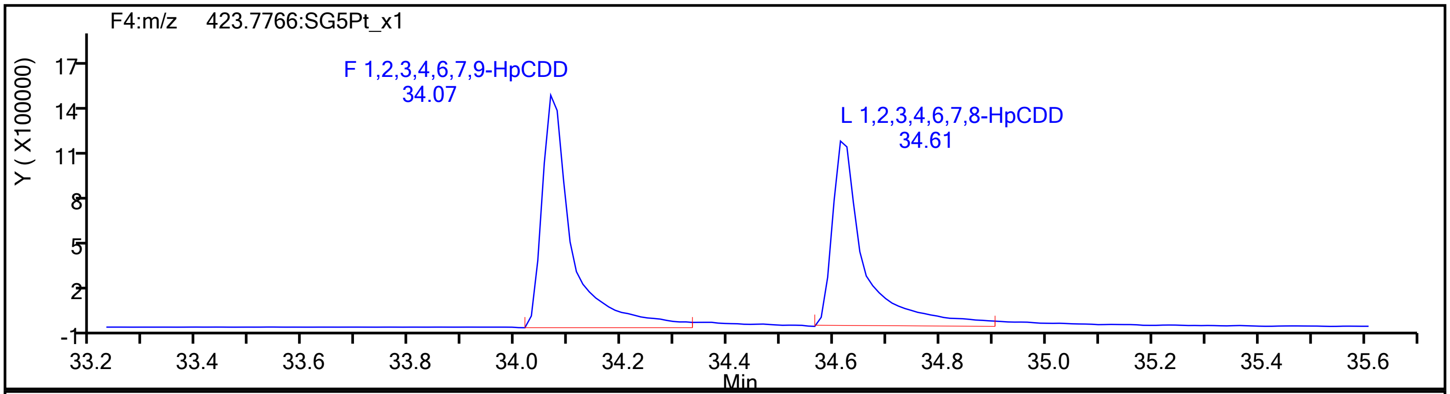

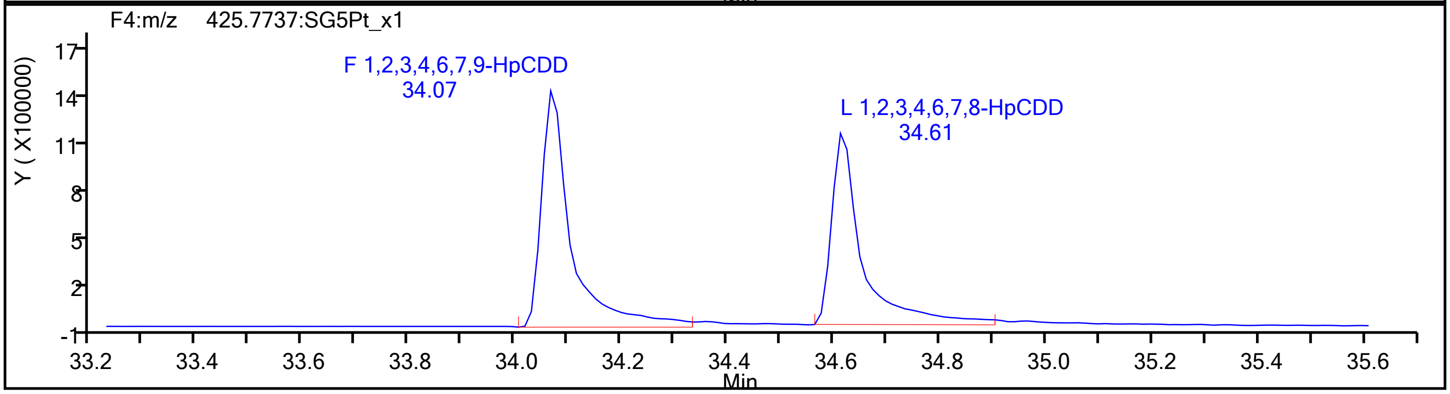

HpCDD Standards

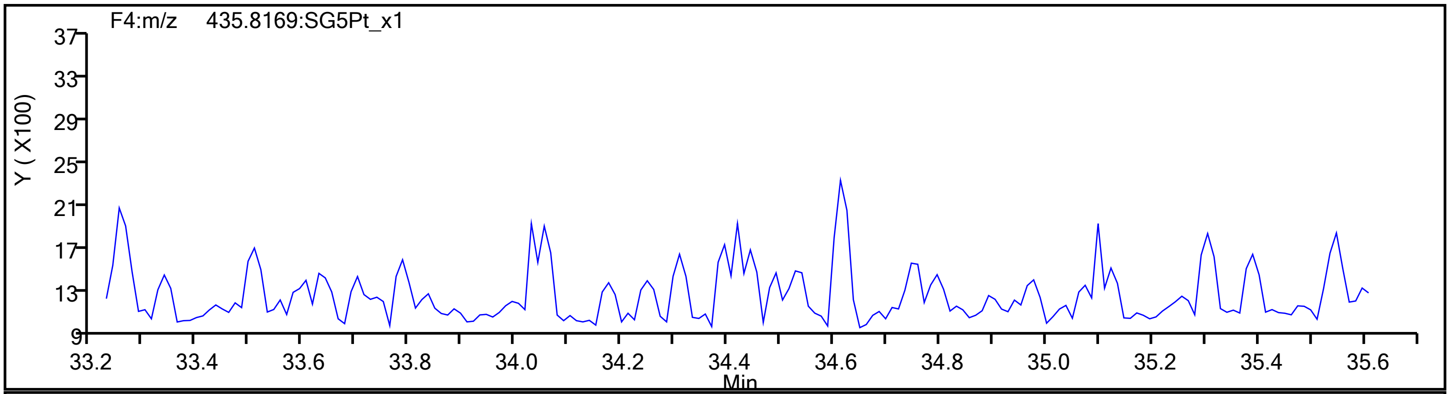

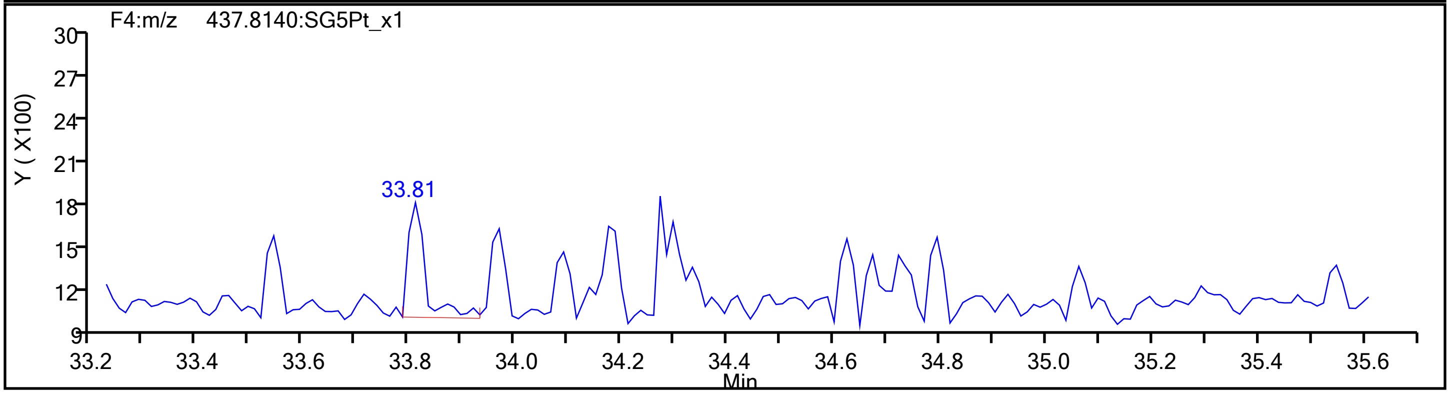

Report Date: 28-Jan-2021 02:01:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d		
Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

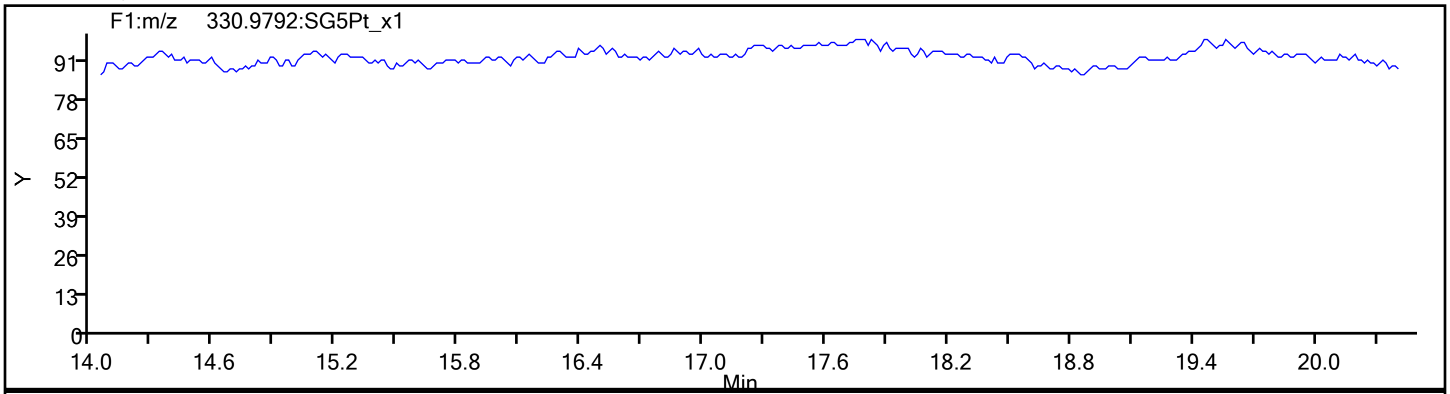

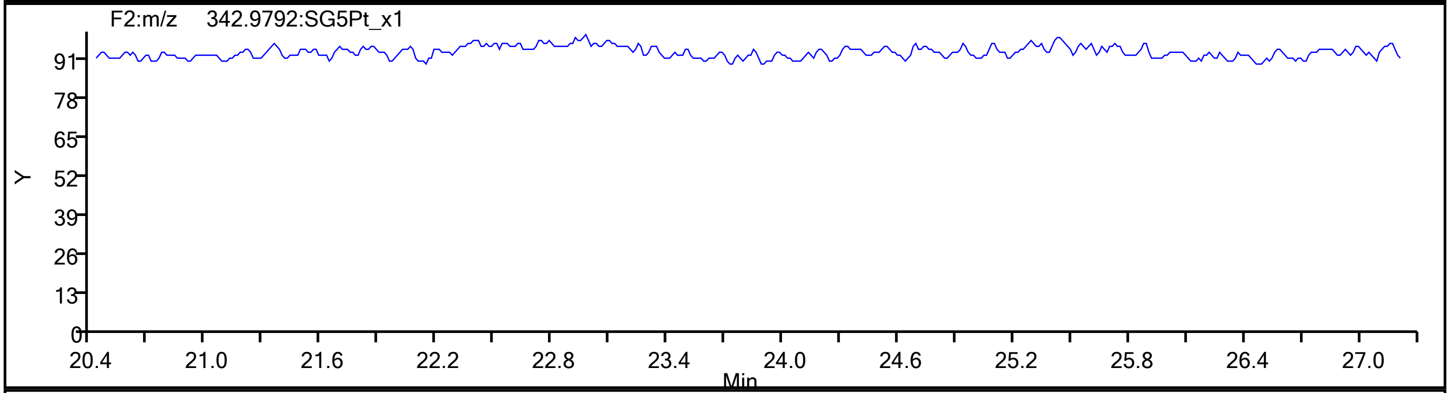

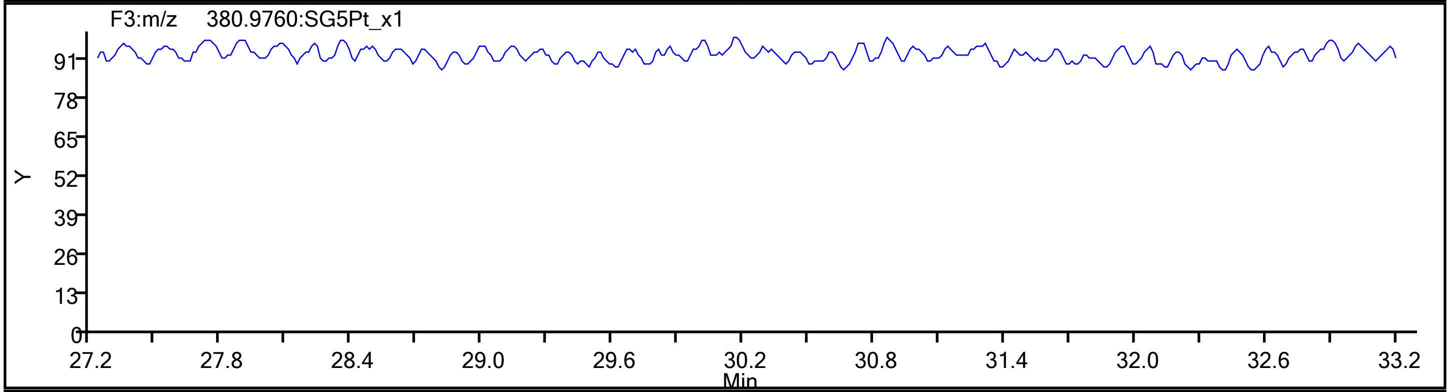

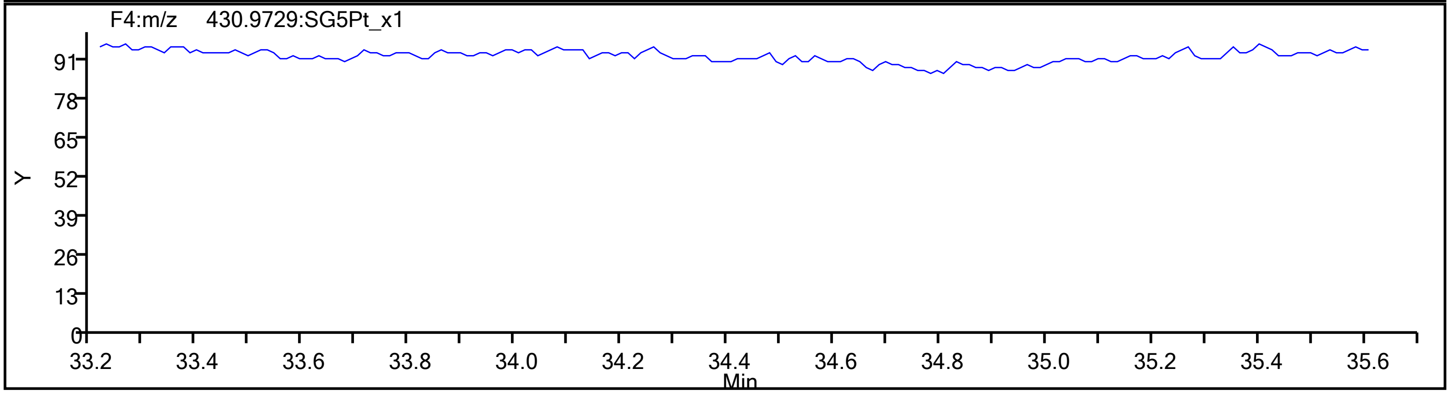

Report Date: 28-Jan-2021 02:01:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210128-112179.b\27JA2110D5_1.d

Injection Date:	27-Jan-2021 14:47:04	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	SMA
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456215	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

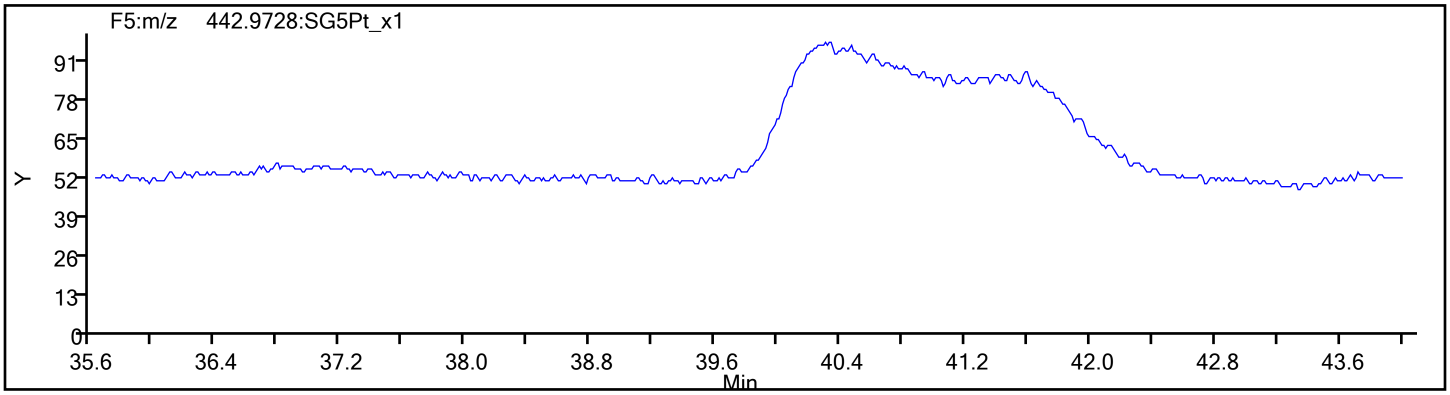

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	24-Jul-2020 22:33:34	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	27-Jul-2020 12:42:31	Calib Date:	25-Jul-2020 02:23:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1056				
First Level Reviewer: shardaa		Date:	27-Jul-2020 12:33:20		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.971	95495205	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.998	97758417	0.78	0.9943	41.2	41.2	0.0927	0.0927		
D 13C-2,3,7,8-TCDD	15.517	59354450	0.80	0.9834					0.00	
2,3,7,8-TCDD	15.544	69003653	0.80	1.2822	36.3	36.3	0.0841	0.0841		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 24-Jul-2020 22:33:34 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jul-2020 12:42:31 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1056

First Level Reviewer: shardaa Date: 27-Jul-2020 12:33:20

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.971	16.971	0	1.000	42086546	8091171	19095	47737	424		
317.9389	16.971	16.971	0	1.000	53408659	9677610	9741	24352	993	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.998	17.001	0	1.002	42902344	8113773	7270	18175	1116		
305.8987	16.998	17.001	0	1.002	54856073	10491273	9112	22780	1151	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.517	15.517	0	1.000	26449400	5645353	9667	24167	584		
333.9339	15.517	15.517	0	1.000	32905050	7225198	3556	8890	2032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.555	-1	1.002	30605752	6667919	7045	17612	946		
321.8936	15.544	15.555	-1	1.002	38397901	8330745	6841	17102	1218	0.80(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

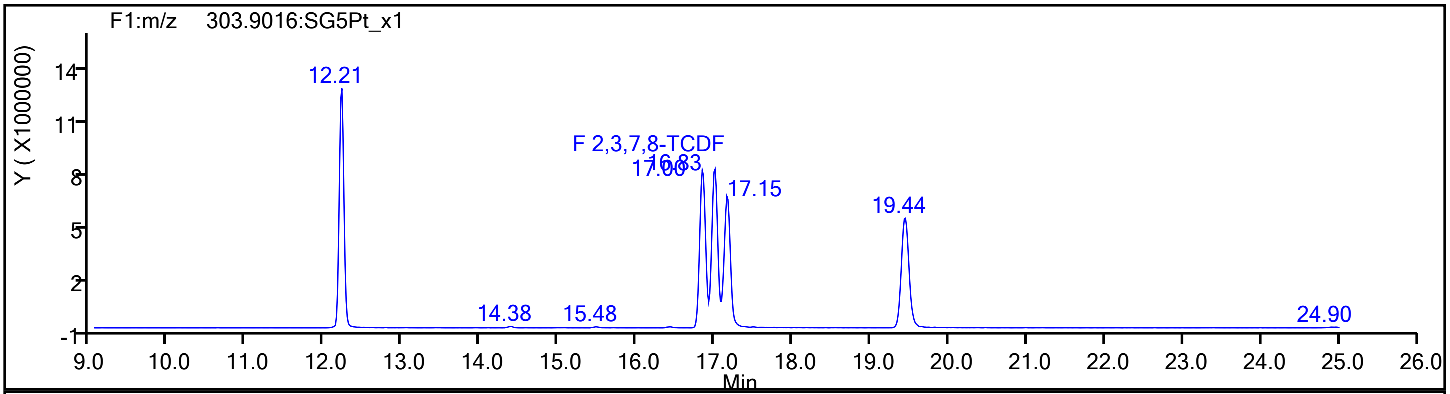

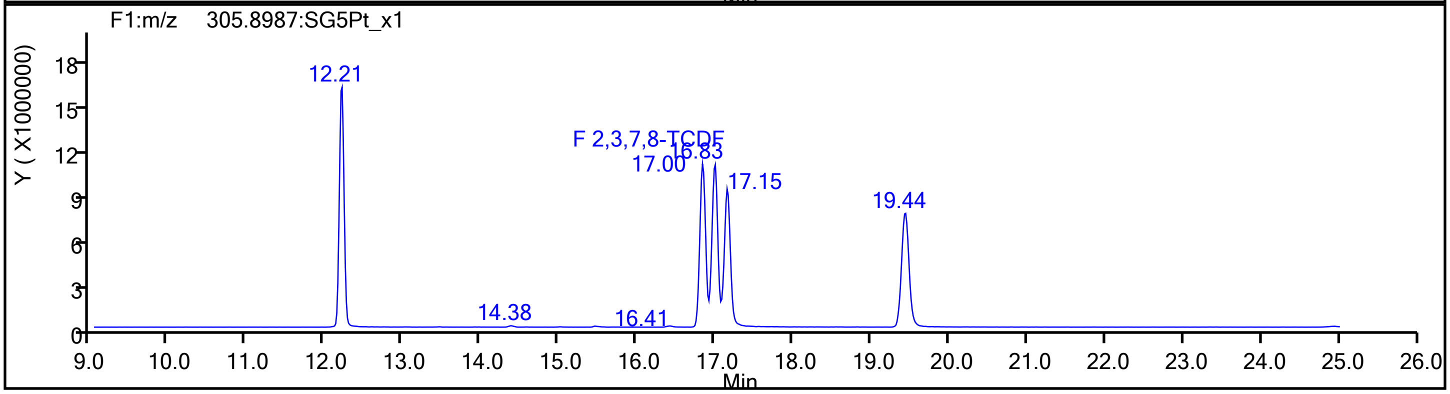

TCDF Standards

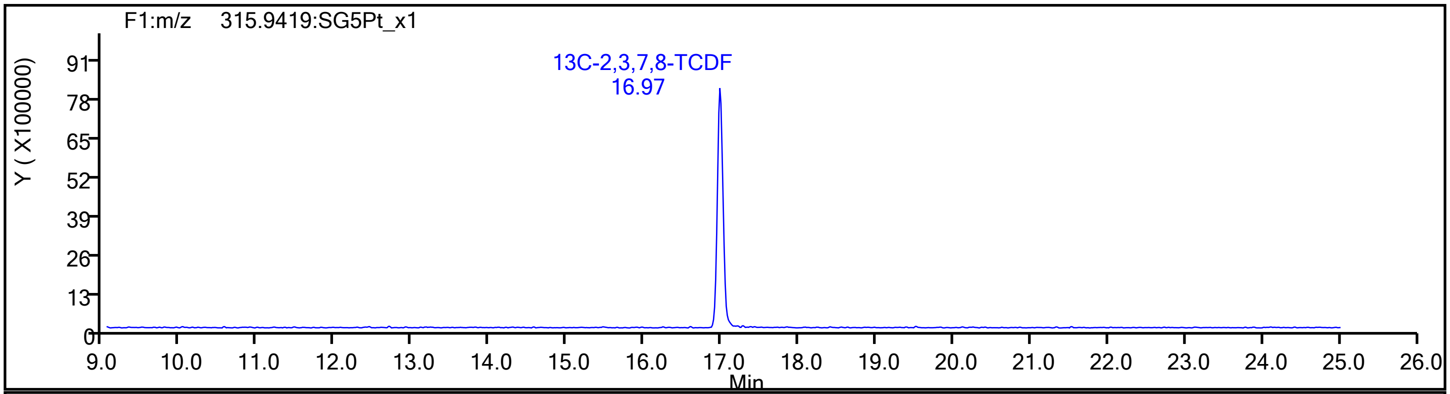

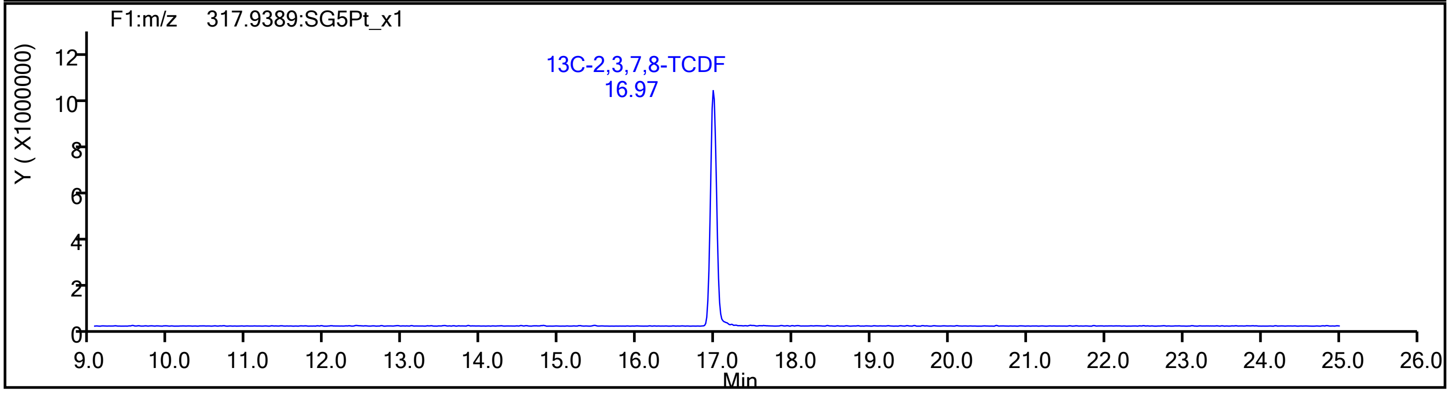

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

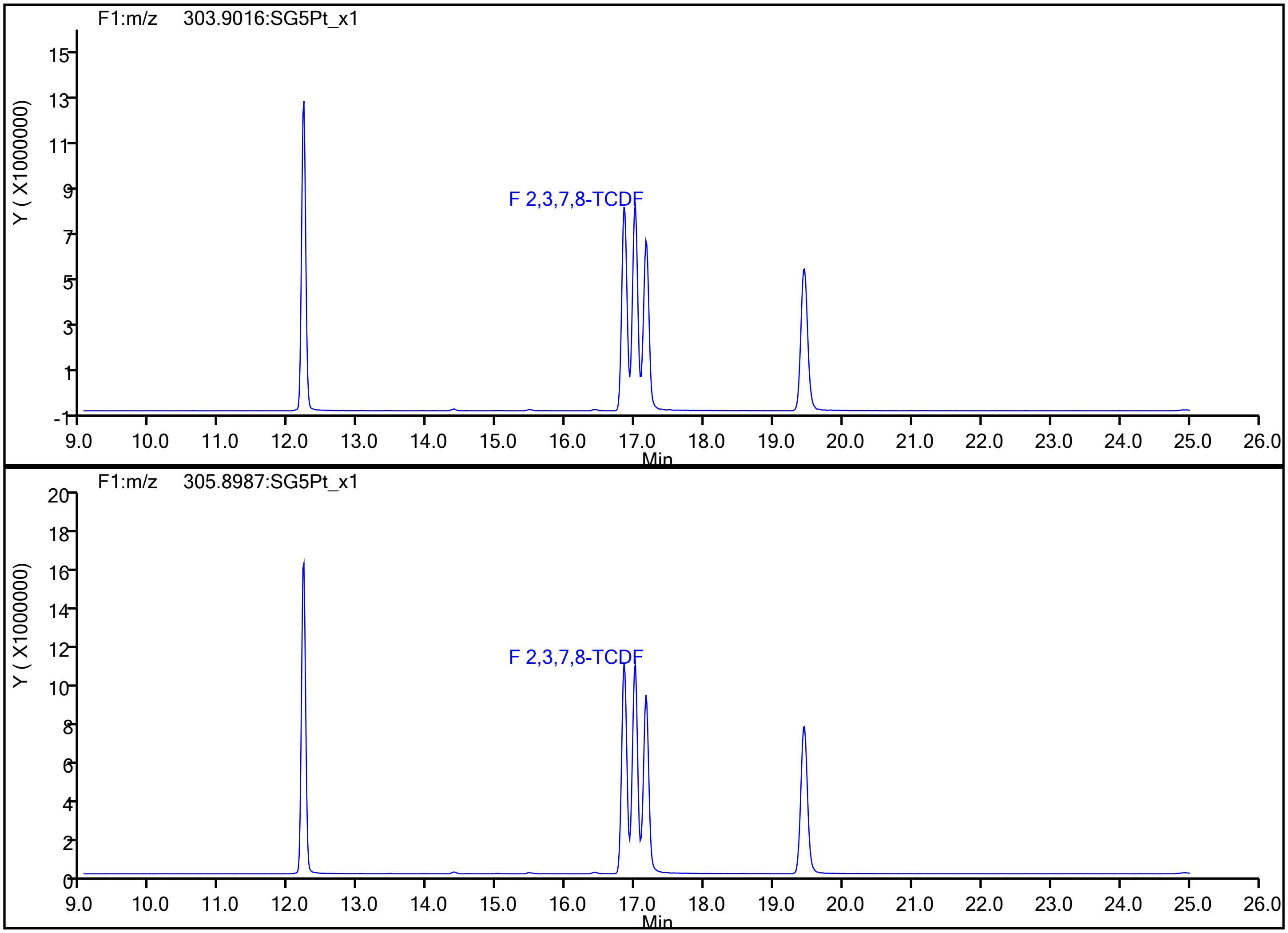

TCDF Interference Mass

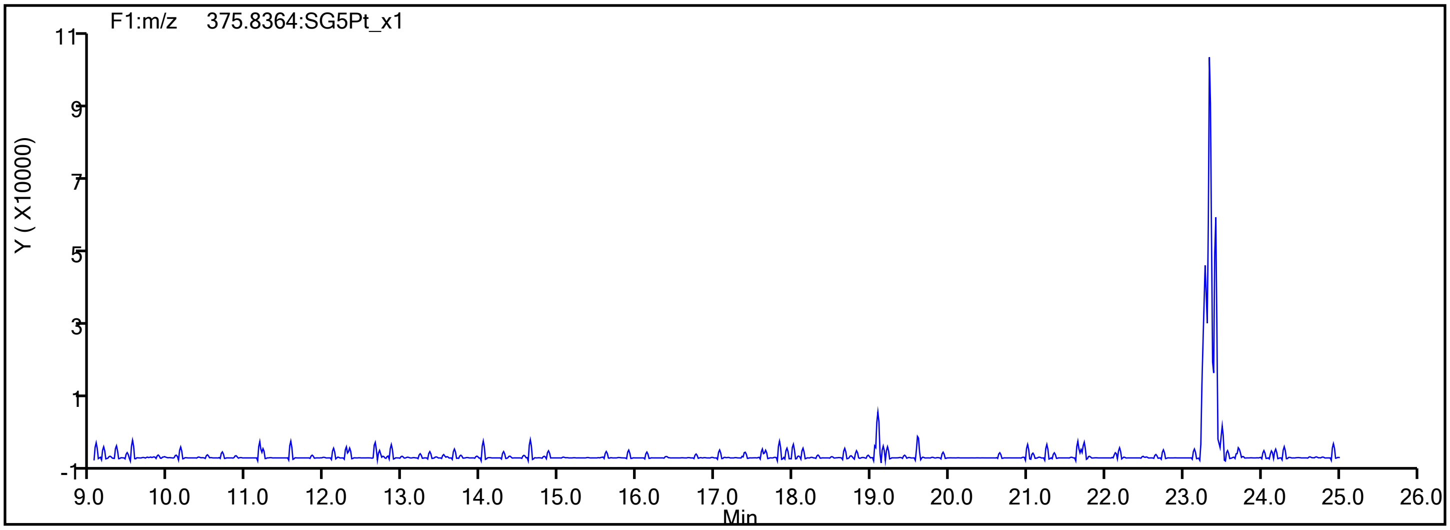

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d
Injection Date: 24-Jul-2020 22:33:34 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 398641 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

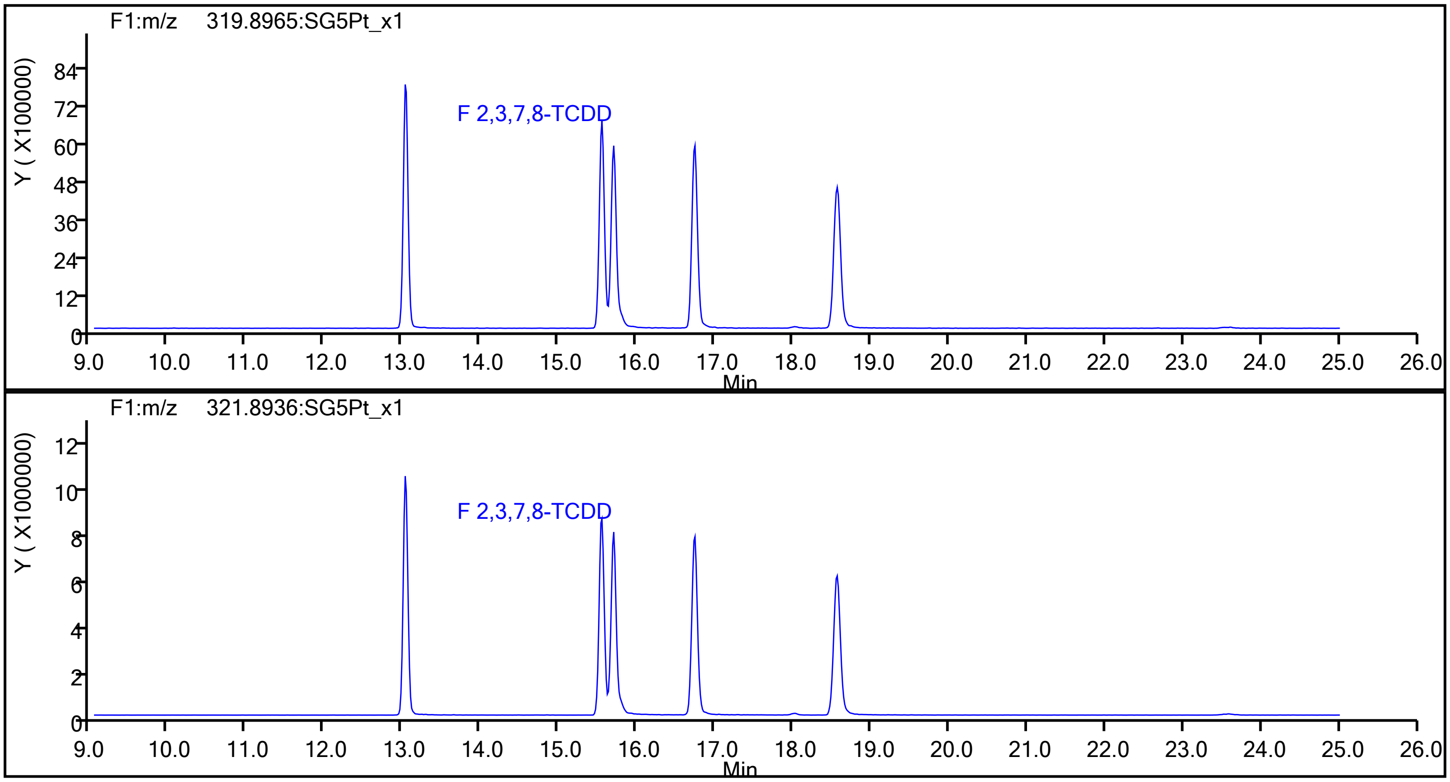

TCDD Standards

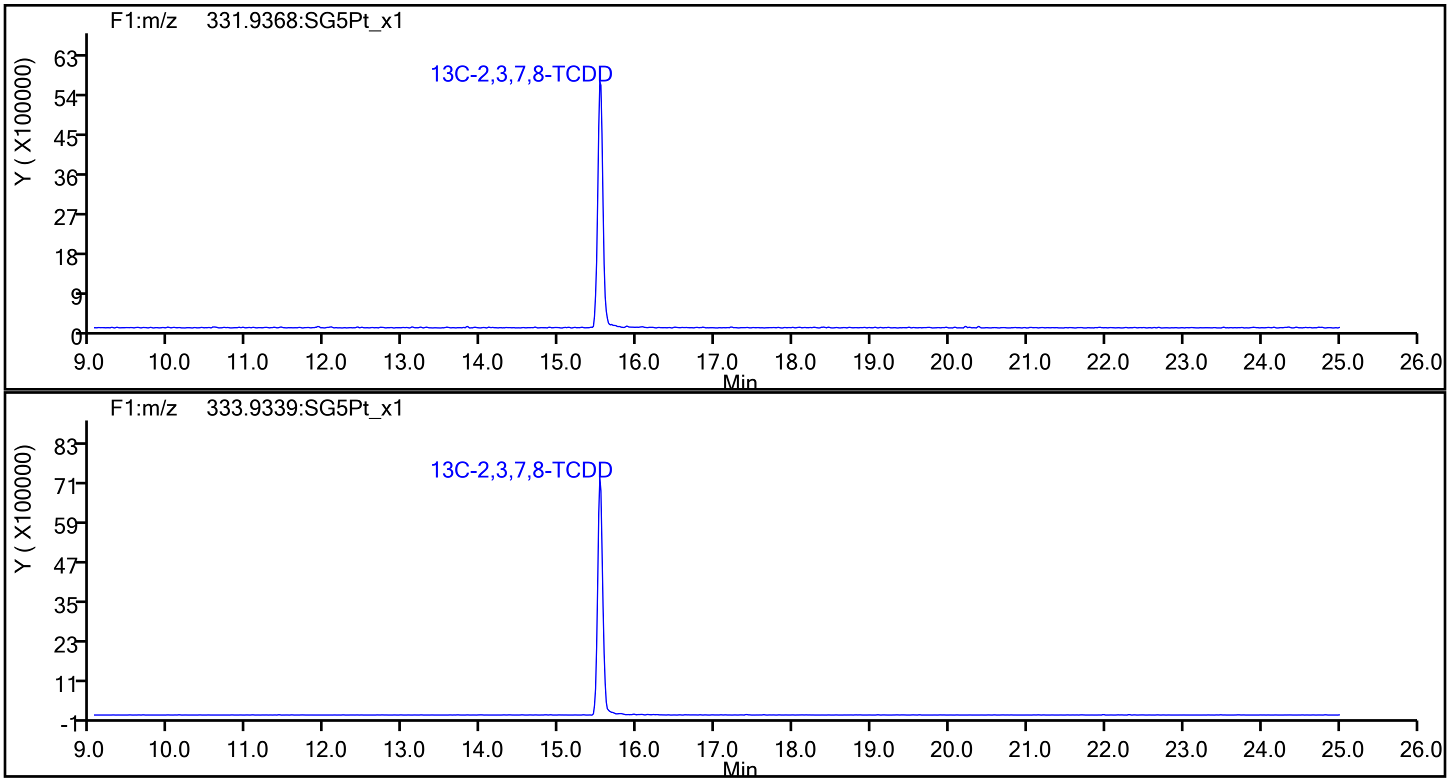

Report Date: 27-Jul-2020 12:42:34 Chrom Revision: 2.3 30-Jun-2020 12:05:54

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d		
Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

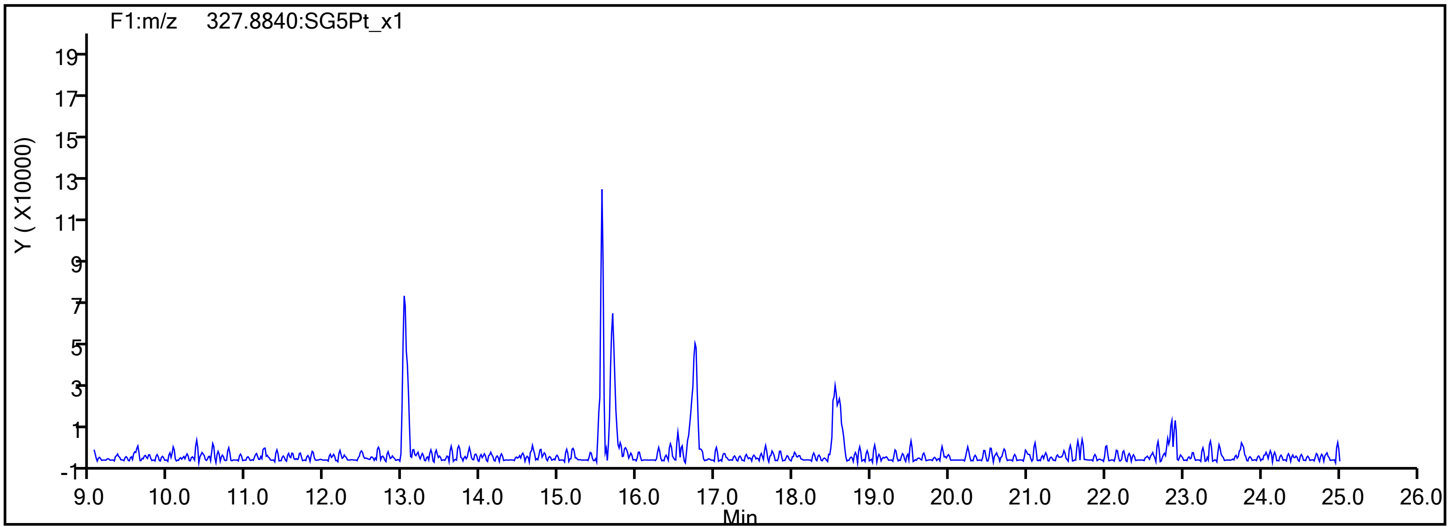

37Cl4-TCDD Standards

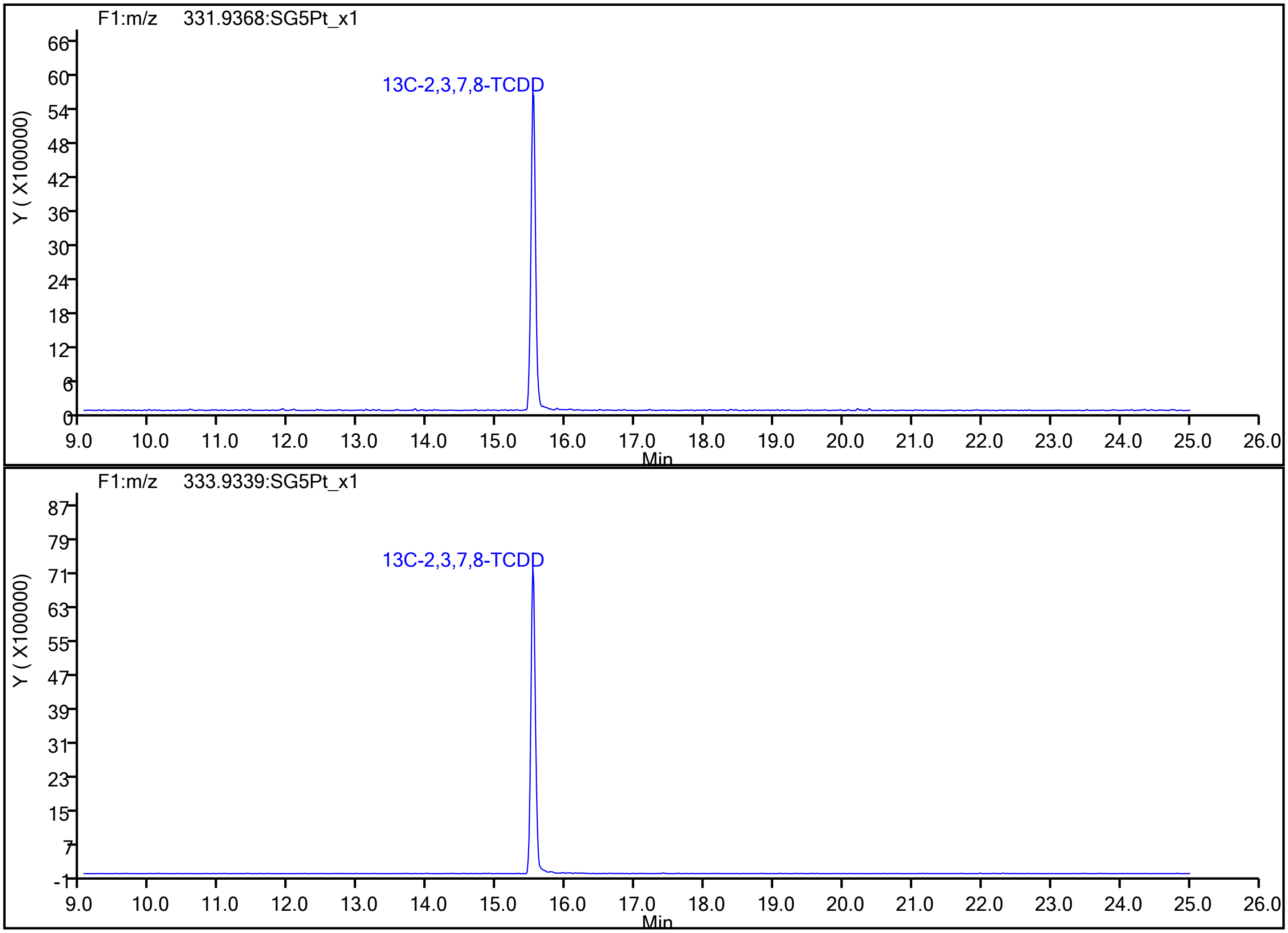

Data File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_001.d

Injection Date:	24-Jul-2020 22:33:34	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	398641	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

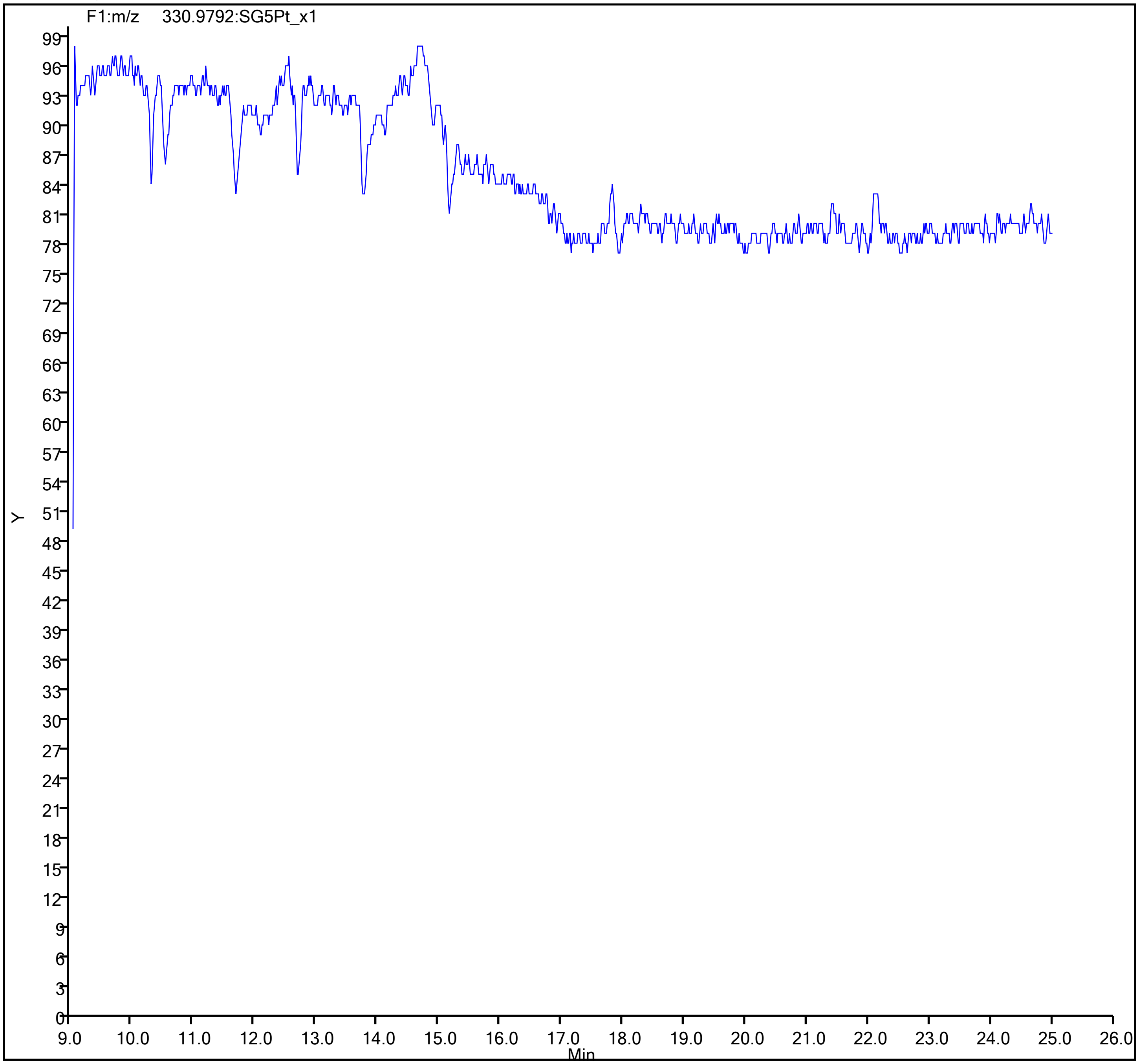

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 25-Jan-2021 23:56:01 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.272	75603046	0.79	1.5708					0.00	
2,3,7,8-TCDF	16.299	76869339	0.76	0.9943	40.9	40.9	0.0974	0.0974		
D 13C-2,3,7,8-TCDD	14.886	45735077	0.77	0.9834					0.00	
2,3,7,8-TCDD	14.913	53693461	0.79	1.2822	36.6	36.6	0.0889	0.0889		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 27-Jan-2021 20:41:49 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 25-Jan-2021 23:56:01 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 20:41:49 Calib Date: 25-Jul-2020 02:23:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200727-100311.b\24JL2011D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1629

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.272	16.272	0	1.000	33347573	6916428	17989	44972	384		
317.9389	16.272	16.272	0	1.000	42255473	9036774	10029	25072	901	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.299	16.299	0	1.002	33313545	7334280	7541	18852	973		
305.8987	16.299	16.299	0	1.002	43555794	9740553	7908	19770	1232	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.886	14.886	0	1.000	19962290	4901840	11828	29570	414		
333.9339	14.886	14.886	0	1.000	25772787	6269060	5716	14290	1097	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.913	14.913	0	1.002	23677863	5753897	6518	16295	883		
321.8936	14.913	14.913	0	1.002	30015598	7271414	6213	15532	1170	0.79(0.65-0.89)	

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 27-Jan-2021 20:41:49   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d
Injection Date: 25-Jan-2021 23:56:01   Injection Vol: 2.0 ul
Instrument ID: 11D2   Operator ID:
Method: DXN_DB225_11D2   Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 456198   Sample Line#: 1
Column Type: DB-225   Column Dia: 0.32 mm

TCDF

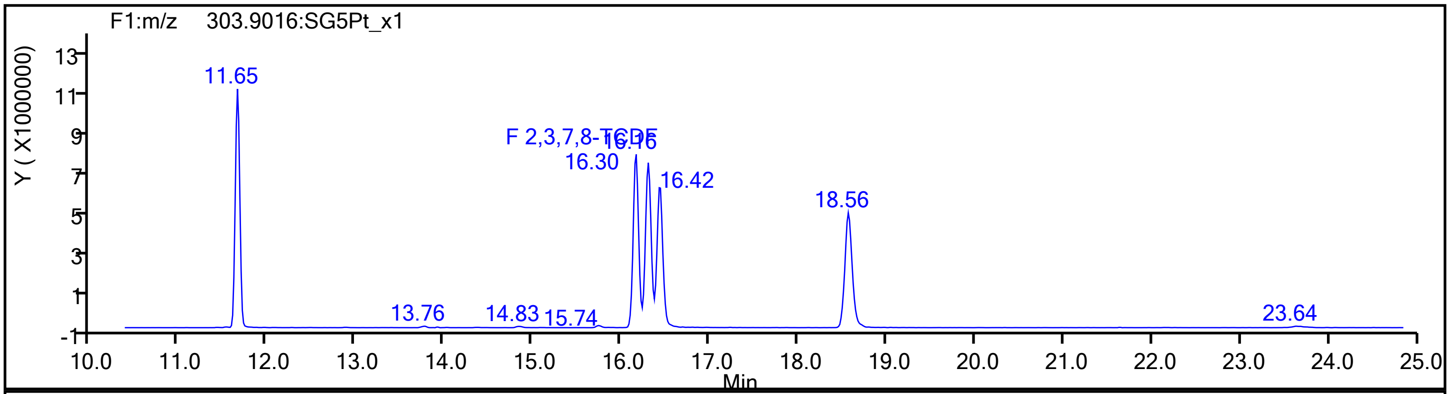

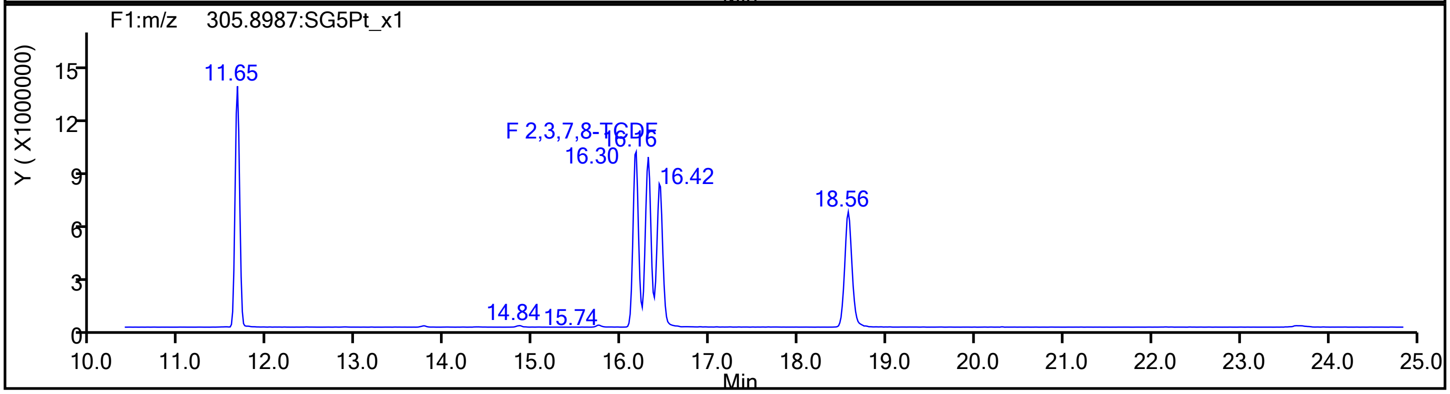

TCDF Standards

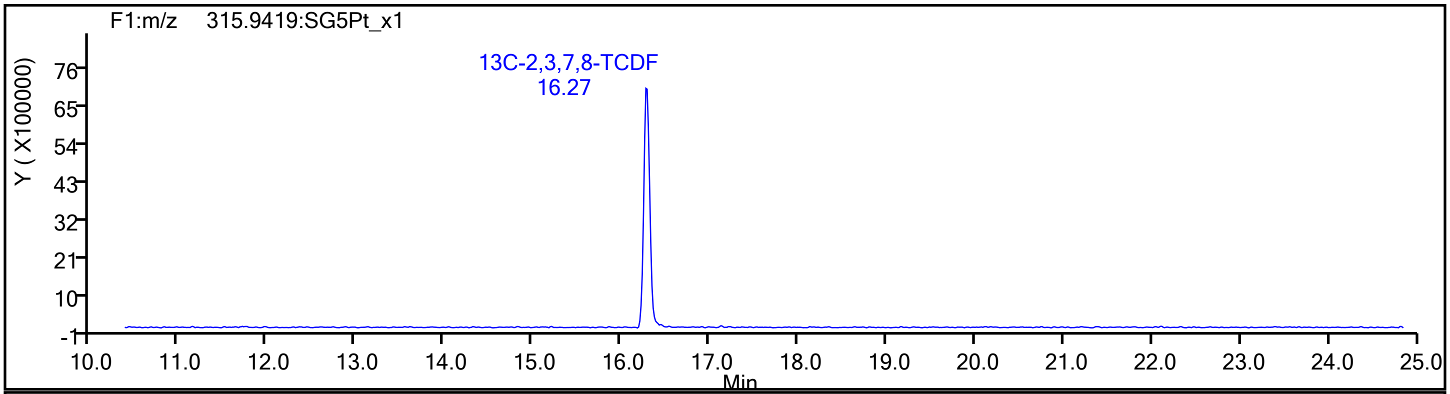

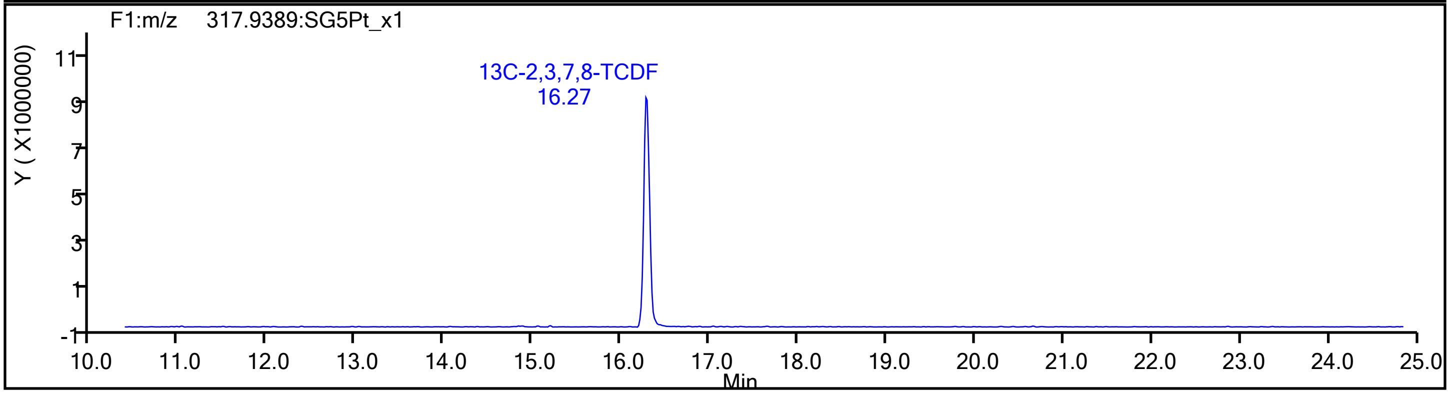

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d		
Injection Date:	25-Jan-2021 23:56:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

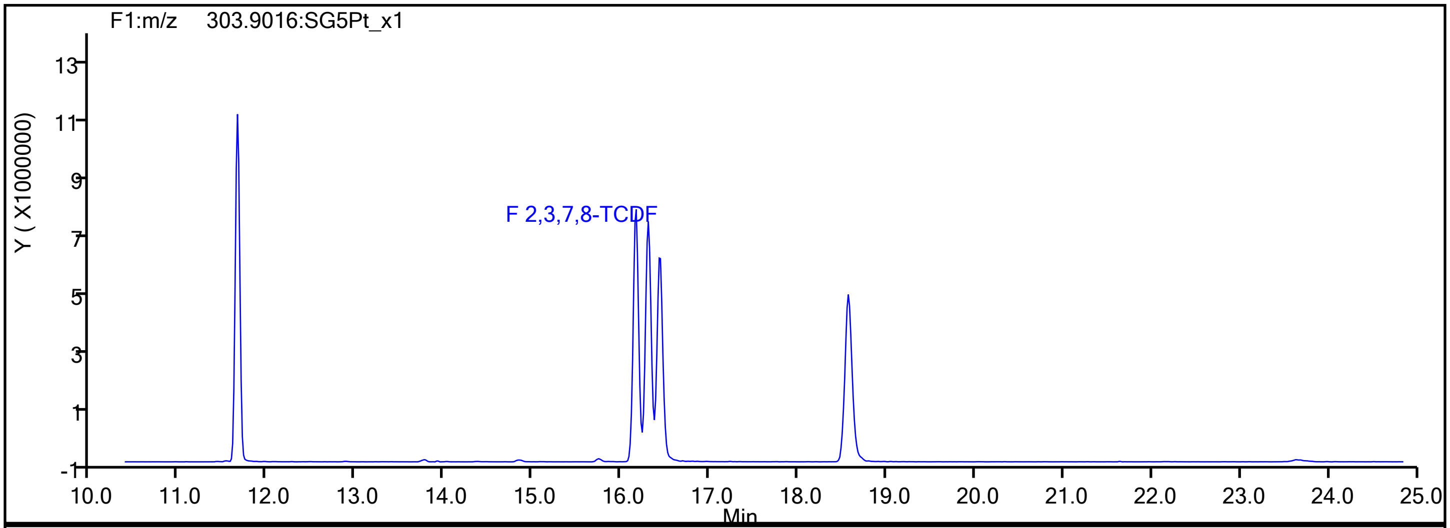

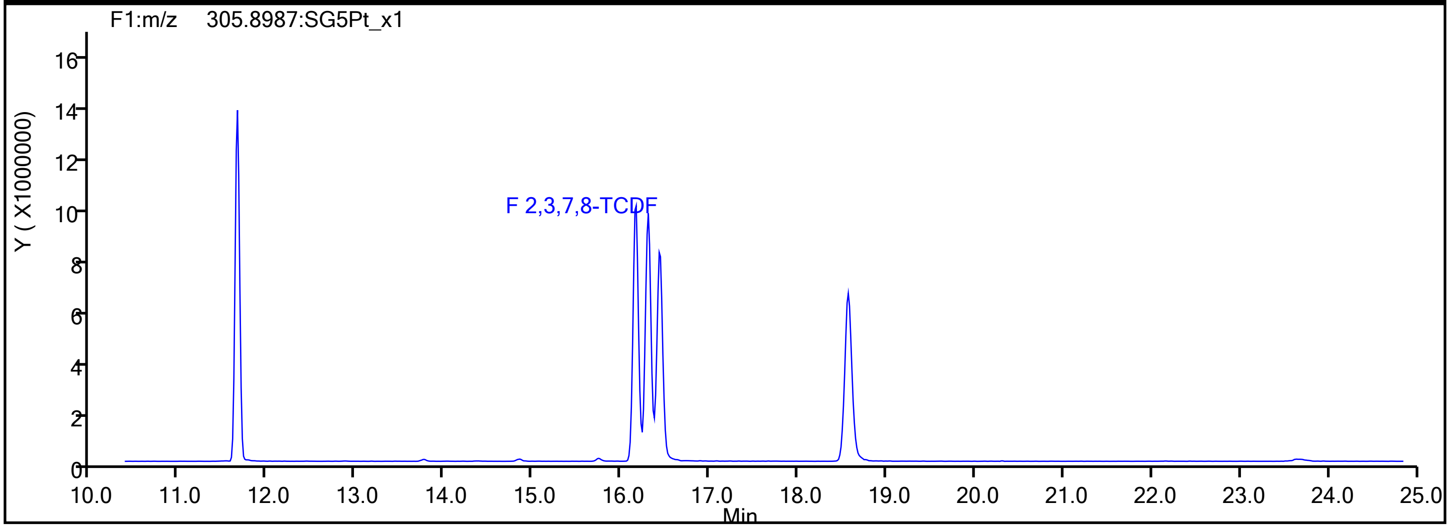

TCDF Interference Mass

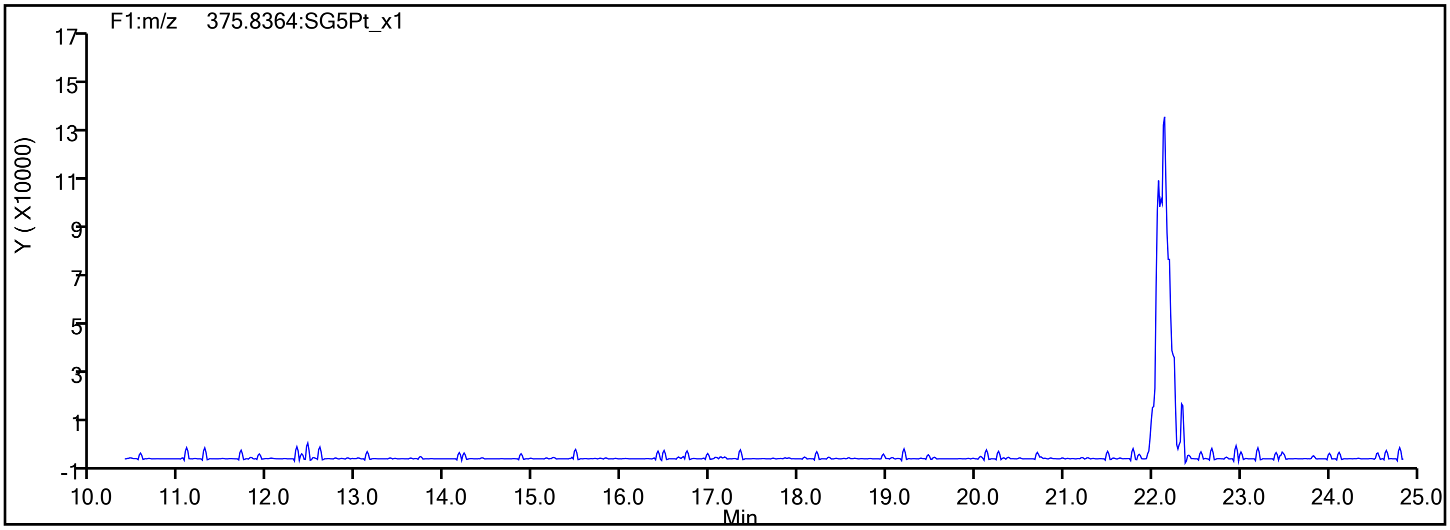

Report Date: 27-Jan-2021 20:41:49 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d		
Injection Date:	25-Jan-2021 23:56:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

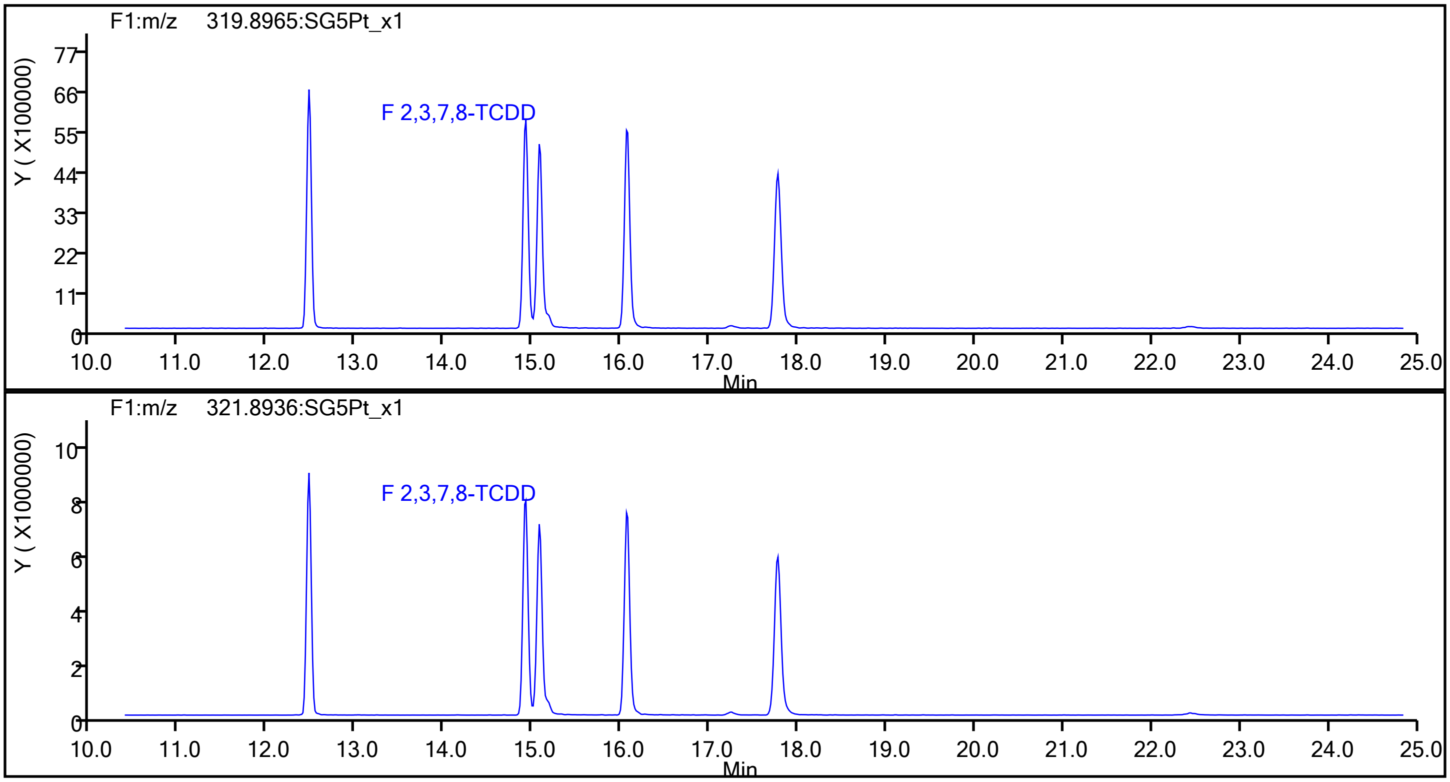

TCDD Standards

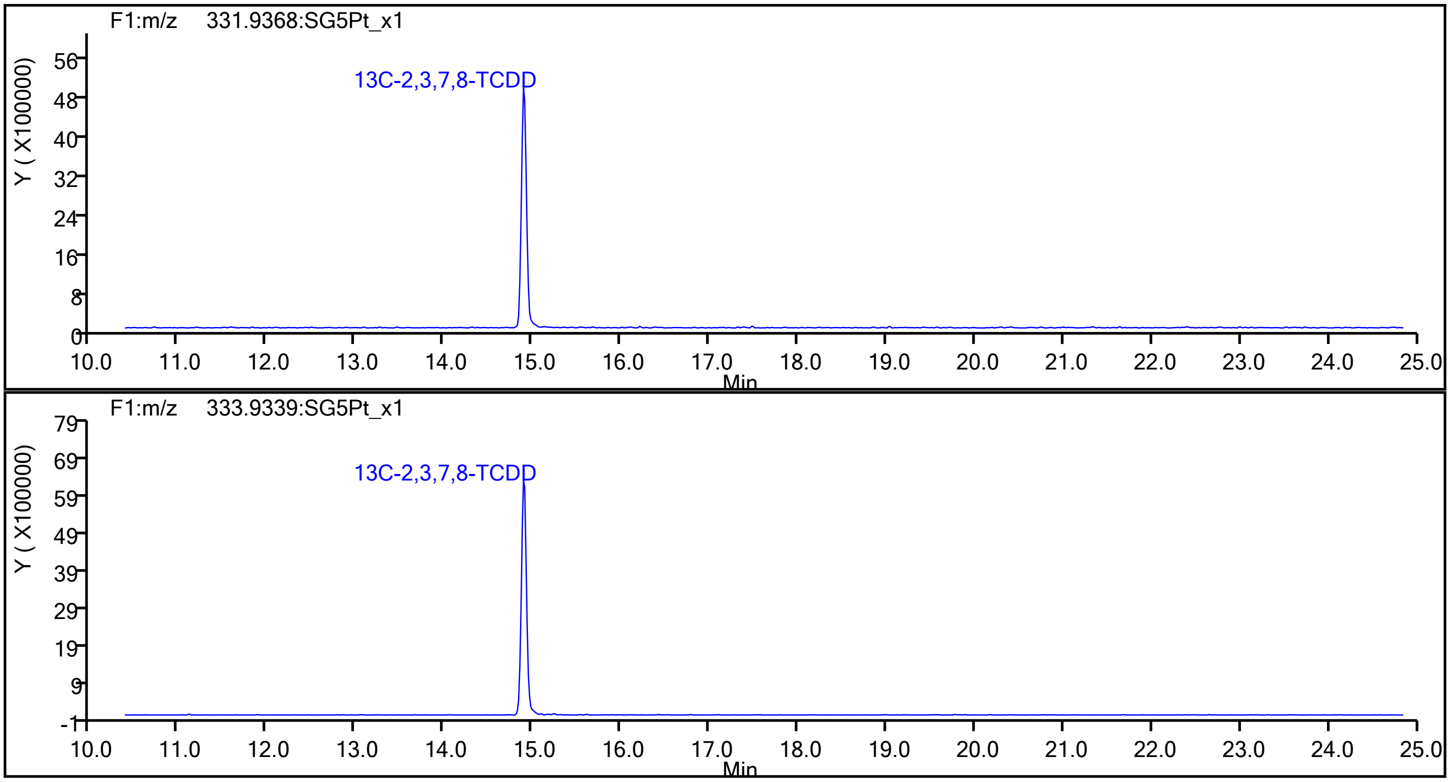

Report Date: 27-Jan-2021 20:41:49 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d		
Injection Date:	25-Jan-2021 23:56:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	456198	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

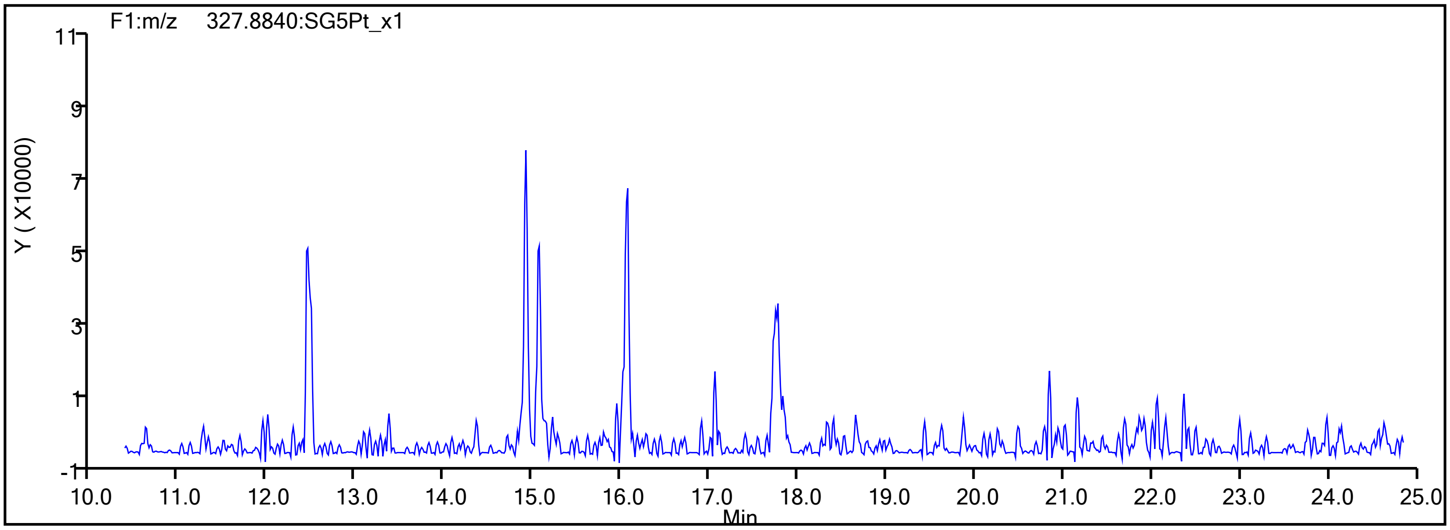

37Cl4-TCDD Standards

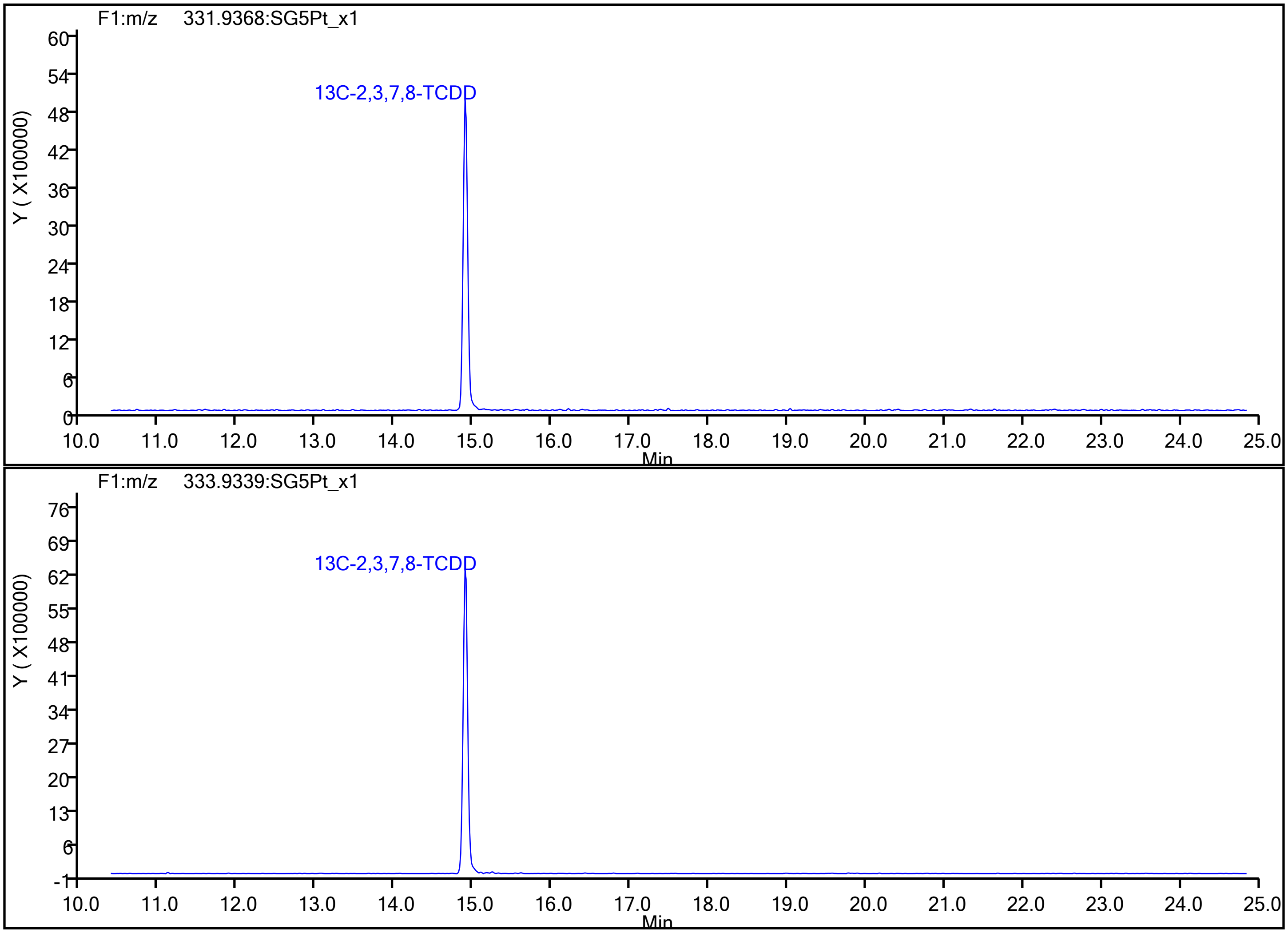

Report Date: 27-Jan-2021 20:41:49 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210127-112171.b\25JA2111D2_001.d

Injection Date: 25-Jan-2021 23:56:01 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 456198 Sample Line#: 1

Column Type: DB-225 Column Dia: 0.32 mm

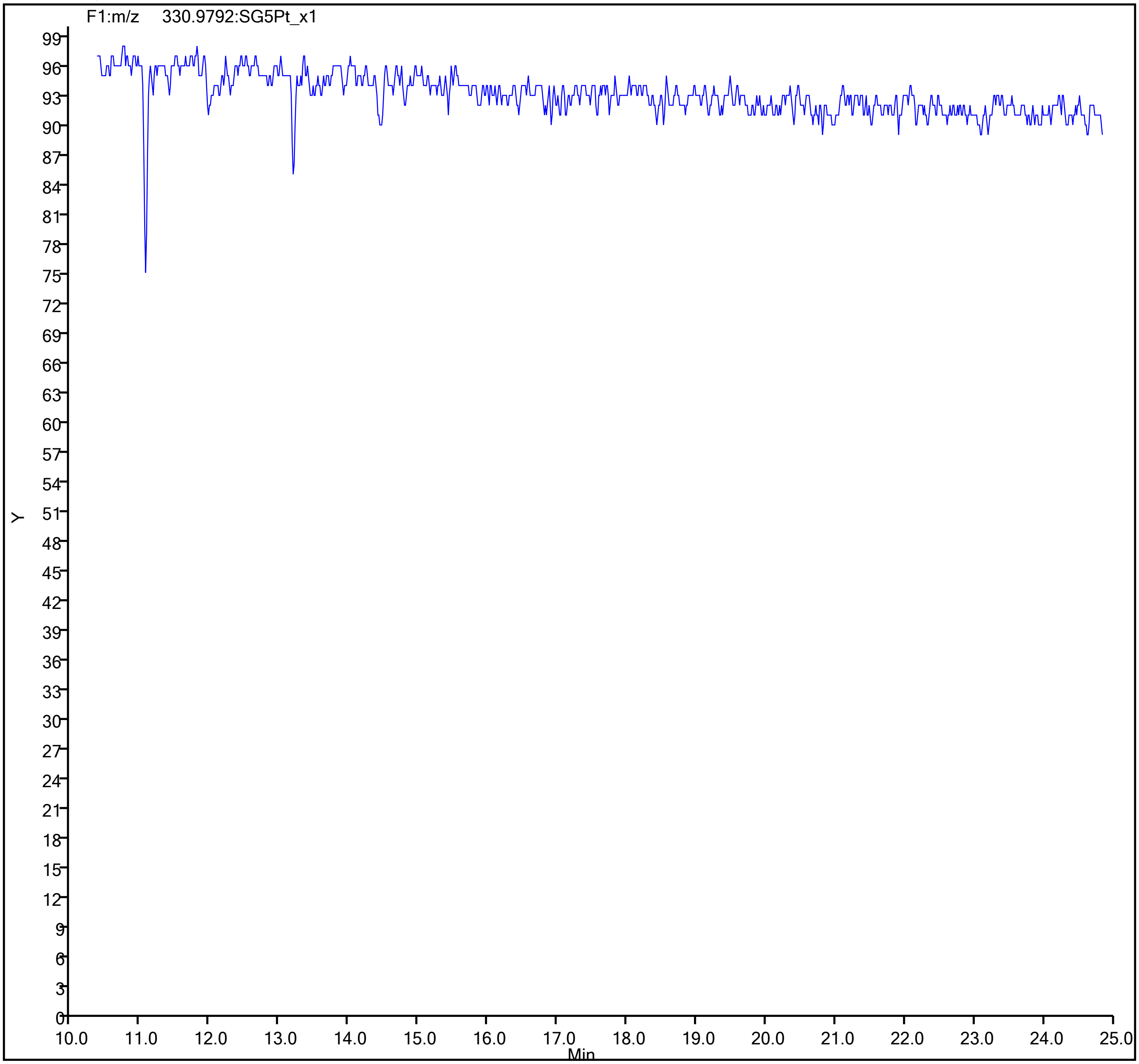

Report Date: 04-Jan-2021 09:37:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 31-Dec-2020 12:42:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:37:34 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	20.398	2795473	0.78	1.1488	75.1	75.1	0.3452	0.3452		
D 13C-2,3,7,8-TCDF	20.355	1295380	0.80	1.9134					0.00	
A Non-2,3,7,8-sub-TCDF	19.833						0.3452	0.3452		
S Total TCDF					75.1	75.1	0.3452	0.3452		
2,3,7,8-TCDD	21.747	913897	0.80	1.3069	40.4	40.4	0.3150	0.3150		
D 13C-2,3,7,8-TCDD	21.712	692167	0.87	1.0908					0.00	
A Non-2,3,7,8-sub-TCDD	20.681						0.3150	0.3150		
S Total TCDD					40.4	40.4	0.3150	0.3150		
A F1 PeCDFs	24.699						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.198	17520	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.389						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.033						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.395	6722	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	38.605	1018509	1.06	1.6487						
1,2,3,4,7,8,9-HpCDF	39.851	820490	1.06	1.5723						
A Non-2,3,7,8-sub-HpCDF	39.228						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.548	597056	1.06	1.2146						
A Non-2,3,7,8-sub-HpCDD	39.533						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.064	1657748	0.78							
1,3,6,8-TCDD	17.699	920061	0.81							
2,3,4,7-TCDF	20.398	2795473	0.78							
1,2,3,7-TCDD	21.532	755881	0.79							
1,2,3,9-TCDF	21.944	1203176	0.78							
1,2,3,9-TCDD	22.048	962297	0.82							
1,2,8,9-TCDF	23.602	1258548	0.77							
1,2,8,9-TCDD	23.662	384990								
1,3,4,6,8-PeCDF	24.023	924514	1.64							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	26.073	719187	1.60							
1,2,3,8,9-PeCDD	30.705	662726	1.57							
1,2,3,8,9-PeCDF	30.882	959871	1.56							
1,2,3,4,6,8-HxCDF	33.159	1238522	1.28							
1,2,4,6,7,9-HxCDD	34.237	797863	1.30							
1,2,3,4,6,7-HxCDD	36.554	749508	1.28							
1,2,3,4,8,9-HxCDF	36.907	1051473	1.28							
1,2,3,4,6,7,9-HpCDD	38.908	664009	1.06							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 31-Dec-2020 12:42:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Jan-2021 09:37:34 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1633

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	20.398	20.313	5	1.002	1223651	159619	314	785	508		
305.8987	20.398	20.313	5	1.002	1571822	207664	410	1025	506	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.355	20.355	0	1.000	576315	82003	681	1702	120		
317.9389	20.363	20.355	1	1.000	719065	100561	266	665	378	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.833						314	785			
305.8987	19.833						410	1025			
2,3,7,8-TCDD											
319.8965	21.747	21.677	4	1.002	404812	53205	211	527	252		
321.8936	21.747	21.677	4	1.002	509085	64958	166	415	391	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.712	21.712	0	1.000	322716	41685	331	827	126		
333.9338	21.721	21.712	1	1.000	369451	49835	40	100	1246	0.87(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.681						211	527			
321.8936	20.681						166	415			
A F1 PeCDFs											
339.8597	24.699						20	50			
341.8567	24.699						58	145			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	26.705	28.198	-89	1.000	2489	469	98	245	5		
341.8567	26.696	28.198	-90	1.000	1697	361	96	240	4	1.47(1.32-1.78)	
339.8597	27.286	28.198	-55	1.000	3743	571	98	245	6		
341.8567	27.303	28.198	-54	1.000	2883	511	96	240	5	1.30(1.32-1.78)	
339.8597	27.875	28.198	-19	1.000	4363	577	98	245	6		
341.8567	27.909	28.198	-17	1.000	3581	355	96	240	4	1.22(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.389						163	407			
357.8516	28.389						81	202			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.033						303	757			
375.8178	35.033						236	590			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	35.341	35.395	-3	1.000	4471	924	185	462	5		
391.8127	35.324	35.395	-4	1.000	3001	529	146	365	4	1.49(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.605	38.598	0	1.000	522954	125626	820	2050	153		
409.7788	38.597	38.598	0	1.000	495555	116931	735	1837	159	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.851	39.846	0	1.000	422064	104424	820	2050	127		
409.7788	39.851	39.846	0	1.000	398426	99173	735	1837	135	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.228						820	2050			
409.7788	39.228						735	1837			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.548	39.541	0	1.000	307098	77530	553	1382	140		
425.7737	39.548	39.541	0	1.000	289958	71155	513	1282	139	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.533						553	1382			
425.7737	39.533						513	1282			
1,3,6,8-TCDF											
303.9016	16.064	16.064	0		727627	136038	314	785	433		
305.8987	16.064	16.064	0		930121	176332	410	1025	430	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.699	17.699	0		412614	69856	211	527	331		
321.8936	17.699	17.699	0		507447	86439	166	415	521	0.81(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.398	20.398	0		1223651	159619	314	785	508		
305.8987	20.398	20.398	0		1571822	207664	410	1025	506	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.532	21.532	0		332755	46535	211	527	221		
321.8936	21.532	21.532	0		423126	58692	166	415	354	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	21.944	21.944	0		526679	65111	314	785	207		
305.8987	21.936	21.944	-1		676497	84941	410	1025	207	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	22.048	22.048	0		434179	54502	211	527	258		
321.8936	22.039	22.048	-1		528118	65323	166	415	394	0.82(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.602	23.602	0		546264	88485	314	785	282		
305.8987	23.602	23.602	0		712284	116606	410	1025	284	0.77(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.662	23.662	0		384990	64703	211	527	307		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	24.023	24.023	0		574067	106534	20	50	5327		
341.8567	24.023	24.023	0		350447	66087	58	145	1139	1.64(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	26.073	26.073	0		442302	64804	163	407	398		
357.8516	26.073	26.073	0		276885	38799	81	202	479	1.60(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	30.705	30.705	0		404768	49034	163	407	301		
357.8516	30.705	30.705	0		257958	31823	81	202	393	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	30.882	30.882	0		585202	68104	98	245	695		
341.8567	30.874	30.882	-1		374669	42163	96	240	439	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.159	33.159	0		695687	98705	303	757	326		
375.8178	33.159	33.159	0		542835	75498	236	590	320	1.28(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.237	34.237	0		450278	72296	185	462	391		
391.8127	34.229	34.237	-1		347585	57172	146	365	392	1.30(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.554	36.554	0		420552	91196	185	462	493		
391.8127	36.554	36.554	0		328956	70030	146	365	480	1.28(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.907	36.907	0		589766	123417	303	757	407		
375.8178	36.899	36.907	-1		461707	96095	236	590	407	1.28(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.908	38.908	0		342176	85866	553	1382	155		
425.7737	38.908	38.908	0		321833	81765	513	1282	159	1.06(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 31-Dec-2020 12:42:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 447767 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 28.198

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170				
2,3,4,7,8-PeCDF	1.224				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.705	2489	469	1697	361		1.47	
27.286	3743	571	2883	511		1.30	R
27.875	4363	577	3581	355		1.22	R
Signal Totals:							
	10595	1617	8161	1227			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18756	2844				1.30	RQ
	17520	2718					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (18756 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (17520 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	31-Dec-2020 12:42:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	447767	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 35.395

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.342				
1,2,3,6,7,8-HxCDD	1.199				
1,2,3,7,8,9-HxCDD	1.364				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.341	4471	924	3001	529		1.49	R
Signal Totals:							
	4471	924	3001	529			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7472	1453				1.49	RQ
	6722	1184					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (7472 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (6722 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 04-Jan-2021 09:37:45 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d		
Injection Date:	31-Dec-2020 12:42:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	447767	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

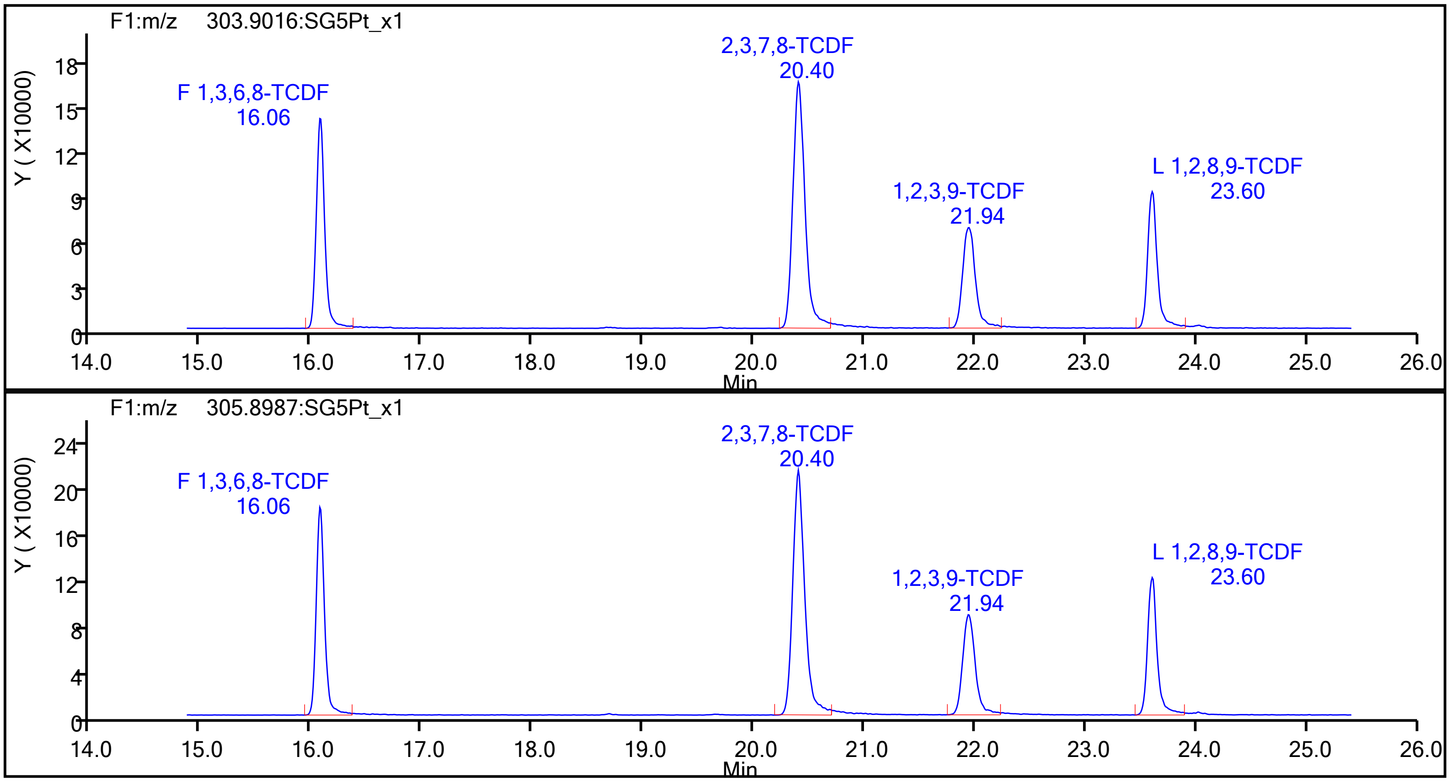

TCDF Standards

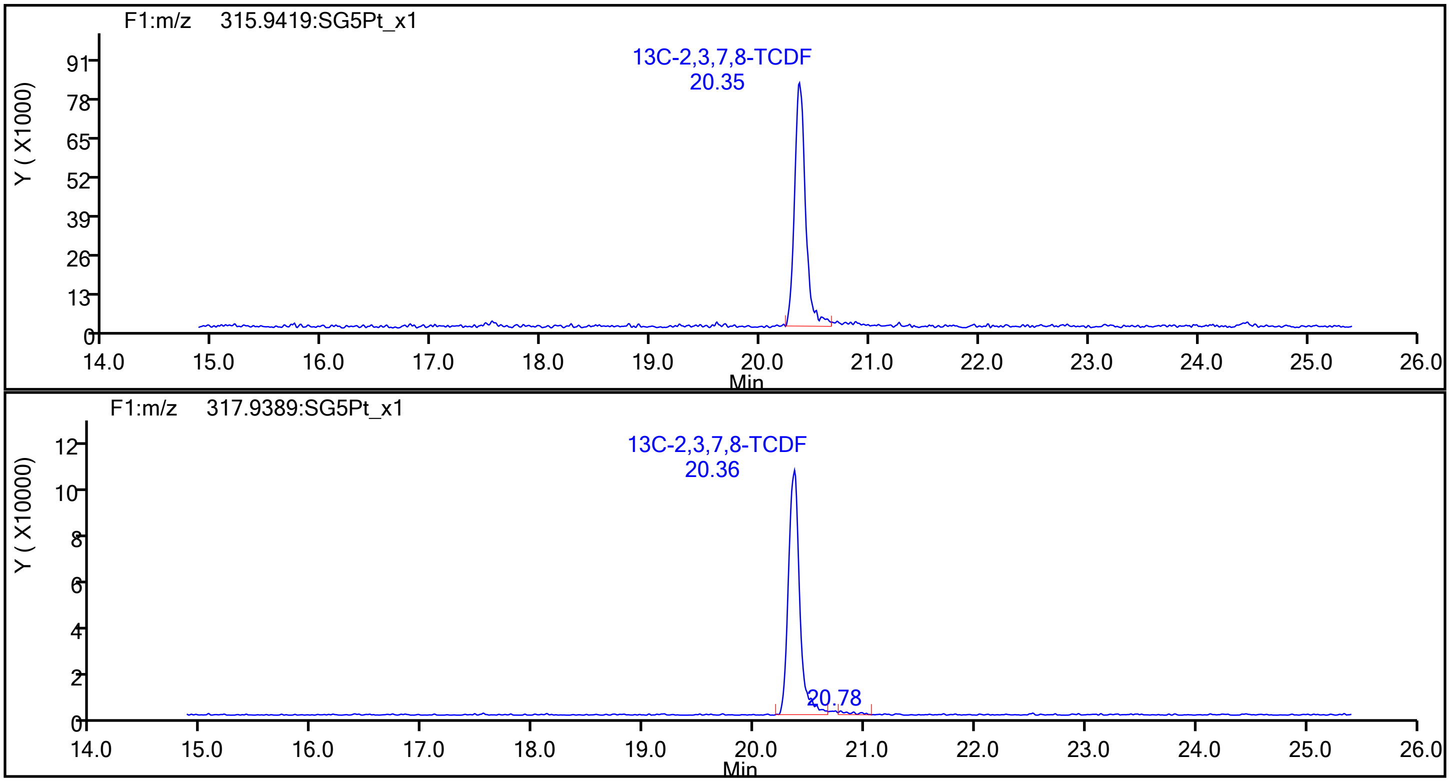

Report Date: 04-Jan-2021 09:37:45 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d
Injection Date: 31-Dec-2020 12:42:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 447767
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

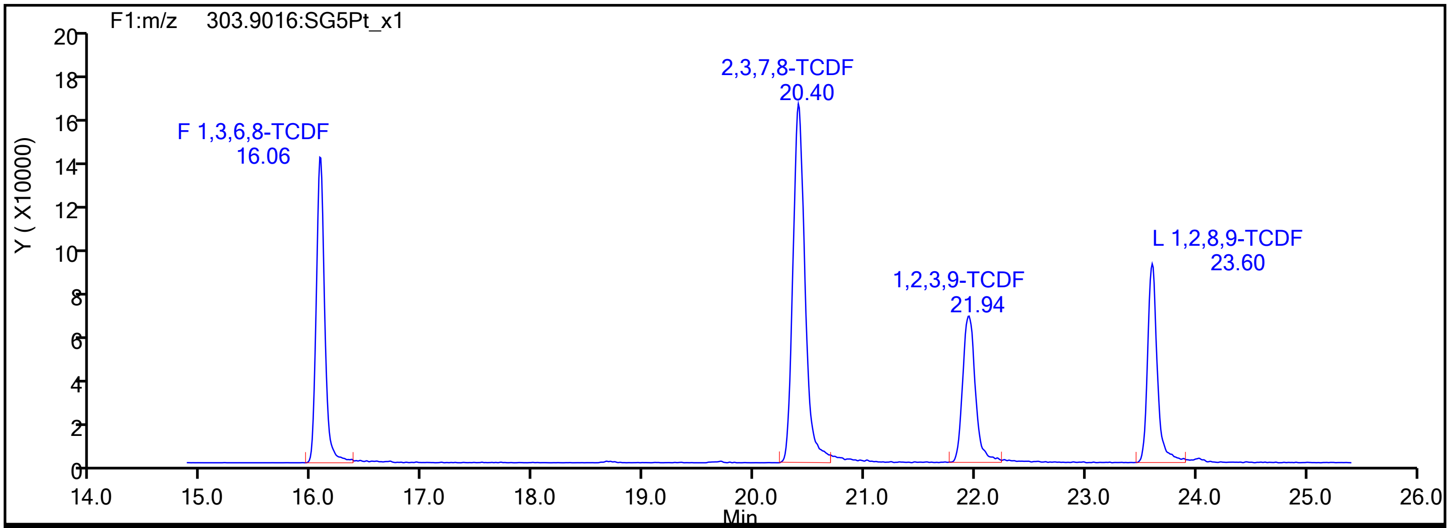

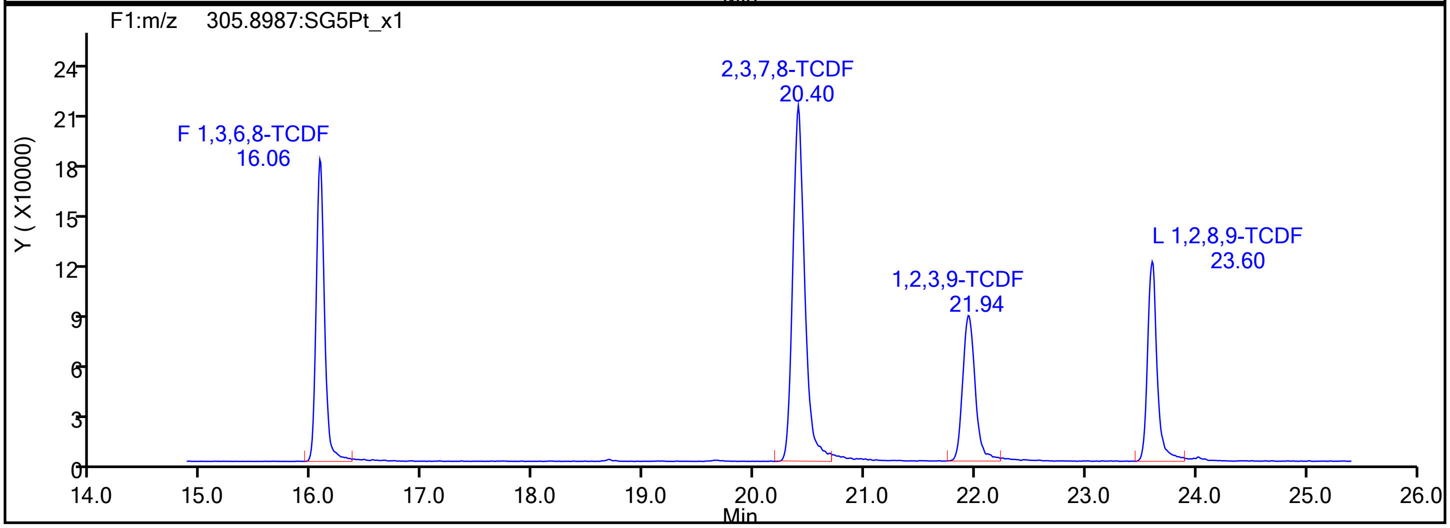

TCDF Interference Mass

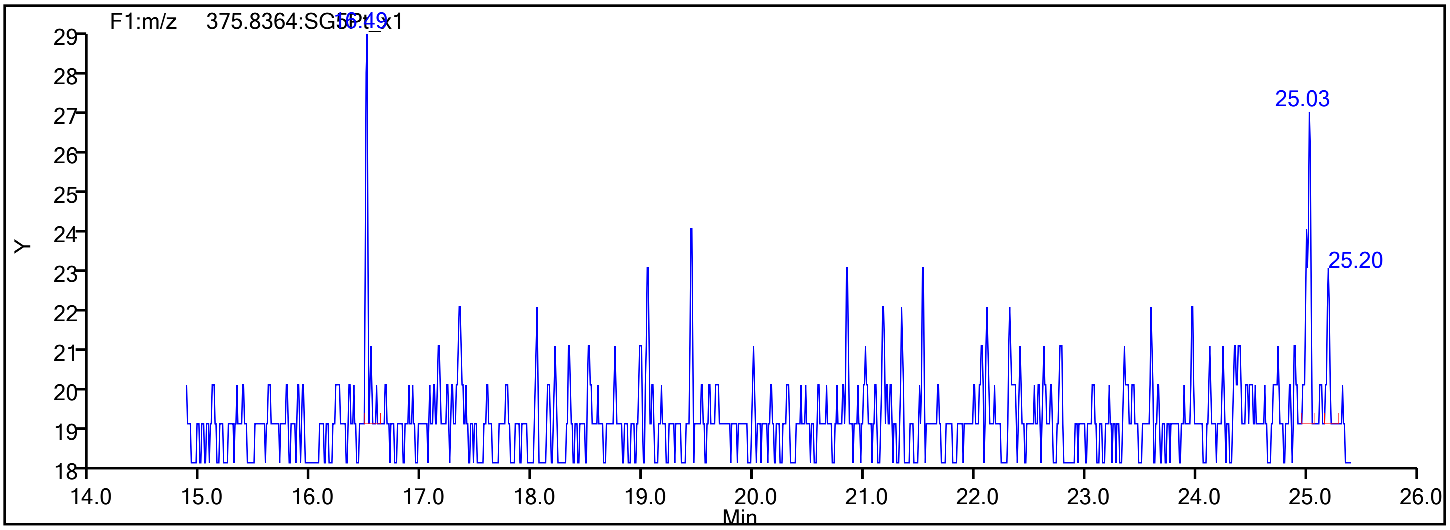

Report Date: 04-Jan-2021 09:37:45
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_2.d
Injection Date: 31-Dec-2020 12:42:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 1
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Column Dia: 0.32 mm

TCDD

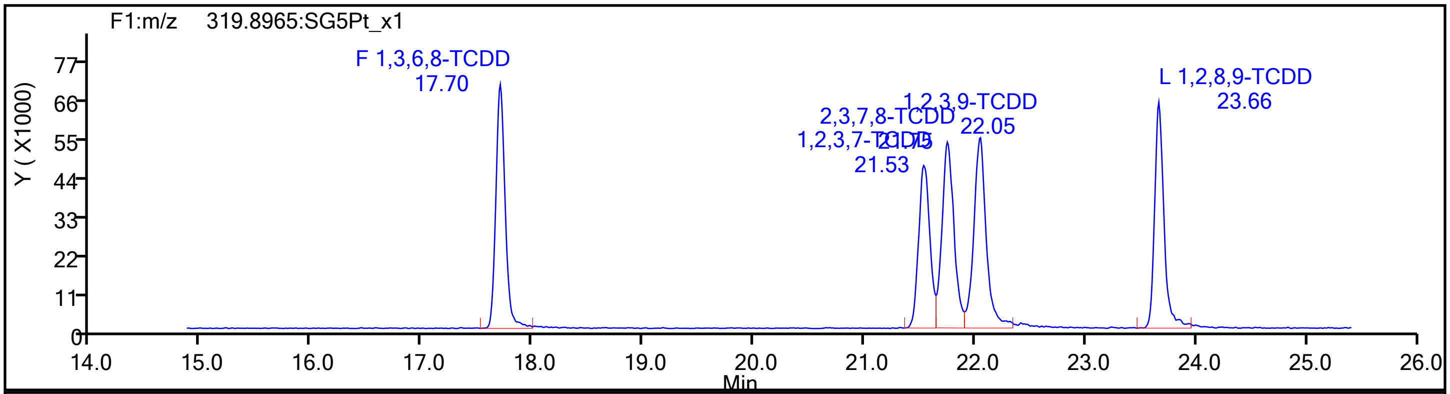

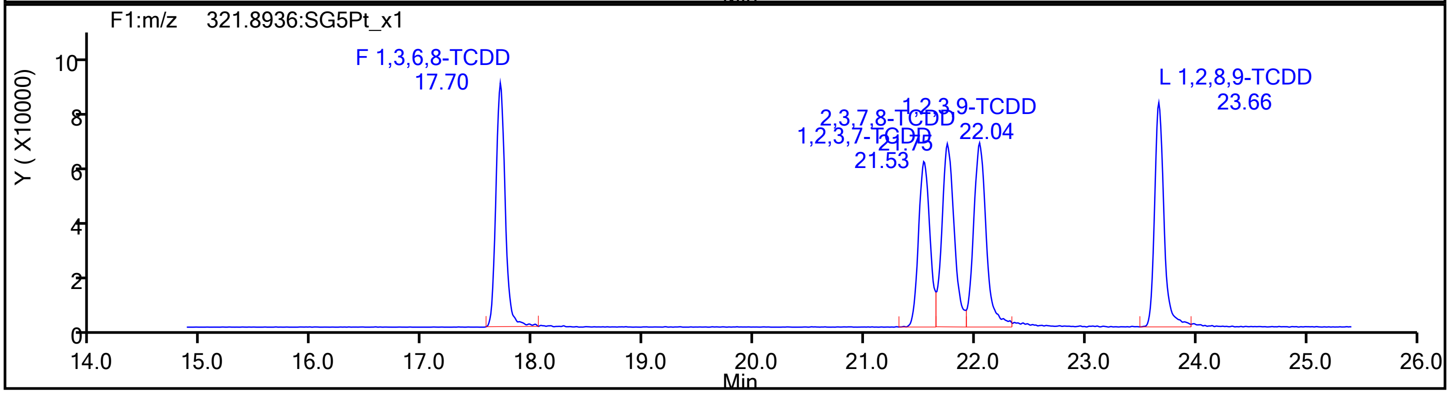

TCDD Standards

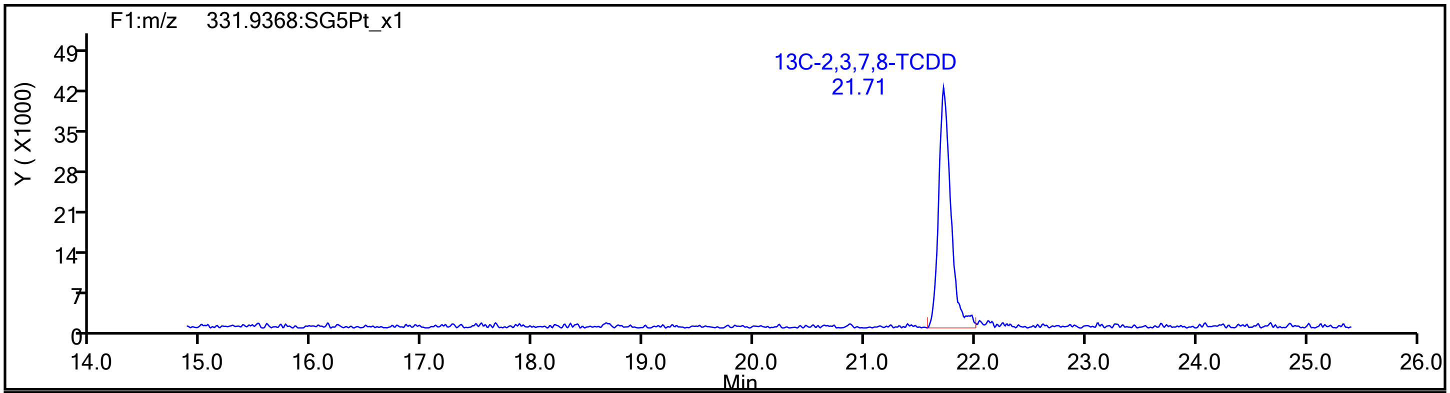

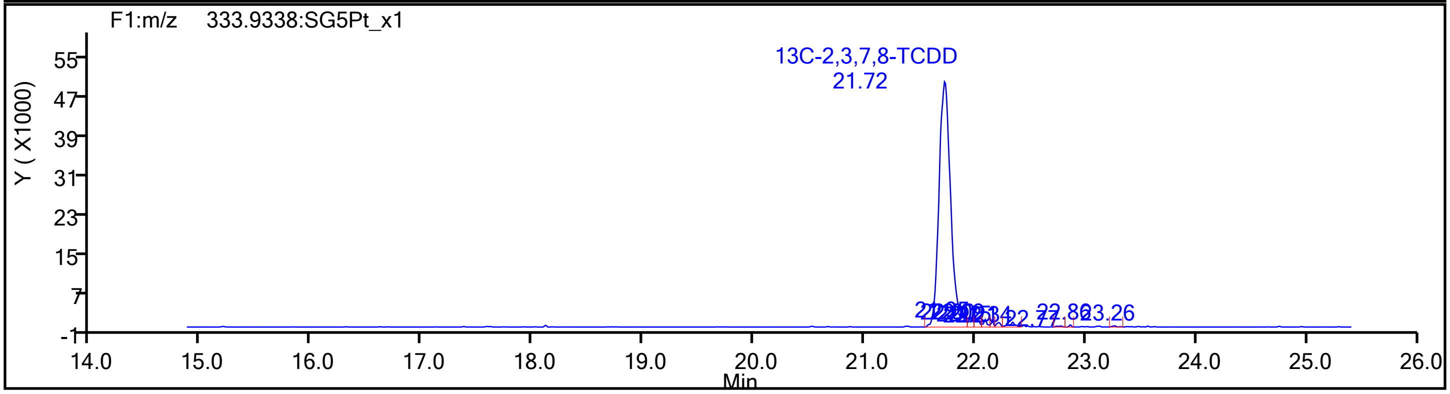

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

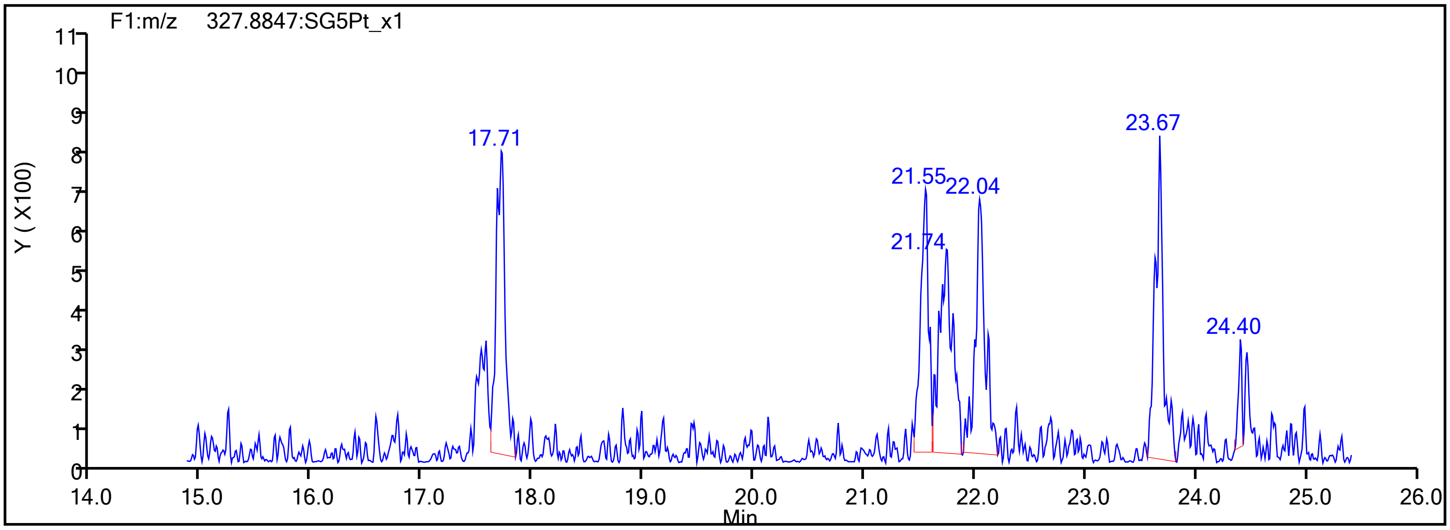

37Cl4-TCDD Standards

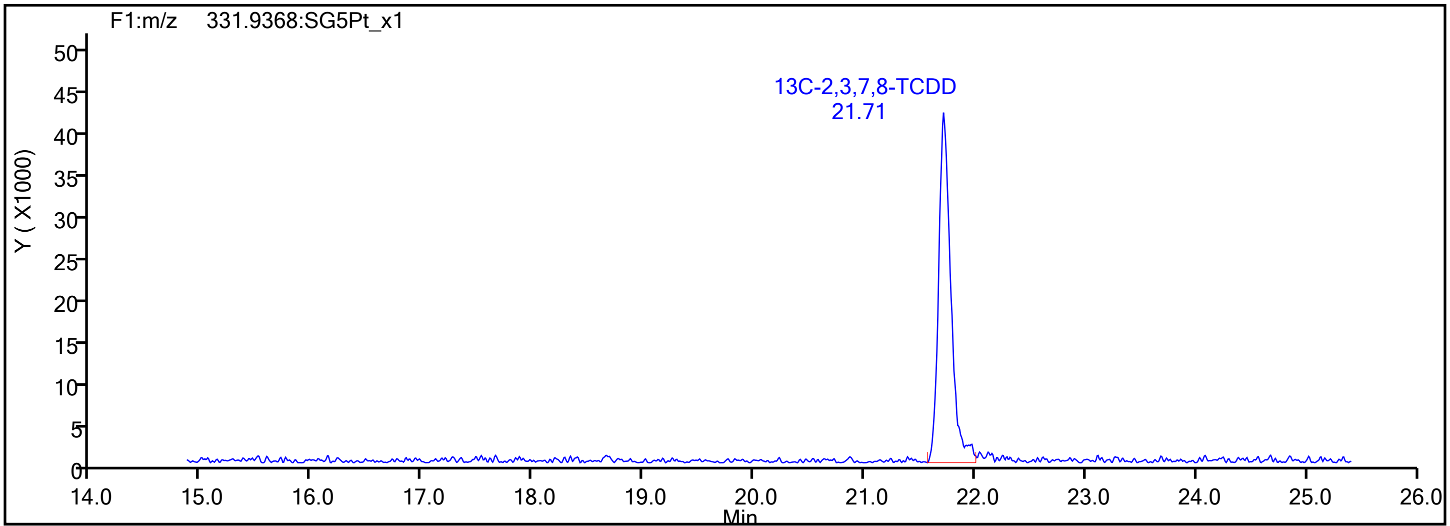

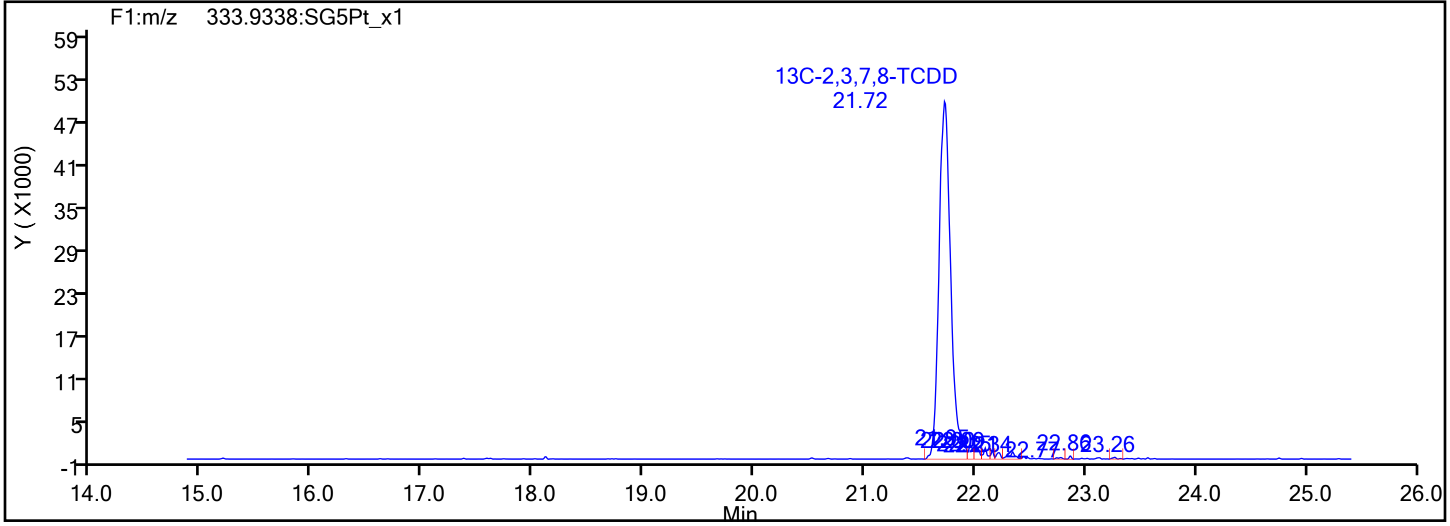

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

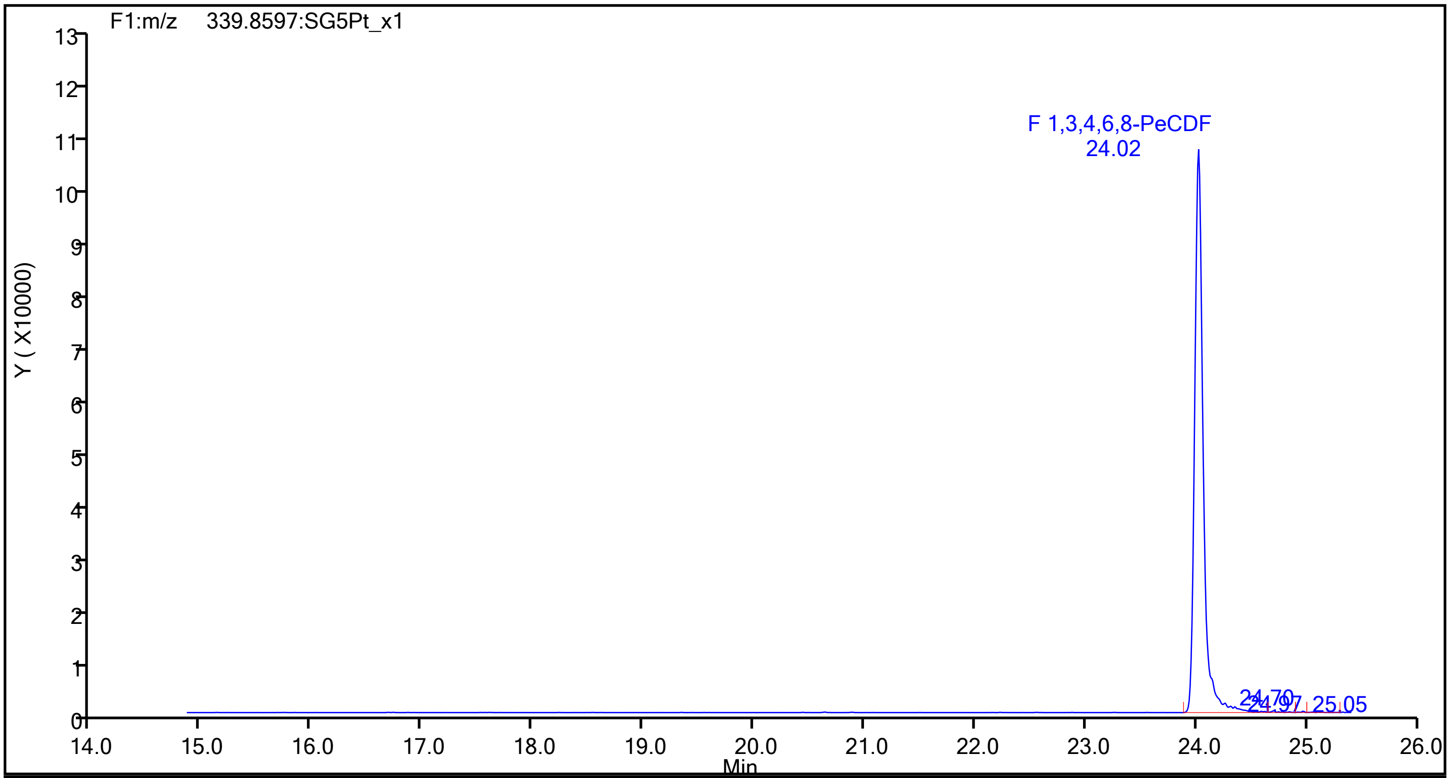

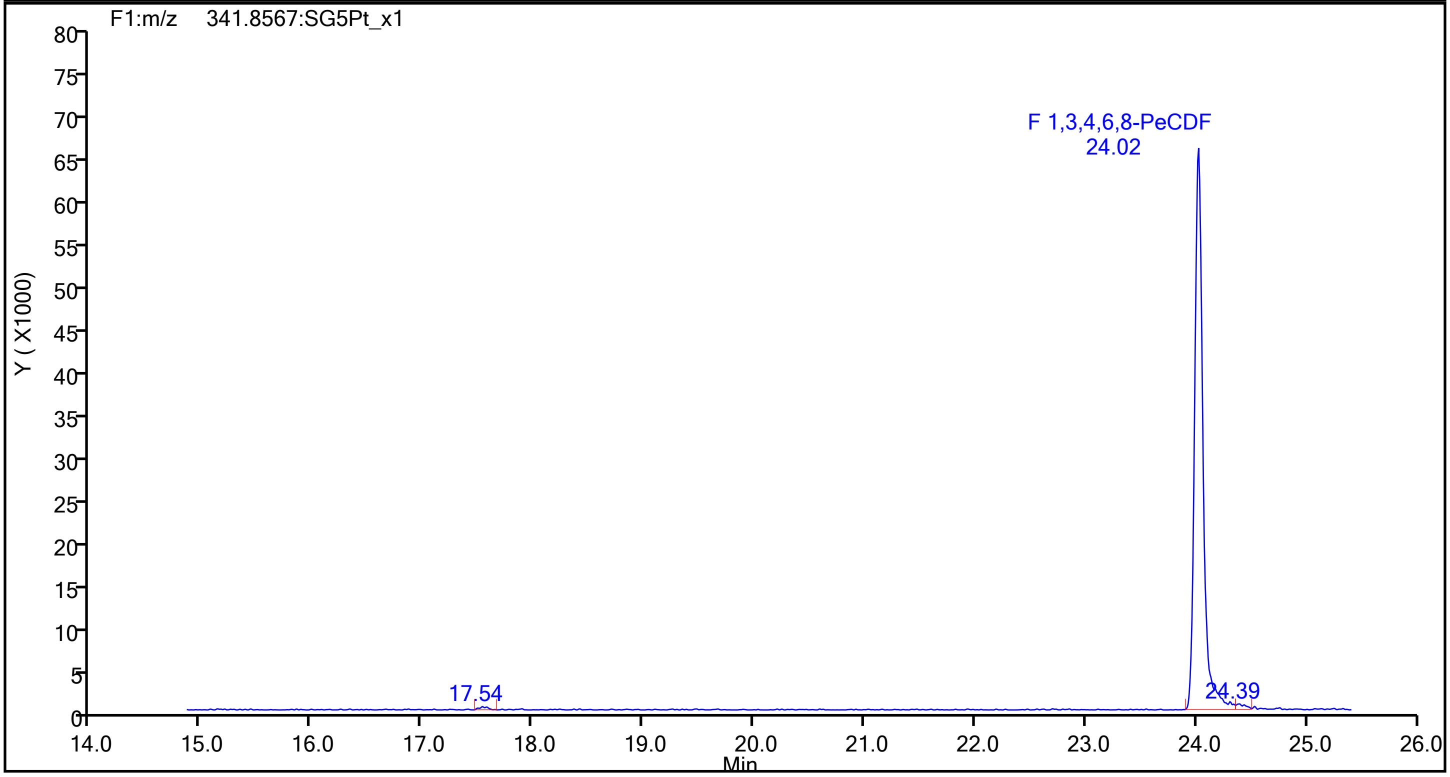

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Eurofins TestAmerica, Sacramento

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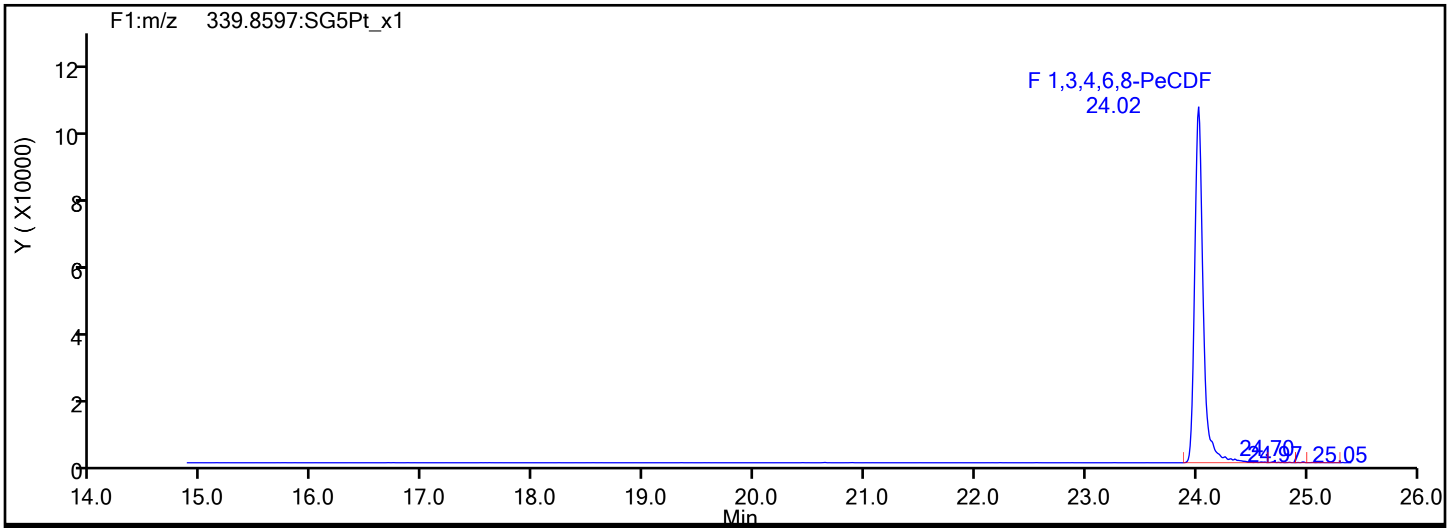

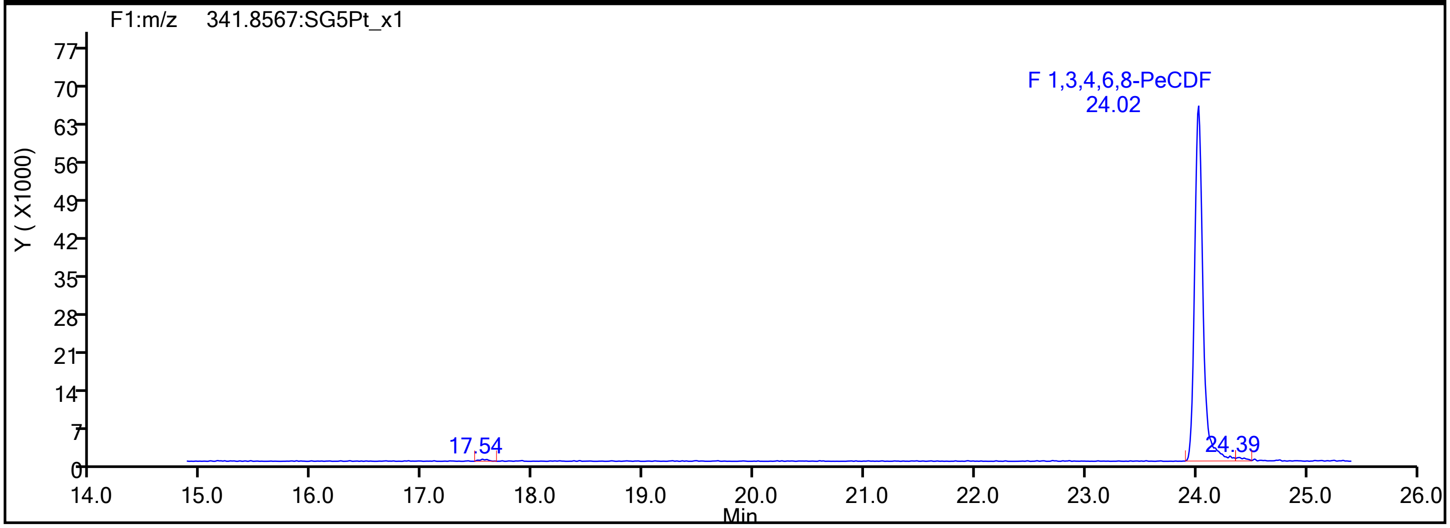

F1 PeCDFs Interference Mass

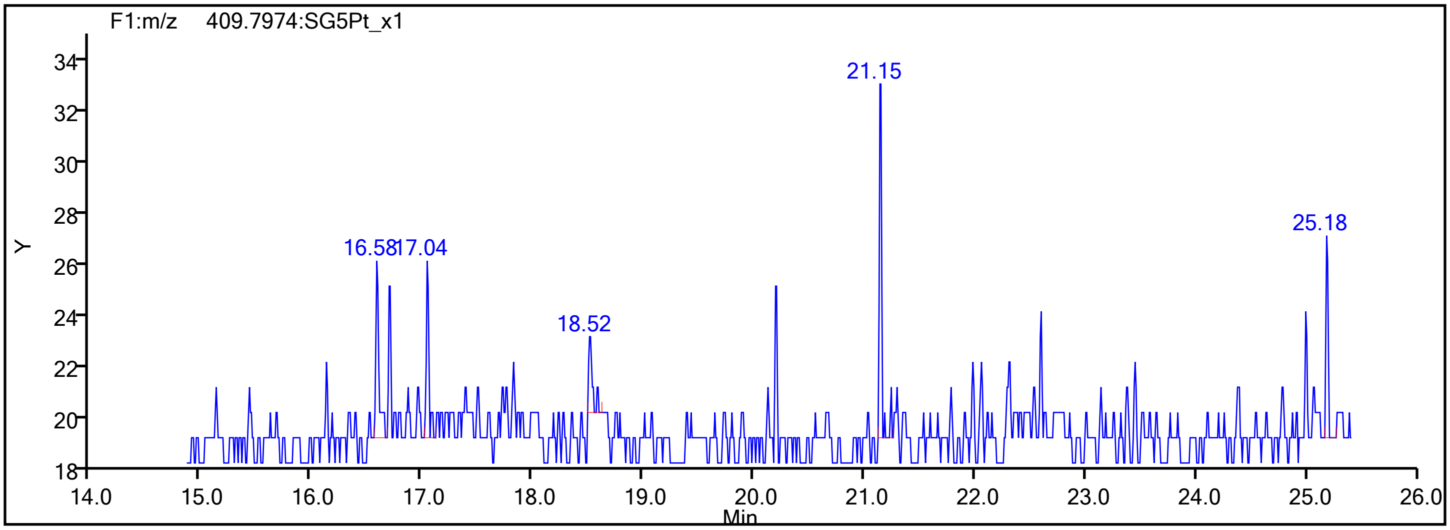

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Eurofins TestAmerica, Sacramento

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PeCDF

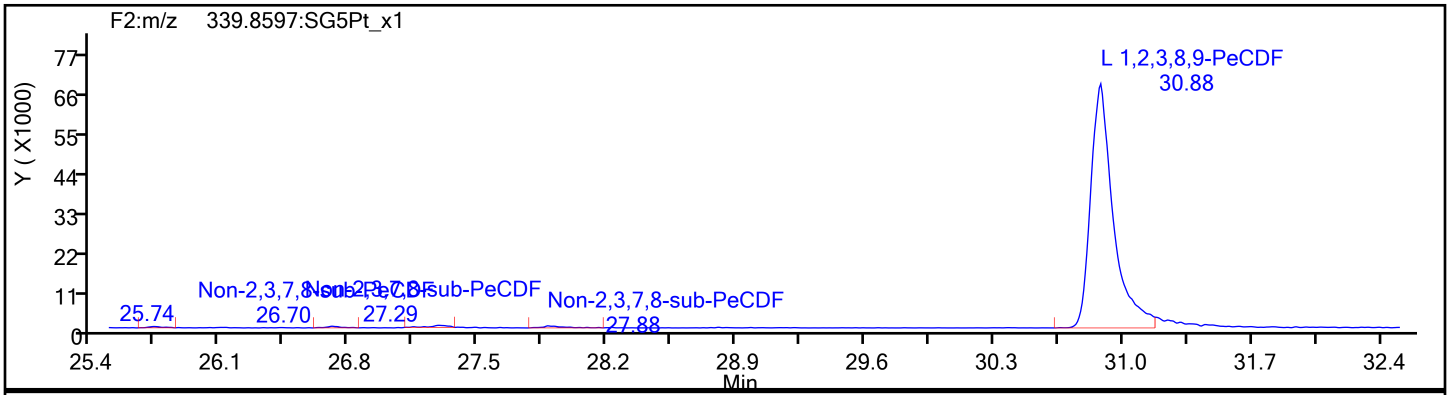

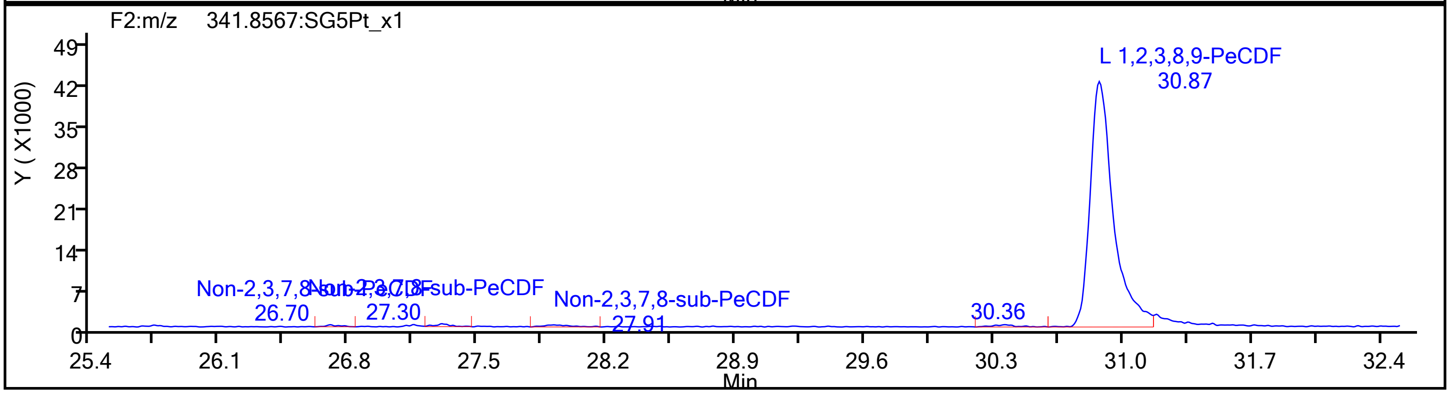

PeCDF Standards

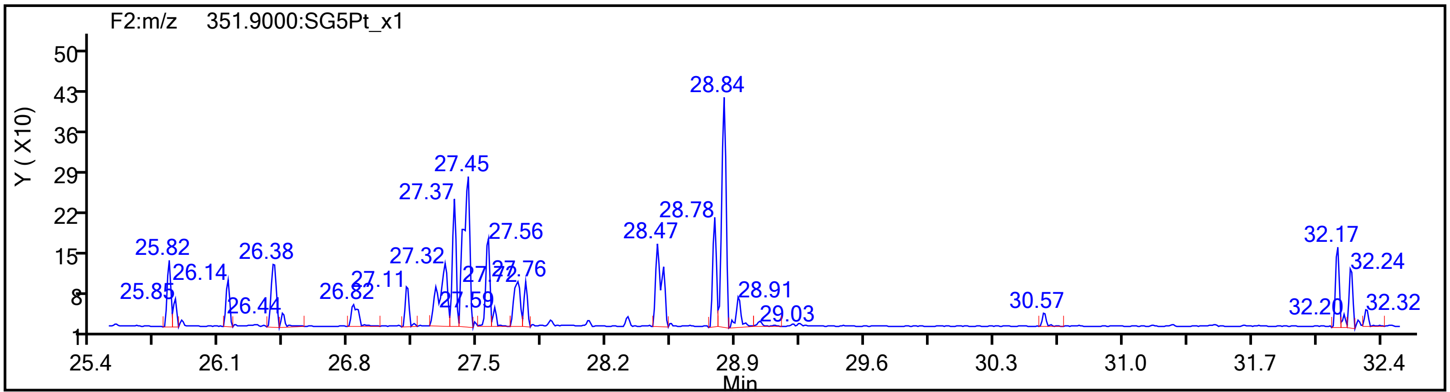

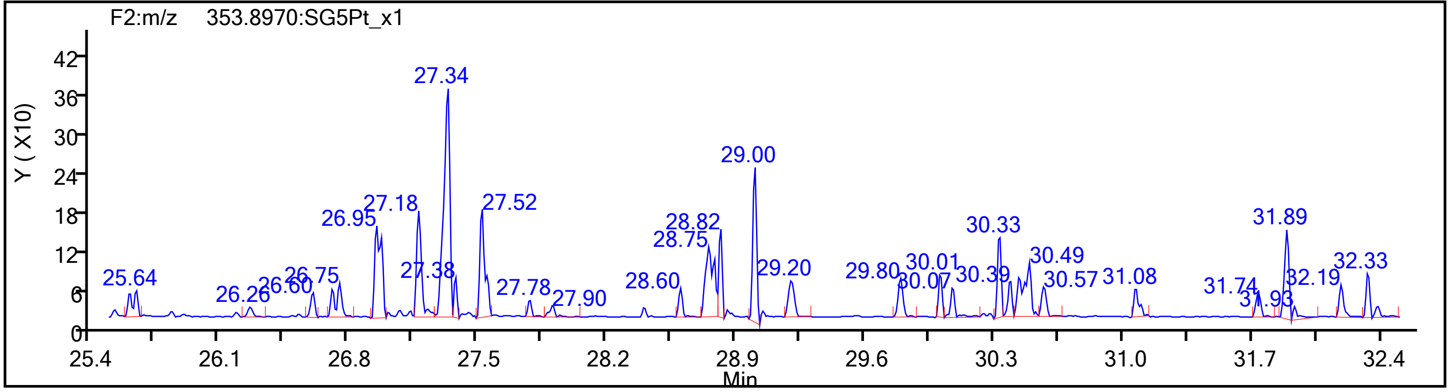

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Eurofins TestAmerica, Sacramento

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PeCDF

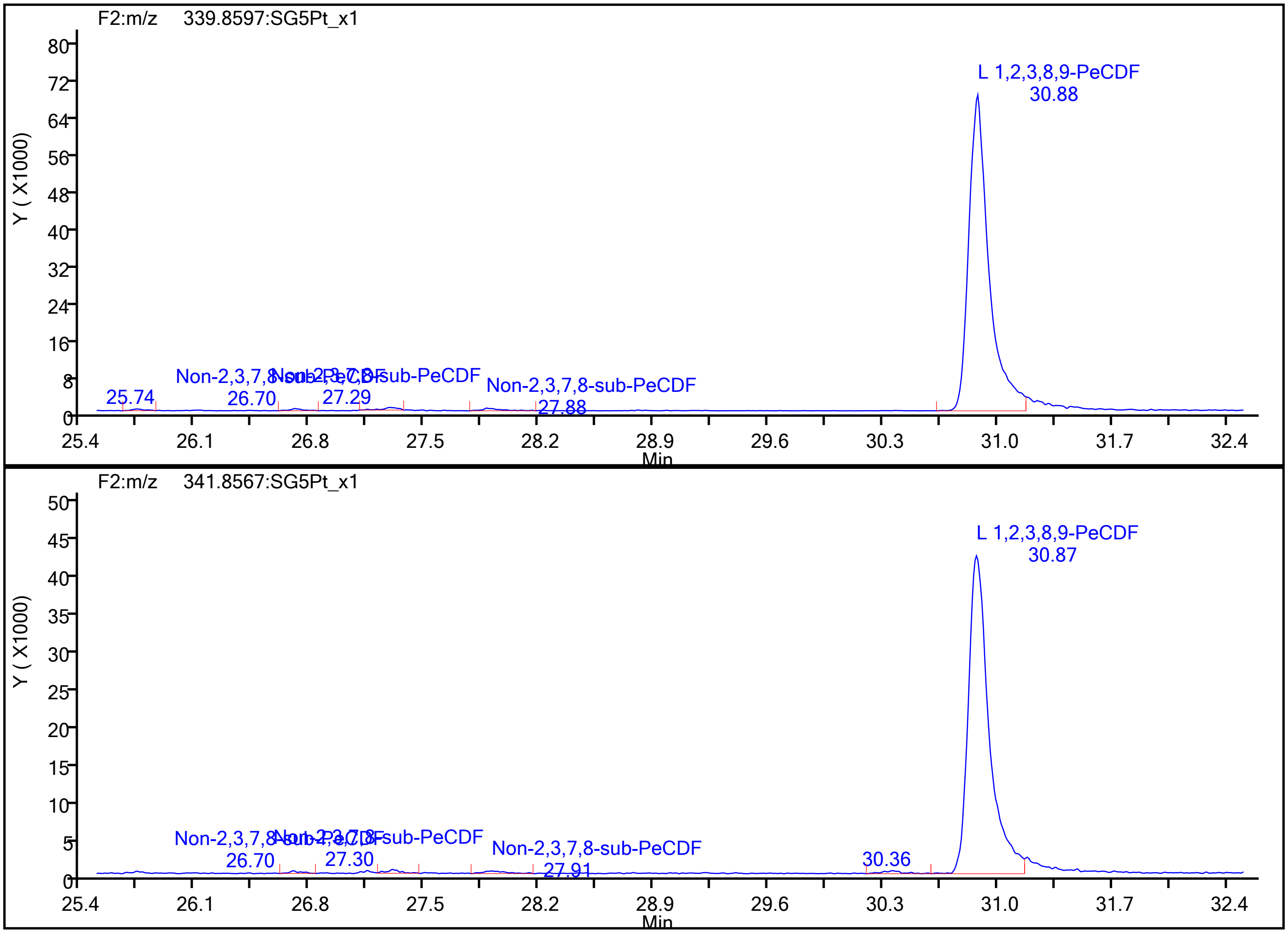

PeCDF Interference Mass

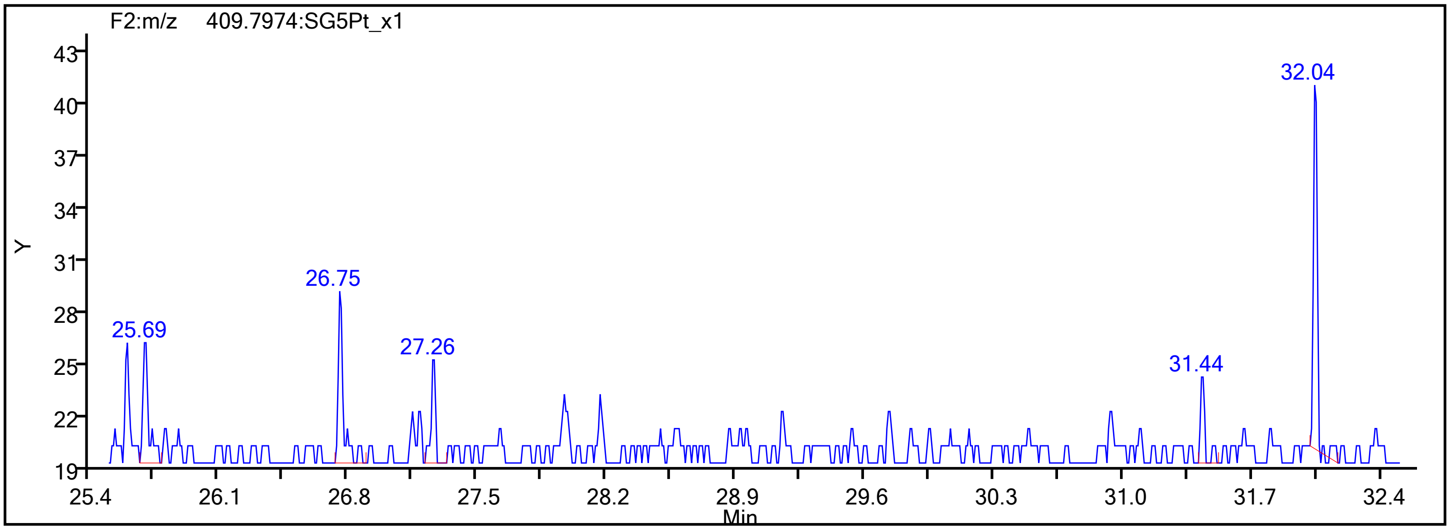

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Eurofins TestAmerica, Sacramento

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PeCDD

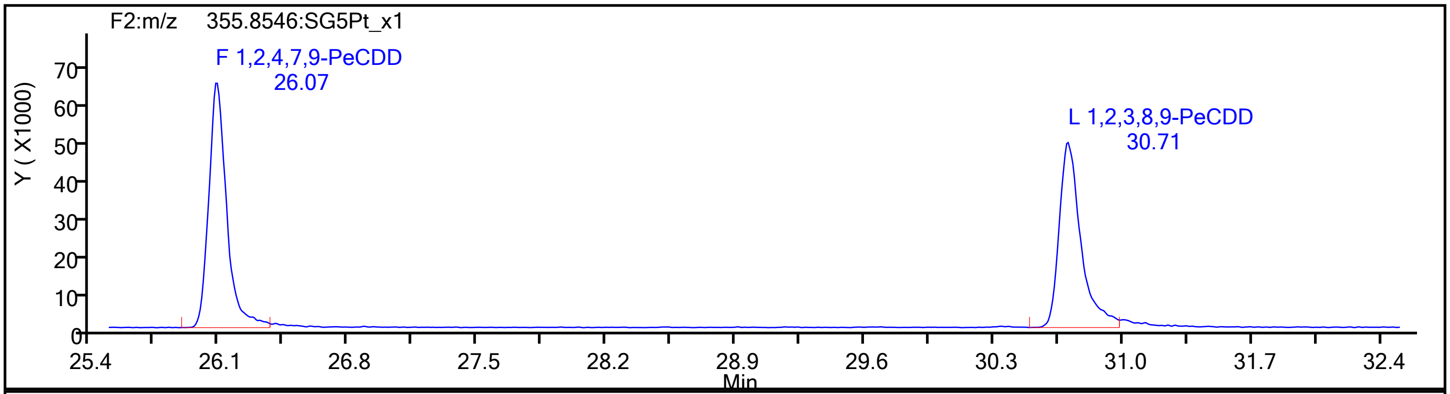

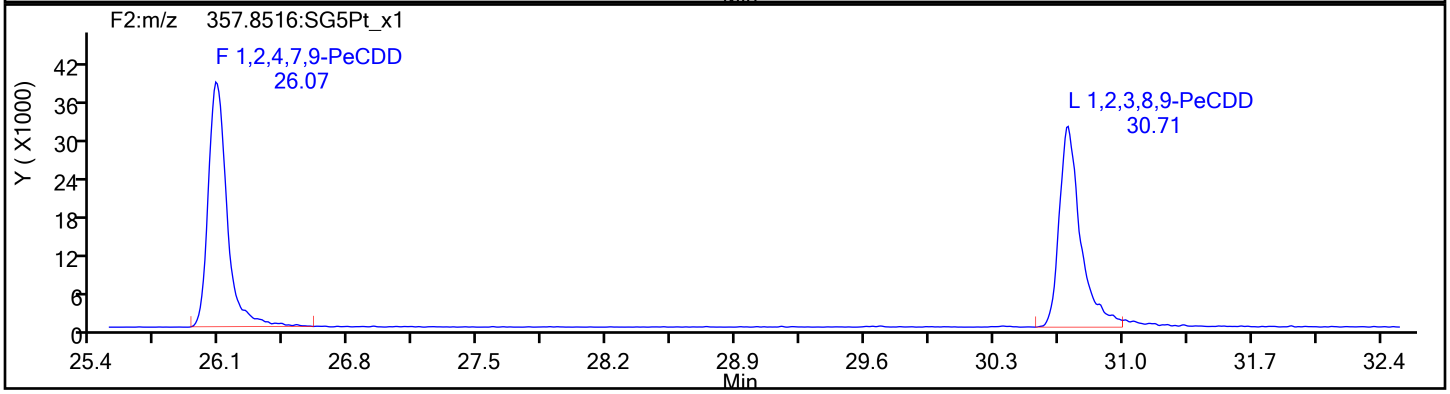

PeCDD Standards

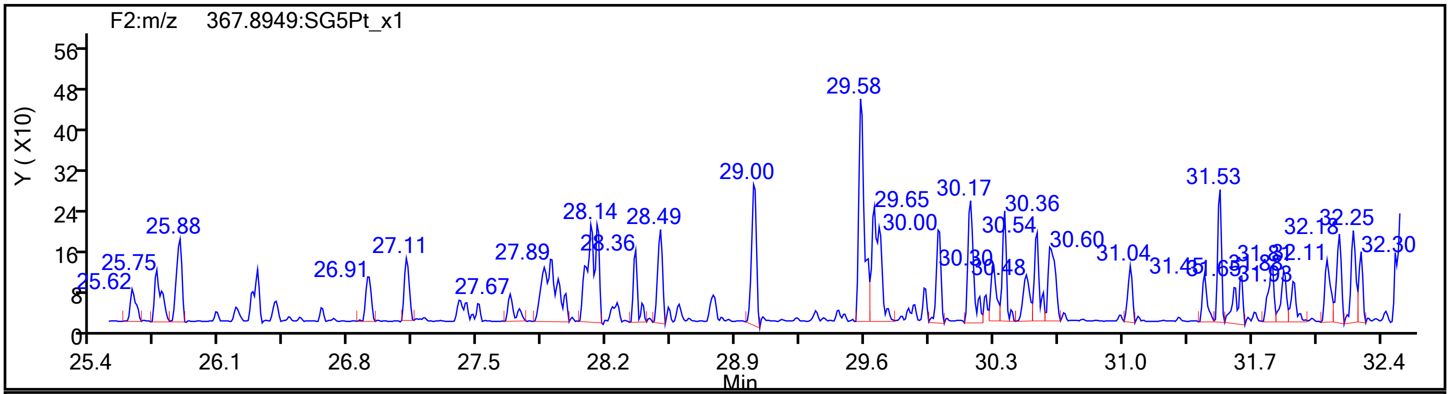

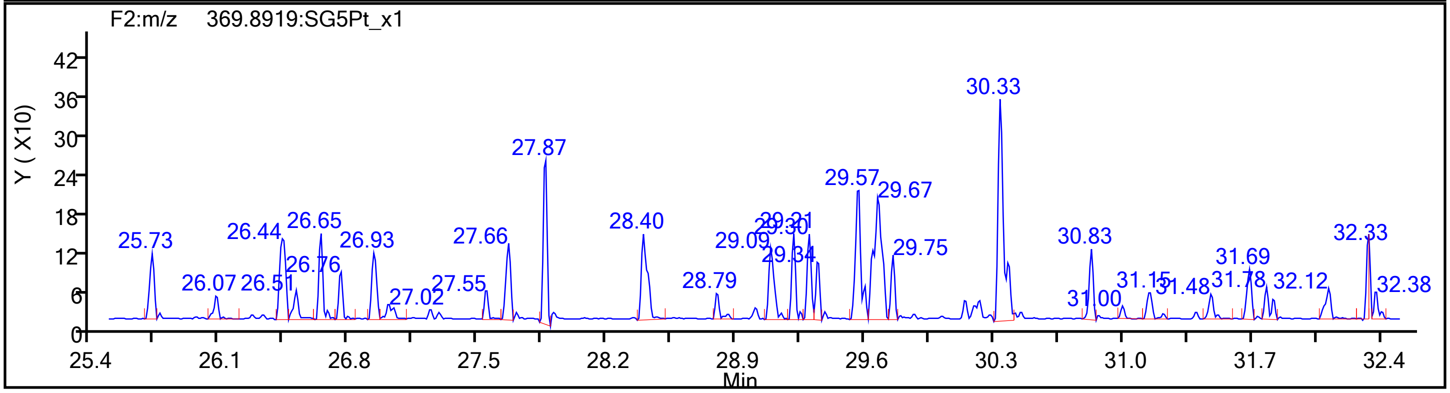

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Eurofins TestAmerica, Sacramento

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HxCDF

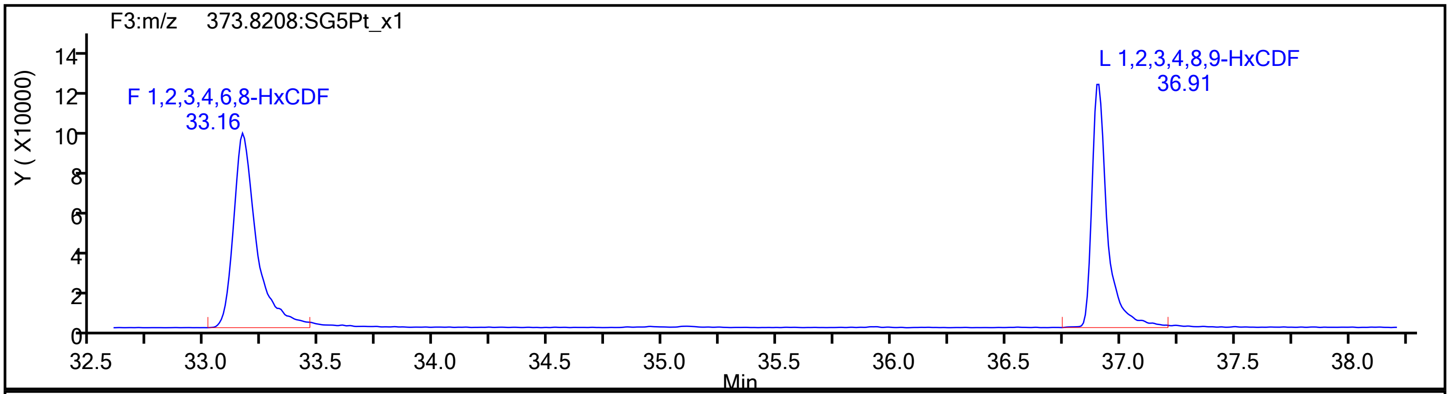

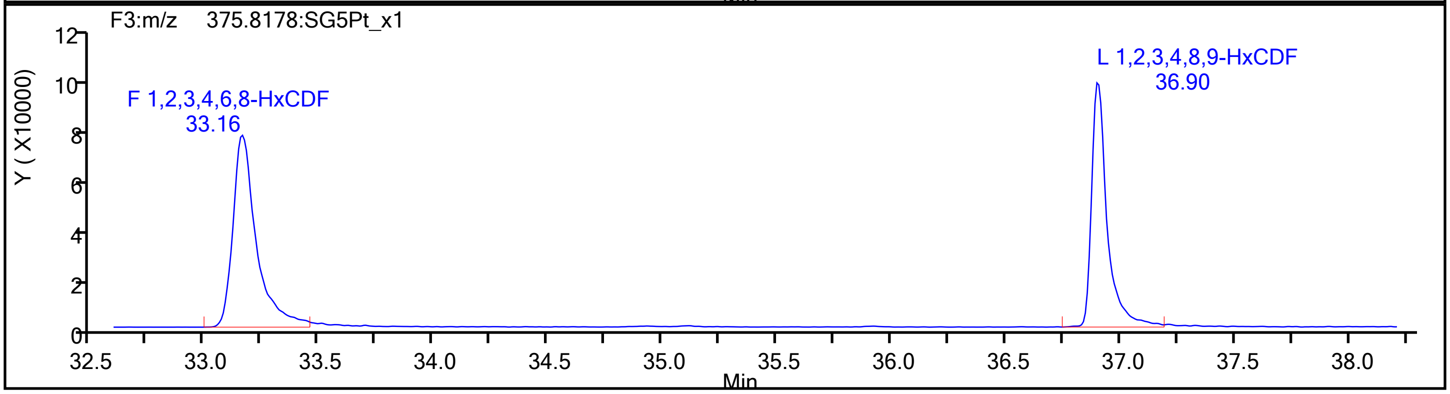

HxCDF Standards

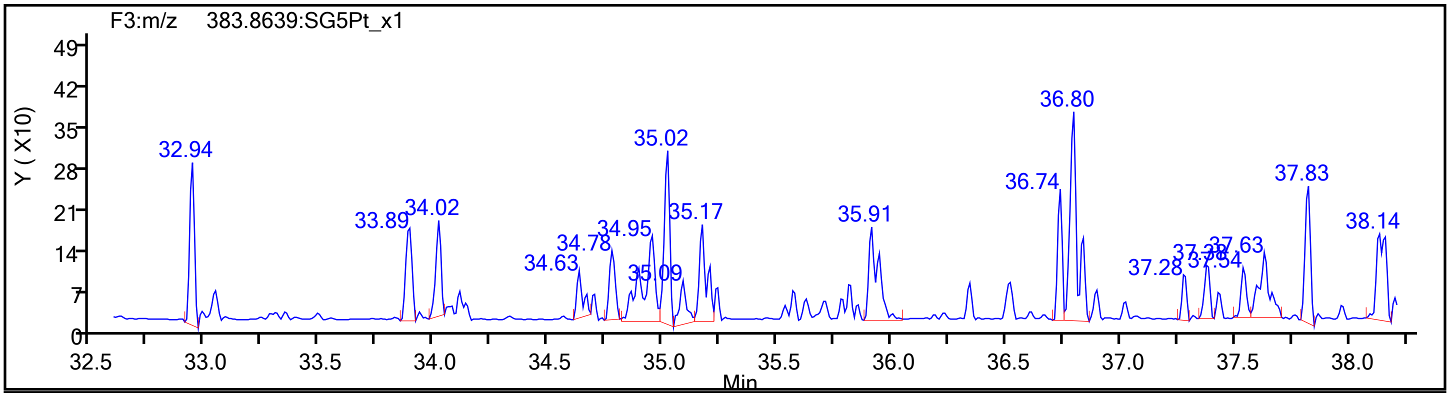

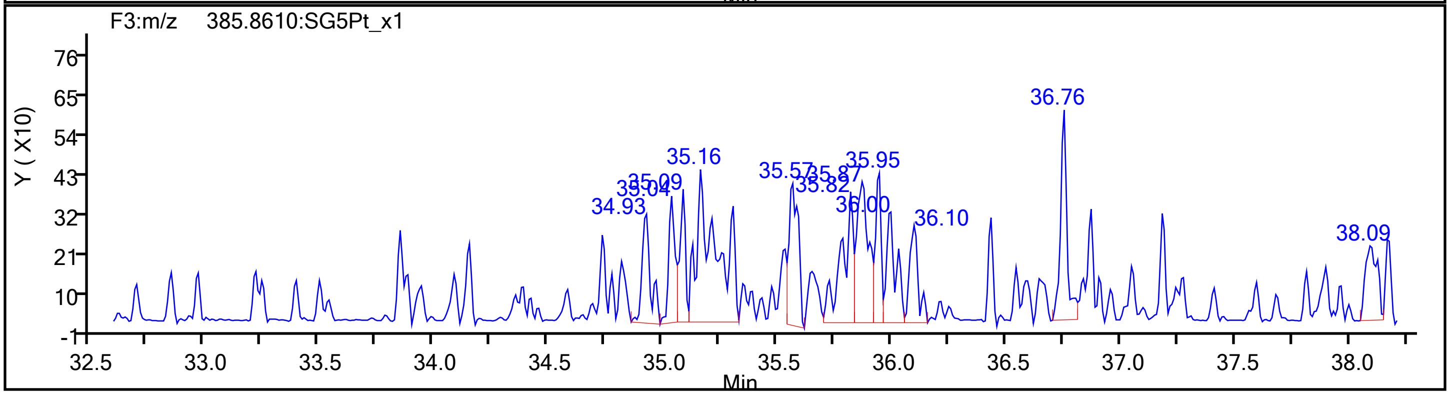

Eurofins TestAmerica, Sacramento

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HxCDF

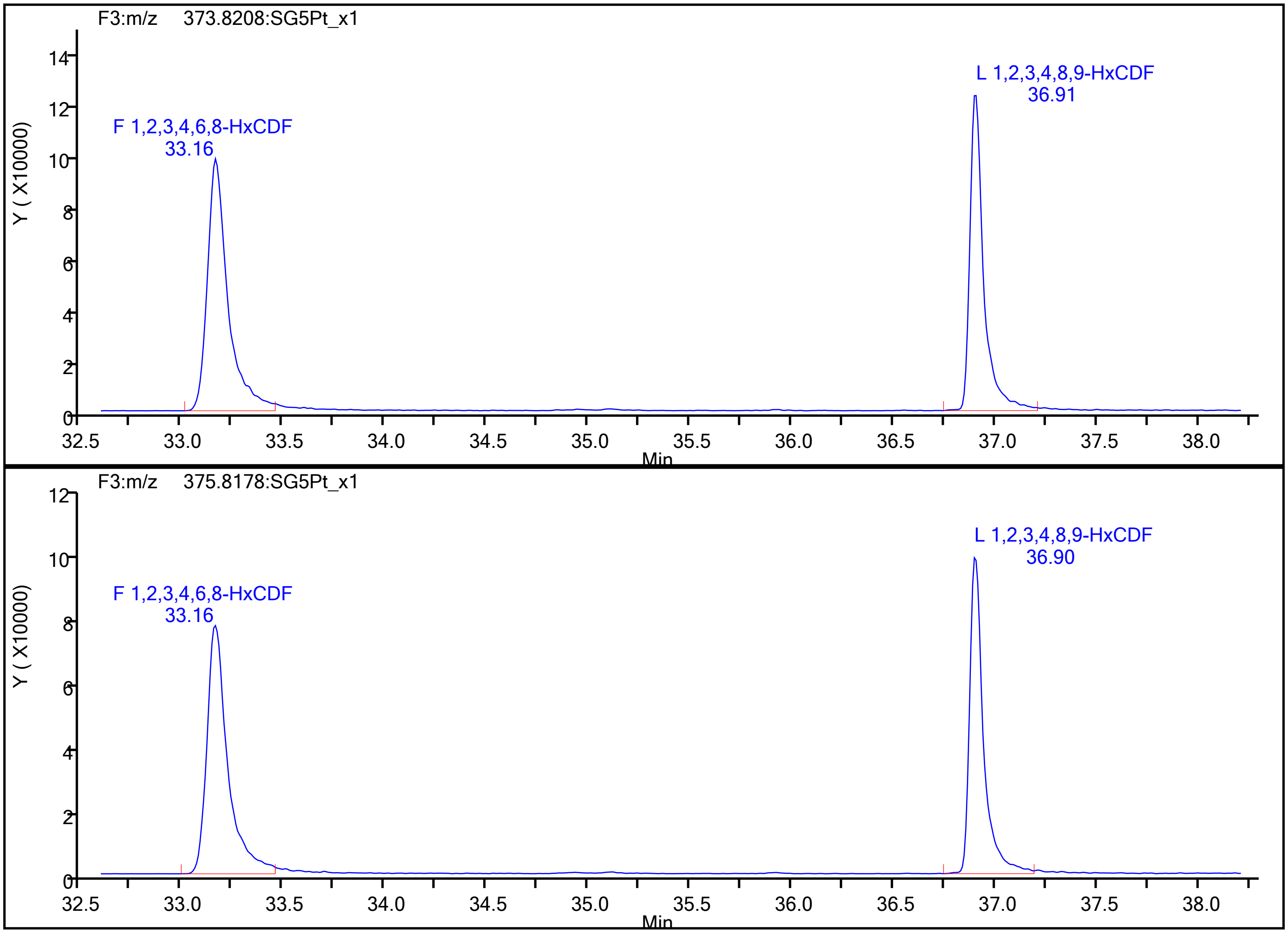

HxCDF Interference Mass

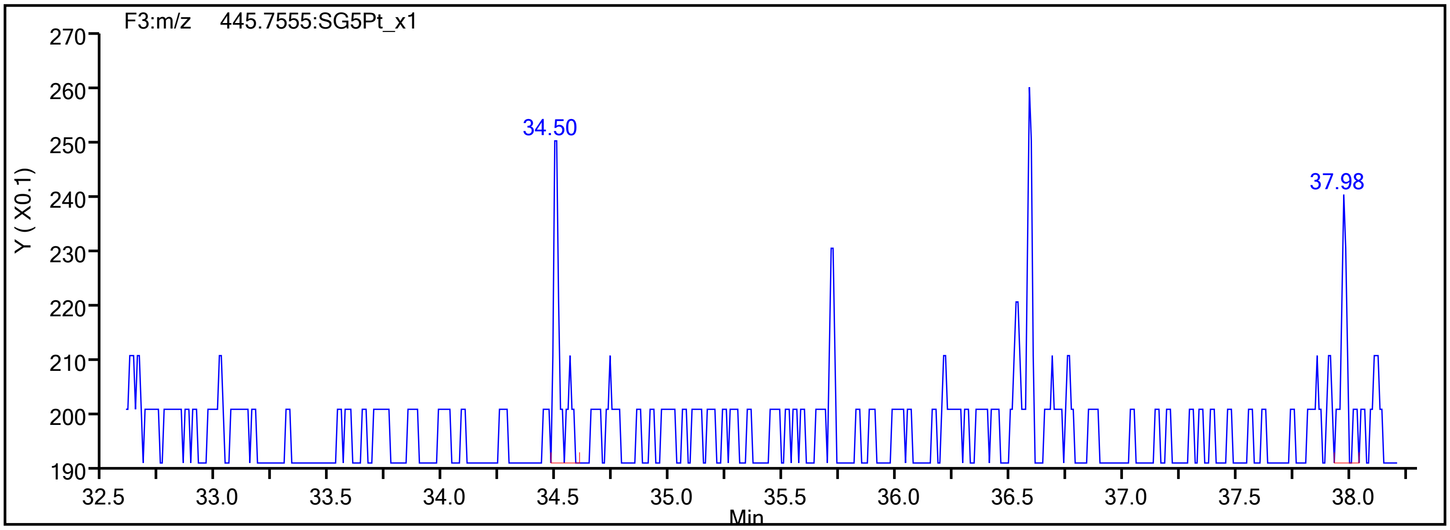

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Eurofins TestAmerica, Sacramento

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HxCDD

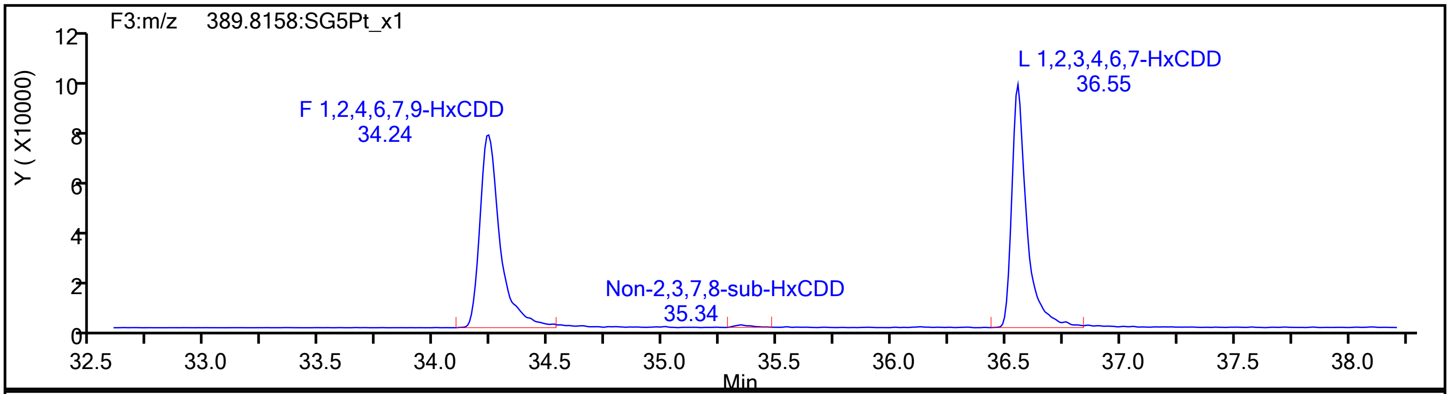

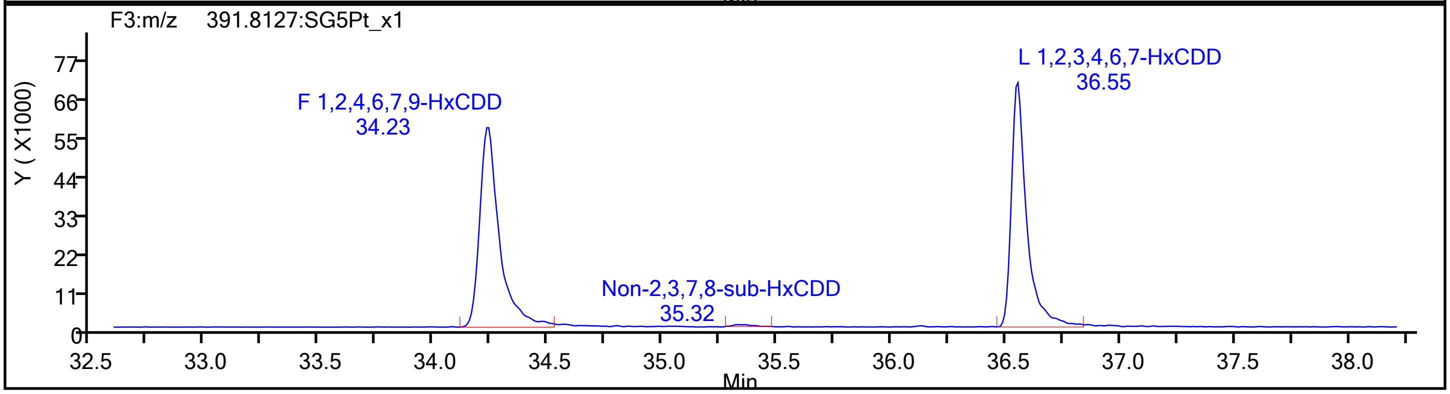

HxCDD Standards

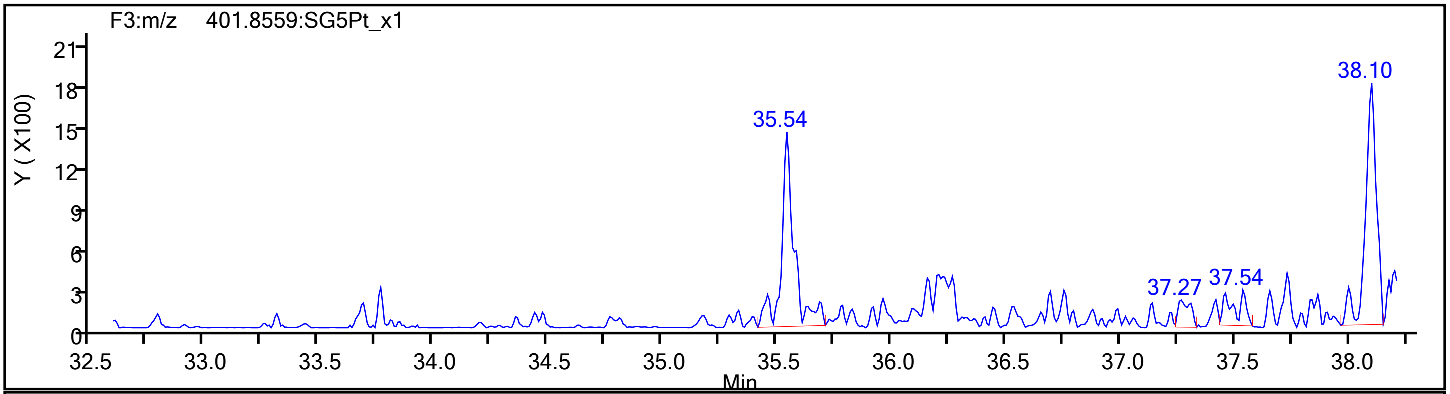

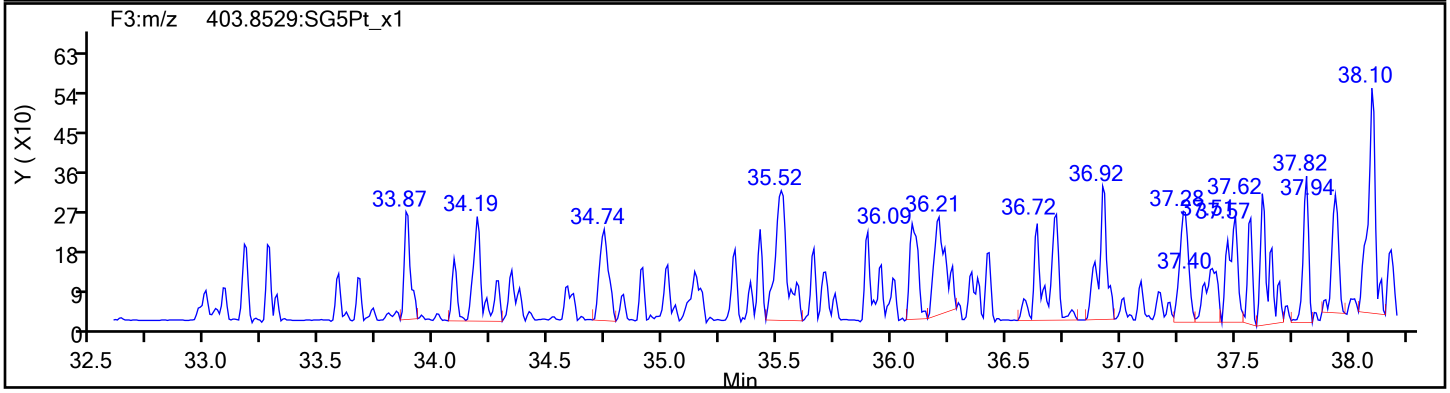

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Eurofins TestAmerica, Sacramento

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Injection Date: 31-Dec-2020 12:42:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 447767 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

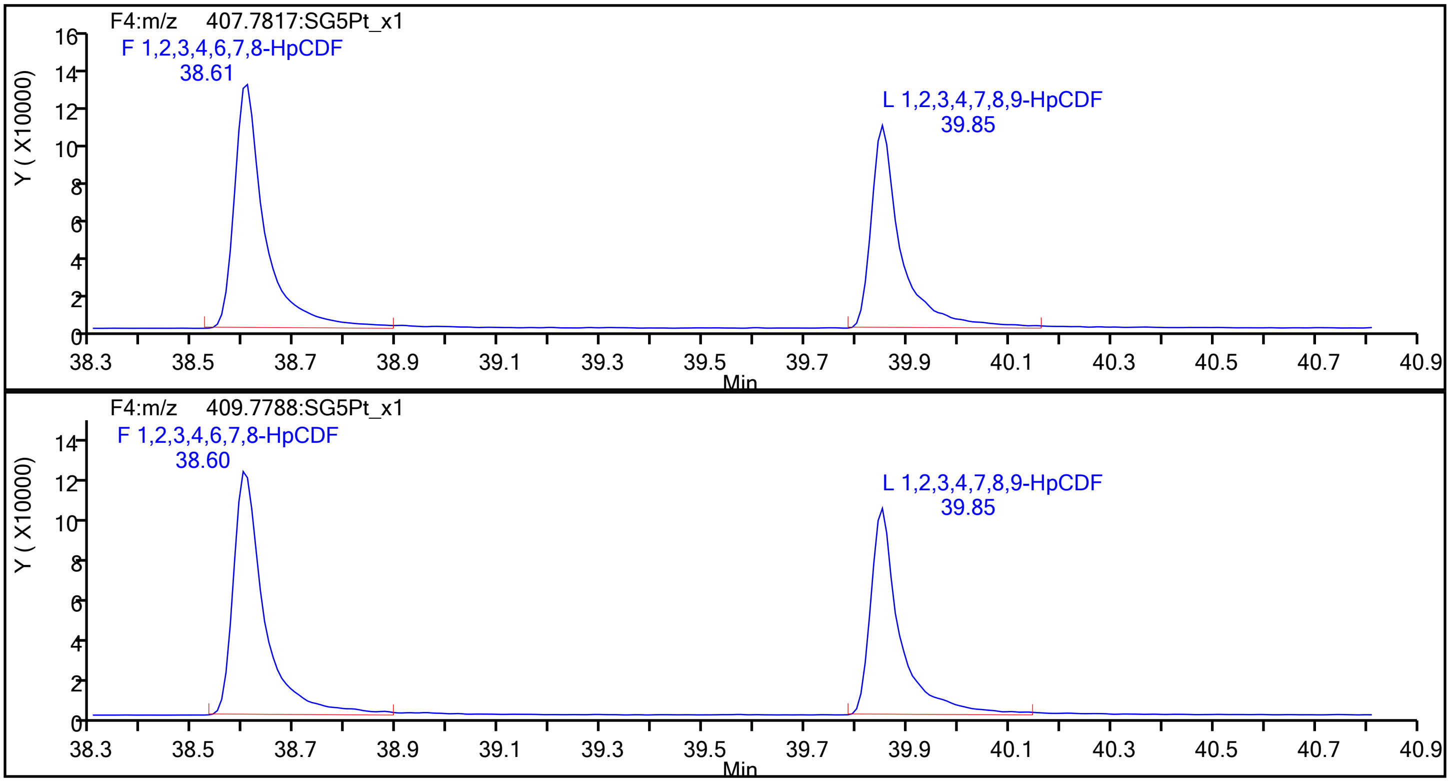

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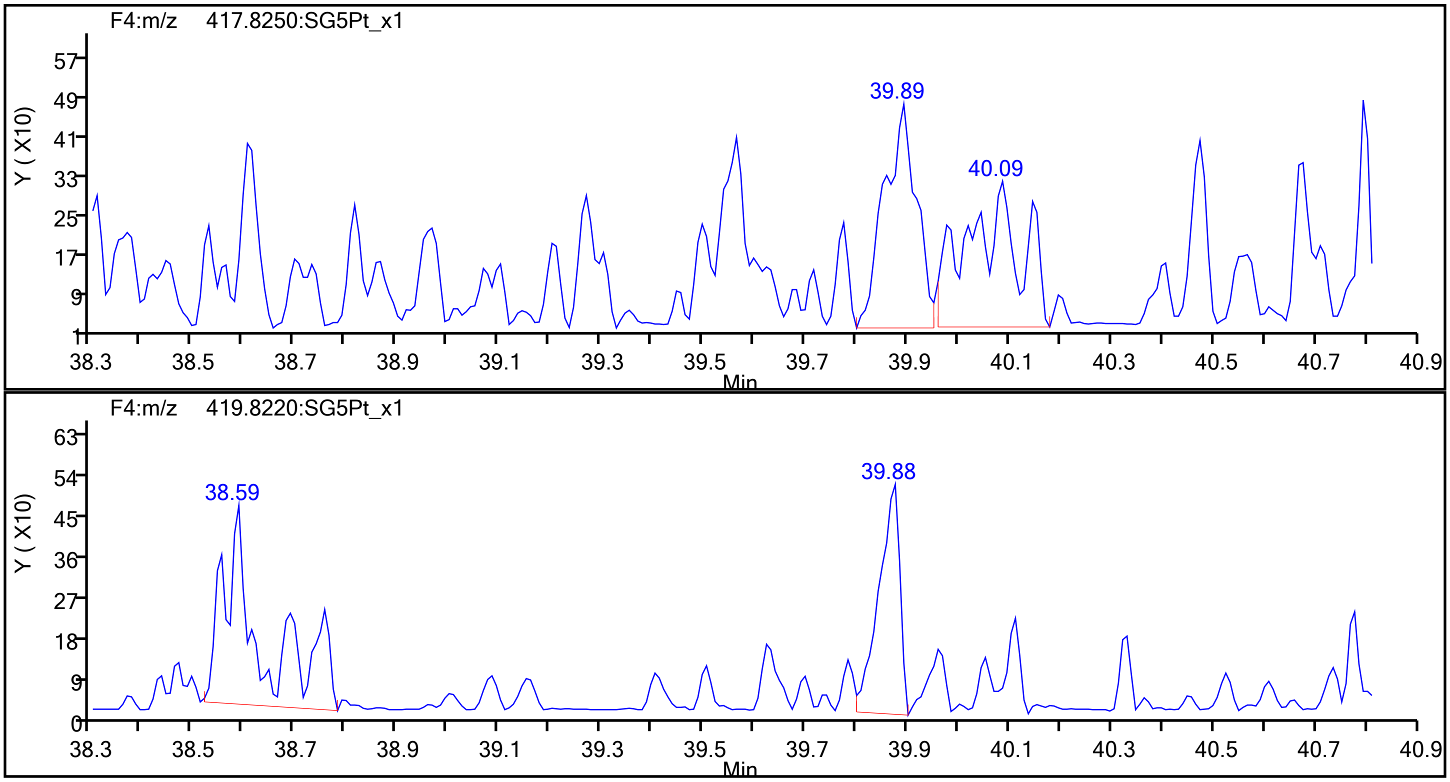

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Eurofins TestAmerica, Sacramento

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HpCDF

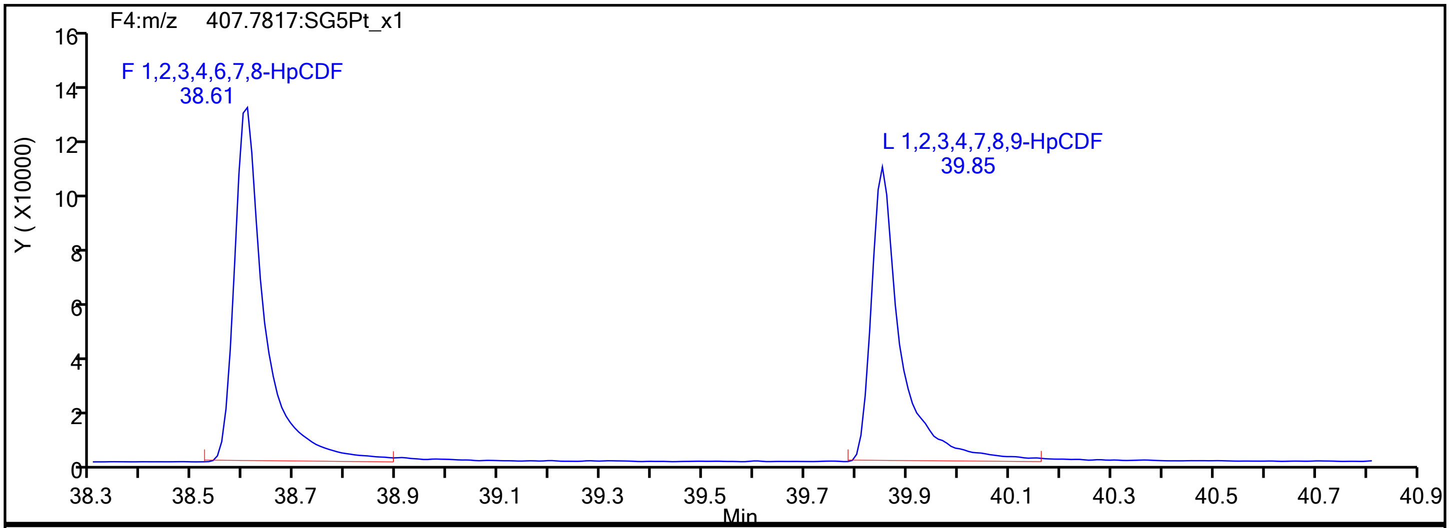

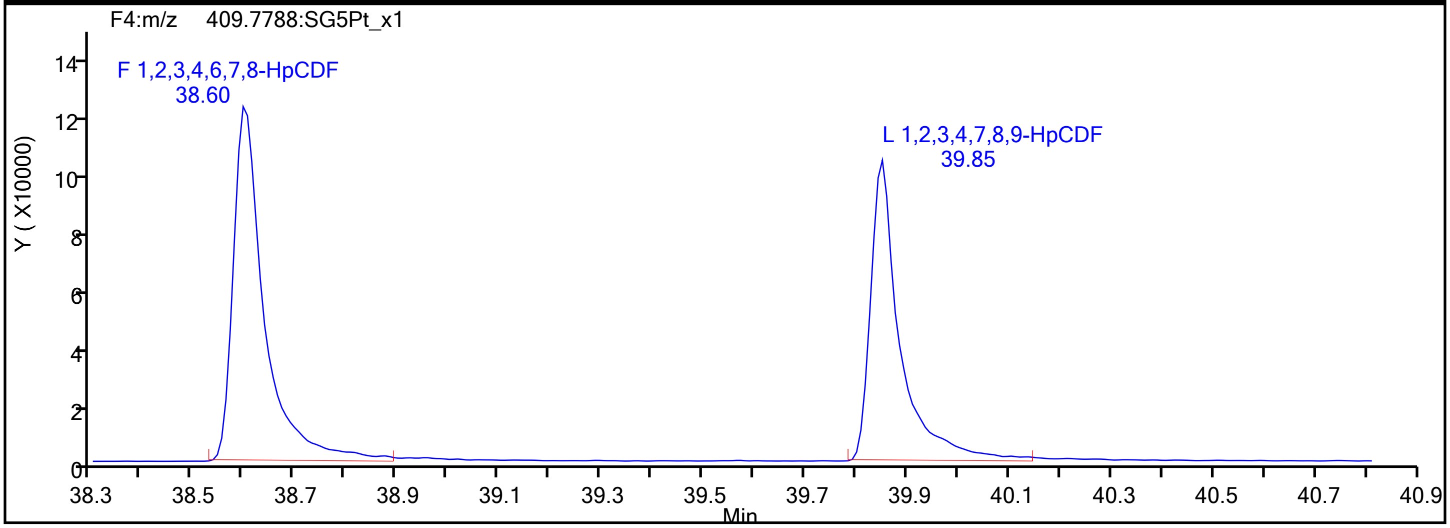

HpCDF Interference Mass

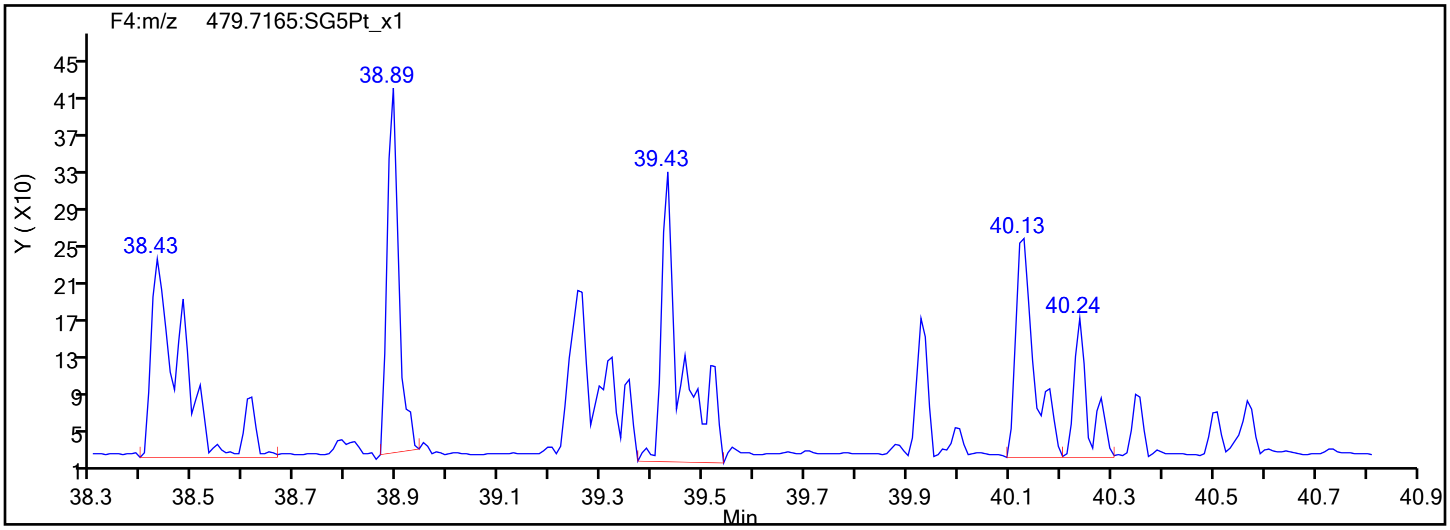

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HpCDD

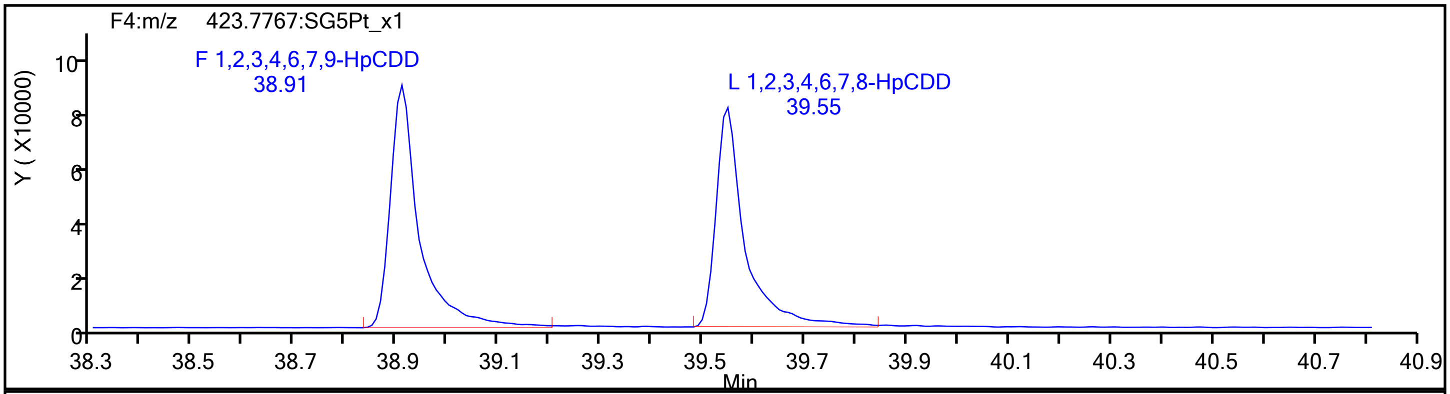

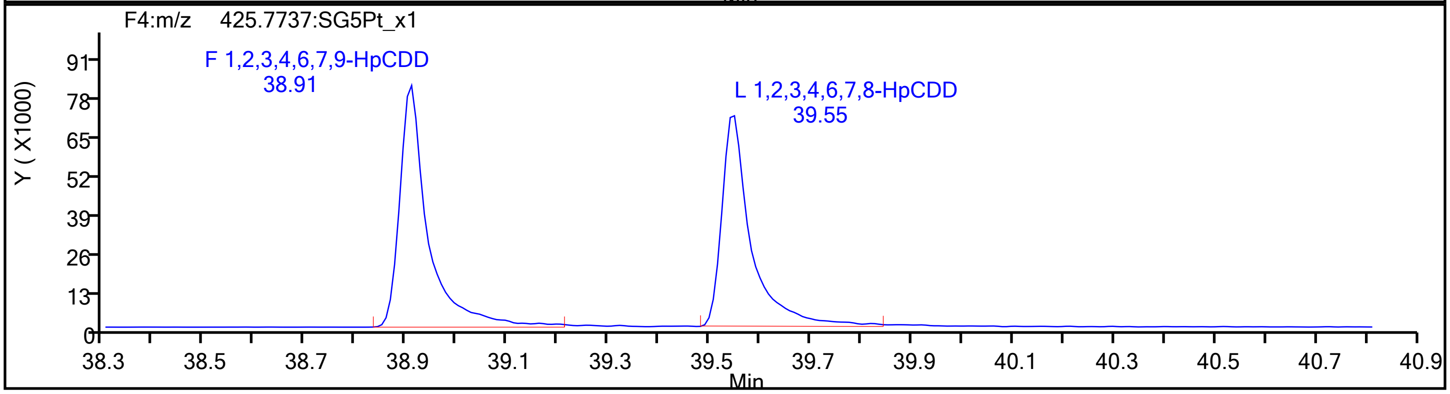

HpCDD Standards

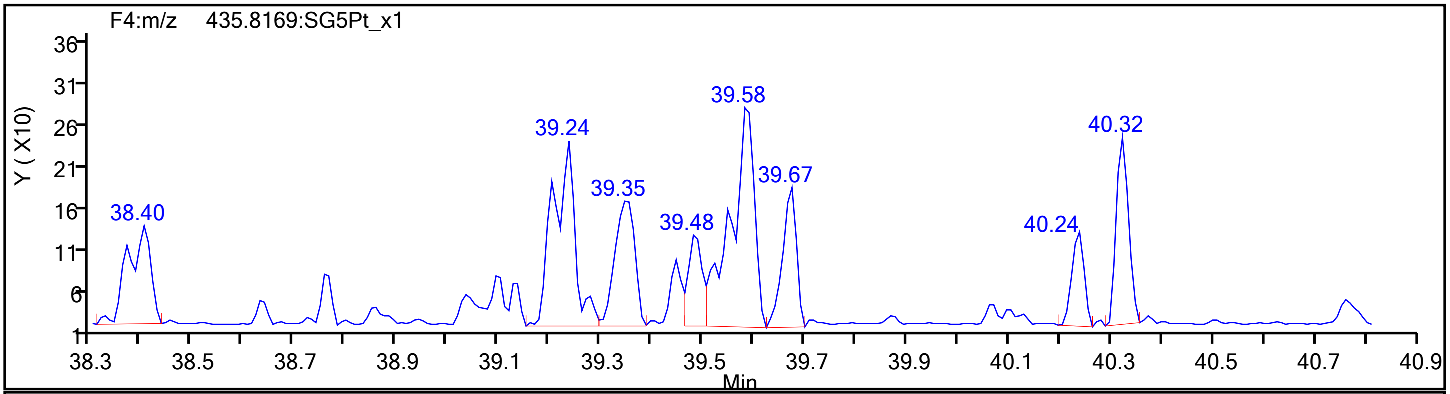

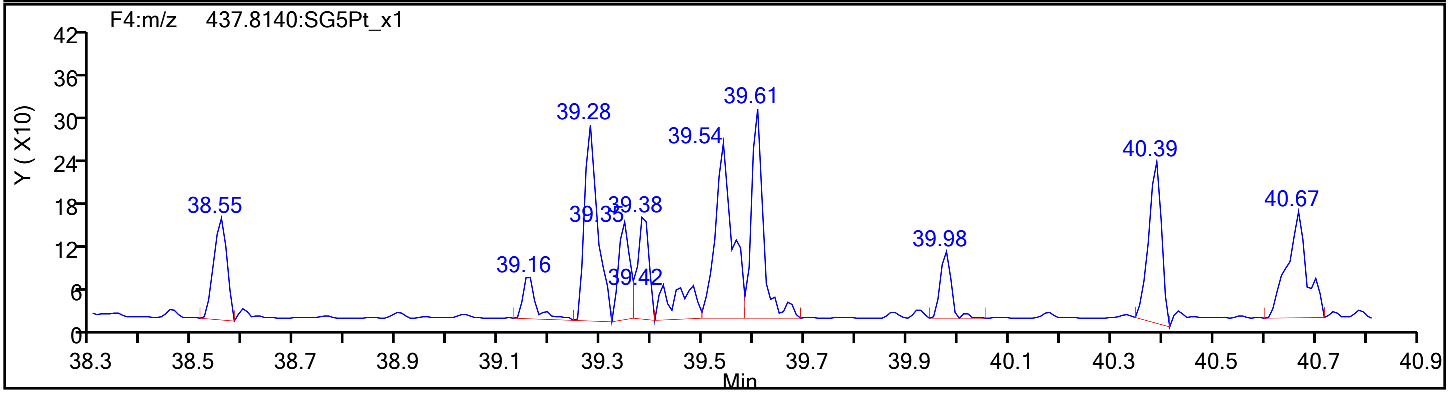

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Eurofins TestAmerica, Sacramento

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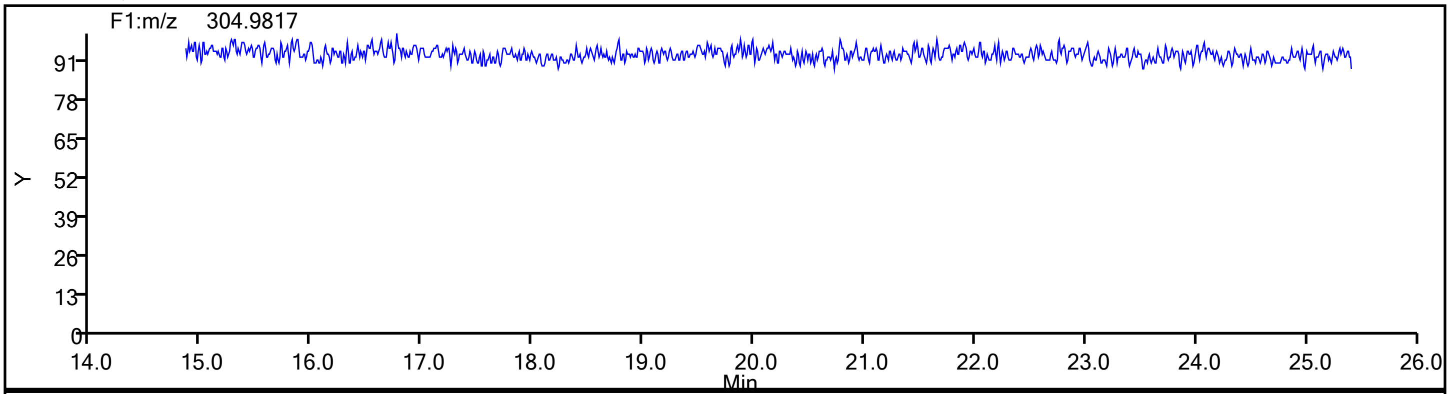

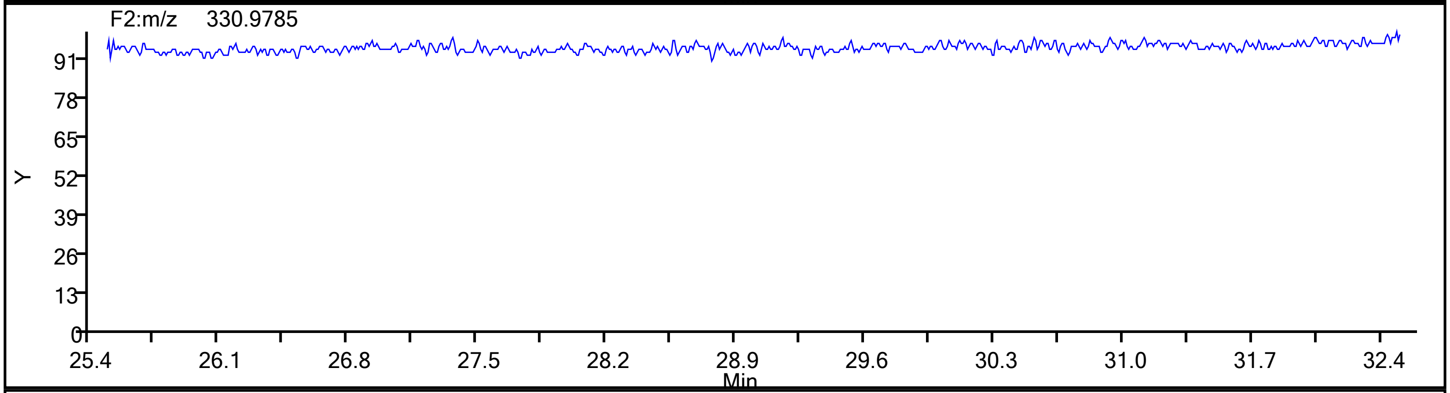

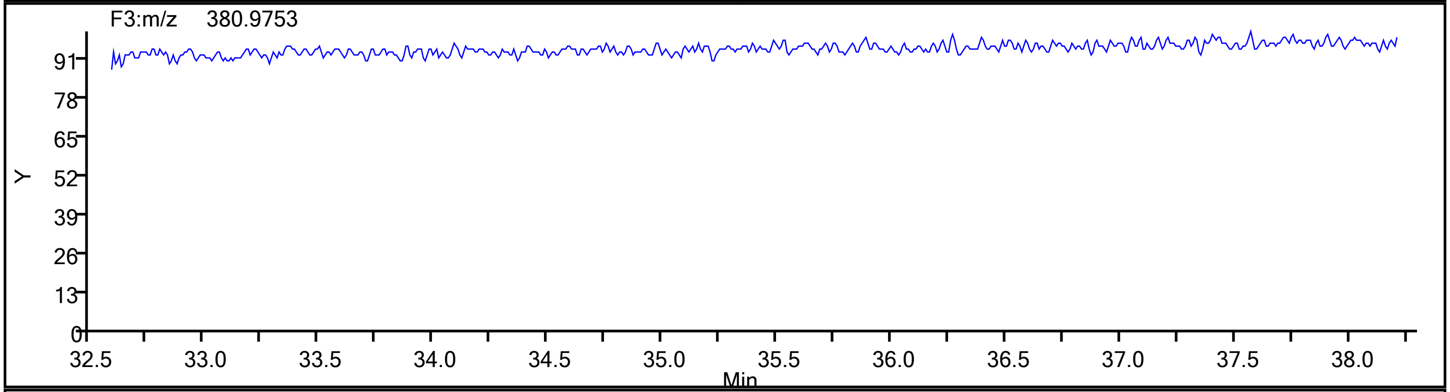

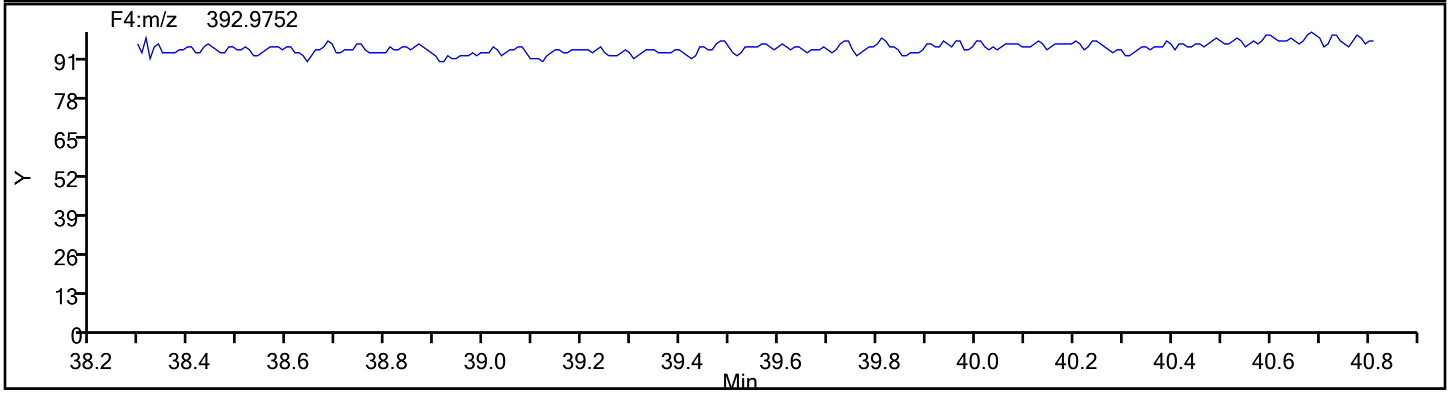

Eurofins TestAmerica, Sacramento

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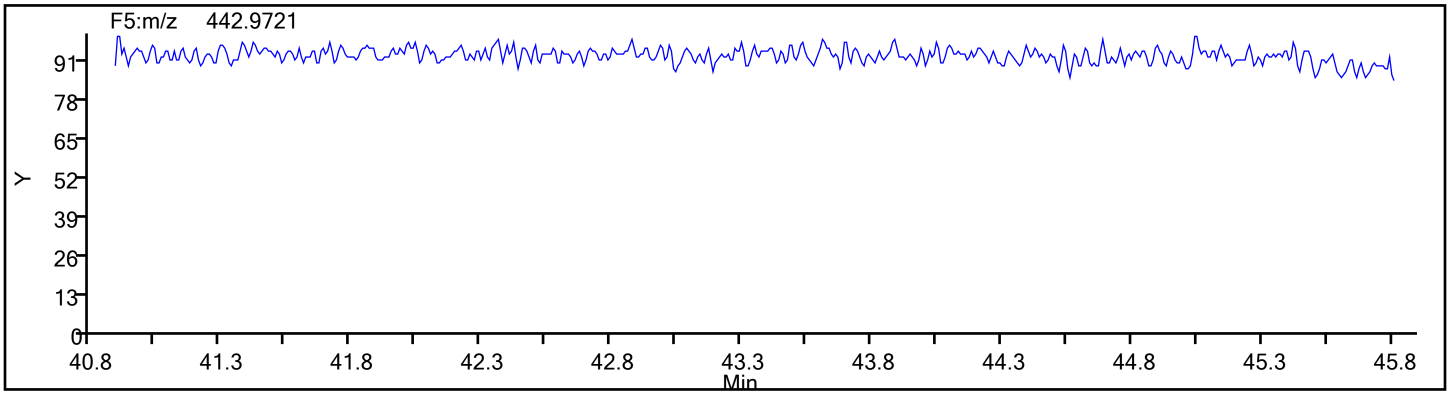

Report Date: 25-Jan-2021 20:04:59 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 22-Jan-2021 22:12:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Jan-2021 20:04:59 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1673

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.255	1817295	0.82	1.9134					0.00	
2,3,7,8-TCDF	20.298	4089960	0.81	1.1488	78.4	78.4	0.3639	0.3639		
A Non-2,3,7,8-sub-TCDF	19.761	52103	0.77	1.1488	0.998	0.998	0.3639	0.998		
S Total TCDF					79.4	79.4	0.3639	0.3639		
D 13C-2,3,7,8-TCDD	21.629	1089612	0.85	1.0908					0.00	
2,3,7,8-TCDD	21.646	1337894	0.80	1.3069	37.6	37.6	0.2433	0.2433		
A Non-2,3,7,8-sub-TCDD	20.599						0.2433	0.2433		
S Total TCDD					37.6	37.6	0.2433	0.2433		
A F1 PeCDFs	24.462						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	27.951						0.0	0.0		
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	28.310	8376	1.55	0.0000						RQ
S Total PeCDD										RQ
A Non-2,3,7,8-sub-HxCDF	34.976						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.342	12782	1.25	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.561	1427823	1.05	1.6487						
1,2,3,4,7,8,9-HpCDF	39.807	1115284	1.05	1.5723						
A Non-2,3,7,8-sub-HpCDF	39.184						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.504	877912	1.06	1.2146						
A Non-2,3,7,8-sub-HpCDD	39.237						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.987	2523004	0.81							
1,3,6,8-TCDD	17.601	1418364	0.79							
2,3,4,7-TCDF	20.298	4089960	0.81							
1,2,3,7-TCDD	21.431	1129553	0.80							
1,2,3,9-TCDF	21.844	1761460	0.80							
1,2,3,9-TCDD	21.930	1431889	0.78							
1,2,8,9-TCDF	23.536	1838706	0.79							
1,2,8,9-TCDD	23.596	560689								
1,3,4,6,8-PeCDF	23.957	1563841	1.60							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,4,7,9-PeCDD	26.004	1152012	1.58							
1,2,3,8,9-PeCDD	30.617	1010479	1.57							
1,2,3,8,9-PeCDF	30.794	1370413	1.59							
1,2,3,4,6,8-HxCDF	33.087	1764501	1.27							
1,2,4,6,7,9-HxCDD	34.172	1189666	1.28							
1,2,3,4,6,7-HxCDD	36.512	1090030	1.25							
1,2,3,4,8,9-HxCDF	36.866	1368834	1.26							
1,2,3,4,6,7,9-HpCDD	38.864	958582	1.06							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 25-Jan-2021 20:04:59 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 22-Jan-2021 22:12:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Jan-2021 20:04:59 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1673

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.255	20.255	0	1.000	816818	122916	811	2027	152		
317.9389	20.246	20.255	-1	1.000	1000477	152149	247	617	616	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.298	20.298	0	1.002	1830180	240618	498	1245	483		
305.8987	20.298	20.298	0	1.002	2259780	299182	652	1630	459	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	23.957	19.761	251	1.183	22653	4111	498	1245	8		
305.8987	23.948	19.761	251	1.182	29450	4929	652	1630	8	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.629	21.629	0	1.000	500335	67023	585	1462	115		
333.9338	21.603	21.629	-2	1.000	589277	87076	74	185	1177	0.85(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.646	21.646	0	1.001	592613	81595	259	647	315		
321.8936	21.646	21.646	0	1.001	745281	104652	231	577	453	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.599						259	647			
321.8936	20.599						231	577			
A F1 PeCDFs											
339.8597	24.462						15	37			
341.8567	24.462						127	317			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.951						112	280			
341.8567	27.951						200	500			
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	30.179	28.310	112	1.000	8547	1284	191	477	7		
357.8516	30.179	28.310	112	1.000	3285	593	84	210	7	2.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.976						203	507			
375.8178	34.976						142	355			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.292	35.342	-3	1.000	7093	1525	156	390	10		
391.8127	35.292	35.342	-3	1.000	5689	1284	125	312	10	1.25(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.561	38.561	0	1.000	729723	237087	224	560	1058		
409.7788	38.561	38.561	0	1.000	698100	223978	142	355	1577	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.807	39.807	0	1.000	571201	202978	224	560	906		
409.7788	39.807	39.807	0	1.000	544083	193498	142	355	1363	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.184						224	560			
409.7788	39.184						142	355			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.504	39.504	0	1.000	452632	158802	121	302	1312		
425.7737	39.504	39.504	0	1.000	425280	150221	91	227	1651	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.237						121	302			
425.7737	39.237						91	227			
1,3,6,8-TCDF											
303.9016	15.987	15.987	0		1132093	224904	498	1245	452		
305.8987	15.978	15.987	-1		1390911	278225	652	1630	427	0.81(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.601	17.601	0		627875	111650	259	647	431		
321.8936	17.601	17.601	0		790489	136667	231	577	592	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.298	20.298	0		1830180	240618	498	1245	483		
305.8987	20.298	20.298	0		2259780	299182	652	1630	459	0.81(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.431	21.431	0		500431	74451	259	647	287		
321.8936	21.431	21.431	0		629122	91673	231	577	397	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	21.844	21.844	0		782733	108363	498	1245	218		
305.8987	21.844	21.844	0		978727	134980	652	1630	207	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	21.930	21.930	0		628954	82966	259	647	320		
321.8936	21.930	21.930	0		802935	105243	231	577	456	0.78(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.536	23.536	0		812399	139976	498	1245	281		
305.8987	23.536	23.536	0		1026307	174313	652	1630	267	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.596	23.596	0		560689	95622	259	647	369		
1,3,4,6,8-PeCDF											
339.8597	23.957	23.957	0		962284	185702	15	37	12380		
341.8567	23.957	23.957	0		601557	118551	127	317	933	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	26.004	26.004	0		704859	110423	191	477	578		
357.8516	26.004	26.004	0		447153	71163	84	210	847	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	30.617	30.617	0		616857	81474	191	477	427		
357.8516	30.617	30.617	0		393622	53159	84	210	633	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	30.794	30.794	0		841094	110395	112	280	986		
341.8567	30.794	30.794	0		529319	69837	200	500	349	1.59(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.087	33.087	0		987874	157357	203	507	775		
375.8178	33.087	33.087	0		776627	123372	142	355	869	1.27(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.172	34.172	0		668076	133350	156	390	855		
391.8127	34.172	34.172	0		521590	104757	125	312	838	1.28(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.512	36.512	0		605980	156081	156	390	1001		
391.8127	36.504	36.512	-1		484050	126312	125	312	1010	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.866	36.866	0		763480	209958	203	507	1034		
375.8178	36.857	36.866	-1		605354	163633	142	355	1152	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.864	38.864	0		493803	165650	121	302	1369		
425.7737	38.864	38.864	0		464779	157373	91	227	1729	1.06(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: uL

Report Date: 25-Jan-2021 20:04:59 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	22-Jan-2021 22:12:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	2

Non-2,3,7,8-sub-TCDF, RT: 19.761

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.149	D 13C-2,3,7,8-TCDF	40.000	1817295	275065

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		40.000	1817295	275065

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
23.957	22653	4111	29450	4929	1.00	0.77	
Signal Totals:							
	22653	4111	29450	4929			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	52103	9040				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.998 = (52103 * 40.000) / (1817295 * 1.149)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d
Lims ID: WDM
Client ID:
Inject. Date: 22-Jan-2021 22:12:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 454782 Lims Sample ID: 2

Non-2,3,7,8-sub-PeCDD, RT: 28.310

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.261				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.179	8547	1284	3285	593		2.60	R
Signal Totals:							
	8547	1284	3285	593			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11832	1877				2.60	RQ
	8376	1512					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11832 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (8376 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	22-Jan-2021 22:12:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	2

Non-2,3,7,8-sub-HxCDD, RT: 35.342

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.342				
1,2,3,6,7,8-HxCDD	1.199				
1,2,3,7,8,9-HxCDD	1.364				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.292	7093	1525	5689	1284		1.25	
Signal Totals:							
	7093	1525	5689	1284			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12782	2809				1.25	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (12782 * 0.0) / (0 * 0.000)

Report Date: 25-Jan-2021 20:04:59 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d

Injection Date: 22-Jan-2021 22:12:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

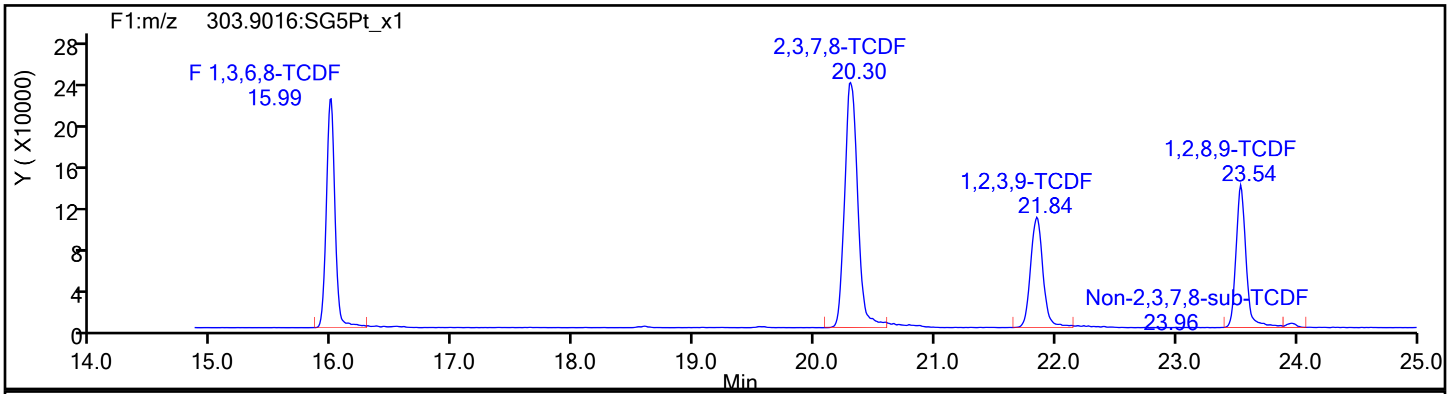

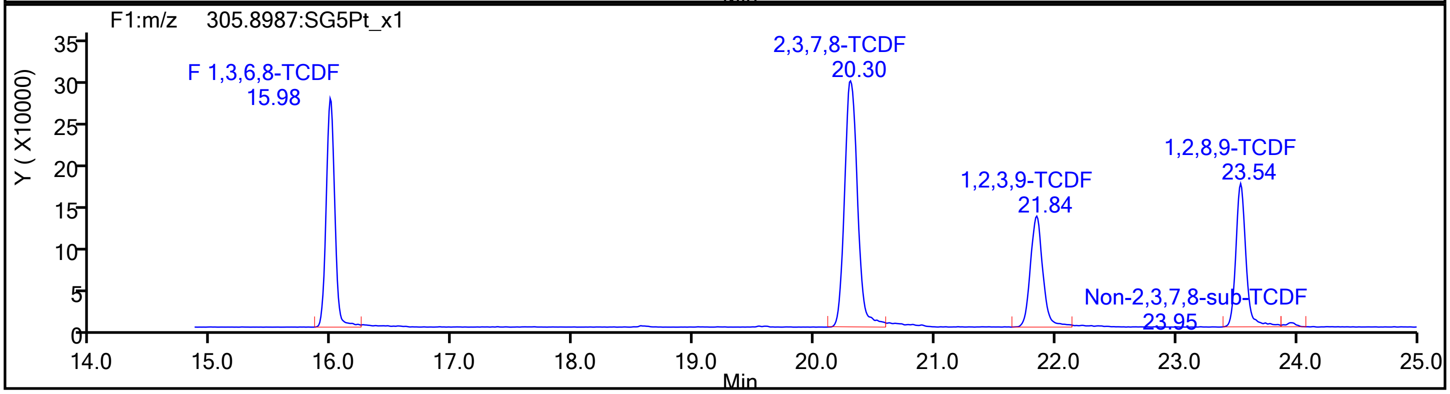

TCDF Standards

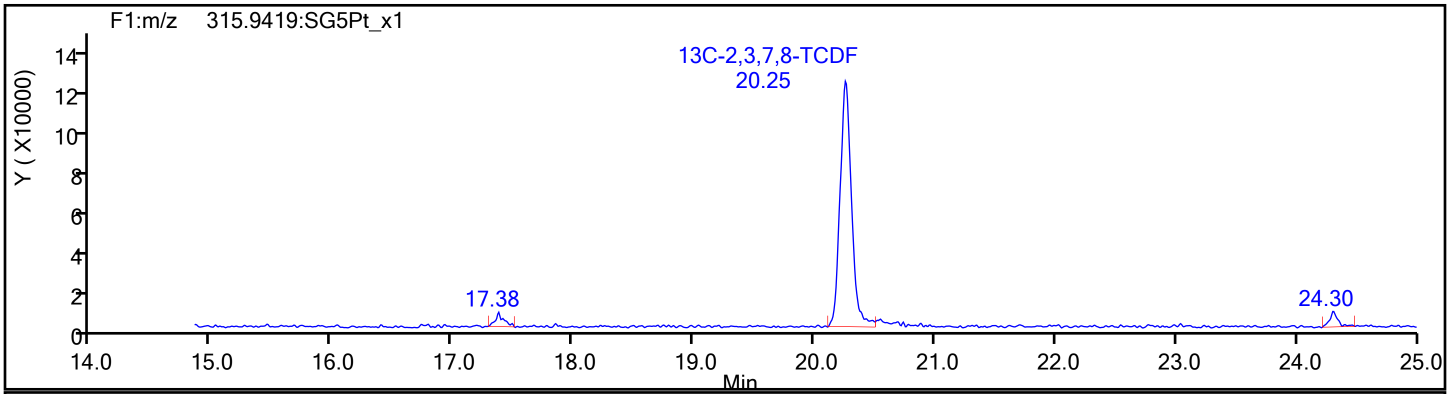

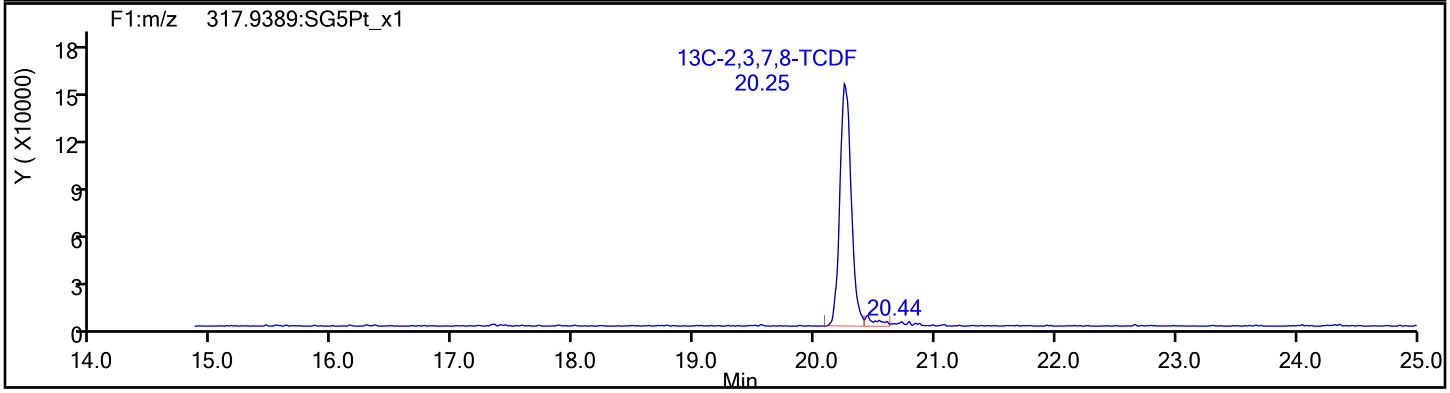

Report Date: 25-Jan-2021 20:04:59 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d		
Injection Date:	22-Jan-2021 22:12:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

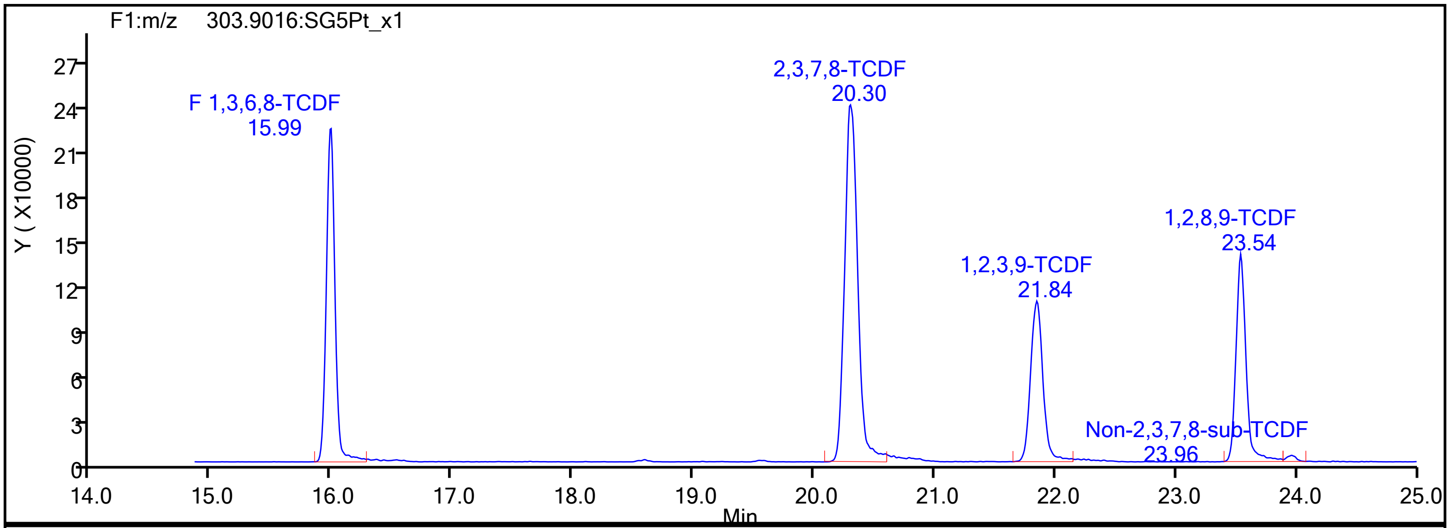

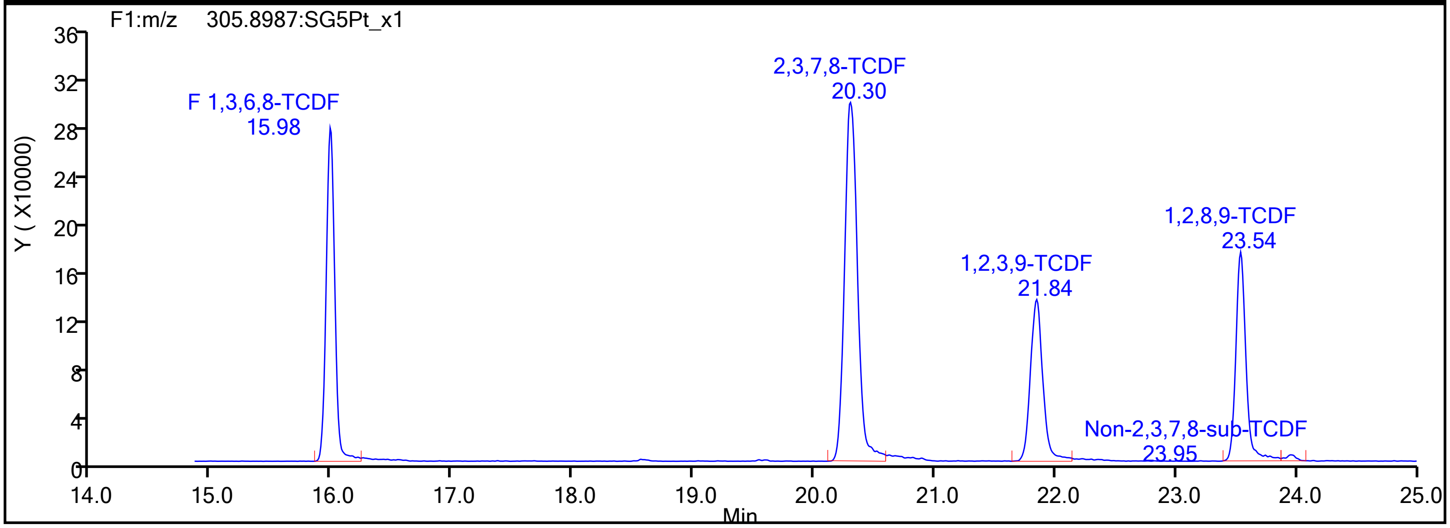

TCDF Interference Mass

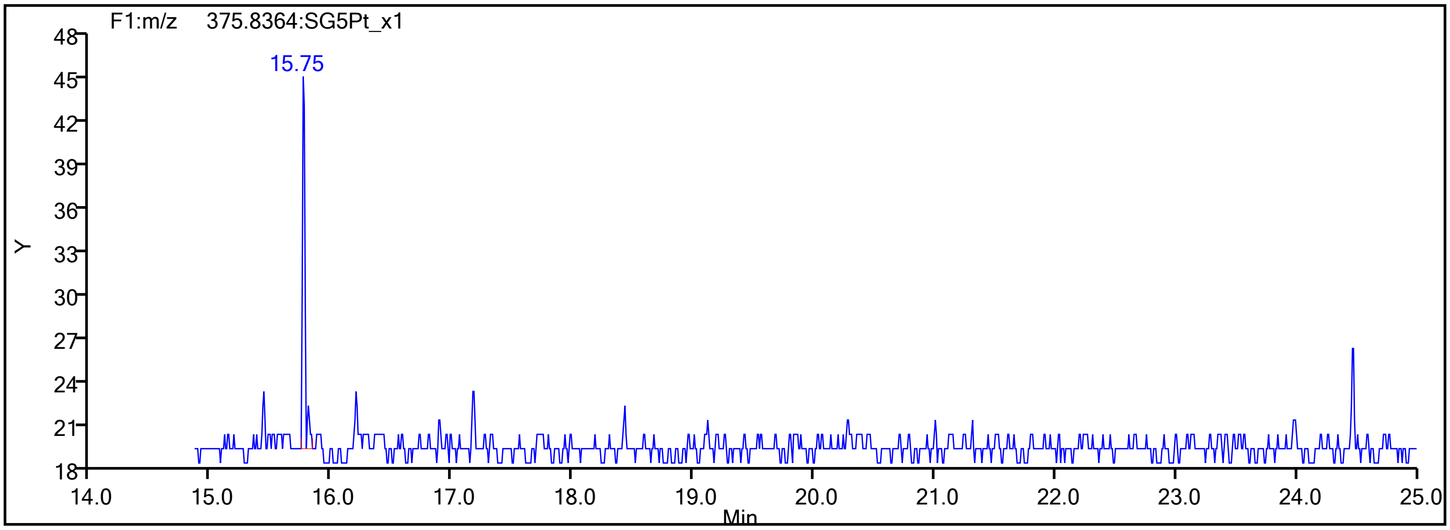

Report Date: 25-Jan-2021 20:04:59 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d
Injection Date: 22-Jan-2021 22:12:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782 Sample Line#: 2
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

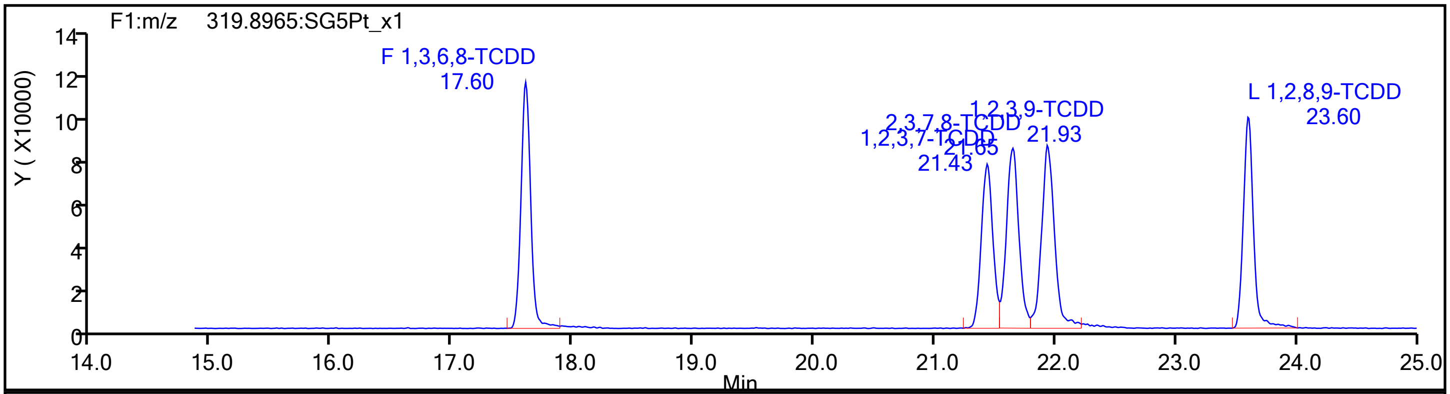

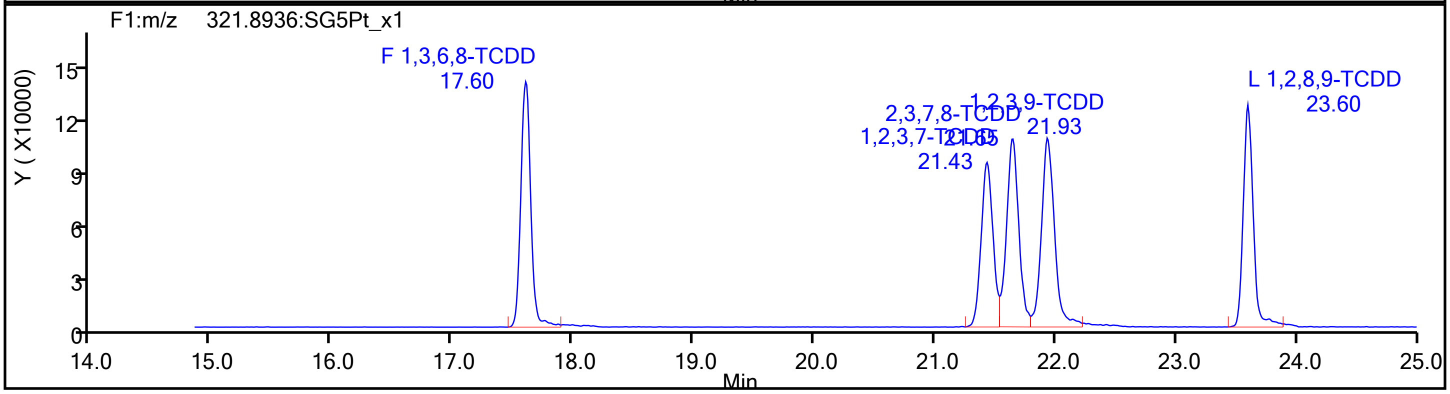

TCDD Standards

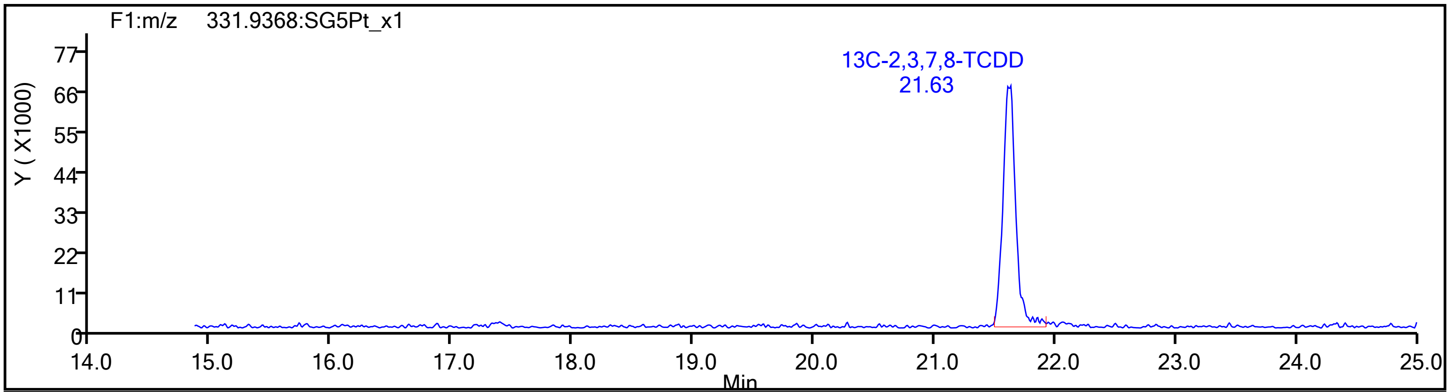

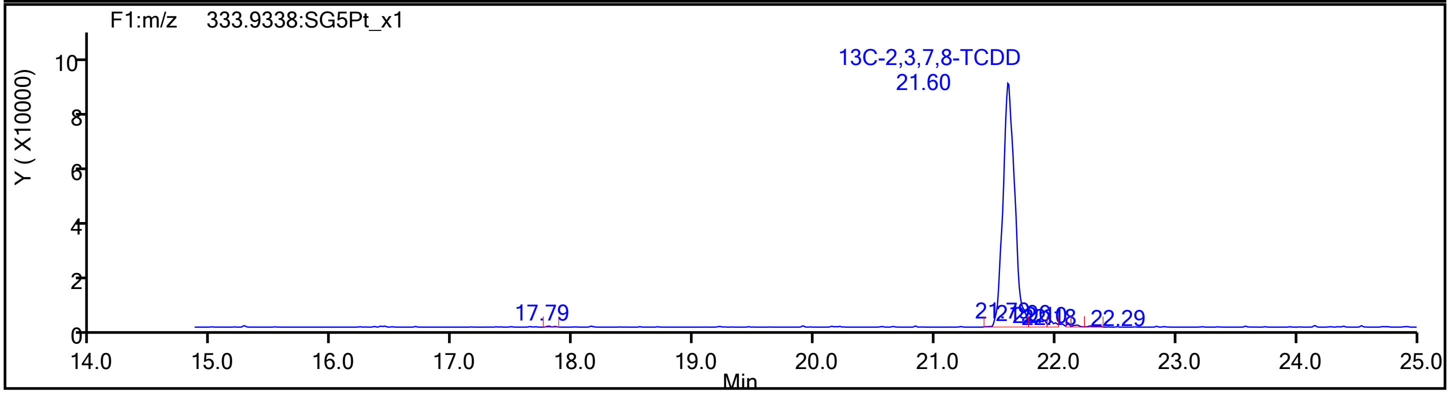

Report Date: 25-Jan-2021 20:05:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

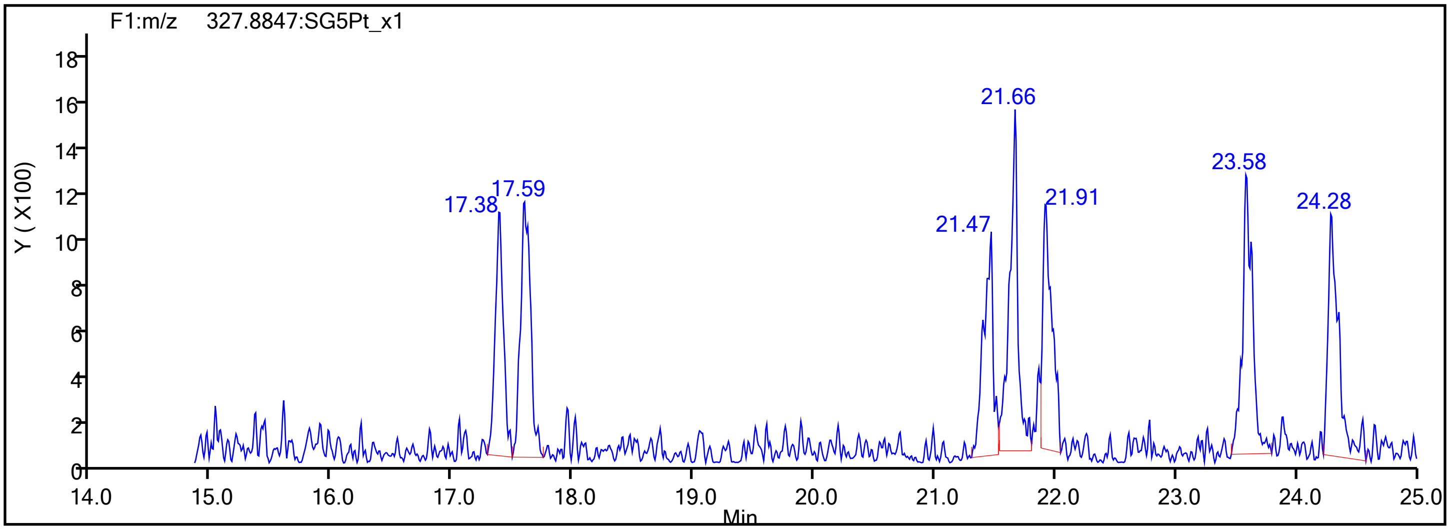

37Cl4-TCDD Standards

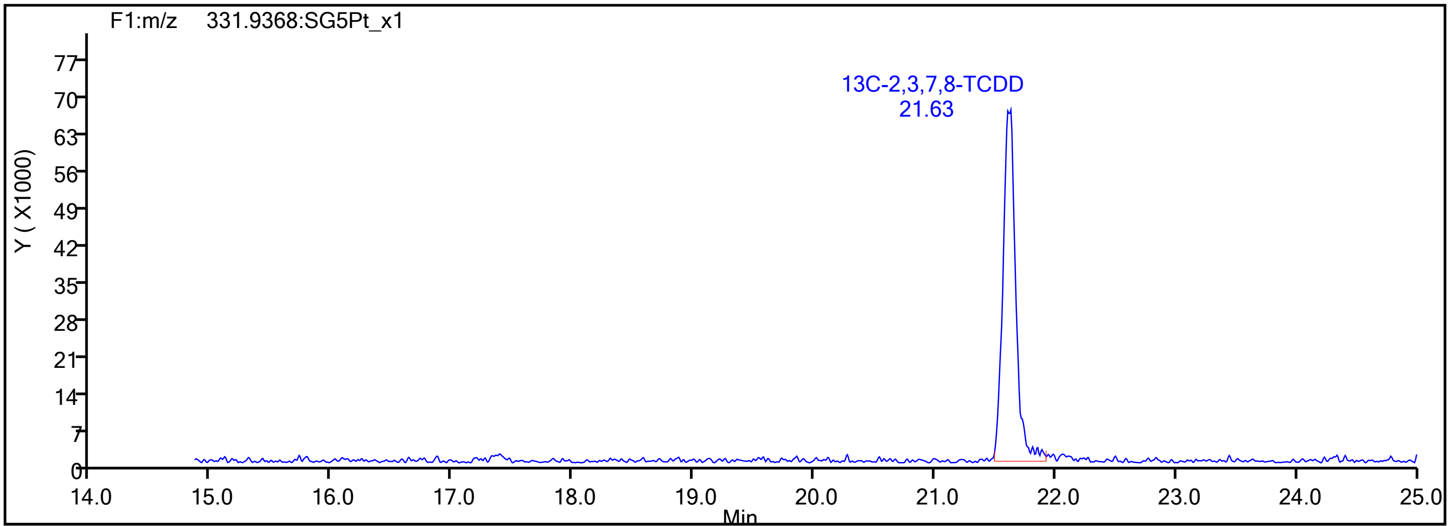

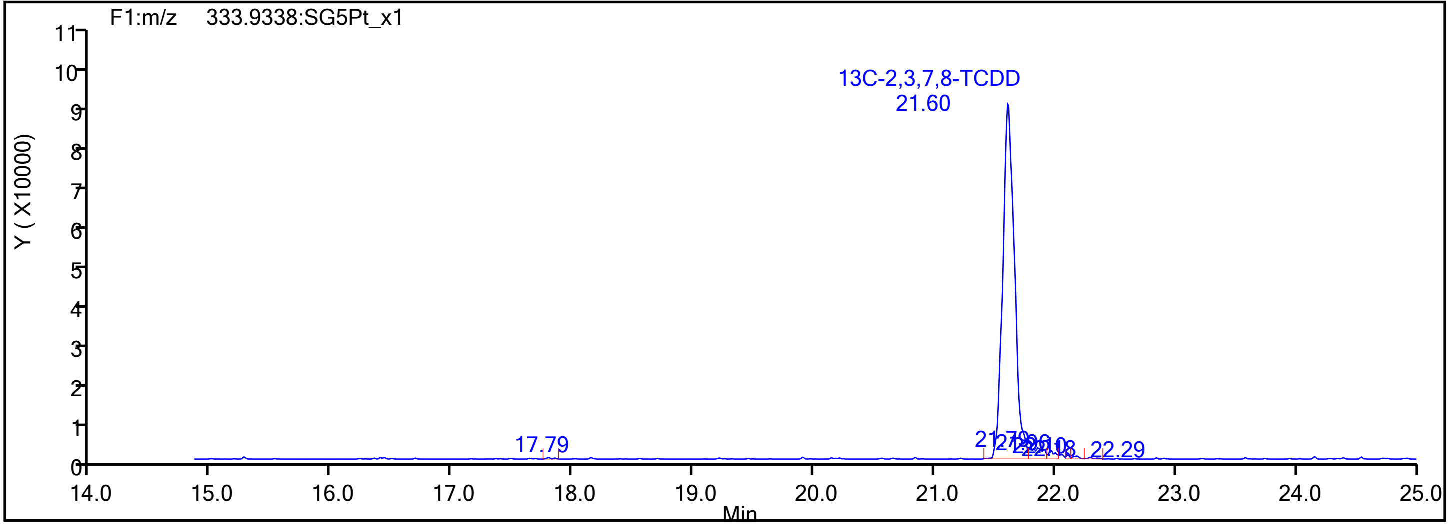

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

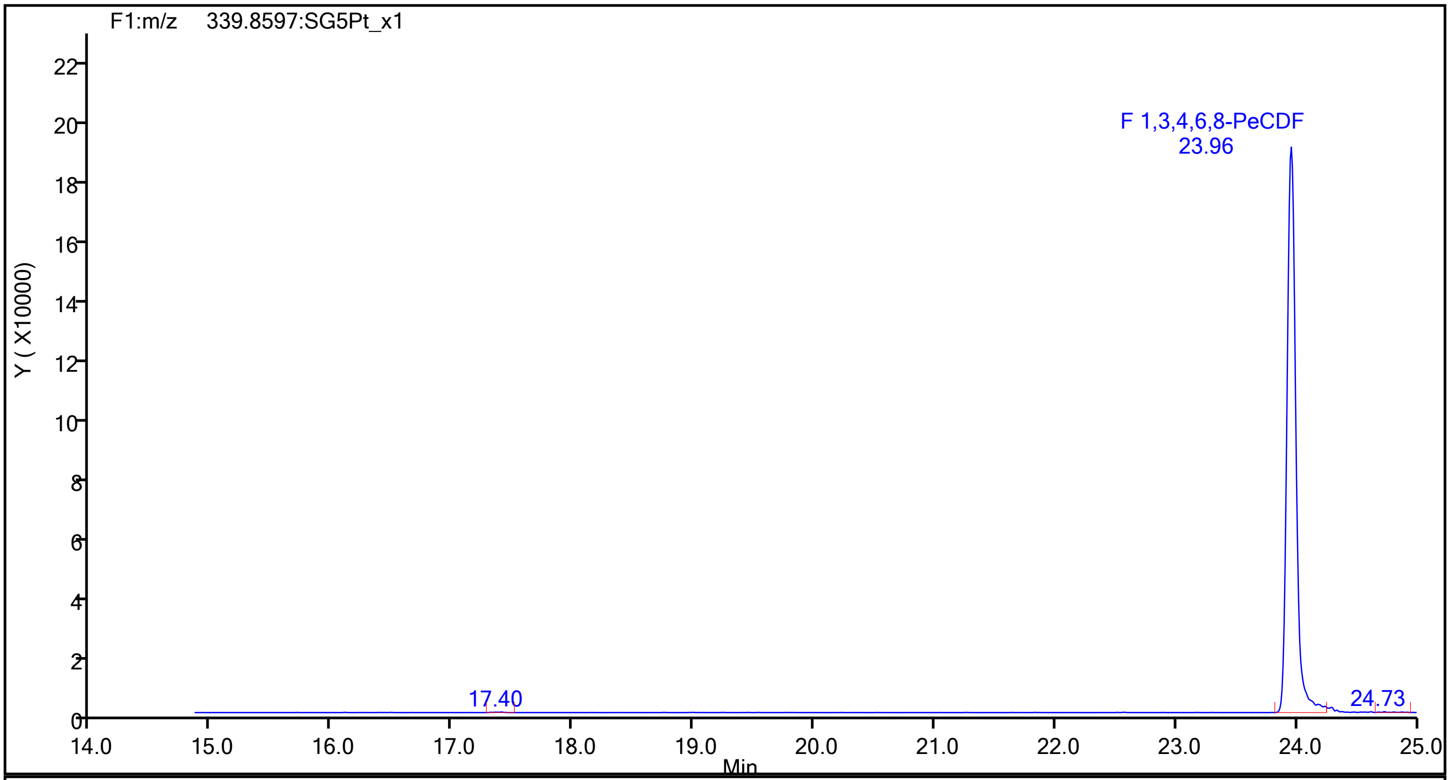

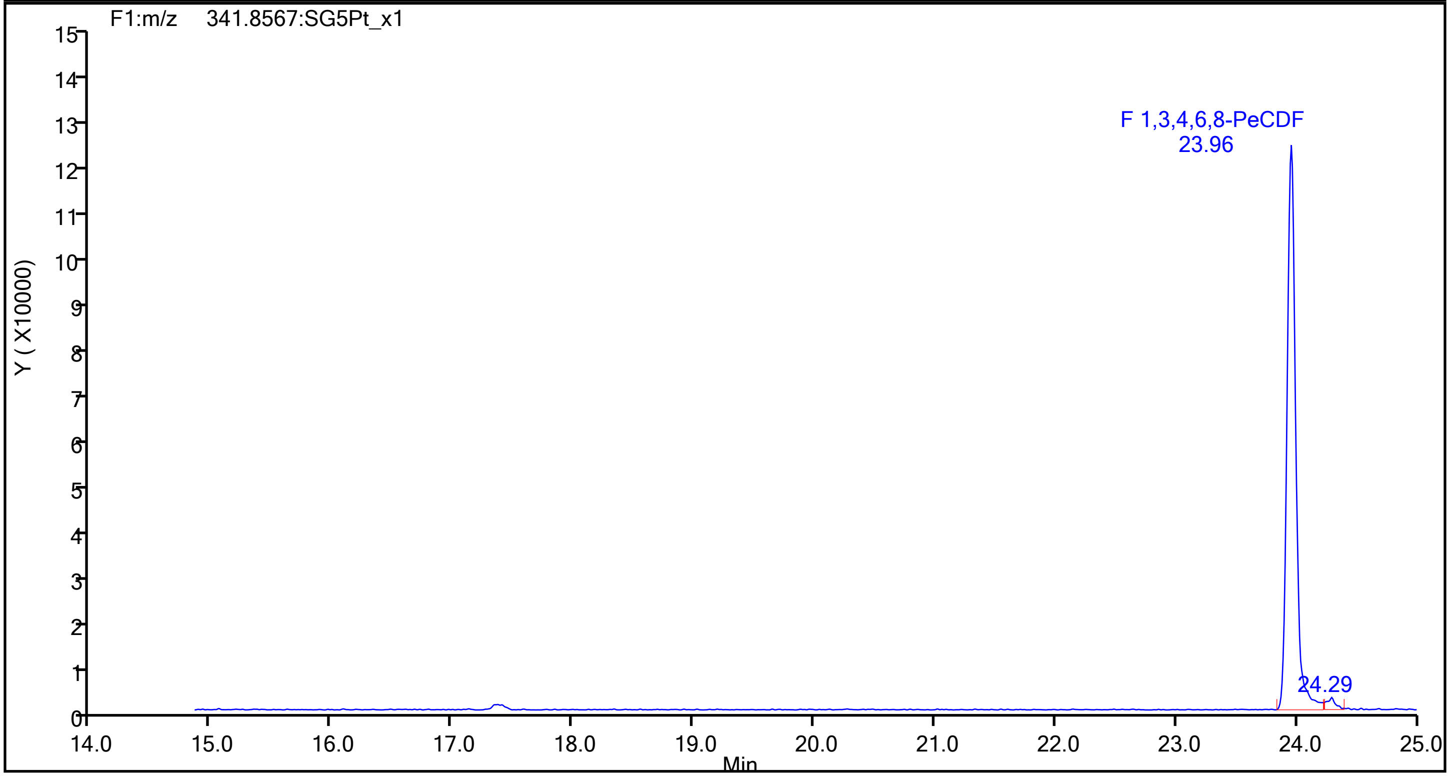

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

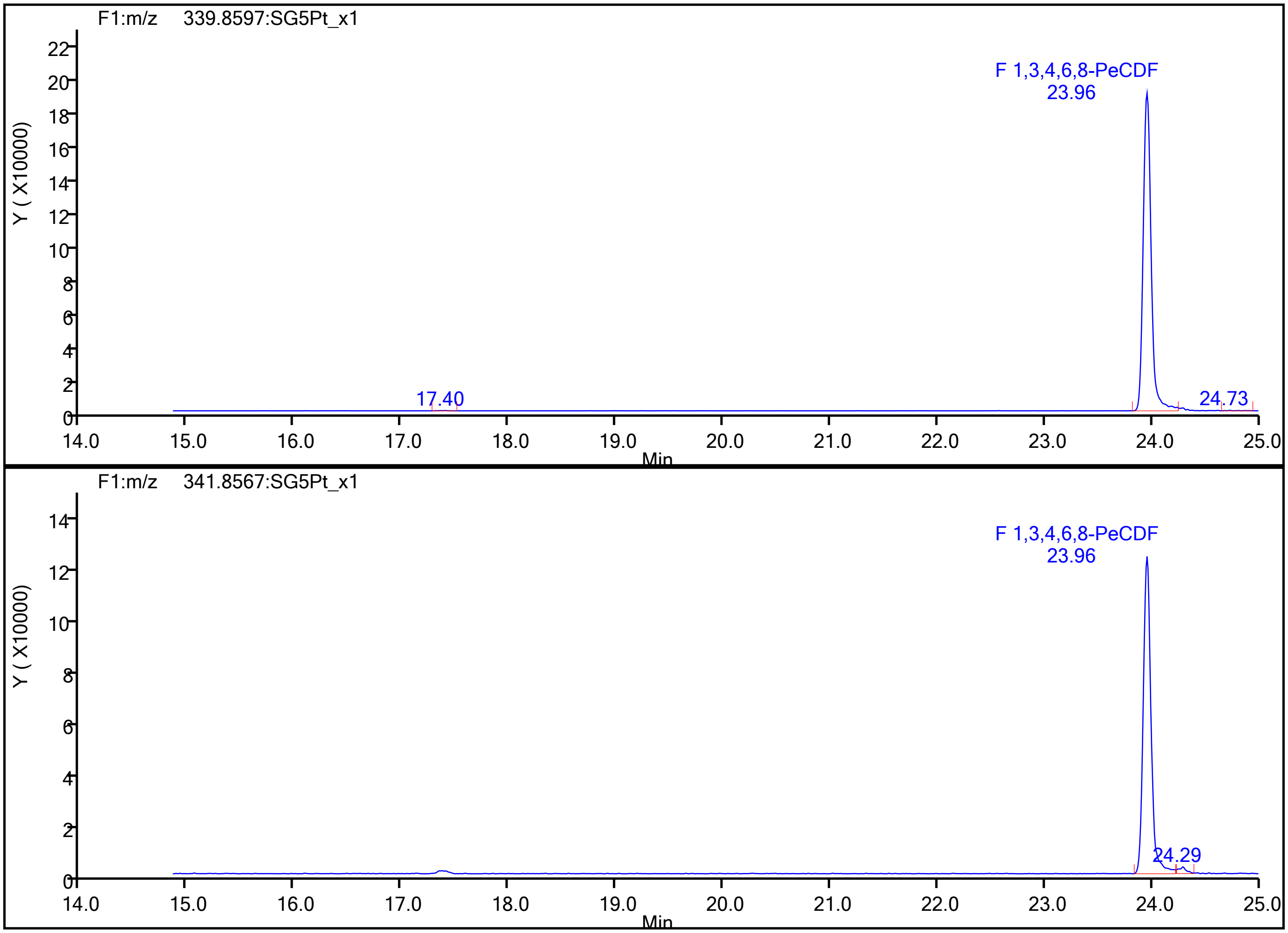

F1 PeCDFs Interference Mass

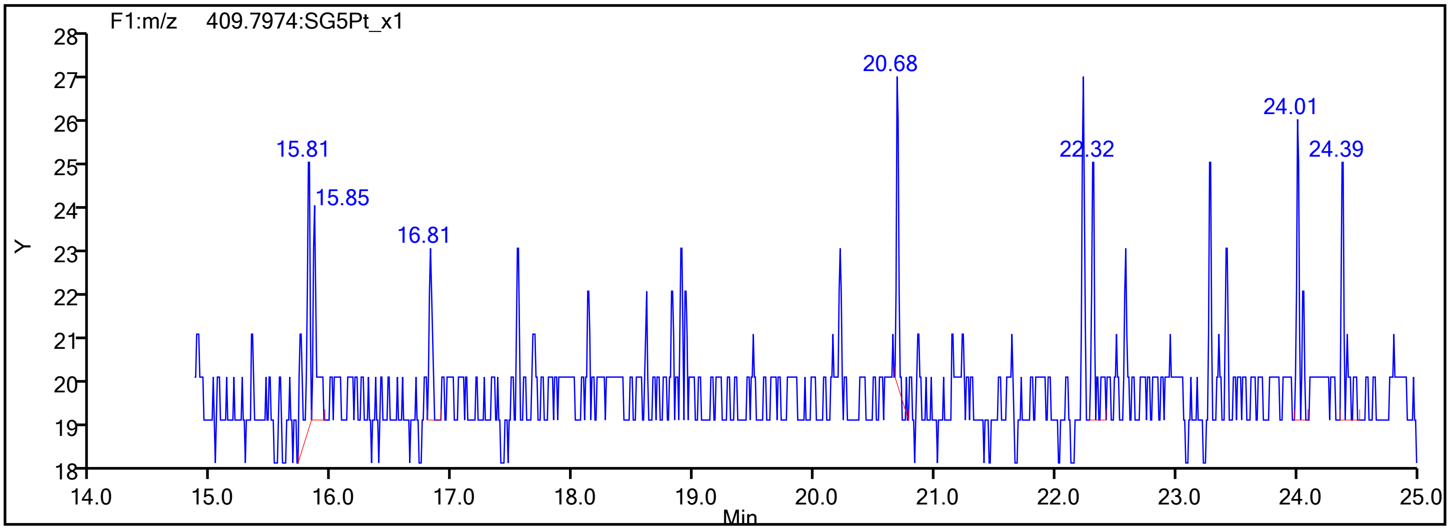

Report Date: 25-Jan-2021 20:05:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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PeCDF

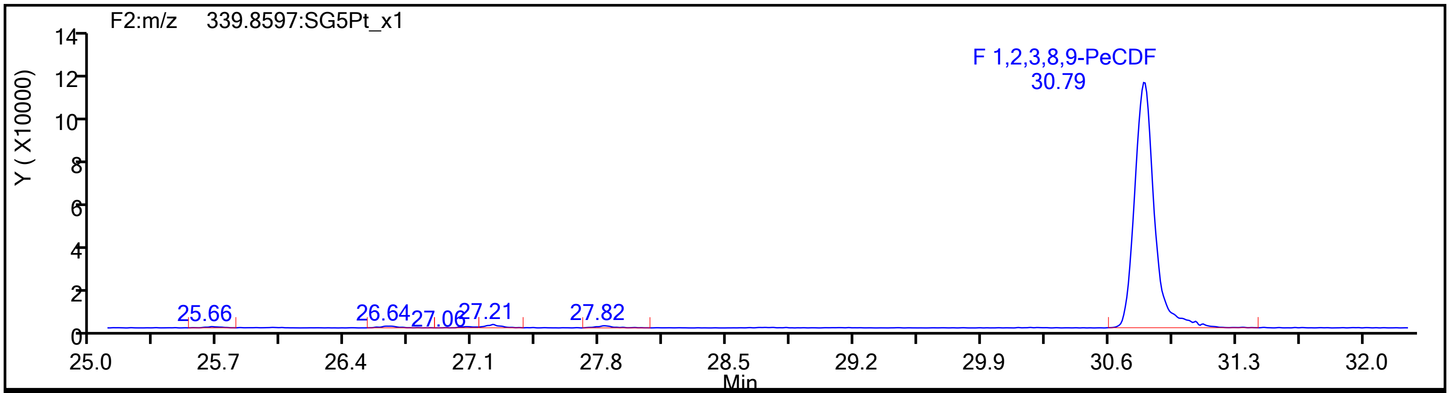

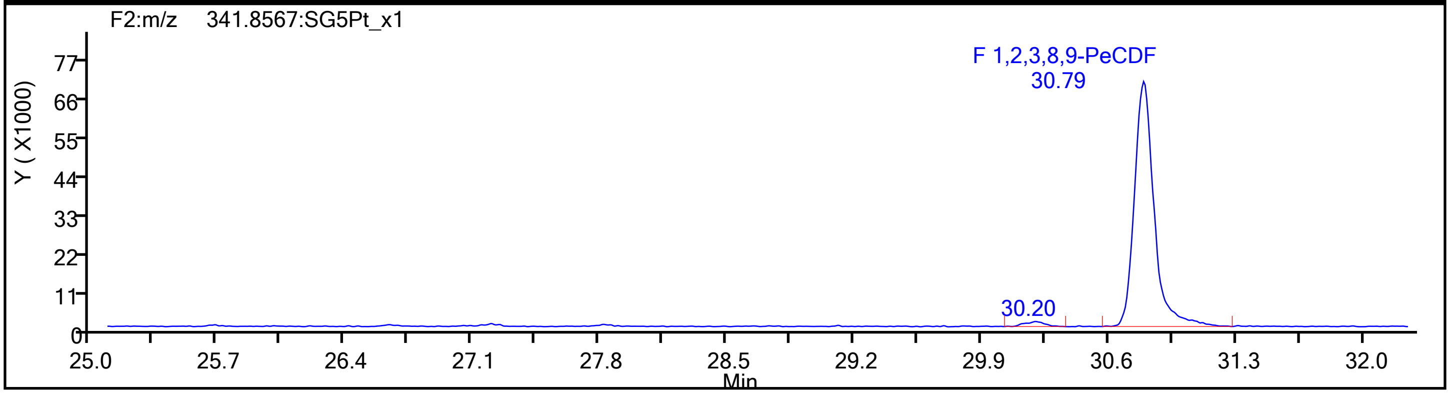

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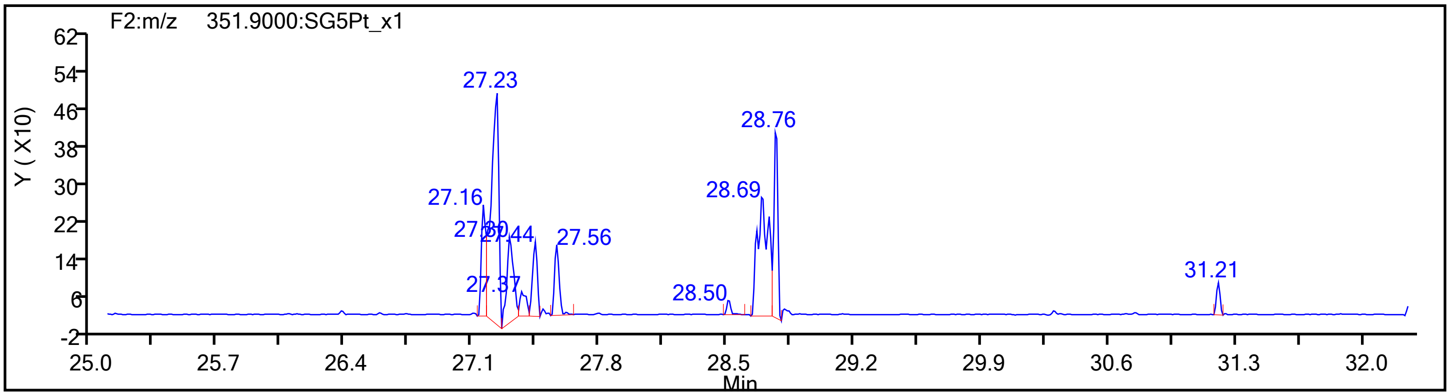

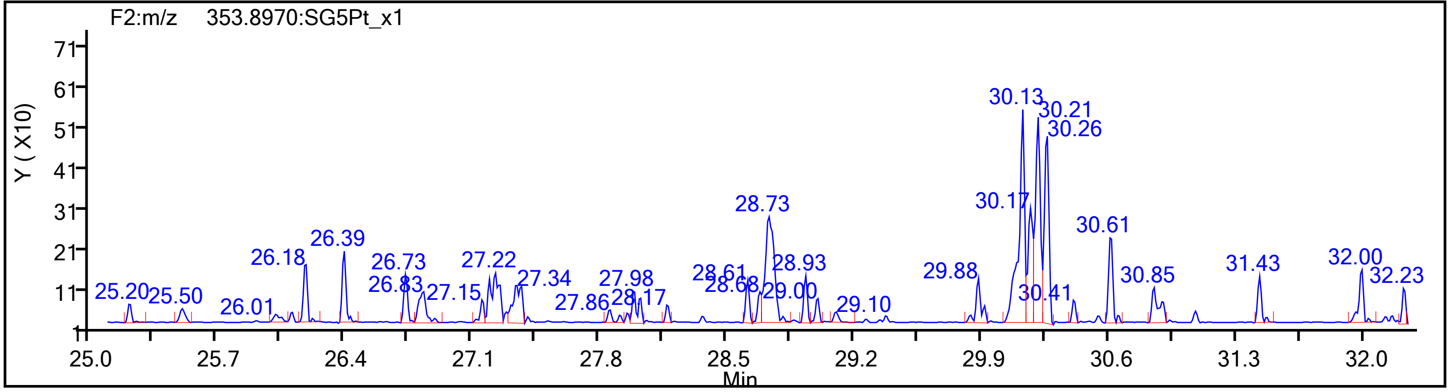

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Eurofins TestAmerica, Sacramento

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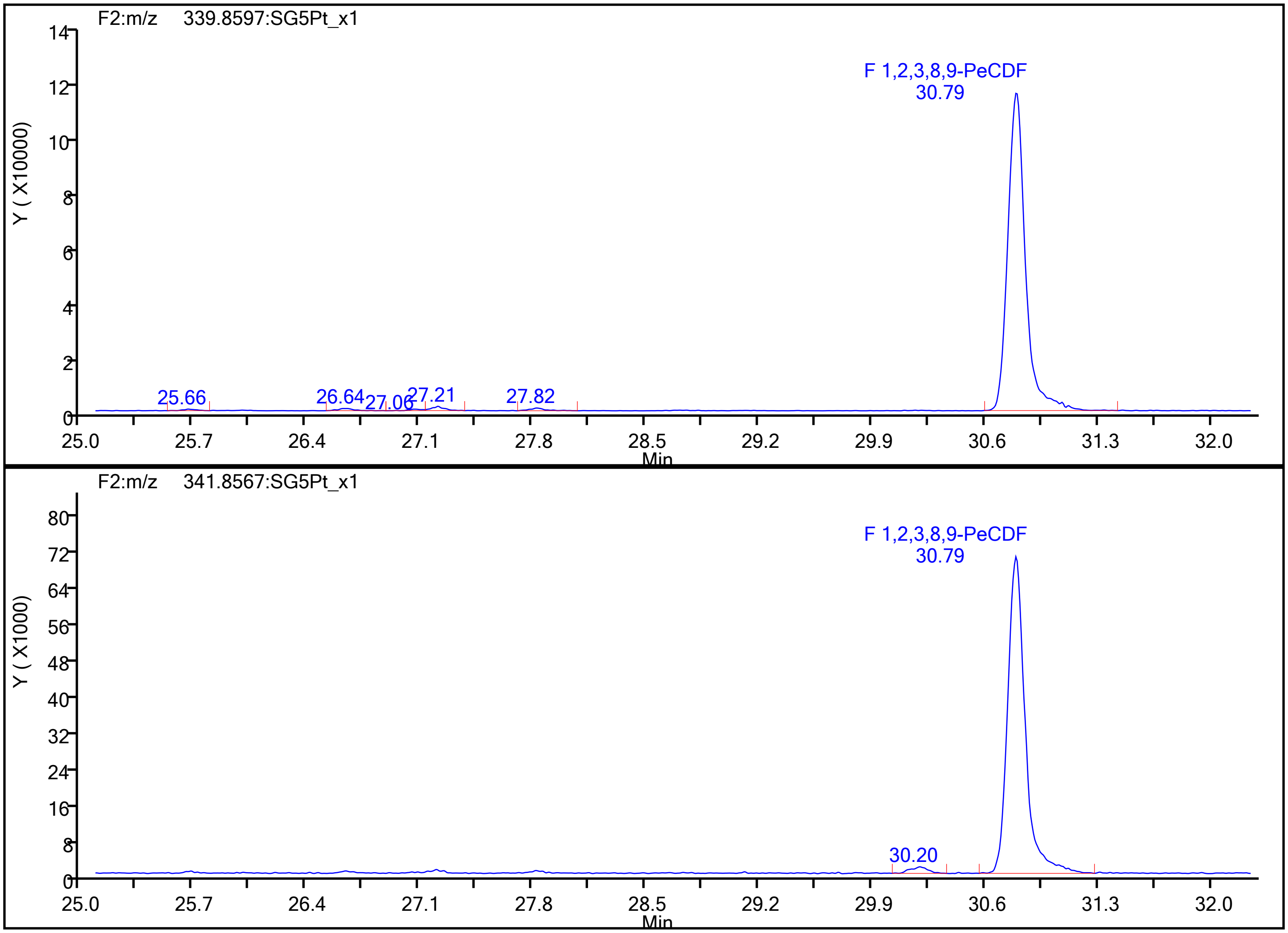

PeCDF Interference Mass

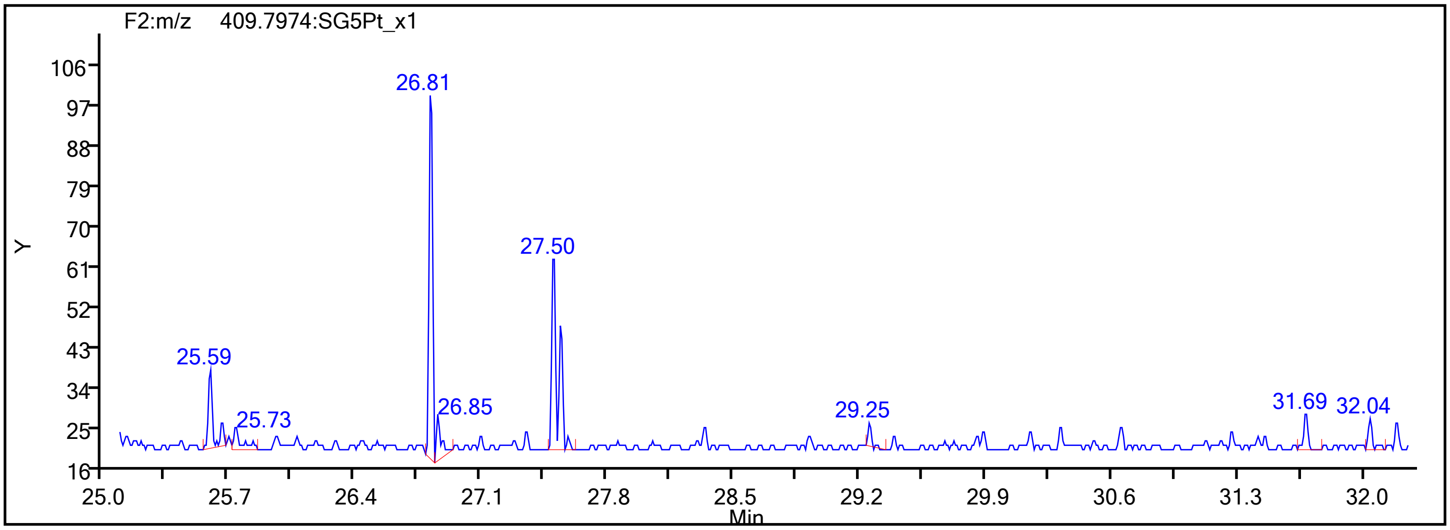

Report Date: 25-Jan-2021 20:05:00		Chrom Revision: 2.3 18-Dec-2020 13:34:10	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_3.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDD

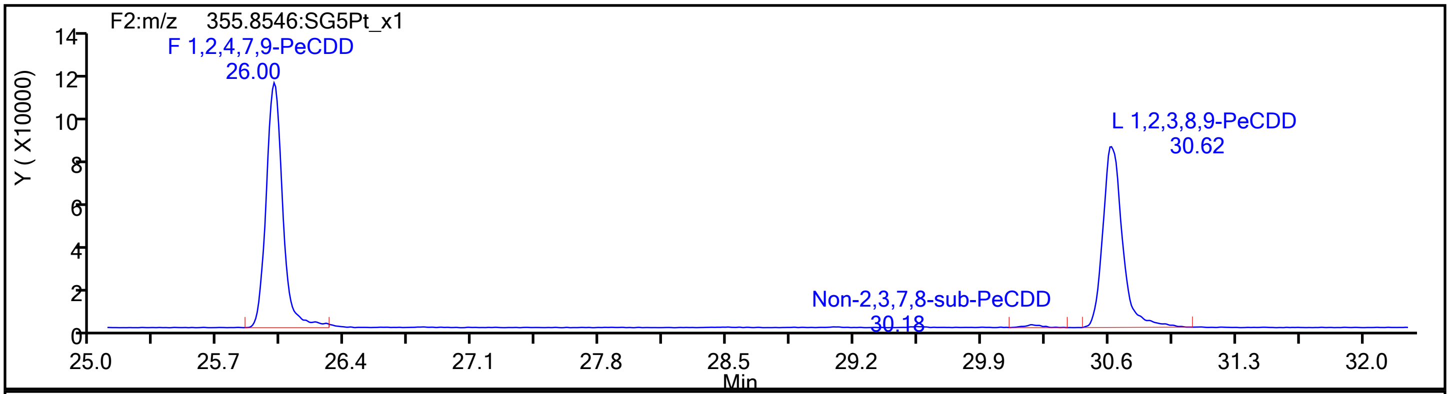

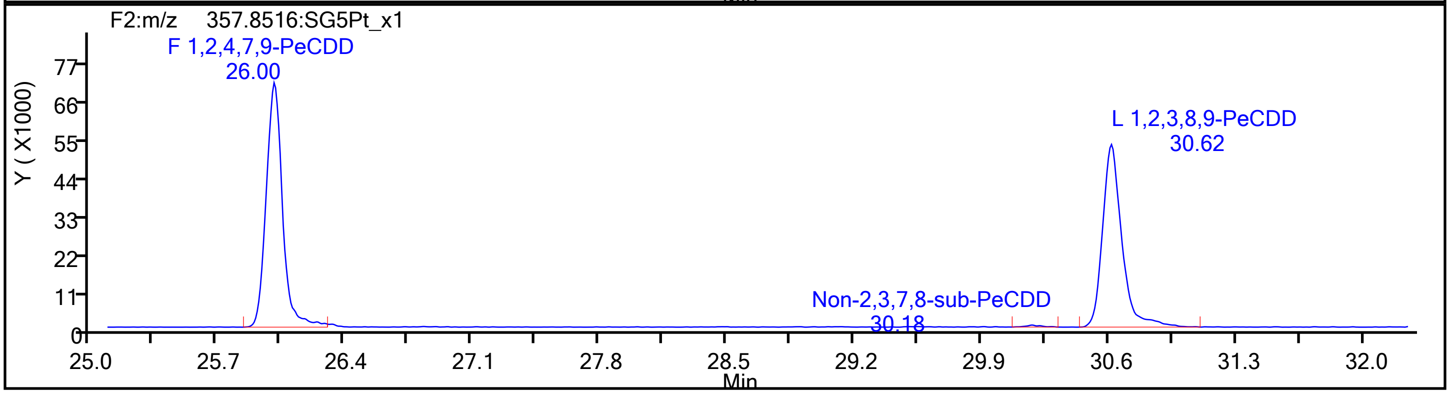

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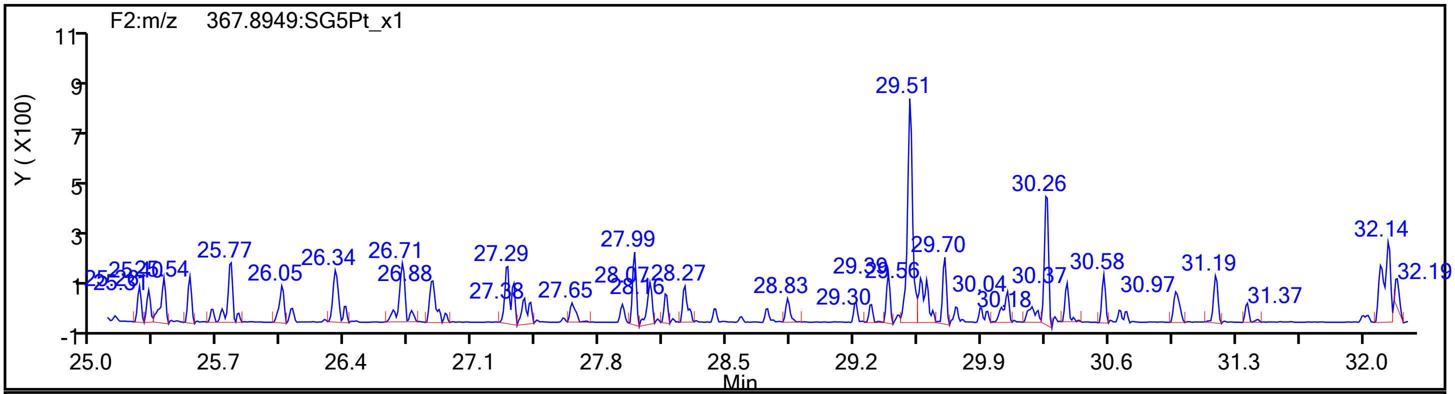

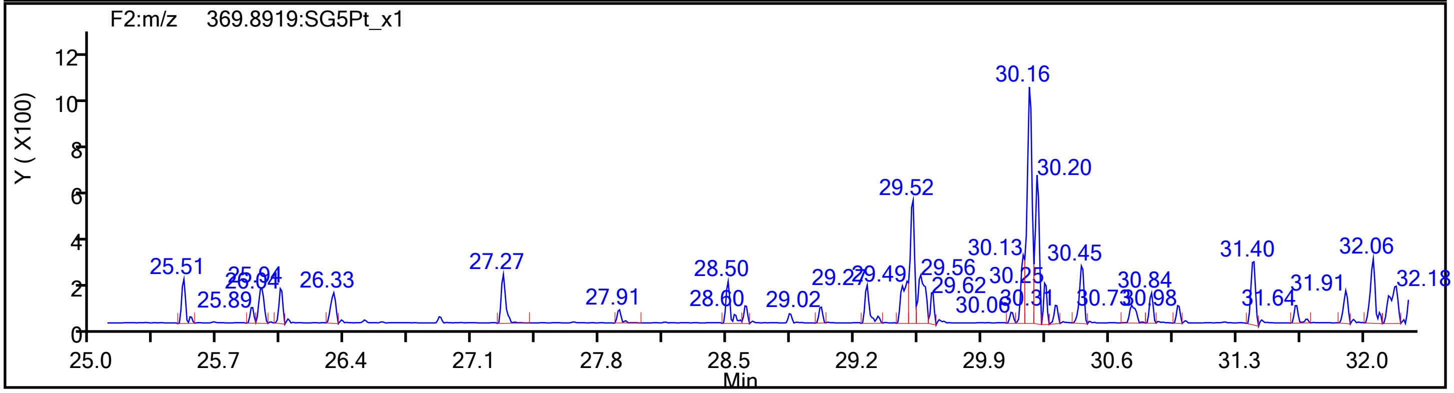

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Eurofins TestAmerica, Sacramento

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HxCDF

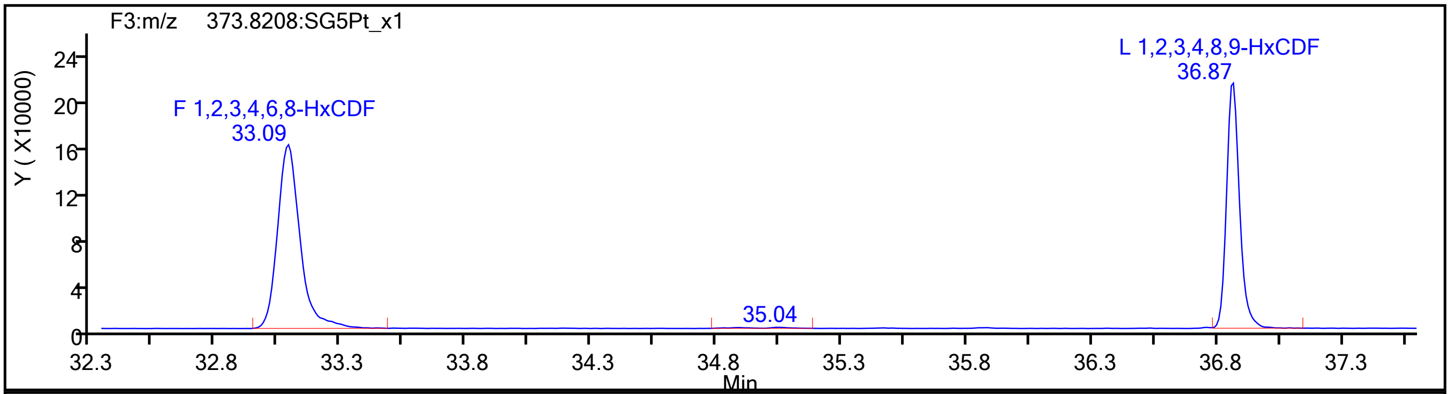

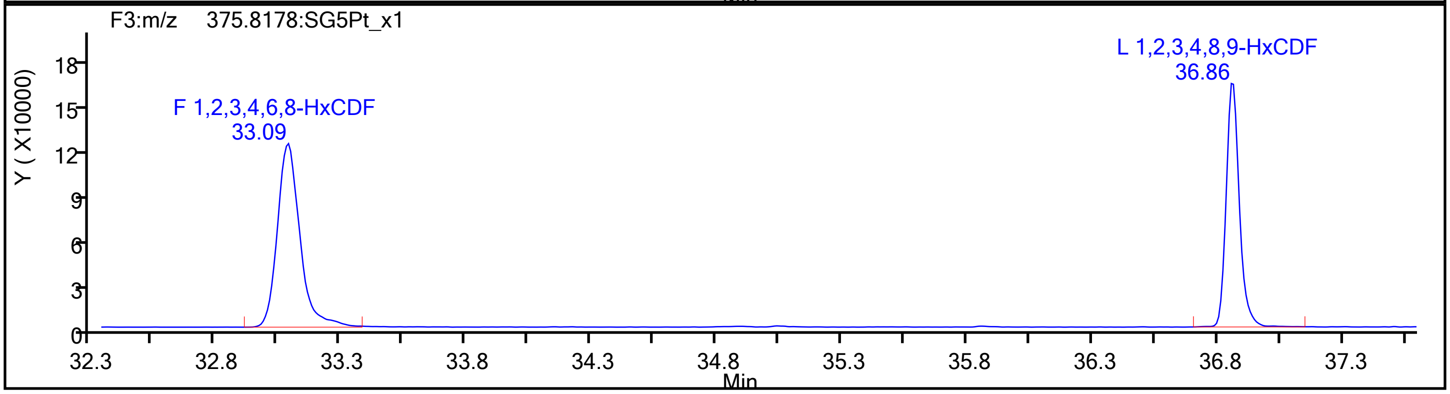

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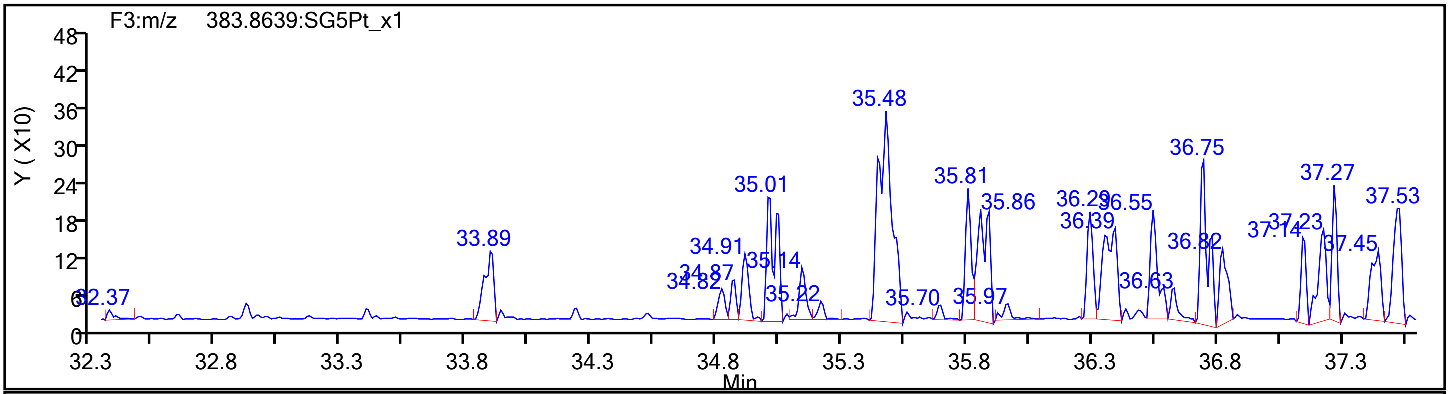

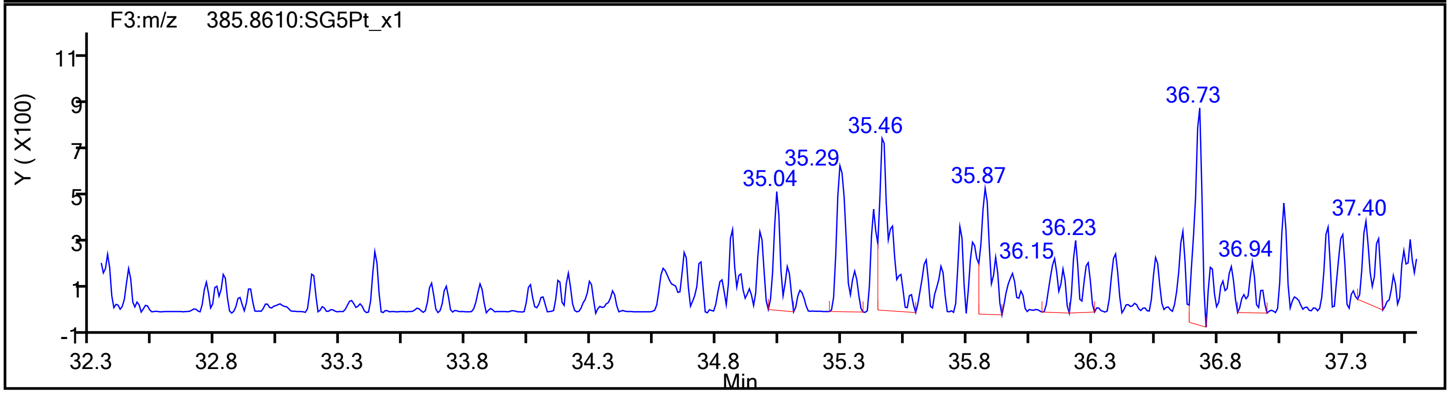

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Eurofins TestAmerica, Sacramento

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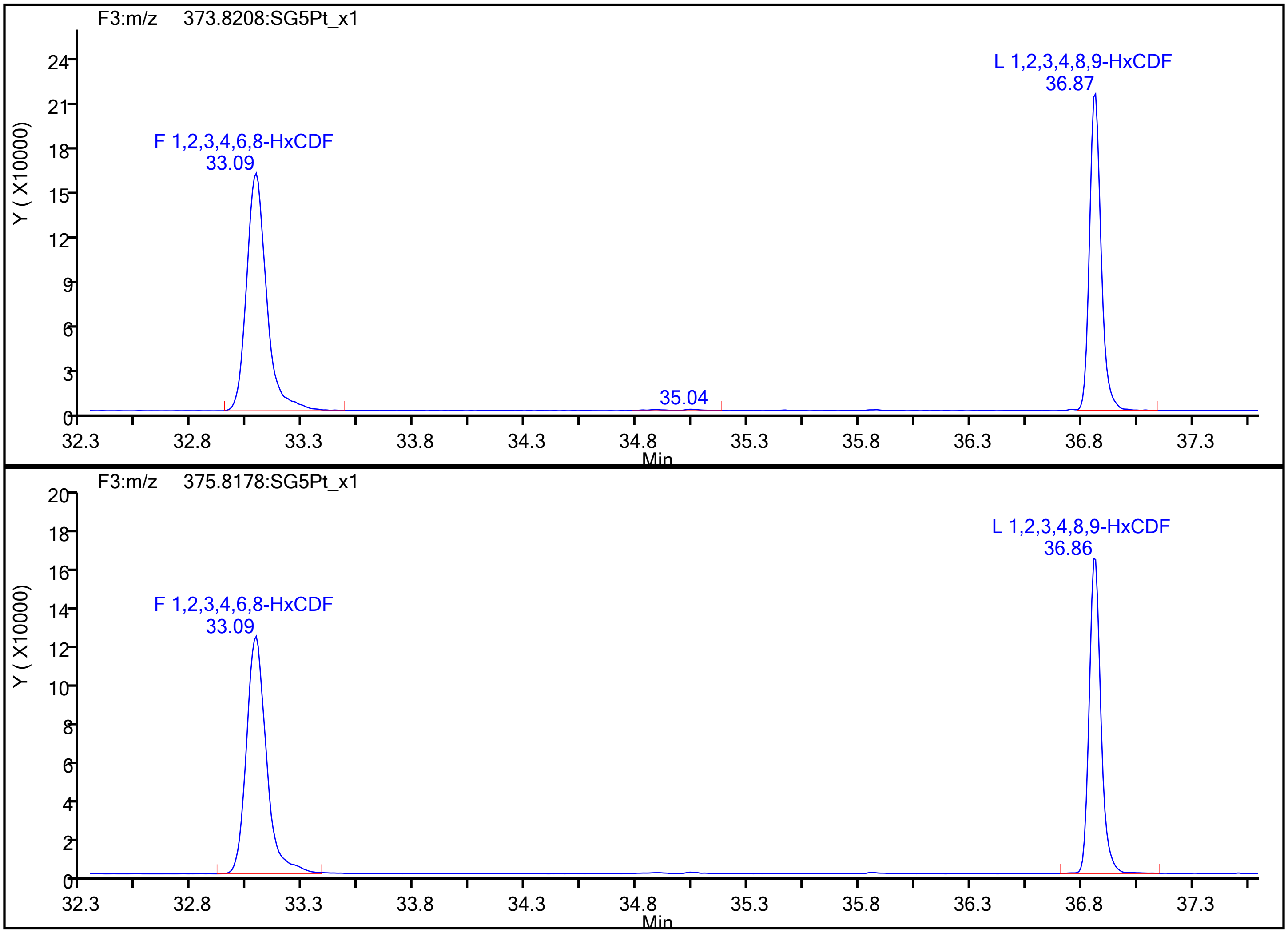

HxCDF Interference Mass

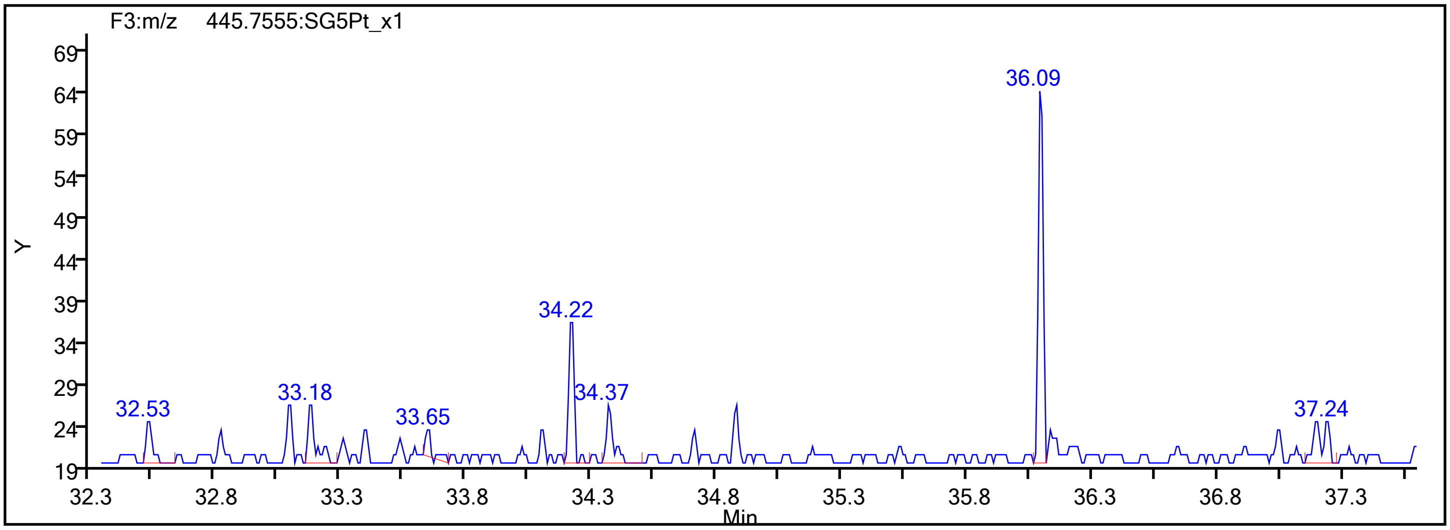

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Eurofins TestAmerica, Sacramento

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HxCDD

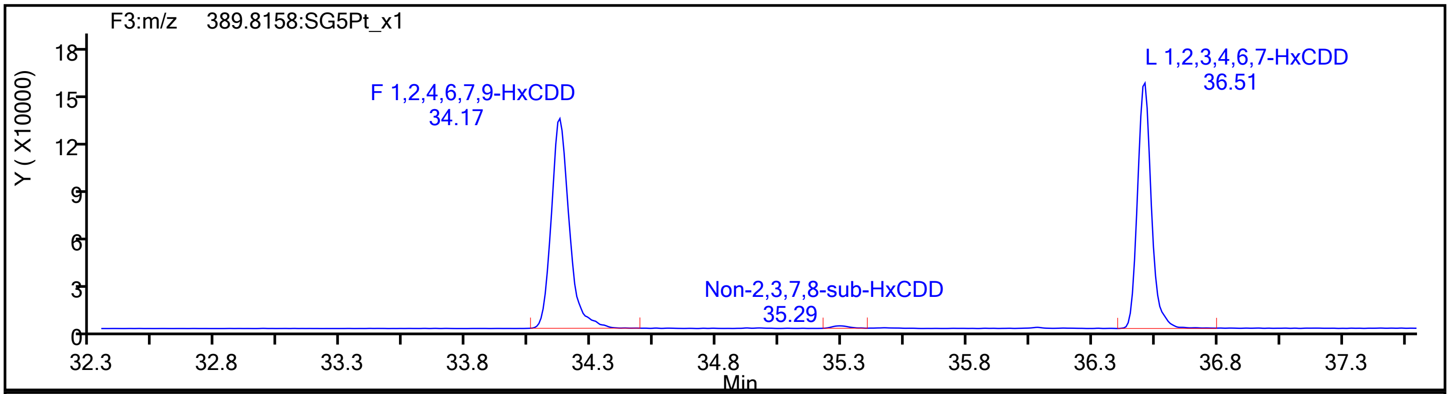

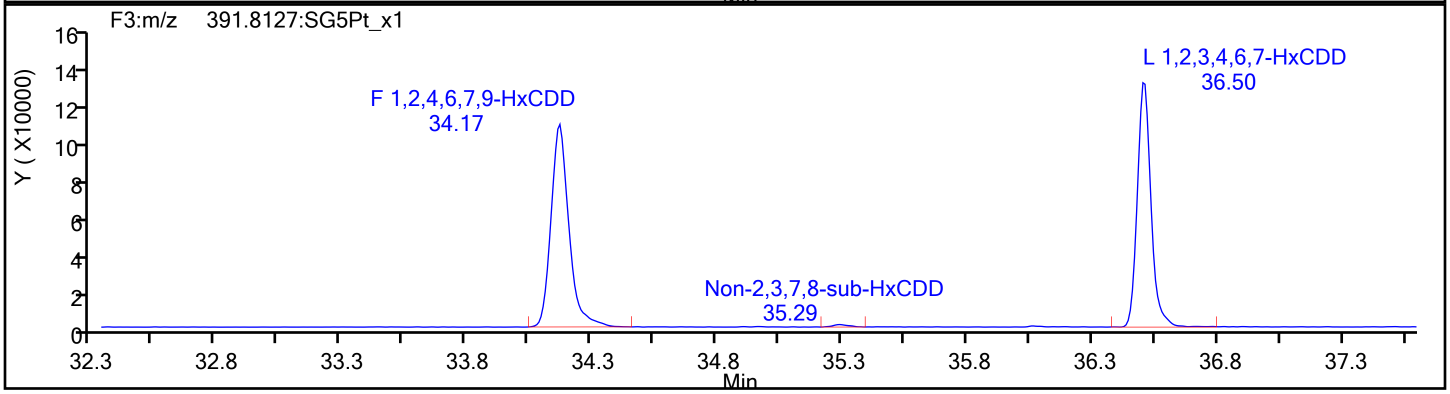

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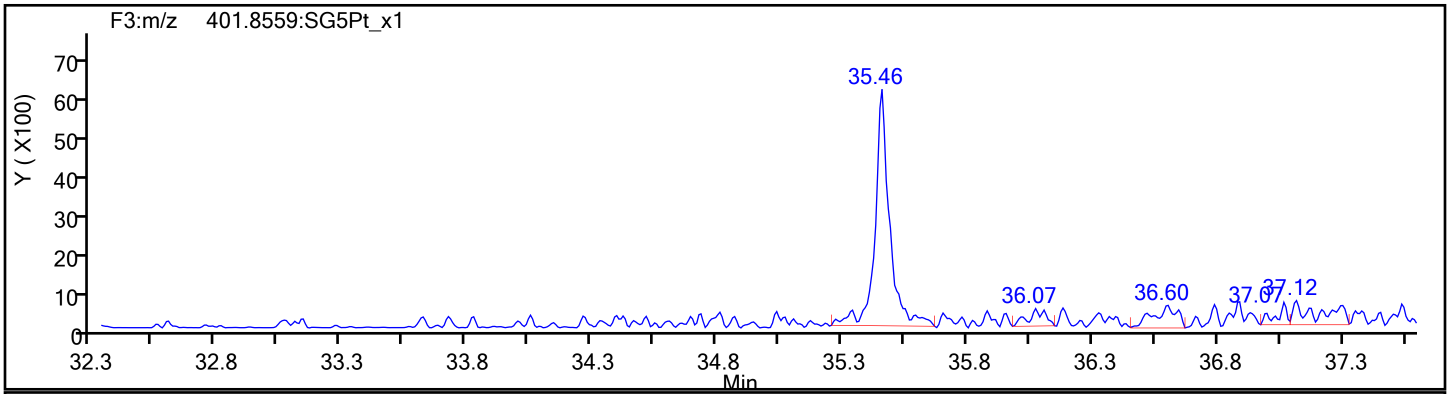

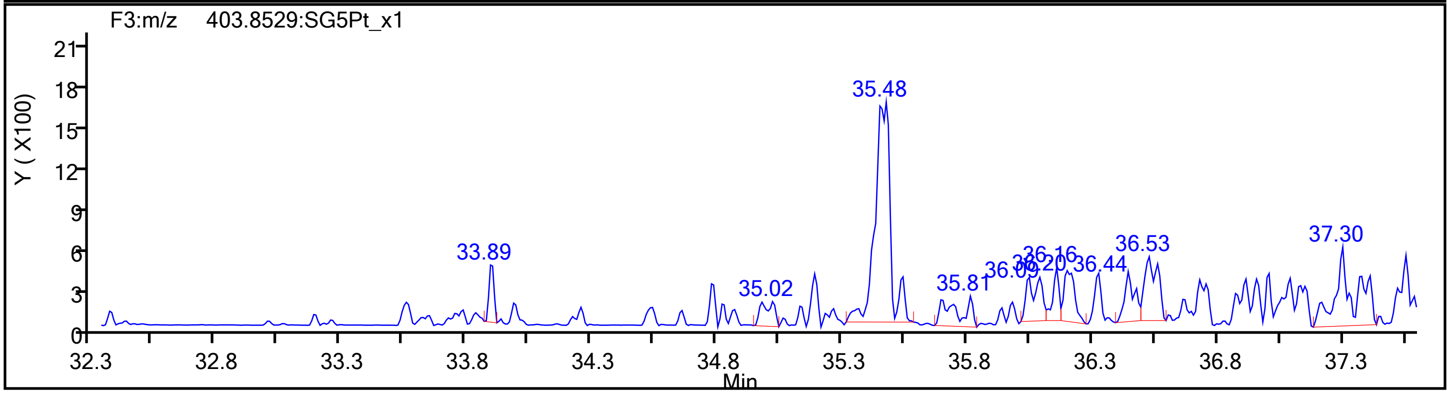

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Eurofins TestAmerica, Sacramento

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Client ID:

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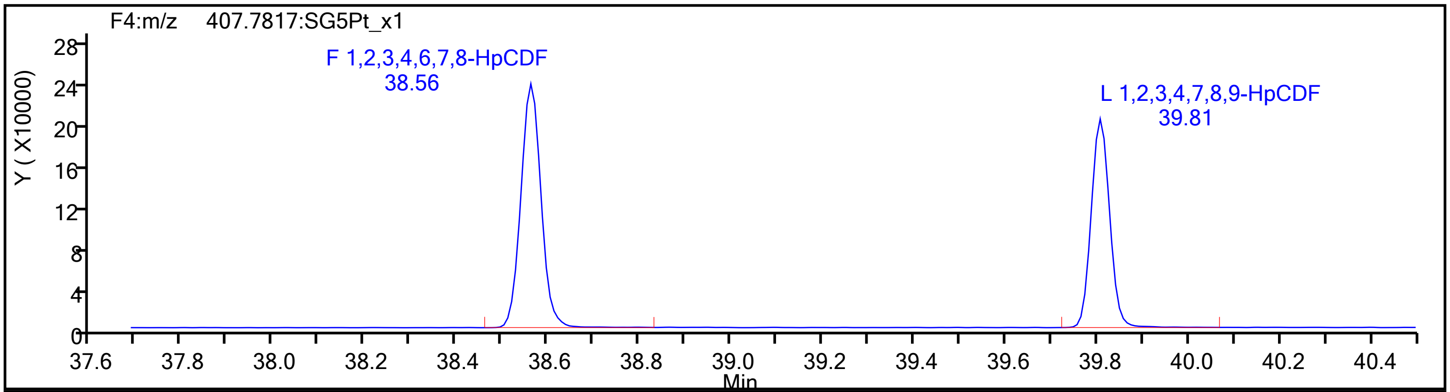

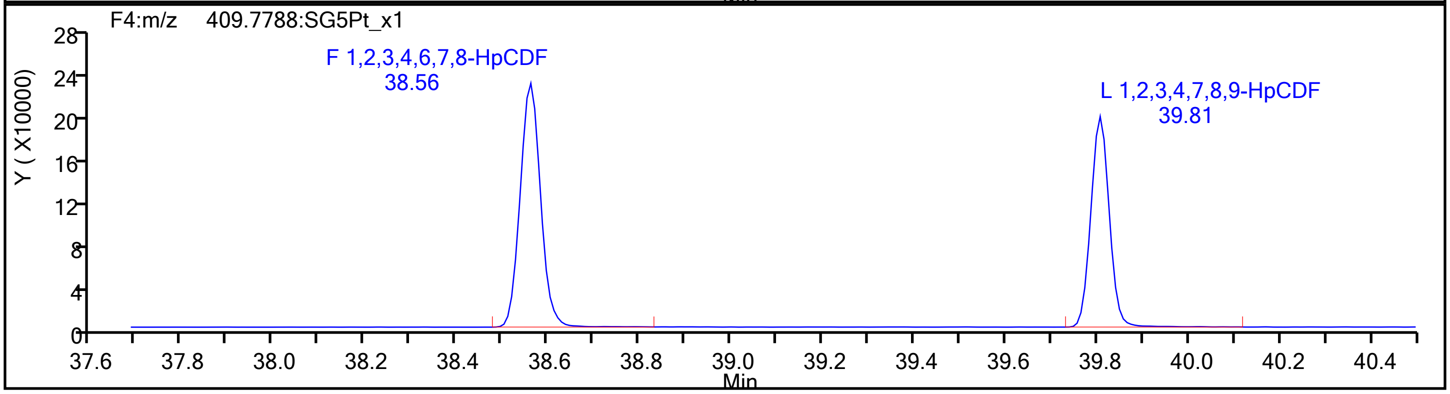

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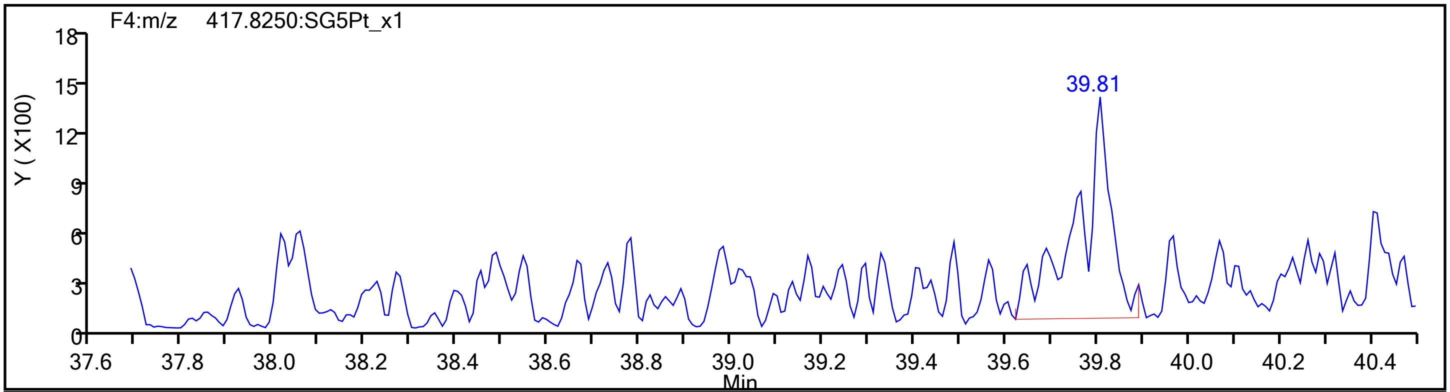

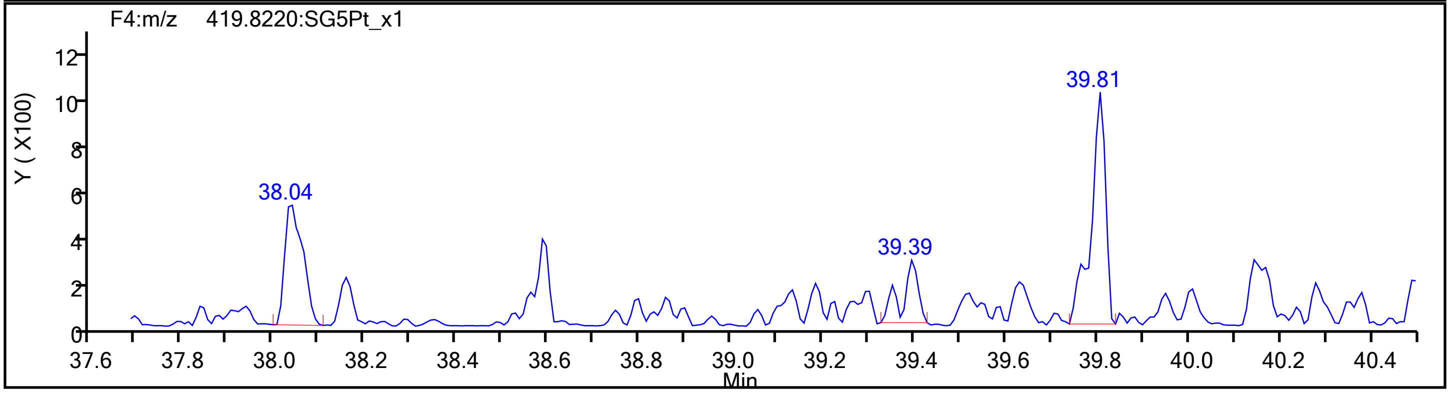

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Eurofins TestAmerica, Sacramento

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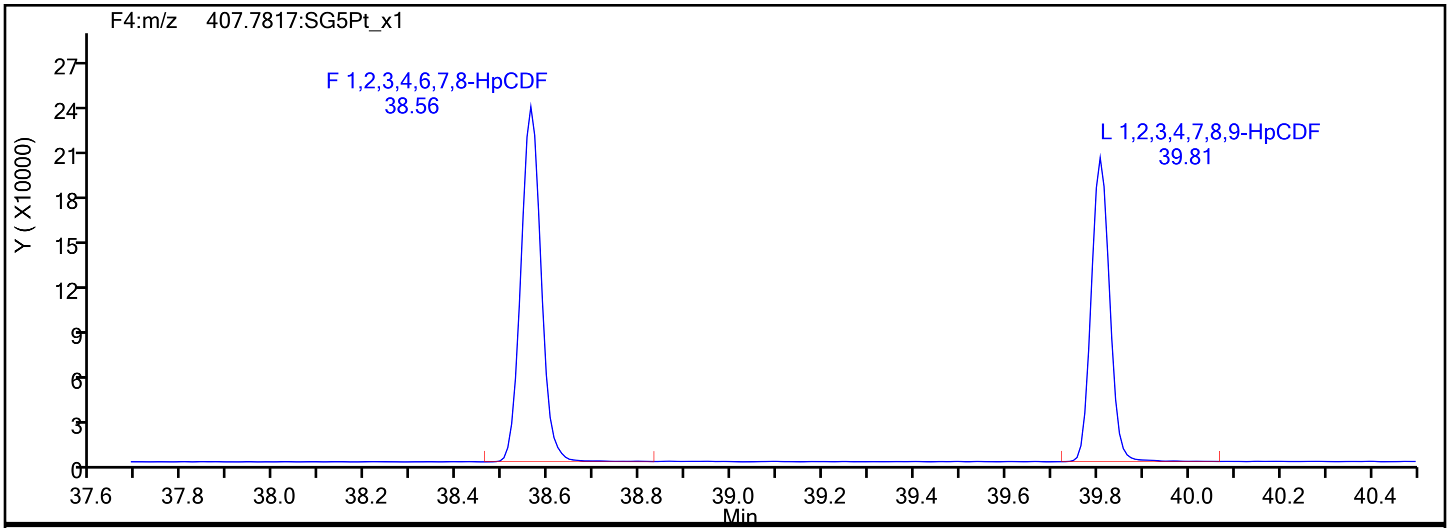

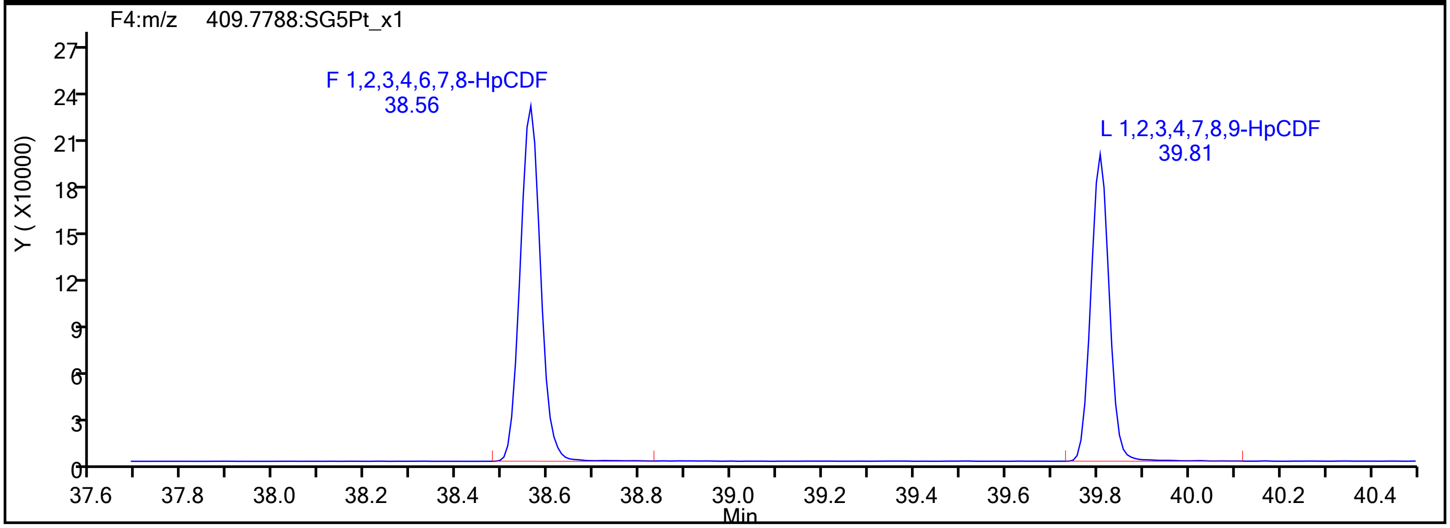

HpCDF Interference Mass

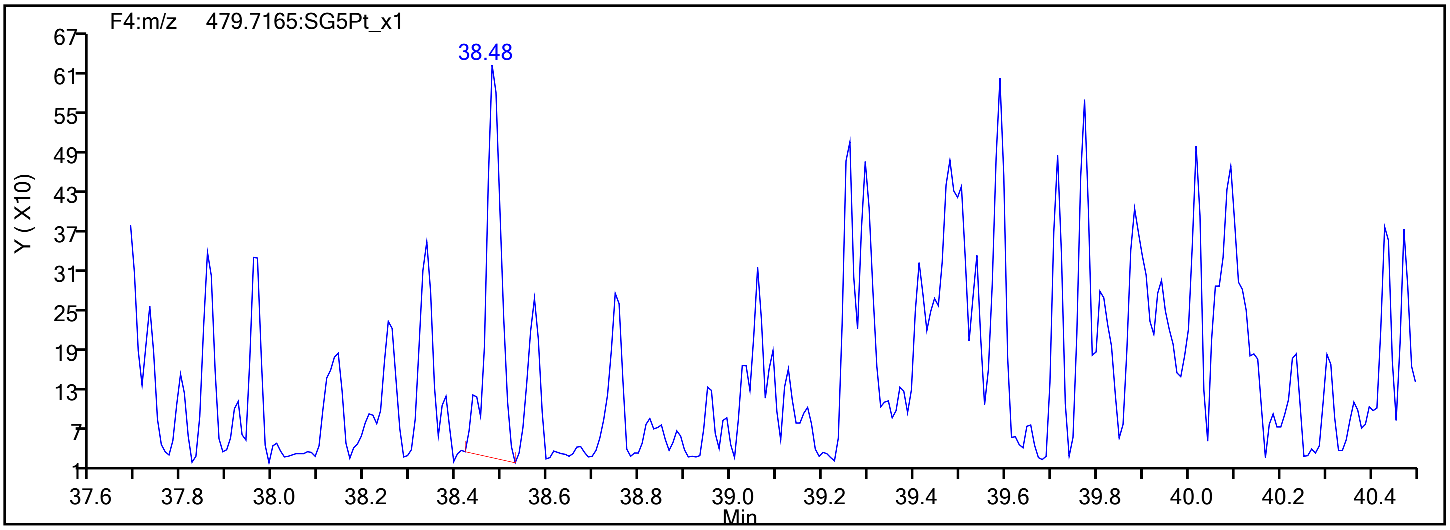

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Eurofins TestAmerica, Sacramento

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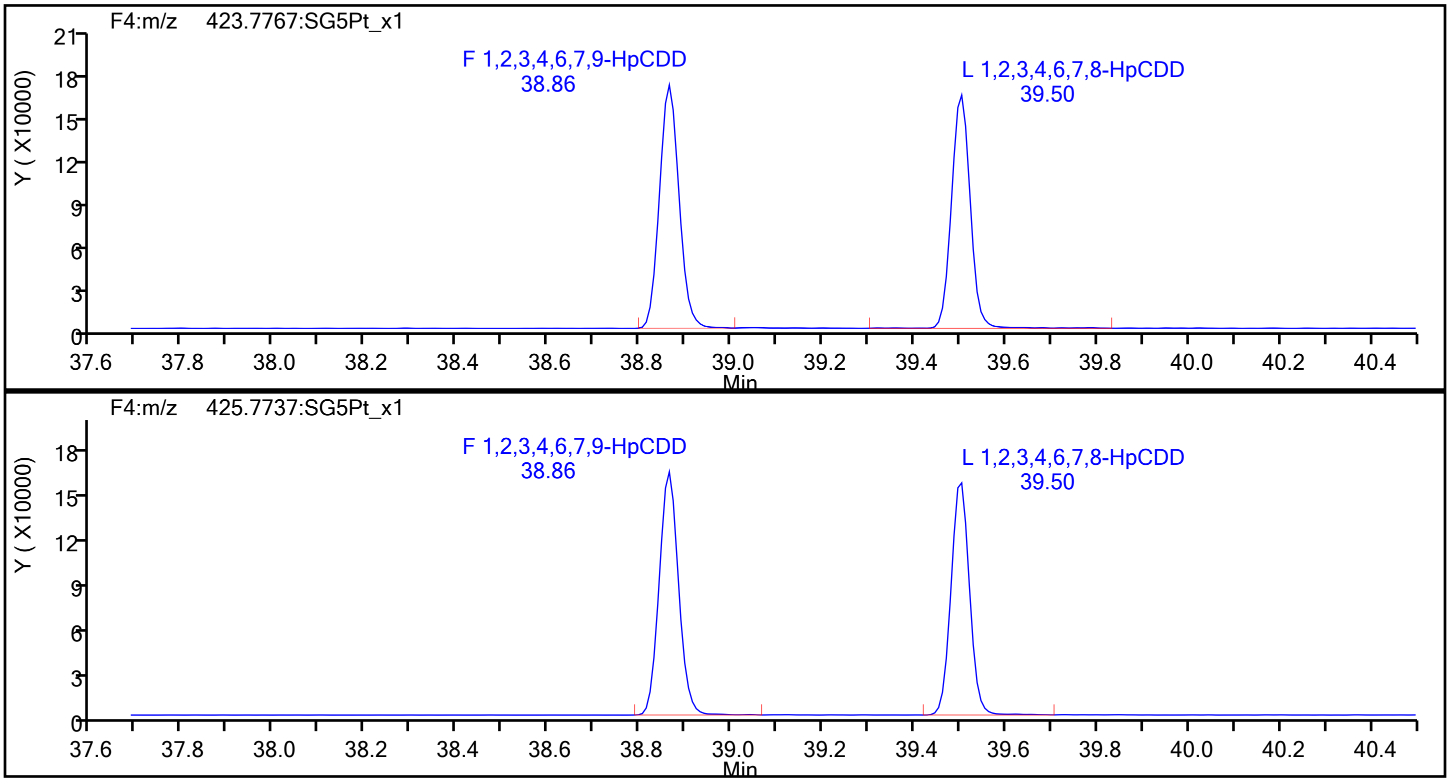

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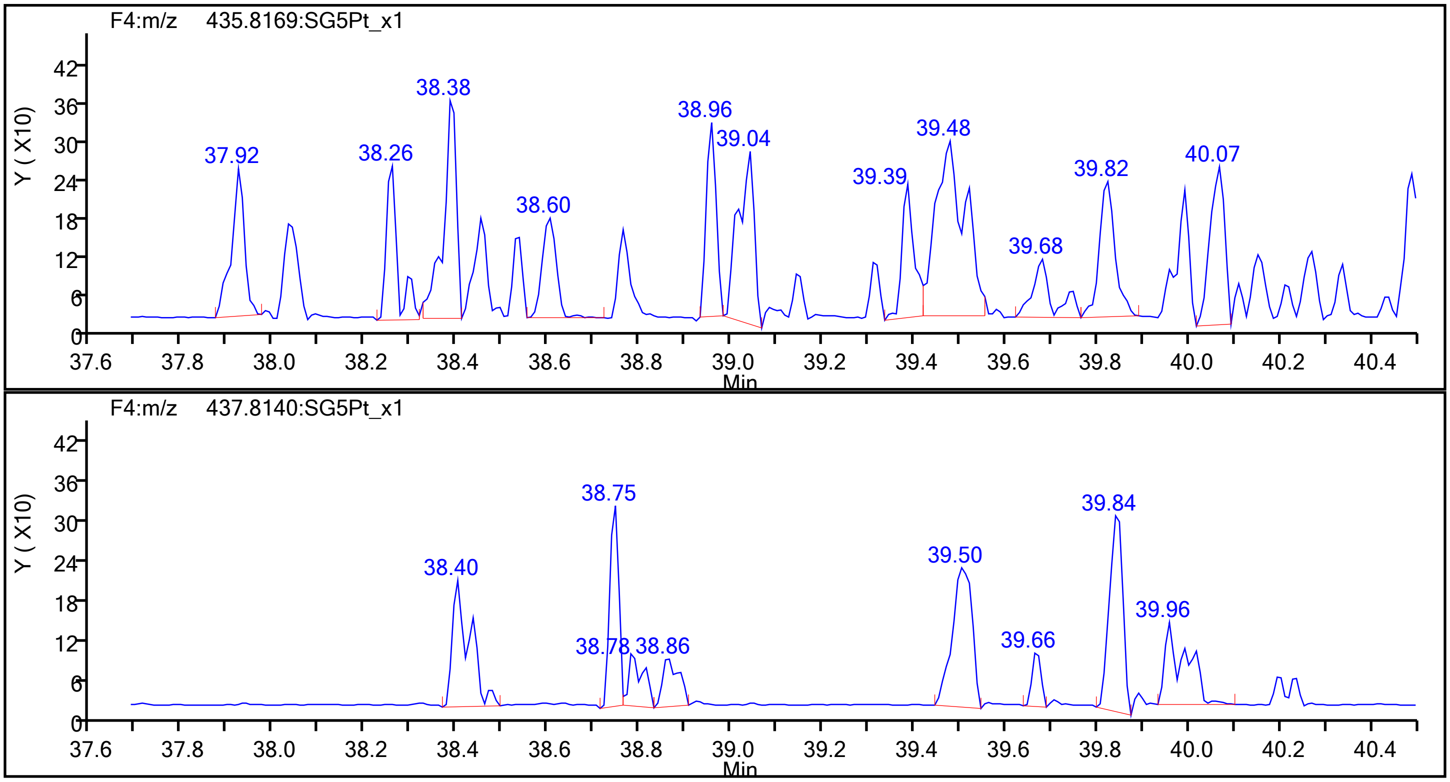

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Eurofins TestAmerica, Sacramento

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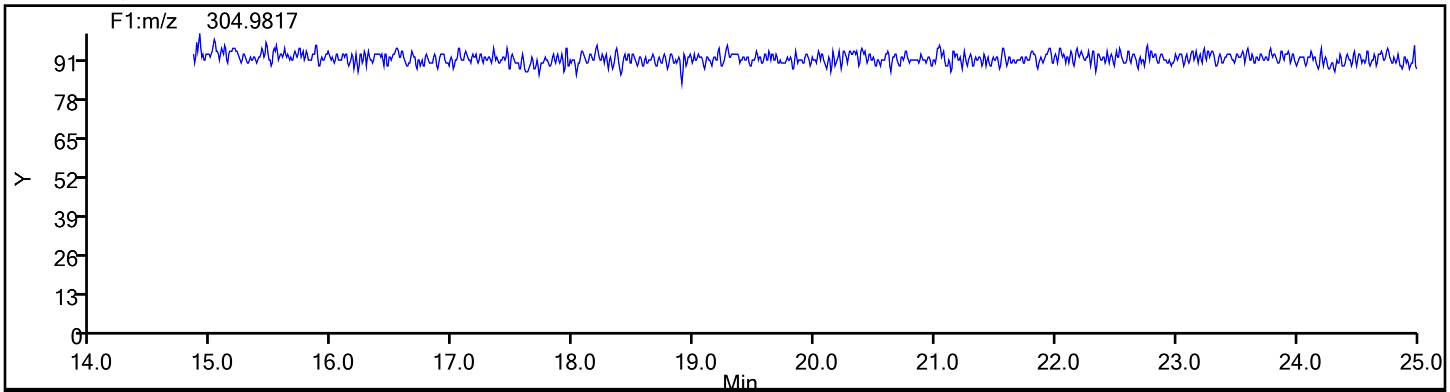

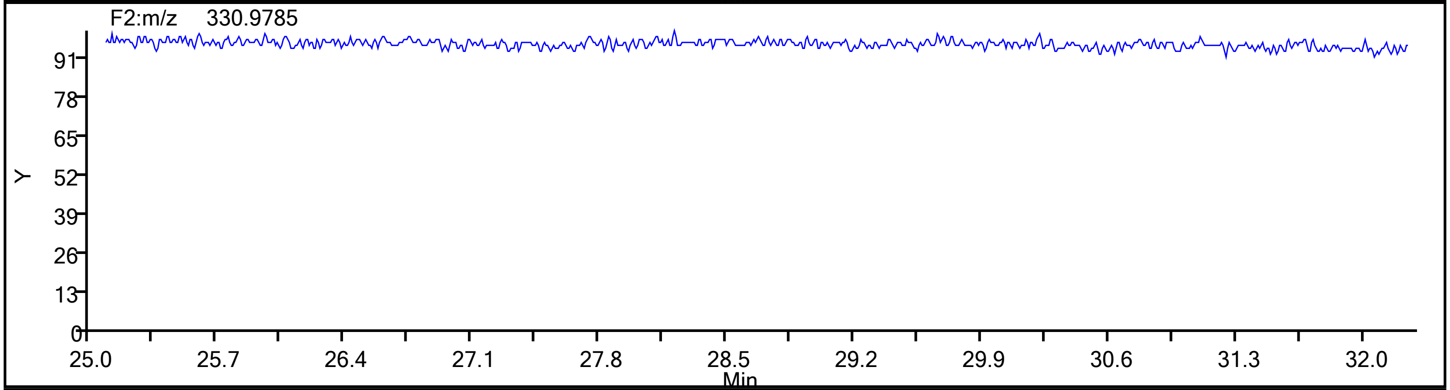

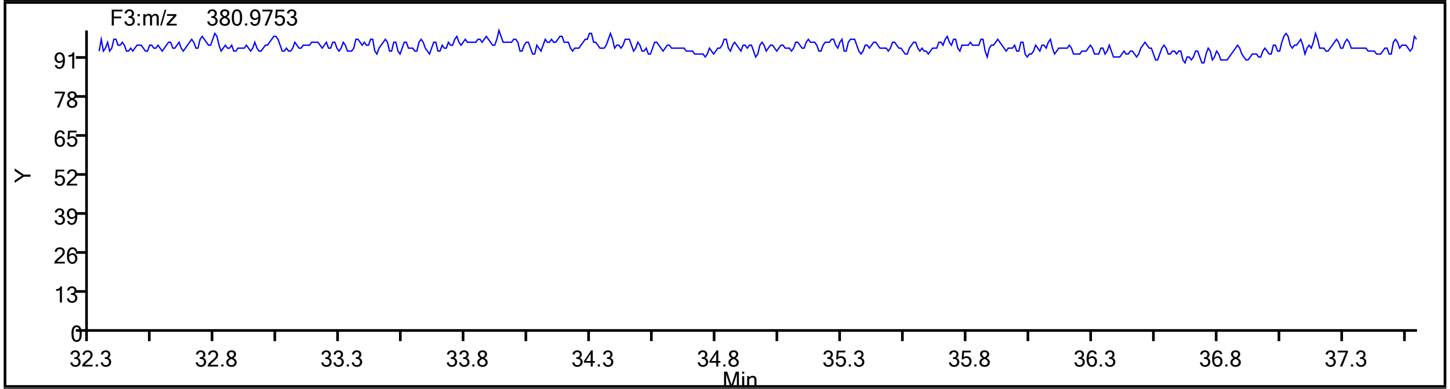

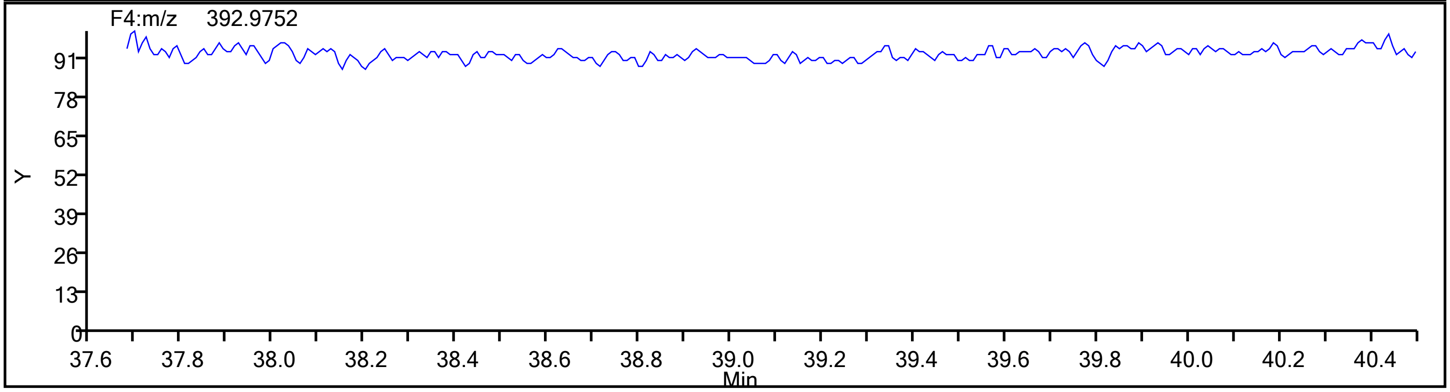

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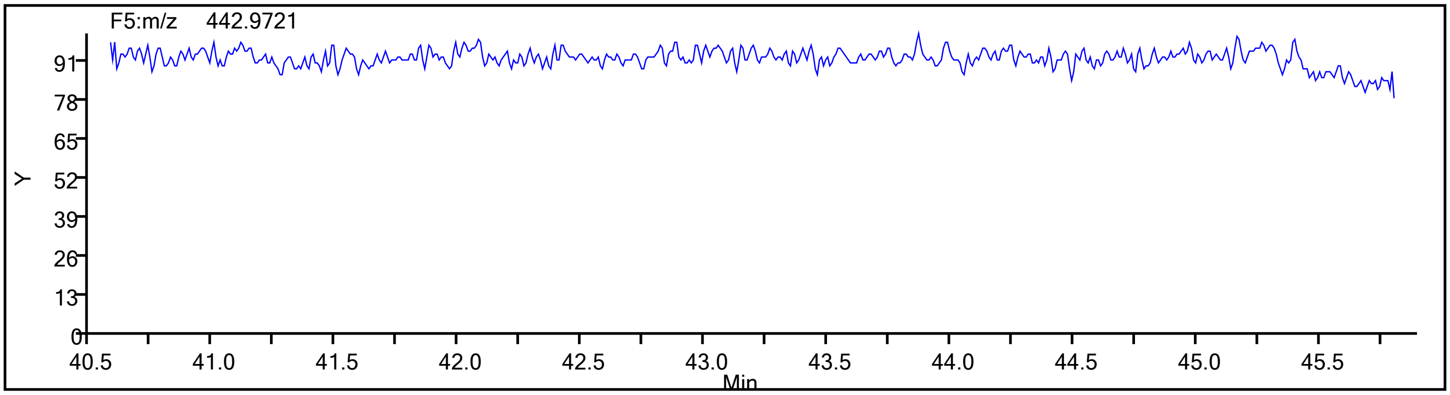

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-452668/1-A
Matrix: Water	Lab File ID: 22ja21dfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1000(mL)	Date Analyzed: 01/22/2021 23:53
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 454782	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.68
51207-31-9	2,3,7,8-TCDF	ND		10	0.47
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.70
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.60
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.64
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.55
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.53
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.50
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.39
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.37
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.36
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.34
35822-46-9	1,2,3,4,6,7,8-HpCDD	2.74	J	50	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.42	J	50	0.35
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.39
3268-87-9	OCDD	4.88	J	100	0.48
39001-02-0	OCDF	ND		100	0.58
41903-57-5	Total TCDD	4.52	J	10	0.68
30402-14-3	Total TCDF	ND		10	0.47
36088-22-9	Total PeCDD	ND		50	0.70
30402-15-4	Total PeCDF	ND		50	0.64
34465-46-8	Total HxCDD	ND		50	1.6
55684-94-1	Total HxCDF	ND		50	0.39
37871-00-4	Total HpCDD	4.46	J	50	0.25
38998-75-3	Total HpCDF	1.42	J	50	0.37

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-452668/1-A
Matrix: Water	Lab File ID: 22ja21dfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1000(mL)	Date Analyzed: 01/22/2021 23:53
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 454782	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	90		25-164
89059-46-1	13C-2,3,7,8-TCDF	85		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	96		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	85		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	86		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	92		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	88		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	78		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	78		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	80		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	79		26-138
114423-97-1	13C-OCDD	87		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	97		35-197

Report Date: 27-Jan-2021 10:12:13   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Lims ID: MB 320-452668/1-A
Client ID:
Sample Type: MB
Inject. Date: 22-Jan-2021 23:53:00   ALS Bottle#: 0   Worklist Smp#: 4
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: MB 320-452668/1-A
Operator ID: Xcalibur_System   Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 10:12:13   Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1626

First Level Reviewer: messecara   Date: 25-Jan-2021 19:17:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.191	4389233	0.82	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.211	7126591	0.80	1.9134	84.9	84.9	0.3382	0.3382	84.86	
2,3,7,8-TCDF	20.298						0.0234	0.0234		
A Non-2,3,7,8-sub-TCDF	19.715						0.0234	0.0234		
S Total TCDF							0.0234	0.0234		
D 13C-2,3,7,8-TCDD	21.560	4324981	0.81	1.0908	90.3	90.3	0.2846	0.2846	90.34	
2,3,7,8-TCDD	21.522						0.0341	0.0341		
$ 37Cl4-2,3,7,8-TCDD	21.595	2091557		1.2281	38.8	38.8	0.0438	0.0438	97.00	
A Non-2,3,7,8-sub-TCDD	20.561	12769	0.77	1.3069	0.2506	0.2259	0.0341	0.1518		RQ
S Total TCDD					0.2506	0.2259	0.0341	0.0341		RQ
D 13C-1,2,3,7,8-PeCDF	27.148	5744345	1.58	1.5355	85.2	85.2	0.2814	0.2814	85.23	
1,2,3,7,8-PeCDF	27.145						0.0302	0.0302		
D 13C-2,3,4,7,8-PeCDF	28.672	5418334	1.58	1.4278	86.5	86.5	0.3027	0.3027	86.46	
2,3,4,7,8-PeCDF	28.769						0.0321	0.0321		
A F1 PeCDFs	24.445						0.0167	0.0167		
A Non-2,3,7,8-sub-PeCDF	27.929						0.0311	0.0311		
S Total PeCDF							0.0321	0.0321		
D 13C-1,2,3,7,8-PeCDD	29.489	3298608	1.60	0.7800	96.3	96.3	0.1473	0.1473	96.34	
1,2,3,7,8-PeCDD	29.477						0.0351	0.0351		
A Non-2,3,7,8-sub-PeCDD	28.272						0.0351	0.0351		
S Total PeCDD							0.0351	0.0351		
D 13C-1,2,3,4,7,8-HxCDF	34.846	4624338	0.53	1.4248	82.9	82.9	0.1999	0.1999	82.93	
1,2,3,4,7,8-HxCDF	34.871						0.0196	0.0196		RQU
D 13C-1,2,3,6,7,8-HxCDF	35.006	5216971	0.53	1.7108	77.9	77.9	0.1665	0.1665	77.92	
1,2,3,6,7,8-HxCDF	35.014						0.0187	0.0187		U
D 13C-2,3,4,6,7,8-HxCDF	35.831	4827702	0.52	1.5455	79.8	79.8	0.1843	0.1843	79.81	
2,3,4,6,7,8-HxCDF	35.831						0.0171	0.0171		U
D 13C-1,2,3,7,8,9-HxCDF	36.731	4201199	0.53	1.3772	77.9	77.9	0.2068	0.2068	77.95	
1,2,3,7,8,9-HxCDF	36.780						0.0178	0.0178		
A Non-2,3,7,8-sub-HxCDF	34.940						0.0182	0.0182		U
S Total HxCDF							0.0196	0.0196		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.529	3913685	1.25	2.5E+04	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	36.049	2991846	1.28	0.8266	92.5	92.5	0.2277	0.2277	92.48	
1,2,3,4,7,8-HxCDD	36.058						0.0276	0.0276		RQU
D 13C-1,2,3,6,7,8-HxCDD	36.167	3570749	1.26	1.0417	87.6	87.6	0.1807	0.1807	87.59	
1,2,3,6,7,8-HxCDD	36.058						0.0264	0.0264		RQU
1,2,3,7,8,9-HxCDD	36.518						0.0250	0.0250		
A Non-2,3,7,8-sub-HxCDD	35.311						0.0262	0.0800		RQU
S Total HxCDD							0.0800	0.0800		
D 13C-1,2,3,4,6,7,8-HpCDF	38.535	3477931	0.46	1.1053	80.4	80.4	0.1790	0.1790	80.40	
1,2,3,4,6,7,8-HpCDF	38.560	4071	1.04	1.6487	0.0913	0.0710	0.0177	0.0177		RQ
D 13C-1,2,3,4,7,8,9-HpCDF	39.789	3023436	0.46	0.9761	79.1	79.1	0.2027	0.2027	79.15	
1,2,3,4,7,8,9-HpCDF	39.780						0.0195	0.0195		
A Non-2,3,7,8-sub-HpCDF	39.160						0.0186	0.0186		
S Total HpCDF					0.0913	0.0710	0.0186	0.0186		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	39.477	3068953	1.07	0.8768	89.4	89.4	0.1410	0.1410	89.43	
1,2,3,4,6,7,8-HpCDD	39.494	5099	0.99	1.2146	0.1368	0.1368	0.0123	0.0123		M
A Non-2,3,7,8-sub-HpCDD	39.237	3221	1.04	1.2146	0.1001	0.0864	0.0123	0.0864		RQ
S Total HpCDD					0.2369	0.2232	0.0123	0.0123		RQ
D 13C-OCDD	41.940	4854528	0.89	0.7137	173.8	173.8	0.1123	0.1123	86.90	
OCDF	42.059						0.0290	0.0290		
OCDD	41.948	7435	0.98	1.2562	0.2438	0.2438	0.0239	0.0239		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Lims ID: MB 320-452668/1-A
Client ID:
Sample Type: MB
Inject. Date: 22-Jan-2021 23:53:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-452668/1-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 10:12:13 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1626

First Level Reviewer: messecara Date: 25-Jan-2021 19:17:19

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.191	21.144	3		1979495	296092	563	1407	526		
333.9338	21.199	21.144	3		2409738	339098	226	565	1500	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.211	20.156	3	0.954	3156968	479347	1130	2825	424		
317.9389	20.211	20.156	3	0.954	3969623	598836	514	1285	1165	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.182						23	57			
305.8987	20.182						93	232			
A Non-2,3,7,8-sub-TCDF											
303.9016	19.715						23	57			
305.8987	19.715						93	232			
13C-2,3,7,8-TCDD											
331.9368	21.560	21.496	4	1.017	1929354	265583	563	1407	472		
333.9338	21.569	21.496	4	1.018	2395627	329140	226	565	1456	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.522						82	205			
321.8936	21.522						24	60			
37Cl4-2,3,7,8-TCDD											
327.8847	21.595	21.539	3	1.019	2091557	295075	137	342	2154		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	17.548	20.561	-180	0.814	4746	849	82	205	10		
	Empc Correction				3732	696	82	205	8		
321.8936	17.557	20.561	-180	0.814	4848	904	24	60	38	0.98(0.65-0.89)	
319.8965	18.089	20.561	-148	0.839	2201	398	82	205	5		
	Empc Correction				1822	522	82	205	6		
321.8936	18.055	20.561	-150	0.837	2367	678	24	60	28	0.93(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.148	27.119	2	1.281	3521053	587461	637	1592	922		
353.8970	27.148	27.119	2	1.281	2223292	362454	461	1152	786	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.145						21	52			
341.8567	27.145						113	282			
13C-2,3,4,7,8-PeCDF											
351.9000	28.672	28.635	2	1.353	3321771	522666	637	1592	821		
353.8970	28.672	28.635	2	1.353	2096563	330061	461	1152	716	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.660						21	52			
341.8567	28.660						113	282			
A F1 PeCDFs											
339.8597	24.445						2	5			
341.8567	24.445						70	175			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.929						21	52			
341.8567	27.929						113	282			
13C-1,2,3,7,8-PeCDD											
367.8949	29.489	29.443	3	1.392	2030641	294567	195	487	1511		
369.8919	29.480	29.443	2	1.391	1267967	184791	97	242	1905	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.477						73	182			
357.8516	29.477						12	30			
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.272						73	182			
357.8516	28.272						12	30			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.846	34.817	2	0.954	1600549	363003	427	1067	850		
385.8610	34.846	34.817	2	0.954	3023789	681978	817	2042	835	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											RQU
373.8208	34.834						73	182			
375.8178	34.834						38	95			
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.006	34.985	1	0.958	1805580	394815	427	1067	925		
385.8610	35.006	34.985	1	0.958	3411391	737895	817	2042	903	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											U
373.8208	35.002						73	182			
375.8178	35.002						38	95			
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.831	35.811	1	0.981	1657924	423872	427	1067	993		
385.8610	35.831	35.811	1	0.981	3169778	801226	817	2042	981	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											U
373.8208	35.828						73	182			
375.8178	35.828						38	95			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.731	36.703	2	1.006	1455732	405329	427	1067	949		
385.8610	36.731	36.703	2	1.006	2745467	759013	817	2042	929	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.720						73	182			
375.8178	36.720						38	95			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	34.940						73	182			
375.8178	34.940						38	95			
13C-1,2,3,7,8,9-HxCDD											a
401.8559	36.529	36.501	2		2177463	611352	509	1272	1201		a
403.8529	36.529	36.501	2		1736222	480612	313	782	1536	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.049	36.021	2	0.987	1681071	447689	509	1272	880		
403.8529	36.041	36.021	1	0.987	1310775	348765	313	782	1114	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQU
389.8158	36.030						63	157			
391.8127	36.030						55	137			
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.167	36.139	2	0.990	1990494	521020	509	1272	1024		
403.8529	36.159	36.139	1	0.990	1580255	412480	313	782	1318	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQU
389.8158	36.156						63	157			
391.8127	36.156						55	137			
1,2,3,7,8,9-HxCDD											
389.8158	36.518						63	157			
391.8127	36.518						55	137			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	35.311	35.311	0	0.976	3215	337	63	157			
	Empc Correction				1892	281	63	157	0		
391.8127	35.311	35.311	0	0.976	1526	227	55	137		2.11(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.535	38.517	1	1.055	1087960	359644	416	1040	865		
419.8220	38.535	38.517	1	1.055	2389971	803518	448	1120	1794	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQ
407.7817	38.560	38.525	2	1.001	3241	750	110	275	7		
	Empc Correction				2075	666	110	275	6		
409.7788	38.543	38.525	1	1.000	1996	641	26	65	25	1.62(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.789	39.772	1	1.089	953353	352637	416	1040	848		
419.8220	39.789	39.772	1	1.089	2070083	755040	448	1120	1685	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.780						110	275			
409.7788	39.780						26	65			
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.160						110	275			
409.7788	39.160						26	65			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.477	39.460	1	1.081	1582940	583536	295	737	1978		
437.8140	39.477	39.460	1	1.081	1486013	533521	245	612	2178	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	39.494	39.477	1	1.000	2542	886	43	107	21		M
425.7737	39.494	39.477	1	1.000	2557	961	24	60	40	0.99(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											RQ
423.7767	38.855	39.237	-23	0.984	2152	735	43	107	17		
	Empc Correction				1642	517	43	107	12		
425.7737	38.863	39.237	-22	0.984	1579	498	24	60	21	1.36(0.88-1.20)	
13C-OCDD											
469.7780	41.940	41.913	2	1.148	2285689	789607	206	515	3833		
471.7750	41.940	41.913	2	1.148	2568839	911906	144	360	6333	0.89(0.76-1.02)	
OCDF											
441.7428	42.015						51	127			
443.7399	42.015						128	320			
OCDD											
457.7377	41.948	41.930	1	1.000	3674	1360	44	110	31		
459.7348	41.940	41.930	1	1.000	3761	1256	58	145	22	0.98(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Lims ID:	MB 320-452668/1-A		
Client ID:			
Inject. Date:	22-Jan-2021 23:53:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	4

Non-2,3,7,8-sub-TCDD, RT: 20.561

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.307	D 13C-2,3,7,8-TCDD	100.000	4324981	594723

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.307		100.000	4324981	594723

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.548	4746	849	4848	904	0.1697	0.98	RQ
17.548	3732	696	4848	904	0.1518		Empc Correction
18.089	2201	398	2367	678	0.0808	0.93	RQ
18.089	1822	522	2367	678	0.0741		Empc Correction
Signal Totals:							
	5554	1218	7215	1582			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14162	2829				0.96	RQ
	12769	2800					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2506 = (14162 * 100.000) / (4324981 * 1.307)
Empc Amount: 0.2259 = (12769 * 100.000) / (4324981 * 1.307)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Lims ID:	MB 320-452668/1-A		
Client ID:			
Inject. Date:	22-Jan-2021 23:53:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDF, RT: 34.940

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.355	D 13C-1,2,3,4,7,8-HxCDF	100.000	4624338	1044981
1,2,3,6,7,8-HxCDF	1.308	D 13C-1,2,3,6,7,8-HxCDF	100.000	5216971	1132710
2,3,4,6,7,8-HxCDF	1.325	D 13C-2,3,4,6,7,8-HxCDF	100.000	4827702	1225098
1,2,3,7,8,9-HxCDF	1.337	D 13C-1,2,3,7,8,9-HxCDF	100.000	4201199	1164342

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.331		100.000	4717552	1141782

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Lims ID:	MB 320-452668/1-A		
Client ID:			
Inject. Date:	22-Jan-2021 23:53:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDD, RT: 35.311

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.342	D 13C-1,2,3,4,7,8-HxCDD	100.000	2991846	796454
1,2,3,6,7,8-HxCDD	1.199	D 13C-1,2,3,6,7,8-HxCDD	100.000	3570749	933500
1,2,3,7,8,9-HxCDD	1.364				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.302		100.000	3281297	864977

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.444	3215	337	1526	227	0.1110	2.11	RQ
35.444	1892	281	1526	227	0.0800		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Lims ID:	MB 320-452668/1-A		
Client ID:			
Inject. Date:	22-Jan-2021 23:53:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDD, RT: 39.237

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.215	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	3068953	1117057

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.215		100.000	3068953	1117057

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.855	2152	735	1579	498	0.1001	1.36	RQ
38.855	1642	517	1579	498	0.0864		Empc Correction
Signal Totals:							
	1642	517	1579	498			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3731	1233				1.36	RQ
	3221	1015					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1001 = (3731 * 100.000) / (3068953 * 1.215)
Empc Amount: 0.0864 = (3221 * 100.000) / (3068953 * 1.215)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Instrument ID: DFS 1
Lims ID: MB 320-452668/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 39.49
Area: 2700
Amount: 0.142027
Amount Units: pg/ul

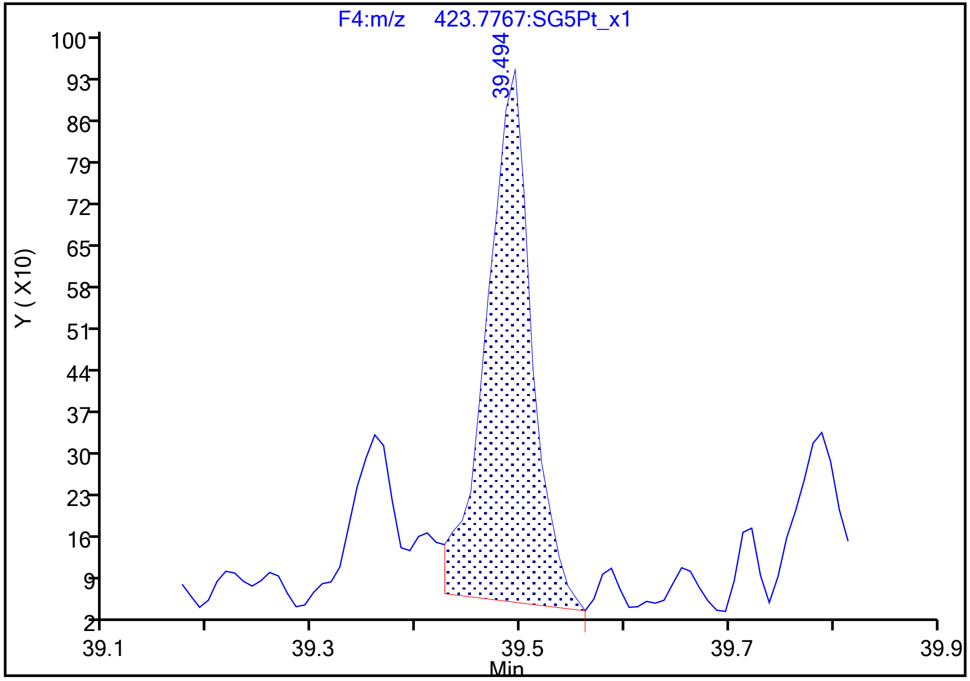

Manual Integration Results

RT: 39.49
Area: 2542
Amount: 0.136796
Amount Units: pg/ul

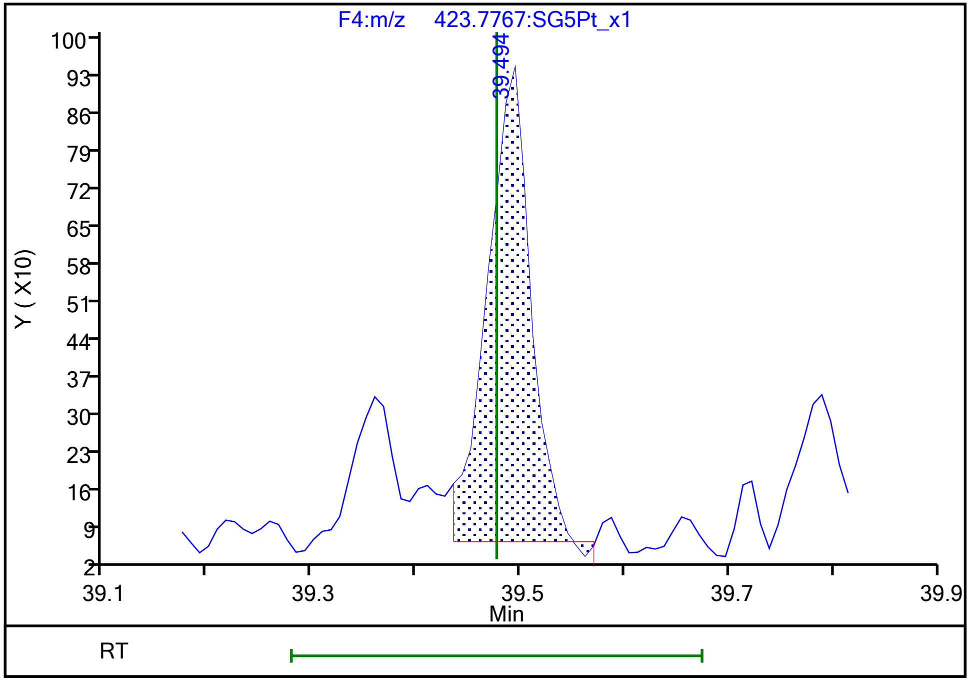

Reviewer: dadunj, 27-Jan-2021 10:11:00
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Instrument ID: DFS 1
Lims ID: MB 320-452668/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 39.49
Area: 2594
Amount: 0.142027
Amount Units: pg/ul

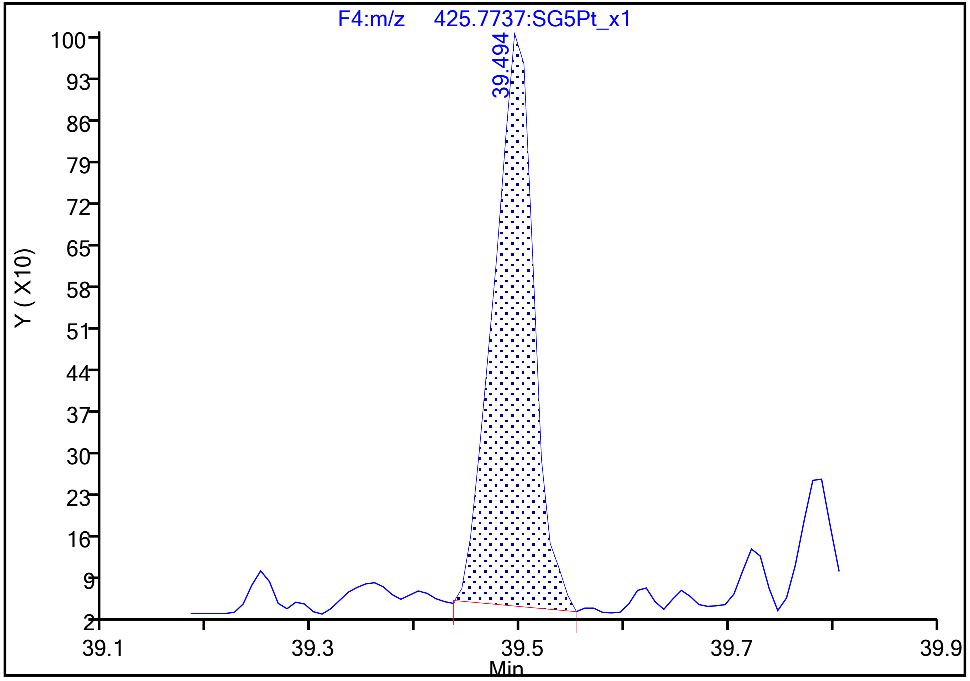

Manual Integration Results

RT: 39.49
Area: 2557
Amount: 0.136796
Amount Units: pg/ul

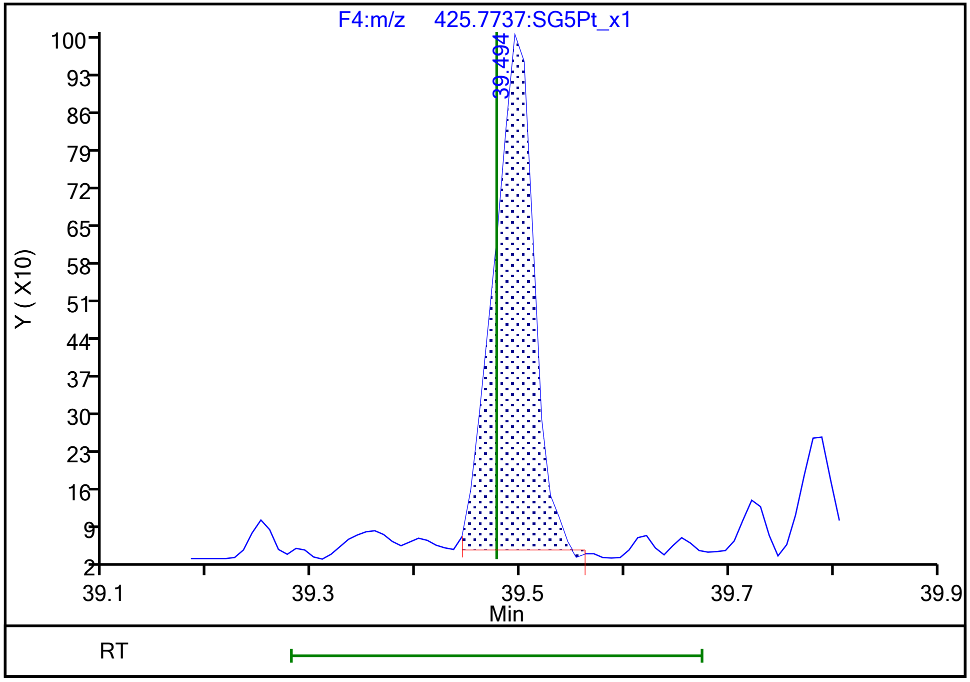

Reviewer: dadunj, 27-Jan-2021 10:11:04

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d

Injection Date: 22-Jan-2021 23:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

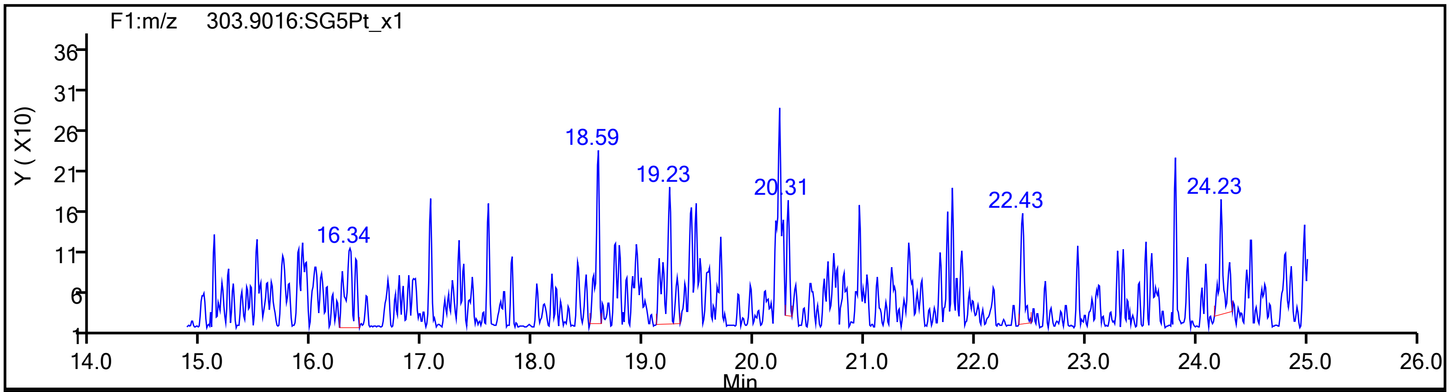

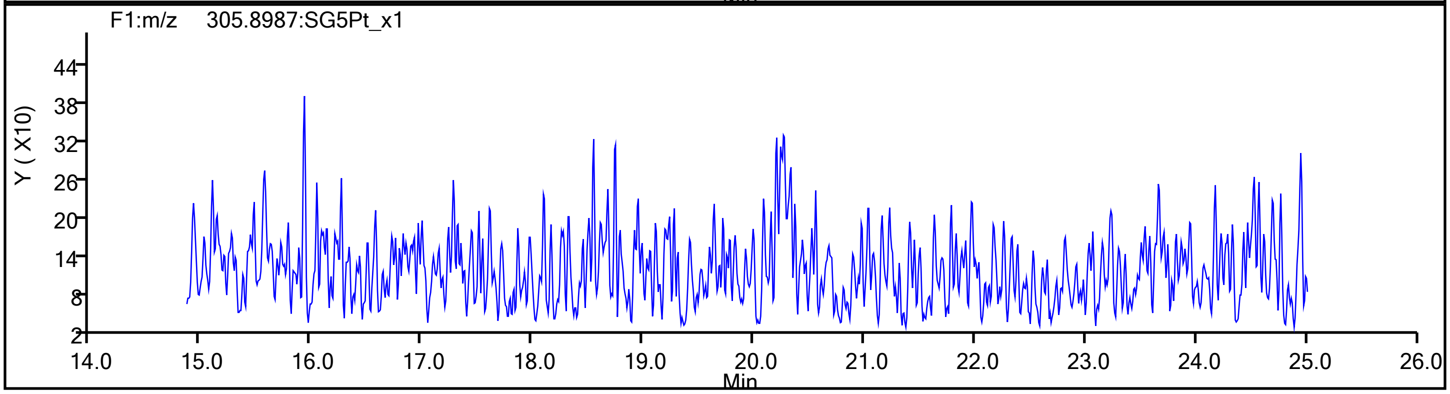

TCDF Standards

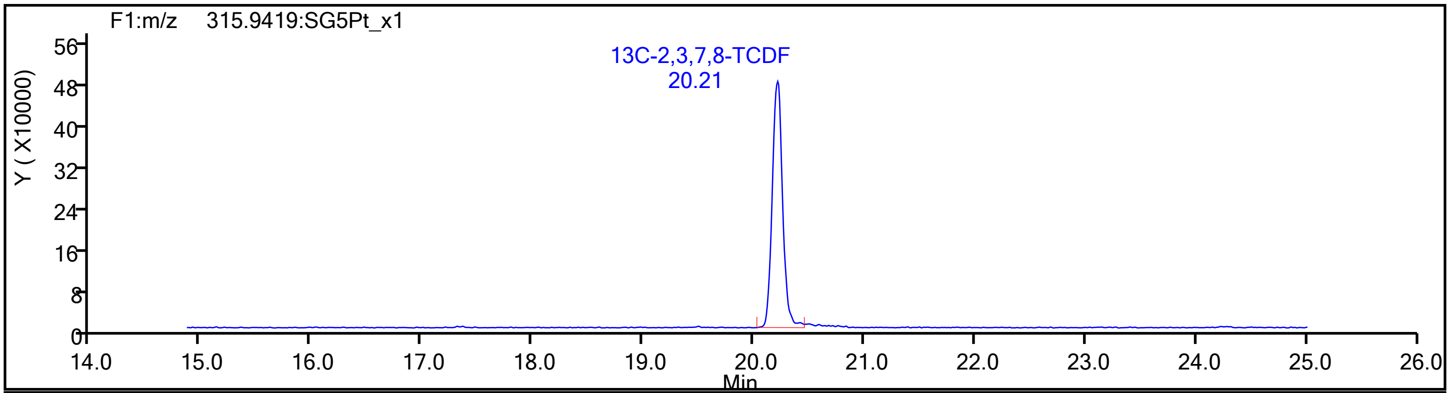

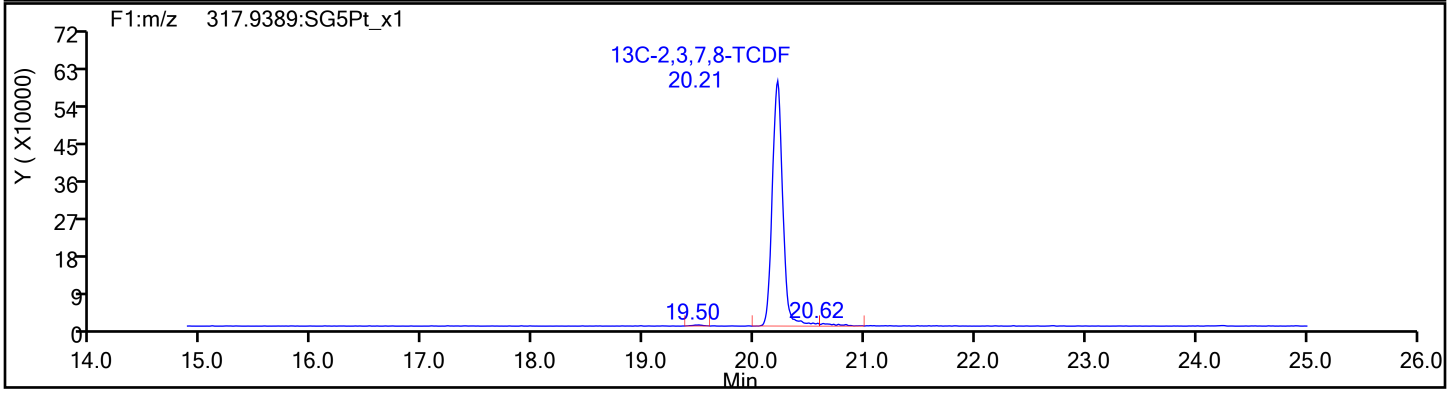

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d

Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

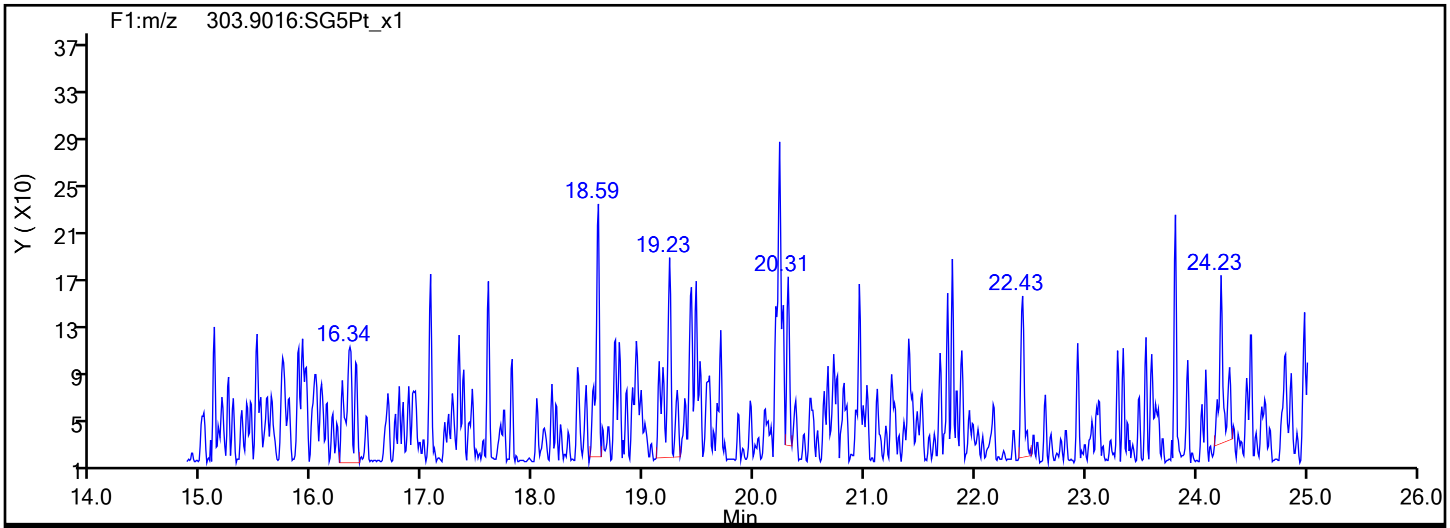

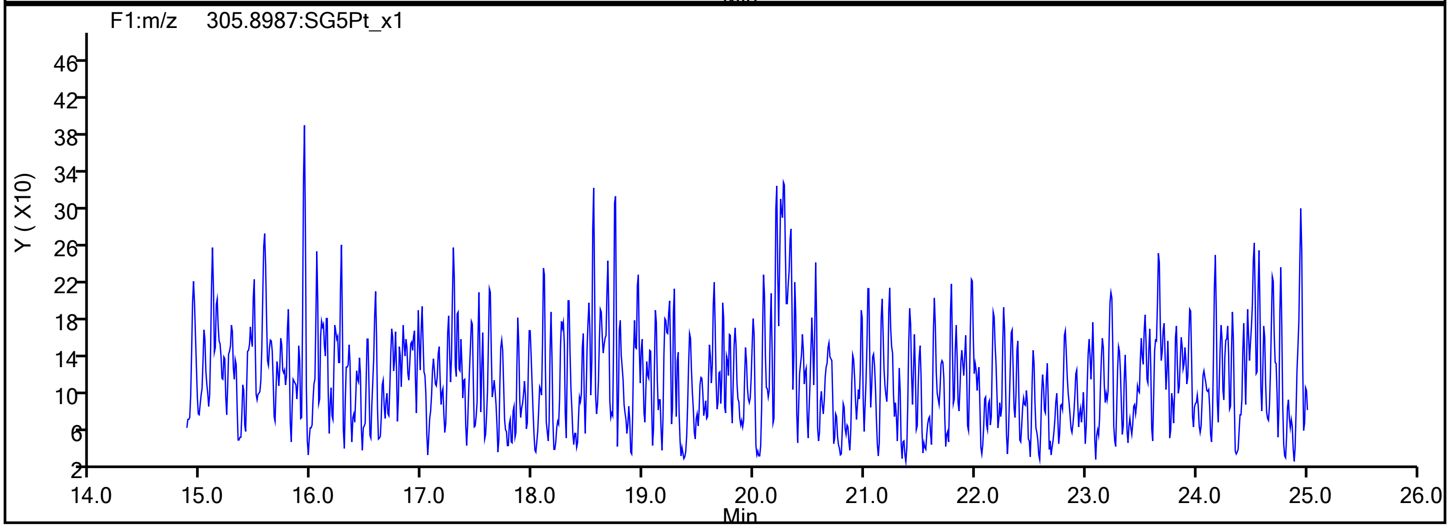

TCDF Interference Mass

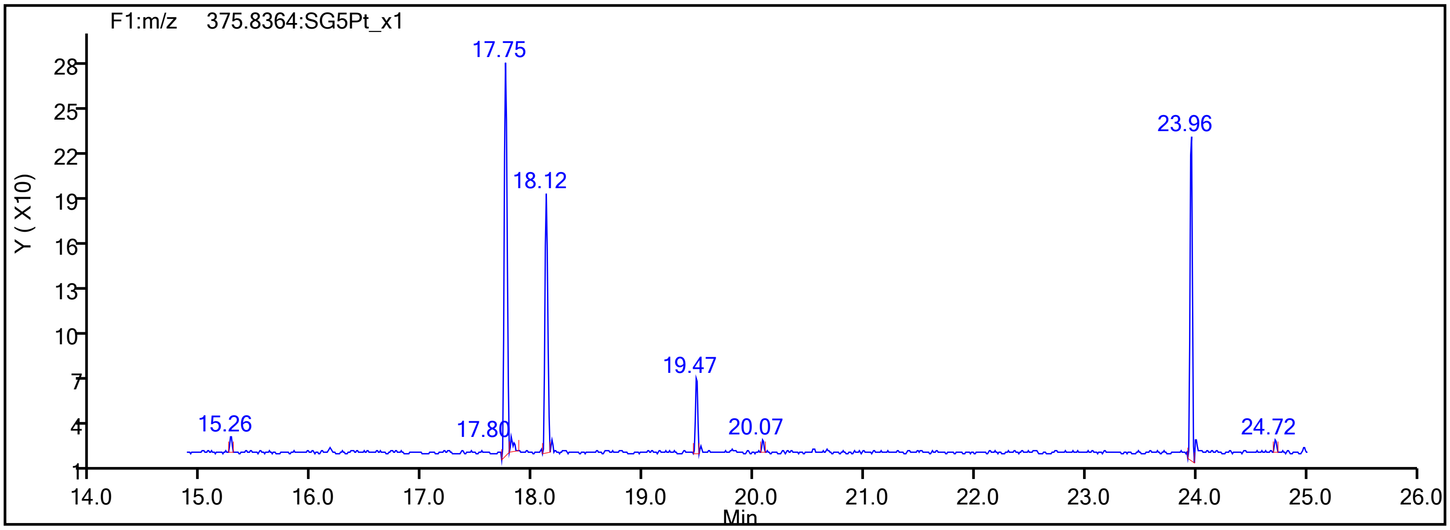

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

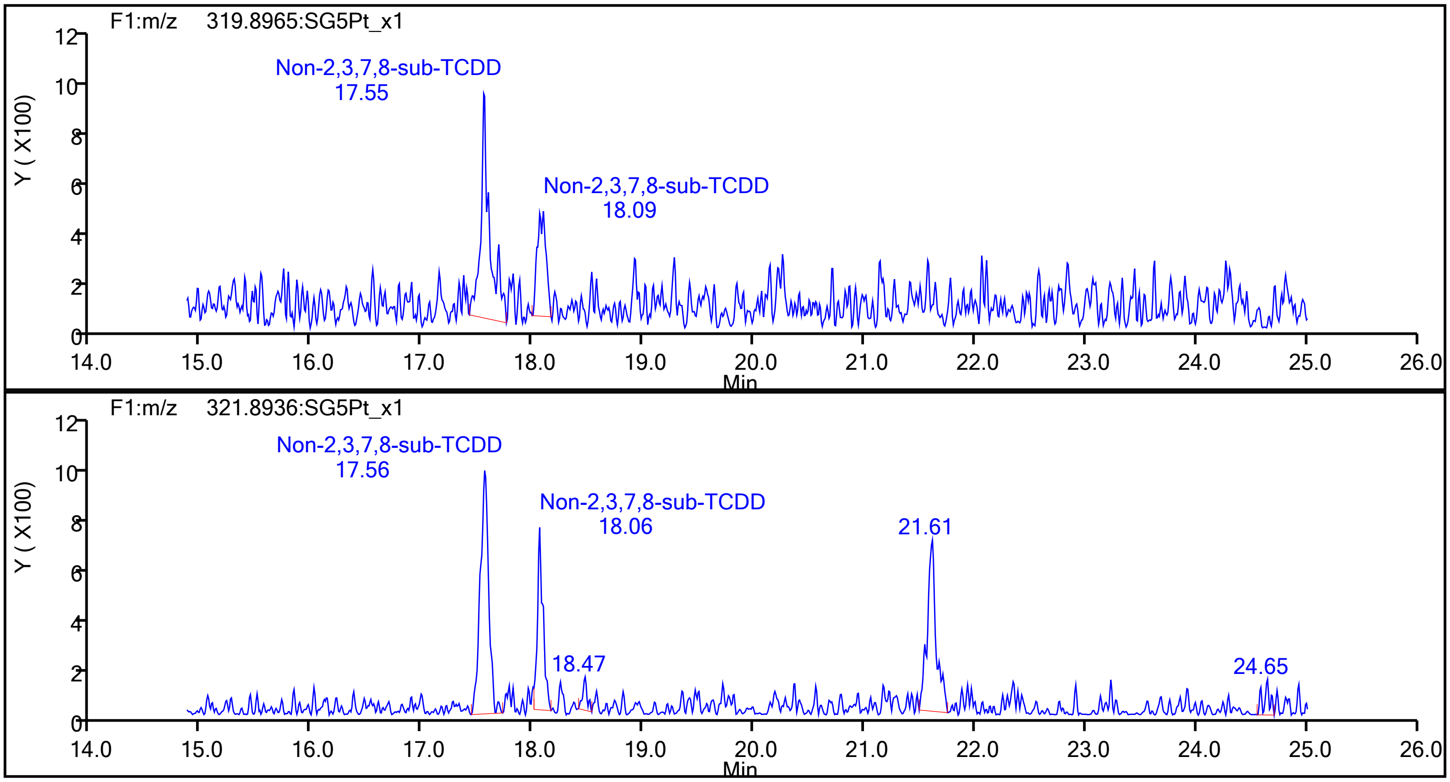

TCDD Standards

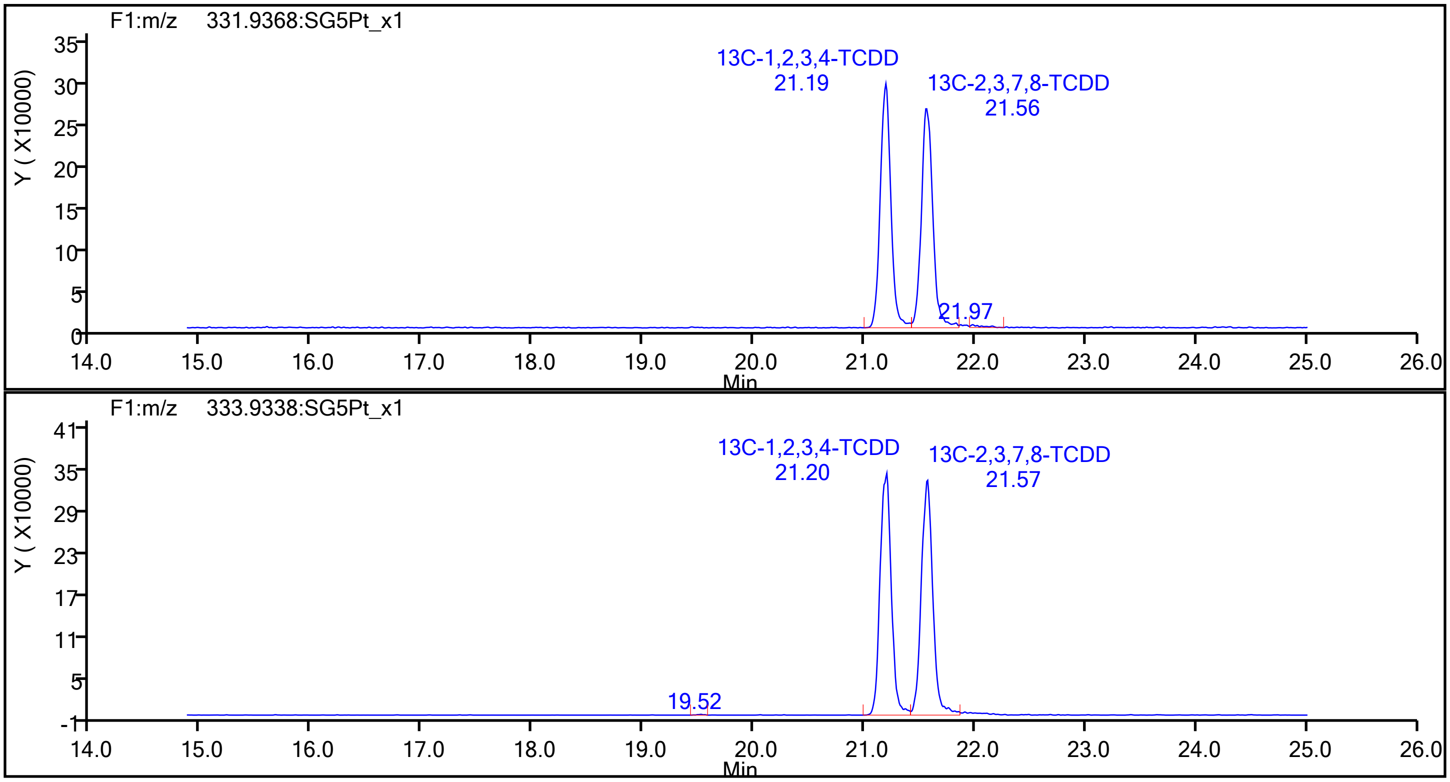

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

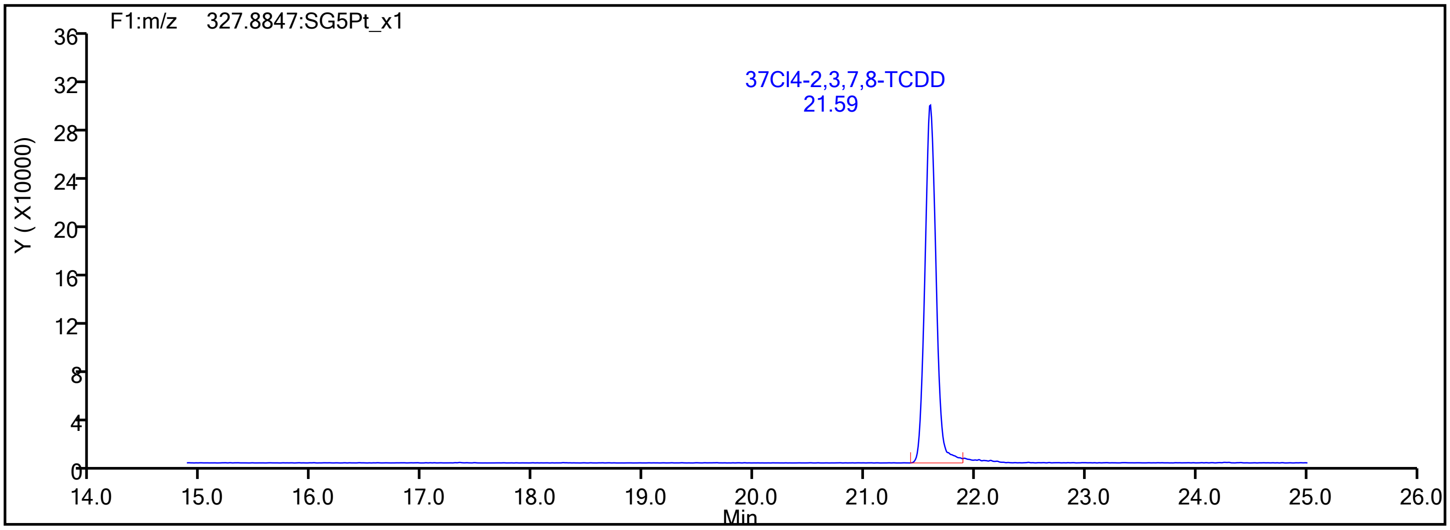

37Cl4-TCDD Standards

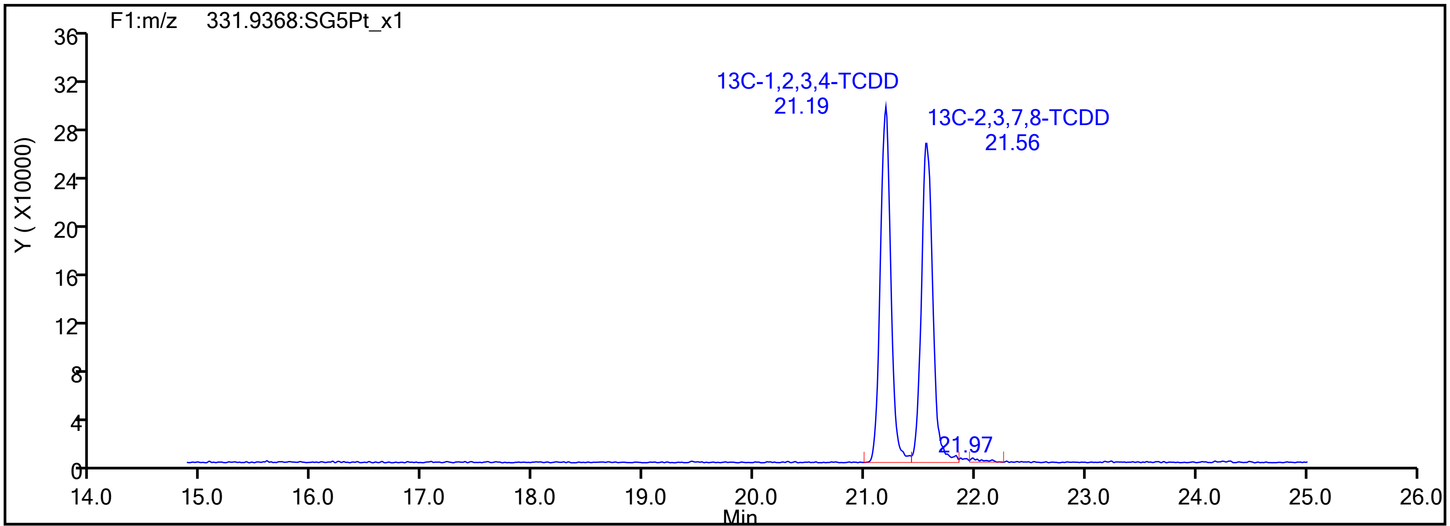

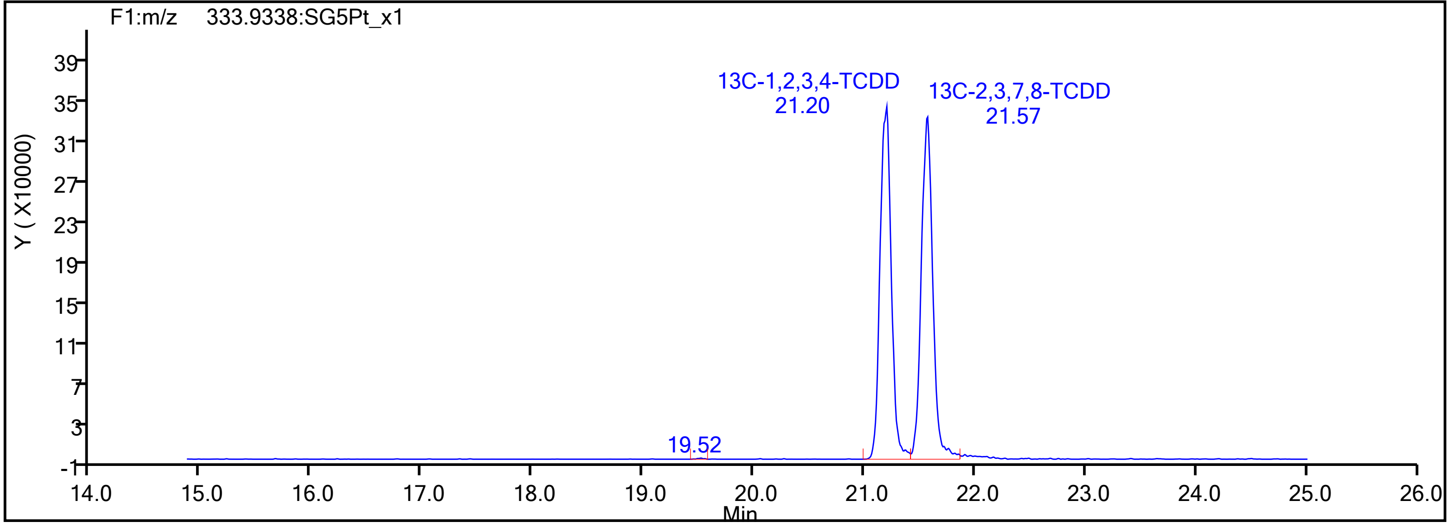

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

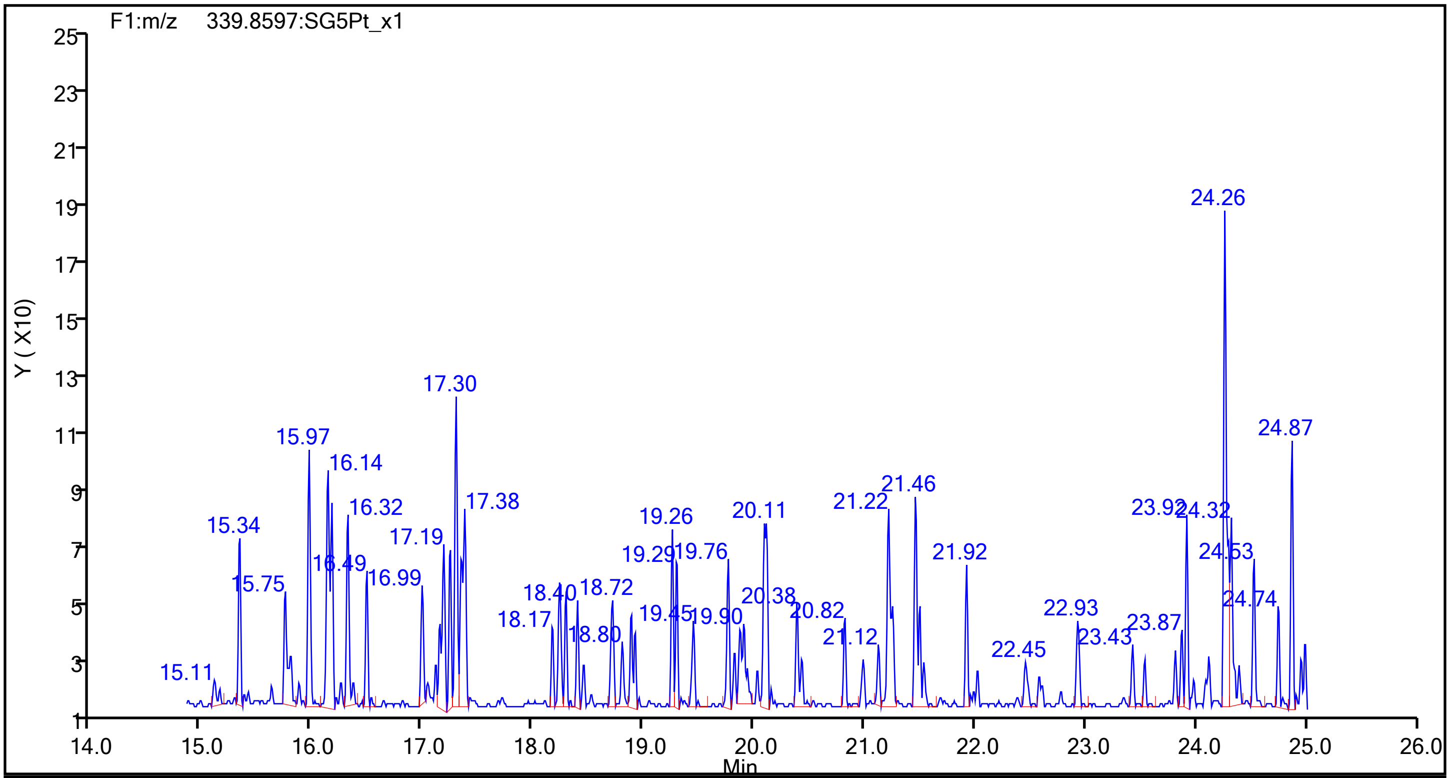

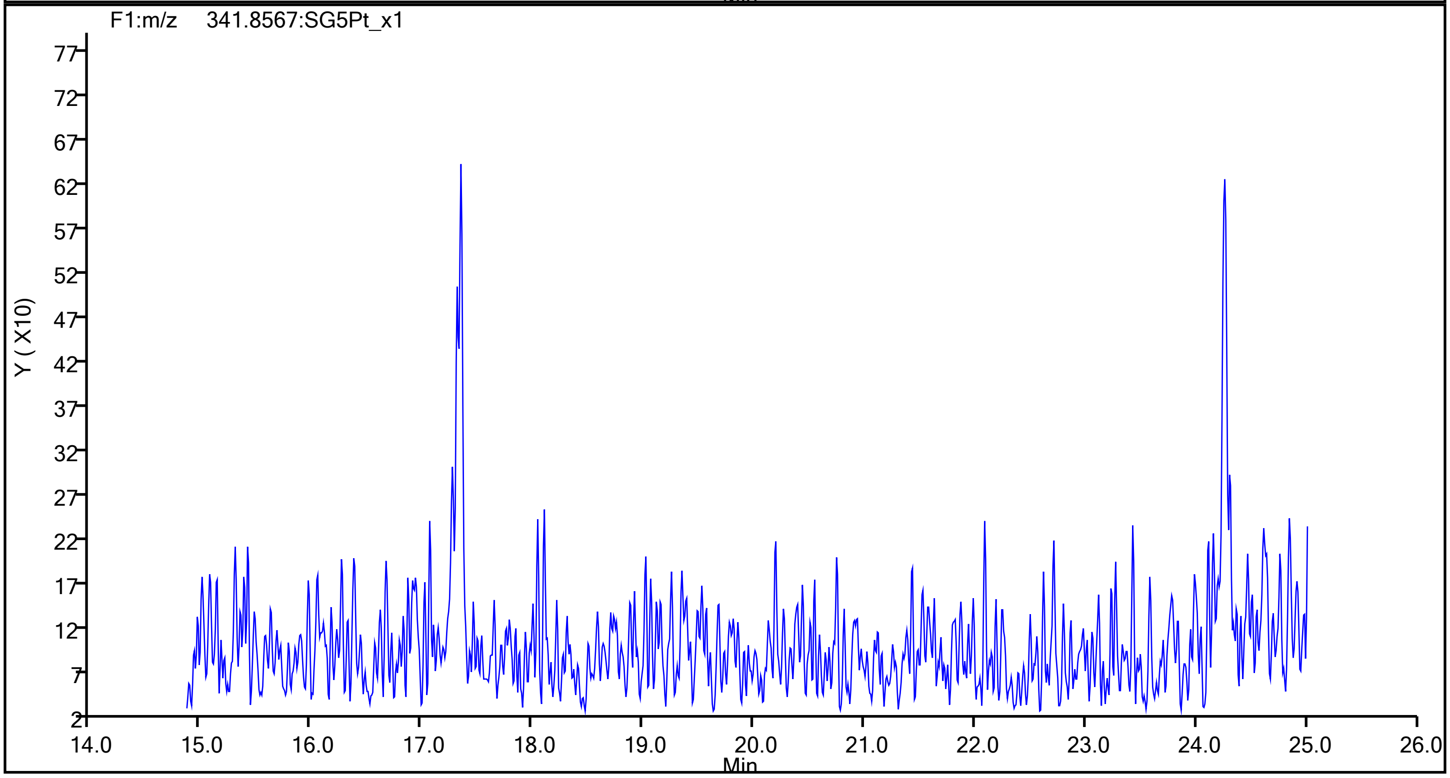

Report Date: 27-Jan-2021 10:12:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

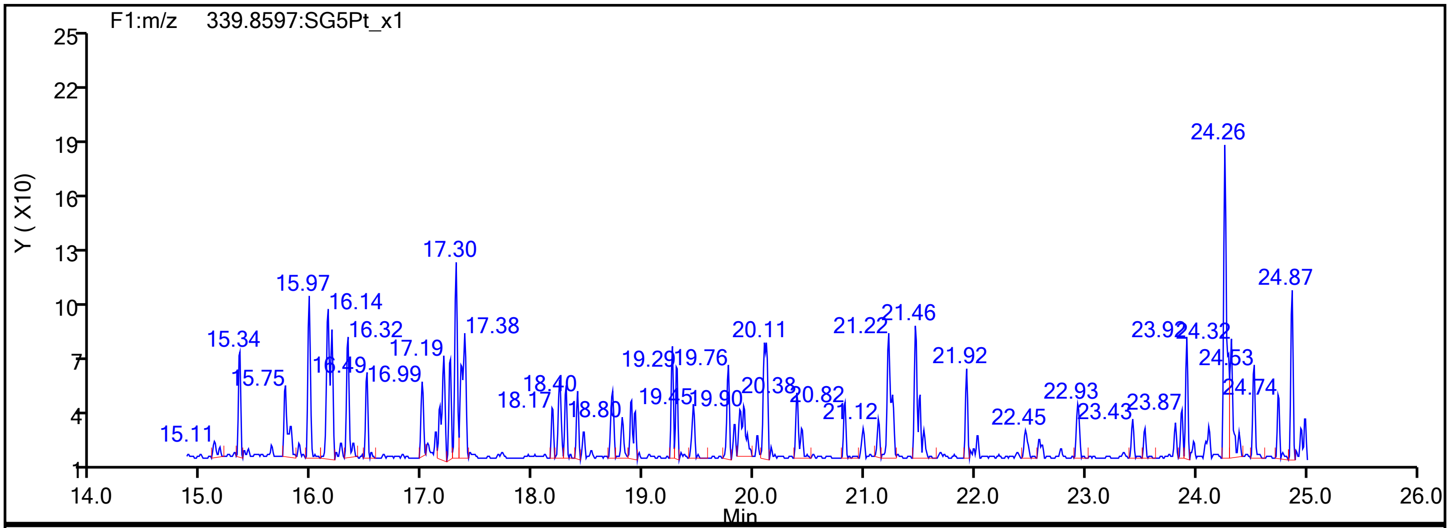

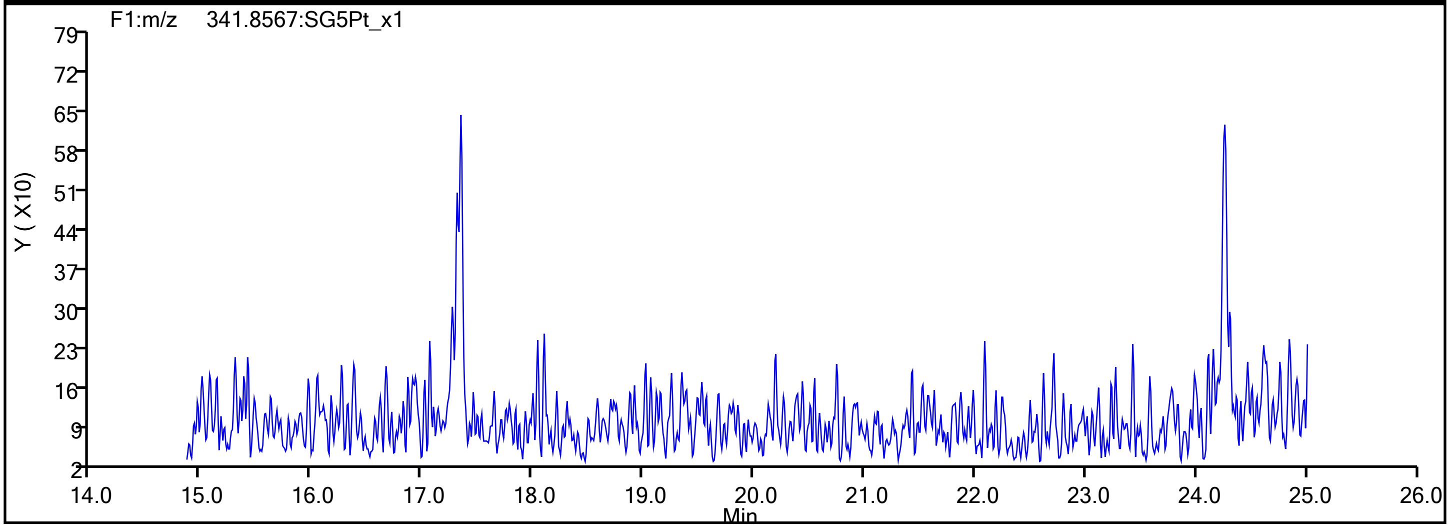

F1 PeCDFs Interference Mass

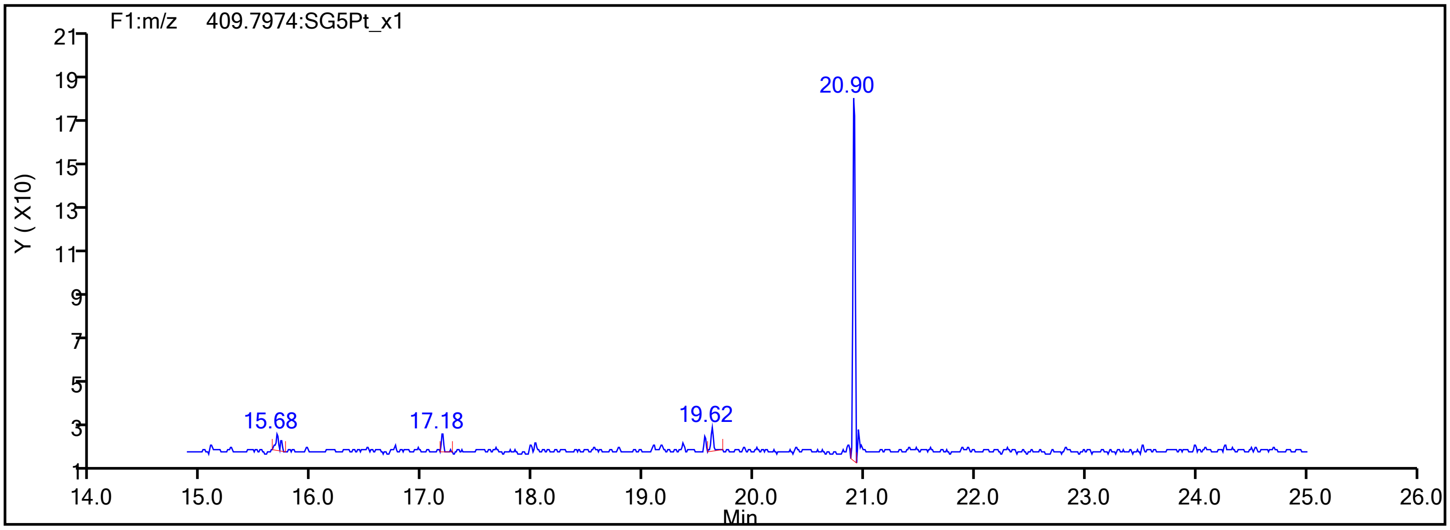

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

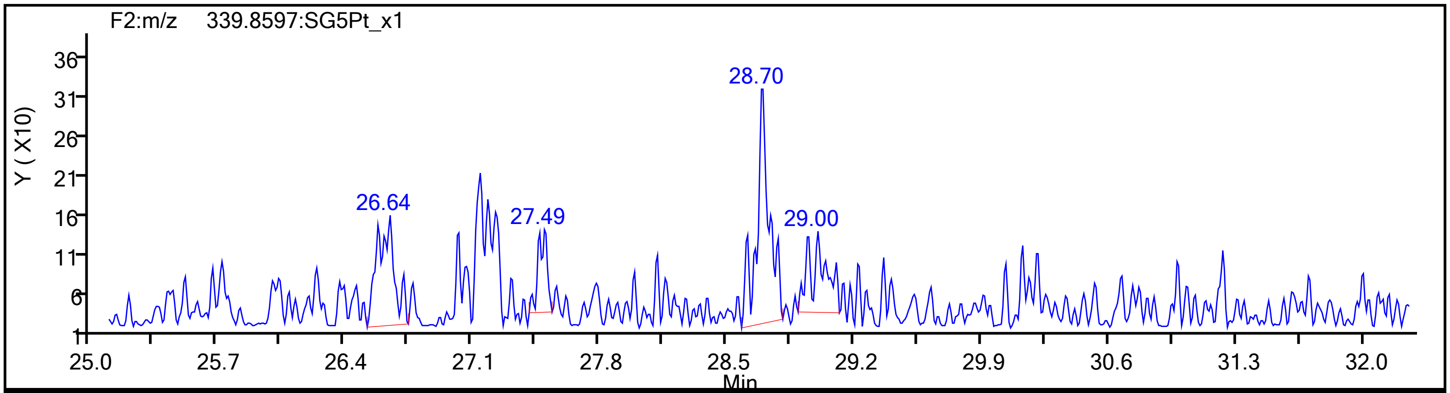

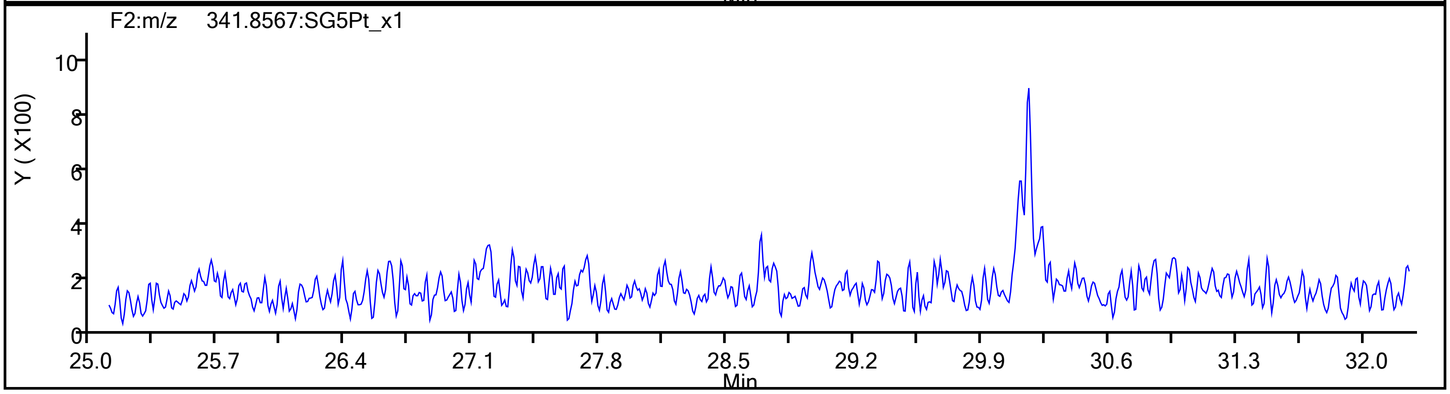

PeCDF Standards

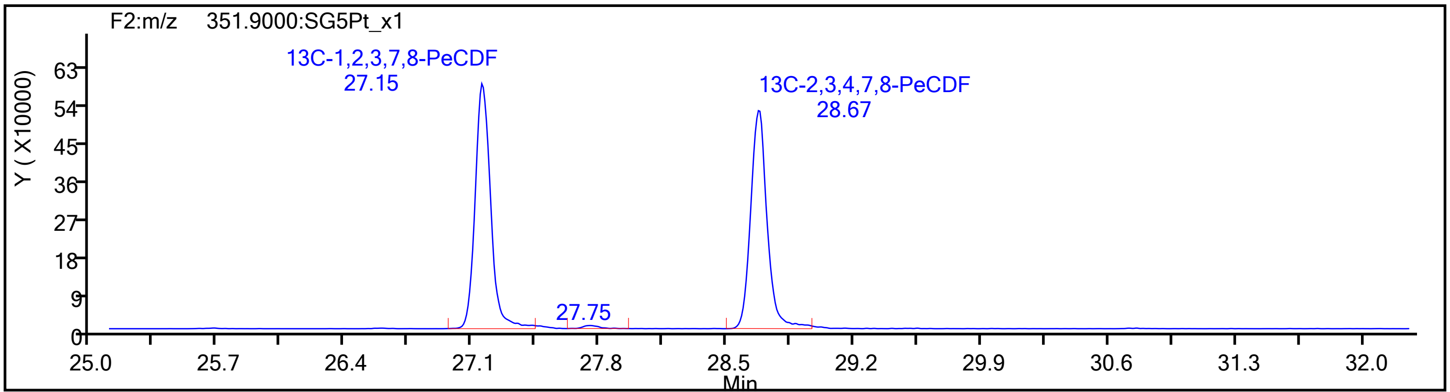

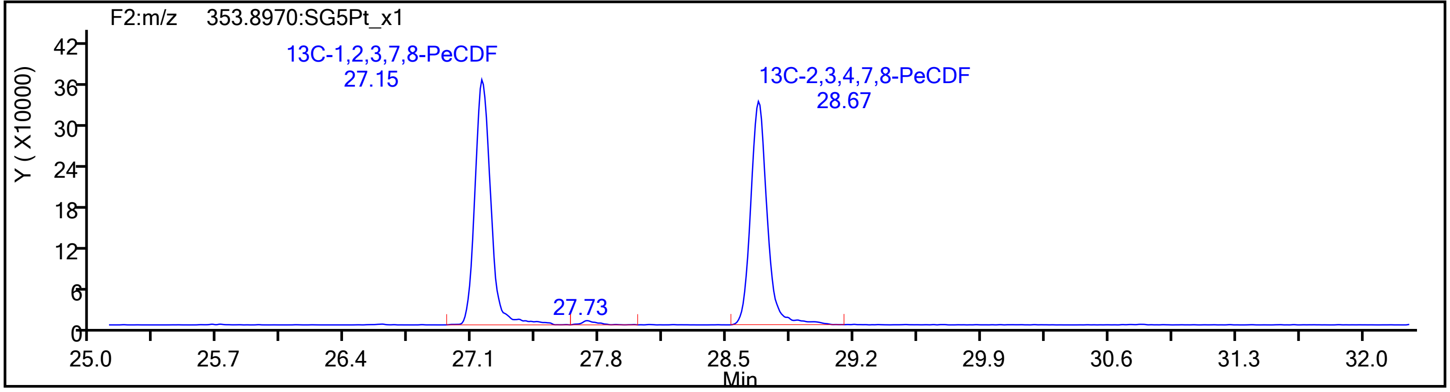

Report Date: 27-Jan-2021 10:12:14
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

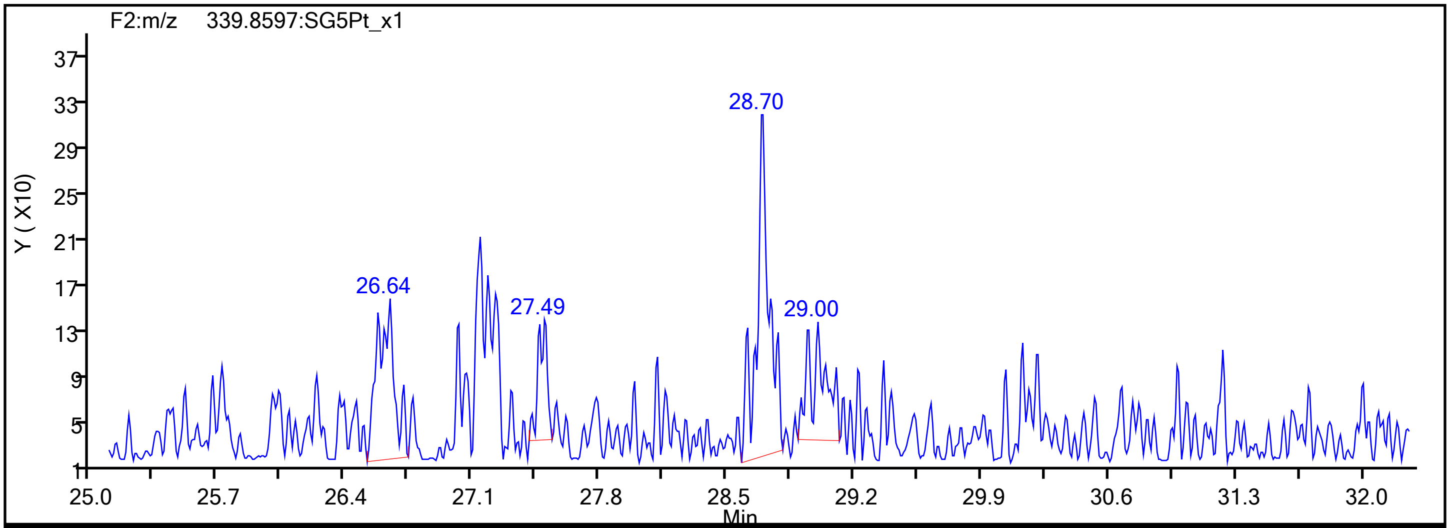

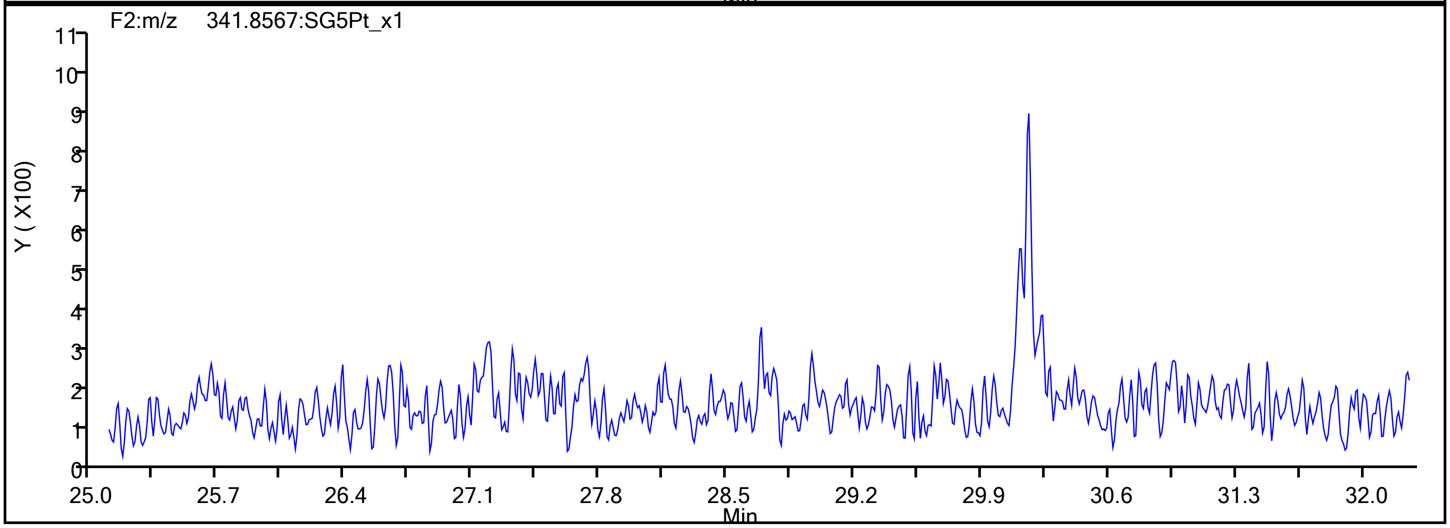

PeCDF Interference Mass

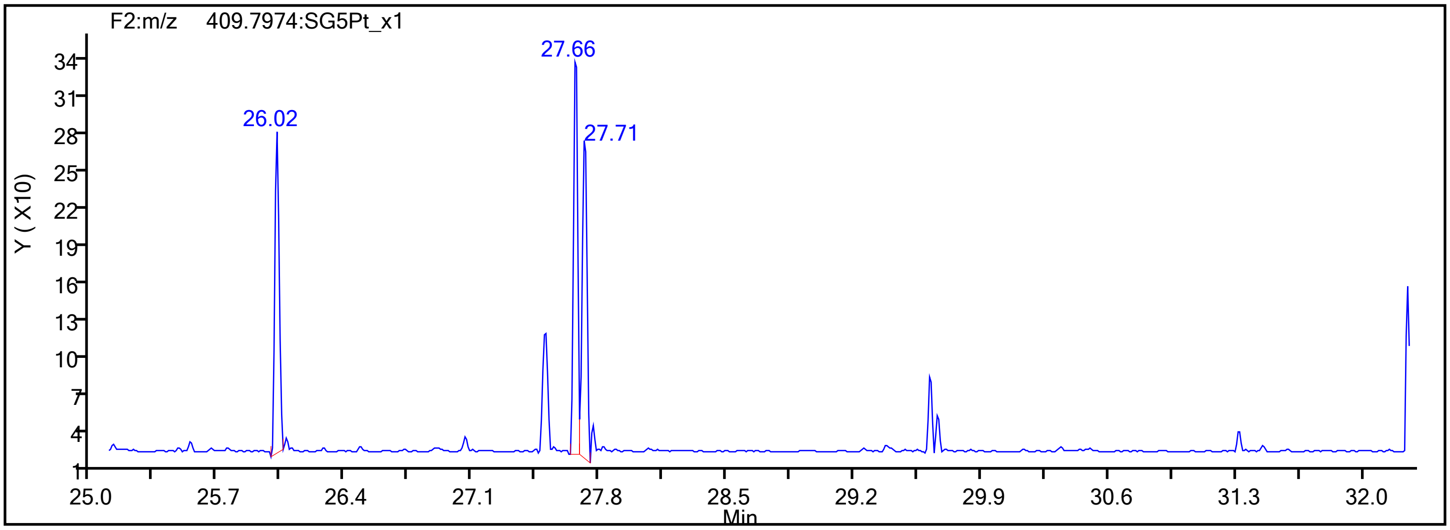

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

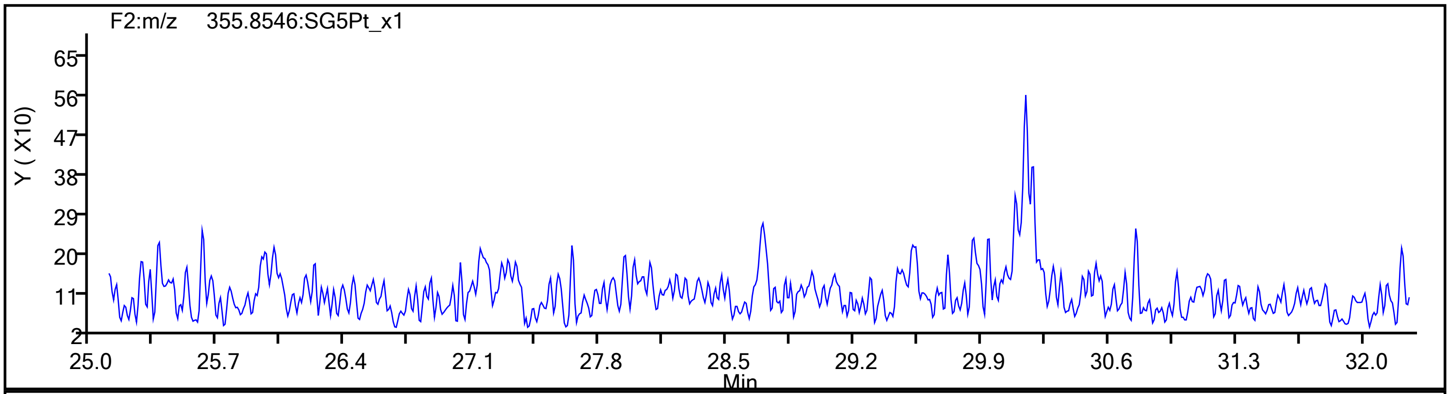

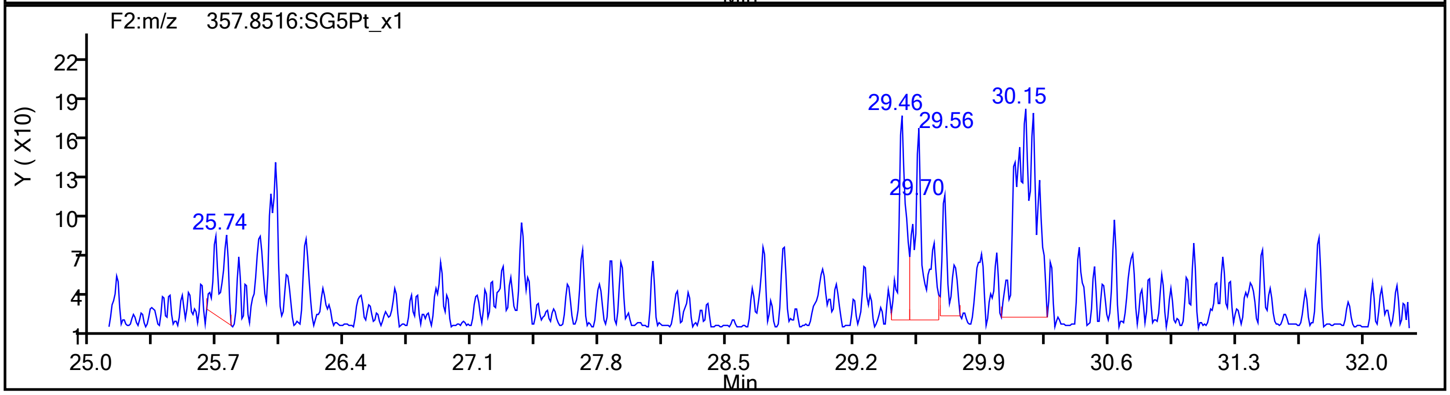

PeCDD Standards

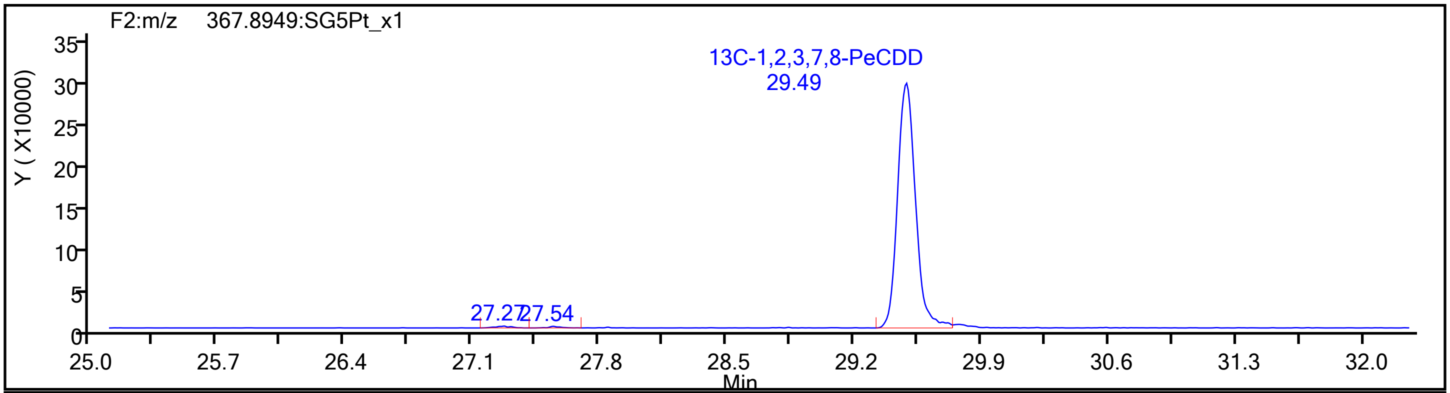

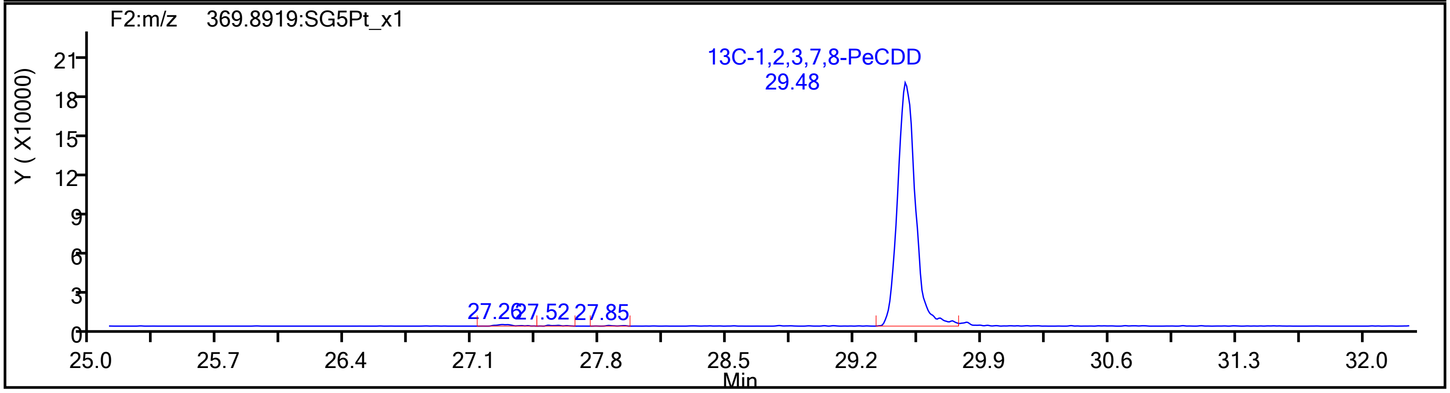

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

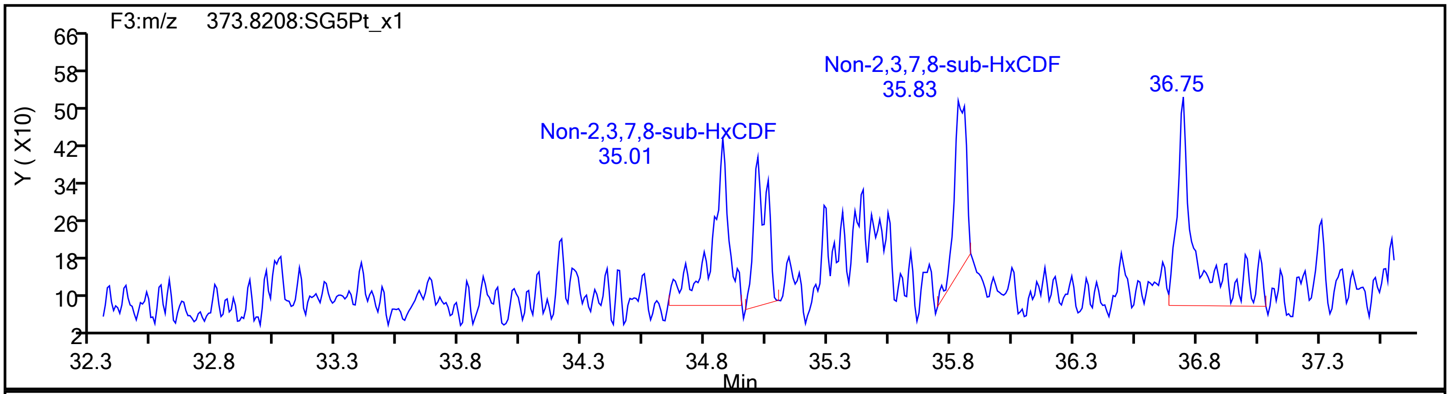

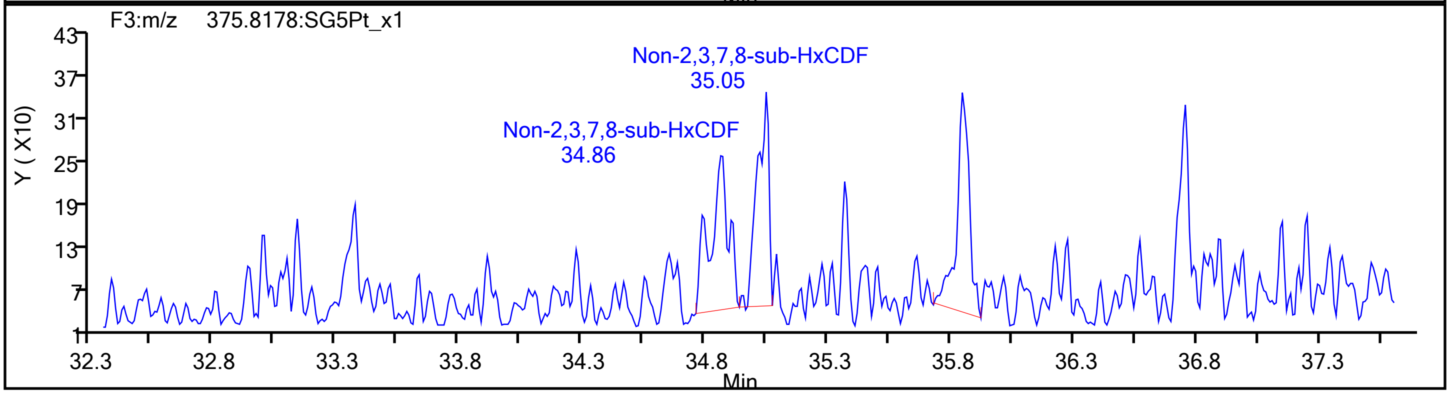

HxCDF Standards

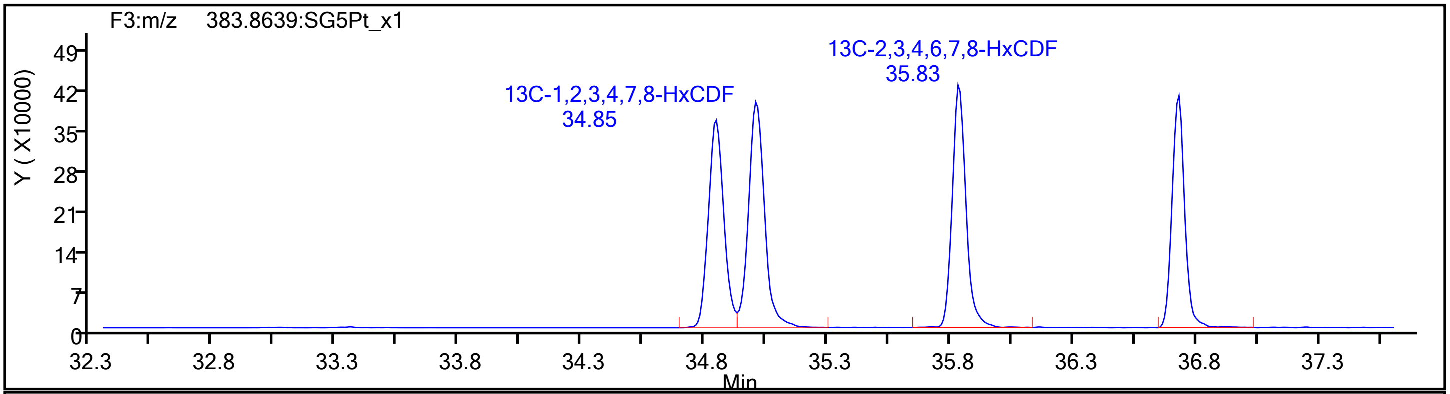

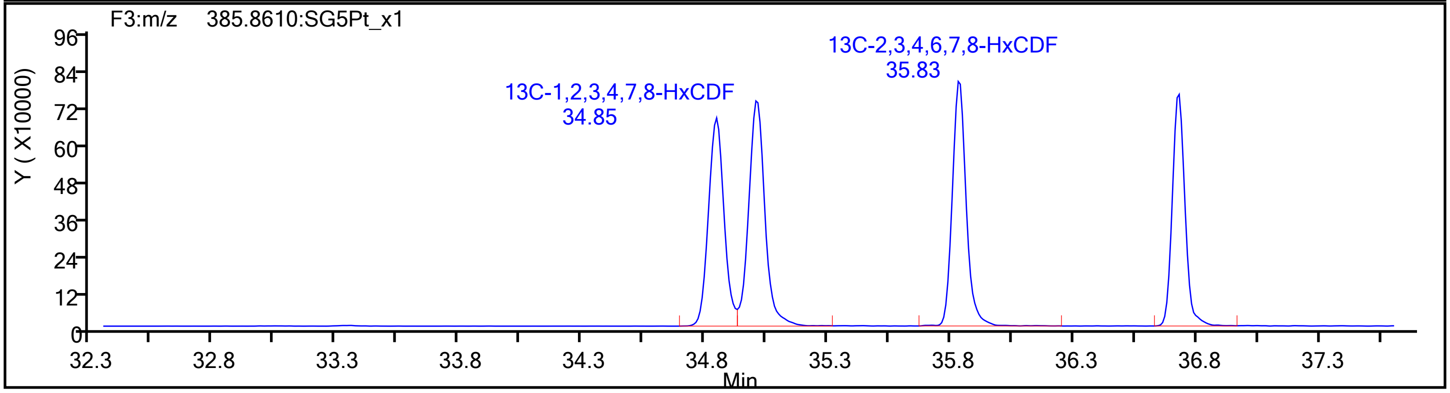

Report Date: 27-Jan-2021 10:12:14
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

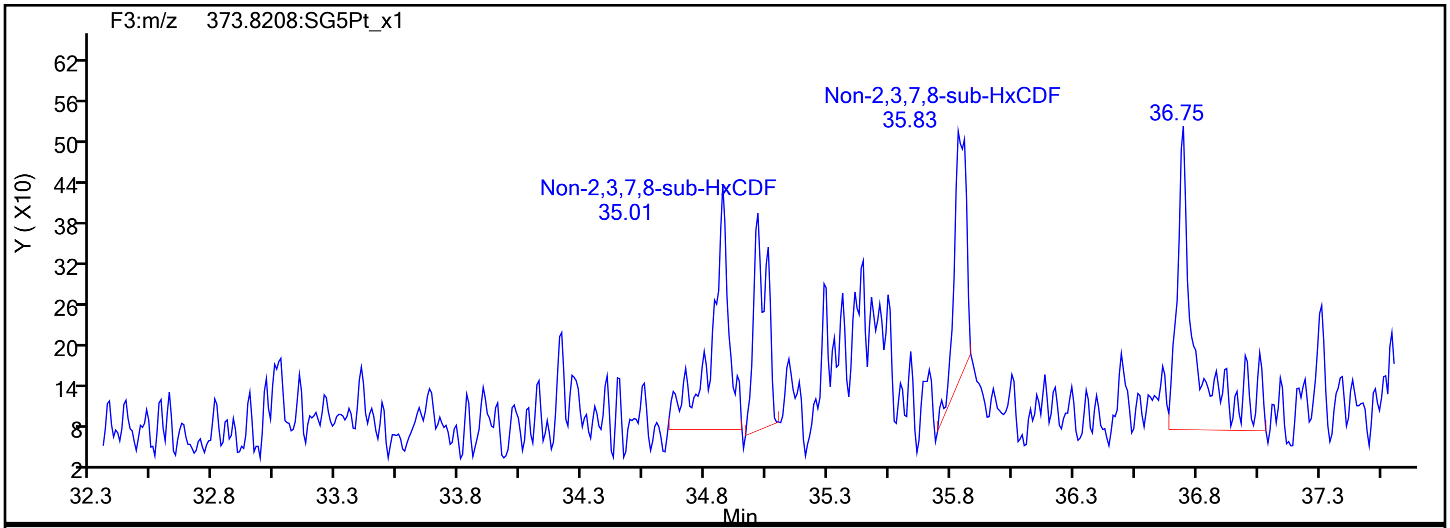

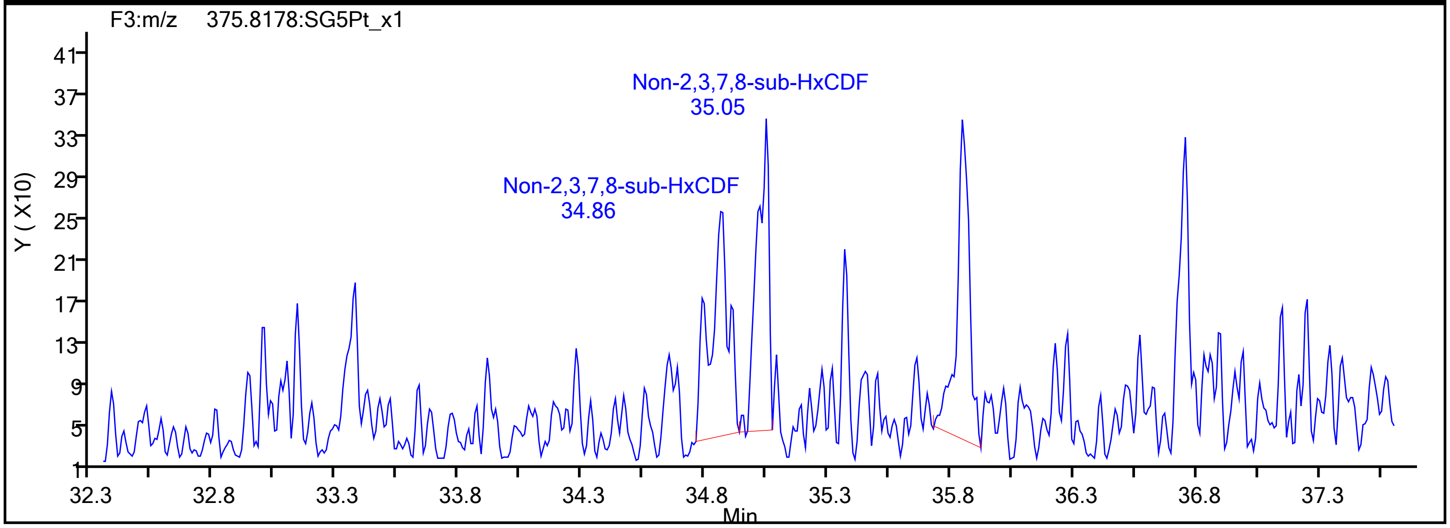

HxCDF Interference Mass

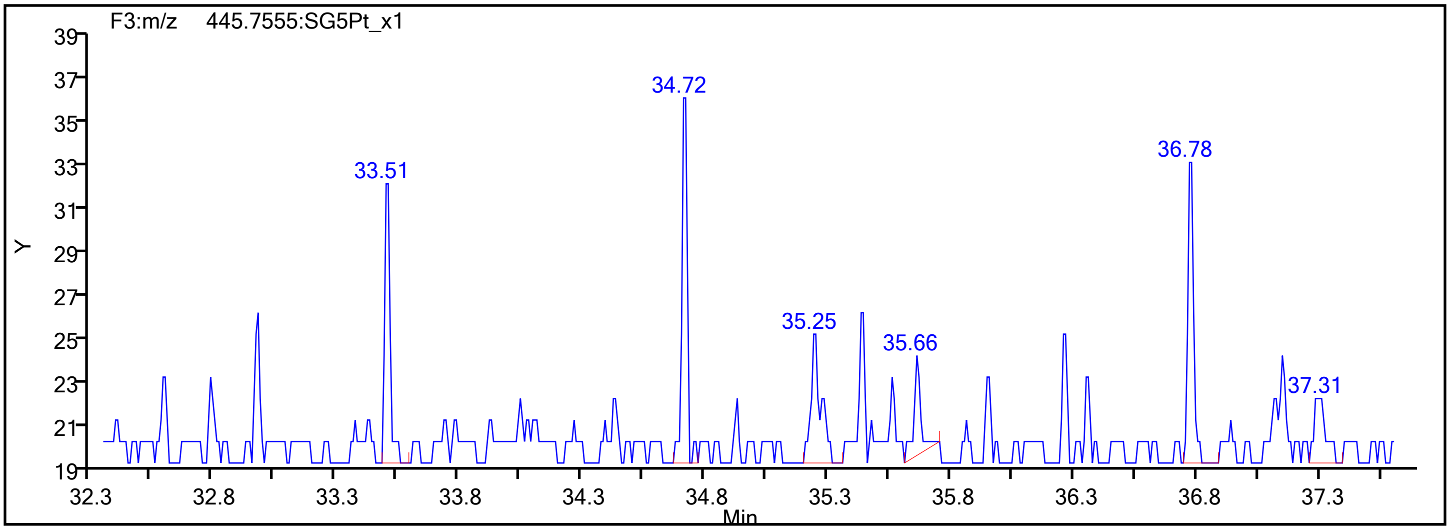

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d

Injection Date: 22-Jan-2021 23:53:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

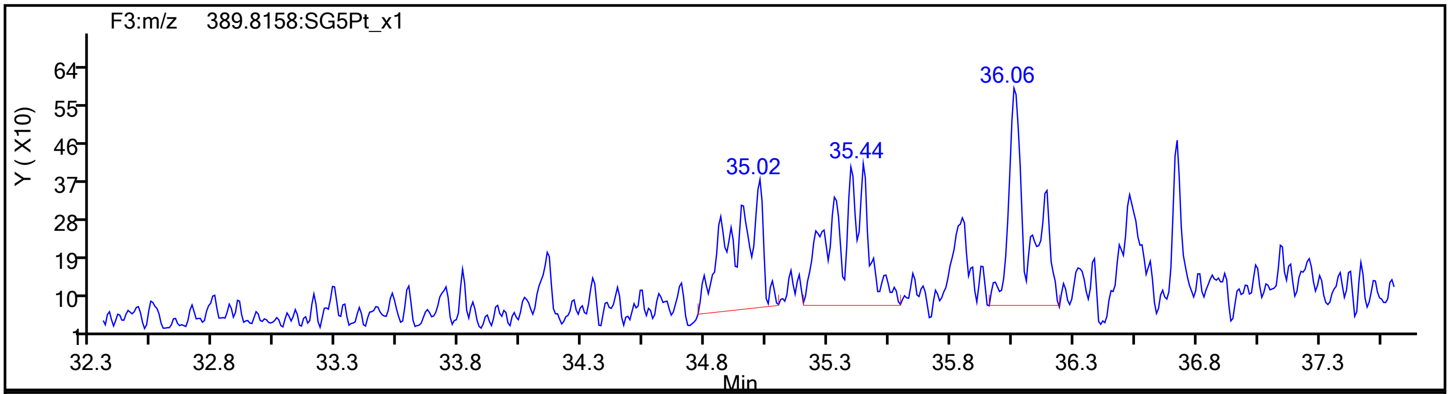

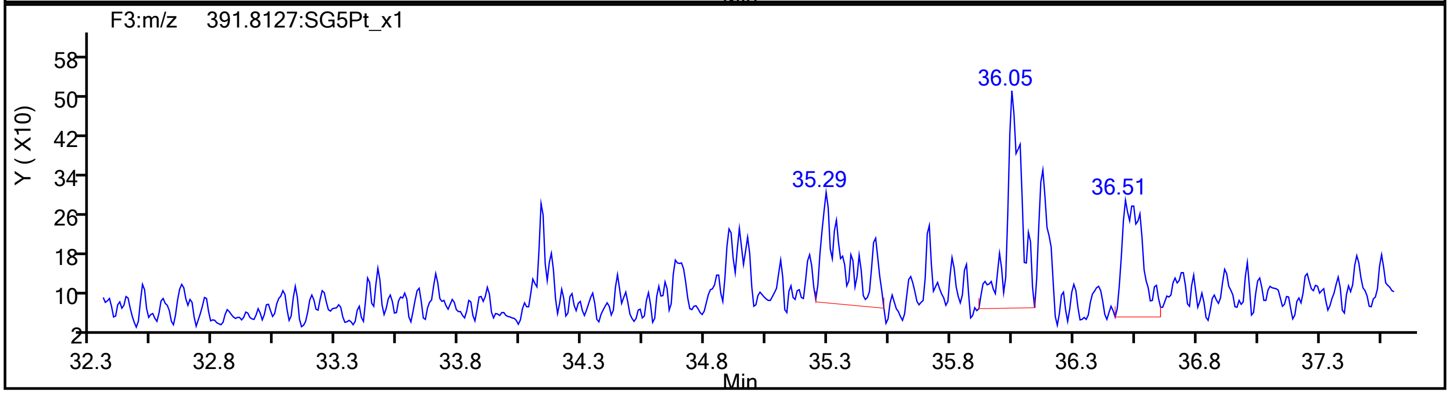

HxCDD Standards

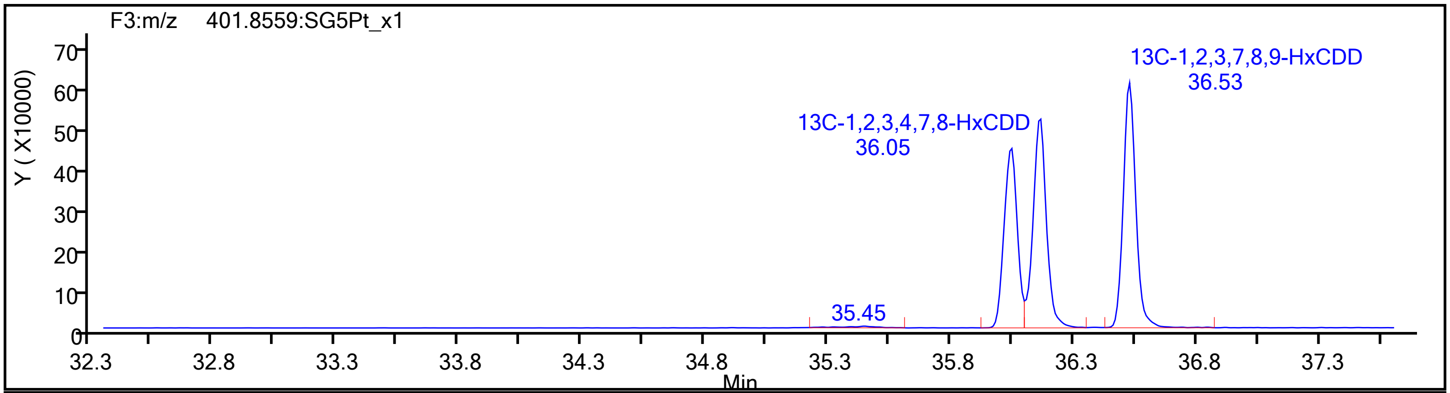

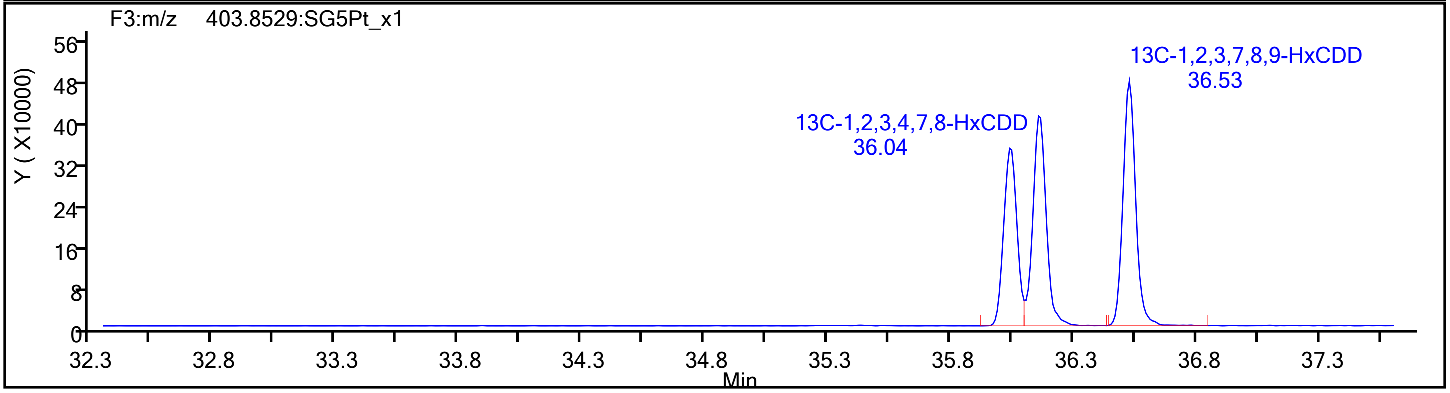

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

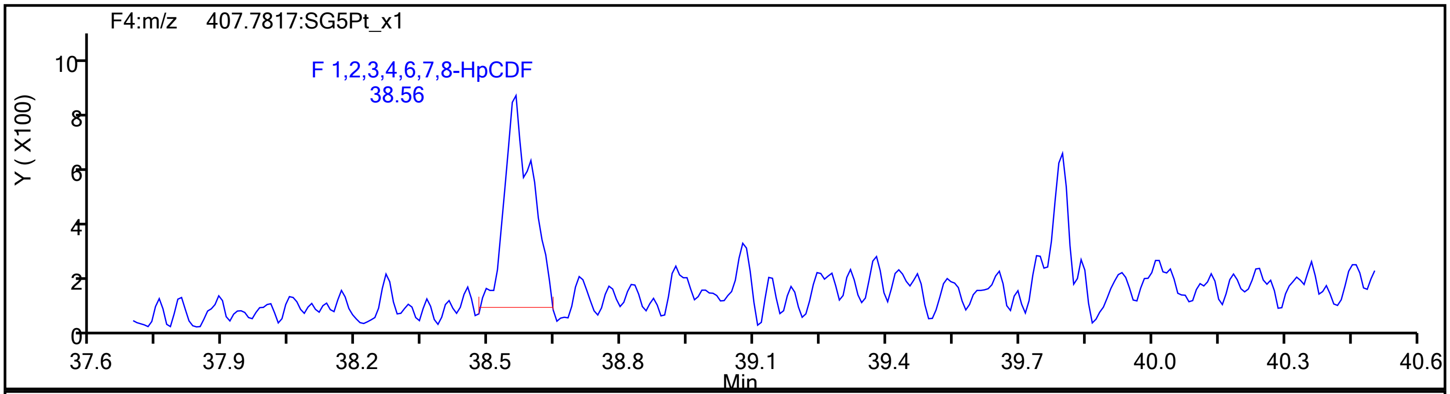

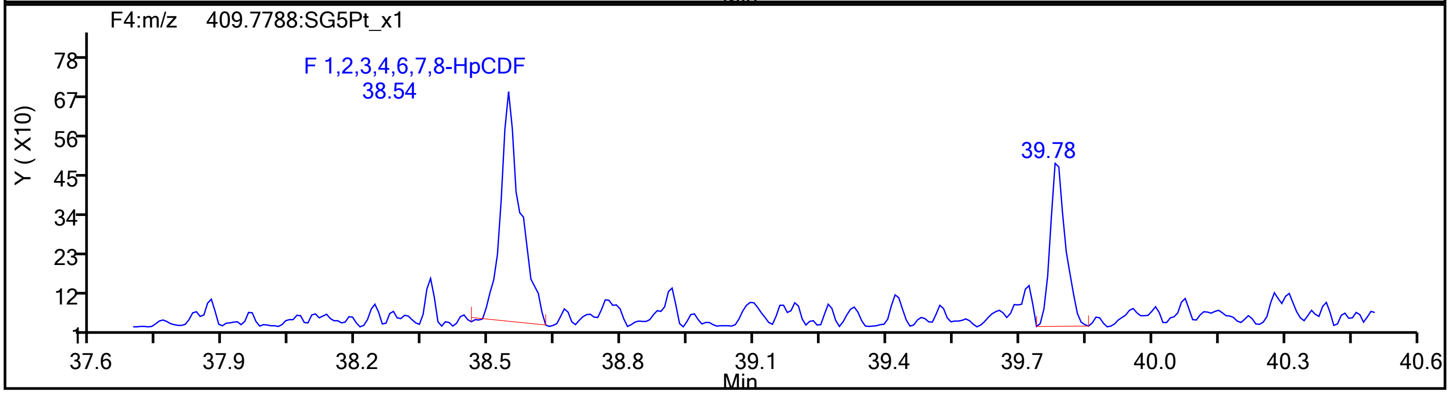

HpCDF Standards

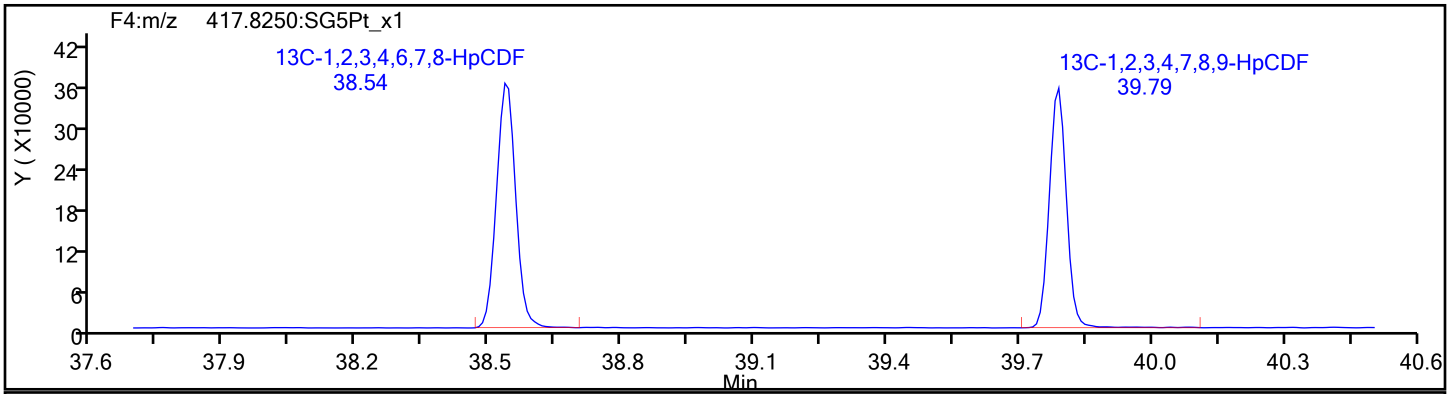

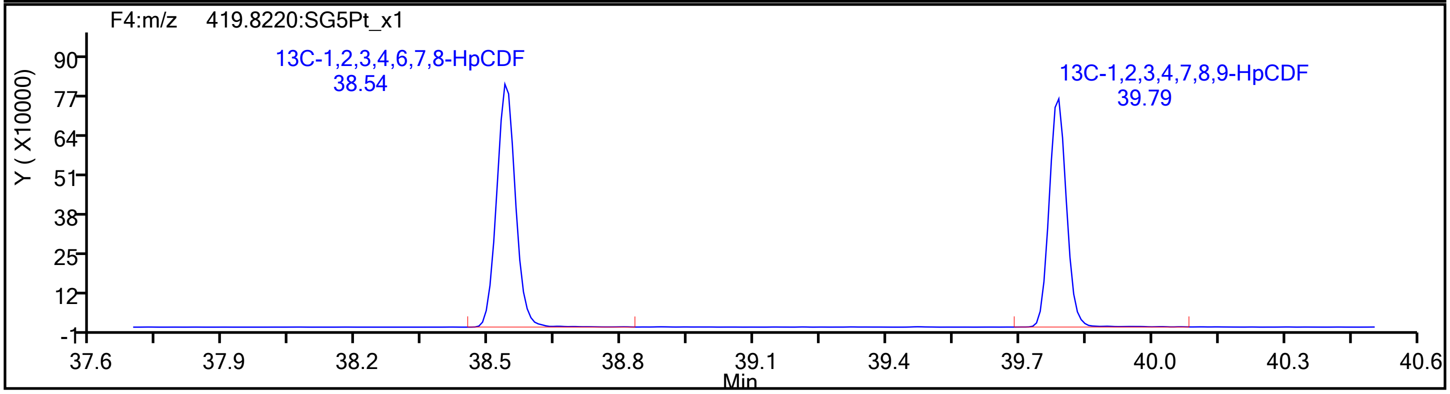

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

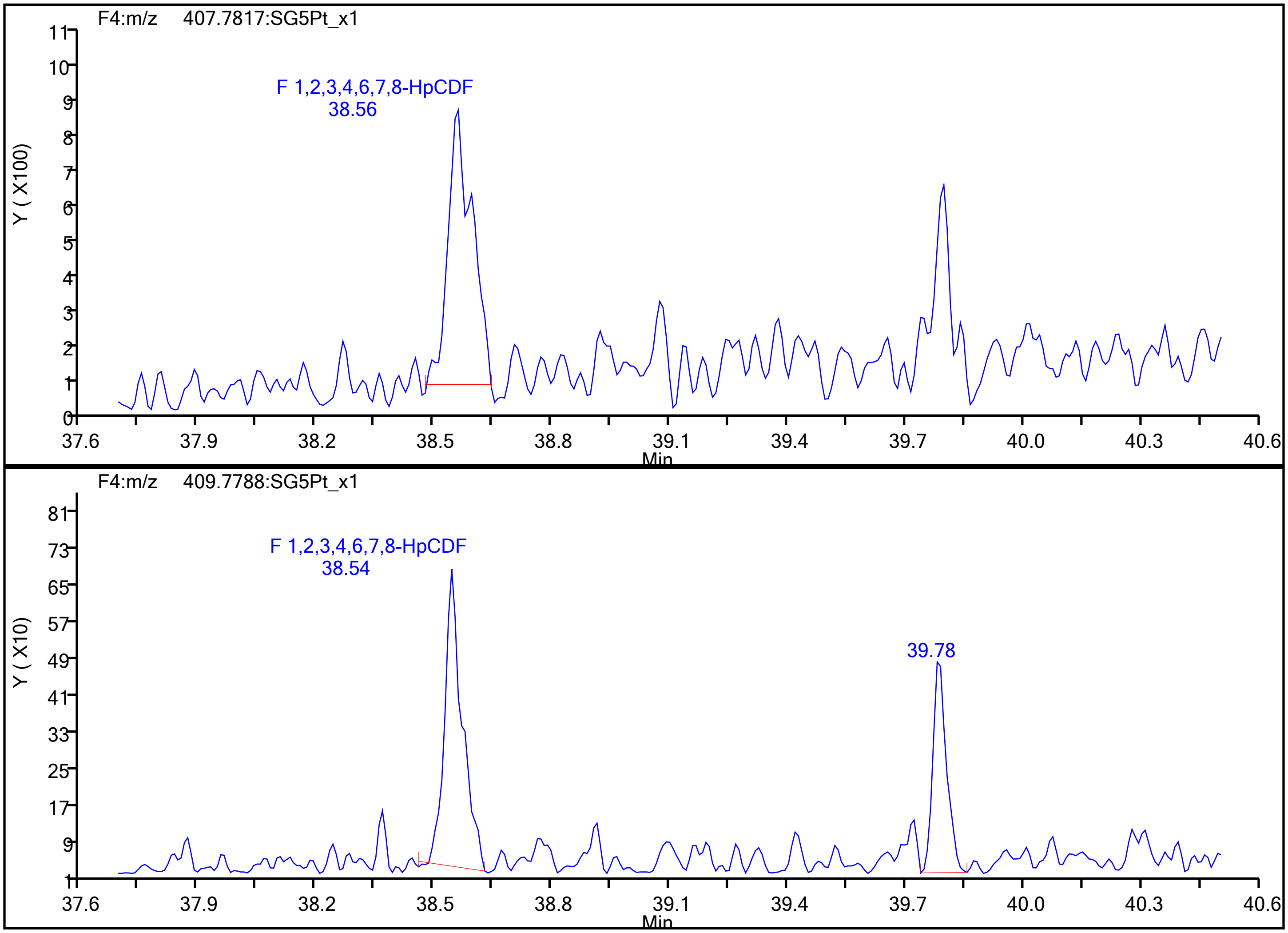

HpCDF Interference Mass

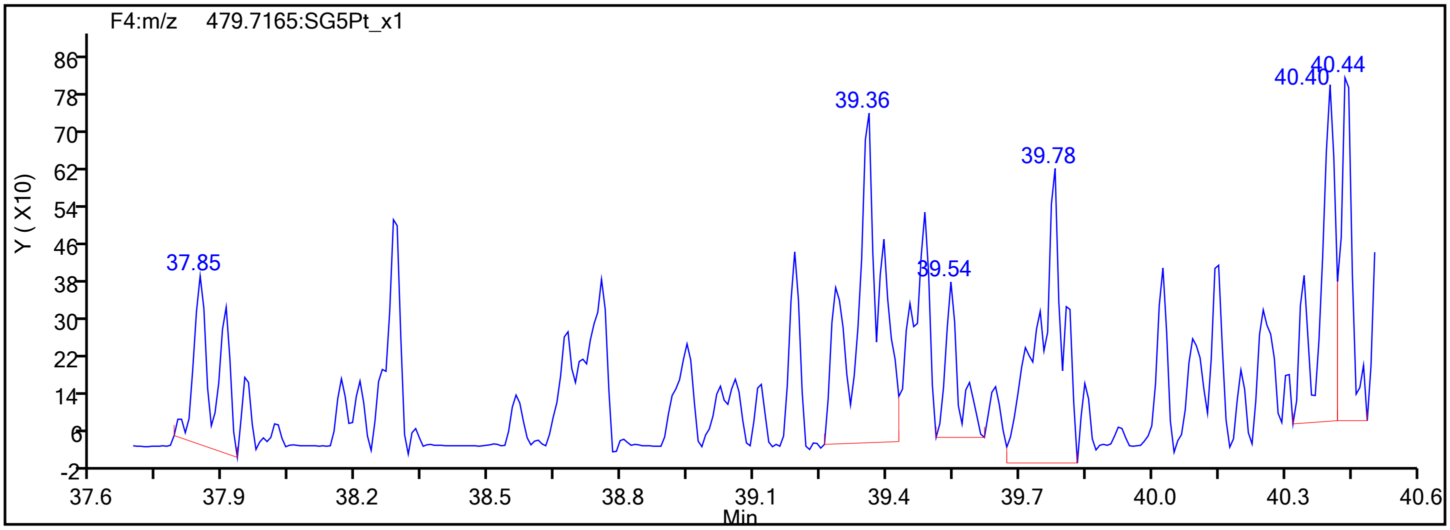

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

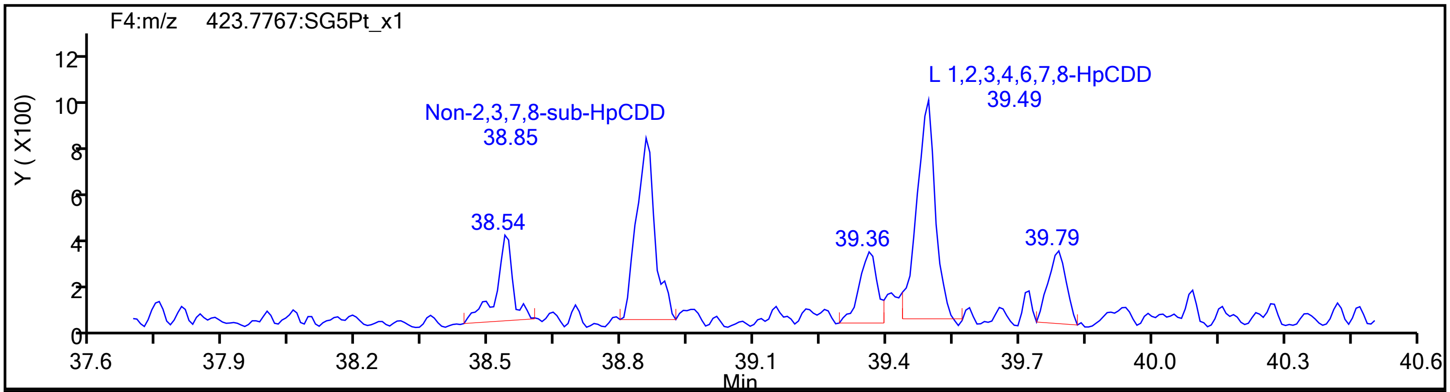

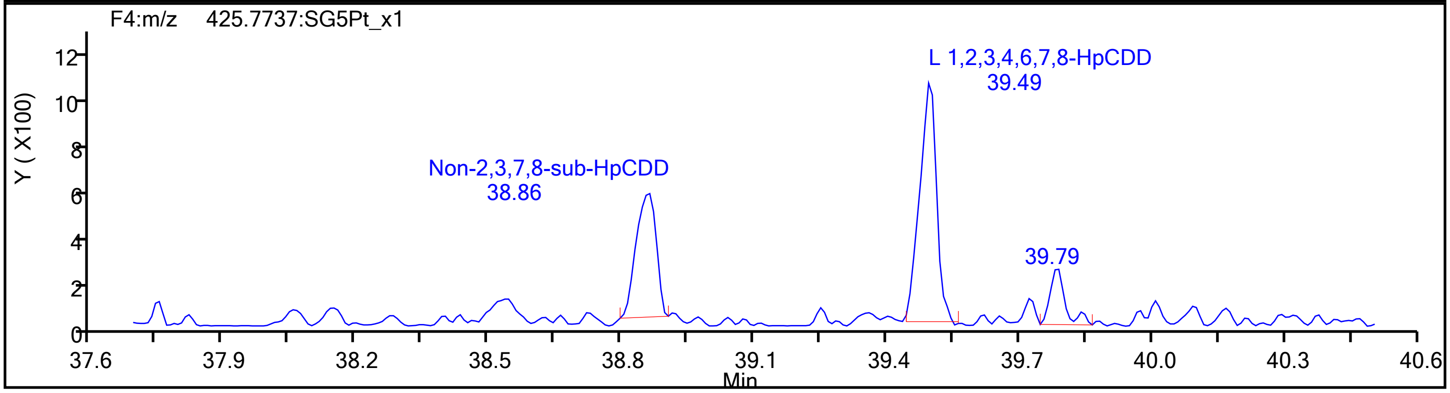

HpCDD Standards

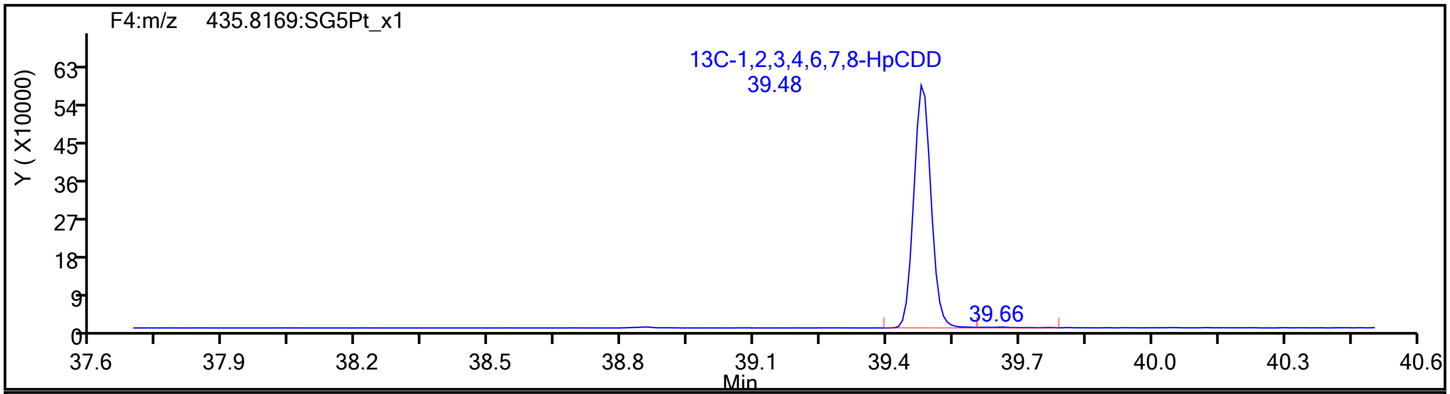

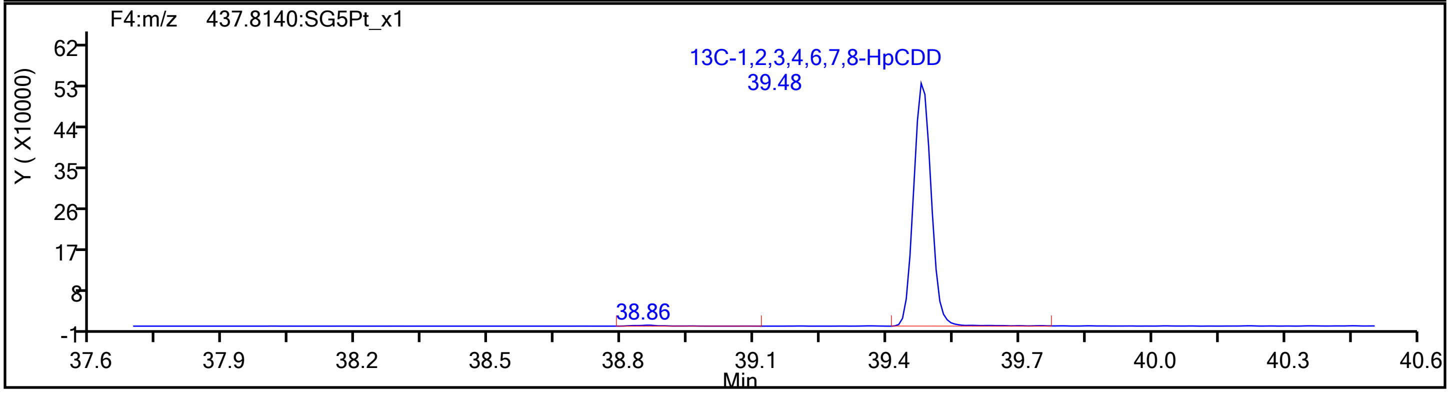

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

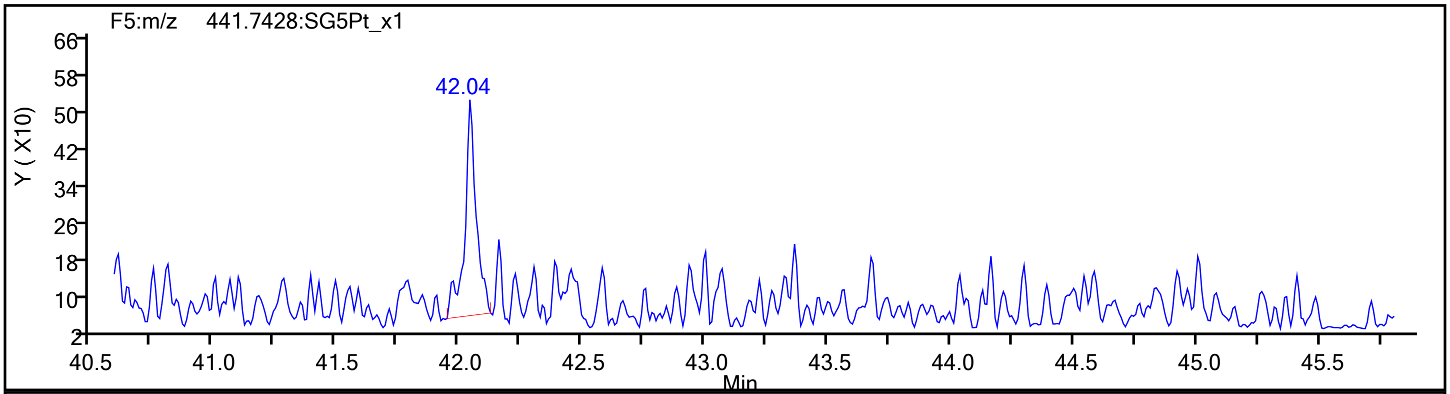

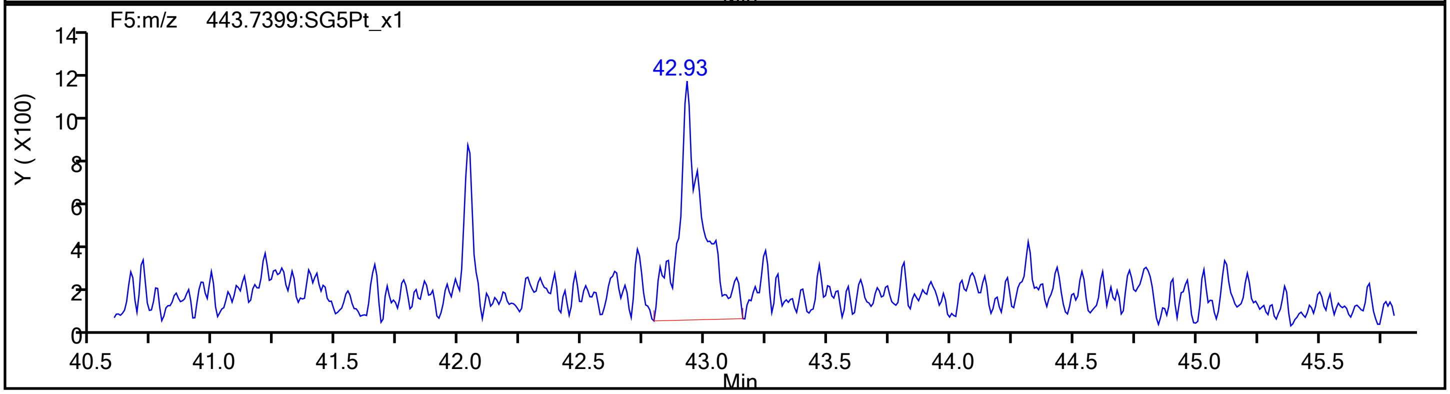

OCDF Standards

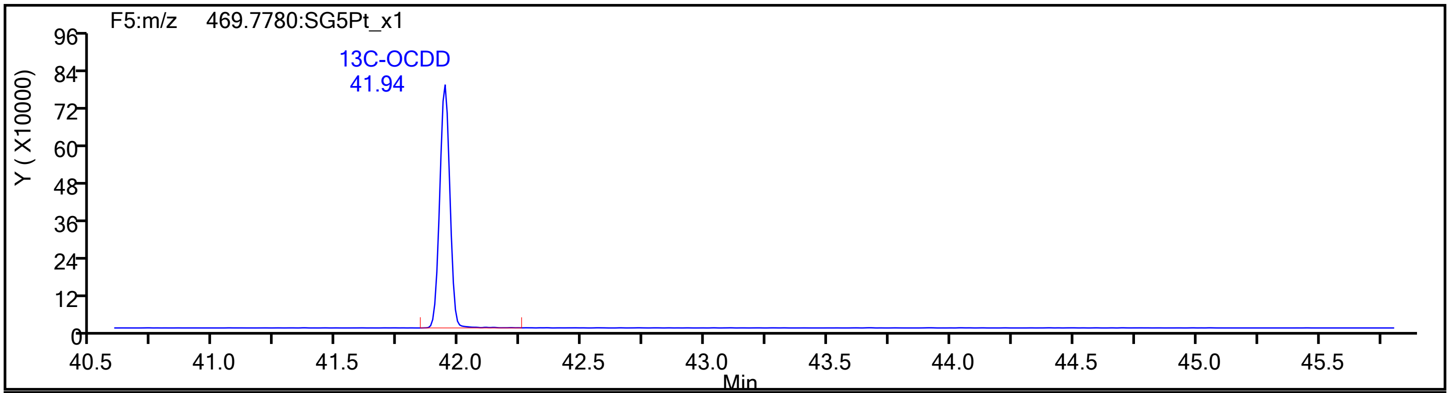

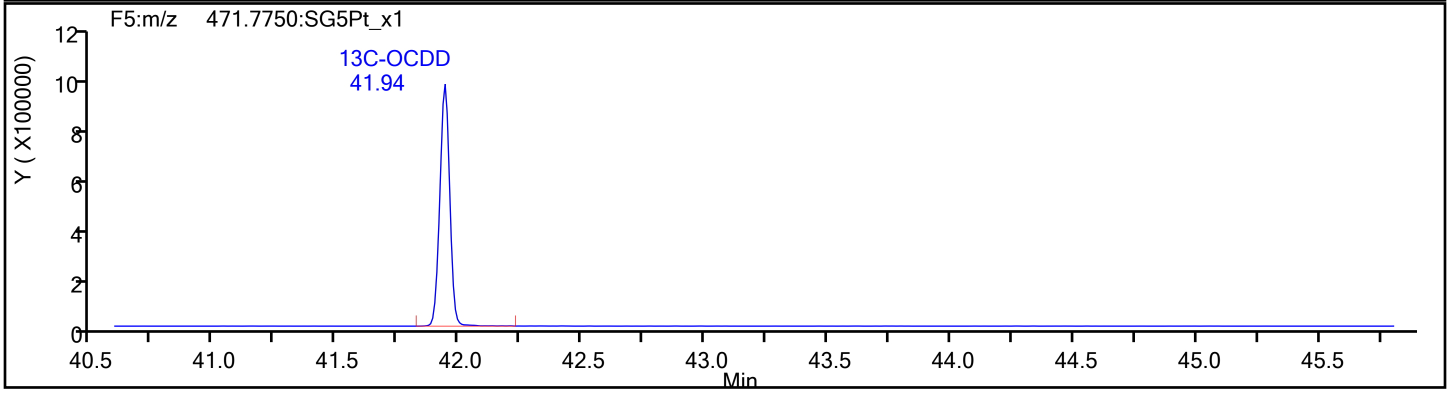

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d

Injection Date: 22-Jan-2021 23:53:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782
Sample Line#: 4

Column Type: DB-5
Column Dia: 0.32 mm

OCDF

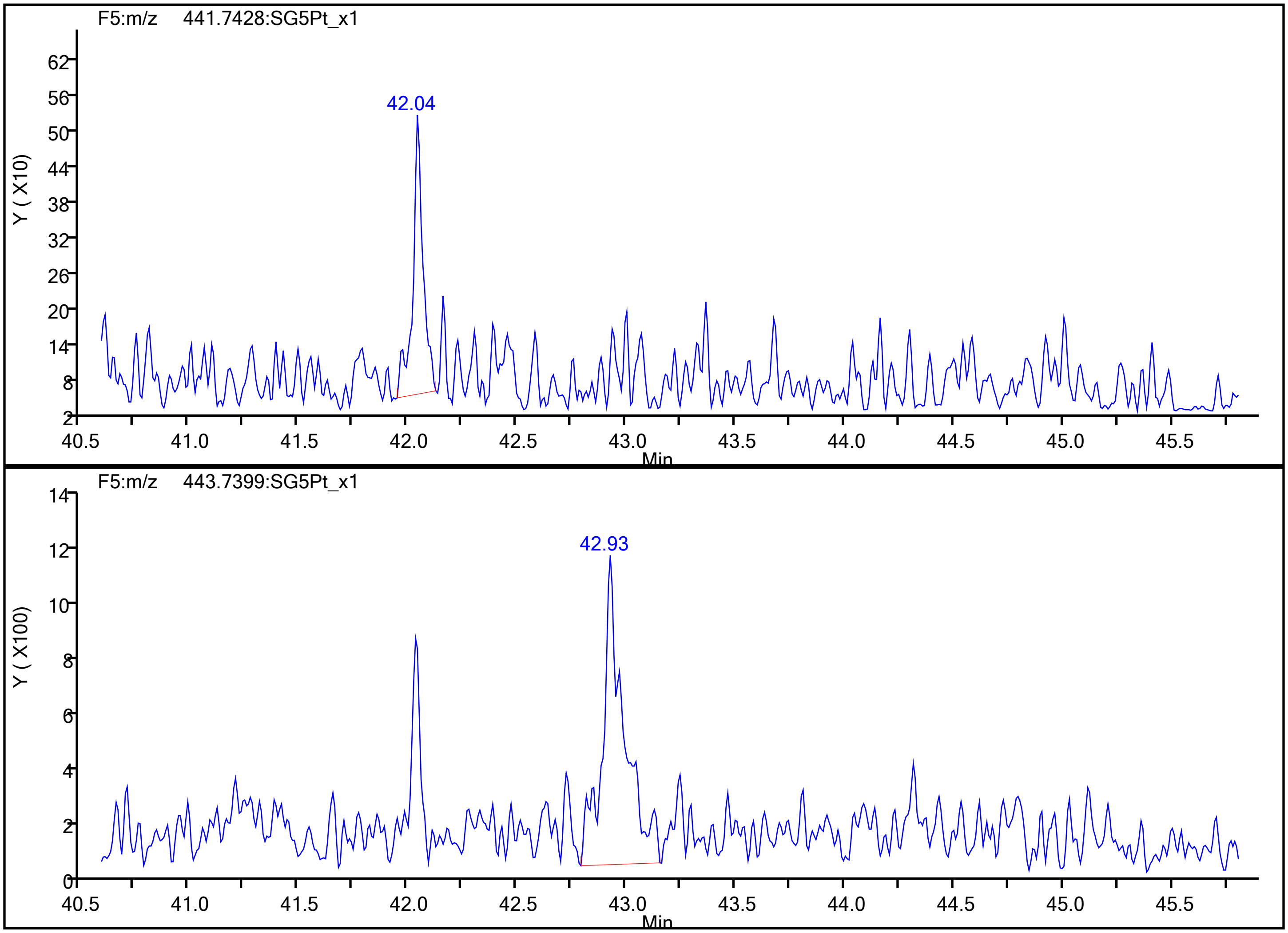

OCDF Interference Mass

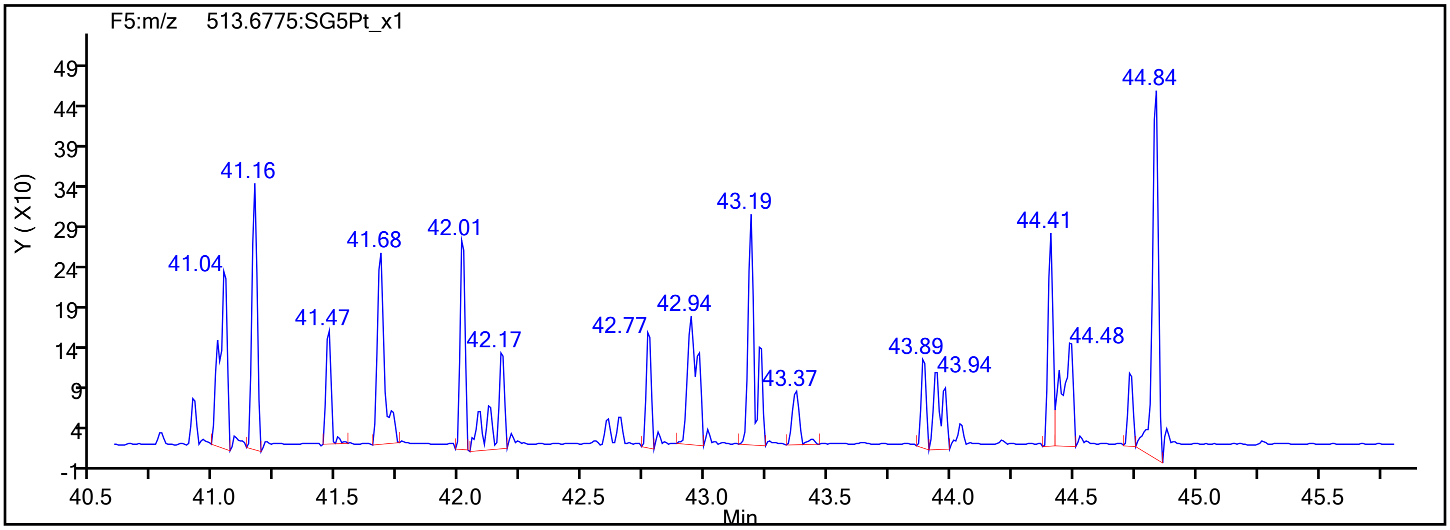

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d
Injection Date: 22-Jan-2021 23:53:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

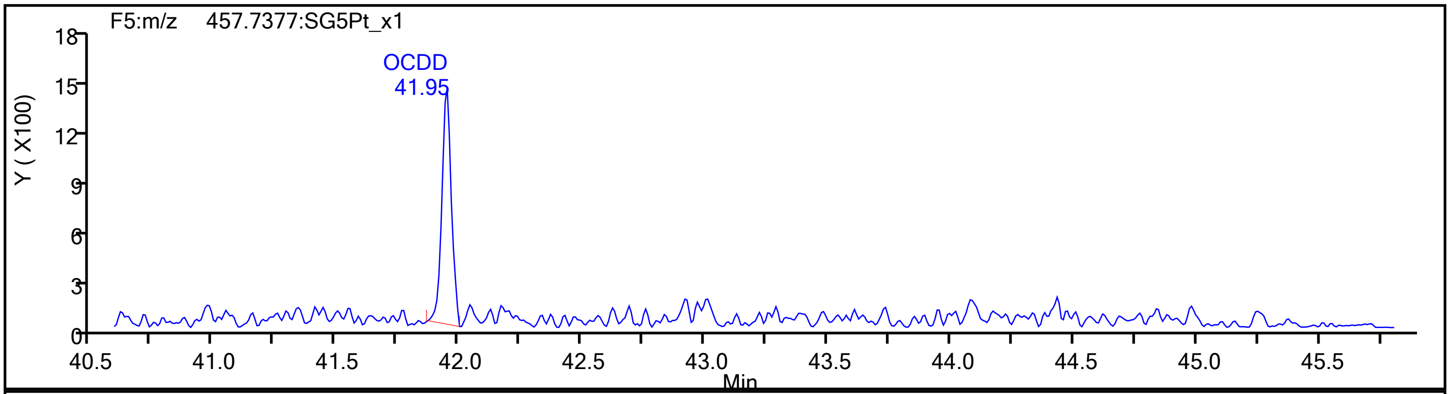

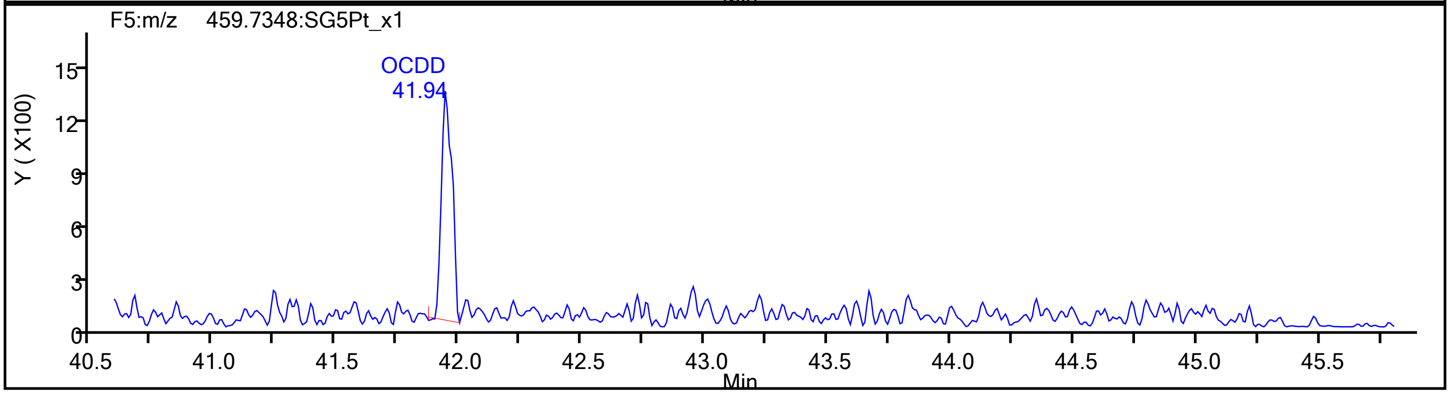

OCDD Standards

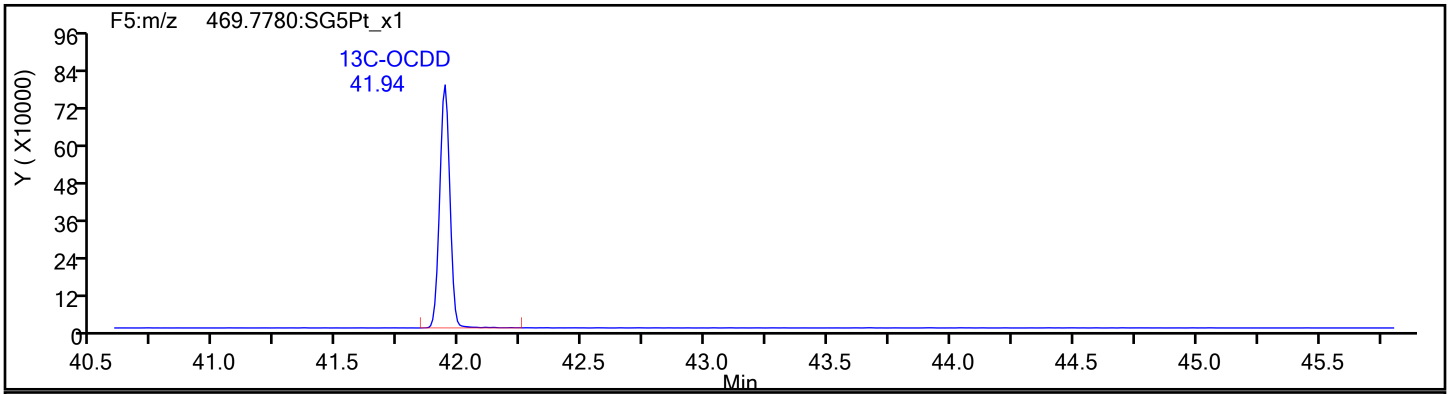

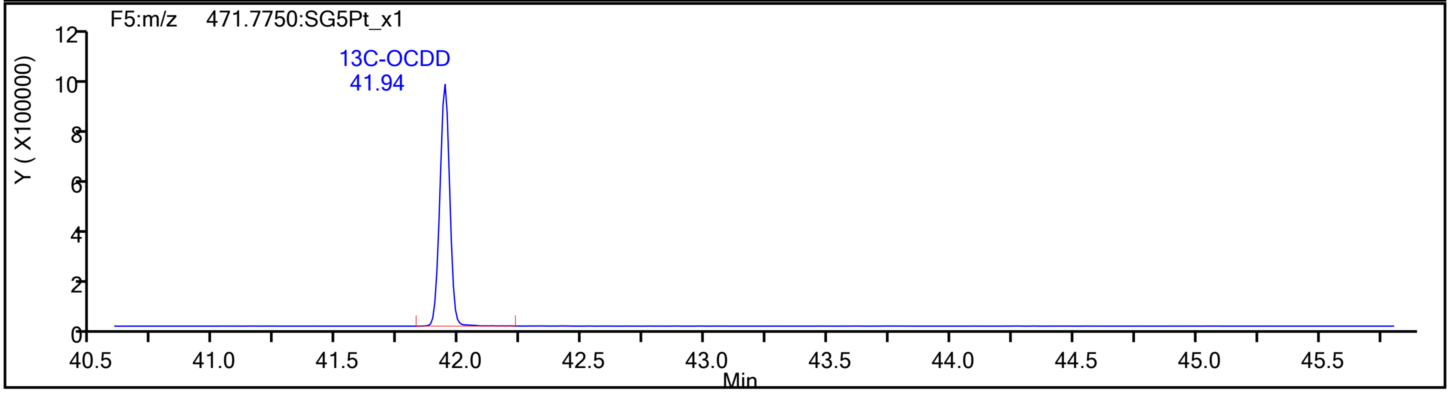

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

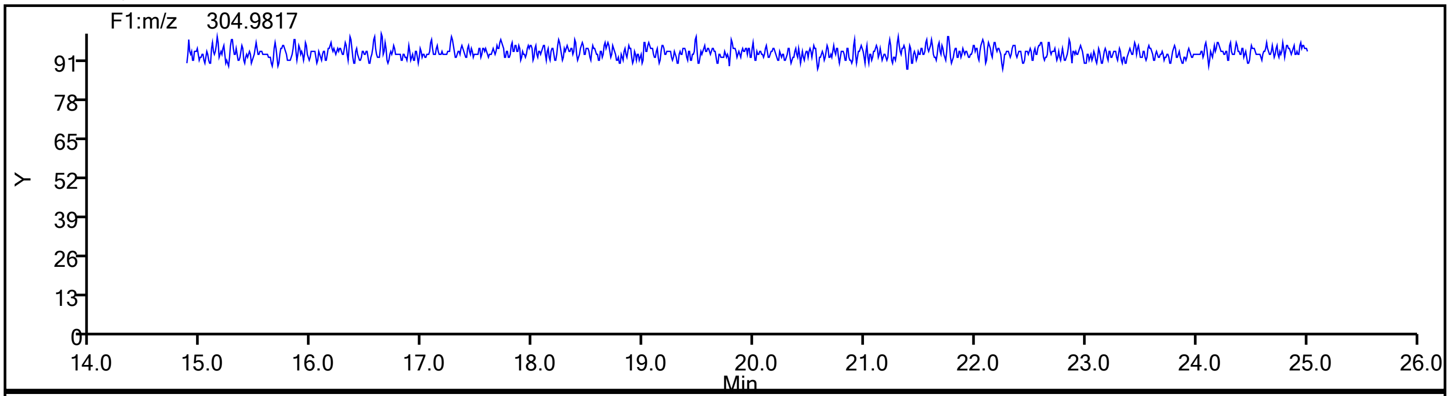

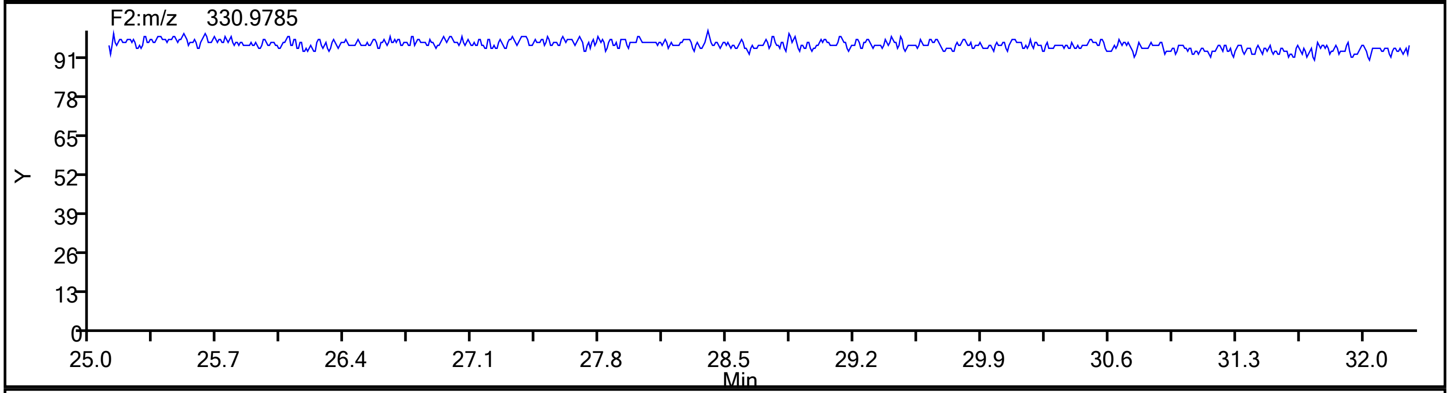

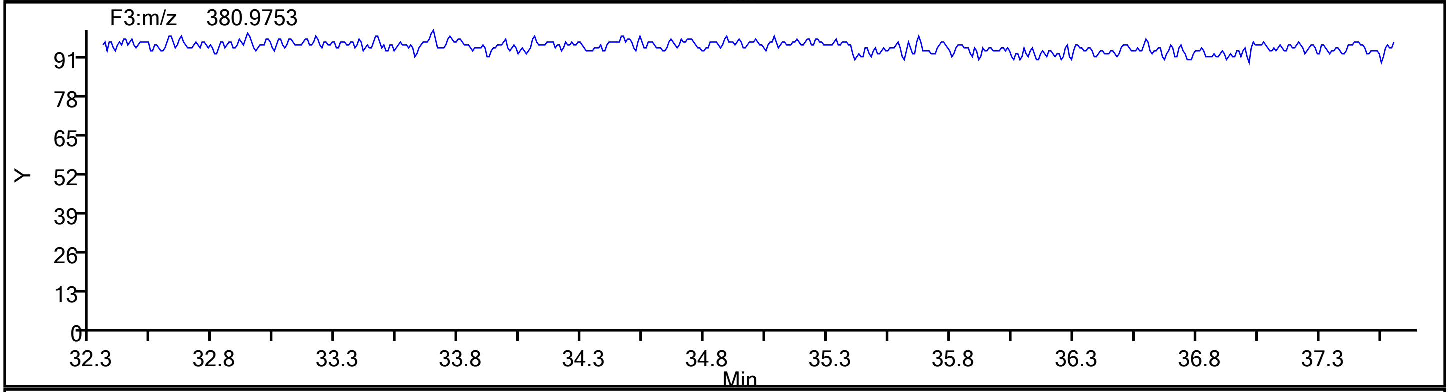

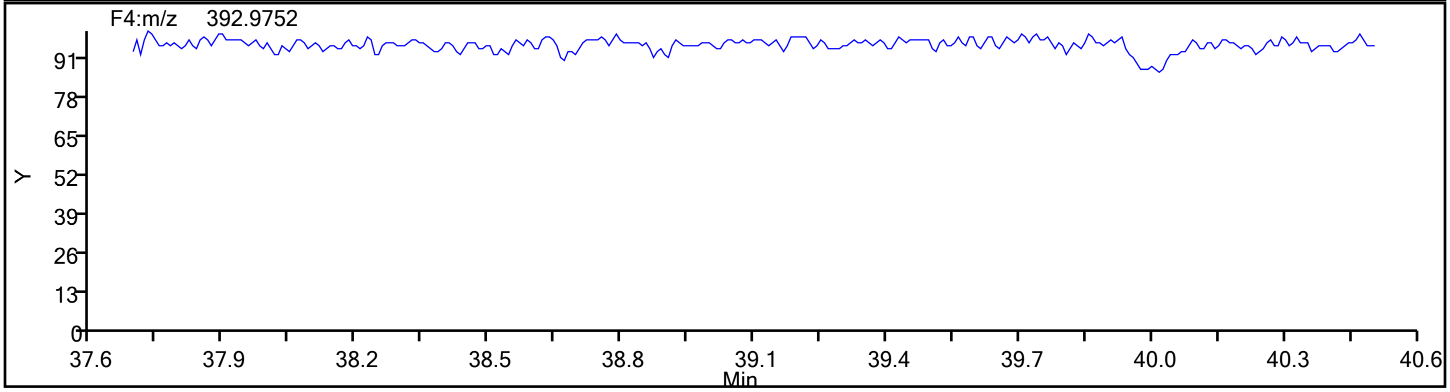

Report Date: 27-Jan-2021 10:12:14 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_5.d		
Injection Date:	22-Jan-2021 23:53:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

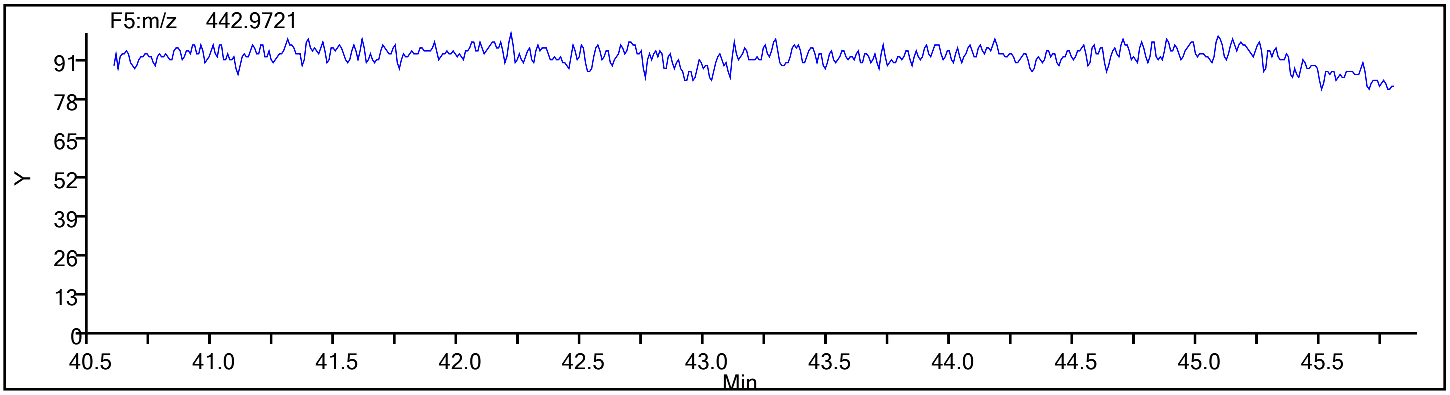

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-68943-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-452668/2-A
Matrix: Water	Lab File ID: 22ja21dfs1_6.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 01/18/2021 11:00
Sample wt/vol: 1000(mL)	Date Analyzed: 01/23/2021 00:41
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 454782	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	180		10	1.1
51207-31-9	2,3,7,8-TCDF	198		10	0.91
40321-76-4	1,2,3,7,8-PeCDD	903		50	1.4
57117-41-6	1,2,3,7,8-PeCDF	949		50	3.4
57117-31-4	2,3,4,7,8-PeCDF	968		50	3.9
39227-28-6	1,2,3,4,7,8-HxCDD	903		50	1.5
57653-85-7	1,2,3,6,7,8-HxCDD	903		50	1.5
19408-74-3	1,2,3,7,8,9-HxCDD	913		50	1.4
70648-26-9	1,2,3,4,7,8-HxCDF	964		50	2.9
57117-44-9	1,2,3,6,7,8-HxCDF	947		50	2.8
72918-21-9	1,2,3,7,8,9-HxCDF	939		50	2.4
60851-34-5	2,3,4,6,7,8-HxCDF	951		50	2.5
35822-46-9	1,2,3,4,6,7,8-HpCDD	905		50	1.2
67562-39-4	1,2,3,4,6,7,8-HpCDF	915		50	1.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	961		50	1.9
3268-87-9	OCDD	1800		100	0.96
39001-02-0	OCDF	1720		100	1.0
41903-57-5	Total TCDD	180		10	1.1
30402-14-3	Total TCDF	198		10	0.91
36088-22-9	Total PeCDD	903		50	1.4
30402-15-4	Total PeCDF	1920		50	3.6
34465-46-8	Total HxCDD	2720		50	1.5
55684-94-1	Total HxCDF	3800		50	2.7
37871-00-4	Total HpCDD	905		50	1.2
38998-75-3	Total HpCDF	1880		50	1.8

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-452668/2-A

Matrix: Water Lab File ID: 22ja21dfs1_6.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 01/18/2021 11:00

Sample wt/vol: 1000(mL) Date Analyzed: 01/23/2021 00:41

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 454782 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	88		20-175
89059-46-1	13C-2,3,7,8-TCDF	79		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	96		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	84		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	85		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	92		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	85		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	80		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	74		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	83		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	79		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	90		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	81		20-186
114423-97-1	13C-OCDD	90		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		31-191

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Lims ID: LCS 320-452668/2-A
Client ID:
Sample Type: LCS
Inject. Date: 23-Jan-2021 00:41:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-452668/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 10:12:59 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1626

First Level Reviewer: dadunj Date: 27-Jan-2021 10:12:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.188	4251604	0.81	2.8E+04	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.209	6447208	0.81	1.9134	79.3	79.3	0.2824	0.2824	79.25	
2,3,7,8-TCDF	20.234	733213	0.82	1.1488	9.899	9.899	0.0453	0.0453	98.99	
A Non-2,3,7,8-sub-TCDF	19.715						0.0453	0.0479		RQU
S Total TCDF					9.899	9.899	0.0453	0.0453		
D 13C-2,3,7,8-TCDD	21.565	4092061	0.81	1.0908	88.2	88.2	0.2725	0.2725	88.24	
2,3,7,8-TCDD	21.583	481610	0.78	1.3069	9.006	9.006	0.0535	0.0535	90.06	
$ 37Cl4-2,3,7,8-TCDD	21.591	1946186		1.2281	37.3	37.3	0.0613	0.0613	93.18	
A Non-2,3,7,8-sub-TCDD	20.561						0.0535	0.1458		RQU
S Total TCDD					9.006	9.006	0.0535	0.0535		
D 13C-1,2,3,7,8-PeCDF	27.162	5497137	1.59	1.5355	84.2	84.2	0.2841	0.2841	84.20	
1,2,3,7,8-PeCDF	27.188	3050768	1.60	1.1695	47.5	47.5	0.1690	0.1690	94.90	
D 13C-2,3,4,7,8-PeCDF	28.678	5169498	1.59	1.4278	85.2	85.2	0.3055	0.3055	85.16	
2,3,4,7,8-PeCDF	28.711	3064173	1.58	1.2244	48.4	48.4	0.1926	0.1926	96.82	
A F1 PeCDFs	24.445						0.0146	0.0146		RQU
A Non-2,3,7,8-sub-PeCDF	27.929						0.1797	0.3905		U
S Total PeCDF					95.9	95.9	0.1808	0.1808		
D 13C-1,2,3,7,8-PeCDD	29.494	3198629	1.65	0.7800	96.4	96.4	0.1437	0.1437	96.45	
1,2,3,7,8-PeCDD	29.520	1821666	1.62	1.2613	45.2	45.2	0.0687	0.0687	90.30	
A Non-2,3,7,8-sub-PeCDD	28.272						0.0687	0.0687		
S Total PeCDD					45.2	45.2	0.0687	0.0687		
D 13C-1,2,3,4,7,8-HxCDF	34.852	4710634	0.54	1.4248	79.5	79.5	0.2114	0.2114	79.55	
1,2,3,4,7,8-HxCDF	34.868	3077345	1.27	1.3553	48.2	48.2	0.1457	0.1457	96.40	
D 13C-1,2,3,6,7,8-HxCDF	35.012	5263807	0.53	1.7108	74.0	74.0	0.1761	0.1761	74.03	
1,2,3,6,7,8-HxCDF	35.037	3261486	1.26	1.3081	47.4	47.4	0.1423	0.1423	94.74	
D 13C-2,3,4,6,7,8-HxCDF	35.836	5082771	0.53	1.5455	79.1	79.1	0.1949	0.1949	79.13	
2,3,4,6,7,8-HxCDF	35.853	3203240	1.29	1.3248	47.6	47.6	0.1231	0.1231	95.14	
D 13C-1,2,3,7,8,9-HxCDF	36.737	4740792	0.53	1.3772	82.8	82.8	0.2187	0.2187	82.83	
1,2,3,7,8,9-HxCDF	36.745	2975134	1.29	1.3372	46.9	46.9	0.1192	0.1192	93.86	
A Non-2,3,7,8-sub-HxCDF	34.940						0.1316	0.1316		
S Total HxCDF					190.1	190.1	0.1326	0.1326		
* 13C-1,2,3,7,8,9-HxCDD	36.535	4156250	1.28	2.5E+04	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	36.055	3174666	1.29	0.8266	92.4	92.4	0.1750	0.1750	92.40	
1,2,3,4,7,8-HxCDD	36.064	1923788	1.26	1.3422	45.1	45.1	0.0756	0.0756	90.29	
D 13C-1,2,3,6,7,8-HxCDD	36.173	3699046	1.28	1.0417	85.4	85.4	0.1389	0.1389	85.44	
1,2,3,6,7,8-HxCDD	36.181	2002731	1.26	1.1989	45.2	45.2	0.0743	0.0743	90.32	
1,2,3,7,8,9-HxCDD	36.552	2139418	1.25	1.3636	45.7	45.7	0.0696	0.0696	91.30	
A Non-2,3,7,8-sub-HxCDD	35.311						0.0729	0.0729		
S Total HxCDD					136.0	136.0	0.0732	0.0732		
D 13C-1,2,3,4,6,7,8-HpCDF	38.542	3672446	0.45	1.1053	79.9	79.9	0.1706	0.1706	79.94	
1,2,3,4,6,7,8-HpCDF	38.559	2770341	1.05	1.6487	45.8	45.8	0.0884	0.0884	91.51	
D 13C-1,2,3,4,7,8,9-HpCDF	39.796	3279779	0.46	0.9761	80.8	80.8	0.1932	0.1932	80.85	
1,2,3,4,7,8,9-HpCDF	39.805	2478348	1.06	1.5723	48.1	48.1	0.0946	0.0946	96.12	
A Non-2,3,7,8-sub-HpCDF	39.160						0.0914	0.0914		
S Total HpCDF					93.8	93.8	0.0915	0.0915		
D 13C-1,2,3,4,6,7,8-HpCDD	39.493	3264193	1.07	0.8768	89.6	89.6	0.1267	0.1267	89.57	
1,2,3,4,6,7,8-HpCDD	39.502	1794890	1.07	1.2146	45.3	45.3	0.0579	0.0579	90.55	
A Non-2,3,7,8-sub-HpCDD	39.237						0.0579	0.0579		
S Total HpCDD					45.3	45.3	0.0579	0.0579		
D 13C-OCDD	41.946	5352815	0.93	0.7137	180.5	180.5	0.1121	0.1121	90.23	
OCDF	42.047	4169065	0.92	1.8132	85.9	85.9	0.0502	0.0502	85.91	
OCDD	41.954	3023481	0.90	1.2562	89.9	89.9	0.0480	0.0480	89.93	

QC Flag Legend
Processing Flags
Review Flags
U - Marked Undetected

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Lims ID: LCS 320-452668/2-A
Client ID:
Sample Type: LCS
Inject. Date: 23-Jan-2021 00:41:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-452668/2-A
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 27-Jan-2021 10:12:59 Calib Date: 31-Dec-2020 17:29:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20201231-110531.b\31de20bdfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1626

First Level Reviewer: dadunj Date: 27-Jan-2021 10:12:59

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.188	21.144	3		1898864	277602	528	1320	526		
333.9338	21.188	21.144	3		2352740	347052	215	537	1614	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.209	20.156	3	0.954	2880025	444845	1019	2547	437		
317.9389	20.209	20.156	3	0.954	3567183	543953	331	827	1643	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.234	20.182	3	1.001	330163	50718	74	185	685		
305.8987	20.234	20.182	3	1.001	403050	60201	132	330	456	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	19.530	19.715	-11	0.966	1544	365	74	185	5		
305.8987	19.504	19.715	-13	0.965	2576	554	132	330	4	0.60(0.65-0.89)	
	Empc Correction				2005	474	132	330	4		
13C-2,3,7,8-TCDD											
331.9368	21.565	21.496	4	1.018	1832759	252581	528	1320	478		
333.9338	21.557	21.496	4	1.017	2259302	311885	215	537	1451	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.583	21.522	4	1.001	210920	31093	110	275	283		
321.8936	21.591	21.522	4	1.001	270690	39061	48	120	814	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.591	21.539	3	1.019	1946186	279271	188	470	1485		
A Non-2,3,7,8-sub-TCDD											U
319.8965	20.561	20.561	0	0.953	8094	960	110	275			
	Empc Correction				3391	615	110	275	0		
321.8936	20.561	20.561	0	0.953	4404	799	48	120		1.84(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	27.162	27.119	3	1.282	3375564	571692	665	1662	860		
353.8970	27.154	27.119	2	1.282	2121573	361765	425	1062	851	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.188	27.145	3	1.001	1879400	321556	395	987	814		
341.8567	27.188	27.145	3	1.001	1171368	201680	343	857	588	1.60(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.678	28.635	3	1.354	3171188	477997	665	1662	719		
353.8970	28.678	28.635	3	1.354	1998310	304184	425	1062	716	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.711	28.660	3	1.001	1877994	284215	395	987	720		
341.8567	28.703	28.660	3	1.001	1186179	180320	343	857	526	1.58(1.32-1.78)	
A F1 PeCDFs											U
339.8597	24.273	24.445	-10	0.894	308	98	2	5	49		
341.8567	24.273	24.445	-10	0.894	2535	462	58	145	8	0.12(1.32-1.78)	
	Empc Correction				198	63	58	145	1		
A Non-2,3,7,8-sub-PeCDF											U
339.8597	27.785	27.929	-9	1.023	14459	2351	395	987	6		
341.8567	27.785	27.929	-9	1.023	10473	1818	343	857	5	1.38(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.494	29.443	3	1.392	1991284	297136	161	402	1846		
369.8919	29.486	29.443	3	1.392	1207345	176304	119	297	1482	1.65(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.520	29.477	3	1.001	1126166	165251	105	262	1574		
357.8516	29.520	29.477	3	1.001	695500	104366	59	147	1769	1.62(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.272						105	262			
357.8516	28.272						59	147			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.852	34.817	2	0.954	1643674	373894	507	1267	737		
385.8610	34.852	34.817	2	0.954	3066960	715700	919	2297	779	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.868	34.834	2	1.000	1723747	402904	479	1197	841		
375.8178	34.868	34.834	2	1.000	1353598	314173	382	955	822	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.012	34.985	2	0.958	1833872	399186	507	1267	787		
385.8610	35.020	34.985	2	0.959	3429935	756880	919	2297	824	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.037	35.002	2	1.001	1820818	414072	479	1197	864		
375.8178	35.037	35.002	2	1.001	1440668	326649	382	955	855	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.836	35.811	2	0.981	1760218	460170	507	1267	908		
385.8610	35.836	35.811	2	0.981	3322553	859176	919	2297	935	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.853	35.828	2	1.000	1803387	463668	479	1197	968		
375.8178	35.853	35.828	2	1.000	1399853	361114	382	955	945	1.29(1.05-1.43)	

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.737	36.703	2	1.006	1637908	470693	507	1267	928		
385.8610	36.737	36.703	2	1.006	3102884	879139	919	2297	957	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.745	36.720	2	1.000	1677401	471737	479	1197	985		
375.8178	36.745	36.720	2	1.000	1297733	368583	382	955	965	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.940						479	1197			
375.8178	34.940						382	955			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.535	36.501	2		2333897	665976	403	1007	1653		
403.8529	36.535	36.501	2		1822353	517484	282	705	1835	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.055	36.021	2	0.987	1785662	487464	403	1007	1210		
403.8529	36.047	36.021	2	0.987	1389004	381809	282	705	1354	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.064	36.030	2	1.000	1071470	295792	197	492	1501		
391.8127	36.064	36.030	2	1.000	852318	230104	156	390	1475	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.173	36.139	2	0.990	2075071	556719	403	1007	1381		
403.8529	36.173	36.139	2	0.990	1623975	433421	282	705	1537	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.181	36.156	2	1.000	1118161	300345	197	492	1525		
391.8127	36.181	36.156	2	1.000	884570	240550	156	390	1542	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.552	36.518	2	1.014	1190563	337265	197	492	1712		
391.8127	36.543	36.518	2	1.014	948855	268085	156	390	1718	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.311						197	492			
391.8127	35.311						156	390			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.542	38.517	2	1.055	1145935	395129	440	1100	898		
419.8220	38.542	38.517	2	1.055	2526511	848430	453	1132	1873	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.559	38.525	2	1.000	1417707	476403	407	1017	1171		
409.7788	38.559	38.525	2	1.000	1352634	452539	318	795	1423	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.796	39.772	1	1.089	1035384	385915	440	1100	877		
419.8220	39.796	39.772	1	1.089	2244395	832794	453	1132	1838	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.805	39.780	1	1.000	1277213	486784	407	1017	1196		
409.7788	39.805	39.780	1	1.000	1201135	452435	318	795	1423	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.160						407	1017			
409.7788	39.160						318	795			

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.493	39.460	2	1.081	1690061	628513	269	672	2336		
437.8140	39.485	39.460	1	1.081	1574132	598272	257	642	2328	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.502	39.477	1	1.000	926329	345076	190	475	1816		
425.7737	39.493	39.477	1	1.000	868561	320651	155	387	2069	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.237						190	475			
425.7737	39.237						155	387			
13C-OCDD											
469.7780	41.946	41.913	2	1.148	2573646	890010	199	497	4472		
471.7750	41.946	41.913	2	1.148	2779169	975979	180	450	5422	0.93(0.76-1.02)	
OCDF											
441.7428	42.047	42.015	2	1.002	1996187	684048	122	305	5607		
443.7399	42.038	42.015	1	1.002	2172878	739030	218	545	3390	0.92(0.76-1.02)	
OCDD											
457.7377	41.954	41.930	1	1.000	1430824	501678	102	255	4918		
459.7348	41.954	41.930	1	1.000	1592657	560168	123	307	4554	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Lims ID: LCS 320-452668/2-A
Client ID:
Inject. Date: 23-Jan-2021 00:41:00
Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 454782
Lims Sample ID: 5

Non-2,3,7,8-sub-TCDF, RT: 19.715

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.149	D 13C-2,3,7,8-TCDF	100.000	6447208	988798

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	6447208	988798

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.530	1544	365	2576	554	0.0556	0.60	RQ
19.530	1544	365	2005	474	0.0479		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Lims ID:	LCS 320-452668/2-A		
Client ID:			
Inject. Date:	23-Jan-2021 00:41:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	5

Non-2,3,7,8-sub-TCDD, RT: 20.561

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.307	D 13C-2,3,7,8-TCDD	100.000	4092061	564466

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.307		100.000	4092061	564466

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.823	8094	960	4404	799	0.2337	1.84	RQ
21.823	3391	615	4404	799	0.1458		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Lims ID: LCS 320-452668/2-A
Client ID:
Inject. Date: 23-Jan-2021 00:41:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 454782 Lims Sample ID: 5

F1 PeCDFs, RT: 24.445

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	5497137	933457
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	5169498	782181

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	5333317	857819

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.273	308	98	2535	462	0.0445	0.12	RQ
24.273	308	98	198	63	0.007926		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Lims ID:	LCS 320-452668/2-A		
Client ID:			
Inject. Date:	23-Jan-2021 00:41:00	Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	454782	Lims Sample ID:	5

Non-2,3,7,8-sub-PeCDF, RT: 27.929

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.170	D 13C-1,2,3,7,8-PeCDF	100.000	5497137	933457
2,3,4,7,8-PeCDF	1.224	D 13C-2,3,4,7,8-PeCDF	100.000	5169498	782181

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.197		100.000	5333317	857819

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.785	14459	2351	10473	1818	0.3905	1.38	

Compound is Marked ND

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

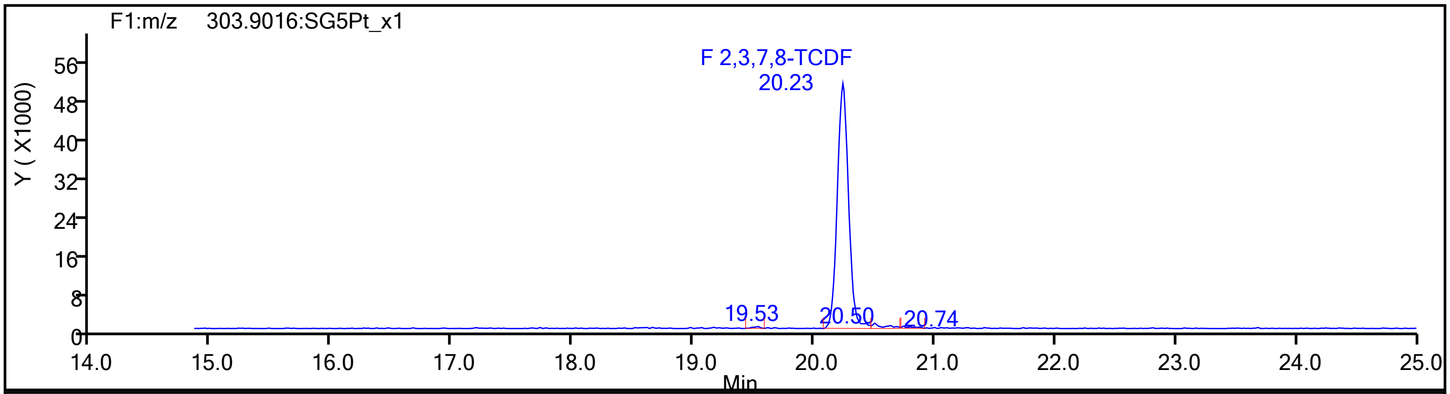

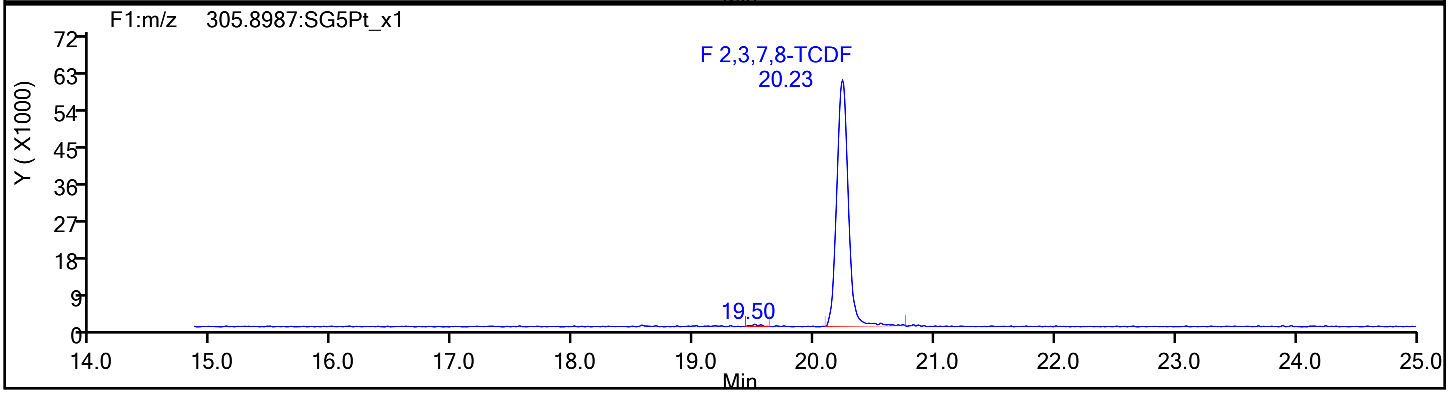

TCDF Standards

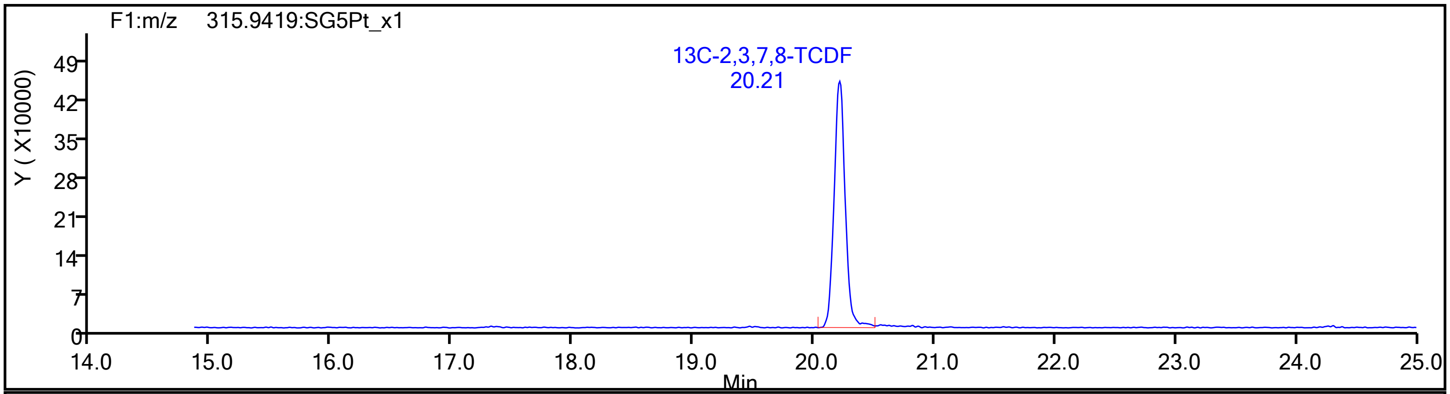

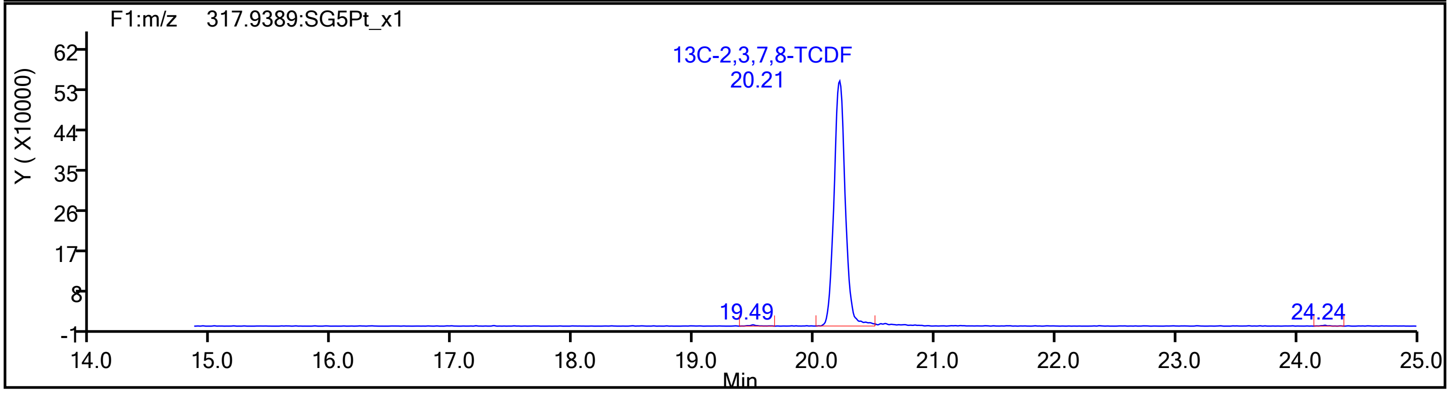

Report Date: 27-Jan-2021 10:13:00 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

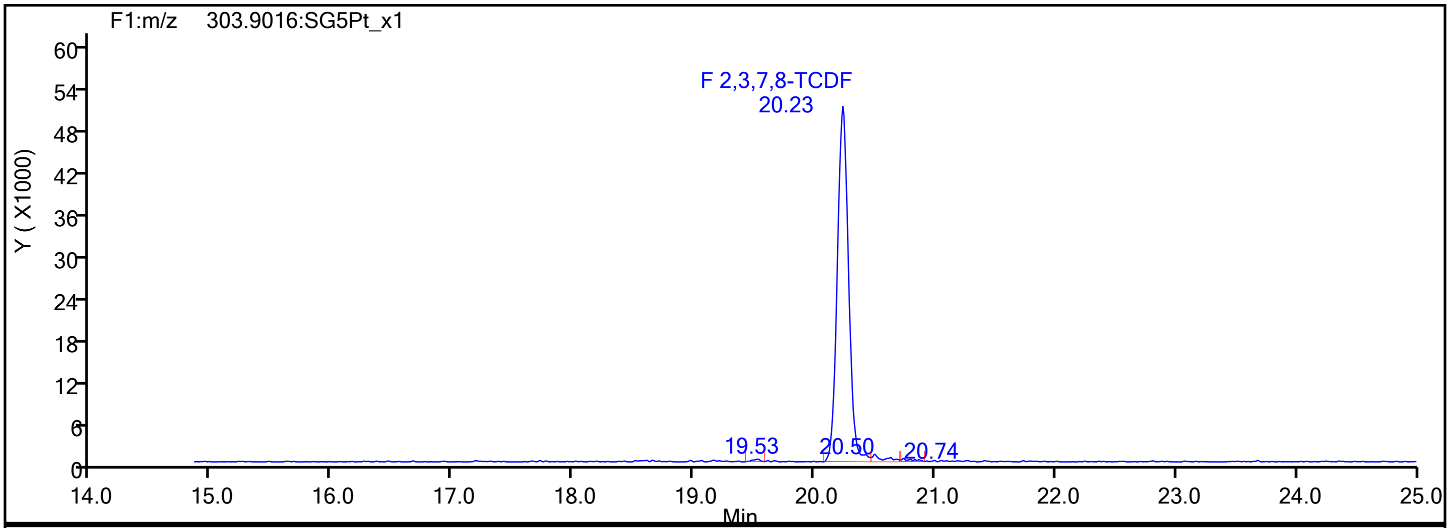

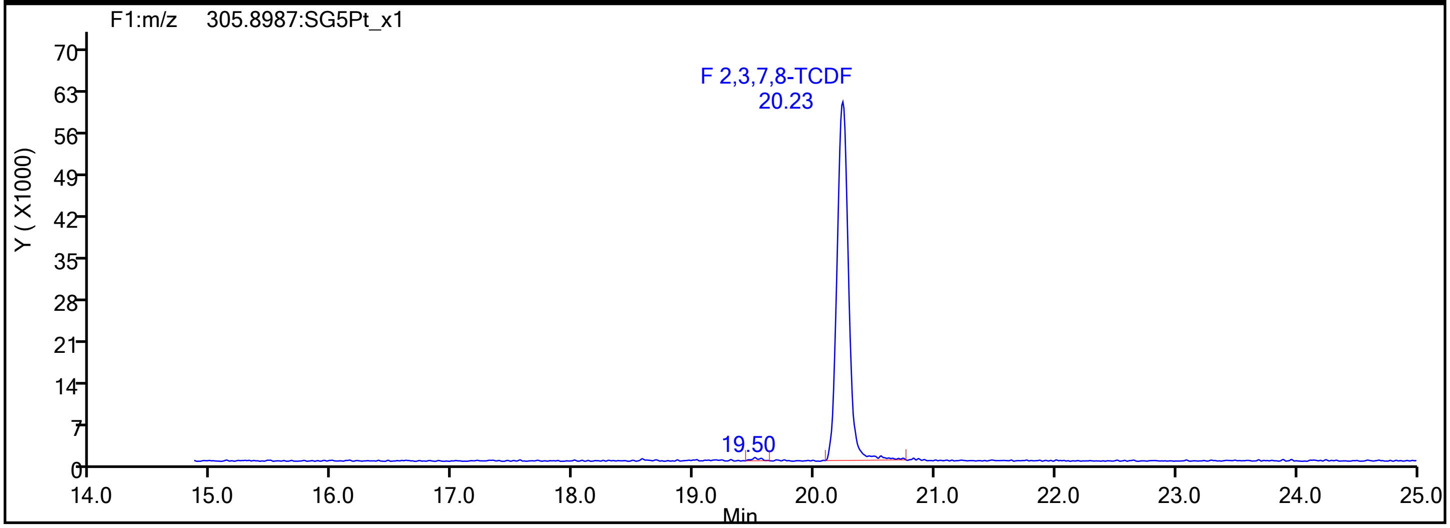

TCDF Interference Mass

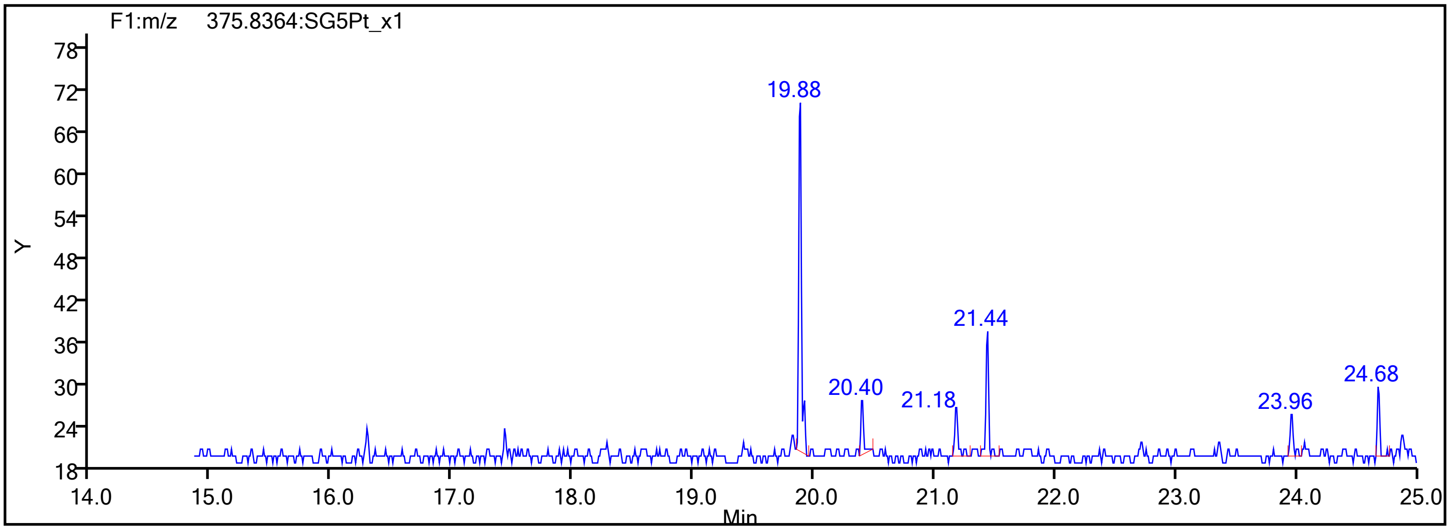

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Injection Date: 23-Jan-2021 00:41:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

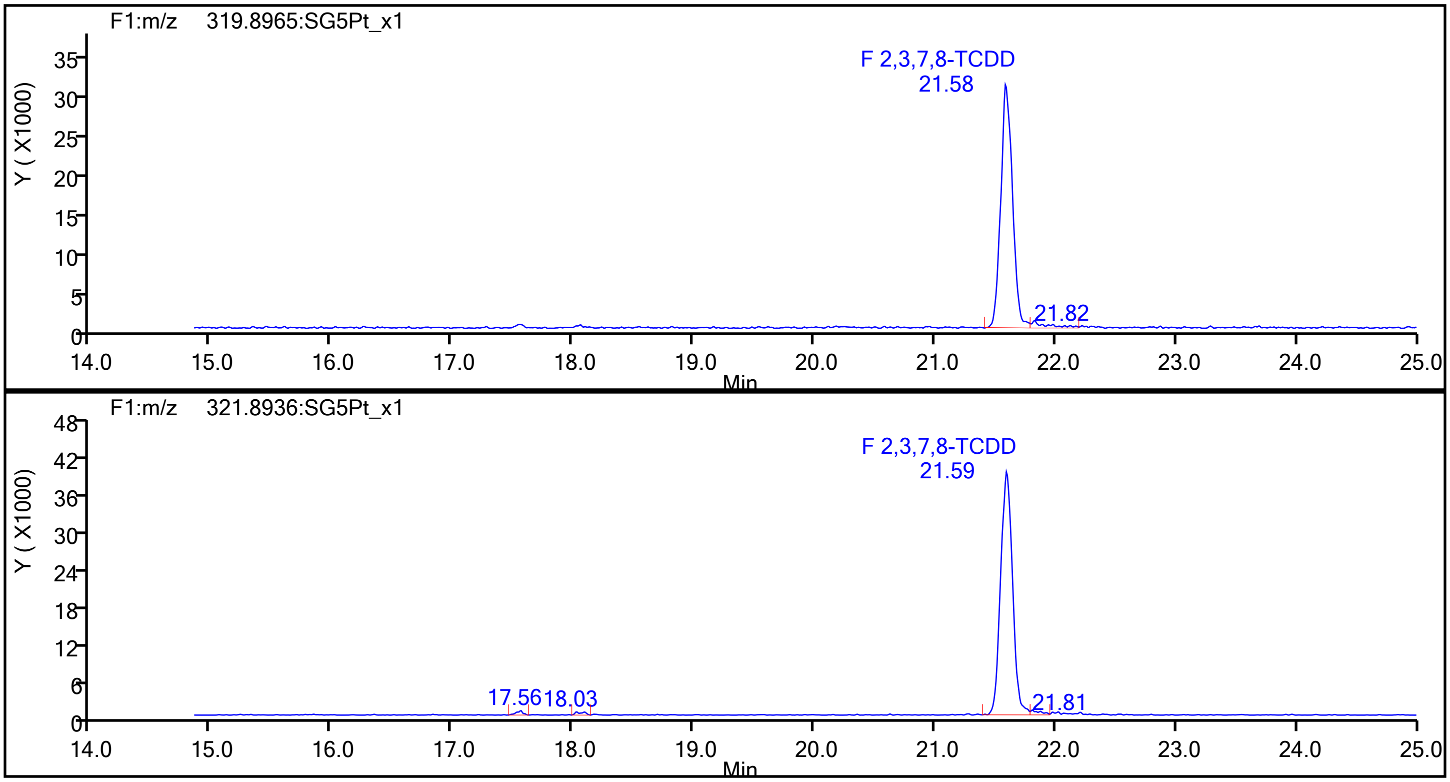

TCDD Standards

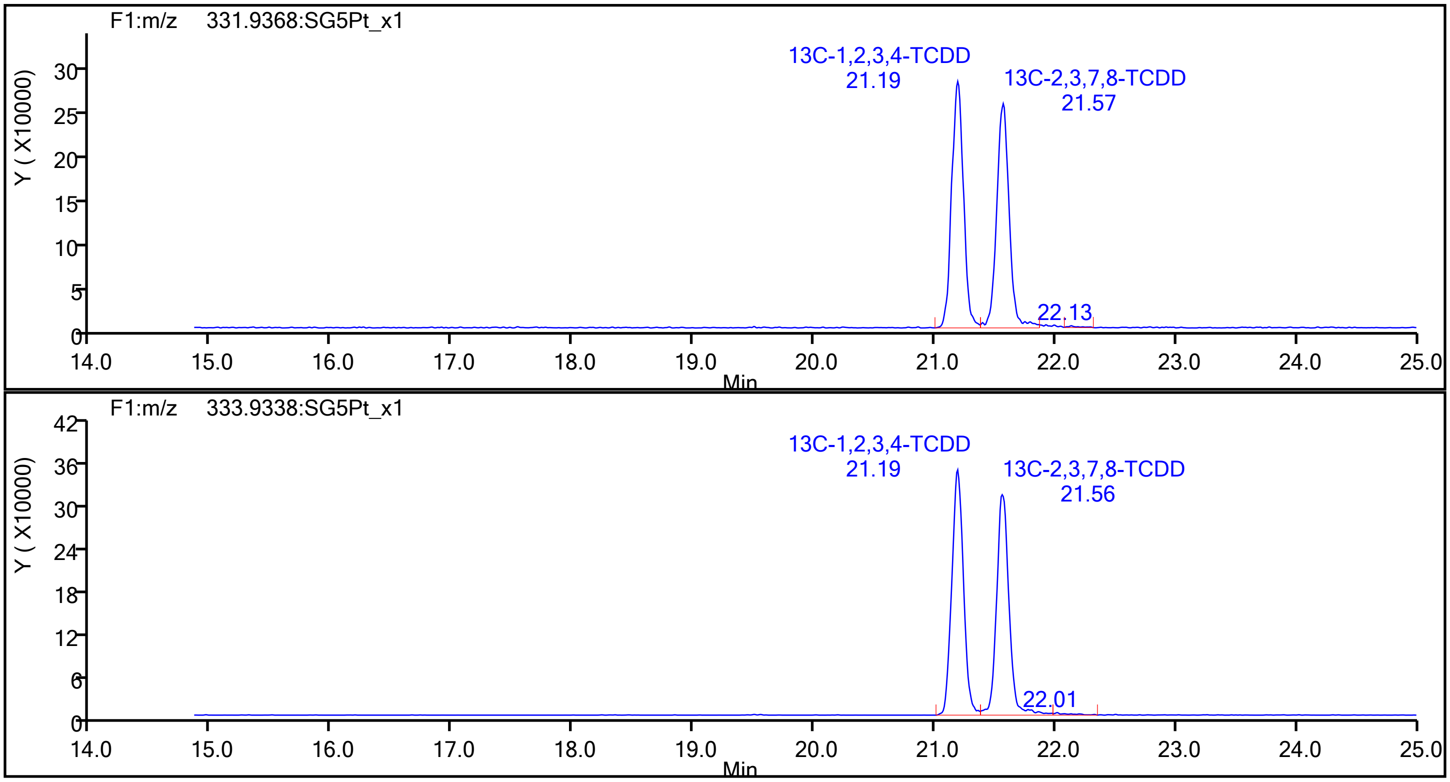

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

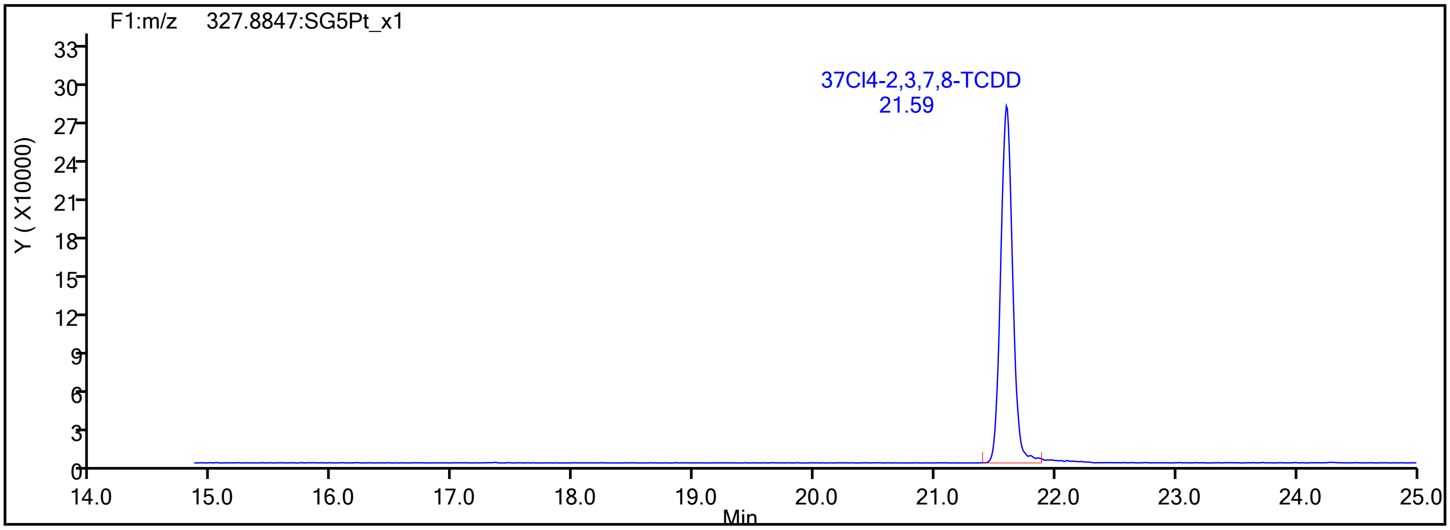

37Cl4-TCDD Standards

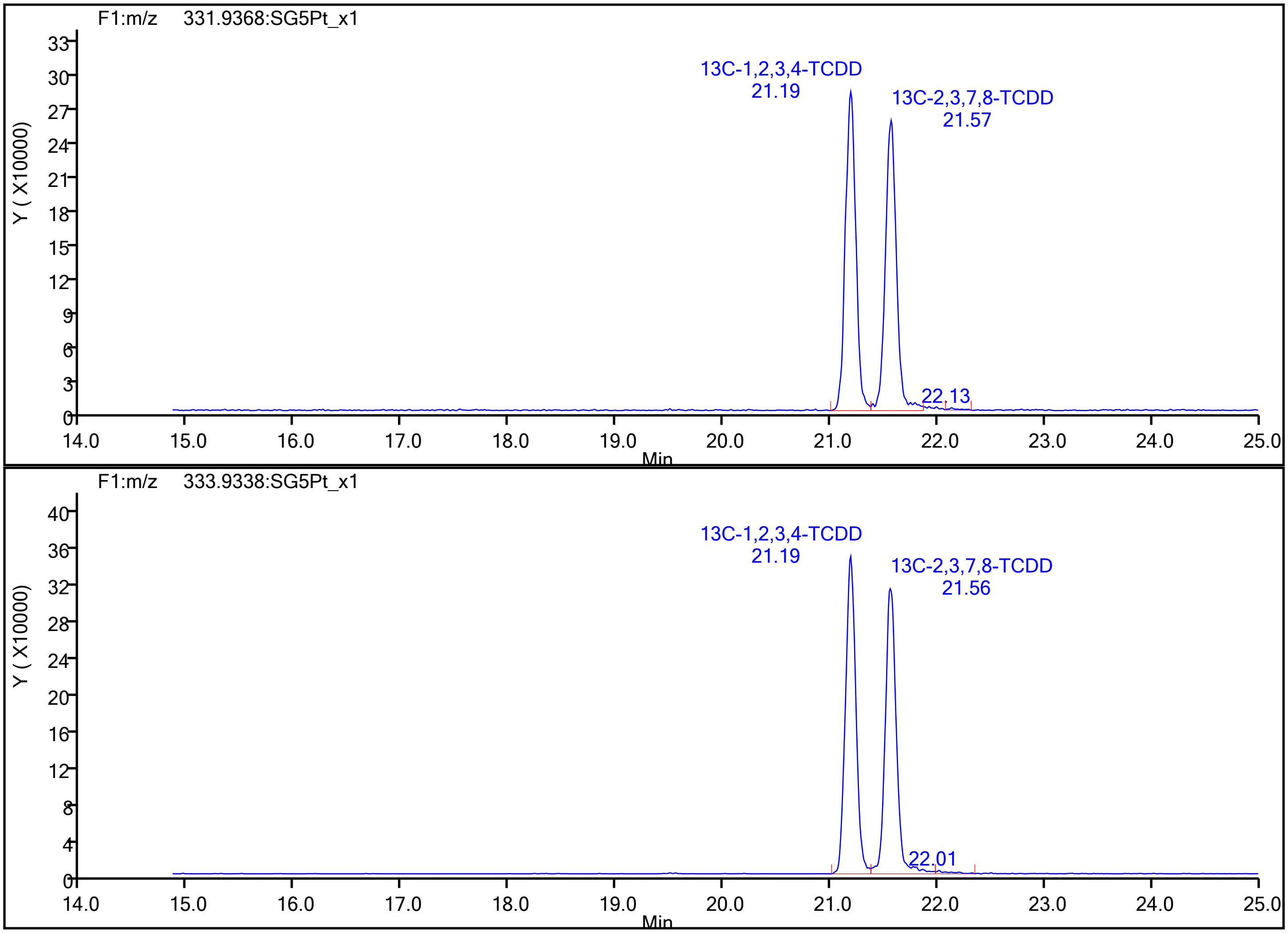

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

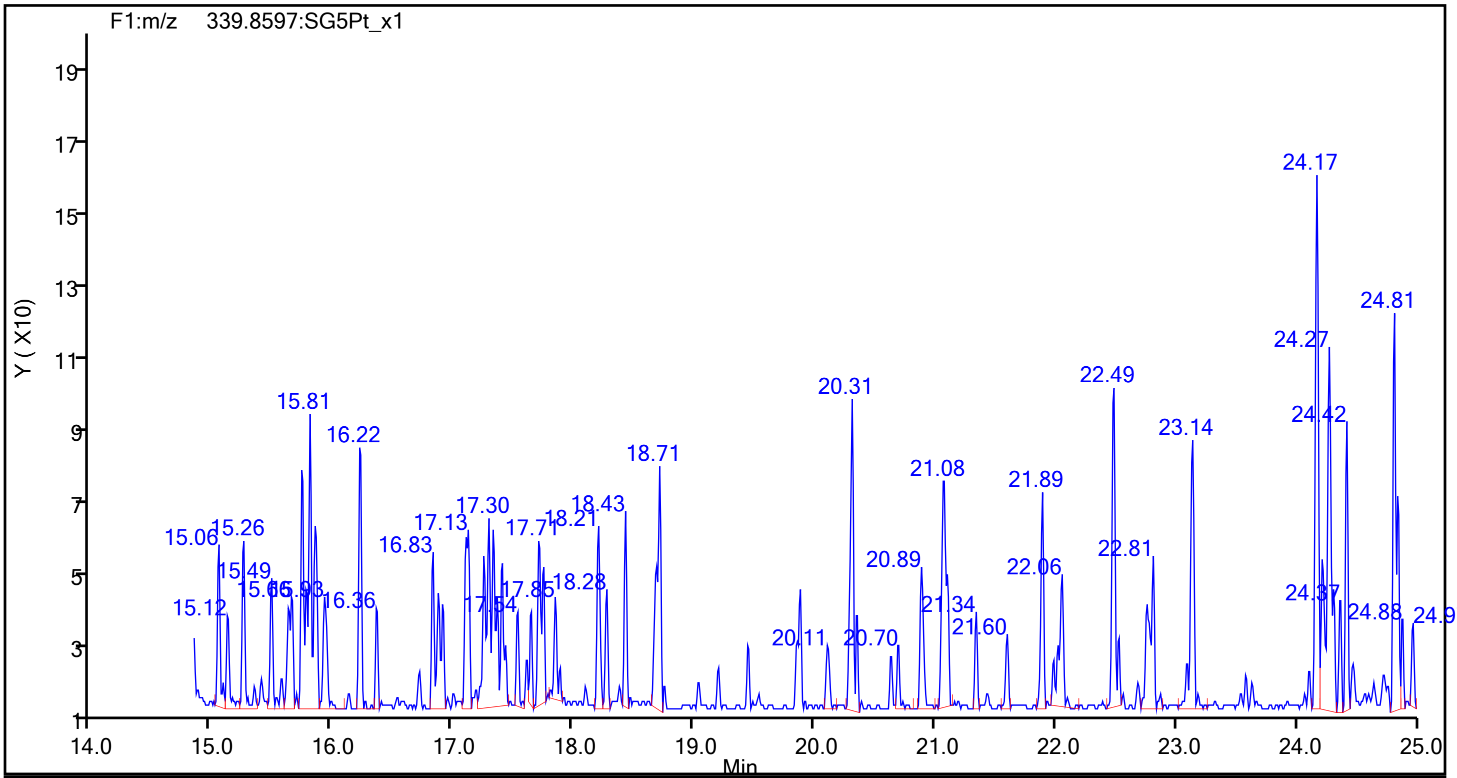

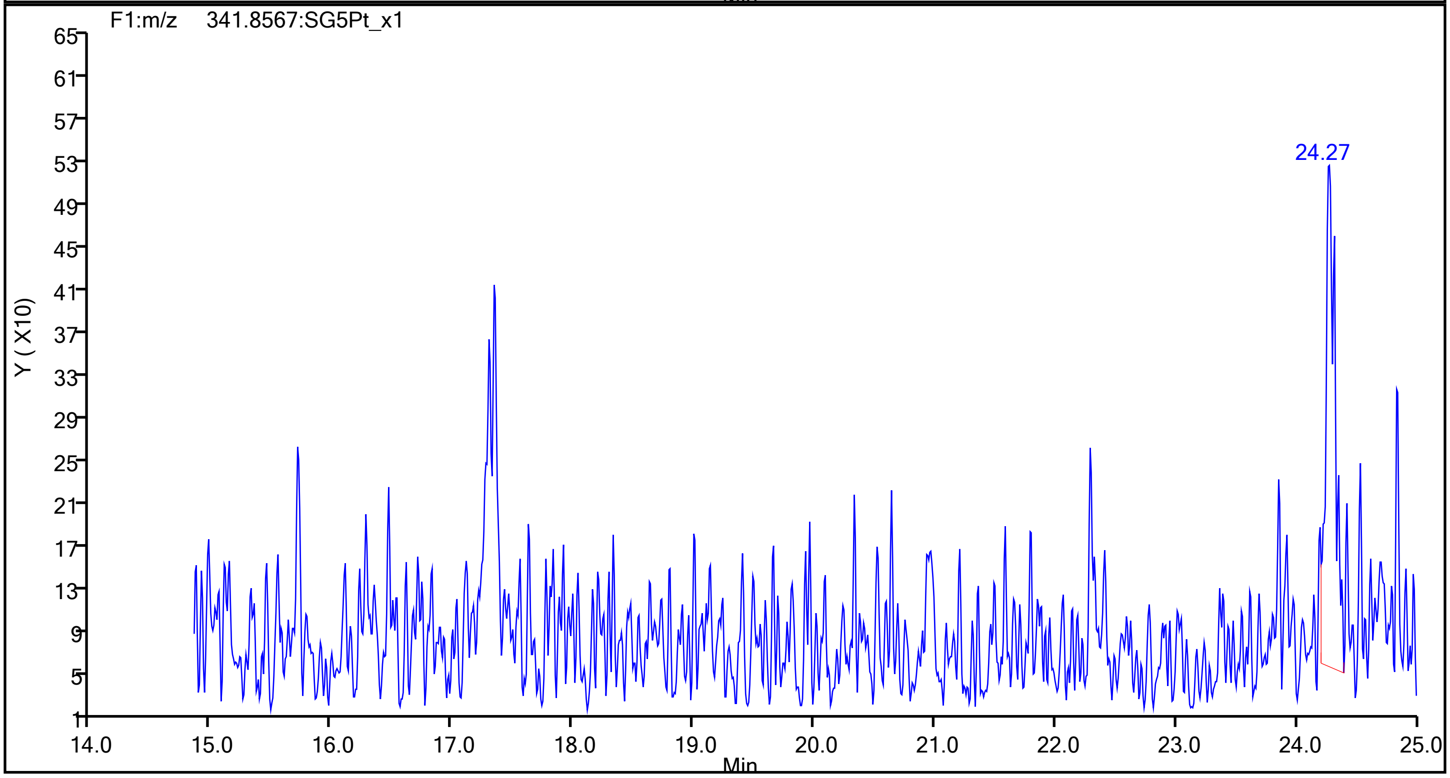

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date: 23-Jan-2021 00:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

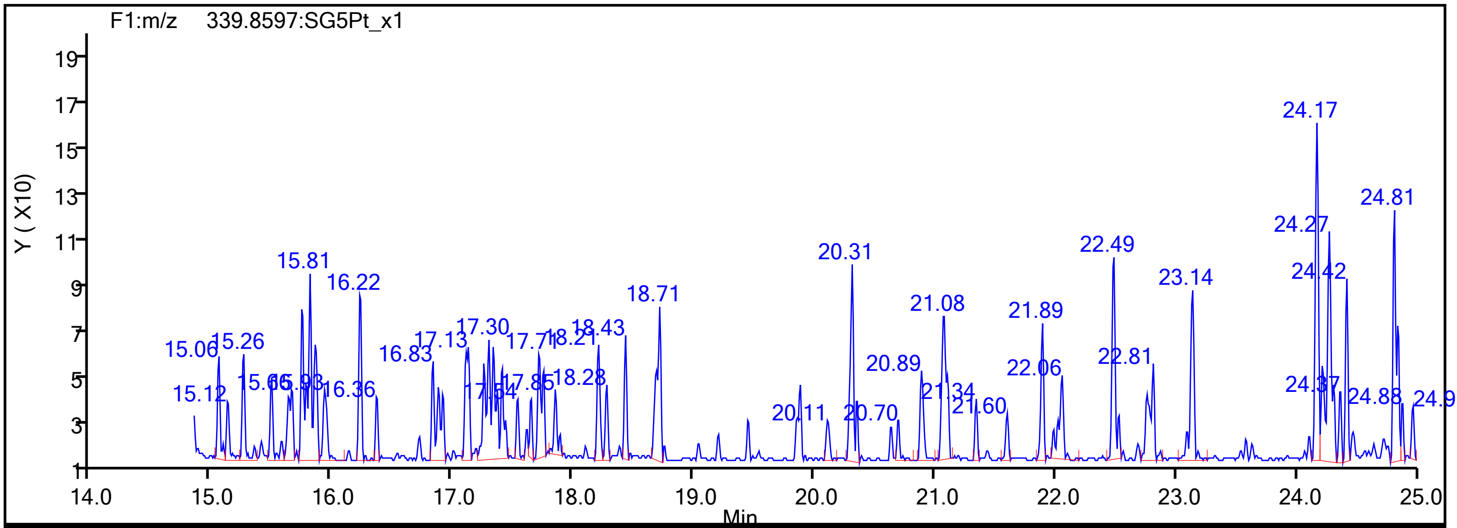

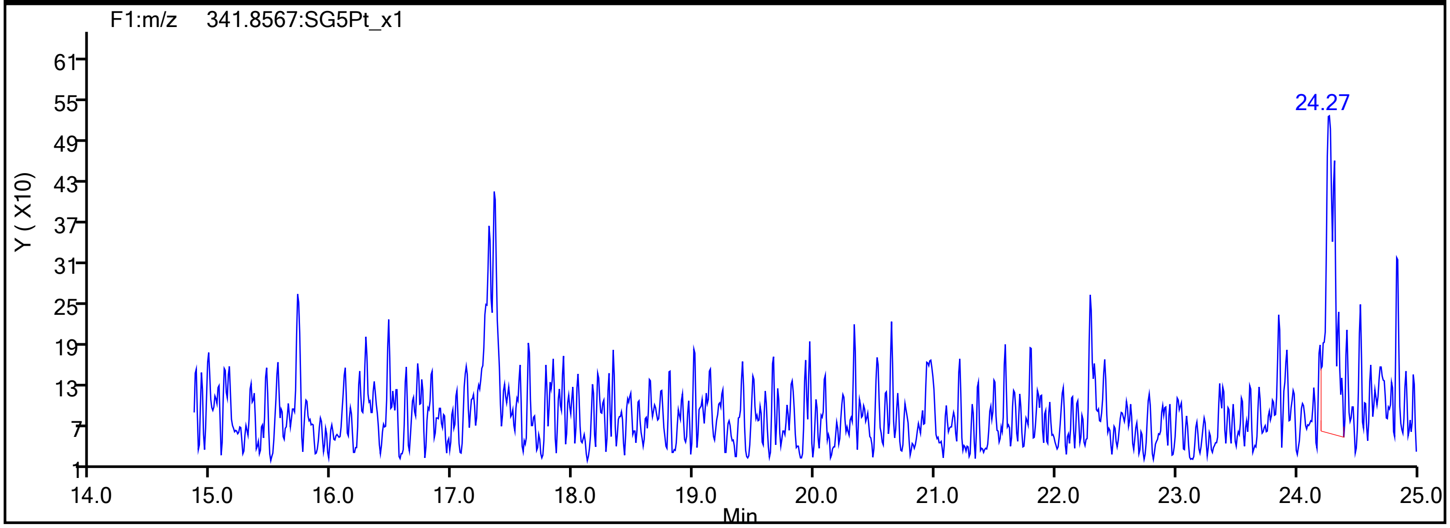

F1 PeCDFs Interference Mass

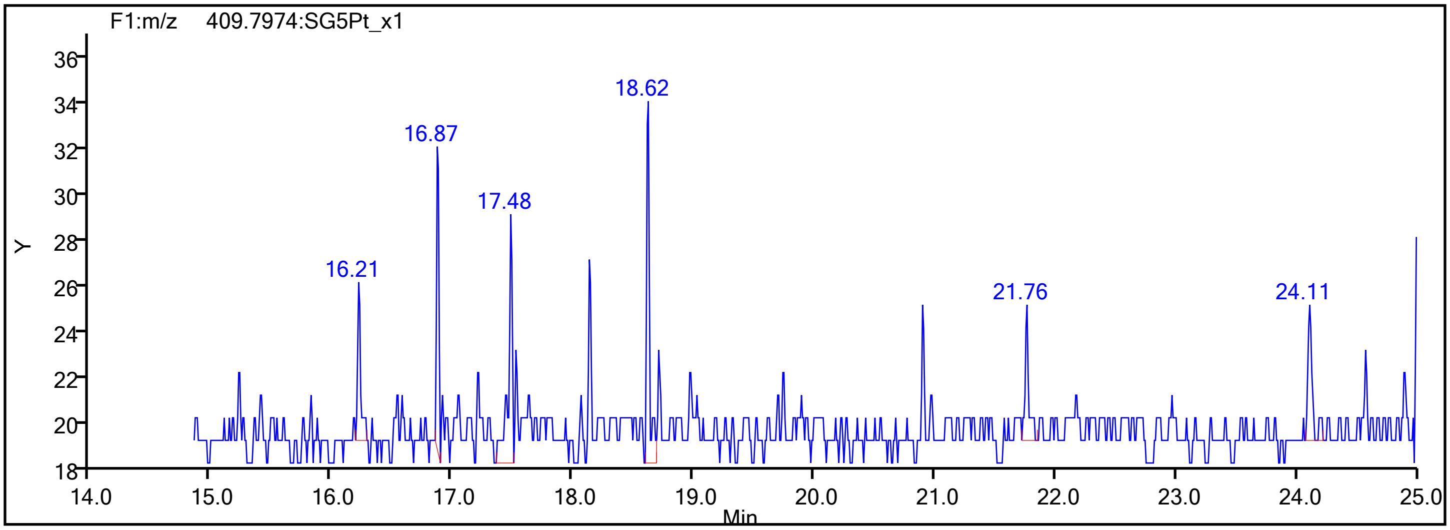

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d

Injection Date: 23-Jan-2021 00:41:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

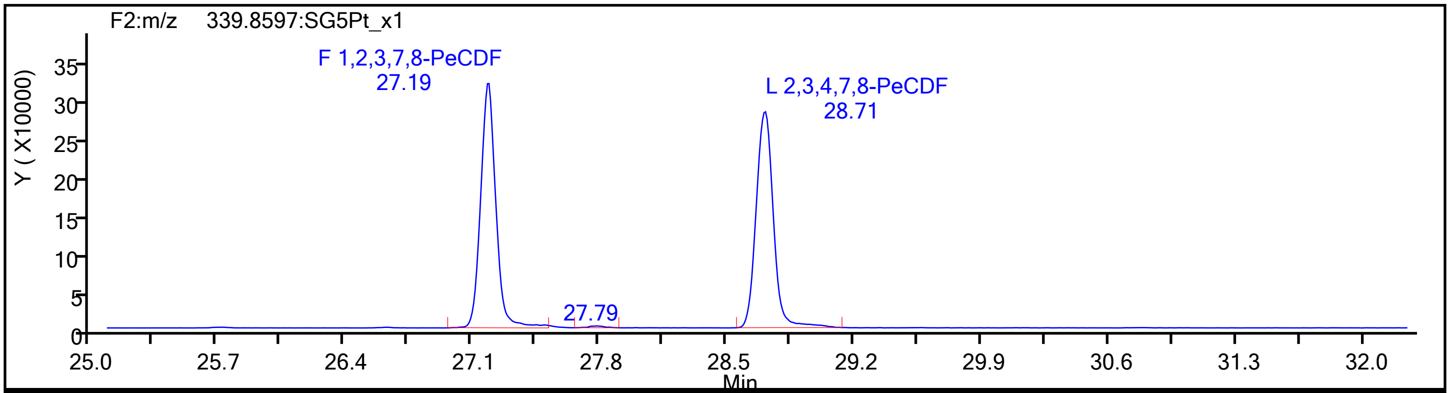

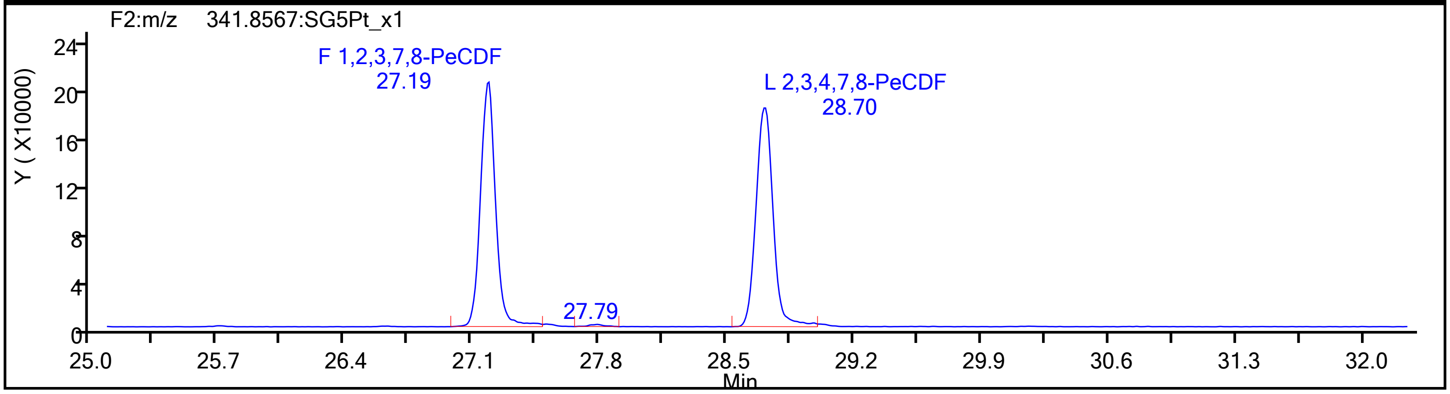

PeCDF Standards

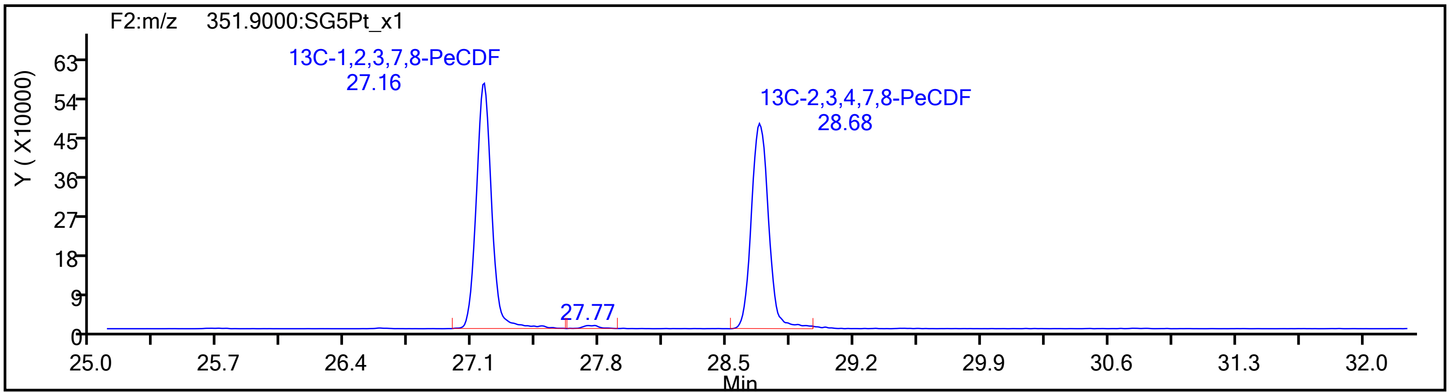

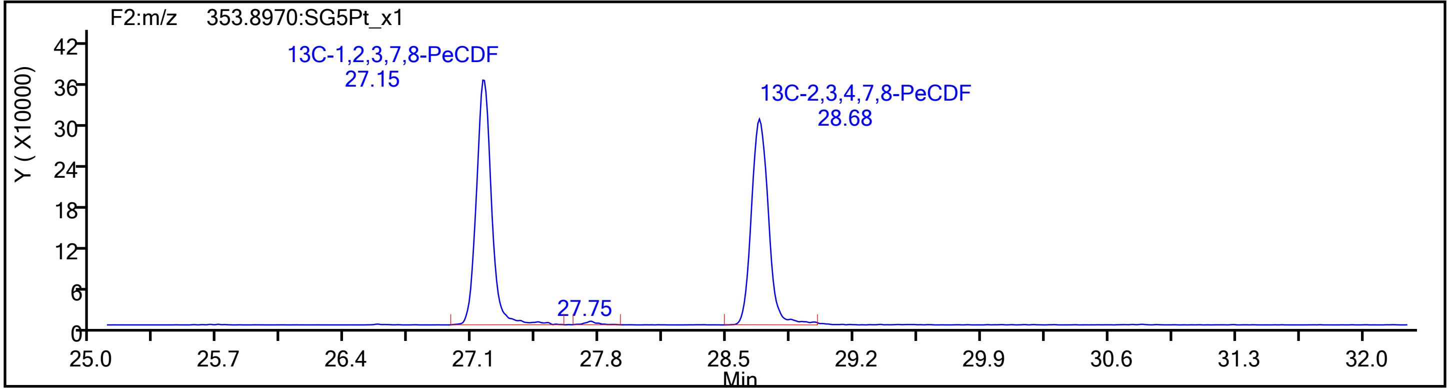

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

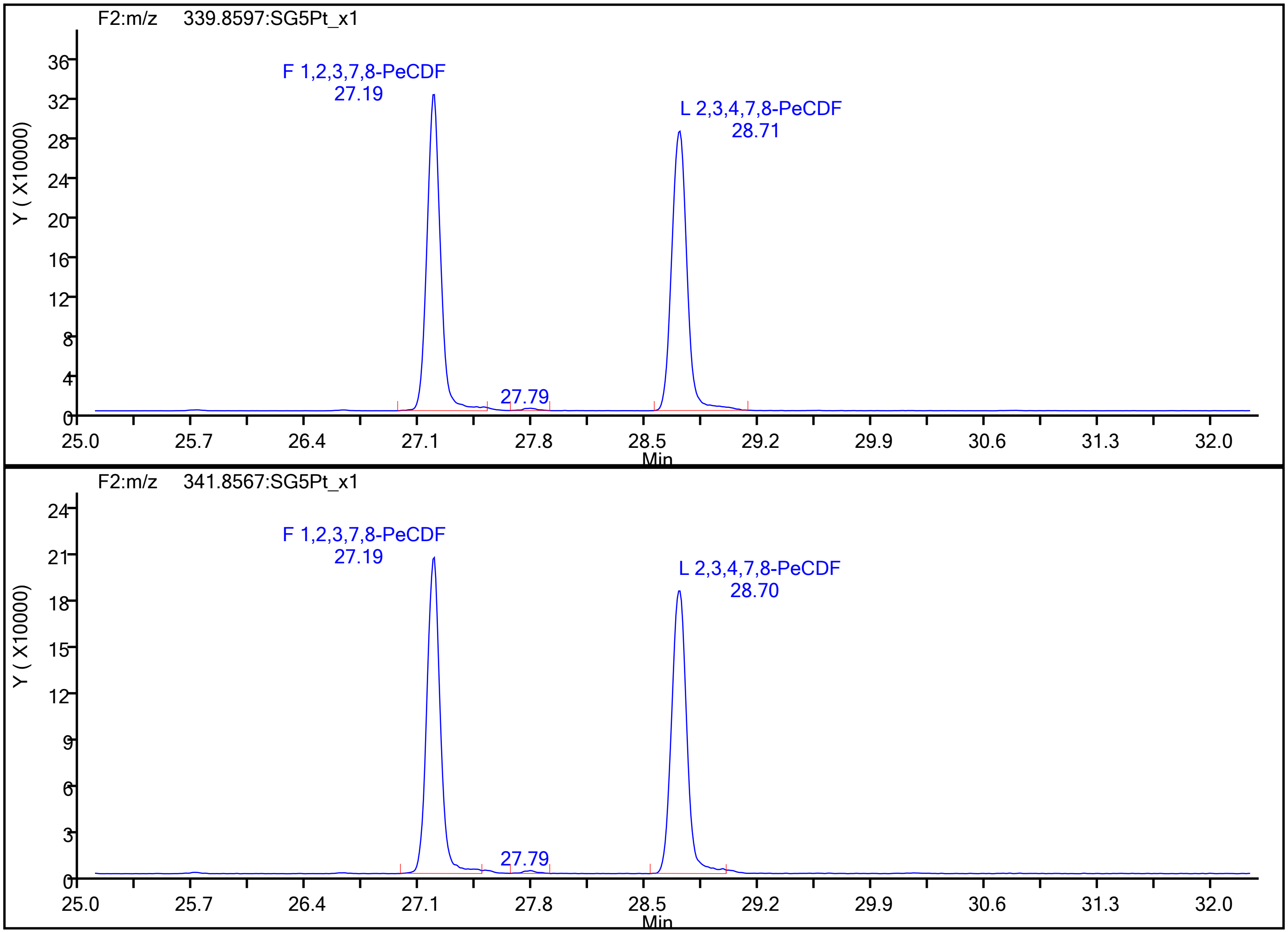

PeCDF Interference Mass

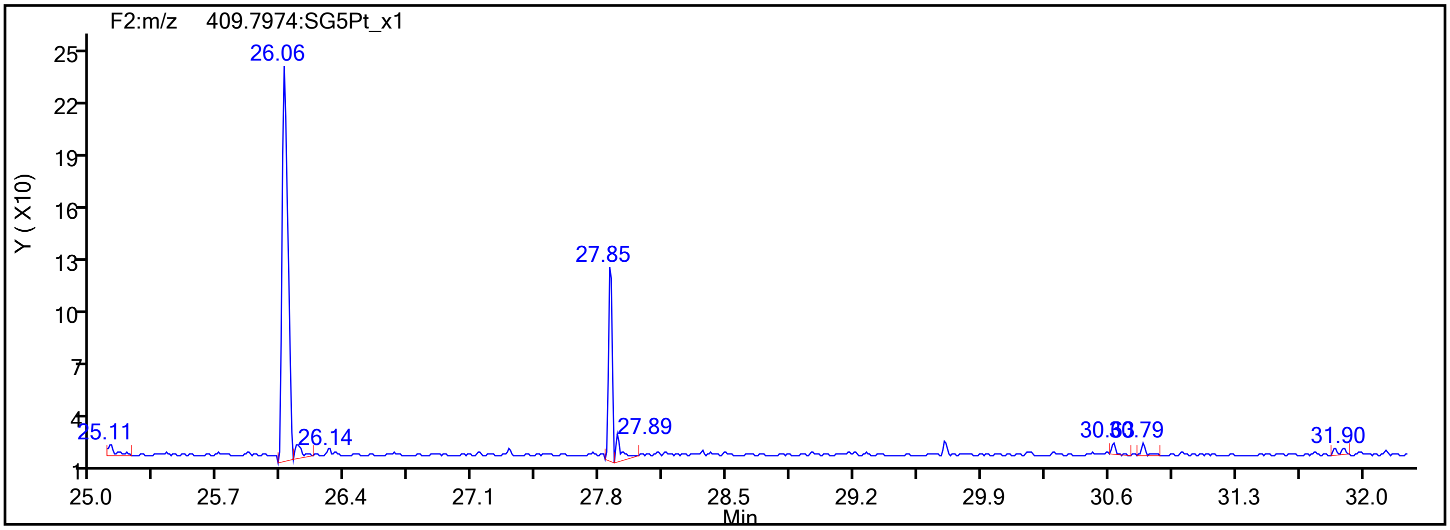

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Injection Date: 23-Jan-2021 00:41:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

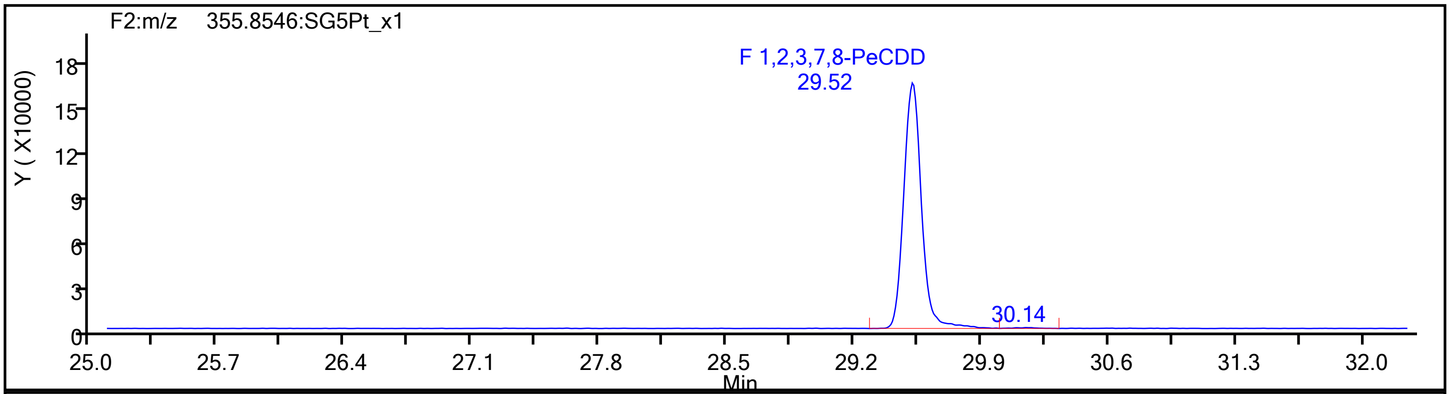

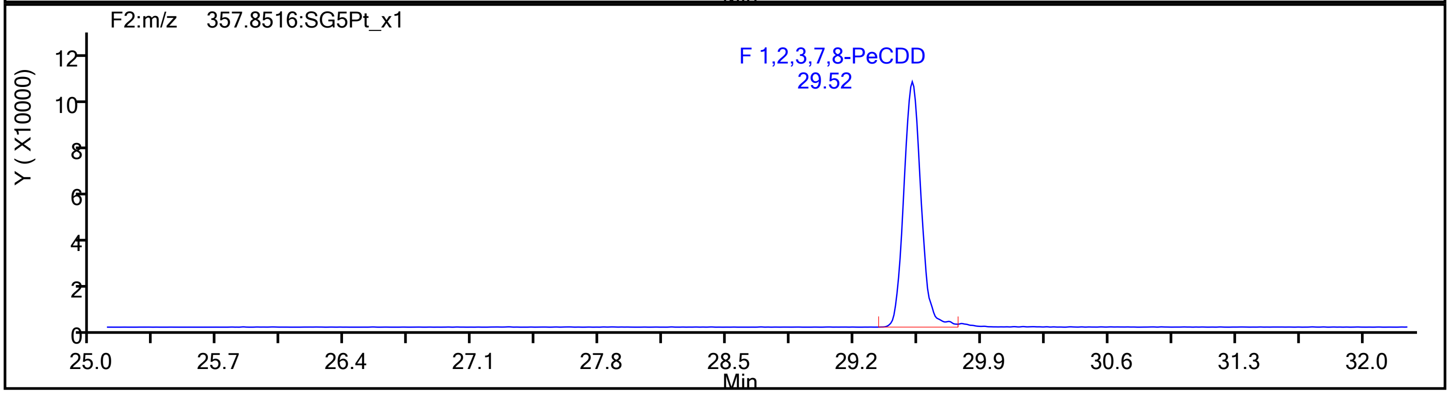

PeCDD Standards

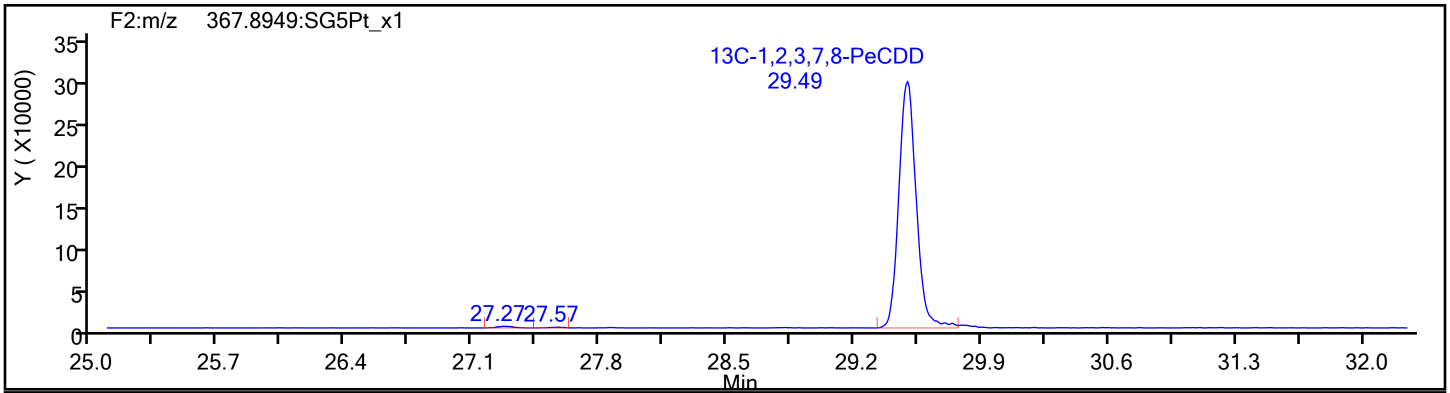

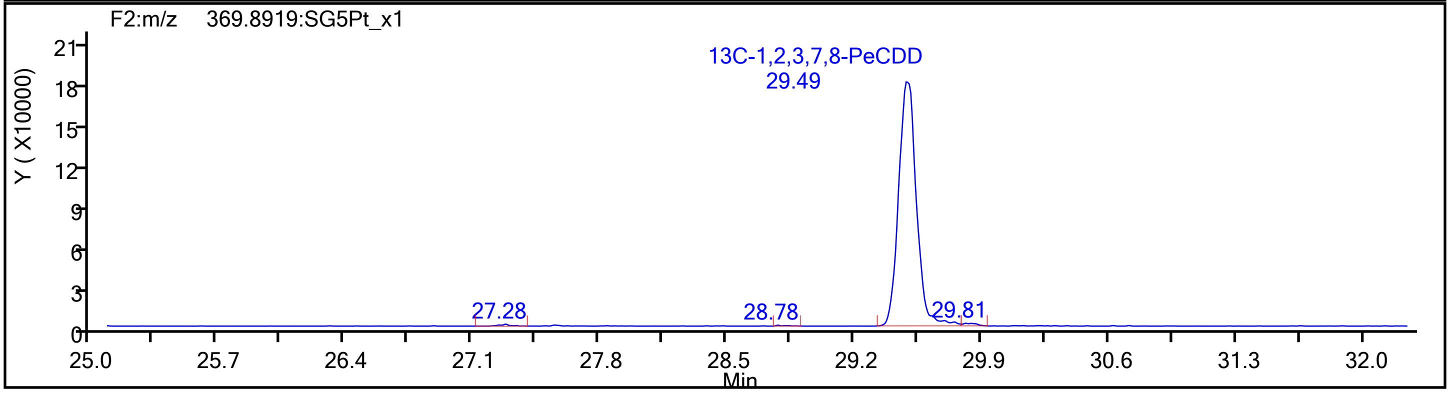

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

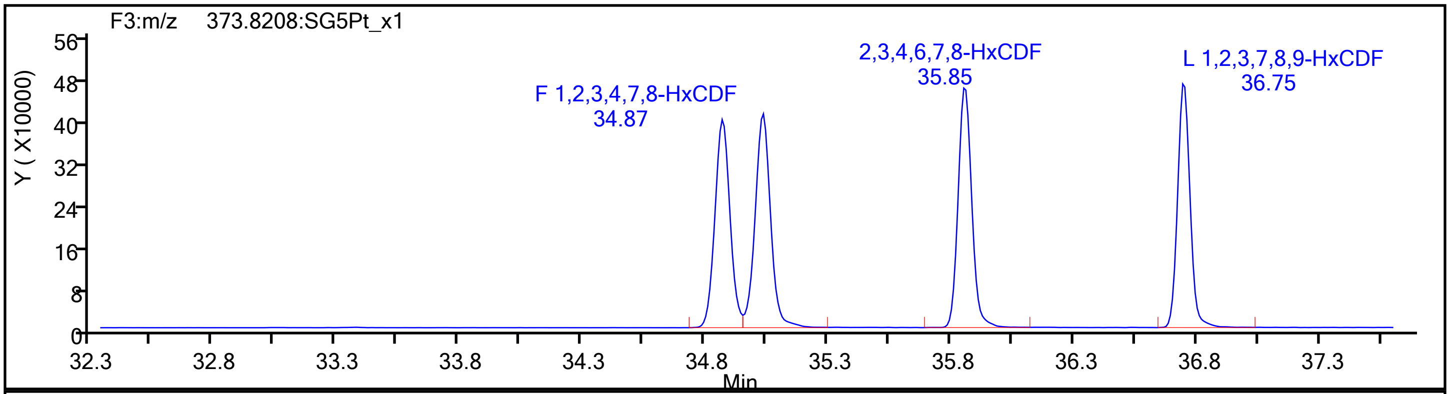

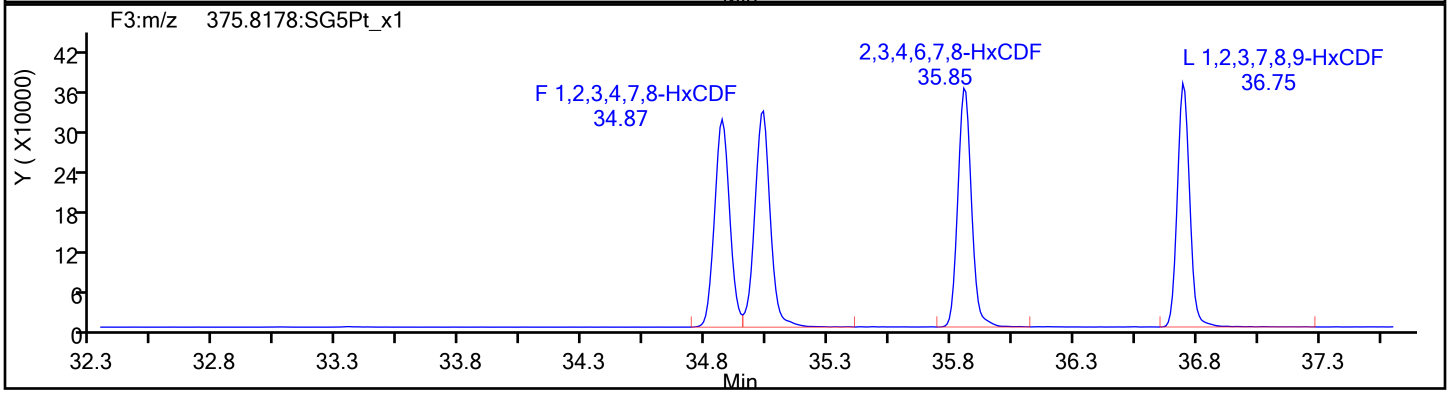

HxCDF Standards

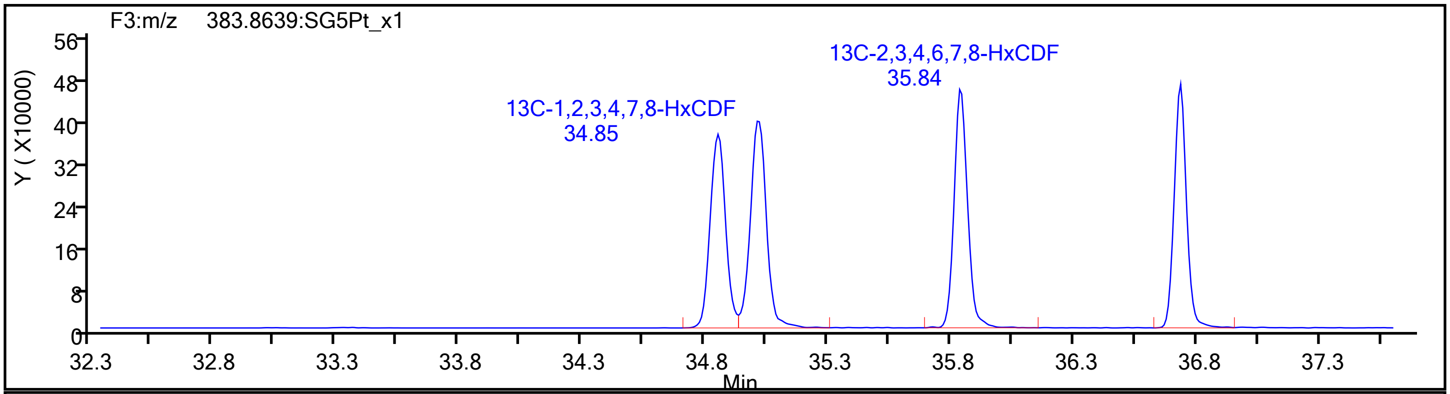

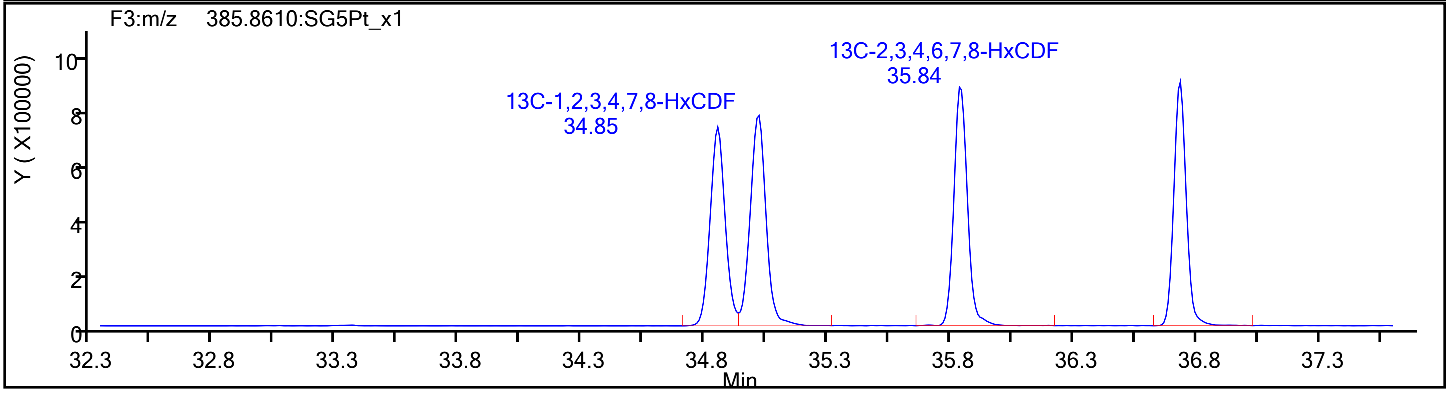

Report Date: 27-Jan-2021 10:13:01	Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Injection Date: 23-Jan-2021 00:41:00	Injection Vol: 1.0 ul
Instrument ID: DFS 1	Operator ID: Xcalibur_System
Method: Dioxin_DFS1	Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5	Column Dia: 0.32 mm

HxCDF

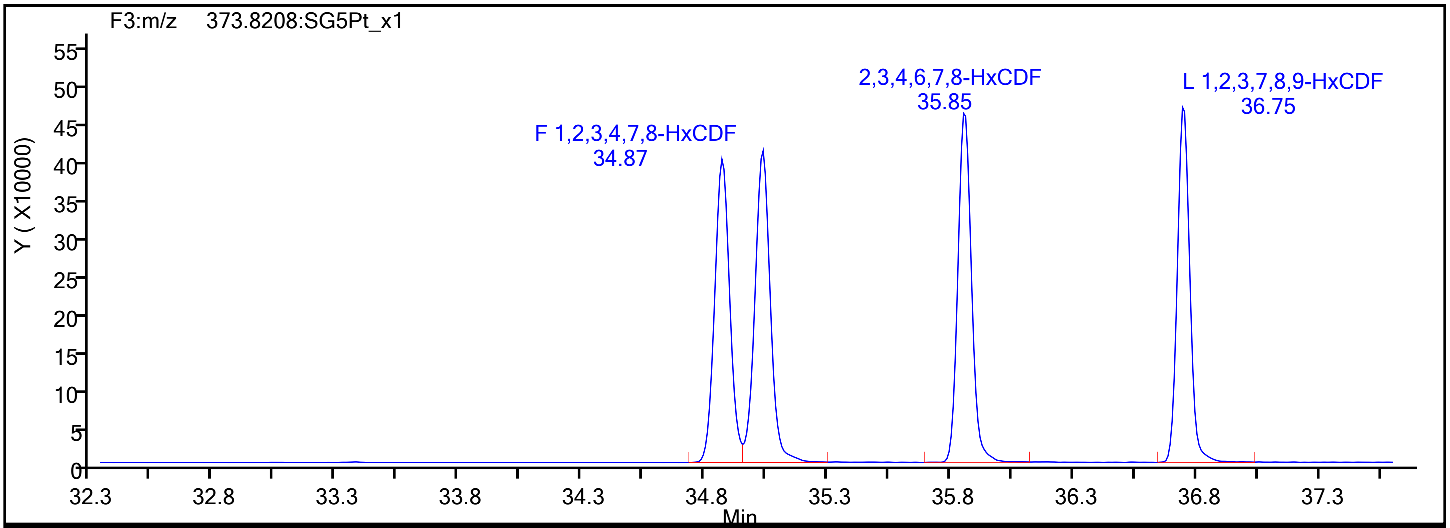

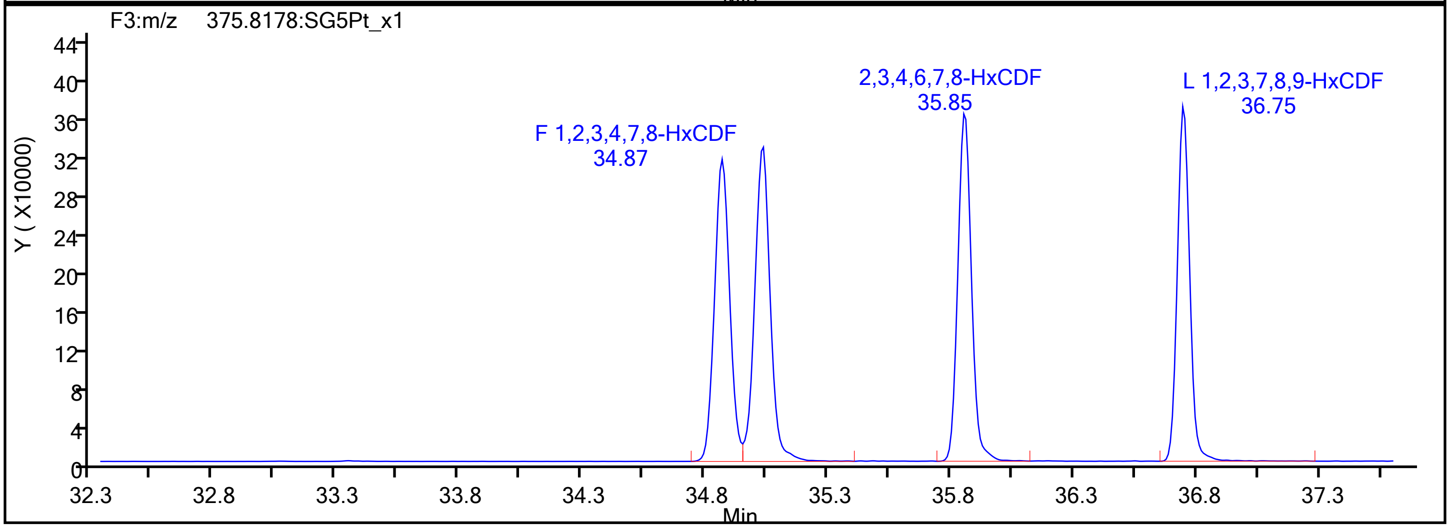

HxCDF Interference Mass

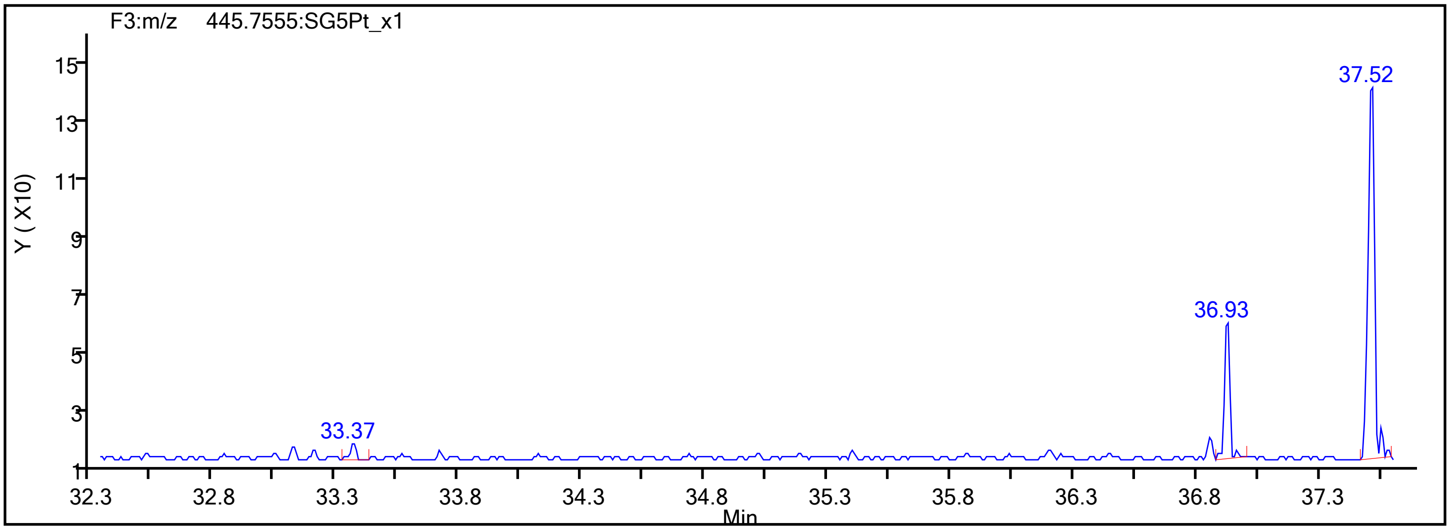

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
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HxCDD

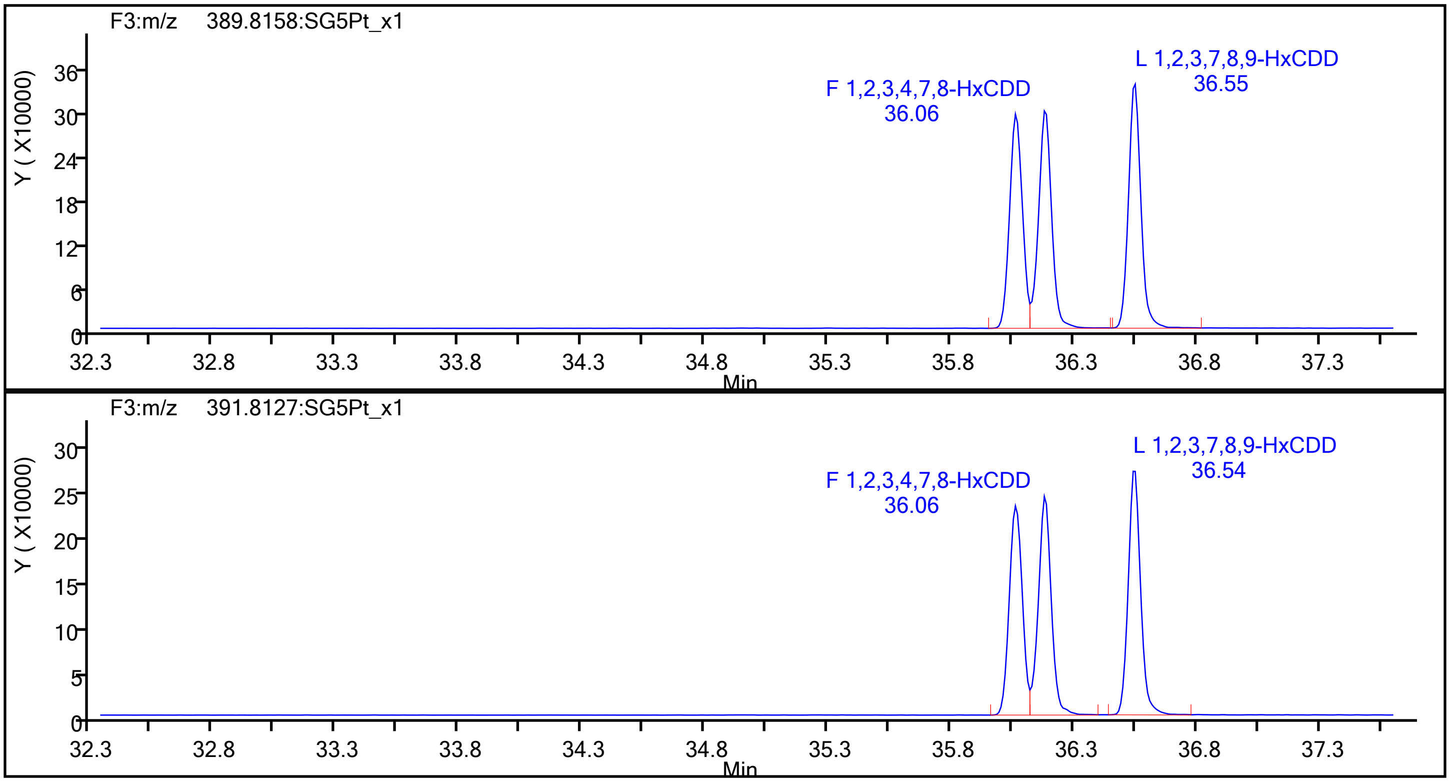

HxCDD Standards

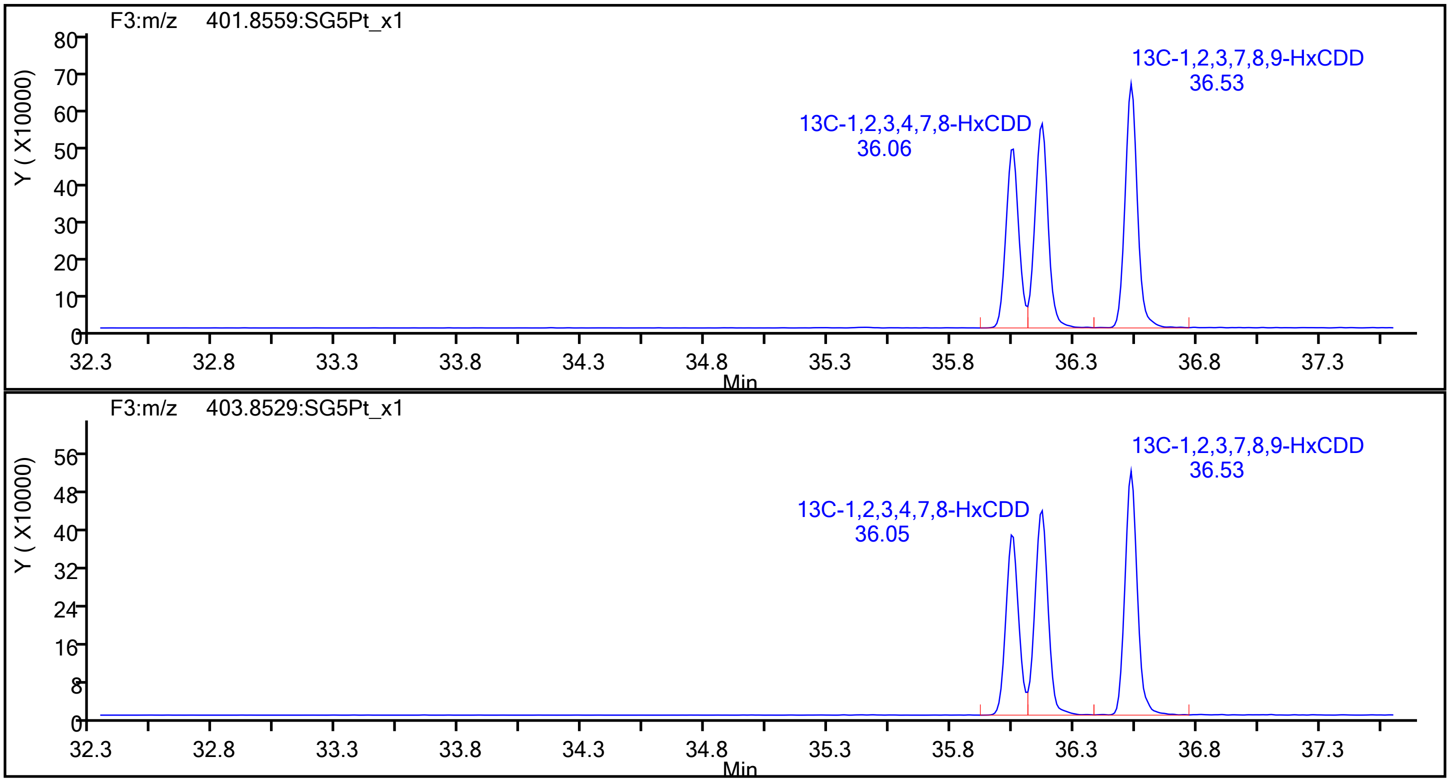

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date: 23-Jan-2021 00:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

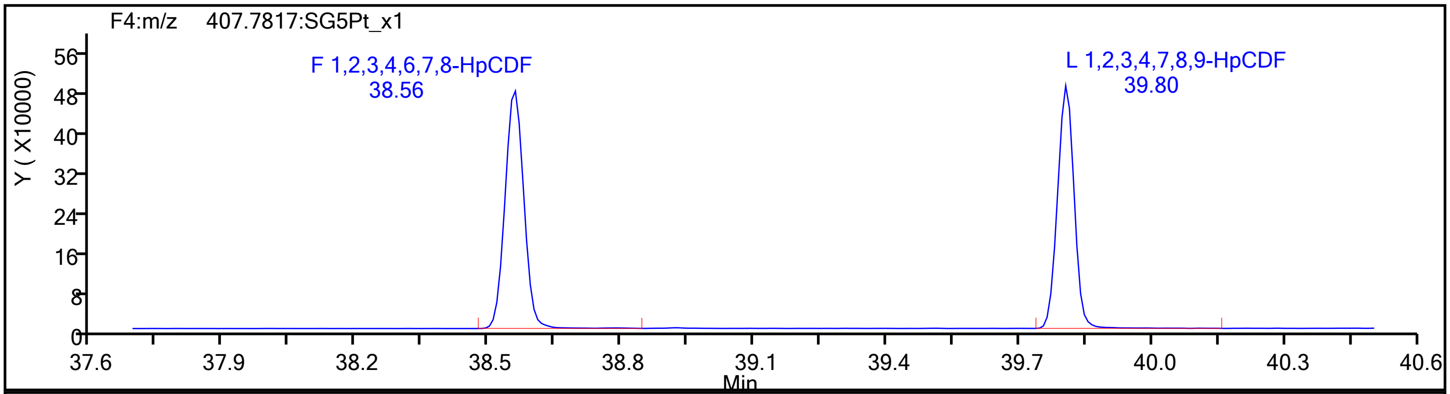

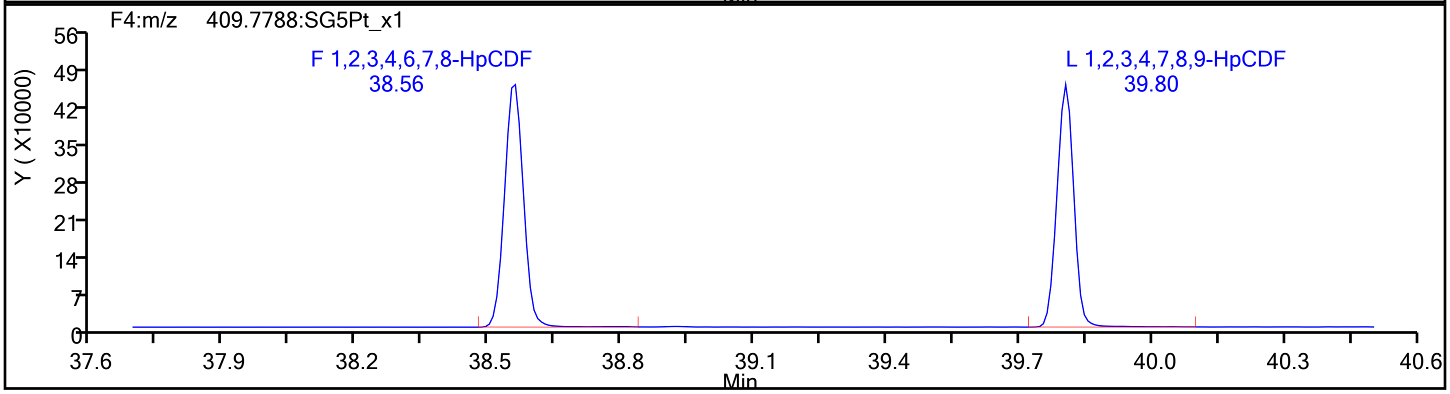

HpCDF Standards

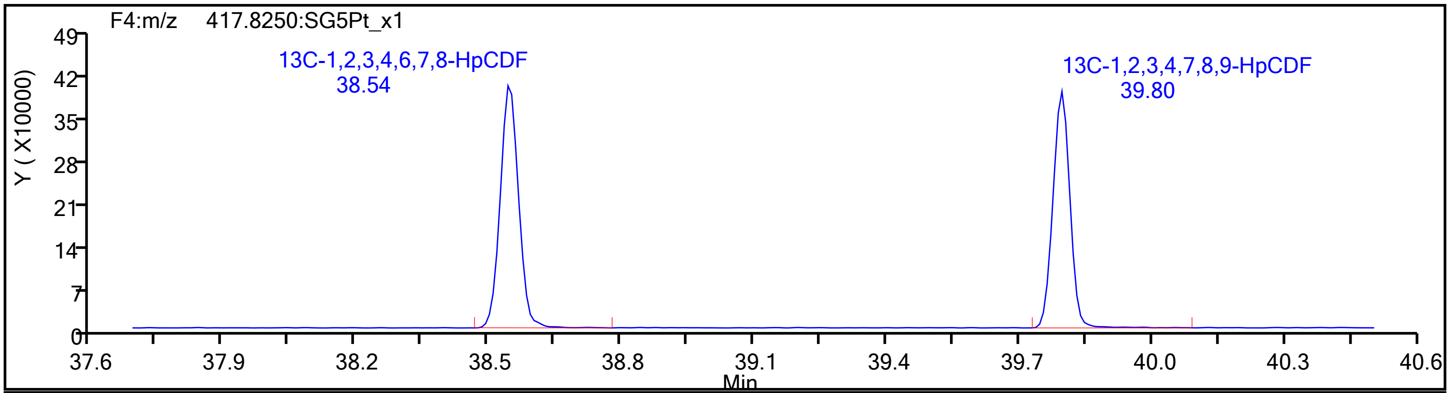

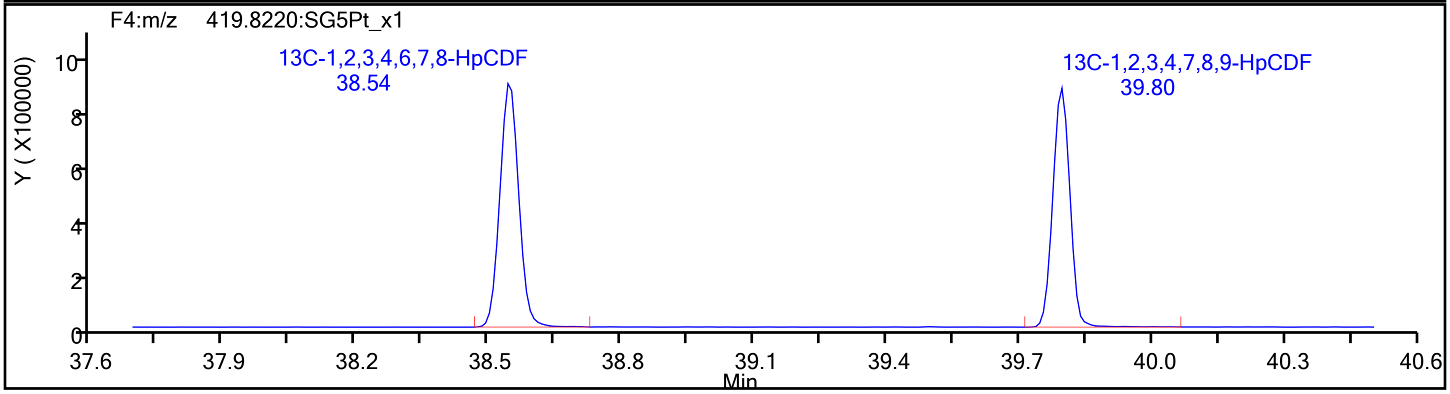

Eurofins TestAmerica, Sacramento

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Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

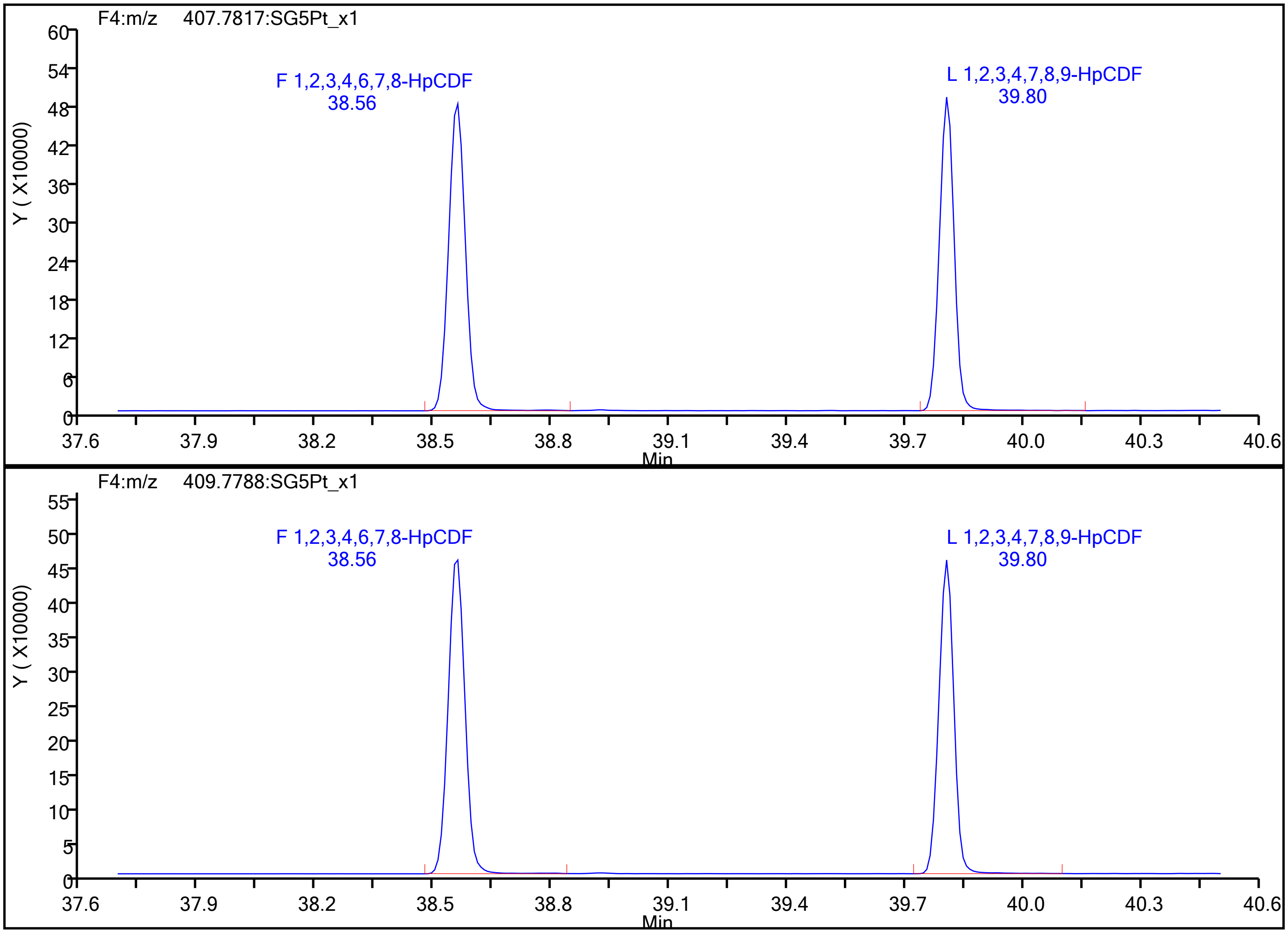

HpCDF Interference Mass

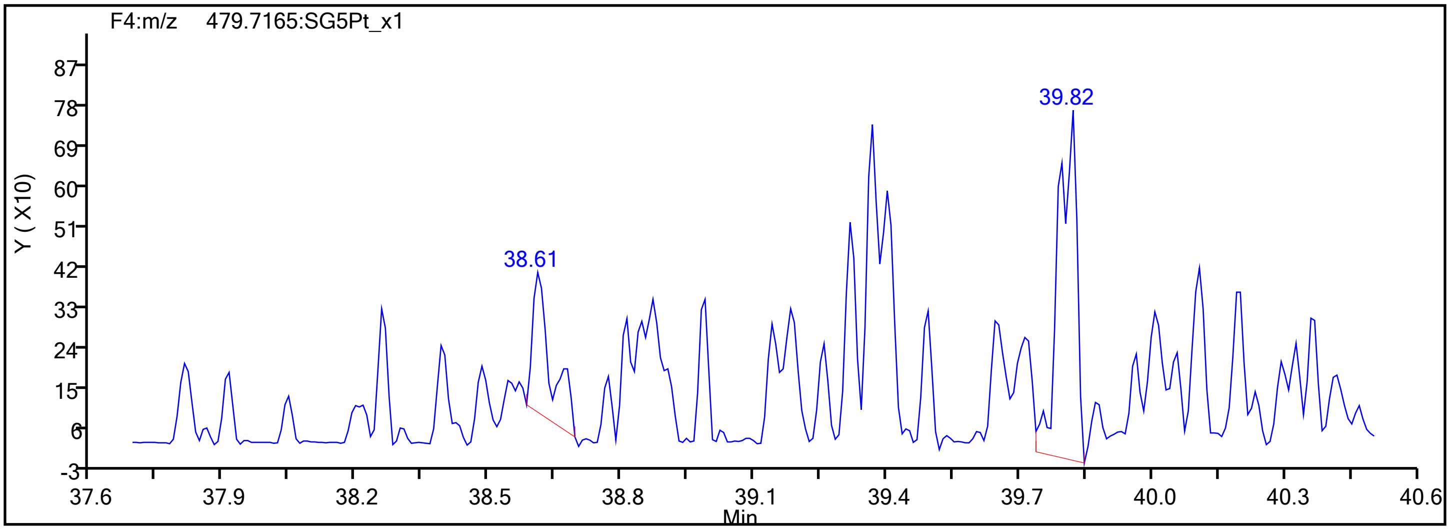

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

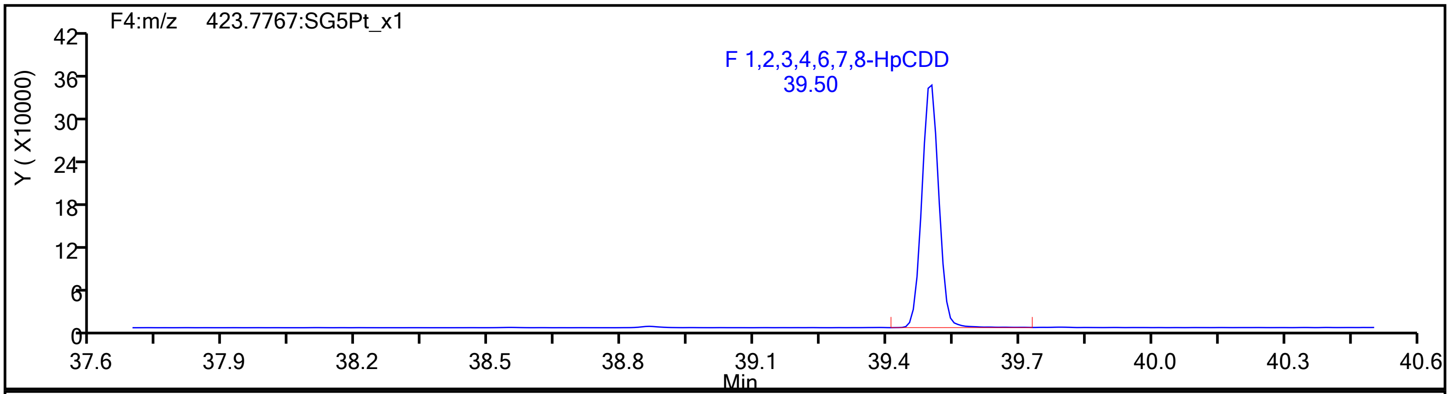

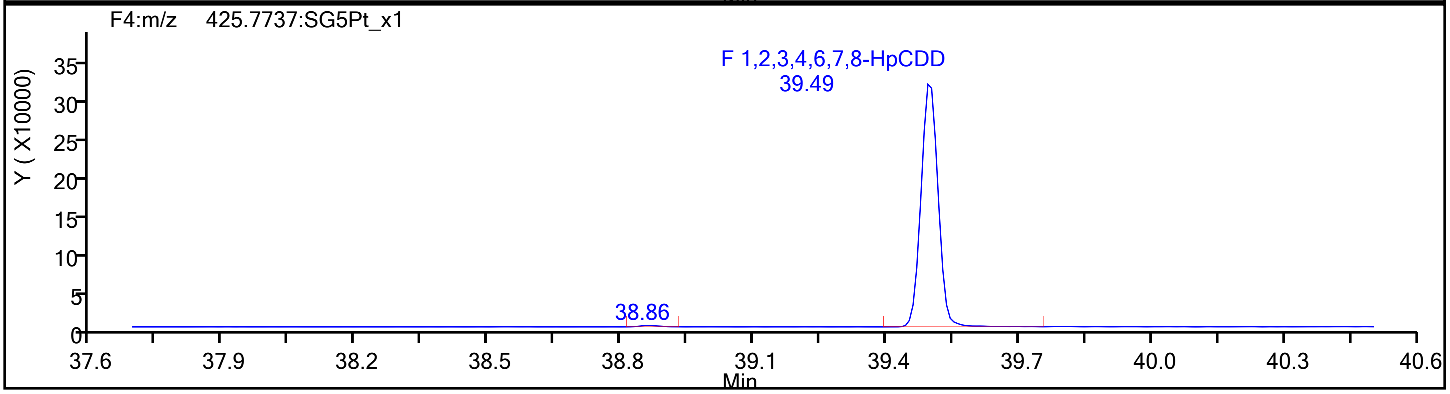

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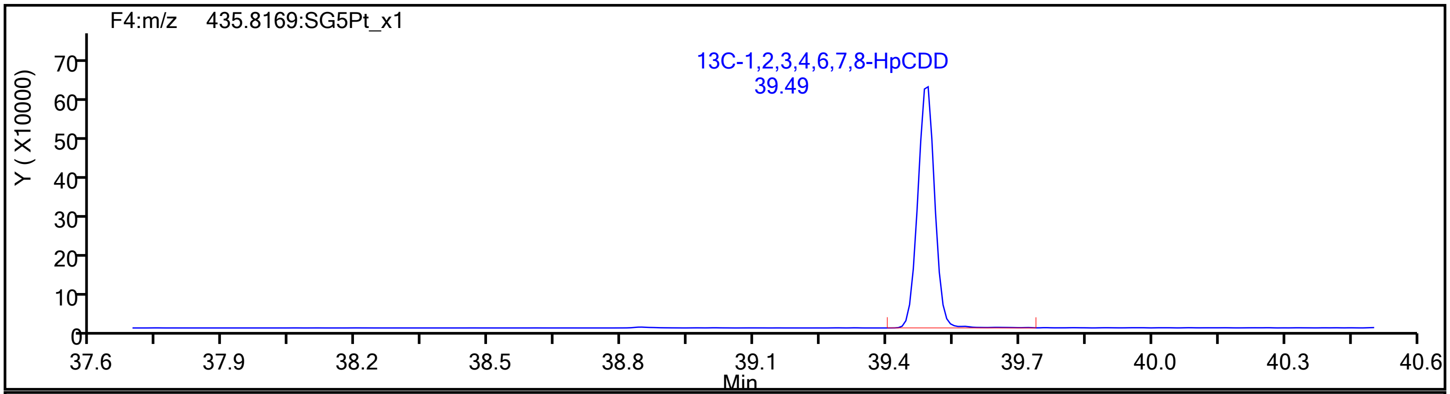

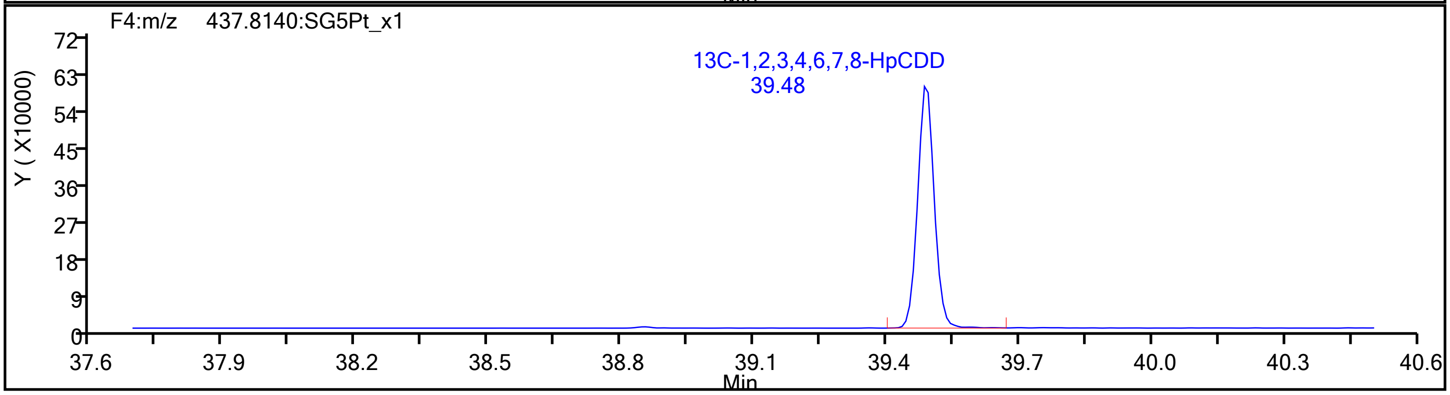

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d
Injection Date: 23-Jan-2021 00:41:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 454782
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

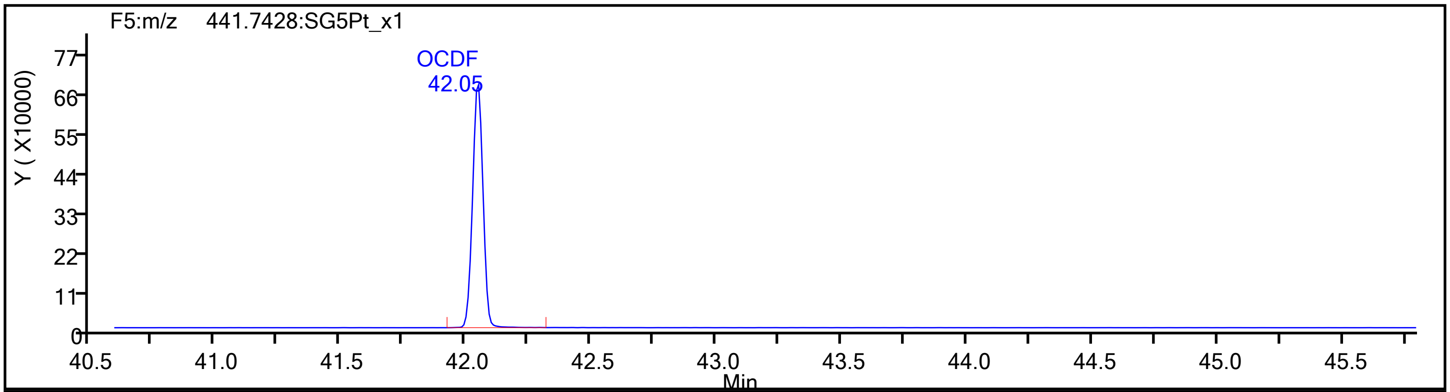

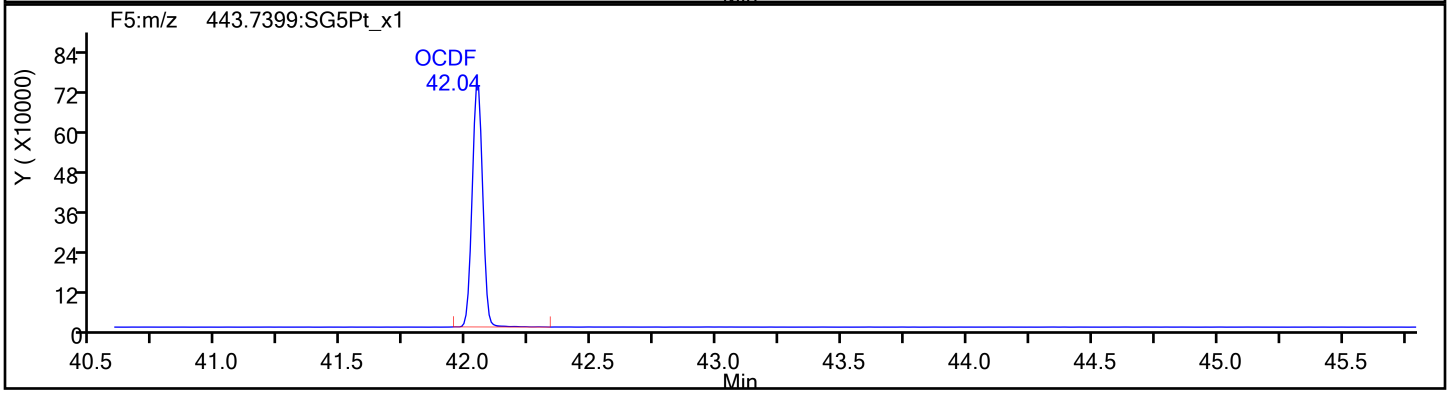

OCDF Standards

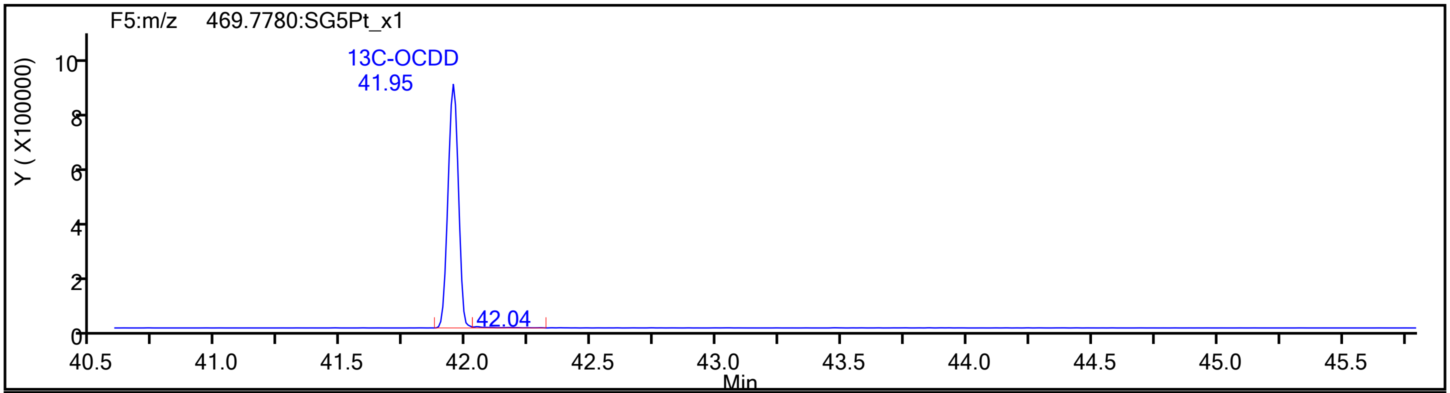

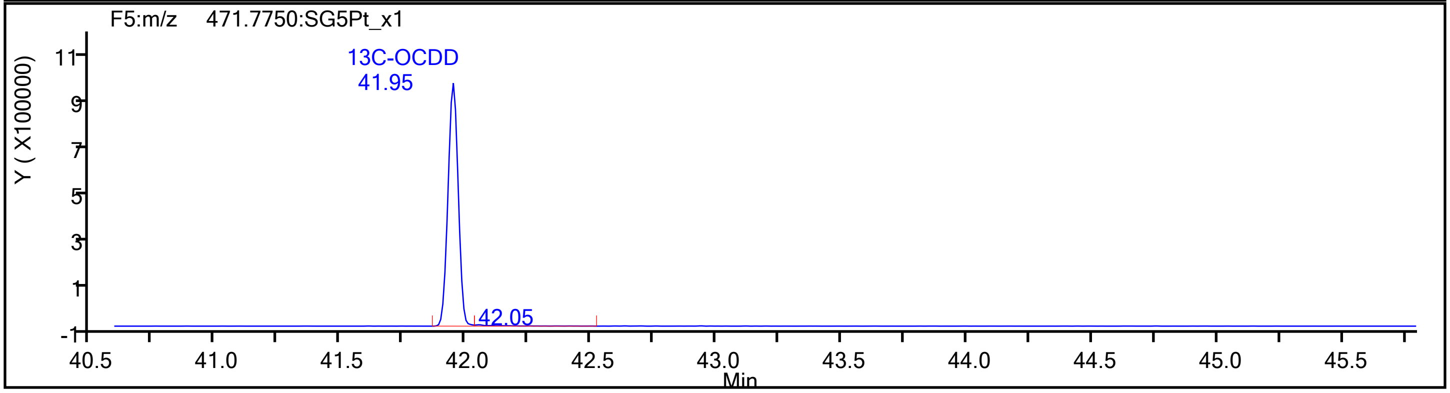

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Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

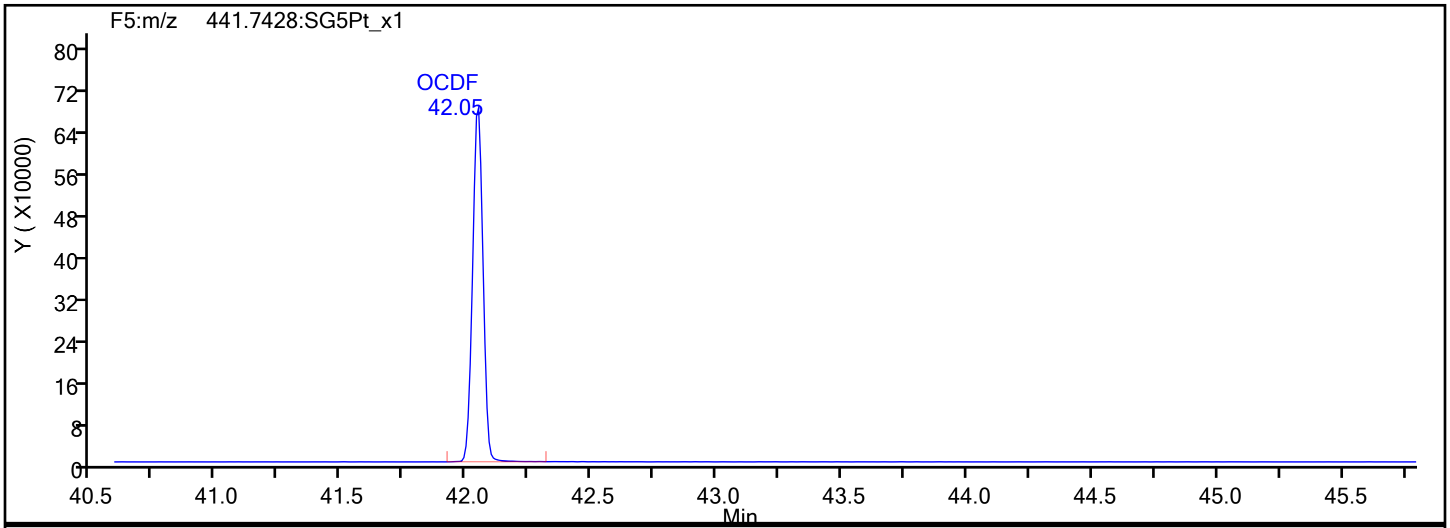

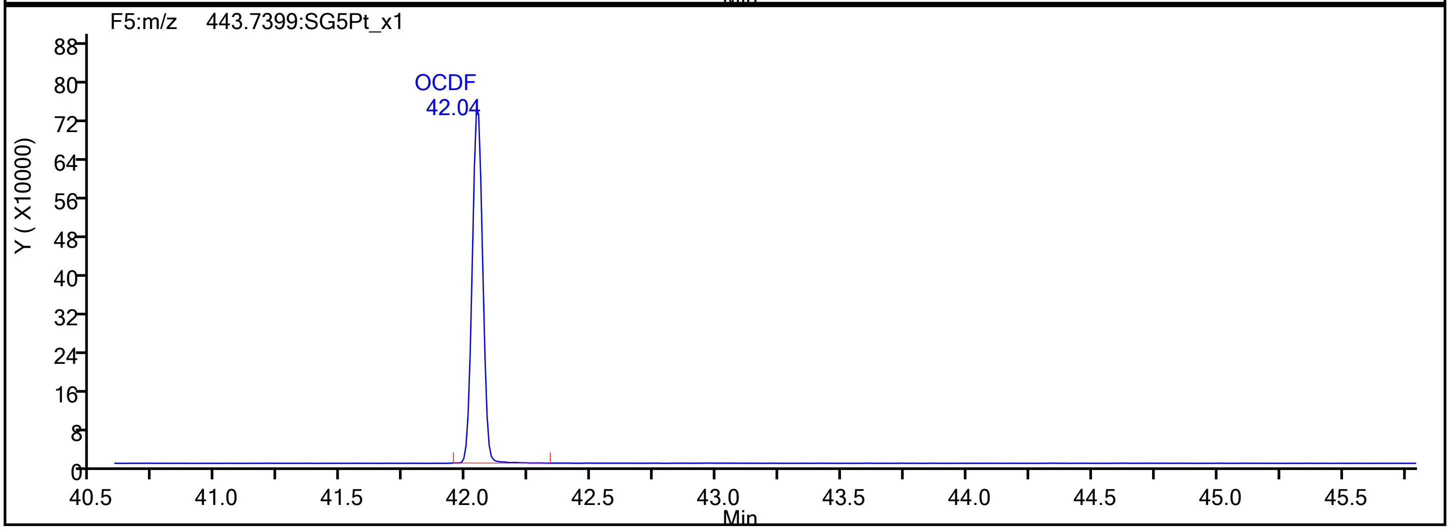

OCDF Interference Mass

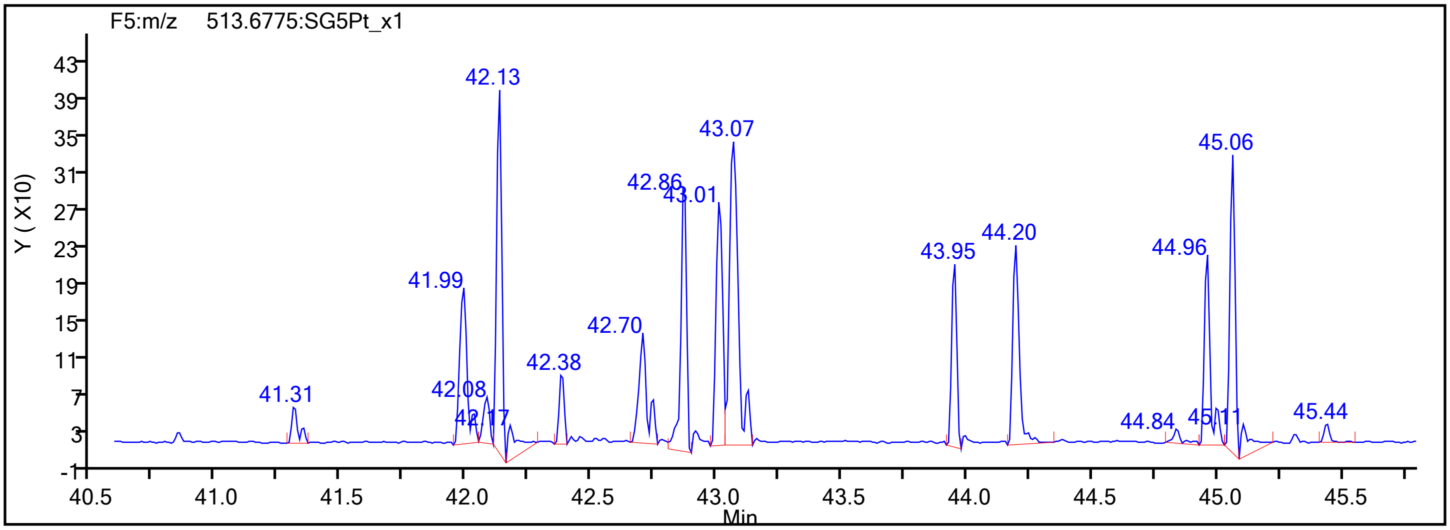

Report Date: 27-Jan-2021 10:13:01 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

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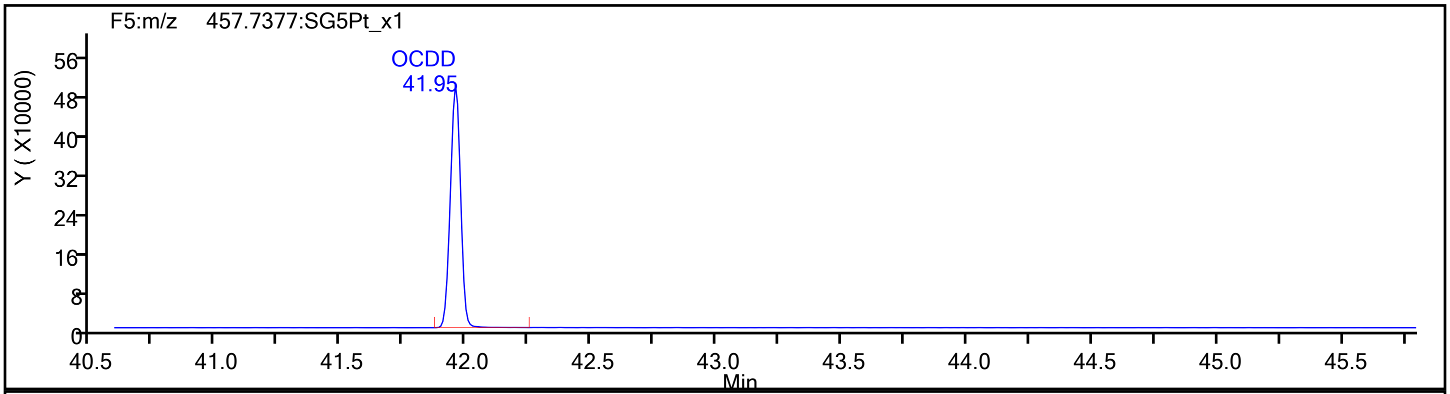

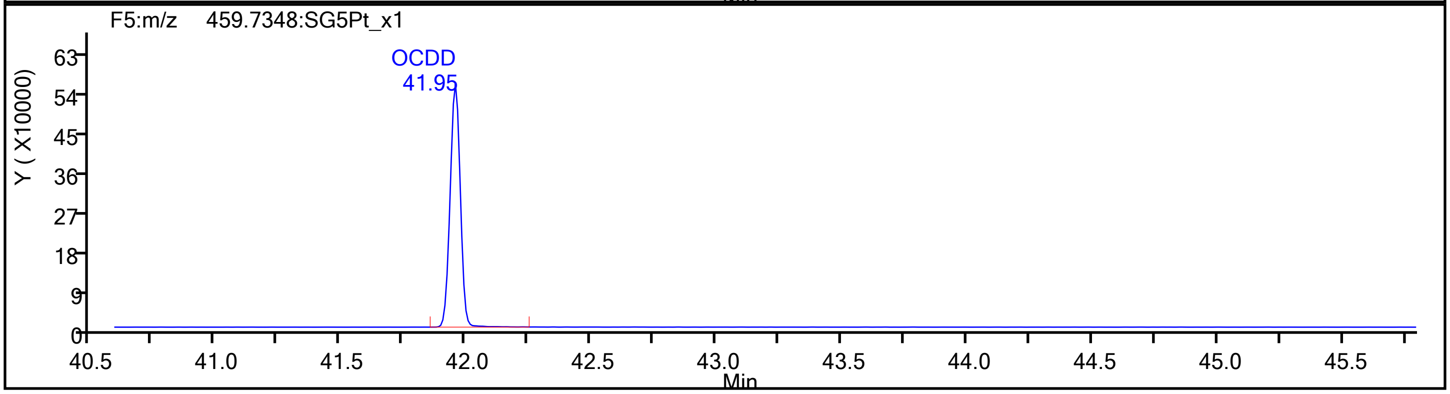

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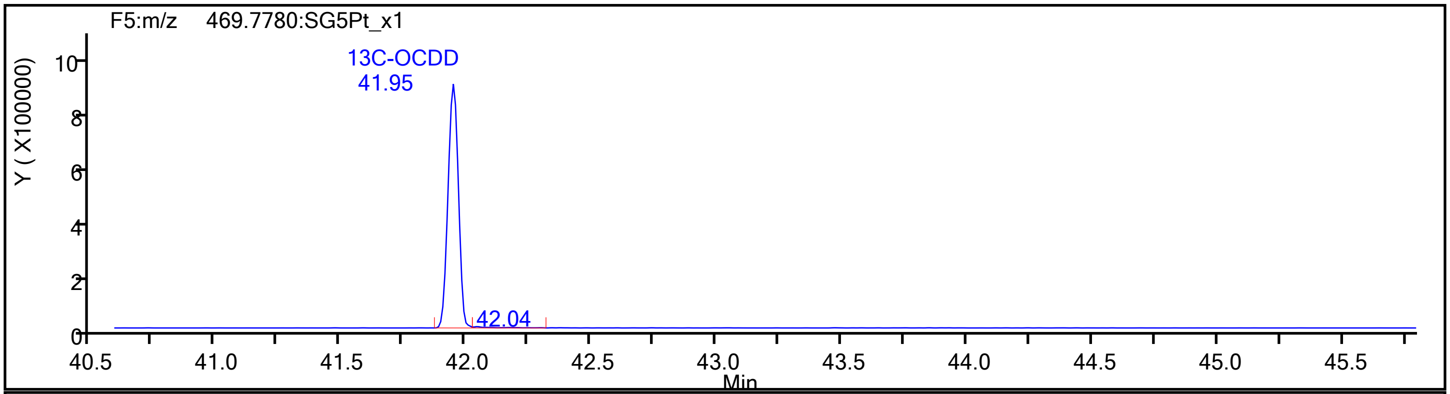

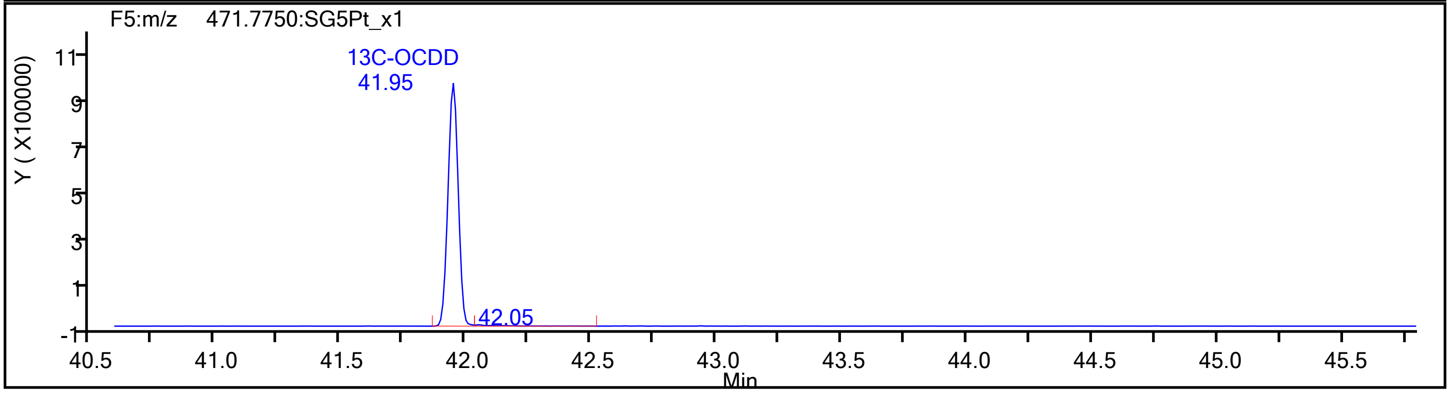

Report Date: 27-Jan-2021 10:13:02 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d

Injection Date: 23-Jan-2021 00:41:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 454782 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

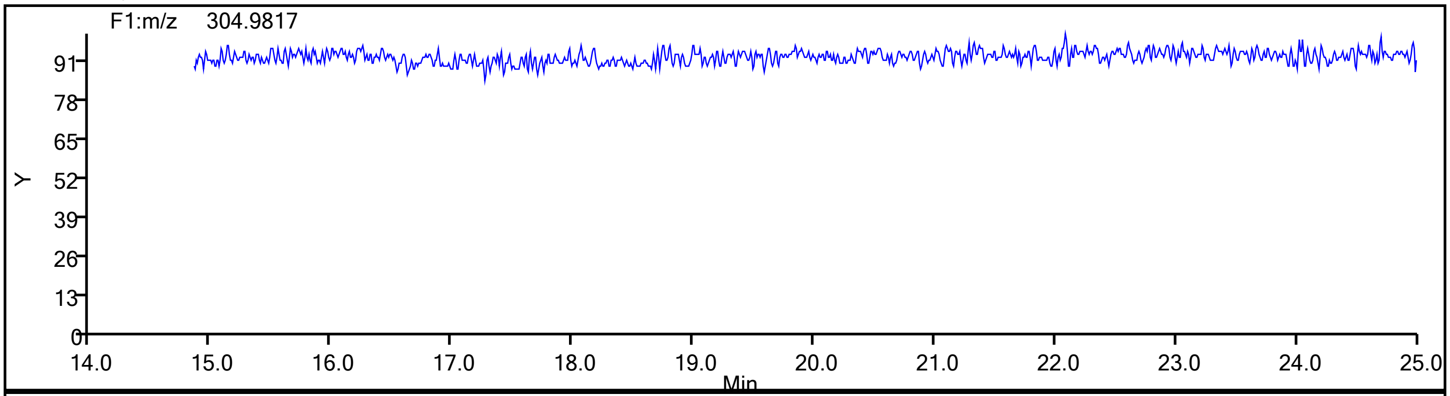

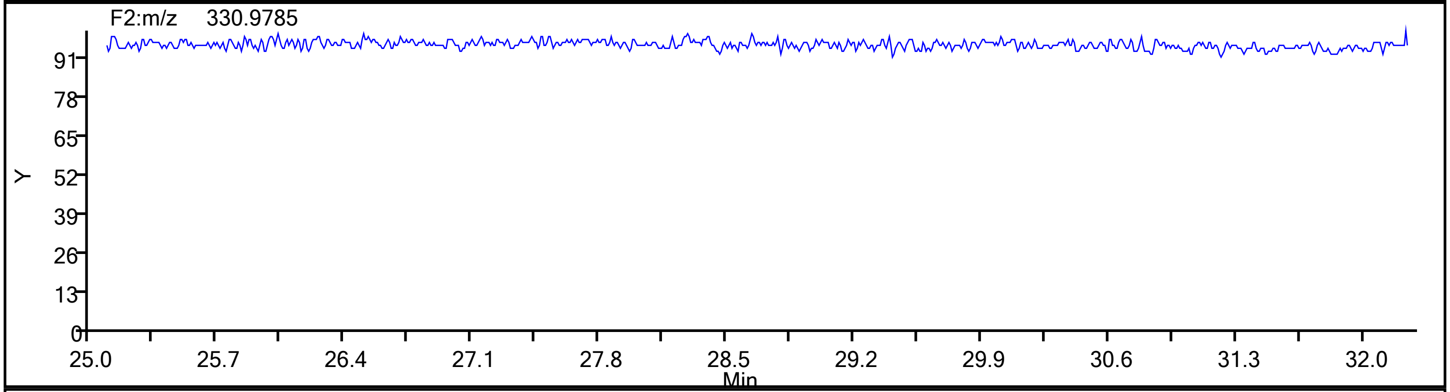

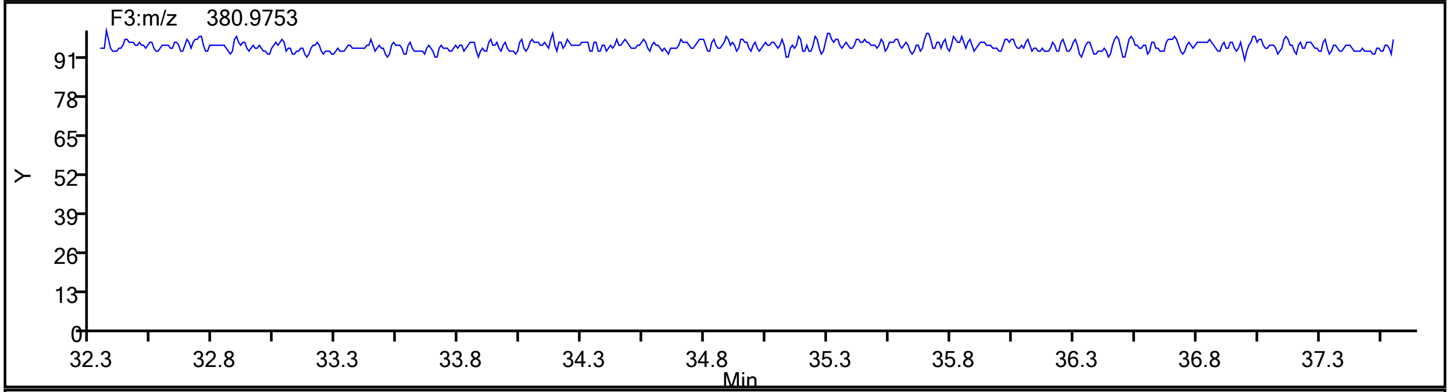

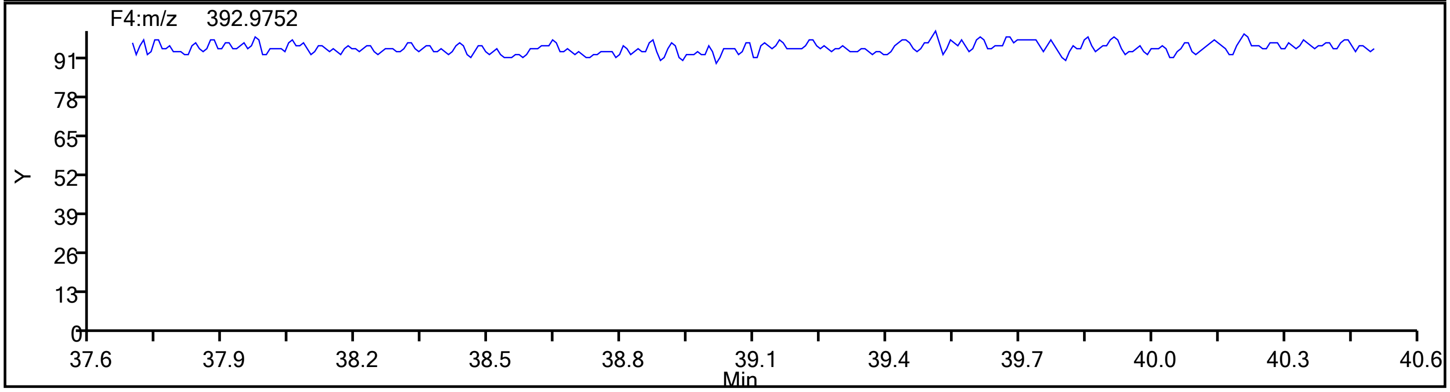

Report Date: 27-Jan-2021 10:13:02　　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210123-111892.b\22ja21dfs1_6.d		
Injection Date:	23-Jan-2021 00:41:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	454782	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

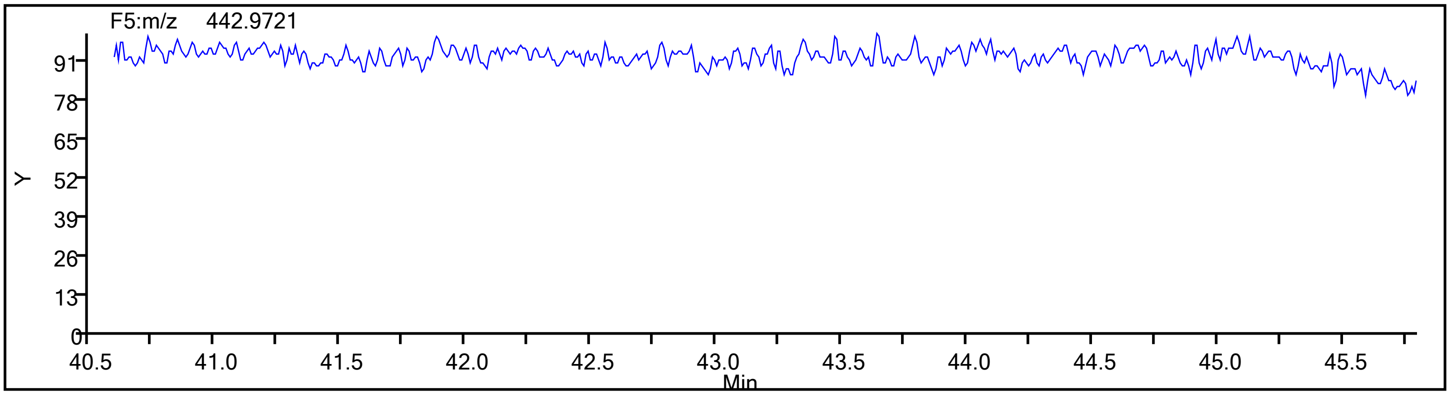

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Instrument ID: 11D2 Start Date: 07/24/2020 22:33

Analysis Batch Number: 398641 End Date: 07/25/2020 03:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-398641/1		07/24/2020 22:33	1	24JL2011D2_001.d	DB-225 0.32(mm)
IC 320-398641/3		07/24/2020 23:50	1	24JL2011D2_003.d	DB-225 0.32(mm)
IC 320-398641/4		07/25/2020 00:28	1	24JL2011D2_004.d	DB-225 0.32(mm)
IC 320-398641/5		07/25/2020 01:07	1	24JL2011D2_005.d	DB-225 0.32(mm)
IC 320-398641/6		07/25/2020 01:45	1	24JL2011D2_006.d	DB-225 0.32(mm)
IC 320-398641/7		07/25/2020 02:23	1	24JL2011D2_007.d	DB-225 0.32(mm)
ICV 320-398641/9		07/25/2020 03:40	1	24JL2011D2_009.d	DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/10/2020 16:57

Analysis Batch Number: 440976 End Date: 12/10/2020 23:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-440976/1		12/10/2020 16:57	1	10DE20B10D5_1.d	DB-5 0.32(mm)
IC 320-440976/3		12/10/2020 18:27	1	10DE20B10D5_3.d	DB-5 0.32(mm)
IC 320-440976/4		12/10/2020 19:12	1	10DE20B10D5_4.d	DB-5 0.32(mm)
IC 320-440976/5		12/10/2020 19:57	1	10DE20B10D5_5.d	DB-5 0.32(mm)
IC 320-440976/6		12/10/2020 20:42	1	10DE20B10D5_6.d	DB-5 0.32(mm)
IC 320-440976/7		12/10/2020 21:27	1	10DE20B10D5_7.d	DB-5 0.32(mm)
ICV 320-440976/9		12/10/2020 23:07	1	10DE20B10D5_9.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Instrument ID: DFS 1 Start Date: 12/31/2020 12:42

Analysis Batch Number: 447767 End Date: 12/31/2020 19:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-447767/1		12/31/2020 12:42	1	31de20bdfs1_2.d	DB-5 0.32(mm)
IC 320-447767/3		12/31/2020 14:17	1	31de20bdfs1_4.d	DB-5 0.32(mm)
IC 320-447767/4		12/31/2020 15:05	1	31de20bdfs1_5.d	DB-5 0.32(mm)
IC 320-447767/5		12/31/2020 15:53	1	31de20bdfs1_6.d	DB-5 0.32(mm)
IC 320-447767/6		12/31/2020 16:41	1	31de20bdfs1_7.d	DB-5 0.32(mm)
IC 320-447767/7		12/31/2020 17:29	1	31de20bdfs1_8.d	DB-5 0.32(mm)
ICV 320-447767/9		12/31/2020 19:05	1	31de20bdfs1_10.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Instrument ID: DFS 1 Start Date: 01/22/2021 21:17

Analysis Batch Number: 454782 End Date: 01/23/2021 07:52

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-454782/1		01/22/2021 21:17	1	22ja21dfs1_2.d	DB-5 0.32(mm)
WDM 320-454782/2		01/22/2021 22:12	1	22ja21dfs1_3.d	DB-5 0.32(mm)
MB 320-452668/1-A		01/22/2021 23:53	1	22ja21dfs1_5.d	DB-5 0.32(mm)
LCS 320-452668/2-A		01/23/2021 00:41	1	22ja21dfs1_6.d	DB-5 0.32(mm)
ZZZZZ		01/23/2021 04:40	1		DB-5 0.32(mm)
ZZZZZ		01/23/2021 05:28	1		DB-5 0.32(mm)
ZZZZZ		01/23/2021 06:16	1		DB-5 0.32(mm)
320-68943-1	11215702-Tank#1-1-8-21	01/23/2021 07:04	1	22ja21dfs1_14.d	DB-5 0.32(mm)
320-68943-2	11215702-Tank#2-1-8-21	01/23/2021 07:52	1	22ja21dfs1_15.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-68943-1

SDG No.:

Instrument ID: 11D2

Start Date: 01/25/2021 23:56

Analysis Batch Number: 456198

End Date: 01/26/2021 02:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-456198/1		01/25/2021 23:56	1	25JA2111D2_001.d	DB-225 0.32(mm)
CCV 320-456198/2		01/26/2021 00:34	1	25JA2111D2_002.d	DB-225 0.32(mm)
320-68943-2 RADL	11215702-Tank#2-1-8-21 RADL	01/26/2021 01:51	10	25JA2111D2_004.d	DB-225 0.32(mm)
320-68943-1 RADL	11215702-Tank#1-1-8-21 RADL	01/26/2021 02:29	20	25JA2111D2_005.d	DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-68943-1

SDG No.:

Instrument ID: 10D5 Start Date: 01/27/2021 14:47

Analysis Batch Number: 456215 End Date: 01/27/2021 22:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-456215/1		01/27/2021 14:47	1	27JA2110D5_1.d	DB-5 0.32(mm)
CCV 320-456215/2		01/27/2021 15:32	1	27JA2110D5_2.d	DB-5 0.32(mm)
ZZZZZ		01/27/2021 17:02	1		DB-5 0.32(mm)
ZZZZZ		01/27/2021 17:47	1		DB-5 0.32(mm)
320-68943-2 DL	11215702-Tank#2-1-8-21 DL	01/27/2021 21:32	10	27JA2110D5_10.d	DB-5 0.32(mm)
320-68943-1 DL	11215702-Tank#1-1-8-21 DL	01/27/2021 22:17	20	27JA2110D5_11.d	DB-5 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-68943-1

SDG No.:

Batch Number: 452668 Batch Start Date: 01/18/21 11:00 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 01/19/21 13:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RotoVapID
MB 320-452668/1		1613B, 1613B				1000 mL	20.0 uL	SS1-1	4
LCS 320-452668/2		1613B, 1613B				1000 mL	20.0 uL	SS1-2	6
320-68943-A-1	11215702-Tank#1-1-8-21	1613B, 1613B	T	1572.9 g	521.66 g	1051.2 mL	20.0 uL	SS2-3	4
320-68943-A-2	11215702-Tank#2-1-8-21	1613B, 1613B	T	1573.2 g	518.31 g	1054.9 mL	20.0 uL	SS2-4	6

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIDA 00455	HRDXNIS 00129	HRDXNSU 00246	HRDXNTA 00128		
MB 320-452668/1		1613B, 1613B		1 mL	20 uL	1 mL			
LCS 320-452668/2		1613B, 1613B		1 mL	20 uL	1 mL	50 uL		
320-68943-A-1	11215702-Tank#1-1-8-21	1613B, 1613B	T	1 mL	20 uL	1 mL			
320-68943-A-2	11215702-Tank#2-1-8-21	1613B, 1613B	T	1 mL	20 uL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-68943-1

SDG No.:

Batch Number: 452668 Batch Start Date: 01/18/21 11:00 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 01/19/21 13:30

Batch Notes	
20% DCM:Hexane ID	DH28_00181 mL
65% DCM:Hexane ID	DH6535_00509 mL
Acid Silica Gel ID	SA5644_00679
Acid Alumina ID	Acid_Alumina_00012
Balance ID	QA - 070
Batch Comment	Eurofins labels match Client labels: NR 01/18/21.
C14 ID	Tetradecane_00011
Hexane ID	Hexane_00245 mL
IFB Clean Up	TGL 01/19/21
MeCL2 ID	DCM_00362 mL
Na2SO4 ID	Na2SO4_00126
Analyst ID - IDA Reagent Drop	NR 01/18/21 HD05018 HRDXNIDA_00455 B-4/4 1.00 mL
Analyst ID - IDA Reagent Drop Witness	FC 01/18/21
Analyst ID - IS Reagent Drop	TGL 01/19/21 DB15270 HRDXNIS_00129 B 4/4 20.0 uL
Analyst ID - IS Reagent Drop Witness	SKV 01/19/21
Analyst ID - SU Reagent Drop	TGL 01/19/21 HD05018 HRDXNSU_00246 B 1/4 1.0 mL
Analyst ID - SU Reagent Drop Witness	GLB 01/19/21
Analyst ID - TA Reagent Drop	NR 01/18/21 DB15270 HRDXNTA_00128 B-3/10 50.0 uL
Analyst ID - TA Reagent Drop Witness	FC 01/18/21
Silica Gel ID	SilicaGel_00335
Soxhlet/Soxtherm End	NR 01/18/21 16:00
Soxhlet/Soxtherm Start	NR 01/18/21 13:00
Storage Box ID	DXN-211
Toluene ID	Toluene_00087 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

GHD

CHAIN OF CUSTODY RECORD

Address: 2055 Niagara Falls Blvd
Phone: 716-297-6150
Fax:

COC NO.: 59871
PAGE ___ OF ___

Project No/ Phase/Task Code: 11215702	**Laboratory Name:** Eurofins / Test America	**Lab Location:** Sacramento	**SSOW ID:**
Project Name: San Jacinto	**Lab Contact:** Carrie Gamber / Beth Hitt		**Cooler No:**
Project Location: Texas			**Carrier:**
GHD Chemistry Contact: Debbie Brennan			**Airbill No:**
Sampler(s): Don Pope			**Total # of Containers:** 2

ANALYSIS REQUESTED (See Back of COC for Definitions)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	SAMPLE TYPE: Matrix Code (see back of COC)	SAMPLE TYPE: Grab (G) or Comp (C)	SAMPLE TYPE: Filtered (Y/N)	Dioxins/Furans												Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)																				
	11215702-Tank#1-1-8-21	1/8/21	14:00	WG			X														Attn to: Carrie Gamber
	11215702-Tank#2-1-8-21	1/8/21	14:30	WG			X														412-963-2428
																					Standard TAT
6																					
7																					
8																					
9																					
10																					
11																					
12																					

320-68943 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☐2Week Other:

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME		RECEIVED BY	COMPANY	DATE	TIME
1.	Don Pope	GHD	1/14/21	10:30	1.		ETASAC	1/15/21	930
2.					2.				
3.					3.				

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

1.8c

CRA Form: COC-10B (20110804)

eurofins | Environment Testing
TestAmerica

Sacramento
Sample Receiving Notes

320-68943 Field Sheet

Job: ____________________

Tracking # : 9379 3045 2468

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other ____________

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: 102 Corr. Factor: (+ / -) / °C

Ice ✓ Wet ✓ Gel ______ Other ______

Cooler Custody Seal: —

Cooler ID: —

Temp Observed: 1.8 °C Corrected: 1.8 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials: ST Date: 1/15/21

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: SO Date: 1/15/21

Notes: ____________________

Trizma Lot #(s): ____________________

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☑	☐	☐

Initials: SO Date: 1/15/21

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
GHD
2055 NIAGARA FALLS BLVD

NIAGARA FALLS, NY 14304
UNITED STATES US

SHIP DATE: 14JAN21
ACTWGT: 20.00 LB MAN
CAD: 68417/CAFE3407

BILL SENDER

56DC1/1/ -/05A2

TO **SAMPLE RECEIVING**
EUROFINS/TEST AMERICA
880 RIVERSIDE PARKWAY

W. SACRAMENTO CA 95605
(916) 373-5600
REF: 11215782-NI8411 GEB (POPE)

FedEx
Express
E

J201019110601uv

FRI - 15 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **9379 3045 2968**

XH BLUA

95605
CA-US **SMF**

Part # 154254-354 RIT EXP 10/20

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-68943-1

Login Number: 68943
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Environment Testing
America

ANALYTICAL REPORT

Job Number: 320-70797-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
3/18/2021 4:53 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
03/18/2021

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

NELAP ACCREDITED TNI LABORATORY

Table of Contents

Table of Contents

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 320-70797-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 03/04/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 8.3 C.

The following samples were received at the laboratory outside the required temperature criteria at 8.3c: 11215702-Tank1-100mm (320-70797-1), 11215702-Tank1-41mm (320-70797-2), 11215702-Tank1-10mm (320-70797-3), 11215702-Tank1-1mm (320-70797-4), 11215702-Tank1-0.45mm (320-70797-5), 11215702-Tank1-0.1mm (320-70797-6), 11215702-Tank2-100mm (320-70797-7), 11215702-Tank2-41mm (320-70797-8), 11215702-Tank2-10mm (320-70797-9), 11215702-Tank2-1mm (320-70797-10), 11215702-Tank2-0.45mm (320-70797-11) and 11215702-Tank2-0.1mm (320-70797-12). The client was contacted and the analyses proceeded.

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS

The following samples were diluted to bring the concentration of target analytes within the calibration range: 11215702-Tank1-100mm (320-70797-1), 11215702-Tank1-41mm (320-70797-2), 11215702-Tank2-100mm (320-70797-7) and 11215702-Tank2-41mm (320-70797-8). Elevated reporting limits (RLs) are provided.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Tank1-100mm (320-70797-1), 11215702-Tank1-41mm (320-70797-2), (CCV 320-468973/1), (LCS 320-467785/2-A), (LCSD 320-467785/3-A), (MB 320-467785/1-A) and (WDM 320-468973/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Several analytes were detected in method blank MB 320-467785/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Detection Summary

Client: GHD Services Inc.
Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank1-100mm
Lab Sample ID: 320-70797-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	98		49	1.5	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1300		49	9.6	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	720		49	10	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	7.2	J	49	1.0	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	31	J	49	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	14	J	49	0.96	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	2200	B	49	6.8	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	580	B	49	6.4	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	34	J B	49	5.4	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	61	B	49	5.5	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	1600	B	49	3.5	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	630	B	49	1.7	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	240	B	49	1.8	pg/L	1		1613B	Total/NA
OCDD	13000	B	98	6.8	pg/L	1		1613B	Total/NA
OCDF	310	B	98	0.75	pg/L	1		1613B	Total/NA
Total PeCDD	150	q	49	1.5	pg/L	1		1613B	Total/NA
Total PeCDF	3100		49	10	pg/L	1		1613B	Total/NA
Total HxCDD	300	q	49	1.0	pg/L	1		1613B	Total/NA
Total HxCDF	3300	B	49	6.0	pg/L	1		1613B	Total/NA
Total HpCDD	2800	B	49	3.5	pg/L	1		1613B	Total/NA
Total HpCDF	1100	B	49	1.7	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	12000		200	110	pg/L	20		1613B	Total/NA
Total TCDD - DL	13000	B	200	110	pg/L	20		1613B	Total/NA
Total TCDF - DL	68000	q B	200	170	pg/L	20		1613B	Total/NA
2,3,7,8-TCDF - RADL	35000	B	200	39	pg/L	20		1613B	Total/NA

Client Sample ID: 11215702-Tank1-41mm
Lab Sample ID: 320-70797-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	70		48	1.1	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	860		48	6.8	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	490		48	7.5	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.8	J	48	0.83	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	13	J	48	0.81	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	7.1	J	48	0.75	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	1900	B	48	4.9	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	490	B	48	4.6	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	26	J B	48	3.8	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	47	J B	48	4.1	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	560	B	48	2.0	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	620	B	48	1.6	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	230	B	48	1.6	pg/L	1		1613B	Total/NA
OCDD	9000	B	96	5.2	pg/L	1		1613B	Total/NA
OCDF	320	B	96	0.75	pg/L	1		1613B	Total/NA
Total PeCDD	82	q	48	1.1	pg/L	1		1613B	Total/NA
Total PeCDF	2100		48	7.2	pg/L	1		1613B	Total/NA
Total HxCDD	110		48	0.80	pg/L	1		1613B	Total/NA
Total HxCDF	2800	B	48	4.4	pg/L	1		1613B	Total/NA
Total HpCDD	1100	B	48	2.0	pg/L	1		1613B	Total/NA
Total HpCDF	1100	B	48	1.6	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	8000		96	52	pg/L	10		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank1-41mm (Continued) Lab Sample ID: 320-70797-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total TCDD - DL	8600	B	96	52	pg/L	10		1613B	Total/NA
Total TCDF - DL	41000	G B	110	110	pg/L	10		1613B	Total/NA
2,3,7,8-TCDF - RADL	23000	B	96	25	pg/L	10		1613B	Total/NA

Client Sample ID: 11215702-Tank1-10mm Lab Sample ID: 320-70797-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	37		9.7	0.52	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	4.8	J	48	0.36	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	3.0	J	48	0.41	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.0	J	48	0.22	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.87	J	48	0.22	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.2	J	48	0.20	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	10	J B	48	0.23	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	2.3	J B q	48	0.21	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	17	J B	48	0.33	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	5.4	J B	48	0.24	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	1.9	J B q	48	0.27	pg/L	1		1613B	Total/NA
OCDD	110	B	97	0.43	pg/L	1		1613B	Total/NA
OCDF	4.1	J B	97	0.42	pg/L	1		1613B	Total/NA
Total TCDD	42	B q	9.7	0.52	pg/L	1		1613B	Total/NA
Total TCDF	160	B	9.7	0.86	pg/L	1		1613B	Total/NA
Total PeCDF	7.8	J	48	0.39	pg/L	1		1613B	Total/NA
Total HxCDD	5.3	J	48	0.22	pg/L	1		1613B	Total/NA
Total HxCDF	13	J B q	48	0.20	pg/L	1		1613B	Total/NA
Total HpCDD	28	J B	48	0.33	pg/L	1		1613B	Total/NA
Total HpCDF	9.2	J B q	48	0.26	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	97	B	9.7	0.54	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank1-1mm Lab Sample ID: 320-70797-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	12		9.6	0.51	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1.6	J	48	0.26	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.0	J	48	0.21	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.67	J	48	0.22	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.67	J q	48	0.20	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	2.6	J B	48	0.18	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.98	J B	48	0.17	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	4.1	J B	48	0.23	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.9	J B q	48	0.20	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.87	J B	48	0.22	pg/L	1		1613B	Total/NA
OCDD	22	J B	96	0.34	pg/L	1		1613B	Total/NA
OCDF	3.0	J B q	96	0.40	pg/L	1		1613B	Total/NA
Total TCDD	17	B q	9.6	0.51	pg/L	1		1613B	Total/NA
Total TCDF	59	B q	9.6	0.46	pg/L	1		1613B	Total/NA
Total PeCDF	1.6	J	48	0.28	pg/L	1		1613B	Total/NA
Total HxCDD	3.3	J q	48	0.21	pg/L	1		1613B	Total/NA
Total HxCDF	3.6	J B	48	0.16	pg/L	1		1613B	Total/NA
Total HpCDD	7.2	J B	48	0.23	pg/L	1		1613B	Total/NA
Total HpCDF	3.7	J B q	48	0.21	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	34	B	9.6	0.53	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc. Job ID: 320-70797-1

Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank1-0.45mm Lab Sample ID: 320-70797-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	6.1	J q	9.6	0.42	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1.1	J	48	0.29	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.9	J	48	0.23	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	1.4	J B	48	0.17	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.43	J B q	48	0.16	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.49	J B	48	0.13	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.49	J B	48	0.14	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	3.8	J B	48	0.19	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.5	J B q	48	0.22	pg/L	1		1613B	Total/NA
OCDD	16	J B	96	0.35	pg/L	1		1613B	Total/NA
OCDF	3.9	J B q	96	0.39	pg/L	1		1613B	Total/NA
Total TCDD	11	B q	9.6	0.42	pg/L	1		1613B	Total/NA
Total TCDF	29	B	9.6	0.34	pg/L	1		1613B	Total/NA
Total PeCDF	1.1	J	48	0.31	pg/L	1		1613B	Total/NA
Total HxCDD	1.9	J	48	0.23	pg/L	1		1613B	Total/NA
Total HxCDF	2.8	J B q	48	0.15	pg/L	1		1613B	Total/NA
Total HpCDD	6.3	J B	48	0.19	pg/L	1		1613B	Total/NA
Total HpCDF	2.6	J B q	48	0.22	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	19	B	9.6	0.37	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank1-0.1mm Lab Sample ID: 320-70797-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	11		9.7	0.47	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1.5	J	48	0.25	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.92	J q	48	0.28	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.8	J	48	0.23	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.40	J q	48	0.23	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	2.6	J B	48	0.24	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	1.0	J B q	48	0.22	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.66	J B	48	0.19	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	3.7	J B	48	0.20	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	2.3	J B	48	0.22	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.97	J B	48	0.22	pg/L	1		1613B	Total/NA
OCDD	20	J B	97	0.38	pg/L	1		1613B	Total/NA
OCDF	3.0	J B	97	0.42	pg/L	1		1613B	Total/NA
Total TCDD	13	B	9.7	0.47	pg/L	1		1613B	Total/NA
Total TCDF	49	B	9.7	0.52	pg/L	1		1613B	Total/NA
Total PeCDD	1.6	J q	48	0.40	pg/L	1		1613B	Total/NA
Total PeCDF	2.4	J q	48	0.27	pg/L	1		1613B	Total/NA
Total HxCDD	2.2	J q	48	0.22	pg/L	1		1613B	Total/NA
Total HxCDF	4.2	J B q	48	0.21	pg/L	1		1613B	Total/NA
Total HpCDD	5.8	J B q	48	0.20	pg/L	1		1613B	Total/NA
Total HpCDF	4.4	J B	48	0.22	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	31	B	9.7	0.48	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank2-100mm Lab Sample ID: 320-70797-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	2700		9.6	4.7	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	28	J	48	0.75	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	350		48	2.5	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Tank2-100mm (Continued) Lab Sample ID: 320-70797-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,7,8-PeCDF	200		48	2.8	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.1	J	48	0.55	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	9.9	J	48	0.55	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	4.5	J	48	0.50	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	670	B	48	2.3	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	170	B	48	2.2	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	11	J B	48	1.7	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	19	J B	48	1.9	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	590	B	48	2.4	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	230	B	48	0.86	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	77	B	48	0.82	pg/L	1		1613B	Total/NA
OCDD	4200	B	96	2.2	pg/L	1		1613B	Total/NA
OCDF	130	B	96	0.60	pg/L	1		1613B	Total/NA
Total TCDD	3000	B	9.6	4.7	pg/L	1		1613B	Total/NA
Total PeCDD	36	J q	48	0.75	pg/L	1		1613B	Total/NA
Total PeCDF	870		48	2.7	pg/L	1		1613B	Total/NA
Total HxCDD	92		48	0.53	pg/L	1		1613B	Total/NA
Total HxCDF	960	B	48	2.0	pg/L	1		1613B	Total/NA
Total HpCDD	980	B	48	2.4	pg/L	1		1613B	Total/NA
Total HpCDF	380	B	48	0.84	pg/L	1		1613B	Total/NA
Total TCDF - DL	16000	B	96	51	pg/L	10		1613B	Total/NA
2,3,7,8-TCDF - RADL	9500	B	96	22	pg/L	10		1613B	Total/NA

Client Sample ID: 11215702-Tank2-41mm Lab Sample ID: 320-70797-8

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	200		49	1.9	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	2300		49	16	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	1400		49	17	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	7.3	J	49	0.90	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	38	J	49	0.96	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	15	J	49	0.85	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	4000	B	49	8.4	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	1000	B	49	7.7	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	71	B	49	6.3	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	110	B	49	6.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	2100	B	49	6.7	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1300	B	49	3.0	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	430	B	49	2.8	pg/L	1		1613B	Total/NA
OCDD	21000	B	98	9.3	pg/L	1		1613B	Total/NA
OCDF	680	B	98	0.83	pg/L	1		1613B	Total/NA
Total PeCDD	260	q	49	1.9	pg/L	1		1613B	Total/NA
Total PeCDF	5800		49	16	pg/L	1		1613B	Total/NA
Total HxCDD	320		49	0.90	pg/L	1		1613B	Total/NA
Total HxCDF	6000	B	49	7.3	pg/L	1		1613B	Total/NA
Total HpCDD	3700	B	49	6.7	pg/L	1		1613B	Total/NA
Total HpCDF	2200	B	49	2.9	pg/L	1		1613B	Total/NA
2,3,7,8-TCDD - DL	26000		200	170	pg/L	20		1613B	Total/NA
Total TCDD - DL	28000	B	200	170	pg/L	20		1613B	Total/NA
Total TCDF - DL	130000	q G B	310	310	pg/L	20		1613B	Total/NA
2,3,7,8-TCDF - RADL	60000	B	200	80	pg/L	20		1613B	Total/NA

Detection Summary

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 320-70797-1

Client Sample ID: 11215702-Tank2-10mm

Lab Sample ID: 320-70797-9

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	52		9.7	0.60	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	6.1	J	49	0.35	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	3.8	J	49	0.40	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.0	J	49	0.23	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.69	J q	49	0.23	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.55	J q	49	0.21	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	12	J B	49	0.27	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	3.1	J B q	49	0.26	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.59	J B	49	0.23	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	23	J B	49	0.35	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	5.6	J B	49	0.30	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	2.2	J B	49	0.30	pg/L	1		1613B	Total/NA
OCDD	130	B	97	0.50	pg/L	1		1613B	Total/NA
OCDF	3.8	J B	97	0.36	pg/L	1		1613B	Total/NA
Total TCDD	59	B q	9.7	0.60	pg/L	1		1613B	Total/NA
Total TCDF	260	B q	9.7	1.4	pg/L	1		1613B	Total/NA
Total PeCDF	14	J	49	0.37	pg/L	1		1613B	Total/NA
Total HxCDD	8.0	J q	49	0.22	pg/L	1		1613B	Total/NA
Total HxCDF	17	J B q	49	0.25	pg/L	1		1613B	Total/NA
Total HpCDD	35	J B	49	0.35	pg/L	1		1613B	Total/NA
Total HpCDF	10	J B q	49	0.30	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	140	B	9.7	0.71	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank2-1mm

Lab Sample ID: 320-70797-10

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	110		9.8	0.77	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	1.3	J	49	0.47	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	14	J	49	0.45	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	8.5	J	49	0.50	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.5	J q	49	0.26	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.1	J q	49	0.27	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	26	J B	49	0.39	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	6.5	J B	49	0.36	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.71	J B q	49	0.31	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.83	J B	49	0.32	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	29	J B	49	0.44	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	10	J B	49	0.33	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	3.2	J B	49	0.34	pg/L	1		1613B	Total/NA
OCDD	170	B	98	0.49	pg/L	1		1613B	Total/NA
OCDF	6.7	J B	98	0.43	pg/L	1		1613B	Total/NA
Total TCDD	120	B	9.8	0.77	pg/L	1		1613B	Total/NA
Total TCDF	600	B q	9.8	2.4	pg/L	1		1613B	Total/NA
Total PeCDD	1.3	J	49	0.47	pg/L	1		1613B	Total/NA
Total PeCDF	33	J q	49	0.47	pg/L	1		1613B	Total/NA
Total HxCDD	8.0	J q	49	0.26	pg/L	1		1613B	Total/NA
Total HxCDF	36	J B q	49	0.34	pg/L	1		1613B	Total/NA
Total HpCDD	46	J B	49	0.44	pg/L	1		1613B	Total/NA
Total HpCDF	17	J B	49	0.33	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	350	B	9.8	0.84	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client Sample ID: 11215702-Tank2-0.45mm

Lab Sample ID: 320-70797-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	4.5	J q	9.8	0.56	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1.4	J	49	0.30	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.0	J	49	0.28	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.2	J	49	0.27	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.1	J q	49	0.25	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	2.0	J B	49	0.30	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.90	J B q	49	0.27	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	1.4	J B q	49	0.24	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.93	J B	49	0.24	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	3.7	J B	49	0.30	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.6	J B q	49	0.37	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	1.0	J B q	49	0.38	pg/L	1		1613B	Total/NA
OCDD	15	J B	98	0.48	pg/L	1		1613B	Total/NA
OCDF	2.0	J B q	98	0.54	pg/L	1		1613B	Total/NA
Total TCDD	4.5	J B q	9.8	0.56	pg/L	1		1613B	Total/NA
Total TCDF	21	B q	9.8	0.43	pg/L	1		1613B	Total/NA
Total PeCDF	1.4	J	49	0.32	pg/L	1		1613B	Total/NA
Total HxCDD	4.3	J q	49	0.26	pg/L	1		1613B	Total/NA
Total HxCDF	5.2	J B q	49	0.26	pg/L	1		1613B	Total/NA
Total HpCDD	6.8	J B	49	0.30	pg/L	1		1613B	Total/NA
Total HpCDF	2.6	J B q	49	0.38	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	11	B	9.8	0.40	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-Tank2-0.1mm

Lab Sample ID: 320-70797-12

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	15		9.8	0.53	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	1.5	J	49	0.42	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	2.1	J	49	0.42	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.9	J	49	0.28	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.4	J	49	0.28	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.6	J	49	0.26	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	4.2	J B	49	0.28	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	2.2	J B	49	0.27	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	1.9	J B q	49	0.23	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.86	J B q	49	0.23	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	5.7	J B	49	0.24	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	3.7	J B	49	0.32	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	2.0	J B q	49	0.33	pg/L	1		1613B	Total/NA
OCDD	25	J B	98	0.42	pg/L	1		1613B	Total/NA
OCDF	5.5	J B	98	0.46	pg/L	1		1613B	Total/NA
Total TCDD	15	B	9.8	0.53	pg/L	1		1613B	Total/NA
Total TCDF	81	B q	9.8	0.63	pg/L	1		1613B	Total/NA
Total PeCDD	1.5	J	49	0.42	pg/L	1		1613B	Total/NA
Total PeCDF	2.1	J	49	0.40	pg/L	1		1613B	Total/NA
Total HxCDD	4.9	J	49	0.27	pg/L	1		1613B	Total/NA
Total HxCDF	9.1	J B q	49	0.25	pg/L	1		1613B	Total/NA
Total HpCDD	9.1	J B	49	0.24	pg/L	1		1613B	Total/NA
Total HpCDF	6.7	J B q	49	0.33	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	48	B	9.8	0.59	pg/L	1		1613B	Total/NA

Client Sample Results

Client: GHD Services Inc. Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank1-100mm Lab Sample ID: 320-70797-1

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	98		49	1.5	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,7,8-PeCDF	1300		49	9.6	pg/L		03/05/21 09:52	03/10/21 14:25	1
2,3,4,7,8-PeCDF	720		49	10	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,4,7,8-HxCDD	7.2	J	49	1.0	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,6,7,8-HxCDD	31	J	49	1.1	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,7,8,9-HxCDD	14	J	49	0.96	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,4,7,8-HxCDF	2200	B	49	6.8	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,6,7,8-HxCDF	580	B	49	6.4	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,7,8,9-HxCDF	34	J B	49	5.4	pg/L		03/05/21 09:52	03/10/21 14:25	1
2,3,4,6,7,8-HxCDF	61	B	49	5.5	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,4,6,7,8-HpCDD	1600	B	49	3.5	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,4,6,7,8-HpCDF	630	B	49	1.7	pg/L		03/05/21 09:52	03/10/21 14:25	1
1,2,3,4,7,8,9-HpCDF	240	B	49	1.8	pg/L		03/05/21 09:52	03/10/21 14:25	1
OCDD	13000	B	98	6.8	pg/L		03/05/21 09:52	03/10/21 14:25	1
OCDF	310	B	98	0.75	pg/L		03/05/21 09:52	03/10/21 14:25	1
Total PeCDD	150	q	49	1.5	pg/L		03/05/21 09:52	03/10/21 14:25	1
Total PeCDF	3100		49	10	pg/L		03/05/21 09:52	03/10/21 14:25	1
Total HxCDD	300	q	49	1.0	pg/L		03/05/21 09:52	03/10/21 14:25	1
Total HxCDF	3300	B	49	6.0	pg/L		03/05/21 09:52	03/10/21 14:25	1
Total HpCDD	2800	B	49	3.5	pg/L		03/05/21 09:52	03/10/21 14:25	1
Total HpCDF	1100	B	49	1.7	pg/L		03/05/21 09:52	03/10/21 14:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*61*		*25 - 181*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-2,3,4,7,8-PeCDF	*59*		*21 - 178*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,4,7,8-HxCDD	*62*		*32 - 141*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,6,7,8-HxCDD	*67*		*28 - 130*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,4,7,8-HxCDF	*65*		*26 - 152*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*26 - 123*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,7,8,9-HxCDF	*63*		*29 - 147*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-2,3,4,6,7,8-HxCDF	*65*		*28 - 136*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*23 - 140*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*65*		*28 - 143*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*64*		*26 - 138*	*03/05/21 09:52*	*03/10/21 14:25*	*1*
13C-OCDD	*64*		*17 - 157*	*03/05/21 09:52*	*03/10/21 14:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*03/05/21 09:52*	*03/10/21 14:25*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	12000		200	110	pg/L		03/05/21 09:52	03/17/21 18:44	20
Total TCDD	13000	B	200	110	pg/L		03/05/21 09:52	03/17/21 18:44	20
Total TCDF	68000	q B	200	170	pg/L		03/05/21 09:52	03/17/21 18:44	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*03/05/21 09:52*	*03/17/21 18:44*	*20*
13C-2,3,7,8-TCDF	*72*		*24 - 169*	*03/05/21 09:52*	*03/17/21 18:44*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*121*		*35 - 197*	*03/05/21 09:52*	*03/17/21 18:44*	*20*

Client Sample ID: 11215702-Tank1-100mm Lab Sample ID: 320-70797-1

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**35000**	**B**	200	39	pg/L		03/05/21 09:52	03/16/21 22:48	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*83*		*24 - 169*	*03/05/21 09:52*	*03/16/21 22:48*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*122*		*35 - 197*	*03/05/21 09:52*	*03/16/21 22:48*	*20*

Client Sample ID: 11215702-Tank1-41mm Lab Sample ID: 320-70797-2

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**70**		48	1.1	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,7,8-PeCDF	**860**		48	6.8	pg/L		03/05/21 09:52	03/10/21 15:13	1
2,3,4,7,8-PeCDF	**490**		48	7.5	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,4,7,8-HxCDD	**3.8**	**J**	48	0.83	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,6,7,8-HxCDD	**13**	**J**	48	0.81	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,7,8,9-HxCDD	**7.1**	**J**	48	0.75	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,4,7,8-HxCDF	**1900**	**B**	48	4.9	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,6,7,8-HxCDF	**490**	**B**	48	4.6	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,7,8,9-HxCDF	**26**	**J B**	48	3.8	pg/L		03/05/21 09:52	03/10/21 15:13	1
2,3,4,6,7,8-HxCDF	**47**	**J B**	48	4.1	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,4,6,7,8-HpCDD	**560**	**B**	48	2.0	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,4,6,7,8-HpCDF	**620**	**B**	48	1.6	pg/L		03/05/21 09:52	03/10/21 15:13	1
1,2,3,4,7,8,9-HpCDF	**230**	**B**	48	1.6	pg/L		03/05/21 09:52	03/10/21 15:13	1
OCDD	**9000**	**B**	96	5.2	pg/L		03/05/21 09:52	03/10/21 15:13	1
OCDF	**320**	**B**	96	0.75	pg/L		03/05/21 09:52	03/10/21 15:13	1
Total PeCDD	**82**	**q**	48	1.1	pg/L		03/05/21 09:52	03/10/21 15:13	1
Total PeCDF	**2100**		48	7.2	pg/L		03/05/21 09:52	03/10/21 15:13	1
Total HxCDD	**110**		48	0.80	pg/L		03/05/21 09:52	03/10/21 15:13	1
Total HxCDF	**2800**	**B**	48	4.4	pg/L		03/05/21 09:52	03/10/21 15:13	1
Total HpCDD	**1100**	**B**	48	2.0	pg/L		03/05/21 09:52	03/10/21 15:13	1
Total HpCDF	**1100**	**B**	48	1.6	pg/L		03/05/21 09:52	03/10/21 15:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*63*		*25 - 181*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,7,8-PeCDF	*61*		*24 - 185*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-2,3,4,7,8-PeCDF	*61*		*21 - 178*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*63*		*32 - 141*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*66*		*26 - 152*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*68*		*26 - 123*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*29 - 147*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*67*		*28 - 136*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*71*		*23 - 140*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*28 - 143*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*68*		*26 - 138*	*03/05/21 09:52*	*03/10/21 15:13*	*1*
13C-OCDD	*67*		*17 - 157*	*03/05/21 09:52*	*03/10/21 15:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*03/05/21 09:52*	*03/10/21 15:13*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**8000**		96	52	pg/L		03/05/21 09:52	03/17/21 17:13	10
Total TCDD	**8600**	**B**	96	52	pg/L		03/05/21 09:52	03/17/21 17:13	10
Total TCDF	**41000**	**G B**	110	110	pg/L		03/05/21 09:52	03/17/21 17:13	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*68*		*25 - 164*	*03/05/21 09:52*	*03/17/21 17:13*	*10*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*03/05/21 09:52*	*03/17/21 17:13*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*108*		*35 - 197*	*03/05/21 09:52*	*03/17/21 17:13*	*10*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**23000**	**B**	96	25	pg/L		03/05/21 09:52	03/16/21 23:26	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*79*		*24 - 169*	*03/05/21 09:52*	*03/16/21 23:26*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*112*		*35 - 197*	*03/05/21 09:52*	*03/16/21 23:26*	*10*

Client Sample ID: 11215702-Tank1-10mm

Lab Sample ID: 320-70797-3

Date Collected: 03/03/21 15:00
Date Received: 03/04/21 10:10
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**37**		9.7	0.52	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,7,8-PeCDD	ND		48	0.46	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,7,8-PeCDF	**4.8**	**J**	48	0.36	pg/L		03/05/21 09:52	03/12/21 12:57	1
2,3,4,7,8-PeCDF	**3.0**	**J**	48	0.41	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,4,7,8-HxCDD	**2.0**	**J**	48	0.22	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,6,7,8-HxCDD	**0.87**	**J**	48	0.22	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,7,8,9-HxCDD	**1.2**	**J**	48	0.20	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,4,7,8-HxCDF	**10**	**J B**	48	0.23	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,6,7,8-HxCDF	**2.3**	**J B q**	48	0.21	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,7,8,9-HxCDF	ND		48	0.18	pg/L		03/05/21 09:52	03/12/21 12:57	1
2,3,4,6,7,8-HxCDF	ND		48	0.18	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,4,6,7,8-HpCDD	**17**	**J B**	48	0.33	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,4,6,7,8-HpCDF	**5.4**	**J B**	48	0.24	pg/L		03/05/21 09:52	03/12/21 12:57	1
1,2,3,4,7,8,9-HpCDF	**1.9**	**J B q**	48	0.27	pg/L		03/05/21 09:52	03/12/21 12:57	1
OCDD	**110**	**B**	97	0.43	pg/L		03/05/21 09:52	03/12/21 12:57	1
OCDF	**4.1**	**J B**	97	0.42	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total TCDD	**42**	**B q**	9.7	0.52	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total TCDF	**160**	**B**	9.7	0.86	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total PeCDD	ND		48	0.46	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total PeCDF	**7.8**	**J**	48	0.39	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total HxCDD	**5.3**	**J**	48	0.22	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total HxCDF	**13**	**J B q**	48	0.20	pg/L		03/05/21 09:52	03/12/21 12:57	1

Client Sample ID: 11215702-Tank1-10mm

Lab Sample ID: 320-70797-3
Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	**28**	**J B**	48	0.33	pg/L		03/05/21 09:52	03/12/21 12:57	1
Total HpCDF	**9.2**	**J B q**	48	0.26	pg/L		03/05/21 09:52	03/12/21 12:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*25 - 164*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-2,3,7,8-TCDF	*72*		*24 - 169*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*28 - 130*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,4,7,8-HxCDF	*78*		*26 - 152*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*26 - 123*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,7,8,9-HxCDF	*79*		*29 - 147*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-2,3,4,6,7,8-HxCDF	*81*		*28 - 136*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*94*		*23 - 140*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*89*		*28 - 143*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*90*		*26 - 138*	*03/05/21 09:52*	*03/12/21 12:57*	*1*
13C-OCDD	*102*		*17 - 157*	*03/05/21 09:52*	*03/12/21 12:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*03/05/21 09:52*	*03/12/21 12:57*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**97**	**B**	9.7	0.54	pg/L		03/05/21 09:52	03/11/21 18:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*91*		*24 - 169*	*03/05/21 09:52*	*03/11/21 18:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*115*		*35 - 197*	*03/05/21 09:52*	*03/11/21 18:57*	*1*

Client Sample ID: 11215702-Tank1-1mm

Lab Sample ID: 320-70797-4
Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**12**		9.6	0.51	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,7,8-PeCDD	ND		48	0.38	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,7,8-PeCDF	**1.6**	**J**	48	0.26	pg/L		03/05/21 09:52	03/12/21 13:45	1
2,3,4,7,8-PeCDF	ND		48	0.30	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,4,7,8-HxCDD	**2.0**	**J**	48	0.21	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,6,7,8-HxCDD	**0.67**	**J**	48	0.22	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,7,8,9-HxCDD	**0.67**	**J q**	48	0.20	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,4,7,8-HxCDF	**2.6**	**J B**	48	0.18	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,6,7,8-HxCDF	**0.98**	**J B**	48	0.17	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,7,8,9-HxCDF	ND		48	0.14	pg/L		03/05/21 09:52	03/12/21 13:45	1
2,3,4,6,7,8-HxCDF	ND		48	0.15	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,4,6,7,8-HpCDD	**4.1**	**J B**	48	0.23	pg/L		03/05/21 09:52	03/12/21 13:45	1
1,2,3,4,6,7,8-HpCDF	**1.9**	**J B q**	48	0.20	pg/L		03/05/21 09:52	03/12/21 13:45	1

Client Sample ID: 11215702-Tank1-1mm Lab Sample ID: 320-70797-4

Date Collected: 03/03/21 15:00 **Matrix: Water**

Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8,9-HpCDF	**0.87**	**J B**	48	0.22	pg/L		03/05/21 09:52	03/12/21 13:45	1
OCDD	**22**	**J B**	96	0.34	pg/L		03/05/21 09:52	03/12/21 13:45	1
OCDF	**3.0**	**J B q**	96	0.40	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total TCDD	**17**	**B q**	9.6	0.51	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total TCDF	**59**	**B q**	9.6	0.46	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total PeCDD	ND		48	0.38	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total PeCDF	**1.6**	**J**	48	0.28	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total HxCDD	**3.3**	**J q**	48	0.21	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total HxCDF	**3.6**	**J B**	48	0.16	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total HpCDD	**7.2**	**J B**	48	0.23	pg/L		03/05/21 09:52	03/12/21 13:45	1
Total HpCDF	**3.7**	**J B q**	48	0.21	pg/L		03/05/21 09:52	03/12/21 13:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*72*		*25 - 164*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,4,7,8-HxCDD	*73*		*32 - 141*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,6,7,8-HxCDD	*77*		*28 - 130*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,4,7,8-HxCDF	*72*		*26 - 152*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,6,7,8-HxCDF	*73*		*26 - 123*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-2,3,4,6,7,8-HxCDF	*75*		*28 - 136*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*23 - 140*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*81*		*28 - 143*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*26 - 138*	*03/05/21 09:52*	*03/12/21 13:45*	*1*
13C-OCDD	*93*		*17 - 157*	*03/05/21 09:52*	*03/12/21 13:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*03/05/21 09:52*	*03/12/21 13:45*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**34**	**B**	9.6	0.53	pg/L		03/05/21 09:52	03/11/21 17:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*88*		*24 - 169*	*03/05/21 09:52*	*03/11/21 17:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*113*		*35 - 197*	*03/05/21 09:52*	*03/11/21 17:40*	*1*

Client Sample ID: 11215702-Tank1-0.45mm Lab Sample ID: 320-70797-5

Date Collected: 03/03/21 15:00 **Matrix: Water**

Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**6.1**	**J q**	9.6	0.42	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,7,8-PeCDD	ND		48	0.40	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,7,8-PeCDF	**1.1**	**J**	48	0.29	pg/L		03/05/21 09:52	03/12/21 14:33	1
2,3,4,7,8-PeCDF	ND		48	0.33	pg/L		03/05/21 09:52	03/12/21 14:33	1

Client Sample ID: 11215702-Tank1-0.45mm

Lab Sample ID: 320-70797-5

Date Collected: 03/03/21 15:00
Date Received: 03/04/21 10:10
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8-HxCDD	**1.9**	**J**	48	0.23	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,6,7,8-HxCDD	ND		48	0.25	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,7,8,9-HxCDD	ND		48	0.22	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,4,7,8-HxCDF	**1.4**	**J B**	48	0.17	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,6,7,8-HxCDF	**0.43**	**J B q**	48	0.16	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,7,8,9-HxCDF	**0.49**	**J B**	48	0.13	pg/L		03/05/21 09:52	03/12/21 14:33	1
2,3,4,6,7,8-HxCDF	**0.49**	**J B**	48	0.14	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,4,6,7,8-HpCDD	**3.8**	**J B**	48	0.19	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,4,6,7,8-HpCDF	**1.5**	**J B q**	48	0.22	pg/L		03/05/21 09:52	03/12/21 14:33	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.23	pg/L		03/05/21 09:52	03/12/21 14:33	1
OCDD	**16**	**J B**	96	0.35	pg/L		03/05/21 09:52	03/12/21 14:33	1
OCDF	**3.9**	**J B q**	96	0.39	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total TCDD	**11**	**B q**	9.6	0.42	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total TCDF	**29**	**B**	9.6	0.34	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total PeCDD	ND		48	0.40	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total PeCDF	**1.1**	**J**	48	0.31	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total HxCDD	**1.9**	**J**	48	0.23	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total HxCDF	**2.8**	**J B q**	48	0.15	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total HpCDD	**6.3**	**J B**	48	0.19	pg/L		03/05/21 09:52	03/12/21 14:33	1
Total HpCDF	**2.6**	**J B q**	48	0.22	pg/L		03/05/21 09:52	03/12/21 14:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-2,3,7,8-TCDF	*74*		*24 - 169*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*24 - 185*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-2,3,4,7,8-PeCDF	*74*		*21 - 178*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,4,7,8-HxCDD	*80*		*32 - 141*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,6,7,8-HxCDD	*84*		*28 - 130*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,4,7,8-HxCDF	*81*		*26 - 152*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,6,7,8-HxCDF	*82*		*26 - 123*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*29 - 147*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-2,3,4,6,7,8-HxCDF	*83*		*28 - 136*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*98*		*23 - 140*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*90*		*28 - 143*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*93*		*26 - 138*	*03/05/21 09:52*	*03/12/21 14:33*	*1*
13C-OCDD	*104*		*17 - 157*	*03/05/21 09:52*	*03/12/21 14:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*03/05/21 09:52*	*03/12/21 14:33*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**19**	**B**	9.6	0.37	pg/L		03/05/21 09:52	03/11/21 16:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*97*		*24 - 169*	*03/05/21 09:52*	*03/11/21 16:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*120*		*35 - 197*	*03/05/21 09:52*	*03/11/21 16:24*	*1*

Client Sample ID: 11215702-Tank1-0.1mm Lab Sample ID: 320-70797-6

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**11**		9.7	0.47	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,7,8-PeCDD	ND		48	0.40	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,7,8-PeCDF	**1.5**	**J**	48	0.25	pg/L		03/05/21 09:52	03/12/21 15:21	1
2,3,4,7,8-PeCDF	**0.92**	**J q**	48	0.28	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,4,7,8-HxCDD	**1.8**	**J**	48	0.23	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,6,7,8-HxCDD	**0.40**	**J q**	48	0.23	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,7,8,9-HxCDD	ND		48	0.21	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,4,7,8-HxCDF	**2.6**	**J B**	48	0.24	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,6,7,8-HxCDF	**1.0**	**J B q**	48	0.22	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,7,8,9-HxCDF	ND		48	0.18	pg/L		03/05/21 09:52	03/12/21 15:21	1
2,3,4,6,7,8-HxCDF	**0.66**	**J B**	48	0.19	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,4,6,7,8-HpCDD	**3.7**	**J B**	48	0.20	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,4,6,7,8-HpCDF	**2.3**	**J B**	48	0.22	pg/L		03/05/21 09:52	03/12/21 15:21	1
1,2,3,4,7,8,9-HpCDF	**0.97**	**J B**	48	0.22	pg/L		03/05/21 09:52	03/12/21 15:21	1
OCDD	**20**	**J B**	97	0.38	pg/L		03/05/21 09:52	03/12/21 15:21	1
OCDF	**3.0**	**J B**	97	0.42	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total TCDD	**13**	**B**	9.7	0.47	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total TCDF	**49**	**B**	9.7	0.52	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total PeCDD	**1.6**	**J q**	48	0.40	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total PeCDF	**2.4**	**J q**	48	0.27	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total HxCDD	**2.2**	**J q**	48	0.22	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total HxCDF	**4.2**	**J B q**	48	0.21	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total HpCDD	**5.8**	**J B q**	48	0.20	pg/L		03/05/21 09:52	03/12/21 15:21	1
Total HpCDF	**4.4**	**J B**	48	0.22	pg/L		03/05/21 09:52	03/12/21 15:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,7,8-PeCDF	*64*		*24 - 185*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-2,3,4,7,8-PeCDF	*65*		*21 - 178*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*28 - 130*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,4,7,8-HxCDF	*71*		*26 - 152*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,6,7,8-HxCDF	*71*		*26 - 123*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,7,8,9-HxCDF	*73*		*29 - 147*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-2,3,4,6,7,8-HxCDF	*74*		*28 - 136*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*23 - 140*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*28 - 143*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*26 - 138*	*03/05/21 09:52*	*03/12/21 15:21*	*1*
13C-OCDD	*93*		*17 - 157*	*03/05/21 09:52*	*03/12/21 15:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*03/05/21 09:52*	*03/12/21 15:21*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**31**	**B**	9.7	0.48	pg/L		03/05/21 09:52	03/11/21 17:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*87*		*24 - 169*	*03/05/21 09:52*	*03/11/21 17:02*	*1*

Client Sample ID: 11215702-Tank1-0.1mm Lab Sample ID: 320-70797-6

Date Collected: 03/03/21 15:00 **Matrix: Water**

Date Received: 03/04/21 10:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*118*		*35 - 197*	*03/05/21 09:52*	*03/11/21 17:02*	*1*

Client Sample ID: 11215702-Tank2-100mm Lab Sample ID: 320-70797-7

Date Collected: 03/03/21 15:00 **Matrix: Water**

Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**2700**		9.6	4.7	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,7,8-PeCDD	**28**	**J**	48	0.75	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,7,8-PeCDF	**350**		48	2.5	pg/L		03/05/21 09:52	03/12/21 16:09	1
2,3,4,7,8-PeCDF	**200**		48	2.8	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,4,7,8-HxCDD	**3.1**	**J**	48	0.55	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,6,7,8-HxCDD	**9.9**	**J**	48	0.55	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,7,8,9-HxCDD	**4.5**	**J**	48	0.50	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,4,7,8-HxCDF	**670**	**B**	48	2.3	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,6,7,8-HxCDF	**170**	**B**	48	2.2	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,7,8,9-HxCDF	**11**	**J B**	48	1.7	pg/L		03/05/21 09:52	03/12/21 16:09	1
2,3,4,6,7,8-HxCDF	**19**	**J B**	48	1.9	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,4,6,7,8-HpCDD	**590**	**B**	48	2.4	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,4,6,7,8-HpCDF	**230**	**B**	48	0.86	pg/L		03/05/21 09:52	03/12/21 16:09	1
1,2,3,4,7,8,9-HpCDF	**77**	**B**	48	0.82	pg/L		03/05/21 09:52	03/12/21 16:09	1
OCDD	**4200**	**B**	96	2.2	pg/L		03/05/21 09:52	03/12/21 16:09	1
OCDF	**130**	**B**	96	0.60	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total TCDD	**3000**	**B**	9.6	4.7	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total PeCDD	**36**	**J q**	48	0.75	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total PeCDF	**870**		48	2.7	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total HxCDD	**92**		48	0.53	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total HxCDF	**960**	**B**	48	2.0	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total HpCDD	**980**	**B**	48	2.4	pg/L		03/05/21 09:52	03/12/21 16:09	1
Total HpCDF	**380**	**B**	48	0.84	pg/L		03/05/21 09:52	03/12/21 16:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,7,8-PeCDF	*55*		*24 - 185*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,6,7,8-HxCDD	*61*		*28 - 130*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,4,7,8-HxCDF	*59*		*26 - 152*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,6,7,8-HxCDF	*59*		*26 - 123*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,7,8,9-HxCDF	*61*		*29 - 147*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-2,3,4,6,7,8-HxCDF	*61*		*28 - 136*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*73*		*23 - 140*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*65*		*28 - 143*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*71*		*26 - 138*	*03/05/21 09:52*	*03/12/21 16:09*	*1*
13C-OCDD	*78*		*17 - 157*	*03/05/21 09:52*	*03/12/21 16:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*03/05/21 09:52*	*03/12/21 16:09*	*1*

Client Sample ID: 11215702-Tank2-100mm Lab Sample ID: 320-70797-7

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	**16000**	**B**	96	51	pg/L		03/05/21 09:52	03/17/21 17:59	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*03/05/21 09:52*	*03/17/21 17:59*	*10*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*03/05/21 09:52*	*03/17/21 17:59*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*112*		*35 - 197*	*03/05/21 09:52*	*03/17/21 17:59*	*10*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**9500**	**B**	96	22	pg/L		03/05/21 09:52	03/17/21 00:05	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*03/05/21 09:52*	*03/17/21 00:05*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*03/05/21 09:52*	*03/17/21 00:05*	*10*

Client Sample ID: 11215702-Tank2-41mm Lab Sample ID: 320-70797-8

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	**200**		49	1.9	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,7,8-PeCDF	**2300**		49	16	pg/L		03/05/21 09:52	03/12/21 16:56	1
2,3,4,7,8-PeCDF	**1400**		49	17	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,4,7,8-HxCDD	**7.3**	**J**	49	0.90	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,6,7,8-HxCDD	**38**	**J**	49	0.96	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,7,8,9-HxCDD	**15**	**J**	49	0.85	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,4,7,8-HxCDF	**4000**	**B**	49	8.4	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,6,7,8-HxCDF	**1000**	**B**	49	7.7	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,7,8,9-HxCDF	**71**	**B**	49	6.3	pg/L		03/05/21 09:52	03/12/21 16:56	1
2,3,4,6,7,8-HxCDF	**110**	**B**	49	6.8	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,4,6,7,8-HpCDD	**2100**	**B**	49	6.7	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,4,6,7,8-HpCDF	**1300**	**B**	49	3.0	pg/L		03/05/21 09:52	03/12/21 16:56	1
1,2,3,4,7,8,9-HpCDF	**430**	**B**	49	2.8	pg/L		03/05/21 09:52	03/12/21 16:56	1
OCDD	**21000**	**B**	98	9.3	pg/L		03/05/21 09:52	03/12/21 16:56	1
OCDF	**680**	**B**	98	0.83	pg/L		03/05/21 09:52	03/12/21 16:56	1
Total PeCDD	**260**	**q**	49	1.9	pg/L		03/05/21 09:52	03/12/21 16:56	1
Total PeCDF	**5800**		49	16	pg/L		03/05/21 09:52	03/12/21 16:56	1
Total HxCDD	**320**		49	0.90	pg/L		03/05/21 09:52	03/12/21 16:56	1
Total HxCDF	**6000**	**B**	49	7.3	pg/L		03/05/21 09:52	03/12/21 16:56	1
Total HpCDD	**3700**	**B**	49	6.7	pg/L		03/05/21 09:52	03/12/21 16:56	1
Total HpCDF	**2200**	**B**	49	2.9	pg/L		03/05/21 09:52	03/12/21 16:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*59*		*25 - 181*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,7,8-PeCDF	*54*		*24 - 185*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,4,7,8-HxCDD	*64*		*32 - 141*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,6,7,8-HxCDD	*62*		*28 - 130*	*03/05/21 09:52*	*03/12/21 16:56*	*1*

Client Sample ID: 11215702-Tank2-41mm

Lab Sample ID: 320-70797-8
Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDF	*64*		*26 - 152*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,6,7,8-HxCDF	*60*		*26 - 123*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,7,8,9-HxCDF	*62*		*29 - 147*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-2,3,4,6,7,8-HxCDF	*60*		*28 - 136*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*23 - 140*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*28 - 143*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*26 - 138*	*03/05/21 09:52*	*03/12/21 16:56*	*1*
13C-OCDD	*90*		*17 - 157*	*03/05/21 09:52*	*03/12/21 16:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*101*		*35 - 197*	*03/05/21 09:52*	*03/12/21 16:56*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**26000**		200	170	pg/L		03/05/21 09:52	03/17/21 19:29	20
Total TCDD	**28000**	**B**	200	170	pg/L		03/05/21 09:52	03/17/21 19:29	20
Total TCDF	**130000**	**q G B**	310	310	pg/L		03/05/21 09:52	03/17/21 19:29	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*59*		*25 - 164*	*03/05/21 09:52*	*03/17/21 19:29*	*20*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*03/05/21 09:52*	*03/17/21 19:29*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*114*		*35 - 197*	*03/05/21 09:52*	*03/17/21 19:29*	*20*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RADL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**60000**	**B**	200	80	pg/L		03/05/21 09:52	03/17/21 00:43	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*78*		*24 - 169*	*03/05/21 09:52*	*03/17/21 00:43*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*03/05/21 09:52*	*03/17/21 00:43*	*20*

Client Sample ID: 11215702-Tank2-10mm

Lab Sample ID: 320-70797-9
Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**52**		9.7	0.60	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,7,8-PeCDD	ND		49	0.40	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,7,8-PeCDF	**6.1**	**J**	49	0.35	pg/L		03/05/21 09:52	03/12/21 17:44	1
2,3,4,7,8-PeCDF	**3.8**	**J**	49	0.40	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,4,7,8-HxCDD	**2.0**	**J**	49	0.23	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,6,7,8-HxCDD	**0.69**	**J q**	49	0.23	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,7,8,9-HxCDD	**0.55**	**J q**	49	0.21	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,4,7,8-HxCDF	**12**	**J B**	49	0.27	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,6,7,8-HxCDF	**3.1**	**J B q**	49	0.26	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,7,8,9-HxCDF	ND		49	0.23	pg/L		03/05/21 09:52	03/12/21 17:44	1
2,3,4,6,7,8-HxCDF	**0.59**	**J B**	49	0.23	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,4,6,7,8-HpCDD	**23**	**J B**	49	0.35	pg/L		03/05/21 09:52	03/12/21 17:44	1

Client Sample ID: 11215702-Tank2-10mm

Lab Sample ID: 320-70797-9

Date Collected: 03/03/21 15:00

Matrix: Water

Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDF	**5.6**	**J B**	49	0.30	pg/L		03/05/21 09:52	03/12/21 17:44	1
1,2,3,4,7,8,9-HpCDF	**2.2**	**J B**	49	0.30	pg/L		03/05/21 09:52	03/12/21 17:44	1
OCDD	**130**	**B**	97	0.50	pg/L		03/05/21 09:52	03/12/21 17:44	1
OCDF	**3.8**	**J B**	97	0.36	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total TCDD	**59**	**B q**	9.7	0.60	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total TCDF	**260**	**B q**	9.7	1.4	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total PeCDD	ND		49	1.4	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total PeCDF	**14**	**J**	49	0.37	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total HxCDD	**8.0**	**J q**	49	0.22	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total HxCDF	**17**	**J B q**	49	0.25	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total HpCDD	**35**	**J B**	49	0.35	pg/L		03/05/21 09:52	03/12/21 17:44	1
Total HpCDF	**10**	**J B q**	49	0.30	pg/L		03/05/21 09:52	03/12/21 17:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*25 - 164*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,7,8-PeCDD	*75*		*25 - 181*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,6,7,8-HxCDD	*85*		*28 - 130*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*26 - 152*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*26 - 123*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 147*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-2,3,4,6,7,8-HxCDF	*81*		*28 - 136*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*99*		*23 - 140*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*28 - 143*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*		*26 - 138*	*03/05/21 09:52*	*03/12/21 17:44*	*1*
13C-OCDD	*106*		*17 - 157*	*03/05/21 09:52*	*03/12/21 17:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*03/05/21 09:52*	*03/12/21 17:44*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**140**	**B**	9.7	0.71	pg/L		03/05/21 09:52	03/11/21 19:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*92*		*24 - 169*	*03/05/21 09:52*	*03/11/21 19:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*115*		*35 - 197*	*03/05/21 09:52*	*03/11/21 19:35*	*1*

Client Sample ID: 11215702-Tank2-1mm

Lab Sample ID: 320-70797-10

Date Collected: 03/03/21 15:00

Matrix: Water

Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**110**		9.8	0.77	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,7,8-PeCDD	**1.3**	**J**	49	0.47	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,7,8-PeCDF	**14**	**J**	49	0.45	pg/L		03/05/21 09:52	03/12/21 18:32	1

Client Sample Results

Client Sample ID: 11215702-Tank2-1mm

Lab Sample ID: 320-70797-10

Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,7,8-PeCDF	**8.5**	**J**	49	0.50	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,4,7,8-HxCDD	**1.5**	**J q**	49	0.26	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,6,7,8-HxCDD	**1.1**	**J q**	49	0.27	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,7,8,9-HxCDD	ND		49	0.24	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,4,7,8-HxCDF	**26**	**J B**	49	0.39	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,6,7,8-HxCDF	**6.5**	**J B**	49	0.36	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,7,8,9-HxCDF	**0.71**	**J B q**	49	0.31	pg/L		03/05/21 09:52	03/12/21 18:32	1
2,3,4,6,7,8-HxCDF	**0.83**	**J B**	49	0.32	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,4,6,7,8-HpCDD	**29**	**J B**	49	0.44	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,4,6,7,8-HpCDF	**10**	**J B**	49	0.33	pg/L		03/05/21 09:52	03/12/21 18:32	1
1,2,3,4,7,8,9-HpCDF	**3.2**	**J B**	49	0.34	pg/L		03/05/21 09:52	03/12/21 18:32	1
OCDD	**170**	**B**	98	0.49	pg/L		03/05/21 09:52	03/12/21 18:32	1
OCDF	**6.7**	**J B**	98	0.43	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total TCDD	**120**	**B**	9.8	0.77	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total TCDF	**600**	**B q**	9.8	2.4	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total PeCDD	**1.3**	**J**	49	0.47	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total PeCDF	**33**	**J q**	49	0.47	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total HxCDD	**8.0**	**J q**	49	0.26	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total HxCDF	**36**	**J B q**	49	0.34	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total HpCDD	**46**	**J B**	49	0.44	pg/L		03/05/21 09:52	03/12/21 18:32	1
Total HpCDF	**17**	**J B**	49	0.33	pg/L		03/05/21 09:52	03/12/21 18:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-2,3,4,7,8-PeCDF	*62*		*21 - 178*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,4,7,8-HxCDD	*67*		*32 - 141*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,6,7,8-HxCDD	*72*		*28 - 130*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,4,7,8-HxCDF	*66*		*26 - 152*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*26 - 123*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,7,8,9-HxCDF	*68*		*29 - 147*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-2,3,4,6,7,8-HxCDF	*69*		*28 - 136*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*23 - 140*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*75*		*28 - 143*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*26 - 138*	*03/05/21 09:52*	*03/12/21 18:32*	*1*
13C-OCDD	*91*		*17 - 157*	*03/05/21 09:52*	*03/12/21 18:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*03/05/21 09:52*	*03/12/21 18:32*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**350**	**B**	9.8	0.84	pg/L		03/05/21 09:52	03/11/21 20:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*03/05/21 09:52*	*03/11/21 20:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*115*		*35 - 197*	*03/05/21 09:52*	*03/11/21 20:13*	*1*

Client Sample Results

Client Sample ID: 11215702-Tank2-0.45mm

Lab Sample ID: 320-70797-11

Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**4.5**	**J q**	9.8	0.56	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,7,8-PeCDD	ND		49	0.46	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,7,8-PeCDF	**1.4**	**J**	49	0.30	pg/L		03/05/21 09:52	03/12/21 19:20	1
2,3,4,7,8-PeCDF	ND		49	0.34	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,4,7,8-HxCDD	**2.0**	**J**	49	0.28	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,6,7,8-HxCDD	**1.2**	**J**	49	0.27	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,7,8,9-HxCDD	**1.1**	**J q**	49	0.25	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,4,7,8-HxCDF	**2.0**	**J B**	49	0.30	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,6,7,8-HxCDF	**0.90**	**J B q**	49	0.27	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,7,8,9-HxCDF	**1.4**	**J B q**	49	0.24	pg/L		03/05/21 09:52	03/12/21 19:20	1
2,3,4,6,7,8-HxCDF	**0.93**	**J B**	49	0.24	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,4,6,7,8-HpCDD	**3.7**	**J B**	49	0.30	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,4,6,7,8-HpCDF	**1.6**	**J B q**	49	0.37	pg/L		03/05/21 09:52	03/12/21 19:20	1
1,2,3,4,7,8,9-HpCDF	**1.0**	**J B q**	49	0.38	pg/L		03/05/21 09:52	03/12/21 19:20	1
OCDD	**15**	**J B**	98	0.48	pg/L		03/05/21 09:52	03/12/21 19:20	1
OCDF	**2.0**	**J B q**	98	0.54	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total TCDD	**4.5**	**J B q**	9.8	0.56	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total TCDF	**21**	**B q**	9.8	0.43	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total PeCDD	ND		49	0.52	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total PeCDF	**1.4**	**J**	49	0.32	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total HxCDD	**4.3**	**J q**	49	0.26	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total HxCDF	**5.2**	**J B q**	49	0.26	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total HpCDD	**6.8**	**J B**	49	0.30	pg/L		03/05/21 09:52	03/12/21 19:20	1
Total HpCDF	**2.6**	**J B q**	49	0.38	pg/L		03/05/21 09:52	03/12/21 19:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-2,3,7,8-TCDF	*54*		*24 - 169*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,7,8-PeCDD	*59*		*25 - 181*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,7,8-PeCDF	*53*		*24 - 185*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,4,7,8-HxCDD	*58*		*32 - 141*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,6,7,8-HxCDD	*62*		*28 - 130*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,4,7,8-HxCDF	*56*		*26 - 152*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,6,7,8-HxCDF	*58*		*26 - 123*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,7,8,9-HxCDF	*57*		*29 - 147*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-2,3,4,6,7,8-HxCDF	*58*		*28 - 136*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*65*		*28 - 143*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*69*		*26 - 138*	*03/05/21 09:52*	*03/12/21 19:20*	*1*
13C-OCDD	*77*		*17 - 157*	*03/05/21 09:52*	*03/12/21 19:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*03/05/21 09:52*	*03/12/21 19:20*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**11**	**B**	9.8	0.40	pg/L		03/05/21 09:52	03/11/21 15:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*03/05/21 09:52*	*03/11/21 15:45*	*1*

Client Sample Results

Client Sample ID: 11215702-Tank2-0.45mm Lab Sample ID: 320-70797-11

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*114*		*35 - 197*	*03/05/21 09:52*	*03/11/21 15:45*	*1*

Client Sample ID: 11215702-Tank2-0.1mm Lab Sample ID: 320-70797-12

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**15**		9.8	0.53	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,7,8-PeCDD	**1.5**	**J**	49	0.42	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,7,8-PeCDF	ND		49	0.37	pg/L		03/05/21 09:52	03/12/21 20:08	1
2,3,4,7,8-PeCDF	**2.1**	**J**	49	0.42	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,4,7,8-HxCDD	**1.9**	**J**	49	0.28	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,6,7,8-HxCDD	**1.4**	**J**	49	0.28	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,7,8,9-HxCDD	**1.6**	**J**	49	0.26	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,4,7,8-HxCDF	**4.2**	**J B**	49	0.28	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,6,7,8-HxCDF	**2.2**	**J B**	49	0.27	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,7,8,9-HxCDF	**1.9**	**J B q**	49	0.23	pg/L		03/05/21 09:52	03/12/21 20:08	1
2,3,4,6,7,8-HxCDF	**0.86**	**J B q**	49	0.23	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,4,6,7,8-HpCDD	**5.7**	**J B**	49	0.24	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,4,6,7,8-HpCDF	**3.7**	**J B**	49	0.32	pg/L		03/05/21 09:52	03/12/21 20:08	1
1,2,3,4,7,8,9-HpCDF	**2.0**	**J B q**	49	0.33	pg/L		03/05/21 09:52	03/12/21 20:08	1
OCDD	**25**	**J B**	98	0.42	pg/L		03/05/21 09:52	03/12/21 20:08	1
OCDF	**5.5**	**J B**	98	0.46	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total TCDD	**15**	**B**	9.8	0.53	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total TCDF	**81**	**B q**	9.8	0.63	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total PeCDD	**1.5**	**J**	49	0.42	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total PeCDF	**2.1**	**J**	49	0.40	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total HxCDD	**4.9**	**J**	49	0.27	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total HxCDF	**9.1**	**J B q**	49	0.25	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total HpCDD	**9.1**	**J B**	49	0.24	pg/L		03/05/21 09:52	03/12/21 20:08	1
Total HpCDF	**6.7**	**J B q**	49	0.33	pg/L		03/05/21 09:52	03/12/21 20:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,7,8-PeCDF	*61*		*24 - 185*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-2,3,4,7,8-PeCDF	*61*		*21 - 178*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,4,7,8-HxCDD	*68*		*32 - 141*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,6,7,8-HxCDD	*73*		*28 - 130*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,4,7,8-HxCDF	*66*		*26 - 152*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,6,7,8-HxCDF	*66*		*26 - 123*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,7,8,9-HxCDF	*68*		*29 - 147*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*28 - 136*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*23 - 140*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*28 - 143*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*84*		*26 - 138*	*03/05/21 09:52*	*03/12/21 20:08*	*1*
13C-OCDD	*97*		*17 - 157*	*03/05/21 09:52*	*03/12/21 20:08*	*1*

Client Sample ID: 11215702-Tank2-0.1mm Lab Sample ID: 320-70797-12

Date Collected: 03/03/21 15:00 **Matrix: Water**

Date Received: 03/04/21 10:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*03/05/21 09:52*	*03/12/21 20:08*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**48**	**B**	9.8	0.59	pg/L		03/05/21 09:52	03/11/21 18:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*03/05/21 09:52*	*03/11/21 18:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*115*		*35 - 197*	*03/05/21 09:52*	*03/11/21 18:19*	*1*

Toxicity Summary

Client Sample ID: 11215702-Tank1-100mm Lab Sample ID: 320-70797-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**98**		49	1.5	pg/L	1	**98**	1613B
1,2,3,7,8-PeCDF	**1300**		49	9.6	pg/L	0.03	**39**	1613B
2,3,4,7,8-PeCDF	**720**		49	10	pg/L	0.3	**220**	1613B
1,2,3,4,7,8-HxCDD	**7.2**	**J**	49	1.0	pg/L	0.1	**0.72**	1613B
1,2,3,6,7,8-HxCDD	**31**	**J**	49	1.1	pg/L	0.1	**3.1**	1613B
1,2,3,7,8,9-HxCDD	**14**	**J**	49	0.96	pg/L	0.1	**1.4**	1613B
1,2,3,4,7,8-HxCDF	**2200**	**B**	49	6.8	pg/L	0.1	**220**	1613B
1,2,3,6,7,8-HxCDF	**580**	**B**	49	6.4	pg/L	0.1	**58**	1613B
1,2,3,7,8,9-HxCDF	**34**	**J B**	49	5.4	pg/L	0.1	**3.4**	1613B
2,3,4,6,7,8-HxCDF	**61**	**B**	49	5.5	pg/L	0.1	**6.1**	1613B
1,2,3,4,6,7,8-HpCDD	**1600**	**B**	49	3.5	pg/L	0.01	**16**	1613B
1,2,3,4,6,7,8-HpCDF	**630**	**B**	49	1.7	pg/L	0.01	**6.3**	1613B
1,2,3,4,7,8,9-HpCDF	**240**	**B**	49	1.8	pg/L	0.01	**2.4**	1613B
OCDD	**13000**	**B**	98	6.8	pg/L	0.0003	**3.9**	1613B
OCDF	**310**	**B**	98	0.75	pg/L	0.0003	**0.093**	1613B
2,3,7,8-TCDD - DL	**12000**		200	110	pg/L	1	**12000**	1613B
2,3,7,8-TCDF - RADL	**35000**	**B**	200	39	pg/L	0.1	**3500**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		16000	TEQ

Client Sample ID: 11215702-Tank1-41mm Lab Sample ID: 320-70797-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**70**		48	1.1	pg/L	1	**70**	1613B
1,2,3,7,8-PeCDF	**860**		48	6.8	pg/L	0.03	**26**	1613B
2,3,4,7,8-PeCDF	**490**		48	7.5	pg/L	0.3	**150**	1613B
1,2,3,4,7,8-HxCDD	**3.8**	**J**	48	0.83	pg/L	0.1	**0.38**	1613B
1,2,3,6,7,8-HxCDD	**13**	**J**	48	0.81	pg/L	0.1	**1.3**	1613B
1,2,3,7,8,9-HxCDD	**7.1**	**J**	48	0.75	pg/L	0.1	**0.71**	1613B
1,2,3,4,7,8-HxCDF	**1900**	**B**	48	4.9	pg/L	0.1	**190**	1613B
1,2,3,6,7,8-HxCDF	**490**	**B**	48	4.6	pg/L	0.1	**49**	1613B
1,2,3,7,8,9-HxCDF	**26**	**J B**	48	3.8	pg/L	0.1	**2.6**	1613B
2,3,4,6,7,8-HxCDF	**47**	**J B**	48	4.1	pg/L	0.1	**4.7**	1613B
1,2,3,4,6,7,8-HpCDD	**560**	**B**	48	2.0	pg/L	0.01	**5.6**	1613B
1,2,3,4,6,7,8-HpCDF	**620**	**B**	48	1.6	pg/L	0.01	**6.2**	1613B
1,2,3,4,7,8,9-HpCDF	**230**	**B**	48	1.6	pg/L	0.01	**2.3**	1613B
OCDD	**9000**	**B**	96	5.2	pg/L	0.0003	**2.7**	1613B
OCDF	**320**	**B**	96	0.75	pg/L	0.0003	**0.096**	1613B
2,3,7,8-TCDD - DL	**8000**		96	52	pg/L	1	**8000**	1613B
2,3,7,8-TCDF - RADL	**23000**	**B**	96	25	pg/L	0.1	**2300**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank1-41mm (Continued) Lab Sample ID: 320-70797-2

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
Total Dioxin/Furan TEQ					pg/L		11000	TEQ

Client Sample ID: 11215702-Tank1-10mm Lab Sample ID: 320-70797-3

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
2,3,7,8-TCDD	**37**		9.7	0.52	pg/L	1	**37**	1613B
1,2,3,7,8-PeCDD	ND		48	0.46	pg/L	1	0.23	1613B
1,2,3,7,8-PeCDF	**4.8**	**J**	48	0.36	pg/L	0.03	**0.14**	1613B
2,3,4,7,8-PeCDF	**3.0**	**J**	48	0.41	pg/L	0.3	**0.90**	1613B
1,2,3,4,7,8-HxCDD	**2.0**	**J**	48	0.22	pg/L	0.1	**0.20**	1613B
1,2,3,6,7,8-HxCDD	**0.87**	**J**	48	0.22	pg/L	0.1	**0.087**	1613B
1,2,3,7,8,9-HxCDD	**1.2**	**J**	48	0.20	pg/L	0.1	**0.12**	1613B
1,2,3,4,7,8-HxCDF	**10**	**J B**	48	0.23	pg/L	0.1	**1.0**	1613B
1,2,3,6,7,8-HxCDF	**2.3**	**J B q**	48	0.21	pg/L	0.1	**0.23**	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.18	pg/L	0.1	0.0090	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.18	pg/L	0.1	0.0090	1613B
1,2,3,4,6,7,8-HpCDD	**17**	**J B**	48	0.33	pg/L	0.01	**0.17**	1613B
1,2,3,4,6,7,8-HpCDF	**5.4**	**J B**	48	0.24	pg/L	0.01	**0.054**	1613B
1,2,3,4,7,8,9-HpCDF	**1.9**	**J B q**	48	0.27	pg/L	0.01	**0.019**	1613B
OCDD	**110**	**B**	97	0.43	pg/L	0.0003	**0.033**	1613B
OCDF	**4.1**	**J B**	97	0.42	pg/L	0.0003	**0.0012**	1613B
2,3,7,8-TCDF - RA	**97**	**B**	9.7	0.54	pg/L	0.1	**9.7**	1613B

Analyte	Result	Qualifier	NONE	NONE	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
Total Dioxin/Furan TEQ					pg/L		50	TEQ

Client Sample ID: 11215702-Tank1-1mm Lab Sample ID: 320-70797-4

Analyte	Result	Qualifier	RL	EDL	Unit	WHO 2005 ND = ½ EDL TEF	WHO 2005 ND = ½ EDL TEQ	Method
2,3,7,8-TCDD	**12**		9.6	0.51	pg/L	1	**12**	1613B
1,2,3,7,8-PeCDD	ND		48	0.38	pg/L	1	0.19	1613B
1,2,3,7,8-PeCDF	**1.6**	**J**	48	0.26	pg/L	0.03	**0.048**	1613B
2,3,4,7,8-PeCDF	ND		48	0.30	pg/L	0.3	0.045	1613B
1,2,3,4,7,8-HxCDD	**2.0**	**J**	48	0.21	pg/L	0.1	**0.20**	1613B
1,2,3,6,7,8-HxCDD	**0.67**	**J**	48	0.22	pg/L	0.1	**0.067**	1613B
1,2,3,7,8,9-HxCDD	**0.67**	**J q**	48	0.20	pg/L	0.1	**0.067**	1613B
1,2,3,4,7,8-HxCDF	**2.6**	**J B**	48	0.18	pg/L	0.1	**0.26**	1613B
1,2,3,6,7,8-HxCDF	**0.98**	**J B**	48	0.17	pg/L	0.1	**0.098**	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.14	pg/L	0.1	0.0070	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.15	pg/L	0.1	0.0075	1613B
1,2,3,4,6,7,8-HpCDD	**4.1**	**J B**	48	0.23	pg/L	0.01	**0.041**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank1-1mm (Continued) Lab Sample ID: 320-70797-4

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,6,7,8-HpCDF	**1.9**	**J B q**	48	0.20	pg/L	0.01	**0.019**	1613B
1,2,3,4,7,8,9-HpCDF	**0.87**	**J B**	48	0.22	pg/L	0.01	**0.0087**	1613B
OCDD	**22**	**J B**	96	0.34	pg/L	0.0003	**0.0066**	1613B
OCDF	**3.0**	**J B q**	96	0.40	pg/L	0.0003	**0.00090**	1613B
2,3,7,8-TCDF - RA	**34**	**B**	9.6	0.53	pg/L	0.1	**3.4**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		16	TEQ

Client Sample ID: 11215702-Tank1-0.45mm Lab Sample ID: 320-70797-5

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**6.1**	**J q**	9.6	0.42	pg/L	1	**6.1**	1613B
1,2,3,7,8-PeCDD	ND		48	0.40	pg/L	1	0.20	1613B
1,2,3,7,8-PeCDF	**1.1**	**J**	48	0.29	pg/L	0.03	**0.033**	1613B
2,3,4,7,8-PeCDF	ND		48	0.33	pg/L	0.3	0.050	1613B
1,2,3,4,7,8-HxCDD	**1.9**	**J**	48	0.23	pg/L	0.1	**0.19**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.25	pg/L	0.1	0.013	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.22	pg/L	0.1	0.011	1613B
1,2,3,4,7,8-HxCDF	**1.4**	**J B**	48	0.17	pg/L	0.1	**0.14**	1613B
1,2,3,6,7,8-HxCDF	**0.43**	**J B q**	48	0.16	pg/L	0.1	**0.043**	1613B
1,2,3,7,8,9-HxCDF	**0.49**	**J B**	48	0.13	pg/L	0.1	**0.049**	1613B
2,3,4,6,7,8-HxCDF	**0.49**	**J B**	48	0.14	pg/L	0.1	**0.049**	1613B
1,2,3,4,6,7,8-HpCDD	**3.8**	**J B**	48	0.19	pg/L	0.01	**0.038**	1613B
1,2,3,4,6,7,8-HpCDF	**1.5**	**J B q**	48	0.22	pg/L	0.01	**0.015**	1613B
1,2,3,4,7,8,9-HpCDF	ND		48	0.23	pg/L	0.01	0.0012	1613B
OCDD	**16**	**J B**	96	0.35	pg/L	0.0003	**0.0048**	1613B
OCDF	**3.9**	**J B q**	96	0.39	pg/L	0.0003	**0.0012**	1613B
2,3,7,8-TCDF - RA	**19**	**B**	9.6	0.37	pg/L	0.1	**1.9**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		8.8	TEQ

Client Sample ID: 11215702-Tank1-0.1mm Lab Sample ID: 320-70797-6

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**11**		9.7	0.47	pg/L	1	**11**	1613B
1,2,3,7,8-PeCDD	ND		48	0.40	pg/L	1	0.20	1613B
1,2,3,7,8-PeCDF	**1.5**	**J**	48	0.25	pg/L	0.03	**0.045**	1613B
2,3,4,7,8-PeCDF	**0.92**	**J q**	48	0.28	pg/L	0.3	**0.28**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client Sample ID: 11215702-Tank1-0.1mm (Continued) Lab Sample ID: 320-70797-6

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,7,8-HxCDD	**1.8**	**J**	48	0.23	pg/L	0.1	**0.18**	1613B
1,2,3,6,7,8-HxCDD	**0.40**	**J q**	48	0.23	pg/L	0.1	**0.040**	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.21	pg/L	0.1	0.011	1613B
1,2,3,4,7,8-HxCDF	**2.6**	**J B**	48	0.24	pg/L	0.1	**0.26**	1613B
1,2,3,6,7,8-HxCDF	**1.0**	**J B q**	48	0.22	pg/L	0.1	**0.10**	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.18	pg/L	0.1	0.0090	1613B
2,3,4,6,7,8-HxCDF	**0.66**	**J B**	48	0.19	pg/L	0.1	**0.066**	1613B
1,2,3,4,6,7,8-HpCDD	**3.7**	**J B**	48	0.20	pg/L	0.01	**0.037**	1613B
1,2,3,4,6,7,8-HpCDF	**2.3**	**J B**	48	0.22	pg/L	0.01	**0.023**	1613B
1,2,3,4,7,8,9-HpCDF	**0.97**	**J B**	48	0.22	pg/L	0.01	**0.0097**	1613B
OCDD	**20**	**J B**	97	0.38	pg/L	0.0003	**0.0060**	1613B
OCDF	**3.0**	**J B**	97	0.42	pg/L	0.0003	**0.00090**	1613B
2,3,7,8-TCDF - RA	**31**	**B**	9.7	0.48	pg/L	0.1	**3.1**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		15	TEQ

Client Sample ID: 11215702-Tank2-100mm Lab Sample ID: 320-70797-7

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**2700**		9.6	4.7	pg/L	1	**2700**	1613B
1,2,3,7,8-PeCDD	**28**	**J**	48	0.75	pg/L	1	**28**	1613B
1,2,3,7,8-PeCDF	**350**		48	2.5	pg/L	0.03	**11**	1613B
2,3,4,7,8-PeCDF	**200**		48	2.8	pg/L	0.3	**60**	1613B
1,2,3,4,7,8-HxCDD	**3.1**	**J**	48	0.55	pg/L	0.1	**0.31**	1613B
1,2,3,6,7,8-HxCDD	**9.9**	**J**	48	0.55	pg/L	0.1	**0.99**	1613B
1,2,3,7,8,9-HxCDD	**4.5**	**J**	48	0.50	pg/L	0.1	**0.45**	1613B
1,2,3,4,7,8-HxCDF	**670**	**B**	48	2.3	pg/L	0.1	**67**	1613B
1,2,3,6,7,8-HxCDF	**170**	**B**	48	2.2	pg/L	0.1	**17**	1613B
1,2,3,7,8,9-HxCDF	**11**	**J B**	48	1.7	pg/L	0.1	**1.1**	1613B
2,3,4,6,7,8-HxCDF	**19**	**J B**	48	1.9	pg/L	0.1	**1.9**	1613B
1,2,3,4,6,7,8-HpCDD	**590**	**B**	48	2.4	pg/L	0.01	**5.9**	1613B
1,2,3,4,6,7,8-HpCDF	**230**	**B**	48	0.86	pg/L	0.01	**2.3**	1613B
1,2,3,4,7,8,9-HpCDF	**77**	**B**	48	0.82	pg/L	0.01	**0.77**	1613B
OCDD	**4200**	**B**	96	2.2	pg/L	0.0003	**1.3**	1613B
OCDF	**130**	**B**	96	0.60	pg/L	0.0003	**0.039**	1613B
2,3,7,8-TCDF - RADL	**9500**	**B**	96	22	pg/L	0.1	**950**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		3800	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Toxicity Summary

Client Sample ID: 11215702-Tank2-41mm Lab Sample ID: 320-70797-8

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,7,8-PeCDD	**200**		49	1.9	pg/L	1	**200**	1613B
1,2,3,7,8-PeCDF	**2300**		49	16	pg/L	0.03	**69**	1613B
2,3,4,7,8-PeCDF	**1400**		49	17	pg/L	0.3	**420**	1613B
1,2,3,4,7,8-HxCDD	**7.3**	**J**	49	0.90	pg/L	0.1	**0.73**	1613B
1,2,3,6,7,8-HxCDD	**38**	**J**	49	0.96	pg/L	0.1	**3.8**	1613B
1,2,3,7,8,9-HxCDD	**15**	**J**	49	0.85	pg/L	0.1	**1.5**	1613B
1,2,3,4,7,8-HxCDF	**4000**	**B**	49	8.4	pg/L	0.1	**400**	1613B
1,2,3,6,7,8-HxCDF	**1000**	**B**	49	7.7	pg/L	0.1	**100**	1613B
1,2,3,7,8,9-HxCDF	**71**	**B**	49	6.3	pg/L	0.1	**7.1**	1613B
2,3,4,6,7,8-HxCDF	**110**	**B**	49	6.8	pg/L	0.1	**11**	1613B
1,2,3,4,6,7,8-HpCDD	**2100**	**B**	49	6.7	pg/L	0.01	**21**	1613B
1,2,3,4,6,7,8-HpCDF	**1300**	**B**	49	3.0	pg/L	0.01	**13**	1613B
1,2,3,4,7,8,9-HpCDF	**430**	**B**	49	2.8	pg/L	0.01	**4.3**	1613B
OCDD	**21000**	**B**	98	9.3	pg/L	0.0003	**6.3**	1613B
OCDF	**680**	**B**	98	0.83	pg/L	0.0003	**0.20**	1613B
2,3,7,8-TCDD - DL	**26000**		200	170	pg/L	1	**26000**	1613B
2,3,7,8-TCDF - RADL	**60000**	**B**	200	80	pg/L	0.1	**6000**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		33000	TEQ

Client Sample ID: 11215702-Tank2-10mm Lab Sample ID: 320-70797-9

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**52**		9.7	0.60	pg/L	1	**52**	1613B
1,2,3,7,8-PeCDD	ND		49	0.40	pg/L	1	0.20	1613B
1,2,3,7,8-PeCDF	**6.1**	**J**	49	0.35	pg/L	0.03	**0.18**	1613B
2,3,4,7,8-PeCDF	**3.8**	**J**	49	0.40	pg/L	0.3	**1.1**	1613B
1,2,3,4,7,8-HxCDD	**2.0**	**J**	49	0.23	pg/L	0.1	**0.20**	1613B
1,2,3,6,7,8-HxCDD	**0.69**	**J q**	49	0.23	pg/L	0.1	**0.069**	1613B
1,2,3,7,8,9-HxCDD	**0.55**	**J q**	49	0.21	pg/L	0.1	**0.055**	1613B
1,2,3,4,7,8-HxCDF	**12**	**J B**	49	0.27	pg/L	0.1	**1.2**	1613B
1,2,3,6,7,8-HxCDF	**3.1**	**J B q**	49	0.26	pg/L	0.1	**0.31**	1613B
1,2,3,7,8,9-HxCDF	ND		49	0.23	pg/L	0.1	0.012	1613B
2,3,4,6,7,8-HxCDF	**0.59**	**J B**	49	0.23	pg/L	0.1	**0.059**	1613B
1,2,3,4,6,7,8-HpCDD	**23**	**J B**	49	0.35	pg/L	0.01	**0.23**	1613B
1,2,3,4,6,7,8-HpCDF	**5.6**	**J B**	49	0.30	pg/L	0.01	**0.056**	1613B
1,2,3,4,7,8,9-HpCDF	**2.2**	**J B**	49	0.30	pg/L	0.01	**0.022**	1613B
OCDD	**130**	**B**	97	0.50	pg/L	0.0003	**0.039**	1613B
OCDF	**3.8**	**J B**	97	0.36	pg/L	0.0003	**0.0011**	1613B
2,3,7,8-TCDF - RA	**140**	**B**	9.7	0.71	pg/L	0.1	**14**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank2-10mm (Continued) Lab Sample ID: 320-70797-9

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		70	TEQ

Client Sample ID: 11215702-Tank2-1mm Lab Sample ID: 320-70797-10

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**110**		9.8	0.77	pg/L	1	**110**	1613B
1,2,3,7,8-PeCDD	**1.3**	**J**	49	0.47	pg/L	1	**1.3**	1613B
1,2,3,7,8-PeCDF	**14**	**J**	49	0.45	pg/L	0.03	**0.42**	1613B
2,3,4,7,8-PeCDF	**8.5**	**J**	49	0.50	pg/L	0.3	**2.6**	1613B
1,2,3,4,7,8-HxCDD	**1.5**	**J q**	49	0.26	pg/L	0.1	**0.15**	1613B
1,2,3,6,7,8-HxCDD	**1.1**	**J q**	49	0.27	pg/L	0.1	**0.11**	1613B
1,2,3,7,8,9-HxCDD	ND		49	0.24	pg/L	0.1	0.012	1613B
1,2,3,4,7,8-HxCDF	**26**	**J B**	49	0.39	pg/L	0.1	**2.6**	1613B
1,2,3,6,7,8-HxCDF	**6.5**	**J B**	49	0.36	pg/L	0.1	**0.65**	1613B
1,2,3,7,8,9-HxCDF	**0.71**	**J B q**	49	0.31	pg/L	0.1	**0.071**	1613B
2,3,4,6,7,8-HxCDF	**0.83**	**J B**	49	0.32	pg/L	0.1	**0.083**	1613B
1,2,3,4,6,7,8-HpCDD	**29**	**J B**	49	0.44	pg/L	0.01	**0.29**	1613B
1,2,3,4,6,7,8-HpCDF	**10**	**J B**	49	0.33	pg/L	0.01	**0.10**	1613B
1,2,3,4,7,8,9-HpCDF	**3.2**	**J B**	49	0.34	pg/L	0.01	**0.032**	1613B
OCDD	**170**	**B**	98	0.49	pg/L	0.0003	**0.051**	1613B
OCDF	**6.7**	**J B**	98	0.43	pg/L	0.0003	**0.0020**	1613B
2,3,7,8-TCDF - RA	**350**	**B**	9.8	0.84	pg/L	0.1	**35**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		150	TEQ

Client Sample ID: 11215702-Tank2-0.45mm Lab Sample ID: 320-70797-11

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**4.5**	**J q**	9.8	0.56	pg/L	1	**4.5**	1613B
1,2,3,7,8-PeCDD	ND		49	0.46	pg/L	1	0.23	1613B
1,2,3,7,8-PeCDF	**1.4**	**J**	49	0.30	pg/L	0.03	**0.042**	1613B
2,3,4,7,8-PeCDF	ND		49	0.34	pg/L	0.3	0.051	1613B
1,2,3,4,7,8-HxCDD	**2.0**	**J**	49	0.28	pg/L	0.1	**0.20**	1613B
1,2,3,6,7,8-HxCDD	**1.2**	**J**	49	0.27	pg/L	0.1	**0.12**	1613B
1,2,3,7,8,9-HxCDD	**1.1**	**J q**	49	0.25	pg/L	0.1	**0.11**	1613B
1,2,3,4,7,8-HxCDF	**2.0**	**J B**	49	0.30	pg/L	0.1	**0.20**	1613B
1,2,3,6,7,8-HxCDF	**0.90**	**J B q**	49	0.27	pg/L	0.1	**0.090**	1613B
1,2,3,7,8,9-HxCDF	**1.4**	**J B q**	49	0.24	pg/L	0.1	**0.14**	1613B
2,3,4,6,7,8-HxCDF	**0.93**	**J B**	49	0.24	pg/L	0.1	**0.093**	1613B
1,2,3,4,6,7,8-HpCDD	**3.7**	**J B**	49	0.30	pg/L	0.01	**0.037**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-Tank2-0.45mm (Continued) Lab Sample ID: 320-70797-11

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,6,7,8-HpCDF	**1.6**	**J B q**	49	0.37	pg/L	0.01	**0.016**	1613B
1,2,3,4,7,8,9-HpCDF	**1.0**	**J B q**	49	0.38	pg/L	0.01	**0.010**	1613B
OCDD	**15**	**J B**	98	0.48	pg/L	0.0003	**0.0045**	1613B
OCDF	**2.0**	**J B q**	98	0.54	pg/L	0.0003	**0.00060**	1613B
2,3,7,8-TCDF - RA	**11**	**B**	9.8	0.40	pg/L	0.1	**1.1**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		6.9	TEQ

Client Sample ID: 11215702-Tank2-0.1mm Lab Sample ID: 320-70797-12

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**15**		9.8	0.53	pg/L	1	**15**	1613B
1,2,3,7,8-PeCDD	**1.5**	**J**	49	0.42	pg/L	1	**1.5**	1613B
1,2,3,7,8-PeCDF	ND		49	0.37	pg/L	0.03	0.0056	1613B
2,3,4,7,8-PeCDF	**2.1**	**J**	49	0.42	pg/L	0.3	**0.63**	1613B
1,2,3,4,7,8-HxCDD	**1.9**	**J**	49	0.28	pg/L	0.1	**0.19**	1613B
1,2,3,6,7,8-HxCDD	**1.4**	**J**	49	0.28	pg/L	0.1	**0.14**	1613B
1,2,3,7,8,9-HxCDD	**1.6**	**J**	49	0.26	pg/L	0.1	**0.16**	1613B
1,2,3,4,7,8-HxCDF	**4.2**	**J B**	49	0.28	pg/L	0.1	**0.42**	1613B
1,2,3,6,7,8-HxCDF	**2.2**	**J B**	49	0.27	pg/L	0.1	**0.22**	1613B
1,2,3,7,8,9-HxCDF	**1.9**	**J B q**	49	0.23	pg/L	0.1	**0.19**	1613B
2,3,4,6,7,8-HxCDF	**0.86**	**J B q**	49	0.23	pg/L	0.1	**0.086**	1613B
1,2,3,4,6,7,8-HpCDD	**5.7**	**J B**	49	0.24	pg/L	0.01	**0.057**	1613B
1,2,3,4,6,7,8-HpCDF	**3.7**	**J B**	49	0.32	pg/L	0.01	**0.037**	1613B
1,2,3,4,7,8,9-HpCDF	**2.0**	**J B q**	49	0.33	pg/L	0.01	**0.020**	1613B
OCDD	**25**	**J B**	98	0.42	pg/L	0.0003	**0.0075**	1613B
OCDF	**5.5**	**J B**	98	0.46	pg/L	0.0003	**0.0017**	1613B
2,3,7,8-TCDF - RA	**48**	**B**	9.8	0.59	pg/L	0.1	**4.8**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		23	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc. Job ID: 320-70797-1

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Surrogate Summary

Client: GHD Services Inc.
Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
320-70797-1	11215702-Tank1-100mm	101
320-70797-1 - RADL	11215702-Tank1-100mm	122
320-70797-1 - DL	11215702-Tank1-100mm	121
320-70797-2	11215702-Tank1-41mm	101
320-70797-2 - RADL	11215702-Tank1-41mm	112
320-70797-2 - DL	11215702-Tank1-41mm	108
320-70797-3 - RA	11215702-Tank1-10mm	115
320-70797-3	11215702-Tank1-10mm	95
320-70797-4 - RA	11215702-Tank1-1mm	113
320-70797-4	11215702-Tank1-1mm	96
320-70797-5 - RA	11215702-Tank1-0.45mm	120
320-70797-5	11215702-Tank1-0.45mm	94
320-70797-6 - RA	11215702-Tank1-0.1mm	118
320-70797-6	11215702-Tank1-0.1mm	94
320-70797-7	11215702-Tank2-100mm	96
320-70797-7 - RADL	11215702-Tank2-100mm	101
320-70797-7 - DL	11215702-Tank2-100mm	112
320-70797-8	11215702-Tank2-41mm	101
320-70797-8 - RADL	11215702-Tank2-41mm	111
320-70797-8 - DL	11215702-Tank2-41mm	114
320-70797-9 - RA	11215702-Tank2-10mm	115
320-70797-9	11215702-Tank2-10mm	94
320-70797-10 - RA	11215702-Tank2-1mm	115
320-70797-10	11215702-Tank2-1mm	95
320-70797-11 - RA	11215702-Tank2-0.45mm	114
320-70797-11	11215702-Tank2-0.45mm	96
320-70797-12 - RA	11215702-Tank2-0.1mm	115
320-70797-12	11215702-Tank2-0.1mm	93
MB 320-467785/1-A	Method Blank	94

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-467785/2-A	Lab Control Sample	95
LCSD 320-467785/3-A	Lab Control Sample Dup	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc. Job ID: 320-70797-1

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
320-70797-1	11215702-Tank1-100mm			61	59	59	62	67	65
320-70797-1 - RADL	11215702-Tank1-100mm		83						
320-70797-1 - DL	11215702-Tank1-100mm	70	72						
320-70797-2	11215702-Tank1-41mm			63	61	61	63	68	66
320-70797-2 - RADL	11215702-Tank1-41mm		79						
320-70797-2 - DL	11215702-Tank1-41mm	68	69						
320-70797-3 - RA	11215702-Tank1-10mm		91						
320-70797-3	11215702-Tank1-10mm	76	72	70	70	70	77	81	78
320-70797-4 - RA	11215702-Tank1-1mm		88						
320-70797-4	11215702-Tank1-1mm	72	71	70	69	68	73	77	72
320-70797-5 - RA	11215702-Tank1-0.45mm		97						
320-70797-5	11215702-Tank1-0.45mm	79	74	76	73	74	80	84	81
320-70797-6 - RA	11215702-Tank1-0.1mm		87						
320-70797-6	11215702-Tank1-0.1mm	71	66	67	64	65	70	75	71
320-70797-7	11215702-Tank2-100mm	62		60	55	57	59	61	59
320-70797-7 - RADL	11215702-Tank2-100mm		69						
320-70797-7 - DL	11215702-Tank2-100mm	64	67						
320-70797-8	11215702-Tank2-41mm			59	54	55	64	62	64
320-70797-8 - RADL	11215702-Tank2-41mm		78						
320-70797-8 - DL	11215702-Tank2-41mm	59	64						
320-70797-9 - RA	11215702-Tank2-10mm		92						
320-70797-9	11215702-Tank2-10mm	76	68	75	70	70	81	85	79
320-70797-10 - RA	11215702-Tank2-1mm		82						
320-70797-10	11215702-Tank2-1mm	70	62	65	62	62	67	72	66
320-70797-11 - RA	11215702-Tank2-0.45mm		73						
320-70797-11	11215702-Tank2-0.45mm	62	54	59	53	55	58	62	56
320-70797-12 - RA	11215702-Tank2-0.1mm		82						
320-70797-12	11215702-Tank2-0.1mm	70	61	67	61	61	68	73	66
MB 320-467785/1-A	Method Blank	66	68	59	59	62	52	64	57

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-70797-1	11215702-Tank1-100mm	67	63	65	70	65	64	64
320-70797-1 - RADL	11215702-Tank1-100mm							
320-70797-1 - DL	11215702-Tank1-100mm							
320-70797-2	11215702-Tank1-41mm	68	65	67	71	67	68	67
320-70797-2 - RADL	11215702-Tank1-41mm							
320-70797-2 - DL	11215702-Tank1-41mm							
320-70797-3 - RA	11215702-Tank1-10mm							
320-70797-3	11215702-Tank1-10mm	79	79	81	94	89	90	102
320-70797-4 - RA	11215702-Tank1-1mm							
320-70797-4	11215702-Tank1-1mm	73	74	75	89	81	83	93
320-70797-5 - RA	11215702-Tank1-0.45mm							
320-70797-5	11215702-Tank1-0.45mm	82	83	83	98	90	93	104
320-70797-6 - RA	11215702-Tank1-0.1mm							
320-70797-6	11215702-Tank1-0.1mm	71	73	74	88	78	83	93
320-70797-7	11215702-Tank2-100mm	59	61	61	73	65	71	78
320-70797-7 - RADL	11215702-Tank2-100mm							
320-70797-7 - DL	11215702-Tank2-100mm							

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HxDF (26-123)**	**HxCF (29-147)**	**13CHxCF (28-136)**	**HpCDD (23-140)**	**HpCDF (28-143)**	**HpCDF2 (26-138)**	**OCDD (17-157)**
320-70797-8	11215702-Tank2-41mm	60	62	60	81	67	76	90
320-70797-8 - RADL	11215702-Tank2-41mm							
320-70797-8 - DL	11215702-Tank2-41mm							
320-70797-9 - RA	11215702-Tank2-10mm							
320-70797-9	11215702-Tank2-10mm	80	76	81	99	86	92	106
320-70797-10 - RA	11215702-Tank2-1mm							
320-70797-10	11215702-Tank2-1mm	67	68	69	84	75	80	91
320-70797-11 - RA	11215702-Tank2-0.45mm							
320-70797-11	11215702-Tank2-0.45mm	58	57	58	75	65	69	77
320-70797-12 - RA	11215702-Tank2-0.1mm							
320-70797-12	11215702-Tank2-0.1mm	66	68	68	89	79	84	97
MB 320-467785/1-A	Method Blank	63	59	67	60	59	56	53

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**TCDD (20-175)**	**TCDF (22-152)**	**PeCDD (21-227)**	**PeCDF (21-192)**	**PeCF (13-328)**	**HxCDD (21-193)**	**HxDD (25-163)**	**HxCDF (19-202)**
LCS 320-467785/2-A	Lab Control Sample	70	62	65	60	60	60	69	60
LCSD 320-467785/3-A	Lab Control Sample Dup	75	73	74	69	71	70	81	74

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**HxDF (21-159)**	**HxCF (17-205)**	**13CHxCF (22-176)**	**HpCDD (26-166)**	**HpCDF (21-158)**	**HpCDF2 (20-186)**	**OCDD (13-199)**
LCS 320-467785/2-A	Lab Control Sample	66	61	67	68	64	61	60
LCSD 320-467785/3-A	Lab Control Sample Dup	79	80	81	80	82	78	77

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD

HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

QC Sample Results

Client: GHD Services Inc. Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-467785/1-A
Matrix: Water
Analysis Batch: 468973

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467785

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.73	pg/L		03/05/21 09:52	03/10/21 17:37	1
2,3,7,8-TCDF	1.24	J q	10	0.33	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,7,8-PeCDD	ND		50	0.73	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,7,8-PeCDF	ND		50	0.47	pg/L		03/05/21 09:52	03/10/21 17:37	1
2,3,4,7,8-PeCDF	ND		50	0.50	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,4,7,8-HxCDD	ND		50	0.55	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,6,7,8-HxCDD	ND		50	0.52	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,7,8,9-HxCDD	ND		50	0.49	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,4,7,8-HxCDF	1.77	J q	50	0.55	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,6,7,8-HxCDF	1.22	J q	50	0.52	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,7,8,9-HxCDF	1.61	J q	50	0.45	pg/L		03/05/21 09:52	03/10/21 17:37	1
2,3,4,6,7,8-HxCDF	1.83	J	50	0.40	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,4,6,7,8-HpCDD	5.95	J	50	0.44	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,4,6,7,8-HpCDF	3.29	J q	50	0.43	pg/L		03/05/21 09:52	03/10/21 17:37	1
1,2,3,4,7,8,9-HpCDF	1.98	J q	50	0.49	pg/L		03/05/21 09:52	03/10/21 17:37	1
OCDD	15.6	J	100	0.73	pg/L		03/05/21 09:52	03/10/21 17:37	1
OCDF	4.48	J	100	1.1	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total TCDD	5.33	J q	10	0.73	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total TCDF	1.24	J q	10	0.33	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total PeCDD	ND		50	0.73	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total PeCDF	ND		50	0.50	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total HxCDD	ND		50	1.0	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total HxCDF	6.43	J q	50	0.48	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total HpCDD	9.54	J	50	0.44	pg/L		03/05/21 09:52	03/10/21 17:37	1
Total HpCDF	5.27	J q	50	0.46	pg/L		03/05/21 09:52	03/10/21 17:37	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*66*		*25 - 164*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,7,8-PeCDD	*59*		*25 - 181*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-2,3,4,7,8-PeCDF	*62*		*21 - 178*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,4,7,8-HxCDD	*52*		*32 - 141*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,6,7,8-HxCDD	*64*		*28 - 130*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,4,7,8-HxCDF	*57*		*26 - 152*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,6,7,8-HxCDF	*63*		*26 - 123*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,7,8,9-HxCDF	*59*		*29 - 147*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-2,3,4,6,7,8-HxCDF	*67*		*28 - 136*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*60*		*23 - 140*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*59*		*28 - 143*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*56*		*26 - 138*	*03/05/21 09:52*	*03/10/21 17:37*	*1*
13C-OCDD	*53*		*17 - 157*	*03/05/21 09:52*	*03/10/21 17:37*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*03/05/21 09:52*	*03/10/21 17:37*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-467785/2-A
Matrix: Water
Analysis Batch: 468973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467785

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	200		pg/L		100	67 - 158
2,3,7,8-TCDF	200	207		pg/L		103	75 - 158
1,2,3,7,8-PeCDD	1000	1010		pg/L		101	70 - 142
1,2,3,7,8-PeCDF	1000	1020		pg/L		102	80 - 134
2,3,4,7,8-PeCDF	1000	1040		pg/L		104	68 - 160
1,2,3,4,7,8-HxCDD	1000	1110		pg/L		111	70 - 164
1,2,3,6,7,8-HxCDD	1000	1130		pg/L		113	76 - 134
1,2,3,7,8,9-HxCDD	1000	1070		pg/L		107	64 - 162
1,2,3,4,7,8-HxCDF	1000	1060		pg/L		106	72 - 134
1,2,3,6,7,8-HxCDF	1000	1070		pg/L		107	84 - 130
1,2,3,7,8,9-HxCDF	1000	1110		pg/L		111	78 - 130
2,3,4,6,7,8-HxCDF	1000	1090		pg/L		109	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	1060		pg/L		106	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	1100		pg/L		110	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	1070		pg/L		107	78 - 138
OCDD	2000	2000		pg/L		100	78 - 144
OCDF	2000	1830		pg/L		92	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*70*		*20 - 175*
13C-2,3,7,8-TCDF	*62*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*65*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*60*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*60*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*60*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*69*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*60*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*66*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*61*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*67*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*68*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*61*		*20 - 186*
13C-OCDD	*60*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*95*		*31 - 191*

Lab Sample ID: LCSD 320-467785/3-A
Matrix: Water
Analysis Batch: 468973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 467785

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	199		pg/L		100	67 - 158	0	50
2,3,7,8-TCDF	200	206		pg/L		103	75 - 158	0	50
1,2,3,7,8-PeCDD	1000	1020		pg/L		102	70 - 142	0	50
1,2,3,7,8-PeCDF	1000	1040		pg/L		104	80 - 134	3	50
2,3,4,7,8-PeCDF	1000	1030		pg/L		103	68 - 160	0	50

QC Sample Results

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-467785/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 468973
Prep Batch: 467785

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	1070		pg/L		107	70 - 164	3	50
1,2,3,6,7,8-HxCDD	1000	1110		pg/L		111	76 - 134	2	50
1,2,3,7,8,9-HxCDD	1000	1070		pg/L		107	64 - 162	0	50
1,2,3,4,7,8-HxCDF	1000	1060		pg/L		106	72 - 134	0	50
1,2,3,6,7,8-HxCDF	1000	1090		pg/L		109	84 - 130	2	50
1,2,3,7,8,9-HxCDF	1000	1060		pg/L		106	78 - 130	5	50
2,3,4,6,7,8-HxCDF	1000	1090		pg/L		109	70 - 156	0	50
1,2,3,4,6,7,8-HpCDD	1000	1030		pg/L		103	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF	1000	1070		pg/L		107	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF	1000	1040		pg/L		104	78 - 138	3	50
OCDD	2000	1970		pg/L		99	78 - 144	1	50
OCDF	2000	1860		pg/L		93	63 - 170	2	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*75*		*20 - 175*
13C-2,3,7,8-TCDF	*73*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*74*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*69*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*71*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*70*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*81*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*74*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*79*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*80*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*81*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*80*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*82*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*20 - 186*
13C-OCDD	*77*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*93*		*31 - 191*

Specialty Organics

Prep Batch: 467785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-70797-1 - DL	11215702-Tank1-100mm	Total/NA	Water	1613B	
320-70797-1 - RADL	11215702-Tank1-100mm	Total/NA	Water	1613B	
320-70797-1	11215702-Tank1-100mm	Total/NA	Water	1613B	
320-70797-2 - DL	11215702-Tank1-41mm	Total/NA	Water	1613B	
320-70797-2 - RADL	11215702-Tank1-41mm	Total/NA	Water	1613B	
320-70797-2	11215702-Tank1-41mm	Total/NA	Water	1613B	
320-70797-3 - RA	11215702-Tank1-10mm	Total/NA	Water	1613B	
320-70797-3	11215702-Tank1-10mm	Total/NA	Water	1613B	
320-70797-4 - RA	11215702-Tank1-1mm	Total/NA	Water	1613B	
320-70797-4	11215702-Tank1-1mm	Total/NA	Water	1613B	
320-70797-5 - RA	11215702-Tank1-0.45mm	Total/NA	Water	1613B	
320-70797-5	11215702-Tank1-0.45mm	Total/NA	Water	1613B	
320-70797-6 - RA	11215702-Tank1-0.1mm	Total/NA	Water	1613B	
320-70797-6	11215702-Tank1-0.1mm	Total/NA	Water	1613B	
320-70797-7 - DL	11215702-Tank2-100mm	Total/NA	Water	1613B	
320-70797-7 - RADL	11215702-Tank2-100mm	Total/NA	Water	1613B	
320-70797-7	11215702-Tank2-100mm	Total/NA	Water	1613B	
320-70797-8 - DL	11215702-Tank2-41mm	Total/NA	Water	1613B	
320-70797-8 - RADL	11215702-Tank2-41mm	Total/NA	Water	1613B	
320-70797-8	11215702-Tank2-41mm	Total/NA	Water	1613B	
320-70797-9 - RA	11215702-Tank2-10mm	Total/NA	Water	1613B	
320-70797-9	11215702-Tank2-10mm	Total/NA	Water	1613B	
320-70797-10 - RA	11215702-Tank2-1mm	Total/NA	Water	1613B	
320-70797-10	11215702-Tank2-1mm	Total/NA	Water	1613B	
320-70797-11 - RA	11215702-Tank2-0.45mm	Total/NA	Water	1613B	
320-70797-11	11215702-Tank2-0.45mm	Total/NA	Water	1613B	
320-70797-12 - RA	11215702-Tank2-0.1mm	Total/NA	Water	1613B	
320-70797-12	11215702-Tank2-0.1mm	Total/NA	Water	1613B	
MB 320-467785/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-467785/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-467785/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 468973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-70797-1	11215702-Tank1-100mm	Total/NA	Water	1613B	467785
320-70797-2	11215702-Tank1-41mm	Total/NA	Water	1613B	467785
MB 320-467785/1-A	Method Blank	Total/NA	Water	1613B	467785
LCS 320-467785/2-A	Lab Control Sample	Total/NA	Water	1613B	467785
LCSD 320-467785/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	467785

Analysis Batch: 469703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-70797-3 - RA	11215702-Tank1-10mm	Total/NA	Water	1613B	467785
320-70797-4 - RA	11215702-Tank1-1mm	Total/NA	Water	1613B	467785
320-70797-5 - RA	11215702-Tank1-0.45mm	Total/NA	Water	1613B	467785
320-70797-6 - RA	11215702-Tank1-0.1mm	Total/NA	Water	1613B	467785
320-70797-9 - RA	11215702-Tank2-10mm	Total/NA	Water	1613B	467785
320-70797-10 - RA	11215702-Tank2-1mm	Total/NA	Water	1613B	467785
320-70797-11 - RA	11215702-Tank2-0.45mm	Total/NA	Water	1613B	467785
320-70797-12 - RA	11215702-Tank2-0.1mm	Total/NA	Water	1613B	467785

Specialty Organics

Analysis Batch: 469779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-70797-3	11215702-Tank1-10mm	Total/NA	Water	1613B	467785
320-70797-4	11215702-Tank1-1mm	Total/NA	Water	1613B	467785
320-70797-5	11215702-Tank1-0.45mm	Total/NA	Water	1613B	467785
320-70797-6	11215702-Tank1-0.1mm	Total/NA	Water	1613B	467785
320-70797-7	11215702-Tank2-100mm	Total/NA	Water	1613B	467785
320-70797-8	11215702-Tank2-41mm	Total/NA	Water	1613B	467785
320-70797-9	11215702-Tank2-10mm	Total/NA	Water	1613B	467785
320-70797-10	11215702-Tank2-1mm	Total/NA	Water	1613B	467785
320-70797-11	11215702-Tank2-0.45mm	Total/NA	Water	1613B	467785
320-70797-12	11215702-Tank2-0.1mm	Total/NA	Water	1613B	467785

Analysis Batch: 470865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-70797-1 - RADL	11215702-Tank1-100mm	Total/NA	Water	1613B	467785
320-70797-2 - RADL	11215702-Tank1-41mm	Total/NA	Water	1613B	467785
320-70797-7 - RADL	11215702-Tank2-100mm	Total/NA	Water	1613B	467785
320-70797-8 - RADL	11215702-Tank2-41mm	Total/NA	Water	1613B	467785

Analysis Batch: 471421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-70797-1 - DL	11215702-Tank1-100mm	Total/NA	Water	1613B	467785
320-70797-2 - DL	11215702-Tank1-41mm	Total/NA	Water	1613B	467785
320-70797-7 - DL	11215702-Tank2-100mm	Total/NA	Water	1613B	467785
320-70797-8 - DL	11215702-Tank2-41mm	Total/NA	Water	1613B	467785

Client Sample ID: 11215702-Tank1-100mm Lab Sample ID: 320-70797-1

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	DL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	DL	20	471421	03/17/21 18:44	ALM	TAL SAC
Total/NA	Prep	1613B	RADL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RADL	20	470865	03/16/21 22:48	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	468973	03/10/21 14:25	GRB	TAL SAC

Client Sample ID: 11215702-Tank1-41mm Lab Sample ID: 320-70797-2

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	DL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	DL	10	471421	03/17/21 17:13	ALM	TAL SAC
Total/NA	Prep	1613B	RADL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RADL	10	470865	03/16/21 23:26	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	468973	03/10/21 15:13	GRB	TAL SAC

Client Sample ID: 11215702-Tank1-10mm Lab Sample ID: 320-70797-3

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 18:57	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 12:57	GRB	TAL SAC

Client Sample ID: 11215702-Tank1-1mm Lab Sample ID: 320-70797-4

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 17:40	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 13:45	GRB	TAL SAC

Client Sample ID: 11215702-Tank1-0.45mm Lab Sample ID: 320-70797-5

Date Collected: 03/03/21 15:00 **Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 16:24	GRB	TAL SAC

Lab Chronicle

Client: GHD Services Inc.	Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

## Client Sample ID: 11215702-Tank1-0.45mm	Lab Sample ID: 320-70797-5

Date Collected: 03/03/21 15:00	**Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 14:33	GRB	TAL SAC

## Client Sample ID: 11215702-Tank1-0.1mm	Lab Sample ID: 320-70797-6

Date Collected: 03/03/21 15:00	**Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 17:02	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 15:21	GRB	TAL SAC

## Client Sample ID: 11215702-Tank2-100mm	Lab Sample ID: 320-70797-7

Date Collected: 03/03/21 15:00	**Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	DL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	DL	10	471421	03/17/21 17:59	ALM	TAL SAC
Total/NA	Prep	1613B	RADL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RADL	10	470865	03/17/21 00:05	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 16:09	GRB	TAL SAC

## Client Sample ID: 11215702-Tank2-41mm	Lab Sample ID: 320-70797-8

Date Collected: 03/03/21 15:00	**Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	DL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	DL	20	471421	03/17/21 19:29	ALM	TAL SAC
Total/NA	Prep	1613B	RADL		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RADL	20	470865	03/17/21 00:43	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 16:56	GRB	TAL SAC

## Client Sample ID: 11215702-Tank2-10mm	Lab Sample ID: 320-70797-9

Date Collected: 03/03/21 15:00	**Matrix: Water**
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 19:35	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 17:44	GRB	TAL SAC

Lab Chronicle

Client: GHD Services Inc.
Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-Tank2-1mm
Lab Sample ID: 320-70797-10

Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 20:13	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 18:32	GRB	TAL SAC

Client Sample ID: 11215702-Tank2-0.45mm
Lab Sample ID: 320-70797-11

Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 15:45	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 19:20	GRB	TAL SAC

Client Sample ID: 11215702-Tank2-0.1mm
Lab Sample ID: 320-70797-12

Date Collected: 03/03/21 15:00
Matrix: Water
Date Received: 03/04/21 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B	RA	1	469703	03/11/21 18:19	GRB	TAL SAC
Total/NA	Prep	1613B			467785	03/05/21 09:52	FC	TAL SAC
Total/NA	Analysis	1613B		1	469779	03/12/21 20:08	GRB	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-70797-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-70797-1	11215702-Tank1-100mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-2	11215702-Tank1-41mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-3	11215702-Tank1-10mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-4	11215702-Tank1-1mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-5	11215702-Tank1-0.45mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-6	11215702-Tank1-0.1mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-7	11215702-Tank2-100mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-8	11215702-Tank2-41mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-9	11215702-Tank2-10mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-10	11215702-Tank2-1mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-11	11215702-Tank2-0.45mm	Water	03/03/21 15:00	03/04/21 10:10	
320-70797-12	11215702-Tank2-0.1mm	Water	03/03/21 15:00	03/04/21 10:10	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 470907

Lab Sample ID: ICV 320-470907/9 Client Sample ID:

Date Analyzed: 03/17/21 11:03 Lab File ID: 17MR2110D5_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	17.49	Peak assignment corrected	arghestanis	03/17/21 12:21
13C-2,3,4,7,8-PeCDF	23.21	Peak assignment corrected	arghestanis	03/17/21 12:21
13C-1,2,3,4,7,8-HxCDF	30.07	Peak assignment corrected	arghestanis	03/17/21 12:22
13C-1,2,3,4,7,8-HxCDD	31.43	Peak assignment corrected	arghestanis	03/17/21 12:22
13C-1,2,3,4,7,8,9-HpCDF	34.65	Peak assignment corrected	arghestanis	03/17/21 12:22

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 469703

Lab Sample ID: 320-70797-11 RA Client Sample ID: 11215702-Tank2-0.45mm RA

Date Analyzed: 03/11/21 15:45 Lab File ID: 11MR2111D2_004.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.18	Peak Tail	bilottag	03/12/21 11:00

Lab Sample ID: 320-70797-6 RA Client Sample ID: 11215702-Tank1-0.1mm RA

Date Analyzed: 03/11/21 17:02 Lab File ID: 11MR2111D2_006.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.16	Peak Tail	bilottag	03/12/21 11:01

Lab Sample ID: 320-70797-4 RA Client Sample ID: 11215702-Tank1-1mm RA

Date Analyzed: 03/11/21 17:40 Lab File ID: 11MR2111D2_007.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	16.17	Peak Tail	bilottag	03/12/21 11:02

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 470865

Lab Sample ID: 320-70797-8 RADL Client Sample ID: 11215702-Tank2-41mm RADL

Date Analyzed: 03/17/21 00:43 Lab File ID: 16MR2111D2_007.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,7,8-TCDF	16.16	Baseline	bilottag	03/17/21 08:12

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 458037

Lab Sample ID: WDM 320-458037/1 Client Sample ID:

Date Analyzed: 02/02/21 20:03 Lab File ID: 02fe21dfs1_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,8,9-PeCDD	30.26	Peak assignment corrected	stephensk	02/03/21 14:41
1,2,3,8,9-PeCDF	30.43	Peak assignment corrected	stephensk	02/03/21 14:41

Lab Sample ID: IC 320-458037/3 Client Sample ID:

Date Analyzed: 02/02/21 21:46 Lab File ID: 02fe21dfs1_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-2,3,4,7,8-PeCDF	28.37	Peak assignment corrected	messecara	02/03/21 01:54
13C-1,2,3,4,7,8-HxCDF	34.64	Peak assignment corrected	messecara	02/03/21 01:54
13C-1,2,3,4,7,8-HxCDD	35.88	Peak assignment corrected	messecara	02/03/21 01:55
13C-1,2,3,4,7,8,9-HpCDF	39.69	Peak assignment corrected	messecara	02/03/21 01:55

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 468973

Lab Sample ID: 320-70797-1 Client Sample ID: 11215702-Tank1-100mm

Date Analyzed: 03/10/21 14:25 Lab File ID: 10mr21dfs1_9.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	25.74	Split Peak	dadunj	03/12/21 09:07
1,2,3,7,8-PeCDD	27.87	Split Peak	dadunj	03/12/21 09:08

Lab Sample ID: 320-70797-2 Client Sample ID: 11215702-Tank1-41mm

Date Analyzed: 03/10/21 15:13 Lab File ID: 10mr21dfs1_10.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	25.71	Split Peak	dadunj	03/12/21 09:12
1,2,3,7,8-PeCDD	27.85	Baseline	dadunj	03/12/21 09:13
1,2,3,7,8,9-HxCDF	35.79	Invalid Compound ID	dadunj	03/12/21 09:14

Lab Sample ID: MB 320-467785/1-A Client Sample ID:

Date Analyzed: 03/10/21 17:37 Lab File ID: 10mr21dfs1_13.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	18.61	Baseline	dadunj	03/12/21 09:19
1,2,3,4,7,8-HxCDF	33.65	Split Peak	dadunj	03/12/21 09:20
1,2,3,6,7,8-HxCDF	33.86	Split Peak	dadunj	03/12/21 09:20
2,3,4,6,7,8-HxCDF	34.81	Split Peak	dadunj	03/12/21 09:20
1,2,3,7,8,9-HxCDF	35.82	Baseline	dadunj	03/12/21 09:21
1,2,3,4,6,7,8-HpCDF	37.85	Baseline	dadunj	03/12/21 09:21
1,2,3,4,6,7,8-HpCDD	38.86	Baseline	dadunj	03/12/21 09:21
OCDD	41.34	Split Peak	dadunj	03/12/21 09:22
OCDF	41.43	Baseline	dadunj	03/12/21 09:22

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 469779

Lab Sample ID: CCV 320-469779/1 Client Sample ID:

Date Analyzed: 03/12/21 10:33 Lab File ID: 12mr21adfs1_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	19.46	Peak assignment corrected	bilottag	03/15/21 09:02
13C-2,3,4,7,8-PeCDF	27.02	Peak assignment corrected	bilottag	03/15/21 09:02
13C-1,2,3,4,7,8-HxCDF	33.53	Peak assignment corrected	bilottag	03/15/21 09:02
13C-1,2,3,4,7,8-HxCDD	34.99	Peak assignment corrected	bilottag	03/15/21 09:02
13C-1,2,3,4,7,8,9-HpCDF	39.14	Peak assignment corrected	bilottag	03/15/21 09:02

Lab Sample ID: 320-70797-3 Client Sample ID: 11215702-Tank1-10mm

Date Analyzed: 03/12/21 12:57 Lab File ID: 12mr21adfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	19.80	Split Peak	dadunj	03/16/21 08:17
1,2,3,7,8-PeCDF	25.64	Split Peak	dadunj	03/16/21 08:17
2,3,4,7,8-PeCDF	27.01	Split Peak	dadunj	03/16/21 08:17
1,2,3,6,7,8-HxCDF	33.75	Split Peak	dadunj	03/16/21 08:18
1,2,3,6,7,8-HxCDD	35.12	Split Peak	dadunj	03/16/21 08:18
1,2,3,7,8,9-HxCDD	35.55	Baseline	dadunj	03/16/21 08:18
1,2,3,4,6,7,8-HpCDF	37.80	Split Peak	dadunj	03/16/21 08:19
1,2,3,4,7,8,9-HpCDF	39.14	Split Peak	dadunj	03/16/21 08:19
OCDF	41.39	Split Peak	dadunj	03/16/21 08:20

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 469779

Lab Sample ID: 320-70797-4 Client Sample ID: 11215702-Tank1-1mm

Date Analyzed: 03/12/21 13:45 Lab File ID: 12mr21adfs1_6.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDF		Invalid Compound ID	dadunj	03/16/21 08:28
2,3,7,8-TCDD	19.84	Split Peak	dadunj	03/16/21 08:26
1,2,3,7,8-PeCDF	25.69	Split Peak	dadunj	03/16/21 08:27
1,2,3,6,7,8-HxCDF	33.75	Split Peak	dadunj	03/16/21 08:28
1,2,3,7,8,9-HxCDD	35.58	Baseline	dadunj	03/16/21 08:29
1,2,3,4,6,7,8-HpCDF	37.83	Split Peak	dadunj	03/16/21 08:29
1,2,3,4,6,7,8-HpCDD	38.84	Split Peak	dadunj	03/16/21 08:30
1,2,3,4,7,8,9-HpCDF	39.17	Split Peak	dadunj	03/16/21 08:29
OCDF	41.39	Split Peak	dadunj	03/16/21 08:30

Lab Sample ID: 320-70797-5 Client Sample ID: 11215702-Tank1-0.45mm

Date Analyzed: 03/12/21 14:33 Lab File ID: 12mr21adfs1_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	dadunj	03/16/21 08:34
1,2,3,7,8-PeCDF	25.64	Split Peak	dadunj	03/16/21 08:32
1,2,3,4,7,8-HxCDF	33.56	Baseline	dadunj	03/16/21 08:32
1,2,3,6,7,8-HxCDF	33.80	Baseline	dadunj	03/16/21 08:32
2,3,4,6,7,8-HxCDF	34.74	Baseline	dadunj	03/16/21 08:32
1,2,3,4,7,8-HxCDD	35.00	Split Peak	dadunj	03/16/21 08:33
1,2,3,7,8,9-HxCDF	35.76	Baseline	dadunj	03/16/21 08:33
1,2,3,4,6,7,8-HpCDF	37.82	Split Peak	dadunj	03/16/21 08:34
1,2,3,4,6,7,8-HpCDD	38.86	Baseline	dadunj	03/16/21 08:34
OCDD	41.33	Split Peak	dadunj	03/16/21 08:35
OCDF	41.40	Split Peak	dadunj	03/16/21 08:35

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 469779

Lab Sample ID: 320-70797-6 Client Sample ID: 11215702-Tank1-0.1mm

Date Analyzed: 03/12/21 15:21 Lab File ID: 12mr21adfs1_8.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDD		Invalid Compound ID	dadunj	03/16/21 08:50
1,2,3,7,8,9-HxCDF		Invalid Compound ID	dadunj	03/16/21 08:50
2,3,7,8-TCDD	19.81	Split Peak	dadunj	03/16/21 08:48
1,2,3,7,8-PeCDF	25.63	Baseline	dadunj	03/16/21 08:48
2,3,4,7,8-PeCDF	27.05	Baseline	dadunj	03/16/21 08:49
2,3,4,6,7,8-HxCDF	34.77	Split Peak	dadunj	03/16/21 08:49
1,2,3,4,7,8-HxCDD	35.02	Split Peak	dadunj	03/16/21 08:50
1,2,3,6,7,8-HxCDD	35.16	Split Peak	dadunj	03/16/21 08:50
1,2,3,4,6,7,8-HpCDD	38.85	Split Peak	dadunj	03/16/21 08:50
1,2,3,4,7,8,9-HpCDF	39.15	Split Peak	dadunj	03/16/21 08:50
OCDF	41.39	Split Peak	dadunj	03/16/21 08:51

Lab Sample ID: 320-70797-8 Client Sample ID: 11215702-Tank2-41mm

Date Analyzed: 03/12/21 16:56 Lab File ID: 12mr21adfs1_10.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	25.76	Invalid Compound ID	dadunj	03/16/21 09:03
1,2,3,7,8,9-HxCDF	35.79	Invalid Compound ID	dadunj	03/16/21 09:05

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 469779

Lab Sample ID: 320-70797-9 Client Sample ID: 11215702-Tank2-10mm

Date Analyzed: 03/12/21 17:44 Lab File ID: 12mr21adfs1_11.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDF		Invalid Compound ID	dadunj	03/16/21 09:09
2,3,7,8-TCDD	19.85	Split Peak	dadunj	03/16/21 09:08
1,2,3,7,8-PeCDF	25.67	Split Peak	dadunj	03/16/21 09:08
1,2,3,4,7,8-HxCDF	33.58	Split Peak	dadunj	03/16/21 09:09
1,2,3,6,7,8-HxCDF	33.78	Split Peak	dadunj	03/16/21 09:09
1,2,3,4,7,8-HxCDD	35.02	Split Peak	dadunj	03/16/21 09:09
1,2,3,6,7,8-HxCDD	35.17	Invalid Compound ID	dadunj	03/16/21 09:09
1,2,3,7,8,9-HxCDD	35.57	Split Peak	dadunj	03/16/21 09:10
1,2,3,4,7,8,9-HpCDF	39.19	Split Peak	dadunj	03/16/21 09:10
OCDF	41.41	Split Peak	dadunj	03/16/21 09:11

Lab Sample ID: 320-70797-10 Client Sample ID: 11215702-Tank2-1mm

Date Analyzed: 03/12/21 18:32 Lab File ID: 12mr21adfs1_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	25.66	Split Peak	dadunj	03/16/21 09:13
1,2,3,7,8-PeCDD	27.81	Baseline	dadunj	03/16/21 09:14
1,2,3,4,7,8-HxCDD	35.03	Split Peak	dadunj	03/16/21 09:14
1,2,3,7,8,9-HxCDF	35.77	Split Peak	dadunj	03/16/21 09:14
OCDF	41.40	Split Peak	dadunj	03/16/21 09:16

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 469779

Lab Sample ID: 320-70797-11 Client Sample ID: 11215702-Tank2-0.45mm

Date Analyzed: 03/12/21 19:20 Lab File ID: 12mr21adfs1_13.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDD		Invalid Compound ID	dadunj	03/16/21 09:17
2,3,7,8-TCDF	18.61	Split Peak	dadunj	03/16/21 09:16
2,3,7,8-TCDD	19.82	Split Peak	dadunj	03/16/21 09:17
1,2,3,7,8-PeCDF	25.66	Split Peak	dadunj	03/16/21 09:17
1,2,3,4,7,8-HxCDF	33.59	Split Peak	dadunj	03/16/21 09:18
1,2,3,6,7,8-HxCDF	33.77	Split Peak	dadunj	03/16/21 09:18
2,3,4,6,7,8-HxCDF	34.75	Split Peak	dadunj	03/16/21 09:18
1,2,3,6,7,8-HxCDD	35.15	Split Peak	dadunj	03/16/21 09:19
1,2,3,7,8,9-HxCDD	35.58	Split Peak	dadunj	03/16/21 09:19
1,2,3,7,8,9-HxCDF	35.80	Split Peak	dadunj	03/16/21 09:18
1,2,3,4,6,7,8-HpCDF	37.84	Split Peak	dadunj	03/16/21 09:19
1,2,3,4,6,7,8-HpCDD	38.87	Split Peak	dadunj	03/16/21 09:20
1,2,3,4,7,8,9-HpCDF	39.19	Split Peak	dadunj	03/16/21 09:19
OCDD	41.34	Split Peak	dadunj	03/16/21 09:20

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 469779

Lab Sample ID: 320-70797-12 Client Sample ID: 11215702-Tank2-0.1mm

Date Analyzed: 03/12/21 20:08 Lab File ID: 12mr21adfs1_14.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	18.60	Baseline	dadunj	03/16/21 09:21
1,2,3,7,8-PeCDD	27.80	Baseline	dadunj	03/16/21 09:22
1,2,3,6,7,8-HxCDF	33.73	Split Peak	dadunj	03/16/21 09:22
2,3,4,6,7,8-HxCDF	34.78	Split Peak	dadunj	03/16/21 09:22
1,2,3,4,7,8-HxCDD	35.01	Split Peak	dadunj	03/16/21 09:23
1,2,3,6,7,8-HxCDD	35.15	Split Peak	dadunj	03/16/21 09:23
1,2,3,7,8,9-HxCDD	35.57	Split Peak	dadunj	03/16/21 09:23
1,2,3,7,8,9-HxCDF	35.79	Split Peak	dadunj	03/16/21 09:22
1,2,3,4,6,7,8-HpCDF	37.82	Split Peak	dadunj	03/16/21 09:23
1,2,3,4,7,8,9-HpCDF	39.17	Split Peak	dadunj	03/16/21 09:23
OCDD	41.33	Split Peak	dadunj	03/16/21 09:23
OCDF	41.39	Split Peak	dadunj	03/16/21 09:23

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00042	07/30/21	07/30/20	C14, Lot STBJ3715	6 mL	HRDXNCP_00041	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00041	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00047	01/14/22	01/20/21	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00464	250 uL	13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00465	250 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00468	02/02/22	02/02/21	Acetone, Lot 0000242180	500 mL	HRDXNIDA_00435	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
					HRDXNIDA_00464	5 mL	13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-OCDD	4 pg/uL
					HRDXNIDA_00465	5 mL	13C-1,2,3,6,7,8-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
HRDXNIS_00133	01/14/22	01/14/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00032	10/02/21	02/02/21	C14, Lot STBJ3715	1 mL	HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00464	500 uL	13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00465	500 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIS_00133	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00246	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00128	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIS_00133	01/14/22	01/14/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00246	12/29/21	12/29/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00128	10/02/21	12/10/20	Acetone, Lot 00000267457	25 mL	HRDXNTA_00112	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00112	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00029	10/02/21	01/20/21	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00464	250 uL	13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00465	250 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIS_00133	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00246	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00128	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIS_00133	01/14/22	01/14/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00246	12/29/21	12/29/20	Isooctane, Lot B00S6184	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00128	10/02/21	12/10/20	Acetone, Lot 00000267457	25 mL	HRDXNTA_00112	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00112	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00097	01/14/22	01/20/21	C14, Lot STBJ3715	1 mL	HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00464	500 uL	13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00465	500 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIS_00133	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00112	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIS_00133	01/14/22	01/14/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00112	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00032	01/14/22	01/20/21	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00464	100 uL	13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00465	100 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIS_00133	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00112	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26	CIL, Lot ER04251601			(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26	CIL, Lot ER04211601			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27	CIL, Lot ER04211701			(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27	CIL, Lot ER01061701			(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIS_00133	01/14/22	01/14/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00112	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent Reagent ID	Parent Reagent Volume Added	Analyte	Concentration
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00028	01/14/22	01/20/21	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00464	100 uL	13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00465	100 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIS_00133	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00112	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00464	10/27/24	01/19/21	Isooctane, Lot B00S6184	50 mL	HRDXNIDA_00450	5 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-OCDD	0.4 ug/mL
..HRDXNIDA_00450	10/27/24	10/27/20	Acetone, Lot 0000242180	25 mL	HRDXNIDA_00440	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
					HRDXNIDA_00441	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00442	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00443	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00448	10 mL	13C-OCDD	4 ug/mL
...HRDXNIDA_00440	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
...HRDXNIDA_00441	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00442	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00443	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00448	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIS_00133	01/14/22	01/14/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00112	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNSU_00247	02/04/22	02/04/21	Isooctane, Lot B0323704	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00128	10/02/21	12/10/20	Acetone, Lot 00000267457	25 mL	HRDXNTA_00112	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00112	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL

Reagent

HRDXNCP_00041

rec 7/29/20 skv

Cerilliant®
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 0
Page 1 of 6

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

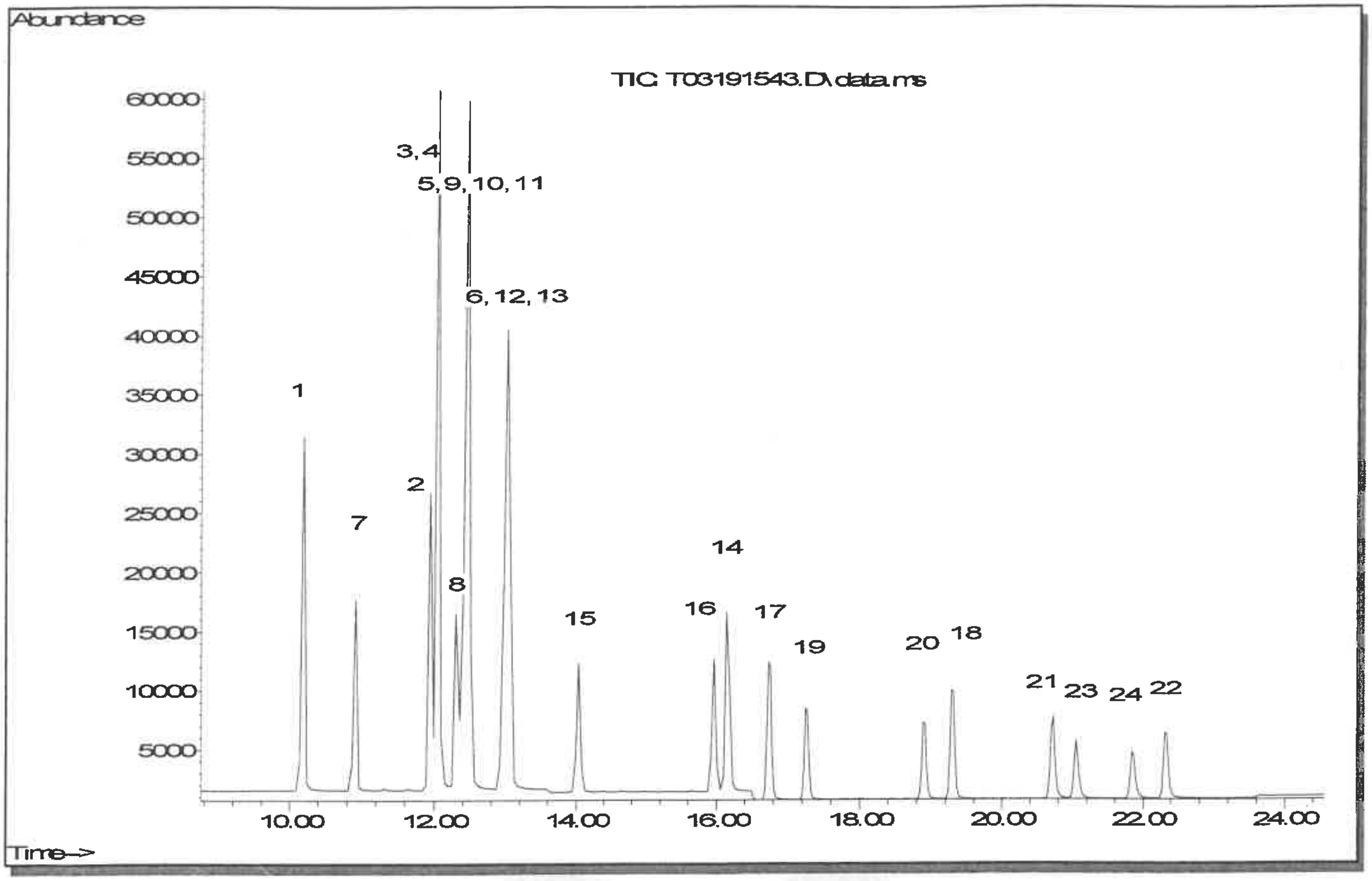

1	1,3,6,8-Tetrachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5	1,2,3,9-Tetrachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin
13	1,3,4,6,8-Pentachlorodibenzofuran
14	1,2,3,8,9-Pentachlorodibenzofuran
15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17	1,2,3,4,6,8-Hexachlorodibenzofuran
18	1,2,3,4,8,9-Hexachlorodibenzofuran
19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00417

r: 3/30/20

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

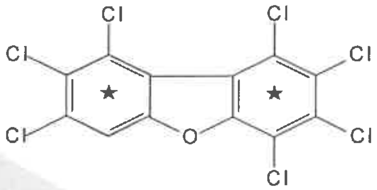

Catalog Number: EF-988
Solution Lot: ER04251601
Expiration Date: May 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER04041602
Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-94-0
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

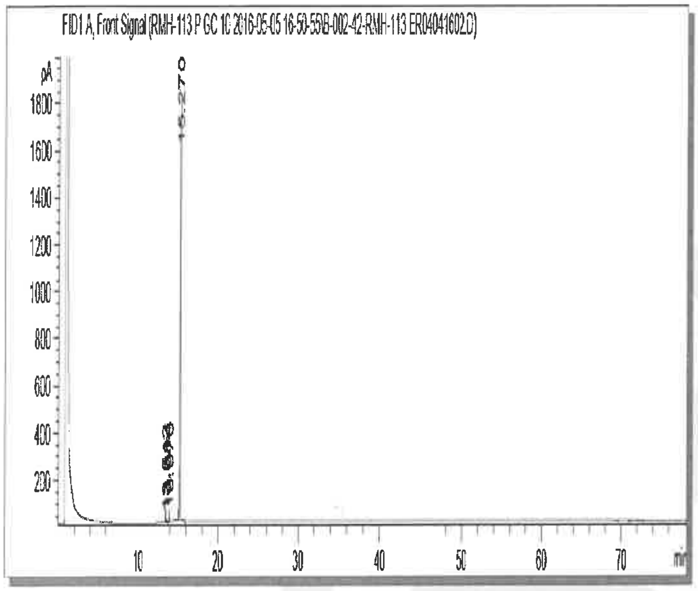

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

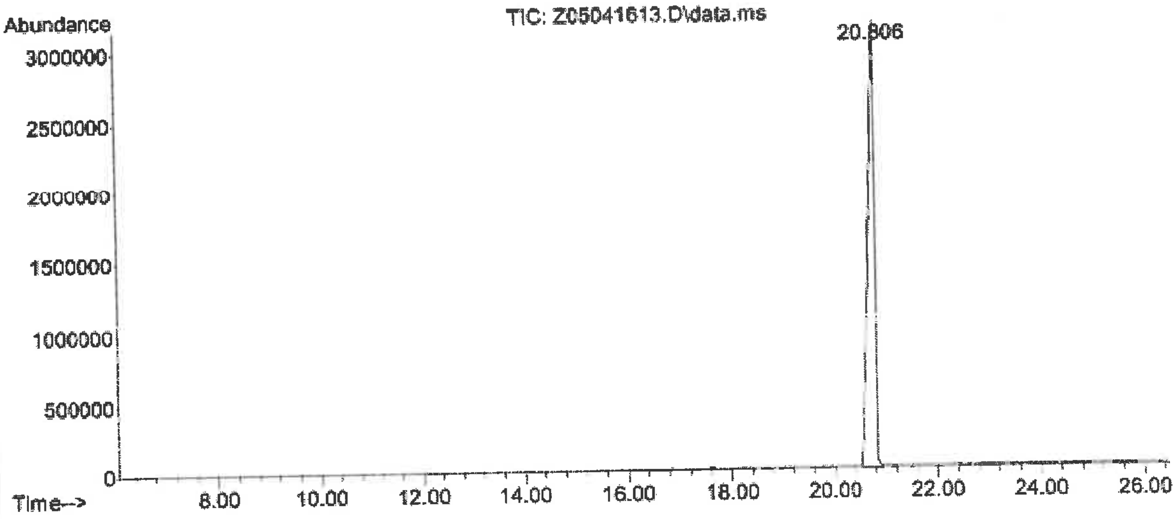

Mass Spectrum

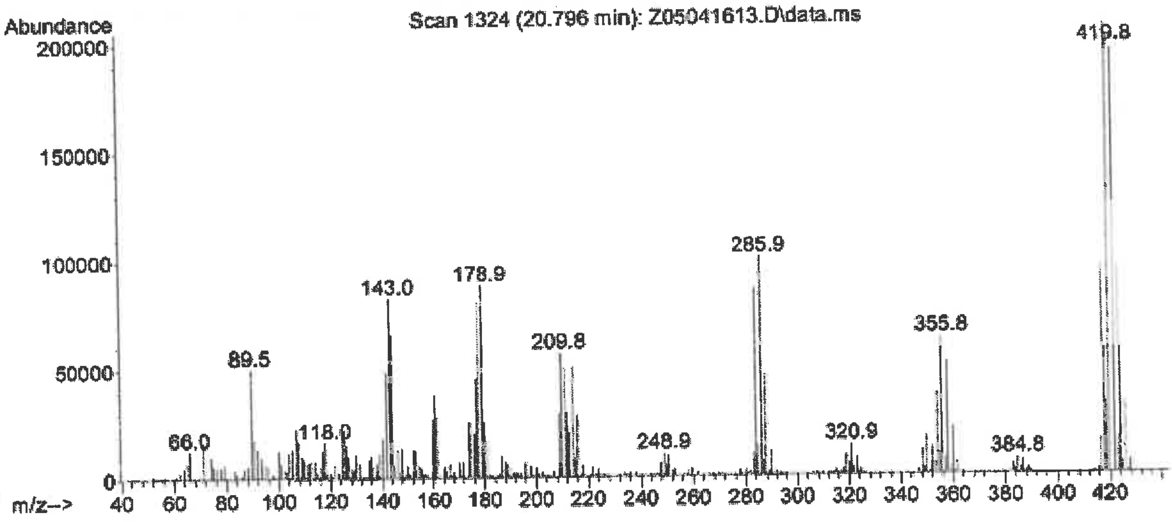

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/20/20 SW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

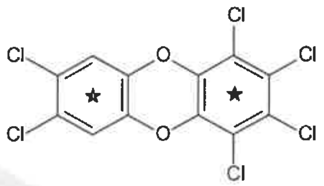

Catalog Number: ED-946
Solution Lot: ER04211601
Expiration Date: June 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

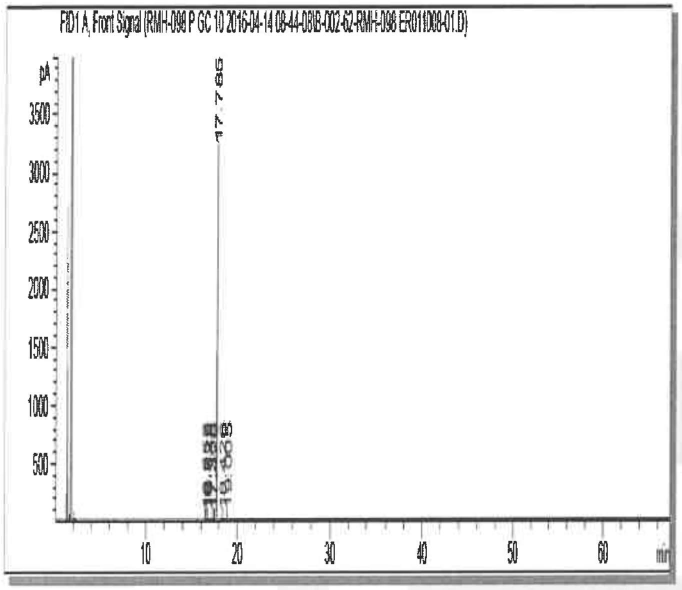

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 50 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument:	GC#10
Sample Name:	ER011008-01
Acquired:	April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

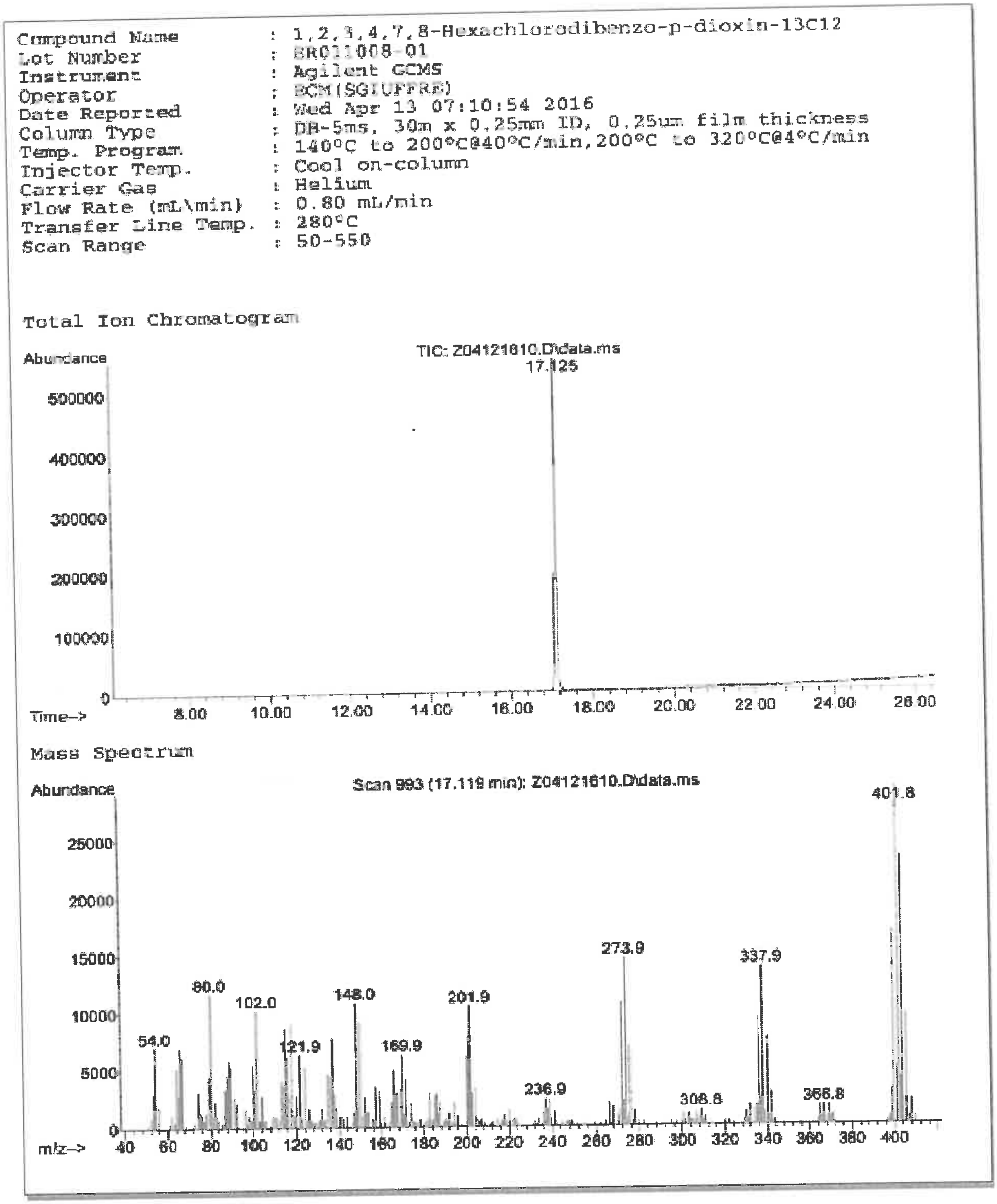

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : BR011008-01
Instrument : Agilent GCMS
Operator : BCM(SGIUFFRE)
Date Reported : Wed Apr 13 07:10:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SKV

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1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

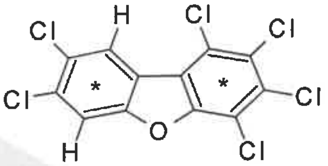

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11281601

Chemical Formula: $^{13}C_{12}Cl_6H_2O$
CAS Number: 114423-98-2
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

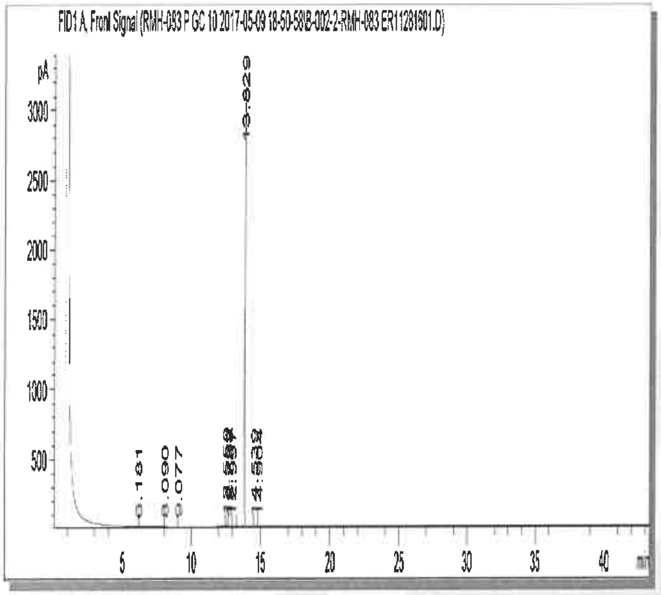

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

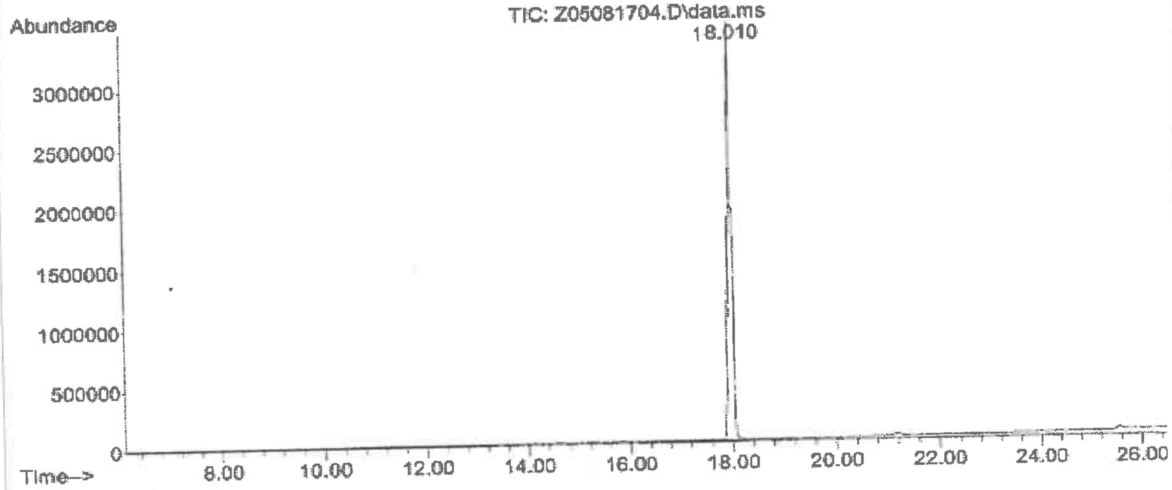

Mass Spectrum

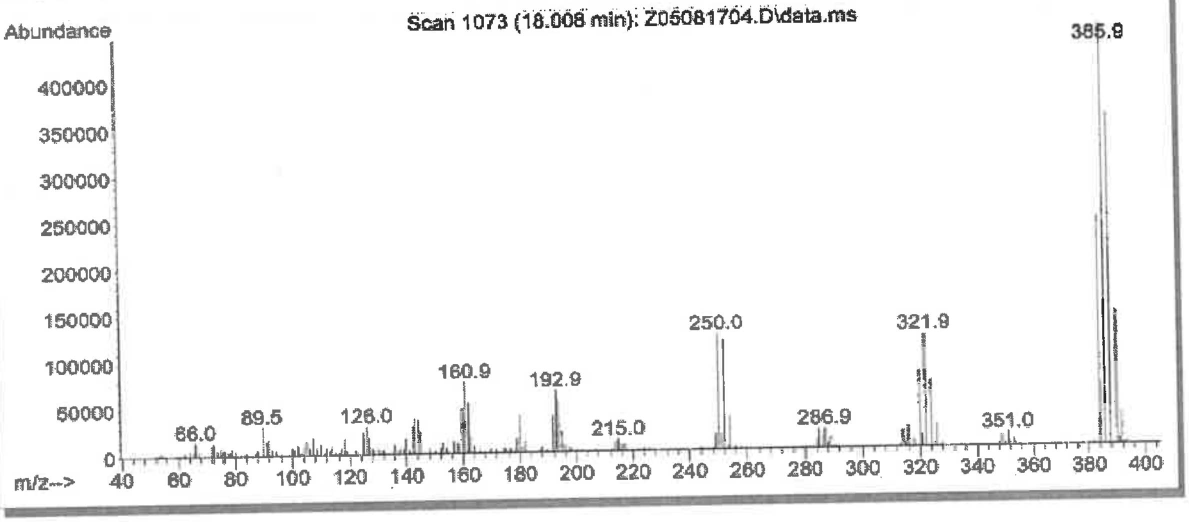

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

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Revision 00
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

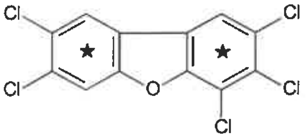

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

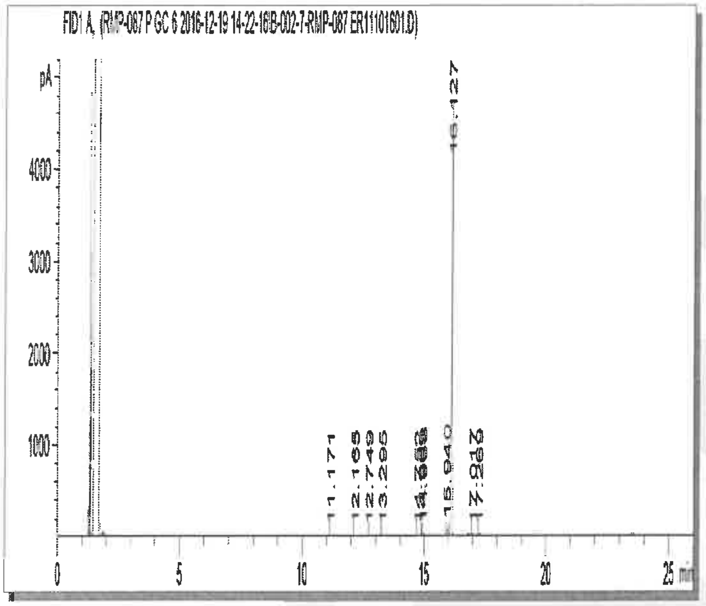

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

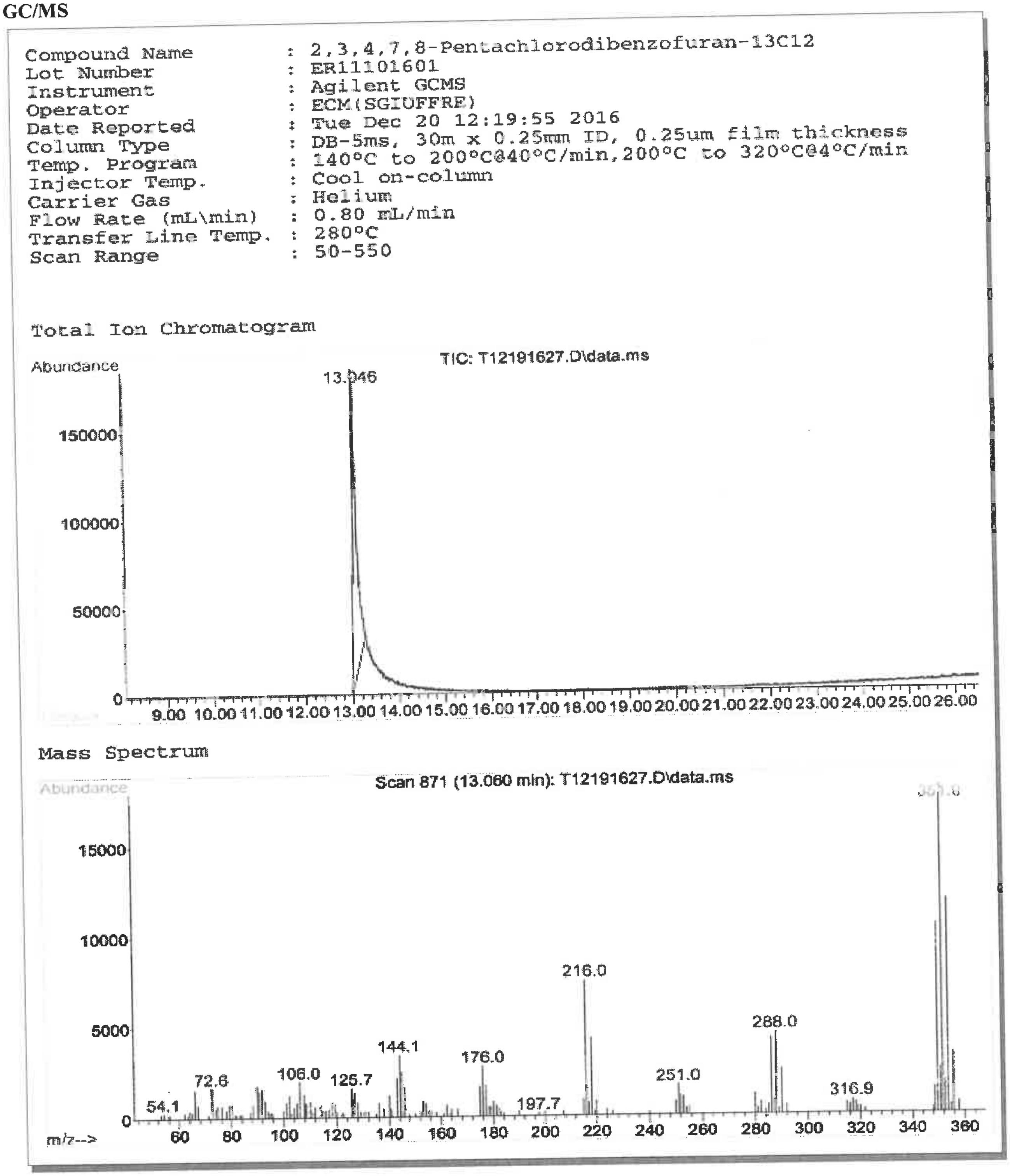

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00440

Rec'zd 10-12-20

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

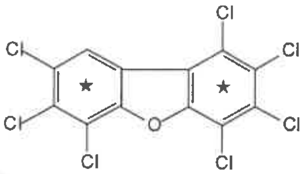

Catalog Number: EF-974
Solution Lot: ER08101404
Expiration Date: November 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER020507-02

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-84-8
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	98.7%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity $\geq$1.0%
Purity Factor		98.69%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

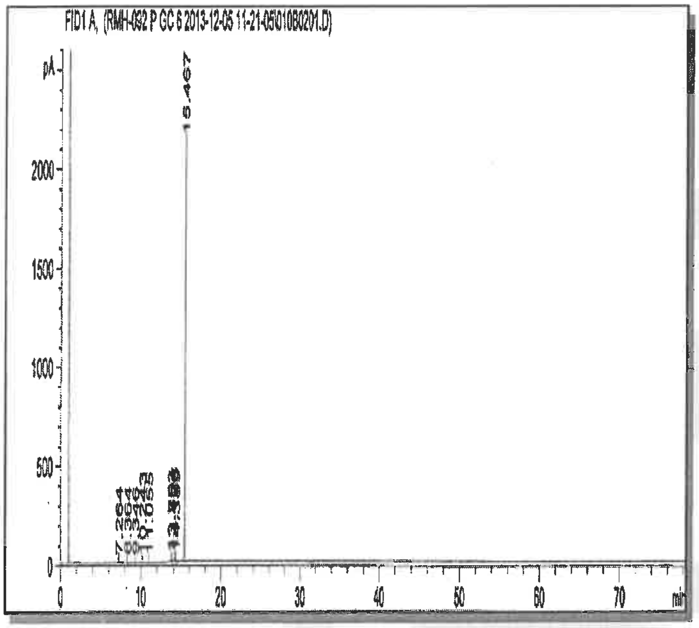

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

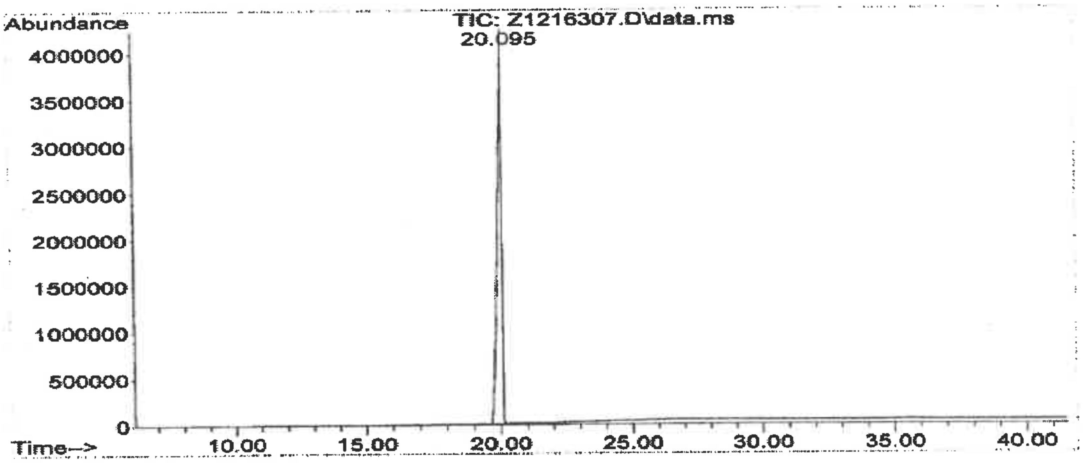

Mass Spectrum

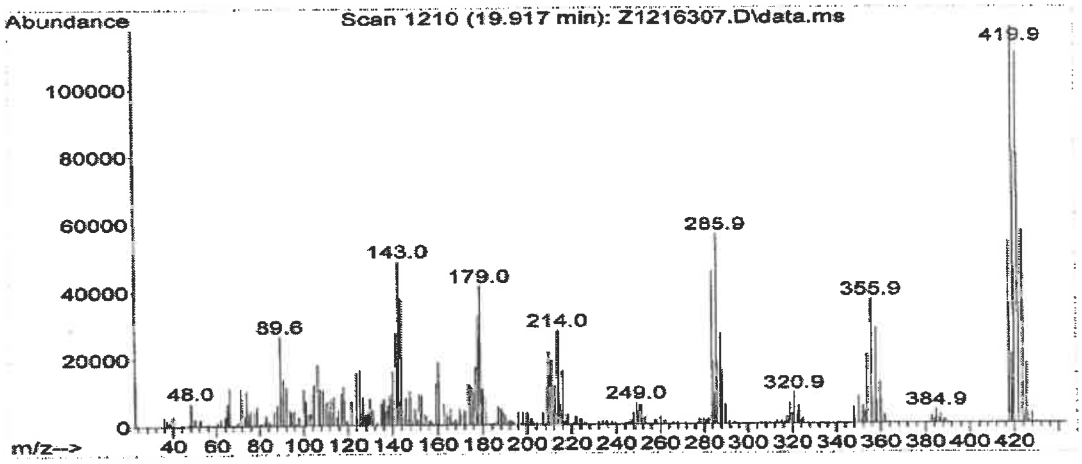

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00441

Rec'd 10-12-20

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Revision 0
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

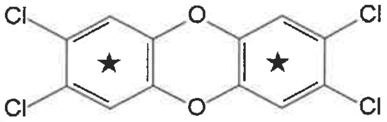

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

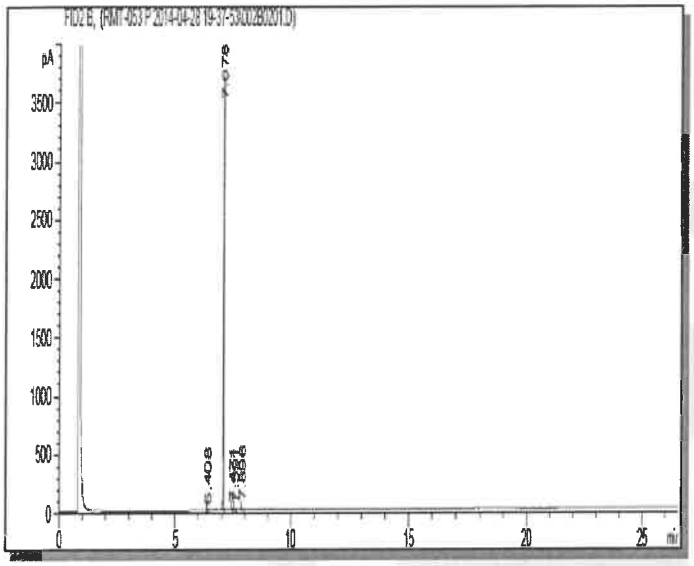

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

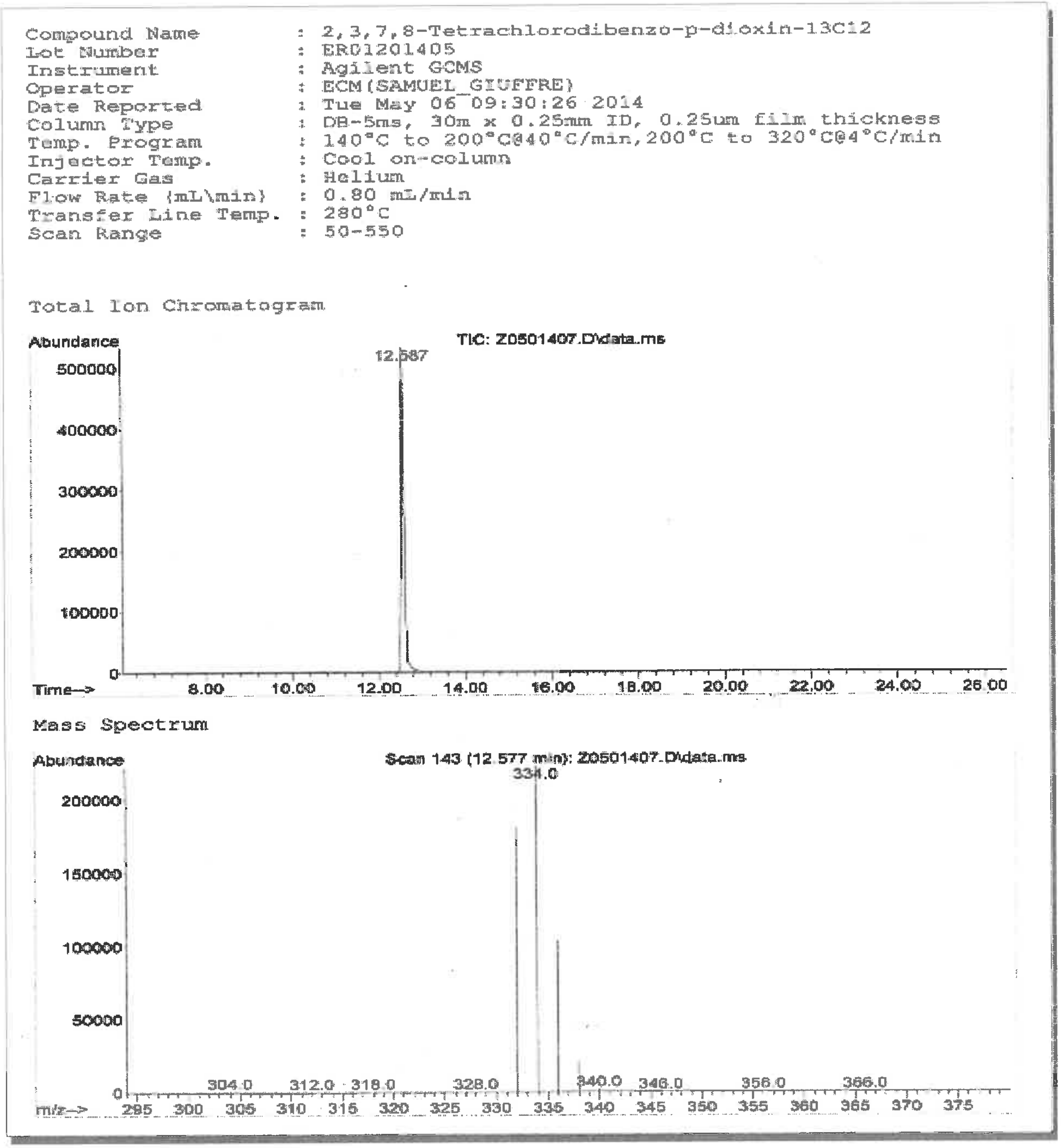

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : ER01201405
Instrument : Agilent GCMS
Operator : ECM(SAMUEL_GIUFFRE)
Date Reported : Tue May 06 09:30:26 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00442

Rec'd 10-19-20

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Revision 00
Page 1 of 5

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

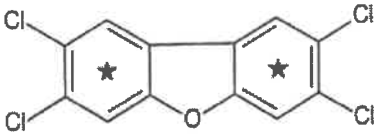

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

November 02, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401

Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF $\geq$ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

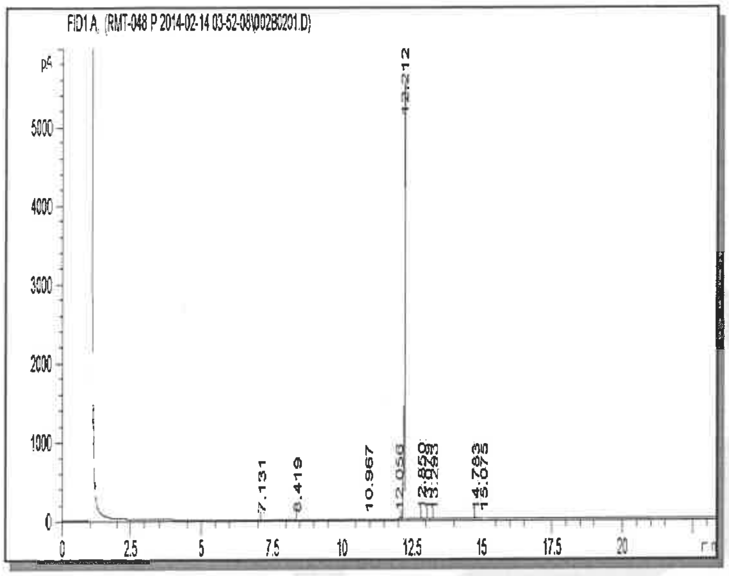

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

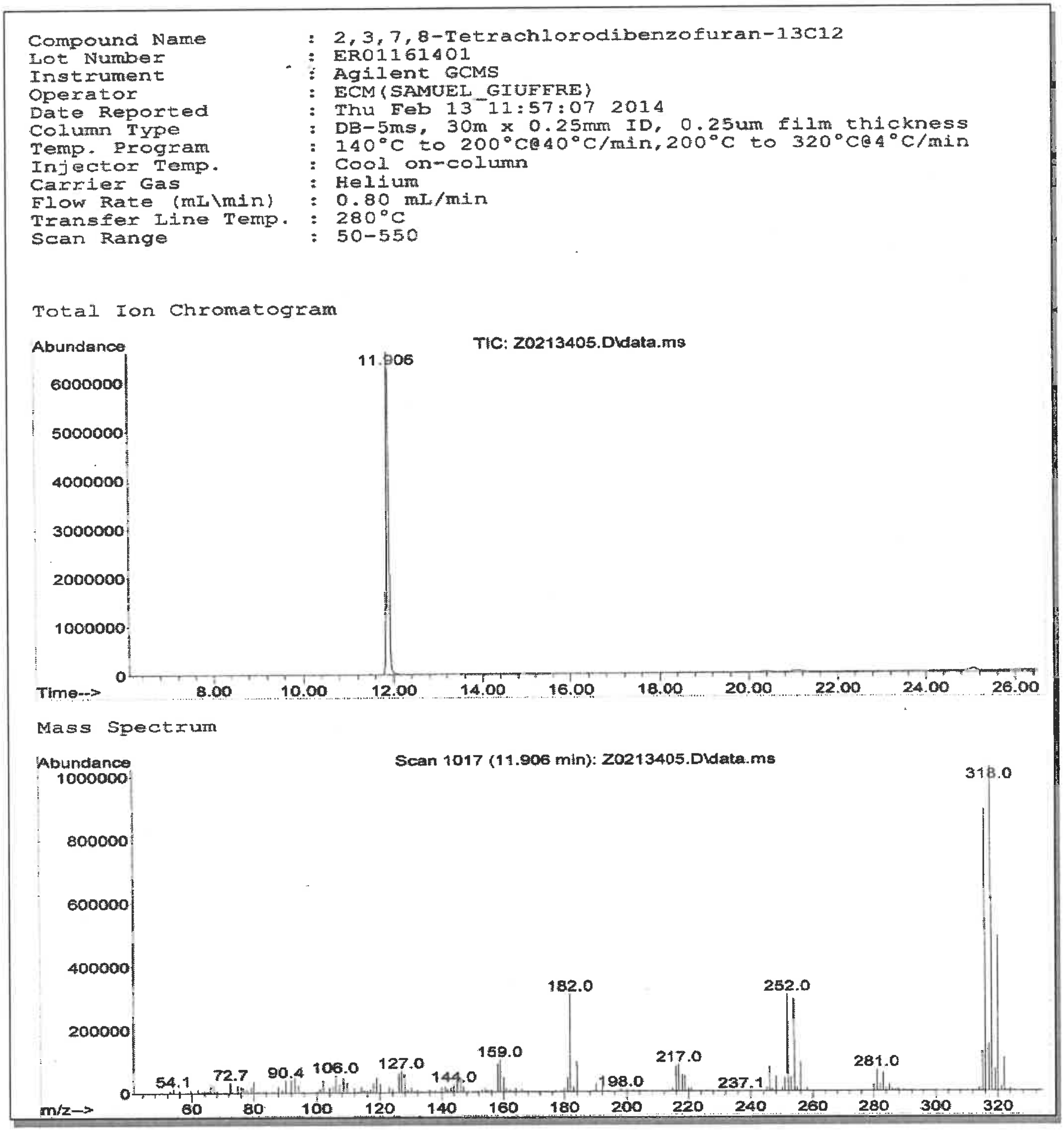

```
Compound Name            : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number               : ER01161401
Instrument               : Agilent GCMS
Operator                 : ECM(SAMUEL_GIUFFRE)
Date Reported            : Thu Feb 13 11:57:07 2014
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (mL\min)       : 0.80 mL/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00443

Recd 10-19-20

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

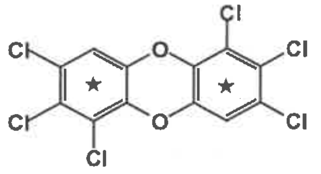

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802

Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

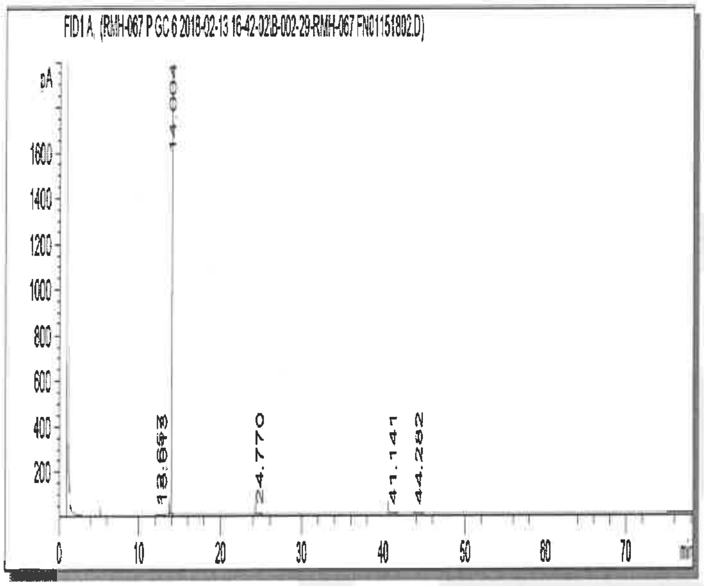

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument:	GC#6
Sample Name:	FN01151802
Acquired:	February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

GC/MS

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number             : FN01151802
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Mon Mar 05 10:17:33 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

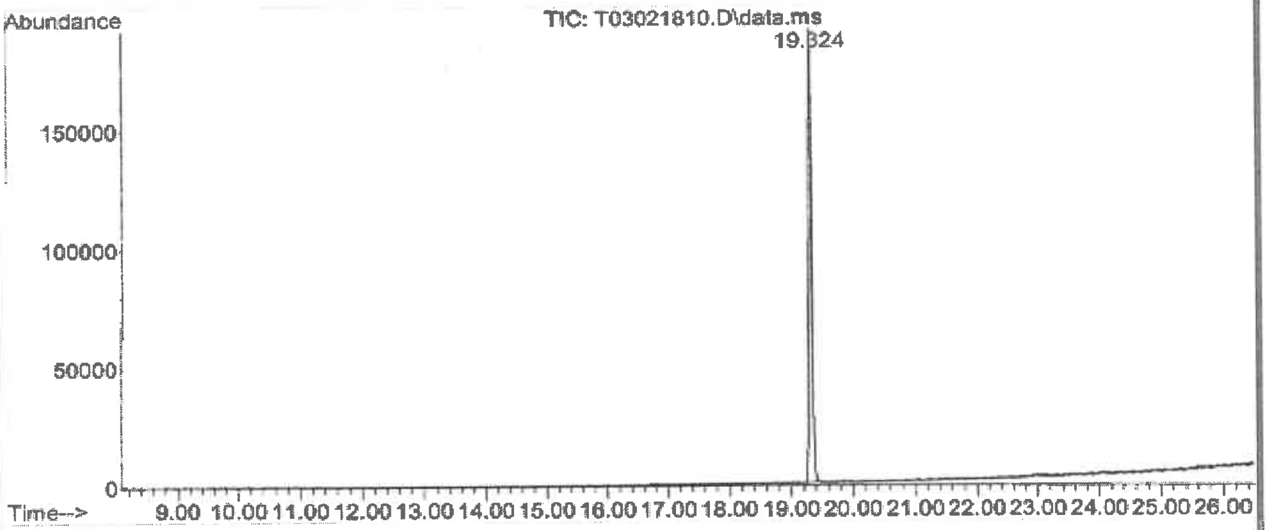

Mass Spectrum

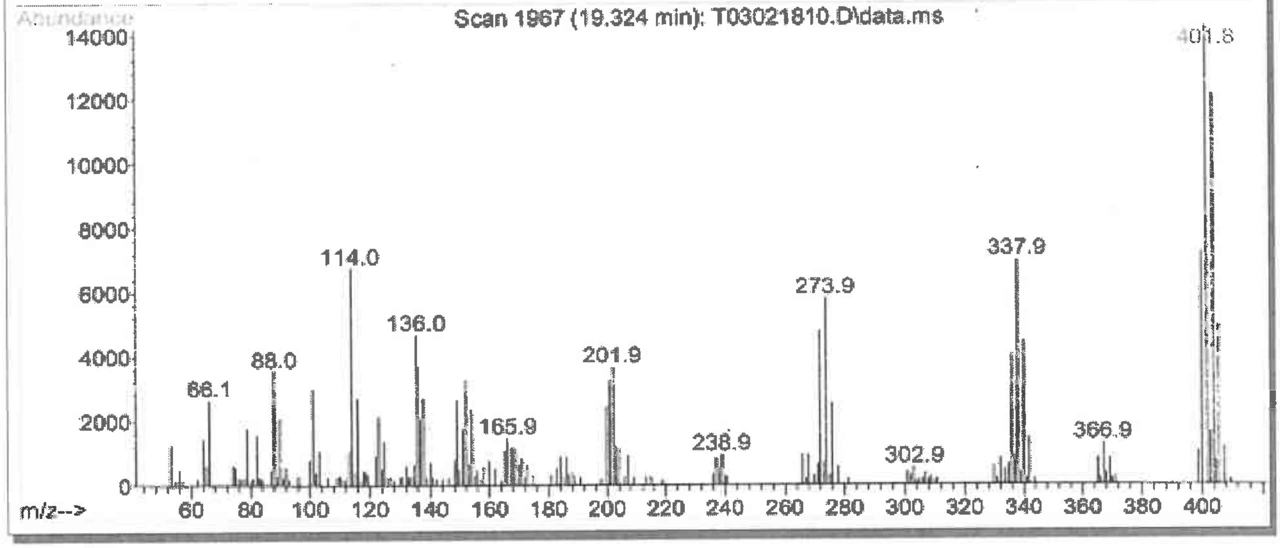

Reagent

HRDXNIDA_00457

r: 1/18/21 StW

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Revision 0
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

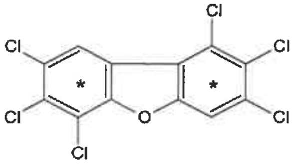

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

May 04, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

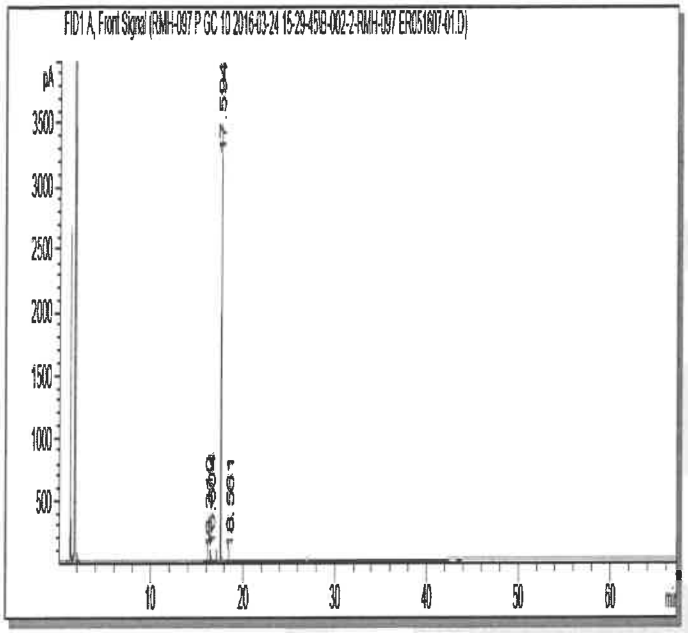

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 50 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument:	GC#10
Sample Name:	ER051607-01
Acquired:	March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name         : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number            : ER051607-01
Instrument            : Agilent GCMS
Operator              : ECM(SGIUFFRE)
Date Reported         : Fri Mar 18 07:08:54 2016
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Total Ion Chromatogram

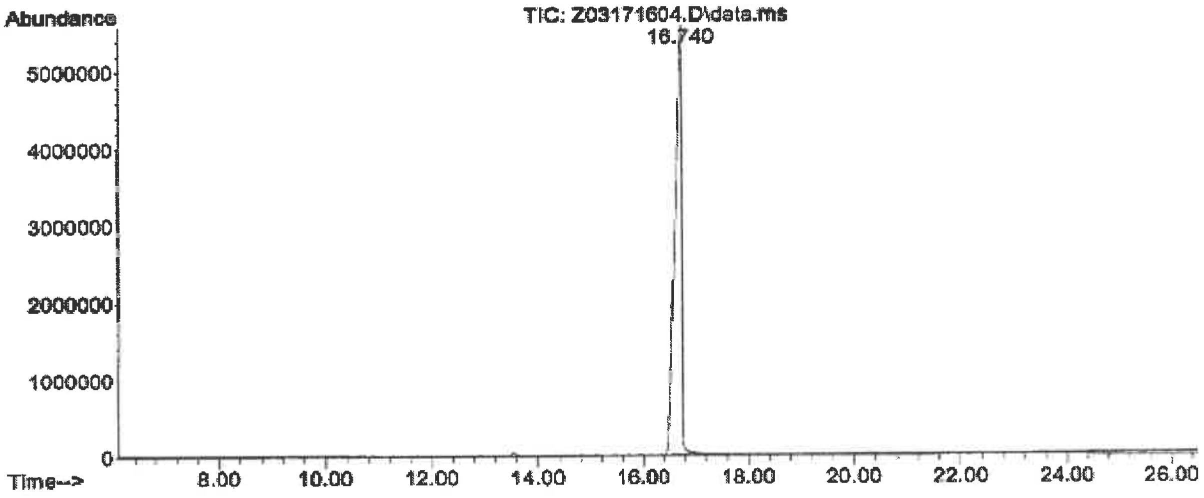

Mass Spectrum

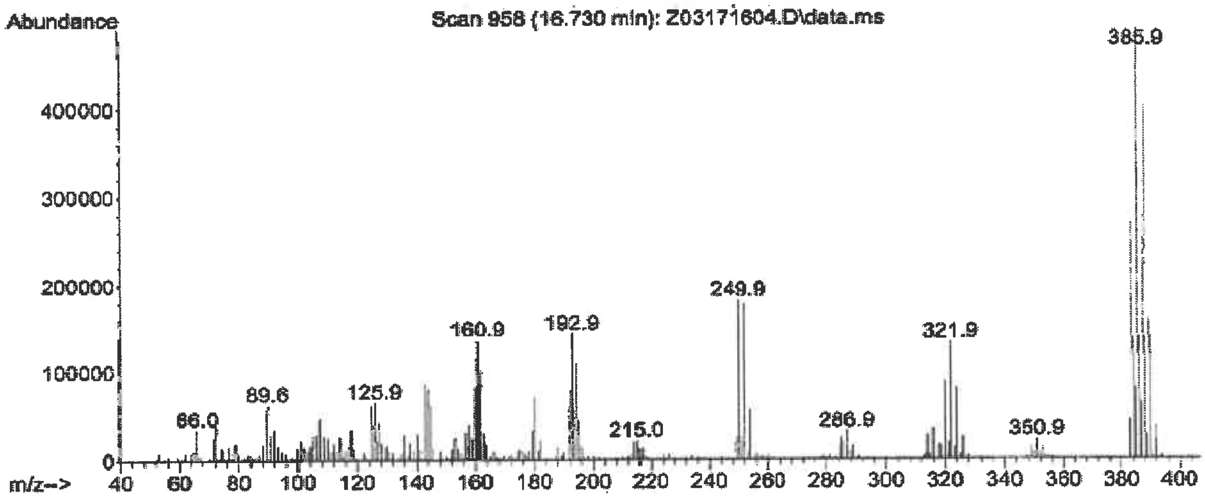

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIDA_00458

r: 1/18/21 StW

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Cerilliant Quality
ISO 17034
ISO/IEC 17025
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ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

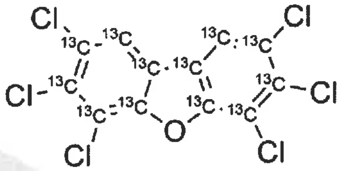

Catalog Number: EF-987
Solution Lot: ER01062015
Expiration Date: January 2030
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER09051801
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

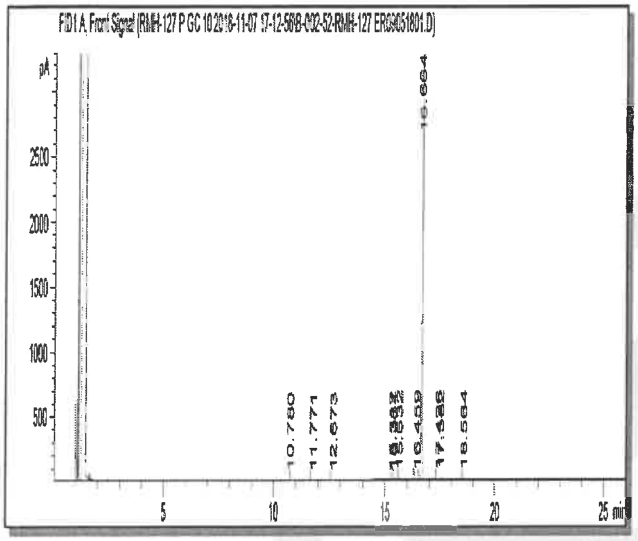

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER09051801
Acquired:	February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

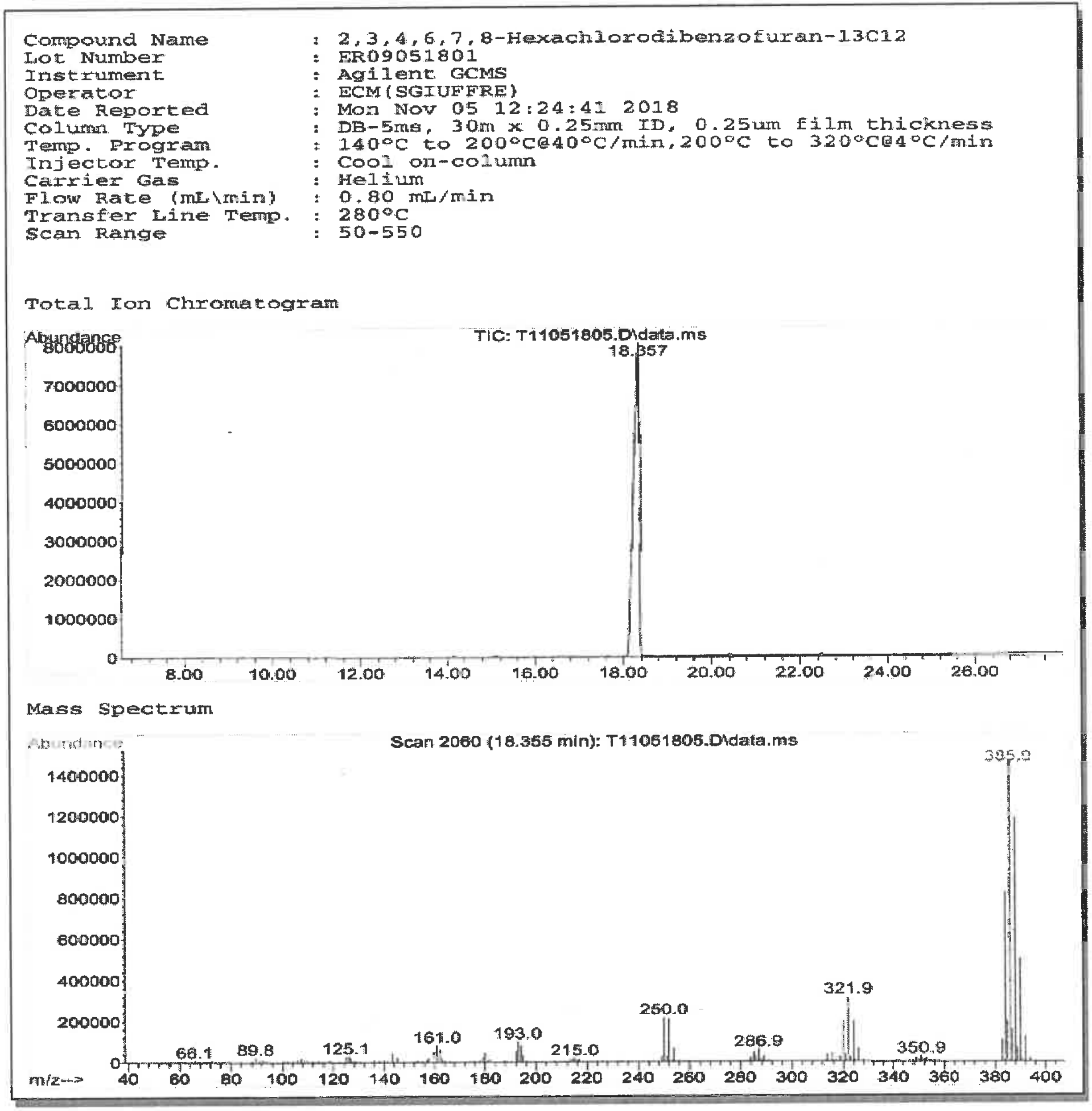

Compound Name : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER09051801
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon Nov 05 12:24:41 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00459

r: 1/18/21 skJ

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Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

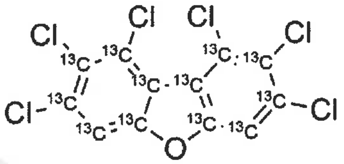

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER080108-03
Chemical Formula:	$^{13}C_{12}H_2OCl_6$
CAS Number:	116843-04-0
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

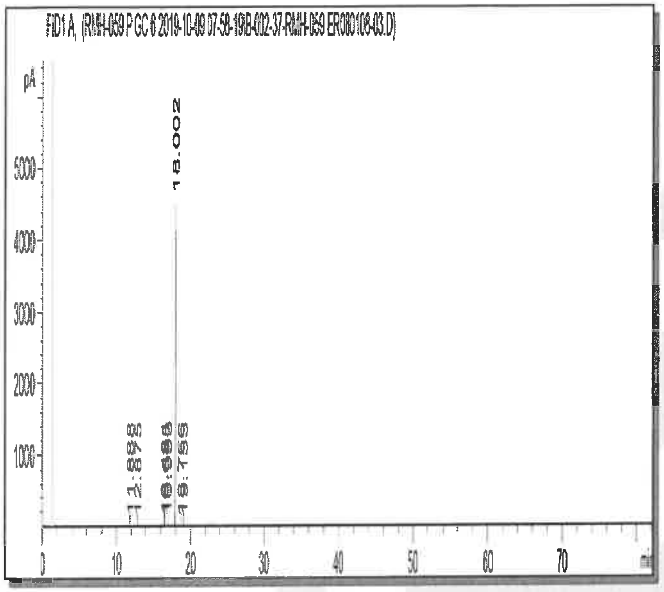

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER080108-03
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

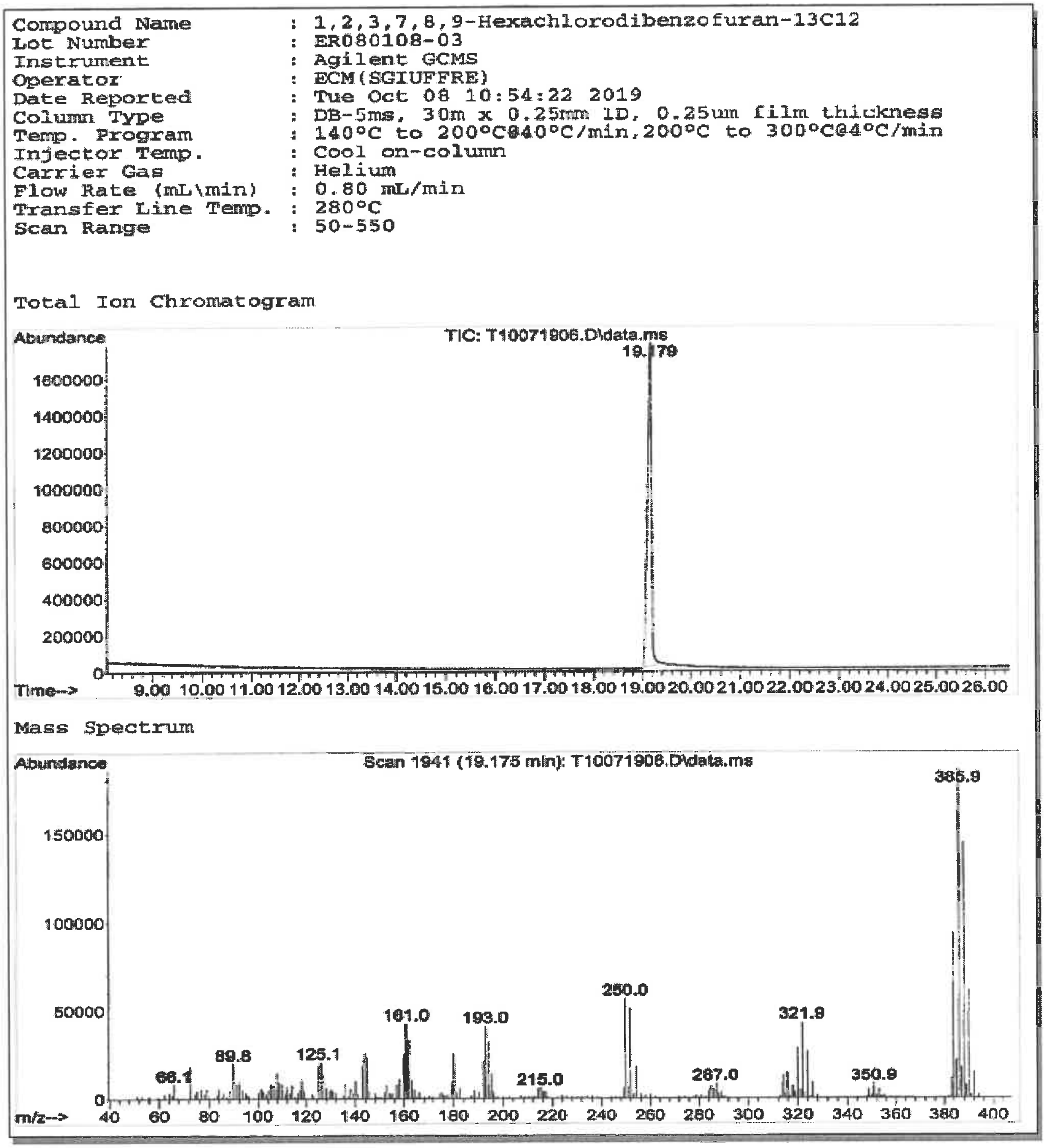

```
Compound Name         : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number            : ER080108-03
Instrument            : Agilent GCMS
Operator              : ECM(SGIUFFRE)
Date Reported         : Tue Oct 08 10:54:22 2019
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00460

r: 1/18/21 SKN

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Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

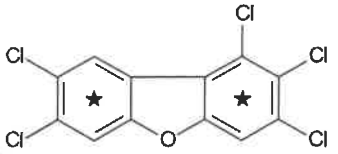

Catalog Number:	EF-952
Solution Lot:	ER10211904
Expiration Date:	December 2029
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER10211904	49.25	± 5%	0.2	≤ 3%
Previous Lot	ER012111-01	48.12	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 07, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3Cl_5O$
CAS Number: 109719-77-9
Molecular Weight: 352.32

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	98.6%
Identity by GC/MS Analysis	AM1029	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	AM1029	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	AM1029	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		98.59%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

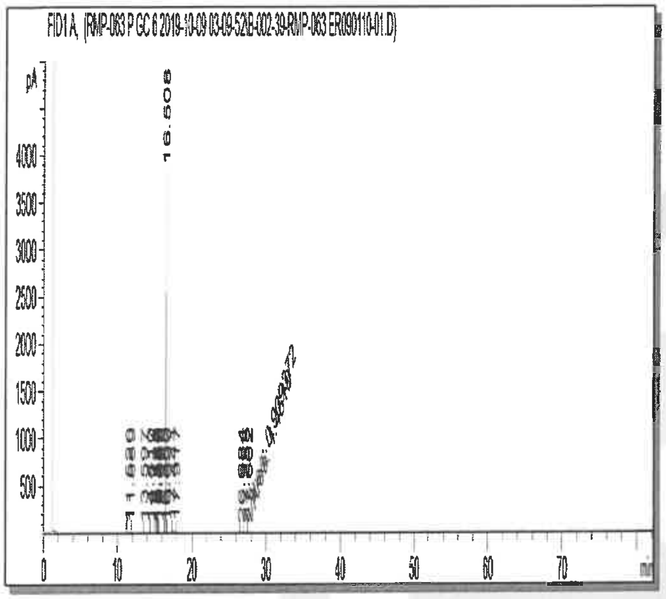

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER090110-01
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.52	0.24
2	11.89	0.02
3	13.60	0.26
4	14.41	0.01
5	14.52	0.01
6	15.12	0.01
7	15.34	0.01
8	15.39	0.03
9	15.46	0.13
10	15.56	0.15
11	15.69	0.01
12	16.38	0.00
13	16.51	98.61
14	16.63	0.02
15	16.69	0.01
16	17.44	0.21
17	17.92	0.21
18	26.68	0.04
19	27.26	0.01
20	27.66	0.02

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER090110-01
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed Oct 23 08:39:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

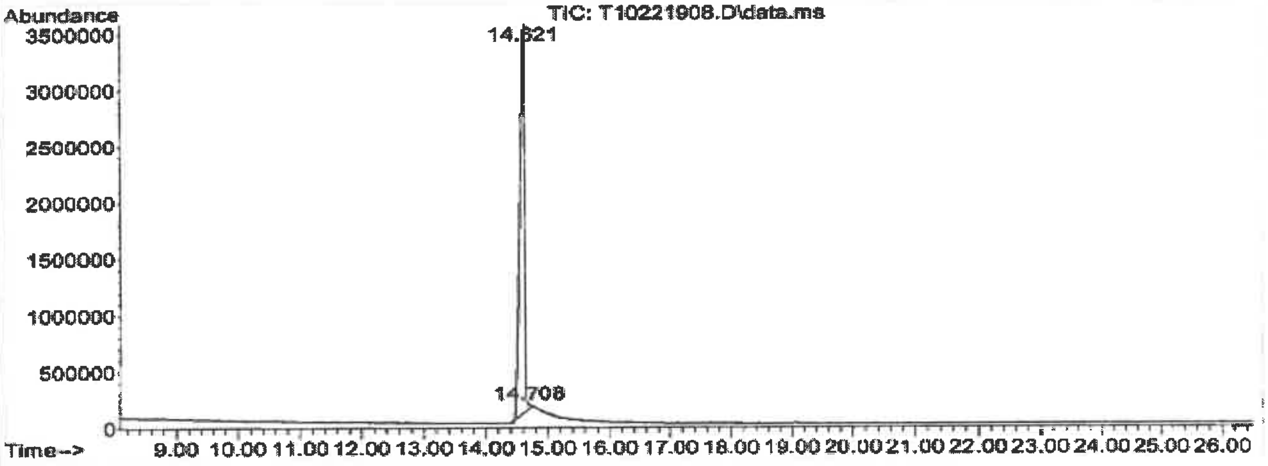

Mass Spectrum

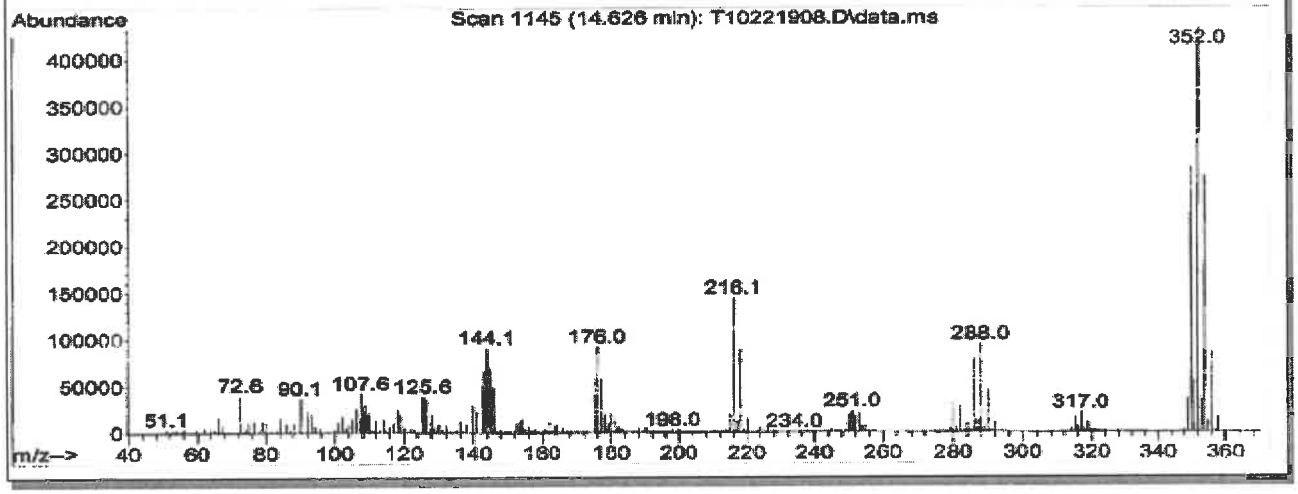

COA Revision History

Revision No.	Date	Reason for Revision
00	January 07, 2020	Initial version

Reagent

HRDXNIDA_00461

r: 1/18/21 SKW

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

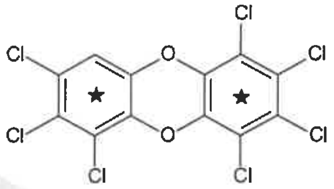

Catalog Number:	ED-972
Solution Lot:	ER09271601
Expiration Date:	October 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	0.999

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER100110-01
Chemical Formula:	$^{13}C_{12}HCl_7O_2$
CAS Number:	109719-83-7
Molecular Weight:	437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

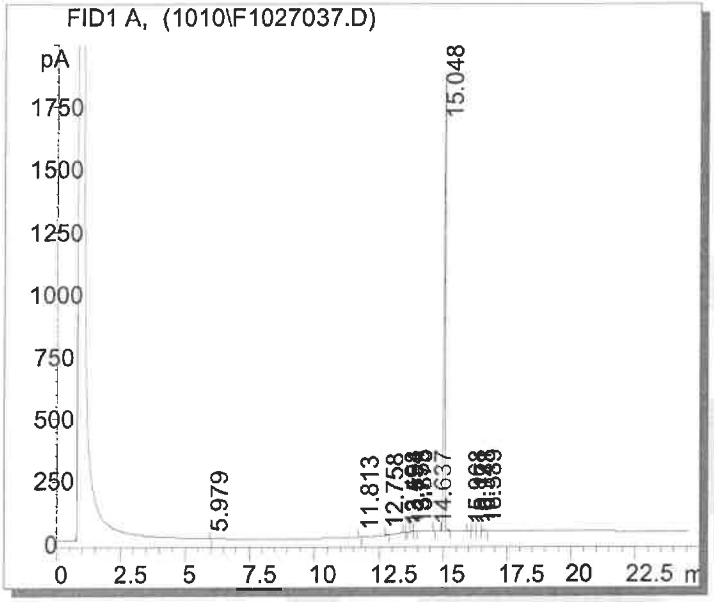

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

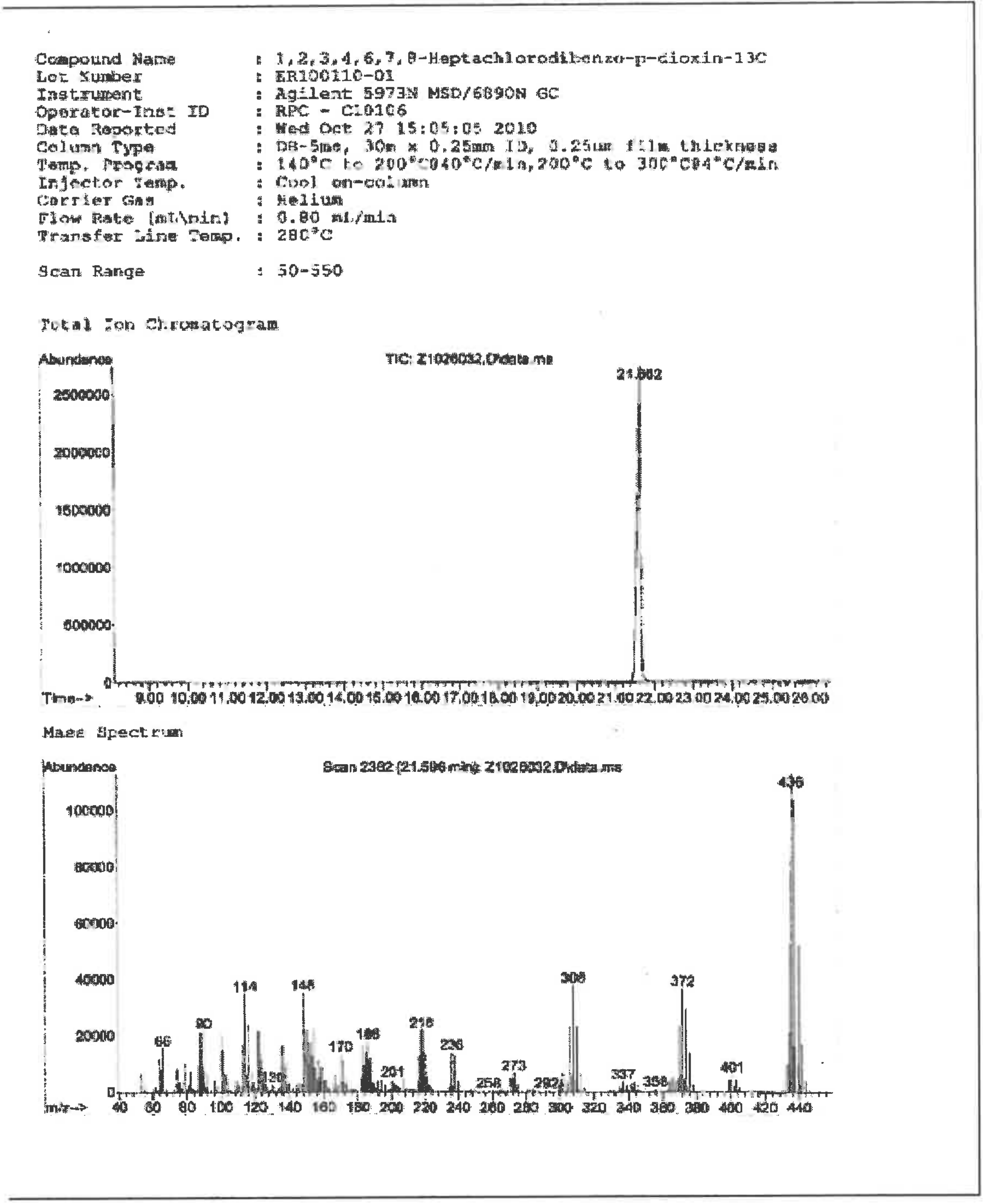

```
Compound Name        : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number           : ER100110-01
Instrument           : Agilent 5973N MSD/6890N GC
Operator-Inst ID     : RPC - C10106
Date Reported        : Wed Oct 27 15:05:05 2010
Column Type          : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program        : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.       : Cool on-column
Carrier Gas          : Helium
Flow Rate (mL\min)   : 0.80 mL/min
Transfer Line Temp.  : 280°C

Scan Range           : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00462

r: 1/18/21 skv

Cerilliant Analytical Reference Standards
a SIGMA-ALDRICH company

Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

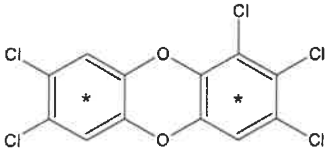

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculate based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

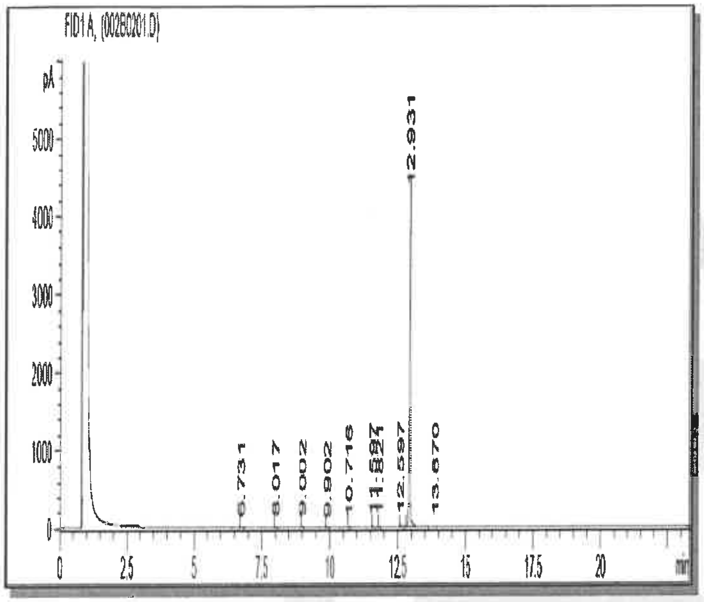

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min, hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument:	GC#6
Sample Name:	ER06241403
Acquired:	July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

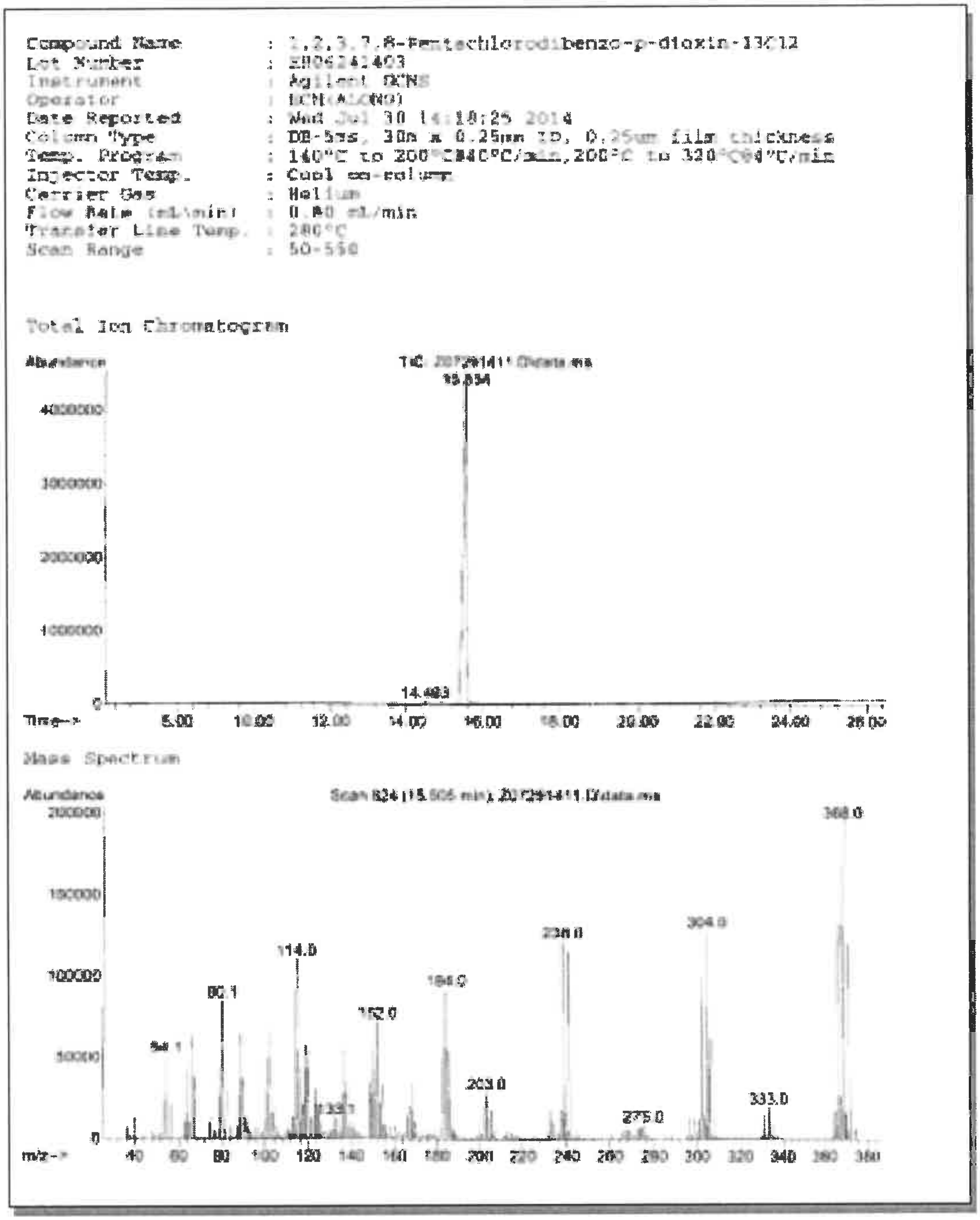

Compound Name : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number : ER06241403
Instrument : Agilent GCMS
Operator : ECM(ALONG)
Date Reported : Wed Jul 30 14:18:25 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIS_00126

rec'. 3/26/20 SKW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

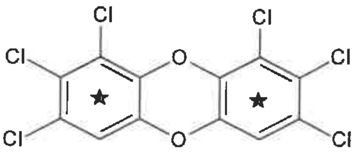

Catalog Number: ED-996
Solution Lot: ER08221601
Expiration Date: September 2026
Solvent: n-Nonane:Toluene (80:20)
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER110510-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-82-6
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$
		0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

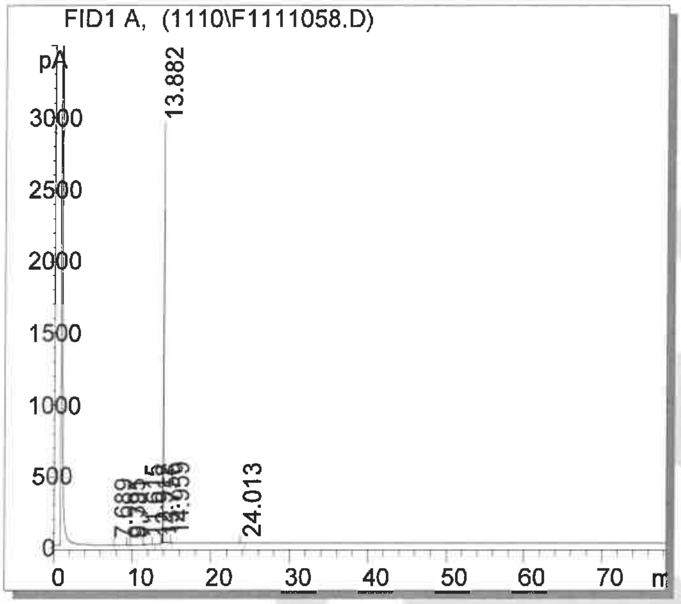

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

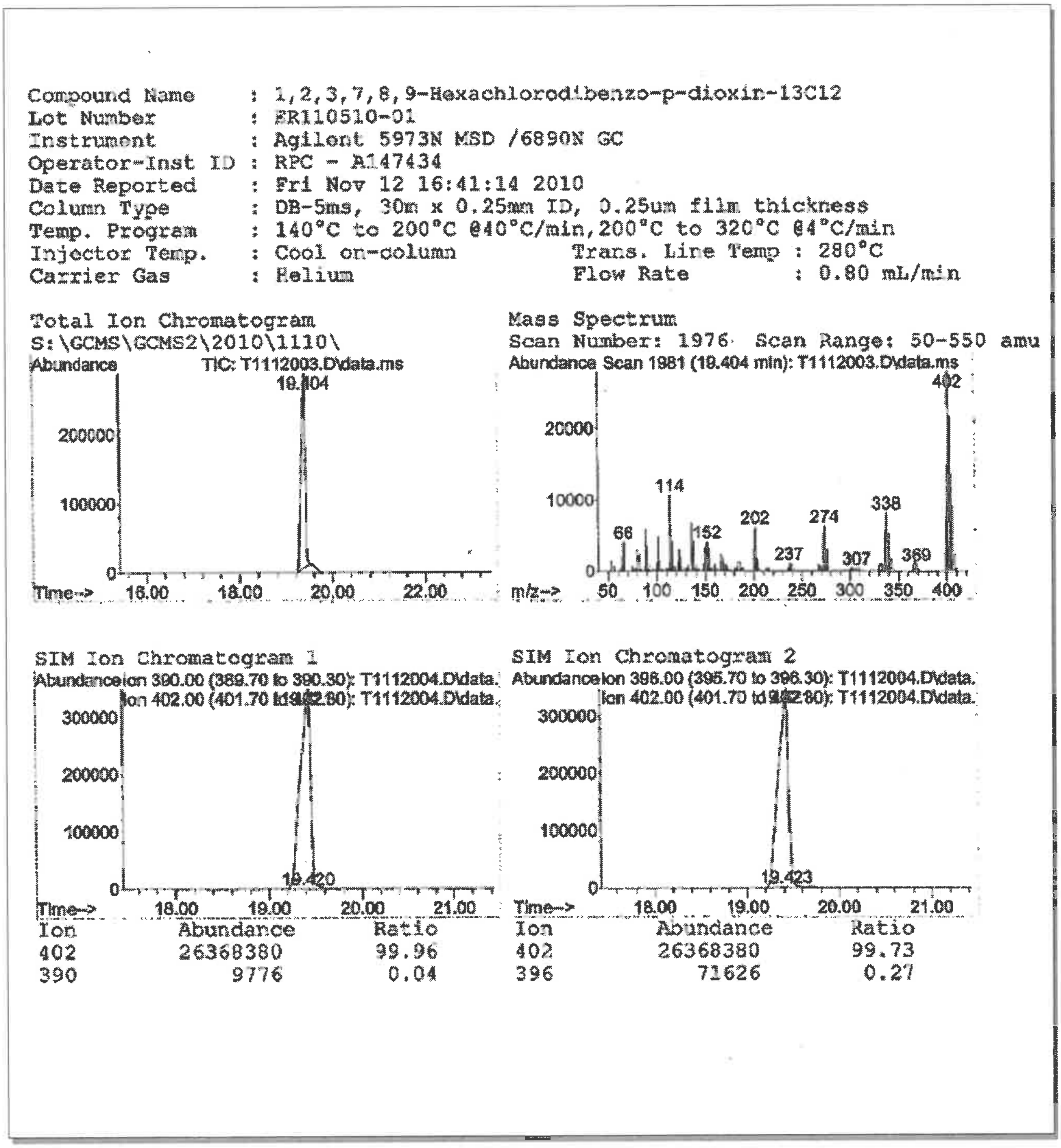

```
Compound Name      : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number         : ER110510-01
Instrument         : Agilent 5973N MSD /6890N GC
Operator-Inst ID   : RPC - A147434
Date Reported      : Fri Nov 12 16:41:14 2010
Column Type        : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program      : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.     : Cool on-column          Trans. Line Temp : 280°C
Carrier Gas        : Helium                  Flow Rate        : 0.80 mL/min
```

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKV

Cerilliant
Analytical Reference Standards
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CIL

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

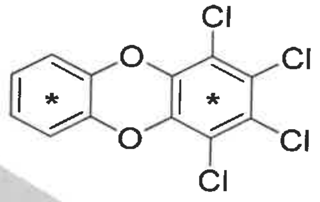

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

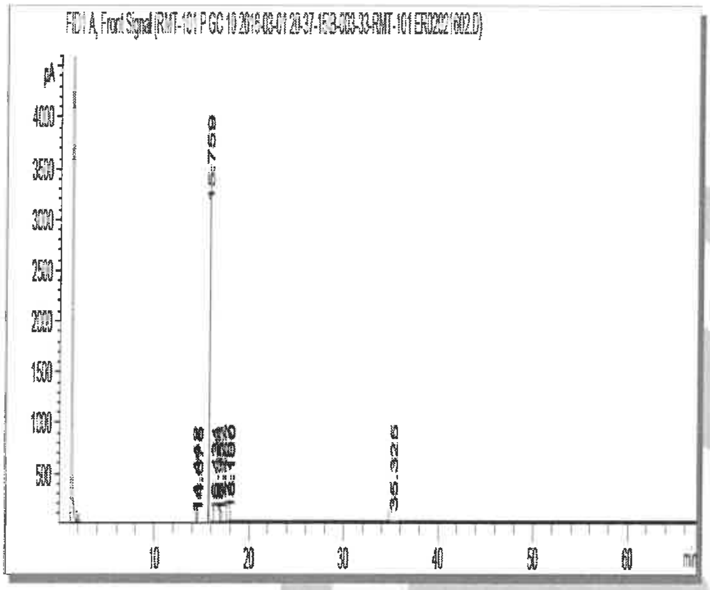

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

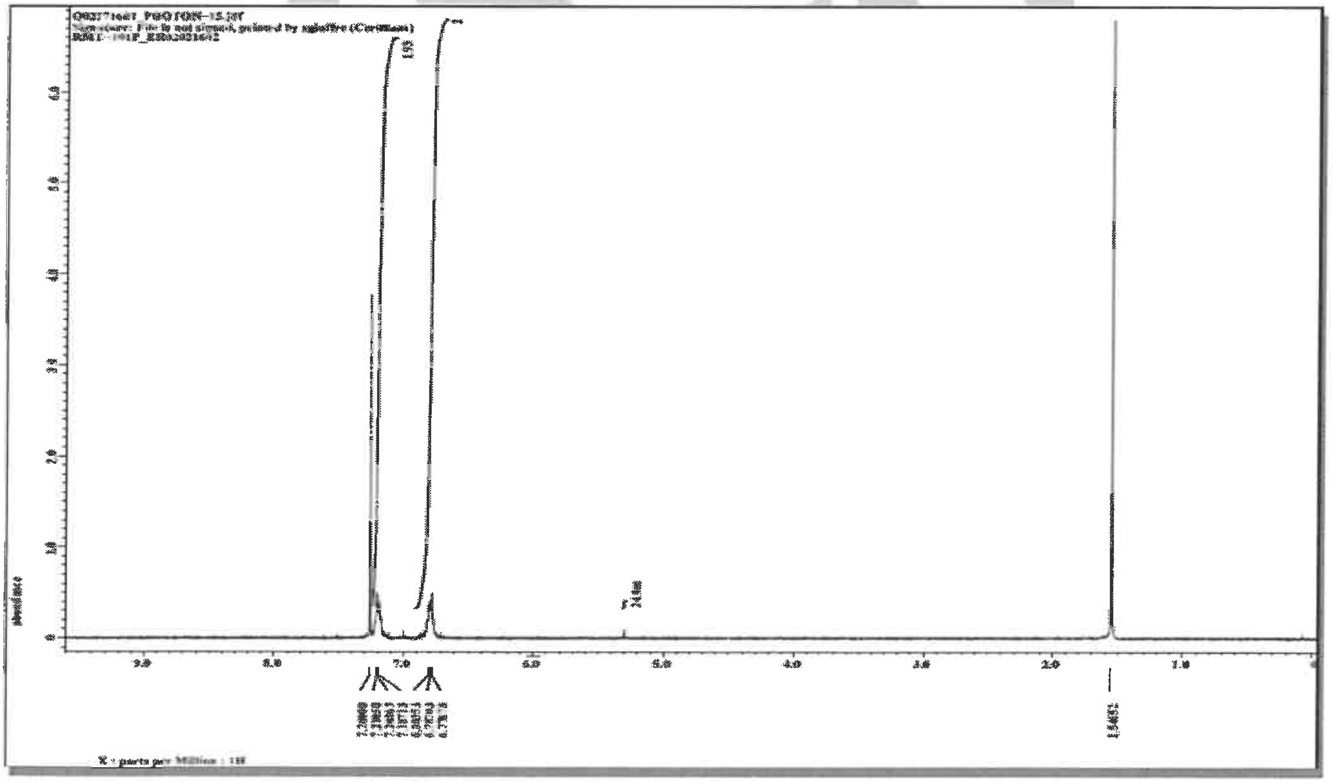

Spectral and Physical Data (cont.)

GC/MS

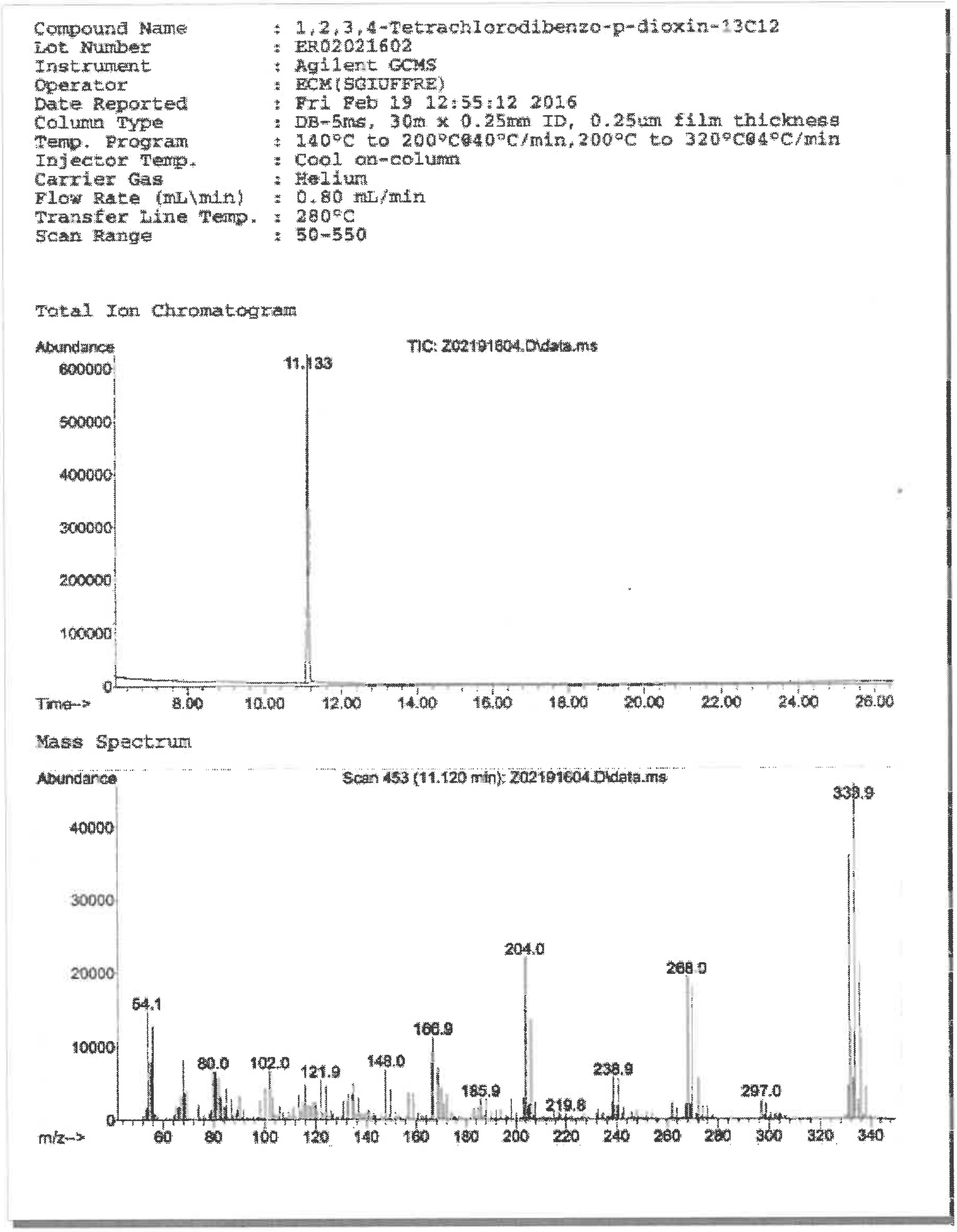

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

② P: 4/26/19 SKJ

WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR0418
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	04/11/2018
LAST TESTED: (mm/dd/yyyy)	04/12/2018
EXPIRY DATE: (mm/dd/yyyy)	03/01/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ______________________
B.G. Chittim, General Manager

Date: 04/16/2018
(mm/dd/yyyy)

Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)

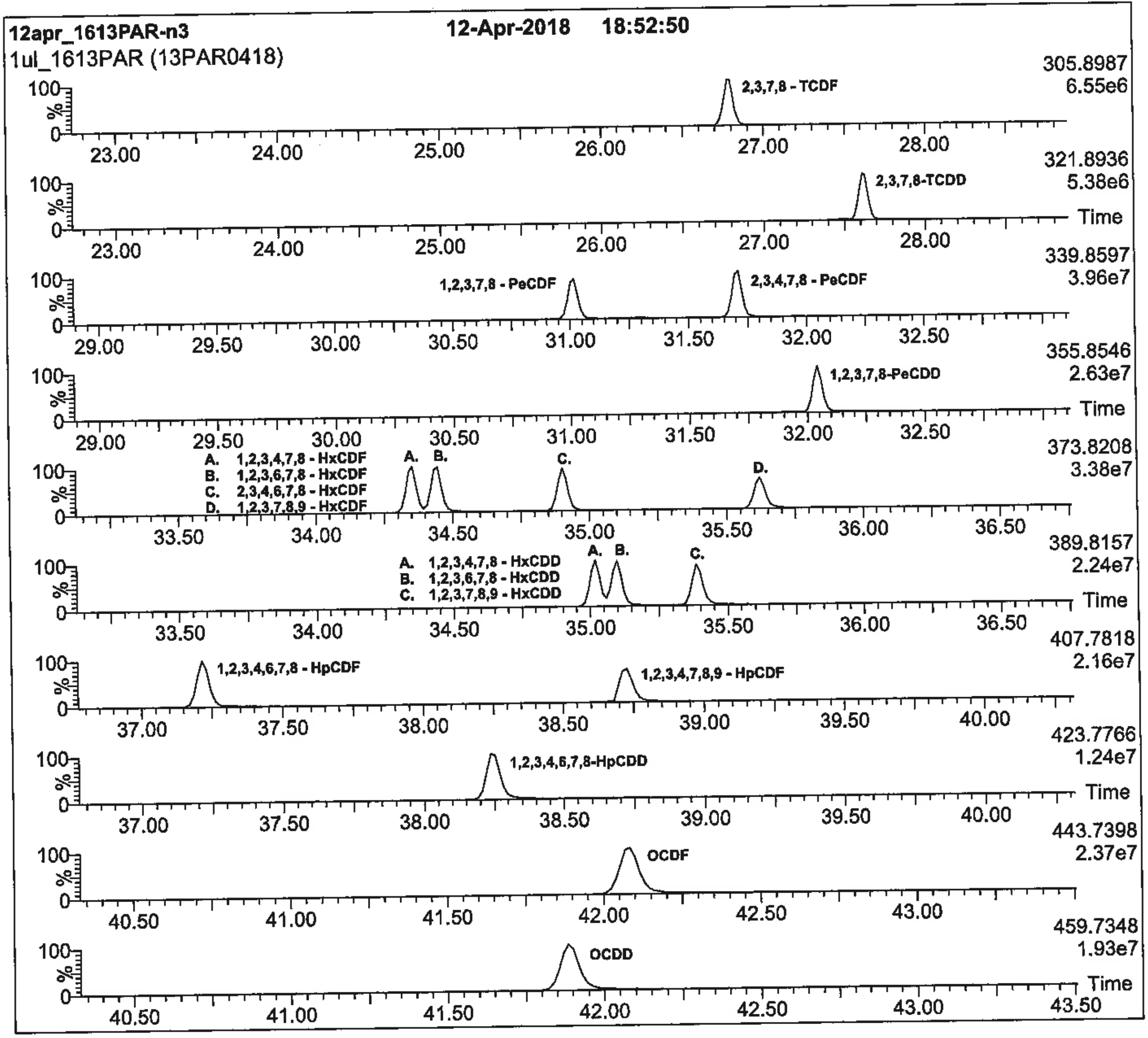

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 ml/min
Injector:	280 °C (Splitless Injection)
Ionization:	EI+
Detector:	280 °C SIR at 10,000 mass resolving power

Oven:
150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00112

③

r: 4|30|15 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number: EDF-7999-10X
Solution Lot: ER02241602
Expiration Date: April 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/ECD
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp: Cool on-column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

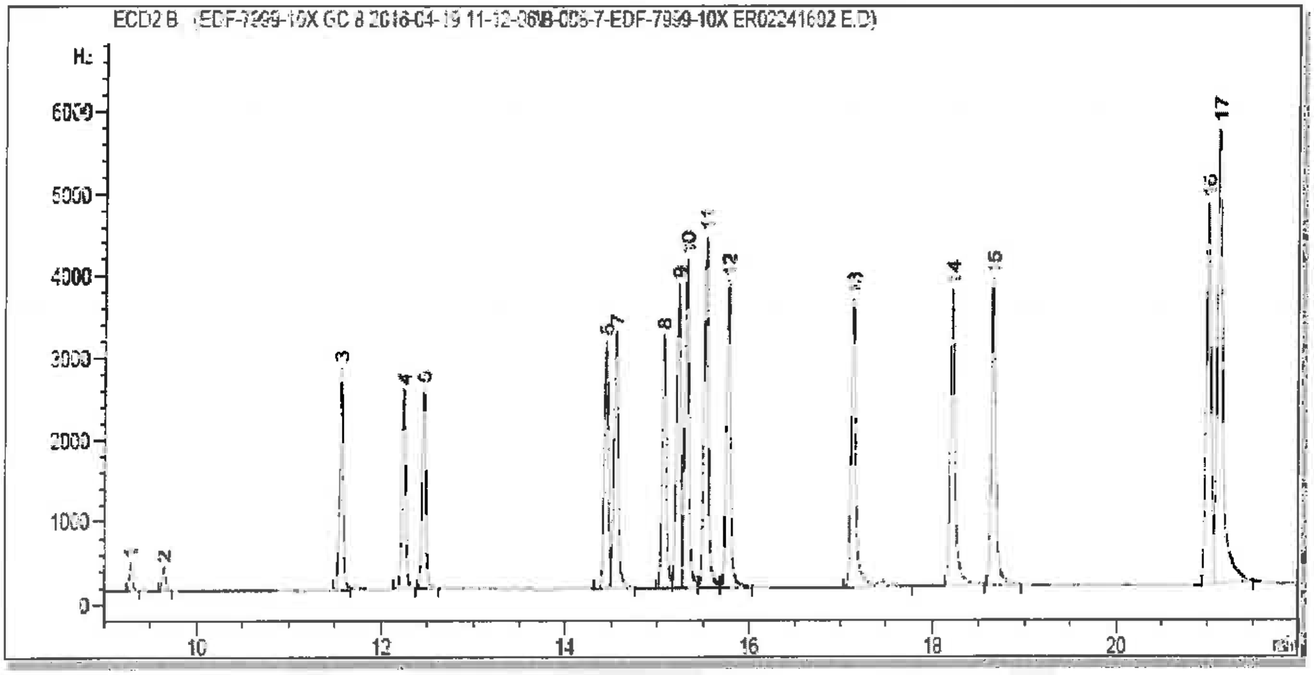

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #	13CHxCF #	HxCDD #
11215702-Tank1-100mm	320-70797-1	101	59	59	61	65	67	65	62
11215702-Tank1-41mm	320-70797-2	101	61	61	63	66	68	67	63
11215702-Tank2-41mm	320-70797-8	101	54	55	59	64	60	60	64

	QC LIMITS
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank1-100mm	320-70797-1	67	63	65	70	64	64
11215702-Tank1-41mm	320-70797-2	68	65	67	71	68	67
11215702-Tank2-41mm	320-70797-8	62	62	67	81	76	90

	QC LIMITS
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #	13CHxCF #
11215702-Tank2-100 mm	320-70797-7	62	96	55	57	60	59	59	61

	QC LIMITS
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank2-100 mm	320-70797-7	59	61	61	65	73	71	78

	QC LIMITS
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-467785/2-A	62	70	95	60	60	65	60	66
	LCSD 320-467785/3-A	73	75	93	69	71	74	74	79

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-467785/2-A	67	60	69	61	64	68	61	60
	LCSD 320-467785/3-A	81	70	81	80	82	80	78	77

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Tank1-100 mm RADL	320-70797-1 RADL	83	122
11215702-Tank1-41m m RADL	320-70797-2 RADL	79	112
11215702-Tank1-10m m RA	320-70797-3 RA	91	115
11215702-Tank1-1mm RA	320-70797-4 RA	88	113
11215702-Tank1-0.4 5mm RA	320-70797-5 RA	97	120
11215702-Tank1-0.1 mm RA	320-70797-6 RA	87	118
11215702-Tank2-100 mm RADL	320-70797-7 RADL	69	101
11215702-Tank2-41m m RADL	320-70797-8 RADL	78	111
11215702-Tank2-10m m RA	320-70797-9 RA	92	115
11215702-Tank2-1mm RA	320-70797-10 RA	82	115
11215702-Tank2-0.4 5mm RA	320-70797-11 RA	73	114
11215702-Tank2-0.1 mm RA	320-70797-12 RA	82	115

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #
11215702-Tank1-100mm DL	320-70797-1 DL	72	70	121
11215702-Tank1-41mm DL	320-70797-2 DL	69	68	108
11215702-Tank2-100mm DL	320-70797-7 DL	67	64	112
11215702-Tank2-41mm DL	320-70797-8 DL	64	59	114

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Tank1-10mm	320-70797-3	72	76	95	70	70	70	78	79
11215702-Tank1-1mm	320-70797-4	71	72	96	69	68	70	72	73
11215702-Tank1-0.45mm	320-70797-5	74	79	94	73	74	76	81	82
11215702-Tank1-0.1mm	320-70797-6	66	71	94	64	65	67	71	71
11215702-Tank2-10mm	320-70797-9	68	76	94	70	70	75	79	80
11215702-Tank2-1mm	320-70797-10	62	70	95	62	62	65	66	67
11215702-Tank2-0.45mm	320-70797-11	54	62	96	53	55	59	56	58
11215702-Tank2-0.1mm	320-70797-12	61	70	93	61	61	67	66	66
	MB 320-467785/1-A	68	66	94	59	62	59	57	63

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Tank1-10mm	320-70797-3	81	77	81	79	89	94	90	102
11215702-Tank1-1mm	320-70797-4	75	73	77	74	81	89	83	93
11215702-Tank1-0.45mm	320-70797-5	83	80	84	83	90	98	93	104
11215702-Tank1-0.1mm	320-70797-6	74	70	75	73	78	88	83	93
11215702-Tank2-10mm	320-70797-9	81	81	85	76	86	99	92	106
11215702-Tank2-1mm	320-70797-10	69	67	72	68	75	84	80	91
11215702-Tank2-0.45mm	320-70797-11	58	58	62	57	65	75	69	77
11215702-Tank2-0.1mm	320-70797-12	68	68	73	68	79	89	84	97
	MB 320-467785/1-A	67	52	64	59	59	60	56	53

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 10mr21dfs1_11.d

Lab ID: LCS 320-467785/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	200	100	67-158	
2,3,7,8-TCDF	200	207	103	75-158	
1,2,3,7,8-PeCDD	1000	1010	101	70-142	
1,2,3,7,8-PeCDF	1000	1020	102	80-134	
2,3,4,7,8-PeCDF	1000	1040	104	68-160	
1,2,3,4,7,8-HxCDD	1000	1110	111	70-164	
1,2,3,6,7,8-HxCDD	1000	1130	113	76-134	
1,2,3,7,8,9-HxCDD	1000	1070	107	64-162	
1,2,3,4,7,8-HxCDF	1000	1060	106	72-134	
1,2,3,6,7,8-HxCDF	1000	1070	107	84-130	
1,2,3,7,8,9-HxCDF	1000	1110	111	78-130	
2,3,4,6,7,8-HxCDF	1000	1090	109	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1060	106	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1100	110	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1070	107	78-138	
OCDD	2000	2000	100	78-144	
OCDF	2000	1830	92	63-170	
13C-2,3,7,8-TCDD	2000	1400	70	20-175	
13C-2,3,7,8-TCDF	2000	1240	62	22-152	
13C-1,2,3,7,8-PeCDD	2000	1310	65	21-227	
13C-1,2,3,7,8-PeCDF	2000	1200	60	21-192	
13C-2,3,4,7,8-PeCDF	2000	1200	60	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1200	60	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1390	69	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1190	60	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1320	66	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1230	61	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1350	67	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1370	68	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1280	64	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1210	61	20-186	
13C-OCDD	4000	2380	60	13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 10mr21dfs1_12.d

Lab ID: LCSD 320-467785/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	199	100	0	50	67-158	
2,3,7,8-TCDF	200	206	103	0	50	75-158	
1,2,3,7,8-PeCDD	1000	1020	102	0	50	70-142	
1,2,3,7,8-PeCDF	1000	1040	104	3	50	80-134	
2,3,4,7,8-PeCDF	1000	1030	103	0	50	68-160	
1,2,3,4,7,8-HxCDD	1000	1070	107	3	50	70-164	
1,2,3,6,7,8-HxCDD	1000	1110	111	2	50	76-134	
1,2,3,7,8,9-HxCDD	1000	1070	107	0	50	64-162	
1,2,3,4,7,8-HxCDF	1000	1060	106	0	50	72-134	
1,2,3,6,7,8-HxCDF	1000	1090	109	2	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1060	106	5	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1090	109	0	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	1030	103	3	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1070	107	2	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	1040	104	3	50	78-138	
OCDD	2000	1970	99	1	50	78-144	
OCDF	2000	1860	93	2	50	63-170	
13C-2,3,7,8-TCDD	2000	1500	75			20-175	
13C-2,3,7,8-TCDF	2000	1450	73			22-152	
13C-1,2,3,7,8-PeCDD	2000	1470	74			21-227	
13C-1,2,3,7,8-PeCDF	2000	1380	69			21-192	
13C-2,3,4,7,8-PeCDF	2000	1420	71			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1410	70			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1620	81			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1470	74			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1580	79			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1600	80			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1620	81			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1600	80			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1630	82			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1550	78			20-186	
13C-OCDD	4000	3080	77			13-199	

Column to be used to flag recovery and RPD values

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab File ID: 10mr21dfs1_13.d   Lab Sample ID: MB 320-467785/1-A

Matrix: Water   Date Extracted: 03/05/2021 09:52

Instrument ID: DFS 1   Date Analyzed: 03/10/2021 17:37

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Tank1-100mm	320-70797-1	10mr21dfs1_9.d	03/10/2021 14:25
11215702-Tank1-41mm	320-70797-2	10mr21dfs1_10.d	03/10/2021 15:13
	LCS 320-467785/2-A	10mr21dfs1_11.d	03/10/2021 16:01
	LCSD 320-467785/3-A	10mr21dfs1_12.d	03/10/2021 16:49
11215702-Tank2-0.45mm RA	320-70797-11 RA	11MR2111D2_004.d	03/11/2021 15:45
11215702-Tank1-0.45mm RA	320-70797-5 RA	11MR2111D2_005.d	03/11/2021 16:24
11215702-Tank1-0.1mm RA	320-70797-6 RA	11MR2111D2_006.d	03/11/2021 17:02
11215702-Tank1-1mm RA	320-70797-4 RA	11MR2111D2_007.d	03/11/2021 17:40
11215702-Tank2-0.1mm RA	320-70797-12 RA	11MR2111D2_008.d	03/11/2021 18:19
11215702-Tank1-10mm RA	320-70797-3 RA	11MR2111D2_009.d	03/11/2021 18:57
11215702-Tank2-10mm RA	320-70797-9 RA	11MR2111D2_010.d	03/11/2021 19:35
11215702-Tank2-1mm RA	320-70797-10 RA	11MR2111D2_011.d	03/11/2021 20:13
11215702-Tank1-10mm	320-70797-3	12mr21adfs1_5.d	03/12/2021 12:57
11215702-Tank1-1mm	320-70797-4	12mr21adfs1_6.d	03/12/2021 13:45
11215702-Tank1-0.45mm	320-70797-5	12mr21adfs1_7.d	03/12/2021 14:33
11215702-Tank1-0.1mm	320-70797-6	12mr21adfs1_8.d	03/12/2021 15:21
11215702-Tank2-100mm	320-70797-7	12mr21adfs1_9.d	03/12/2021 16:09
11215702-Tank2-41mm	320-70797-8	12mr21adfs1_10.d	03/12/2021 16:56
11215702-Tank2-10mm	320-70797-9	12mr21adfs1_11.d	03/12/2021 17:44
11215702-Tank2-1mm	320-70797-10	12mr21adfs1_12.d	03/12/2021 18:32
11215702-Tank2-0.45mm	320-70797-11	12mr21adfs1_13.d	03/12/2021 19:20
11215702-Tank2-0.1mm	320-70797-12	12mr21adfs1_14.d	03/12/2021 20:08

FORM IV 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab File ID: 10mr21dfs1_13.d   Lab Sample ID: MB 320-467785/1-A

Matrix: Water   Date Extracted: 03/05/2021 09:52

Instrument ID: DFS 1   Date Analyzed: 03/10/2021 17:37

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
11215702-Tank1-100mm RADL	320-70797-1 RADL	16MR2111D2_004.d	03/16/2021 22:48
11215702-Tank1-41mm RADL	320-70797-2 RADL	16MR2111D2_005.d	03/16/2021 23:26
11215702-Tank2-100mm RADL	320-70797-7 RADL	16MR2111D2_006.d	03/17/2021 00:05
11215702-Tank2-41mm RADL	320-70797-8 RADL	16MR2111D2_007.d	03/17/2021 00:43
11215702-Tank1-41mm DL	320-70797-2 DL	17MR2110D5_10.d	03/17/2021 17:13
11215702-Tank2-100mm DL	320-70797-7 DL	17MR2110D5_11.d	03/17/2021 17:59
11215702-Tank1-100mm DL	320-70797-1 DL	17MR2110D5_12.d	03/17/2021 18:44
11215702-Tank2-41mm DL	320-70797-8 DL	17MR2110D5_13.d	03/17/2021 19:29

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank1-100mm
Lab Sample ID: 320-70797-1
Matrix: Water
Lab File ID: 10mr21dfs1_9.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1016.1(mL)
Date Analyzed: 03/10/2021 14:25
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	98		49	1.5
57117-41-6	1,2,3,7,8-PeCDF	1300		49	9.6
57117-31-4	2,3,4,7,8-PeCDF	720		49	10
39227-28-6	1,2,3,4,7,8-HxCDD	7.2	J	49	1.0
57653-85-7	1,2,3,6,7,8-HxCDD	31	J	49	1.1
19408-74-3	1,2,3,7,8,9-HxCDD	14	J	49	0.96
70648-26-9	1,2,3,4,7,8-HxCDF	2200	B	49	6.8
57117-44-9	1,2,3,6,7,8-HxCDF	580	B	49	6.4
72918-21-9	1,2,3,7,8,9-HxCDF	34	J B	49	5.4
60851-34-5	2,3,4,6,7,8-HxCDF	61	B	49	5.5
35822-46-9	1,2,3,4,6,7,8-HpCDD	1600	B	49	3.5
67562-39-4	1,2,3,4,6,7,8-HpCDF	630	B	49	1.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	240	B	49	1.8
3268-87-9	OCDD	13000	B	98	6.8
39001-02-0	OCDF	310	B	98	0.75
36088-22-9	Total PeCDD	150	q	49	1.5
30402-15-4	Total PeCDF	3100		49	10
34465-46-8	Total HxCDD	300	q	49	1.0
55684-94-1	Total HxCDF	3300	B	49	6.0
37871-00-4	Total HpCDD	2800	B	49	3.5
38998-75-3	Total HpCDF	1100	B	49	1.7

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-100mm Lab Sample ID: 320-70797-1

Matrix: Water Lab File ID: 10mr21dfs1_9.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1016.1(mL) Date Analyzed: 03/10/2021 14:25

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 468973 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
109719-79-1	13C-1,2,3,7,8-PeCDD	61		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	59		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	59		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	62		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	65		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	67		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	63		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	65		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	64		26-138
114423-97-1	13C-OCDD	64		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Report Date: 12-Mar-2021 07:52:00 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Sample Type: Client
Inject. Date: 10-Mar-2021 14:25:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 07:52:00 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: krenns Date: 12-Mar-2021 07:52:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.564	4548442	0.79	1E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.679	4396004	0.79	1.5437	62.6	62.6	0.2780	0.2780	62.61	
2,3,7,8-TCDF	18.696	75745127	0.76	1.1258	1530.5	1530.5	7.432	7.432		E
A Non-2,3,7,8-sub-TCDF	18.182	55114139	0.77	1.1258	1113.6	1113.6	7.432	655.9		Ma
S Total TCDF					2644.1	2644.1	7.432	7.432		
D 13C-2,3,7,8-TCDD	19.899	2889137	0.80	0.9687	65.6	65.6	0.2684	0.2684	65.57	
2,3,7,8-TCDD	19.924	17793755	0.79	1.1904	517.4	517.4	0.7663	0.7663		Ea
$ 37Cl4-2,3,7,8-TCDD	19.924	1991783		1.0841	40.4	40.4	0.0516	0.0516	101	
A Non-2,3,7,8-sub-TCDD	18.946	1691162	0.79	1.1904	49.2	49.2	0.7663	43.5		a
S Total TCDD					566.6	566.6	0.7663	0.7663		
D 13C-1,2,3,7,8-PeCDF	25.723	3519004	1.59	1.3124	59.0	59.0	0.1871	0.1871	58.95	
1,2,3,7,8-PeCDF	25.740	2496583	1.55	1.1163	63.6	63.6	0.4858	0.4858		M
D 13C-2,3,4,7,8-PeCDF	27.096	3605746	1.60	1.3352	59.4	59.4	0.1839	0.1839	59.37	
2,3,4,7,8-PeCDF	27.130	1394066	1.58	1.0579	36.5	36.5	0.5261	0.5261		
A F1 PeCDFs	22.838	15629	1.49	1.0871	0.4036	0.4036	0.0129	0.4036		
A Non-2,3,7,8-sub-PeCDF	26.271	2302730	1.56	1.0871	59.5	59.5	0.5054	24.8		Ma
S Total PeCDF					160.0	160.0	0.5060	0.5060		
D 13C-1,2,3,7,8-PeCDD	27.846	2127232	1.61	0.7716	60.6	60.6	0.0857	0.0857	60.61	
1,2,3,7,8-PeCDD	27.871	120367	1.60	1.1372	4.976	4.976	0.0781	0.0781		M
A Non-2,3,7,8-sub-PeCDD	26.681	61756	1.55	1.1372	2.940	2.553	0.0781	1.066		RQ
S Total PeCDD					7.916	7.529	0.0781	0.0781		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.594	2737322	0.51	1.0931	64.7	64.7	0.1118	0.1118	64.66	
1,2,3,4,7,8-HxCDF	33.611	3696022	1.22	1.1831	114.1	114.1	0.3451	0.3451		
D 13C-1,2,3,6,7,8-HxCDF	33.788	2919295	0.53	1.1278	66.8	66.8	0.1084	0.1084	66.84	
1,2,3,6,7,8-HxCDF	33.814	1080936	1.23	1.2484	29.7	29.7	0.3233	0.3233		
D 13C-2,3,4,6,7,8-HxCDF	34.774	2639079	0.52	1.0552	64.6	64.6	0.1159	0.1159	64.58	
2,3,4,6,7,8-HxCDF	34.791	104327	1.22	1.2750	3.100	3.100	0.2818	0.2818		
D 13C-1,2,3,7,8,9-HxCDF	35.785	2442127	0.53	0.9938	63.5	63.5	0.1230	0.1230	63.45	
1,2,3,7,8,9-HxCDF	35.810	55395	1.19	1.2953	1.751	1.751	0.2729	0.2729		
A Non-2,3,7,8-sub-HxCDF	33.585	688084	1.25	1.2505	20.5	20.5	0.3035	7.360		
S Total HxCDF					169.1	169.1	0.3058	0.3058		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.583	3872712	1.27	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.035	1882791	1.27	0.7895	61.6	61.6	0.1073	0.1073	61.58	
1,2,3,4,7,8-HxCDD	35.052	7514	1.08	1.0950	0.3645	0.3645	0.0532	0.0532		
D 13C-1,2,3,6,7,8-HxCDD	35.170	2206022	1.27	0.8495	67.1	67.1	0.0997	0.0997	67.06	
1,2,3,6,7,8-HxCDD	35.187	34990	1.29	1.0201	1.555	1.555	0.0538	0.0538		
1,2,3,7,8,9-HxCDD	35.591	16628	1.19	1.1549	0.7043	0.7043	0.0489	0.0489		
A Non-2,3,7,8-sub-HxCDD	34.125	281580	1.24	1.0900	12.7	12.6	0.0518	6.265		RQ
S Total HxCDD					15.3	15.3	0.0520	0.0520		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.827	1981986	0.45	0.7854	65.2	65.2	0.1946	0.1946	65.16	
1,2,3,4,6,7,8-HpCDF	37.836	946666	1.04	1.4859	32.1	32.1	0.0856	0.0856		
D 13C-1,2,3,4,7,8,9-HpCDF	39.158	1793646	0.47	0.7230	64.1	64.1	0.2114	0.2114	64.06	
1,2,3,4,7,8,9-HpCDF	39.175	311969	1.06	1.4048	12.4	12.4	0.0901	0.0901		
A Non-2,3,7,8-sub-HpCDF	38.512	335254	1.04	1.4453	12.3	12.3	0.0878	12.3		
S Total HpCDF					56.8	56.8	0.0878	0.0878		
D 13C-1,2,3,4,6,7,8-HpCDD	38.847	1748318	1.06	0.6413	70.4	70.4	0.1145	0.1145	70.39	
1,2,3,4,6,7,8-HpCDD	38.864	1663174	1.04	1.1489	82.8	82.8	0.1775	0.1775		
A Non-2,3,7,8-sub-HpCDD	38.524	1207255	1.06	1.1489	60.1	60.1	0.1775	60.1		
S Total HpCDD					142.9	142.9	0.1775	0.1775		
D 13C-OCDD	41.319	2540552	0.89	0.5141	127.6	127.6	0.1330	0.1330	63.80	
OCDF	41.403	320538	0.87	1.5776	16.0	16.0	0.0380	0.0380		
OCDD	41.327	9579068	0.90	1.1706	644.2	644.2	0.3457	0.3457		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Sample Type: Client
Inject. Date: 10-Mar-2021 14:25:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 07:52:00 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: krenns Date: 12-Mar-2021 07:52:00

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.564	19.547	1		2013831	313354	391	977	801		a
333.9338	19.564	19.547	1		2534611	393250	344	860	1143	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.679	18.671	0	0.955	1934315	357753	651	1627	550		
317.9389	18.679	18.671	0	0.955	2461689	447254	562	1405	796	0.79(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.696	18.706	-1	1.001	32705940	5722699	11062	27655	517		
305.8987	18.696	18.706	-1	1.001	43039187	7658516	15879	39697	482	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											Ma
303.9016	16.017	18.182	-130	0.857	184952	39164	11062	27655	4		M
305.8987	16.017	18.182	-130	0.857	253595	52529	15879	39697	3	0.73(0.65-0.89)	M
303.9016	16.421	18.182	-105	0.879	644083	128259	11062	27655	12		
305.8987	16.421	18.182	-105	0.879	807994	163510	15879	39697	10	0.80(0.65-0.89)	
303.9016	16.867	18.182	-79	0.903	1134580	160926	11062	27655	15		
305.8987	16.867	18.182	-79	0.903	1475934	207777	15879	39697	13	0.77(0.65-0.89)	
303.9016	17.253	18.182	-56	0.924	1004749	152703	11062	27655	14		
305.8987	17.245	18.182	-56	0.923	1336372	201963	15879	39697	13	0.75(0.65-0.89)	
303.9016	17.588	18.182	-36	0.942	1552558	263980	11062	27655	24		
305.8987	17.588	18.182	-36	0.942	1997403	336083	15879	39697	21	0.78(0.65-0.89)	
303.9016	18.035	18.182	-9	0.966	14152904	2311964	11062	27655	209		
305.8987	18.035	18.182	-9	0.966	18307322	3019271	15879	39697	190	0.77(0.65-0.89)	
303.9016	18.405	18.182	13	0.985	521420	87506	11062	27655	8		M
305.8987	18.405	18.182	13	0.985	653160	110145	15879	39697	7	0.80(0.65-0.89)	M
303.9016	19.400	18.182	73	1.039	2093961	369682	11062	27655	33		
305.8987	19.400	18.182	73	1.039	2694547	477450	15879	39697	30	0.78(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.804	18.182	97	1.060	412394	65539	11062	27655	6		M
305.8987	19.796	18.182	97	1.060	558455	85420	15879	39697	5	0.74(0.65-0.89)	M
303.9016	21.693	18.182	210	1.161	2308691	349404	11062	27655	32		a
305.8987	21.693	18.182	210	1.161	3019065	459576	15879	39697	29	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.899	19.882	1	1.017	1282523	207751	391	977	531		
333.9338	19.899	19.882	1	1.017	1606614	260889	344	860	758	0.80(0.65-0.89)	
2,3,7,8-TCDD											Ea
319.8965	19.924	19.908	1	1.001	7869343	1225117	925	2312	1324		a
321.8936	19.924	19.908	1	1.001	9924412	1523111	785	1962	1940	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.924	19.917	0	1.018	1991783	310724	158	395	1967		
A Non-2,3,7,8-sub-TCDD											a
319.8965	19.761	18.946	49	0.993	88931	14654	925	2312	16		a
321.8936	19.753	18.946	48	0.993	104888	19372	785	1962	25	0.85(0.65-0.89)	
319.8965	20.517	18.946	94	1.031	656186	94969	925	2312	103		
321.8936	20.517	18.946	94	1.031	841157	119331	785	1962	152	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.723	25.717	0	1.315	2162874	377378	427	1067	884		
353.8970	25.723	25.717	0	1.315	1356130	237564	267	667	890	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.740	25.734	0	1.001	1517842	258883	786	1965	329		
341.8567	25.740	25.734	0	1.001	978741	166257	548	1370	303	1.55(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.096	27.107	-1	1.385	2216640	369631	427	1067	866		
353.8970	27.096	27.107	-1	1.385	1389106	229538	267	667	860	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.130	27.124	0	1.001	853330	145699	786	1965	185		
341.8567	27.122	27.124	0	1.001	540736	92735	548	1370	169	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.363	22.838	-28	0.869	9343	1583	9	22	176		
341.8567	22.363	22.838	-28	0.869	6286	1023	25	62	41	1.49(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											Ma
339.8597	24.384	26.271	-113	0.948	587897	116523	786	1965	148		M
341.8567	24.384	26.271	-113	0.948	371664	74327	548	1370	136	1.58(1.32-1.78)	M
339.8597	25.226	26.271	-63	0.981	45425	7714	786	1965	10		
341.8567	25.218	26.271	-63	0.980	31783	5390	548	1370	10	1.43(1.32-1.78)	
339.8597	25.614	26.271	-39	0.996	92137	22196	786	1965	28		
341.8567	25.614	26.271	-39	0.996	60632	14146	548	1370	26	1.52(1.32-1.78)	
339.8597	26.271	26.271	0	1.021	392548	69872	786	1965	89		a
341.8567	26.271	26.271	0	1.021	254401	44426	548	1370	81	1.54(1.32-1.78)	
339.8597	27.417	26.271	69	1.066	237526	35087	786	1965	45		
341.8567	27.417	26.271	69	1.066	151035	21839	548	1370	40	1.57(1.32-1.78)	
339.8597	28.975	26.271	162	1.126	46754	7907	786	1965	10		a
341.8567	28.975	26.271	162	1.126	30928	4976	548	1370	9	1.51(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	27.846	27.857	-1	1.423	1311227	210550	105	262	2005		
369.8919	27.846	27.857	-1	1.423	816005	132765	82	205	1619	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	27.871	27.883	-1	1.001	74095	11655	70	175	167		M
357.8516	27.880	27.883	0	1.001	46272	7270	52	130	140	1.60(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	24.637	26.681	-122	0.885	11986	2169	70	175	31		
357.8516	24.670	26.681	-120	0.886	16661	2893	52	130	56	0.72(1.32-1.78)	
	Empc Correction				7732	1399	52	130	27		
355.8546	25.867	26.681	-49	0.929	15532	2810	70	175	40		
357.8516	25.858	26.681	-49	0.929	10265	1955	52	130	38	1.51(1.32-1.78)	
355.8546	26.103	26.681	-35	0.937	3577	659	70	175	9		
357.8516	26.094	26.681	-35	0.937	2746	509	52	130	10	1.30(1.32-1.78)	
	Empc Correction				2307	425	52	130	8		
355.8546	26.389	26.681	-18	0.948	6522	1155	70	175	17		
357.8516	26.406	26.681	-17	0.948	3835	698	52	130	13	1.70(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.594	33.620	-2	0.944	930114	158887	156	390	1019		
385.8610	33.586	33.620	-2	0.944	1807208	304512	257	642	1185	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.611	33.646	-2	1.001	2030666	341211	349	872	978		
375.8178	33.611	33.646	-2	1.001	1665356	281639	408	1020	690	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.788	33.822	-2	0.950	1011277	160934	156	390	1032		
385.8610	33.788	33.822	-2	0.950	1908018	307838	257	642	1198	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.814	33.839	-2	1.001	595406	88289	349	872	253		
375.8178	33.814	33.839	-2	1.001	485530	73847	408	1020	181	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.774	34.808	-2	0.977	905834	183330	156	390	1175		
385.8610	34.774	34.808	-2	0.977	1733245	343293	257	642	1336	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.791	34.825	-2	1.000	57292	11457	349	872	33		
375.8178	34.791	34.825	-2	1.000	47035	9096	408	1020	22	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.785	35.827	-3	1.006	847315	185869	156	390	1191		
385.8610	35.785	35.827	-3	1.006	1594812	349396	257	642	1360	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.810	35.836	-2	1.001	30150	7585	349	872	22		
375.8178	35.810	35.836	-2	1.001	25245	6317	408	1020	15	1.19(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.666	33.585	-115	0.943	137750	17441	349	872	50		
375.8178	31.657	33.585	-115	0.942	109315	14301	408	1020	35	1.26(1.05-1.43)	
373.8208	32.811	33.585	-46	0.977	81377	11873	349	872	34		
375.8178	32.819	33.585	-46	0.977	64943	9908	408	1020	24	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
373.8208	34.639	33.585	63	1.031	39075	7424	349	872	21		
375.8178	34.639	33.585	63	1.031	31623	6385	408	1020	16	1.24(1.05-1.43)	
373.8208	35.920	33.585	140	1.069	123547	27554	349	872	79		
375.8178	35.920	33.585	140	1.069	100454	22281	408	1020	55	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.583	35.617	-2		2163685	471517	172	430	2741		
403.8529	35.583	35.617	-2		1709027	372529	114	285	3268	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.035	35.061	-2	0.985	1054094	231917	172	430	1348		
403.8529	35.035	35.061	-2	0.985	828697	180220	114	285	1581	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.052	35.086	-2	1.000	3901	941	44	110	21		
391.8127	35.052	35.086	-2	1.000	3613	937	52	130	18	1.08(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.170	35.195	-2	0.988	1232799	245323	172	430	1426		
403.8529	35.170	35.195	-2	0.988	973223	192276	114	285	1687	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.187	35.212	-2	1.000	19710	4077	44	110	93		
391.8127	35.178	35.212	-2	1.000	15280	2995	52	130	58	1.29(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.591	35.633	-3	1.016	9052	1674	44	110	38		
391.8127	35.600	35.633	-2	1.016	7576	1359	52	130	26	1.19(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	32.744	34.125	-83	0.931	77935	11454	44	110	260		
391.8127	32.735	34.125	-83	0.931	61662	8684	52	130	167	1.26(1.05-1.43)	
389.8158	33.721	34.125	-24	0.959	13936	2350	44	110	53		
391.8127	33.713	34.125	-25	0.959	10758	1758	52	130	34	1.30(1.05-1.43)	
389.8158	34.134	34.125	1	0.971	61551	10602	44	110	241		
391.8127	34.125	34.125	0	0.970	50095	8550	52	130	164	1.23(1.05-1.43)	
389.8158	34.370	34.125	15	0.977	3124	622	44	110	14		
391.8127	34.361	34.125	14	0.977	3097	576	52	130	11	1.01(1.05-1.43)	
	Empc Correction				2519	501	52	130	10		
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.827	37.860	-2	1.063	614575	169085	202	505	837		
419.8220	37.819	37.860	-3	1.063	1367411	366962	314	785	1169	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.836	37.869	-2	1.000	483669	132176	142	355	931		
409.7788	37.836	37.869	-2	1.000	462997	125963	131	327	962	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.158	39.199	-2	1.100	573718	173467	202	505	859		
419.8220	39.158	39.199	-2	1.100	1219928	365657	314	785	1165	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.175	39.208	-2	1.000	160373	48350	142	355	340		
409.7788	39.167	39.208	-2	1.000	151596	45927	131	327	351	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.224	38.512	-17	1.010	171169	47987	142	355	338		
409.7788	38.224	38.512	-17	1.010	164085	45699	131	327	349	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.847	38.888	-2	1.092	897601	266826	122	305	2187		
437.8140	38.847	38.888	-2	1.092	850717	254051	126	315	2016	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.864	38.896	-2	1.000	847100	255446	223	557	1145		
425.7737	38.855	38.896	-2	1.000	816074	243828	202	505	1207	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.173	38.524	-21	0.983	620048	171862	223	557	771		
425.7737	38.173	38.524	-21	0.983	587207	162992	202	505	807	1.06(0.88-1.20)	
13C-OCDD											
469.7780	41.319	41.358	-2	1.161	1199792	380316	117	292	3251		
471.7750	41.319	41.358	-2	1.161	1340760	420376	114	285	3688	0.89(0.76-1.02)	
OCDF											
441.7428	41.403	41.434	-2	1.002	149222	45281	33	82	1372		
443.7399	41.403	41.434	-2	1.002	171316	51417	63	157	816	0.87(0.76-1.02)	
OCDD											
457.7377	41.327	41.367	-2	1.000	4530855	1403486	308	770	4557		
459.7348	41.327	41.367	-2	1.000	5048213	1562037	340	850	4594	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Inject. Date: 10-Mar-2021 14:25:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 468973
Lims Sample ID: 8

Non-2,3,7,8-sub-TCDF, RT: 18.182

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	4396004	805007

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	4396004	805007

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.017	184952	39164	253595	52529	8.86	0.73	M
16.421	644083	128259	807994	163510	29.3	0.80	
16.867	1134580	160926	1475934	207777	52.7	0.77	
17.253	1004749	152703	1336372	201963	47.3	0.75	
17.588	1552558	263980	1997403	336083	71.7	0.78	
18.035	14152904	2311964	18307322	3019271	655.9	0.77	
18.405	521420	87506	653160	110145	23.7	0.80	M
19.400	2093961	369682	2694547	477450	96.8	0.78	
19.804	412394	65539	558455	85420	19.6	0.74	M
21.693	2308691	349404	3019065	459576	107.7	0.76	a
Signal Totals:							
	24010292	3929127	31103847	5113724			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	55114139	9042851				0.77	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1113.6 = (55114139 * 100.000) / (4396004 * 1.126)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

Non-2,3,7,8-sub-TCDD, RT: 18.946

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2889137	468640

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2889137	468640

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.761	88931	14654	104888	19372	5.64	0.85	a
20.517	656186	94969	841157	119331	43.5	0.78	
Signal Totals:							
	745117	109623	946045	138703			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1691162	248326				0.79	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 49.174 = (1691162 * 100.000) / (2889137 * 1.190)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 12-Mar-2021 07:52:00 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

F1 PeCDFs, RT: 22.838

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3519004	614942
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3605746	599169

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3562375	607055

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.363	9343	1583	6286	1023	0.4036	1.49	
Signal Totals:							
	9343	1583	6286	1023			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15629	2606				1.49	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4036 = (15629 * 100.000) / (3562375 * 1.087)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

Non-2,3,7,8-sub-PeCDF, RT: 26.271

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3519004	614942
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3605746	599169

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3562375	607055

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.384	587897	116523	371664	74327	24.8	1.58	M
25.226	45425	7714	31783	5390	1.99	1.43	
25.614	92137	22196	60632	14146	3.94	1.52	
26.271	392548	69872	254401	44426	16.7	1.54	a
27.417	237526	35087	151035	21839	10.0	1.57	
28.975	46754	7907	30928	4976	2.01	1.51	a
Signal Totals:							
	1402287	259299	900443	165104			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2302730	424403				1.56	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 59.462 = (2302730 * 100.000) / (3562375 * 1.087)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 12-Mar-2021 07:52:00 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

Non-2,3,7,8-sub-PeCDD, RT: 26.681

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	2127232	343315

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	2127232	343315

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
24.637	11986	2169	16661	2893	1.18	0.72	RQ
24.637	11986	2169	7732	1399	0.8151		Empc Correction
25.867	15532	2810	10265	1955	1.07	1.51	
26.103	3577	659	2746	509	0.2614	1.30	RQ
26.103	3577	659	2307	425	0.2432		Empc Correction
26.389	6522	1155	3835	698	0.4281	1.70	
Signal Totals:							
	37617	6793	24139	4477			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	71124	12848				1.12	RQ
	61756	11270					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.940 = (71124 * 100.000) / (2127232 * 1.137)
Empc Amount: 2.553 = (61756 * 100.000) / (2127232 * 1.137)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

Non-2,3,7,8-sub-HxCDF, RT: 33.585

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2737322	463399
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2919295	468772
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2639079	526623
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2442127	535265

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2684455	498514

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.666	137750	17441	109315	14301	7.36	1.26	
32.811	81377	11873	64943	9908	4.36	1.25	
34.639	39075	7424	31623	6385	2.11	1.24	
35.920	123547	27554	100454	22281	6.67	1.23	
Signal Totals:							
	381749	64292	306335	52875			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	688084	117167				1.25	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 20.498 = (688084 * 100.000) / (2684455 * 1.250)

Report Date: 12-Mar-2021 07:52:00 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Inject. Date: 10-Mar-2021 14:25:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 8

Non-2,3,7,8-sub-HxCDD, RT: 34.125

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1882791	412137
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2206022	437599
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	2044406	424868

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.744	77935	11454	61662	8684	6.26	1.26	
33.721	13936	2350	10758	1758	1.11	1.30	
34.134	61551	10602	50095	8550	5.01	1.23	
34.370	3124	622	3097	576	0.2792	1.01	RQ
34.370	3124	622	2519	501	0.2532		Empc Correction
Signal Totals:							
	156546	25028	125034	19493			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	282158	44596				1.25	RQ
	281580	44521					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.662 = (282158 * 100.000) / (2044406 * 1.090)
Empc Amount: 12.636 = (281580 * 100.000) / (2044406 * 1.090)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

Non-2,3,7,8-sub-HpCDF, RT: 38.512

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1981986	536047
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1793646	539124

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	1887816	537585

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.224	171169	47987	164085	45699	12.3	1.04	
Signal Totals:							
	171169	47987	164085	45699			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	335254	93686				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.287 = (335254 * 100.000) / (1887816 * 1.445)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	10-Mar-2021 14:25:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	8

Non-2,3,7,8-sub-HpCDD, RT: 38.524

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1748318	520877

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1748318	520877

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.173	620048	171862	587207	162992	60.1	1.06	
Signal Totals:							
	620048	171862	587207	162992			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1207255	334854				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 60.101 = (1207255 * 100.000) / (1748318 * 1.149)

Report Date: 12-Mar-2021 07:52:00

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-1-A	Lab Sample ID:	320-70797-1
Client ID:	11215702-Tank1-100mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	25.74
Area:	988818
Amount:	63.813237
Amount Units:	pg/ul

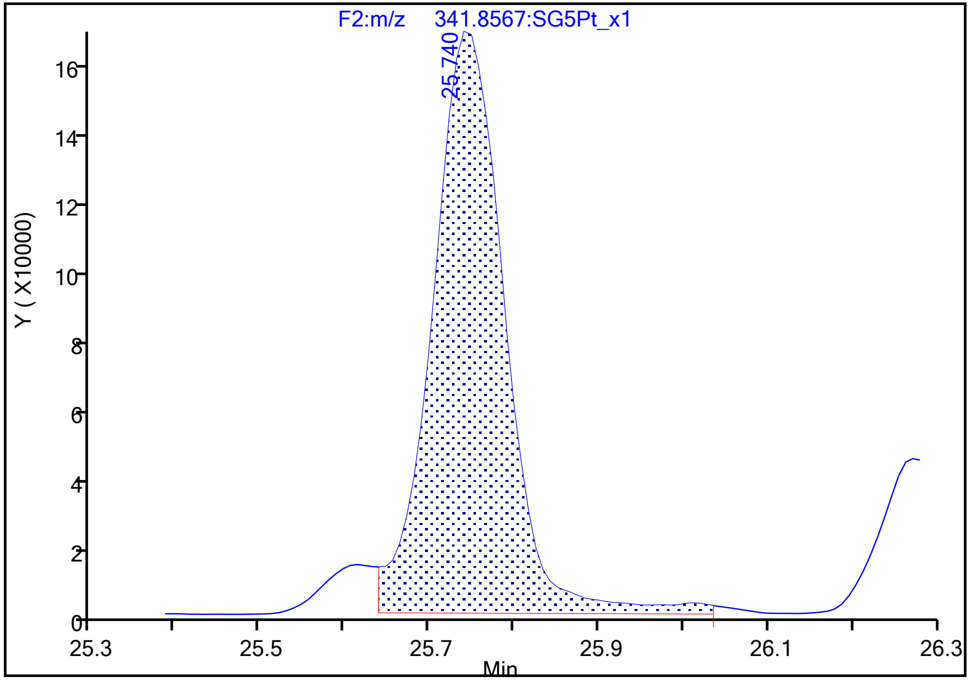

Manual Integration Results

RT:	25.74
Area:	978741
Amount:	63.556702
Amount Units:	pg/ul

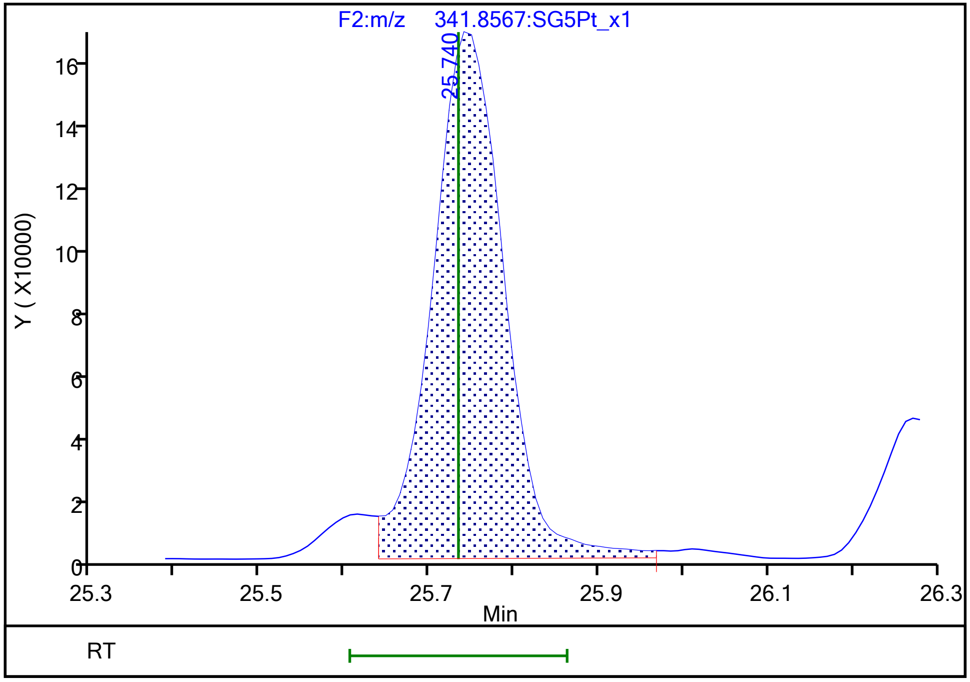

Reviewer: dadunj, 12-Mar-2021 09:07:03

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Injection Date: 10-Mar-2021 14:25:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-1-A
Lab Sample ID: 320-70797-1
Client ID: 11215702-Tank1-100mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 8
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.58- 28.96)

Signal: 1

Processing Integration Results

RT = 24.384 Area = 603330

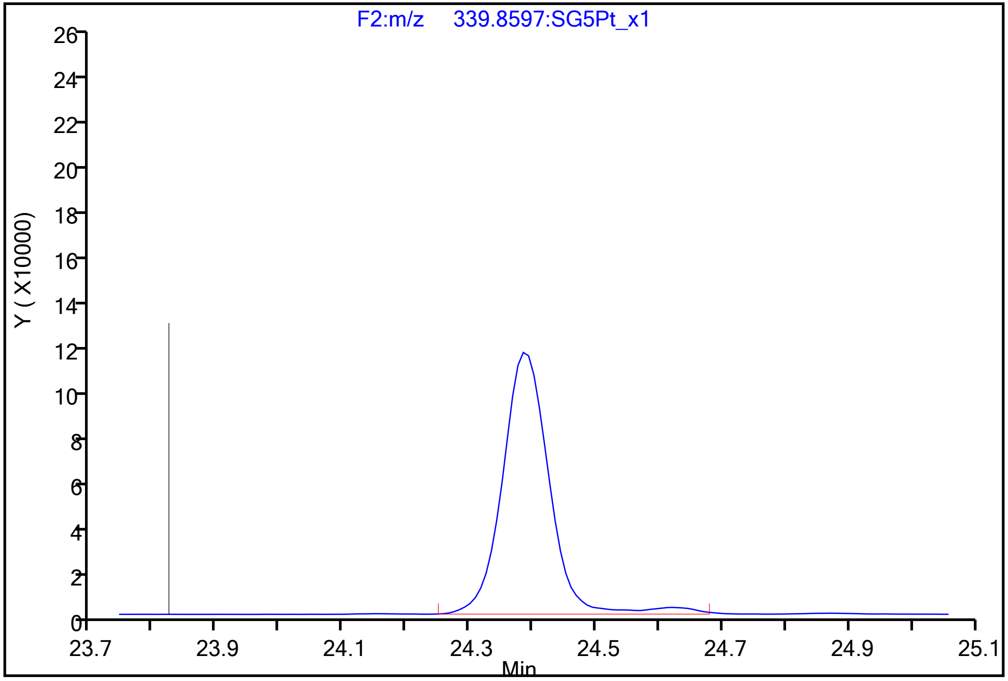

Manual Integration Results

RT = 24.384 Area = 587897 M

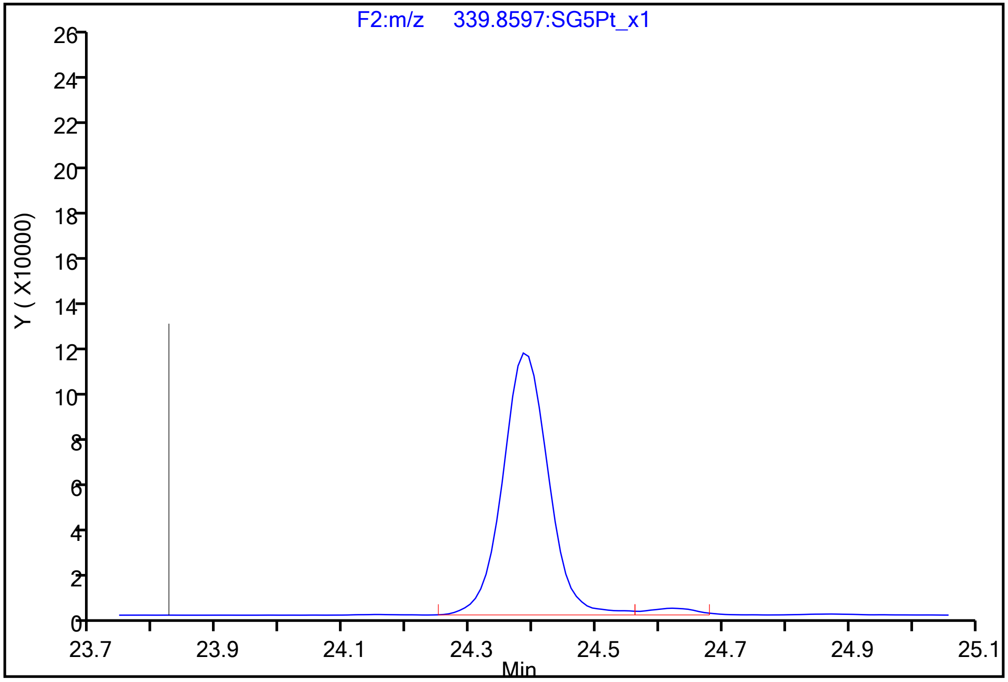

Reviewer: krenns, 12-Mar-2021 07:51:29
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d				
Injection Date:	10-Mar-2021 14:25:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-1-A	Lab Sample ID:	320-70797-1		
Client ID:	11215702-Tank1-100mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.58- 28.96)

Signal: 2

Processing Integration Results

RT = 24.384 Area = 382019

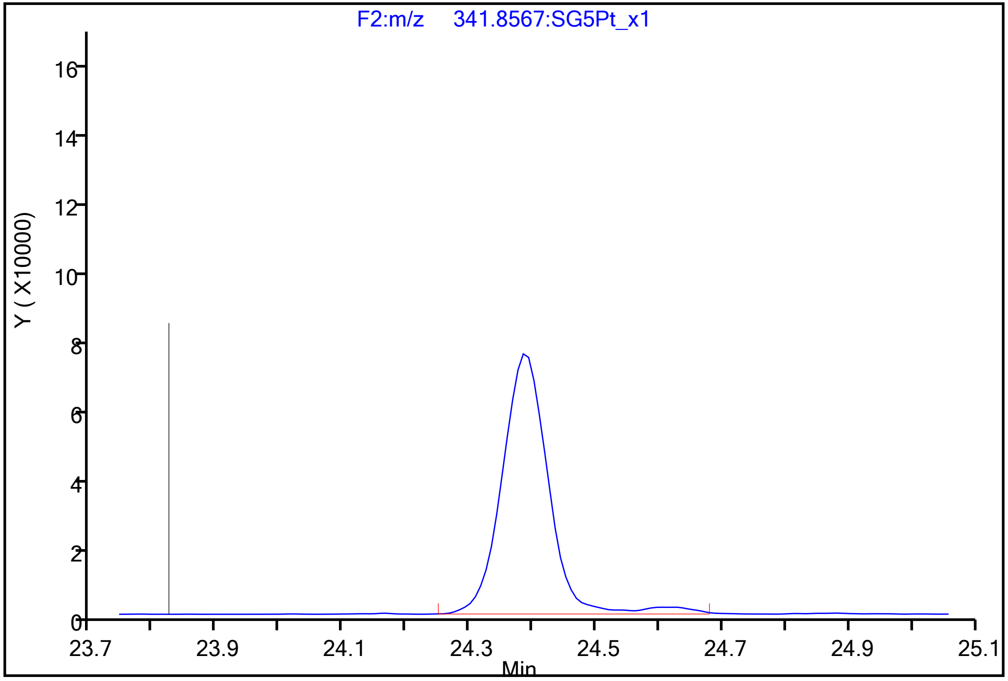

Manual Integration Results

RT = 24.384 Area = 371664 M

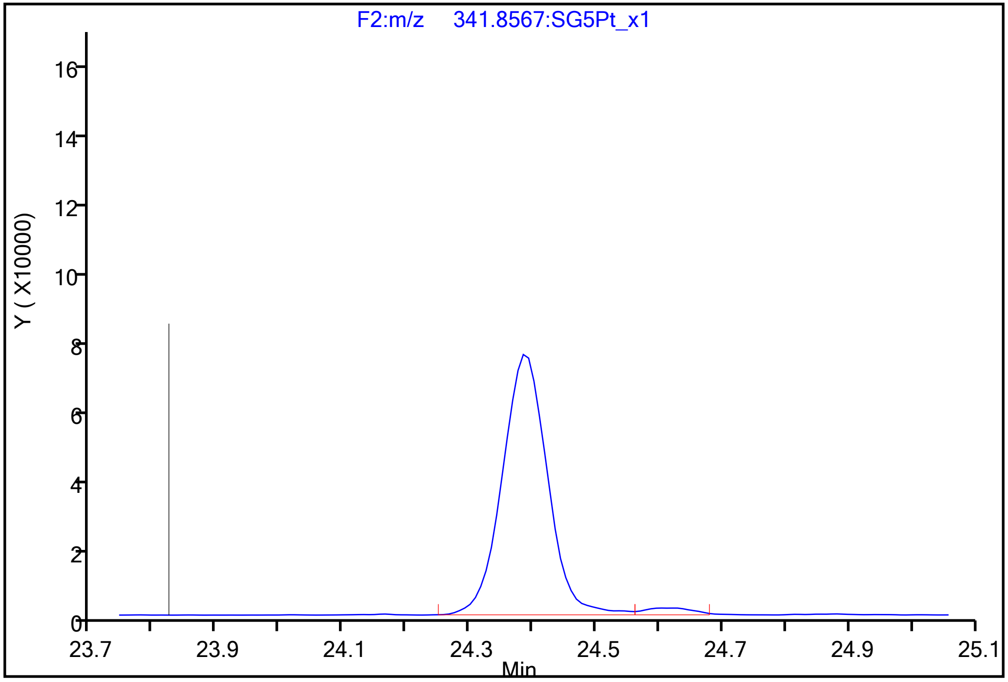

Reviewer: dadunj, 12-Mar-2021 09:07:51

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-1-A	Lab Sample ID:	320-70797-1
Client ID:	11215702-Tank1-100mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Processing Integration Results

RT: 27.88
Area: 48150
Amount: 5.126195
Amount Units: pg/ul

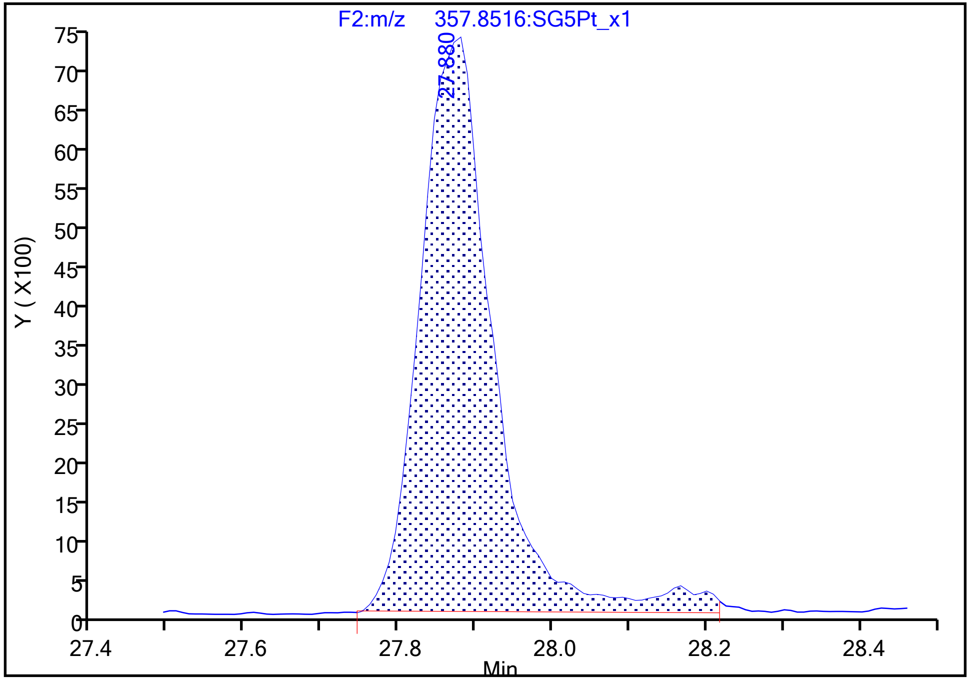

Manual Integration Results

RT: 27.88
Area: 46272
Amount: 4.975765
Amount Units: pg/ul

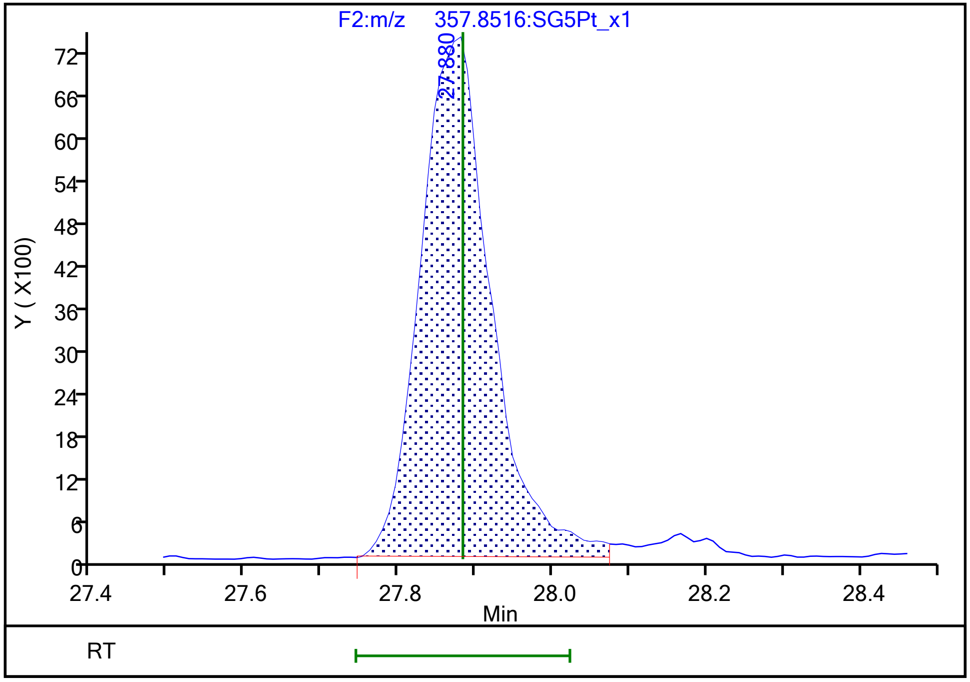

Reviewer: dadunj, 12-Mar-2021 09:08:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d				
Injection Date:	10-Mar-2021 14:25:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-1-A	Lab Sample ID:	320-70797-1		
Client ID:	11215702-Tank1-100mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	27.87
Area:	75856
Amount:	5.126195
Amount Units:	pg/ul

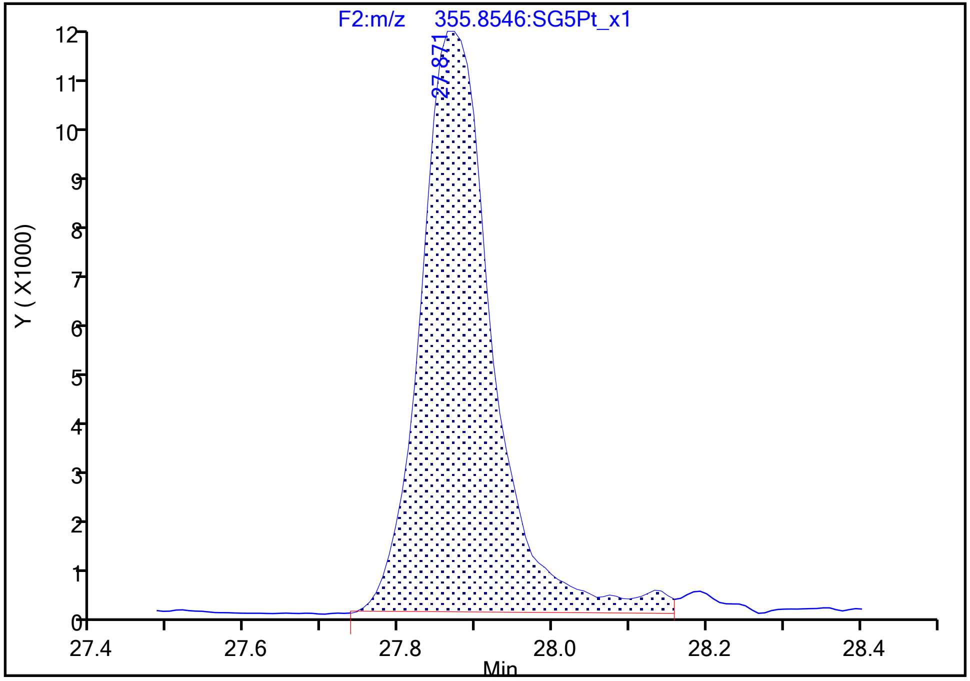

Manual Integration Results

RT:	27.87
Area:	74095
Amount:	4.975765
Amount Units:	pg/ul

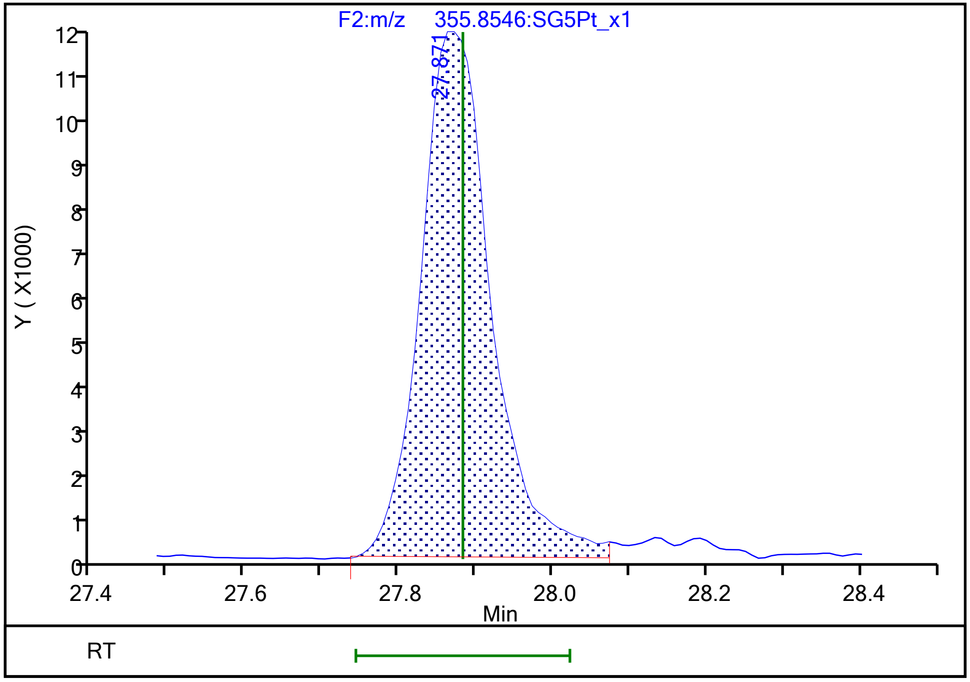

Reviewer: dadunj, 12-Mar-2021 09:08:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d

Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

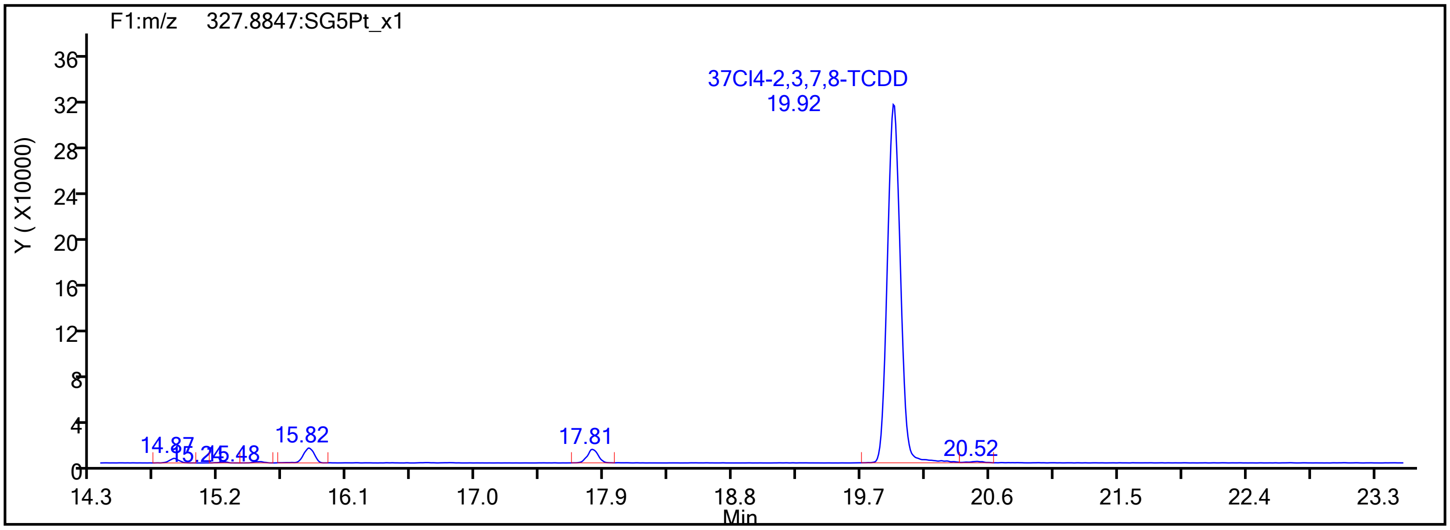

37Cl4-TCDD Standards

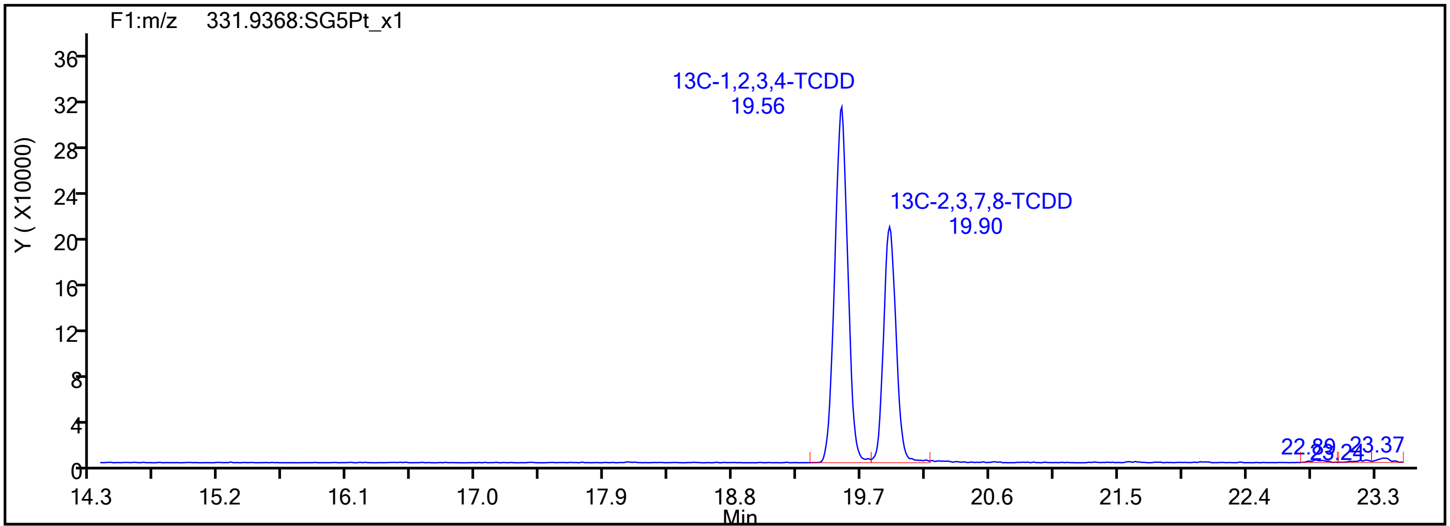

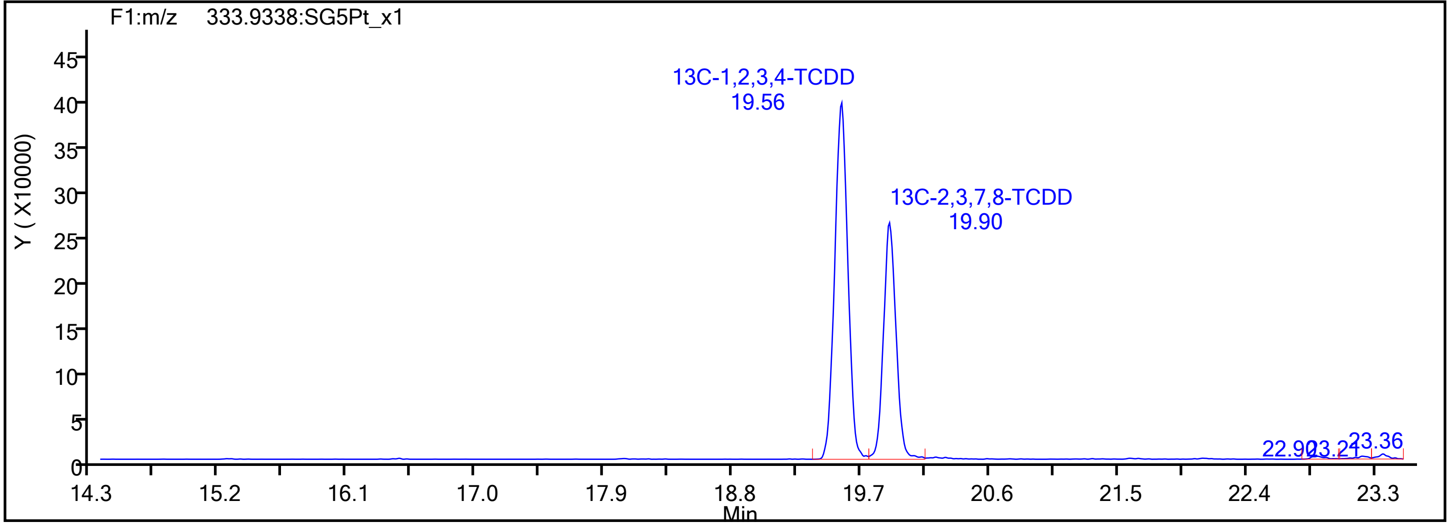

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

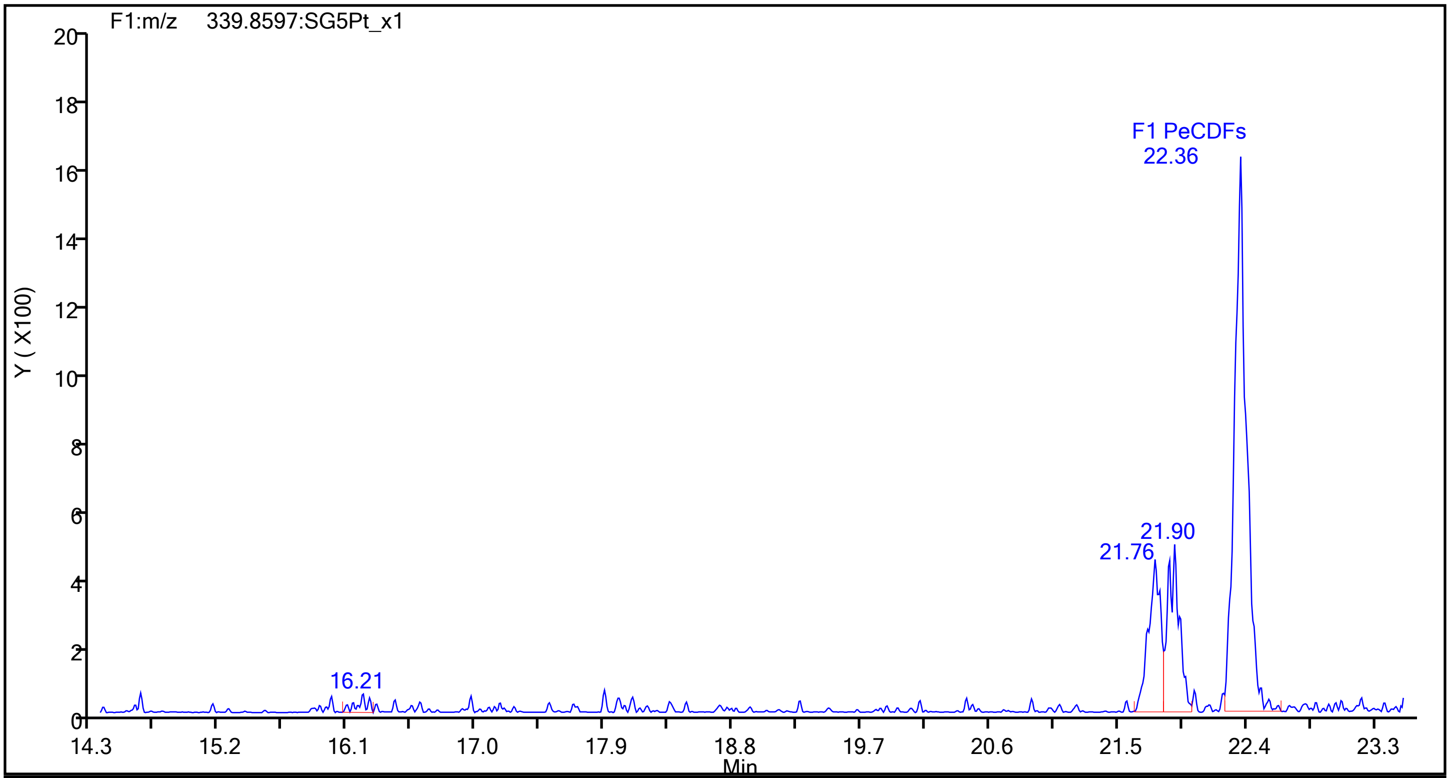

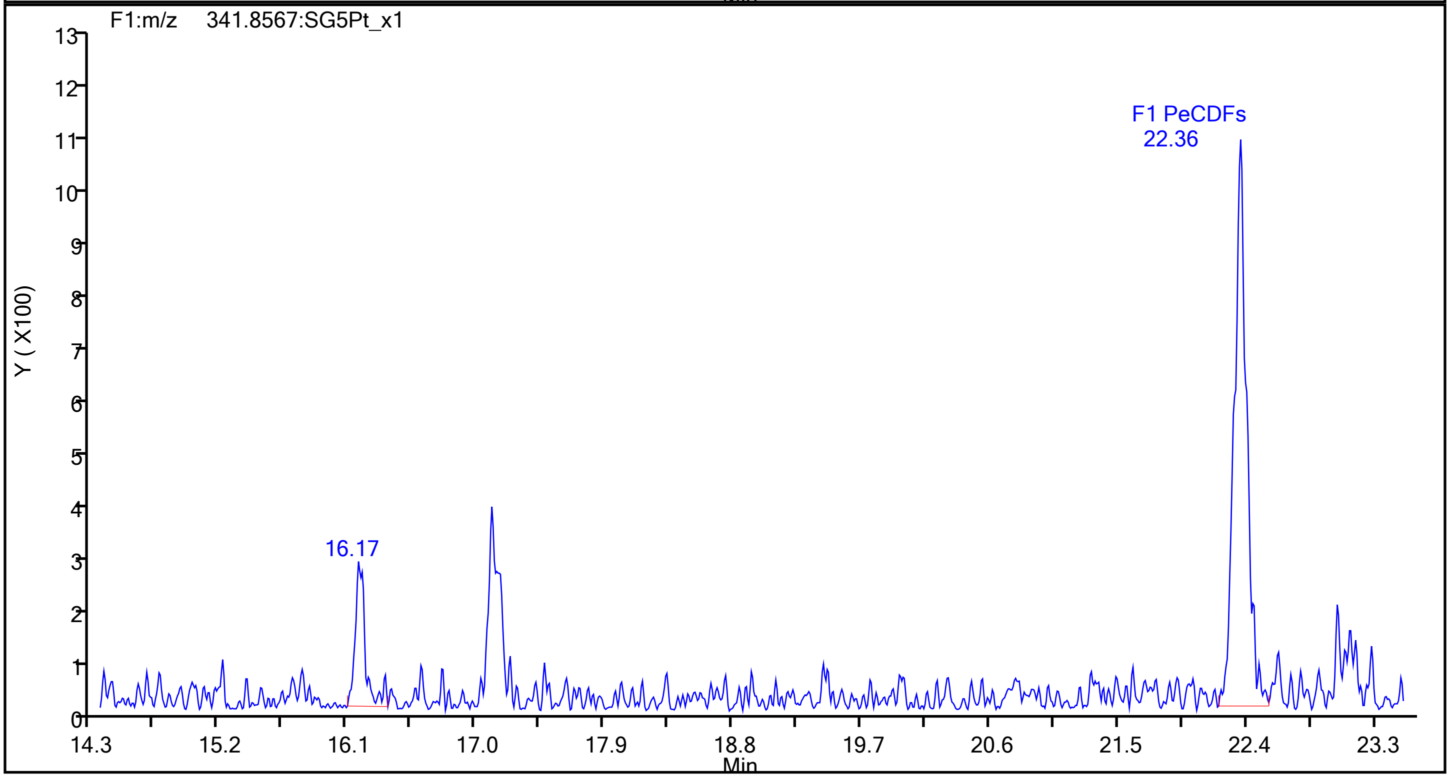

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

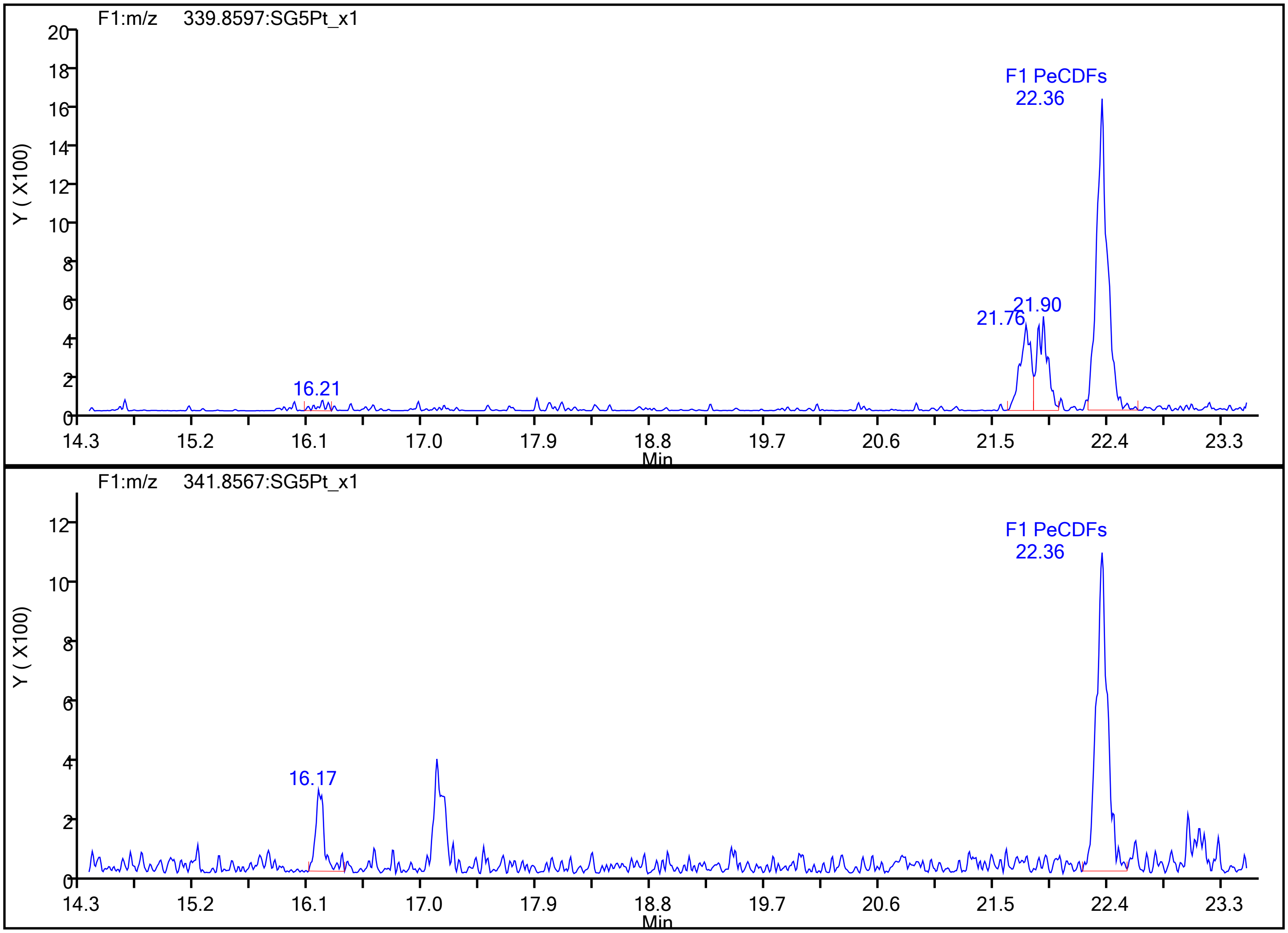

F1 PeCDFs Interference Mass

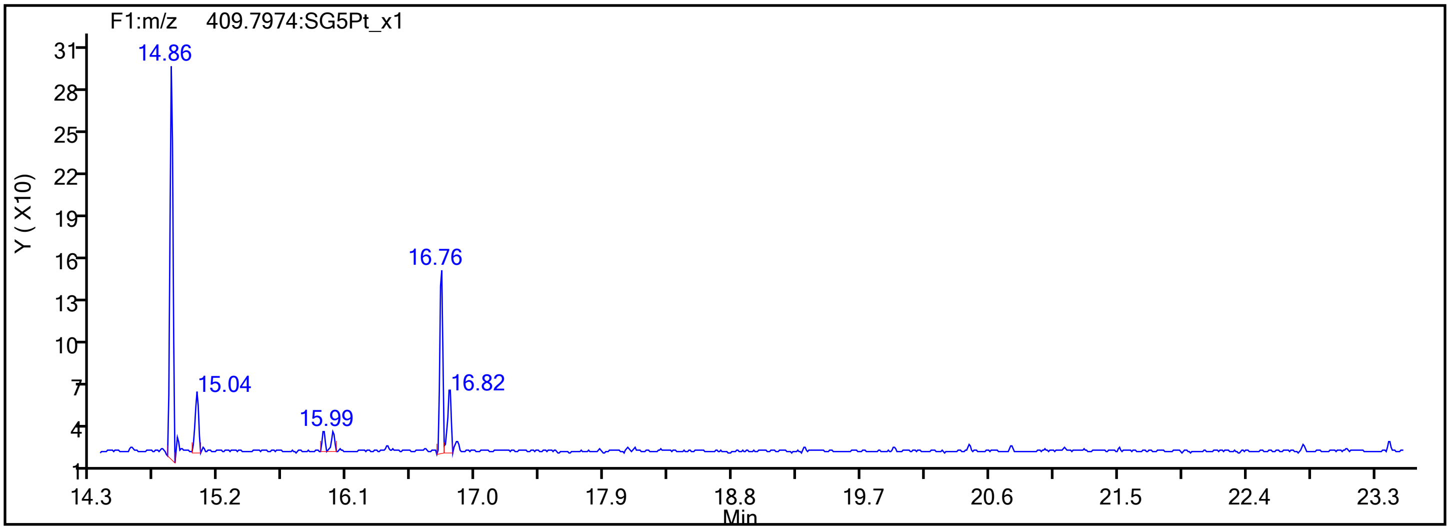

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Injection Date: 10-Mar-2021 14:25:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-100mm
Worklist#: 468973
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

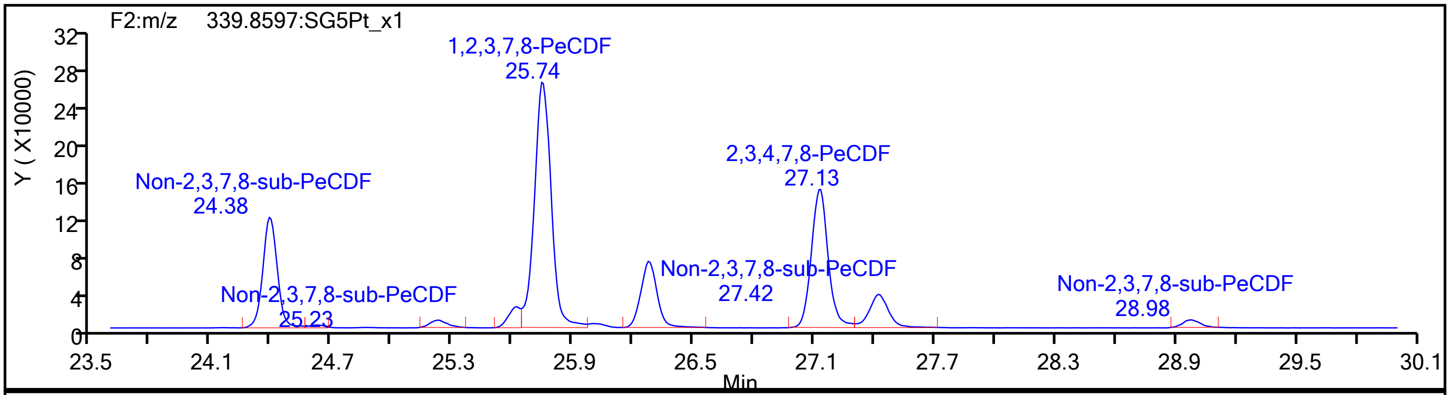

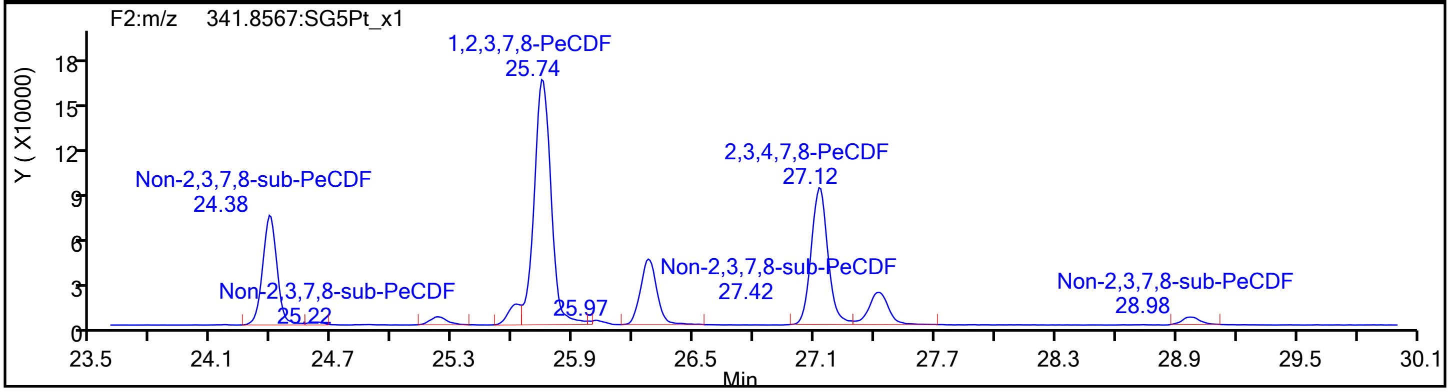

PeCDF Standards

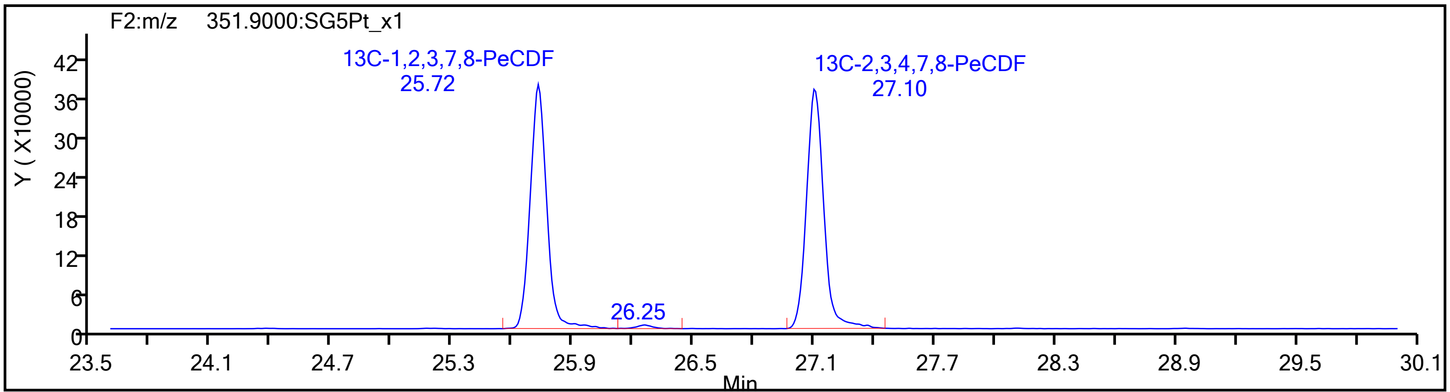

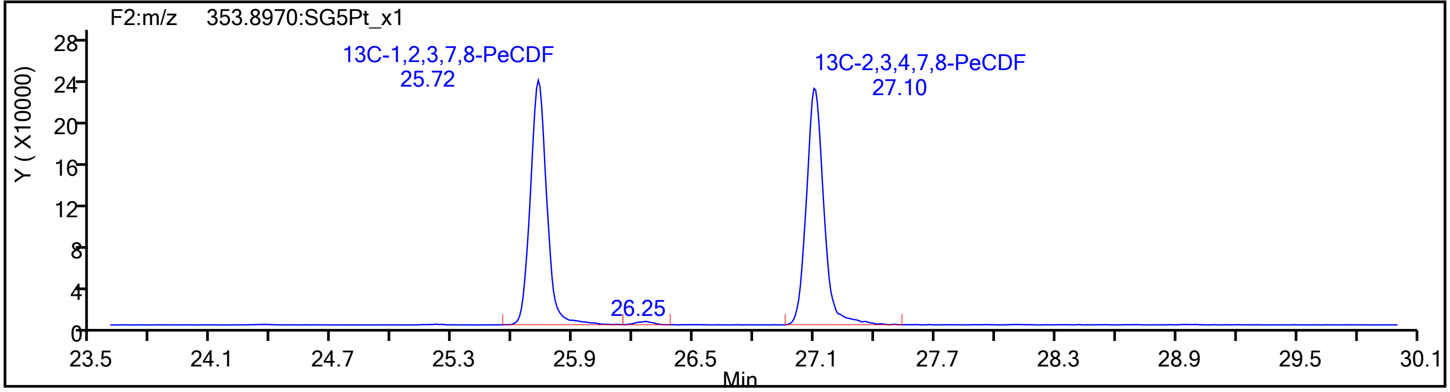

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

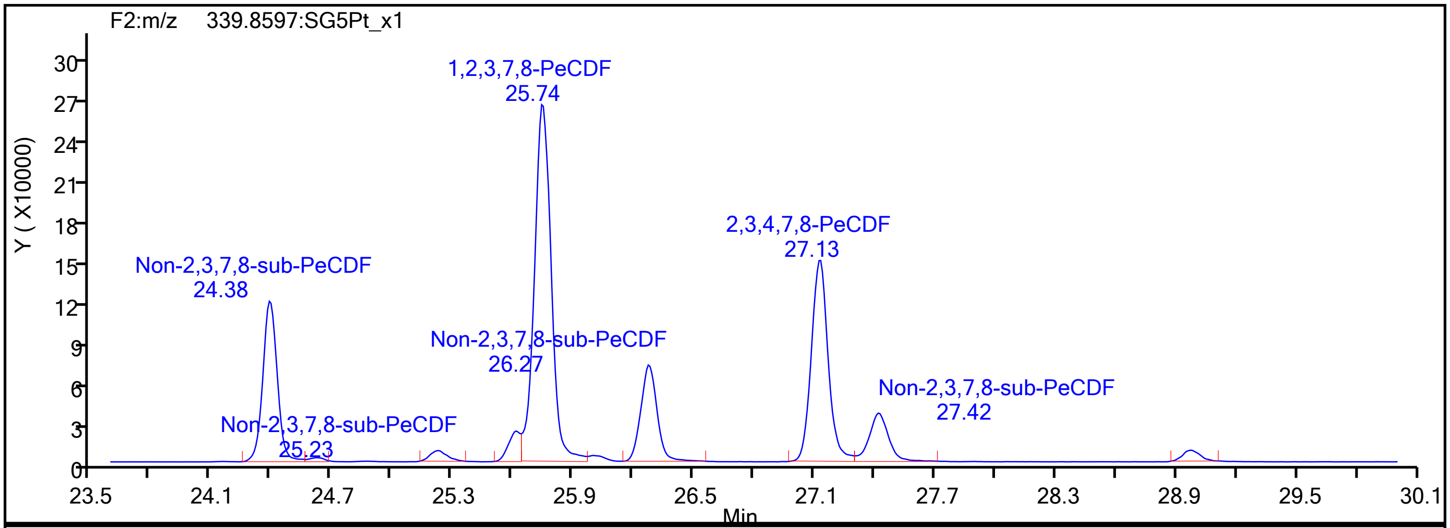

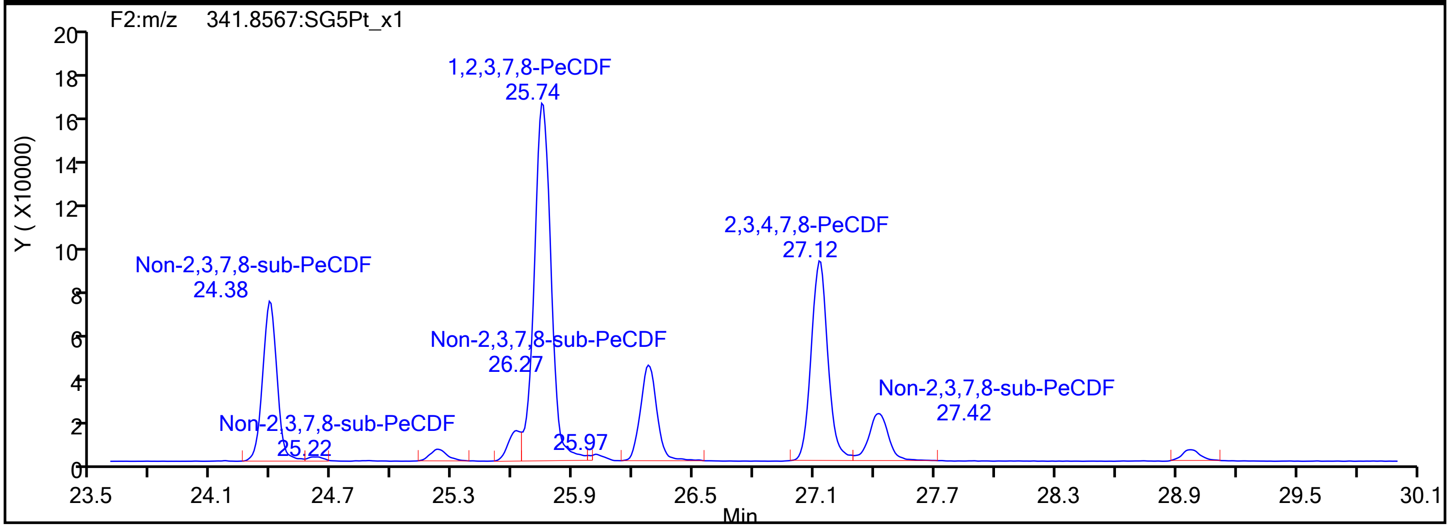

PeCDF Interference Mass

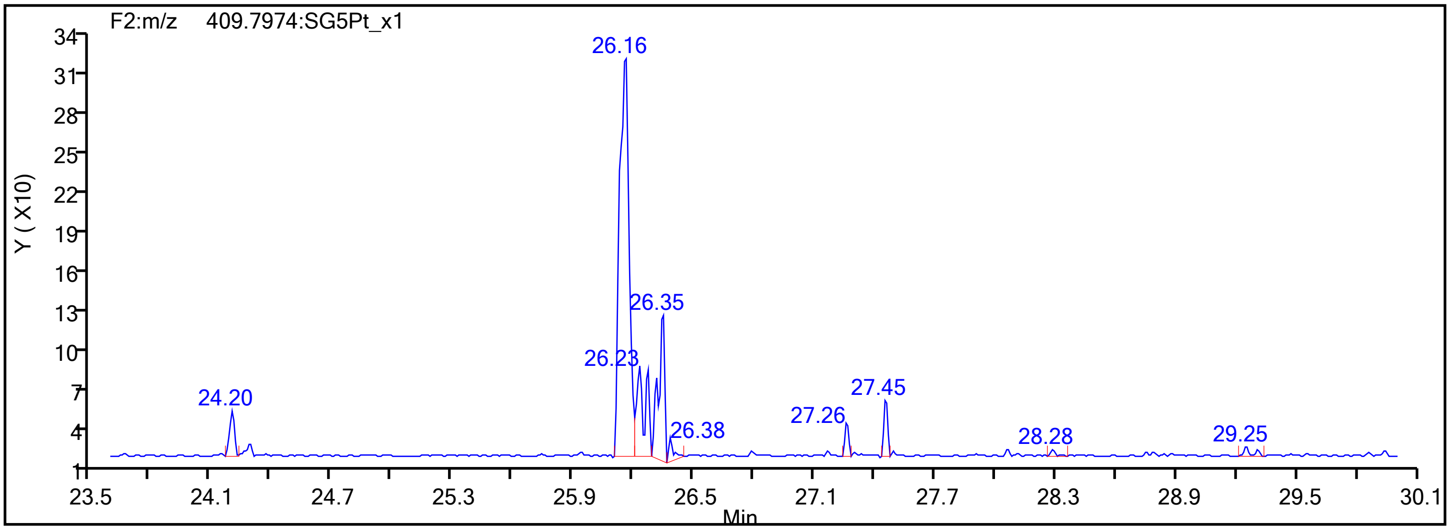

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

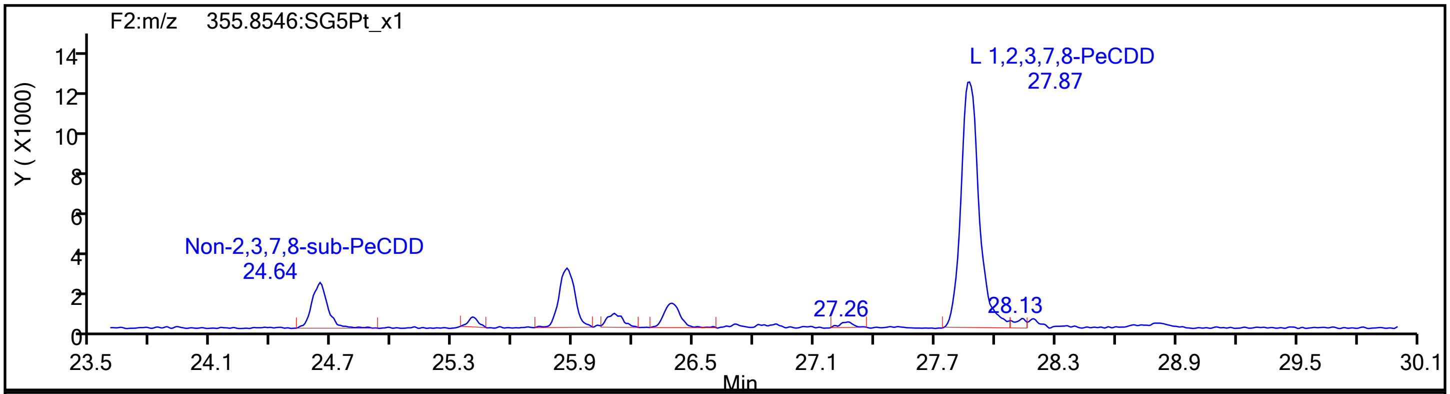

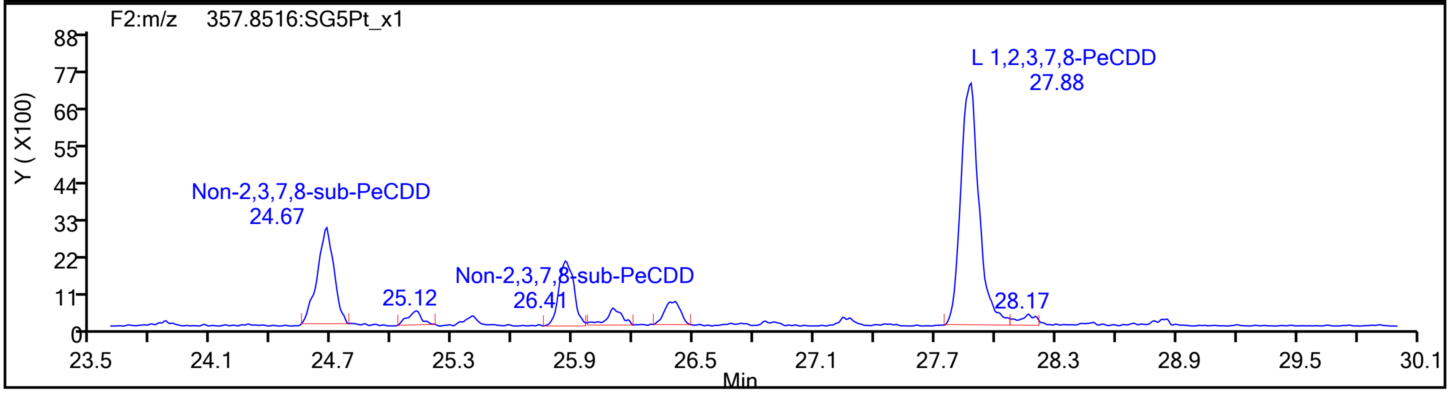

PeCDD Standards

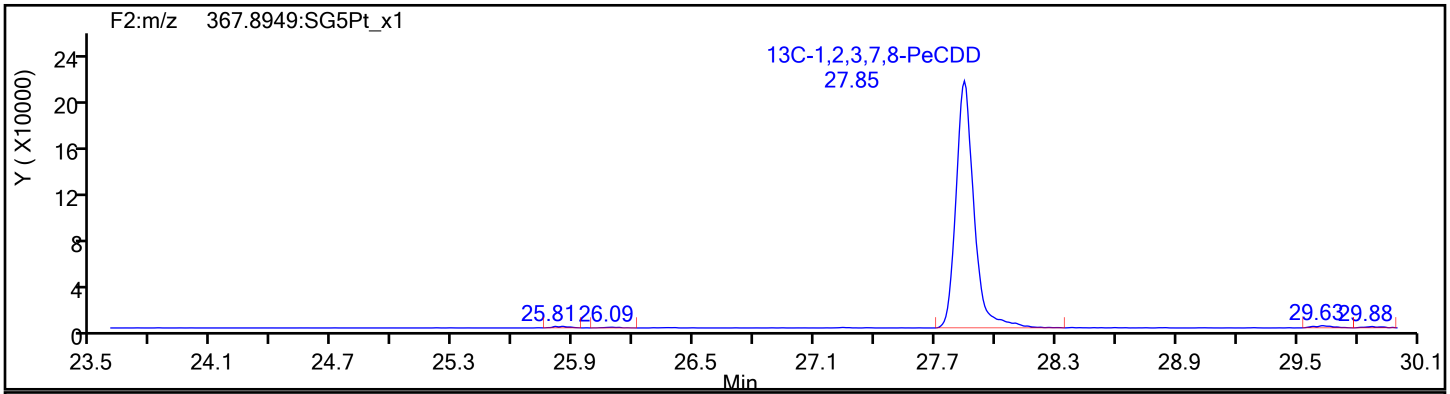

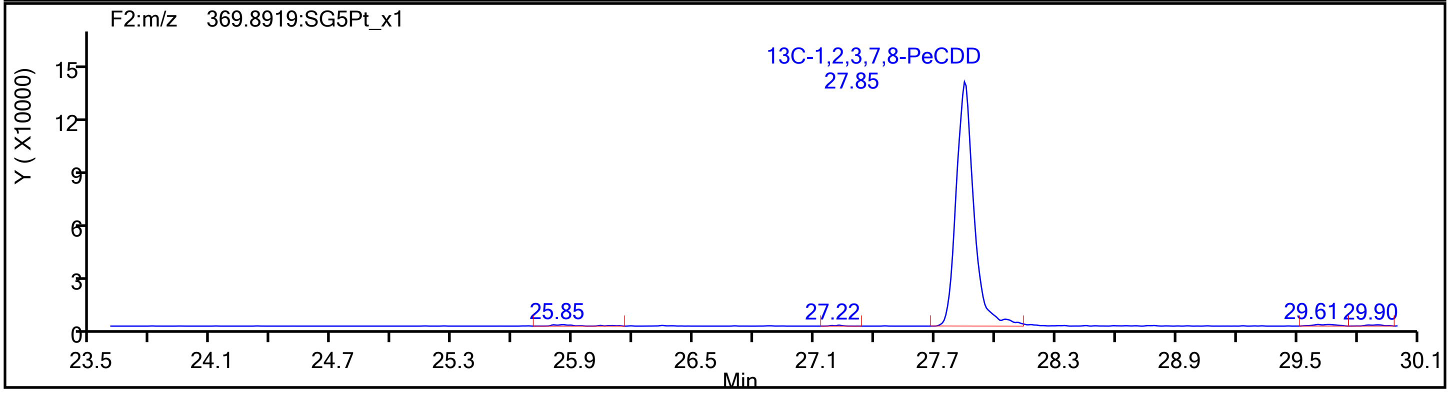

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

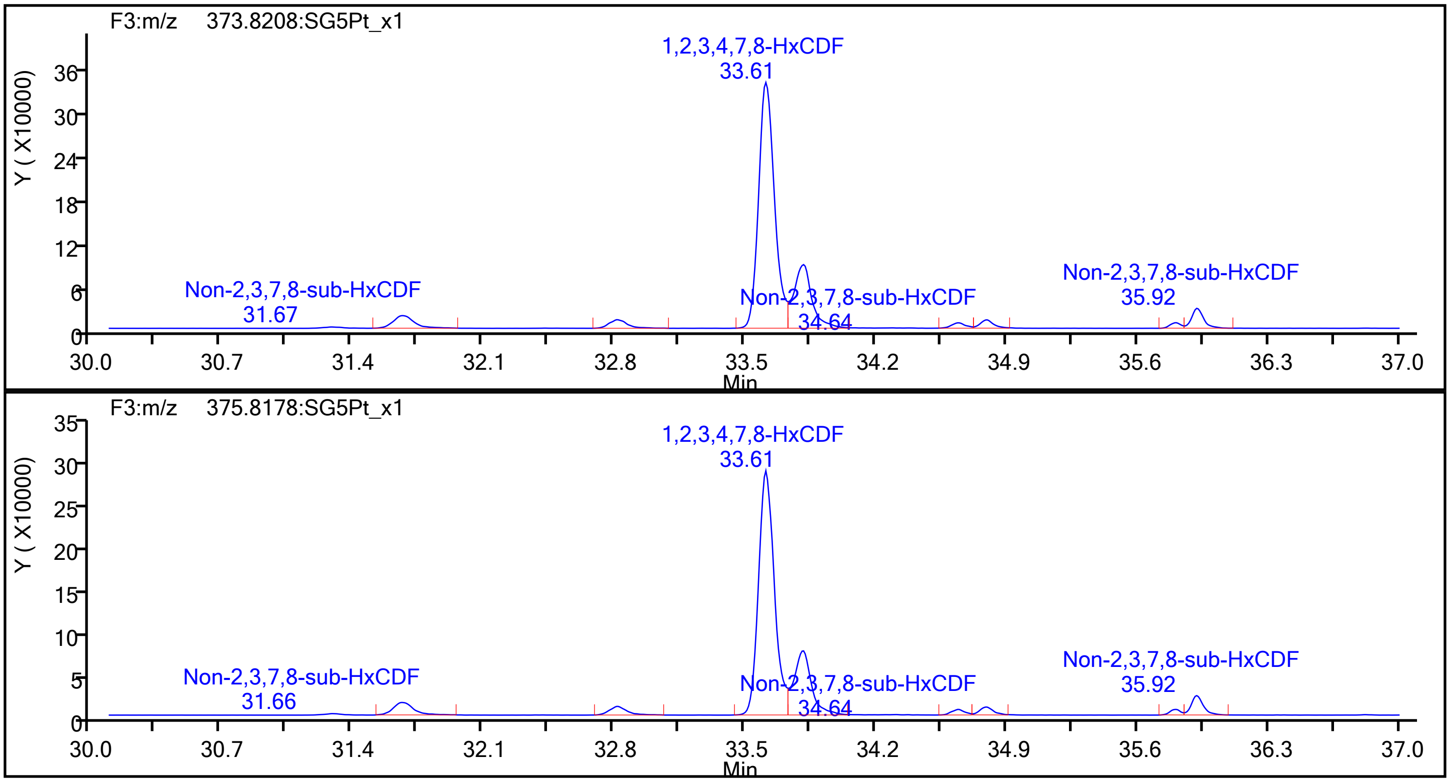

HxCDF Standards

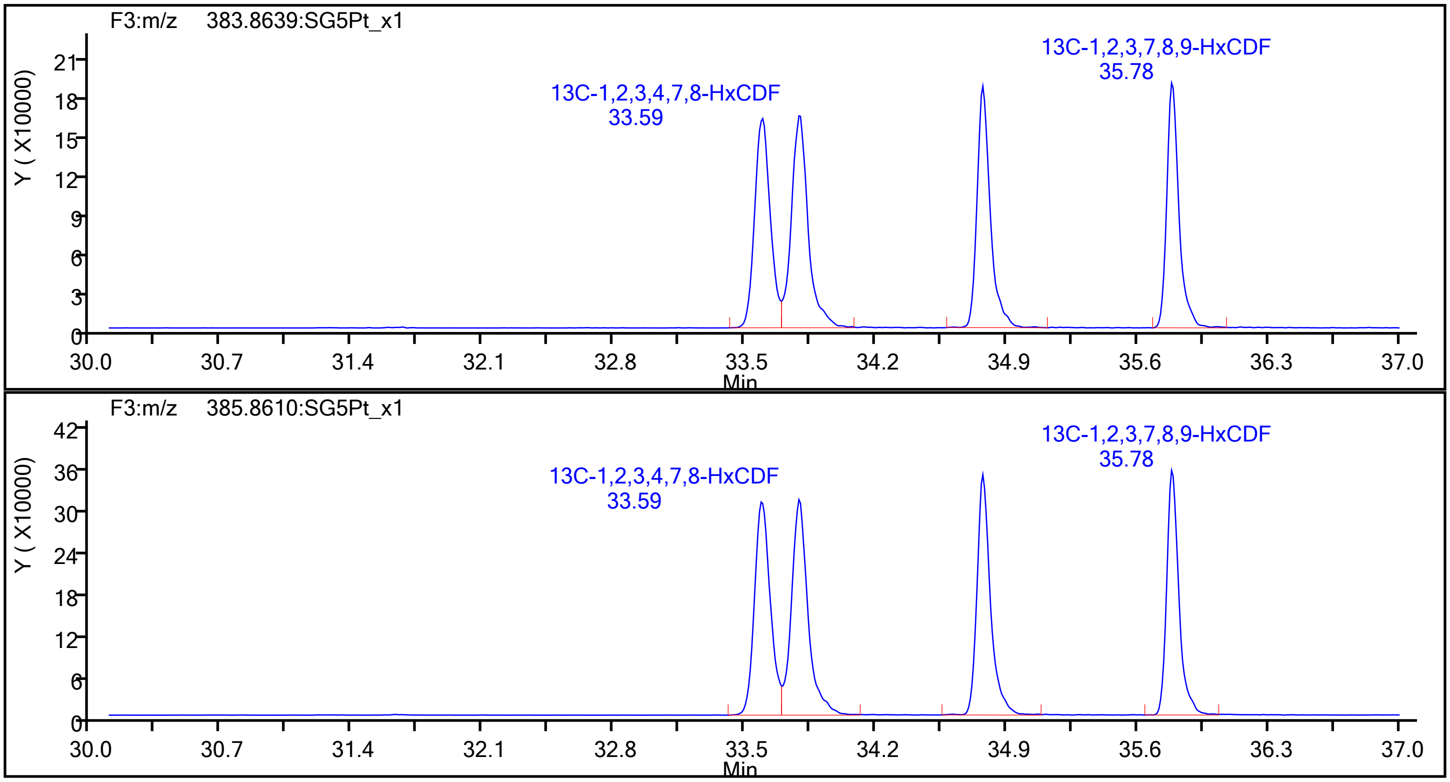

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

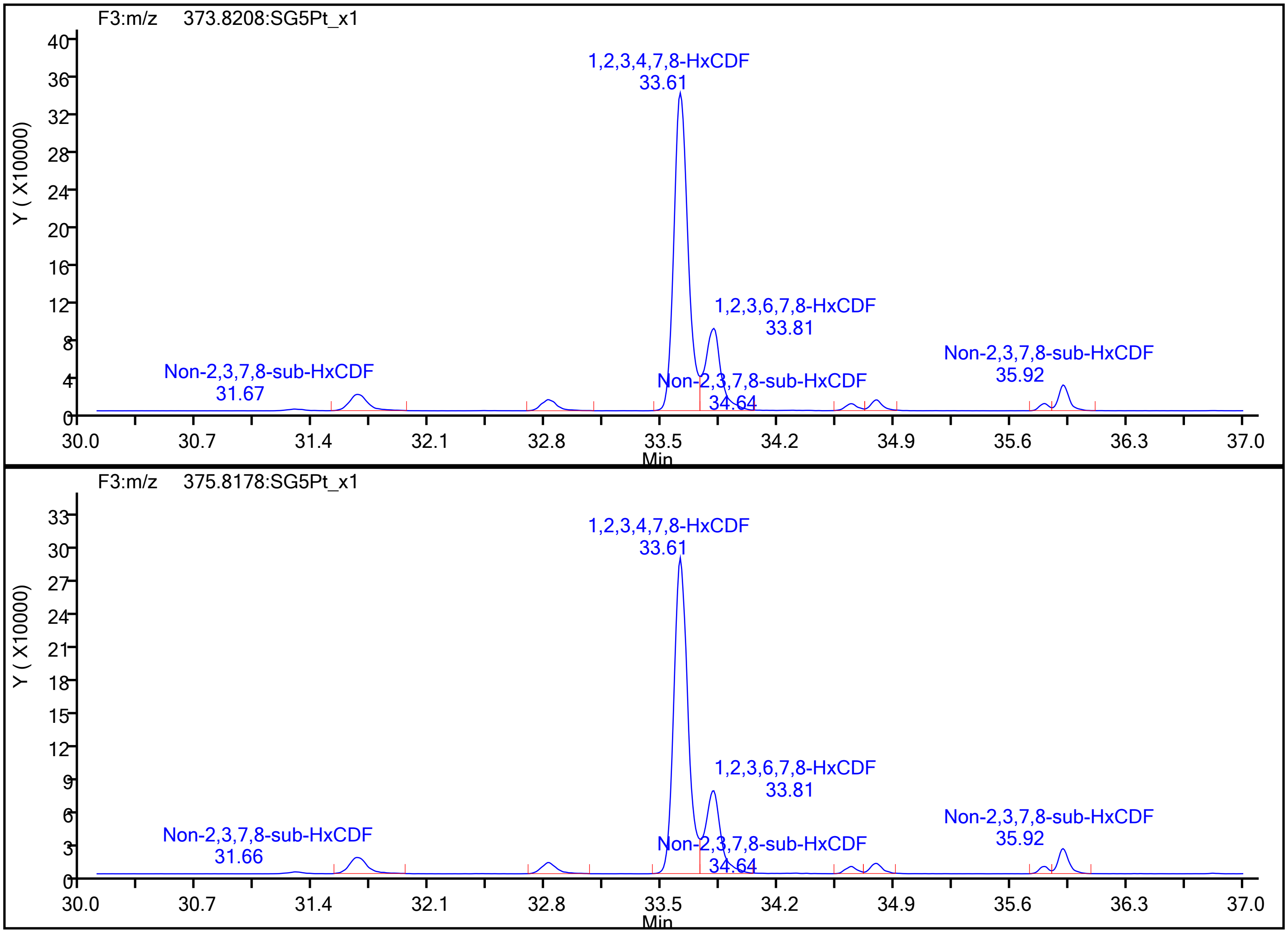

HxCDF Interference Mass

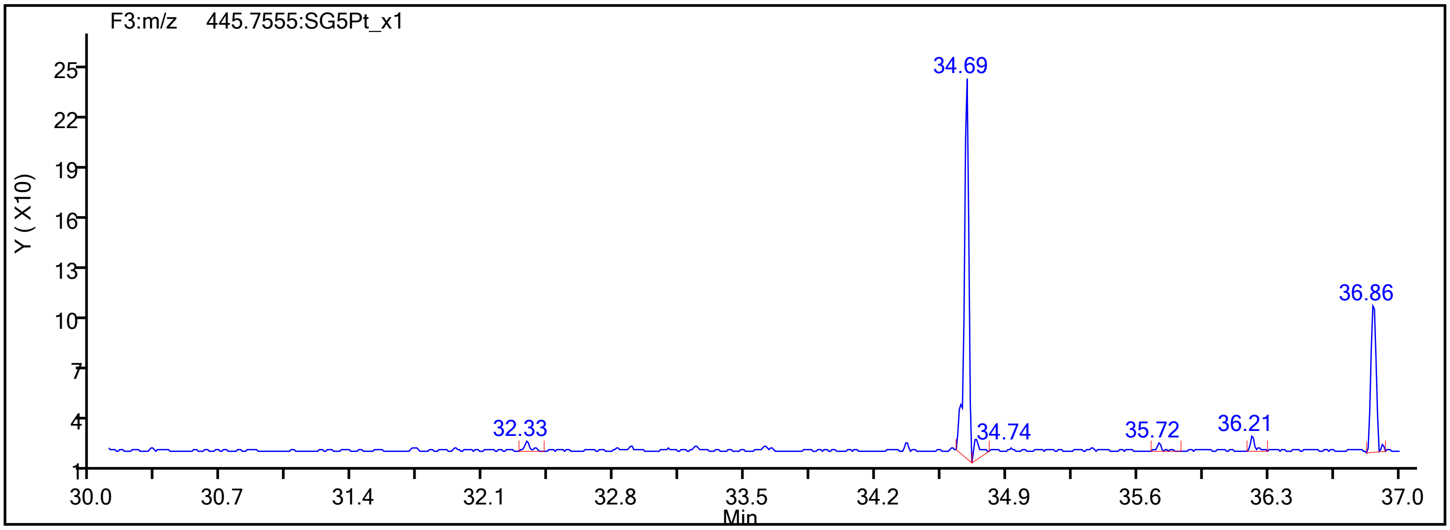

Report Date: 12-Mar-2021 07:52:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d

Injection Date: 10-Mar-2021 14:25:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-100mm

Worklist#: 468973 Sample Line#: 8

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

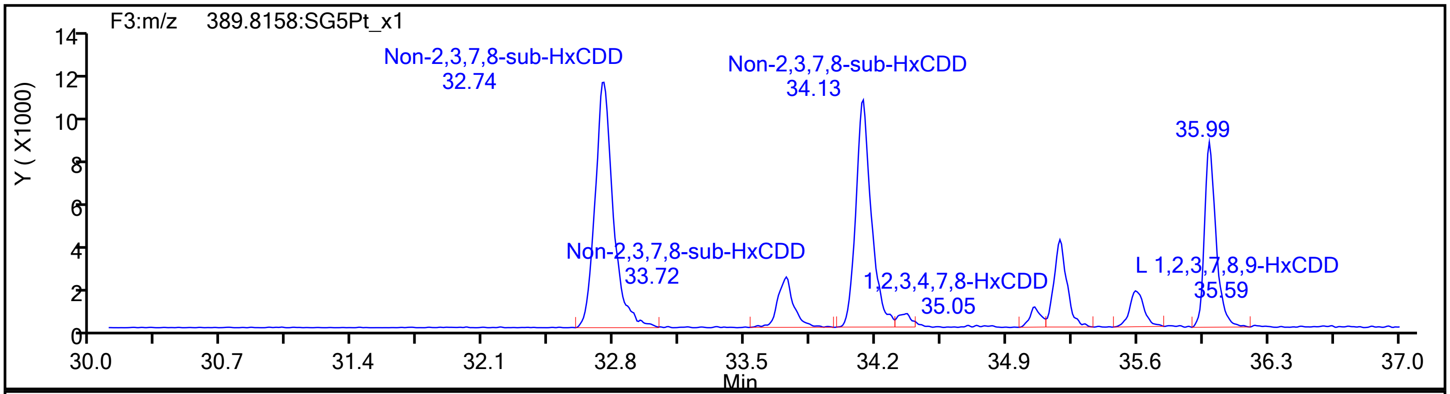

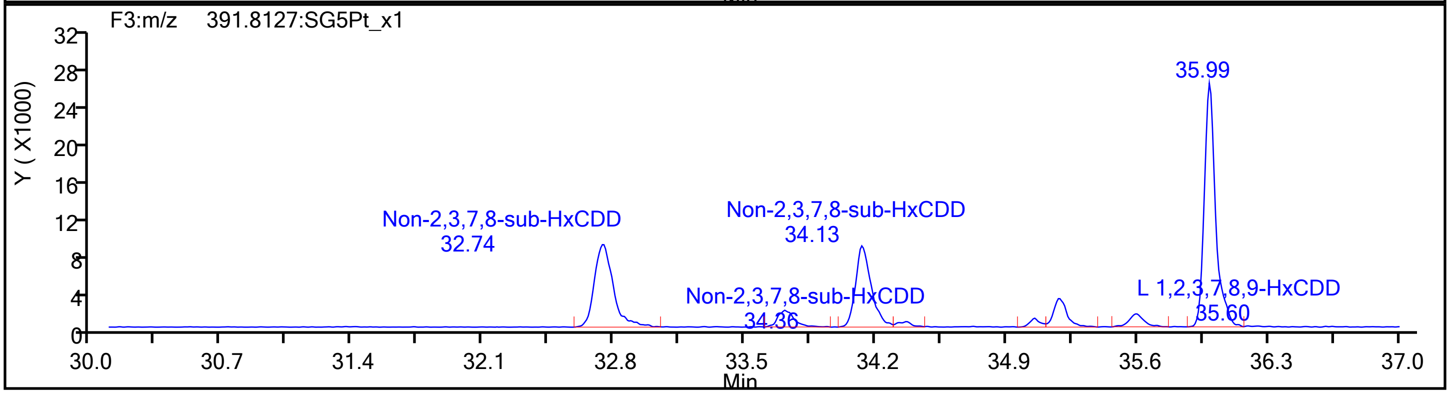

HxCDD Standards

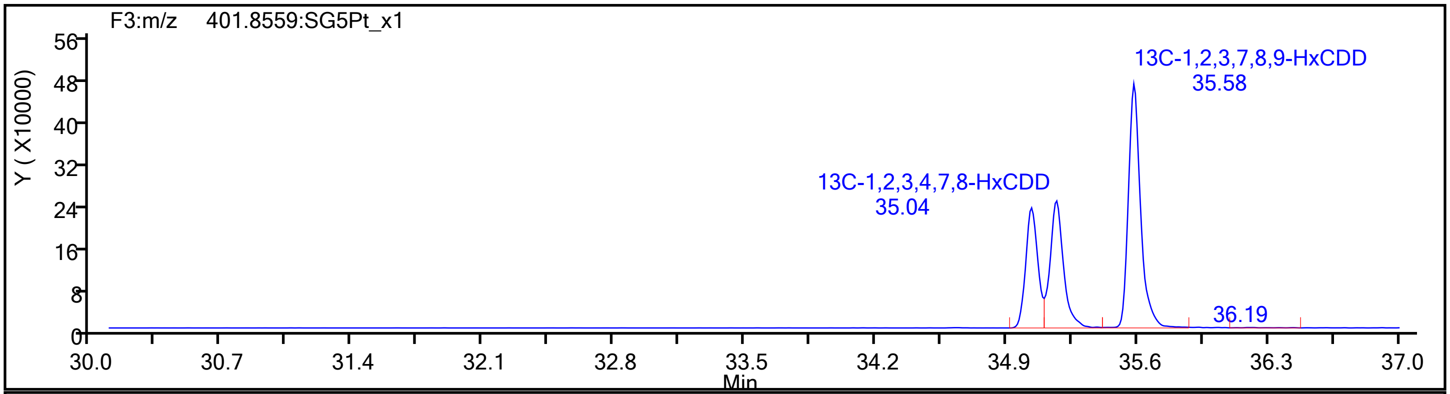

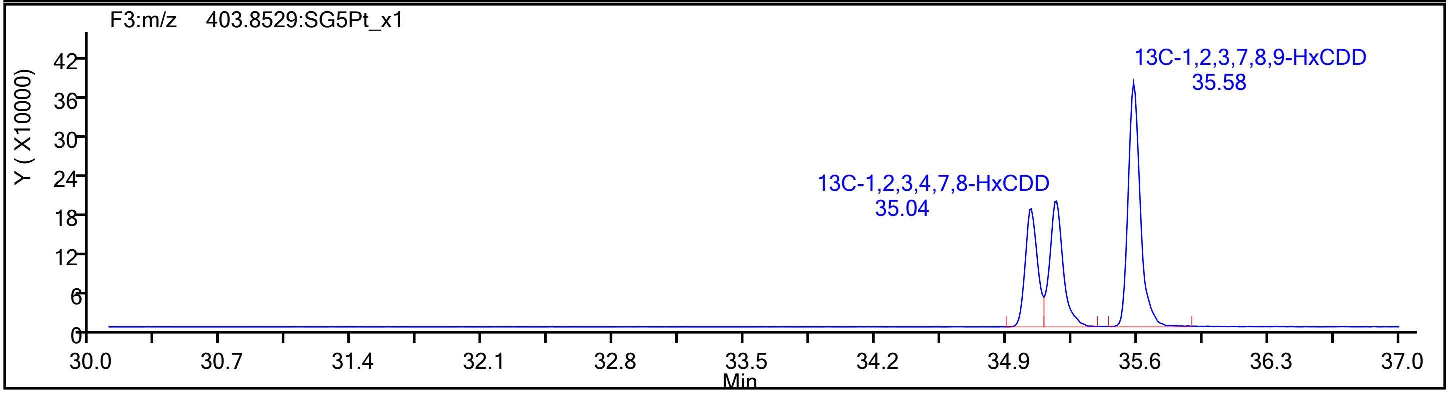

Report Date: 12-Mar-2021 07:52:02 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Injection Date: 10-Mar-2021 14:25:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-100mm
Worklist#: 468973
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

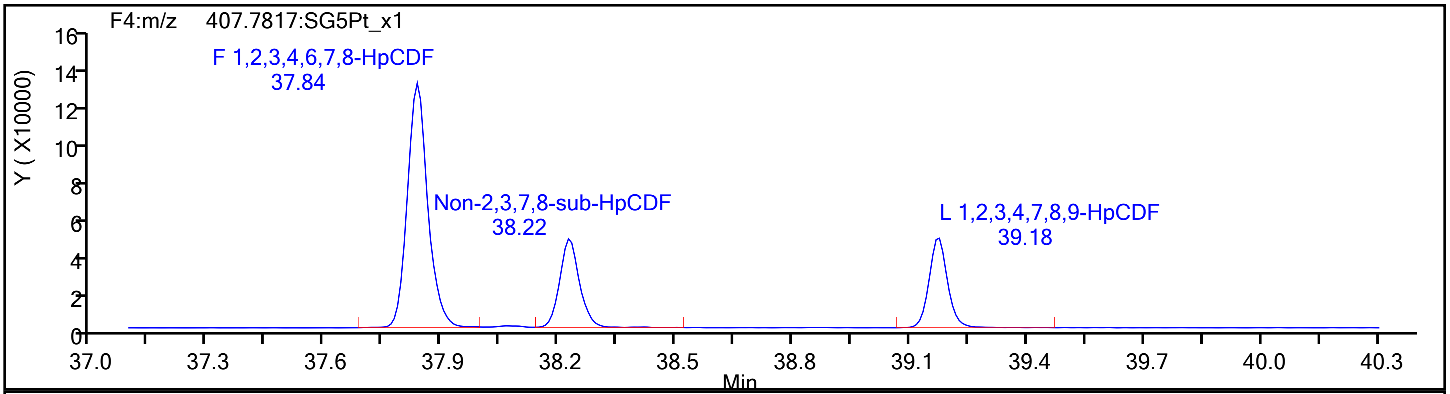

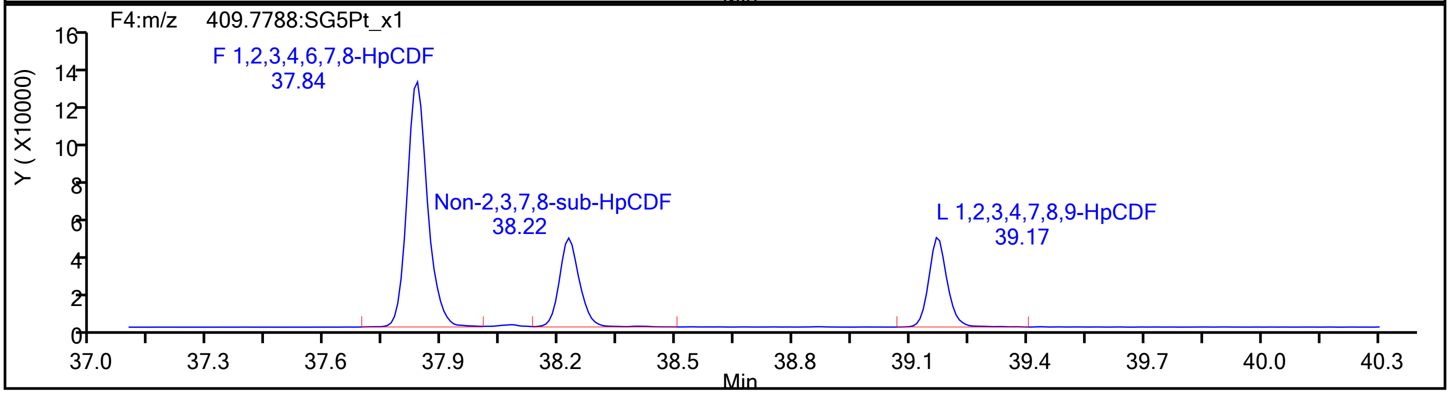

HpCDF Standards

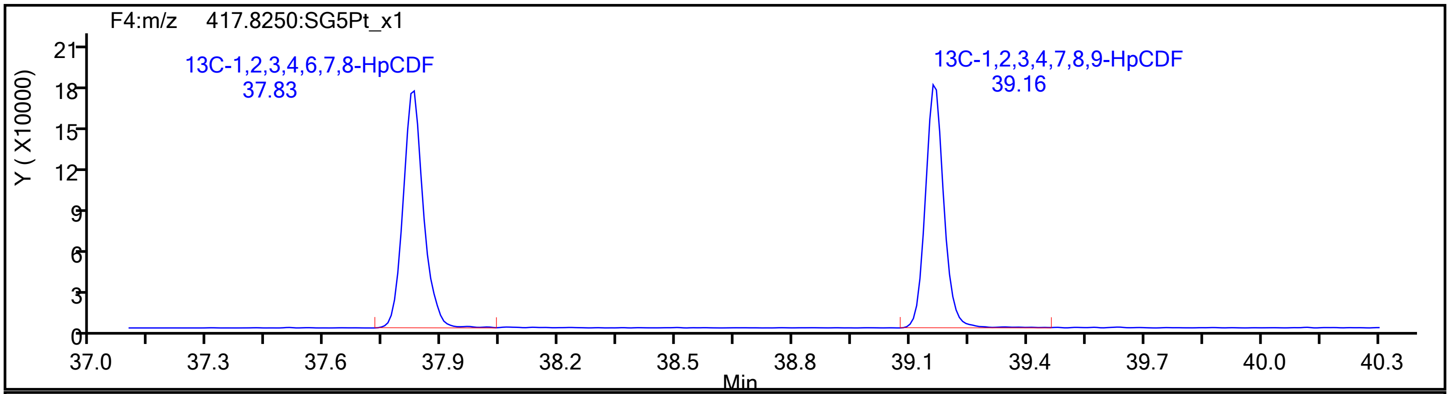

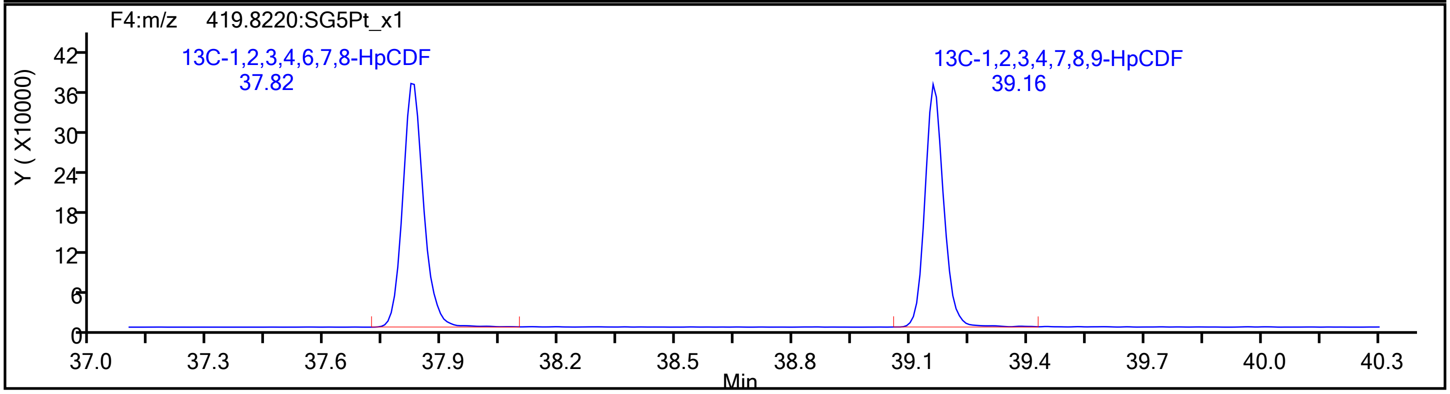

Report Date: 12-Mar-2021 07:52:02		Chrom Revision: 2.3 05-Feb-2021 00:13:28	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

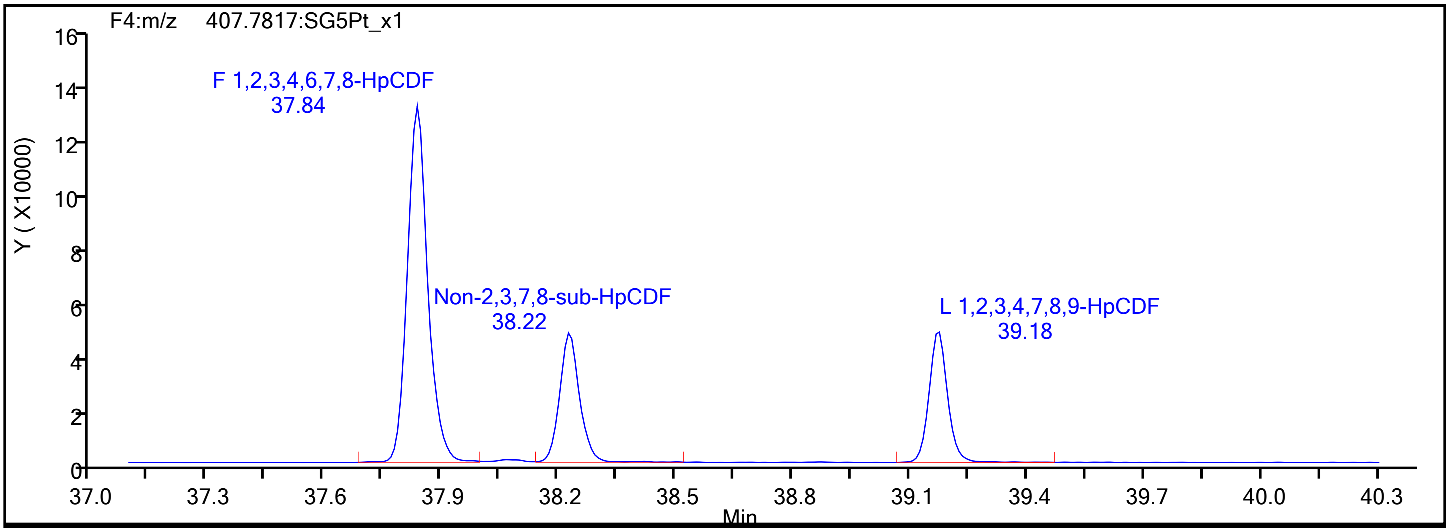

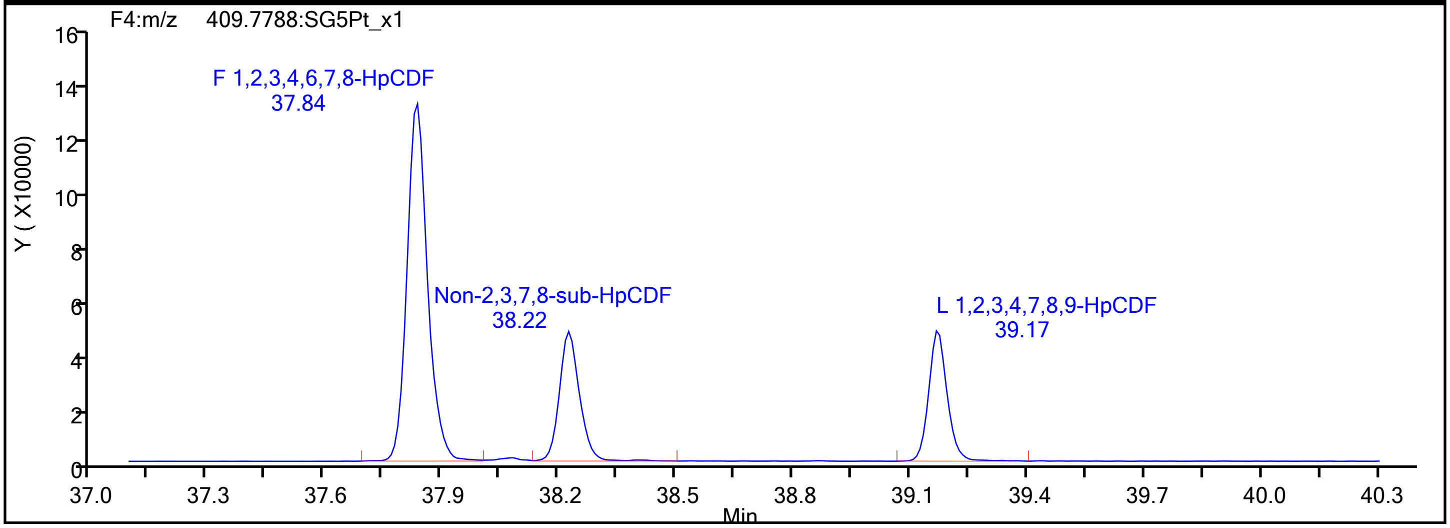

HpCDF Interference Mass

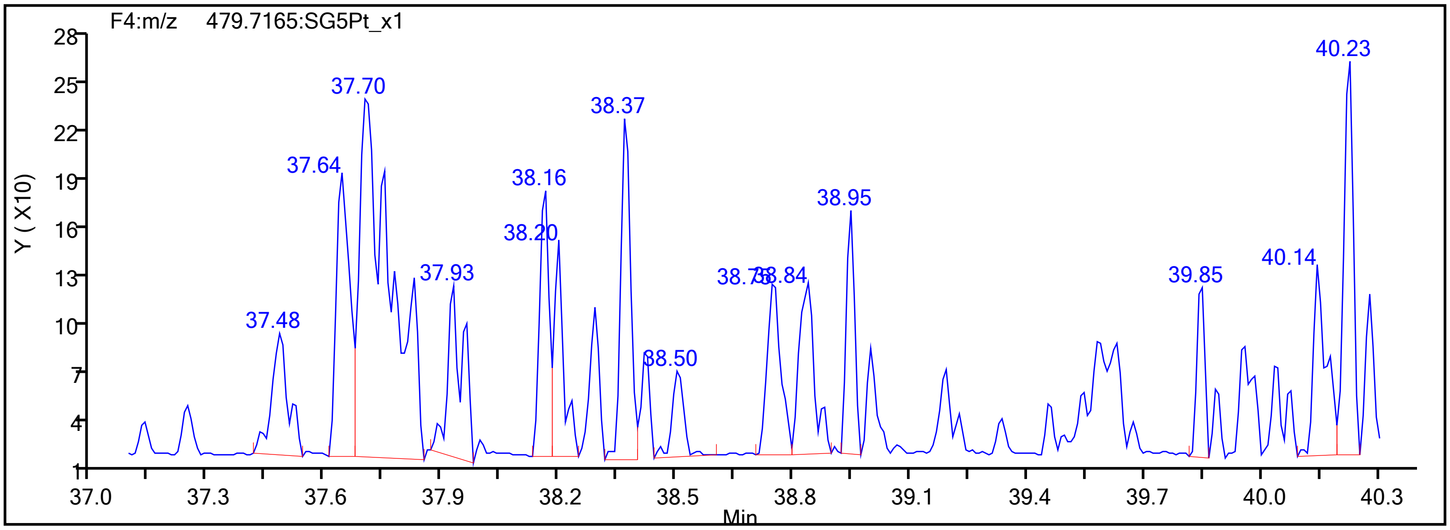

Report Date: 12-Mar-2021 07:52:02 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

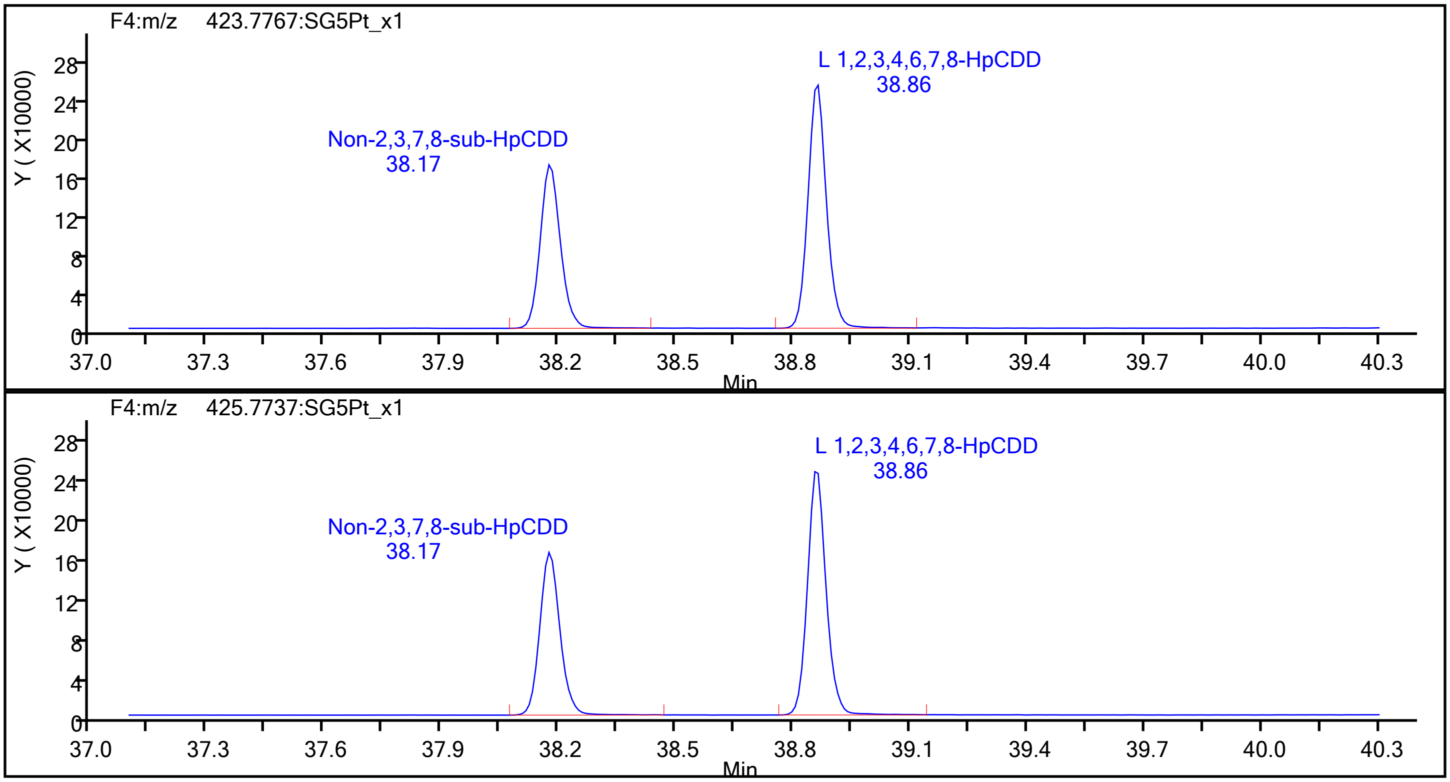

HpCDD Standards

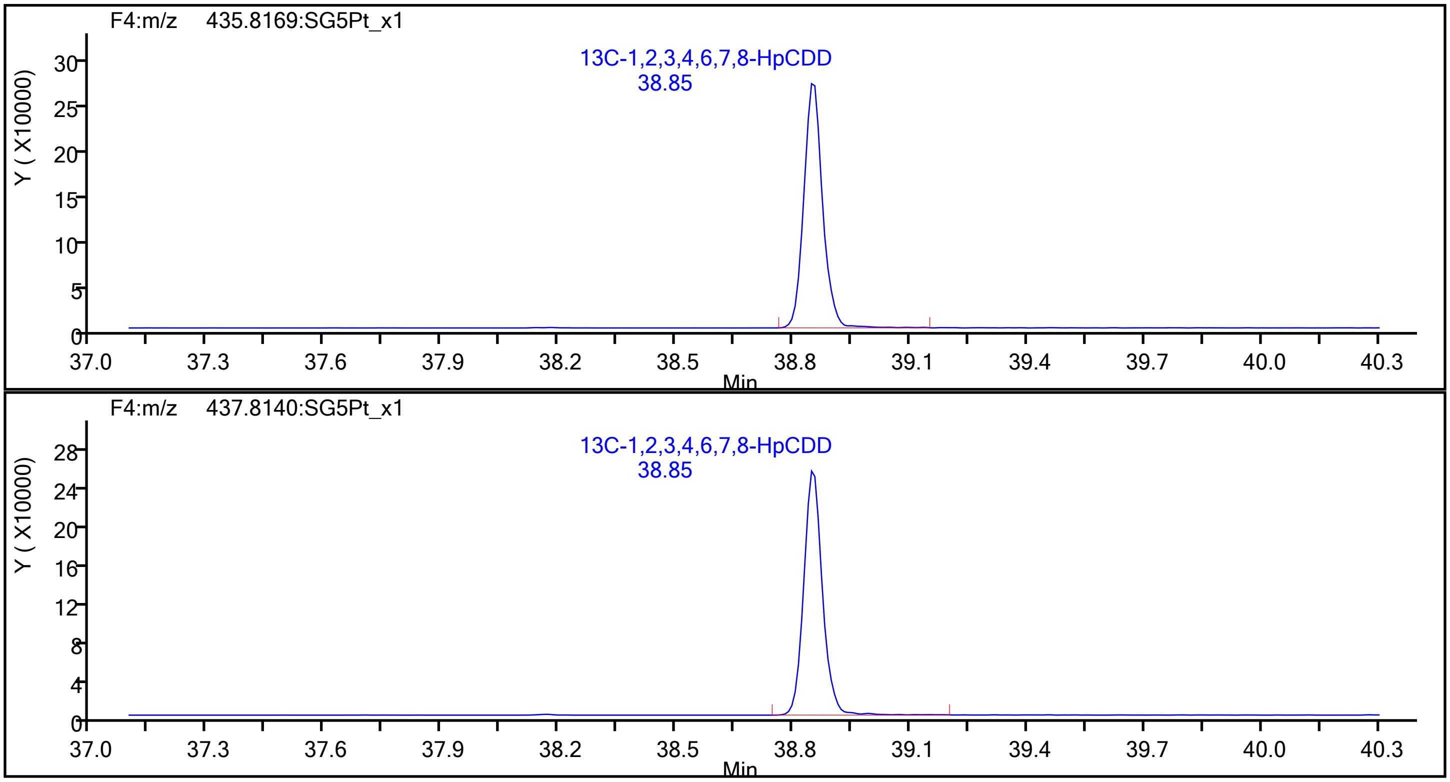

Report Date: 12-Mar-2021 07:52:02 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d		
Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

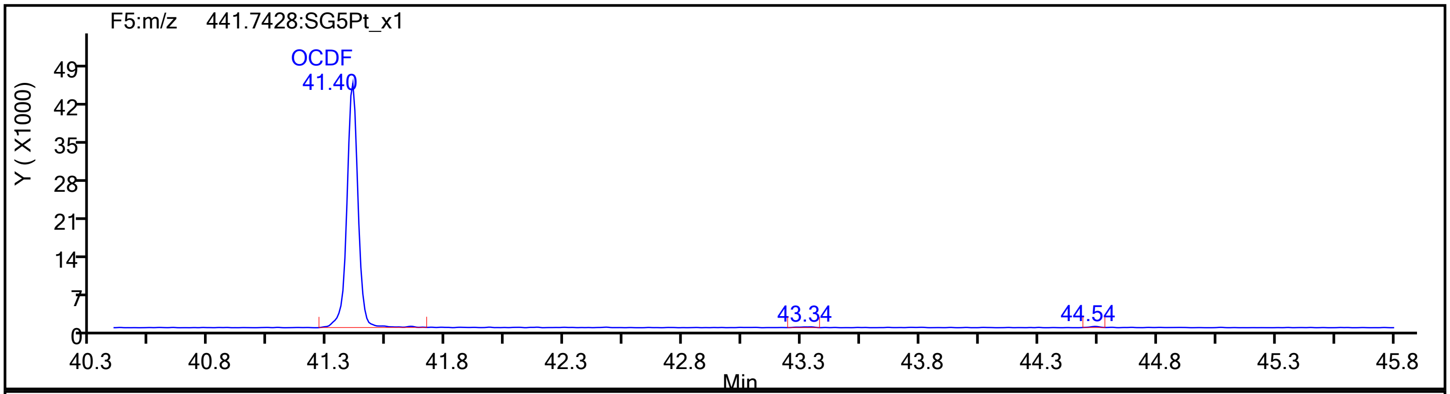

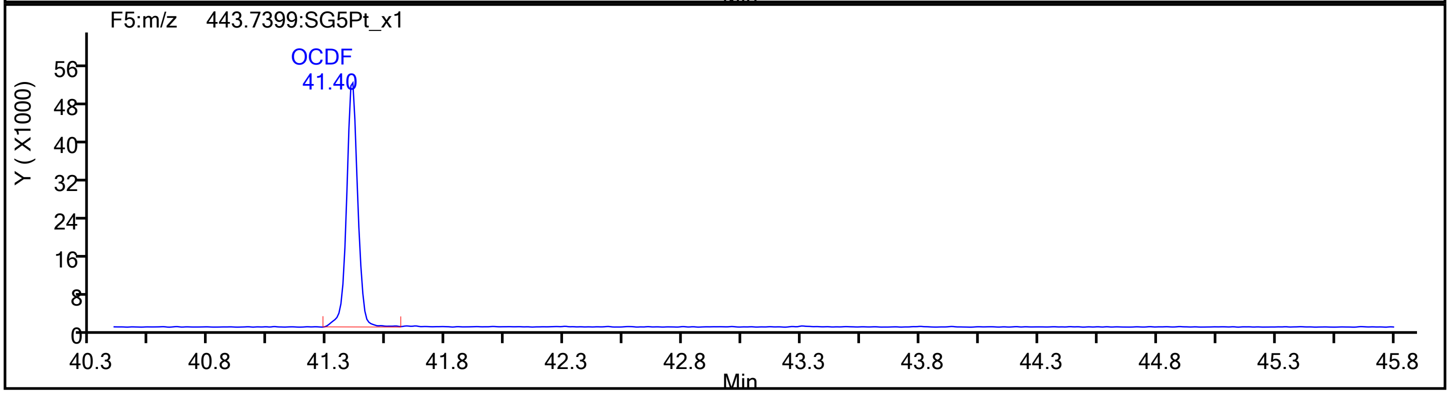

OCDF Standards

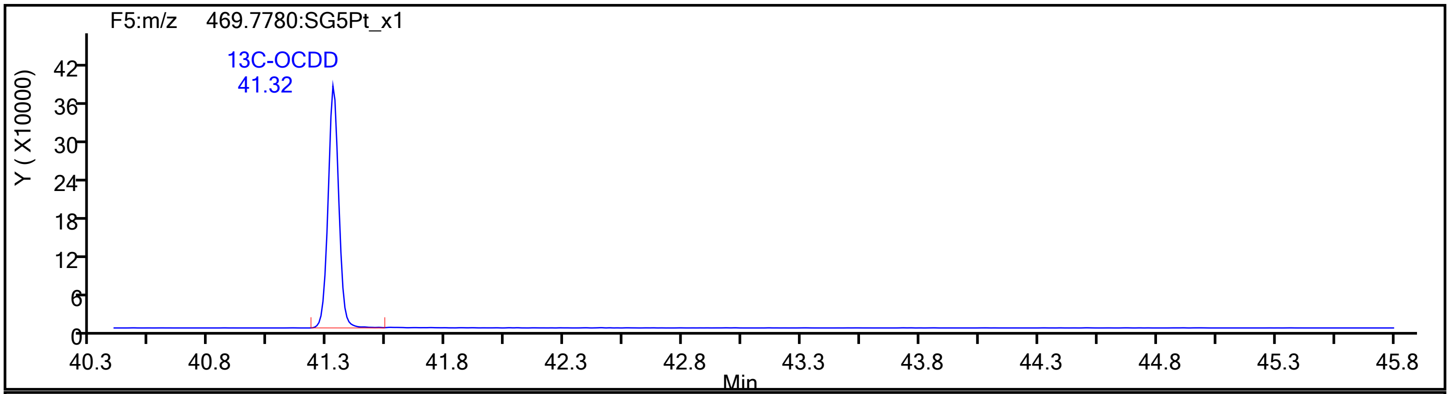

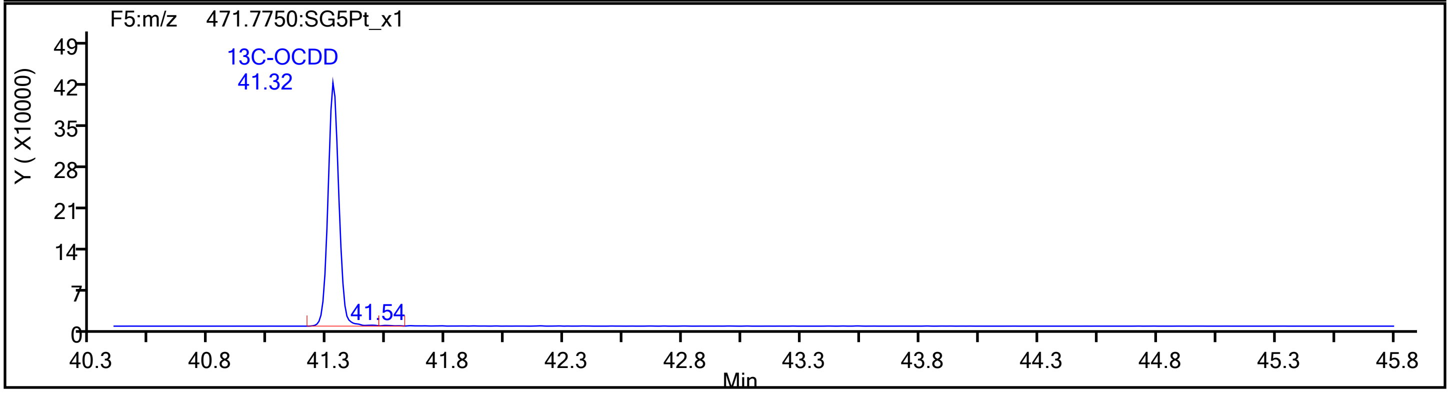

Report Date: 12-Mar-2021 07:52:02 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d
Injection Date: 10-Mar-2021 14:25:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-100mm
Worklist#: 468973
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

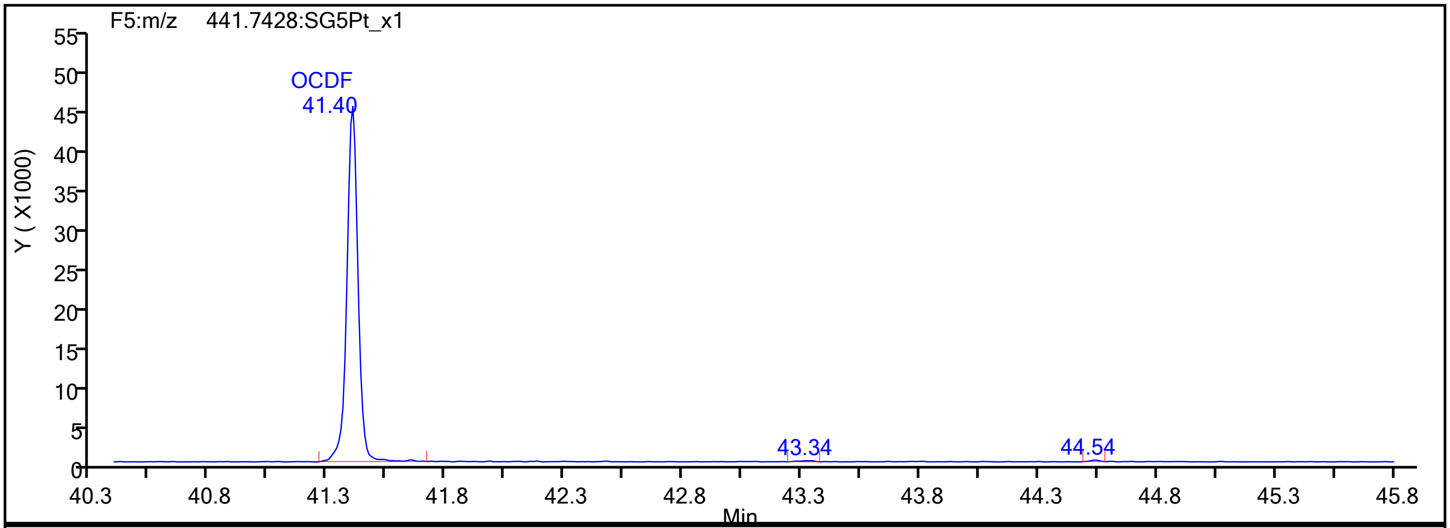

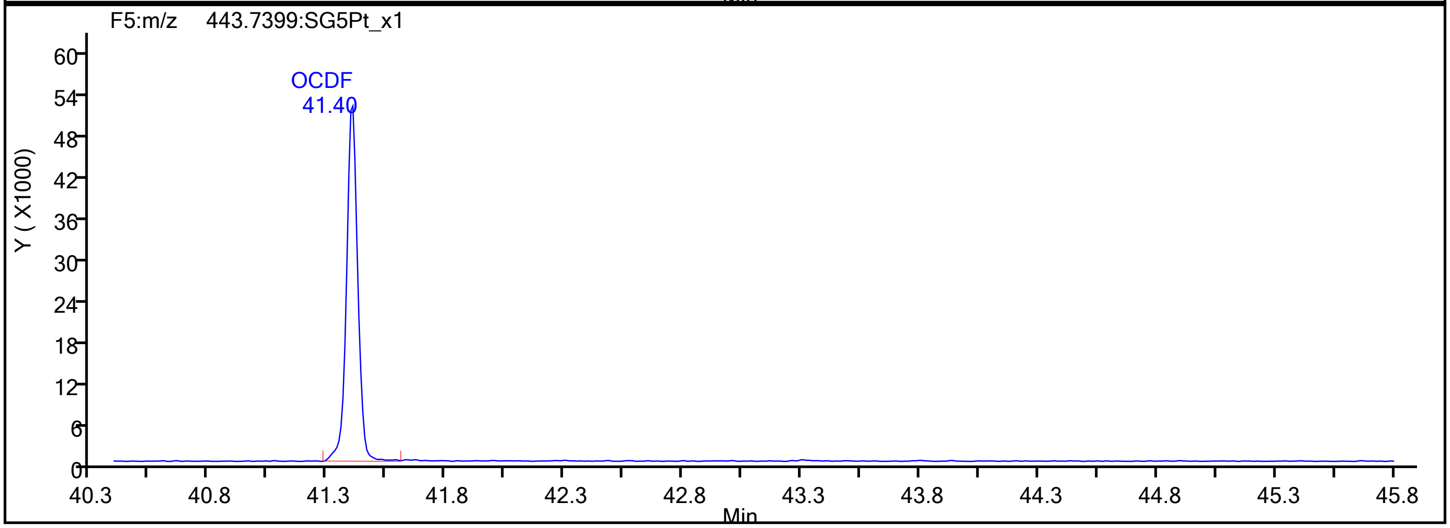

OCDF Interference Mass

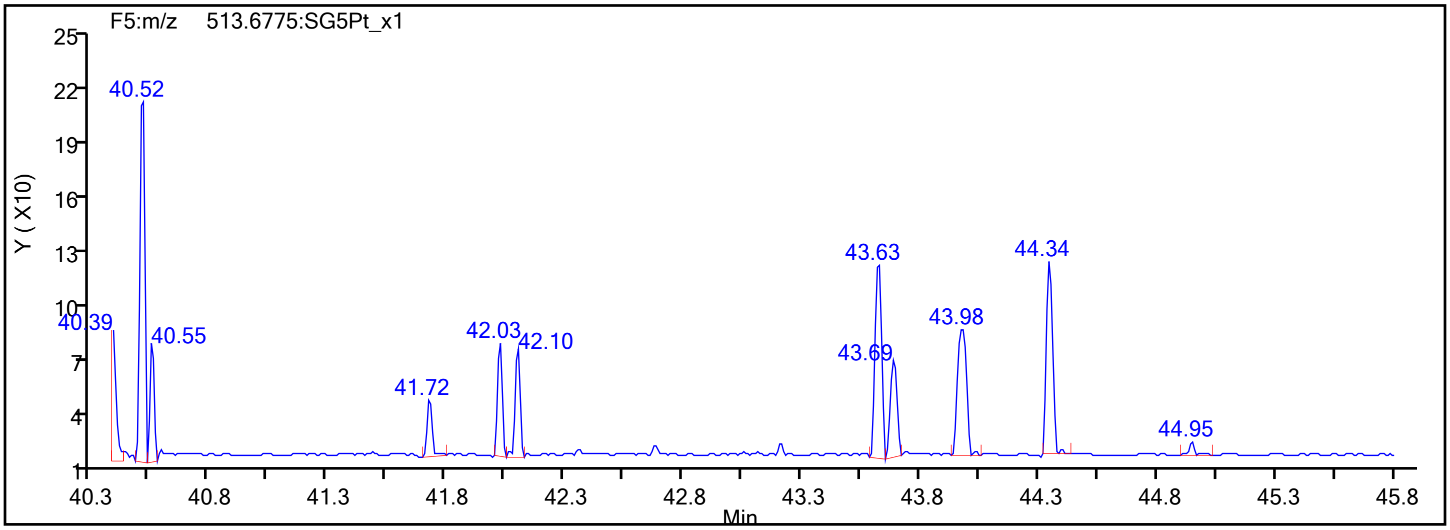

Report Date: 12-Mar-2021 07:52:02 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d

Injection Date: 10-Mar-2021 14:25:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-100mm

Worklist#: 468973

Sample Line#: 8

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

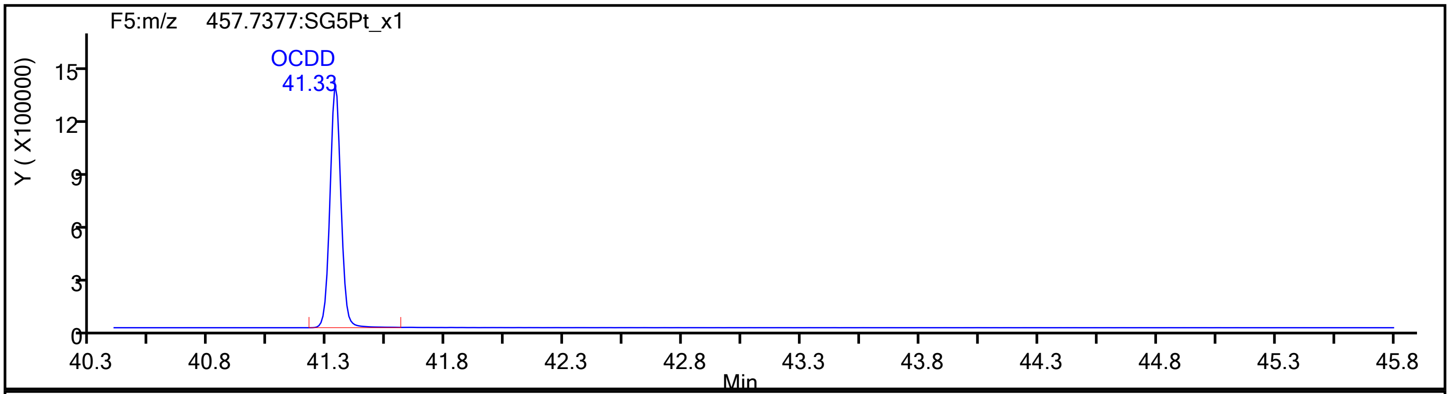

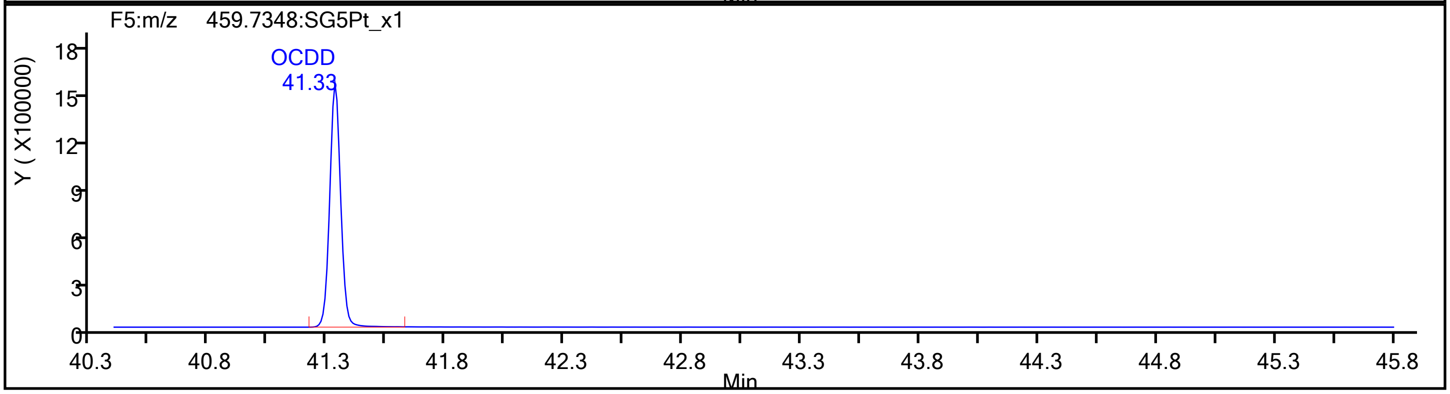

OCDD Standards

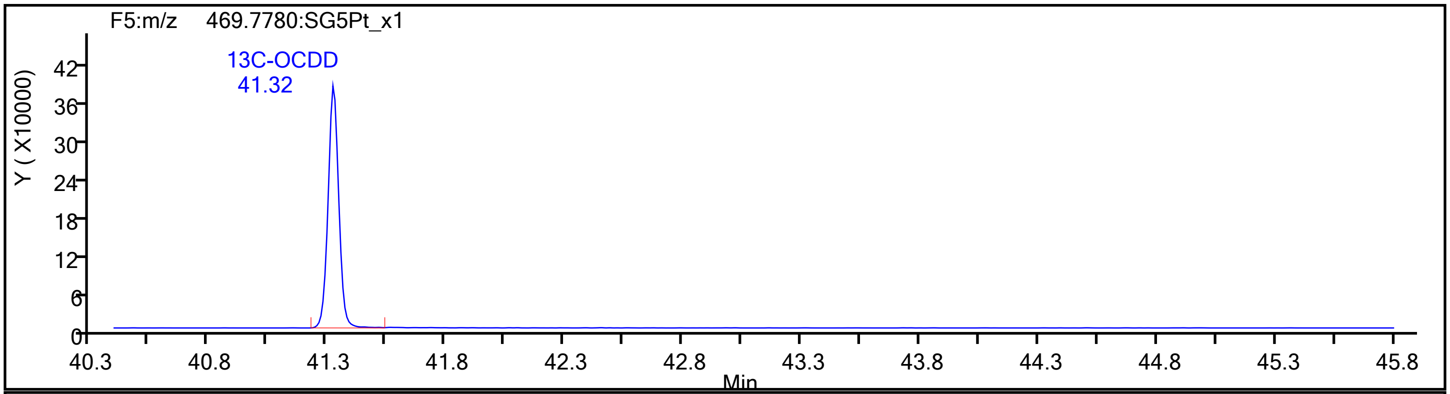

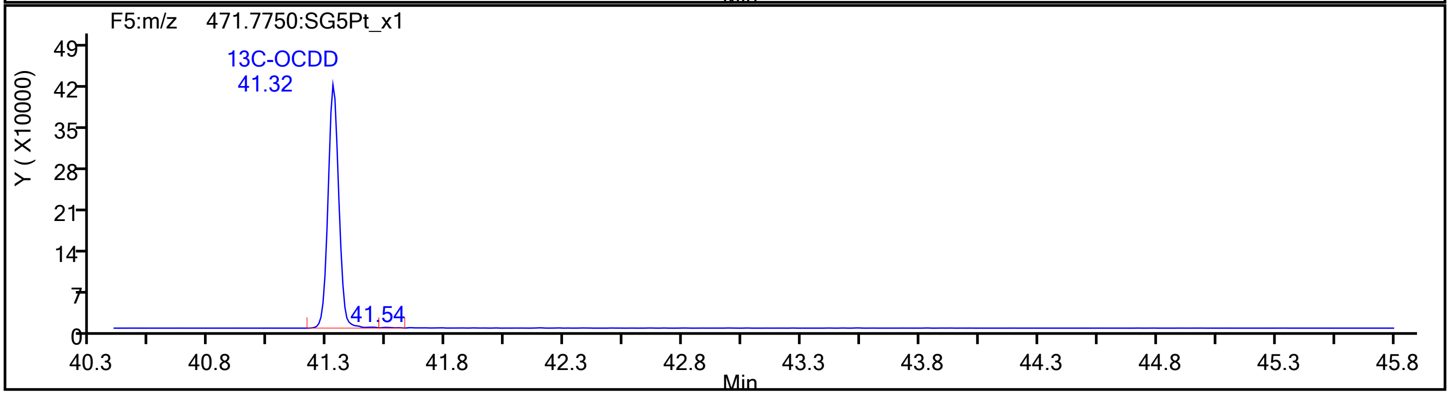

Report Date: 12-Mar-2021 07:52:02 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d

Injection Date: 10-Mar-2021 14:25:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-100mm

Worklist#: 468973 Sample Line#: 8

Column Type: DB-5 Column Dia: 0.32 mm

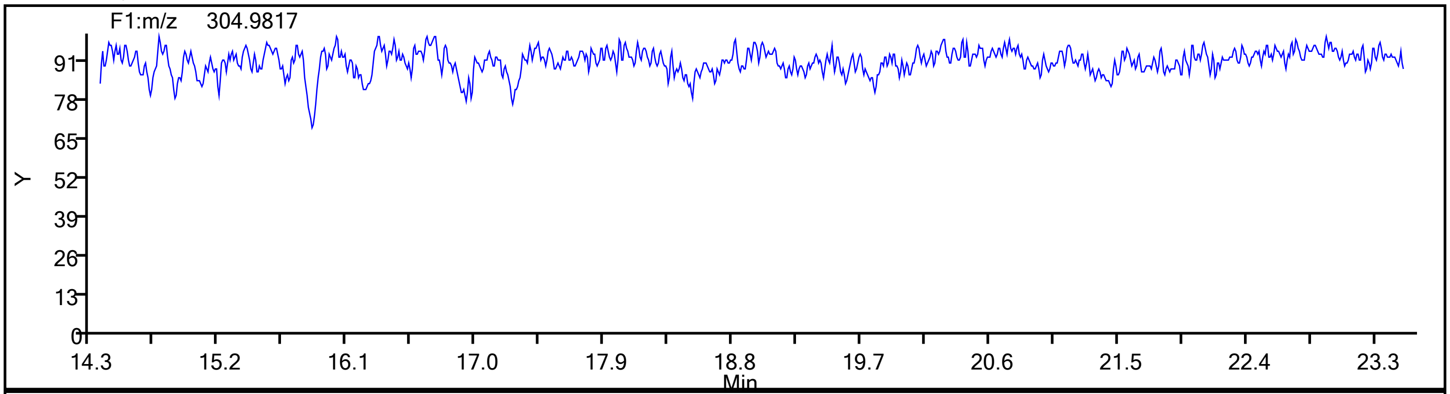

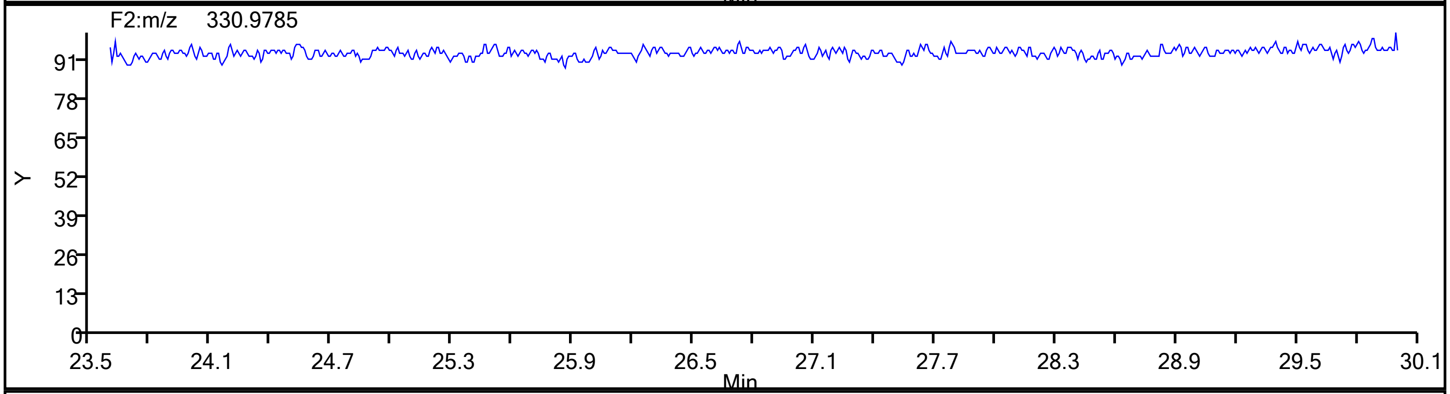

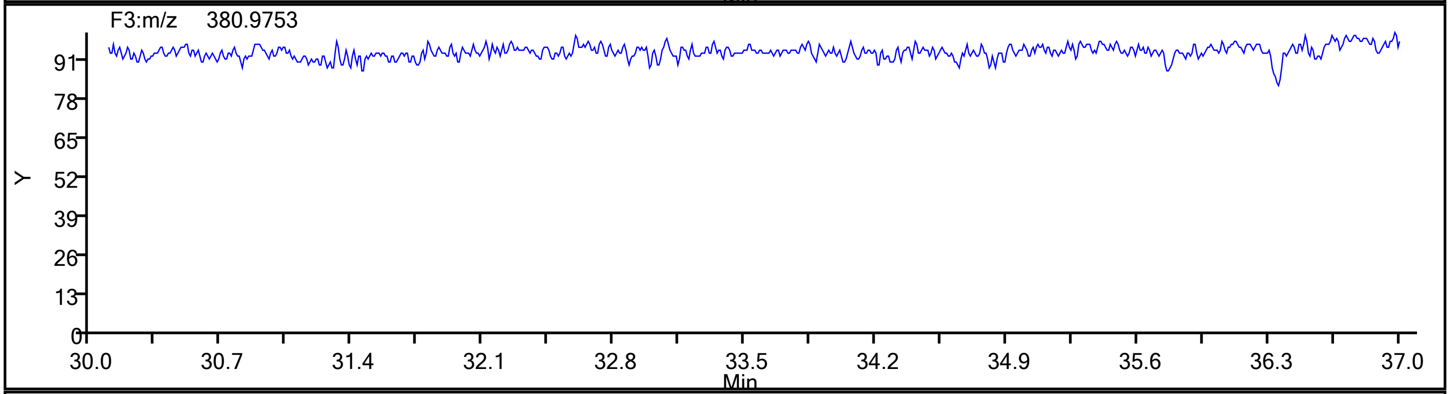

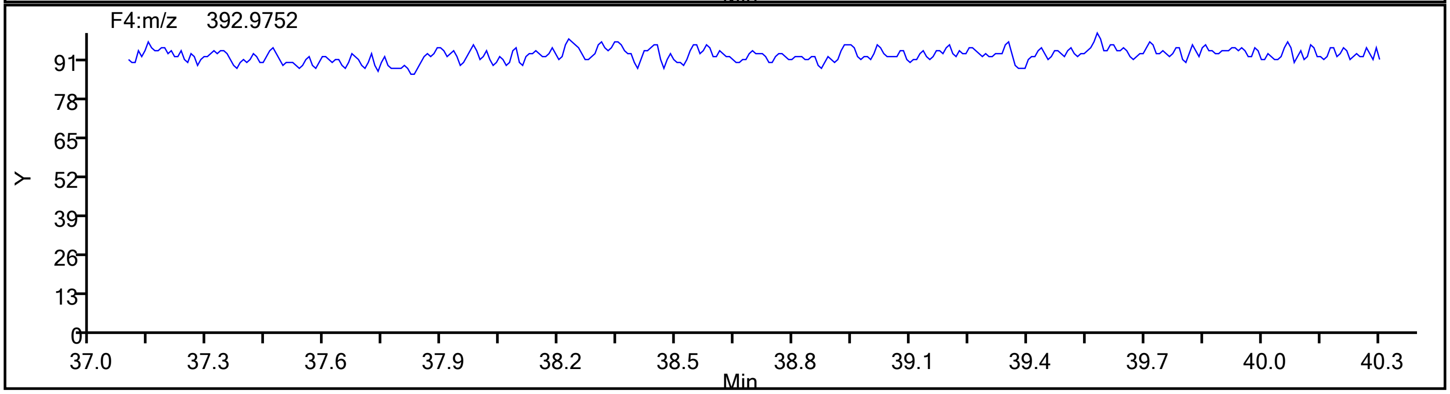

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_9.d

Injection Date:	10-Mar-2021 14:25:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	468973	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

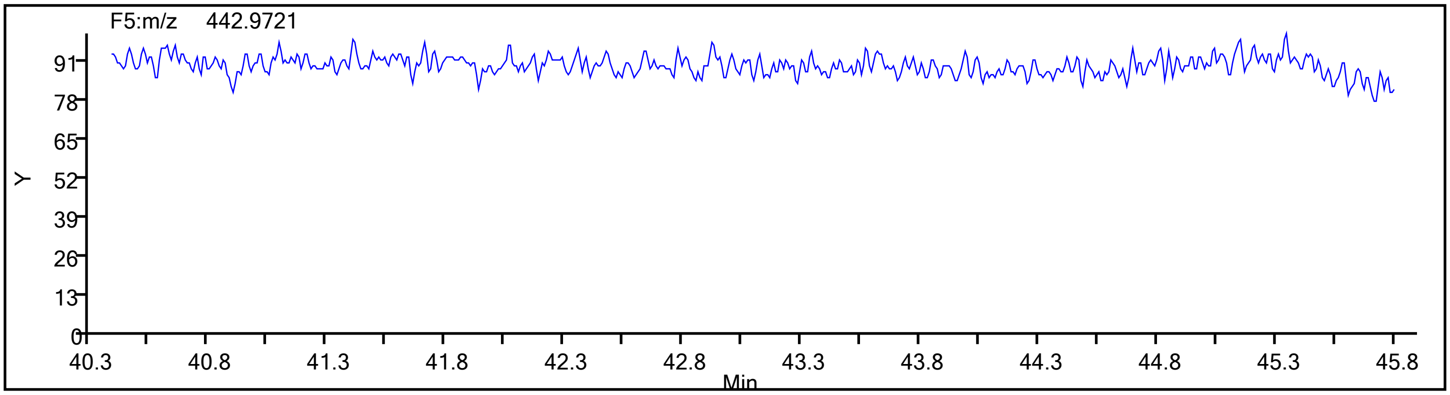

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank1-100mm RADL
Lab Sample ID: 320-70797-1 RADL
Matrix: Water
Lab File ID: 16MR2111D2_004.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1016.1(mL)
Date Analyzed: 03/16/2021 22:48
Con. Extract Vol.: 20(uL)
Dilution Factor: 20
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 470865
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	35000	B	200	39

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	83		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	122		35-197

Report Date: 17-Mar-2021 08:12:47 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_004.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Sample Type: Client
Inject. Date: 16-Mar-2021 22:48:16 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-1-A (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:10:10

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.023	10385908	0.70	1.8E+06	5.000	5.000				
D 13C-2,3,7,8-TCDF	16.162	11200303	0.80	1.3057	4.129	4.129	0.1387	0.1387	82.59	
2,3,7,8-TCDF	16.176	181942271	0.79	0.9242	87.9	87.9	0.0994	0.0994		
D 13C-2,3,7,8-TCDD	14.790	5990424	0.75	0.8971	3.215	3.215	0.8456	0.8456	64.29	
2,3,7,8-TCDD	14.818	43288871	0.81	0.9989	36.2	36.2	0.1496	0.1496		
$ 37Cl4-2,3,7,8-TCDD	14.804	4303994		0.8499	2.438	2.438	0.0213	0.0213	122	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 17-Mar-2021 08:12:47 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_004.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Sample Type: Client
Inject. Date: 16-Mar-2021 22:48:16 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-1-A (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:10:10

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.023	15.023	0		4283874	1039969	74510	186275	14		
333.9339	15.023	15.023	0		6102034	1467095	77636	194090	19	0.70(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.162	16.148	1	1.076	4991638	1014412	20577	51442	49		
317.9389	16.162	16.148	1	1.076	6208665	1296977	15738	39345	82	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.176	16.176	0	1.001	80146125	18156474	7776	19440	2335		
305.8987	16.176	16.176	0	1.001	101796146	23026460	9218	23045	2498	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.790	14.790	0	0.984	2574052	669252	74510	186275	9		
333.9339	14.790	14.790	0	0.984	3416372	817936	77636	194090	11	0.75(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.818	14.804	1	1.002	19330352	4566173	10758	26895	424		
321.8936	14.804	14.804	0	1.001	23958519	5710790	7016	17540	814	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.804	14.804	0	0.985	4303994	1075921	3635	9087	296		

QC Flag Legend

Processing Flags

Report Date: 17-Mar-2021 08:12:47 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_004.d		
Injection Date:	16-Mar-2021 22:48:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	470865	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

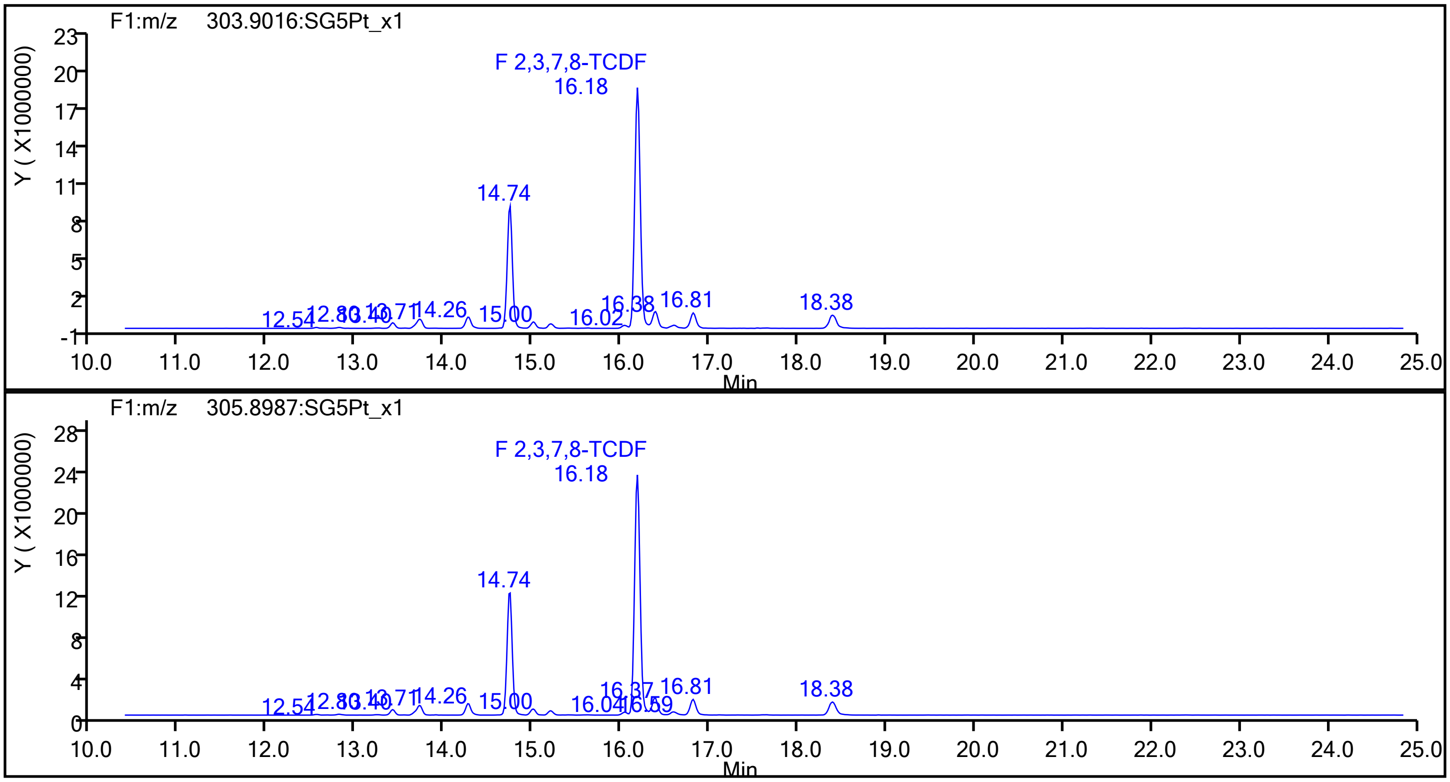

TCDF Standards

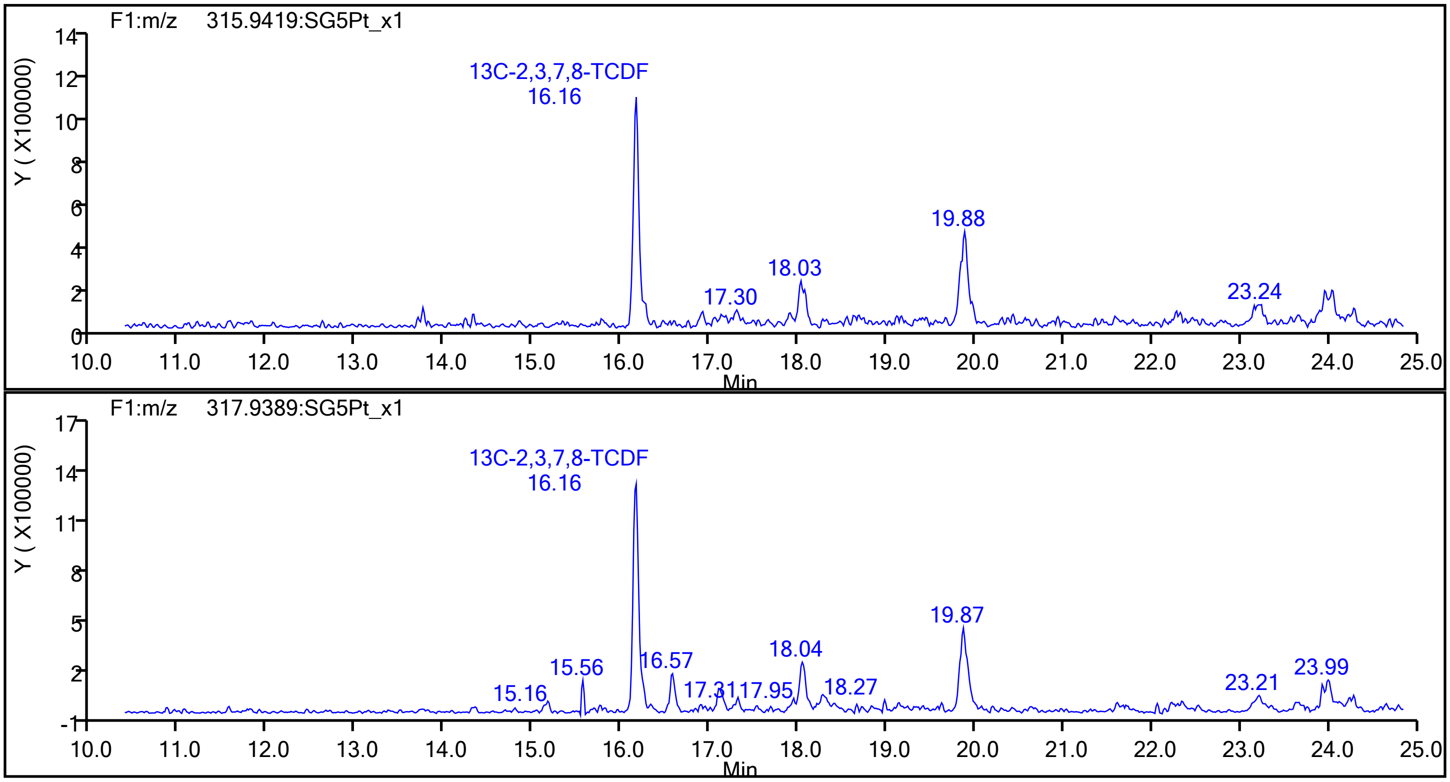

Report Date: 17-Mar-2021 08:12:47 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_004.d

Injection Date: 16-Mar-2021 22:48:16
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-100mm
Worklist#: 470865
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

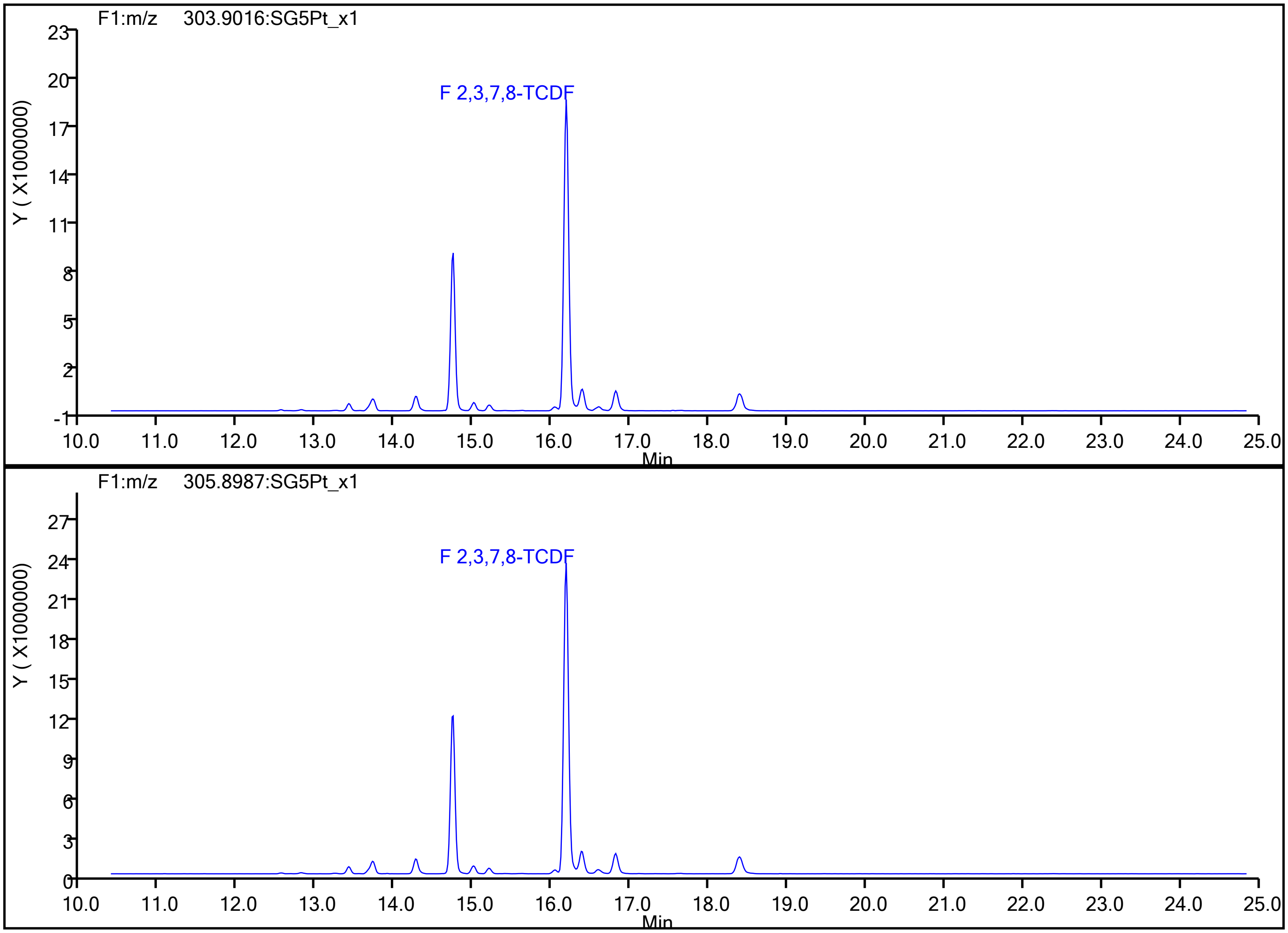

TCDF Interference Mass

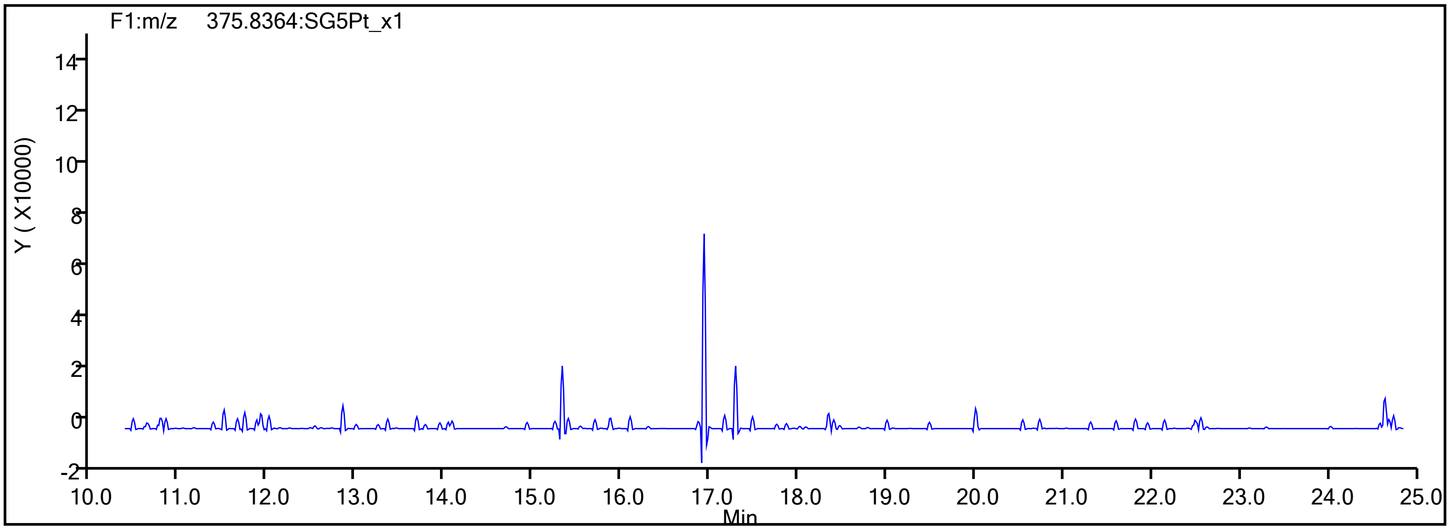

Report Date: 17-Mar-2021 08:12:47 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_004.d		
Injection Date:	16-Mar-2021 22:48:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	470865	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

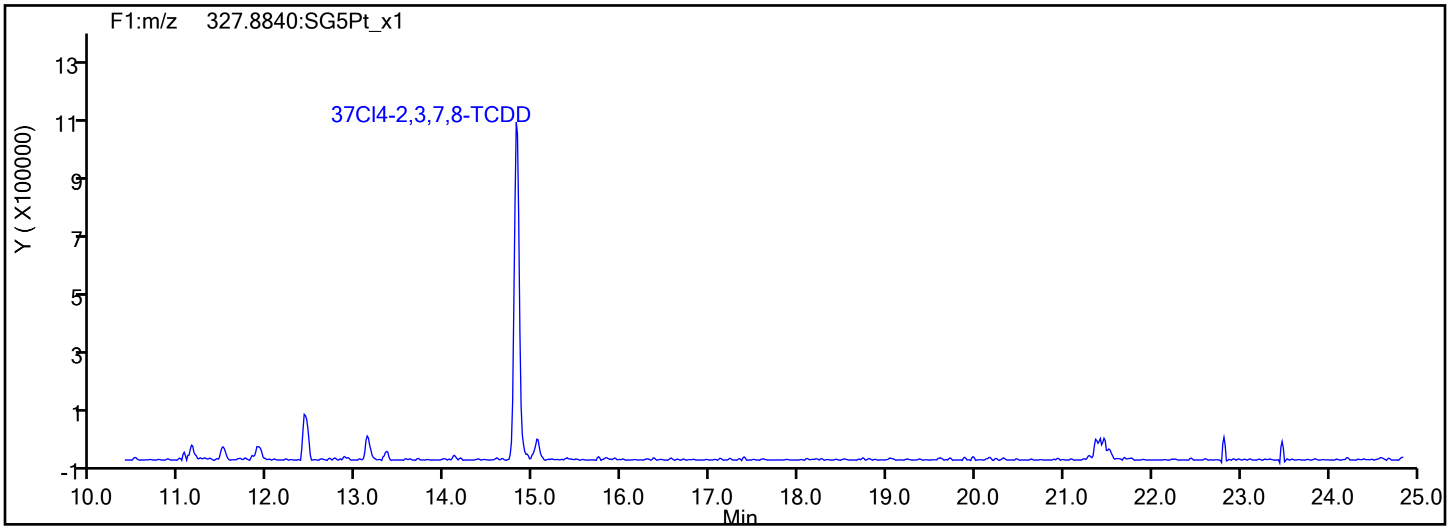

37Cl4-TCDD Standards

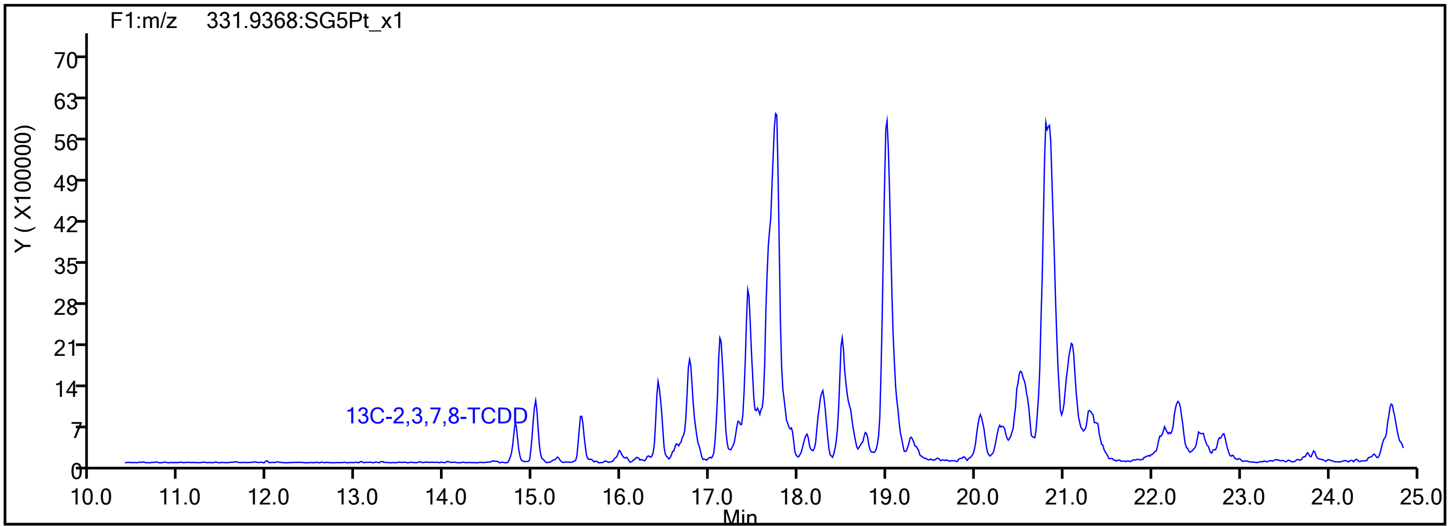

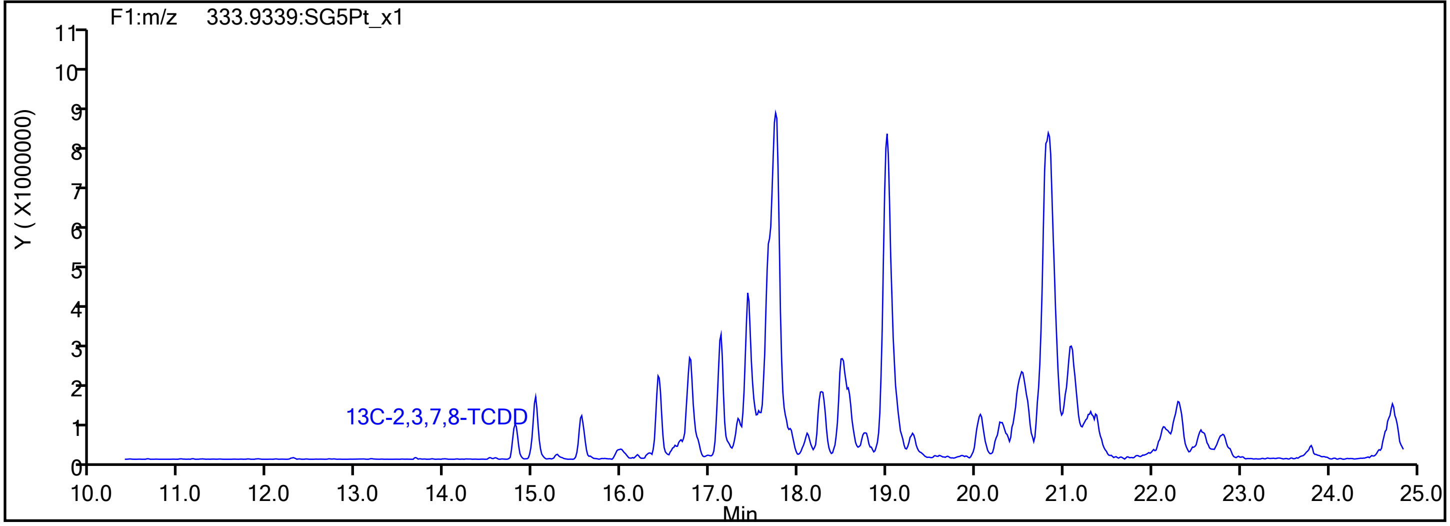

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_004.d		
Injection Date:	16-Mar-2021 22:48:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	470865	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

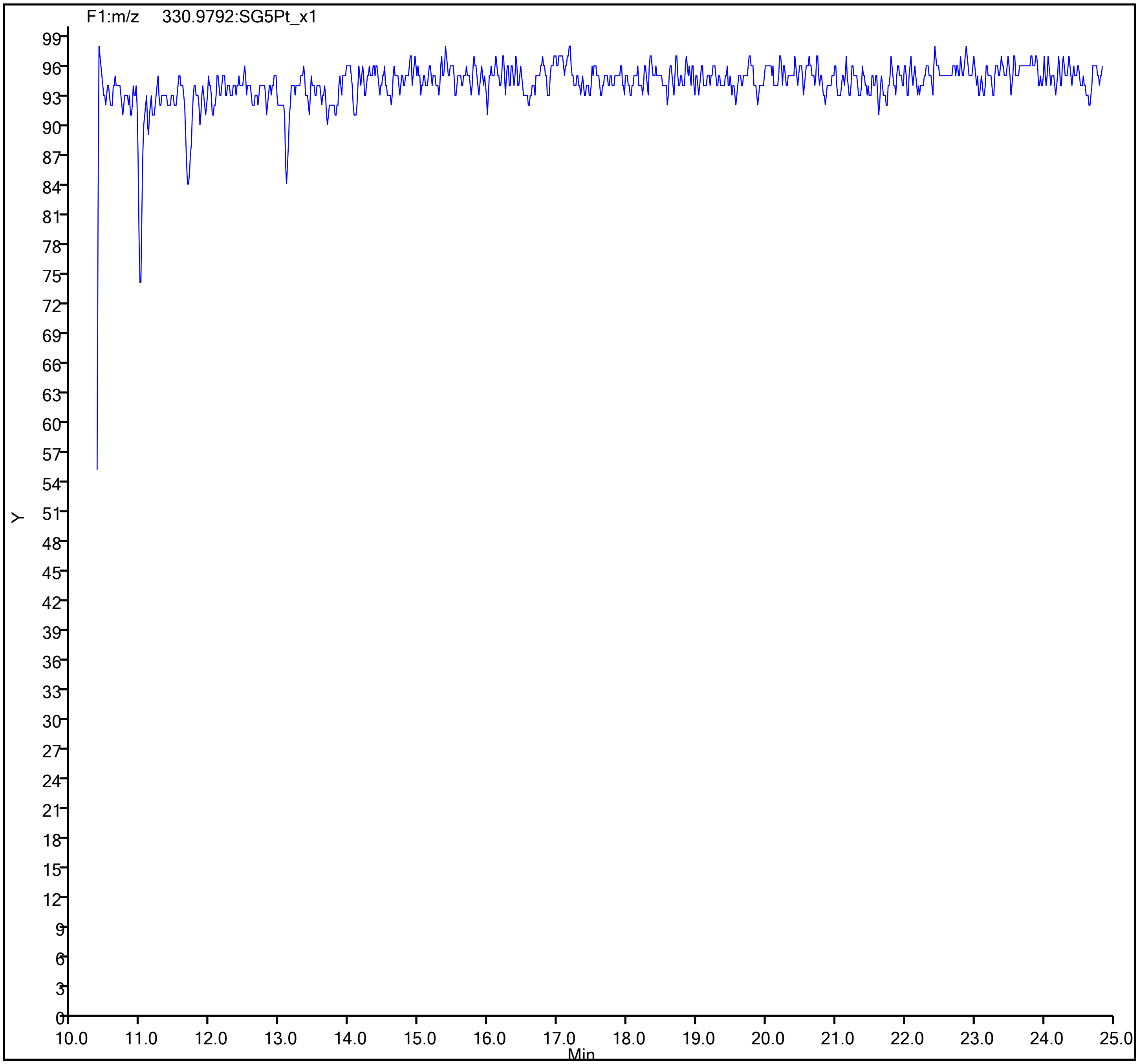

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-100mm DL Lab Sample ID: 320-70797-1 DL

Matrix: Water Lab File ID: 17MR2110D5_12.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1016.1(mL) Date Analyzed: 03/17/2021 18:44

Con. Extract Vol.: 20(uL) Dilution Factor: 20

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 471421 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	12000		200	110
41903-57-5	Total TCDD	13000	B	200	110
30402-14-3	Total TCDF	68000	q B	200	170

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		25-164
89059-46-1	13C-2,3,7,8-TCDF	72		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	121		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Sample Type: Client
Inject. Date: 17-Mar-2021 18:44:02 ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-1-A 320-70797-A-1-A 20X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:41:18 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: dadunj Date: 18-Mar-2021 15:41:18

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.521	1243820	0.68	5.4E+05	5.000	5.000				
D 13C-2,3,7,8-TCDF	17.022	1209557	0.71	1.3554	3.587	3.587	0.1755	0.1755	71.75	
2,3,7,8-TCDF	17.037	23885806	0.77	0.9903	99.7	99.7	0.4437	0.4437		
A Non-2,3,7,8-sub-TCDF	16.719	17240967	0.77	0.9903	72.4	72.0	0.4437	43.0		RQ
S Total TCDF					172.1	171.7	0.4437	0.4437		RQ
D 13C-2,3,7,8-TCDD	17.702	804263	0.73	0.9209	3.511	3.511	0.1329	0.1329	70.21	
2,3,7,8-TCDD	17.717	5540733	0.77	1.0991	31.3	31.3	0.2777	0.2777		
$ 37Cl4-2,3,7,8-TCDD	17.717	612225		1.0159	2.423	2.423	0.0198	0.0198	121	
A Non-2,3,7,8-sub-TCDD	17.165	453094	0.81	1.0991	2.563	2.563	0.2777	2.563		
S Total TCDD					33.9	33.9	0.2777	0.2777		
D 13C-1,2,3,7,8-PeCDF	21.896	994181	1.47	1.0847	3.684	3.684	0.0342	0.0342	73.69	
1,2,3,7,8-PeCDF	21.937	687728	1.42	1.0209	3.388	3.388	0.0673	0.0673		M
D 13C-2,3,4,7,8-PeCDF	23.219	1089020	1.76	1.1057	3.959	3.959	0.0335	0.0335	79.19	
2,3,4,7,8-PeCDF	23.246	408520	1.55	0.9790	1.916	1.916	0.0727	0.0727		
A F1 PeCDFs	19.524						0.0383	0.0383		
A Non-2,3,7,8-sub-PeCDF	22.586	604793	1.55	1.0000	2.918	2.903	0.0699	1.304		RQMa
S Total PeCDF					8.222	8.207	0.0700	0.0700		RQ
D 13C-1,2,3,7,8-PeCDD	23.928	682430	1.56	0.7689	3.568	3.568	0.0403	0.0403	71.35	
1,2,3,7,8-PeCDD	23.941	37240	1.55	0.9982	0.3555	0.2733	0.0696	0.0696		RQM
A Non-2,3,7,8-sub-PeCDD	22.857						0.0696	0.0696		
S Total PeCDD					0.3555	0.2733	0.0696	0.0696		RQ
D 13C-1,2,3,4,7,8-HxCDF	30.081	846890	0.51	1.0321	2.938	2.938	0.0375	0.0375	58.77	
1,2,3,4,7,8-HxCDF	30.094	1184378	1.19	1.0667	6.555	6.555	0.0779	0.0779		
D 13C-1,2,3,6,7,8-HxCDF	30.281	870682	0.59	1.0218	3.051	3.051	0.0379	0.0379	61.03	
1,2,3,6,7,8-HxCDF	30.320	303634	1.17	1.1178	1.560	1.560	0.0662	0.0662		
D 13C-2,3,4,6,7,8-HxCDF	31.226	820697	0.44	0.9729	3.021	3.021	0.0398	0.0398	60.42	
2,3,4,6,7,8-HxCDF	31.252	29437	1.42	1.1422	0.1570	0.1570	0.0517	0.0517		M
D 13C-1,2,3,7,8,9-HxCDF	32.091	776396	0.45	0.9469	2.936	2.936	0.0409	0.0409	58.72	
1,2,3,7,8,9-HxCDF	32.104	16080	1.09	1.1455	0.0904	0.0904	0.0467	0.0467		M
A Non-2,3,7,8-sub-HxCDF	29.781	114470	1.35	1.1181	0.6177	0.6177	0.0585	0.4239		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					8.980	8.980	0.0606	0.0606		
* 13C-1,2,3,7,8,9-HxCDD	31.891	1396217	1.18	4.9E+05	5.000	5.000				
D 13C-1,2,3,4,7,8-HxCDD	31.438	631157	1.26	0.7689	2.939	2.939	0.0490	0.0490	58.79	
1,2,3,4,7,8-HxCDD	31.585						0.0406	0.0406		U
D 13C-1,2,3,6,7,8-HxCDD	31.545	754528	1.28	0.8643	3.126	3.126	0.0436	0.0436	62.52	
1,2,3,6,7,8-HxCDD	31.585	13674	1.25	0.9658	0.0938	0.0938	0.0373	0.0373		M
1,2,3,7,8,9-HxCDD	31.917						0.0362	0.0362		
A Non-2,3,7,8-sub-HxCDD	30.433	62174	1.24	1.0247	0.4634	0.4379	0.0379	0.2563		RQM
S Total HxCDD					0.5572	0.5317	0.0380	0.0380		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.580	602572	0.51	0.7233	2.983	2.983	0.0748	0.0748	59.67	
1,2,3,4,6,7,8-HpCDF	33.592	285631	1.02	1.4017	1.691	1.691	0.0459	0.0459		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.649	578327	0.48	0.6720	3.082	3.082	0.0805	0.0805	61.63	
1,2,3,4,7,8,9-HpCDF	34.661	84269	0.90	1.2995	0.5606	0.5606	0.0573	0.0573		M
A Non-2,3,7,8-sub-HpCDF	34.127	101403	1.05	1.3506	0.6358	0.6358	0.0511	0.6358		M
S Total HpCDF					2.887	2.887	0.0516	0.0516		
D 13C-1,2,3,4,6,7,8-HpCDD	34.358	526486	1.19	0.6855	2.750	2.750	0.0540	0.0540	55.01	
1,2,3,4,6,7,8-HpCDD	34.382	545152	1.08	1.0339	5.008	5.008	0.0752	0.0752		M
A Non-2,3,7,8-sub-HpCDD	34.460	414876	1.00	1.0339	3.811	3.811	0.0752	3.811		
S Total HpCDD					8.819	8.819	0.0752	0.0752		
D 13C-OCDD	36.685	717481	0.87	0.4996	5.143	5.143	0.0602	0.0602	51.43	
OCDF	36.769	92627	0.81	1.3135	0.9828	0.9828	0.0635	0.0635		M
OCDD	36.697	2889907	0.90	1.0576	38.1	38.1	0.1001	0.1001		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Mar-2021 15:41:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Sample Type: Client
Inject. Date: 17-Mar-2021 18:44:02 ALS Bottle#: 10 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-1-A 320-70797-A-1-A 20X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:41:18 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: dadunj Date: 18-Mar-2021 15:41:18

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.521	17.506	1		502661	113780	1828	4570	62		
333.9339	17.506	17.506	0		741159	190561	1153	2882	165	0.68(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.007	1	0.972	503829	125912	3574	8935	35		
317.9389	17.022	17.007	1	0.972	705728	177846	2218	5545	80	0.71(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.022	1	1.001	10415073	2507293	5251	13127	477		
305.8987	17.022	17.022	0	1.000	13470733	3215929	5427	13567	593	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	15.646	16.719	-64	0.919	183030	48362	5251	13127	9		
305.8987	15.646	16.719	-64	0.919	271858	77795	5427	13567	14	0.67(0.65-0.89)	
303.9016	15.918	16.719	-48	0.935	375411	84588	5251	13127	16		
305.8987	15.918	16.719	-48	0.935	436118	98620	5427	13567	18	0.86(0.65-0.89)	
303.9016	16.145	16.719	-34	0.948	314002	81118	5251	13127	15		
305.8987	16.145	16.719	-34	0.948	420950	105572	5427	13567	19	0.75(0.65-0.89)	
303.9016	16.387	16.719	-20	0.963	392894	106208	5251	13127	20		
305.8987	16.372	16.719	-21	0.962	609541	144072	5427	13567	27	0.64(0.65-0.89)	
	Empc Correction				510251	137932	5427	13567	25		
303.9016	16.659	16.719	-4	0.979	4523790	1198130	5251	13127	228		
305.8987	16.659	16.719	-4	0.979	5786300	1514715	5427	13567	279	0.78(0.65-0.89)	
303.9016	16.871	16.719	9	0.991	174612	47305	5251	13127	9		
305.8987	16.871	16.719	9	0.991	206855	47728	5427	13567	9	0.84(0.65-0.89)	
303.9016	17.445	16.719	43	1.025	699683	168396	5251	13127	32		
305.8987	17.445	16.719	43	1.025	903010	228585	5427	13567	42	0.77(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.687	16.719	58	1.039	139116	34014	5251	13127	6		
305.8987	17.687	16.719	58	1.039	197074	45415	5427	13567	8	0.71(0.65-0.89)	
303.9016	18.806	16.719	125	1.105	758761	177107	5251	13127	34		
305.8987	18.806	16.719	125	1.105	947252	211626	5427	13567	39	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.702	17.702	0	1.010	340430	72423	1828	4570	40		
333.9339	17.702	17.702	0	1.010	463833	109179	1153	2882	95	0.73(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.717	17.717	0	1.001	2407250	577784	2660	6650	217		
321.8936	17.717	17.717	0	1.001	3133483	750715	1774	4435	423	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.717	17.717	0	1.011	612225	141522	491	1227	288		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.065	17.165	54	1.021	202759	47166	2660	6650	18		
321.8936	18.065	17.165	54	1.021	250335	60382	1774	4435	34	0.81(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.896	21.896	0	1.250	591787	110318	497	1242	222		
353.8970	21.896	21.896	0	1.250	402394	69542	406	1015	171	1.47(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.937	21.910	2	1.002	403207	66798	383	957	174		
341.8567	21.923	21.910	1	1.001	284521	51675	606	1515	85	1.42(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	23.219	23.205	1	1.325	694346	113366	497	1242	228		
353.8970	23.219	23.205	1	1.325	394674	60185	406	1015	148	1.76(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.246	23.219	2	1.001	248265	43881	383	957	115		
341.8567	23.232	23.219	1	1.001	160255	28409	606	1515	47	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.524						211	527			
341.8567	19.524						331	827			
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	20.628	22.586	-117	0.942	161783	32111	383	957	84		
341.8567	20.614	22.586	-118	0.941	109812	23138	606	1515	38	1.47(1.32-1.78)	
339.8597	21.801	22.586	-47	0.996	20781	5663	383	957	15		M
	Empc Correction				17671	5578	383	957	15		
341.8567	21.814	22.586	-46	0.996	11401	3599	606	1515	6	1.82(1.32-1.78)	
339.8597	22.428	22.586	-9	1.024	116926	20357	383	957	53		
341.8567	22.441	22.586	-9	1.025	69194	12036	606	1515	20	1.69(1.32-1.78)	
339.8597	23.560	22.586	58	1.076	72463	11477	383	957	30		
341.8567	23.573	22.586	59	1.077	45543	6947	606	1515	11	1.59(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.928	23.901	2	1.366	415775	63832	462	1155	138		
369.8919	23.900	23.901	0	1.364	266655	43103	293	732	147	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											RQM
355.8546	23.941	23.928	1	1.001	33833	5149	326	815	16		M
	Empc Correction				22636	3949	326	815	12		
357.8516	23.928	23.928	0	1.000	14604	2548	268	670	10	2.32(1.32-1.78)	M

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.857						326	815			
357.8516	22.857						268	670			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.081	30.054	2	0.943	285364	46649	412	1030	113		
385.8610	30.067	30.054	1	0.943	561526	81352	633	1582	129	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.094	30.094	0	1.000	642888	105187	469	1172	224		
375.8178	30.094	30.094	0	1.000	541490	86447	382	955	226	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.281	30.281	0	0.949	323612	51779	412	1030	126		
385.8610	30.294	30.281	1	0.950	547070	91955	633	1582	145	0.59(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.320	30.307	1	1.001	163856	24929	469	1172	53		
375.8178	30.307	30.307	0	1.001	139778	20250	382	955	53	1.17(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.226	31.226	0	0.979	250837	60882	412	1030	148		
385.8610	31.226	31.226	0	0.979	569860	119284	633	1582	188	0.44(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	31.252	31.239	1	1.001	17284	3818	469	1172	8		
375.8178	31.239	31.239	0	1.000	12153	3397	382	955	9	1.42(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.091	32.091	0	1.006	242463	62478	412	1030	152		
385.8610	32.091	32.091	0	1.006	533933	136182	633	1582	215	0.45(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	32.104	32.104	0	1.000	8392	3214	469	1172	7		M
375.8178	32.091	32.104	-1	1.000	7688	2755	382	955	7	1.09(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.765	29.781	-121	0.923	44802	6292	469	1172	13		
375.8178	27.738	29.781	-122	0.922	33746	4615	382	955	12	1.33(1.05-1.43)	
373.8208	29.043	29.781	-44	0.965	20903	2490	469	1172	5		
375.8178	29.043	29.781	-44	0.965	15019	2368	382	955	6	1.39(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.891	31.891	0		754552	180487	495	1237	365		
403.8529	31.904	31.891	1		641665	157033	523	1307	300	1.18(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.438	31.425	1	0.986	351418	86572	495	1237	175		
403.8529	31.438	31.425	1	0.986	279739	68784	523	1307	132	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											U
389.8157	31.452						249	622			
391.8127	31.452						273	682			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.545	31.545	0	0.989	424036	94761	495	1237	191		
403.8529	31.545	31.545	0	0.989	330492	86160	523	1307	165	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											M
389.8157	31.585	31.558	2	1.001	7597	1706	249	622	7		M
391.8127	31.558	31.558	0	1.000	6077	1585	273	682	6	1.25(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											
389.8157	31.904						249	622			
391.8127	31.904						273	682			
A Non-2,3,7,8-sub-HxCDD											RQM
389.8157	28.910	30.433	-91	0.916	17896	3426	249	622	14		M
	Empc Correction				14269	3386	249	622	14		
391.8127	28.923	30.433	-90	0.917	11508	2731	273	682	10	1.56(1.05-1.43)	
389.8157	30.490	30.433	3	0.000			249	622			
391.8127	30.490	30.433	3	0.000			273	682		0.00(1.05-1.43)	
389.8157	30.613	30.433	11	0.970	20637	3879	249	622	16		M
391.8127	30.613	30.433	11	0.970	15760	3008	273	682	11	1.31(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.580	33.580	0	1.053	202249	65326	708	1770	92		
419.8220	33.580	33.580	0	1.053	400323	140604	753	1882	187	0.51(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.592	33.592	0	1.000	144089	45935	629	1572	73		M
409.7789	33.580	33.592	-1	1.000	141542	45363	431	1077	105	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.649	34.650	0	1.086	187473	60507	708	1770	85		
419.8220	34.649	34.650	0	1.086	390854	117503	753	1882	156	0.48(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	34.661	34.661	0	1.000	39990	14174	629	1572	23		M
409.7789	34.661	34.661	0	1.000	44279	16064	431	1077	37	0.90(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7818	33.884	34.127	-15	1.009	52034	18947	629	1572	30		M
409.7789	33.884	34.127	-15	1.009	49369	18427	431	1077	43	1.05(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.358	34.370	-1	1.077	285575	87666	659	1647	133		
437.8140	34.370	34.370	0	1.078	240911	78756	341	852	231	1.19(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.382	34.382	0	1.001	283628	88119	489	1222	180		M
425.7737	34.370	34.382	-1	1.000	261524	85020	546	1365	156	1.08(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.823	34.460	-38	0.984	207187	62513	489	1222	128		
425.7737	33.823	34.460	-38	0.984	207689	62683	546	1365	115	1.00(0.88-1.20)	
13C-OCDD											
469.7779	36.685	36.685	0	1.150	334255	96942	409	1022	237		
471.7750	36.685	36.685	0	1.150	383226	114281	403	1007	284	0.87(0.76-1.02)	
OCDF											M
441.7428	36.769	36.781	-1	1.002	41588	11444	288	720	40		M
443.7399	36.781	36.781	0	1.003	51039	15933	417	1042	38	0.81(0.76-1.02)	M

Report Date: 18-Mar-2021 15:41:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	36.697	36.697	0	1.000	1367126	365486	484	1210	755		
459.7348	36.685	36.697	-1	1.000	1522781	393257	411	1027	957	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Mar-2021 15:41:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	17-Mar-2021 18:44:02	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 16.719

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.990	D 13C-2,3,7,8-TCDF	100.000	1209557	303758

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.990		5.000	1209557	303758

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.646	183030	48362	271858	77795	1.90	0.67	
15.918	375411	84588	436118	98620	3.39	0.86	
16.145	314002	81118	420950	105572	3.07	0.75	
16.387	392894	106208	609541	144072	4.18	0.64	RQ
16.387	392894	106208	510251	137932	3.77		Empc Correction
16.659	4523790	1198130	5786300	1514715	43.0	0.78	
16.871	174612	47305	206855	47728	1.59	0.84	
17.445	699683	168396	903010	228585	6.69	0.77	
17.687	139116	34014	197074	45415	1.40	0.71	
18.806	758761	177107	947252	211626	7.12	0.80	
Signal Totals:							
	7561299	1945228	9679668	2467988			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	17340257	4419356				0.77	RQ
	17240967	4413216					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 72.385 = (17340257 * 5.000) / (1209557 * 0.990)

Empc Amount: 71.970 = (17240967 * 5.000) / (1209557 * 0.990)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 18-Mar-2021 15:41:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Inject. Date: 17-Mar-2021 18:44:02
Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: KSS
Lims Batch ID: 471421
Lims Sample ID: 12

Non-2,3,7,8-sub-TCDD, RT: 17.165

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.099	D 13C-2,3,7,8-TCDD	100.000	804263	181602

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.099		5.000	804263	181602

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.065	202759	47166	250335	60382	2.56	0.81	
Signal Totals:							
	202759	47166	250335	60382			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	453094	107548				0.81	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.563 = (453094 * 5.000) / (804263 * 1.099)

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	17-Mar-2021 18:44:02	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDF, RT: 22.586

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021	D 13C-1,2,3,7,8-PeCDF	100.000	994181	179860
2,3,4,7,8-PeCDF	0.979	D 13C-2,3,4,7,8-PeCDF	100.000	1089020	173551

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		5.000	1041600	176705

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.628	161783	32111	109812	23138	1.30	1.47	
21.801	20781	5663	11401	3599	0.1545	1.82	RQMa
21.801	17671	5578	11401	3599	0.1396		Empc Correction
22.428	116926	20357	69194	12036	0.8935	1.69	
23.560	72463	11477	45543	6947	0.5665	1.59	
Signal Totals:							
	368843	69523	235950	45720			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	607903	115328				1.58	RQMa
	604793	115243					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 2.918 = (607903 * 5.000) / (1041600 * 1.000)

Empc Amount: 2.903 = (604793 * 5.000) / (1041600 * 1.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 18-Mar-2021 15:41:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	17-Mar-2021 18:44:02	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDF, RT: 29.781

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.067	D 13C-1,2,3,4,7,8-HxCDF	100.000	846890	128001
1,2,3,6,7,8-HxCDF	1.118	D 13C-1,2,3,6,7,8-HxCDF	100.000	870682	143734
2,3,4,6,7,8-HxCDF	1.142	D 13C-2,3,4,6,7,8-HxCDF	100.000	820697	180166
1,2,3,7,8,9-HxCDF	1.146	D 13C-1,2,3,7,8,9-HxCDF	100.000	776396	198660

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.118		5.000	828666	162640

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.765	44802	6292	33746	4615	0.4239	1.33	
29.043	20903	2490	15019	2368	0.1939	1.39	
Signal Totals:							
	65705	8782	48765	6983			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	114470	15765				1.35	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.6177 = (114470 * 5.000) / (828666 * 1.118)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	17-Mar-2021 18:44:02	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 30.433

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.036	D 13C-1,2,3,4,7,8-HxCDD	100.000	631157	155356
1,2,3,6,7,8-HxCDD	0.966	D 13C-1,2,3,6,7,8-HxCDD	100.000	754528	180921
1,2,3,7,8,9-HxCDD	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.025		5.000	692842	168138

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
28.910	17896	3426	11508	2731	0.2071	1.56	RQM
28.910	14269	3386	11508	2731	0.1815		Empc Correction
30.490	0	0	0	0		0.00	
30.613	20637	3879	15760	3008	0.2563	1.31	M
Signal Totals:							
	34906	7265	27268	5739			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	65801	13044				1.41	RQM
	62174	13004					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4634 = (65801 * 5.000) / (692842 * 1.025)
Empc Amount: 0.4379 = (62174 * 5.000) / (692842 * 1.025)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d
Lims ID: 320-70797-A-1-A
Client ID: 11215702-Tank1-100mm
Inject. Date: 17-Mar-2021 18:44:02
Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: KSS
Lims Batch ID: 471421
Lims Sample ID: 12

Non-2,3,7,8-sub-HpCDF, RT: 34.127

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.402	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	602572	205930
1,2,3,4,7,8,9-HpCDF	1.300	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	578327	178010

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.351		5.000	590449	191970

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.884	52034	18947	49369	18427	0.6358	1.05	M
Signal Totals:							
	52034	18947	49369	18427			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	101403	37374				1.05	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6358 = (101403 * 5.000) / (590449 * 1.351)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Lims ID:	320-70797-A-1-A		
Client ID:	11215702-Tank1-100mm		
Inject. Date:	17-Mar-2021 18:44:02	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 34.460

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.034	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	526486	166422

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.034		5.000	526486	166422

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.823	207187	62513	207689	62683	3.81	1.00	
Signal Totals:							
	207187	62513	207689	62683			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	414876	125196				1.00	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.811 = (414876 * 5.000) / (526486 * 1.034)

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Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d

Injection Date: 17-Mar-2021 18:44:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-100mm

Worklist#: 471421 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

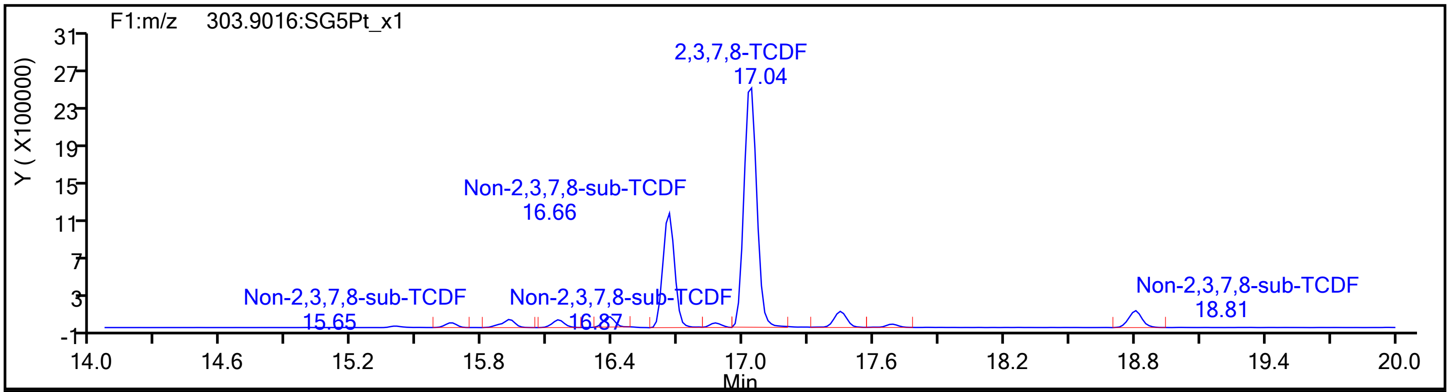

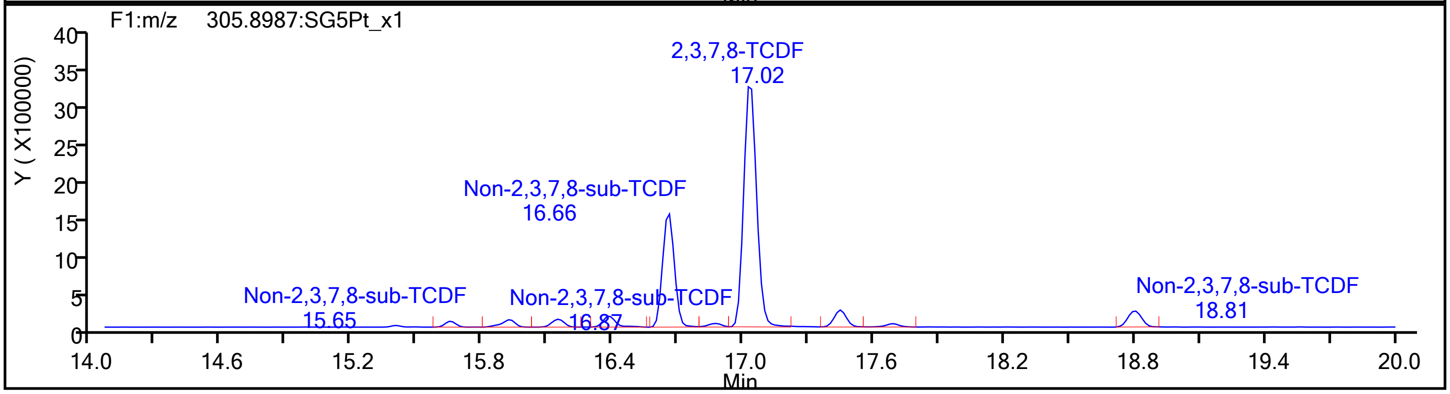

TCDF Standards

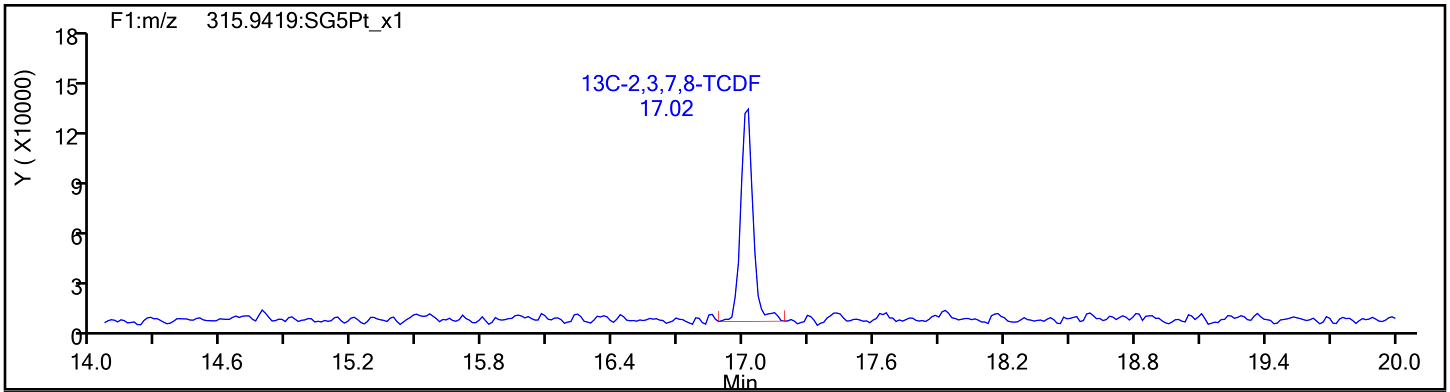

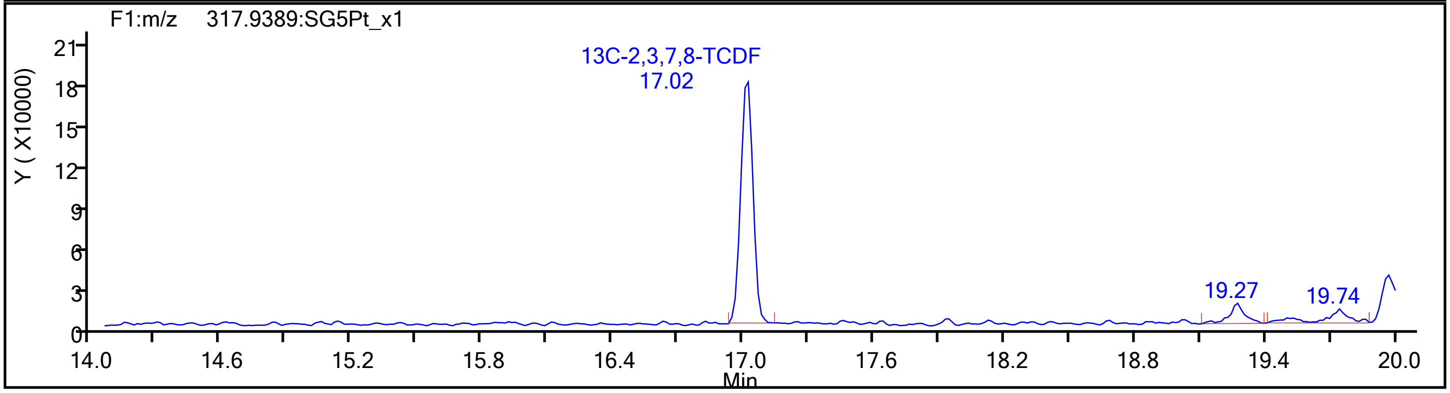

Report Date: 18-Mar-2021 15:41:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d

Injection Date: 17-Mar-2021 18:44:02
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-100mm
Worklist#: 471421
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

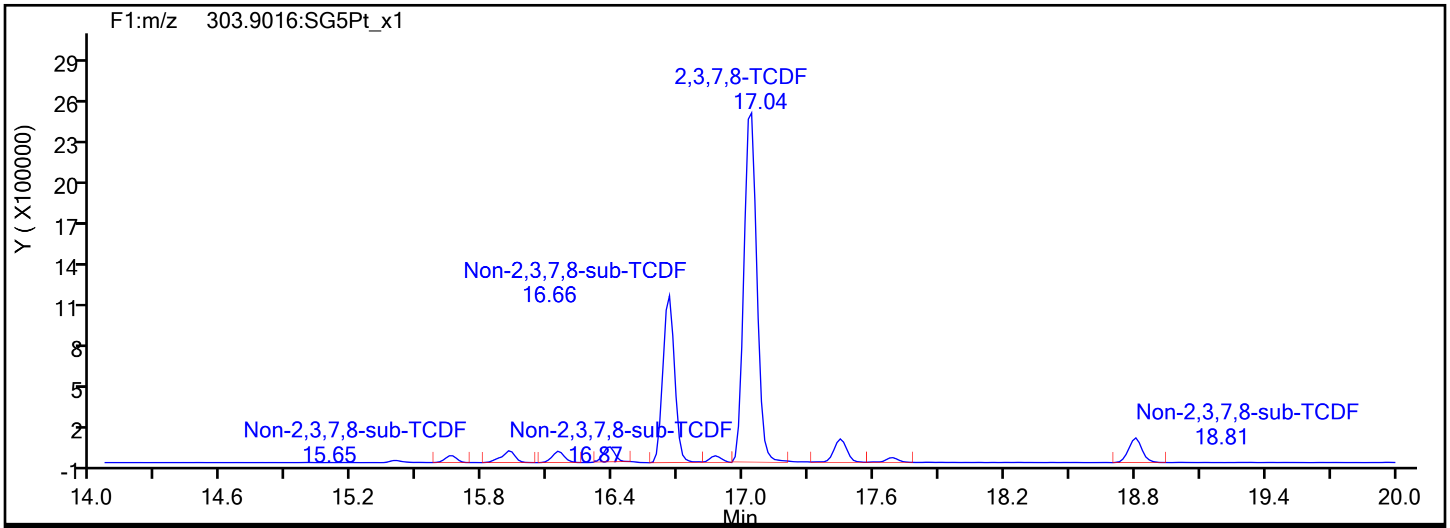

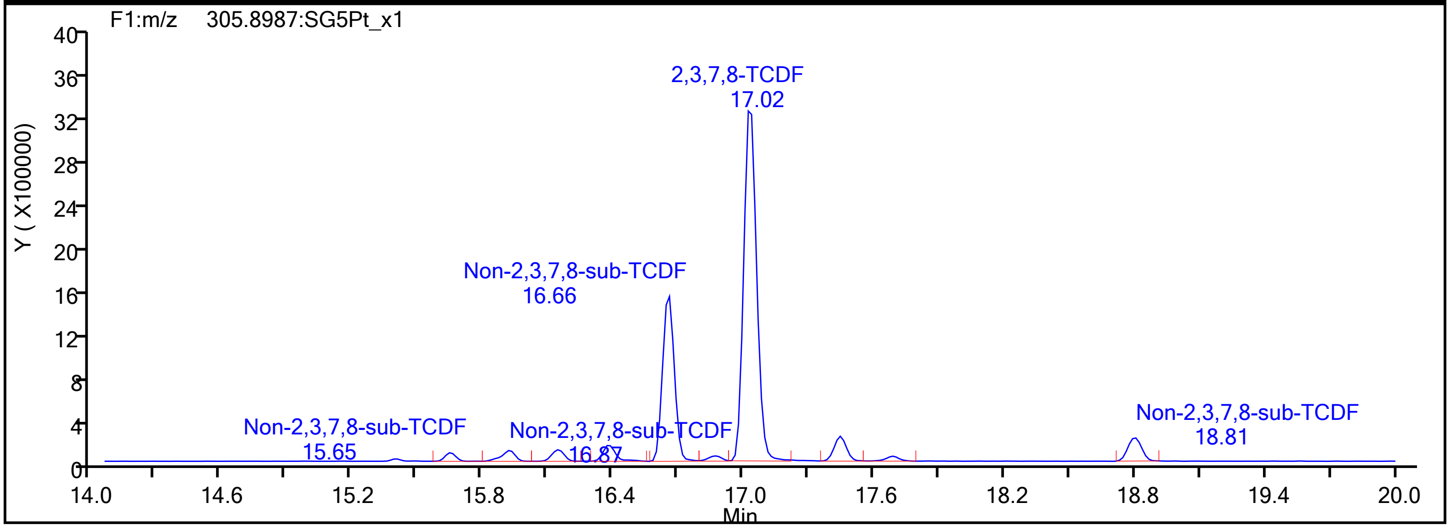

TCDF Interference Mass

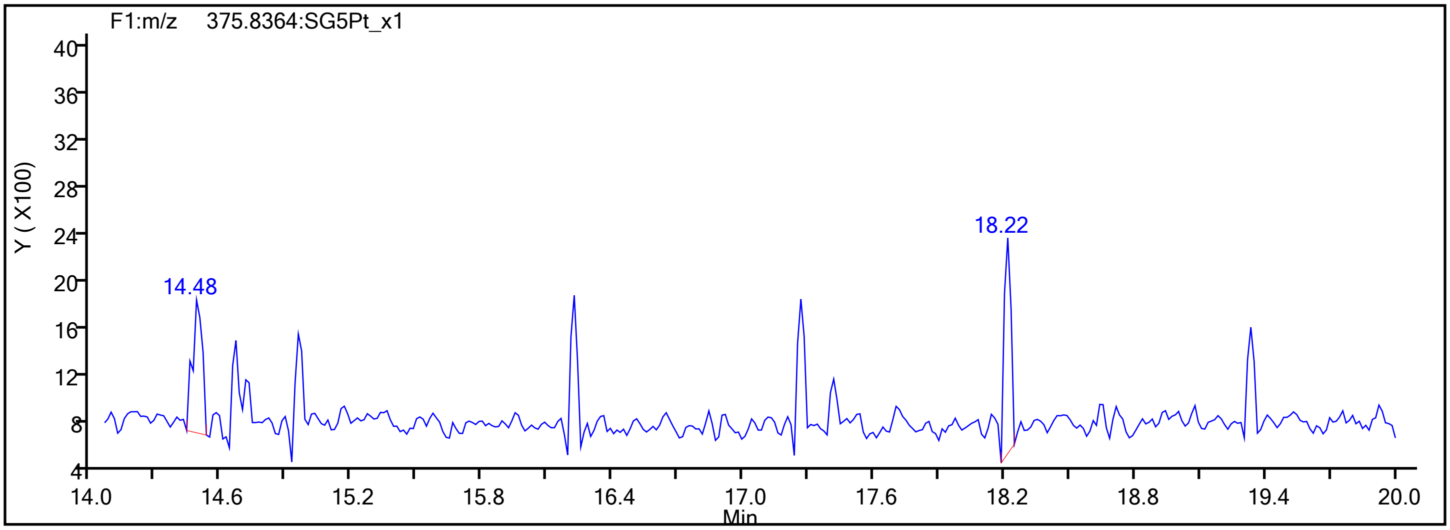

Report Date: 18-Mar-2021 15:41:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d

Injection Date: 17-Mar-2021 18:44:02 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-100mm

Worklist#: 471421 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

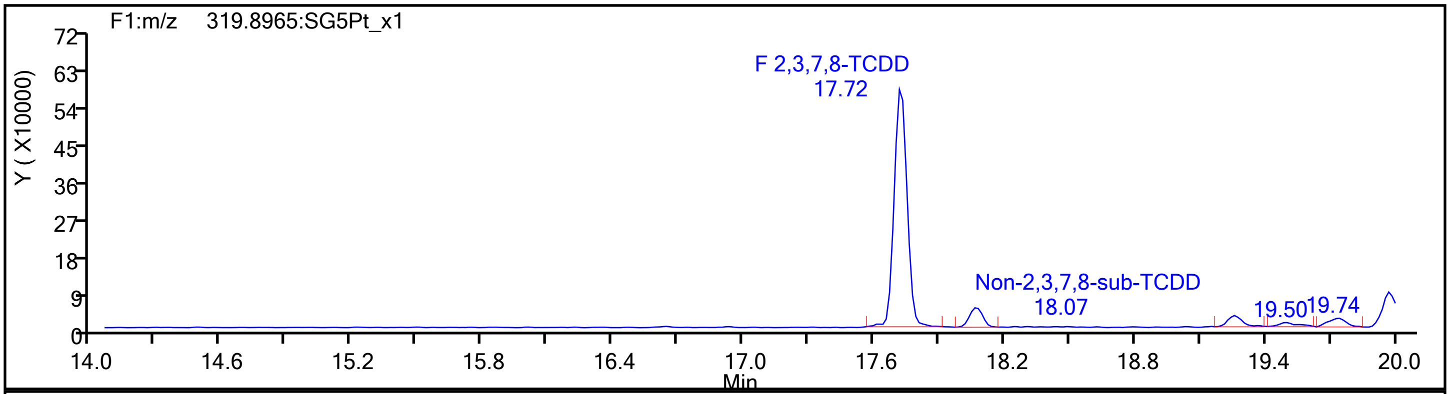

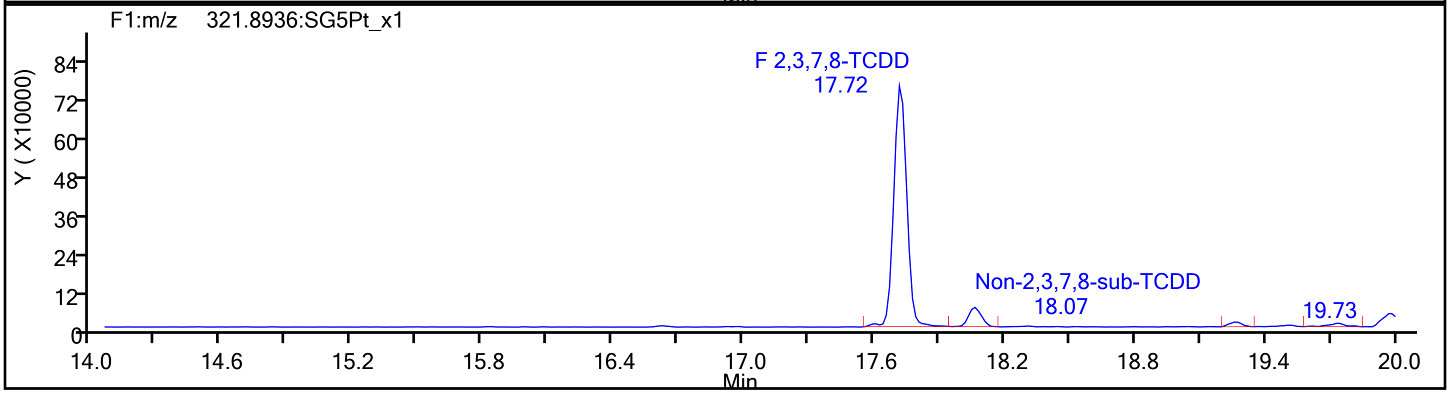

TCDD Standards

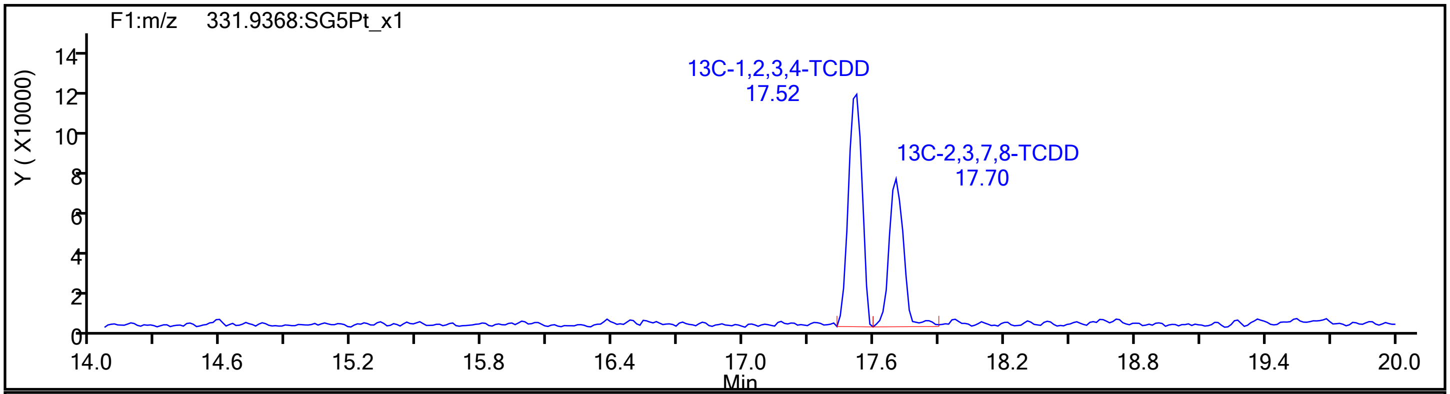

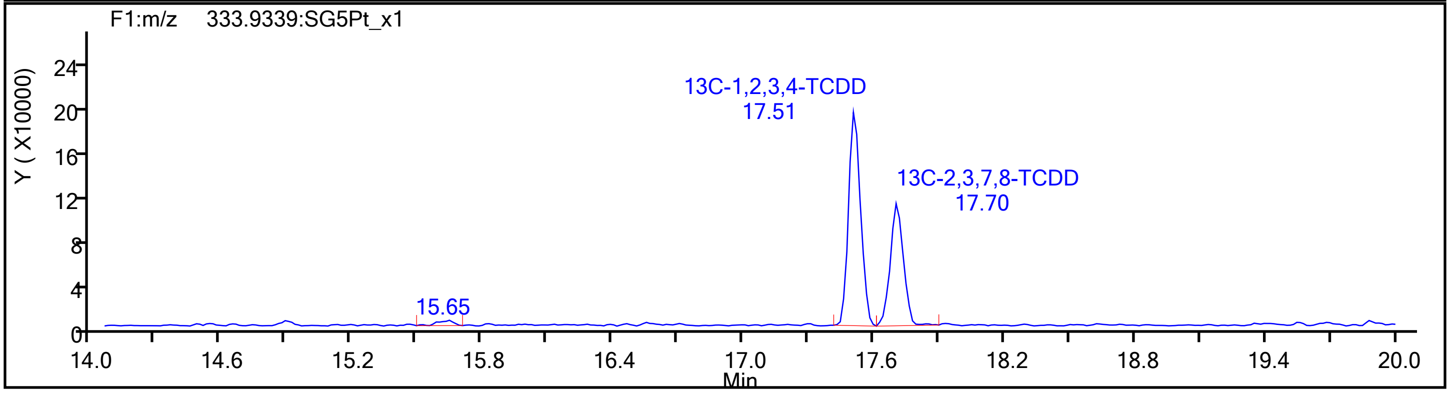

Report Date: 18-Mar-2021 15:41:19
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d
Injection Date: 17-Mar-2021 18:44:02
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-100mm
Worklist#: 471421
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

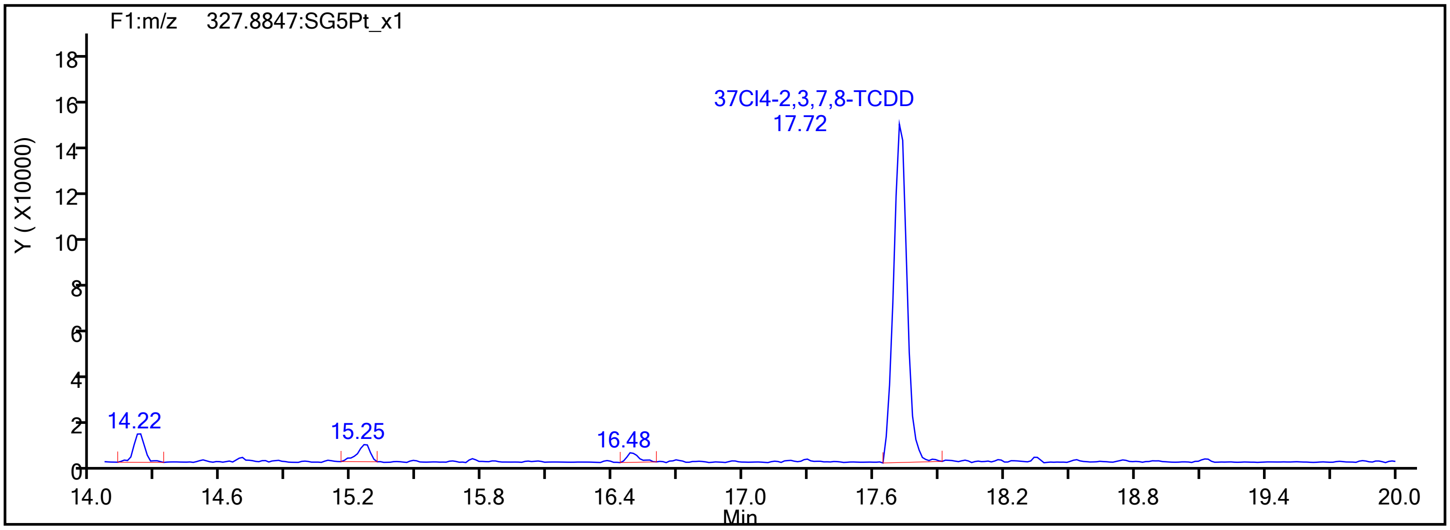

37Cl4-TCDD Standards

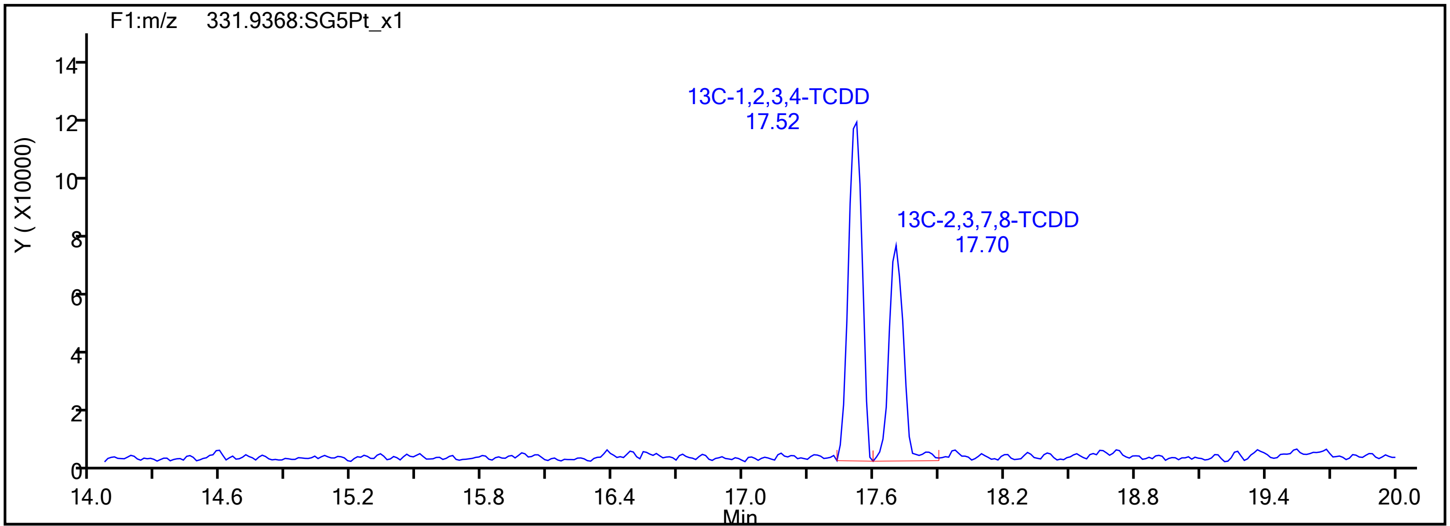

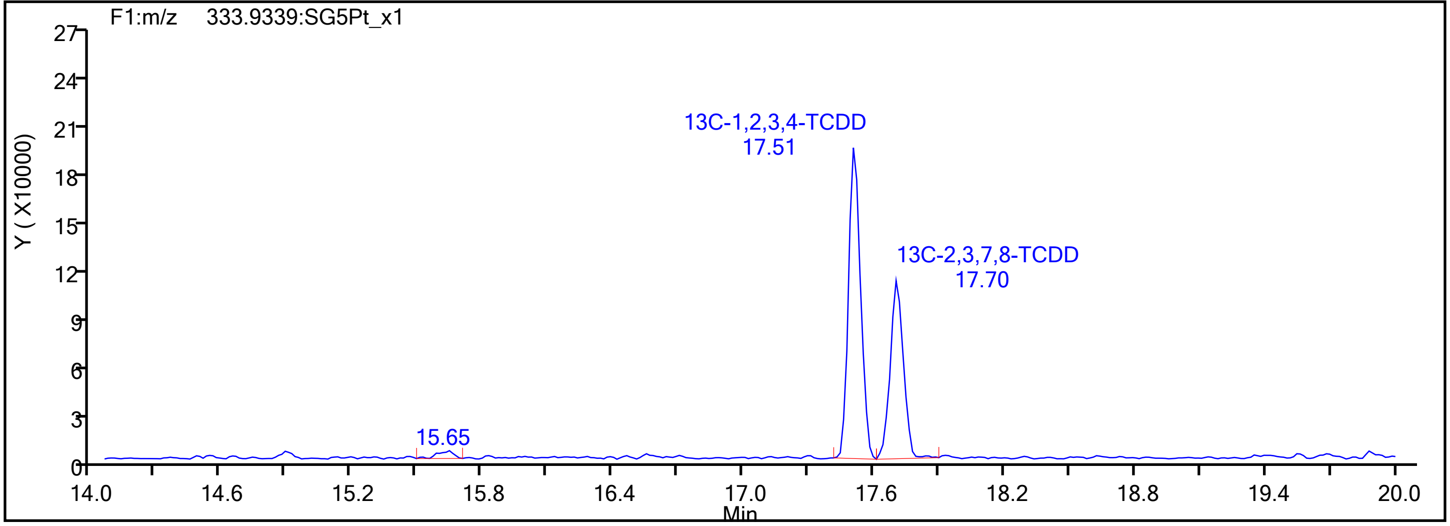

Report Date: 18-Mar-2021 15:41:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Injection Date:	17-Mar-2021 18:44:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	471421	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

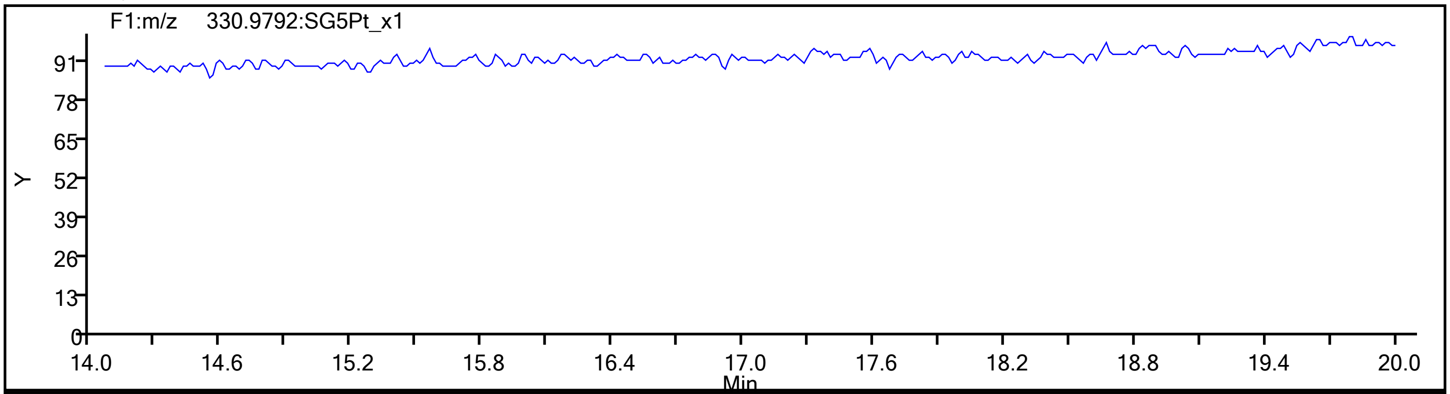

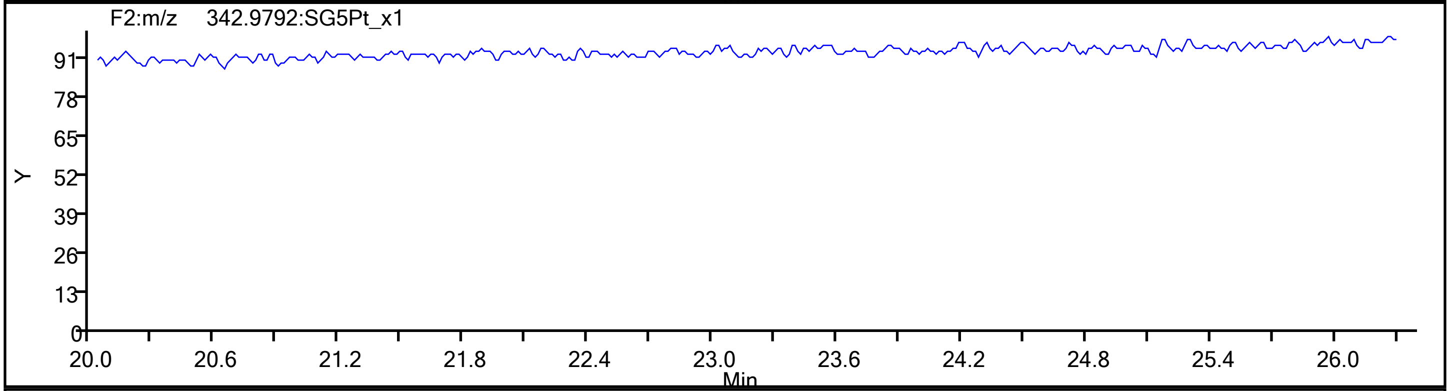

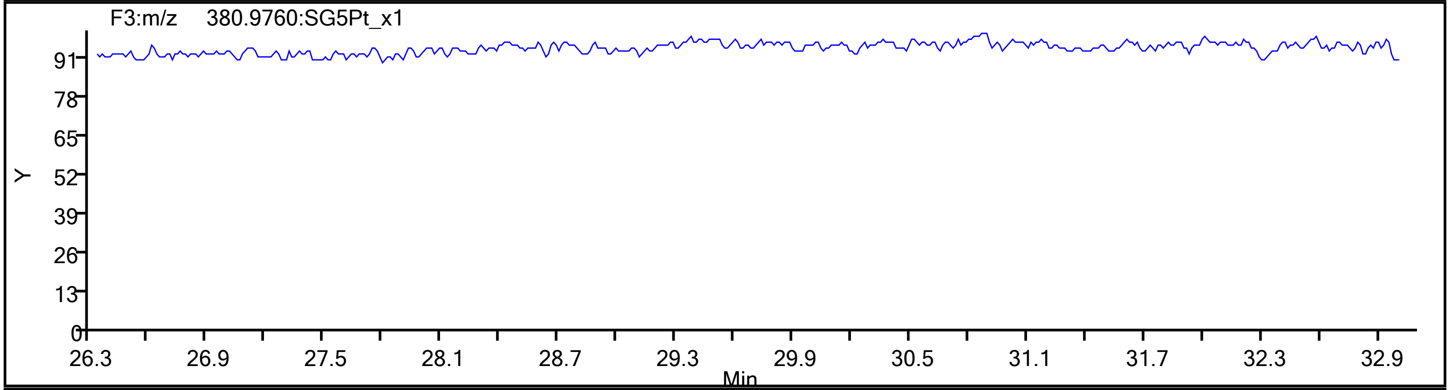

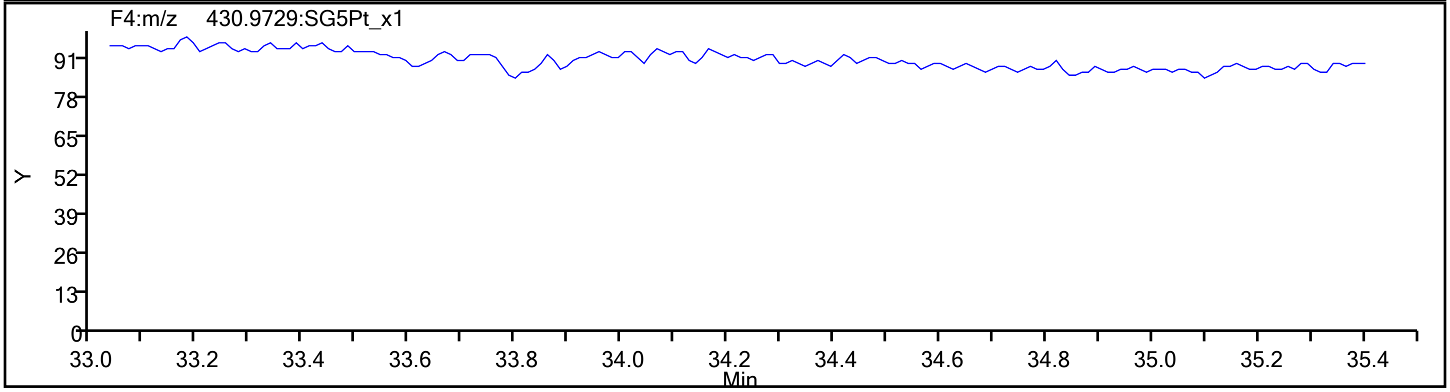

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_12.d		
Injection Date:	17-Mar-2021 18:44:02	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-100mm		
Worklist#:	471421	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

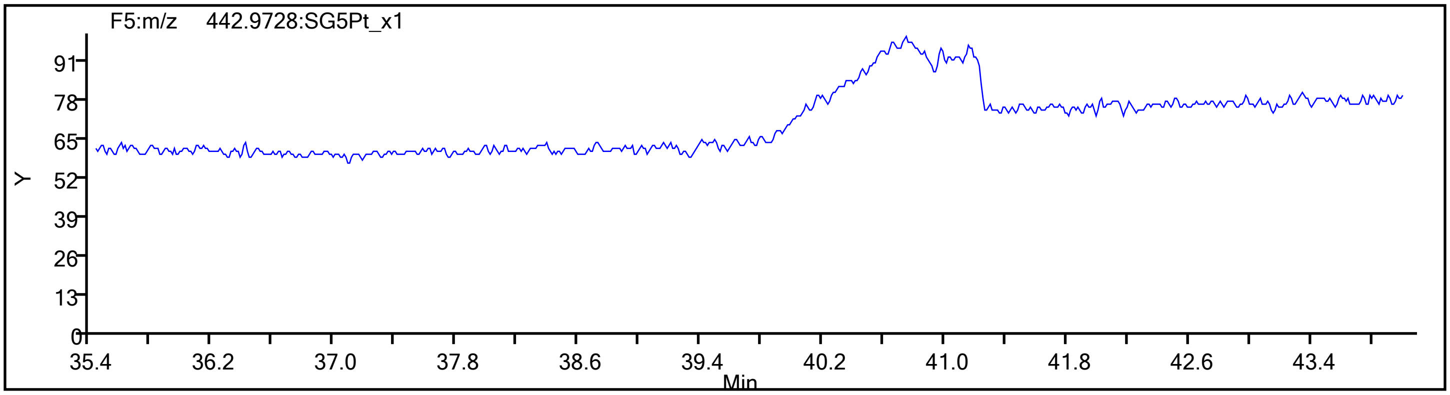

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-41mm	Lab Sample ID: 320-70797-2
Matrix: Water	Lab File ID: 10mr21dfs1_10.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1036.3(mL)	Date Analyzed: 03/10/2021 15:13
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	70		48	1.1
57117-41-6	1,2,3,7,8-PeCDF	860		48	6.8
57117-31-4	2,3,4,7,8-PeCDF	490		48	7.5
39227-28-6	1,2,3,4,7,8-HxCDD	3.8	J	48	0.83
57653-85-7	1,2,3,6,7,8-HxCDD	13	J	48	0.81
19408-74-3	1,2,3,7,8,9-HxCDD	7.1	J	48	0.75
70648-26-9	1,2,3,4,7,8-HxCDF	1900	B	48	4.9
57117-44-9	1,2,3,6,7,8-HxCDF	490	B	48	4.6
72918-21-9	1,2,3,7,8,9-HxCDF	26	J B	48	3.8
60851-34-5	2,3,4,6,7,8-HxCDF	47	J B	48	4.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	560	B	48	2.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	620	B	48	1.6
55673-89-7	1,2,3,4,7,8,9-HpCDF	230	B	48	1.6
3268-87-9	OCDD	9000	B	96	5.2
39001-02-0	OCDF	320	B	96	0.75
36088-22-9	Total PeCDD	82	q	48	1.1
30402-15-4	Total PeCDF	2100		48	7.2
34465-46-8	Total HxCDD	110		48	0.80
55684-94-1	Total HxCDF	2800	B	48	4.4
37871-00-4	Total HpCDD	1100	B	48	2.0
38998-75-3	Total HpCDF	1100	B	48	1.6

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank1-41mm
Lab Sample ID: 320-70797-2
Matrix: Water
Lab File ID: 10mr21dfs1_10.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1036.3(mL)
Date Analyzed: 03/10/2021 15:13
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
109719-79-1	13C-1,2,3,7,8-PeCDD	63		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	61		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	61		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	63		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	66		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	68		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	65		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	67		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	71		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	68		26-138
114423-97-1	13C-OCDD	67		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Report Date: 12-Mar-2021 07:53:41   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Sample Type: Client
Inject. Date: 10-Mar-2021 15:13:00   ALS Bottle#: 0   Worklist Smp#: 9
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: 320-70797-a-2-a
Operator ID: Xcalibur_System   Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 07:53:41   Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: bilottag   Date: 11-Mar-2021 12:51:21

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.526	3893176	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.649	4004755	0.80	1.5437	66.6	66.6	0.2211	0.2211	66.64	
2,3,7,8-TCDF	18.667	45129643	0.78	1.1258	1001.0	1001.0	3.713	3.713		EM
A Non-2,3,7,8-sub-TCDF	18.182	32050600	0.77	1.1258	714.6	710.9	3.713	435.2		RQMa
S Total TCDF					1715.6	1711.9	3.713	3.713		RQ
D 13C-2,3,7,8-TCDD	19.861	2523487	0.82	0.9687	66.9	66.9	0.2699	0.2699	66.91	
2,3,7,8-TCDD	19.895	10818372	0.80	1.1904	360.1	360.1	0.5214	0.5214		E
$ 37Cl4-2,3,7,8-TCDD	19.895	1708198		1.0841	40.5	40.5	0.0598	0.0598	101	
A Non-2,3,7,8-sub-TCDD	18.946	1022805	0.78	1.1904	34.0	34.0	0.5214	29.3		
S Total TCDD					394.2	394.2	0.5214	0.5214		
D 13C-1,2,3,7,8-PeCDF	25.687	3135763	1.60	1.3124	61.4	61.4	0.2124	0.2124	61.37	
1,2,3,7,8-PeCDF	25.713	1562044	1.57	1.1163	44.6	44.6	0.3519	0.3519		M
D 13C-2,3,4,7,8-PeCDF	27.069	3196455	1.62	1.3352	61.5	61.5	0.2087	0.2087	61.49	
2,3,4,7,8-PeCDF	27.094	862385	1.60	1.0579	25.5	25.5	0.3892	0.3892		
A F1 PeCDFs	22.838	8201	1.61	1.0871	0.2383	0.2383	0.0123	0.2383		M
A Non-2,3,7,8-sub-PeCDF	26.271	1375648	1.56	1.0871	40.0	40.0	0.3698	16.3		M
S Total PeCDF					110.3	110.3	0.3705	0.3705		
D 13C-1,2,3,7,8-PeCDD	27.819	1899983	1.62	0.7716	63.3	63.3	0.1019	0.1019	63.25	
1,2,3,7,8-PeCDD	27.852	78472	1.60	1.1372	3.632	3.632	0.0561	0.0561		M
A Non-2,3,7,8-sub-PeCDD	26.681	12813	1.55	1.1372	0.8341	0.5930	0.0561	0.3609		RQ
S Total PeCDD					4.466	4.225	0.0561	0.0561		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.569	2552376	0.54	1.0931	66.3	66.3	0.1195	0.1195	66.30	
1,2,3,4,7,8-HxCDF	33.594	3035746	1.22	1.1831	100.5	100.5	0.2562	0.2562		
D 13C-1,2,3,6,7,8-HxCDF	33.779	2711800	0.53	1.1278	68.3	68.3	0.1158	0.1158	68.27	
1,2,3,6,7,8-HxCDF	33.796	862731	1.29	1.2484	25.5	25.5	0.2409	0.2409		
D 13C-2,3,4,6,7,8-HxCDF	34.765	2474326	0.52	1.0552	66.6	66.6	0.1238	0.1238	66.58	
2,3,4,6,7,8-HxCDF	34.781	76453	1.35	1.2750	2.423	2.423	0.2132	0.2132		
D 13C-1,2,3,7,8,9-HxCDF	35.776	2291898	0.53	0.9938	65.5	65.5	0.1314	0.1314	65.48	
1,2,3,7,8,9-HxCDF	35.793	39556	1.10	1.2953	1.332	1.332	0.1982	0.1982		Ma
A Non-2,3,7,8-sub-HxCDF	33.585	502351	1.24	1.2505	16.0	16.0	0.2253	5.687		Ma
S Total HxCDF					145.8	145.8	0.2271	0.2271		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.574	3521947	1.28	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.018	1740199	1.27	0.7895	62.6	62.6	0.1152	0.1152	62.58	
1,2,3,4,7,8-HxCDD	35.043	3703	1.32	1.0950	0.1943	0.1943	0.0430	0.0430		
D 13C-1,2,3,6,7,8-HxCDD	35.152	2031141	1.30	0.8495	67.9	67.9	0.1071	0.1071	67.89	
1,2,3,6,7,8-HxCDD	35.169	14014	1.21	1.0201	0.6763	0.6763	0.0419	0.0419		
1,2,3,7,8,9-HxCDD	35.599	7960	1.23	1.1549	0.3655	0.3655	0.0388	0.0388		
A Non-2,3,7,8-sub-HxCDD	34.125	88242	1.24	1.0900	4.293	4.293	0.0411	2.409		M
S Total HxCDD					5.529	5.529	0.0412	0.0412		
D 13C-1,2,3,4,6,7,8-HpCDF	37.810	1844478	0.47	0.7854	66.7	66.7	0.2192	0.2192	66.68	
1,2,3,4,6,7,8-HpCDF	37.827	884705	1.02	1.4859	32.3	32.3	0.0833	0.0833		
D 13C-1,2,3,4,7,8,9-HpCDF	39.158	1736388	0.46	0.7230	68.2	68.2	0.2381	0.2381	68.19	
1,2,3,4,7,8,9-HpCDF	39.166	294893	1.05	1.4048	12.1	12.1	0.0839	0.0839		
A Non-2,3,7,8-sub-HpCDF	38.512	277656	1.06	1.4453	10.7	10.7	0.0836	10.7		
S Total HpCDF					55.1	55.1	0.0836	0.0836		
D 13C-1,2,3,4,6,7,8-HpCDD	38.846	1593780	1.09	0.6413	70.6	70.6	0.1334	0.1334	70.56	
1,2,3,4,6,7,8-HpCDD	38.855	532560	1.06	1.1489	29.1	29.1	0.1022	0.1022		
A Non-2,3,7,8-sub-HpCDD	38.524	520642	1.04	1.1489	28.4	28.4	0.1022	28.4		
S Total HpCDD					57.5	57.5	0.1022	0.1022		
D 13C-OCDD	41.317	2413447	0.89	0.5141	133.3	133.3	0.1185	0.1185	66.65	
OCDF	41.392	319517	0.90	1.5776	16.8	16.8	0.0386	0.0386		
OCDD	41.325	6598977	0.89	1.1706	467.2	467.2	0.2676	0.2676		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Sample Type: Client
Inject. Date: 10-Mar-2021 15:13:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-2-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 07:53:41 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: bilottag Date: 11-Mar-2021 12:51:21

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.526	19.547	-1		1744390	280095	349	872	803		
333.9338	19.526	19.547	-1		2148786	339560	299	747	1136	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.649	18.671	-1	0.955	1775494	314788	513	1282	614		
317.9389	18.641	18.671	-2	0.955	2229261	388578	333	832	1167	0.80(0.65-0.89)	
2,3,7,8-TCDF											EM
303.9016	18.667	18.706	-2	1.001	19729507	3284691	2589	6472	1269		
305.8987	18.675	18.706	-2	1.001	25400136	4246840	9172	22930	463	0.78(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	15.985	18.182	-132	0.000			2589	6472			
305.8987	15.987	18.182	-131	0.000	131540	28315	9172	22930		0.00(0.65-0.89)	M
303.9016	16.400	18.182	-107	0.879	376678	71270	2589	6472	28		
305.8987	16.400	18.182	-107	0.879	426807	87314	9172	22930	10	0.88(0.65-0.89)	
303.9016	16.838	18.182	-81	0.903	649591	94168	2589	6472	36		
305.8987	16.838	18.182	-81	0.903	799626	119431	9172	22930	13	0.81(0.65-0.89)	
303.9016	17.224	18.182	-57	0.924	650504	94691	2589	6472	37		
305.8987	17.224	18.182	-57	0.924	781767	117914	9172	22930	13	0.83(0.65-0.89)	
303.9016	17.568	18.182	-37	0.942	926032	156654	2589	6472	61		
	Empc Correction				758846	148812	2589	6472	57		
305.8987	17.568	18.182	-37	0.942	985515	193263	9172	22930	21	0.94(0.65-0.89)	
303.9016	18.014	18.182	-10	0.966	8580909	1464380	2589	6472	566		
305.8987	18.014	18.182	-10	0.966	11039143	1861180	9172	22930	203	0.78(0.65-0.89)	
303.9016	18.375	18.182	12	0.985	367162	53627	2589	6472	21		M
305.8987	18.375	18.182	12	0.985	410995	68207	9172	22930	7	0.89(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.371	18.182	71	1.039	1332886	216918	2589	6472	84		
305.8987	19.371	18.182	71	1.039	1635250	278325	9172	22930	30	0.82(0.65-0.89)	
303.9016	21.656	18.182	208	1.161	1382161	208442	2589	6472	81		a
305.8987	21.656	18.182	208	1.161	1741220	264436	9172	22930	29	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.861	19.882	-1	1.017	1133688	188677	349	872	541		
333.9338	19.861	19.882	-1	1.017	1389799	216037	299	747	723	0.82(0.65-0.89)	
2,3,7,8-TCDD											E
319.8965	19.895	19.908	-1	1.002	4795937	748022	545	1362	1373		
321.8936	19.895	19.908	-1	1.002	6022435	935311	460	1150	2033	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.895	19.917	-1	1.019	1708198	266674	161	402	1656		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.057	18.946	-53	0.909	15495	2260	545	1362	4		
321.8936	18.031	18.946	-55	0.908	17987	3056	460	1150	7	0.86(0.65-0.89)	
319.8965	19.715	18.946	46	0.993	48537	8987	545	1362	16		
321.8936	19.715	18.946	46	0.993	60548	11032	460	1150	24	0.80(0.65-0.89)	
319.8965	20.488	18.946	92	1.032	384670	54579	545	1362	100		
321.8936	20.488	18.946	92	1.032	495568	68705	460	1150	149	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.687	25.717	-2	1.316	1928277	336986	388	970	869		
353.8970	25.687	25.717	-2	1.316	1207486	213432	303	757	704	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.713	25.734	-1	1.001	955314	162679	502	1255	324		M
341.8567	25.713	25.734	-1	1.001	606730	104188	363	907	287	1.57(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.069	27.107	-2	1.386	1975795	323253	388	970	833		
353.8970	27.069	27.107	-2	1.386	1220660	201838	303	757	666	1.62(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.094	27.124	-2	1.001	530624	87969	502	1255	175		
341.8567	27.094	27.124	-2	1.001	331761	54890	363	907	151	1.60(1.32-1.78)	
A F1 PeCDFs											M
339.8597	22.309	22.838	-32	0.868	5060	811	6	15	135		M
341.8567	22.343	22.838	-30	0.870	3141	507	23	57	22	1.61(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDF											M
339.8597	24.356	26.271	-115	0.948	340934	65561	502	1255	131		M
341.8567	24.356	26.271	-115	0.948	219289	42042	363	907	116	1.55(1.32-1.78)	M
339.8597	25.190	26.271	-65	0.981	30041	5180	502	1255	10		
341.8567	25.190	26.271	-65	0.981	17554	3233	363	907	9	1.71(1.32-1.78)	
339.8597	25.586	26.271	-41	0.996	54382	13185	502	1255	26		
341.8567	25.578	26.271	-42	0.996	36402	8504	363	907	23	1.49(1.32-1.78)	
339.8597	26.243	26.271	-2	1.022	236208	42363	502	1255	84		
341.8567	26.243	26.271	-2	1.022	151036	26036	363	907	72	1.56(1.32-1.78)	
339.8597	27.389	26.271	67	1.066	146836	20682	502	1255	41		
341.8567	27.389	26.271	67	1.066	95149	13738	363	907	38	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	28.948	26.271	160	1.127	29784	4643	502	1255	9		
341.8567	28.956	26.271	161	1.127	18033	3195	363	907	9	1.65(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.819	27.857	-2	1.425	1174077	179167	110	275	1629		
369.8919	27.819	27.857	-2	1.425	725906	110806	85	212	1304	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	27.852	27.883	-2	1.001	48275	7646	42	105	182		M
357.8516	27.835	27.883	-3	1.001	30197	4890	32	80	153	1.60(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	24.617	26.681	-124	0.885	3049	504	42	105	12		
357.8516	24.660	26.681	-121	0.886	7175	1170	32	80	37	0.42(1.32-1.78)	
	Empc Correction				1967	325	32	80	10		
355.8546	25.847	26.681	-50	0.929	4721	872	42	105	21		
357.8516	25.814	26.681	-52	0.928	3076	546	32	80	17	1.53(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.569	33.620	-3	0.944	890721	142993	133	332	1075		
385.8610	33.569	33.620	-3	0.944	1661655	269410	253	632	1065	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.594	33.646	-3	1.001	1667793	277990	217	542	1281		
375.8178	33.594	33.646	-3	1.001	1367953	227347	283	707	803	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.779	33.822	-3	0.950	934018	145985	133	332	1098		
385.8610	33.771	33.822	-3	0.949	1777782	269744	253	632	1066	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.796	33.839	-3	1.000	486497	69717	217	542	321		
375.8178	33.788	33.839	-3	1.000	376234	55997	283	707	198	1.29(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.765	34.808	-3	0.977	851160	160102	133	332	1204		
385.8610	34.765	34.808	-3	0.977	1623166	299770	253	632	1185	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.781	34.825	-3	1.000	43972	8247	217	542	38		
375.8178	34.781	34.825	-3	1.000	32481	6500	283	707	23	1.35(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.776	35.827	-3	1.006	796996	168256	133	332	1265		
385.8610	35.776	35.827	-3	1.006	1494902	318531	253	632	1259	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	35.793	35.836	-3	1.000	20726	5687	217	542	26		M
375.8178	35.793	35.836	-3	1.000	18830	4675	283	707	17	1.10(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	31.631	33.585	-117	0.942	98709	12581	217	542	58		
375.8178	31.631	33.585	-117	0.942	79618	10852	283	707	38	1.24(1.05-1.43)	
373.8208	32.803	33.585	-47	0.977	61420	8576	217	542	40		
375.8178	32.803	33.585	-47	0.977	48511	7297	283	707	26	1.27(1.05-1.43)	
373.8208	34.621	33.585	62	1.031	26819	5342	217	542	25		M
375.8178	34.630	33.585	63	1.032	22585	4516	283	707	16	1.19(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
373.8208	35.911	33.585	139	1.070	91232	20484	217	542	94		M
375.8178	35.911	33.585	139	1.070	73457	16725	283	707	59	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.574	35.617	-3		1977531	416702	155	387	2688		
403.8529	35.574	35.617	-3		1544416	322233	114	285	2827	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.018	35.061	-3	0.984	974984	209531	155	387	1352		
403.8529	35.026	35.061	-2	0.985	765215	162270	114	285	1423	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.043	35.086	-3	1.001	2110	483	31	77	16		
391.8127	35.035	35.086	-3	1.000	1593	406	39	97	10	1.32(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.152	35.195	-3	0.988	1146527	233288	155	387	1505		
403.8529	35.152	35.195	-3	0.988	884614	176477	114	285	1548	1.30(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.169	35.212	-3	1.000	7664	1581	31	77	51		
391.8127	35.169	35.212	-3	1.000	6350	1281	39	97	33	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.599	35.633	-2	1.017	4387	870	31	77	28		
391.8127	35.599	35.633	-2	1.017	3573	605	39	97	16	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											M
389.8158	32.718	34.125	-84	0.931	27465	3886	31	77	125		
391.8127	32.718	34.125	-84	0.931	22039	3106	39	97	80	1.25(1.05-1.43)	
389.8158	34.116	34.125	-1	0.971	21412	3444	31	77	111		M
391.8127	34.116	34.125	-1	0.971	17326	2826	39	97	72	1.24(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.810	37.860	-3	1.063	586429	160793	205	512	784		
419.8220	37.810	37.860	-3	1.063	1258049	329412	304	760	1084	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.827	37.869	-3	1.000	447380	117119	125	312	937		
409.7788	37.827	37.869	-3	1.000	437325	113985	118	295	966	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.158	39.199	-2	1.101	548893	161457	205	512	788		
419.8220	39.158	39.199	-2	1.101	1187495	353564	304	760	1163	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.166	39.208	-2	1.000	151134	44862	125	312	359		
409.7788	39.166	39.208	-2	1.000	143759	43476	118	295	368	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.214	38.512	-18	1.011	143125	39473	125	312	316		
409.7788	38.214	38.512	-18	1.011	134531	38388	118	295	325	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.846	38.888	-2	1.092	832364	250161	141	352	1774		
437.8140	38.846	38.888	-2	1.092	761416	231208	112	280	2064	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.855	38.896	-2	1.000	274349	82711	126	315	656		
425.7737	38.855	38.896	-2	1.000	258211	77654	100	250	777	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.164	38.524	-22	0.982	264830	74309	126	315	590		
425.7737	38.164	38.524	-22	0.982	255812	70959	100	250	710	1.04(0.88-1.20)	
13C-OCDD											
469.7780	41.317	41.358	-2	1.161	1135967	356017	91	227	3912		
471.7750	41.317	41.358	-2	1.161	1277480	398802	89	222	4481	0.89(0.76-1.02)	
OCDF											
441.7428	41.392	41.434	-2	1.002	151145	44215	33	82	1340		
443.7399	41.392	41.434	-2	1.002	168372	49479	59	147	839	0.90(0.76-1.02)	
OCDD											
457.7377	41.325	41.367	-2	1.000	3115987	965415	225	562	4291		
459.7348	41.325	41.367	-2	1.000	3482990	1066819	248	620	4302	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Inject. Date: 10-Mar-2021 15:13:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 468973
Lims Sample ID: 9

Non-2,3,7,8-sub-TCDF, RT: 18.182

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	4004755	703366

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	4004755	703366

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.985	0	0	131540	28315	2.92	0.00	M
16.400	376678	71270	426807	87314	17.8	0.88	
16.838	649591	94168	799626	119431	32.1	0.81	
17.224	650504	94691	781767	117914	31.8	0.83	
17.568	926032	156654	985515	193263	42.4	0.94	RQ
17.568	758846	148812	985515	193263	38.7		Empc Correction
18.014	8580909	1464380	11039143	1861180	435.2	0.78	
18.375	367162	53627	410995	68207	17.3	0.89	Ma
19.371	1332886	216918	1635250	278325	65.8	0.82	
21.656	1382161	208442	1741220	264436	69.3	0.79	a
Signal Totals:	14098737	2352308	17951863	3018385			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	32217786	5378535				0.79	RQMa
	32050600	5370693					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 714.591 = (32217786 * 100.000) / (4004755 * 1.126)
Empc Amount: 710.883 = (32050600 * 100.000) / (4004755 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-TCDD, RT: 18.946

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2523487	404714

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2523487	404714

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.057	15495	2260	17987	3056	1.11	0.86	
19.715	48537	8987	60548	11032	3.63	0.80	
20.488	384670	54579	495568	68705	29.3	0.78	
Signal Totals:							
	448702	65826	574103	82793			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1022805	148619				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 34.049 = (1022805 * 100.000) / (2523487 * 1.190)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Inject. Date: 10-Mar-2021 15:13:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 9

F1 PeCDFs, RT: 22.838

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3135763	550418
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3196455	525091

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3166109	537754

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.309	5060	811	3141	507	0.2383	1.61	M
Signal Totals:							
	5060	811	3141	507			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8201	1318				1.61	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2383 = (8201 * 100.000) / (3166109 * 1.087)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-PeCDF, RT: 26.271

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3135763	550418
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3196455	525091

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3166109	537754

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.356	340934	65561	219289	42042	16.3	1.55	M
25.190	30041	5180	17554	3233	1.38	1.71	
25.586	54382	13185	36402	8504	2.64	1.49	
26.243	236208	42363	151036	26036	11.3	1.56	
27.389	146836	20682	95149	13738	7.03	1.54	
28.948	29784	4643	18033	3195	1.39	1.65	
Signal Totals:							
	838185	151614	537463	96748			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1375648	248362				1.56	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 39.968 = (1375648 * 100.000) / (3166109 * 1.087)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-PeCDD, RT: 26.681

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1899983	289973

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1899983	289973

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
24.617	3049	504	7175	1170	0.4732	0.42	RQ
24.617	3049	504	1967	325	0.2322		Empc Correction
25.847	4721	872	3076	546	0.3609	1.53	
Signal Totals:							
	7770	1376	5043	871			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18021	3092				0.76	RQ
	12813	2247					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.8341 = (18021 * 100.000) / (1899983 * 1.137)
Empc Amount: 0.5930 = (12813 * 100.000) / (1899983 * 1.137)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-HxCDF, RT: 33.585

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2552376	412403
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2711800	415729
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2474326	459872
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2291898	486787

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2507600	443697

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.631	98709	12581	79618	10852	5.69	1.24	
32.803	61420	8576	48511	7297	3.51	1.27	
34.621	26819	5342	22585	4516	1.58	1.19	Ma
35.911	91232	20484	73457	16725	5.25	1.24	Ma
Signal Totals:							
	278180	46983	224171	39390			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	502351	86373				1.24	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 16.021 = (502351 * 100.000) / (2507600 * 1.250)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-HxCDD, RT: 34.125

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1740199	371801
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2031141	409765
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	1885670	390783

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.718	27465	3886	22039	3106	2.41	1.25	
34.116	21412	3444	17326	2826	1.88	1.24	M
Signal Totals:							
	48877	7330	39365	5932			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	88242	13262				1.24	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.293 = (88242 * 100.000) / (1885670 * 1.090)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-HpCDF, RT: 38.512

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1844478	490205
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1736388	515021

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	1790433	502613

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.214	143125	39473	134531	38388	10.7	1.06	
Signal Totals:							
	143125	39473	134531	38388			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	277656	77861				1.06	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 10.730 = (277656 * 100.000) / (1790433 * 1.445)

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Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	10-Mar-2021 15:13:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	9

Non-2,3,7,8-sub-HpCDD, RT: 38.524

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1593780	481369

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1593780	481369

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.164	264830	74309	255812	70959	28.4	1.04	
Signal Totals:							
	264830	74309	255812	70959			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	520642	145268				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 28.432 = (520642 * 100.000) / (1593780 * 1.149)

Report Date: 12-Mar-2021 07:53:42

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	25.71
Area:	617788
Amount:	45.165945
Amount Units:	pg/ul

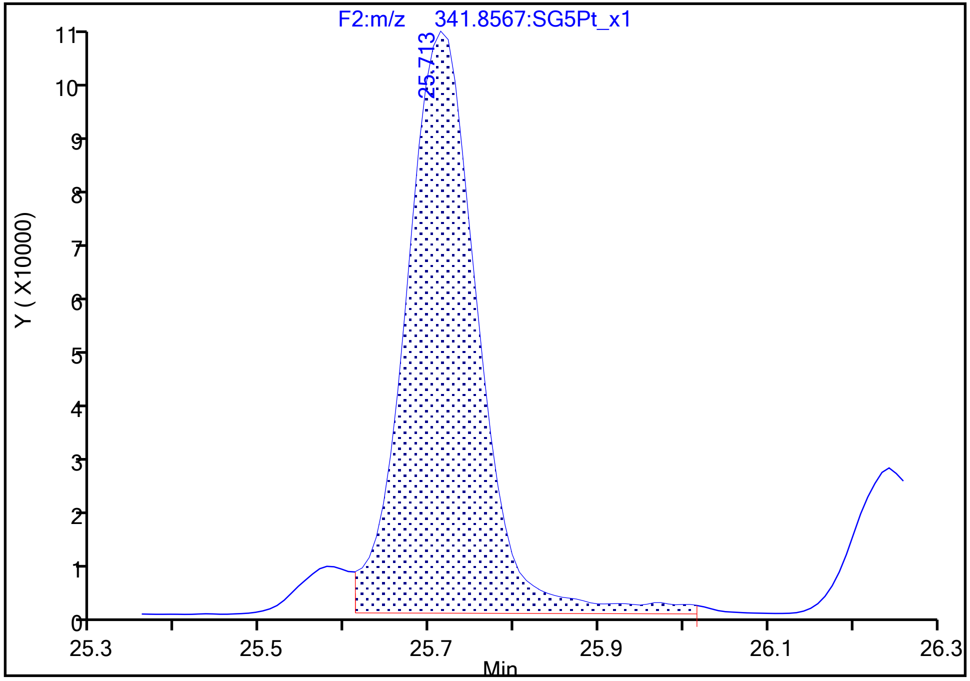

Manual Integration Results

RT:	25.71
Area:	606730
Amount:	44.625709
Amount Units:	pg/ul

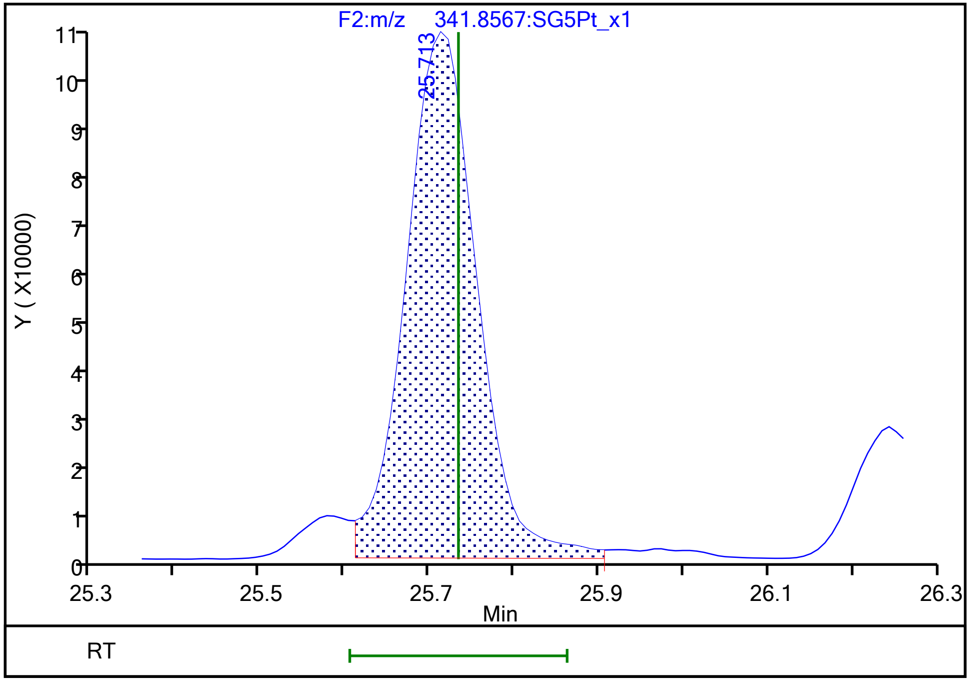

Reviewer: dadunj, 12-Mar-2021 09:12:44

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2
Client ID:	11215702-Tank1-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.71
Area:	963166
Amount:	45.165945
Amount Units:	pg/ul

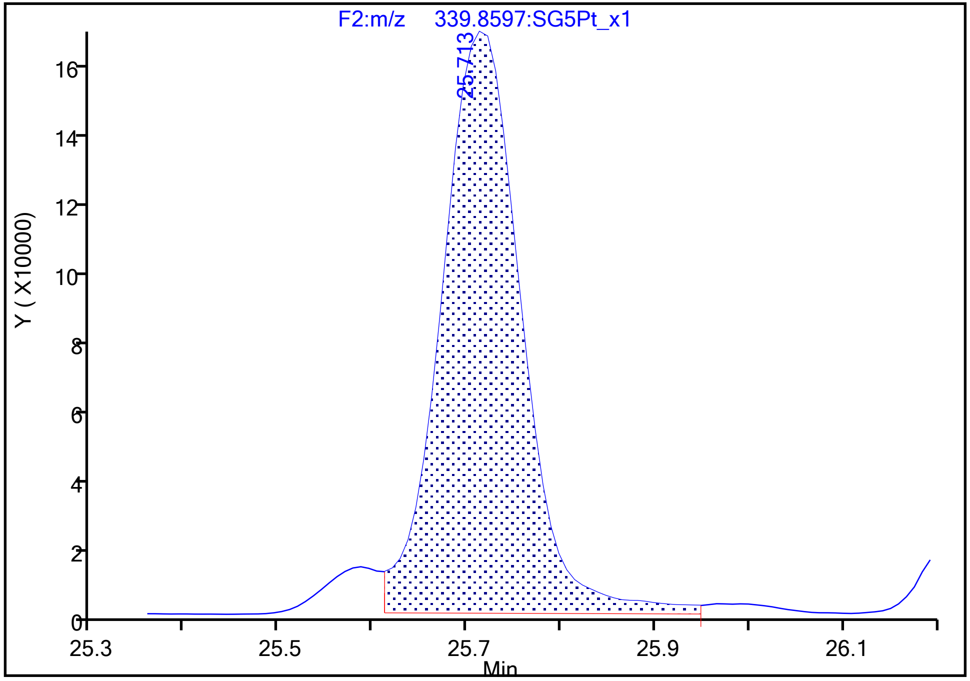

Manual Integration Results

RT:	25.71
Area:	955314
Amount:	44.625709
Amount Units:	pg/ul

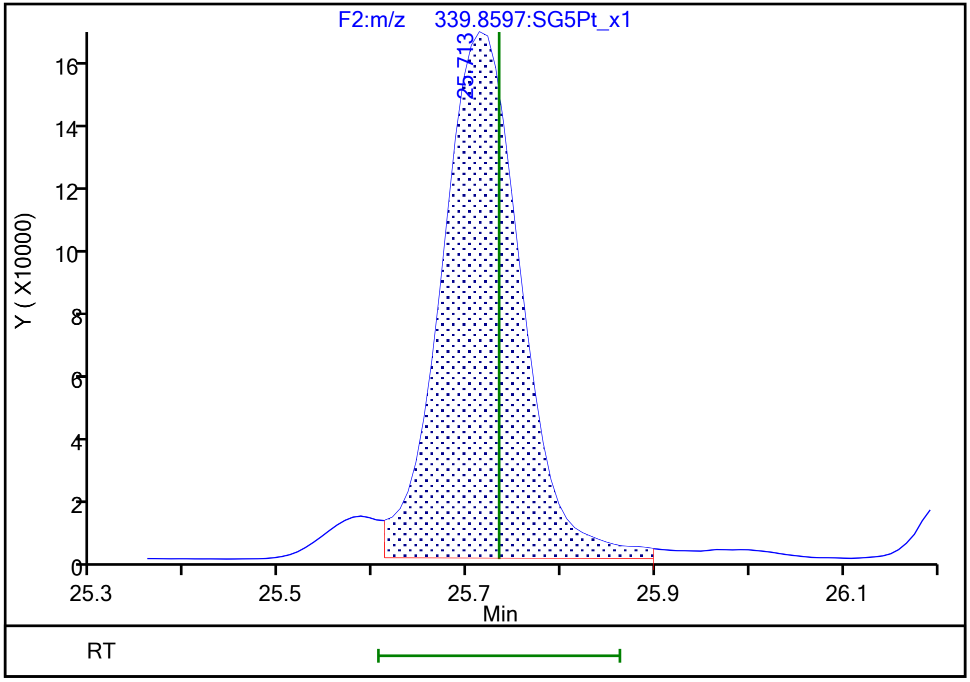

Reviewer: dadunj, 12-Mar-2021 09:12:46

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (22.18- 23.50)

Signal: 1

RT = 22.309 Area = 5225

Processing Integration Results

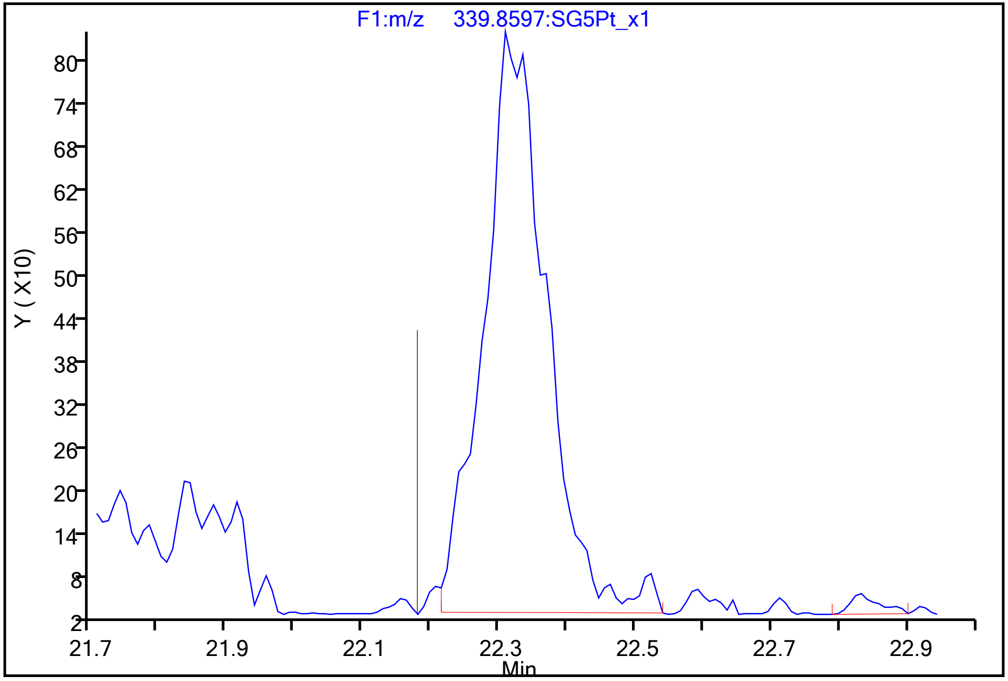

RT = 22.309 Area = 5060 M

Manual Integration Results

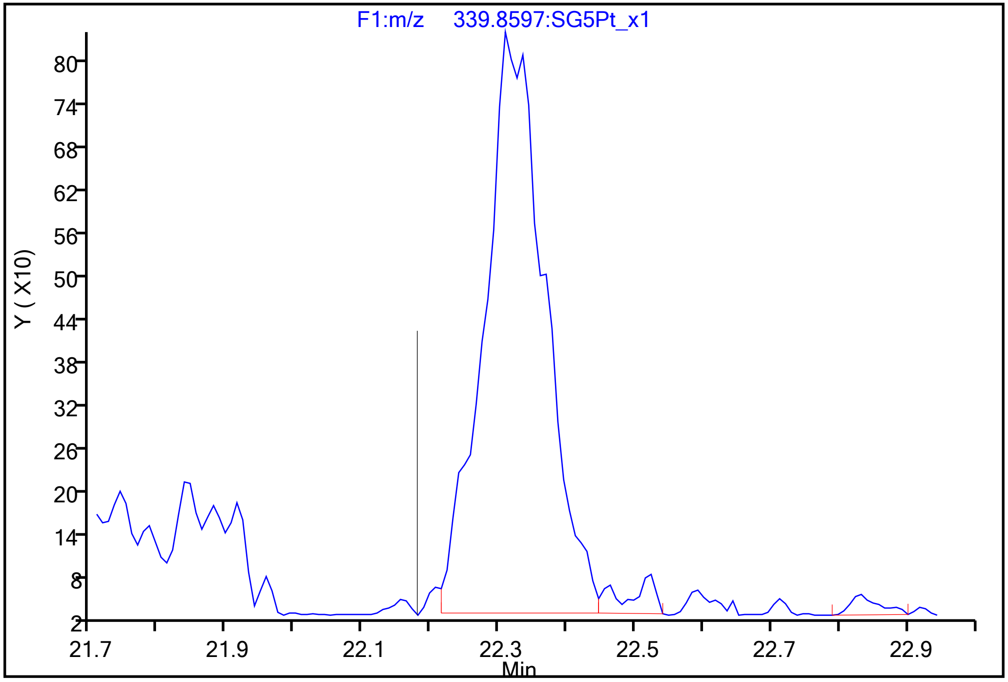

Reviewer: dadunj, 12-Mar-2021 09:12:55

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 2, m/z: 341.8567, RT: (22.18- 23.50)

Signal: 2

Processing Integration Results

RT = 22.343 Area = 3488

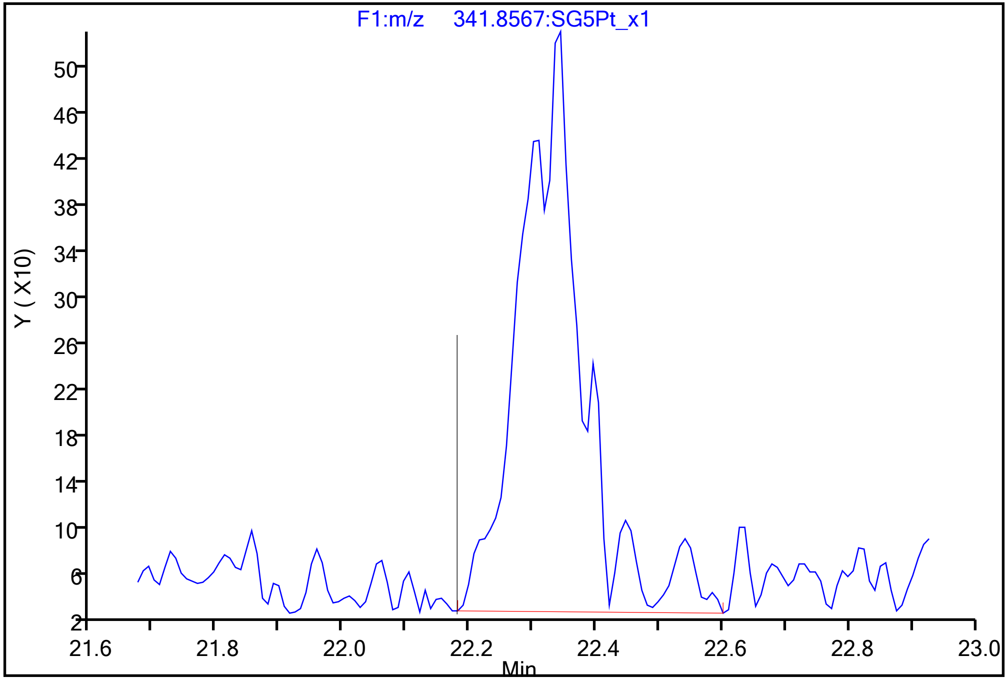

Manual Integration Results

RT = 22.343 Area = 3141 M

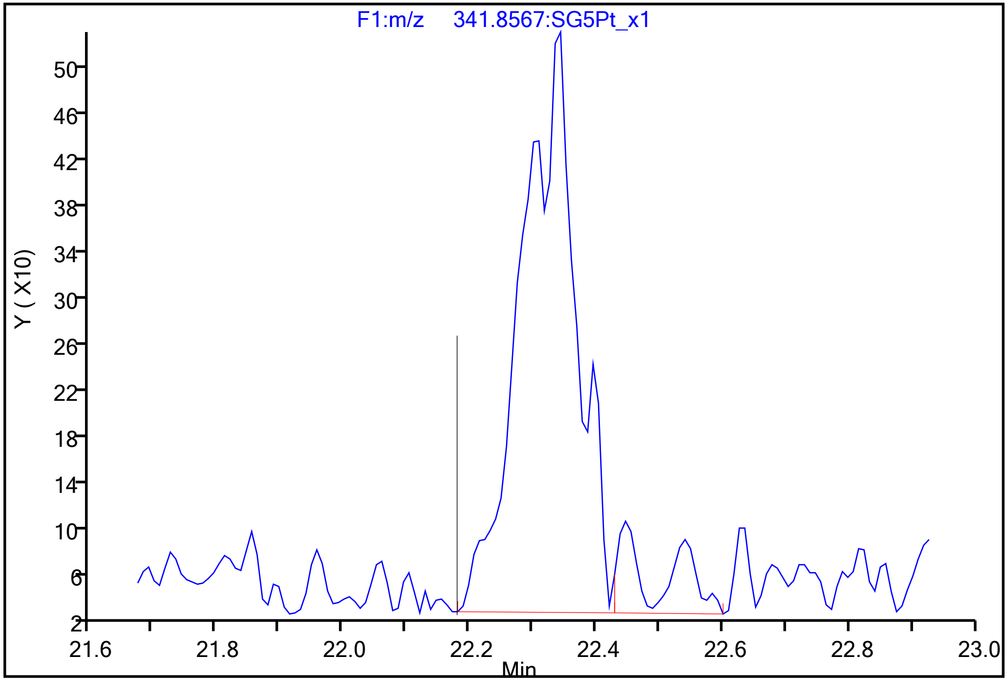

Reviewer: dadunj, 12-Mar-2021 09:12:54

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.58- 28.96)

Signal: 1

Processing Integration Results

RT = 24.356 Area = 350048

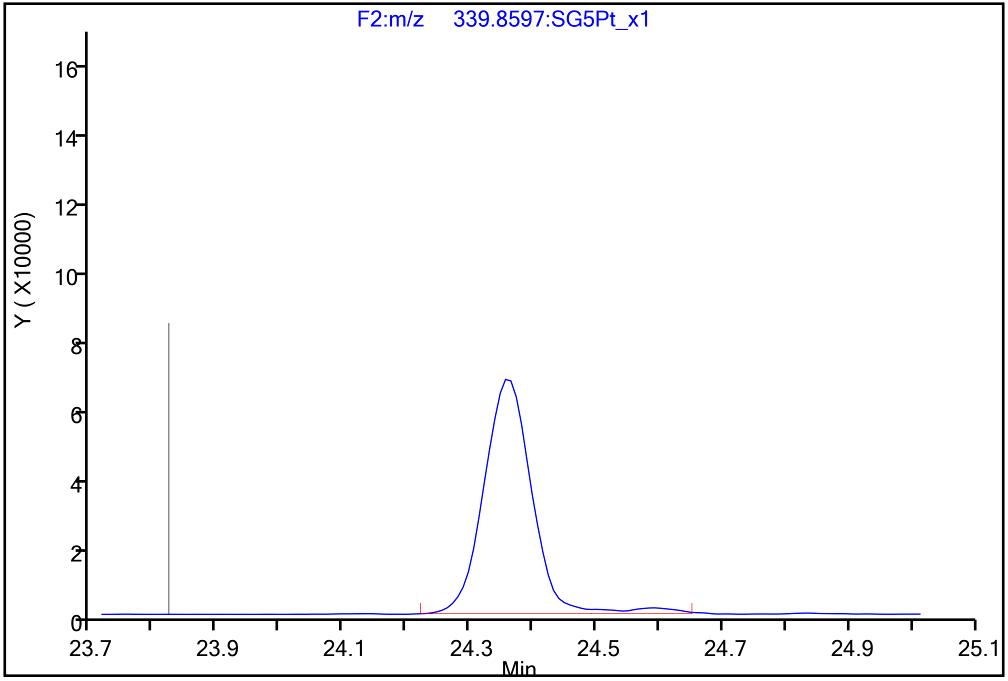

Manual Integration Results

RT = 24.356 Area = 340934 M

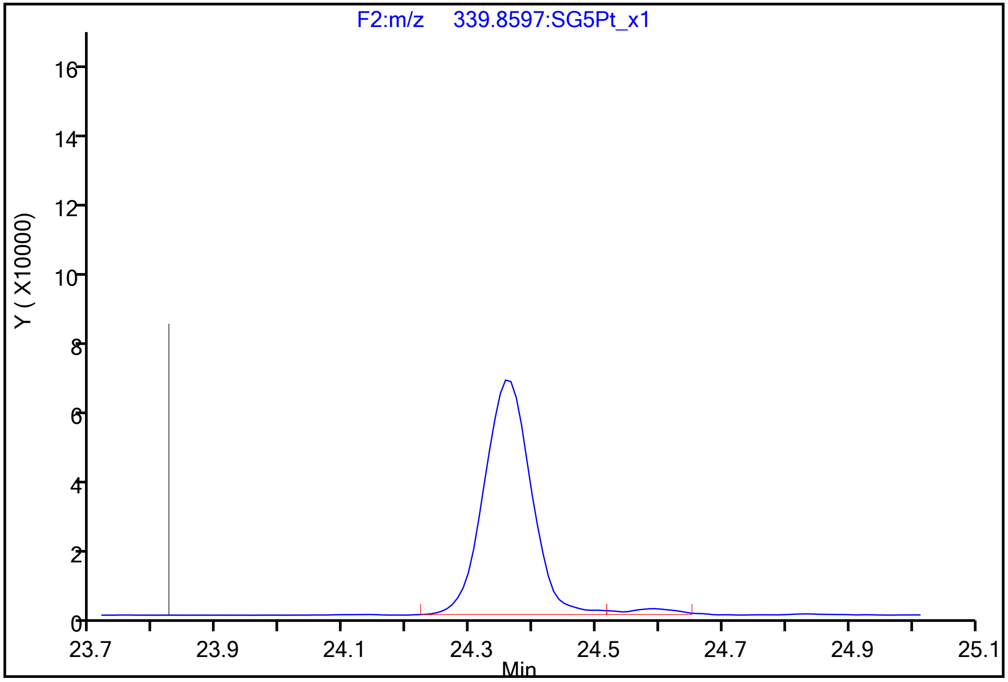

Reviewer: dadunj, 12-Mar-2021 09:13:06

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2
Client ID:	11215702-Tank1-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.58- 28.96)

Signal: 2

Processing Integration Results

RT = 24.356 Area = 225578

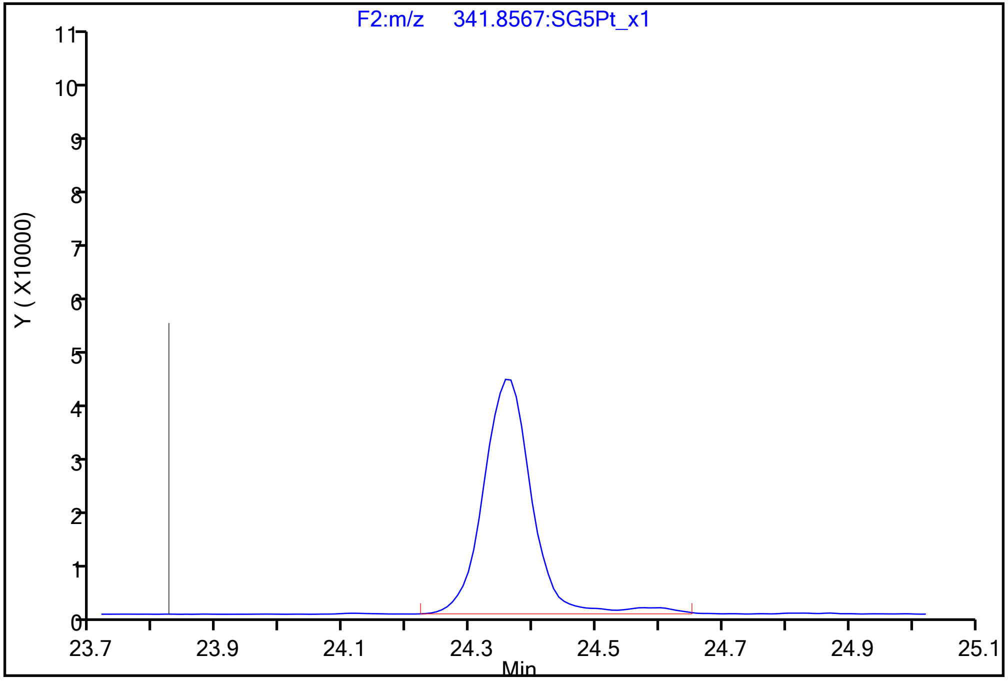

Manual Integration Results

RT = 24.356 Area = 219289 M

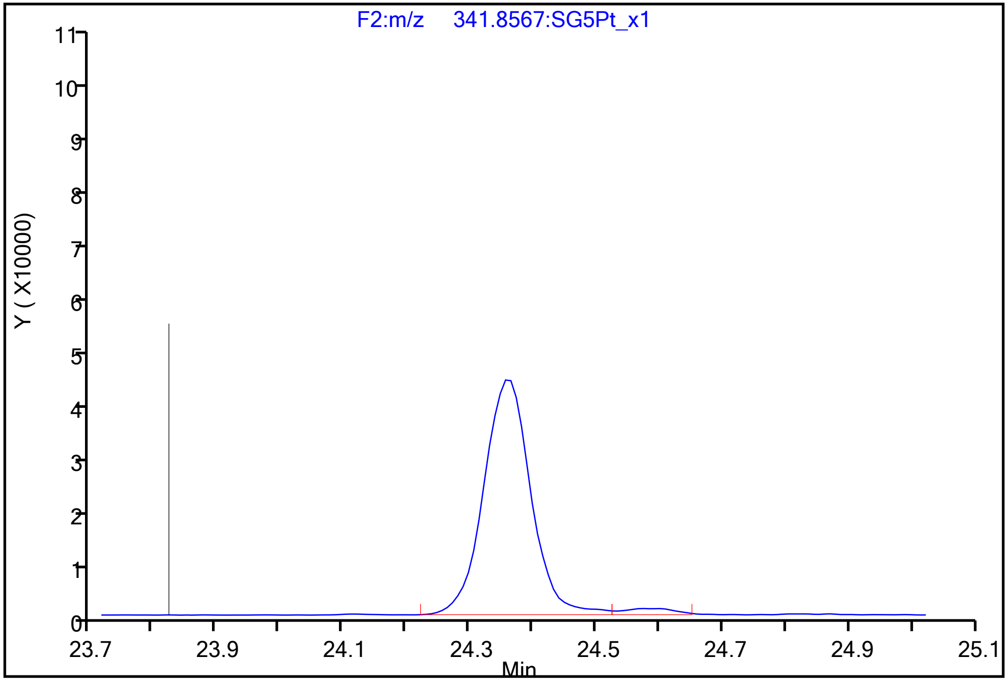

Reviewer: dadunj, 12-Mar-2021 09:13:15

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT:	27.85
Area:	47123
Amount:	3.578569
Amount Units:	pg/ul

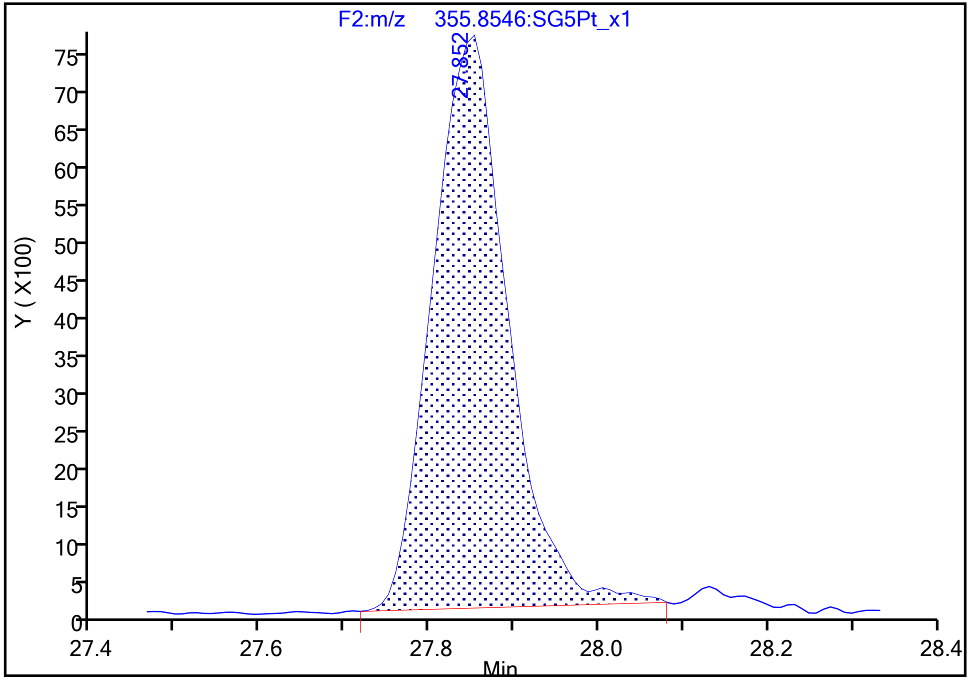

Manual Integration Results

RT:	27.85
Area:	48275
Amount:	3.631887
Amount Units:	pg/ul

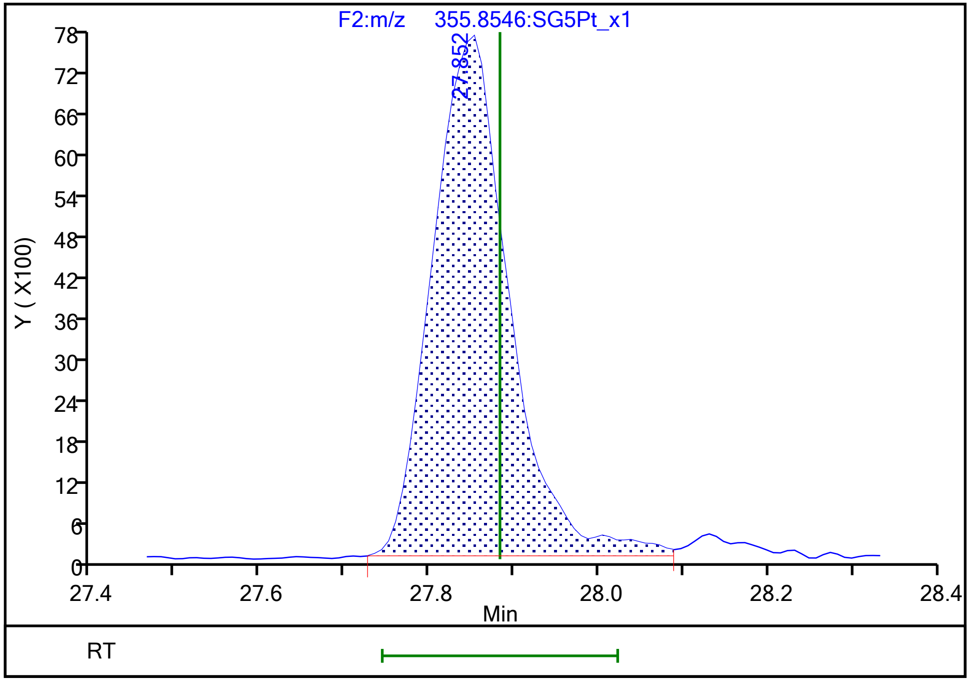

Reviewer: dadunj, 12-Mar-2021 09:13:44

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 12-Mar-2021 07:53:42   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d

Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT:	35.91
Area:	73457
Amount:	6.245685
Amount Units:	pg/ul

Processing Integration Results

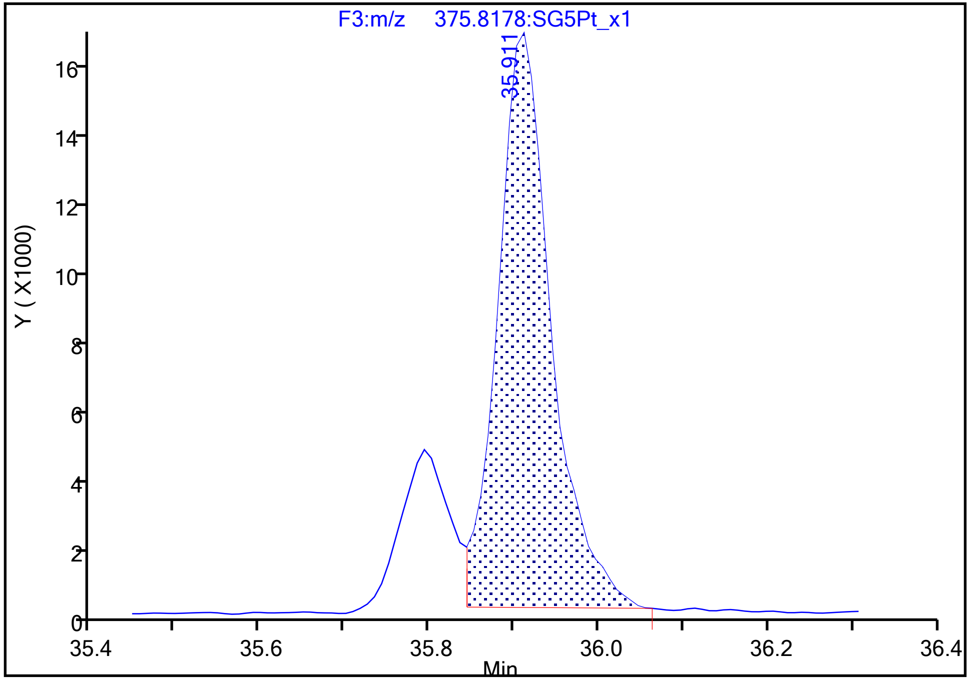

RT:	35.79
Area:	18830
Amount:	1.332440
Amount Units:	pg/ul

Manual Integration Results

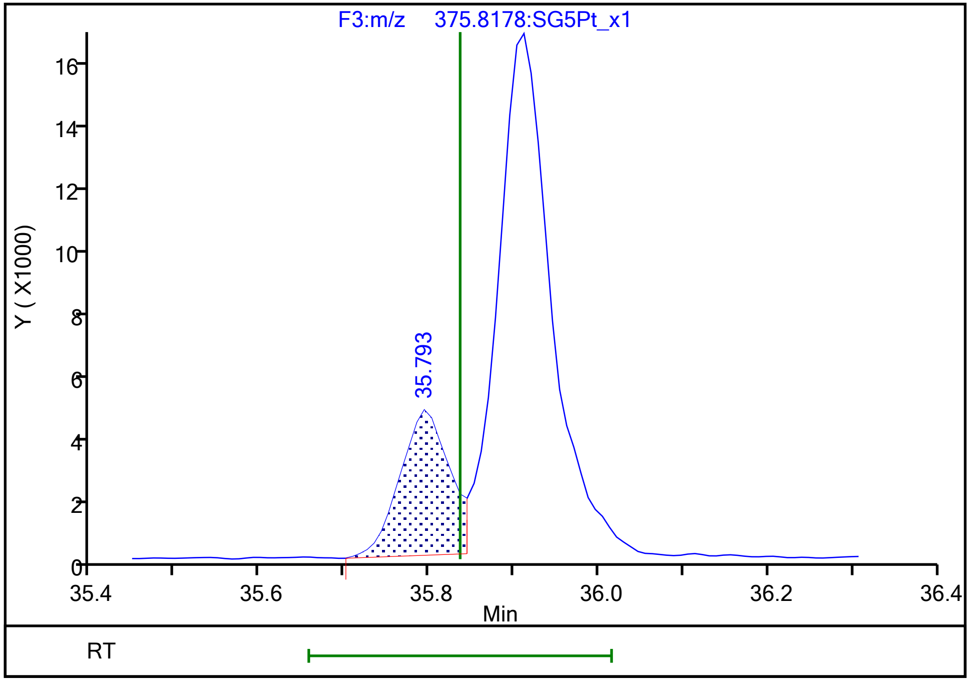

Reviewer: dadunj, 12-Mar-2021 09:14:26

Audit Action: Marked Compound Undetected   Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 3

Processing Integration Results

RT:	35.91
Area:	185415
Amount:	6.245685
Amount Units:	pg/ul

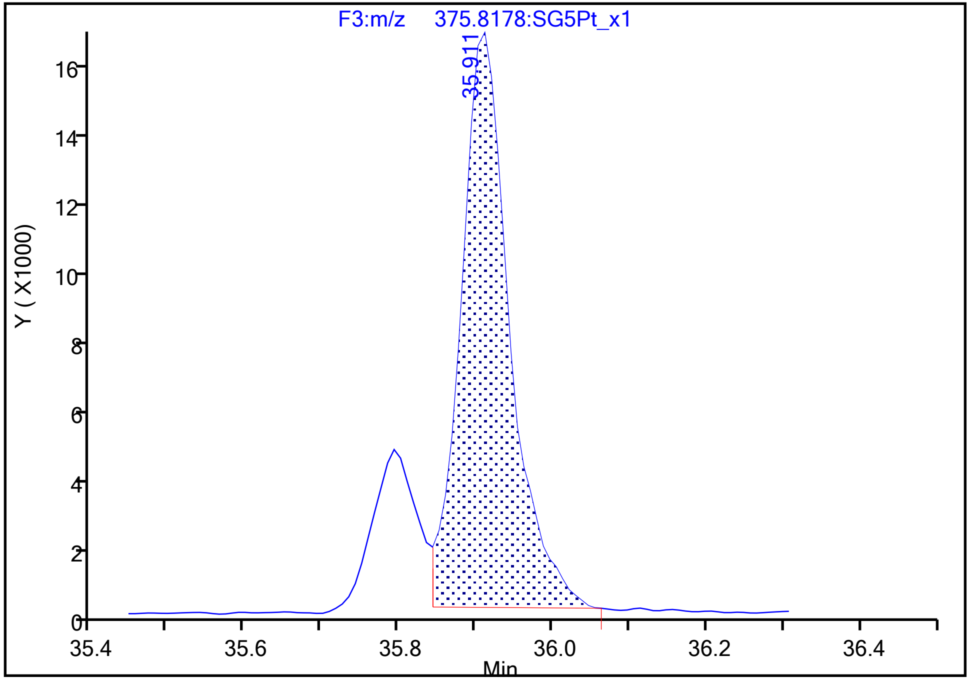

Manual Integration Results

RT:	35.79
Area:	39556
Amount:	1.332440
Amount Units:	pg/ul

Reviewer: dadunj, 12-Mar-2021 09:14:26

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2
Client ID:	11215702-Tank1-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	35.91
Area:	111958
Amount:	6.245685
Amount Units:	pg/ul

Processing Integration Results

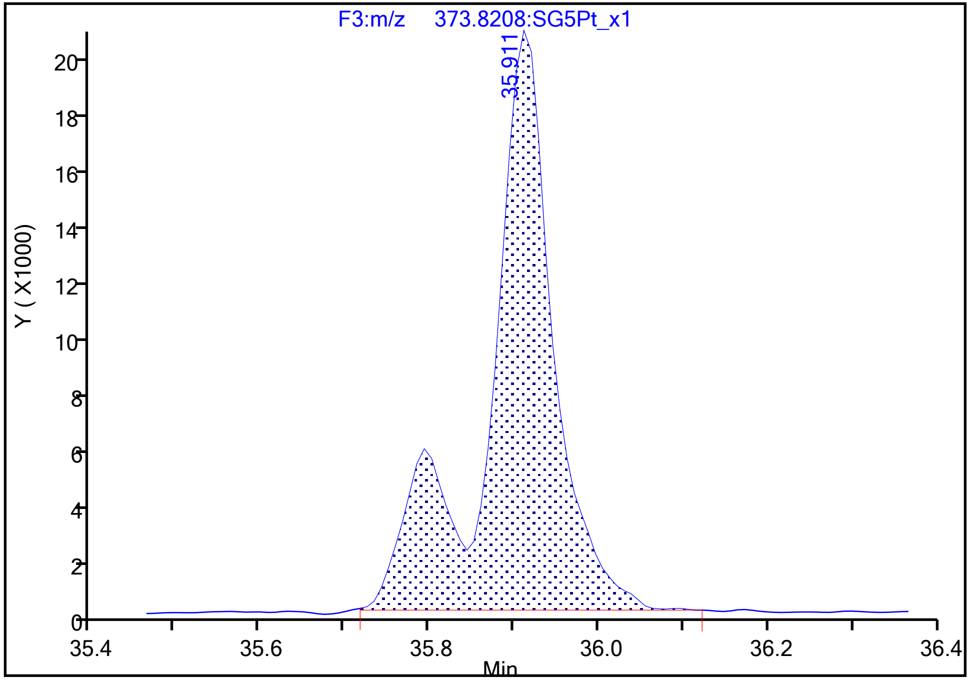

RT:	35.79
Area:	20726
Amount:	1.332440
Amount Units:	pg/ul

Manual Integration Results

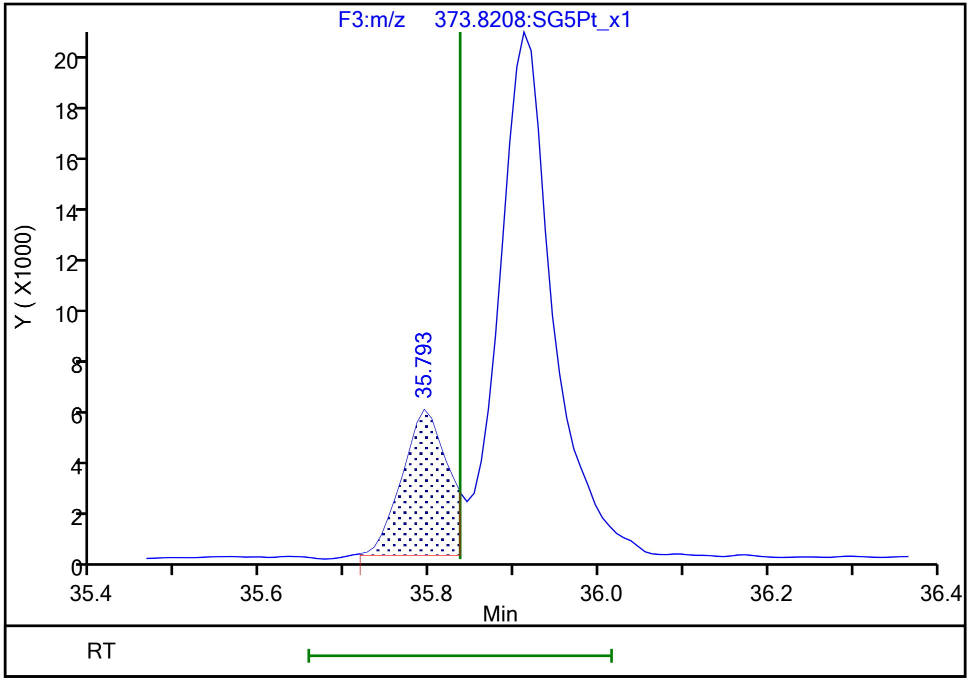

Reviewer: dadunj, 12-Mar-2021 09:14:27

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (31.22- 35.95)

Signal: 1

Not Detected
RT: 31.22- 35.95

Processing Integration Results

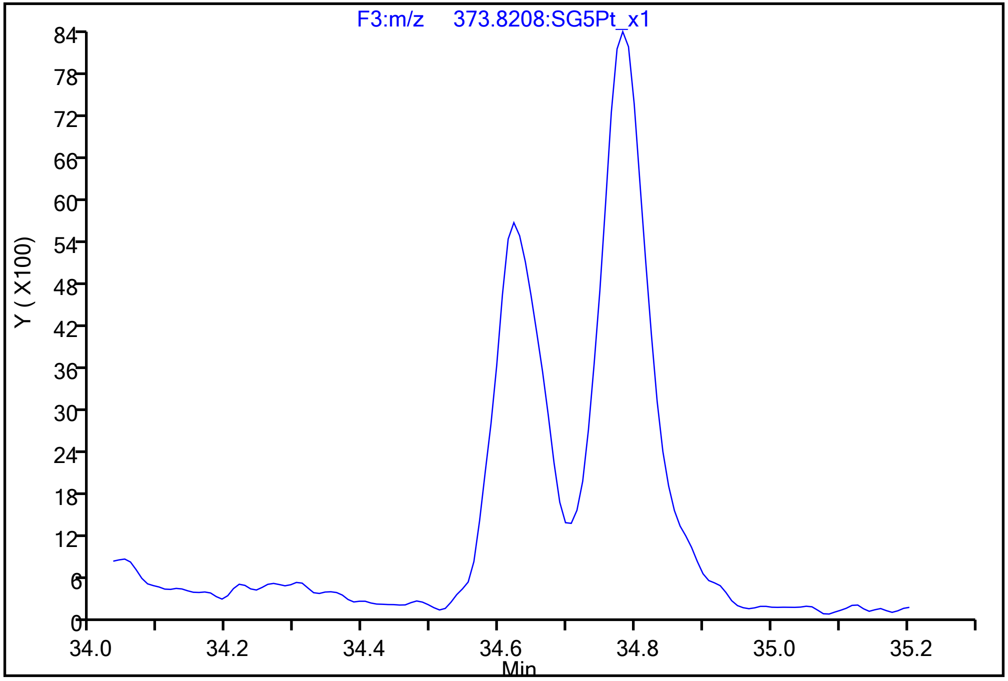

RT = 34.621 Area = 26819 M

Manual Integration Results

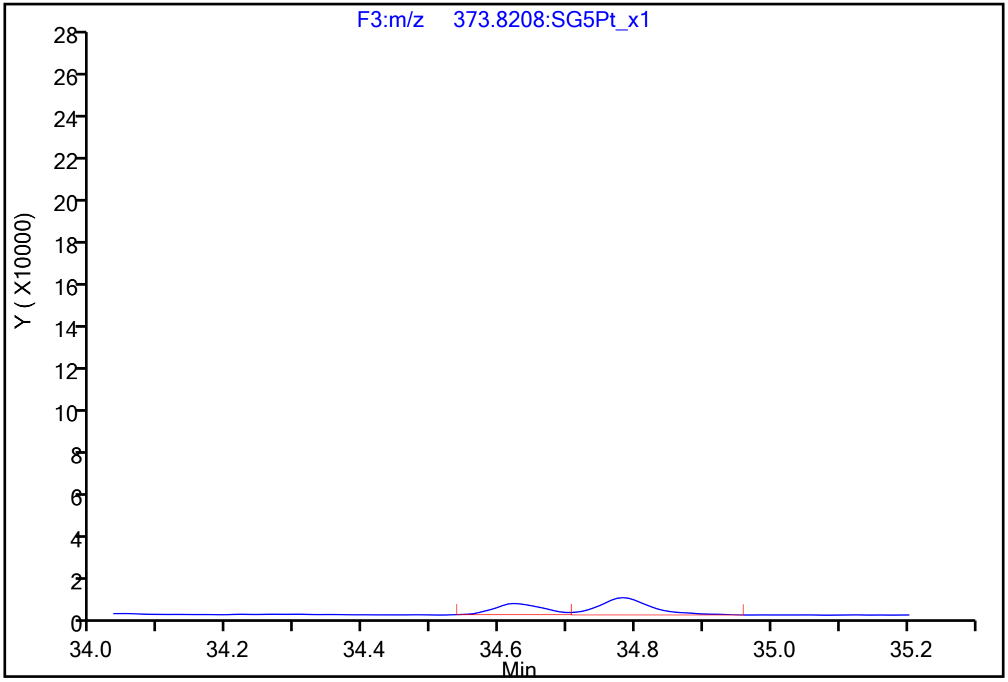

Reviewer: dadunj, 12-Mar-2021 09:15:53

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2
Client ID:	11215702-Tank1-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (31.22- 35.95)

Signal: 1

RT = 35.911 Area = 111958

Processing Integration Results

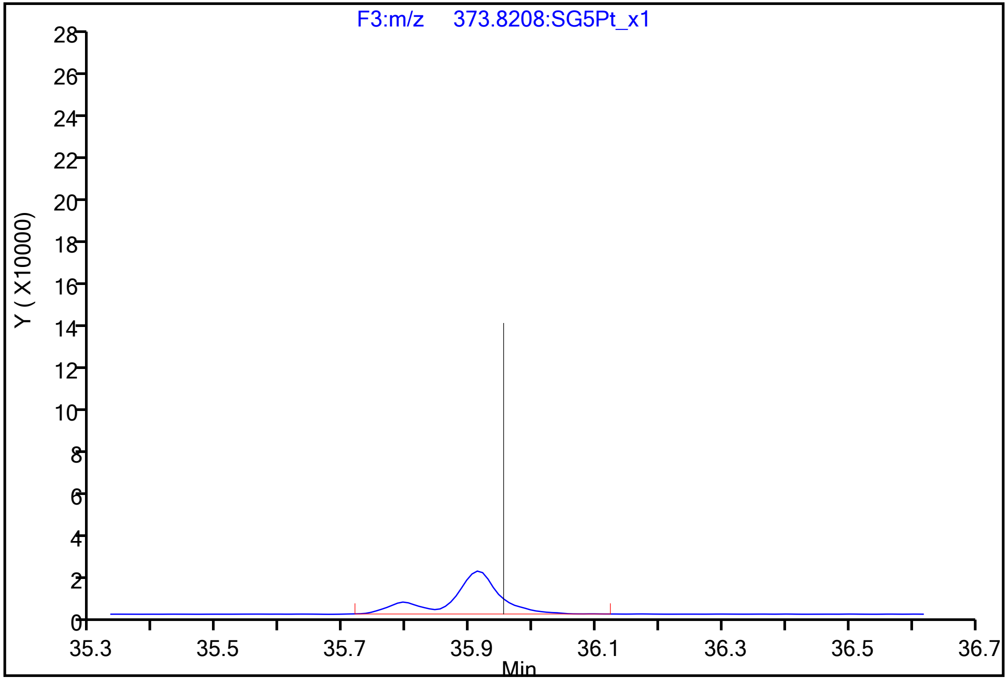

RT = 35.911 Area = 91232 M

Manual Integration Results

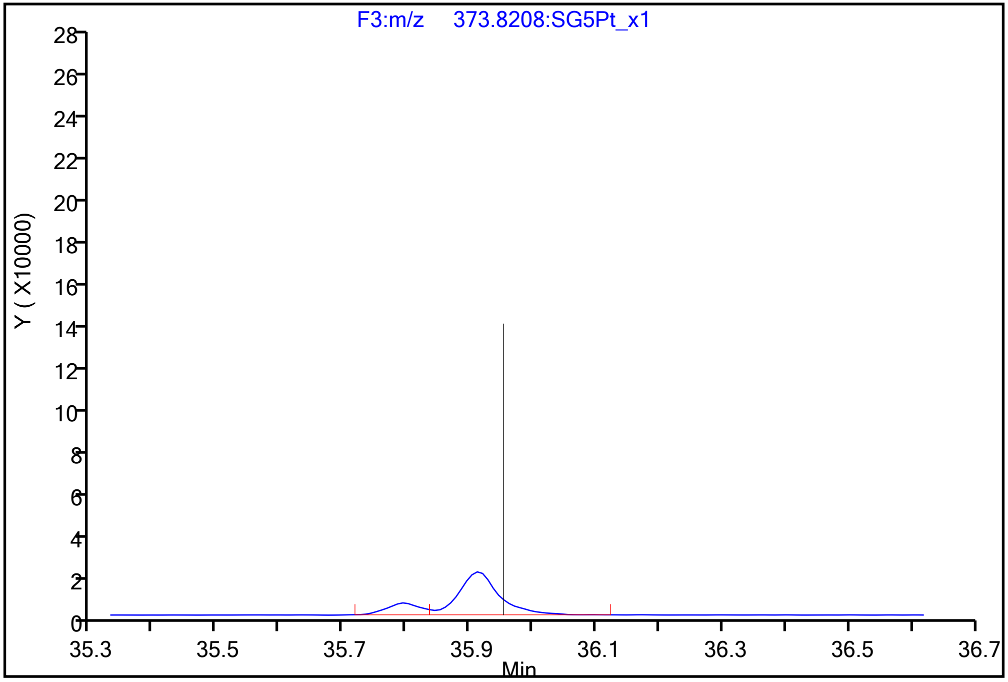

Reviewer: dadunj, 12-Mar-2021 09:15:53

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d				
Injection Date:	10-Mar-2021 15:13:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.68- 35.57)

Signal: 1

Processing Integration Results

RT = 34.116 Area = 22904

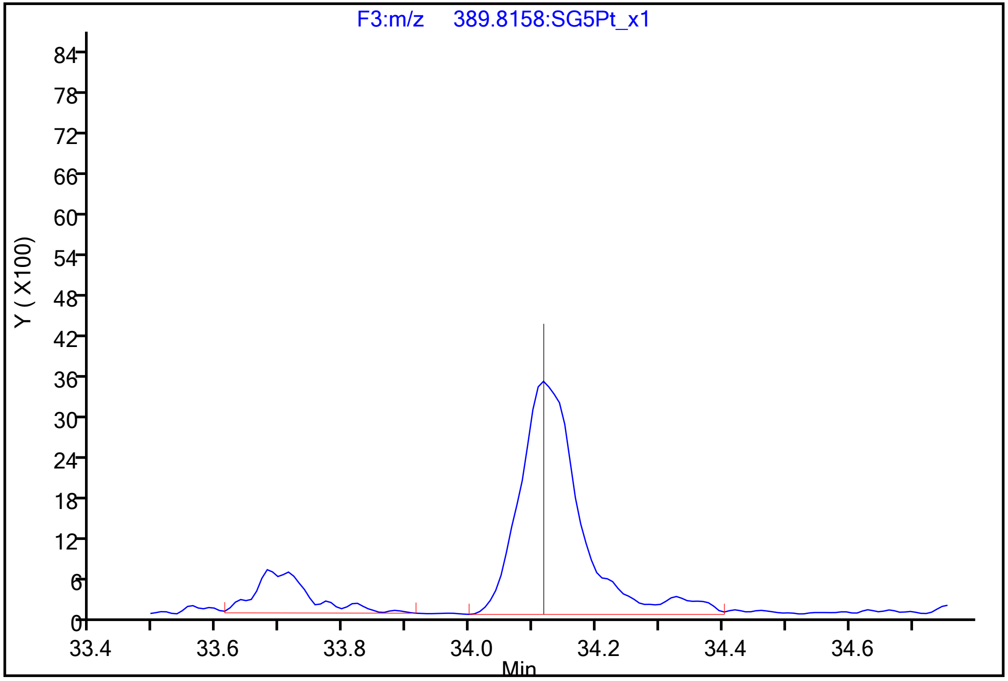

Manual Integration Results

RT = 34.116 Area = 21412 M

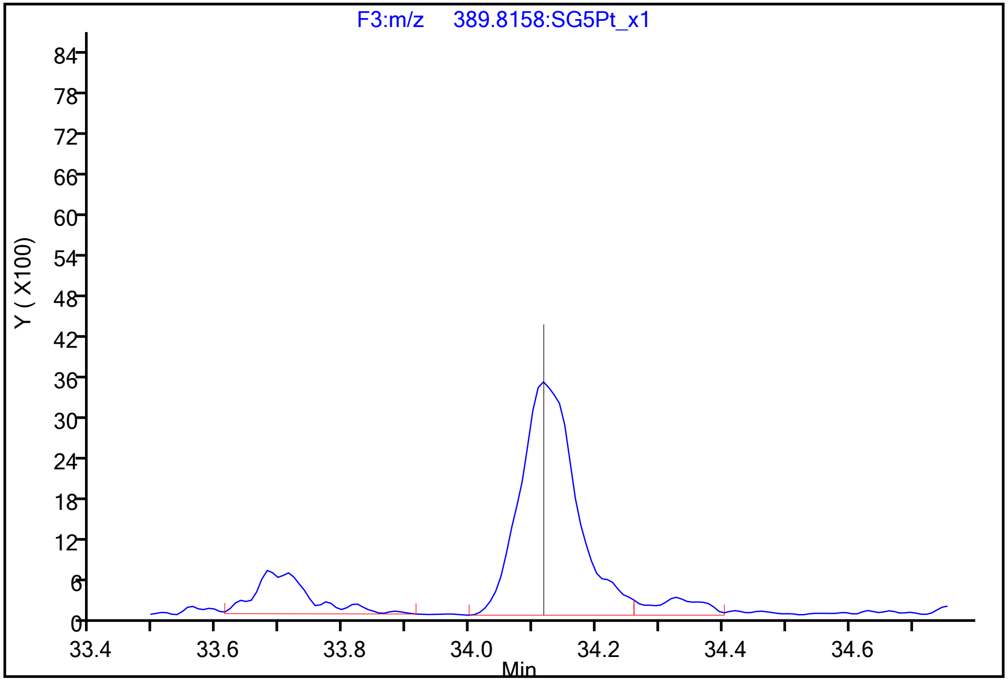

Reviewer: dadunj, 12-Mar-2021 09:16:16

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 07:53:42

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d
Injection Date: 10-Mar-2021 15:13:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-2-A
Lab Sample ID: 320-70797-2
Client ID: 11215702-Tank1-41mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 9
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.68- 35.57)

Signal: 2

Processing Integration Results

RT = 34.116 Area = 18092

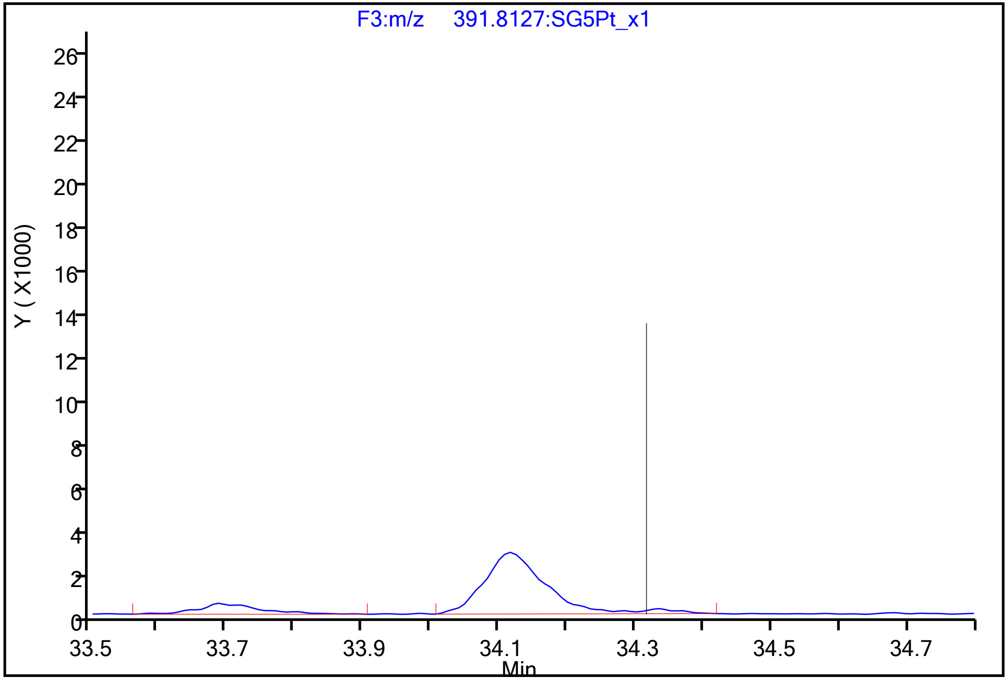

Manual Integration Results

RT = 34.116 Area = 17326 M

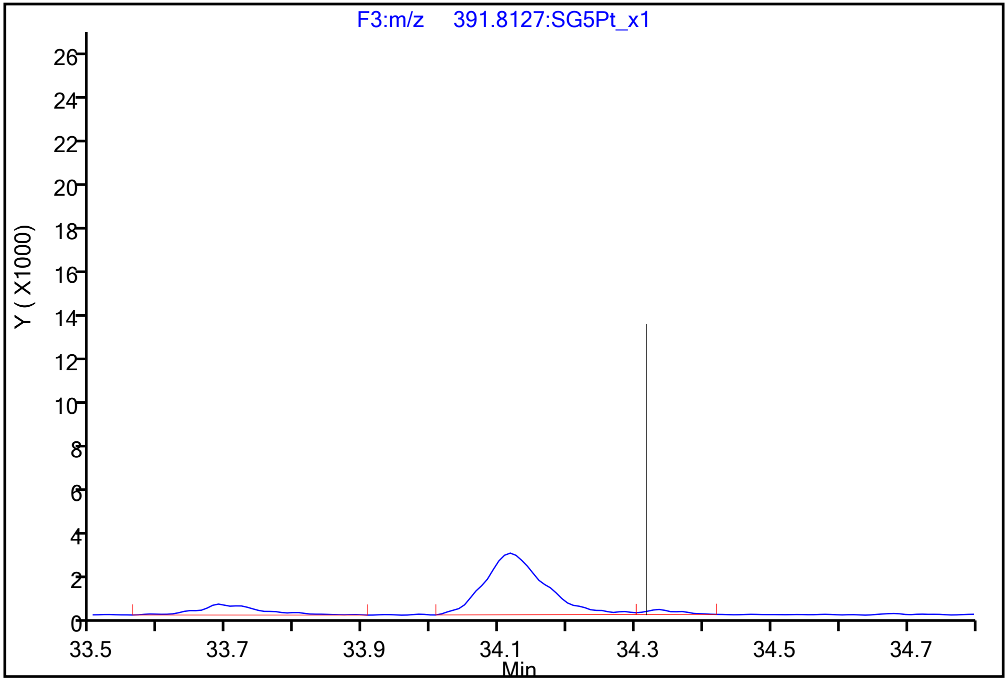

Reviewer: dadunj, 12-Mar-2021 09:16:17
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

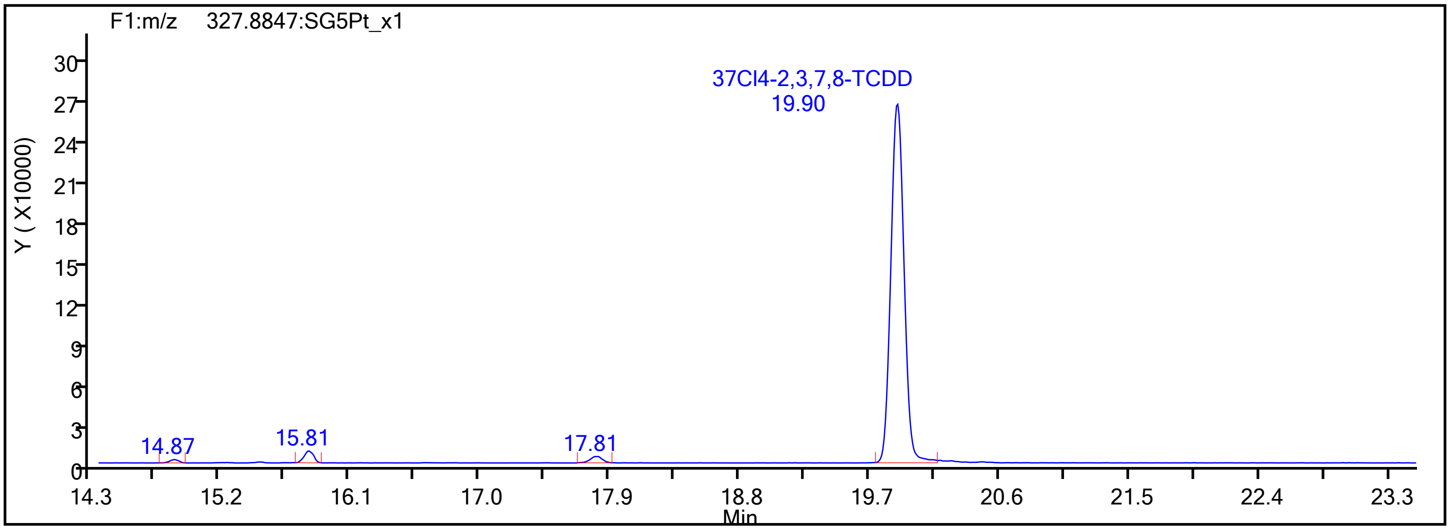

37Cl4-TCDD Standards

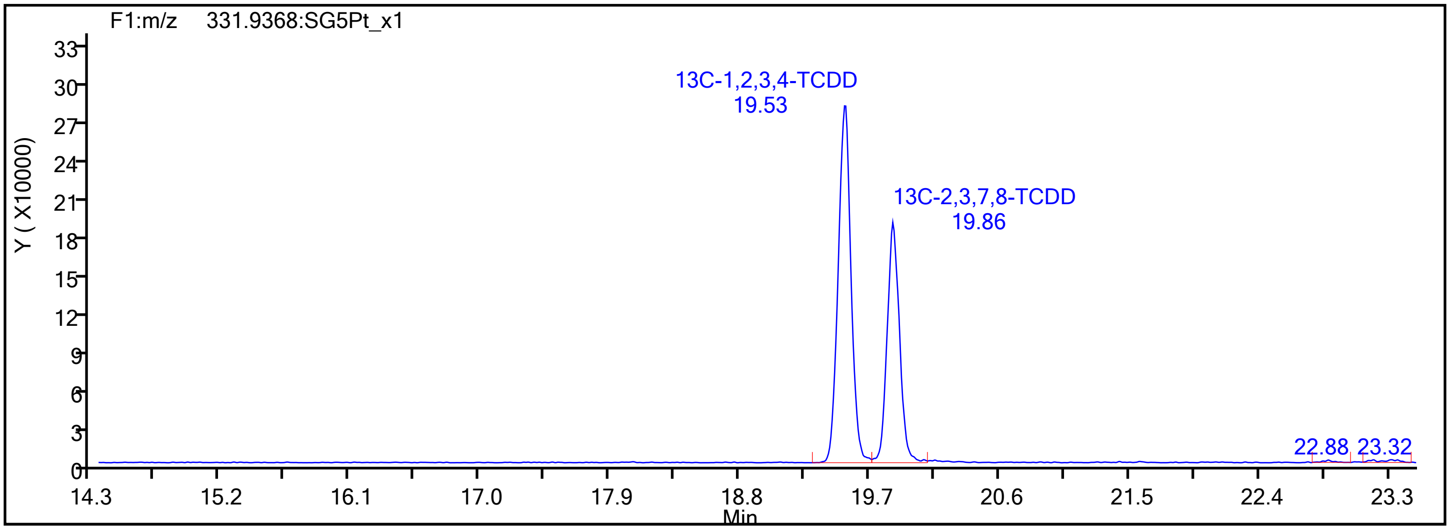

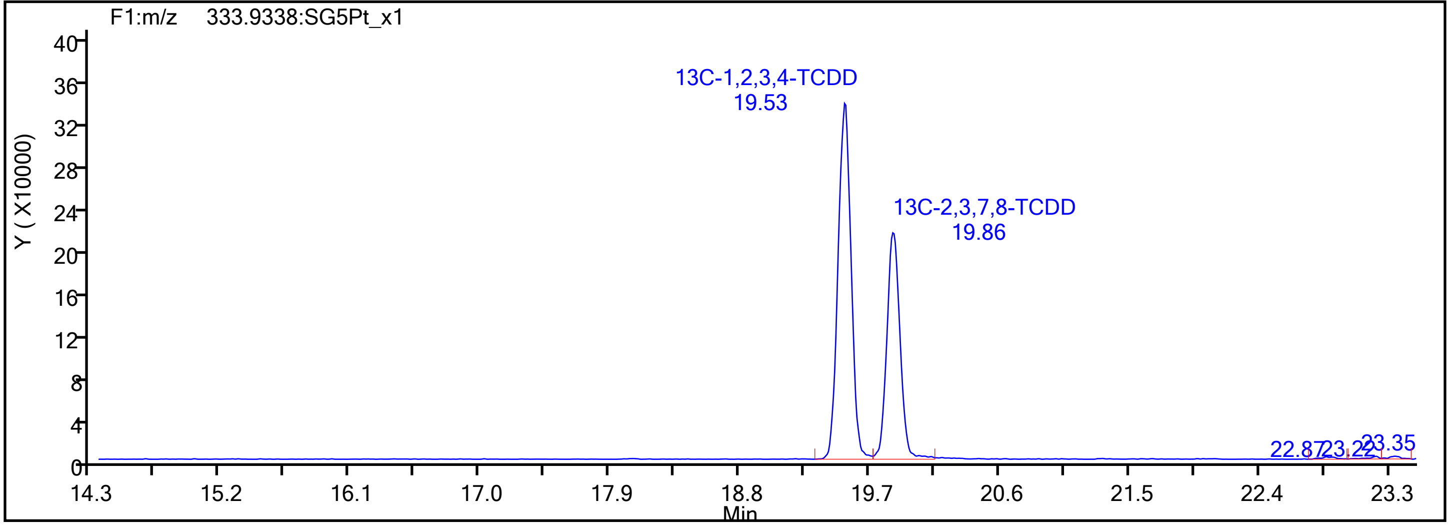

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

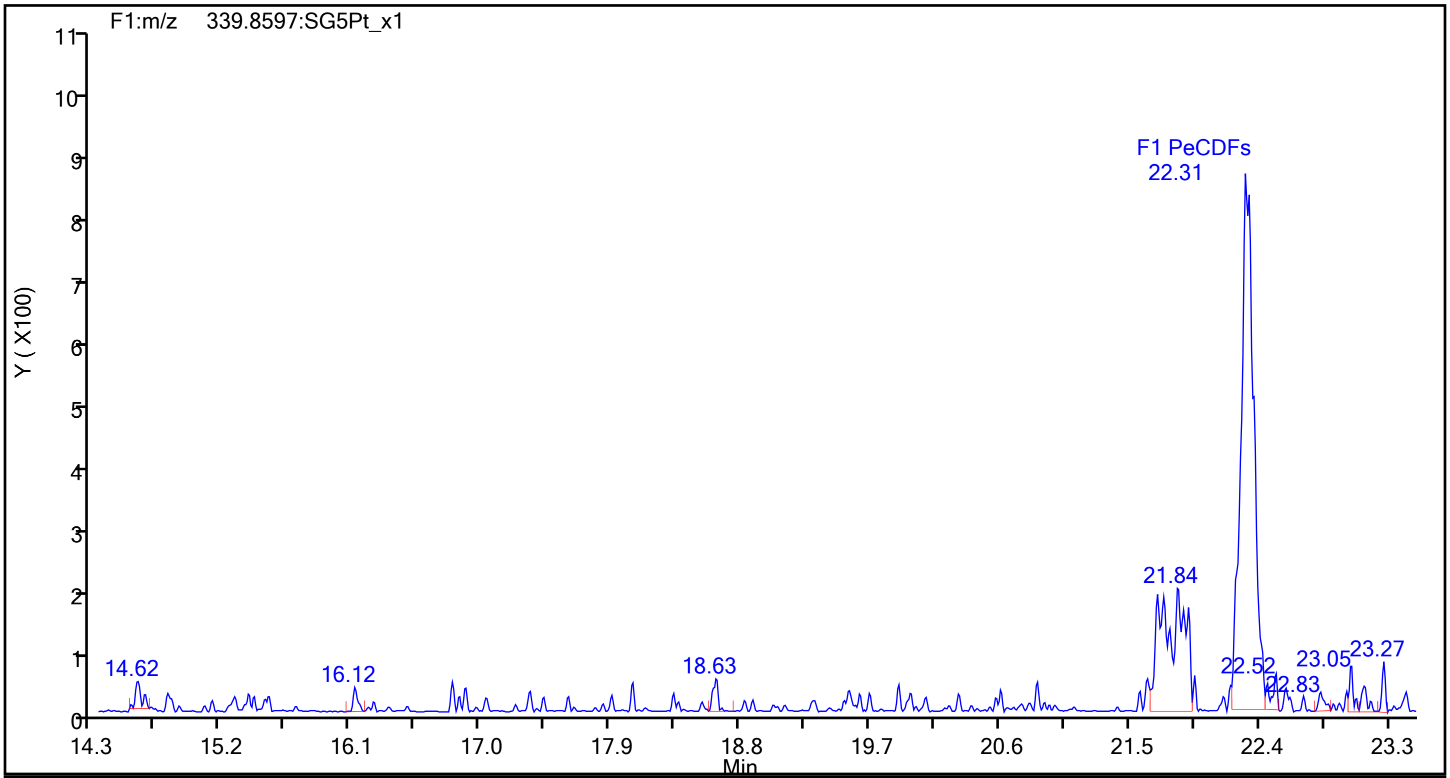

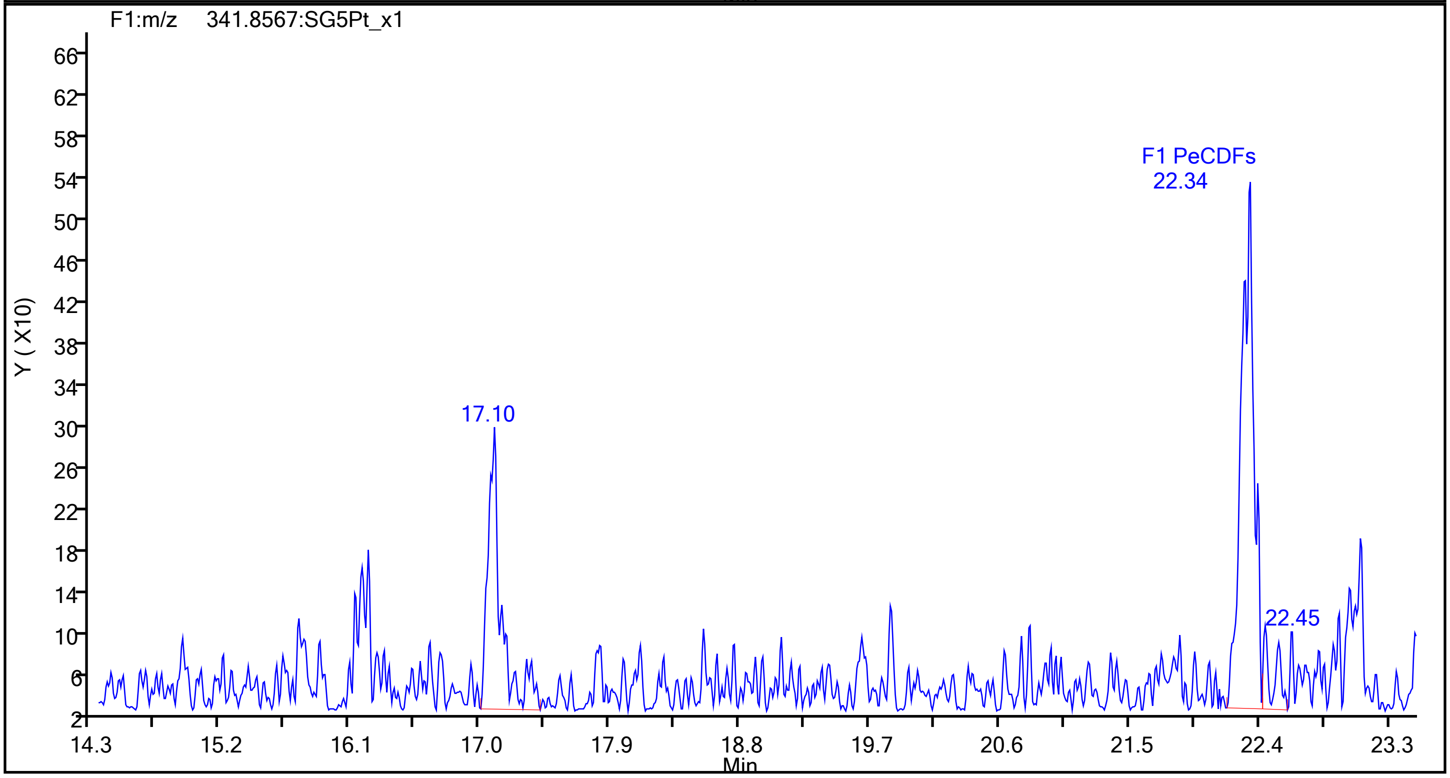

Report Date: 12-Mar-2021 07:53:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

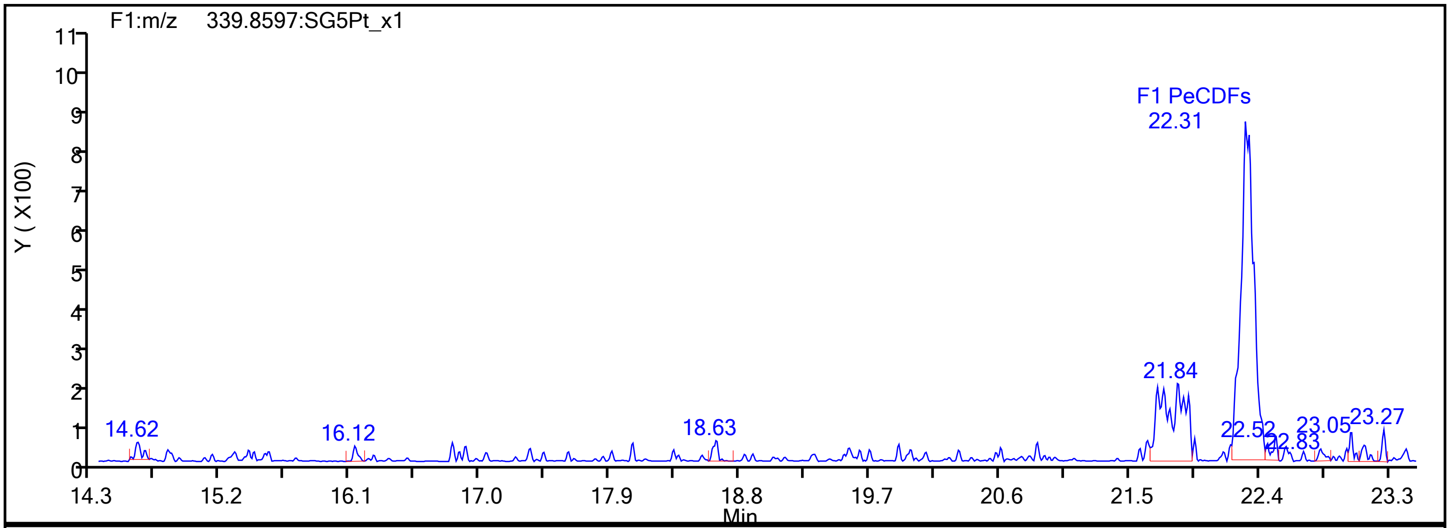

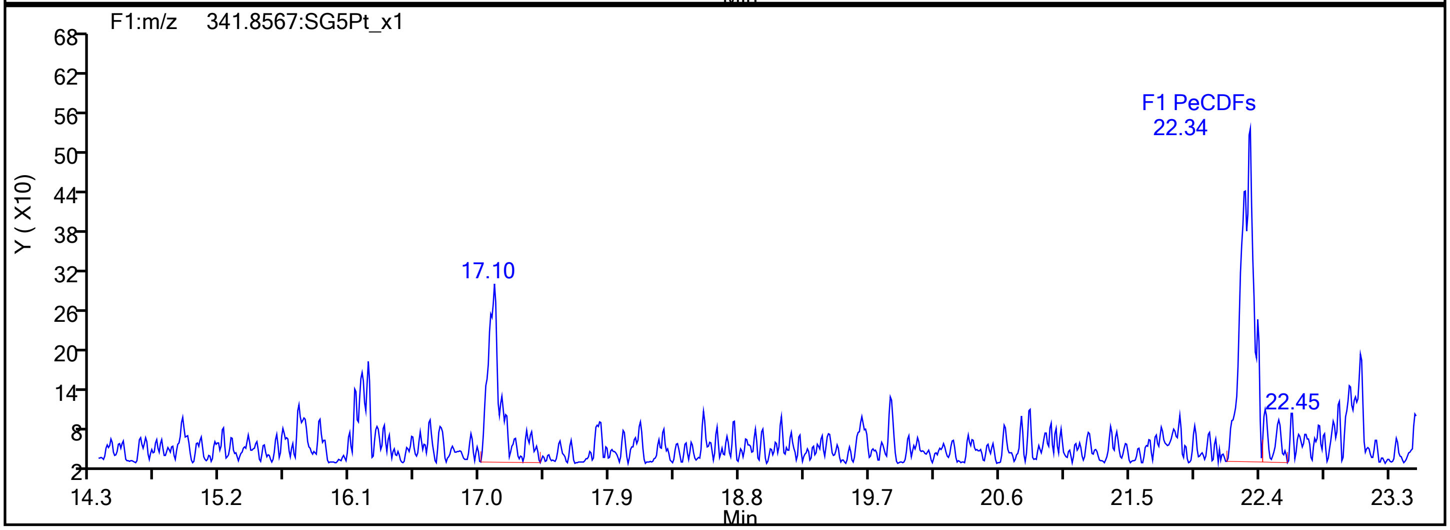

F1 PeCDFs Interference Mass

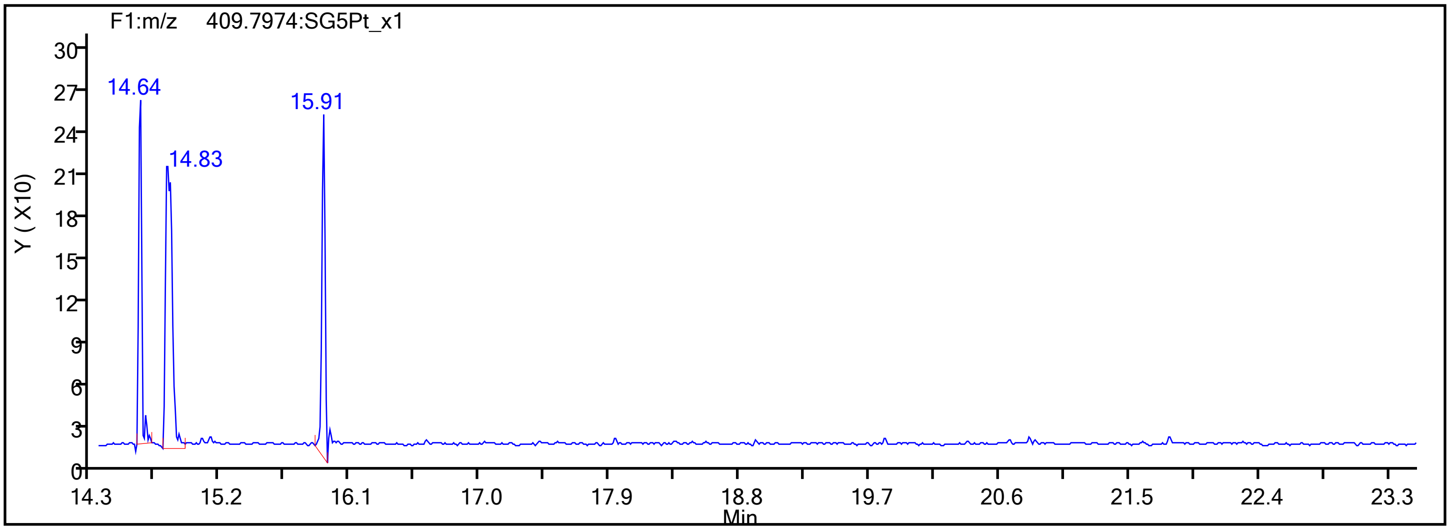

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

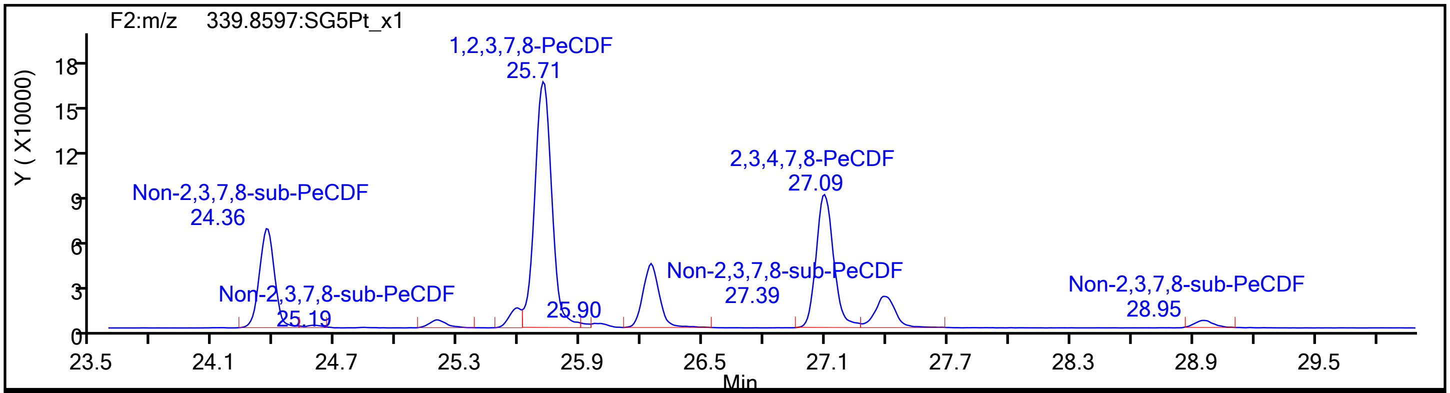

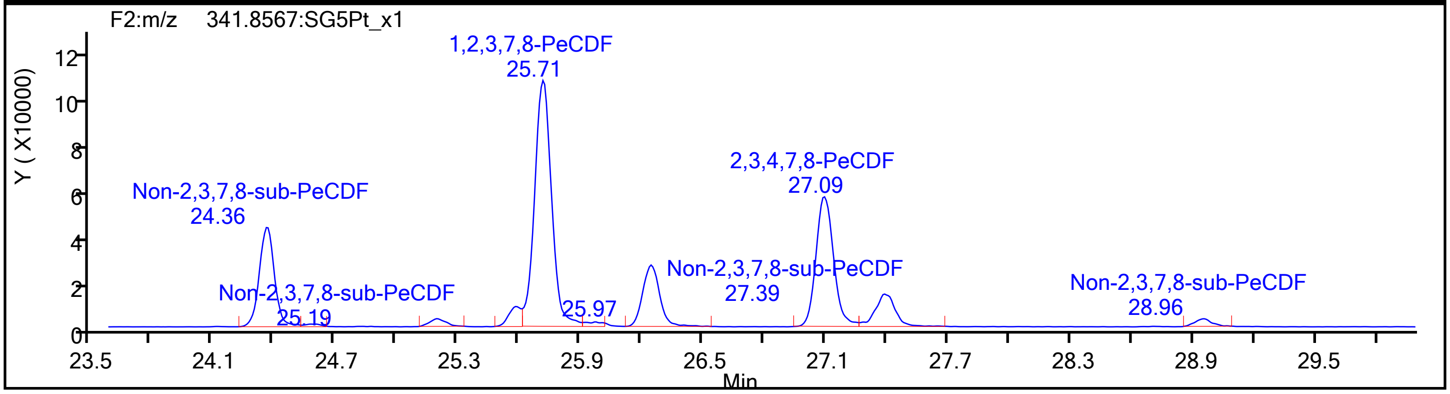

PeCDF Standards

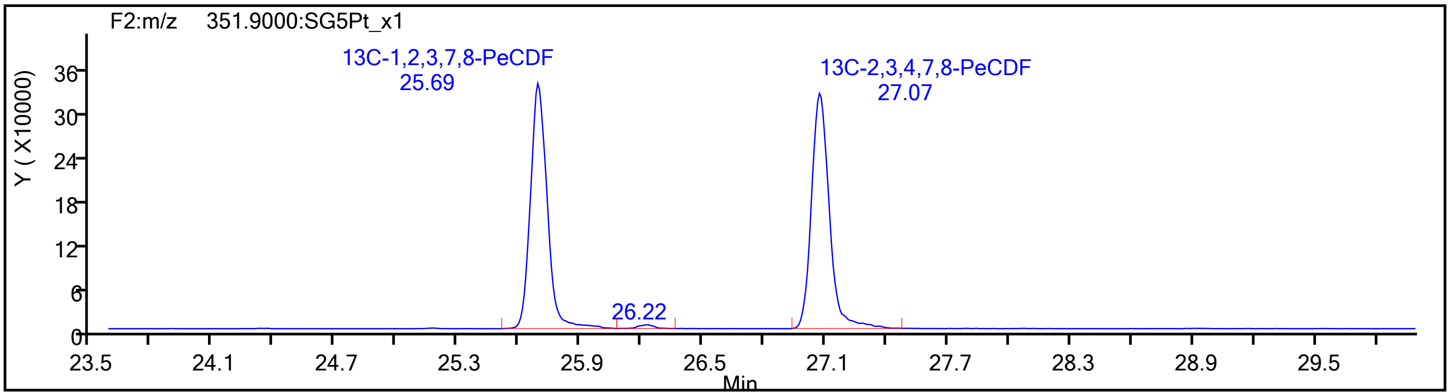

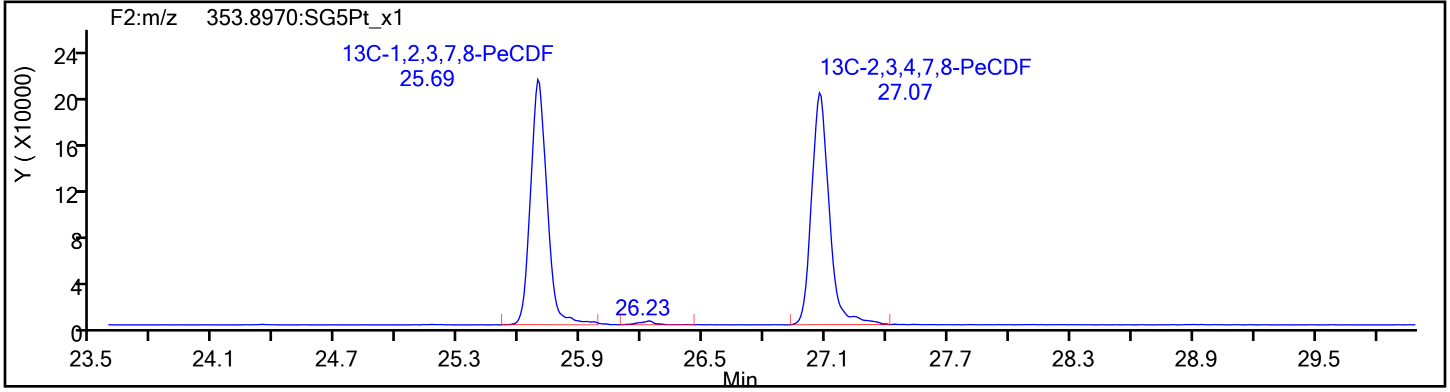

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

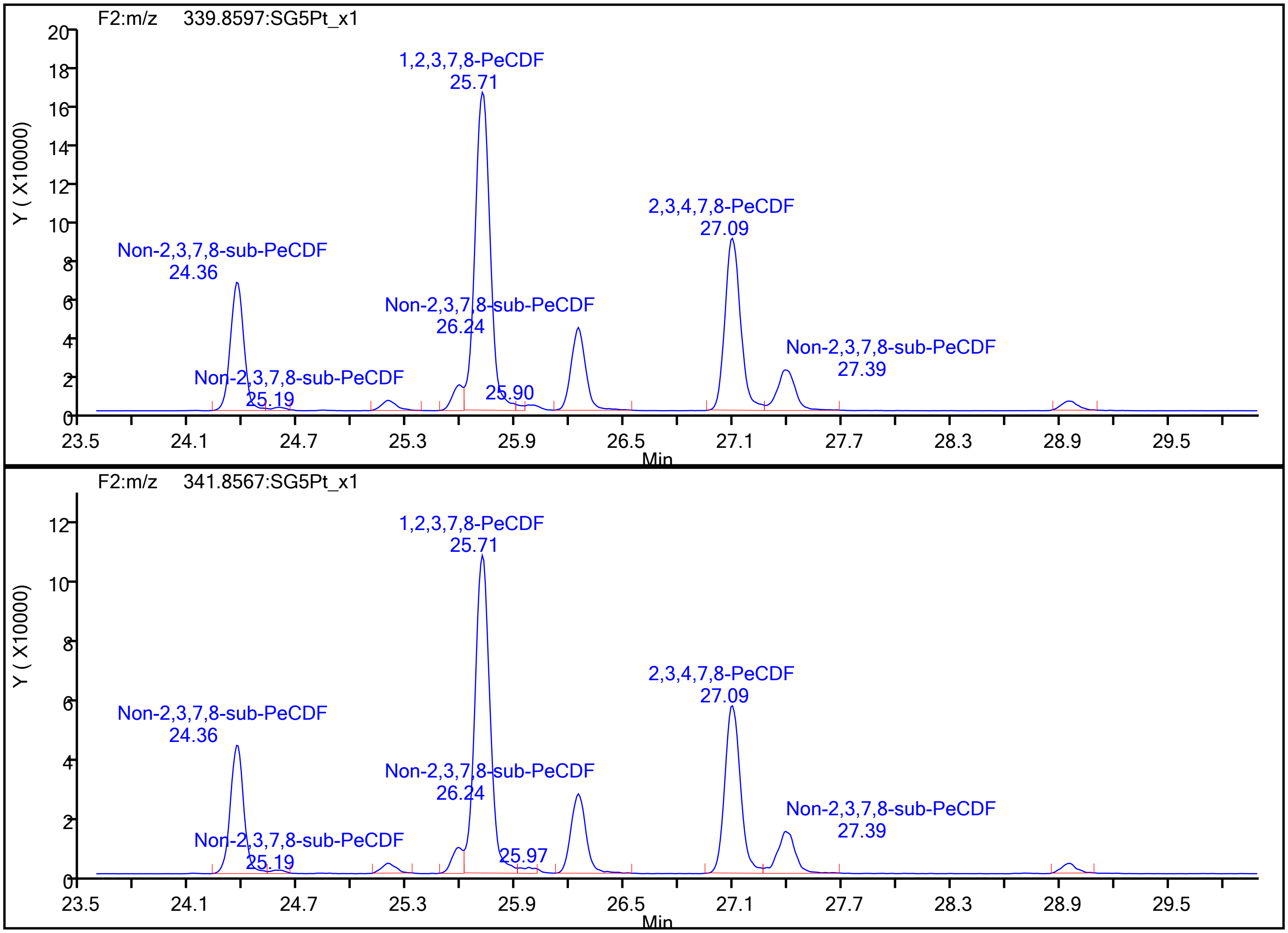

PeCDF Interference Mass

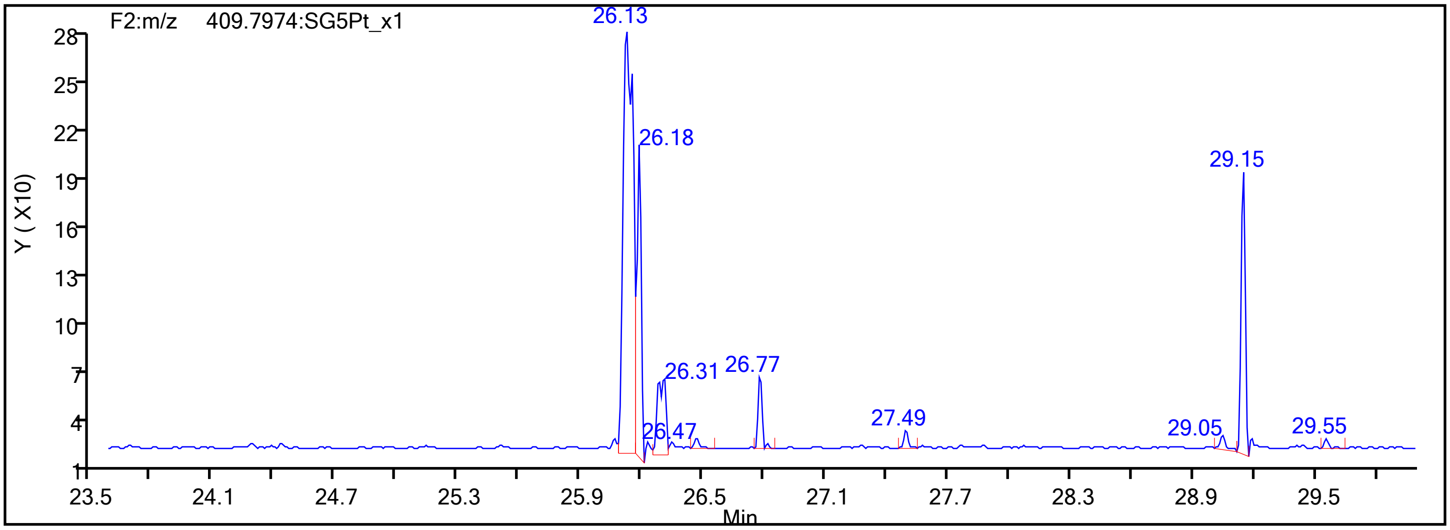

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

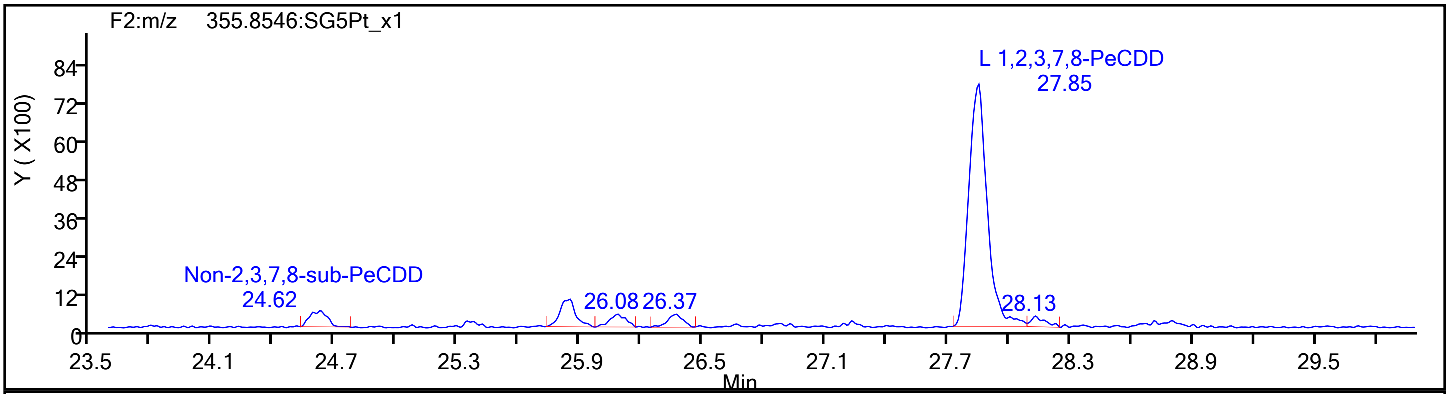

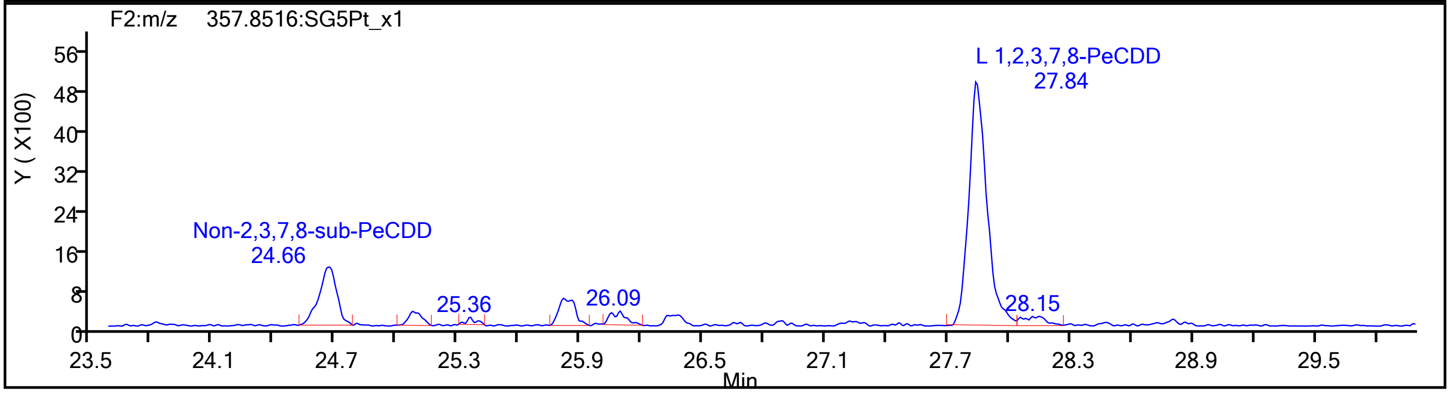

PeCDD Standards

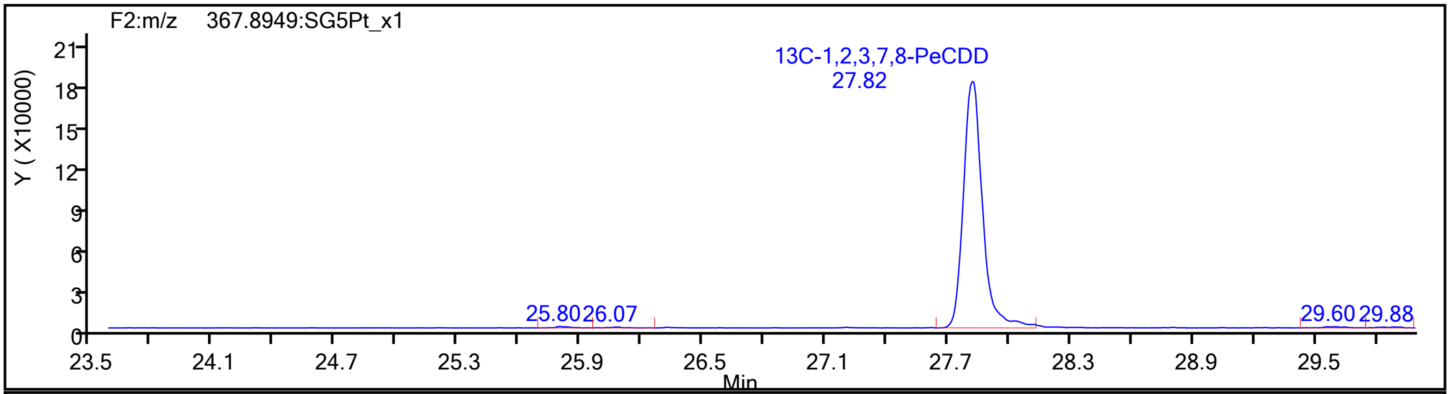

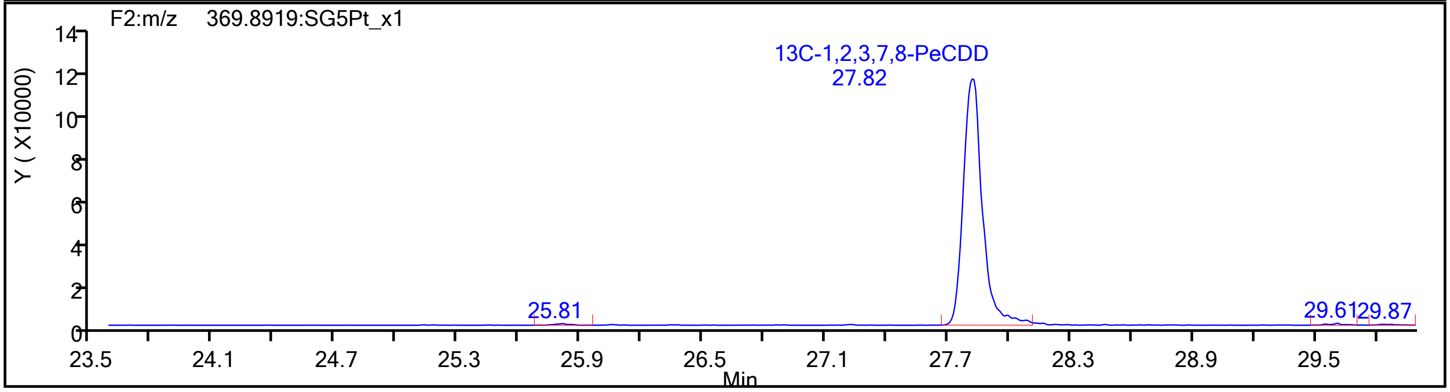

Report Date: 12-Mar-2021 07:53:43
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d
Injection Date: 10-Mar-2021 15:13:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-41mm
Worklist#: 468973
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

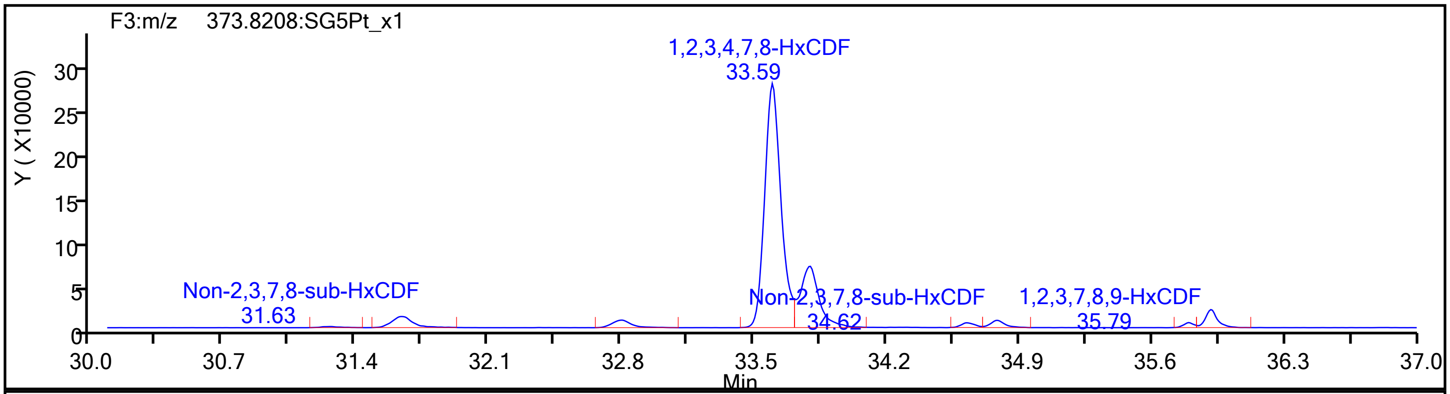

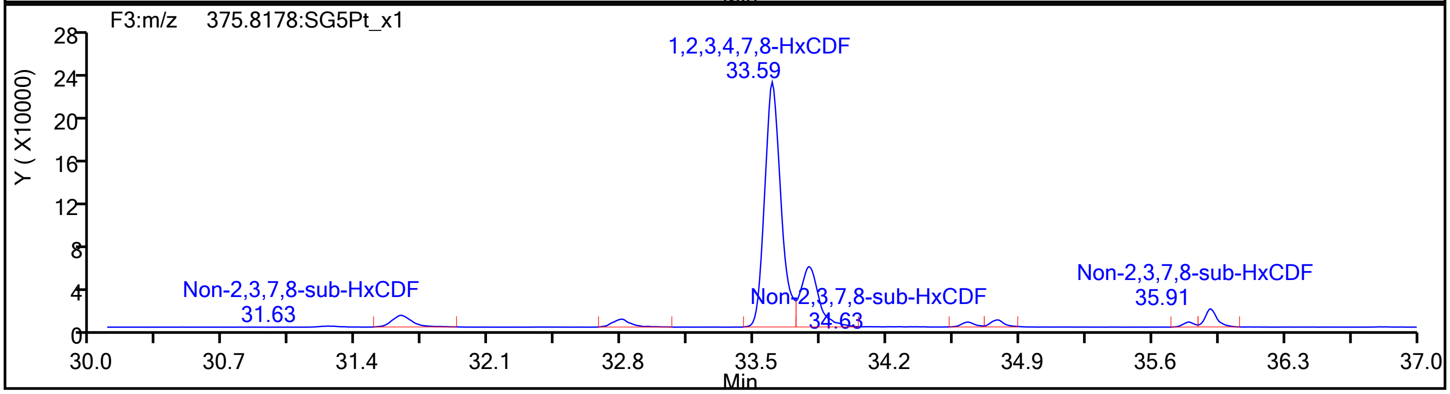

HxCDF Standards

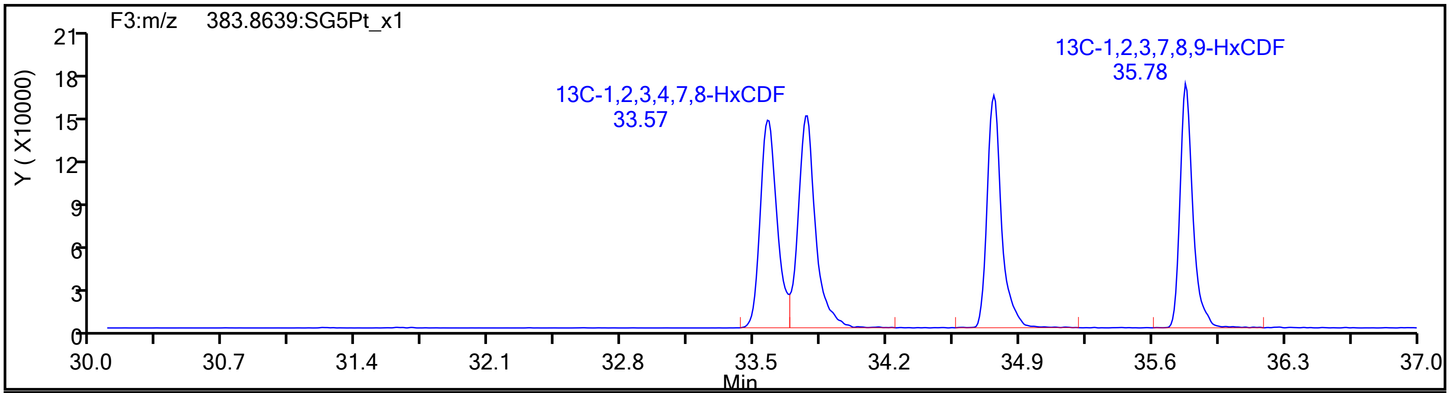

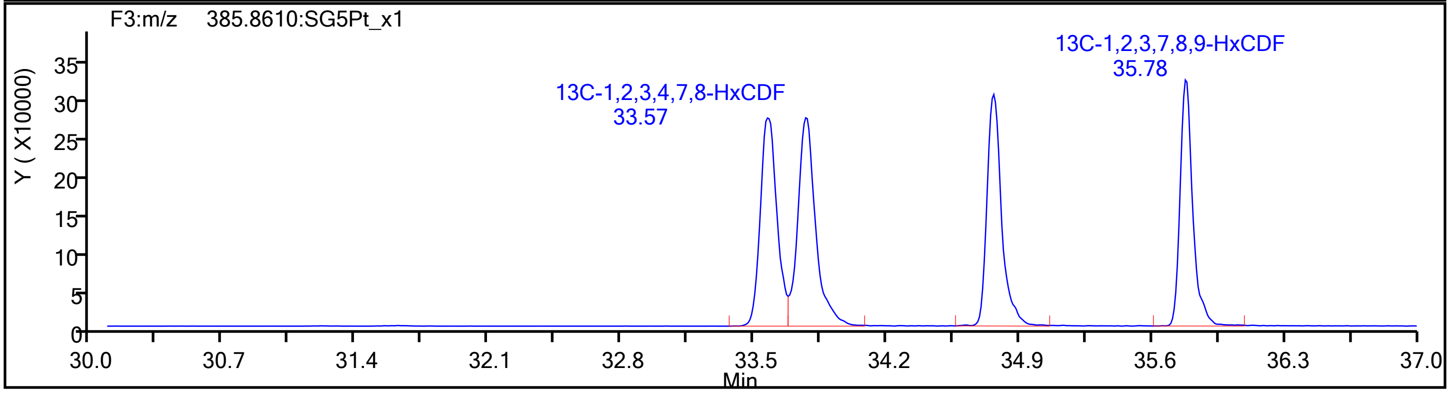

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

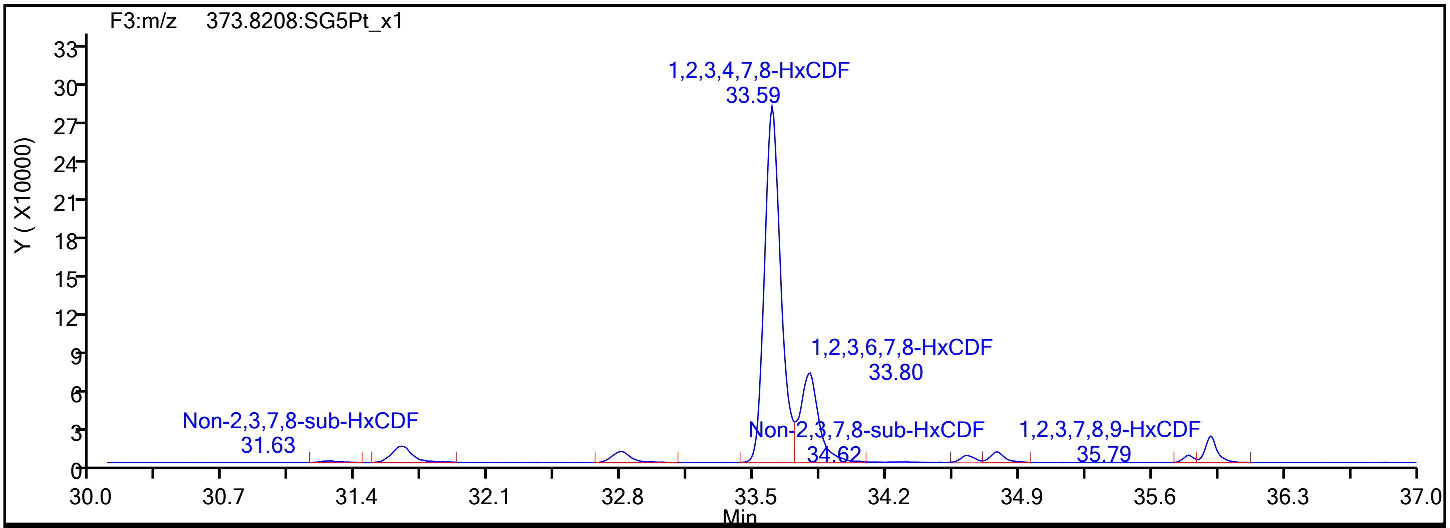

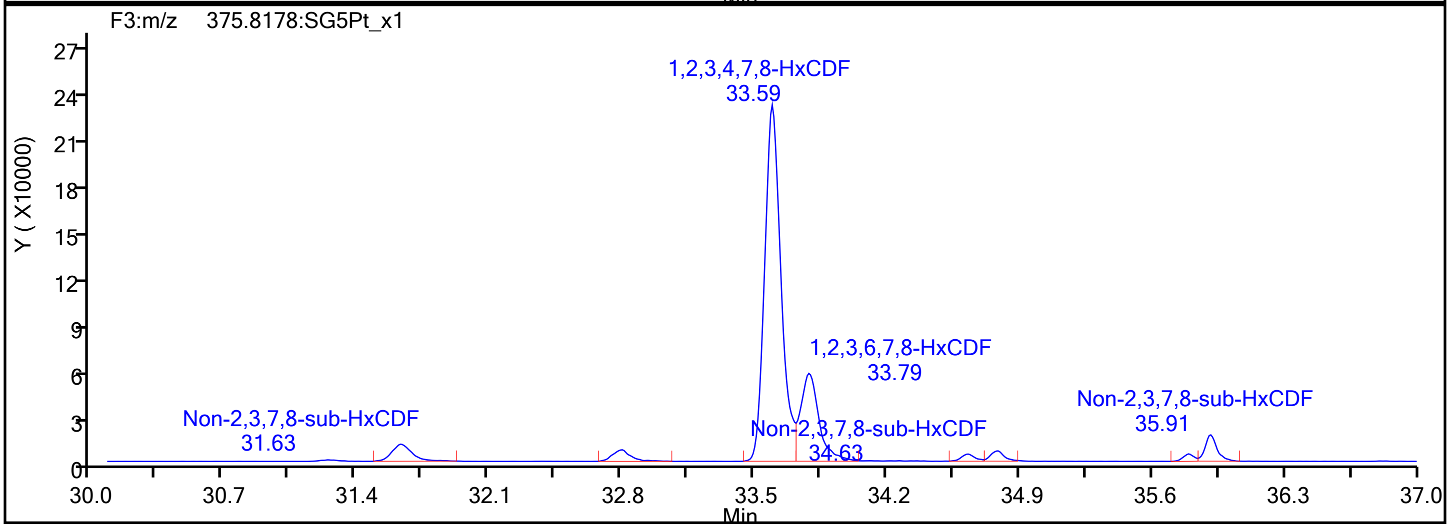

HxCDF Interference Mass

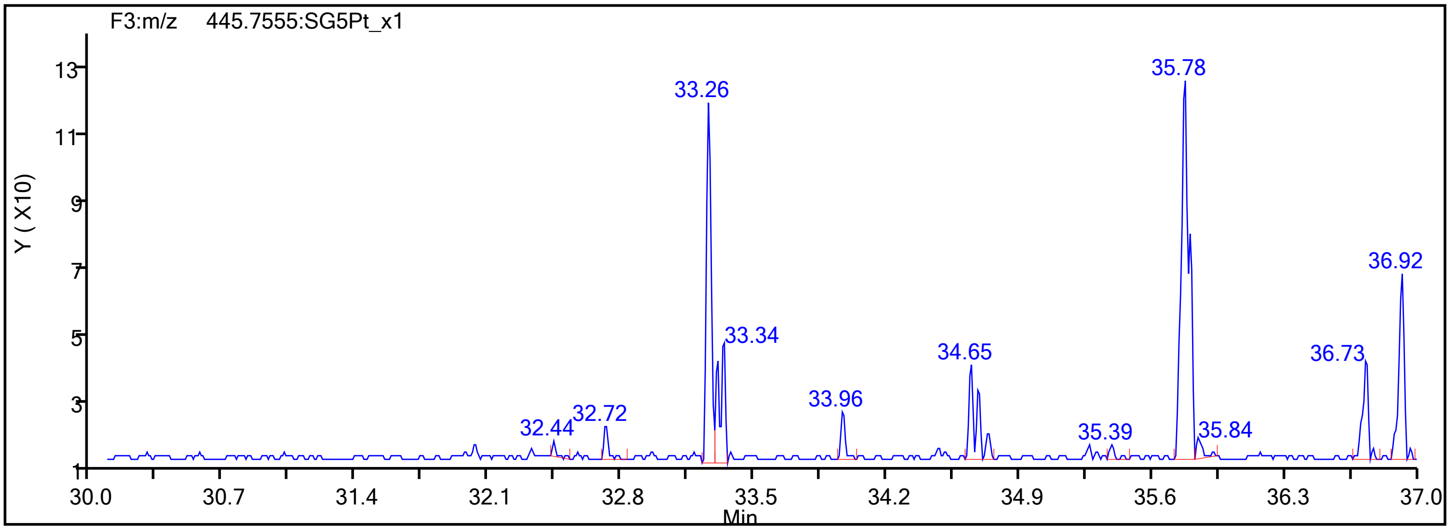

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

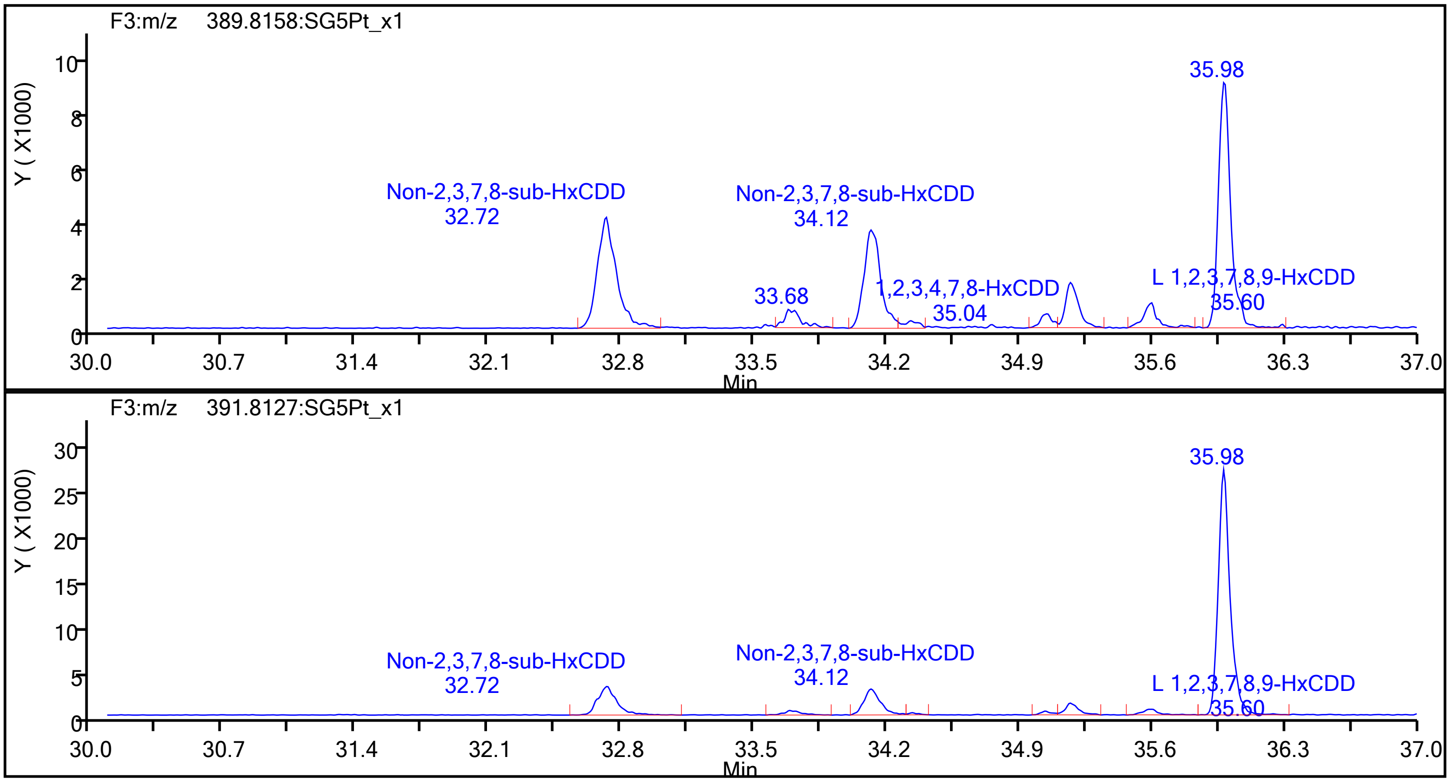

HxCDD Standards

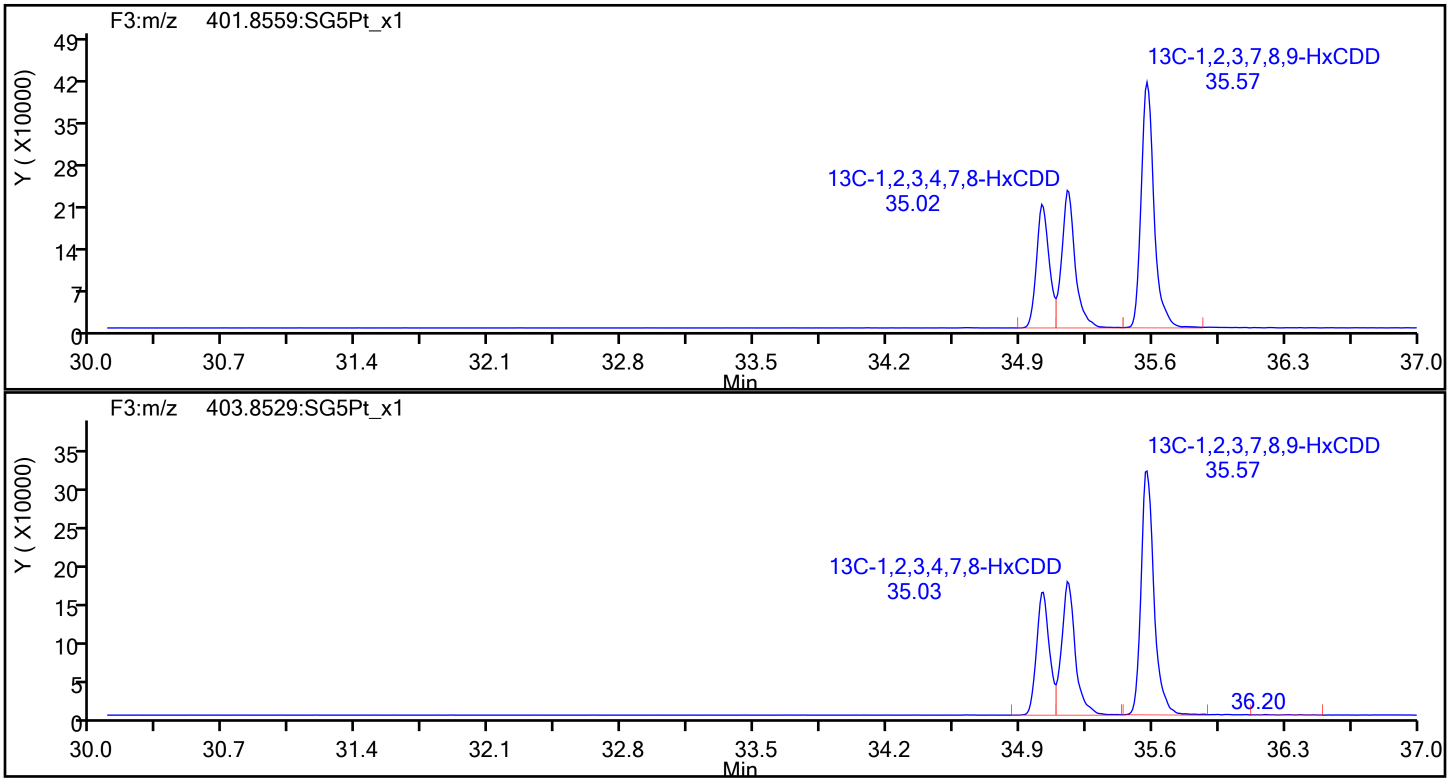

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

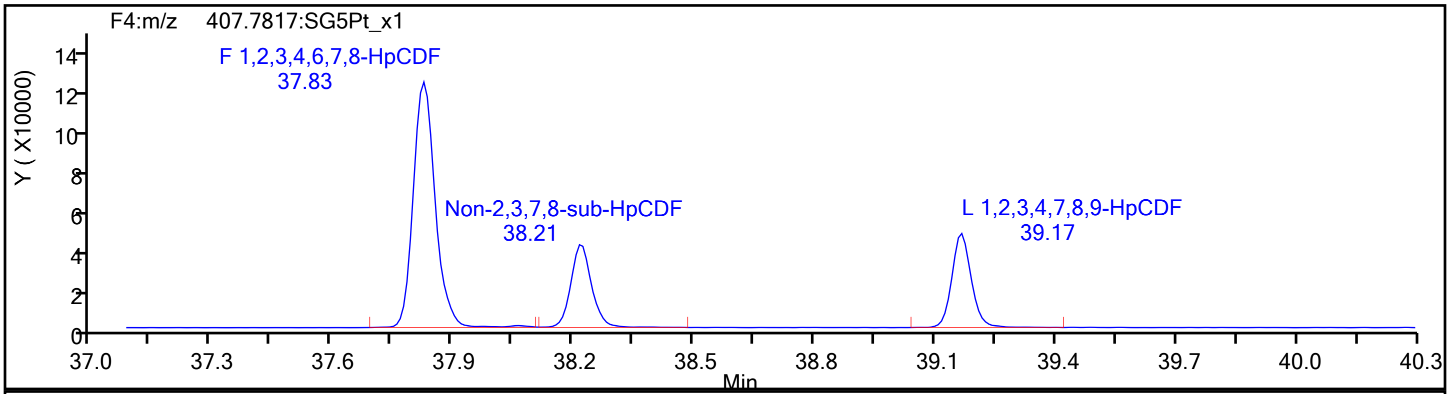

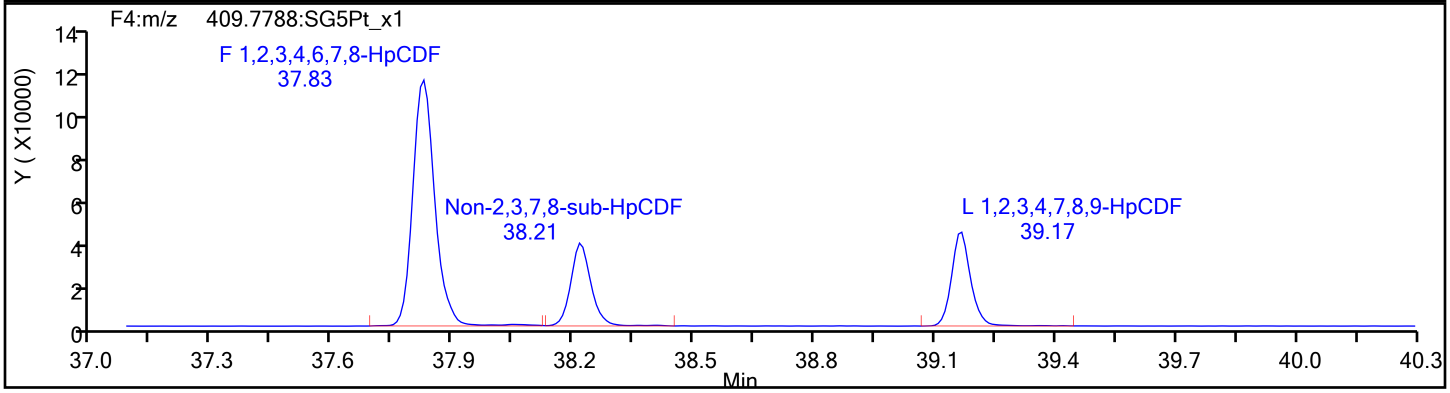

HpCDF Standards

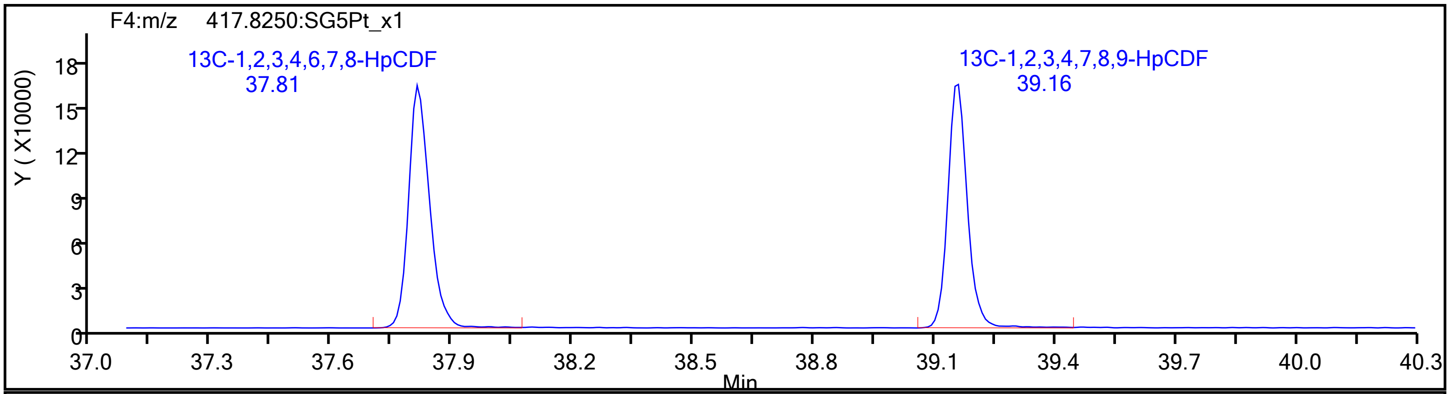

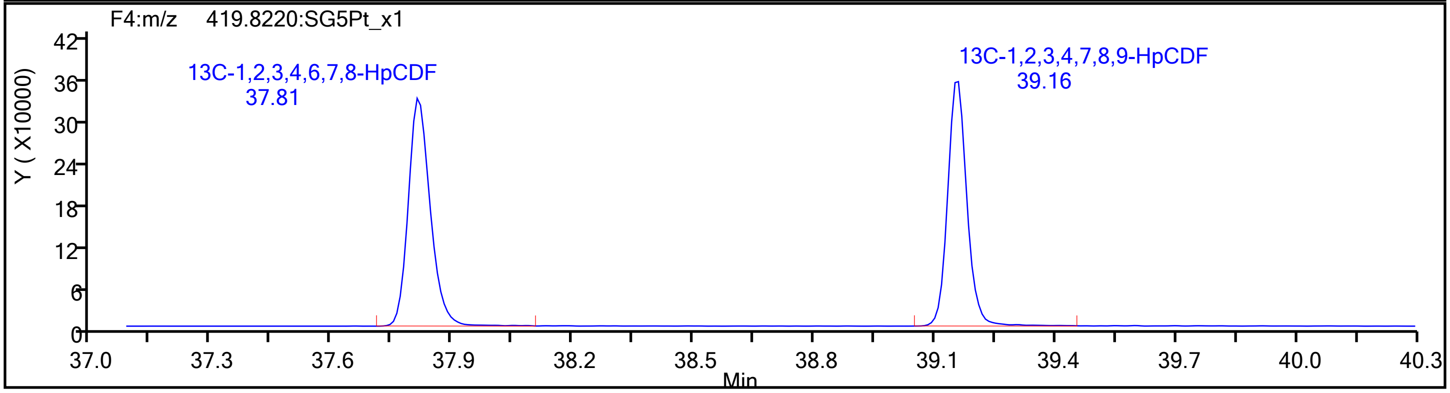

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

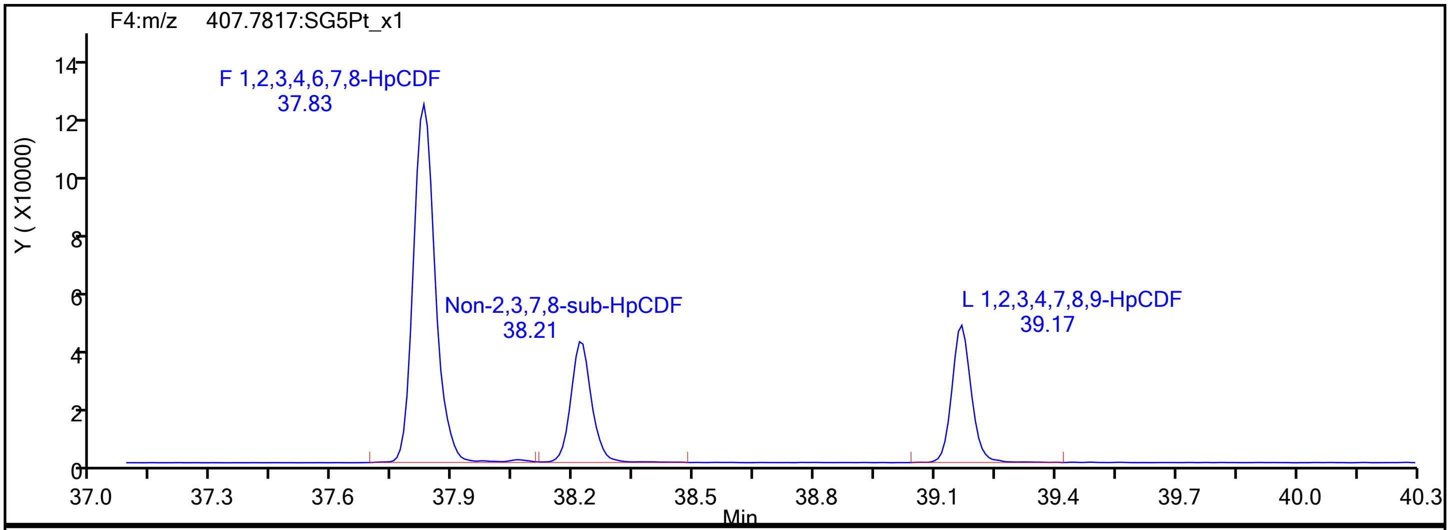

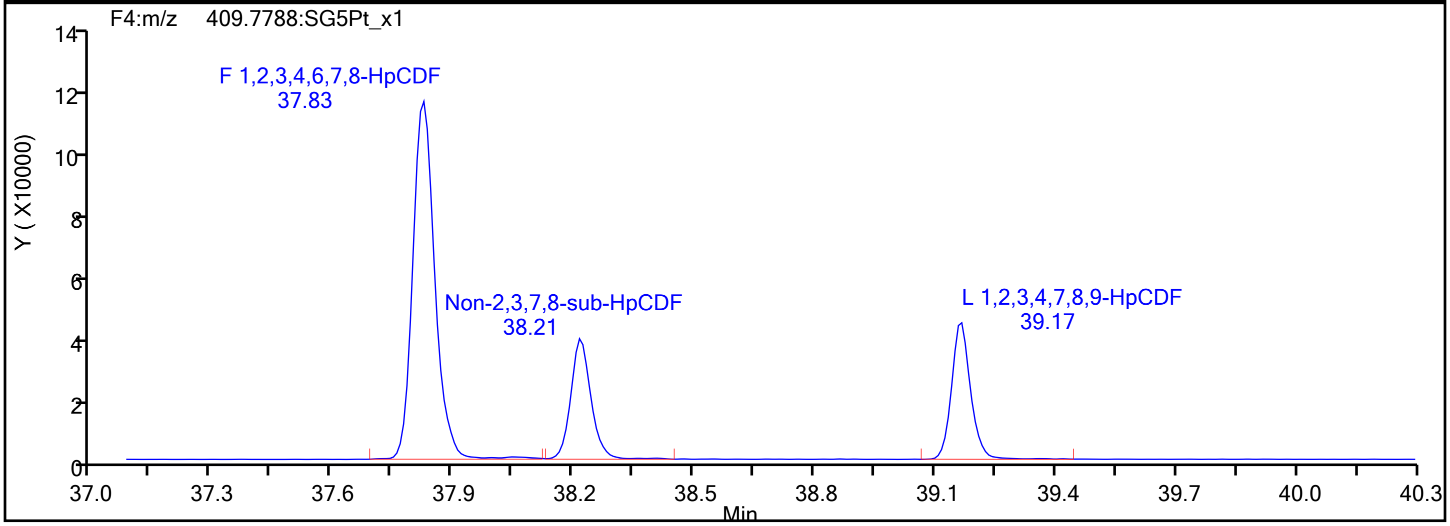

HpCDF Interference Mass

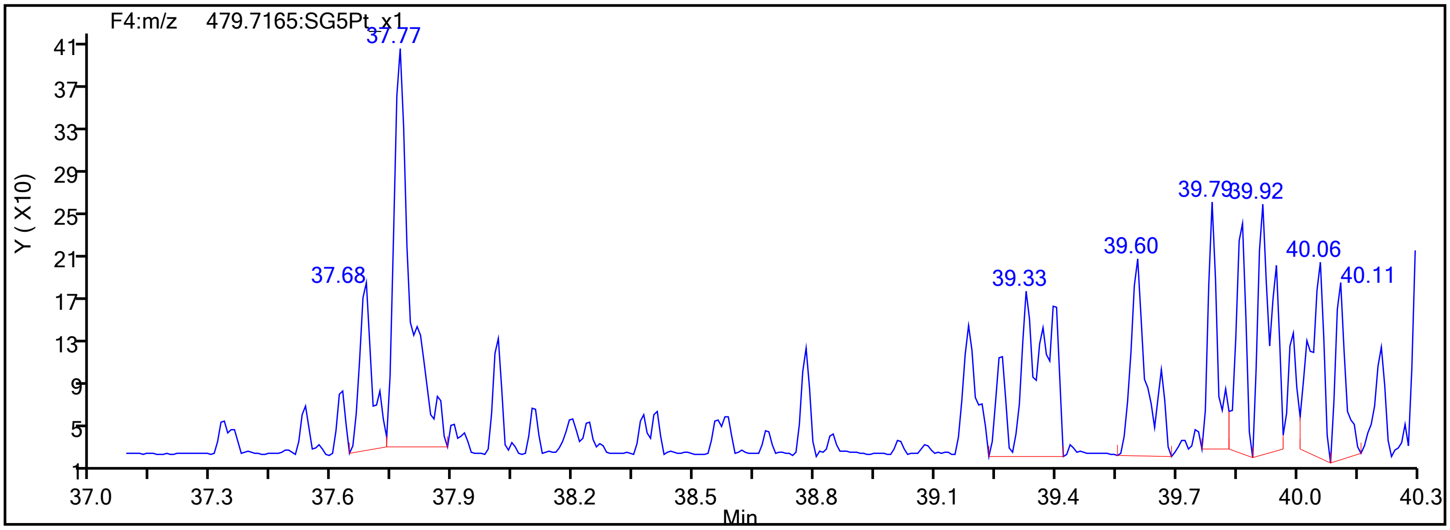

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

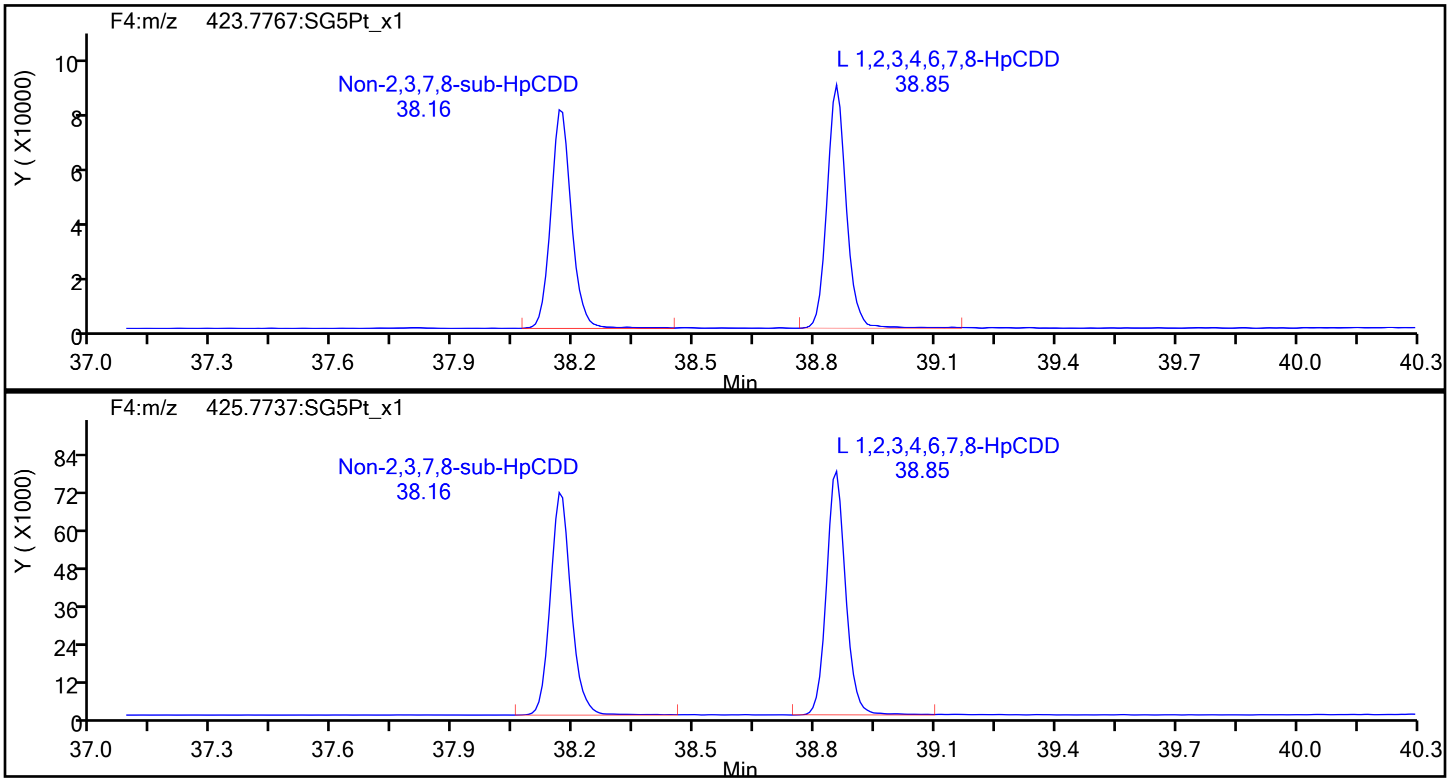

HpCDD Standards

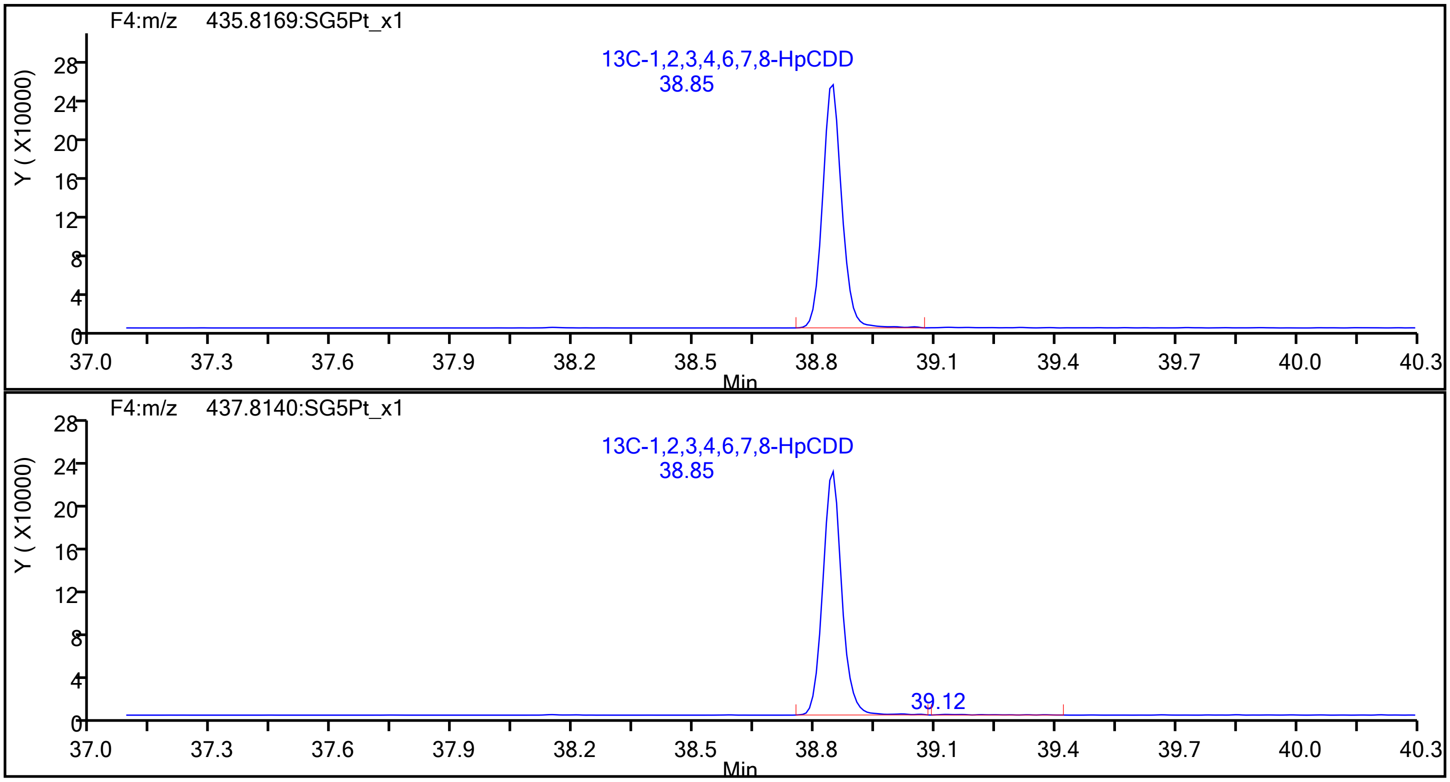

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d

Injection Date: 10-Mar-2021 15:13:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-41mm

Worklist#: 468973

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

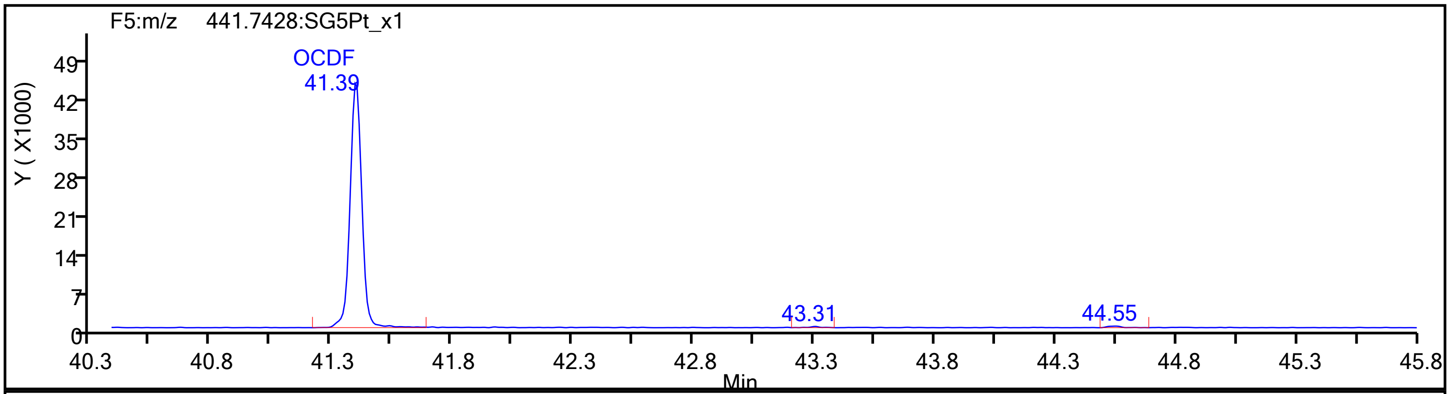

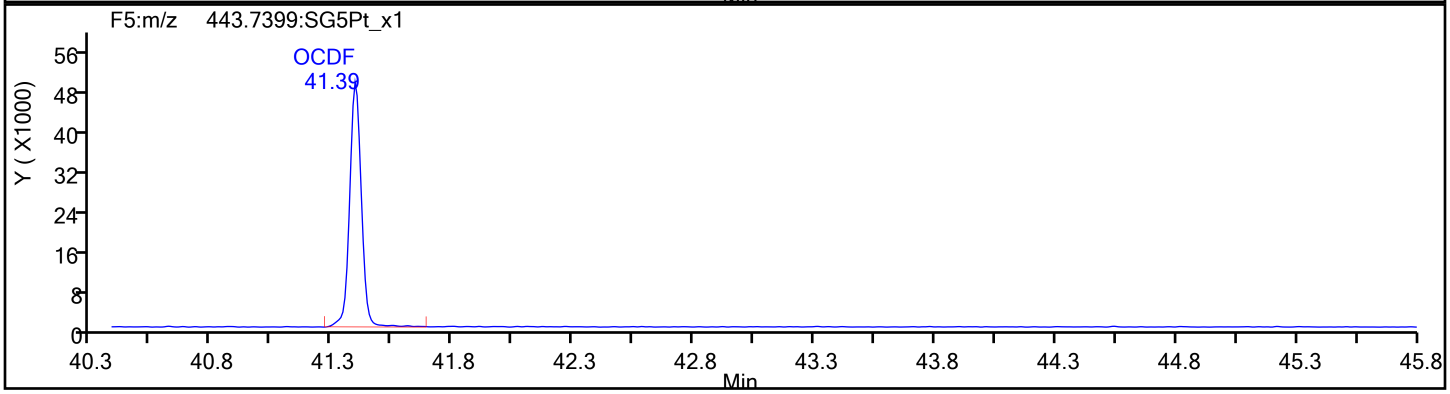

OCDF Standards

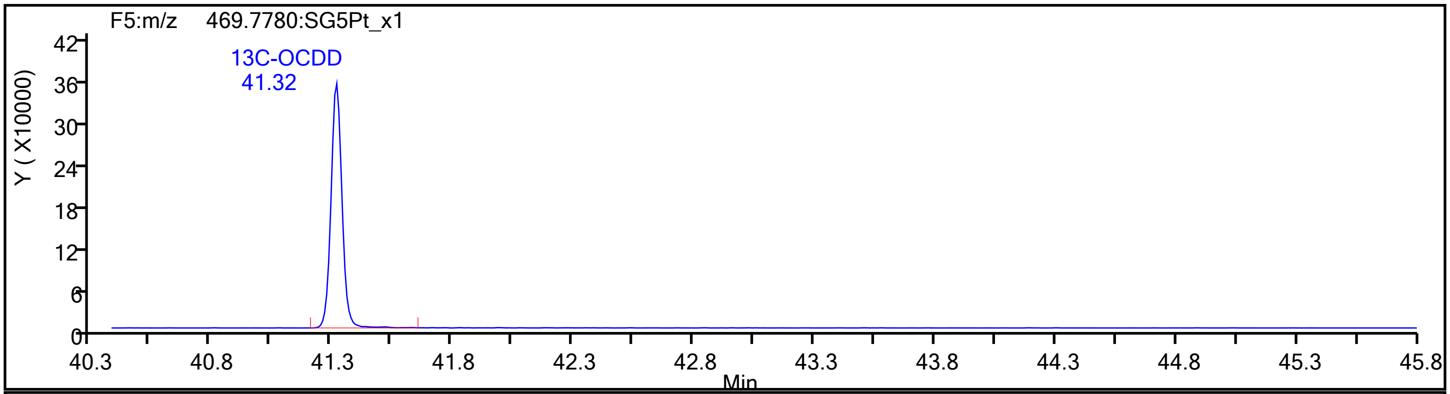

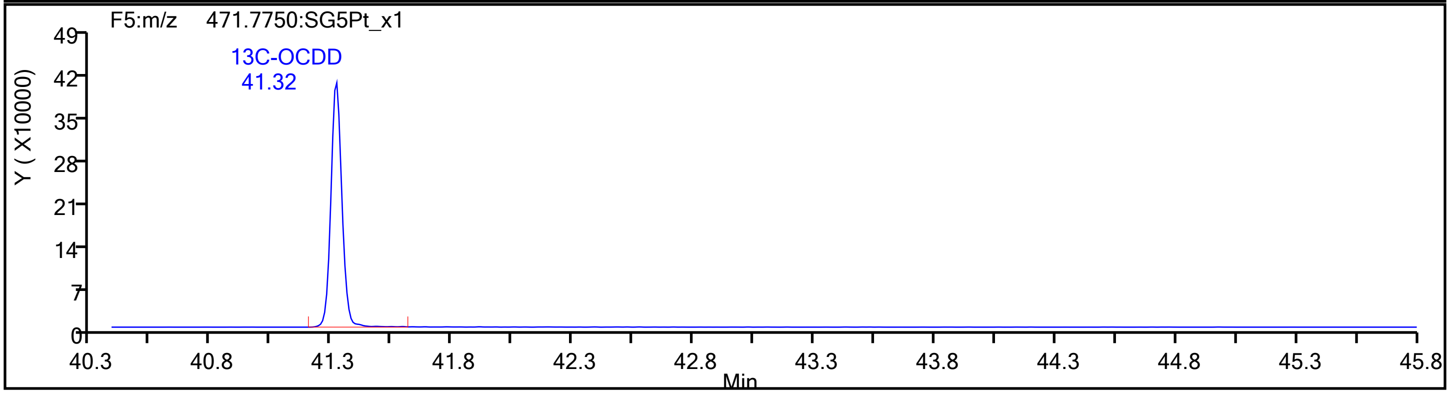

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

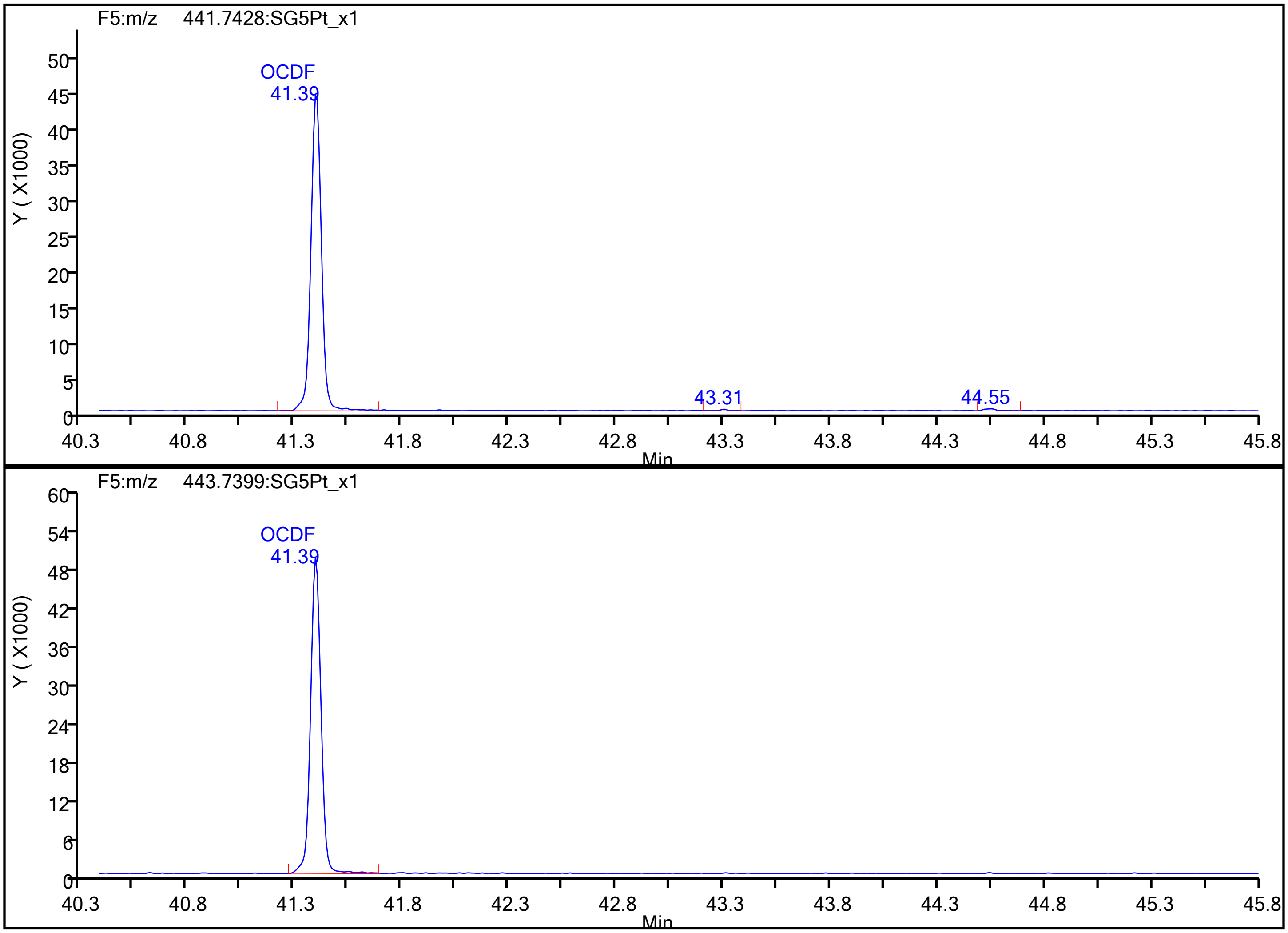

OCDF Interference Mass

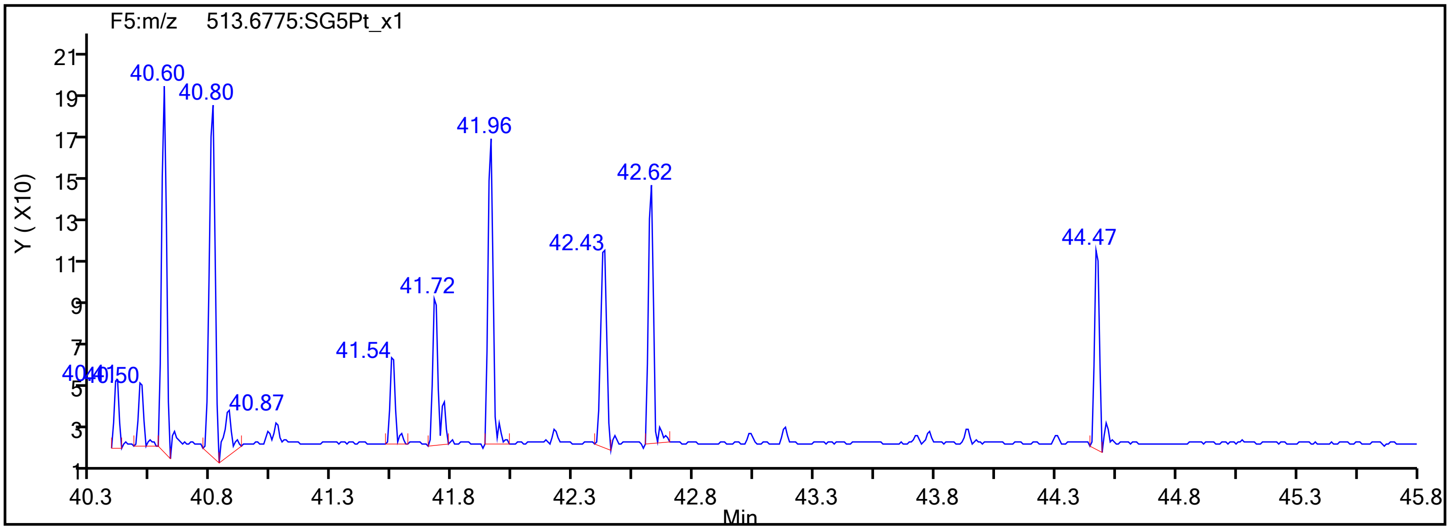

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

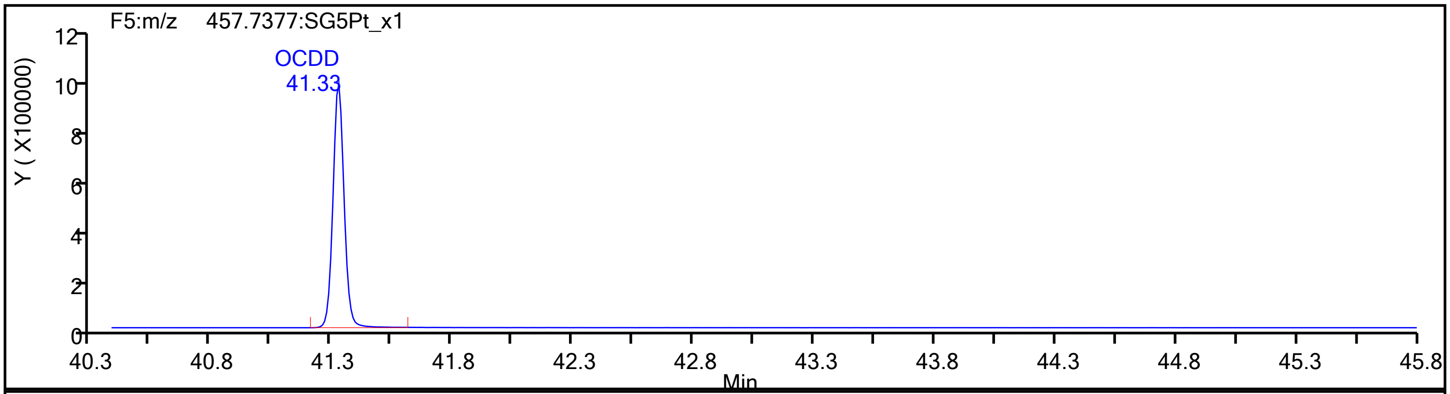

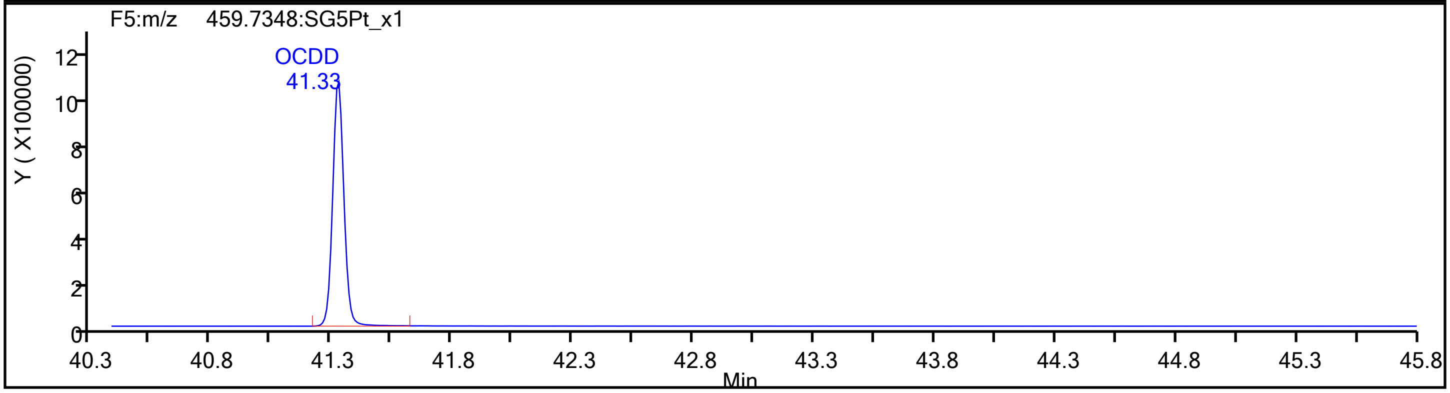

OCDD Standards

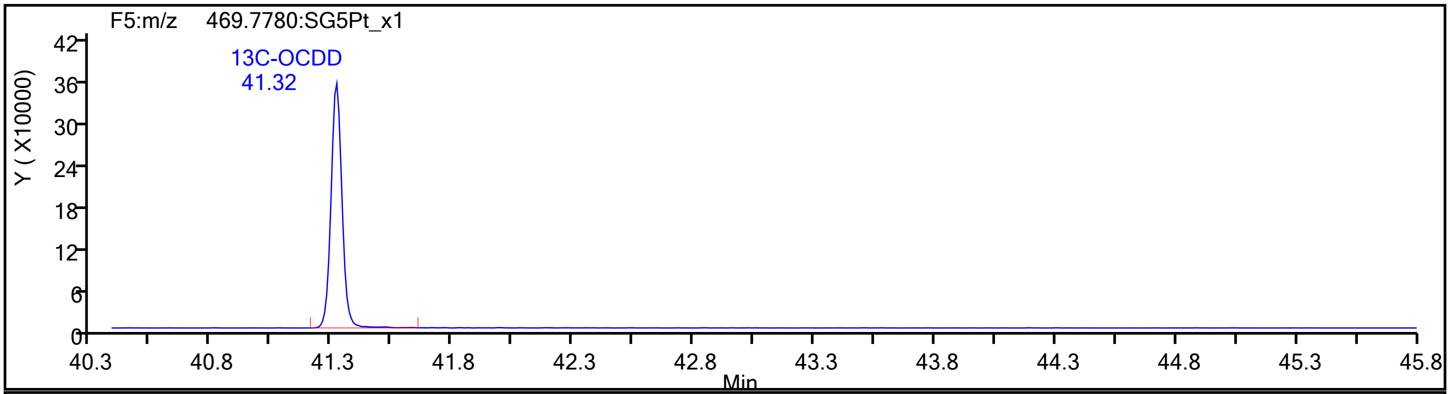

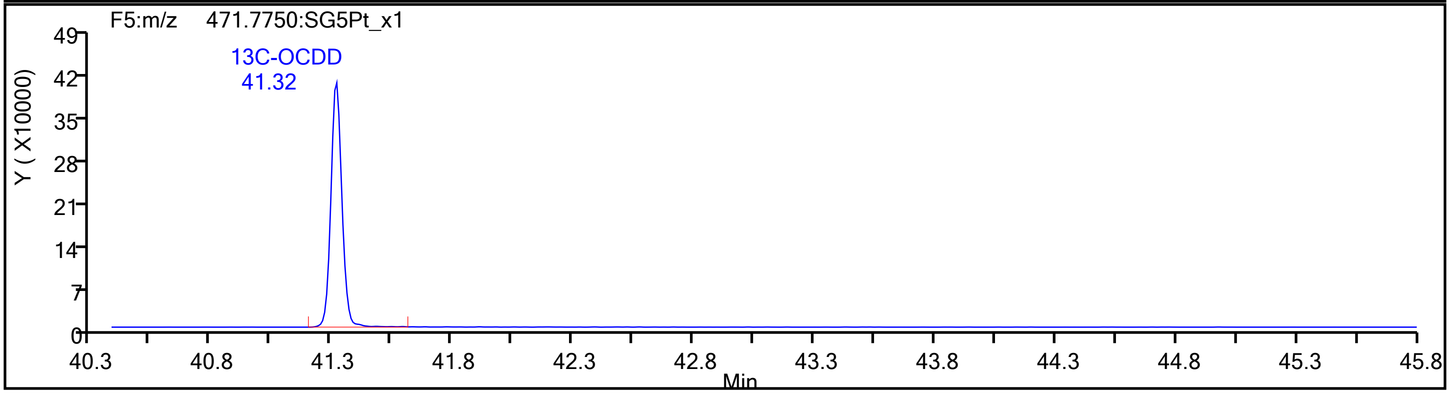

Report Date: 12-Mar-2021 07:53:43 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

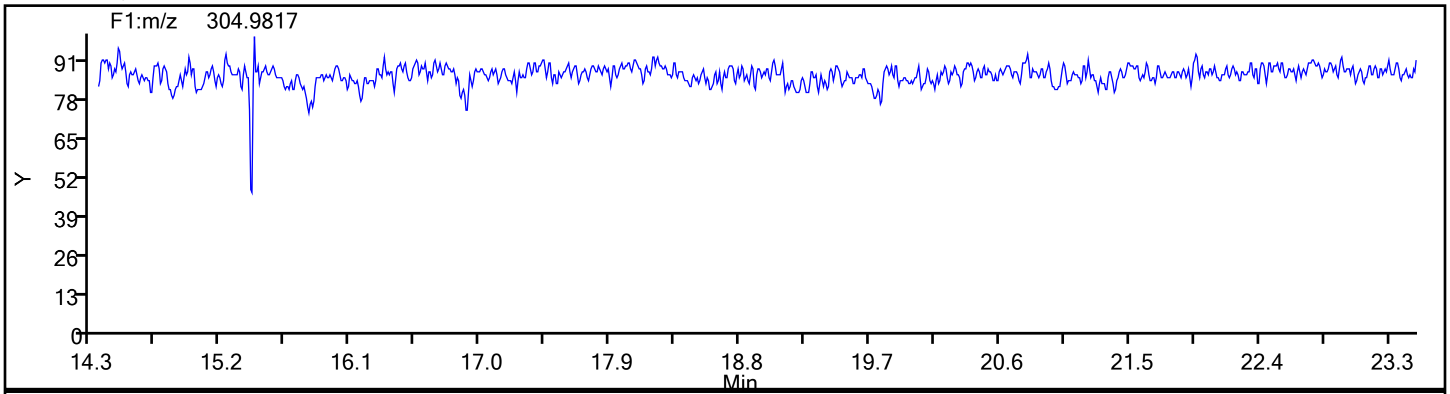

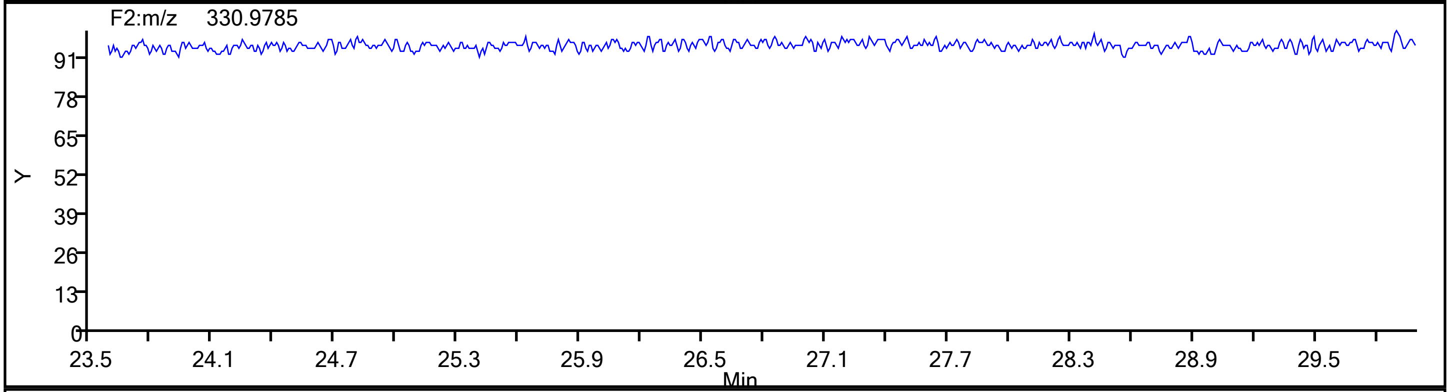

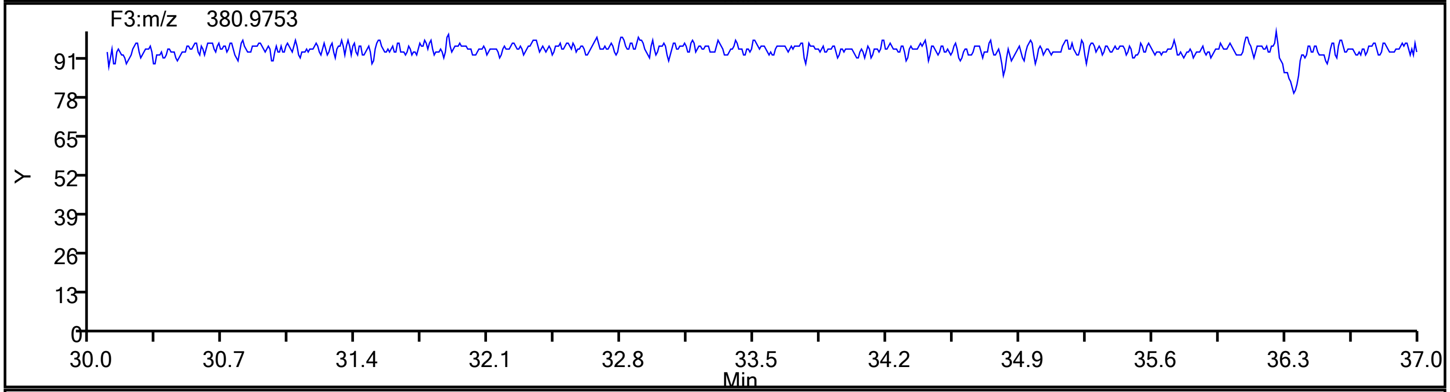

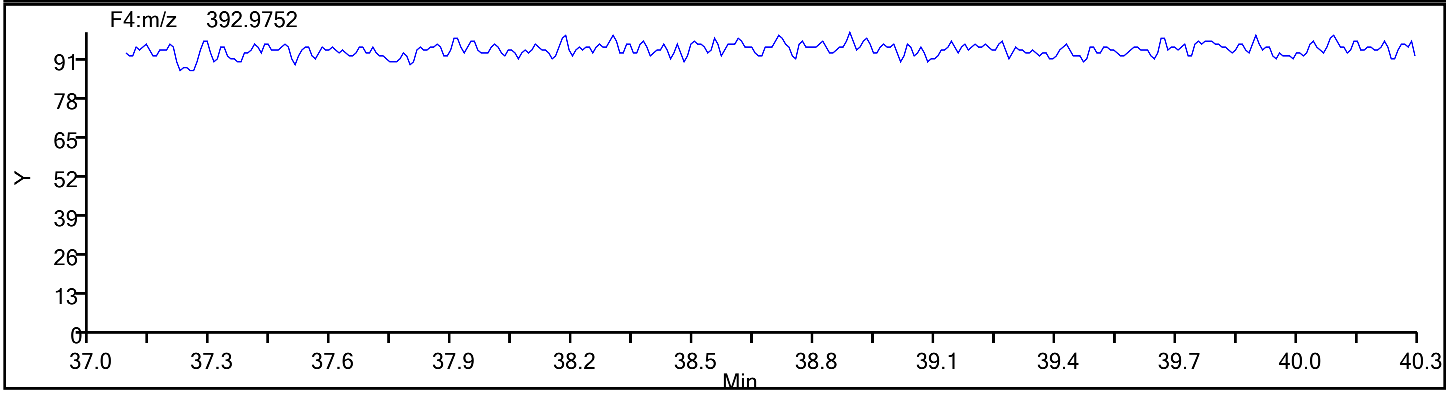

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_10.d		
Injection Date:	10-Mar-2021 15:13:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	468973	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

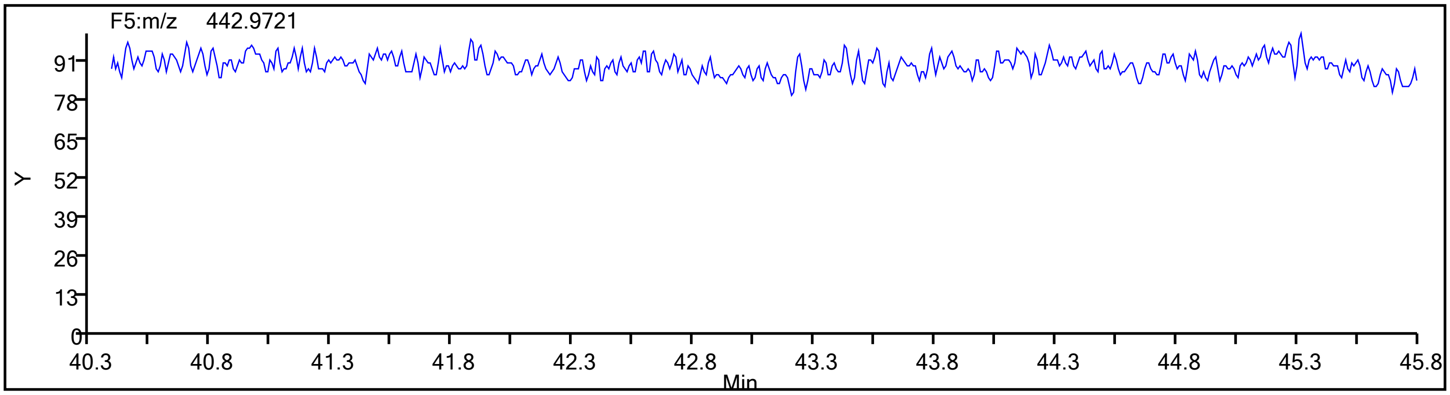

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-41mm RADL Lab Sample ID: 320-70797-2 RADL

Matrix: Water Lab File ID: 16MR2111D2_005.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1036.3(mL) Date Analyzed: 03/16/2021 23:26

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 470865 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	23000	B	96	25

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	112		35-197

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_005.d				
Lims ID:	320-70797-A-2-A				
Client ID:	11215702-Tank1-41mm				
Sample Type:	Client				
Inject. Date:	16-Mar-2021 23:26:38	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Sample Info:	320-70797-A-2-A (10X)				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	17-Mar-2021 08:12:45	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1655				
First Level Reviewer: bilottag		Date:	17-Mar-2021 08:10:22		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.022	14853751	0.79	1.8E+06	10.0	10.0				
D 13C-2,3,7,8-TCDF	16.160	15261170	0.83	1.3057	7.869	7.869	0.2030	0.2030	78.69	
2,3,7,8-TCDF	16.160	166253188	0.78	0.9242	117.9	117.9	0.1288	0.1288		
D 13C-2,3,7,8-TCDD	14.788	9094900	0.82	0.8971	6.825	6.825	1.397	1.397	68.25	
2,3,7,8-TCDD	14.802	40802891	0.79	0.9989	44.9	44.9	0.2196	0.2196		
$ 37Cl4-2,3,7,8-TCDD	14.802	5679854		0.8499	4.499	4.499	0.0343	0.0343	112	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_005.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Sample Type: Client
Inject. Date: 16-Mar-2021 23:26:38 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-2-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:10:22

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.022	15.023	0		6552727	1583095	80048	200120	20		
333.9339	15.008	15.023	-1		8301024	1915042	95286	238215	20	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.160	16.148	1	1.076	6926438	1579294	20540	51350	77		
317.9389	16.160	16.148	1	1.076	8334732	1830994	16555	41387	111	0.83(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.160	16.176	-1	1.000	72879949	16596846	6750	16875	2459		
305.8987	16.160	16.176	-1	1.000	93373239	20991107	9485	23712	2213	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.788	14.790	0	0.984	4089440	919277	80048	200120	11		
333.9339	14.788	14.790	0	0.984	5005460	1277483	95286	238215	13	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.802	14.804	0	1.001	18034463	4352493	10593	26482	411		
321.8936	14.802	14.804	0	1.001	22768428	5619146	8679	21697	647	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.802	14.804	0	0.985	5679854	1412422	4079	10197	346		

QC Flag Legend

Processing Flags

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_005.d

Injection Date: 16-Mar-2021 23:26:38 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-41mm

Worklist#: 470865 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

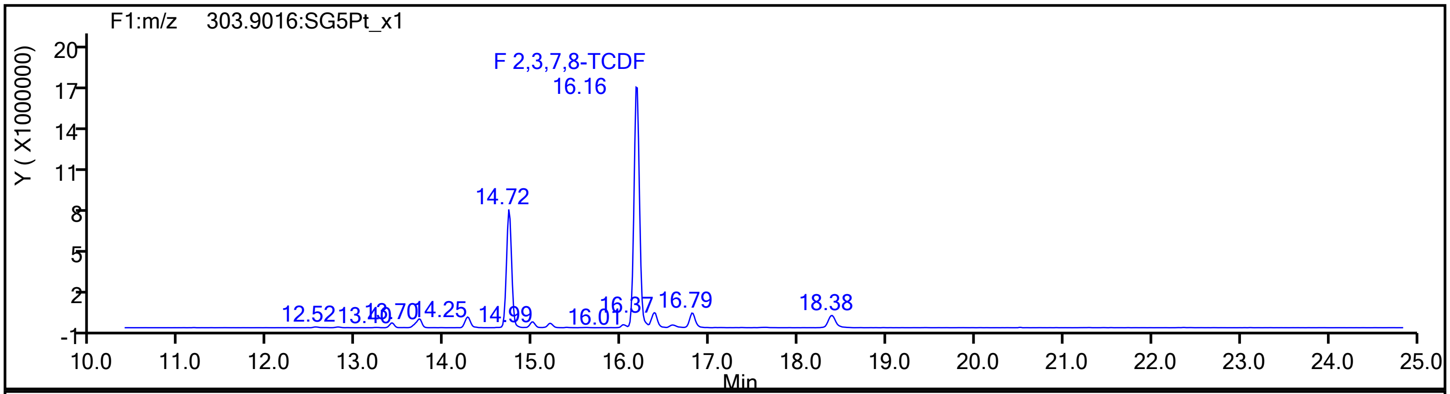

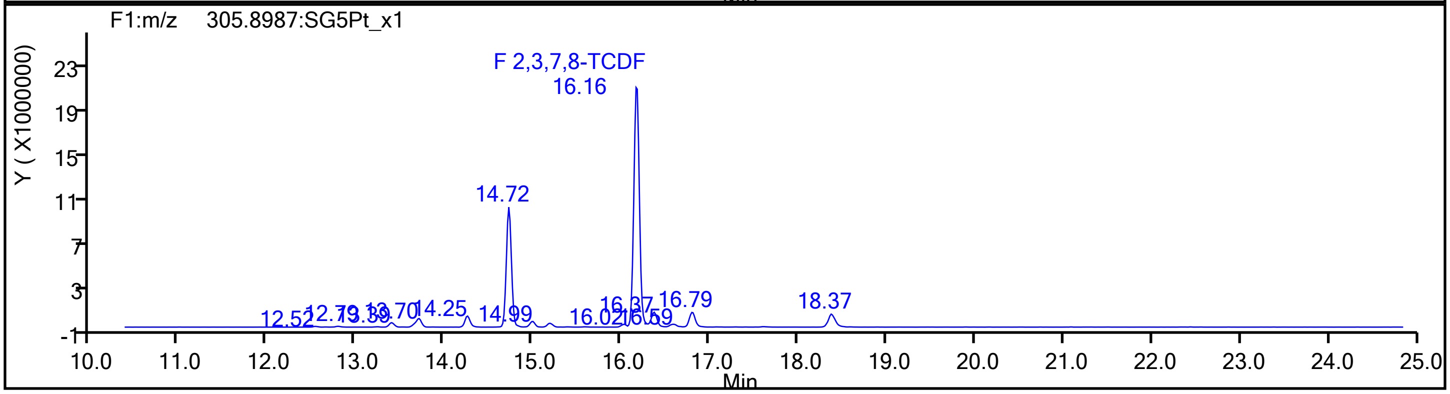

TCDF Standards

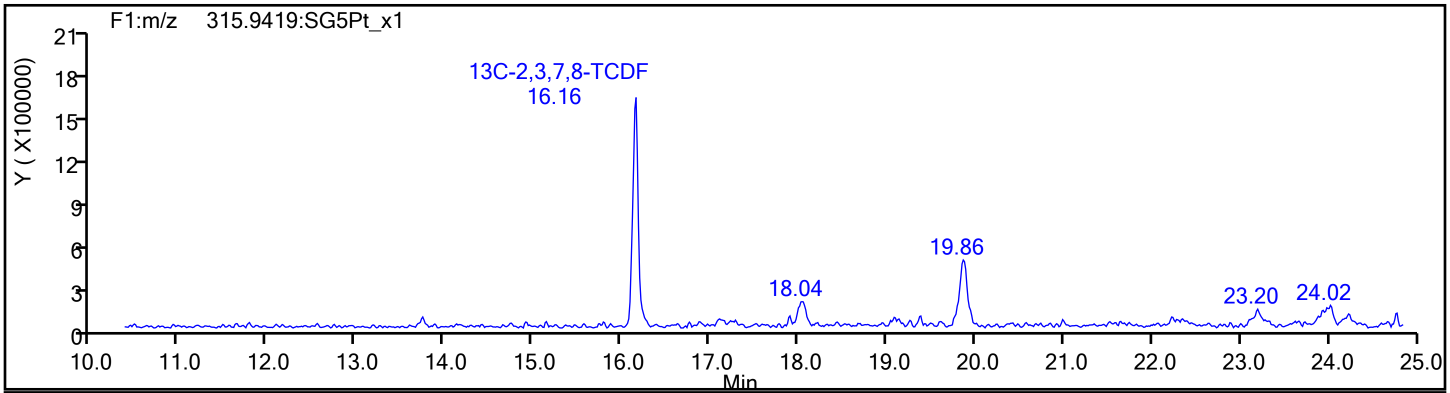

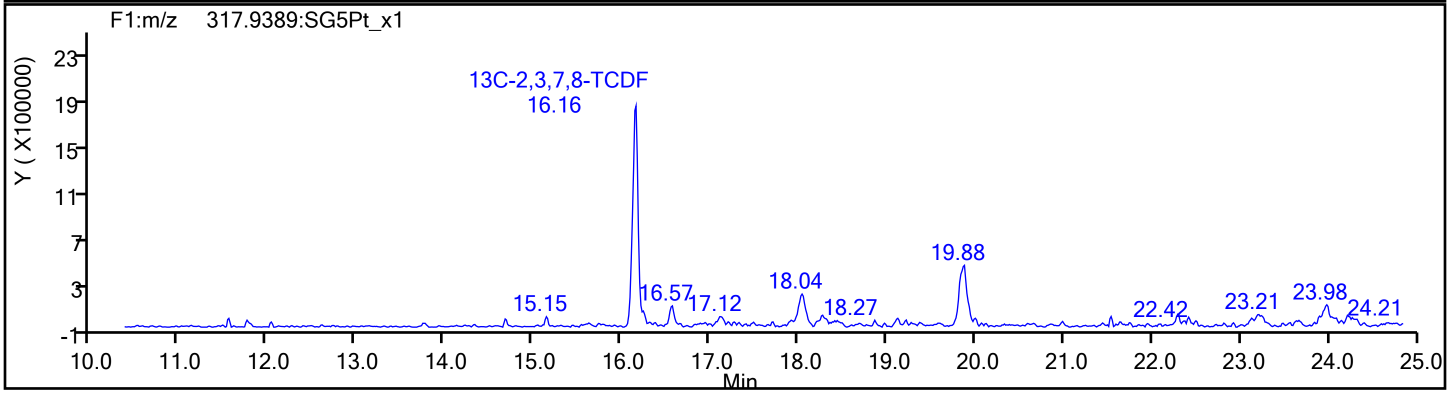

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_005.d		
Injection Date:	16-Mar-2021 23:26:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	470865	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

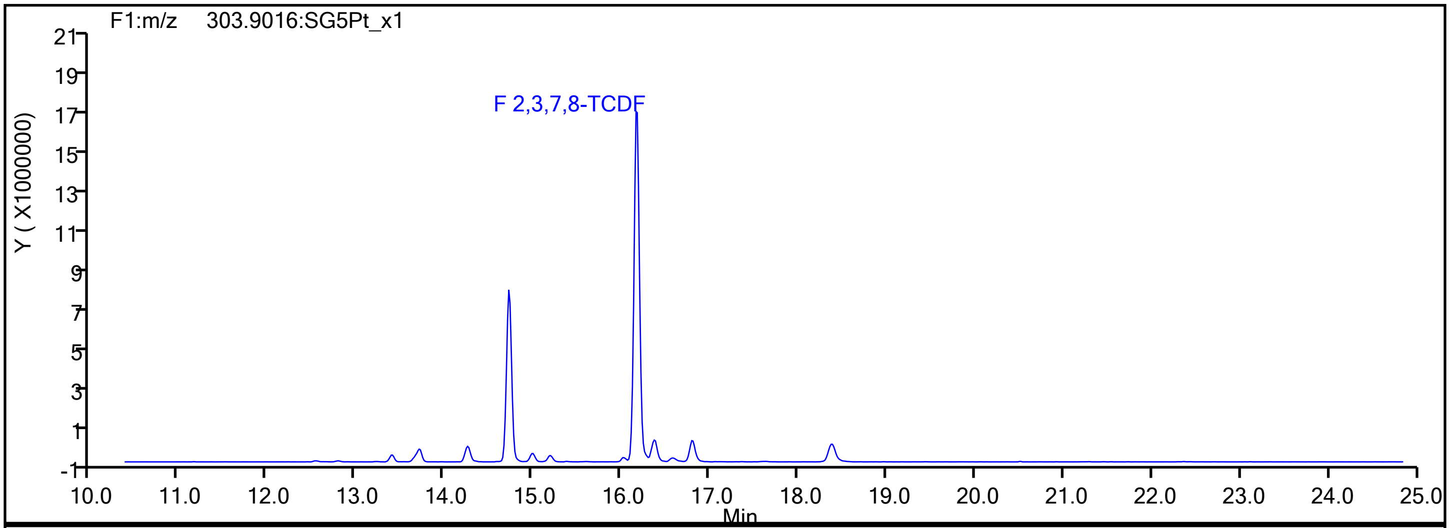

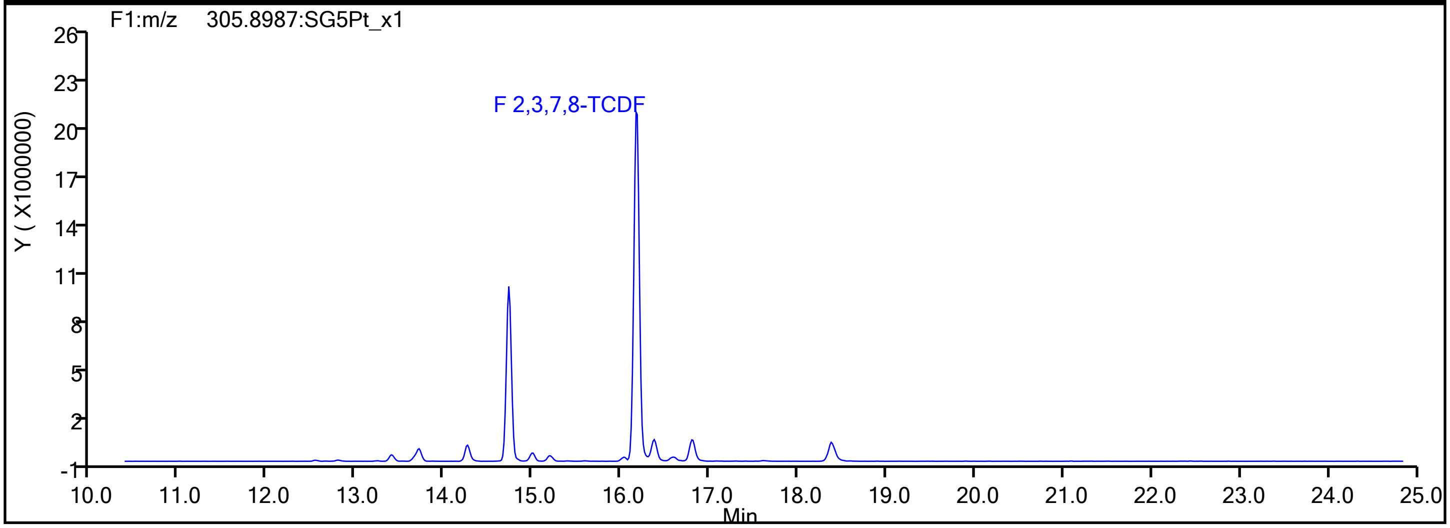

TCDF Interference Mass

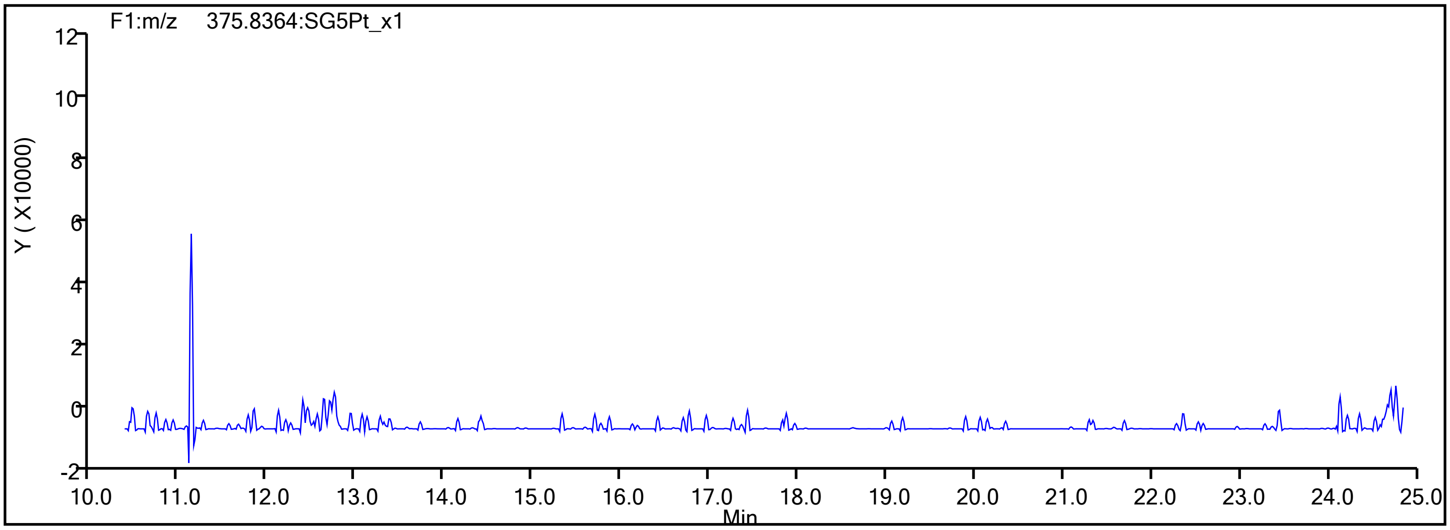

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_005.d
Injection Date: 16-Mar-2021 23:26:38 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-41mm
Worklist#: 470865 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

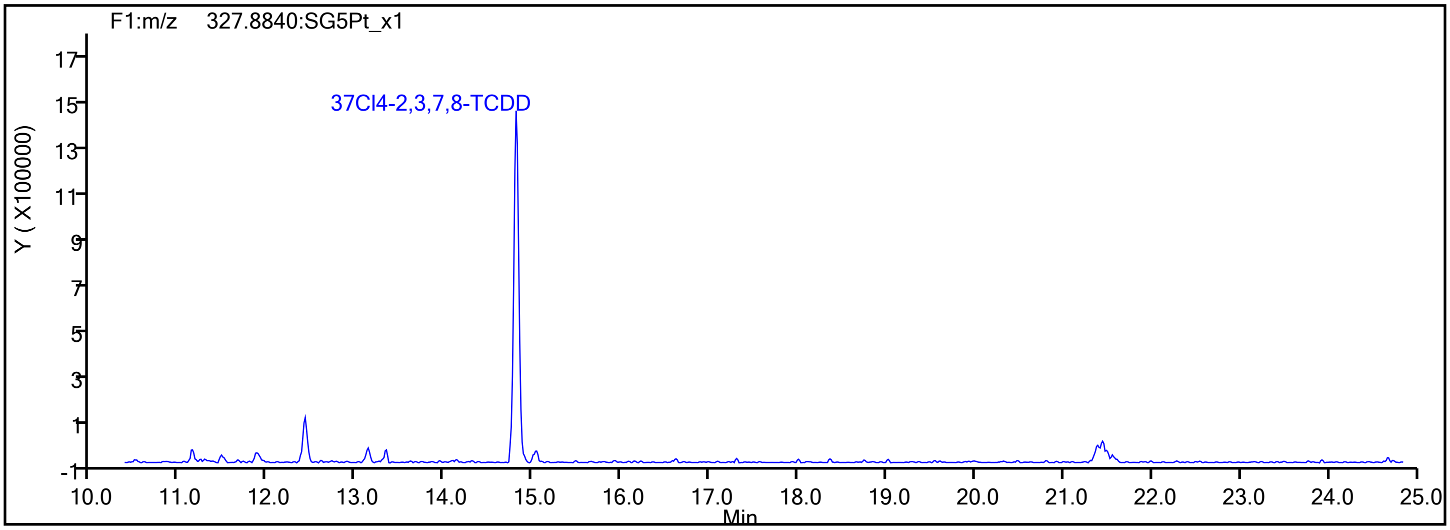

37Cl4-TCDD Standards

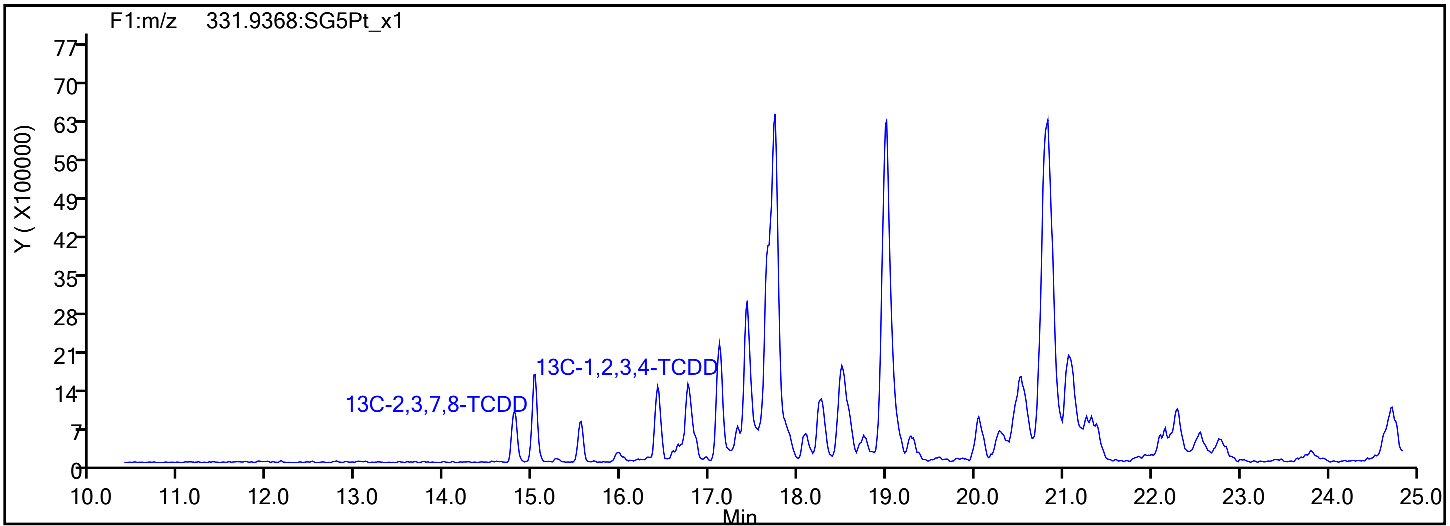

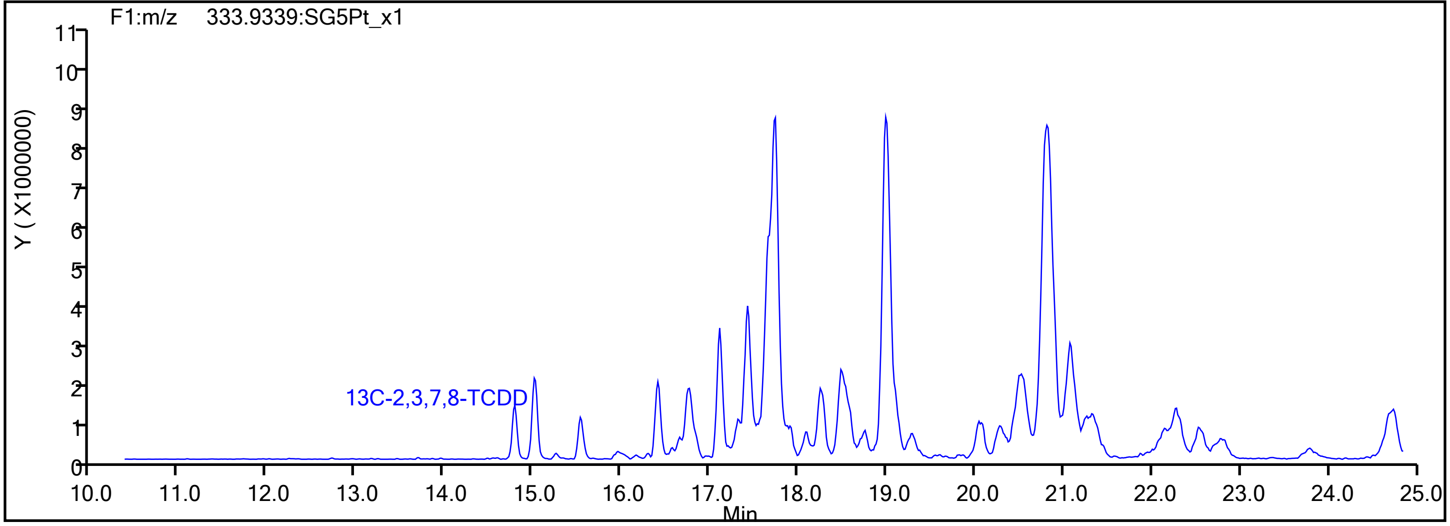

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_005.d		
Injection Date:	16-Mar-2021 23:26:38	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	470865	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

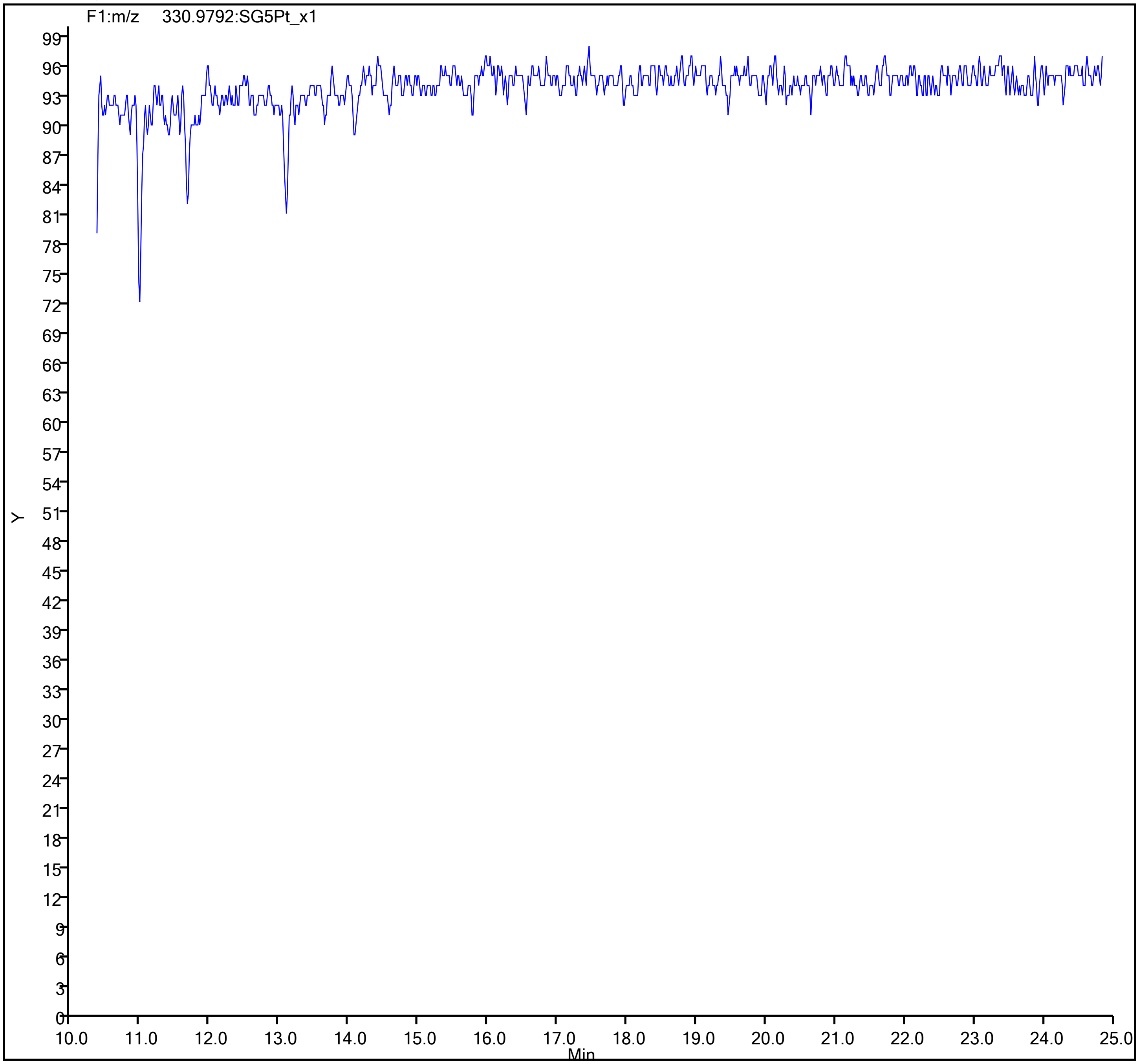

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-41mm DL	Lab Sample ID: 320-70797-2 DL
Matrix: Water	Lab File ID: 17MR2110D5_10.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1036.3(mL)	Date Analyzed: 03/17/2021 17:13
Con. Extract Vol.: 20(uL)	Dilution Factor: 10
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 471421	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	8000		96	52
41903-57-5	Total TCDD	8600	B	96	52
30402-14-3	Total TCDF	41000	G B	110	110

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		25-164
89059-46-1	13C-2,3,7,8-TCDF	69		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	108		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Sample Type: Client
Inject. Date: 17-Mar-2021 17:13:57 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-2-A 320-70797-A-2-A 10X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:32:48 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: dadunj Date: 18-Mar-2021 15:32:48

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.506	2466417	0.69	5.4E+05	10.0	10.0				
D 13C-2,3,7,8-TCDF	17.007	2300549	0.85	1.3554	6.882	6.882	0.2106	0.2106	68.82	
2,3,7,8-TCDF	17.022	28651409	0.77	0.9903	125.8	125.8	0.5718	0.5718		
A Non-2,3,7,8-sub-TCDF	16.719	19950096	0.76	0.9903	87.6	87.6	0.5718	52.7		M
S Total TCDF					213.3	213.3	0.5718	0.5718		
D 13C-2,3,7,8-TCDD	17.702	1535267	0.65	0.9209	6.759	6.759	0.1654	0.1654	67.59	
2,3,7,8-TCDD	17.717	6988929	0.80	1.0991	41.4	41.4	0.2708	0.2708		
$ 37Cl4-2,3,7,8-TCDD	17.717	1083539		1.0159	4.324	4.324	0.0269	0.0269	108	
A Non-2,3,7,8-sub-TCDD	17.165	518413	0.77	1.0991	3.072	3.072	0.2708	3.072		
S Total TCDD					44.5	44.5	0.2708	0.2708		
D 13C-1,2,3,7,8-PeCDF	21.896	1816515	1.52	1.0847	6.790	6.790	0.0456	0.0456	67.90	
1,2,3,7,8-PeCDF	21.923	885389	1.61	1.0209	4.774	4.774	0.0905	0.0905		M
D 13C-2,3,4,7,8-PeCDF	23.205	1921033	1.61	1.1057	7.044	7.044	0.0447	0.0447	70.44	
2,3,4,7,8-PeCDF	23.232	516960	1.41	0.9790	2.749	2.749	0.0923	0.0923		
A F1 PeCDFs	19.524						0.0494	0.0494		
A Non-2,3,7,8-sub-PeCDF	22.586	744470	1.61	1.0000	3.984	3.984	0.0914	1.727		
S Total PeCDF					11.5	11.5	0.0914	0.0914		
D 13C-1,2,3,7,8-PeCDD	23.900	1274239	1.48	0.7689	6.719	6.719	0.0601	0.0601	67.19	M
1,2,3,7,8-PeCDD	23.914	58661	1.52	0.9982	0.4612	0.4612	0.0748	0.0748		
A Non-2,3,7,8-sub-PeCDD	22.857						0.0748	0.0748		
S Total PeCDD					0.4612	0.4612	0.0748	0.0748		
D 13C-1,2,3,4,7,8-HxCDF	30.067	1672746	0.58	1.0321	6.679	6.679	0.0634	0.0634	66.79	
1,2,3,4,7,8-HxCDF	30.094	1887756	1.27	1.0667	10.6	10.6	0.0908	0.0908		
D 13C-1,2,3,6,7,8-HxCDF	30.294	1666757	0.49	1.0218	6.722	6.722	0.0640	0.0640	67.22	
1,2,3,6,7,8-HxCDF	30.320	449145	1.26	1.1178	2.411	2.411	0.0809	0.0809		
D 13C-2,3,4,6,7,8-HxCDF	31.225	1553049	0.54	0.9729	6.579	6.579	0.0672	0.0672	65.79	
2,3,4,6,7,8-HxCDF	31.239	39473	1.24	1.1422	0.2654	0.2225	0.0642	0.0642		RQ
D 13C-1,2,3,7,8,9-HxCDF	32.077	1438899	0.52	0.9469	6.262	6.262	0.0691	0.0691	62.62	
1,2,3,7,8,9-HxCDF	32.077	32424	1.18	1.1455	0.1967	0.1967	0.0580	0.0580		
A Non-2,3,7,8-sub-HxCDF	29.781	248933	1.37	1.1181	1.407	1.407	0.0715	0.6321		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					14.9	14.8	0.0735	0.0735		RQ
* 13C-1,2,3,7,8,9-HxCDD	31.891	2426484	1.25	4.9E+05	10.0	10.0				
D 13C-1,2,3,4,7,8-HxCDD	31.425	1335318	1.19	0.7689	7.157	7.157	0.0783	0.0783	71.57	
1,2,3,4,7,8-HxCDD	31.452						0.0503	0.0503		
D 13C-1,2,3,6,7,8-HxCDD	31.545	1330540	1.28	0.8643	6.344	6.344	0.0697	0.0697	63.44	
1,2,3,6,7,8-HxCDD	31.558						0.0580	0.0580		
1,2,3,7,8,9-HxCDD	31.904						0.0503	0.0503		
A Non-2,3,7,8-sub-HxCDD	30.433	29569	1.24	1.0247	0.2405	0.2165	0.0527	0.2165		RQ
S Total HxCDD					0.2405	0.2165	0.0529	0.0529		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.580	1093524	0.41	0.7233	6.230	6.230	0.1415	0.1415	62.30	
1,2,3,4,6,7,8-HpCDF	33.592	532054	1.10	1.4017	3.471	3.471	0.0676	0.0676		
D 13C-1,2,3,4,7,8,9-HpCDF	34.649	1027896	0.41	0.6720	6.303	6.303	0.1523	0.1523	63.03	
1,2,3,4,7,8,9-HpCDF	34.661	190382	1.16	1.2995	1.425	1.425	0.0854	0.0854		
A Non-2,3,7,8-sub-HpCDF	34.127	168469	1.04	1.3506	1.310	1.176	0.0757	1.176		RQ
S Total HpCDF					6.207	6.072	0.0765	0.0765		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	34.370	1118884	1.00	0.6855	6.727	6.727	0.0772	0.0772	67.27	
1,2,3,4,6,7,8-HpCDD	34.370	371536	1.00	1.0339	3.212	3.212	0.0705	0.0705		
A Non-2,3,7,8-sub-HpCDD	34.460	354162	1.02	1.0339	3.062	3.062	0.0705	3.062		
S Total HpCDD					6.274	6.274	0.0705	0.0705		
D 13C-OCDD	36.685	1363832	0.89	0.4996	11.2	11.2	0.0815	0.0815	56.25	
OCDF	36.780	184987	0.93	1.3135	2.065	2.065	0.0732	0.0732		M
OCDD	36.697	4046691	0.90	1.0576	56.1	56.1	0.1368	0.1368		

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

Report Date: 18-Mar-2021 15:32:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Sample Type: Client
Inject. Date: 17-Mar-2021 17:13:57 ALS Bottle#: 8 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-2-A 320-70797-A-2-A 10X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:32:48 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: dadunj Date: 18-Mar-2021 15:32:48

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.506	17.506	0		1002990	241158	2188	5470	110		
333.9339	17.506	17.506	0		1463427	361727	1485	3712	244	0.69(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.007	17.007	0	0.972	1054505	261992	4288	10720	61		
317.9389	17.007	17.007	0	0.972	1246044	317440	2597	6492	122	0.85(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.022	17.022	0	1.001	12444539	3057695	5818	14545	526		
305.8987	17.022	17.022	0	1.001	16206870	4021713	7305	18262	551	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											M
303.9016	15.404	16.719	-79	0.906	56743	15531	5818	14545	3		M
305.8987	15.404	16.719	-79	0.906	75152	22933	7305	18262	3	0.76(0.65-0.89)	M
303.9016	15.646	16.719	-64	0.920	219271	58733	5818	14545	10		
305.8987	15.646	16.719	-64	0.920	290860	79904	7305	18262	11	0.75(0.65-0.89)	
303.9016	15.918	16.719	-48	0.936	368755	82671	5818	14545	14		
305.8987	15.918	16.719	-48	0.936	477276	109178	7305	18262	15	0.77(0.65-0.89)	
303.9016	16.145	16.719	-34	0.949	350823	91144	5818	14545	16		
305.8987	16.145	16.719	-34	0.949	476716	131699	7305	18262	18	0.74(0.65-0.89)	
303.9016	16.372	16.719	-21	0.963	439248	116198	5818	14545	20		
305.8987	16.372	16.719	-21	0.963	678624	160580	7305	18262	22	0.65(0.65-0.89)	
303.9016	16.659	16.719	-4	0.980	5212201	1360573	5818	14545	234		
305.8987	16.659	16.719	-4	0.980	6799164	1749140	7305	18262	239	0.77(0.65-0.89)	
303.9016	16.871	16.719	9	0.992	193859	48483	5818	14545	8		
305.8987	16.871	16.719	9	0.992	240392	63471	7305	18262	9	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.445	16.719	43	1.026	773584	189262	5818	14545	33		
305.8987	17.445	16.719	43	1.026	988250	245935	7305	18262	34	0.78(0.65-0.89)	
303.9016	17.687	16.719	58	1.040	178738	40765	5818	14545	7		
305.8987	17.687	16.719	58	1.040	227741	49051	7305	18262	7	0.78(0.65-0.89)	
303.9016	18.791	16.719	124	1.105	819855	180614	5818	14545	31		
305.8987	18.791	16.719	124	1.105	1082844	242361	7305	18262	33	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.702	17.702	0	1.011	602396	145251	2188	5470	66		
333.9339	17.702	17.702	0	1.011	932871	208872	1485	3712	141	0.65(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.717	17.717	0	1.001	3096468	765956	2743	6857	279		
321.8936	17.717	17.717	0	1.001	3892461	940592	1473	3682	639	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.717	17.717	0	1.012	1083539	262478	658	1645	399		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.065	17.165	54	1.020	226087	57128	2743	6857	21		
321.8936	18.065	17.165	54	1.020	292326	76126	1473	3682	52	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.896	21.896	0	1.251	1095128	195987	664	1660	295		
353.8970	21.896	21.896	0	1.251	721387	128611	529	1322	243	1.52(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.923	21.910	1	1.001	546286	99063	548	1370	181		M
341.8567	21.910	21.910	0	1.001	339103	56763	652	1630	87	1.61(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	23.205	23.205	0	1.326	1185206	208675	664	1660	314		
353.8970	23.219	23.205	1	1.326	735827	123247	529	1322	233	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.232	23.219	1	1.001	302351	52709	548	1370	96		
341.8567	23.232	23.219	1	1.001	214609	36323	652	1630	56	1.41(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.524						267	667			
341.8567	19.524						381	952			
A Non-2,3,7,8-sub-PeCDF											
339.8597	20.614	22.586	-118	0.941	195793	39019	548	1370	71		
341.8567	20.614	22.586	-118	0.941	126904	26507	652	1630	41	1.54(1.32-1.78)	
339.8597	21.787	22.586	-48	0.995	36313	8329	548	1370	15		
341.8567	21.787	22.586	-48	0.995	24333	5443	652	1630	8	1.49(1.32-1.78)	
339.8597	22.428	22.586	-9	1.024	142429	25654	548	1370	47		
341.8567	22.428	22.586	-9	1.024	84084	18328	652	1630	28	1.69(1.32-1.78)	
339.8597	23.546	22.586	57	1.075	84851	12518	548	1370	23		
341.8567	23.573	22.586	59	1.077	49763	8593	652	1630	13	1.71(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											M
367.8949	23.900	23.901	0	1.365	759740	120772	600	1500	201		M
369.8919	23.900	23.901	0	1.365	514499	76683	515	1287	149	1.48(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											
355.8546	23.914	23.928	-1	1.001	35356	5591	346	865	16		
357.8516	23.955	23.928	2	1.002	23305	3792	244	610	16	1.52(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.857						346	865			
357.8516	22.857						244	610			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.067	30.054	1	0.943	615809	94014	595	1487	158		
385.8610	30.067	30.054	1	0.943	1056937	158206	967	2417	164	0.58(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.094	30.094	0	1.001	1056166	161152	509	1272	317		
375.8178	30.094	30.094	0	1.001	831590	127305	468	1170	272	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.294	30.281	1	0.950	551371	86149	595	1487	145		
385.8610	30.294	30.281	1	0.950	1115386	184053	967	2417	190	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.320	30.307	1	1.001	250691	39070	509	1272	77		
375.8178	30.333	30.307	2	1.001	198454	30798	468	1170	66	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.225	31.226	0	0.979	547309	124988	595	1487	210		
385.8610	31.225	31.226	0	0.979	1005740	207763	967	2417	215	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQ
373.8208	31.239	31.239	0	1.000	29451	8928	509	1272	18		
	Empc Correction				21851	6461	509	1272	13		
375.8178	31.239	31.239	0	1.000	17622	5211	468	1170	11	1.67(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.077	32.091	-1	1.006	491325	120016	595	1487	202		
385.8610	32.090	32.091	0	1.006	947574	247317	967	2417	256	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.077	32.104	-2	1.000	17555	4303	509	1272	8		
375.8178	32.104	32.104	0	1.001	14869	3528	468	1170	8	1.18(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	27.725	29.781	-123	0.922	65601	7307	509	1272	14		
375.8178	27.751	29.781	-122	0.923	46268	5454	468	1170	12	1.42(1.05-1.43)	
373.8208	31.119	29.781	80	1.035	21323	4718	509	1272	9		
375.8178	31.132	29.781	81	1.035	15599	3146	468	1170	7	1.37(1.05-1.43)	
373.8208	32.197	29.781	145	1.071	57032	14917	509	1272	29		
375.8178	32.197	29.781	145	1.071	43110	10800	468	1170	23	1.32(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.891	31.891	0		1346438	338789	677	1692	500		
403.8529	31.891	31.891	0		1080046	258255	761	1902	339	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.425	31.425	0	0.985	726627	185681	677	1692	274		
403.8529	31.438	31.425	1	0.986	608691	143384	761	1902	188	1.19(1.05-1.43)	

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Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDD											
389.8157	31.452						396	990			
391.8127	31.452						290	725			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.545	31.545	0	0.989	746424	175063	677	1692	259		
403.8529	31.545	31.545	0	0.989	584116	131120	761	1902	172	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.558						396	990			
391.8127	31.558						290	725			
1,2,3,7,8,9-HxCDD											
389.8157	31.904						396	990			
391.8127	31.904						290	725			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8157	30.613	30.433	11	0.970	16369	2894	396	990	7		
391.8127	30.626	30.433	12	0.971	16476	3417	290	725	12	0.99(1.05-1.43)	
	Empc Correction				13200	2333	290	725	8		
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.580	33.580	0	1.053	319451	106227	1254	3135	85		
419.8220	33.580	33.580	0	1.053	774073	265093	1190	2975	223	0.41(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.592	0	1.000	278097	93840	985	2462	95		
409.7789	33.580	33.592	-1	1.000	253957	86493	422	1055	205	1.10(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.649	34.650	0	1.086	301417	88861	1254	3135	71		
419.8220	34.649	34.650	0	1.086	726479	228215	1190	2975	192	0.41(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.661	34.661	0	1.000	102404	27105	985	2462	28		
409.7789	34.661	34.661	0	1.000	87978	26563	422	1055	63	1.16(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											RQ
407.7818	33.884	34.127	-15	1.009	105111	32893	985	2462	33		
	Empc Correction				85886	28336	985	2462	29		
409.7789	33.884	34.127	-15	1.009	82583	27247	422	1055	65	1.27(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.370	34.370	0	1.078	558990	171219	724	1810	236		
437.8140	34.370	34.370	0	1.078	559894	167991	540	1350	311	1.00(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.370	34.382	-1	1.000	185833	57238	463	1157	124		
425.7737	34.370	34.382	-1	1.000	185703	59695	526	1315	113	1.00(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.823	34.460	-38	0.984	178600	58427	463	1157	126		
425.7737	33.823	34.460	-38	0.984	175562	57831	526	1315	110	1.02(0.88-1.20)	
13C-OCDD											
469.7779	36.685	36.685	0	1.150	643858	179957	504	1260	357		
471.7750	36.685	36.685	0	1.150	719974	191290	469	1172	408	0.89(0.76-1.02)	
OCDF											M
441.7428	36.780	36.781	0	1.003	88984	29259	319	797	92		M
443.7399	36.769	36.781	-1	1.002	96003	30717	395	987	78	0.93(0.76-1.02)	M

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDD											
457.7377	36.697	36.697	0	1.000	1915578	524160	559	1397	938		
459.7348	36.685	36.697	-1	1.000	2131113	578513	515	1287	1123	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	17-Mar-2021 17:13:57	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDF, RT: 16.719

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.990	D 13C-2,3,7,8-TCDF	100.000	2300549	579432

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.990		10.000	2300549	579432

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.404	56743	15531	75152	22933	0.5790	0.76	M
15.646	219271	58733	290860	79904	2.24	0.75	
15.918	368755	82671	477276	109178	3.71	0.77	
16.145	350823	91144	476716	131699	3.63	0.74	
16.372	439248	116198	678624	160580	4.91	0.65	
16.659	5212201	1360573	6799164	1749140	52.7	0.77	
16.871	193859	48483	240392	63471	1.91	0.81	
17.445	773584	189262	988250	245935	7.73	0.78	
17.687	178738	40765	227741	49051	1.78	0.78	
18.791	819855	180614	1082844	242361	8.35	0.76	
Signal Totals:							
	8613077	2183974	11337019	2854252			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	19950096	5038226				0.76	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 87.571 = (19950096 * 10.000) / (2300549 * 0.990)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	17-Mar-2021 17:13:57	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDD, RT: 17.165

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.099	D 13C-2,3,7,8-TCDD	100.000	1535267	354123

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.099		10.000	1535267	354123

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.065	226087	57128	292326	76126	3.07	0.77	
Signal Totals:							
	226087	57128	292326	76126			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	518413	133254				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.072 = (518413 * 10.000) / (1535267 * 1.099)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Inject. Date: 17-Mar-2021 17:13:57 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: KSS
Lims Batch ID: 471421 Lims Sample ID: 10

Non-2,3,7,8-sub-PeCDF, RT: 22.586

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021	D 13C-1,2,3,7,8-PeCDF	100.000	1816515	324598
2,3,4,7,8-PeCDF	0.979	D 13C-2,3,4,7,8-PeCDF	100.000	1921033	331922

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		10.000	1868774	328260

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.614	195793	39019	126904	26507	1.73	1.54	
21.787	36313	8329	24333	5443	0.3245	1.49	
22.428	142429	25654	84084	18328	1.21	1.69	
23.546	84851	12518	49763	8593	0.7204	1.71	
Signal Totals:							
	459386	85520	285084	58871			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	744470	144391				1.61	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.984 = (744470 * 10.000) / (1868774 * 1.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	17-Mar-2021 17:13:57	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDF, RT: 29.781

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.067	D 13C-1,2,3,4,7,8-HxCDF	100.000	1672746	252220
1,2,3,6,7,8-HxCDF	1.118	D 13C-1,2,3,6,7,8-HxCDF	100.000	1666757	270202
2,3,4,6,7,8-HxCDF	1.142	D 13C-2,3,4,6,7,8-HxCDF	100.000	1553049	332751
1,2,3,7,8,9-HxCDF	1.146	D 13C-1,2,3,7,8,9-HxCDF	100.000	1438899	367333

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.118		10.000	1582862	305626

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.725	65601	7307	46268	5454	0.6321	1.42	
31.119	21323	4718	15599	3146	0.2086	1.37	
32.197	57032	14917	43110	10800	0.5659	1.32	
Signal Totals:							
	143956	26942	104977	19400			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	248933	46342				1.37	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.407 = (248933 * 10.000) / (1582862 * 1.118)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	17-Mar-2021 17:13:57	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDD, RT: 30.433

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.036	D 13C-1,2,3,4,7,8-HxCDD	100.000	1335318	329065
1,2,3,6,7,8-HxCDD	0.966	D 13C-1,2,3,6,7,8-HxCDD	100.000	1330540	306183
1,2,3,7,8,9-HxCDD	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.025		10.000	1332929	317624

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.613	16369	2894	16476	3417	0.2405	0.99	RQ
30.613	16369	2894	13200	2333	0.2165		Empc Correction
Signal Totals:							
	16369	2894	13200	2333			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	32845	6311				0.99	RQ
	29569	5227					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2405 = (32845 * 10.000) / (1332929 * 1.025)
Empc Amount: 0.2165 = (29569 * 10.000) / (1332929 * 1.025)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Lims ID:	320-70797-A-2-A		
Client ID:	11215702-Tank1-41mm		
Inject. Date:	17-Mar-2021 17:13:57	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	10

Non-2,3,7,8-sub-HpCDF, RT: 34.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.402	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1093524	371320
1,2,3,4,7,8,9-HpCDF	1.300	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1027896	317076

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.351		10.000	1060710	344198

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.884	105111	32893	82583	27247	1.31	1.27	RQ
33.884	85886	28336	82583	27247	1.18		Empc Correction
Signal Totals:							
	85886	28336	82583	27247			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	187694	60140				1.27	RQ
	168469	55583					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.310 = (187694 * 10.000) / (1060710 * 1.351)
Empc Amount: 1.176 = (168469 * 10.000) / (1060710 * 1.351)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 18-Mar-2021 15:32:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d
Lims ID: 320-70797-A-2-A
Client ID: 11215702-Tank1-41mm
Inject. Date: 17-Mar-2021 17:13:57 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: KSS
Lims Batch ID: 471421 Lims Sample ID: 10

Non-2,3,7,8-sub-HpCDD, RT: 34.460

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.034	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1118884	339210

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.034		10.000	1118884	339210

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.823	178600	58427	175562	57831	3.06	1.02	
Signal Totals:							
	178600	58427	175562	57831			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	354162	116258				1.02	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.062 = (354162 * 10.000) / (1118884 * 1.034)

Report Date: 18-Mar-2021 15:32:48

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d				
Injection Date:	17-Mar-2021 17:13:57	Instrument ID:	10D5		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	KSS	ALS Bottle#:	8	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.62- 18.82)

Signal: 1

Processing Integration Results

Not Detected
RT: 14.62- 18.82

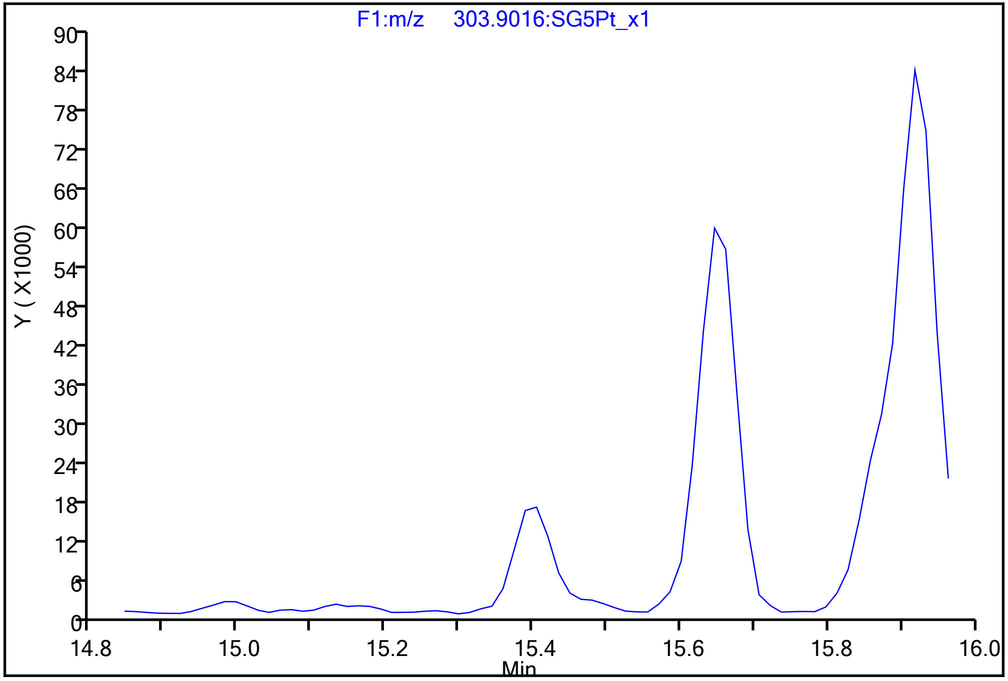

Manual Integration Results

RT = 15.404 Area = 56743 M

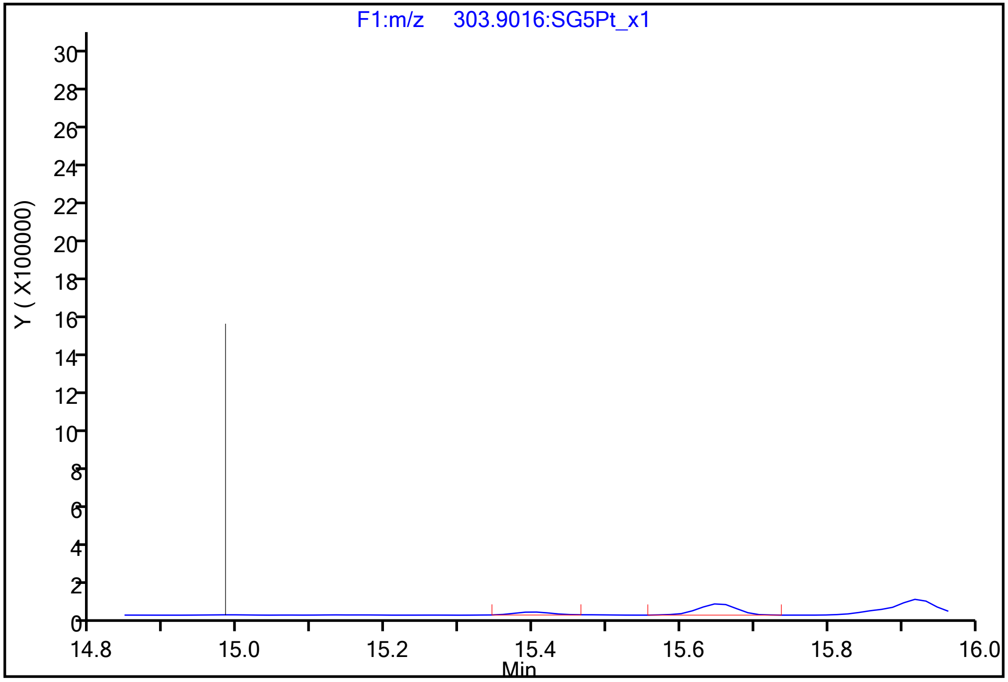

Reviewer: dadunj, 18-Mar-2021 15:29:06

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Report Date: 18-Mar-2021 15:32:48

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d				
Injection Date:	17-Mar-2021 17:13:57	Instrument ID:	10D5		
Lims ID:	320-70797-A-2-A	Lab Sample ID:	320-70797-2		
Client ID:	11215702-Tank1-41mm				
Operator ID:	KSS	ALS Bottle#:	8	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (14.62- 18.82)

Signal: 2

Processing Integration Results

Not Detected

RT: 14.62- 18.82

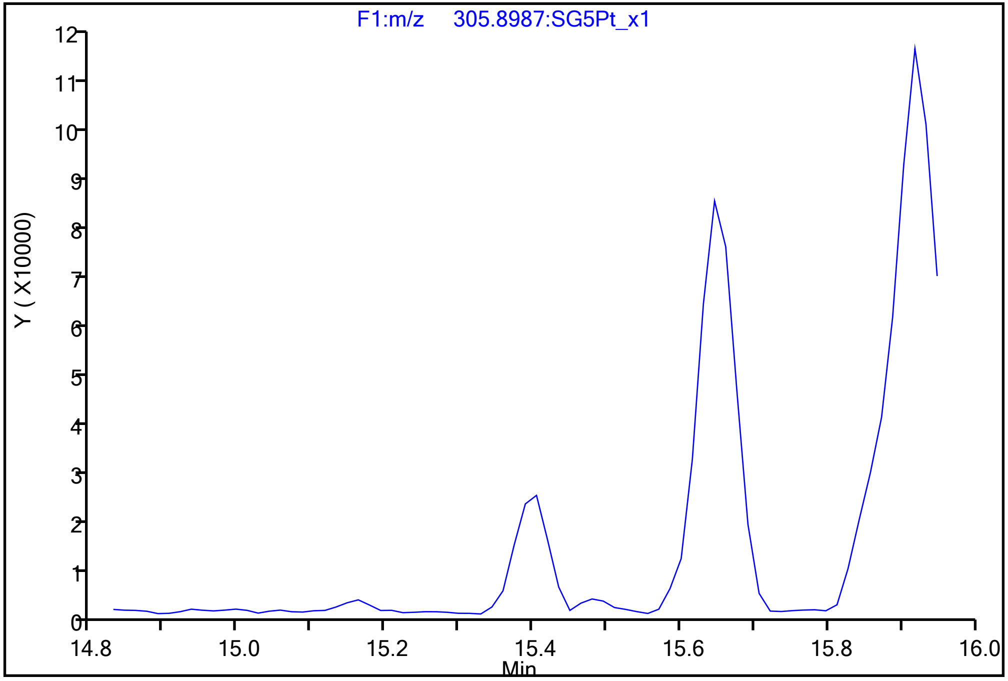

Manual Integration Results

RT = 15.404 Area = 75152 M

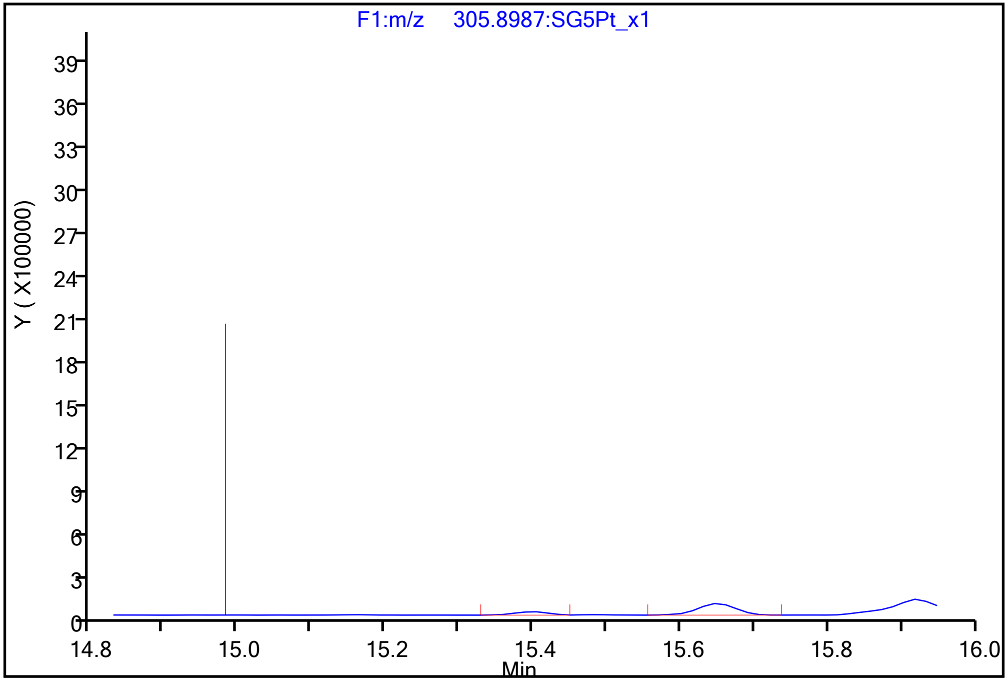

Reviewer: dadunj, 18-Mar-2021 15:29:15

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Report Date: 18-Mar-2021 15:32:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Injection Date:	17-Mar-2021 17:13:57	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	471421	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

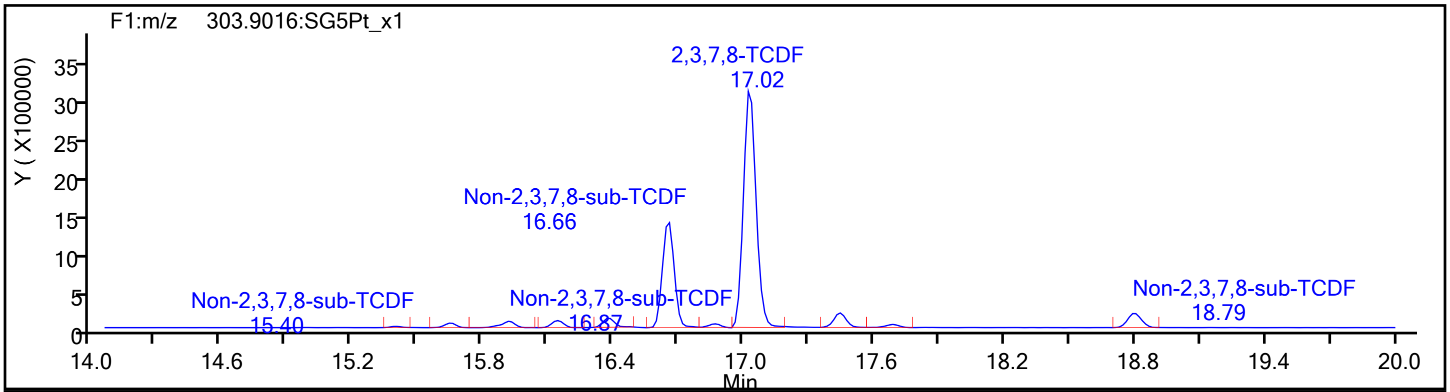

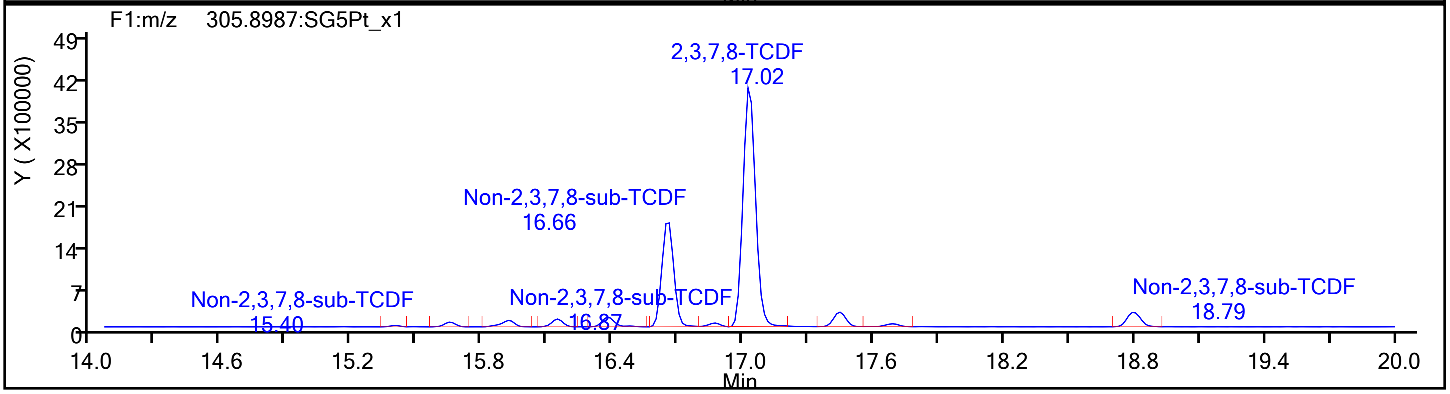

TCDF Standards

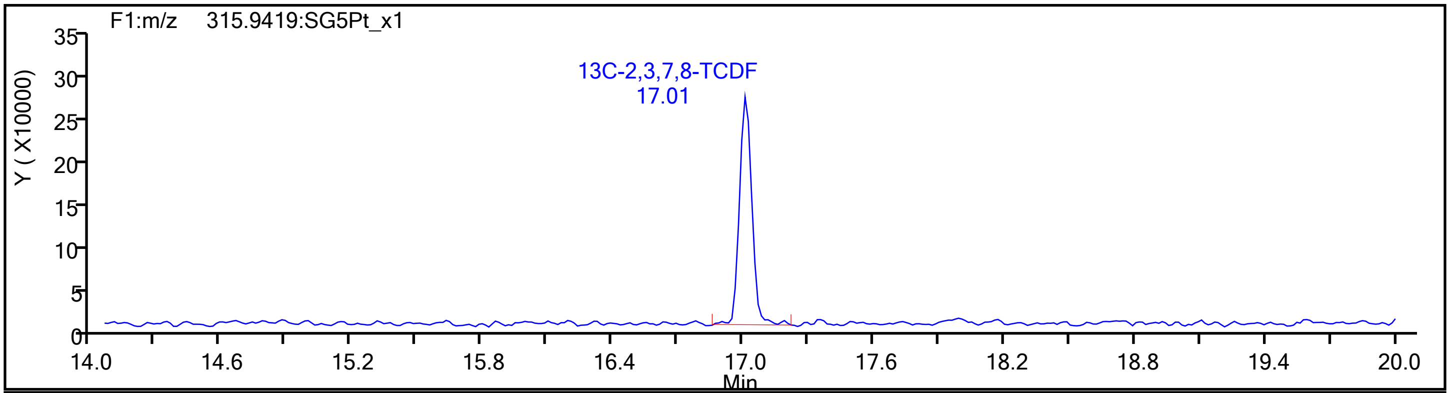

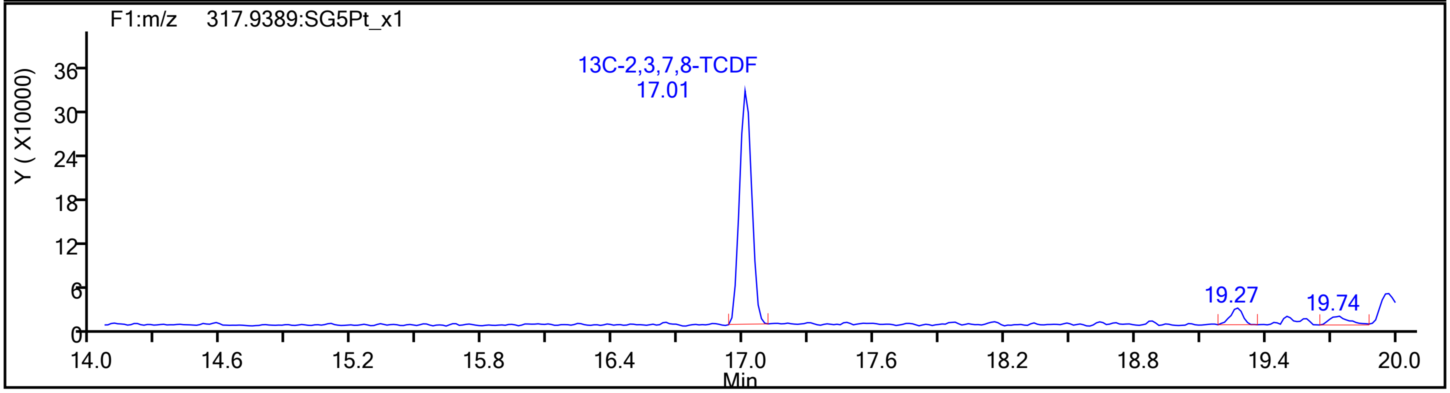

Report Date: 18-Mar-2021 15:32:48　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d
Injection Date: 17-Mar-2021 17:13:57
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-41mm
Worklist#: 471421
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

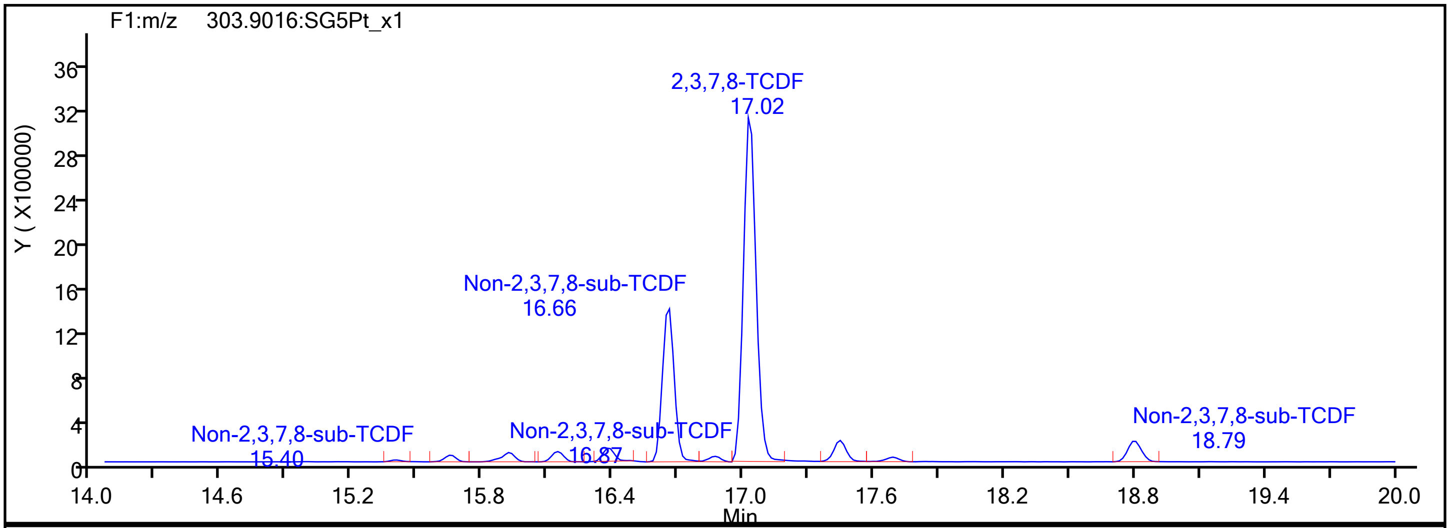

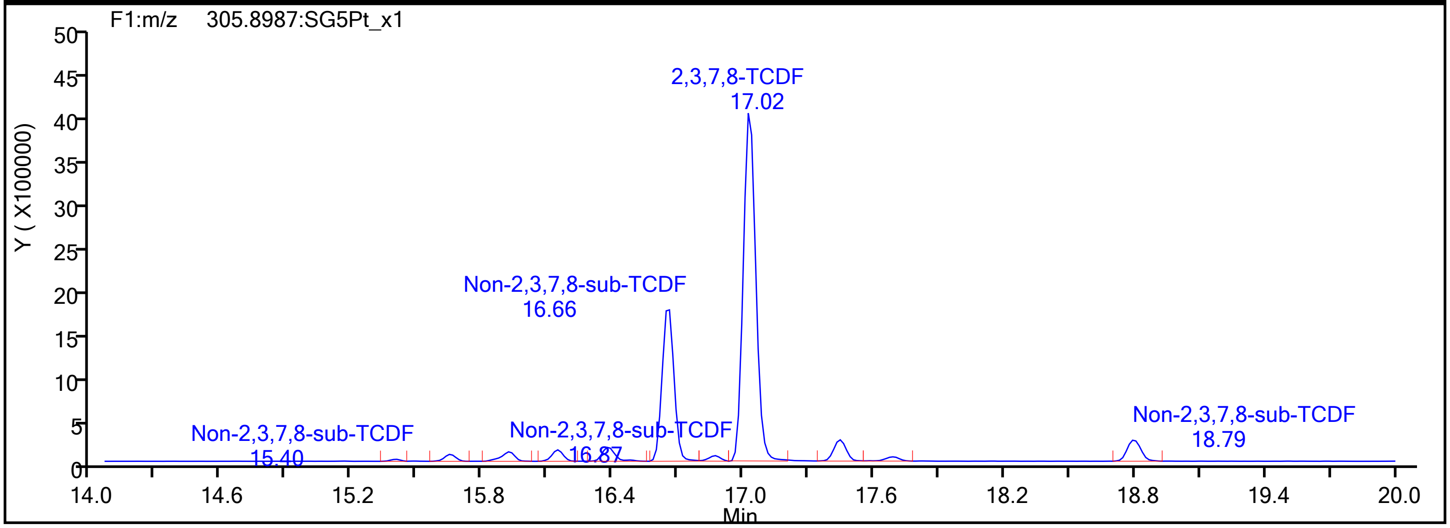

TCDF Interference Mass

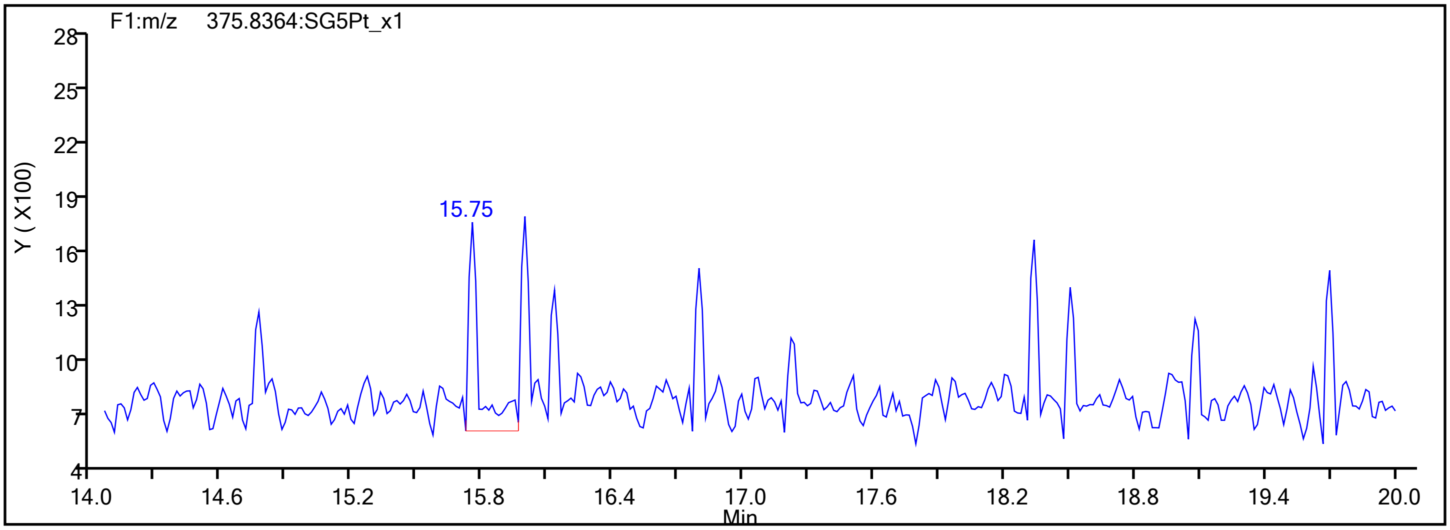

Report Date: 18-Mar-2021 15:32:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d		
Injection Date:	17-Mar-2021 17:13:57	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	471421	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

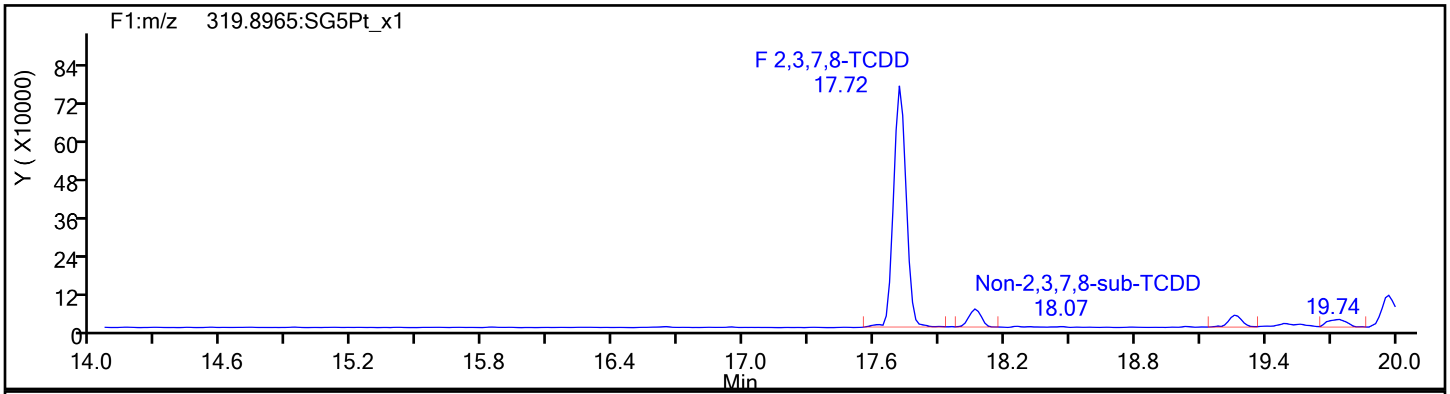

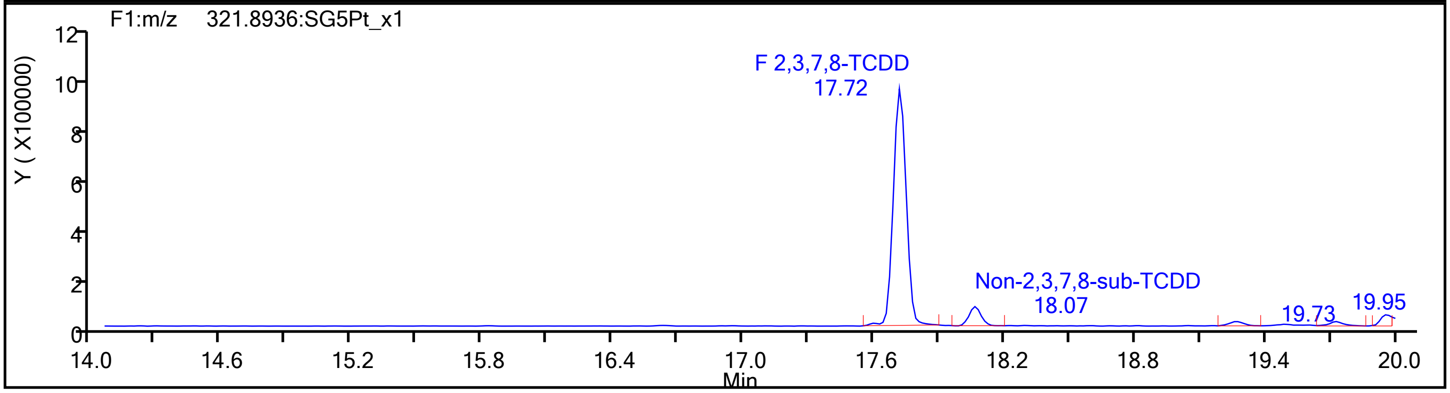

TCDD Standards

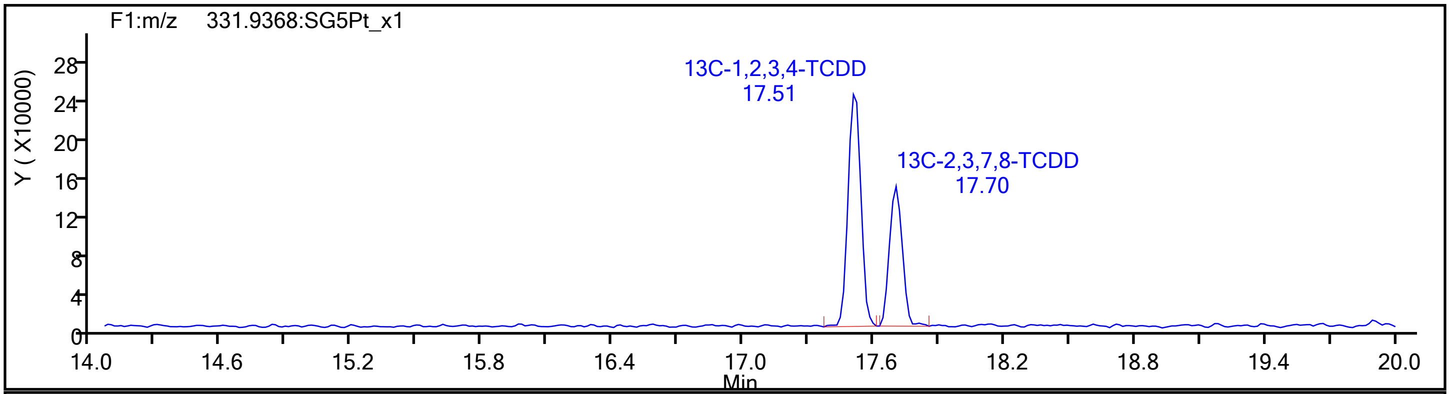

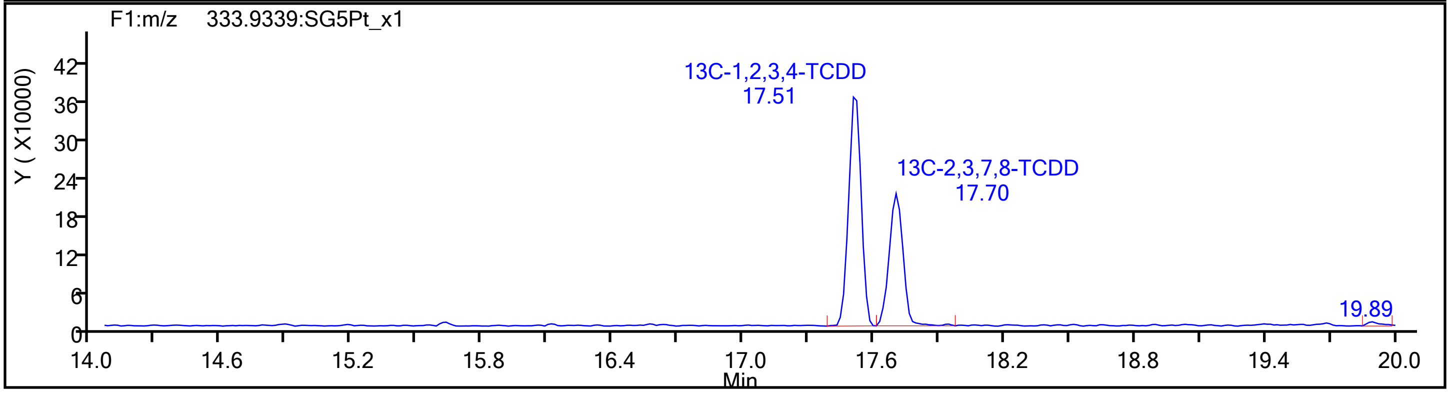

Report Date: 18-Mar-2021 15:32:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d
Injection Date: 17-Mar-2021 17:13:57
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-41mm
Worklist#: 471421
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

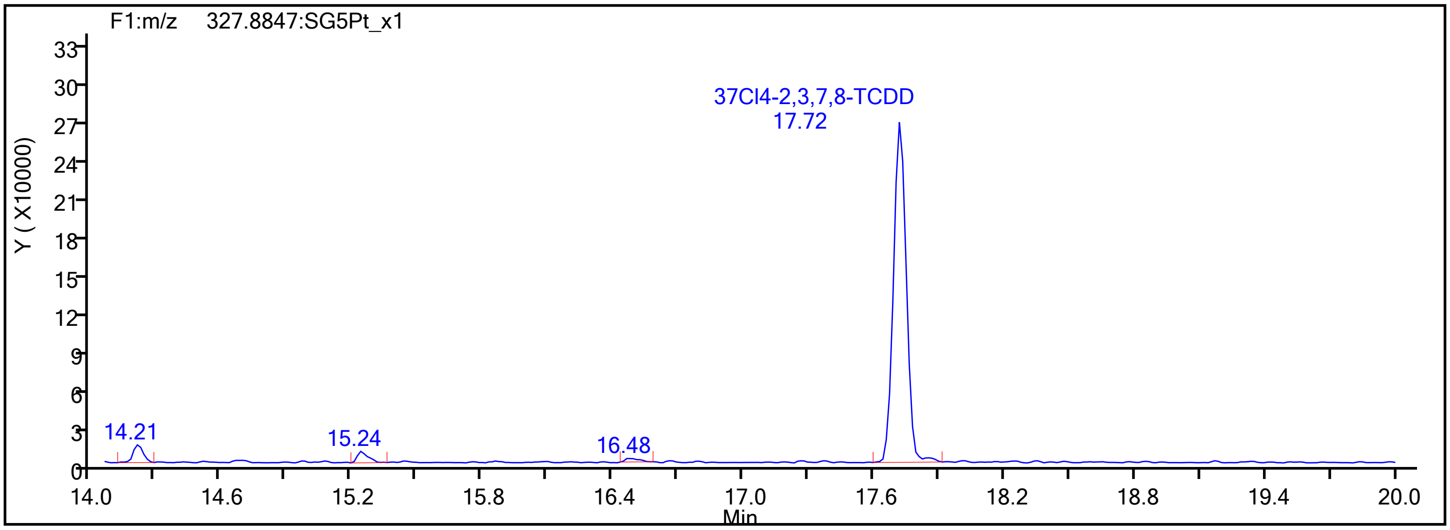

37Cl4-TCDD Standards

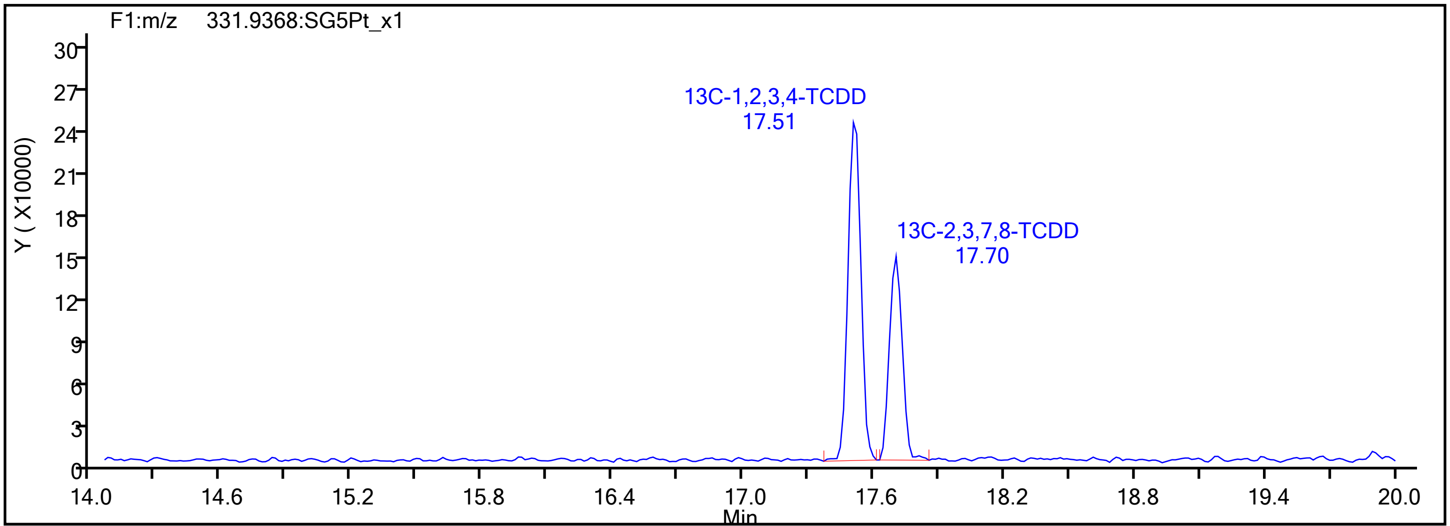

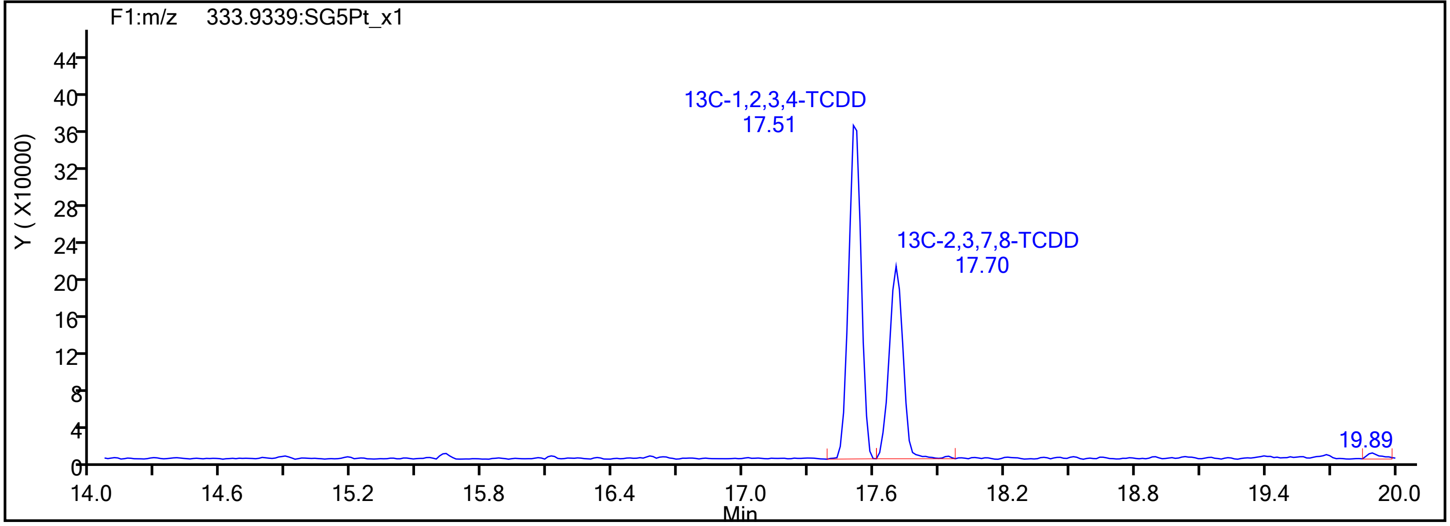

Report Date: 18-Mar-2021 15:32:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d

Injection Date: 17-Mar-2021 17:13:57

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: KSS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-41mm

Worklist#: 471421

Sample Line#: 10

Column Type: DB-5

Column Dia: 0.32 mm

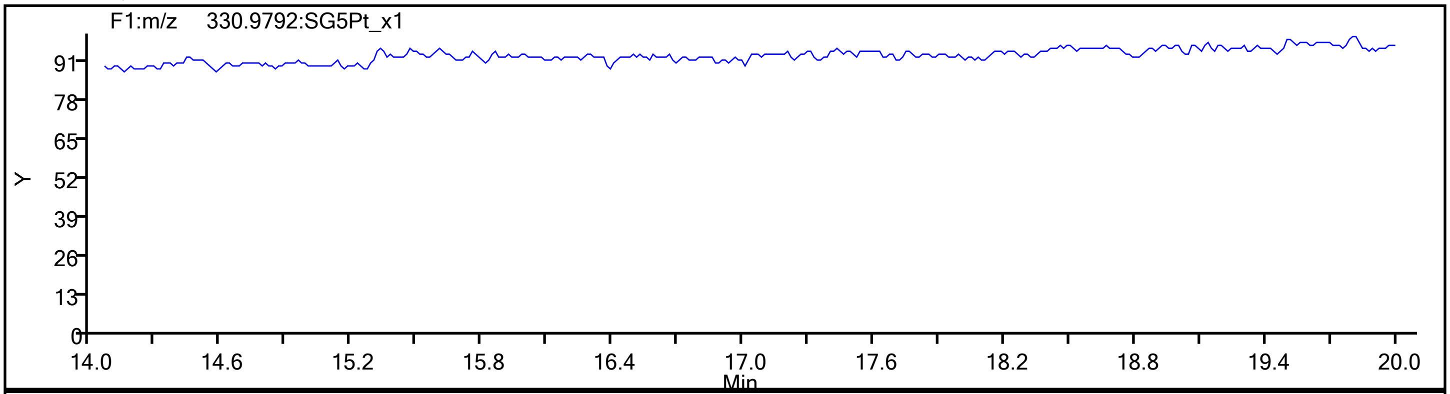

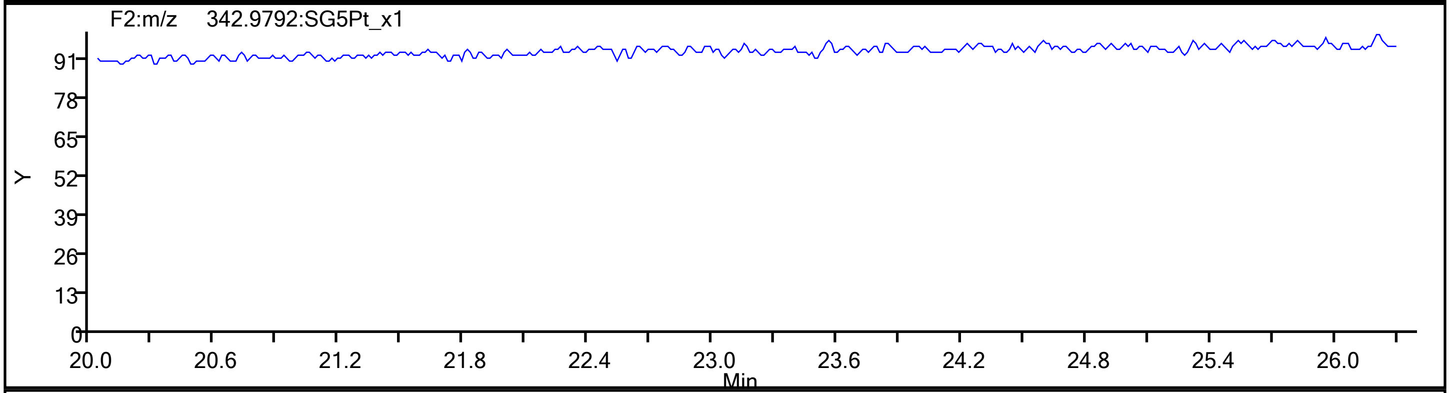

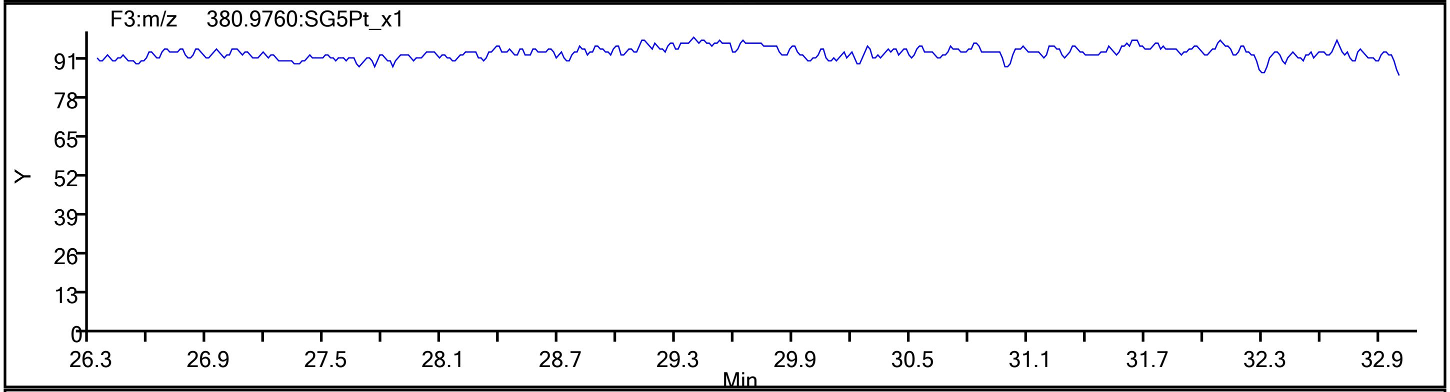

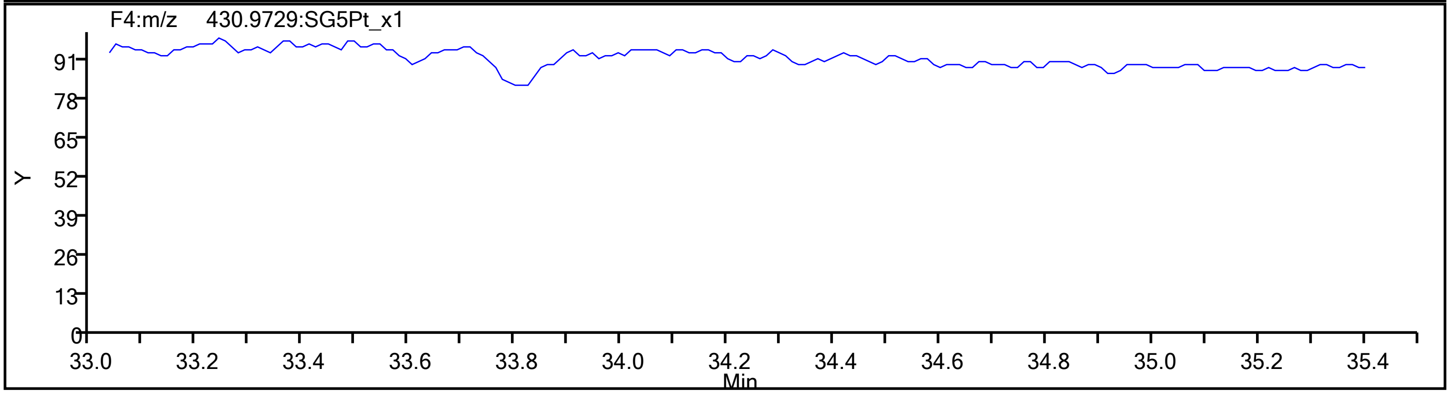

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_10.d

Injection Date:	17-Mar-2021 17:13:57	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-41mm		
Worklist#:	471421	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

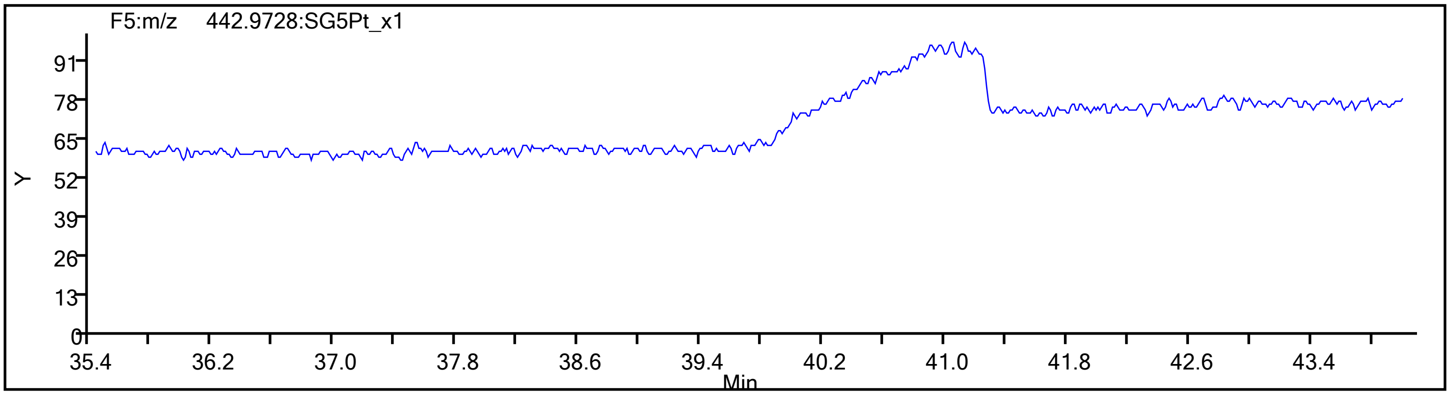

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-10mm RA Lab Sample ID: 320-70797-3 RA

Matrix: Water Lab File ID: 11MR2111D2_009.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1033.1(mL) Date Analyzed: 03/11/2021 18:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469703 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	97	B	9.7	0.54

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	115		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_009.d				
Lims ID:	320-70797-A-3-A				
Client ID:	11215702-Tank1-10mm				
Sample Type:	Client				
Inject. Date:	11-Mar-2021 18:57:20	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-A-3-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 11:08:26	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				
First Level Reviewer: bilottag		Date:	12-Mar-2021 11:03:03		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.009	232895872	0.79	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.147	276266653	0.81	1.3057	90.8	90.8	0.1672	0.1672	90.85	
2,3,7,8-TCDF	16.161	12736629	0.78	0.9242	4.989	4.989	0.0280	0.0280		
D 13C-2,3,7,8-TCDD	14.789	166212027	0.78	0.8971	79.5	79.5	0.5567	0.5567	79.55	
2,3,7,8-TCDD	14.803	3457048	0.76	0.9989	2.082	2.082	0.0635	0.0635		
$ 37Cl4-2,3,7,8-TCDD	14.803	90763486		0.8499	45.9	45.9	0.0961	0.0961	115	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 12-Mar-2021 11:08:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_009.d
Lims ID: 320-70797-A-3-A
Client ID: 11215702-Tank1-10mm
Sample Type: Client
Inject. Date: 11-Mar-2021 18:57:20 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-3-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:03:03

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.009	15.013	0		102533703	25197164	52664	131660	478		
333.9339	15.009	15.013	0		130362169	31747407	61098	152745	520	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.147	16.152	0	1.076	123271046	27889230	25699	64247	1085		
317.9389	16.147	16.152	0	1.076	152995607	35791642	24016	60040	1490	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.161	16.166	0	1.001	5583621	1320703	2687	6717	492		
305.8987	16.161	16.166	0	1.001	7153008	1607227	3911	9777	411	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.789	14.794	0	0.985	72669407	17905719	52664	131660	340		
333.9339	14.789	14.794	0	0.985	93542620	22889028	61098	152745	375	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.803	14.807	0	1.001	1495476	372997	4121	10302	91		
321.8936	14.803	14.807	0	1.001	1961572	474195	6233	15582	76	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.803	14.807	0	0.986	90763486	22105744	18600	46500	1188		

QC Flag Legend

Processing Flags

Report Date: 12-Mar-2021 11:08:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_009.d
Injection Date: 11-Mar-2021 18:57:20 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-10mm
Worklist#: 469703 Sample Line#: 9
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

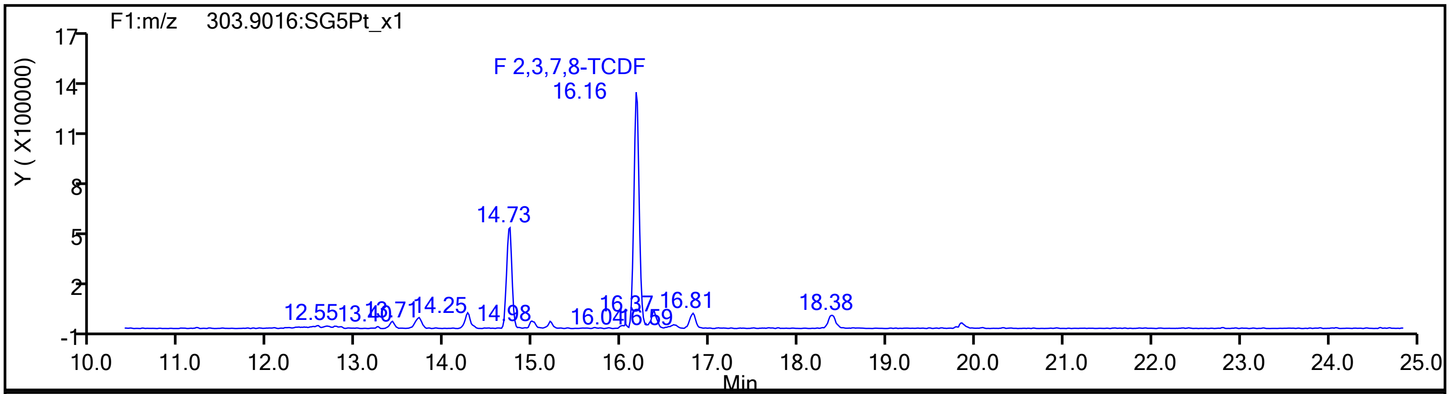

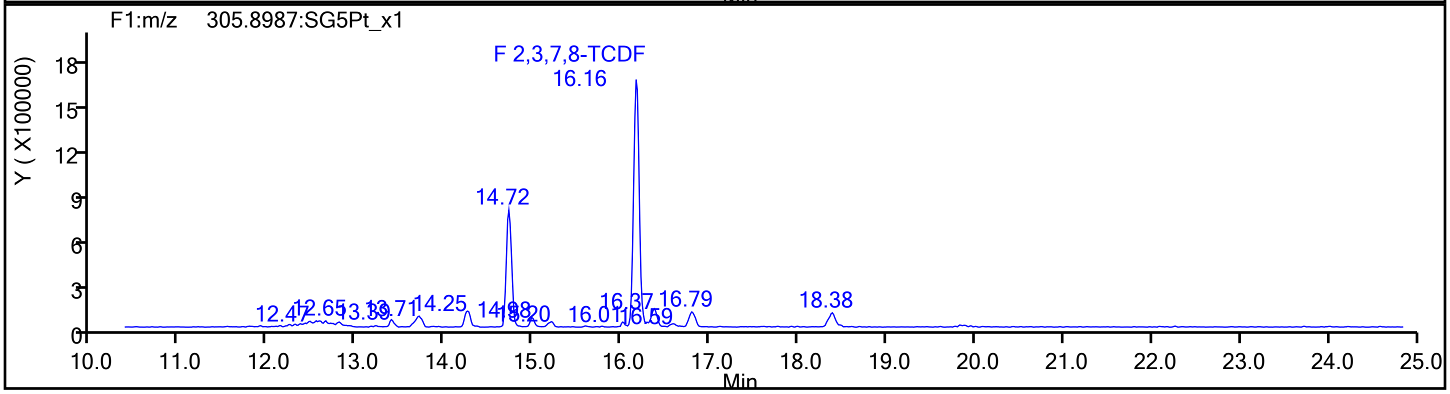

TCDF Standards

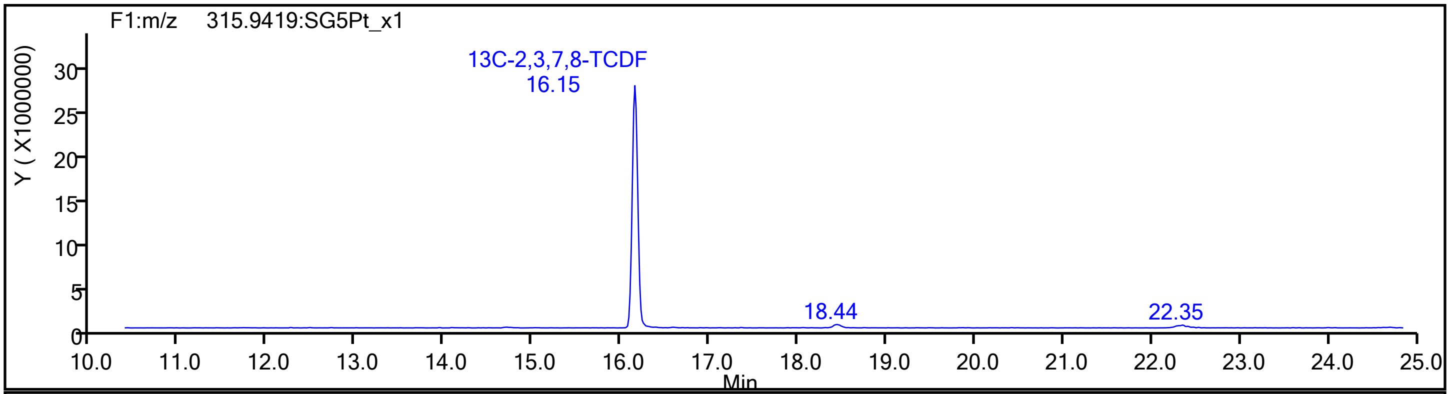

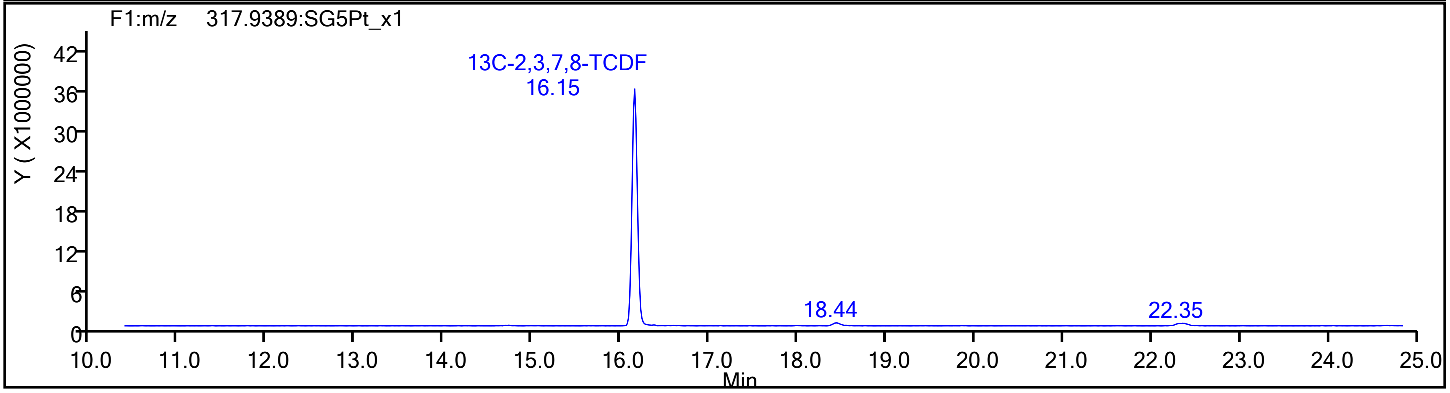

Report Date: 12-Mar-2021 11:08:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_009.d		
Injection Date:	11-Mar-2021 18:57:20	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469703	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

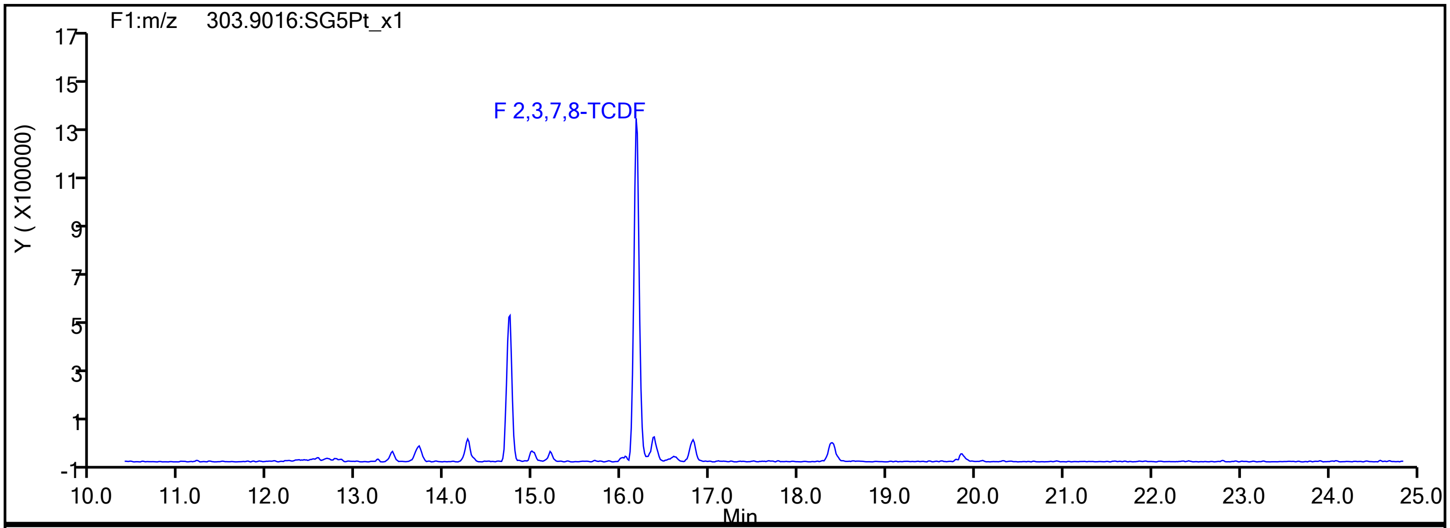

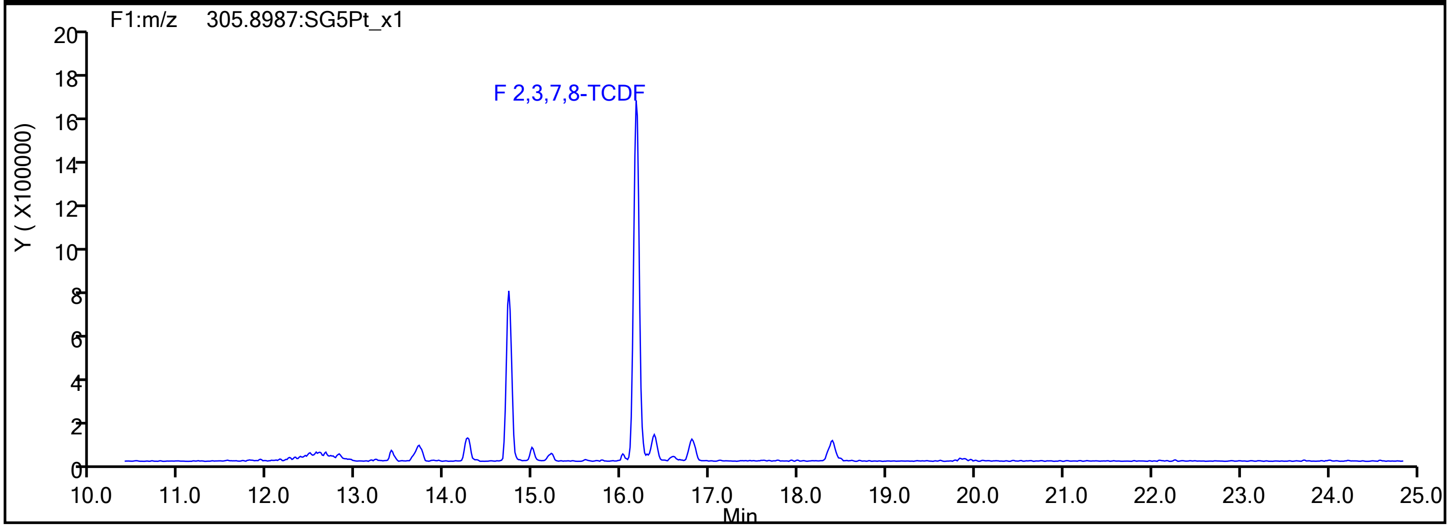

TCDF Interference Mass

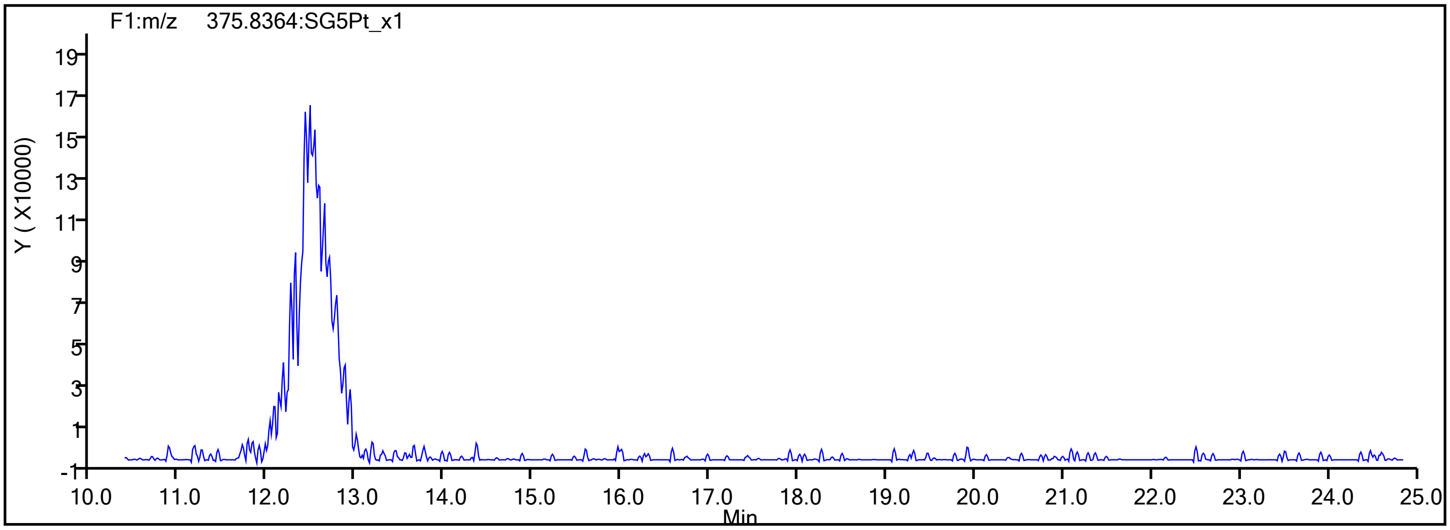

Report Date: 12-Mar-2021 11:08:32
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_009.d		
Injection Date:	11-Mar-2021 18:57:20	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469703	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

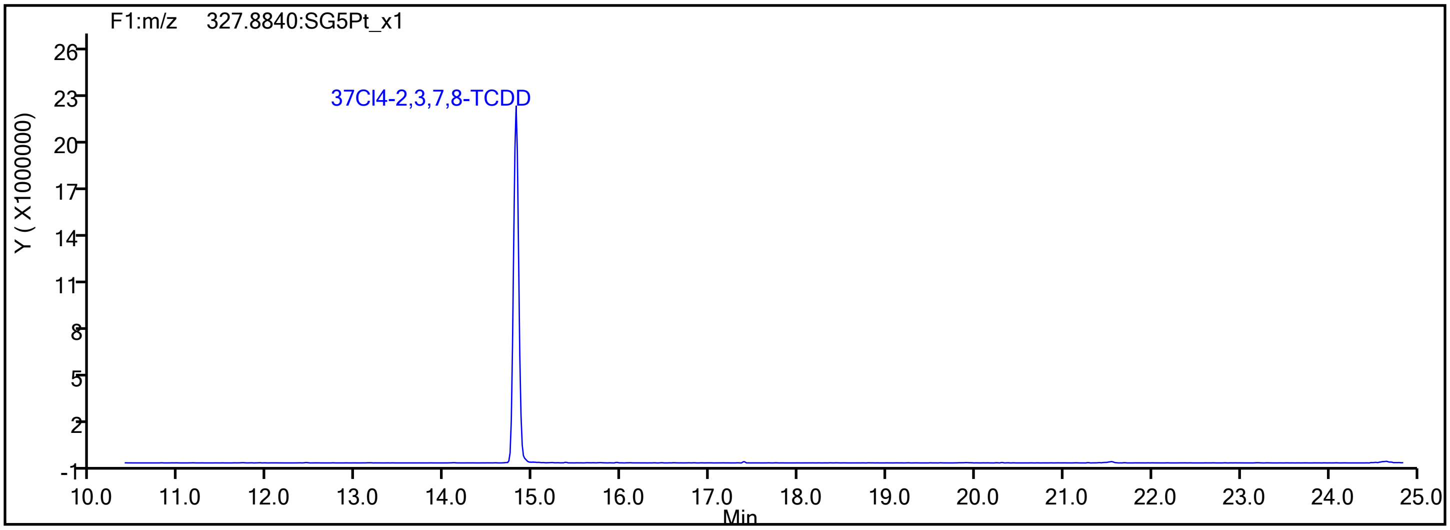

37Cl4-TCDD Standards

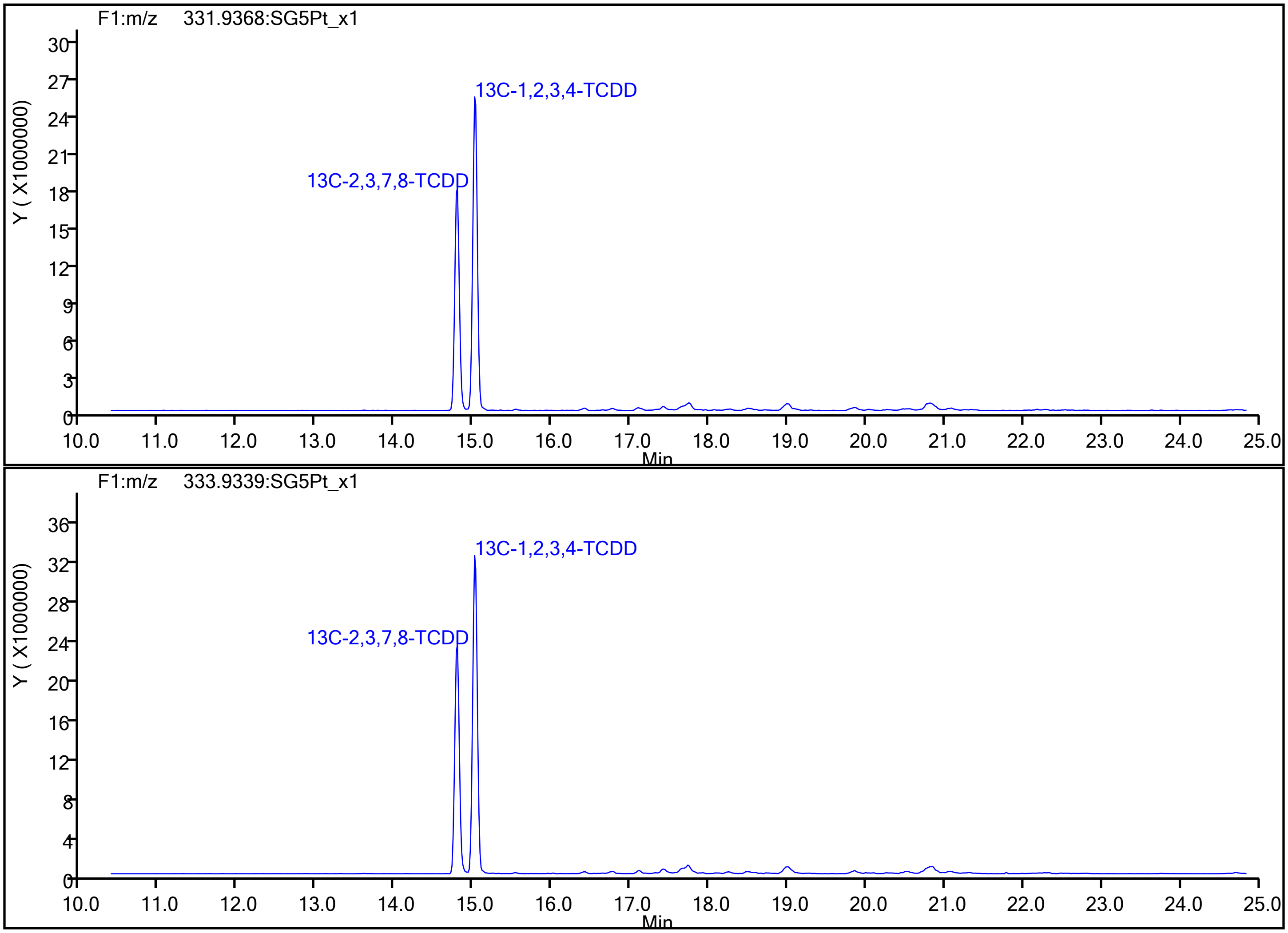

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_009.d

Injection Date:	11-Mar-2021 18:57:20	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469703	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

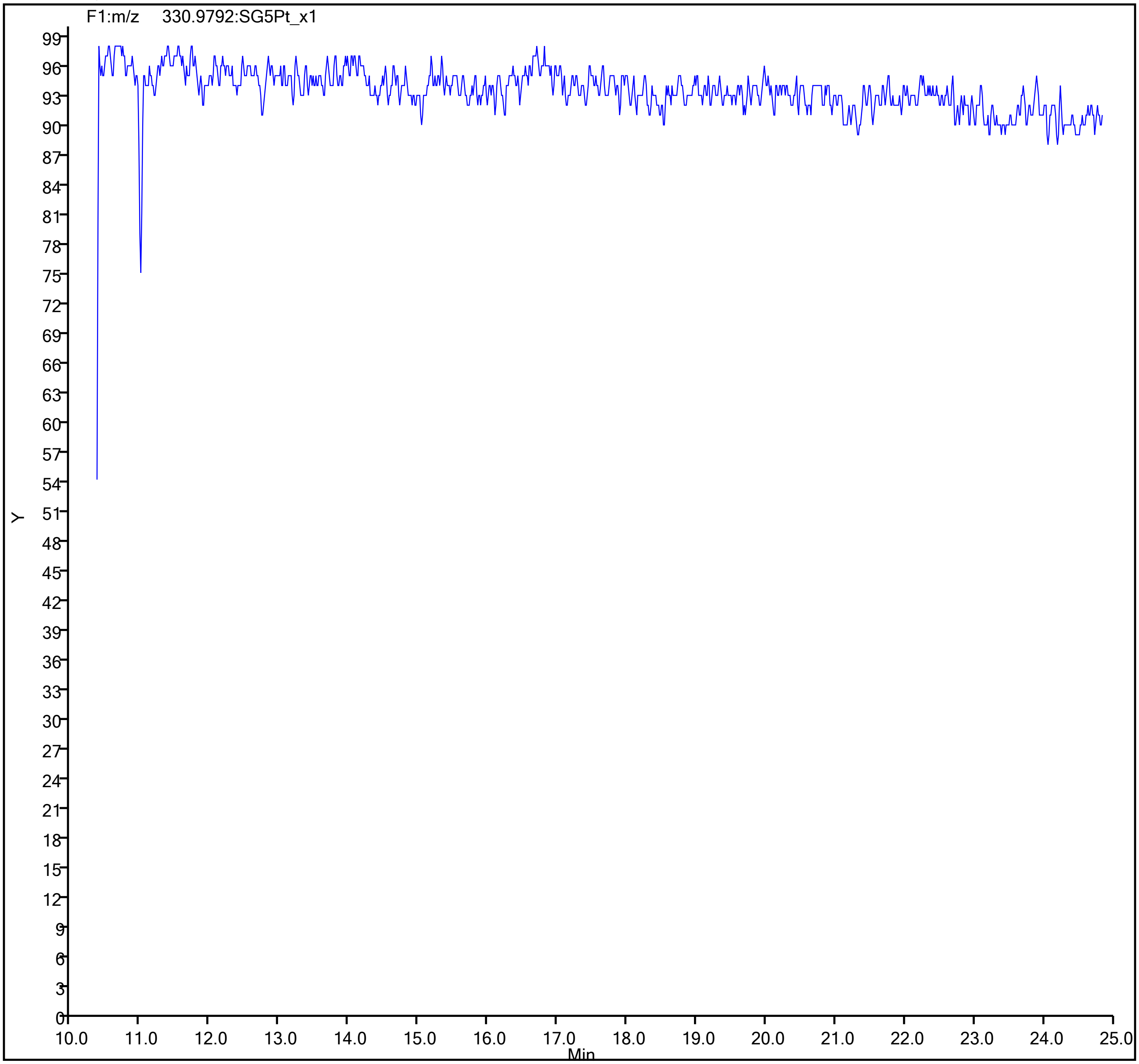

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-10mm Lab Sample ID: 320-70797-3

Matrix: Water Lab File ID: 12mr21adfs1_5.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1033.1(mL) Date Analyzed: 03/12/2021 12:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469779 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	37		9.7	0.52
40321-76-4	1,2,3,7,8-PeCDD	ND		48	0.46
57117-41-6	1,2,3,7,8-PeCDF	4.8	J	48	0.36
57117-31-4	2,3,4,7,8-PeCDF	3.0	J	48	0.41
39227-28-6	1,2,3,4,7,8-HxCDD	2.0	J	48	0.22
57653-85-7	1,2,3,6,7,8-HxCDD	0.87	J	48	0.22
19408-74-3	1,2,3,7,8,9-HxCDD	1.2	J	48	0.20
70648-26-9	1,2,3,4,7,8-HxCDF	10	J B	48	0.23
57117-44-9	1,2,3,6,7,8-HxCDF	2.3	J B q	48	0.21
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.18
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.18
35822-46-9	1,2,3,4,6,7,8-HpCDD	17	J B	48	0.33
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.4	J B	48	0.24
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.9	J B q	48	0.27
3268-87-9	OCDD	110	B	97	0.43
39001-02-0	OCDF	4.1	J B	97	0.42
41903-57-5	Total TCDD	42	B q	9.7	0.52
30402-14-3	Total TCDF	160	B	9.7	0.86
36088-22-9	Total PeCDD	ND		48	0.46
30402-15-4	Total PeCDF	7.8	J	48	0.39
34465-46-8	Total HxCDD	5.3	J	48	0.22
55684-94-1	Total HxCDF	13	J B q	48	0.20
37871-00-4	Total HpCDD	28	J B	48	0.33
38998-75-3	Total HpCDF	9.2	J B q	48	0.26

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank1-10mm
Lab Sample ID: 320-70797-3
Matrix: Water
Lab File ID: 12mr21adfs1_5.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1033.1(mL)
Date Analyzed: 03/12/2021 12:57
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	76		25-164
89059-46-1	13C-2,3,7,8-TCDF	72		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	70		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	70		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	77		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	78		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	79		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	79		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	81		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	94		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	89		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	90		26-138
114423-97-1	13C-OCDD	102		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Lims ID: 320-70797-A-3-A
Client ID: 11215702-Tank1-10mm
Sample Type: Client
Inject. Date: 12-Mar-2021 12:57:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:24:56 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: bilottag Date: 12-Mar-2021 14:35:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.449	4028807	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.573	4471751	0.79	1.5437	71.9	71.9	0.1680	0.1680	71.90	
2,3,7,8-TCDF	18.599	262669	0.78	1.1258	5.218	5.218	0.0445	0.0445		
A Non-2,3,7,8-sub-TCDF	18.115	164802	0.80	1.1258	3.274	3.274	0.0445	2.108		a
S Total TCDF					8.491	8.491	0.0445	0.0445		
D 13C-2,3,7,8-TCDD	19.776	2969041	0.80	0.9687	76.1	76.1	0.1626	0.1626	76.07	
$ 37Cl4-2,3,7,8-TCDD	19.810	1651471		1.0841	37.8	37.8	0.0278	0.0278	94.53	
2,3,7,8-TCDD	19.801	68226	0.77	1.1904	1.930	1.930	0.0267	0.0267		M
A Non-2,3,7,8-sub-TCDD	18.876	9245	0.77	1.1904	0.2898	0.2616	0.0267	0.1509		RQ
S Total TCDD					2.220	2.192	0.0267	0.0267		RQ
D 13C-1,2,3,7,8-PeCDF	25.620	3688488	1.58	1.3124	69.8	69.8	0.3037	0.3037	69.76	
1,2,3,7,8-PeCDF	25.637	10106	1.48	1.1163	0.2455	0.2455	0.0187	0.0187		M
D 13C-2,3,4,7,8-PeCDF	27.002	3742680	1.64	1.3352	69.6	69.6	0.2985	0.2985	69.58	
2,3,4,7,8-PeCDF	27.010	6137	1.57	1.0579	0.1550	0.1550	0.0211	0.0211		M
A F1 PeCDFs	22.791						0.008509	0.008509		
A Non-2,3,7,8-sub-PeCDF	26.224						0.0199	0.0199		U
S Total PeCDF					0.4004	0.4004	0.0199	0.0199		
D 13C-1,2,3,7,8-PeCDD	27.743	2186485	1.58	0.7716	70.3	70.3	0.1238	0.1238	70.34	
1,2,3,7,8-PeCDD	27.755						0.0239	0.0239		
A Non-2,3,7,8-sub-PeCDD	26.609						0.0239	0.0239		
S Total PeCDD							0.0239	0.0239		
D 13C-1,2,3,4,7,8-HxCDF	33.523	3217563	0.54	1.0931	77.7	77.7	0.2607	0.2607	77.71	
1,2,3,4,7,8-HxCDF	33.531	20167	1.25	1.1831	0.5298	0.5298	0.0118	0.0118		
D 13C-1,2,3,6,7,8-HxCDF	33.725	3363073	0.53	1.1278	78.7	78.7	0.2527	0.2527	78.73	
1,2,3,6,7,8-HxCDF	33.750	5087	1.24	1.2484	0.1333	0.1212	0.0110	0.0110		RQM
D 13C-2,3,4,6,7,8-HxCDF	34.727	3222116	0.53	1.0552	80.6	80.6	0.2701	0.2701	80.61	
2,3,4,6,7,8-HxCDF	34.744						0.009479	0.009479		
D 13C-1,2,3,7,8,9-HxCDF	35.746	2975364	0.54	0.9938	79.0	79.0	0.2868	0.2868	79.04	
1,2,3,7,8,9-HxCDF	35.753						0.009328	0.009328		
A Non-2,3,7,8-sub-HxCDF	33.496						0.0103	0.0519		RQU
S Total HxCDF					0.6630	0.6509	0.0104	0.0104		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.536	3787891	1.28	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.989	2304595	1.29	0.7895	77.1	77.1	0.2243	0.2243	77.06	
1,2,3,4,7,8-HxCDD	34.997	2580	1.14	1.0950	0.1022	0.1022	0.0116	0.0116		
D 13C-1,2,3,6,7,8-HxCDD	35.123	2608662	1.29	0.8495	81.1	81.1	0.2085	0.2085	81.07	
1,2,3,6,7,8-HxCDD	35.123	1199	1.25	1.0201	0.0451	0.0451	0.0114	0.0114		M
1,2,3,7,8,9-HxCDD	35.553	1689	1.16	1.1549	0.0595	0.0595	0.0105	0.0105		M
A Non-2,3,7,8-sub-HxCDD	34.039	1822	1.25	1.0900	0.0680	0.0680	0.0111	0.0680		M
S Total HxCDD					0.2749	0.2749	0.0112	0.0112		
D 13C-1,2,3,4,6,7,8-HpCDF	37.796	2653638	0.45	0.7854	89.2	89.2	0.3820	0.3820	89.20	
1,2,3,4,6,7,8-HpCDF	37.804	10948	1.00	1.4859	0.2777	0.2777	0.0125	0.0125		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.142	2456219	0.46	0.7230	89.7	89.7	0.4149	0.4149	89.69	
1,2,3,4,7,8,9-HpCDF	39.142	3470	1.04	1.4048	0.1092	0.1006	0.0138	0.0138		RQM
A Non-2,3,7,8-sub-HpCDF	38.451	3573	1.16	1.4453	0.0968	0.0968	0.0132	0.0968		M
S Total HpCDF					0.4837	0.4750	0.0132	0.0132		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.823	2292574	1.04	0.6413	94.4	94.4	0.3019	0.3019	94.37	
1,2,3,4,6,7,8-HpCDD	38.831	22933	0.99	1.1489	0.8706	0.8706	0.0171	0.0171		
A Non-2,3,7,8-sub-HpCDD	39.230	15655	0.98	1.1489	0.5943	0.5943	0.0171	0.5943		a
S Total HpCDD					1.465	1.465	0.0171	0.0171		
D 13C-OCDD	41.302	3973594	0.91	0.5141	204.1	204.1	0.1847	0.1847	102	
OCDF	41.386	6661	0.98	1.5776	0.2125	0.2125	0.0219	0.0219		M
OCDD	41.310	128071	0.90	1.1706	5.507	5.507	0.0221	0.0221		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Lims ID:	320-70797-A-3-A				
Client ID:	11215702-Tank1-10mm				
Sample Type:	Client				
Inject. Date:	12-Mar-2021 12:57:00	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-a-3-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	16-Mar-2021 09:24:56	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1616				
First Level Reviewer: bilottag		Date:	12-Mar-2021 14:35:55		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.449	19.417	2		1802887	301349	265	662	1137		
333.9338	19.441	19.417	1		2225920	368489	157	392	2347	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.573	18.557	1	0.955	1978976	329470	372	930	886		
317.9389	18.573	18.557	1	0.955	2492775	419529	323	807	1299	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.599	18.574	1	1.001	115242	17533	51	127	344		
305.8987	18.599	18.574	1	1.001	147427	22267	99	247	225	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											a
303.9016	16.793	18.115	-79	0.904	4774	717	51	127	14		
305.8987	16.785	18.115	-80	0.904	6311	1052	99	247	11	0.76(0.65-0.89)	
303.9016	17.507	18.115	-36	0.943	7390	1111	51	127	22		
305.8987	17.516	18.115	-36	0.943	8666	1373	99	247	14	0.85(0.65-0.89)	
303.9016	17.963	18.115	-9	0.967	46707	7924	51	127	155		
305.8987	17.963	18.115	-9	0.967	59408	10170	99	247	103	0.79(0.65-0.89)	
303.9016	19.303	18.115	71	1.039	7870	1122	51	127	22		
305.8987	19.294	18.115	71	1.039	9045	1548	99	247	16	0.87(0.65-0.89)	
303.9016	21.580	18.115	207	1.162	6525	982	51	127	19		a
305.8987	21.597	18.115	208	1.163	8106	1179	99	247	12	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.776	19.761	1	1.017	1322736	209896	265	662	792		
333.9338	19.776	19.761	1	1.017	1646305	253445	157	392	1614	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.810	19.778	2	1.019	1651471	254750	81	202	3145		

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											M
319.8965	19.801	19.787	1	1.001	29735	4702	44	110	107		M
321.8936	19.819	19.787	2	1.002	38491	5822	15	37	388	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	16.260	18.876	-157	0.822	2785	560	44	110	13		
	Empc Correction				2320	483	44	110	11		
321.8936	16.243	18.876	-158	0.821	3014	628	15	37	42	0.92(0.65-0.89)	
319.8965	16.682	18.876	-131	0.844	2235	468	44	110	11		
	Empc Correction				1701	374	44	110	9		
321.8936	16.682	18.876	-131	0.844	2210	486	15	37	32	1.01(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.620	25.600	1	1.317	2257927	411825	673	1682	612		
353.8970	25.612	25.600	1	1.317	1430561	257591	395	987	652	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.637	25.625	1	1.001	6039	1115	15	37	74		M
341.8567	25.646	25.625	1	1.001	4067	740	41	102	18	1.48(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.002	26.980	1	1.388	2324039	393591	673	1682	585		
353.8970	27.002	26.980	1	1.388	1418641	234307	395	987	593	1.64(1.32-1.78)	
2,3,4,7,8-PeCDF											M
339.8597	27.010	27.006	0	1.000	3747	611	15	37	41		M
341.8567	27.002	27.006	0	1.000	2390	502	41	102	12	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.791						2	5			
341.8567	22.791						22	55			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	26.224						15	37			
341.8567	26.224						41	102			
13C-1,2,3,7,8-PeCDD											
367.8949	27.743	27.721	1	1.426	1340421	214609	128	320	1677		
369.8919	27.751	27.721	2	1.427	846064	135155	128	320	1056	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.755						31	77			
357.8516	27.755						7	17			
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.609						31	77			
357.8516	26.609						7	17			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.523	33.504	1	0.943	1128489	204595	325	812	630		
385.8610	33.515	33.504	1	0.943	2089074	369608	626	1565	590	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.531	33.521	1	1.000	11205	2135	21	52	102		
375.8178	33.548	33.521	2	1.001	8962	1525	11	27	139	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.725	33.706	1	0.949	1166699	201939	325	812	621		
385.8610	33.725	33.706	1	0.949	2196374	382679	626	1565	611	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											RQM
373.8208	33.750	33.723	2	1.001	3324	675	21	52	32		M
	Empc Correction				2816	540	21	52	26		
375.8178	33.725	33.723	0	1.000	2271	436	11	27	40	1.46(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.727	34.709	1	0.977	1116267	230344	325	812	709		
385.8610	34.727	34.709	1	0.977	2105849	431569	626	1565	689	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.725						21	52			
375.8178	34.725						11	27			
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.746	35.736	1	1.006	1037700	230459	325	812	709		
385.8610	35.746	35.736	1	1.006	1937664	431680	626	1565	690	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.753						21	52			
375.8178	35.753						11	27			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	31.182	33.496	-139	0.930	475	105	21	52	5		
	Empc Correction				198	73	21	52	0		
375.8178	31.182	33.496	-139	0.930	160	59	11	27	5	2.97(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.536	35.525	1		2126531	469772	303	757	1550		
403.8529	35.536	35.525	1		1661360	364259	288	720	1265	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	34.989	34.970	1	0.985	1299414	289769	303	757	956		
403.8529	34.980	34.970	1	0.984	1005181	223605	288	720	776	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	34.997	34.995	0	1.000	1372	327	12	30	27		
391.8127	34.997	34.995	0	1.000	1208	267	14	35	19	1.14(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.123	35.105	1	0.988	1467087	315572	303	757	1041		
403.8529	35.115	35.105	1	0.988	1141575	243564	288	720	846	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.123	35.121	0	1.000	665	170	12	30	14		M
391.8127	35.132	35.121	1	1.000	534	142	14	35	10	1.25(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8158	35.553	35.542	1	1.016	906	178	12	30	15		
391.8127	35.544	35.542	0	1.016	783	121	14	35	9	1.16(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											M
389.8158	34.062	34.039	1	0.970	1013	198	12	30	17		M
391.8127	34.087	34.039	3	0.971	809	204	14	35	15	1.25(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.796	37.786	1	1.064	818631	217881	339	847	643		
419.8220	37.796	37.786	1	1.064	1835007	490230	662	1655	741	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	37.804	37.794	1	1.000	5482	1484	39	97	38		M
409.7788	37.804	37.794	1	1.000	5466	1478	14	35	106	1.00(0.88-1.20)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.142	39.133	1	1.101	770085	211397	339	847	624		
419.8220	39.134	39.133	0	1.101	1686134	467186	662	1655	706	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQM
407.7817	39.142	39.142	0	1.000	2068	595	39	97	15		M
	Empc Correction				1769	531	39	97	14		
409.7788	39.142	39.142	0	1.000	1701	511	14	35	37	1.22(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7817	38.208	38.451	-15	1.011	1915	481	39	97	12		M
409.7788	38.191	38.451	-16	1.010	1658	373	14	35	27	1.16(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.823	38.822	0	1.092	1170642	338976	338	845	1003		
437.8140	38.823	38.822	0	1.092	1121932	334385	308	770	1086	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.831	38.830	0	1.000	11394	3178	35	87	91		
425.7737	38.831	38.830	0	1.000	11539	3524	18	45	196	0.99(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.149	39.230	-65	0.983	7743	2061	35	87	59		a
425.7737	38.149	39.230	-65	0.983	7912	2155	18	45	120	0.98(0.88-1.20)	
13C-OCDD											
469.7780	41.302	41.293	1	1.162	1896998	522130	157	392	3326		
471.7750	41.302	41.293	1	1.162	2076596	578014	160	400	3613	0.91(0.76-1.02)	
OCDF											M
441.7428	41.386	41.377	1	1.002	3297	928	21	52	44		M
443.7399	41.377	41.377	0	1.002	3364	998	55	137	18	0.98(0.76-1.02)	M
OCDD											
457.7377	41.310	41.301	1	1.000	60610	17095	27	67	633		
459.7348	41.310	41.301	1	1.000	67461	18721	30	75	624	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Lims ID: 320-70797-A-3-A
Client ID: 11215702-Tank1-10mm
Inject. Date: 12-Mar-2021 12:57:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 4

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	4471751	748999

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	4471751	748999

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.793	4774	717	6311	1052	0.2202	0.76	
17.507	7390	1111	8666	1373	0.3189	0.85	
17.963	46707	7924	59408	10170	2.11	0.79	
19.303	7870	1122	9045	1548	0.3360	0.87	
21.580	6525	982	8106	1179	0.2906	0.80	a
Signal Totals:							
	73266	11856	91536	15322			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	164802	27178				0.80	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.274 = (164802 * 100.000) / (4471751 * 1.126)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Lims ID:	320-70797-A-3-A		
Client ID:	11215702-Tank1-10mm		
Inject. Date:	12-Mar-2021 12:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	4

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2969041	463341

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2969041	463341

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.260	2785	560	3014	628	0.1641	0.92	RQ
16.260	2320	483	3014	628	0.1509		Empc Correction
16.682	2235	468	2210	486	0.1258	1.01	RQ
16.682	1701	374	2210	486	0.1107		Empc Correction
Signal Totals:							
	4021	857	5224	1114			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10244	2142				0.96	RQ
	9245	1971					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2898 = (10244 * 100.000) / (2969041 * 1.190)
Empc Amount: 0.2616 = (9245 * 100.000) / (2969041 * 1.190)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Lims ID:	320-70797-A-3-A		
Client ID:	11215702-Tank1-10mm		
Inject. Date:	12-Mar-2021 12:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDF, RT: 26.224

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3688488	669416
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3742680	627898

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3715584	648657

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Lims ID:	320-70797-A-3-A		
Client ID:	11215702-Tank1-10mm		
Inject. Date:	12-Mar-2021 12:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	3217563	574203
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	3363073	584618
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	3222116	661913
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2975364	662139

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	3194529	620718

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.182	475	105	160	59	0.0159	2.97	RQ
31.182	198	73	160	59			Empc Correction
32.723	458	100	305	91	0.0191	1.50	RQ
32.723	378	112	305	91			Empc Correction
35.780	40	0	552	140	0.0148	0.07	RnQ
35.780	40	0	32	0			Empc Correction
35.881	1183	227	890	153	0.0519	1.33	

Compound is Marked ND

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Lims ID:	320-70797-A-3-A		
Client ID:	11215702-Tank1-10mm		
Inject. Date:	12-Mar-2021 12:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	4

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	2304595	513374
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2608662	559136
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	2456628	536255

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.062	1013	198	809	204	0.0680	1.25	M
Signal Totals:							
	1013	198	809	204			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1822	402				1.25	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0680 = (1822 * 100.000) / (2456628 * 1.090)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Lims ID:	320-70797-A-3-A		
Client ID:	11215702-Tank1-10mm		
Inject. Date:	12-Mar-2021 12:57:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2653638	708111
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2456219	678583

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2554928	693347

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.208	1915	481	1658	373	0.0968	1.16	M
Signal Totals:							
	1915	481	1658	373			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3573	854				1.16	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0968 = (3573 * 100.000) / (2554928 * 1.445)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Lims ID: 320-70797-A-3-A
Client ID: 11215702-Tank1-10mm
Inject. Date: 12-Mar-2021 12:57:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 469779 Lims Sample ID: 4

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2292574	673361

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2292574	673361

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.149	7743	2061	7912	2155	0.5943	0.98	a
Signal Totals:							
	7743	2061	7912	2155			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15655	4216				0.98	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5943 = (15655 * 100.000) / (2292574 * 1.149)

QC Flag Legend

Review Flags
a - User Assigned ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	19.80
Area:	30348
Amount:	1.947755
Amount Units:	pg/ul

Processing Integration Results

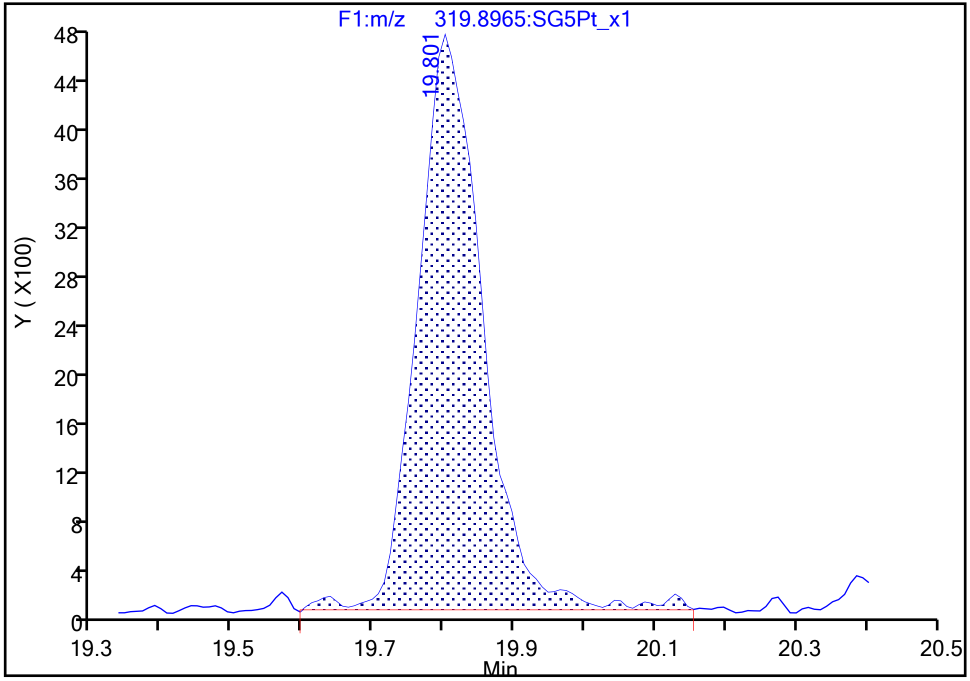

RT:	19.80
Area:	29735
Amount:	1.930410
Amount Units:	pg/ul

Manual Integration Results

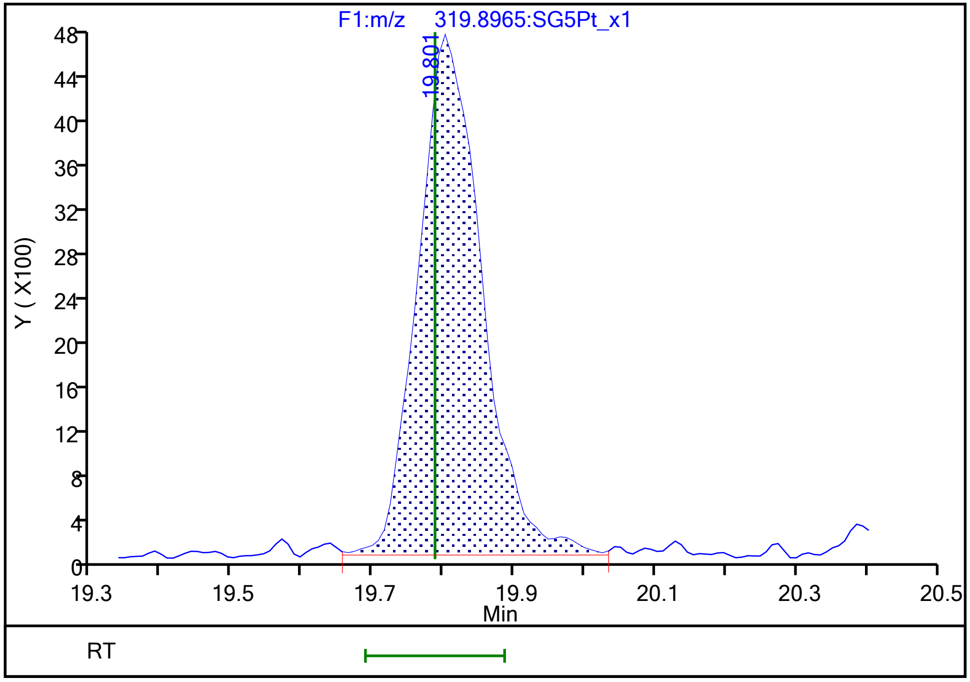

Reviewer: dadunj, 16-Mar-2021 08:17:15

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d

Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT:	25.65
Area:	4567
Amount:	0.266121
Amount Units:	pg/ul

Processing Integration Results

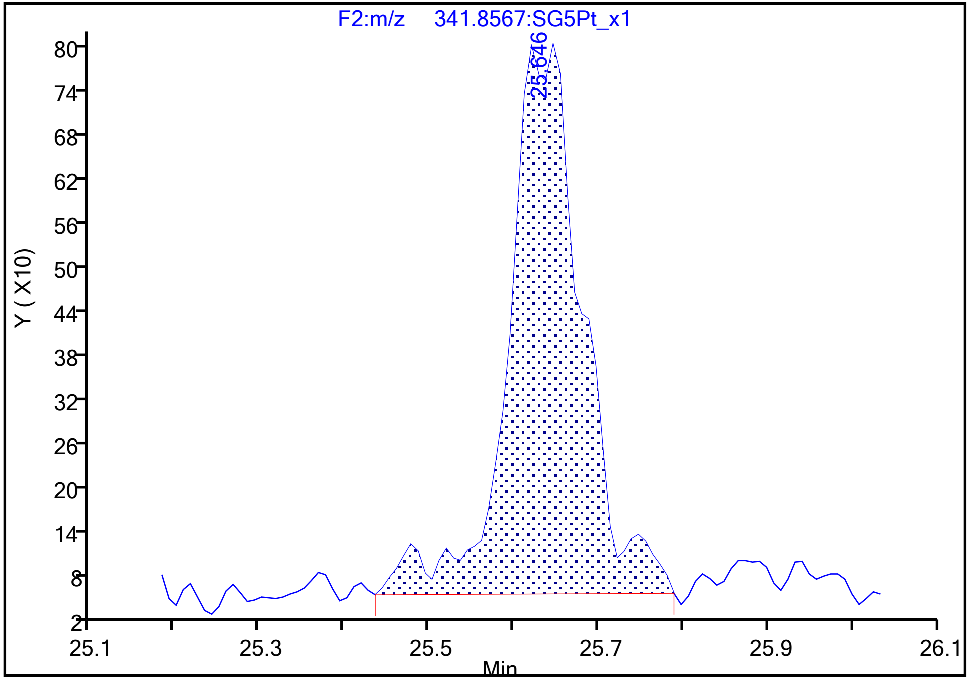

RT:	25.65
Area:	4067
Amount:	0.245452
Amount Units:	pg/ul

Manual Integration Results

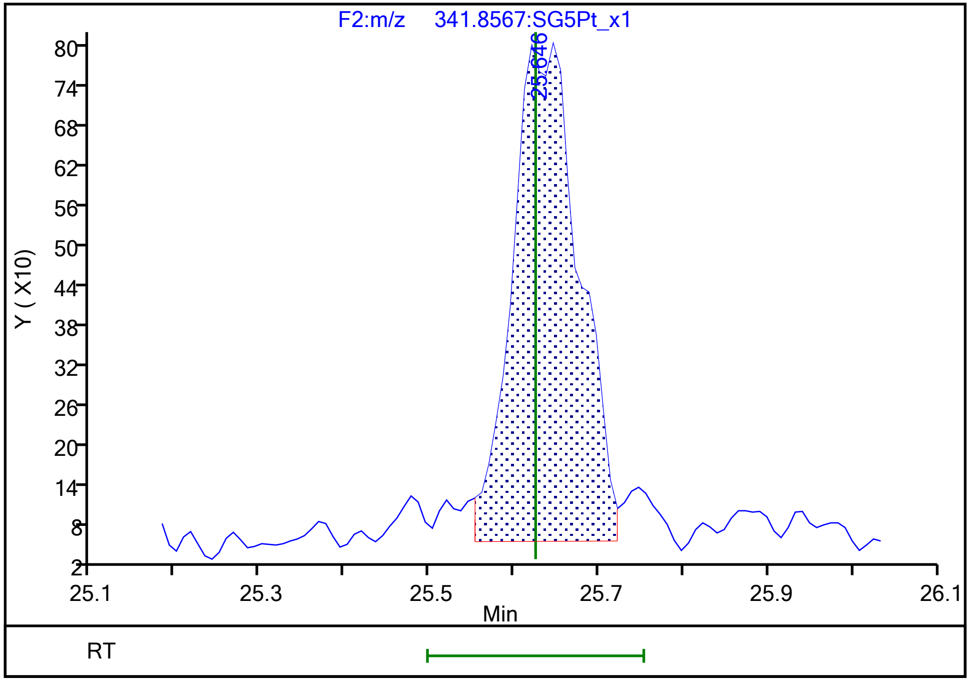

Reviewer: dadunj, 16-Mar-2021 08:17:38

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT:	25.64
Area:	6390
Amount:	0.266121
Amount Units:	pg/ul

Processing Integration Results

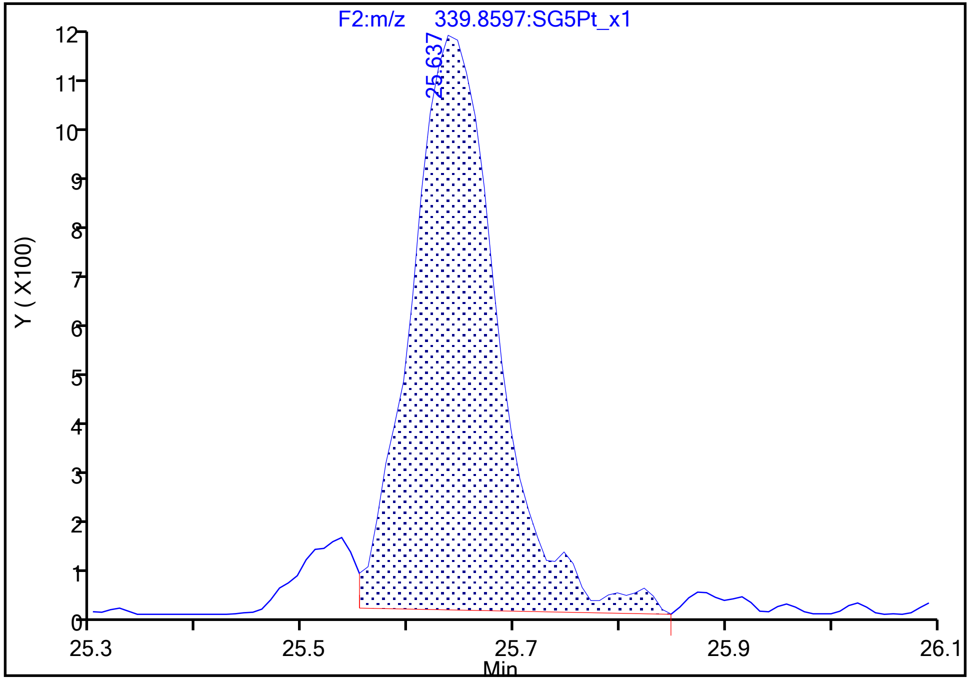

RT:	25.64
Area:	6039
Amount:	0.245452
Amount Units:	pg/ul

Manual Integration Results

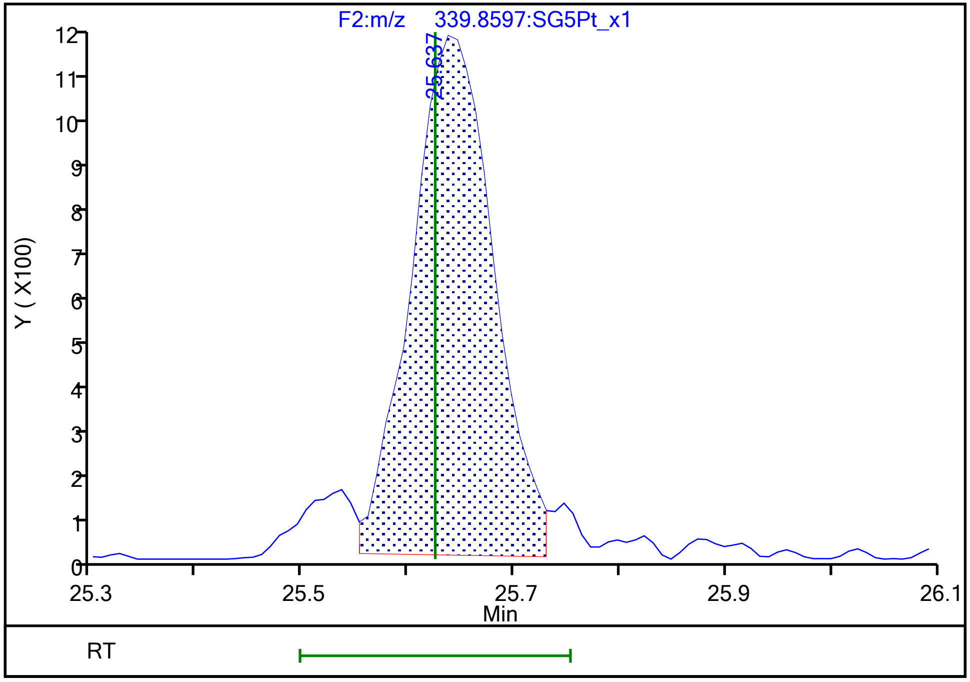

Reviewer: dadunj, 16-Mar-2021 08:17:41

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:56 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

Processing Integration Results

RT:	27.01
Area:	4829
Amount:	0.182322
Amount Units:	pg/ul

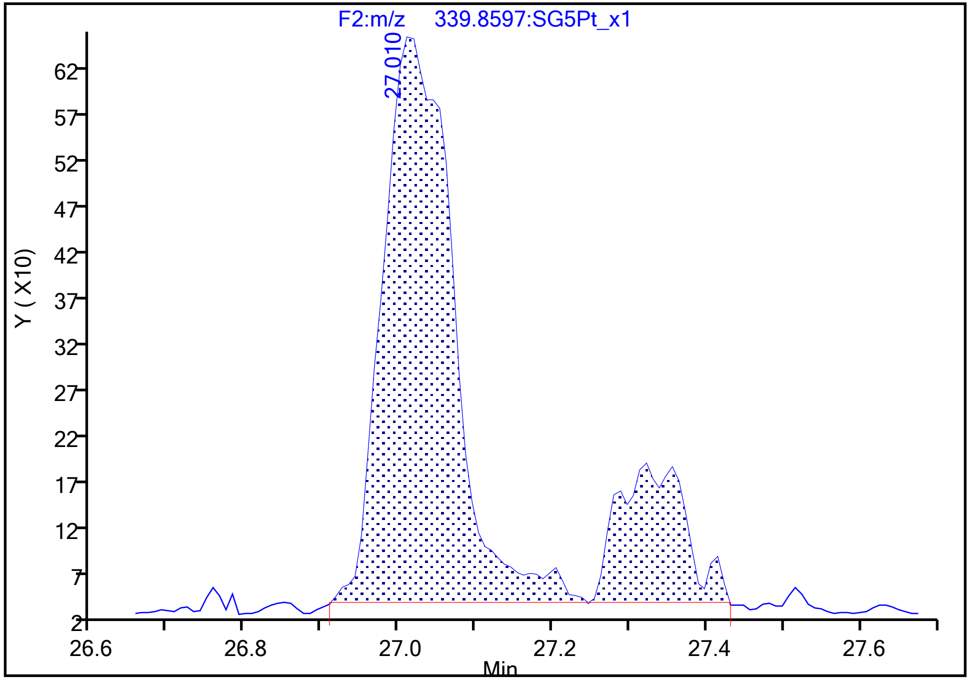

Manual Integration Results

RT:	27.01
Area:	3747
Amount:	0.154996
Amount Units:	pg/ul

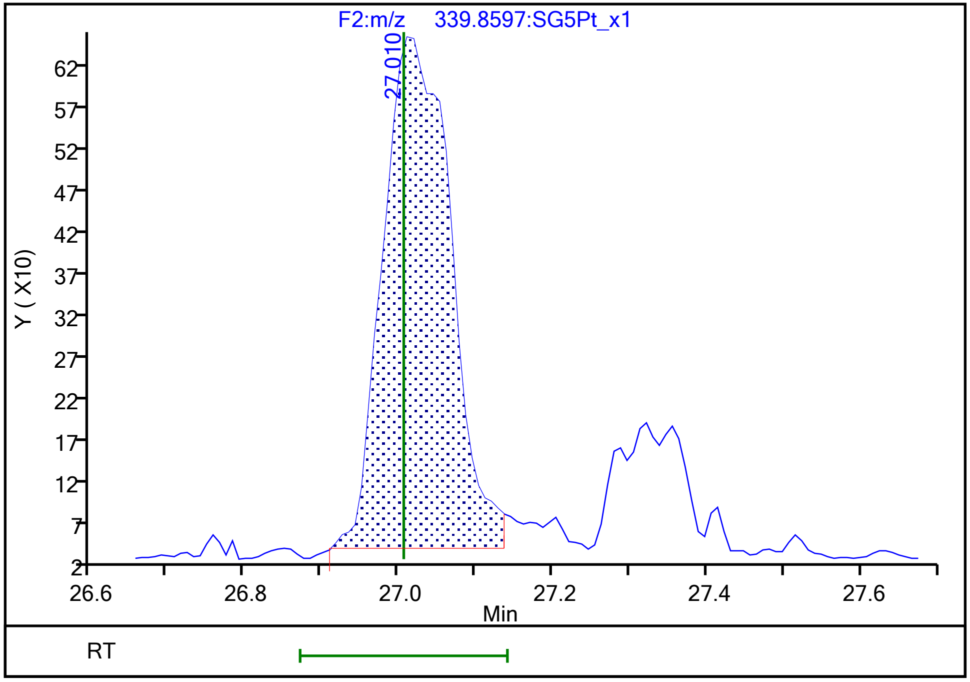

Reviewer: dadunj, 16-Mar-2021 08:17:47

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT: 33.75
Area: 3530
Amount: 0.138171
Amount Units: pg/ul

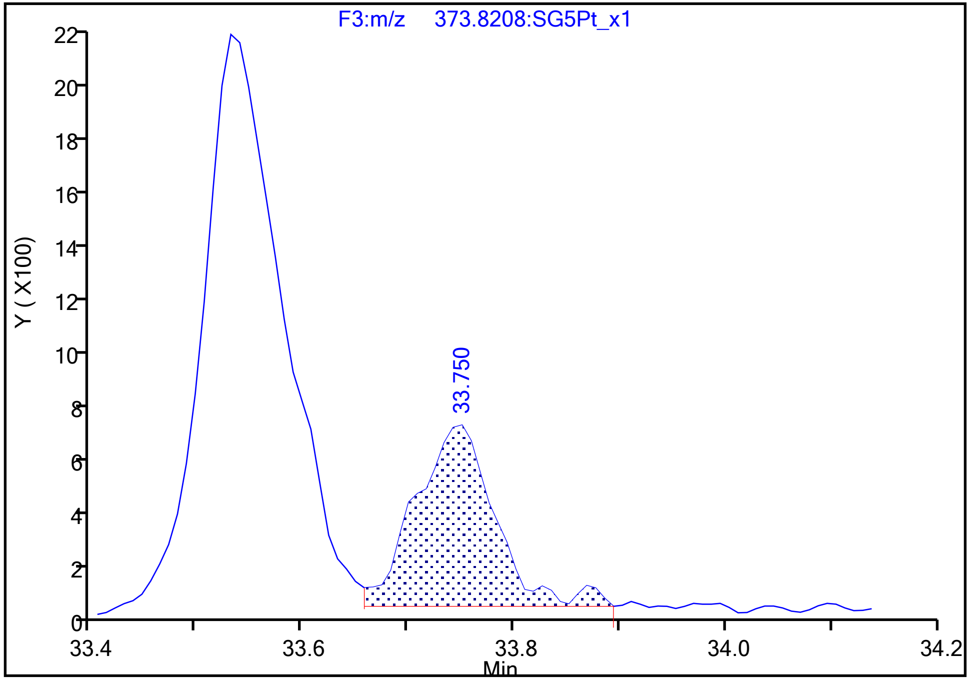

Manual Integration Results

RT: 33.75
Area: 3324
Amount: 0.133264
Amount Units: pg/ul

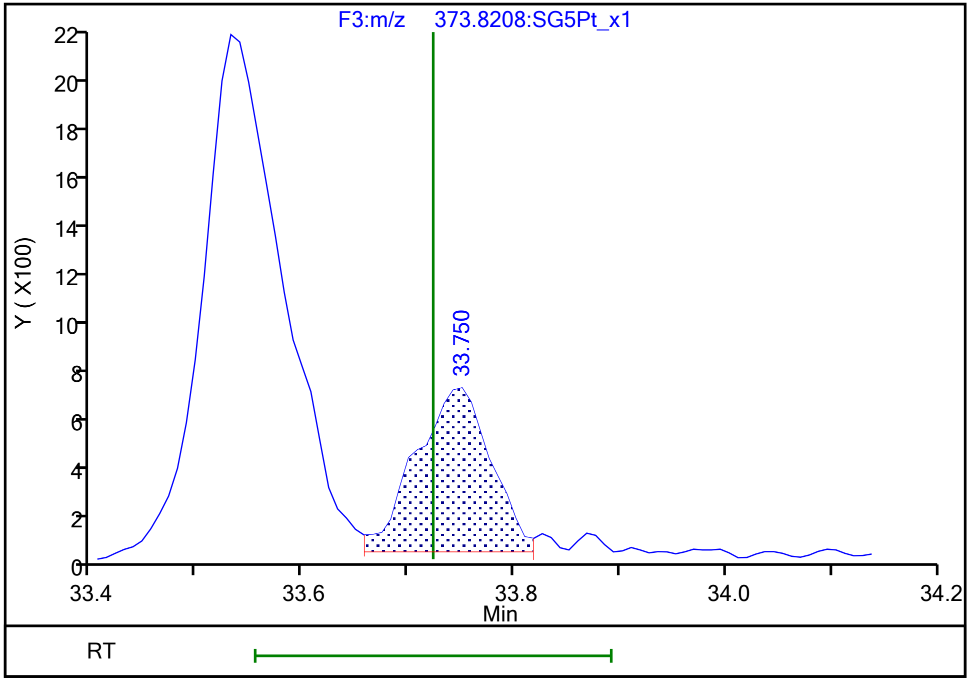

Reviewer: dadunj, 16-Mar-2021 08:18:19

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00 Instrument ID: DFS 1
Lims ID: 320-70797-A-3-A Lab Sample ID: 320-70797-3
Client ID: 11215702-Tank1-10mm
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F3(33.08 :38.50)

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

RT: 35.13
Area: 733
Amount: 0.054374
Amount Units: pg/ul

Processing Integration Results

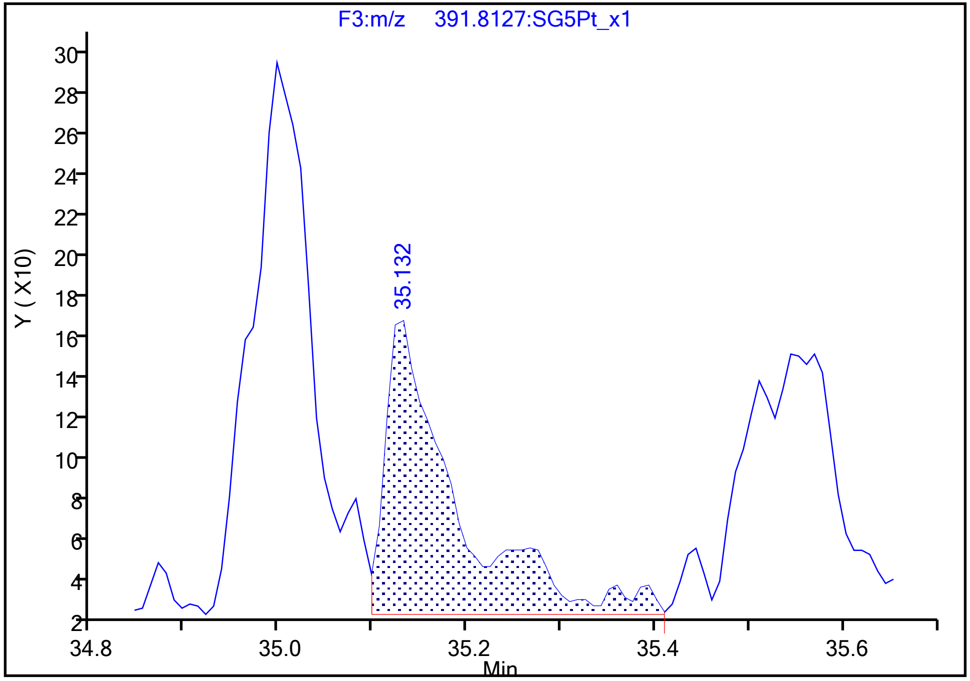

RT: 35.13
Area: 534
Amount: 0.045055
Amount Units: pg/ul

Manual Integration Results

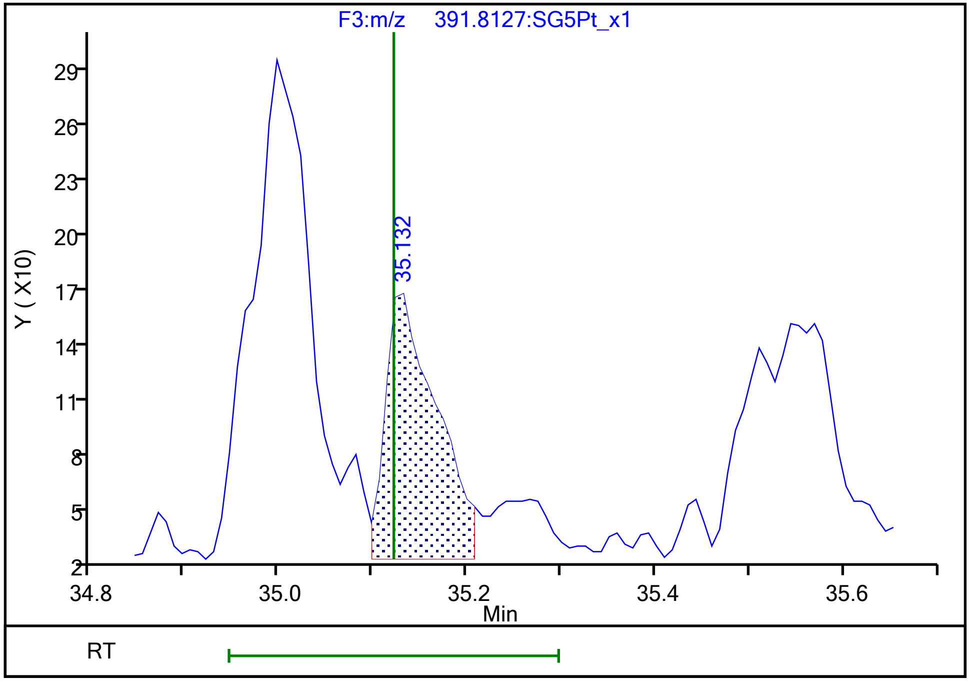

Reviewer: dadunj, 16-Mar-2021 08:18:46
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Processing Integration Results

RT:	35.12
Area:	714
Amount:	0.054374
Amount Units:	pg/ul

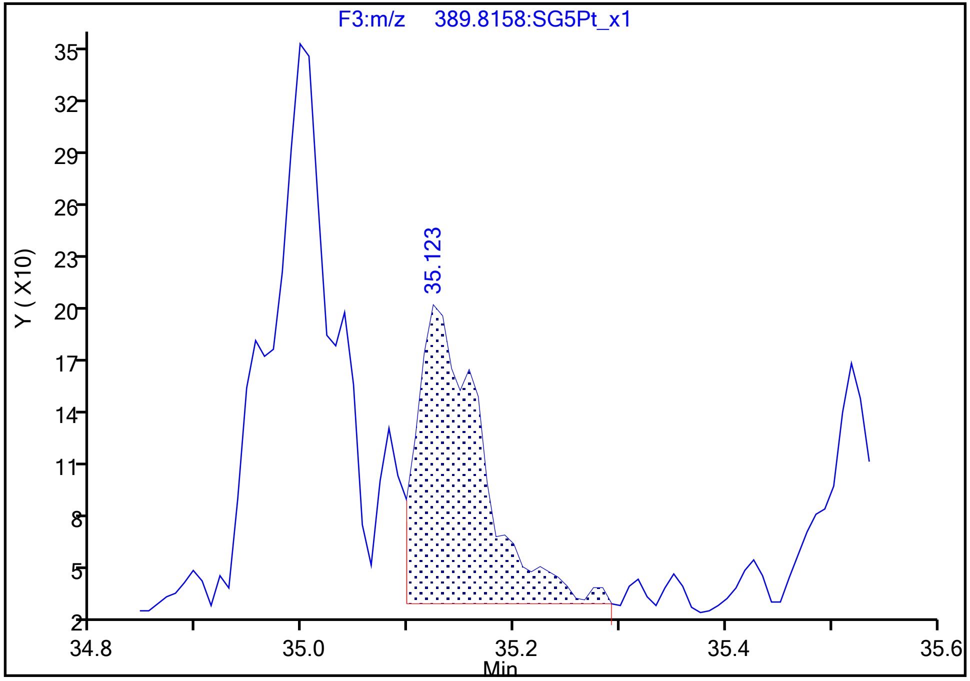

Manual Integration Results

RT:	35.12
Area:	665
Amount:	0.045055
Amount Units:	pg/ul

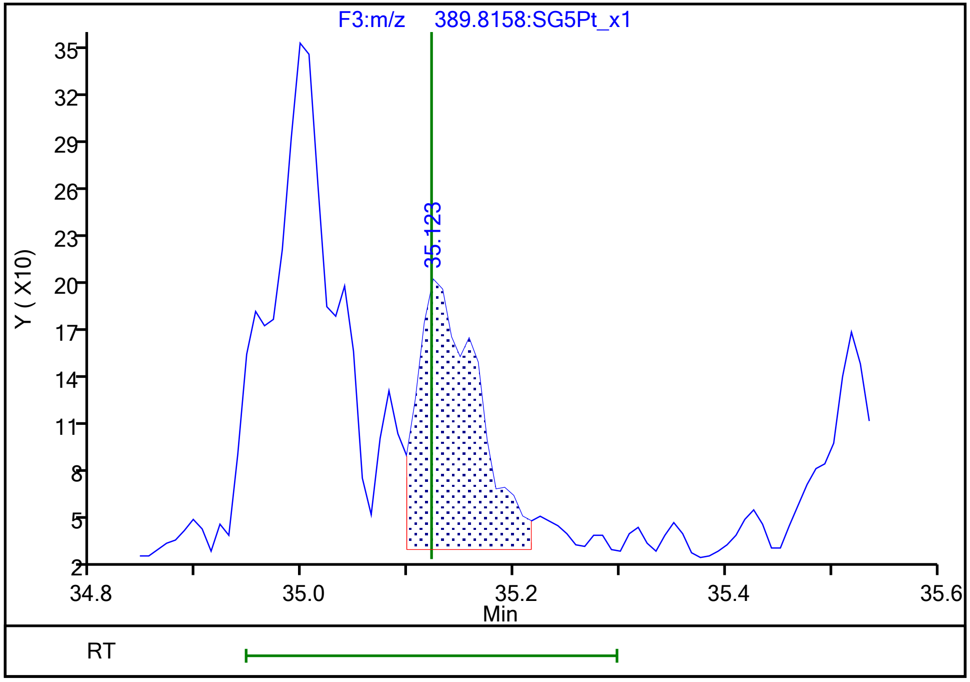

Reviewer: dadunj, 16-Mar-2021 08:18:47

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-3-A
Lab Sample ID: 320-70797-3
Client ID: 11215702-Tank1-10mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Processing Integration Results

RT: 35.54
Area: 153
Amount: 0.037327
Amount Units: pg/ul

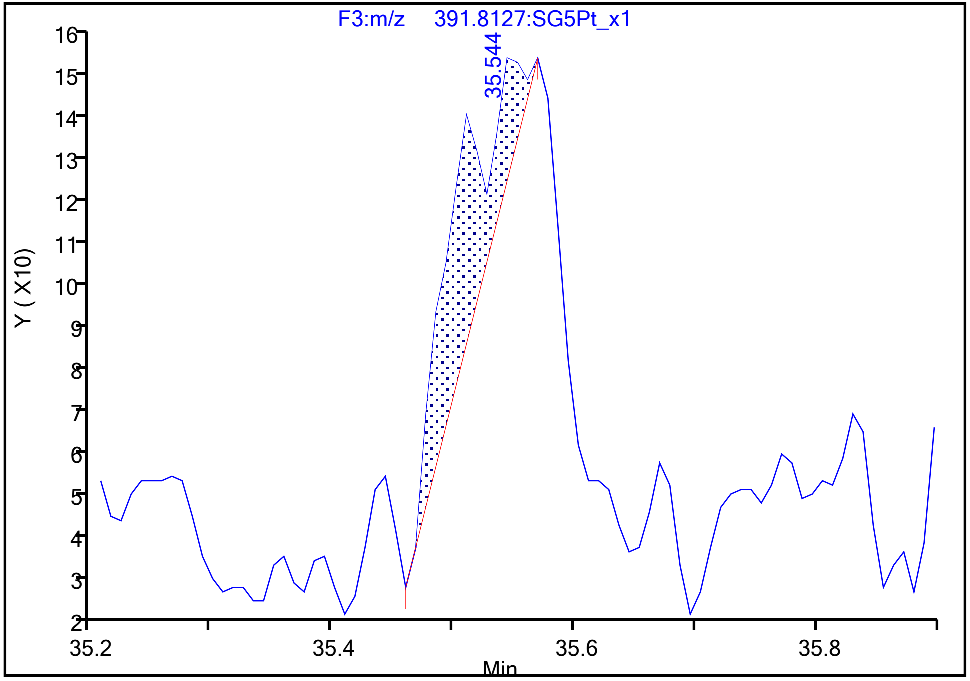

Manual Integration Results

RT: 35.54
Area: 783
Amount: 0.059533
Amount Units: pg/ul

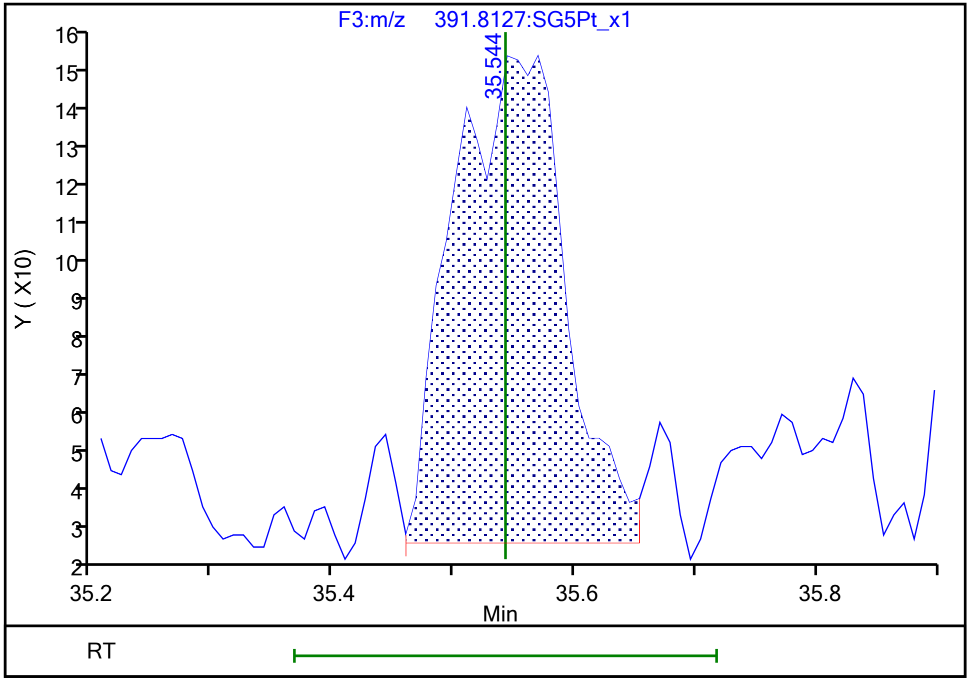

Reviewer: dadunj, 16-Mar-2021 08:18:58

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.58- 35.50)

Signal: 1

Processing Integration Results

RT = 34.062 Area = 1140

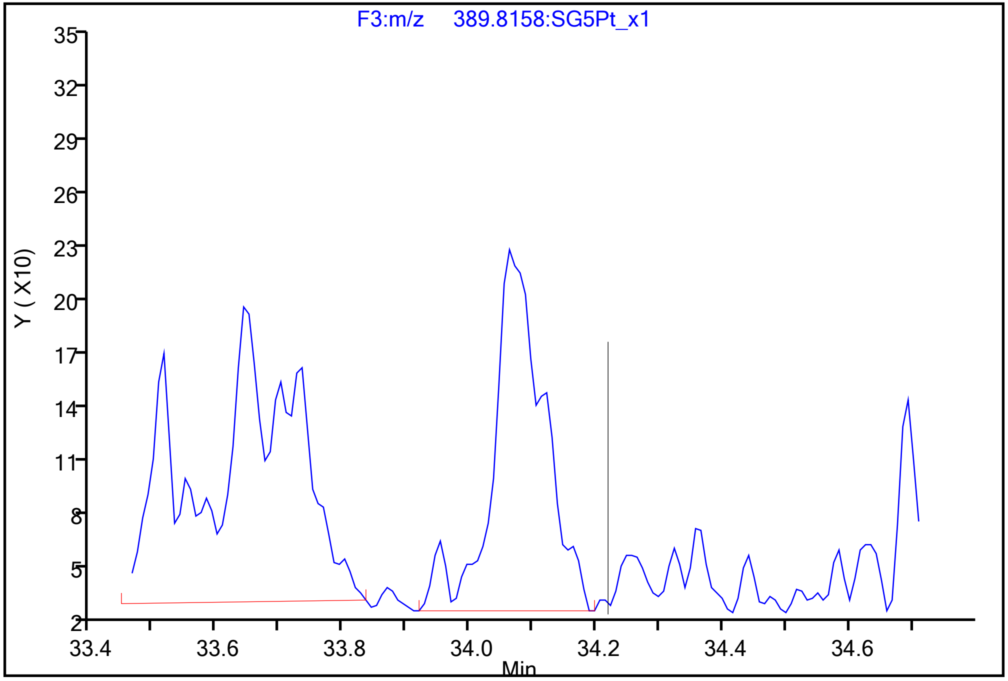

Manual Integration Results

RT = 34.062 Area = 1013 M

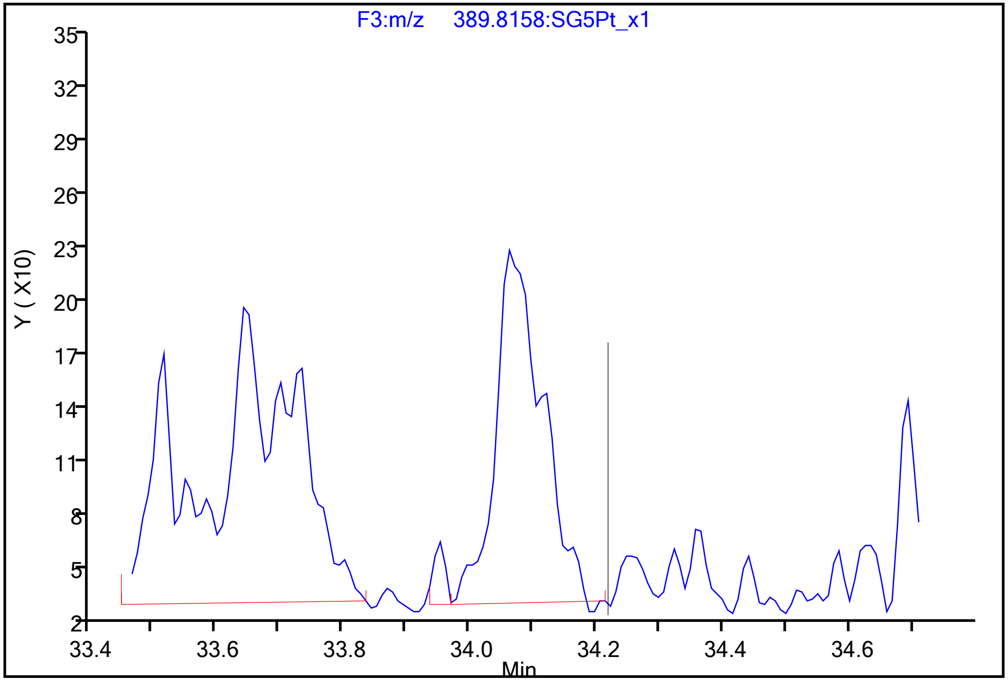

Reviewer: dadunj, 16-Mar-2021 08:19:26

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3
Client ID:	11215702-Tank1-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

Processing Integration Results

RT = 34.087 Area = 832

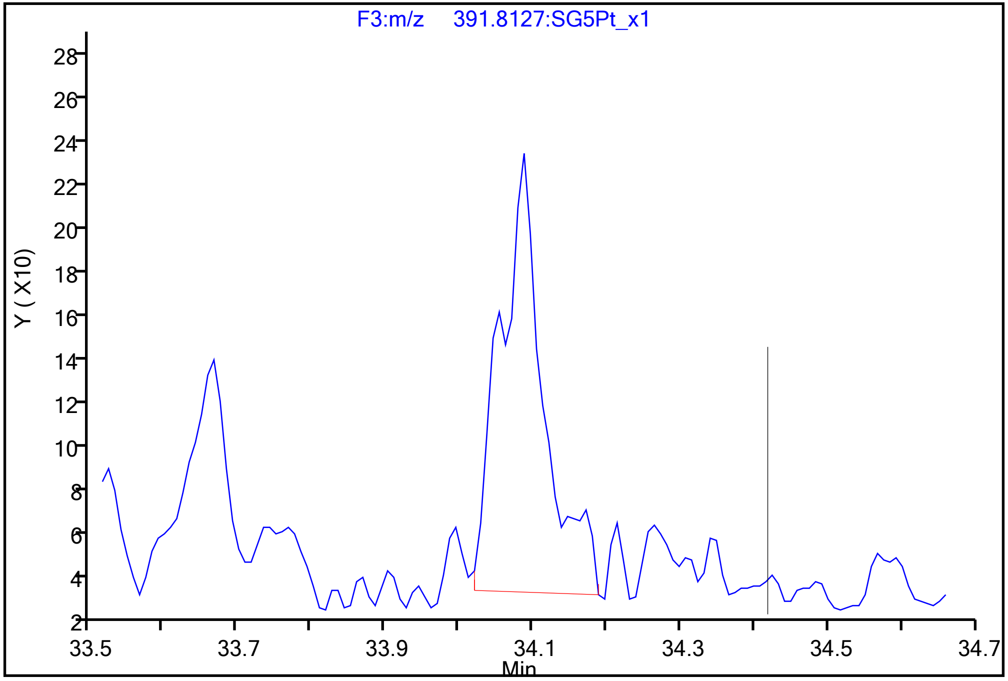

Manual Integration Results

RT = 34.087 Area = 809 M

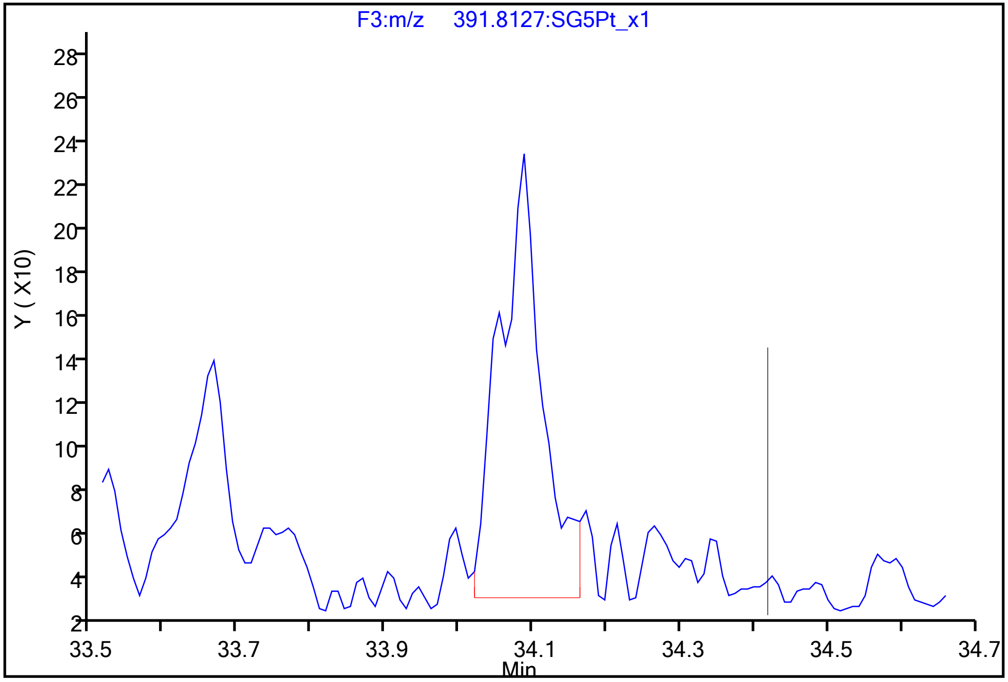

Reviewer: dadunj, 16-Mar-2021 08:19:37

Audit Action: Manually Integrated Audit Reason: Baseline

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 37.80
Area: 5572
Amount: 0.282403
Amount Units: pg/ul

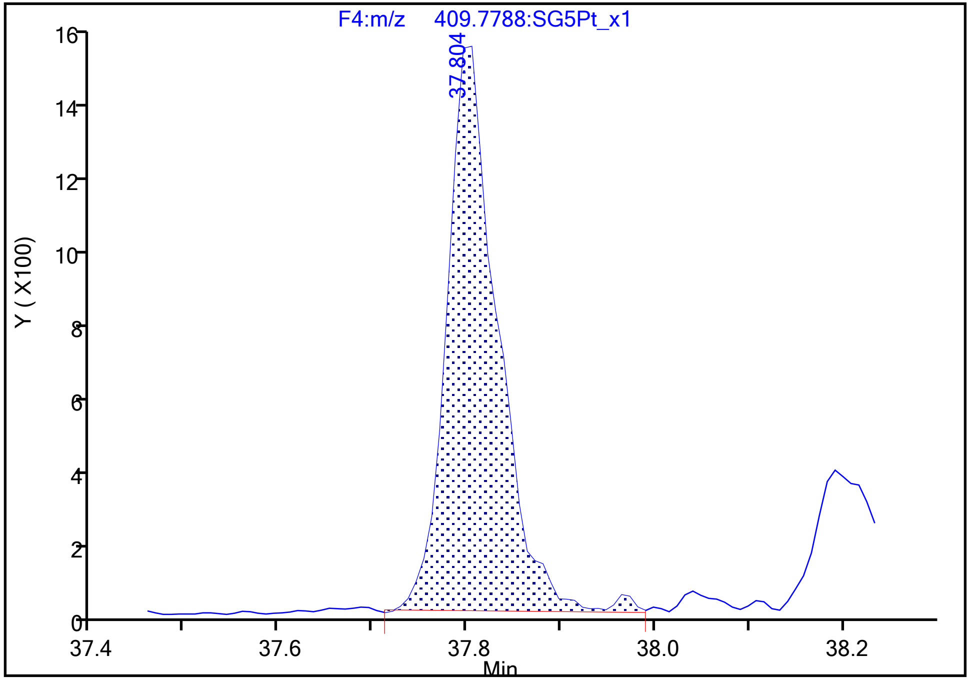

Manual Integration Results

RT: 37.80
Area: 5466
Amount: 0.277661
Amount Units: pg/ul

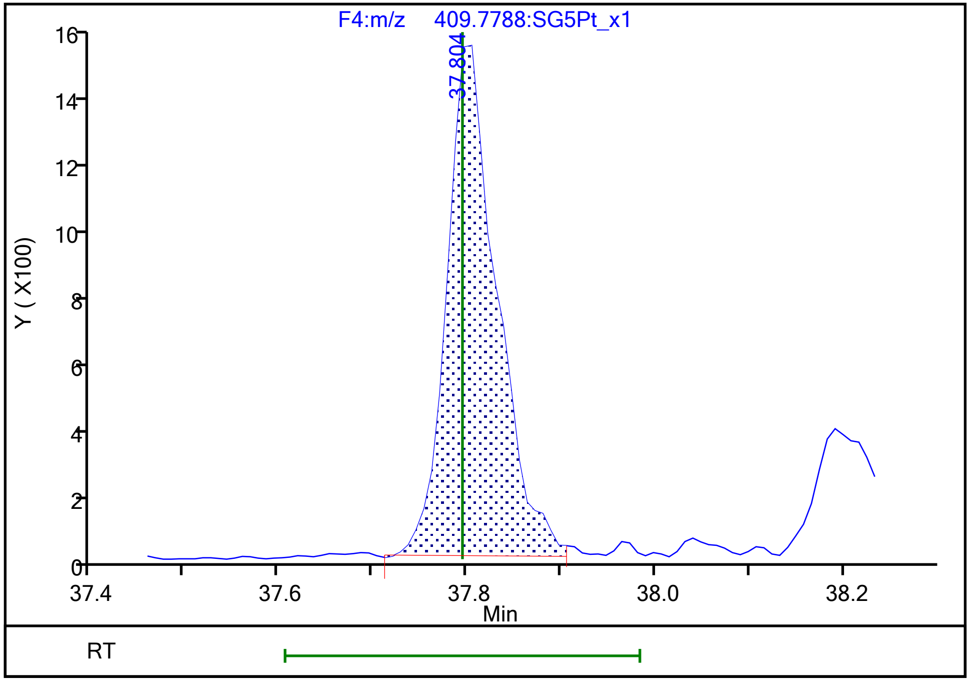

Reviewer: dadunj, 16-Mar-2021 08:19:51

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d

Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3
Client ID:	11215702-Tank1-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT:	37.80
Area:	5563
Amount:	0.282403
Amount Units:	pg/ul

Processing Integration Results

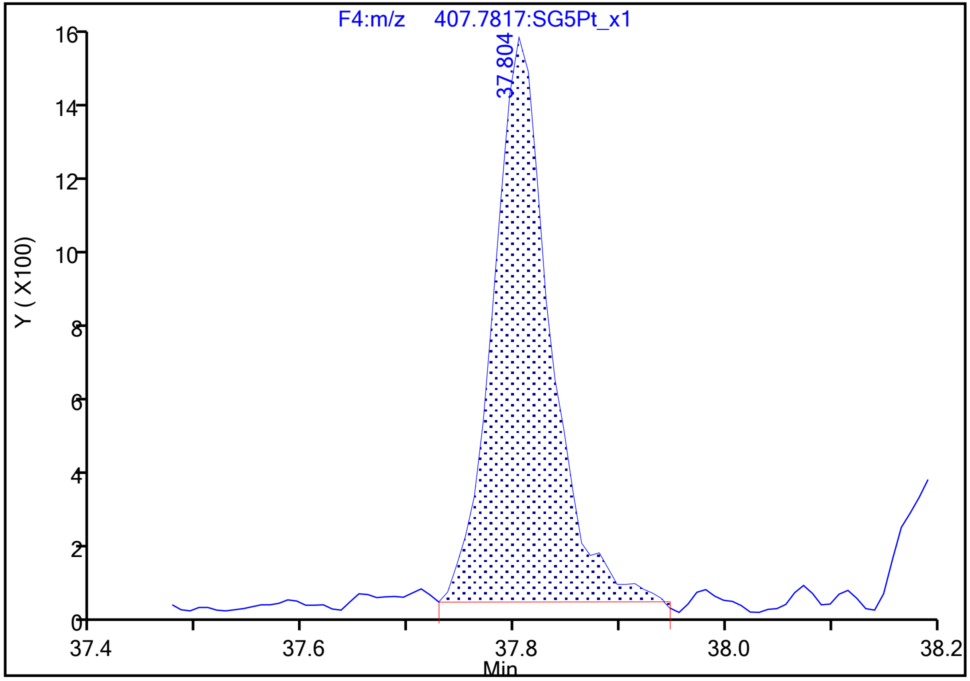

RT:	37.80
Area:	5482
Amount:	0.277661
Amount Units:	pg/ul

Manual Integration Results

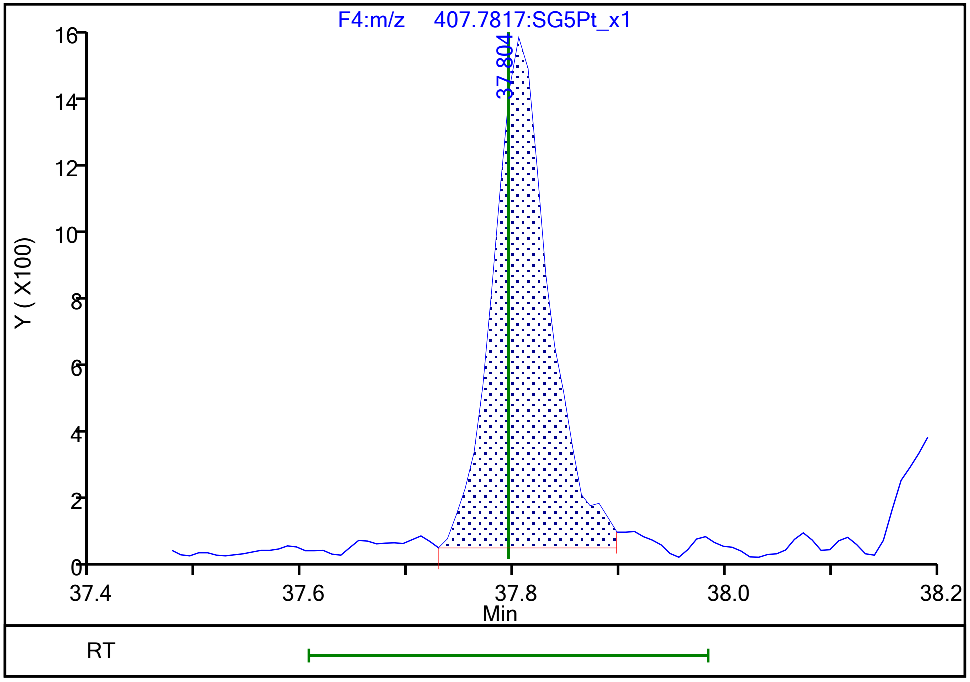

Reviewer: dadunj, 16-Mar-2021 08:19:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3
Client ID:	11215702-Tank1-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

RT:	39.14
Area:	2205
Amount:	0.115086
Amount Units:	pg/ul

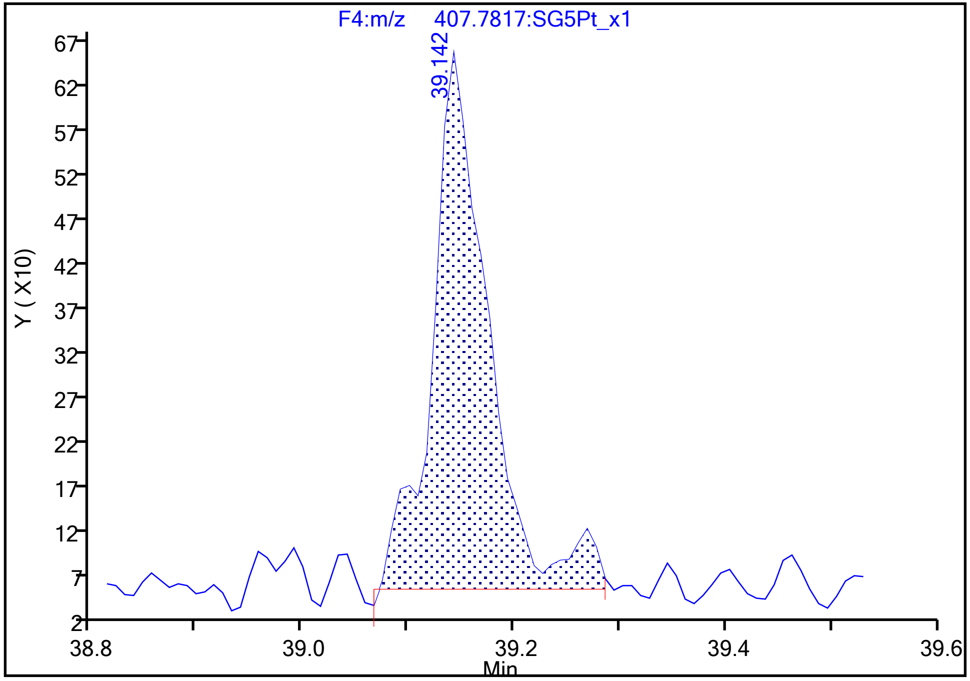

Manual Integration Results

RT:	39.14
Area:	2068
Amount:	0.109232
Amount Units:	pg/ul

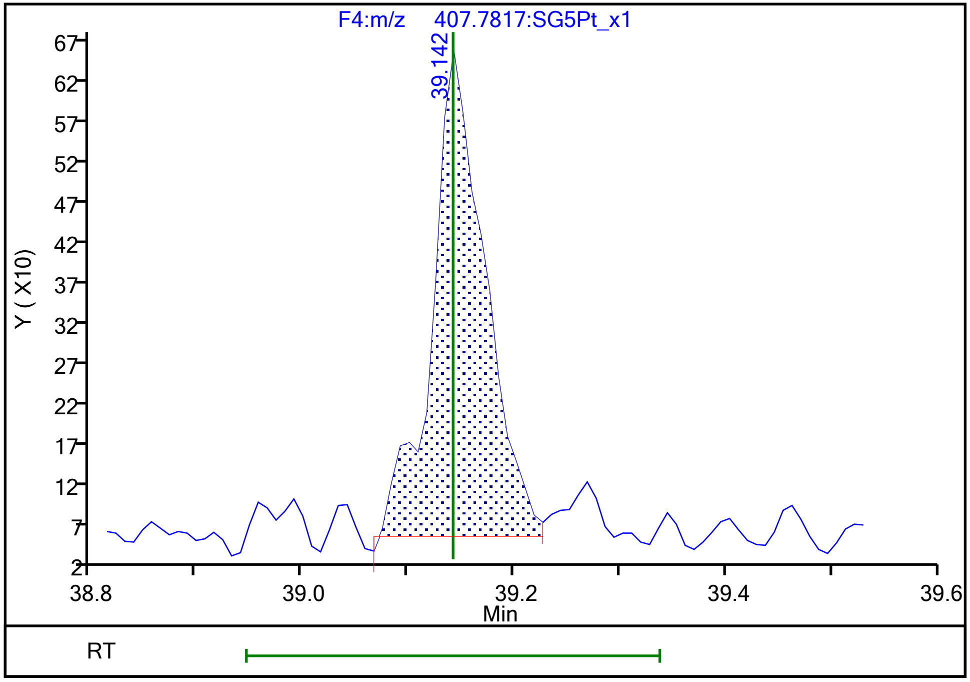

Reviewer: dadunj, 16-Mar-2021 08:19:57

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT: 39.14
Area: 1766
Amount: 0.115086
Amount Units: pg/ul

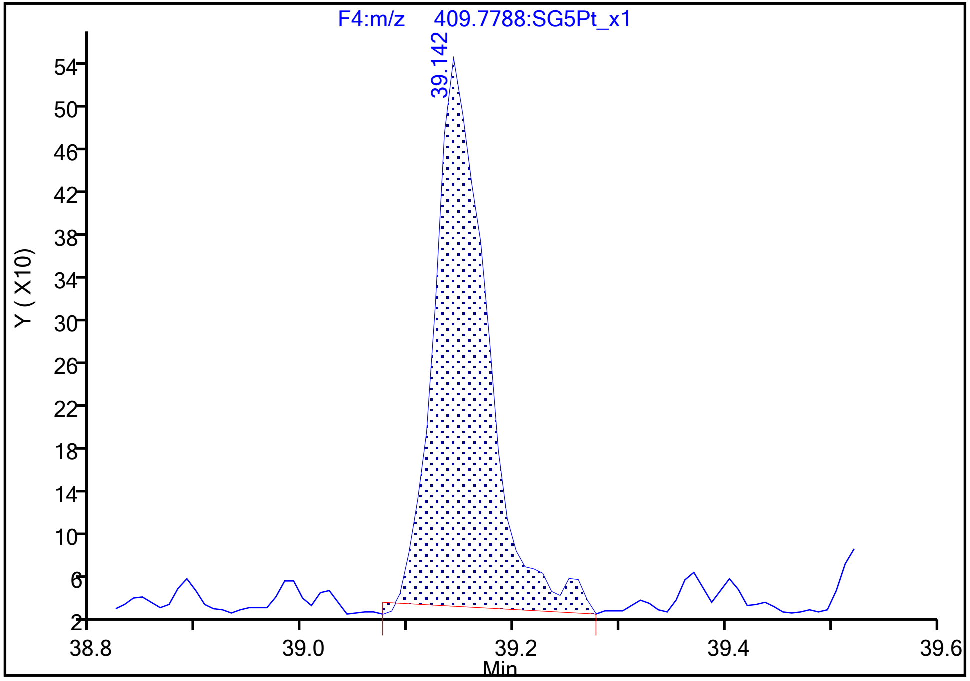

Manual Integration Results

RT: 39.14
Area: 1701
Amount: 0.109232
Amount Units: pg/ul

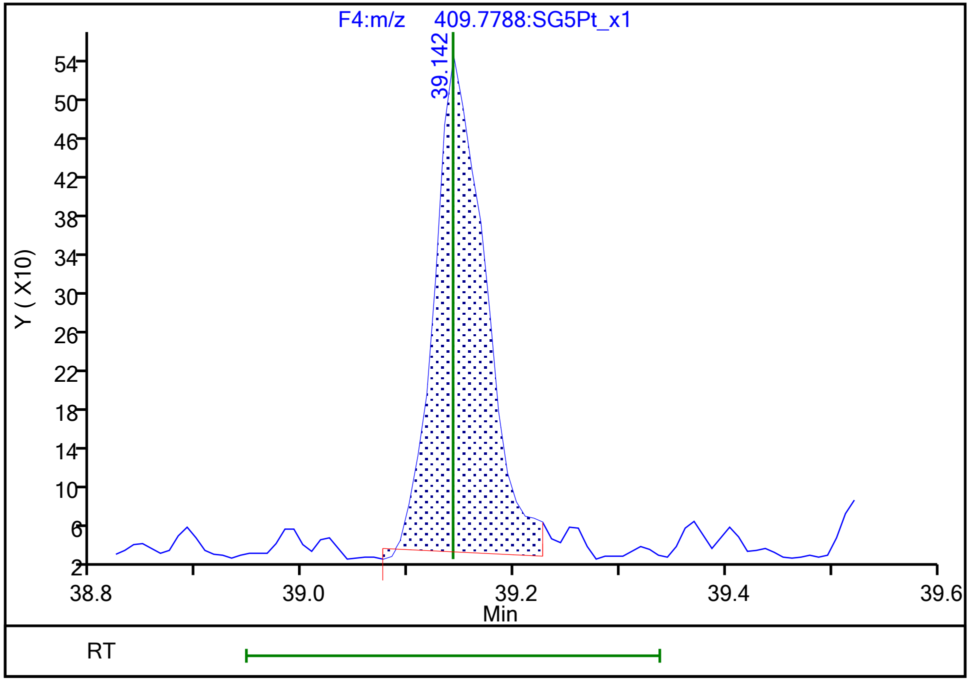

Reviewer: dadunj, 16-Mar-2021 08:19:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7817, RT: (37.75- 39.15)

Signal: 1

Processing Integration Results

RT = 38.208 Area = 2009

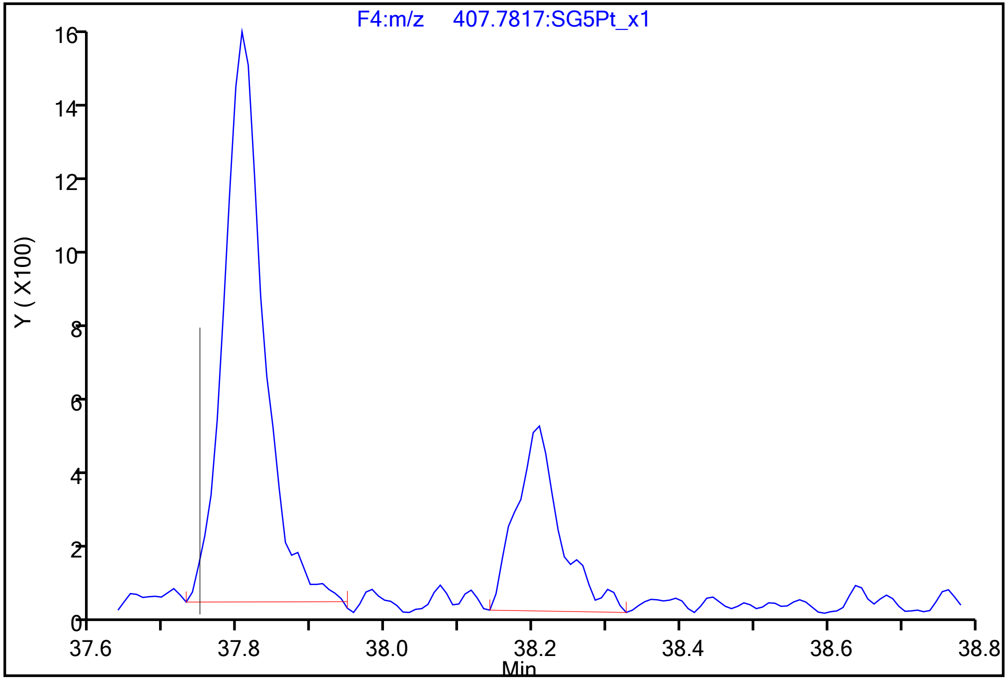

Manual Integration Results

RT = 38.208 Area = 1915 M

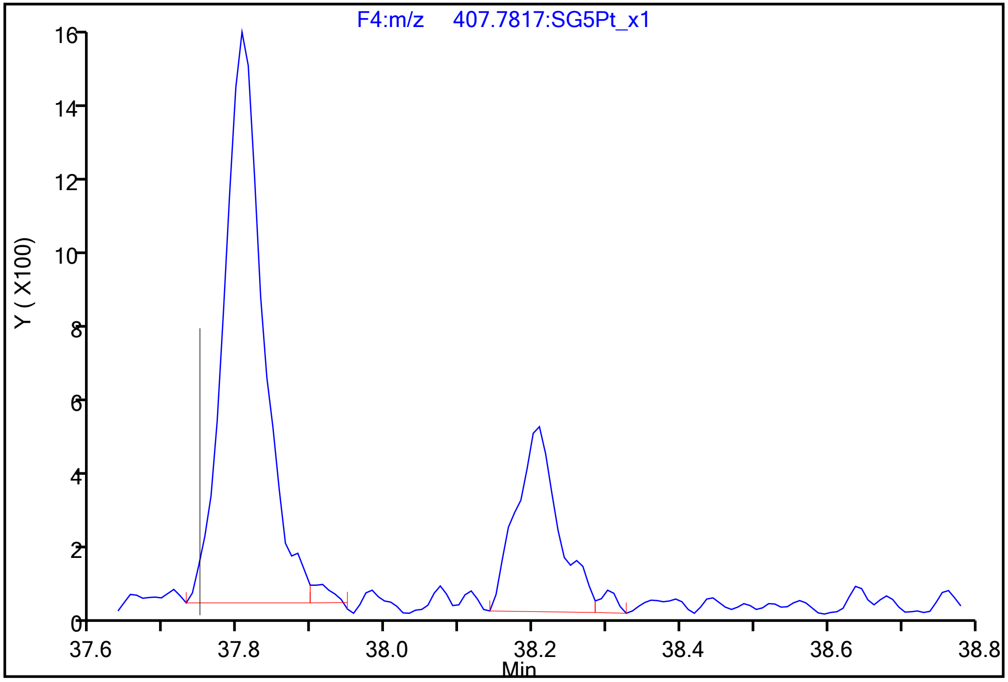

Reviewer: dadunj, 16-Mar-2021 08:20:04

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d				
Injection Date:	12-Mar-2021 12:57:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-3-A	Lab Sample ID:	320-70797-3		
Client ID:	11215702-Tank1-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (37.75- 39.15)

Signal: 2

Processing Integration Results

RT = 38.191 Area = 1733

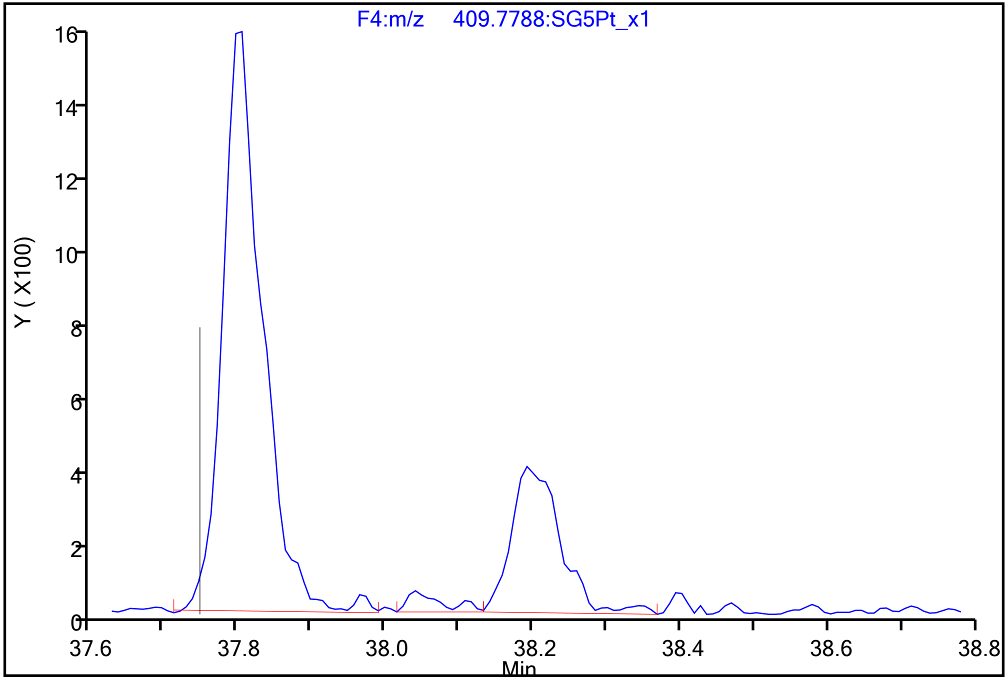

Manual Integration Results

RT = 38.191 Area = 1658 M

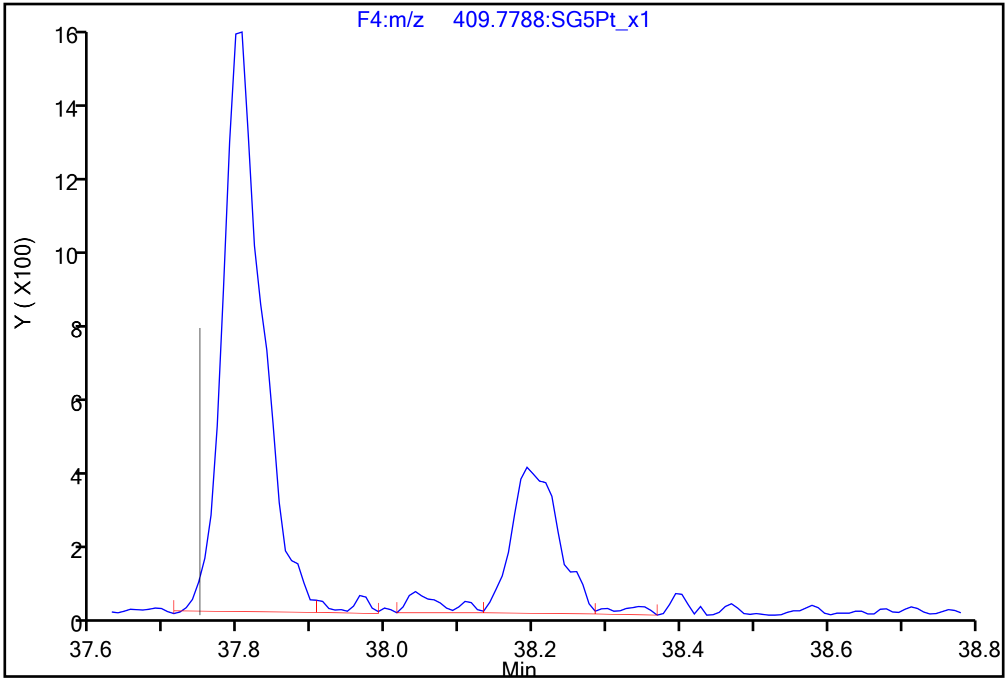

Reviewer: dadunj, 16-Mar-2021 08:20:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-3-A
Lab Sample ID: 320-70797-3
Client ID: 11215702-Tank1-10mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 2

RT: 41.38
Area: 3481
Amount: 0.218922
Amount Units: pg/ul

Processing Integration Results

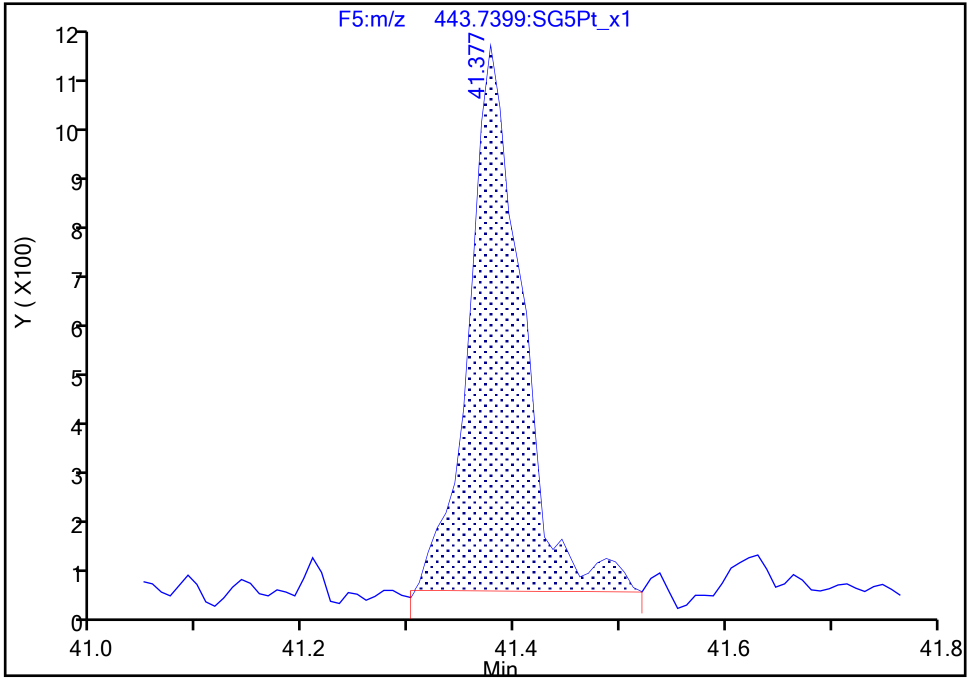

RT: 41.38
Area: 3364
Amount: 0.212509
Amount Units: pg/ul

Manual Integration Results

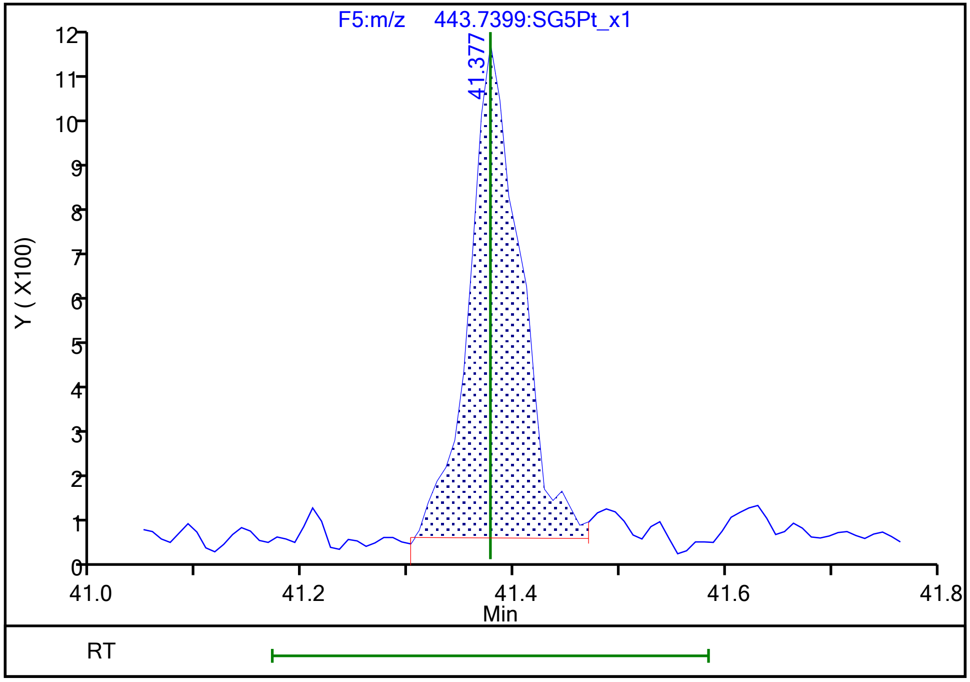

Reviewer: dadunj, 16-Mar-2021 08:20:19
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-3-A
Lab Sample ID: 320-70797-3
Client ID: 11215702-Tank1-10mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT: 41.39
Area: 3381
Amount: 0.218922
Amount Units: pg/ul

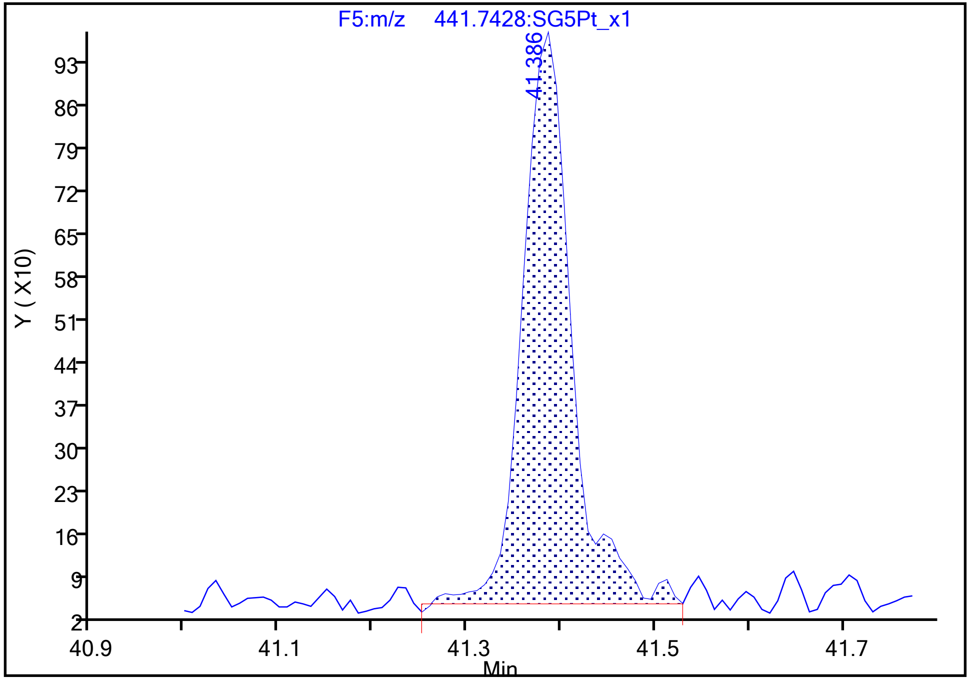

Manual Integration Results

RT: 41.39
Area: 3297
Amount: 0.212509
Amount Units: pg/ul

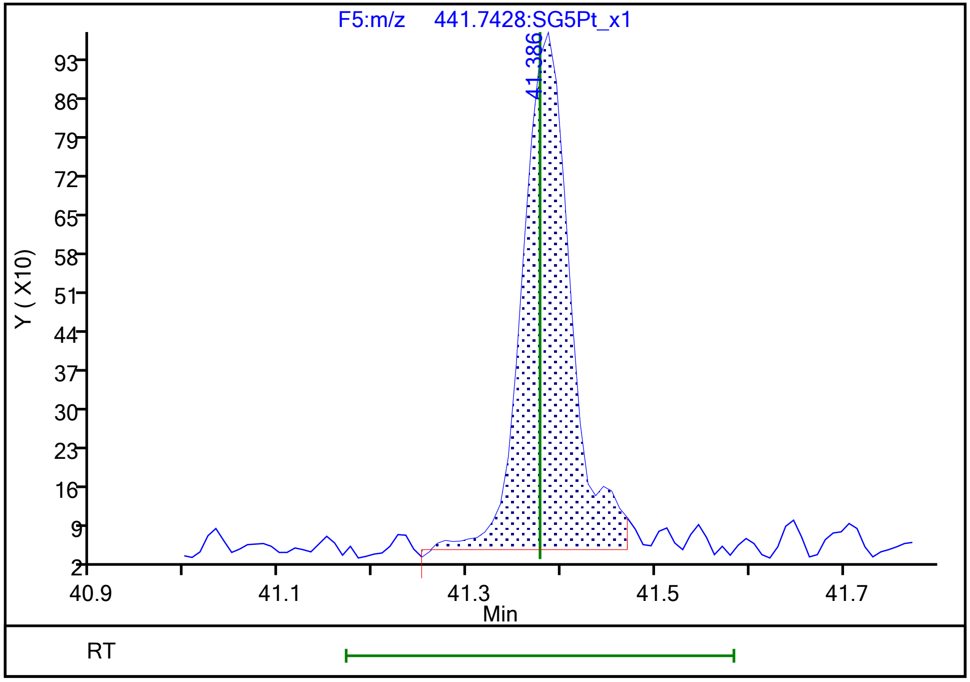

Reviewer: dadunj, 16-Mar-2021 08:20:21
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:24:57
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-10mm
Worklist#: 469779
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

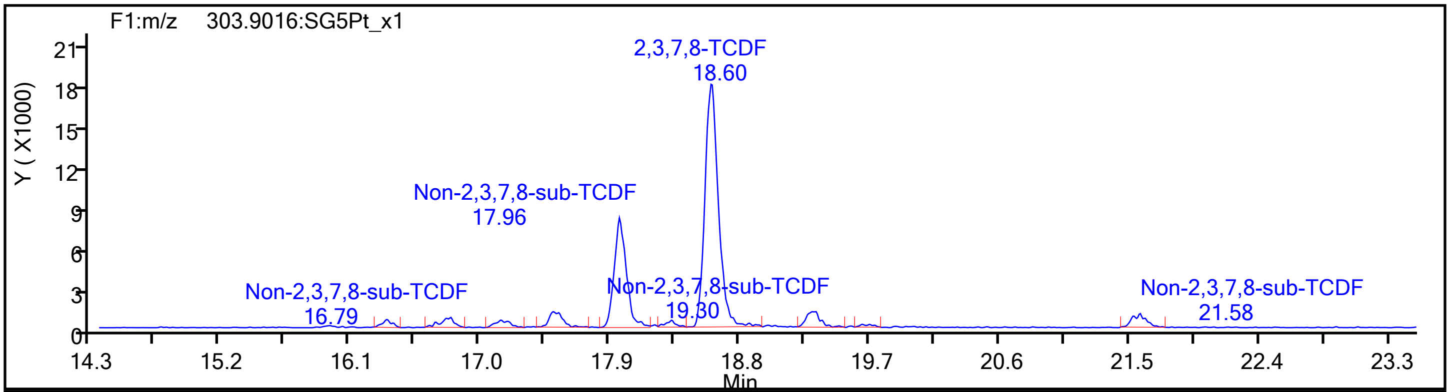

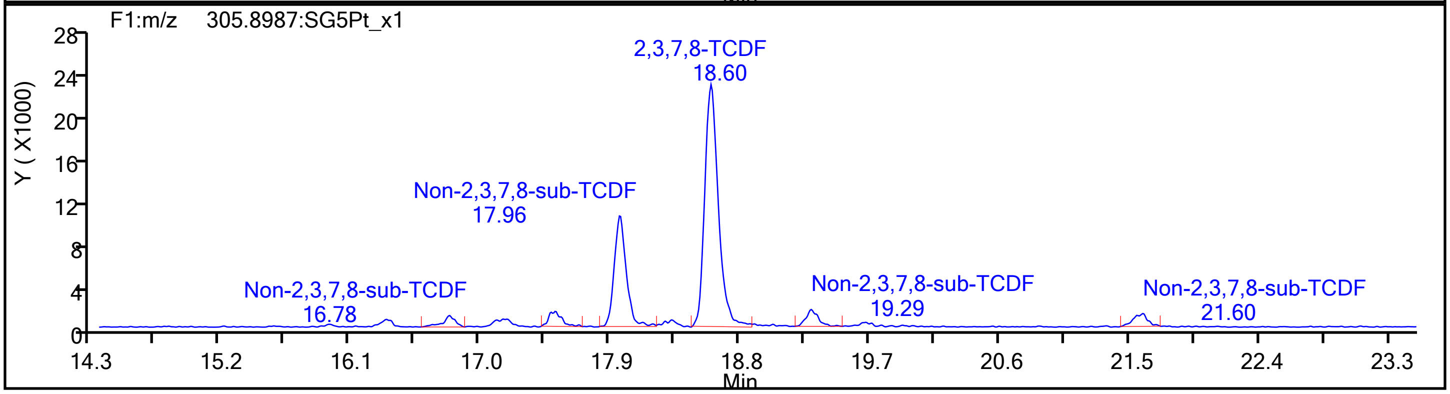

TCDF Standards

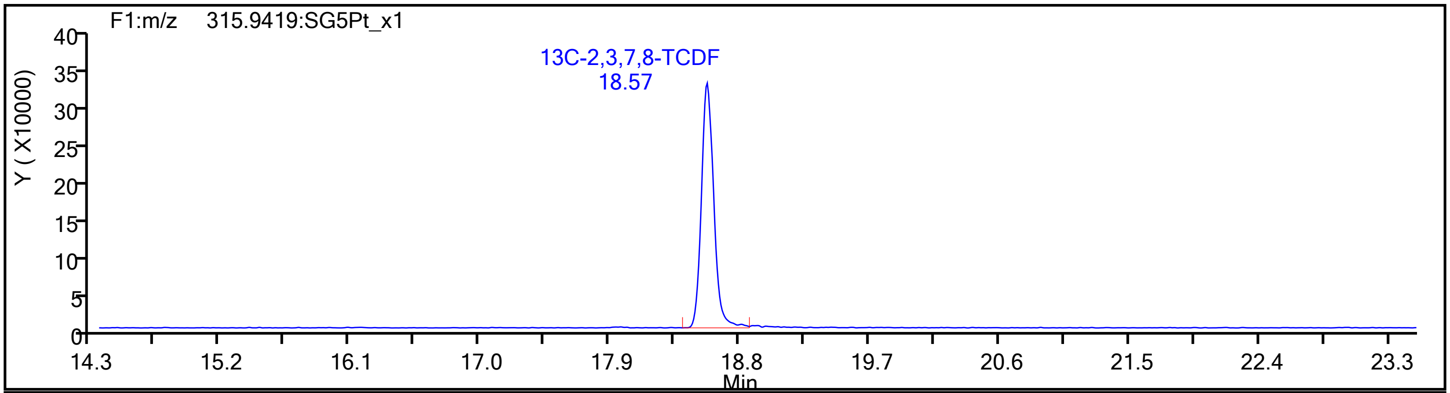

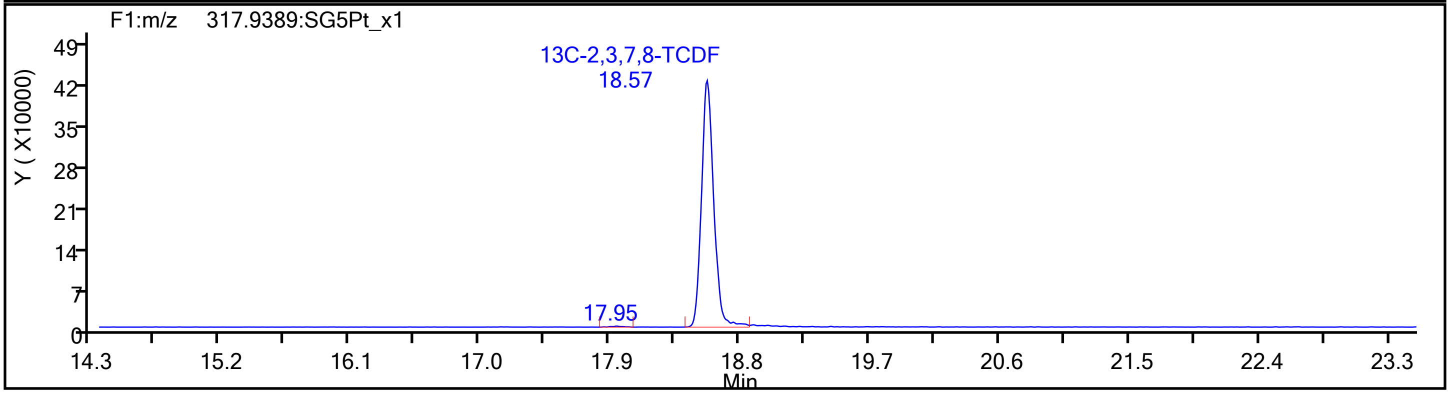

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

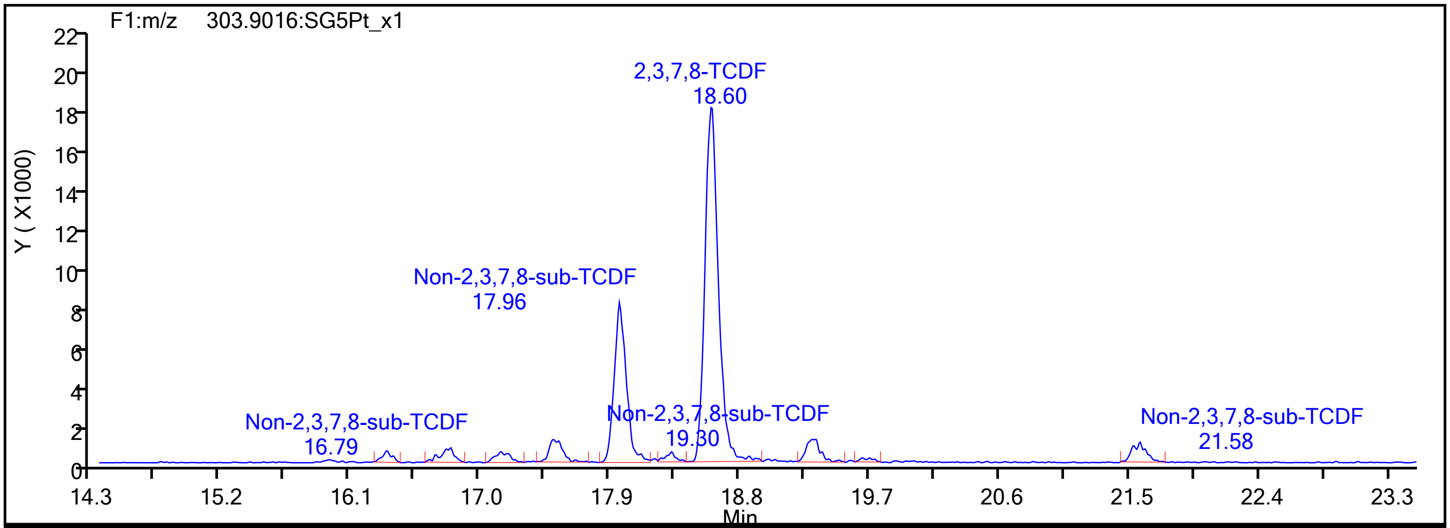

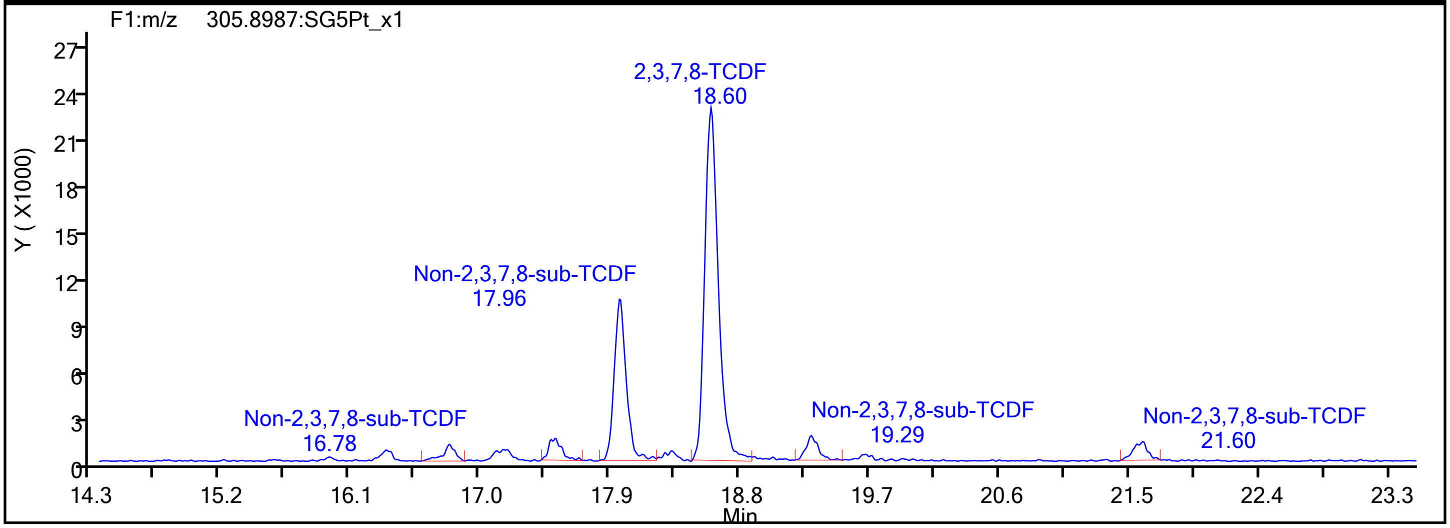

TCDF Interference Mass

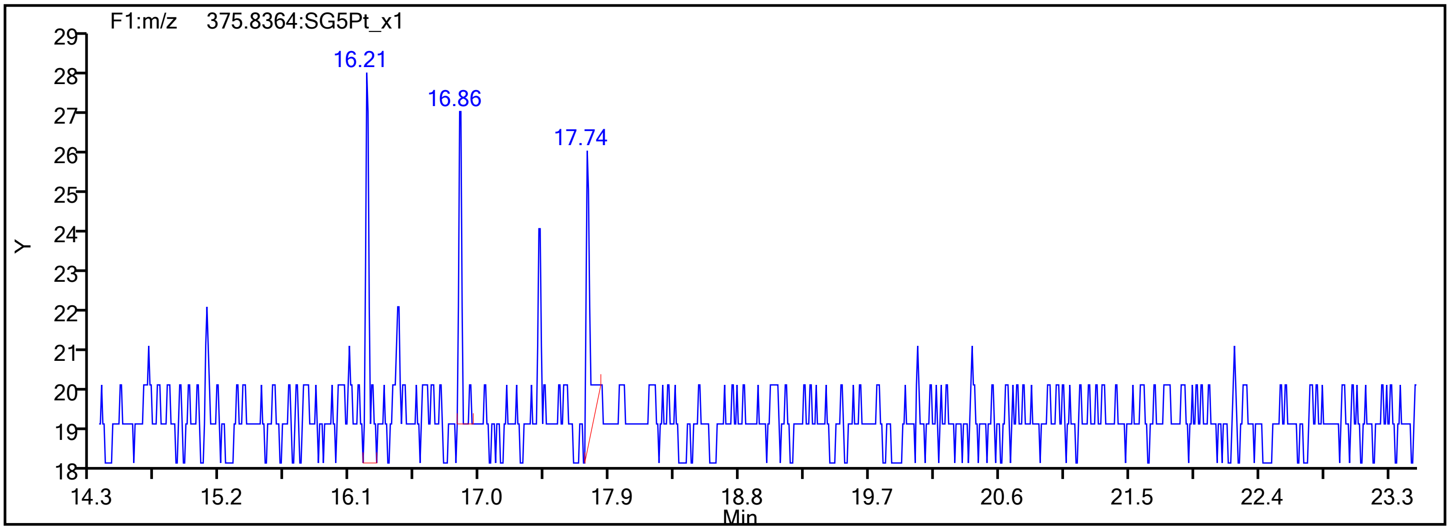

Report Date: 16-Mar-2021 09:24:57
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 469779
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

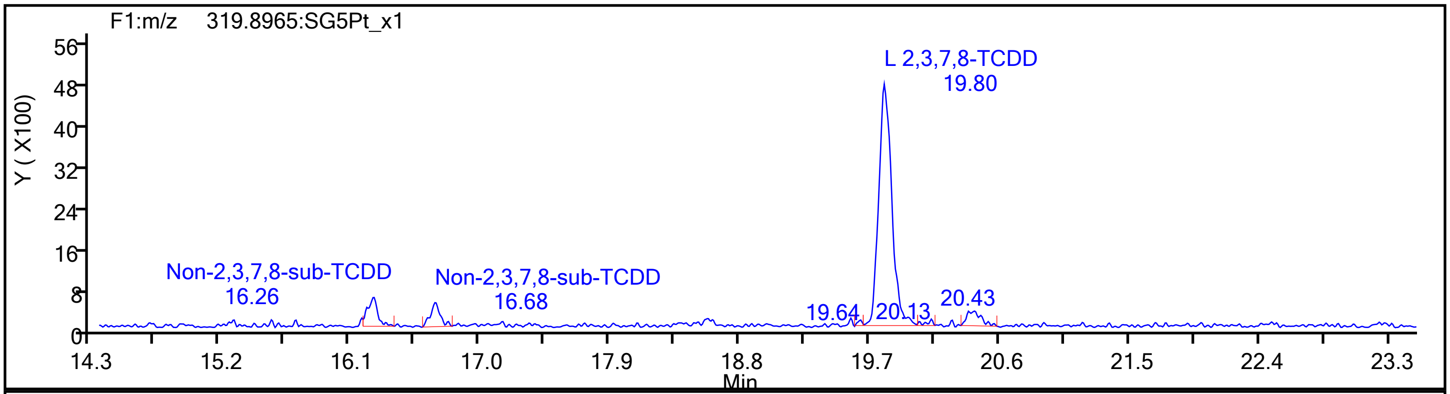

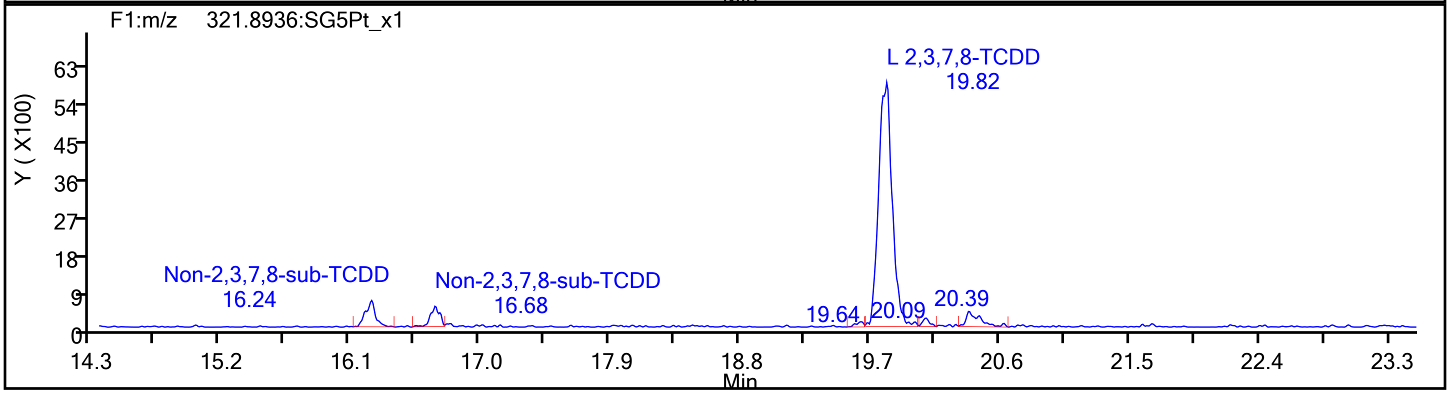

TCDD Standards

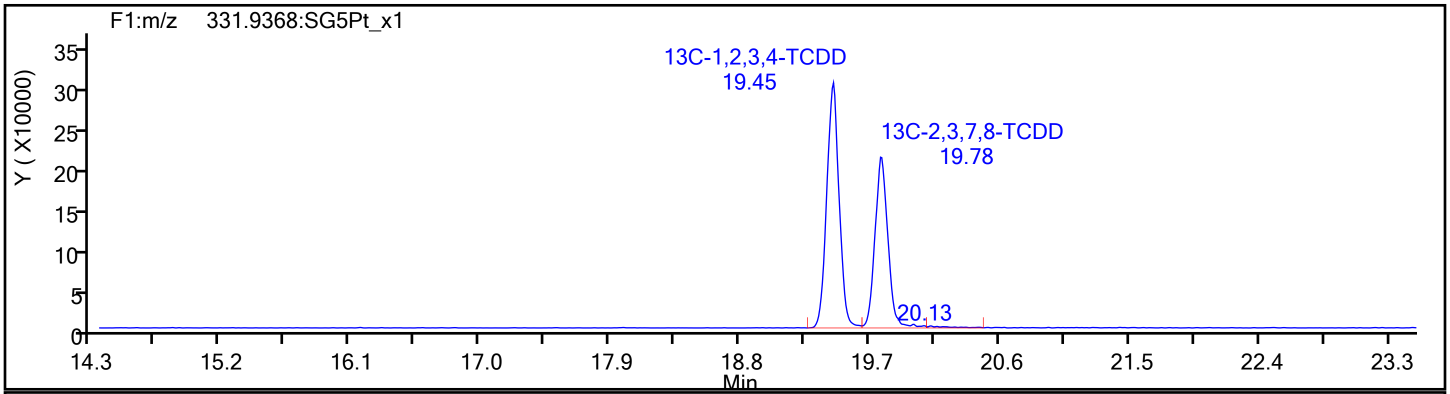

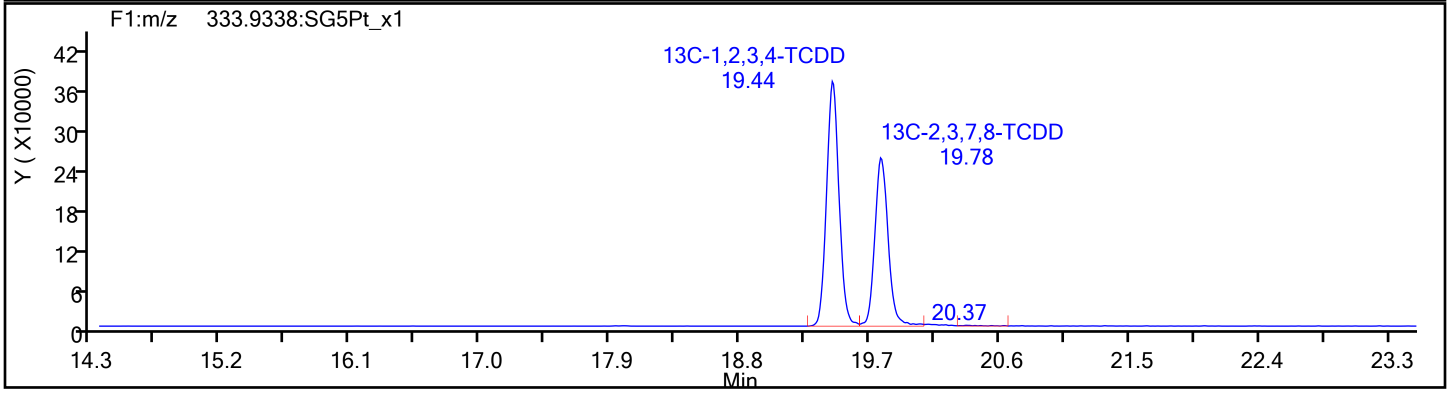

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

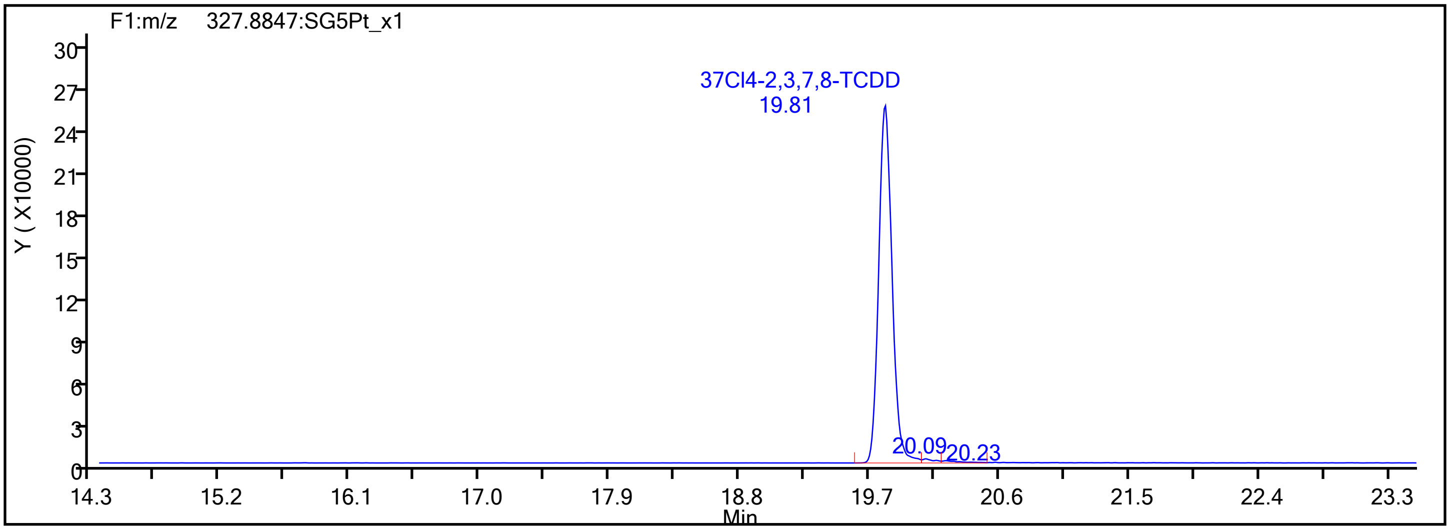

37Cl4-TCDD Standards

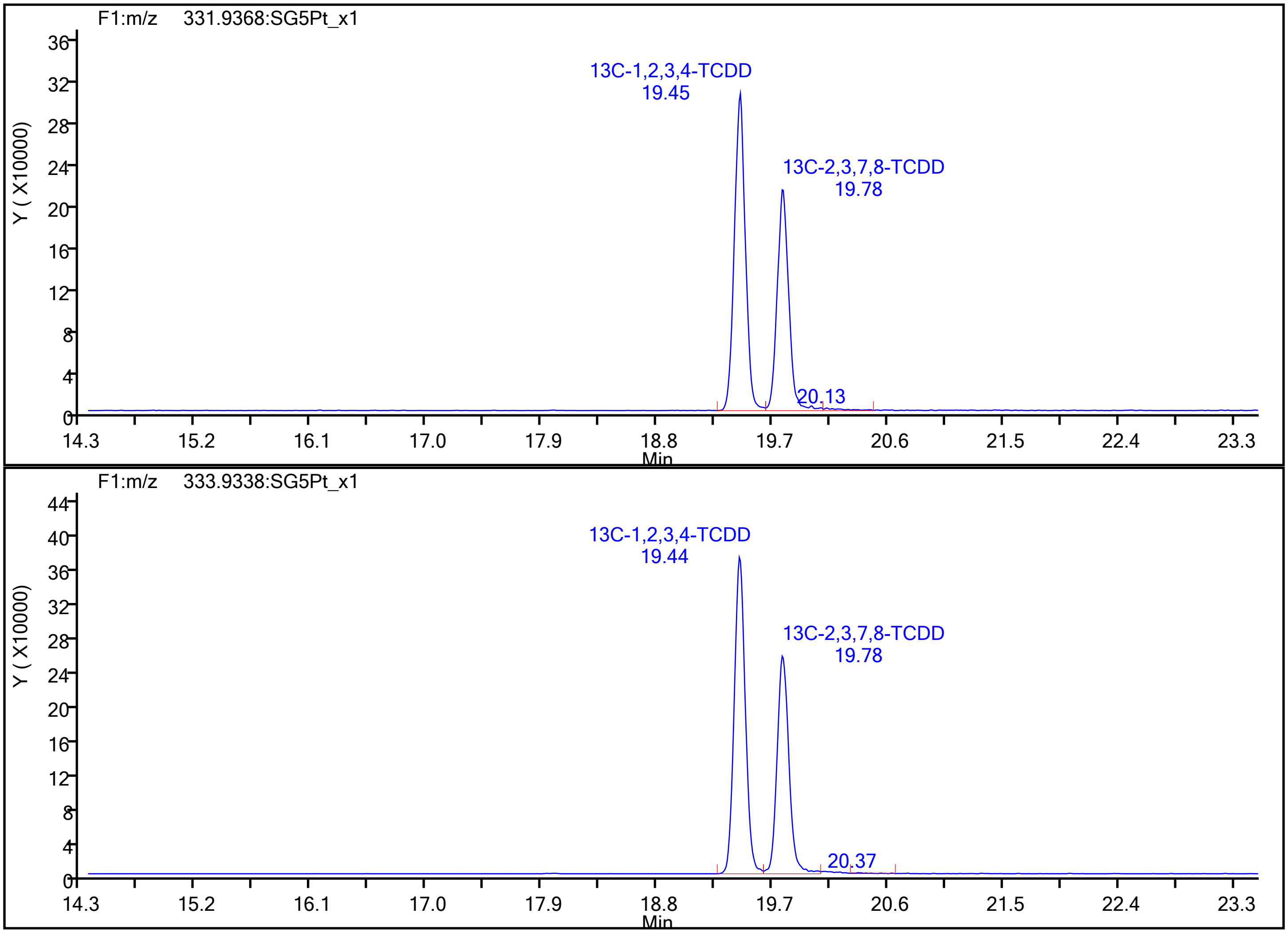

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

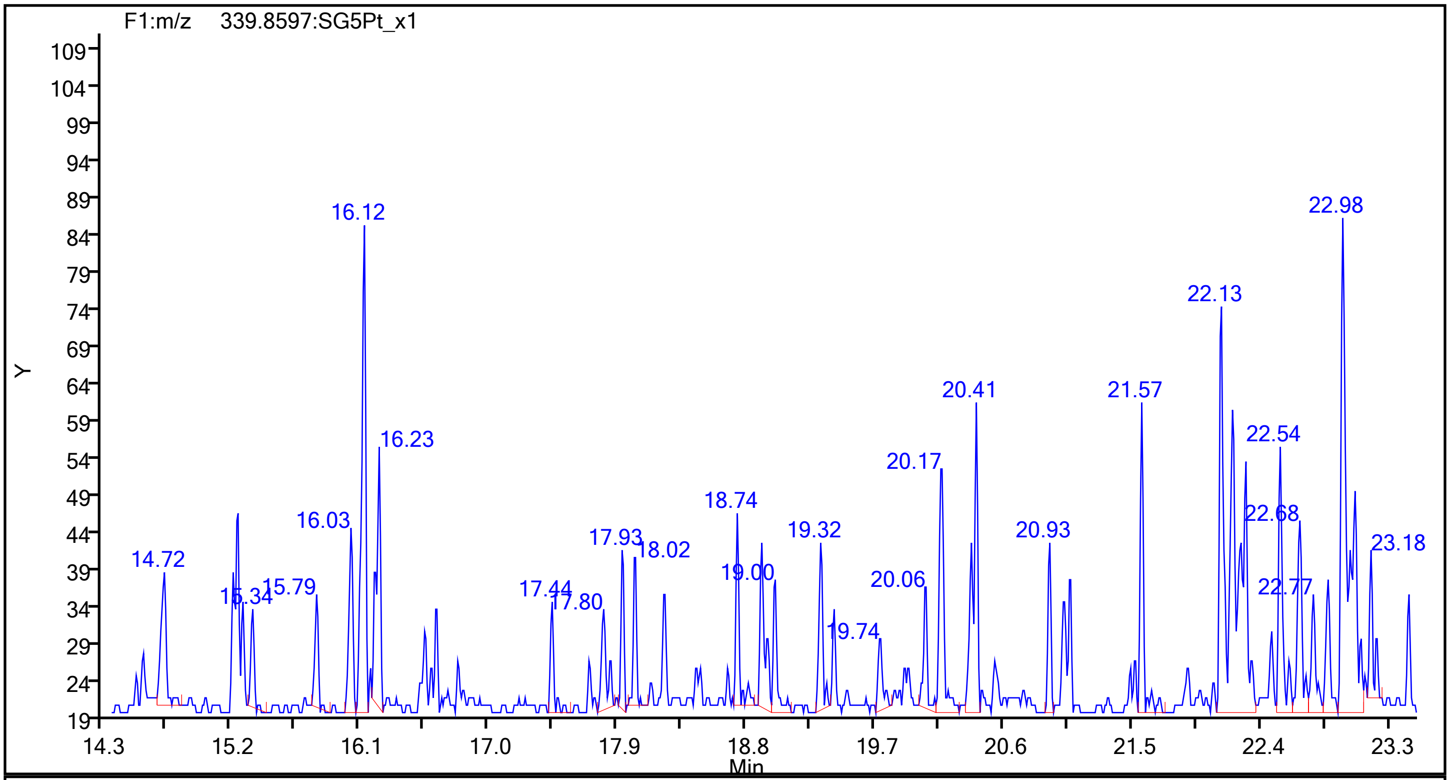

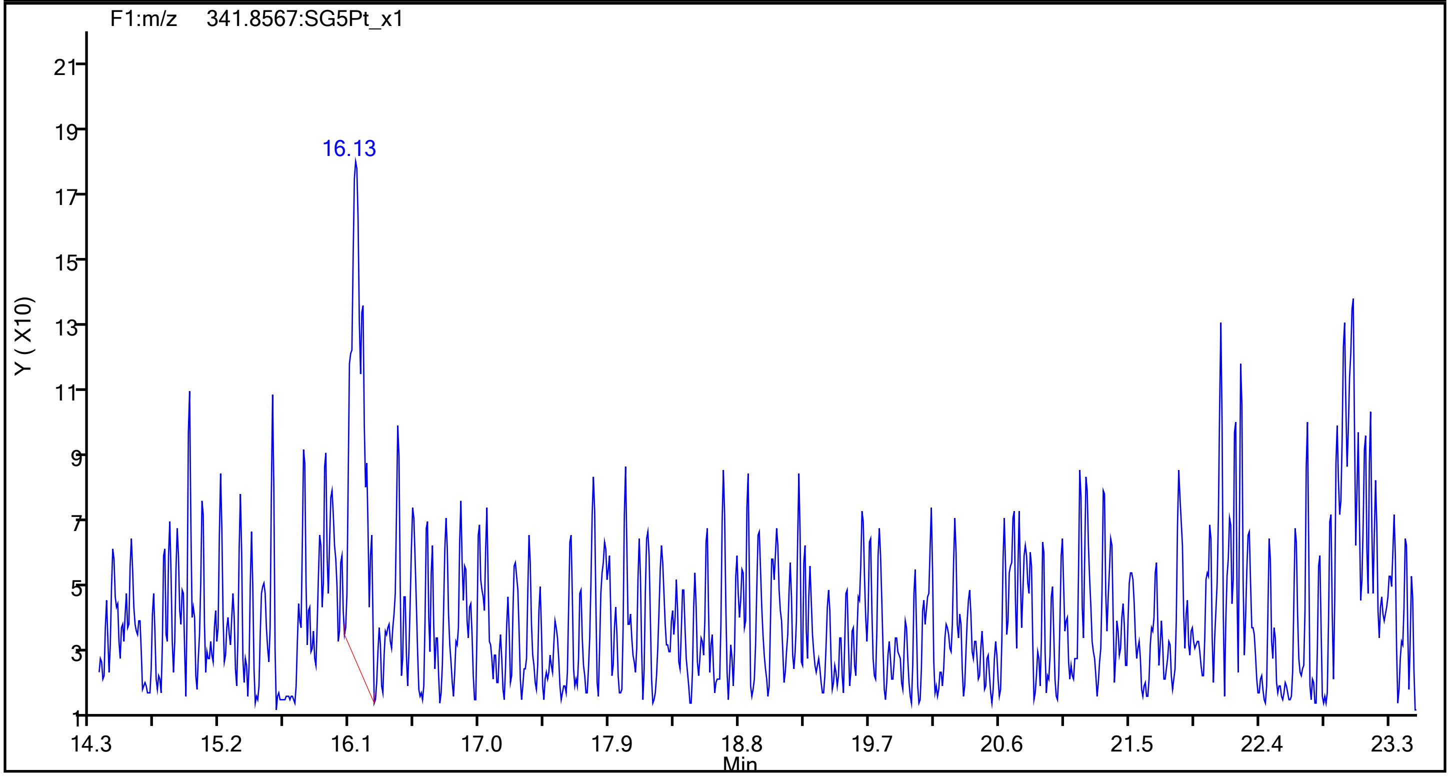

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

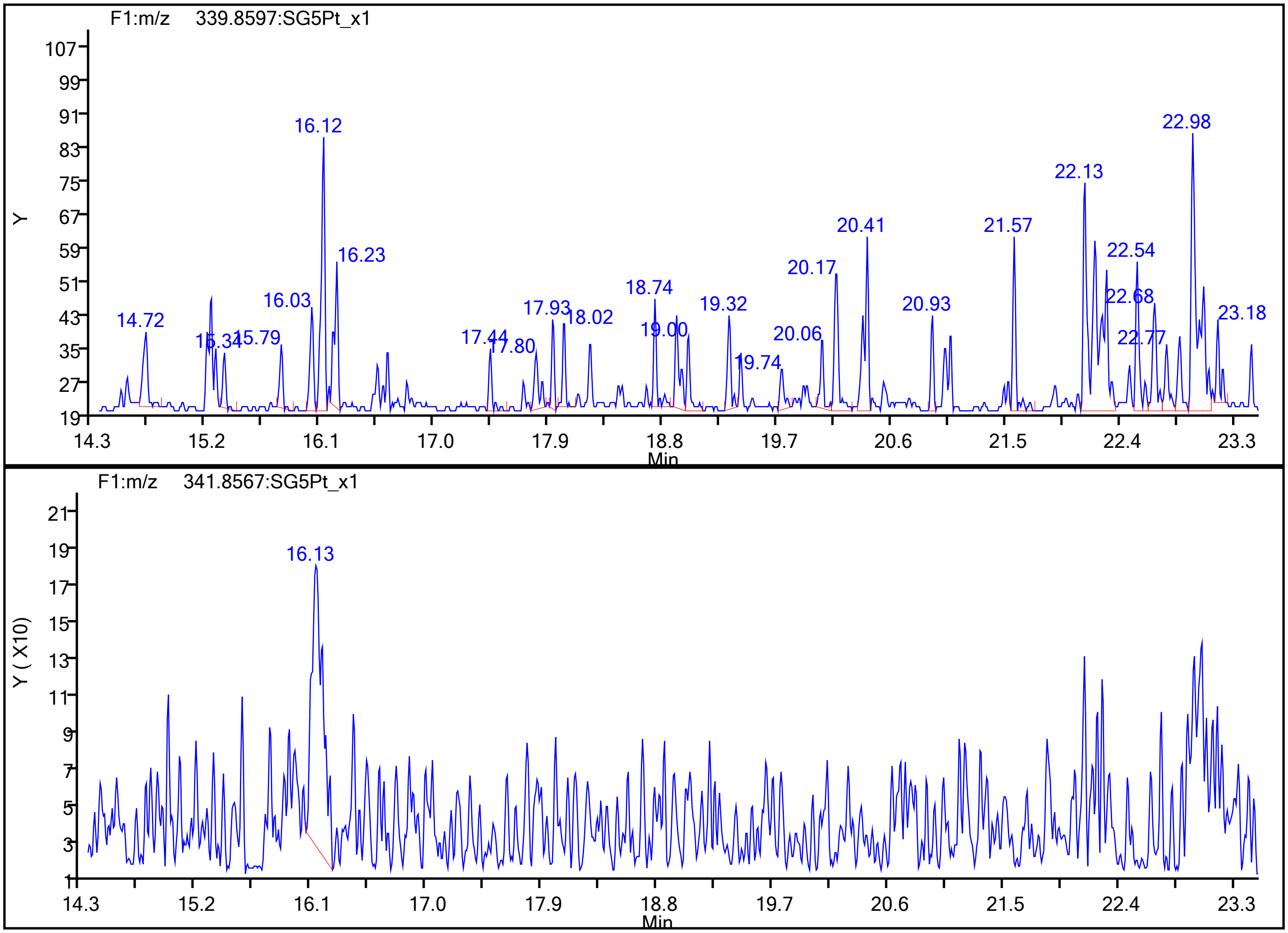

F1 PeCDFs Interference Mass

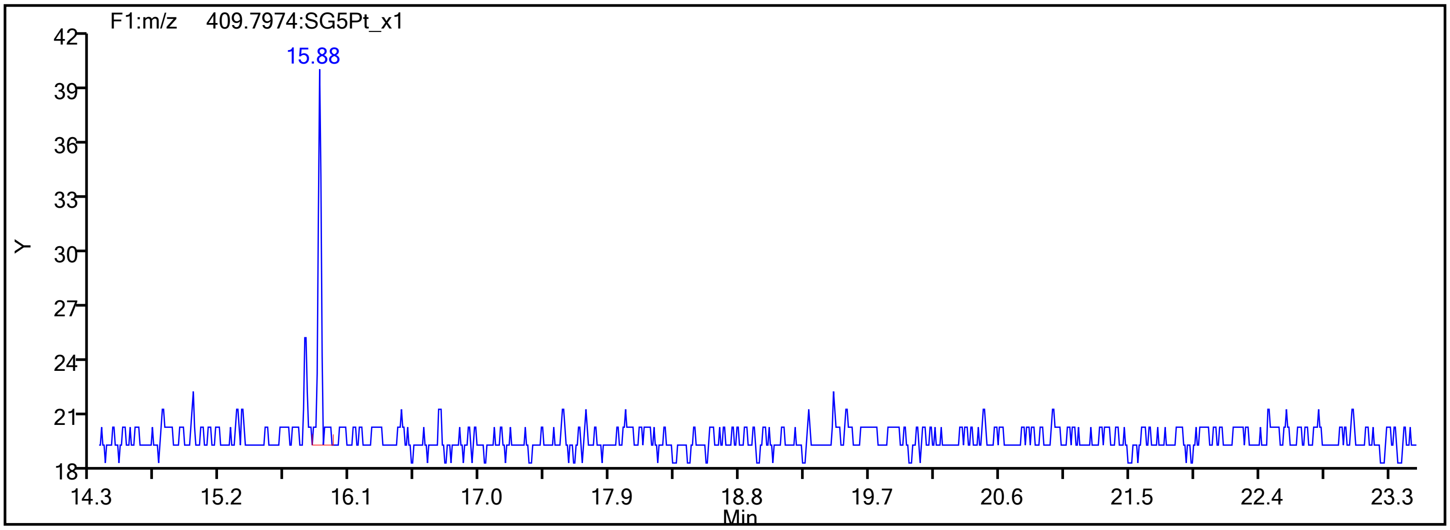

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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PeCDF

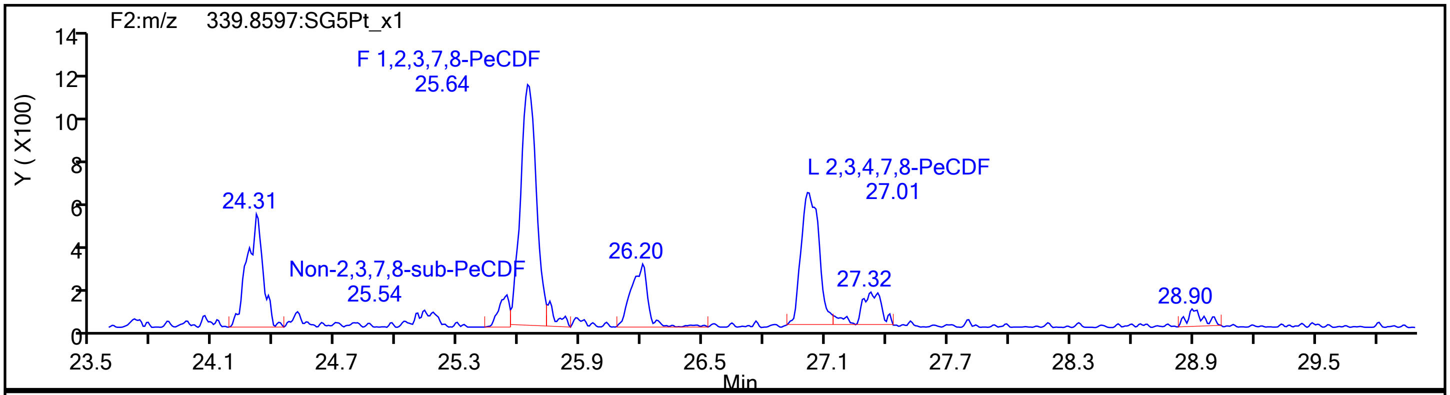

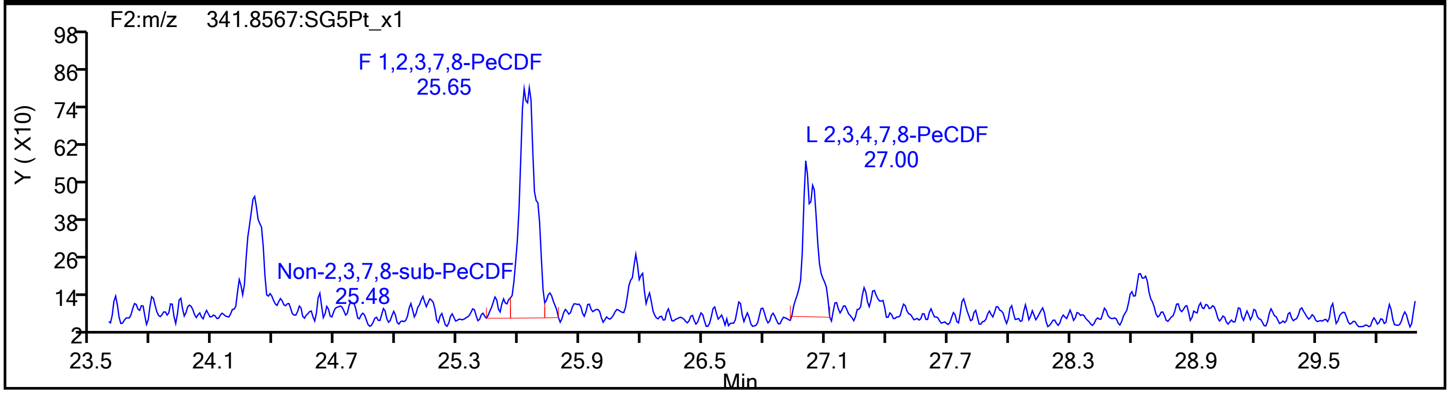

PeCDF Standards

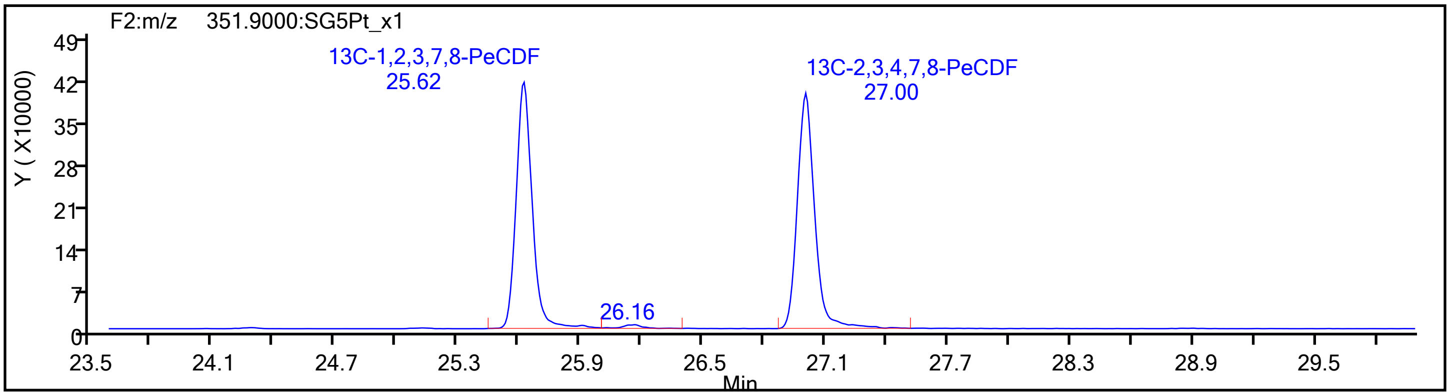

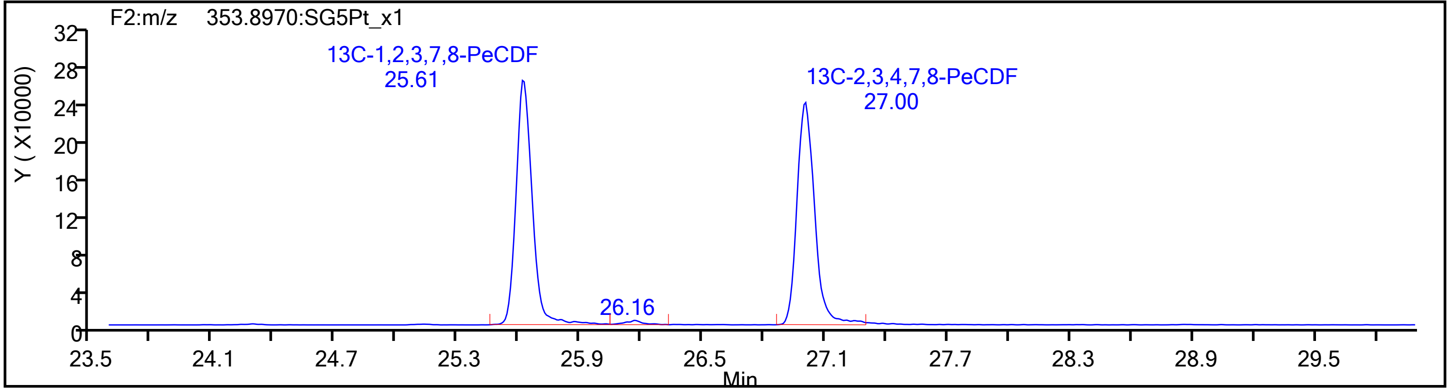

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

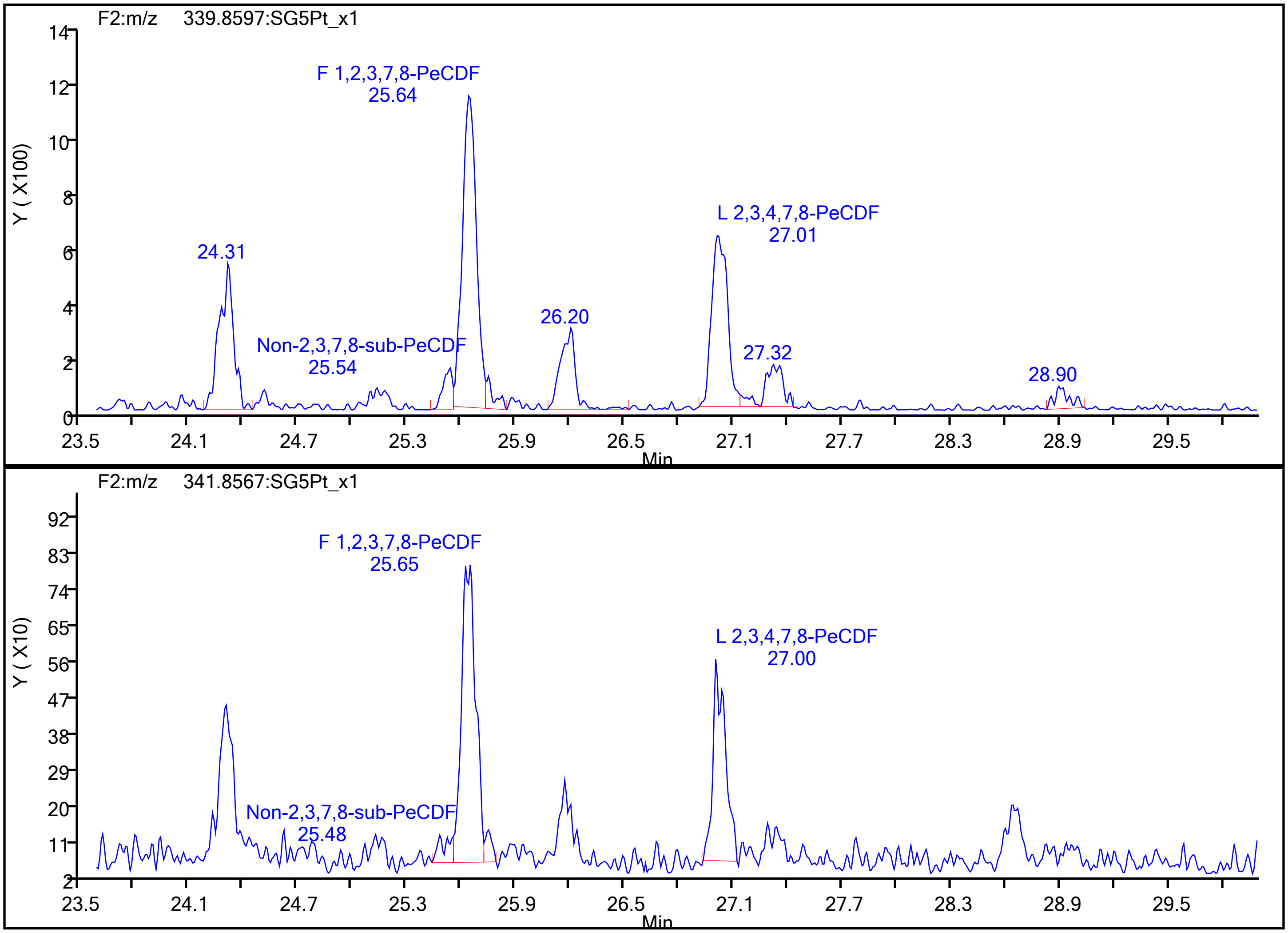

PeCDF Interference Mass

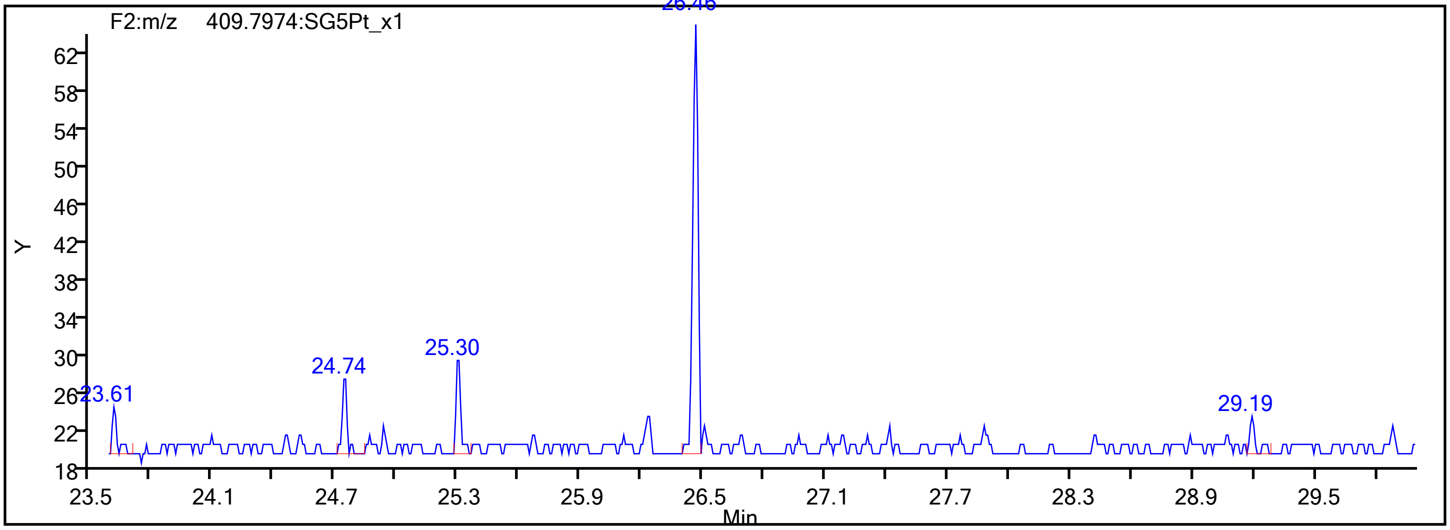

Report Date: 16-Mar-2021 09:24:57 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 469779
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PeCDD

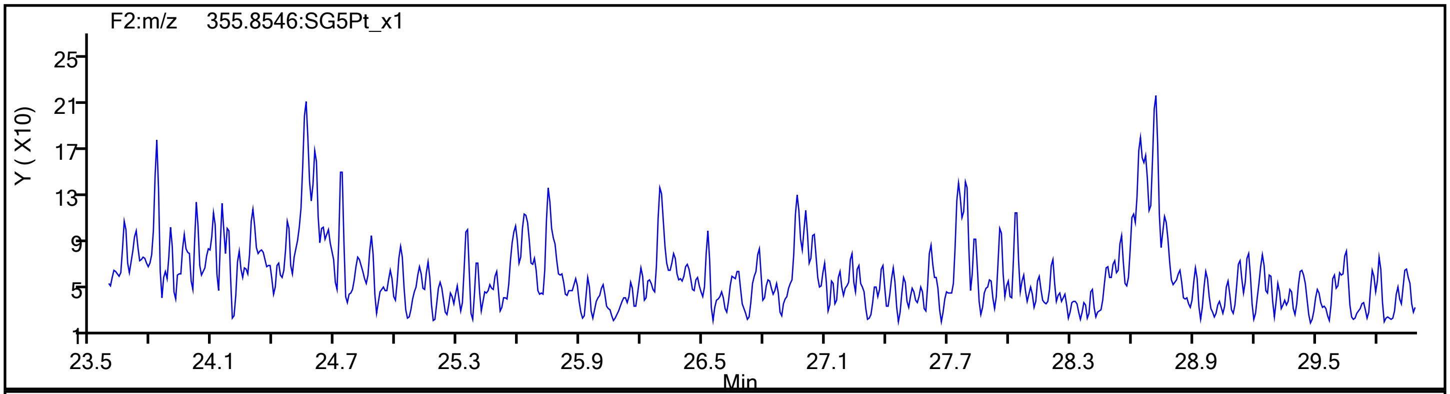

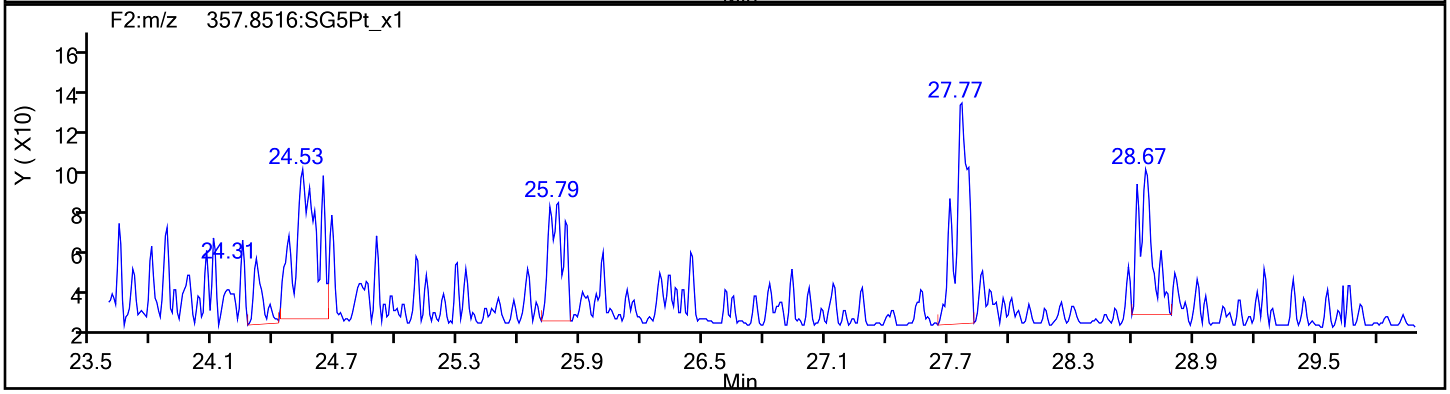

PeCDD Standards

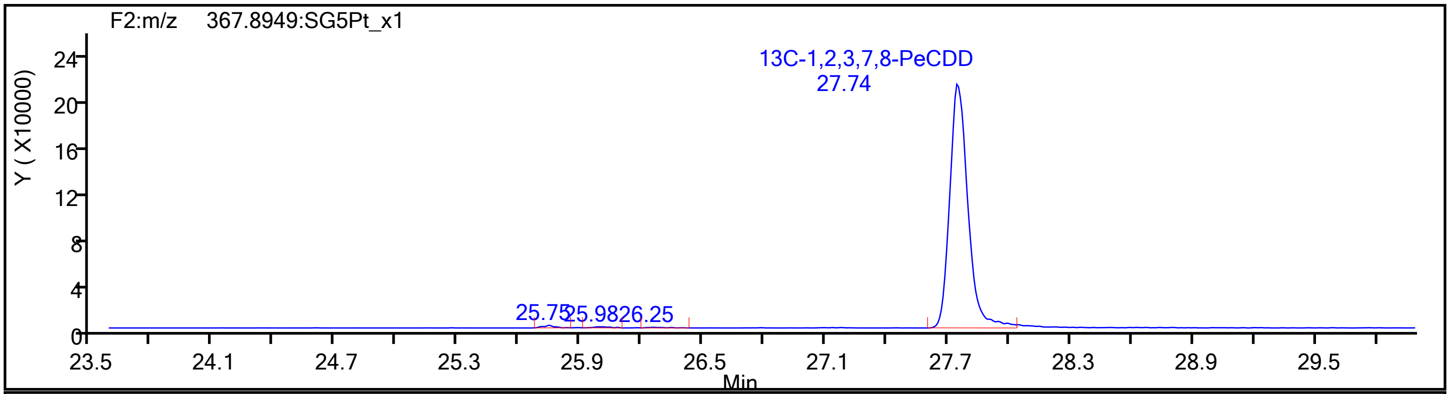

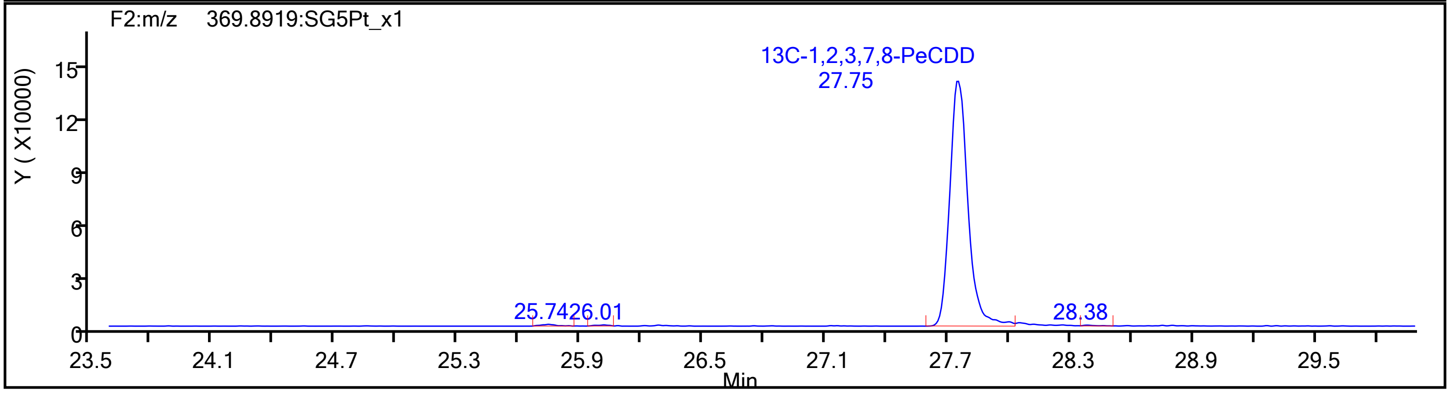

Report Date: 16-Mar-2021 09:24:58
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 469779
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

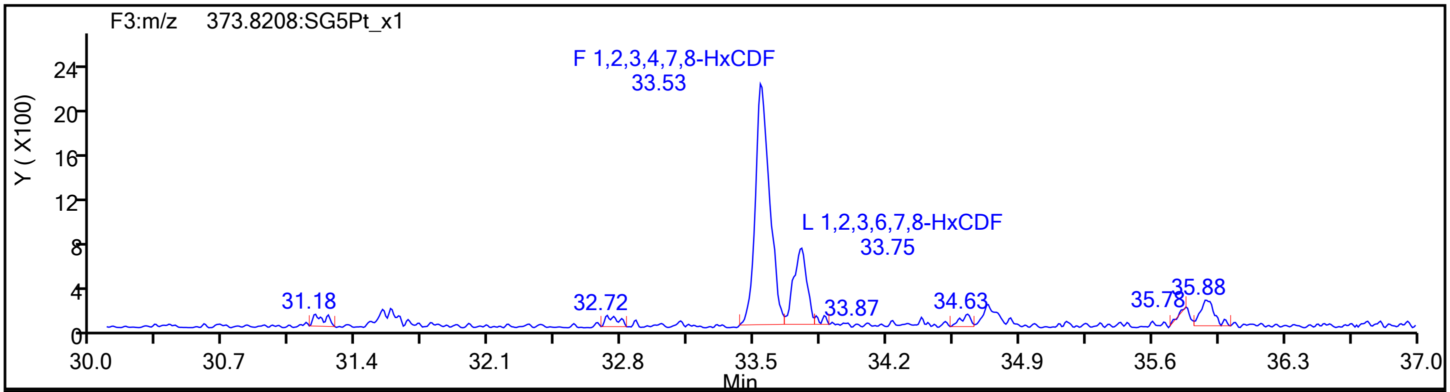

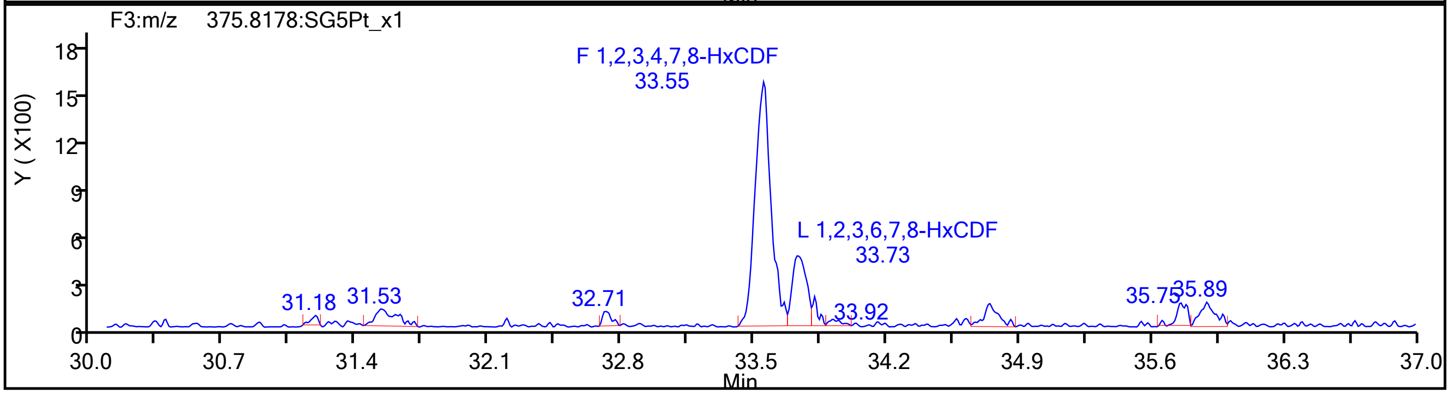

HxCDF Standards

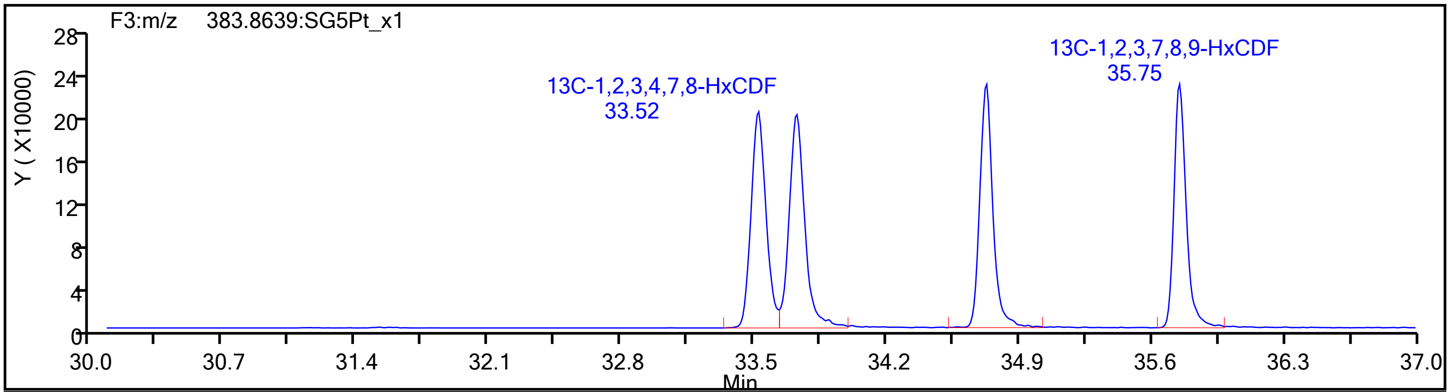

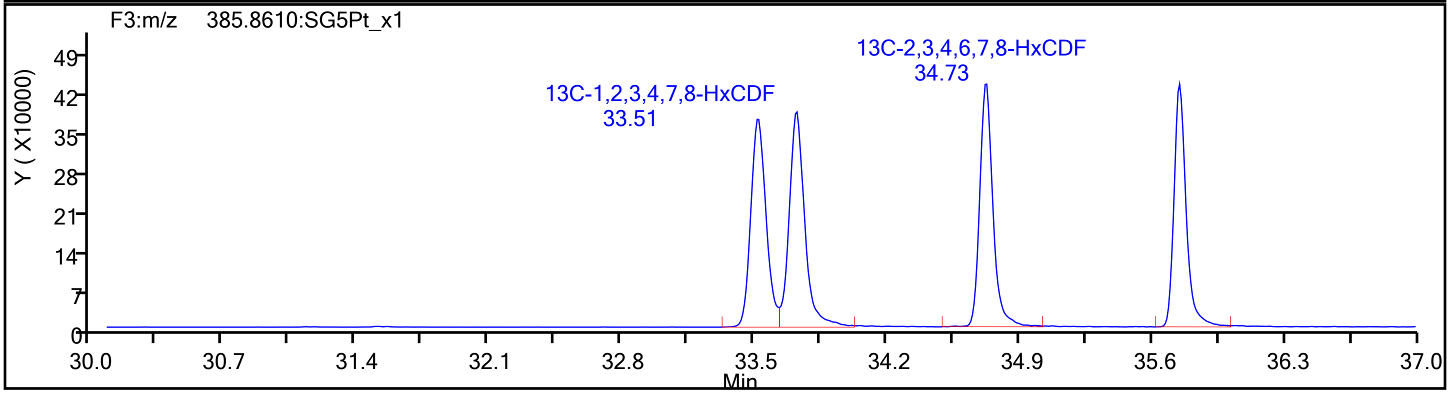

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Eurofins TestAmerica, Sacramento

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Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

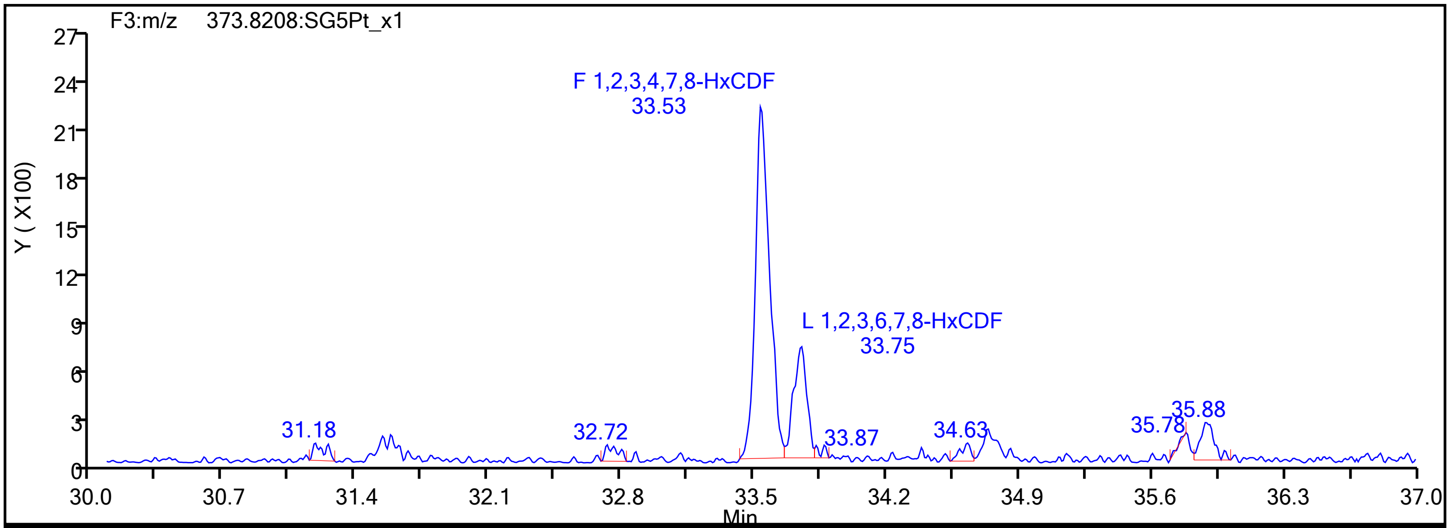

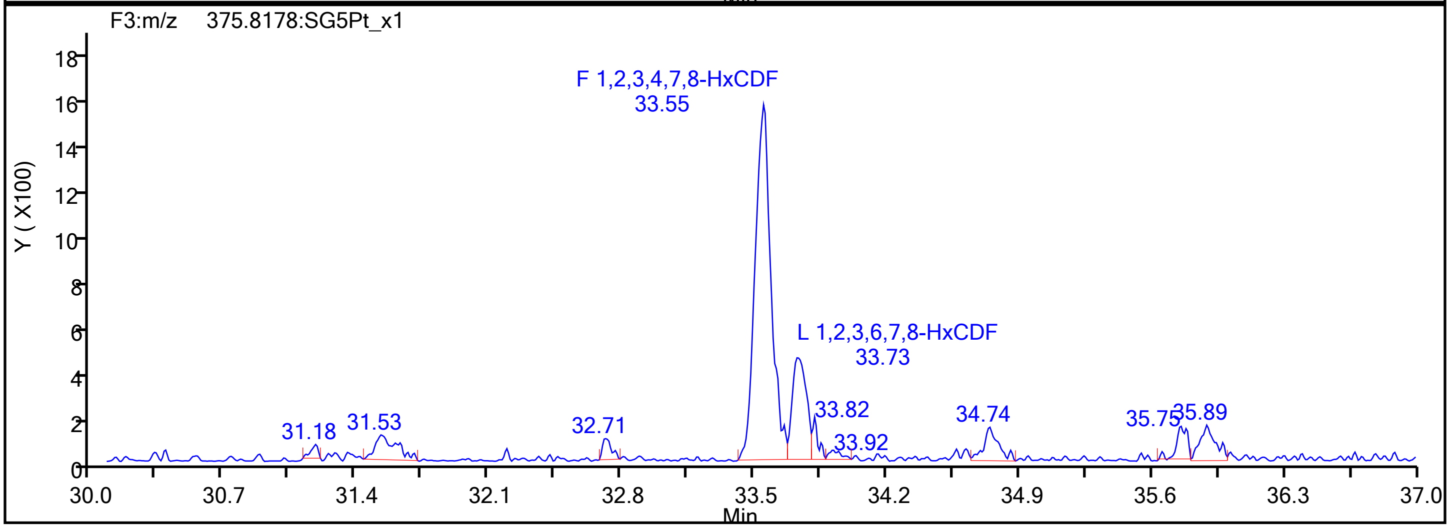

HxCDF Interference Mass

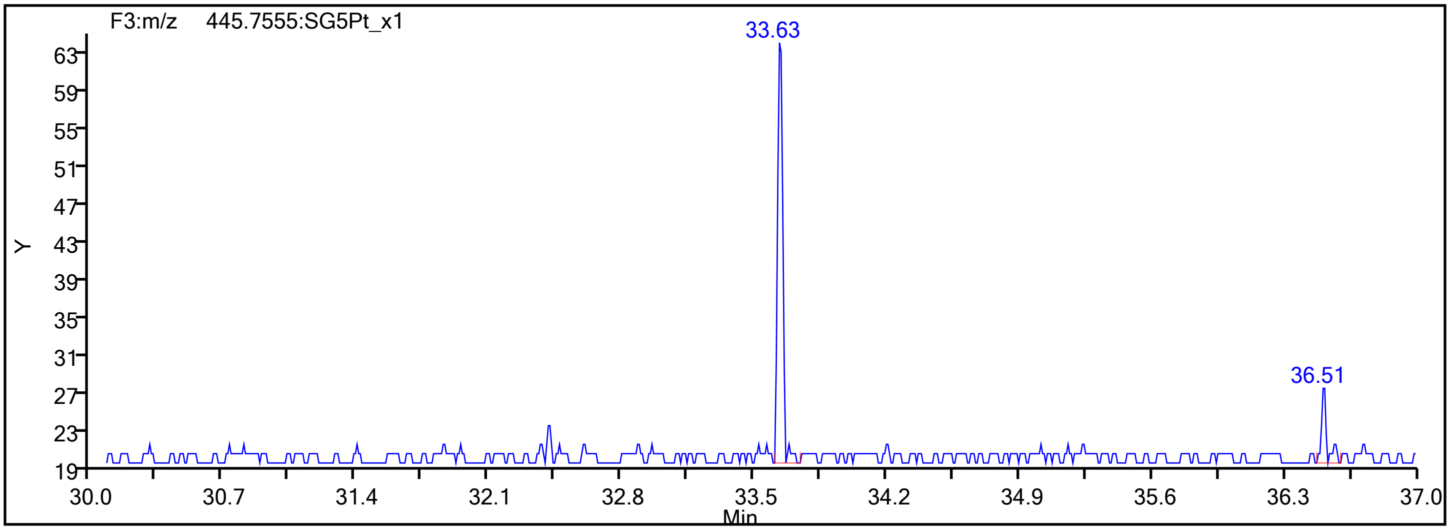

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d

Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 469779
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

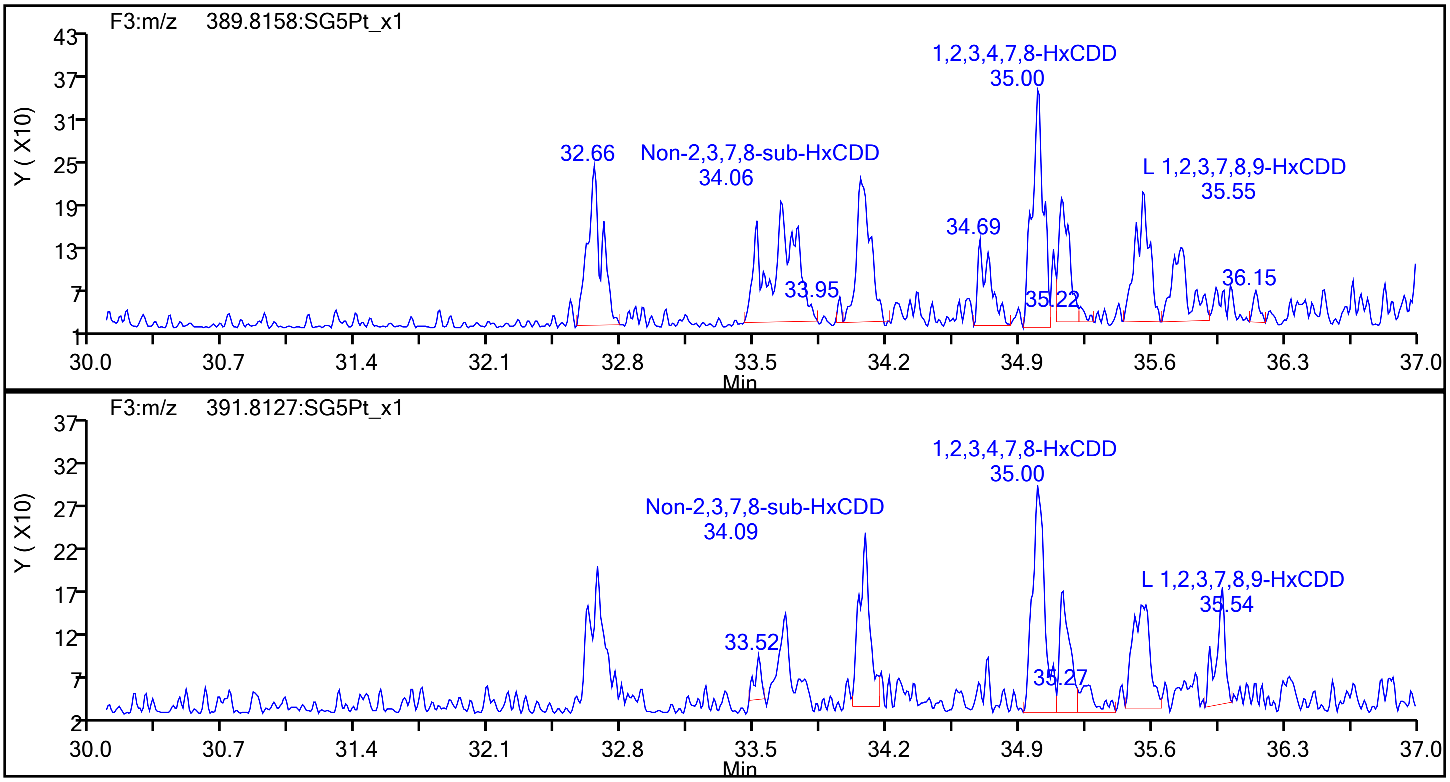

HxCDD Standards

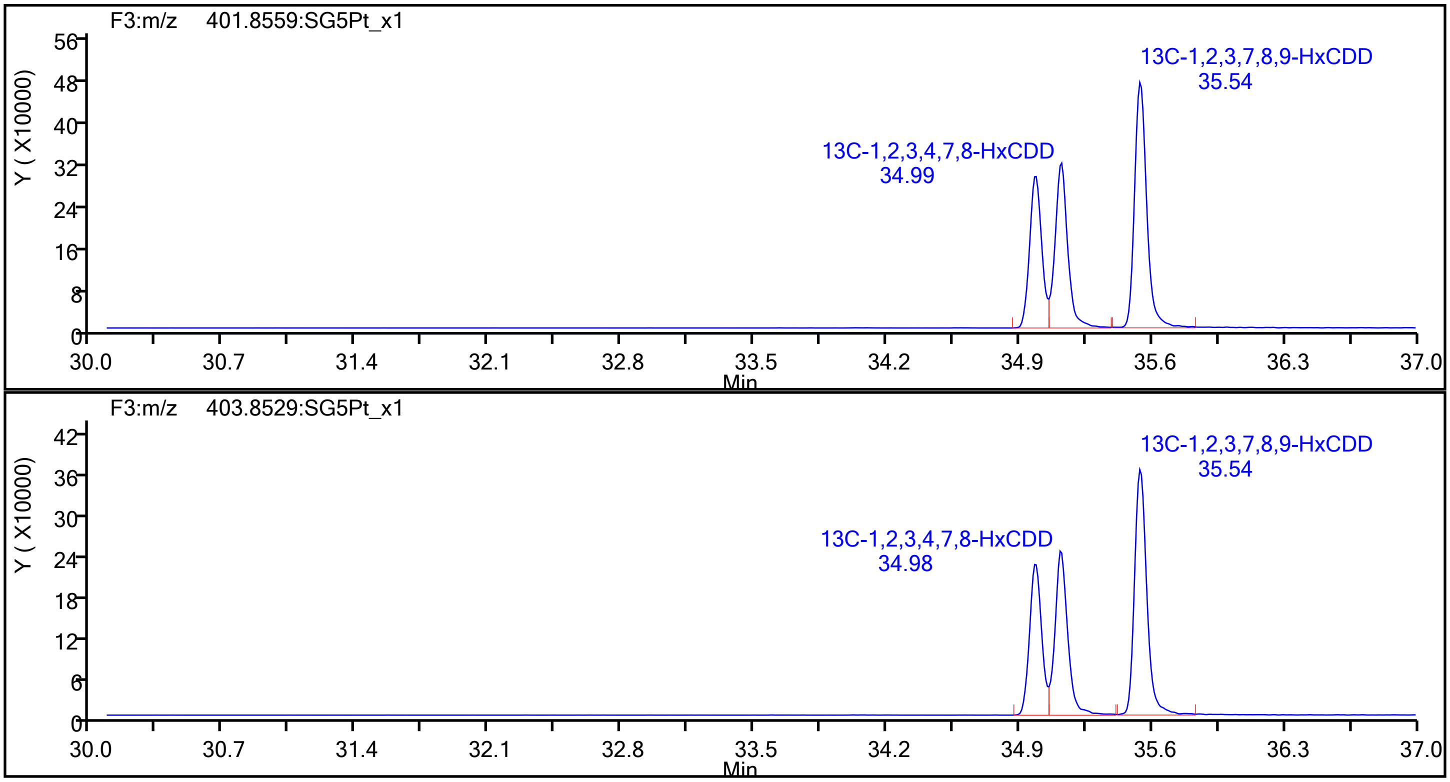

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 469779
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Column Dia: 0.32 mm

HpCDF

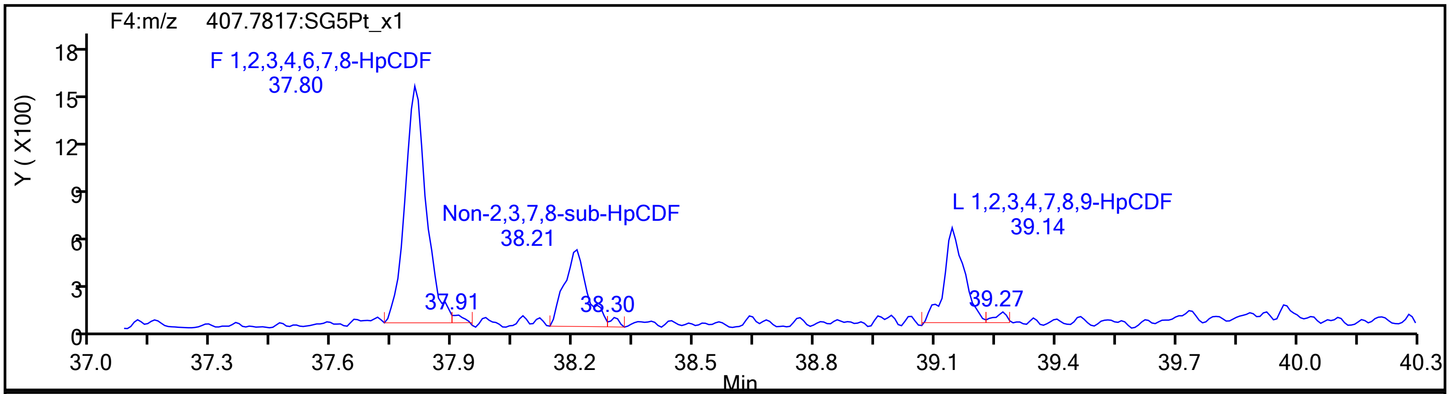

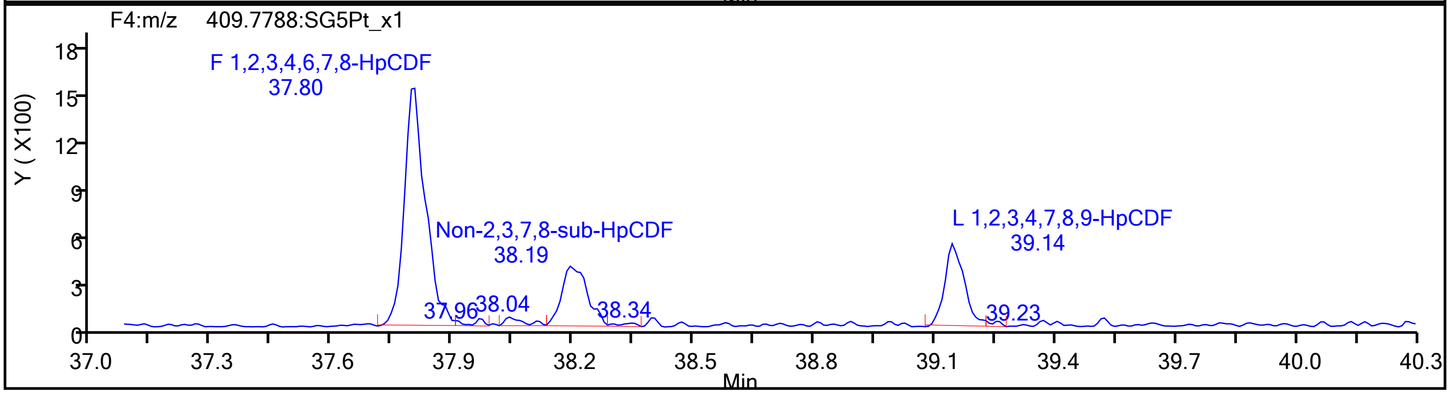

HpCDF Standards

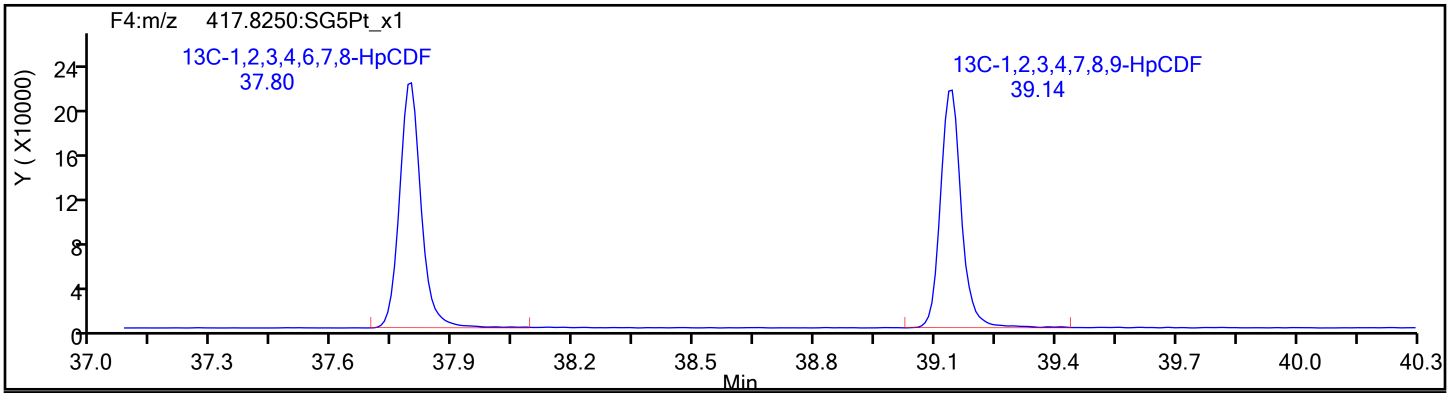

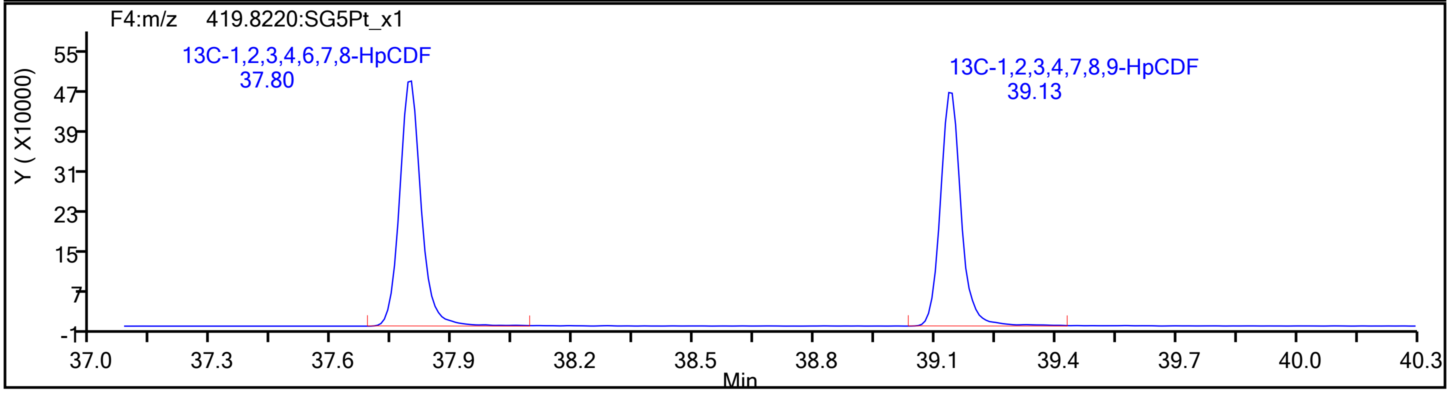

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-10mm
Worklist#: 469779
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

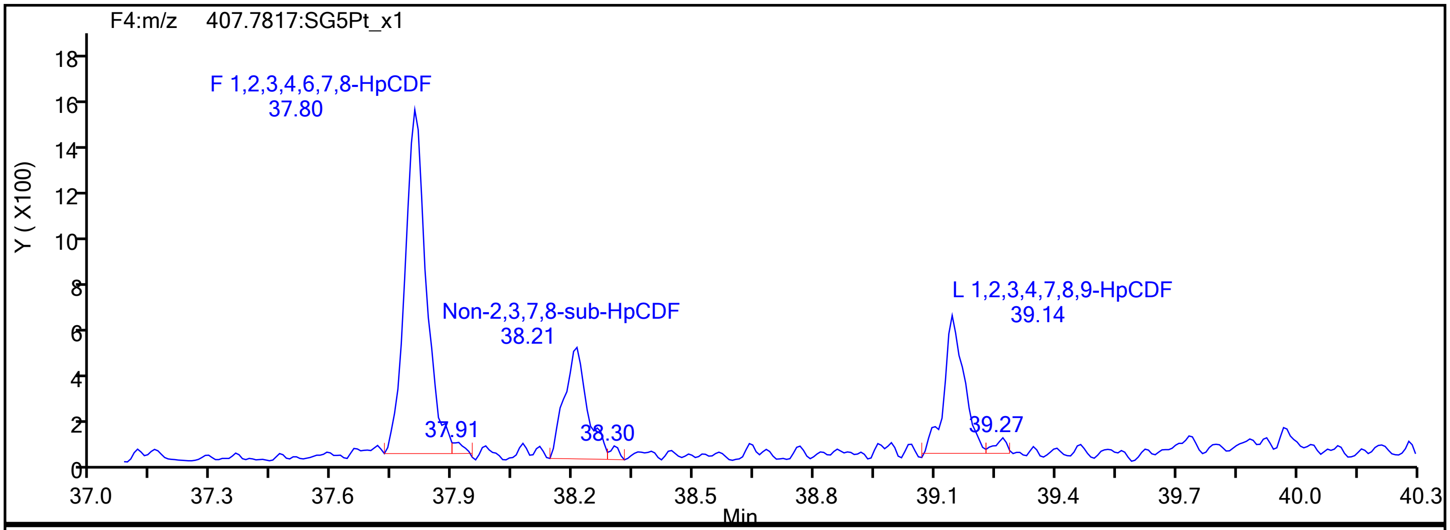

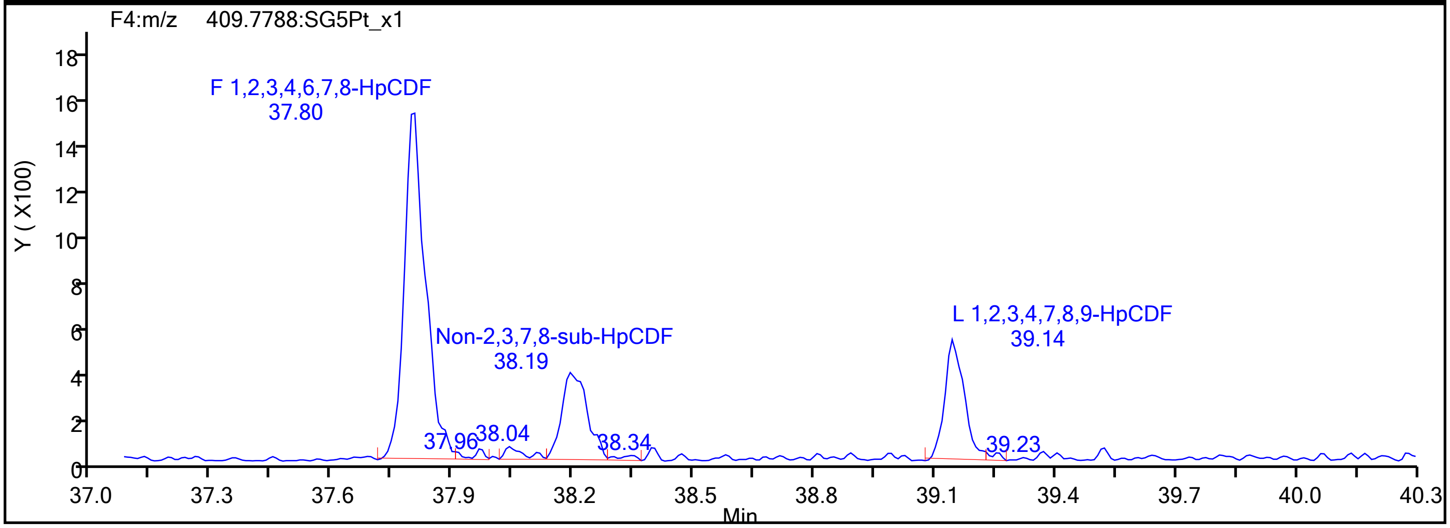

HpCDF Interference Mass

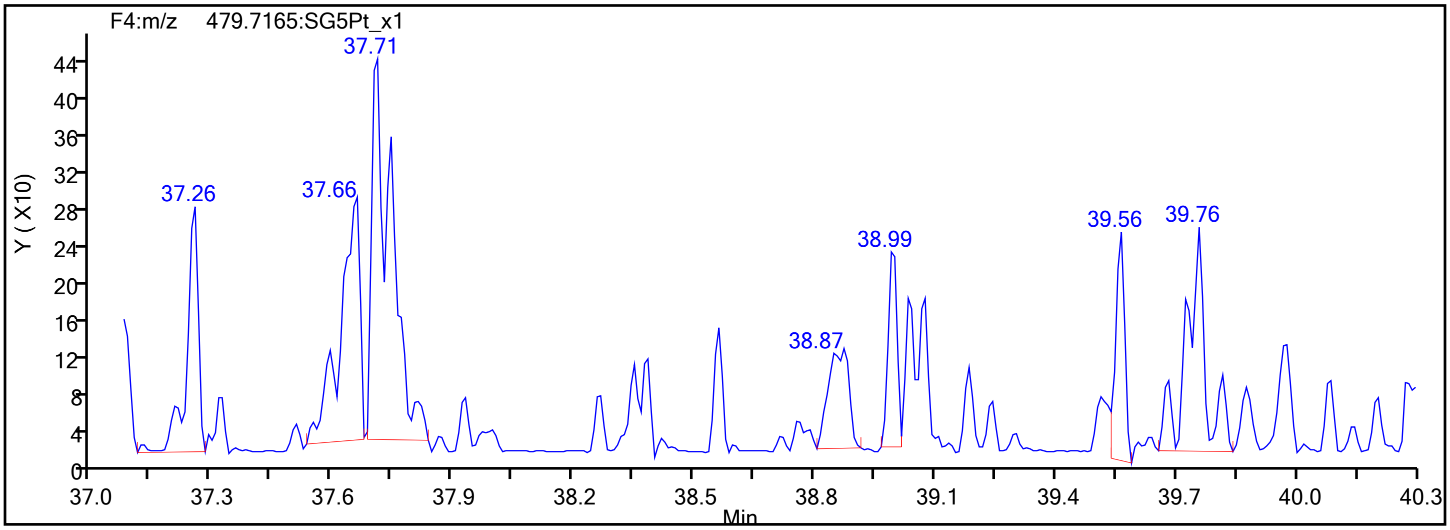

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d
Injection Date: 12-Mar-2021 12:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-10mm
Worklist#: 469779
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

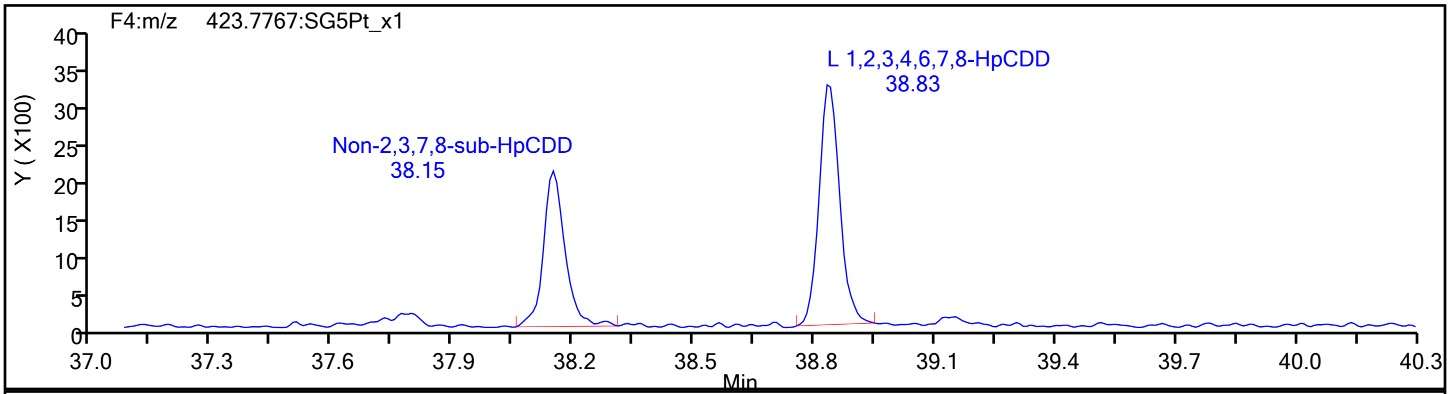

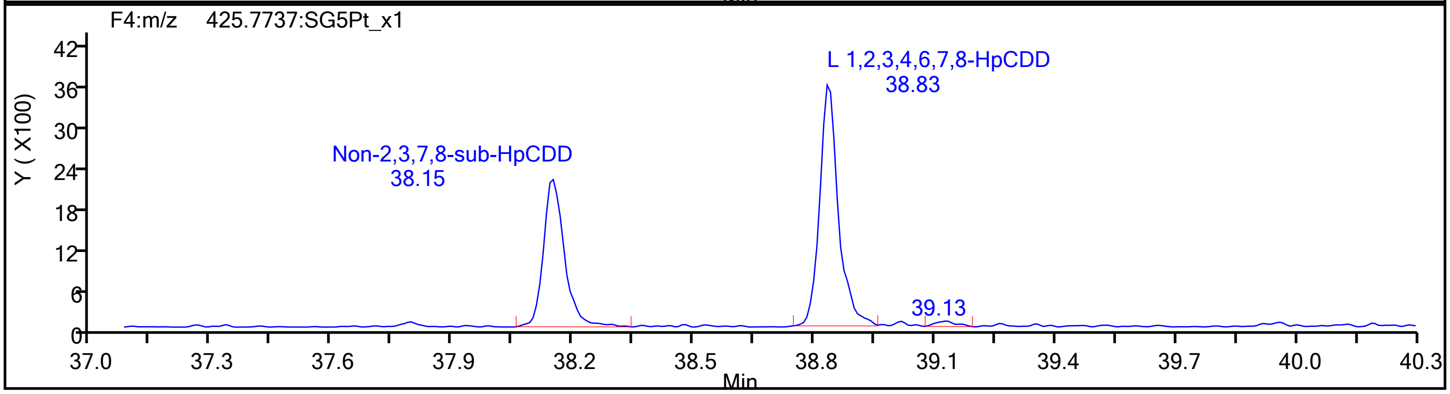

HpCDD Standards

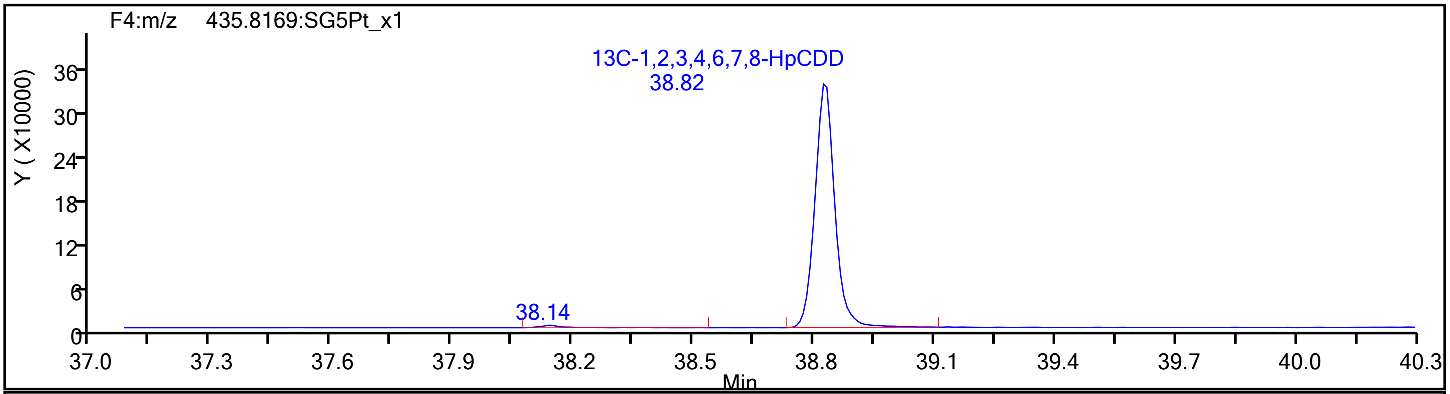

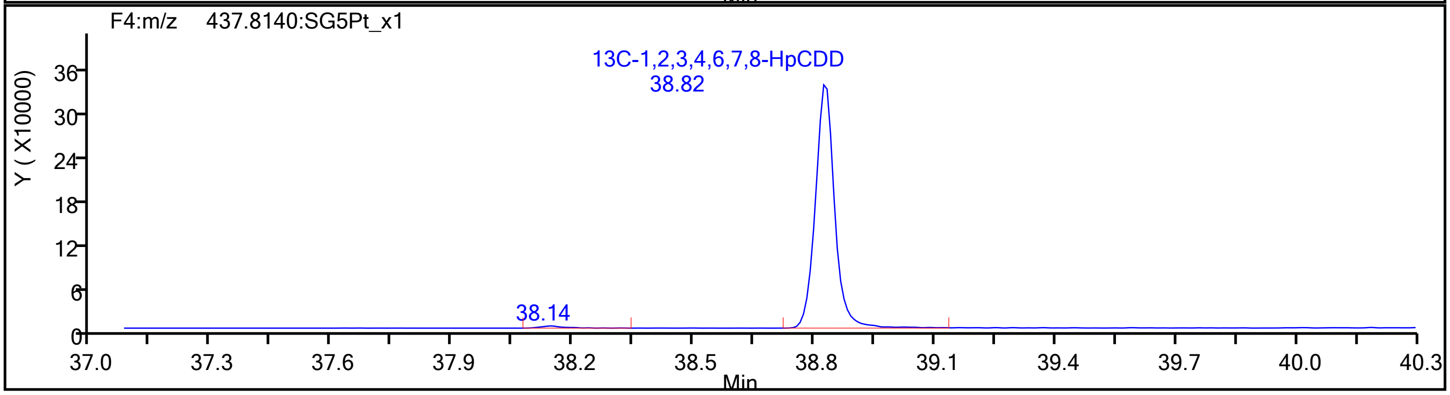

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

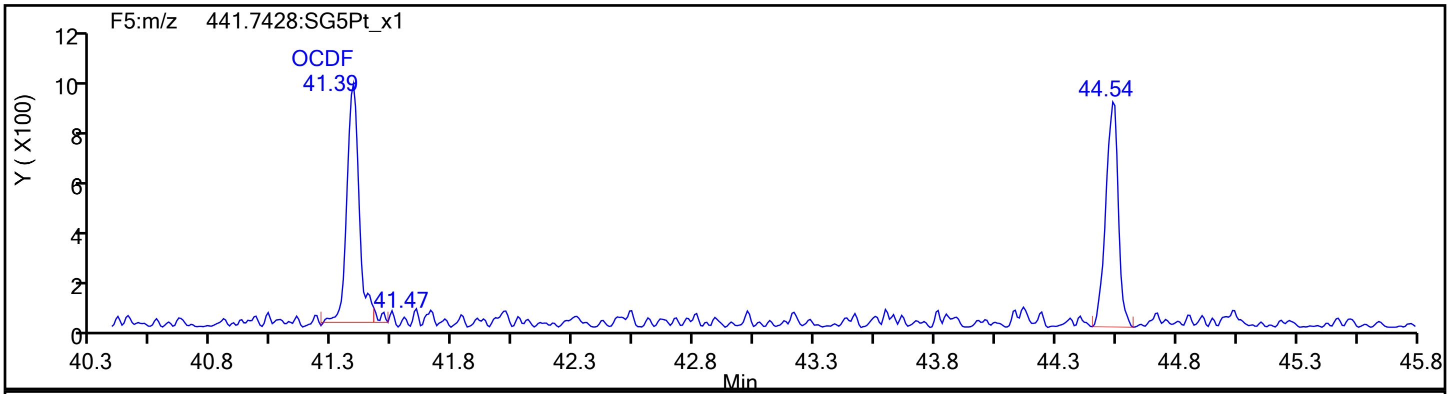

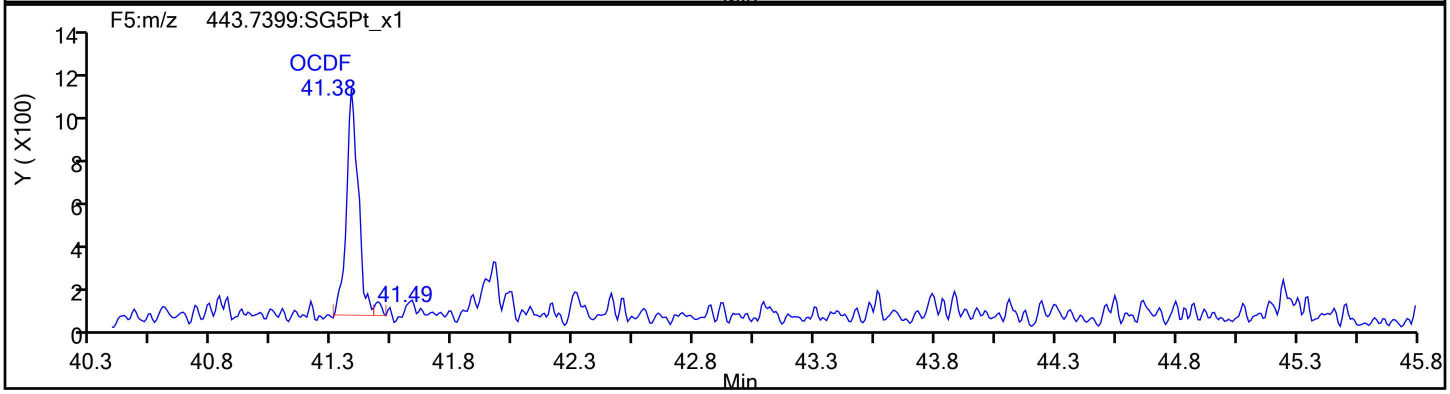

OCDF Standards

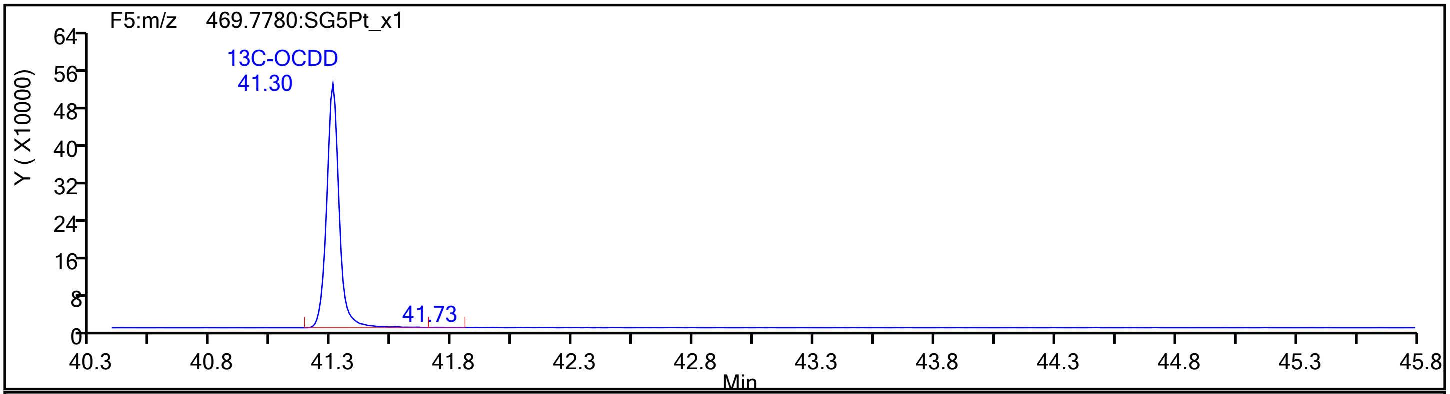

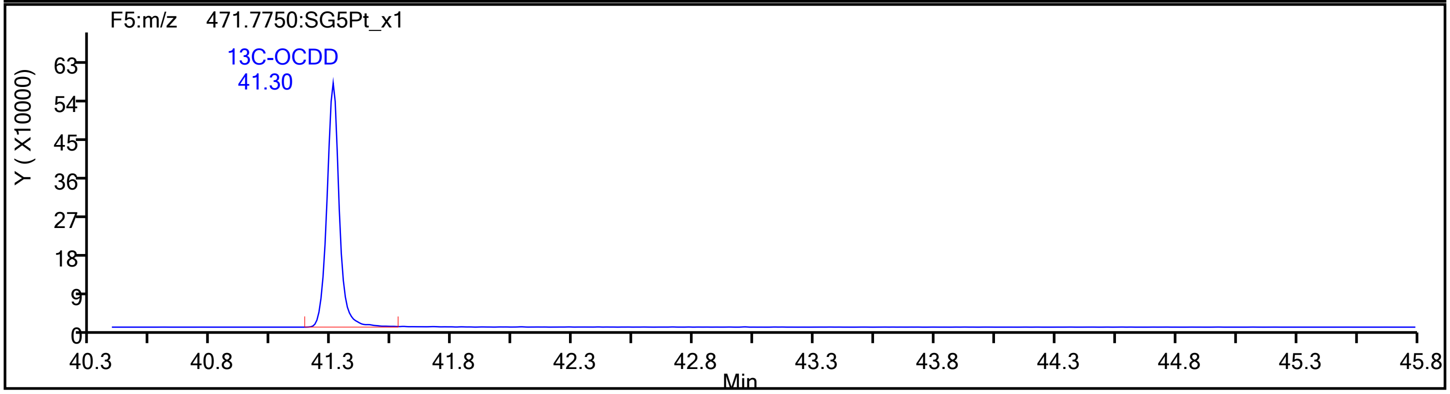

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d

Injection Date: 12-Mar-2021 12:57:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-10mm

Worklist#: 469779

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

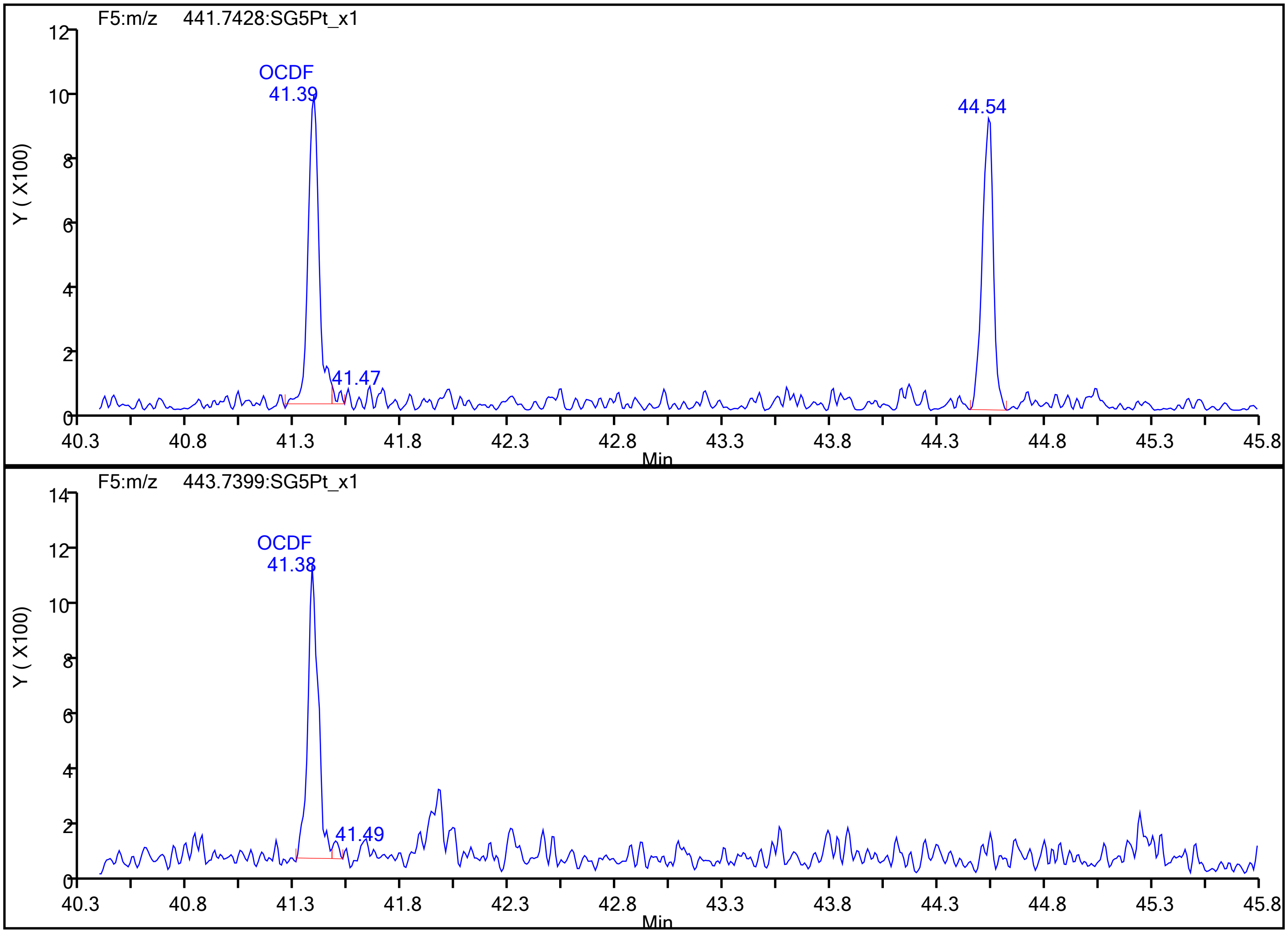

OCDF Interference Mass

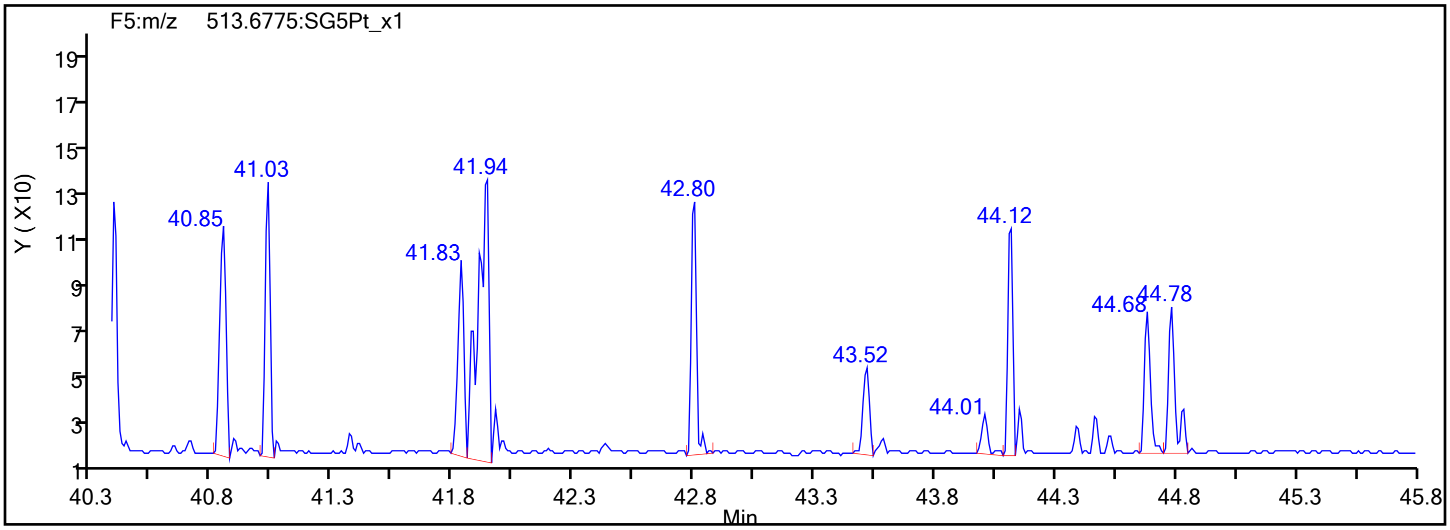

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

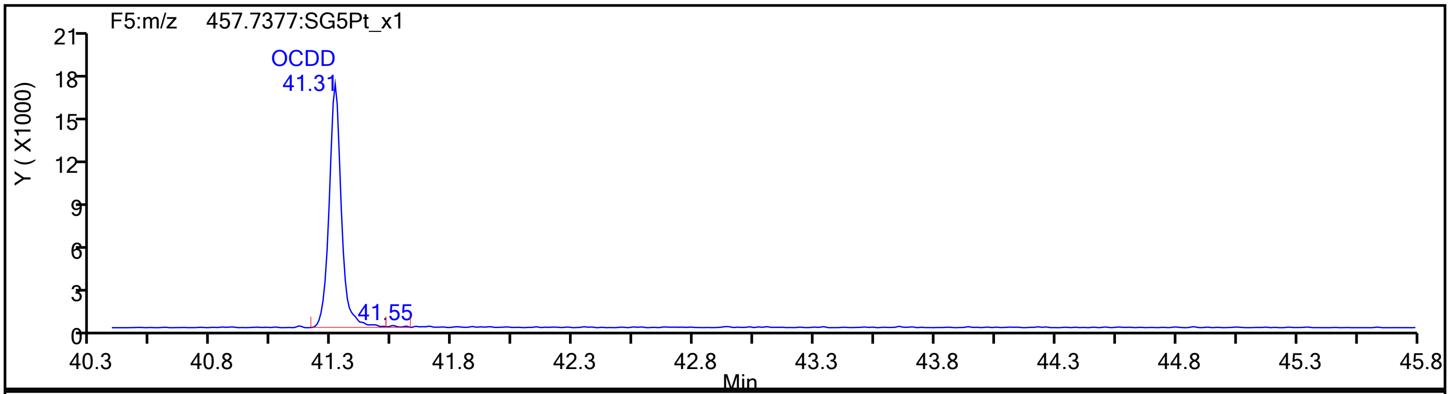

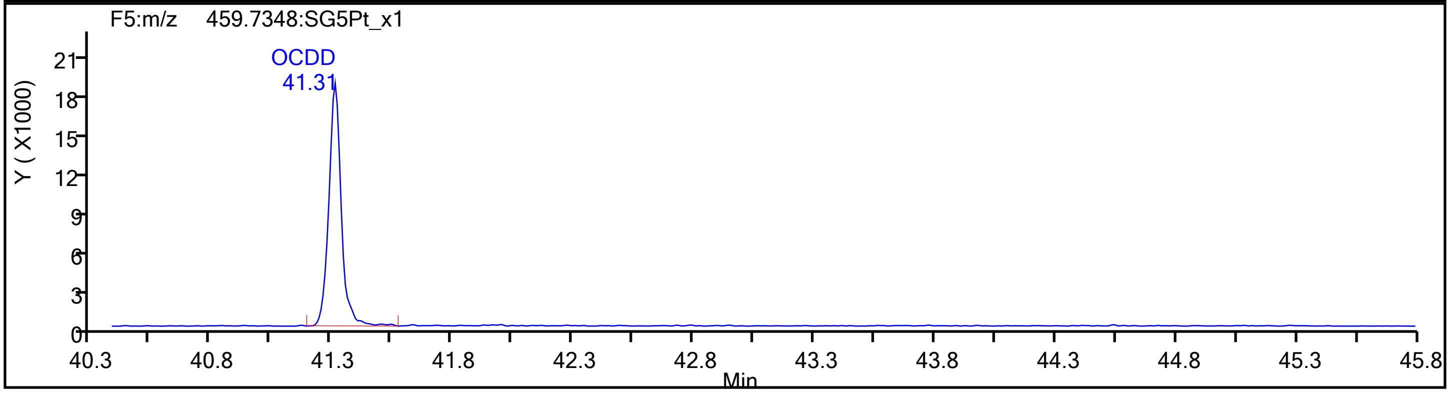

OCDD Standards

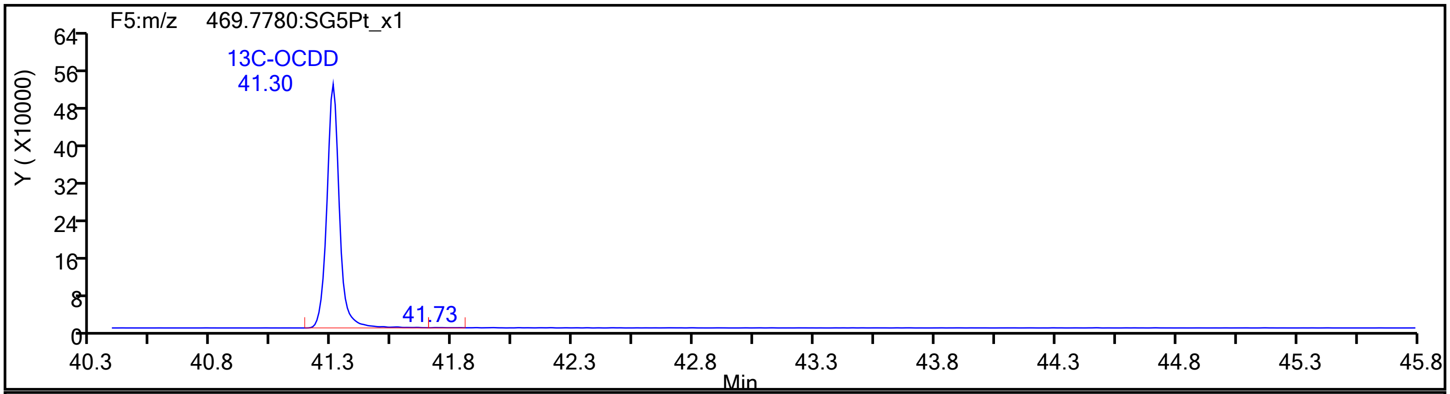

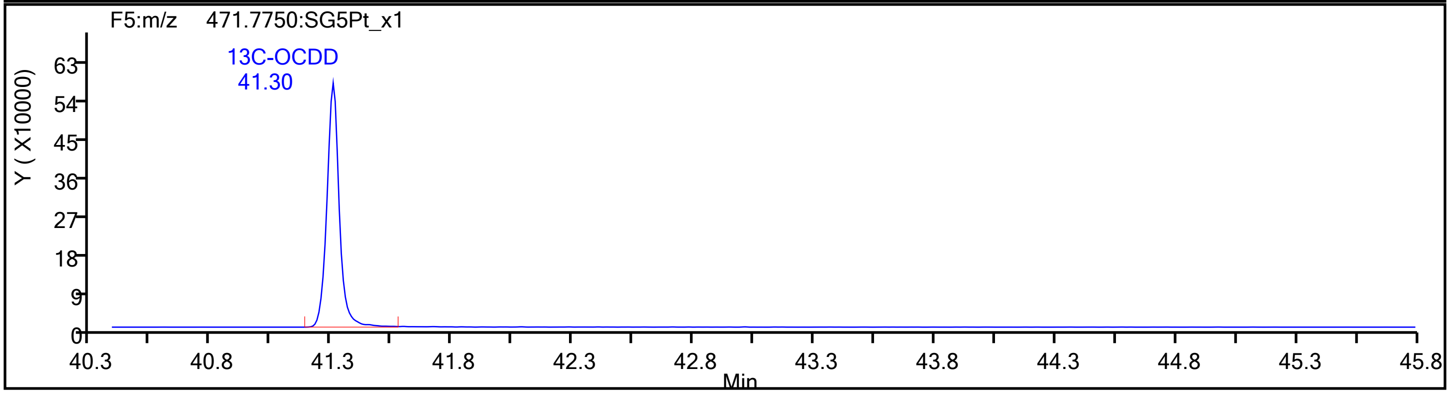

Report Date: 16-Mar-2021 09:24:58 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

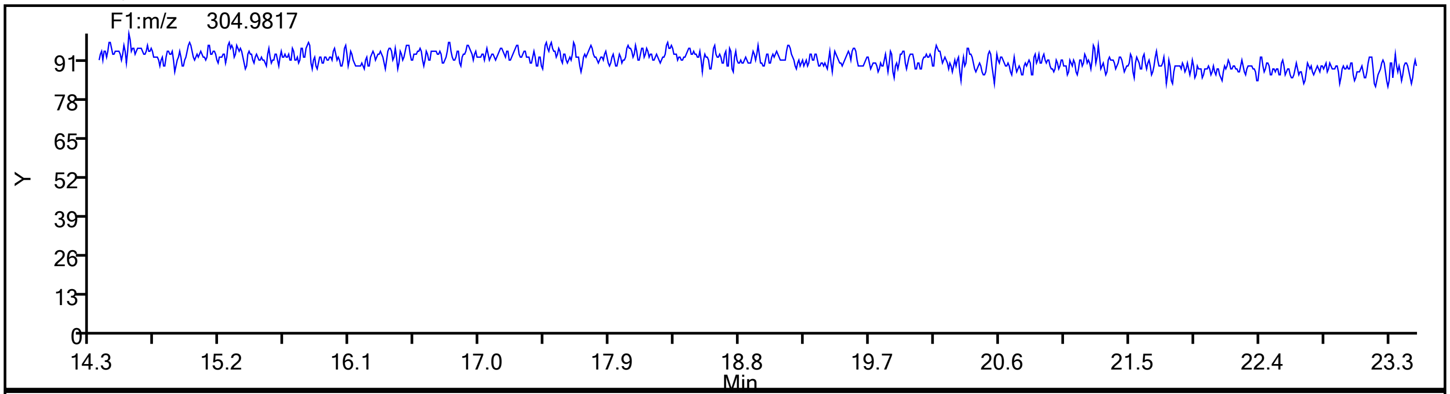

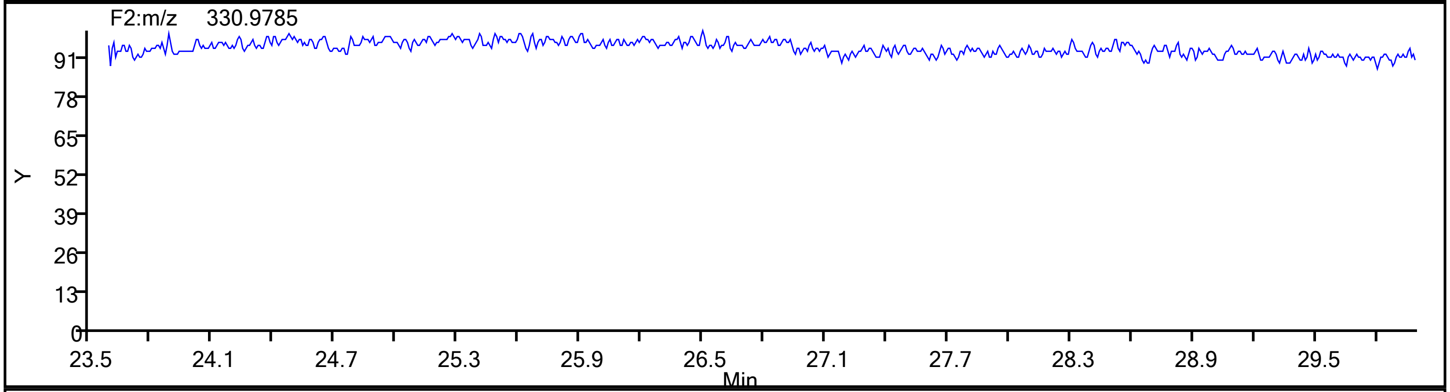

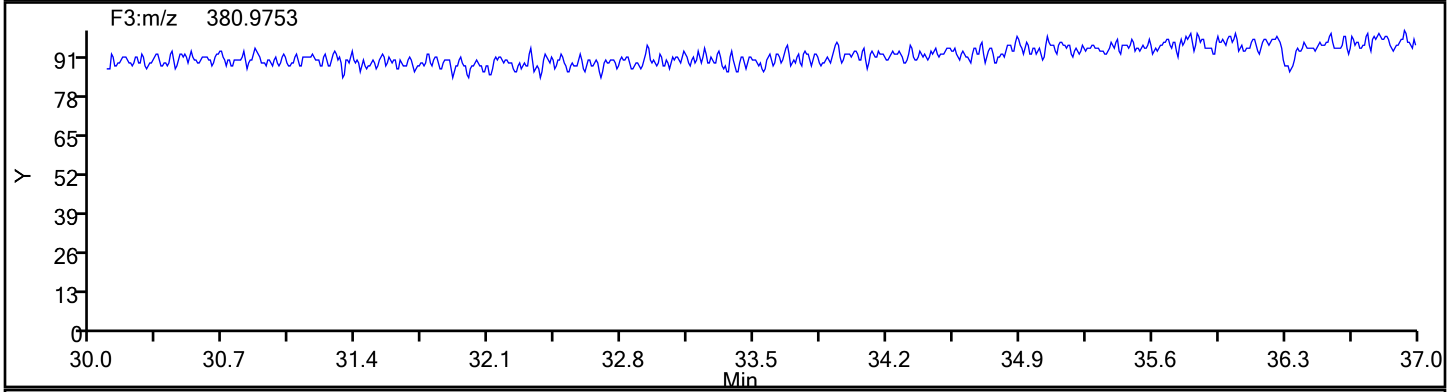

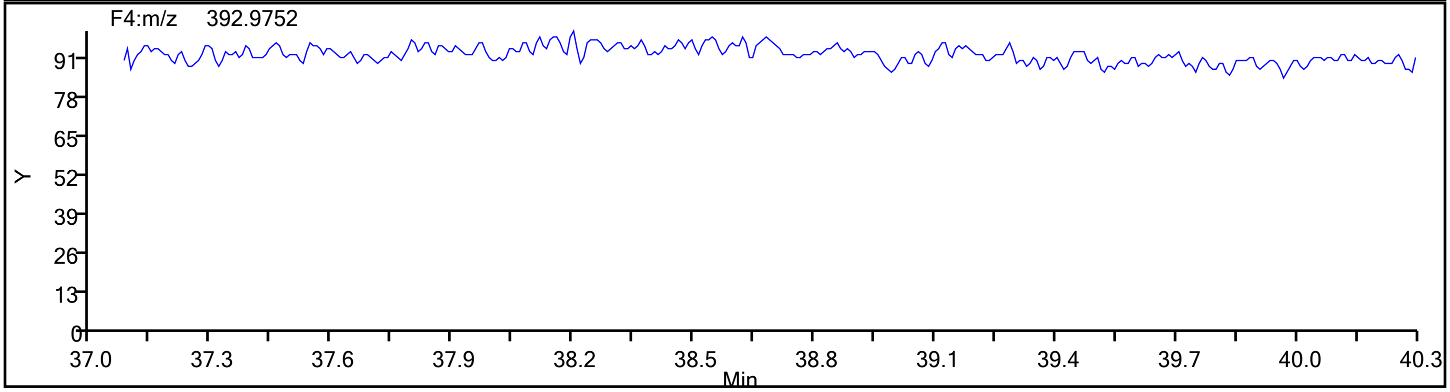

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_5.d		
Injection Date:	12-Mar-2021 12:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-10mm		
Worklist#:	469779	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

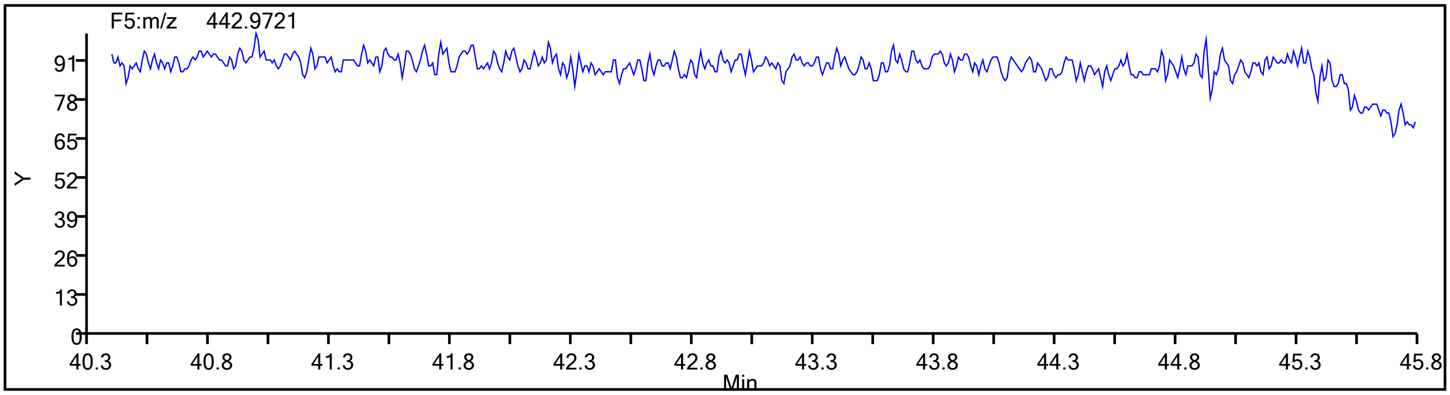

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-1mm RA	Lab Sample ID: 320-70797-4 RA
Matrix: Water	Lab File ID: 11MR2111D2_007.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.7(mL)	Date Analyzed: 03/11/2021 17:40
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469703	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	34	B	9.6	0.53

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	88		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	113		35-197

Report Date: 12-Mar-2021 11:08:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d				
Lims ID:	320-70797-A-4-A				
Client ID:	11215702-Tank1-1mm				
Sample Type:	Client				
Inject. Date:	11-Mar-2021 17:40:43	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-A-4-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 11:08:26	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				

First Level Reviewer: bilottag Date: 12-Mar-2021 11:02:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.014	236558712	0.78	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.153	270314502	0.80	1.3057	87.5	87.5	0.1670	0.1670	87.51	
2,3,7,8-TCDF	16.167	4434431	0.78	0.9242	1.775	1.775	0.0276	0.0276		M
D 13C-2,3,7,8-TCDD	14.781	156247898	0.78	0.8971	73.6	73.6	0.2057	0.2057	73.62	
2,3,7,8-TCDD	14.795	1091737	0.68	0.9989	0.6995	0.6995	0.0671	0.0671		M
$ 37Cl4-2,3,7,8-TCDD	14.808	91148166		0.8499	45.3	45.3	0.0372	0.0372	113	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d
Lims ID: 320-70797-A-4-A
Client ID: 11215702-Tank1-1mm
Sample Type: Client
Inject. Date: 11-Mar-2021 17:40:43 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-4-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:02:36

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.014	15.013	0		103327690	25052140	19522	48805	1283		
333.9339	15.014	15.013	0		133231022	32492000	22959	57397	1415	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.153	16.152	0	1.076	120199412	26311508	26026	65065	1011		
317.9389	16.153	16.152	0	1.076	150115090	33684801	24171	60427	1394	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.167	16.166	0	1.001	1949329	457314	2809	7022	163		M
305.8987	16.167	16.166	0	1.001	2485102	549605	3316	8290	166	0.78(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	14.781	14.794	-1	0.984	68636101	16680126	19522	48805	854		
333.9339	14.781	14.794	-1	0.984	87611797	21117054	22959	57397	920	0.78(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	14.795	14.807	-1	1.001	440223	104870	4523	11307	23		M
321.8936	14.808	14.807	0	1.002	651514	155310	5616	14040	28	0.68(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8840	14.808	14.807	0	0.986	91148166	21943445	7272	18180	3018		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d		
Injection Date:	11-Mar-2021 17:40:43	Instrument ID:	11D2
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4
Client ID:	11215702-Tank1-1mm		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 16.17
Area: 1975624
Amount: 1.800946
Amount Units: pg/ul

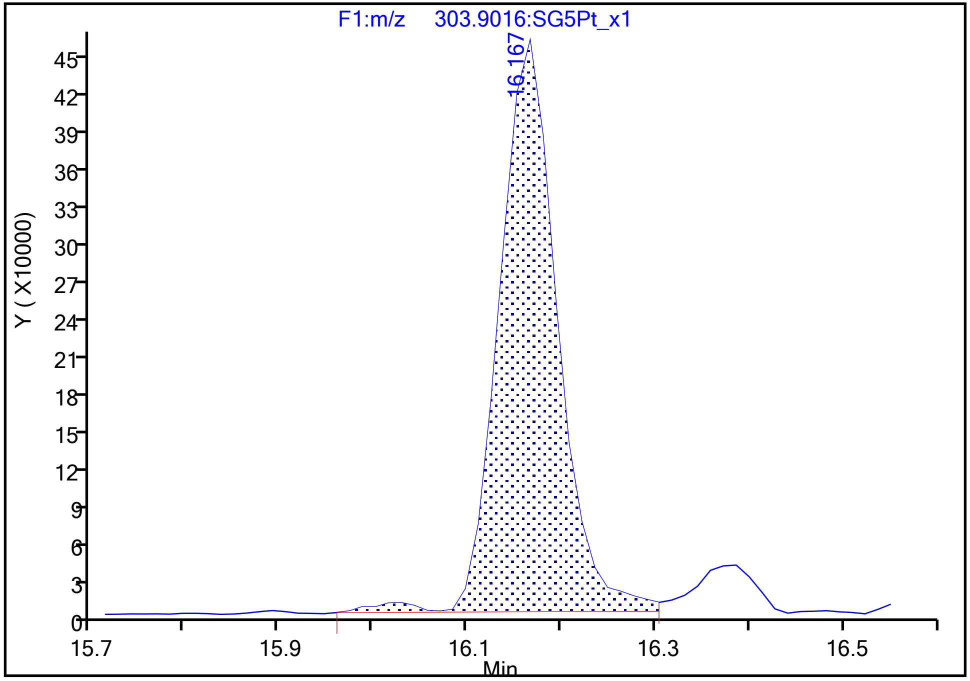

Manual Integration Results

RT: 16.17
Area: 1949329
Amount: 1.775088
Amount Units: pg/ul

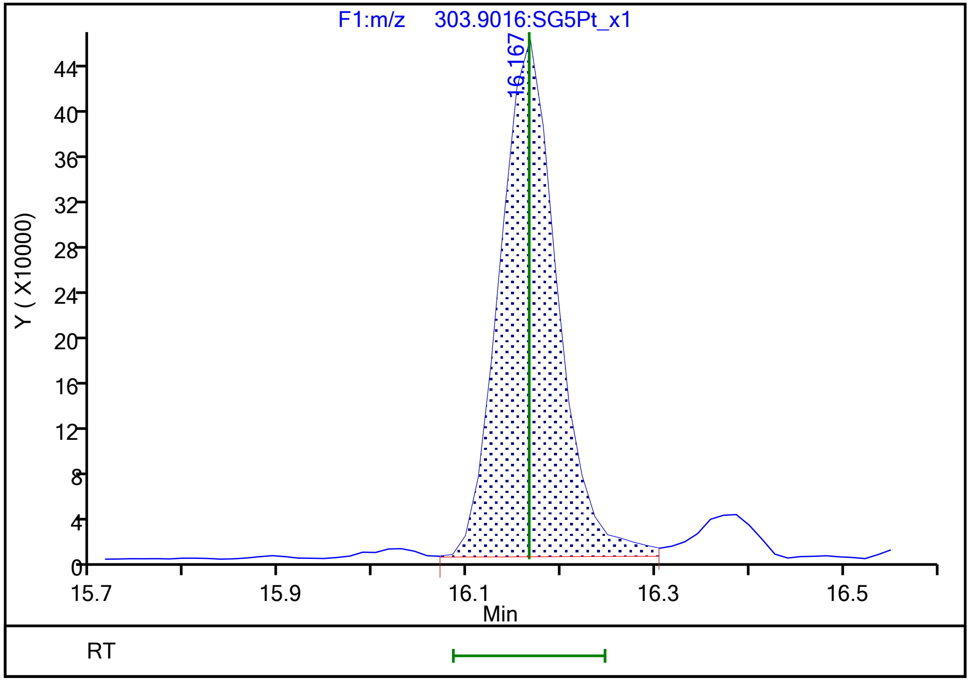

Reviewer: bilottag, 12-Mar-2021 11:02:02

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d				
Injection Date:	11-Mar-2021 17:40:43	Instrument ID:	11D2		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 16.17
Area: 2523405
Amount: 1.800946
Amount Units: pg/ul

Processing Integration Results

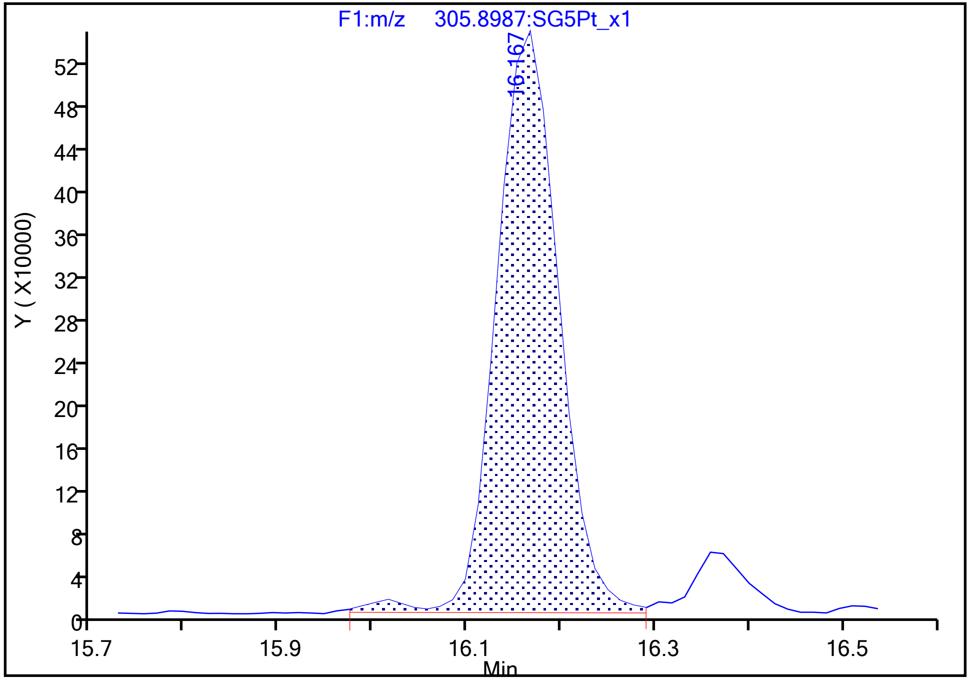

RT: 16.17
Area: 2485102
Amount: 1.775088
Amount Units: pg/ul

Manual Integration Results

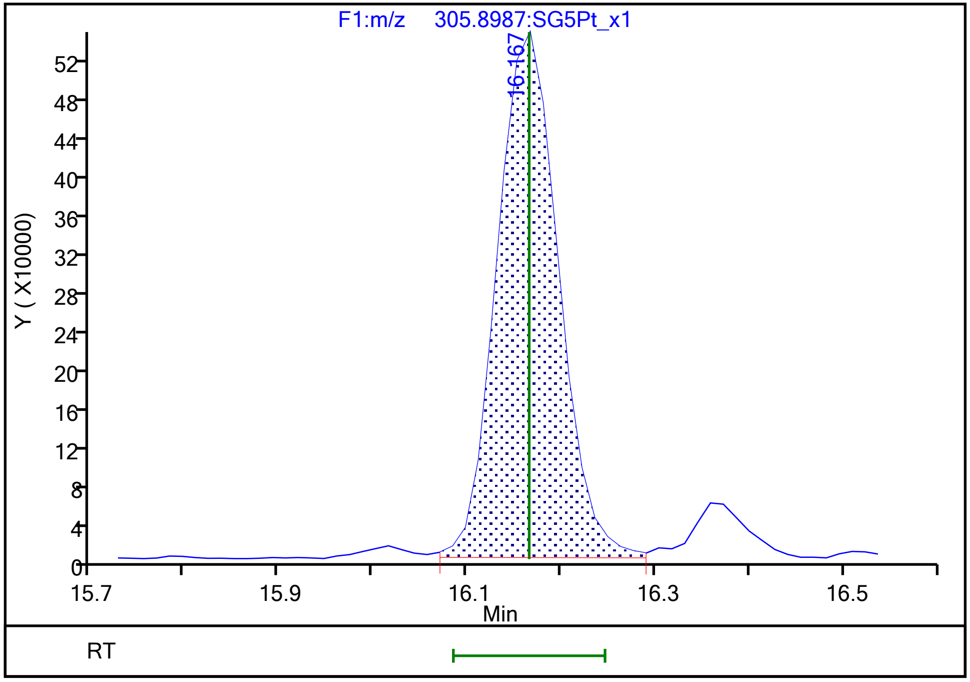

Reviewer: bilottag, 12-Mar-2021 11:02:05

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 12-Mar-2021 11:08:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d
Injection Date: 11-Mar-2021 17:40:43
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-1mm
Worklist#: 469703
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

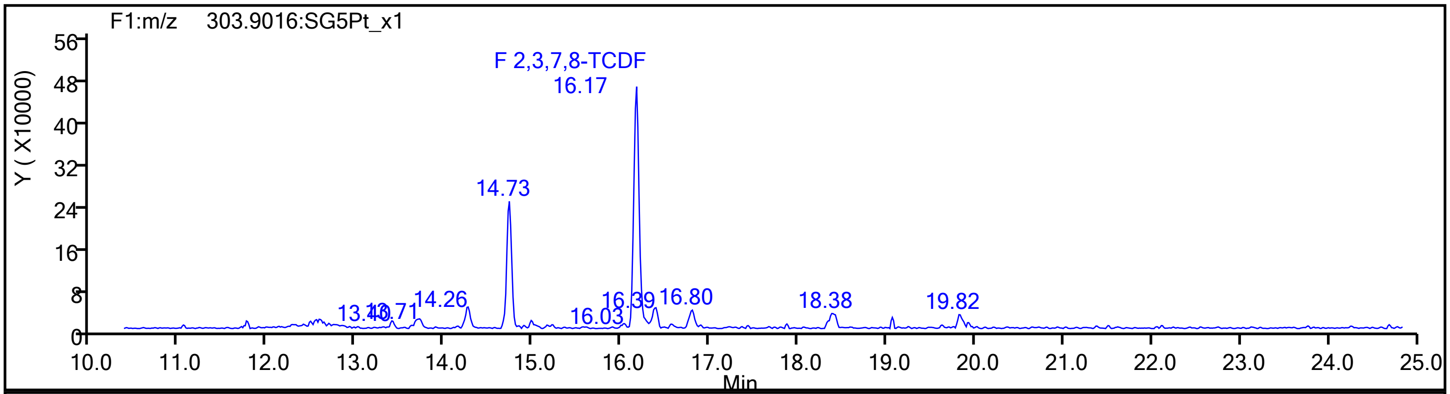

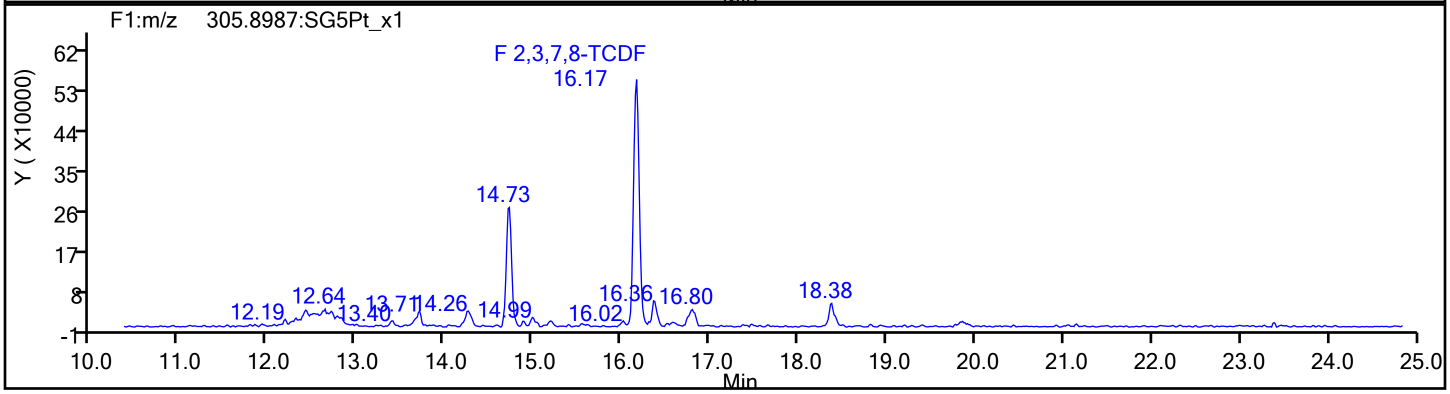

TCDF Standards

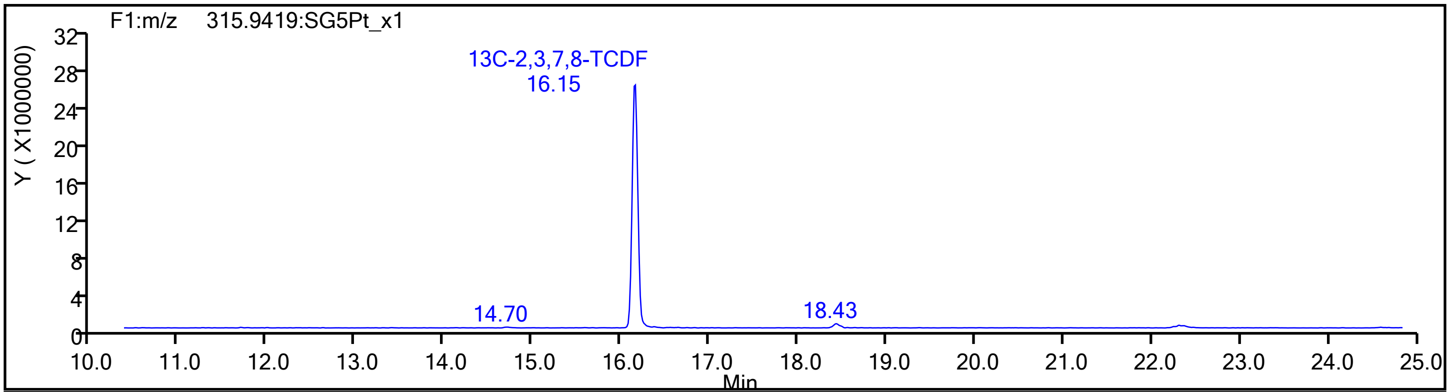

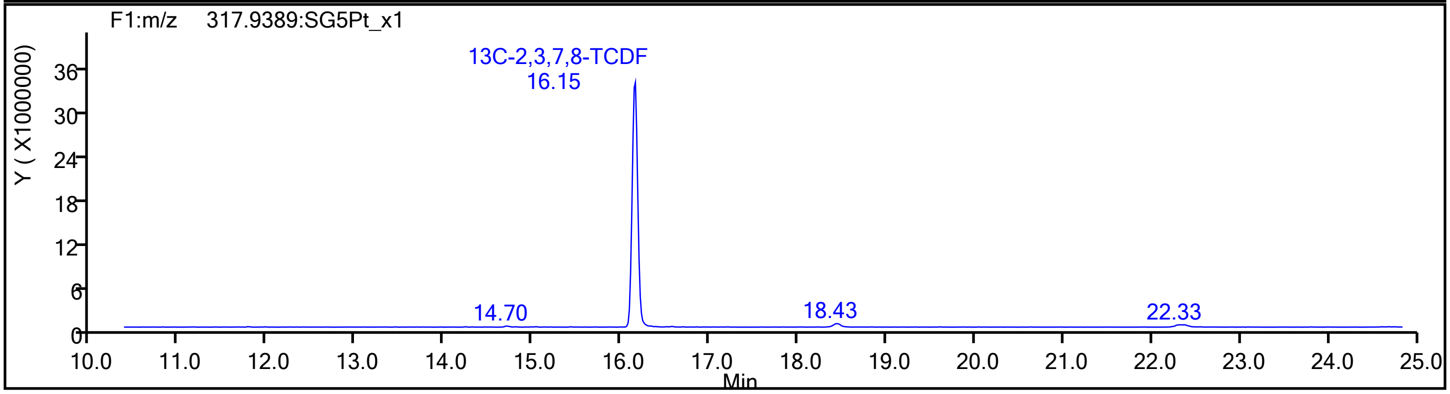

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d
Injection Date: 11-Mar-2021 17:40:43
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-1mm
Worklist#: 469703
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

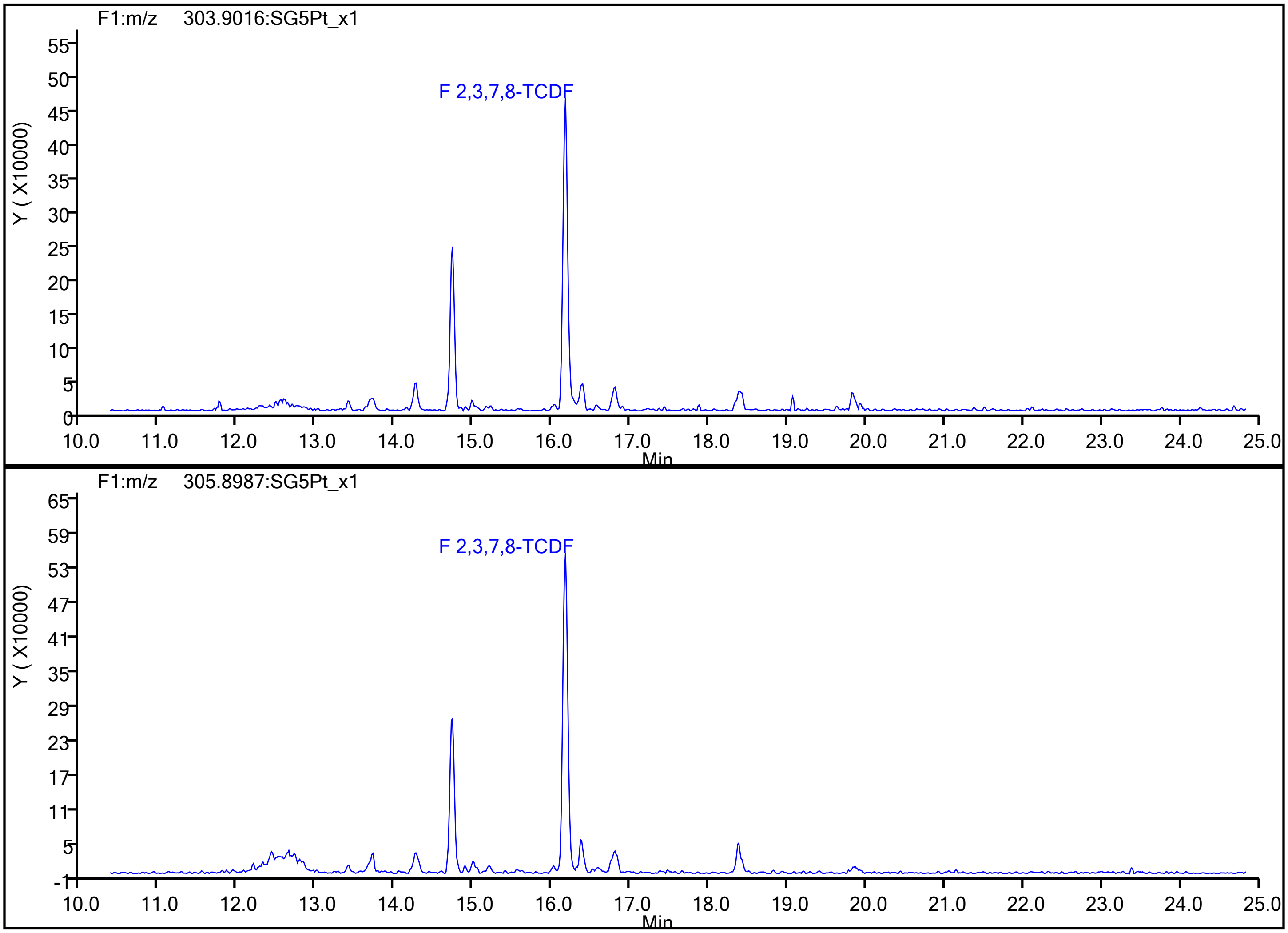

TCDF Interference Mass

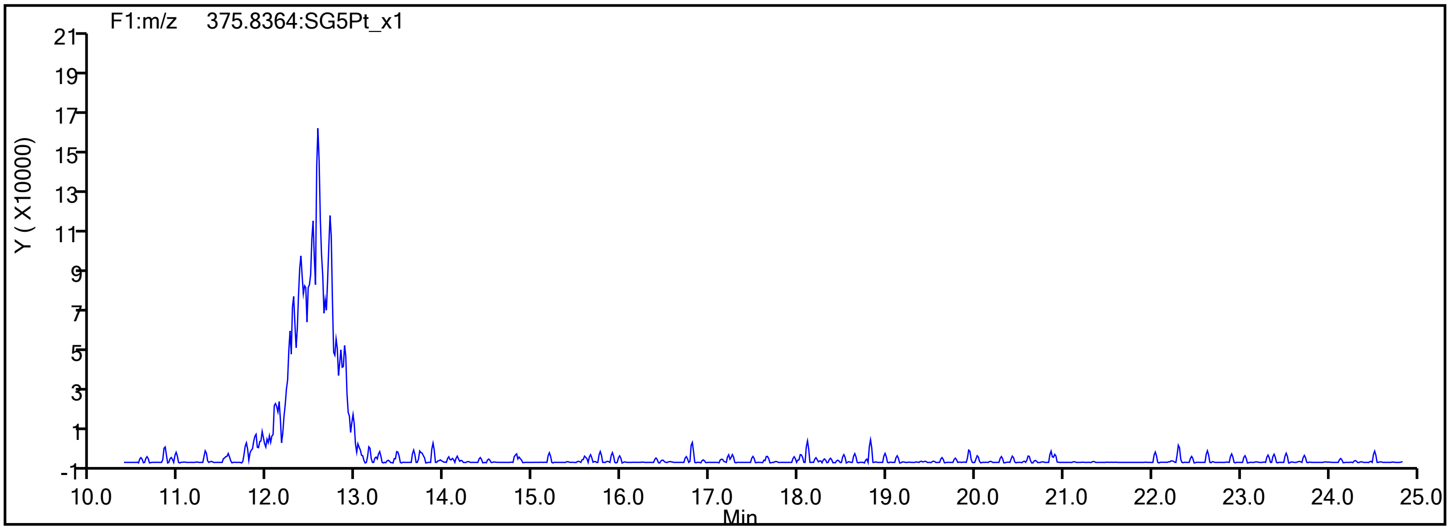

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d		
Injection Date:	11-Mar-2021 17:40:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469703	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

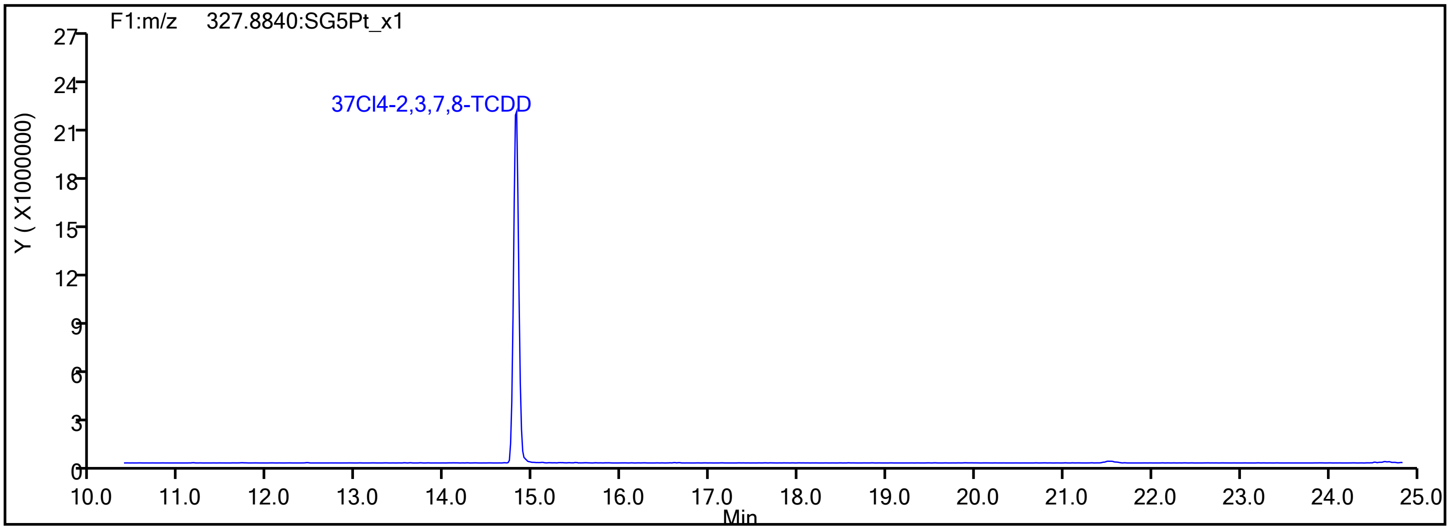

37Cl4-TCDD Standards

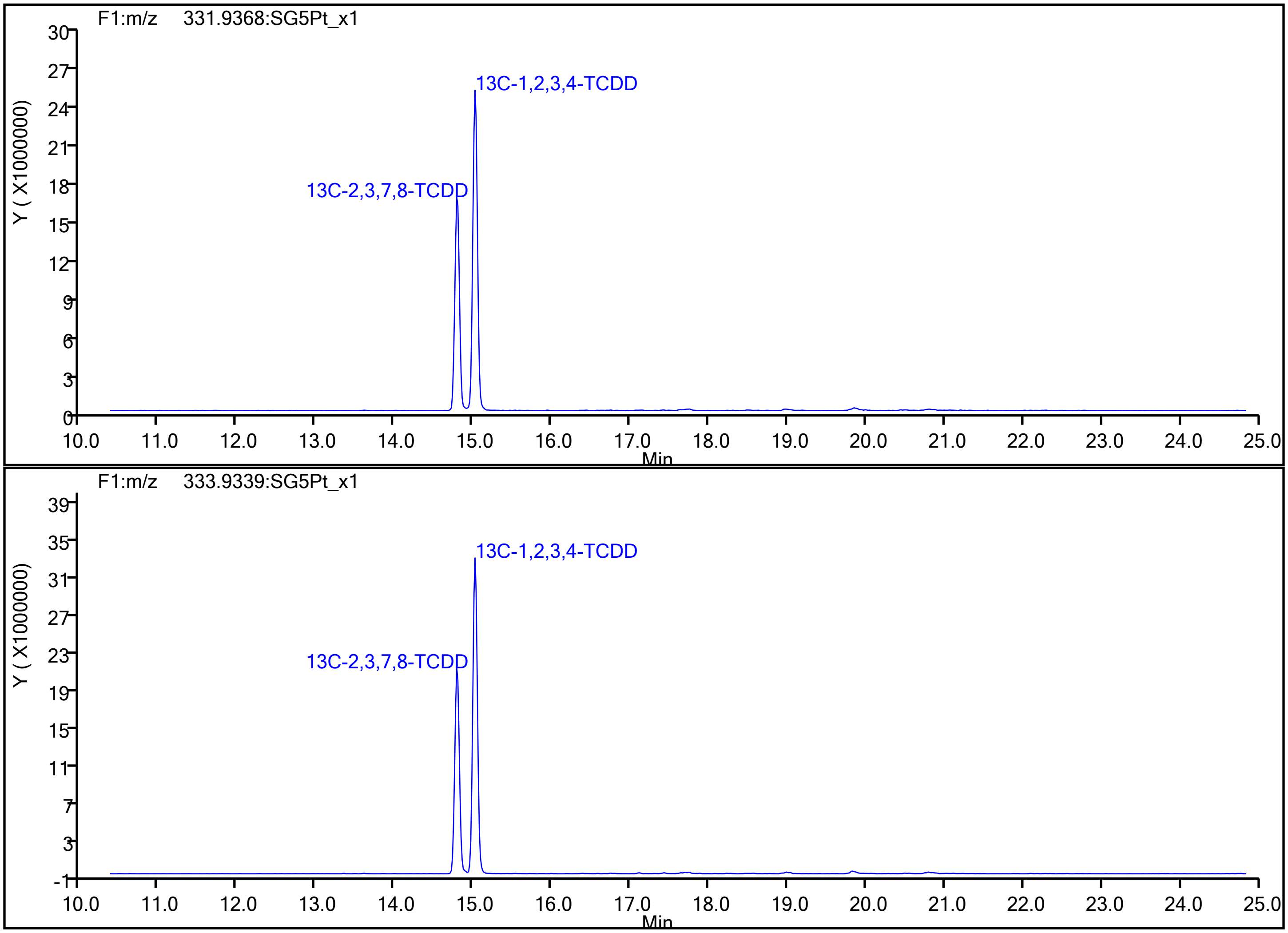

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_007.d		
Injection Date:	11-Mar-2021 17:40:43	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469703	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

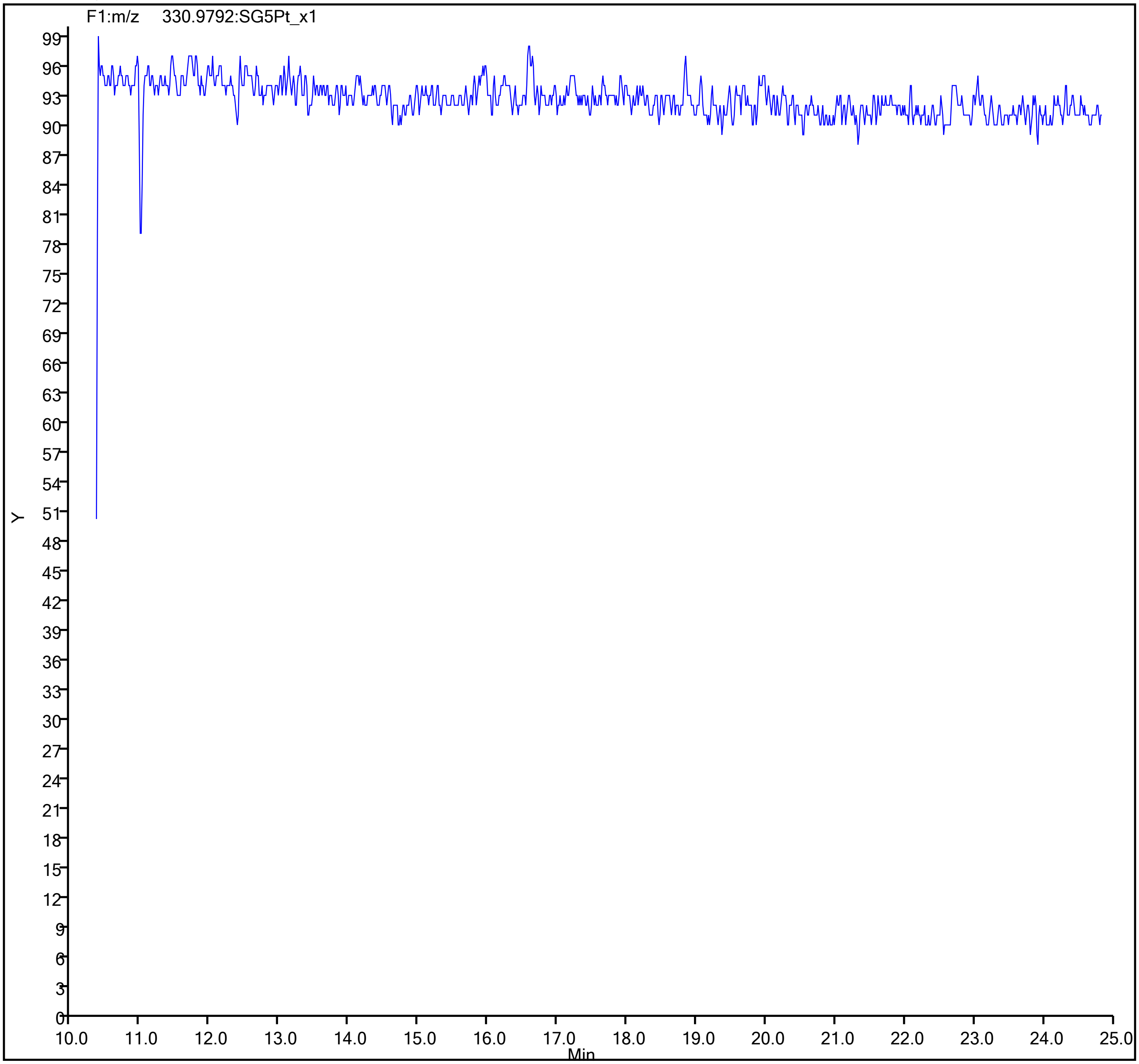

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-1mm	Lab Sample ID: 320-70797-4
Matrix: Water	Lab File ID: 12mr21adfs1_6.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.7(mL)	Date Analyzed: 03/12/2021 13:45
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	12		9.6	0.51
40321-76-4	1,2,3,7,8-PeCDD	ND		48	0.38
57117-41-6	1,2,3,7,8-PeCDF	1.6	J	48	0.26
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.30
39227-28-6	1,2,3,4,7,8-HxCDD	2.0	J	48	0.21
57653-85-7	1,2,3,6,7,8-HxCDD	0.67	J	48	0.22
19408-74-3	1,2,3,7,8,9-HxCDD	0.67	J q	48	0.20
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J B	48	0.18
57117-44-9	1,2,3,6,7,8-HxCDF	0.98	J B	48	0.17
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.14
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.15
35822-46-9	1,2,3,4,6,7,8-HpCDD	4.1	J B	48	0.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.9	J B q	48	0.20
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.87	J B	48	0.22
3268-87-9	OCDD	22	J B	96	0.34
39001-02-0	OCDF	3.0	J B q	96	0.40
41903-57-5	Total TCDD	17	B q	9.6	0.51
30402-14-3	Total TCDF	59	B q	9.6	0.46
36088-22-9	Total PeCDD	ND		48	0.38
30402-15-4	Total PeCDF	1.6	J	48	0.28
34465-46-8	Total HxCDD	3.3	J q	48	0.21
55684-94-1	Total HxCDF	3.6	J B	48	0.16
37871-00-4	Total HpCDD	7.2	J B	48	0.23
38998-75-3	Total HpCDF	3.7	J B q	48	0.21

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-1mm	Lab Sample ID: 320-70797-4
Matrix: Water	Lab File ID: 12mr21adfs1_6.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.7(mL)	Date Analyzed: 03/12/2021 13:45
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	72		25-164
89059-46-1	13C-2,3,7,8-TCDF	71		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	70		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	69		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	68		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	73		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	73		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	74		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	75		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	81		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	83		26-138
114423-97-1	13C-OCDD	93		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Lims ID:	320-70797-A-4-A				
Client ID:	11215702-Tank1-1mm				
Sample Type:	Client				
Inject. Date:	12-Mar-2021 13:45:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-a-4-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	16-Mar-2021 09:25:41	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1616				

First Level Reviewer: bilottag Date: 12-Mar-2021 14:43:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.453	3905642	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.594	4252791	0.79	1.5437	70.5	70.5	0.1547	0.1547	70.54	
2,3,7,8-TCDF	18.611	90599	0.80	1.1258	1.892	1.892	0.0238	0.0238		
A Non-2,3,7,8-sub-TCDF	18.115	56773	0.77	1.1258	1.234	1.186	0.0238	0.8342		RQa
S Total TCDF					3.126	3.078	0.0238	0.0238		RQ
D 13C-2,3,7,8-TCDD	19.796	2737540	0.82	0.9687	72.4	72.4	0.1677	0.1677	72.35	
$ 37Cl4-2,3,7,8-TCDD	19.822	1633928		1.0841	38.6	38.6	0.0299	0.0299	96.47	
2,3,7,8-TCDD	19.839	21109	0.71	1.1904	0.6478	0.6478	0.0263	0.0263		M
A Non-2,3,7,8-sub-TCDD	18.876	7742	0.77	1.1904	0.2739	0.2376	0.0263	0.1306		RQM
S Total TCDD					0.9217	0.8854	0.0263	0.0263		RQ
D 13C-1,2,3,7,8-PeCDF	25.638	3520318	1.58	1.3124	68.7	68.7	0.3303	0.3303	68.68	
1,2,3,7,8-PeCDF	25.688	3267	1.37	1.1163	0.0831	0.0831	0.0136	0.0136		M
D 13C-2,3,4,7,8-PeCDF	27.019	3534090	1.61	1.3352	67.8	67.8	0.3247	0.3247	67.77	
2,3,4,7,8-PeCDF	27.040						0.0157	0.0157		
A F1 PeCDFs	22.791						0.007826	0.007826		
A Non-2,3,7,8-sub-PeCDF	26.224						0.0146	0.0219		RQU
S Total PeCDF					0.0831	0.0831	0.0147	0.0147		
D 13C-1,2,3,7,8-PeCDD	27.769	2101914	1.61	0.7716	69.8	69.8	0.1238	0.1238	69.75	
1,2,3,7,8-PeCDD	27.755						0.0197	0.0197		
A Non-2,3,7,8-sub-PeCDD	26.609						0.0197	0.0197		
S Total PeCDD							0.0197	0.0197		
D 13C-1,2,3,4,7,8-HxCDF	33.542	3048079	0.54	1.0931	72.2	72.2	0.3207	0.3207	72.22	
1,2,3,4,7,8-HxCDF	33.559	4907	1.33	1.1831	0.1361	0.1361	0.009292	0.009292		
D 13C-1,2,3,6,7,8-HxCDF	33.744	3172810	0.53	1.1278	72.9	72.9	0.3108	0.3108	72.86	
1,2,3,6,7,8-HxCDF	33.752	2005	1.27	1.2484	0.0506	0.0506	0.008968	0.008968		M
D 13C-2,3,4,6,7,8-HxCDF	34.737	3052969	0.54	1.0552	74.9	74.9	0.3322	0.3322	74.93	
2,3,4,6,7,8-HxCDF	34.725						0.007638	0.007638		
D 13C-1,2,3,7,8,9-HxCDF	35.765	2824435	0.54	0.9938	73.6	73.6	0.3527	0.3527	73.60	
1,2,3,7,8,9-HxCDF	35.773						0.007279	0.007279		RQMU
A Non-2,3,7,8-sub-HxCDF	33.496						0.008223	0.0183		RQU
S Total HxCDF					0.1867	0.1867	0.008294	0.008294		

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.554	3861064	1.28	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.999	2225437	1.26	0.7895	73.0	73.0	0.2032	0.2032	73.00	
1,2,3,4,7,8-HxCDD	35.024	2466	1.24	1.0950	0.1012	0.1012	0.0111	0.0111		
D 13C-1,2,3,6,7,8-HxCDD	35.133	2533497	1.26	0.8495	77.2	77.2	0.1889	0.1889	77.24	
1,2,3,6,7,8-HxCDD	35.159	895	1.22	1.0201	0.0346	0.0346	0.0114	0.0114		
1,2,3,7,8,9-HxCDD	35.580	960	1.24	1.1549	0.0429	0.0349	0.0103	0.0103		RQMa
A Non-2,3,7,8-sub-HxCDD	34.039						0.0109	0.0109		
S Total HxCDD					0.1788	0.1708	0.0110	0.0110		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.806	2464019	0.45	0.7854	81.3	81.3	0.3352	0.3352	81.26	
1,2,3,4,6,7,8-HpCDF	37.831	3643	1.04	1.4859	0.1170	0.0995	0.0103	0.0103		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	39.153	2319283	0.45	0.7230	83.1	83.1	0.3641	0.3641	83.09	
1,2,3,4,7,8,9-HpCDF	39.170	1465	1.14	1.4048	0.0450	0.0450	0.0113	0.0113		M
A Non-2,3,7,8-sub-HpCDF	38.451	1677	1.04	1.4453	0.0538	0.0485	0.0108	0.0485		RQM
S Total HpCDF					0.2158	0.1930	0.0108	0.0108		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.842	2201831	1.05	0.6413	88.9	88.9	0.2600	0.2600	88.92	
1,2,3,4,6,7,8-HpCDD	38.842	5370	0.99	1.1489	0.2123	0.2123	0.0117	0.0117		M
A Non-2,3,7,8-sub-HpCDD	39.230	4029	0.94	1.1489	0.1593	0.1593	0.0117	0.1593		Ma
S Total HpCDD					0.3715	0.3715	0.0117	0.0117		
D 13C-OCDD	41.315	3708185	0.90	0.5141	186.8	186.8	0.1754	0.1754	93.41	
OCDF	41.391	4608	0.89	1.5776	0.1861	0.1575	0.0209	0.0209		RQM
OCDD	41.323	24799	0.90	1.1706	1.143	1.143	0.0174	0.0174		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Lims ID:	320-70797-A-4-A				
Client ID:	11215702-Tank1-1mm				
Sample Type:	Client				
Inject. Date:	12-Mar-2021 13:45:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-a-4-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	16-Mar-2021 09:25:41	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1616				

First Level Reviewer: bilottag Date: 12-Mar-2021 14:43:36

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.453	19.417	2		1748865	276523	242	605	1143		
333.9338	19.453	19.417	2		2156777	346284	163	407	2124	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.594	18.557	2	0.956	1881440	309014	353	882	875		
317.9389	18.585	18.557	2	0.955	2371351	388032	242	605	1603	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.611	18.574	2	1.001	40347	6367	28	70	227		
305.8987	18.620	18.574	3	1.001	50252	7645	47	117	163	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQa
303.9016	17.555	18.115	-34	0.944	2219	319	28	70	11		
305.8987	17.546	18.115	-34	0.944	3997	594	47	117	13	0.56(0.65-0.89)	
	Empc Correction				2881	414	47	117	9		
303.9016	17.976	18.115	-8	0.967	18543	3148	28	70	112		
305.8987	17.984	18.115	-8	0.967	21399	3640	47	117	77	0.87(0.65-0.89)	
303.9016	19.315	18.115	72	1.039	2756	532	28	70	19		
305.8987	19.350	18.115	74	1.041	3466	644	47	117	14	0.80(0.65-0.89)	
303.9016	21.616	18.115	210	1.163	2397	393	28	70	14		a
305.8987	21.573	18.115	207	1.160	4310	543	47	117	12	0.56(0.65-0.89)	
	Empc Correction				3112	510	47	117	11		
13C-2,3,7,8-TCDD											
331.9368	19.796	19.761	2	1.018	1234241	187842	242	605	776		
333.9338	19.804	19.761	3	1.018	1503299	227104	163	407	1393	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.822	19.778	3	1.019	1633928	248274	81	202	3065		

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											M
319.8965	19.839	19.787	3	1.002	8774	1425	39	97	37		
321.8936	19.830	19.787	3	1.002	12335	1880	13	32	145	0.71(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	16.239	18.876	-158	0.820	2746	530	39	97	14		M
	Empc Correction				1851	374	39	97	10		
321.8936	16.239	18.876	-158	0.820	2405	486	13	32	37	1.14(0.65-0.89)	
319.8965	16.695	18.876	-131	0.843	1806	371	39	97	10		M
	Empc Correction				1516	266	39	97	7		
321.8936	16.703	18.876	-130	0.844	1970	346	13	32	27	0.92(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.638	25.600	2	1.318	2154476	392617	664	1660	591		
353.8970	25.638	25.600	2	1.318	1365842	246028	416	1040	591	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.688	25.625	4	1.002	1886	309	7	17	44		M
341.8567	25.663	25.625	2	1.001	1381	276	32	80	9	1.37(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.019	26.980	2	1.389	2181294	357941	664	1660	539		
353.8970	27.019	26.980	2	1.389	1352796	225855	416	1040	543	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.006						7	17			
341.8567	27.006						32	80			
A F1 PeCDFs											
339.8597	22.791						1	2			
341.8567	22.791						20	50			
A Non-2,3,7,8-sub-PeCDF											U
339.8597	26.224	26.224	0	1.023	447	91	7	17			
341.8567	26.224	26.224	0	1.023	391	130	32	80		1.14(1.32-1.78)	
	Empc Correction				288	58	32	80	0		
13C-1,2,3,7,8-PeCDD											
367.8949	27.769	27.721	3	1.427	1297188	210281	133	332	1581		
369.8919	27.769	27.721	3	1.427	804726	132633	105	262	1263	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.755						26	65			
357.8516	27.755						5	12			
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.609						26	65			
357.8516	26.609						5	12			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.542	33.504	2	0.943	1071305	194336	336	840	578		
385.8610	33.534	33.504	2	0.943	1976774	351416	885	2212	397	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.559	33.521	2	1.001	2802	506	16	40	32		
375.8178	33.584	33.521	4	1.001	2105	352	8	20	44	1.33(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.744	33.706	2	0.949	1096661	187797	336	840	559		
385.8610	33.744	33.706	2	0.949	2076149	348139	885	2212	393	0.53(0.43-0.59)	

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											M
373.8208	33.752	33.723	2	1.000	1123	207	16	40	13		
375.8178	33.769	33.723	3	1.001	882	144	8	20	18	1.27(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.737	34.709	2	0.977	1073906	220795	336	840	657		
385.8610	34.746	34.709	2	0.977	1979063	395298	885	2212	447	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.725						16	40			
375.8178	34.725						8	20			
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.765	35.736	2	1.006	991767	222755	336	840	663		
385.8610	35.765	35.736	2	1.006	1832668	413600	885	2212	467	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQMU
373.8208	35.753						16	40			
375.8178	35.753						8	20			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	31.588	33.496	-114	0.942	418	95	16	40	6		
	Empc Correction				339	76	16	40	0		
375.8178	31.580	33.496	-115	0.941	274	62	8	20	8	1.53(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.554	35.525	2		2164620	487481	298	745	1636		
403.8529	35.554	35.525	2		1696444	383202	261	652	1468	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	34.999	34.970	2	0.984	1239855	281192	298	745	944		
403.8529	34.999	34.970	2	0.984	985582	226738	261	652	869	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.024	34.995	2	1.001	1367	309	11	27	28		
391.8127	35.024	34.995	2	1.001	1099	258	14	35	18	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.133	35.105	2	0.988	1410234	293057	298	745	983		
403.8529	35.133	35.105	2	0.988	1123263	238940	261	652	915	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.159	35.121	2	1.001	492	111	11	27	10		
391.8127	35.142	35.121	1	1.000	403	98	14	35	7	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											RQMa
389.8158	35.580	35.542	2	1.017	751	174	11	27	16		M
	Empc Correction				531	143	11	27	13		
391.8127	35.588	35.542	3	1.017	429	116	14	35	8	1.75(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.039						11	27			
391.8127	34.039						14	35			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.806	37.786	1	1.063	766781	206568	325	812	636		
419.8220	37.806	37.786	1	1.063	1697238	457675	592	1480	773	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7817	37.831	37.794	2	1.001	2496	597	31	77	19		
	Empc Correction				1857	470	31	77	15		
409.7788	37.823	37.794	2	1.000	1786	452	10	25	45	1.40(0.88-1.20)	M

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.153	39.133	1	1.101	719173	199266	325	812	613		
419.8220	39.153	39.133	1	1.101	1600110	445448	592	1480	752	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7817	39.170	39.142	2	1.000	782	232	31	77	7		M
409.7788	39.162	39.142	1	1.000	683	241	10	25	24	1.14(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											RQM
407.7817	38.218	38.451	-14	1.011	855	237	31	77	8		M
409.7788	38.210	38.451	-14	1.011	1006	257	10	25	26	0.85(0.88-1.20)	M
	Empc Correction				822	227	10	25	23		
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.842	38.822	1	1.092	1129329	330063	319	797	1035		
437.8140	38.842	38.822	1	1.092	1072502	316032	262	655	1206	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	38.842	38.830	1	1.000	2665	690	24	60	29		
425.7737	38.850	38.830	1	1.000	2705	831	11	27	76	0.99(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											Ma
423.7767	38.176	39.230	-63	0.983	1953	487	24	60	20		M
425.7737	38.168	39.230	-64	0.983	2076	547	11	27	50	0.94(0.88-1.20)	
13C-OCDD											
469.7780	41.315	41.293	1	1.162	1759875	485409	162	405	2996		
471.7750	41.315	41.293	1	1.162	1948310	543560	152	380	3576	0.90(0.76-1.02)	
OCDF											RQM
441.7428	41.391	41.377	1	1.002	2170	623	20	50	31		
443.7399	41.399	41.377	1	1.002	3275	910	48	120	19	0.66(0.76-1.02)	M
	Empc Correction				2438	700	48	120	15		
OCDD											
457.7377	41.323	41.301	1	1.000	11771	3228	20	50	161		
459.7348	41.323	41.301	1	1.000	13028	3562	22	55	162	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Lims ID:	320-70797-A-4-A		
Client ID:	11215702-Tank1-1mm		
Inject. Date:	12-Mar-2021 13:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	5

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	4252791	697046

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	4252791	697046

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.555	2219	319	3997	594	0.1298	0.56	RQ
17.555	2219	319	2881	414	0.1065		Empc Correction
17.976	18543	3148	21399	3640	0.8342	0.87	
19.315	2756	532	3466	644	0.1300	0.80	
21.616	2397	393	4310	543	0.1401	0.56	RQa
21.616	2397	393	3112	510	0.1151		Empc Correction
Signal Totals:							
	25915	4392	30858	5208			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59087	9813				0.78	RQa
	56773	9600					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.234 = (59087 * 100.000) / (4252791 * 1.126)
Empc Amount: 1.186 = (56773 * 100.000) / (4252791 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Lims ID:	320-70797-A-4-A		
Client ID:	11215702-Tank1-1mm		
Inject. Date:	12-Mar-2021 13:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	5

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2737540	414946

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2737540	414946

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.239	2746	530	2405	486	0.1581	1.14	RQM
16.239	1851	374	2405	486	0.1306		Empc Correction
16.695	1806	371	1970	346	0.1159	0.92	RQM
16.695	1516	266	1970	346	0.1070		Empc Correction
Signal Totals:							
	3367	640	4375	832			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8927	1733				1.04	RQM
	7742	1472					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2739 = (8927 * 100.000) / (2737540 * 1.190)
Empc Amount: 0.2376 = (7742 * 100.000) / (2737540 * 1.190)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Lims ID:	320-70797-A-4-A		
Client ID:	11215702-Tank1-1mm		
Inject. Date:	12-Mar-2021 13:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	5

Non-2,3,7,8-sub-PeCDF, RT: 26.224

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3520318	638645
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3534090	583796

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3527204	611220

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
26.227	447	91	391	130	0.0219	1.14	RQ
26.227	447	91	288	58			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Lims ID:	320-70797-A-4-A		
Client ID:	11215702-Tank1-1mm		
Inject. Date:	12-Mar-2021 13:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	5

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	3048079	545752
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	3172810	535936
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	3052969	616093
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2824435	636355

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	3024573	583534

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.588	418	95	274	62	0.0183	1.53	RQ
31.588	339	76	274	62			Empc Correction
35.891	250	72	331	95	0.0154	0.76	RQ
35.891	250	72	201	58			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Lims ID:	320-70797-A-4-A		
Client ID:	11215702-Tank1-1mm		
Inject. Date:	12-Mar-2021 13:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	5

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2464019	664243
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2319283	644714

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2391651	654478

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.218	855	237	1006	257	0.0538	0.85	RQM
38.218	855	237	822	227	0.0485		Empc Correction
Signal Totals:							
	855	237	822	227			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1861	494				0.85	RQM
	1677	464					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0538 = (1861 * 100.000) / (2391651 * 1.445)
Empc Amount: 0.0485 = (1677 * 100.000) / (2391651 * 1.445)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Lims ID:	320-70797-A-4-A		
Client ID:	11215702-Tank1-1mm		
Inject. Date:	12-Mar-2021 13:45:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	5

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2201831	646095

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2201831	646095

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.176	1953	487	2076	547	0.1593	0.94	M
Signal Totals:							
	1953	487	2076	547			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4029	1034				0.94	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1593 = (4029 * 100.000) / (2201831 * 1.149)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 09:25:42

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4
Client ID:	11215702-Tank1-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT:	19.83
Area:	12717
Amount:	0.659496
Amount Units:	pg/ul

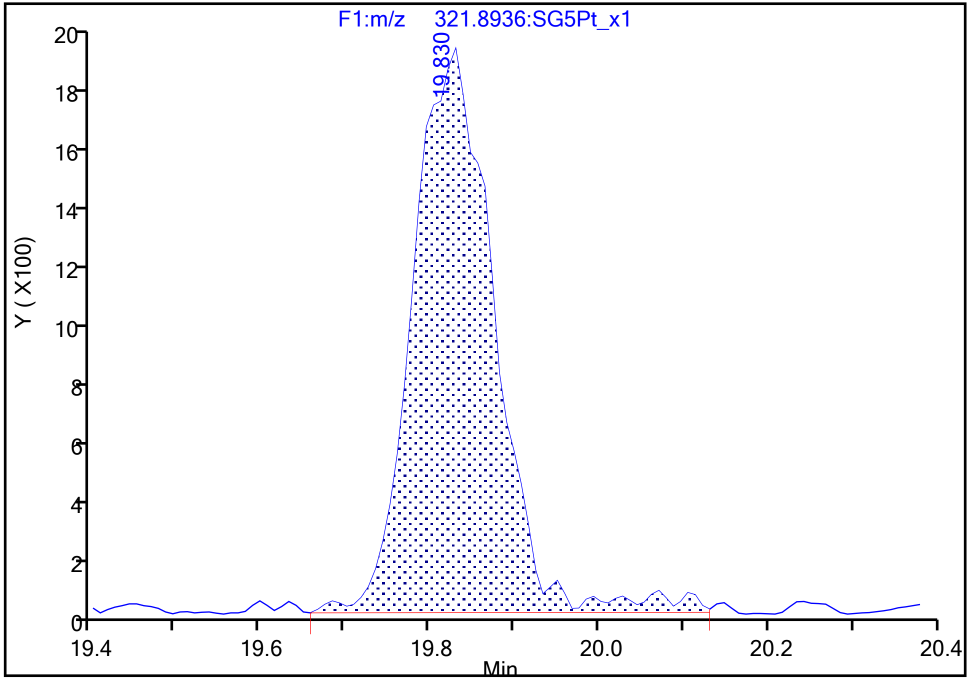

Manual Integration Results

RT:	19.83
Area:	12335
Amount:	0.647773
Amount Units:	pg/ul

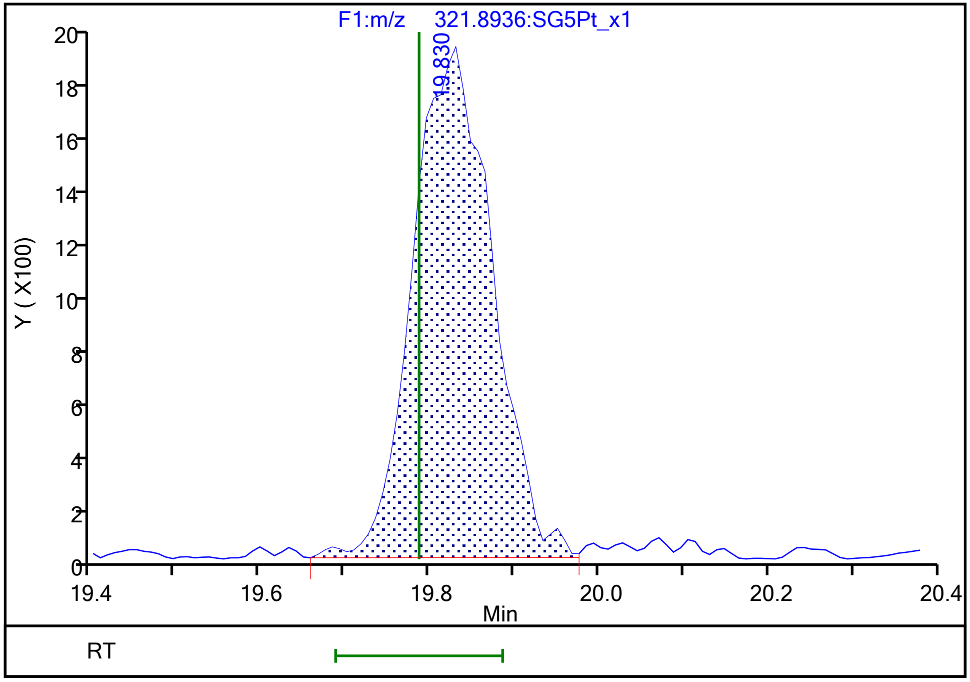

Reviewer: dadunj, 16-Mar-2021 08:26:31

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (16.14- 21.62)

Signal: 1

Processing Integration Results

RT = 16.239 Area = 3123

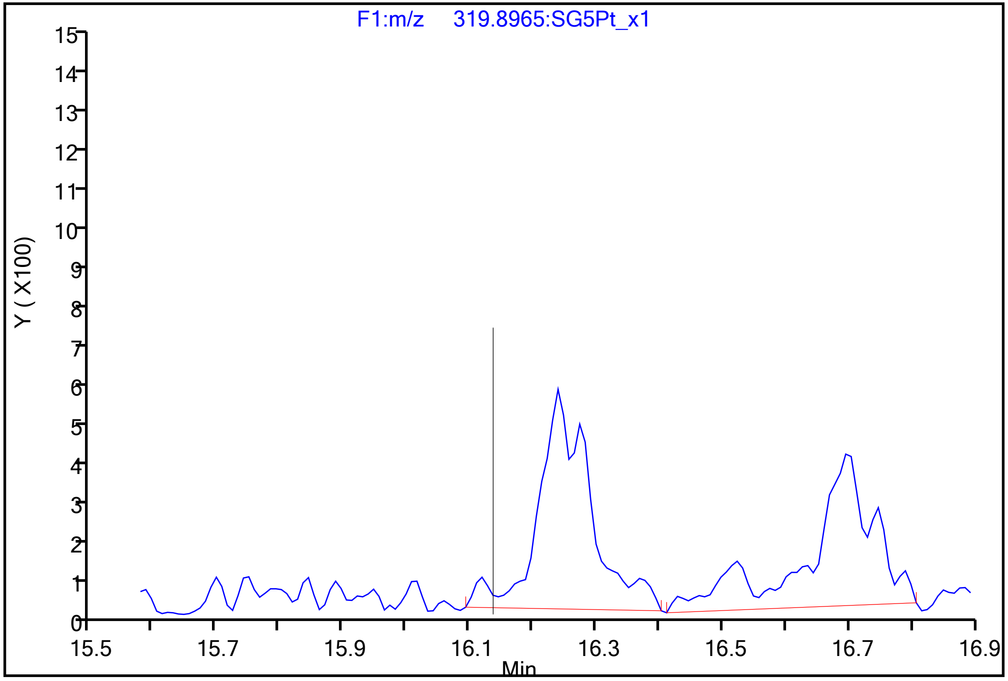

Manual Integration Results

RT = 16.239 Area = 2746 M

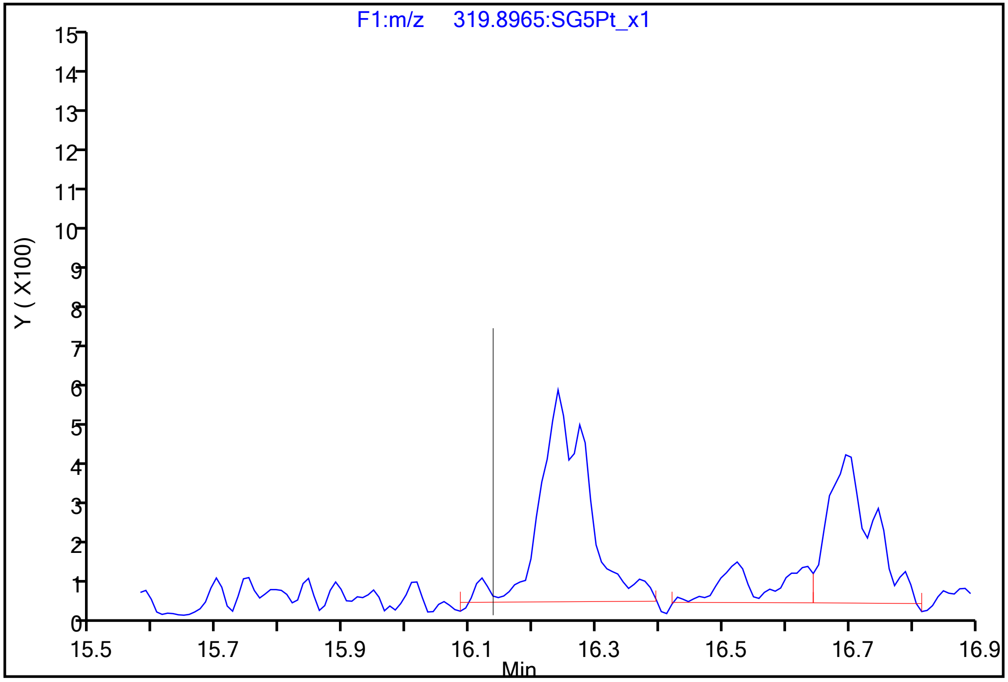

Reviewer: dadunj, 16-Mar-2021 08:27:21

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 16-Mar-2021 09:25:42

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (16.14- 21.62)

Signal: 1

RT = 16.695 Area = 2738

Processing Integration Results

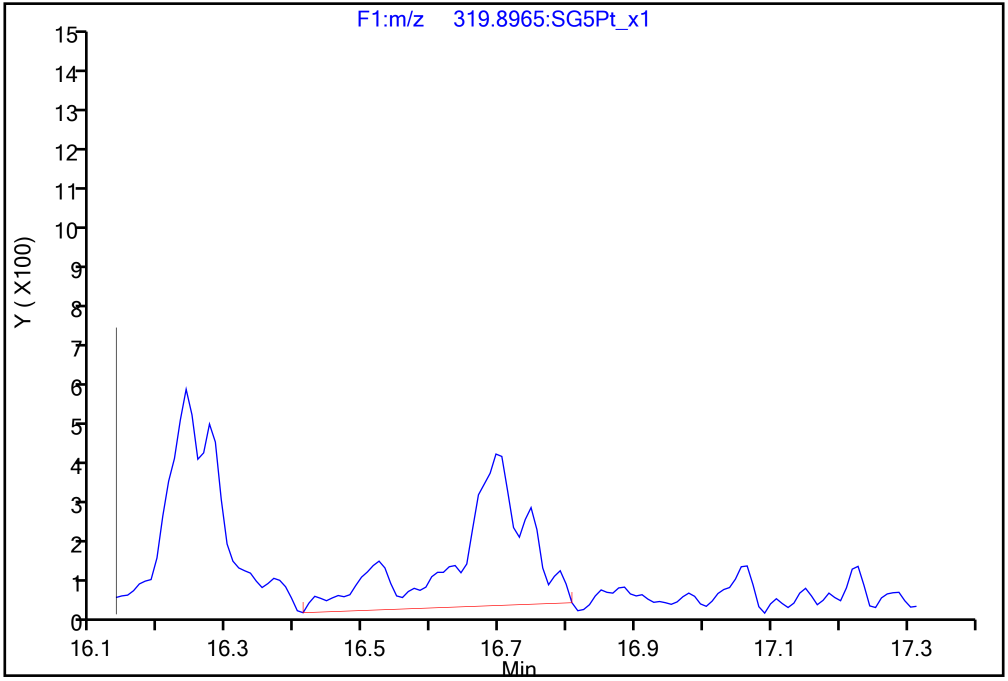

RT = 16.695 Area = 1806 M

Manual Integration Results

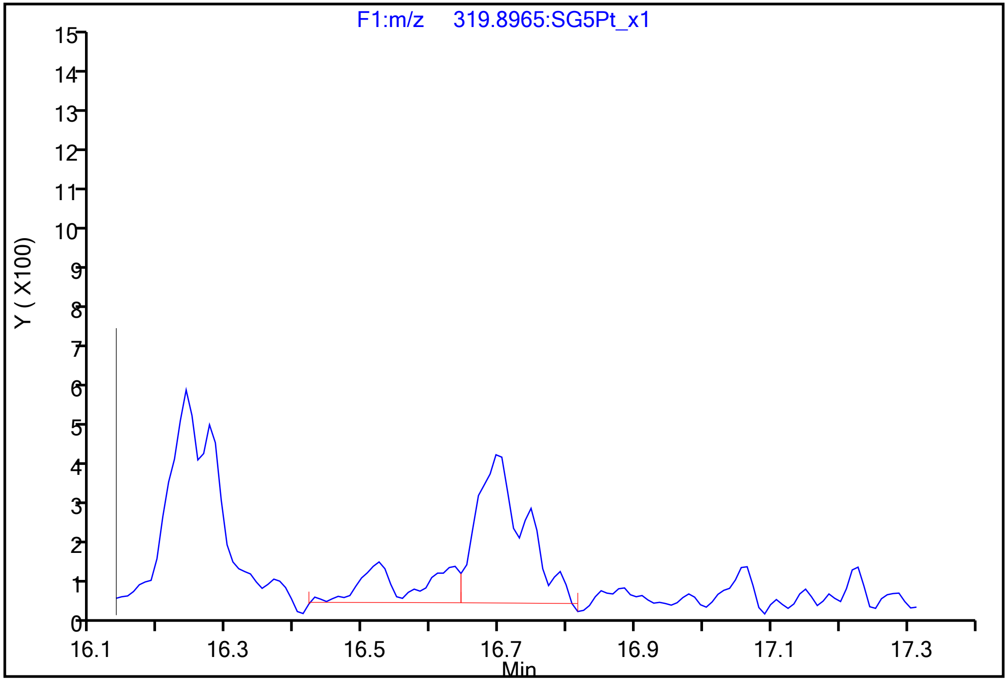

Reviewer: dadunj, 16-Mar-2021 08:27:21

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.69
Area:	1980
Amount:	0.085531
Amount Units:	pg/ul

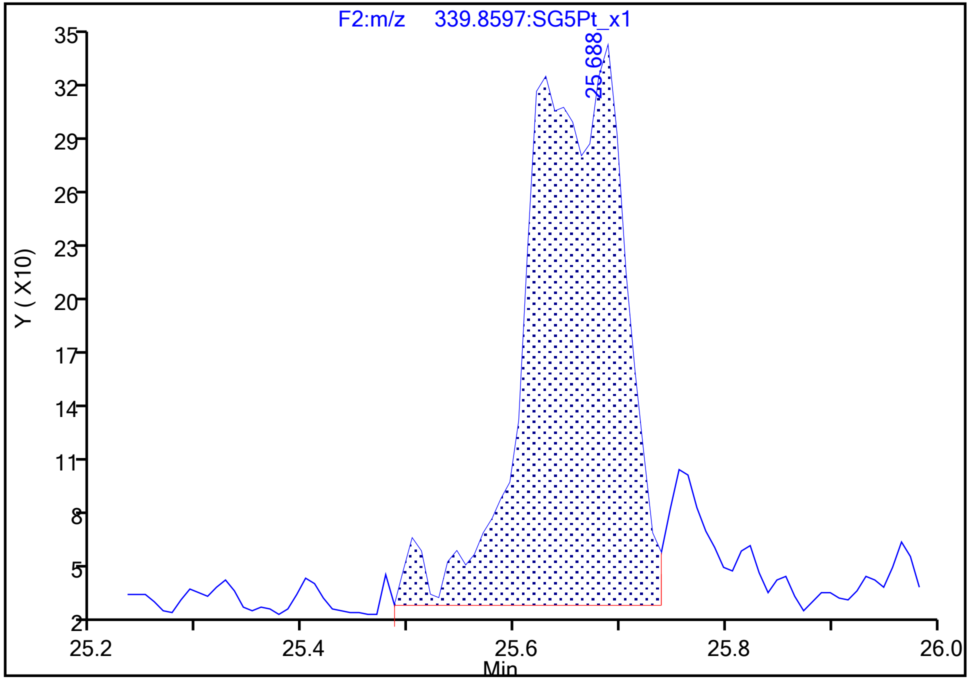

Manual Integration Results

RT:	25.69
Area:	1886
Amount:	0.083139
Amount Units:	pg/ul

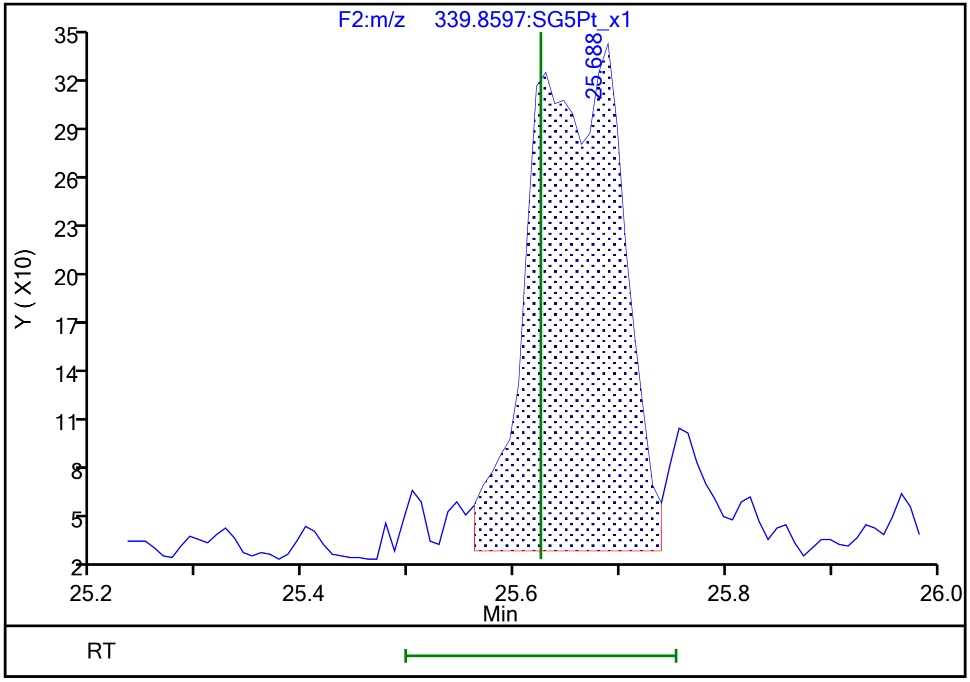

Reviewer: dadunj, 16-Mar-2021 08:27:40

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

RT: 33.77
Area: 968
Amount: 0.052791
Amount Units: pg/ul

Processing Integration Results

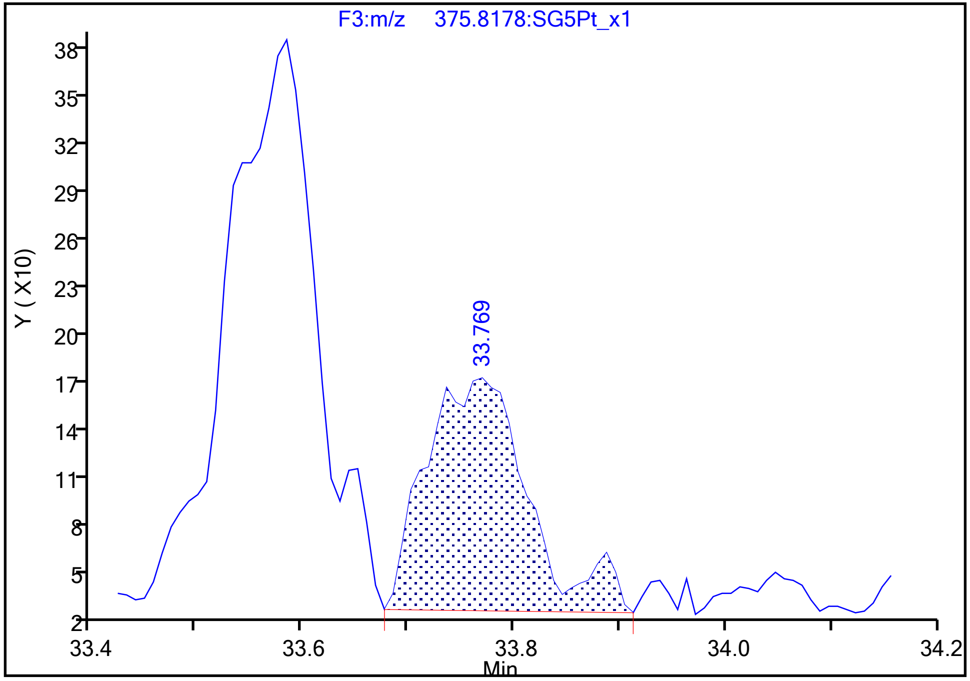

RT: 33.77
Area: 882
Amount: 0.050620
Amount Units: pg/ul

Manual Integration Results

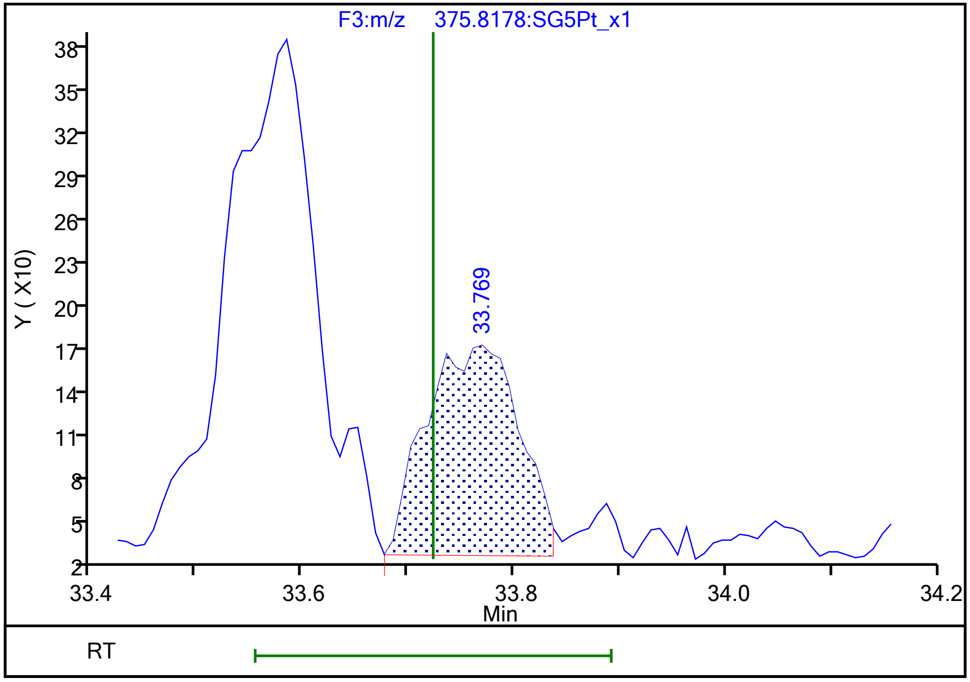

Reviewer: dadunj, 16-Mar-2021 08:28:10

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Not Detected

Expected RT: 35.54

Processing Integration Results

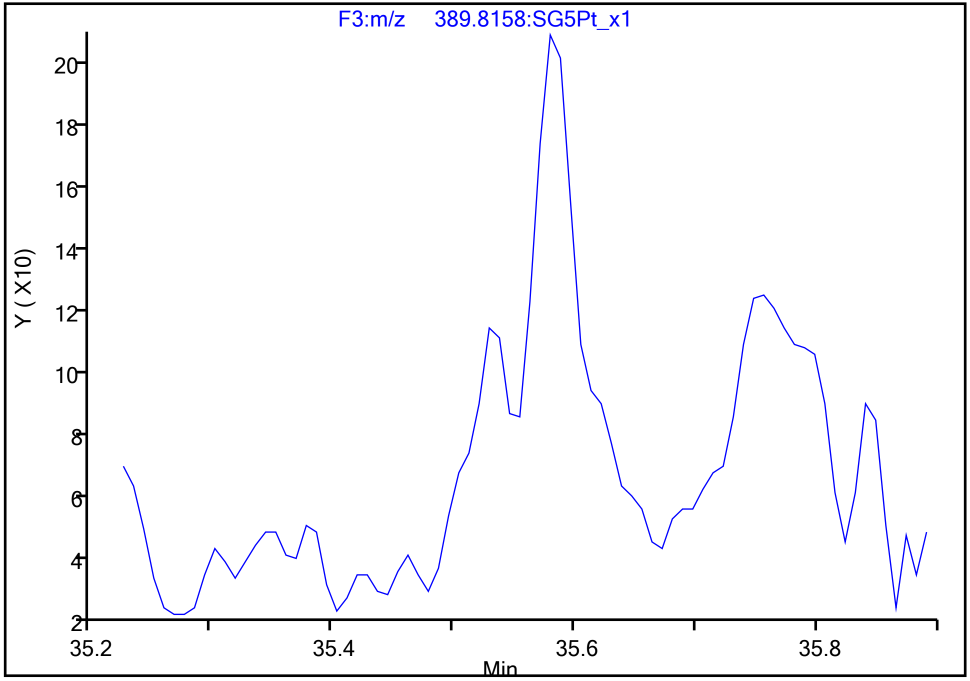

RT:	35.58
Area:	751
Amount:	0.042941
Amount Units:	pg/ul

Manual Integration Results

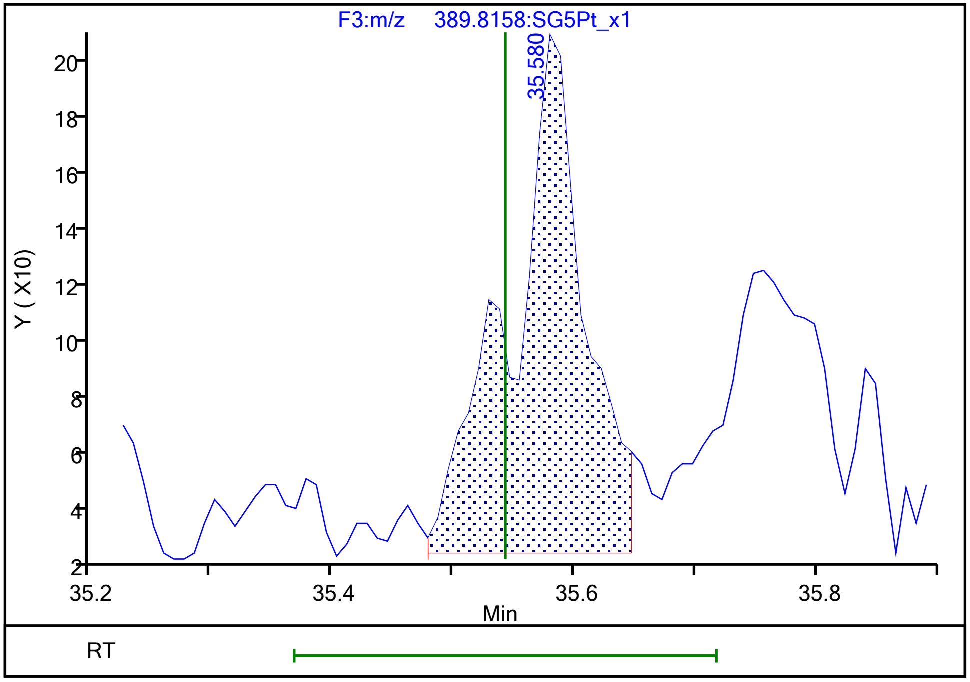

Reviewer: dadunj, 16-Mar-2021 08:29:22

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 16-Mar-2021 09:25:42

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4
Client ID:	11215702-Tank1-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Not Detected

Expected RT: 35.54

Processing Integration Results

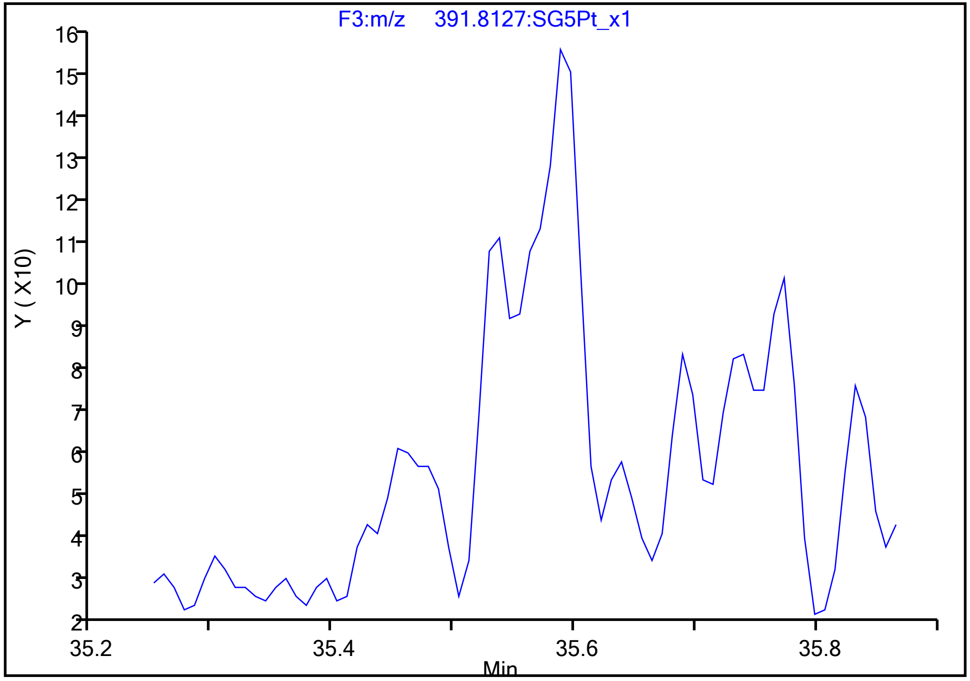

RT: 35.59

Area: 429

Amount: 0.042941

Amount Units: pg/ul

Manual Integration Results

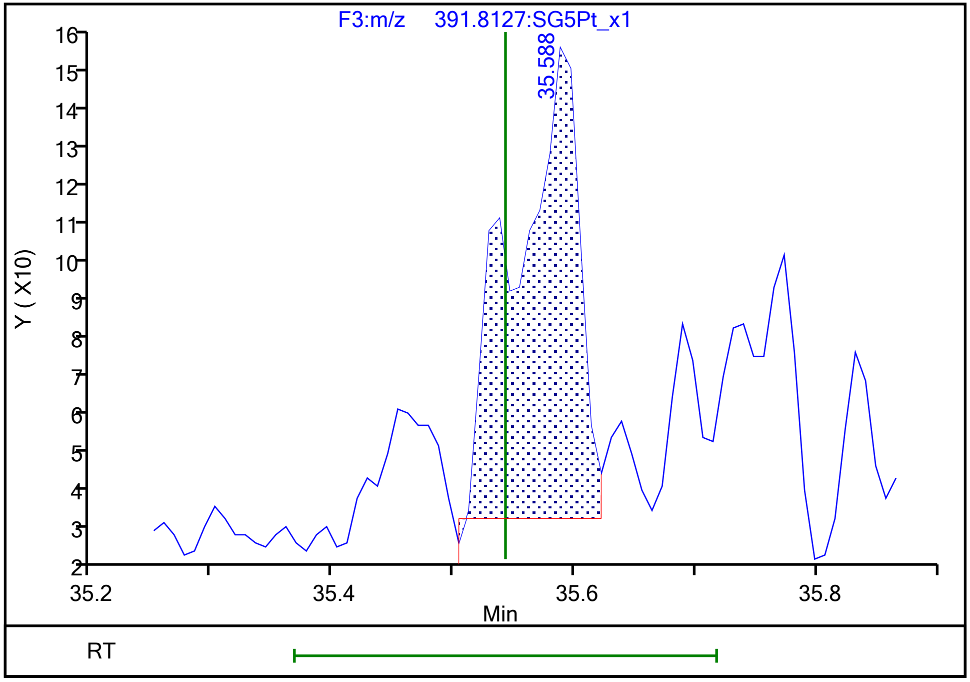

Reviewer: dadunj, 16-Mar-2021 08:29:28

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4
Client ID:	11215702-Tank1-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT: 37.82
Area: 1980
Amount: 0.122255
Amount Units: pg/ul

Processing Integration Results

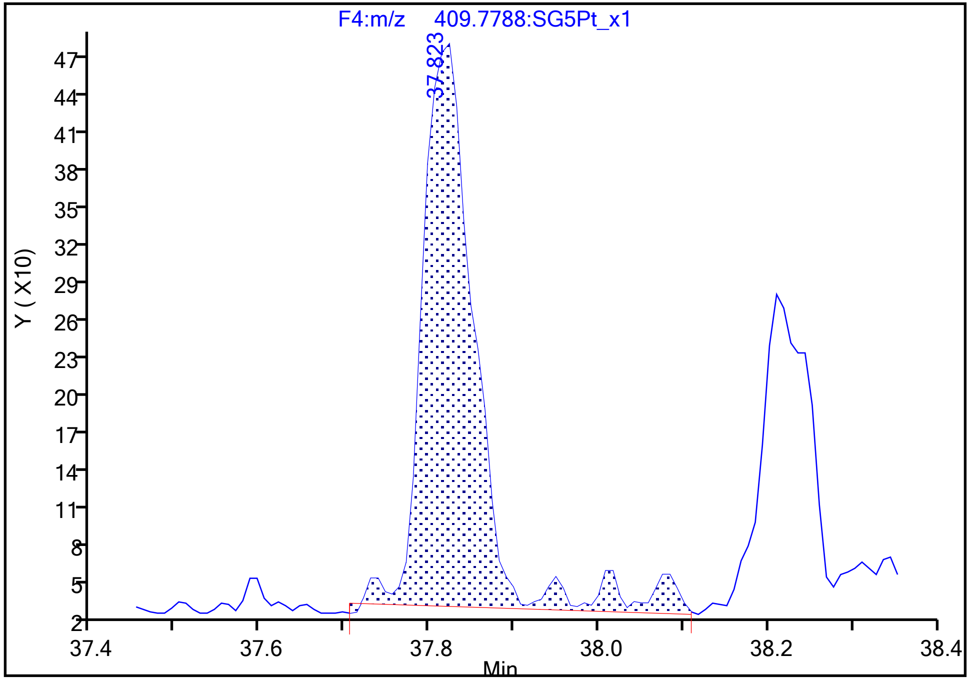

RT: 37.82
Area: 1786
Amount: 0.116956
Amount Units: pg/ul

Manual Integration Results

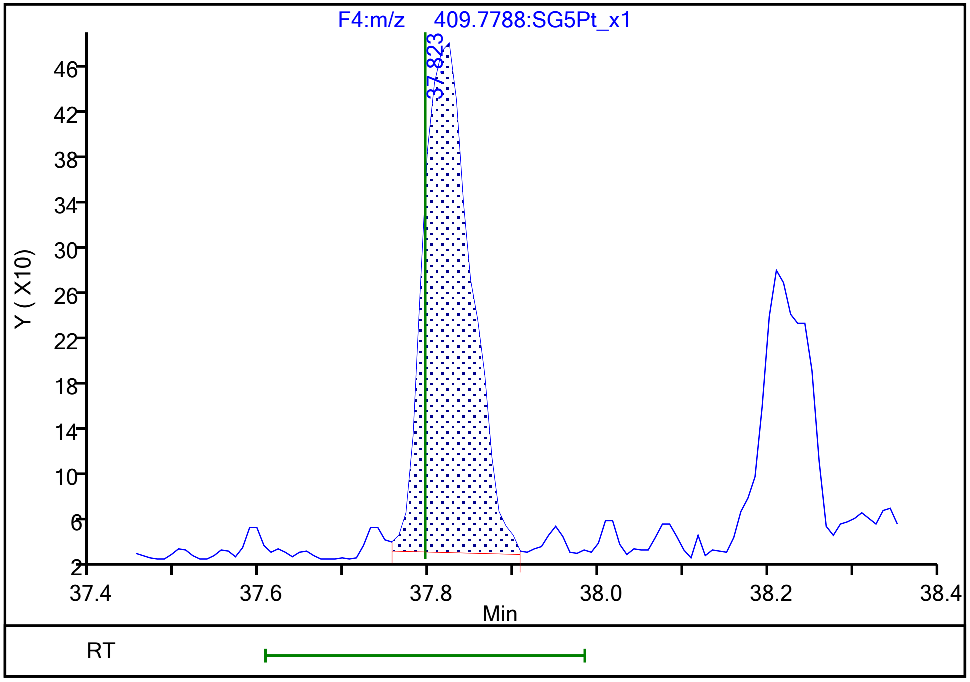

Reviewer: dadunj, 16-Mar-2021 08:29:41
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT:	39.17
Area:	1115
Amount:	0.057334
Amount Units:	pg/ul

Processing Integration Results

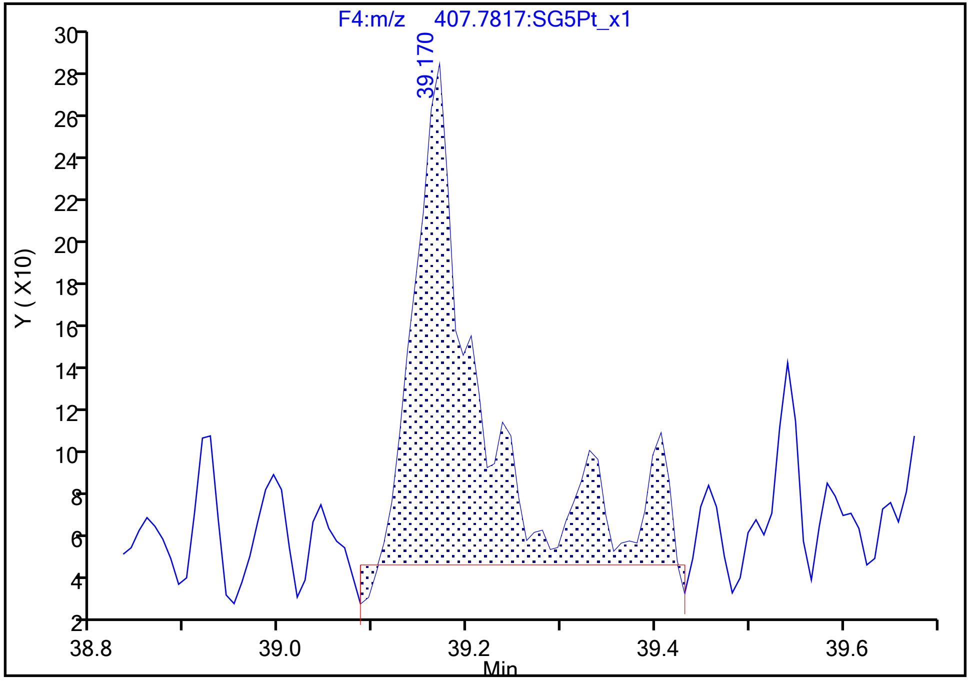

RT:	39.17
Area:	782
Amount:	0.044965
Amount Units:	pg/ul

Manual Integration Results

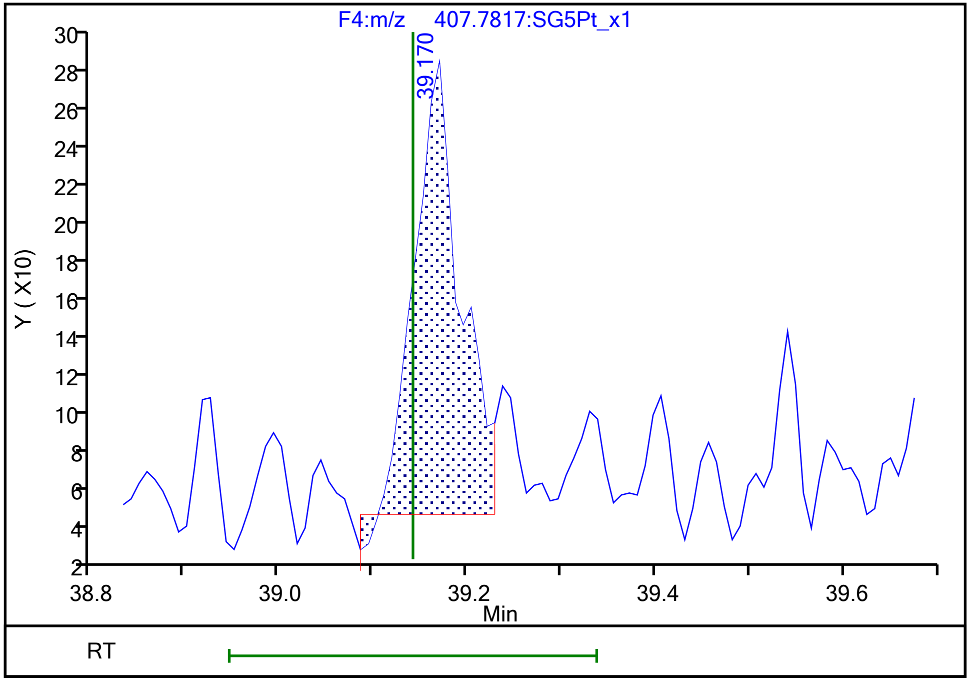

Reviewer: dadunj, 16-Mar-2021 08:29:48

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT:	39.16
Area:	753
Amount:	0.057334
Amount Units:	pg/ul

Processing Integration Results

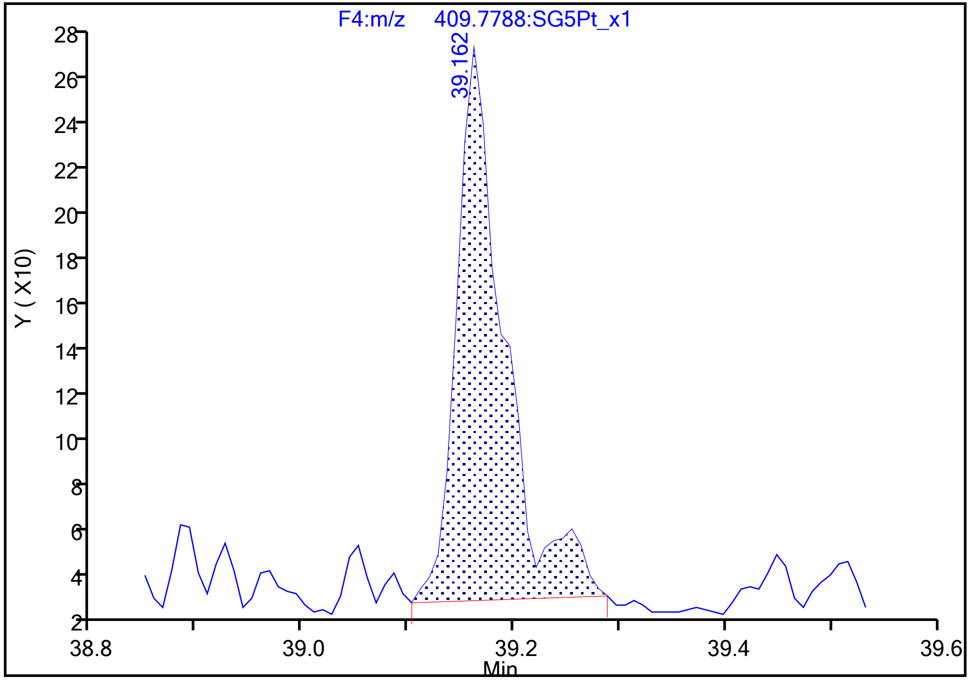

RT:	39.16
Area:	683
Amount:	0.044965
Amount Units:	pg/ul

Manual Integration Results

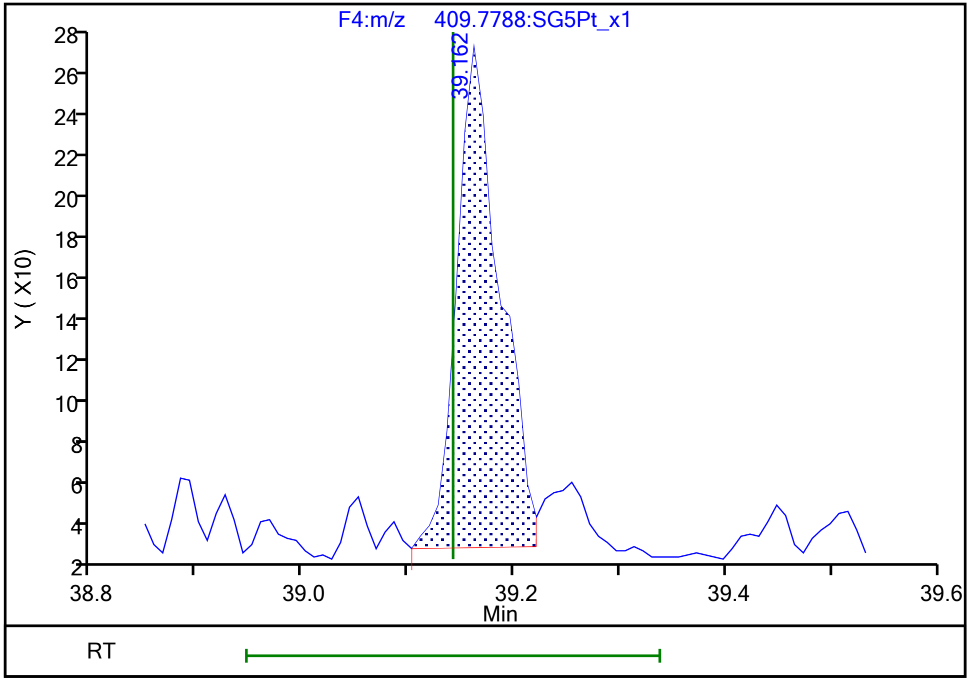

Reviewer: dadunj, 16-Mar-2021 08:29:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7817, RT: (37.75- 39.15)

Signal: 1

Processing Integration Results

RT = 38.218 Area = 930

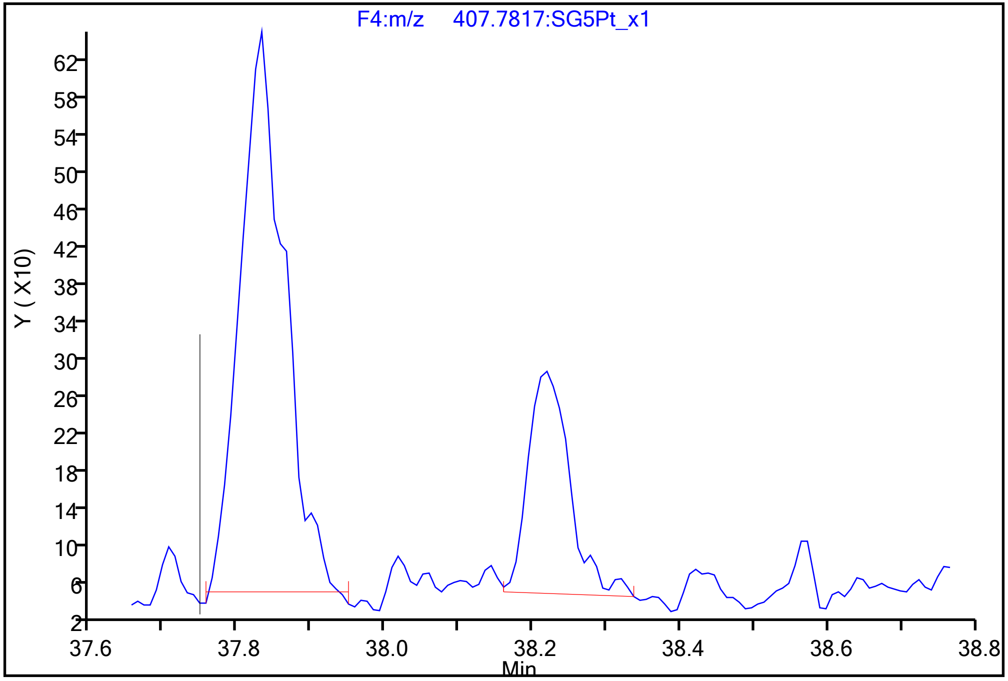

Manual Integration Results

RT = 38.218 Area = 855 M

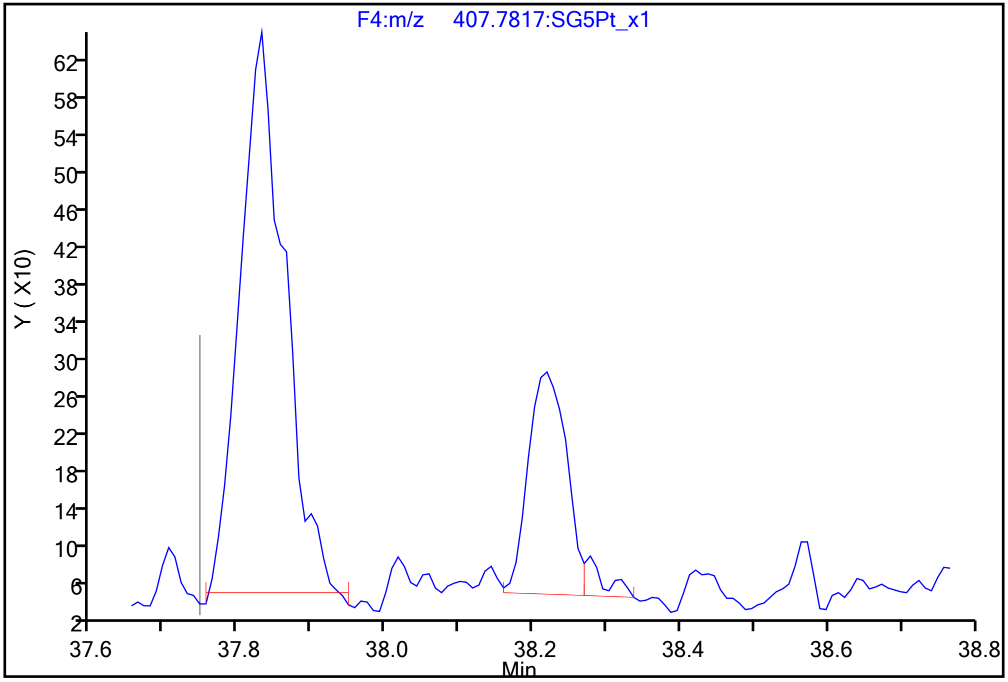

Reviewer: dadunj, 16-Mar-2021 08:29:54

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4
Client ID:	11215702-Tank1-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (37.75- 39.15)

Signal: 2

Processing Integration Results

RT = 38.210 Area = 1191

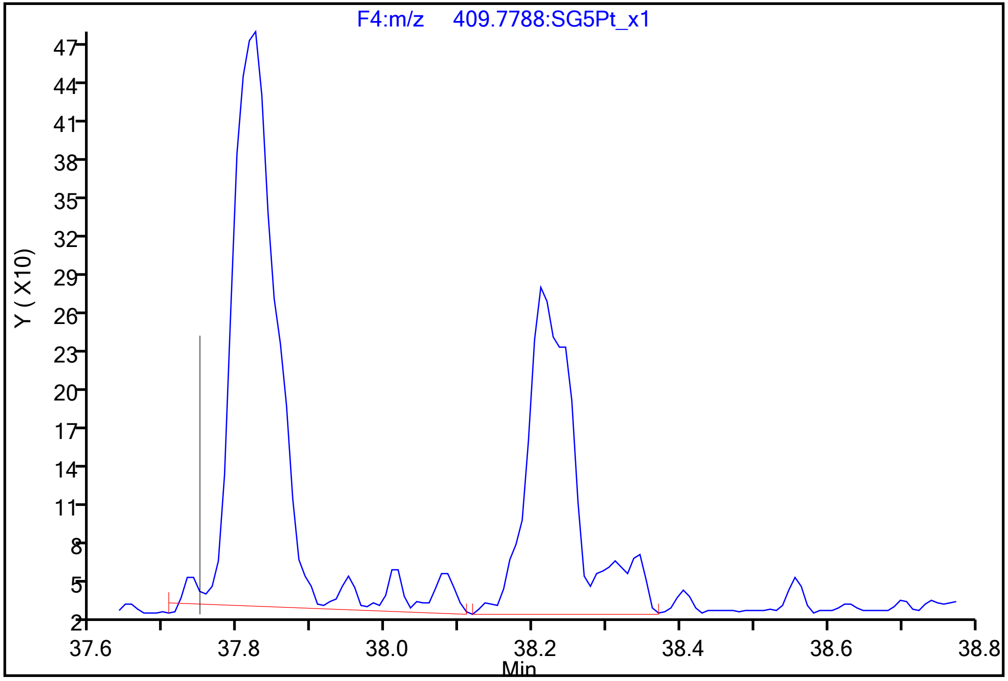

Manual Integration Results

RT = 38.210 Area = 1006 M

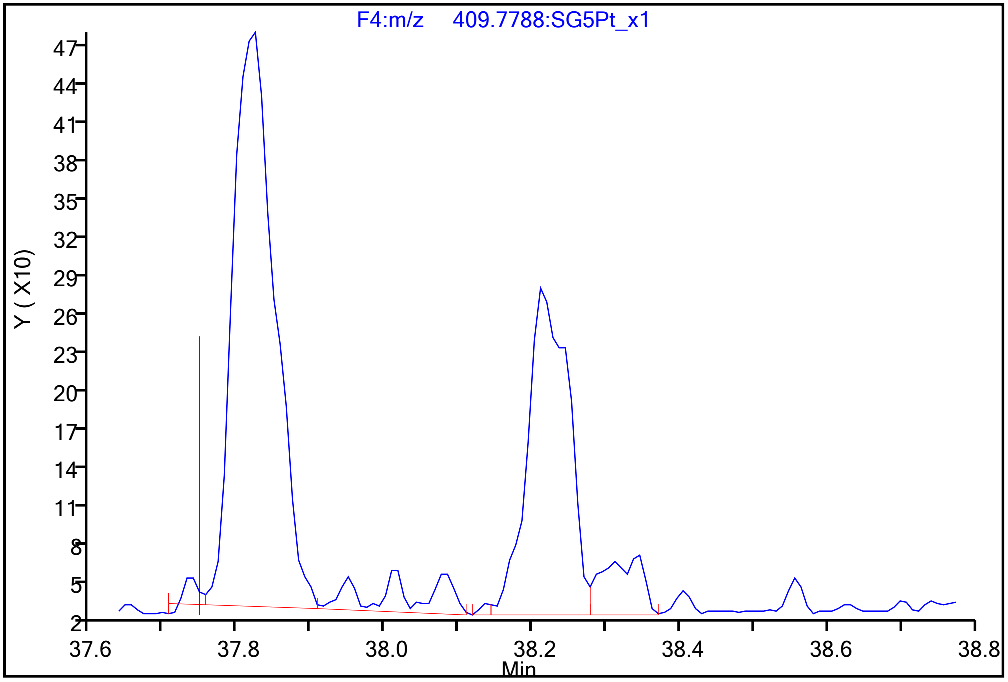

Reviewer: dadunj, 16-Mar-2021 08:29:57

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d
Injection Date: 12-Mar-2021 13:45:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-4-A
Lab Sample ID: 320-70797-4
Client ID: 11215702-Tank1-1mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 5
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 38.85
Area: 2796
Amount: 0.215869
Amount Units: pg/ul

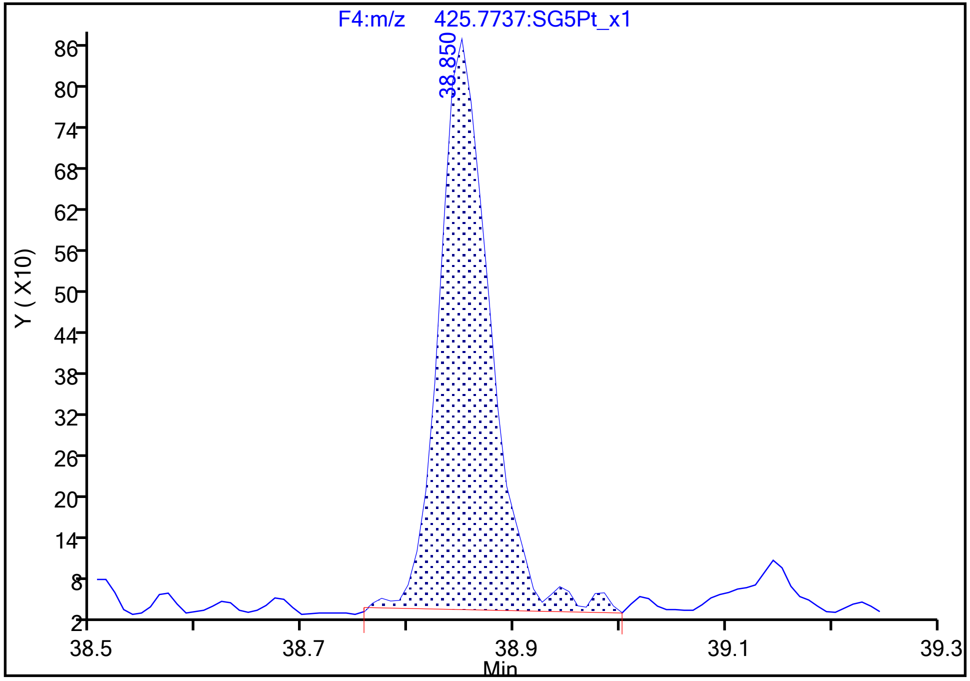

Manual Integration Results

RT: 38.85
Area: 2705
Amount: 0.212272
Amount Units: pg/ul

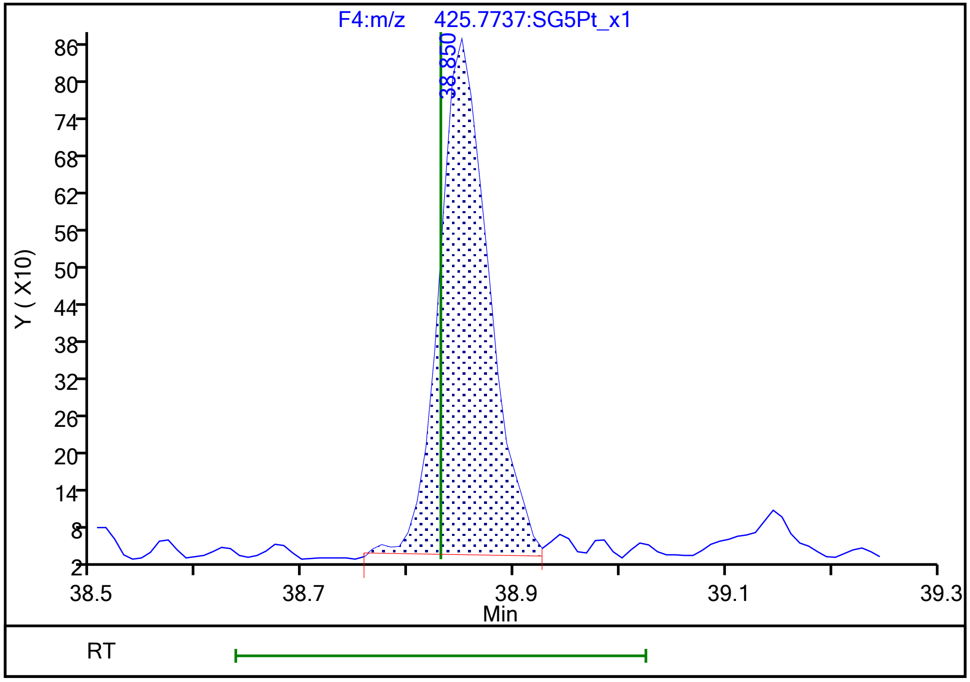

Reviewer: dadunj, 16-Mar-2021 08:30:02

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.75- 39.71)

Signal: 1

Processing Integration Results

RT = 38.176 Area = 2043

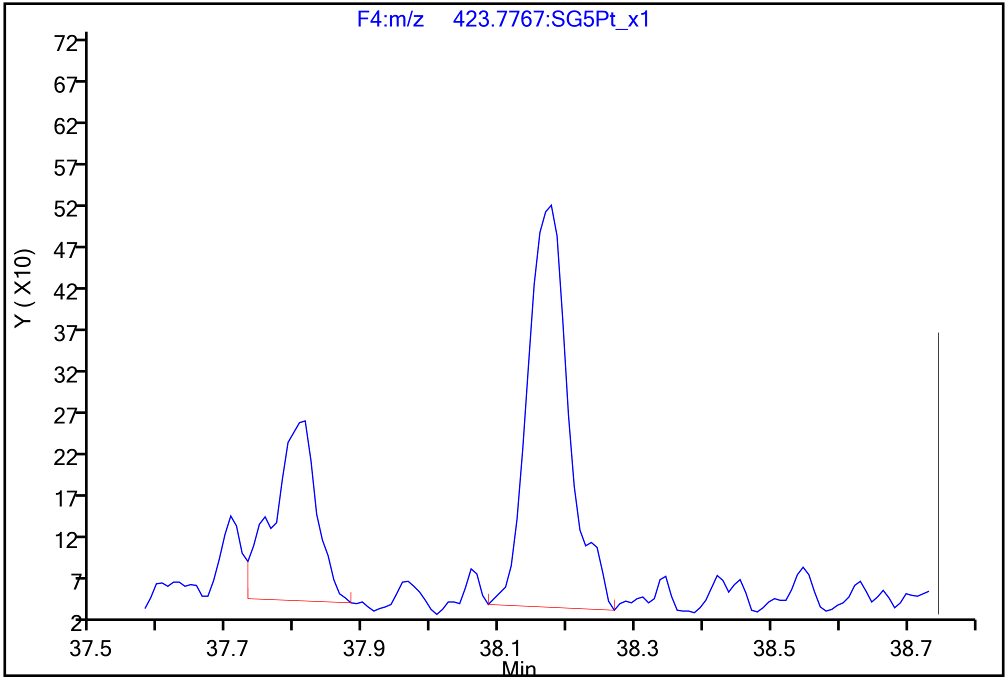

Manual Integration Results

RT = 38.176 Area = 1953 M

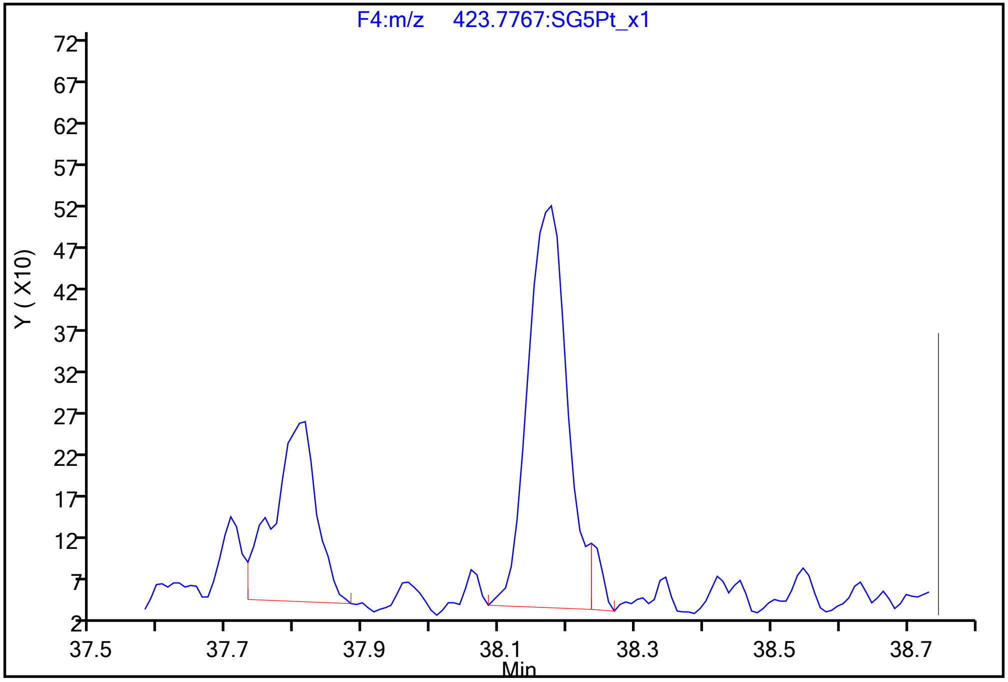

Reviewer: dadunj, 16-Mar-2021 08:30:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d				
Injection Date:	12-Mar-2021 13:45:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-4-A	Lab Sample ID:	320-70797-4		
Client ID:	11215702-Tank1-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT:	41.40
Area:	4178
Amount:	0.217019
Amount Units:	pg/ul

Processing Integration Results

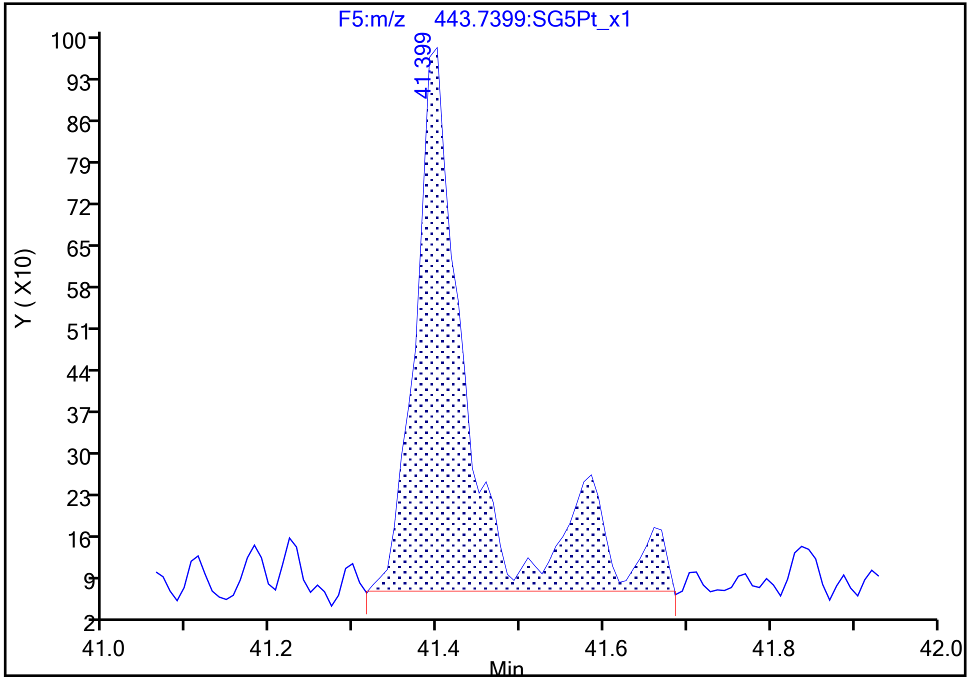

RT:	41.40
Area:	3275
Amount:	0.186148
Amount Units:	pg/ul

Manual Integration Results

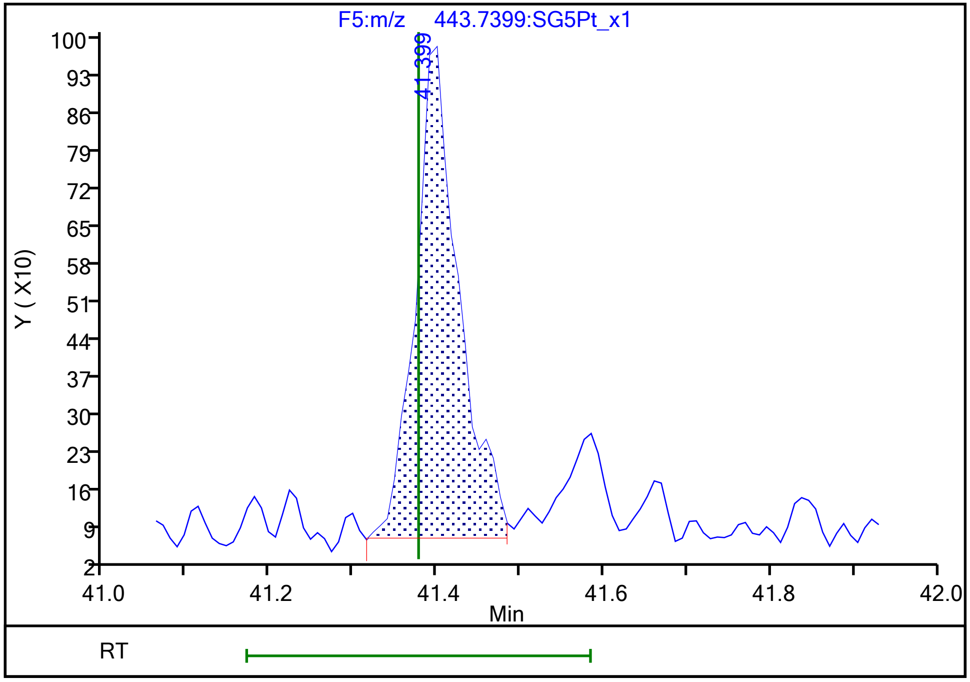

Reviewer: dadunj, 16-Mar-2021 08:30:17

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:25:42 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

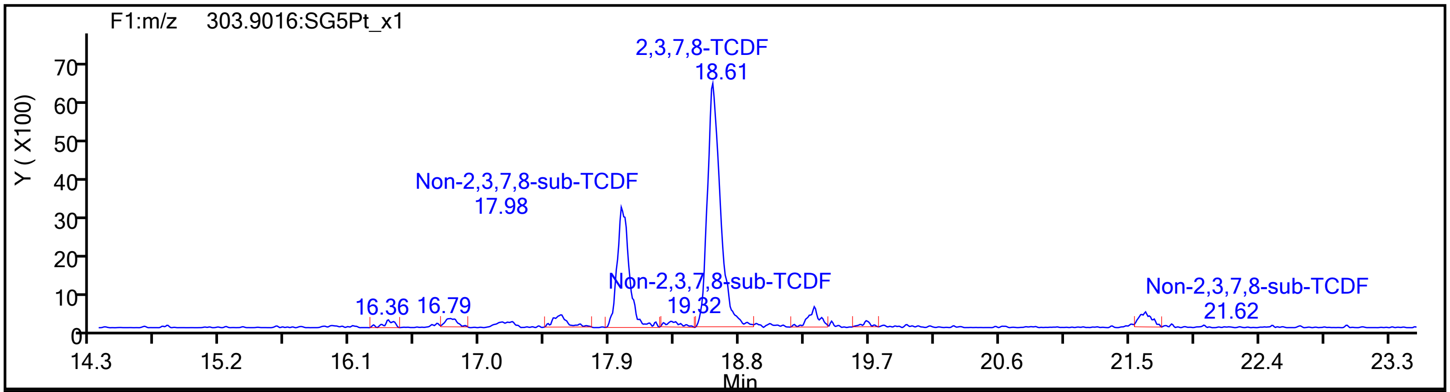

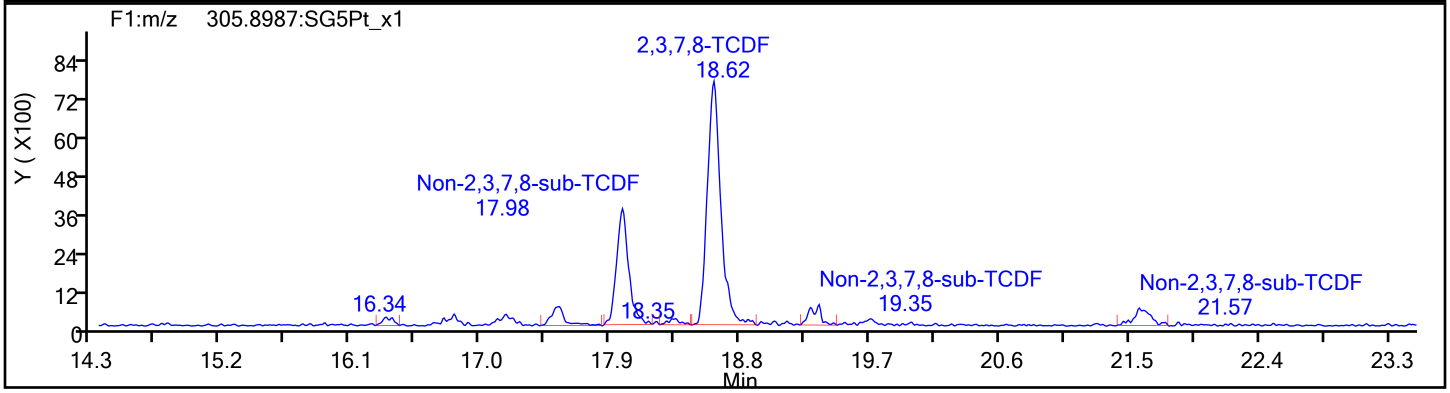

TCDF Standards

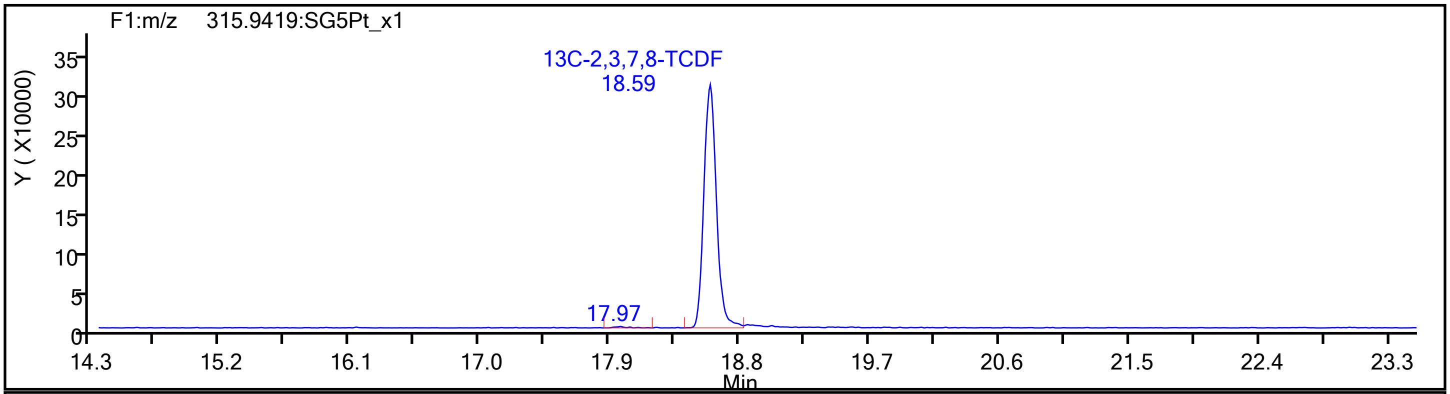

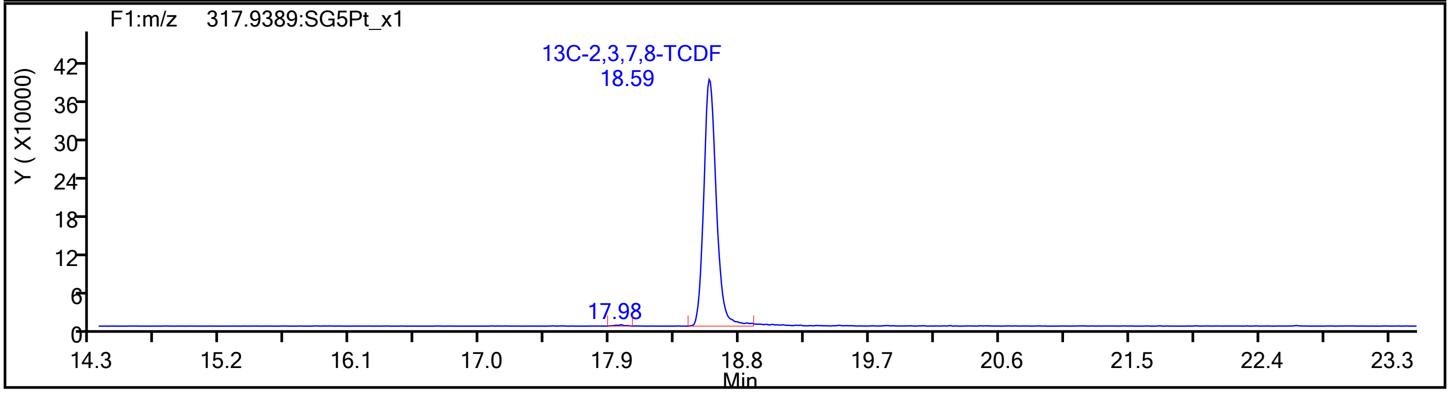

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-1mm
Worklist#: 469779
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

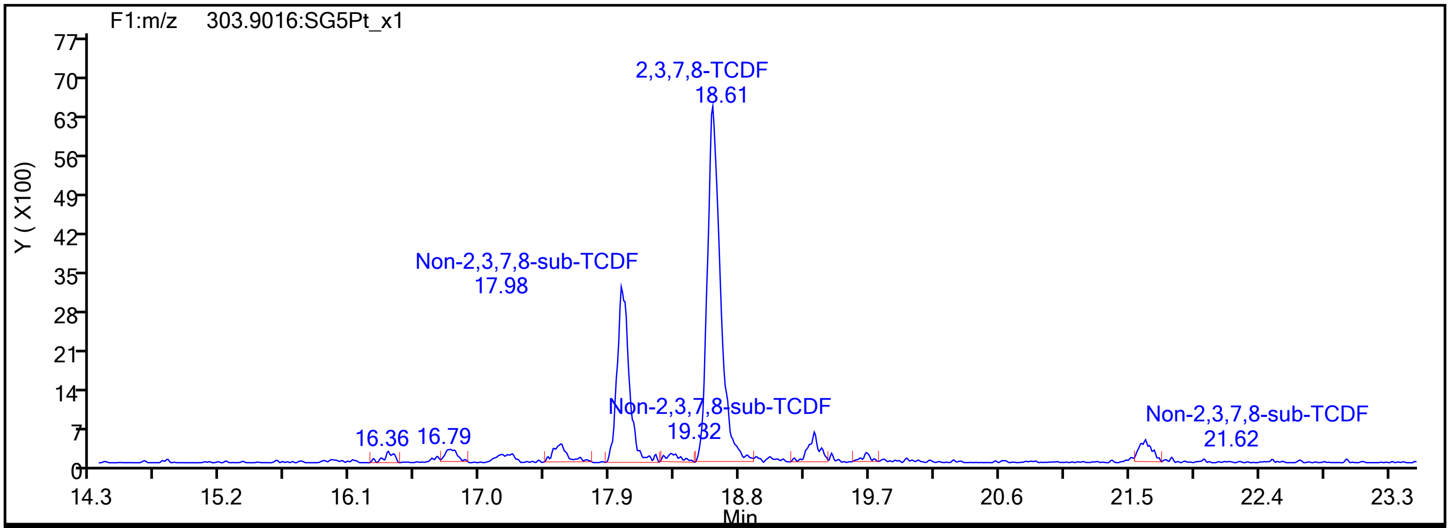

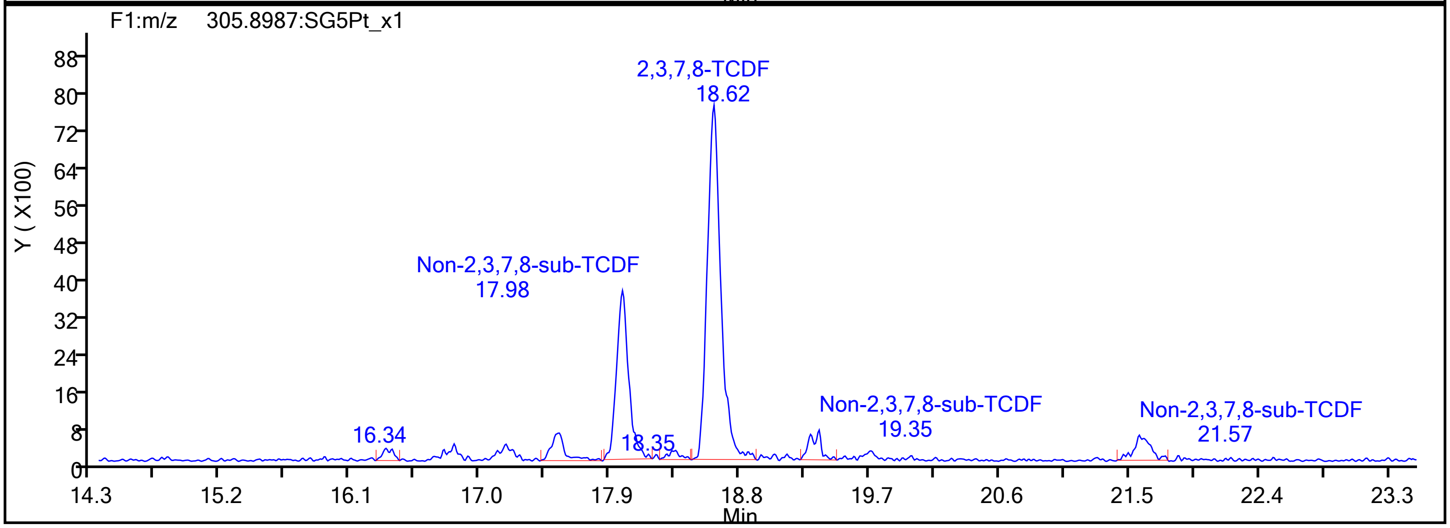

TCDF Interference Mass

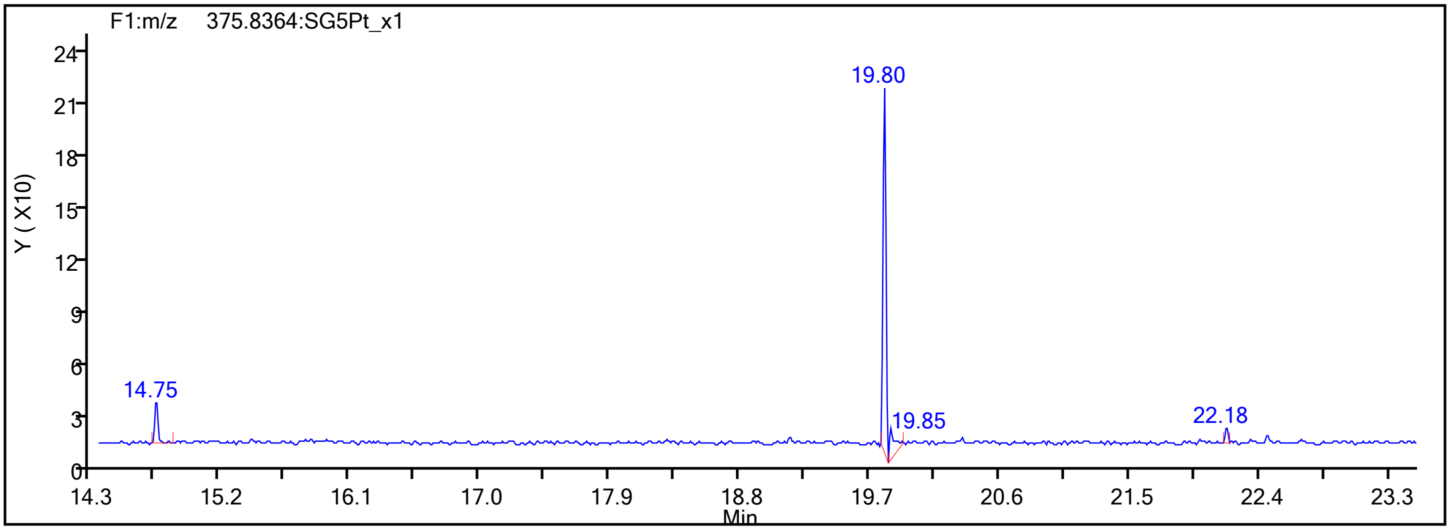

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Eurofins TestAmerica, Sacramento

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Column Type: DB-5
Column Dia: 0.32 mm

TCDD

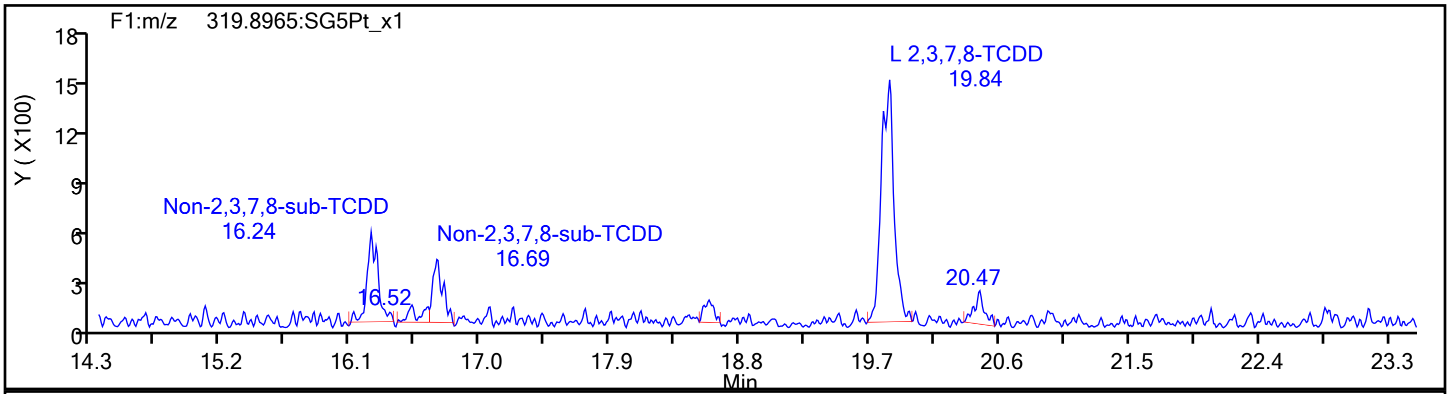

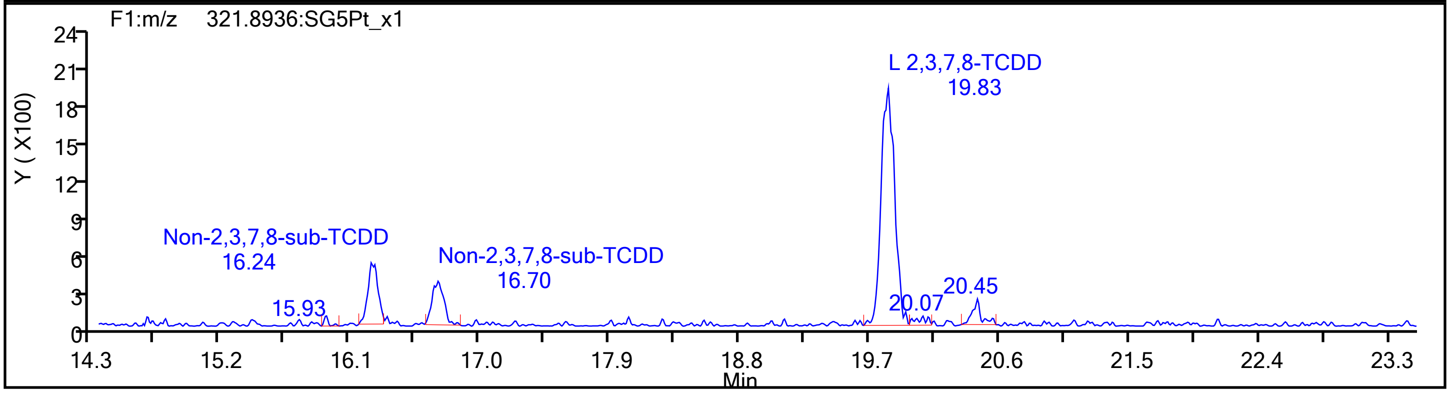

TCDD Standards

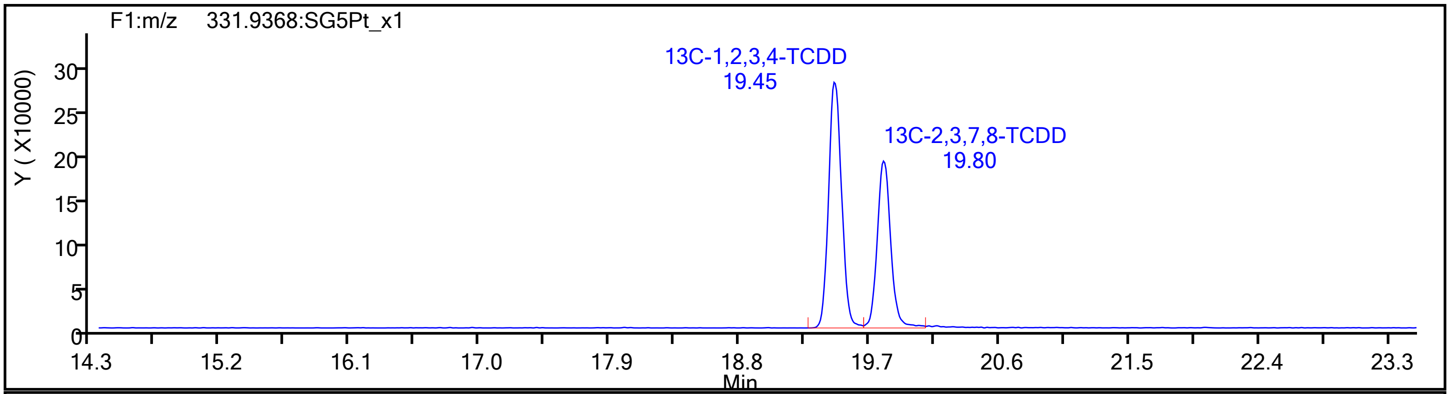

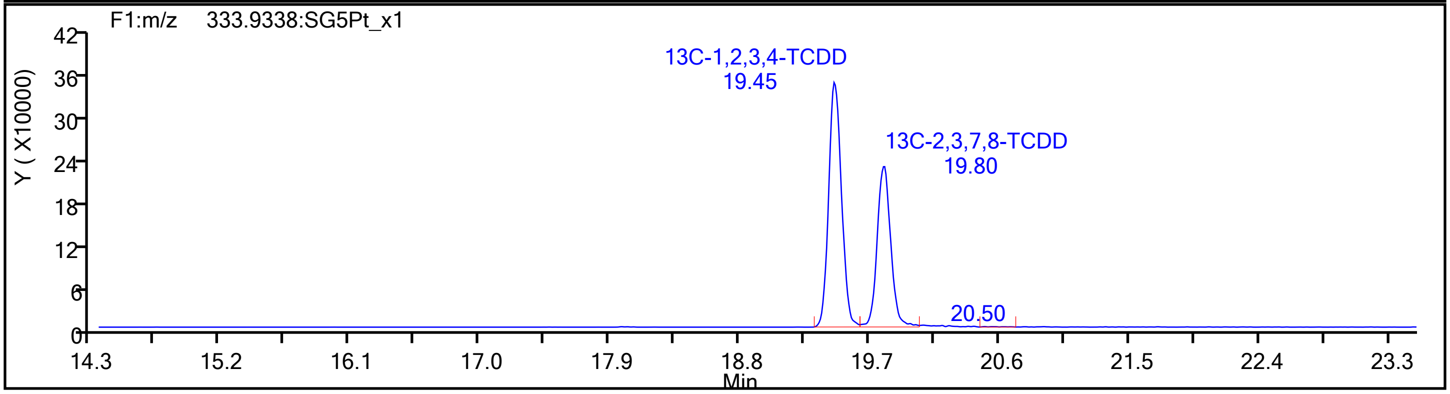

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Column Dia: 0.32 mm

37Cl4-TCDD

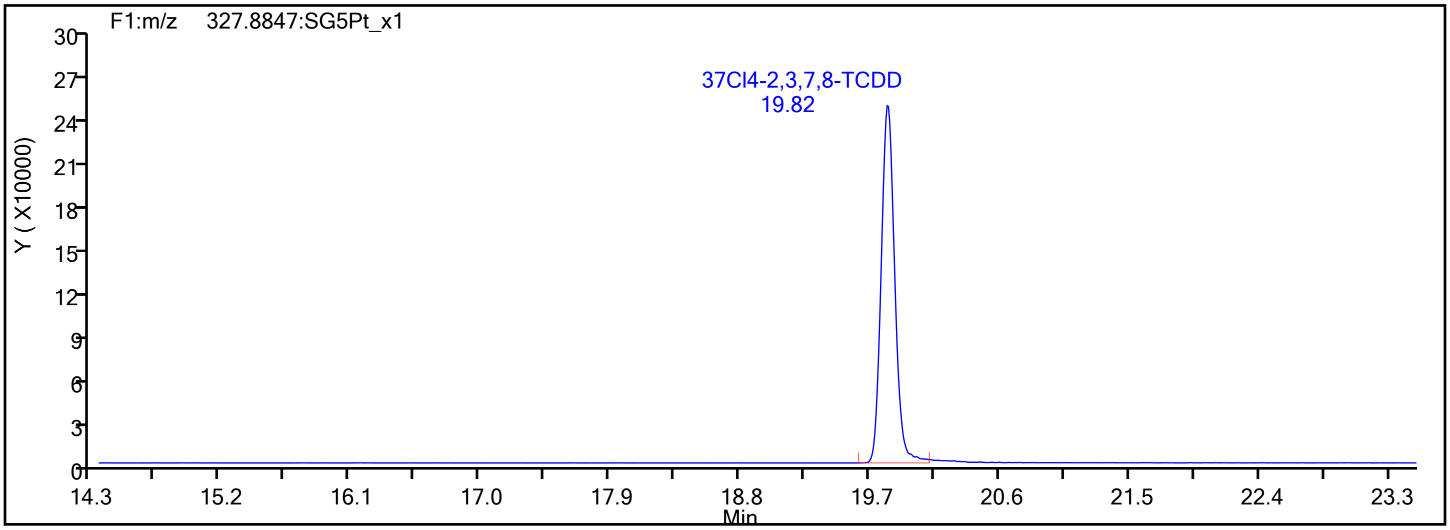

37Cl4-TCDD Standards

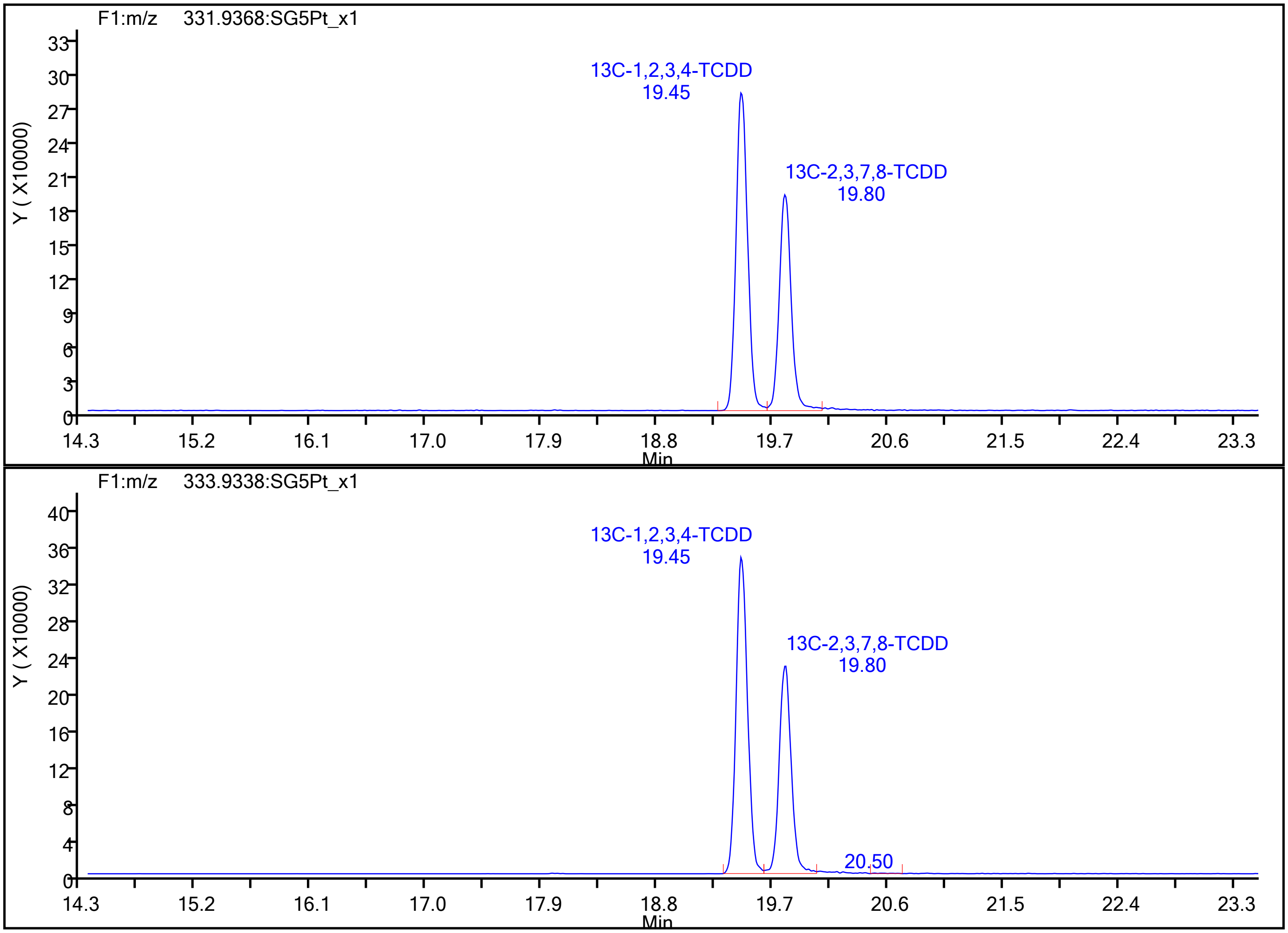

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

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Worklist#: 469779 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

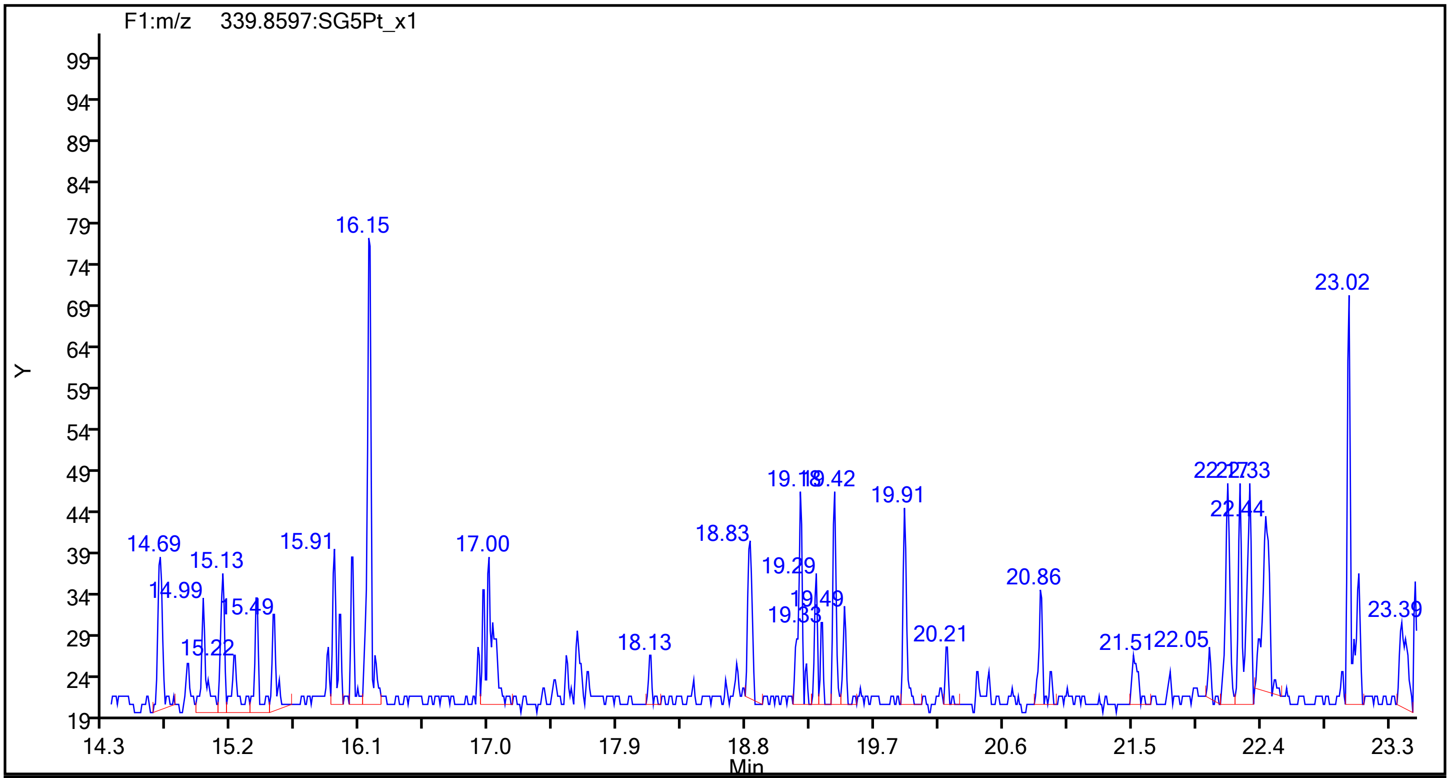

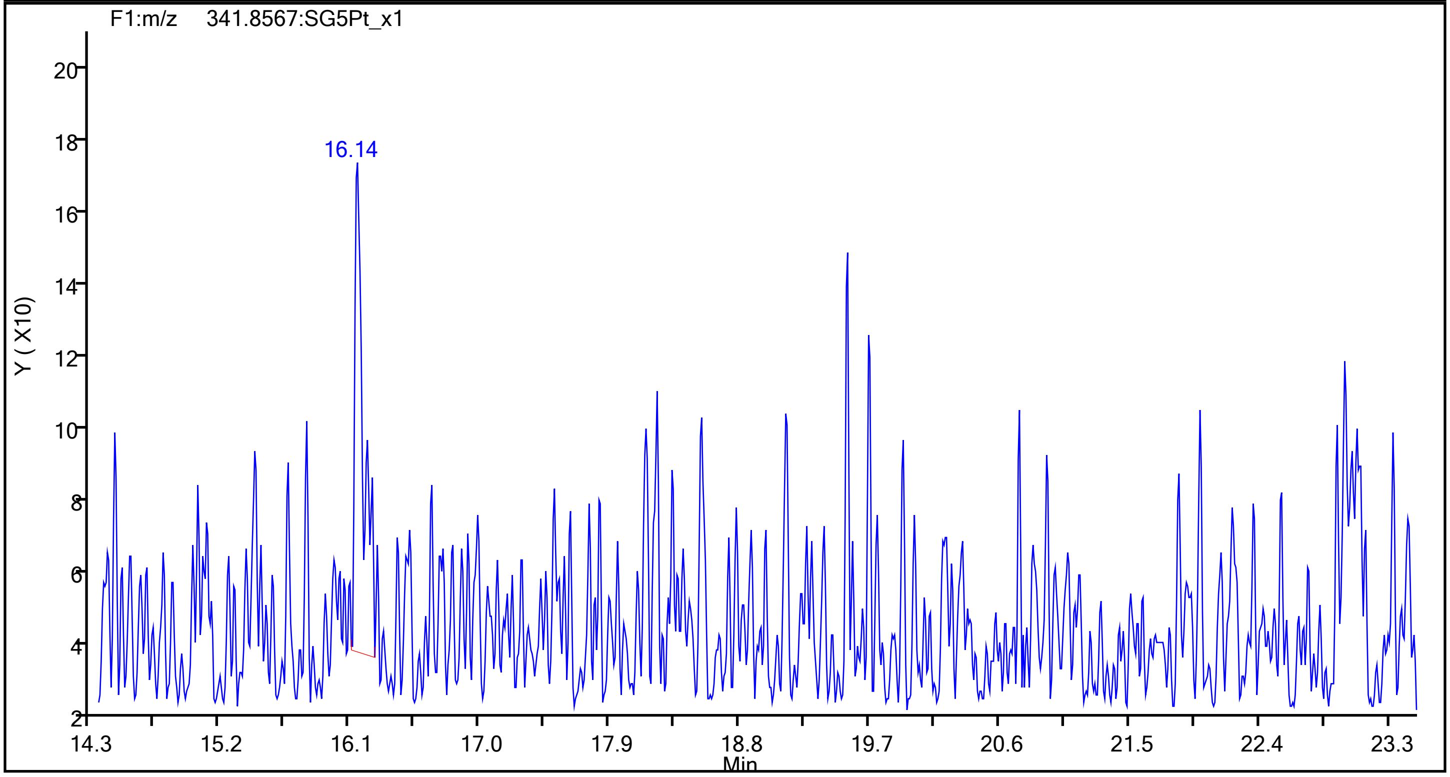

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Column Dia: 0.32 mm

F1 PeCDFs

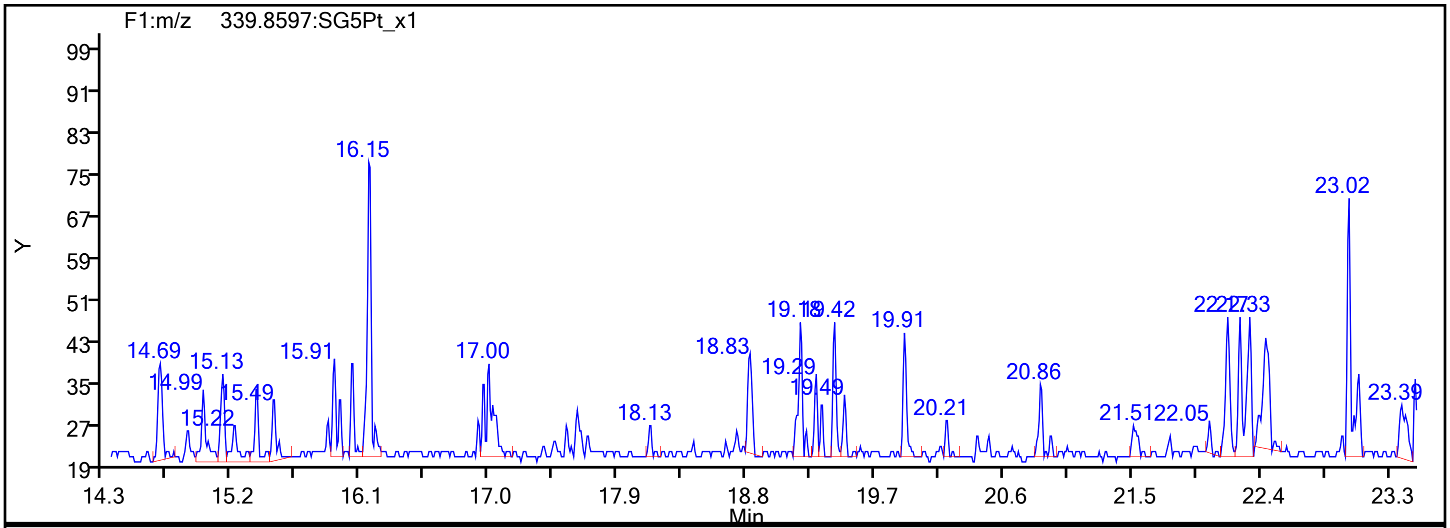

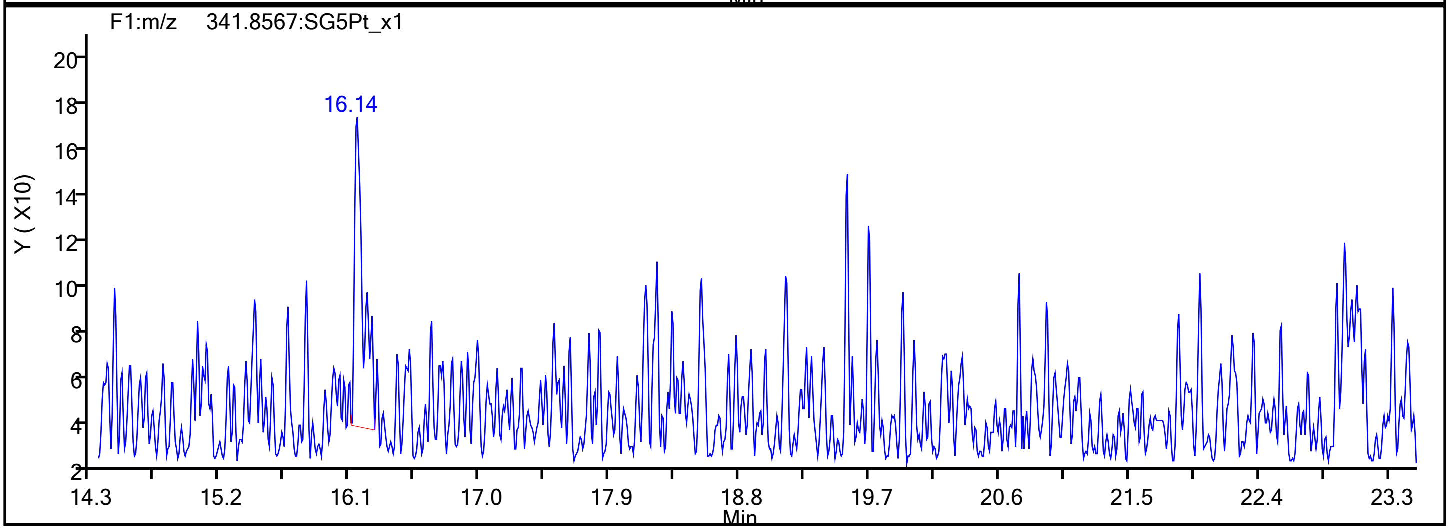

F1 PeCDFs Interference Mass

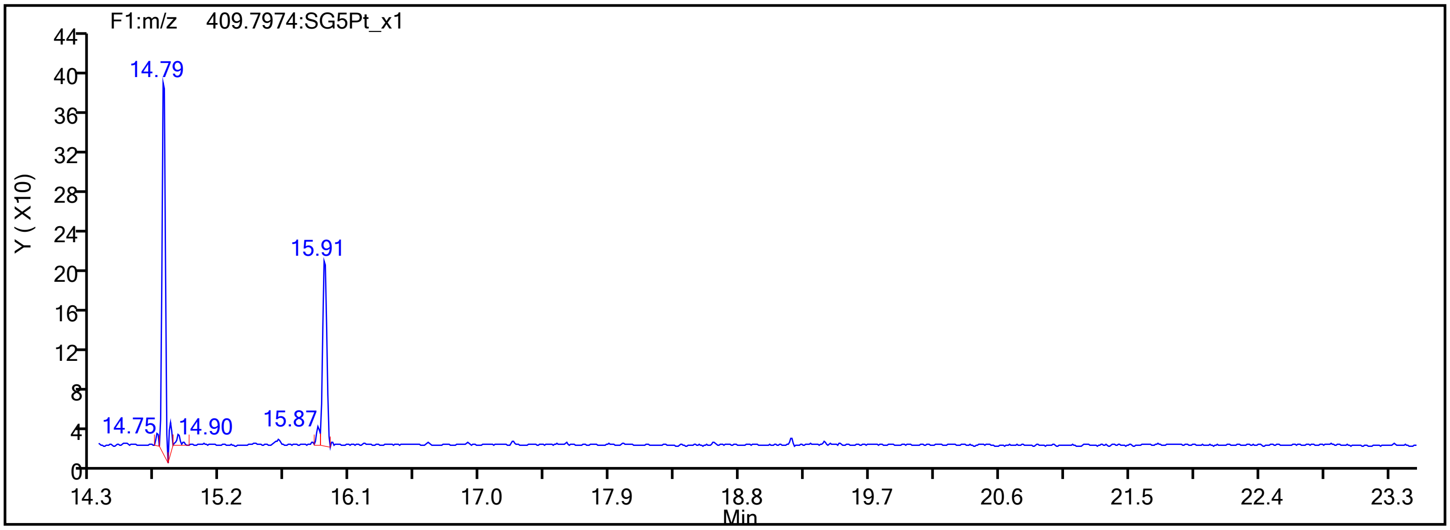

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Column Dia: 0.32 mm

PeCDF

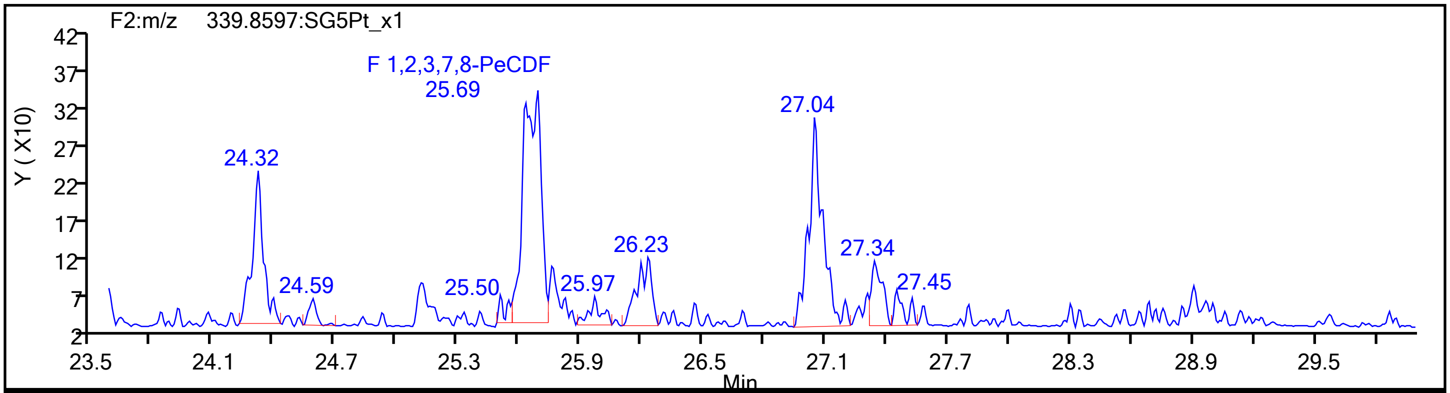

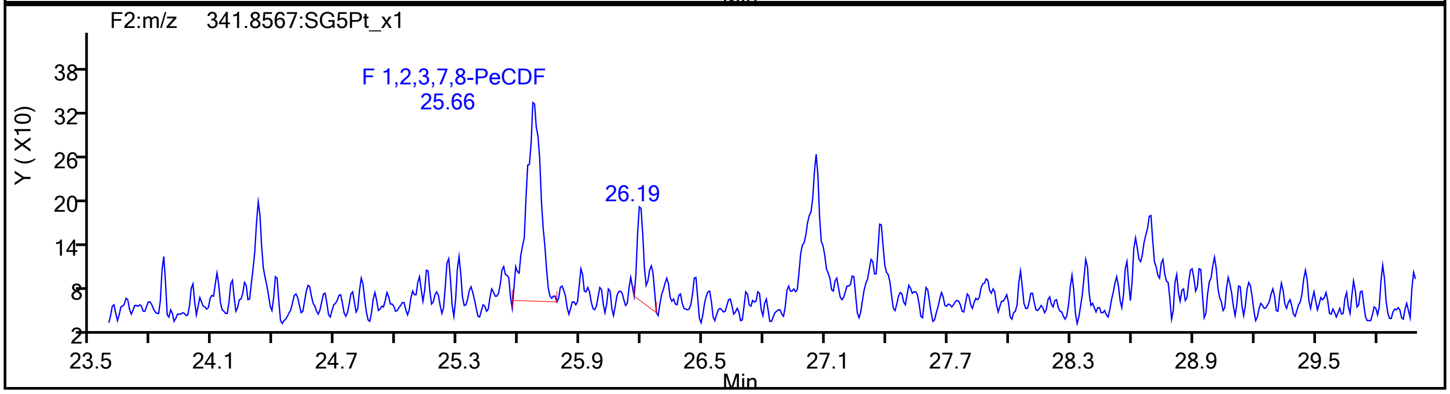

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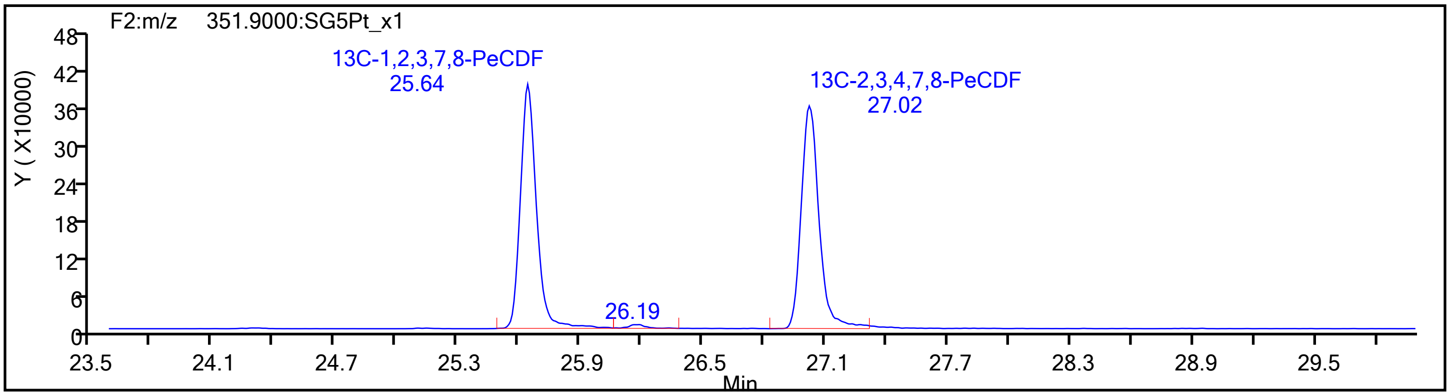

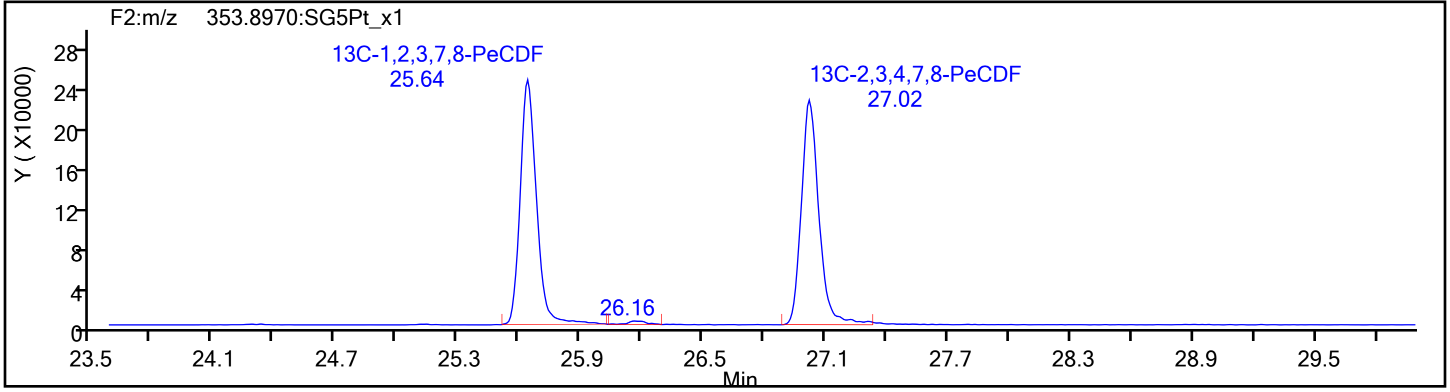

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PeCDF

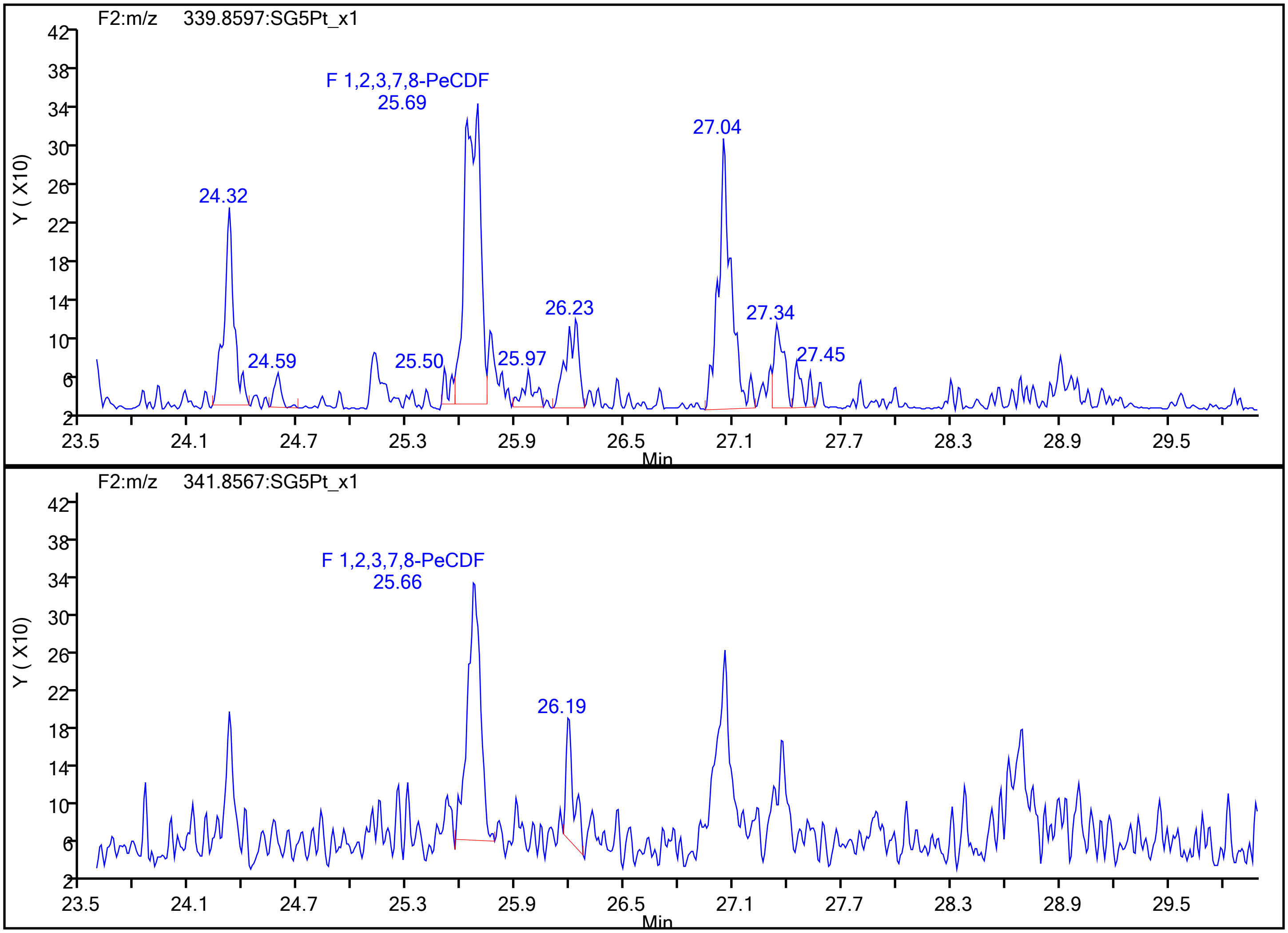

PeCDF Interference Mass

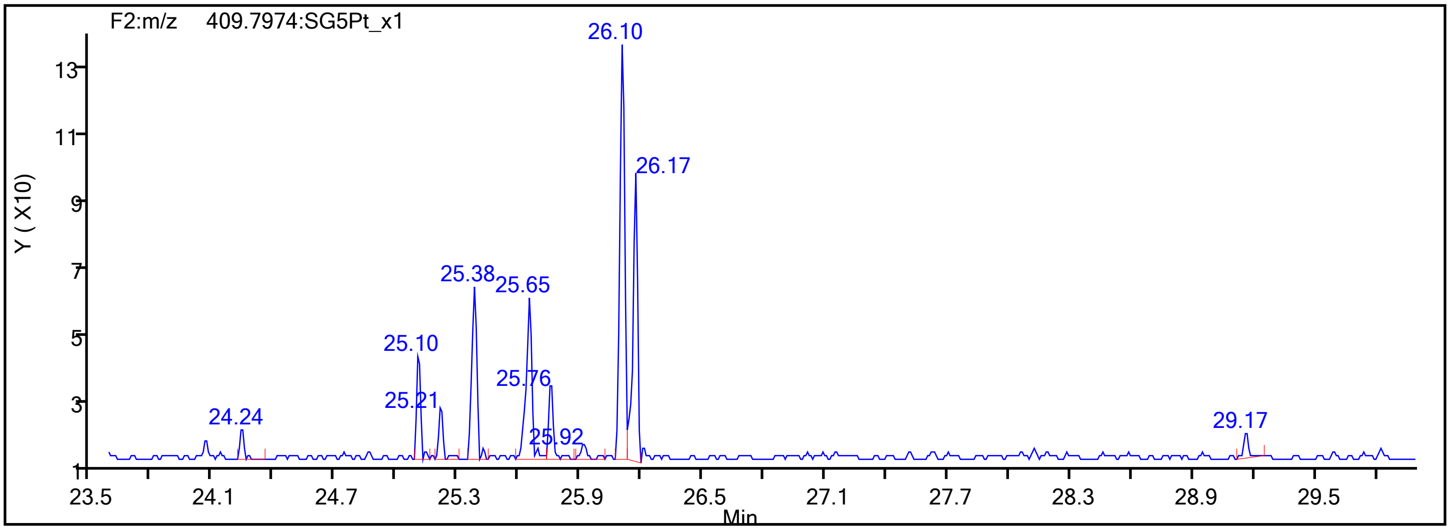

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Eurofins TestAmerica, Sacramento

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PeCDD

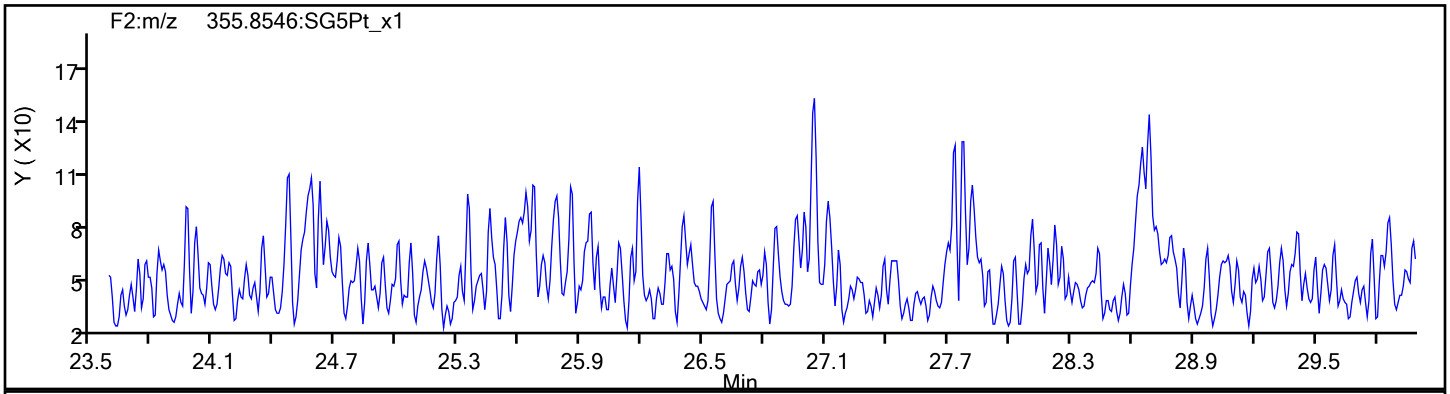

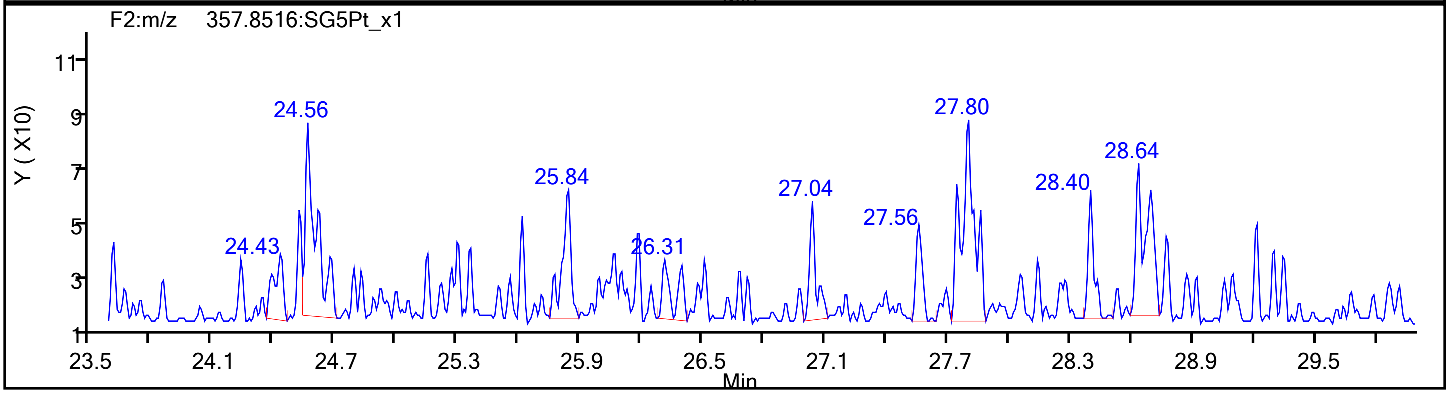

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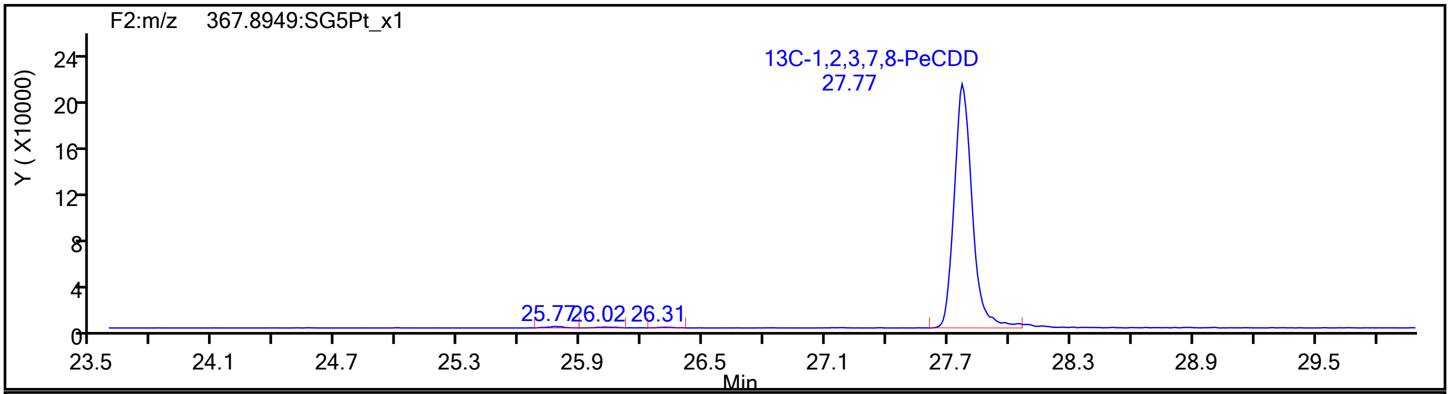

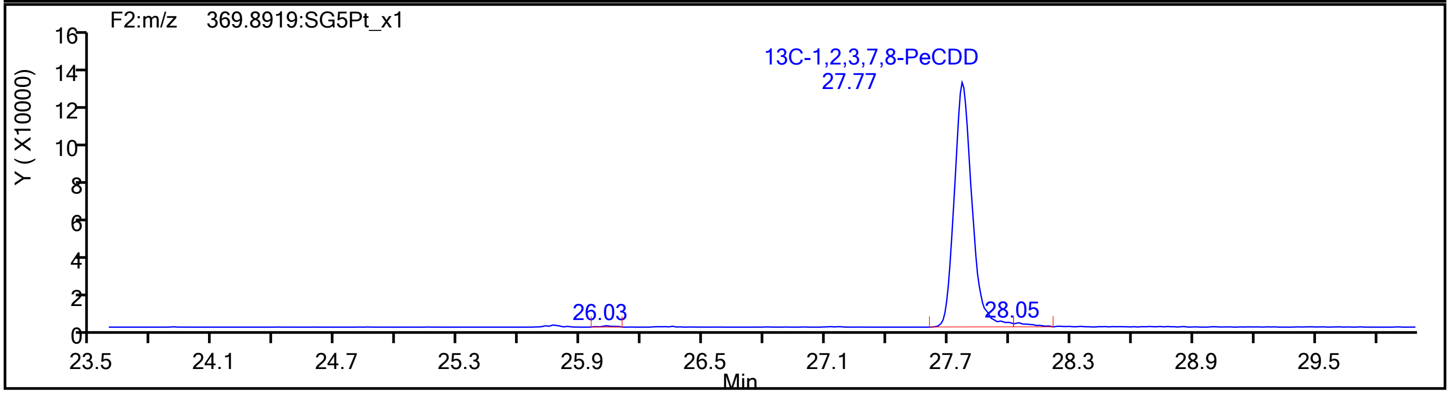

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HxCDF

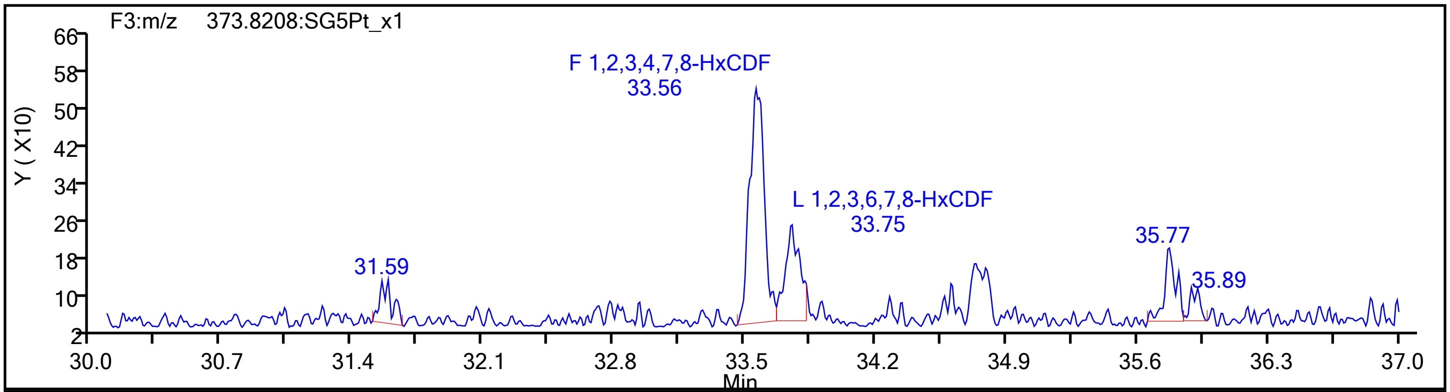

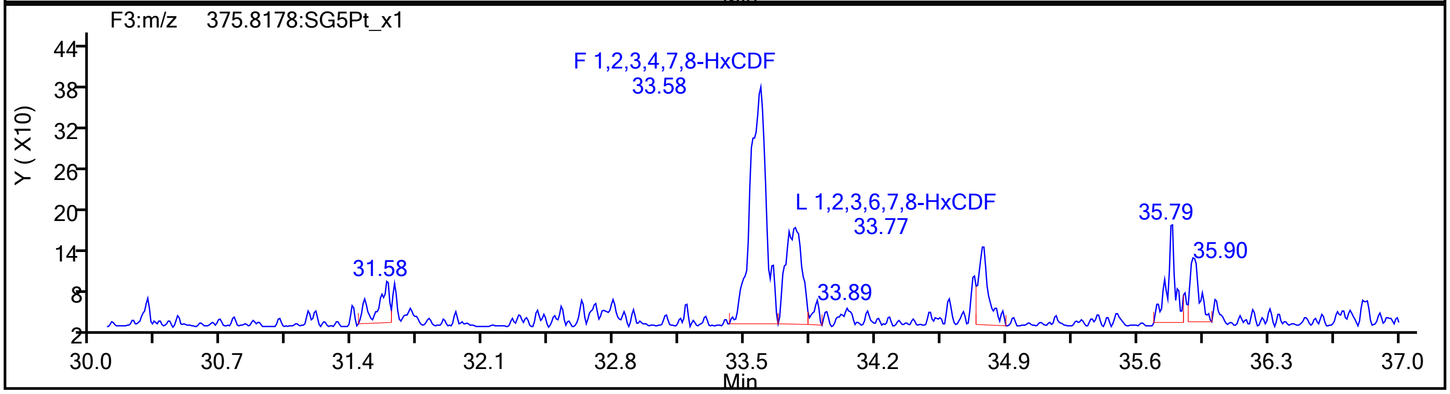

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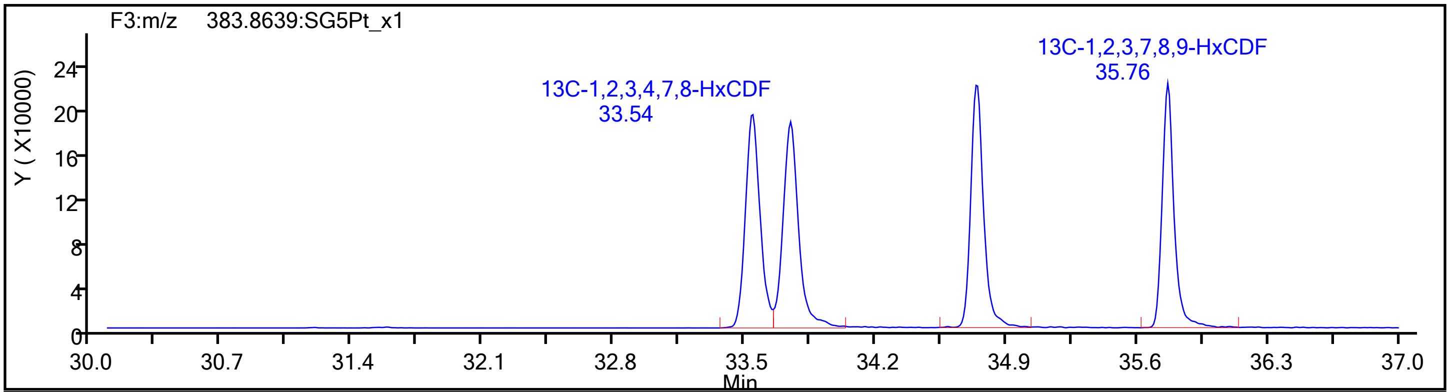

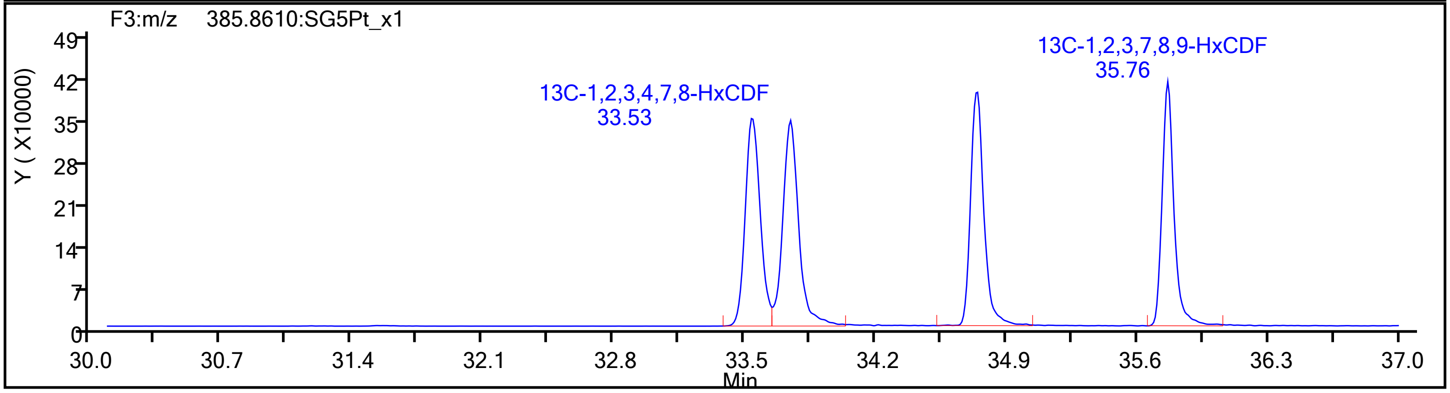

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Worklist#: 469779
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Column Dia: 0.32 mm

HxCDF

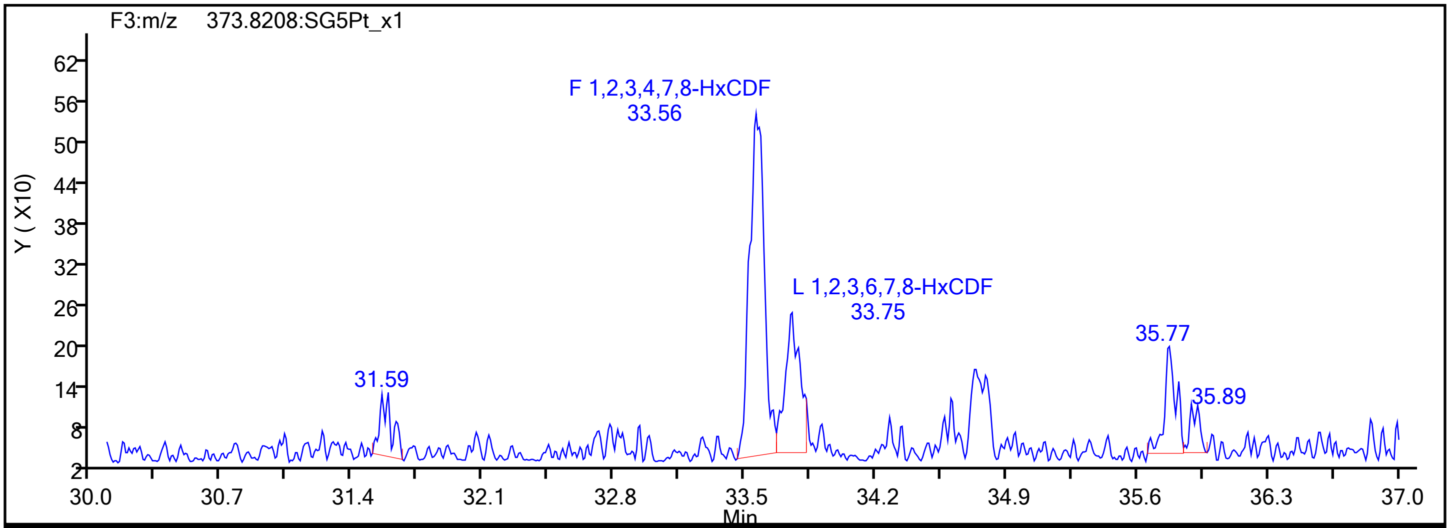

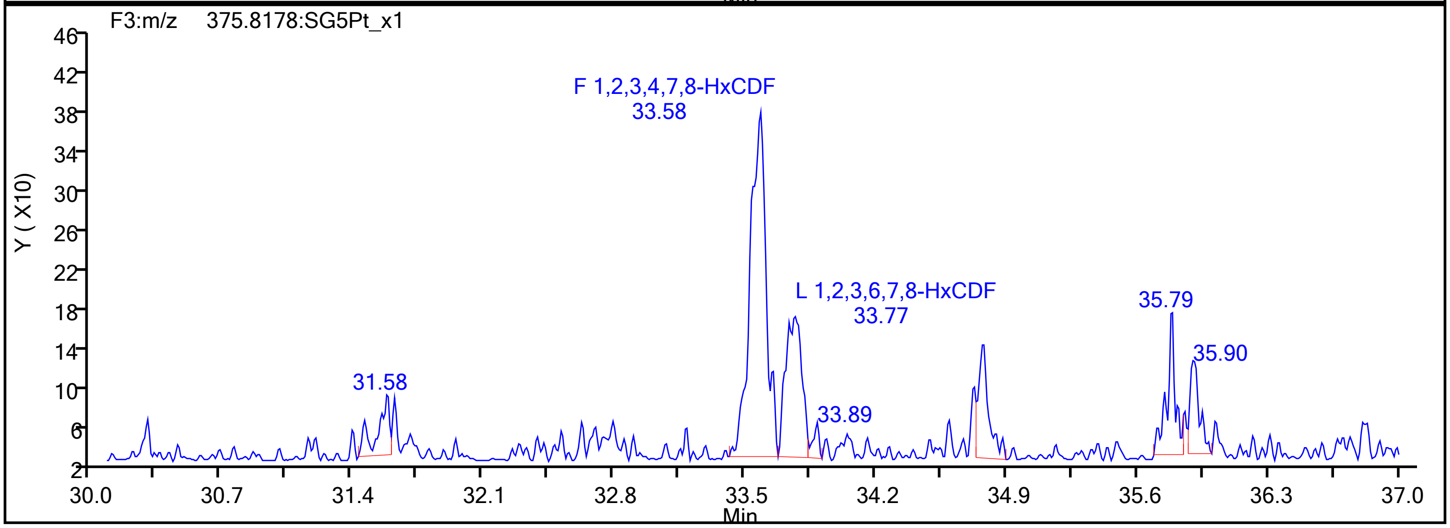

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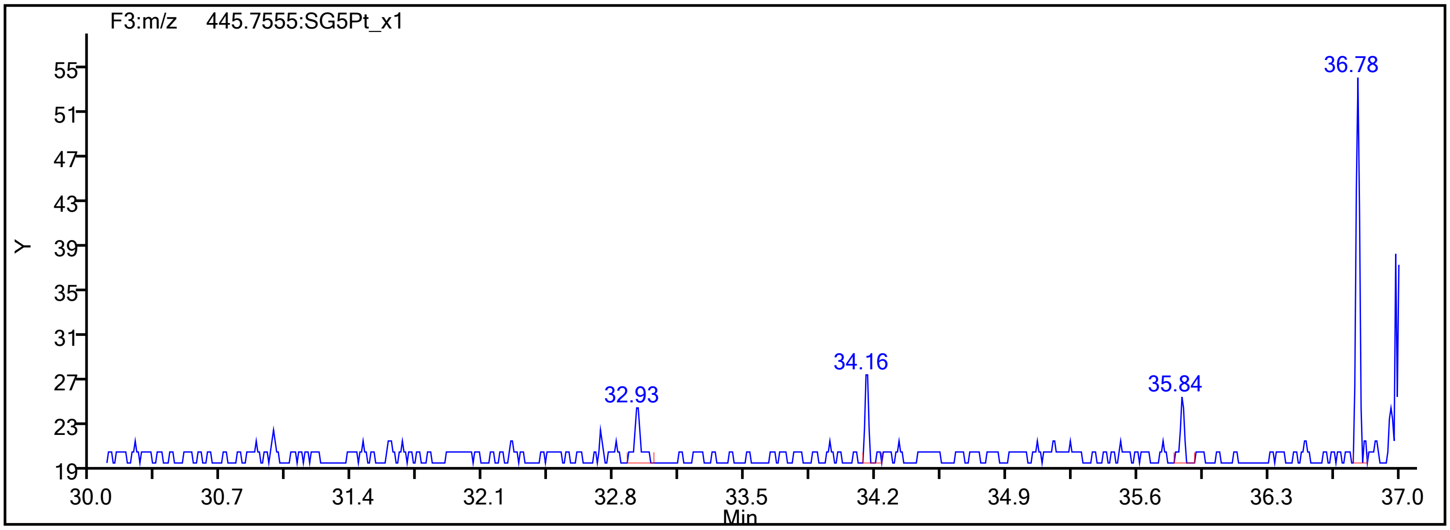

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HxCDD

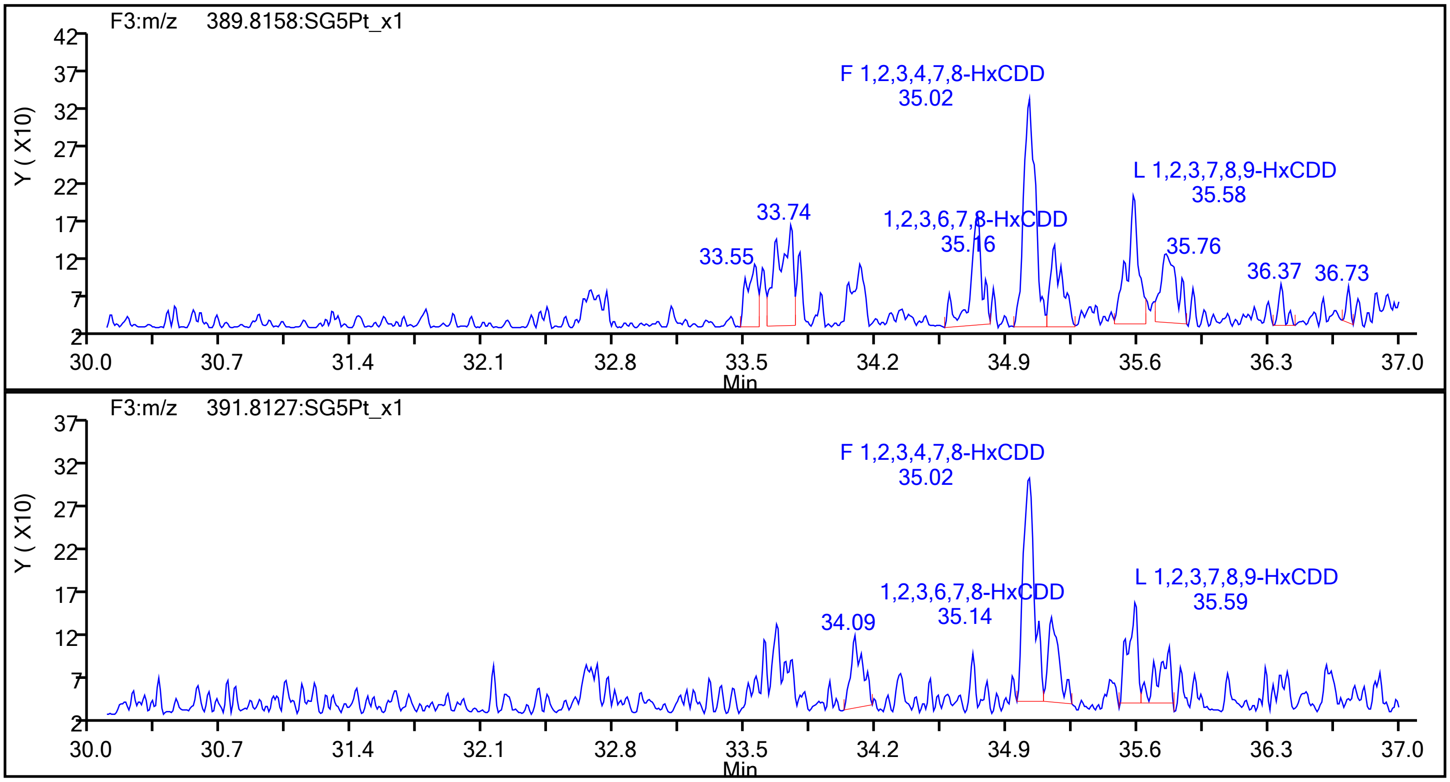

HxCDD Standards

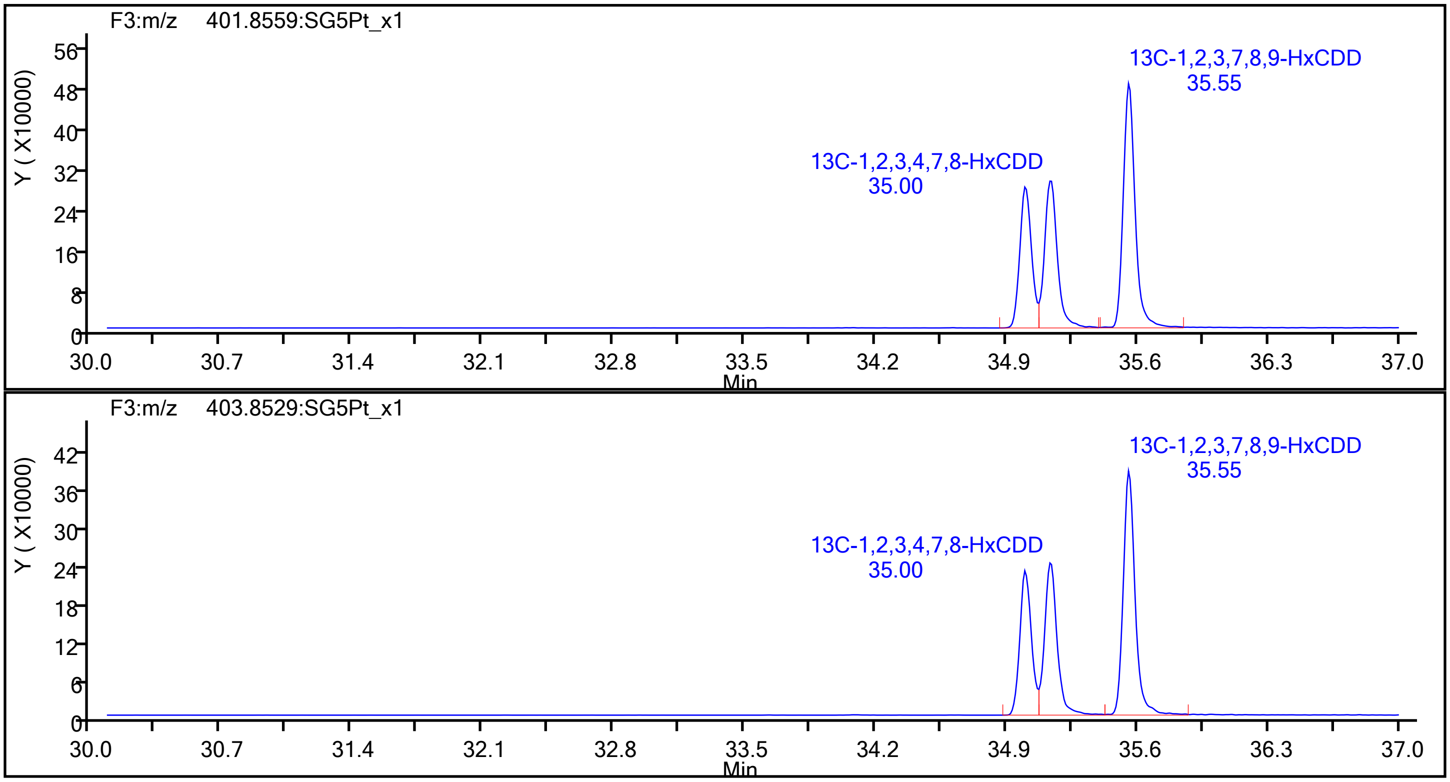

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Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 13:45:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-1mm

Worklist#: 469779

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

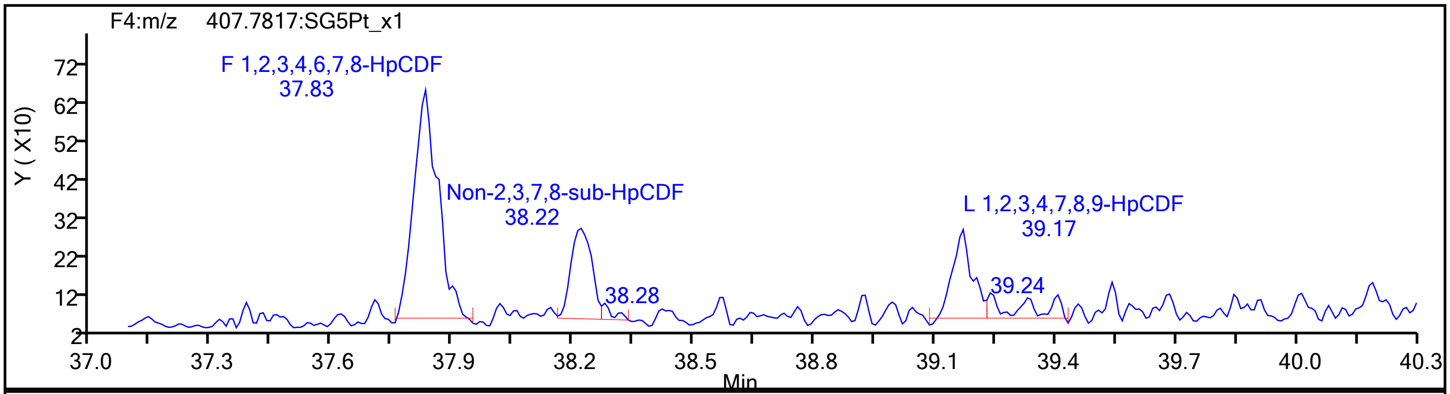

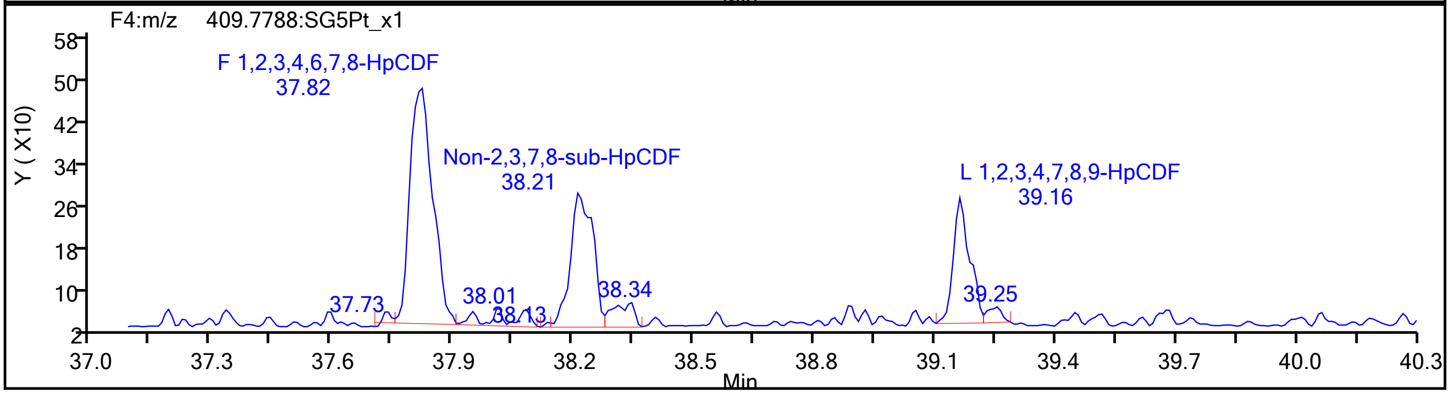

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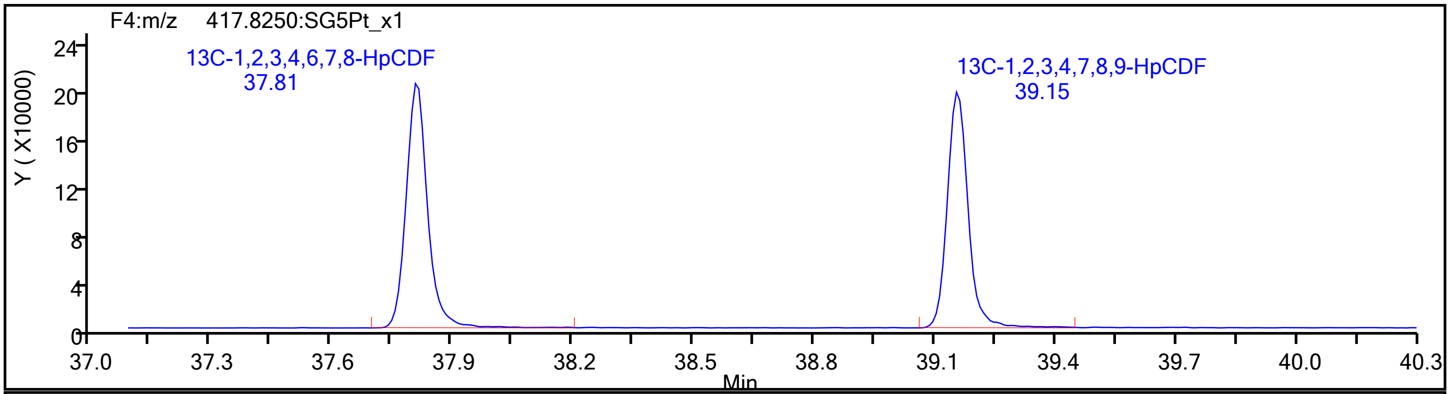

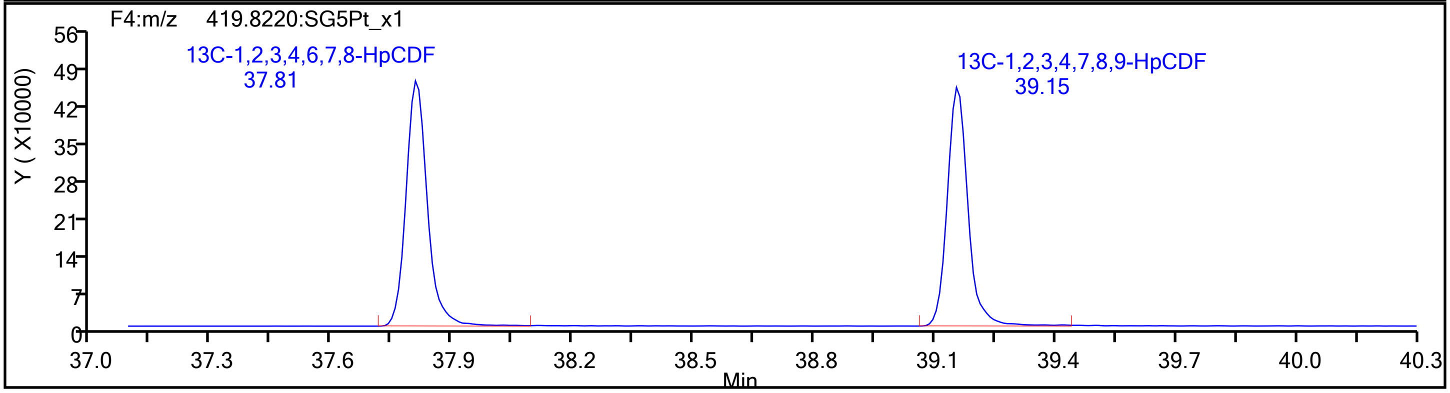

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

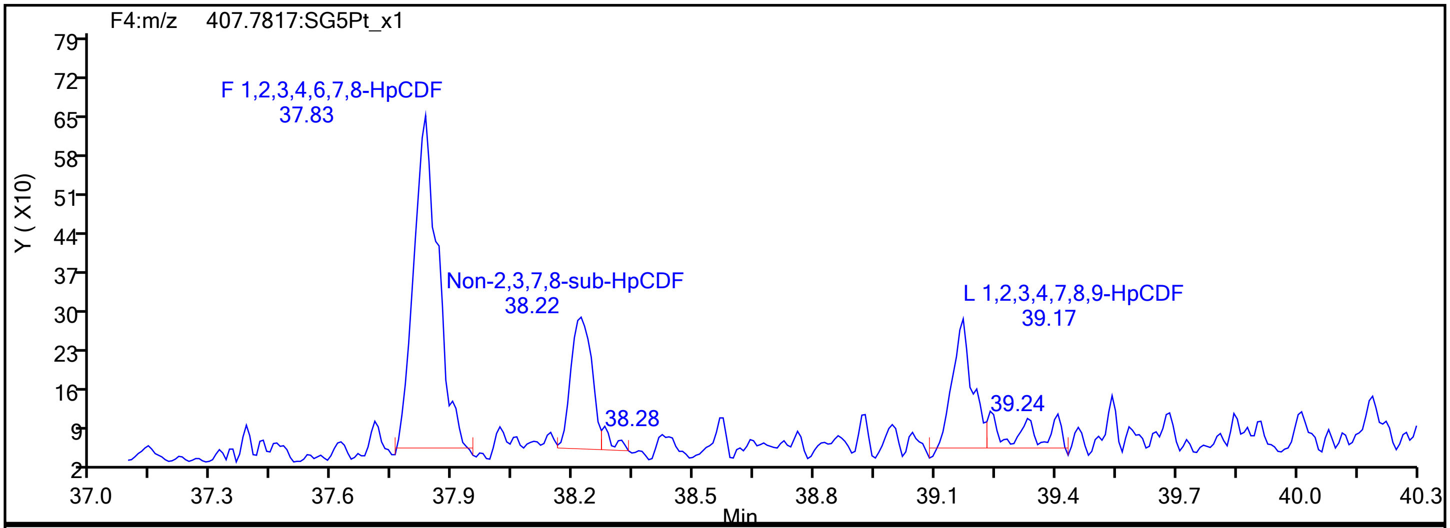

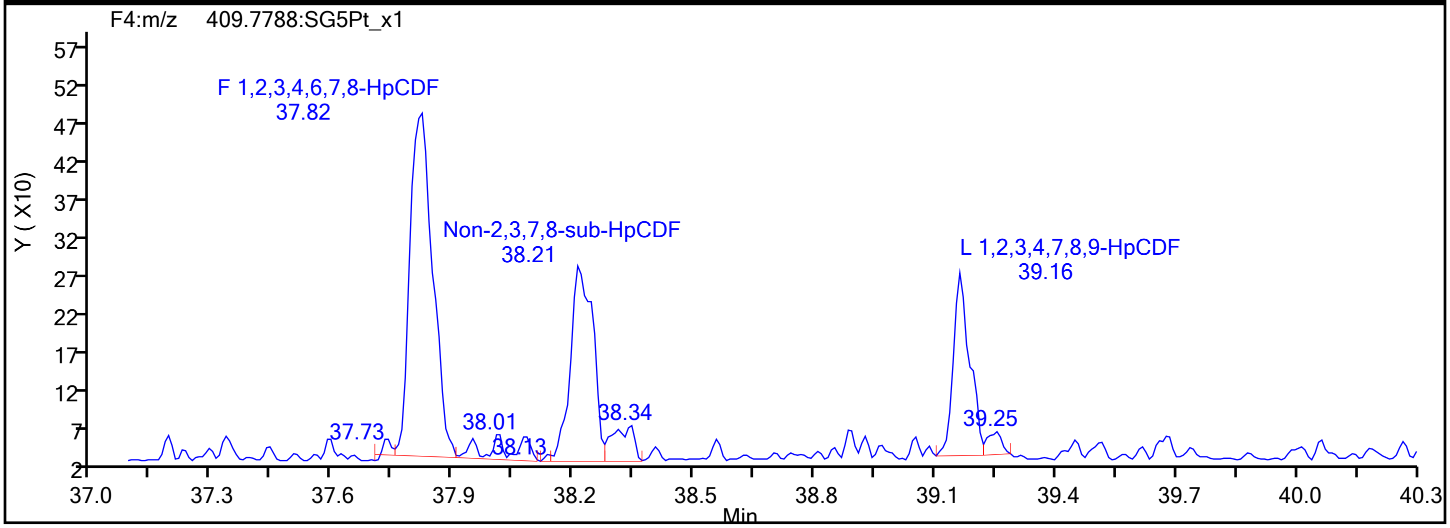

HpCDF Interference Mass

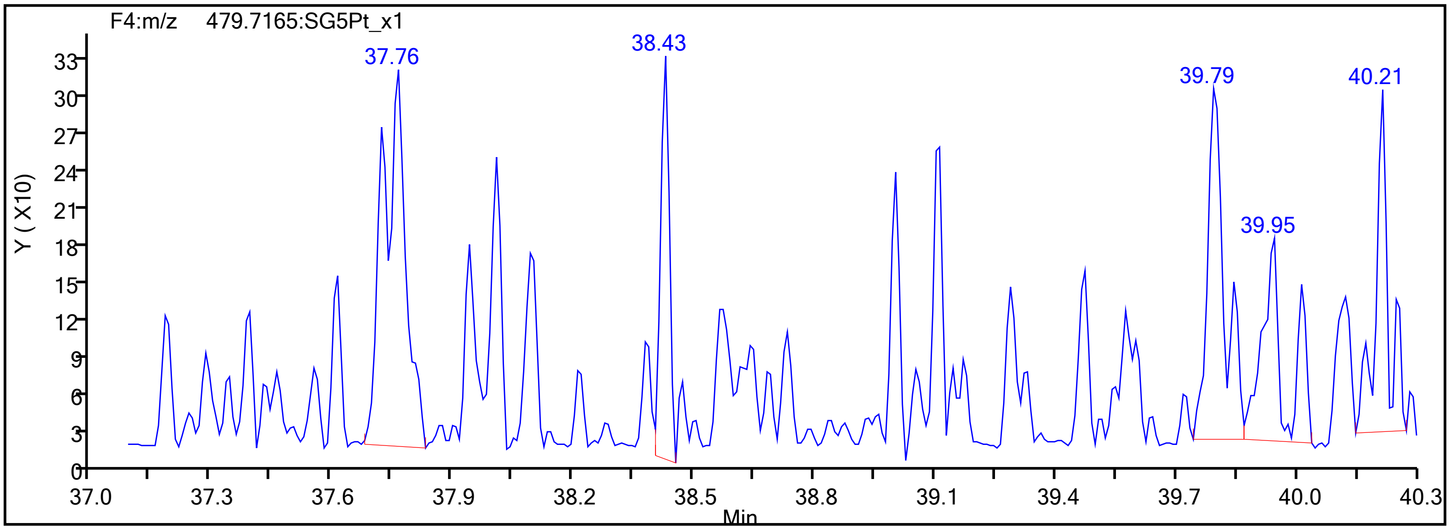

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HpCDD

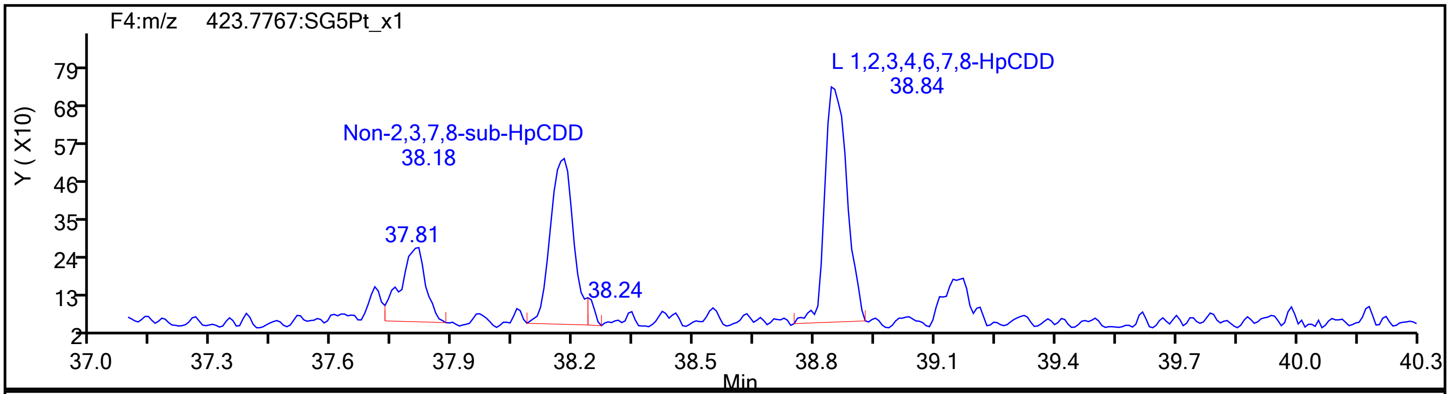

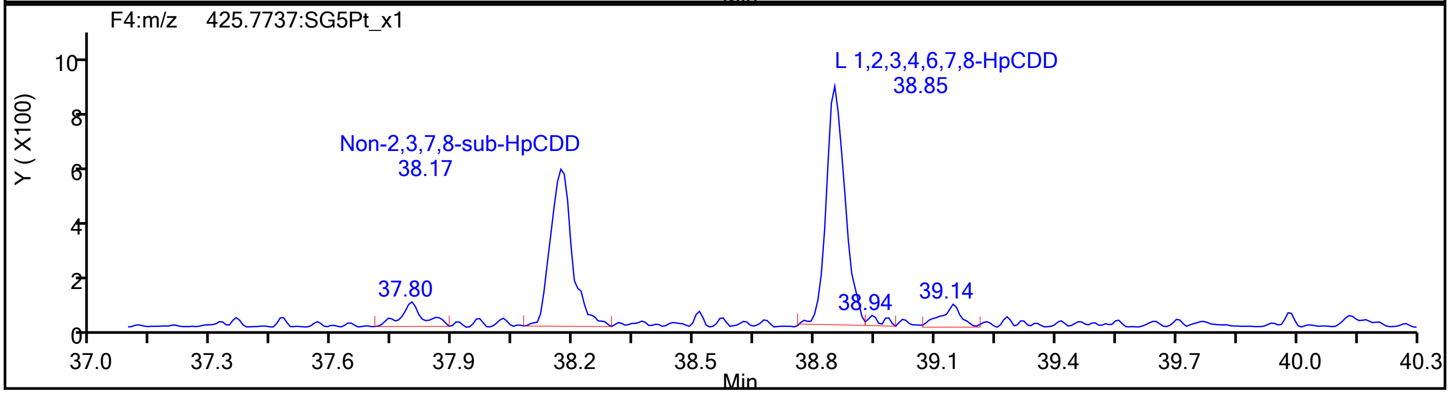

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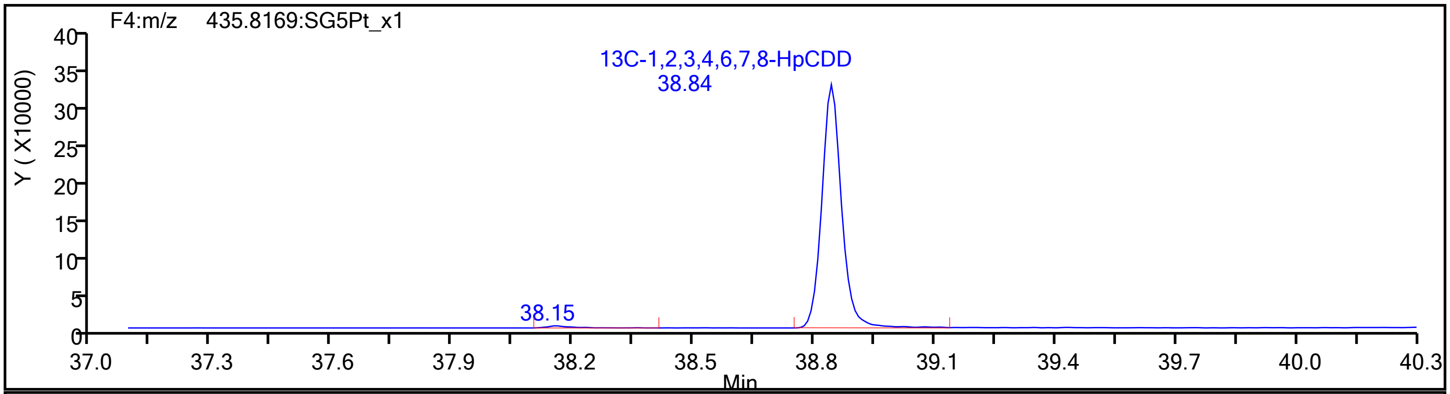

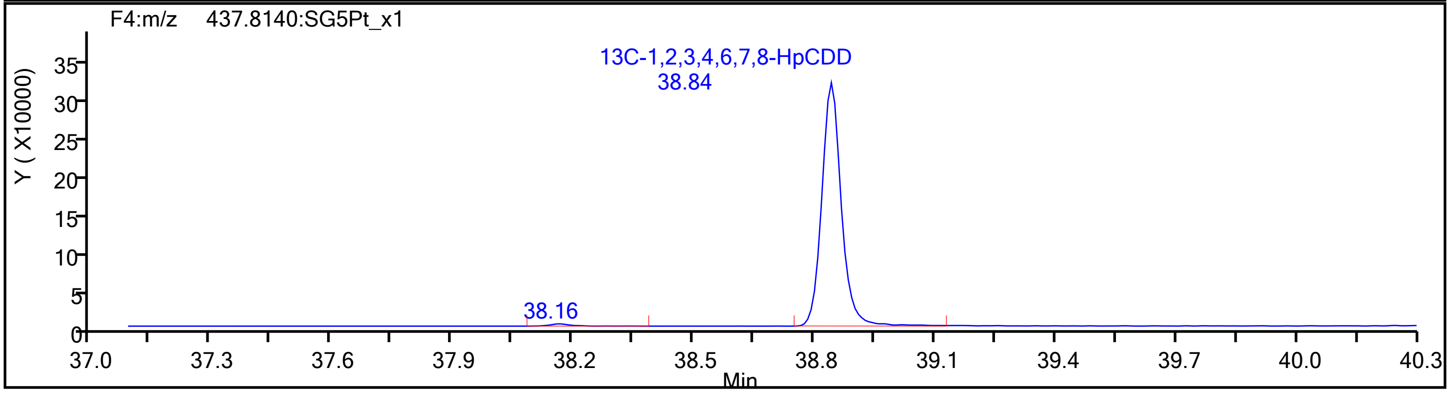

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Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

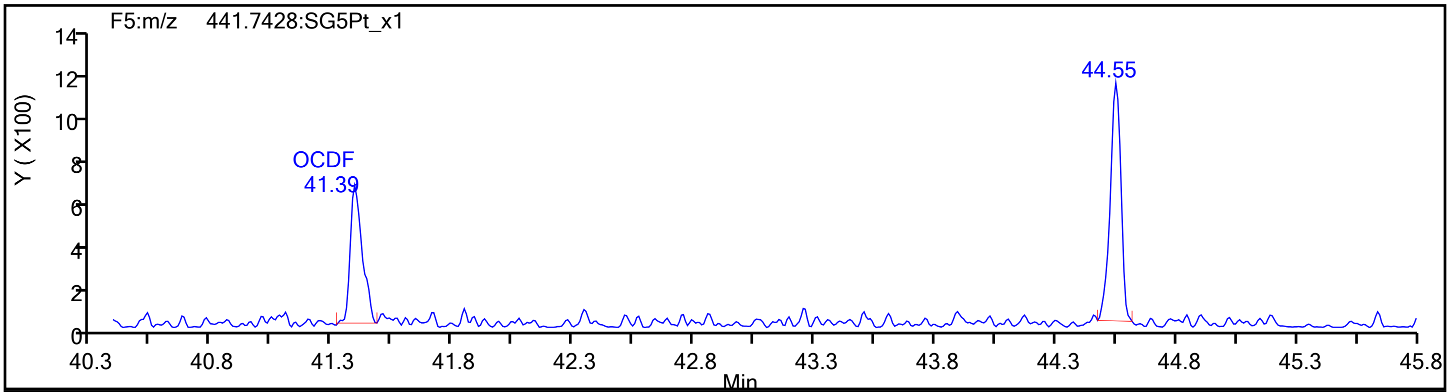

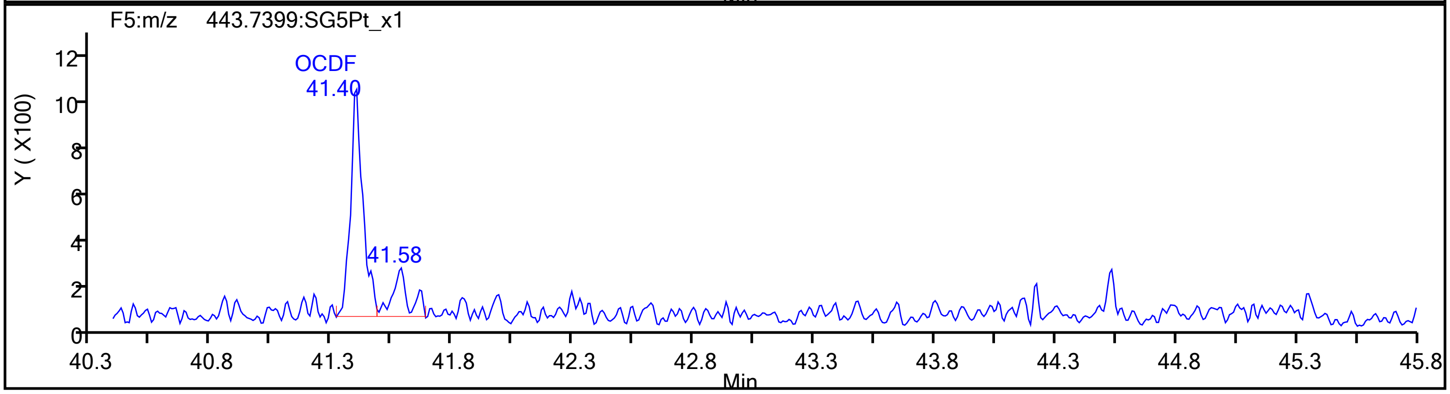

OCDF Standards

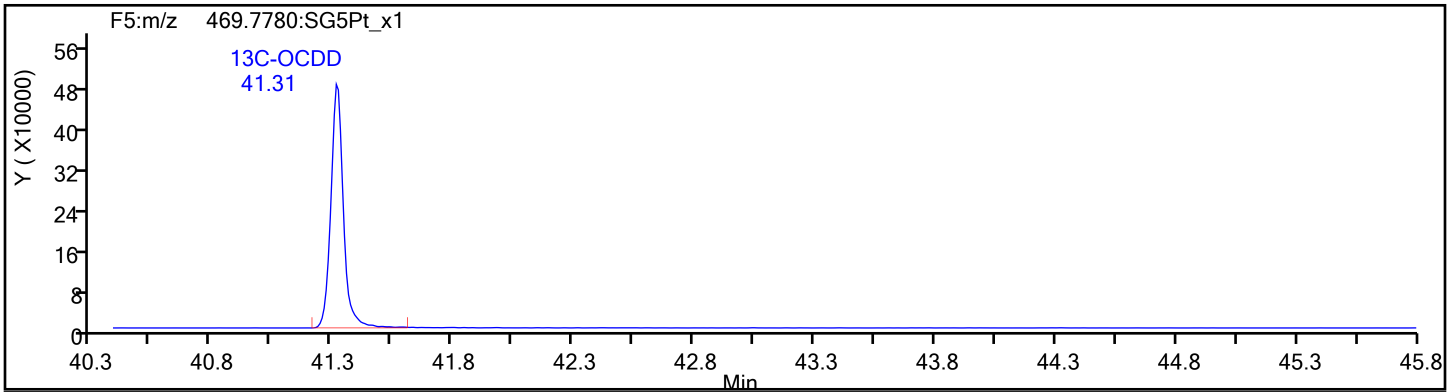

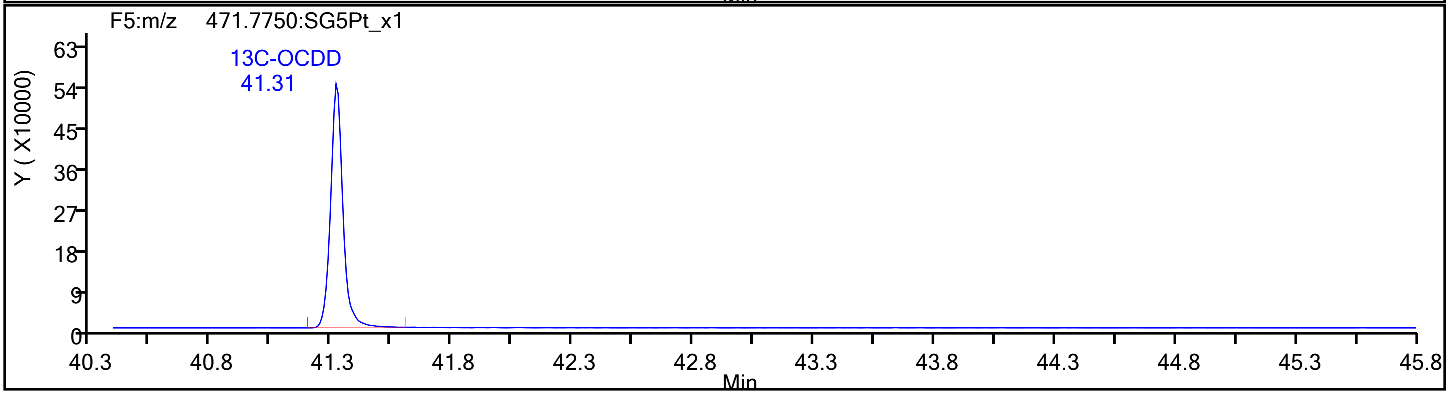

Report Date: 16-Mar-2021 09:25:44 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

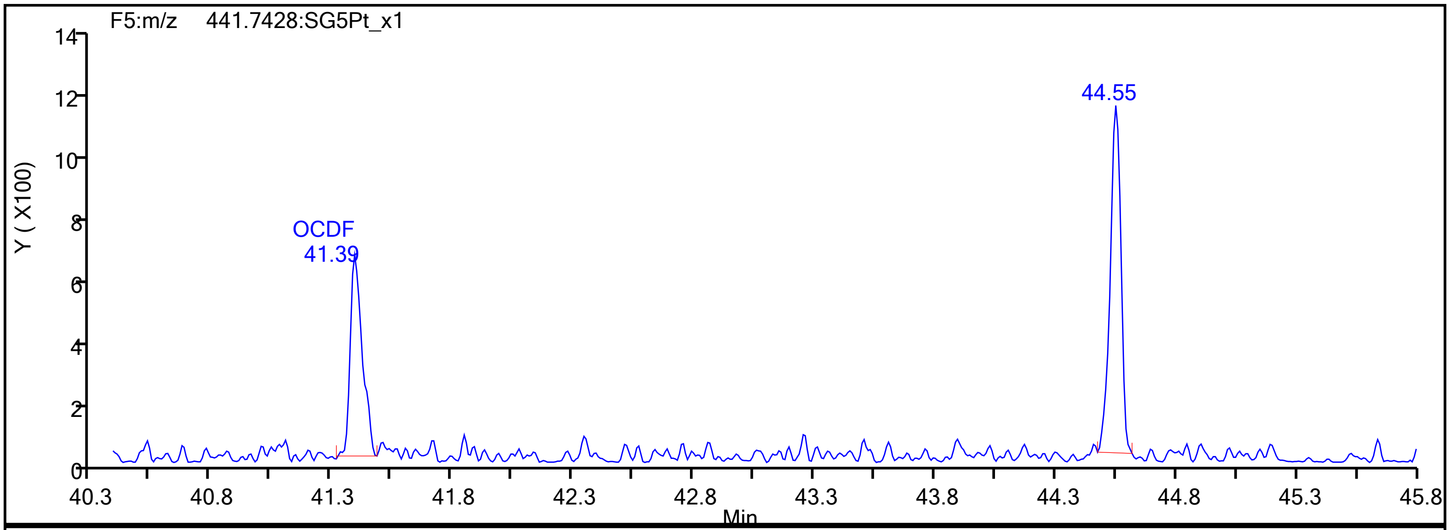

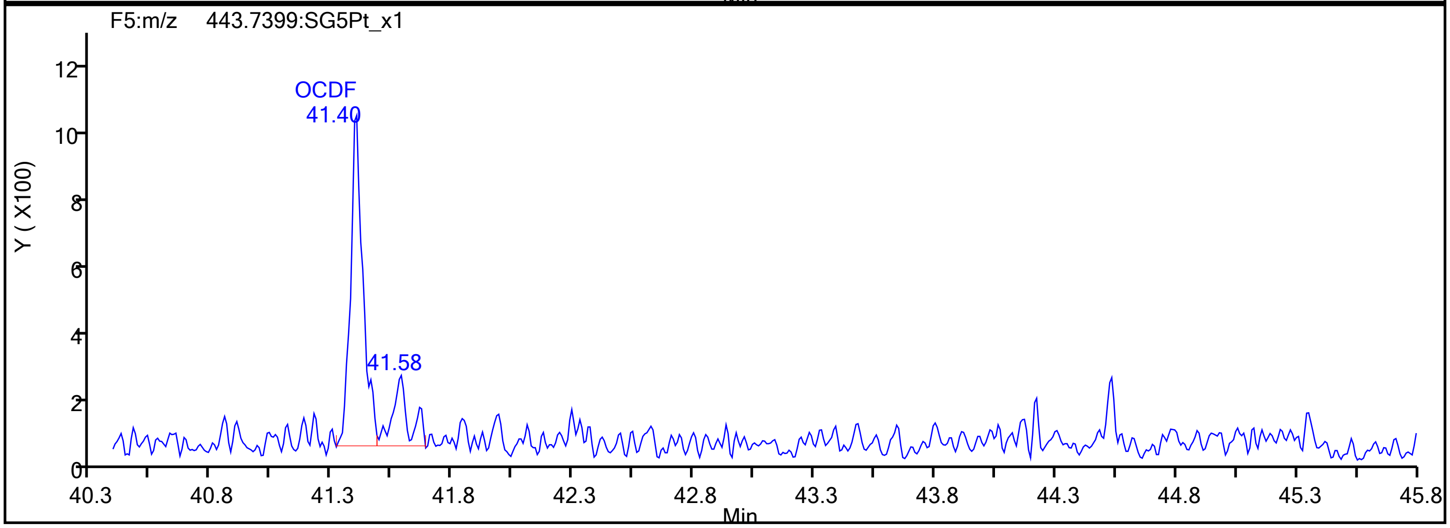

OCDF Interference Mass

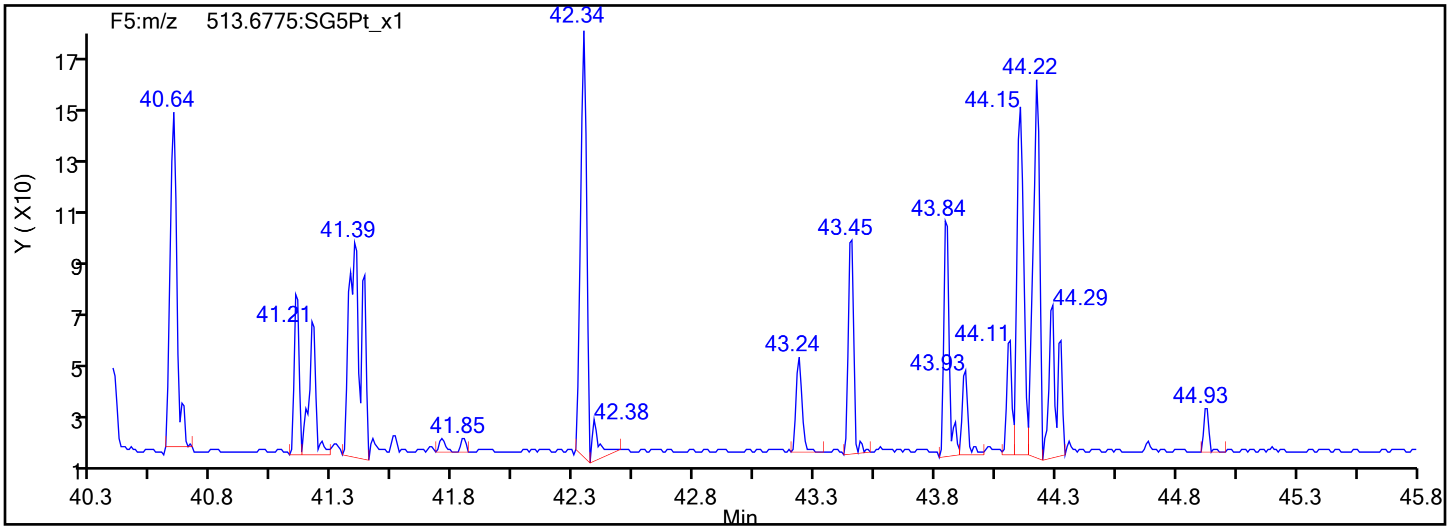

Report Date: 16-Mar-2021 09:25:44 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

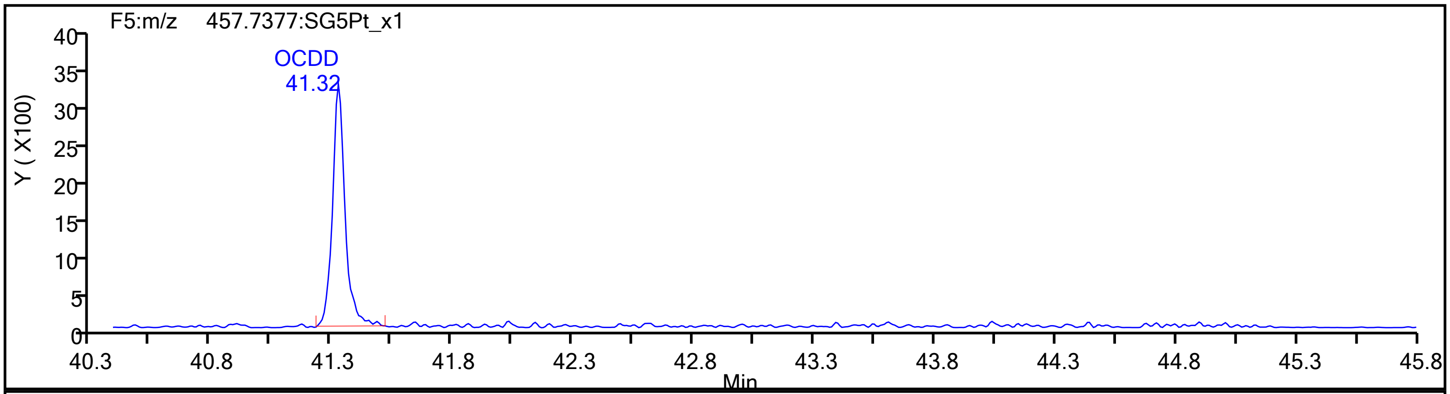

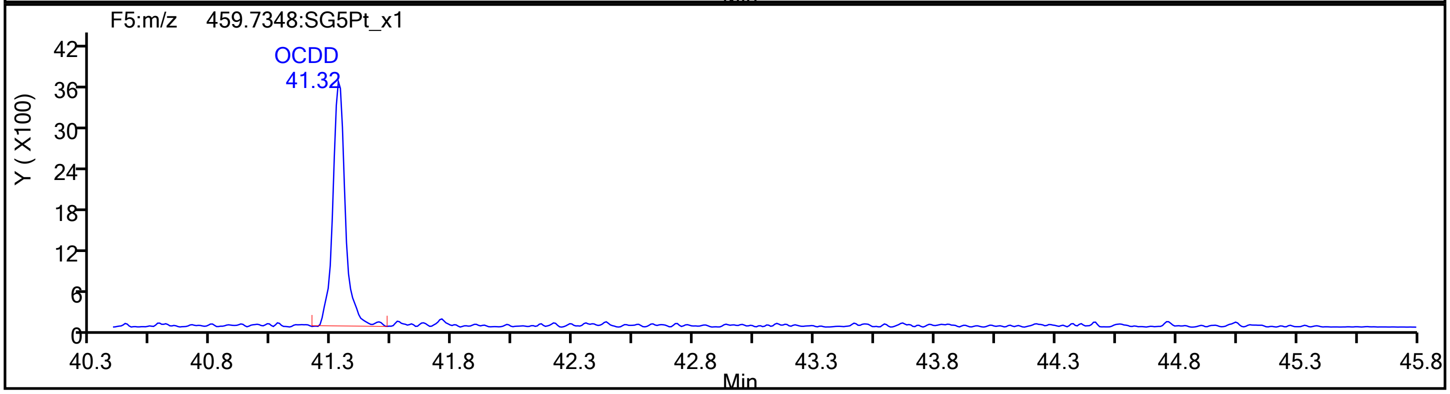

OCDD Standards

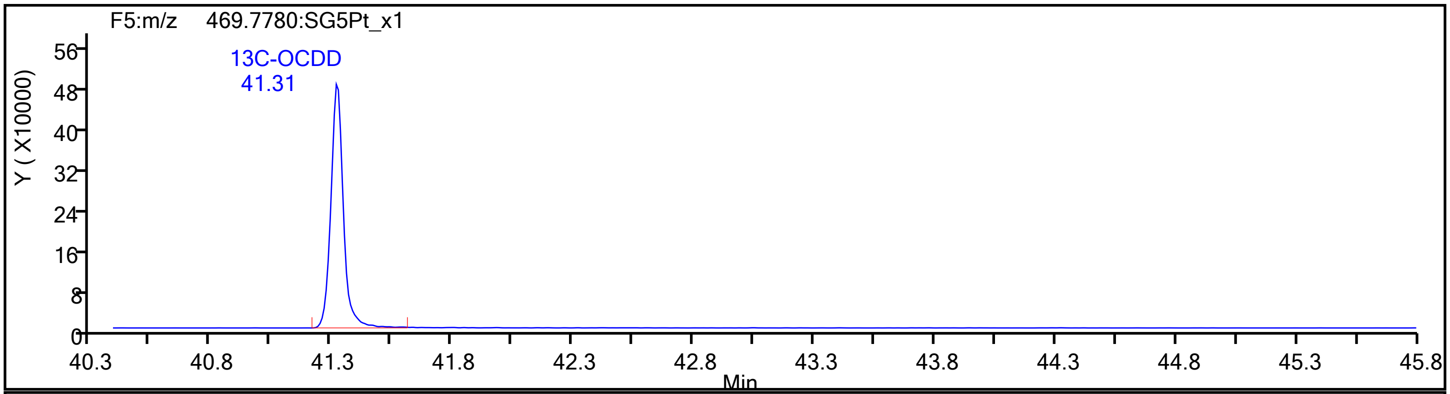

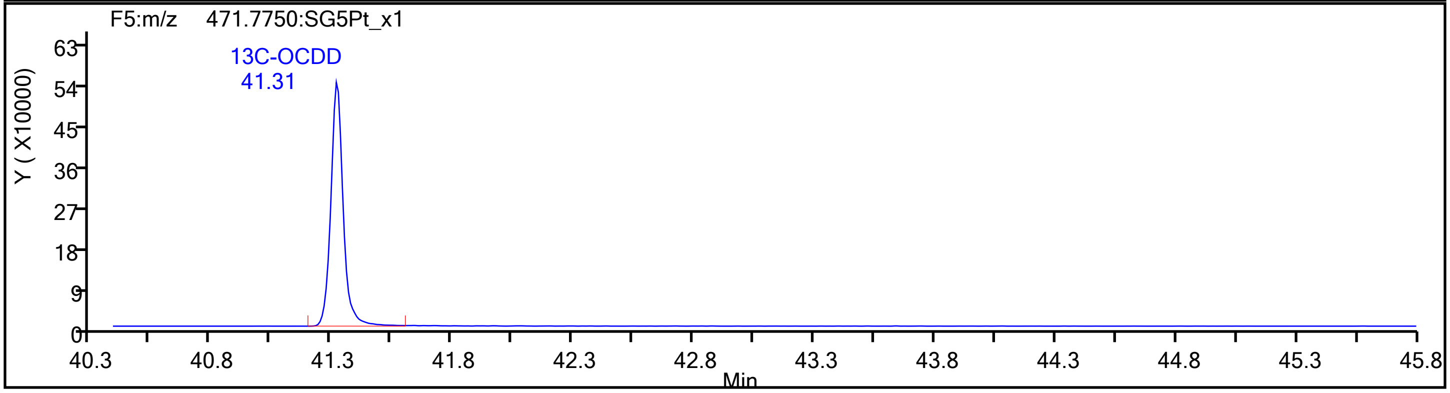

Report Date: 16-Mar-2021 09:25:44 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d

Injection Date:	12-Mar-2021 13:45:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

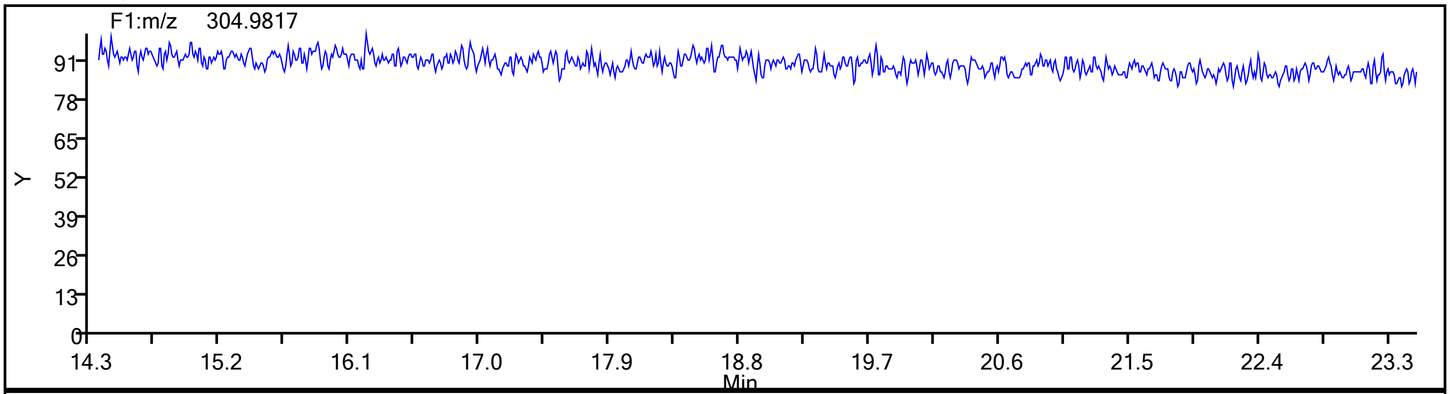

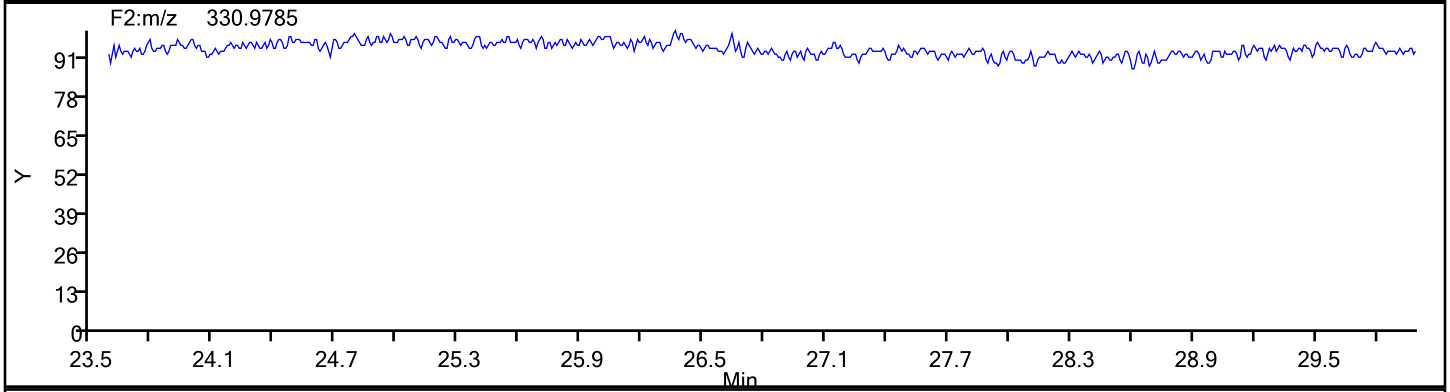

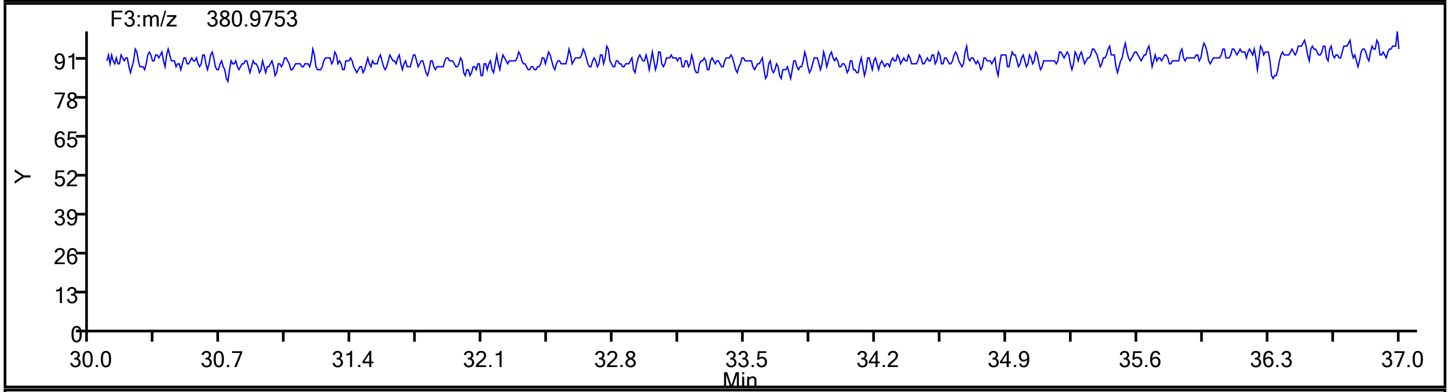

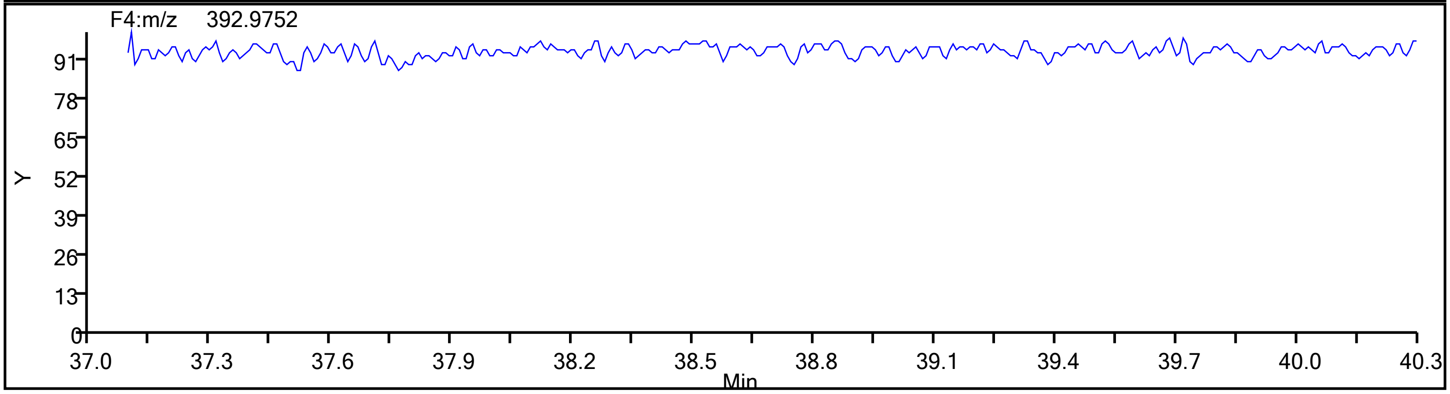

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_6.d		
Injection Date:	12-Mar-2021 13:45:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-1mm		
Worklist#:	469779	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

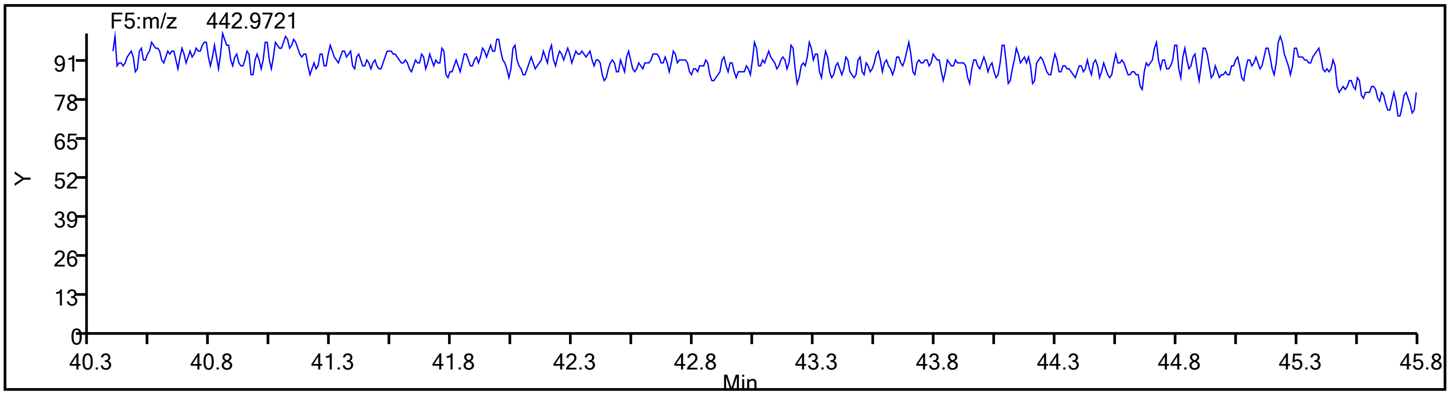

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-0.45mm RA	Lab Sample ID: 320-70797-5 RA
Matrix: Water	Lab File ID: 11MR2111D2_005.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.1(mL)	Date Analyzed: 03/11/2021 16:24
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469703	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	19	B	9.6	0.37

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	97		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	120		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_005.d
Lims ID: 320-70797-A-5-A
Client ID: 11215702-Tank1-0.45mm
Sample Type: Client
Inject. Date: 11-Mar-2021 16:24:08 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-5-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:01:02

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.011	215125416	0.79	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.150	273406053	0.80	1.3057	97.3	97.3	0.2523	0.2523	97.33	
2,3,7,8-TCDF	16.164	2518568	0.85	0.9242	0.997	0.997	0.0194	0.0194		
D 13C-2,3,7,8-TCDD	14.792	164153805	0.77	0.8971	85.1	85.1	0.1699	0.1699	85.05	
2,3,7,8-TCDD	14.819	729161	0.71	0.9989	0.4447	0.4447	0.0642	0.0642		
$ 37Cl4-2,3,7,8-TCDD	14.806	87412132		0.8499	47.8	47.8	0.0511	0.0511	120	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 12-Mar-2021 11:08:28 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_005.d
Lims ID: 320-70797-A-5-A
Client ID: 11215702-Tank1-0.45mm
Sample Type: Client
Inject. Date: 11-Mar-2021 16:24:08 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-5-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:01:02

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.011	15.013	0		95069638	23329208	16624	41560	1403		
333.9339	15.011	15.013	0		120055778	29087940	15331	38327	1897	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.150	16.152	0	1.076	121531812	28453220	33824	84560	841		
317.9389	16.150	16.152	0	1.076	151874241	35086645	35239	88097	996	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.164	16.166	0	1.001	1159602	257521	2041	5102	126		
305.8987	16.164	16.166	0	1.001	1358966	289184	2518	6295	115	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.792	14.794	0	0.985	71663327	17550708	16624	41560	1056		
333.9339	14.792	14.794	0	0.985	92490478	23030152	15331	38327	1502	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.819	14.807	1	1.002	302851	73893	4604	11510	16		
321.8936	14.792	14.807	-1	1.000	426310	109188	5808	14520	19	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.806	14.807	0	0.986	87412132	21425816	9098	22745	2355		

QC Flag Legend

Processing Flags

Report Date: 12-Mar-2021 11:08:28
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_005.d
Injection Date: 11-Mar-2021 16:24:08
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-0.45mm
Worklist#: 469703
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

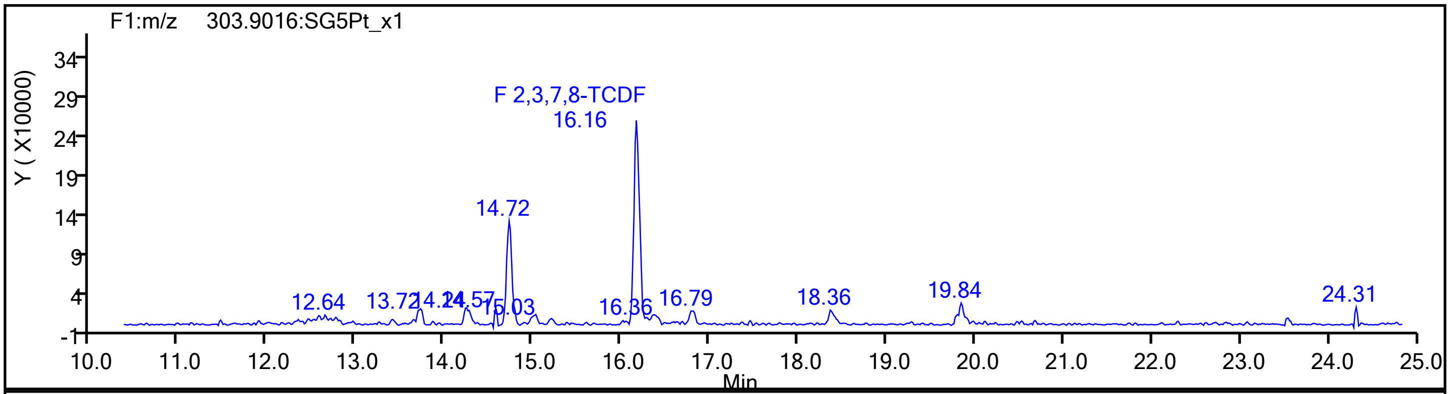

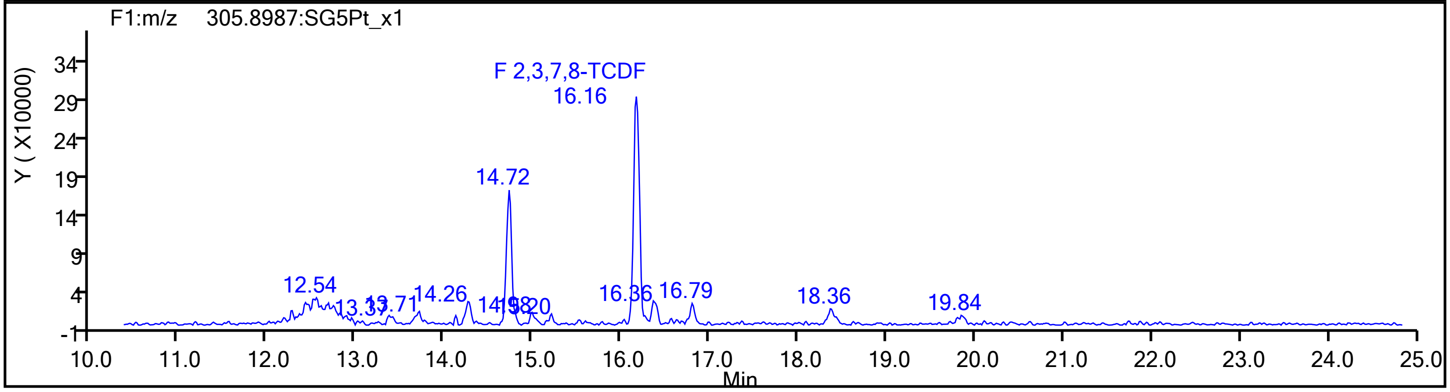

TCDF Standards

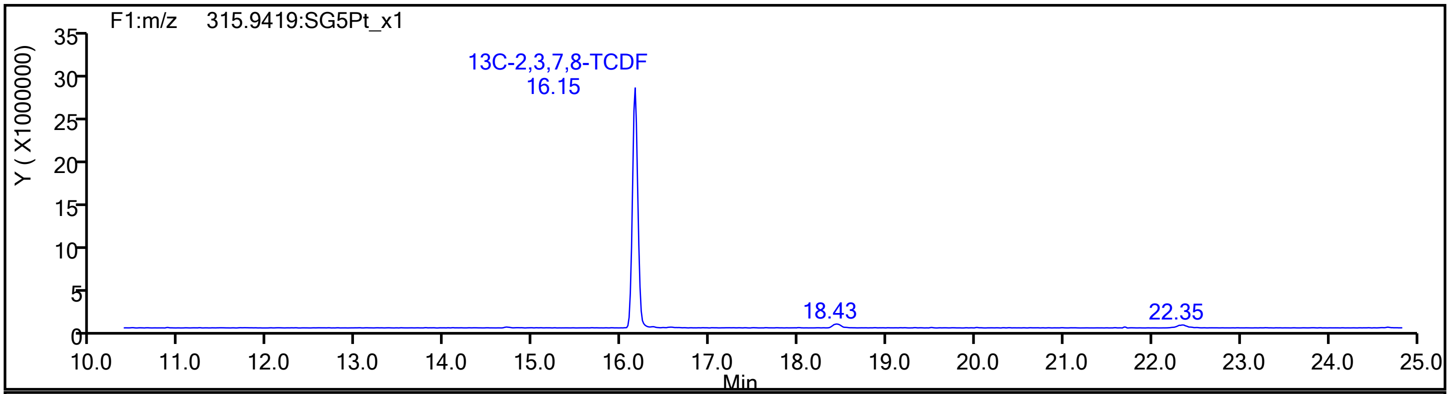

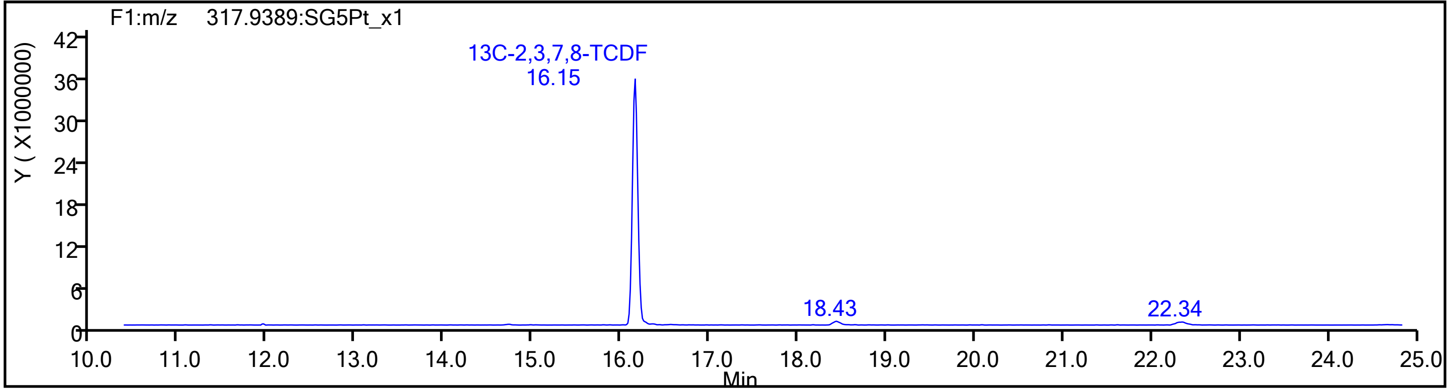

Report Date: 12-Mar-2021 11:08:28 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_005.d		
Injection Date:	11-Mar-2021 16:24:08	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.45mm		
Worklist#:	469703	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

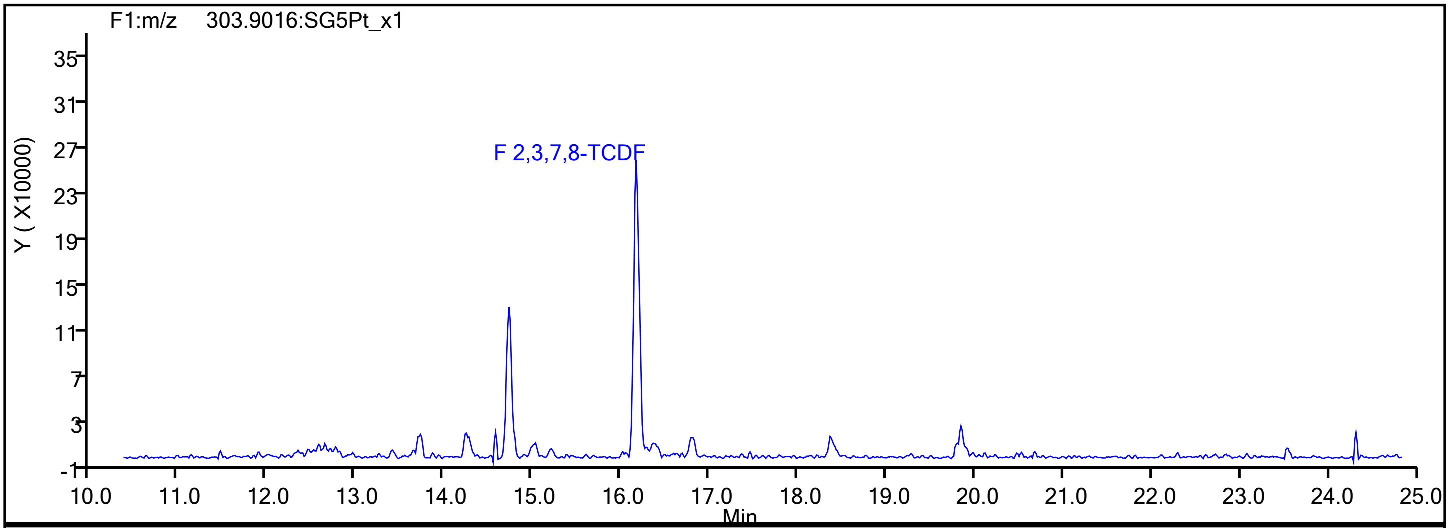

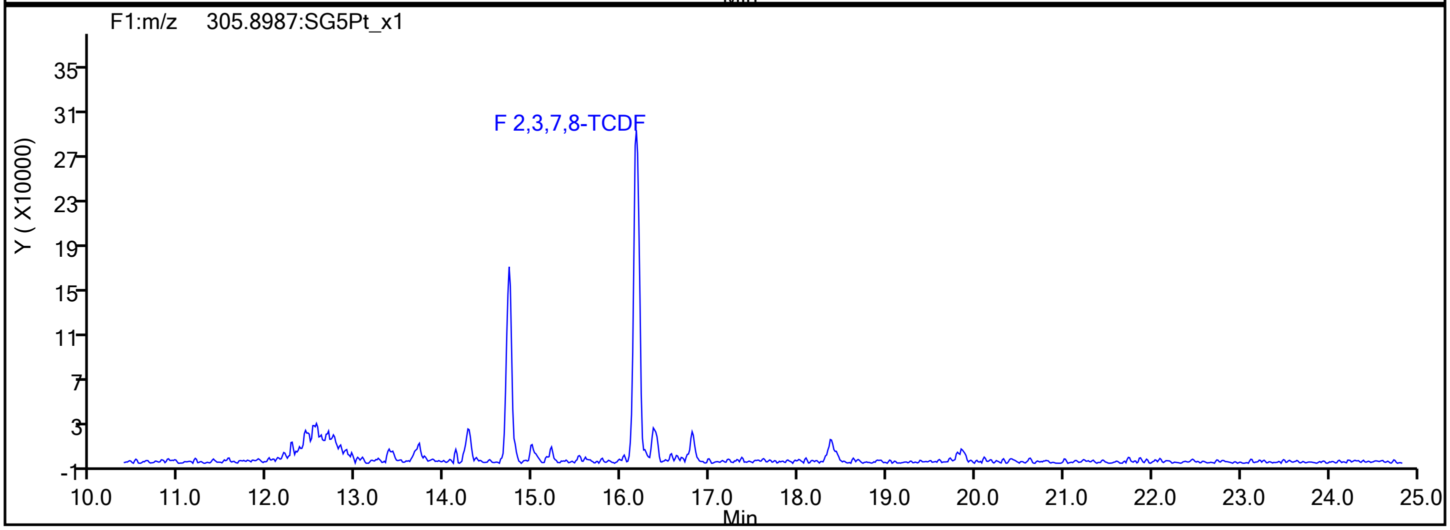

TCDF Interference Mass

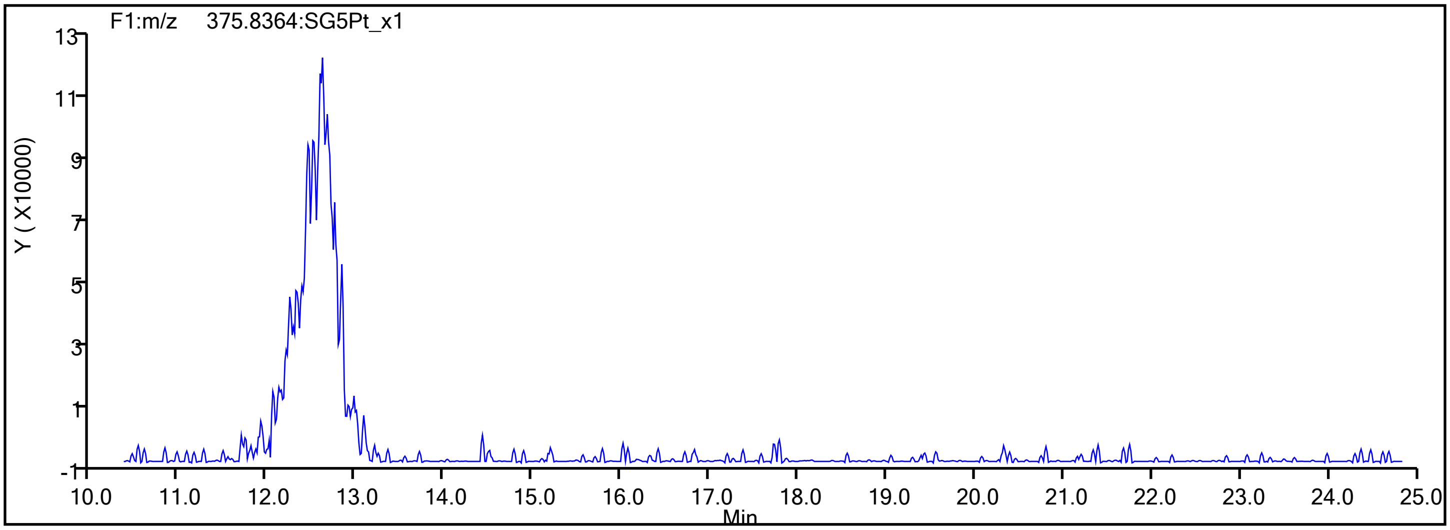

Report Date: 12-Mar-2021 11:08:28 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_005.d

Injection Date: 11-Mar-2021 16:24:08 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.45mm

Worklist#: 469703 Sample Line#: 5

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

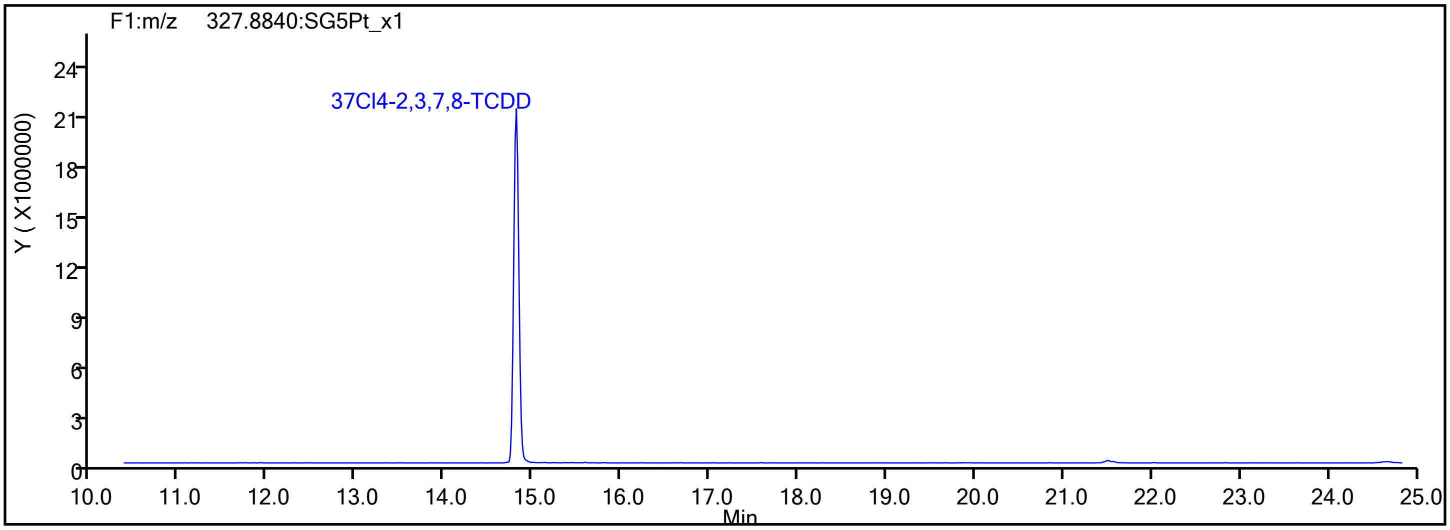

37Cl4-TCDD Standards

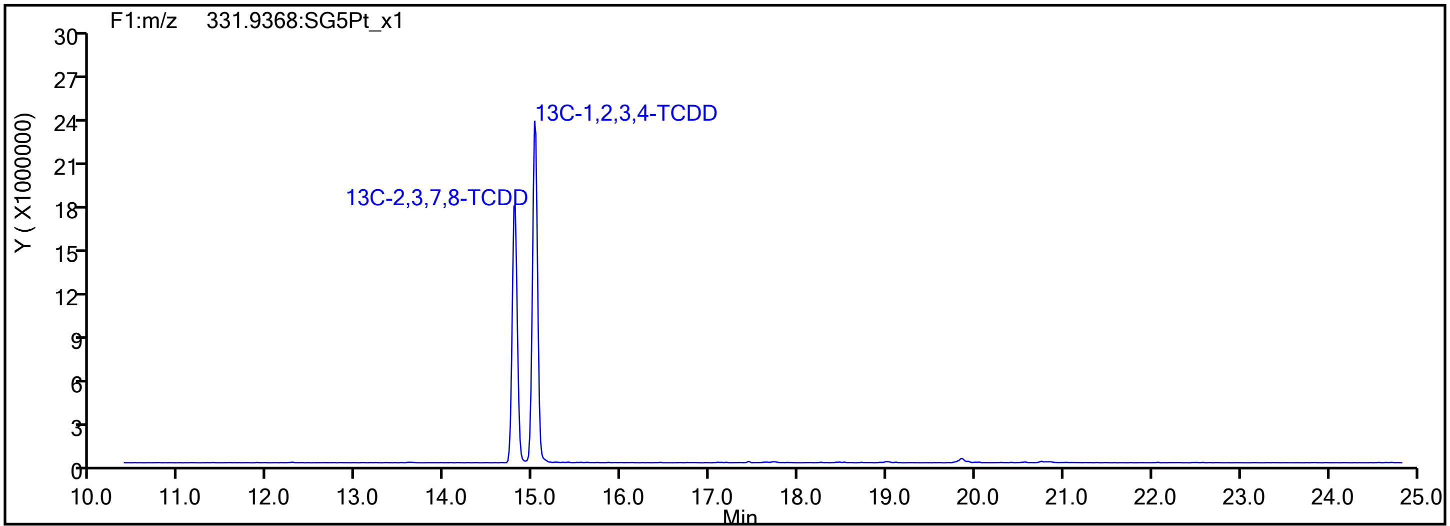

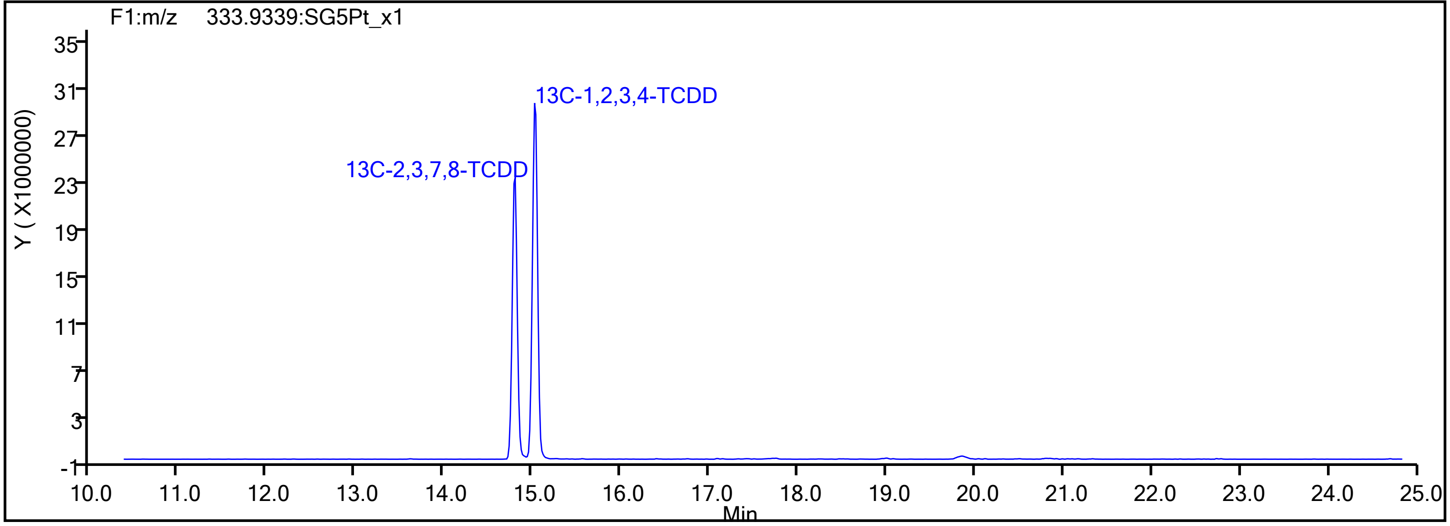

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_005.d		
Injection Date:	11-Mar-2021 16:24:08	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.45mm		
Worklist#:	469703	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

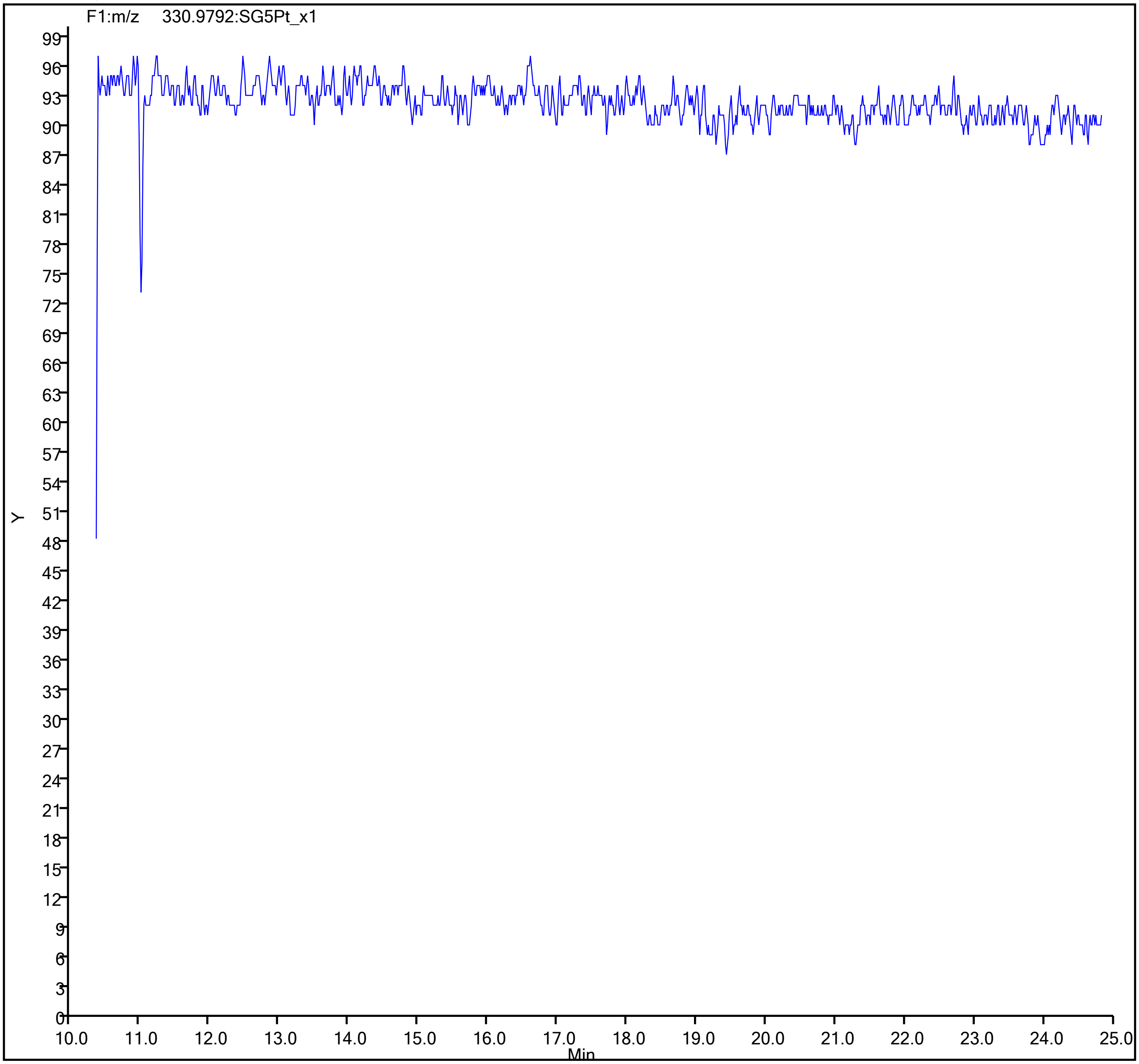

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-0.45mm	Lab Sample ID: 320-70797-5
Matrix: Water	Lab File ID: 12mr21adfs1_7.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.1(mL)	Date Analyzed: 03/12/2021 14:33
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	6.1	J q	9.6	0.42
40321-76-4	1,2,3,7,8-PeCDD	ND		48	0.40
57117-41-6	1,2,3,7,8-PeCDF	1.1	J	48	0.29
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.33
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J	48	0.23
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.25
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.22
70648-26-9	1,2,3,4,7,8-HxCDF	1.4	J B	48	0.17
57117-44-9	1,2,3,6,7,8-HxCDF	0.43	J B q	48	0.16
72918-21-9	1,2,3,7,8,9-HxCDF	0.49	J B	48	0.13
60851-34-5	2,3,4,6,7,8-HxCDF	0.49	J B	48	0.14
35822-46-9	1,2,3,4,6,7,8-HpCDD	3.8	J B	48	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.5	J B q	48	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.23
3268-87-9	OCDD	16	J B	96	0.35
39001-02-0	OCDF	3.9	J B q	96	0.39
41903-57-5	Total TCDD	11	B q	9.6	0.42
30402-14-3	Total TCDF	29	B	9.6	0.34
36088-22-9	Total PeCDD	ND		48	0.40
30402-15-4	Total PeCDF	1.1	J	48	0.31
34465-46-8	Total HxCDD	1.9	J	48	0.23
55684-94-1	Total HxCDF	2.8	J B q	48	0.15
37871-00-4	Total HpCDD	6.3	J B	48	0.19
38998-75-3	Total HpCDF	2.6	J B q	48	0.22

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank1-0.45mm	Lab Sample ID: 320-70797-5
Matrix: Water	Lab File ID: 12mr21adfs1_7.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.1(mL)	Date Analyzed: 03/12/2021 14:33
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	79		25-164
89059-46-1	13C-2,3,7,8-TCDF	74		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	76		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	73		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	74		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	80		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	84		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	82		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	83		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	83		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	98		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	93		26-138
114423-97-1	13C-OCDD	104		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 16-Mar-2021 08:36:04 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d
Lims ID: 320-70797-A-5-A
Client ID: 11215702-Tank1-0.45mm
Sample Type: Client
Inject. Date: 12-Mar-2021 14:33:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-5-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 08:36:04 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: bilottag Date: 12-Mar-2021 15:25:55

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.458	3726933	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.591	4273115	0.81	1.5437	74.3	74.3	0.1372	0.1372	74.27	
2,3,7,8-TCDF	18.616	50680	0.84	1.1258	1.053	1.053	0.0175	0.0175		
A Non-2,3,7,8-sub-TCDF	18.115	22392	0.77	1.1258	0.4655	0.4655	0.0175	0.4655		
S Total TCDF					1.519	1.519	0.0175	0.0175		
D 13C-2,3,7,8-TCDD	19.793	2857473	0.80	0.9687	79.1	79.1	0.1486	0.1486	79.14	
$ 37Cl4-2,3,7,8-TCDD	19.827	1525629		1.0841	37.8	37.8	0.0371	0.0371	94.40	
2,3,7,8-TCDD	19.810	10806	0.77	1.1904	0.3588	0.3177	0.0219	0.0219		RQ
A Non-2,3,7,8-sub-TCDD	18.876	8536	0.77	1.1904	0.2941	0.2510	0.0219	0.1390		RQ
S Total TCDD					0.6529	0.5686	0.0219	0.0219		RQ
D 13C-1,2,3,7,8-PeCDF	25.627	3580363	1.60	1.3124	73.2	73.2	0.3555	0.3555	73.20	
1,2,3,7,8-PeCDF	25.644	2197	1.54	1.1163	0.0550	0.0550	0.0152	0.0152		M
D 13C-2,3,4,7,8-PeCDF	27.008	3666891	1.58	1.3352	73.7	73.7	0.3495	0.3495	73.69	
2,3,4,7,8-PeCDF	27.040						0.0171	0.0171		
A F1 PeCDFs	22.791						0.006865	0.006865		RQU
A Non-2,3,7,8-sub-PeCDF	26.224						0.0161	0.0161		
S Total PeCDF					0.0550	0.0550	0.0161	0.0161		
D 13C-1,2,3,7,8-PeCDD	27.758	2188667	1.58	0.7716	76.1	76.1	0.1621	0.1621	76.11	
1,2,3,7,8-PeCDD	27.755						0.0208	0.0208		
A Non-2,3,7,8-sub-PeCDD	26.609						0.0208	0.0208		
S Total PeCDD							0.0208	0.0208		
D 13C-1,2,3,4,7,8-HxCDF	33.539	3091409	0.53	1.0931	80.9	80.9	0.3399	0.3399	80.89	
1,2,3,4,7,8-HxCDF	33.555	2589	1.10	1.1831	0.0708	0.0708	0.008801	0.008801		M
D 13C-1,2,3,6,7,8-HxCDF	33.741	3231312	0.54	1.1278	82.0	82.0	0.3294	0.3294	81.95	
1,2,3,6,7,8-HxCDF	33.800	894	1.24	1.2484	0.0248	0.0222	0.008417	0.008417		RQM
D 13C-2,3,4,6,7,8-HxCDF	34.743	3064139	0.54	1.0552	83.1	83.1	0.3521	0.3521	83.06	
2,3,4,6,7,8-HxCDF	34.743	1000	1.23	1.2750	0.0256	0.0256	0.007240	0.007240		M
D 13C-1,2,3,7,8,9-HxCDF	35.762	2866583	0.54	0.9938	82.5	82.5	0.3738	0.3738	82.50	
1,2,3,7,8,9-HxCDF	35.762	953	1.30	1.2953	0.0257	0.0257	0.006940	0.006940		Ma
A Non-2,3,7,8-sub-HxCDF	33.496						0.007787	0.0108		RMU
S Total HxCDF					0.1468	0.1442	0.007849	0.007849		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.560	3496143	1.25	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.004	2197613	1.26	0.7895	79.6	79.6	0.2198	0.2198	79.62	
1,2,3,4,7,8-HxCDD	35.004	2366	1.30	1.0950	0.0983	0.0983	0.0121	0.0121		M
D 13C-1,2,3,6,7,8-HxCDD	35.130	2500125	1.26	0.8495	84.2	84.2	0.2043	0.2043	84.18	
1,2,3,6,7,8-HxCDD	35.156						0.0129	0.0129		RQMU
1,2,3,7,8,9-HxCDD	35.553						0.0114	0.0114		
A Non-2,3,7,8-sub-HxCDD	34.039						0.0121	0.0121		U
S Total HxCDD					0.0983	0.0983	0.0121	0.0121		
D 13C-1,2,3,4,6,7,8-HpCDF	37.813	2465454	0.45	0.7854	89.8	89.8	0.4187	0.4187	89.79	
1,2,3,4,6,7,8-HpCDF	37.821	2917	1.04	1.4859	0.0969	0.0796	0.0112	0.0112		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	39.161	2352347	0.46	0.7230	93.1	93.1	0.4549	0.4549	93.07	
1,2,3,4,7,8,9-HpCDF	39.142						0.0117	0.0117		
A Non-2,3,7,8-sub-HpCDF	38.451	1965	0.97	1.4453	0.0564	0.0564	0.0114	0.0564		M
S Total HpCDF					0.1534	0.1361	0.0114	0.0114		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.840	2192463	1.06	0.6413	97.8	97.8	0.3074	0.3074	97.78	
1,2,3,4,6,7,8-HpCDD	38.857	4988	0.92	1.1489	0.1980	0.1980	0.0100	0.0100		M
A Non-2,3,7,8-sub-HpCDD	39.230	3208	1.11	1.1489	0.1274	0.1274	0.0100	0.1274		a
S Total HpCDD					0.3254	0.3254	0.0100	0.0100		
D 13C-OCDD	41.320	3729862	0.89	0.5141	207.5	207.5	0.2252	0.2252	104	
OCDF	41.396	5874	0.89	1.5776	0.2153	0.1996	0.0201	0.0201		RQM
OCDD	41.329	18652	0.81	1.1706	0.8544	0.8544	0.0181	0.0181		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Mar-2021 08:36:04 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Lims ID:	320-70797-A-5-A				
Client ID:	11215702-Tank1-0.45mm				
Sample Type:	Client				
Inject. Date:	12-Mar-2021 14:33:00	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-a-5-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	16-Mar-2021 08:36:04	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1613				

First Level Reviewer: bilottag Date: 12-Mar-2021 15:25:55

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.458	19.417	2		1662405	265434	216	540	1229		
333.9338	19.458	19.417	2		2064528	331873	128	320	2593	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.591	18.557	2	0.955	1906643	317525	293	732	1084		
317.9389	18.591	18.557	2	0.955	2366472	392984	213	532	1845	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.616	18.574	3	1.001	23101	3555	18	45	198		
305.8987	18.616	18.574	3	1.001	27579	4427	38	95	117	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.981	18.115	-8	0.967	9727	1696	18	45	94		
305.8987	17.998	18.115	-7	0.968	12665	1904	38	95	50	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.793	19.761	2	1.017	1268722	192064	216	540	889		
333.9338	19.793	19.761	2	1.017	1588751	237848	128	320	1858	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.827	19.778	3	1.019	1525629	232814	96	240	2425		
2,3,7,8-TCDD											RQ
319.8965	19.810	19.787	1	1.001	4701	744	33	82	23		
321.8936	19.810	19.787	1	1.001	7503	1146	12	30	96	0.63(0.65-0.89)	
	Empc Correction				6105	966	12	30	81		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	16.246	18.876	-158	0.821	2789	501	33	82	15		
	Empc Correction				2056	450	33	82	14		
321.8936	16.255	18.876	-157	0.821	2671	585	12	30	49	1.04(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	16.693	18.876	-131	0.843	2391	382	33	82	12		
	Empc Correction				1657	361	33	82	11		
321.8936	16.693	18.876	-131	0.843	2152	469	12	30	39	1.11(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.627	25.600	2	1.317	2202142	398894	706	1765	565		
353.8970	25.627	25.600	2	1.317	1378221	250934	409	1022	614	1.60(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.644	25.625	1	1.001	1331	252	8	20	32		M
341.8567	25.653	25.625	2	1.001	866	199	36	90	6	1.54(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.008	26.980	2	1.388	2247787	373586	706	1765	529		
353.8970	27.008	26.980	2	1.388	1419104	236126	409	1022	577	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.006						8	20			
341.8567	27.006						36	90			
A F1 PeCDFs											U
339.8597	22.791	22.791	0	0.889	152	44	1	2			
341.8567	22.791	22.791	0	0.889	1076	171	18	45		0.14(1.32-1.78)	
	Empc Correction				98	28	18	45	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.224						8	20			
341.8567	26.224						36	90			
13C-1,2,3,7,8-PeCDD											
367.8949	27.758	27.721	2	1.427	1339153	204571	141	352	1451		
369.8919	27.758	27.721	2	1.427	849514	133435	158	395	845	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.755						27	67			
357.8516	27.755						5	12			
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.609						27	67			
357.8516	26.609						5	12			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.539	33.504	2	0.943	1067005	189536	302	755	628		
385.8610	33.539	33.504	2	0.943	2024404	357881	830	2075	431	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	33.555	33.521	2	1.001	1357	235	16	40	15		M
375.8178	33.564	33.521	3	1.001	1232	249	7	17	36	1.10(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.741	33.706	2	0.949	1130602	189623	302	755	628		
385.8610	33.741	33.706	2	0.949	2100710	352868	830	2075	425	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQM
373.8208	33.800	33.723	5	1.002	495	125	16	40	8		M
375.8178	33.774	33.723	3	1.001	505	83	7	17	12	0.98(1.05-1.43)	
	Empc Correction				399	100	7	17	14		
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.743	34.709	2	0.977	1069634	211980	302	755	702		
385.8610	34.743	34.709	2	0.977	1994505	405507	830	2075	489	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											M
373.8208	34.743	34.725	1	1.000	552	146	16	40	9		M
375.8178	34.776	34.725	3	1.001	448	107	7	17	15	1.23(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.762	35.736	2	1.006	1004906	224727	302	755	744		
385.8610	35.762	35.736	2	1.006	1861677	409318	830	2075	493	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	35.762	35.753	1	1.000	538	143	16	40	9		M
375.8178	35.779	35.753	2	1.000	415	95	7	17	14	1.30(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											MU
373.8208	33.496	33.496	0	0.999			16	40			
375.8178	33.496	33.496	0	0.999	415	95	7	17		0.00(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.560	35.525	2		1944060	420948	291	727	1447		
403.8529	35.552	35.525	2		1552083	340789	238	595	1432	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.004	34.970	2	0.984	1227153	281891	291	727	969		
403.8529	34.996	34.970	2	0.984	970460	223965	238	595	941	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.004	34.995	1	1.000	1339	321	11	27	29		M
391.8127	35.029	34.995	2	1.001	1027	290	16	40	18	1.30(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.130	35.105	2	0.988	1395827	283884	291	727	976		
403.8529	35.139	35.105	2	0.988	1104298	226514	238	595	952	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMU
389.8158	35.121						11	27			
391.8127	35.121						16	40			
1,2,3,7,8,9-HxCDD											
389.8158	35.542						11	27			
391.8127	35.542						16	40			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	34.039						11	27			
391.8127	34.039						16	40			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.813	37.786	2	1.063	766842	202033	346	865	584		
419.8220	37.813	37.786	2	1.063	1698612	443766	656	1640	676	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7817	37.821	37.794	2	1.000	2121	592	34	85	17		M
	Empc Correction				1487	453	34	85	13		
409.7788	37.813	37.794	1	1.000	1430	436	9	22	48	1.48(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.161	39.133	2	1.101	735824	202134	346	865	584		
419.8220	39.161	39.133	2	1.101	1616523	449760	656	1640	686	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.142						34	85			
409.7788	39.142						9	22			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											M
407.7817	38.217	38.451	-14	1.011	970	261	34	85	8		M
409.7788	38.217	38.451	-14	1.011	995	279	9	22	31	0.97(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.840	38.822	1	1.092	1125624	310488	336	840	924		
437.8140	38.840	38.822	1	1.092	1066839	297504	265	662	1123	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	38.857	38.830	2	1.000	2390	655	17	42	39		M
425.7737	38.849	38.830	1	1.000	2598	722	11	27	66	0.92(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.167	39.230	-64	0.983	1685	470	17	42	28		a
425.7737	38.167	39.230	-64	0.983	1523	412	11	27	37	1.11(0.88-1.20)	
13C-OCDD											
469.7780	41.320	41.293	2	1.162	1754018	475064	191	477	2487		
471.7750	41.320	41.293	2	1.162	1975844	534731	162	405	3301	0.89(0.76-1.02)	
OCDF											RQM
441.7428	41.396	41.377	1	1.002	3227	949	18	45	53		M
	Empc Correction				2766	728	18	45	40		
443.7399	41.405	41.377	2	1.002	3108	818	46	115	18	1.04(0.76-1.02)	M
OCDD											M
457.7377	41.329	41.301	2	1.000	8333	2291	20	50	115		M
459.7348	41.329	41.301	2	1.000	10319	2753	23	57	120	0.81(0.76-1.02)	M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	4273115	710509

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	4273115	710509

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.981	9727	1696	12665	1904	0.4655	0.77	
Signal Totals:							
	9727	1696	12665	1904			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22392	3600				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4655 = (22392 * 100.000) / (4273115 * 1.126)

Report Date: 16-Mar-2021 08:36:04 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2857473	429912

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2857473	429912

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.246	2789	501	2671	585	0.1605	1.04	RQ
16.246	2056	450	2671	585	0.1390		Empc Correction
16.693	2391	382	2152	469	0.1336	1.11	RQ
16.693	1657	361	2152	469	0.1120		Empc Correction
Signal Totals:							
	3713	811	4823	1054			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10003	1937				1.07	RQ
	8536	1865					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.2941 = (10003 * 100.000) / (2857473 * 1.190)

Empc Amount: 0.2510 = (8536 * 100.000) / (2857473 * 1.190)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

F1 PeCDFs, RT: 22.791

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3580363	649828
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3666891	609712

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3623627	629770

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.039	152	44	1076	171	0.0312	0.14	RQ
23.039	152	44	98	28	0.006346		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	3091409	547417
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	3231312	542491
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	3064139	617487
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2866583	634045

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	3063360	585360

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.779	0	0	415	95	0.0108	0.00	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	2197613	505856
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2500125	510398
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	2348869	508127

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 16-Mar-2021 08:36:04 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2465454	645799
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2352347	651894

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2408900	648846

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.217	970	261	995	279	0.0564	0.97	M
Signal Totals:							
	970	261	995	279			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1965	540				0.97	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0564 = (1965 * 100.000) / (2408900 * 1.445)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 08:36:04 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Lims ID:	320-70797-A-5-A		
Client ID:	11215702-Tank1-0.45mm		
Inject. Date:	12-Mar-2021 14:33:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	6

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2192463	607992

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2192463	607992

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.167	1685	470	1523	412	0.1274	1.11	a
Signal Totals:							
	1685	470	1523	412			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3208	882				1.11	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.1274 = (3208 * 100.000) / (2192463 * 1.149)

QC Flag Legend

Review Flags

a - User Assigned ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.64
Area:	1373
Amount:	0.056022
Amount Units:	pg/ul

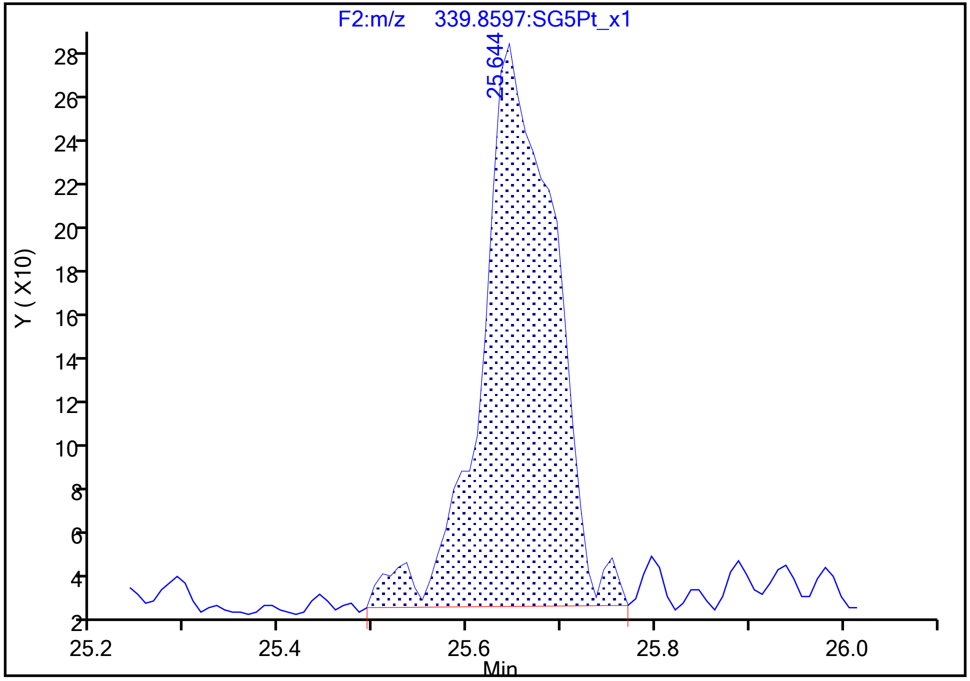

Manual Integration Results

RT:	25.64
Area:	1331
Amount:	0.054972
Amount Units:	pg/ul

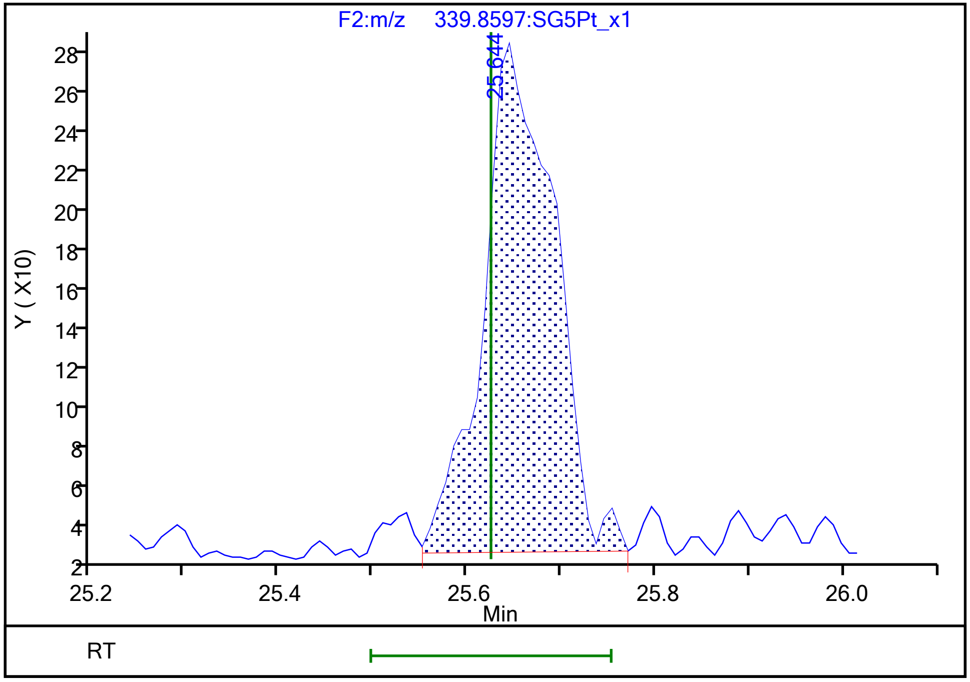

Reviewer: dadunj, 16-Mar-2021 08:32:07

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:36:04

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

RT:	33.56
Area:	1435
Amount:	0.072918
Amount Units:	pg/ul

Processing Integration Results

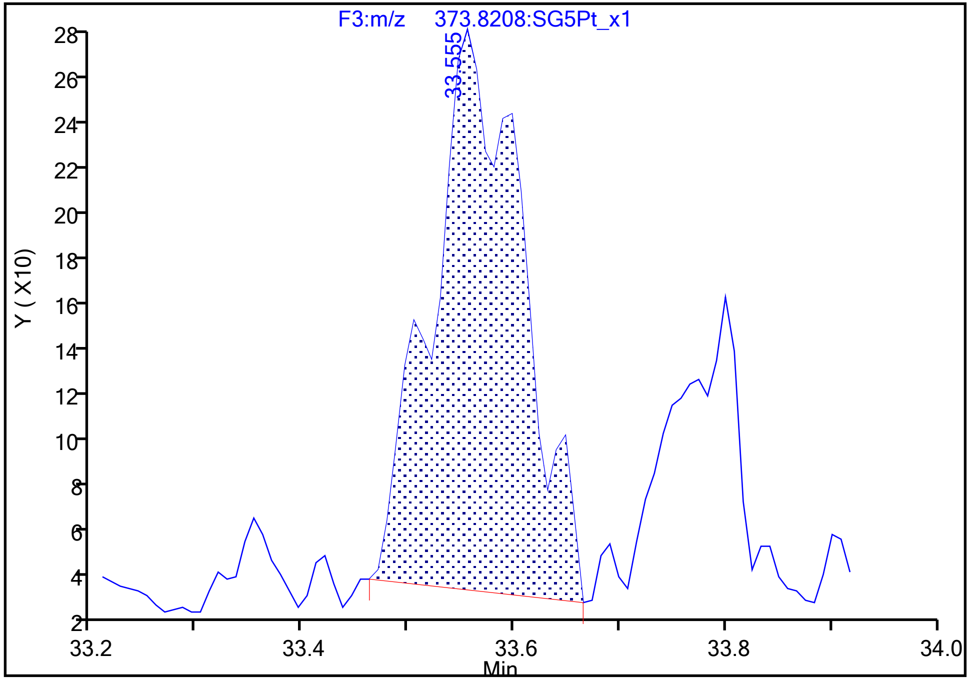

RT:	33.56
Area:	1357
Amount:	0.070785
Amount Units:	pg/ul

Manual Integration Results

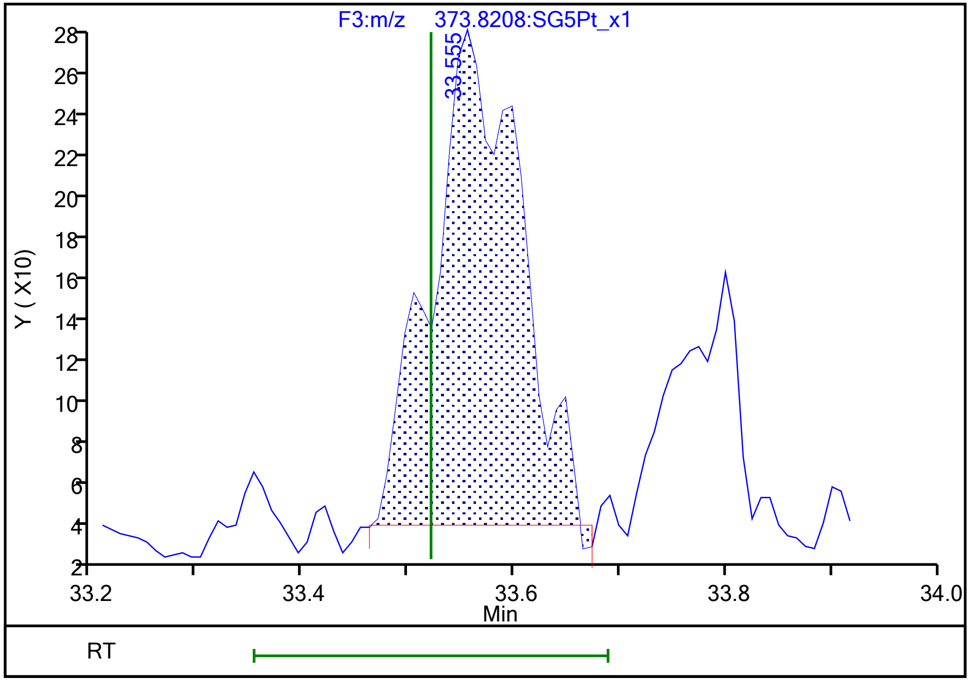

Reviewer: dadunj, 16-Mar-2021 08:32:34

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 16-Mar-2021 08:36:04 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d

Injection Date: 12-Mar-2021 14:33:00

Instrument ID: DFS 1

Lims ID: 320-70797-A-5-A

Lab Sample ID: 320-70797-5

Client ID: 11215702-Tank1-0.45mm

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT: 33.80

Area: 452

Amount: 0.023724

Amount Units: pg/ul

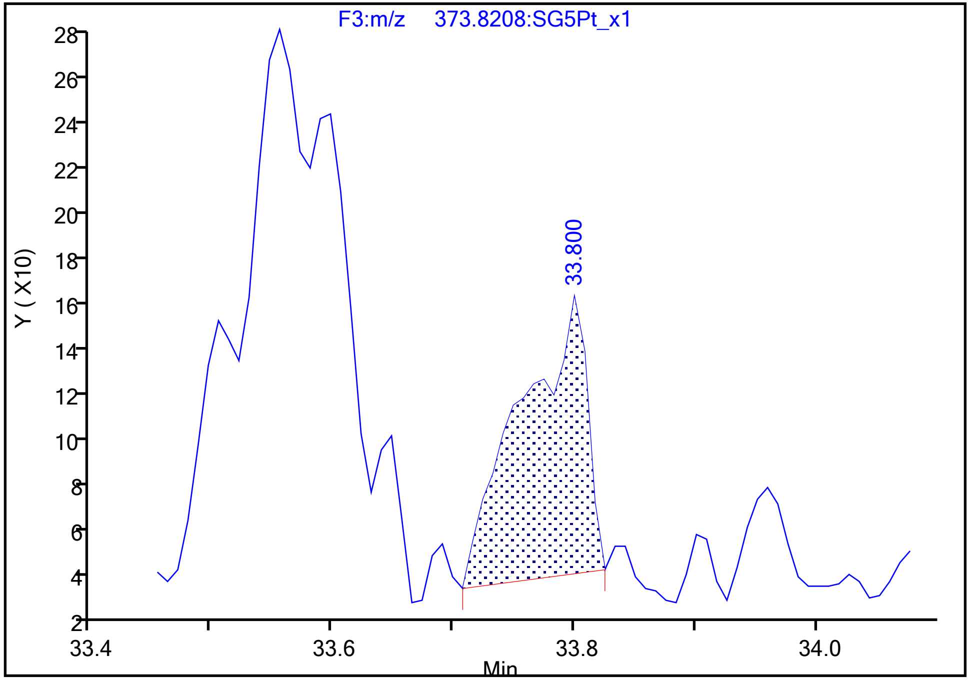

Manual Integration Results

RT: 33.80

Area: 495

Amount: 0.024790

Amount Units: pg/ul

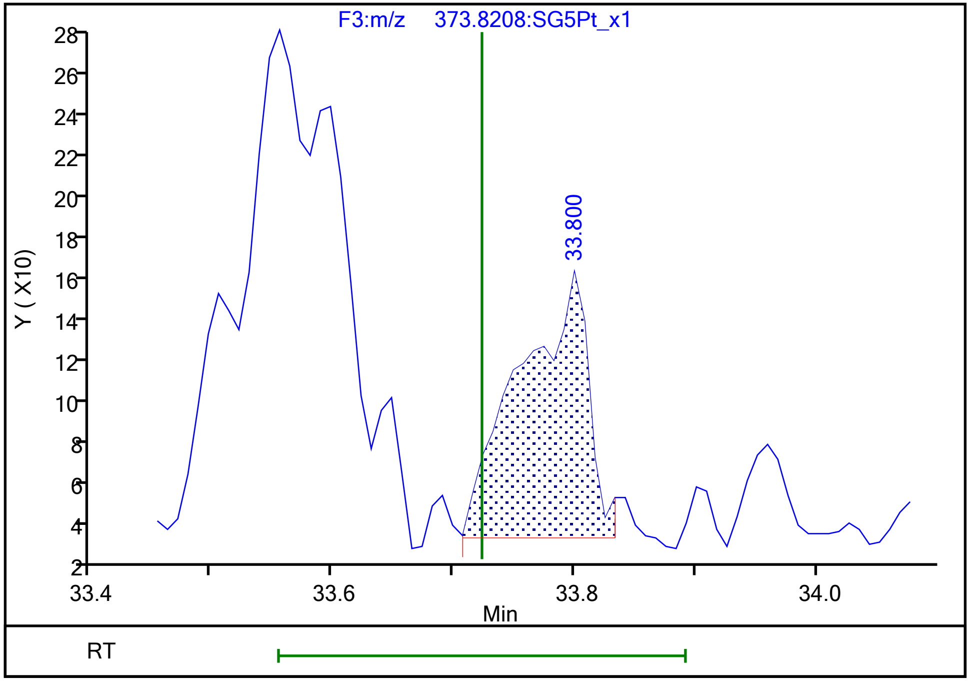

Reviewer: dadunj, 16-Mar-2021 08:32:44

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT:	34.78
Area:	499
Amount:	0.028310
Amount Units:	pg/ul

Processing Integration Results

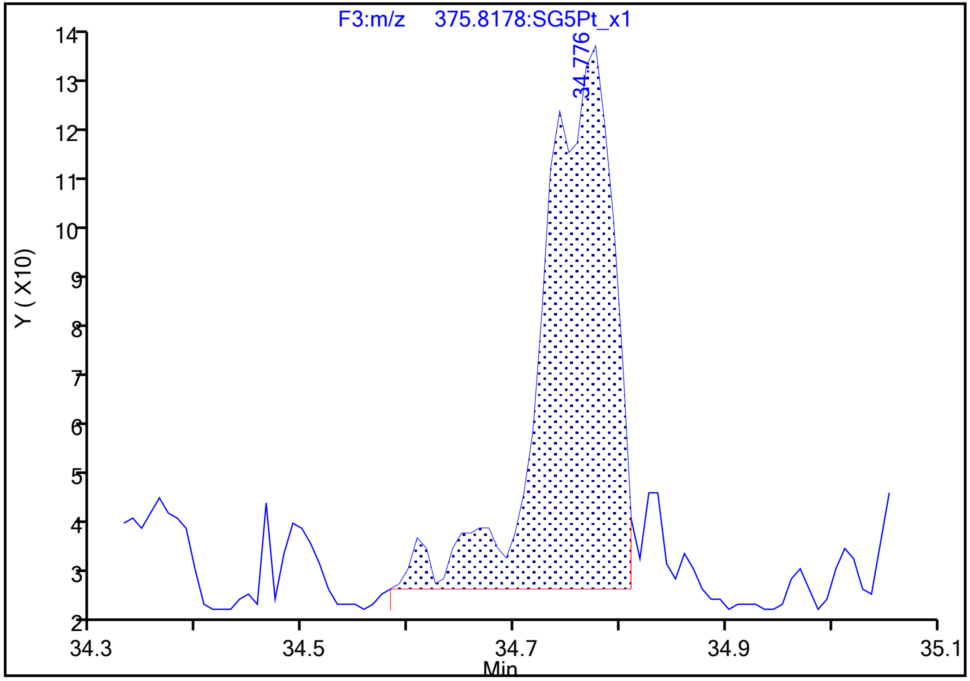

RT:	34.78
Area:	448
Amount:	0.025596
Amount Units:	pg/ul

Manual Integration Results

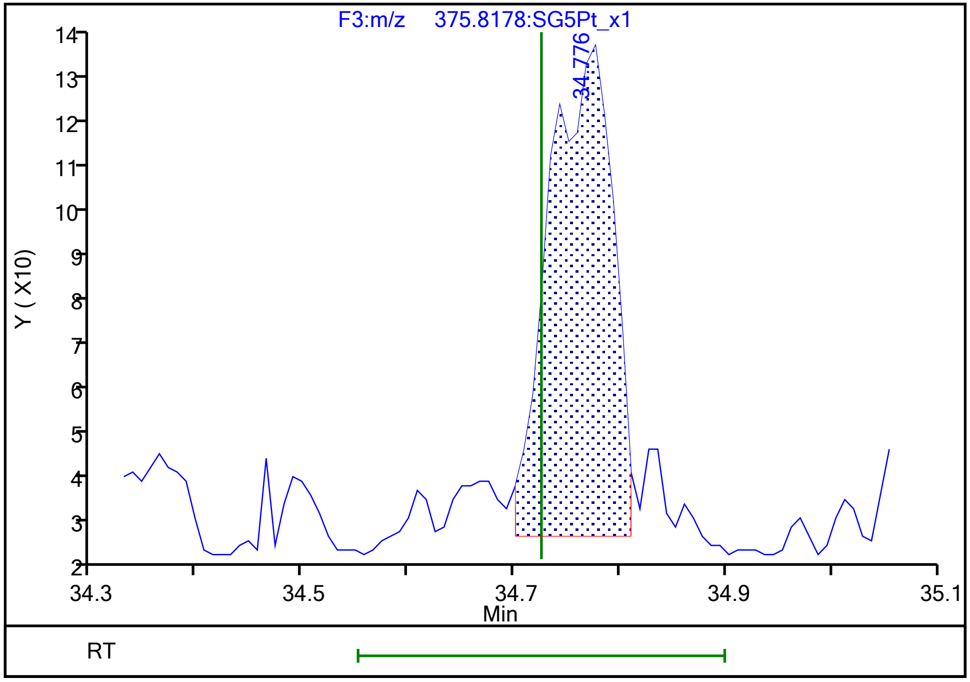

Reviewer: dadunj, 16-Mar-2021 08:32:59

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

Processing Integration Results

RT:	34.74
Area:	607
Amount:	0.028310
Amount Units:	pg/ul

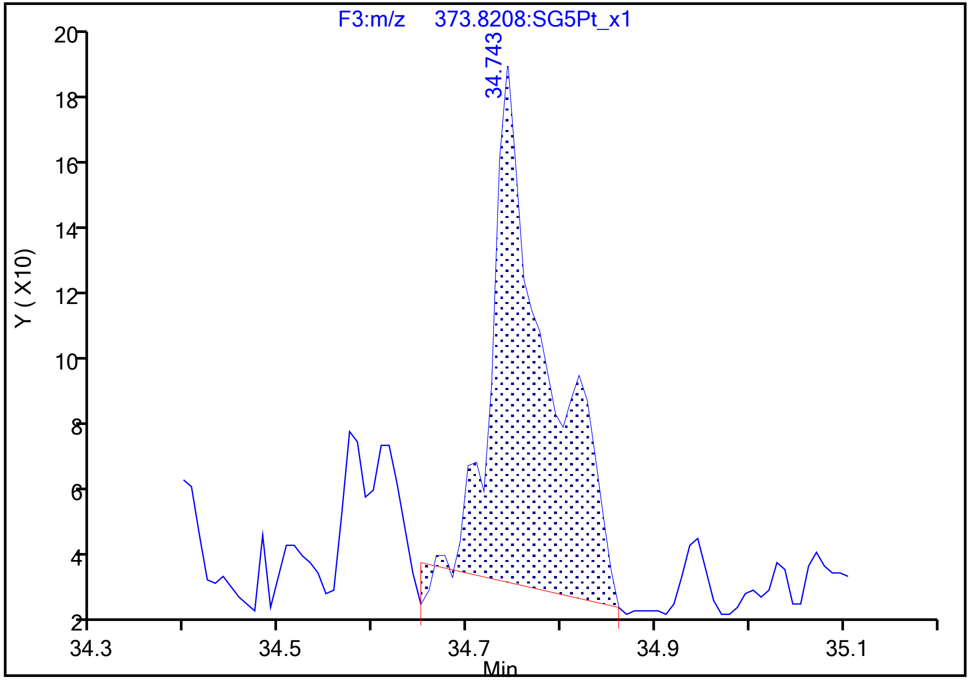

Manual Integration Results

RT:	34.74
Area:	552
Amount:	0.025596
Amount Units:	pg/ul

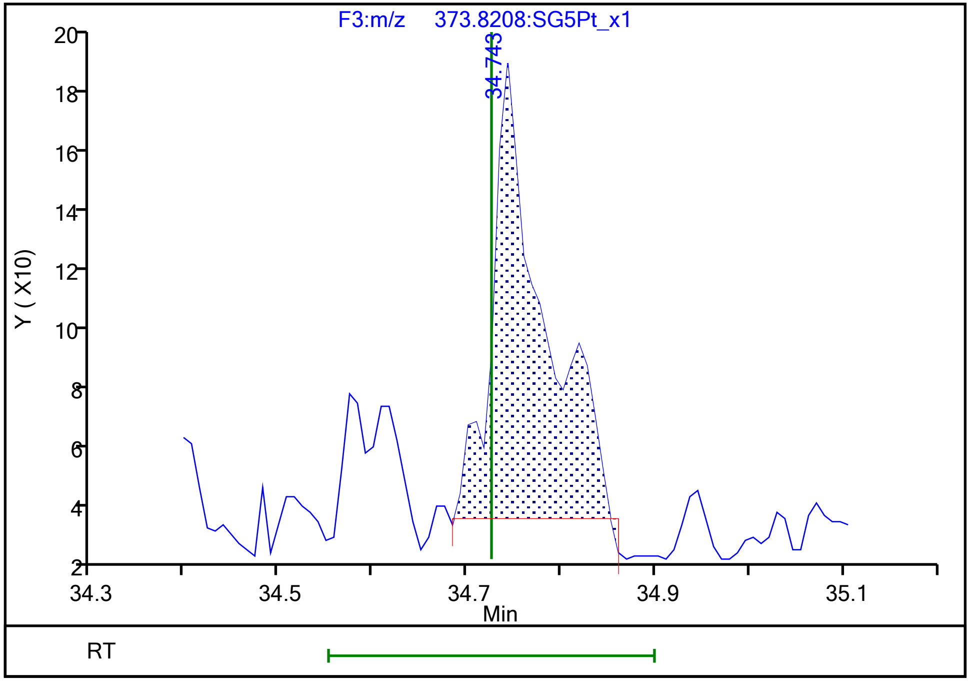

Reviewer: dadunj, 16-Mar-2021 08:33:01

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Not Detected

Expected RT: 35.75

Processing Integration Results

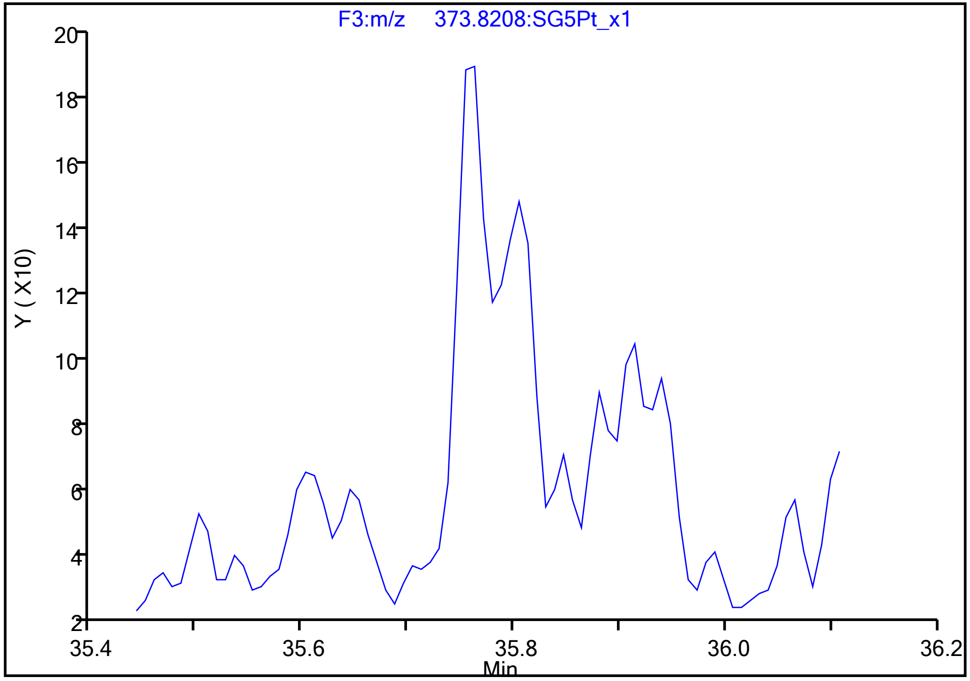

RT:	35.76
Area:	538
Amount:	0.025666
Amount Units:	pg/ul

Manual Integration Results

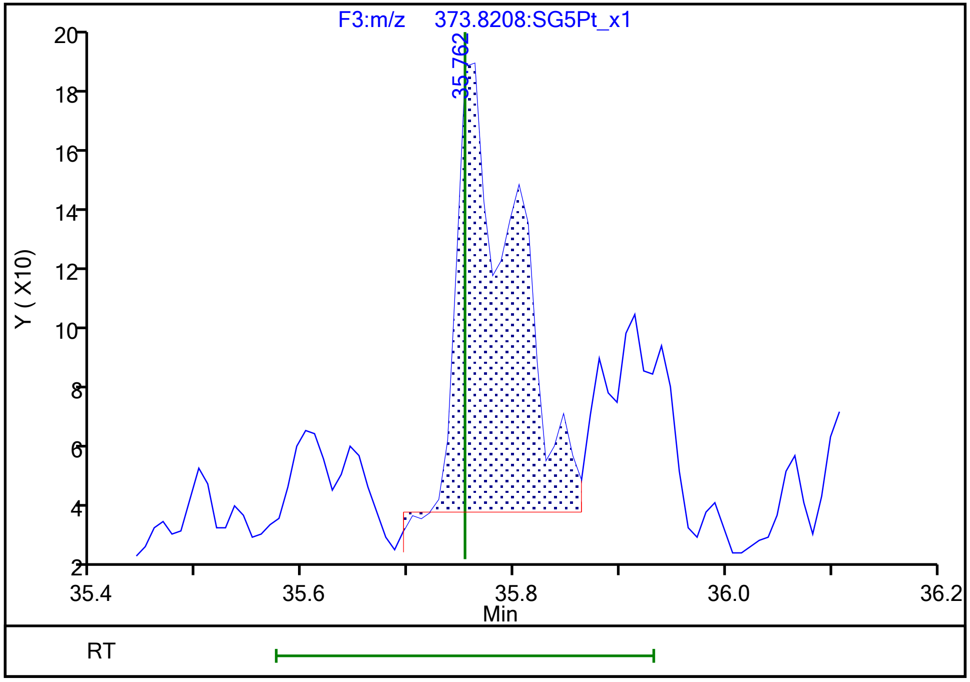

Reviewer: dadunj, 16-Mar-2021 08:33:25

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 16-Mar-2021 08:36:05 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Not Detected

Expected RT: 35.75

Processing Integration Results

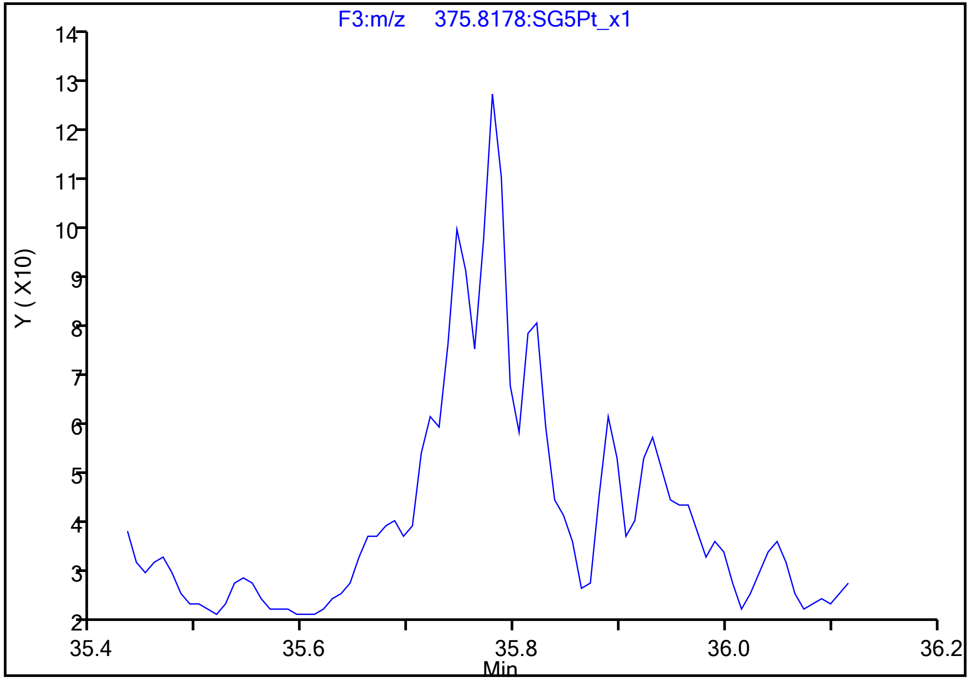

RT: 35.78

Area: 415

Amount: 0.025666

Amount Units: pg/ul

Manual Integration Results

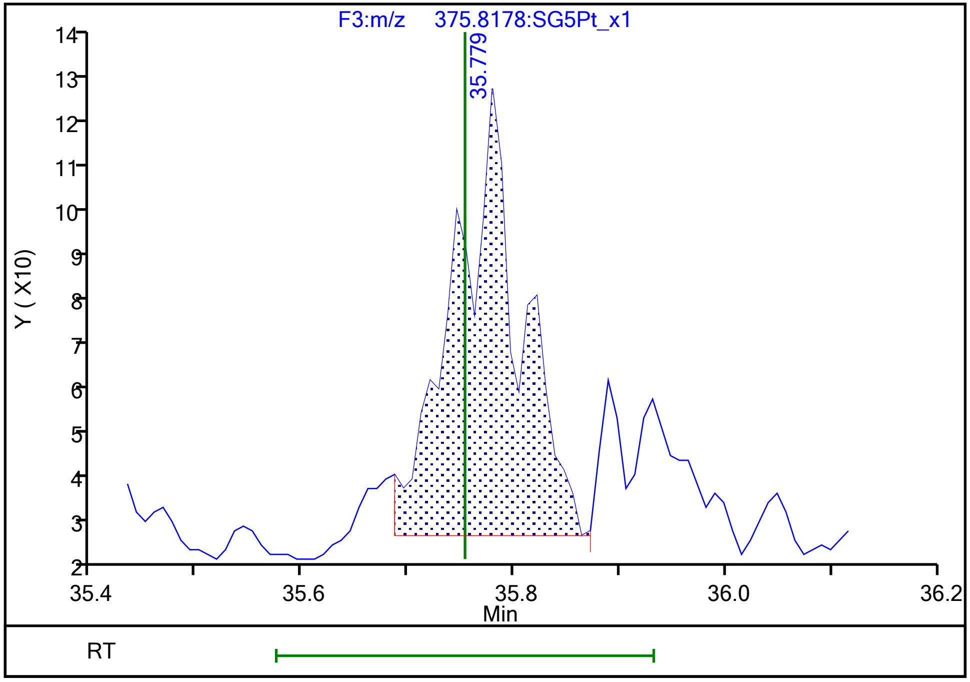

Reviewer: dadunj, 16-Mar-2021 08:33:27

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	35.00
Area:	1680
Amount:	0.133110
Amount Units:	pg/ul

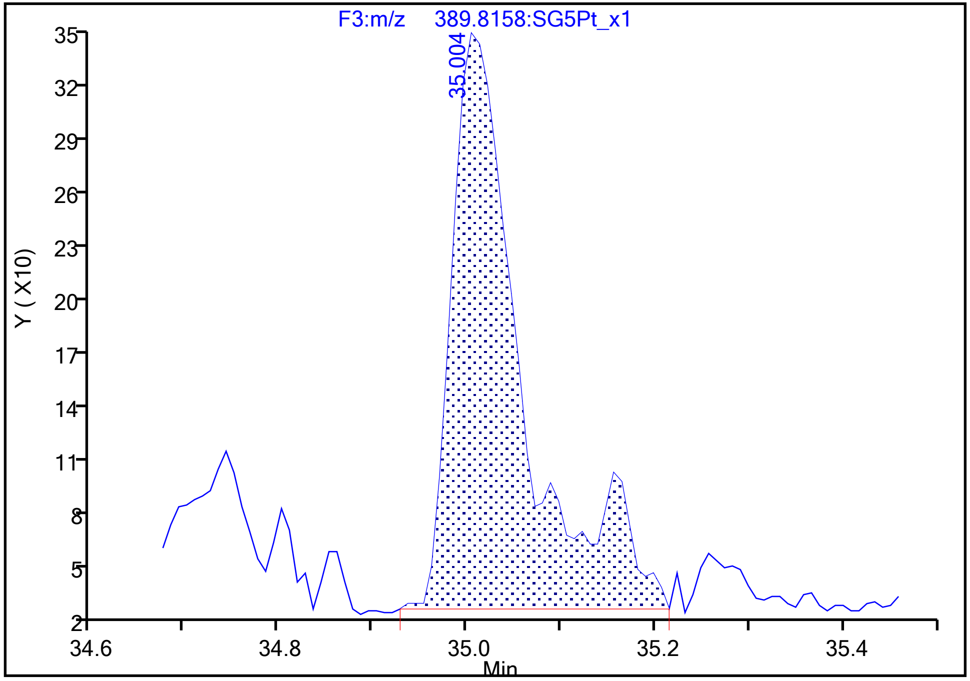

Manual Integration Results

RT:	35.00
Area:	1339
Amount:	0.098326
Amount Units:	pg/ul

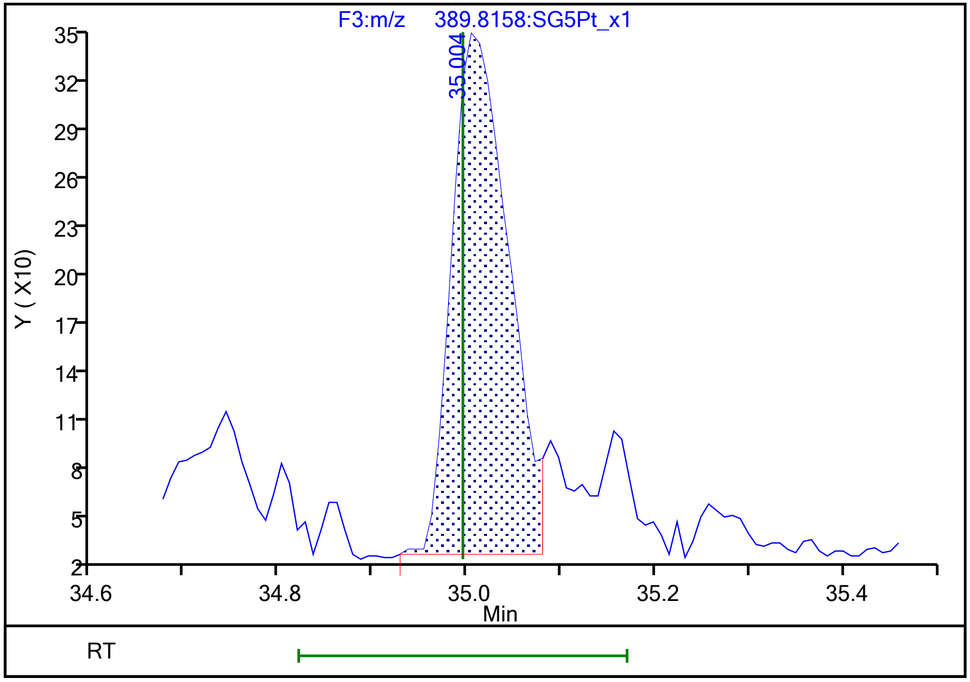

Reviewer: dadunj, 16-Mar-2021 08:33:50

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	35.03
Area:	1523
Amount:	0.133110
Amount Units:	pg/ul

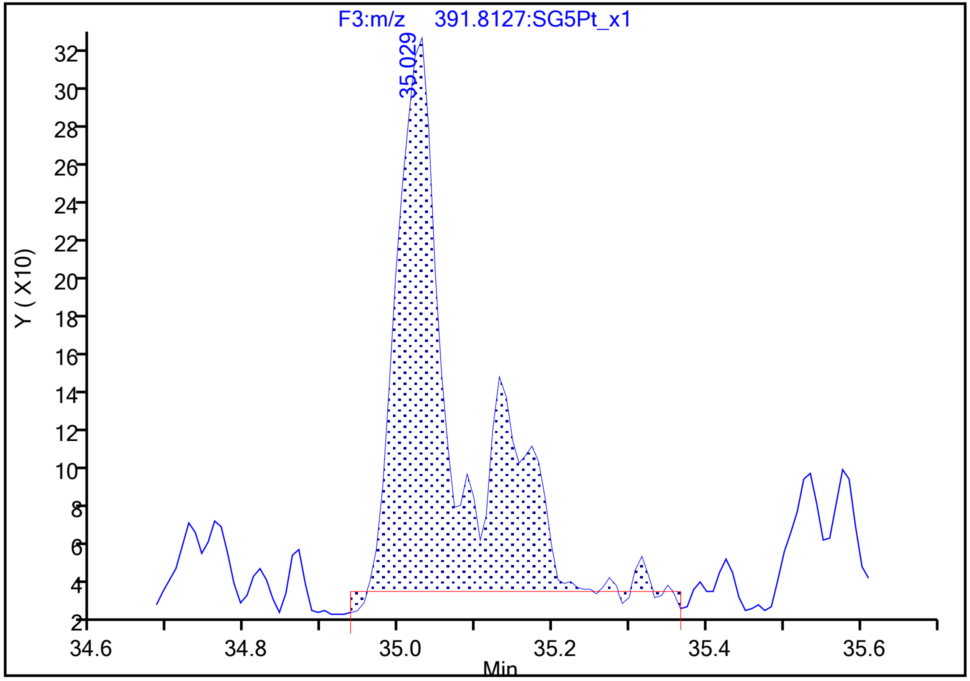

Manual Integration Results

RT:	35.03
Area:	1027
Amount:	0.098326
Amount Units:	pg/ul

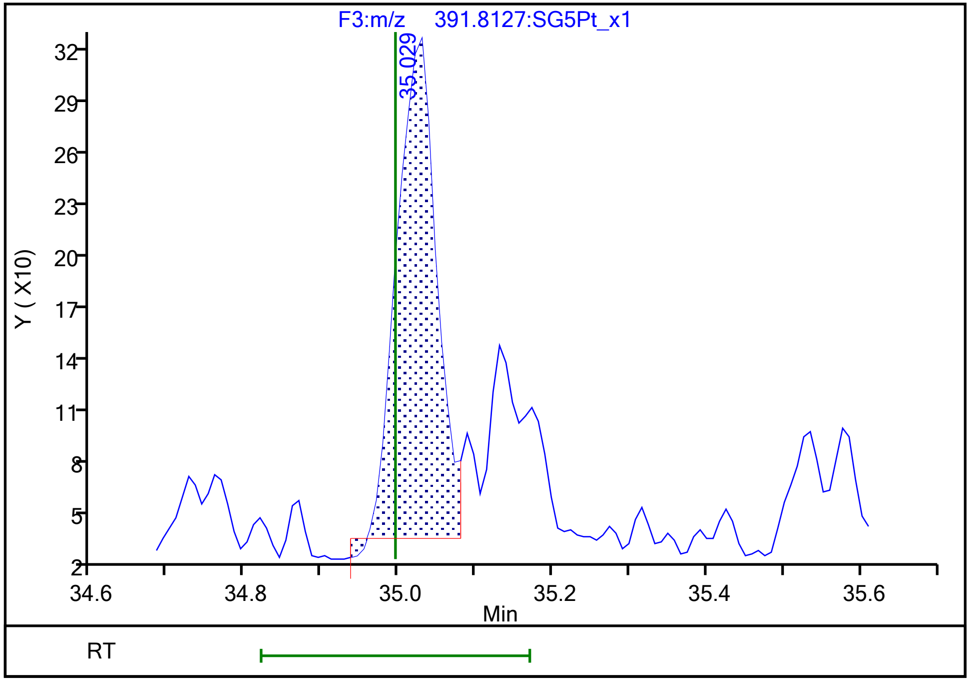

Reviewer: dadunj, 16-Mar-2021 08:33:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT:	37.81
Area:	1547
Amount:	0.102448
Amount Units:	pg/ul

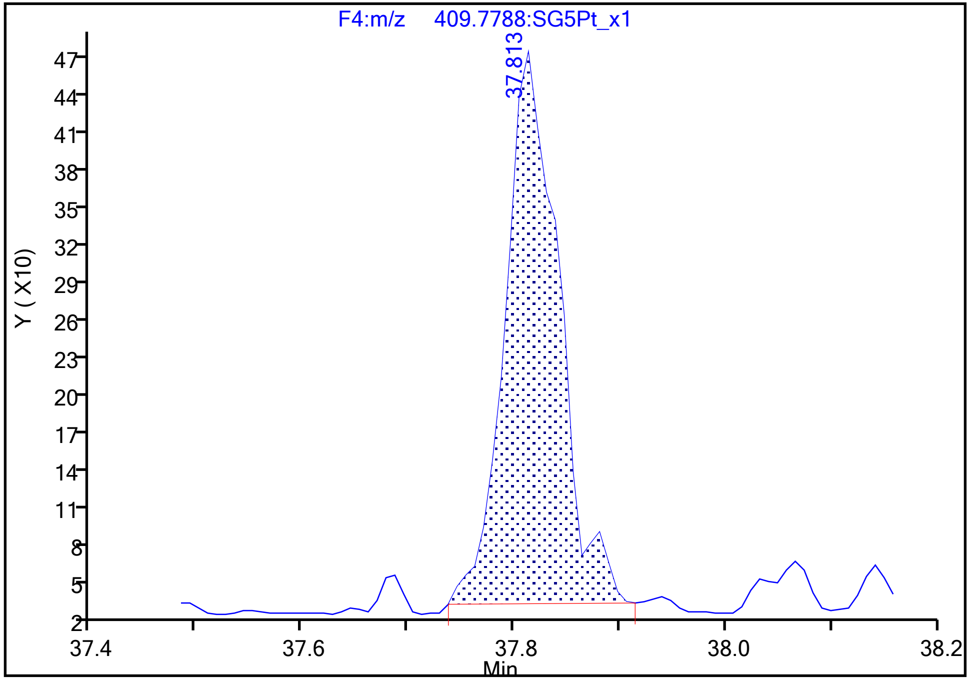

Manual Integration Results

RT:	37.81
Area:	1430
Amount:	0.096934
Amount Units:	pg/ul

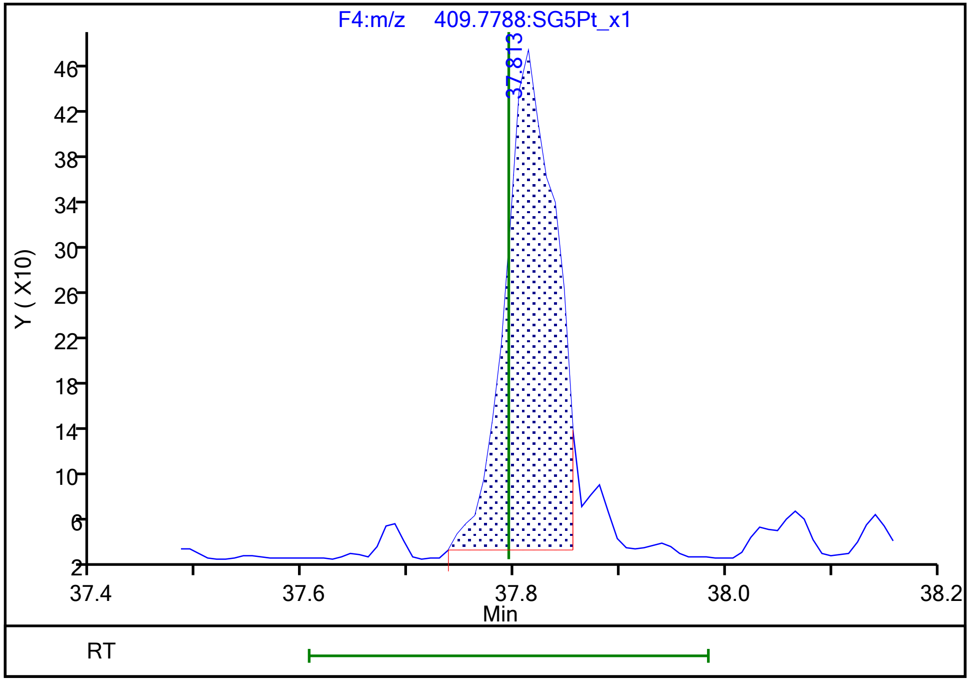

Reviewer: dadunj, 16-Mar-2021 08:34:27

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT: 37.82
Area: 2206
Amount: 0.102448
Amount Units: pg/ul

Processing Integration Results

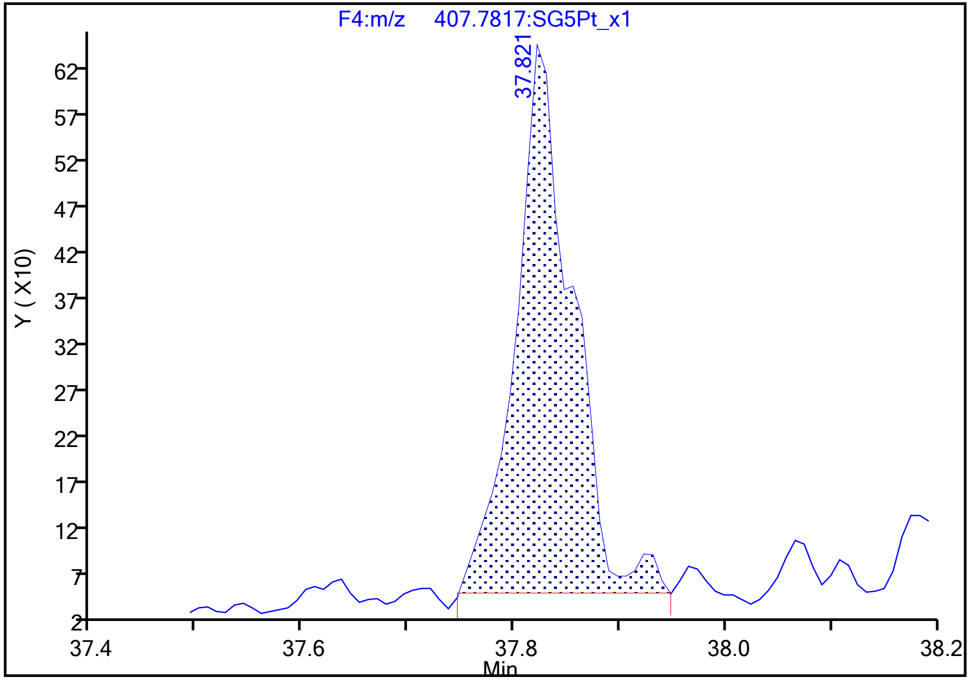

RT: 37.82
Area: 2121
Amount: 0.096934
Amount Units: pg/ul

Manual Integration Results

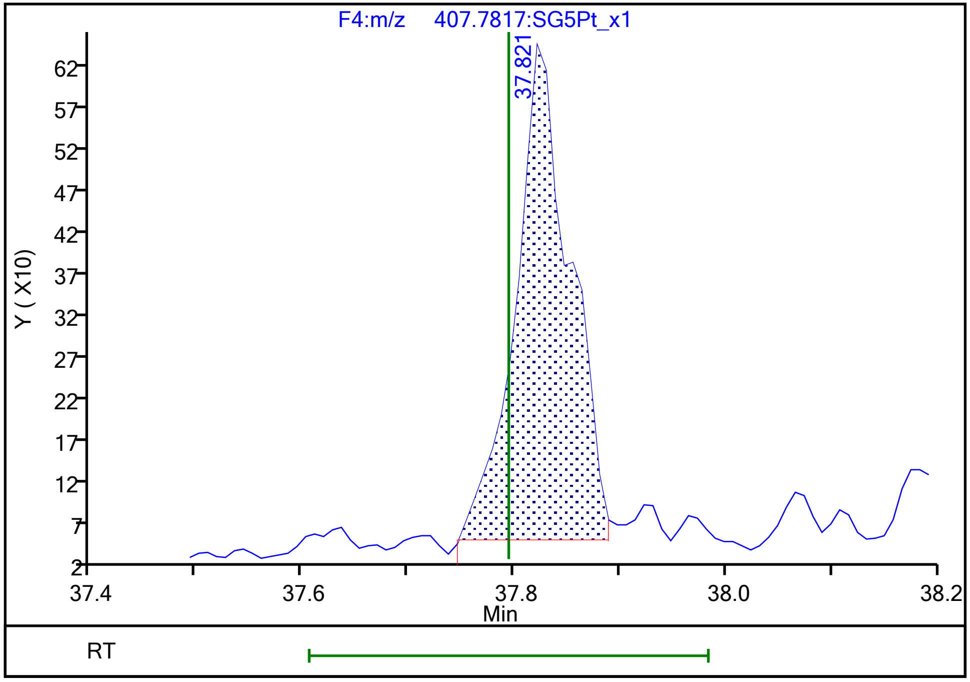

Reviewer: dadunj, 16-Mar-2021 08:34:29
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7817, RT: (37.75- 39.15)

Signal: 1

Processing Integration Results

RT = 38.217 Area = 1067

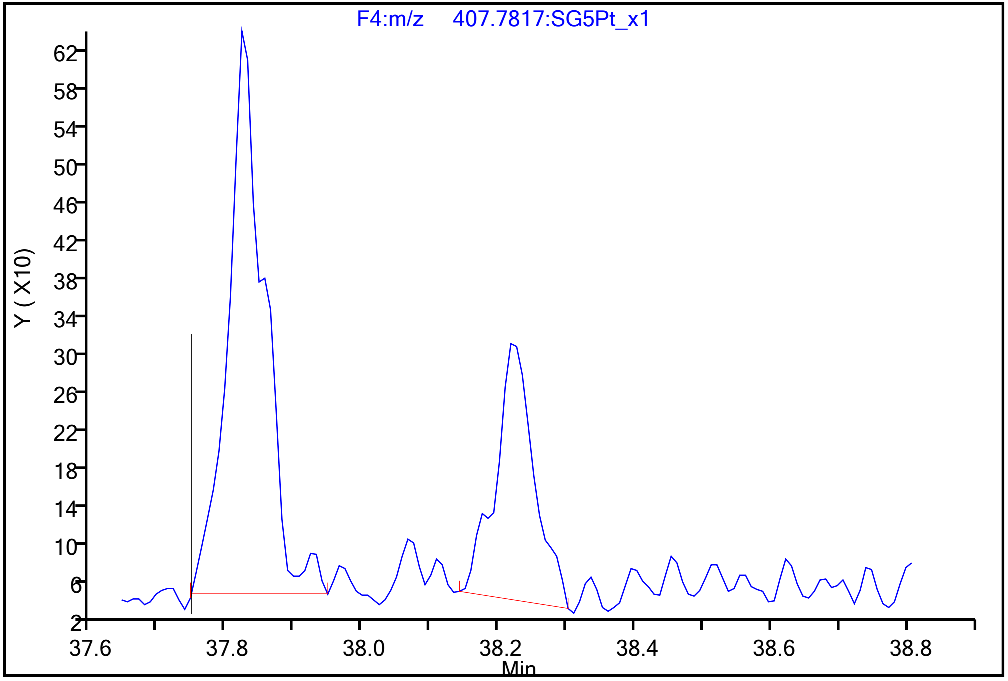

Manual Integration Results

RT = 38.217 Area = 970 M

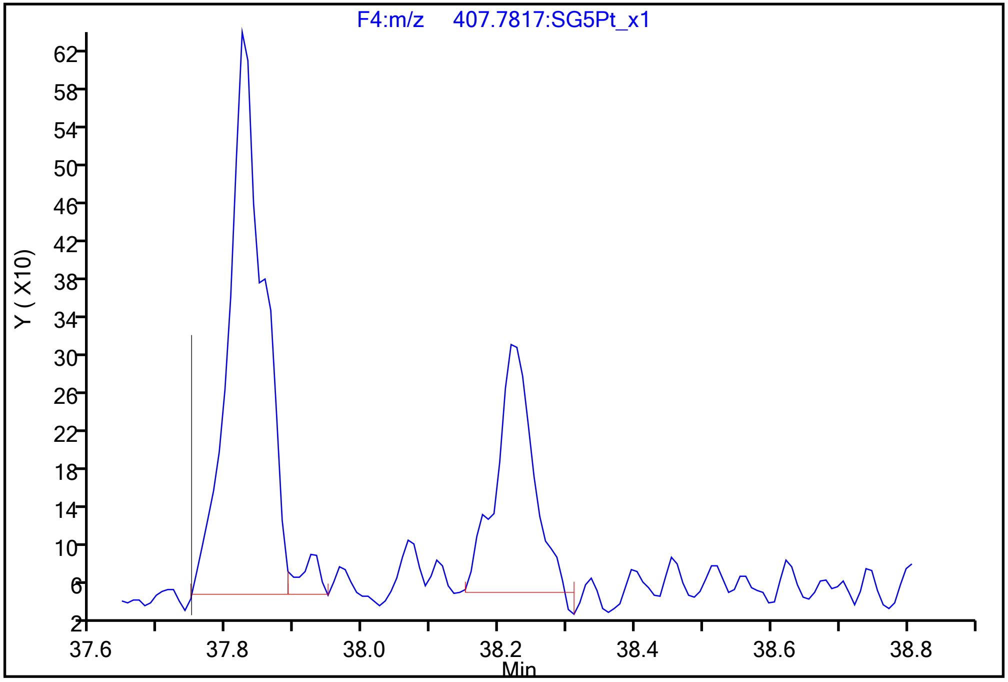

Reviewer: dadunj, 16-Mar-2021 08:34:41

Audit Action: Manually Integrated Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (37.75- 39.15)

Signal: 2

Processing Integration Results

RT = 38.217 Area = 1396

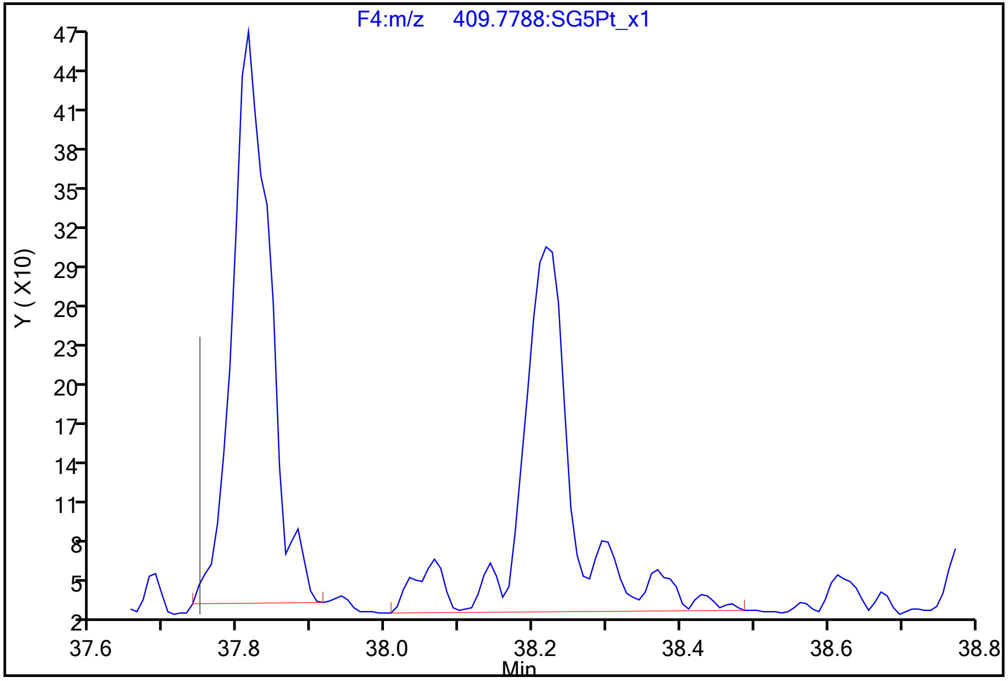

Manual Integration Results

RT = 38.217 Area = 995 M

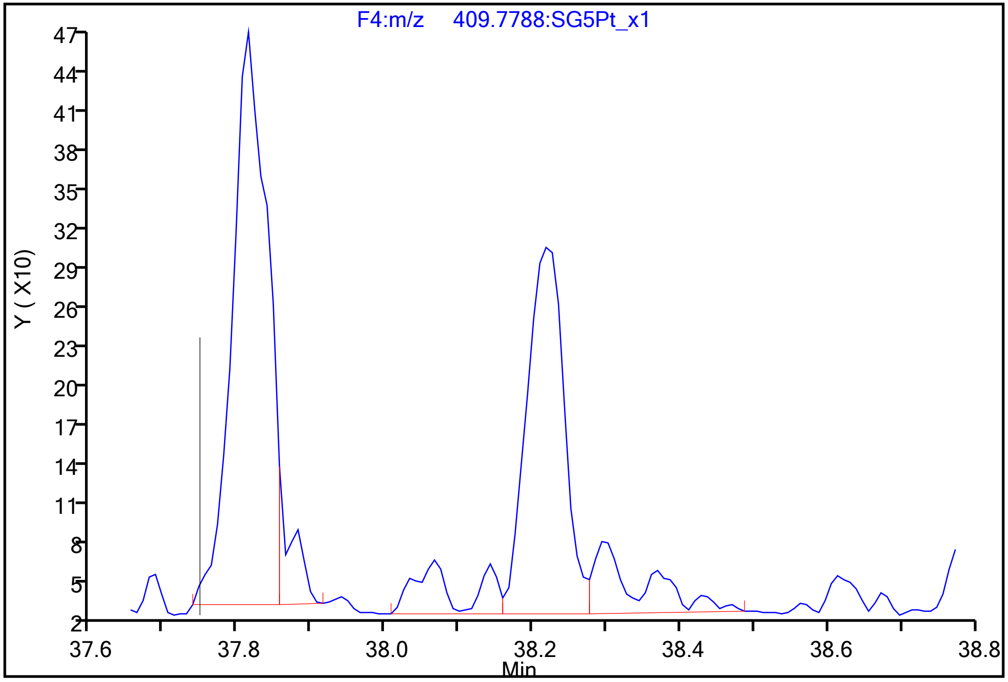

Reviewer: dadunj, 16-Mar-2021 08:34:37

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:36:05 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

RT: 38.86
Area: 2448
Amount: 0.200317
Amount Units: pg/ul

Processing Integration Results

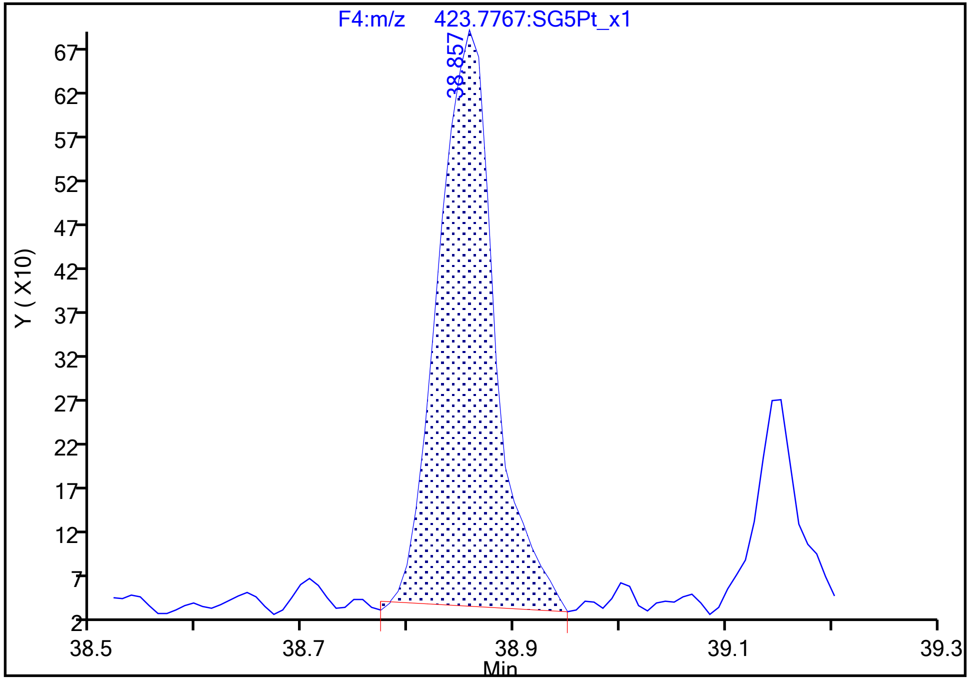

RT: 38.86
Area: 2390
Amount: 0.198014
Amount Units: pg/ul

Manual Integration Results

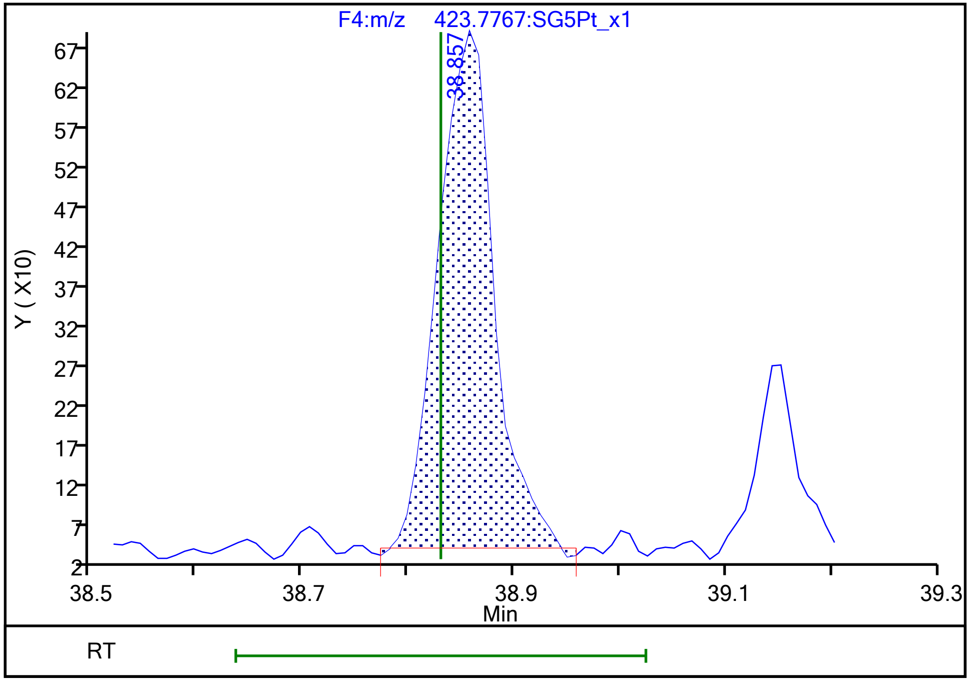

Reviewer: dadunj, 16-Mar-2021 08:34:56
Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 16-Mar-2021 08:36:05

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT: 41.40

Area: 3252

Amount: 0.225410

Amount Units: pg/ul

Processing Integration Results

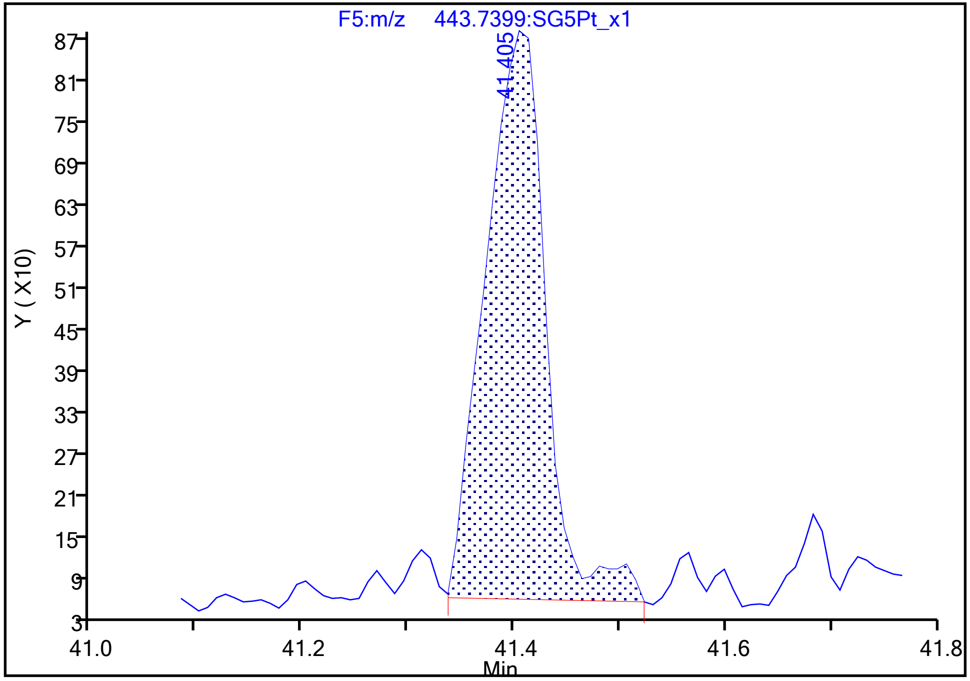

RT: 41.40

Area: 3108

Amount: 0.215316

Amount Units: pg/ul

Manual Integration Results

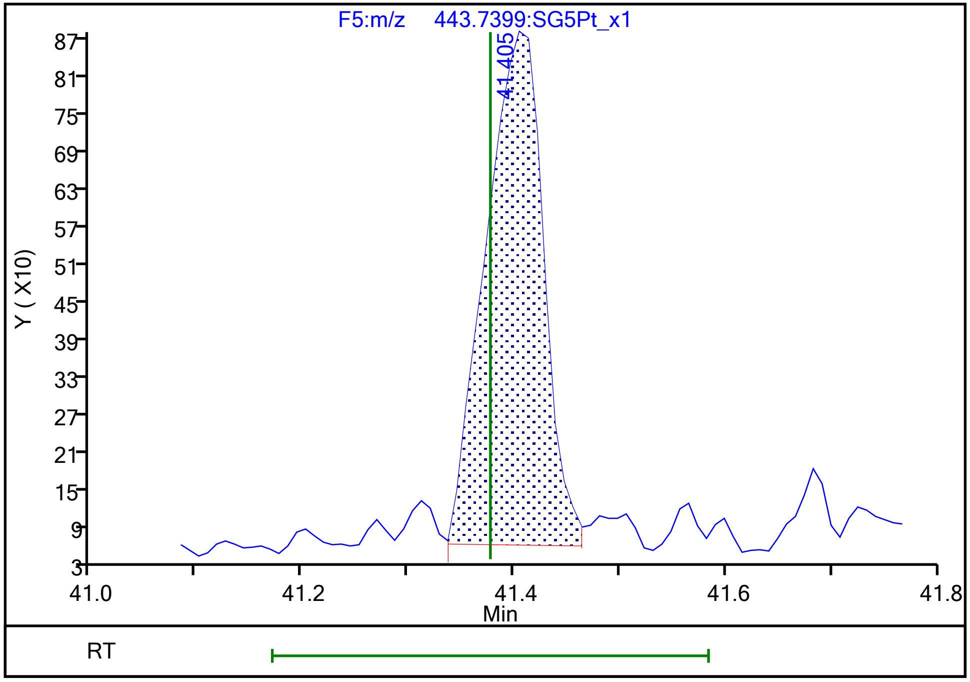

Reviewer: dadunj, 16-Mar-2021 08:35:10

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:36:05

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d

Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

RT:	41.40
Area:	3380
Amount:	0.225410
Amount Units:	pg/ul

Processing Integration Results

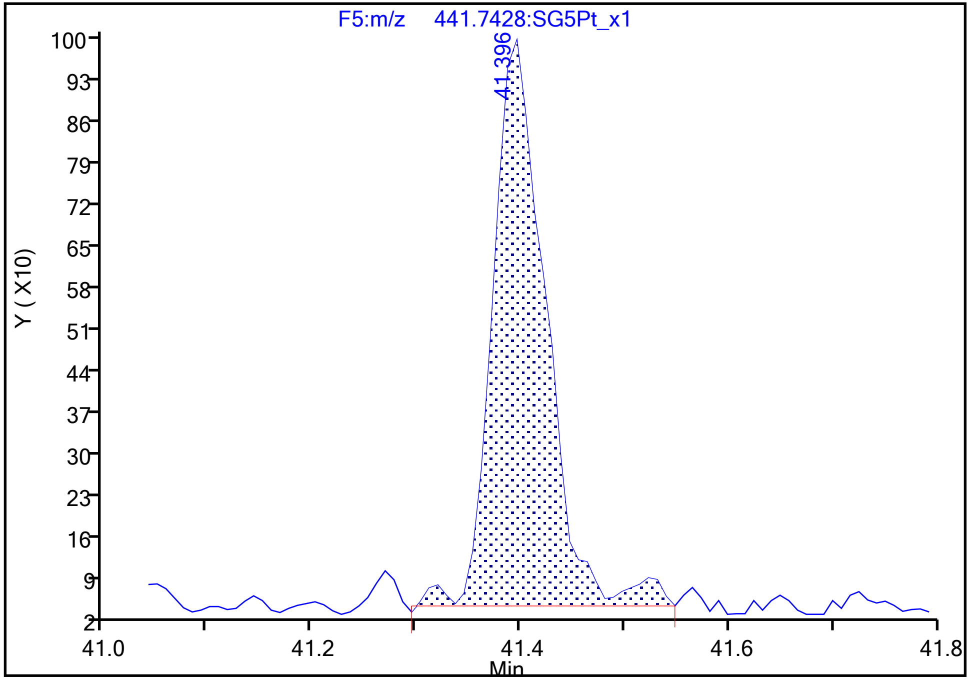

RT:	41.40
Area:	3227
Amount:	0.215316
Amount Units:	pg/ul

Manual Integration Results

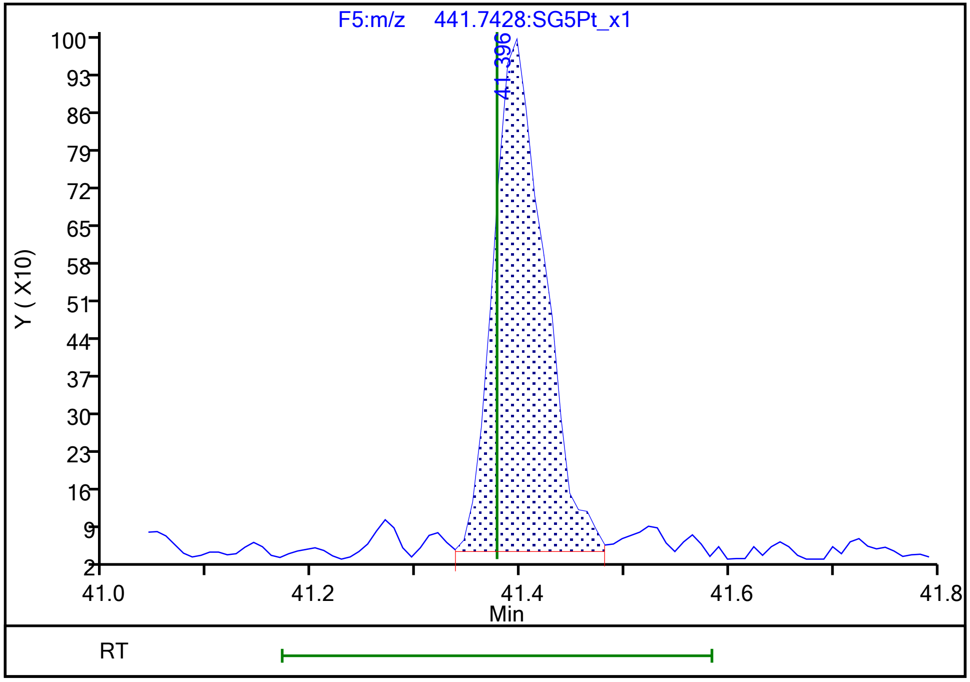

Reviewer: dadunj, 16-Mar-2021 08:35:11

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d				
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5		
Client ID:	11215702-Tank1-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT:	41.33
Area:	10823
Amount:	0.895638
Amount Units:	pg/ul

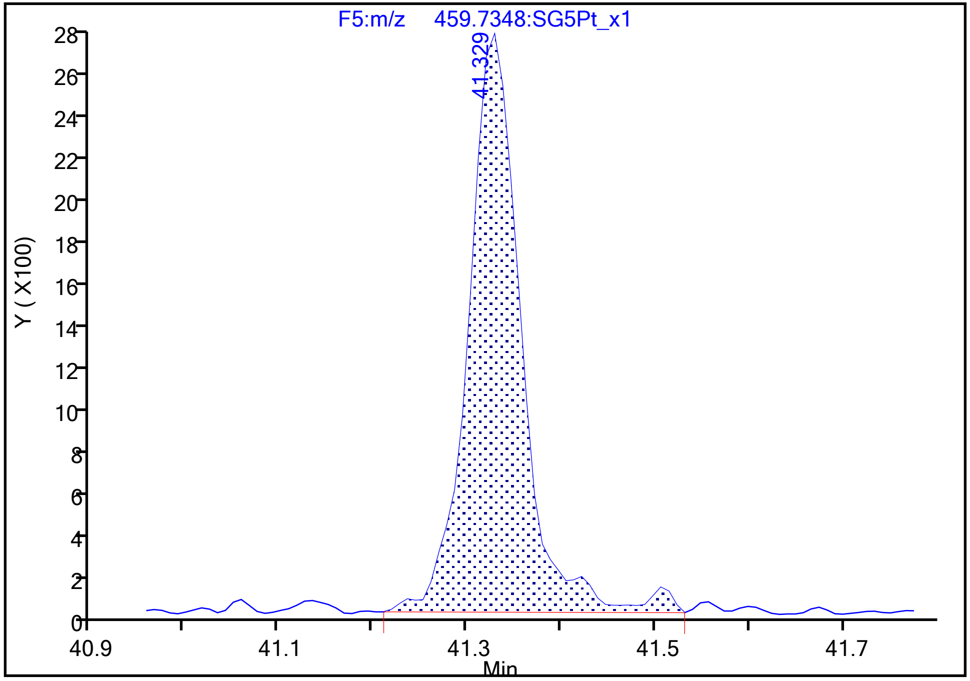

Manual Integration Results

RT:	41.33
Area:	10319
Amount:	0.854410
Amount Units:	pg/ul

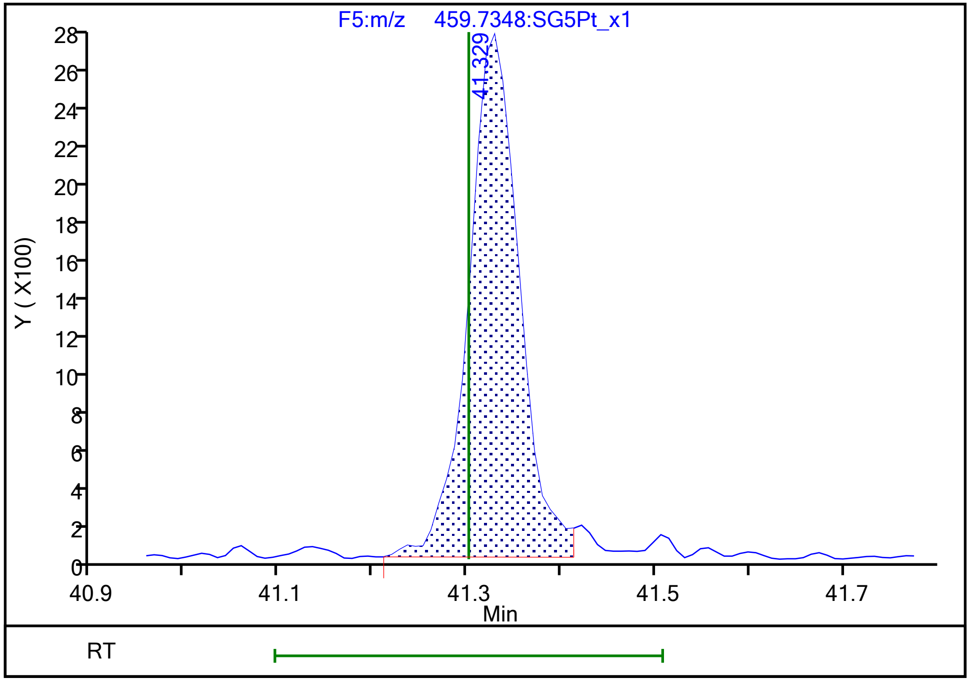

Reviewer: dadunj, 16-Mar-2021 08:35:15

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:36:05 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-5-A	Lab Sample ID:	320-70797-5
Client ID:	11215702-Tank1-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT:	41.33
Area:	8729
Amount:	0.895638
Amount Units:	pg/ul

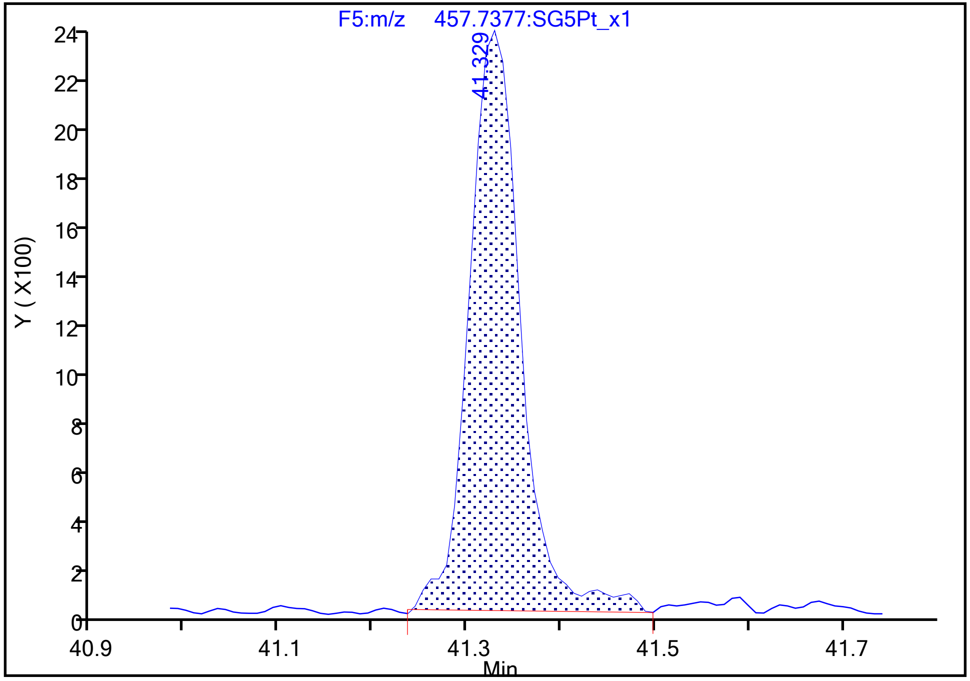

Manual Integration Results

RT:	41.33
Area:	8333
Amount:	0.854410
Amount Units:	pg/ul

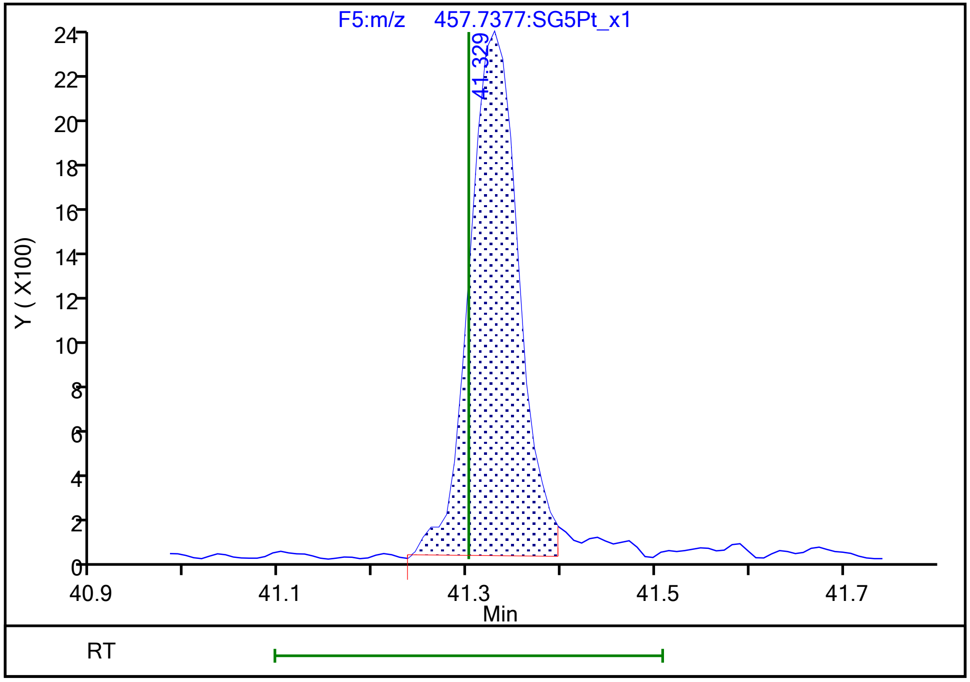

Reviewer: dadunj, 16-Mar-2021 08:35:16

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:36:05 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d

Injection Date: 12-Mar-2021 14:33:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.45mm

Worklist#: 469779

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

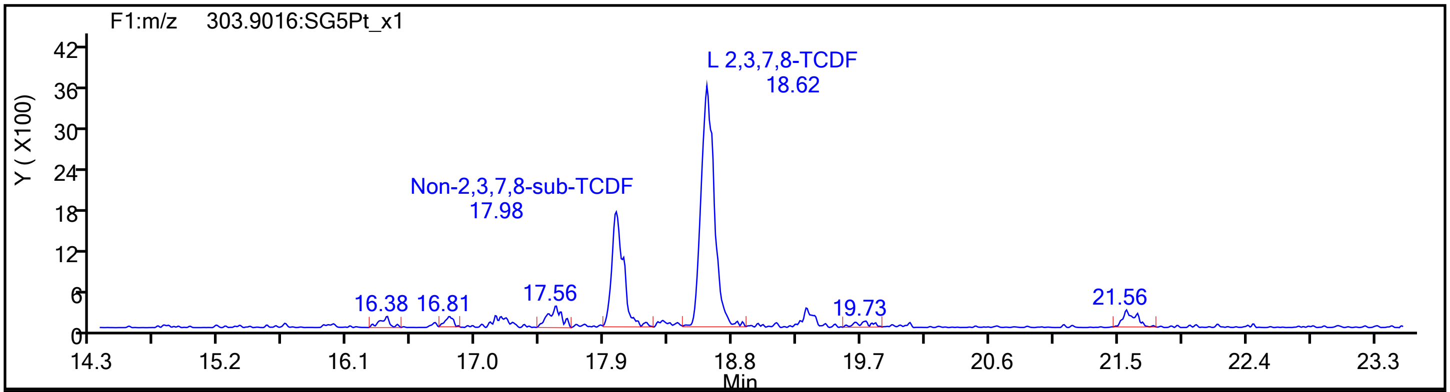

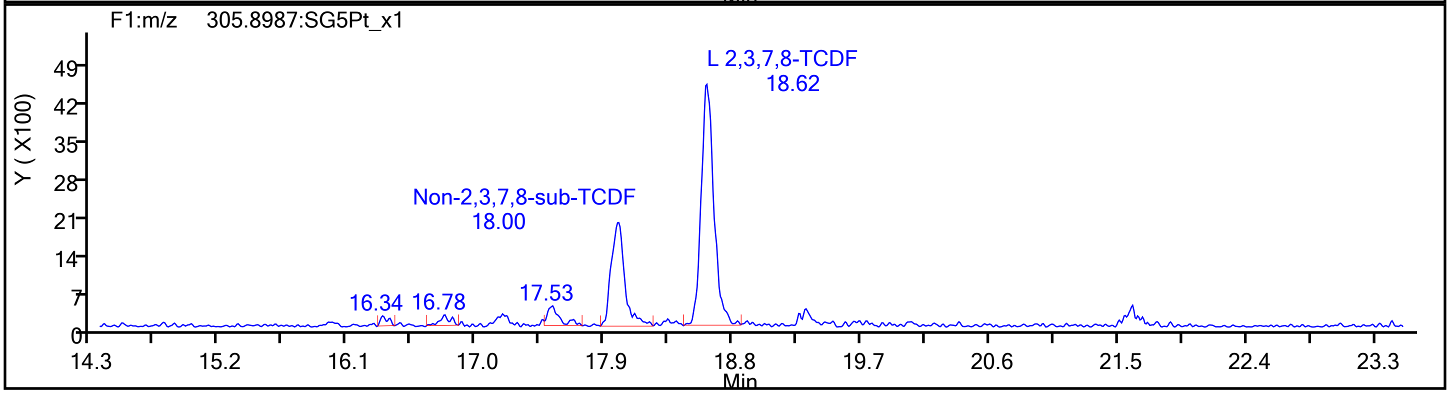

TCDF Standards

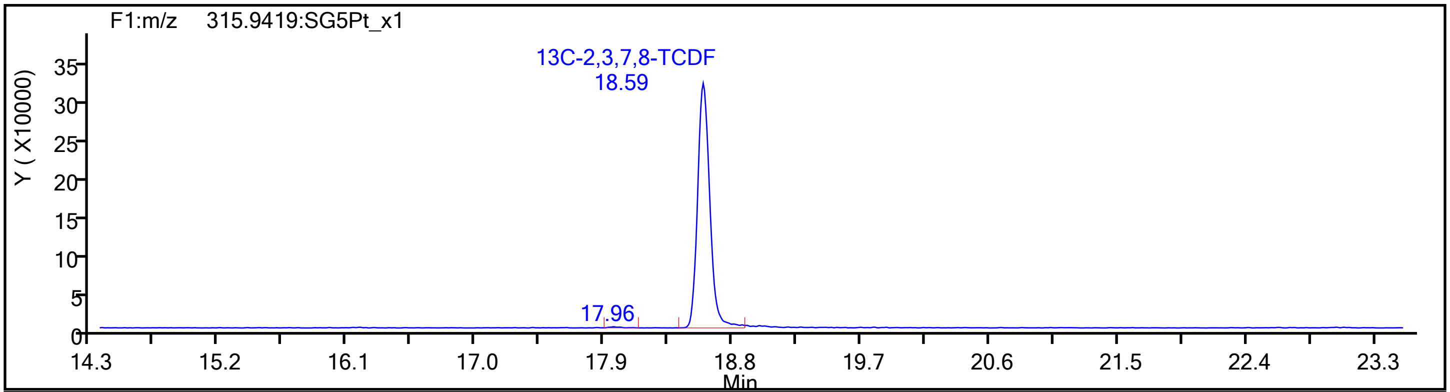

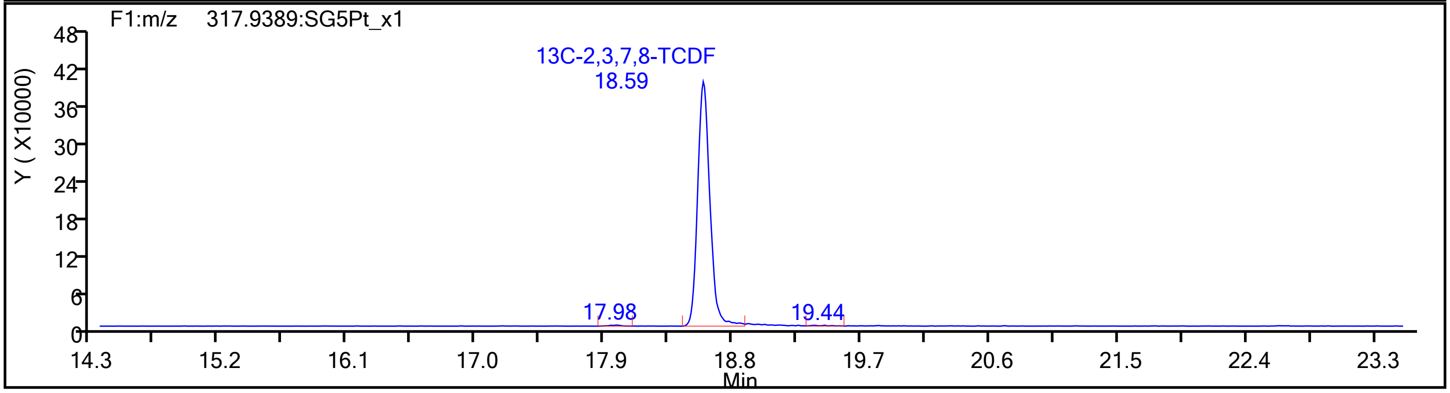

Report Date: 16-Mar-2021 08:36:05
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.45mm		
Worklist#:	469779	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

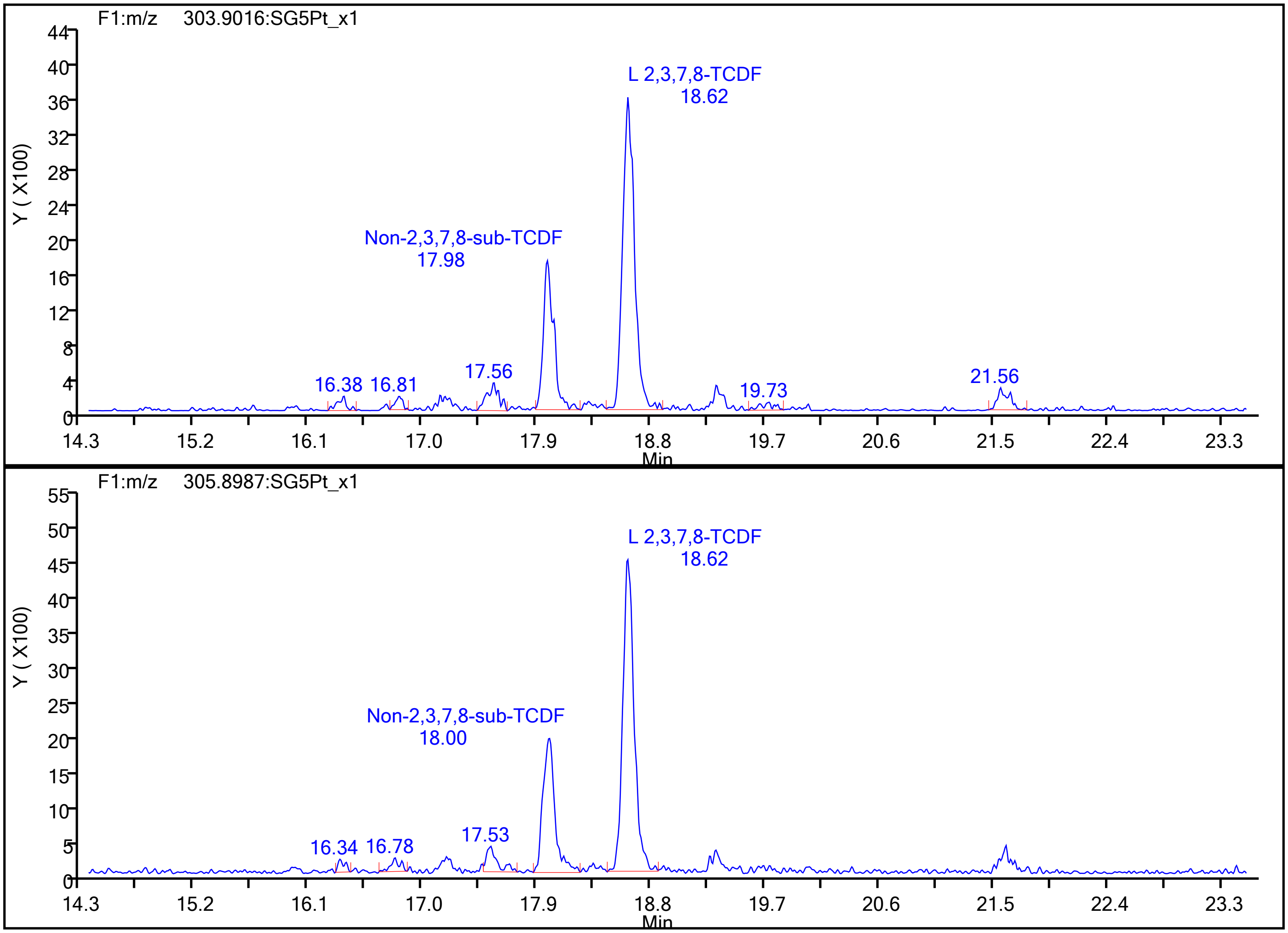

TCDF Interference Mass

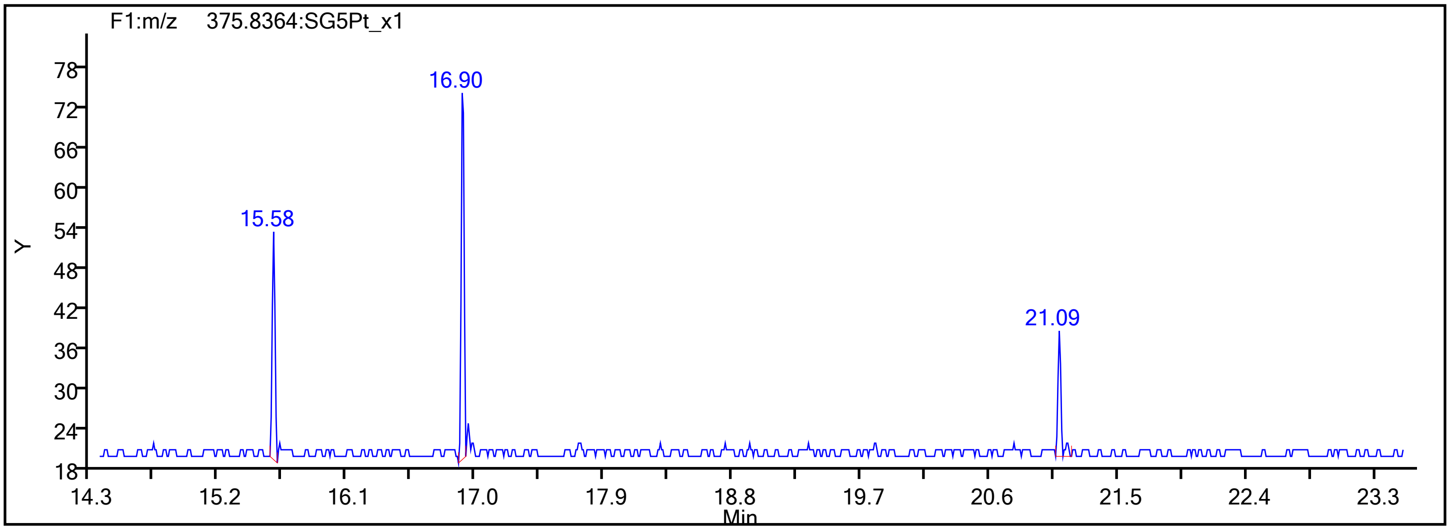

Report Date: 16-Mar-2021 08:36:05　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d

Injection Date:	12-Mar-2021 14:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.45mm		
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

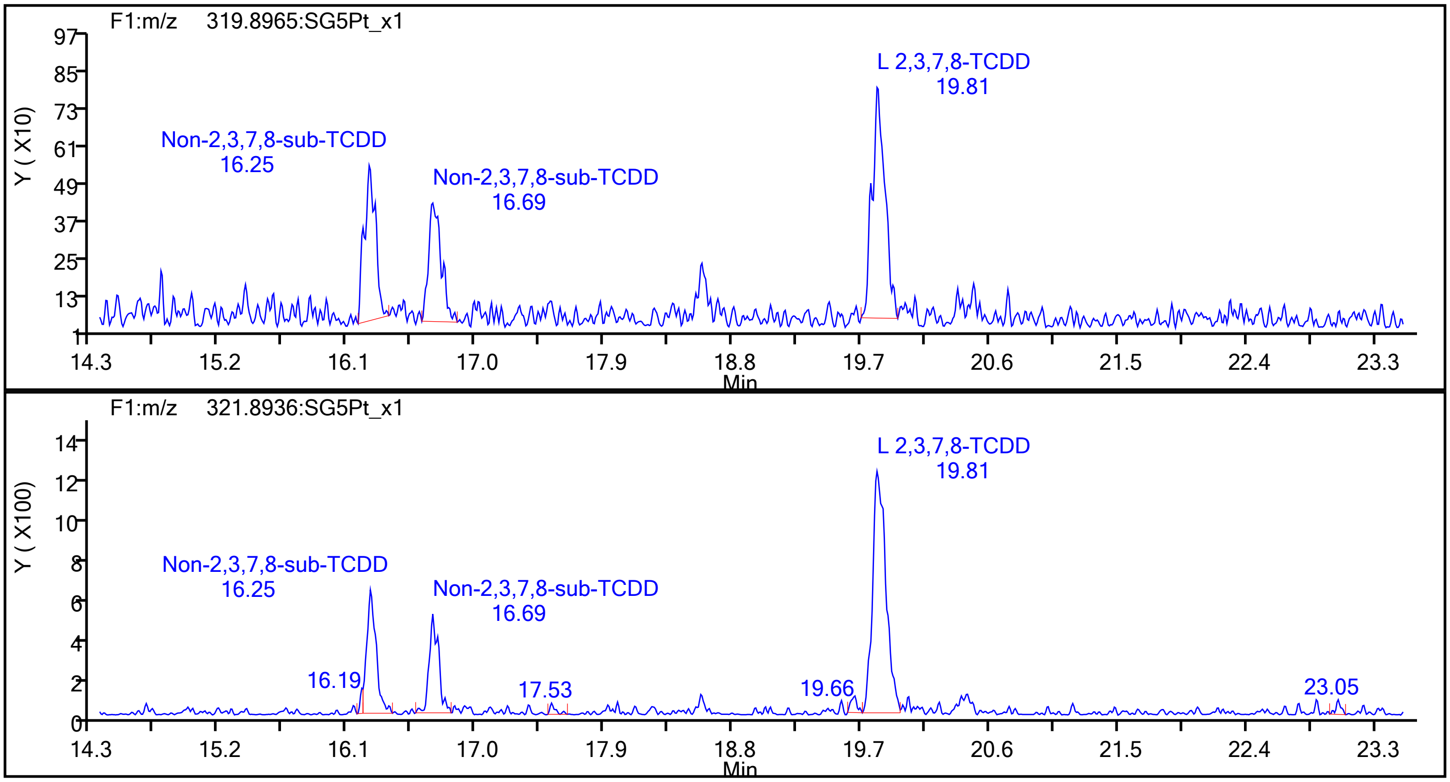

TCDD Standards

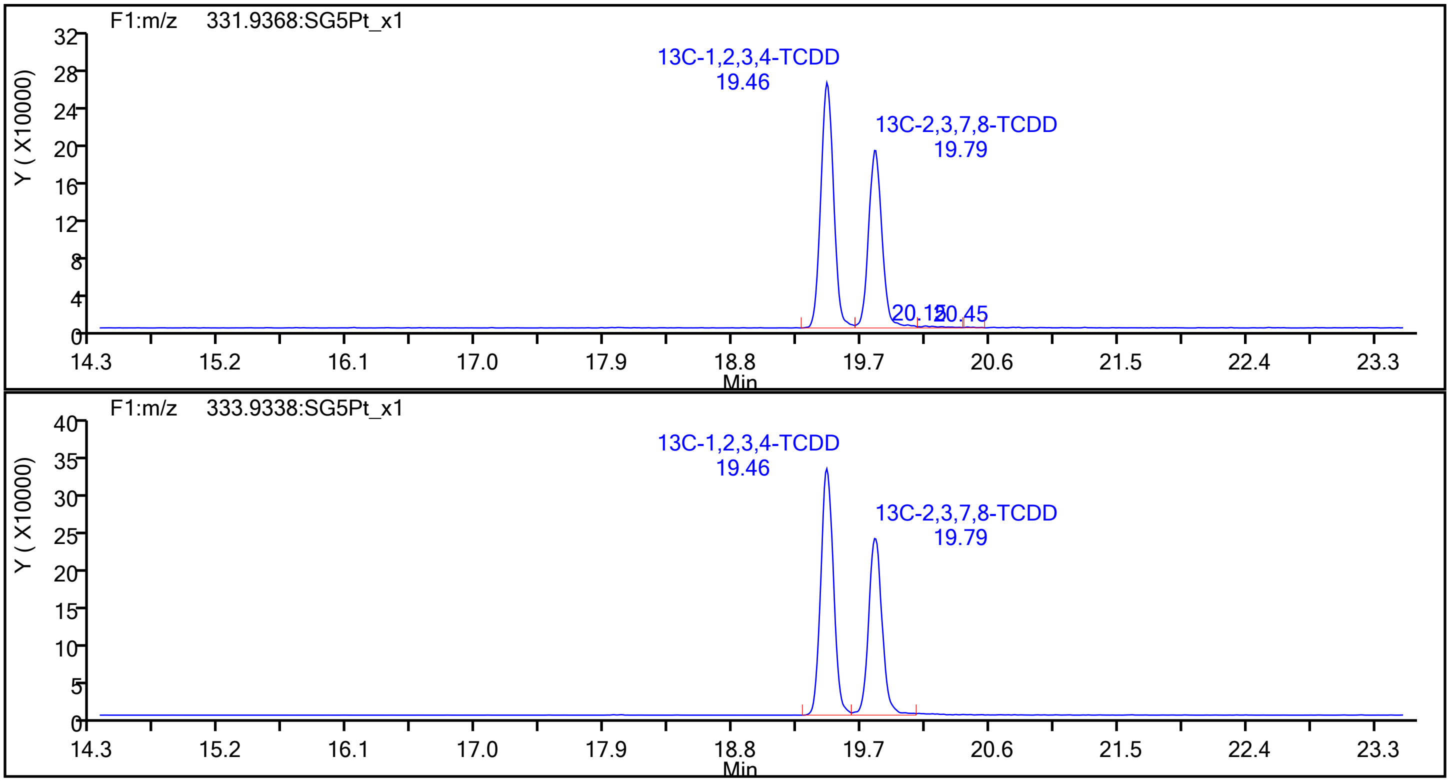

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

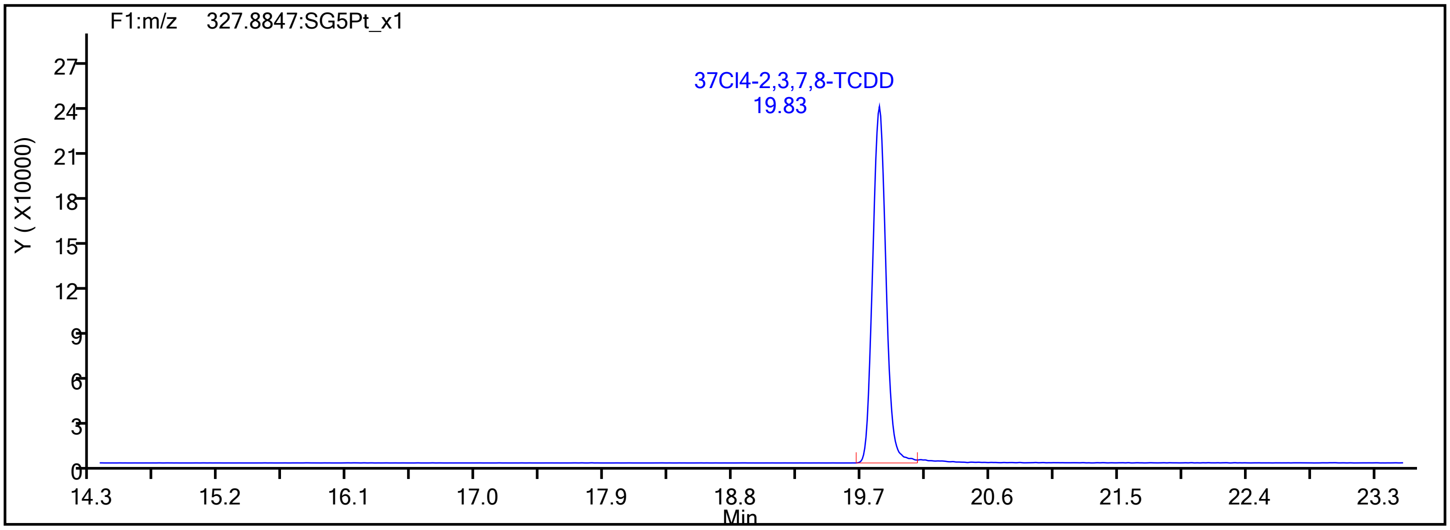

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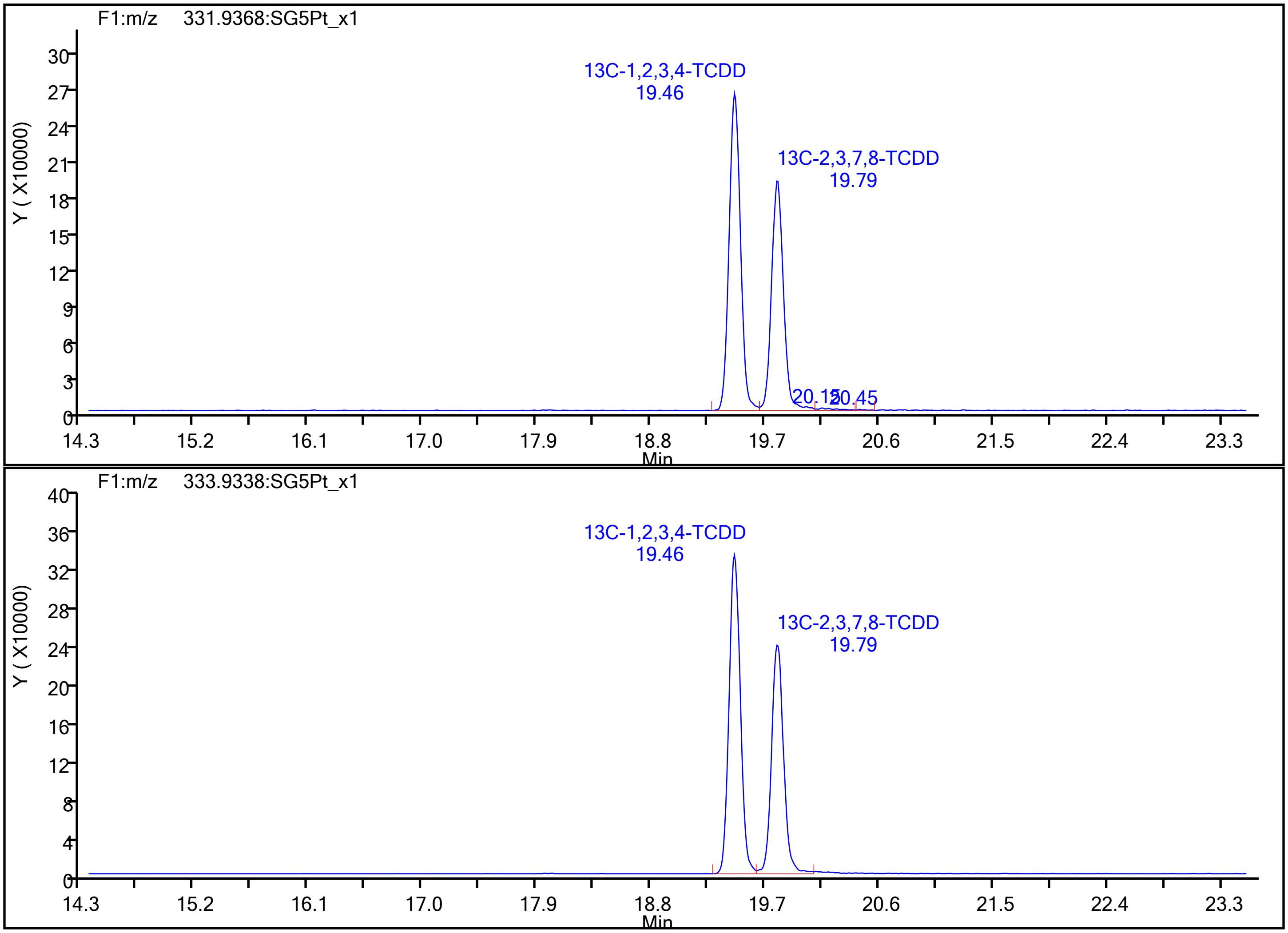

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

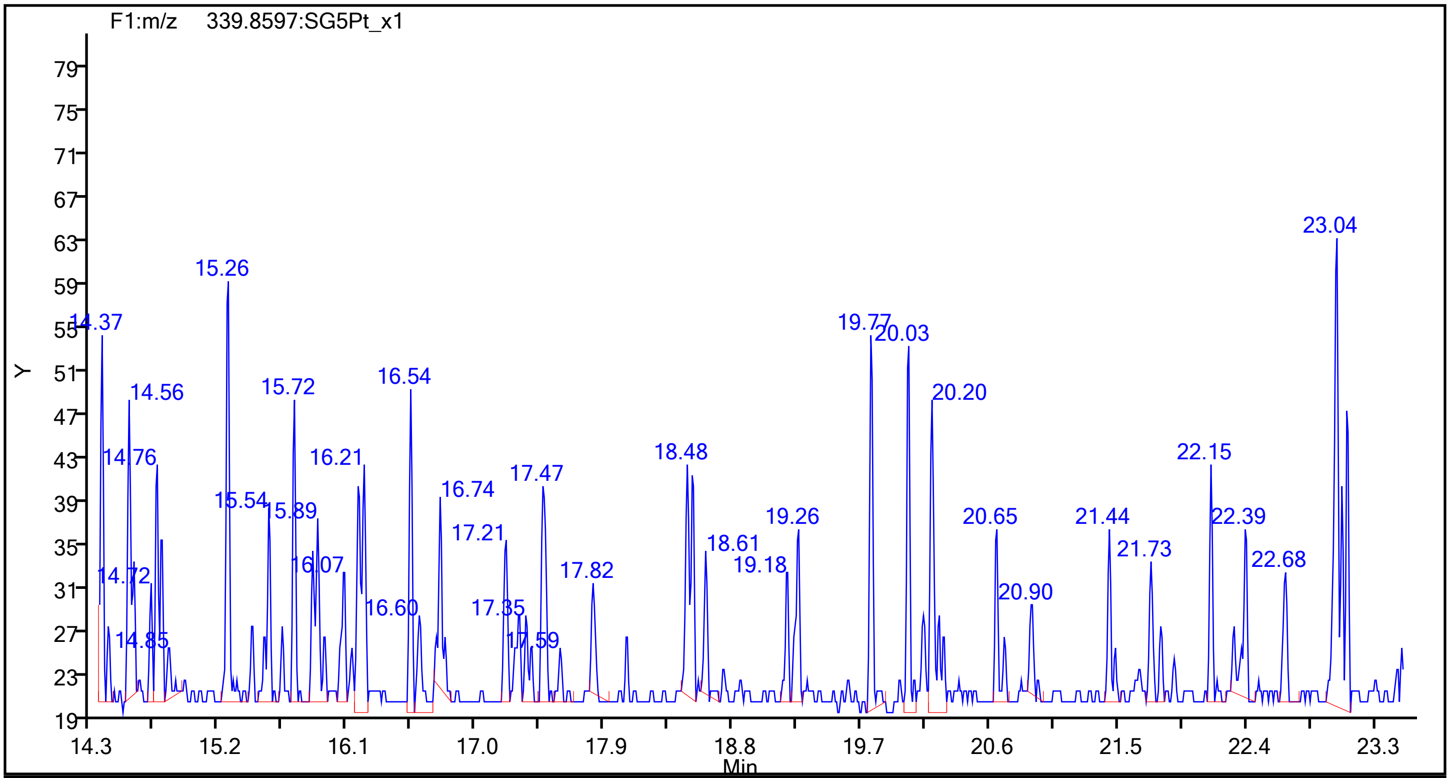

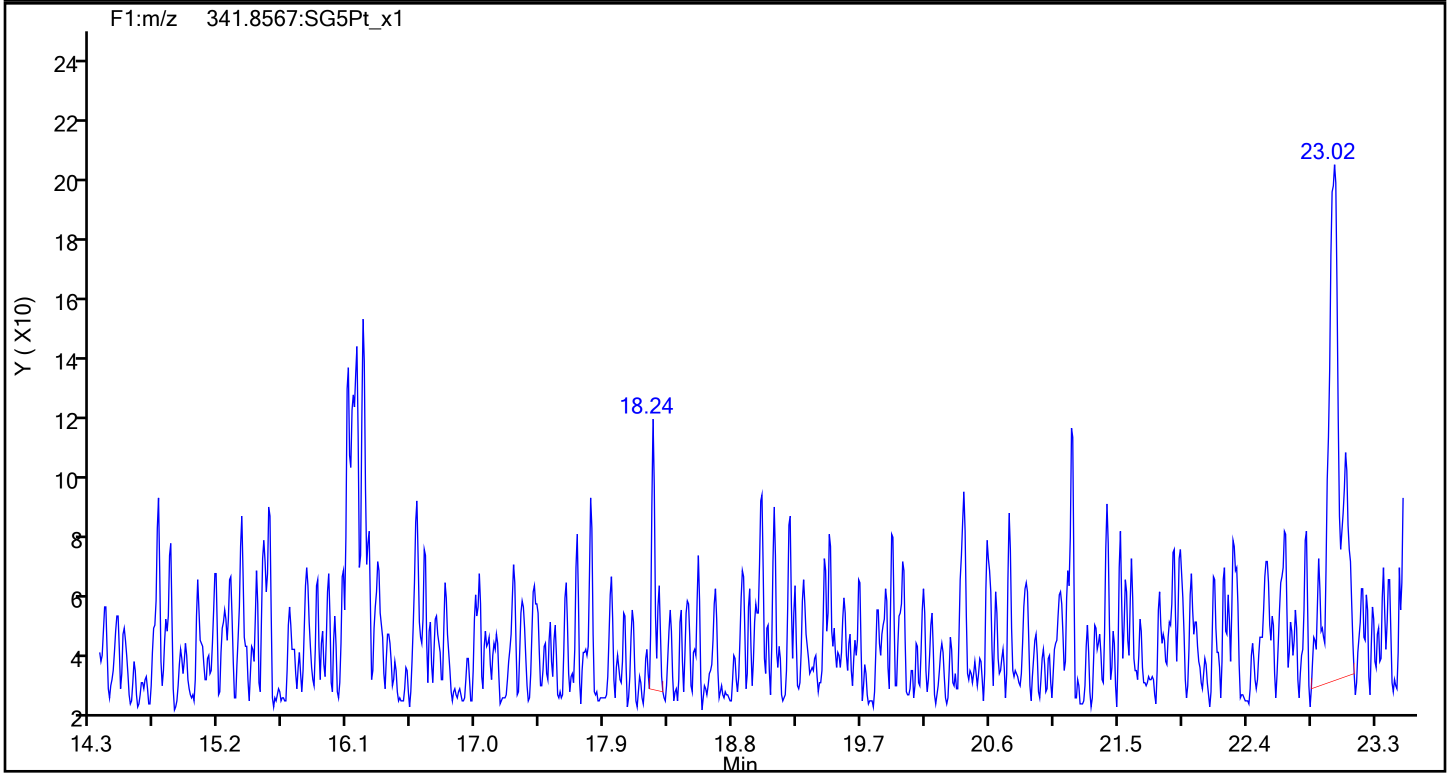

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

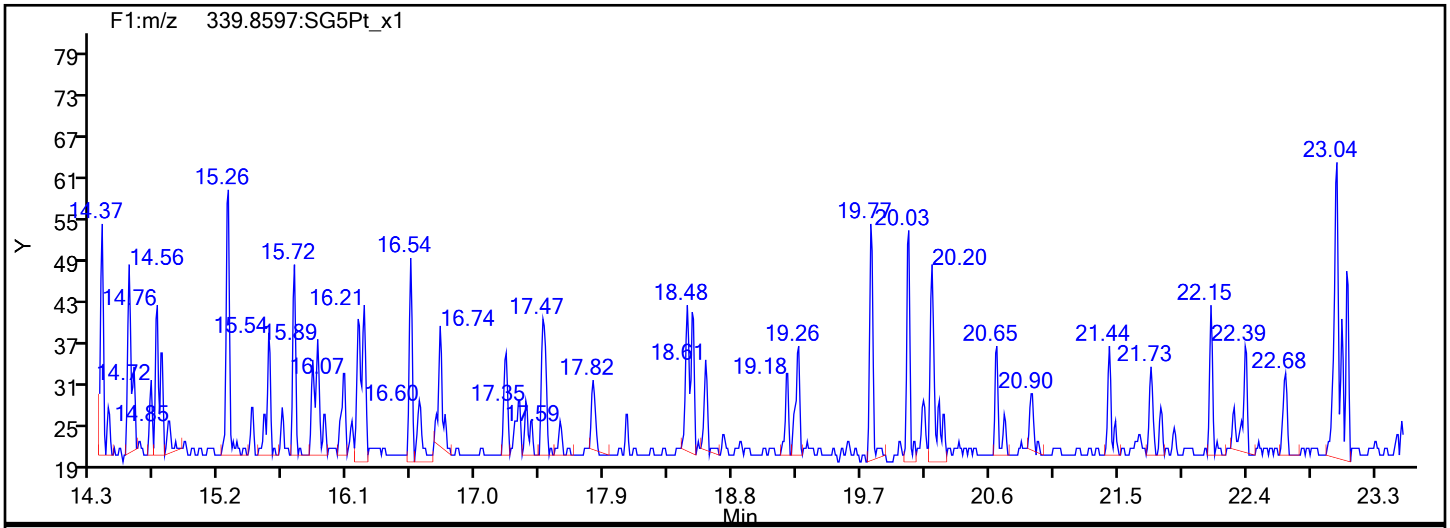

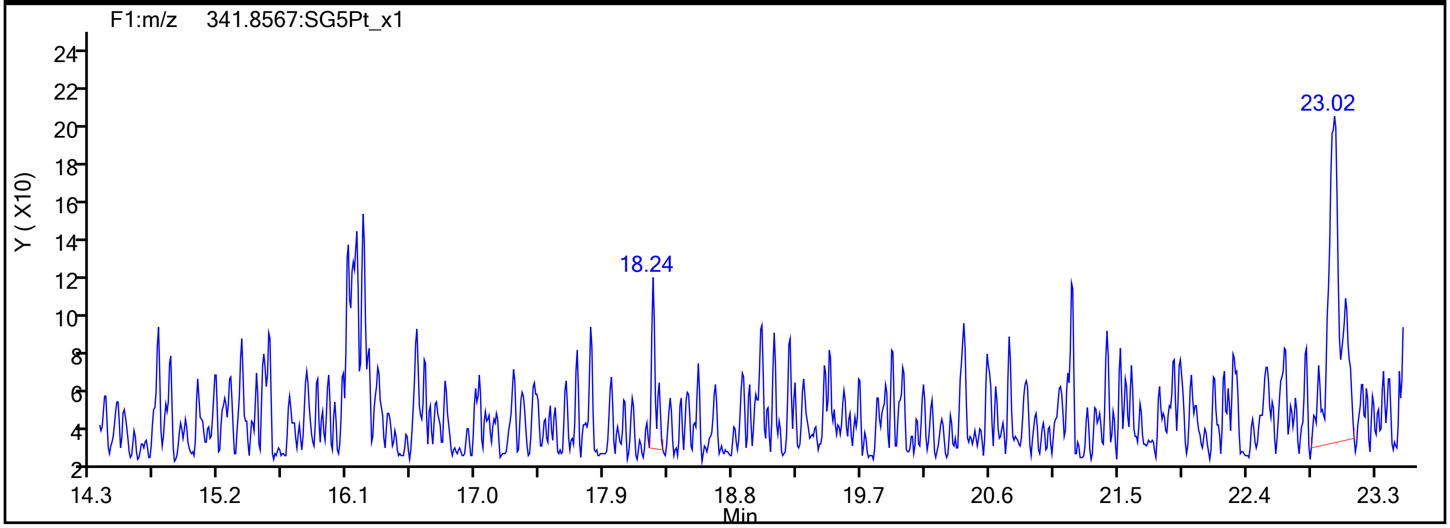

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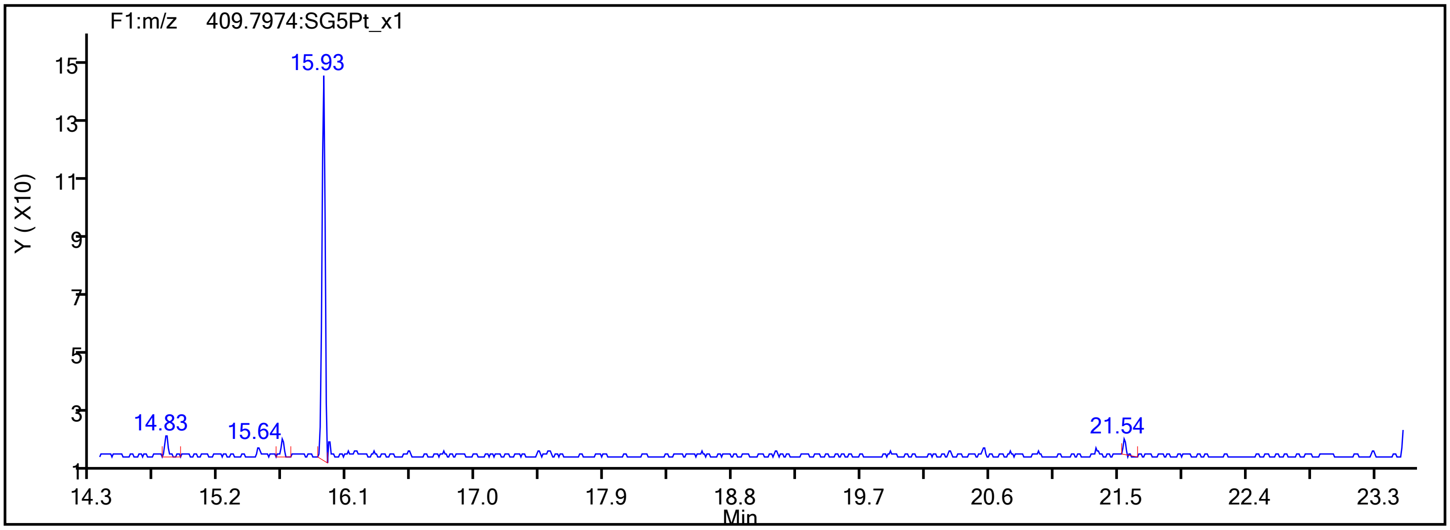

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Eurofins TestAmerica, Sacramento

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PeCDF

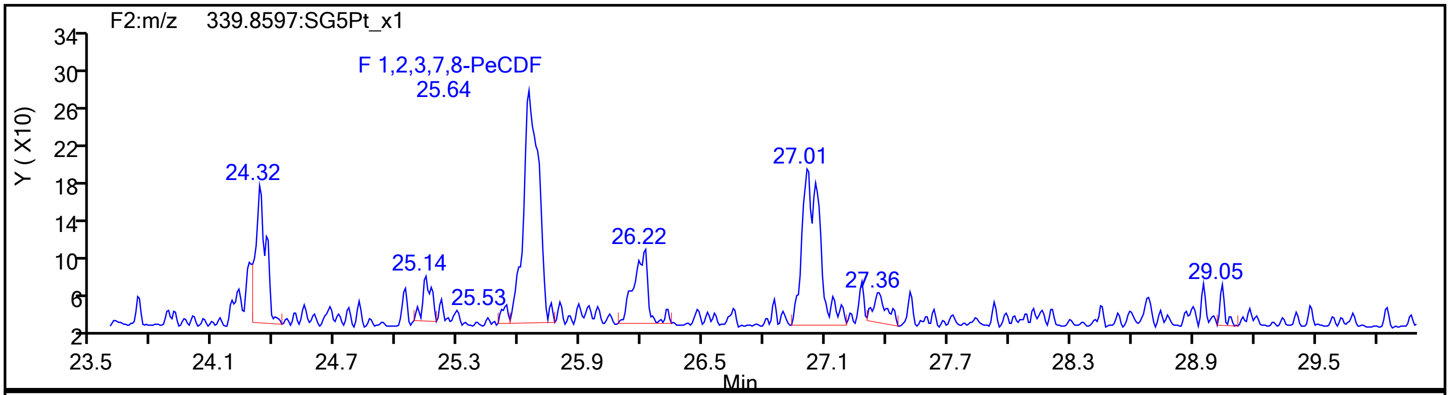

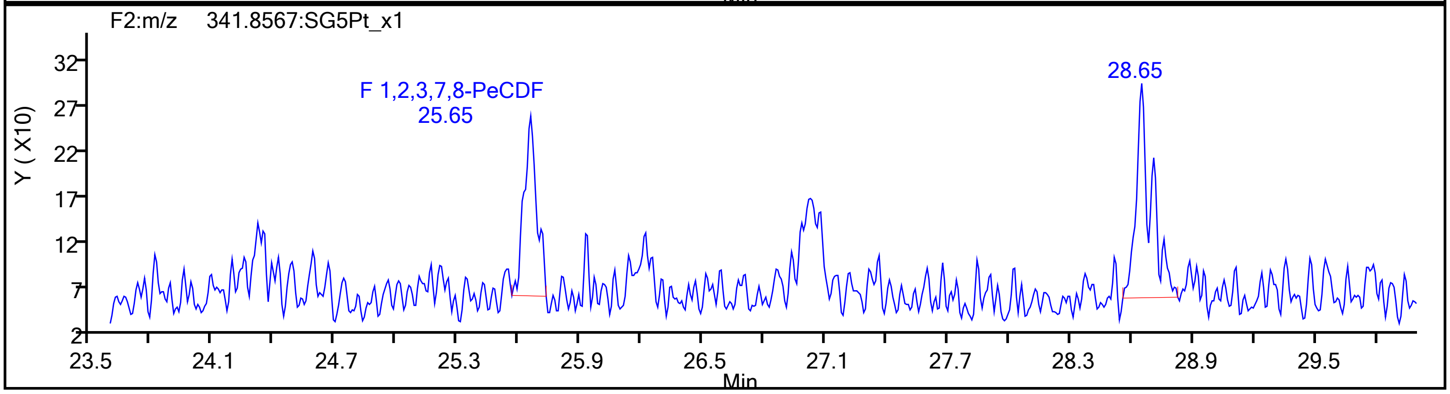

PeCDF Standards

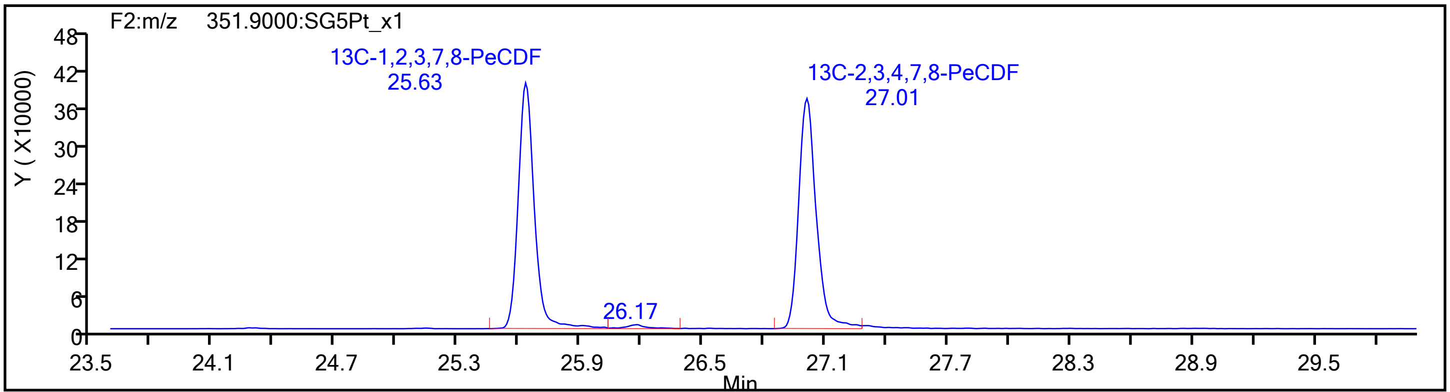

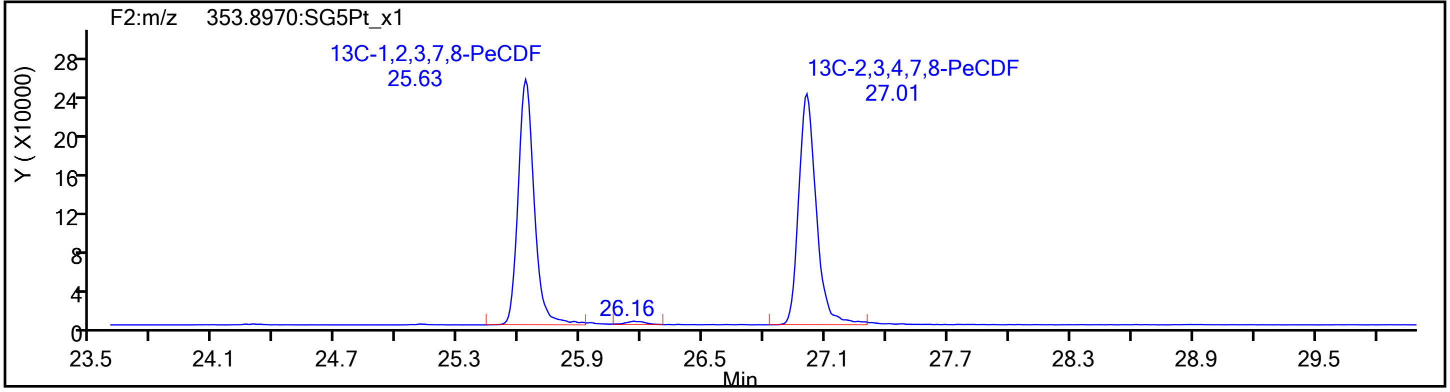

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

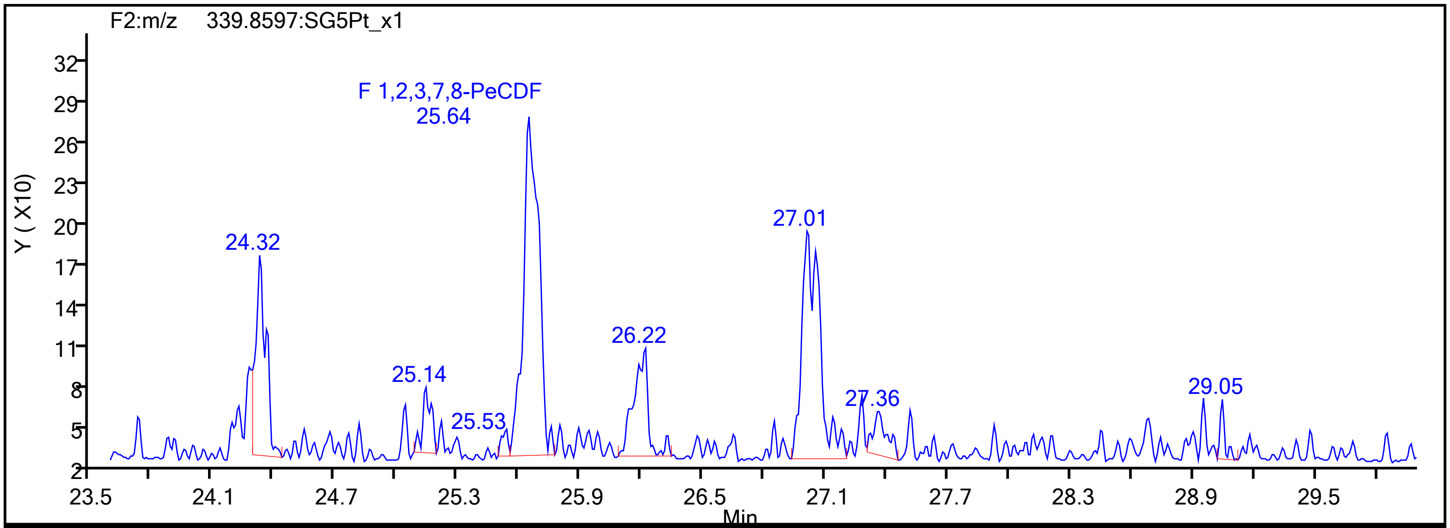

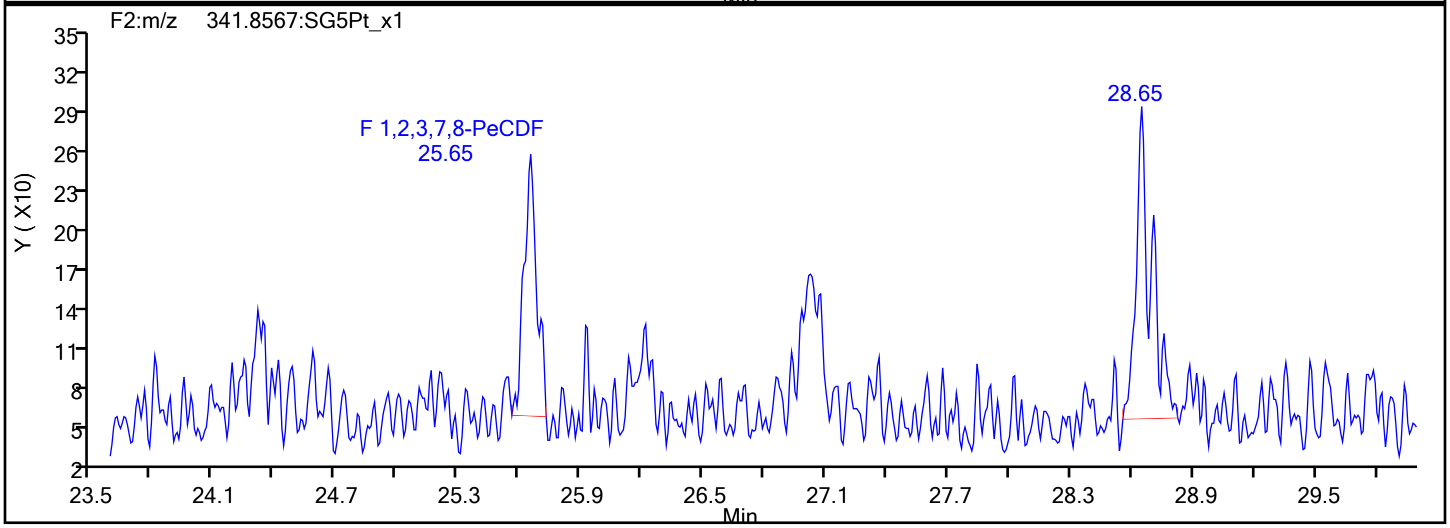

PeCDF Interference Mass

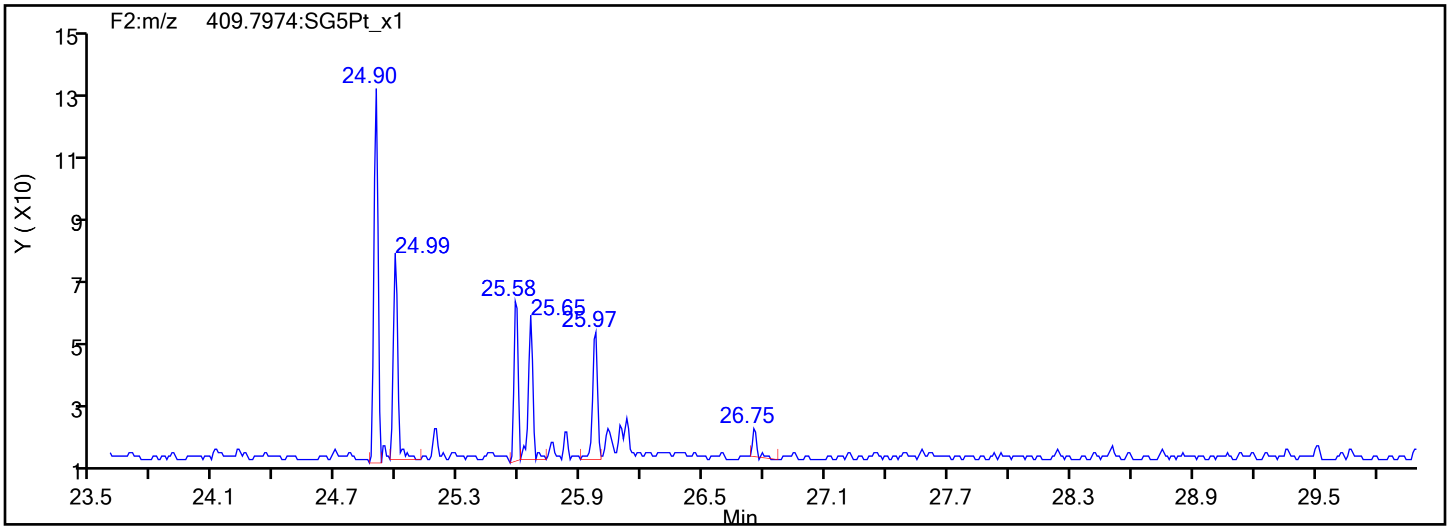

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Eurofins TestAmerica, Sacramento

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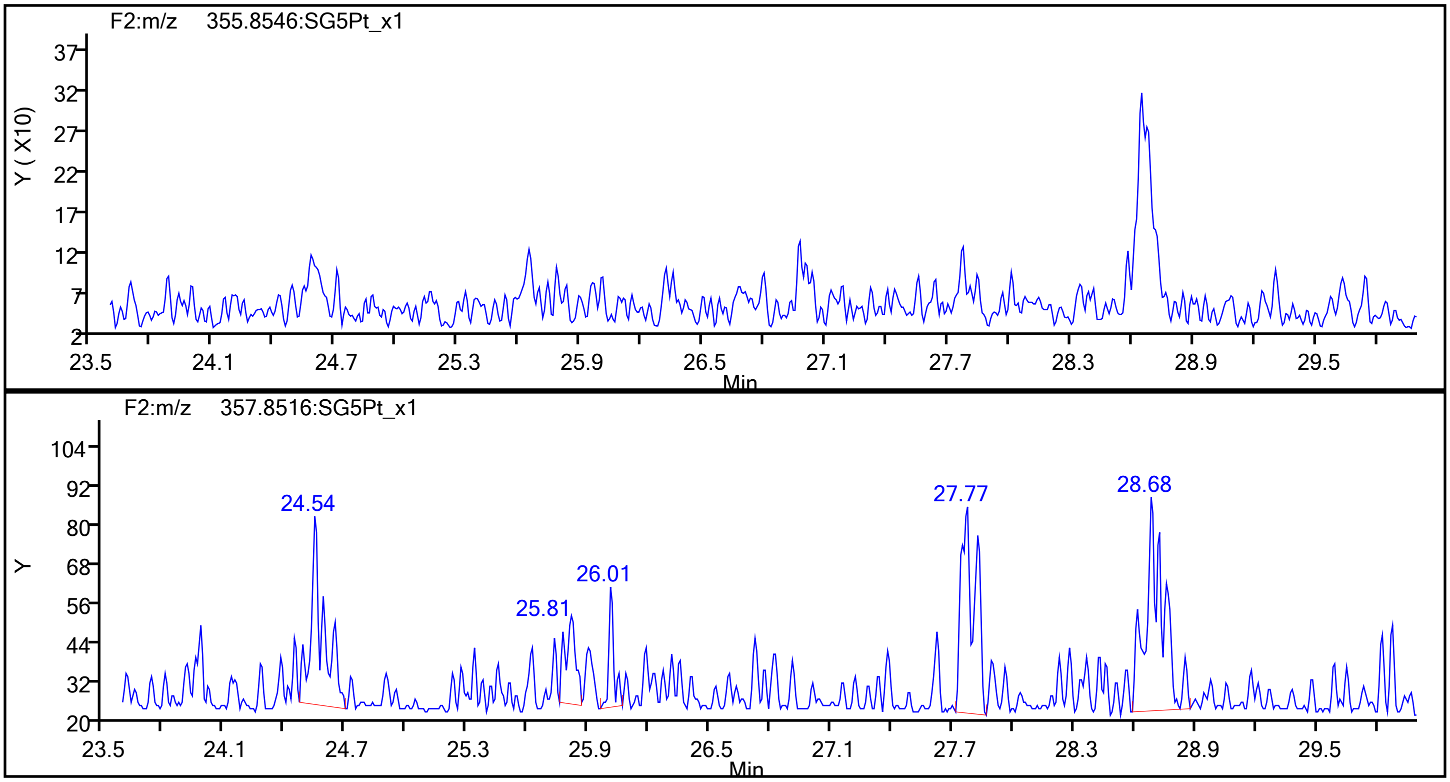

PeCDD Standards

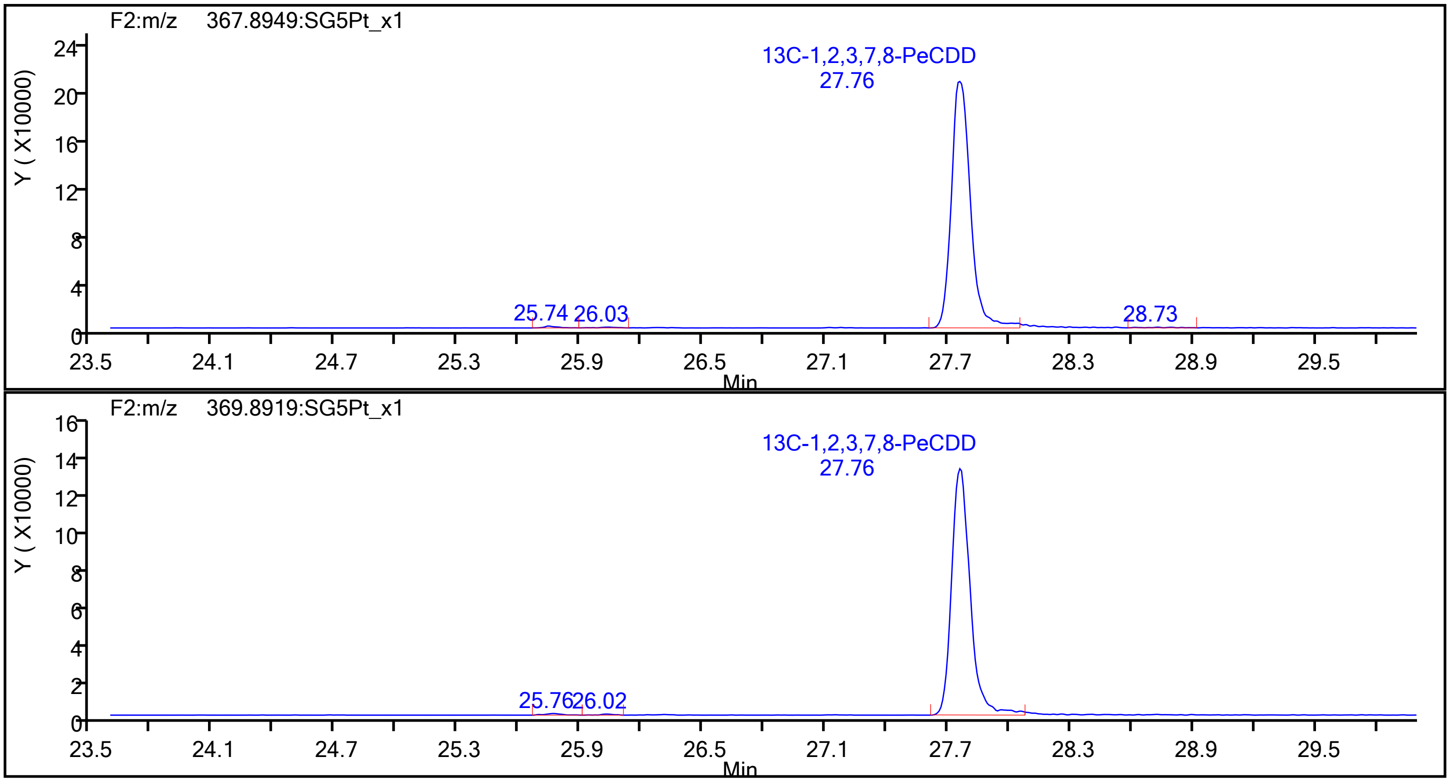

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Eurofins TestAmerica, Sacramento

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HxCDF

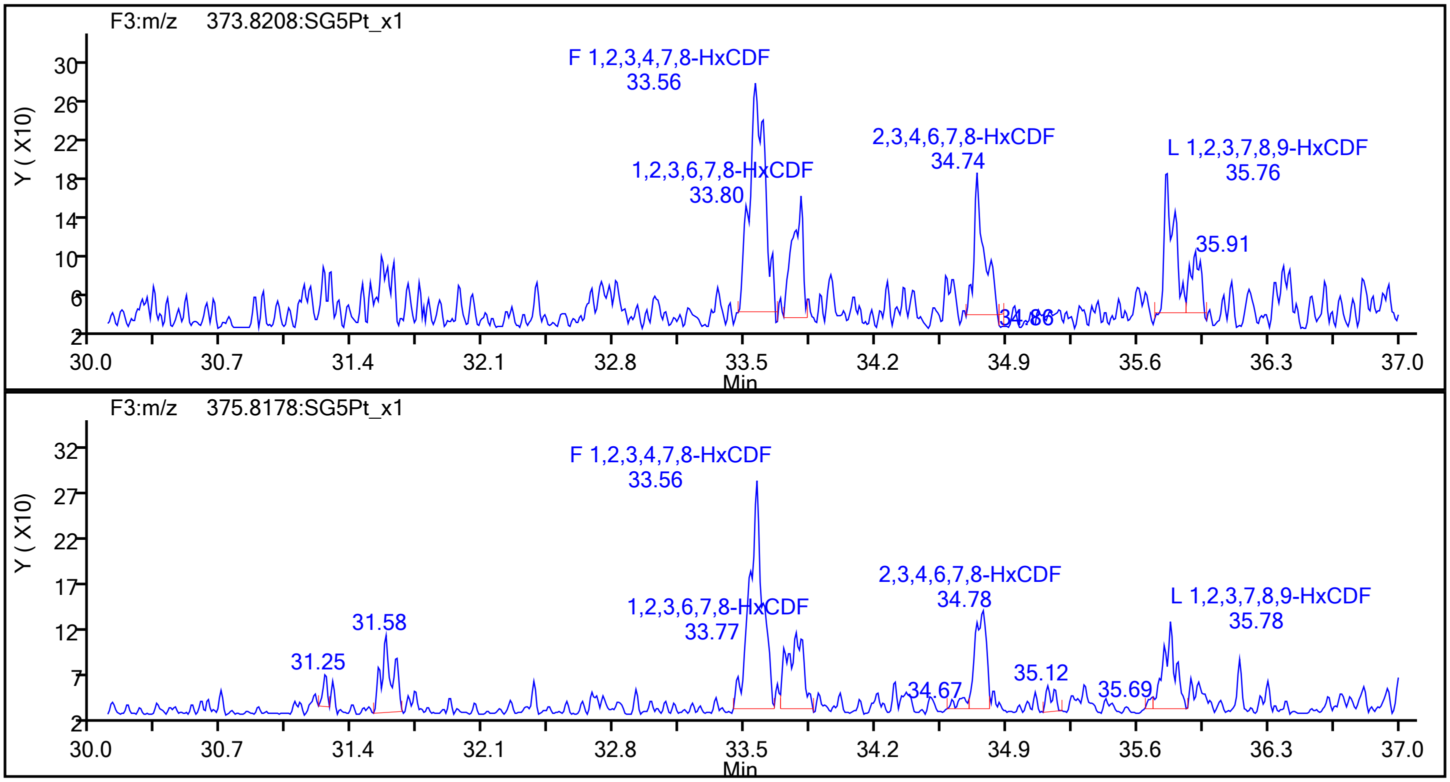

HxCDF Standards

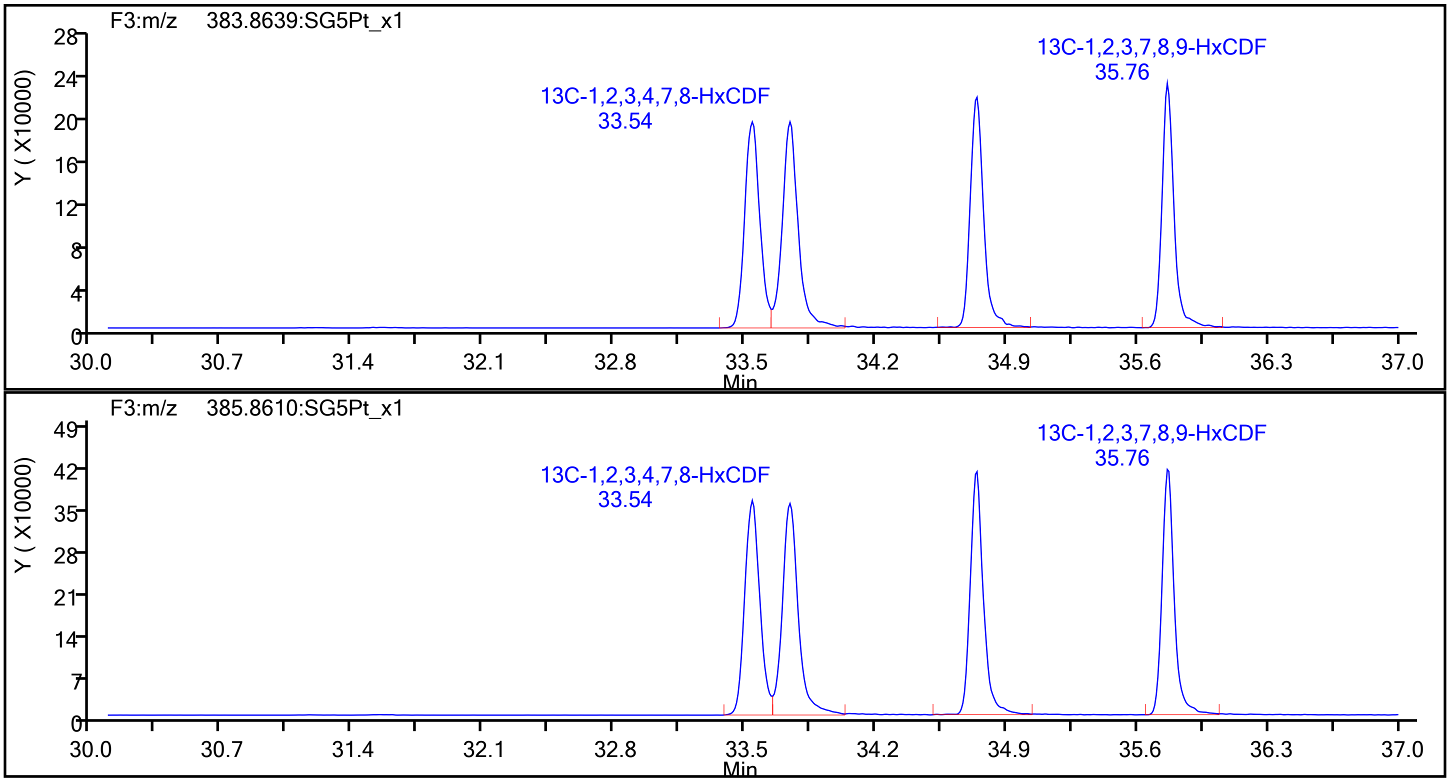

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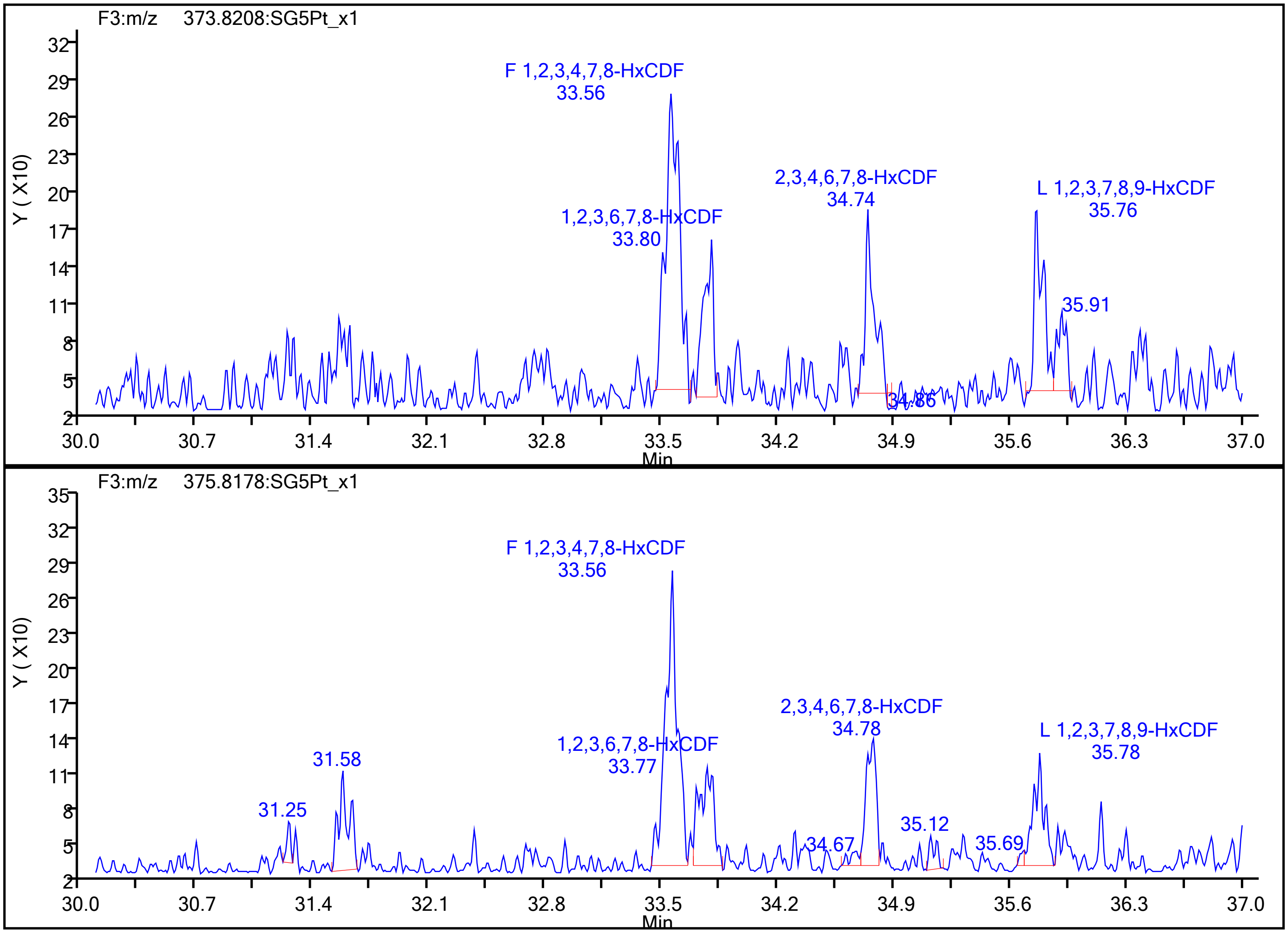

HxCDF Interference Mass

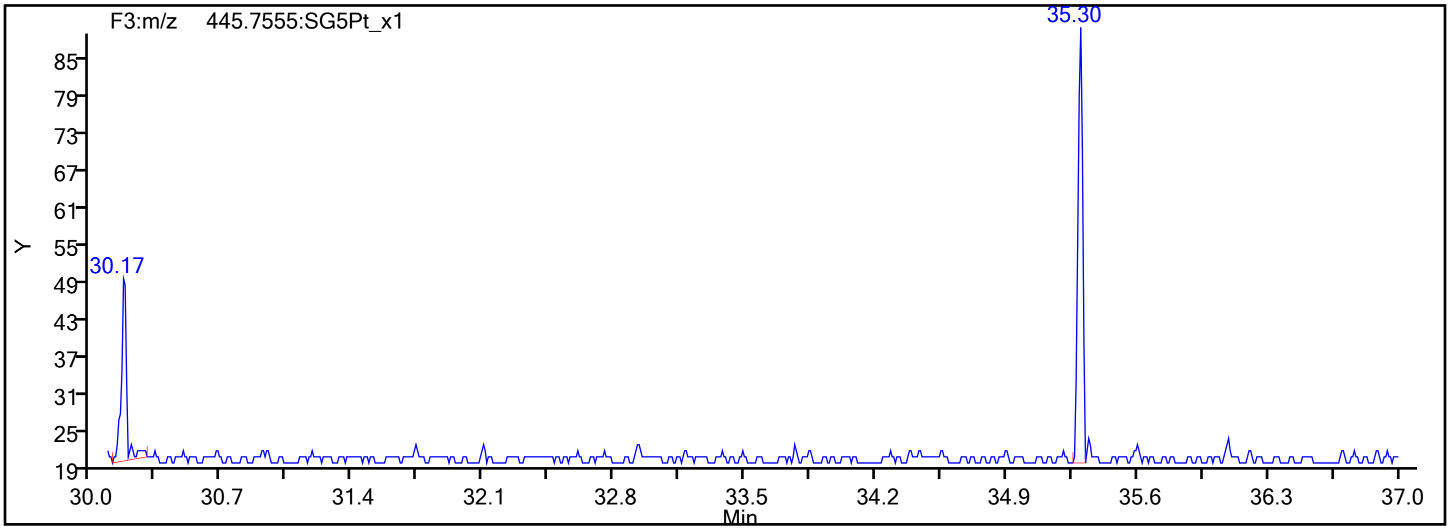

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL

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Worklist#: 469779　Sample Line#: 6

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HxCDD

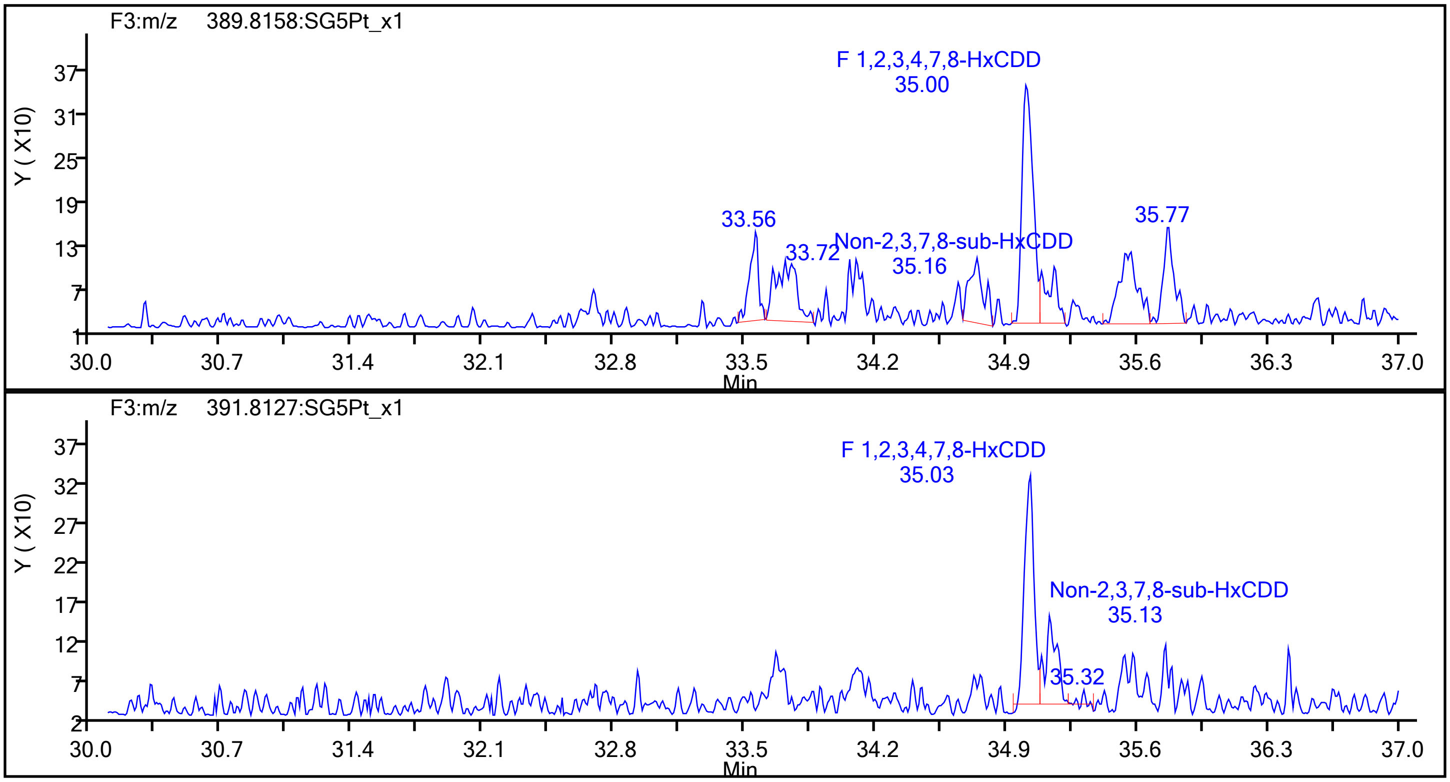

HxCDD Standards

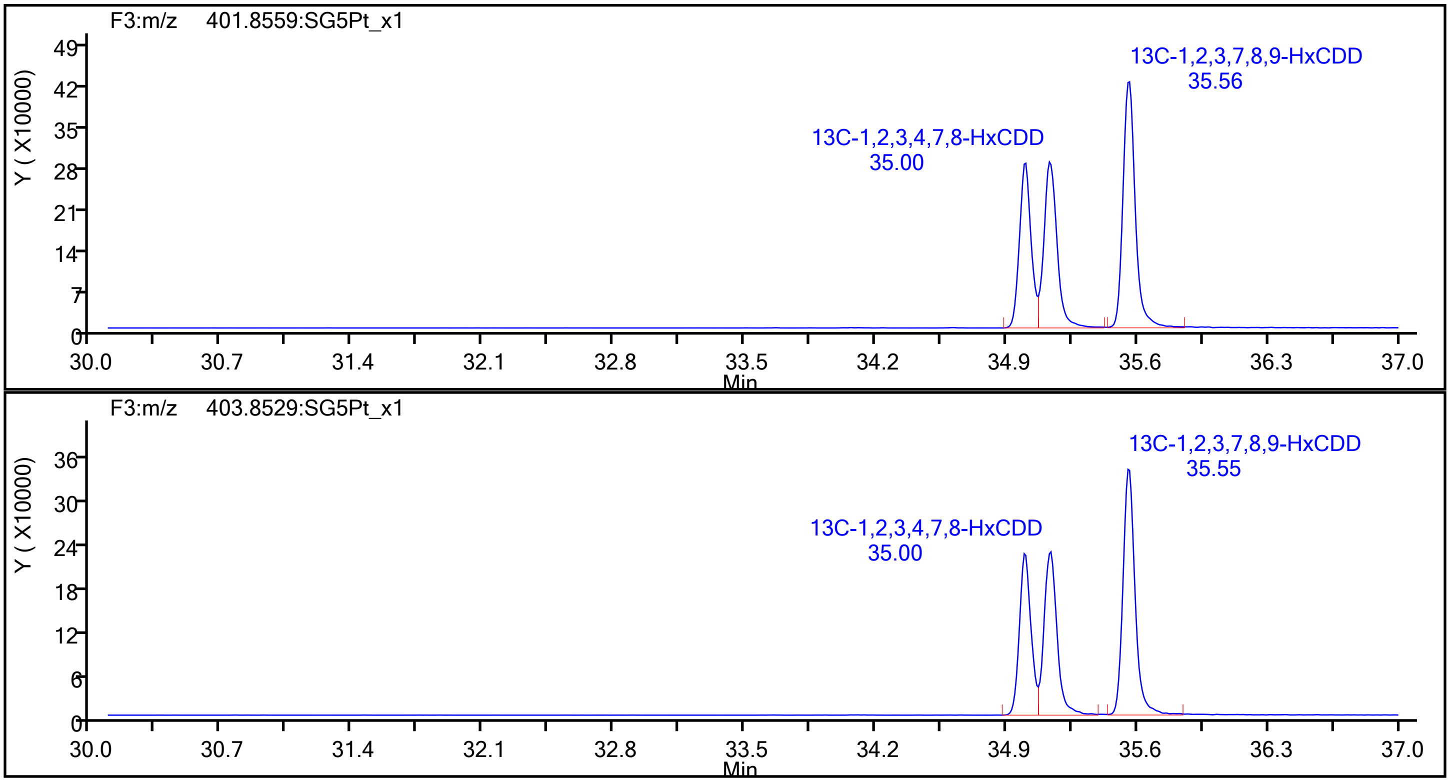

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Eurofins TestAmerica, Sacramento

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HpCDF

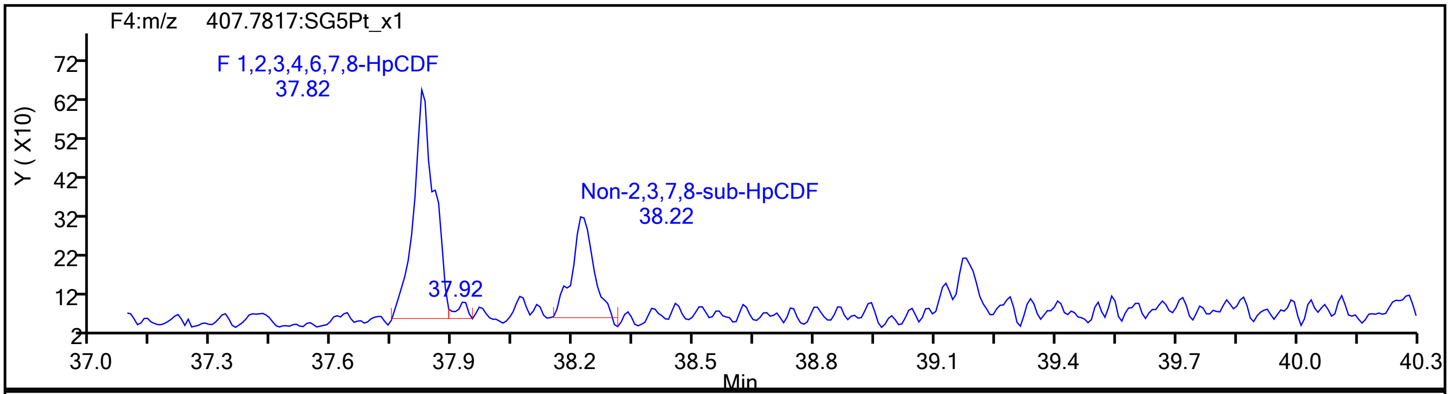

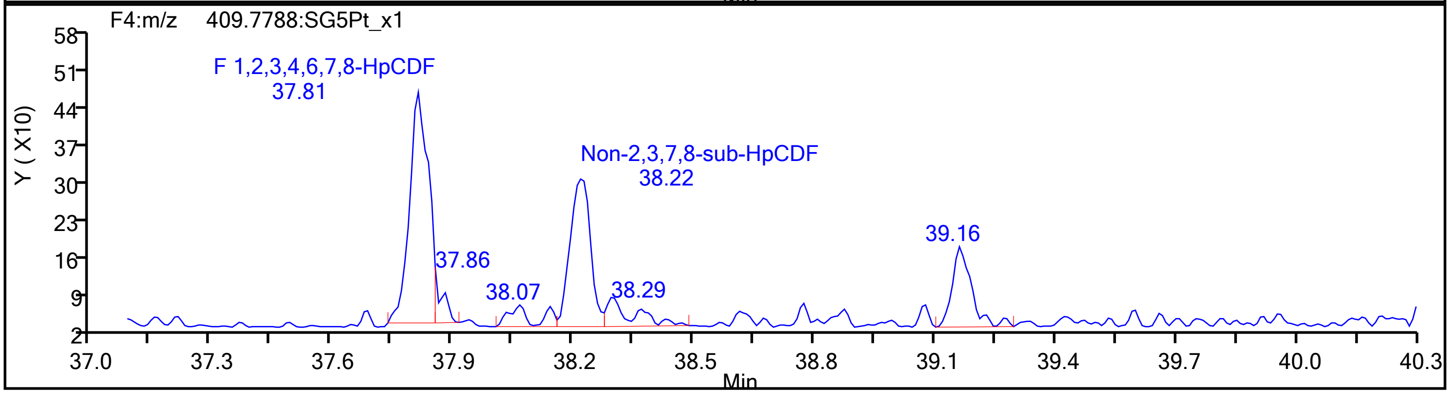

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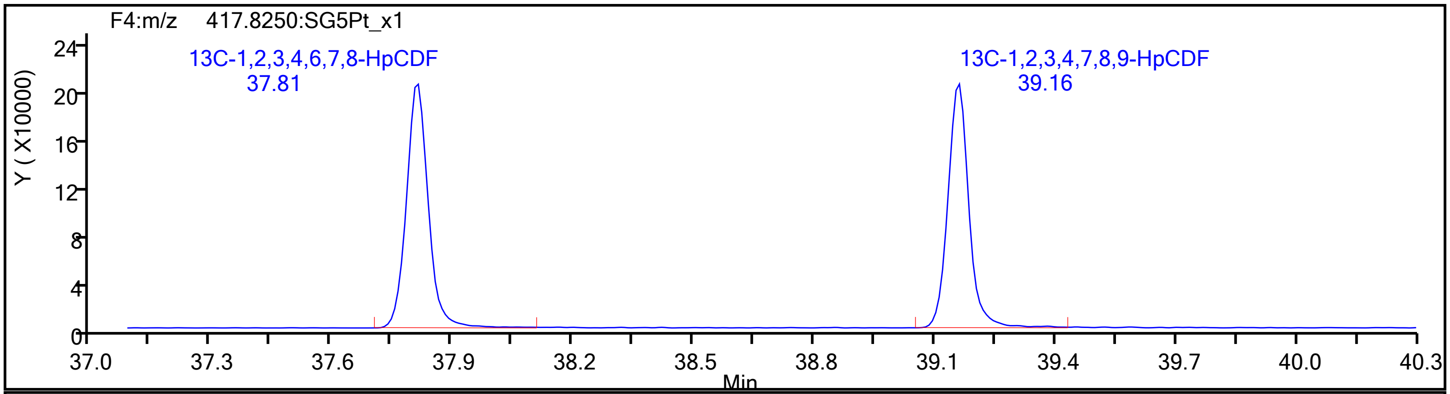

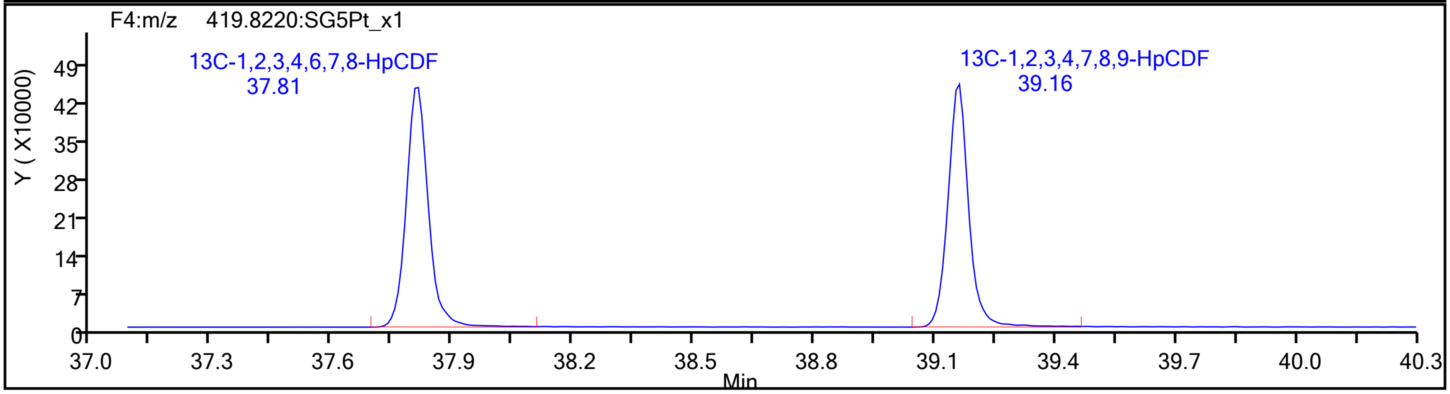

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

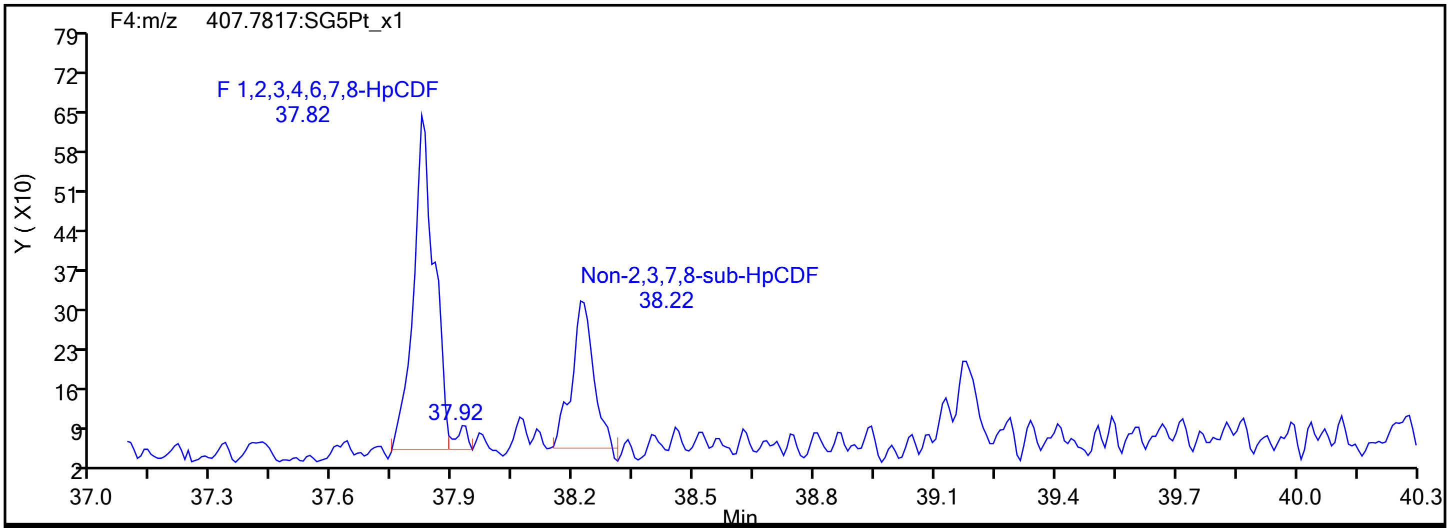

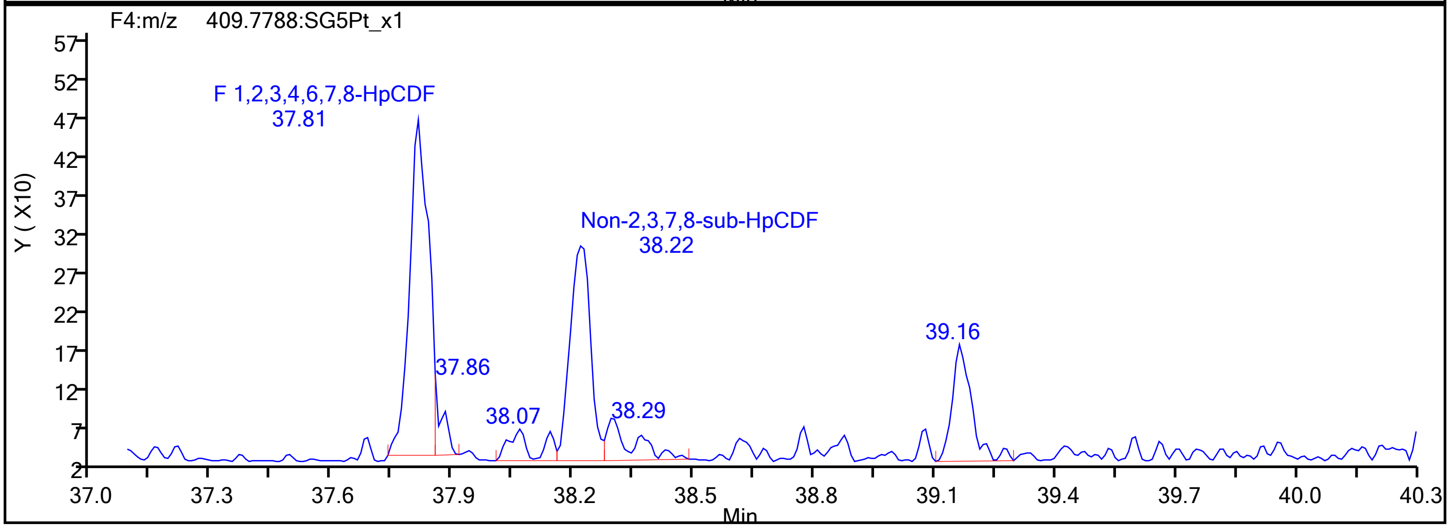

HpCDF Interference Mass

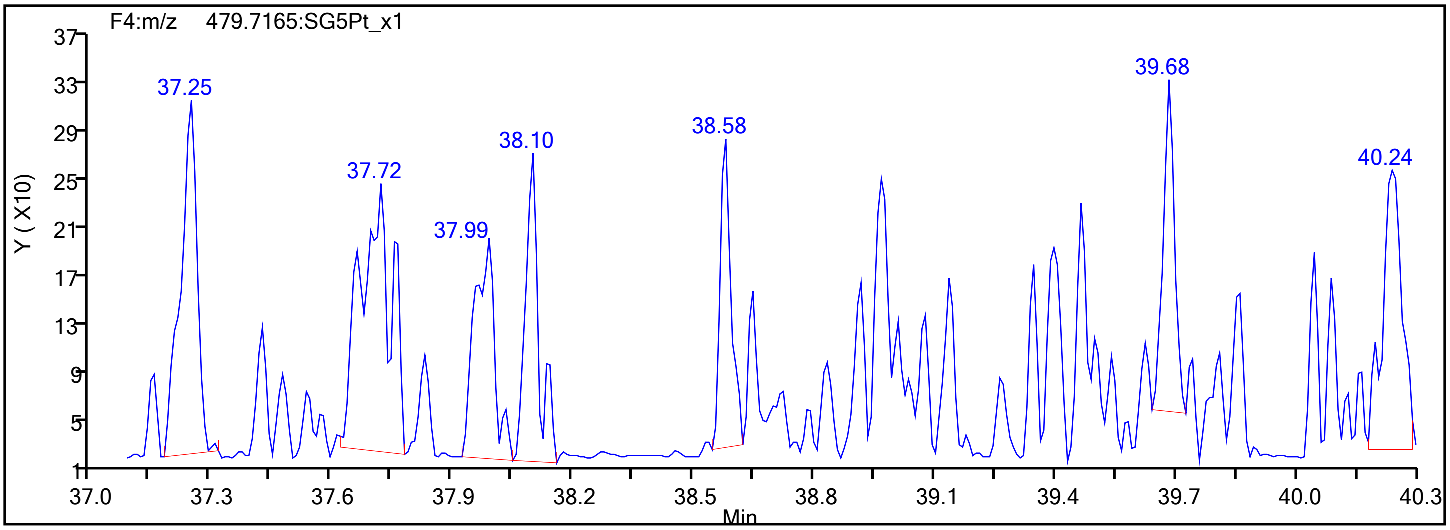

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Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 14:33:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.45mm

Worklist#: 469779
Sample Line#: 6

Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

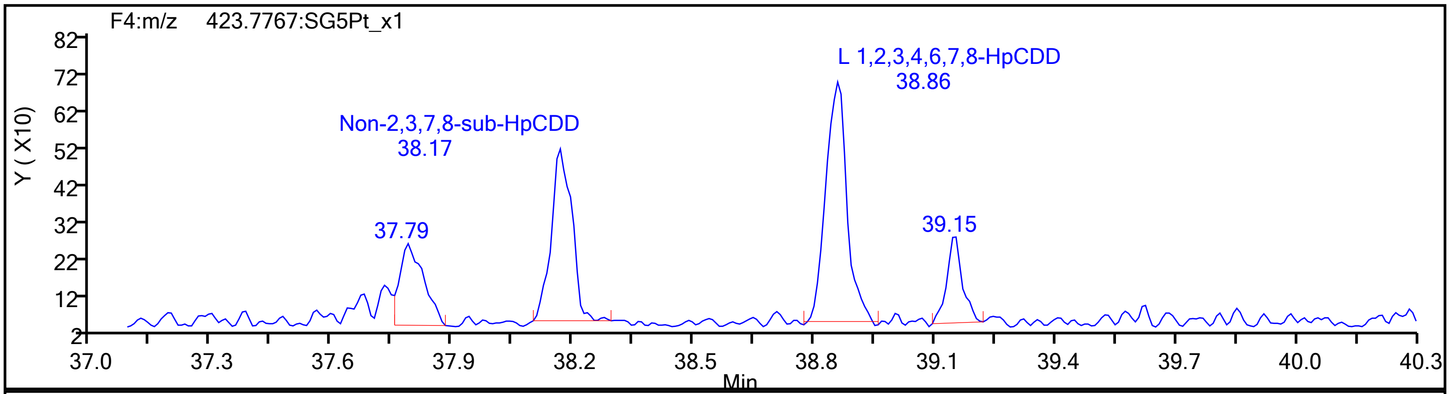

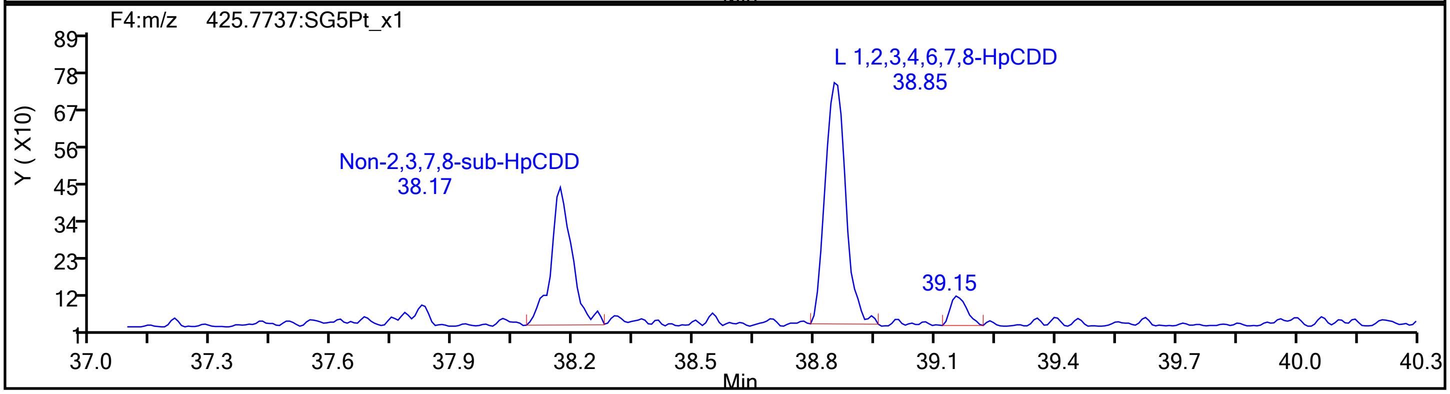

HpCDD Standards

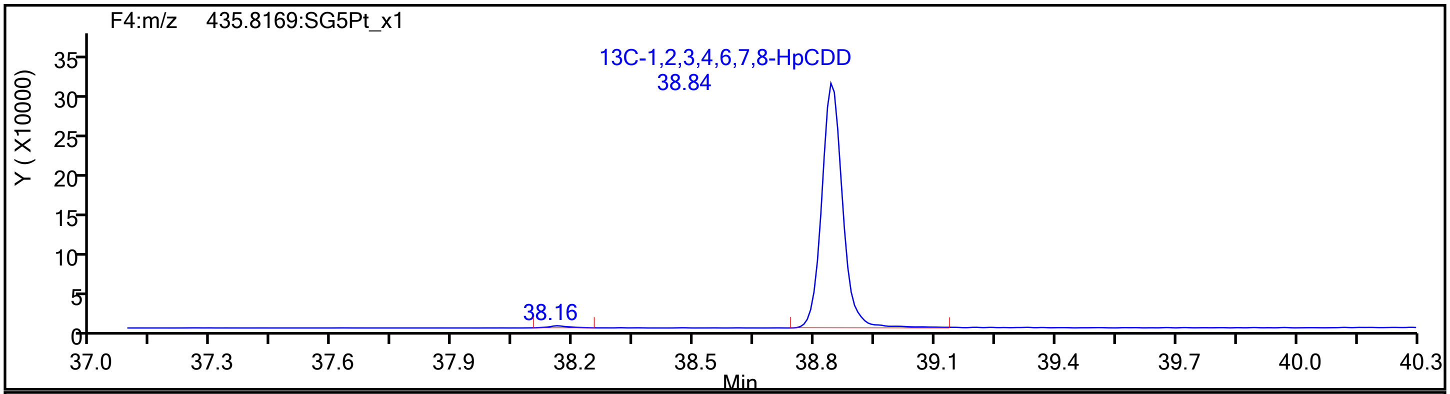

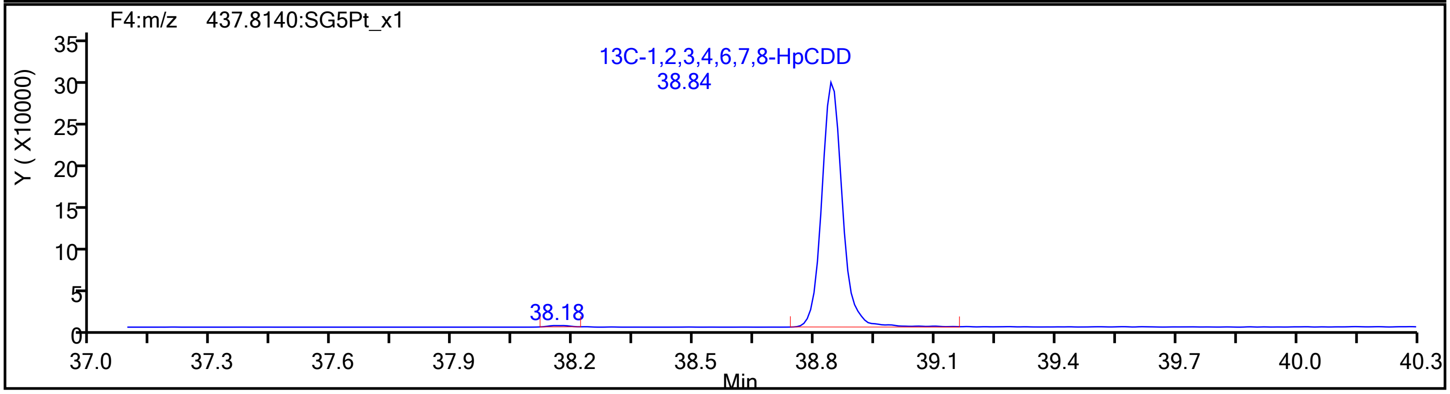

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	469779	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

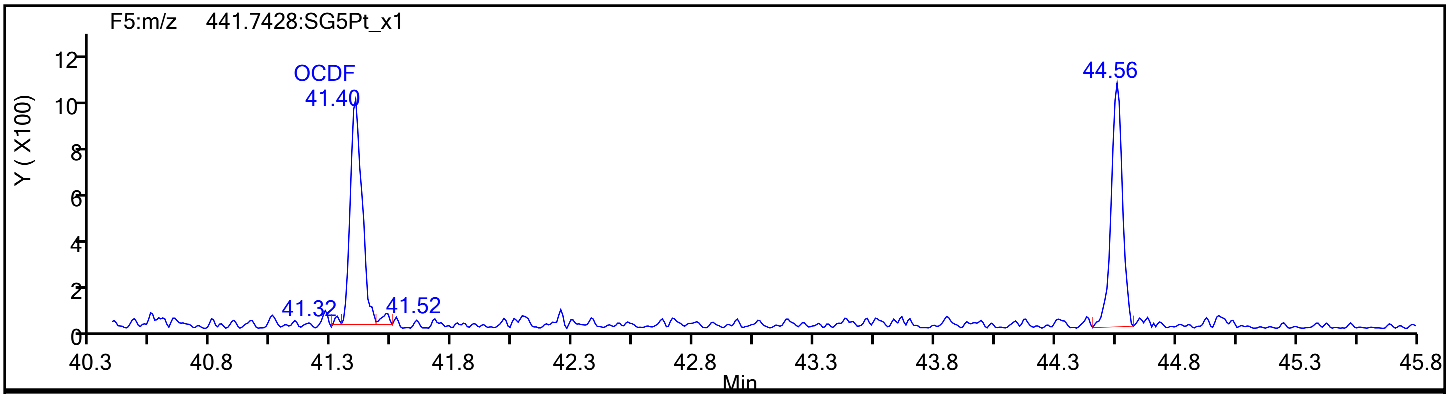

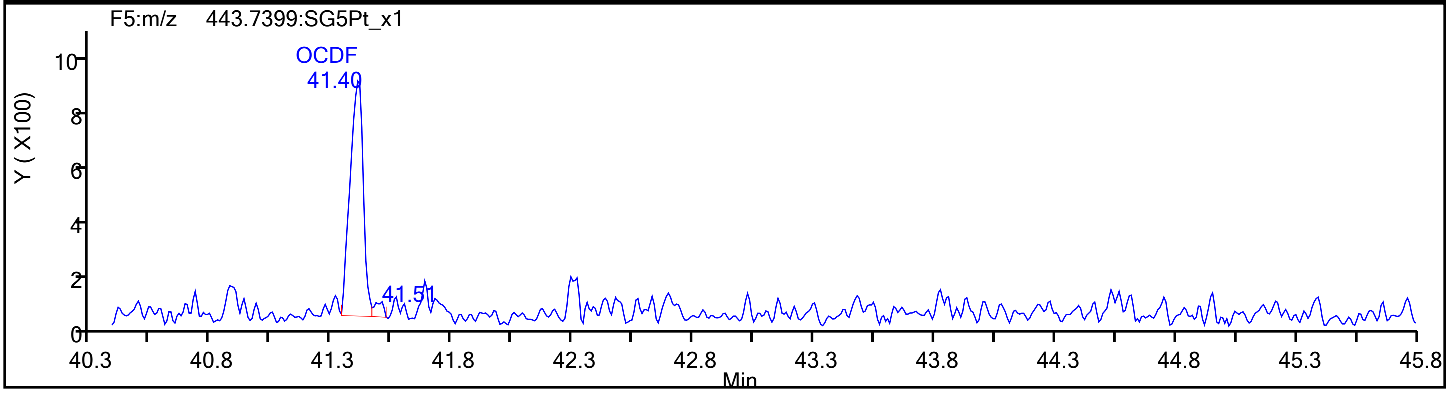

OCDF Standards

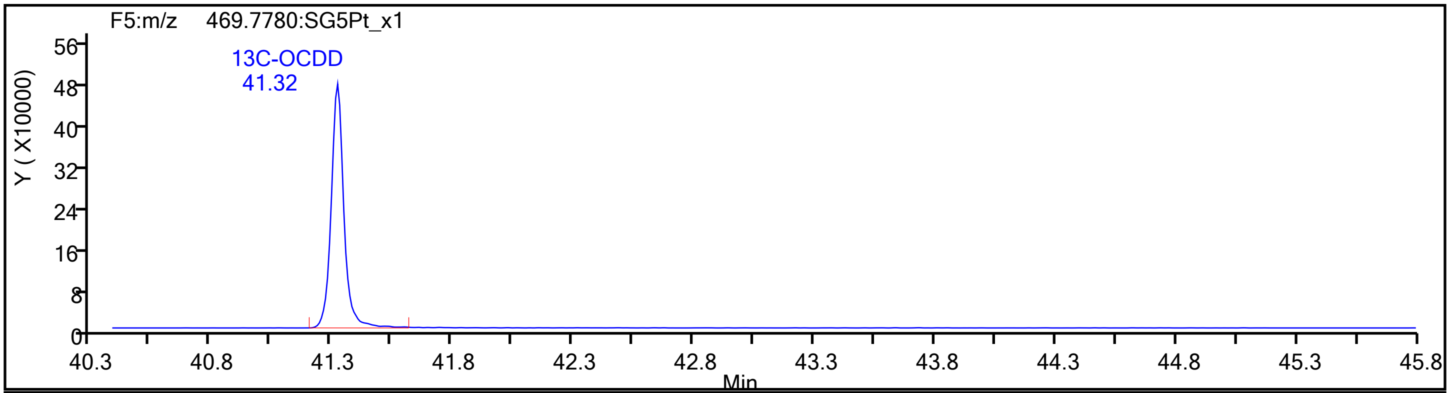

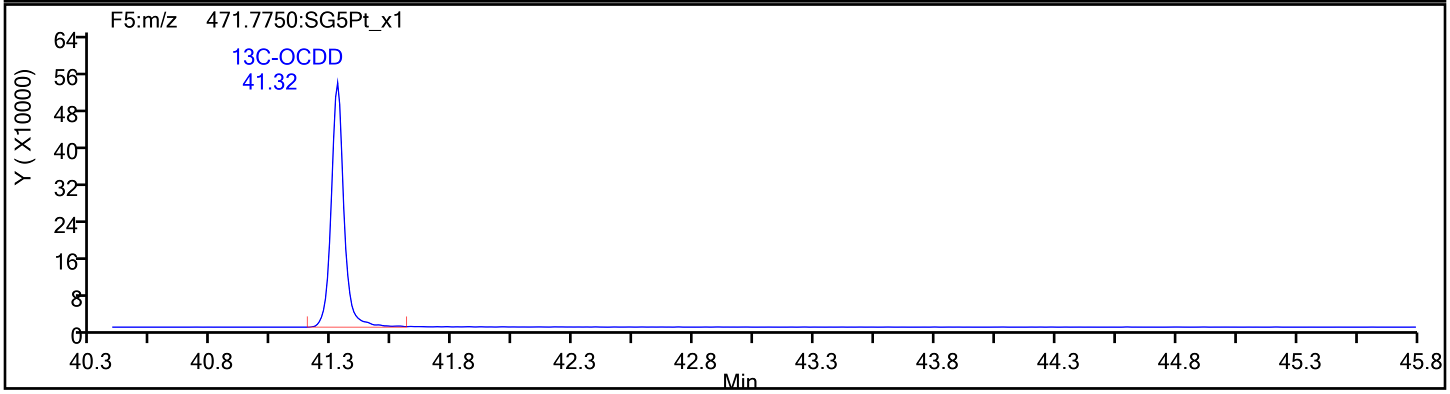

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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OCDF

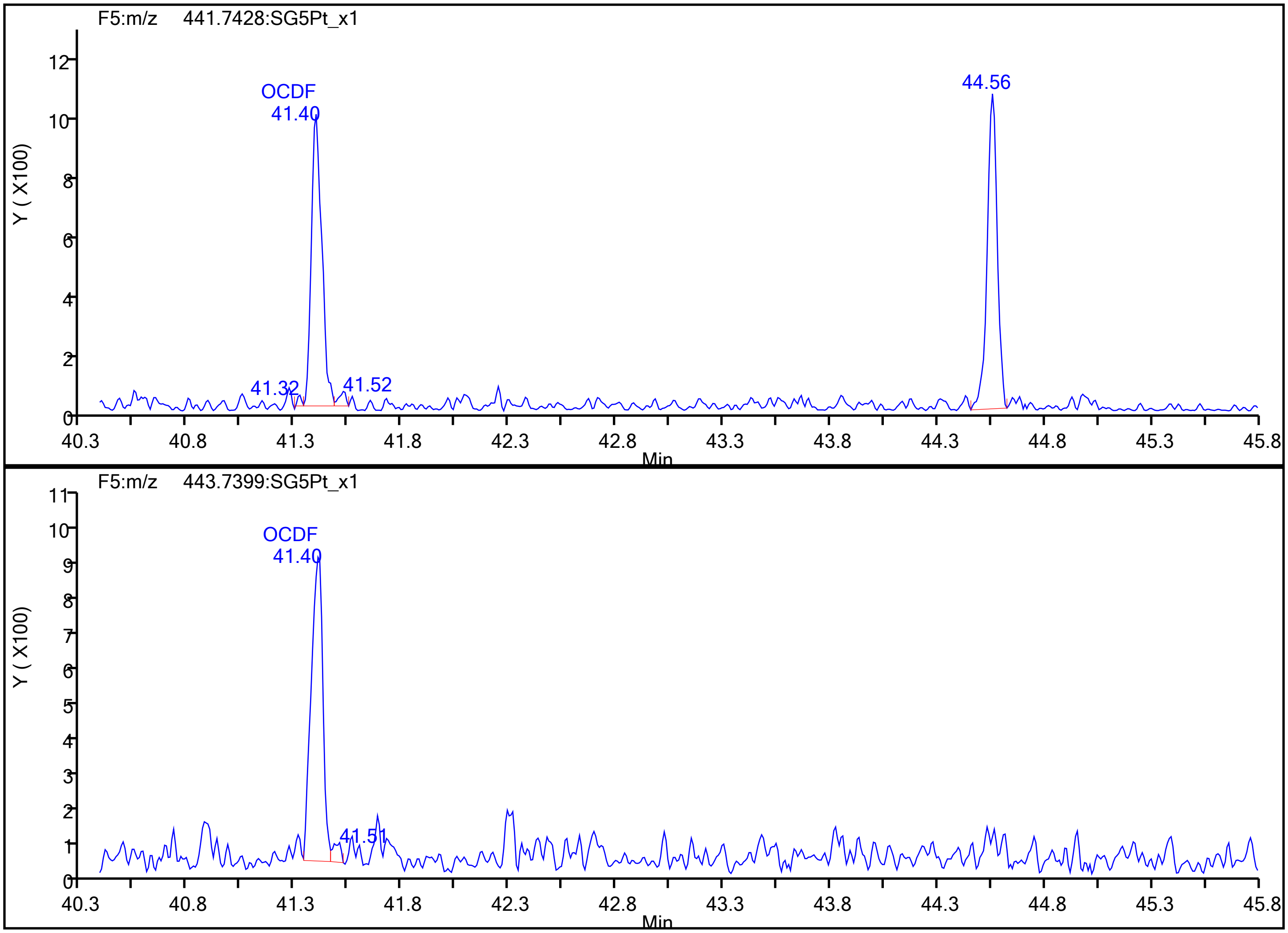

OCDF Interference Mass

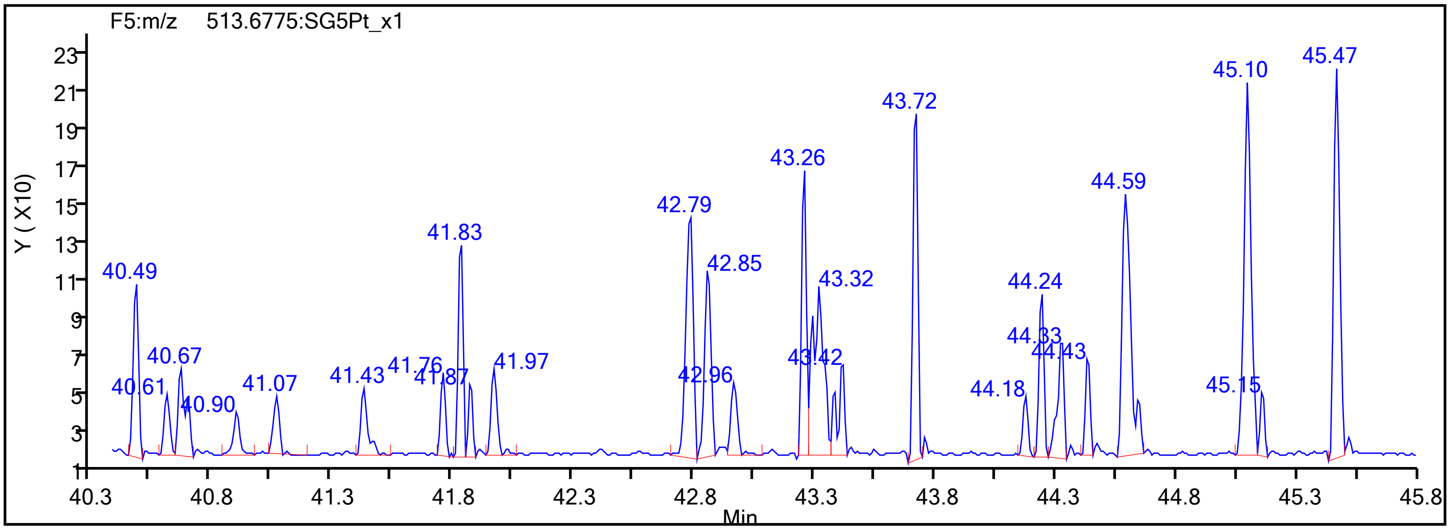

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Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 14:33:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.45mm

Worklist#: 469779

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

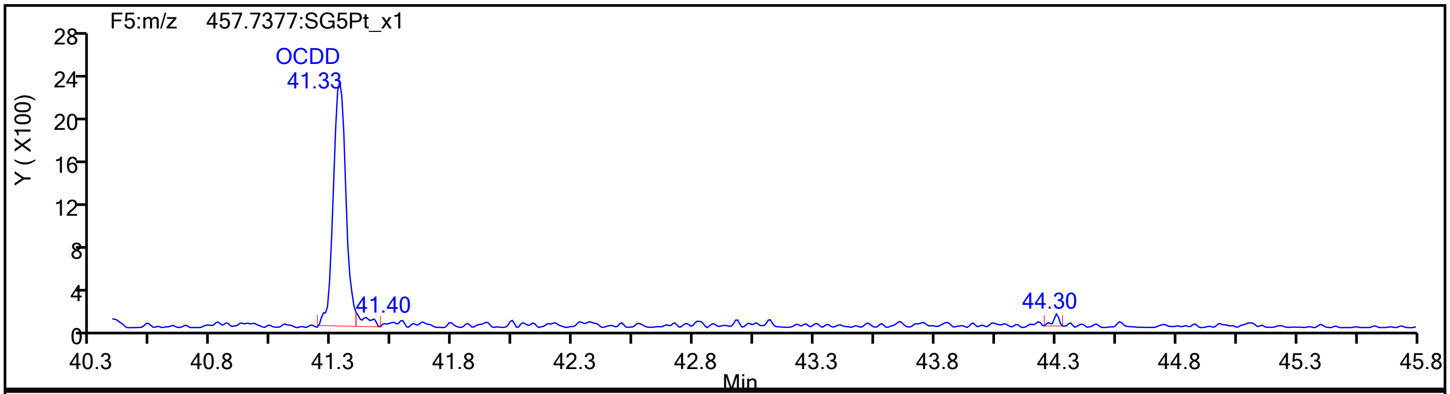

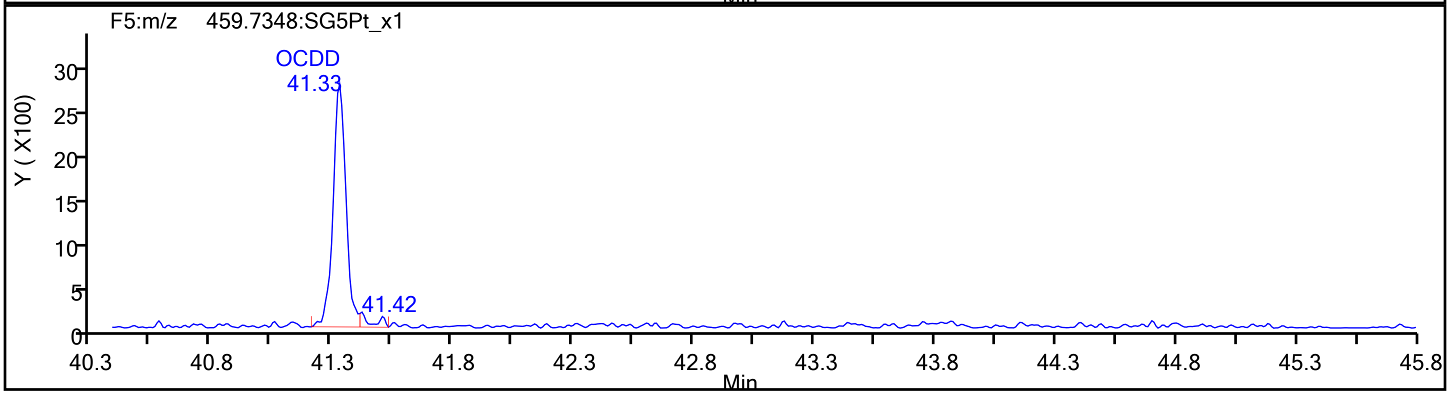

OCDD Standards

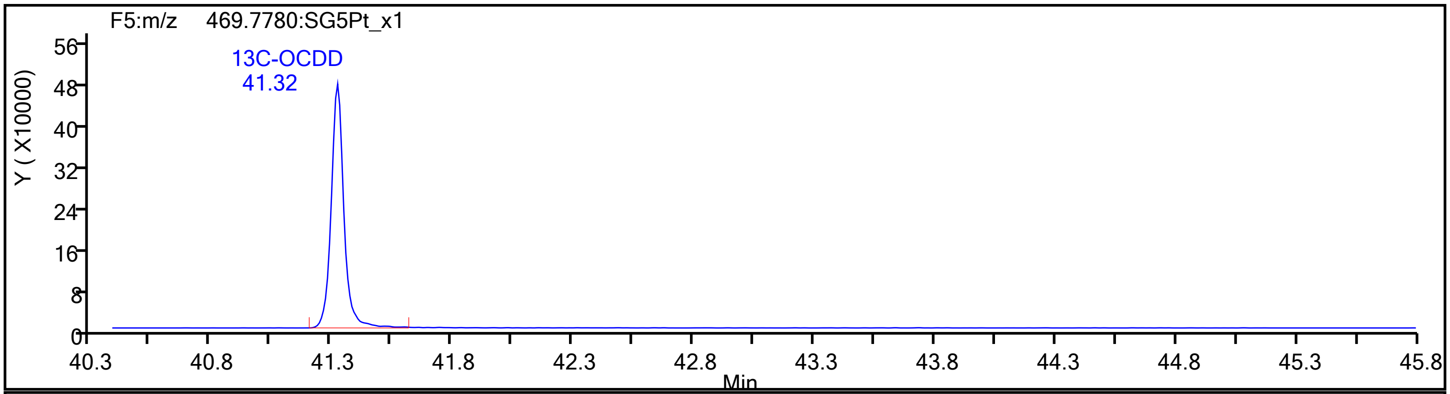

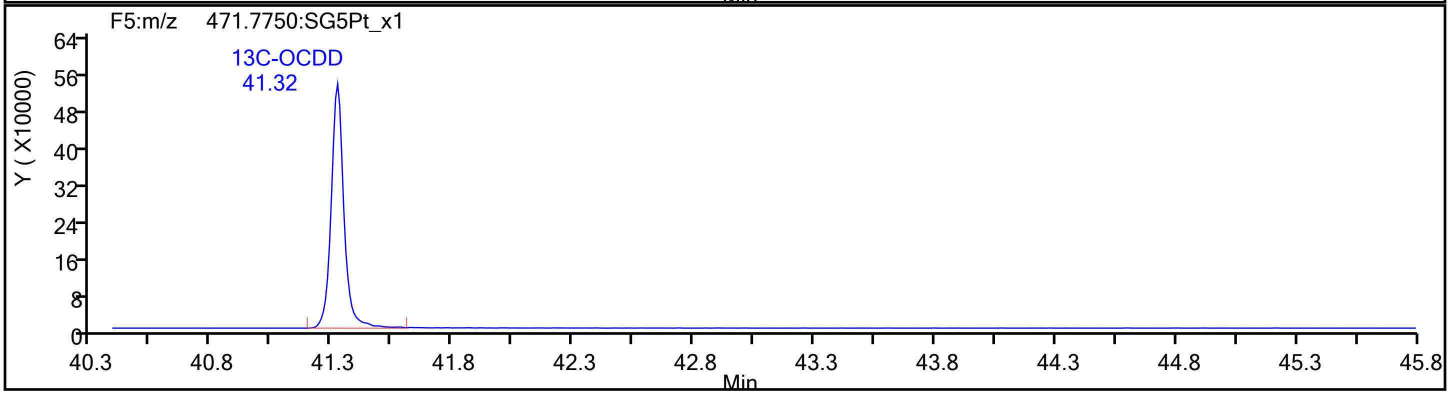

Report Date: 16-Mar-2021 08:36:06 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d

Injection Date: 12-Mar-2021 14:33:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.45mm

Worklist#: 469779
Sample Line#: 6

Column Type: DB-5
Column Dia: 0.32 mm

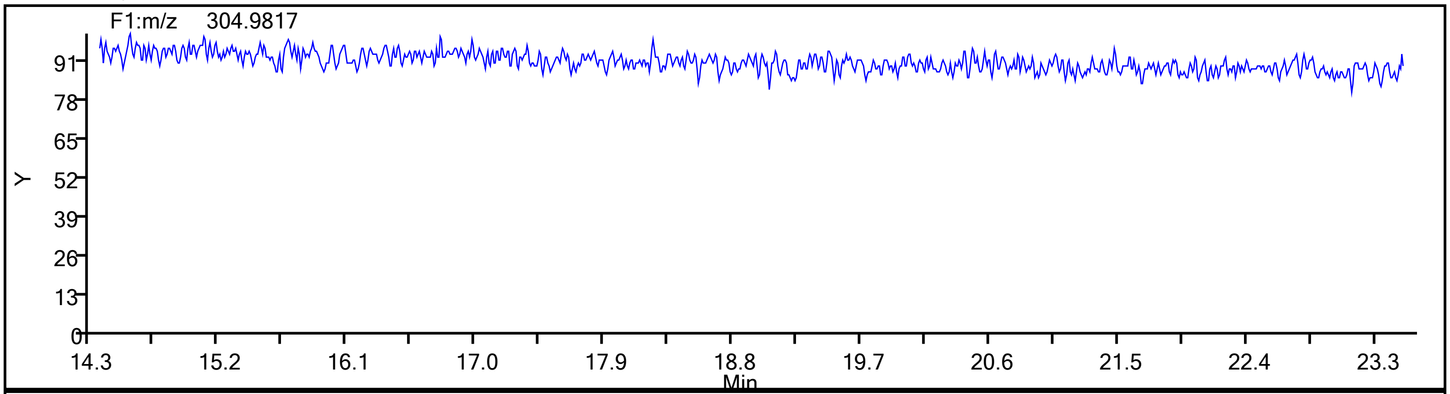

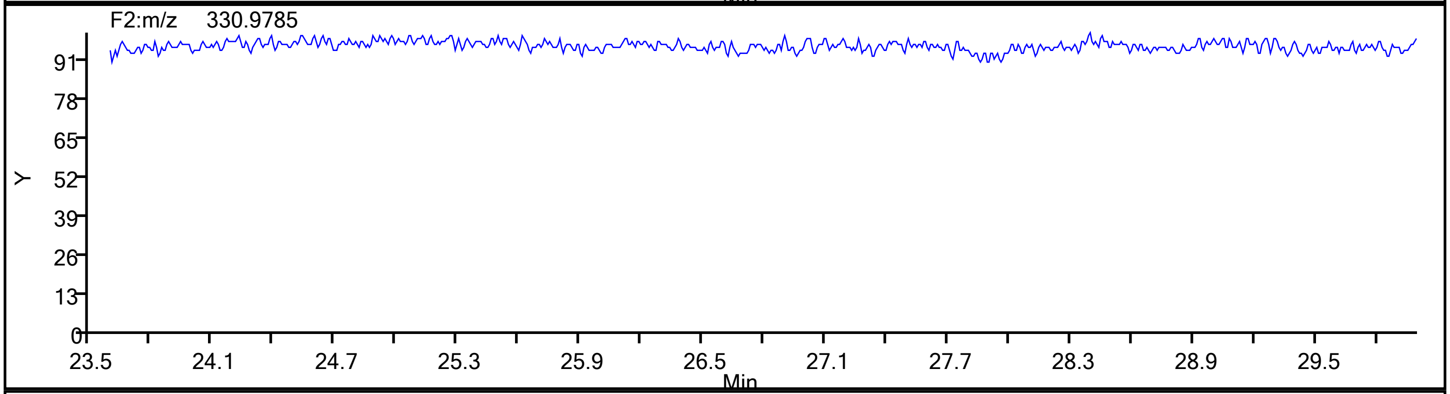

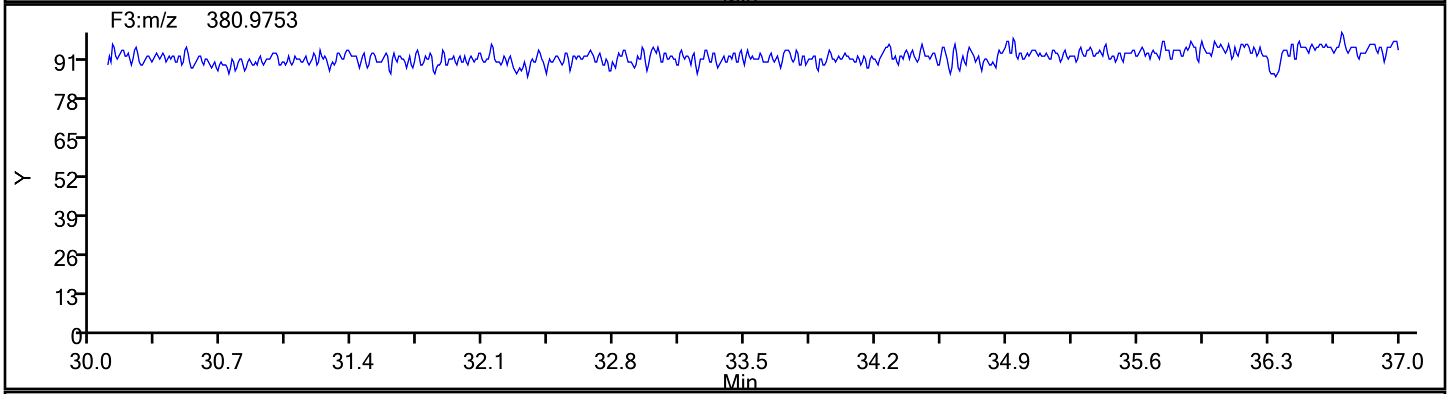

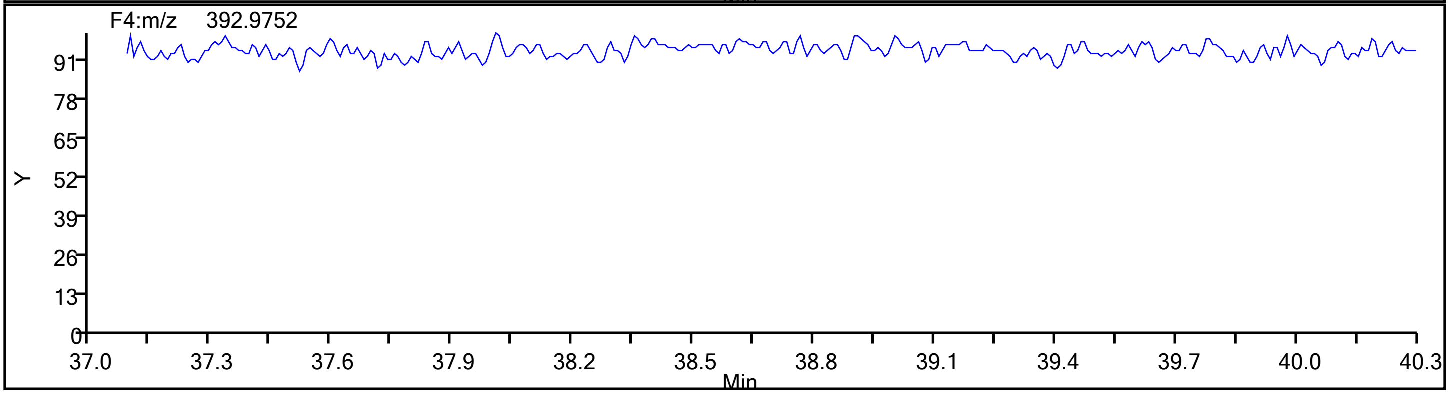

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_7.d		
Injection Date:	12-Mar-2021 14:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.45mm		
Worklist#:	469779	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

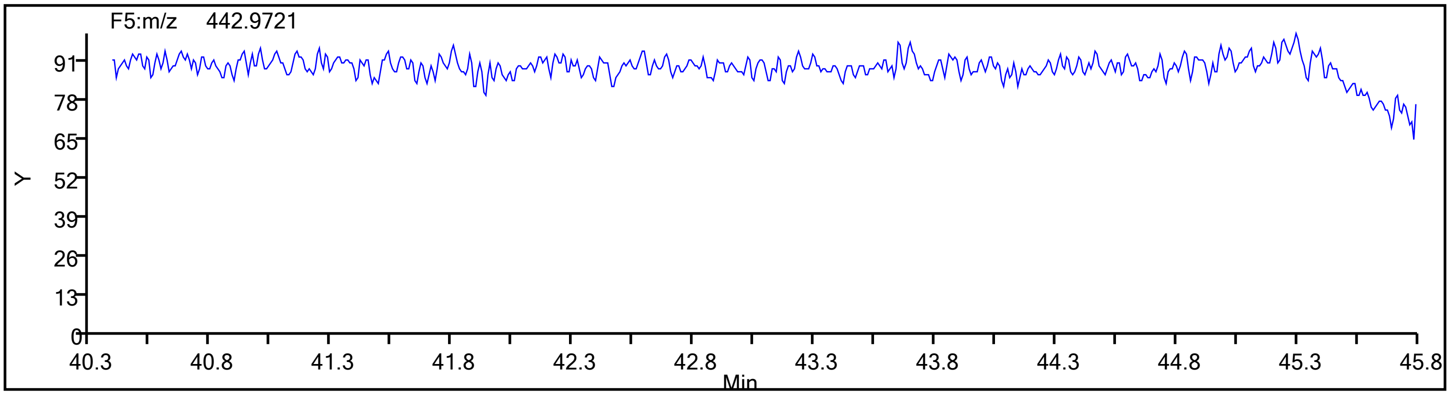

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-0.1mm RA Lab Sample ID: 320-70797-6 RA

Matrix: Water Lab File ID: 11MR2111D2_006.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1032.2(mL) Date Analyzed: 03/11/2021 17:02

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469703 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	31	B	9.7	0.48

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	87		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	118		35-197

Report Date: 12-Mar-2021 11:08:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d				
Lims ID:	320-70797-A-6-A				
Client ID:	11215702-Tank1-0.1mm				
Sample Type:	Client				
Inject. Date:	11-Mar-2021 17:02:25	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-A-6-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	12-Mar-2021 11:08:26	Calib Date:	03-Feb-2021 17:13:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1627	

First Level Reviewer: bilottag Date: 12-Mar-2021 11:01:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.024	224282049	0.76	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.149	253394523	0.81	1.3057	86.5	86.5	0.1870	0.1870	86.53	
2,3,7,8-TCDF	16.162	3758695	0.81	0.9242	1.605	1.605	0.0248	0.0248		M
D 13C-2,3,7,8-TCDD	14.791	151843009	0.75	0.8971	75.5	75.5	0.2062	0.2062	75.46	
2,3,7,8-TCDD	14.818	1020134	0.72	0.9989	0.6726	0.6726	0.0722	0.0722		M
$ 37Cl4-2,3,7,8-TCDD	14.804	89769674		0.8499	47.1	47.1	0.1160	0.1160	118	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 12-Mar-2021 11:08:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d				
Lims ID:	320-70797-A-6-A				
Client ID:	11215702-Tank1-0.1mm				
Sample Type:	Client				
Inject. Date:	11-Mar-2021 17:02:25	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-A-6-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		

Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	12-Mar-2021 11:08:26	Calib Date:	03-Feb-2021 17:13:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1627	

First Level Reviewer: bilottag Date: 12-Mar-2021 11:01:52

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.024	15.013	1		97146762	23287793	18781	46952	1240		
333.9339	15.024	15.013	1		127135287	30339091	20903	52257	1451	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.149	16.152	0	1.075	113358037	26250477	34783	86957	755		
317.9389	16.149	16.152	0	1.075	140036486	32027316	17591	43977	1821	0.81(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.162	16.166	0	1.001	1683844	383328	2315	5787	166		M
305.8987	16.162	16.166	0	1.001	2074851	447613	3026	7565	148	0.81(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	14.791	14.794	0	0.984	64935173	16119614	18781	46952	858		
333.9339	14.791	14.794	0	0.984	86907836	21516388	20903	52257	1029	0.75(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	14.818	14.807	1	1.002	425533	94155	4807	12017	20		M
321.8936	14.804	14.807	0	1.001	594601	150419	6050	15125	25	0.72(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8840	14.804	14.807	0	0.985	89769674	21765976	21140	52850	1030		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 12-Mar-2021 11:08:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d				
Injection Date:	11-Mar-2021 17:02:25	Instrument ID:	11D2		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 16.16
Area: 1698568
Amount: 1.623649
Amount Units: pg/ul

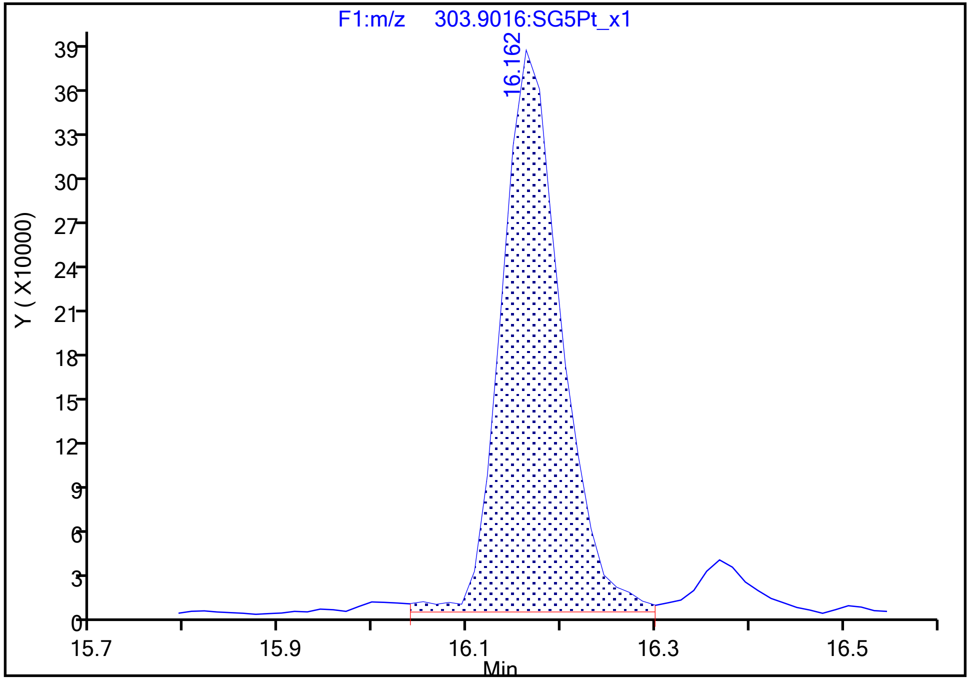

Manual Integration Results

RT: 16.16
Area: 1683844
Amount: 1.605059
Amount Units: pg/ul

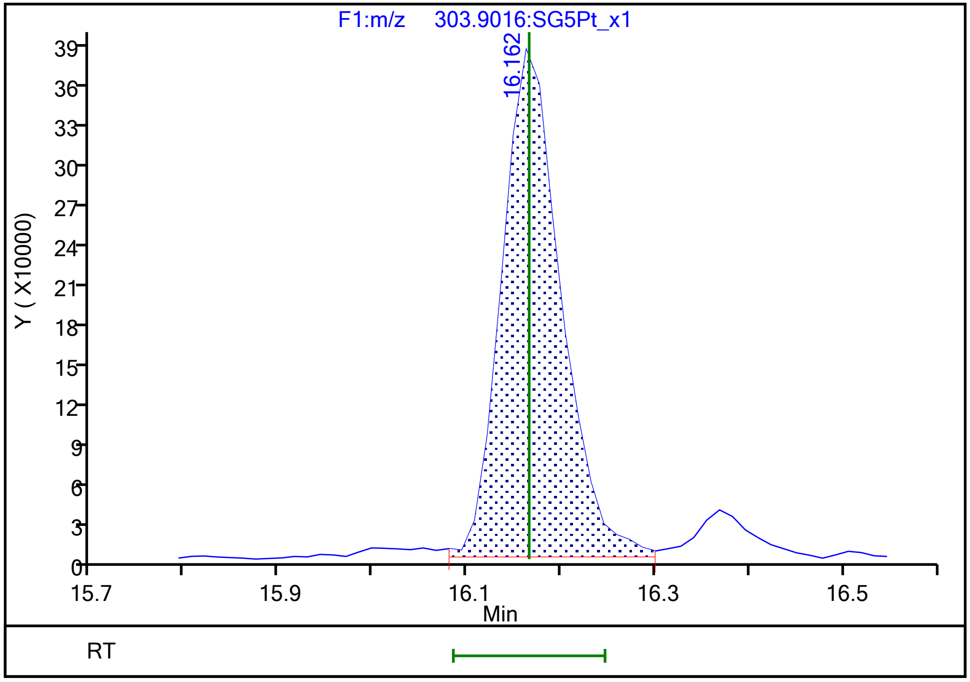

Reviewer: bilottag, 12-Mar-2021 11:01:19

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d		
Injection Date:	11-Mar-2021 17:02:25	Instrument ID:	11D2
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6
Client ID:	11215702-Tank1-0.1mm		
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 16.16
Area: 2103660
Amount: 1.623649
Amount Units: pg/ul

Processing Integration Results

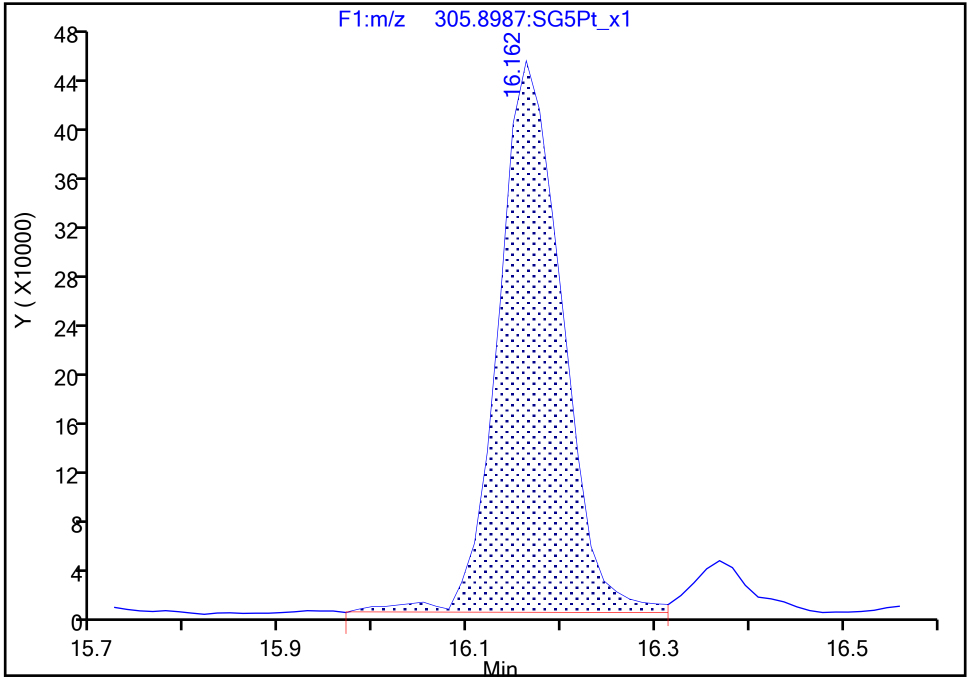

RT: 16.16
Area: 2074851
Amount: 1.605059
Amount Units: pg/ul

Manual Integration Results

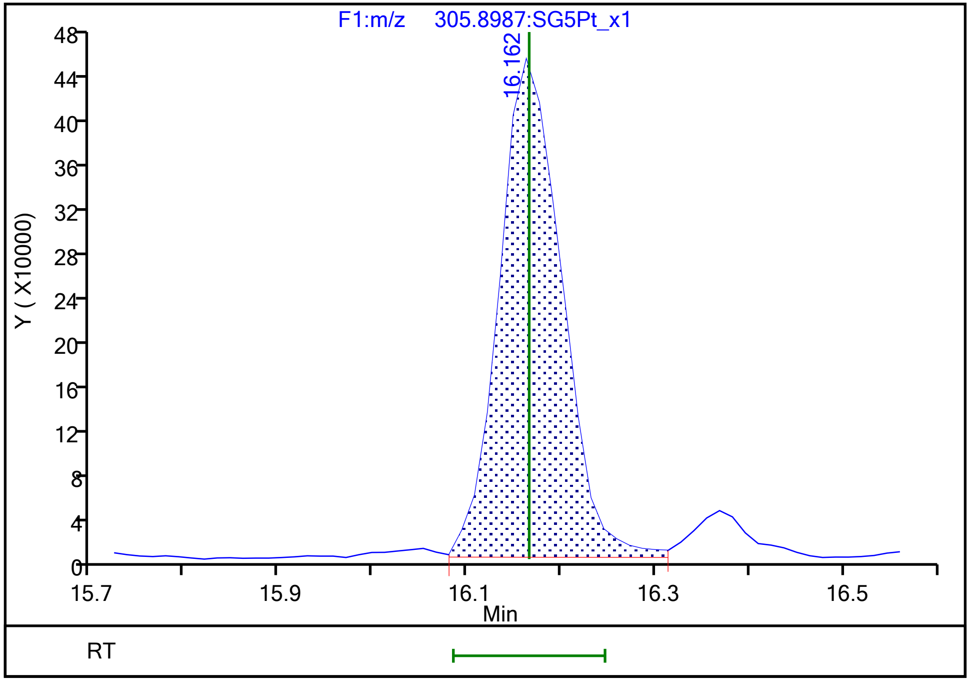

Reviewer: bilottag, 12-Mar-2021 11:01:21

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Report Date: 12-Mar-2021 11:08:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d

Injection Date: 11-Mar-2021 17:02:25 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.1mm

Worklist#: 469703 Sample Line#: 6

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

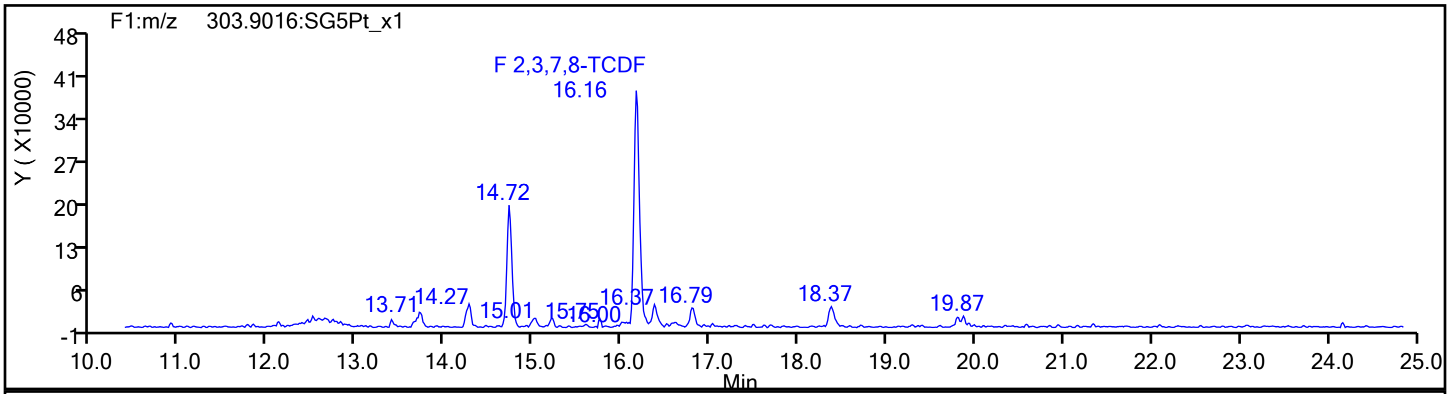

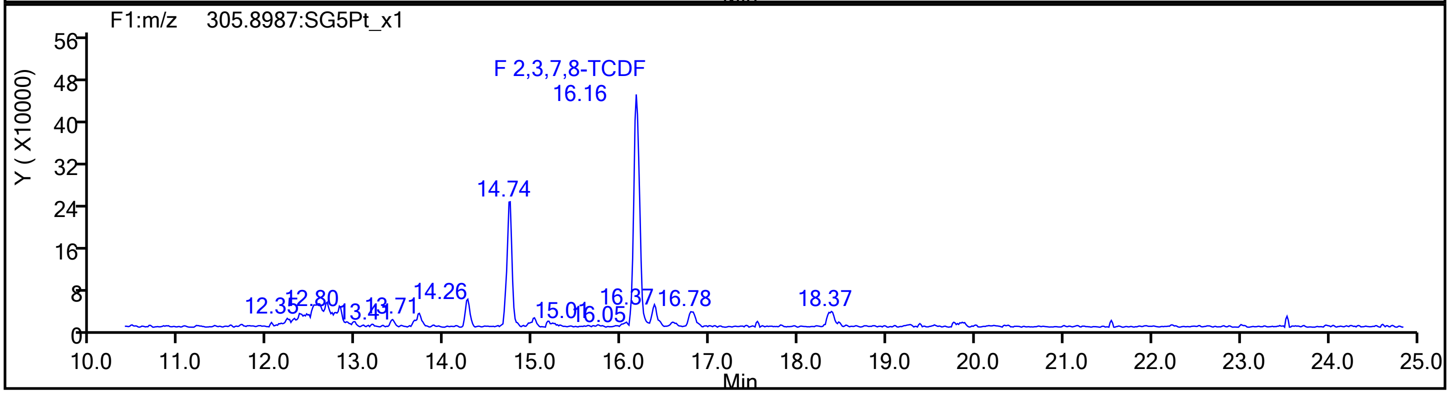

TCDF Standards

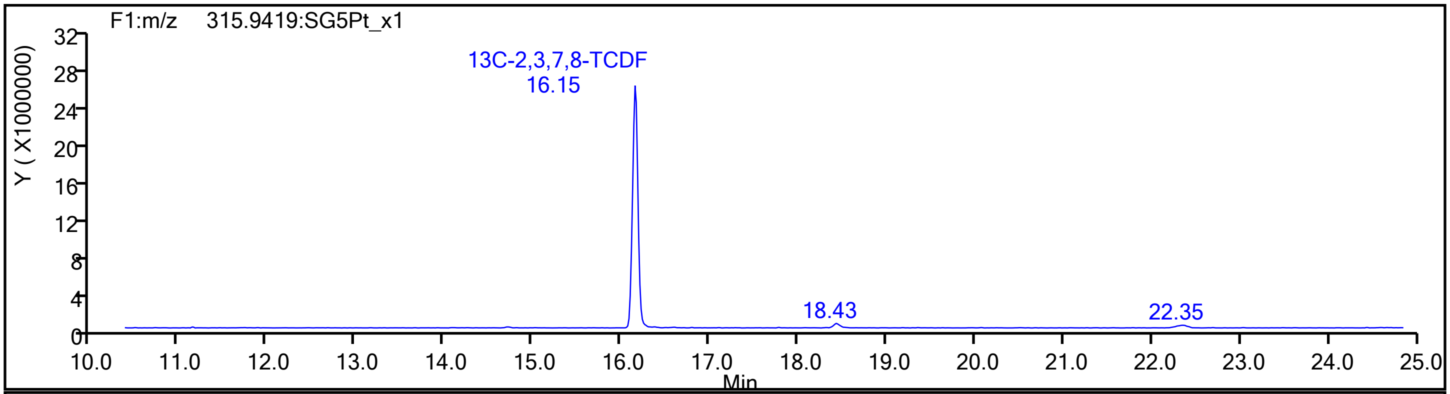

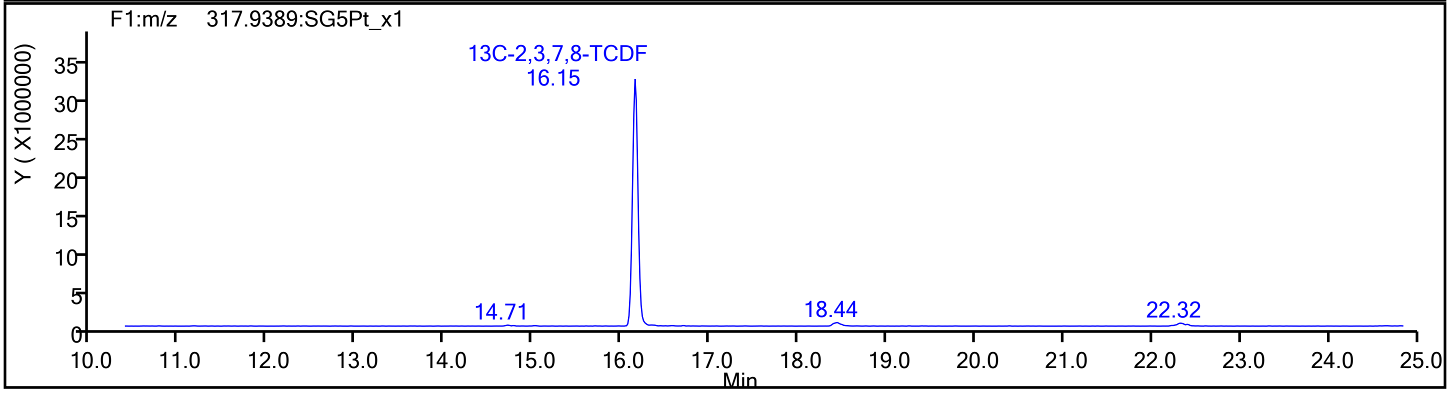

Report Date: 12-Mar-2021 11:08:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d		
Injection Date:	11-Mar-2021 17:02:25	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.1mm		
Worklist#:	469703	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

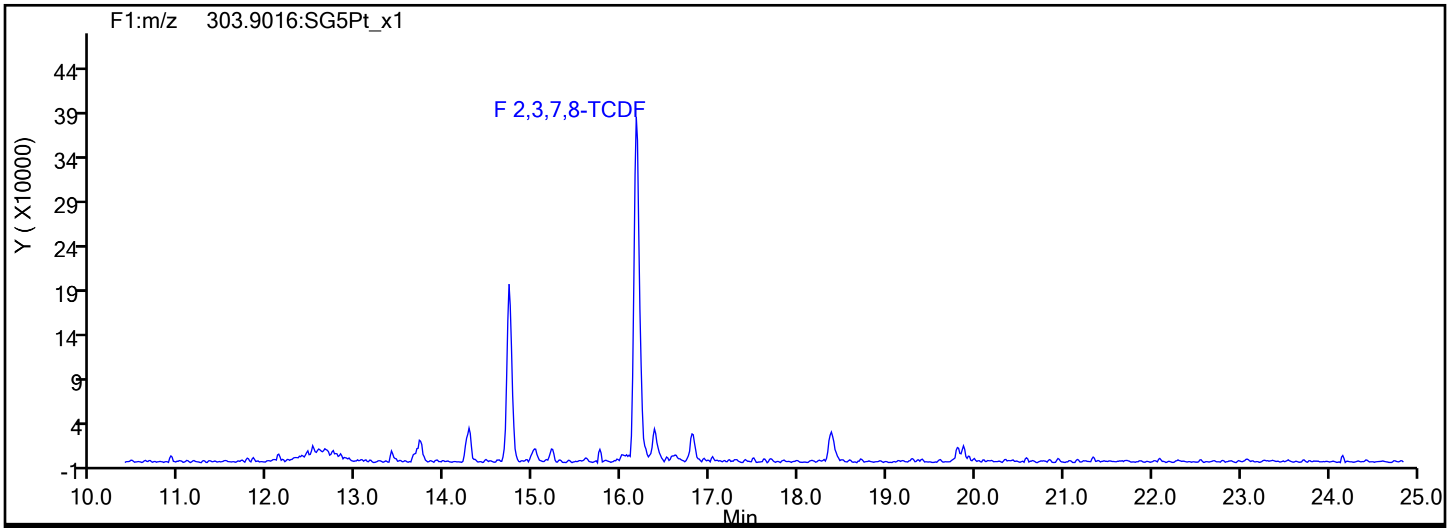

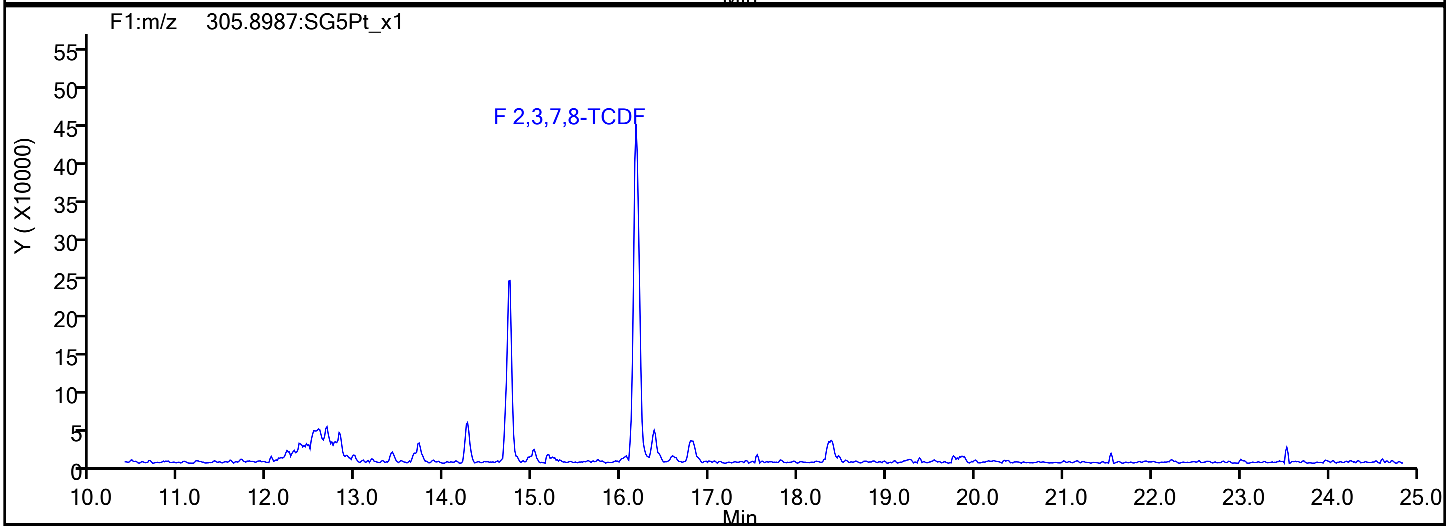

TCDF Interference Mass

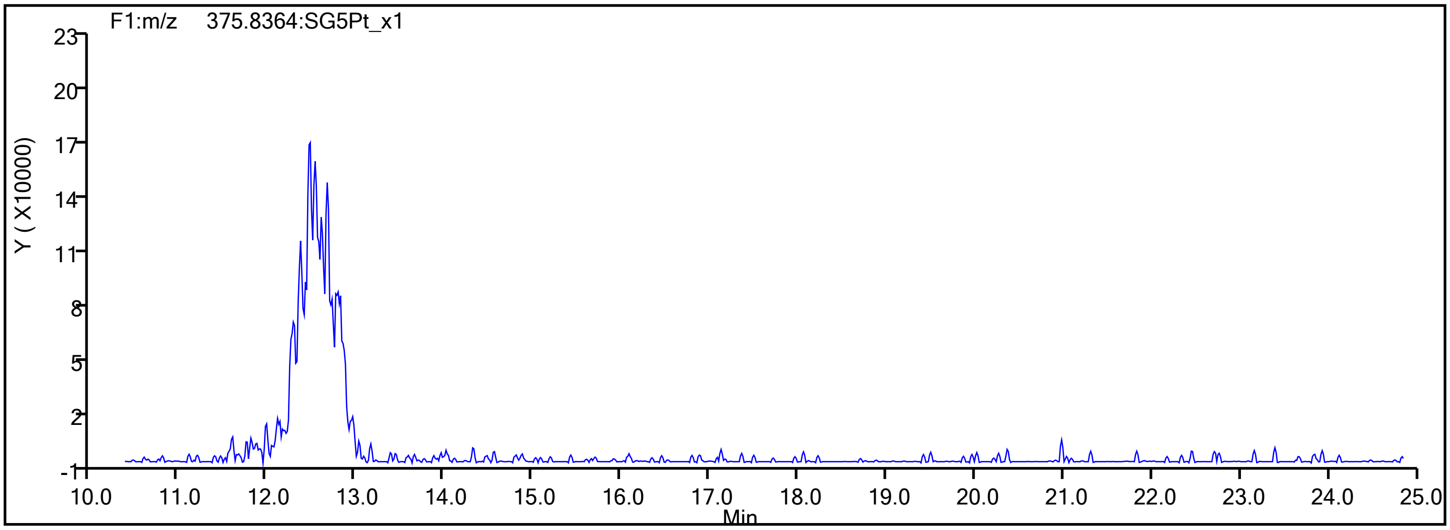

Report Date: 12-Mar-2021 11:08:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d

Injection Date: 11-Mar-2021 17:02:25 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.1mm

Worklist#: 469703 Sample Line#: 6

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

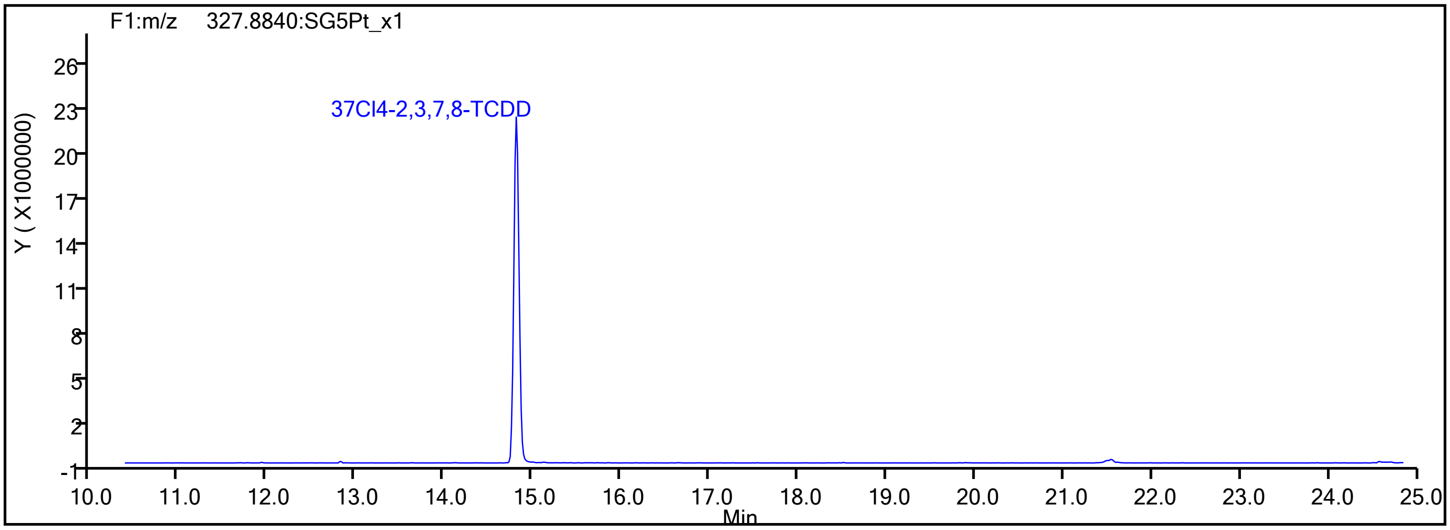

37Cl4-TCDD Standards

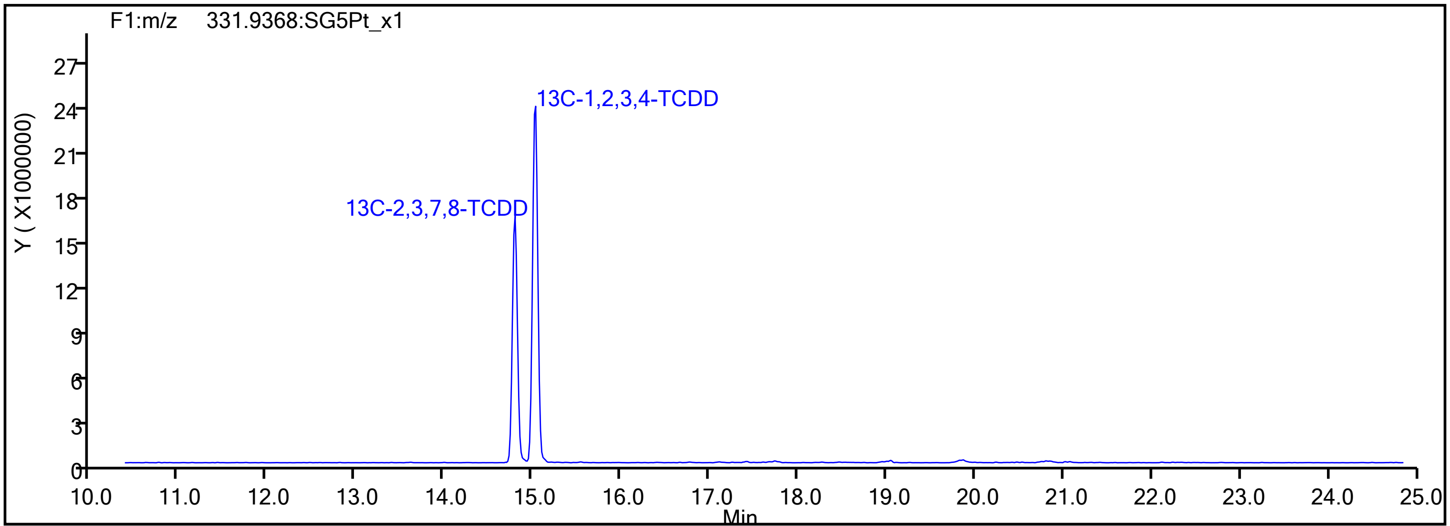

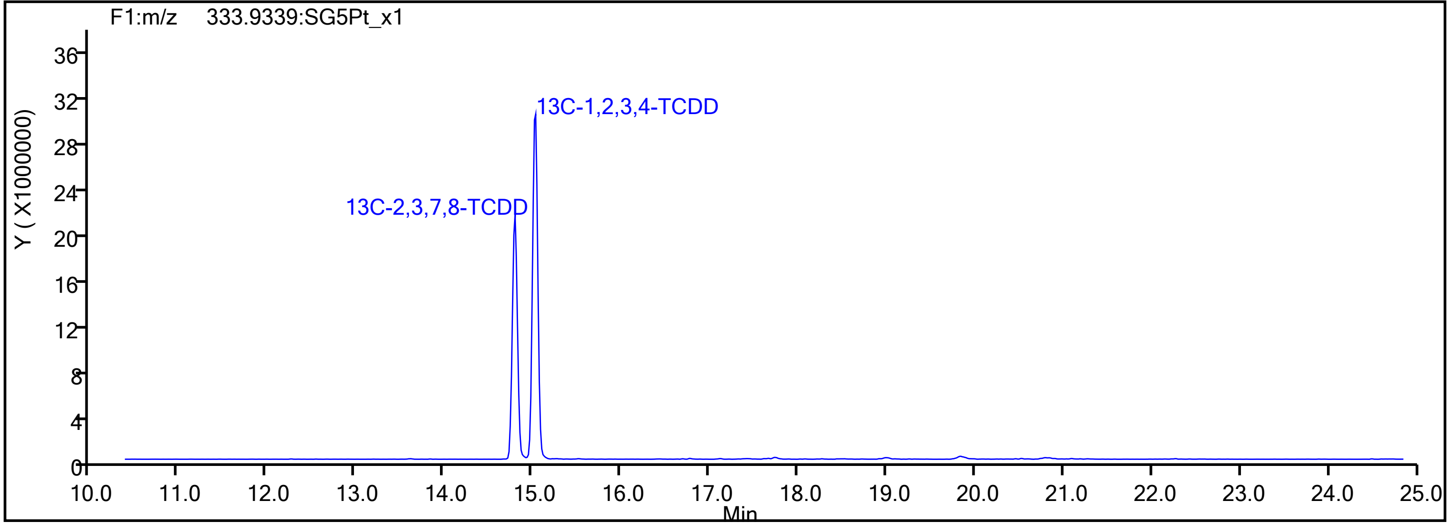

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_006.d		
Injection Date:	11-Mar-2021 17:02:25	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.1mm		
Worklist#:	469703	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

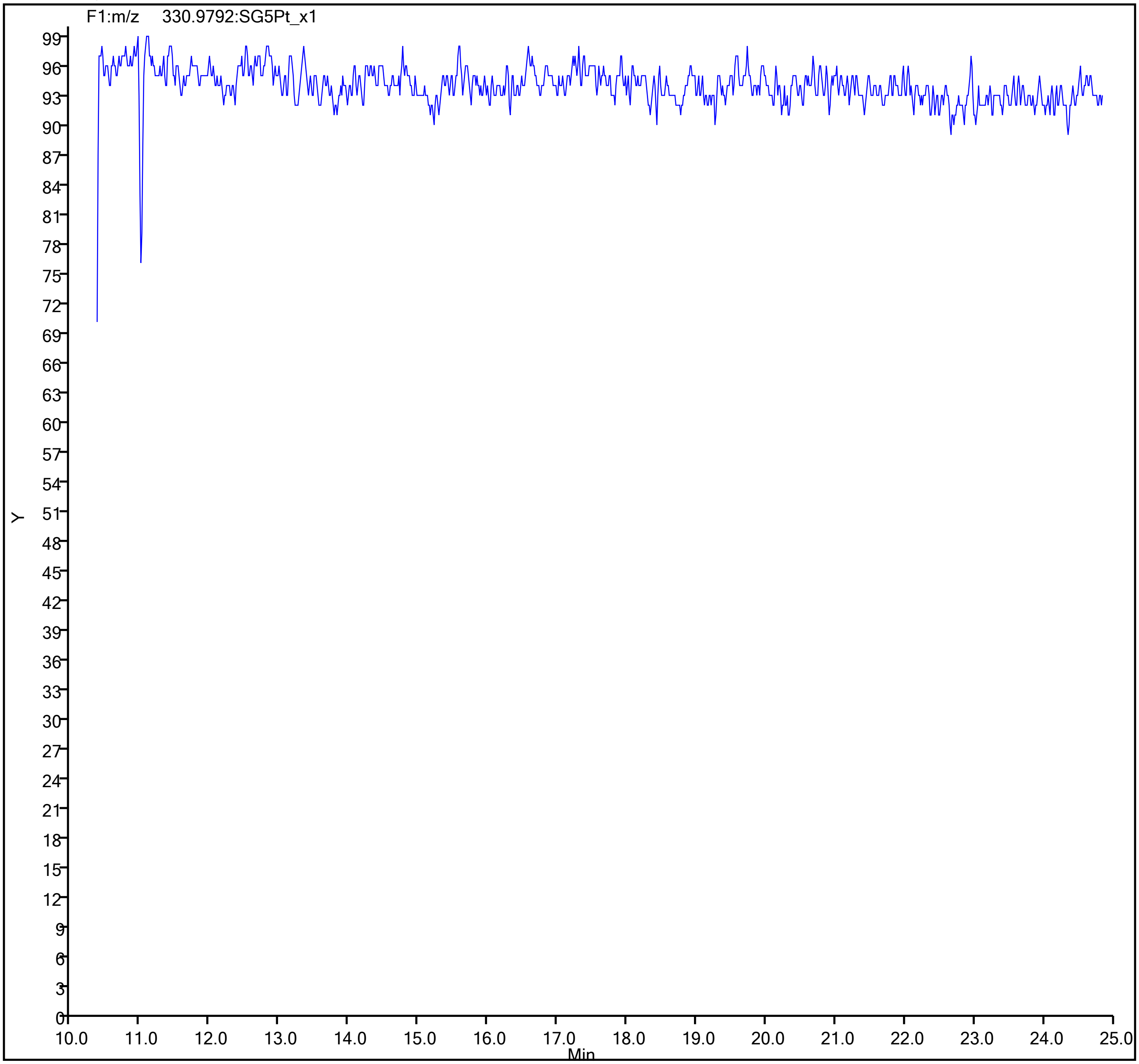

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank1-0.1mm
Lab Sample ID: 320-70797-6
Matrix: Water
Lab File ID: 12mr21adfs1_8.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1032.2(mL)
Date Analyzed: 03/12/2021 15:21
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	11		9.7	0.47
40321-76-4	1,2,3,7,8-PeCDD	ND		48	0.40
57117-41-6	1,2,3,7,8-PeCDF	1.5	J	48	0.25
57117-31-4	2,3,4,7,8-PeCDF	0.92	J q	48	0.28
39227-28-6	1,2,3,4,7,8-HxCDD	1.8	J	48	0.23
57653-85-7	1,2,3,6,7,8-HxCDD	0.40	J q	48	0.23
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.21
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J B	48	0.24
57117-44-9	1,2,3,6,7,8-HxCDF	1.0	J B q	48	0.22
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.18
60851-34-5	2,3,4,6,7,8-HxCDF	0.66	J B	48	0.19
35822-46-9	1,2,3,4,6,7,8-HpCDD	3.7	J B	48	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.3	J B	48	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.97	J B	48	0.22
3268-87-9	OCDD	20	J B	97	0.38
39001-02-0	OCDF	3.0	J B	97	0.42
41903-57-5	Total TCDD	13	B	9.7	0.47
30402-14-3	Total TCDF	49	B	9.7	0.52
36088-22-9	Total PeCDD	1.6	J q	48	0.40
30402-15-4	Total PeCDF	2.4	J q	48	0.27
34465-46-8	Total HxCDD	2.2	J q	48	0.22
55684-94-1	Total HxCDF	4.2	J B q	48	0.21
37871-00-4	Total HpCDD	5.8	J B q	48	0.20
38998-75-3	Total HpCDF	4.4	J B	48	0.22

FORM I 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank1-0.1mm

Lab Sample ID: 320-70797-6

Matrix: Water

Lab File ID: 12mr21adfs1_8.d

Analysis Method: 1613B

Date Collected: 03/03/2021 15:00

Extract. Method: 1613B

Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1032.2(mL)

Date Analyzed: 03/12/2021 15:21

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 469779

Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		25-164
89059-46-1	13C-2,3,7,8-TCDF	66		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	67		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	64		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	65		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	70		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	71		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	73		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	74		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	88		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	83		26-138
114423-97-1	13C-OCDD	93		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 16-Mar-2021 08:52:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Lims ID: 320-70797-A-6-A
Client ID: 11215702-Tank1-0.1mm
Sample Type: Client
Inject. Date: 12-Mar-2021 15:21:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-6-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 08:52:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: bilottag Date: 15-Mar-2021 07:16:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.446	3655885	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.579	3703939	0.80	1.5437	65.6	65.6	0.1472	0.1472	65.63	
2,3,7,8-TCDF	18.605	72516	0.81	1.1258	1.739	1.739	0.0270	0.0270		
A Non-2,3,7,8-sub-TCDF	18.115	33228	0.83	1.1258	0.7969	0.7969	0.0270	0.7078		M
S Total TCDF					2.536	2.536	0.0270	0.0270		
D 13C-2,3,7,8-TCDD	19.790	2497765	0.82	0.9687	70.5	70.5	0.1466	0.1466	70.53	
$ 37Cl4-2,3,7,8-TCDD	19.816	1495787		1.0841	37.7	37.7	0.0333	0.0333	94.35	
2,3,7,8-TCDD	19.807	16126	0.73	1.1904	0.5424	0.5424	0.0241	0.0241		M
A Non-2,3,7,8-sub-TCDD	18.876	3664	0.73	1.1904	0.1232	0.1232	0.0241	0.1232		
S Total TCDD					0.6656	0.6656	0.0241	0.0241		
D 13C-1,2,3,7,8-PeCDF	25.626	3067503	1.57	1.3124	63.9	63.9	0.2900	0.2900	63.93	
1,2,3,7,8-PeCDF	25.626	2689	1.33	1.1163	0.0785	0.0785	0.0131	0.0131		M
D 13C-2,3,4,7,8-PeCDF	27.007	3172081	1.58	1.3352	65.0	65.0	0.2851	0.2851	64.99	
2,3,4,7,8-PeCDF	27.049	1601	1.55	1.0579	0.0523	0.0477	0.0145	0.0145		RQM
A F1 PeCDFs	22.791						0.007892	0.007892		RQU
A Non-2,3,7,8-sub-PeCDF	26.224						0.0138	0.0138		
S Total PeCDF					0.1309	0.1262	0.0138	0.0138		RQ
D 13C-1,2,3,7,8-PeCDD	27.757	1895204	1.62	0.7716	67.2	67.2	0.1173	0.1173	67.19	
1,2,3,7,8-PeCDD	27.755						0.0206	0.0206		
A Non-2,3,7,8-sub-PeCDD	26.609	1820	1.55	1.1372	0.1437	0.0844	0.0206	0.0844		RQ
S Total PeCDD					0.1437	0.0844	0.0206	0.0206		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.527	2661420	0.54	1.0931	70.7	70.7	0.2947	0.2947	70.65	
1,2,3,4,7,8-HxCDF	33.544	4205	1.07	1.1831	0.1335	0.1335	0.0122	0.0122		
D 13C-1,2,3,6,7,8-HxCDF	33.729	2772289	0.53	1.1278	71.3	71.3	0.2856	0.2856	71.34	
1,2,3,6,7,8-HxCDF	33.754	1792	1.24	1.2484	0.0568	0.0518	0.0115	0.0115		RQ
D 13C-2,3,4,6,7,8-HxCDF	34.731	2677241	0.53	1.0552	73.6	73.6	0.3053	0.3053	73.63	
2,3,4,6,7,8-HxCDF	34.765	1154	1.05	1.2750	0.0338	0.0338	0.009710	0.009710		M
D 13C-1,2,3,7,8,9-HxCDF	35.750	2494440	0.53	0.9938	72.8	72.8	0.3241	0.3241	72.84	
1,2,3,7,8,9-HxCDF	35.753						0.009336	0.009336		U
A Non-2,3,7,8-sub-HxCDF	33.496						0.0106	0.0106		RQU
S Total HxCDF					0.2241	0.2191	0.0107	0.0107		RQ

Report Date: 16-Mar-2021 08:52:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.547	3445893	1.27	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.992	1899475	1.27	0.7895	69.8	69.8	0.1888	0.1888	69.82	
1,2,3,4,7,8-HxCDD	35.017	1961	1.43	1.0950	0.0943	0.0943	0.0117	0.0117		M
D 13C-1,2,3,6,7,8-HxCDD	35.126	2195734	1.26	0.8495	75.0	75.0	0.1755	0.1755	75.01	
1,2,3,6,7,8-HxCDD	35.160	461	1.24	1.0201	0.0250	0.0206	0.0118	0.0118		RQM
1,2,3,7,8,9-HxCDD	35.724						0.0107	0.0107		U
A Non-2,3,7,8-sub-HxCDD	34.039						0.0114	0.0174		RQU
S Total HxCDD					0.1193	0.1149	0.0114	0.0114		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.799	2124043	0.45	0.7854	78.5	78.5	0.3389	0.3389	78.48	
1,2,3,4,6,7,8-HpCDF	37.833	3793	1.18	1.4859	0.1202	0.1202	0.0111	0.0111		
D 13C-1,2,3,4,7,8,9-HpCDF	39.146	2062814	0.45	0.7230	82.8	82.8	0.3682	0.3682	82.80	
1,2,3,4,7,8,9-HpCDF	39.154	1445	1.13	1.4048	0.0499	0.0499	0.0115	0.0115		M
A Non-2,3,7,8-sub-HpCDF	38.451	1697	0.95	1.4453	0.0561	0.0561	0.0113	0.0561		M
S Total HpCDF					0.2261	0.2261	0.0113	0.0113		
D 13C-1,2,3,4,6,7,8-HpCDD	38.834	1946051	1.05	0.6413	88.1	88.1	0.2742	0.2742	88.06	
1,2,3,4,6,7,8-HpCDD	38.851	4217	0.89	1.1489	0.1886	0.1886	0.0101	0.0101		M
A Non-2,3,7,8-sub-HpCDD	39.230	2457	1.04	1.1489	0.1342	0.1099	0.0101	0.1099		RQMa
S Total HpCDD					0.3228	0.2985	0.0101	0.0101		RQ
D 13C-OCDD	41.305	3288116	0.90	0.5141	185.6	185.6	0.1671	0.1671	92.81	
OCDF	41.389	4060	0.90	1.5776	0.1565	0.1565	0.0218	0.0218		M
OCDD	41.322	20058	0.97	1.1706	1.042	1.042	0.0197	0.0197		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Lims ID: 320-70797-A-6-A
Client ID: 11215702-Tank1-0.1mm
Sample Type: Client
Inject. Date: 12-Mar-2021 15:21:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-6-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 08:52:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: bilottag Date: 15-Mar-2021 07:16:33

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.446	19.417	2		1637259	263970	210	525	1257		
333.9338	19.455	19.417	2		2018626	332477	129	322	2577	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.579	18.557	1	0.955	1651244	266232	328	820	812		
317.9389	18.579	18.557	1	0.955	2052695	332796	214	535	1555	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.605	18.574	2	1.001	32411	5019	22	55	228		
305.8987	18.613	18.574	2	1.002	40105	6395	51	127	125	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											M
303.9016	17.539	18.115	-34	0.944	1577	294	22	55	13		
305.8987	17.514	18.115	-36	0.943	2135	470	51	127	9	0.74(0.65-0.89)	
303.9016	17.995	18.115	-7	0.969	13460	2079	22	55	95		M
305.8987	17.986	18.115	-8	0.968	16056	2796	51	127	55	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.790	19.761	2	1.018	1125370	174052	210	525	829		
333.9338	19.790	19.761	2	1.018	1372395	209323	129	322	1623	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.816	19.778	2	1.019	1495787	232461	86	215	2703		
2,3,7,8-TCDD											M
319.8965	19.807	19.787	1	1.001	6826	1149	35	87	33		M
321.8936	19.816	19.787	2	1.001	9300	1501	9	22	167	0.73(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDD											
319.8965	16.259	18.876	-157	0.822	1540	312	35	87	9		
321.8936	16.242	18.876	-158	0.821	2124	375	9	22	42	0.73(0.65-0.89)	

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	25.626	25.600	2	1.318	1874660	342289	549	1372	623		
353.8970	25.626	25.600	2	1.318	1192843	219778	359	897	612	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.626	25.625	0	1.000	1537	267	8	20	33		M
341.8567	25.634	25.625	1	1.000	1152	287	25	62	11	1.33(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.007	26.980	2	1.389	1943170	328397	549	1372	598		
353.8970	27.007	26.980	2	1.389	1228911	205245	359	897	572	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											RQM
339.8597	27.049	27.006	3	1.002	1128	197	8	20	25		M
	Empc Correction				973	246	8	20	31		
341.8567	27.041	27.006	2	1.001	628	159	25	62	6	1.80(1.32-1.78)	M
A F1 PeCDFs											U
339.8597	22.791	22.791	0	0.889	82	45	1	2			
341.8567	22.791	22.791	0	0.889	1828	272	18	45		0.04(1.32-1.78)	
	Empc Correction				52	29	18	45	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.224						8	20			
341.8567	26.224						25	62			
13C-1,2,3,7,8-PeCDD											
367.8949	27.757	27.721	2	1.427	1171330	186951	125	312	1496		
369.8919	27.757	27.721	2	1.427	723874	111705	91	227	1228	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.755						24	60			
357.8516	27.755						4	10			
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	28.675	26.609	124	1.033	2382	307	24	60	13		
	Empc Correction				1106	224	24	60	9		
357.8516	28.666	26.609	123	1.033	714	145	4	10	36	3.34(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.527	33.504	1	0.943	937129	163641	282	705	580		
385.8610	33.527	33.504	1	0.943	1724291	298964	738	1845	405	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.544	33.521	1	1.001	2174	404	19	47	21		
375.8178	33.527	33.521	0	1.000	2031	429	8	20	54	1.07(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.729	33.706	1	0.949	964145	163968	282	705	581		
385.8610	33.729	33.706	1	0.949	1808144	304522	738	1845	413	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQ
373.8208	33.754	33.723	2	1.001	1165	214	19	47	11		
	Empc Correction				992	169	19	47	9		
375.8178	33.763	33.723	2	1.001	800	137	8	20	17	1.46(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.731	34.709	1	0.977	921830	182249	282	705	646		
385.8610	34.731	34.709	1	0.977	1755411	358908	738	1845	486	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											M
373.8208	34.765	34.725	2	1.001	590	130	19	47	7		M
375.8178	34.765	34.725	2	1.001	564	143	8	20	18	1.05(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.750	35.736	1	1.006	863758	187096	282	705	663		
385.8610	35.750	35.736	1	1.006	1630682	366943	738	1845	497	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											U
373.8208	35.753						19	47			
375.8178	35.753						8	20			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	33.496	33.496	0	0.999	29		19	47			
375.8178	33.496	33.496	0	0.999	530	149	8	20		0.05(1.05-1.43)	
	Empc Correction				23	0	8	20	0		
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.547	35.525	1		1924664	443759	256	640	1733		
403.8529	35.547	35.525	1		1521229	347849	216	540	1610	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	34.992	34.970	1	0.984	1060876	240678	256	640	940		
403.8529	34.992	34.970	1	0.984	838599	189570	216	540	878	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.017	34.995	1	1.001	1154	258	9	22	29		M
391.8127	35.000	34.995	0	1.000	807	187	13	32	14	1.43(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.126	35.105	1	0.988	1225904	255238	256	640	997		
403.8529	35.126	35.105	1	0.988	969830	201211	216	540	932	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8158	35.160	35.121	2	1.001	355	94	9	22	10		
	Empc Correction				255	95	9	22	11		
391.8127	35.160	35.121	2	1.001	206	77	13	32	6	1.72(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											U
389.8158	35.542						9	22			
391.8127	35.542						13	32			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	33.510	34.039	-32	0.954	363	82	9	22	9		
	Empc Correction				215	75	9	22	8		
391.8127	33.519	34.039	-31	0.954	174	61	13	32	5	2.09(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.799	37.786	1	1.063	659828	179596	310	775	579		
419.8220	37.799	37.786	1	1.063	1464215	394308	533	1332	740	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.833	37.794	2	1.001	2053	439	28	70	16		
409.7788	37.808	37.794	1	1.000	1740	442	10	25	44	1.18(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.146	39.133	1	1.101	638304	182174	310	775	588		
419.8220	39.146	39.133	1	1.101	1424510	408346	533	1332	766	0.45(0.37-0.51)	

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8,9-HpCDF											M
407.7817	39.154	39.142	1	1.000	768	200	28	70	7		M
409.7788	39.163	39.142	1	1.000	677	219	10	25	22	1.13(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7817	38.203	38.451	-15	1.011	827	207	28	70	7		M
409.7788	38.203	38.451	-15	1.011	870	240	10	25	24	0.95(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.834	38.822	1	1.092	998523	290441	275	687	1056		
437.8140	38.834	38.822	1	1.092	947528	269499	282	705	956	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	38.851	38.830	1	1.000	1986	568	15	37	38		M
425.7737	38.843	38.830	1	1.000	2231	513	11	27	47	0.89(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											RQMa
423.7767	38.153	39.230	-65	0.982	1253	312	15	37	21		M
425.7737	38.161	39.230	-64	0.983	1747	468	11	27	43	0.72(0.88-1.20)	
	Empc Correction				1204	300	11	27	27		
13C-OCDD											
469.7780	41.305	41.293	1	1.162	1558053	423295	136	340	3112		
471.7750	41.305	41.293	1	1.162	1730063	459216	136	340	3377	0.90(0.76-1.02)	
OCDF											M
441.7428	41.389	41.377	1	1.002	1924	574	15	37	38		M
443.7399	41.389	41.377	1	1.002	2136	643	46	115	14	0.90(0.76-1.02)	
OCDD											
457.7377	41.322	41.301	1	1.000	9899	2613	18	45	145		
459.7348	41.314	41.301	1	1.000	10159	2773	23	57	121	0.97(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Lims ID:	320-70797-A-6-A		
Client ID:	11215702-Tank1-0.1mm		
Inject. Date:	12-Mar-2021 15:21:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	7

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3703939	599028

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3703939	599028

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.539	1577	294	2135	470	0.0890	0.74	
17.995	13460	2079	16056	2796	0.7078	0.84	M
Signal Totals:							
	15037	2373	18191	3266			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	33228	5639				0.83	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7969 = (33228 * 100.000) / (3703939 * 1.126)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Lims ID:	320-70797-A-6-A		
Client ID:	11215702-Tank1-0.1mm		
Inject. Date:	12-Mar-2021 15:21:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	7

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2497765	383375

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2497765	383375

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.259	1540	312	2124	375	0.1232	0.73	
Signal Totals:							
	1540	312	2124	375			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3664	687				0.73	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1232 = (3664 * 100.000) / (2497765 * 1.190)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Lims ID: 320-70797-A-6-A
Client ID: 11215702-Tank1-0.1mm
Inject. Date: 12-Mar-2021 15:21:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 7

F1 PeCDFs, RT: 22.791

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3067503	562067
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3172081	533642

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3119792	547854

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.001	82	45	1828	272	0.0563	0.04	RQ
23.001	82	45	52	29	0.003951		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Lims ID:	320-70797-A-6-A		
Client ID:	11215702-Tank1-0.1mm		
Inject. Date:	12-Mar-2021 15:21:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	7

Non-2,3,7,8-sub-PeCDD, RT: 26.609

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1895204	298656

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1895204	298656

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
28.675	2382	307	714	145	0.1437	3.34	RQ
28.675	1106	224	714	145	0.0844		Empc Correction
Signal Totals:							
	1106	224	714	145			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3096	452				3.34	RQ
	1820	369					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1437 = (3096 * 100.000) / (1895204 * 1.137)
Empc Amount: 0.0844 = (1820 * 100.000) / (1895204 * 1.137)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Lims ID: 320-70797-A-6-A
Client ID: 11215702-Tank1-0.1mm
Inject. Date: 12-Mar-2021 15:21:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 7

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2661420	462605
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2772289	468490
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2677241	541157
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2494440	554039

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2651347	506572

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
35.809	29	0	530	149	0.0169	0.05	RnQ
35.809	29	0	23	0	0.001568		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Lims ID:	320-70797-A-6-A		
Client ID:	11215702-Tank1-0.1mm		
Inject. Date:	12-Mar-2021 15:21:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	7

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1899475	430248
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2195734	456449
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	2047604	443348

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.510	363	82	174	61	0.0241	2.09	RQ
33.510	215	75	174	61	0.0174		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Lims ID: 320-70797-A-6-A
Client ID: 11215702-Tank1-0.1mm
Inject. Date: 12-Mar-2021 15:21:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 7

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2124043	573904
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2062814	590520

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2093428	582212

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.203	827	207	870	240	0.0561	0.95	M
Signal Totals:							
	827	207	870	240			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1697	447				0.95	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0561 = (1697 * 100.000) / (2093428 * 1.445)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Lims ID:	320-70797-A-6-A		
Client ID:	11215702-Tank1-0.1mm		
Inject. Date:	12-Mar-2021 15:21:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	7

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1946051	559940

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1946051	559940

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.153	1253	312	1747	468	0.1342	0.72	RQM
38.153	1253	312	1204	300	0.1099		Empc Correction
Signal Totals:							
	1253	312	1204	300			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3000	780				0.72	RQM
	2457	612					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1342 = (3000 * 100.000) / (1946051 * 1.149)
Empc Amount: 0.1099 = (2457 * 100.000) / (1946051 * 1.149)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6
Client ID:	11215702-Tank1-0.1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.70- 21.53)

Signal: 1

Processing Integration Results

RT = 17.995 Area = 13657

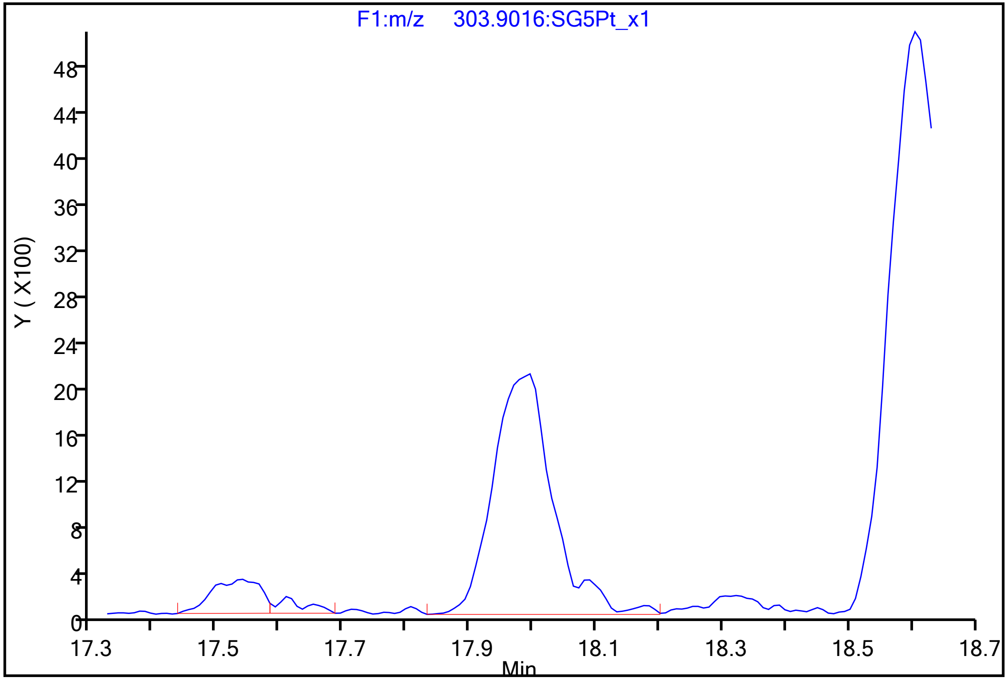

Manual Integration Results

RT = 17.995 Area = 13460 M

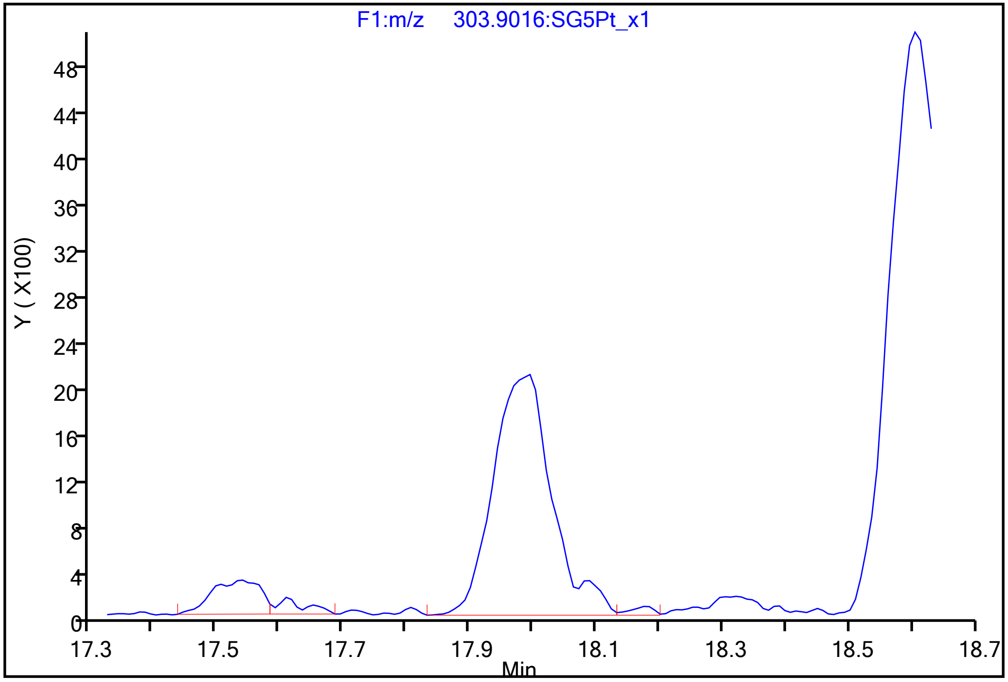

Reviewer: dadunj, 16-Mar-2021 08:51:28

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	19.81
Area:	7044
Amount:	0.551647
Amount Units:	pg/ul

Processing Integration Results

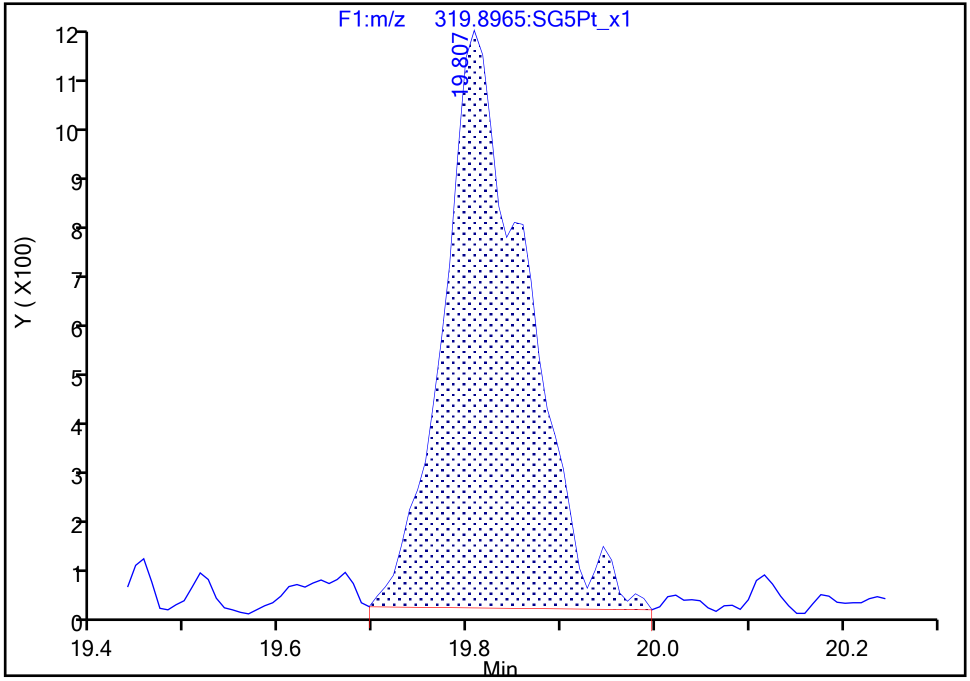

RT:	19.81
Area:	6826
Amount:	0.542364
Amount Units:	pg/ul

Manual Integration Results

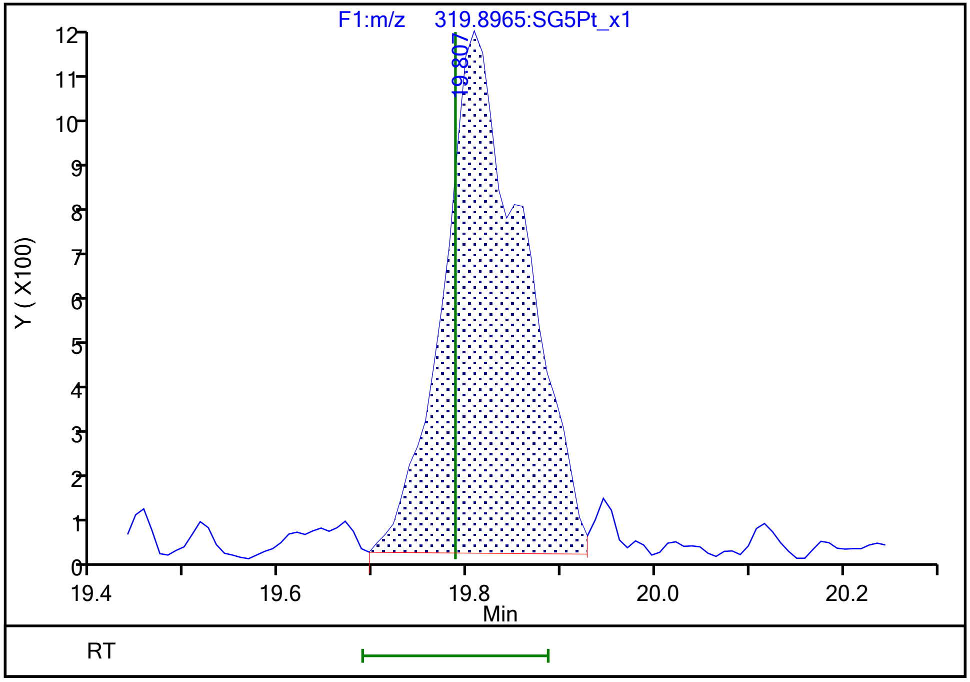

Reviewer: dadunj, 16-Mar-2021 08:48:28

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6
Client ID:	11215702-Tank1-0.1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT:	19.82
Area:	9358
Amount:	0.551647
Amount Units:	pg/ul

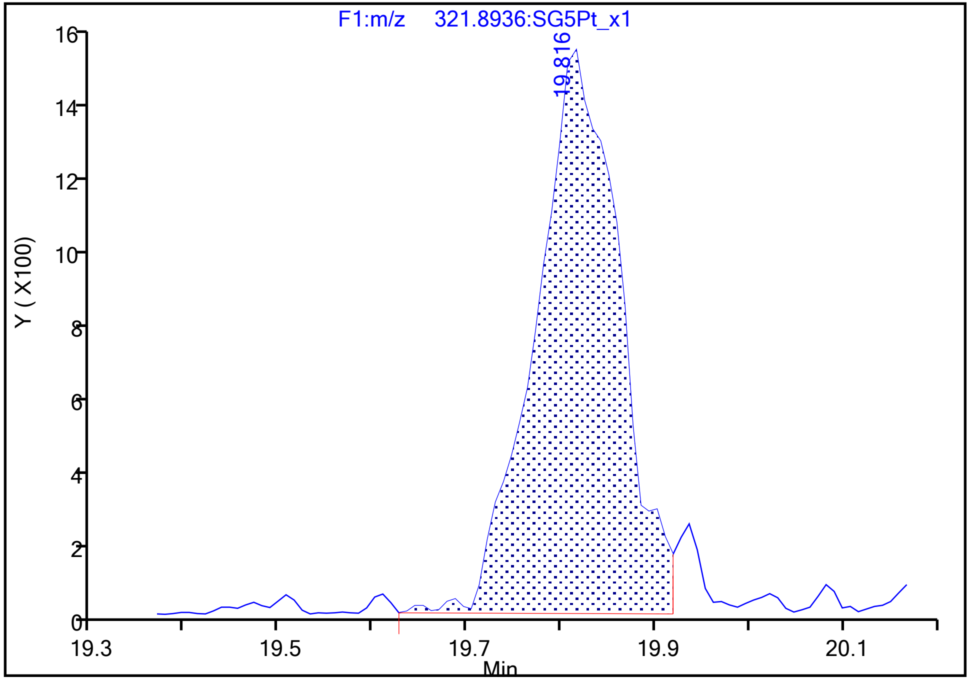

Manual Integration Results

RT:	19.82
Area:	9300
Amount:	0.542364
Amount Units:	pg/ul

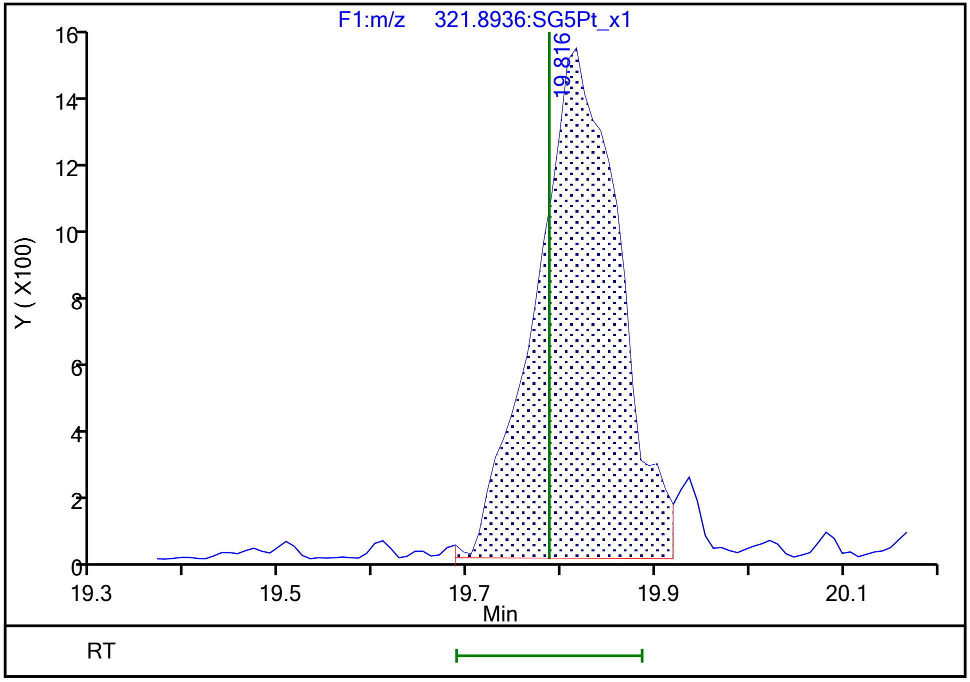

Reviewer: dadunj, 16-Mar-2021 08:48:30

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	25.63
Area:	1030
Amount:	0.078385
Amount Units:	pg/ul

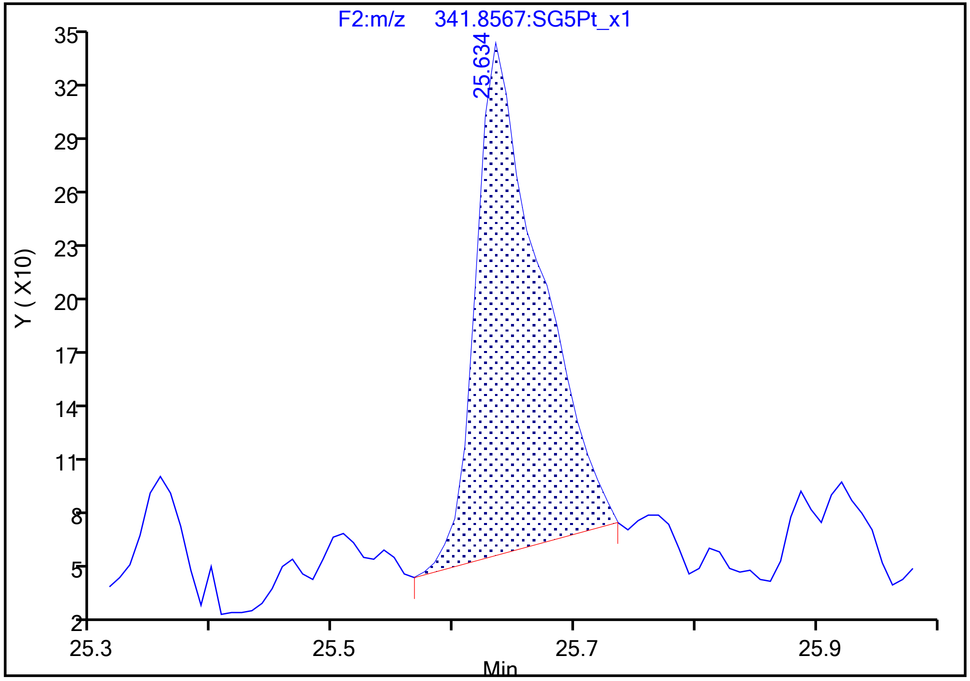

Manual Integration Results

RT:	25.63
Area:	1152
Amount:	0.078531
Amount Units:	pg/ul

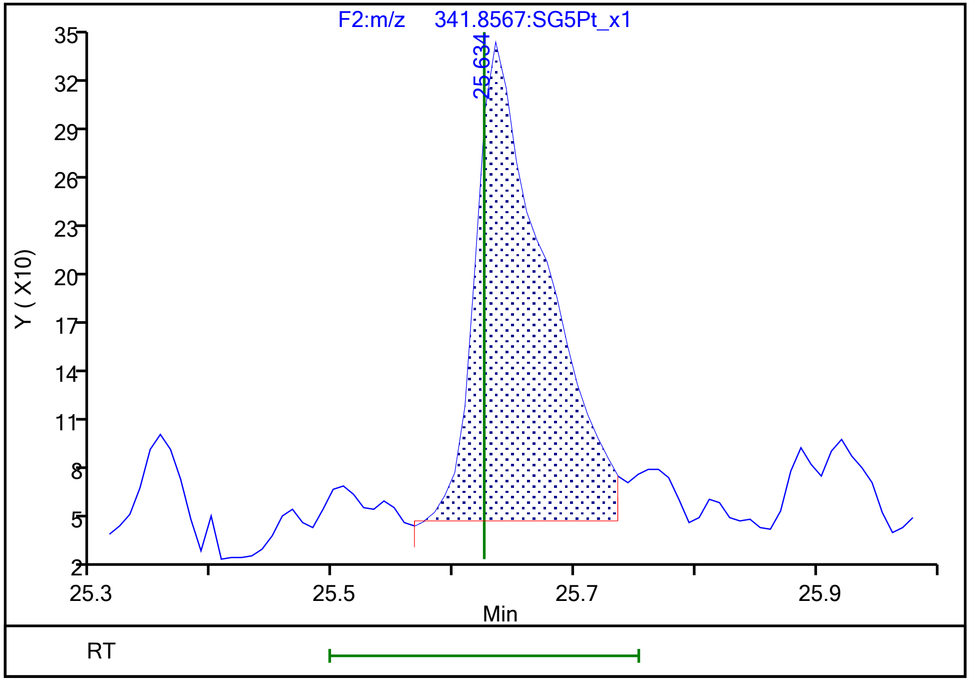

Reviewer: dadunj, 16-Mar-2021 08:48:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.63
Area:	1654
Amount:	0.078385
Amount Units:	pg/ul

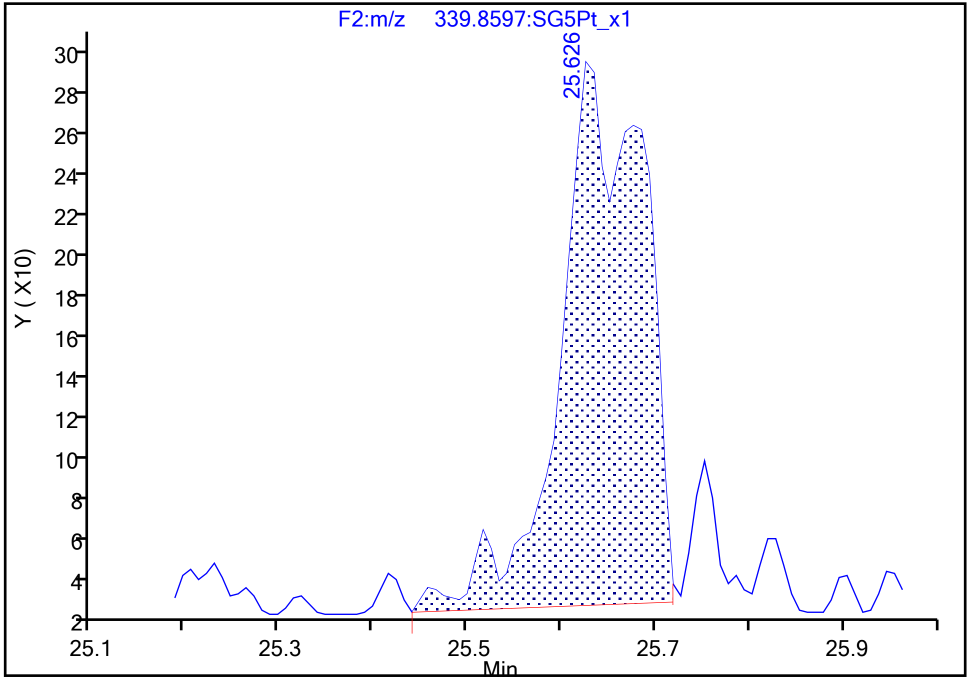

Manual Integration Results

RT:	25.63
Area:	1537
Amount:	0.078531
Amount Units:	pg/ul

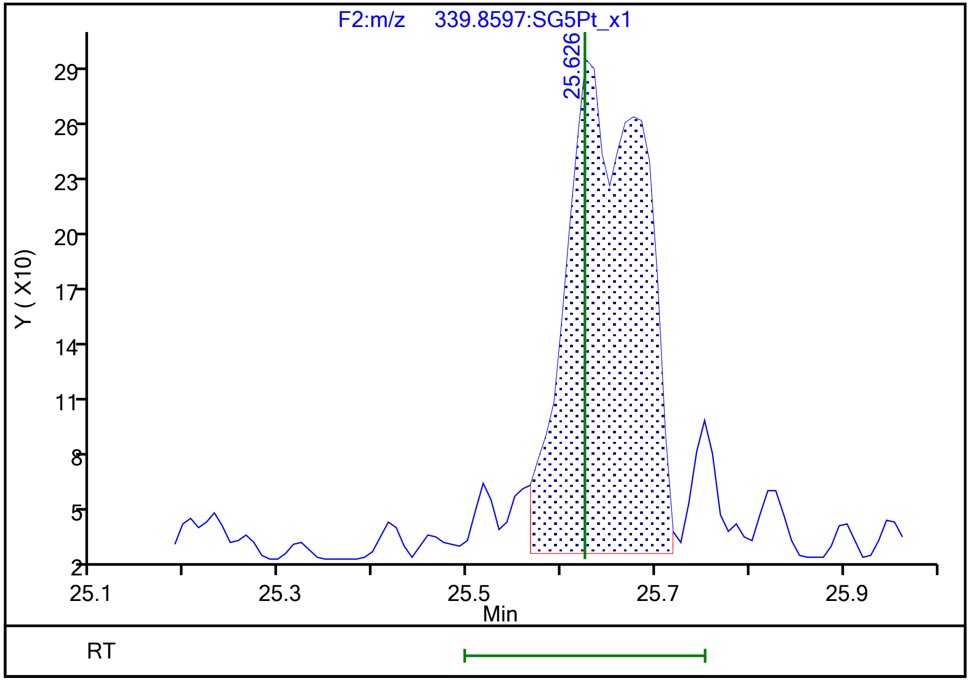

Reviewer: dadunj, 16-Mar-2021 08:49:04

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 16-Mar-2021 08:52:19
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Injection Date: 12-Mar-2021 15:21:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-6-A
Lab Sample ID: 320-70797-6
Client ID: 11215702-Tank1-0.1mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 2

Processing Integration Results

RT: 27.04
Area: 788
Amount: 0.060790
Amount Units: pg/ul

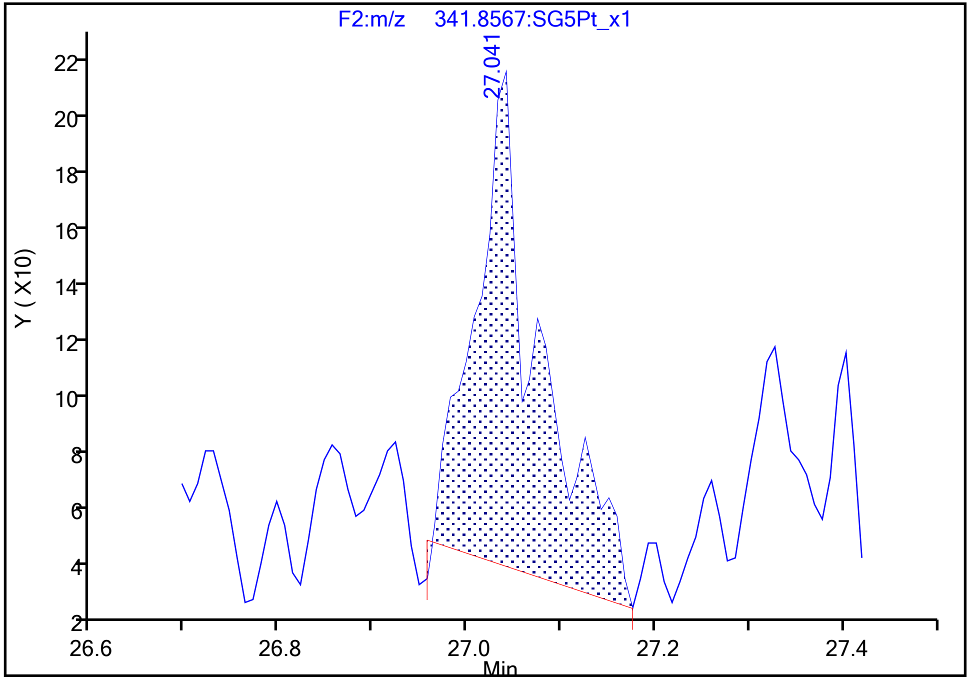

Manual Integration Results

RT: 27.04
Area: 628
Amount: 0.052327
Amount Units: pg/ul

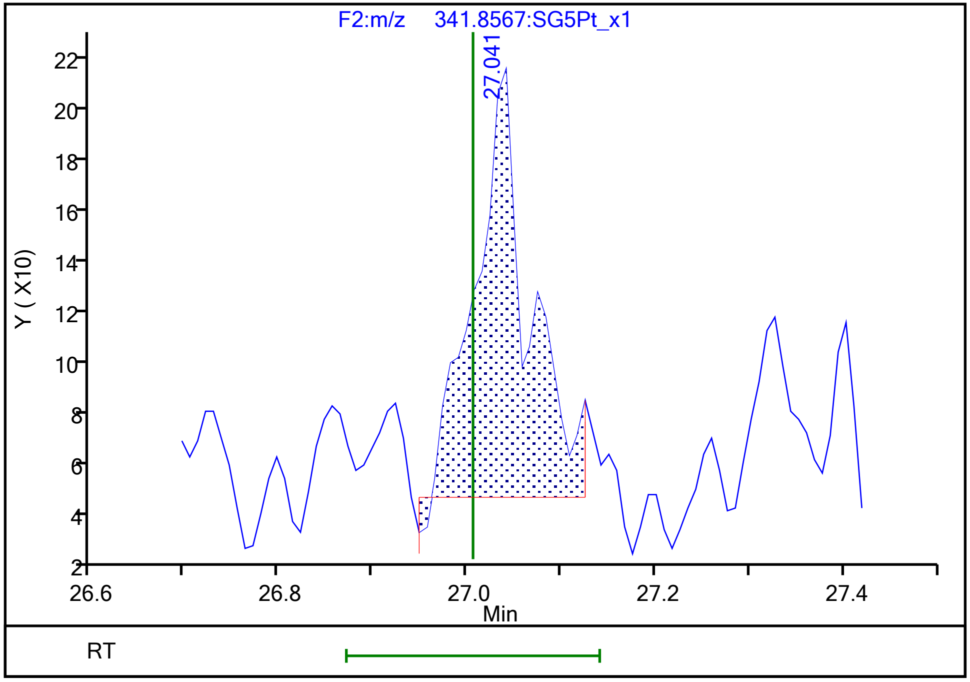

Reviewer: dadunj, 16-Mar-2021 08:49:14
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

2,3,4,7,8-PeCDF, CAS: 57117-31-4

Signal: 1

RT:	27.05
Area:	1252
Amount:	0.060790
Amount Units:	pg/ul

Processing Integration Results

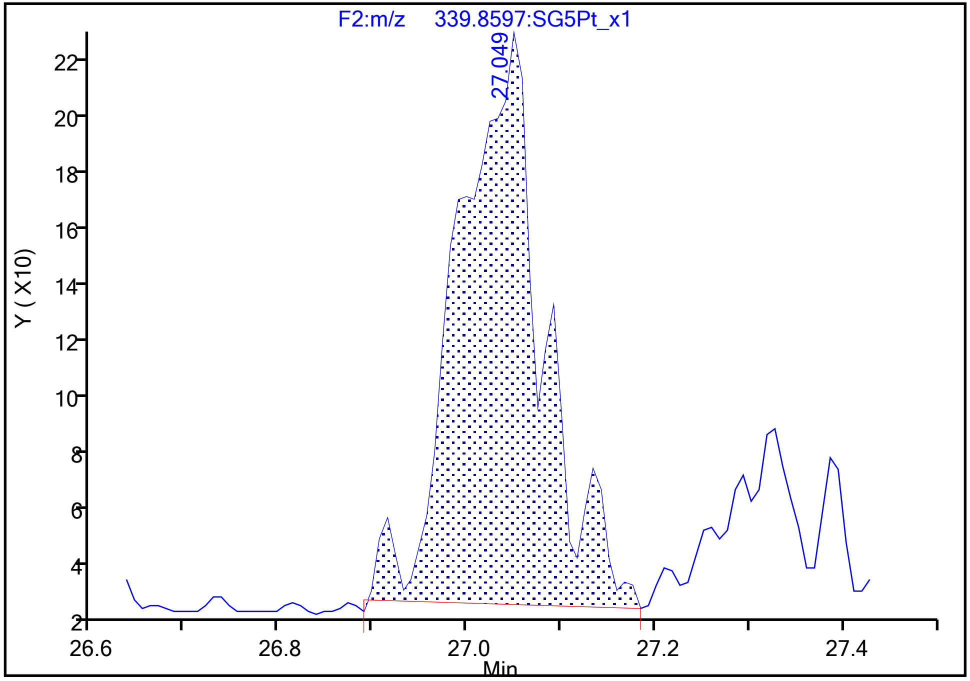

RT:	27.05
Area:	1128
Amount:	0.052327
Amount Units:	pg/ul

Manual Integration Results

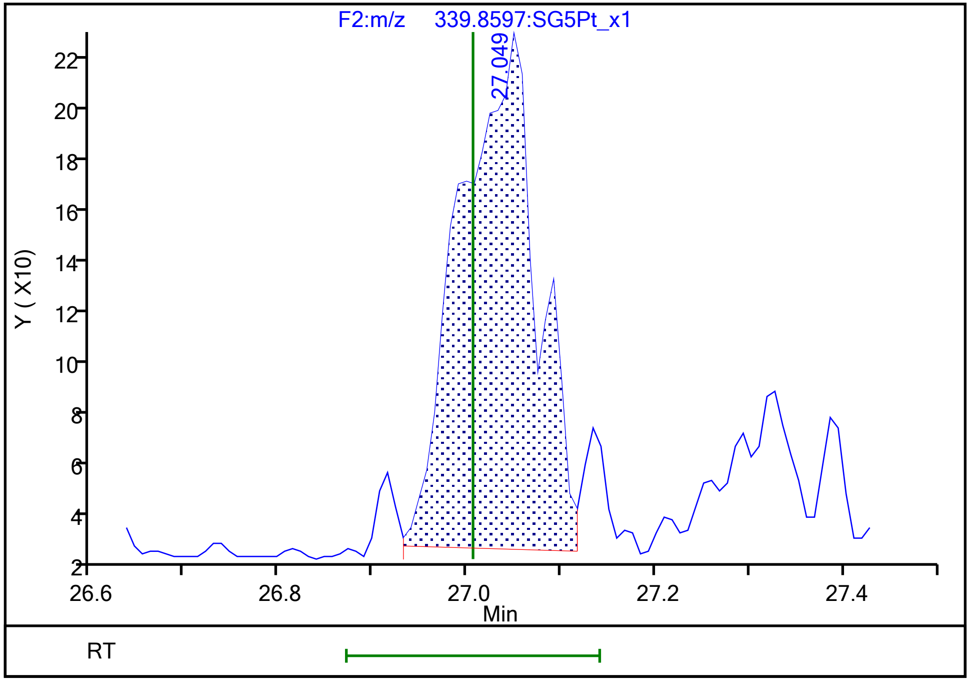

Reviewer: dadunj, 16-Mar-2021 08:49:22

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	34.76
Area:	888
Amount:	0.043533
Amount Units:	pg/ul

Processing Integration Results

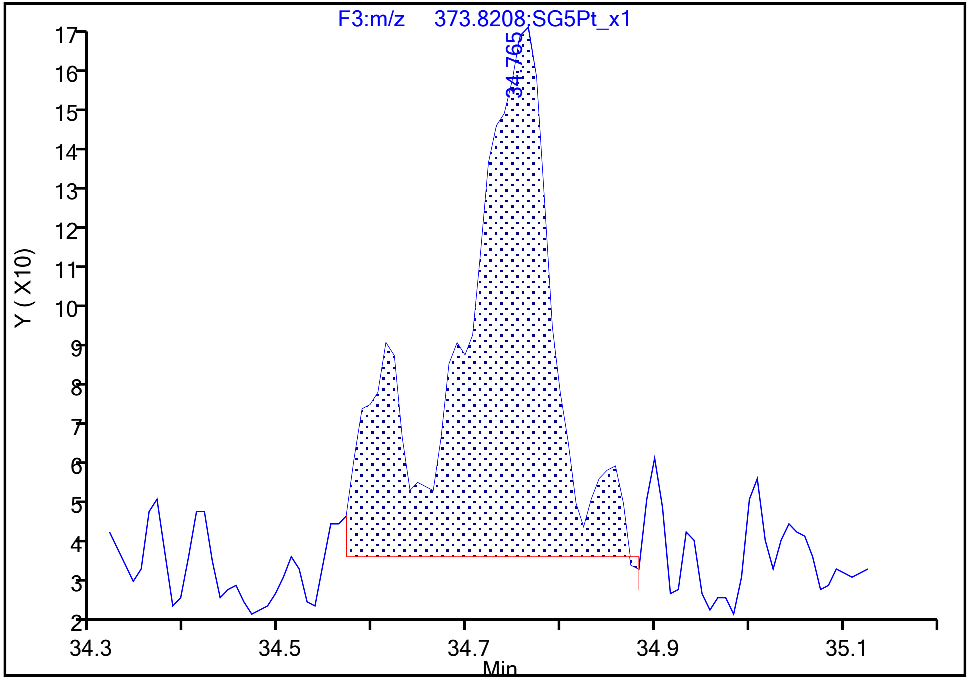

RT:	34.76
Area:	590
Amount:	0.033807
Amount Units:	pg/ul

Manual Integration Results

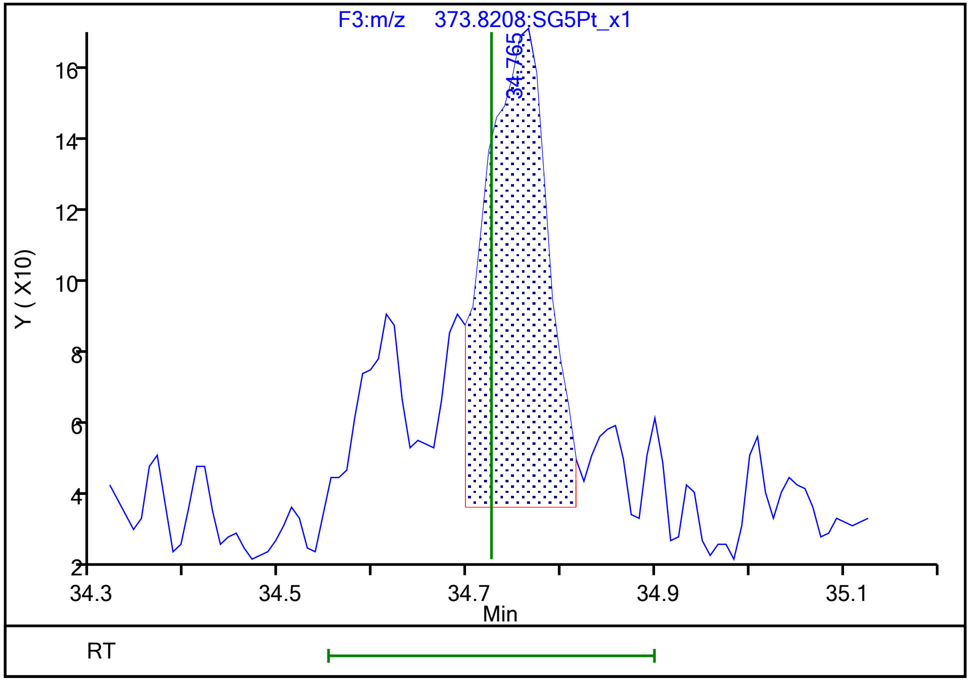

Reviewer: dadunj, 16-Mar-2021 08:49:55

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT:	34.76
Area:	598
Amount:	0.043533
Amount Units:	pg/ul

Processing Integration Results

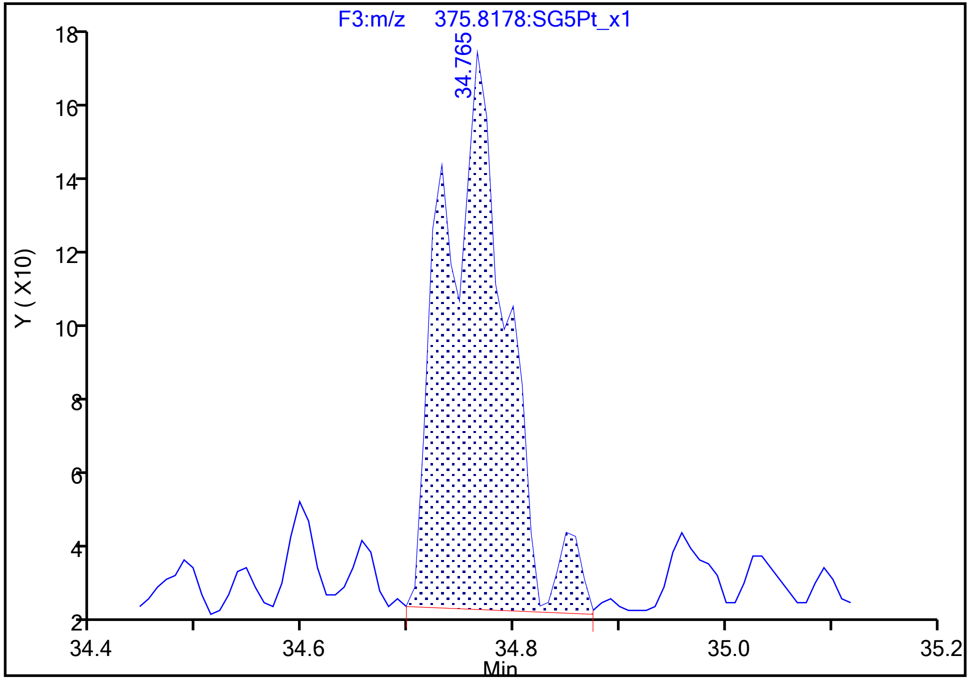

RT:	34.76
Area:	564
Amount:	0.033807
Amount Units:	pg/ul

Manual Integration Results

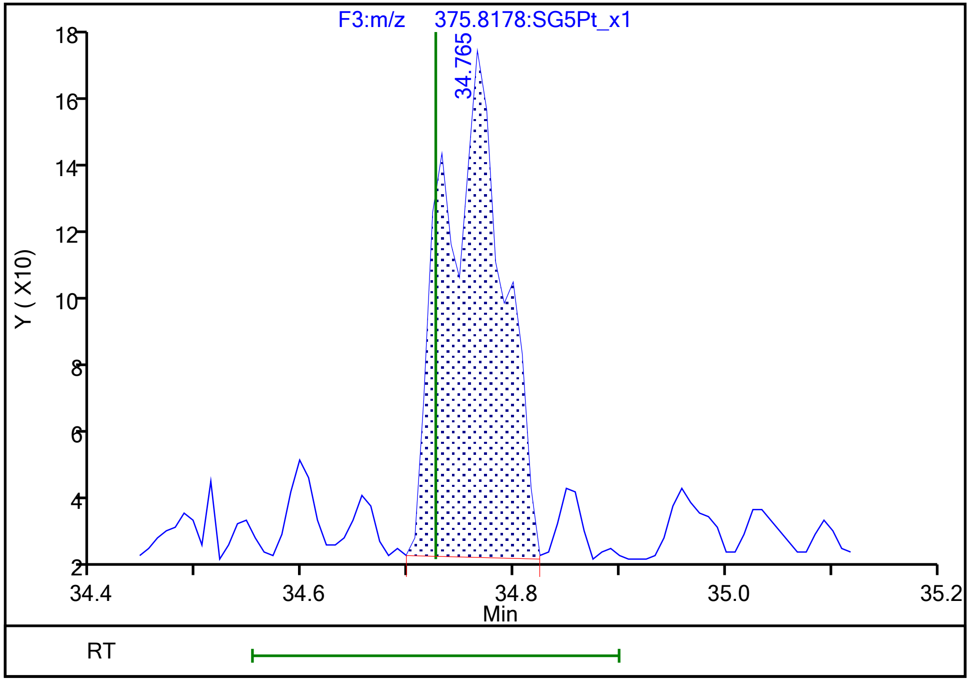

Reviewer: dadunj, 16-Mar-2021 08:49:58

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT:	35.02
Area:	1357
Amount:	0.104047
Amount Units:	pg/ul

Processing Integration Results

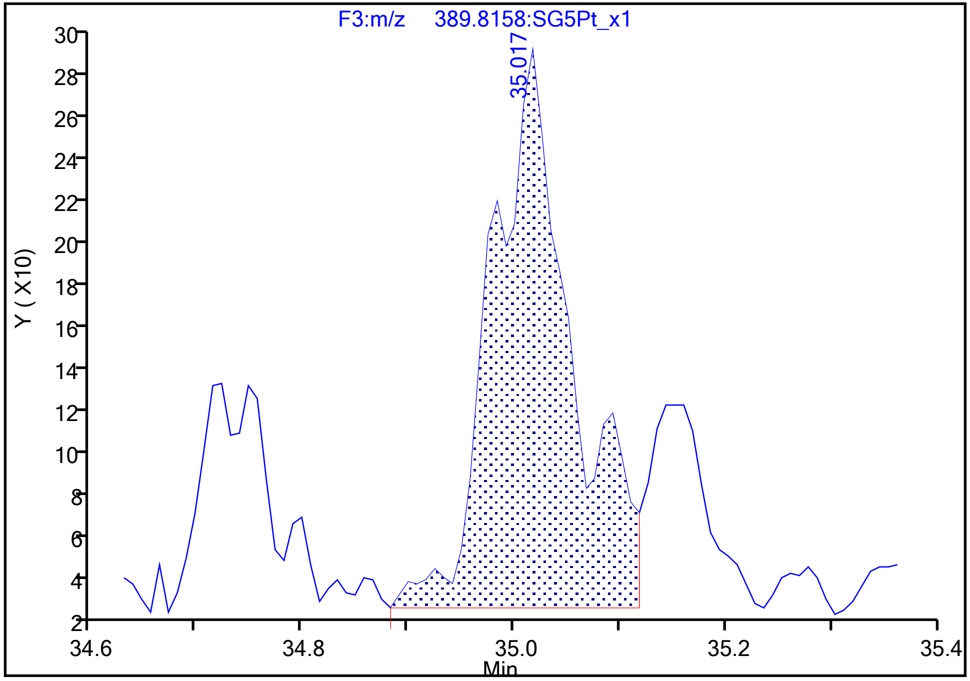

RT:	35.02
Area:	1154
Amount:	0.094286
Amount Units:	pg/ul

Manual Integration Results

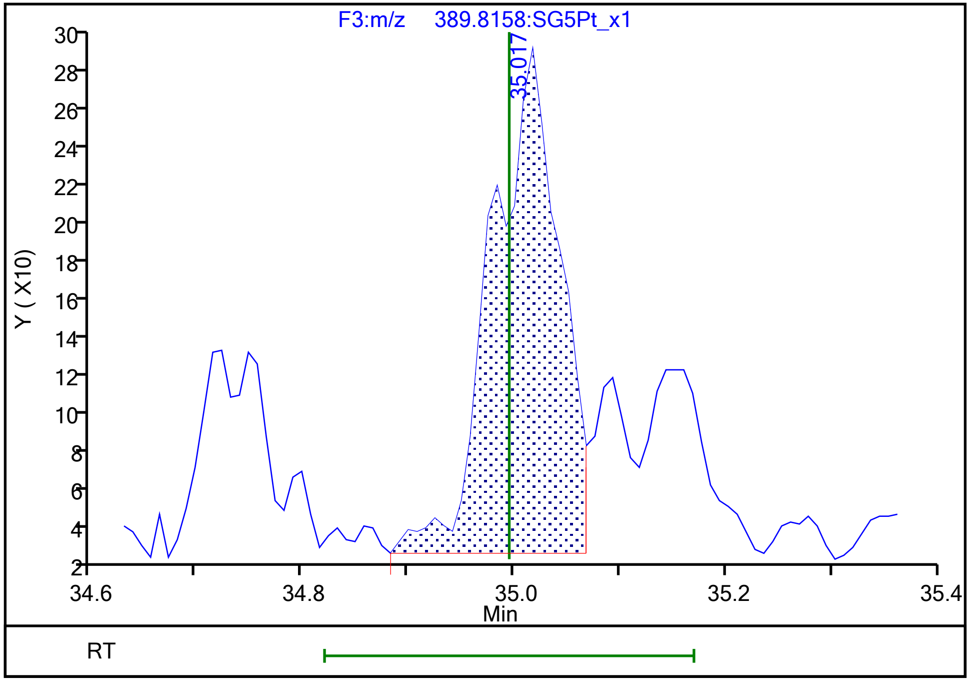

Reviewer: dadunj, 16-Mar-2021 08:50:18

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	35.16
Area:	269
Amount:	0.027858
Amount Units:	pg/ul

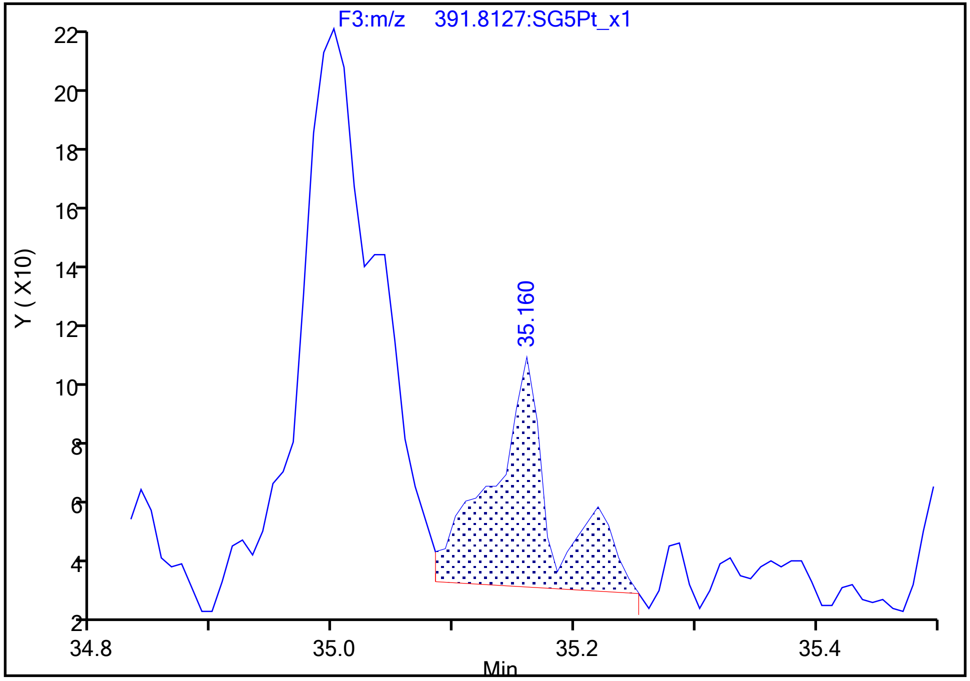

Manual Integration Results

RT:	35.16
Area:	206
Amount:	0.025045
Amount Units:	pg/ul

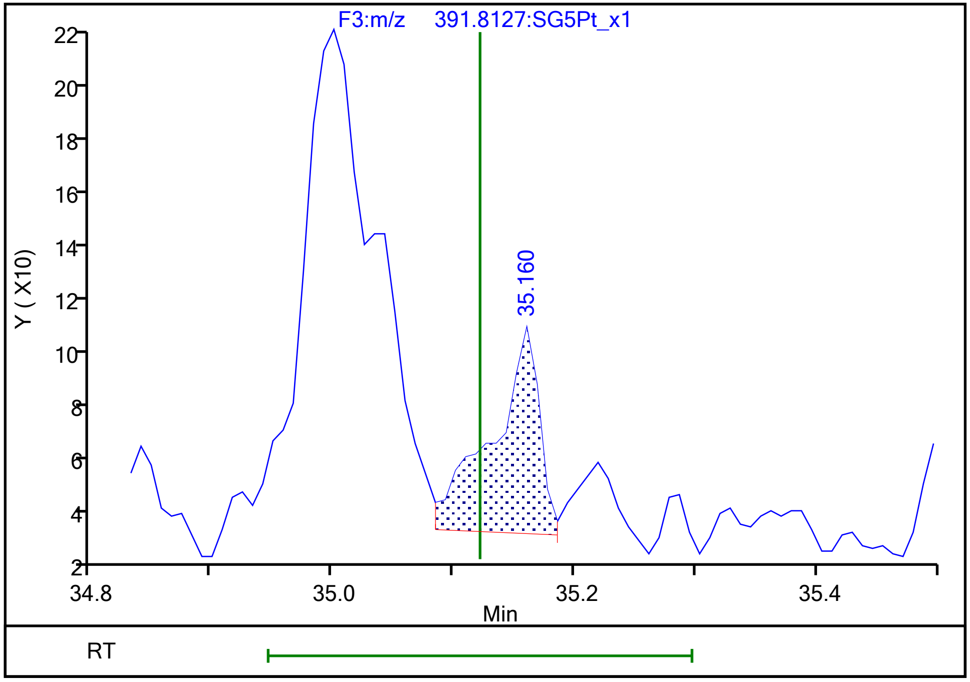

Reviewer: dadunj, 16-Mar-2021 08:50:23

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6
Client ID:	11215702-Tank1-0.1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT:	39.16
Area:	805
Amount:	0.069328
Amount Units:	pg/ul

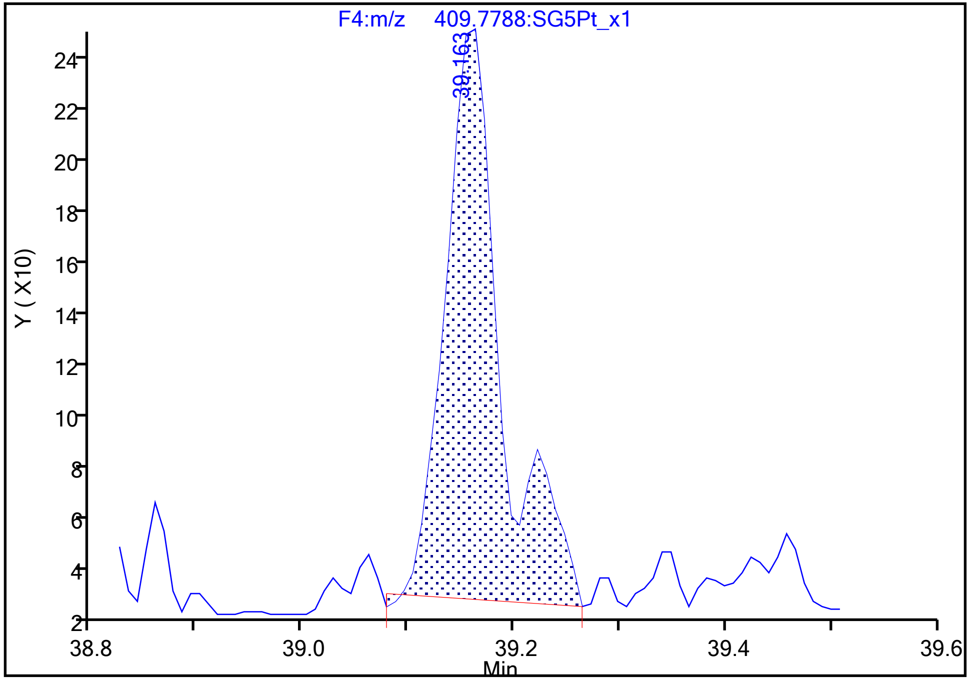

Manual Integration Results

RT:	39.16
Area:	677
Amount:	0.049865
Amount Units:	pg/ul

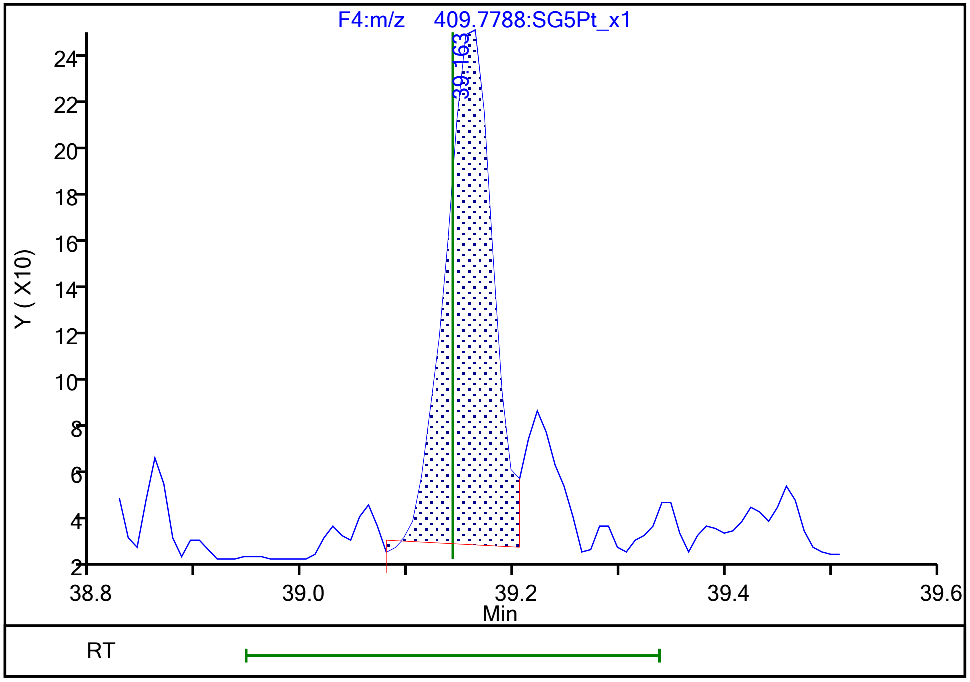

Reviewer: dadunj, 16-Mar-2021 08:50:41

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT:	39.15
Area:	1204
Amount:	0.069328
Amount Units:	pg/ul

Processing Integration Results

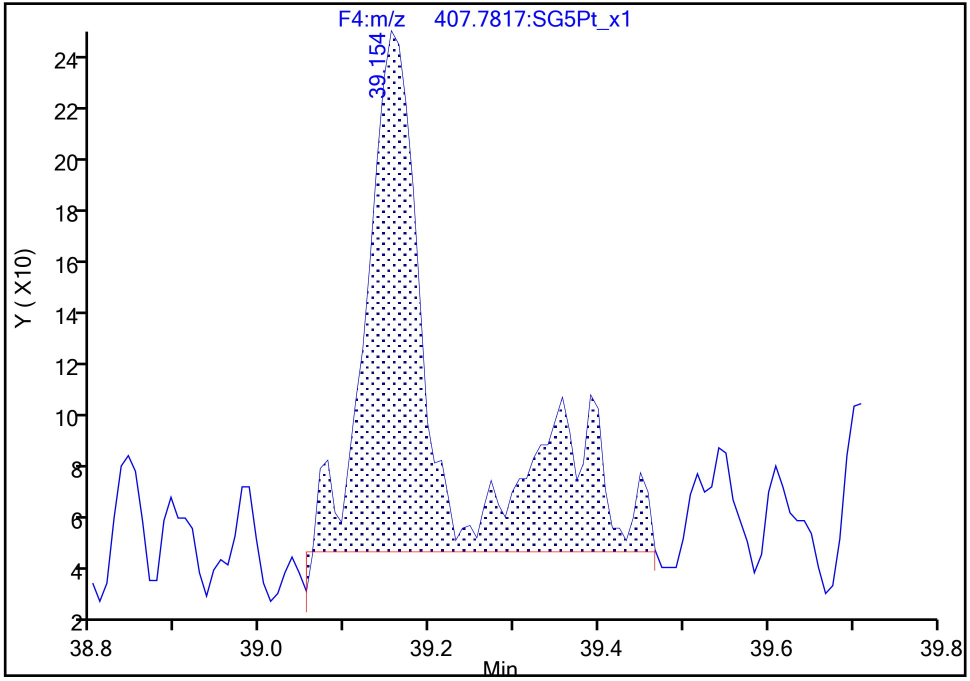

RT:	39.15
Area:	768
Amount:	0.049865
Amount Units:	pg/ul

Manual Integration Results

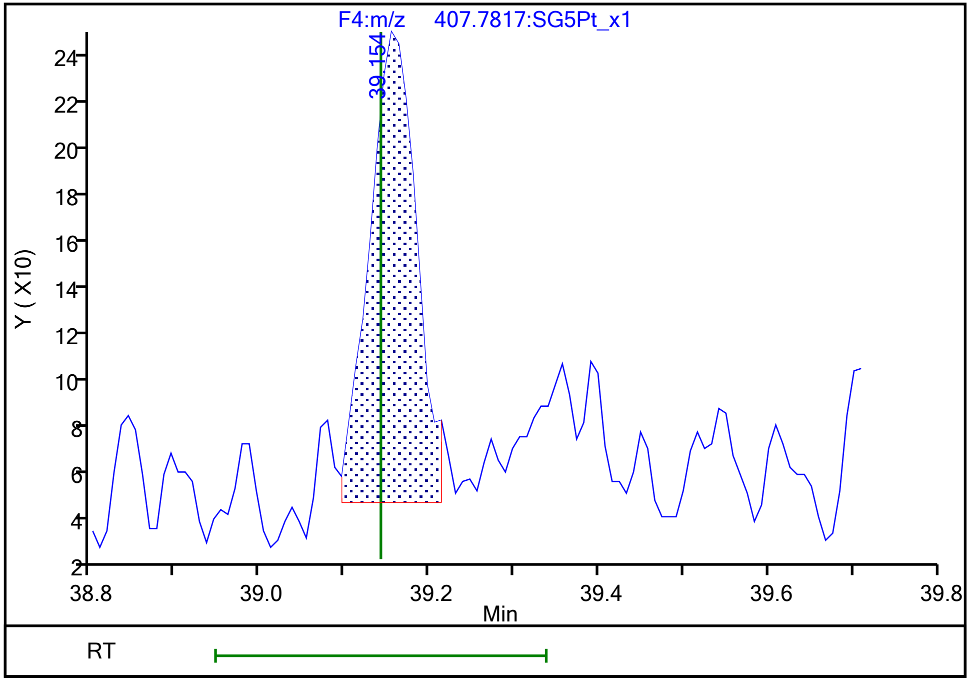

Reviewer: dadunj, 16-Mar-2021 08:50:44

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Injection Date: 12-Mar-2021 15:21:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-6-A
Lab Sample ID: 320-70797-6
Client ID: 11215702-Tank1-0.1mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7817, RT: (37.75- 39.15)

Signal: 1

Processing Integration Results

RT = 38.203 Area = 849

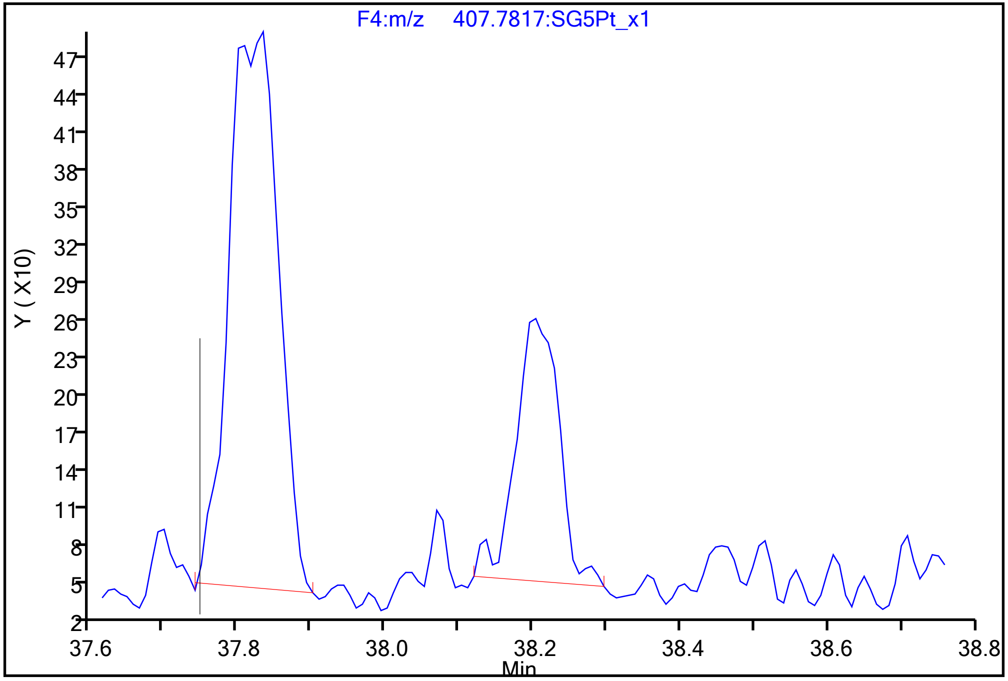

Manual Integration Results

RT = 38.203 Area = 827 M

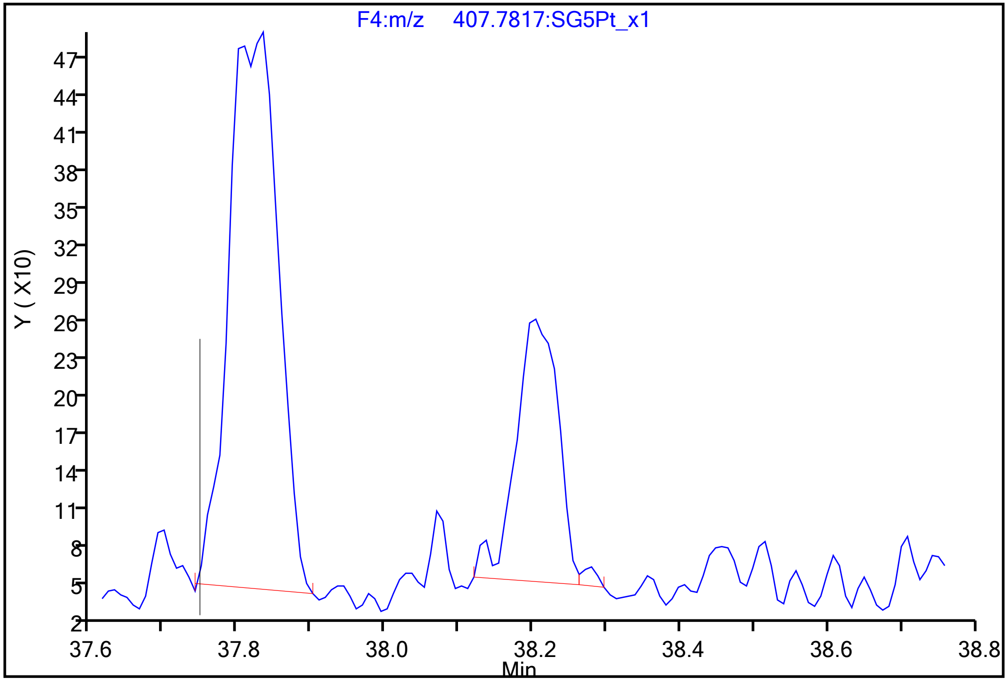

Reviewer: dadunj, 16-Mar-2021 08:50:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (37.75- 39.15)

Signal: 2

Processing Integration Results

RT = 38.203 Area = 951

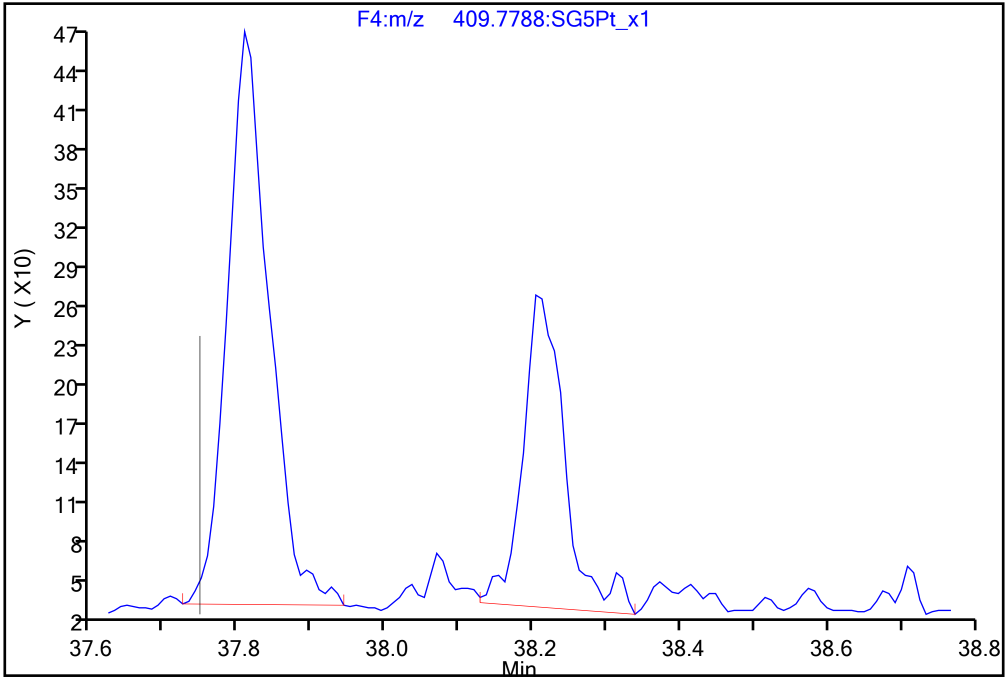

Manual Integration Results

RT = 38.203 Area = 870 M

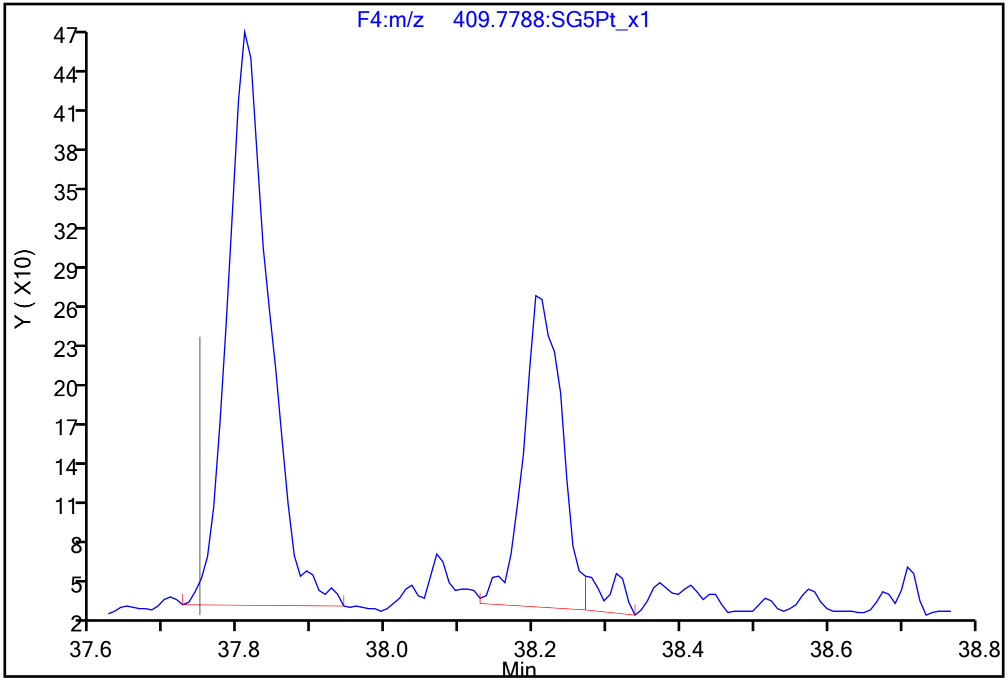

Reviewer: dadunj, 16-Mar-2021 08:50:47

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

RT:	38.85
Area:	2022
Amount:	0.190215
Amount Units:	pg/ul

Processing Integration Results

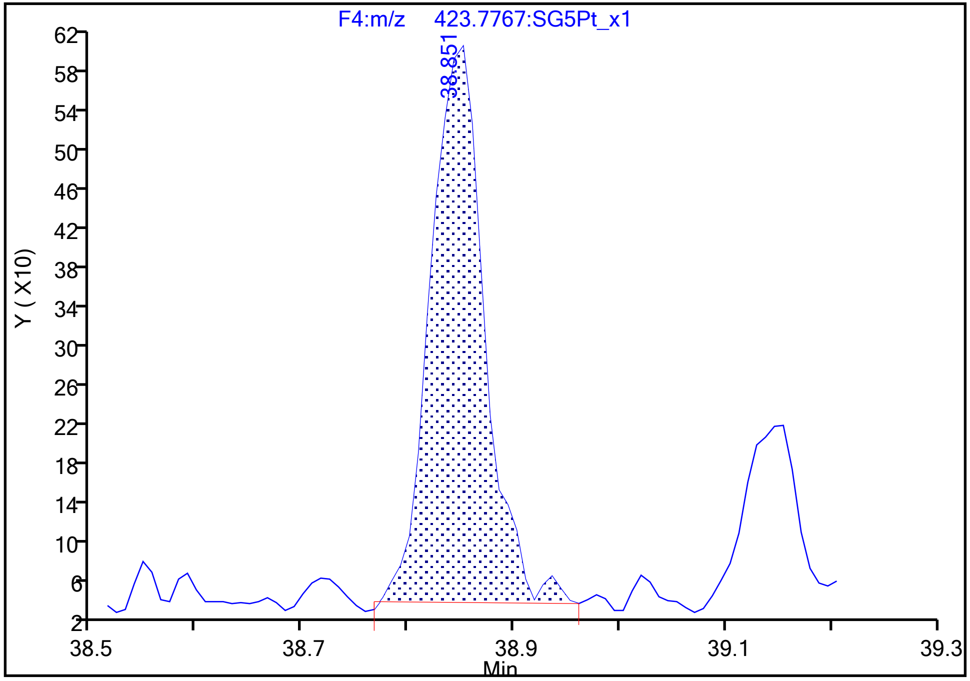

RT:	38.85
Area:	1986
Amount:	0.188604
Amount Units:	pg/ul

Manual Integration Results

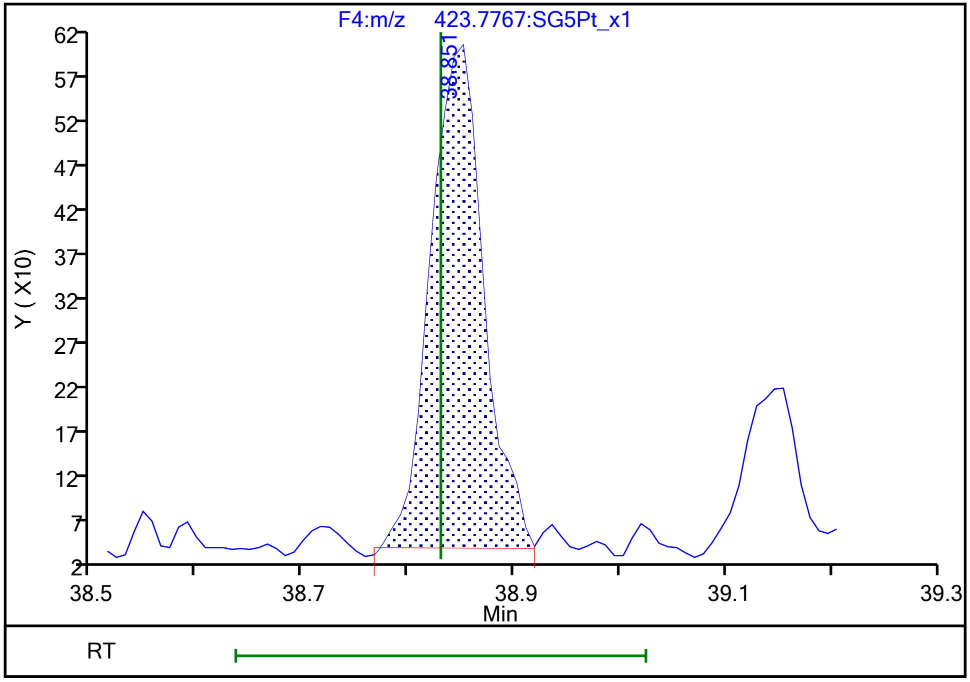

Reviewer: dadunj, 16-Mar-2021 08:50:54

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6
Client ID:	11215702-Tank1-0.1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.75- 39.71)

Signal: 1

Processing Integration Results

RT = 38.153 Area = 1487

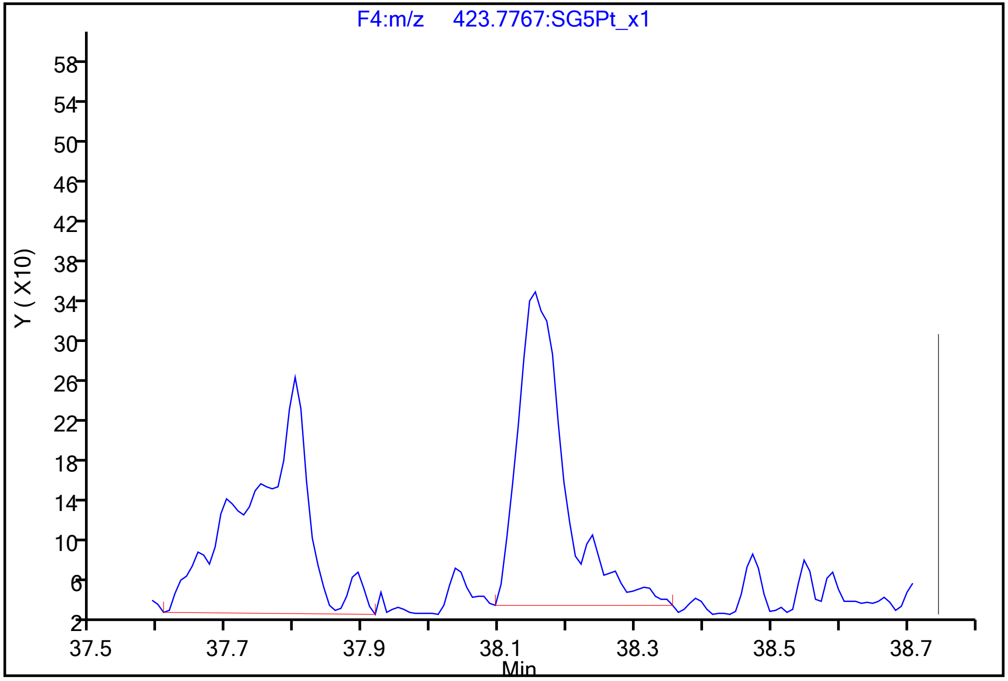

Manual Integration Results

RT = 38.153 Area = 1253 M

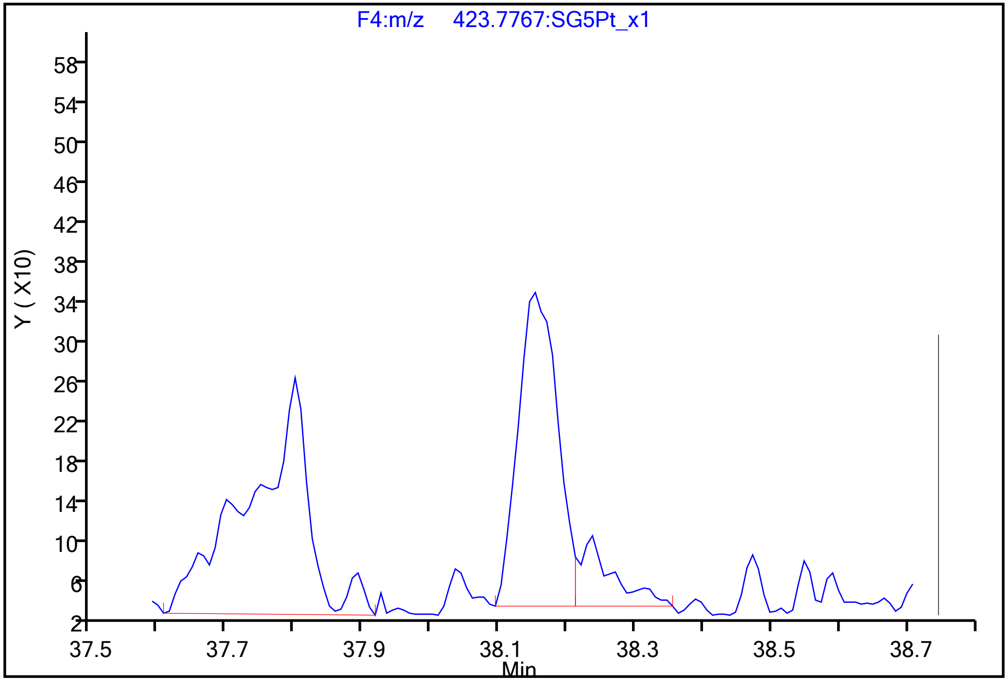

Reviewer: dadunj, 16-Mar-2021 08:50:59

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d				
Injection Date:	12-Mar-2021 15:21:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-6-A	Lab Sample ID:	320-70797-6		
Client ID:	11215702-Tank1-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT: 41.39
Area: 2044
Amount: 0.161158
Amount Units: pg/ul

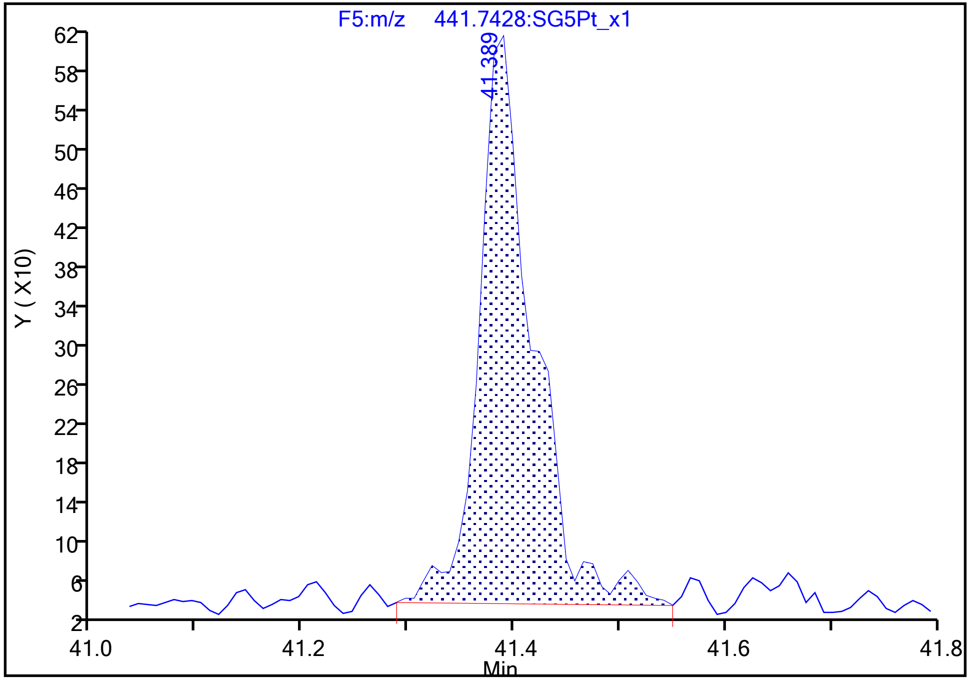

Manual Integration Results

RT: 41.39
Area: 1924
Amount: 0.156531
Amount Units: pg/ul

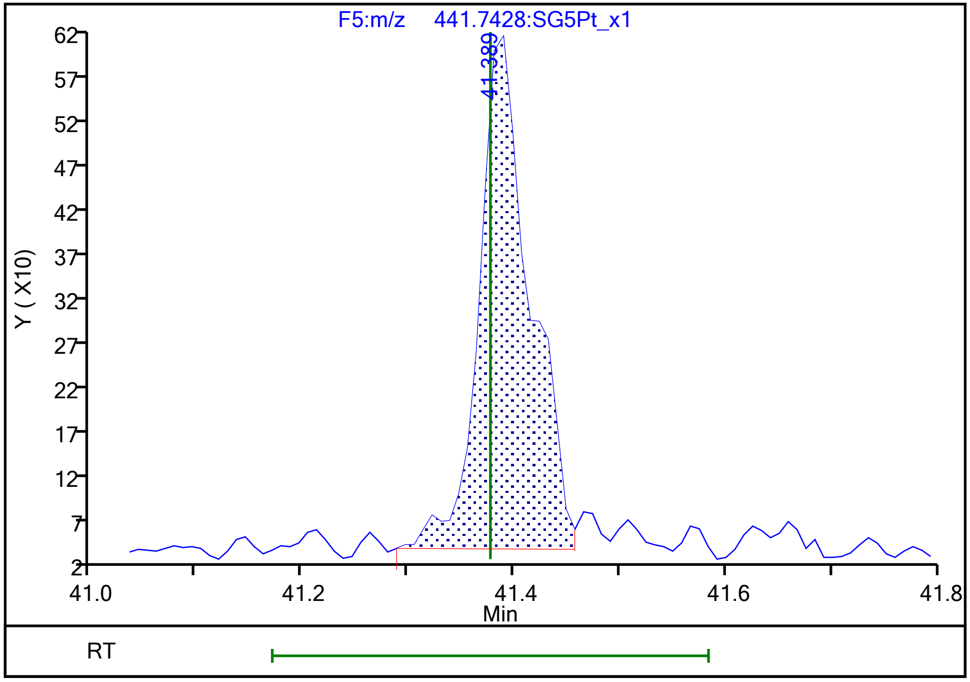

Reviewer: dadunj, 16-Mar-2021 08:51:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Injection Date: 12-Mar-2021 15:21:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-0.1mm
Worklist#: 469779
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

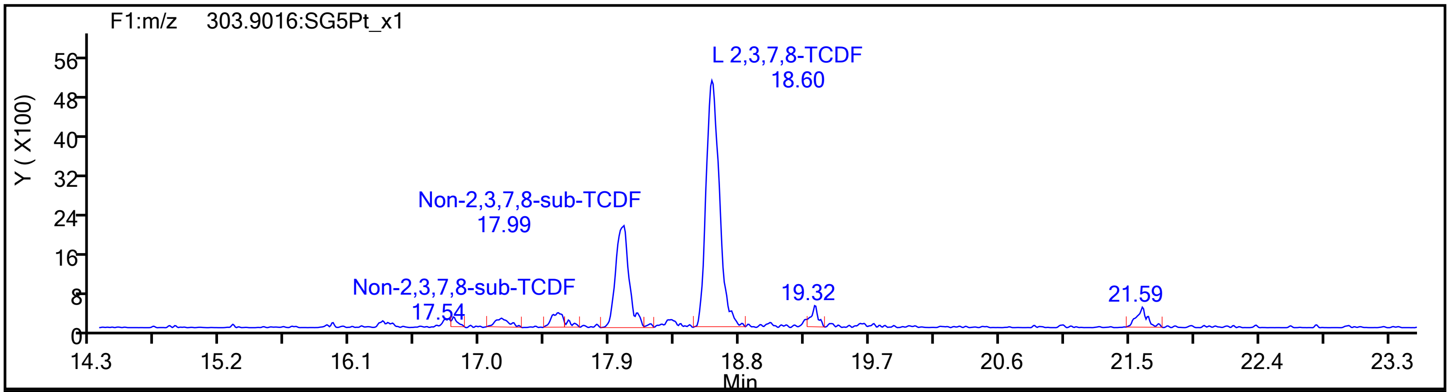

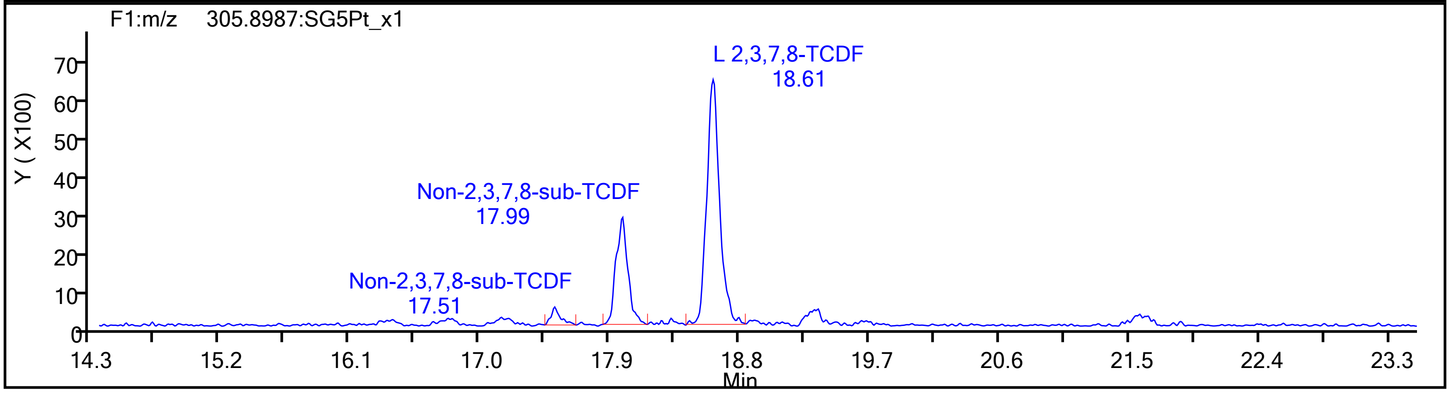

TCDF Standards

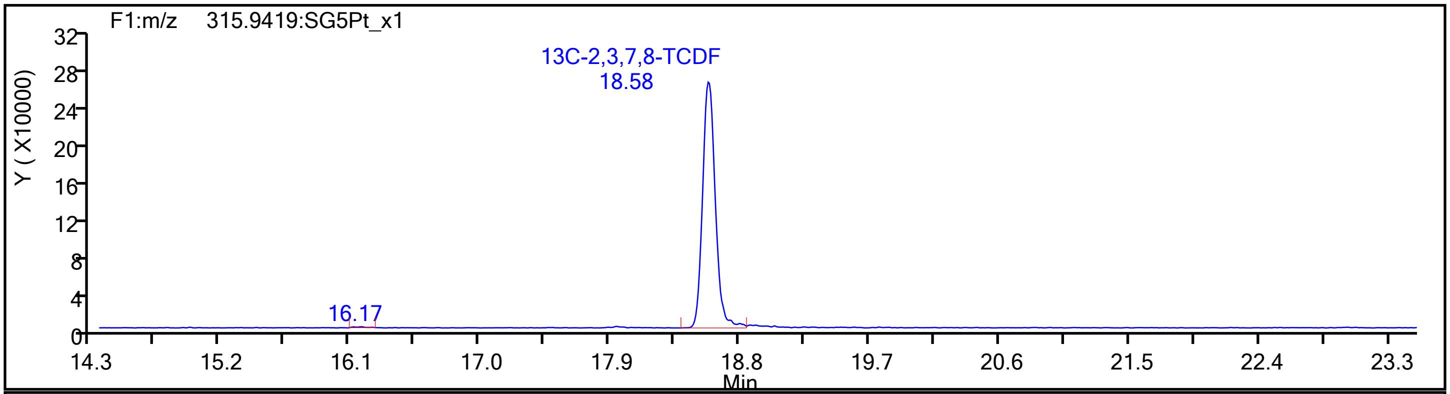

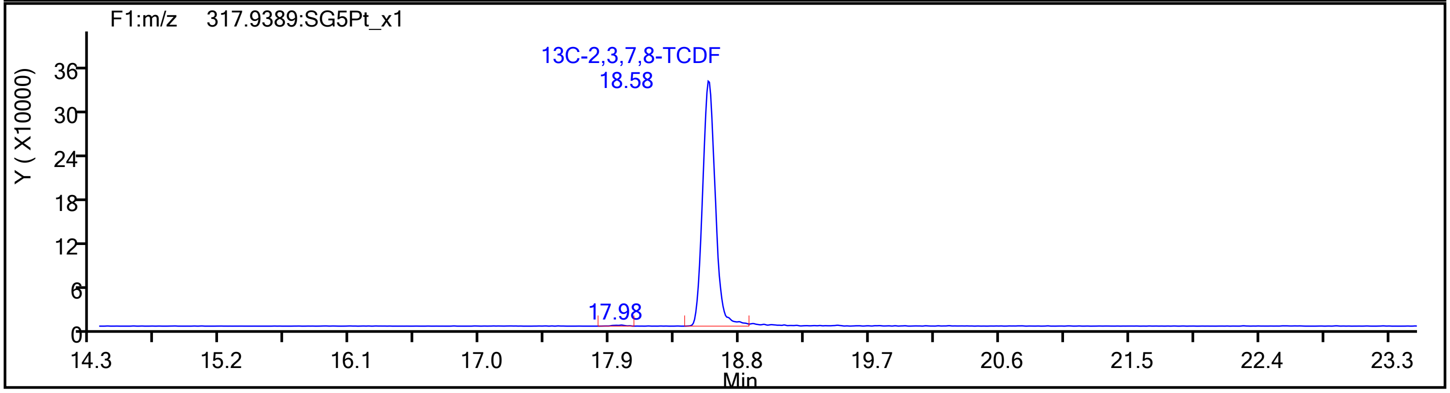

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.1mm		
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

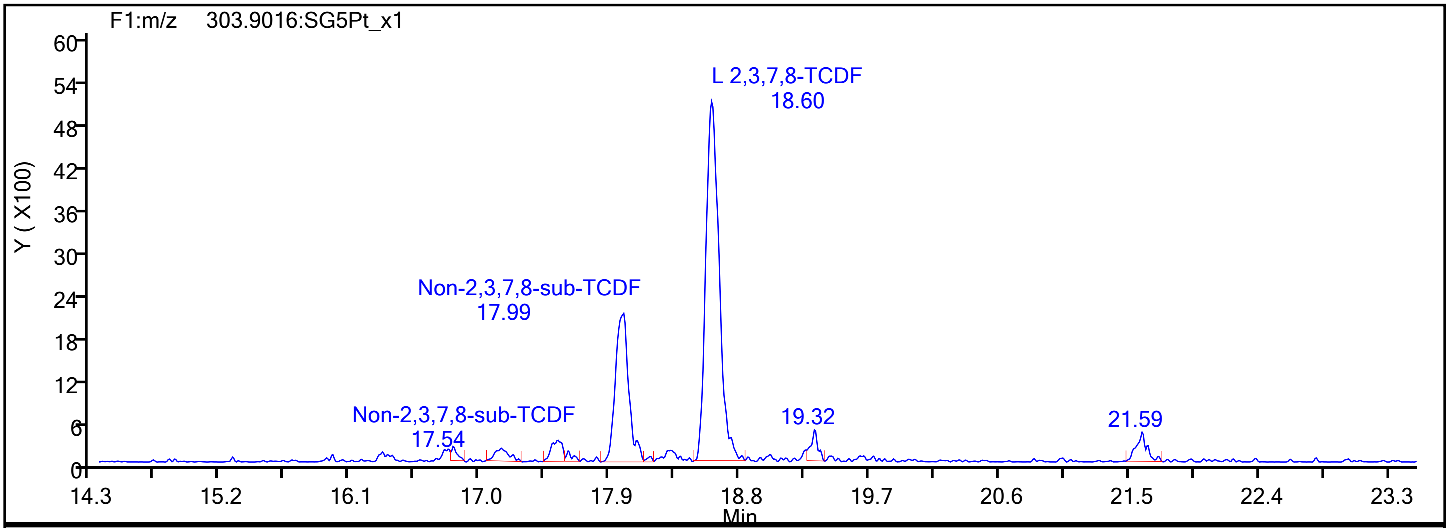

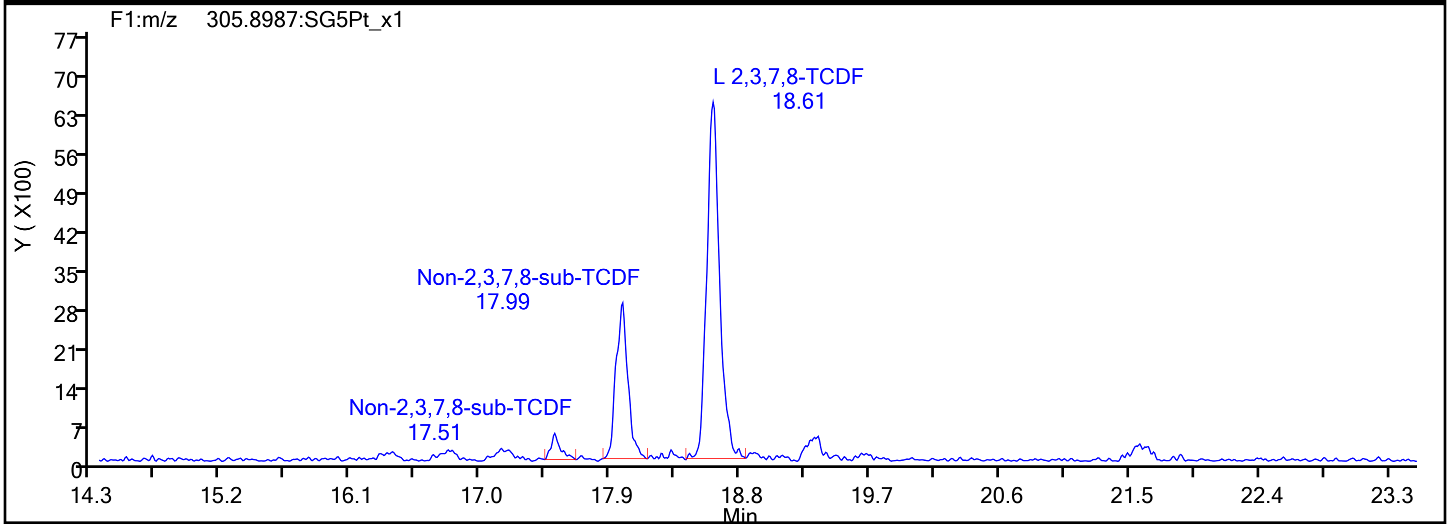

TCDF Interference Mass

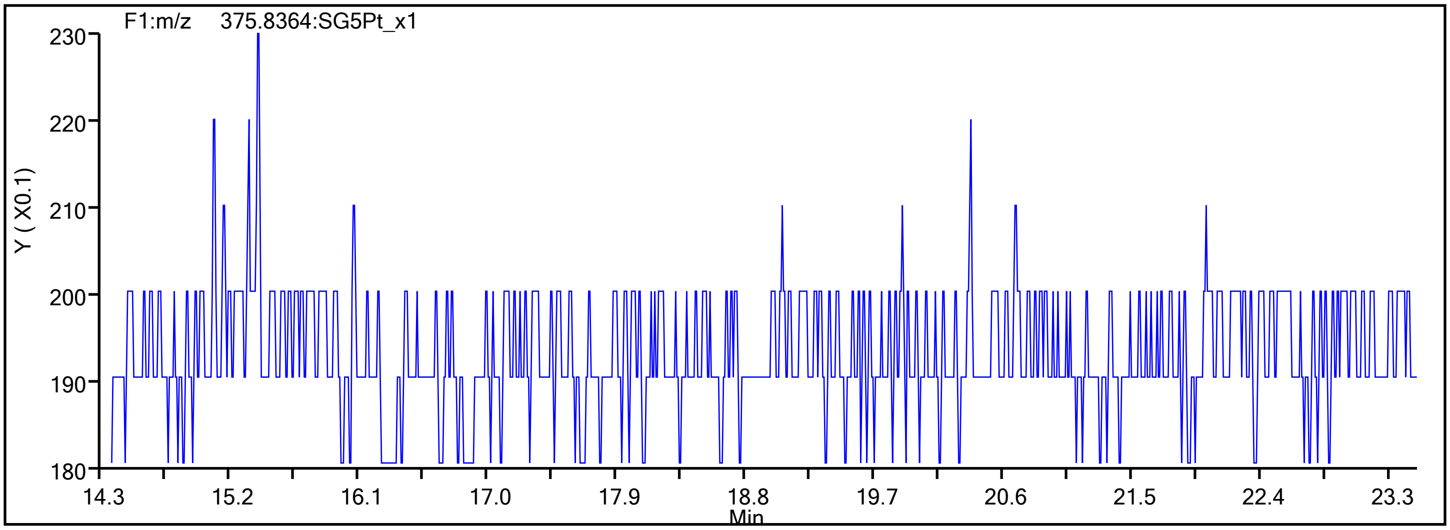

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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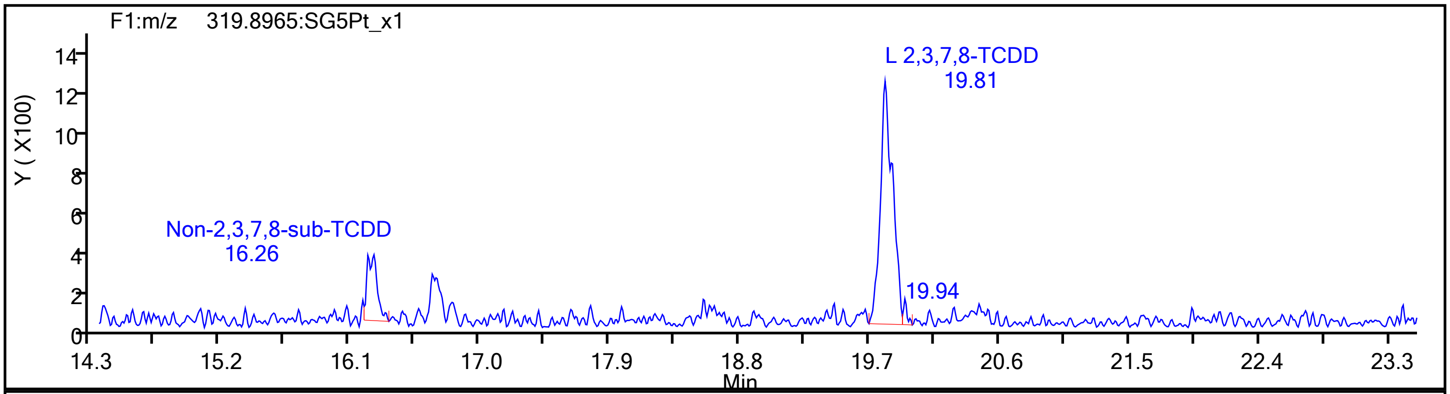

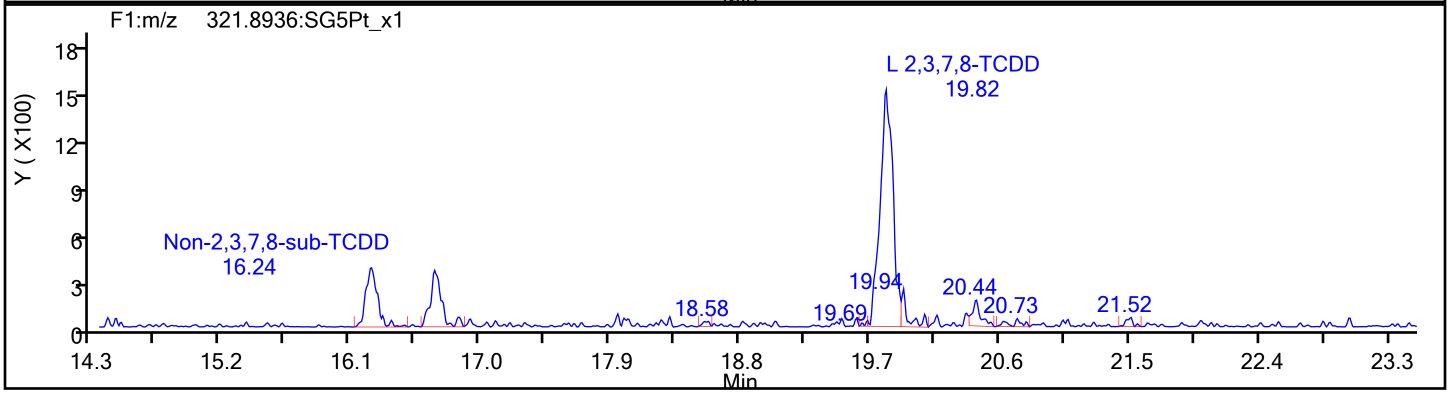

TCDD Standards

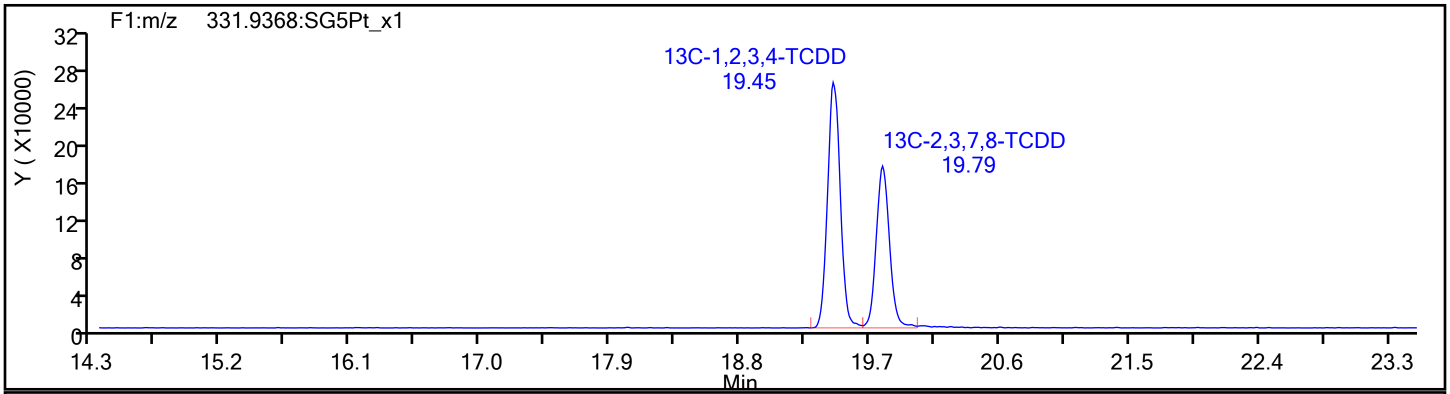

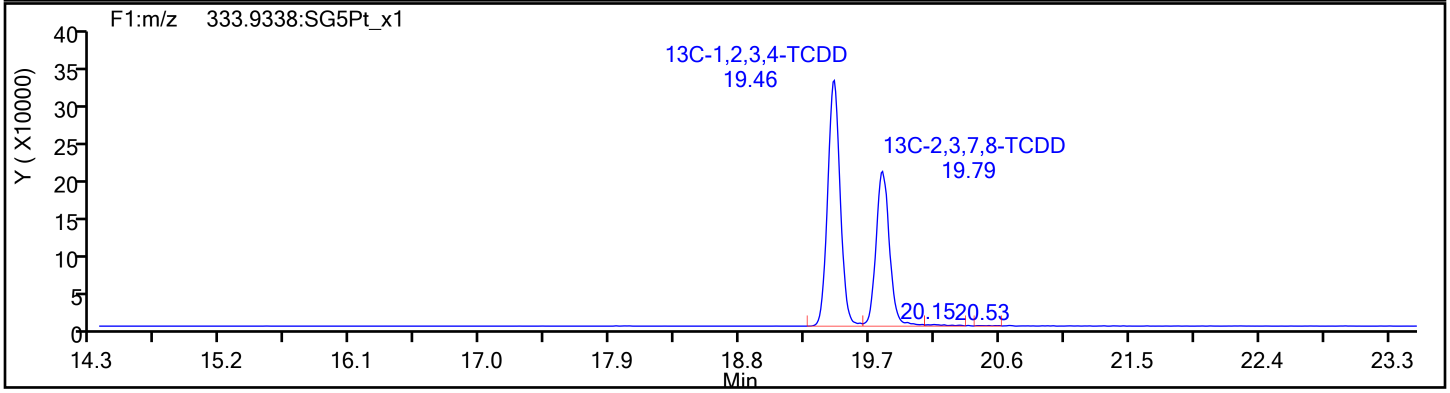

Report Date: 16-Mar-2021 08:52:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

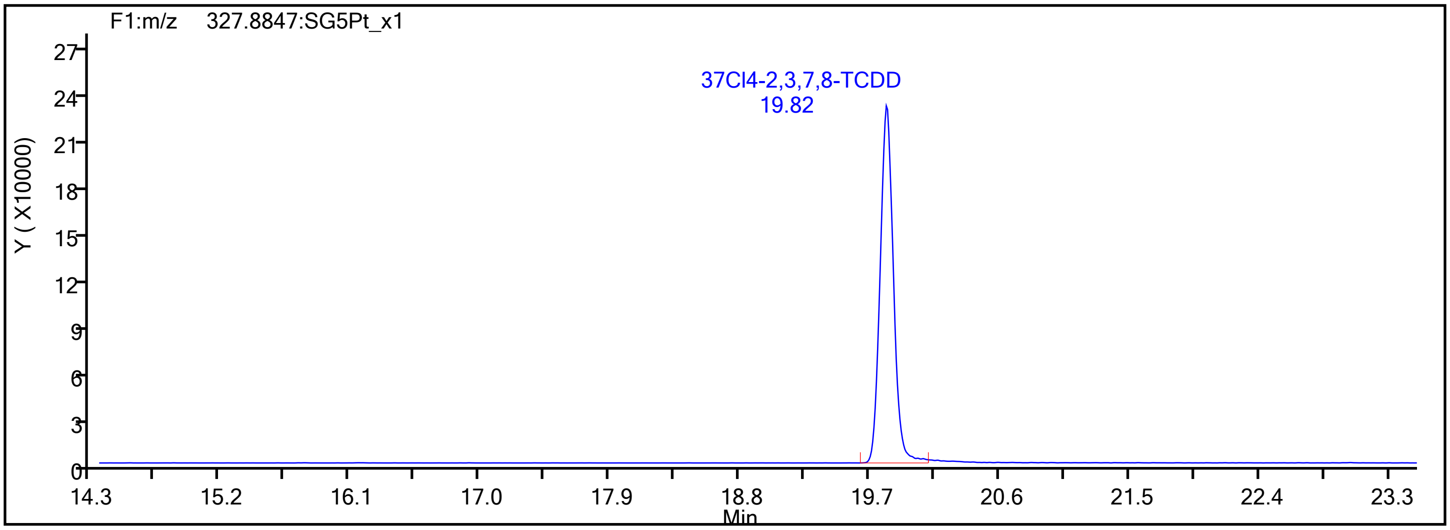

37Cl4-TCDD Standards

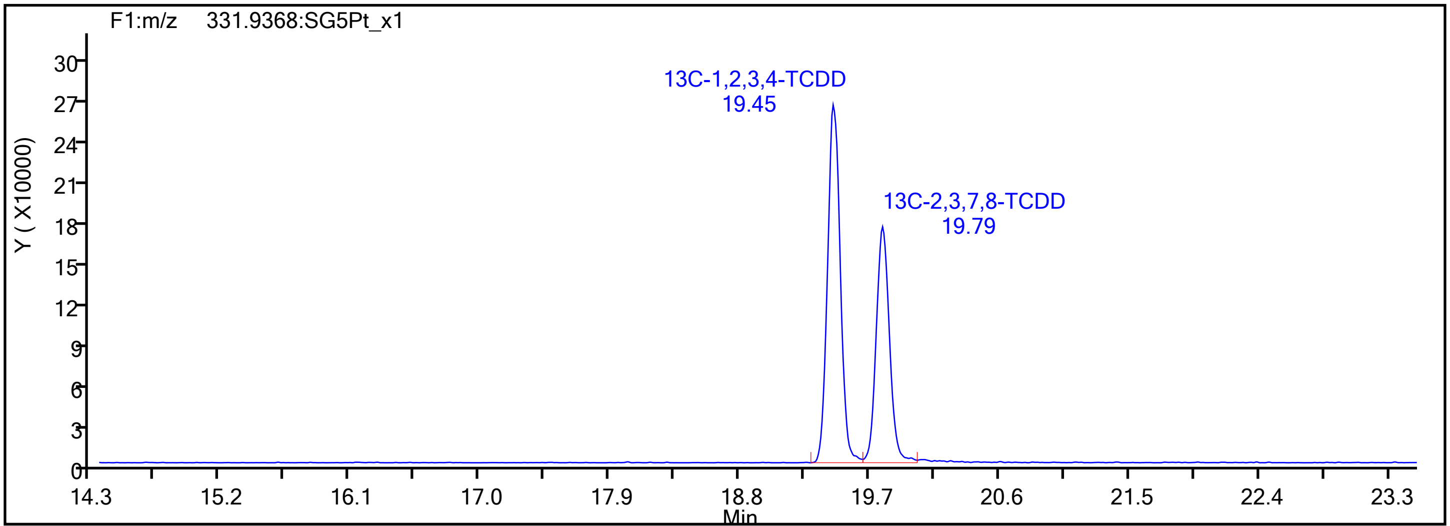

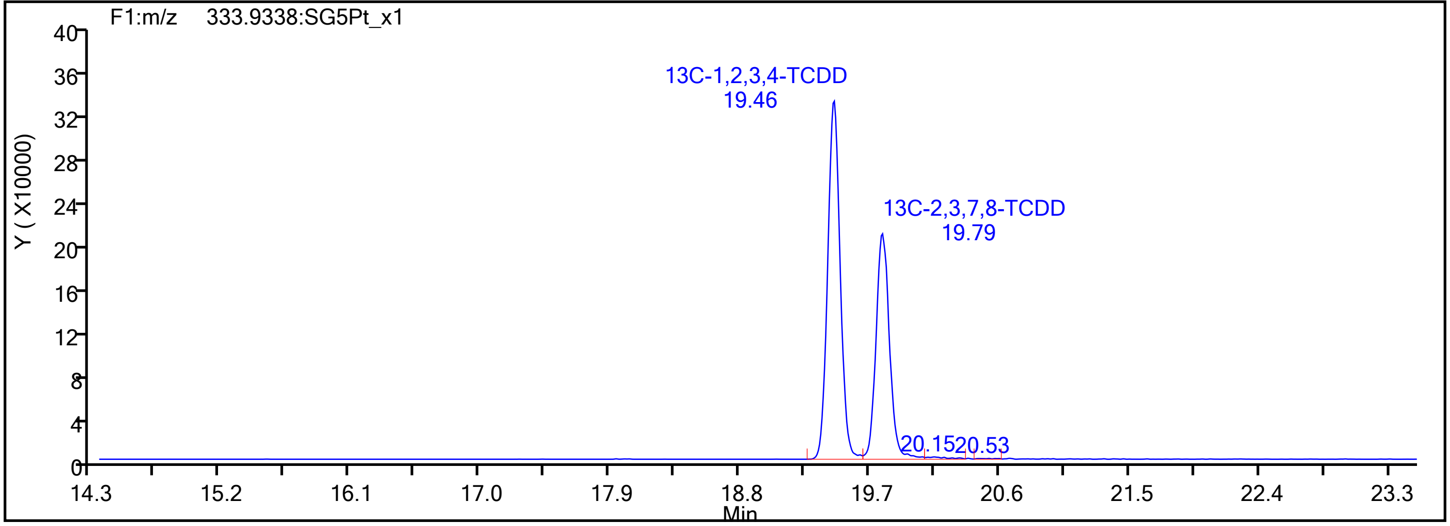

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.1mm

Worklist#: 469779 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

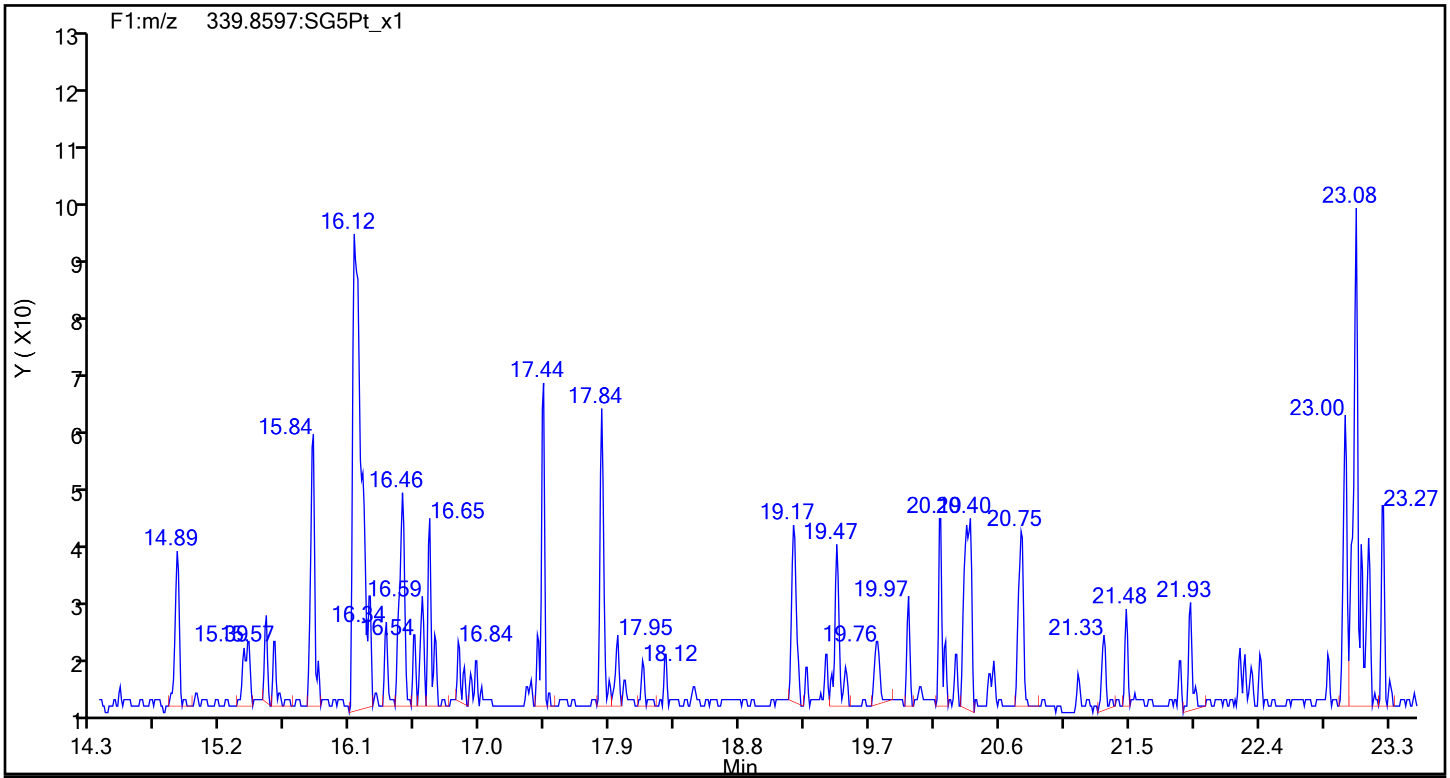

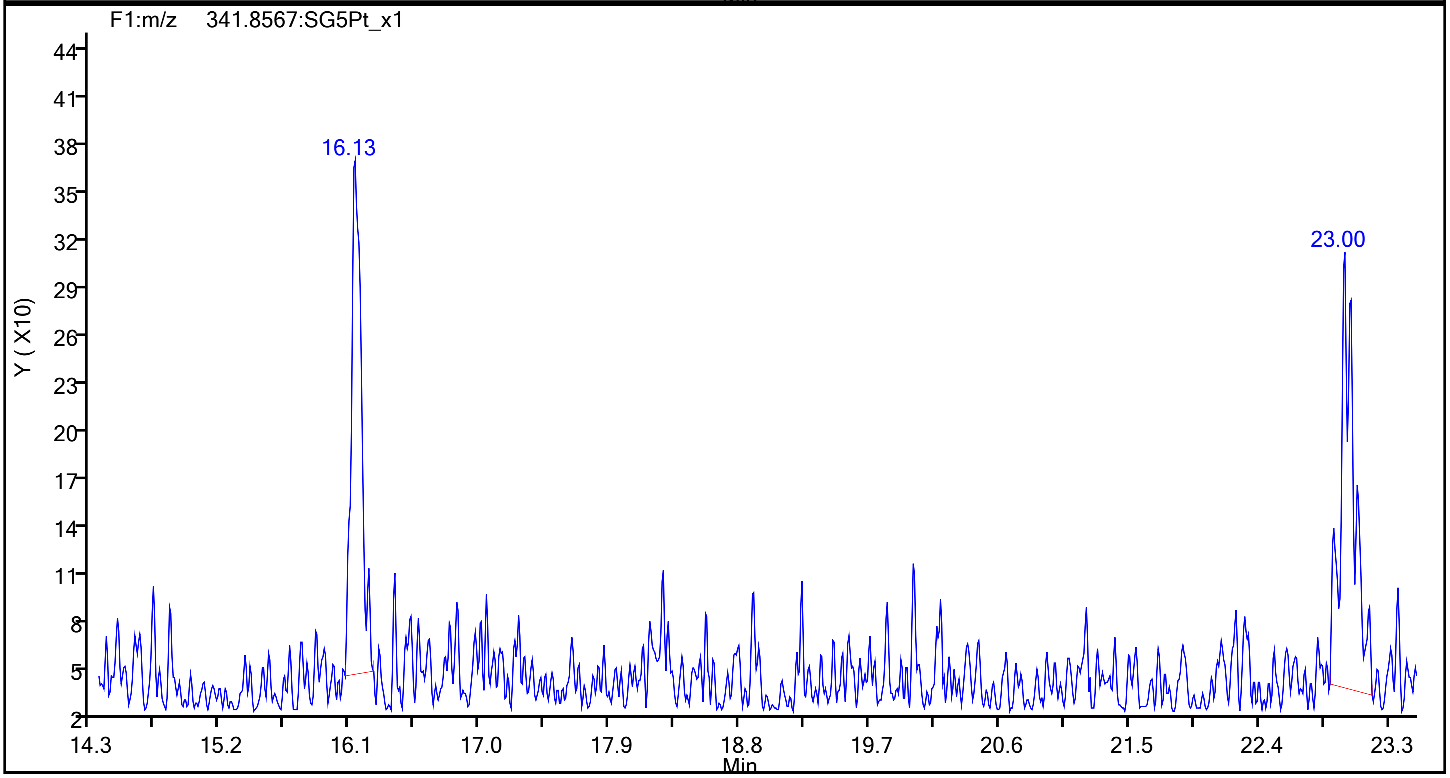

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F1 PeCDFs

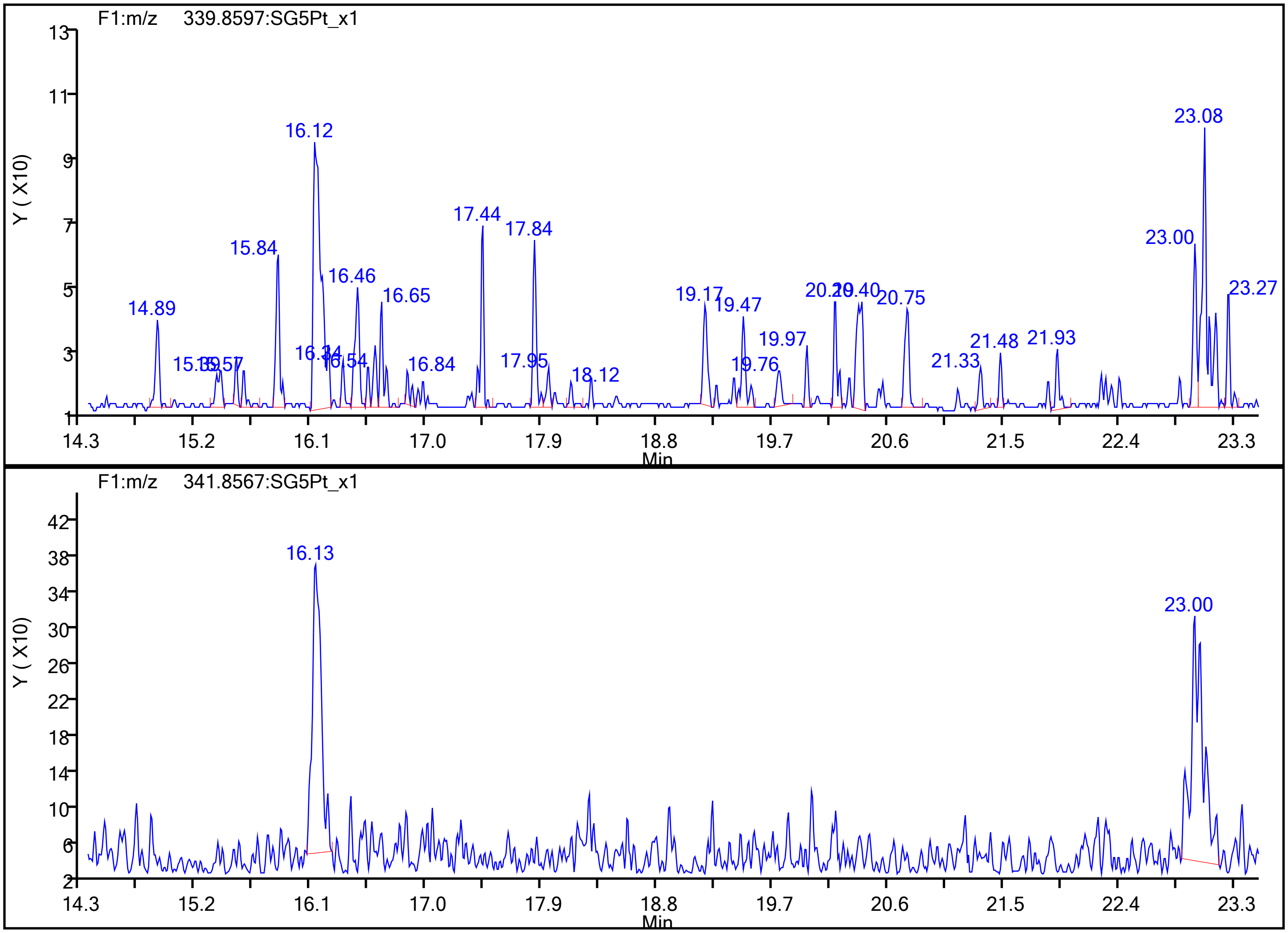

F1 PeCDFs Interference Mass

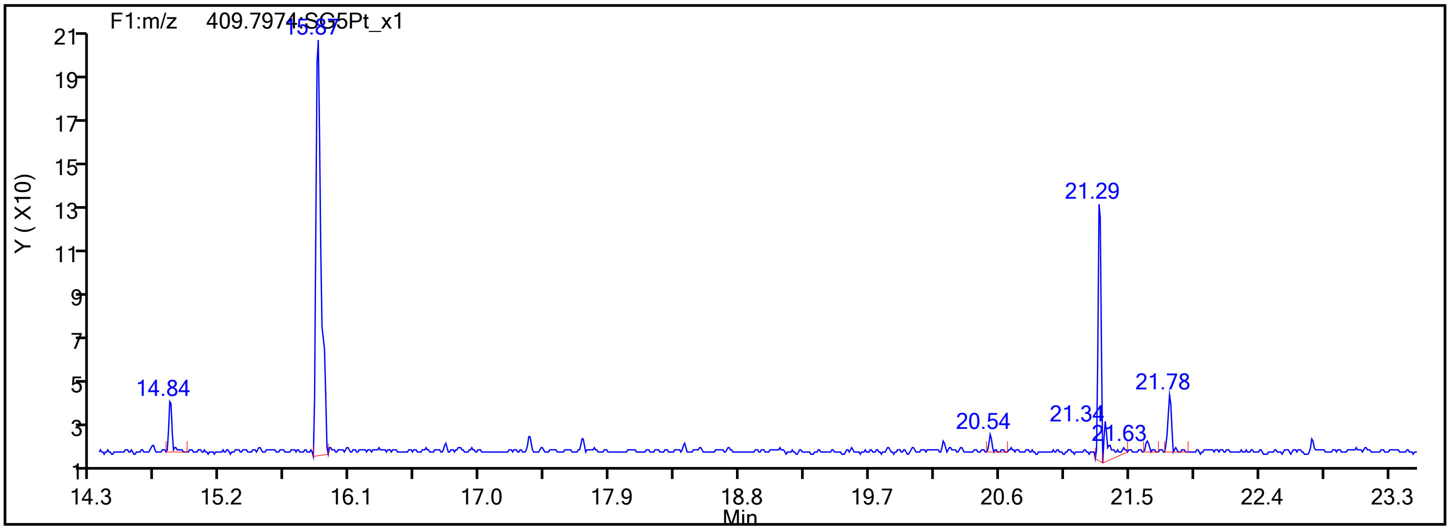

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Eurofins TestAmerica, Sacramento

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PeCDF

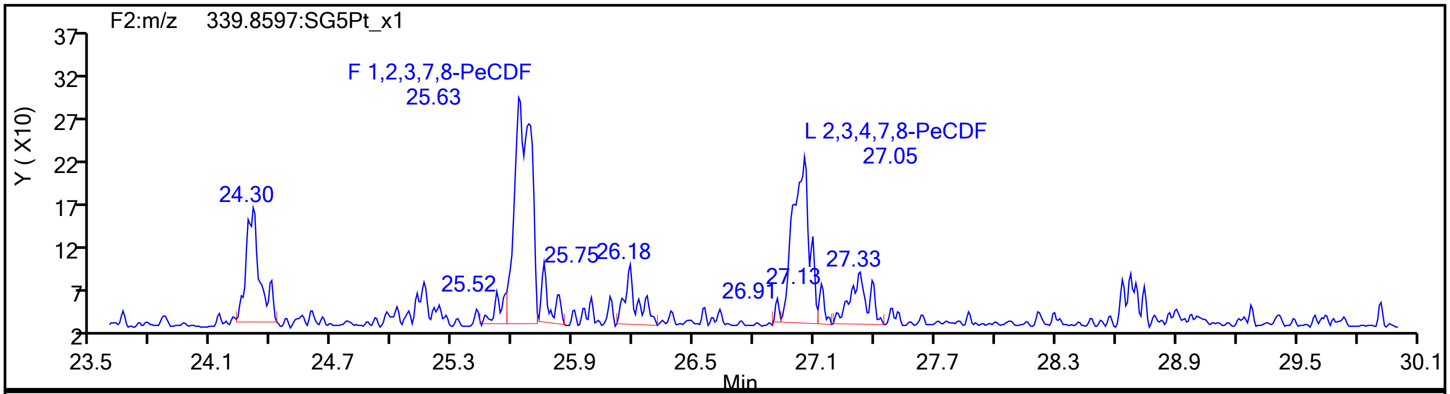

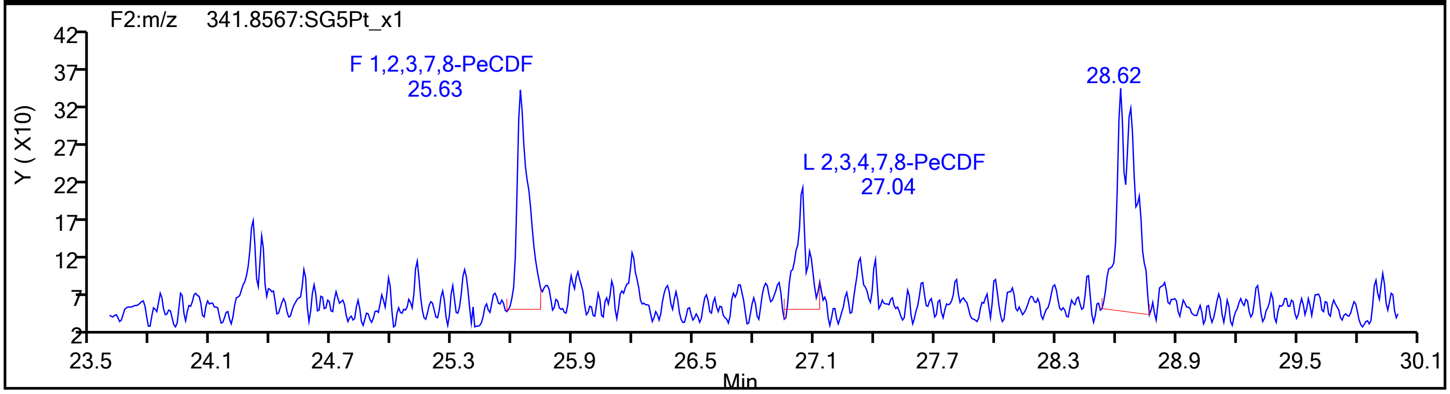

PeCDF Standards

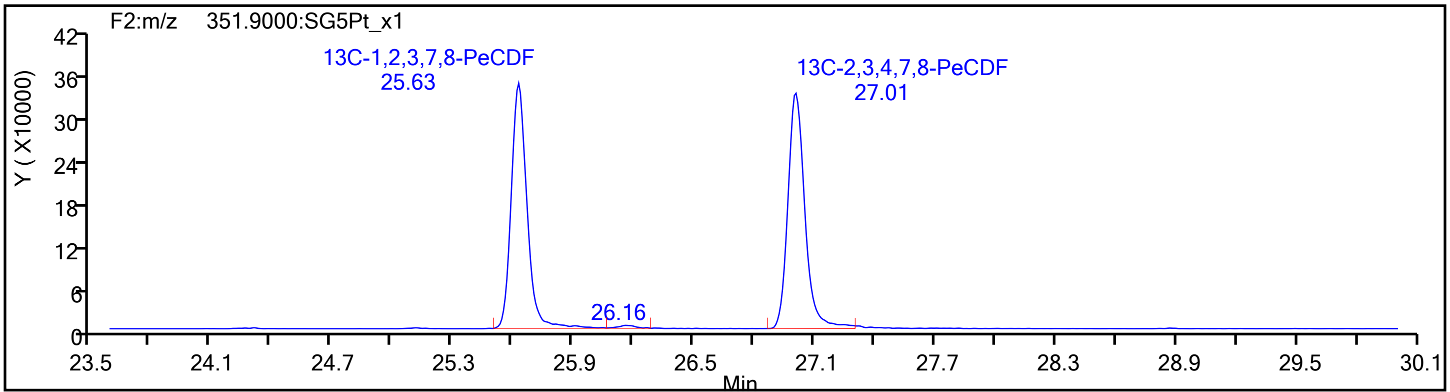

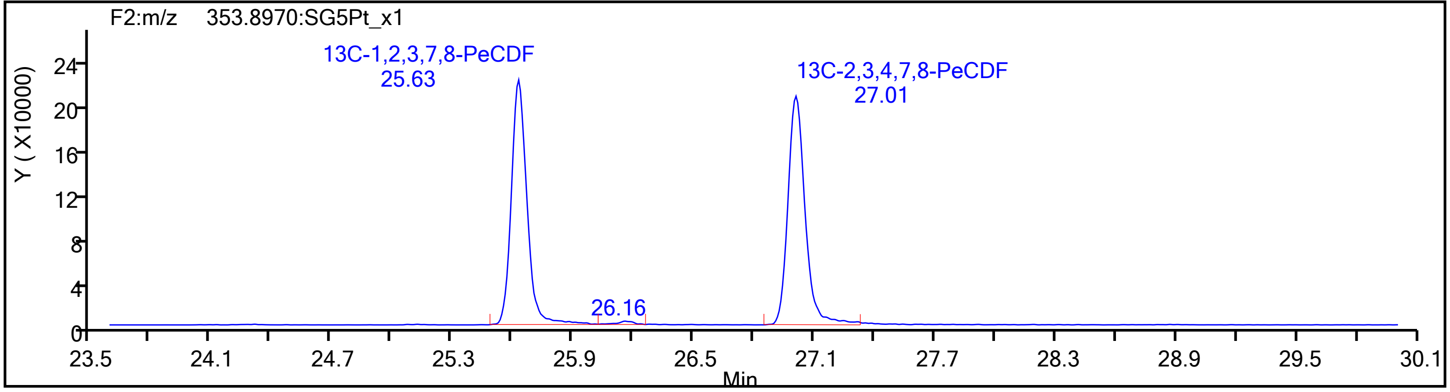

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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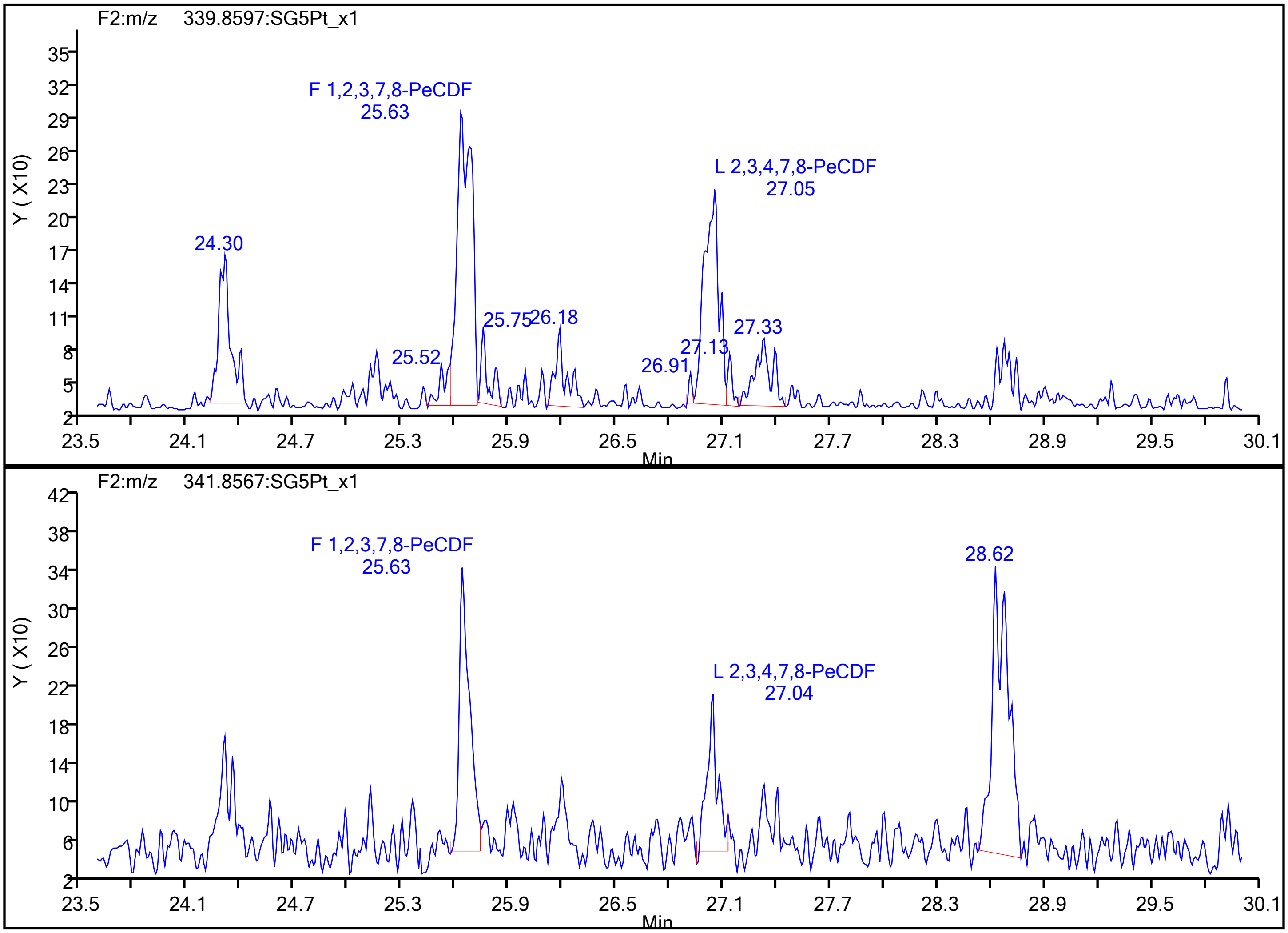

PeCDF Interference Mass

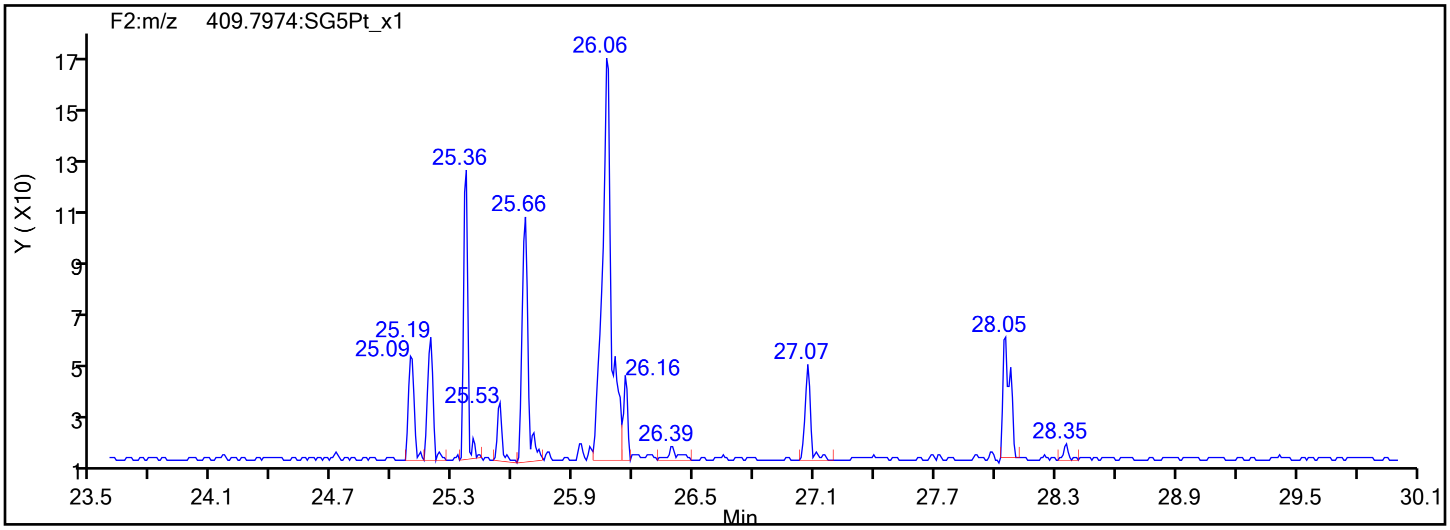

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Eurofins TestAmerica, Sacramento

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PeCDD

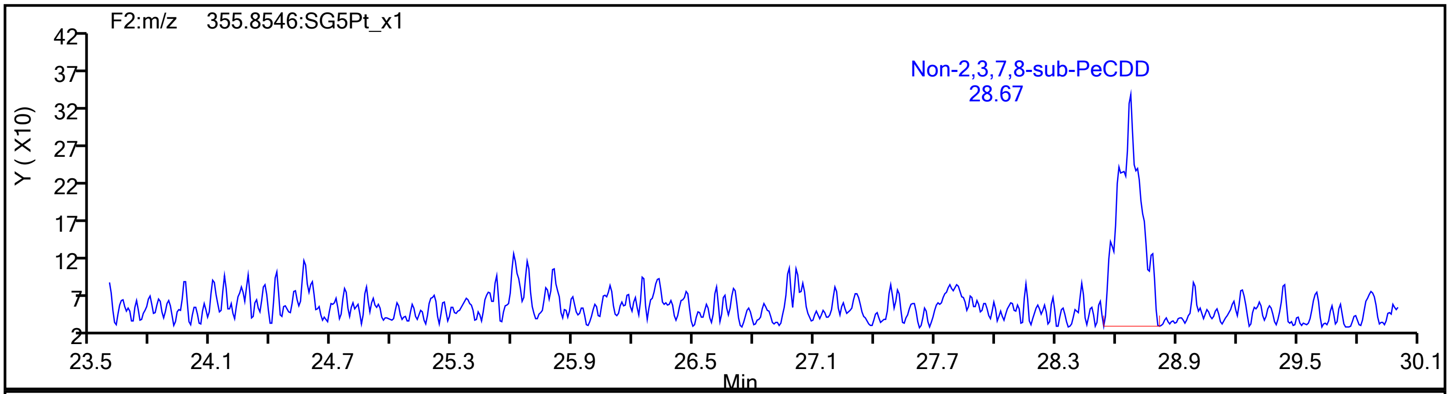

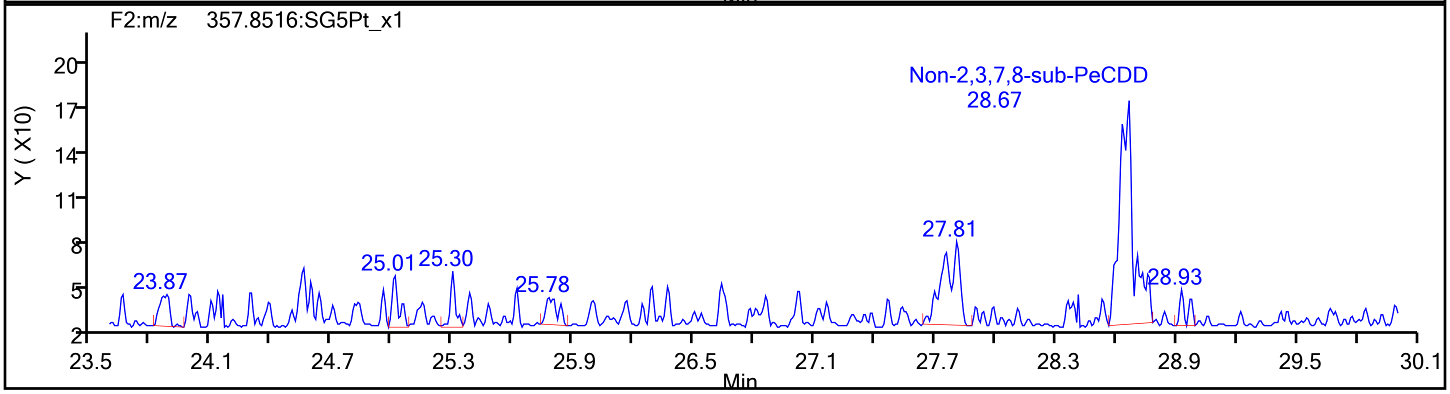

PeCDD Standards

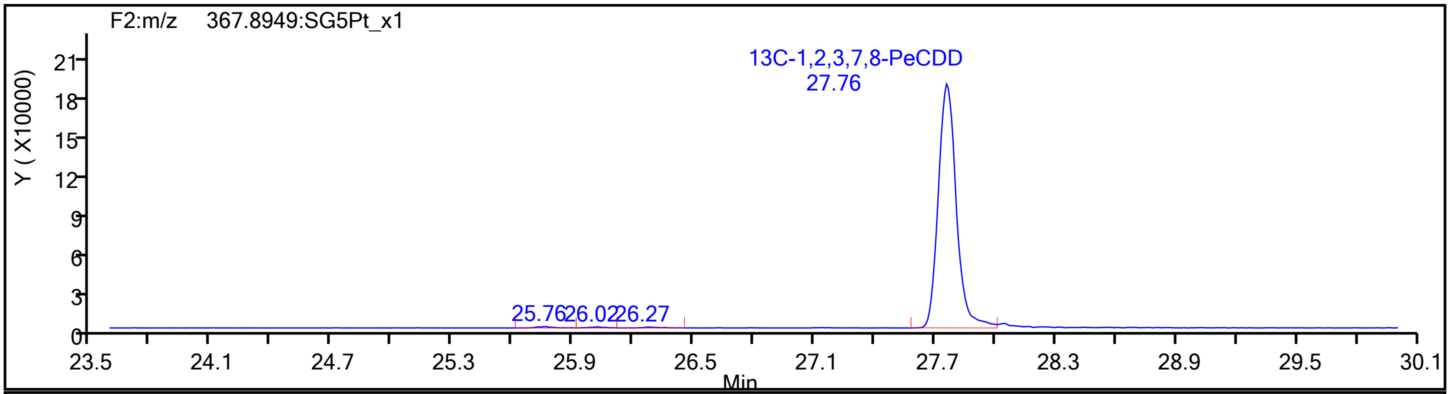

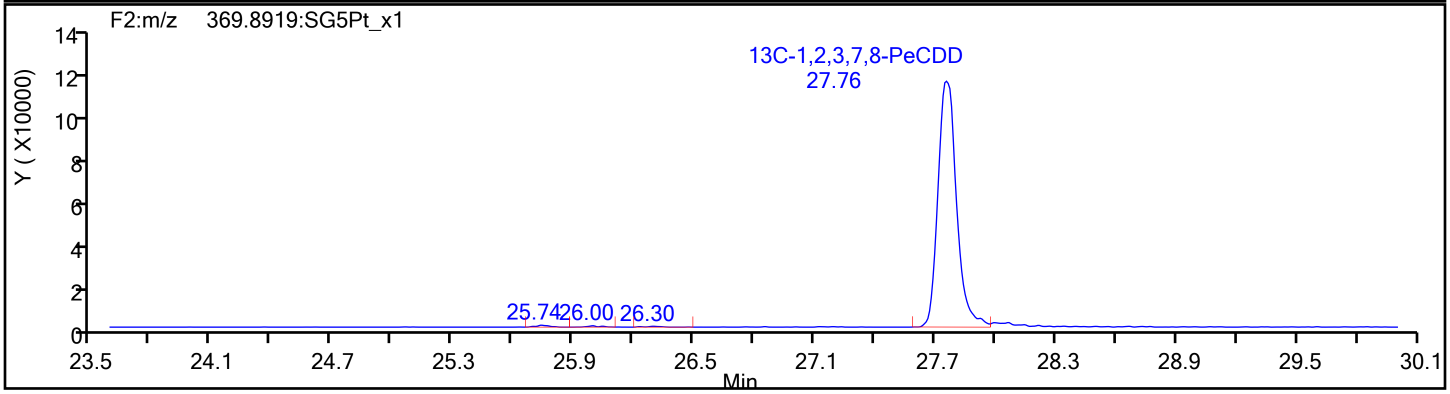

Report Date: 16-Mar-2021 08:52:20	Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 469779
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

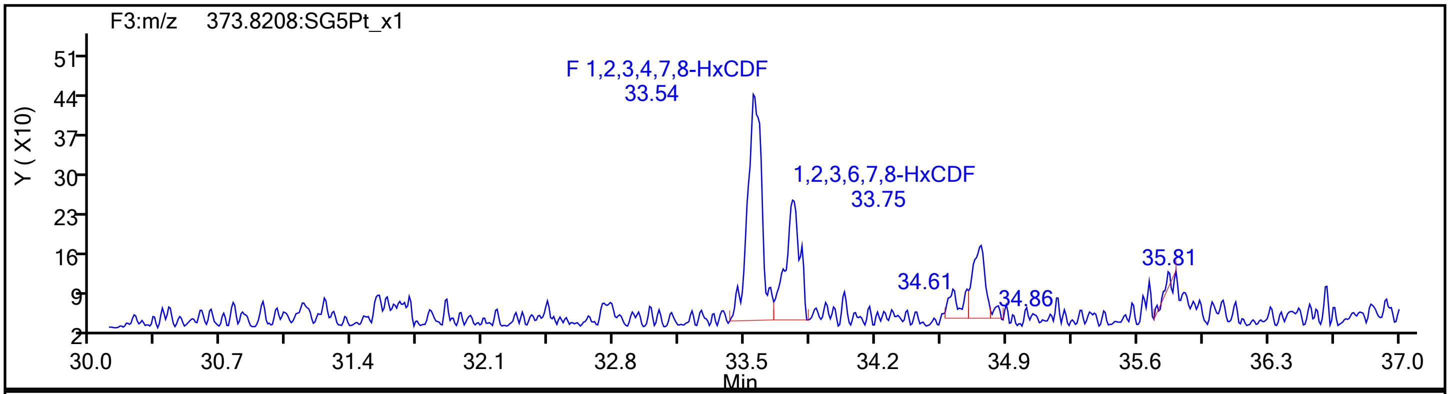

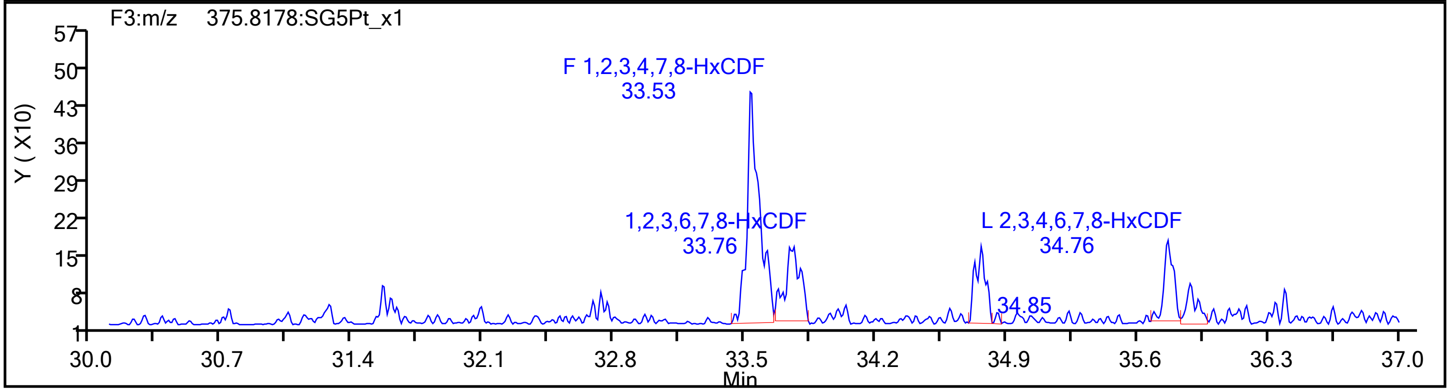

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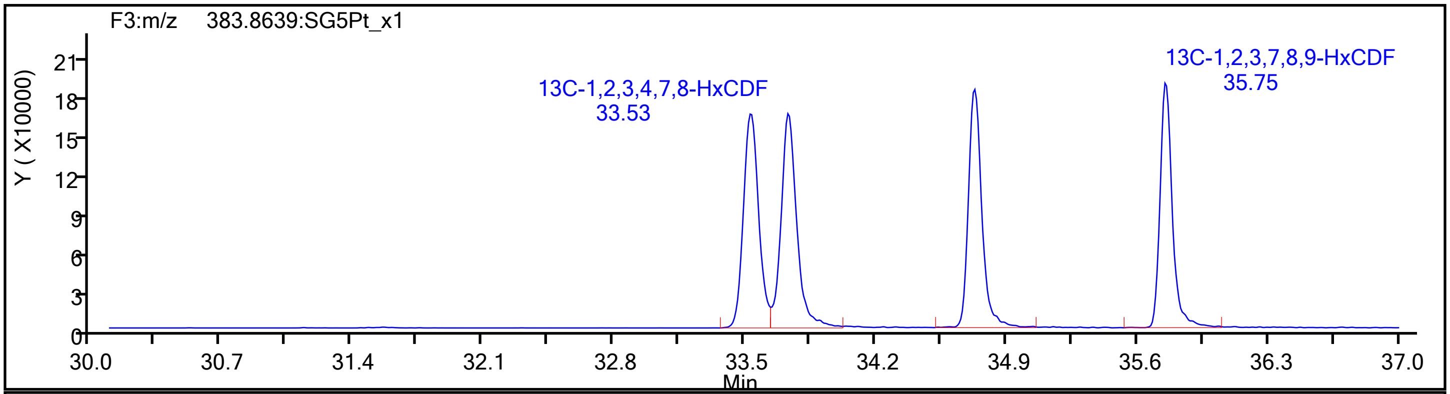

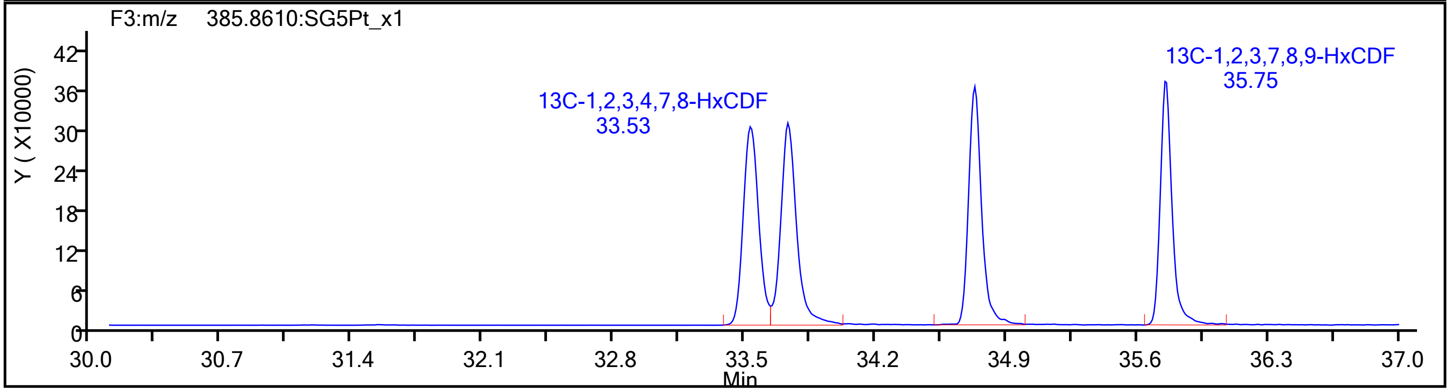

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Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
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Worklist#: 469779 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

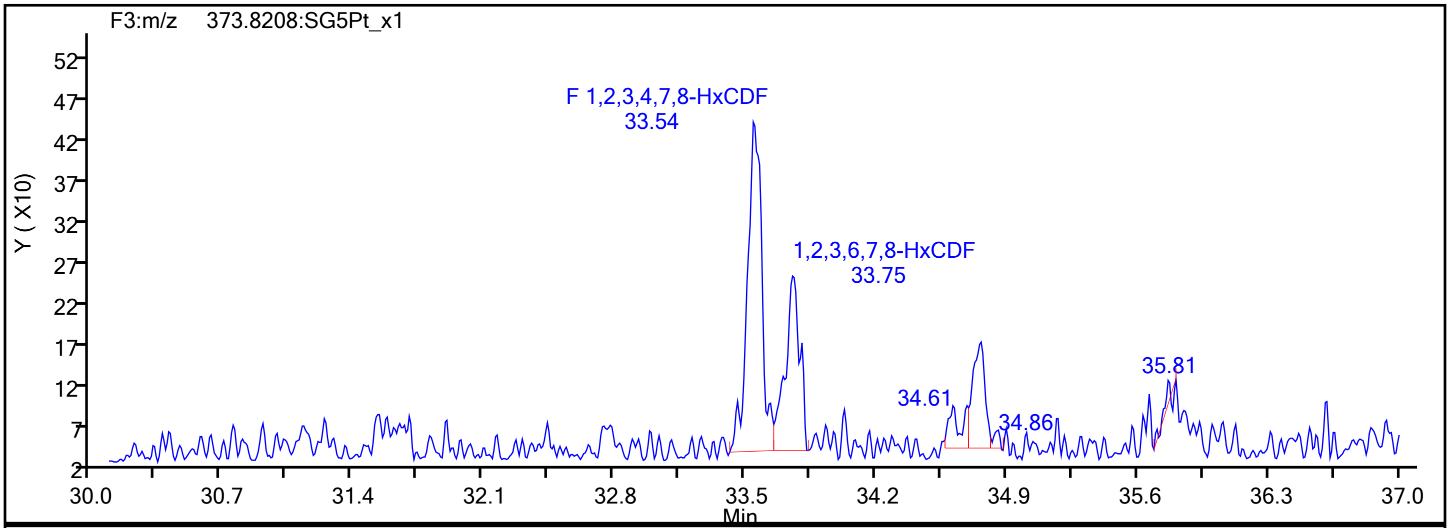

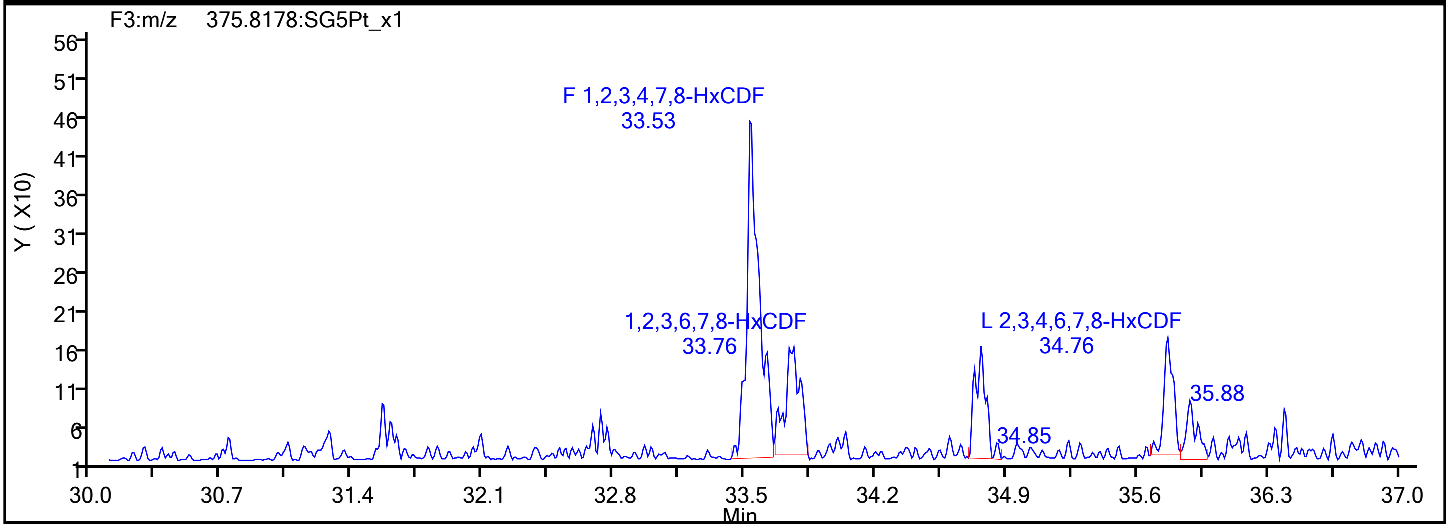

HxCDF Interference Mass

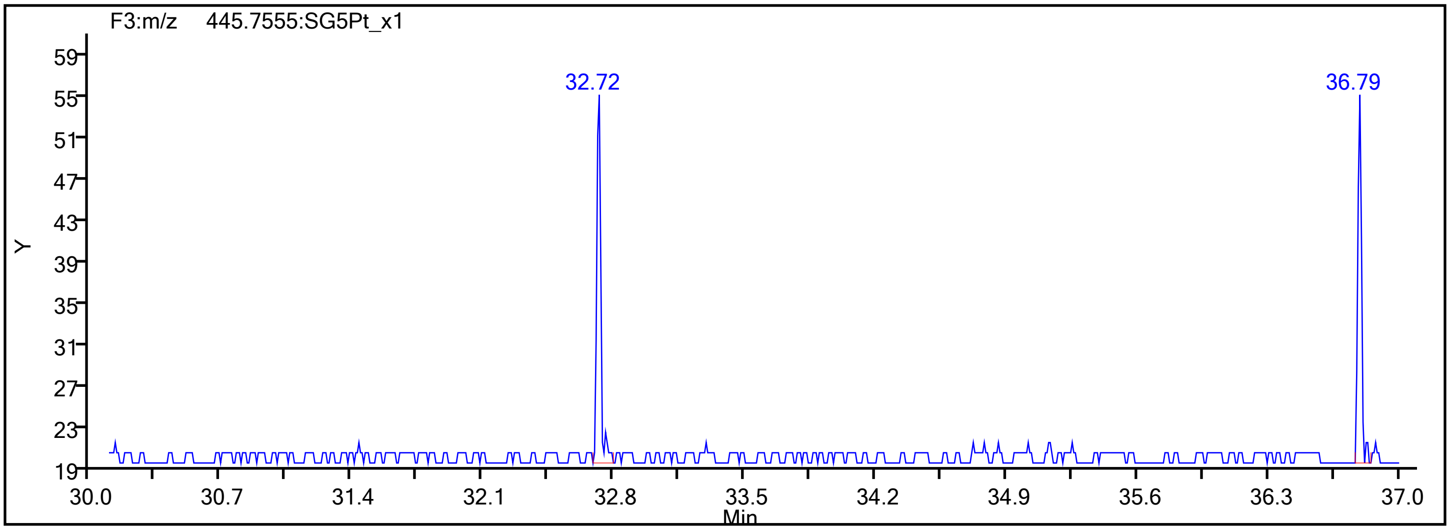

Report Date: 16-Mar-2021 08:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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HxCDD

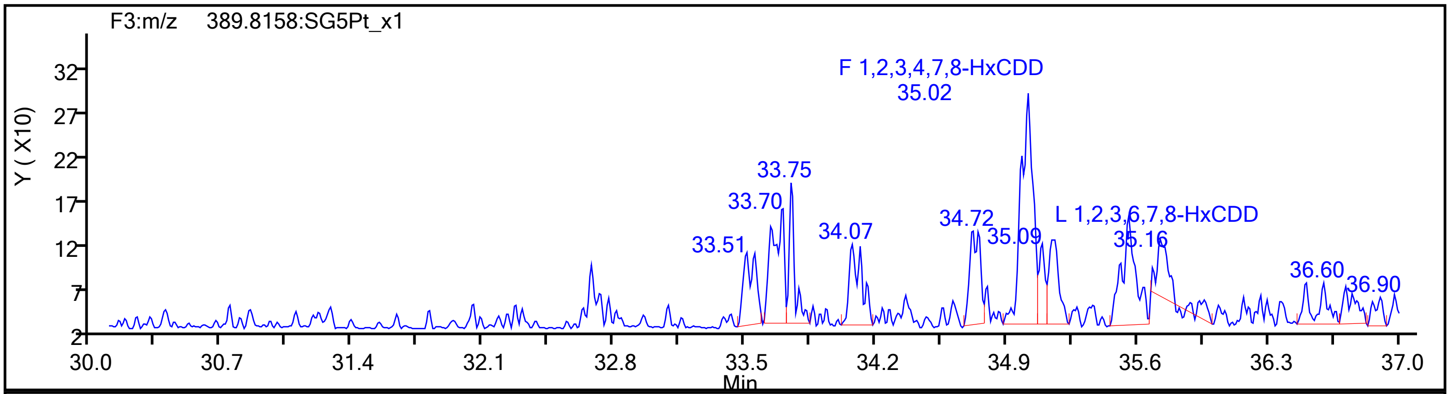

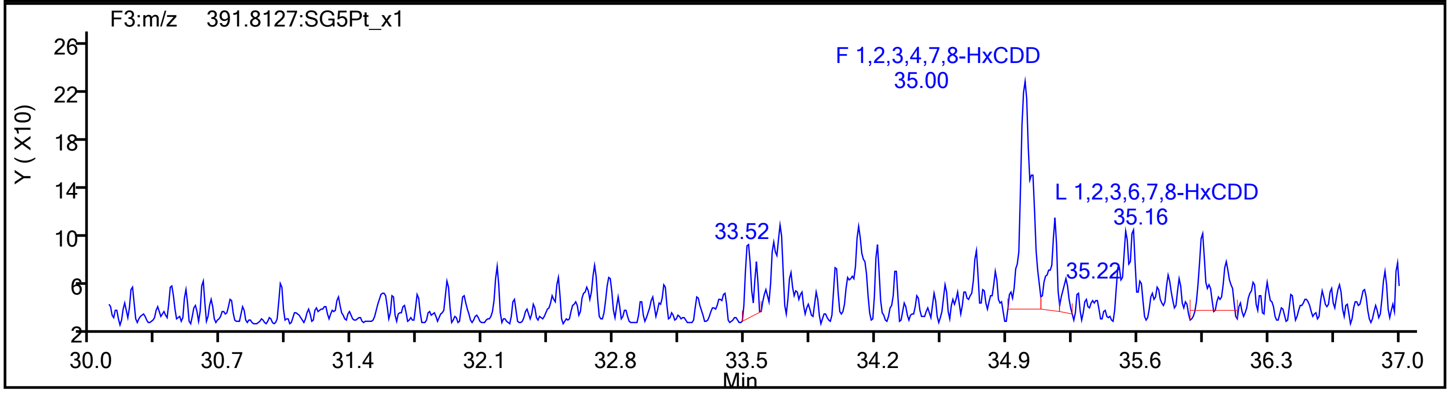

HxCDD Standards

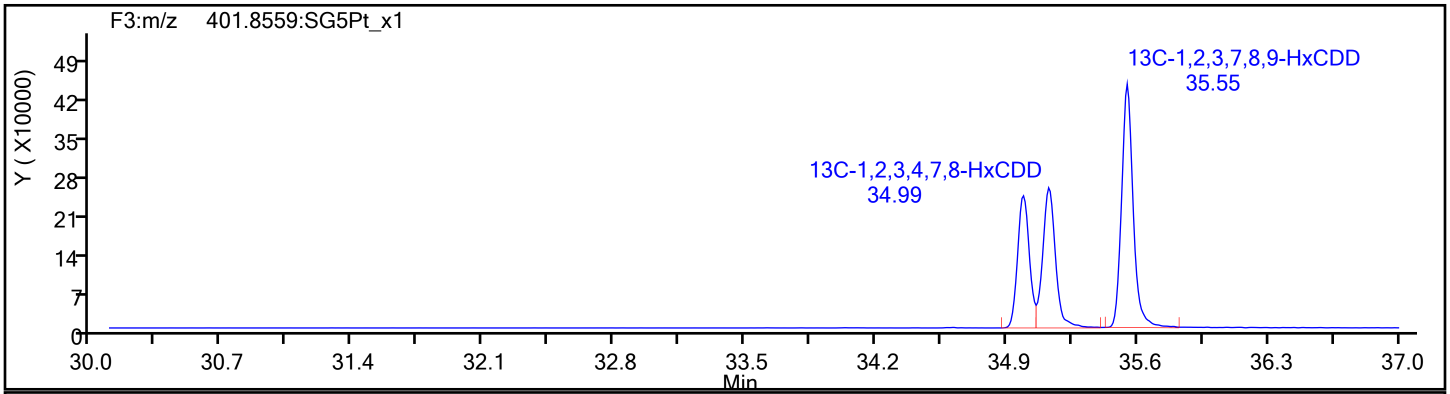

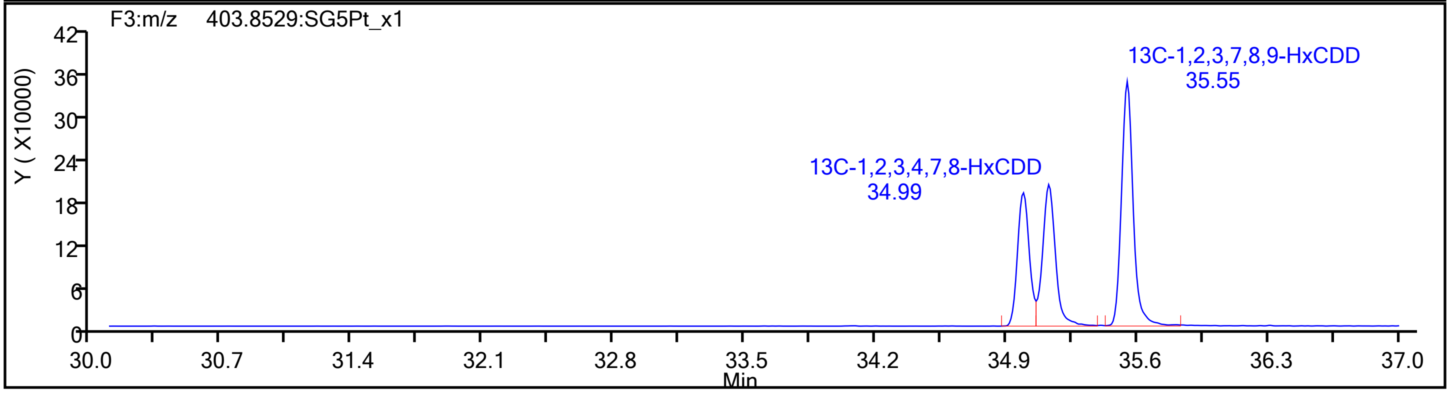

Report Date: 16-Mar-2021 08:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDF

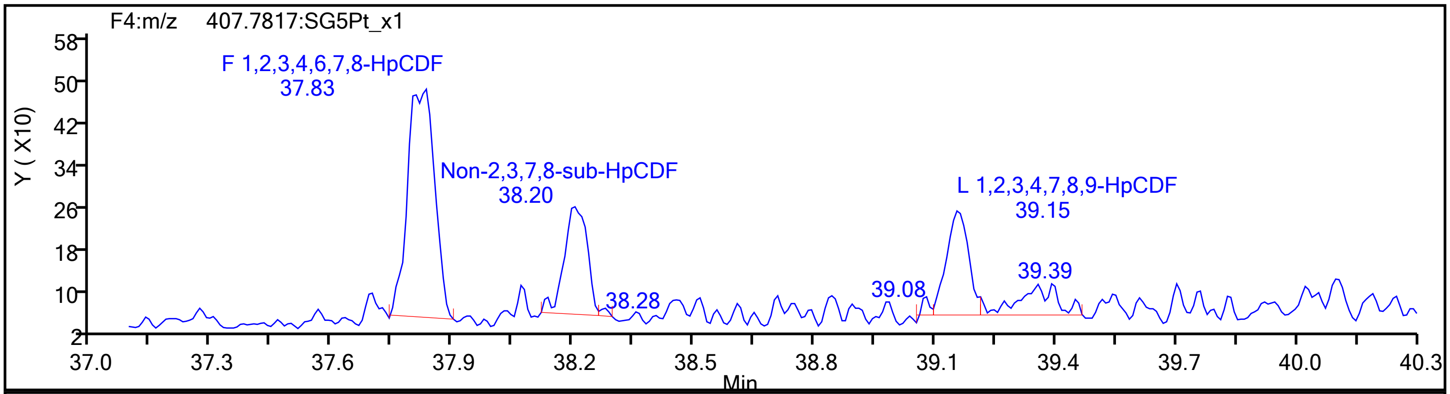

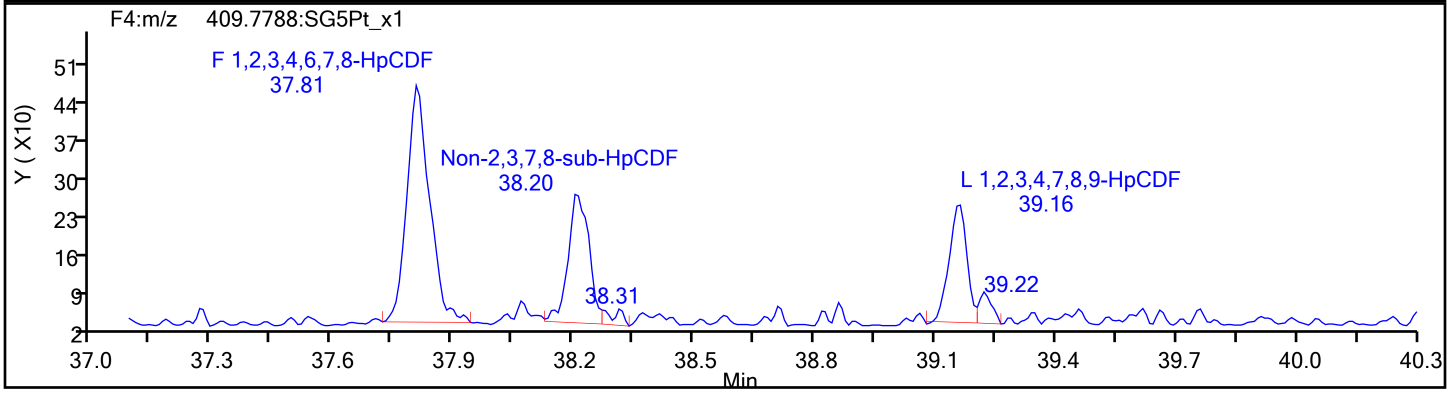

HpCDF Standards

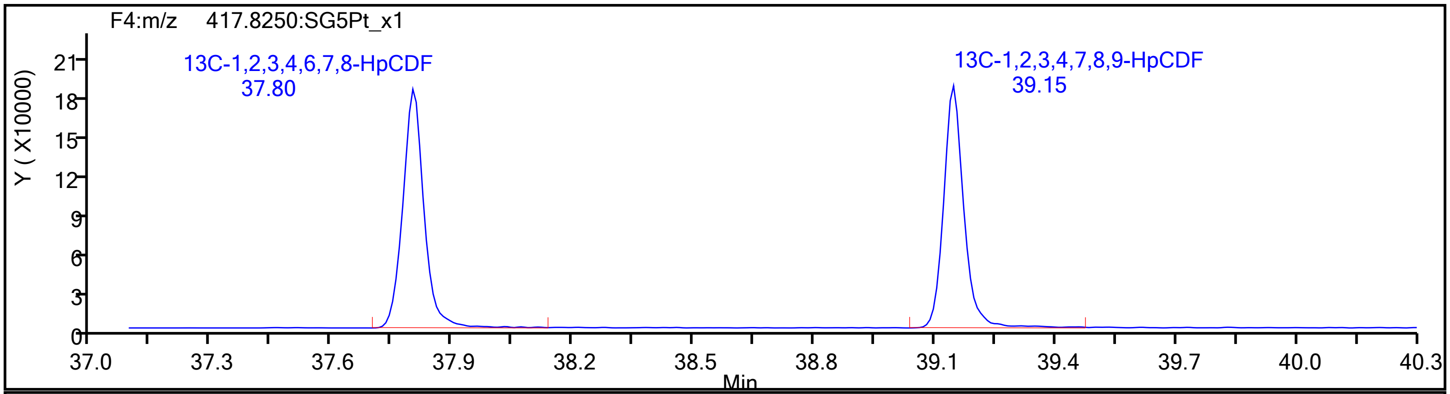

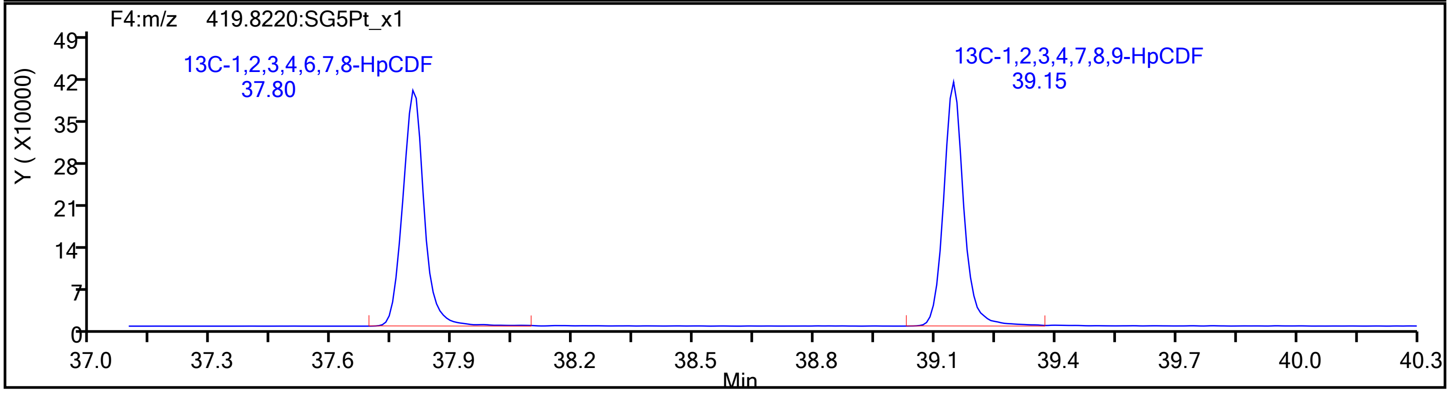

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Eurofins TestAmerica, Sacramento

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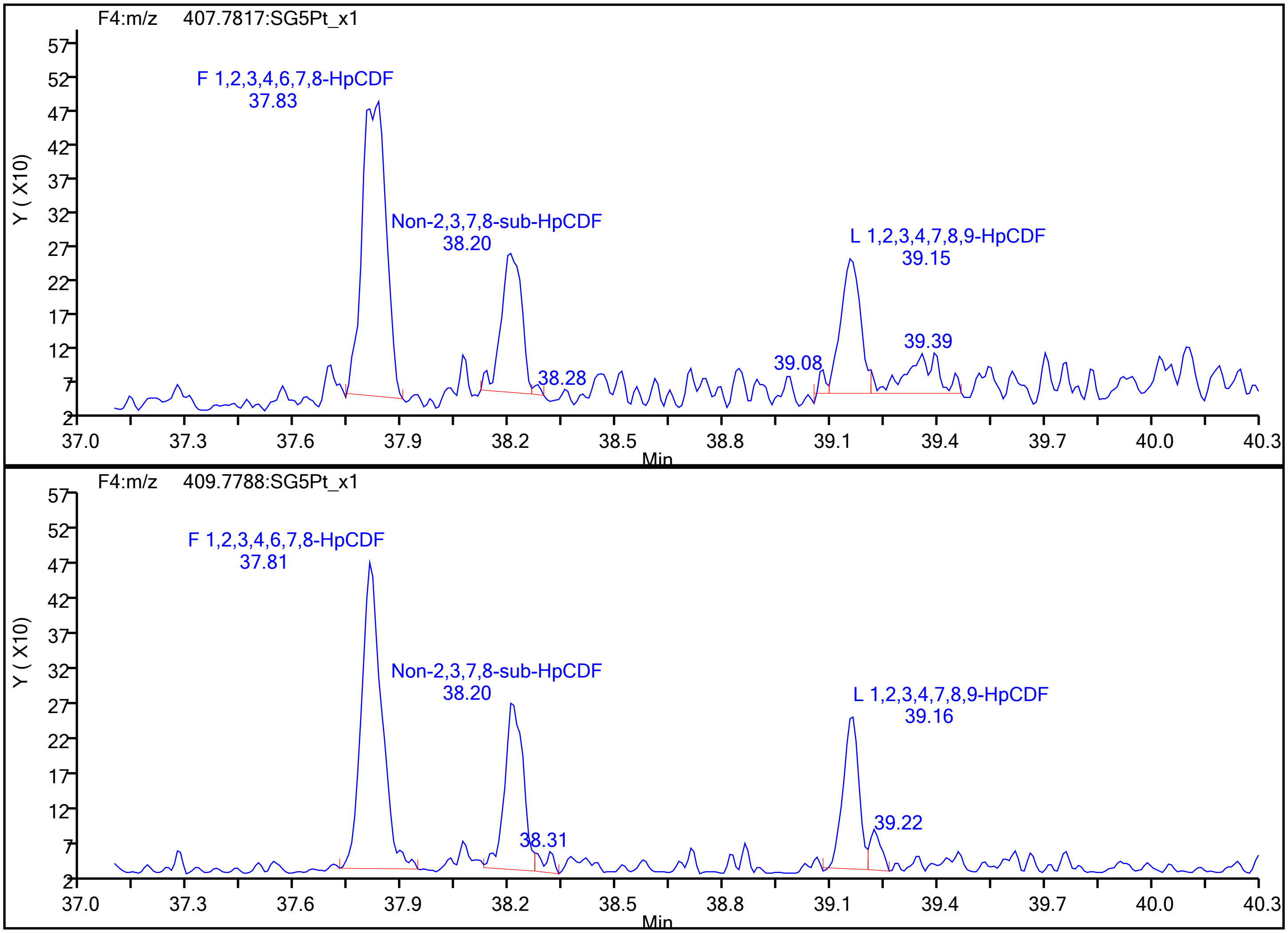

HpCDF Interference Mass

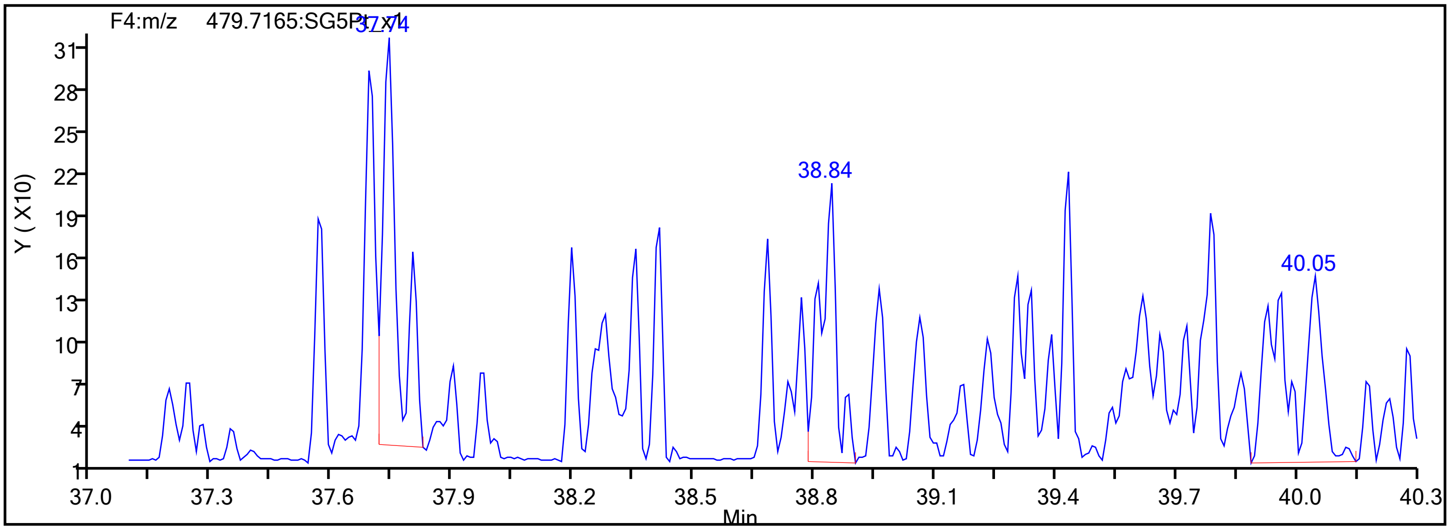

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Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 15:21:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.1mm

Worklist#: 469779 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

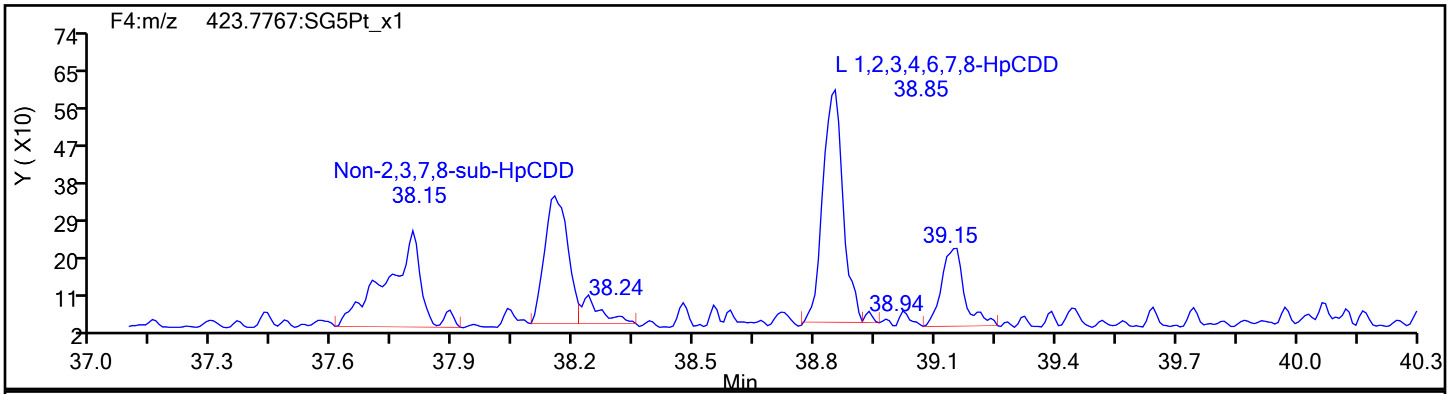

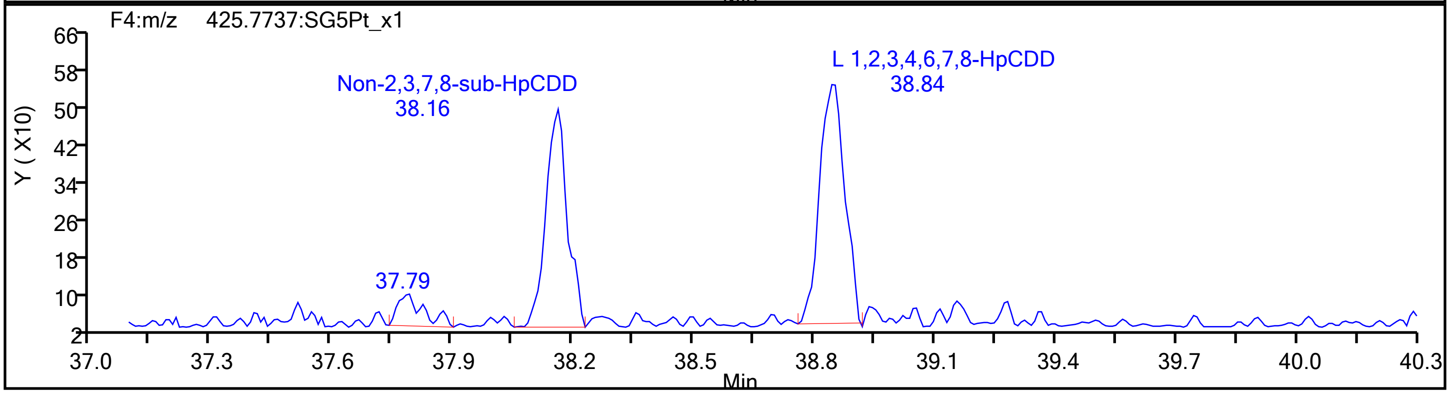

HpCDD Standards

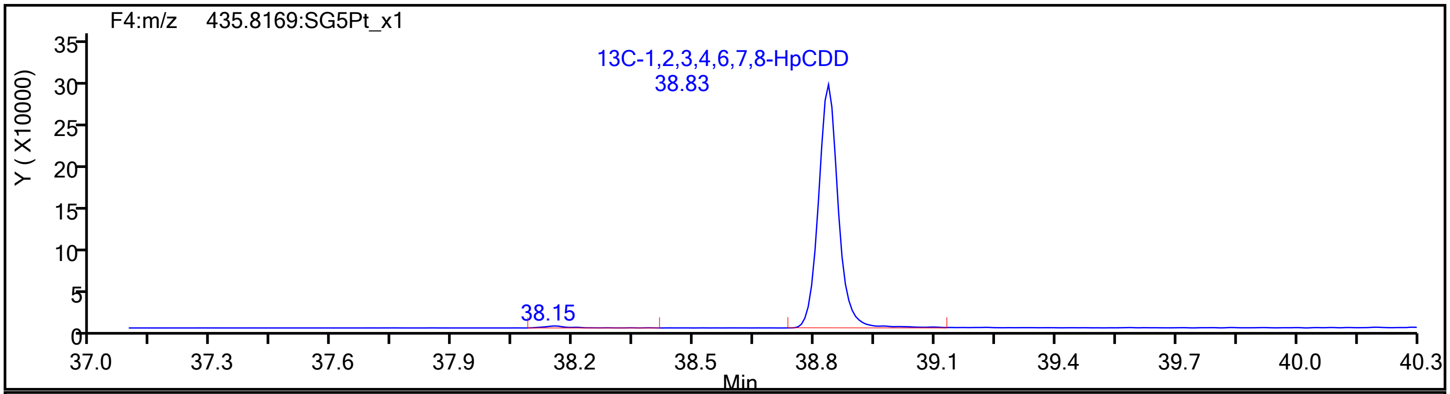

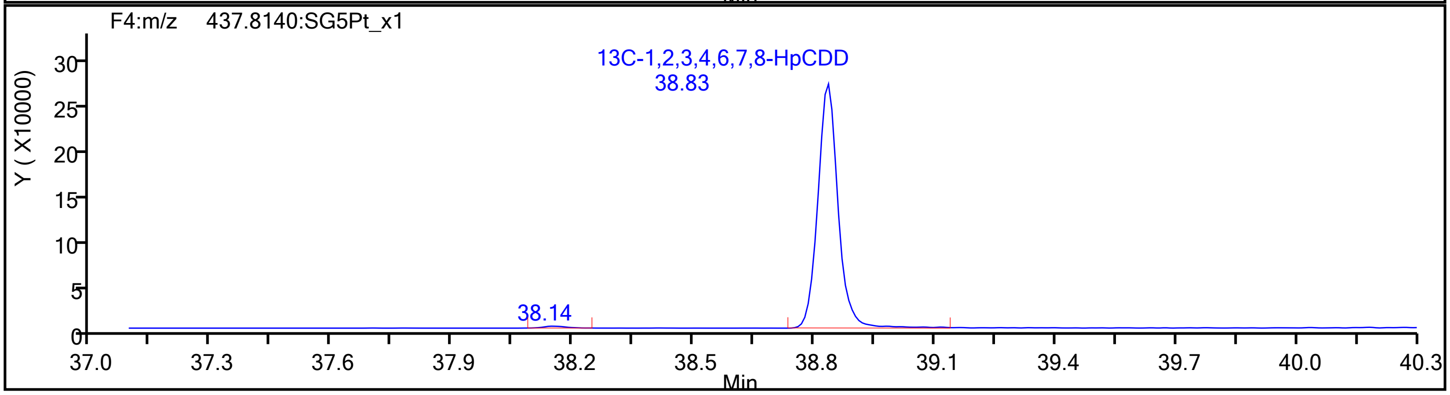

Report Date: 16-Mar-2021 08:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Injection Date: 12-Mar-2021 15:21:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank1-0.1mm

Worklist#: 469779

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

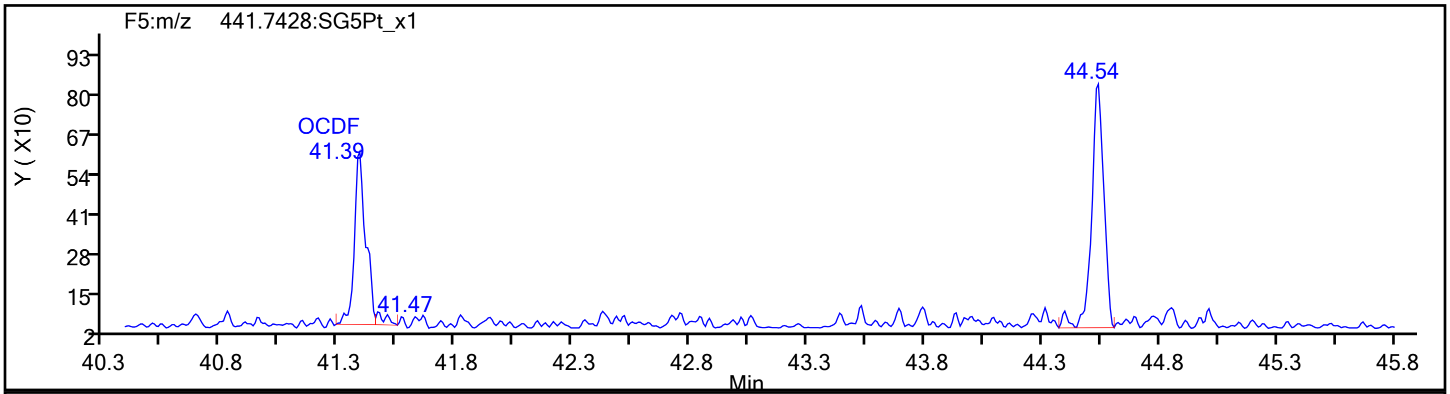

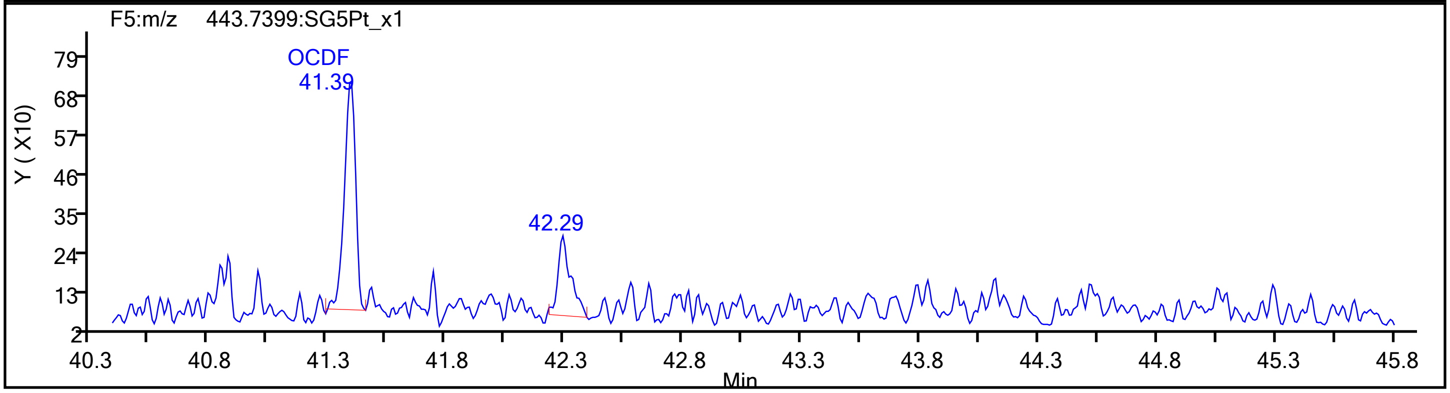

OCDF Standards

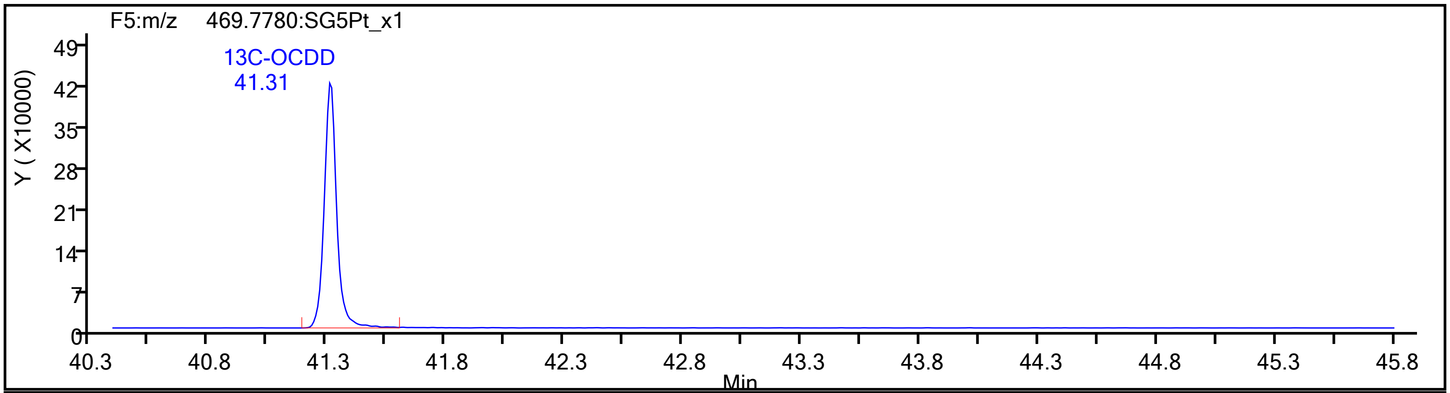

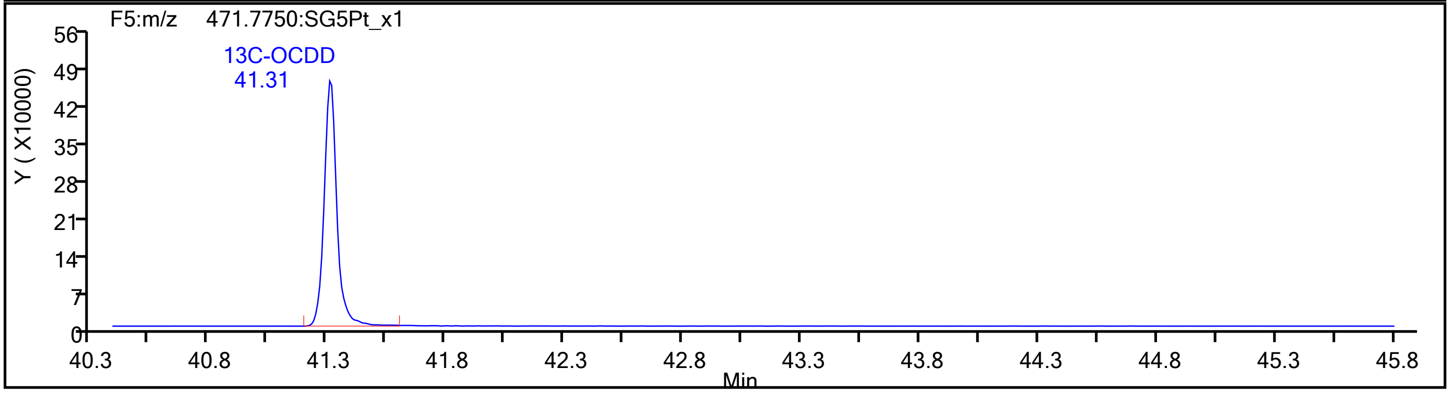

Report Date: 16-Mar-2021 08:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Injection Date: 12-Mar-2021 15:21:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-0.1mm
Worklist#: 469779
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

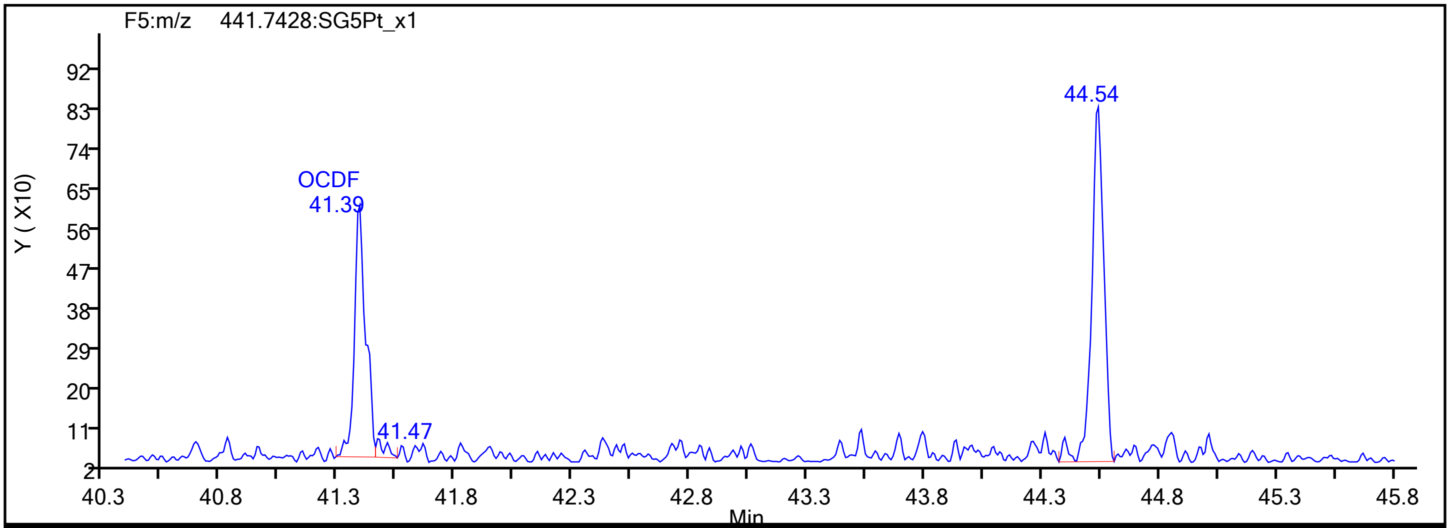

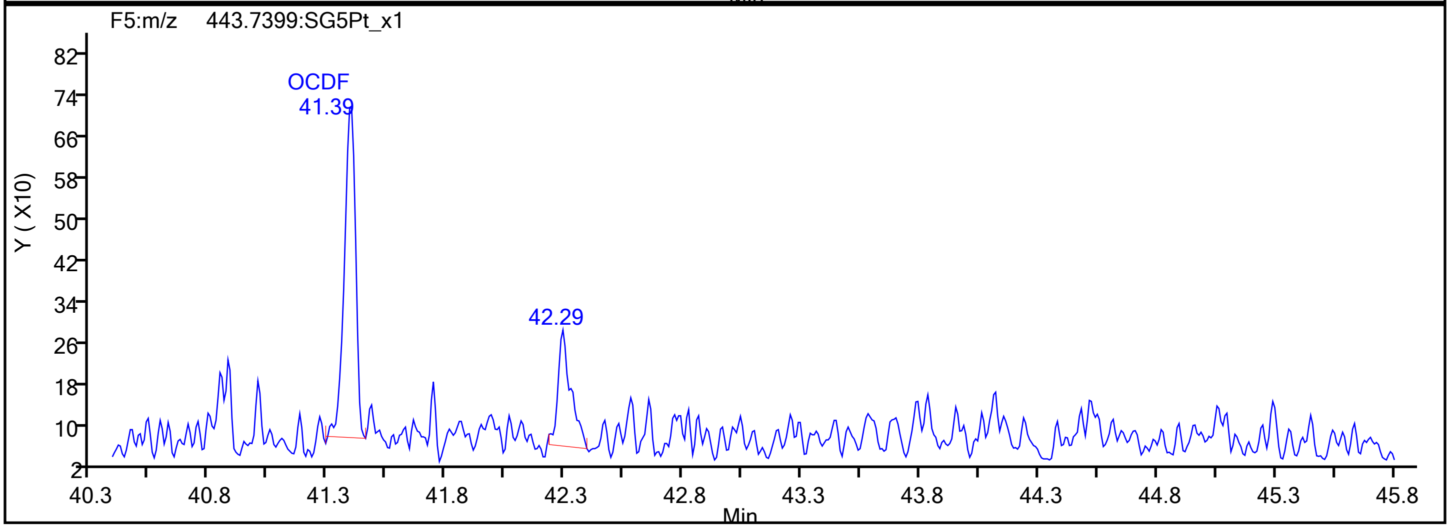

OCDF Interference Mass

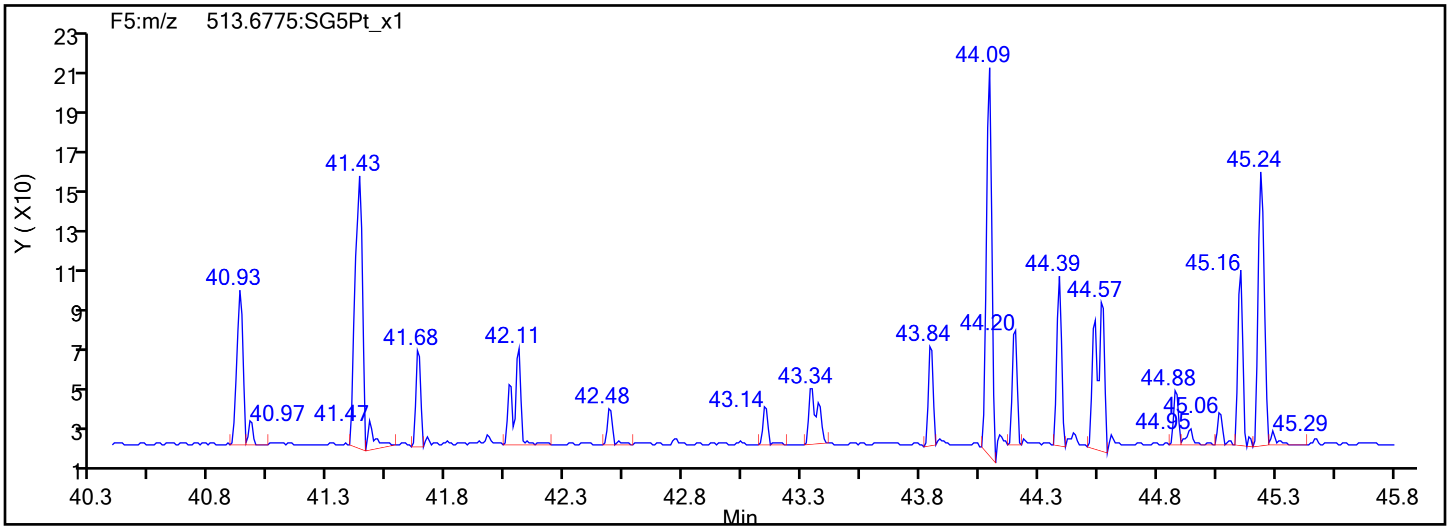

Report Date: 16-Mar-2021 08:52:20
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d
Injection Date: 12-Mar-2021 15:21:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank1-0.1mm
Worklist#: 469779
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

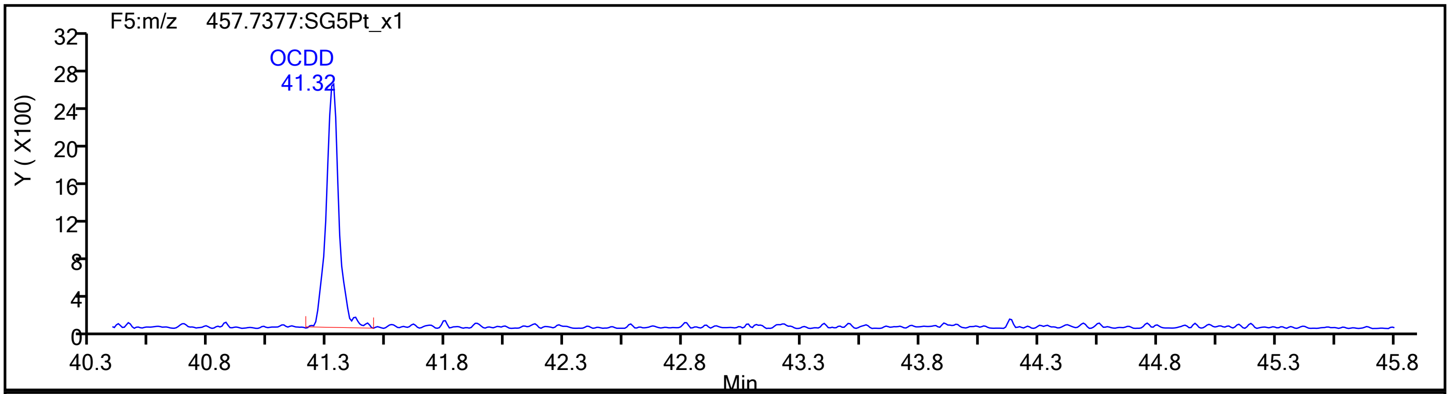

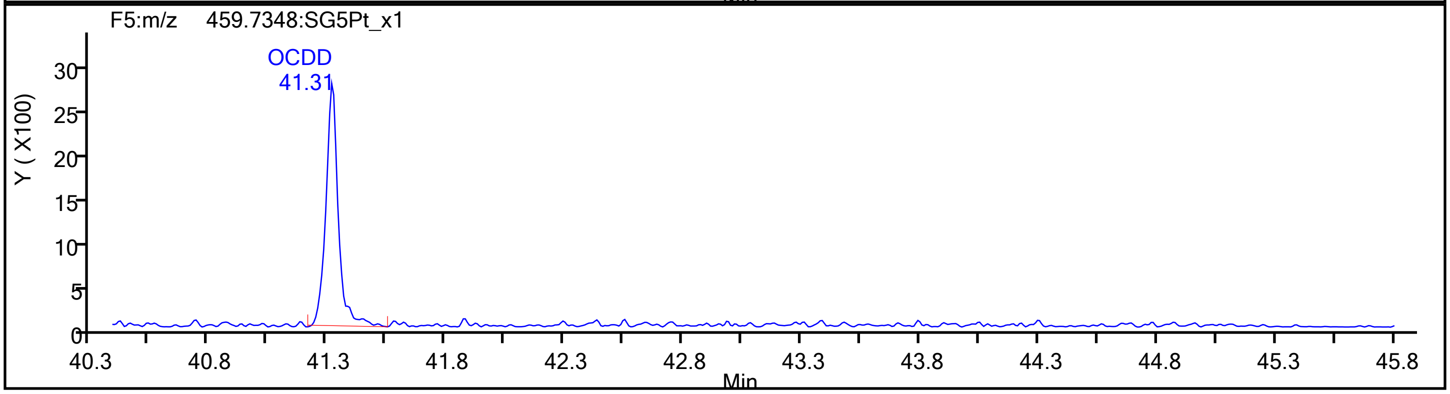

OCDD Standards

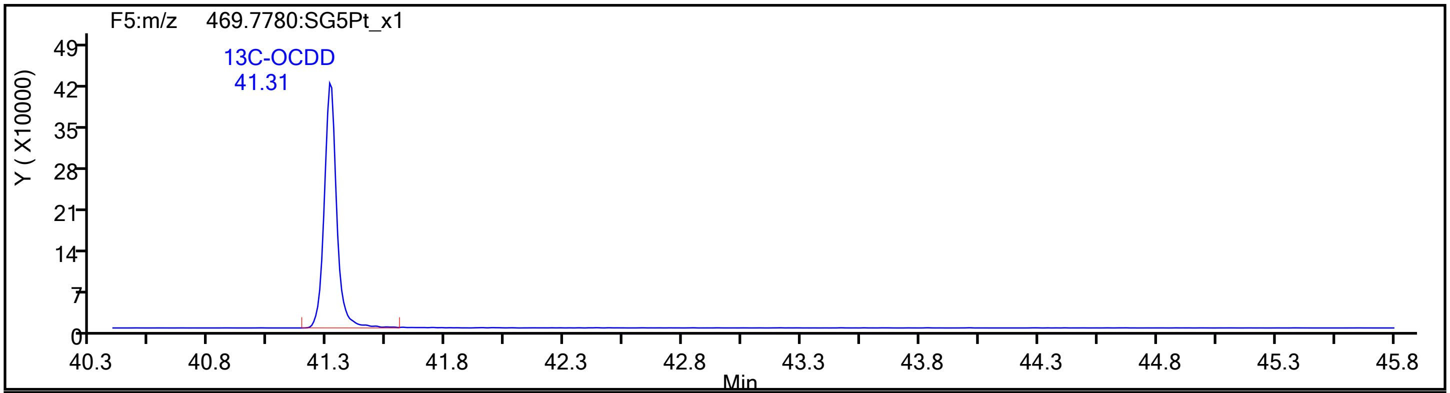

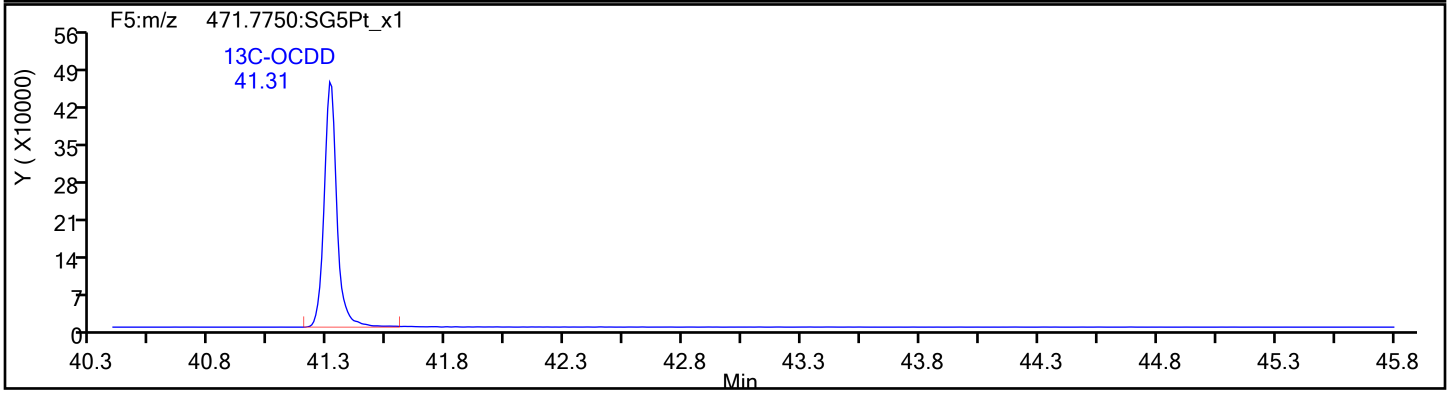

Report Date: 16-Mar-2021 08:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d		
Injection Date:	12-Mar-2021 15:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.1mm		
Worklist#:	469779	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

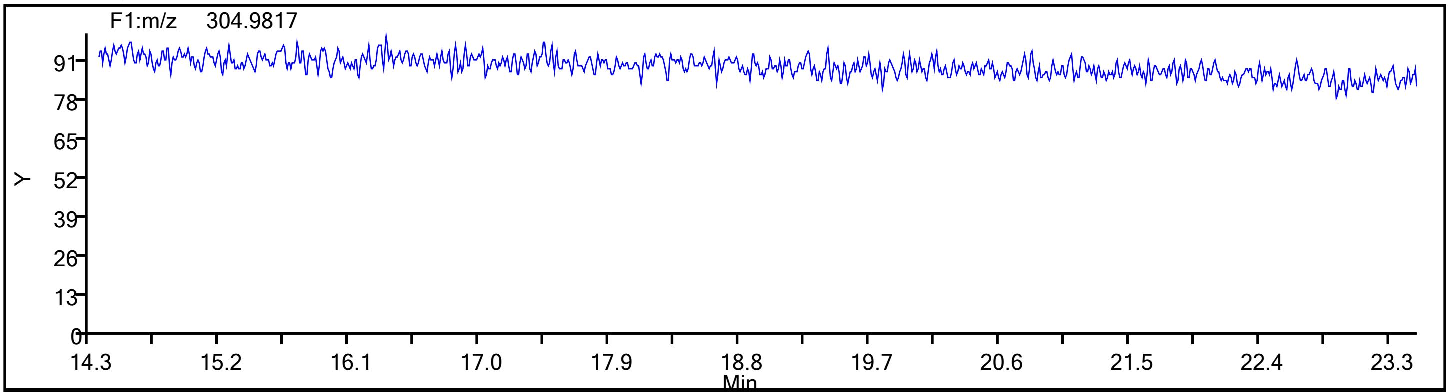

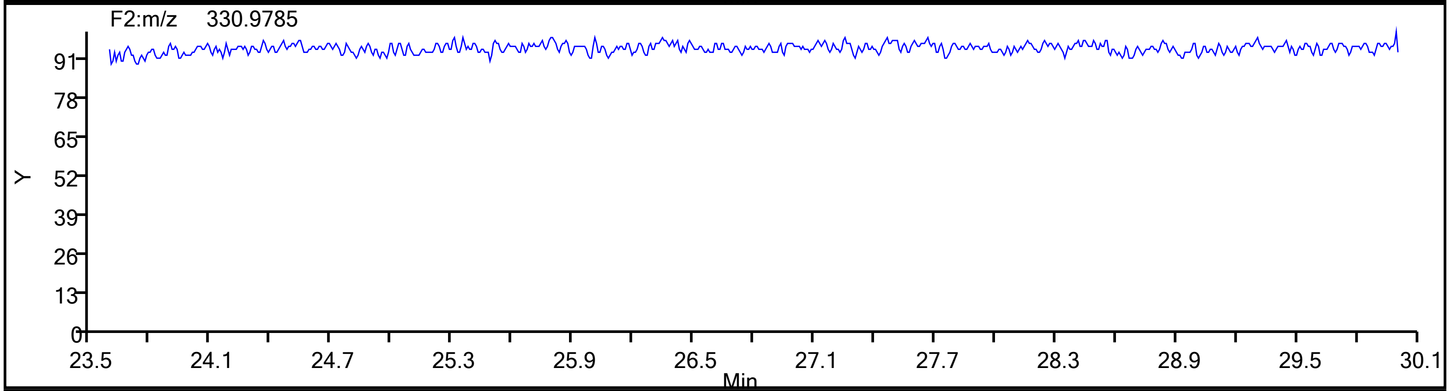

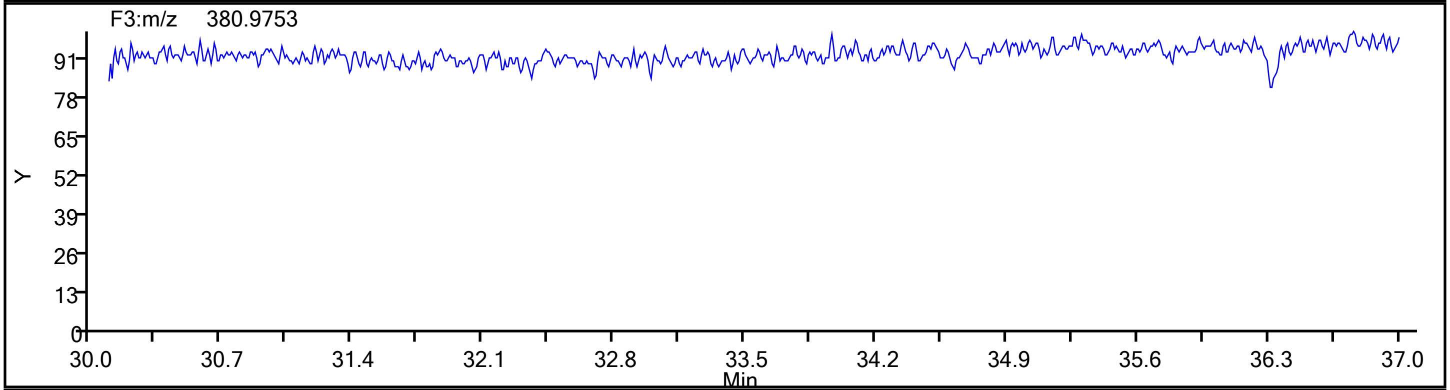

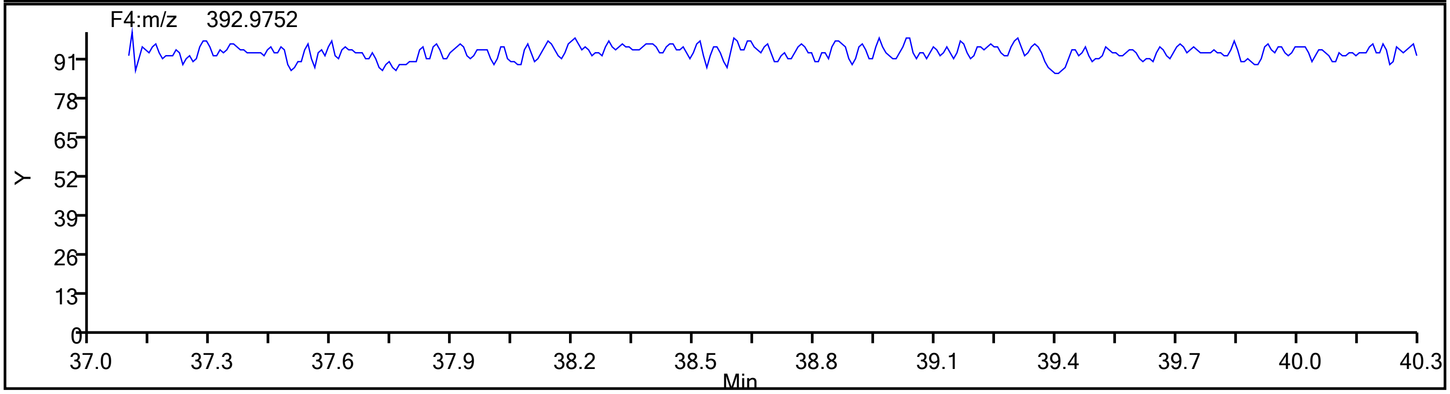

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_8.d

Injection Date:	12-Mar-2021 15:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank1-0.1mm		
Worklist#:	469779	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

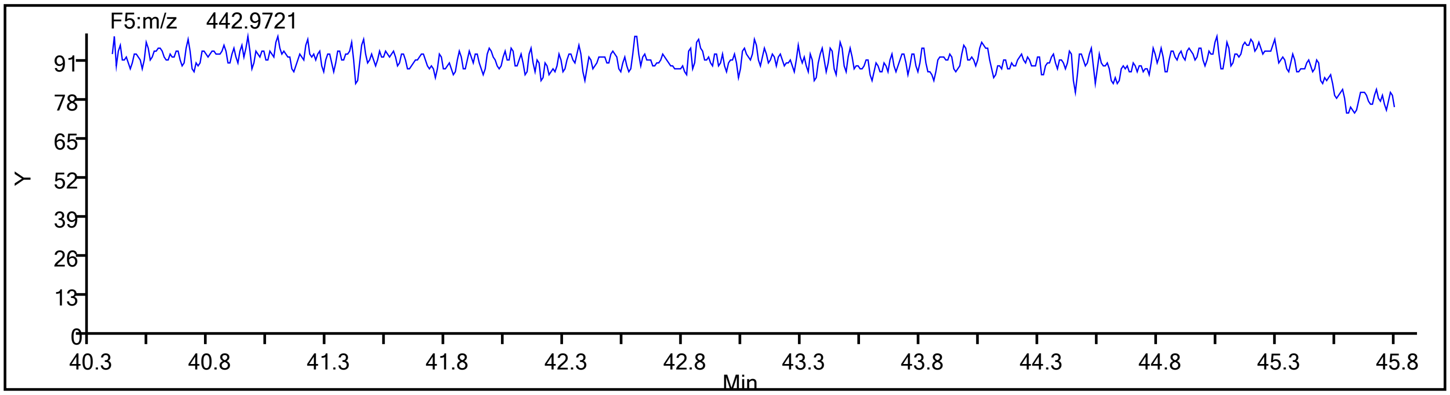

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank2-100mm
Lab Sample ID: 320-70797-7
Matrix: Water
Lab File ID: 12mr21adfs1_9.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.8(mL)
Date Analyzed: 03/12/2021 16:09
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	2700		9.6	4.7
40321-76-4	1,2,3,7,8-PeCDD	28	J	48	0.75
57117-41-6	1,2,3,7,8-PeCDF	350		48	2.5
57117-31-4	2,3,4,7,8-PeCDF	200		48	2.8
39227-28-6	1,2,3,4,7,8-HxCDD	3.1	J	48	0.55
57653-85-7	1,2,3,6,7,8-HxCDD	9.9	J	48	0.55
19408-74-3	1,2,3,7,8,9-HxCDD	4.5	J	48	0.50
70648-26-9	1,2,3,4,7,8-HxCDF	670	B	48	2.3
57117-44-9	1,2,3,6,7,8-HxCDF	170	B	48	2.2
72918-21-9	1,2,3,7,8,9-HxCDF	11	J B	48	1.7
60851-34-5	2,3,4,6,7,8-HxCDF	19	J B	48	1.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	590	B	48	2.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	230	B	48	0.86
55673-89-7	1,2,3,4,7,8,9-HpCDF	77	B	48	0.82
3268-87-9	OCDD	4200	B	96	2.2
39001-02-0	OCDF	130	B	96	0.60
41903-57-5	Total TCDD	3000	B	9.6	4.7
36088-22-9	Total PeCDD	36	J q	48	0.75
30402-15-4	Total PeCDF	870		48	2.7
34465-46-8	Total HxCDD	92		48	0.53
55684-94-1	Total HxCDF	960	B	48	2.0
37871-00-4	Total HpCDD	980	B	48	2.4
38998-75-3	Total HpCDF	380	B	48	0.84

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-100mm

Lab Sample ID: 320-70797-7

Matrix: Water

Lab File ID: 12mr21adfs1_9.d

Analysis Method: 1613B

Date Collected: 03/03/2021 15:00

Extract. Method: 1613B

Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1037.8(mL)

Date Analyzed: 03/12/2021 16:09

Con. Extract Vol.: 20(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 469779

Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		25-164
109719-79-1	13C-1,2,3,7,8-PeCDD	60		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	55		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	57		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	59		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	59		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	61		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	61		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	71		26-138
114423-97-1	13C-OCDD	78		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 16-Mar-2021 08:59:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Sample Type: Client
Inject. Date: 12-Mar-2021 16:09:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-7-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 08:59:49 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: dadunj Date: 16-Mar-2021 08:59:49

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.469	4128644	0.80	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.593	3758225	0.79	1.5437	59.0	59.0	0.1128	0.1128	58.97	
2,3,7,8-TCDF	18.619	18932420	0.84	1.1258	447.5	447.5	1.843	1.843		E
A Non-2,3,7,8-sub-TCDF	18.115	13812997	0.83	1.1258	326.5	326.5	1.843	194.9		M
S Total TCDF					773.9	773.9	1.843	1.843		
D 13C-2,3,7,8-TCDD	19.795	2474546	0.81	0.9687	61.9	61.9	0.1258	0.1258	61.87	
$ 37Cl4-2,3,7,8-TCDD	19.821	1719570		1.0841	38.4	38.4	0.0388	0.0388	96.05	
2,3,7,8-TCDD	19.821	4165589	0.80	1.1904	141.4	141.4	0.2425	0.2425		
A Non-2,3,7,8-sub-TCDD	18.876	376285	0.76	1.1904	12.8	12.8	0.2425	11.3		
S Total TCDD					154.2	154.2	0.2425	0.2425		
D 13C-1,2,3,7,8-PeCDF	25.605	2992311	1.57	1.3124	55.2	55.2	0.1666	0.1666	55.22	
1,2,3,7,8-PeCDF	25.630	607745	1.58	1.1163	18.2	18.2	0.1315	0.1315		
D 13C-2,3,4,7,8-PeCDF	26.986	3123220	1.58	1.3352	56.7	56.7	0.1637	0.1637	56.66	
2,3,4,7,8-PeCDF	27.003	348625	1.57	1.0579	10.6	10.6	0.1458	0.1458		
A F1 PeCDFs	22.791	2925	1.52	1.0871	0.0880	0.0880	0.007695	0.0880		Ma
A Non-2,3,7,8-sub-PeCDF	26.224	547078	1.53	1.0871	16.5	16.5	0.1384	6.787		
S Total PeCDF					45.3	45.3	0.1386	0.1386		
D 13C-1,2,3,7,8-PeCDD	27.728	1896261	1.61	0.7716	59.5	59.5	0.1000	0.1000	59.53	
1,2,3,7,8-PeCDD	27.753	31592	1.52	1.1372	1.465	1.465	0.0388	0.0388		
A Non-2,3,7,8-sub-PeCDD	26.609	8432	1.55	1.1372	0.4918	0.3910	0.0388	0.2404		RQ
S Total PeCDD					1.957	1.856	0.0388	0.0388		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.500	2566691	0.54	1.0931	58.8	58.8	0.1289	0.1289	58.77	
1,2,3,4,7,8-HxCDF	33.525	1061593	1.28	1.1831	35.0	35.0	0.1173	0.1173		
D 13C-1,2,3,6,7,8-HxCDF	33.710	2640880	0.52	1.1278	58.6	58.6	0.1249	0.1249	58.61	
1,2,3,6,7,8-HxCDF	33.727	283717	1.30	1.2484	8.606	8.606	0.1126	0.1126		
D 13C-2,3,4,6,7,8-HxCDF	34.704	2554679	0.52	1.0552	60.6	60.6	0.1335	0.1335	60.60	
2,3,4,6,7,8-HxCDF	34.729	31946	1.23	1.2750	0.9808	0.9808	0.0980	0.0980		
D 13C-1,2,3,7,8,9-HxCDF	35.731	2440517	0.52	0.9938	61.5	61.5	0.1418	0.1418	61.46	
1,2,3,7,8,9-HxCDF	35.748	18292	1.26	1.2953	0.5786	0.5786	0.0899	0.0899		
A Non-2,3,7,8-sub-HxCDF	33.496	155487	1.25	1.2505	4.875	4.875	0.1035	2.220		
S Total HxCDF					50.0	50.0	0.1045	0.1045		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.529	3995186	1.25	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.973	1858623	1.25	0.7895	58.9	58.9	0.1404	0.1404	58.92	
1,2,3,4,7,8-HxCDD	34.990	3310	1.13	1.0950	0.1626	0.1626	0.0287	0.0287		
D 13C-1,2,3,6,7,8-HxCDD	35.108	2064971	1.24	0.8495	60.8	60.8	0.1305	0.1305	60.85	
1,2,3,6,7,8-HxCDD	35.125	10873	1.14	1.0201	0.5161	0.5161	0.0285	0.0285		
1,2,3,7,8,9-HxCDD	35.538	5271	1.40	1.1549	0.2327	0.2327	0.0261	0.0261		
A Non-2,3,7,8-sub-HxCDD	34.039	82286	1.23	1.0900	3.848	3.848	0.0277	1.798		M
S Total HxCDD					4.760	4.760	0.0278	0.0278		
D 13C-1,2,3,4,6,7,8-HpCDF	37.781	2037268	0.45	0.7854	64.9	64.9	0.2237	0.2237	64.93	
1,2,3,4,6,7,8-HpCDF	37.798	366062	1.03	1.4859	12.1	12.1	0.0446	0.0446		
D 13C-1,2,3,4,7,8,9-HpCDF	39.129	2036322	0.45	0.7230	70.5	70.5	0.2430	0.2430	70.50	
1,2,3,4,7,8,9-HpCDF	39.145	114709	1.02	1.4048	4.010	4.010	0.0428	0.0428		
A Non-2,3,7,8-sub-HpCDF	38.451	113732	1.03	1.4453	3.863	3.863	0.0436	3.863		
S Total HpCDF					20.0	20.0	0.0437	0.0437		
D 13C-1,2,3,4,6,7,8-HpCDD	38.817	1858579	1.07	0.6413	72.5	72.5	0.1670	0.1670	72.54	
1,2,3,4,6,7,8-HpCDD	38.834	653643	1.05	1.1489	30.6	30.6	0.1227	0.1227		
A Non-2,3,7,8-sub-HpCDD	39.230	428585	1.05	1.1489	20.1	20.1	0.1227	20.1		a
S Total HpCDD					50.7	50.7	0.1227	0.1227		
D 13C-OCDD	41.299	3212902	0.89	0.5141	156.4	156.4	0.1176	0.1176	78.22	
OCDF	41.375	174135	0.92	1.5776	6.871	6.871	0.0309	0.0309		
OCDD	41.307	4071729	0.89	1.1706	216.5	216.5	0.1127	0.1127		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Sample Type: Client
Inject. Date: 12-Mar-2021 16:09:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-7-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 08:59:49 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: dadunj Date: 16-Mar-2021 08:59:49

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.469	19.417	3		1840729	303904	198	495	1535		
333.9338	19.469	19.417	3		2287915	366299	129	322	2840	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.593	18.557	2	0.955	1654878	279957	278	695	1007		
317.9389	18.602	18.557	3	0.955	2103347	358870	189	472	1899	0.79(0.65-0.89)	
2,3,7,8-TCDF											E
303.9016	18.619	18.574	3	1.001	8634239	1391065	2431	6077	572		
305.8987	18.619	18.574	3	1.001	10298181	1655780	2870	7175	577	0.84(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											M
303.9016	15.981	18.115	-128	0.860	44937	9518	2431	6077	4		M
305.8987	15.972	18.115	-128	0.859	54158	10756	2870	7175	4	0.83(0.65-0.89)	M
303.9016	16.376	18.115	-104	0.881	139342	27778	2431	6077	11		
305.8987	16.376	18.115	-104	0.881	166023	33605	2870	7175	12	0.84(0.65-0.89)	
303.9016	16.814	18.115	-78	0.904	284210	44915	2431	6077	18		
305.8987	16.814	18.115	-78	0.904	350329	54103	2870	7175	19	0.81(0.65-0.89)	
303.9016	17.184	18.115	-56	0.924	284231	43606	2431	6077	18		
305.8987	17.184	18.115	-56	0.924	338016	50260	2870	7175	18	0.84(0.65-0.89)	
303.9016	17.528	18.115	-35	0.943	413687	68962	2431	6077	28		
305.8987	17.528	18.115	-35	0.943	488169	82604	2870	7175	29	0.85(0.65-0.89)	
303.9016	17.975	18.115	-8	0.967	3734075	668421	2431	6077	275		
305.8987	17.975	18.115	-8	0.967	4510862	802328	2870	7175	280	0.83(0.65-0.89)	
303.9016	18.335	18.115	13	0.986	144508	25180	2431	6077	10		
305.8987	18.327	18.115	13	0.986	171325	28707	2870	7175	10	0.84(0.65-0.89)	
303.9016	19.315	18.115	72	1.039	547079	91392	2431	6077	38		
305.8987	19.306	18.115	71	1.038	661917	112247	2870	7175	39	0.83(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.692	18.115	94	1.059	107247	18656	2431	6077	8		M
305.8987	19.692	18.115	94	1.059	141130	22640	2870	7175	8	0.76(0.65-0.89)	M
303.9016	21.565	18.115	207	1.160	562712	86968	2431	6077	36		
305.8987	21.565	18.115	207	1.160	669040	103772	2870	7175	36	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.795	19.761	2	1.017	1106886	177405	198	495	896		
333.9338	19.795	19.761	2	1.017	1367660	217519	129	322	1686	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.821	19.778	3	1.018	1719570	275891	113	282	2442		
2,3,7,8-TCDD											
319.8965	19.821	19.787	2	1.001	1846862	295528	223	557	1325		
321.8936	19.821	19.787	2	1.001	2318727	372102	233	582	1597	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	19.649	18.876	46	0.993	19363	3828	223	557	17		
321.8936	19.658	18.876	47	0.993	24754	4975	233	582	21	0.78(0.65-0.89)	
319.8965	20.414	18.876	92	1.031	143031	21882	223	557	98		
321.8936	20.414	18.876	92	1.031	189137	28328	233	582	122	0.76(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.605	25.600	0	1.315	1826225	351017	373	932	941		
353.8970	25.605	25.600	0	1.315	1166086	224670	213	532	1055	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.630	25.625	0	1.001	372454	69397	193	482	360		
341.8567	25.630	25.625	0	1.001	235291	44017	145	362	304	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	26.986	26.980	0	1.386	1914797	334848	373	932	898		
353.8970	26.978	26.980	0	1.386	1208423	213124	213	532	1001	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.003	27.006	0	1.001	213215	37902	193	482	196		
341.8567	27.003	27.006	0	1.001	135410	24029	145	362	166	1.57(1.32-1.78)	
A F1 PeCDFs											Ma
339.8597	22.226	22.791	-34	0.868	1766	290	2	5	145		M
341.8567	22.209	22.791	-35	0.867	1159	215	17	42	13	1.52(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDF											
339.8597	24.291	26.224	-116	0.949	138432	27202	193	482	141		
341.8567	24.291	26.224	-116	0.949	87162	17347	145	362	120	1.59(1.32-1.78)	
339.8597	25.125	26.224	-66	0.981	11535	1945	193	482	10		
341.8567	25.108	26.224	-67	0.981	8309	1514	145	362	10	1.39(1.32-1.78)	
339.8597	25.504	26.224	-43	0.996	23390	5891	193	482	31		
341.8567	25.512	26.224	-43	0.996	15844	4063	145	362	28	1.48(1.32-1.78)	
339.8597	26.153	26.224	-4	1.021	92134	17340	193	482	90		
341.8567	26.153	26.224	-4	1.021	59099	11017	145	362	76	1.56(1.32-1.78)	
339.8597	27.307	26.224	65	1.066	52437	8647	193	482	45		
341.8567	27.298	26.224	64	1.066	35624	5805	145	362	40	1.47(1.32-1.78)	
339.8597	28.856	26.224	158	1.127	13242	2367	193	482	12		
341.8567	28.856	26.224	158	1.127	9870	1514	145	362	10	1.34(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	27.728	27.721	0	1.424	1168974	190935	106	265	1801		
369.8919	27.728	27.721	0	1.424	727287	119681	101	252	1185	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.753	27.755	0	1.001	19031	3240	37	92	88		
357.8516	27.753	27.755	0	1.001	12561	2066	18	45	115	1.52(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQ
355.8546	24.535	26.609	-124	0.885	3152	639	37	92	17		
357.8516	24.594	26.609	-121	0.887	4206	515	18	45	29	0.75(1.32-1.78)	
	Empc Correction				2033	412	18	45	23		
355.8546	26.287	26.609	-19	0.948	2018	415	37	92	11		
357.8516	26.287	26.609	-19	0.948	1229	295	18	45	16	1.64(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.500	33.504	0	0.943	899272	162304	179	447	907		
385.8610	33.500	33.504	0	0.943	1667419	310950	343	857	907	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.525	33.521	0	1.001	595425	107972	123	307	878		
375.8178	33.525	33.521	0	1.001	466168	85698	140	350	612	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.710	33.706	0	0.949	908688	161925	179	447	905		
385.8610	33.702	33.706	0	0.949	1732192	305444	343	857	891	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.727	33.723	0	1.000	160360	27827	123	307	226		
375.8178	33.727	33.723	0	1.000	123357	21979	140	350	157	1.30(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.704	34.709	0	0.977	875518	181547	179	447	1014		
385.8610	34.704	34.709	0	0.977	1679161	344131	343	857	1003	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.729	34.725	0	1.001	17648	3677	123	307	30		
375.8178	34.729	34.725	0	1.001	14298	2947	140	350	21	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.731	35.736	0	1.006	837396	192227	179	447	1074		
385.8610	35.731	35.736	0	1.006	1603121	372008	343	857	1085	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.748	35.753	0	1.000	10181	2566	123	307	21		
375.8178	35.740	35.753	-1	1.000	8111	1860	140	350	13	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.529	33.496	-118	0.941	39583	5734	123	307	47		
375.8178	31.529	33.496	-118	0.941	31235	4199	140	350	30	1.27(1.05-1.43)	
373.8208	34.569	33.496	64	1.032	11278	2431	123	307	20		
375.8178	34.578	33.496	65	1.032	9429	1857	140	350	13	1.20(1.05-1.43)	
373.8208	35.866	33.496	142	1.071	35612	8449	123	307	69		
375.8178	35.866	33.496	142	1.071	28350	6169	140	350	44	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.529	35.525	0		2216794	513474	227	567	2262		
403.8529	35.529	35.525	0		1778392	412735	184	460	2243	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	34.973	34.970	0	0.984	1032720	228860	227	567	1008		
403.8529	34.973	34.970	0	0.984	825903	185323	184	460	1007	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	34.990	34.995	0	1.000	1758	421	30	75	14		
391.8127	34.990	34.995	0	1.000	1552	301	22	55	14	1.13(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.108	35.105	0	0.988	1144872	247651	227	567	1091		
403.8529	35.108	35.105	0	0.988	920099	199844	184	460	1086	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.125	35.121	0	1.000	5797	1249	30	75	42		
391.8127	35.125	35.121	0	1.000	5076	1298	22	55	59	1.14(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.538	35.542	0	1.016	3075	712	30	75	24		
391.8127	35.546	35.542	0	1.016	2196	462	22	55	21	1.40(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											M
389.8158	32.624	34.039	-85	0.929	21374	3363	30	75	112		
391.8127	32.633	34.039	-84	0.929	17076	2703	22	55	123	1.25(1.05-1.43)	
389.8158	33.635	34.039	-24	0.958	4346	857	30	75	29		M
391.8127	33.626	34.039	-25	0.958	3364	739	22	55	34	1.29(1.05-1.43)	
389.8158	34.047	34.039	0	0.970	19691	3370	30	75	112		M
391.8127	34.056	34.039	1	0.970	16435	2921	22	55	133	1.20(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.781	37.786	0	1.063	632658	170272	243	607	701		
419.8220	37.781	37.786	0	1.063	1404610	376265	408	1020	922	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.798	37.794	0	1.000	186157	51510	87	217	592		
409.7788	37.798	37.794	0	1.000	179905	50001	58	145	862	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.129	39.133	0	1.101	632987	184576	243	607	760		
419.8220	39.129	39.133	0	1.101	1403335	417470	408	1020	1023	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.145	39.142	0	1.000	58003	16811	87	217	193		
409.7788	39.137	39.142	0	1.000	56706	16593	58	145	286	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.186	38.451	-16	1.011	57816	16341	87	217	188		
409.7788	38.194	38.451	-15	1.011	55916	15453	58	145	266	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.817	38.822	0	1.093	960503	283015	199	497	1422		
437.8140	38.817	38.822	0	1.093	898076	262976	198	495	1328	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.834	38.830	0	1.000	334797	98103	165	412	595		
425.7737	38.825	38.830	0	1.000	318846	93136	143	357	651	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.143	39.230	-65	0.983	219434	61317	165	412	372		a
425.7737	38.135	39.230	-66	0.982	209151	57749	143	357	404	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-OCDD											
469.7780	41.299	41.293	0	1.162	1508547	443829	114	285	3893		
471.7750	41.299	41.293	0	1.162	1704355	498756	110	275	4534	0.89(0.76-1.02)	
OCDF											
441.7428	41.375	41.377	0	1.002	83608	23897	37	92	646		
443.7399	41.375	41.377	0	1.002	90527	25496	55	137	464	0.92(0.76-1.02)	
OCDD											
457.7377	41.307	41.301	0	1.000	1918689	565606	115	287	4918		
459.7348	41.307	41.301	0	1.000	2153040	629963	134	335	4701	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- a - User Assigned ID

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3758225	638827

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3758225	638827

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.981	44937	9518	54158	10756	2.34	0.83	M
16.376	139342	27778	166023	33605	7.22	0.84	
16.814	284210	44915	350329	54103	15.0	0.81	
17.184	284231	43606	338016	50260	14.7	0.84	
17.528	413687	68962	488169	82604	21.3	0.85	
17.975	3734075	668421	4510862	802328	194.9	0.83	
18.335	144508	25180	171325	28707	7.46	0.84	
19.315	547079	91392	661917	112247	28.6	0.83	
19.692	107247	18656	141130	22640	5.87	0.76	M
21.565	562712	86968	669040	103772	29.1	0.84	
Signal Totals:							
	6262028	1085396	7550969	1301022			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13812997	2386418				0.83	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 326.470 = (13812997 * 100.000) / (3758225 * 1.126)

QC Flag Legend

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2474546	394924

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2474546	394924

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.649	19363	3828	24754	4975	1.50	0.78	
20.414	143031	21882	189137	28328	11.3	0.76	
Signal Totals:							
	162394	25710	213891	33303			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	376285	59013				0.76	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.774 = (376285 * 100.000) / (2474546 * 1.190)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Inject. Date: 12-Mar-2021 16:09:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 469779 Lims Sample ID: 8

F1 PeCDFs, RT: 22.791

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	2992311	575687
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3123220	547972

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3057765	561829

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.226	1766	290	1159	215	0.0880	1.52	M
Signal Totals:							
	1766	290	1159	215			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2925	505				1.52	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0880 = (2925 * 100.000) / (3057765 * 1.087)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Inject. Date: 12-Mar-2021 16:09:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 8

Non-2,3,7,8-sub-PeCDF, RT: 26.224

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	2992311	575687
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3123220	547972

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3057765	561829

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.291	138432	27202	87162	17347	6.79	1.59	
25.125	11535	1945	8309	1514	0.5970	1.39	
25.504	23390	5891	15844	4063	1.18	1.48	
26.153	92134	17340	59099	11017	4.55	1.56	
27.307	52437	8647	35624	5805	2.65	1.47	
28.856	13242	2367	9870	1514	0.6953	1.34	
Signal Totals:							
	331170	63392	215908	41260			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	547078	104652				1.53	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 16.458 = (547078 * 100.000) / (3057765 * 1.087)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-PeCDD, RT: 26.609

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1896261	310616

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1896261	310616

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
24.535	3152	639	4206	515	0.3412	0.75	RQ
24.535	3152	639	2033	412	0.2404		Empc Correction
26.287	2018	415	1229	295	0.1506	1.64	
Signal Totals:							
	5170	1054	3262	707			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	10605	1864				0.95	RQ
	8432	1761					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4918 = (10605 * 100.000) / (1896261 * 1.137)
Empc Amount: 0.3910 = (8432 * 100.000) / (1896261 * 1.137)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2566691	473254
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2640880	467369
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2554679	525678
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2440517	564235

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2550691	507634

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.529	39583	5734	31235	4199	2.22	1.27	
34.569	11278	2431	9429	1857	0.6492	1.20	
35.866	35612	8449	28350	6169	2.01	1.26	
Signal Totals:							
	86473	16614	69014	12225			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	155487	28839				1.25	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.875 = (155487 * 100.000) / (2550691 * 1.250)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1858623	414183
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2064971	447495
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	1961797	430839

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.624	21374	3363	17076	2703	1.80	1.25	
33.635	4346	857	3364	739	0.3606	1.29	M
34.047	19691	3370	16435	2921	1.69	1.20	M
Signal Totals:							
	45411	7590	36875	6363			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	82286	13953				1.23	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.848 = (82286 * 100.000) / (1961797 * 1.090)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2037268	546537
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2036322	602046

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2036795	574291

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.186	57816	16341	55916	15453	3.86	1.03	
Signal Totals:							
	57816	16341	55916	15453			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	113732	31794				1.03	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.863 = (113732 * 100.000) / (2036795 * 1.445)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	12-Mar-2021 16:09:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	8

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1858579	545991

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1858579	545991

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.143	219434	61317	209151	57749	20.1	1.05	a
Signal Totals:							
	219434	61317	209151	57749			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	428585	119066				1.05	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 20.071 = (428585 * 100.000) / (1858579 * 1.149)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Injection Date:	12-Mar-2021 16:09:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-7-A	Lab Sample ID:	320-70797-7
Client ID:	11215702-Tank2-100mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (22.09- 23.49)

Signal: 1

Processing Integration Results

RT = 22.226 Area = 1766

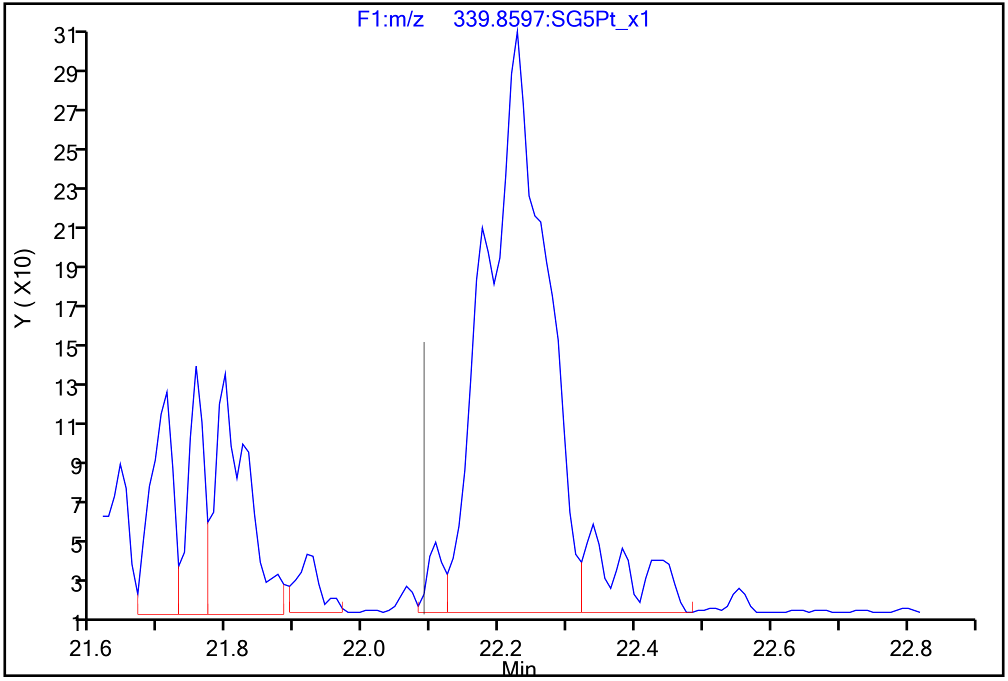

Manual Integration Results

RT = 22.226 Area = 1766

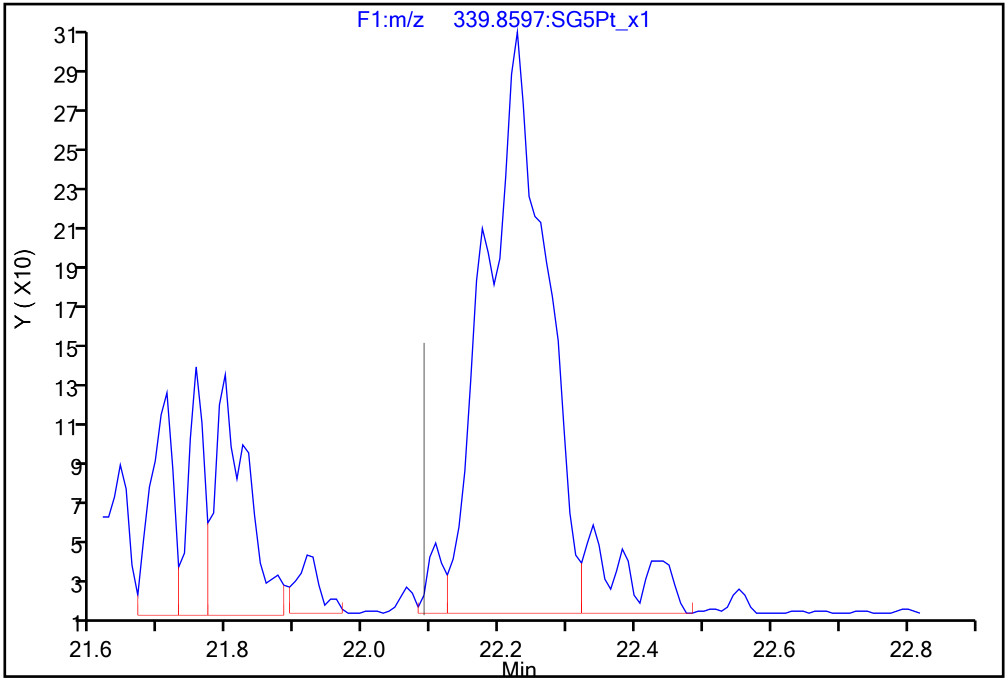

Reviewer: dadunj, 16-Mar-2021 08:54:59

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:59:50

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Injection Date:	12-Mar-2021 16:09:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-7-A	Lab Sample ID:	320-70797-7
Client ID:	11215702-Tank2-100mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

F1 PeCDFs, Signal: 2, m/z: 341.8567, RT: (22.09- 23.49)

Signal: 2

RT = 22.209 Area = 1222

Processing Integration Results

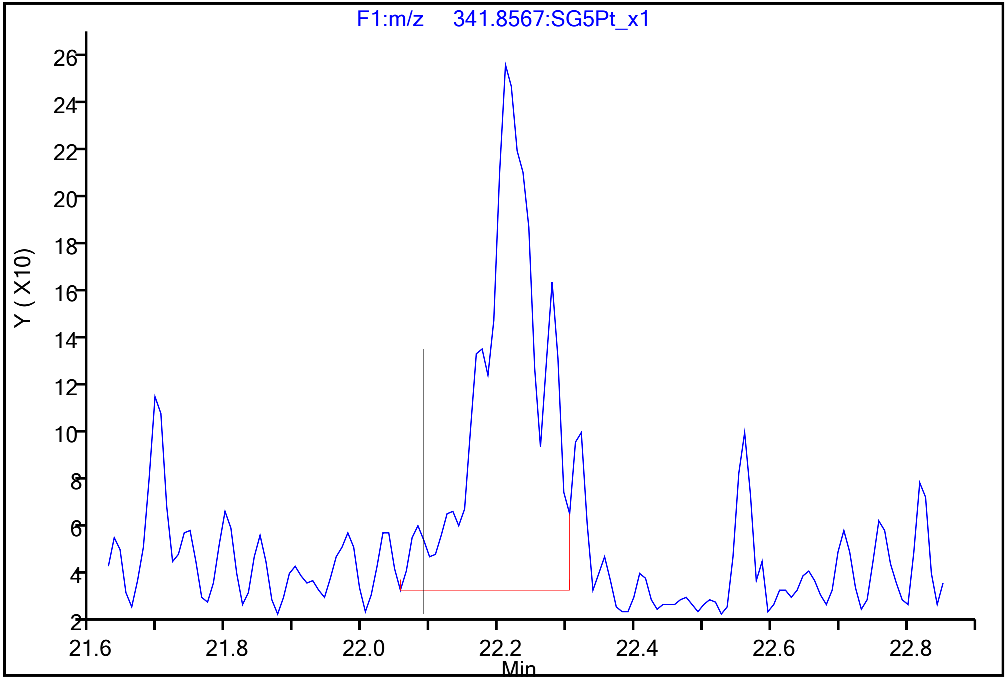

RT = 22.209 Area = 1159 M

Manual Integration Results

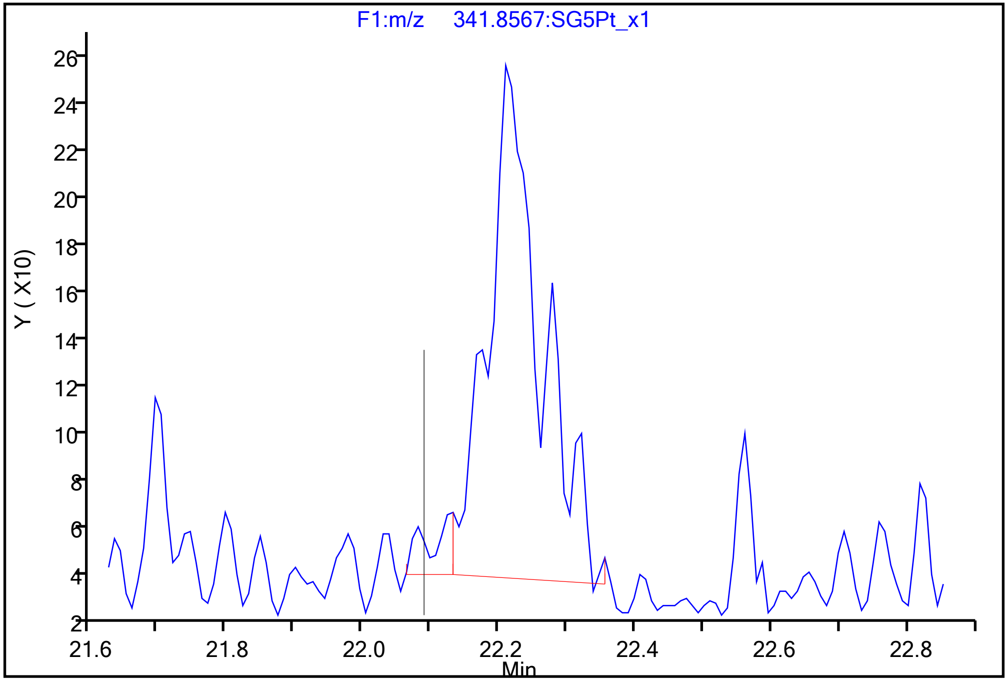

Reviewer: dadunj, 16-Mar-2021 08:55:04

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:59:50

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d				
Injection Date:	12-Mar-2021 16:09:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-7-A	Lab Sample ID:	320-70797-7		
Client ID:	11215702-Tank2-100mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.58- 35.50)

Signal: 1

Processing Integration Results

RT = 33.635 Area = 4648

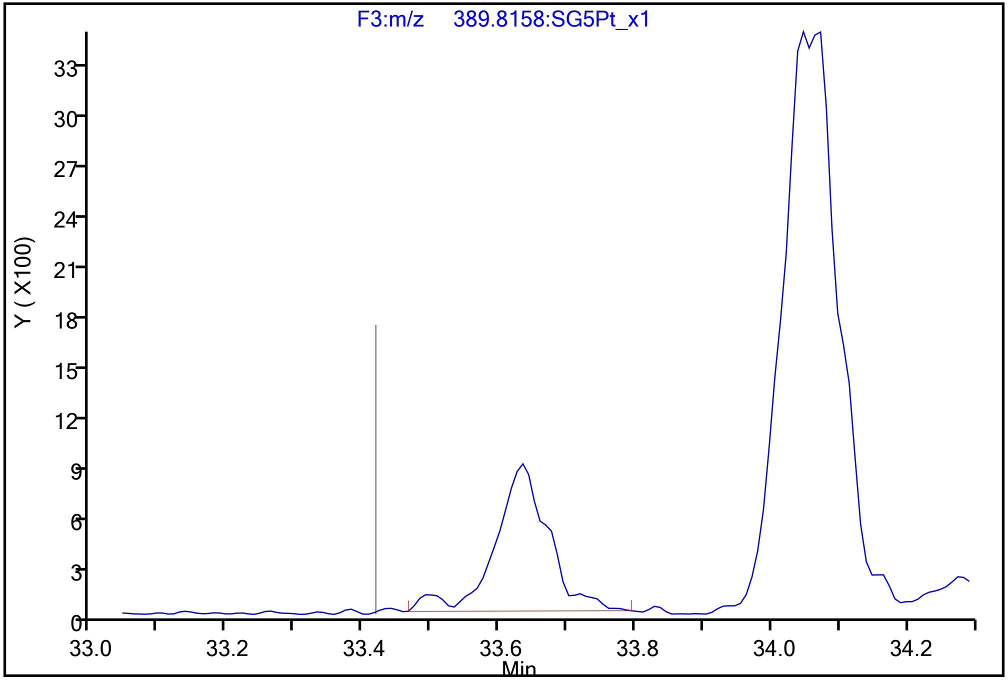

Manual Integration Results

RT = 33.635 Area = 4346 M

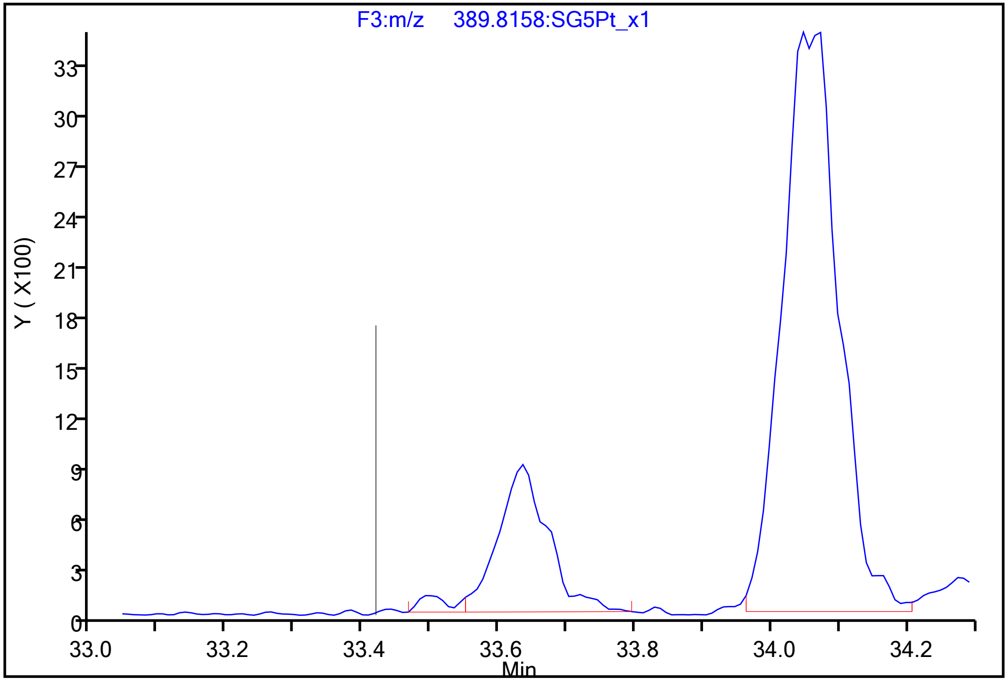

Reviewer: dadunj, 16-Mar-2021 08:57:59

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Injection Date:	12-Mar-2021 16:09:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-7-A	Lab Sample ID:	320-70797-7
Client ID:	11215702-Tank2-100mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.58- 35.50)

Signal: 1

Processing Integration Results

RT = 34.047 Area = 20636

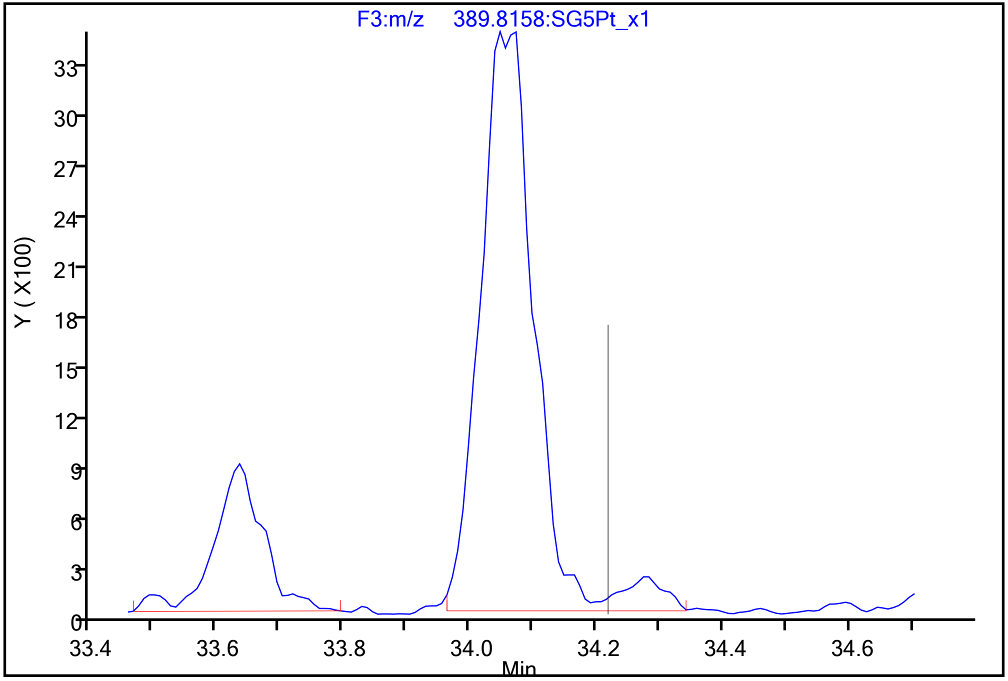

Manual Integration Results

RT = 34.047 Area = 19691 M

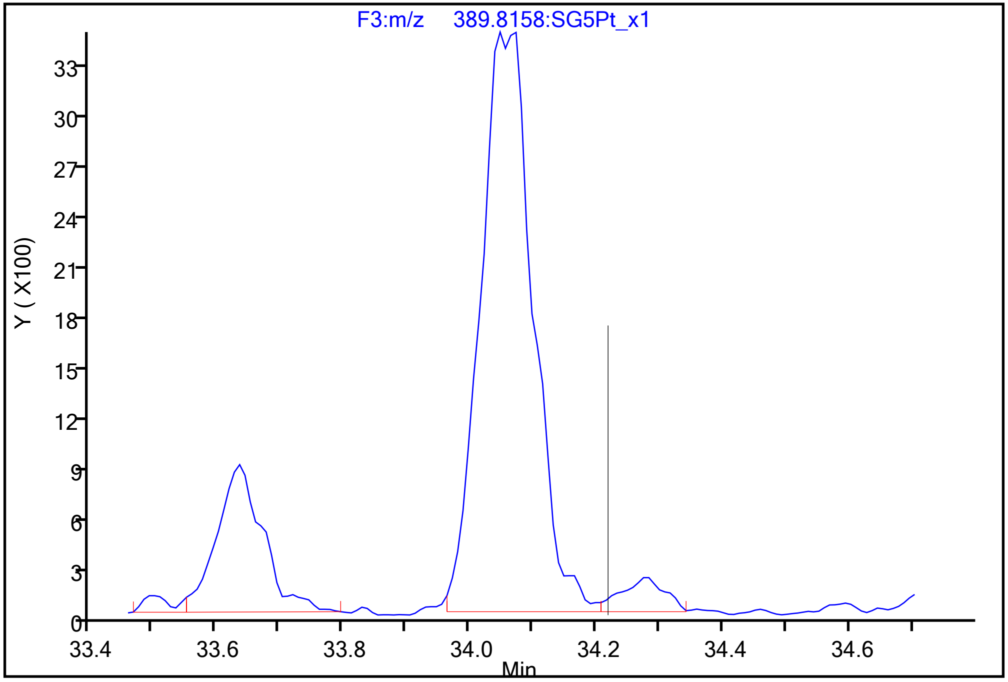

Reviewer: dadunj, 16-Mar-2021 08:57:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Injection Date:	12-Mar-2021 16:09:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	469779	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

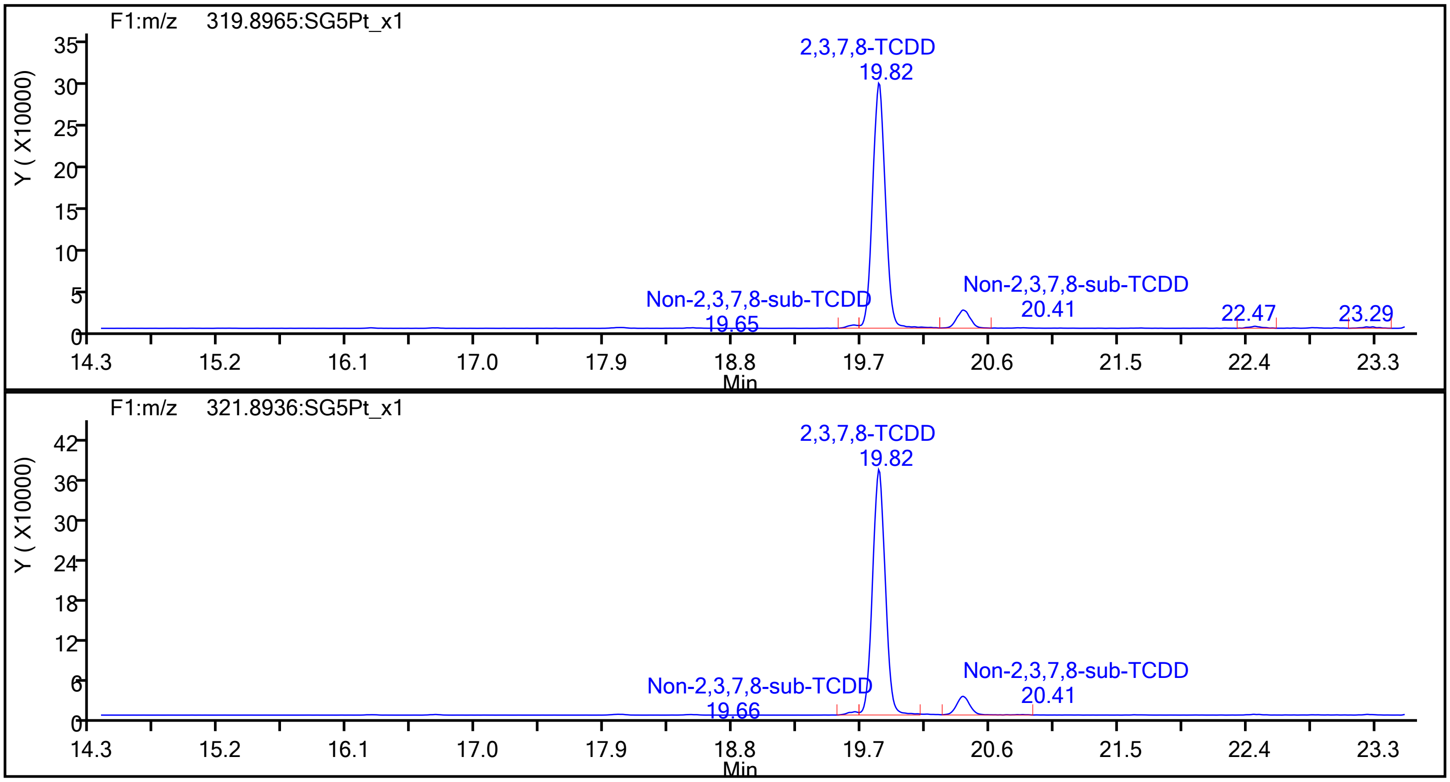

TCDD Standards

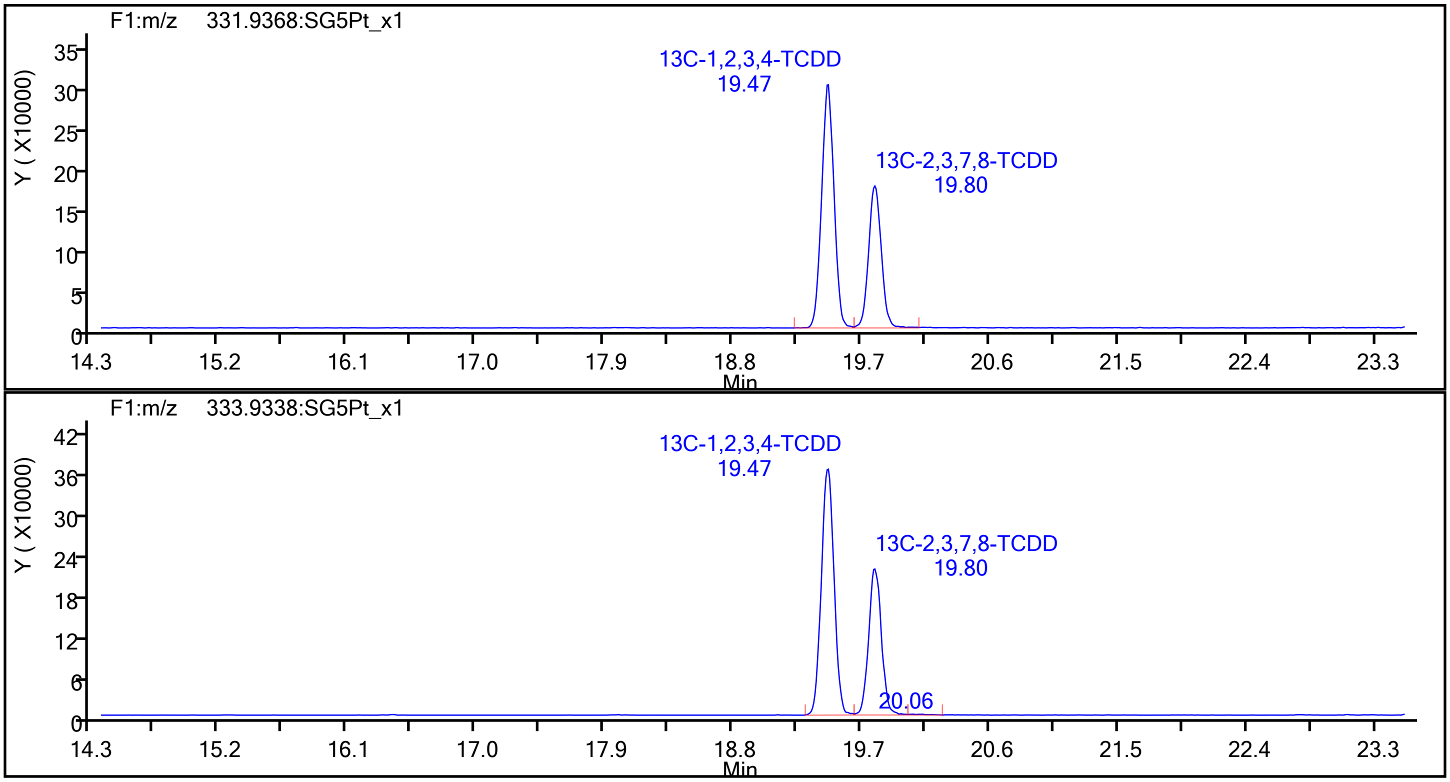

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Injection Date:	12-Mar-2021 16:09:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	469779	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

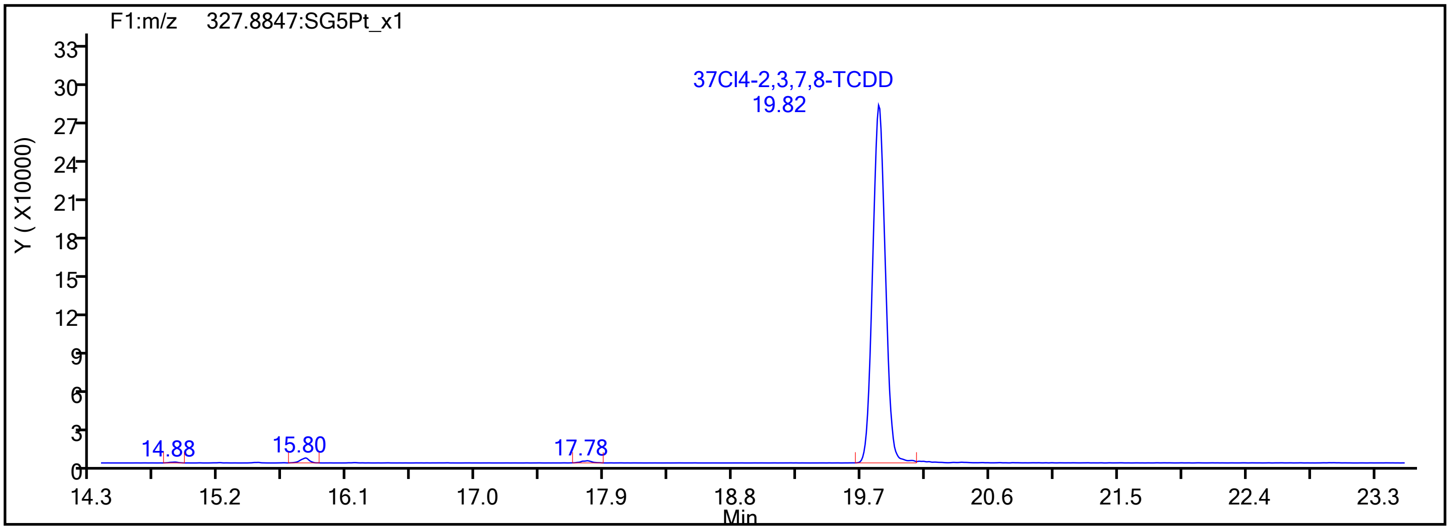

37Cl4-TCDD Standards

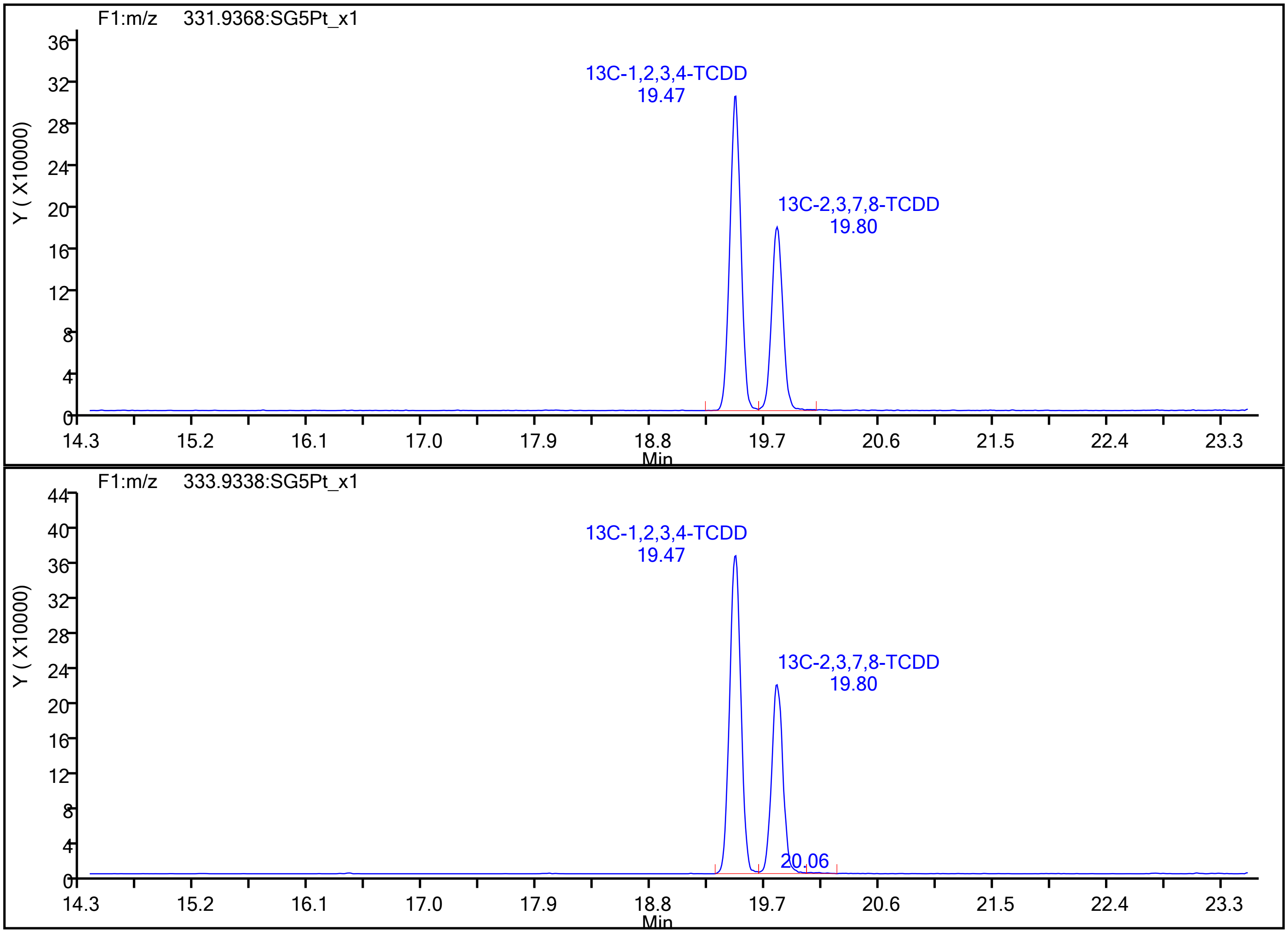

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d
Injection Date: 12-Mar-2021 16:09:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-100mm
Worklist#: 469779
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

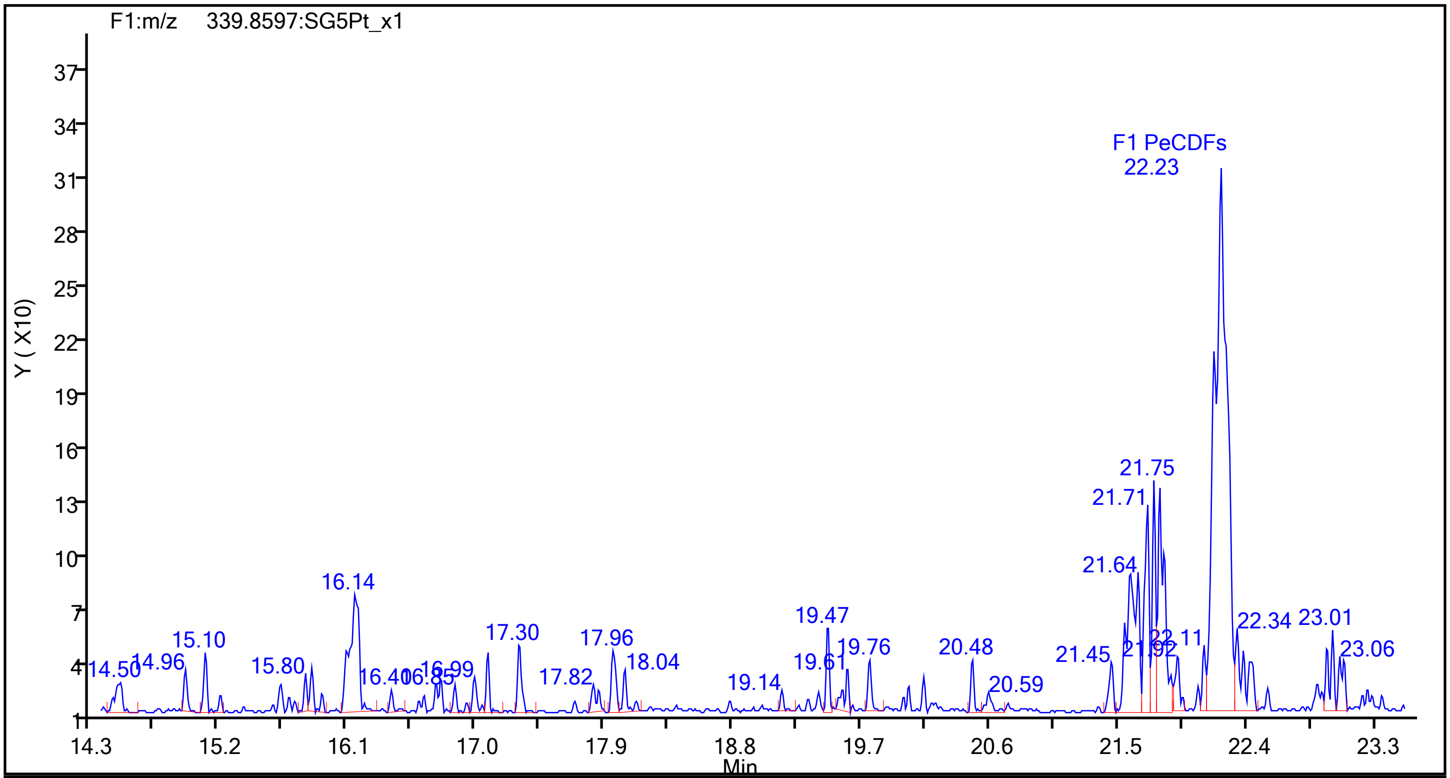

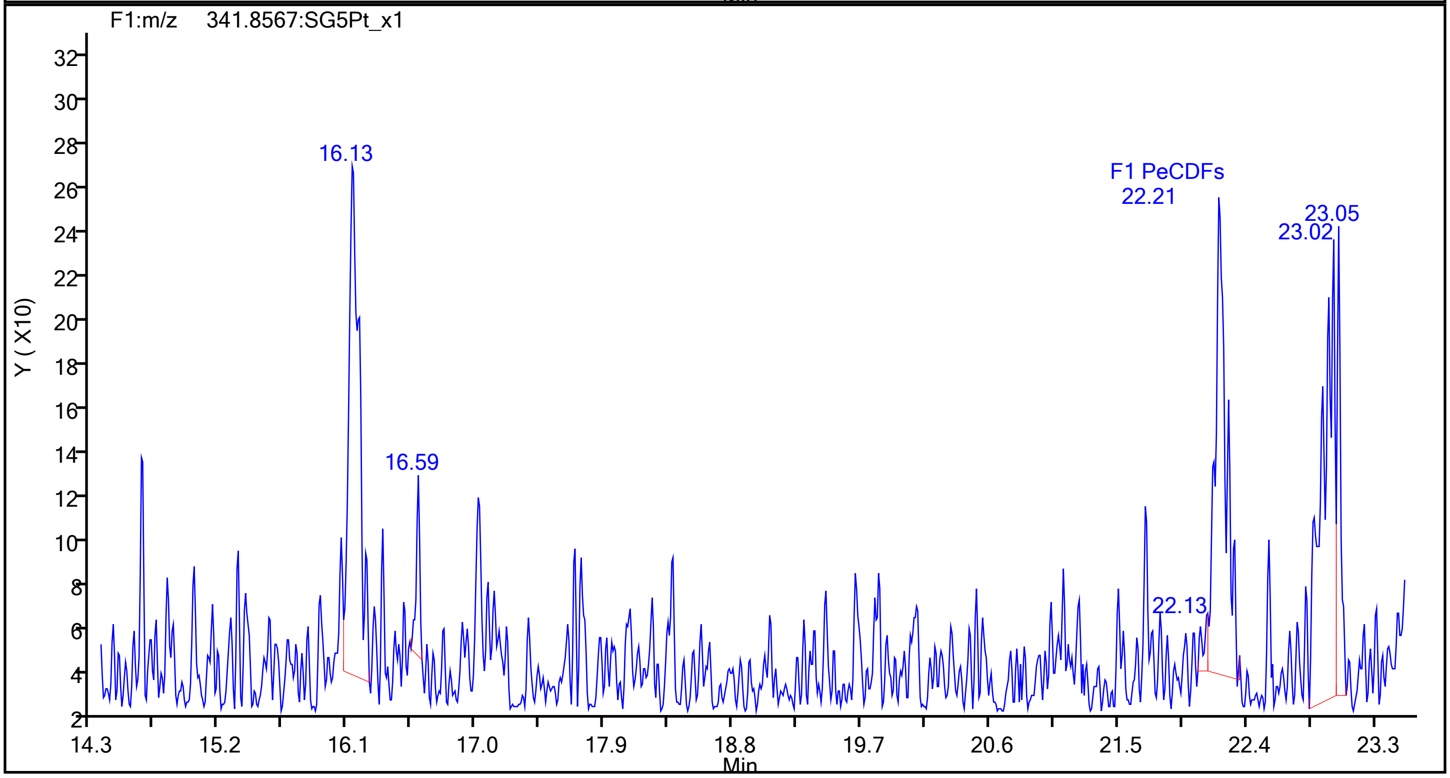

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_9.d		
Injection Date:	12-Mar-2021 16:09:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	469779	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

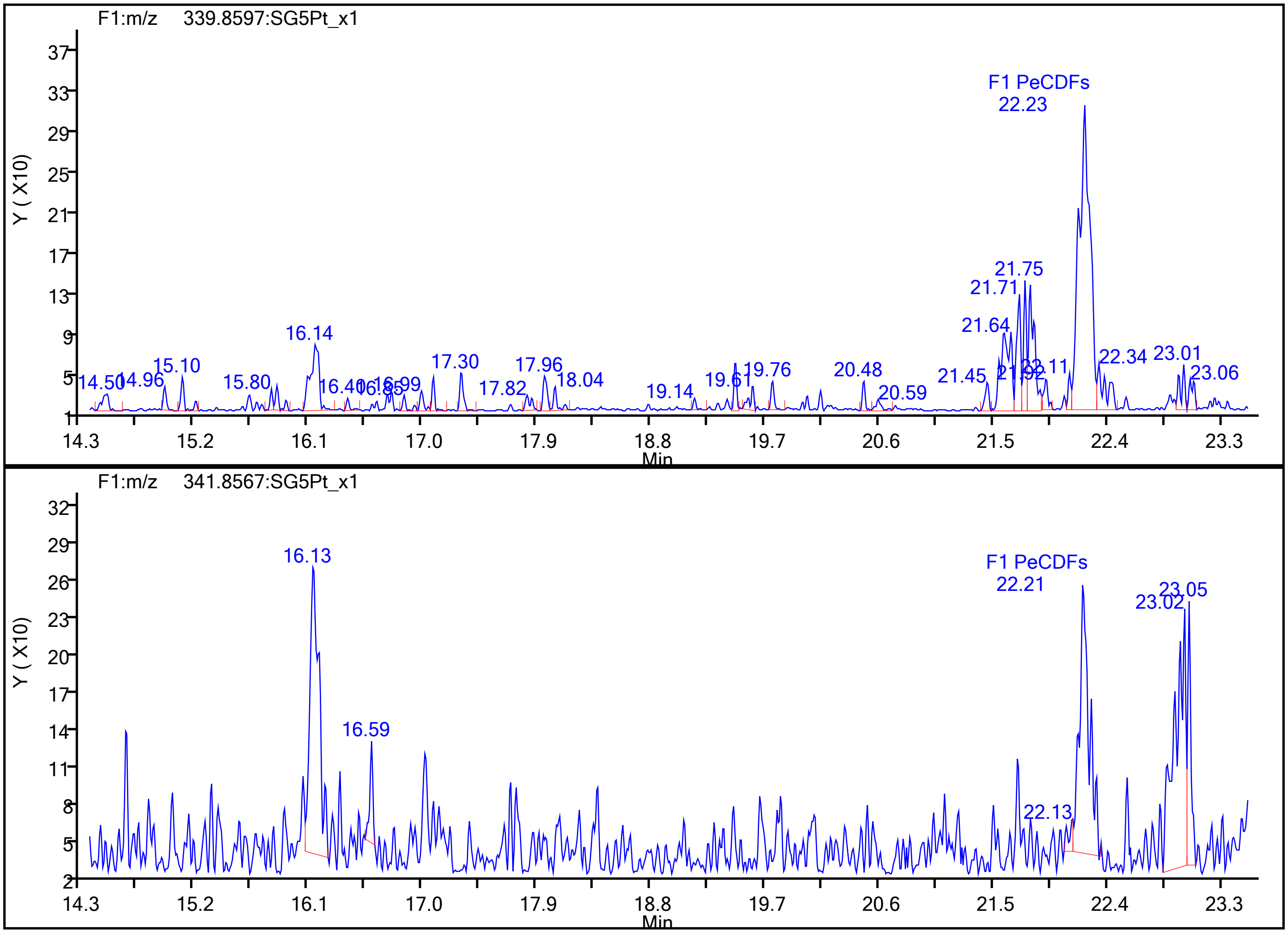

F1 PeCDFs Interference Mass

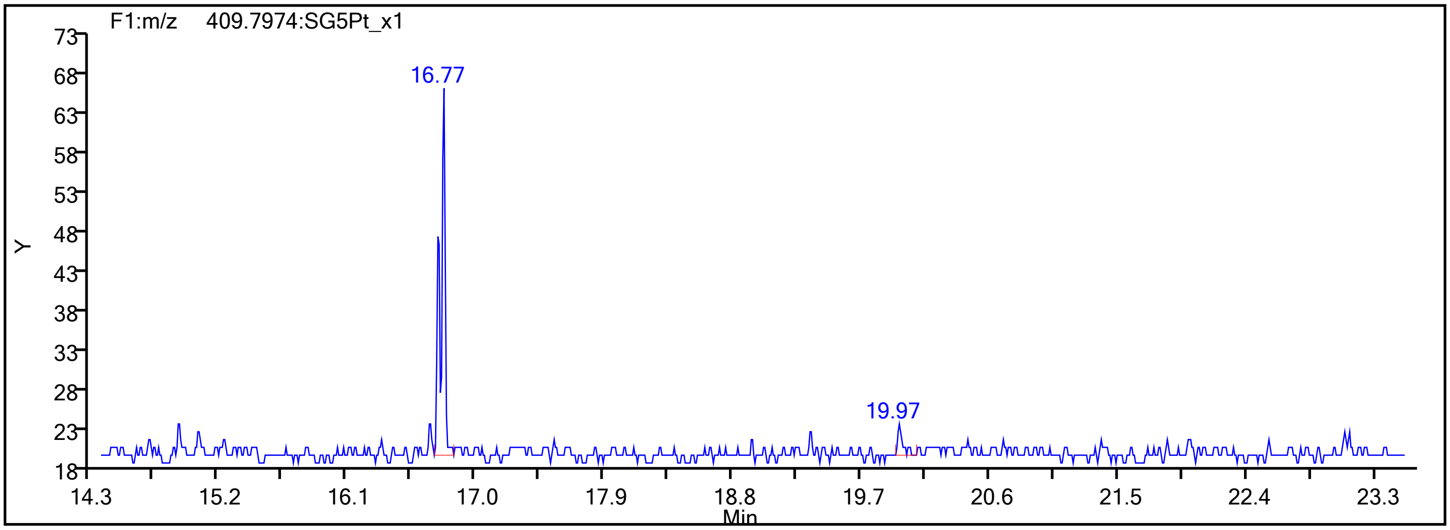

Report Date: 16-Mar-2021 08:59:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	12-Mar-2021 16:09:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	469779	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

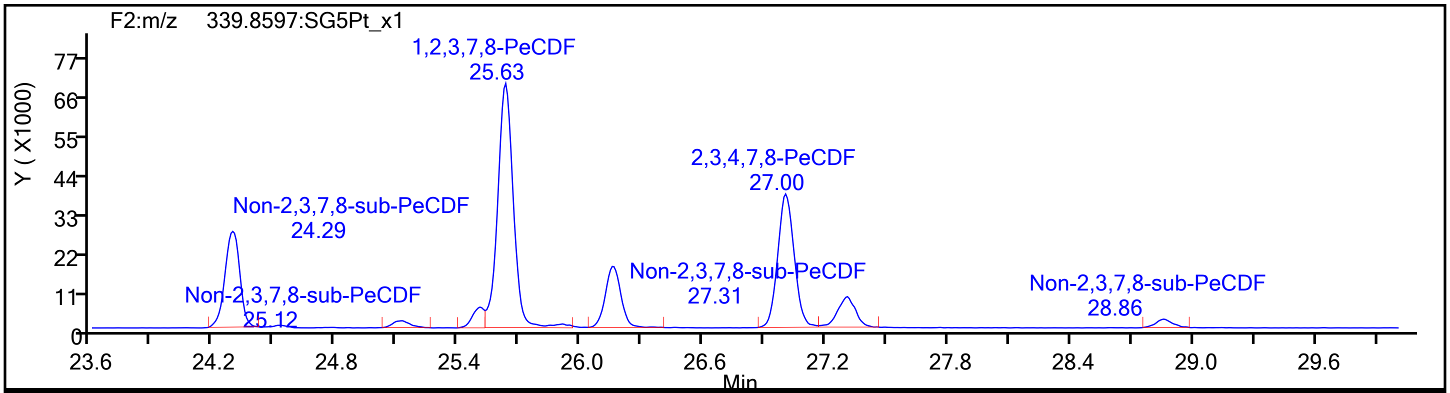

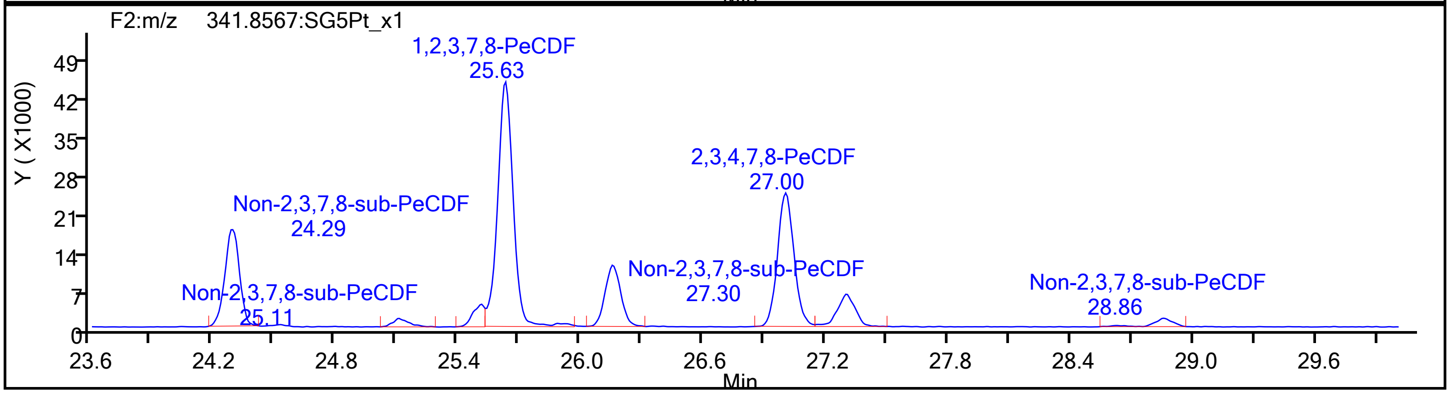

PeCDF Standards

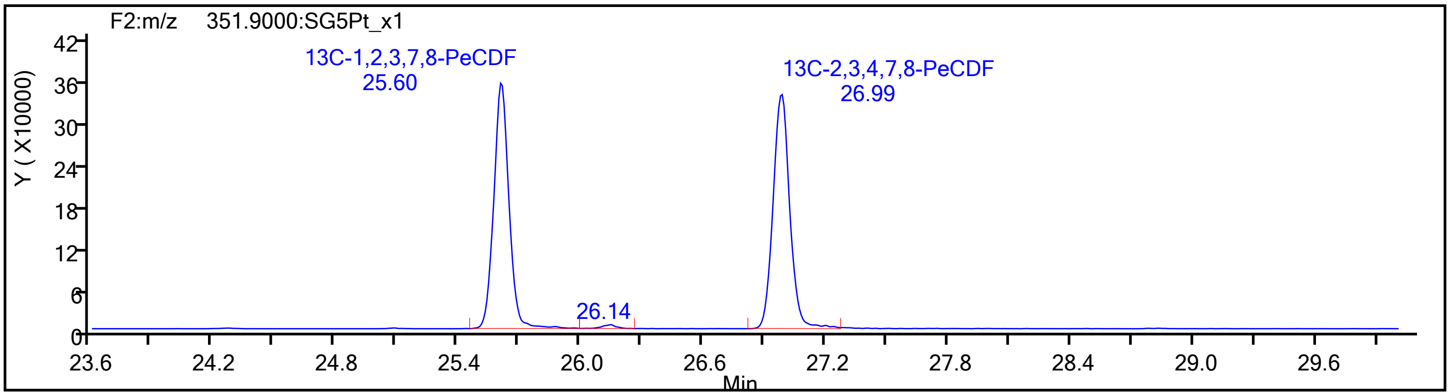

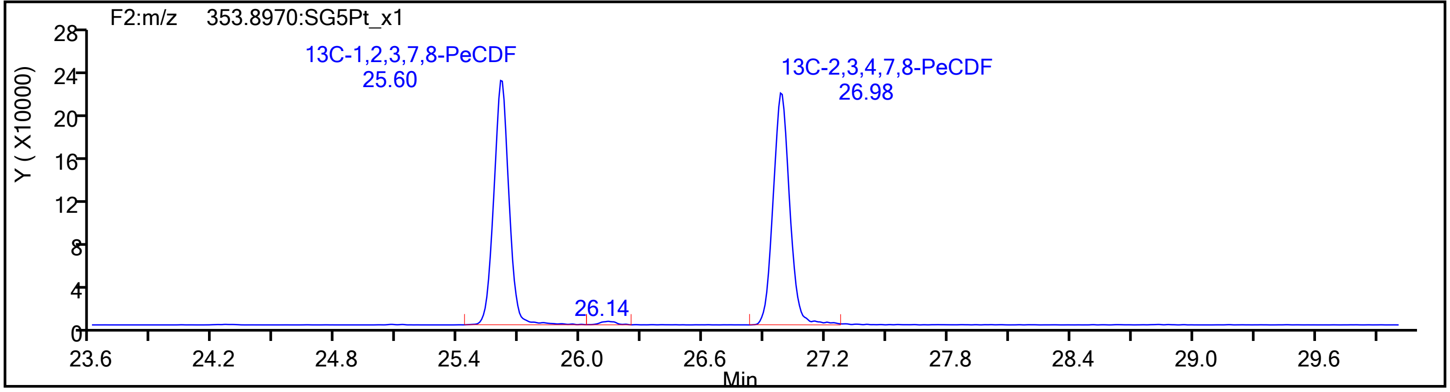

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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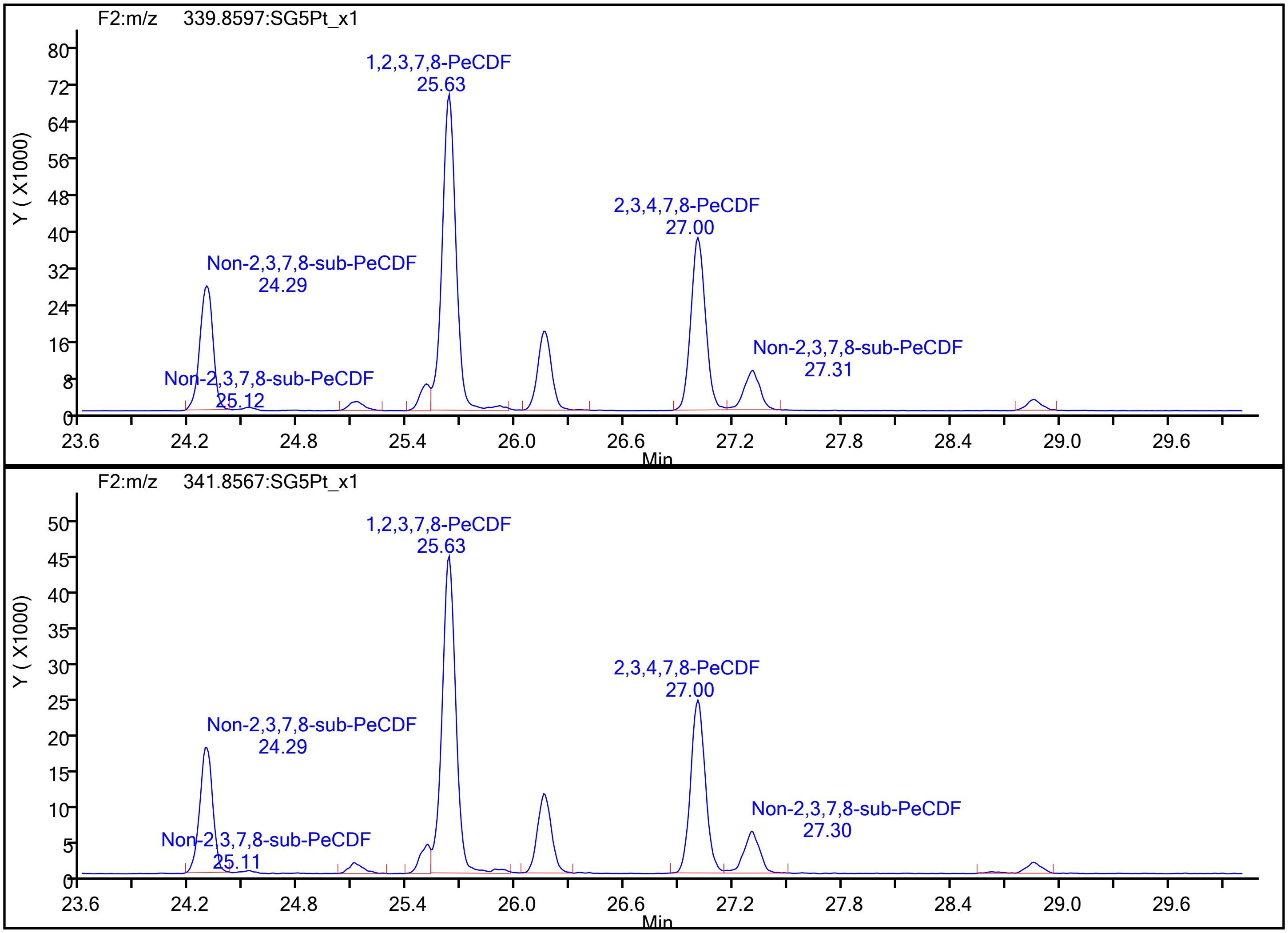

PeCDF Interference Mass

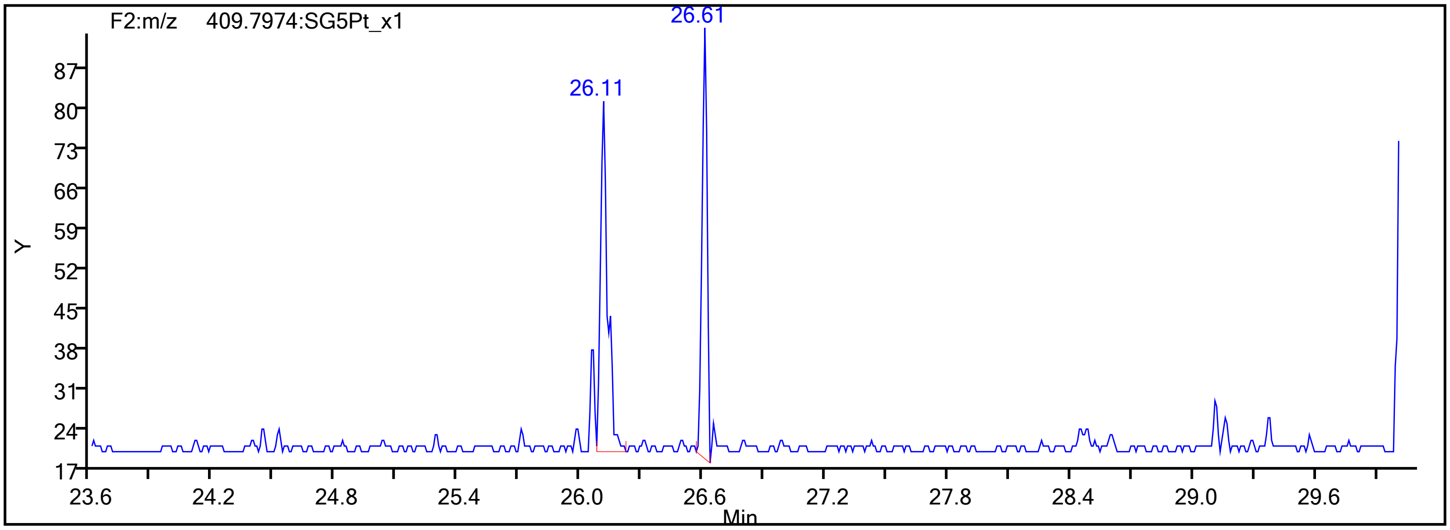

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Eurofins TestAmerica, Sacramento

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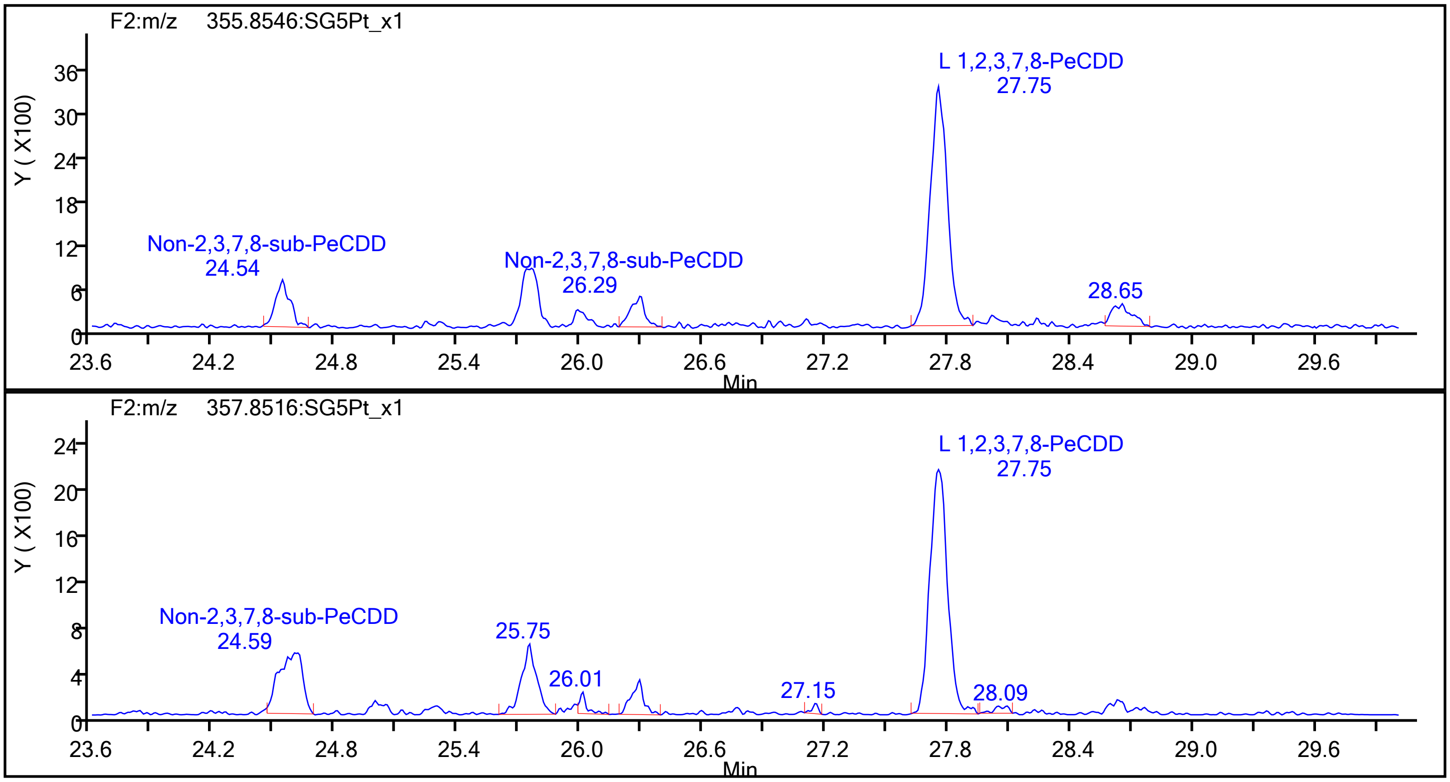

PeCDD Standards

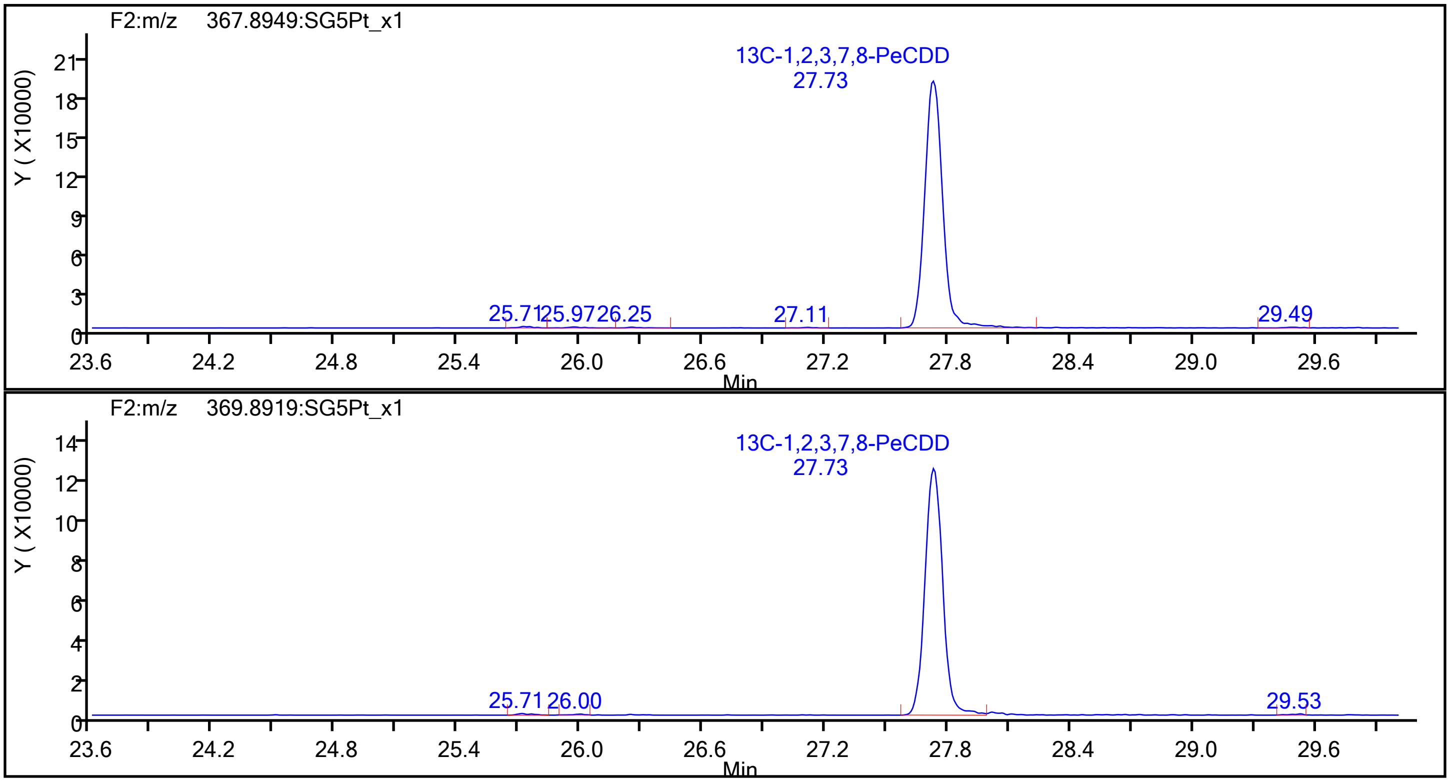

Report Date: 16-Mar-2021 08:59:51 Chrom Revision: 2.3 05-Feb-2021 00:13:28

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HxCDF

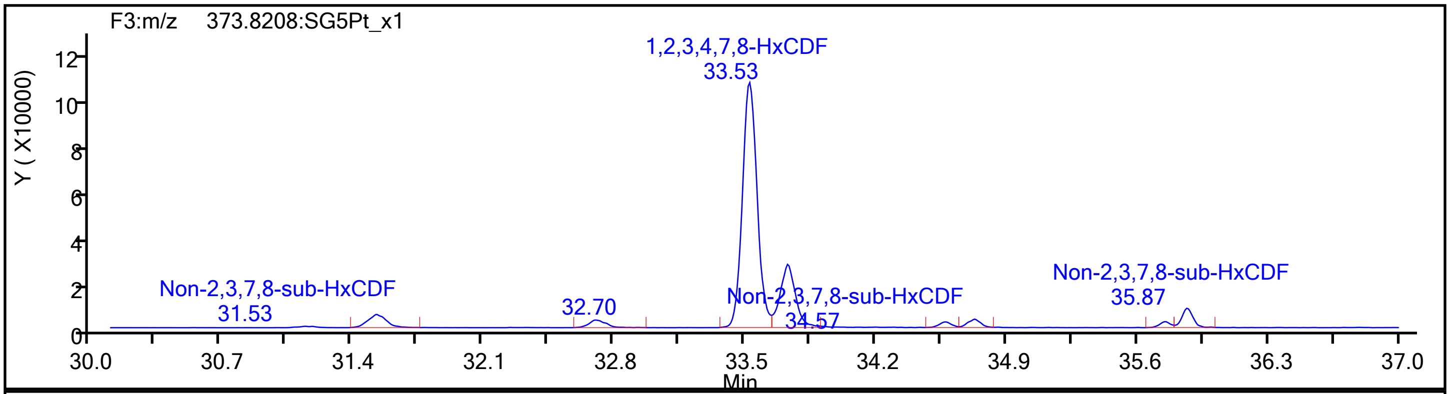

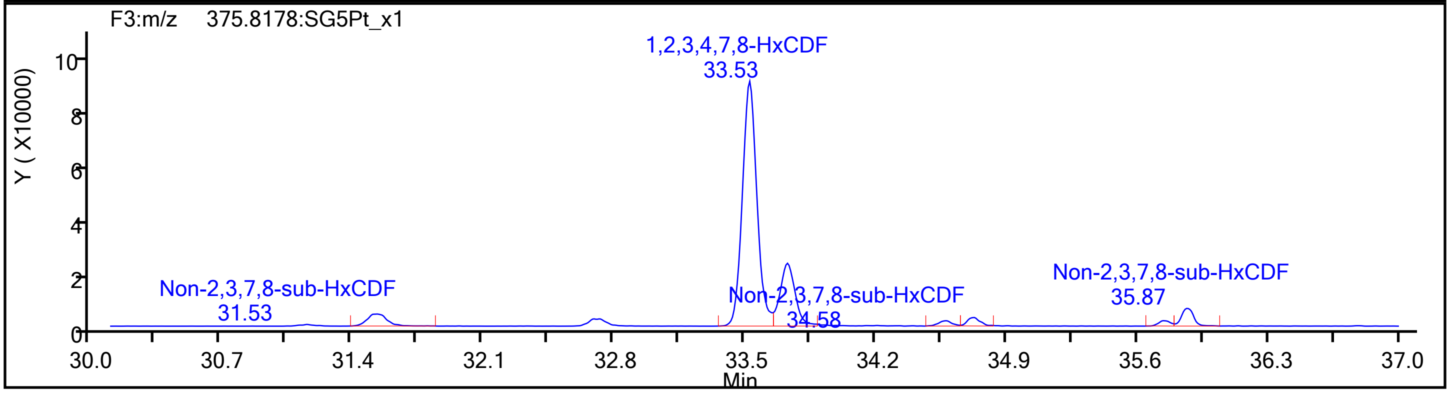

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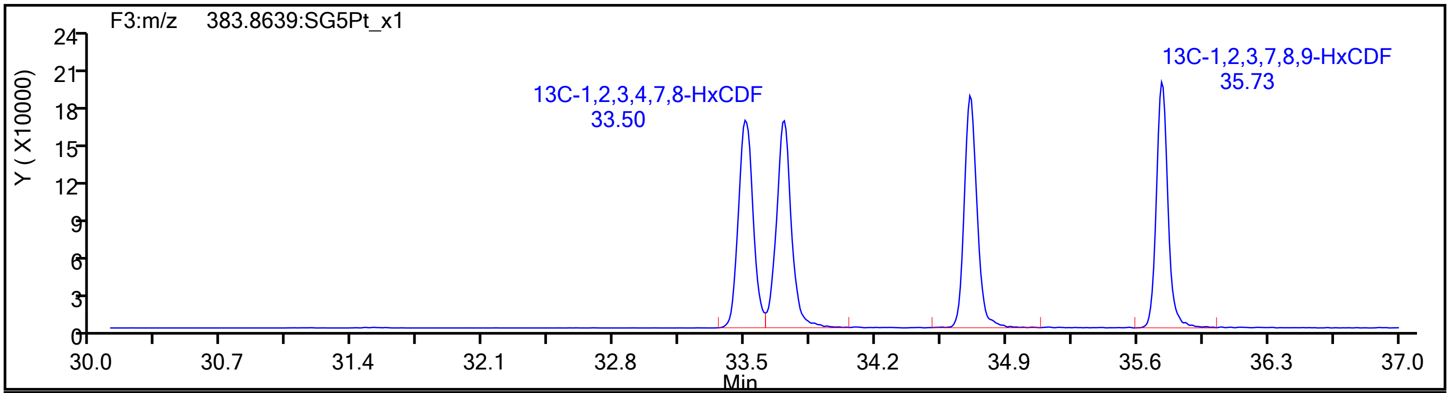

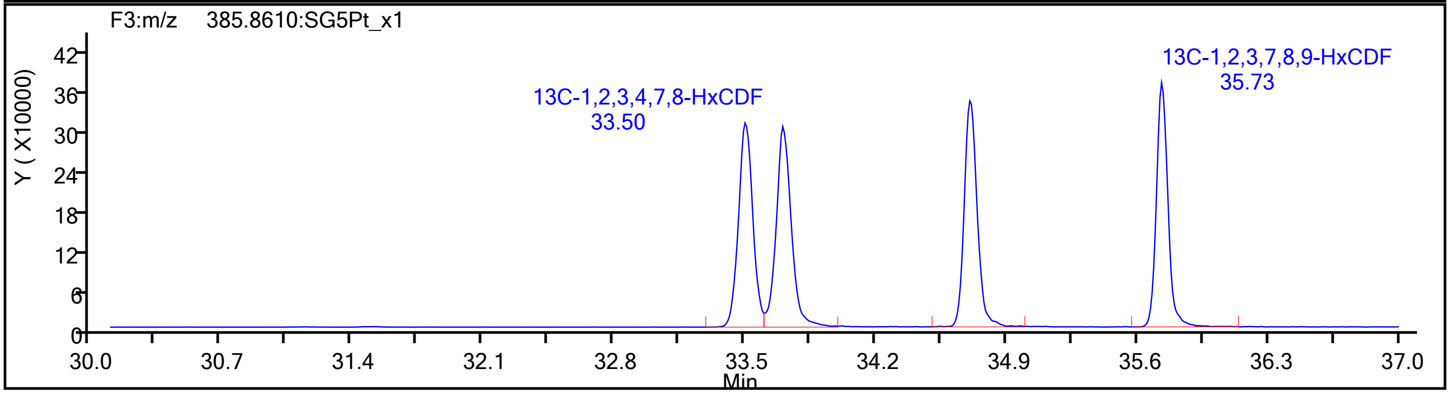

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Eurofins TestAmerica, Sacramento

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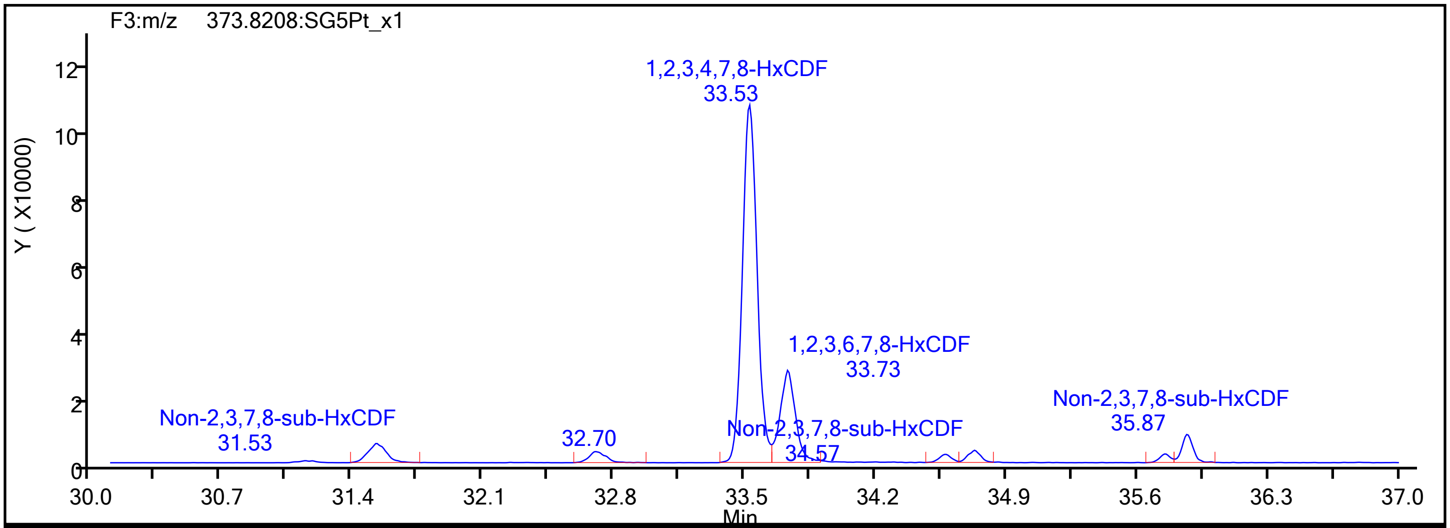

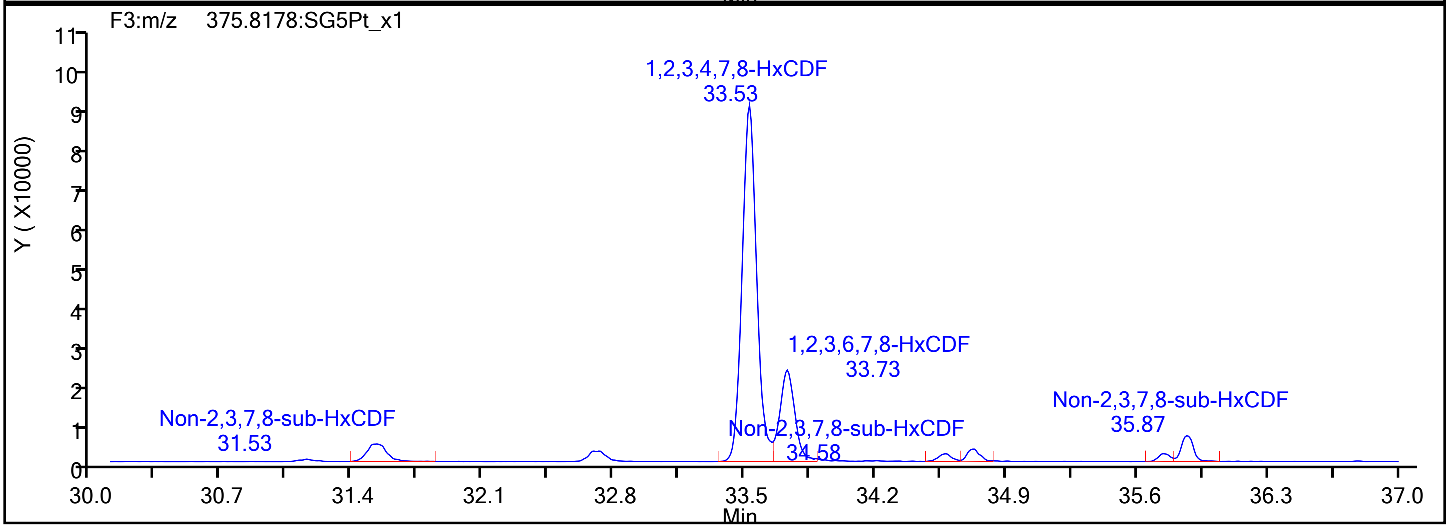

HxCDF Interference Mass

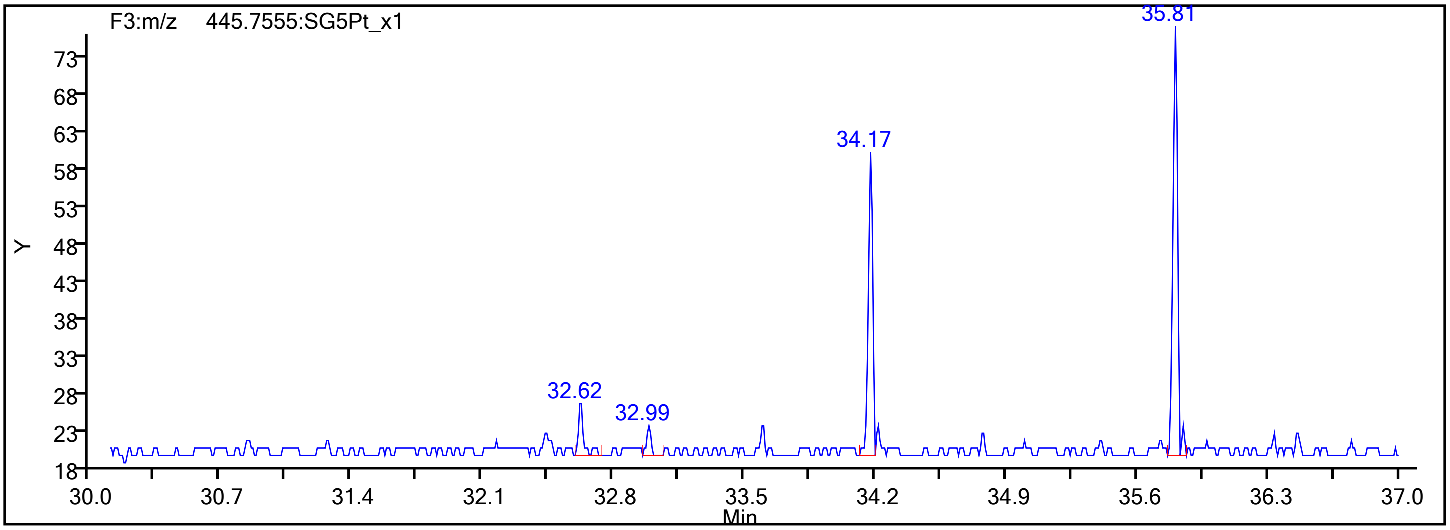

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Eurofins TestAmerica, Sacramento

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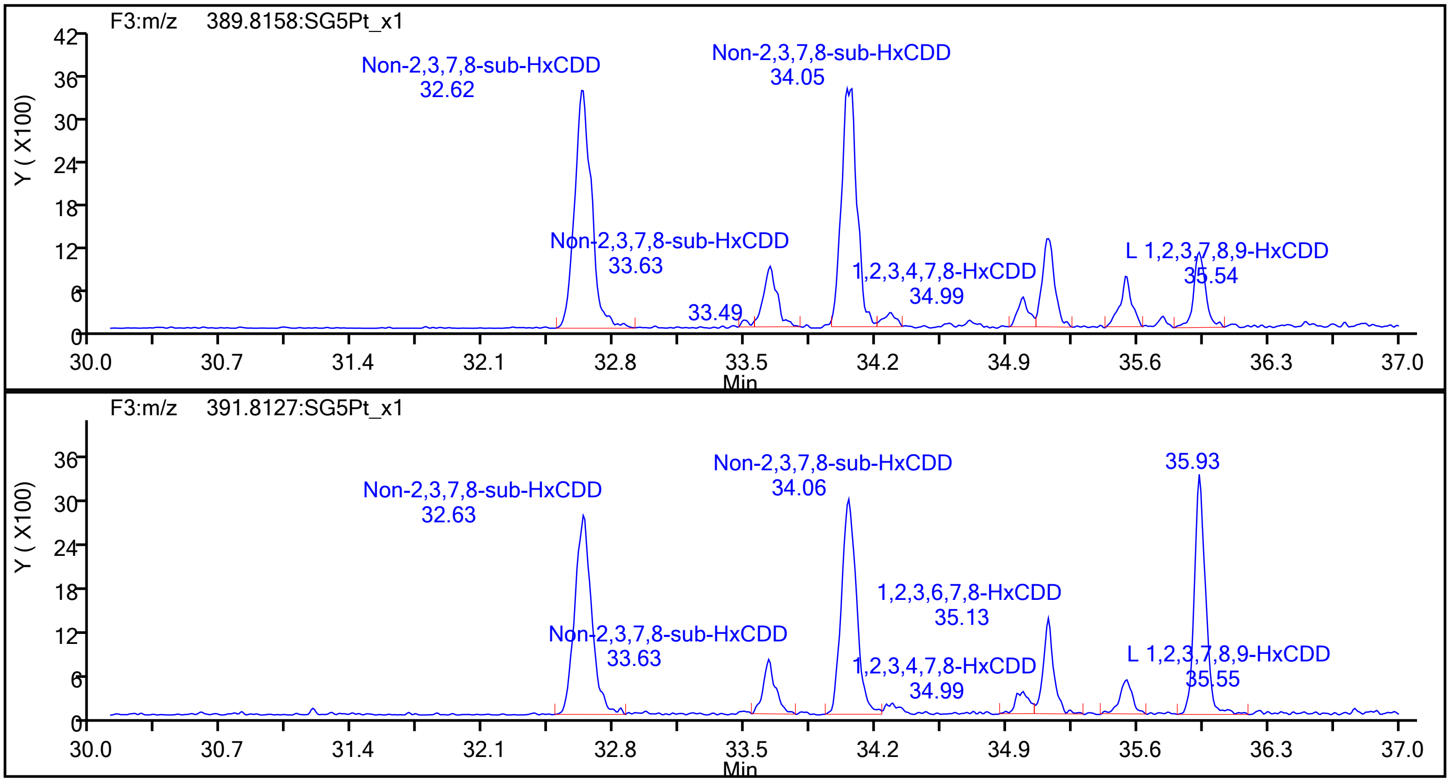

HxCDD Standards

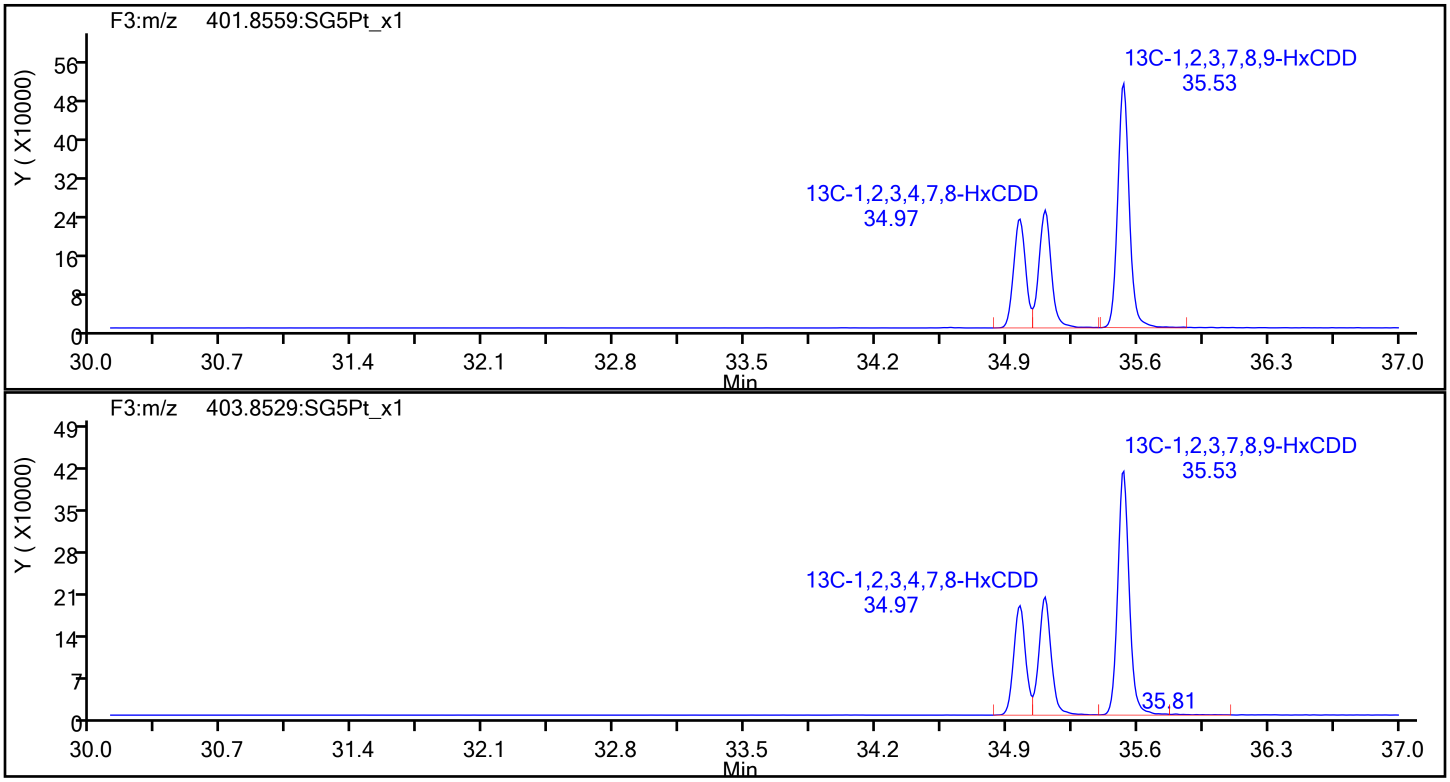

Report Date: 16-Mar-2021 08:59:51   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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HpCDF

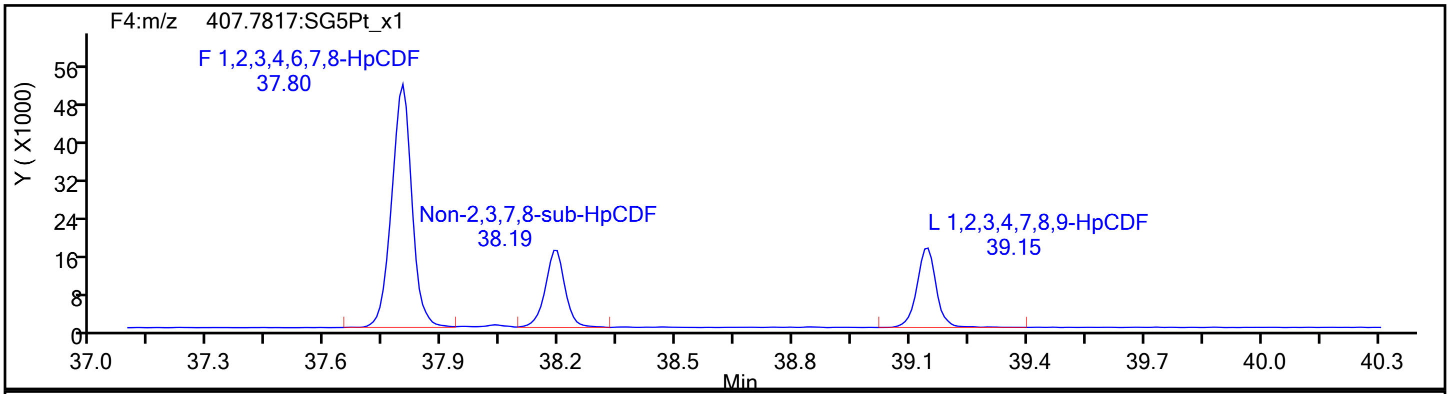

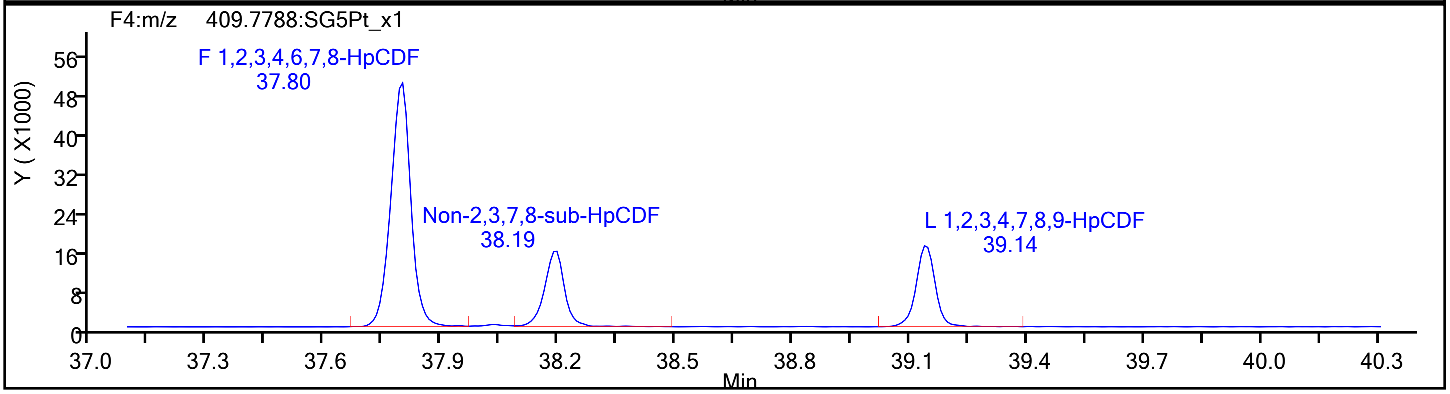

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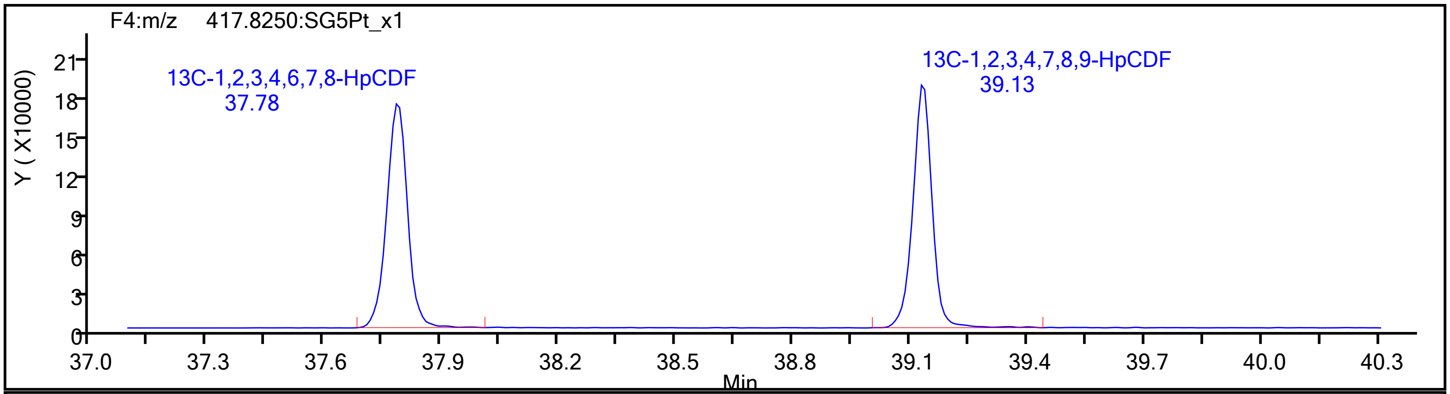

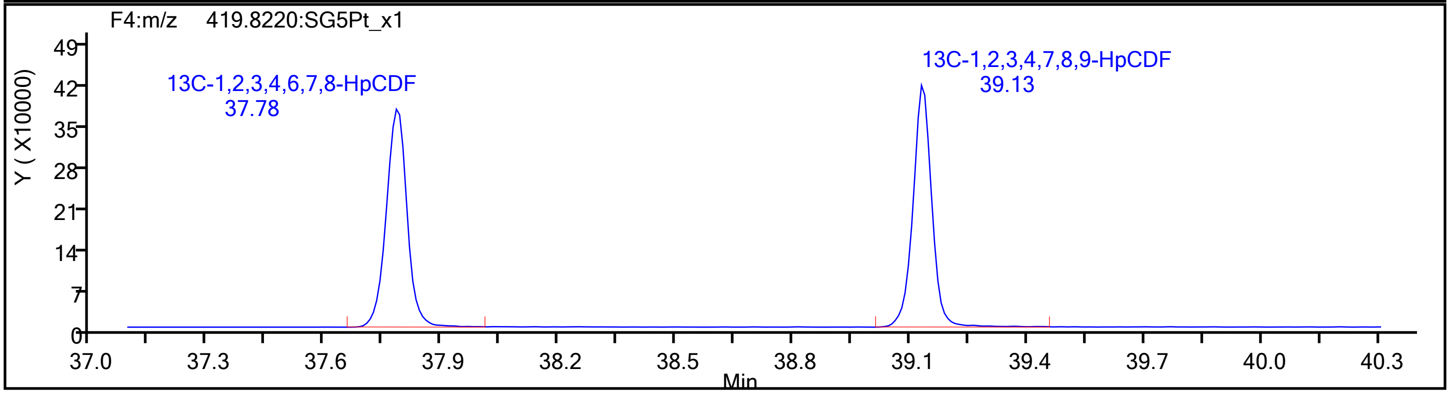

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Eurofins TestAmerica, Sacramento

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HpCDF

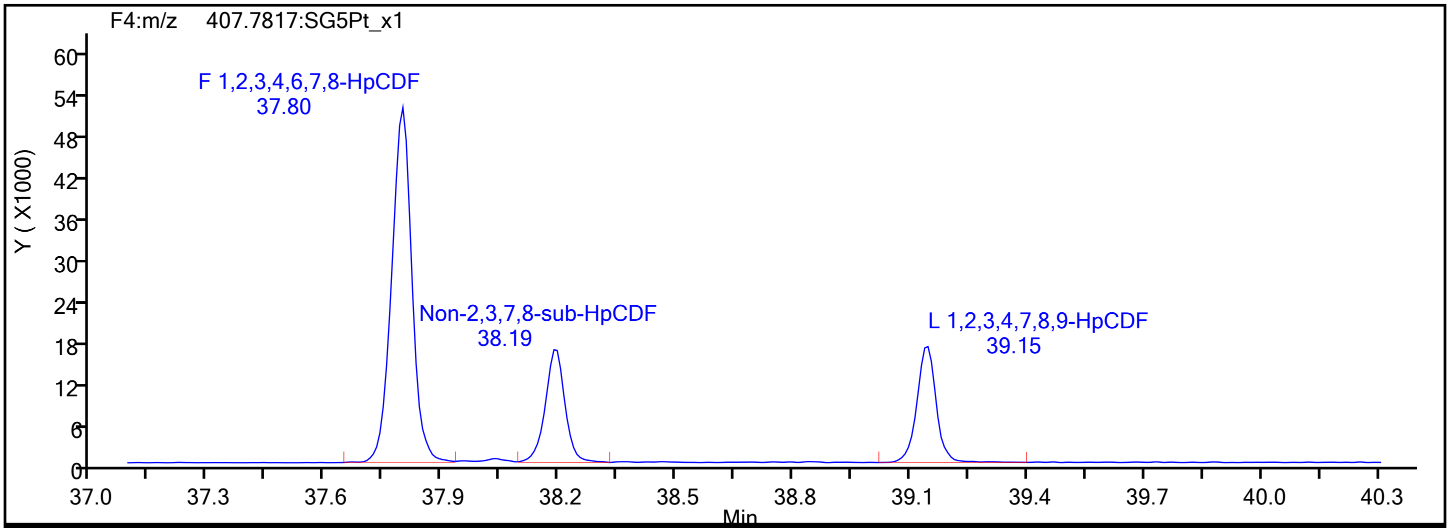

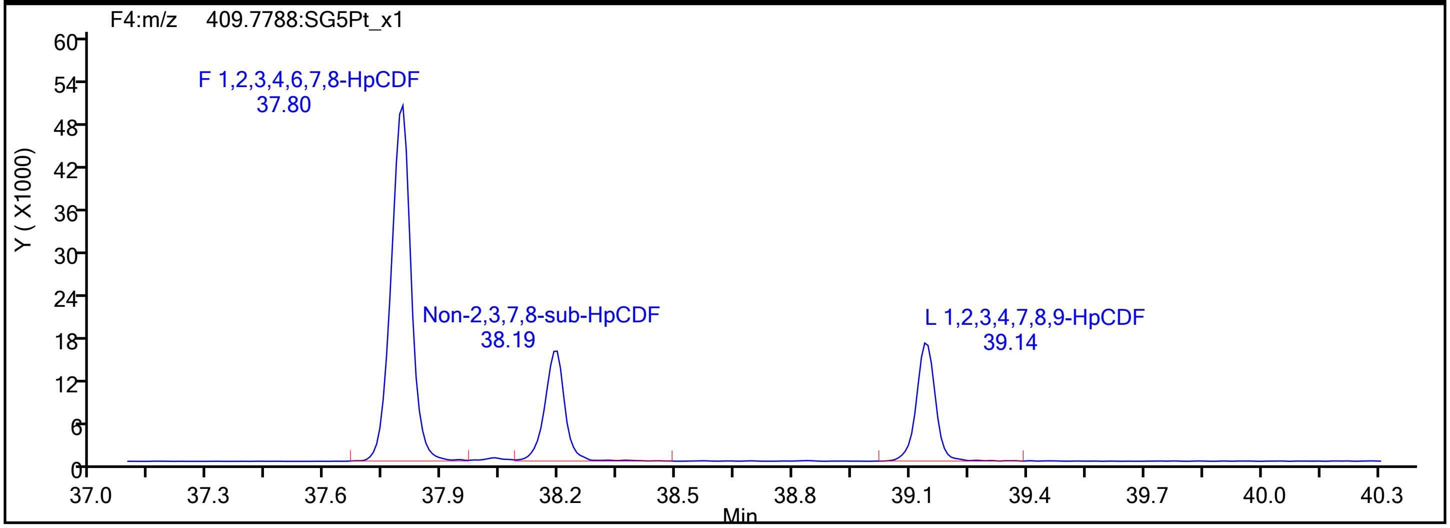

HpCDF Interference Mass

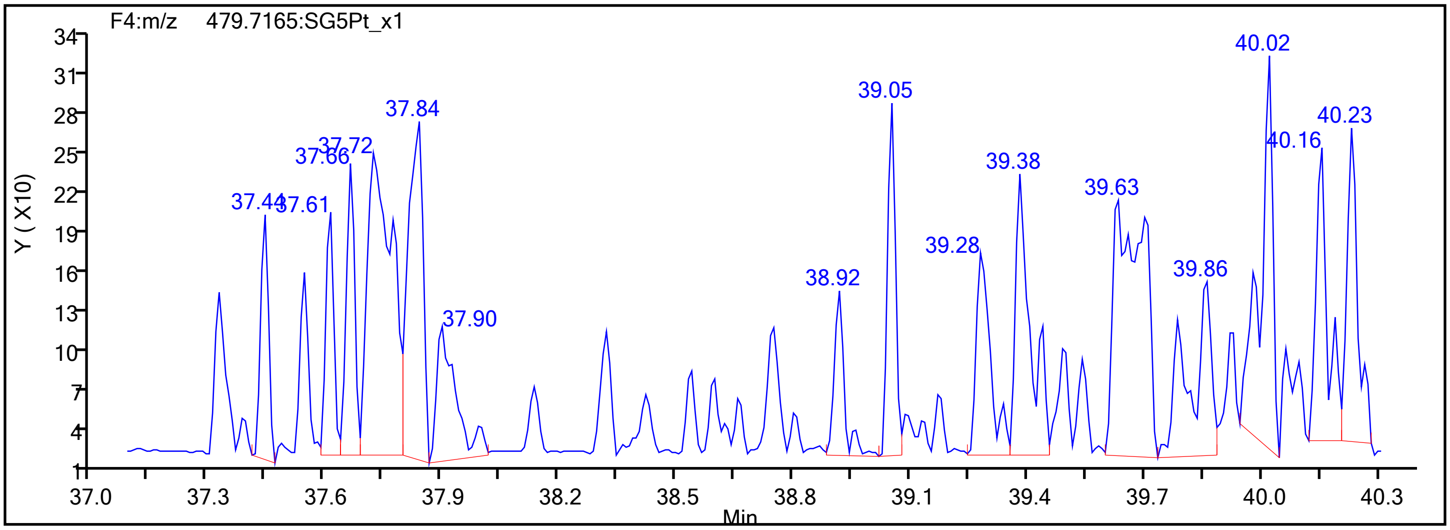

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HpCDD

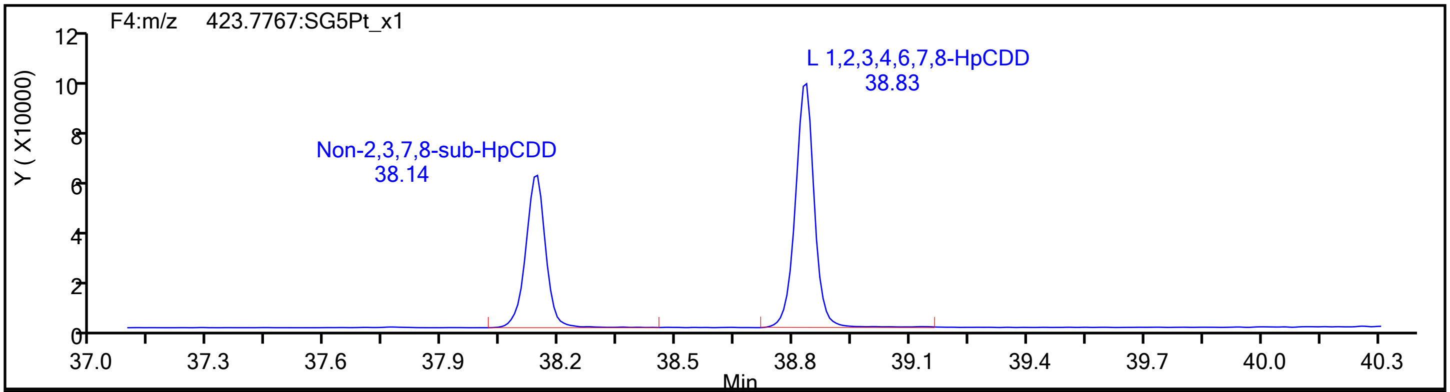

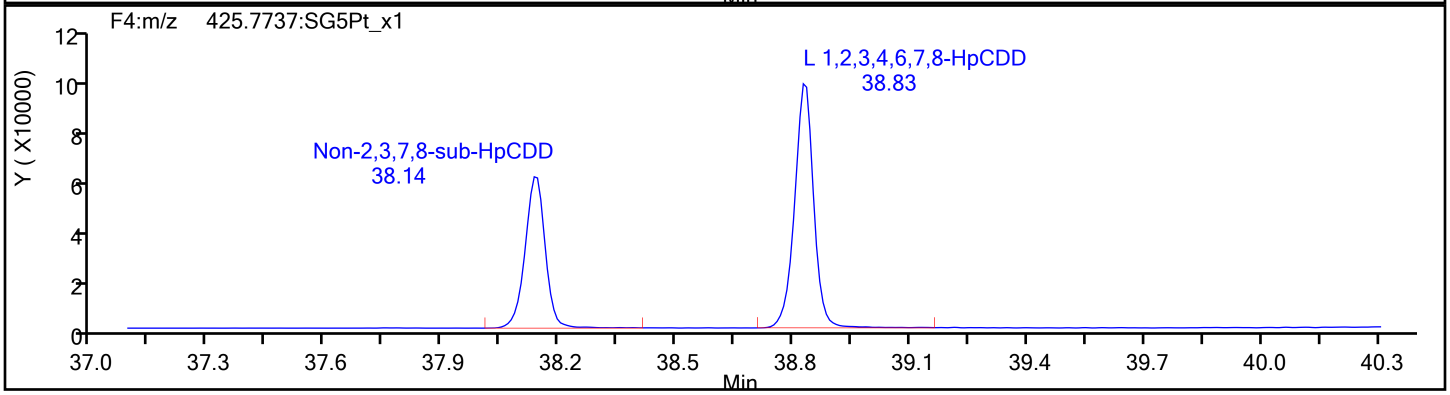

HpCDD Standards

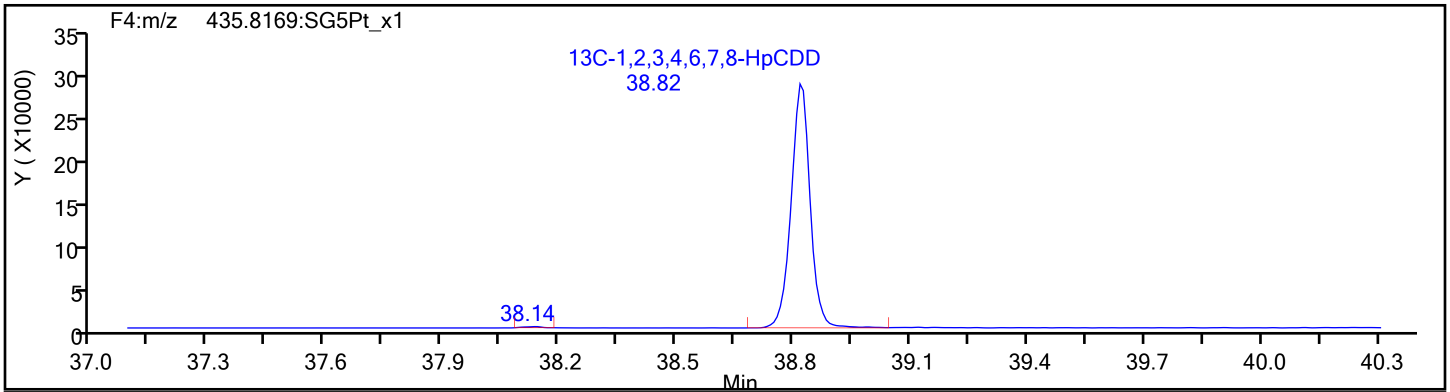

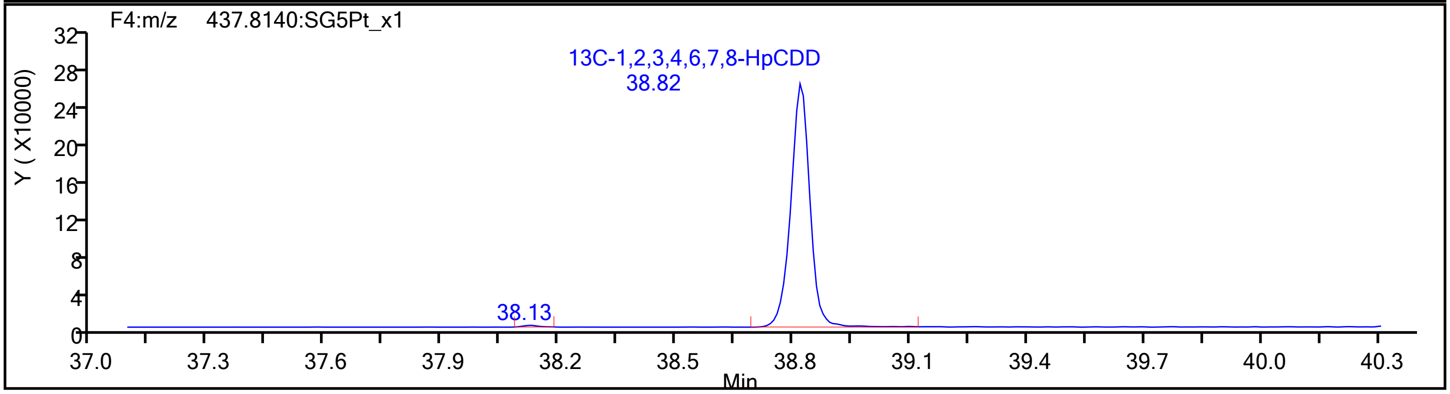

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OCDF

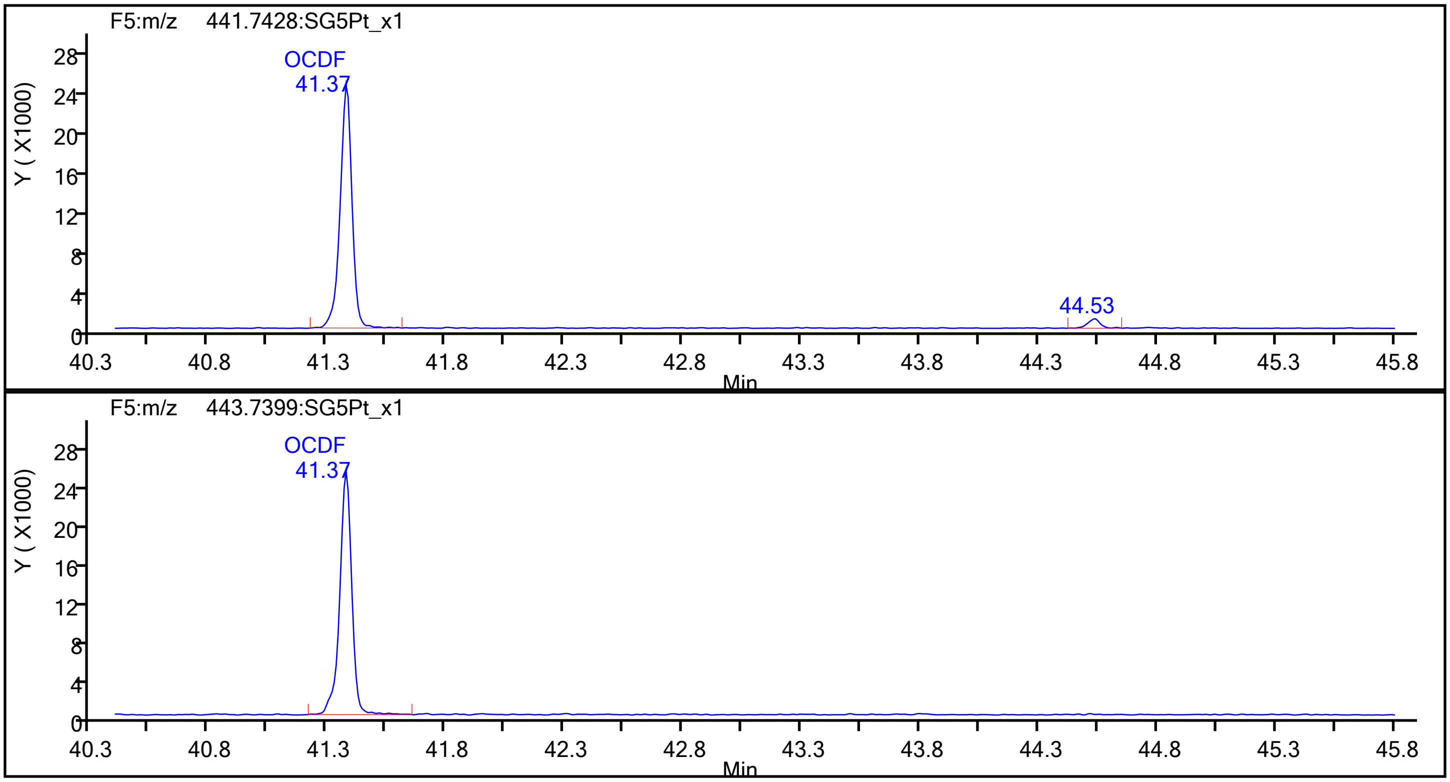

OCDF Standards

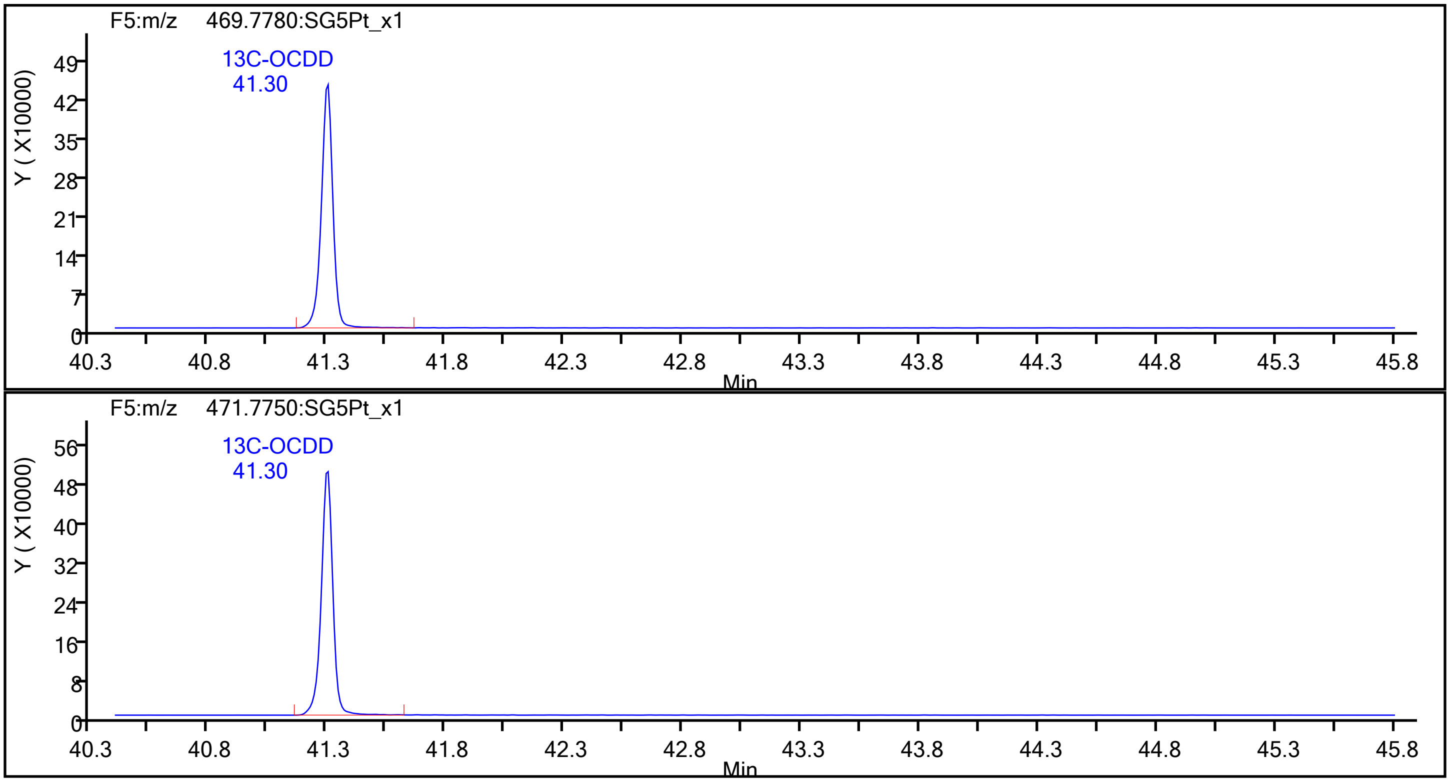

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OCDF

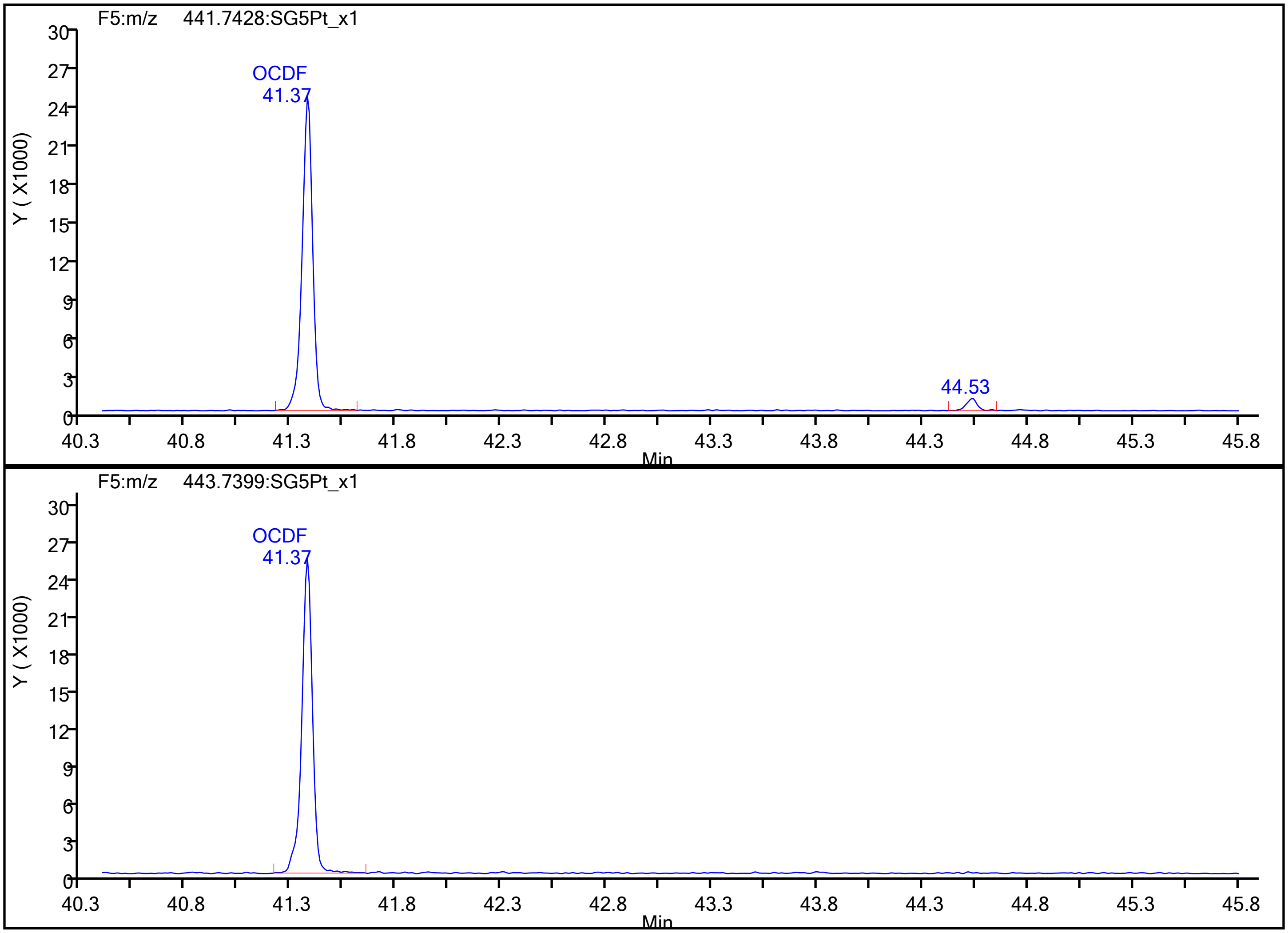

OCDF Interference Mass

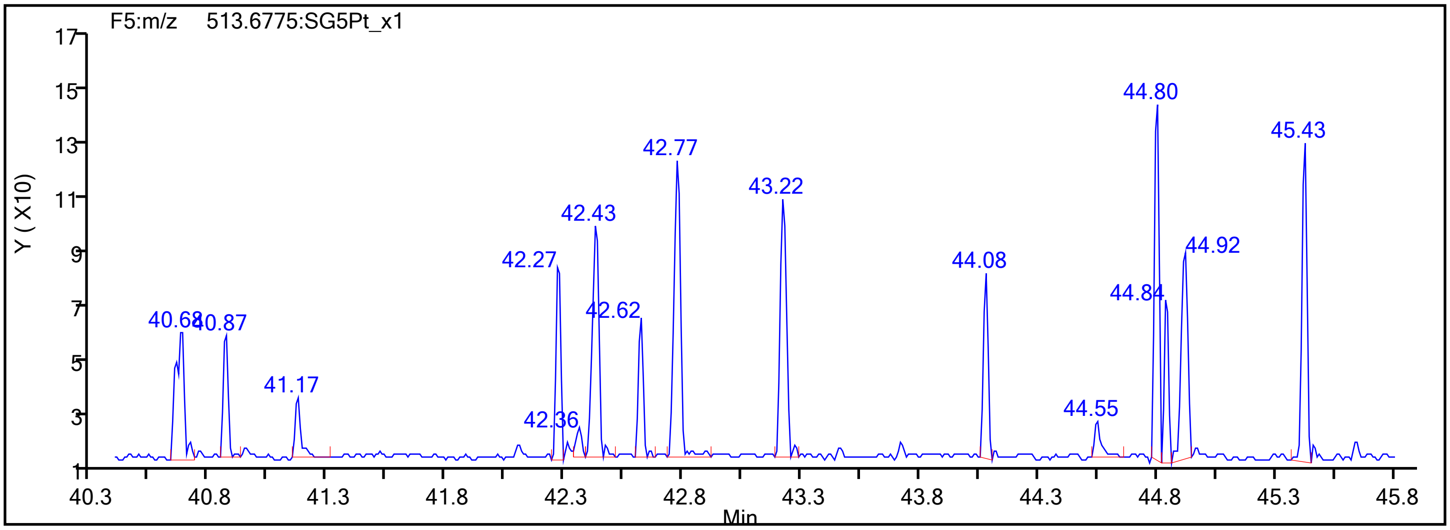

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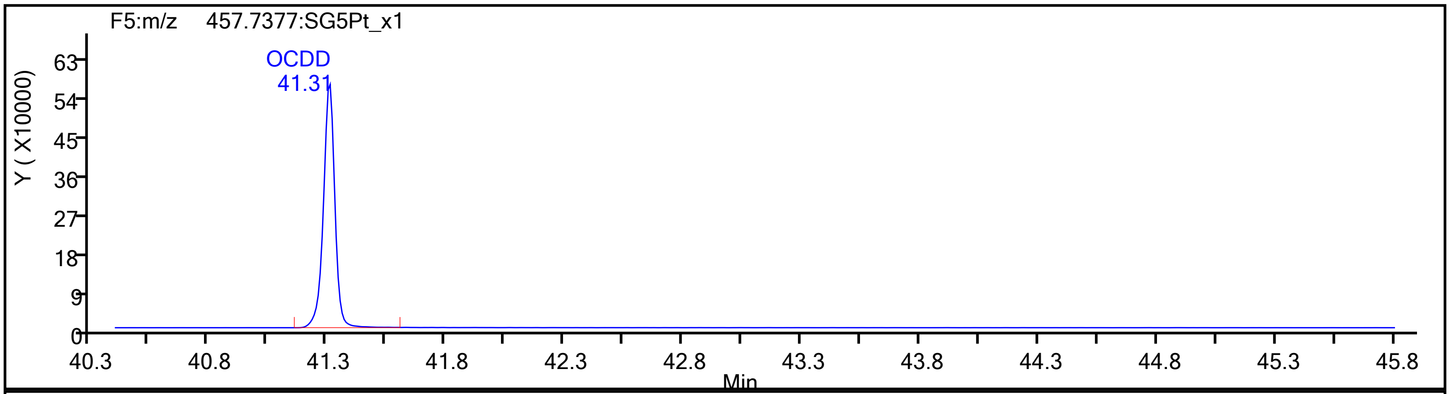

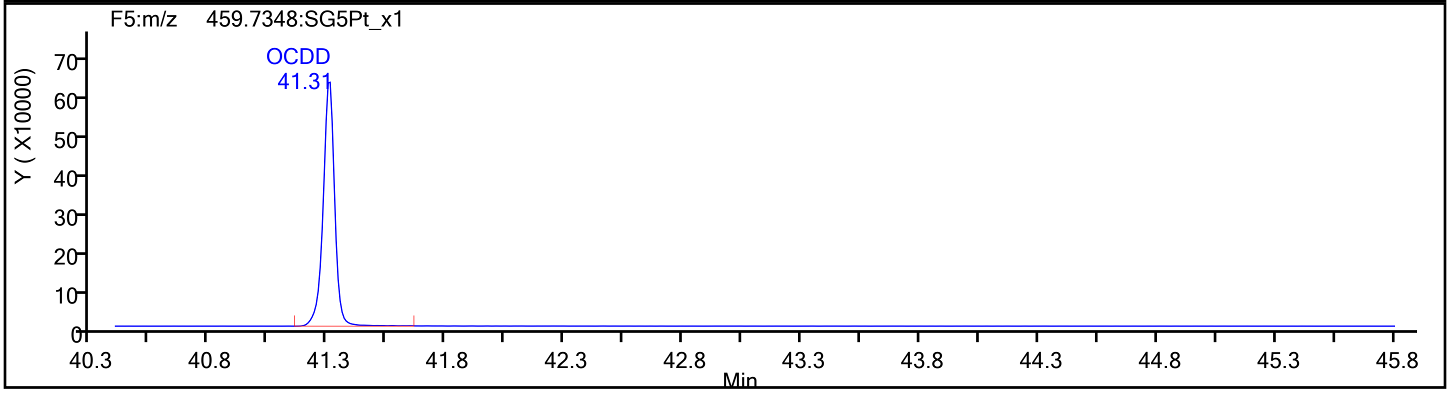

OCDD Standards

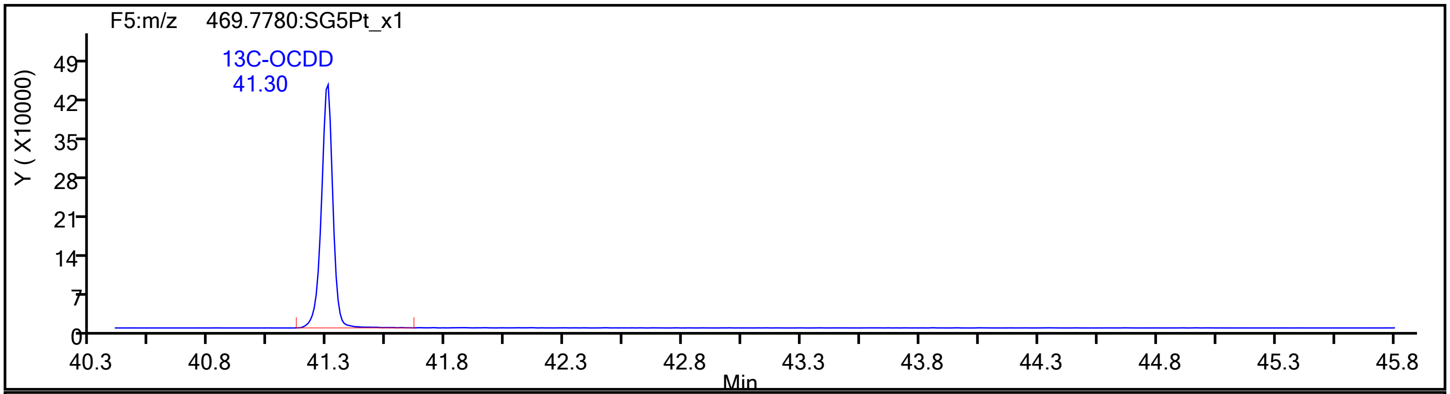

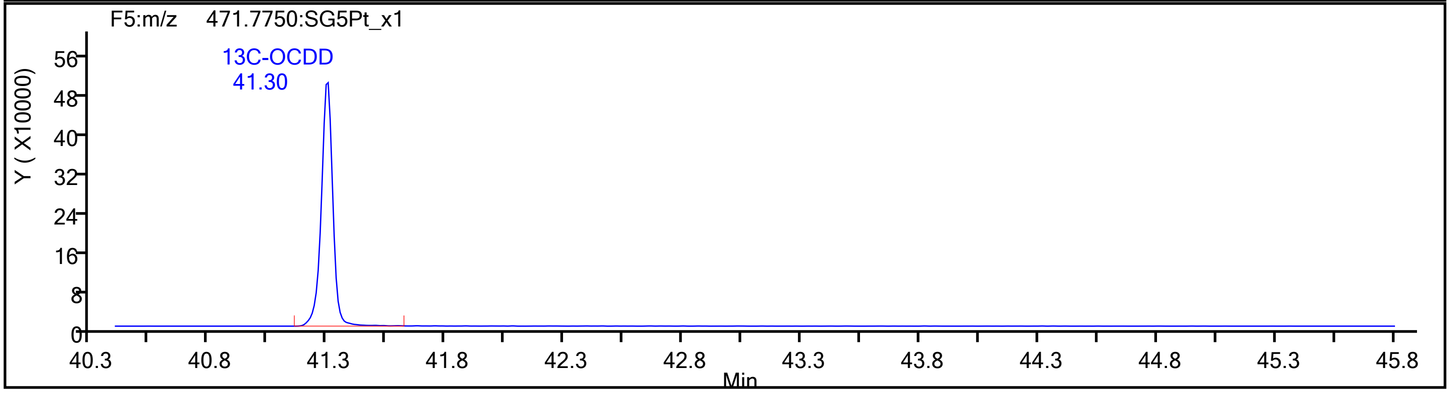

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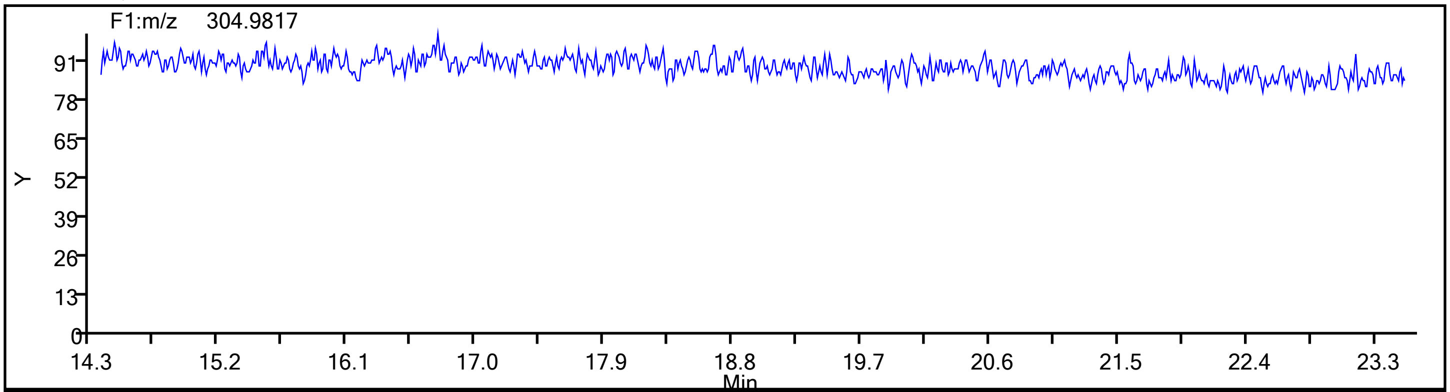

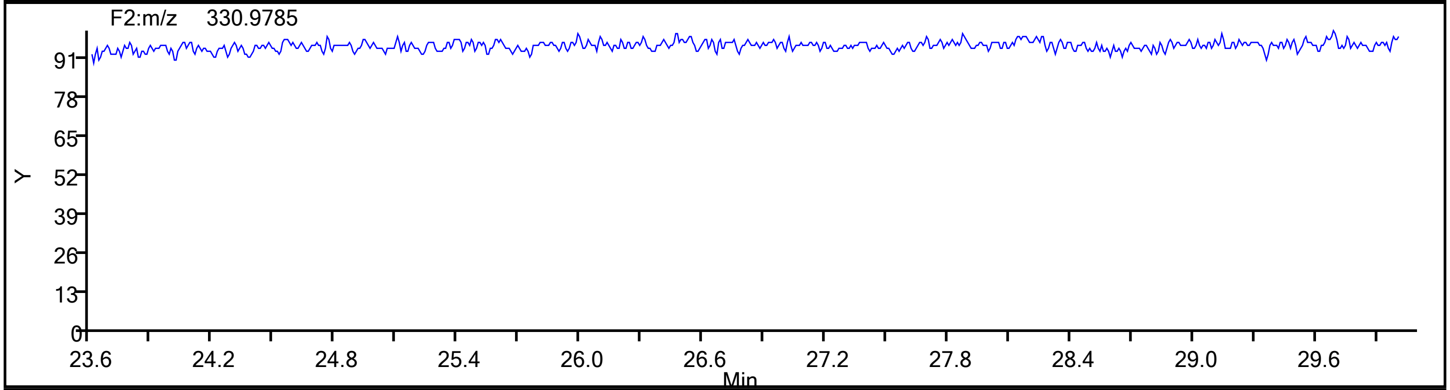

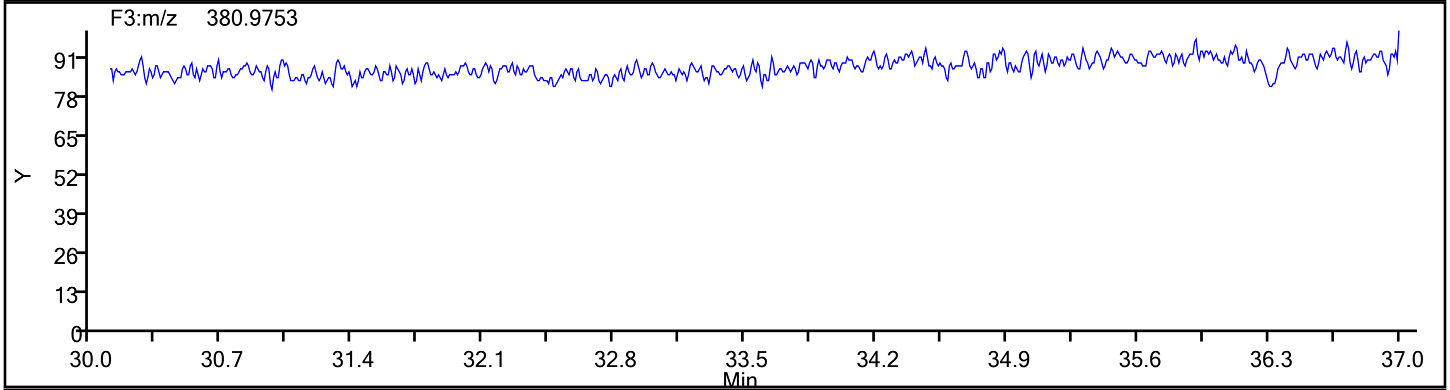

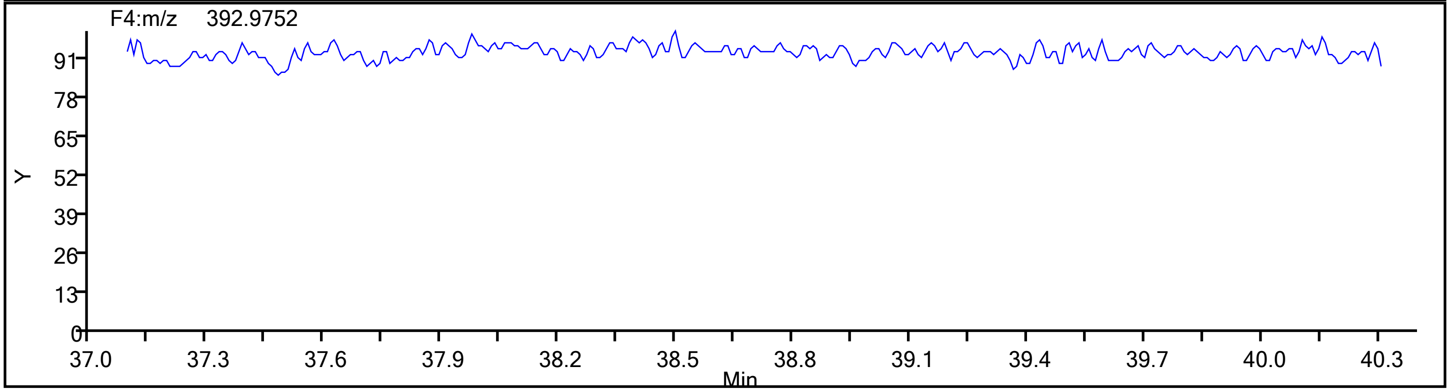

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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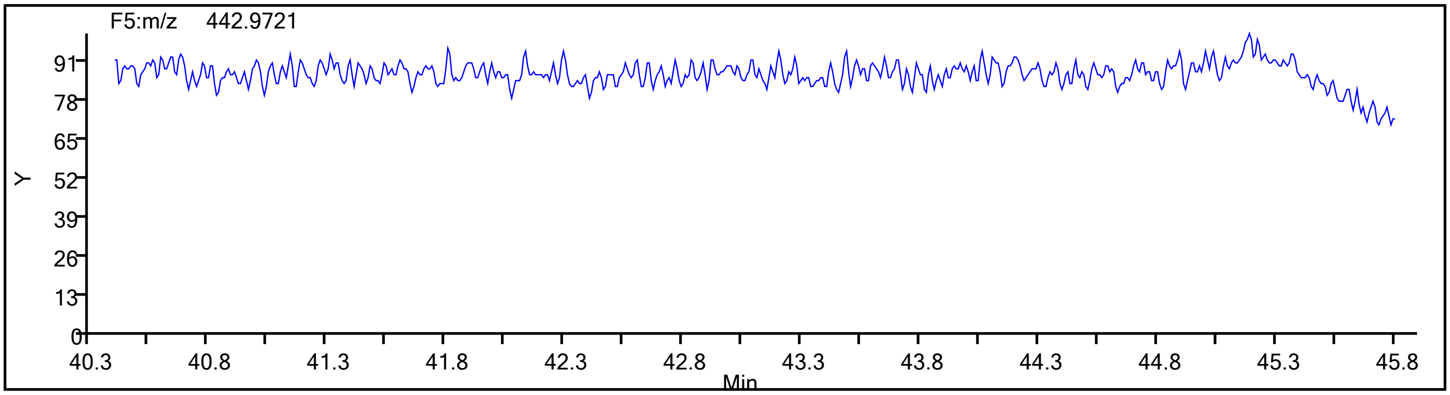

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-100mm RADL Lab Sample ID: 320-70797-7 RADL

Matrix: Water Lab File ID: 16MR2111D2_006.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1037.8(mL) Date Analyzed: 03/17/2021 00:05

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 470865 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	9500	B	96	22

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_006.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Sample Type: Client
Inject. Date: 17-Mar-2021 00:05:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-7-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:10:32

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.011	15925221	0.83	1.8E+06	10.0	10.0				
D 13C-2,3,7,8-TCDF	16.149	14355077	0.74	1.3057	6.903	6.903	0.1362	0.1362	69.03	
2,3,7,8-TCDF	16.163	65176486	0.78	0.9242	49.1	49.1	0.1120	0.1120		
D 13C-2,3,7,8-TCDD	14.791	9028114	0.67	0.8971	6.319	6.319	0.6579	0.6579	63.19	
2,3,7,8-TCDD	14.805	15782910	0.81	0.9989	17.5	17.5	0.0918	0.0918		
$ 37Cl4-2,3,7,8-TCDD	14.805	5468654		0.8499	4.040	4.040	0.0222	0.0222	101	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_006.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Sample Type: Client
Inject. Date: 17-Mar-2021 00:05:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-7-A (10X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:10:32

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.011	15.023	-1		7208978	1828341	46746	116865	39		
333.9339	15.011	15.023	-1		8716243	2245426	49434	123585	45	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.149	16.148	0	1.076	6109007	1342539	16191	40477	83		
317.9389	16.149	16.148	0	1.076	8246070	1885377	12788	31970	147	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.163	16.176	-1	1.001	28500915	6447549	6976	17440	924		
305.8987	16.163	16.176	-1	1.001	36675571	8198166	6389	15972	1283	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.791	14.790	0	0.985	3614333	889256	46746	116865	19		
333.9339	14.791	14.790	0	0.985	5413781	1367516	49434	123585	28	0.67(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.805	14.804	0	1.001	7070136	1696397	4961	12402	342		
321.8936	14.805	14.804	0	1.001	8712774	2126138	3319	8297	641	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.805	14.804	0	0.986	5468654	1347914	3074	7685	438		

QC Flag Legend

Processing Flags

Report Date: 17-Mar-2021 08:12:48 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_006.d		
Injection Date:	17-Mar-2021 00:05:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	470865	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

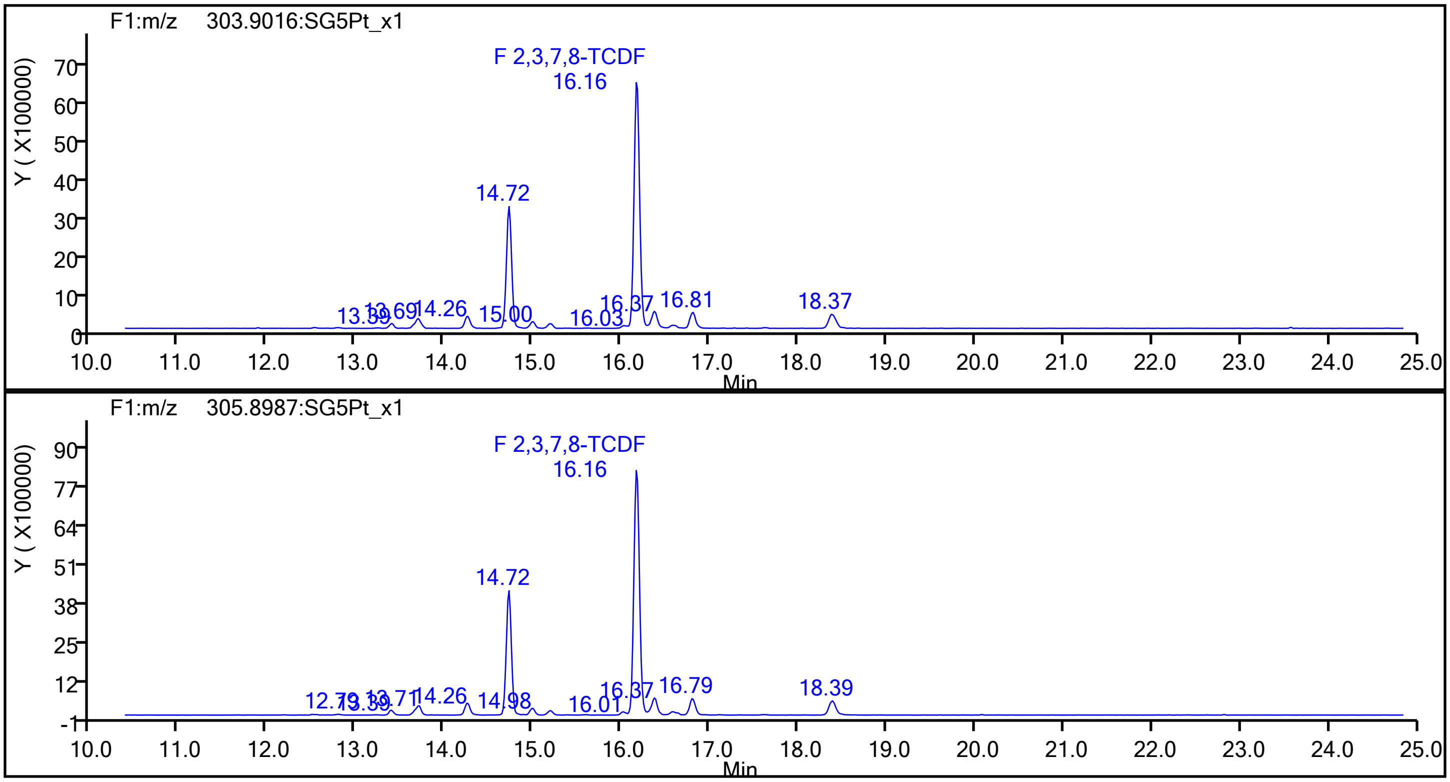

TCDF Standards

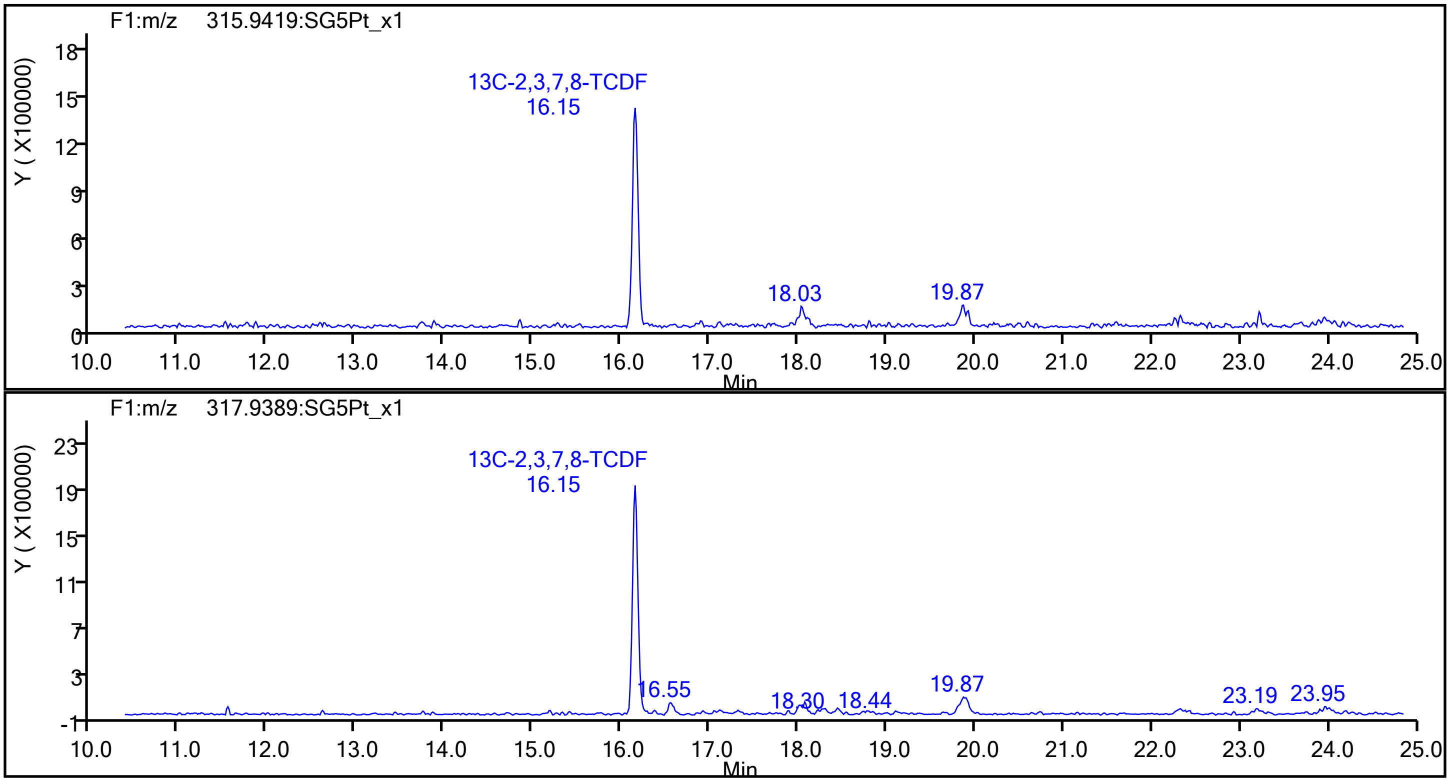

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_006.d		
Injection Date:	17-Mar-2021 00:05:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	470865	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

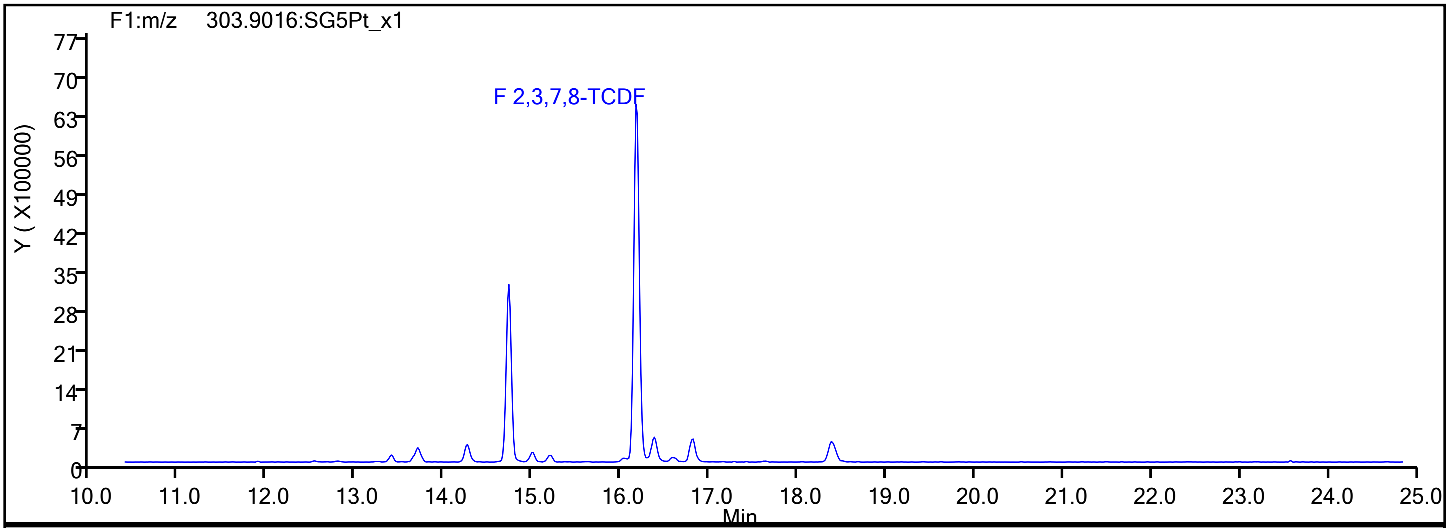

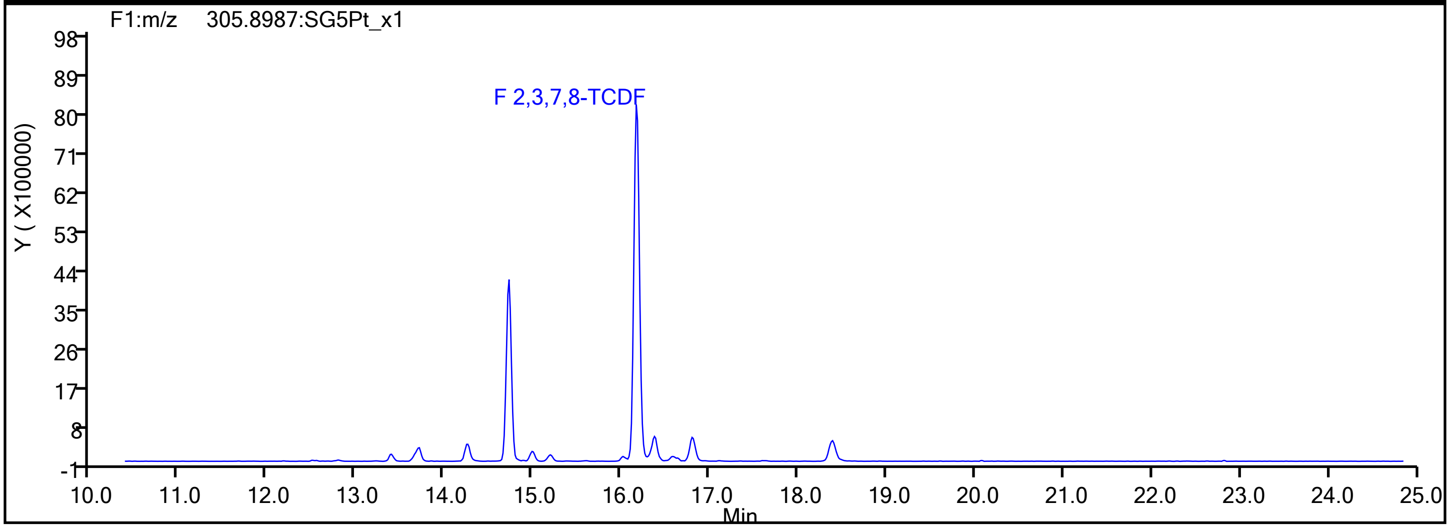

TCDF Interference Mass

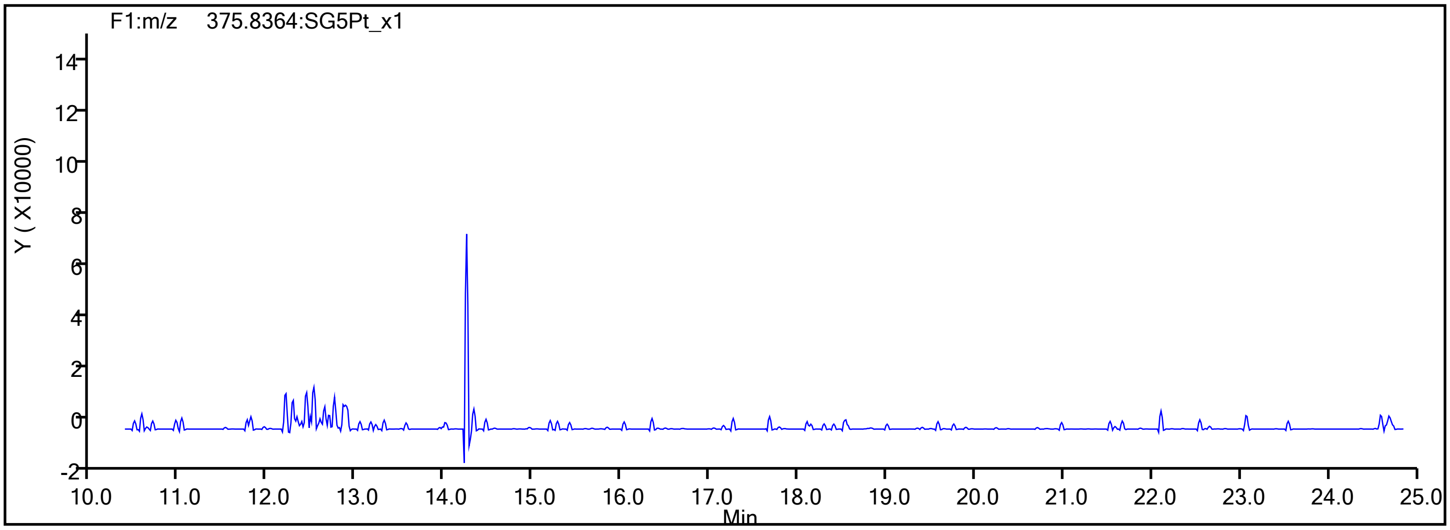

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_006.d		
Injection Date:	17-Mar-2021 00:05:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	470865	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

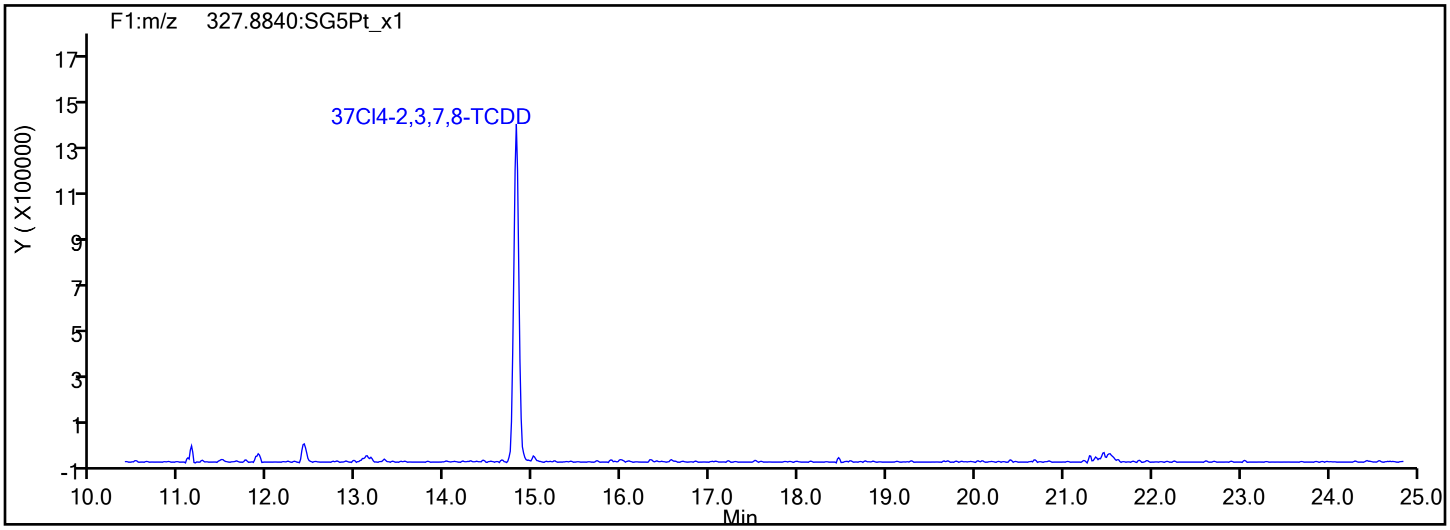

37Cl4-TCDD Standards

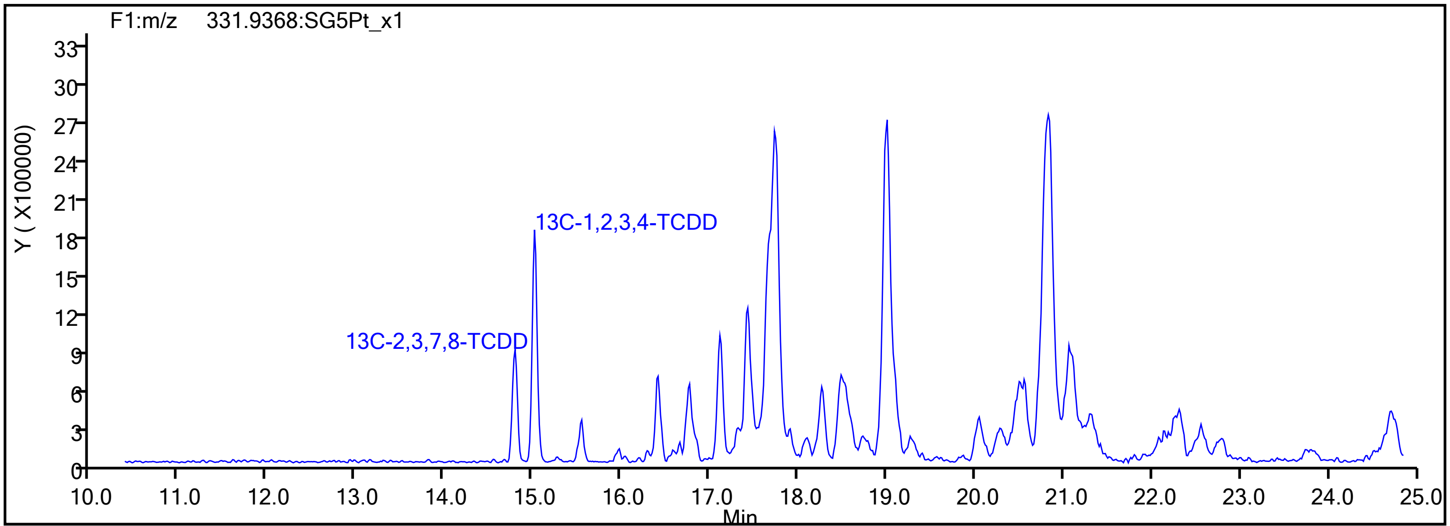

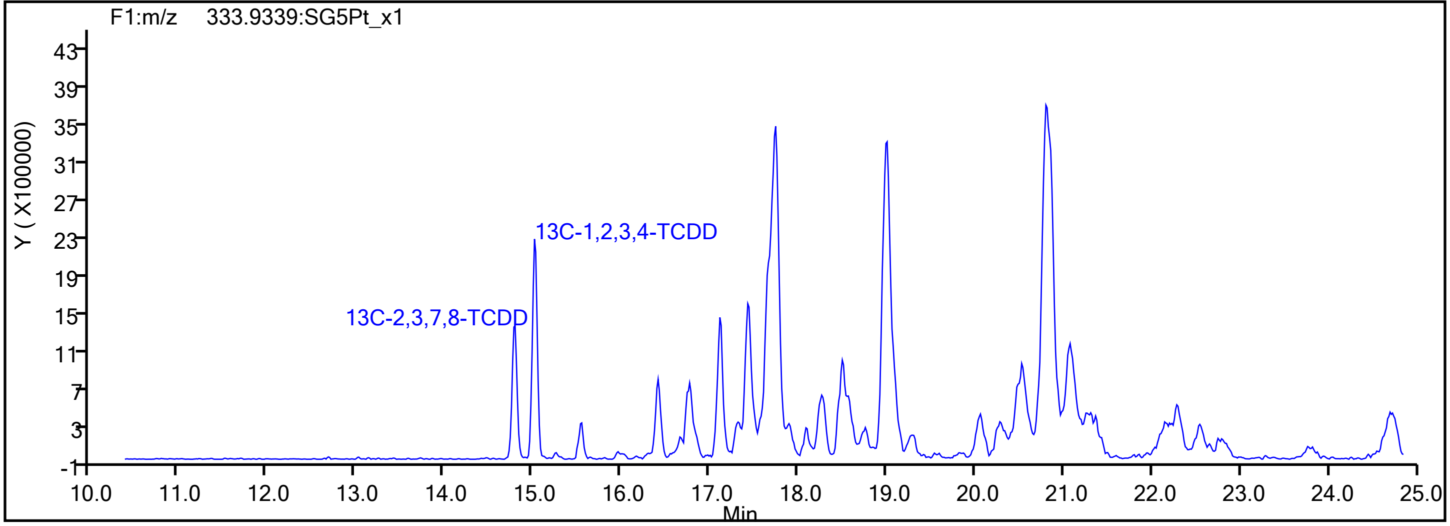

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_006.d		
Injection Date:	17-Mar-2021 00:05:00	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	470865	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

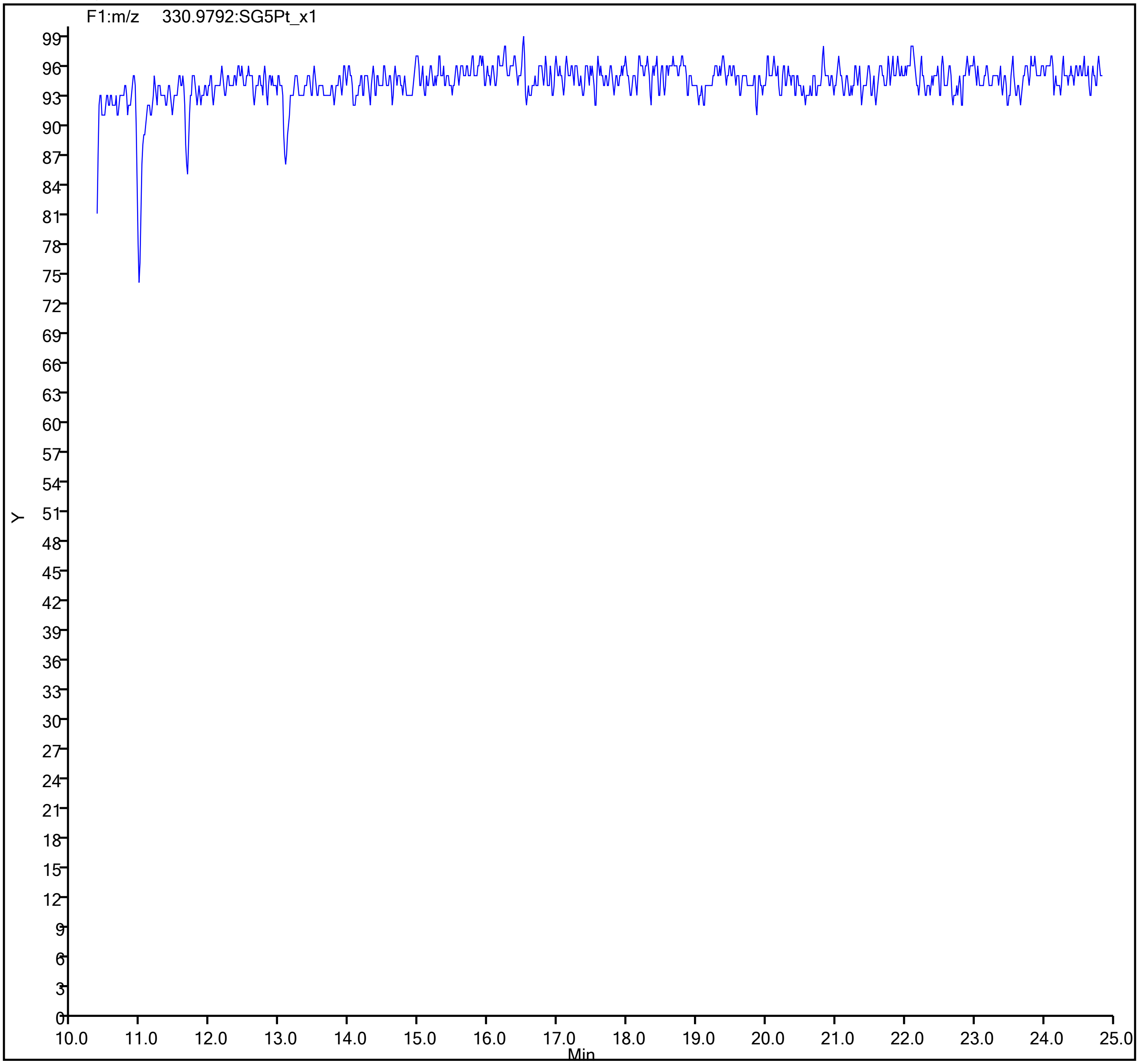

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-100mm DL	Lab Sample ID: 320-70797-7 DL
Matrix: Water	Lab File ID: 17MR2110D5_11.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1037.8(mL)	Date Analyzed: 03/17/2021 17:59
Con. Extract Vol.: 20(uL)	Dilution Factor: 10
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 471421	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
30402-14-3	Total TCDF	16000	B	96	51

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		25-164
89059-46-1	13C-2,3,7,8-TCDF	67		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	112		35-197

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Sample Type: Client
Inject. Date: 17-Mar-2021 17:59:00 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-7-A 320-70797-A-7-A 10X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:36:45 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: dadunj Date: 18-Mar-2021 15:36:45

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.521	2567519	0.69	5.4E+05	10.0	10.0				
D 13C-2,3,7,8-TCDF	17.022	2346576	0.84	1.3554	6.743	6.743	0.2024	0.2024	67.43	
2,3,7,8-TCDF	17.037	11618652	0.76	0.9903	50.0	50.0	0.2642	0.2642		
A Non-2,3,7,8-sub-TCDF	16.719	8111205	0.78	0.9903	34.9	34.9	0.2642	21.3		
S Total TCDF					84.9	84.9	0.2642	0.2642		
D 13C-2,3,7,8-TCDD	17.702	1516474	0.69	0.9209	6.414	6.414	0.1289	0.1289	64.14	
2,3,7,8-TCDD	17.733	2785619	0.77	1.0991	16.7	16.7	0.1633	0.1633		
$ 37Cl4-2,3,7,8-TCDD	17.717	1164357		1.0159	4.464	4.464	0.0263	0.0263	112	
A Non-2,3,7,8-sub-TCDD	17.165	217079	0.74	1.0991	1.302	1.302	0.1633	1.302		
S Total TCDD					18.0	18.0	0.1633	0.1633		
D 13C-1,2,3,7,8-PeCDF	21.909	1840945	1.57	1.0847	6.610	6.610	0.0403	0.0403	66.10	
1,2,3,7,8-PeCDF	21.937	356894	1.58	1.0209	1.899	1.899	0.0639	0.0639		M
D 13C-2,3,4,7,8-PeCDF	23.219	1853468	1.54	1.1057	6.529	6.529	0.0396	0.0396	65.29	
2,3,4,7,8-PeCDF	23.246	221959	1.57	0.9790	1.223	1.223	0.0731	0.0731		
A F1 PeCDFs	19.524						0.0456	0.0456		
A Non-2,3,7,8-sub-PeCDF	22.586	309652	1.55	1.0000	1.778	1.676	0.0682	0.7852		RQMa
S Total PeCDF					4.900	4.798	0.0685	0.0685		RQ
D 13C-1,2,3,7,8-PeCDD	23.927	1323999	1.58	0.7689	6.706	6.706	0.0481	0.0481	67.06	
1,2,3,7,8-PeCDD	23.941						0.0673	0.0673		
A Non-2,3,7,8-sub-PeCDD	22.857						0.0673	0.0673		
S Total PeCDD							0.0673	0.0673		
D 13C-1,2,3,4,7,8-HxCDF	30.080	1607156	0.53	1.0321	5.933	5.933	0.0533	0.0533	59.33	
1,2,3,4,7,8-HxCDF	30.107	647800	1.22	1.0667	3.779	3.779	0.0777	0.0777		
D 13C-1,2,3,6,7,8-HxCDF	30.294	1721096	0.54	1.0218	6.417	6.417	0.0538	0.0538	64.17	
1,2,3,6,7,8-HxCDF	30.320	158324	1.12	1.1178	0.8229	0.8229	0.0691	0.0691		
D 13C-2,3,4,6,7,8-HxCDF	31.239	1599041	0.53	0.9729	6.262	6.262	0.0565	0.0565	62.62	
2,3,4,6,7,8-HxCDF	31.252	18253	1.24	1.1422	0.0999	0.0999	0.0504	0.0504		M
D 13C-1,2,3,7,8,9-HxCDF	32.104	1463684	0.51	0.9469	5.889	5.889	0.0581	0.0581	58.89	
1,2,3,7,8,9-HxCDF	32.197						0.0485	0.0485		RQMU
A Non-2,3,7,8-sub-HxCDF	29.781	84354	1.24	1.1181	0.4722	0.4722	0.0593	0.2640		Ma

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					5.174	5.174	0.0614	0.0614		
* 13C-1,2,3,7,8,9-HxCDD	31.904	2624773	1.24	4.9E+05	10.0	10.0				
D 13C-1,2,3,4,7,8-HxCDD	31.438	1239019	1.24	0.7689	6.139	6.139	0.0691	0.0691	61.39	
1,2,3,4,7,8-HxCDD	31.452						0.0485	0.0485		
D 13C-1,2,3,6,7,8-HxCDD	31.558	1358197	1.25	0.8643	5.987	5.987	0.0615	0.0615	59.87	
1,2,3,6,7,8-HxCDD	31.558						0.0469	0.0469		
1,2,3,7,8,9-HxCDD	31.904						0.0444	0.0444		
A Non-2,3,7,8-sub-HxCDD	30.433	14670	1.24	1.0247	0.1339	0.1102	0.0465	0.1102		RQM
S Total HxCDD					0.1339	0.1102	0.0466	0.0466		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.580	1150911	0.43	0.7233	6.062	6.062	0.1085	0.1085	60.62	
1,2,3,4,6,7,8-HpCDF	33.592	206326	1.13	1.4017	1.279	1.279	0.0561	0.0561		
D 13C-1,2,3,4,7,8,9-HpCDF	34.661	982277	0.44	0.6720	5.874	5.569	0.1168	0.1168	58.74	RQ
1,2,3,4,7,8,9-HpCDF	34.661	55609	1.03	1.2995	0.4130	0.4130	0.0723	0.0723		M
A Non-2,3,7,8-sub-HpCDF	34.127	59187	0.90	1.3506	0.4007	0.4007	0.0634	0.4007		M
S Total HpCDF					2.093	2.093	0.0642	0.0642		
D 13C-1,2,3,4,6,7,8-HpCDD	34.370	1022757	1.11	0.6855	5.684	5.684	0.0691	0.0691	56.84	
1,2,3,4,6,7,8-HpCDD	34.382	369164	1.05	1.0339	3.491	3.491	0.0707	0.0707		
A Non-2,3,7,8-sub-HpCDD	34.460	265559	1.00	1.0339	2.511	2.511	0.0707	2.511		
S Total HpCDD					6.003	6.003	0.0707	0.0707		
D 13C-OCDD	36.685	1311802	0.89	0.4996	10.0	10.0	0.0883	0.0883	50.02	
OCDF	36.780	75942	0.81	1.3135	0.8815	0.8815	0.0764	0.0764		M
OCDD	36.697	1750935	0.89	1.0576	25.2	25.2	0.0937	0.0937		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Sample Type: Client
Inject. Date: 17-Mar-2021 17:59:00 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-70797-A-7-A 320-70797-A-7-A 10X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:36:45 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: dadunj Date: 18-Mar-2021 15:36:45

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.521	17.506	1		1049606	264560	1848	4620	143		
333.9339	17.521	17.506	1		1517913	374376	1185	2962	316	0.69(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.007	1	0.972	1068665	248266	4581	11452	54		
317.9389	17.022	17.007	1	0.972	1277911	320866	2431	6077	132	0.84(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.022	1	1.001	5001067	1245835	2735	6837	456		
305.8987	17.037	17.022	1	1.001	6617585	1667806	3222	8055	518	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	15.661	16.719	-63	0.920	83826	23225	2735	6837	8		
305.8987	15.661	16.719	-63	0.920	105371	28610	3222	8055	9	0.80(0.65-0.89)	
303.9016	15.933	16.719	-47	0.936	150515	37652	2735	6837	14		
305.8987	15.933	16.719	-47	0.936	208129	45871	3222	8055	14	0.72(0.65-0.89)	
303.9016	16.145	16.719	-34	0.948	154887	36181	2735	6837	13		
305.8987	16.160	16.719	-34	0.949	217109	52840	3222	8055	16	0.71(0.65-0.89)	
303.9016	16.387	16.719	-20	0.963	234088	59677	2735	6837	22		
305.8987	16.387	16.719	-20	0.963	265248	70528	3222	8055	22	0.88(0.65-0.89)	
303.9016	16.659	16.719	-4	0.979	2166004	579012	2735	6837	212		
305.8987	16.659	16.719	-4	0.979	2779818	751775	3222	8055	233	0.78(0.65-0.89)	
303.9016	17.460	16.719	44	1.026	324824	78374	2735	6837	29		
305.8987	17.445	16.719	43	1.025	424432	103112	3222	8055	32	0.77(0.65-0.89)	
303.9016	17.687	16.719	58	1.039	72126	16753	2735	6837	6		
305.8987	17.687	16.719	58	1.039	83442	18337	3222	8055	6	0.86(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	18.806	16.719	125	1.105	372685	84802	2735	6837	31		
305.8987	18.806	16.719	125	1.105	468701	111108	3222	8055	34	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.702	17.702	0	1.010	619999	160201	1848	4620	87		
333.9339	17.702	17.702	0	1.010	896475	207748	1185	2962	175	0.69(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.733	17.717	1	1.002	1212790	287347	1455	3637	197		
321.8936	17.733	17.717	1	1.002	1572829	379007	1187	2967	319	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.717	17.717	0	1.011	1164357	261693	683	1707	383		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.080	17.165	55	1.021	92571	22956	1455	3637	16		
321.8936	18.080	17.165	55	1.021	124508	29898	1187	2967	25	0.74(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.909	21.896	1	1.250	1123523	211208	617	1542	342		
353.8970	21.909	21.896	1	1.250	717422	123098	501	1252	246	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.937	21.910	2	1.001	218600	36298	438	1095	83		
341.8567	21.923	21.910	1	1.001	138294	24836	434	1085	57	1.58(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	23.219	23.205	1	1.325	1124650	185633	617	1542	301		
353.8970	23.205	23.205	0	1.324	728818	119177	501	1252	238	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.246	23.219	2	1.001	135705	23241	438	1095	53		
341.8567	23.232	23.219	1	1.001	86254	14471	434	1085	33	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.524						266	665			
341.8567	19.524						317	792			
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	20.628	22.586	-117	0.941	85327	18368	438	1095	42		
341.8567	20.628	22.586	-117	0.941	59708	12885	434	1085	30	1.43(1.32-1.78)	
339.8597	21.814	22.586	-46	0.996	15671	4085	438	1095	9		M
341.8567	21.787	22.586	-48	0.994	11464	2844	434	1085	7	1.37(1.32-1.78)	
339.8597	22.414	22.586	-10	1.023	63075	10261	438	1095	23		
	Empc Correction				54144	8551	438	1095	20		
341.8567	22.455	22.586	-8	1.025	34932	5517	434	1085	13	1.81(1.32-1.78)	
339.8597	23.559	22.586	58	1.075	39243	5904	438	1095	13		
	Empc Correction				29423	4367	438	1095	10		
341.8567	23.559	22.586	58	1.075	18983	2818	434	1085	6	2.07(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.927	23.901	2	1.366	810147	115608	511	1277	226		
369.8919	23.927	23.901	2	1.366	513852	79995	435	1087	184	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.928						287	717			
357.8516	23.928						239	597			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.857						287	717			
357.8516	22.857						239	597			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.080	30.054	2	0.943	557673	86619	637	1592	136		
385.8610	30.094	30.054	2	0.943	1049483	156398	844	2110	185	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.107	30.094	1	1.001	356481	56537	452	1130	125		
375.8178	30.107	30.094	1	1.001	291319	43526	354	885	123	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.294	30.281	1	0.950	604828	89710	637	1592	141		
385.8610	30.307	30.281	2	0.950	1116268	171128	844	2110	203	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.320	30.307	1	1.001	83547	16296	452	1130	36		
375.8178	30.320	30.307	1	1.001	74777	11851	354	885	33	1.12(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.239	31.226	1	0.979	550733	124685	637	1592	196		
385.8610	31.225	31.226	0	0.979	1048308	225354	844	2110	267	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	31.252	31.239	1	1.000	10091	2415	452	1130	5		M
375.8178	31.239	31.239	0	1.000	8162	2274	354	885	6	1.24(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.104	32.091	1	1.006	494568	122681	637	1592	193		
385.8610	32.090	32.091	0	1.006	969116	239869	844	2110	284	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQMU
373.8208	32.104						452	1130			
375.8178	32.104						354	885			
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	27.738	29.781	-122	0.922	26510	3249	452	1130	7		
375.8178	27.751	29.781	-122	0.923	20643	2778	354	885	8	1.28(1.05-1.43)	
373.8208	32.197	29.781	145	1.070	20104	5129	452	1130	11		M
375.8178	32.197	29.781	145	1.070	17097	4135	354	885	12	1.18(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.891	1		1452505	368332	765	1912	481		
403.8529	31.904	31.891	1		1172268	305015	667	1667	457	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.438	31.425	1	0.985	685127	160723	765	1912	210		
403.8529	31.438	31.425	1	0.985	553892	144558	667	1667	217	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.452						360	900			
391.8127	31.452						253	632			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.558	31.545	1	0.989	753340	194696	765	1912	255		
403.8529	31.558	31.545	1	0.989	604857	143681	667	1667	215	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8157	31.558						360	900			
391.8127	31.558						253	632			
1,2,3,7,8,9-HxCDD											
389.8157	31.904						360	900			
391.8127	31.904						253	632			
A Non-2,3,7,8-sub-HxCDD											RQM
389.8157	30.613	30.433	11	0.970	8121	1653	360	900	5		M
391.8127	30.613	30.433	11	0.970	9692	1914	253	632	8	0.84(1.05-1.43)	M
	Empc Correction				6549	1333	253	632	5		
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.580	33.580	0	1.053	348620	115132	955	2387	121		
419.8220	33.580	33.580	0	1.053	802291	260256	1159	2897	225	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.592	0	1.000	109333	36578	739	1847	49		
409.7789	33.592	33.592	0	1.000	96993	32089	441	1102	73	1.13(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											RQ
417.8253	34.661	34.650	1	1.086	354015	109727	955	2387	115		
	Empc Correction				300140	89785	955	2387	94		
419.8220	34.661	34.650	1	1.086	682137	204059	1159	2897	176	0.52(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	34.661	34.661	0	1.000	28162	9352	739	1847	13		M
409.7789	34.673	34.661	1	1.000	27447	7895	441	1102	18	1.03(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7818	33.896	34.127	-14	1.009	28032	9591	739	1847	13		M
409.7789	33.896	34.127	-14	1.009	31155	10634	441	1102	24	0.90(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.370	34.370	0	1.077	537961	165040	503	1257	328		
437.8140	34.370	34.370	0	1.077	484796	149465	773	1932	193	1.11(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.382	0	1.000	188766	60211	456	1140	132		
425.7737	34.382	34.382	0	1.000	180398	55691	464	1160	120	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.835	34.460	-37	0.984	132889	39172	456	1140	86		
425.7737	33.835	34.460	-37	0.984	132670	41566	464	1160	90	1.00(0.88-1.20)	
13C-OCDD											
469.7779	36.685	36.685	0	1.150	617039	167850	566	1415	297		
471.7750	36.697	36.685	1	1.150	694763	176784	622	1555	284	0.89(0.76-1.02)	
OCDF											M
441.7428	36.780	36.781	0	1.003	33919	9211	331	827	28		M
443.7399	36.780	36.781	0	1.003	42023	12840	361	902	36	0.81(0.76-1.02)	M
OCDD											
457.7377	36.697	36.697	0	1.000	822305	218729	333	832	657		
459.7348	36.697	36.697	0	1.000	928630	249077	350	875	712	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	17-Mar-2021 17:59:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 16.719

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.990	D 13C-2,3,7,8-TCDF	100.000	2346576	569132

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.990		10.000	2346576	569132

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.661	83826	23225	105371	28610	0.8142	0.80	
15.933	150515	37652	208129	45871	1.54	0.72	
16.145	154887	36181	217109	52840	1.60	0.71	
16.387	234088	59677	265248	70528	2.15	0.88	
16.659	2166004	579012	2779818	751775	21.3	0.78	
17.460	324824	78374	424432	103112	3.22	0.77	
17.687	72126	16753	83442	18337	0.6695	0.86	
18.806	372685	84802	468701	111108	3.62	0.80	
Signal Totals:							
	3558955	915676	4552250	1182181			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8111205	2097857				0.78	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 34.906 = (8111205 * 10.000) / (2346576 * 0.990)

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d
Lims ID: 320-70797-A-7-A
Client ID: 11215702-Tank2-100mm
Inject. Date: 17-Mar-2021 17:59:00 Dil. Factor: 10.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: KSS
Lims Batch ID: 471421 Lims Sample ID: 11

Non-2,3,7,8-sub-TCDD, RT: 17.165

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.099	D 13C-2,3,7,8-TCDD	100.000	1516474	367949

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.099		10.000	1516474	367949

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.080	92571	22956	124508	29898	1.30	0.74	
Signal Totals:							
	92571	22956	124508	29898			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	217079	52854				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.302 = (217079 * 10.000) / (1516474 * 1.099)

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	17-Mar-2021 17:59:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 22.586

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021	D 13C-1,2,3,7,8-PeCDF	100.000	1840945	334306
2,3,4,7,8-PeCDF	0.979	D 13C-2,3,4,7,8-PeCDF	100.000	1853468	304810

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		10.000	1847206	319558

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.628	85327	18368	59708	12885	0.7852	1.43	
21.814	15671	4085	11464	2844	0.1469	1.37	Ma
22.414	63075	10261	34932	5517	0.5306	1.81	RQ
22.414	54144	8551	34932	5517	0.4822		Empc Correction
23.559	39243	5904	18983	2818	0.3152	2.07	RQ
23.559	29423	4367	18983	2818	0.2621		Empc Correction
Signal Totals:							
	184565	35371	125087	24064			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	328403	62682				1.63	RQMa
	309652	59435					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.778 = (328403 * 10.000) / (1847206 * 1.000)
Empc Amount: 1.676 = (309652 * 10.000) / (1847206 * 1.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	17-Mar-2021 17:59:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDF, RT: 29.781

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.067	D 13C-1,2,3,4,7,8-HxCDF	100.000	1607156	243017
1,2,3,6,7,8-HxCDF	1.118	D 13C-1,2,3,6,7,8-HxCDF	100.000	1721096	260838
2,3,4,6,7,8-HxCDF	1.142	D 13C-2,3,4,6,7,8-HxCDF	100.000	1599041	350039
1,2,3,7,8,9-HxCDF	1.146	D 13C-1,2,3,7,8,9-HxCDF	100.000	1463684	362550

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.118		10.000	1597744	304111

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.738	26510	3249	20643	2778	0.2640	1.28	
32.197	20104	5129	17097	4135	0.2082	1.18	M
Signal Totals:							
	46614	8378	37740	6913			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	84354	15291				1.24	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4722 = (84354 * 10.000) / (1597744 * 1.118)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	17-Mar-2021 17:59:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDD, RT: 30.433

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.036	D 13C-1,2,3,4,7,8-HxCDD	100.000	1239019	305281
1,2,3,6,7,8-HxCDD	0.966	D 13C-1,2,3,6,7,8-HxCDD	100.000	1358197	338377
1,2,3,7,8,9-HxCDD	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.025		10.000	1298608	321829

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.613	8121	1653	9692	1914	0.1339	0.84	RQM
30.613	8121	1653	6549	1333	0.1102		Empc Correction
Signal Totals:							
	8121	1653	6549	1333			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	17813	3567				0.84	RQM
	14670	2986					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.1339 = (17813 * 10.000) / (1298608 * 1.025)

Empc Amount: 0.1102 = (14670 * 10.000) / (1298608 * 1.025)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	17-Mar-2021 17:59:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDF, RT: 34.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.402	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1150911	375388
1,2,3,4,7,8,9-HpCDF	1.300	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1036152	313786

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.351		10.000	1093531	344587

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.896	28032	9591	31155	10634	0.4007	0.90	M
Signal Totals:							
	28032	9591	31155	10634			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	59187	20225				0.90	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4007 = (59187 * 10.000) / (1093531 * 1.351)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Lims ID:	320-70797-A-7-A		
Client ID:	11215702-Tank2-100mm		
Inject. Date:	17-Mar-2021 17:59:00	Dil. Factor:	10.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDD, RT: 34.460

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.034	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1022757	314505

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.034		10.000	1022757	314505

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.835	132889	39172	132670	41566	2.51	1.00	
Signal Totals:							
	132889	39172	132670	41566			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	265559	80738				1.00	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.511 = (265559 * 10.000) / (1022757 * 1.034)

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d

Injection Date: 17-Mar-2021 17:59:00 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-100mm

Worklist#: 471421 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

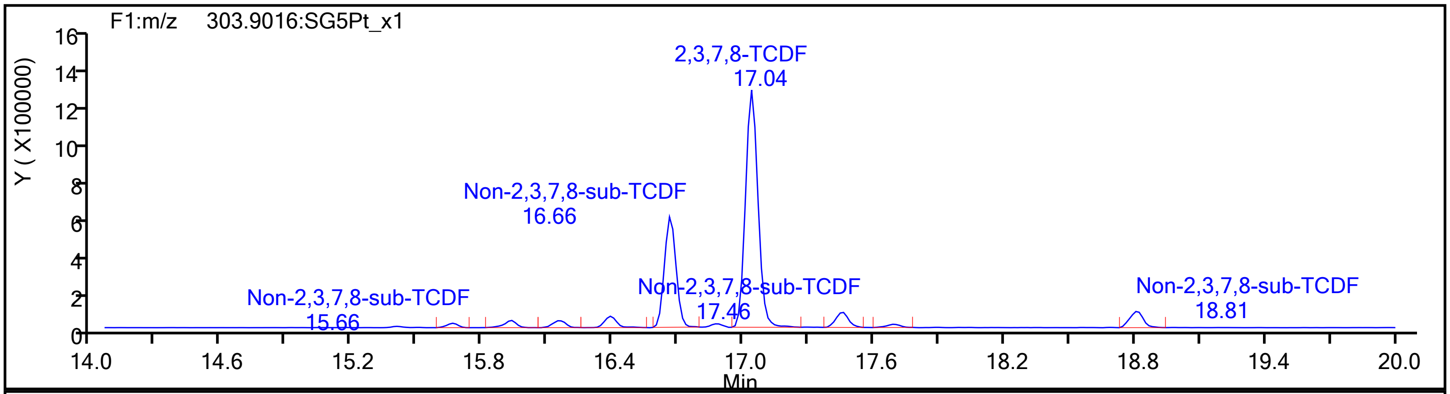

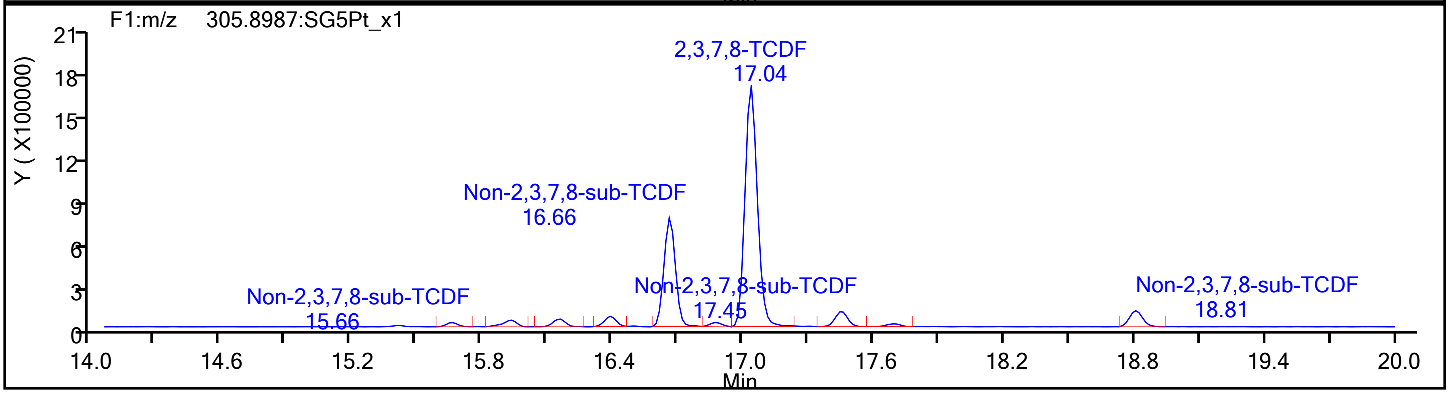

TCDF Standards

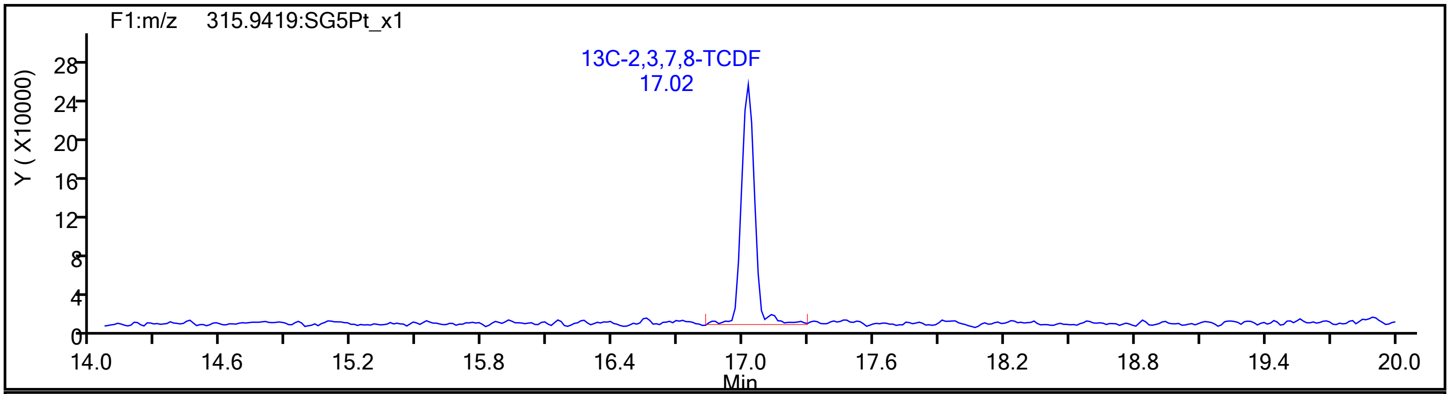

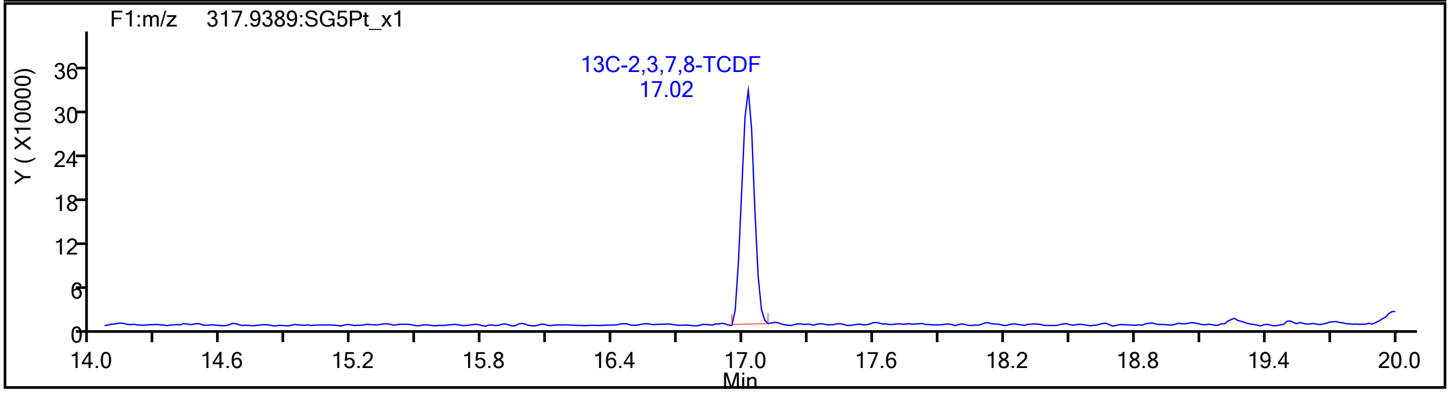

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Injection Date:	17-Mar-2021 17:59:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	471421	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

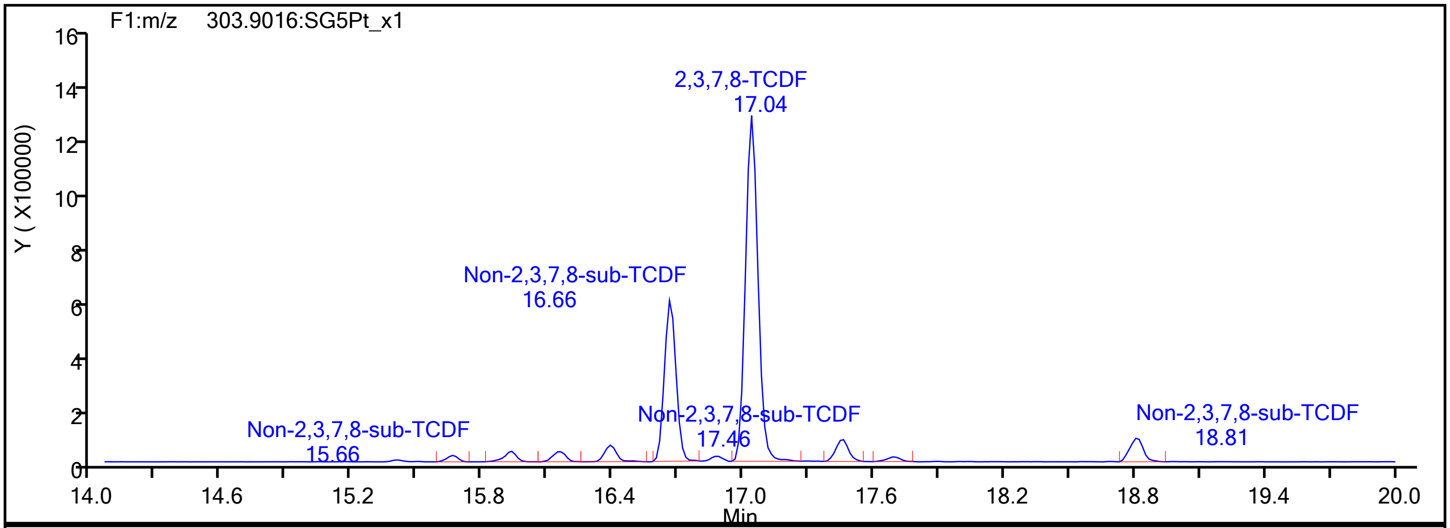

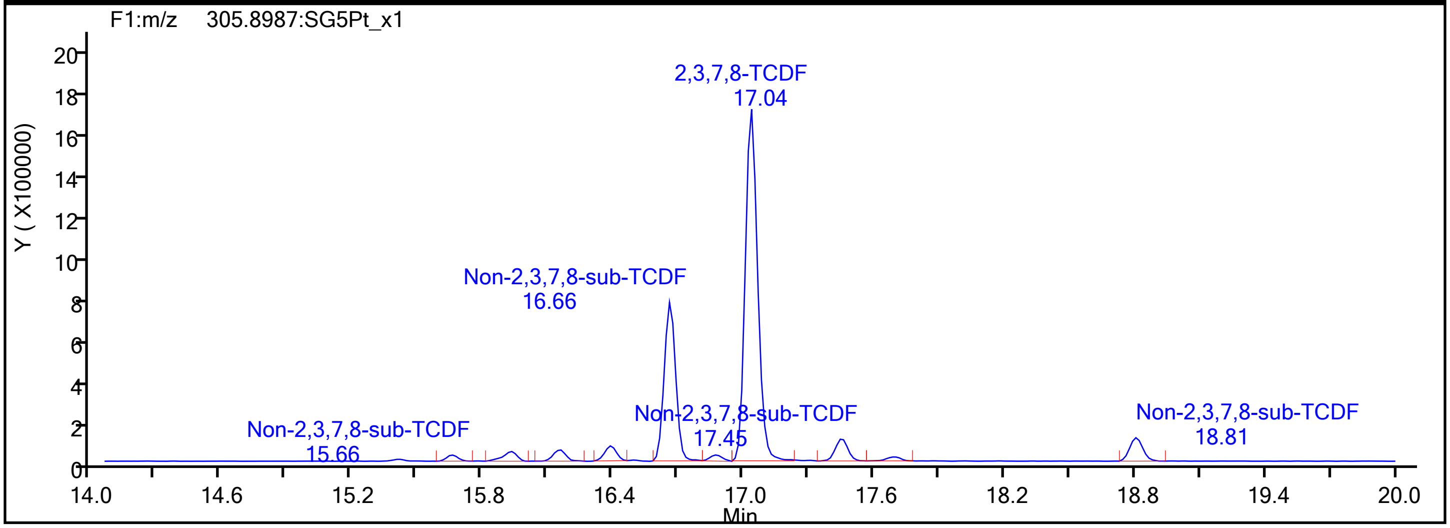

TCDF Interference Mass

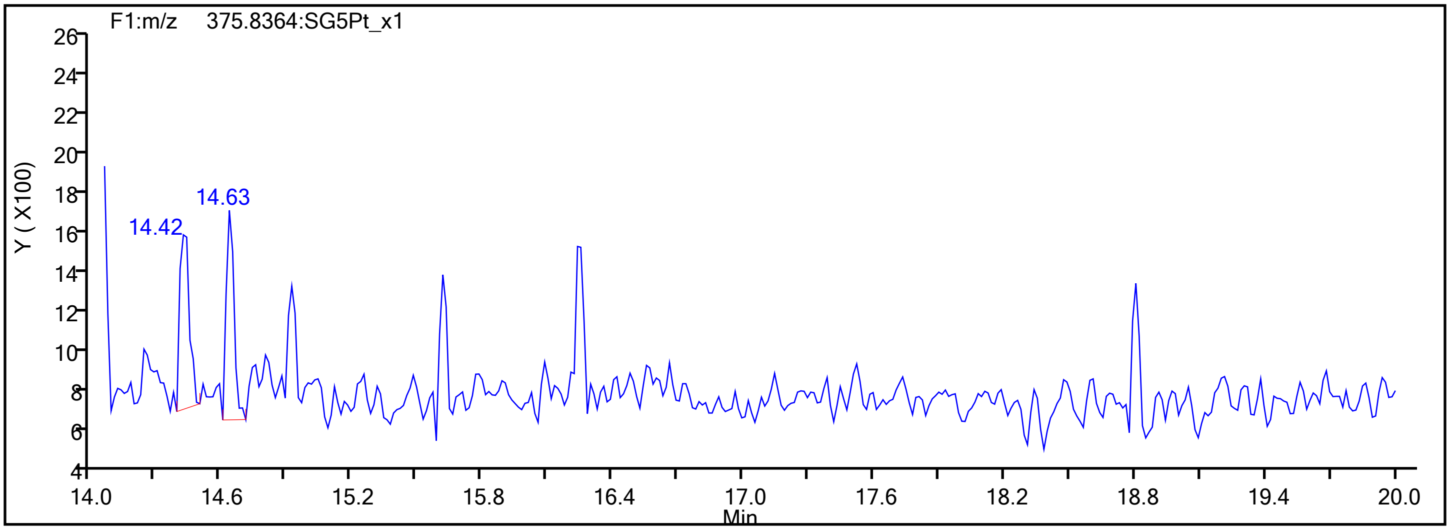

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Injection Date:	17-Mar-2021 17:59:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	471421	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

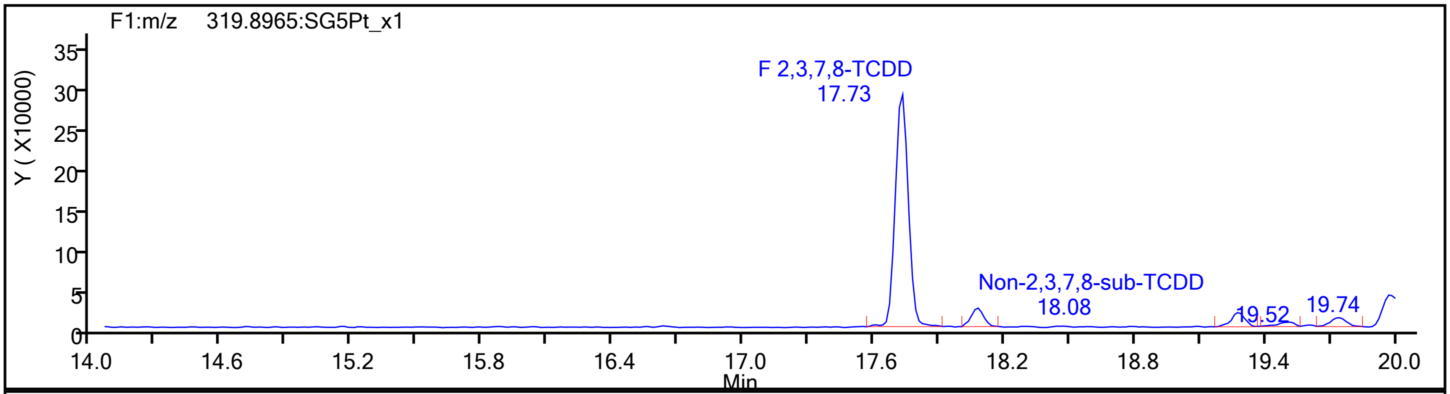

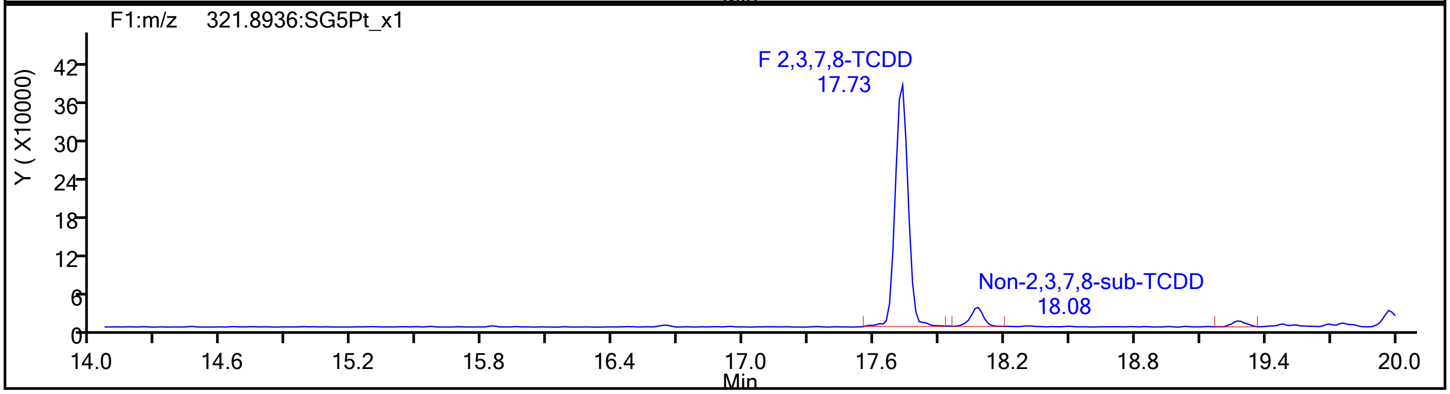

TCDD Standards

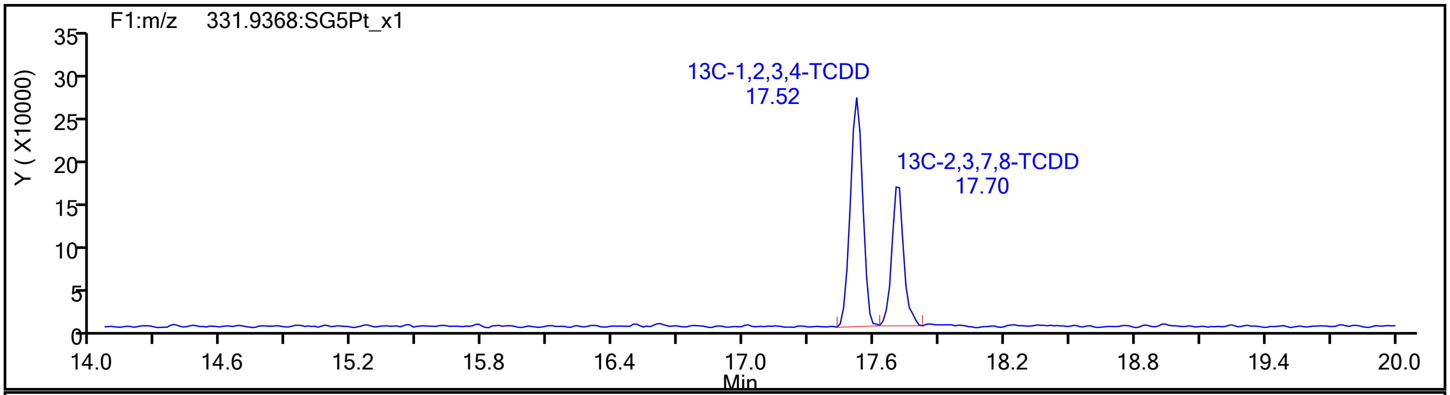

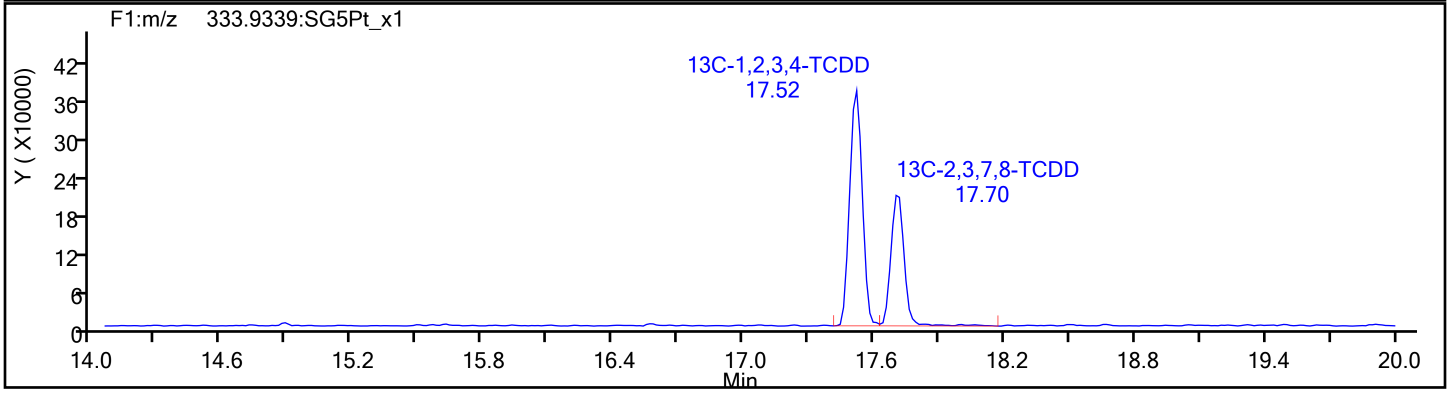

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Injection Date:	17-Mar-2021 17:59:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	471421	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

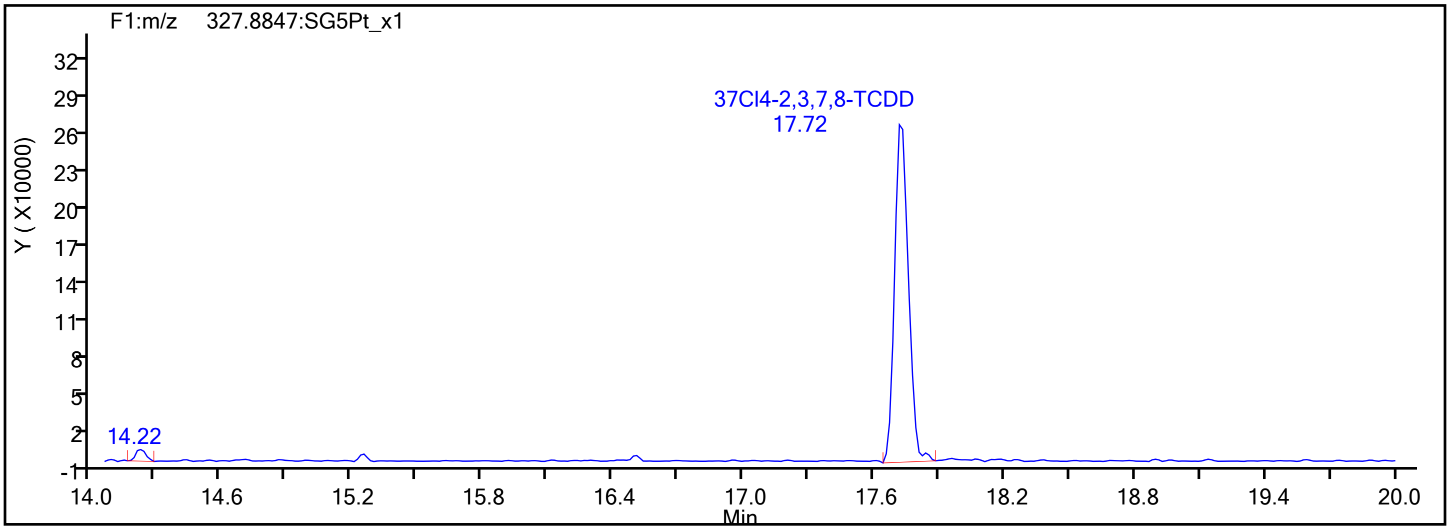

37Cl4-TCDD Standards

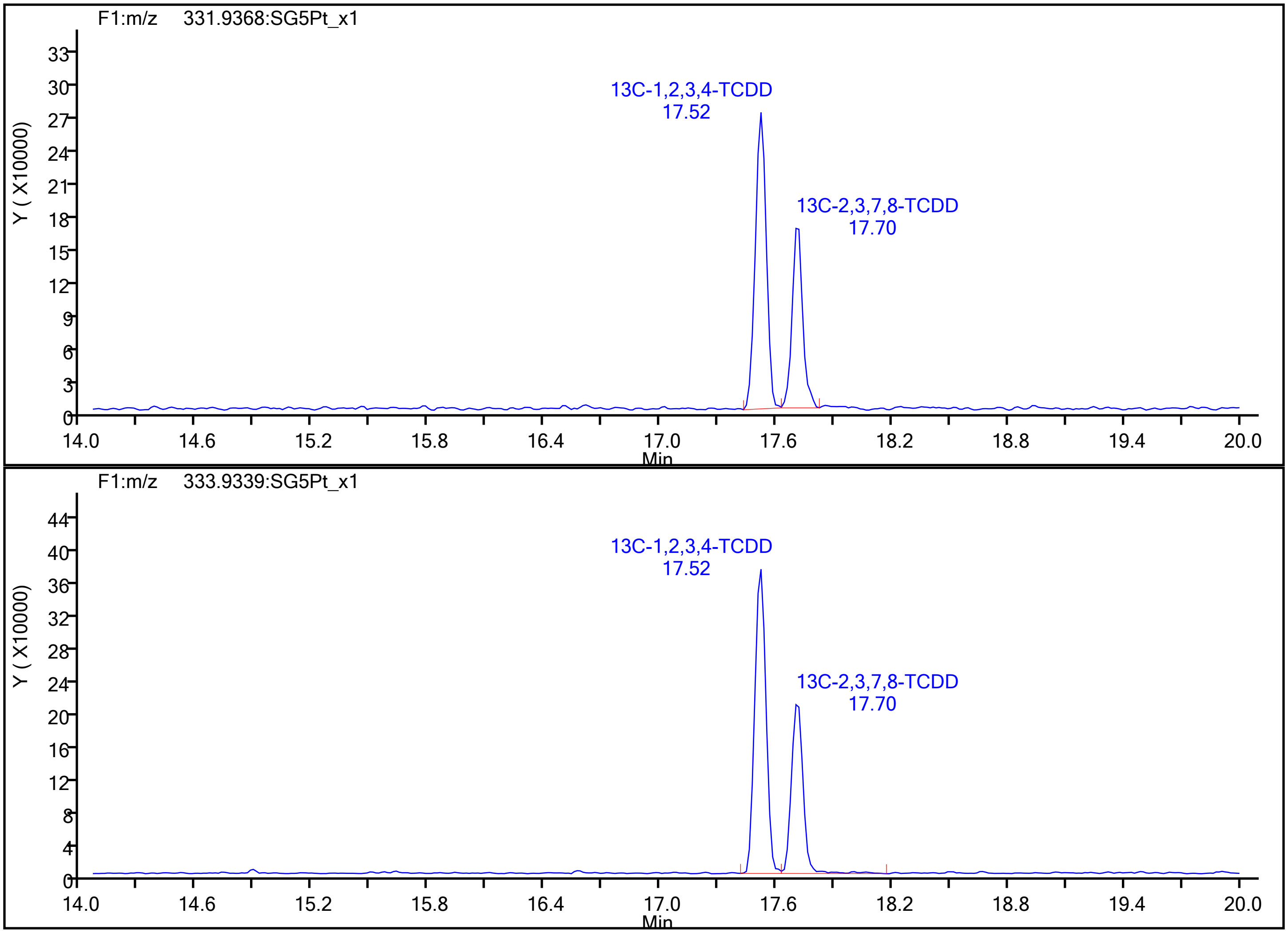

Report Date: 18-Mar-2021 15:36:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Injection Date:	17-Mar-2021 17:59:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	471421	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

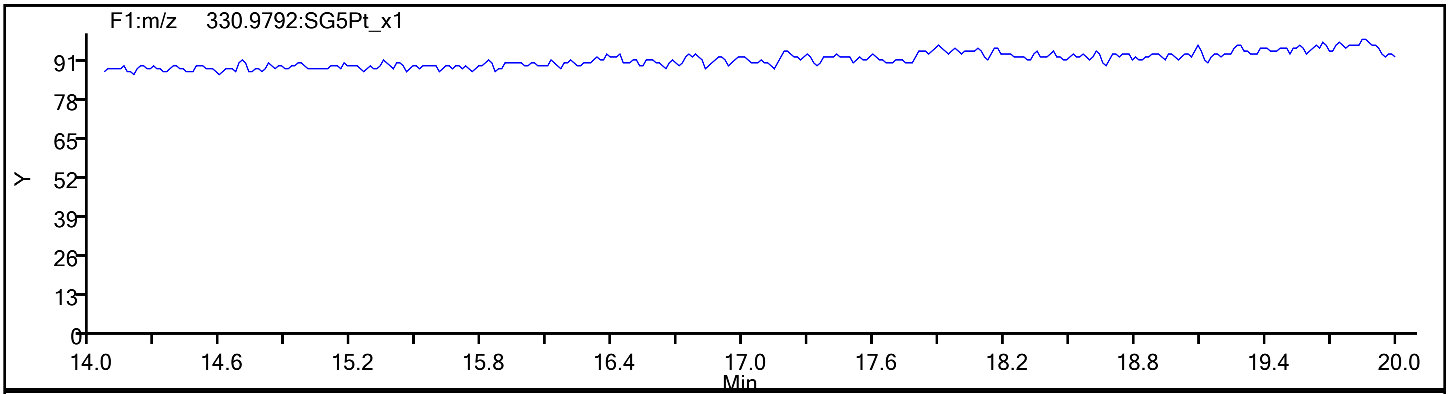

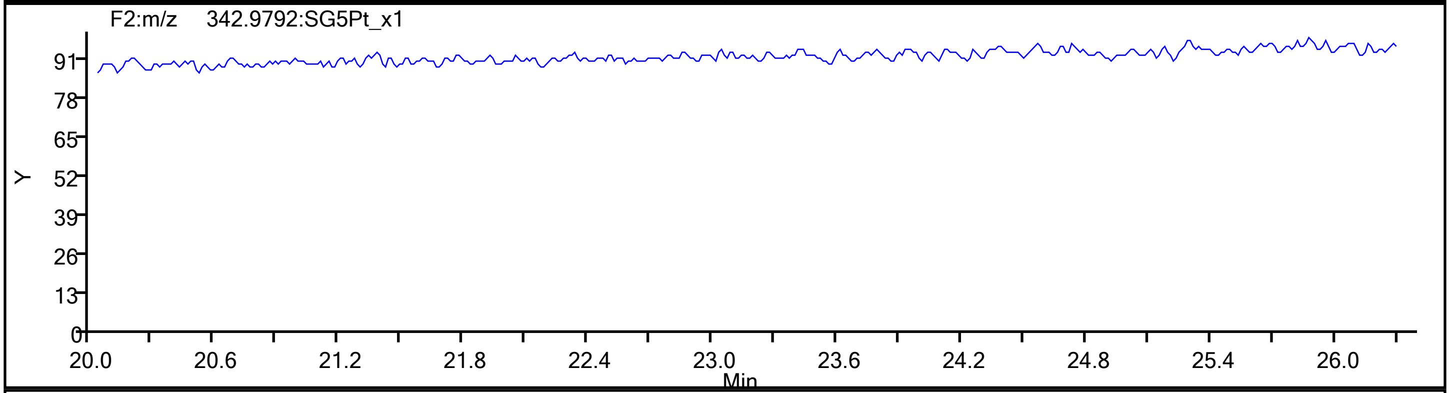

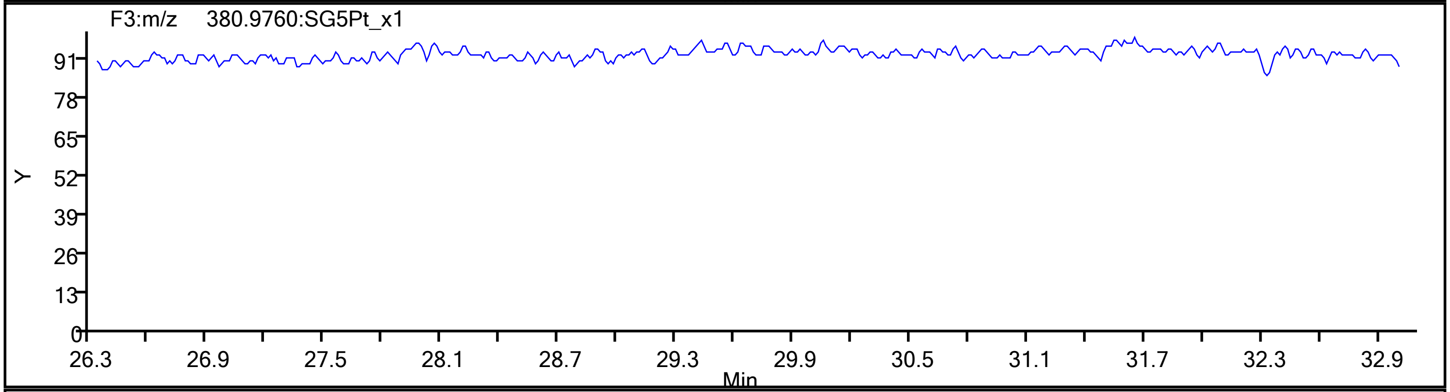

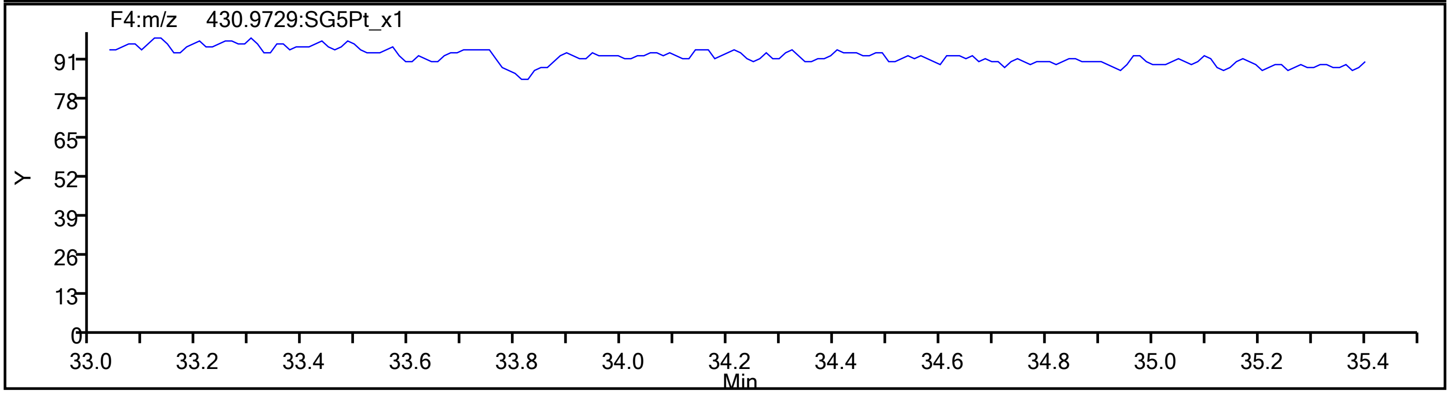

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_11.d		
Injection Date:	17-Mar-2021 17:59:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-100mm		
Worklist#:	471421	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

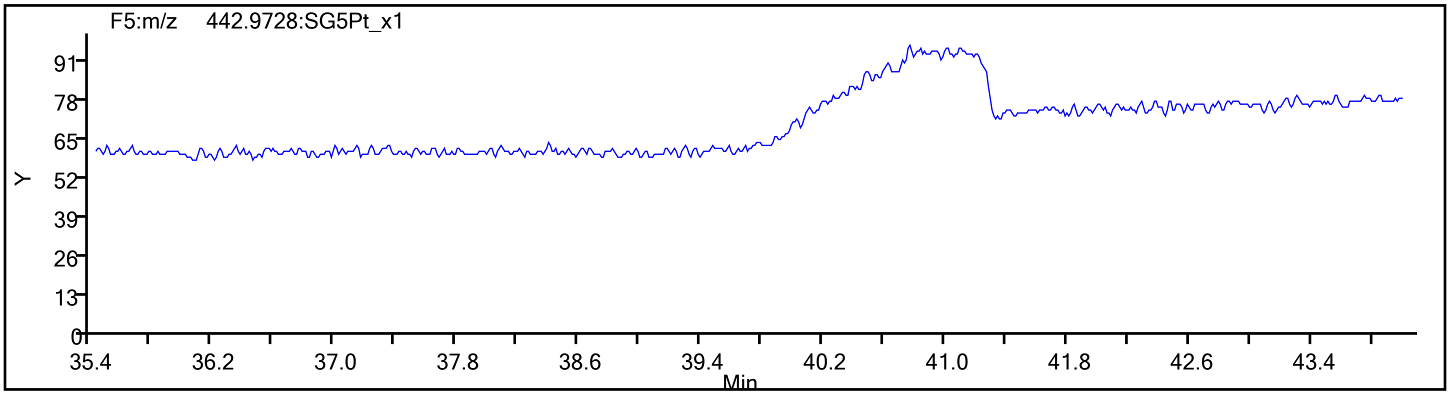

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-41mm	Lab Sample ID: 320-70797-8
Matrix: Water	Lab File ID: 12mr21adfs1_10.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1024.5(mL)	Date Analyzed: 03/12/2021 16:56
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
40321-76-4	1,2,3,7,8-PeCDD	200		49	1.9
57117-41-6	1,2,3,7,8-PeCDF	2300		49	16
57117-31-4	2,3,4,7,8-PeCDF	1400		49	17
39227-28-6	1,2,3,4,7,8-HxCDD	7.3	J	49	0.90
57653-85-7	1,2,3,6,7,8-HxCDD	38	J	49	0.96
19408-74-3	1,2,3,7,8,9-HxCDD	15	J	49	0.85
70648-26-9	1,2,3,4,7,8-HxCDF	4000	B	49	8.4
57117-44-9	1,2,3,6,7,8-HxCDF	1000	B	49	7.7
72918-21-9	1,2,3,7,8,9-HxCDF	71	B	49	6.3
60851-34-5	2,3,4,6,7,8-HxCDF	110	B	49	6.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	2100	B	49	6.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	1300	B	49	3.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	430	B	49	2.8
3268-87-9	OCDD	21000	B	98	9.3
39001-02-0	OCDF	680	B	98	0.83
36088-22-9	Total PeCDD	260	q	49	1.9
30402-15-4	Total PeCDF	5800		49	16
34465-46-8	Total HxCDD	320		49	0.90
55684-94-1	Total HxCDF	6000	B	49	7.3
37871-00-4	Total HpCDD	3700	B	49	6.7
38998-75-3	Total HpCDF	2200	B	49	2.9

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-41mm Lab Sample ID: 320-70797-8

Matrix: Water Lab File ID: 12mr21adfs1_10.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1024.5(mL) Date Analyzed: 03/12/2021 16:56

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469779 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
109719-79-1	13C-1,2,3,7,8-PeCDD	59		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	54		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	55		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	64		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	64		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	60		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	62		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	60		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	76		26-138
114423-97-1	13C-OCDD	90		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	101		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Sample Type: Client
Inject. Date: 12-Mar-2021 16:56:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-8-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:33:10 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: krenns Date: 16-Mar-2021 09:33:10

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.571	4147326	0.81	1E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.695	3416559	0.78	1.5437	53.4	53.4	0.2976	0.2976	53.37	
2,3,7,8-TCDF	18.712	125749279	0.83	1.1258	3269.3	3269.3	15.0	15.0		Ea
A Non-2,3,7,8-sub-TCDF	18.115	87689937	0.84	1.1258	2279.8	2279.8	15.0	1327.2		Ma
S Total TCDF					5549.1	5549.1	15.0	15.0		
D 13C-2,3,7,8-TCDD	19.906	2383237	0.80	0.9687	59.3	59.3	0.3234	0.3234	59.32	
$ 37Cl4-2,3,7,8-TCDD	19.932	1816306		1.0841	40.4	40.4	0.0787	0.0787	101	
2,3,7,8-TCDD	19.932	27585075	0.80	1.1904	972.4	972.4	1.310	1.310		Ea
A Non-2,3,7,8-sub-TCDD	18.876	2667604	0.77	1.1904	94.0	94.0	1.310	79.3		a
S Total TCDD					1066.4	1066.4	1.310	1.310		
D 13C-1,2,3,7,8-PeCDF	25.730	2965202	1.59	1.3124	54.5	54.5	0.1688	0.1688	54.48	
1,2,3,7,8-PeCDF	25.755	3889804	1.57	1.1163	117.5	117.5	0.8127	0.8127		M
D 13C-2,3,4,7,8-PeCDF	27.110	3053452	1.56	1.3352	55.1	55.1	0.1660	0.1660	55.14	
2,3,4,7,8-PeCDF	27.127	2263395	1.57	1.0579	70.1	70.1	0.8515	0.8515		
A F1 PeCDFs	22.791	24565	1.55	1.0871	0.7509	0.7509	0.0127	0.7509		
A Non-2,3,7,8-sub-PeCDF	26.224	3639705	1.55	1.0871	111.3	111.3	0.8316	47.3		Ma
S Total PeCDF					299.6	299.6	0.8321	0.8321		
D 13C-1,2,3,7,8-PeCDD	27.851	1894920	1.56	0.7716	59.2	59.2	0.1694	0.1694	59.22	
1,2,3,7,8-PeCDD	27.868	217600	1.58	1.1372	10.1	10.1	0.0985	0.0985		
A Non-2,3,7,8-sub-PeCDD	26.609	71178	1.55	1.1372	4.012	3.303	0.0985	1.386		RQM
S Total PeCDD					14.1	13.4	0.0985	0.0985		RQ
D 13C-1,2,3,4,7,8-HxCDF	33.572	2754331	0.53	1.0931	63.9	63.9	0.1527	0.1527	63.92	
1,2,3,4,7,8-HxCDF	33.598	6725381	1.29	1.1831	206.4	206.4	0.4314	0.4314		
D 13C-1,2,3,6,7,8-HxCDF	33.774	2680855	0.52	1.1278	60.3	60.3	0.1480	0.1480	60.30	
1,2,3,6,7,8-HxCDF	33.800	1707508	1.31	1.2484	51.0	51.0	0.3958	0.3958		
D 13C-2,3,4,6,7,8-HxCDF	34.760	2490504	0.53	1.0552	59.9	59.9	0.1581	0.1581	59.87	
2,3,4,6,7,8-HxCDF	34.776	183177	1.36	1.2750	5.769	5.769	0.3505	0.3505		
D 13C-1,2,3,7,8,9-HxCDF	35.770	2416528	0.53	0.9938	61.7	61.7	0.1679	0.1679	61.68	
1,2,3,7,8,9-HxCDF	35.787	114168	1.32	1.2953	3.647	3.647	0.3252	0.3252		Ma
A Non-2,3,7,8-sub-HxCDF	33.496	1236911	1.29	1.2505	38.3	38.3	0.3722	14.7		Ma
S Total HxCDF					305.1	305.1	0.3757	0.3757		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.568	3942100	1.25	1.1E+05	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.012	1988299	1.25	0.7895	63.9	63.9	0.1116	0.1116	63.88	
1,2,3,4,7,8-HxCDD	35.021	8105	1.23	1.0950	0.3723	0.3723	0.0463	0.0463		
D 13C-1,2,3,6,7,8-HxCDD	35.155	2092720	1.26	0.8495	62.5	62.5	0.1037	0.1037	62.49	
1,2,3,6,7,8-HxCDD	35.172	41870	1.25	1.0201	1.961	1.961	0.0490	0.0490		
1,2,3,7,8,9-HxCDD	35.576	18005	1.28	1.1549	0.7641	0.7641	0.0436	0.0436		
A Non-2,3,7,8-sub-HxCDD	34.039	297756	1.24	1.0900	13.4	13.4	0.0461	6.310		M
S Total HxCDD					16.5	16.5	0.0463	0.0463		
D 13C-1,2,3,4,6,7,8-HpCDF	37.805	2069073	0.45	0.7854	66.8	66.8	0.1953	0.1953	66.83	
1,2,3,4,6,7,8-HpCDF	37.814	2013844	1.03	1.4859	65.5	65.5	0.1556	0.1556		
D 13C-1,2,3,4,7,8,9-HpCDF	39.145	2155846	0.45	0.7230	75.6	75.6	0.2122	0.2122	75.64	
1,2,3,4,7,8,9-HpCDF	39.153	668401	1.04	1.4048	22.1	22.1	0.1413	0.1413		
A Non-2,3,7,8-sub-HpCDF	38.451	732541	1.04	1.4453	24.0	24.0	0.1478	24.0		
S Total HpCDF					111.6	111.6	0.1484	0.1484		
D 13C-1,2,3,4,6,7,8-HpCDD	38.833	2043613	1.07	0.6413	80.8	80.8	0.1399	0.1399	80.83	
1,2,3,4,6,7,8-HpCDD	38.842	2490764	1.04	1.1489	106.1	106.1	0.3419	0.3419		
A Non-2,3,7,8-sub-HpCDD	39.230	1902367	1.05	1.1489	81.0	81.0	0.3419	81.0		a
S Total HpCDD					187.1	187.1	0.3419	0.3419		
D 13C-OCDD	41.303	3631435	0.89	0.5141	179.2	179.2	0.1232	0.1232	89.60	
OCDF	41.387	990918	0.93	1.5776	34.6	34.6	0.0424	0.0424		
OCDD	41.312	23063315	0.89	1.1706	1085.1	1085.1	0.4772	0.4772		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Sample Type: Client
Inject. Date: 12-Mar-2021 16:56:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-8-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:33:10 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: krenns Date: 16-Mar-2021 09:33:10

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.571	19.417	9		1860355	280024	305	762	918		a
333.9338	19.571	19.417	9		2286971	347276	481	1202	722	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.695	18.557	8	0.955	1492317	283085	603	1507	469		
317.9389	18.695	18.557	8	0.955	1924242	363186	550	1375	660	0.78(0.65-0.89)	
2,3,7,8-TCDF											Ea
303.9016	18.712	18.574	8	1.001	57100215	10748968	20045	50112	536		a
305.8987	18.712	18.574	8	1.001	68649064	12941412	23618	59045	548	0.83(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											Ma
303.9016	16.030	18.115	-125	0.857	324184	70583	20045	50112	4		M
305.8987	16.022	18.115	-125	0.857	389398	84622	23618	59045	4	0.83(0.65-0.89)	M
303.9016	16.426	18.115	-101	0.879	1147925	224613	20045	50112	11		
305.8987	16.426	18.115	-101	0.879	1347215	262810	23618	59045	11	0.85(0.65-0.89)	
303.9016	16.873	18.115	-74	0.903	2155833	285046	20045	50112	14		
305.8987	16.873	18.115	-74	0.903	2551520	334294	23618	59045	14	0.84(0.65-0.89)	
303.9016	17.260	18.115	-51	0.923	1843394	284190	20045	50112	14		
305.8987	17.260	18.115	-51	0.923	2170397	333371	23618	59045	14	0.85(0.65-0.89)	
303.9016	17.595	18.115	-31	0.941	2020597	412122	20045	50112	21		
305.8987	17.595	18.115	-31	0.941	2736984	509697	23618	59045	22	0.74(0.65-0.89)	M
303.9016	18.042	18.115	-4	0.965	23342044	3931909	20045	50112	196		
305.8987	18.042	18.115	-4	0.965	27707349	4696021	23618	59045	199	0.84(0.65-0.89)	
303.9016	18.411	18.115	18	0.985	896239	147476	20045	50112	7		M
305.8987	18.411	18.115	18	0.985	1107002	178656	23618	59045	8	0.81(0.65-0.89)	M
303.9016	19.408	18.115	77	1.038	3592448	638241	20045	50112	32		
305.8987	19.408	18.115	77	1.038	4221232	752666	23618	59045	32	0.85(0.65-0.89)	

Report Date: 16-Mar-2021 09:33:10 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	19.811	18.115	102	1.060	716878	105007	20045	50112	5		M
305.8987	19.811	18.115	102	1.060	886672	125235	23618	59045	5	0.81(0.65-0.89)	
303.9016	21.709	18.115	215	1.161	3902471	605560	20045	50112	30		a
305.8987	21.709	18.115	215	1.161	4630155	719042	23618	59045	30	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.906	19.761	9	1.017	1059604	174138	305	762	571		
333.9338	19.906	19.761	9	1.017	1323633	214189	481	1202	445	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.932	19.778	9	1.018	1816306	282742	214	535	1321		
2,3,7,8-TCDD											Ea
319.8965	19.932	19.787	9	1.001	12228593	1868986	1293	3232	1445		a
321.8936	19.932	19.787	9	1.001	15356482	2329153	1130	2825	2061	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											a
319.8965	18.067	18.876	-48	0.908	43521	6576	1293	3232	5		
321.8936	18.067	18.876	-48	0.908	54876	8210	1130	2825	7	0.79(0.65-0.89)	
319.8965	18.609	18.876	-16	0.935	23359	4745	1293	3232	4		
321.8936	18.609	18.876	-16	0.935	26801	5941	1130	2825	5	0.87(0.65-0.89)	
319.8965	19.760	18.876	53	0.993	108988	20054	1293	3232	16		a
321.8936	19.769	18.876	53	0.993	159565	26701	1130	2825	24	0.68(0.65-0.89)	
319.8965	20.515	18.876	98	1.031	983887	138971	1293	3232	107		
321.8936	20.515	18.876	98	1.031	1266607	177025	1130	2825	157	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.730	25.600	8	1.315	1822031	318669	346	865	921		
353.8970	25.730	25.600	8	1.315	1143171	200495	210	525	955	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.755	25.625	8	1.001	2375739	412531	1131	2827	365		M
341.8567	25.755	25.625	8	1.001	1514065	264432	753	1882	351	1.57(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.110	26.980	8	1.385	1858664	318000	346	865	919		
353.8970	27.110	26.980	8	1.385	1194788	204836	210	525	975	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.127	27.006	7	1.001	1383512	250273	1131	2827	221		
341.8567	27.127	27.006	7	1.001	879883	161167	753	1882	214	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.361	22.791	-26	0.869	14937	1996	10	25	200		
341.8567	22.370	22.791	-25	0.869	9628	1482	19	47	78	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											Ma
339.8597	24.399	26.224	-109	0.948	934776	200251	1131	2827	177		
341.8567	24.399	26.224	-109	0.948	611084	130471	753	1882	173	1.53(1.32-1.78)	M
339.8597	25.241	26.224	-59	0.981	73154	13681	1131	2827	12		
341.8567	25.233	26.224	-59	0.981	45496	8775	753	1882	12	1.61(1.32-1.78)	
339.8597	25.620	26.224	-36	0.996	157514	38892	1131	2827	34		M
341.8567	25.620	26.224	-36	0.996	97862	23681	753	1882	31	1.61(1.32-1.78)	
339.8597	26.285	26.224	4	1.022	625892	116138	1131	2827	103		
341.8567	26.285	26.224	4	1.022	403887	75411	753	1882	100	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	27.422	26.224	72	1.066	330261	53905	1131	2827	48		
341.8567	27.422	26.224	72	1.066	214458	34986	753	1882	46	1.54(1.32-1.78)	
339.8597	28.971	26.224	165	1.126	88361	15403	1131	2827	14		a
341.8567	28.963	26.224	164	1.126	56960	9690	753	1882	13	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.851	27.721	8	1.423	1155846	197885	168	420	1178		
369.8919	27.843	27.721	7	1.423	739074	125300	160	400	783	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.868	27.755	7	1.001	133299	23157	90	225	257		
357.8516	27.877	27.755	7	1.001	84301	14362	55	137	261	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQM
355.8546	24.651	26.609	-117	0.885	12161	2309	90	225	26		
357.8516	24.677	26.609	-116	0.886	22583	3865	55	137	70	0.54(1.32-1.78)	
	Empc Correction				7845	1489	55	137	27		
355.8546	25.881	26.609	-44	0.929	18373	3548	90	225	39		
357.8516	25.873	26.609	-44	0.929	11500	2185	55	137	40	1.60(1.32-1.78)	
355.8546	26.117	26.609	-29	0.938	6685	1226	90	225	14		
357.8516	26.108	26.609	-30	0.937	4459	893	55	137	16	1.50(1.32-1.78)	
355.8546	27.228	26.609	37	0.978	2524	429	90	225	5		
357.8516	27.270	26.609	40	0.979	1456	342	55	137	6	1.73(1.32-1.78)	
355.8546	28.146	26.609	92	1.011	3754	697	90	225	8		M
357.8516	28.154	26.609	93	1.011	2960	522	55	137	9	1.27(1.32-1.78)	M
	Empc Correction				2421	449	55	137	8		
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.572	33.504	4	0.944	949183	170440	208	520	819		
385.8610	33.572	33.504	4	0.944	1805148	329132	411	1027	801	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.598	33.521	5	1.001	3782171	682473	579	1447	1179		
375.8178	33.598	33.521	5	1.001	2943210	530101	441	1102	1202	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.774	33.706	4	0.950	917168	176114	208	520	847		
385.8610	33.783	33.706	5	0.950	1763687	339973	411	1027	827	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.800	33.723	5	1.001	967744	187508	579	1447	324		
375.8178	33.800	33.723	5	1.001	739764	142658	441	1102	323	1.31(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.760	34.709	3	0.977	866628	200070	208	520	962		
385.8610	34.760	34.709	3	0.977	1623876	370535	411	1027	902	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.776	34.725	3	1.000	105722	24606	579	1447	42		
375.8178	34.776	34.725	3	1.000	77455	18589	441	1102	42	1.36(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.770	35.736	2	1.006	842062	211400	208	520	1016		
385.8610	35.770	35.736	2	1.006	1574466	393888	411	1027	958	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	35.787	35.753	2	1.000	64988	16826	579	1447	29		M
375.8178	35.787	35.753	2	1.000	49180	12765	441	1102	29	1.32(1.05-1.43)	

Report Date: 16-Mar-2021 09:33:10 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	31.678	33.496	-109	0.944	267125	40076	579	1447	69		
375.8178	31.669	33.496	-109	0.943	209569	31434	441	1102	71	1.27(1.05-1.43)	
373.8208	32.814	33.496	-41	0.977	139068	23770	579	1447	41		
375.8178	32.814	33.496	-41	0.977	108843	18934	441	1102	43	1.28(1.05-1.43)	
373.8208	34.625	33.496	68	1.031	69500	14887	579	1447	26		
375.8178	34.625	33.496	68	1.031	50996	11450	441	1102	26	1.36(1.05-1.43)	
373.8208	35.905	33.496	144	1.069	220932	56227	579	1447	97		M
375.8178	35.905	33.496	144	1.069	170878	43560	441	1102	99	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.568	35.525	3		2192175	515703	187	467	2758		a
403.8529	35.568	35.525	3		1749925	411350	140	350	2938	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.012	34.970	3	0.984	1104748	262809	187	467	1405		
403.8529	35.021	34.970	3	0.985	883551	210919	140	350	1507	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.021	34.995	2	1.000	4468	995	48	120	21		
391.8127	35.029	34.995	2	1.000	3637	919	48	120	19	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.155	35.105	3	0.988	1167002	269755	187	467	1443		
403.8529	35.155	35.105	3	0.988	925718	210755	140	350	1505	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.172	35.121	3	1.000	23301	5332	48	120	111		
391.8127	35.172	35.121	3	1.000	18569	4416	48	120	92	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.576	35.542	2	1.016	10111	1951	48	120	41		
391.8127	35.585	35.542	3	1.016	7894	1582	48	120	33	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											M
389.8158	32.739	34.039	-78	0.931	77598	12002	48	120	250		
391.8127	32.730	34.039	-78	0.931	62736	9839	48	120	205	1.24(1.05-1.43)	
389.8158	33.699	34.039	-20	0.959	13944	2715	48	120	57		
391.8127	33.699	34.039	-20	0.959	11484	2235	48	120	47	1.21(1.05-1.43)	
389.8158	34.111	34.039	4	0.970	73346	13204	48	120	275		
391.8127	34.120	34.039	5	0.971	58648	10686	48	120	223	1.25(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.805	37.786	1	1.063	641608	185829	228	570	815		
419.8220	37.805	37.786	1	1.063	1427465	420606	341	852	1233	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.814	37.794	1	1.000	1023647	291903	298	745	980		
409.7788	37.814	37.794	1	1.000	990197	286975	263	657	1091	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.145	39.133	1	1.101	663999	219140	228	570	961		
419.8220	39.145	39.133	1	1.101	1491847	487168	341	852	1429	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.153	39.142	1	1.000	340179	108706	298	745	365		
409.7788	39.153	39.142	1	1.000	328222	106701	263	657	406	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.210	38.451	-14	1.011	373484	115744	298	745	388		
409.7788	38.210	38.451	-14	1.011	359057	112341	263	657	427	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.833	38.822	1	1.092	1056008	349426	163	407	2144		
437.8140	38.833	38.822	1	1.092	987605	318841	170	425	1876	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.842	38.830	1	1.000	1269390	411440	539	1347	763		
425.7737	38.842	38.830	1	1.000	1221374	398129	511	1277	779	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.159	39.230	-64	0.983	975113	300328	539	1347	557		a
425.7737	38.159	39.230	-64	0.983	927254	289015	511	1277	566	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.303	41.293	1	1.161	1705007	559999	101	252	5545		
471.7750	41.303	41.293	1	1.161	1926428	643082	134	335	4799	0.89(0.76-1.02)	
OCDF											
441.7428	41.387	41.377	1	1.002	477374	152123	69	172	2205		
443.7399	41.387	41.377	1	1.002	513544	163685	92	230	1779	0.93(0.76-1.02)	
OCDD											
457.7377	41.312	41.301	1	1.000	10883301	3519274	633	1582	5560		
459.7348	41.312	41.301	1	1.000	12180014	4006892	711	1777	5636	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 16-Mar-2021 09:33:10 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 12-Mar-2021 16:56:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 469779 Lims Sample ID: 9

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3416559	646271

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3416559	646271

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.030	324184	70583	389398	84622	18.6	0.83	M
16.426	1147925	224613	1347215	262810	64.9	0.85	
16.873	2155833	285046	2551520	334294	122.4	0.84	
17.260	1843394	284190	2170397	333371	104.4	0.85	
17.595	2020597	412122	2736984	509697	123.7	0.74	M
18.042	23342044	3931909	27707349	4696021	1327.2	0.84	
18.411	896239	147476	1107002	178656	52.1	0.81	M
19.408	3592448	638241	4221232	752666	203.1	0.85	
19.811	716878	105007	886672	125235	41.7	0.81	M
21.709	3902471	605560	4630155	719042	221.8	0.84	a
Signal Totals:							
	39942013	6704747	47747924	7996414			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	87689937	14701161				0.84	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2279.8 = (87689937 * 100.000) / (3416559 * 1.126)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	12-Mar-2021 16:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	9

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2383237	388327

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2383237	388327

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.067	43521	6576	54876	8210	3.47	0.79	
18.609	23359	4745	26801	5941	1.77	0.87	
19.760	108988	20054	159565	26701	9.47	0.68	a
20.515	983887	138971	1266607	177025	79.3	0.78	
Signal Totals:							
	1159755	170346	1507849	217877			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2667604	388223				0.77	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 94.031 = (2667604 * 100.000) / (2383237 * 1.190)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	12-Mar-2021 16:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	9

F1 PeCDFs, RT: 22.791

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	2965202	519164
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3053452	522836

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3009327	521000

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.361	14937	1996	9628	1482	0.7509	1.55	
Signal Totals:							
	14937	1996	9628	1482			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	24565	3478				1.55	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7509 = (24565 * 100.000) / (3009327 * 1.087)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	12-Mar-2021 16:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	9

Non-2,3,7,8-sub-PeCDF, RT: 26.224

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	2965202	519164
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3053452	522836

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3009327	521000

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.399	934776	200251	611084	130471	47.3	1.53	M
25.241	73154	13681	45496	8775	3.63	1.61	
25.620	157514	38892	97862	23681	7.81	1.61	Ma
26.285	625892	116138	403887	75411	31.5	1.55	
27.422	330261	53905	214458	34986	16.7	1.54	
28.971	88361	15403	56960	9690	4.44	1.55	a
Signal Totals:							
	2209958	438270	1429747	283014			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3639705	721284				1.55	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 111.258 = (3639705 * 100.000) / (3009327 * 1.087)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	12-Mar-2021 16:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	9

Non-2,3,7,8-sub-PeCDD, RT: 26.609

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1894920	323185

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1894920	323185

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
24.651	12161	2309	22583	3865	1.61	0.54	RQ
24.651	12161	2309	7845	1489	0.9284		Empc Correction
25.881	18373	3548	11500	2185	1.39	1.60	
26.117	6685	1226	4459	893	0.5172	1.50	
27.228	2524	429	1456	342	0.1847	1.73	
28.146	3754	697	2960	522	0.3116	1.27	RQM
28.146	3754	697	2421	449	0.2866		Empc Correction
Signal Totals:							
	43497	8209	27681	5358			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	86455	16016				1.01	RQM
	71178	13567					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.012 = (86455 * 100.000) / (1894920 * 1.137)
Empc Amount: 3.303 = (71178 * 100.000) / (1894920 * 1.137)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 09:33:10 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	12-Mar-2021 16:56:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	9

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2754331	499572
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2680855	516087
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2490504	570605
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2416528	605288

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2585554	547888

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.678	267125	40076	209569	31434	14.7	1.27	
32.814	139068	23770	108843	18934	7.67	1.28	
34.625	69500	14887	50996	11450	3.73	1.36	
35.905	220932	56227	170878	43560	12.1	1.29	Ma
Signal Totals:							
	696625	134960	540286	105378			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1236911	240338				1.29	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 38.257 = (1236911 * 100.000) / (2585554 * 1.250)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 12-Mar-2021 16:56:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 9

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1988299	473728
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2092720	480510
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	2040509	477119

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.739	77598	12002	62736	9839	6.31	1.24	
33.699	13944	2715	11484	2235	1.14	1.21	
34.111	73346	13204	58648	10686	5.93	1.25	M
Signal Totals:							
	164888	27921	132868	22760			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	297756	50681				1.24	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 13.388 = (297756 * 100.000) / (2040509 * 1.090)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 09:33:10 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 12-Mar-2021 16:56:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 469779 Lims Sample ID: 9

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2069073	606435
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2155846	706308

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2112459	656371

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.210	373484	115744	359057	112341	24.0	1.04	
Signal Totals:							
	373484	115744	359057	112341			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	732541	228085				1.04	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 23.993 = (732541 * 100.000) / (2112459 * 1.445)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 12-Mar-2021 16:56:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 9

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2043613	668267

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2043613	668267

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.159	975113	300328	927254	289015	81.0	1.05	a
Signal Totals:							
	975113	300328	927254	289015			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1902367	589343				1.05	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 81.021 = (1902367 * 100.000) / (2043613 * 1.149)

QC Flag Legend

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 3

Processing Integration Results

RT:	25.62
Area:	268075
Amount:	8.099107
Amount Units:	pg/ul

Manual Integration Results

RT:	25.75
Area:	3889804
Amount:	117.5191
Amount Units:	pg/ul

Reviewer: dadunj, 16-Mar-2021 09:03:53

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Injection Date: 12-Mar-2021 16:56:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-8-A
Lab Sample ID: 320-70797-8
Client ID: 11215702-Tank2-41mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 9
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT: 25.62
Area: 170213
Amount: 8.099107
Amount Units: pg/ul

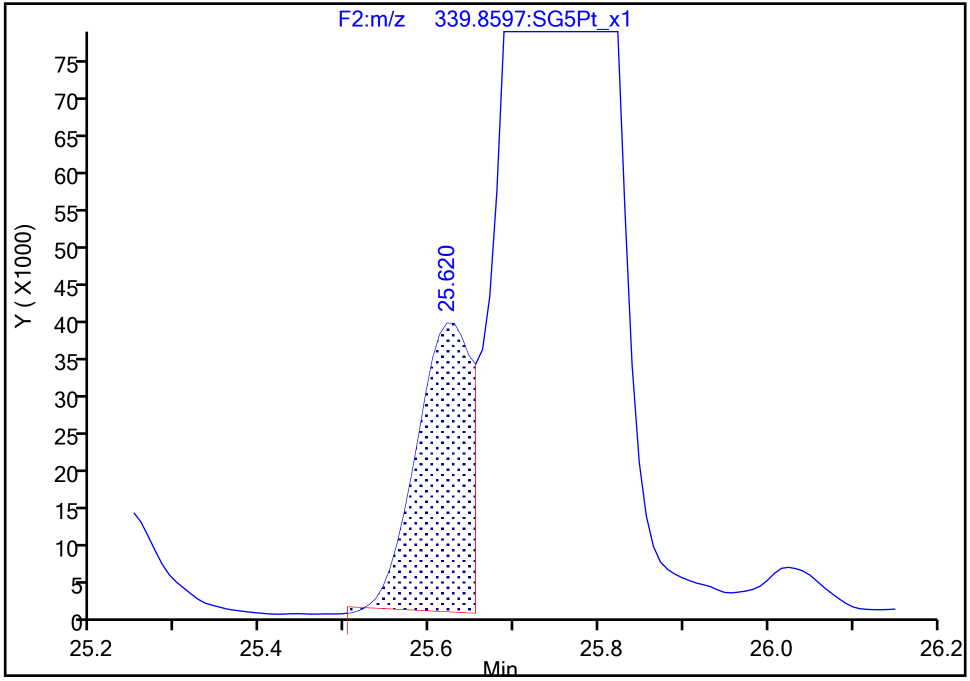

Manual Integration Results

RT: 25.75
Area: 2375739
Amount: 117.5191
Amount Units: pg/ul

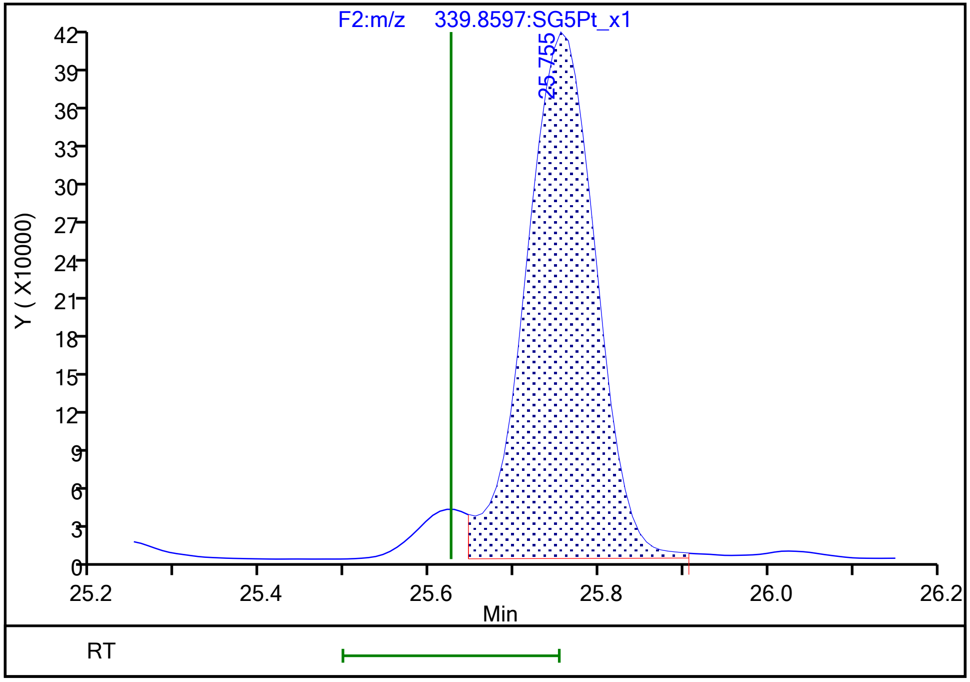

Reviewer: dadunj, 16-Mar-2021 09:04:22
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8
Client ID:	11215702-Tank2-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	25.62
Area:	97862
Amount:	8.099107
Amount Units:	pg/ul

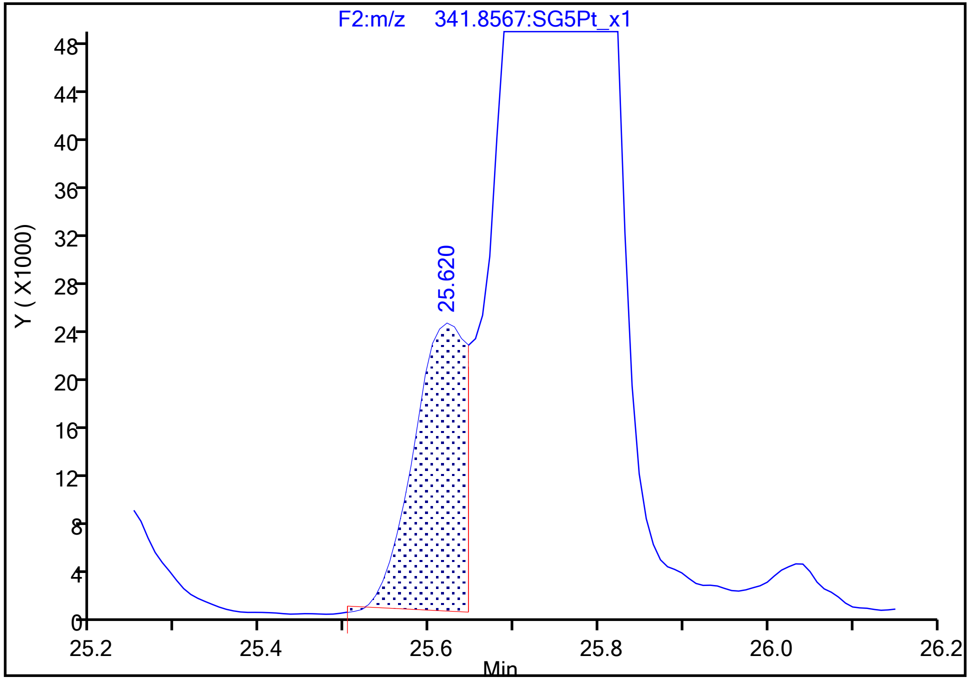

Manual Integration Results

RT:	25.75
Area:	1514065
Amount:	117.5191
Amount Units:	pg/ul

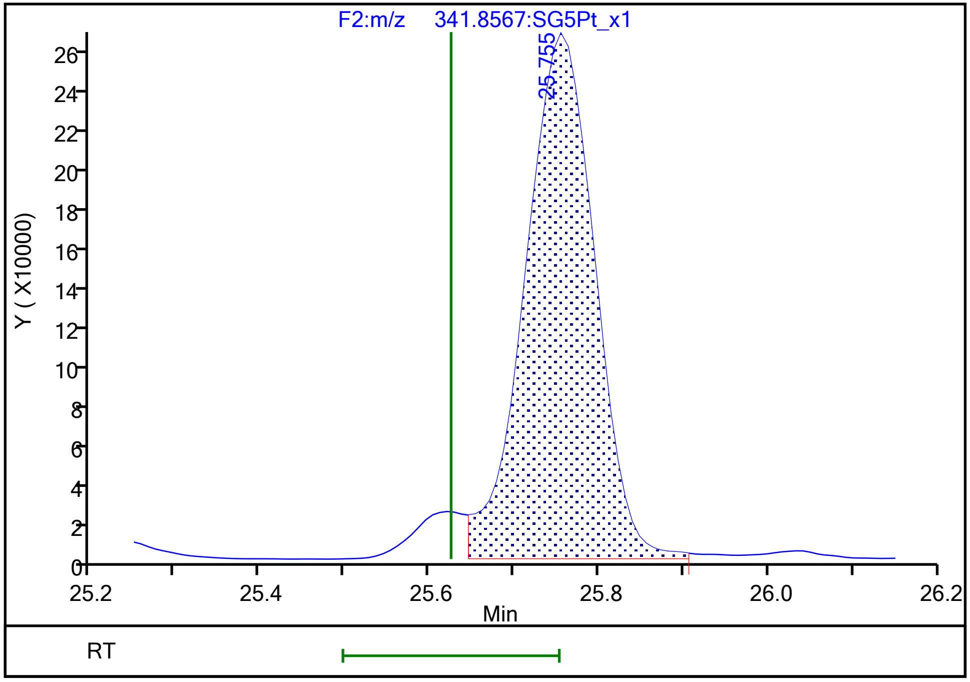

Reviewer: dadunj, 16-Mar-2021 09:04:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 2, m/z: 341.8567, RT: (23.57- 28.87)

Signal: 2

Processing Integration Results

RT = 24.399 Area = 625219

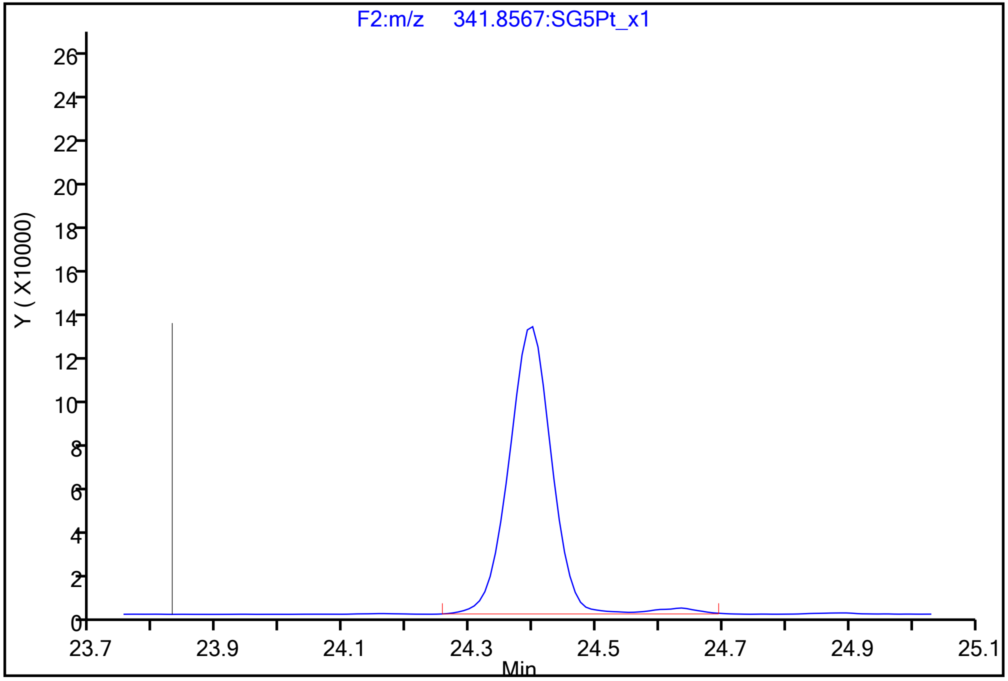

Manual Integration Results

RT = 24.399 Area = 611084 M

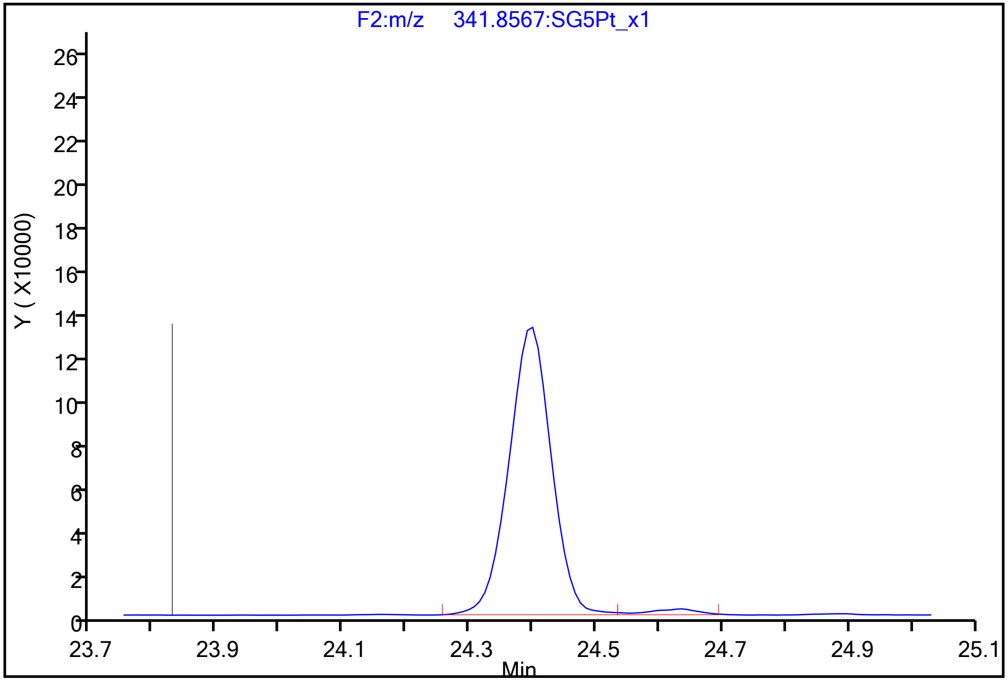

Reviewer: dadunj, 16-Mar-2021 09:04:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.57- 28.87)

Signal: 1

RT = 25.620 Area = 170213

Processing Integration Results

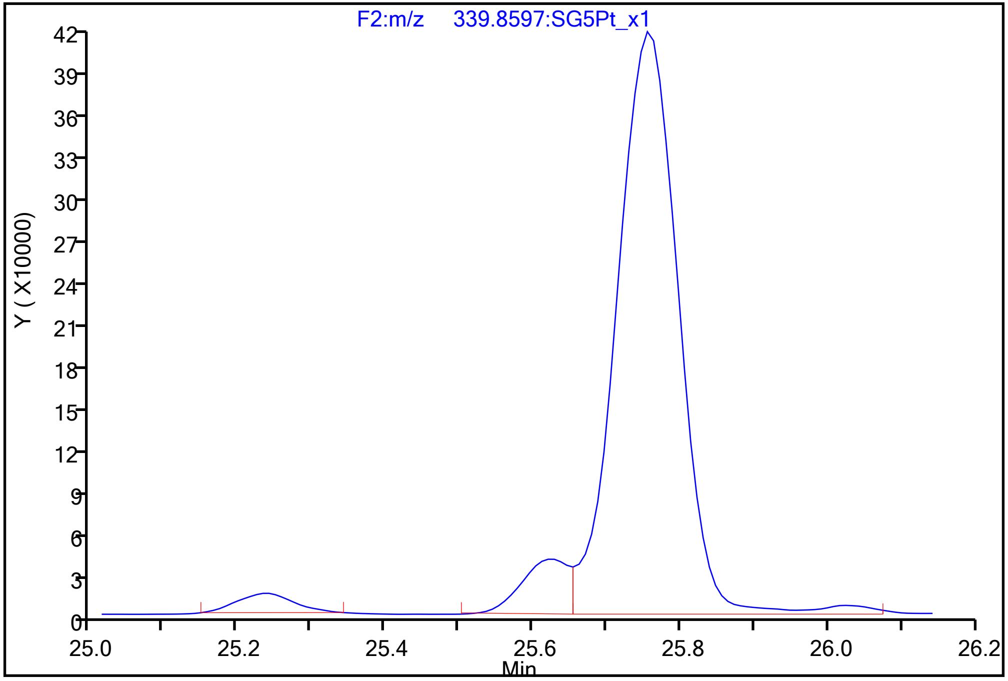

RT = 25.620 Area = 157514 M

Manual Integration Results

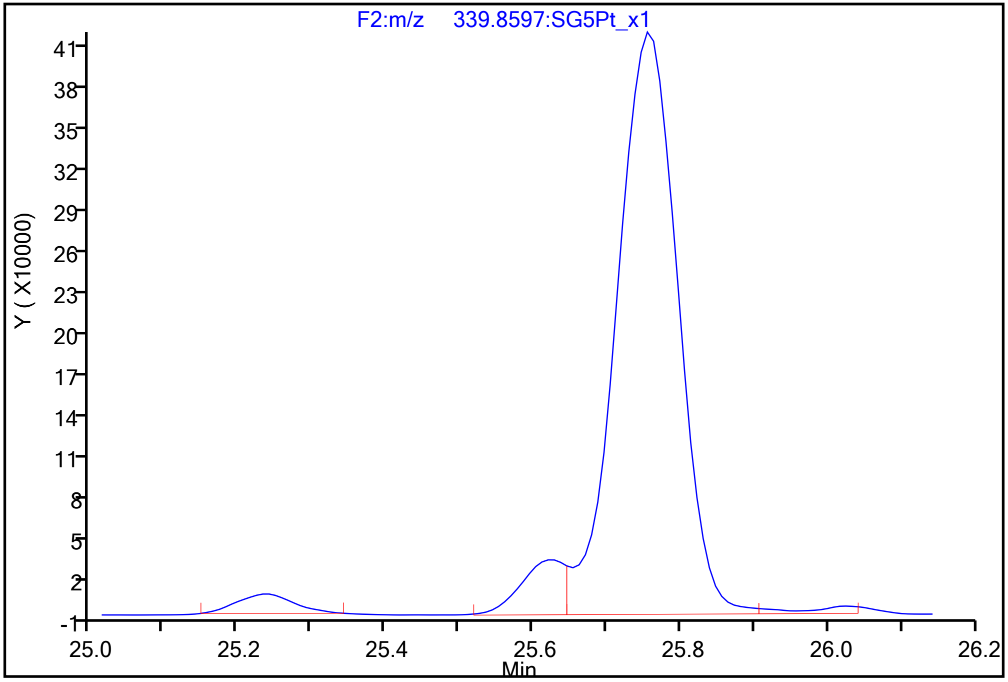

Reviewer: krenns, 16-Mar-2021 09:32:38

Audit Action: Assigned Compound ID Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDD, Signal: 1, m/z: 355.8546, RT: (24.49- 28.73)

Signal: 1

Processing Integration Results

RT = 28.146 Area = 4836

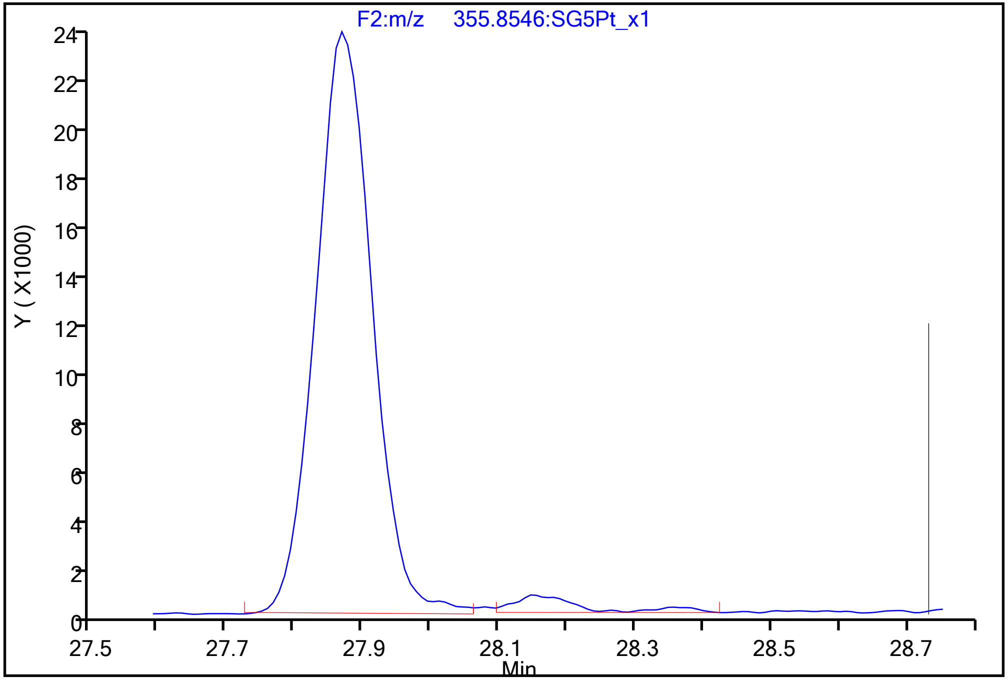

Manual Integration Results

RT = 28.146 Area = 3754 M

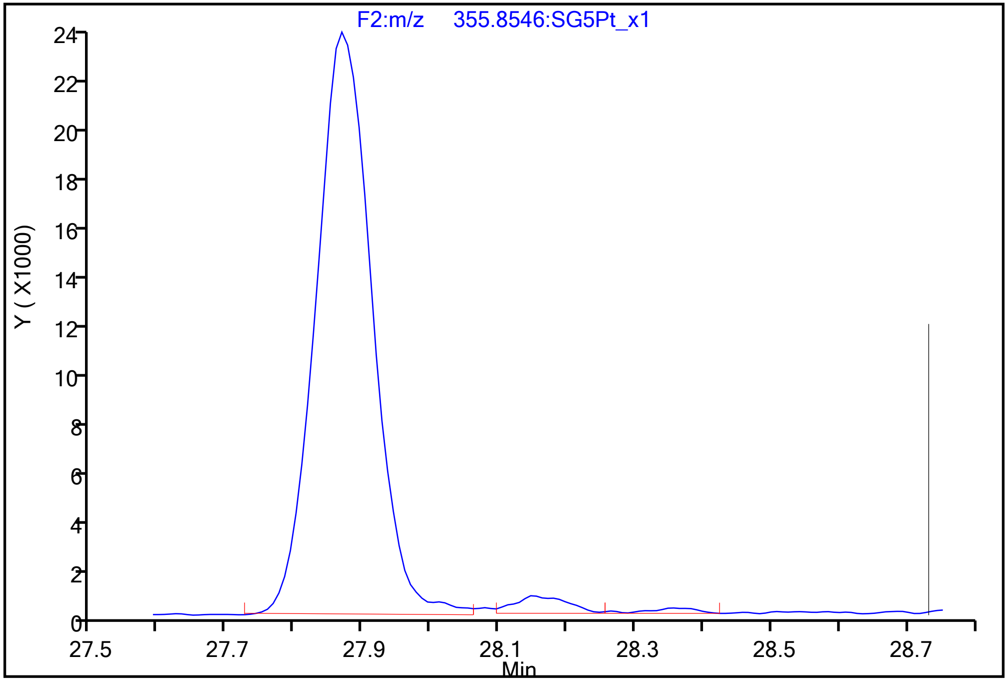

Reviewer: dadunj, 16-Mar-2021 09:05:13

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDD, Signal: 2, m/z: 357.8516, RT: (24.49- 28.73)

Signal: 2

Processing Integration Results

RT = 28.154 Area = 4553

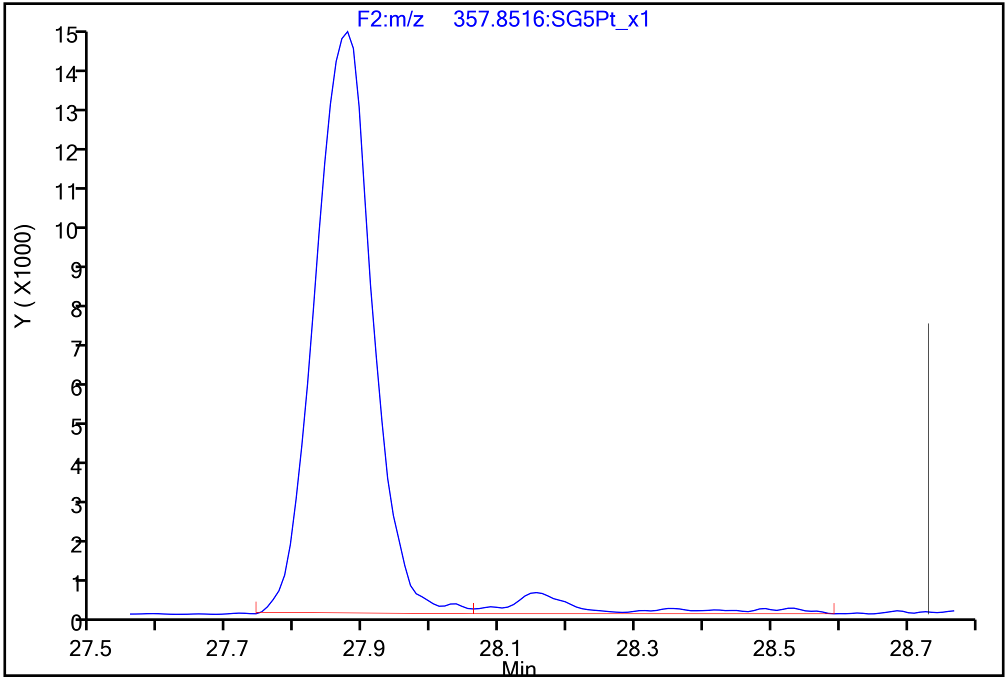

Manual Integration Results

RT = 28.154 Area = 2960 M

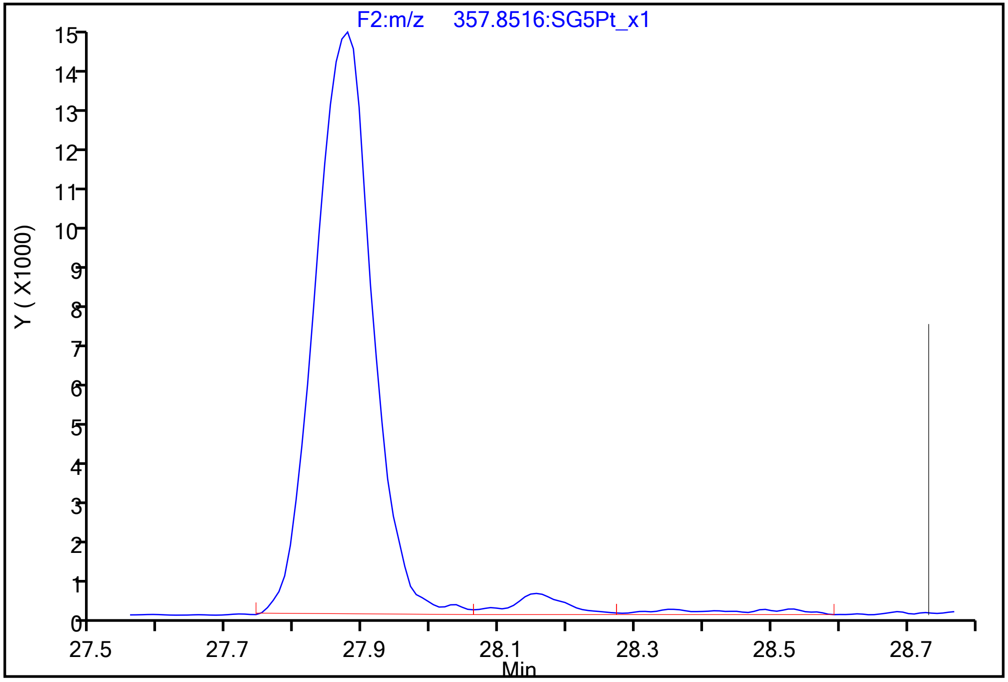

Reviewer: dadunj, 16-Mar-2021 09:05:22

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8
Client ID:	11215702-Tank2-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9
Signal: 2

Processing Integration Results

RT:	35.90
Area:	220059
Amount:	14.088619
Amount Units:	pg/ul

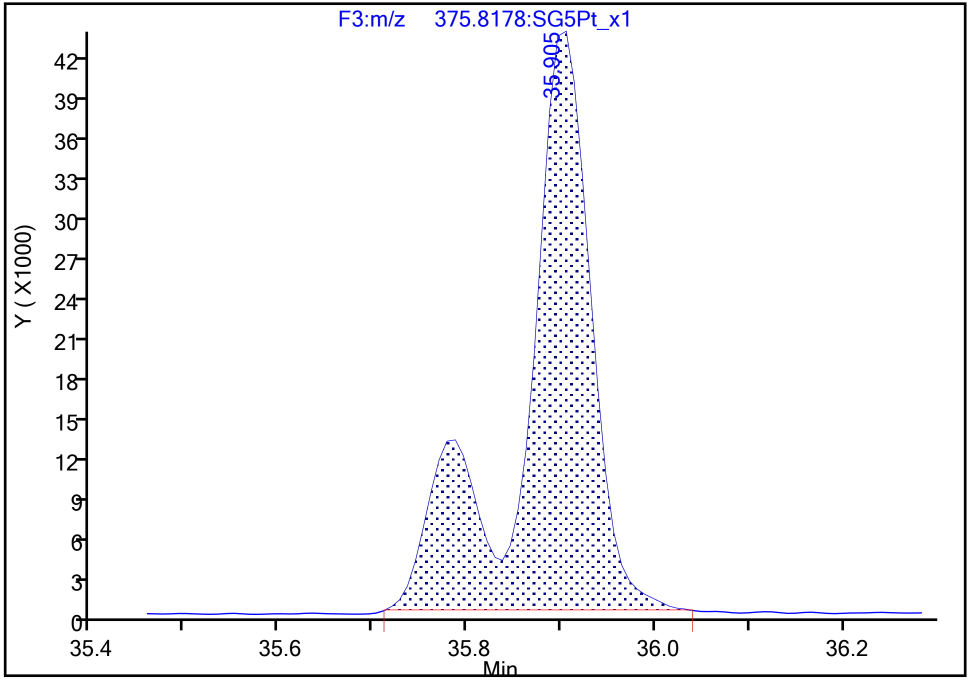

Manual Integration Results

RT:	35.79
Area:	49180
Amount:	3.647397
Amount Units:	pg/ul

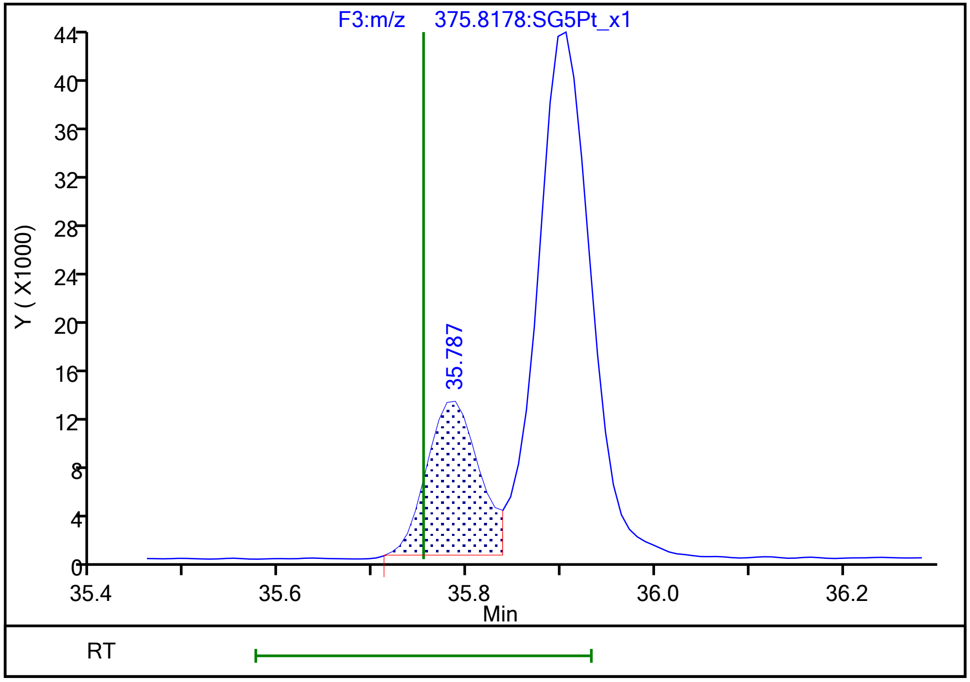

Reviewer: dadunj, 16-Mar-2021 09:05:39

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 16-Mar-2021 09:33:11

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 3

RT:	35.90
Area:	440991
Amount:	14.088619
Amount Units:	pg/ul

Processing Integration Results

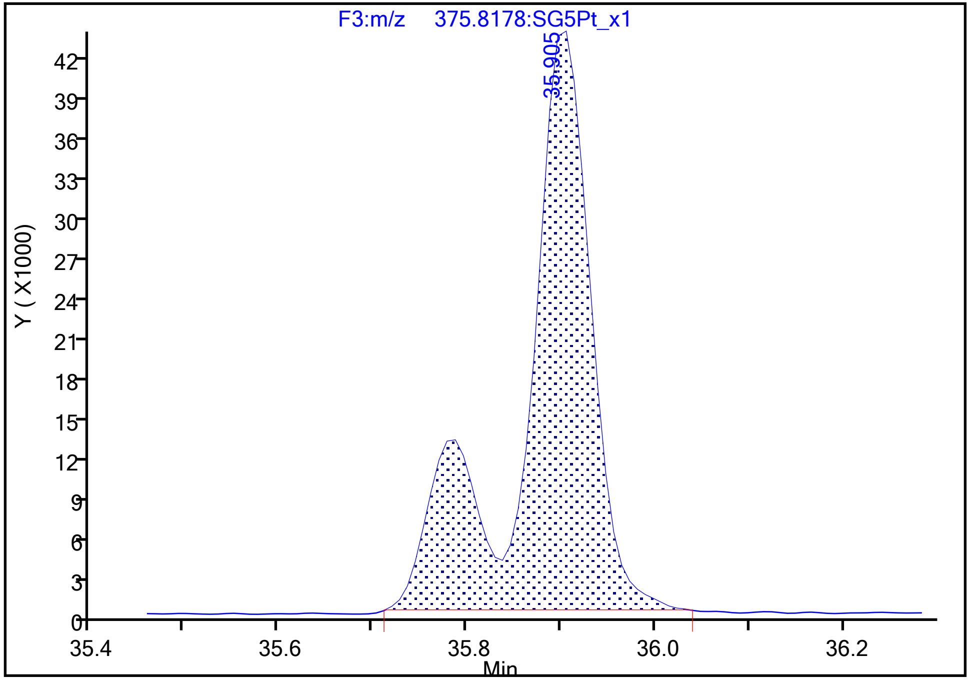

Manual Integration Results

RT:	35.79
Area:	114168
Amount:	3.647397
Amount Units:	pg/ul

Reviewer: dadunj, 16-Mar-2021 09:05:39

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	35.90
Area:	220932
Amount:	14.088619
Amount Units:	pg/ul

Processing Integration Results

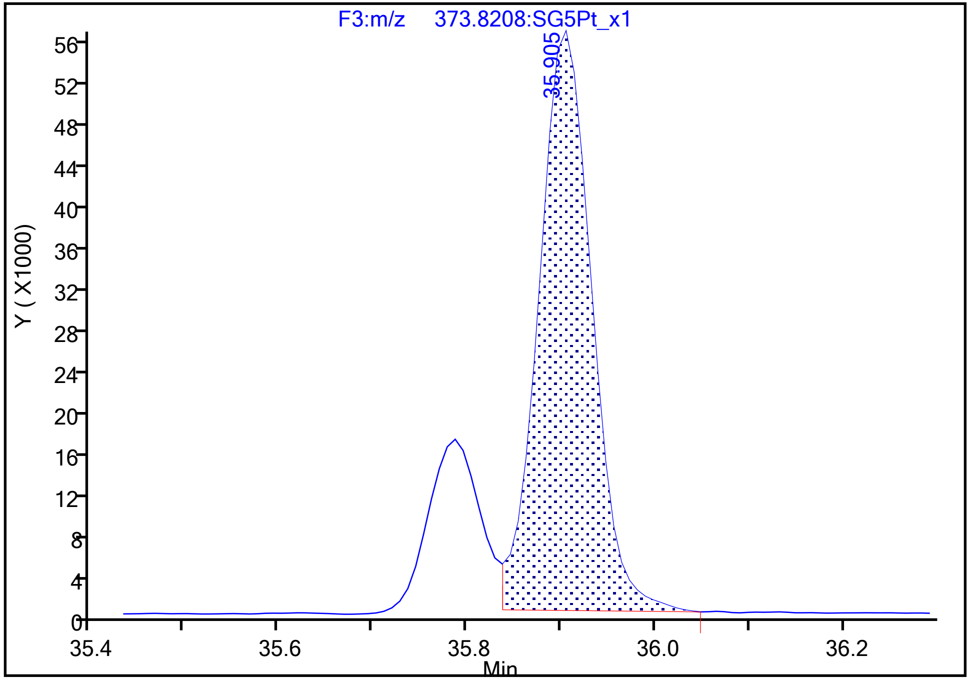

RT:	35.79
Area:	64988
Amount:	3.647397
Amount Units:	pg/ul

Manual Integration Results

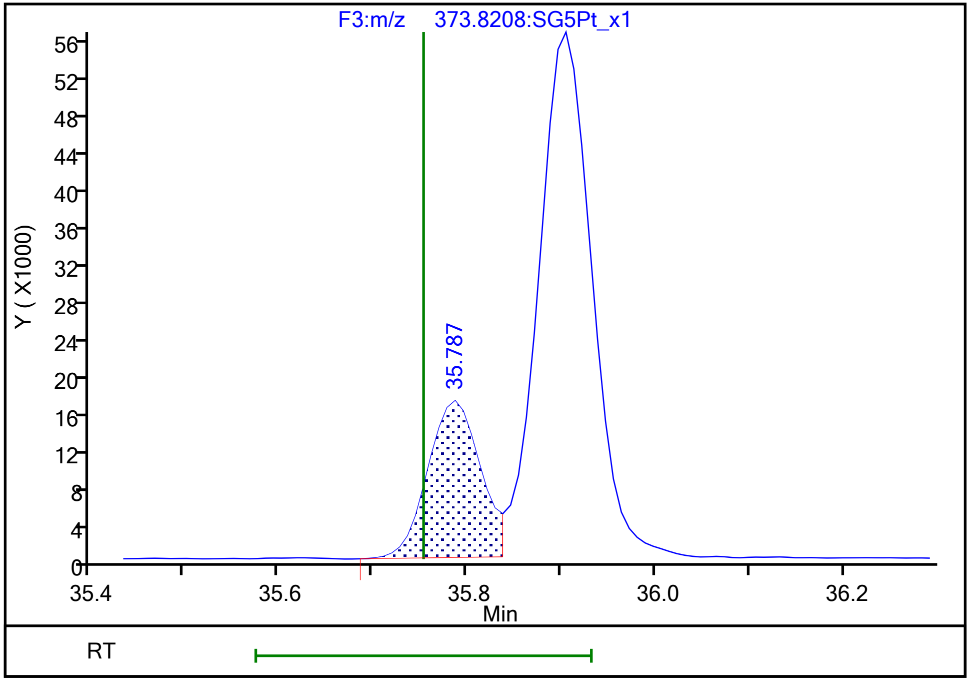

Reviewer: dadunj, 16-Mar-2021 09:05:40

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d				
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (31.11- 35.88)

Signal: 1

Processing Integration Results

RT = 35.905 Area = 220932

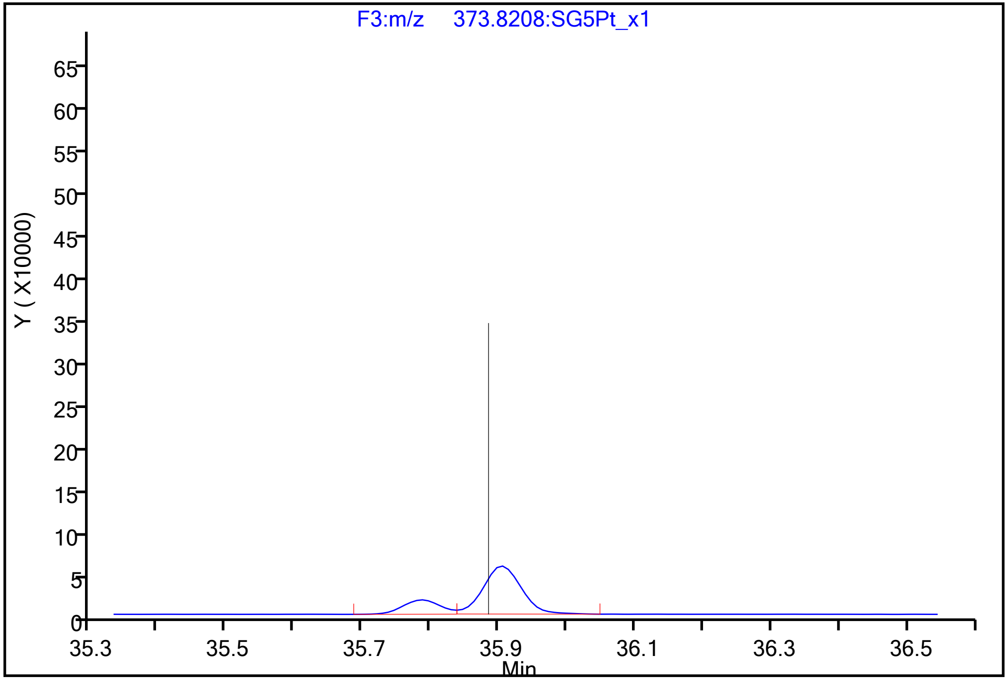

Manual Integration Results

RT = 35.905 Area = 220932

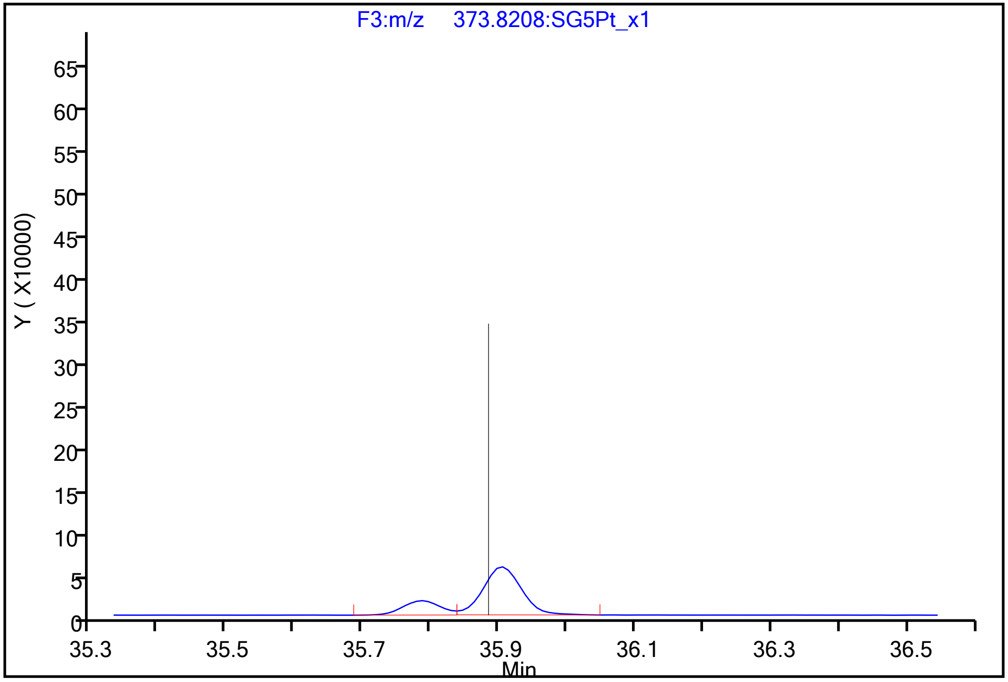

Reviewer: dadunj, 16-Mar-2021 09:05:48

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:33:11

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8
Client ID:	11215702-Tank2-41mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

Processing Integration Results

RT = 34.120 Area = 61700

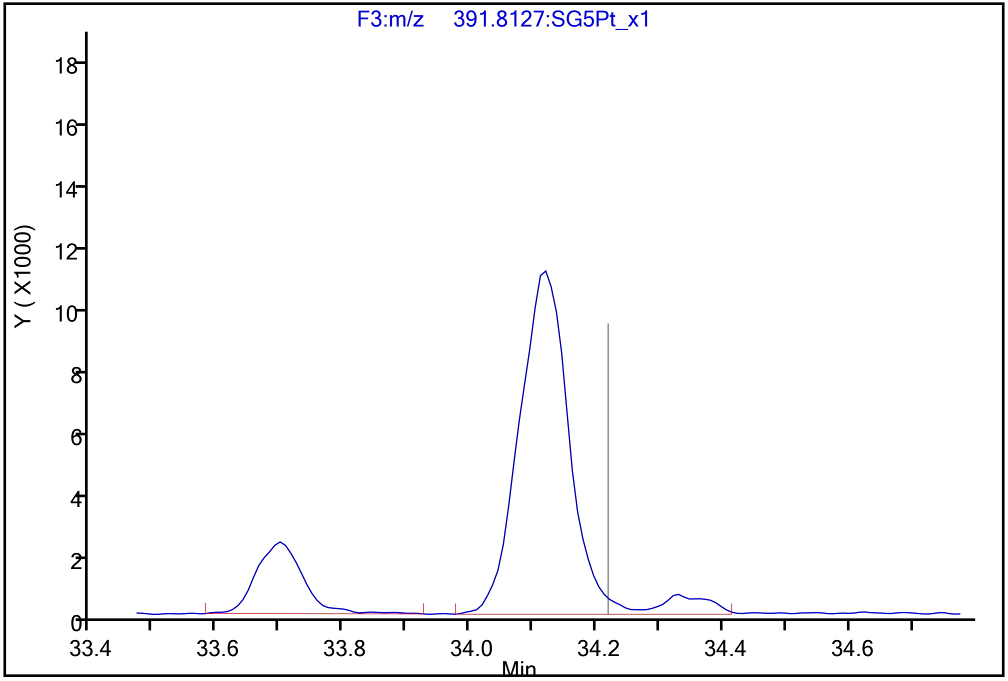

Manual Integration Results

RT = 34.120 Area = 58648 M

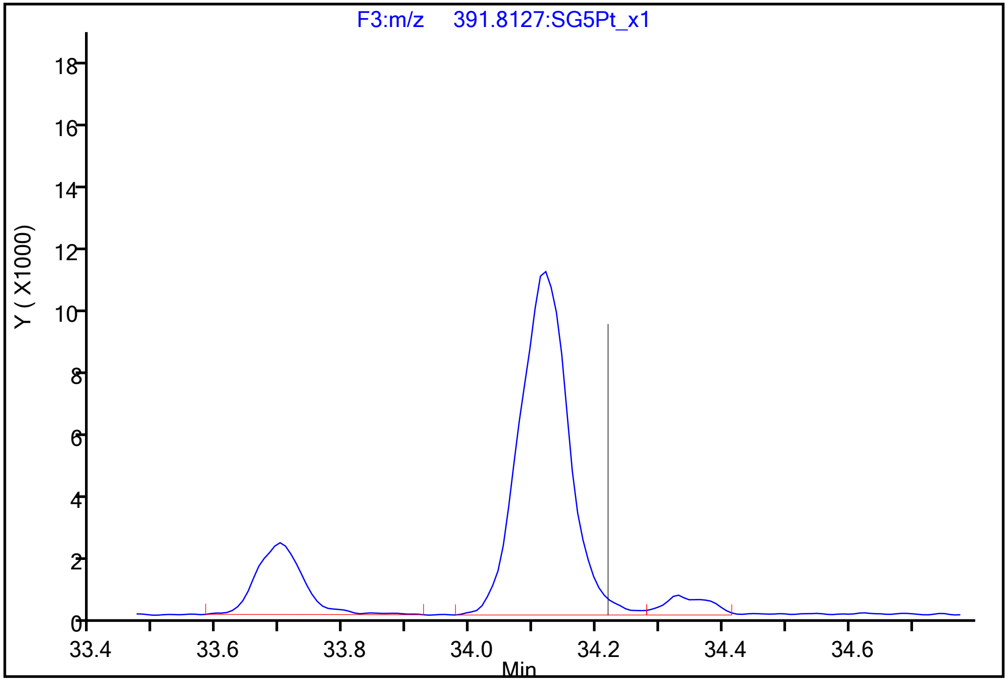

Reviewer: dadunj, 16-Mar-2021 09:06:16

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Injection Date: 12-Mar-2021 16:56:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-41mm
Worklist#: 469779
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

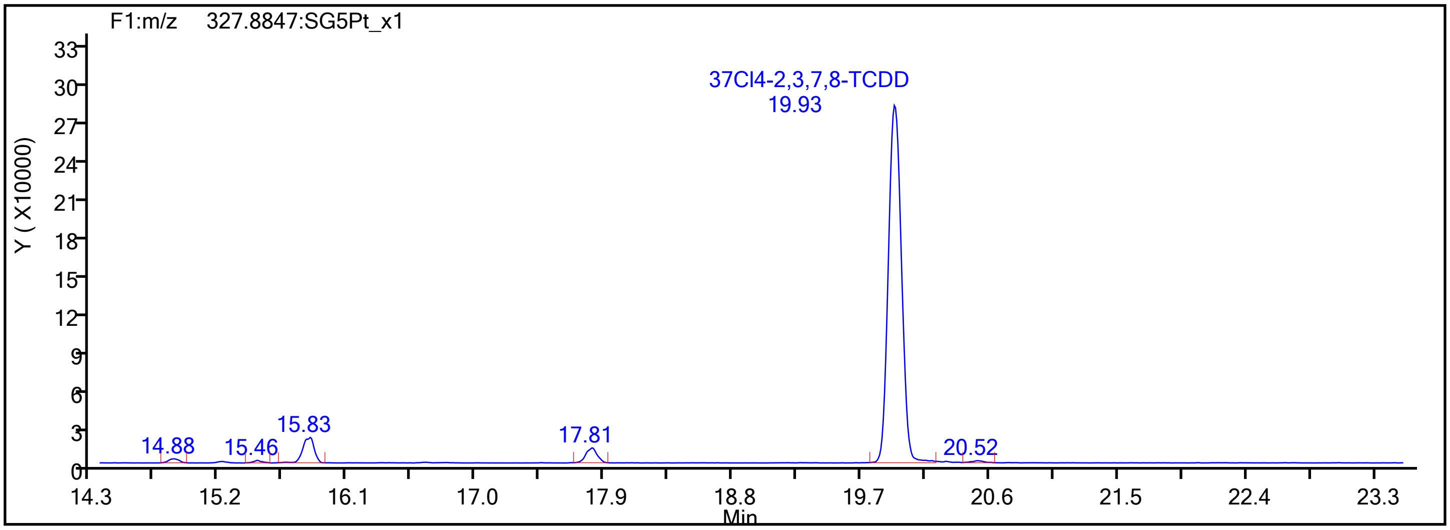

37Cl4-TCDD Standards

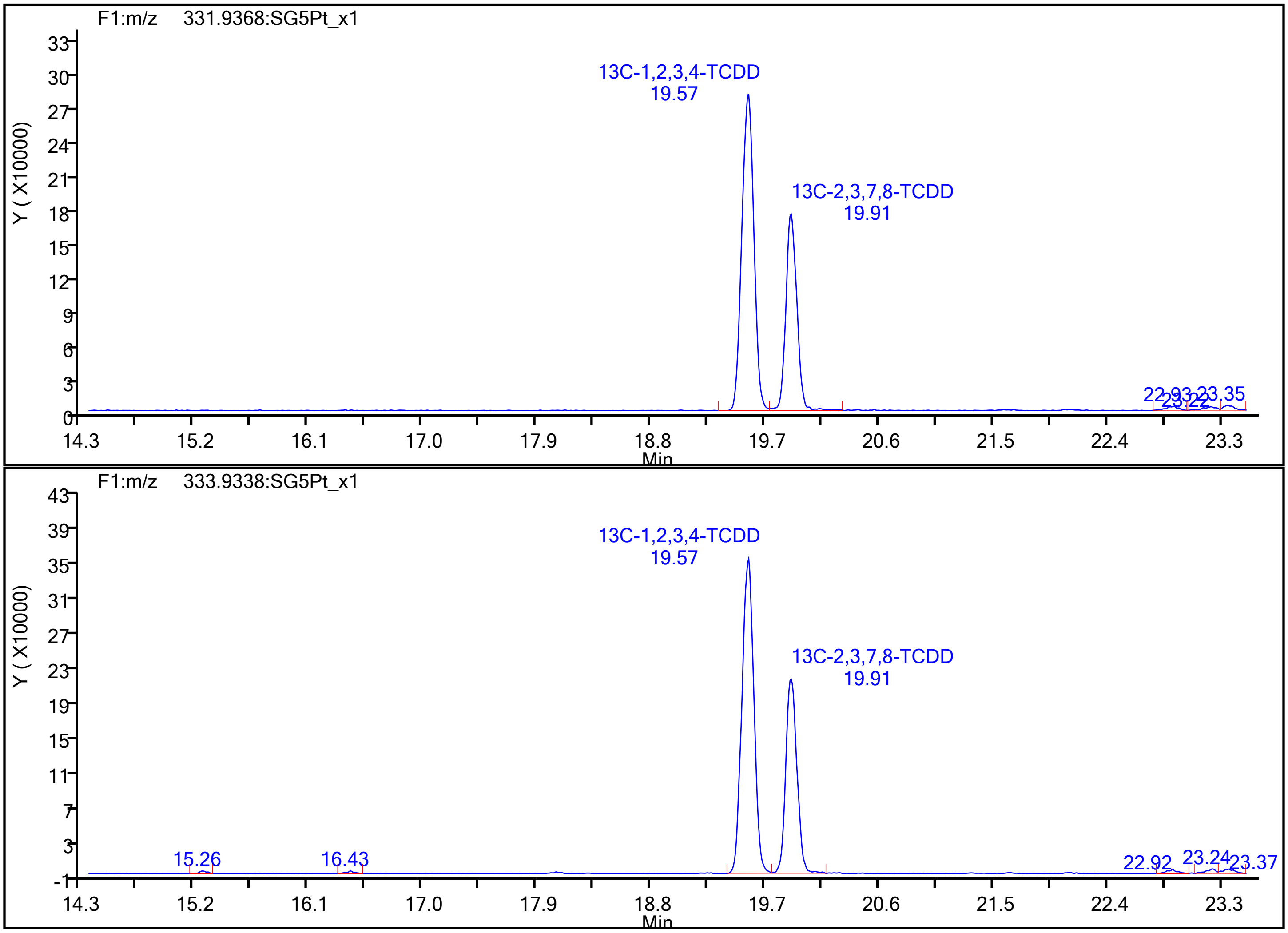

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

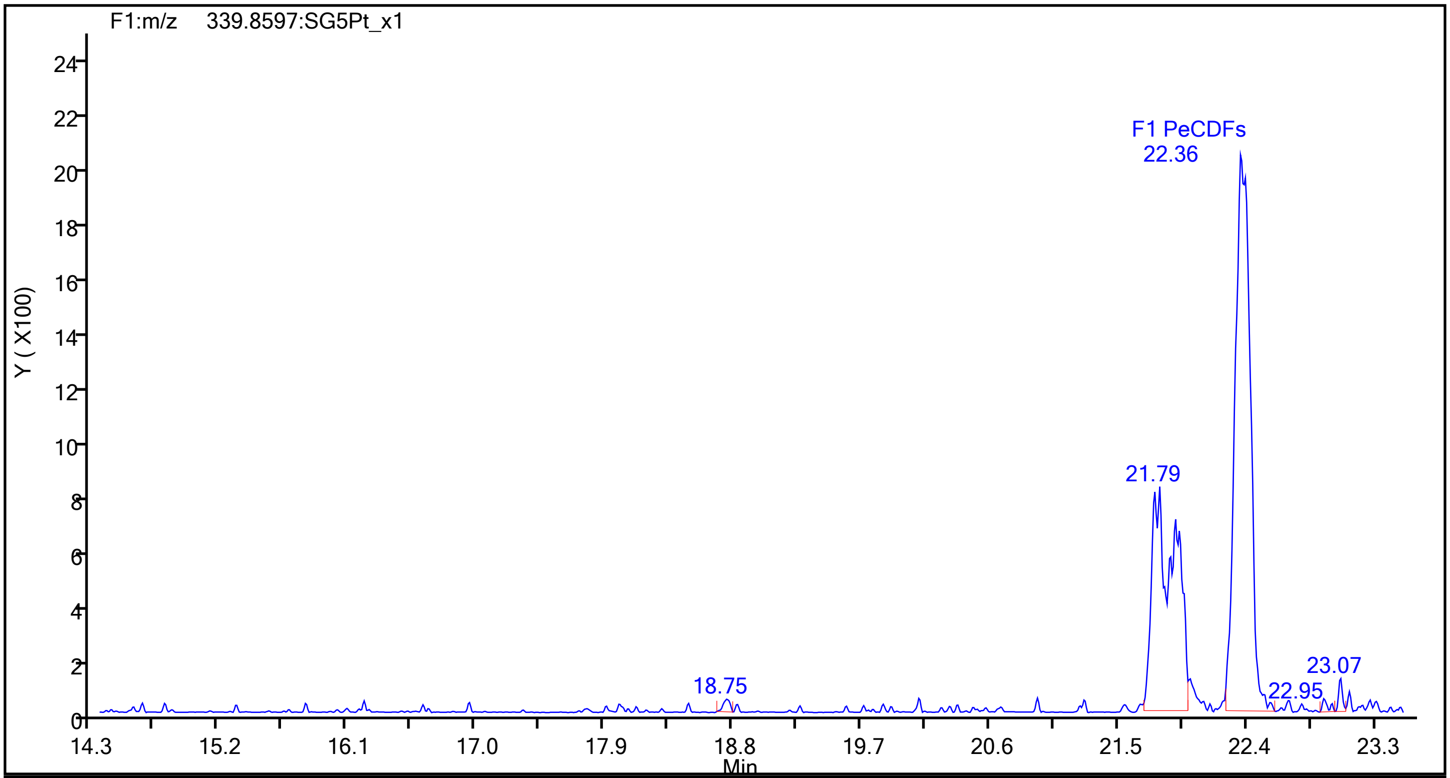

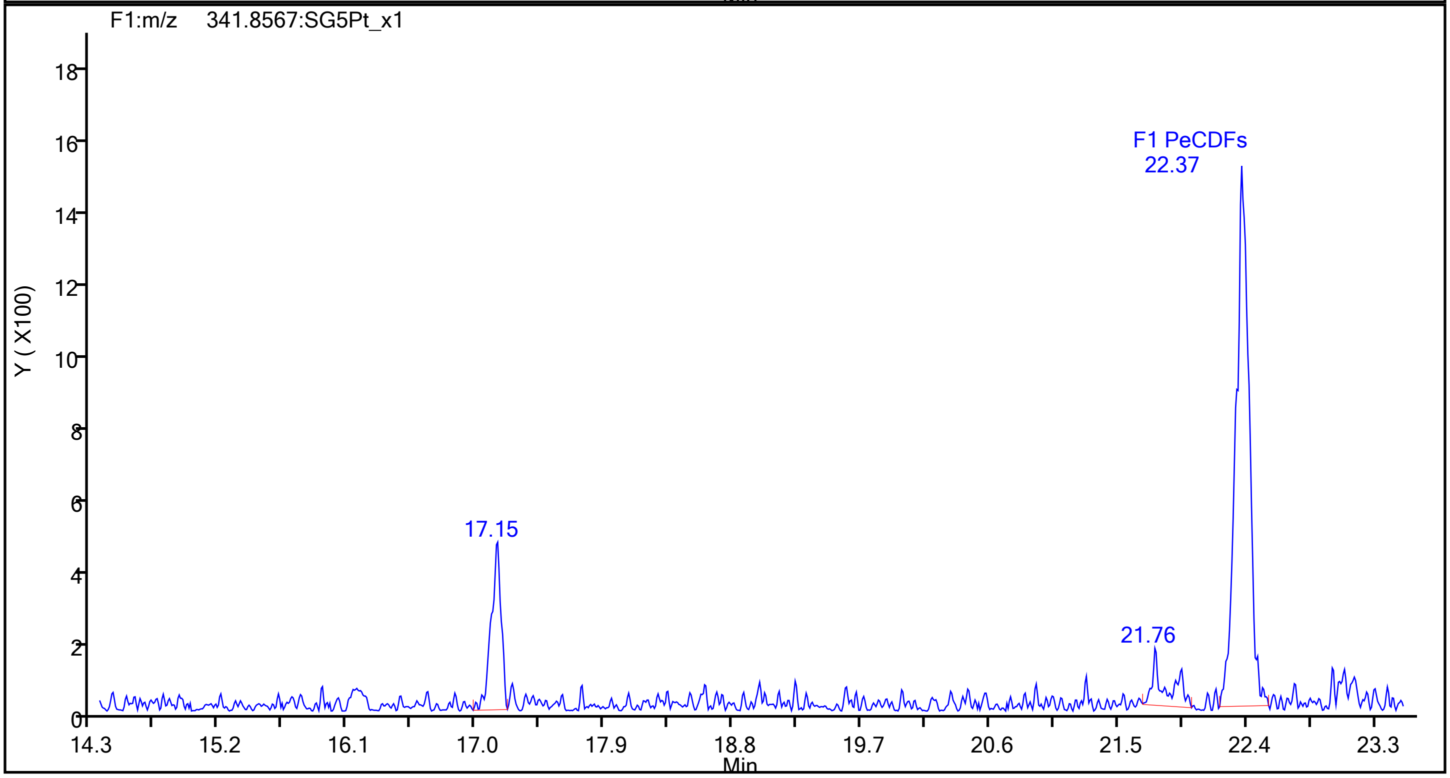

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

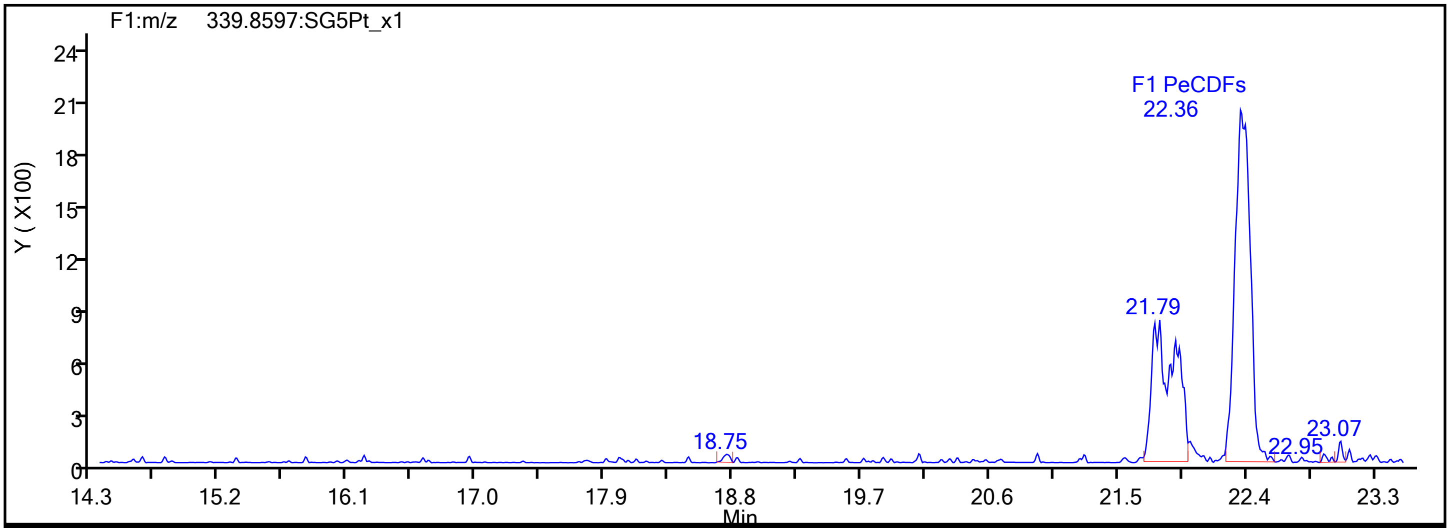

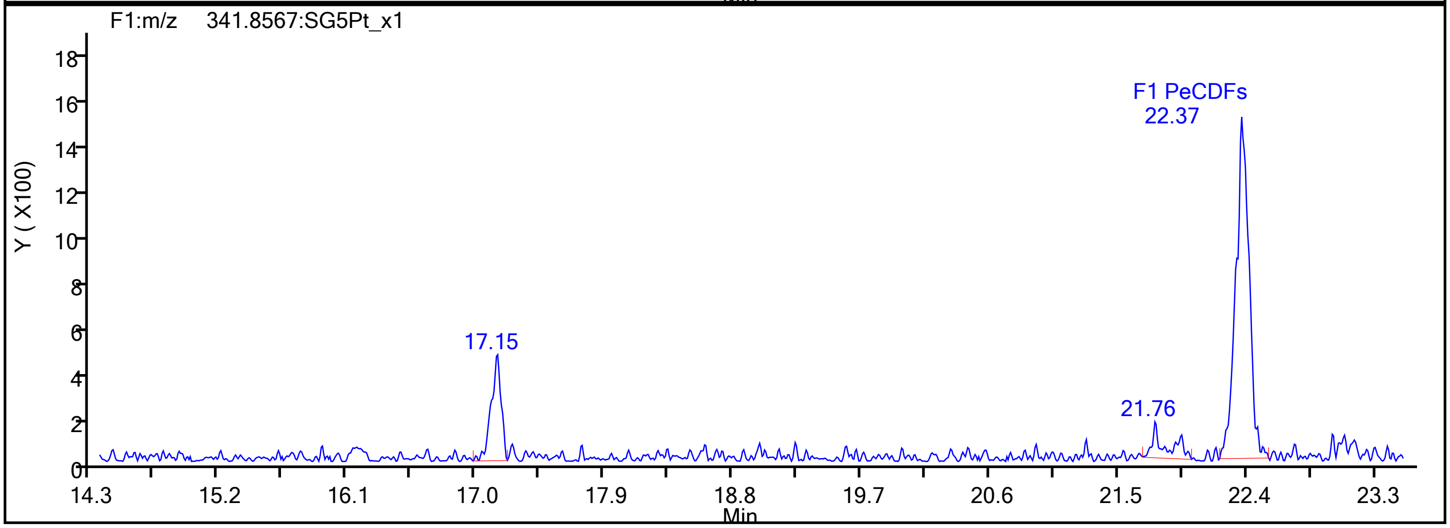

F1 PeCDFs Interference Mass

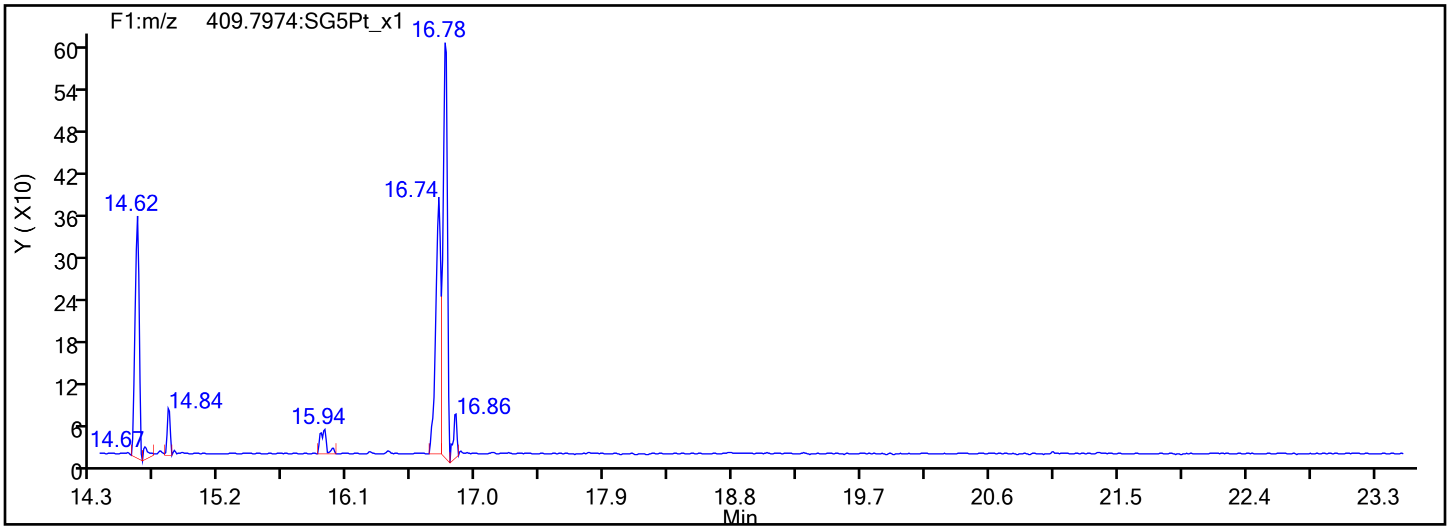

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

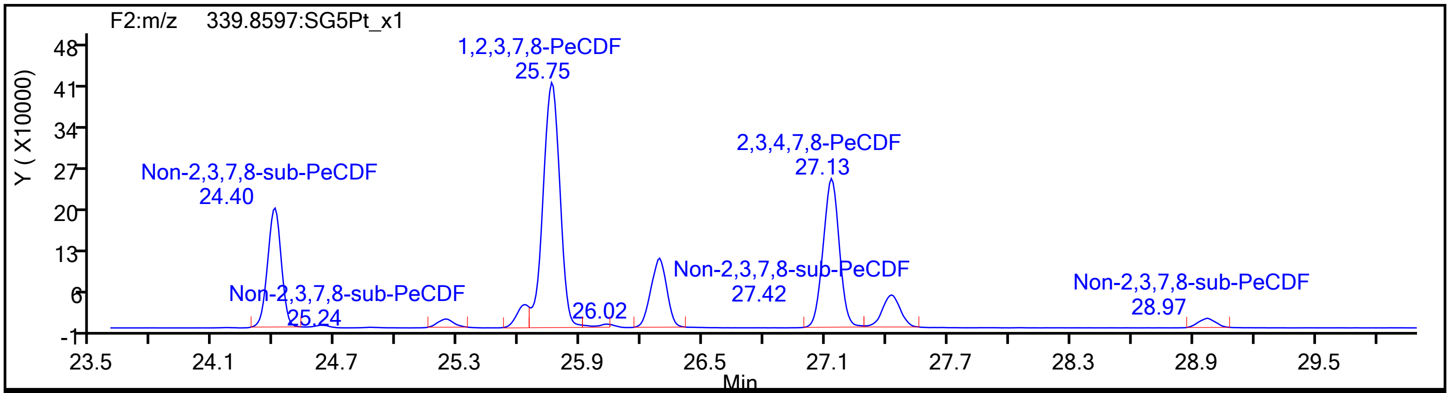

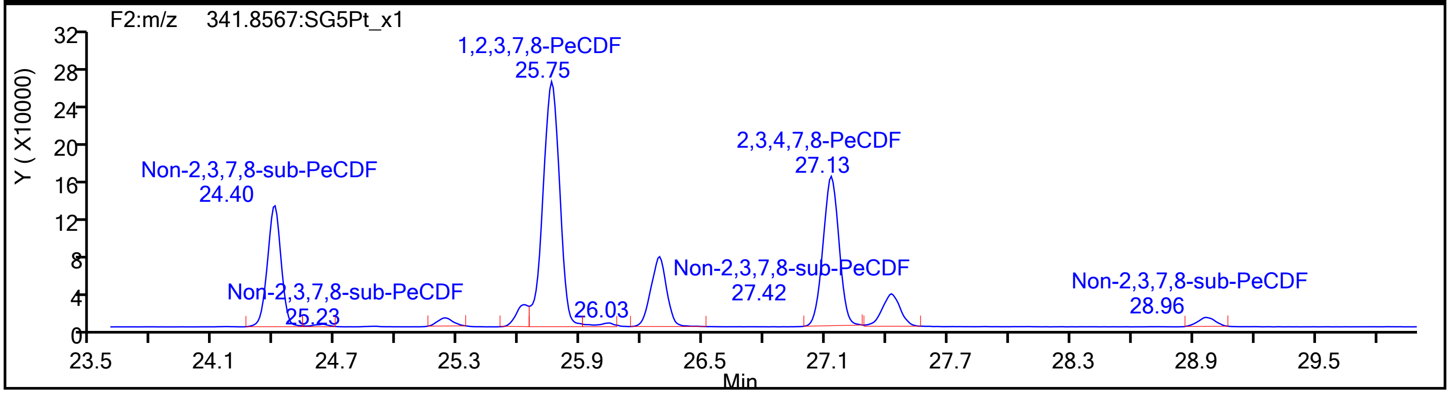

PeCDF Standards

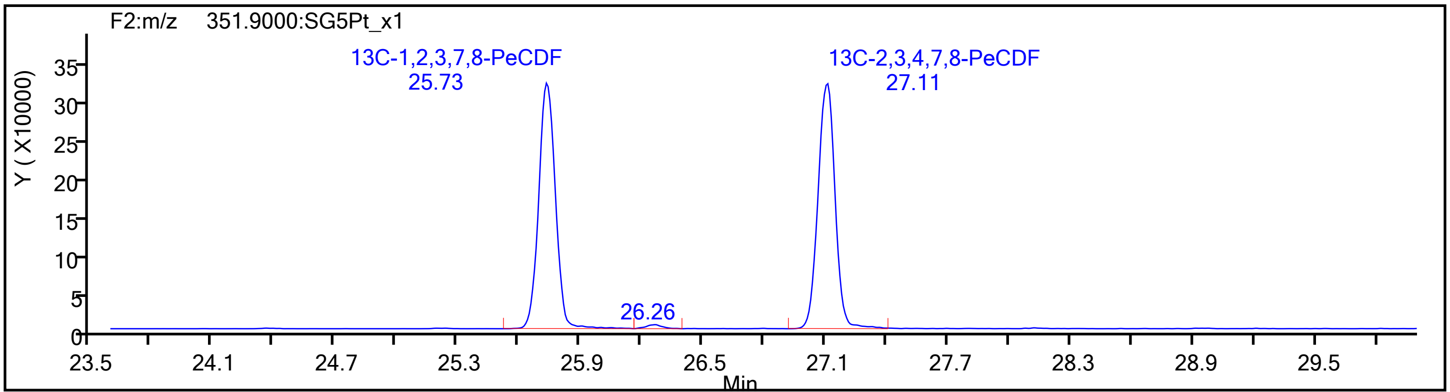

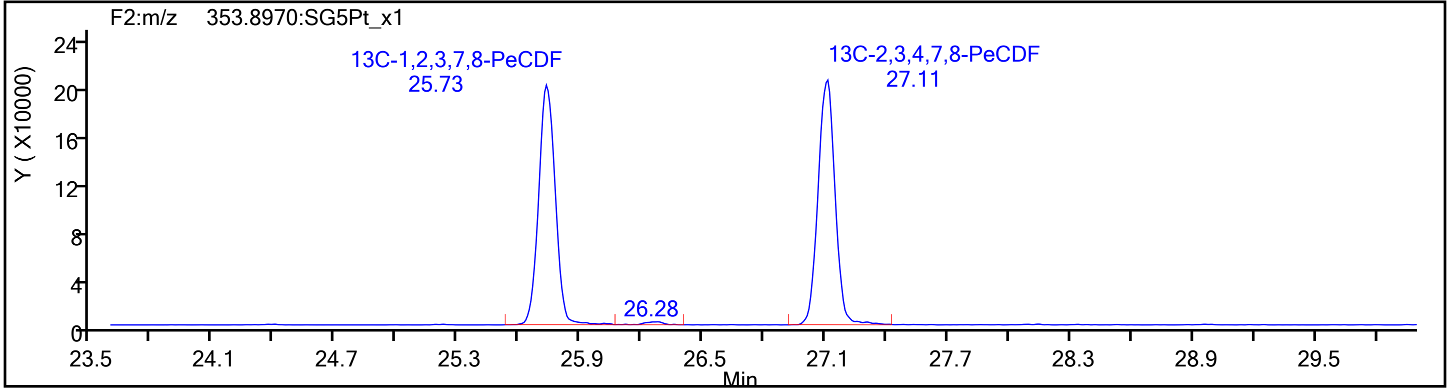

Report Date: 16-Mar-2021 09:33:11 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Injection Date: 12-Mar-2021 16:56:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-41mm
Worklist#: 469779
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

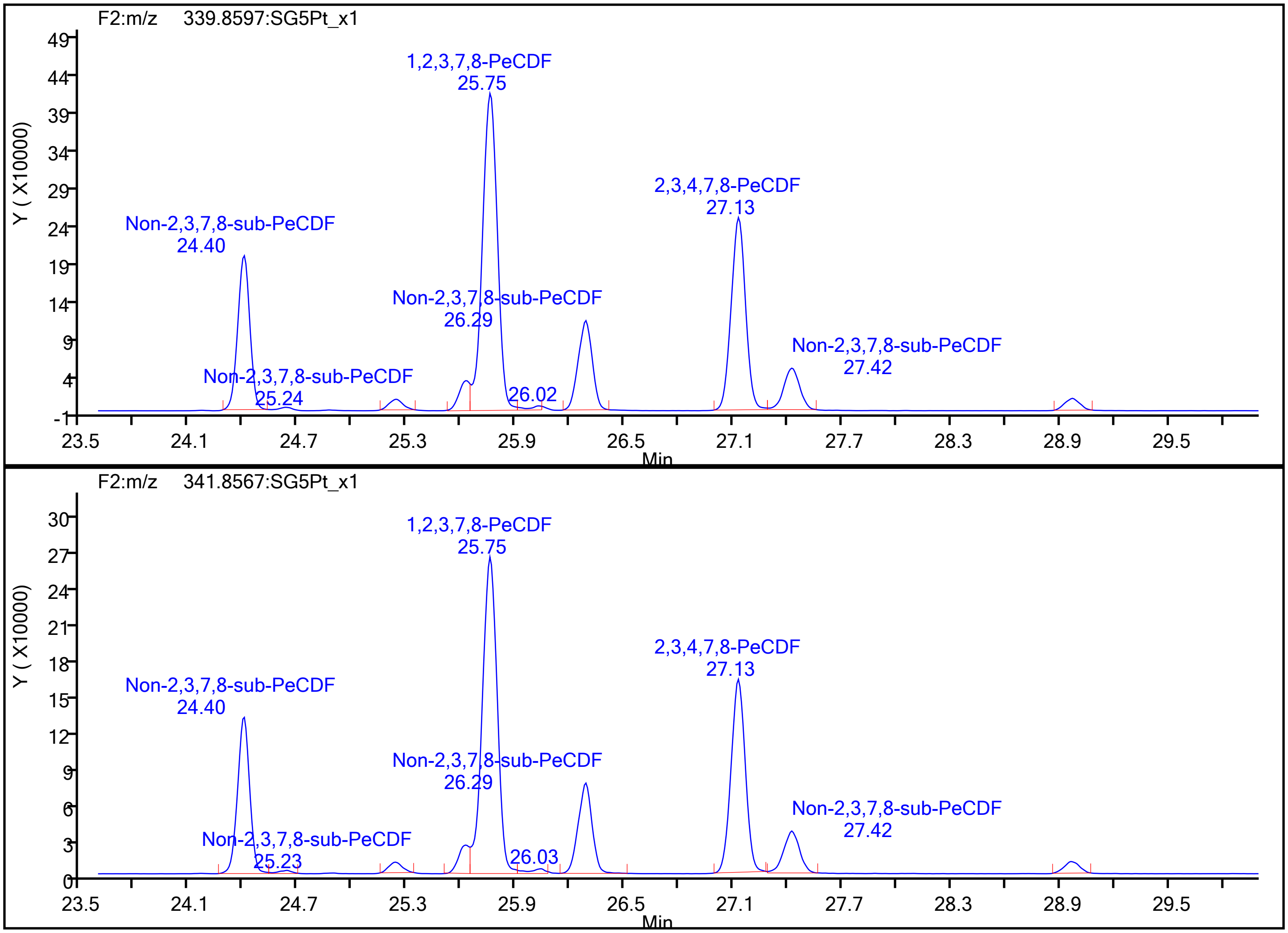

PeCDF Interference Mass

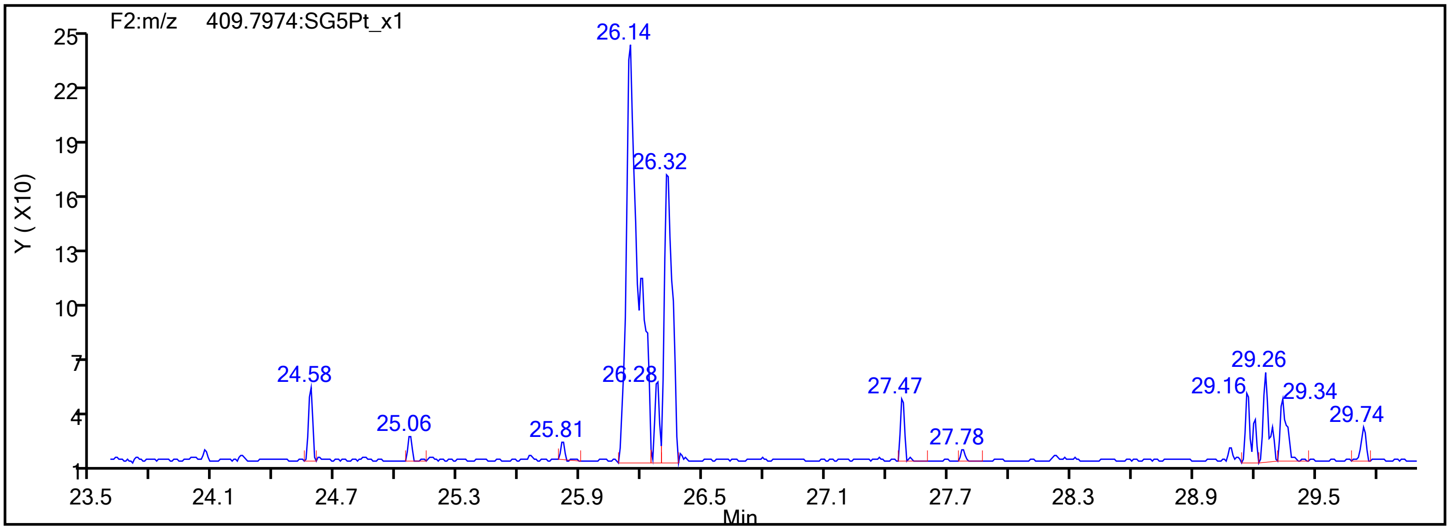

Report Date: 16-Mar-2021 09:33:12
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d
Injection Date: 12-Mar-2021 16:56:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-41mm
Worklist#: 469779
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

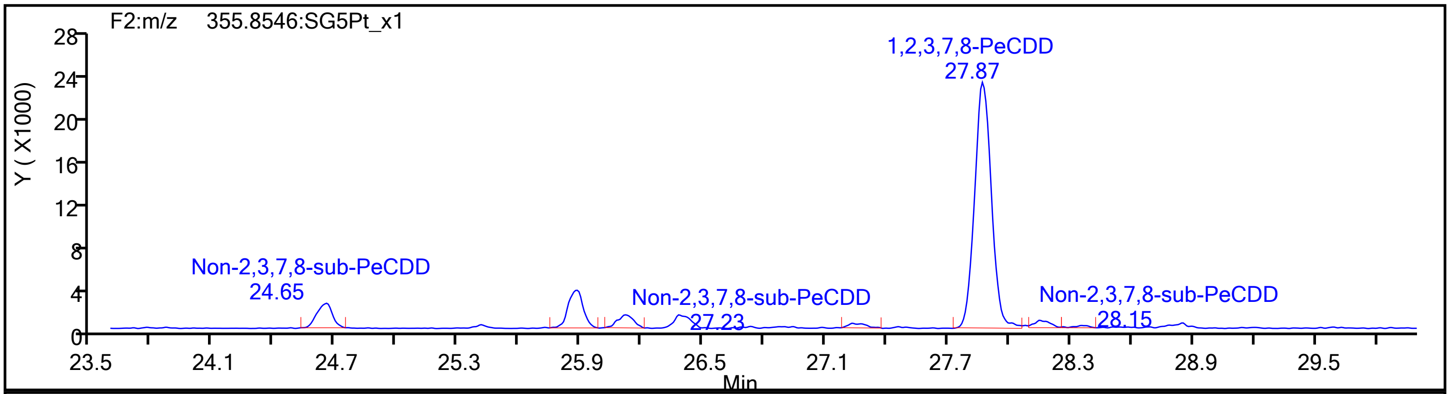

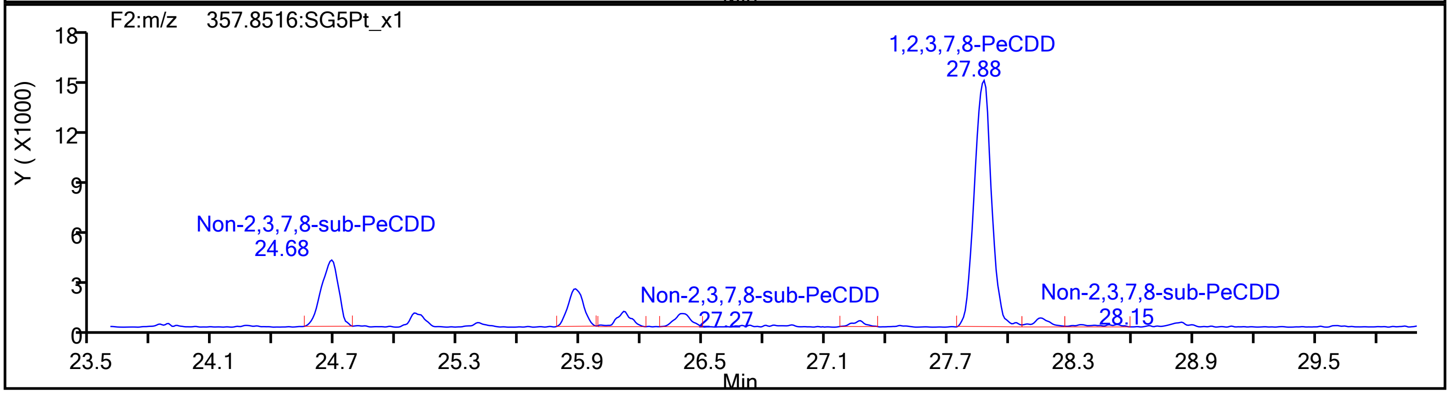

PeCDD Standards

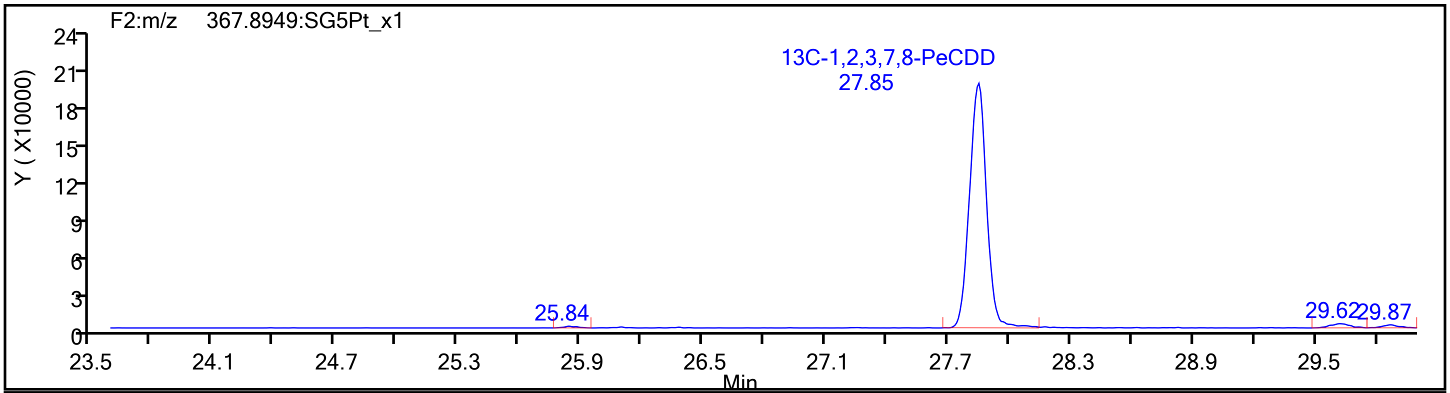

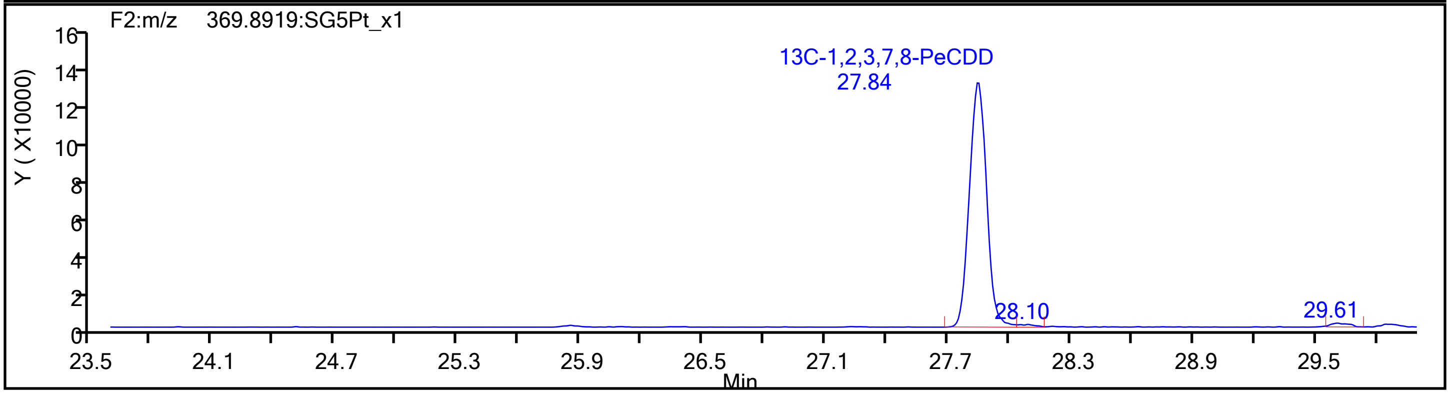

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

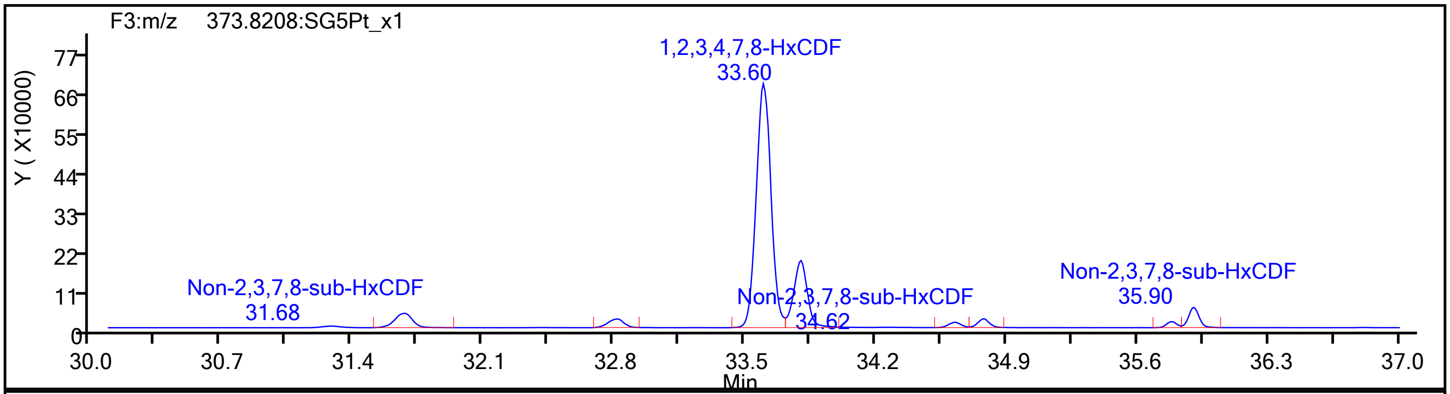

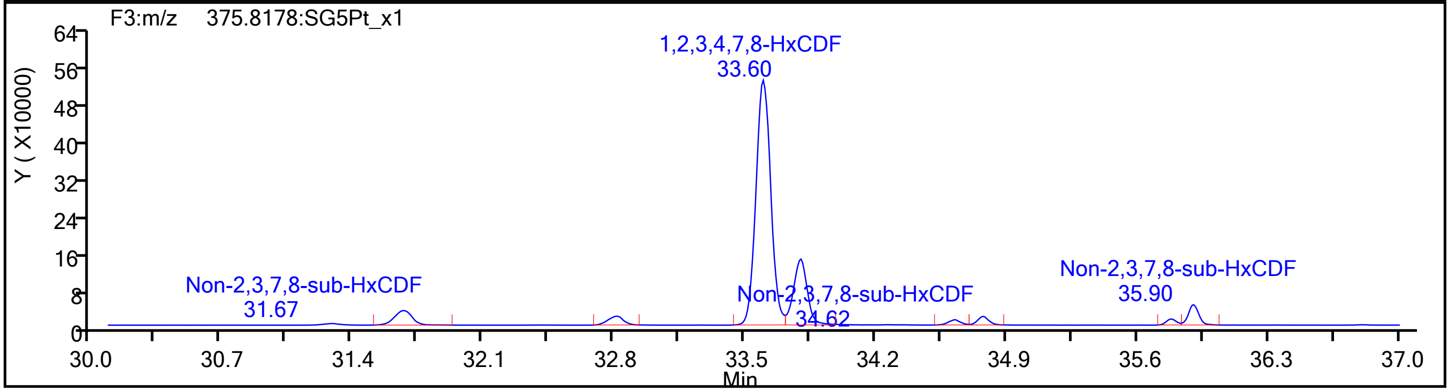

HxCDF Standards

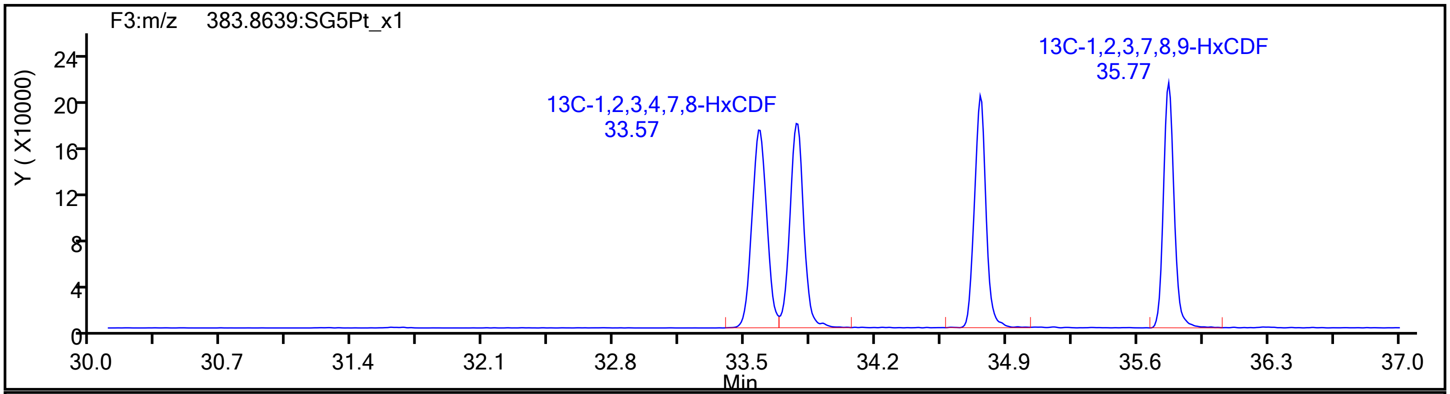

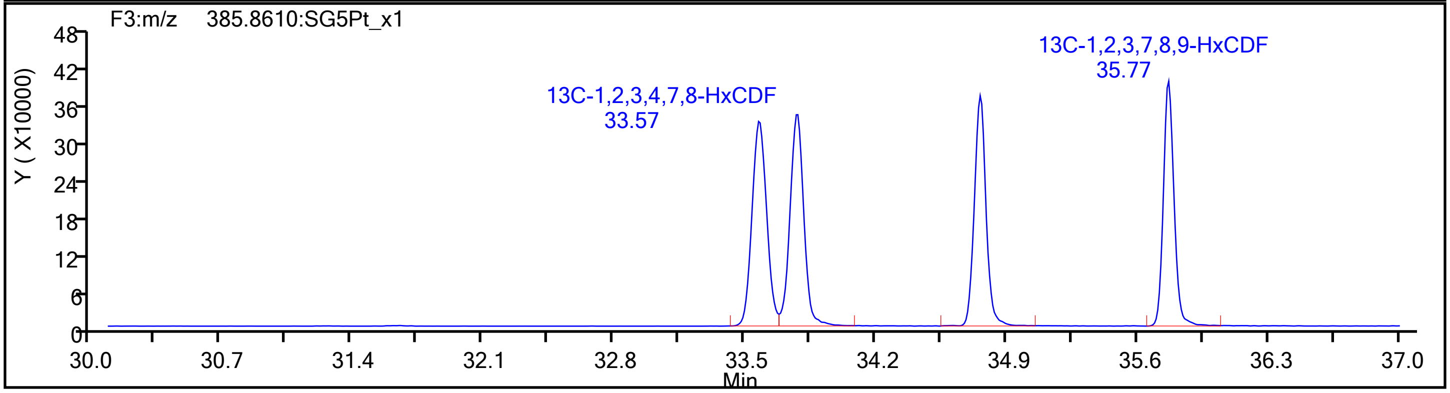

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

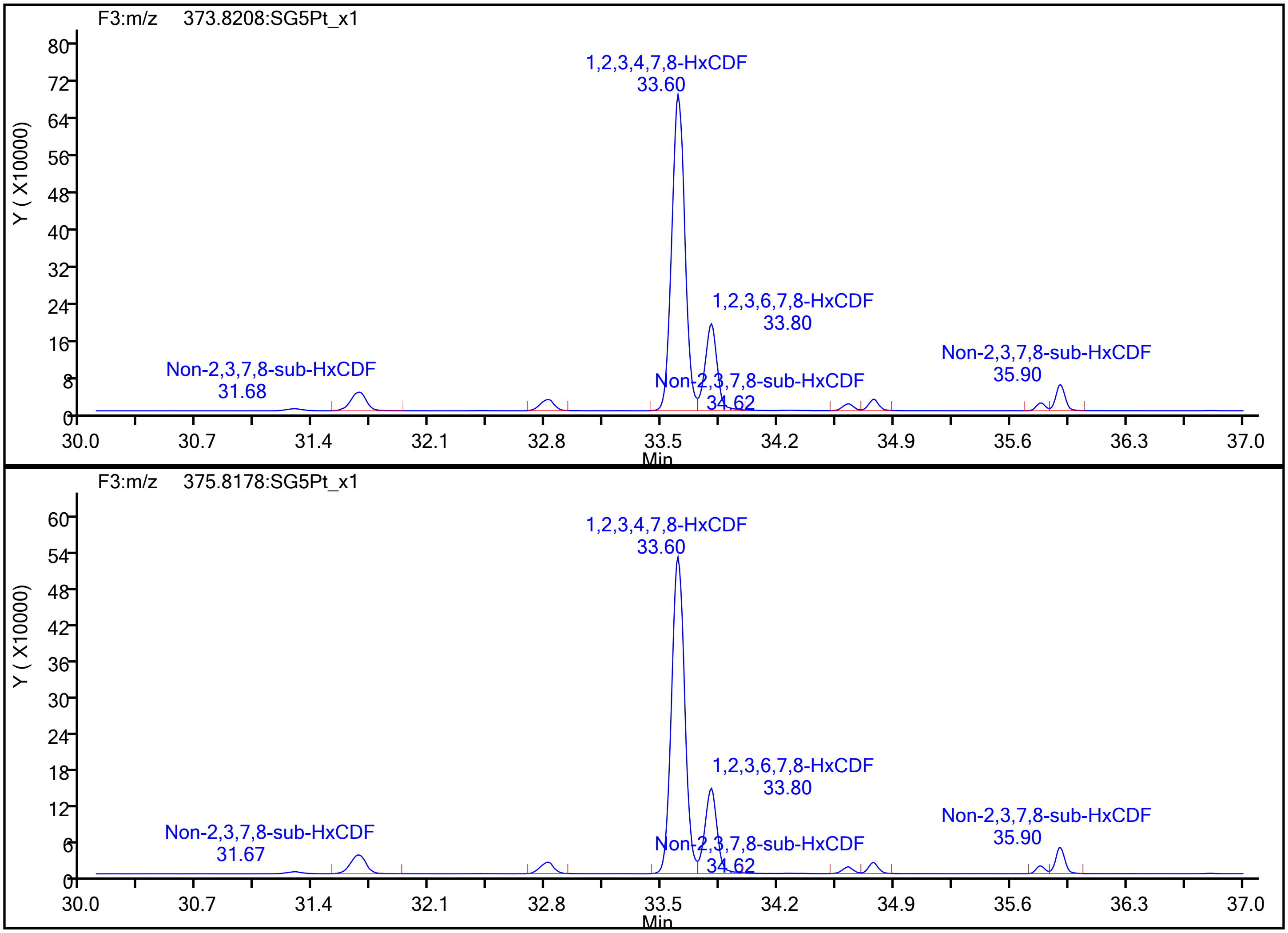

HxCDF Interference Mass

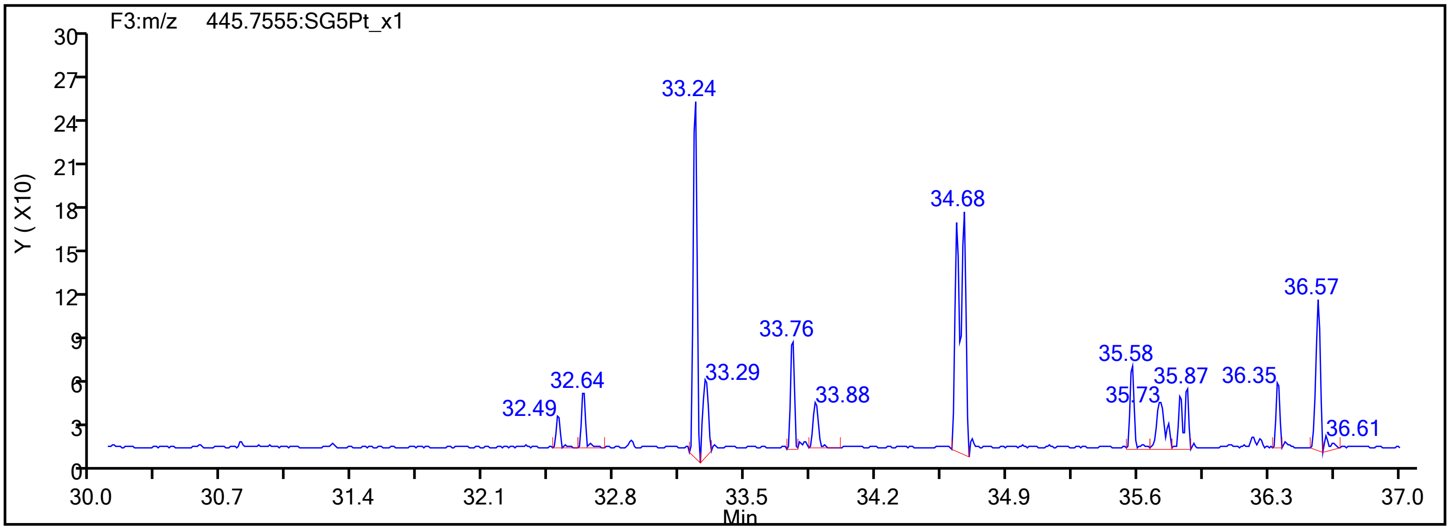

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

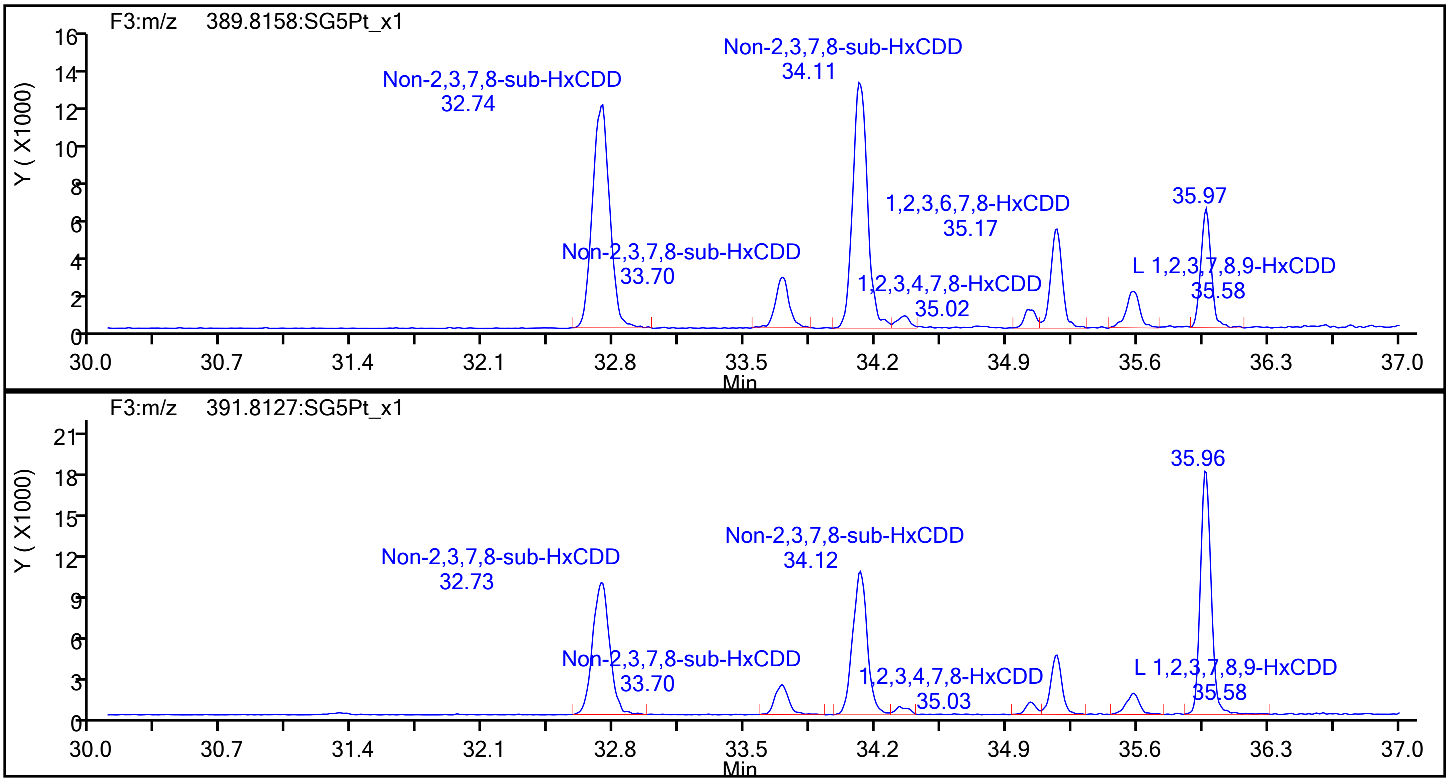

HxCDD Standards

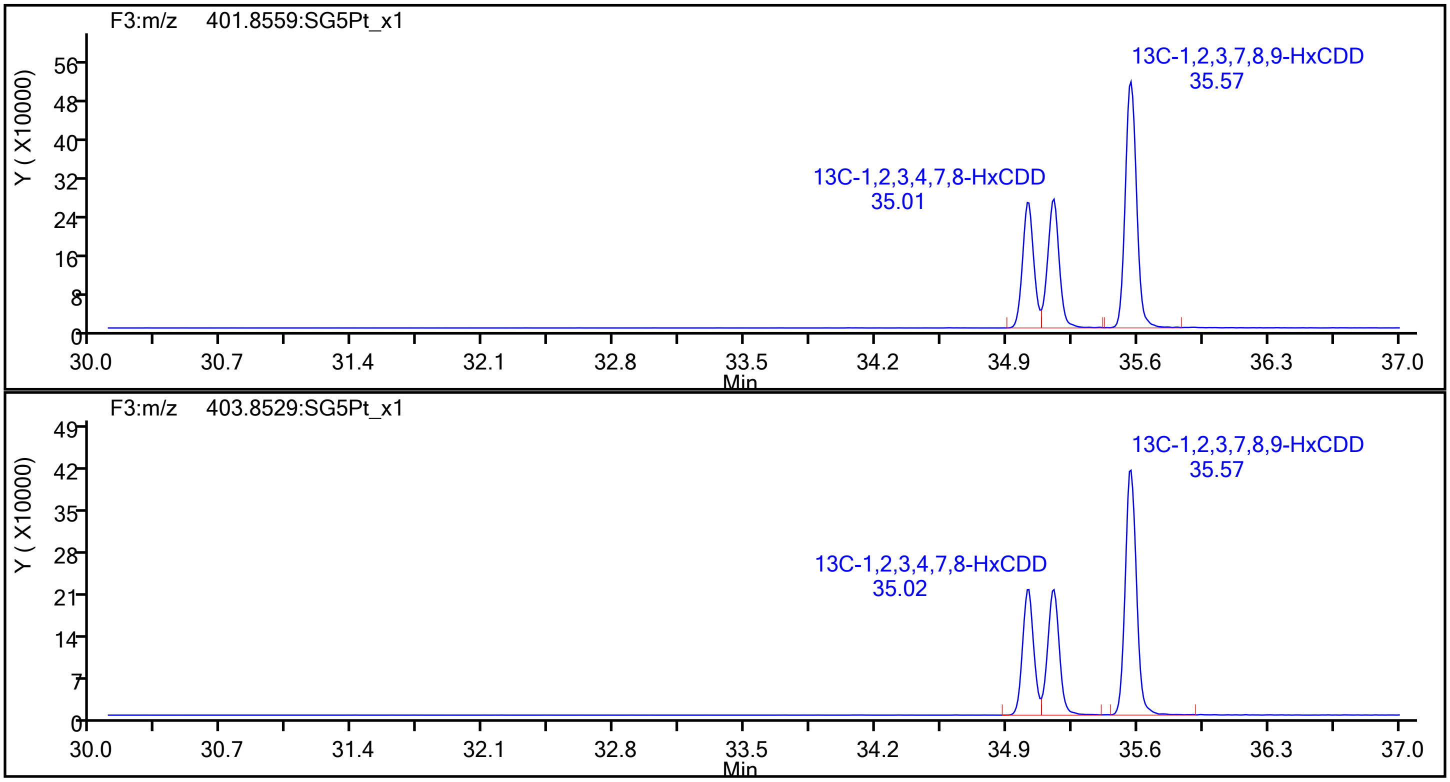

Report Date: 16-Mar-2021 09:33:12   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDF

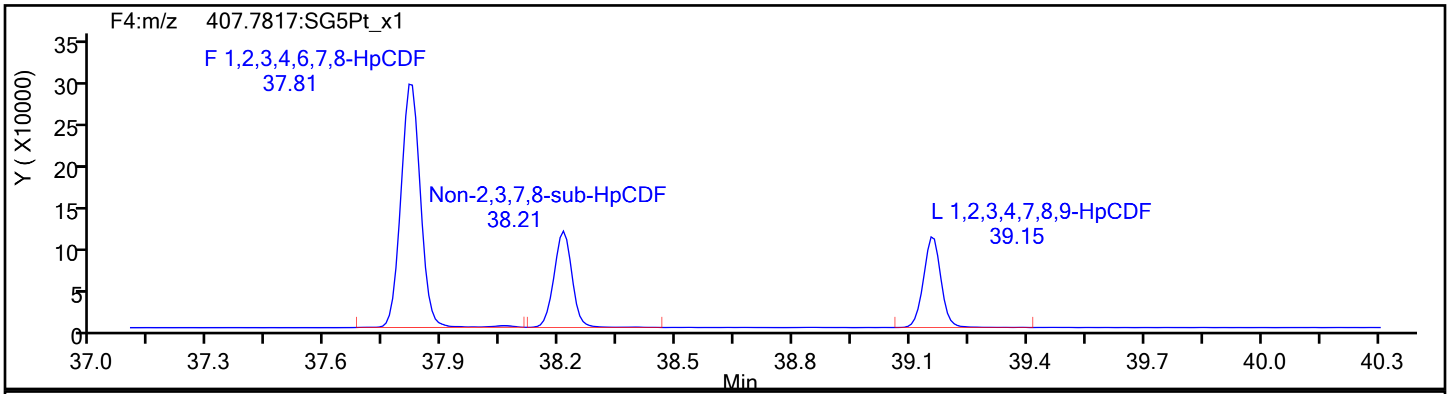

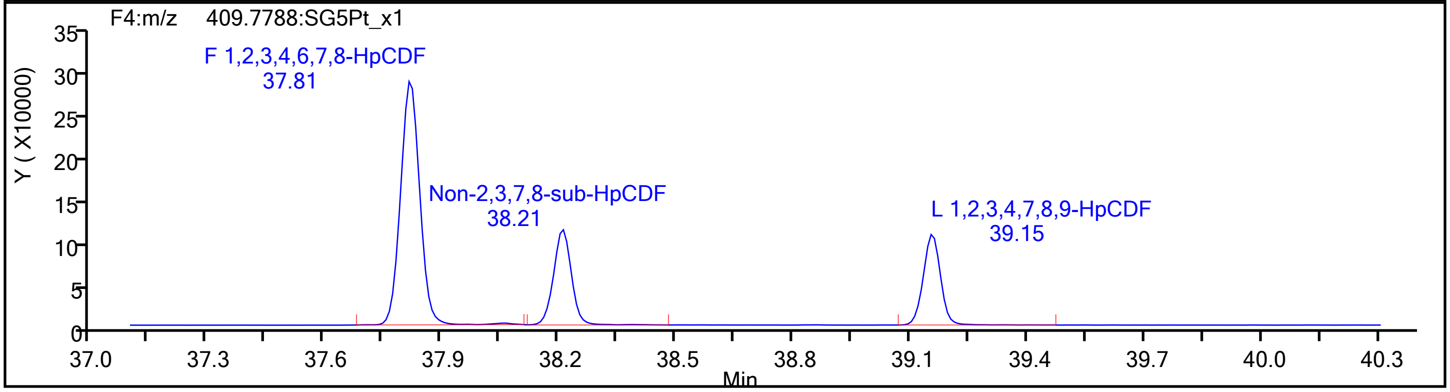

HpCDF Standards

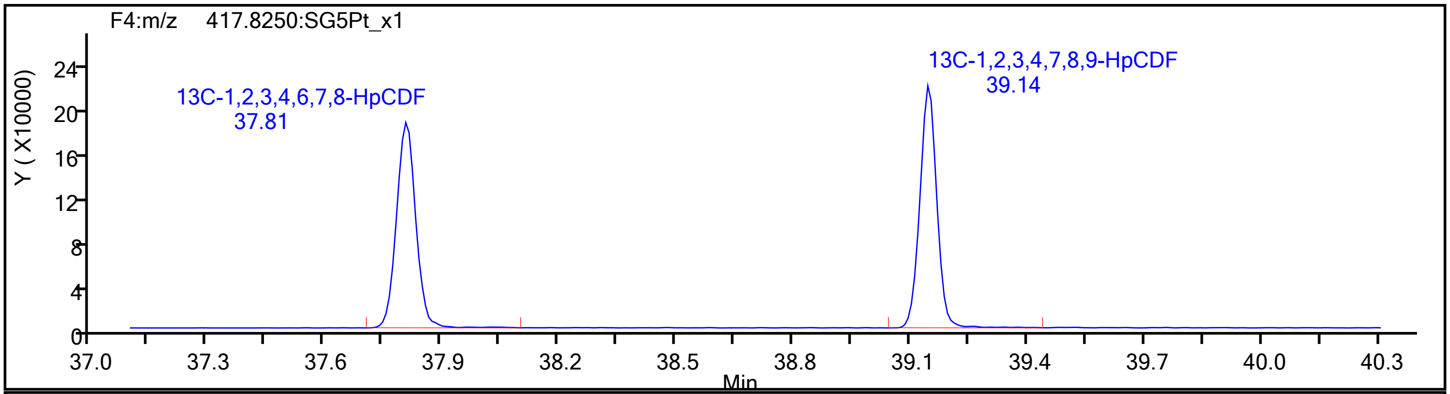

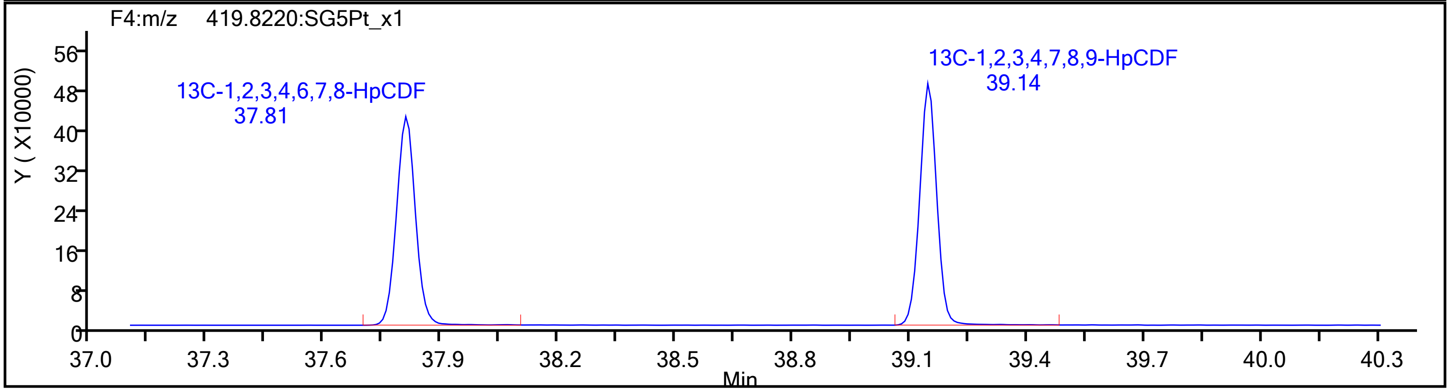

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d

Injection Date: 12-Mar-2021 16:56:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-41mm

Worklist#: 469779 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

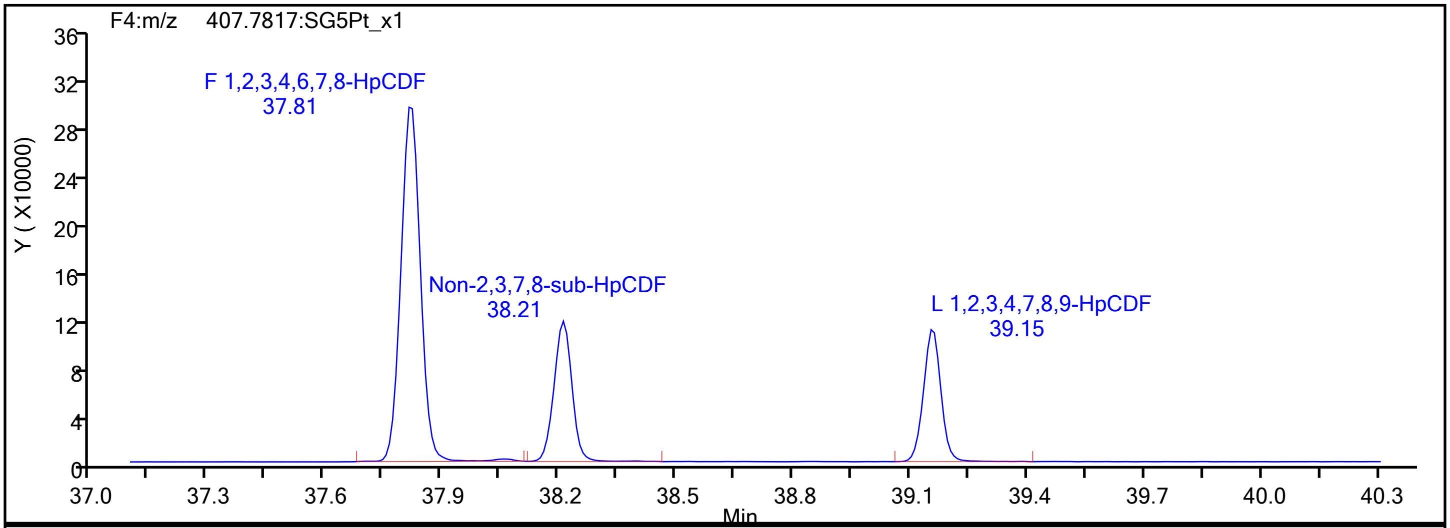

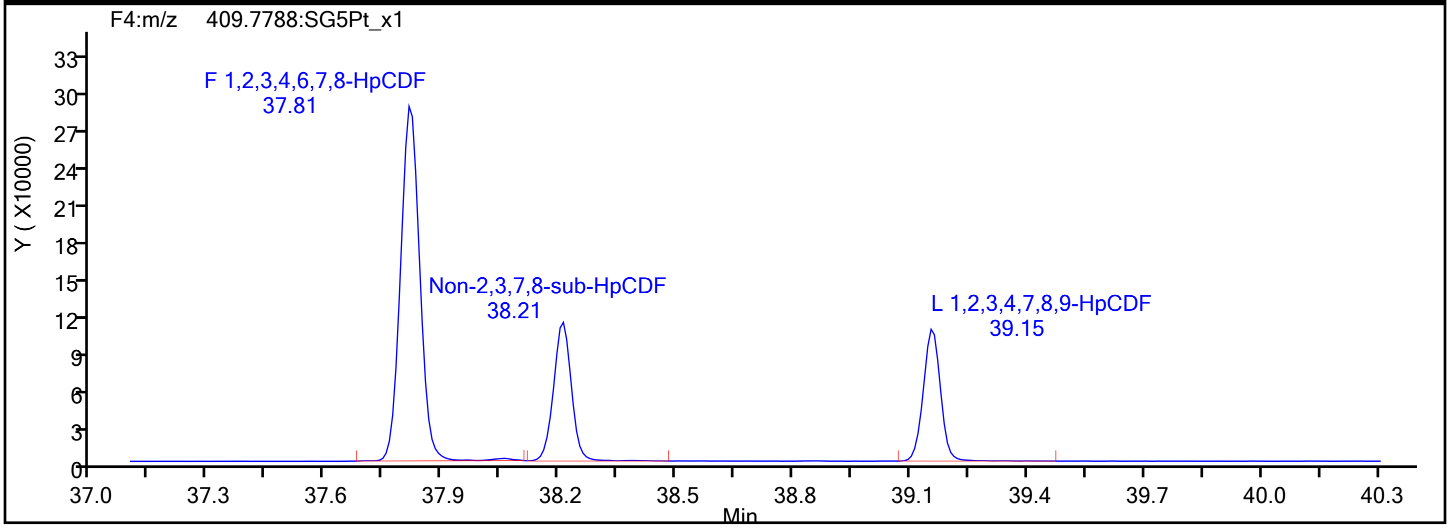

HpCDF Interference Mass

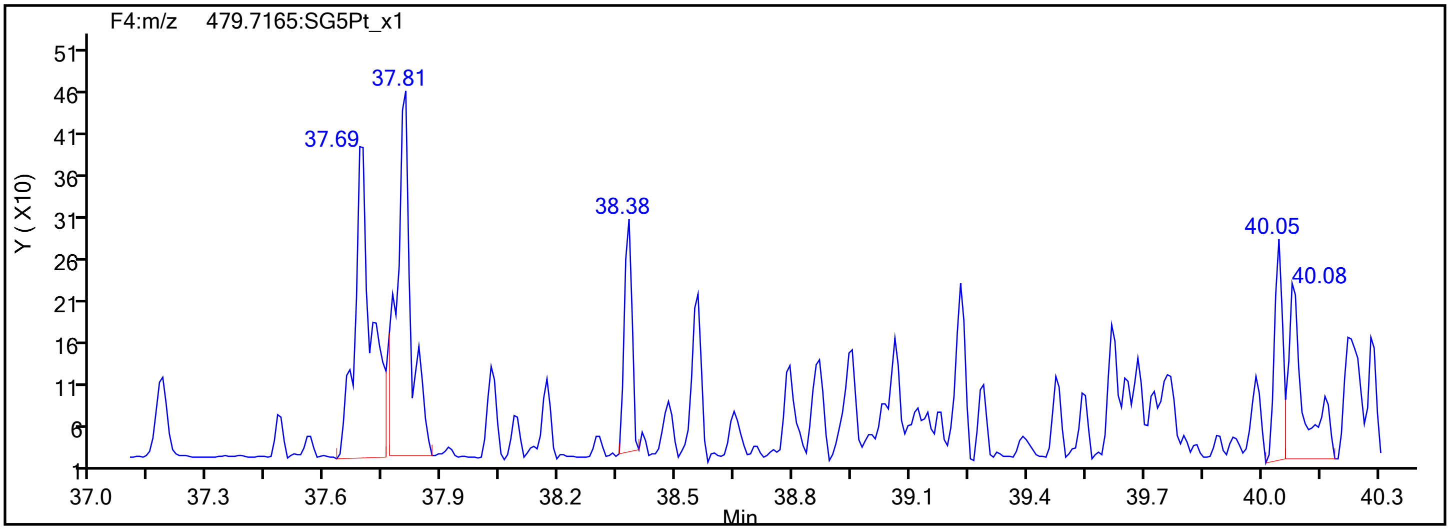

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDD

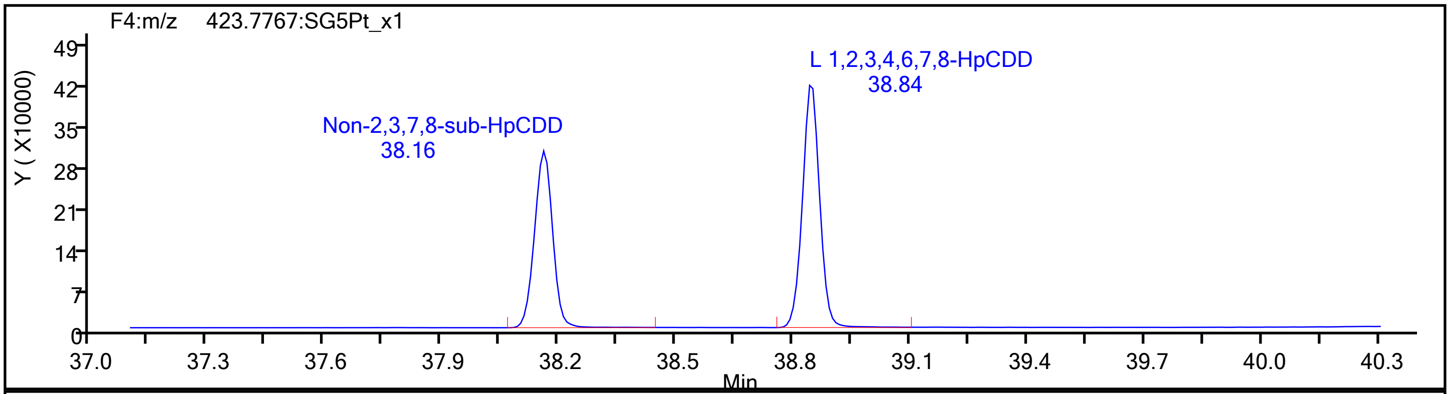

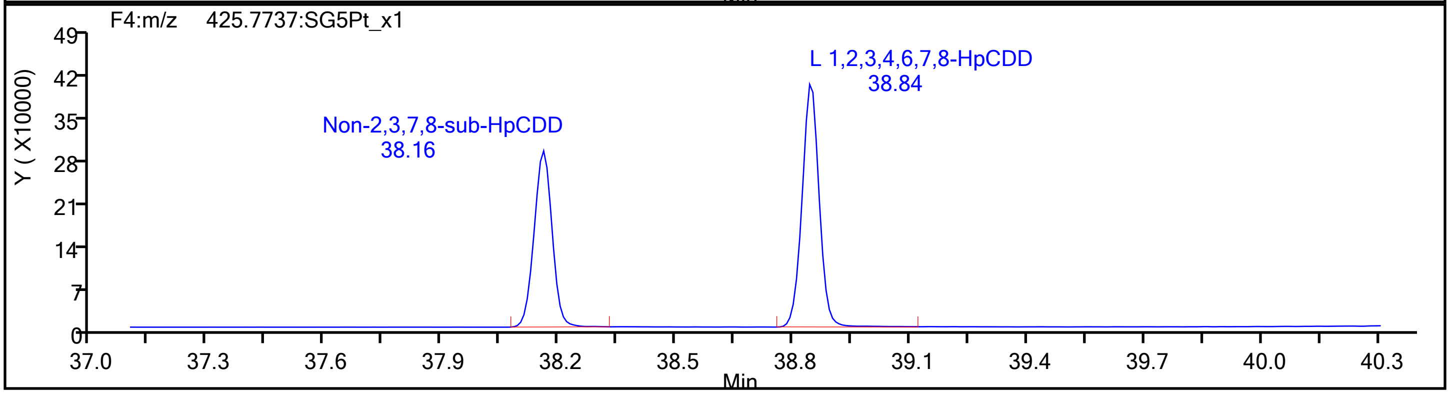

HpCDD Standards

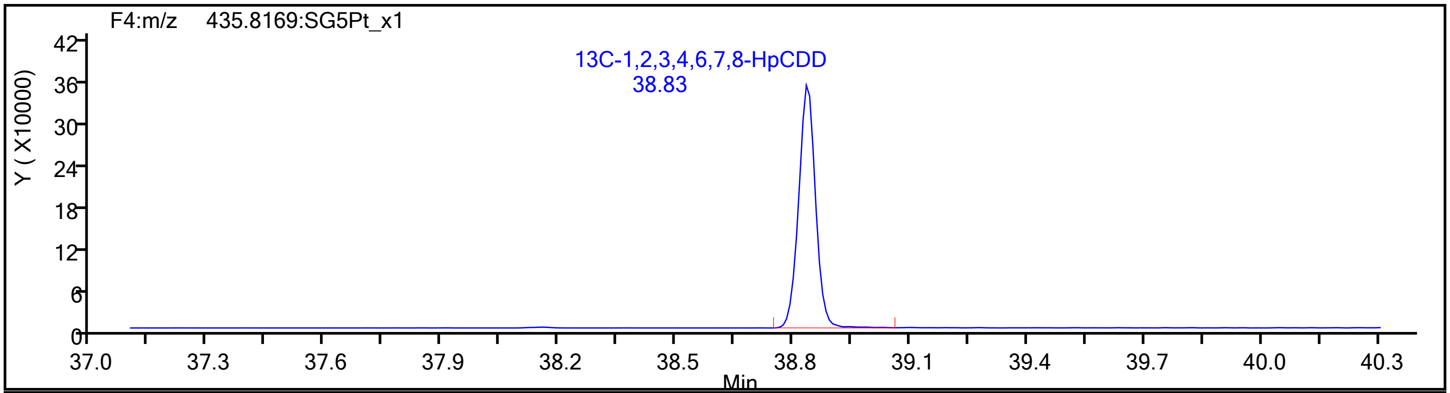

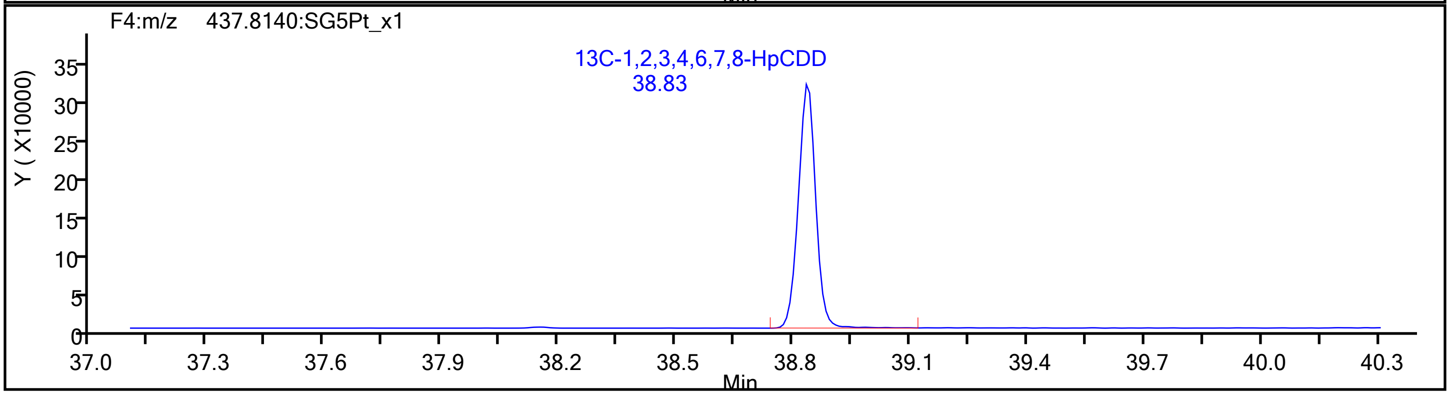

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

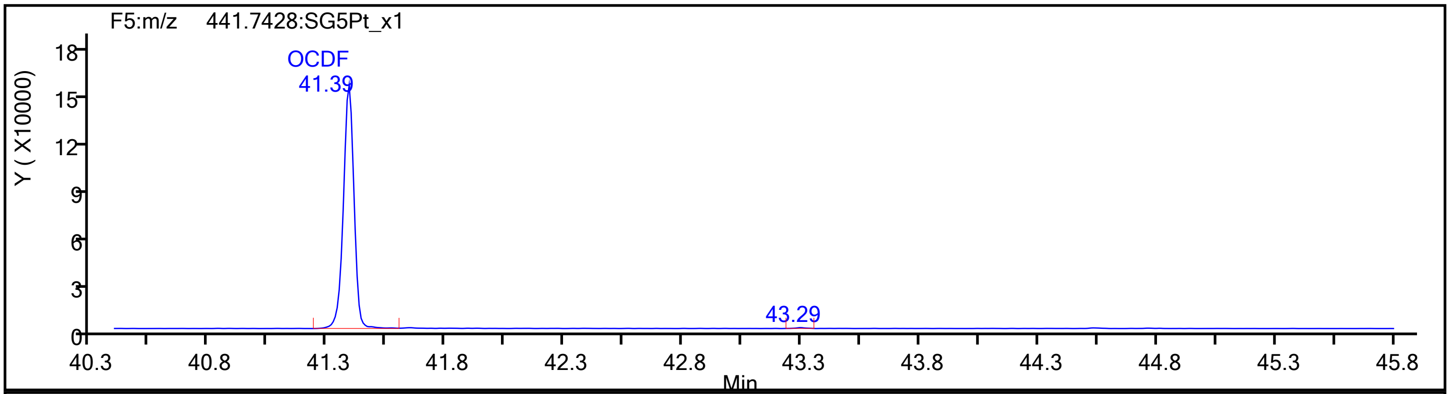

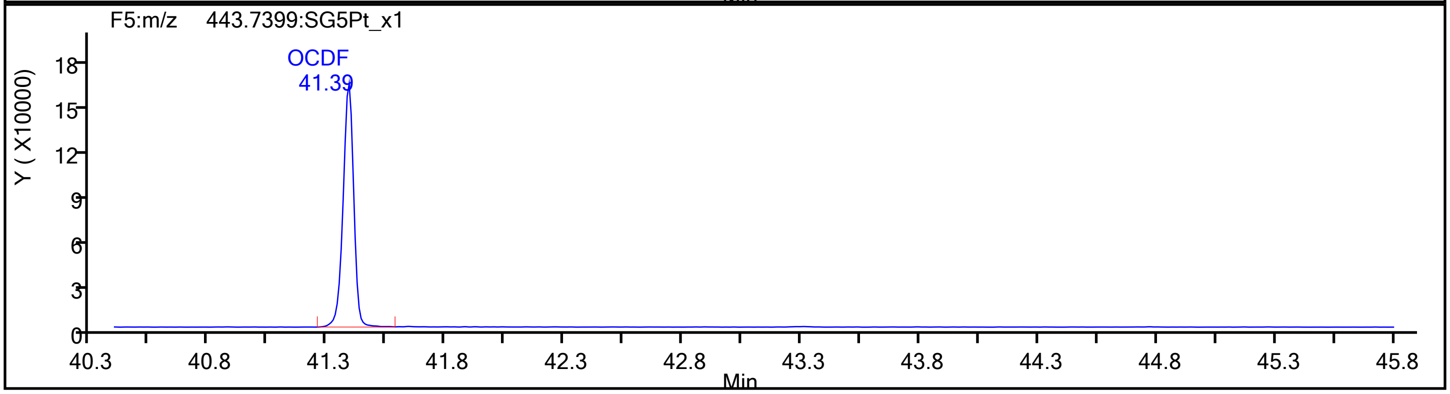

OCDF Standards

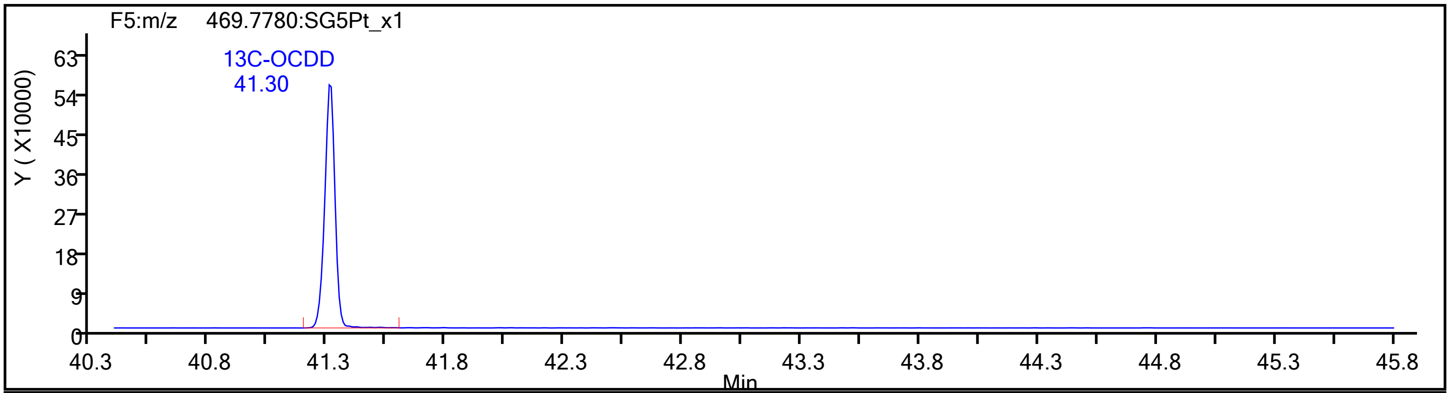

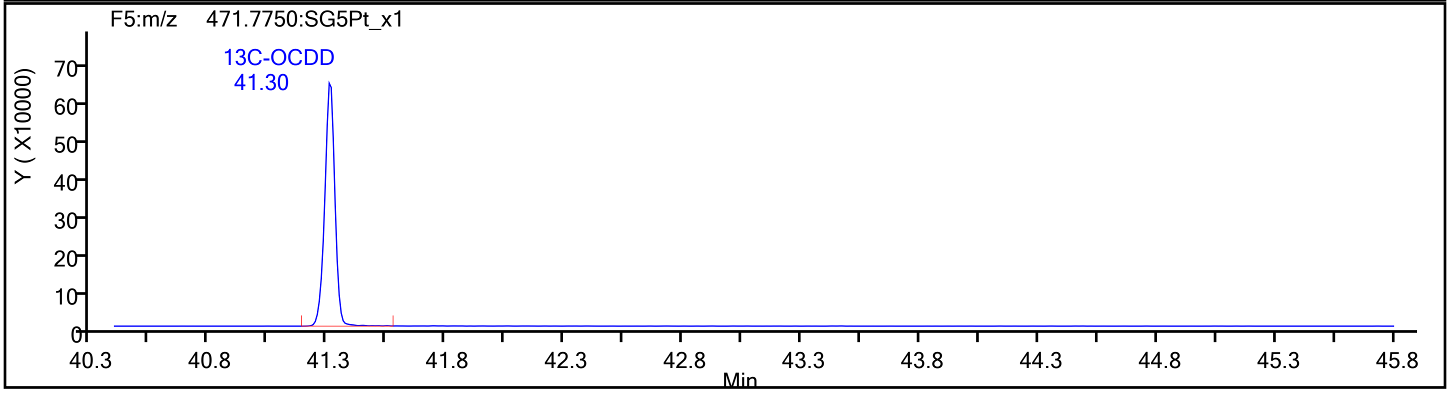

Report Date: 16-Mar-2021 09:33:12   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 16:56:00   Injection Vol: 2.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-41mm
Worklist#: 469779   Sample Line#: 9
Column Type: DB-5   Column Dia: 0.32 mm

OCDF

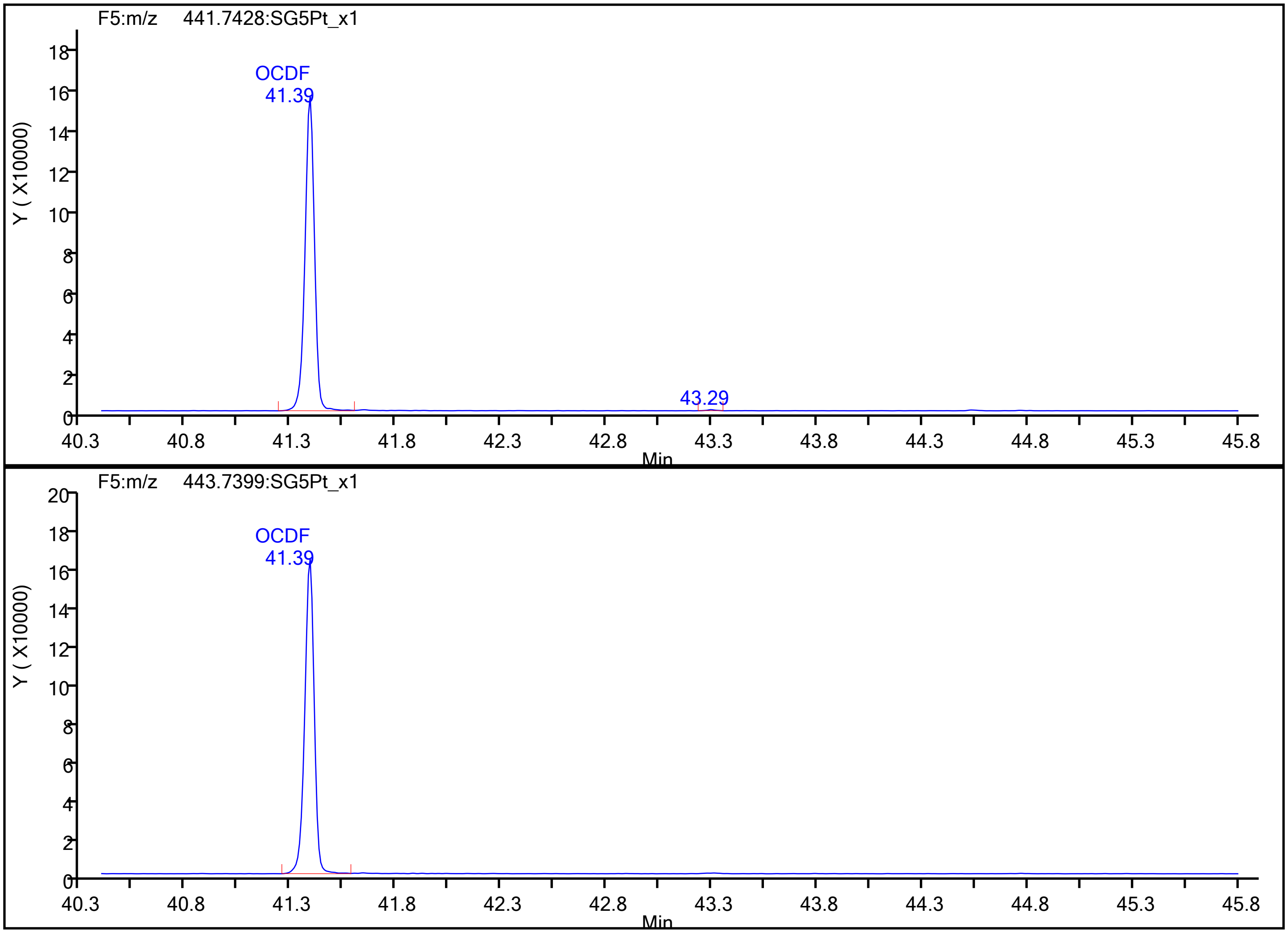

OCDF Interference Mass

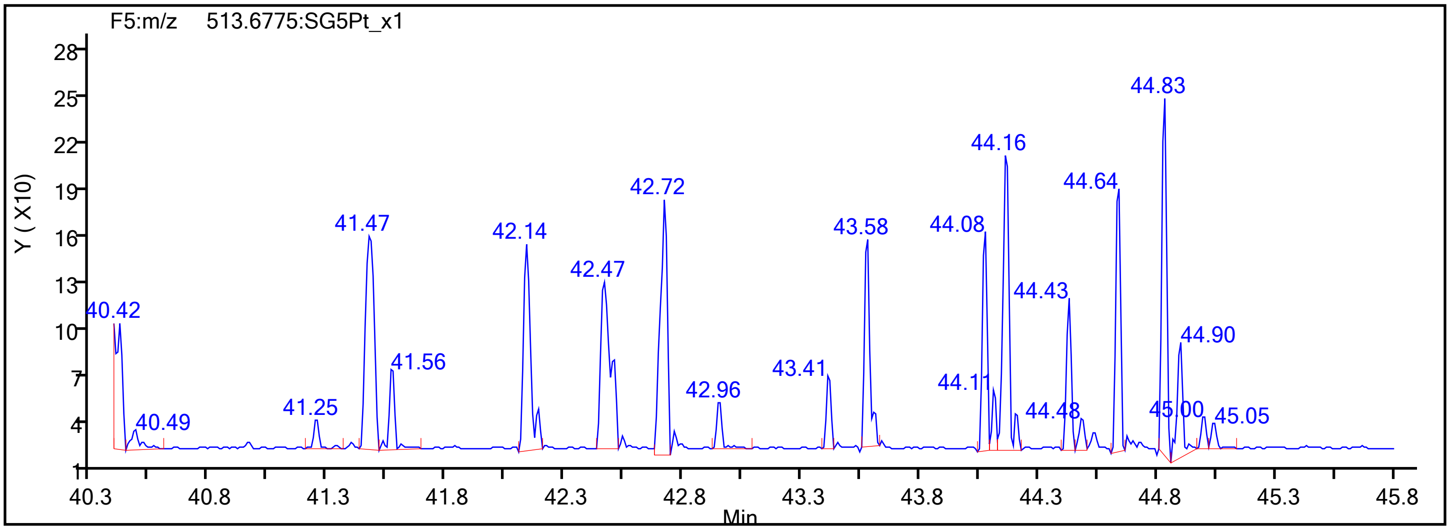

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
Injection Date:	12-Mar-2021 16:56:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

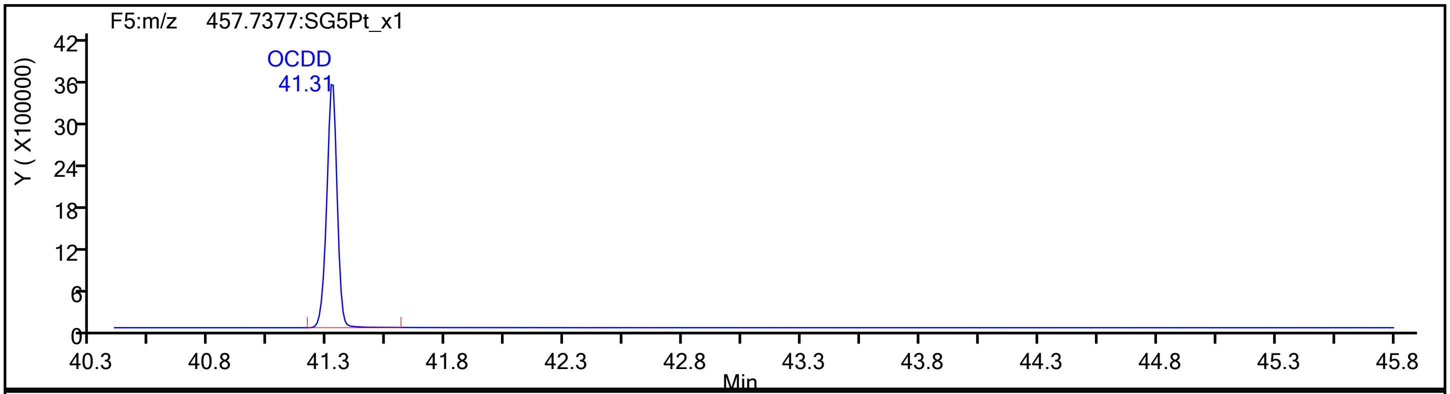

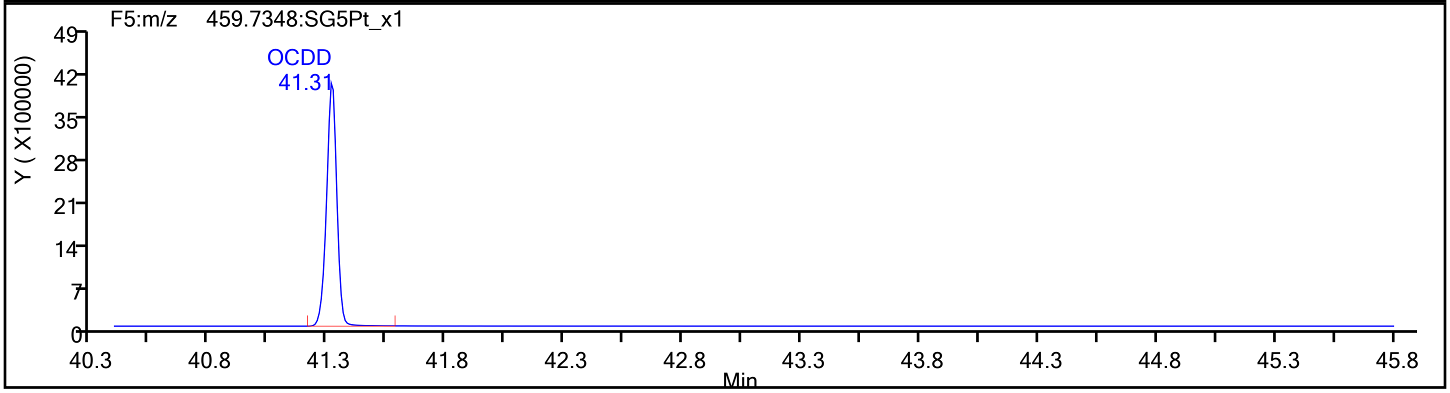

OCDD Standards

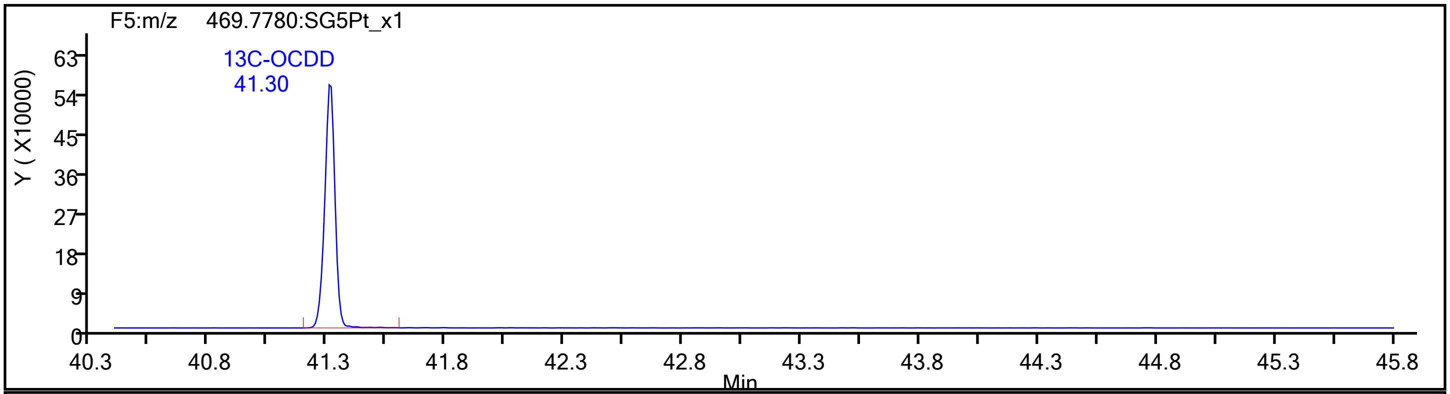

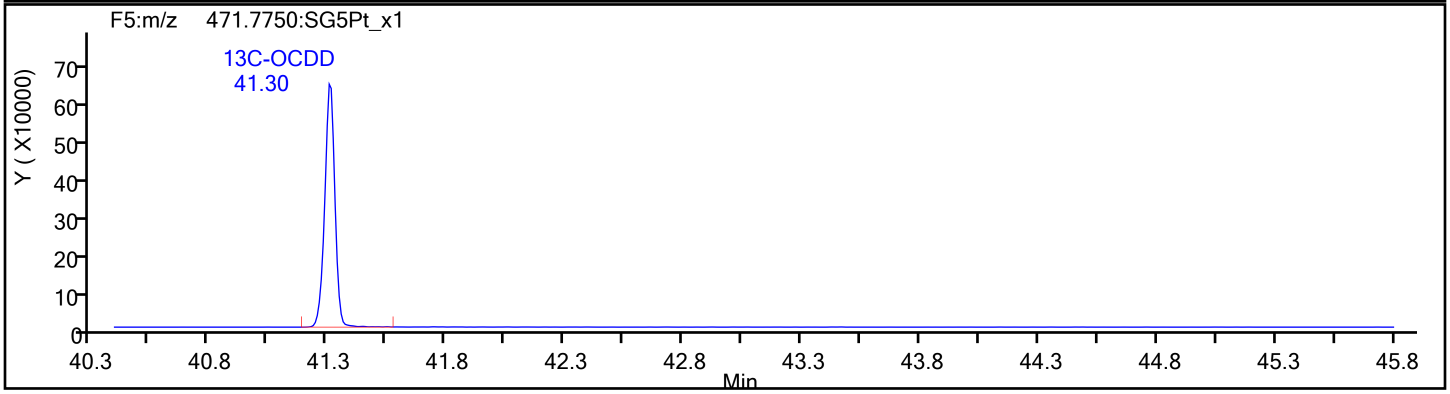

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

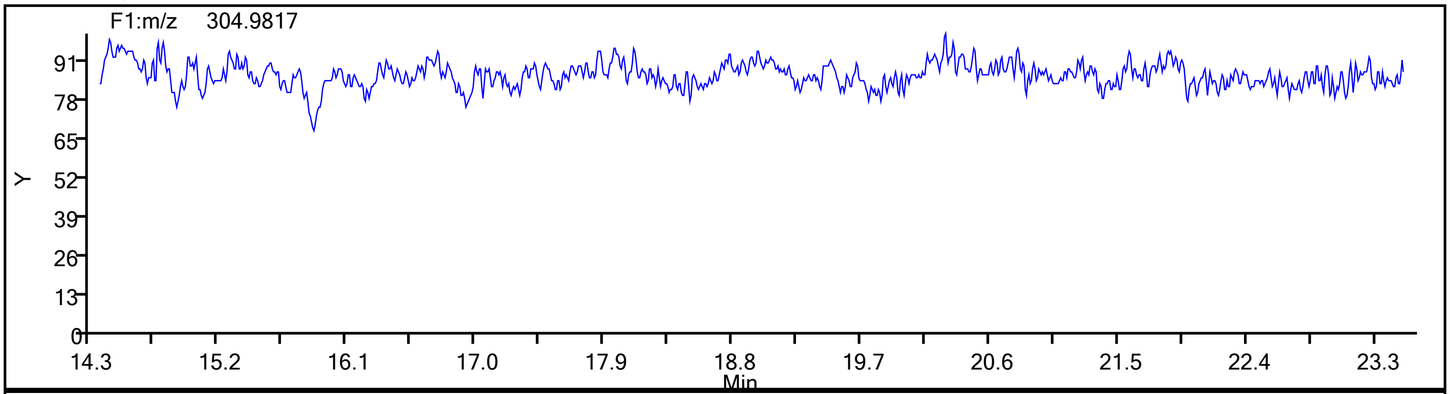

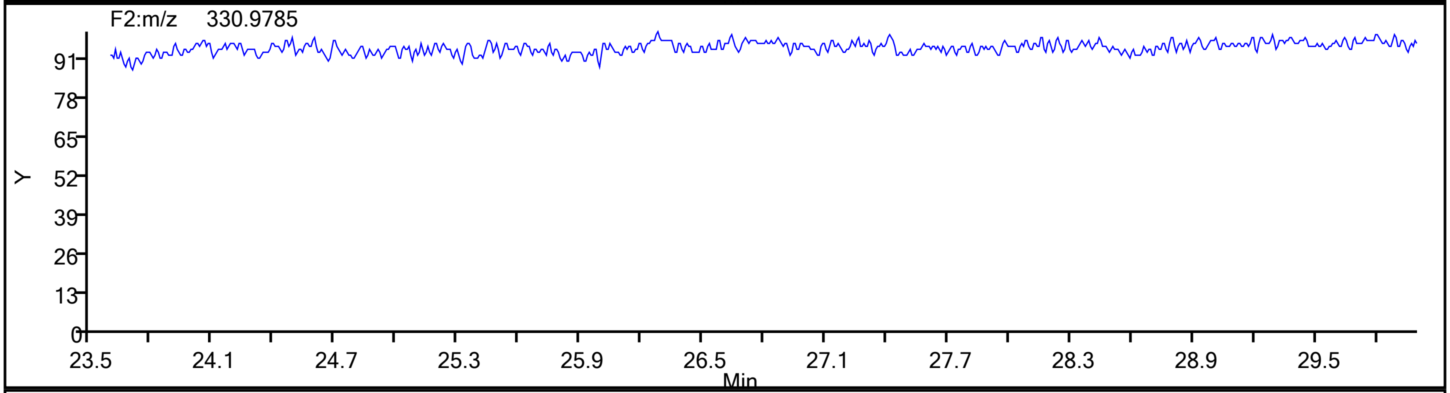

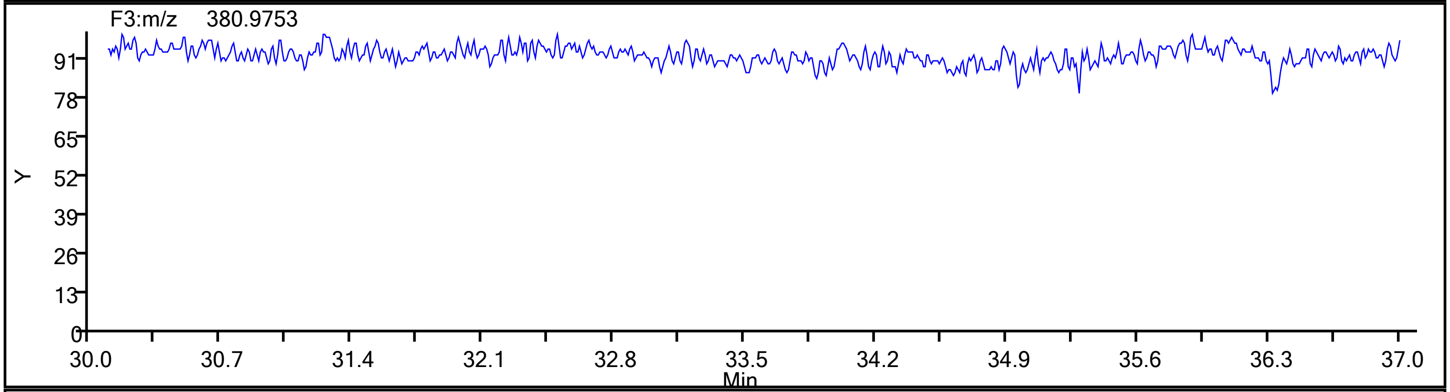

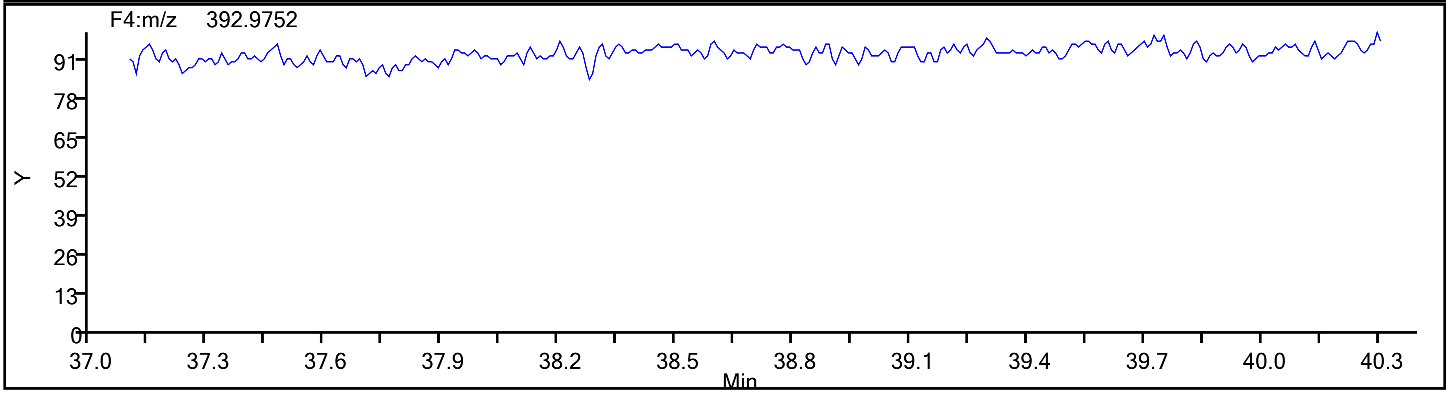

Report Date: 16-Mar-2021 09:33:12 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_10.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	469779	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

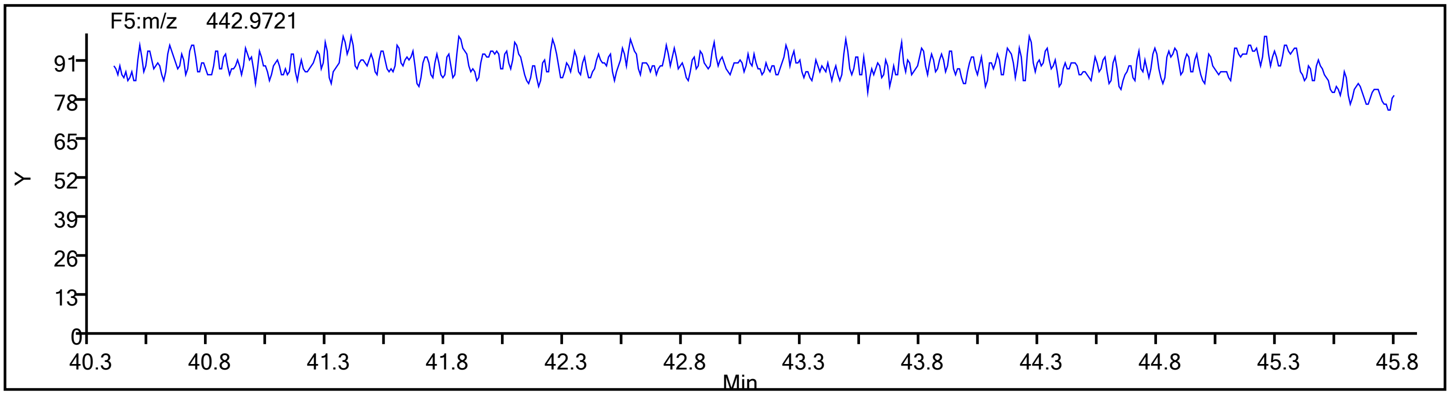

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank2-41mm RADL
Lab Sample ID: 320-70797-8 RADL
Matrix: Water
Lab File ID: 16MR2111D2_007.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1024.5(mL)
Date Analyzed: 03/17/2021 00:43
Con. Extract Vol.: 20(uL)
Dilution Factor: 20
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 470865
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	60000	B	200	80

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	78		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	111		35-197

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Sample Type: Client
Inject. Date: 17-Mar-2021 00:43:23 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-8-A (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:11:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.017	9560813	0.75	1.8E+06	5.000	5.000				
D 13C-2,3,7,8-TCDF	16.155	9679662	0.80	1.3057	3.877	3.877	0.1912	0.1912	77.54	M
2,3,7,8-TCDF	16.169	275998479	0.79	0.9242	154.3	154.3	0.2038	0.2038		
D 13C-2,3,7,8-TCDD	14.783	4824108	0.72	0.8971	2.812	2.812	2.178	2.178	56.24	M
2,3,7,8-TCDD	14.797	67279075	0.80	0.9989	69.8	69.8	0.2473	0.2473		a
$ 37Cl4-2,3,7,8-TCDD	14.797	3610854		0.8499	2.222	2.222	0.0254	0.0254	111	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated
a - User Assigned ID

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Sample Type: Client
Inject. Date: 17-Mar-2021 00:43:23 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-8-A (20X)
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:11:23

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.017	15.023	0		4087060	954928	163602	409005	6		
333.9339	15.017	15.023	0		5473753	1229199	177841	444602	7	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											M
315.9419	16.155	16.148	0	1.076	4292988	864614	23289	58222	37		M
317.9389	16.155	16.148	0	1.076	5386674	974242	20338	50845	48	0.80(0.65-0.89)	M
2,3,7,8-TCDF											
303.9016	16.169	16.176	0	1.001	122023748	28159134	12358	30895	2279		
305.8987	16.169	16.176	0	1.001	153974731	35248678	15350	38375	2296	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											M
331.9368	14.783	14.790	0	0.984	2021322	517762	163602	409005	3		M
333.9339	14.783	14.790	0	0.984	2802786	674885	177841	444602	4	0.72(0.65-0.89)	M
2,3,7,8-TCDD											a
319.8965	14.797	14.804	0	1.001	29805307	7552546	12956	32390	583		a
321.8936	14.797	14.804	0	1.001	37473768	9355670	10614	26535	881	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.797	14.804	0	0.985	3610854	921762	3776	9440	244		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated
a - User Assigned ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d				
Injection Date:	17-Mar-2021 00:43:23	Instrument ID:	11D2		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 2

RT:	16.16
Area:	5266004
Amount:	3.743519
Amount Units:	pg/ul

Processing Integration Results

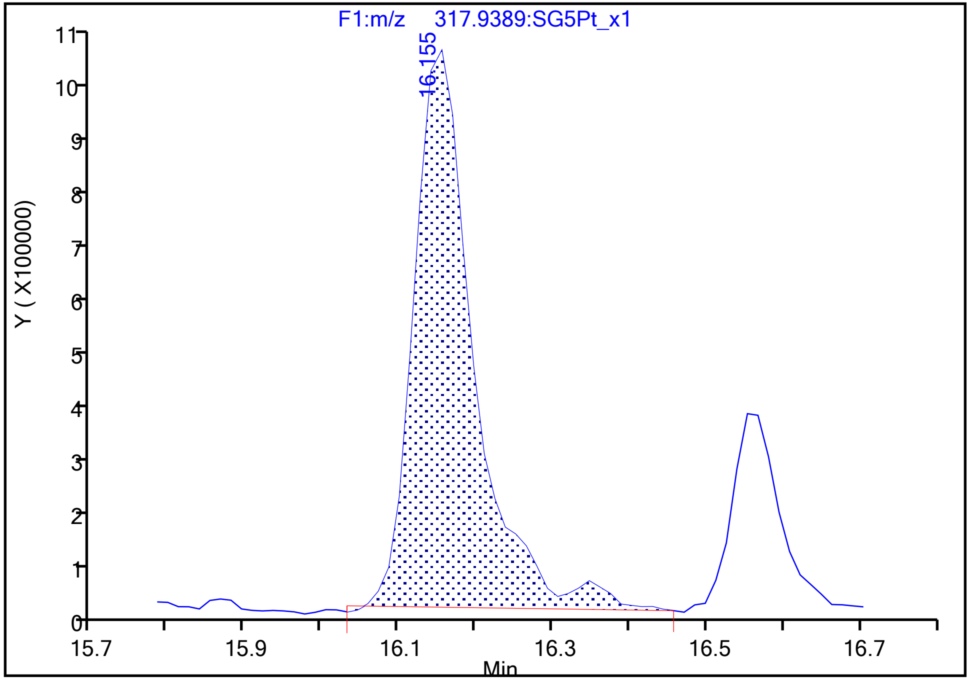

RT:	16.16
Area:	5386674
Amount:	3.876832
Amount Units:	pg/ul

Manual Integration Results

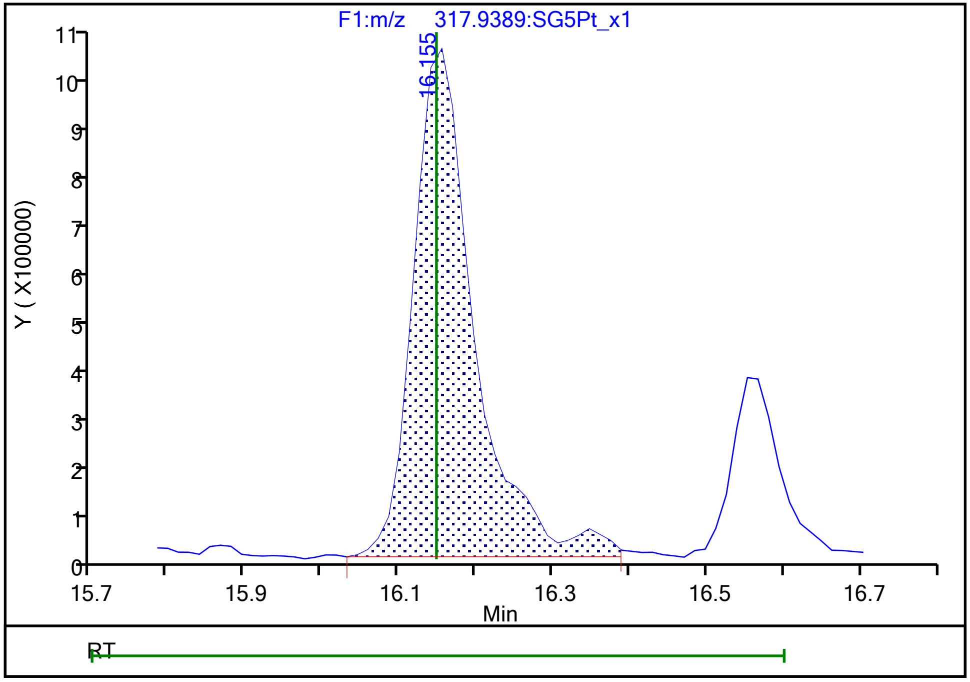

Reviewer: bilottag, 17-Mar-2021 08:12:01

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d				
Injection Date:	17-Mar-2021 00:43:23	Instrument ID:	11D2		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

13C-2,3,7,8-TCDF, CAS: 89059-46-1

Signal: 1

Processing Integration Results

RT:	16.16
Area:	4080802
Amount:	3.743519
Amount Units:	pg/ul

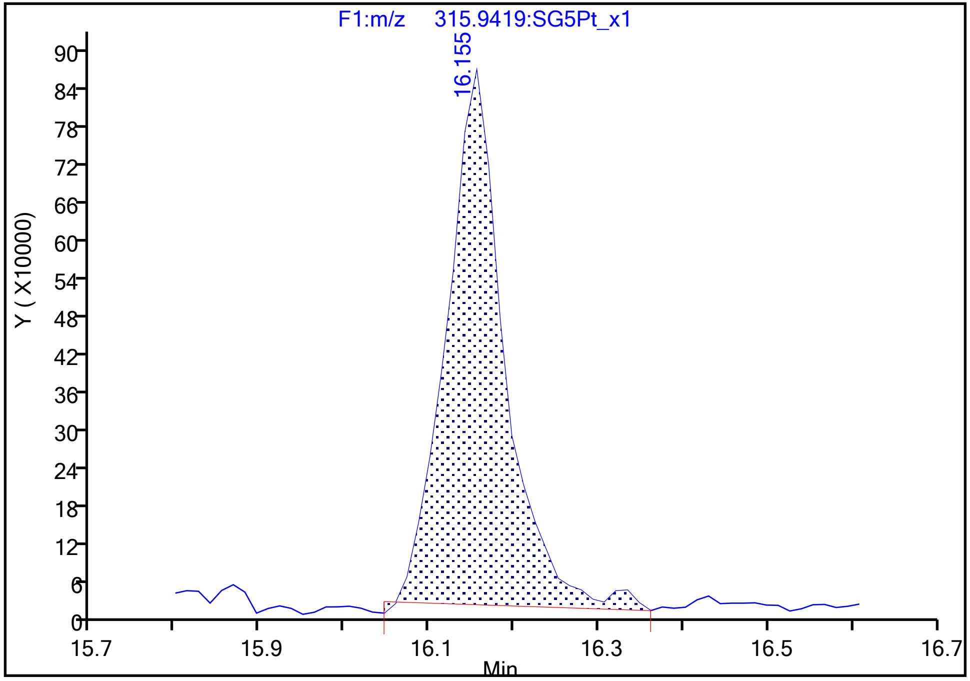

Manual Integration Results

RT:	16.16
Area:	4292988
Amount:	3.876832
Amount Units:	pg/ul

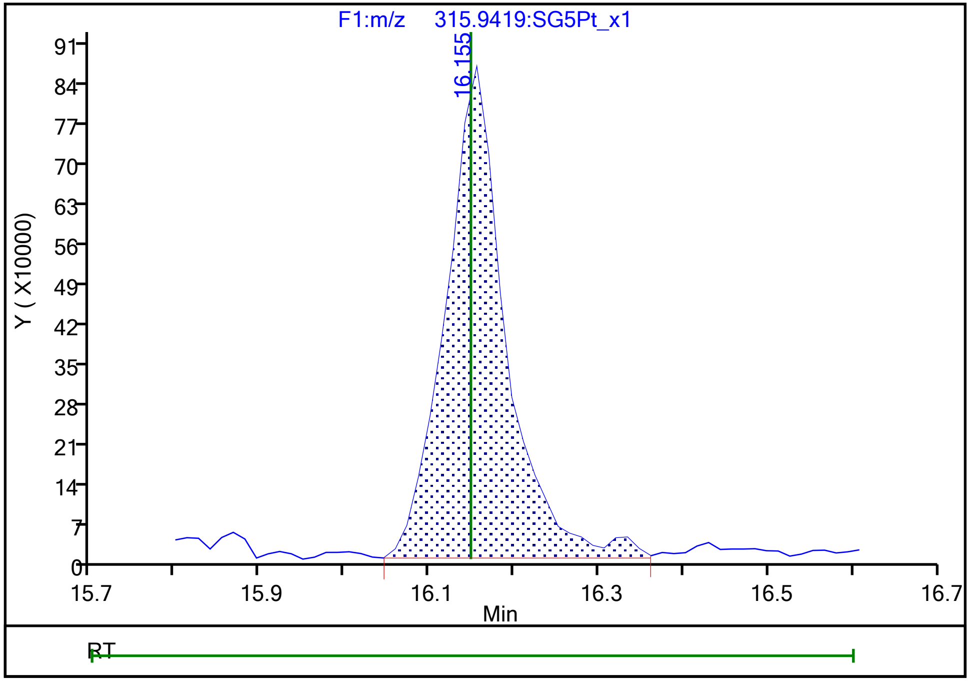

Reviewer: bilottag, 17-Mar-2021 08:12:06

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d		
Injection Date:	17-Mar-2021 00:43:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	470865	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

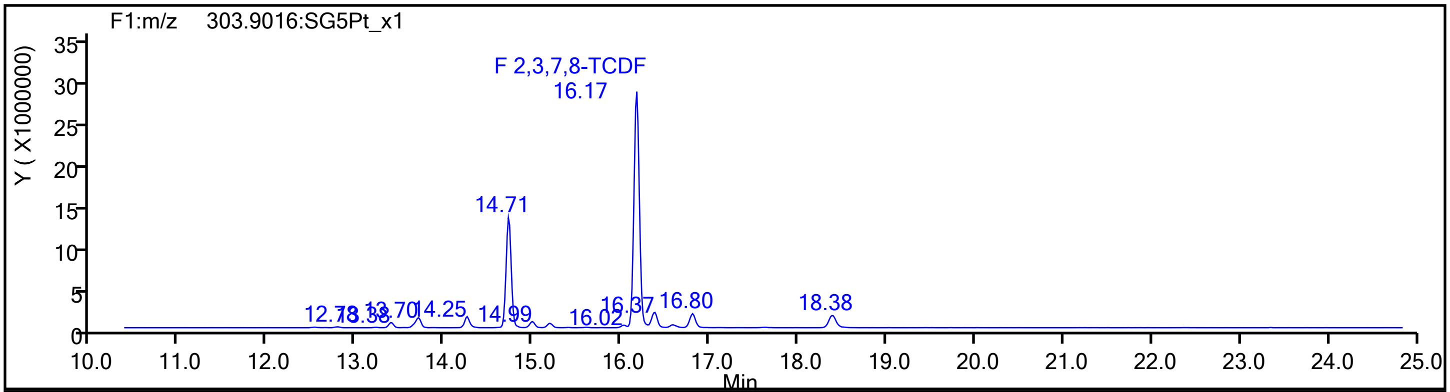

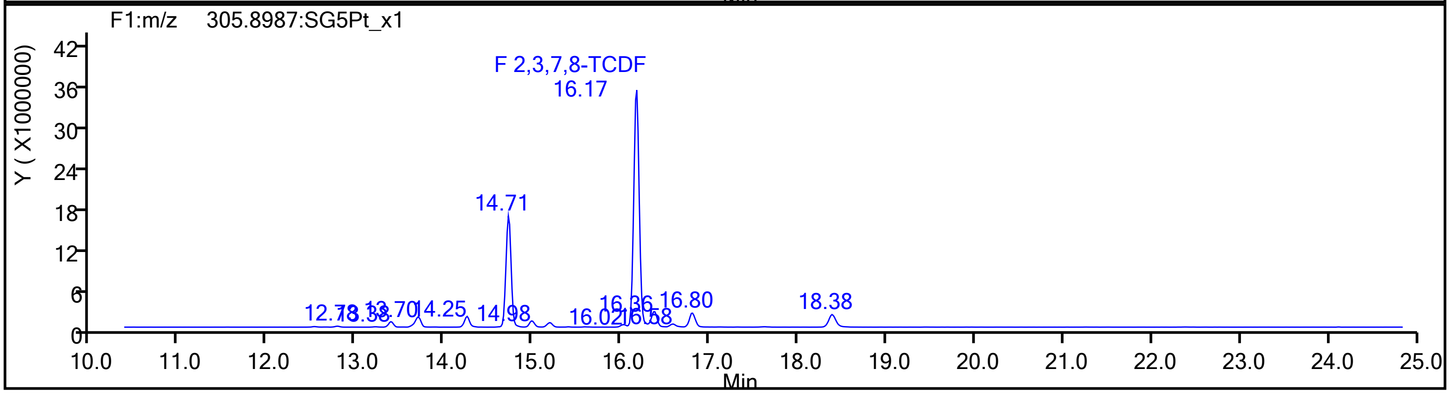

TCDF Standards

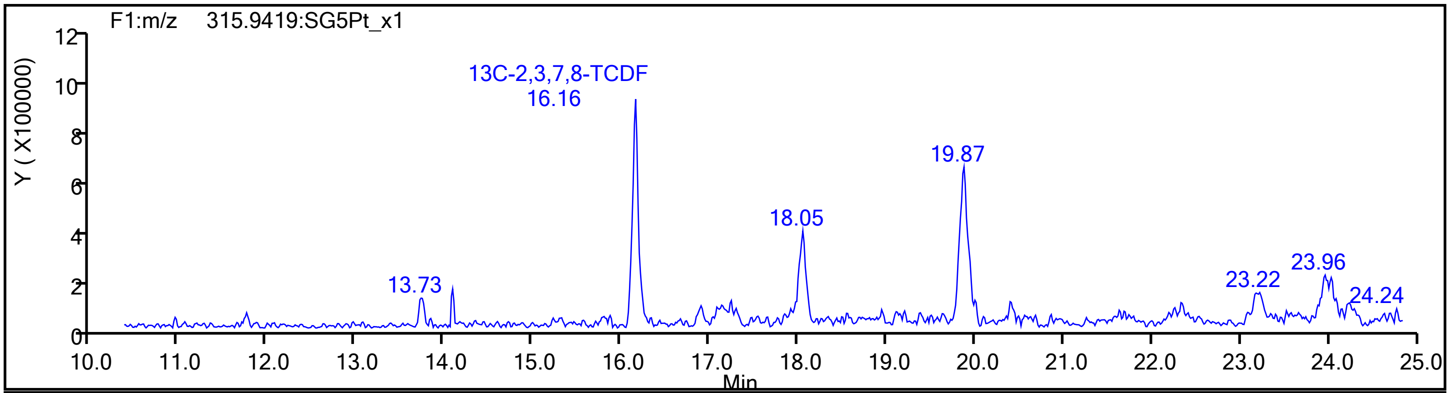

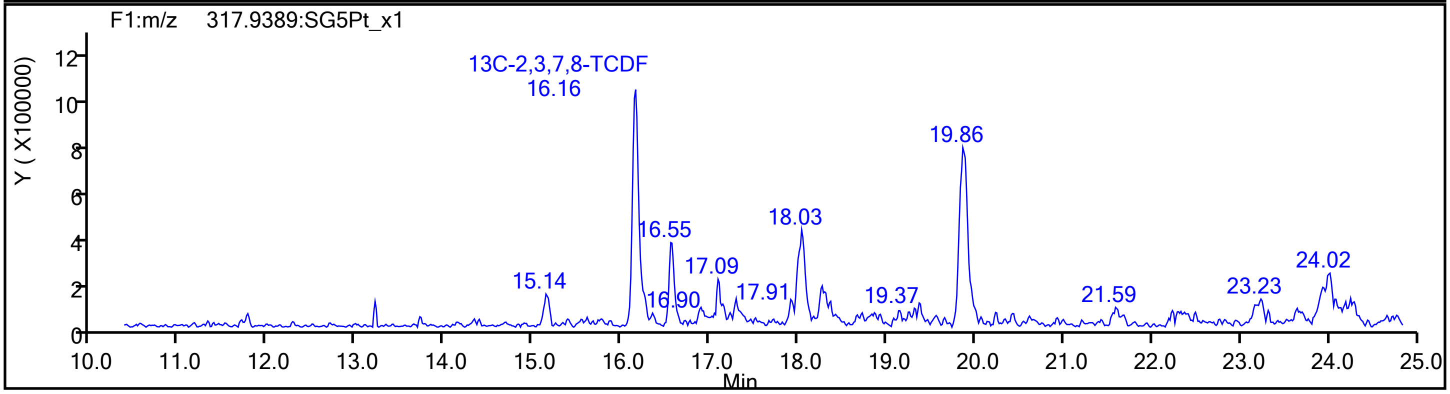

Report Date: 17-Mar-2021 08:12:49 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d		
Injection Date:	17-Mar-2021 00:43:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	470865	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

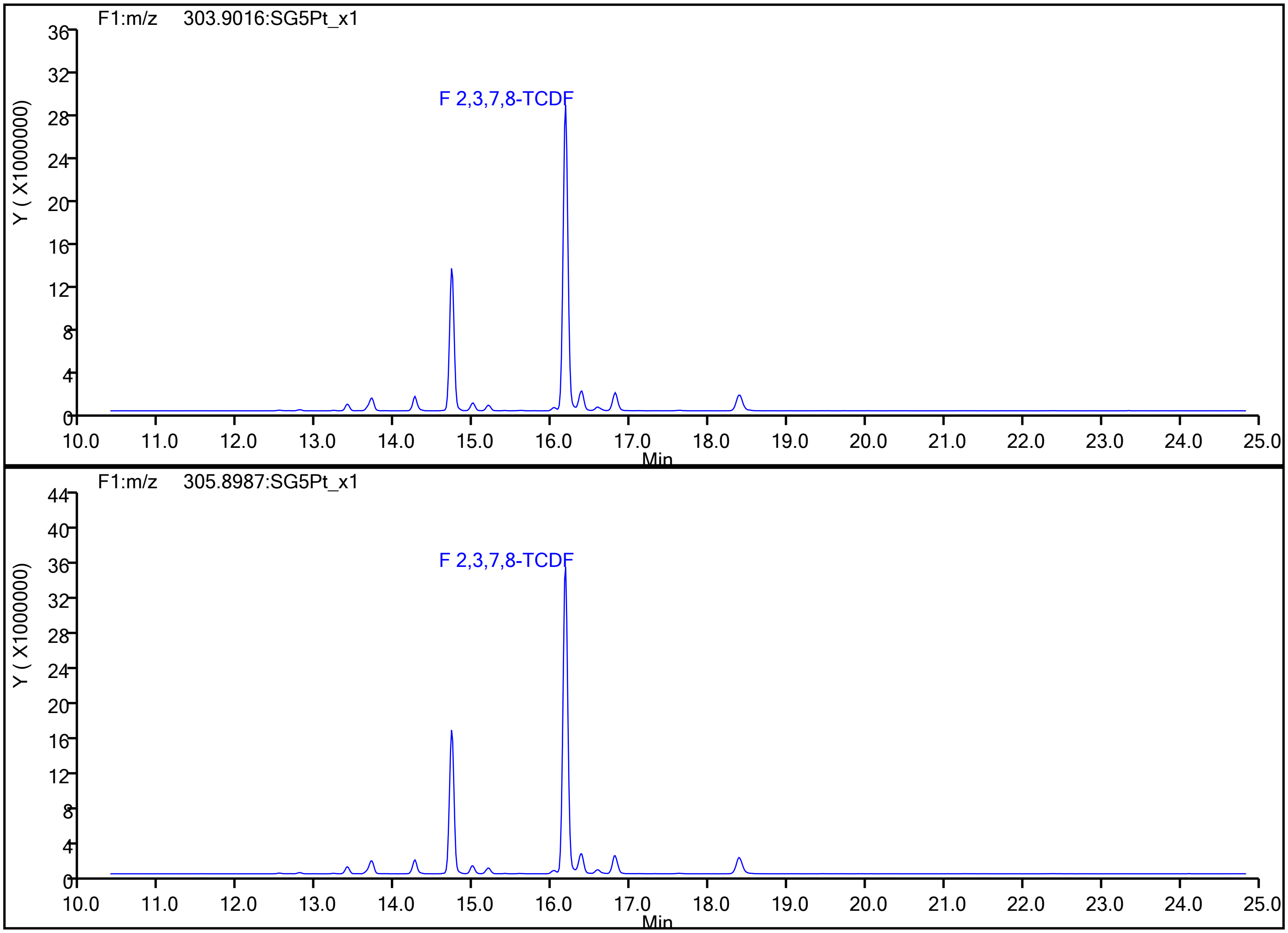

TCDF Interference Mass

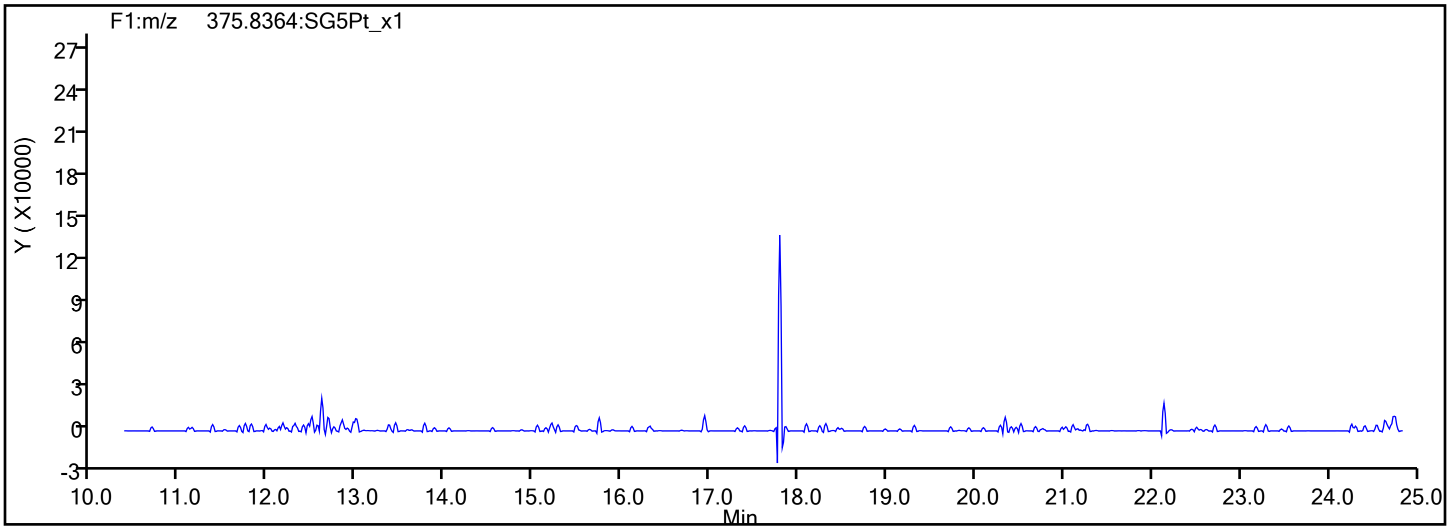

Report Date: 17-Mar-2021 08:12:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d
Injection Date: 17-Mar-2021 00:43:23
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-41mm
Worklist#: 470865
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

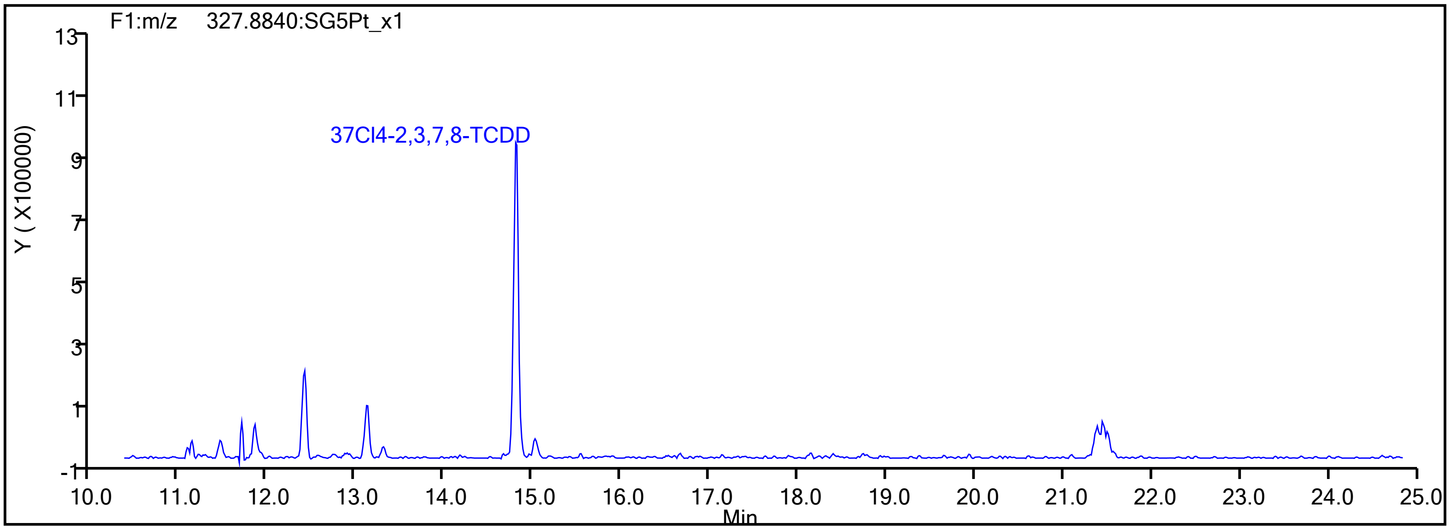

37Cl4-TCDD Standards

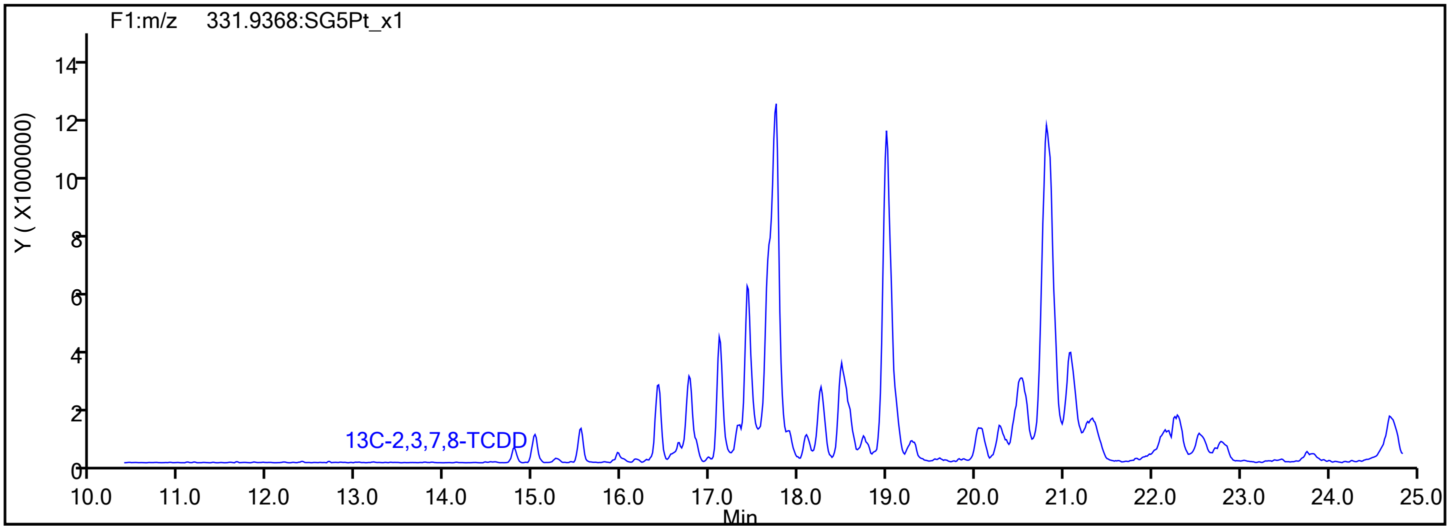

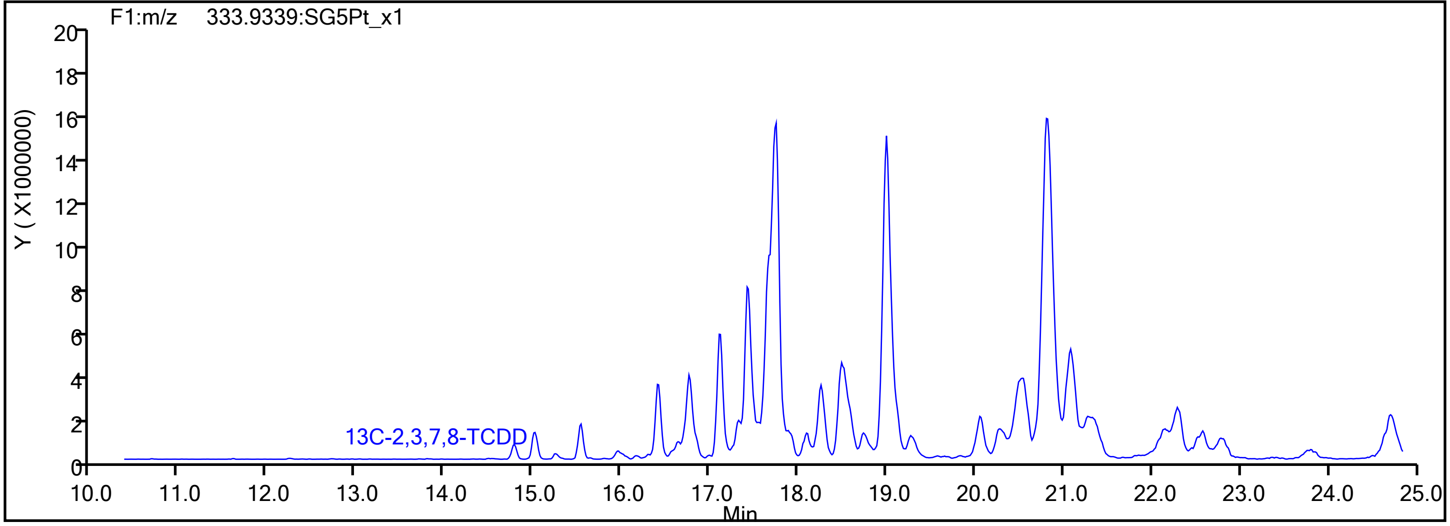

Report Date: 17-Mar-2021 08:12:50 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_007.d		
Injection Date:	17-Mar-2021 00:43:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	470865	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

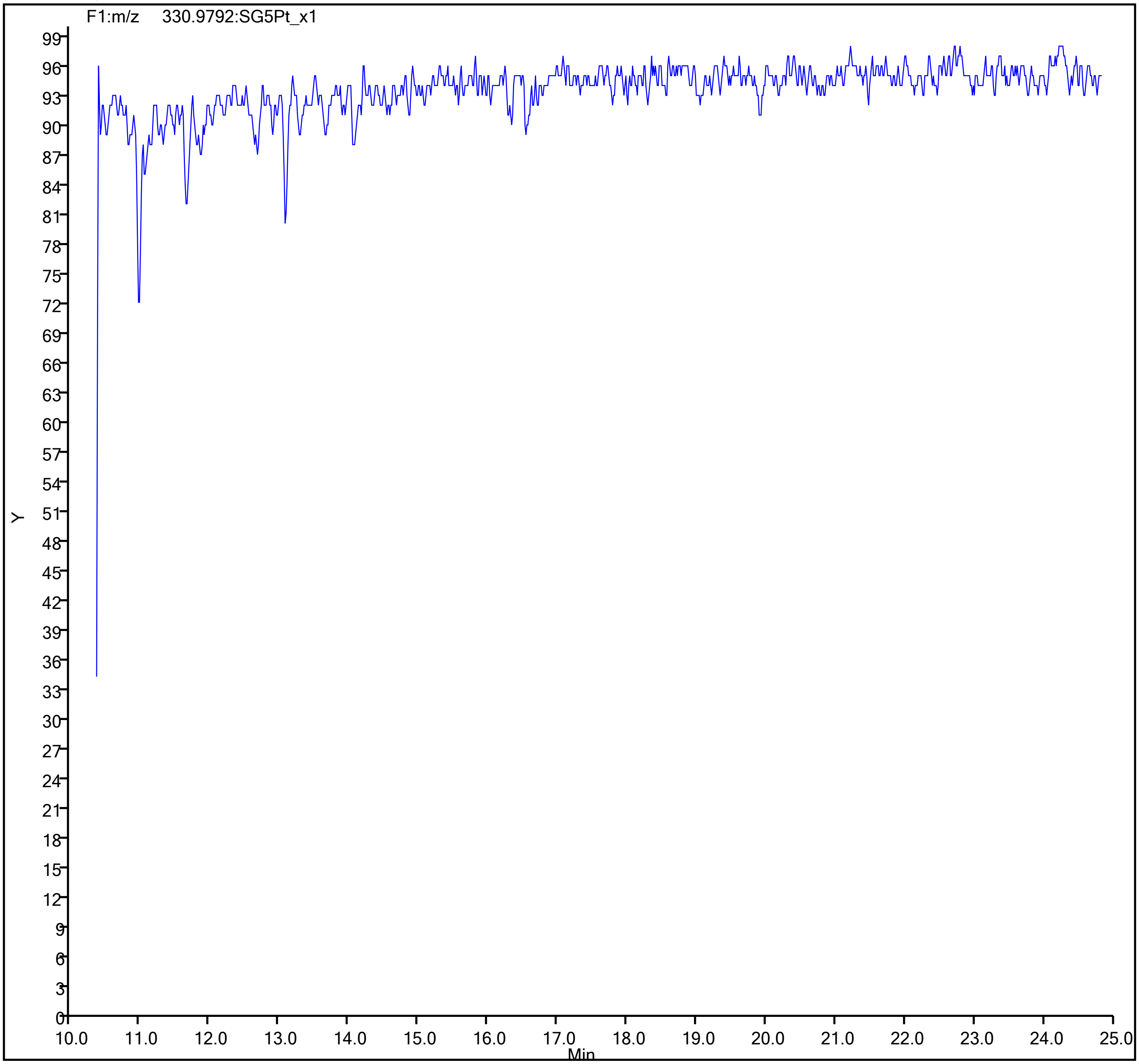

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-41mm DL

Lab Sample ID: 320-70797-8 DL

Matrix: Water

Lab File ID: 17MR2110D5_13.d

Analysis Method: 1613B

Date Collected: 03/03/2021 15:00

Extract. Method: 1613B

Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1024.5(mL)

Date Analyzed: 03/17/2021 19:29

Con. Extract Vol.: 20(uL)

Dilution Factor: 20

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 471421

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	26000		200	170
41903-57-5	Total TCDD	28000	B	200	170
30402-14-3	Total TCDF	130000	q G B	310	310

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		25-164
89059-46-1	13C-2,3,7,8-TCDF	64		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	114		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Sample Type: Client
Inject. Date: 17-Mar-2021 19:29:05 ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-8-A 320-70797-A-8-A 20X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:46:39 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: messecara Date: 17-Mar-2021 22:28:36

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.536	1170478	0.71	5.4E+05	5.000	5.000				a
D 13C-2,3,7,8-TCDF	17.022	1021674	0.88	1.3554	3.220	3.220	0.2156	0.2156	64.40	
2,3,7,8-TCDF	17.037	39511578	0.78	0.9903	195.3	195.3	0.7839	0.7839		
A Non-2,3,7,8-sub-TCDF	16.719	27641310	0.77	0.9903	137.4	136.6	0.7839	82.2		RQMa
S Total TCDF					332.7	331.9	0.7839	0.7839		RQ
D 13C-2,3,7,8-TCDD	17.717	637660	0.74	0.9209	2.958	2.958	0.1223	0.1223	59.16	
2,3,7,8-TCDD	17.733	9209873	0.80	1.0991	65.7	65.7	0.4418	0.4418		
$ 37Cl4-2,3,7,8-TCDD	17.733	542857		1.0159	2.283	2.283	0.0294	0.0294	114	
A Non-2,3,7,8-sub-TCDD	17.165	667149	0.83	1.0991	4.760	4.760	0.4418	4.760		
S Total TCDD					70.5	70.5	0.4418	0.4418		
D 13C-1,2,3,7,8-PeCDF	21.910	907967	1.43	1.0847	3.576	3.576	0.0357	0.0357	71.52	
1,2,3,7,8-PeCDF	21.937	1089095	1.54	1.0209	5.874	5.874	0.0825	0.0825		M
D 13C-2,3,4,7,8-PeCDF	23.232	859587	1.47	1.1057	3.321	3.321	0.0350	0.0350	66.42	
2,3,4,7,8-PeCDF	23.246	682249	1.54	0.9790	4.054	4.054	0.1066	0.1066		
A F1 PeCDFs	19.524						0.0393	0.0496		RQU
A Non-2,3,7,8-sub-PeCDF	22.586	1058873	1.55	1.0000	6.077	5.991	0.0932	2.638		RQMa
S Total PeCDF					16.0	15.9	0.0945	0.0945		RQ
D 13C-1,2,3,7,8-PeCDD	23.914	612313	1.56	0.7689	3.402	3.402	0.0399	0.0399	68.03	
1,2,3,7,8-PeCDD	23.941	74141	1.71	0.9982	0.6065	0.6065	0.0782	0.0782		M
A Non-2,3,7,8-sub-PeCDD	22.857						0.0782	0.0782		RQU
S Total PeCDD					0.6065	0.6065	0.0782	0.0782		
D 13C-1,2,3,4,7,8-HxCDF	30.067	780756	0.58	1.0321	3.136	3.136	0.0484	0.0484	62.72	
1,2,3,4,7,8-HxCDF	30.107	1883839	1.21	1.0667	11.3	11.3	0.0923	0.0923		
D 13C-1,2,3,6,7,8-HxCDF	30.294	799592	0.57	1.0218	3.244	3.244	0.0489	0.0489	64.88	
1,2,3,6,7,8-HxCDF	30.320	437164	1.16	1.1178	2.446	2.446	0.0880	0.0880		
D 13C-2,3,4,6,7,8-HxCDF	31.239	756089	0.55	0.9729	3.222	3.222	0.0514	0.0514	64.44	
2,3,4,6,7,8-HxCDF	31.252	52802	1.13	1.1422	0.3057	0.3057	0.0667	0.0667		
D 13C-1,2,3,7,8,9-HxCDF	32.091	695785	0.49	0.9469	3.046	3.046	0.0528	0.0528	60.92	
1,2,3,7,8,9-HxCDF	32.104						0.0622	0.0622		RQU
A Non-2,3,7,8-sub-HxCDF	29.781	352566	1.24	1.1181	2.127	2.080	0.0754	0.8035		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					16.2	16.1	0.0773	0.0773		RQ
* 13C-1,2,3,7,8,9-HxCDD	31.904	1206139	1.24	4.9E+05	5.000	5.000				
D 13C-1,2,3,4,7,8-HxCDD	31.438	595007	1.14	0.7689	3.208	3.208	0.0549	0.0549	64.16	
1,2,3,4,7,8-HxCDD	31.558						0.0429	0.0429		RQU
D 13C-1,2,3,6,7,8-HxCDD	31.545	576413	1.24	0.8643	3.008	2.765	0.0488	0.0488	60.16	RQ
1,2,3,6,7,8-HxCDD	31.558	15350	1.42	0.9658	0.1267	0.1267	0.0490	0.0490		
1,2,3,7,8,9-HxCDD	31.917						0.0427	0.0427		
A Non-2,3,7,8-sub-HxCDD	30.433	91082	1.24	1.0247	0.7943	0.7273	0.0447	0.3303		RQM
S Total HxCDD					0.9210	0.8540	0.0449	0.0449		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.592	562349	0.39	0.7233	3.223	3.223	0.0822	0.0822	64.46	
1,2,3,4,6,7,8-HpCDF	33.592	537934	1.07	1.4017	3.412	3.412	0.0631	0.0631		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.662	506082	0.41	0.6720	3.122	3.122	0.0884	0.0884	62.43	
1,2,3,4,7,8,9-HpCDF	34.674	164876	1.02	1.2995	1.253	1.253	0.0759	0.0759		M
A Non-2,3,7,8-sub-HpCDF	34.127	211949	1.13	1.3506	1.469	1.469	0.0690	1.469		
S Total HpCDF					6.134	6.134	0.0695	0.0695		
D 13C-1,2,3,4,6,7,8-HpCDD	34.370	494308	1.01	0.6855	2.989	2.989	0.0580	0.0580	59.78	
1,2,3,4,6,7,8-HpCDD	34.382	669286	1.04	1.0339	6.548	6.548	0.0912	0.0912		
A Non-2,3,7,8-sub-HpCDD	34.460	517400	1.09	1.0339	5.062	5.062	0.0912	5.062		
S Total HpCDD					11.6	11.6	0.0912	0.0912		
D 13C-OCDD	36.685	655510	0.87	0.4996	5.439	5.439	0.0606	0.0606	54.39	
OCDF	36.793	189249	0.89	1.3135	2.198	2.198	0.0862	0.0862		M
OCDD	36.697	4787760	0.91	1.0576	69.1	69.1	0.1389	0.1389		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Sample Type: Client
Inject. Date: 17-Mar-2021 19:29:05 ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-70797-A-8-A 320-70797-A-8-A 20X
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Mar-2021 15:46:39 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1666

First Level Reviewer: messecara Date: 17-Mar-2021 22:28:36

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.536	17.506	2		484641	112627	1600	4000	70		a
333.9339	17.521	17.506	1		685837	180302	1039	2597	174	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.007	1	0.971	477618	123775	3881	9702	32		
317.9389	17.022	17.007	1	0.971	544056	139874	2968	7420	47	0.88(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.022	1	1.001	17264511	4324693	7148	17870	605		
305.8987	17.037	17.022	1	1.001	22247067	5635431	9226	23065	611	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	15.661	16.719	-63	0.920	306998	91175	7148	17870	13		M
305.8987	15.661	16.719	-63	0.920	449908	127543	9226	23065	14	0.68(0.65-0.89)	
303.9016	15.933	16.719	-47	0.936	586783	141747	7148	17870	20		M
305.8987	15.933	16.719	-47	0.936	813941	183419	9226	23065	20	0.72(0.65-0.89)	
303.9016	16.160	16.719	-33	0.949	545334	141235	7148	17870	20		
	Empc Correction				461671	129477	7148	17870	18		
305.8987	16.160	16.719	-33	0.949	599573	168153	9226	23065	18	0.91(0.65-0.89)	M
303.9016	16.387	16.719	-20	0.963	682887	173515	7148	17870	24		M
305.8987	16.387	16.719	-20	0.963	903189	233421	9226	23065	25	0.76(0.65-0.89)	
303.9016	16.659	16.719	-4	0.979	7259471	1925442	7148	17870	269		
305.8987	16.659	16.719	-4	0.979	9376812	2501686	9226	23065	271	0.77(0.65-0.89)	
303.9016	16.886	16.719	10	0.992	230805	71460	7148	17870	10		M
305.8987	16.886	16.719	10	0.992	377933	92466	9226	23065	10	0.61(0.65-0.89)	
	Empc Correction				299746	92805	9226	23065	10		
303.9016	17.460	16.719	44	1.026	1076750	269674	7148	17870	38		
305.8987	17.460	16.719	44	1.026	1433977	351566	9226	23065	38	0.75(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	17.687	16.719	58	1.039	212707	52396	7148	17870	7		
305.8987	17.687	16.719	58	1.039	302632	61276	9226	23065	7	0.70(0.65-0.89)	
303.9016	18.806	16.719	125	1.105	1140932	269153	7148	17870	38		
305.8987	18.806	16.719	125	1.105	1502528	354637	9226	23065	38	0.76(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.717	17.702	1	1.010	271579	64707	1600	4000	40		
333.9339	17.717	17.702	1	1.010	366081	91423	1039	2597	88	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.733	17.717	1	1.001	4084032	993752	3192	7980	311		
321.8936	17.733	17.717	1	1.001	5125841	1273216	2873	7182	443	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.733	17.717	1	1.011	542857	126670	700	1750	181		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.080	17.165	55	1.020	302832	72976	3192	7980	23		
321.8936	18.080	17.165	55	1.020	364317	88315	2873	7182	31	0.83(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.910	21.896	1	1.249	534191	96604	487	1217	198		
353.8970	21.910	21.896	1	1.249	373776	70471	420	1050	168	1.43(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	21.937	21.910	2	1.001	660427	115874	588	1470	197		M
341.8567	21.937	21.910	2	1.001	428668	79831	538	1345	148	1.54(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	23.232	23.205	2	1.325	512156	79353	487	1217	163		
353.8970	23.219	23.205	1	1.324	347431	55547	420	1050	132	1.47(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.246	23.219	2	1.001	414050	70045	588	1470	119		
341.8567	23.232	23.219	1	1.000	268199	46677	538	1345	87	1.54(1.32-1.78)	
A F1 PeCDFs											U
339.8597	19.108	19.524	-25	0.872	5331	1646	249	622	7		
341.8567	19.078	19.524	-27	0.871	6762	1356	226	565	6	0.79(1.32-1.78)	
	Empc Correction				3439	1061	226	565	5		
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	20.628	22.586	-117	0.941	281147	58645	588	1470	100		
341.8567	20.628	22.586	-117	0.941	185032	36709	538	1345	68	1.52(1.32-1.78)	
339.8597	21.787	22.586	-48	0.994	57627	12301	588	1470	21		M
	Empc Correction				49519	12452	588	1470	21		
341.8567	21.814	22.586	-46	0.996	31948	8034	538	1345	15	1.80(1.32-1.78)	
339.8597	22.441	22.586	-9	1.024	180484	31779	588	1470	54		
341.8567	22.428	22.586	-9	1.024	121990	24895	538	1345	46	1.48(1.32-1.78)	
339.8597	23.573	22.586	59	1.076	101338	16390	588	1470	28		
341.8567	23.559	22.586	58	1.075	65656	9676	538	1345	18	1.54(1.32-1.78)	
339.8597	25.141	22.586	153	1.148	25383	4547	588	1470	8		
341.8567	25.141	22.586	153	1.148	23496	3888	538	1345	7	1.08(1.32-1.78)	
	Empc Correction				16376	2933	538	1345	5		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDD											
367.8949	23.914	23.901	1	1.364	373491	55919	410	1025	136		
369.8919	23.914	23.901	1	1.364	238822	41197	309	772	133	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	23.941	23.928	1	1.001	46814	7262	369	922	20		M
357.8516	23.955	23.928	2	1.002	27327	4699	238	595	20	1.71(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											U
355.8546	21.951	22.857	-54	0.918	10359	2857	369	922	8		
	Empc Correction				5748	1216	369	922	3		
357.8516	21.978	22.857	-53	0.919	3709	785	238	595	3	2.79(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.067	30.054	1	0.942	286762	50159	461	1152	109		
385.8610	30.081	30.054	2	0.943	493994	79040	722	1805	109	0.58(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.107	30.094	1	1.001	1030585	164108	667	1667	246		
375.8178	30.094	30.094	0	1.001	853254	125393	351	877	357	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.294	30.281	1	0.950	291834	49823	461	1152	108		
385.8610	30.294	30.281	1	0.950	507758	79517	722	1805	110	0.57(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.320	30.307	1	1.001	234543	37146	667	1667	56		
375.8178	30.320	30.307	1	1.001	202621	29618	351	877	84	1.16(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.239	31.226	1	0.979	266818	58157	461	1152	126		
385.8610	31.239	31.226	1	0.979	489271	108794	722	1805	151	0.55(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.252	31.239	1	1.000	28030	6603	667	1667	10		
375.8178	31.265	31.239	2	1.001	24772	5197	351	877	15	1.13(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.091	32.091	0	1.006	227828	60555	461	1152	131		
385.8610	32.091	32.091	0	1.006	467957	117979	722	1805	163	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQU
373.8208	32.104						667	1667			
375.8178	32.104						351	877			
A Non-2,3,7,8-sub-HxCDF											RQ
373.8208	27.738	29.781	-122	0.923	77215	10354	667	1667	16		
375.8178	27.751	29.781	-122	0.923	58980	8066	351	877	23	1.31(1.05-1.43)	
373.8208	29.096	29.781	-41	0.968	42984	6026	667	1667	9		
	Empc Correction				35056	4919	667	1667	7		
375.8178	29.083	29.781	-42	0.967	28271	3967	351	877	11	1.52(1.05-1.43)	
373.8208	31.119	29.781	80	1.035	21522	4422	667	1667	7		
375.8178	31.119	29.781	80	1.035	19362	4051	351	877	12	1.11(1.05-1.43)	
373.8208	32.197	29.781	145	1.071	60987	17137	667	1667	26		
375.8178	32.197	29.781	145	1.071	51173	13974	351	877	40	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.891	1		667751	159560	488	1220	327		
403.8529	31.904	31.891	1		538388	136211	510	1275	267	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.438	31.425	1	0.985	317499	78423	488	1220	161		
403.8529	31.452	31.425	2	0.986	277508	73442	510	1275	144	1.14(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQU
389.8157	31.452						263	657			
391.8127	31.452						277	692			
13C-1,2,3,6,7,8-HxCDD											RQ
401.8559	31.545	31.545	0	0.989	319086	75305	488	1220	154		
403.8529	31.558	31.545	1	0.989	308072	67411	510	1275	132	1.04(1.05-1.43)	
	Empc Correction				257327	60729	510	1275	119		
1,2,3,6,7,8-HxCDD											
389.8157	31.558	31.558	0	1.000	9017	2743	263	657	10		
391.8127	31.558	31.558	0	1.000	6333	1821	277	692	7	1.42(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.904						263	657			
391.8127	31.904						277	692			
A Non-2,3,7,8-sub-HxCDD											RQM
389.8157	28.923	30.433	-90	0.917	24254	3114	263	657	12		M
391.8127	28.936	30.433	-90	0.917	17117	2205	277	692	8	1.42(1.05-1.43)	
389.8157	30.187	30.433	-15	0.957	9154	1438	263	657	5		
	Empc Correction				5391	1396	263	657	5		
391.8127	30.187	30.433	-15	0.957	4348	1126	277	692	4	2.11(1.05-1.43)	
389.8157	30.626	30.433	12	0.971	26757	5714	263	657	22		M
	Empc Correction				22127	3808	263	657	14		
391.8127	30.613	30.433	11	0.970	17845	3071	277	692	11	1.50(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.592	33.580	1	1.053	157221	46716	645	1612	72		
419.8220	33.592	33.580	1	1.053	405128	129815	761	1902	171	0.39(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.592	33.592	0	1.000	278285	95233	648	1620	147		M
409.7789	33.592	33.592	0	1.000	259649	86220	601	1502	143	1.07(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.662	34.650	1	1.086	148284	47022	645	1612	73		
419.8220	34.662	34.650	1	1.086	357798	111215	761	1902	146	0.41(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7818	34.674	34.661	1	1.000	83197	26698	648	1620	41		M
409.7789	34.674	34.661	1	1.000	81679	26203	601	1502	44	1.02(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											
407.7818	33.896	34.127	-14	1.009	112344	26017	648	1620	40		
409.7789	33.884	34.127	-15	1.009	99605	29931	601	1502	50	1.13(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.370	34.370	0	1.077	248315	77905	511	1277	152		
437.8140	34.370	34.370	0	1.077	245993	80096	430	1075	186	1.01(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.382	0	1.000	341286	100795	617	1542	163		
425.7737	34.382	34.382	0	1.000	328000	97191	575	1437	169	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDD											
423.7766	33.836	34.460	-37	0.984	270360	88043	617	1542	143		
425.7737	33.836	34.460	-37	0.984	247040	83809	575	1437	146	1.09(0.88-1.20)	
13C-OCDD											
469.7779	36.685	36.685	0	1.150	305194	78498	344	860	228		
471.7750	36.685	36.685	0	1.150	350316	87102	372	930	234	0.87(0.76-1.02)	
OCDF											M
441.7428	36.793	36.781	1	1.003	89187	25960	386	965	67		M
443.7399	36.781	36.781	0	1.003	100062	28318	364	910	78	0.89(0.76-1.02)	M
OCDD											
457.7377	36.697	36.697	0	1.000	2277319	604677	397	992	1523		
459.7348	36.697	36.697	0	1.000	2510441	689058	576	1440	1196	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 17-Mar-2021 19:29:05 Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: KSS
Lims Batch ID: 471421 Lims Sample ID: 13

Non-2,3,7,8-sub-TCDF, RT: 16.719

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.990	D 13C-2,3,7,8-TCDF	100.000	1021674	263649

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.990		5.000	1021674	263649

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
15.661	306998	91175	449908	127543	3.74	0.68	Ma
15.933	586783	141747	813941	183419	6.92	0.72	M
16.160	545334	141235	599573	168153	5.66	0.91	RQM
16.160	461671	129477	599573	168153	5.24		Empc Correction
16.387	682887	173515	903189	233421	7.84	0.76	M
16.659	7259471	1925442	9376812	2501686	82.2	0.77	
16.886	230805	71460	377933	92466	3.01	0.61	RQM
16.886	230805	71460	299746	92805	2.62		Empc Correction
17.460	1076750	269674	1433977	351566	12.4	0.75	
17.687	212707	52396	302632	61276	2.55	0.70	
18.806	1140932	269153	1502528	354637	13.1	0.76	
Signal Totals:							
	11959004	3124039	15682306	4074506			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27803160	7209964				0.76	RQMa
	27641310	7198545					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 137.404 = (27803160 * 5.000) / (1021674 * 0.990)
Empc Amount: 136.605 = (27641310 * 5.000) / (1021674 * 0.990)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 17-Mar-2021 19:29:05
Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: KSS
Lims Batch ID: 471421
Lims Sample ID: 13

Non-2,3,7,8-sub-TCDD, RT: 17.165

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.099	D 13C-2,3,7,8-TCDD	100.000	637660	156130

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.099		5.000	637660	156130

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.080	302832	72976	364317	88315	4.76	0.83	
Signal Totals:							
	302832	72976	364317	88315			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	667149	161291				0.83	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.760 = (667149 * 5.000) / (637660 * 1.099)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	17-Mar-2021 19:29:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	13

F1 PeCDFs, RT: 19.524

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021	D 13C-1,2,3,7,8-PeCDF	100.000	907967	167075
2,3,4,7,8-PeCDF	0.979	D 13C-2,3,4,7,8-PeCDF	100.000	859587	134900

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		5.000	883777	150987

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
19.108	5331	1646	6762	1356	0.0684	0.79	RQ
19.108	5331	1646	3439	1061	0.0496		Empc Correction

Compound is Marked ND

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Lims ID: 320-70797-A-8-A
Client ID: 11215702-Tank2-41mm
Inject. Date: 17-Mar-2021 19:29:05 Dil. Factor: 20.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: KSS
Lims Batch ID: 471421 Lims Sample ID: 13

Non-2,3,7,8-sub-PeCDF, RT: 22.586

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021	D 13C-1,2,3,7,8-PeCDF	100.000	907967	167075
2,3,4,7,8-PeCDF	0.979	D 13C-2,3,4,7,8-PeCDF	100.000	859587	134900

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		5.000	883777	150987

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.628	281147	58645	185032	36709	2.64	1.52	
21.787	57627	12301	31948	8034	0.5068	1.80	RQMa
21.787	49519	12452	31948	8034	0.4609		Empc Correction
22.441	180484	31779	121990	24895	1.71	1.48	
23.573	101338	16390	65656	9676	0.9448	1.54	
25.141	25383	4547	23496	3888	0.2765	1.08	RQ
25.141	25383	4547	16376	2933	0.2363		Empc Correction
Signal Totals:							
	637871	123813	421002	82247			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1074101	206864				1.51	RQMa
	1058873	206060					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 6.077 = (1074101 * 5.000) / (883777 * 1.000)
Empc Amount: 5.991 = (1058873 * 5.000) / (883777 * 1.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	17-Mar-2021 19:29:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	13

Non-2,3,7,8-sub-PeCDD, RT: 22.857

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	0.998	D 13C-1,2,3,7,8-PeCDD	100.000	612313	97116

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.998		5.000	612313	97116

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
21.951	10359	2857	3709	785	0.1151	2.79	RQ
21.951	5748	1216	3709	785	0.0774		Empc Correction

Compound is Marked ND

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	17-Mar-2021 19:29:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDF, RT: 29.781

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.067	D 13C-1,2,3,4,7,8-HxCDF	100.000	780756	129199
1,2,3,6,7,8-HxCDF	1.118	D 13C-1,2,3,6,7,8-HxCDF	100.000	799592	129340
2,3,4,6,7,8-HxCDF	1.142	D 13C-2,3,4,6,7,8-HxCDF	100.000	756089	166951
1,2,3,7,8,9-HxCDF	1.146	D 13C-1,2,3,7,8,9-HxCDF	100.000	695785	178534

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.118		5.000	758055	151006

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
27.738	77215	10354	58980	8066	0.8035	1.31	
29.096	42984	6026	28271	3967	0.4204	1.52	RQ
29.096	35056	4919	28271	3967	0.3736		Empc Correction
31.119	21522	4422	19362	4051	0.2412	1.11	
32.197	60987	17137	51173	13974	0.6617	1.19	
Signal Totals:							
	194780	36832	157786	30058			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	360494	67997				1.28	RQ
	352566	66890					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.127 = (360494 * 5.000) / (758055 * 1.118)
Empc Amount: 2.080 = (352566 * 5.000) / (758055 * 1.118)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	17-Mar-2021 19:29:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDD, RT: 30.433

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.036	D 13C-1,2,3,4,7,8-HxCDD	100.000	595007	151865
1,2,3,6,7,8-HxCDD	0.966	D 13C-1,2,3,6,7,8-HxCDD	100.000	627158	142716
1,2,3,7,8,9-HxCDD	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.025		5.000	611082	147290

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
28.923	24254	3114	17117	2205	0.3303	1.42	M
30.187	9154	1438	4348	1126	0.1078	2.11	RQ
30.187	5391	1396	4348	1126	0.0778		Empc Correction
30.626	26757	5714	17845	3071	0.3561	1.50	RQM
30.626	22127	3808	17845	3071	0.3192		Empc Correction
Signal Totals:							
	51772	8318	39310	6402			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	99475	16668				1.53	RQM
	91082	14720					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7943 = (99475 * 5.000) / (611082 * 1.025)
Empc Amount: 0.7273 = (91082 * 5.000) / (611082 * 1.025)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	17-Mar-2021 19:29:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDF, RT: 34.127

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.402	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	562349	176531
1,2,3,4,7,8,9-HpCDF	1.300	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	506082	158237

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.351		5.000	534215	167384

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.896	112344	26017	99605	29931	1.47	1.13	
Signal Totals:							
	112344	26017	99605	29931			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	211949	55948				1.13	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.469 = (211949 * 5.000) / (534215 * 1.351)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Lims ID:	320-70797-A-8-A		
Client ID:	11215702-Tank2-41mm		
Inject. Date:	17-Mar-2021 19:29:05	Dil. Factor:	20.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDD, RT: 34.460

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.034	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	494308	158001

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.034		5.000	494308	158001

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.836	270360	88043	247040	83809	5.06	1.09	
Signal Totals:							
	270360	88043	247040	83809			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	517400	171852				1.09	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 5.062 = (517400 * 5.000) / (494308 * 1.034)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d				
Injection Date:	17-Mar-2021 19:29:05	Instrument ID:	10D5		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	KSS	ALS Bottle#:	11	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.62- 18.82)

Signal: 1

Processing Integration Results

RT = 15.661 Area = 329751

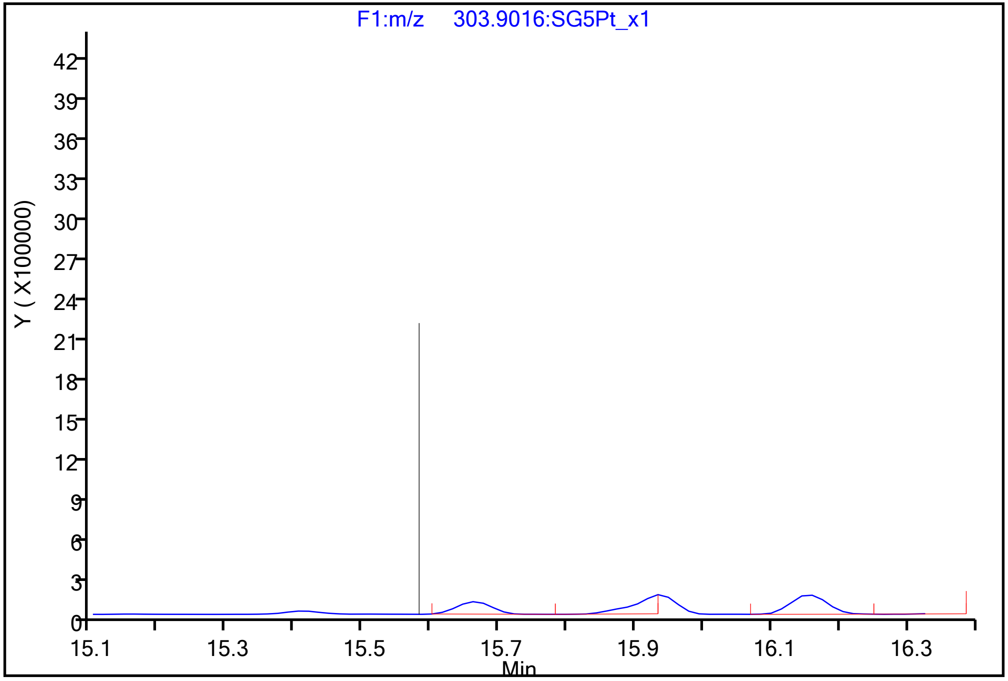

Manual Integration Results

RT = 15.661 Area = 306998 M

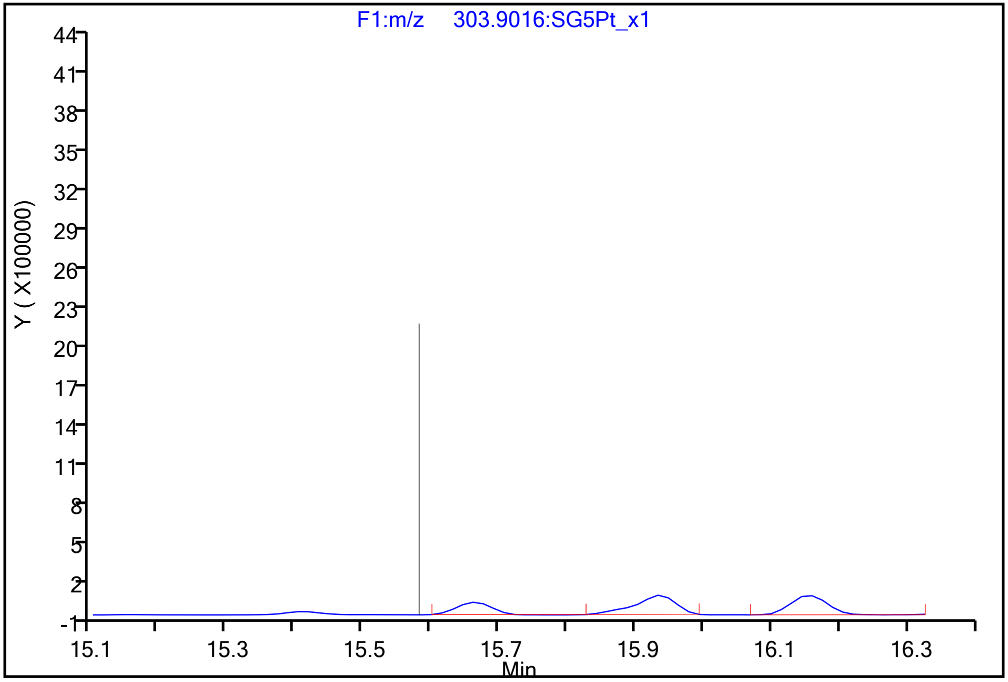

Reviewer: dadunj, 18-Mar-2021 15:42:24

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Injection Date: 17-Mar-2021 19:29:05 Instrument ID: 10D5
Lims ID: 320-70797-A-8-A Lab Sample ID: 320-70797-8
Client ID: 11215702-Tank2-41mm
Operator ID: KSS ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.62- 18.82)

Signal: 1

RT = 15.918 Area = 343613

Processing Integration Results

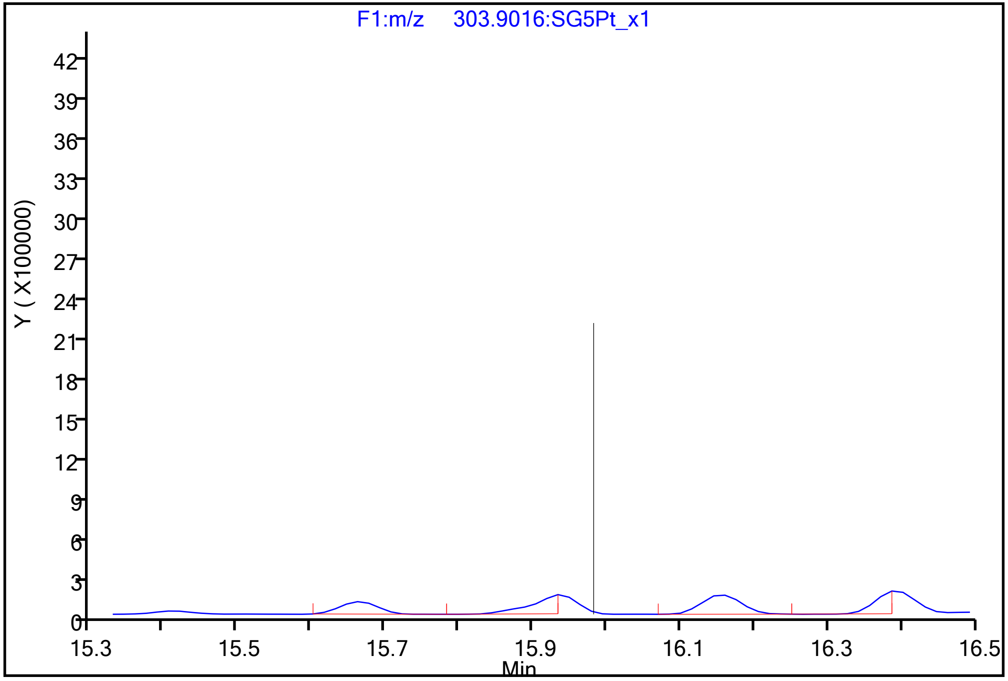

RT = 15.933 Area = 586783 M

Manual Integration Results

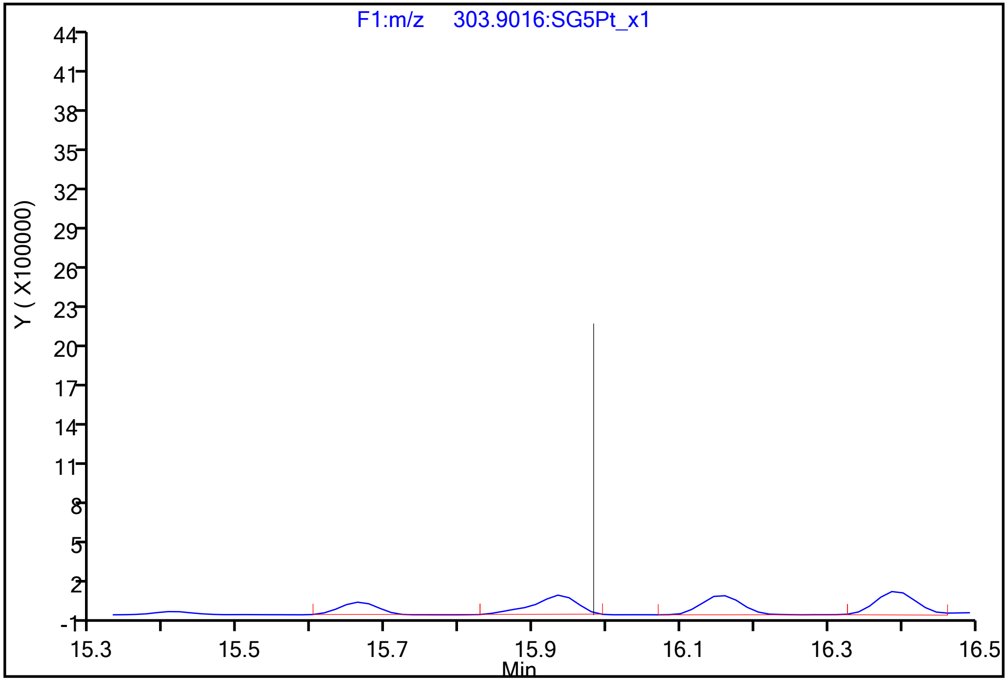

Reviewer: dadunj, 18-Mar-2021 15:42:24

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Injection Date: 17-Mar-2021 19:29:05 Instrument ID: 10D5
Lims ID: 320-70797-A-8-A Lab Sample ID: 320-70797-8
Client ID: 11215702-Tank2-41mm
Operator ID: KSS ALS Bottle#: 11 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (14.62- 18.82)

Signal: 2

Processing Integration Results

RT = 16.145 Area = 379930

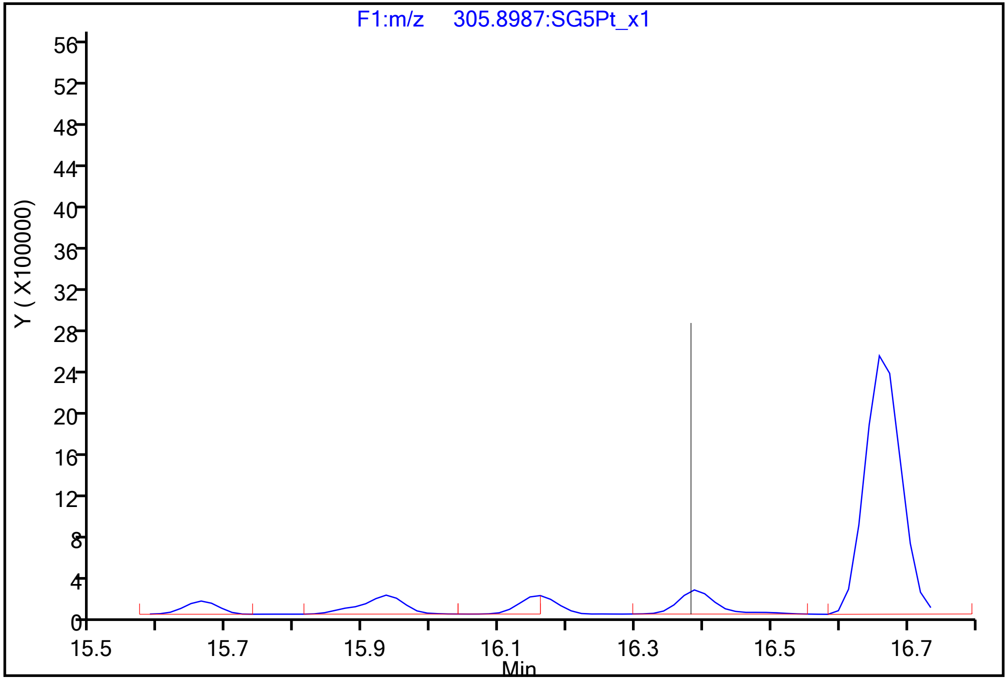

Manual Integration Results

RT = 16.160 Area = 599573 M

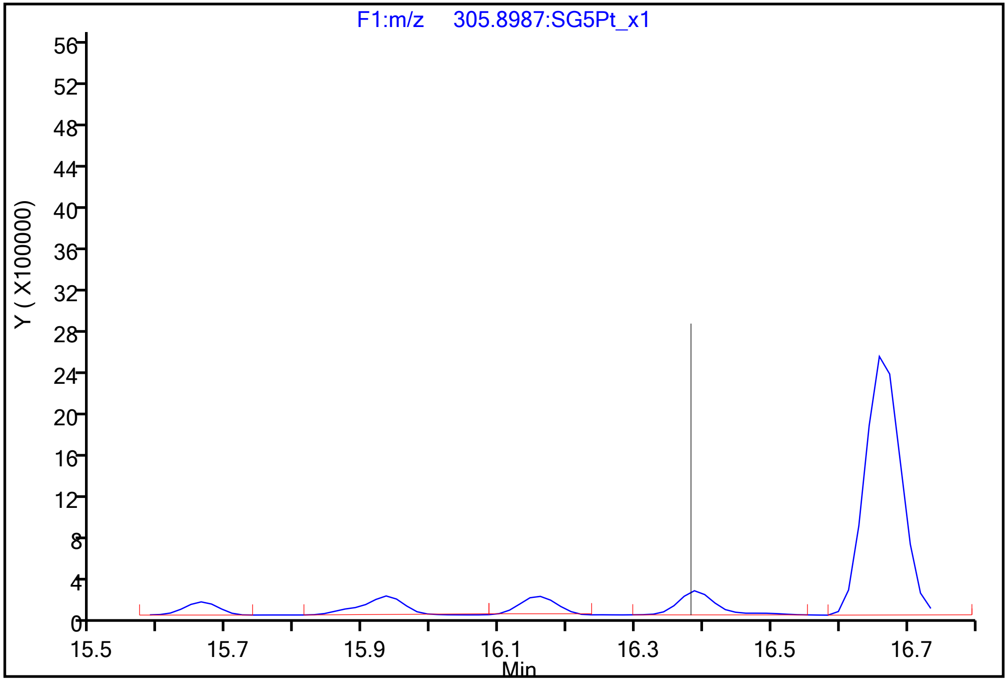

Reviewer: dadunj, 18-Mar-2021 15:42:17
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d				
Injection Date:	17-Mar-2021 19:29:05	Instrument ID:	10D5		
Lims ID:	320-70797-A-8-A	Lab Sample ID:	320-70797-8		
Client ID:	11215702-Tank2-41mm				
Operator ID:	KSS	ALS Bottle#:	11	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.62- 18.82)

Signal: 1

Processing Integration Results

RT = 16.372 Area = 262270

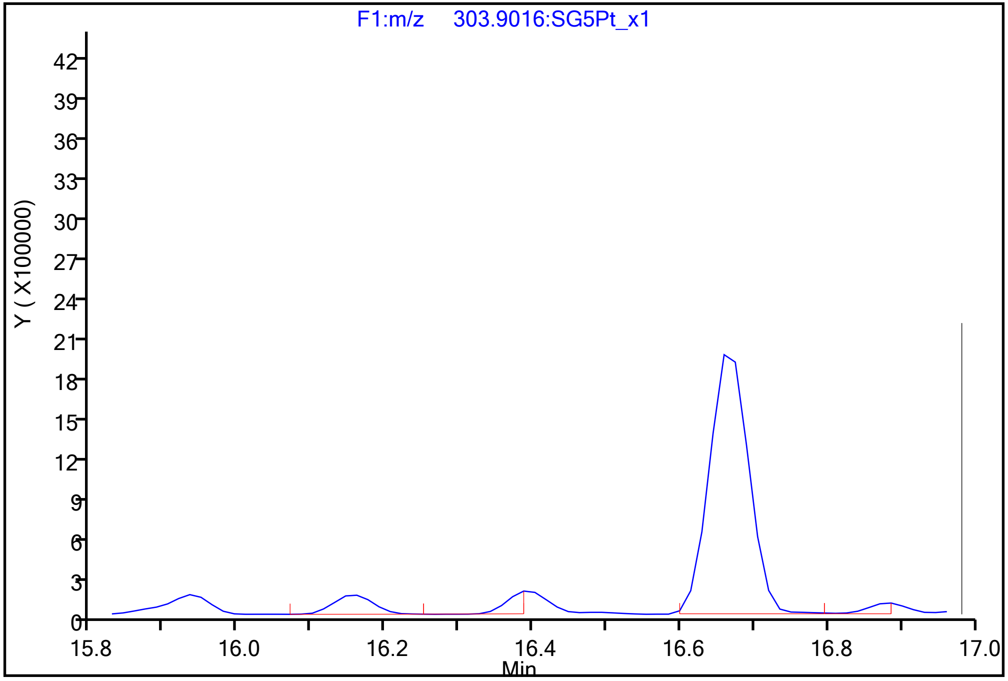

Manual Integration Results

RT = 16.387 Area = 682887 M

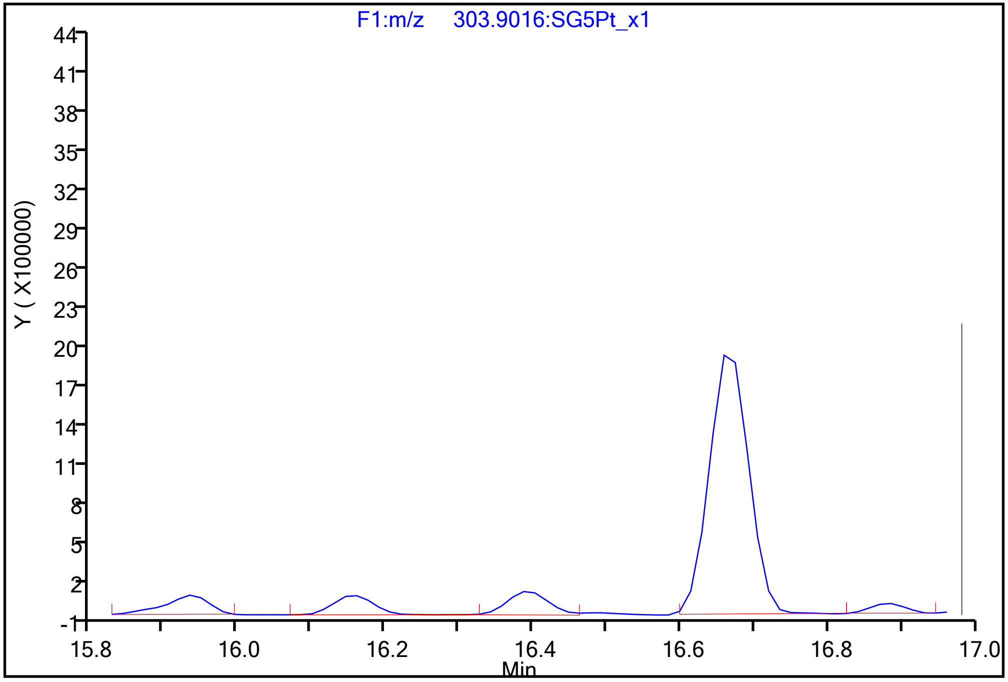

Reviewer: dadunj, 18-Mar-2021 15:42:24

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d
Injection Date: 17-Mar-2021 19:29:05
Instrument ID: 10D5
Lims ID: 320-70797-A-8-A
Lab Sample ID: 320-70797-8
Client ID: 11215702-Tank2-41mm
Operator ID: KSS
ALS Bottle#: 11
Worklist Smp#: 13
Injection Vol: 2.0 ul
Dil. Factor: 20.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (14.62- 18.82)

Signal: 1

Processing Integration Results

RT = 16.871 Area = 173606

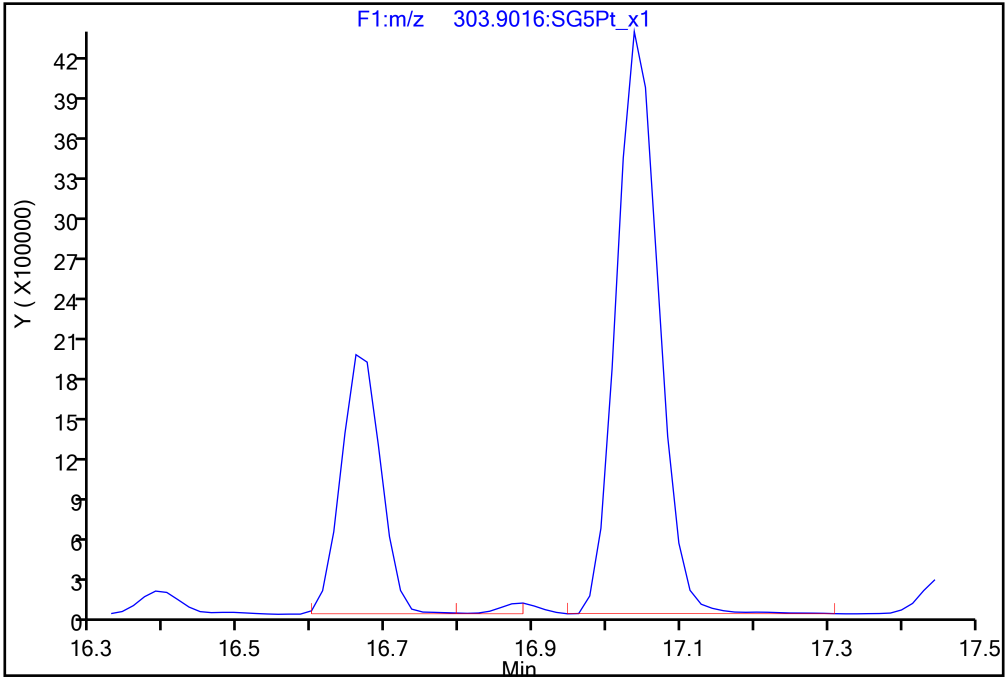

Manual Integration Results

RT = 16.886 Area = 230805 M

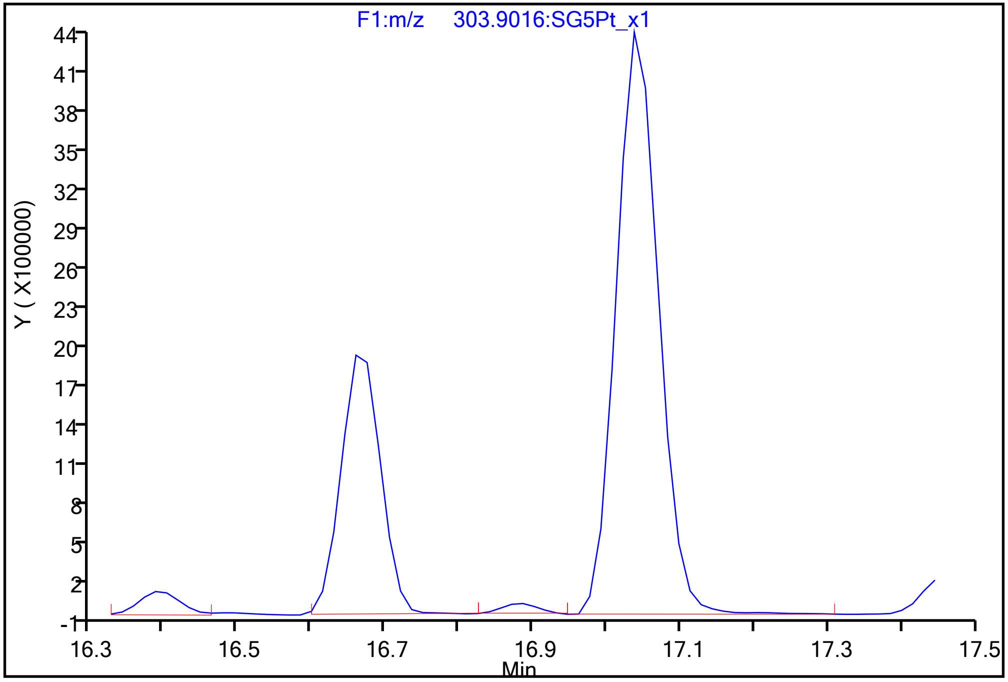

Reviewer: dadunj, 18-Mar-2021 15:42:24

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Injection Date:	17-Mar-2021 19:29:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	471421	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

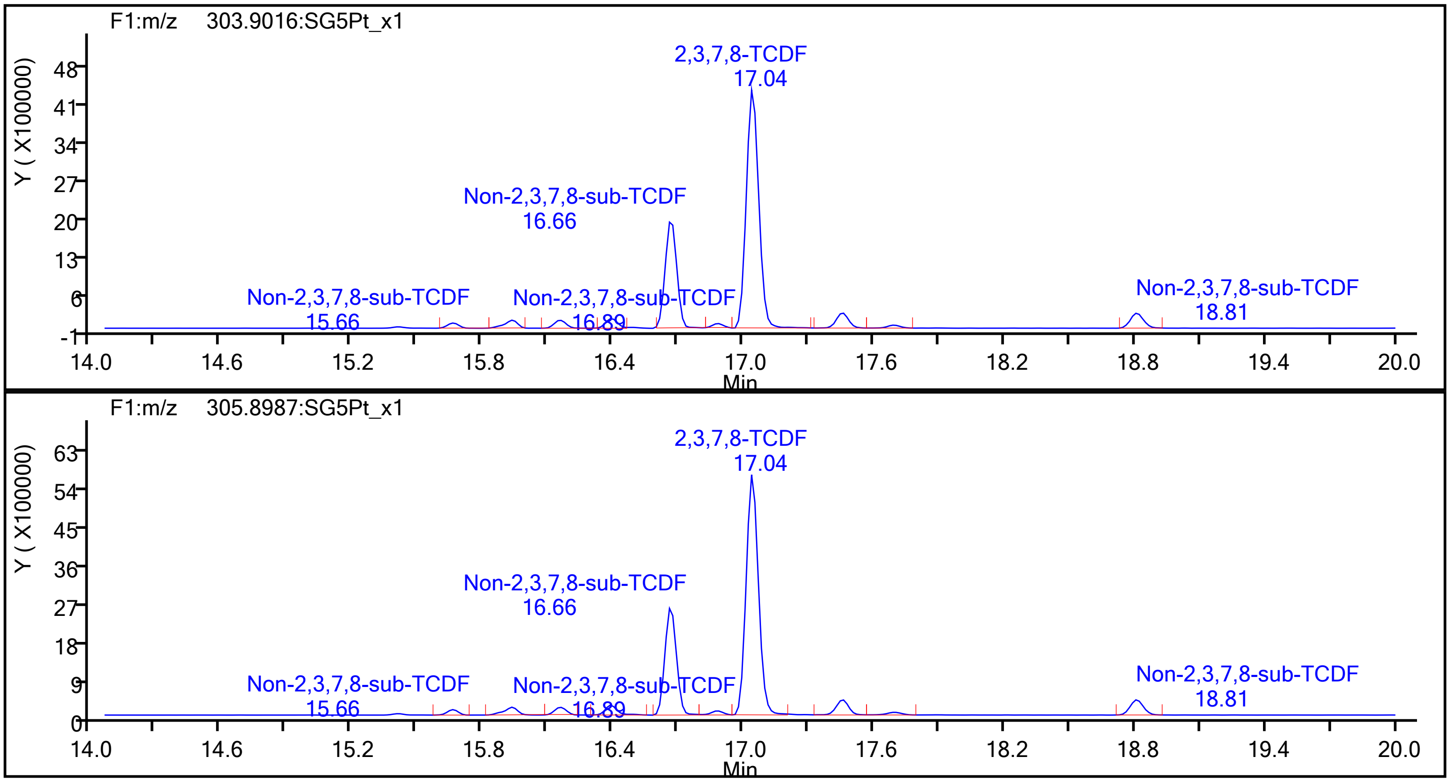

TCDF Standards

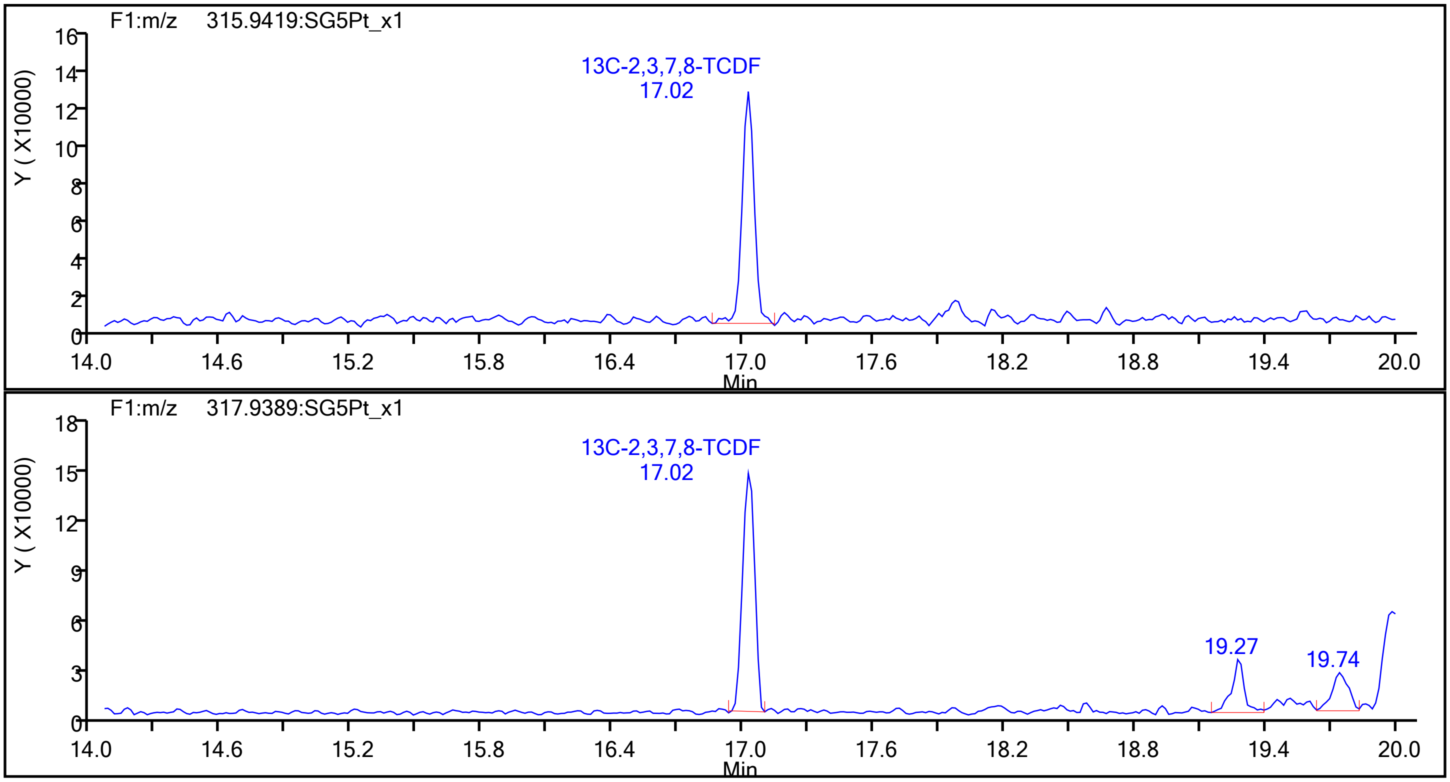

Report Date: 18-Mar-2021 15:46:39　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d

Injection Date:	17-Mar-2021 19:29:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	471421	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

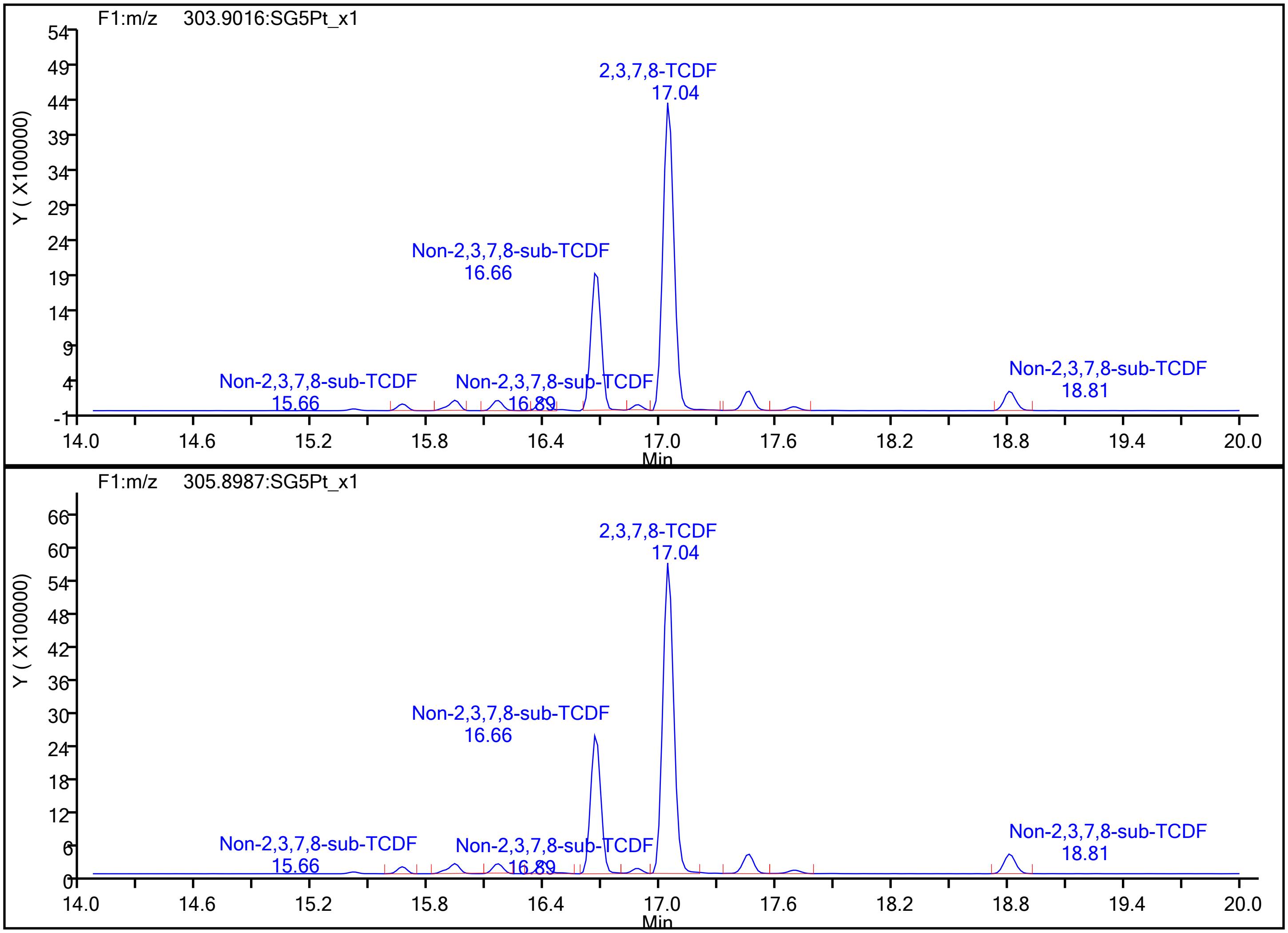

TCDF Interference Mass

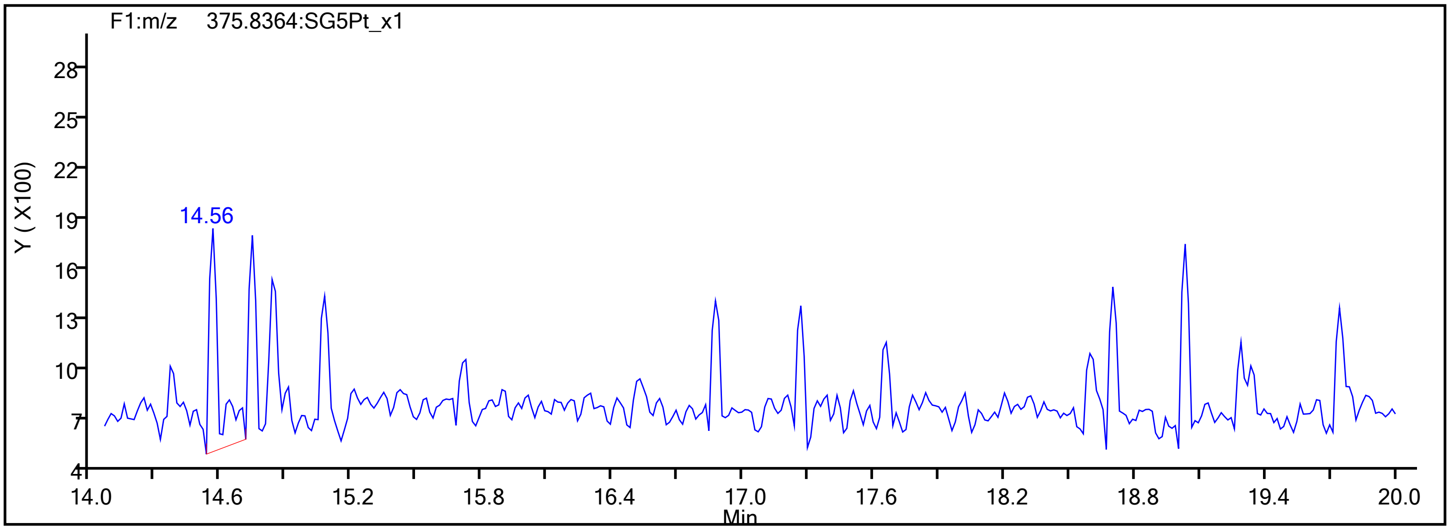

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Injection Date:	17-Mar-2021 19:29:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	471421	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

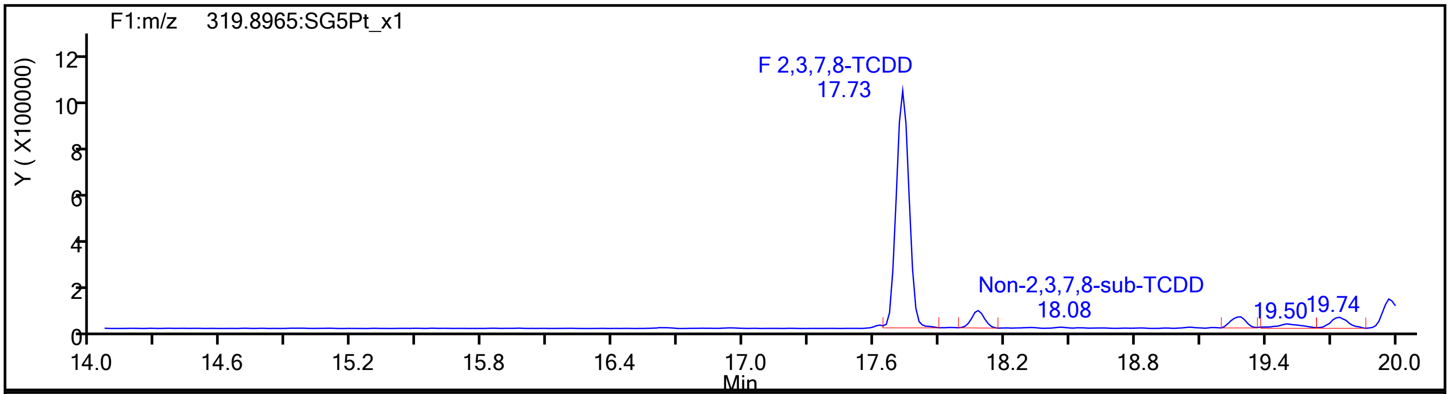

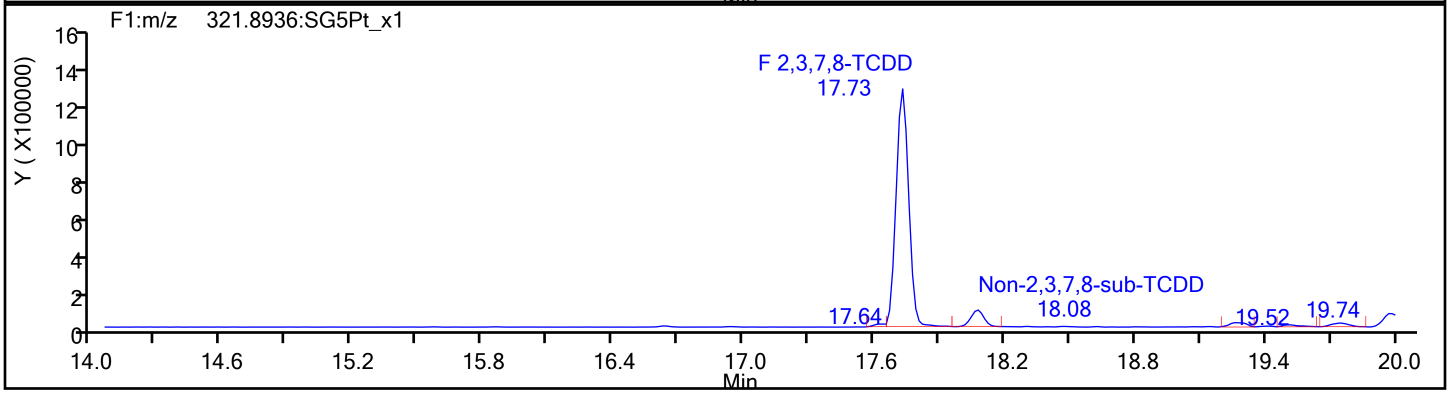

TCDD Standards

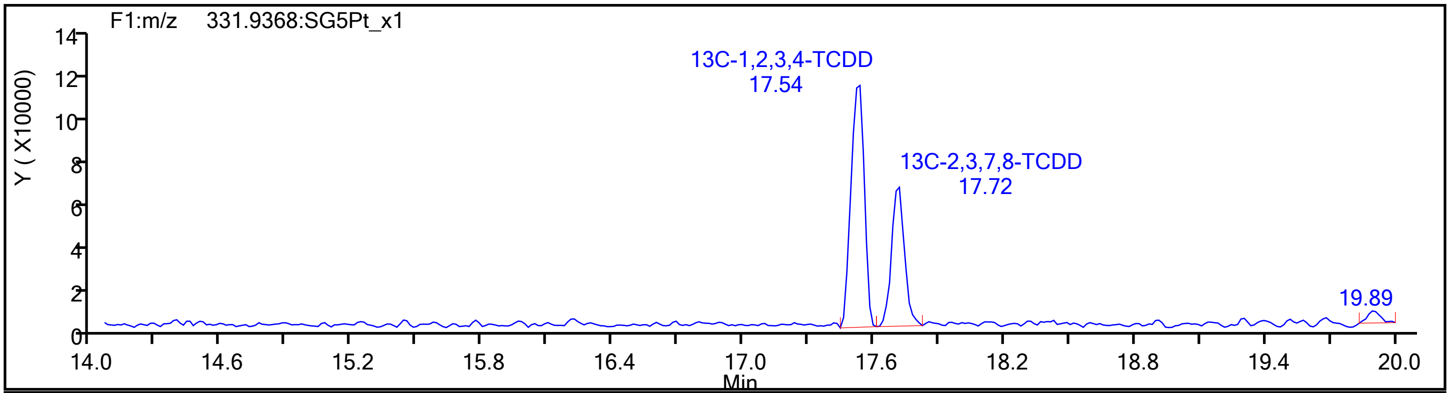

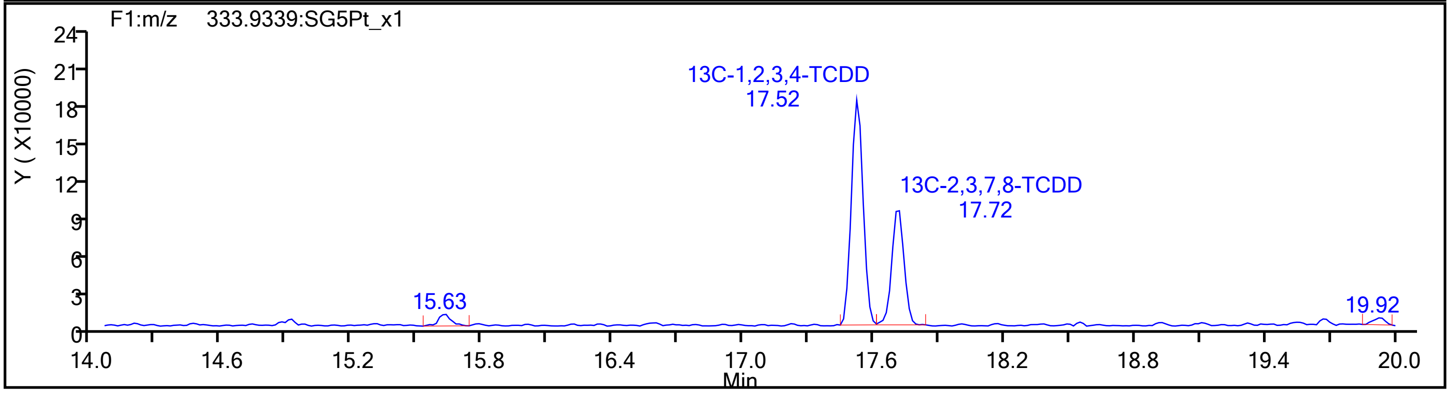

Report Date: 18-Mar-2021 15:46:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Injection Date:	17-Mar-2021 19:29:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	471421	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

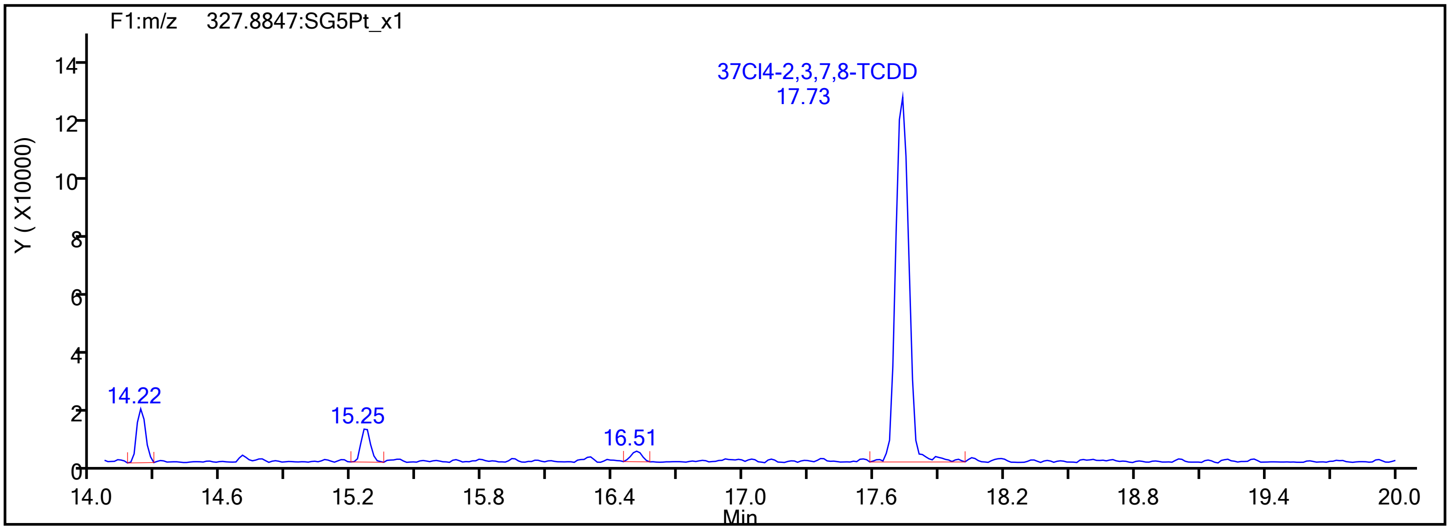

37Cl4-TCDD Standards

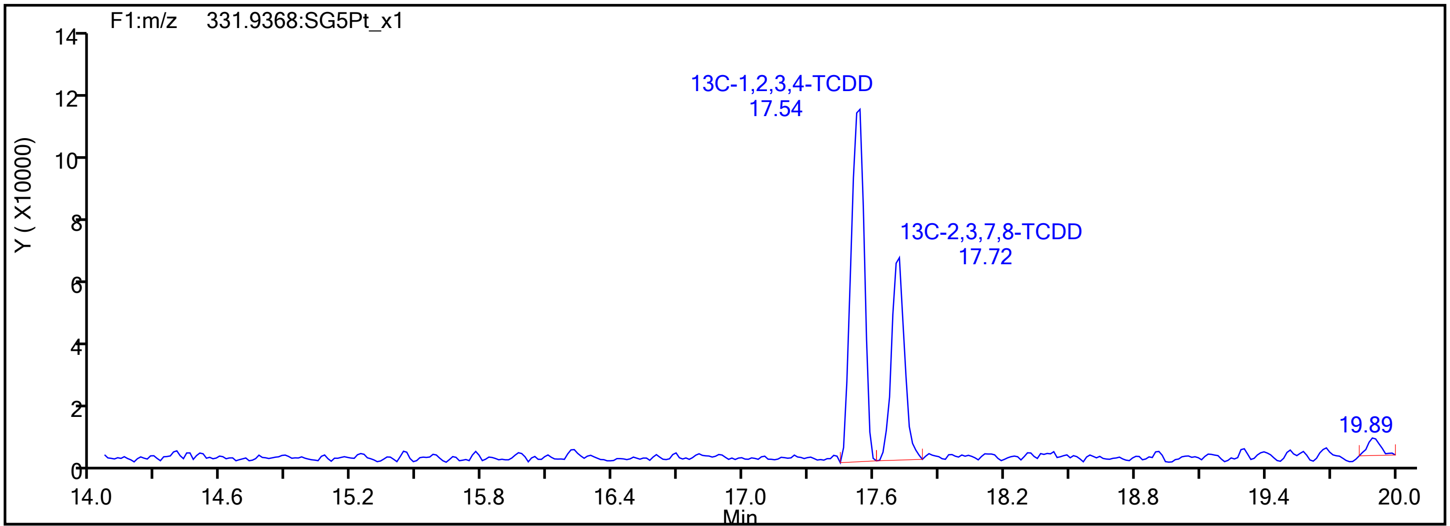

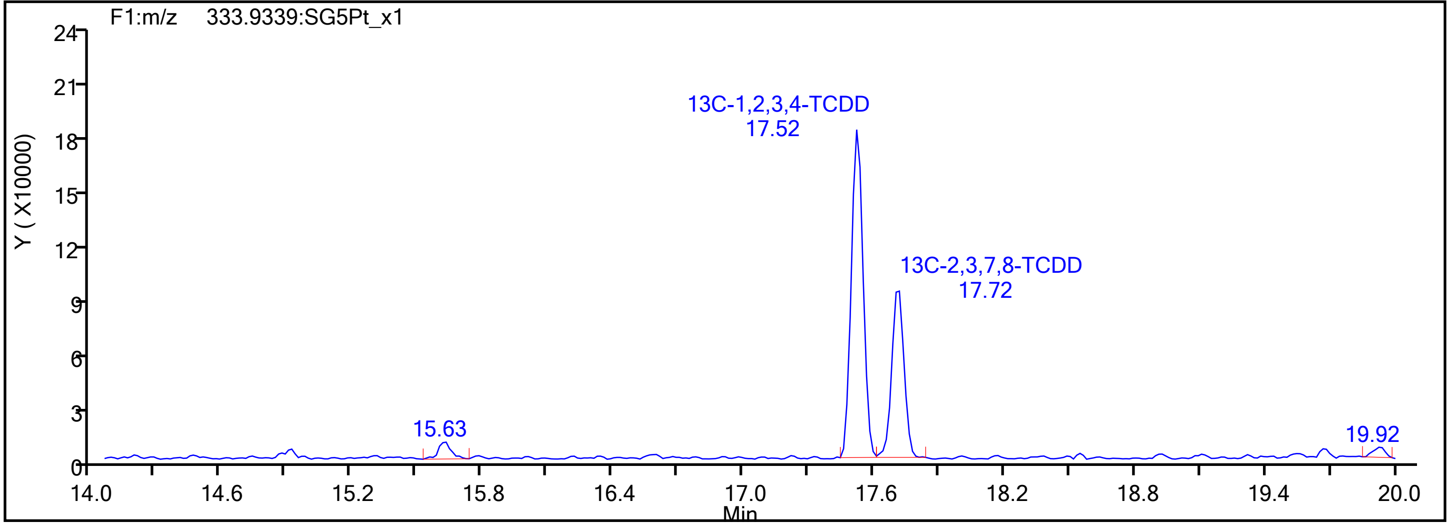

Report Date: 18-Mar-2021 15:46:40 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Injection Date:	17-Mar-2021 19:29:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	471421	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

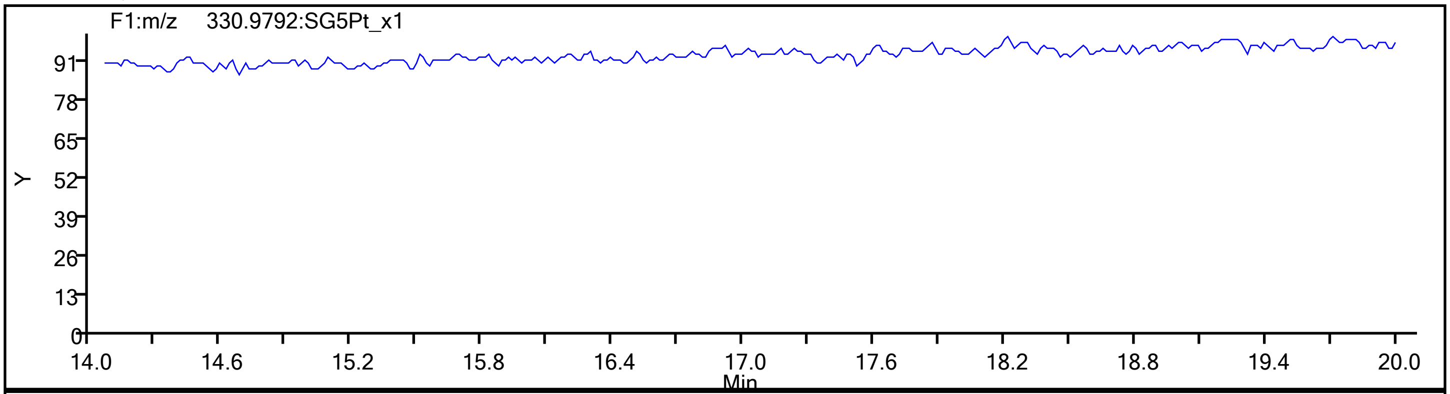

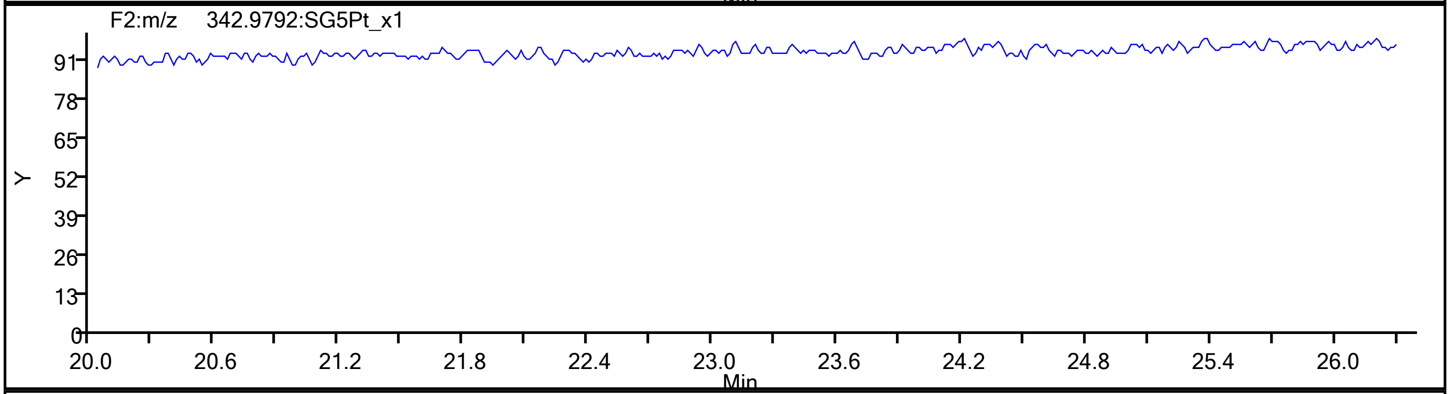

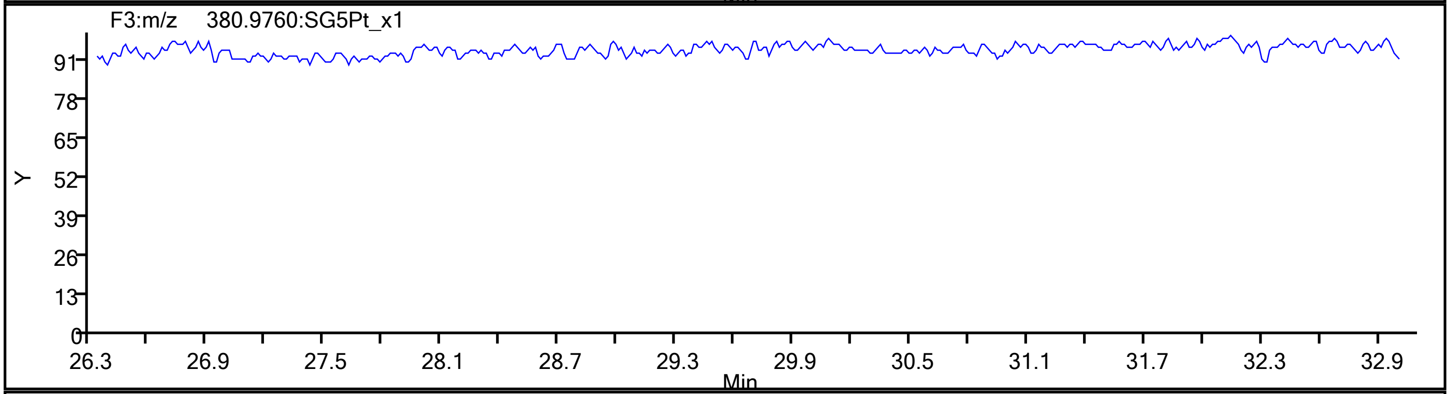

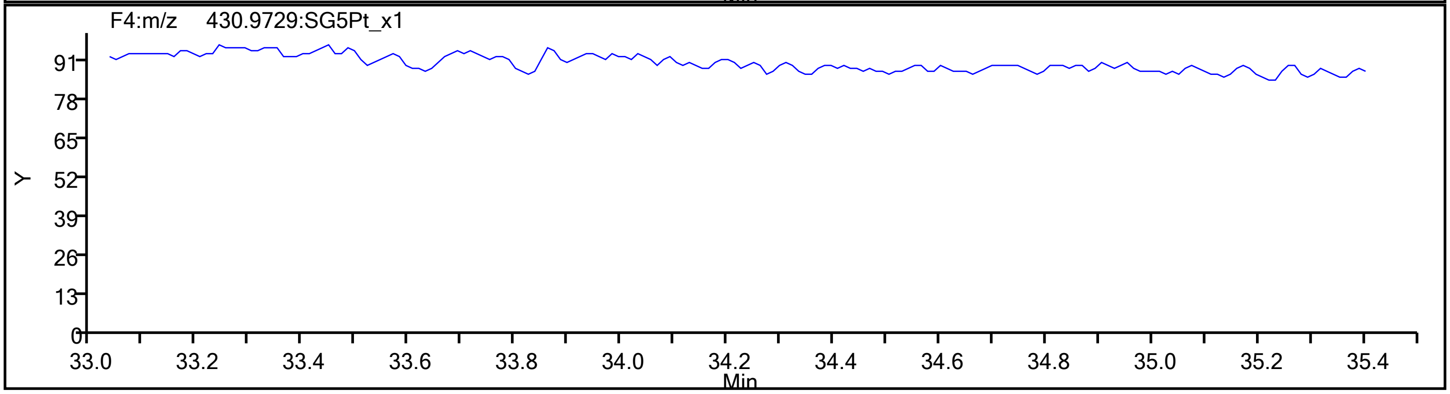

Report Date: 18-Mar-2021 15:46:40 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_13.d		
Injection Date:	17-Mar-2021 19:29:05	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-41mm		
Worklist#:	471421	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

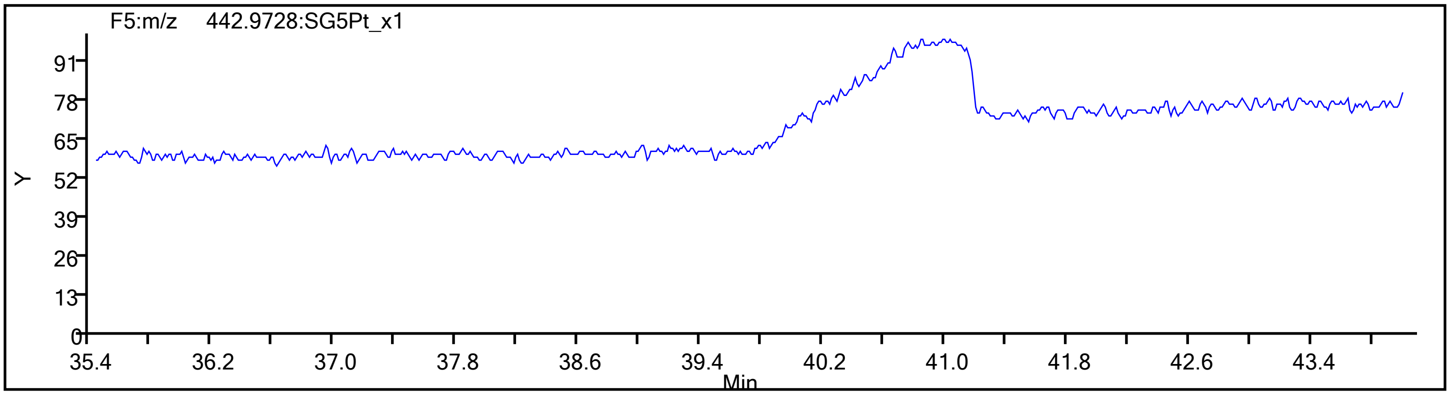

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank2-10mm RA
Lab Sample ID: 320-70797-9 RA
Matrix: Water
Lab File ID: 11MR2111D2_010.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1026.3(mL)
Date Analyzed: 03/11/2021 19:35
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 469703
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	140	B	9.7	0.71

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	92		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	115		35-197

Report Date: 12-Mar-2021 11:08:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_010.d
Lims ID: 320-70797-A-9-A
Client ID: 11215702-Tank2-10mm
Sample Type: Client
Inject. Date: 11-Mar-2021 19:35:39 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-9-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:03:15

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.006	233095353	0.78	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.131	279597278	0.80	1.3057	91.9	91.9	0.1933	0.1933	91.86	
2,3,7,8-TCDF	16.158	18888159	0.79	0.9242	7.310	7.310	0.0367	0.0367		
D 13C-2,3,7,8-TCDD	14.773	164112399	0.79	0.8971	78.5	78.5	0.5152	0.5152	78.48	
2,3,7,8-TCDD	14.786	4914691	0.75	0.9989	2.998	2.998	0.0757	0.0757		
$ 37Cl4-2,3,7,8-TCDD	14.786	91201031		0.8499	46.0	46.0	0.0396	0.0396	115	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Report Date: 12-Mar-2021 11:08:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_010.d
Lims ID: 320-70797-A-9-A
Client ID: 11215702-Tank2-10mm
Sample Type: Client
Inject. Date: 11-Mar-2021 19:35:39 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-9-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:03:15

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.006	15.013	0		102080347	25720300	43165	107912	596		
333.9339	15.006	15.013	0		131015006	32761158	64966	162415	504	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.131	16.152	-1	1.075	124372478	27992372	32131	80327	871		
317.9389	16.131	16.152	-1	1.075	155224800	34681624	26921	67302	1288	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.158	16.166	0	1.002	8339968	1927581	3603	9007	535		
305.8987	16.144	16.166	-1	1.001	10548191	2412464	4893	12232	493	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.773	14.794	-1	0.984	72285200	18076581	43165	107912	419		
333.9339	14.773	14.794	-1	0.984	91827199	22471722	64966	162415	346	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.786	14.807	-1	1.001	2111223	510853	5945	14862	86		
321.8936	14.786	14.807	-1	1.001	2803468	662882	6317	15792	105	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.786	14.807	-1	0.985	91201031	22668559	7864	19660	2883		

QC Flag Legend

Processing Flags

Report Date: 12-Mar-2021 11:08:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_010.d
Injection Date: 11-Mar-2021 19:35:39
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469703
Sample Line#: 10
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

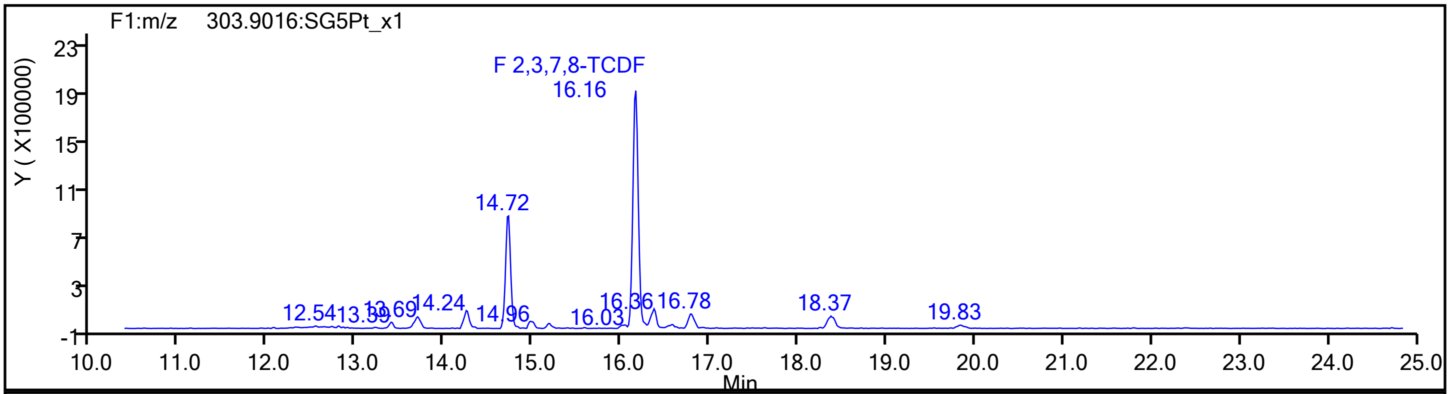

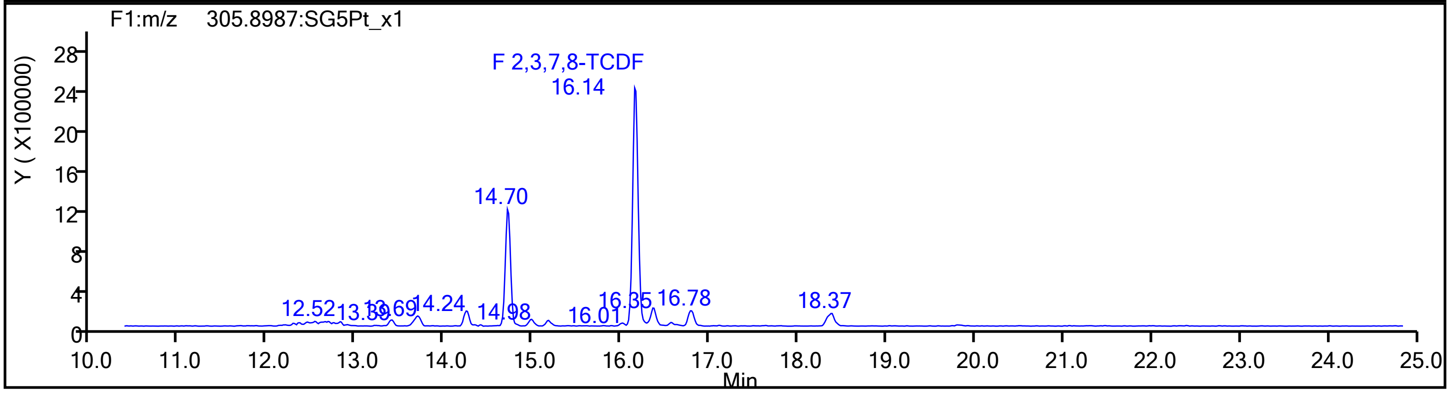

TCDF Standards

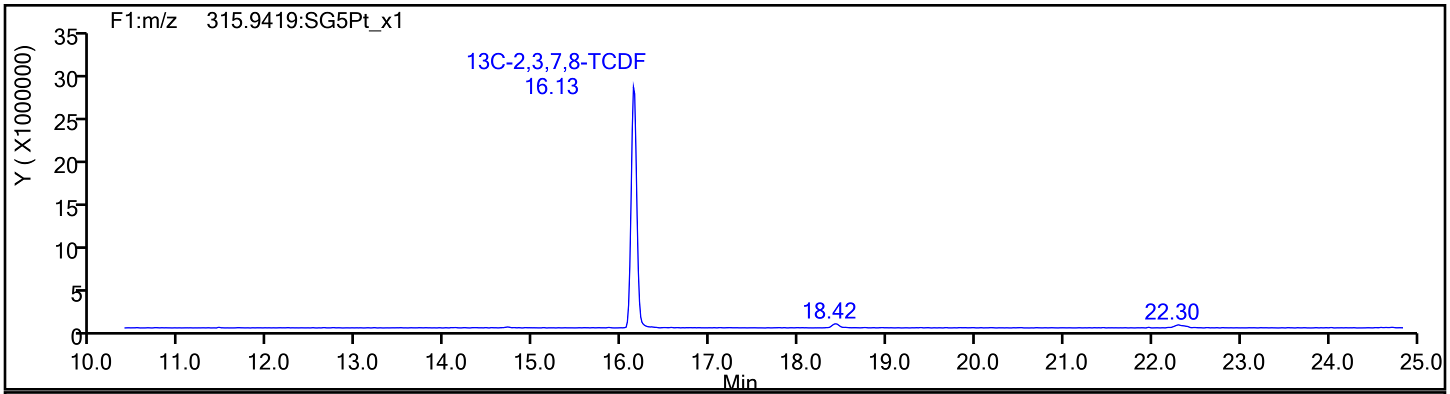

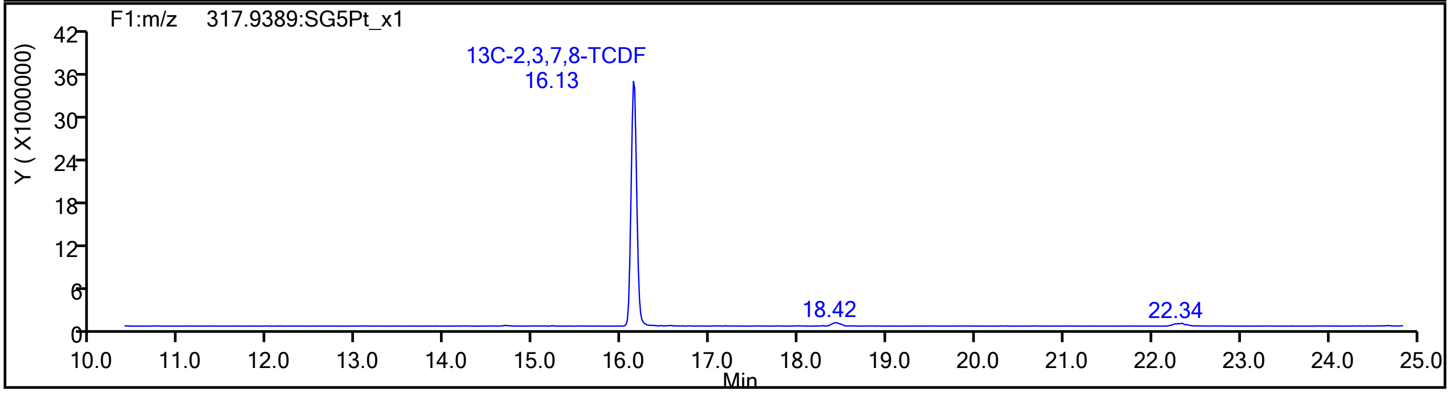

Report Date: 12-Mar-2021 11:08:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_010.d		
Injection Date:	11-Mar-2021 19:35:39	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469703	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

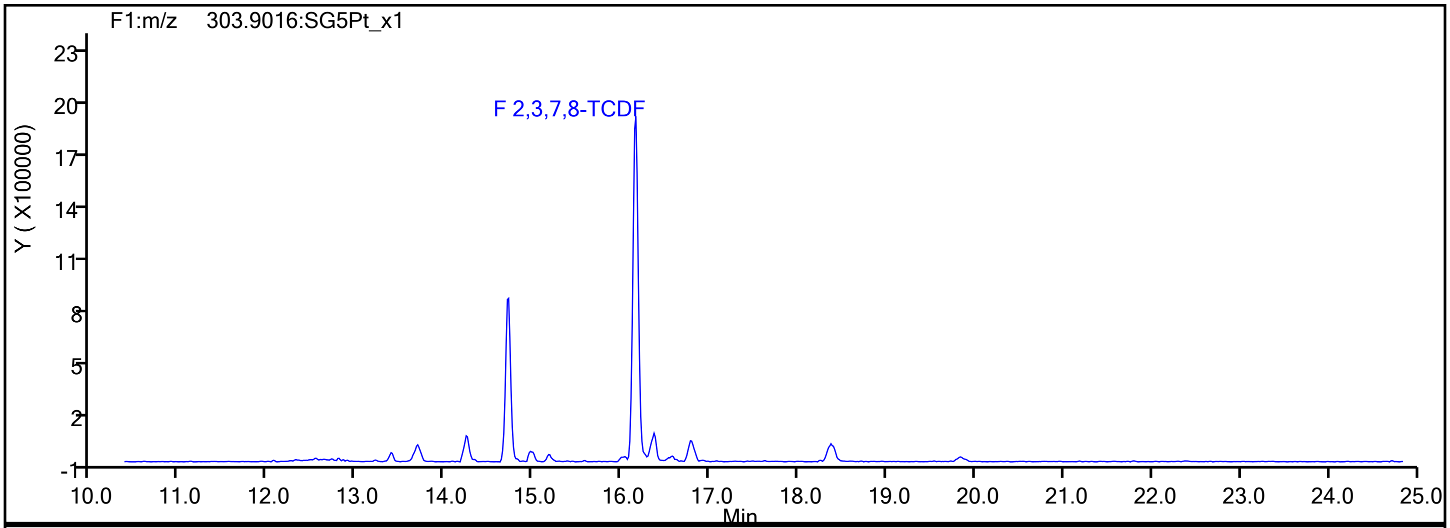

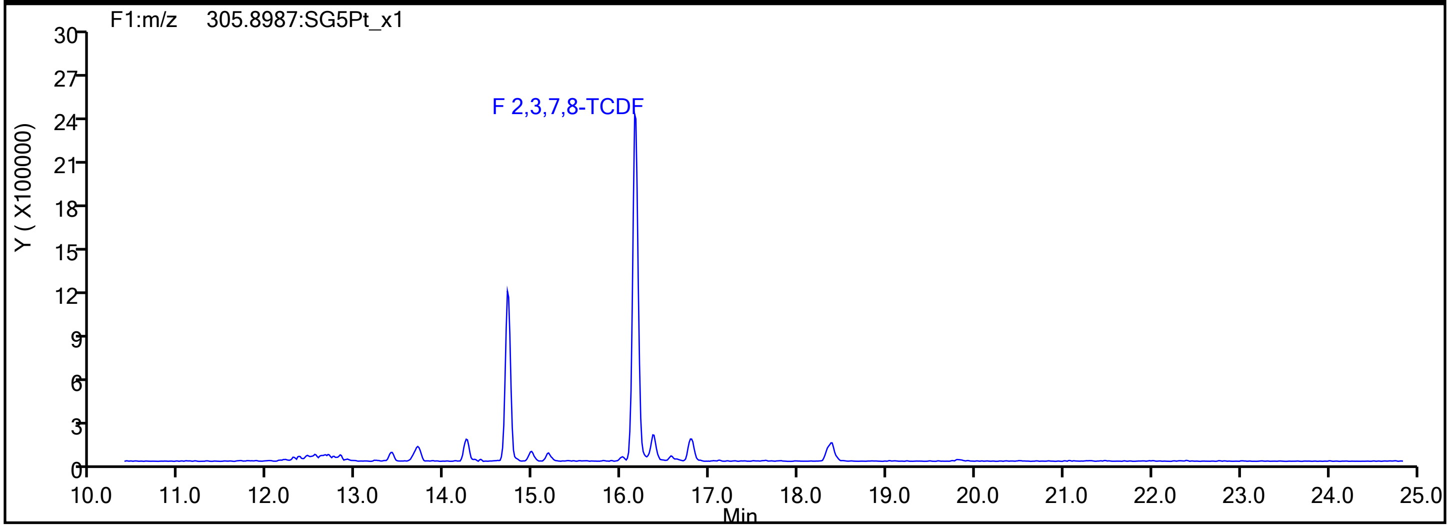

TCDF Interference Mass

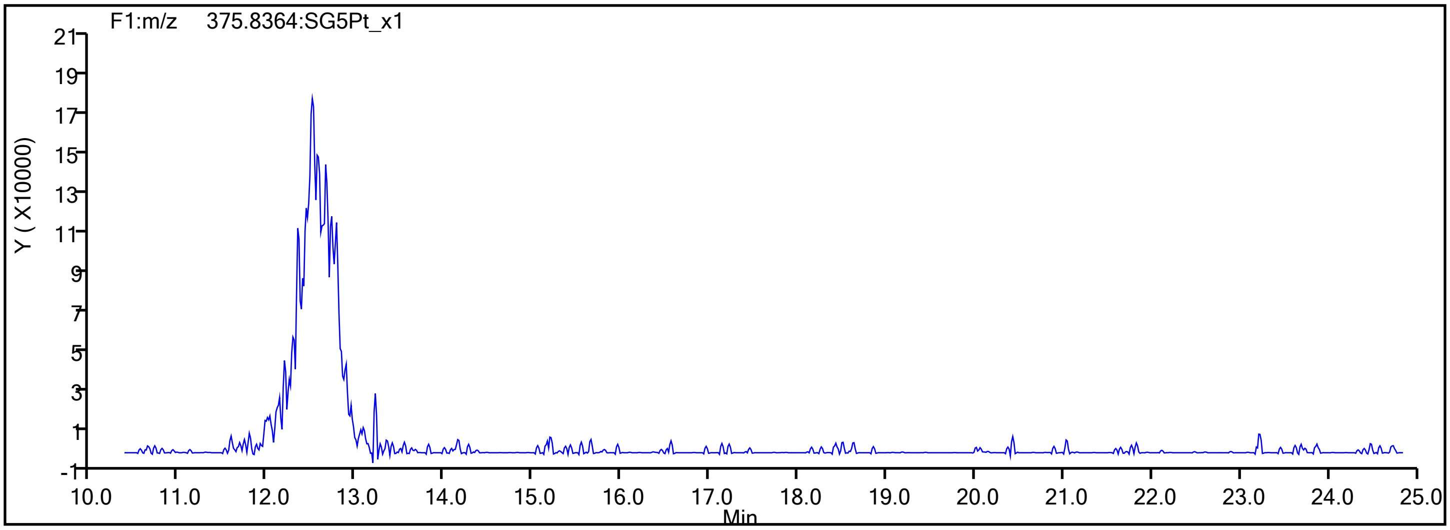

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_010.d

Injection Date: 11-Mar-2021 19:35:39 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-10mm

Worklist#: 469703 Sample Line#: 10

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

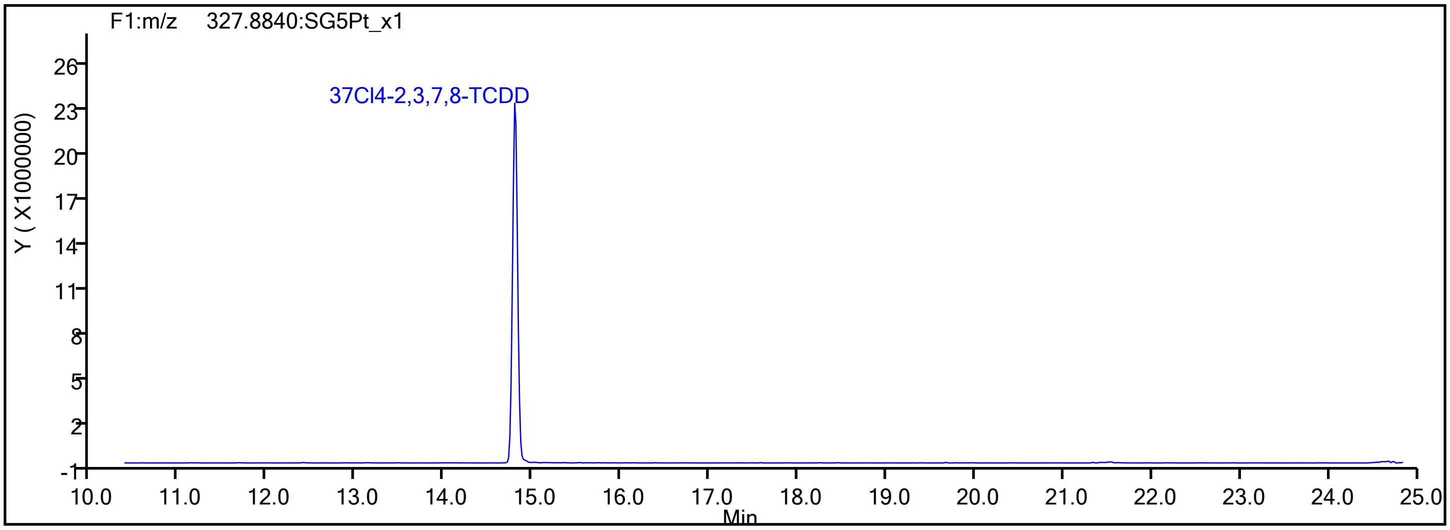

37Cl4-TCDD Standards

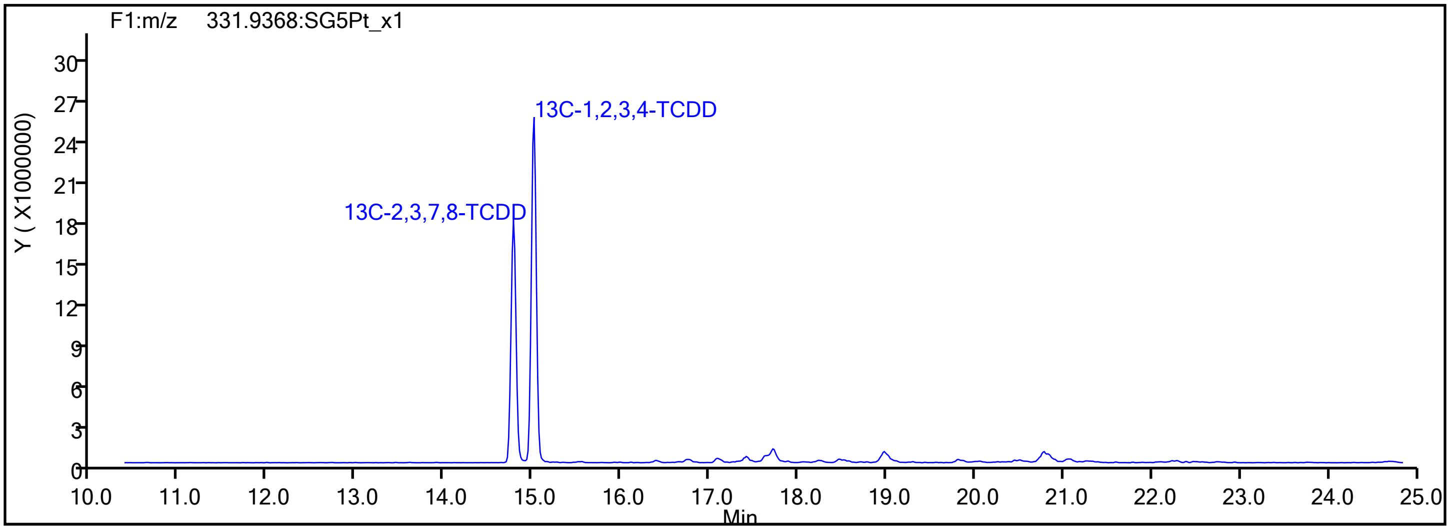

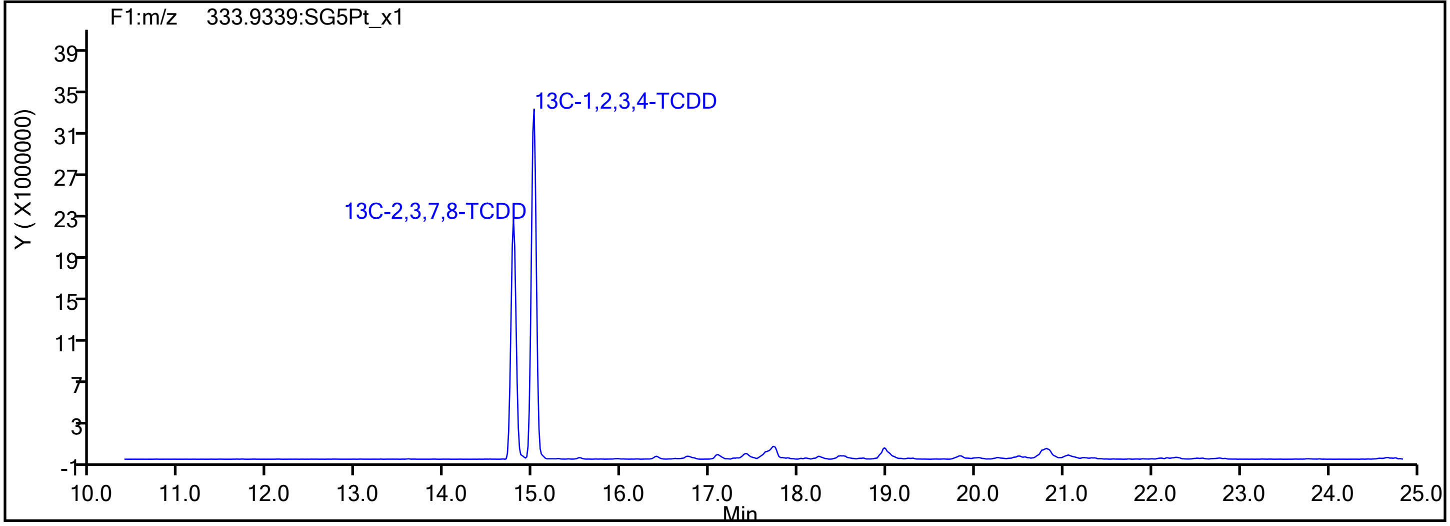

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_010.d

Injection Date: 11-Mar-2021 19:35:39 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-10mm

Worklist#: 469703 Sample Line#: 10

Column Type: DB-225 Column Dia: 0.32 mm

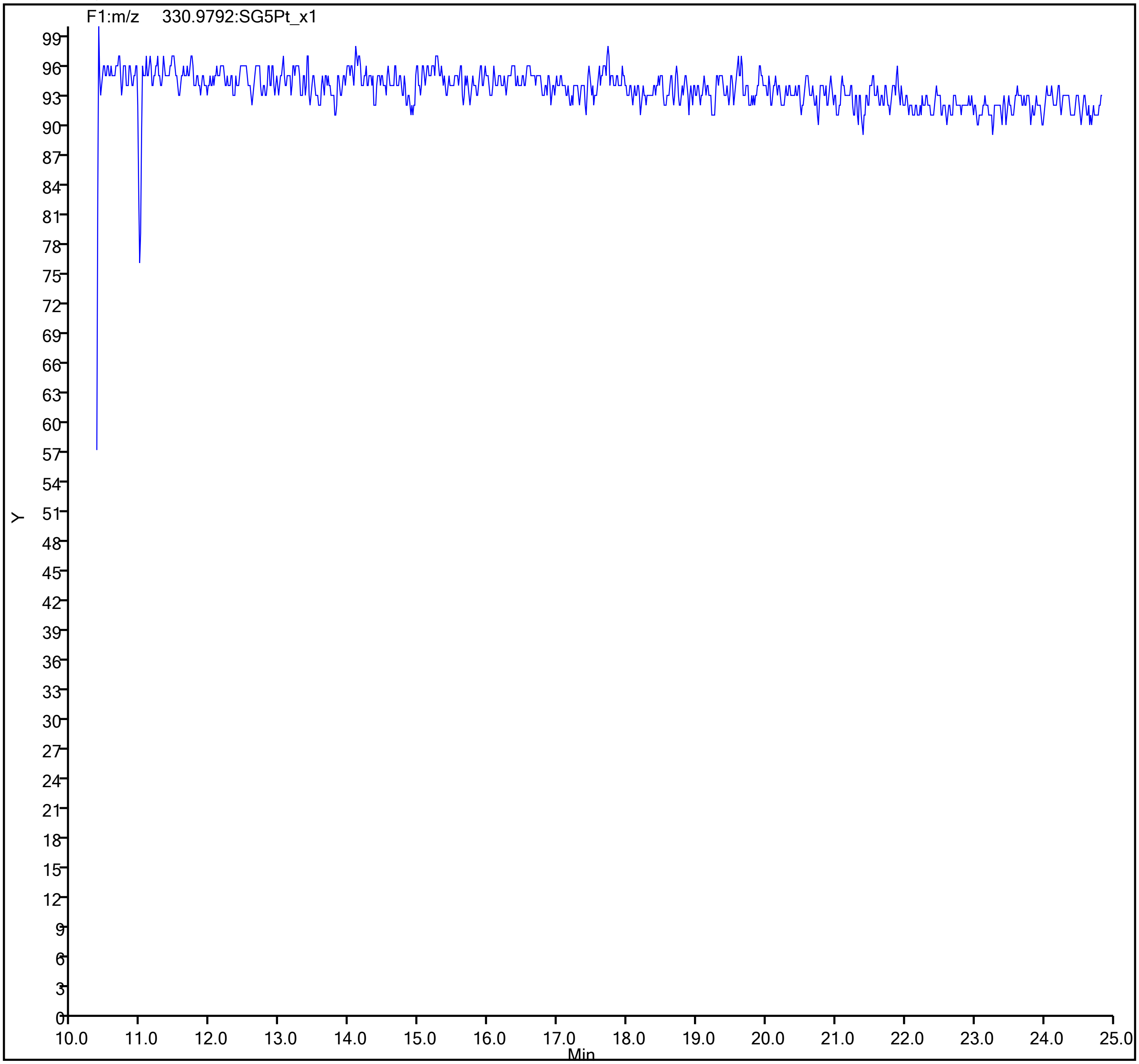

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-10mm Lab Sample ID: 320-70797-9

Matrix: Water Lab File ID: 12mr21adfs1_11.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1026.3(mL) Date Analyzed: 03/12/2021 17:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469779 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	52		9.7	0.60
40321-76-4	1,2,3,7,8-PeCDD	ND		49	0.40
57117-41-6	1,2,3,7,8-PeCDF	6.1	J	49	0.35
57117-31-4	2,3,4,7,8-PeCDF	3.8	J	49	0.40
39227-28-6	1,2,3,4,7,8-HxCDD	2.0	J	49	0.23
57653-85-7	1,2,3,6,7,8-HxCDD	0.69	J q	49	0.23
19408-74-3	1,2,3,7,8,9-HxCDD	0.55	J q	49	0.21
70648-26-9	1,2,3,4,7,8-HxCDF	12	J B	49	0.27
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J B q	49	0.26
72918-21-9	1,2,3,7,8,9-HxCDF	ND		49	0.23
60851-34-5	2,3,4,6,7,8-HxCDF	0.59	J B	49	0.23
35822-46-9	1,2,3,4,6,7,8-HpCDD	23	J B	49	0.35
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.6	J B	49	0.30
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.2	J B	49	0.30
3268-87-9	OCDD	130	B	97	0.50
39001-02-0	OCDF	3.8	J B	97	0.36
41903-57-5	Total TCDD	59	B q	9.7	0.60
30402-14-3	Total TCDF	260	B q	9.7	1.4
36088-22-9	Total PeCDD	ND		49	1.4
30402-15-4	Total PeCDF	14	J	49	0.37
34465-46-8	Total HxCDD	8.0	J q	49	0.22
55684-94-1	Total HxCDF	17	J B q	49	0.25
37871-00-4	Total HpCDD	35	J B	49	0.35
38998-75-3	Total HpCDF	10	J B q	49	0.30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-10mm	Lab Sample ID: 320-70797-9
Matrix: Water	Lab File ID: 12mr21adfs1_11.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1026.3(mL)	Date Analyzed: 03/12/2021 17:44
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	76		25-164
89059-46-1	13C-2,3,7,8-TCDF	68		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	75		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	70		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	70		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	81		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	85		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	80		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	76		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	81		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	99		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	86		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	92		26-138
114423-97-1	13C-OCDD	106		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Lims ID: 320-70797-A-9-A
Client ID: 11215702-Tank2-10mm
Sample Type: Client
Inject. Date: 12-Mar-2021 17:44:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-9-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:34:37 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: bilottag Date: 15-Mar-2021 07:17:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.468	3558586	0.79	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.601	3723472	0.78	1.5437	67.8	67.8	0.1358	0.1358	67.78	
2,3,7,8-TCDF	18.626	346866	0.82	1.1258	8.275	8.275	0.0741	0.0741		
A Non-2,3,7,8-sub-TCDF	18.115	204268	0.77	1.1258	4.925	4.873	0.0741	3.393		RQa
S Total TCDF					13.2	13.1	0.0741	0.0741		RQ
D 13C-2,3,7,8-TCDD	19.803	2603729	0.79	0.9687	75.5	75.5	0.2355	0.2355	75.53	
$ 37Cl4-2,3,7,8-TCDD	19.837	1444138		1.0841	37.4	37.4	0.0276	0.0276	93.58	
2,3,7,8-TCDD	19.846	82578	0.80	1.1904	2.664	2.664	0.0308	0.0308		M
A Non-2,3,7,8-sub-TCDD	18.876	12037	0.77	1.1904	0.4069	0.3884	0.0308	0.1856		RQ
S Total TCDD					3.071	3.053	0.0308	0.0308		RQ
D 13C-1,2,3,7,8-PeCDF	25.646	3258247	1.54	1.3124	69.8	69.8	0.3036	0.3036	69.76	
1,2,3,7,8-PeCDF	25.672	11294	1.54	1.1163	0.3105	0.3105	0.0178	0.0178		M
D 13C-2,3,4,7,8-PeCDF	27.019	3314065	1.53	1.3352	69.8	69.8	0.2984	0.2984	69.75	
2,3,4,7,8-PeCDF	27.061	6793	1.58	1.0579	0.1938	0.1938	0.0206	0.0206		
A F1 PeCDFs	22.791						0.007361	0.007361		
A Non-2,3,7,8-sub-PeCDF	26.224	8013	1.64	1.0871	0.2243	0.2243	0.0191	0.1521		
S Total PeCDF					0.7286	0.7286	0.0192	0.0192		
D 13C-1,2,3,7,8-PeCDD	27.777	2061179	1.59	0.7716	75.1	75.1	0.1351	0.1351	75.07	
1,2,3,7,8-PeCDD	27.755						0.0206	0.0206		
A Non-2,3,7,8-sub-PeCDD	26.609						0.0206	0.0693		RQU
S Total PeCDD							0.0693	0.0693		
D 13C-1,2,3,4,7,8-HxCDF	33.550	2927707	0.53	1.0931	78.6	78.6	0.2572	0.2572	78.62	
1,2,3,4,7,8-HxCDF	33.584	22180	1.29	1.1831	0.6403	0.6403	0.0141	0.0141		M
D 13C-1,2,3,6,7,8-HxCDF	33.752	3080521	0.52	1.1278	80.2	80.2	0.2493	0.2493	80.18	
1,2,3,6,7,8-HxCDF	33.777	6160	1.24	1.2484	0.1801	0.1602	0.0132	0.0132		RQM
D 13C-2,3,4,6,7,8-HxCDF	34.746	2896943	0.52	1.0552	80.6	80.6	0.2664	0.2664	80.59	
2,3,4,6,7,8-HxCDF	34.779	1109	1.05	1.2750	0.0300	0.0300	0.0117	0.0117		
D 13C-1,2,3,7,8,9-HxCDF	35.773	2573041	0.54	0.9938	76.0	76.0	0.2829	0.2829	76.00	
1,2,3,7,8,9-HxCDF	35.933						0.0119	0.0119		RQU
A Non-2,3,7,8-sub-HxCDF	33.496	1955	1.18	1.2505	0.0545	0.0545	0.0127	0.0545		
S Total HxCDF					0.9050	0.8850	0.0127	0.0127		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.571	3406653	1.25	1.1E+05	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.007	2171076	1.28	0.7895	80.7	80.7	0.2092	0.2092	80.72	
1,2,3,4,7,8-HxCDD	35.024	2463	1.10	1.0950	0.1036	0.1036	0.0119	0.0119		M
D 13C-1,2,3,6,7,8-HxCDD	35.141	2451651	1.25	0.8495	84.7	84.7	0.1944	0.1944	84.72	
1,2,3,6,7,8-HxCDD	35.167	883	1.24	1.0201	0.0384	0.0353	0.0118	0.0118		RQM
1,2,3,7,8,9-HxCDD	35.571	756	1.24	1.1549	0.0331	0.0283	0.0109	0.0109		RQMa
A Non-2,3,7,8-sub-HxCDD	34.039	6127	1.24	1.0900	0.2544	0.2432	0.0115	0.1037		RQM
S Total HxCDD					0.4295	0.4104	0.0115	0.0115		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.814	2309386	0.45	0.7854	86.3	86.3	0.3918	0.3918	86.32	
1,2,3,4,6,7,8-HpCDF	37.839	9837	1.17	1.4859	0.2867	0.2867	0.0152	0.0152		
D 13C-1,2,3,4,7,8,9-HpCDF	39.161	2274550	0.45	0.7230	92.4	92.4	0.4256	0.4256	92.35	
1,2,3,4,7,8,9-HpCDF	39.186	3556	1.13	1.4048	0.1113	0.1113	0.0153	0.0153		M
A Non-2,3,7,8-sub-HpCDF	38.451	4518	1.04	1.4453	0.1911	0.1364	0.0153	0.0908		RQ
S Total HpCDF					0.5890	0.5344	0.0153	0.0153		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.849	2165994	1.07	0.6413	99.1	99.1	0.2964	0.2964	99.14	
1,2,3,4,6,7,8-HpCDD	38.858	28822	1.06	1.1489	1.158	1.158	0.0181	0.0181		
A Non-2,3,7,8-sub-HpCDD	39.230	16231	0.98	1.1489	0.6522	0.6522	0.0181	0.6522		a
S Total HpCDD					1.810	1.810	0.0181	0.0181		
D 13C-OCDD	41.328	3726465	0.89	0.5141	212.8	212.8	0.2096	0.2096	106	
OCDF	41.412	5778	0.77	1.5776	0.1966	0.1966	0.0185	0.0185		M
OCDD	41.336	140684	0.93	1.1706	6.450	6.450	0.0254	0.0254		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Lims ID: 320-70797-A-9-A
Client ID: 11215702-Tank2-10mm
Sample Type: Client
Inject. Date: 12-Mar-2021 17:44:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-9-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:34:37 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: bilottag Date: 15-Mar-2021 07:17:33

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.468	19.417	3		1571142	254650	302	755	843		
333.9338	19.477	19.417	4		1987444	330583	232	580	1425	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.601	18.557	3	0.955	1629368	274760	337	842	815		
317.9389	18.601	18.557	3	0.955	2094104	342492	154	385	2224	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.626	18.574	3	1.001	156499	23284	72	180	323		
305.8987	18.626	18.574	3	1.001	190367	29410	134	335	219	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQa
303.9016	17.543	18.115	-34	0.943	10461	1575	72	180	22		
	Empc Correction				8289	1483	72	180	21		
305.8987	17.543	18.115	-34	0.943	10766	1926	134	335	14	0.97(0.65-0.89)	
303.9016	17.990	18.115	-7	0.967	66021	10644	72	180	148		
305.8987	17.990	18.115	-7	0.967	76218	13018	134	335	97	0.87(0.65-0.89)	
303.9016	19.322	18.115	72	1.039	9752	1788	72	180	25		
305.8987	19.314	18.115	72	1.038	11323	1903	134	335	14	0.86(0.65-0.89)	
303.9016	21.590	18.115	208	1.161	9526	1477	72	180	21		a
305.8987	21.590	18.115	208	1.161	12373	1553	134	335	12	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.803	19.761	3	1.017	1151755	180620	302	755	598		
333.9338	19.803	19.761	3	1.017	1451974	220232	232	580	949	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.837	19.778	4	1.019	1444138	218519	70	175	3122		
2,3,7,8-TCDD											M
319.8965	19.846	19.787	4	1.002	36673	6022	40	100	151		M
321.8936	19.829	19.787	3	1.001	45905	7232	19	47	381	0.80(0.65-0.89)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	16.272	18.876	-156	0.822	1511	274	40	100	7		
321.8936	16.246	18.876	-158	0.820	2161	451	19	47	24	0.70(0.65-0.89)	
319.8965	16.710	18.876	-130	0.844	1223	244	40	100	6		
321.8936	16.710	18.876	-130	0.844	1390	273	19	47	14	0.88(0.65-0.89)	
319.8965	20.447	18.876	94	1.033	3076	416	40	100	10		
	Empc Correction				2502	385	40	100	10		
321.8936	20.430	18.876	93	1.032	3250	501	19	47	26	0.95(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.646	25.600	3	1.317	1977862	357317	566	1415	631		
353.8970	25.646	25.600	3	1.317	1280385	231126	367	917	630	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.672	25.625	3	1.001	6844	1268	15	37	85		M
341.8567	25.672	25.625	3	1.001	4450	896	32	80	28	1.54(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.019	26.980	2	1.388	2006633	322000	566	1415	569		
353.8970	27.028	26.980	3	1.388	1307432	214278	367	917	584	1.53(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.061	27.006	3	1.002	4163	657	15	37	44		
341.8567	27.044	27.006	2	1.001	2630	510	32	80	16	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.791						1	2			
341.8567	22.791						17	42			
A Non-2,3,7,8-sub-PeCDF											
339.8597	24.316	26.224	-114	0.948	3415	579	15	37	39		
341.8567	24.316	26.224	-114	0.948	2018	411	32	80	13	1.69(1.32-1.78)	
339.8597	26.211	26.224	-1	1.022	1558	298	15	37	20		
341.8567	26.186	26.224	-2	1.021	1022	215	32	80	7	1.52(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.777	27.721	3	1.427	1264755	211095	118	295	1789		
369.8919	27.777	27.721	3	1.427	796424	130306	126	315	1034	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.755						26	65			
357.8516	27.755						6	15			
A Non-2,3,7,8-sub-PeCDD											U
355.8546	25.815	26.609	-48	0.929	1212	175	26	65	7		
	Empc Correction				638	139	26	65	0		
357.8516	25.798	26.609	-49	0.929	412	90	6	15	15	2.94(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.550	33.504	3	0.943	1016911	177646	379	947	469		
385.8610	33.550	33.504	3	0.943	1910796	344746	477	1192	723	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	33.584	33.521	4	1.001	12515	2274	22	55	103		
375.8178	33.584	33.521	4	1.001	9665	1686	13	32	130	1.29(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.752	33.706	3	0.949	1056728	183089	379	947	483		
385.8610	33.752	33.706	3	0.949	2023793	345694	477	1192	725	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											RQM
373.8208	33.777	33.723	3	1.001	4177	643	22	55	29		M
	Empc Correction				3410	618	22	55	28		
375.8178	33.786	33.723	4	1.001	2750	499	13	32	38	1.52(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.746	34.709	2	0.977	994066	199002	379	947	525		
385.8610	34.746	34.709	2	0.977	1902877	385425	477	1192	808	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.779	34.725	3	1.001	567	139	22	55	6		
375.8178	34.771	34.725	3	1.001	542	163	13	32	13	1.05(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.773	35.736	2	1.006	898085	200440	379	947	529		
385.8610	35.773	35.736	2	1.006	1674956	363547	477	1192	762	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQU
373.8208	35.753						22	55			
375.8178	35.753						13	32			
A Non-2,3,7,8-sub-HxCDF											
373.8208	31.604	33.496	-113	0.942	1059	218	22	55	10		
375.8178	31.579	33.496	-115	0.941	896	156	13	32	12	1.18(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.571	35.525	3		1889984	422879	271	677	1560		a
403.8529	35.571	35.525	3		1516669	338265	232	580	1458	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.007	34.970	2	0.984	1217567	264874	271	677	977		
403.8529	35.007	34.970	2	0.984	953509	209050	232	580	901	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.024	34.995	2	1.000	1291	238	12	30	20		M
391.8127	35.032	34.995	2	1.001	1172	250	13	32	19	1.10(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.141	35.105	2	0.988	1363386	284949	271	677	1051		
403.8529	35.150	35.105	3	0.988	1088265	230200	232	580	992	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8158	35.167	35.121	3	1.001	489	139	12	30	12		M
391.8127	35.158	35.121	2	1.000	471	117	13	32	9	1.04(1.05-1.43)	M
	Empc Correction				394	112	13	32	9		
1,2,3,7,8,9-HxCDD											RQMa
389.8158	35.571	35.542	2	1.016	419	100	12	30	8		M
391.8127	35.579	35.542	2	1.016	464	87	13	32	7	0.90(1.05-1.43)	a
	Empc Correction				337	80	13	32	6		
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	32.716	34.039	-79	0.931	1011	207	12	30	17		
391.8127	32.699	34.039	-80	0.930	910	133	13	32	10	1.11(1.05-1.43)	M
389.8158	33.718	34.039	-19	0.960	1164	195	12	30	16		M
	Empc Correction				882	161	12	30	13		
391.8127	33.676	34.039	-22	0.958	712	130	13	32	10	1.63(1.05-1.43)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
389.8158	34.089	34.039	3	0.970	1495	295	12	30	25		M
391.8127	34.106	34.039	4	0.971	1117	237	13	32	18	1.34(1.05-1.43)	M
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.814	37.786	2	1.063	716583	192443	327	817	589		
419.8220	37.814	37.786	2	1.063	1592803	426985	610	1525	700	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.839	37.794	3	1.001	5301	1296	41	102	32		
409.7788	37.822	37.794	2	1.000	4536	1251	15	37	83	1.17(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.161	39.133	2	1.101	710825	203967	327	817	624		
419.8220	39.161	39.133	2	1.101	1563725	445704	610	1525	731	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											M
407.7817	39.186	39.142	3	1.001	1883	442	41	102	11		M
409.7788	39.178	39.142	2	1.000	1673	483	15	37	32	1.13(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											RQ
407.7817	38.226	38.451	-13	1.011	1533	456	41	102	11		
409.7788	38.235	38.451	-13	1.011	1769	446	15	37	30	0.87(0.88-1.20)	
	Empc Correction				1474	438	15	37	29		
407.7817	39.052	38.451	36	1.033	2286	600	41	102	15		
	Empc Correction				770	172	41	102	4		
409.7788	39.035	38.451	35	1.032	741	166	15	37	11	3.09(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.849	38.822	2	1.092	1117893	329212	288	720	1143		
437.8140	38.849	38.822	2	1.092	1048101	304060	291	727	1045	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.858	38.830	2	1.000	14835	4413	31	77	142		
425.7737	38.866	38.830	2	1.000	13987	4051	22	55	184	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.176	39.230	-63	0.983	8013	2304	31	77	74		a
425.7737	38.176	39.230	-63	0.983	8218	2321	22	55	106	0.98(0.88-1.20)	
13C-OCDD											
469.7780	41.328	41.293	2	1.162	1752392	508141	162	405	3137		
471.7750	41.328	41.293	2	1.162	1974073	568024	166	415	3422	0.89(0.76-1.02)	
OCDF											M
441.7428	41.412	41.377	2	1.002	2507	622	21	52	30		M
443.7399	41.404	41.377	2	1.002	3271	934	42	105	22	0.77(0.76-1.02)	M
OCDD											
457.7377	41.336	41.301	2	1.000	67792	18938	28	70	676		
459.7348	41.336	41.301	2	1.000	72892	20314	36	90	564	0.93(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Lims ID:	320-70797-A-9-A		
Client ID:	11215702-Tank2-10mm		
Inject. Date:	12-Mar-2021 17:44:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3723472	617252

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3723472	617252

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.543	10461	1575	10766	1926	0.5064	0.97	RQ
17.543	8289	1483	10766	1926	0.4546		Empc Correction
17.990	66021	10644	76218	13018	3.39	0.87	
19.322	9752	1788	11323	1903	0.5028	0.86	
21.590	9526	1477	12373	1553	0.5224	0.77	a
Signal Totals:							
	93588	15392	110680	18400			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	206440	33884				0.87	RQa
	204268	33792					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.925 = (206440 * 100.000) / (3723472 * 1.126)
Empc Amount: 4.873 = (204268 * 100.000) / (3723472 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Lims ID: 320-70797-A-9-A
Client ID: 11215702-Tank2-10mm
Inject. Date: 12-Mar-2021 17:44:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 10

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2603729	400852

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2603729	400852

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.272	1511	274	2161	451	0.1185	0.70	
16.710	1223	244	1390	273	0.0843	0.88	
20.447	3076	416	3250	501	0.2041	0.95	RQ
20.447	2502	385	3250	501	0.1856		Empc Correction
Signal Totals:							
	5236	903	6801	1225			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	12611	2159				0.85	RQ
	12037	2128					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4069 = (12611 * 100.000) / (2603729 * 1.190)
Empc Amount: 0.3884 = (12037 * 100.000) / (2603729 * 1.190)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Lims ID: 320-70797-A-9-A
Client ID: 11215702-Tank2-10mm
Inject. Date: 12-Mar-2021 17:44:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 469779 Lims Sample ID: 10

Non-2,3,7,8-sub-PeCDF, RT: 26.224

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3258247	588443
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3314065	536278

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3286156	562360

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.316	3415	579	2018	411	0.1521	1.69	
26.211	1558	298	1022	215	0.0722	1.52	
Signal Totals:							
	4973	877	3040	626			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8013	1503				1.64	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2243 = (8013 * 100.000) / (3286156 * 1.087)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Lims ID:	320-70797-A-9-A		
Client ID:	11215702-Tank2-10mm		
Inject. Date:	12-Mar-2021 17:44:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	10

Non-2,3,7,8-sub-PeCDD, RT: 26.609

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	2061179	341401

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	2061179	341401

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
25.815	1212	175	412	90	0.0693	2.94	RQ
25.815	638	139	412	90			Empc Correction
28.695	882	183	199	46	0.0461	4.43	RQ
28.695	308	71	199	46			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Lims ID:	320-70797-A-9-A		
Client ID:	11215702-Tank2-10mm		
Inject. Date:	12-Mar-2021 17:44:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2927707	522392
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	3080521	528783
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2896943	584427
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2573041	563987

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2869553	549897

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.604	1059	218	896	156	0.0545	1.18	
Signal Totals:							
	1059	218	896	156			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1955	374				1.18	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0545 = (1955 * 100.000) / (2869553 * 1.250)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Lims ID:	320-70797-A-9-A		
Client ID:	11215702-Tank2-10mm		
Inject. Date:	12-Mar-2021 17:44:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	2171076	473924
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2451651	515149
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	2311363	494536

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.716	1011	207	910	133	0.0762	1.11	M
33.718	1164	195	712	130	0.0745	1.63	RQM
33.718	882	161	712	130	0.0633		Empc Correction
34.089	1495	295	1117	237	0.1037	1.34	M
Signal Totals:							
	3388	663	2739	500			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6409	1197				1.34	RQM
	6127	1163					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2544 = (6409 * 100.000) / (2311363 * 1.090)
Empc Amount: 0.2432 = (6127 * 100.000) / (2311363 * 1.090)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Lims ID:	320-70797-A-9-A		
Client ID:	11215702-Tank2-10mm		
Inject. Date:	12-Mar-2021 17:44:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	10

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	2309386	619428
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	2274550	649671

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	2291968	634549

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.226	1533	456	1769	446	0.0997	0.87	RQ
38.226	1533	456	1474	438	0.0908		Empc Correction
39.052	2286	600	741	166	0.0914	3.09	RQ
39.052	770	172	741	166	0.0456		Empc Correction
Signal Totals:							
	2303	628	2215	604			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6329	1668				1.52	RQ
	4518	1232					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1911 = (6329 * 100.000) / (2291968 * 1.445)
Empc Amount: 0.1364 = (4518 * 100.000) / (2291968 * 1.445)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Lims ID:	320-70797-A-9-A		
Client ID:	11215702-Tank2-10mm		
Inject. Date:	12-Mar-2021 17:44:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	10

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	2165994	633272

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	2165994	633272

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.176	8013	2304	8218	2321	0.6522	0.98	a
Signal Totals:							
	8013	2304	8218	2321			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16231	4625				0.98	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6522 = (16231 * 100.000) / (2165994 * 1.149)

QC Flag Legend

Review Flags
a - User Assigned ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

RT:	19.85
Area:	37027
Amount:	2.692088
Amount Units:	pg/ul

Processing Integration Results

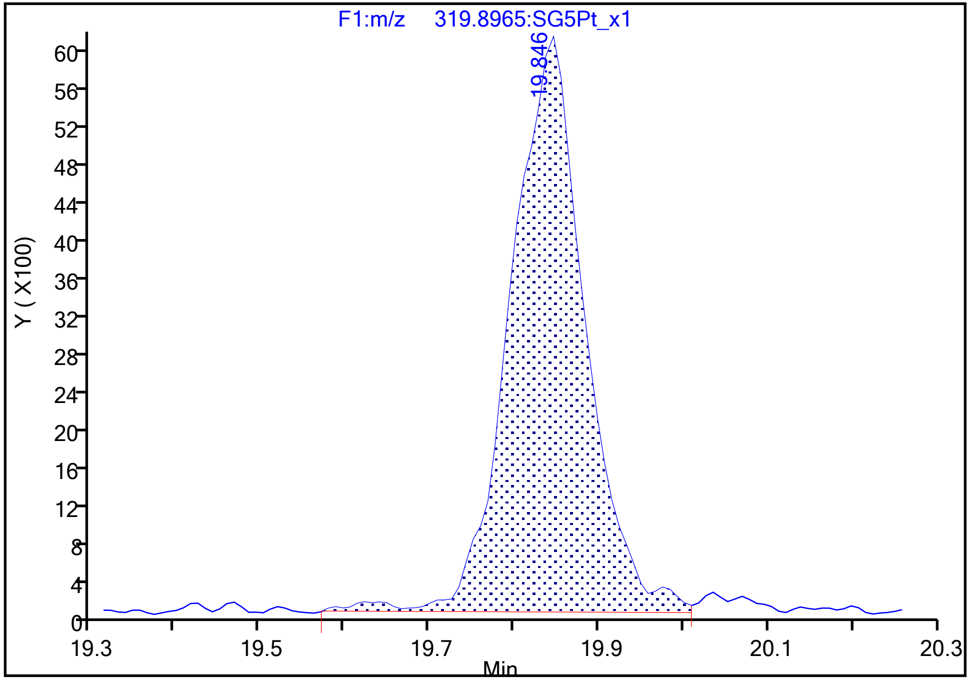

RT:	19.85
Area:	36673
Amount:	2.664309
Amount Units:	pg/ul

Manual Integration Results

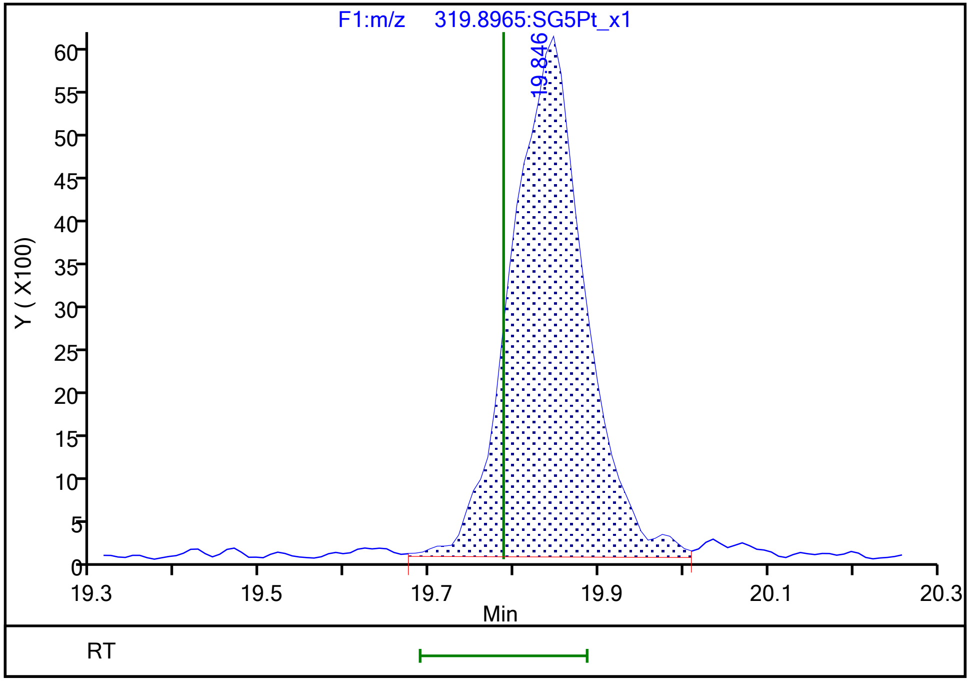

Reviewer: dadunj, 16-Mar-2021 09:08:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT:	19.83
Area:	46412
Amount:	2.692088
Amount Units:	pg/ul

Processing Integration Results

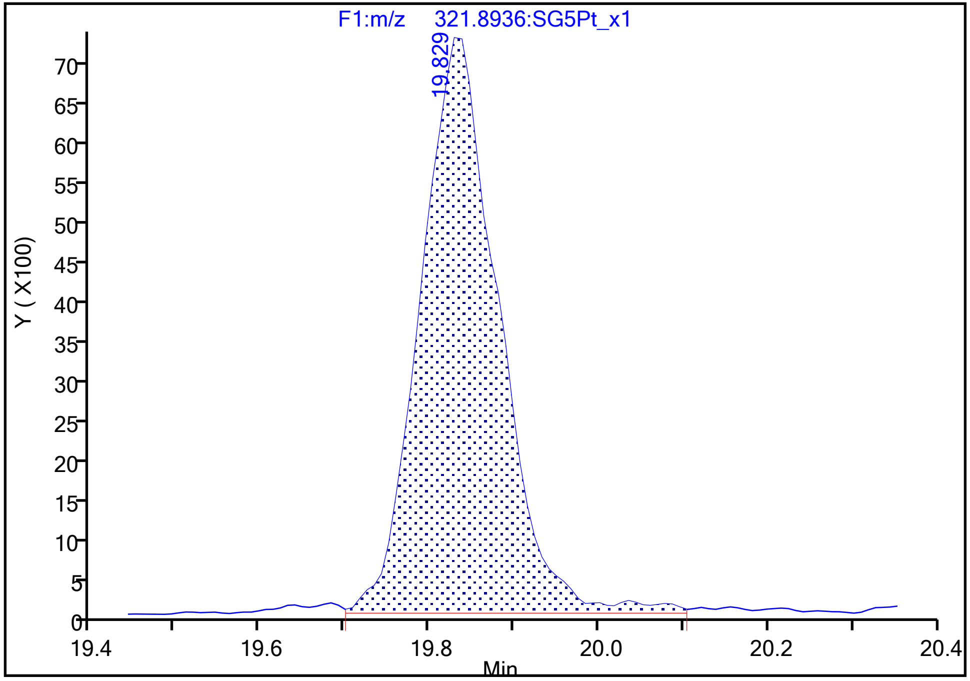

RT:	19.83
Area:	45905
Amount:	2.664309
Amount Units:	pg/ul

Manual Integration Results

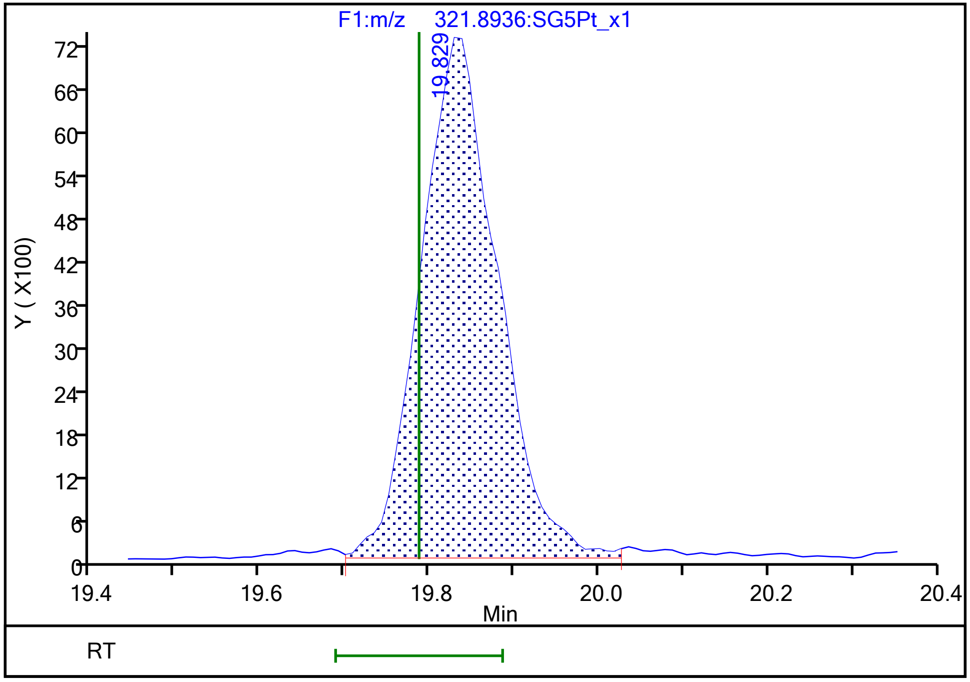

Reviewer: dadunj, 16-Mar-2021 09:08:28

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

RT:	25.67
Area:	7406
Amount:	0.334365
Amount Units:	pg/ul

Processing Integration Results

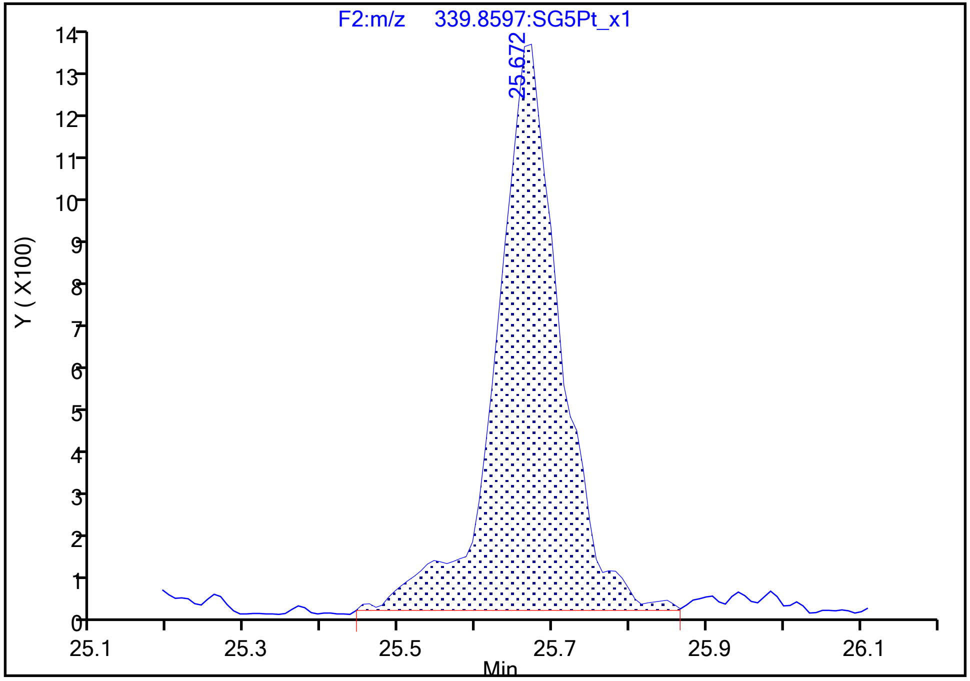

RT:	25.67
Area:	6844
Amount:	0.310527
Amount Units:	pg/ul

Manual Integration Results

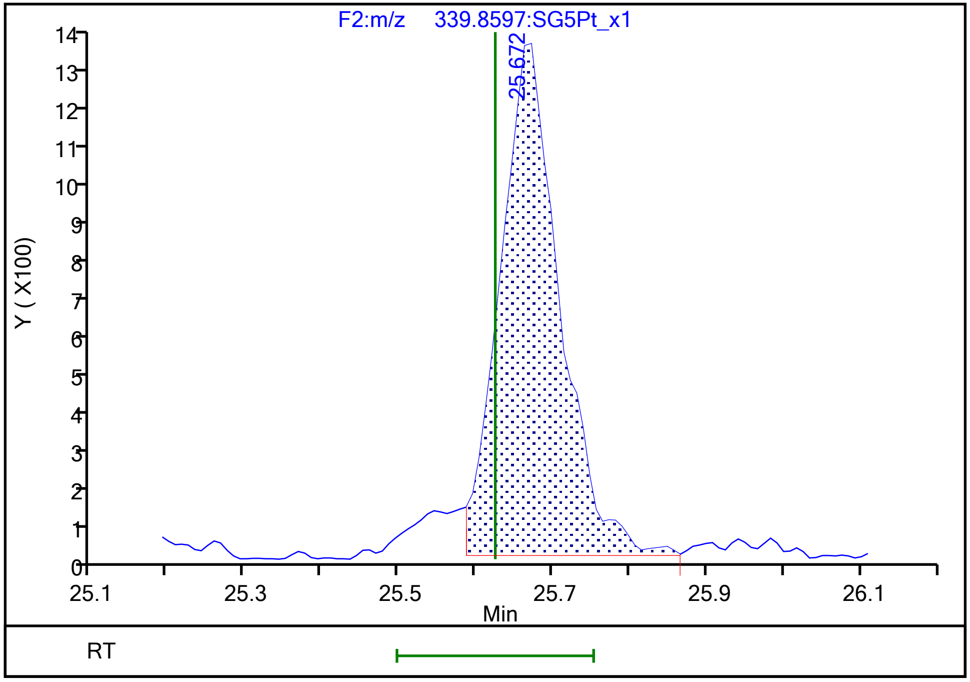

Reviewer: dadunj, 16-Mar-2021 09:08:41

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d

Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT:	25.67
Area:	4755
Amount:	0.334365
Amount Units:	pg/ul

Processing Integration Results

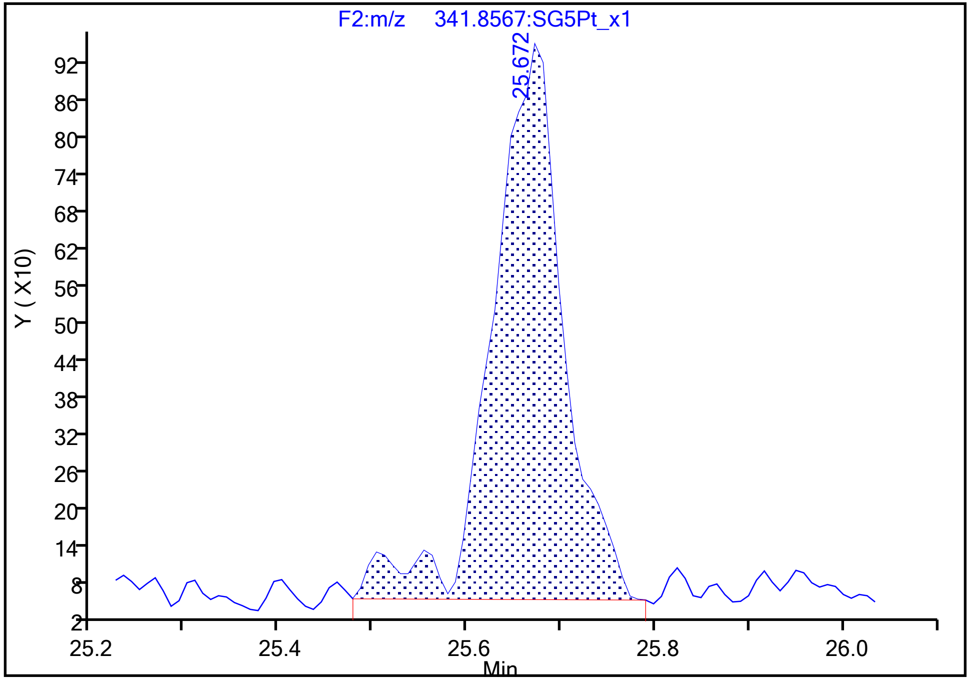

RT:	25.67
Area:	4450
Amount:	0.310527
Amount Units:	pg/ul

Manual Integration Results

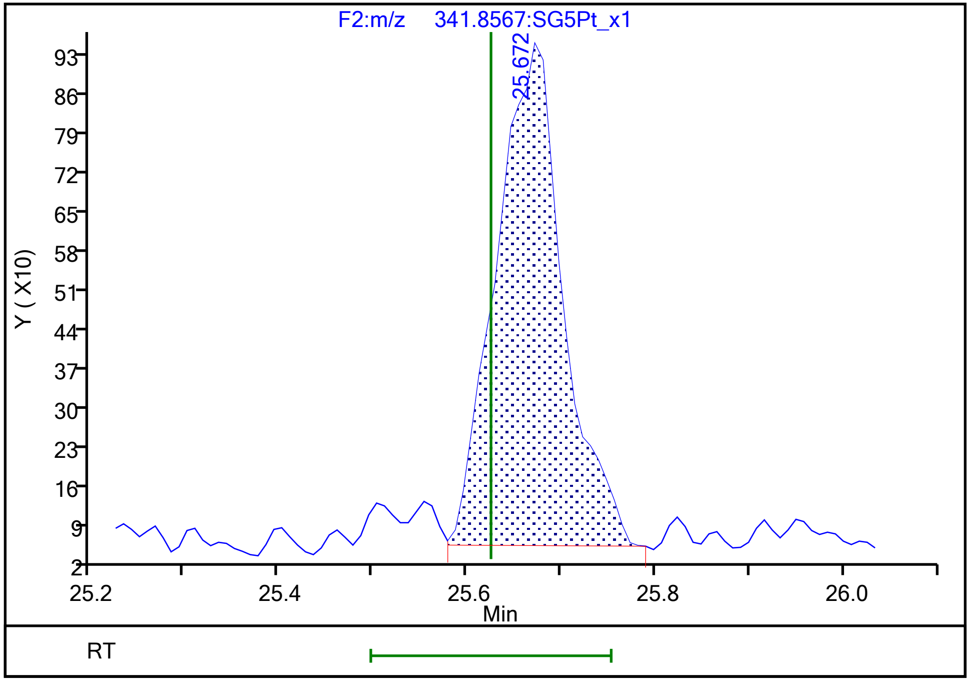

Reviewer: dadunj, 16-Mar-2021 09:08:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 2

Processing Integration Results

RT:	33.58
Area:	9761
Amount:	0.643095
Amount Units:	pg/ul

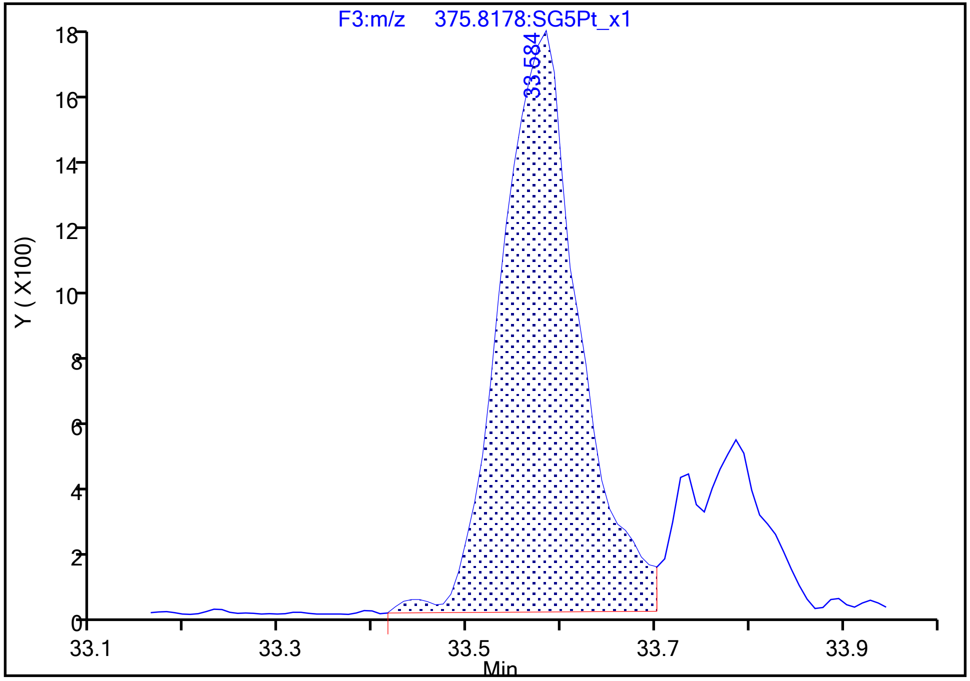

Manual Integration Results

RT:	33.58
Area:	9665
Amount:	0.640324
Amount Units:	pg/ul

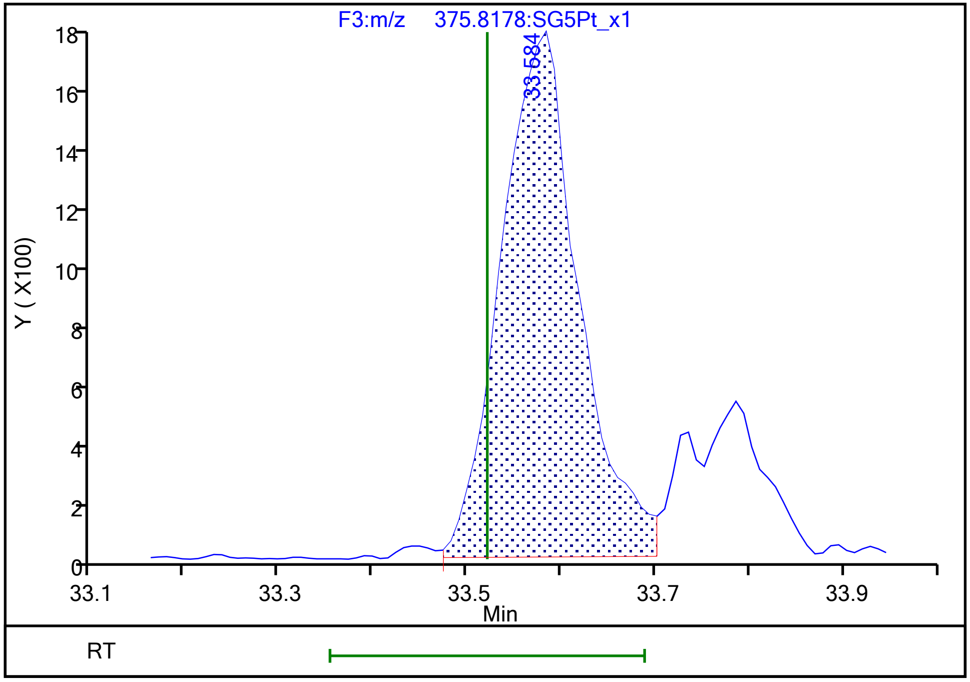

Reviewer: dadunj, 16-Mar-2021 09:09:13

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Processing Integration Results

RT:	33.79
Area:	3007
Amount:	0.189251
Amount Units:	pg/ul

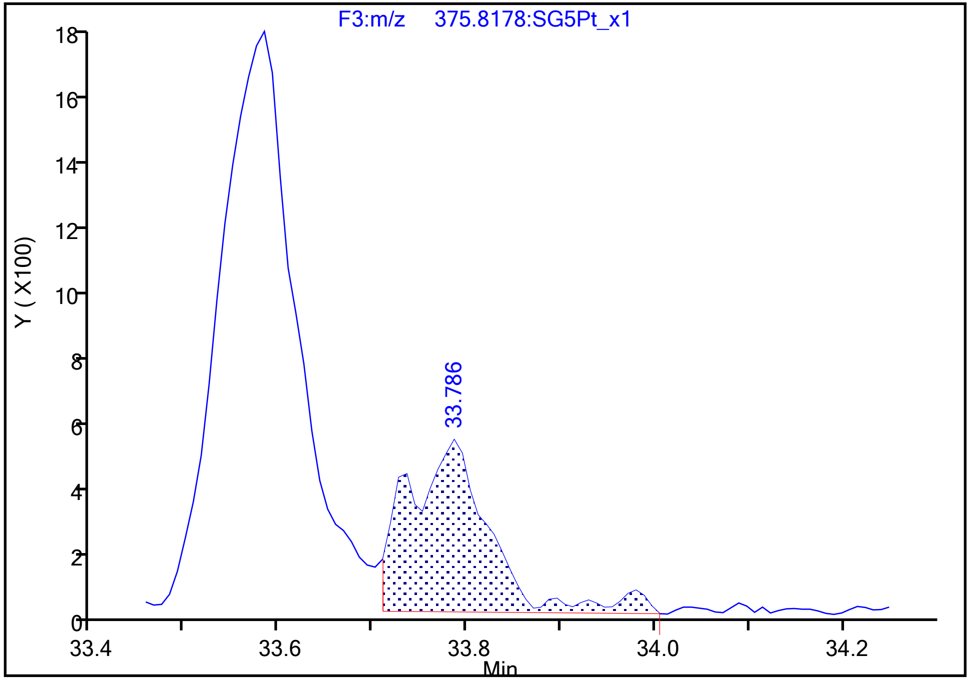

Manual Integration Results

RT:	33.79
Area:	2750
Amount:	0.180124
Amount Units:	pg/ul

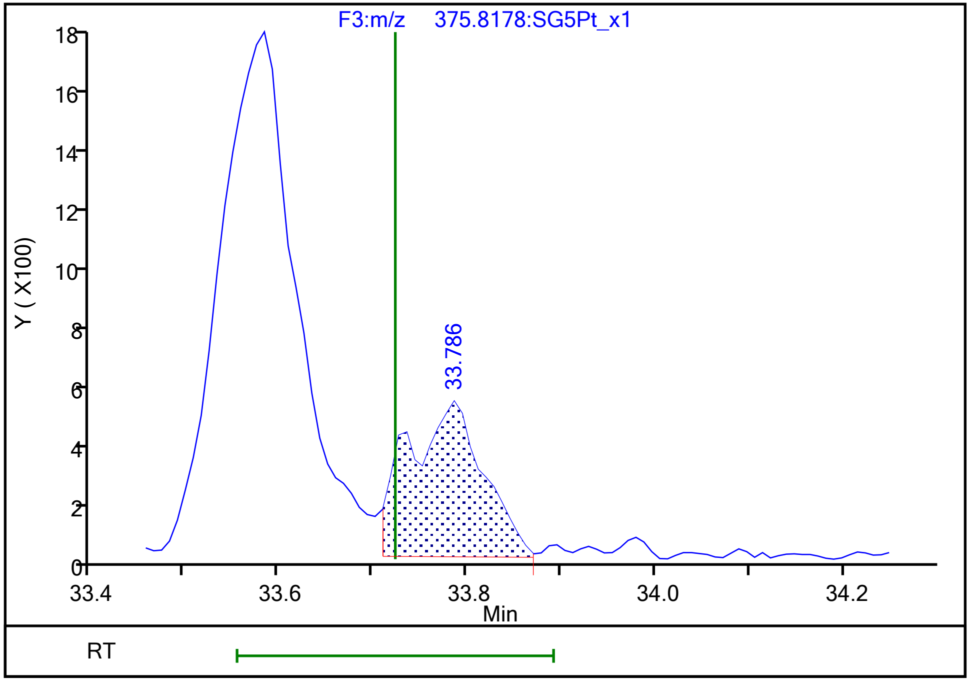

Reviewer: dadunj, 16-Mar-2021 09:09:17

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d

Injection Date: 12-Mar-2021 17:44:00

Instrument ID: DFS 1

Lims ID: 320-70797-A-9-A

Lab Sample ID: 320-70797-9

Client ID: 11215702-Tank2-10mm

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT: 33.78

Area: 4271

Amount: 0.189251

Amount Units: pg/ul

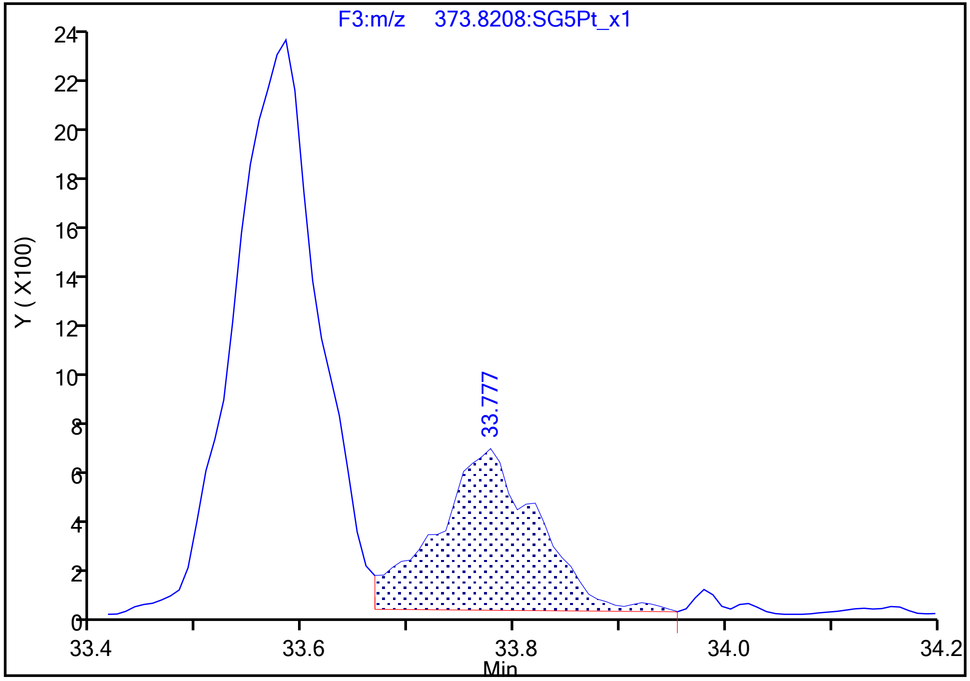

Manual Integration Results

RT: 33.78

Area: 4177

Amount: 0.180124

Amount Units: pg/ul

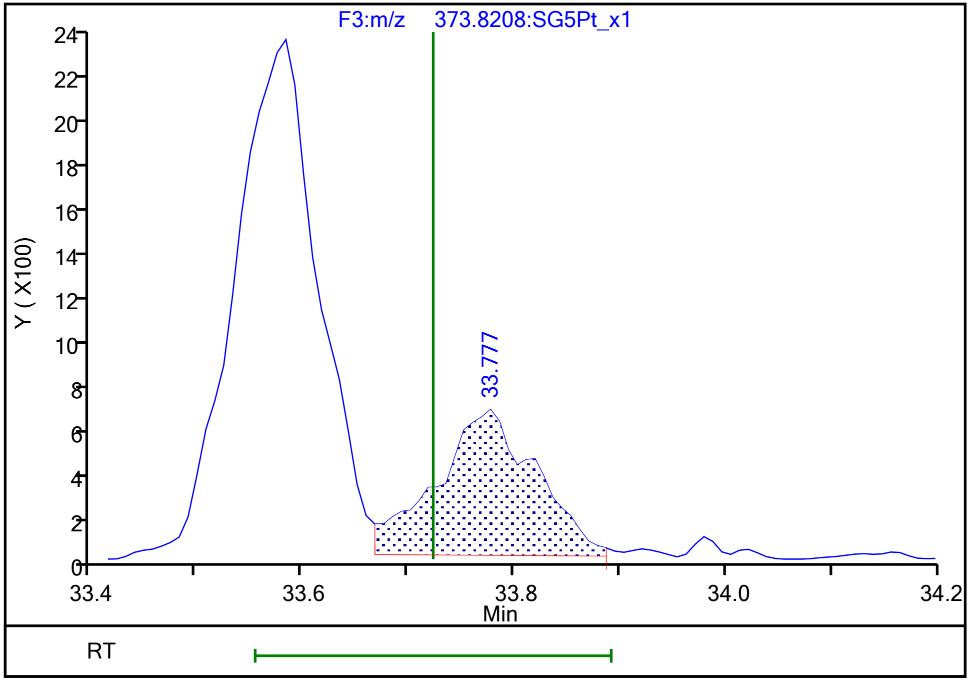

Reviewer: dadunj, 16-Mar-2021 09:09:20

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 35.03
Area: 1745
Amount: 0.126450
Amount Units: pg/ul

Processing Integration Results

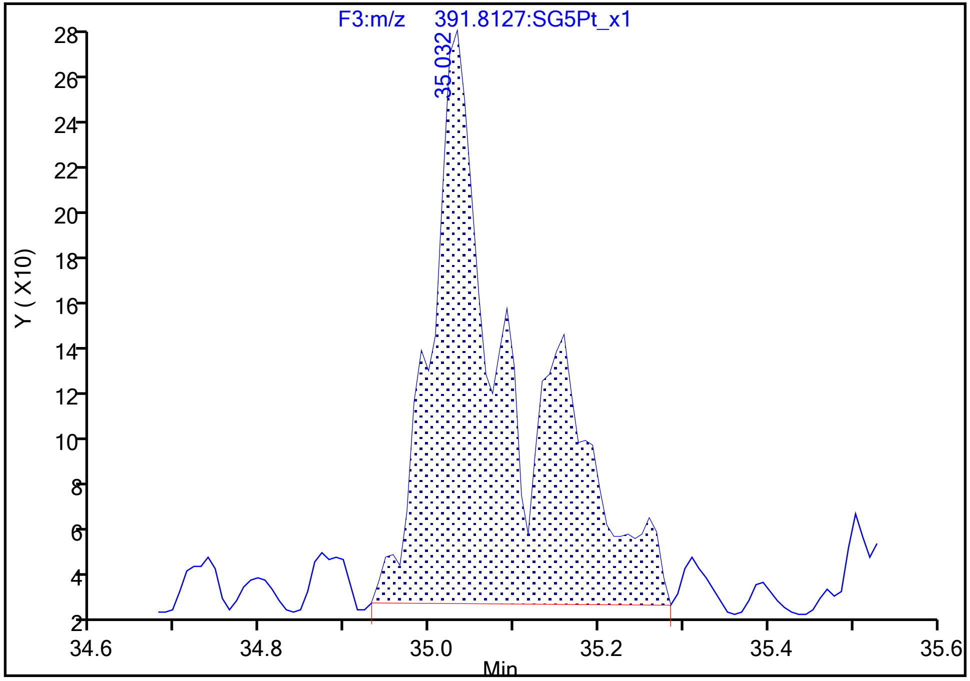

RT: 35.03
Area: 1172
Amount: 0.103608
Amount Units: pg/ul

Manual Integration Results

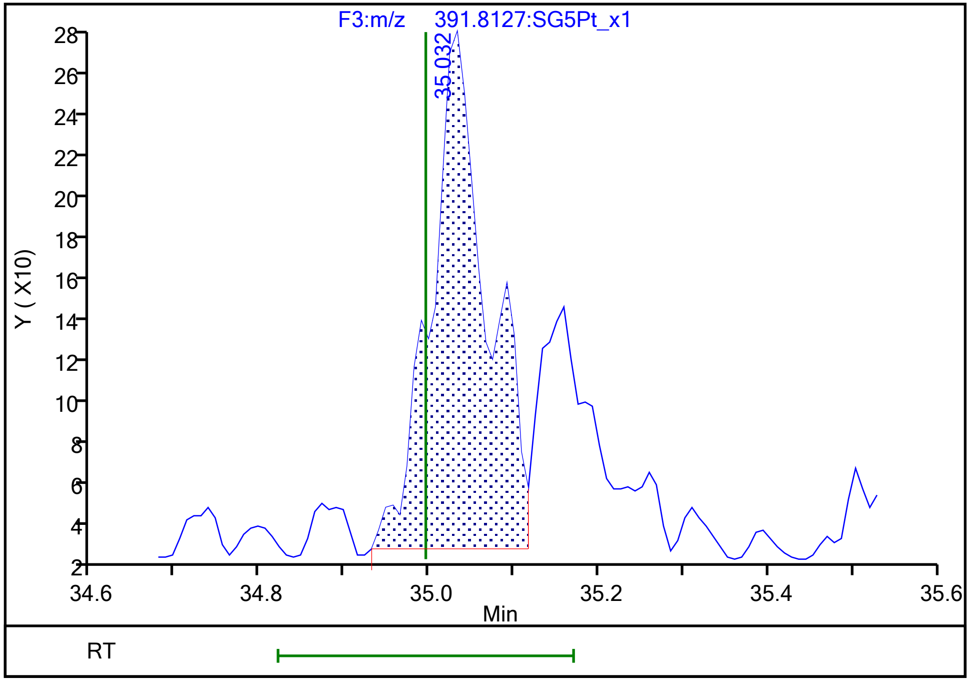

Reviewer: dadunj, 16-Mar-2021 09:09:53

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	35.02
Area:	1261
Amount:	0.126450
Amount Units:	pg/ul

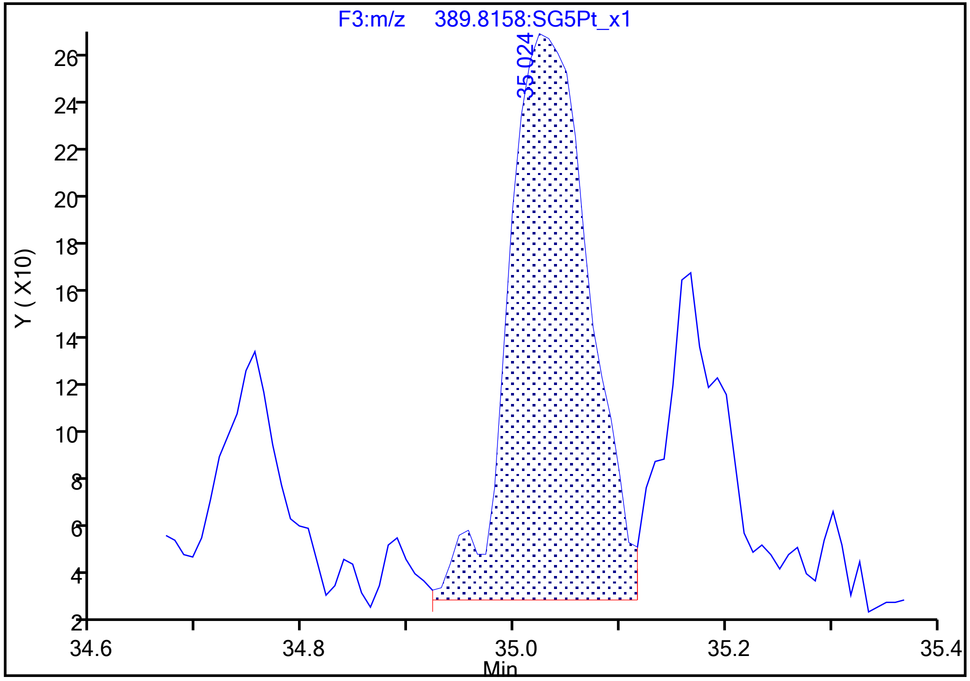

Manual Integration Results

RT:	35.02
Area:	1291
Amount:	0.103608
Amount Units:	pg/ul

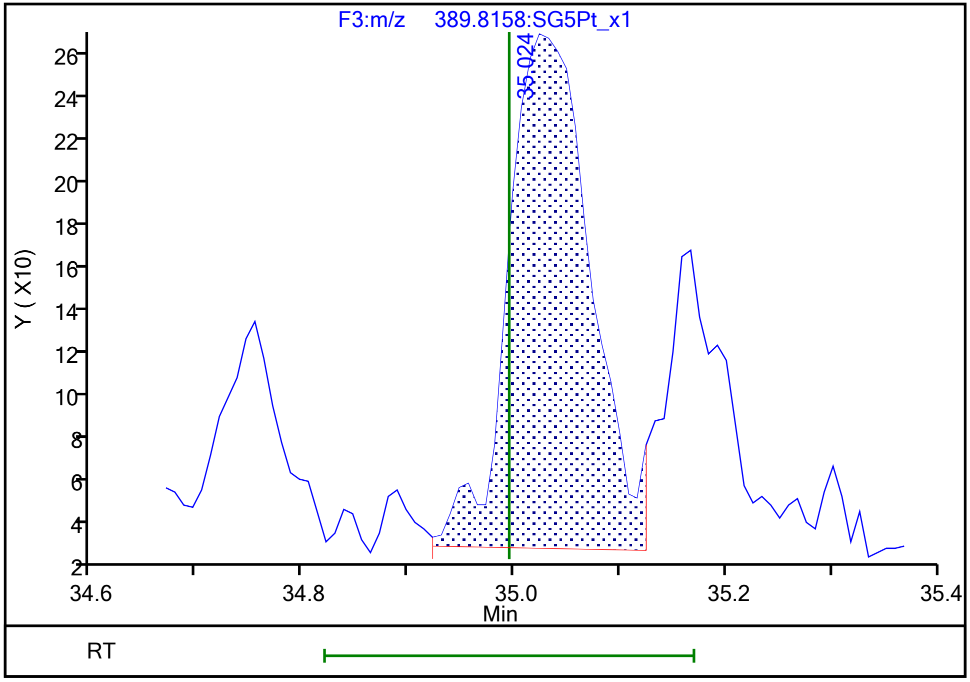

Reviewer: dadunj, 16-Mar-2021 09:10:05

Audit Action: Manually Integrated Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 3

Processing Integration Results

RT: 35.02
Area: 3006
Amount: 0.120190
Amount Units: pg/ul

Manual Integration Results

RT: 35.17
Area: 960
Amount: 0.038384
Amount Units: pg/ul

Reviewer: dadunj, 16-Mar-2021 09:09:57

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

RT:	35.03
Area:	1745
Amount:	0.120190
Amount Units:	pg/ul

Processing Integration Results

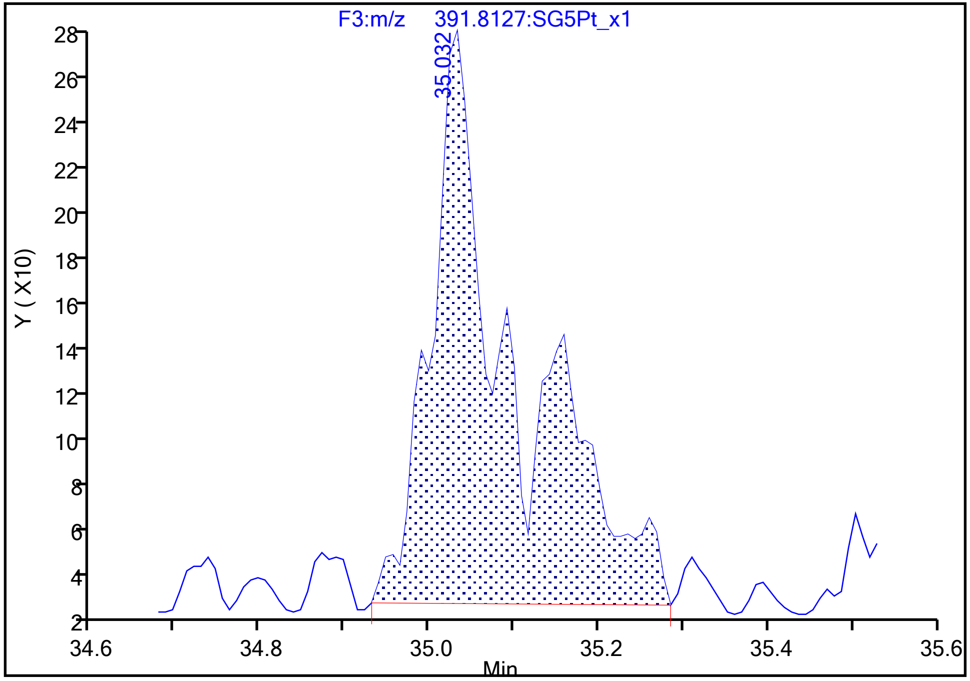

RT:	35.16
Area:	471
Amount:	0.038384
Amount Units:	pg/ul

Manual Integration Results

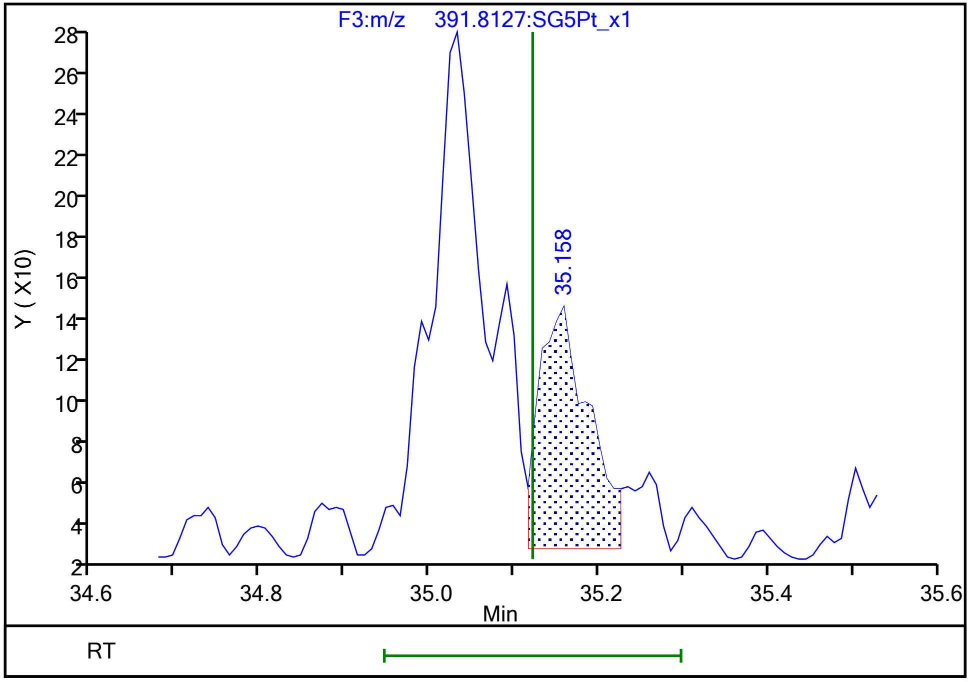

Reviewer: dadunj, 16-Mar-2021 09:10:11

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT:	35.02
Area:	1261
Amount:	0.120190
Amount Units:	pg/ul

Processing Integration Results

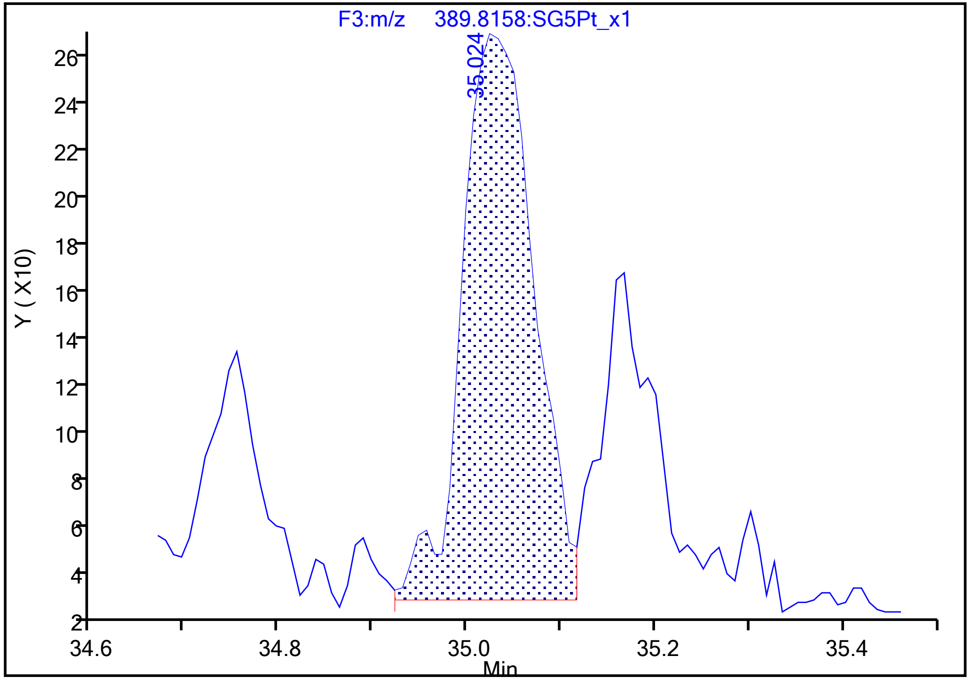

RT:	35.17
Area:	489
Amount:	0.038384
Amount Units:	pg/ul

Manual Integration Results

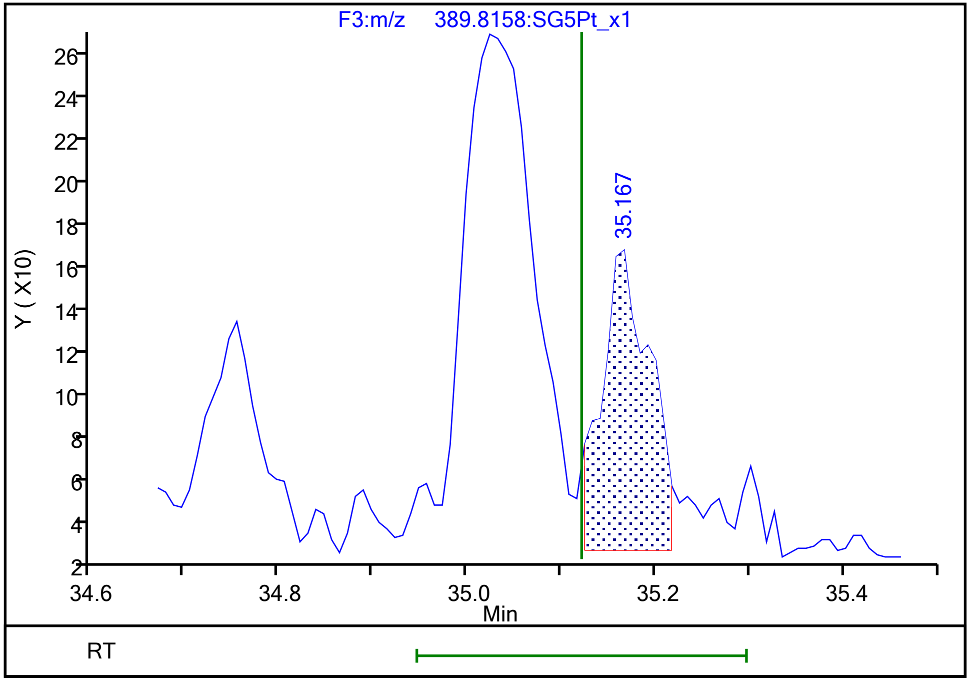

Reviewer: dadunj, 16-Mar-2021 09:10:12

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Not Detected

Expected RT: 35.54

Processing Integration Results

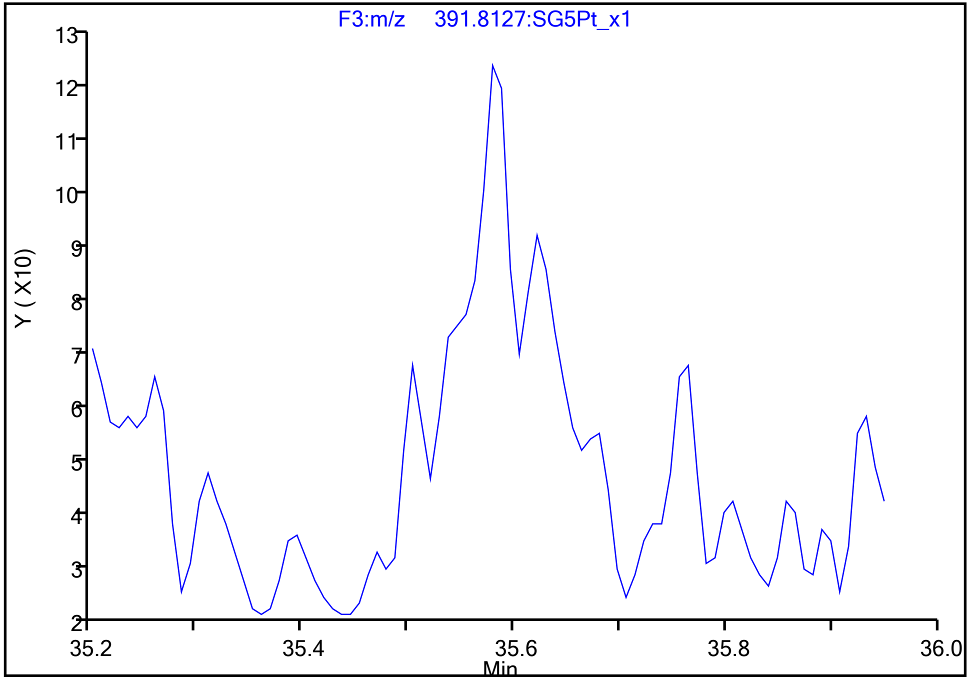

RT: 35.58

Area: 464

Amount: 0.033080

Amount Units: pg/ul

Manual Integration Results

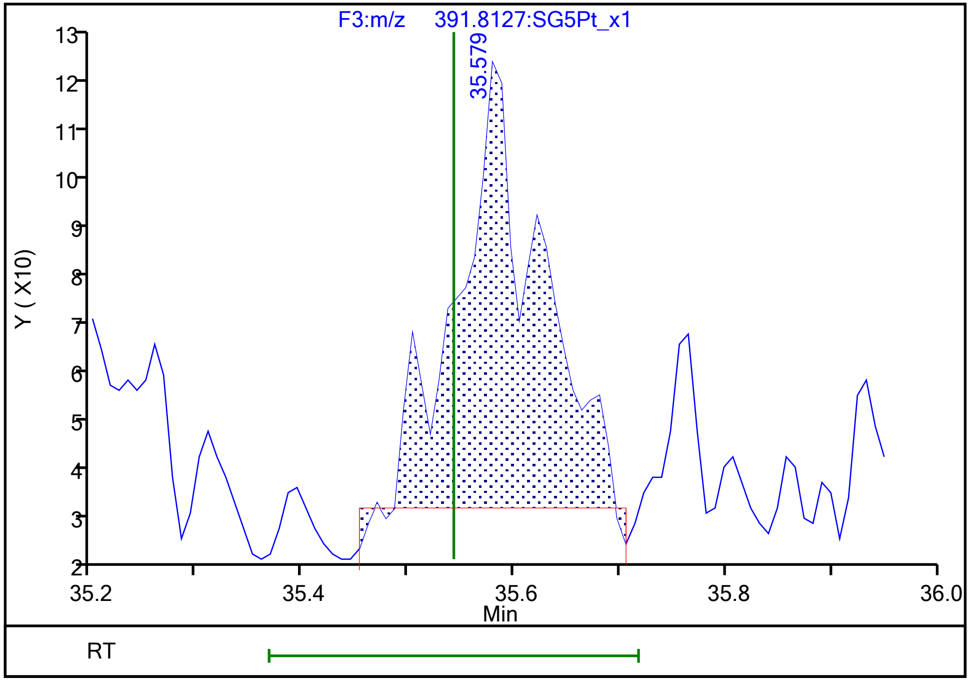

Reviewer: dadunj, 16-Mar-2021 09:10:22

Audit Action: Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Not Detected

Expected RT: 35.54

Processing Integration Results

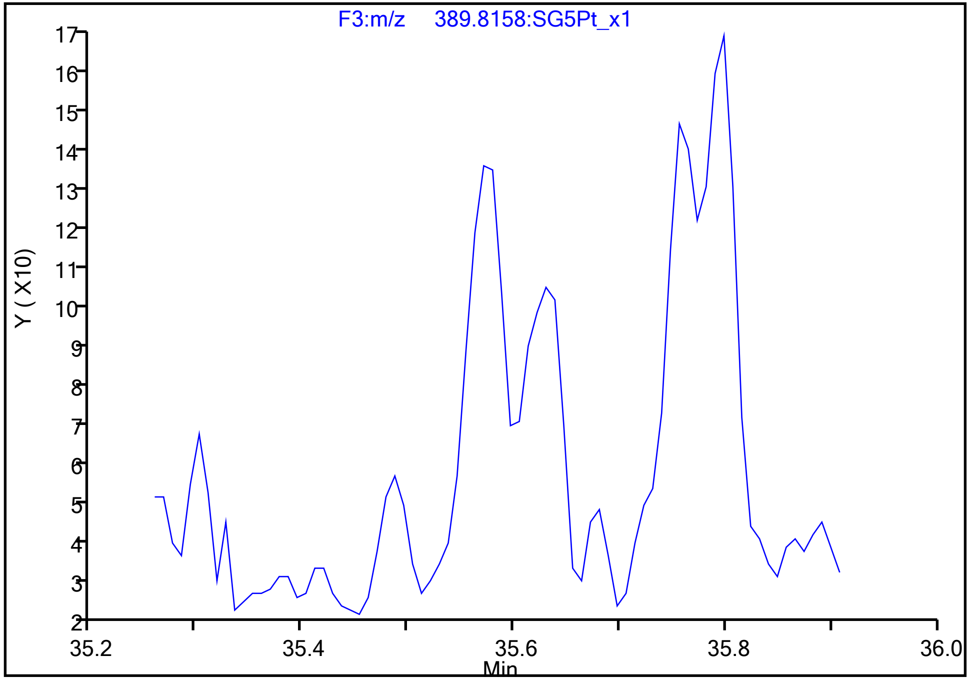

RT:	35.57
Area:	419
Amount:	0.033080
Amount Units:	pg/ul

Manual Integration Results

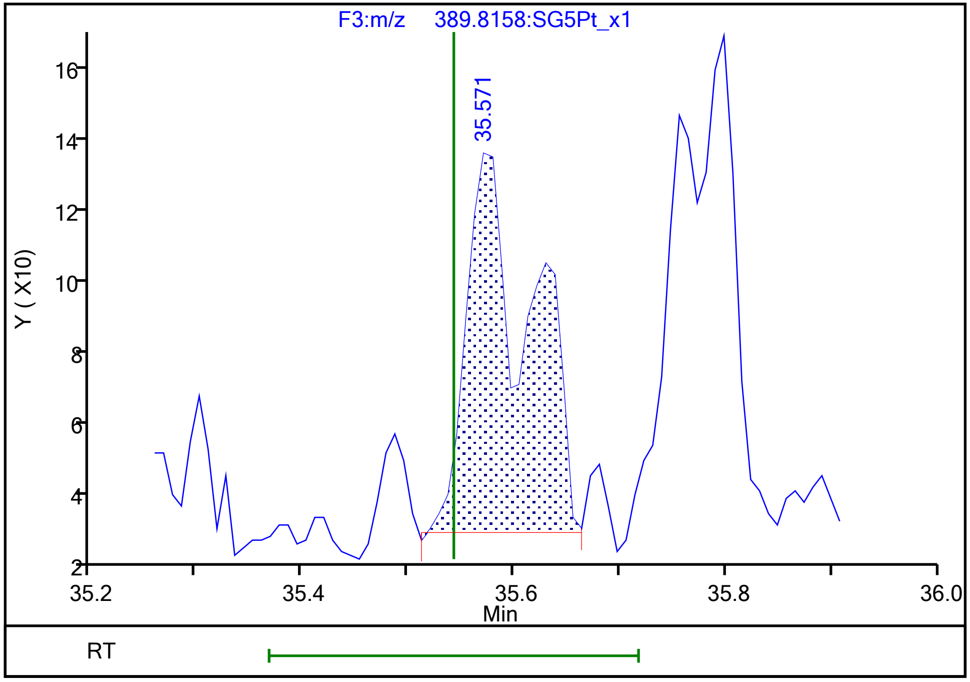

Reviewer: dadunj, 16-Mar-2021 09:10:22

Audit Action: Manually Integrated

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

Processing Integration Results

RT = 32.699 Area = 1053

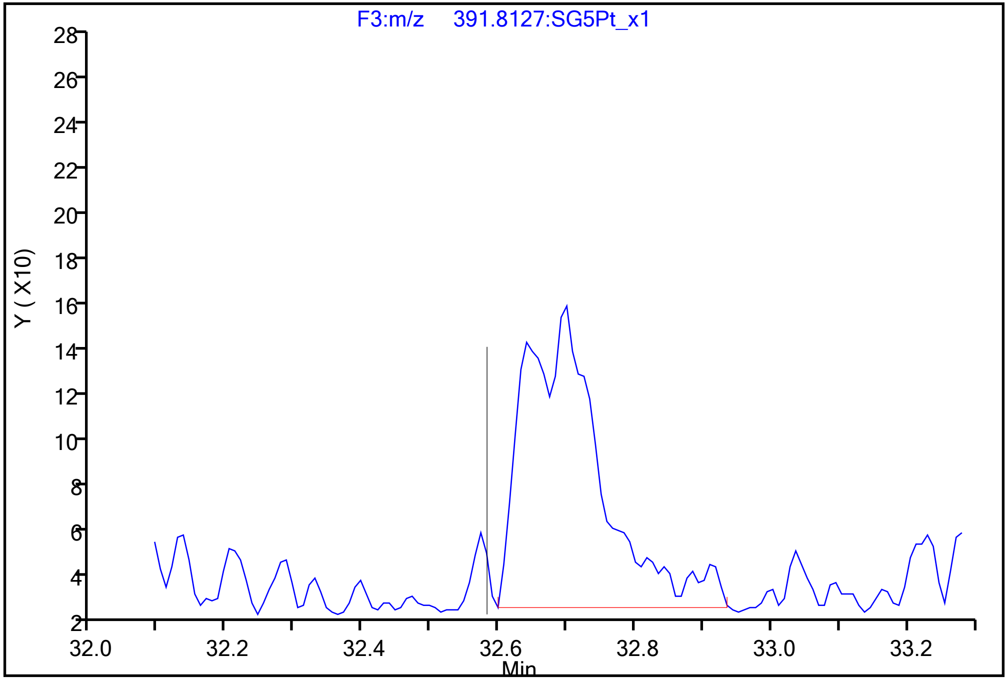

Manual Integration Results

RT = 32.699 Area = 910 M

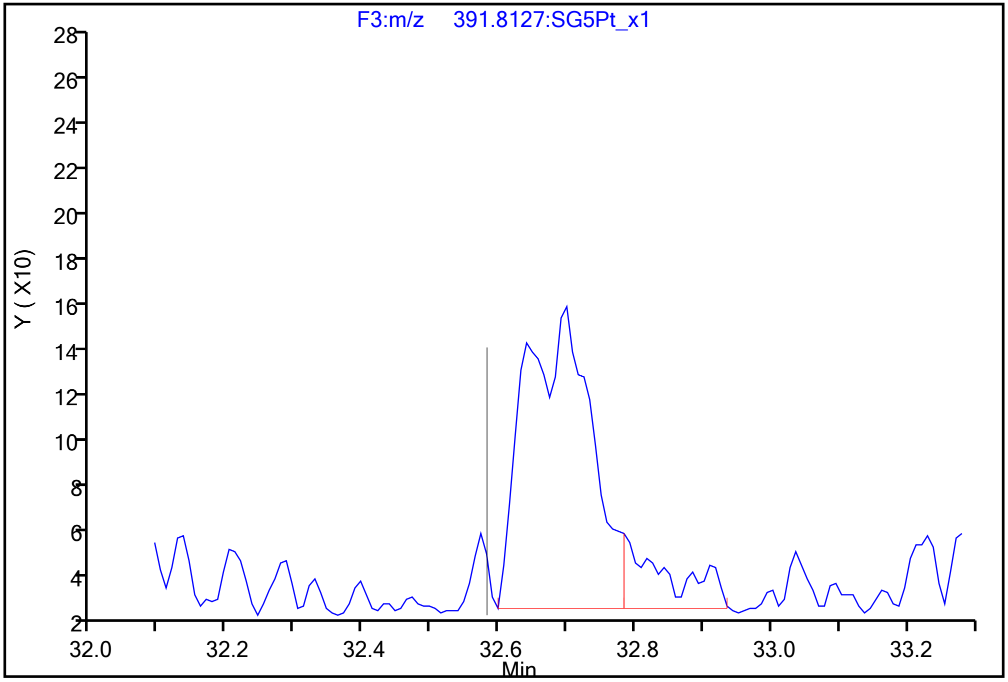

Reviewer: dadunj, 16-Mar-2021 09:10:39

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d

Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.58- 35.50)

Signal: 1

RT = 33.718 Area = 1623

Processing Integration Results

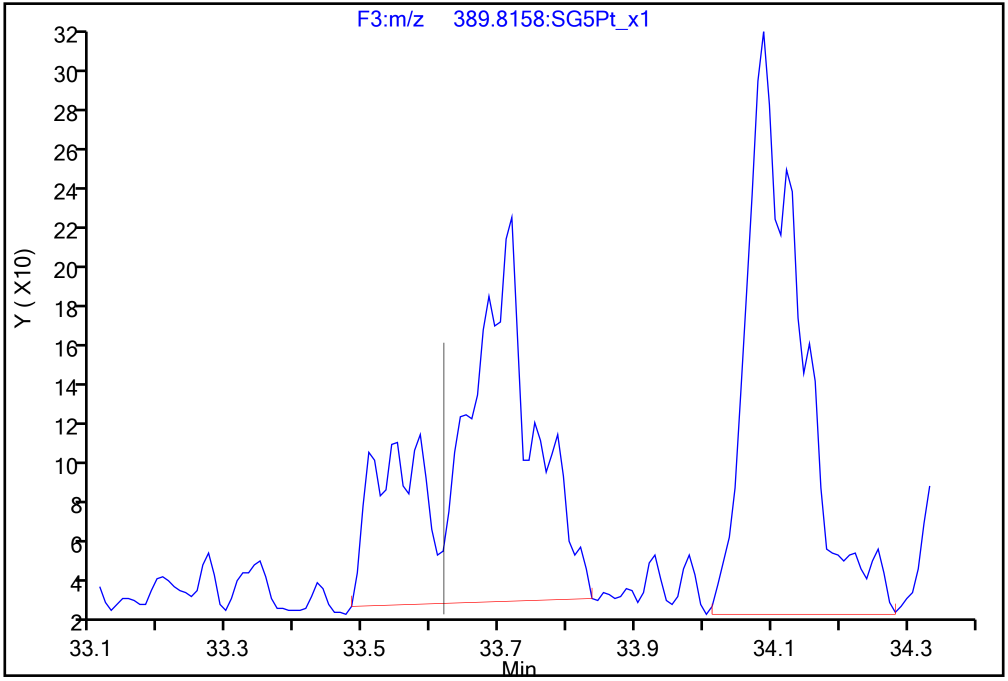

RT = 33.718 Area = 1164 M

Manual Integration Results

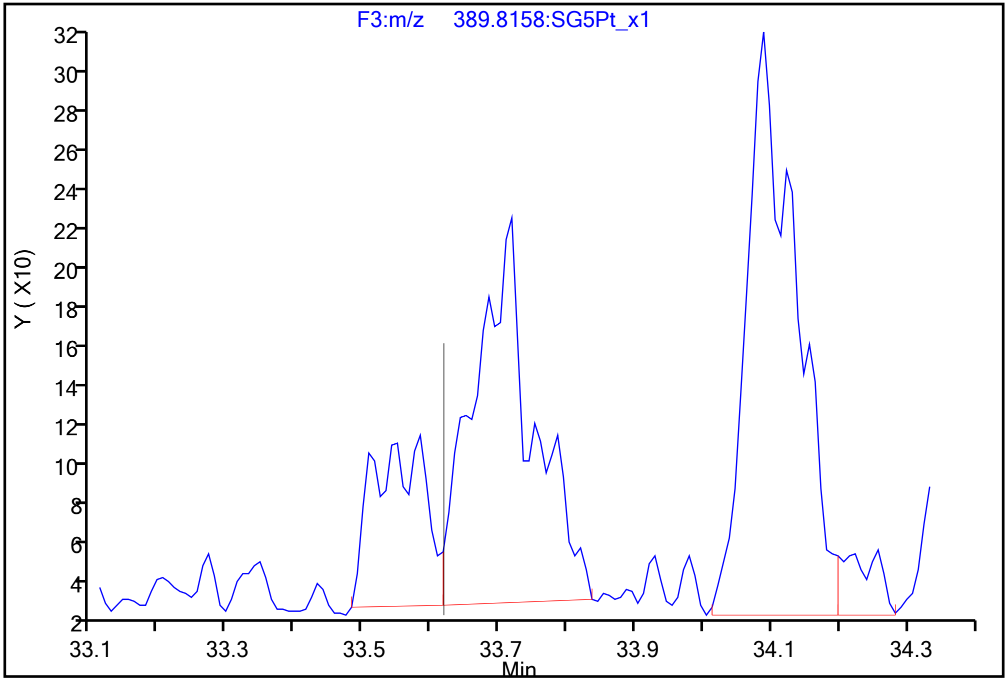

Reviewer: dadunj, 16-Mar-2021 09:10:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

RT = 33.676 Area = 771

Processing Integration Results

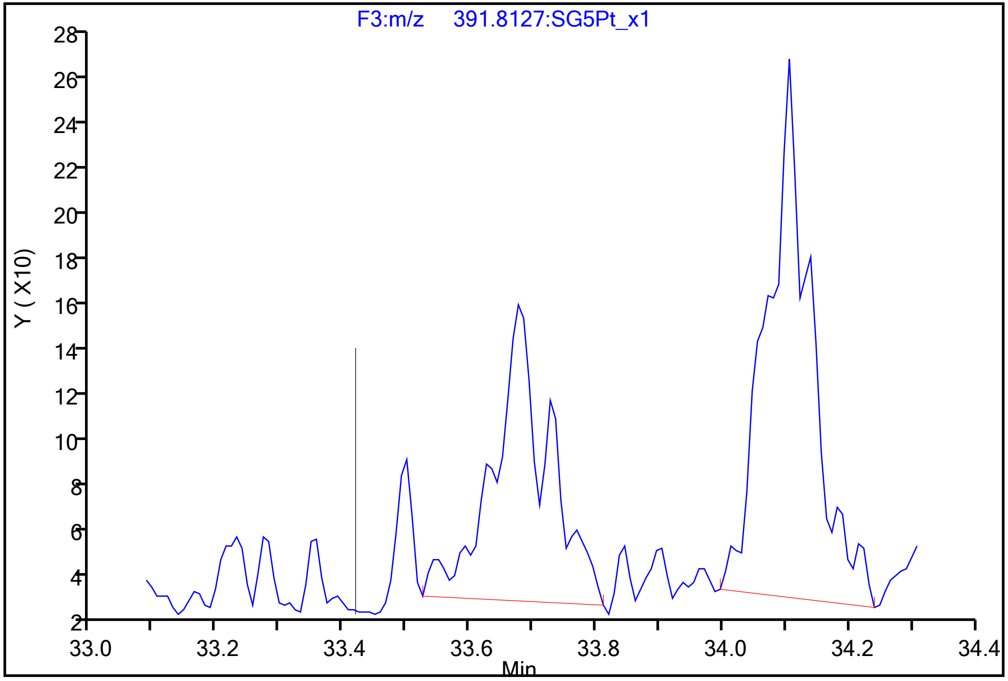

RT = 33.676 Area = 712 M

Manual Integration Results

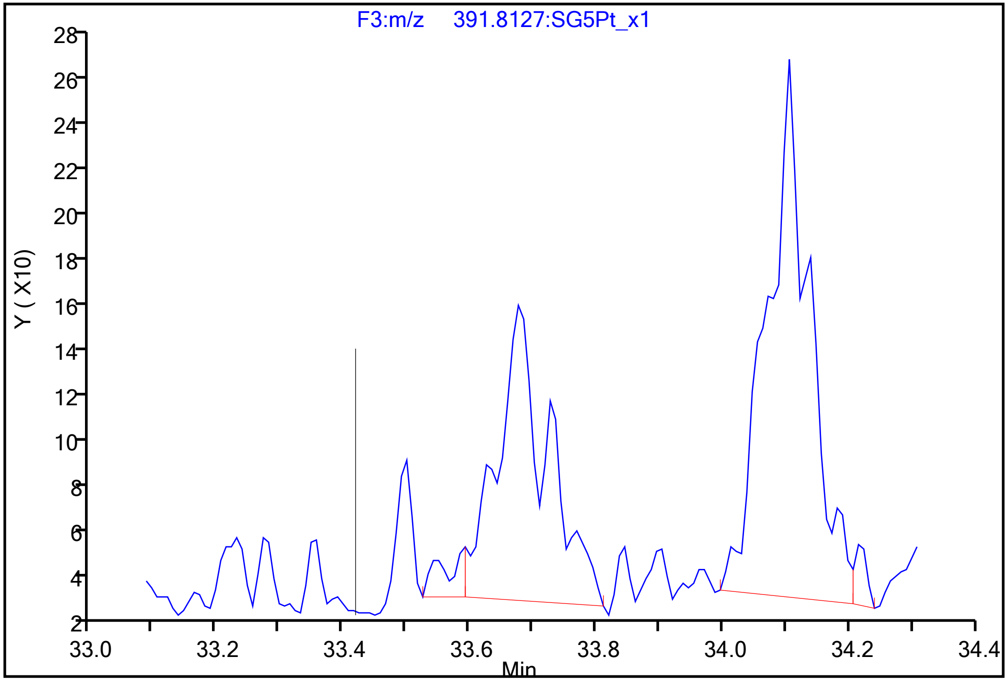

Reviewer: dadunj, 16-Mar-2021 09:10:39

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.58- 35.50)

Signal: 1

Processing Integration Results

RT = 34.089 Area = 1612

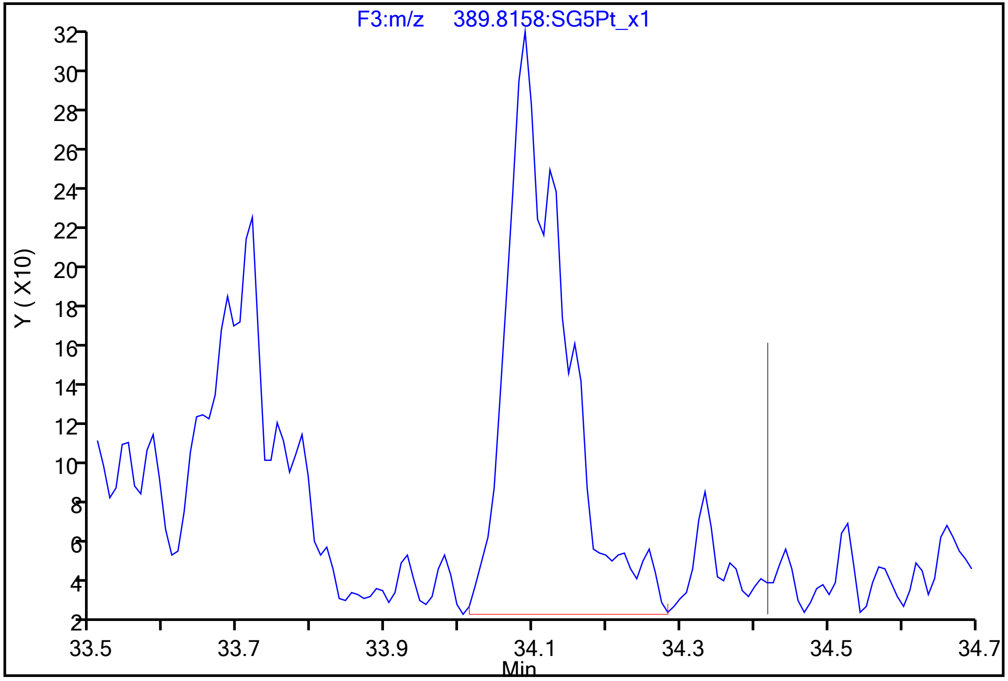

Manual Integration Results

RT = 34.089 Area = 1495 M

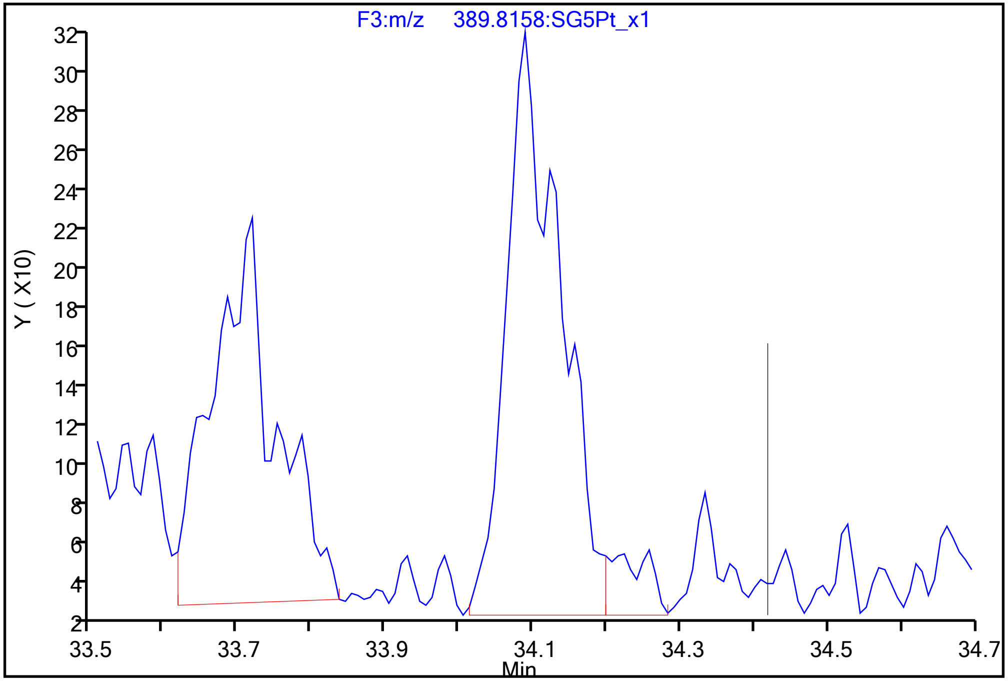

Reviewer: dadunj, 16-Mar-2021 09:10:36

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

Processing Integration Results

RT = 34.106 Area = 1158

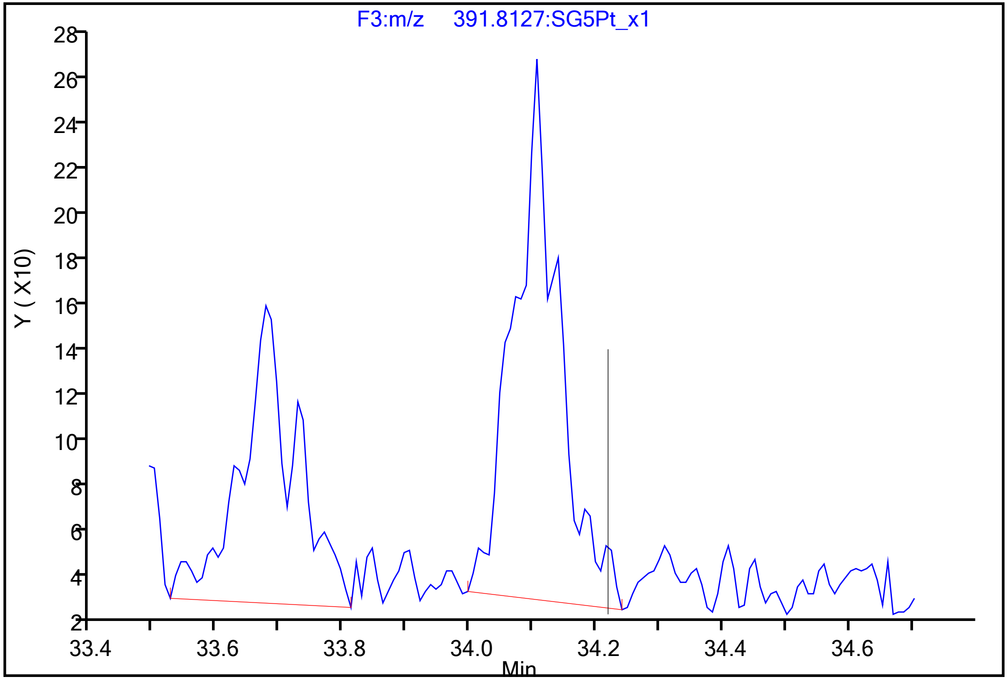

Manual Integration Results

RT = 34.106 Area = 1117 M

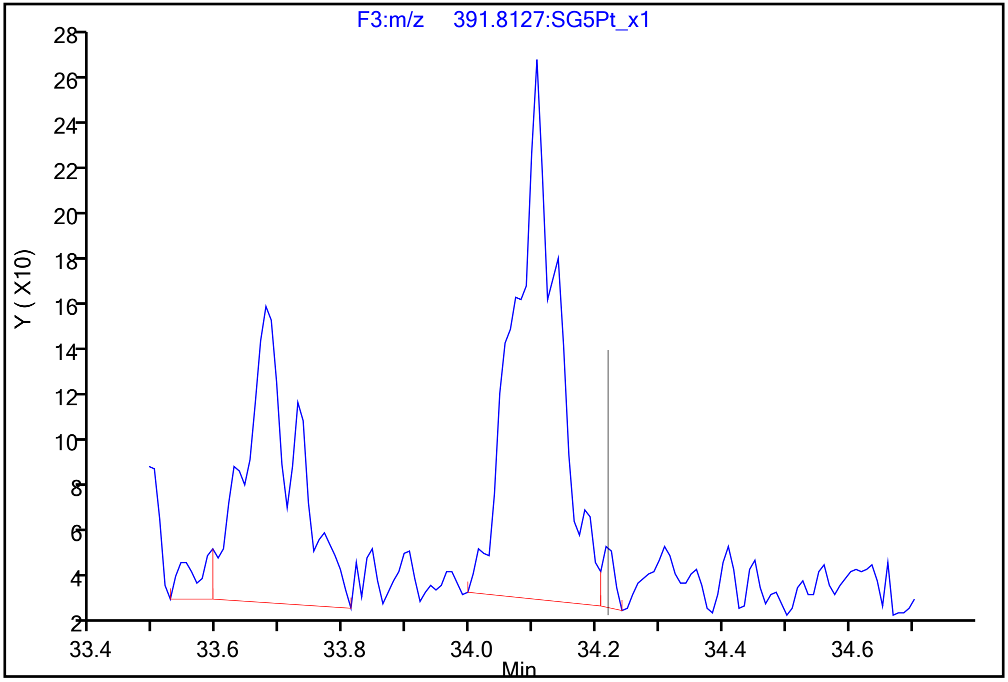

Reviewer: dadunj, 16-Mar-2021 09:10:39

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

RT:	39.19
Area:	1073
Amount:	0.085940
Amount Units:	pg/ul

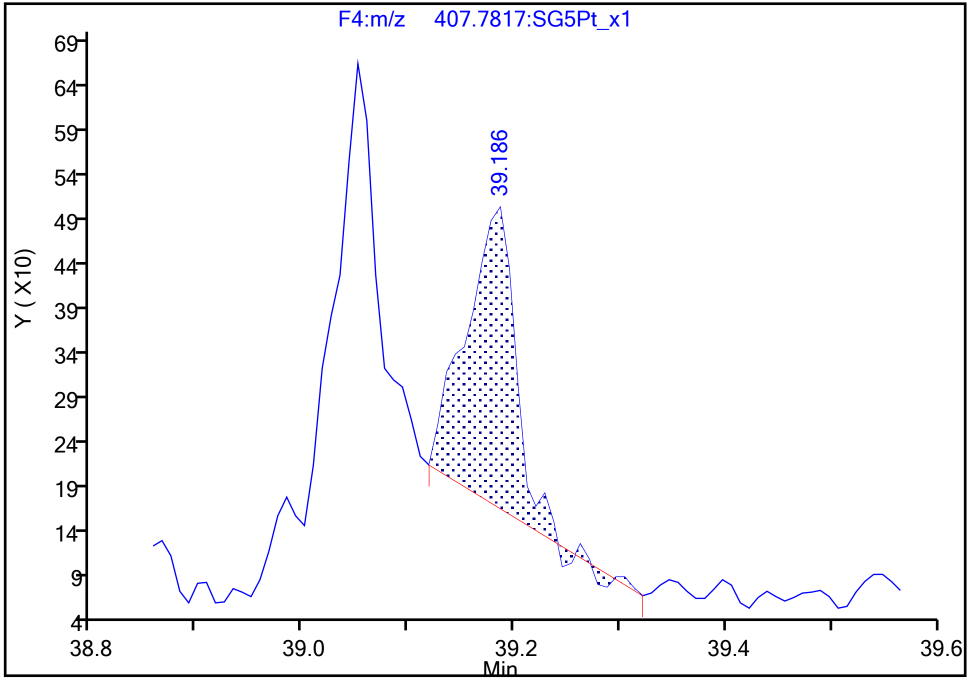

Manual Integration Results

RT:	39.19
Area:	1883
Amount:	0.111290
Amount Units:	pg/ul

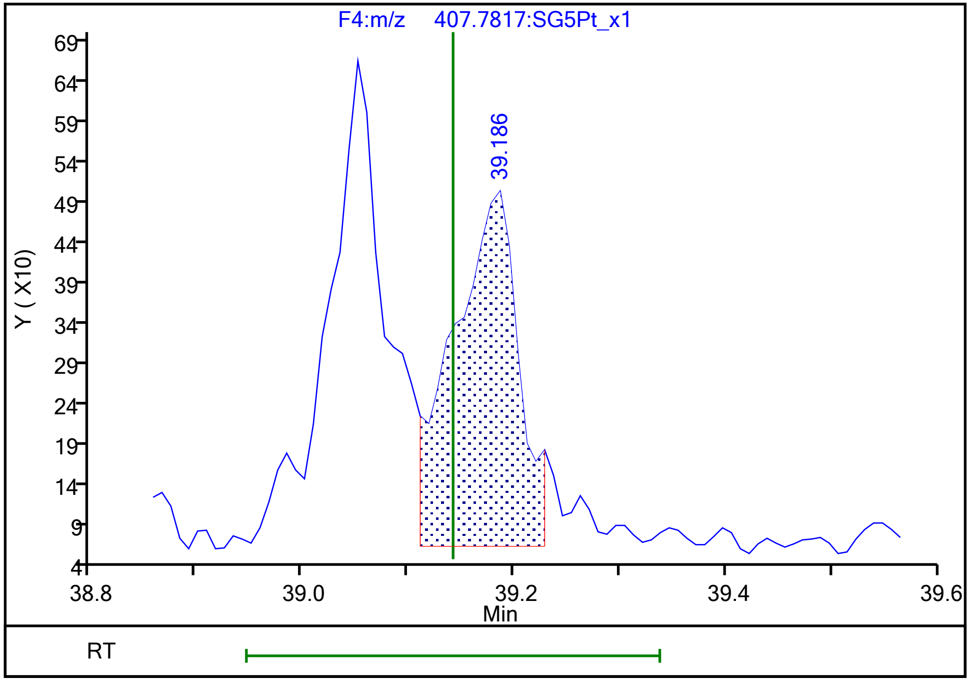

Reviewer: dadunj, 16-Mar-2021 09:10:55

Audit Action: Manually Integrated Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9
Client ID:	11215702-Tank2-10mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 1

RT:	41.41
Area:	2613
Amount:	0.211089
Amount Units:	pg/ul

Processing Integration Results

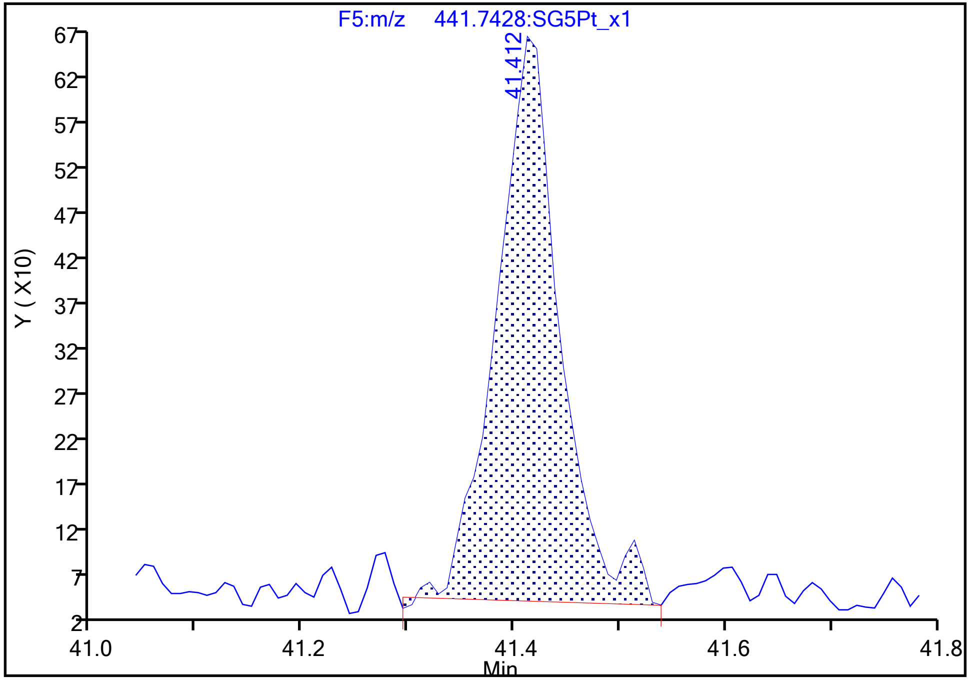

RT:	41.41
Area:	2507
Amount:	0.196563
Amount Units:	pg/ul

Manual Integration Results

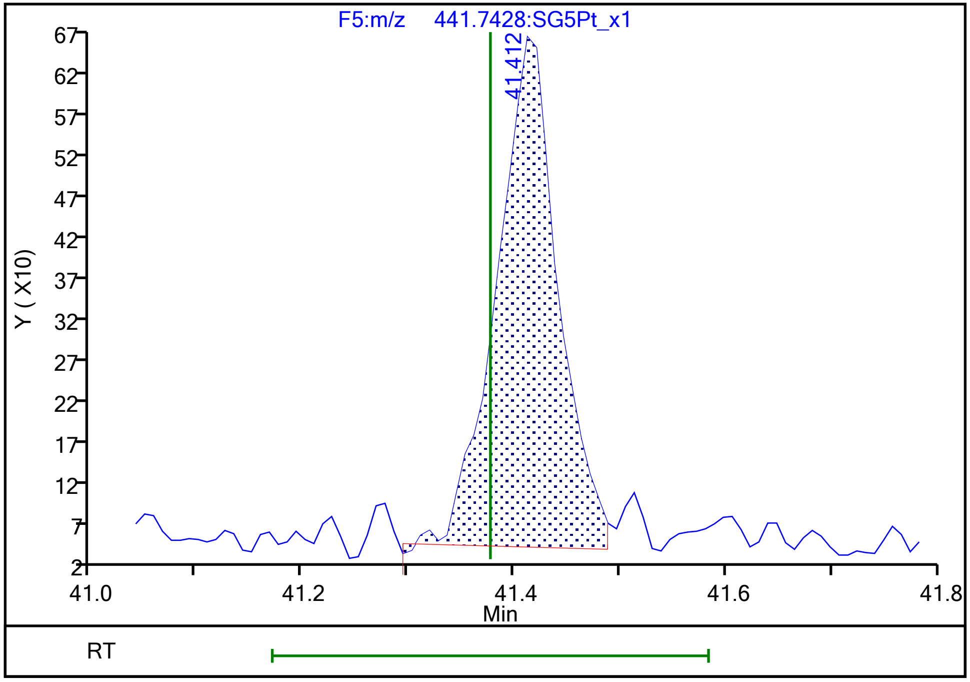

Reviewer: dadunj, 16-Mar-2021 09:11:33

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d				
Injection Date:	12-Mar-2021 17:44:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-9-A	Lab Sample ID:	320-70797-9		
Client ID:	11215702-Tank2-10mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT: 41.40
Area: 3592
Amount: 0.211089
Amount Units: pg/ul

Processing Integration Results

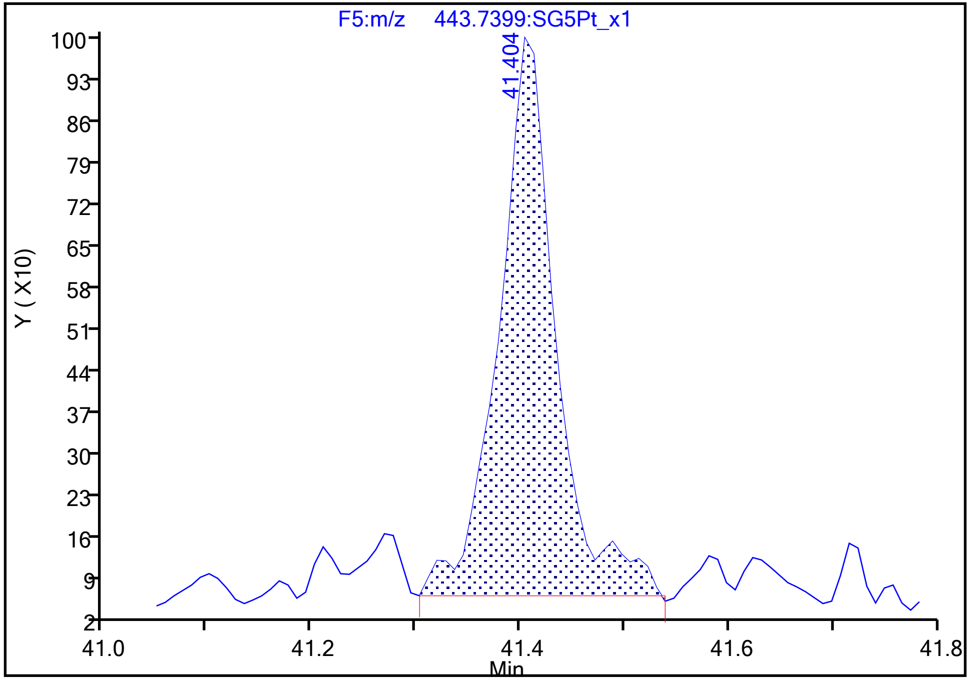

RT: 41.40
Area: 3271
Amount: 0.196563
Amount Units: pg/ul

Manual Integration Results

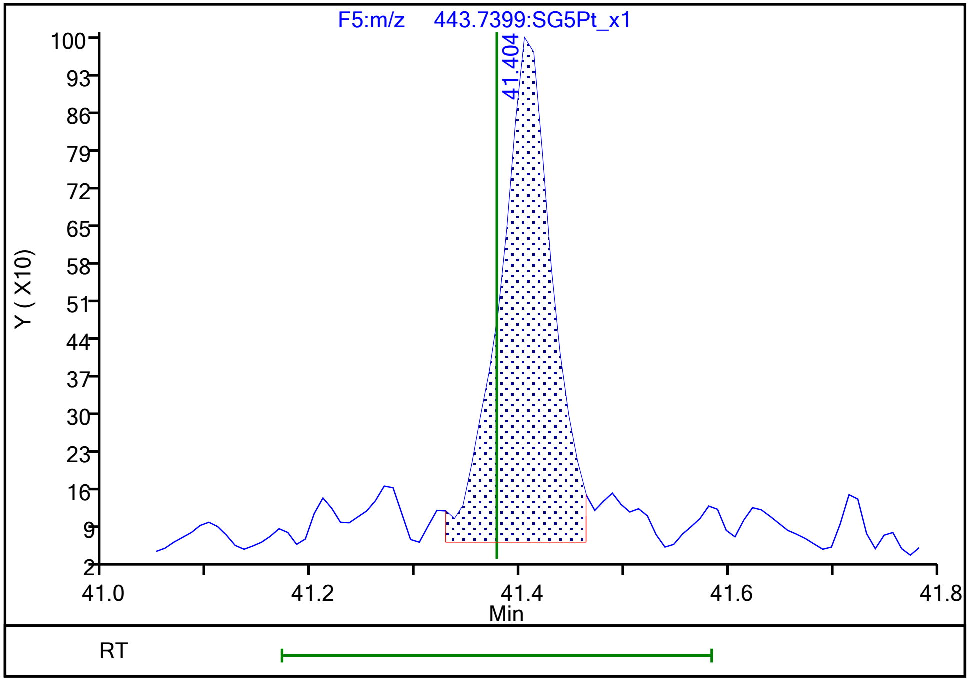

Reviewer: dadunj, 16-Mar-2021 09:11:34

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:34:38 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Injection Date: 12-Mar-2021 17:44:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469779
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

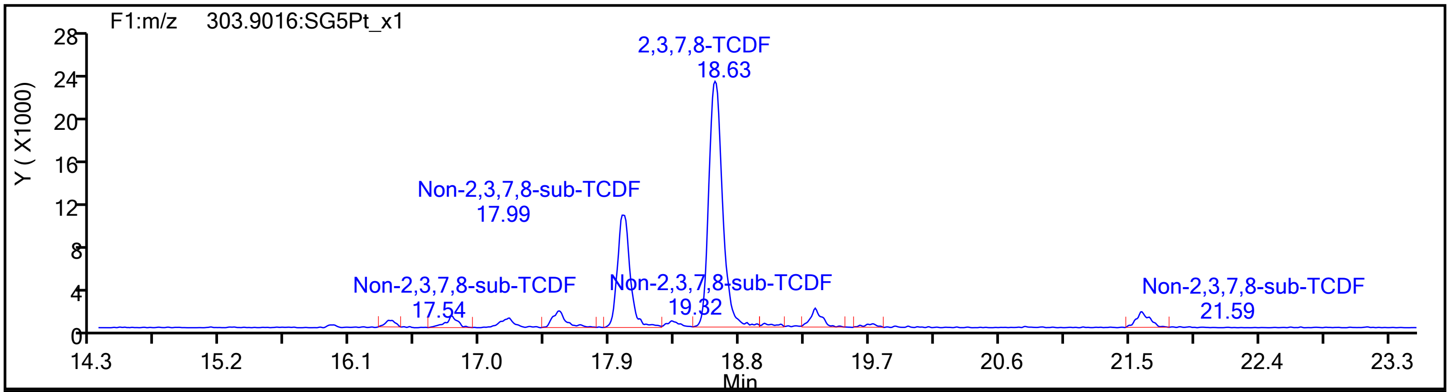

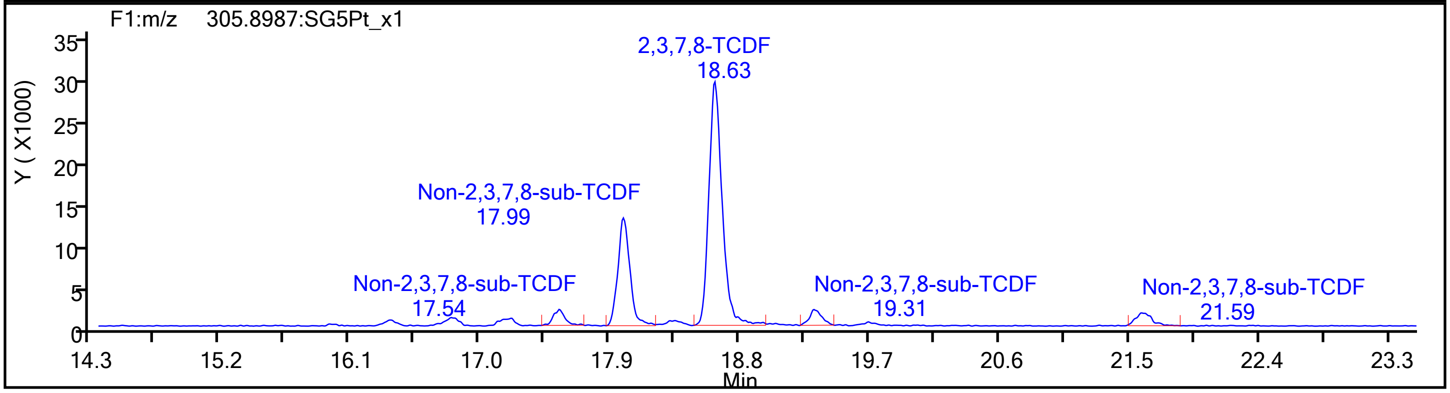

TCDF Standards

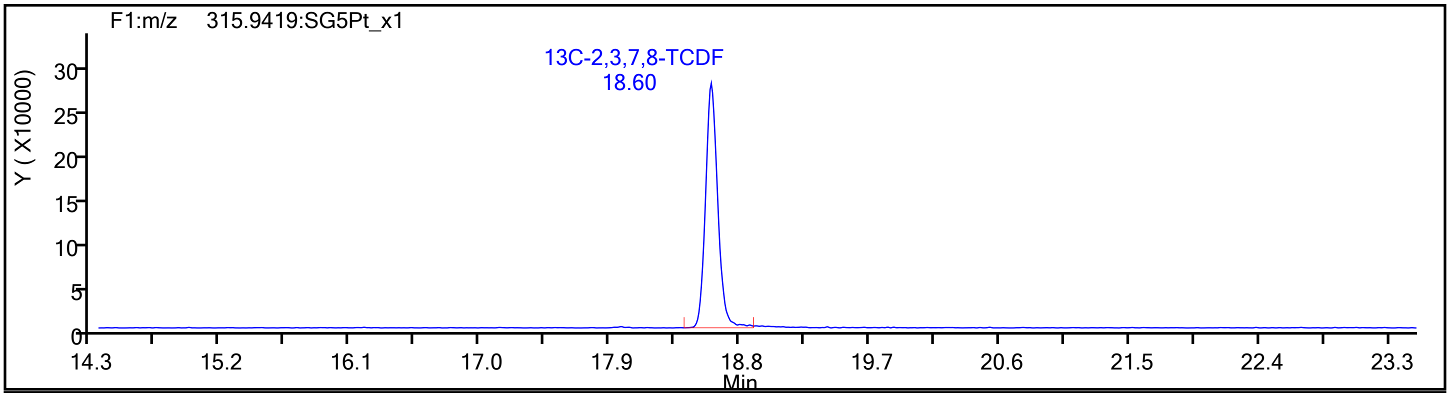

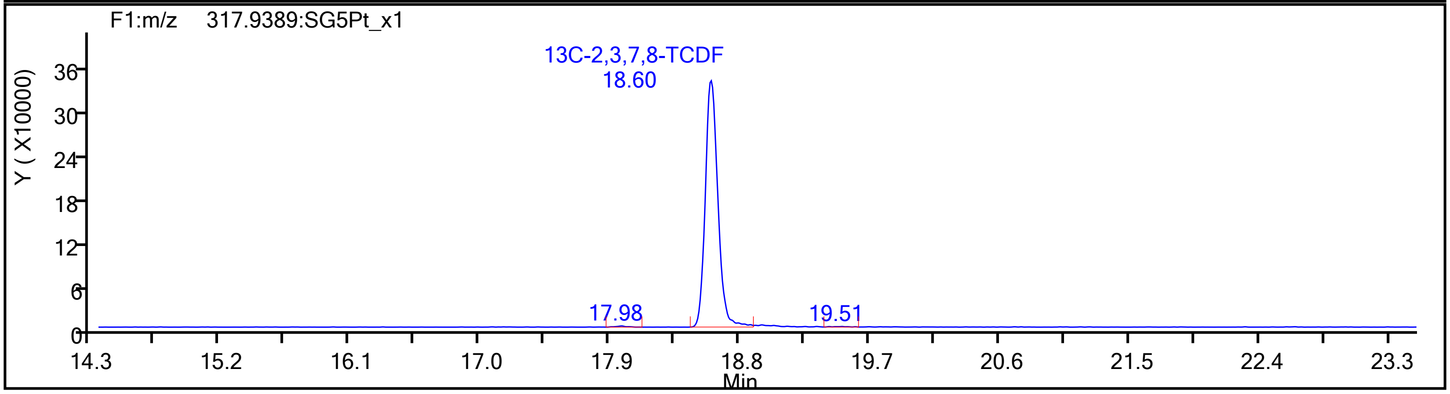

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Injection Date: 12-Mar-2021 17:44:00
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469779
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

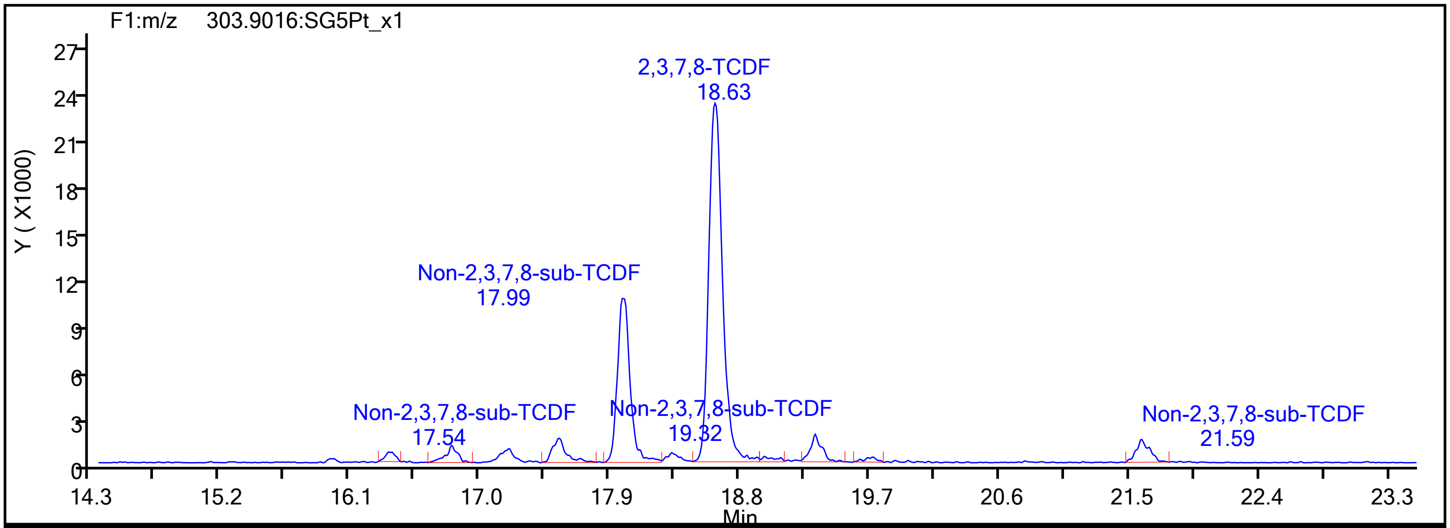

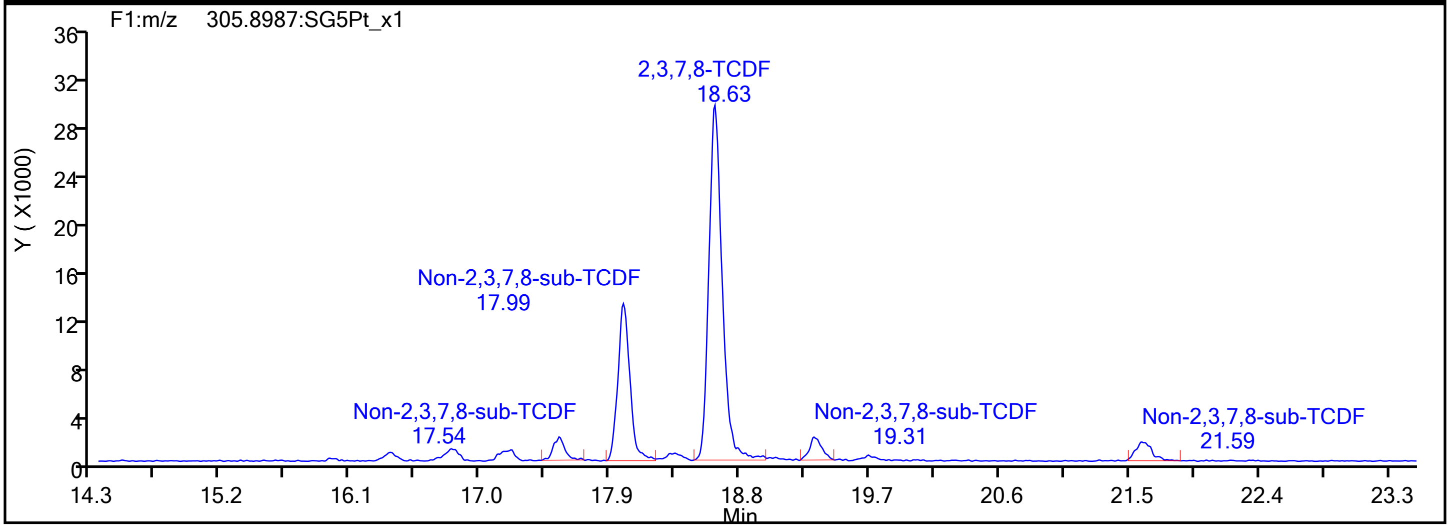

TCDF Interference Mass

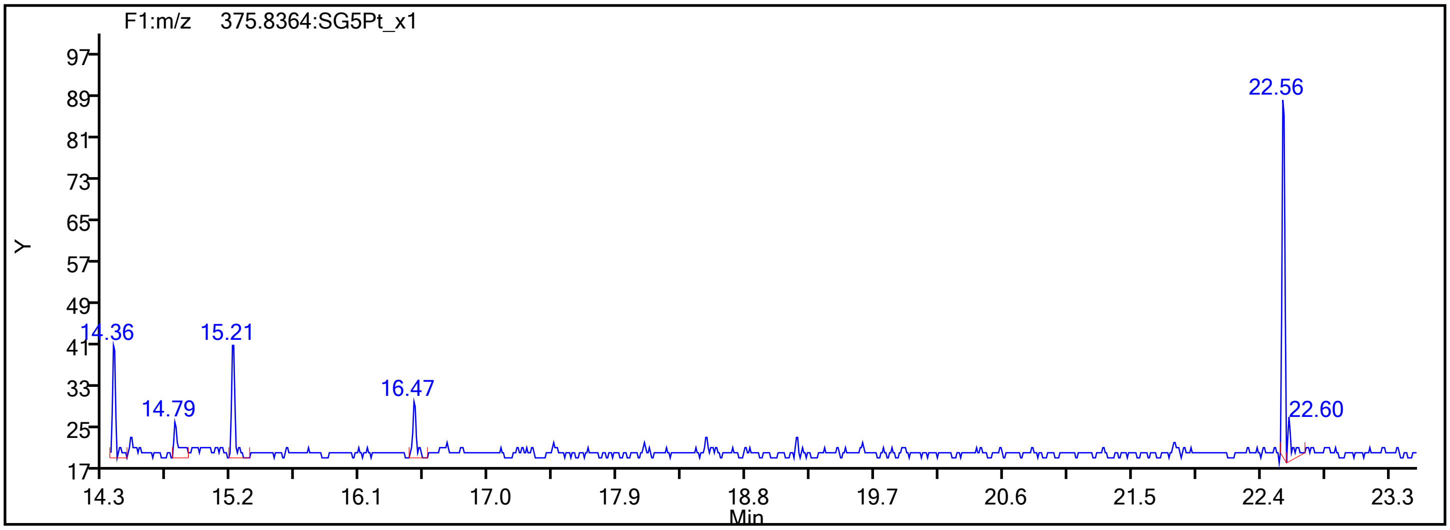

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

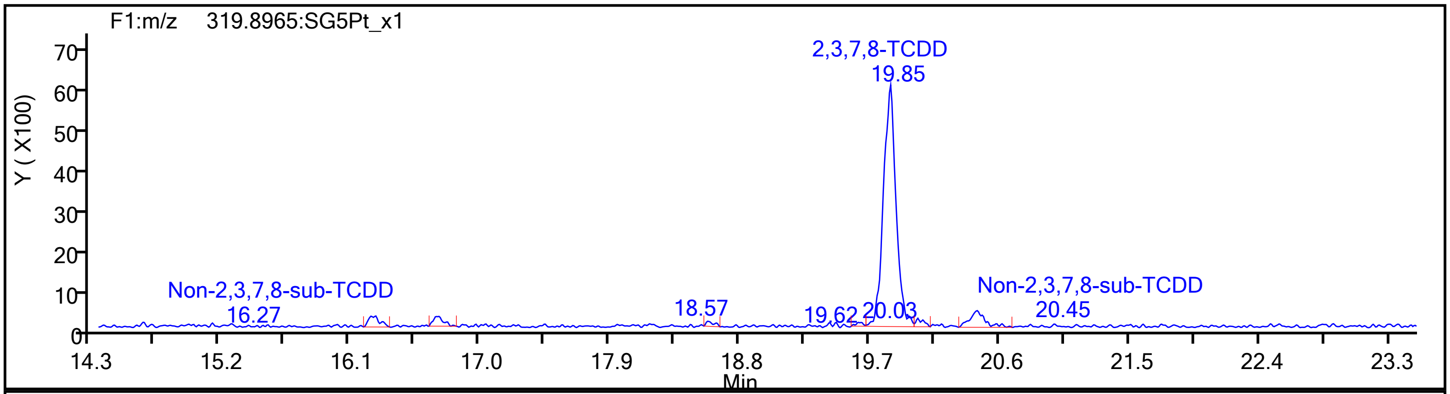

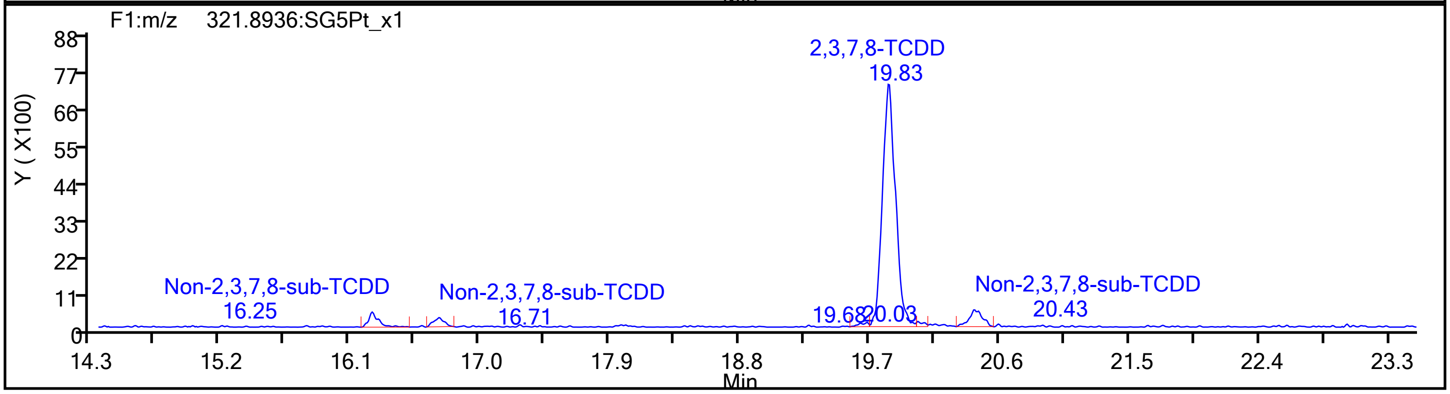

TCDD Standards

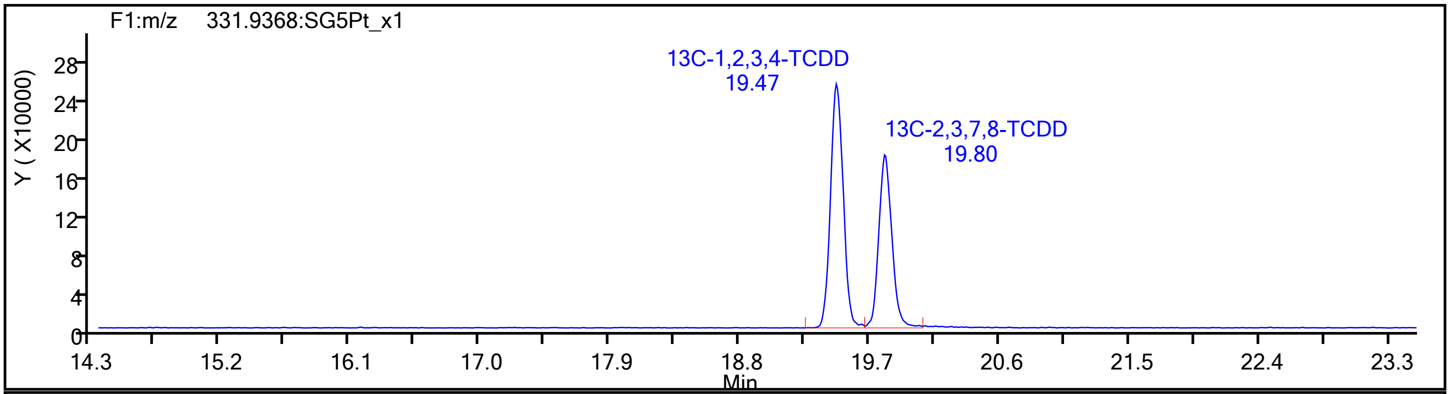

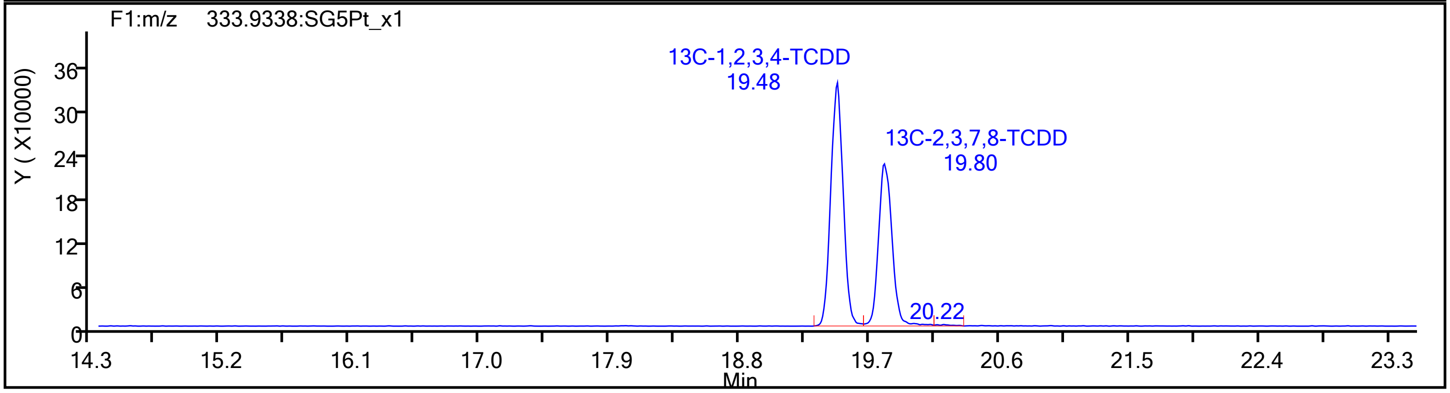

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d

Injection Date: 12-Mar-2021 17:44:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-10mm

Worklist#: 469779

Sample Line#: 10

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

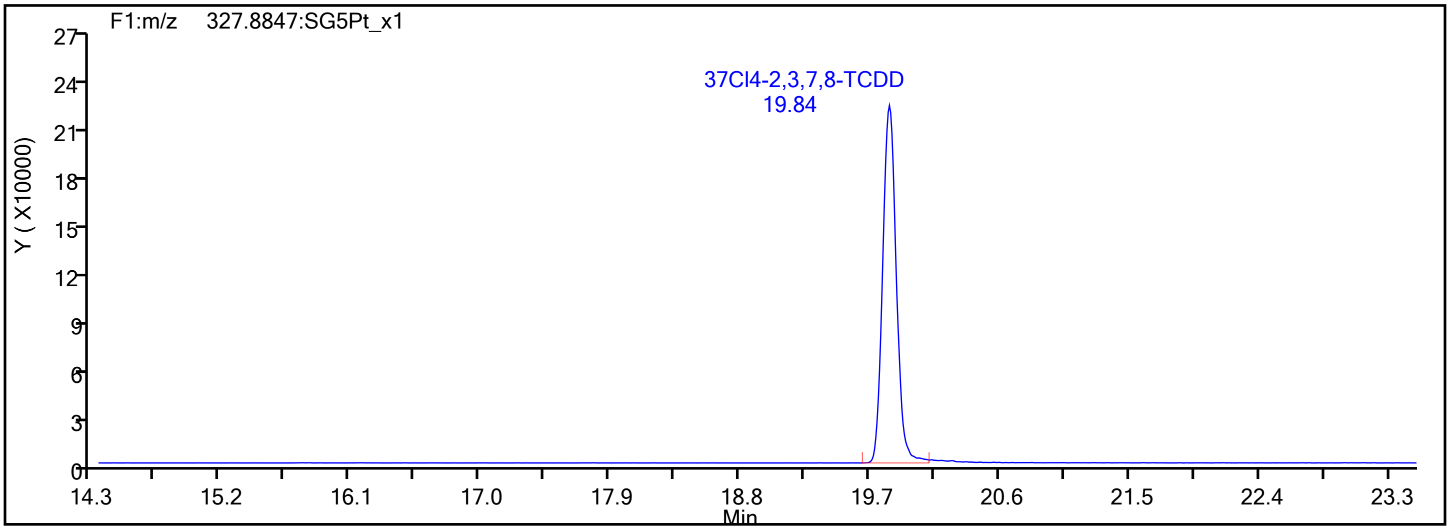

37Cl4-TCDD Standards

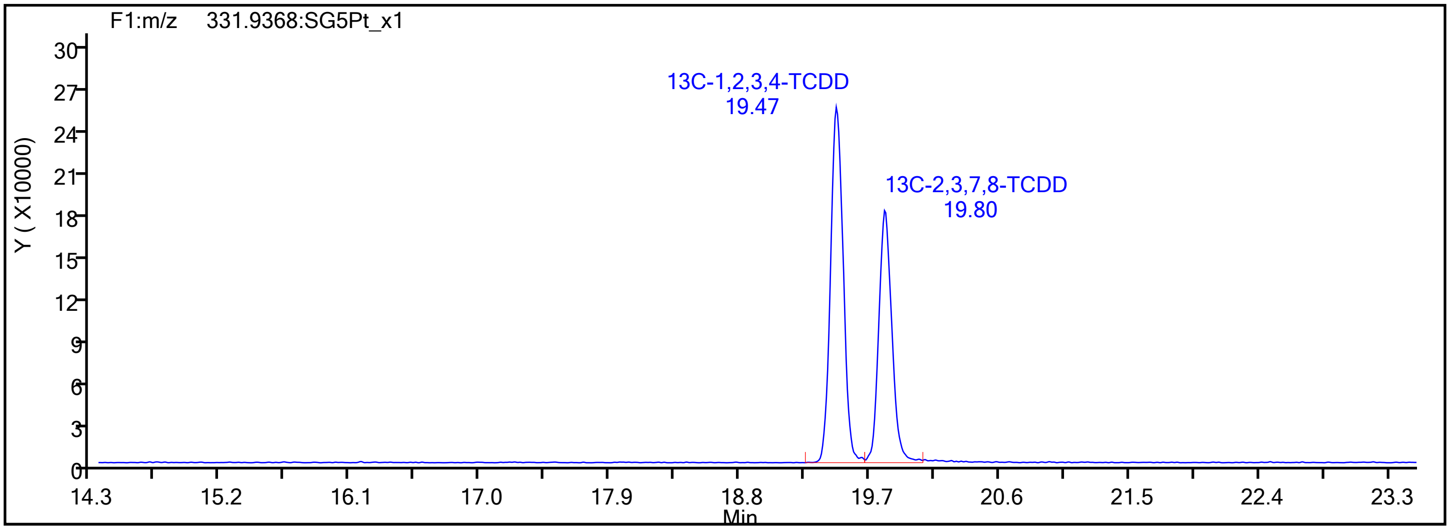

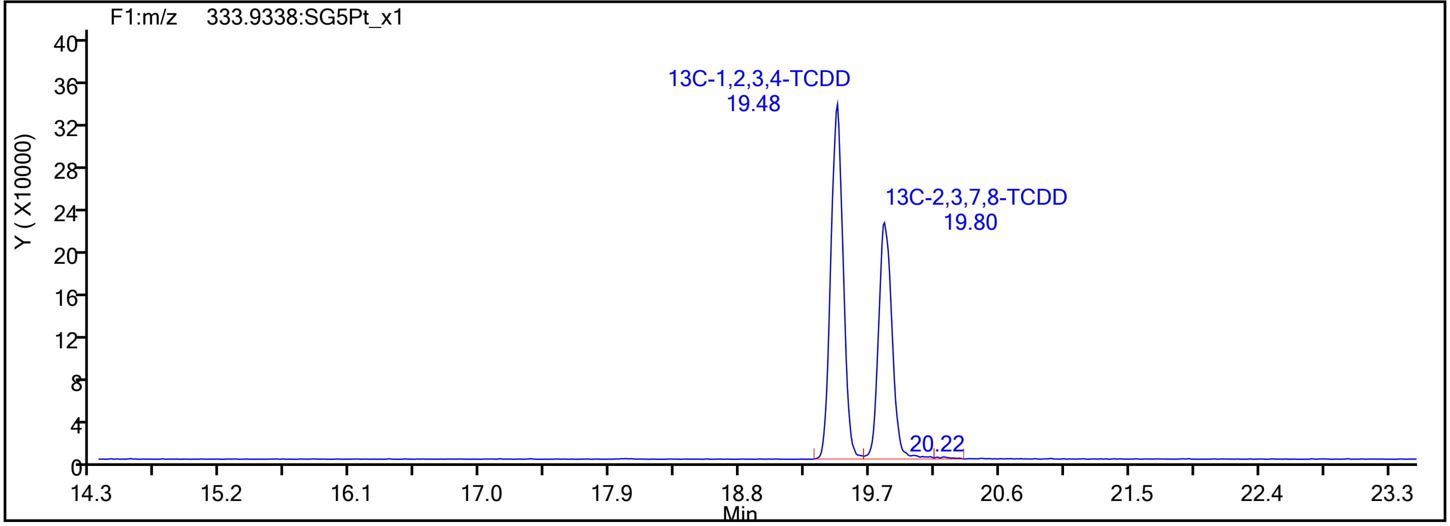

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

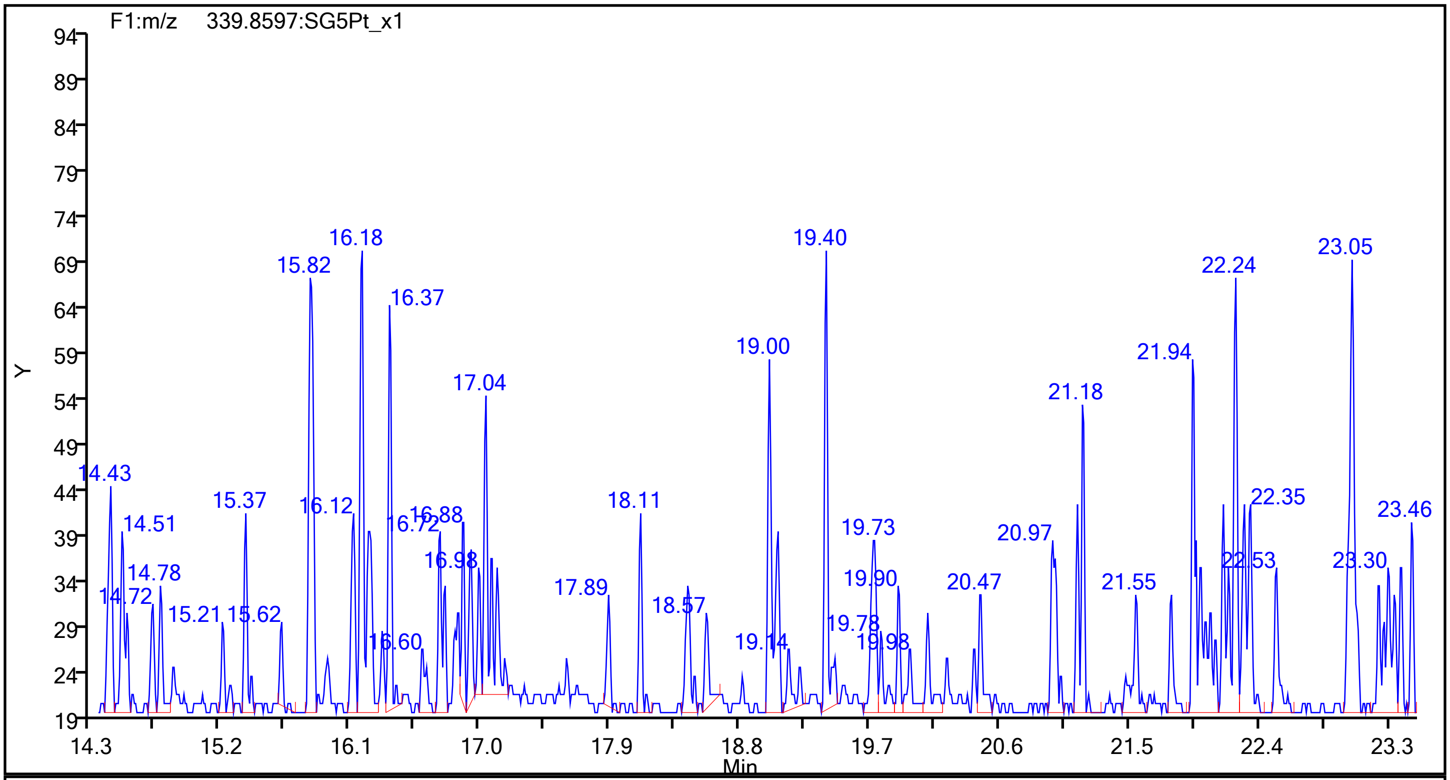

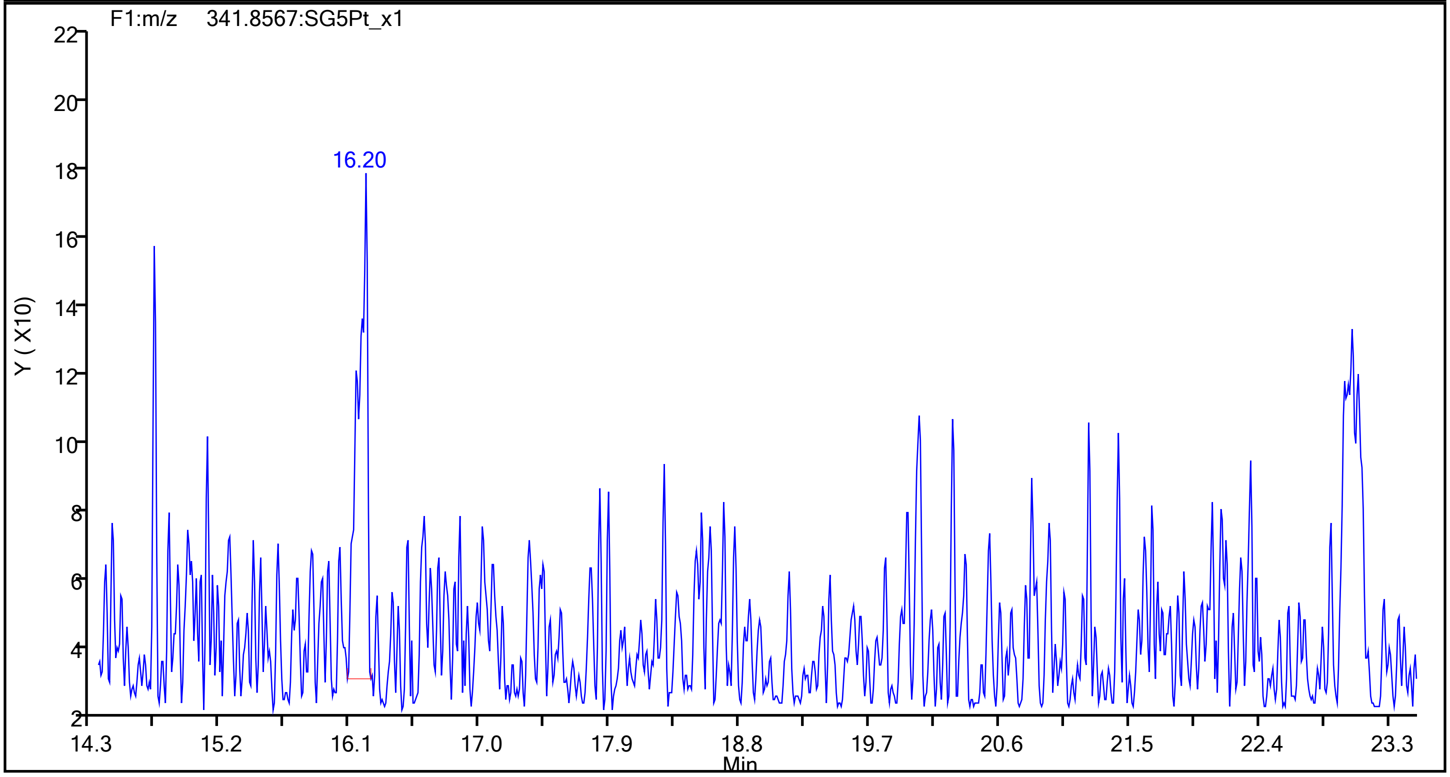

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Injection Date: 12-Mar-2021 17:44:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469779
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

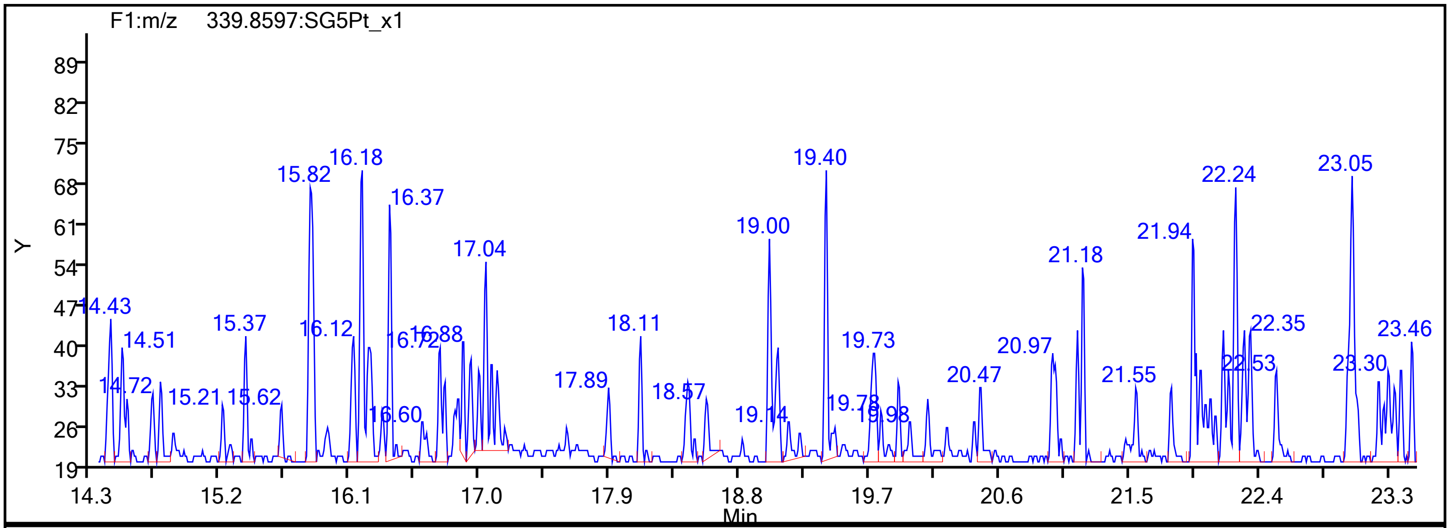

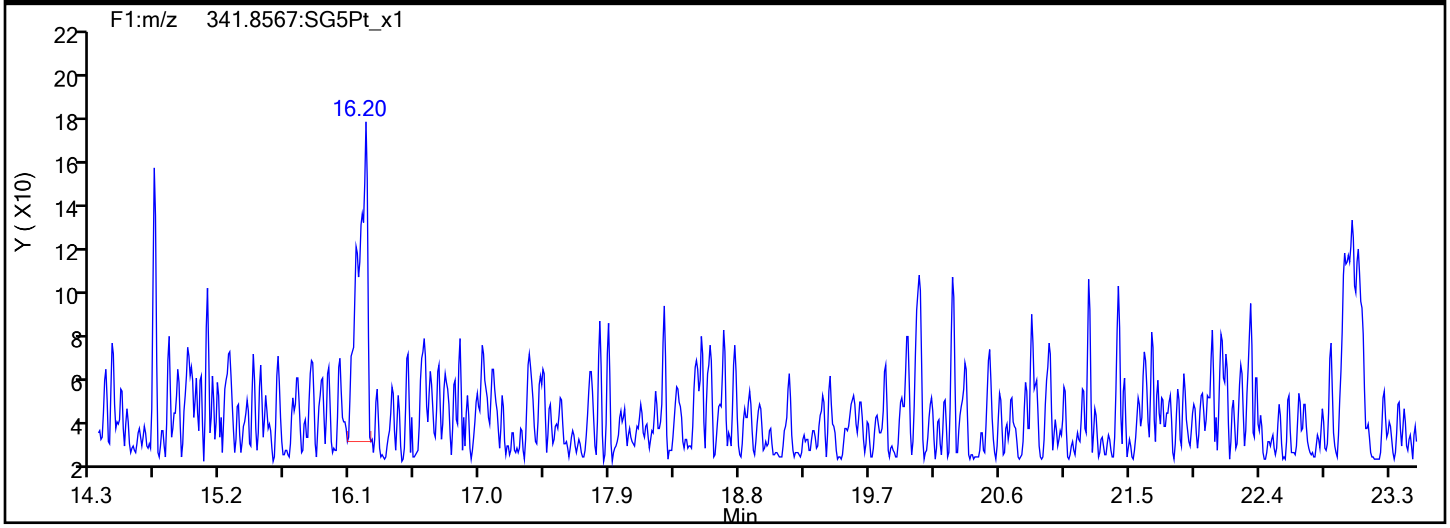

F1 PeCDFs Interference Mass

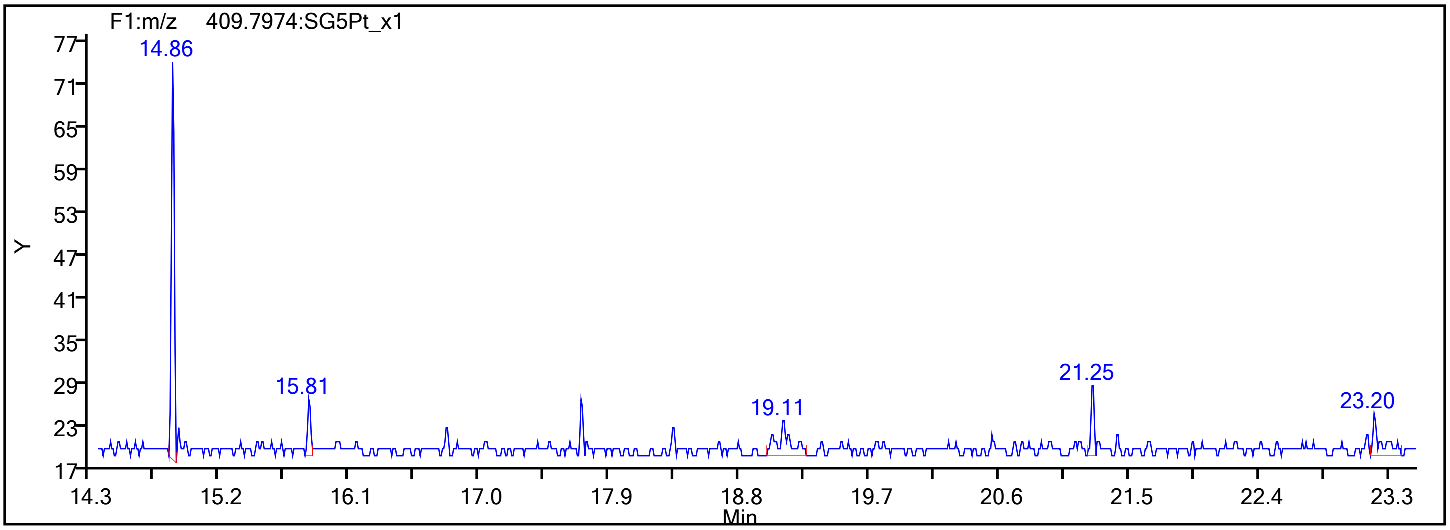

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

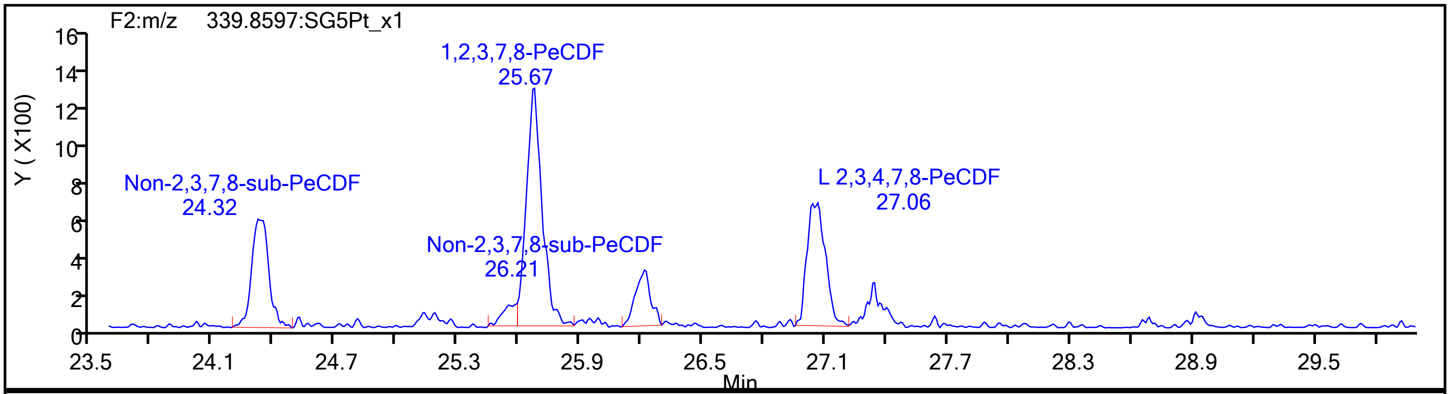

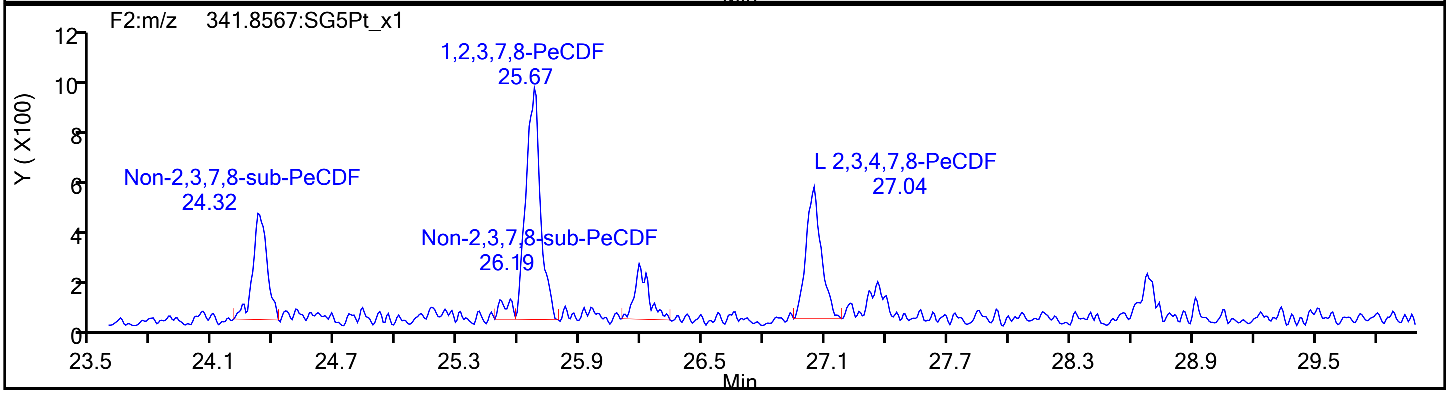

PeCDF Standards

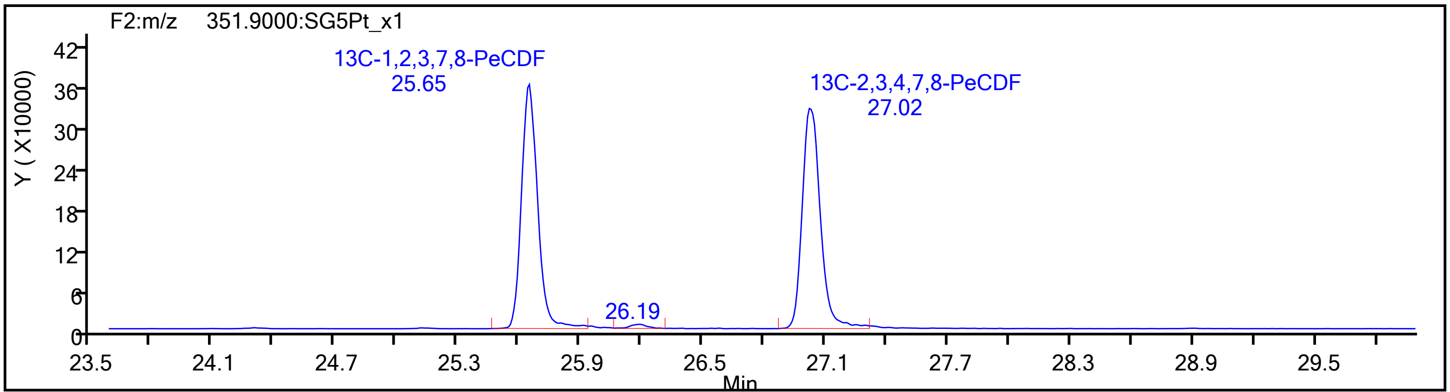

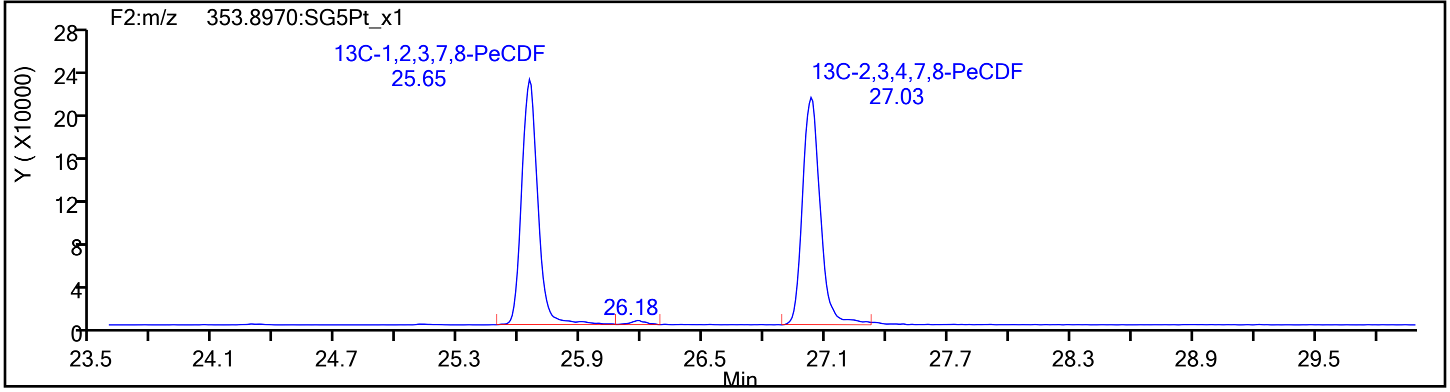

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

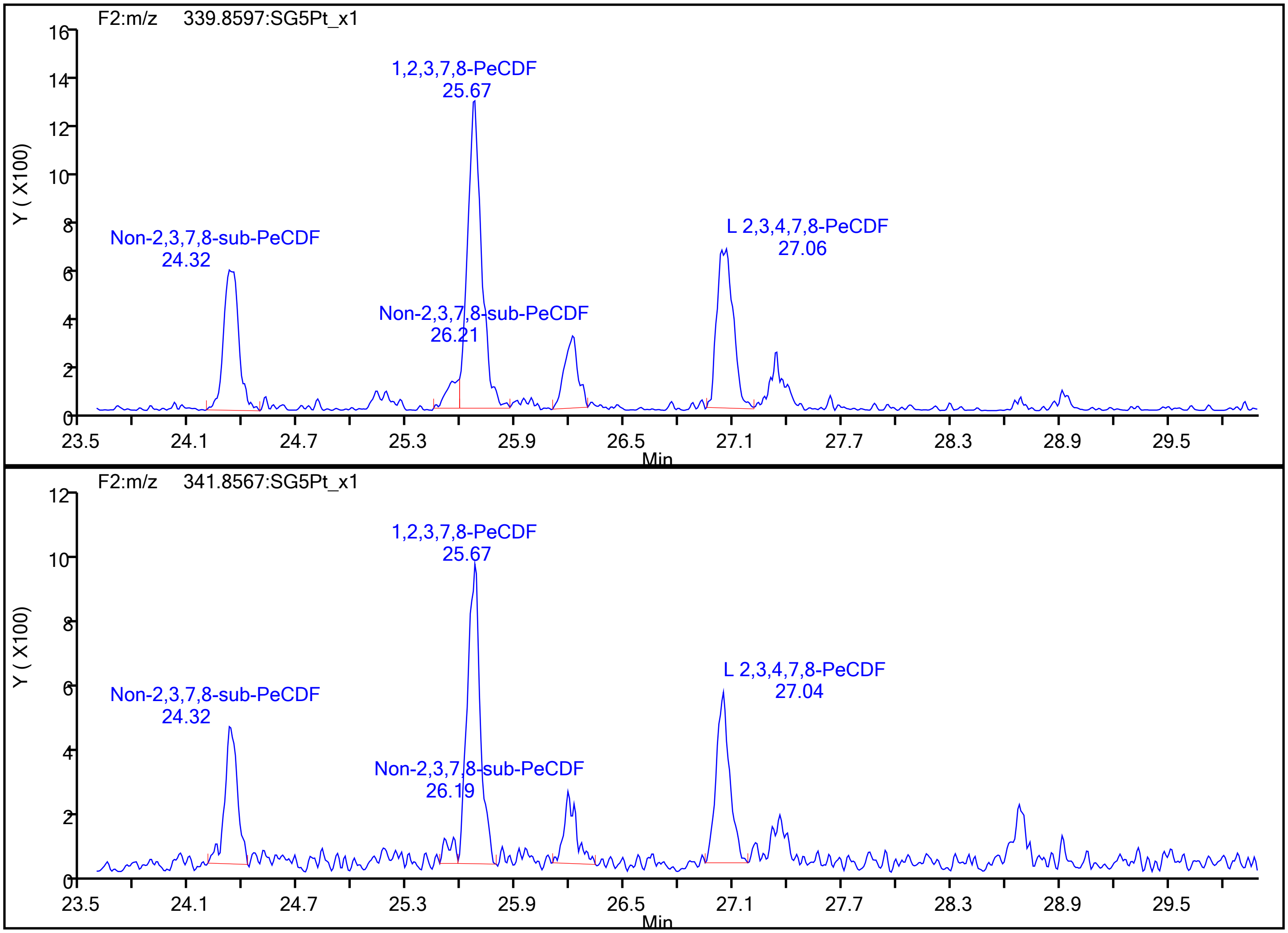

PeCDF Interference Mass

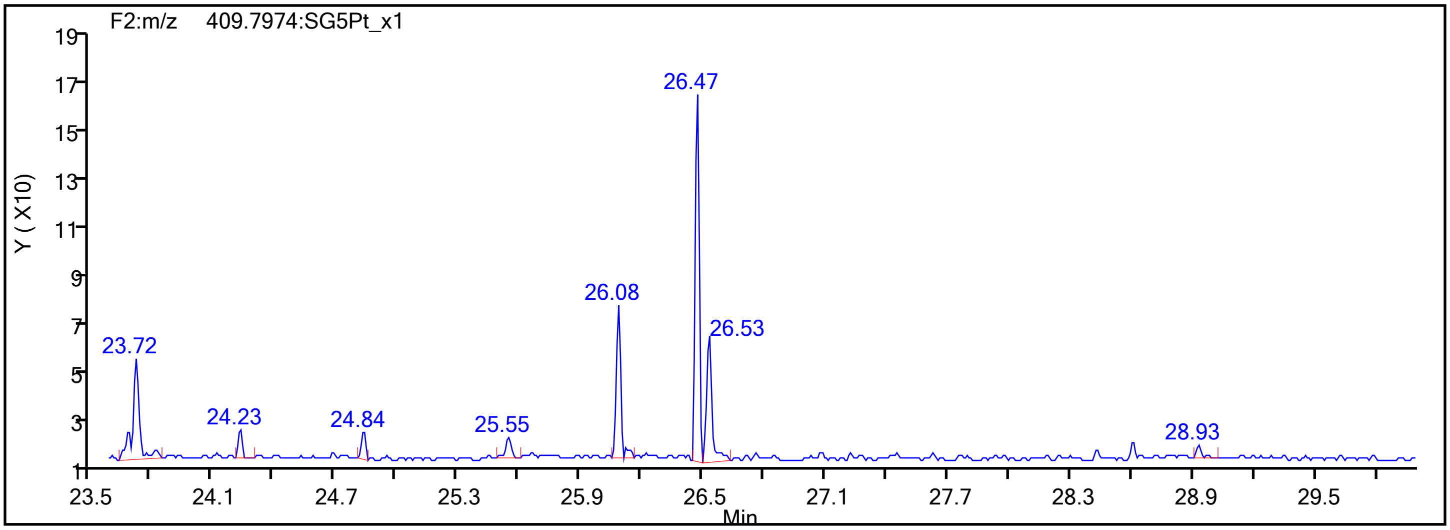

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

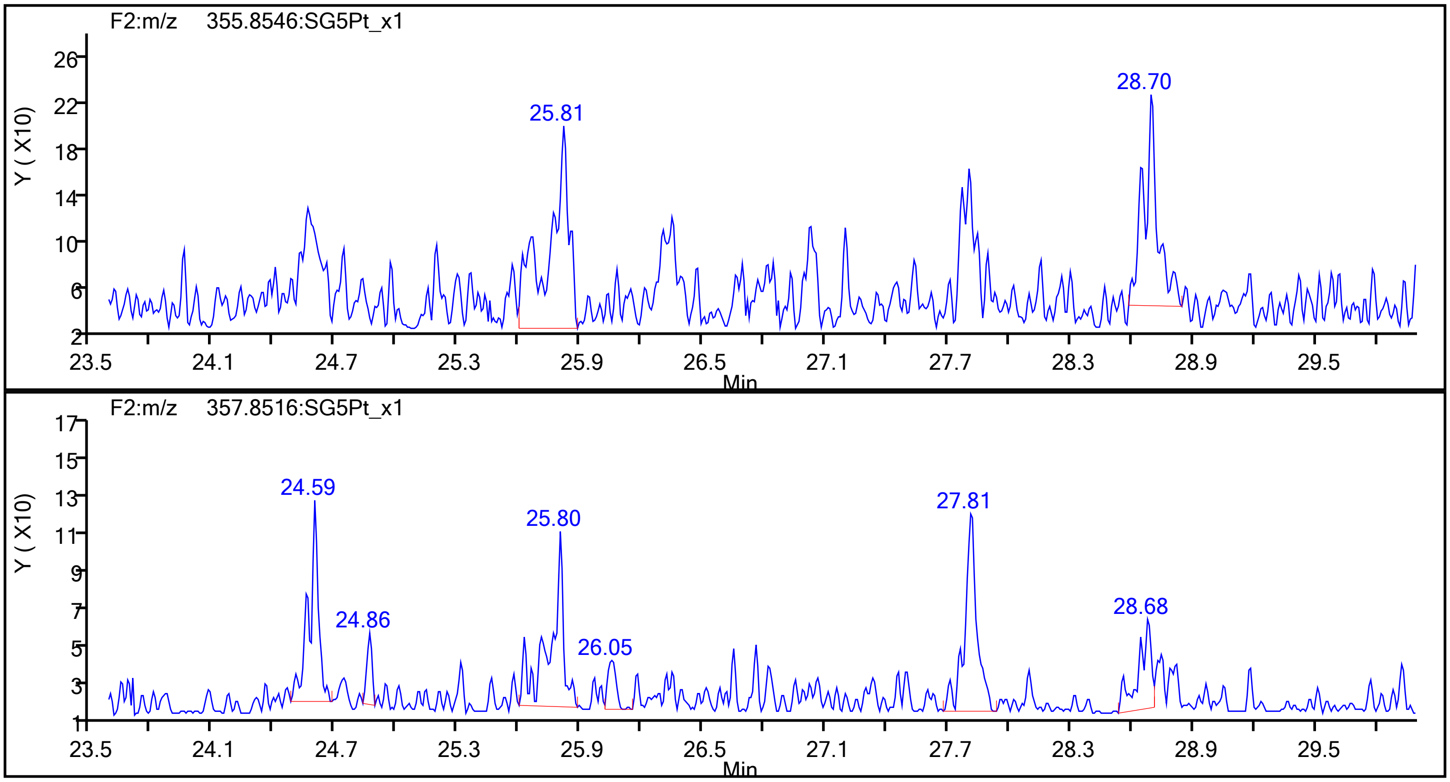

PeCDD Standards

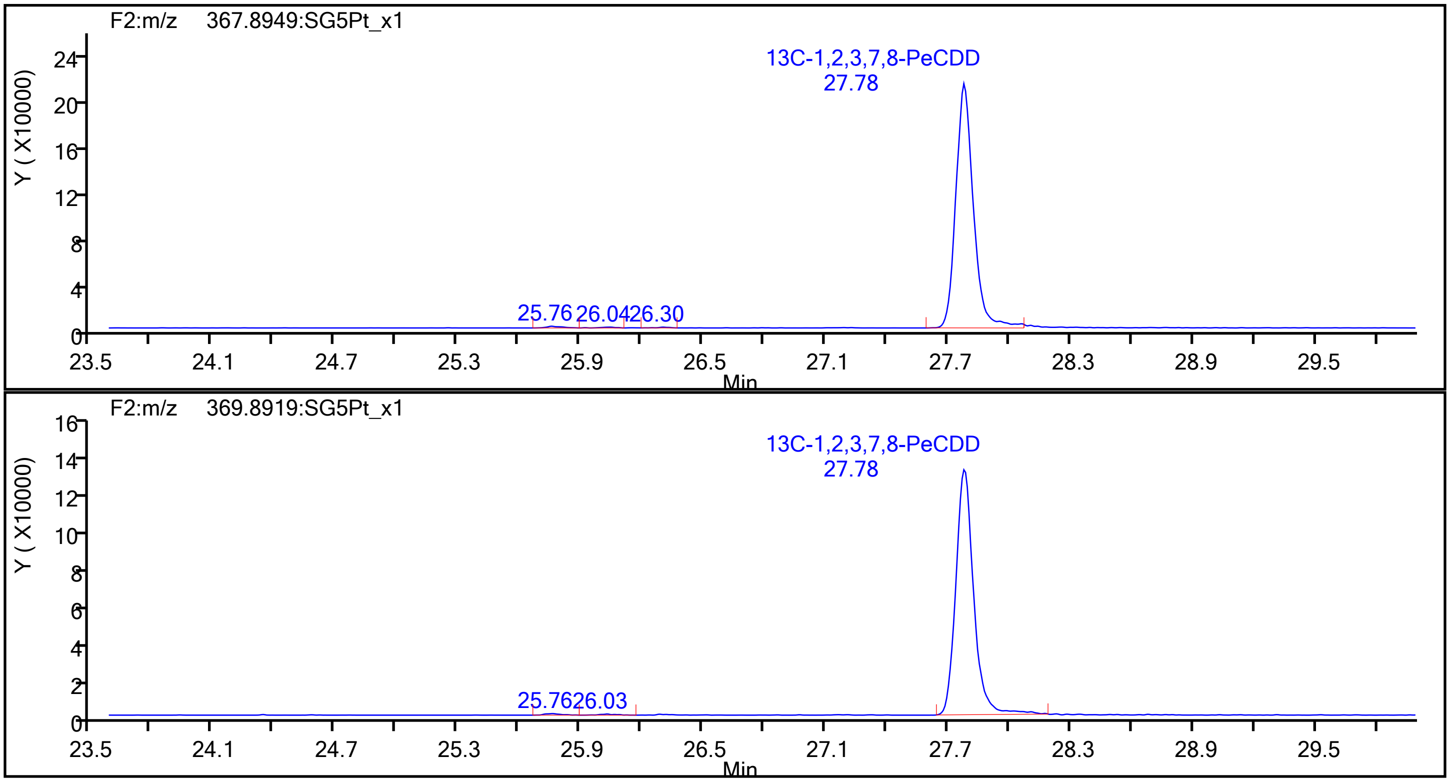

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d

Injection Date: 12-Mar-2021 17:44:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-10mm

Worklist#: 469779 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

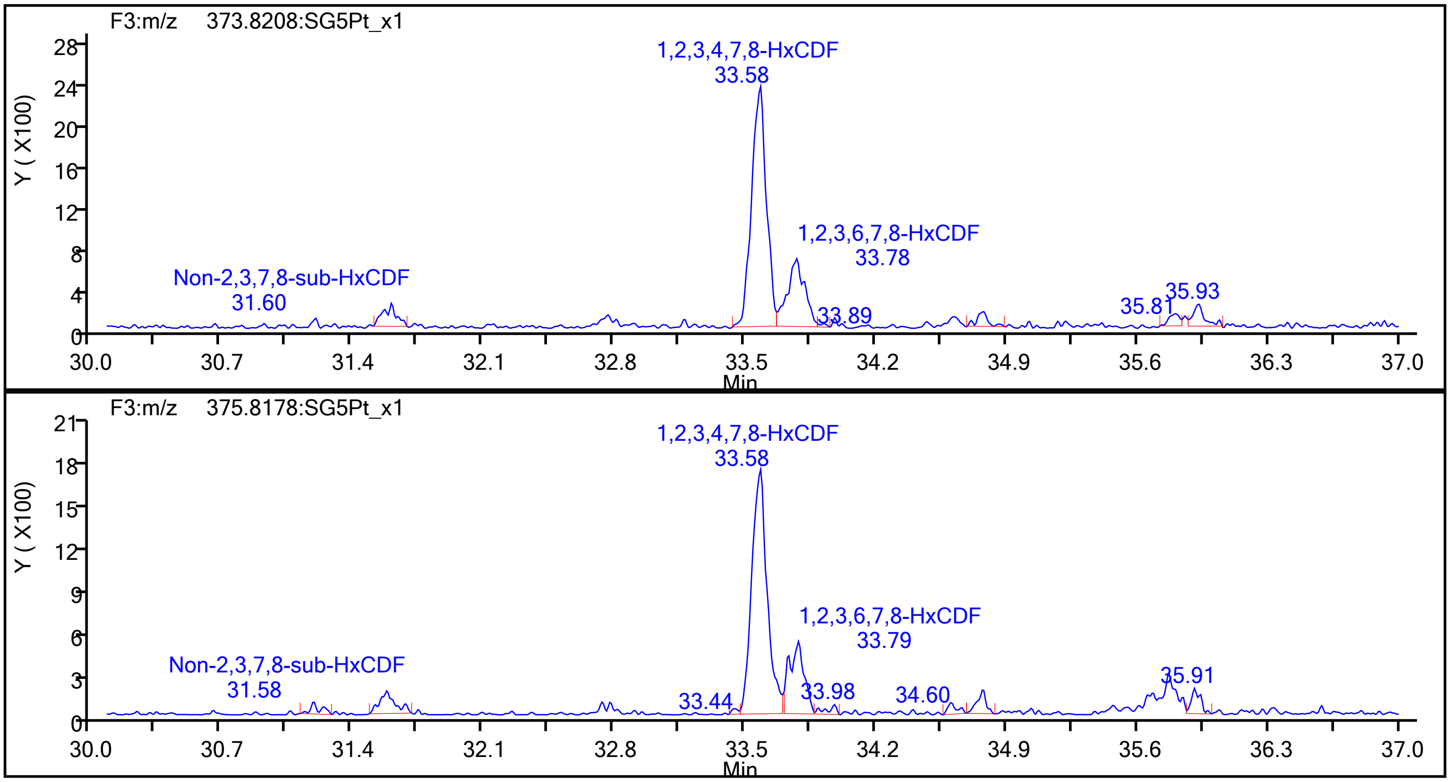

HxCDF Standards

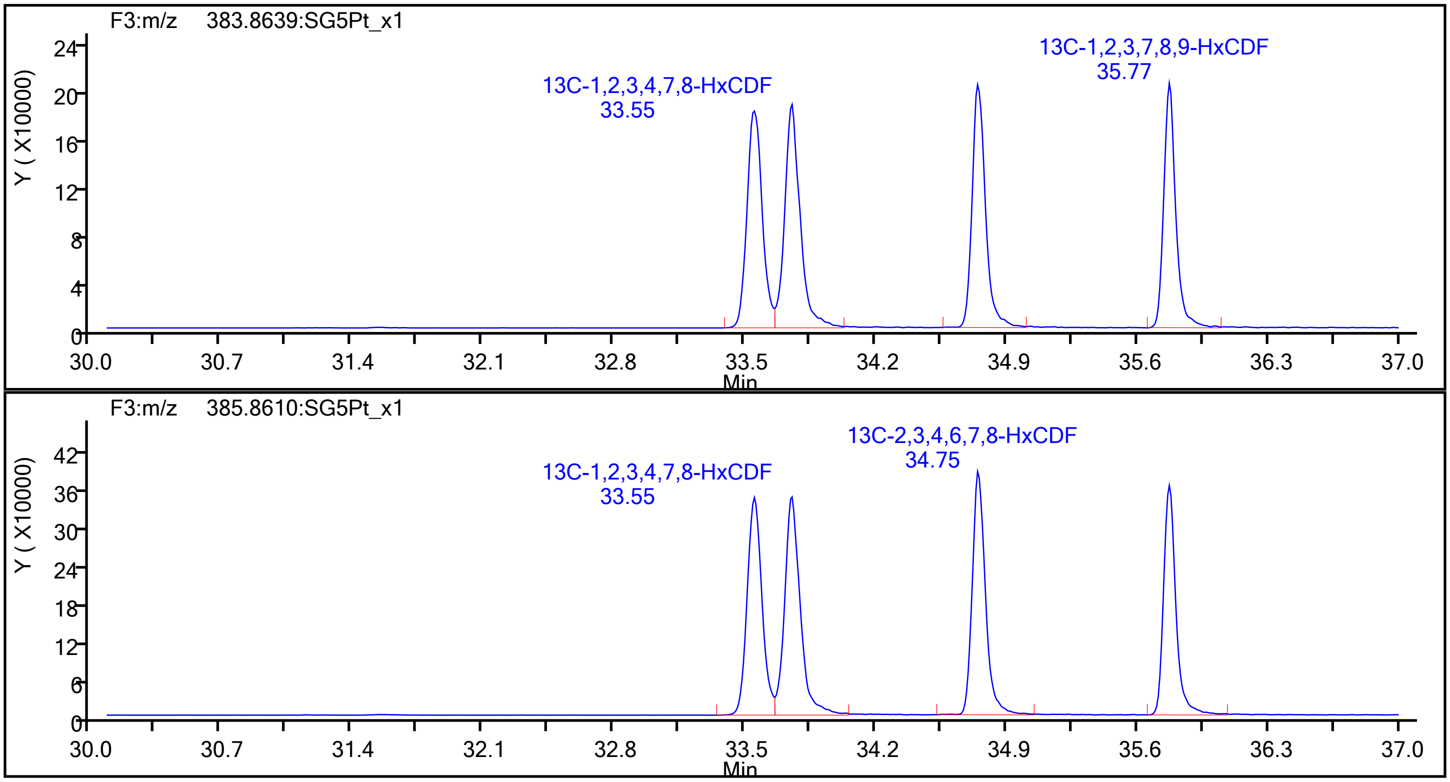

Report Date: 16-Mar-2021 09:34:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d

Injection Date: 12-Mar-2021 17:44:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-10mm

Worklist#: 469779
Sample Line#: 10

Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

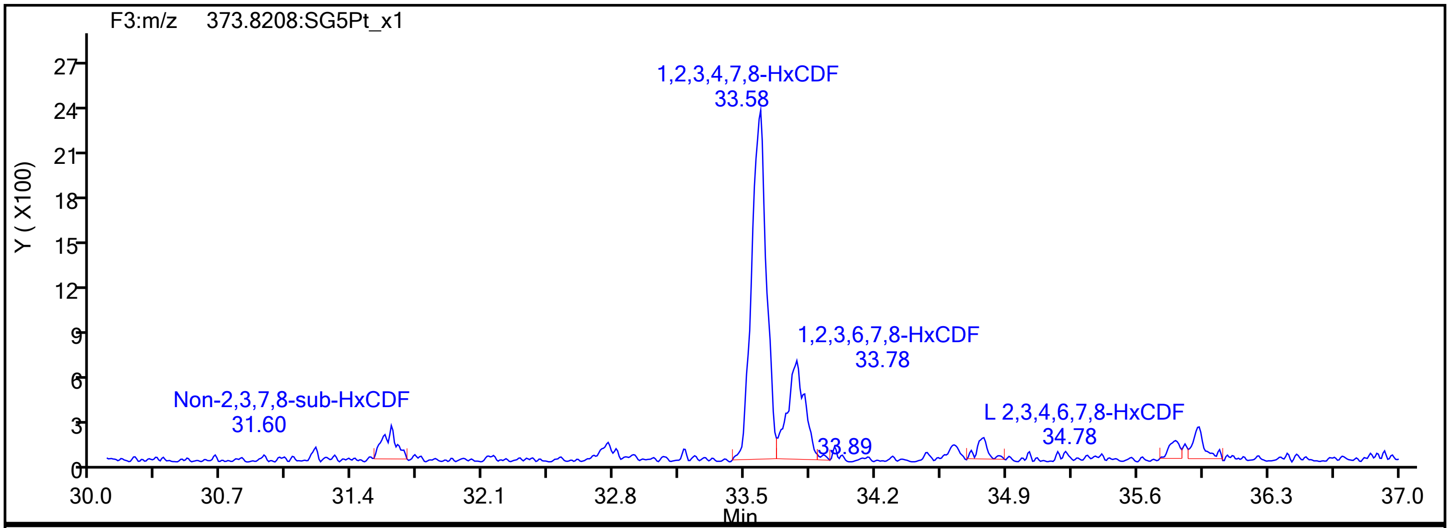

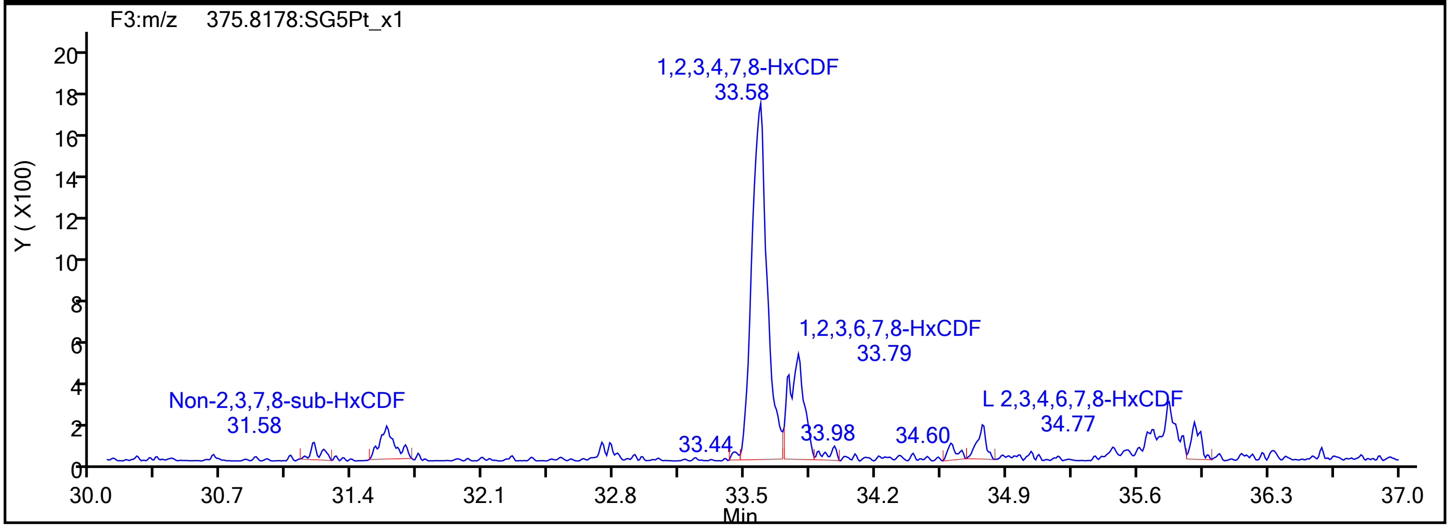

HxCDF Interference Mass

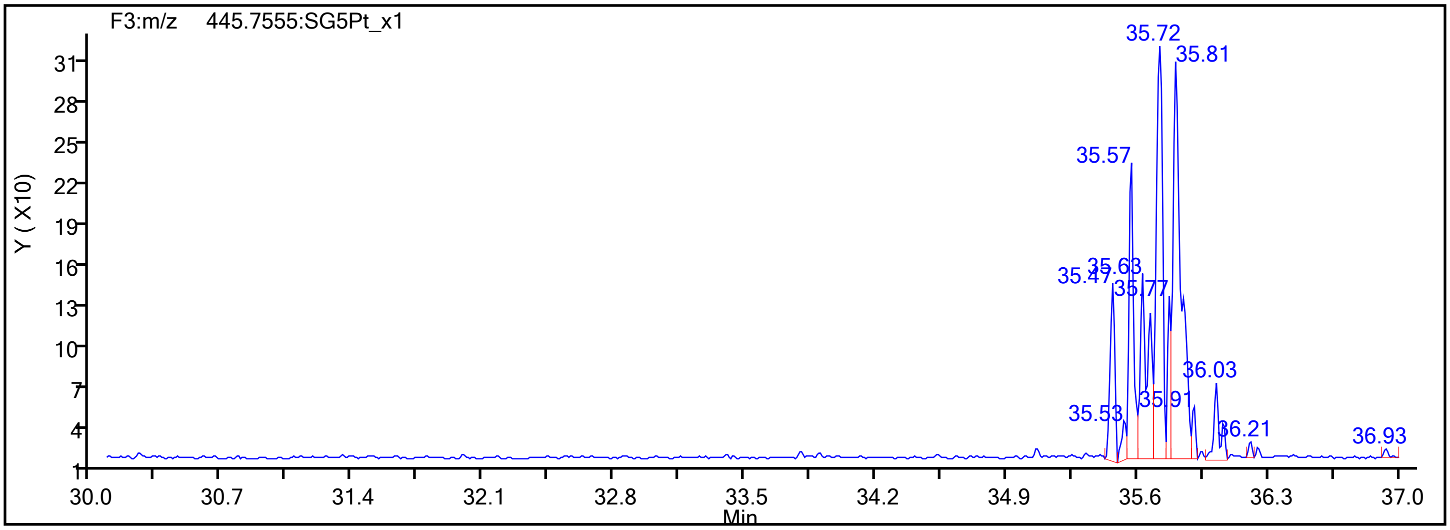

Report Date: 16-Mar-2021 09:34:39　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

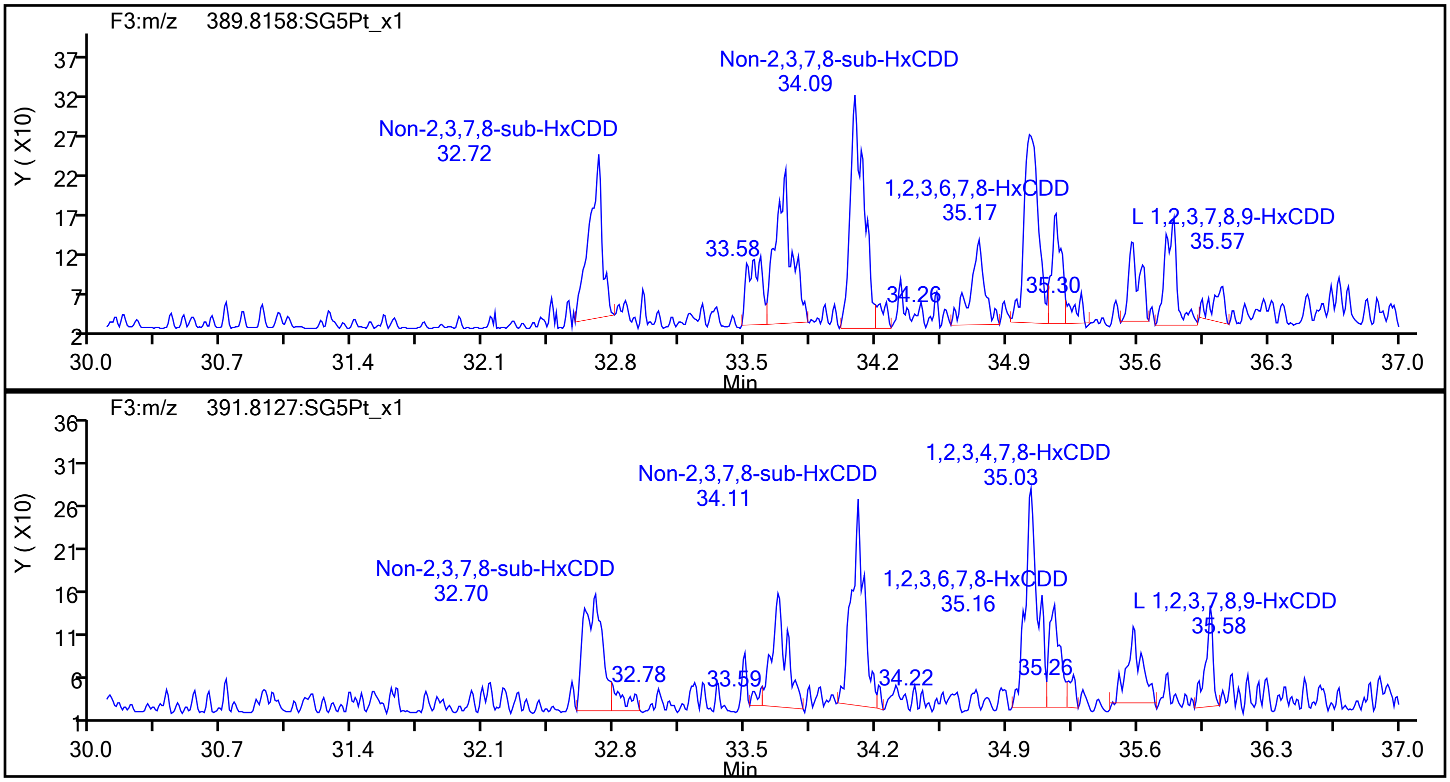

HxCDD Standards

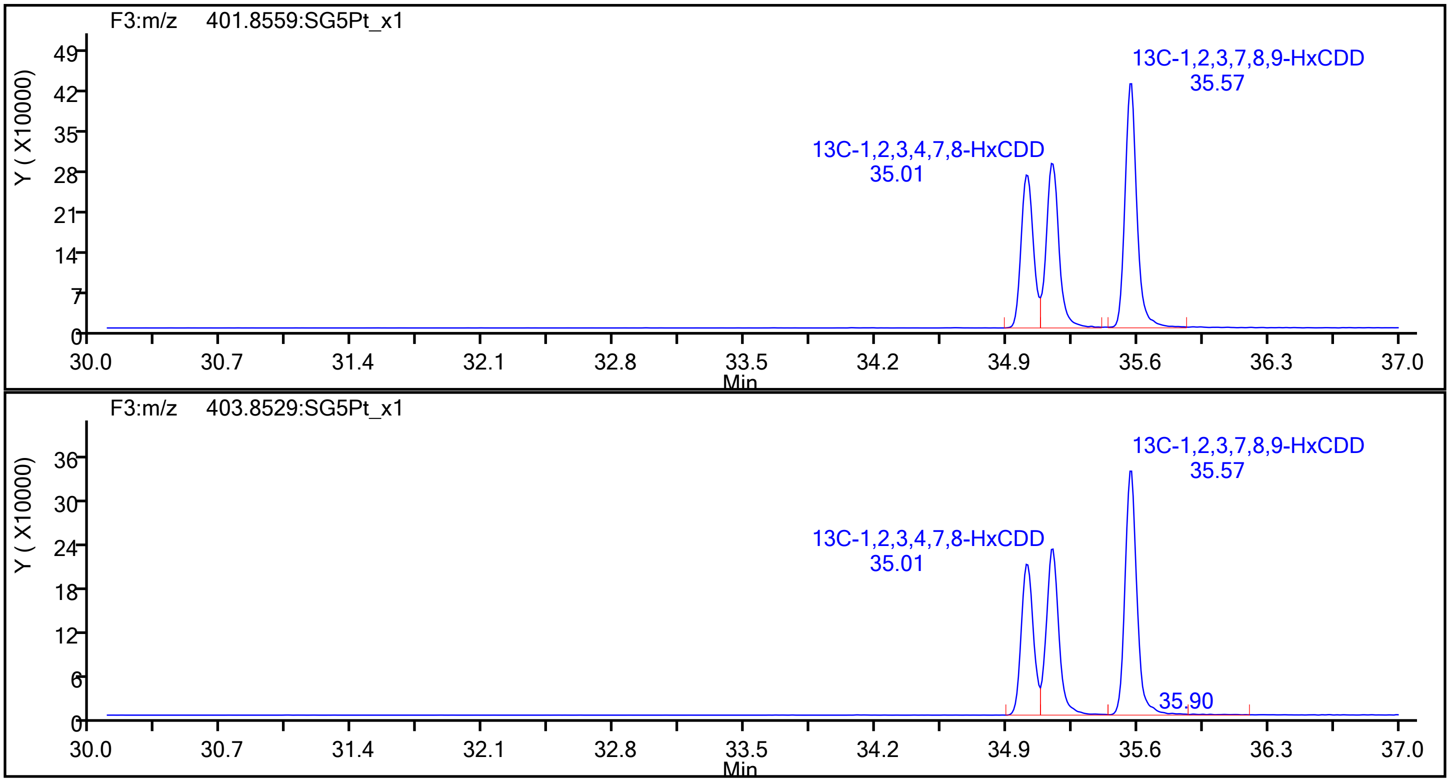

Report Date: 16-Mar-2021 09:34:39　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Injection Date: 12-Mar-2021 17:44:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469779
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

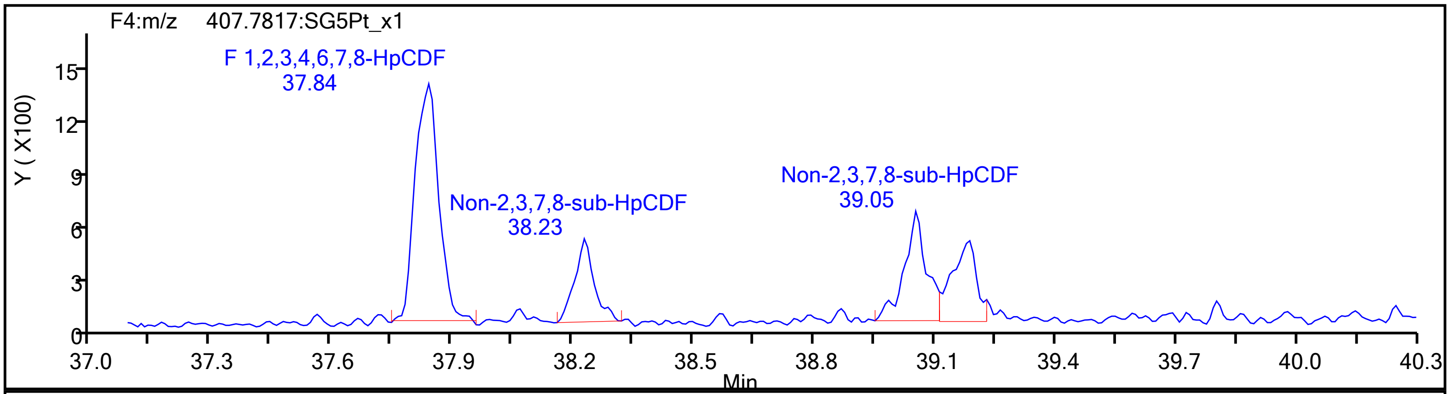

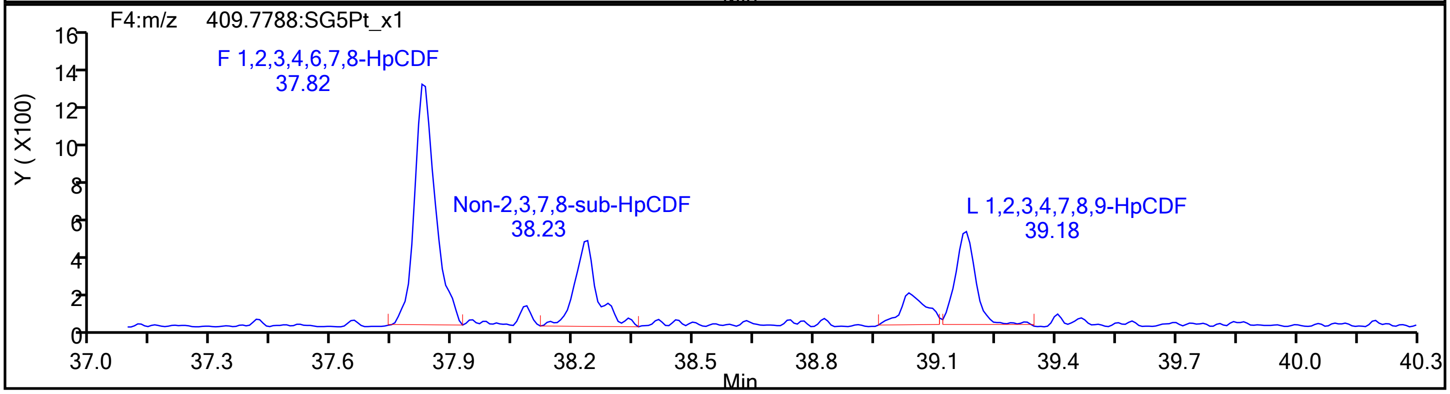

HpCDF Standards

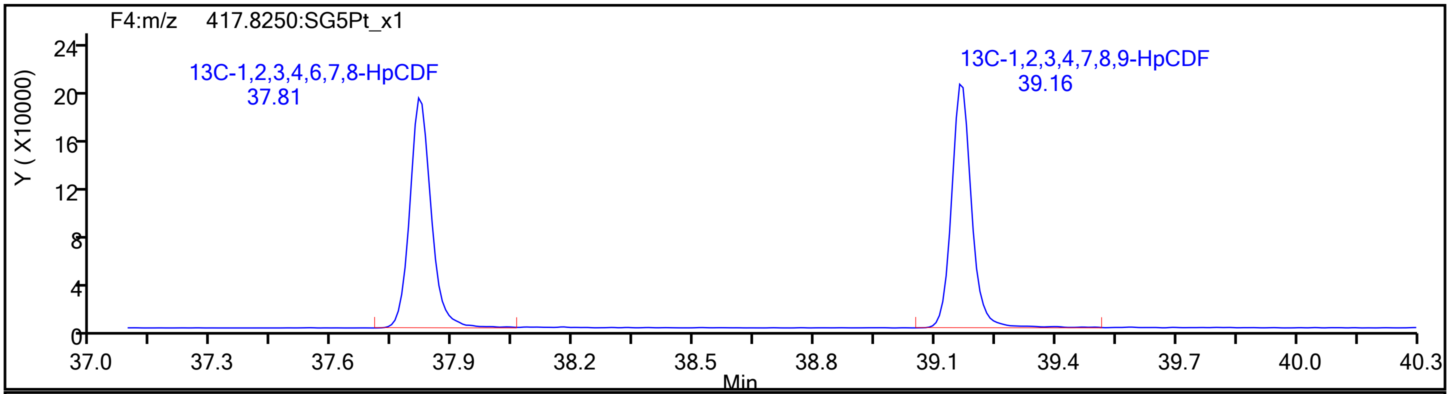

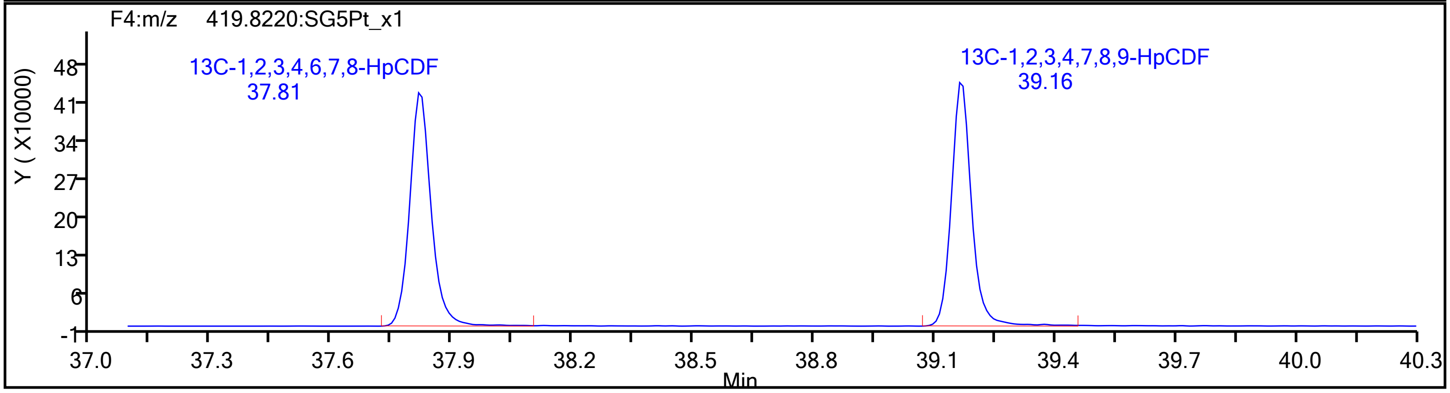

Report Date: 16-Mar-2021 09:34:40   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Injection Date: 12-Mar-2021 17:44:00   Injection Vol: 2.0 ul
Instrument ID: DFS 1   Operator ID: Xcalibur_System
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469779   Sample Line#: 10
Column Type: DB-5   Column Dia: 0.32 mm

HpCDF

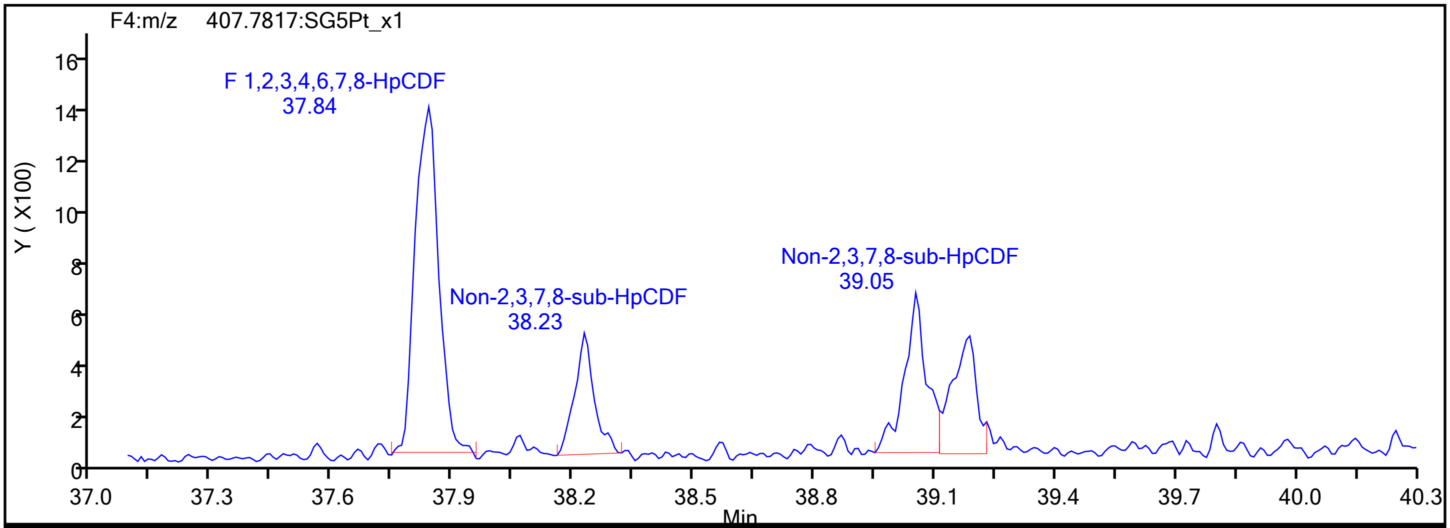

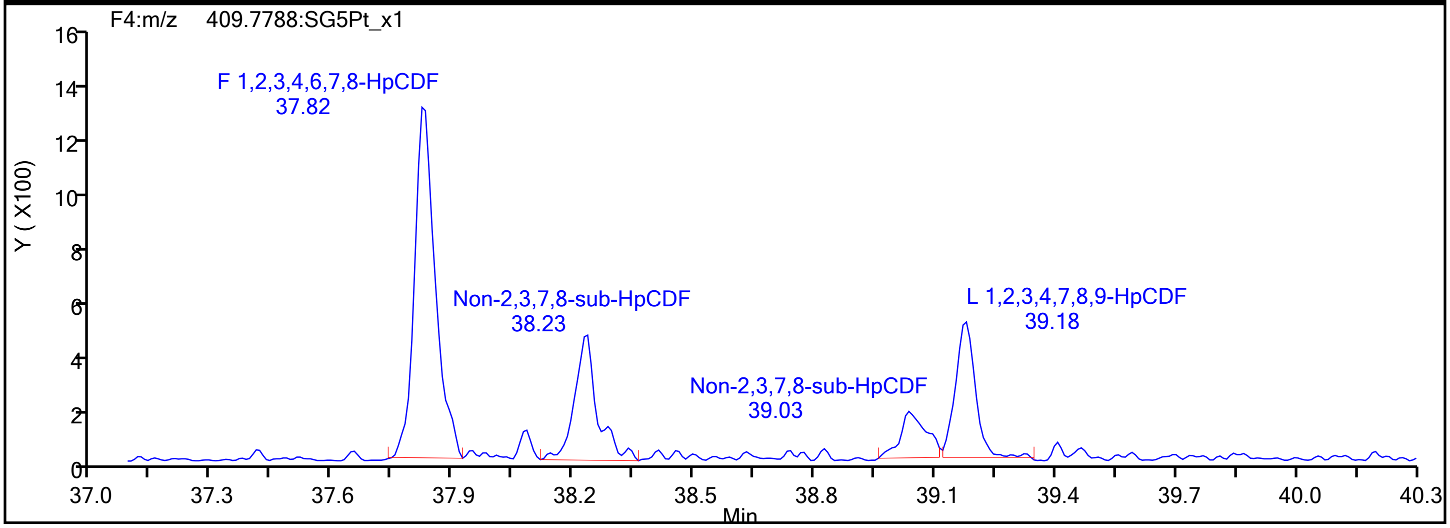

HpCDF Interference Mass

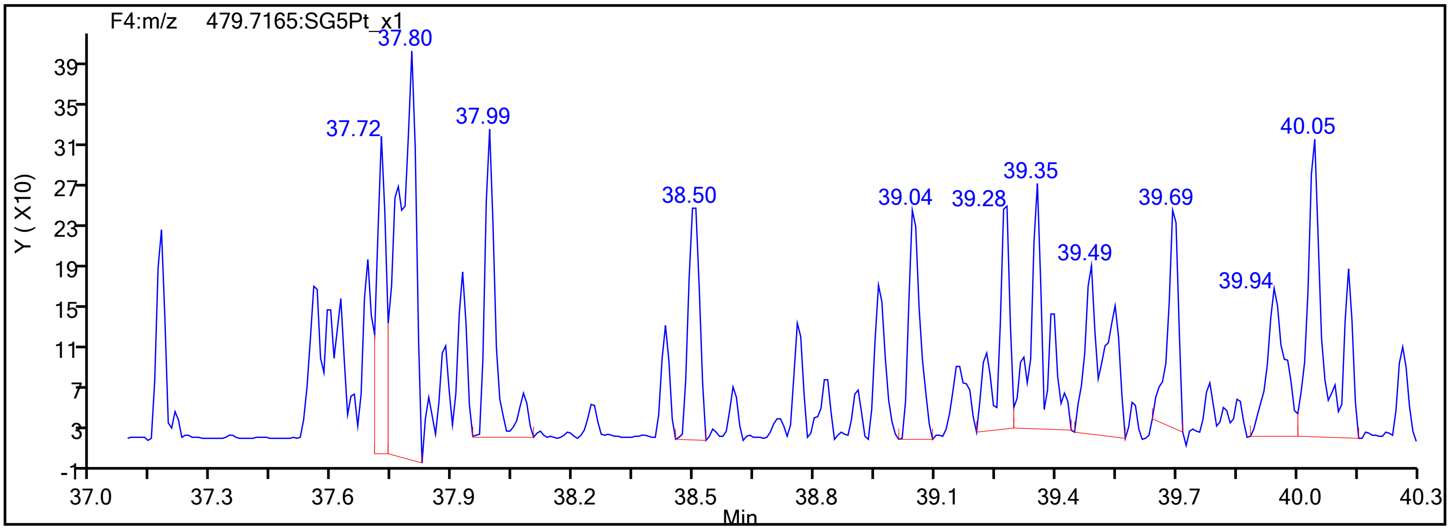

Report Date: 16-Mar-2021 09:34:40 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

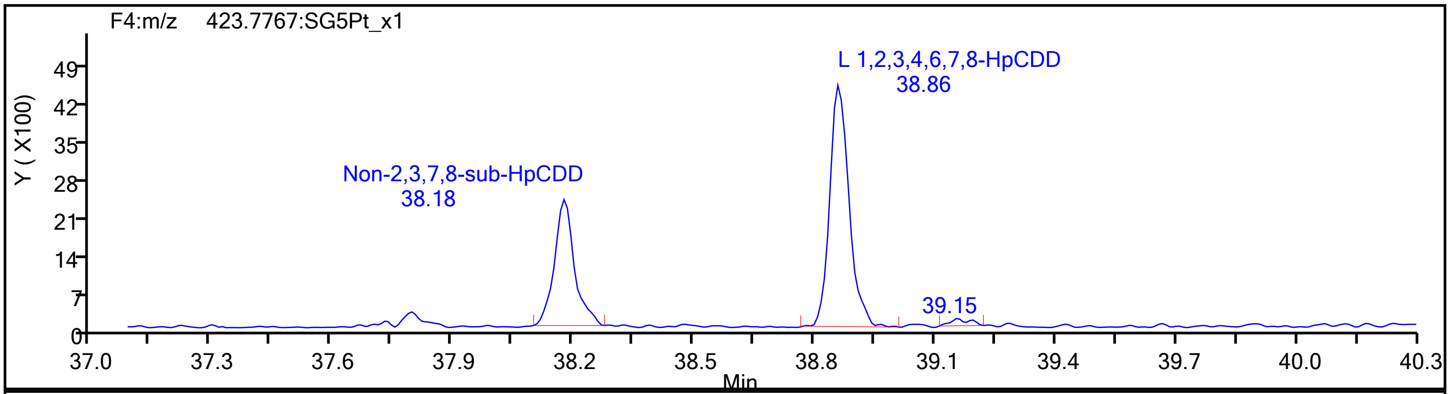

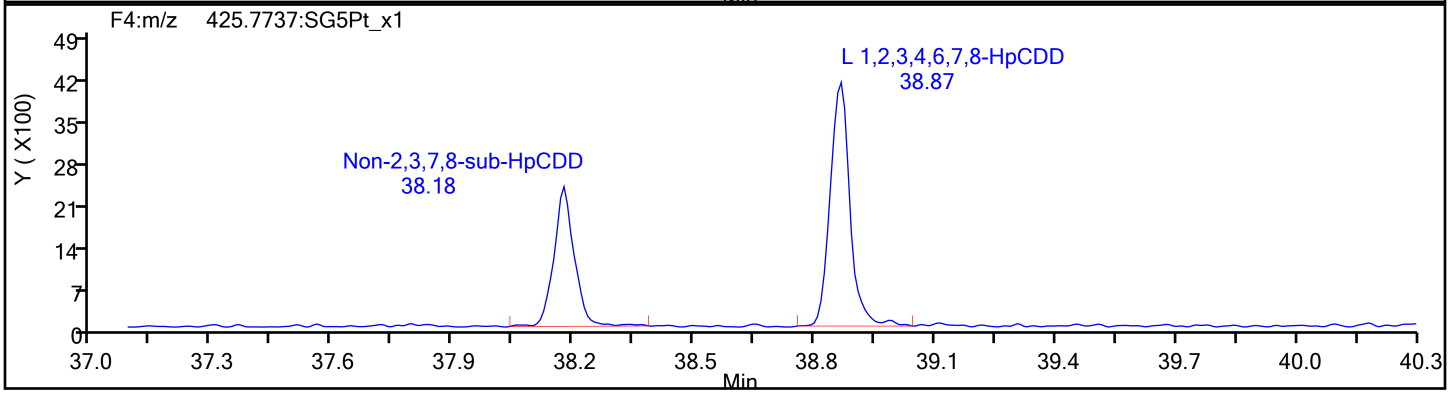

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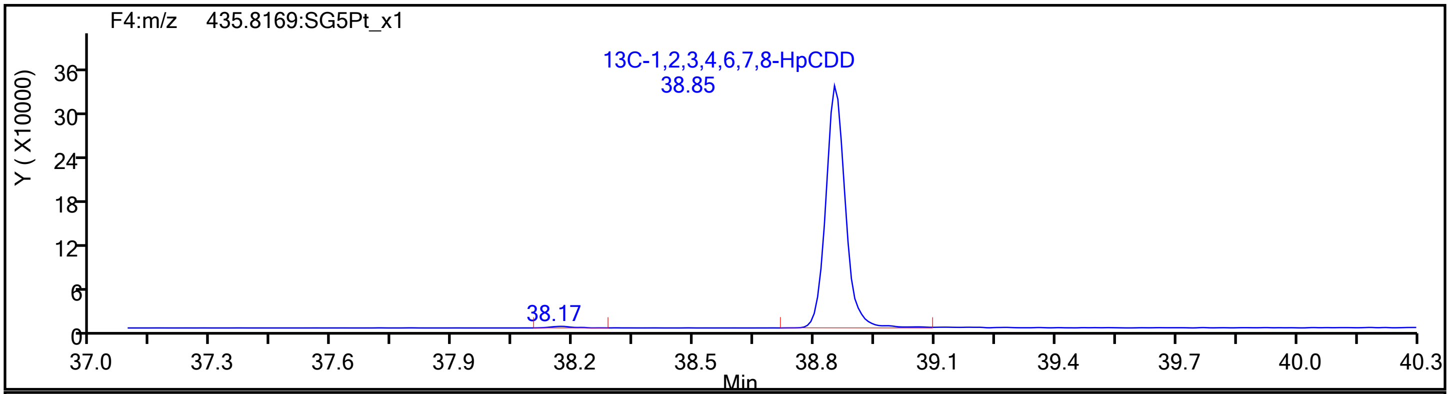

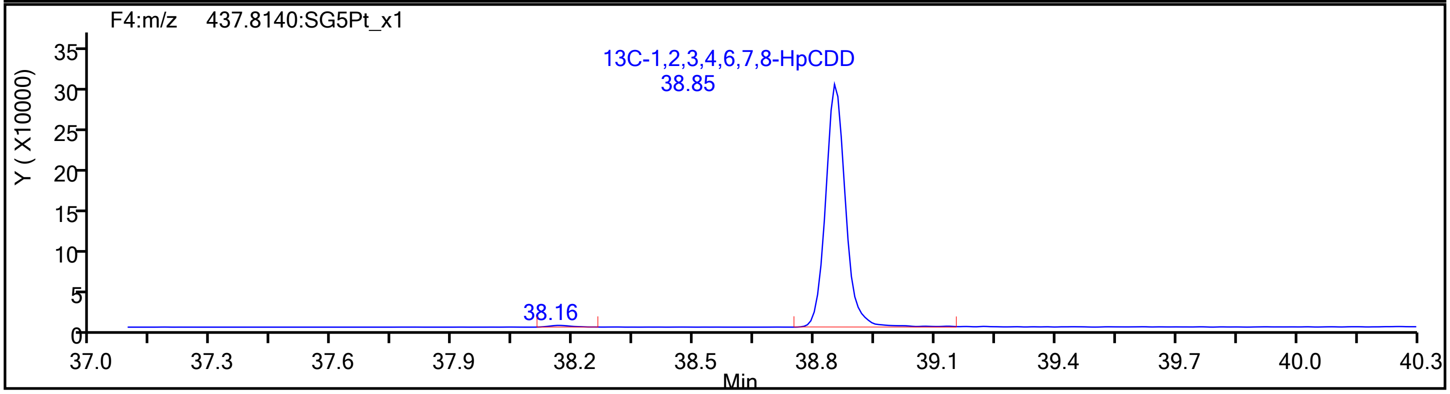

Report Date: 16-Mar-2021 09:34:40　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d
Injection Date: 12-Mar-2021 17:44:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-10mm
Worklist#: 469779
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

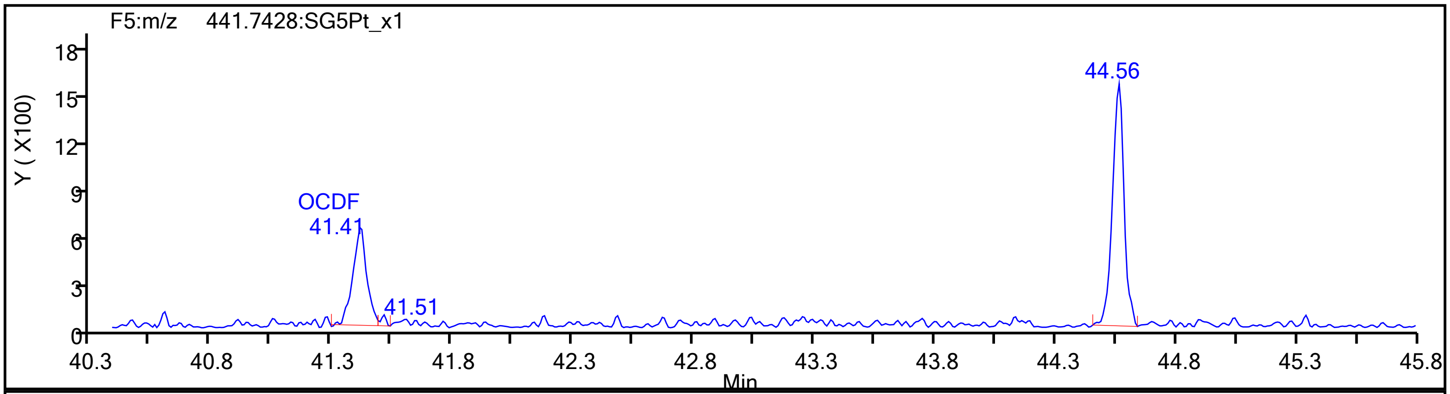

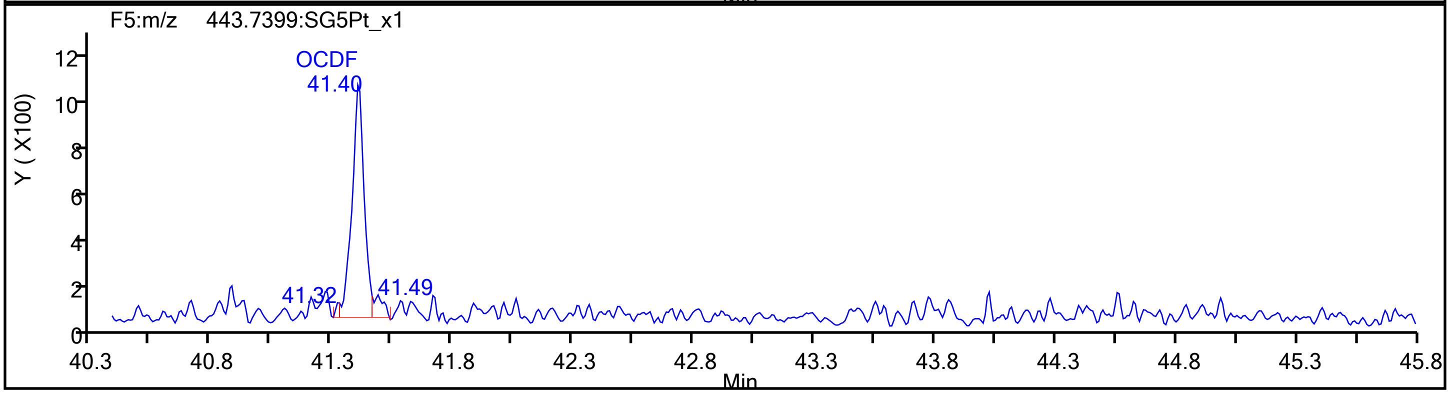

OCDF Standards

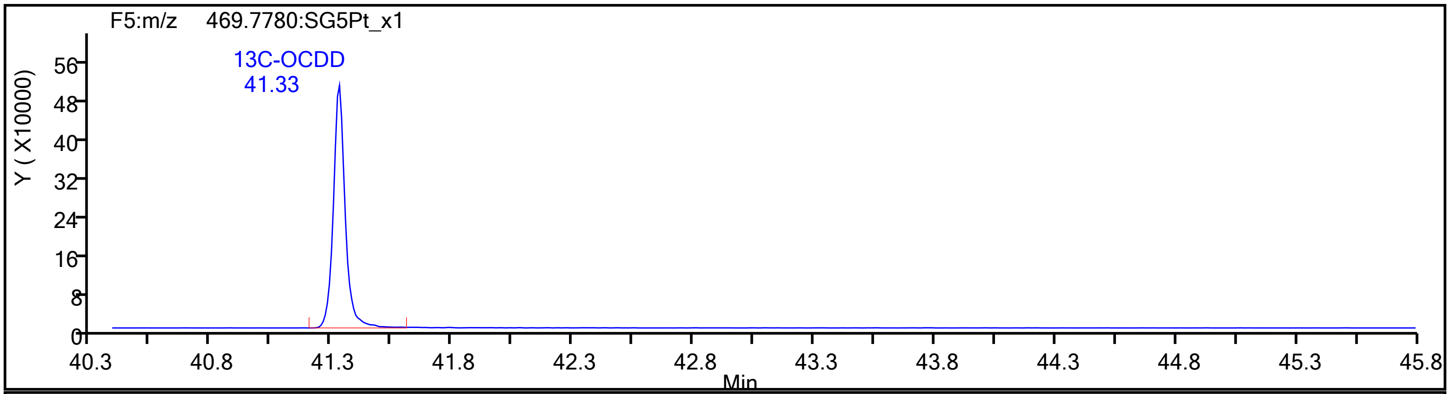

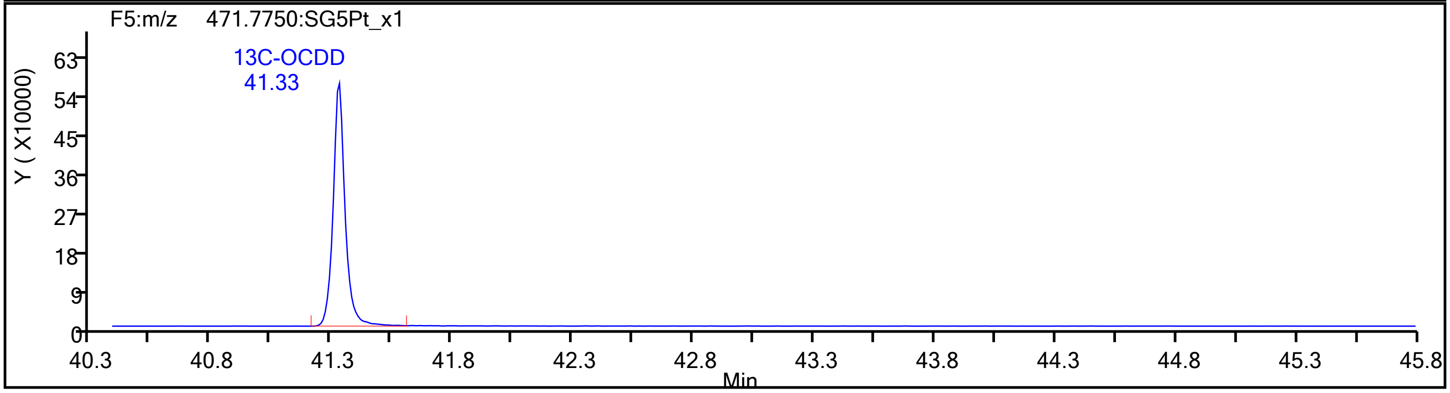

Report Date: 16-Mar-2021 09:34:40 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

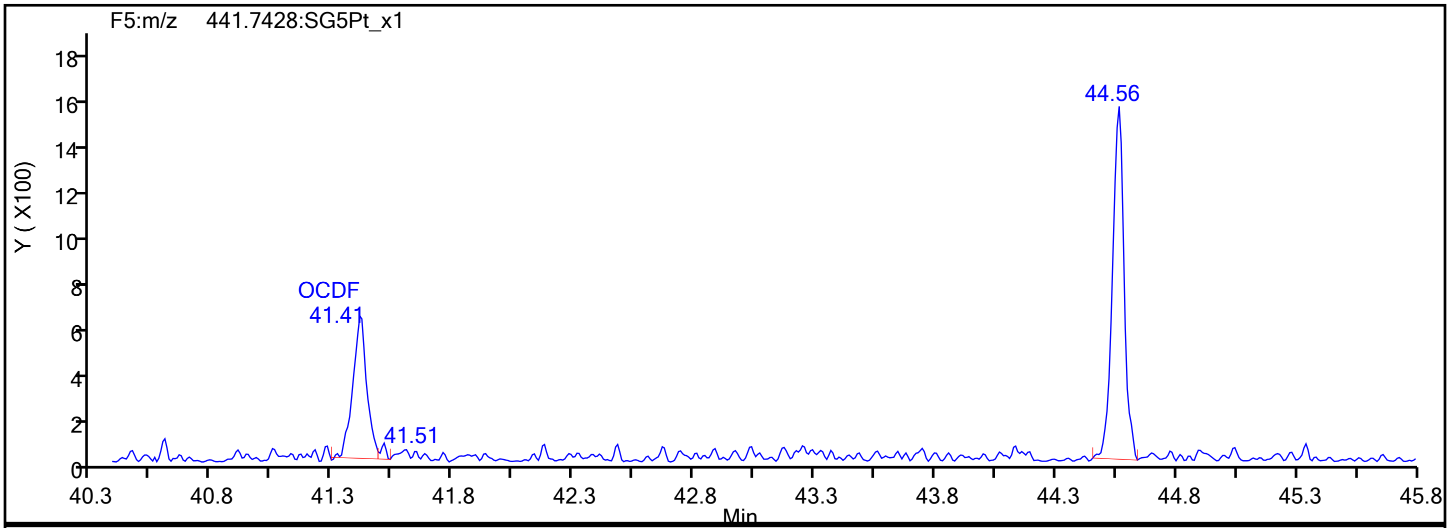

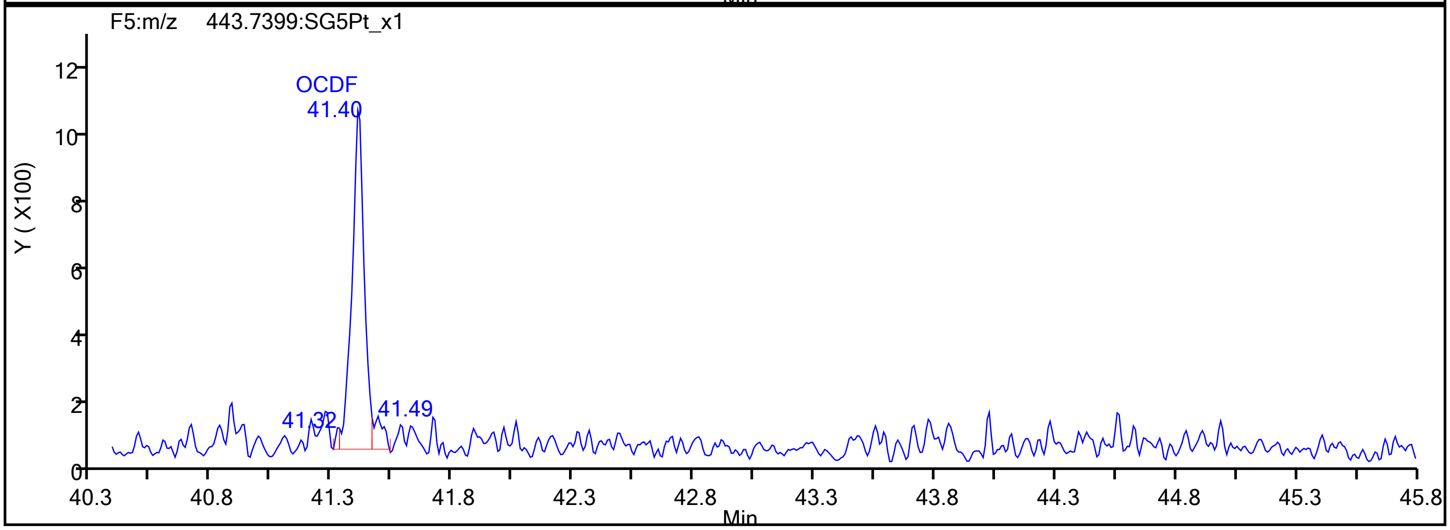

OCDF Interference Mass

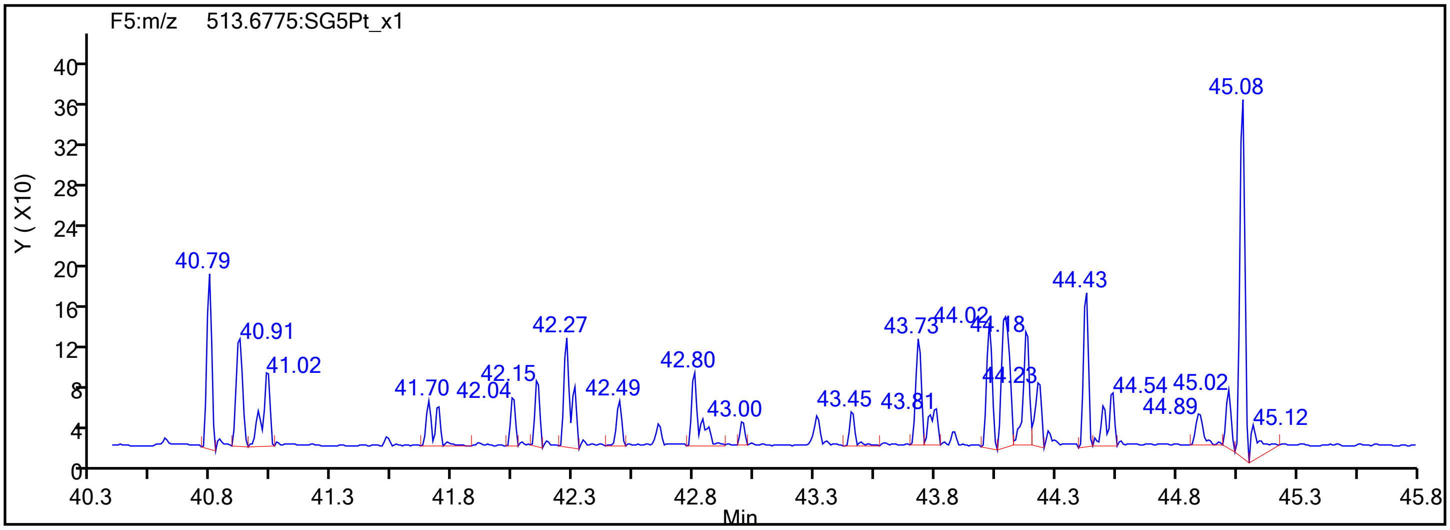

Report Date: 16-Mar-2021 09:34:40 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

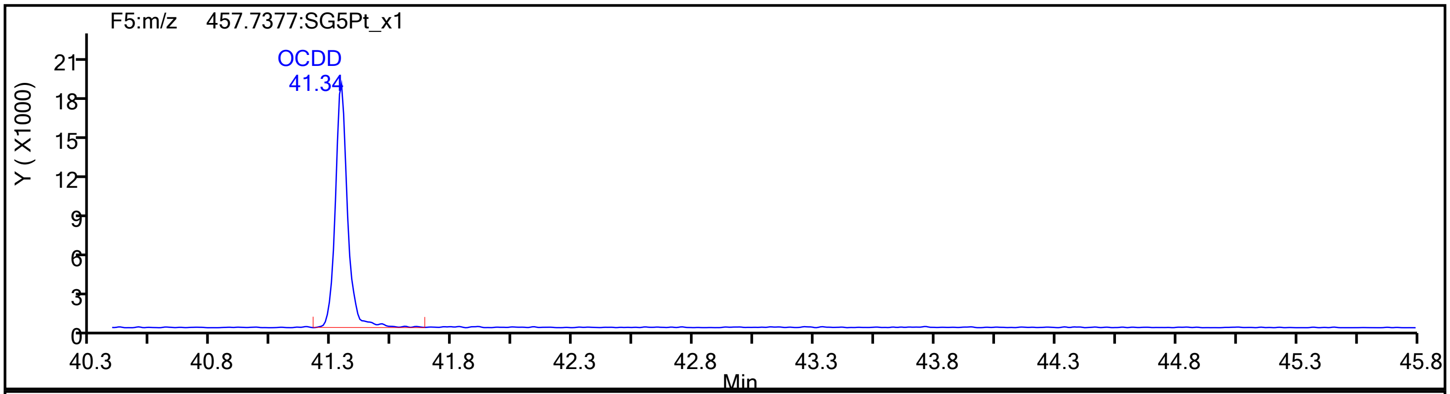

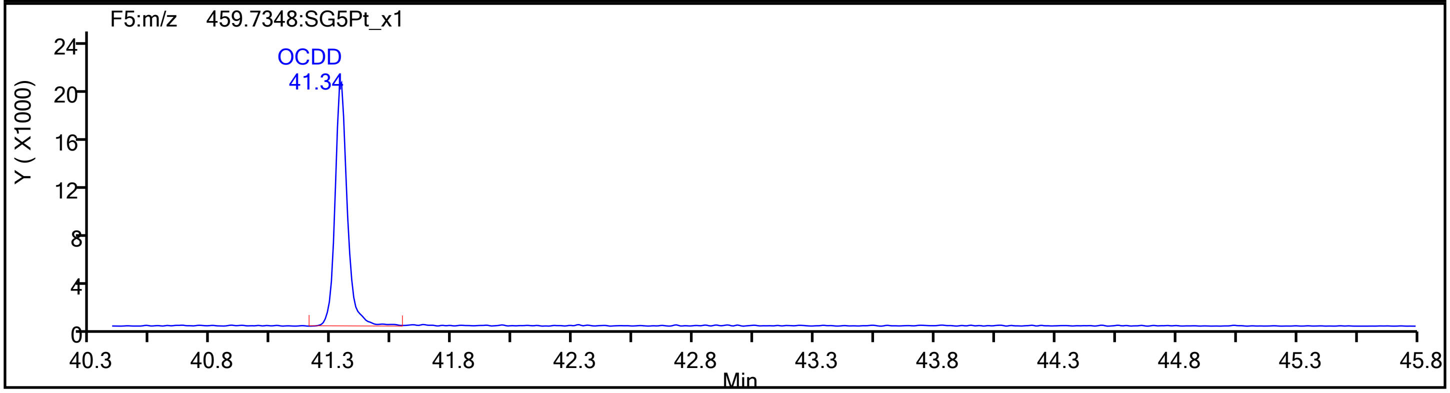

OCDD Standards

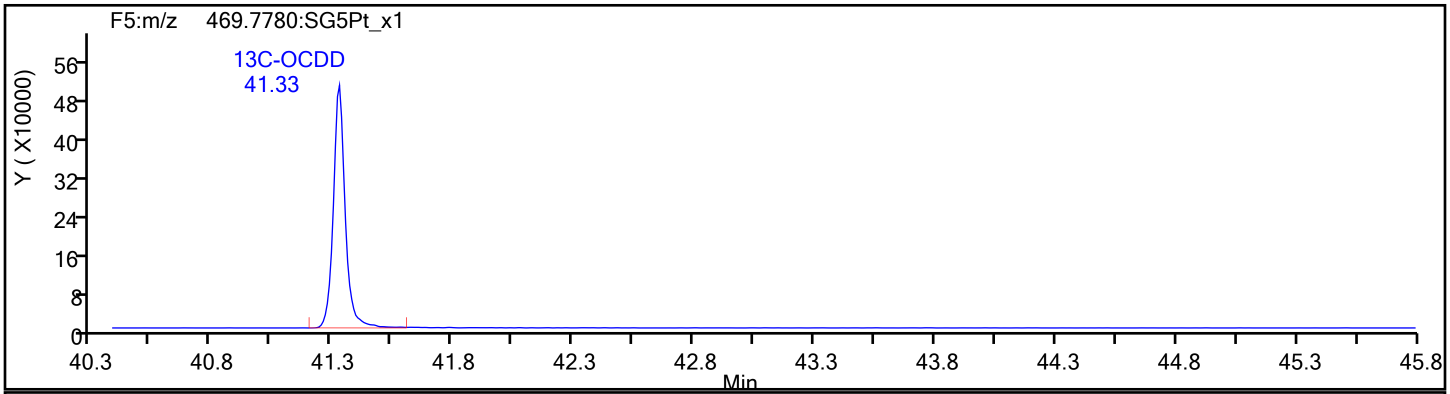

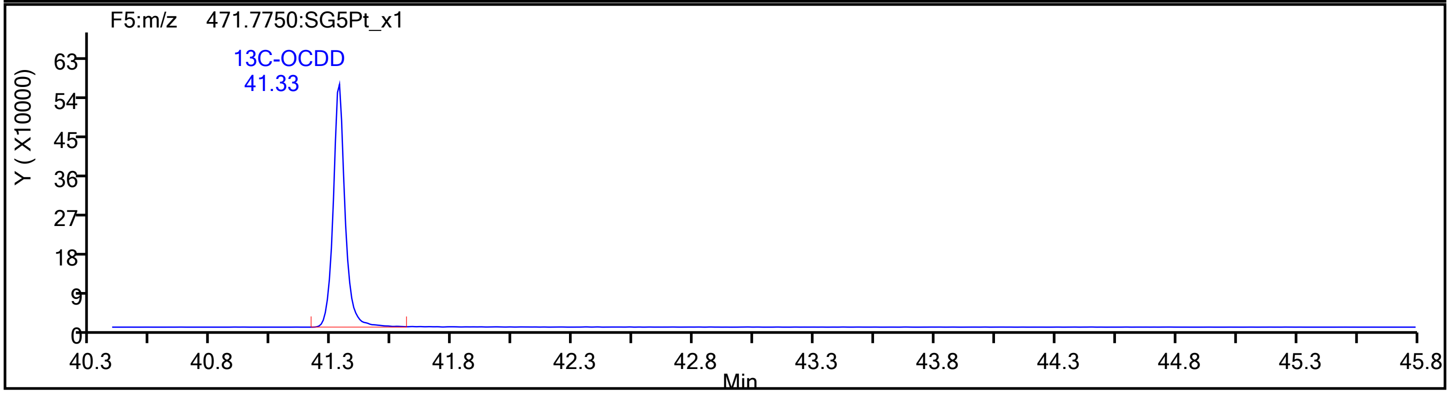

Report Date: 16-Mar-2021 09:34:40 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

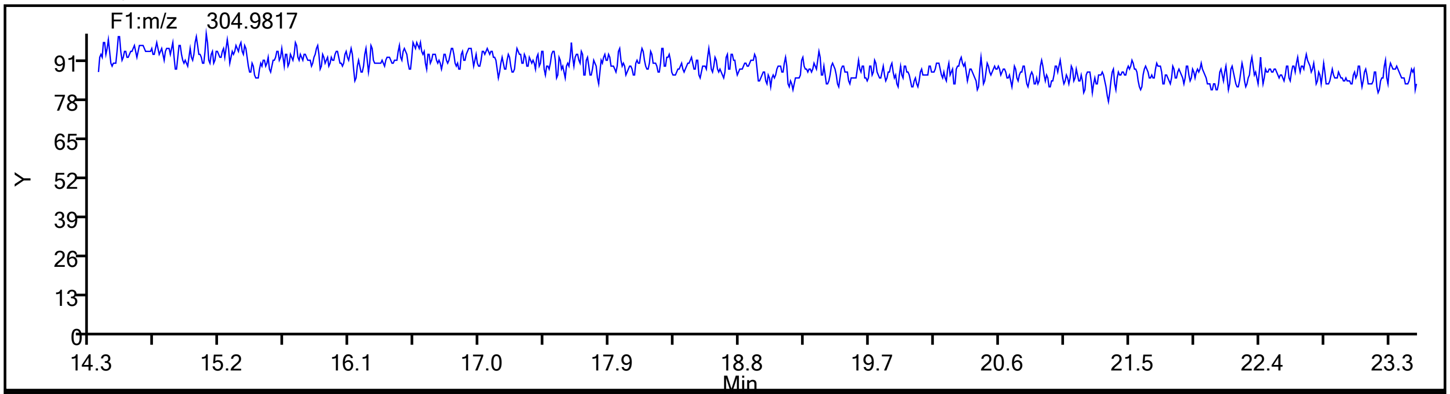

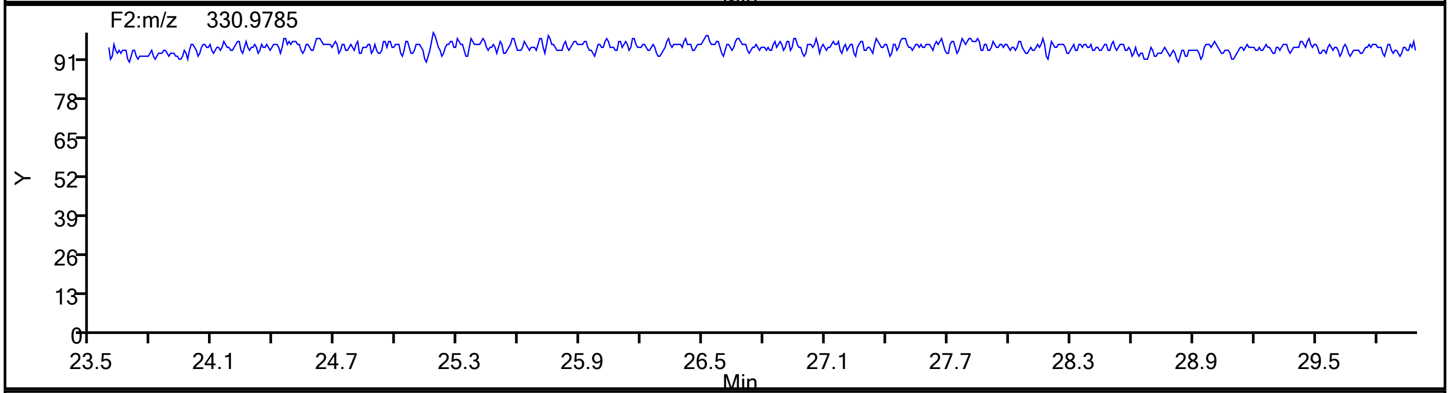

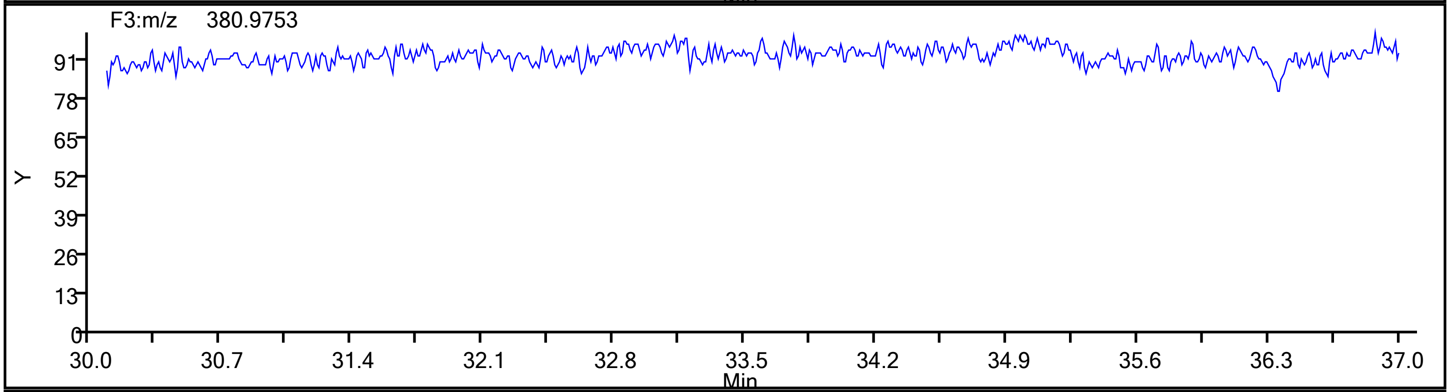

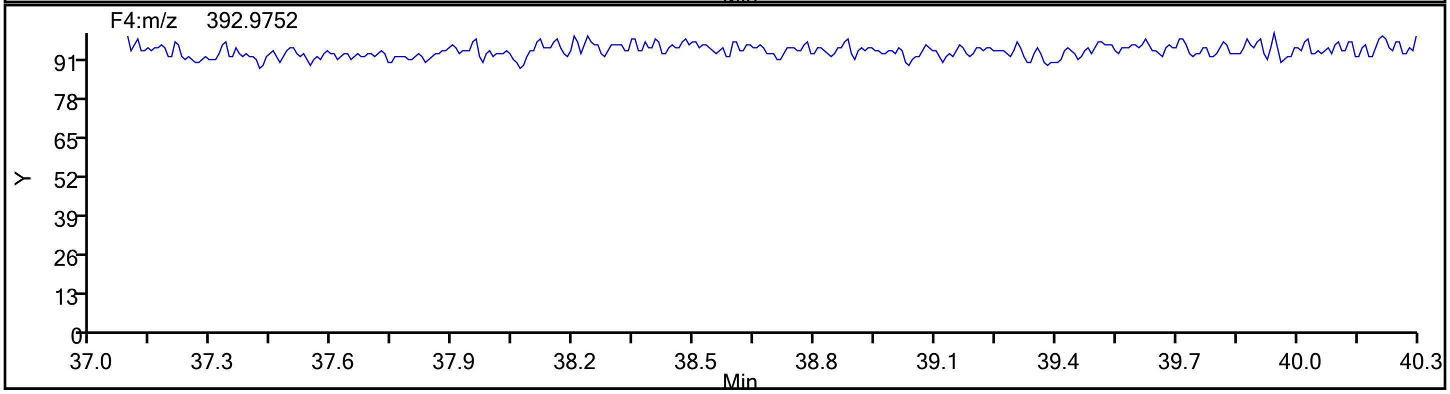

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_11.d		
Injection Date:	12-Mar-2021 17:44:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-10mm		
Worklist#:	469779	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

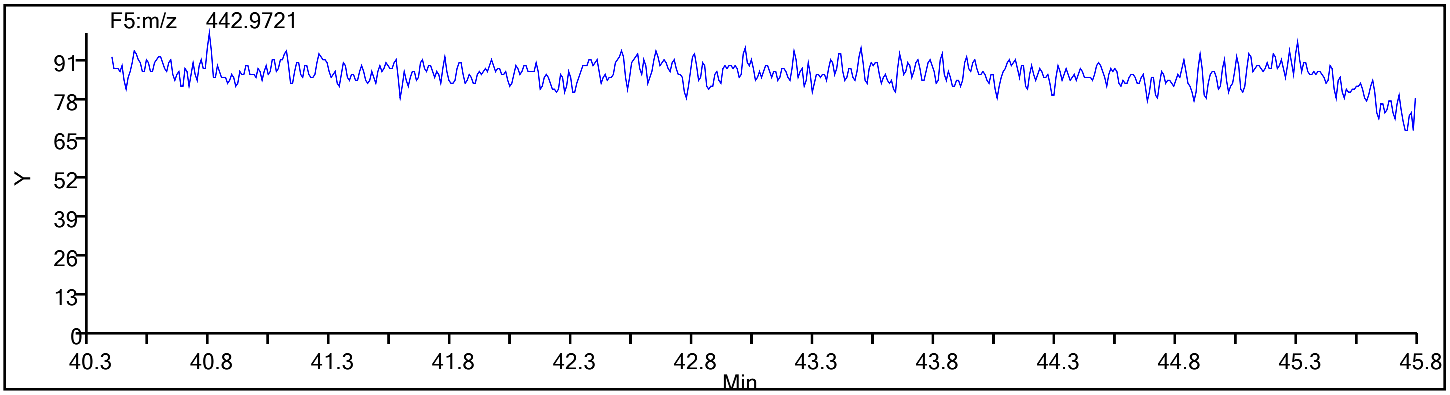

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-1mm RA	Lab Sample ID: 320-70797-10 RA
Matrix: Water	Lab File ID: 11MR2111D2_011.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1023.4(mL)	Date Analyzed: 03/11/2021 20:13
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469703	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	350	B	9.8	0.84

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	82		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	115		35-197

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_011.d
Lims ID: 320-70797-A-10-A
Client ID: 11215702-Tank2-1mm
Sample Type: Client
Inject. Date: 11-Mar-2021 20:13:57 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-10-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:03:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.009	234586914	0.77	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.148	250569116	0.82	1.3057	81.8	81.8	0.1652	0.1652	81.80	
2,3,7,8-TCDF	16.161	41396494	0.81	0.9242	17.9	17.9	0.0428	0.0428		
D 13C-2,3,7,8-TCDD	14.776	153168070	0.78	0.8971	72.8	72.8	0.7130	0.7130	72.78	
2,3,7,8-TCDD	14.803	10209238	0.79	0.9989	6.673	6.673	0.0755	0.0755		
$ 37Cl4-2,3,7,8-TCDD	14.803	91492128		0.8499	45.9	45.9	0.0354	0.0354	115	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_011.d
Lims ID: 320-70797-A-10-A
Client ID: 11215702-Tank2-1mm
Sample Type: Client
Inject. Date: 11-Mar-2021 20:13:57 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-10-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:03:26

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.009	15.013	0		101988552	25068457	57969	144922	432		
333.9339	15.009	15.013	0		132598362	33631202	92217	230542	365	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.148	16.152	0	1.076	112722088	25578574	26246	65615	975		
317.9389	16.148	16.152	0	1.076	137847028	31614454	24408	61020	1295	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.161	16.166	0	1.001	18468928	4174359	3326	8315	1255		
305.8987	16.161	16.166	0	1.001	22927566	5329786	5719	14297	932	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.776	14.794	-1	0.984	67127707	16590687	57969	144922	286		
333.9339	14.776	14.794	-1	0.984	86040363	21868833	92217	230542	237	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.803	14.807	0	1.002	4490517	1122783	5375	13437	209		
321.8936	14.803	14.807	0	1.002	5718721	1351602	6224	15560	217	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.803	14.807	0	0.986	91492128	22663720	7072	17680	3205		

QC Flag Legend
Processing Flags

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_011.d

Injection Date: 11-Mar-2021 20:13:57

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-1mm

Worklist#: 469703

Sample Line#: 11

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

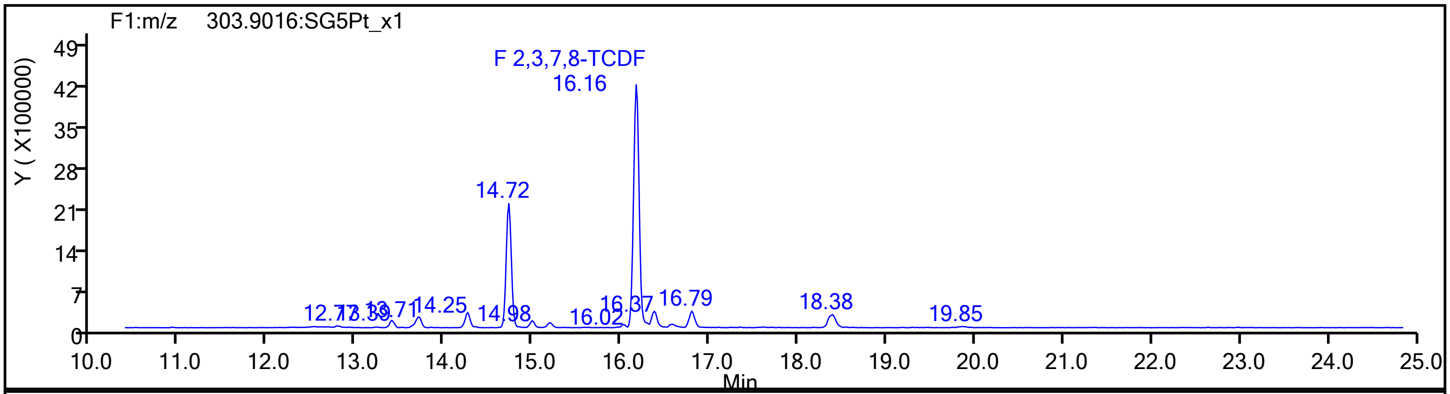

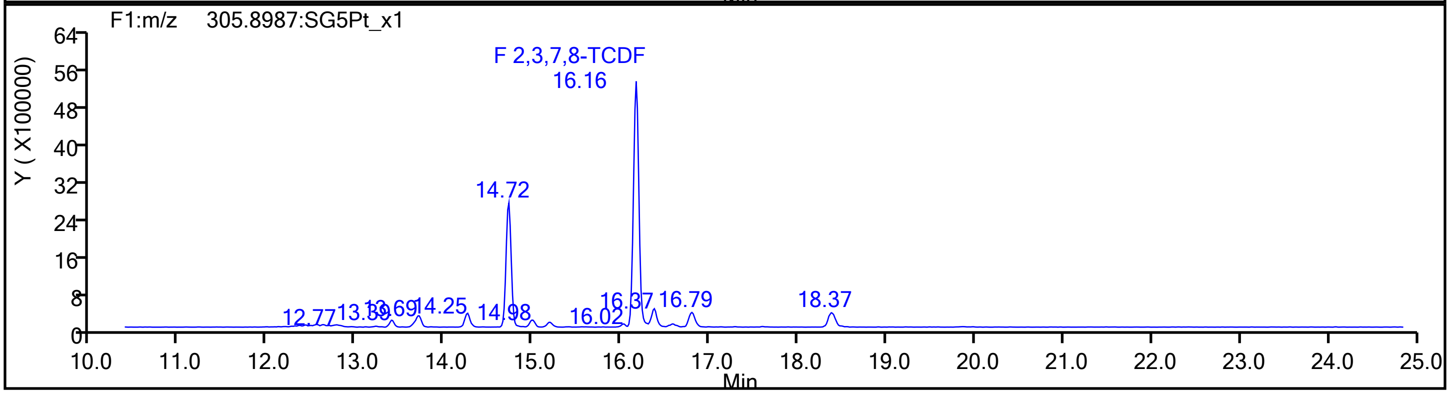

TCDF Standards

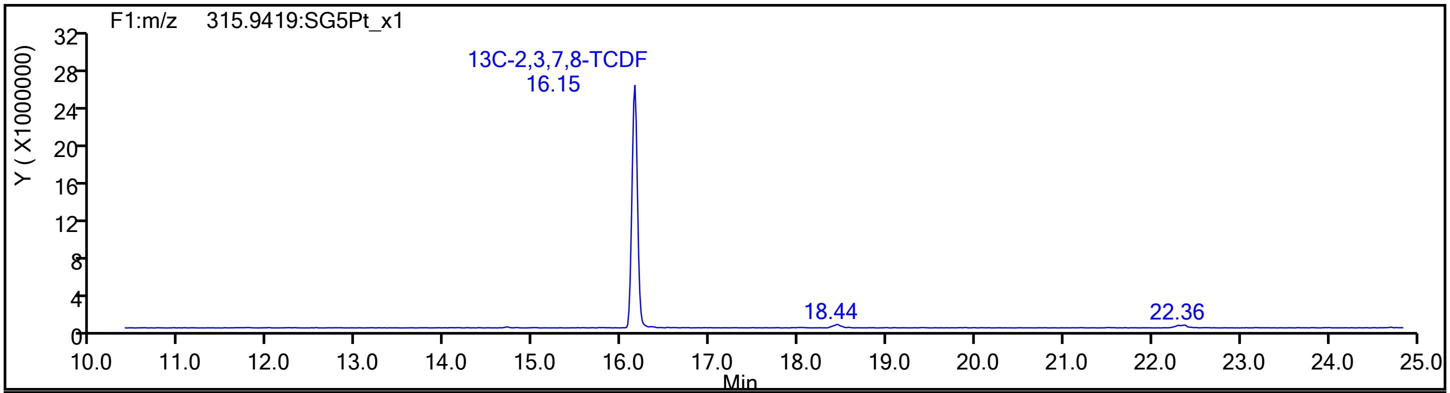

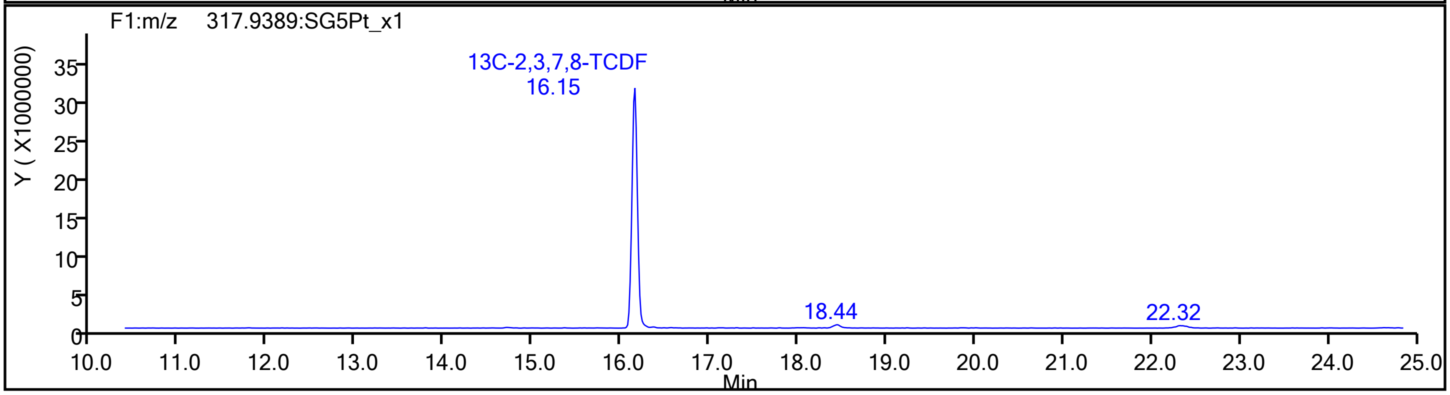

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_011.d		
Injection Date:	11-Mar-2021 20:13:57	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469703	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

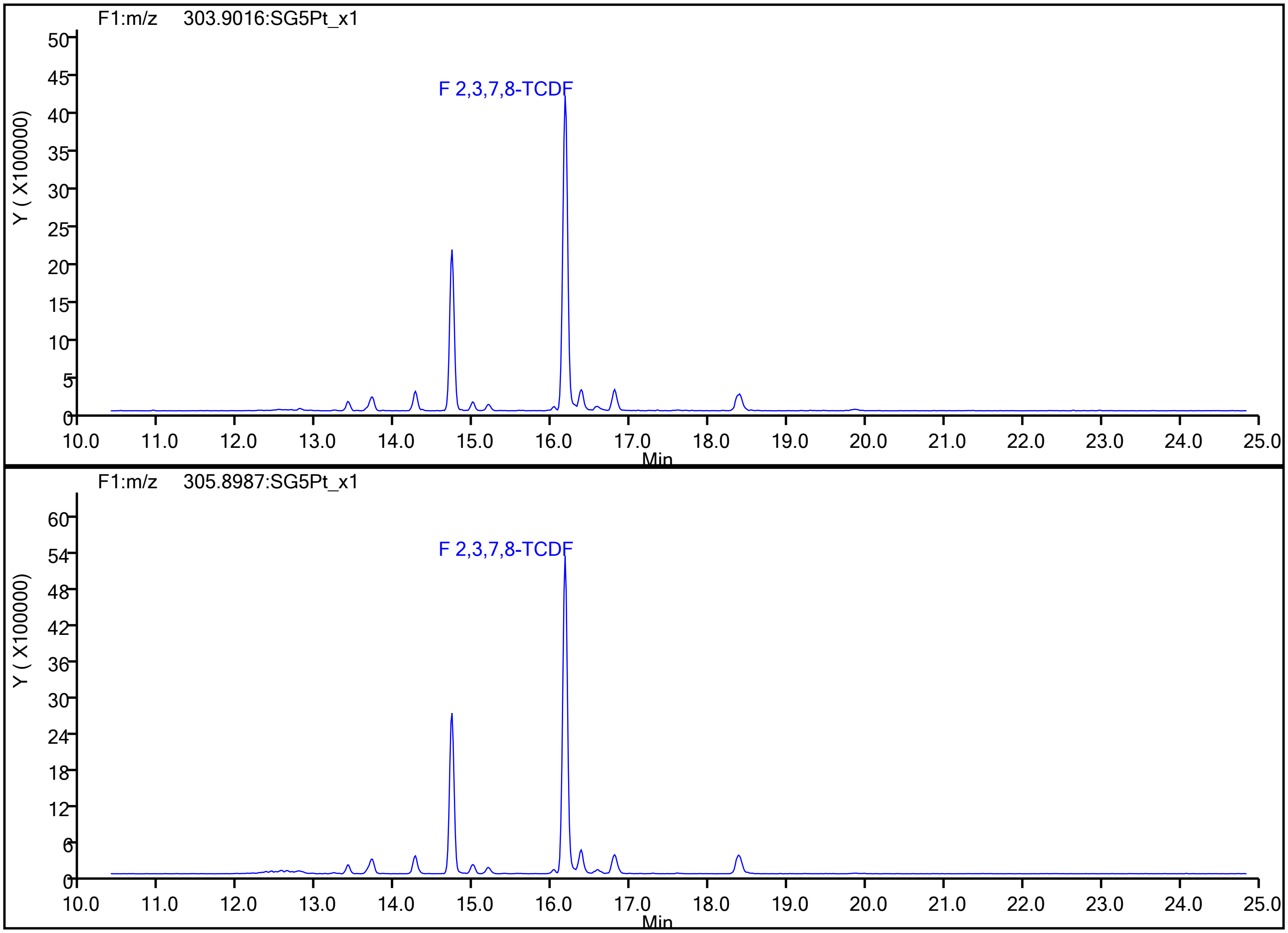

TCDF Interference Mass

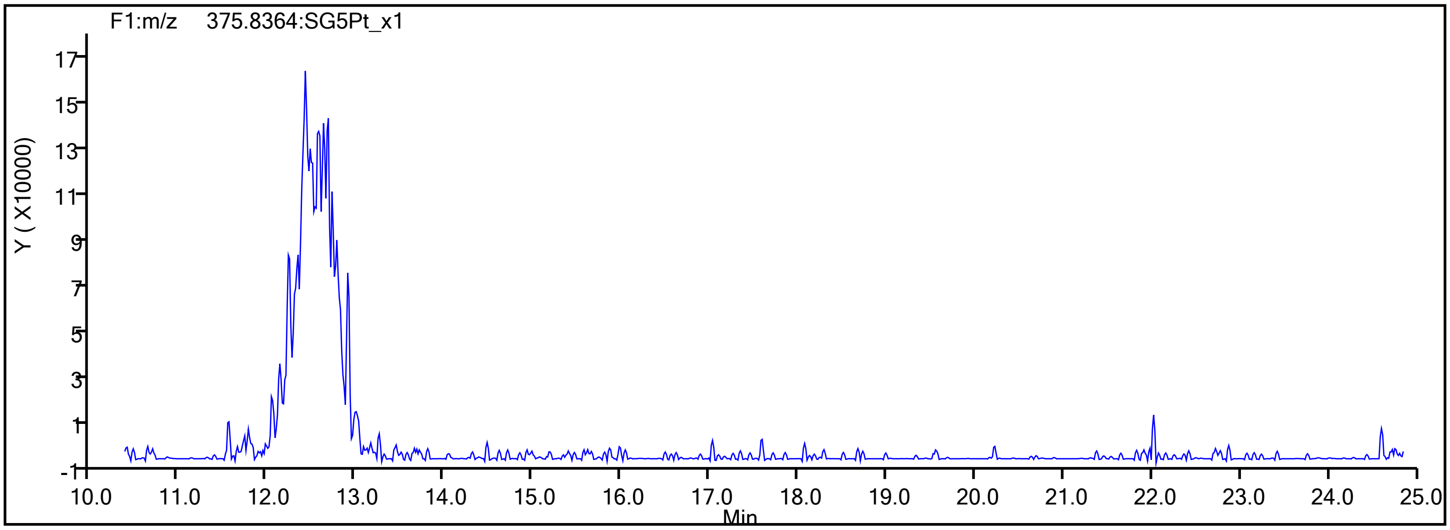

Report Date: 12-Mar-2021 11:08:33 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_011.d		
Injection Date:	11-Mar-2021 20:13:57	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469703	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

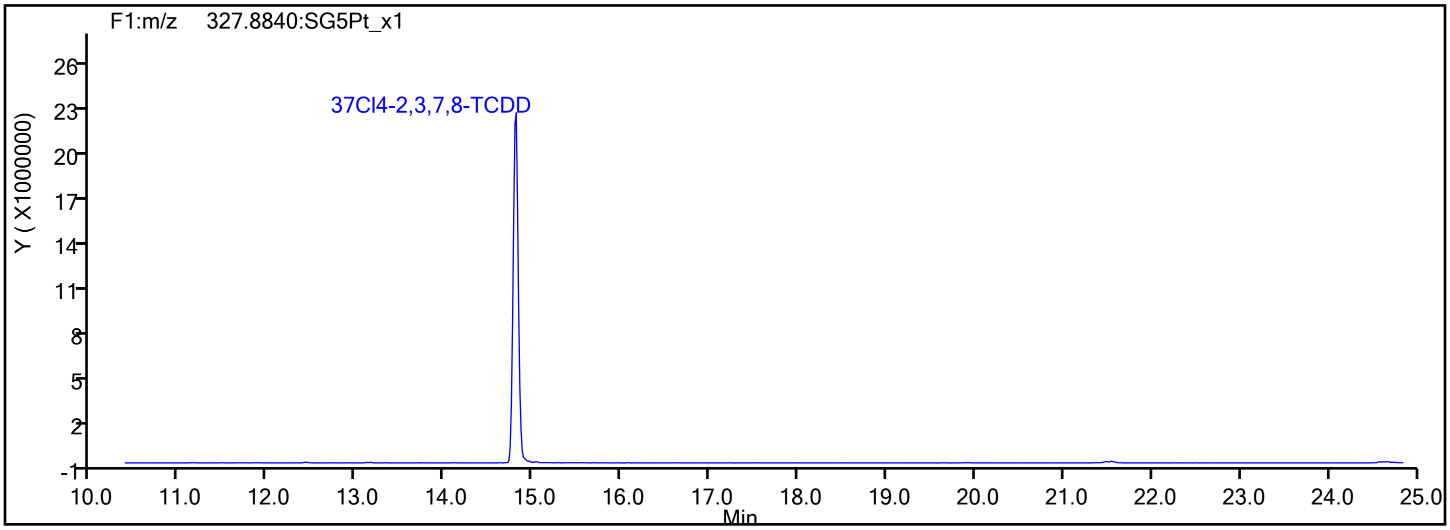

37Cl4-TCDD Standards

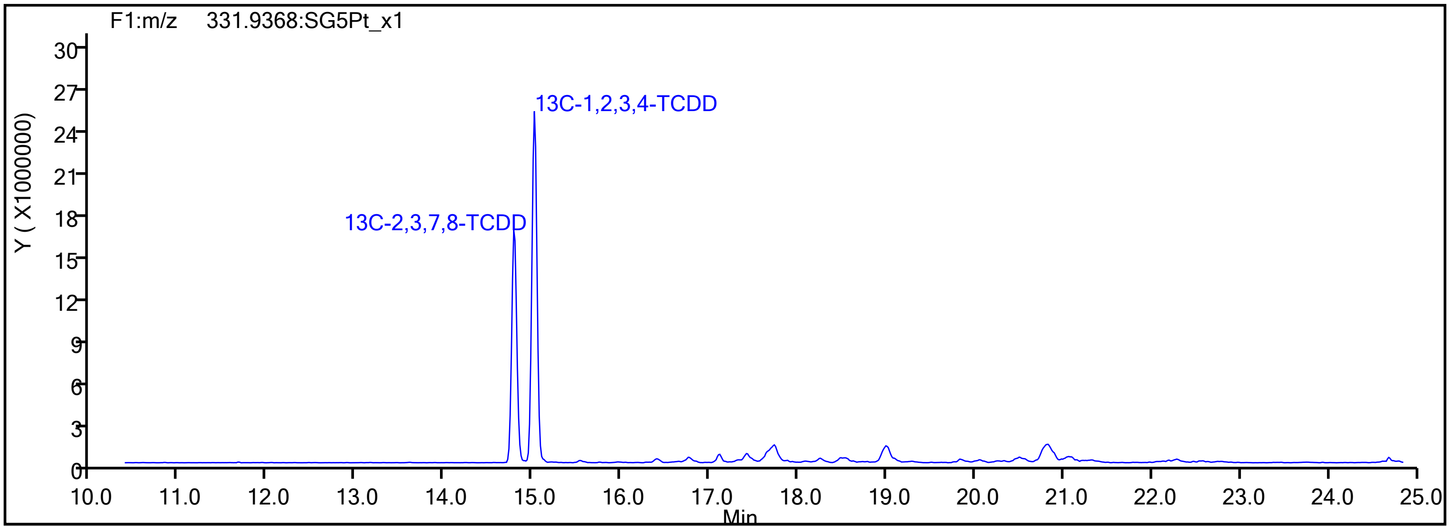

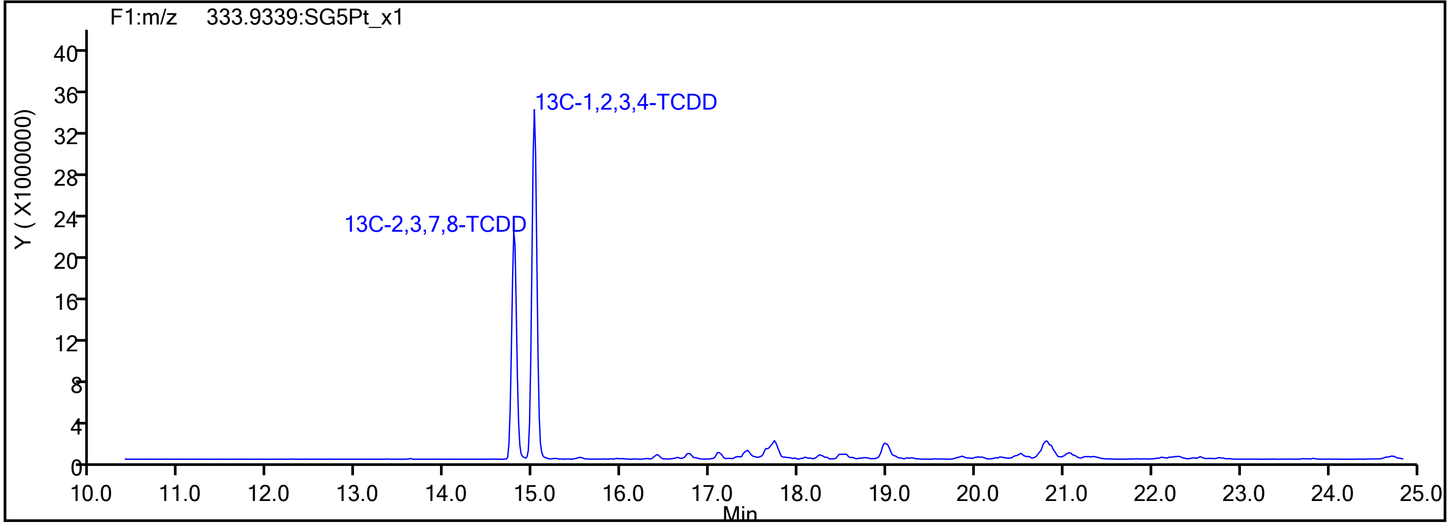

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_011.d

Injection Date:	11-Mar-2021 20:13:57	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469703	Sample Line#:	11
Column Type:	DB-225	Column Dia:	0.32 mm

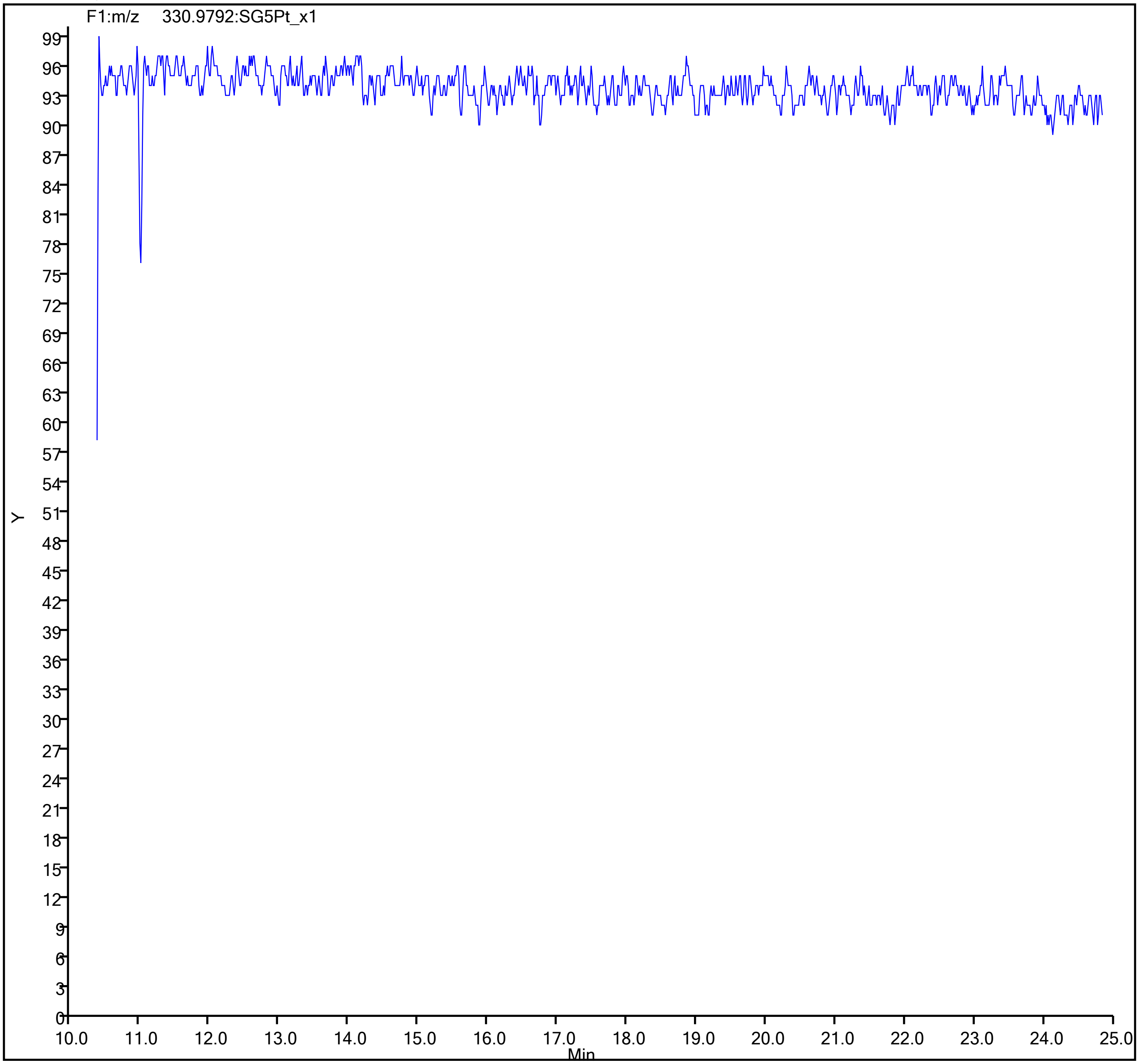

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-1mm	Lab Sample ID: 320-70797-10
Matrix: Water	Lab File ID: 12mr21adfs1_12.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1023.4(mL)	Date Analyzed: 03/12/2021 18:32
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	110		9.8	0.77
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	49	0.47
57117-41-6	1,2,3,7,8-PeCDF	14	J	49	0.45
57117-31-4	2,3,4,7,8-PeCDF	8.5	J	49	0.50
39227-28-6	1,2,3,4,7,8-HxCDD	1.5	J q	49	0.26
57653-85-7	1,2,3,6,7,8-HxCDD	1.1	J q	49	0.27
19408-74-3	1,2,3,7,8,9-HxCDD	ND		49	0.24
70648-26-9	1,2,3,4,7,8-HxCDF	26	J B	49	0.39
57117-44-9	1,2,3,6,7,8-HxCDF	6.5	J B	49	0.36
72918-21-9	1,2,3,7,8,9-HxCDF	0.71	J B q	49	0.31
60851-34-5	2,3,4,6,7,8-HxCDF	0.83	J B	49	0.32
35822-46-9	1,2,3,4,6,7,8-HpCDD	29	J B	49	0.44
67562-39-4	1,2,3,4,6,7,8-HpCDF	10	J B	49	0.33
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.2	J B	49	0.34
3268-87-9	OCDD	170	B	98	0.49
39001-02-0	OCDF	6.7	J B	98	0.43
41903-57-5	Total TCDD	120	B	9.8	0.77
30402-14-3	Total TCDF	600	B q	9.8	2.4
36088-22-9	Total PeCDD	1.3	J	49	0.47
30402-15-4	Total PeCDF	33	J q	49	0.47
34465-46-8	Total HxCDD	8.0	J q	49	0.26
55684-94-1	Total HxCDF	36	J B q	49	0.34
37871-00-4	Total HpCDD	46	J B	49	0.44
38998-75-3	Total HpCDF	17	J B	49	0.33

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-1mm	Lab Sample ID: 320-70797-10
Matrix: Water	Lab File ID: 12mr21adfs1_12.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1023.4(mL)	Date Analyzed: 03/12/2021 18:32
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		25-164
89059-46-1	13C-2,3,7,8-TCDF	62		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	65		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	62		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	62		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	67		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	66		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	67		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	68		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	69		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	84		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	80		26-138
114423-97-1	13C-OCDD	91		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Lims ID: 320-70797-A-10-A
Client ID: 11215702-Tank2-1mm
Sample Type: Client
Inject. Date: 12-Mar-2021 18:32:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-10-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:35:52 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: dadunj Date: 16-Mar-2021 09:16:40

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.459	3517668	0.79	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.591	3362361	0.78	1.5437	61.9	61.9	0.1234	0.1234	61.92	
2,3,7,8-TCDF	18.609	690134	0.85	1.1258	18.2	18.2	0.1215	0.1215		
A Non-2,3,7,8-sub-TCDF	18.115	474873	0.77	1.1258	12.7	12.5	0.1215	8.067		RQa
S Total TCDF					30.9	30.8	0.1215	0.1215		RQ
D 13C-2,3,7,8-TCDD	19.786	2391718	0.78	0.9687	70.2	70.2	0.1532	0.1532	70.19	
$ 37Cl4-2,3,7,8-TCDD	19.820	1444419		1.0841	37.9	37.9	0.0278	0.0278	94.69	
2,3,7,8-TCDD	19.820	157532	0.80	1.1904	5.533	5.533	0.0395	0.0395		
A Non-2,3,7,8-sub-TCDD	18.876	13932	0.77	1.1904	0.4893	0.4893	0.0395	0.4893		
S Total TCDD					6.023	6.023	0.0395	0.0395		
D 13C-1,2,3,7,8-PeCDF	25.638	2859559	1.57	1.3124	61.9	61.9	0.2512	0.2512	61.94	
1,2,3,7,8-PeCDF	25.655	22642	1.56	1.1163	0.7093	0.7093	0.0230	0.0230		M
D 13C-2,3,4,7,8-PeCDF	27.028	2900795	1.57	1.3352	61.8	61.8	0.2470	0.2470	61.76	
2,3,4,7,8-PeCDF	27.045	13309	1.53	1.0579	0.4337	0.4337	0.0255	0.0255		
A F1 PeCDFs	22.791						0.008739	0.008739		
A Non-2,3,7,8-sub-PeCDF	26.224	16324	1.55	1.0871	0.5283	0.5214	0.0242	0.2749		RQMa
S Total PeCDF					1.671	1.664	0.0242	0.0242		RQ
D 13C-1,2,3,7,8-PeCDD	27.769	1768266	1.58	0.7716	65.2	65.2	0.1310	0.1310	65.15	
1,2,3,7,8-PeCDD	27.811	1317	1.39	1.1372	0.0655	0.0655	0.0238	0.0238		M
A Non-2,3,7,8-sub-PeCDD	26.609						0.0238	0.0238		
S Total PeCDD					0.0655	0.0655	0.0238	0.0238		
D 13C-1,2,3,4,7,8-HxCDF	33.540	2414606	0.52	1.0931	66.2	66.2	0.2004	0.2004	66.22	
1,2,3,4,7,8-HxCDF	33.574	37677	1.20	1.1831	1.319	1.319	0.0198	0.0198		
D 13C-1,2,3,6,7,8-HxCDF	33.742	2530317	0.54	1.1278	67.3	67.3	0.1943	0.1943	67.26	
1,2,3,6,7,8-HxCDF	33.751	10531	1.30	1.2484	0.3334	0.3334	0.0186	0.0186		
D 13C-2,3,4,6,7,8-HxCDF	34.744	2431977	0.53	1.0552	69.1	69.1	0.2076	0.2076	69.10	
2,3,4,6,7,8-HxCDF	34.744	1313	1.09	1.2750	0.0423	0.0423	0.0161	0.0161		
D 13C-1,2,3,7,8,9-HxCDF	35.763	2257121	0.53	0.9938	68.1	68.1	0.2205	0.2205	68.09	
1,2,3,7,8,9-HxCDF	35.771	1056	1.24	1.2953	0.0412	0.0361	0.0156	0.0156		RQM
A Non-2,3,7,8-sub-HxCDF	33.496	3195	1.24	1.2505	0.1100	0.1061	0.0174	0.0794		RQMa
S Total HxCDF					1.846	1.837	0.0175	0.0175		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.552	3335545	1.27	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.997	1760358	1.26	0.7895	66.8	66.8	0.1966	0.1966	66.84	
1,2,3,4,7,8-HxCDD	35.031	1477	1.24	1.0950	0.0884	0.0766	0.0135	0.0135		RQM
D 13C-1,2,3,6,7,8-HxCDD	35.140	2031907	1.26	0.8495	71.7	71.7	0.1828	0.1828	71.71	
1,2,3,6,7,8-HxCDD	35.148	1189	1.24	1.0201	0.0740	0.0574	0.0137	0.0137		RQ
1,2,3,7,8,9-HxCDD	35.553						0.0124	0.0124		
A Non-2,3,7,8-sub-HxCDD	34.039	5655	1.24	1.0900	0.3032	0.2736	0.0132	0.1619		RQM
S Total HxCDD					0.4655	0.4076	0.0132	0.0132		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.805	1977007	0.44	0.7854	75.5	75.5	0.3391	0.3391	75.47	
1,2,3,4,6,7,8-HpCDF	37.822	15512	1.00	1.4859	0.5281	0.5281	0.0168	0.0168		
D 13C-1,2,3,4,7,8,9-HpCDF	39.153	1919520	0.44	0.7230	79.6	79.6	0.3684	0.3684	79.60	
1,2,3,4,7,8,9-HpCDF	39.170	4350	0.89	1.4048	0.1613	0.1613	0.0171	0.0171		
A Non-2,3,7,8-sub-HpCDF	38.451	5036	1.00	1.4453	0.1788	0.1788	0.0170	0.1788		M
S Total HpCDF					0.8682	0.8682	0.0170	0.0170		
D 13C-1,2,3,4,6,7,8-HpCDD	38.841	1805460	1.05	0.6413	84.4	84.4	0.2628	0.2628	84.40	
1,2,3,4,6,7,8-HpCDD	38.849	30923	1.04	1.1489	1.491	1.491	0.0225	0.0225		
A Non-2,3,7,8-sub-HpCDD	39.230	18237	1.08	1.1489	0.8792	0.8792	0.0225	0.8792		a
S Total HpCDD					2.370	2.370	0.0225	0.0225		
D 13C-OCDD	41.313	3118130	0.91	0.5141	181.8	181.8	0.1907	0.1907	90.92	
OCDF	41.397	8481	0.81	1.5776	0.3448	0.3448	0.0220	0.0220		M
OCDD	41.322	159742	0.89	1.1706	8.753	8.753	0.0253	0.0253		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Lims ID: 320-70797-A-10-A
Client ID: 11215702-Tank2-1mm
Sample Type: Client
Inject. Date: 12-Mar-2021 18:32:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-10-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:35:52 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: dadunj Date: 16-Mar-2021 09:16:40

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.459	19.417	3		1554177	254922	195	487	1307		
333.9338	19.451	19.417	2		1963491	315855	144	360	2193	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.591	18.557	2	0.955	1474658	250051	271	677	923		
317.9389	18.583	18.557	2	0.955	1887703	313090	164	410	1909	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.609	18.574	2	1.001	316210	48208	138	345	349		
305.8987	18.609	18.574	2	1.001	373924	56605	170	425	333	0.85(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQa
303.9016	16.786	18.115	-80	0.903	10939	1561	138	345	11		
305.8987	16.786	18.115	-80	0.903	14174	2281	170	425	13	0.77(0.65-0.89)	
303.9016	17.173	18.115	-56	0.924	10208	1644	138	345	12		
	Empc Correction				8356	1158	138	345	8		
305.8987	17.190	18.115	-55	0.925	10852	1504	170	425	9	0.94(0.65-0.89)	
303.9016	17.517	18.115	-36	0.942	15653	2670	138	345	19		
305.8987	17.508	18.115	-36	0.942	19236	2958	170	425	17	0.81(0.65-0.89)	
303.9016	17.973	18.115	-9	0.967	140202	23150	138	345	168		
305.8987	17.973	18.115	-9	0.967	165163	26519	170	425	156	0.85(0.65-0.89)	
303.9016	19.313	18.115	72	1.039	20829	3368	138	345	24		
305.8987	19.313	18.115	72	1.039	25448	4033	170	425	24	0.82(0.65-0.89)	
303.9016	21.573	18.115	207	1.160	22573	2824	138	345	20		a
	Empc Correction				19150	2639	138	345	19		
305.8987	21.590	18.115	208	1.161	24871	3428	170	425	20	0.91(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.786	19.761	1	1.017	1045206	151279	195	487	776		
333.9338	19.803	19.761	3	1.018	1346512	199486	144	360	1385	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.820	19.778	3	1.019	1444419	218500	69	172	3167		

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDD											
319.8965	19.820	19.787	2	1.002	69876	11187	43	107	260		
321.8936	19.829	19.787	3	1.002	87656	12921	23	57	562	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.448	18.876	94	1.033	6082	782	43	107	18		
321.8936	20.430	18.876	93	1.033	7850	1023	23	57	44	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.638	25.600	2	1.318	1745527	311703	492	1230	634		
353.8970	25.638	25.600	2	1.318	1114032	195023	261	652	747	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.655	25.625	2	1.001	13791	2512	14	35	179		M
341.8567	25.663	25.625	2	1.001	8851	1610	38	95	42	1.56(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.028	26.980	3	1.389	1771578	297670	492	1230	605		
353.8970	27.028	26.980	3	1.389	1129217	185058	261	652	709	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.045	27.006	2	1.001	8043	1514	14	35	108		
341.8567	27.036	27.006	2	1.000	5266	956	38	95	25	1.53(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.791						2	5			
341.8567	22.791						17	42			
A Non-2,3,7,8-sub-PeCDF											RQMa
339.8597	24.324	26.224	-114	0.949	5209	996	14	35	71		M
341.8567	24.333	26.224	-113	0.949	3398	598	38	95	16	1.53(1.32-1.78)	
339.8597	25.554	26.224	-40	0.997	972	247	14	35	18		M
341.8567	25.529	26.224	-42	0.996	844	195	38	95	5	1.15(1.32-1.78)	
	Empc Correction				627	159	38	95	4		
339.8597	26.186	26.224	-2	1.021	3497	676	14	35	48		
341.8567	26.202	26.224	-1	1.022	2621	476	38	95	13	1.33(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.769	27.721	3	1.427	1083844	175142	148	370	1183		
369.8919	27.777	27.721	3	1.427	684422	109339	83	207	1317	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	27.811	27.755	3	1.002	765	166	24	60	7		M
357.8516	27.819	27.755	4	1.002	552	132	7	17	19	1.39(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.609						24	60			
357.8516	26.609						7	17			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.540	33.504	2	0.943	823711	147338	247	617	597		
385.8610	33.540	33.504	2	0.943	1590895	288004	412	1030	699	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.574	33.521	3	1.001	20554	3491	23	57	152		
375.8178	33.574	33.521	3	1.001	17123	3225	18	45	179	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.742	33.706	2	0.949	882083	154266	247	617	625		
385.8610	33.742	33.706	2	0.949	1648234	285240	412	1030	692	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											
373.8208	33.751	33.723	2	1.000	5946	952	23	57	41		
375.8178	33.751	33.723	2	1.000	4585	810	18	45	45	1.30(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.744	34.709	2	0.977	843190	170938	247	617	692		
385.8610	34.736	34.709	2	0.977	1588787	324790	412	1030	788	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.744	34.725	1	1.000	686	148	23	57	6		
375.8178	34.778	34.725	3	1.001	627	145	18	45	8	1.09(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.763	35.736	2	1.006	777382	176588	247	617	715		
385.8610	35.763	35.736	2	1.006	1479739	327293	412	1030	794	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	35.771	35.753	1	1.000	585	160	23	57	7		M
375.8178	35.788	35.753	2	1.001	619	144	18	45	8	0.95(1.05-1.43)	M
	Empc Correction				471	129	18	45	7		
A Non-2,3,7,8-sub-HxCDF											RQMa
373.8208	34.626	33.496	68	1.032	562	121	23	57	5		
	Empc Correction				445	145	23	57	6		
375.8178	34.618	33.496	67	1.032	359	117	18	45	7	1.57(1.05-1.43)	
373.8208	35.906	33.496	144	1.071	1260	271	23	57	12		M
375.8178	35.889	33.496	143	1.070	1131	207	18	45	12	1.11(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.552	35.525	2		1865562	422183	268	670	1575		
403.8529	35.552	35.525	2		1469983	329547	199	497	1656	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	34.997	34.970	2	0.984	981593	227503	268	670	849		
403.8529	34.997	34.970	2	0.984	778765	177468	199	497	892	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	35.031	34.995	2	1.001	818	186	11	27	17		M
391.8127	35.014	34.995	1	1.000	885	241	13	32	19	0.92(1.05-1.43)	M
	Empc Correction				659	149	13	32	11		
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.140	35.105	2	0.988	1132088	243722	268	670	909		
403.8529	35.140	35.105	2	0.988	899819	186615	199	497	938	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQ
389.8158	35.148	35.121	2	1.000	1003	260	11	27	24		
	Empc Correction				658	152	11	27	14		
391.8127	35.165	35.121	3	1.001	531	123	13	32	9	1.89(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.542						11	27			
391.8127	35.542						13	32			
A Non-2,3,7,8-sub-HxCDD											RQM
389.8158	32.648	34.039	-83	0.929	1272	199	11	27	18		
391.8127	32.673	34.039	-82	0.930	1036	214	13	32	16	1.23(1.05-1.43)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
389.8158	34.079	34.039	2	0.970	1853	325	11	27	30		M
391.8127	34.121	34.039	5	0.971	2105	332	13	32	26	0.88(1.05-1.43)	M
	Empc Correction				1494	262	13	32	20		
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.805	37.786	1	1.063	602549	163562	278	695	588		
419.8220	37.805	37.786	1	1.063	1374458	376533	523	1307	720	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.822	37.794	2	1.000	7752	2123	38	95	56		
409.7788	37.822	37.794	2	1.000	7760	2184	16	40	137	1.00(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.153	39.133	1	1.101	590447	172388	278	695	620		
419.8220	39.153	39.133	1	1.101	1329073	388110	523	1307	742	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.170	39.142	2	1.000	2050	582	38	95	15		
409.7788	39.161	39.142	1	1.000	2300	659	16	40	41	0.89(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											M
407.7817	38.217	38.451	-14	1.011	2515	700	38	95	18		
409.7788	38.217	38.451	-14	1.011	2521	673	16	40	42	1.00(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.841	38.822	1	1.093	925692	276987	262	655	1057		
437.8140	38.841	38.822	1	1.093	879768	263805	245	612	1077	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.849	38.830	1	1.000	15798	4521	34	85	133		
425.7737	38.849	38.830	1	1.000	15125	4394	22	55	200	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											a
423.7767	38.167	39.230	-64	0.983	9467	2850	34	85	84		a
425.7737	38.167	39.230	-64	0.983	8770	2399	22	55	109	1.08(0.88-1.20)	
13C-OCDD											
469.7780	41.313	41.293	1	1.162	1484552	423965	152	380	2789		
471.7750	41.313	41.293	1	1.162	1633578	467663	143	357	3270	0.91(0.76-1.02)	
OCDF											M
441.7428	41.397	41.377	1	1.002	3802	1063	19	47	56		M
443.7399	41.397	41.377	1	1.002	4679	1251	43	107	29	0.81(0.76-1.02)	
OCDD											
457.7377	41.322	41.301	1	1.000	75169	21549	26	65	829		
459.7348	41.322	41.301	1	1.000	84573	23429	27	67	868	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Lims ID:	320-70797-A-10-A		
Client ID:	11215702-Tank2-1mm		
Inject. Date:	12-Mar-2021 18:32:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3362361	563141

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3362361	563141

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.786	10939	1561	14174	2281	0.6634	0.77	
17.173	10208	1644	10852	1504	0.5564	0.94	RQ
17.173	8356	1158	10852	1504	0.5074		Empc Correction
17.517	15653	2670	19236	2958	0.9217	0.81	
17.973	140202	23150	165163	26519	8.07	0.85	
19.313	20829	3368	25448	4033	1.22	0.82	
21.573	22573	2824	24871	3428	1.25	0.91	RQa
21.573	19150	2639	24871	3428	1.16		Empc Correction
Signal Totals:							
	215129	34546	259744	40723			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	480148	75940				0.85	RQa
	474873	75269					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 12.684 = (480148 * 100.000) / (3362361 * 1.126)
Empc Amount: 12.545 = (474873 * 100.000) / (3362361 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Lims ID:	320-70797-A-10-A		
Client ID:	11215702-Tank2-1mm		
Inject. Date:	12-Mar-2021 18:32:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDD, RT: 18.876

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2391718	350765

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2391718	350765

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.448	6082	782	7850	1023	0.4893	0.77	
Signal Totals:							
	6082	782	7850	1023			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13932	1805				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4893 = (13932 * 100.000) / (2391718 * 1.190)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Lims ID:	320-70797-A-10-A		
Client ID:	11215702-Tank2-1mm		
Inject. Date:	12-Mar-2021 18:32:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 26.224

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	2859559	506726
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	2900795	482728

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	2880177	494727

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.324	5209	996	3398	598	0.2749	1.53	M
25.554	972	247	844	195	0.0580	1.15	RQMa
25.554	972	247	627	159	0.0511		Empc Correction
26.186	3497	676	2621	476	0.1954	1.33	
Signal Totals:							
	9678	1919	6646	1233			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16541	3188				1.41	RQMa
	16324	3152					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5283 = (16541 * 100.000) / (2880177 * 1.087)
Empc Amount: 0.5214 = (16324 * 100.000) / (2880177 * 1.087)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Lims ID:	320-70797-A-10-A		
Client ID:	11215702-Tank2-1mm		
Inject. Date:	12-Mar-2021 18:32:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2414606	435342
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2530317	439506
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2431977	495728
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2257121	503881

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2408505	468614

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.626	562	121	359	117	0.0306	1.57	RQ
34.626	445	145	359	117	0.0267		Empc Correction
35.906	1260	271	1131	207	0.0794	1.11	Ma
Signal Totals:							
	1705	416	1490	324			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3312	716				1.22	RQMa
	3195	740					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1100 = (3312 * 100.000) / (2408505 * 1.250)
Empc Amount: 0.1061 = (3195 * 100.000) / (2408505 * 1.250)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Lims ID:	320-70797-A-10-A		
Client ID:	11215702-Tank2-1mm		
Inject. Date:	12-Mar-2021 18:32:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1760358	404971
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	2031907	430337
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	1896132	417654

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
32.648	1272	199	1036	214	0.1117	1.23	M
34.079	1853	325	2105	332	0.1915	0.88	RQM
34.079	1853	325	1494	262	0.1619		Empc Correction
Signal Totals:							
	3125	524	2530	476			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6266	1070				0.99	RQM
	5655	1000					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3032 = (6266 * 100.000) / (1896132 * 1.090)
Empc Amount: 0.2736 = (5655 * 100.000) / (1896132 * 1.090)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Lims ID:	320-70797-A-10-A		
Client ID:	11215702-Tank2-1mm		
Inject. Date:	12-Mar-2021 18:32:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1977007	540095
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1919520	560498

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	1948263	550296

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.217	2515	700	2521	673	0.1788	1.00	M
Signal Totals:							
	2515	700	2521	673			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5036	1373				1.00	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1788 = (5036 * 100.000) / (1948263 * 1.445)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Lims ID: 320-70797-A-10-A
Client ID: 11215702-Tank2-1mm
Inject. Date: 12-Mar-2021 18:32:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 11

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1805460	540792

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1805460	540792

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.167	9467	2850	8770	2399	0.8792	1.08	a
Signal Totals:							
	9467	2850	8770	2399			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18237	5249				1.08	a

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.8792 = (18237 * 100.000) / (1805460 * 1.149)

QC Flag Legend

Review Flags
a - User Assigned ID

Report Date: 16-Mar-2021 09:35:53

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT: 25.66
Area: 9991
Amount: 0.751784
Amount Units: pg/ul

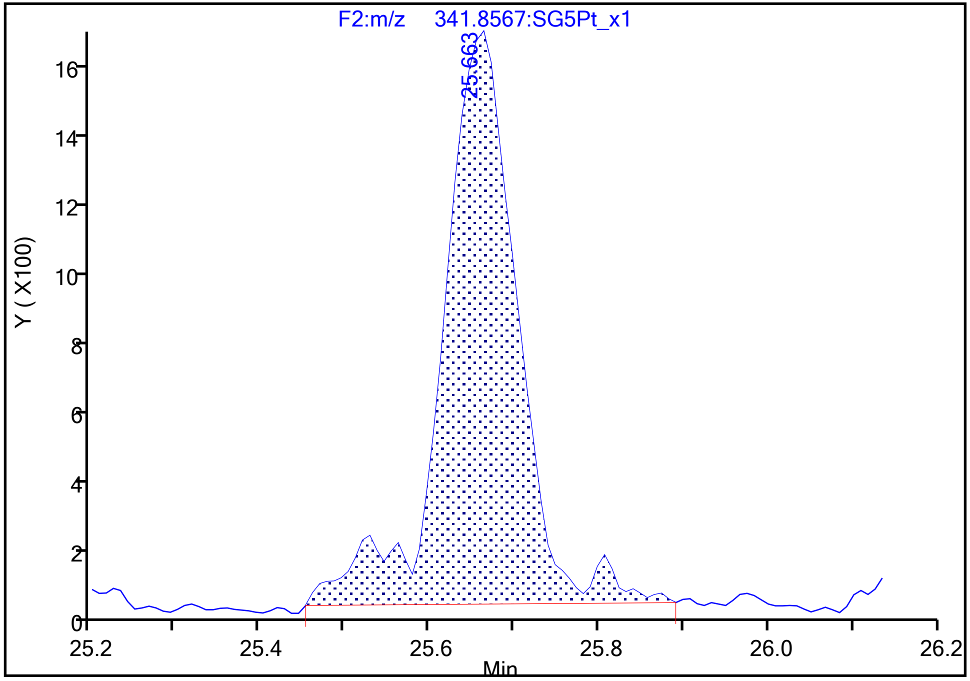

Manual Integration Results

RT: 25.66
Area: 8851
Amount: 0.709334
Amount Units: pg/ul

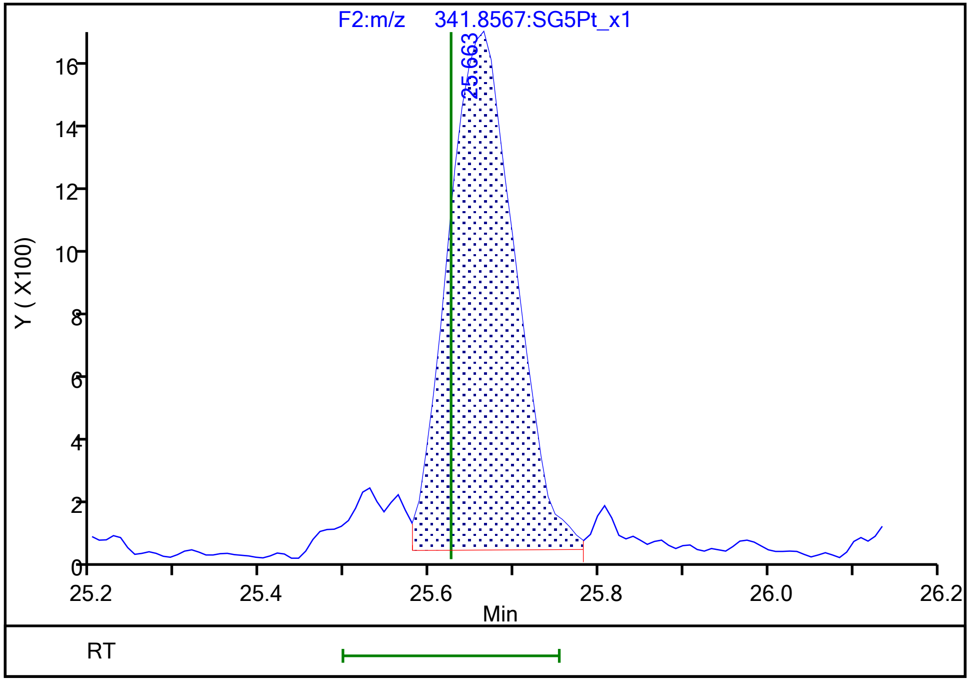

Reviewer: dadunj, 16-Mar-2021 09:13:43

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10
Client ID:	11215702-Tank2-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.65
Area:	14006
Amount:	0.751784
Amount Units:	pg/ul

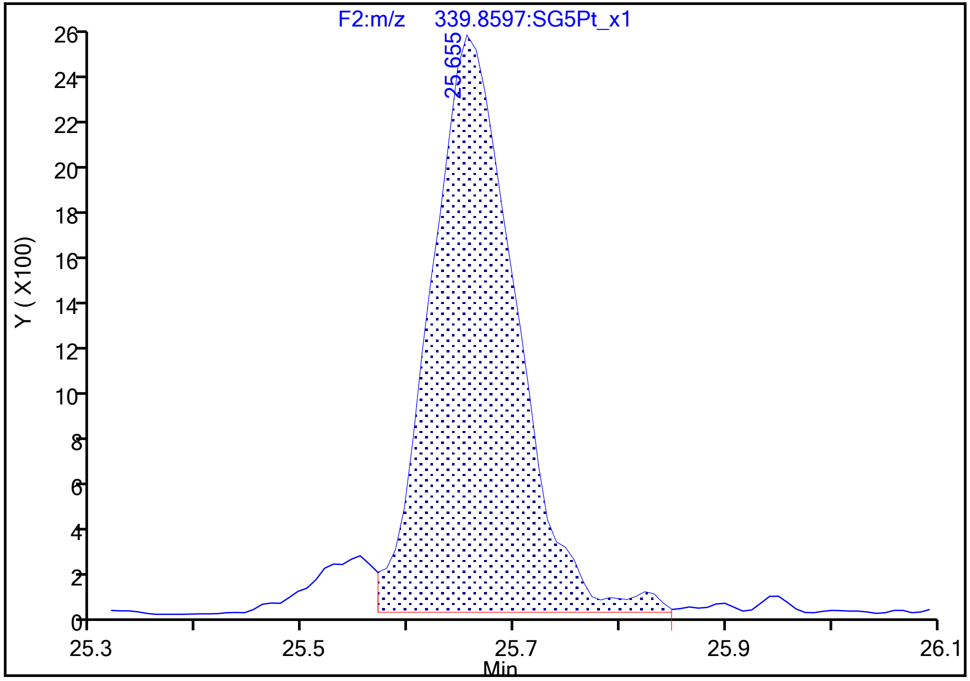

Manual Integration Results

RT:	25.65
Area:	13791
Amount:	0.709334
Amount Units:	pg/ul

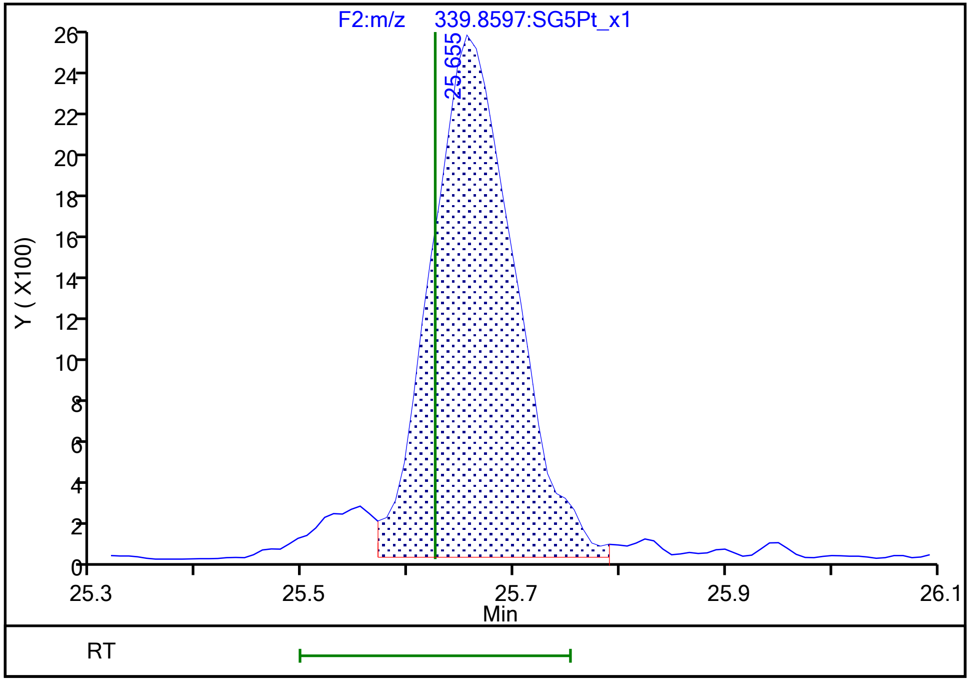

Reviewer: dadunj, 16-Mar-2021 09:13:45

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.57- 28.87)

Signal: 1

Processing Integration Results

RT = 24.324 Area = 5436

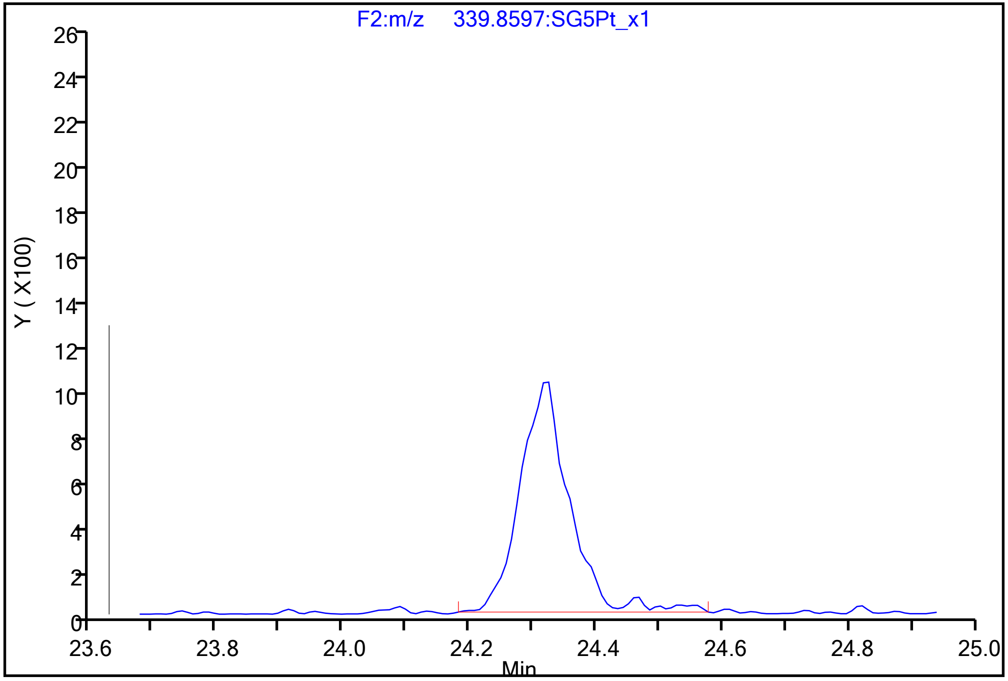

Manual Integration Results

RT = 24.324 Area = 5209 M

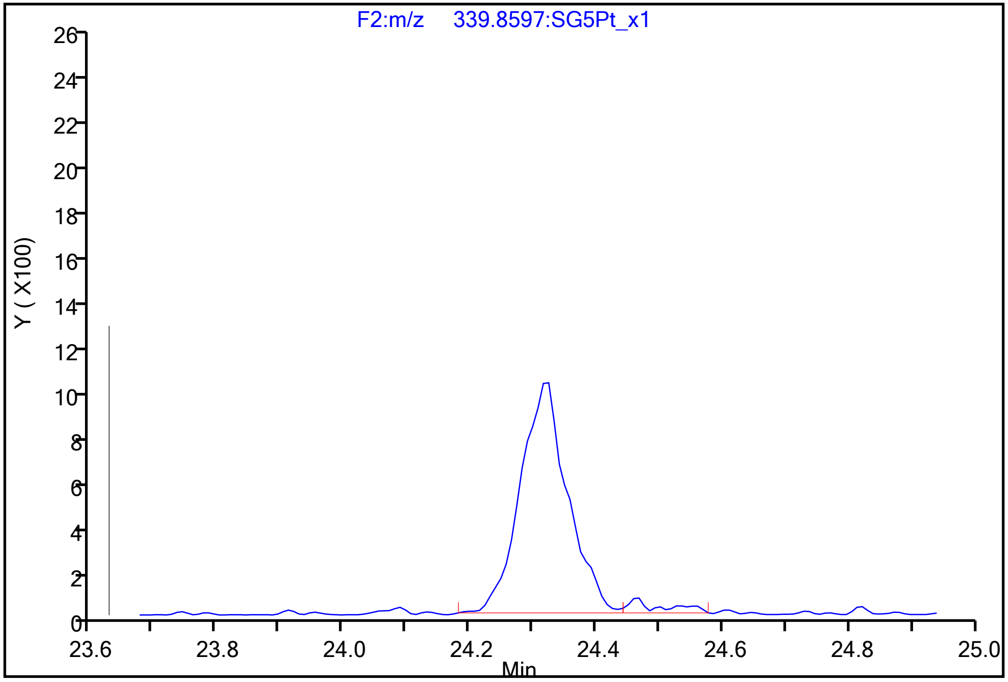

Reviewer: dadunj, 16-Mar-2021 09:13:58

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10
Client ID:	11215702-Tank2-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (23.57- 28.87)

Signal: 1

Processing Integration Results

RT = 25.554 Area = 972

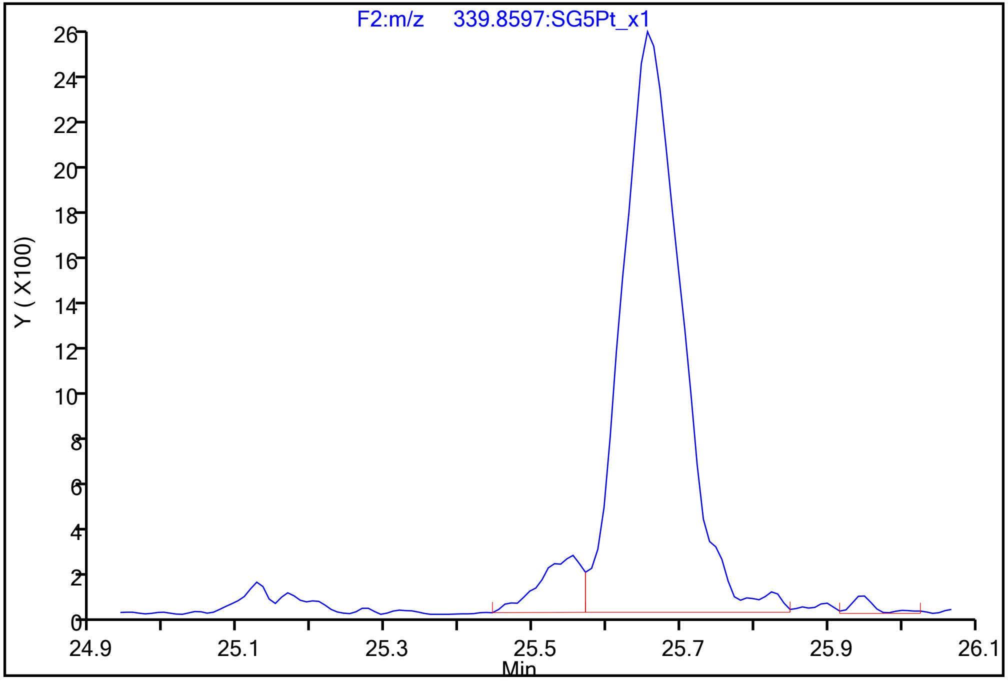

Manual Integration Results

RT = 25.554 Area = 972

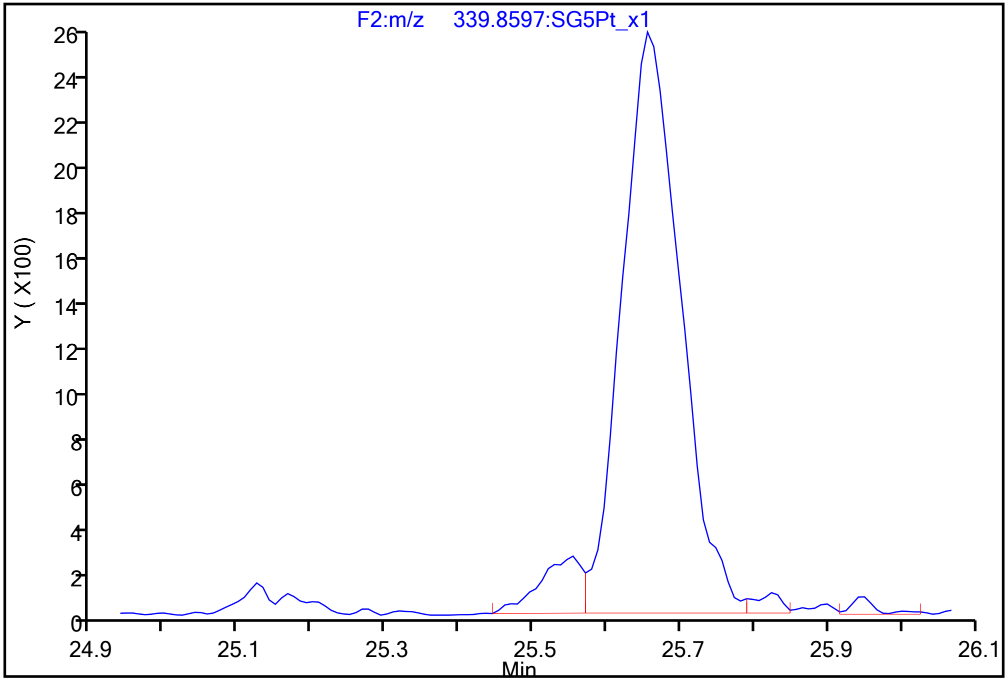

Reviewer: dadunj, 16-Mar-2021 09:13:58

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Processing Integration Results

RT: 27.81
Area: 788
Amount: 0.066638
Amount Units: pg/ul

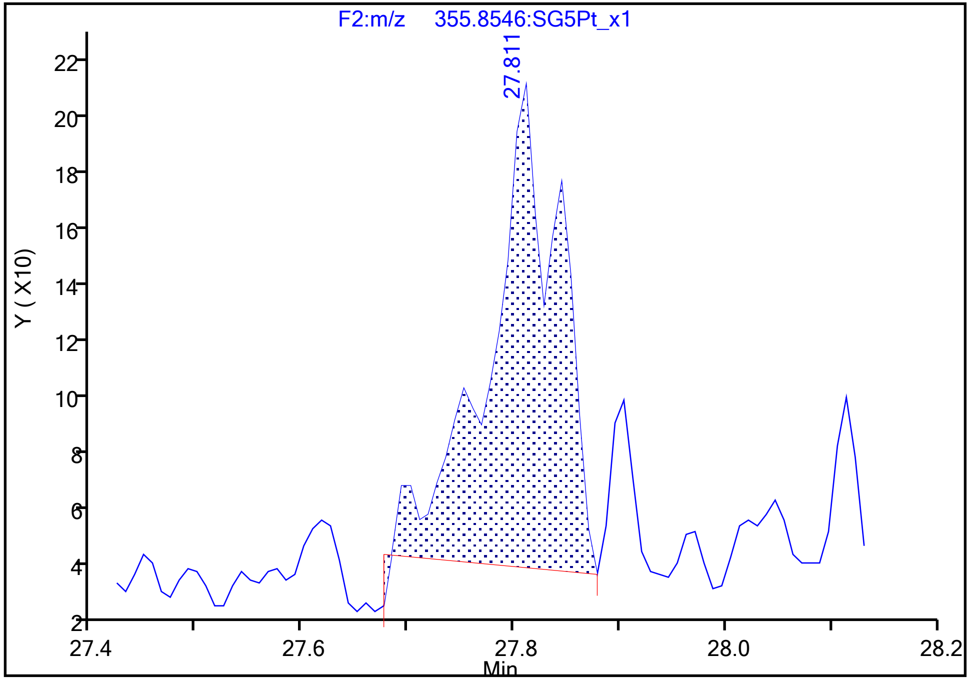

Manual Integration Results

RT: 27.81
Area: 765
Amount: 0.065495
Amount Units: pg/ul

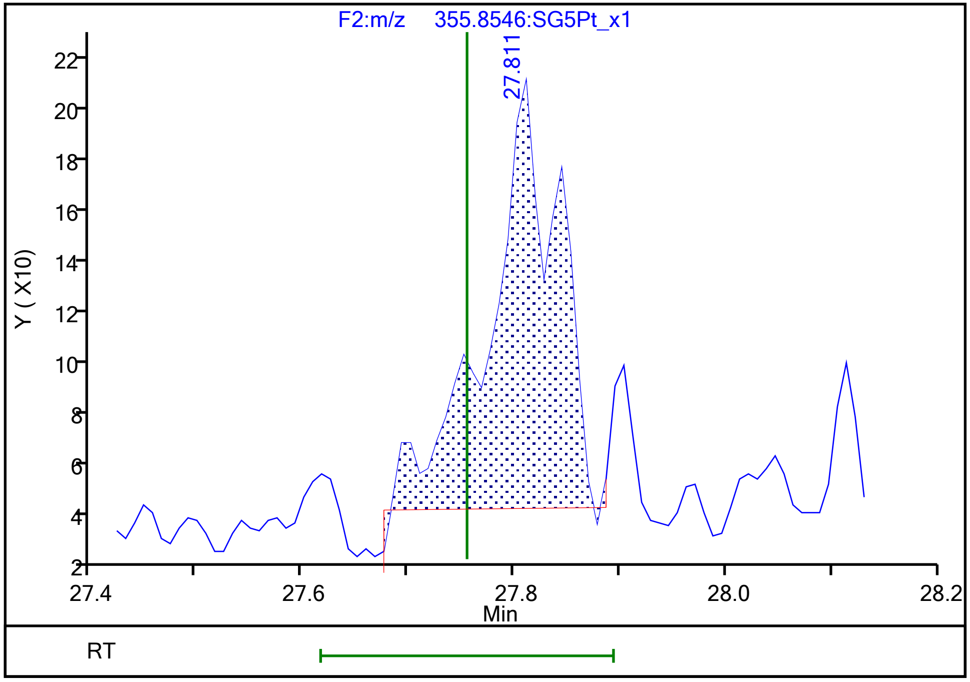

Reviewer: dadunj, 16-Mar-2021 09:14:12

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 16-Mar-2021 09:35:53

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Injection Date: 12-Mar-2021 18:32:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-10-A
Lab Sample ID: 320-70797-10
Client ID: 11215702-Tank2-1mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 11
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT: 35.91
Area: 1850
Amount: 0.123305
Amount Units: pg/ul

Processing Integration Results

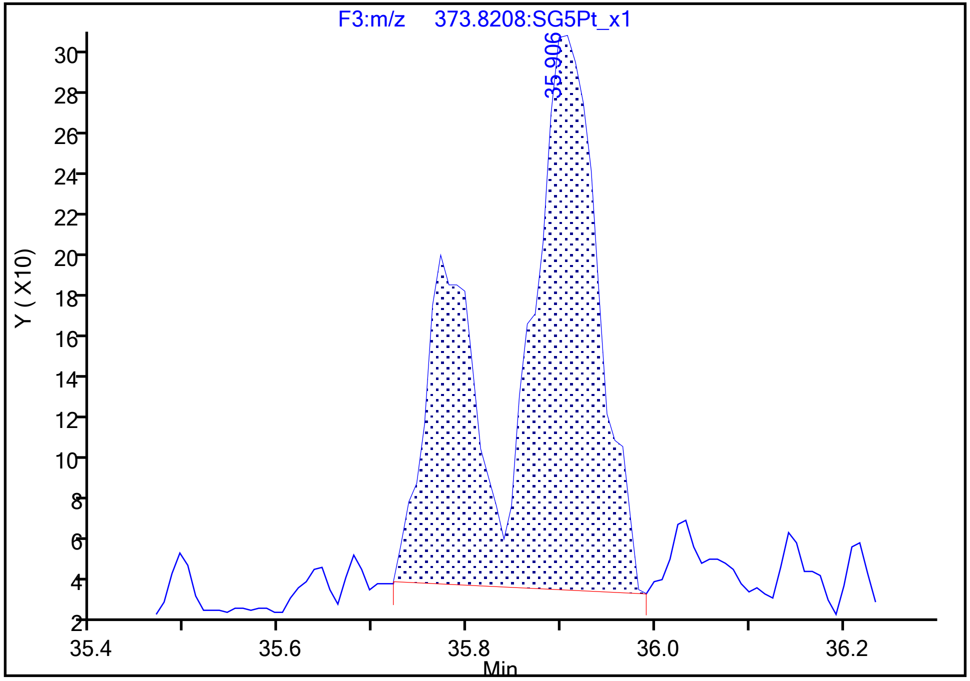

RT: 35.77
Area: 585
Amount: 0.041182
Amount Units: pg/ul

Manual Integration Results

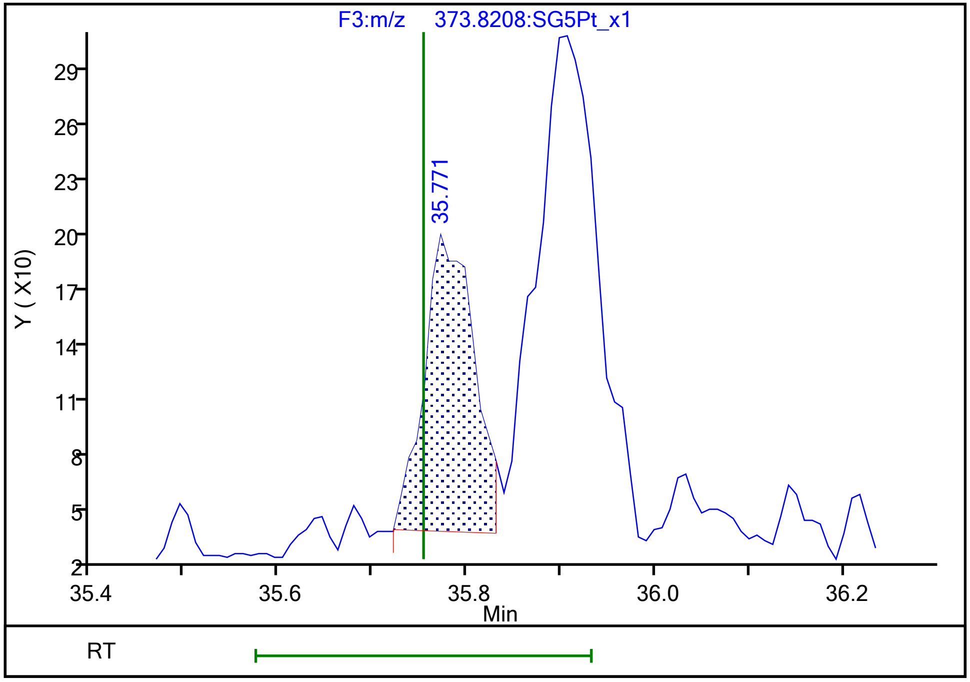

Reviewer: dadunj, 16-Mar-2021 09:14:34

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:53   Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Injection Date: 12-Mar-2021 18:32:00   Instrument ID: DFS 1
Lims ID: 320-70797-A-10-A   Lab Sample ID: 320-70797-10
Client ID: 11215702-Tank2-1mm
Operator ID: Xcalibur_System   ALS Bottle#: 0   Worklist Smp#: 11
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Method: Dioxin_DFS1   Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)   Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9
Signal: 2

RT: 35.89
Area: 1755
Amount: 0.123305
Amount Units: pg/ul

Processing Integration Results

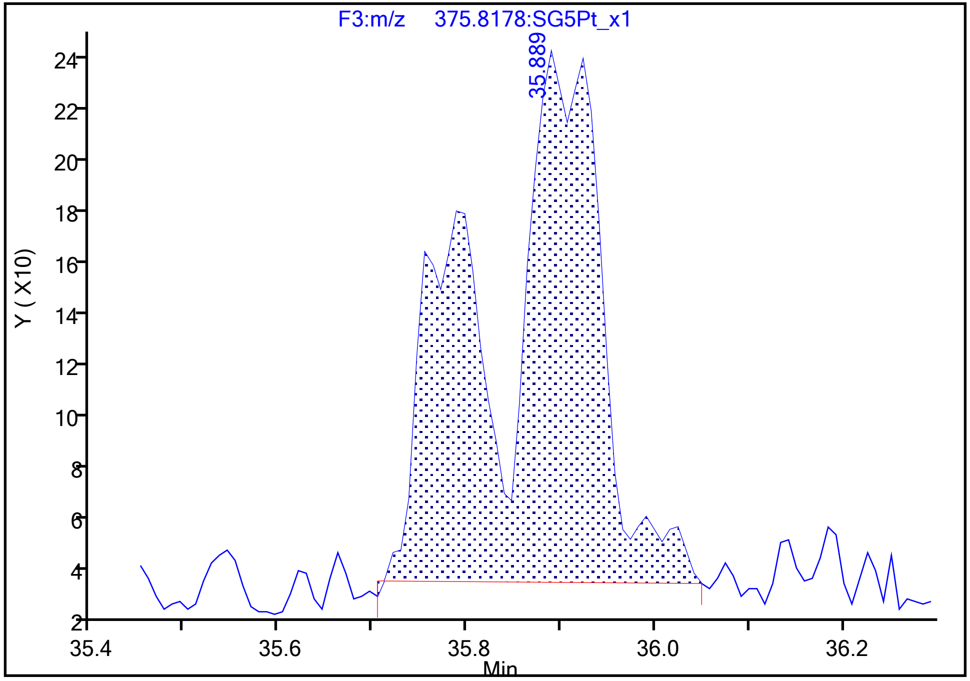

RT: 35.79
Area: 619
Amount: 0.041182
Amount Units: pg/ul

Manual Integration Results

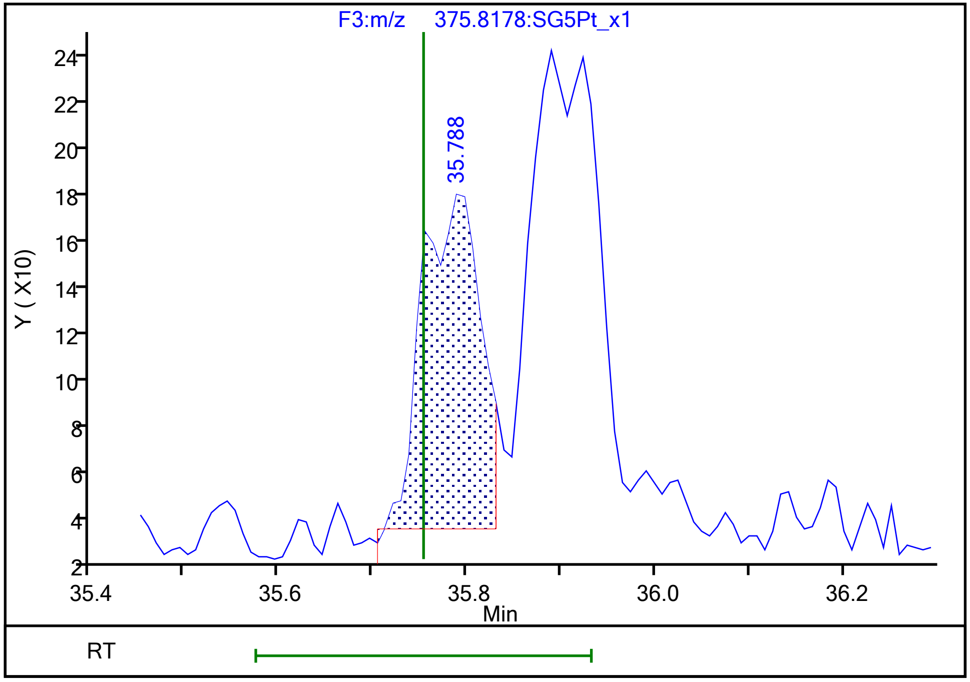

Reviewer: dadunj, 16-Mar-2021 09:14:36
Audit Action: Split an Integrated Peak   Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (31.11- 35.88)

Signal: 1

Processing Integration Results

RT = 35.906 Area = 1850

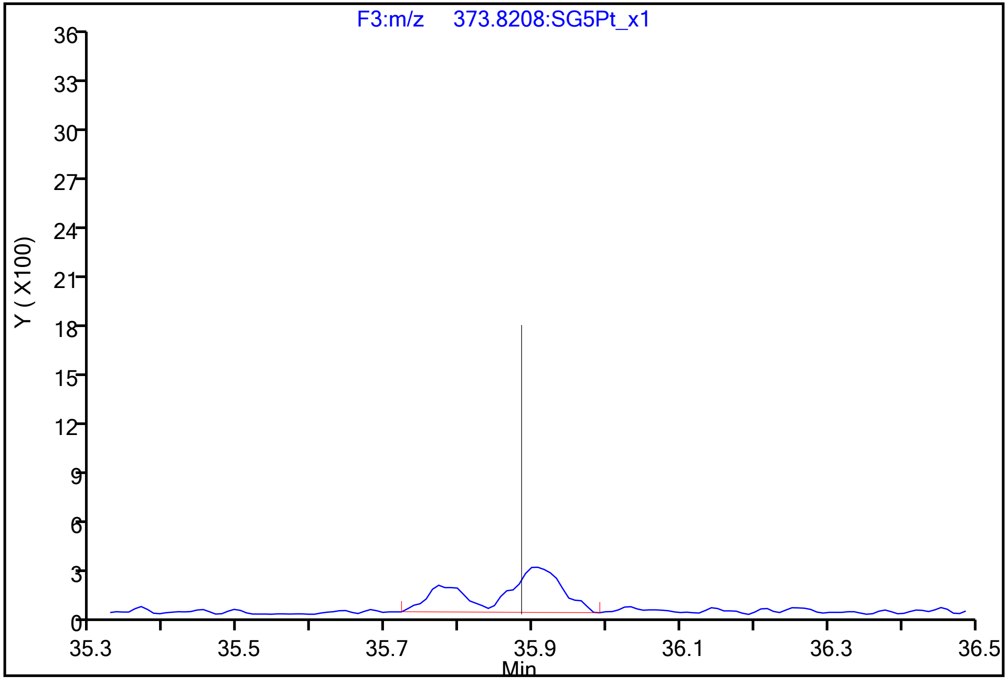

Manual Integration Results

RT = 35.906 Area = 1260 M

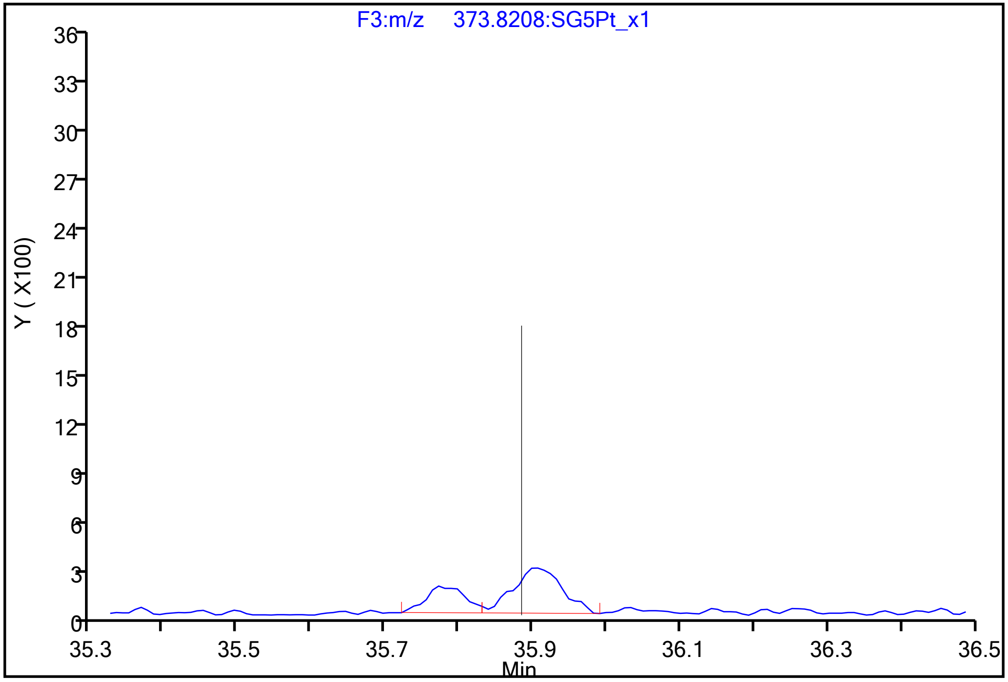

Reviewer: dadunj, 16-Mar-2021 09:14:47

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	35.01
Area:	937
Amount:	0.092658
Amount Units:	pg/ul

Processing Integration Results

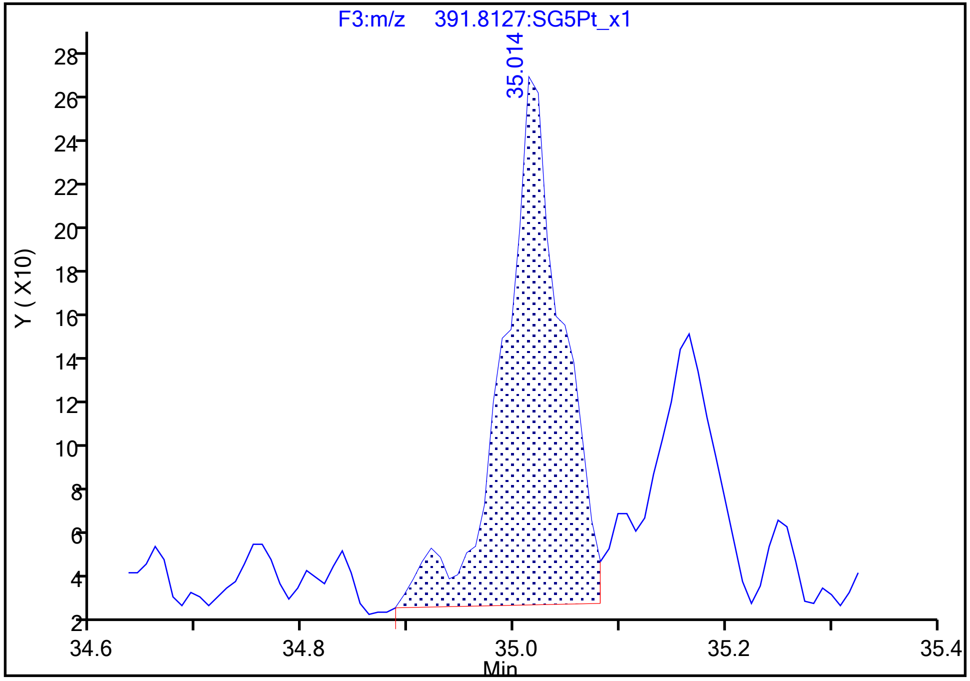

RT:	35.01
Area:	885
Amount:	0.088352
Amount Units:	pg/ul

Manual Integration Results

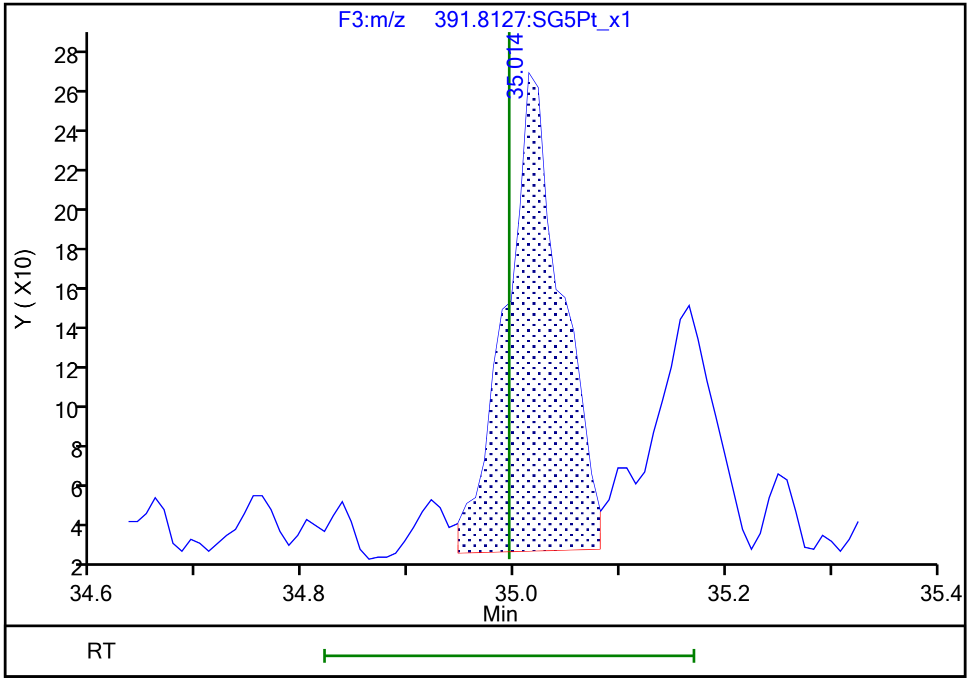

Reviewer: dadunj, 16-Mar-2021 09:14:56

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10
Client ID:	11215702-Tank2-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 35.03
Area: 849
Amount: 0.092658
Amount Units: pg/ul

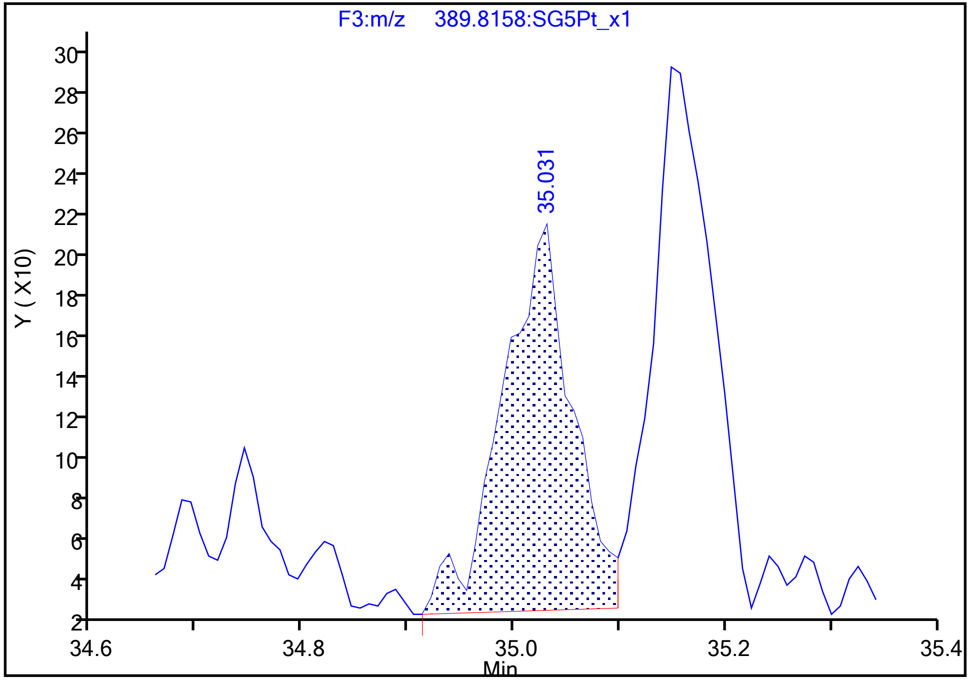

Manual Integration Results

RT: 35.03
Area: 818
Amount: 0.088352
Amount Units: pg/ul

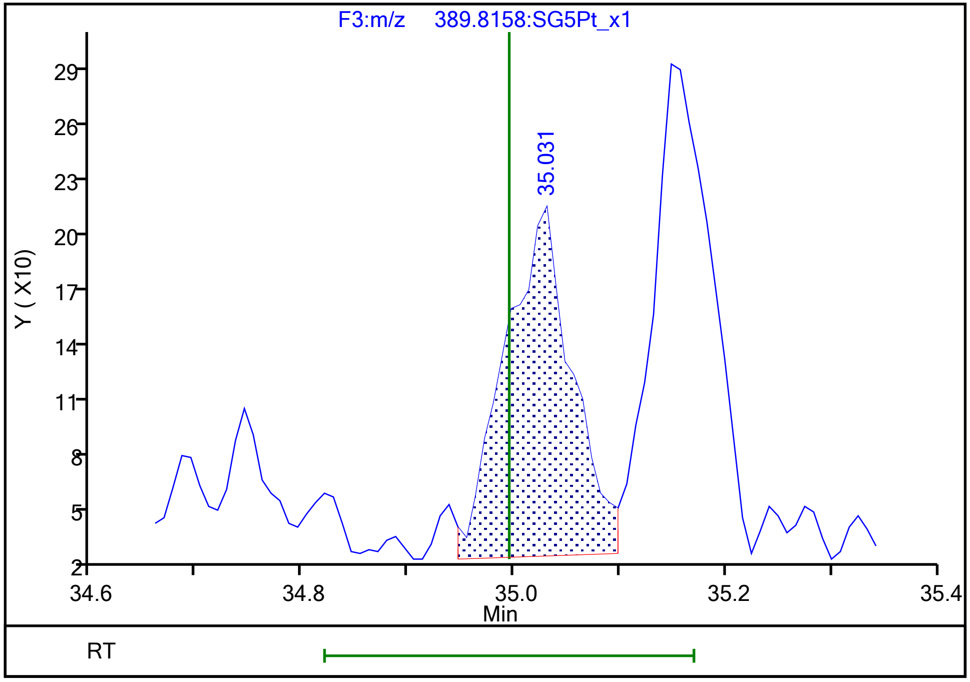

Reviewer: dadunj, 16-Mar-2021 09:14:57

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

Processing Integration Results

RT = 32.673 Area = 1078

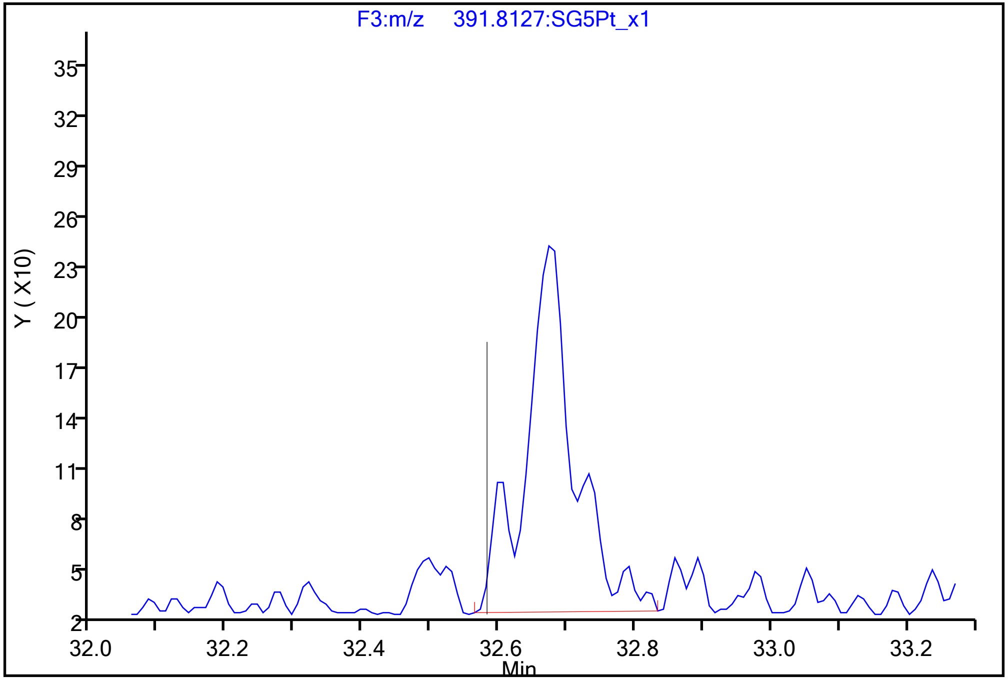

Manual Integration Results

RT = 32.673 Area = 1036 M

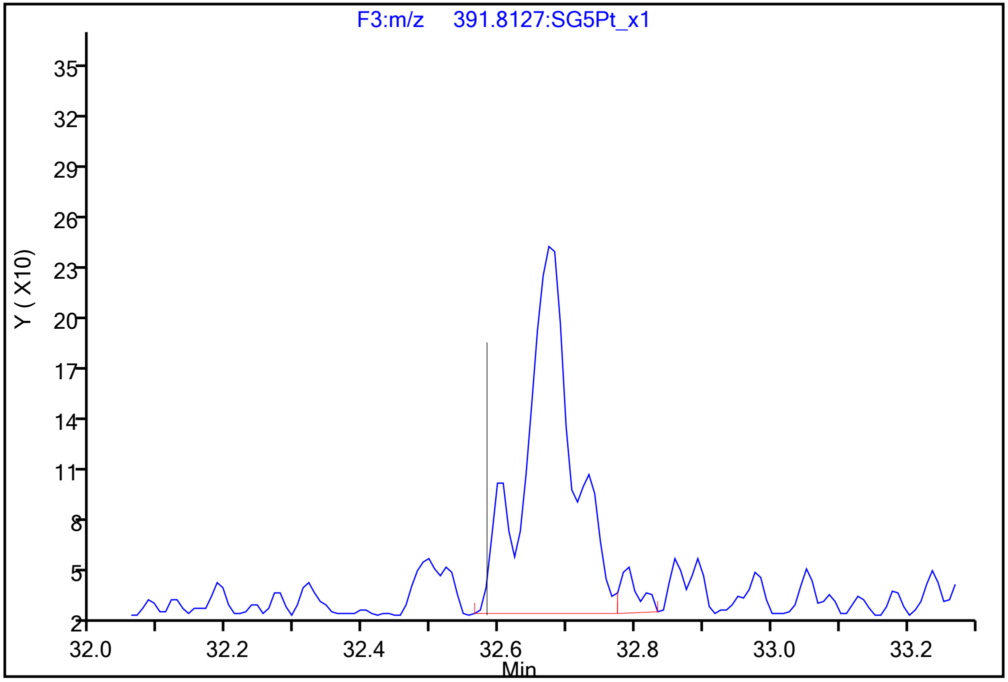

Reviewer: dadunj, 16-Mar-2021 09:15:08

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (32.58- 35.50)

Signal: 1

Processing Integration Results

RT = 34.079 Area = 2024

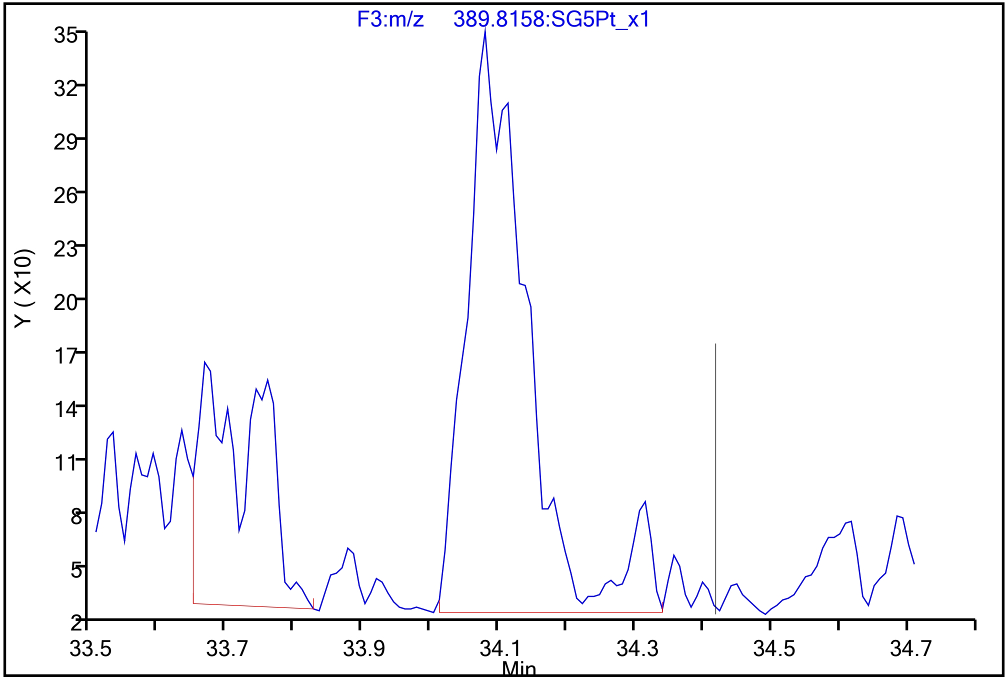

Manual Integration Results

RT = 34.079 Area = 1853 M

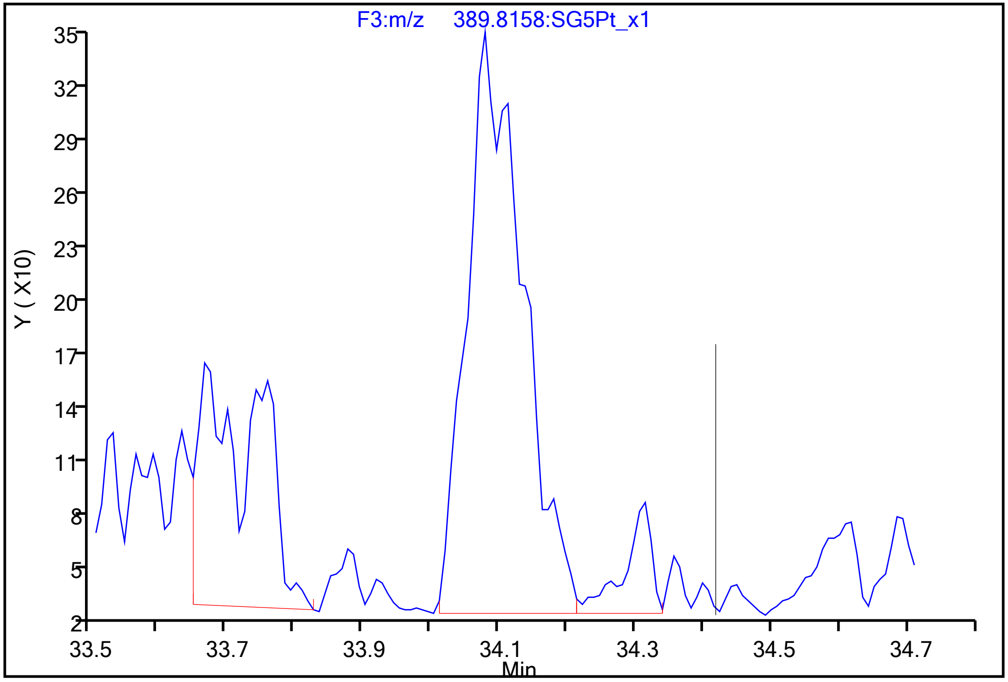

Reviewer: dadunj, 16-Mar-2021 09:15:05

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:53

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10
Client ID:	11215702-Tank2-1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 2, m/z: 391.8127, RT: (32.58- 35.50)

Signal: 2

Processing Integration Results

RT = 34.121 Area = 2146

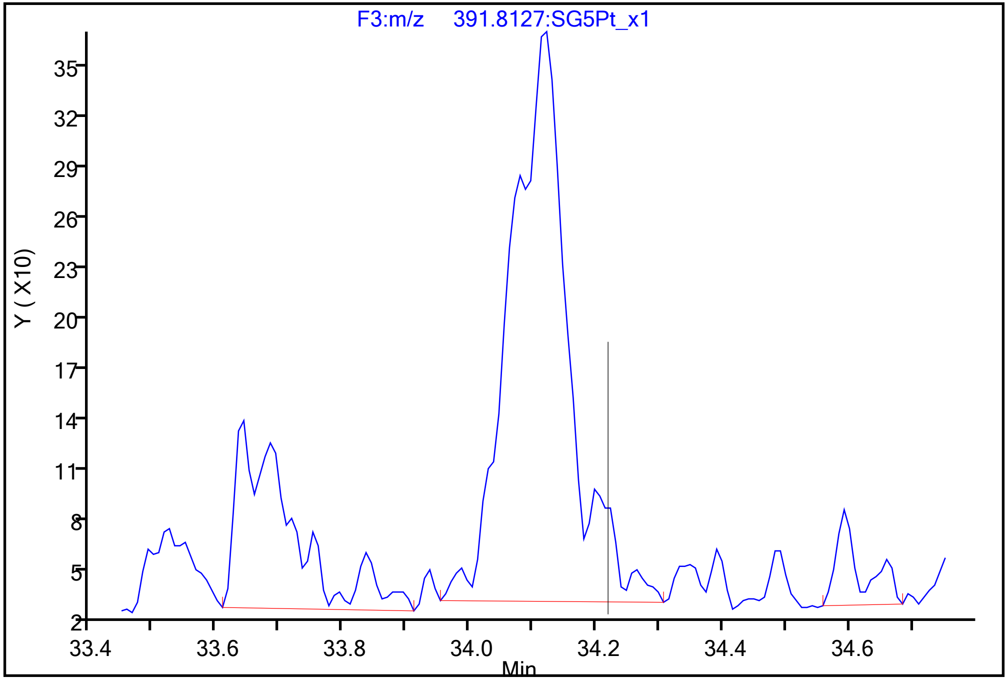

Manual Integration Results

RT = 34.121 Area = 2105 M

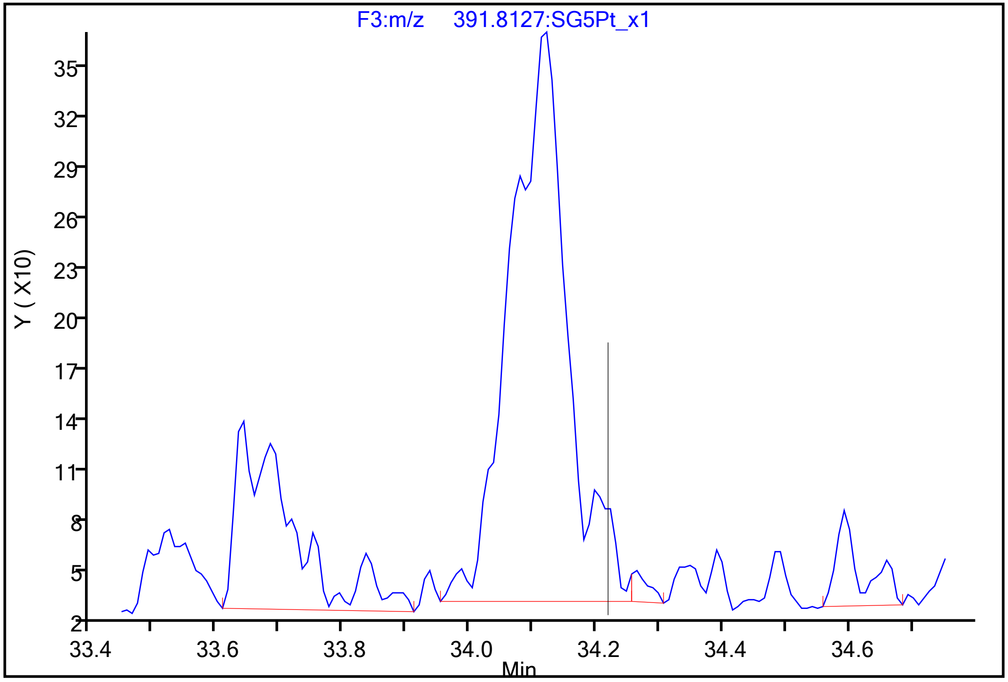

Reviewer: dadunj, 16-Mar-2021 09:15:08

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7788, RT: (37.75- 39.15)

Signal: 2

Processing Integration Results

RT = 38.217 Area = 2697

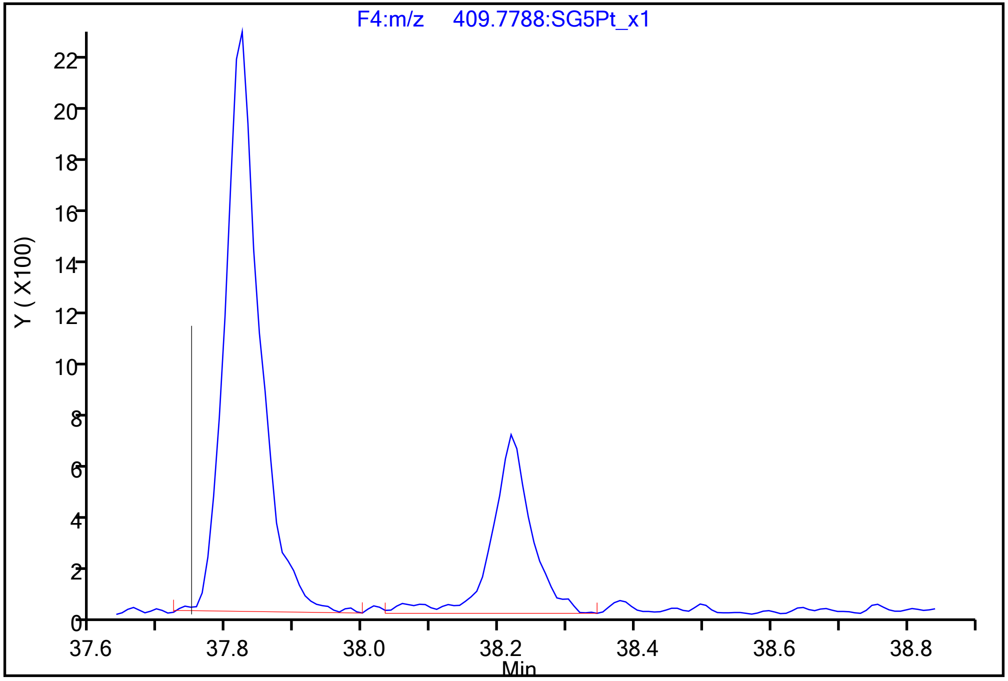

Manual Integration Results

RT = 38.217 Area = 2521 M

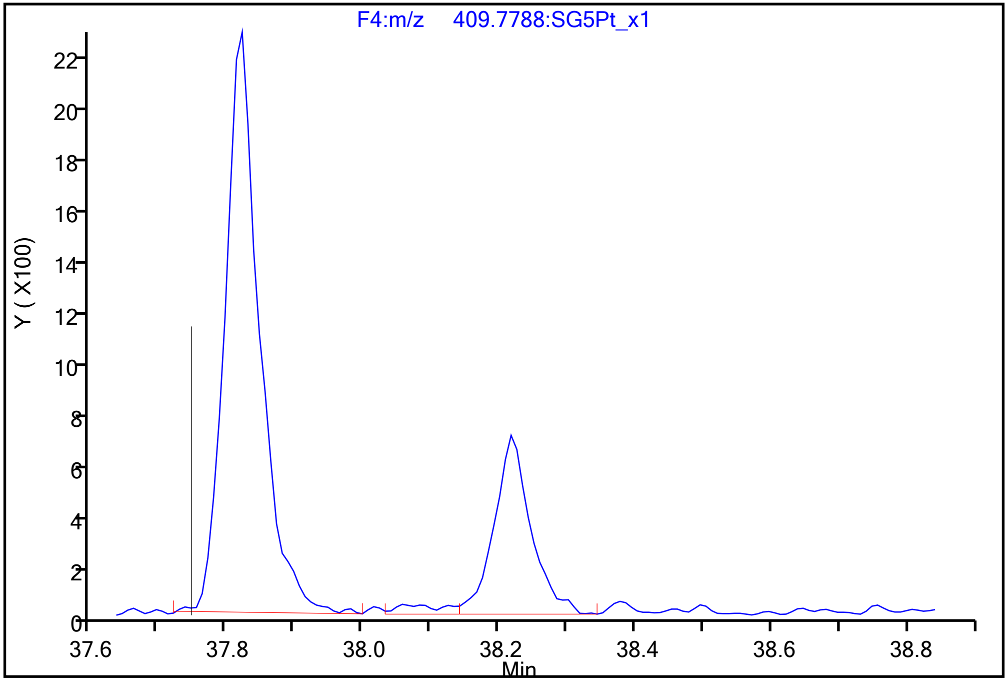

Reviewer: dadunj, 16-Mar-2021 09:16:26

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d				
Injection Date:	12-Mar-2021 18:32:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-10-A	Lab Sample ID:	320-70797-10		
Client ID:	11215702-Tank2-1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

RT:	41.40
Area:	3883
Amount:	0.348099
Amount Units:	pg/ul

Processing Integration Results

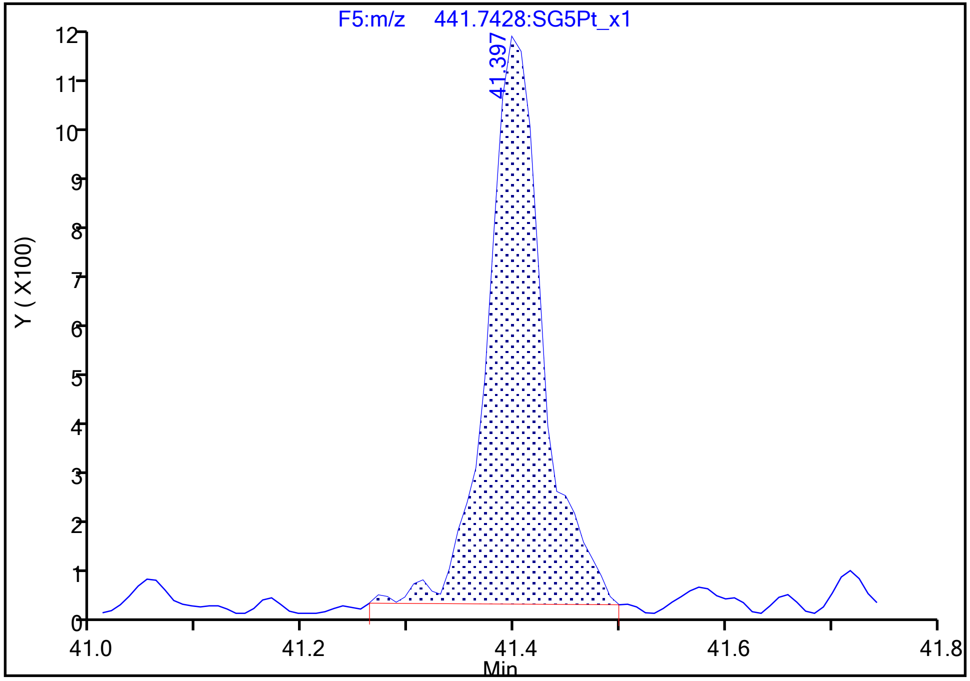

RT:	41.40
Area:	3802
Amount:	0.344806
Amount Units:	pg/ul

Manual Integration Results

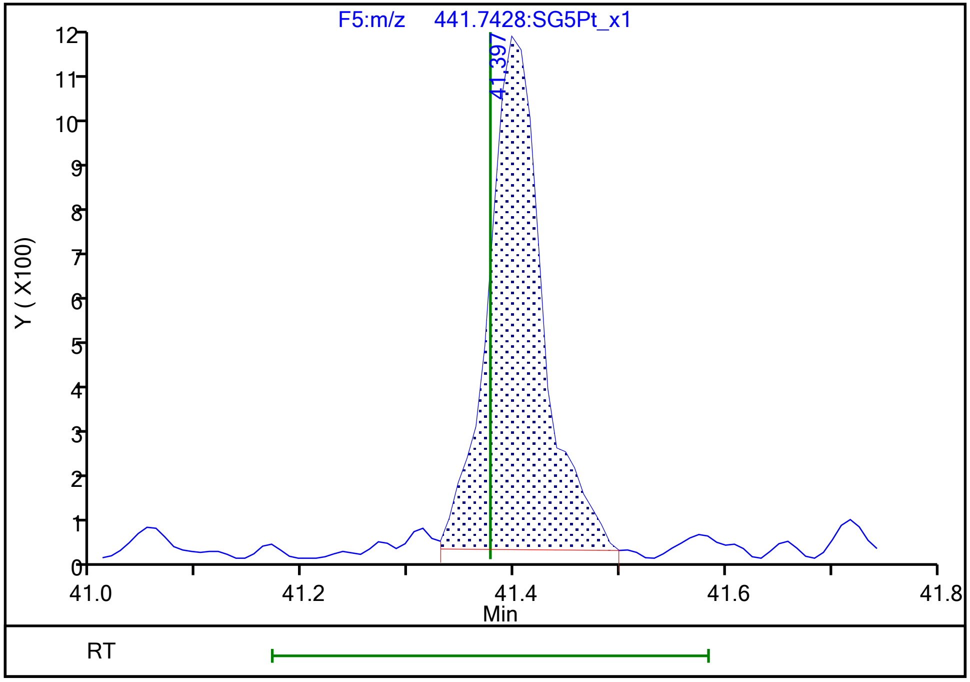

Reviewer: dadunj, 16-Mar-2021 09:16:35

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Injection Date: 12-Mar-2021 18:32:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-1mm

Worklist#: 469779 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

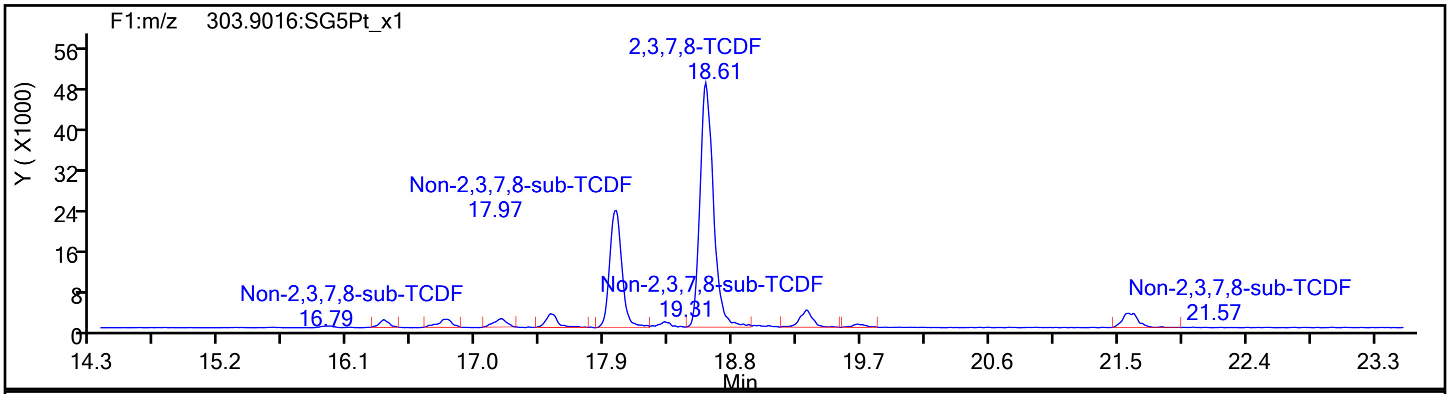

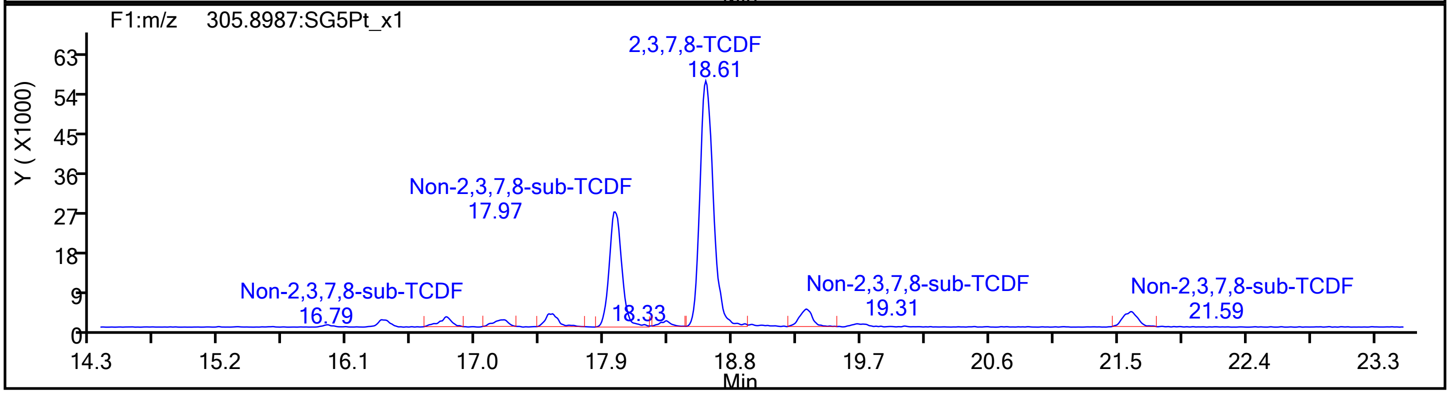

TCDF Standards

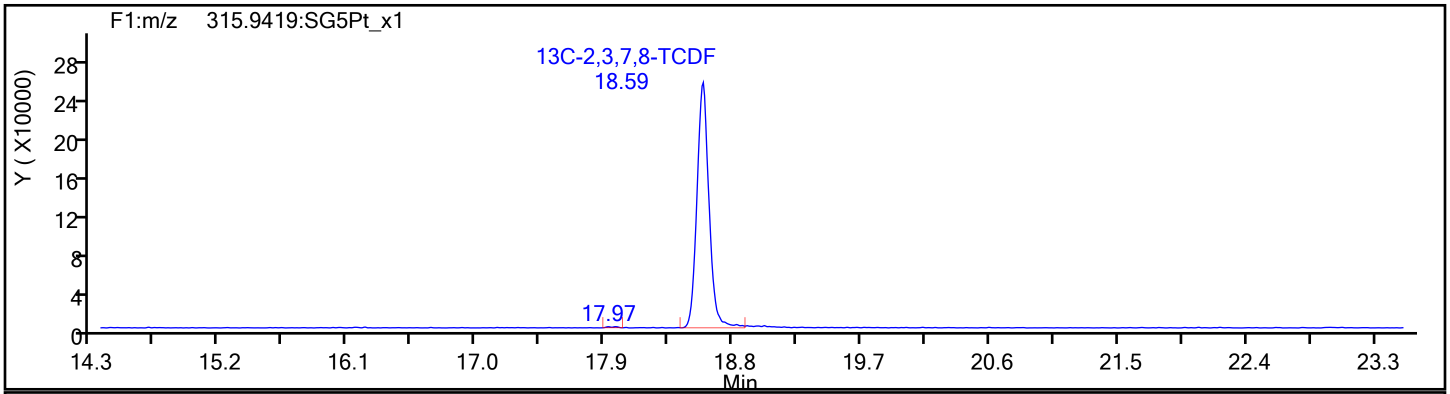

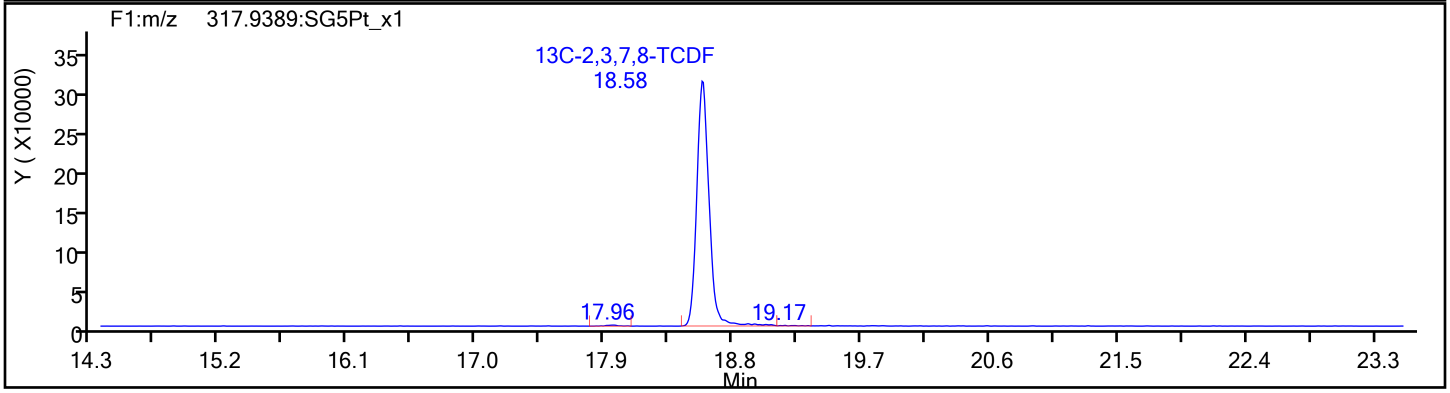

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

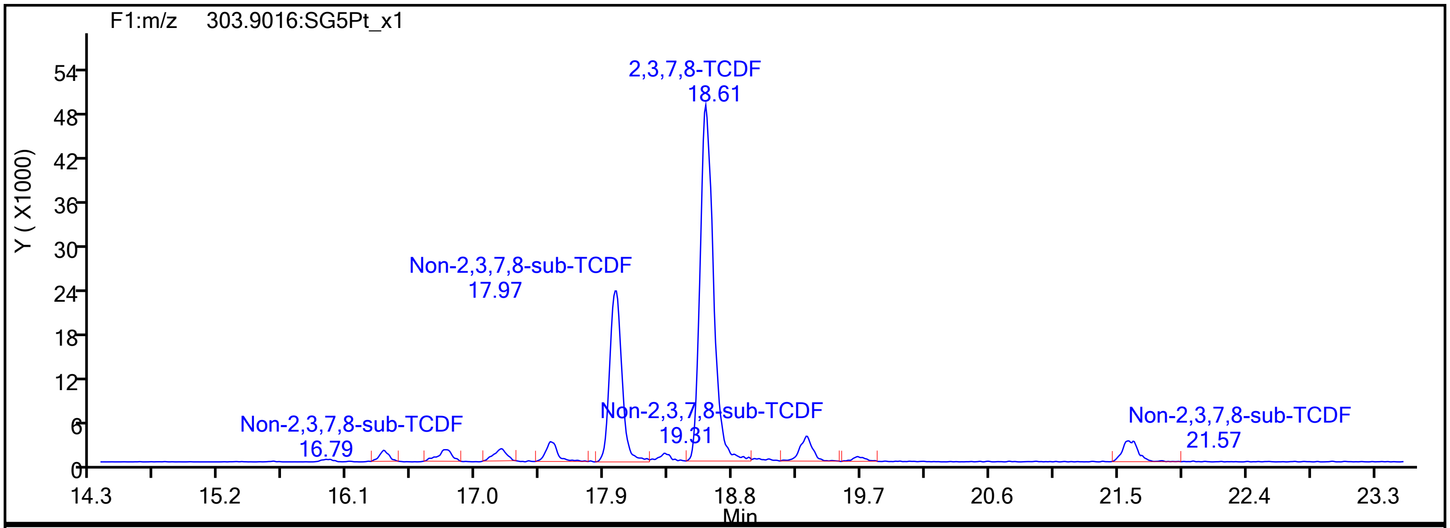

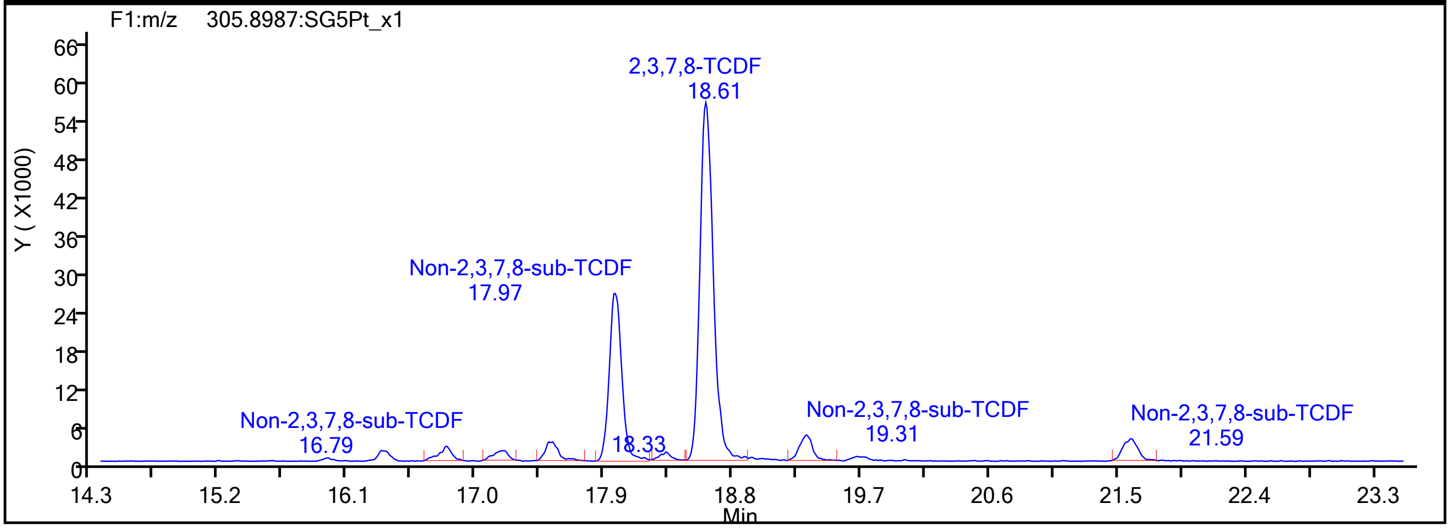

TCDF Interference Mass

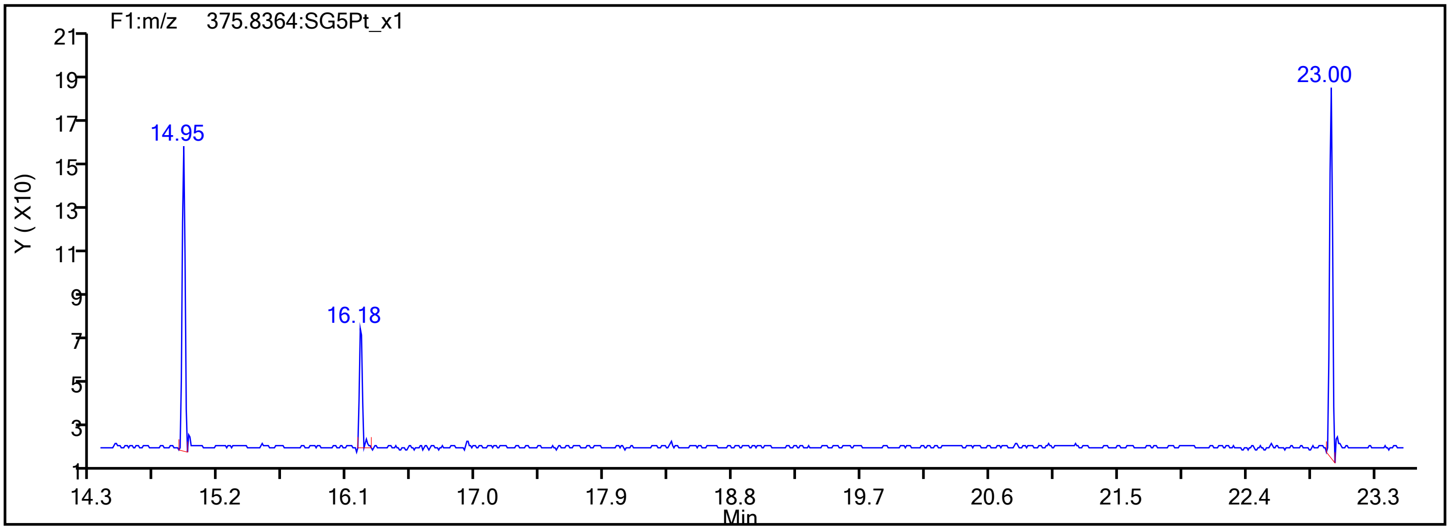

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Injection Date: 12-Mar-2021 18:32:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-1mm

Worklist#: 469779 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

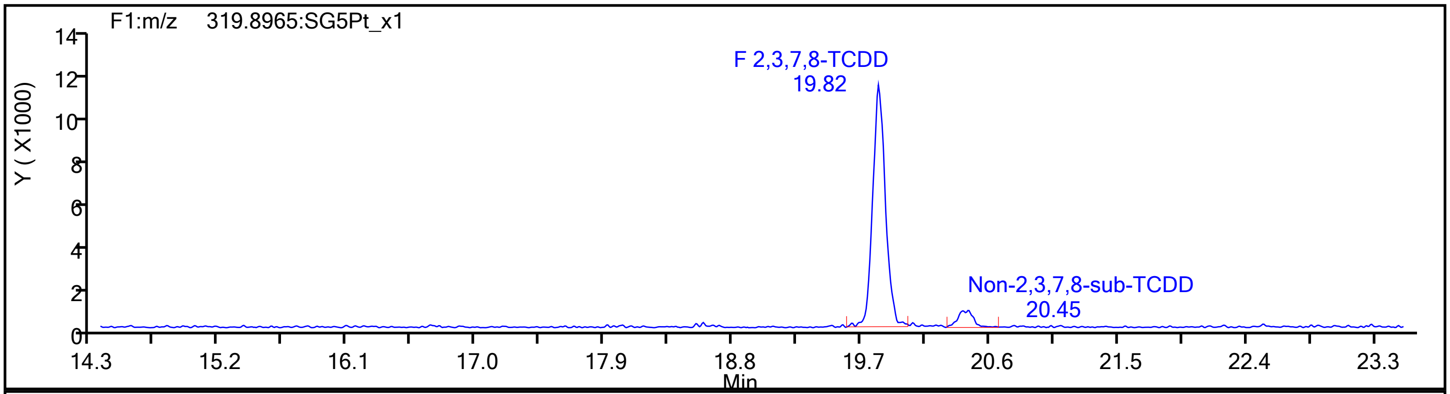

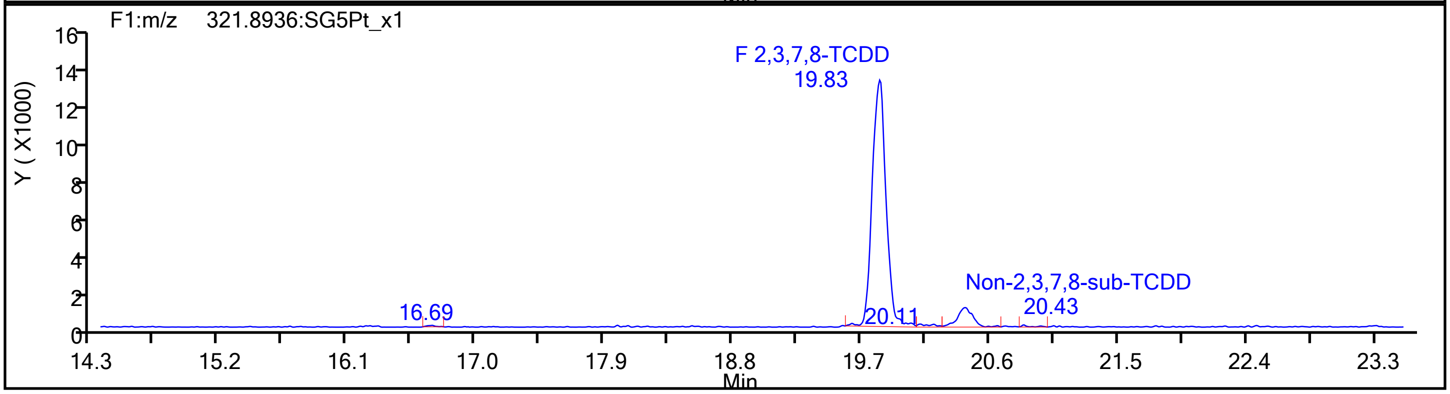

TCDD Standards

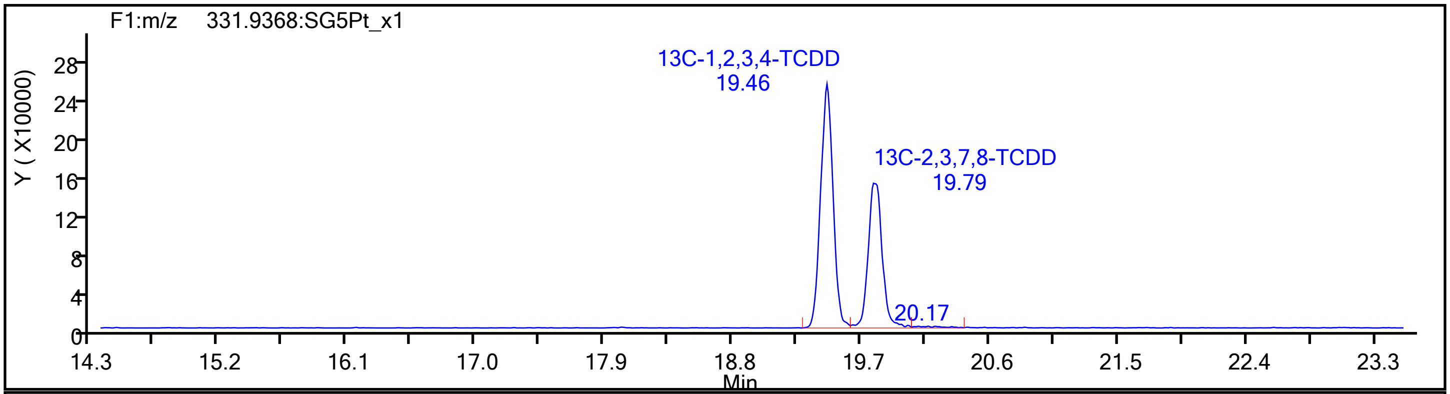

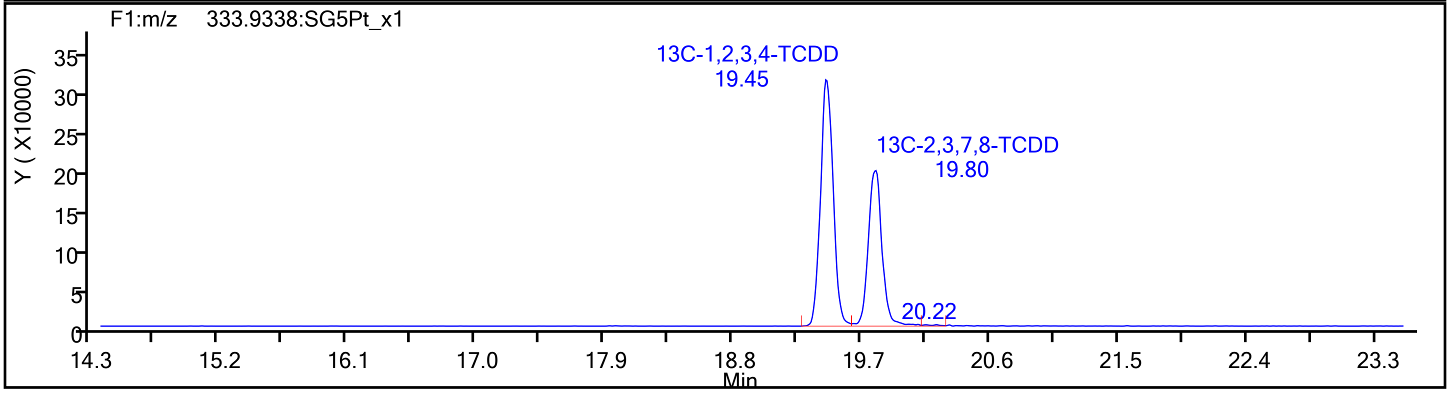

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

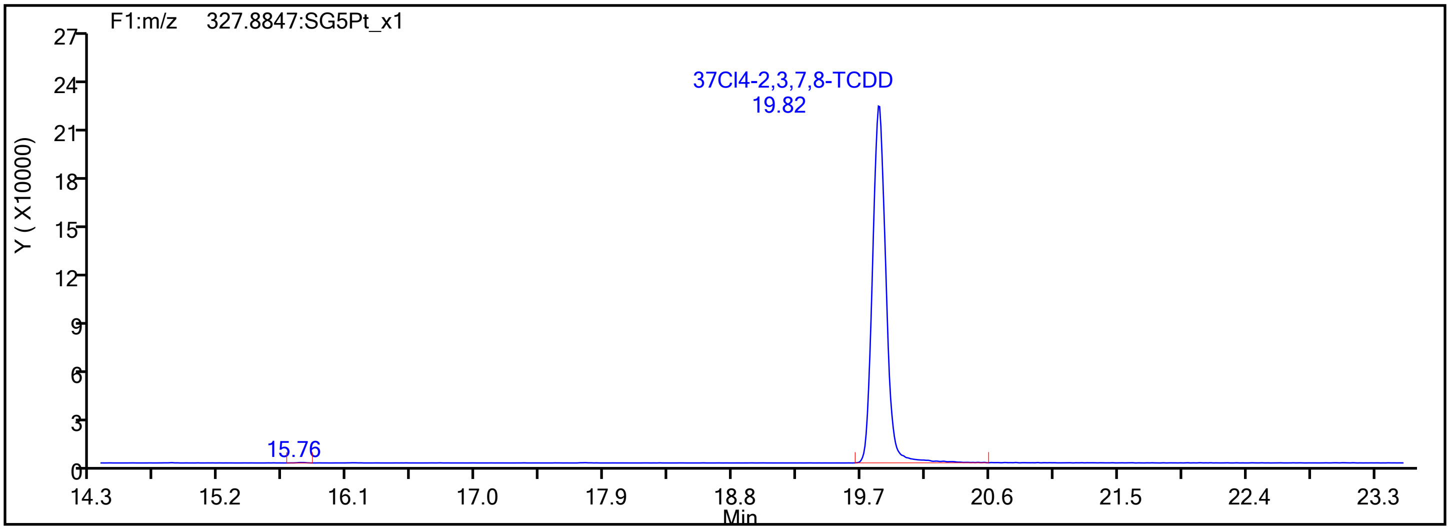

37Cl4-TCDD Standards

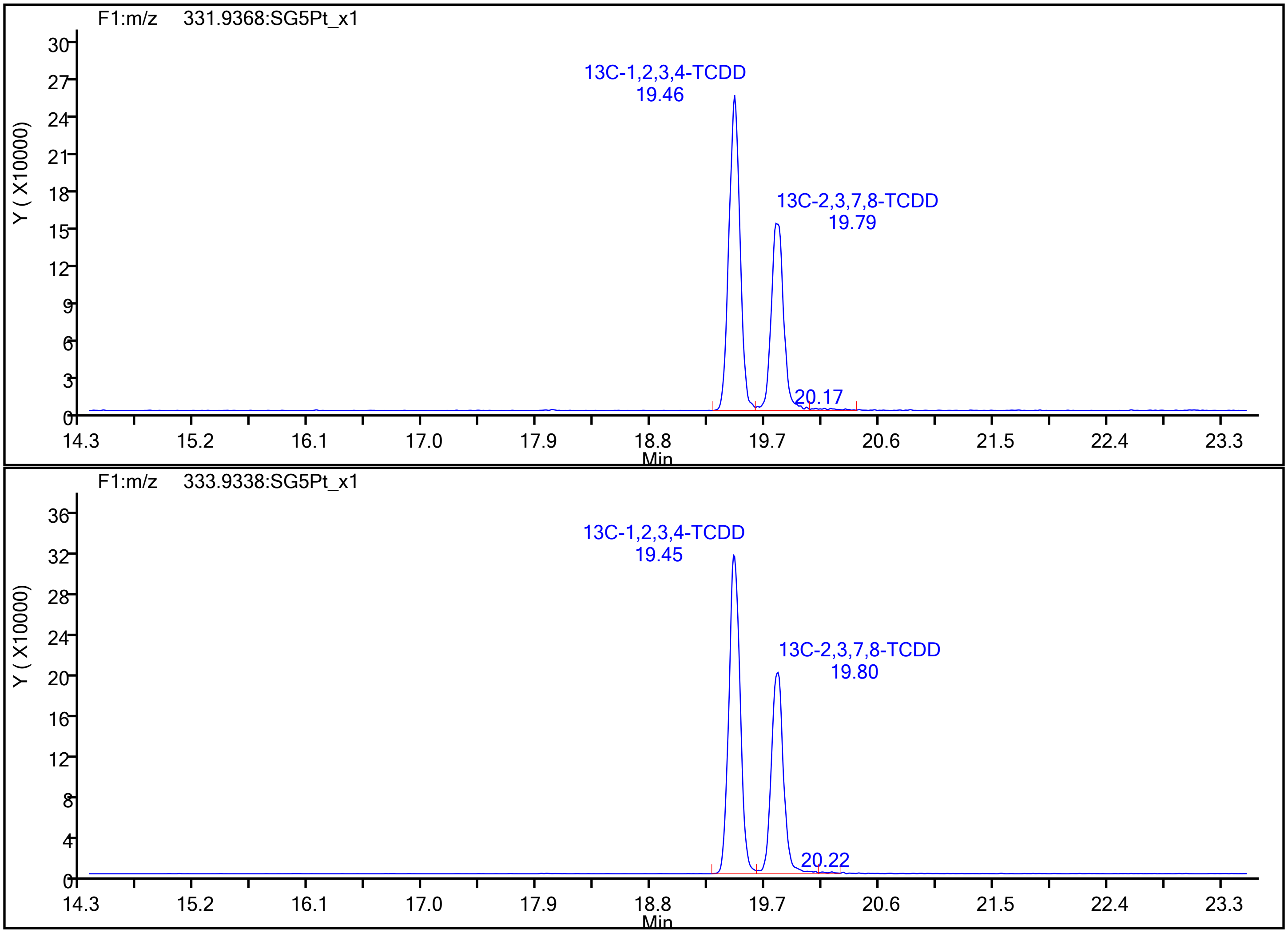

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

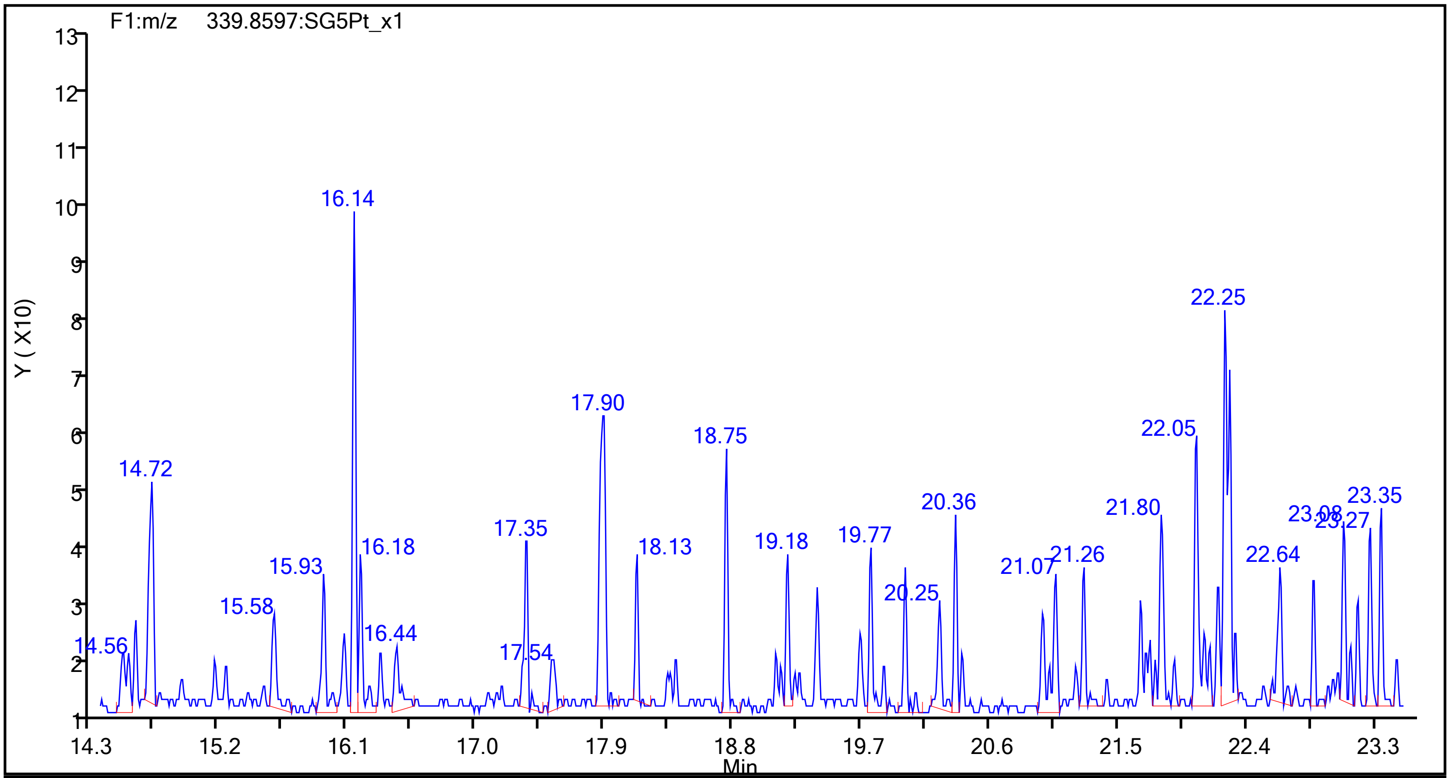

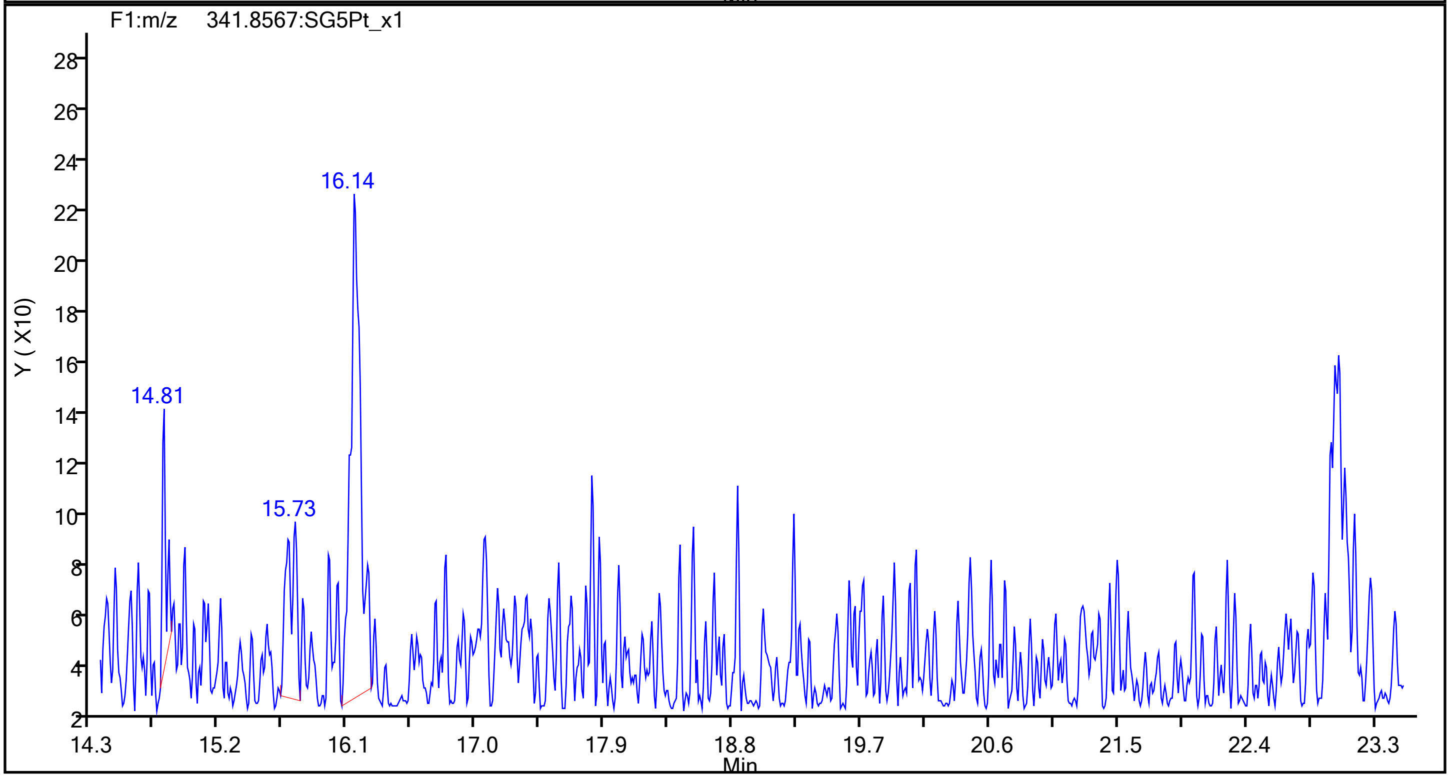

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

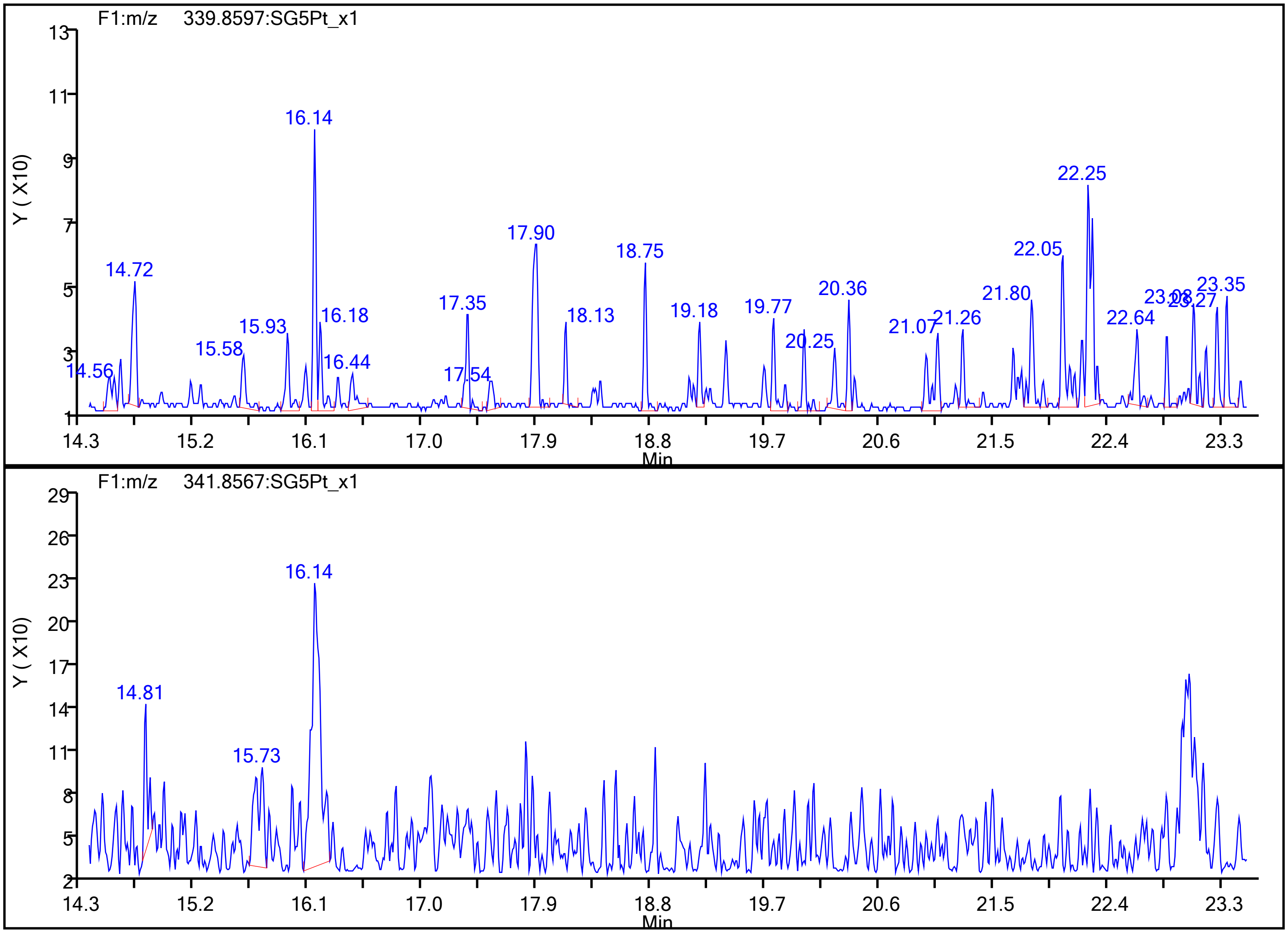

F1 PeCDFs Interference Mass

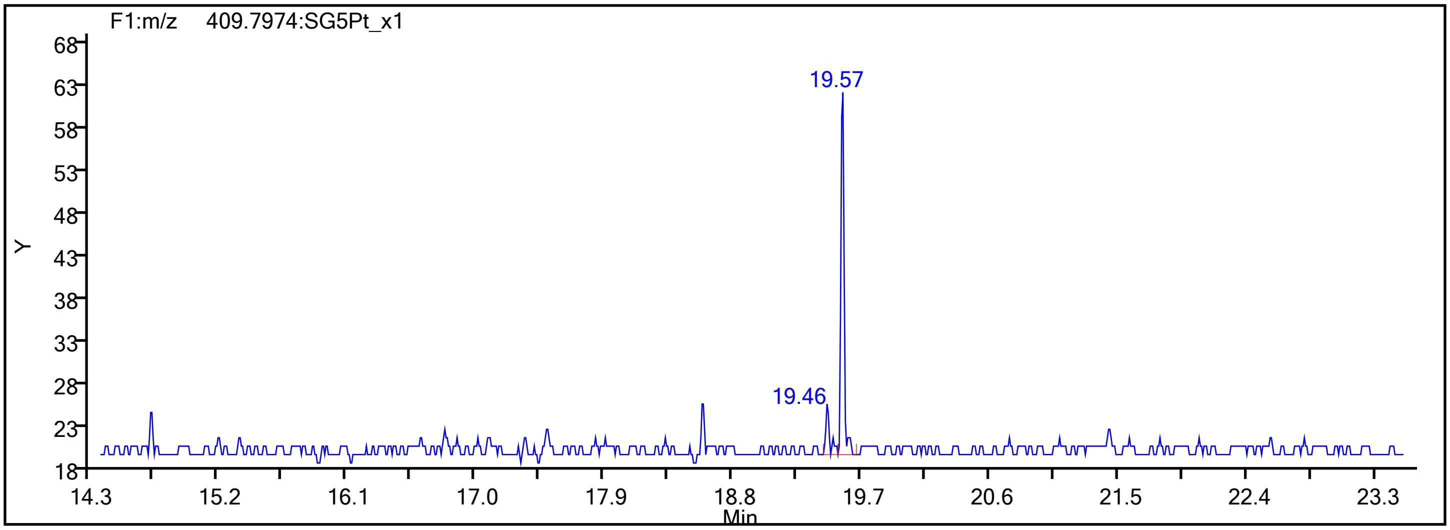

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

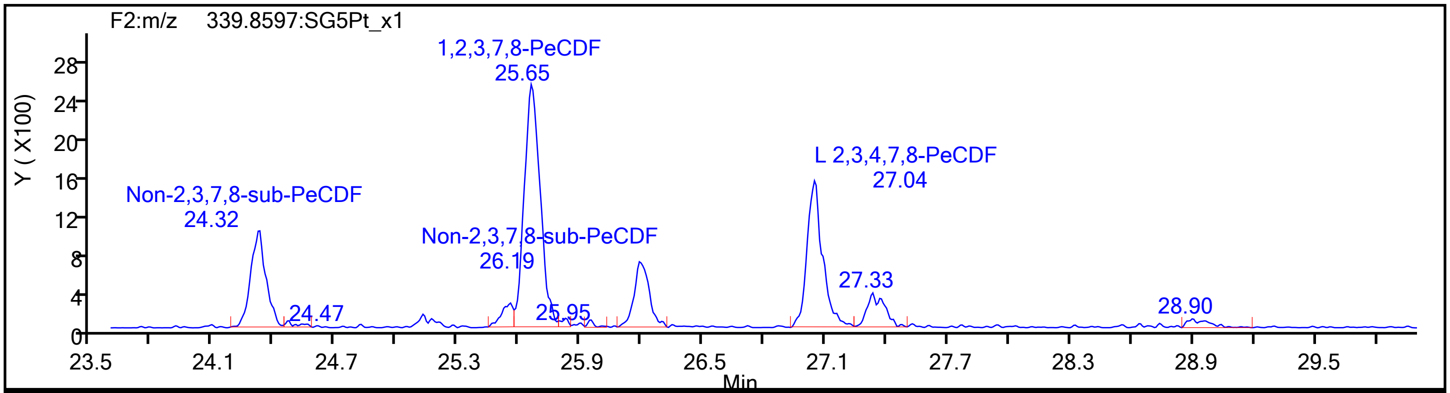

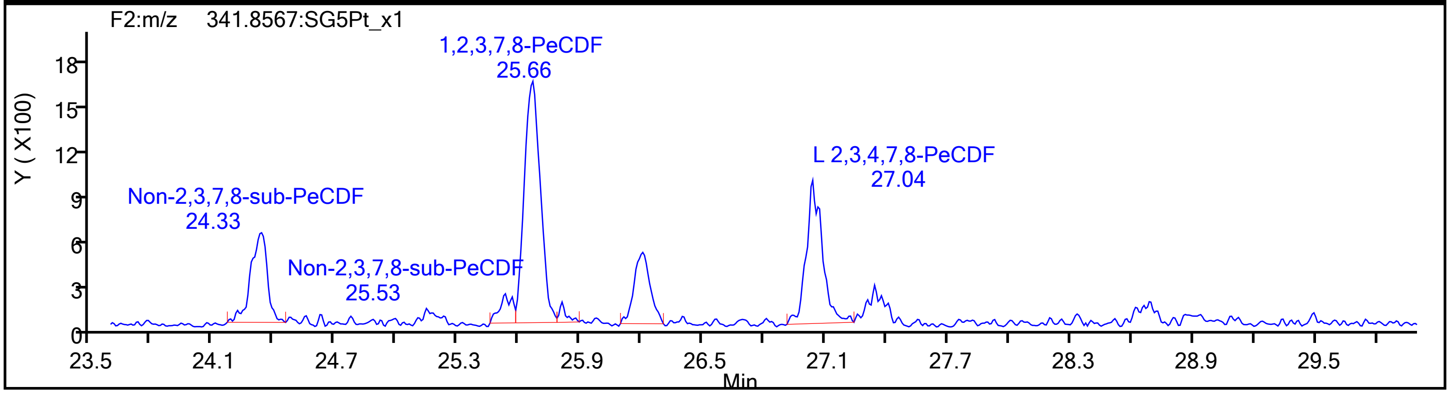

PeCDF Standards

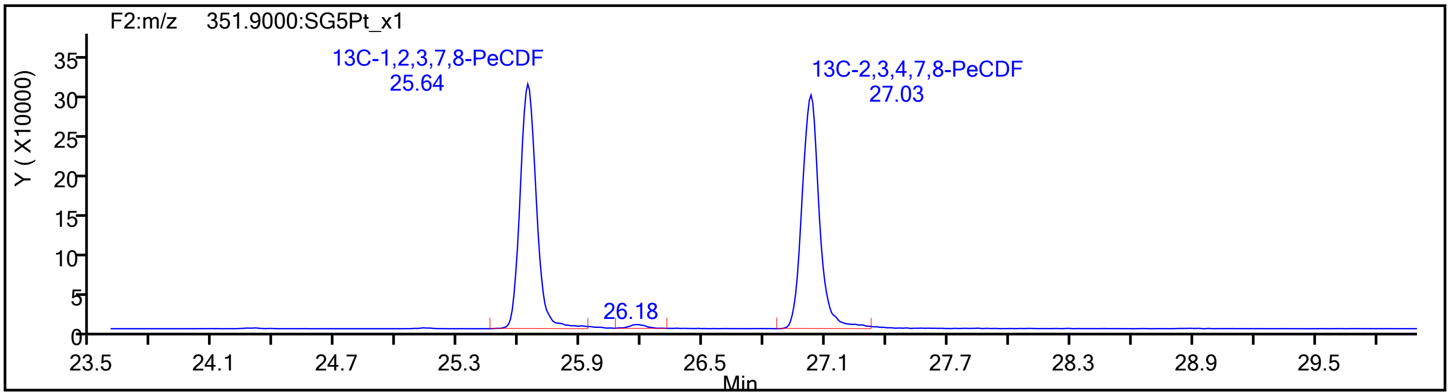

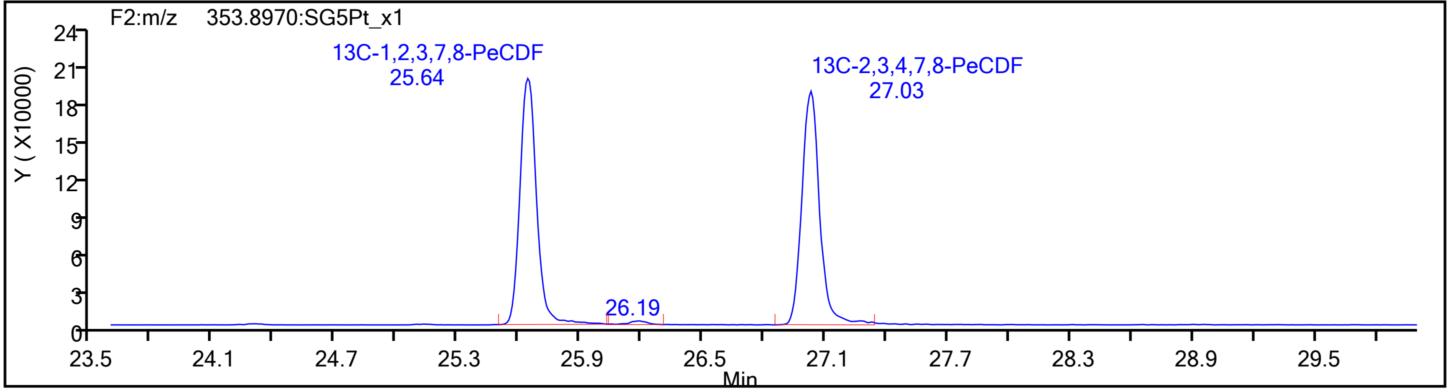

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Injection Date: 12-Mar-2021 18:32:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-1mm
Worklist#: 469779
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

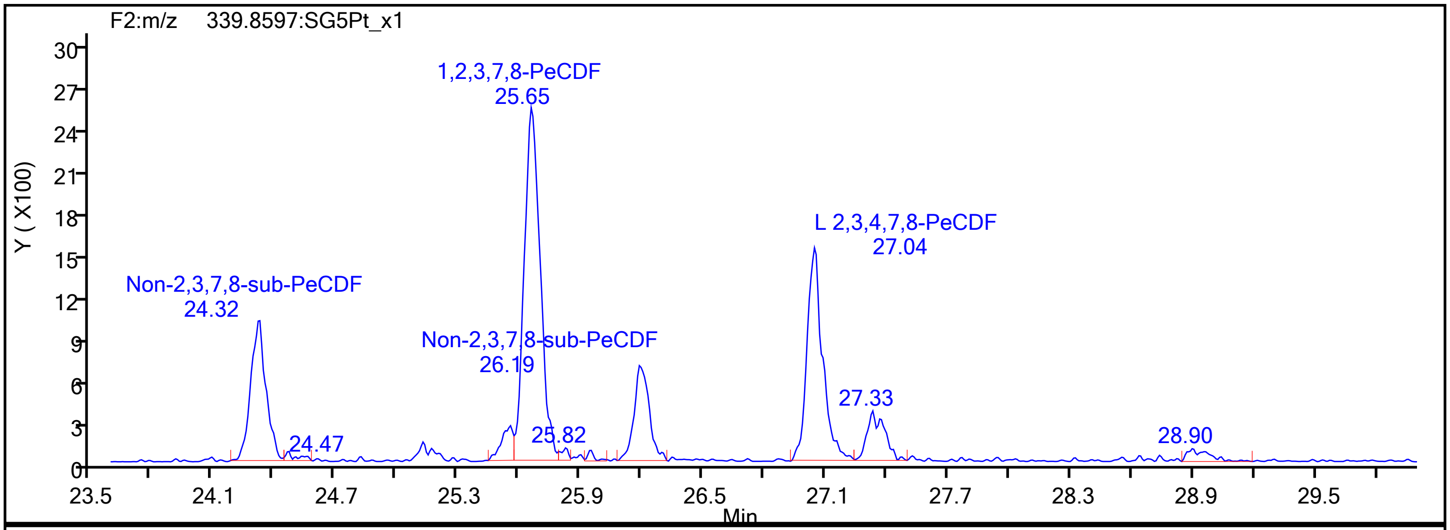

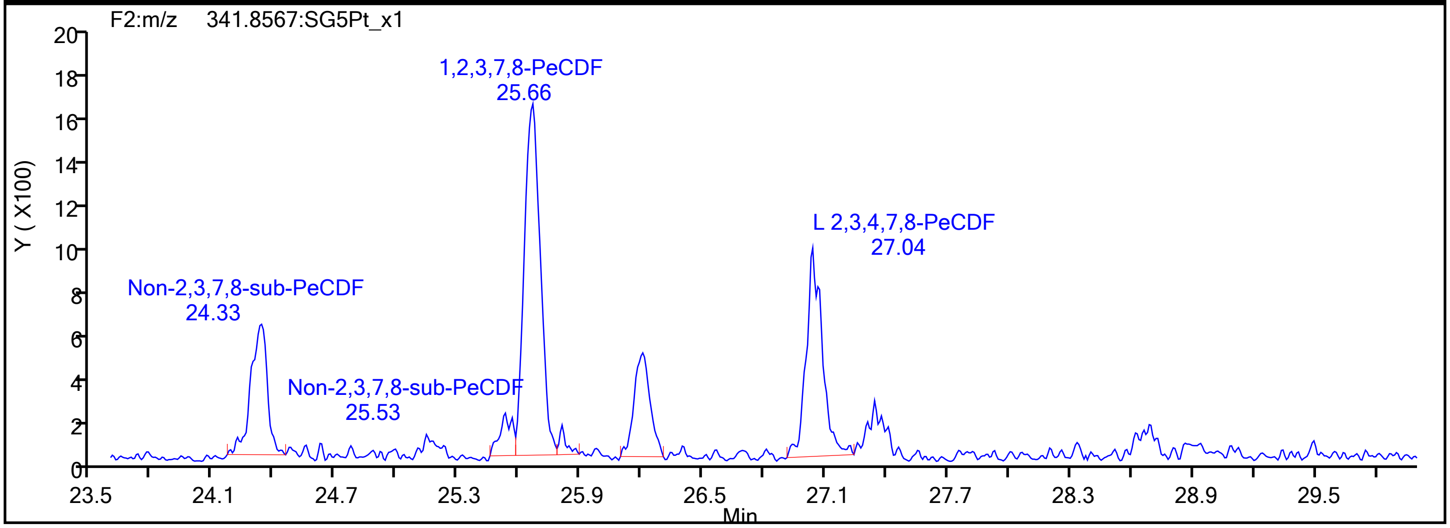

PeCDF Interference Mass

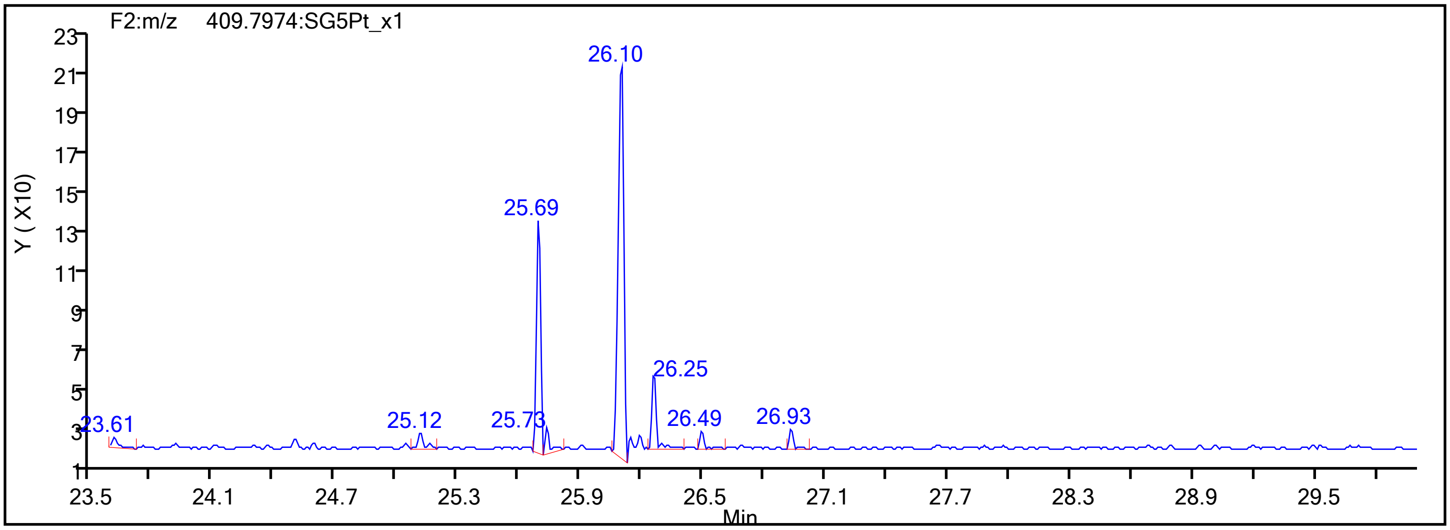

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Injection Date: 12-Mar-2021 18:32:00 Injection Vol: 2.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-1mm
Worklist#: 469779 Sample Line#: 11
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

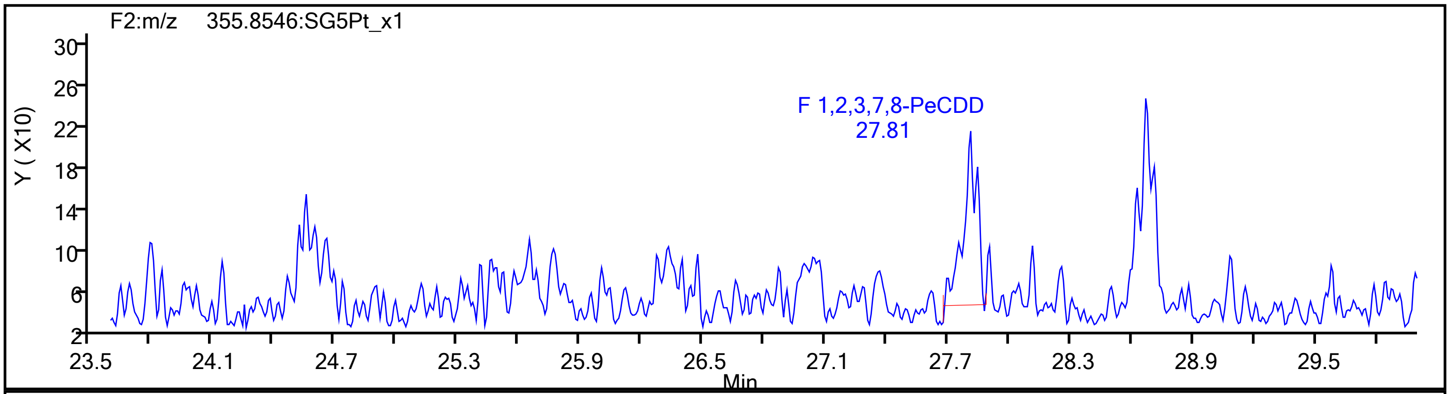

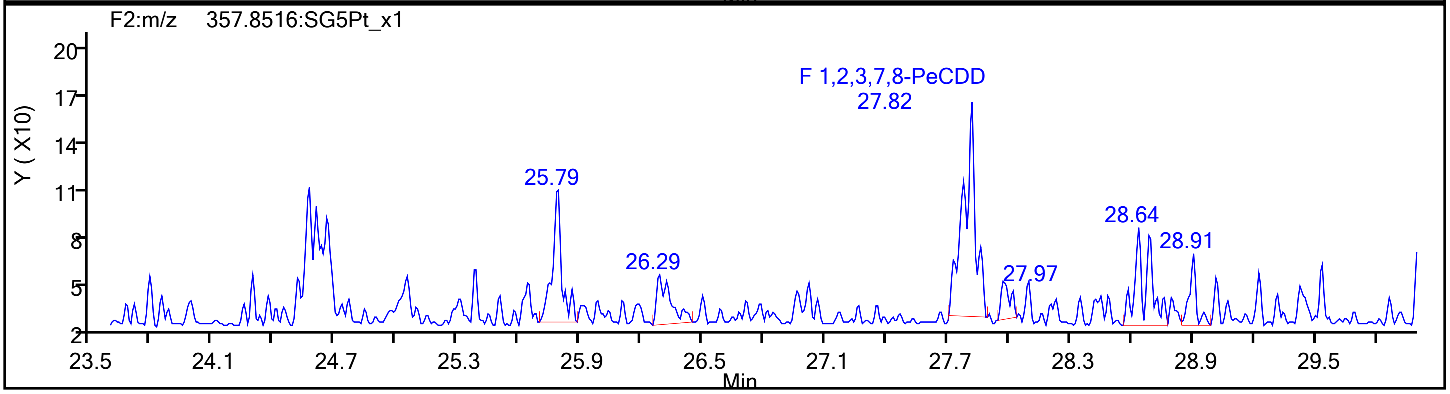

PeCDD Standards

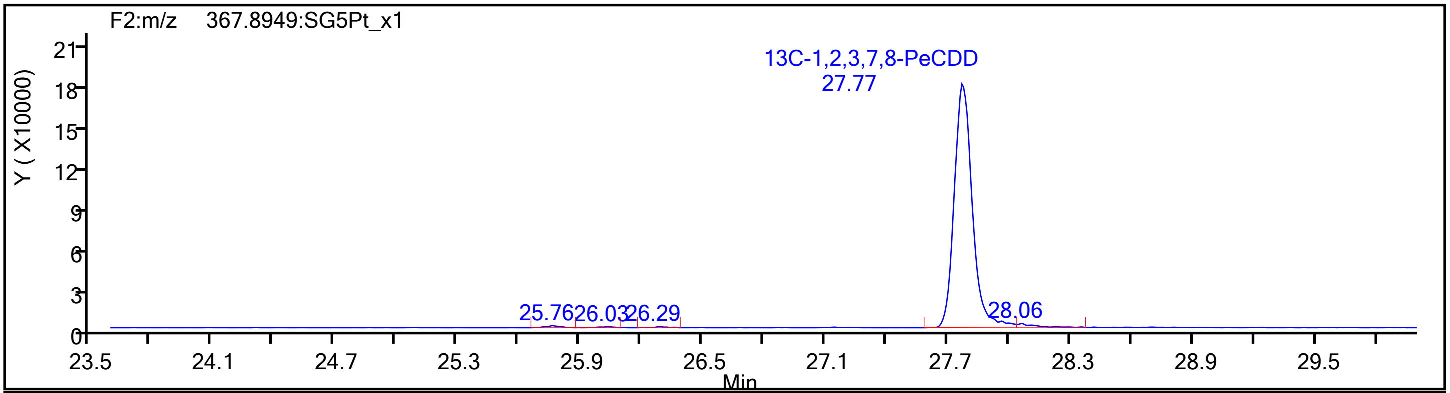

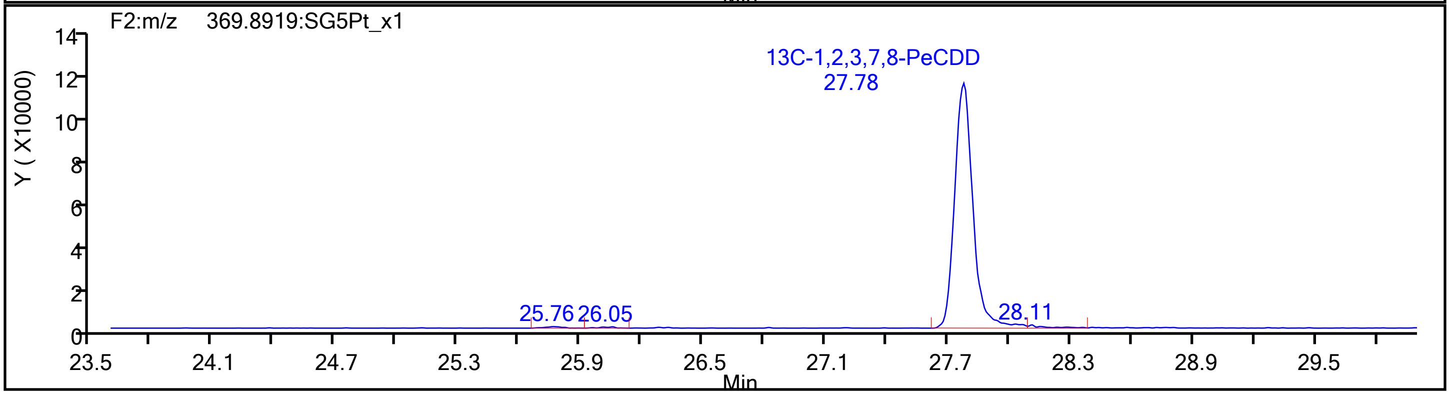

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Injection Date: 12-Mar-2021 18:32:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-1mm

Worklist#: 469779 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

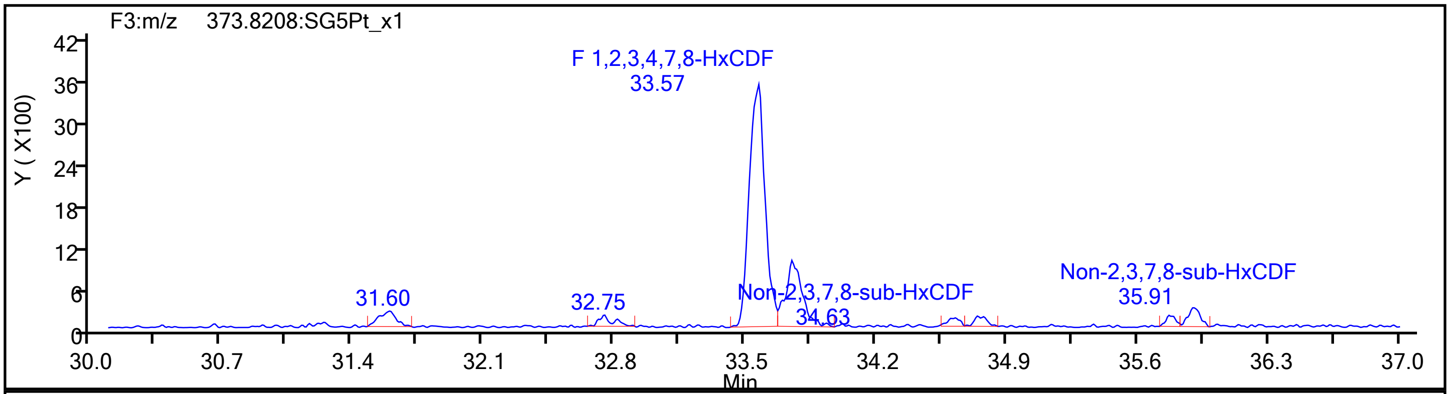

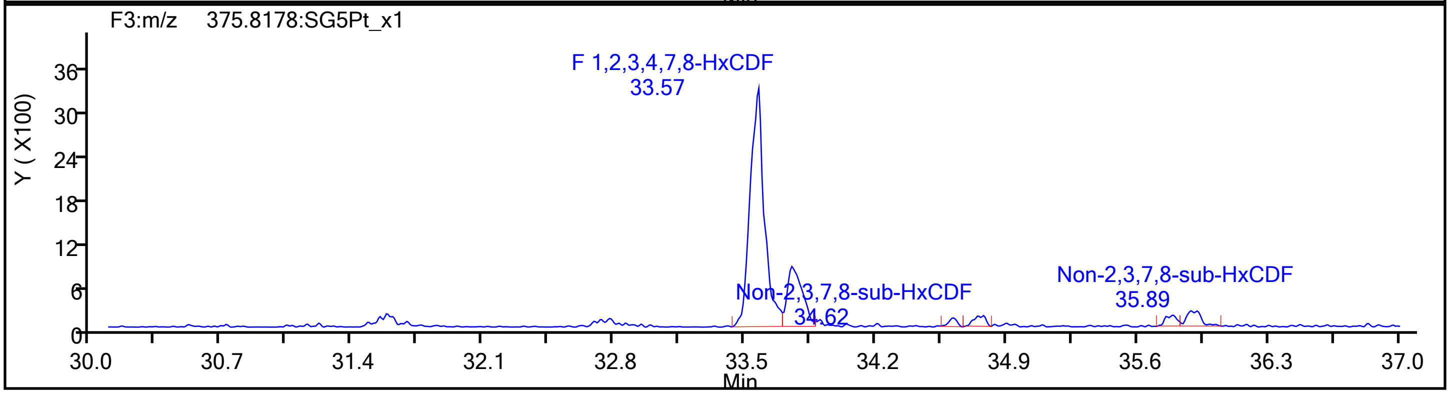

HxCDF Standards

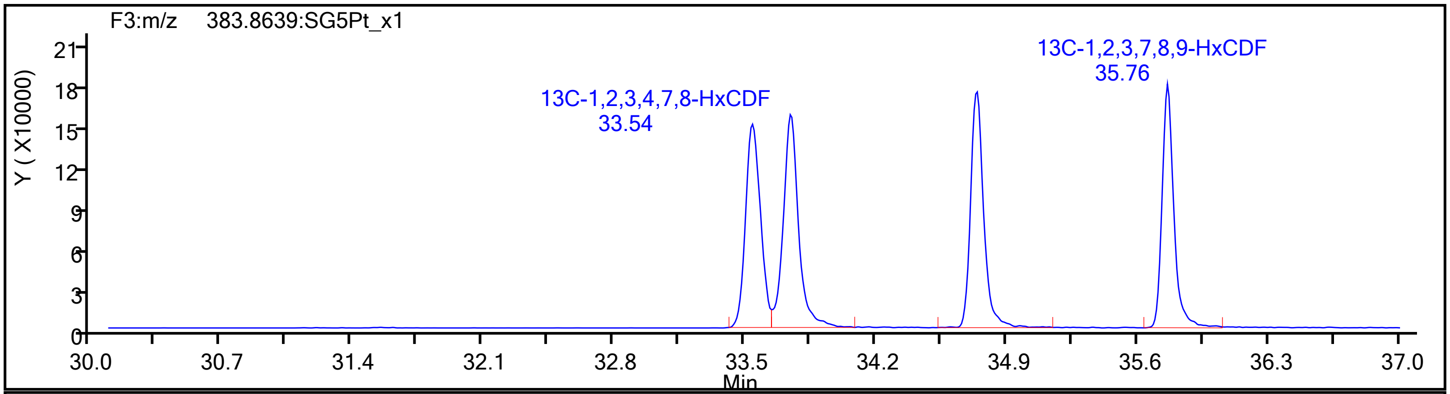

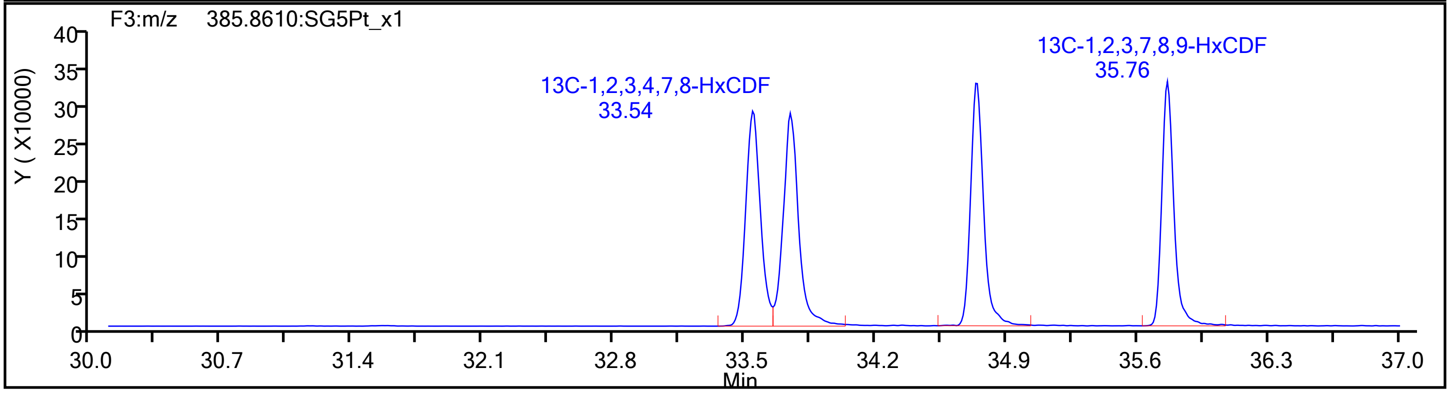

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

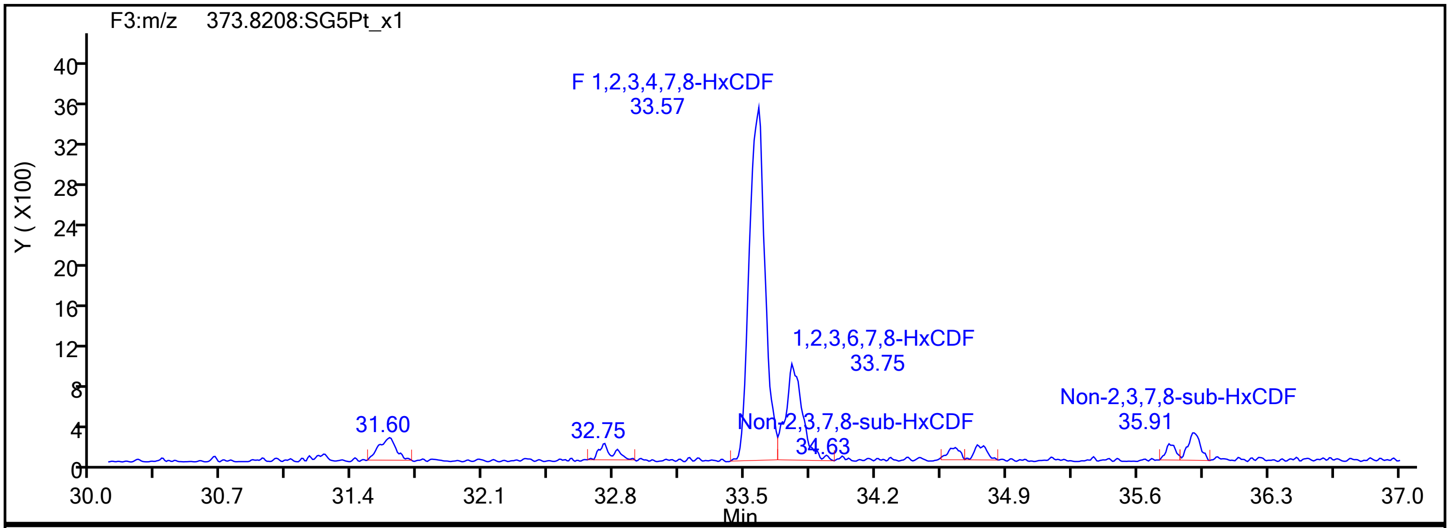

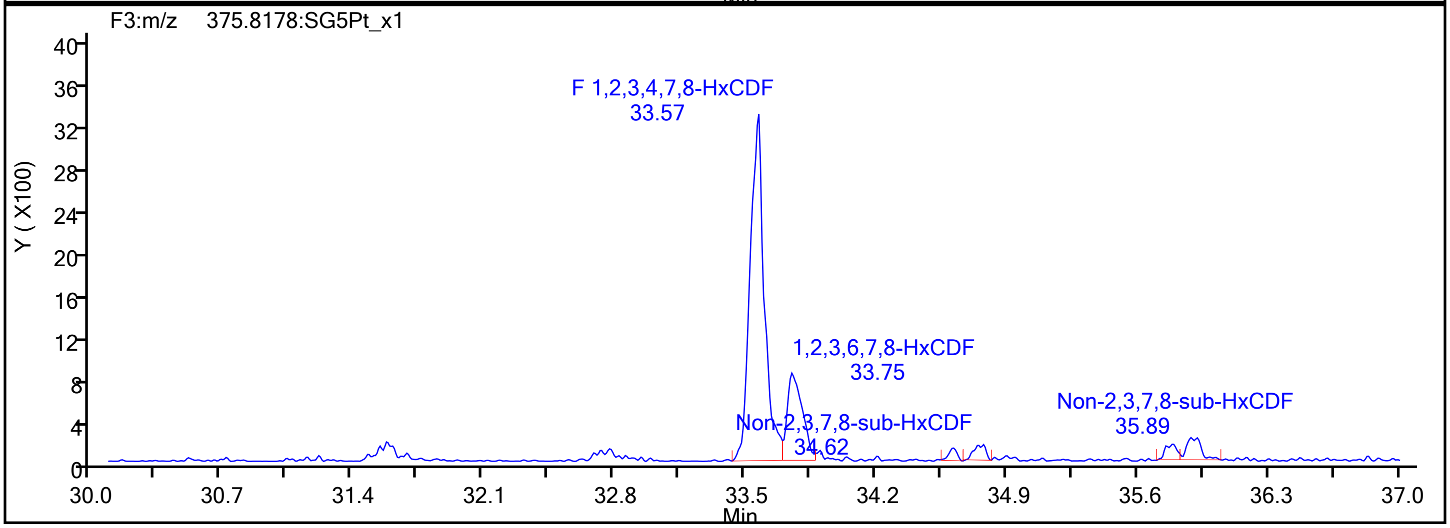

HxCDF Interference Mass

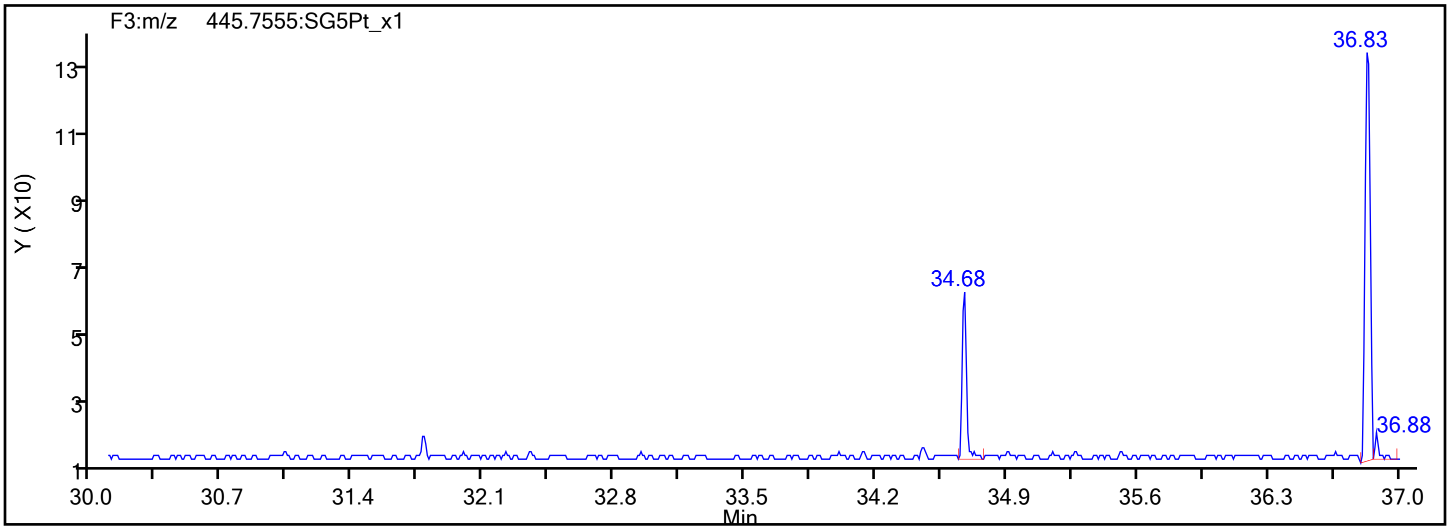

Report Date: 16-Mar-2021 09:35:54 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Injection Date: 12-Mar-2021 18:32:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-1mm

Worklist#: 469779

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

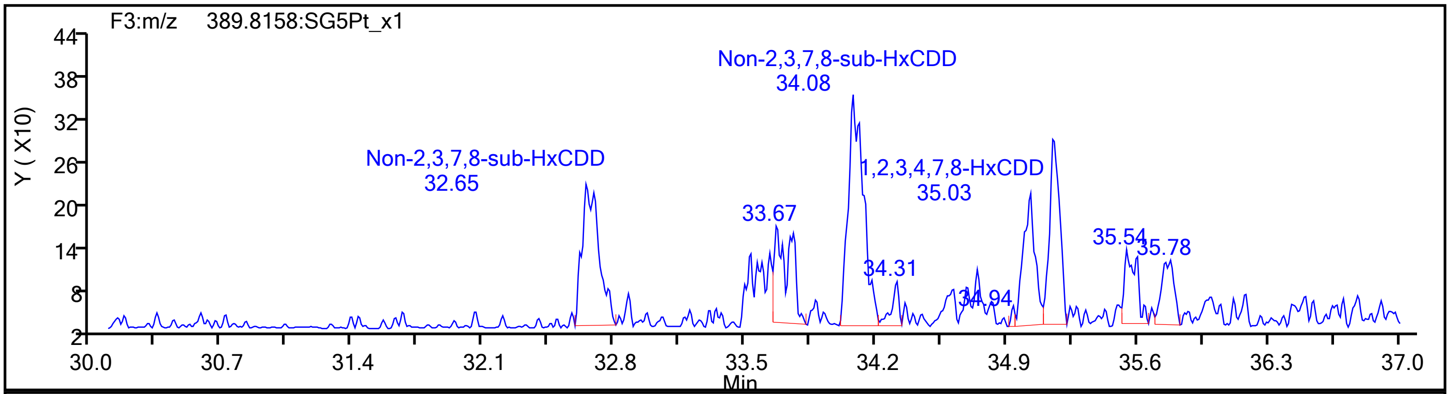

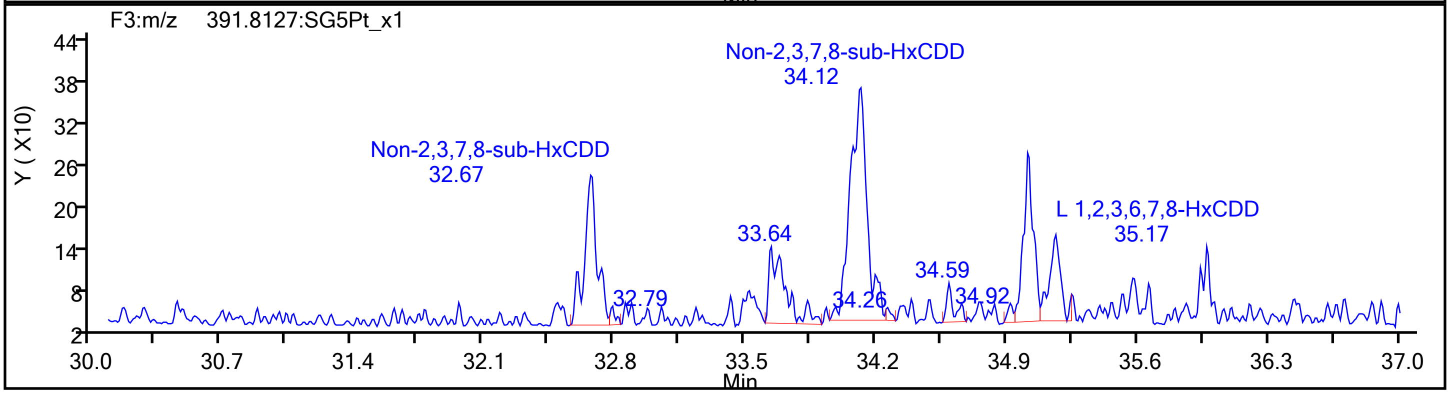

HxCDD Standards

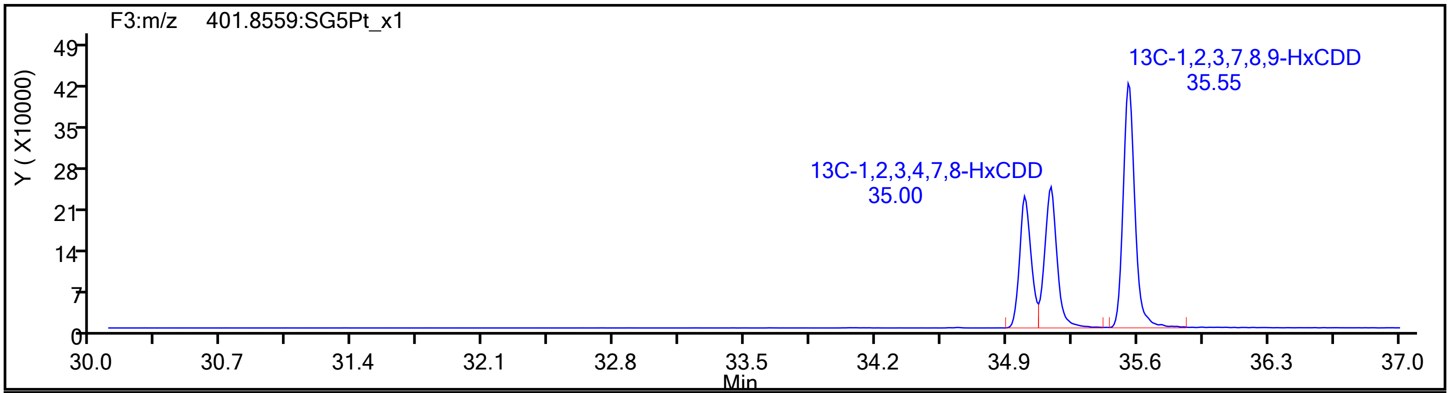

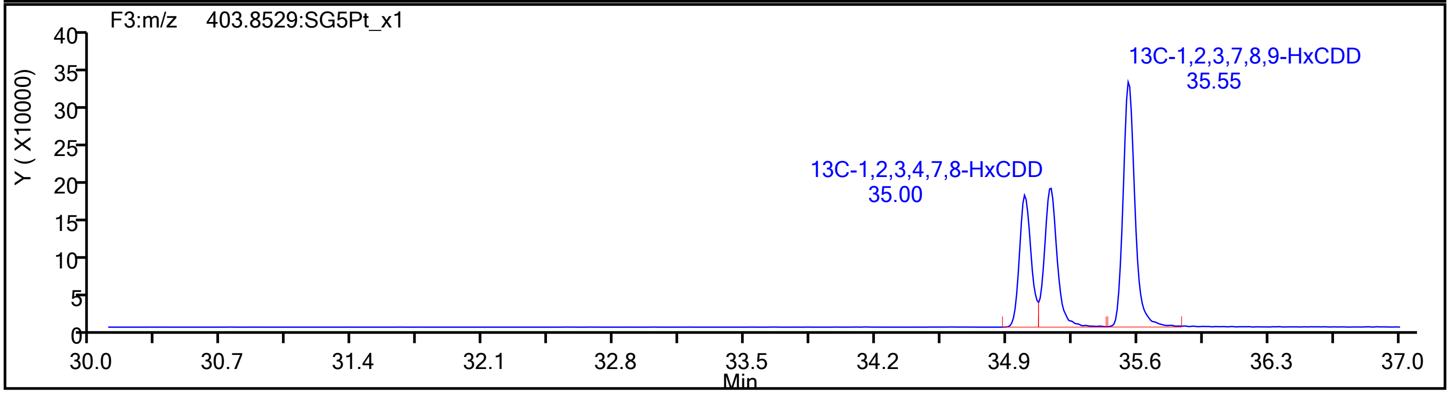

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d

Injection Date: 12-Mar-2021 18:32:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-1mm

Worklist#: 469779

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

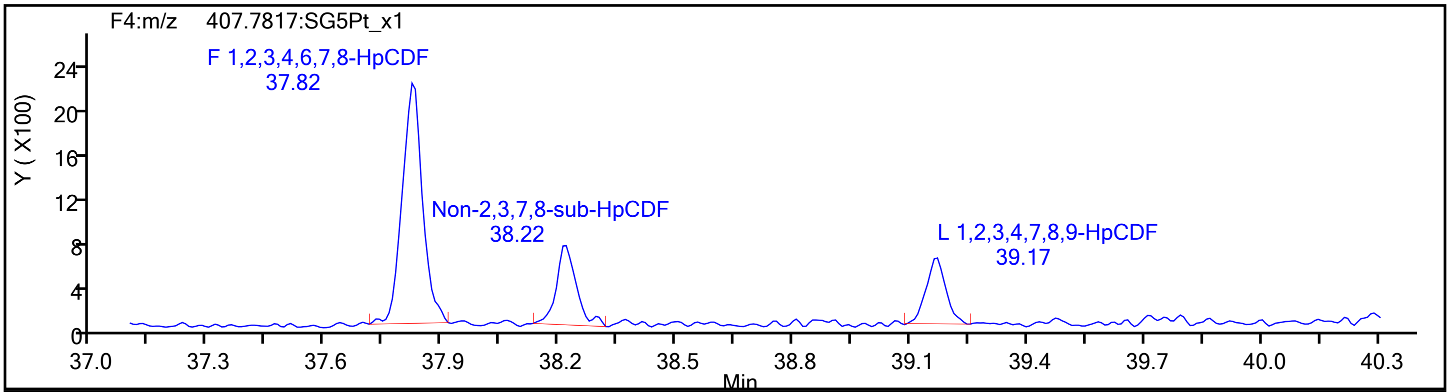

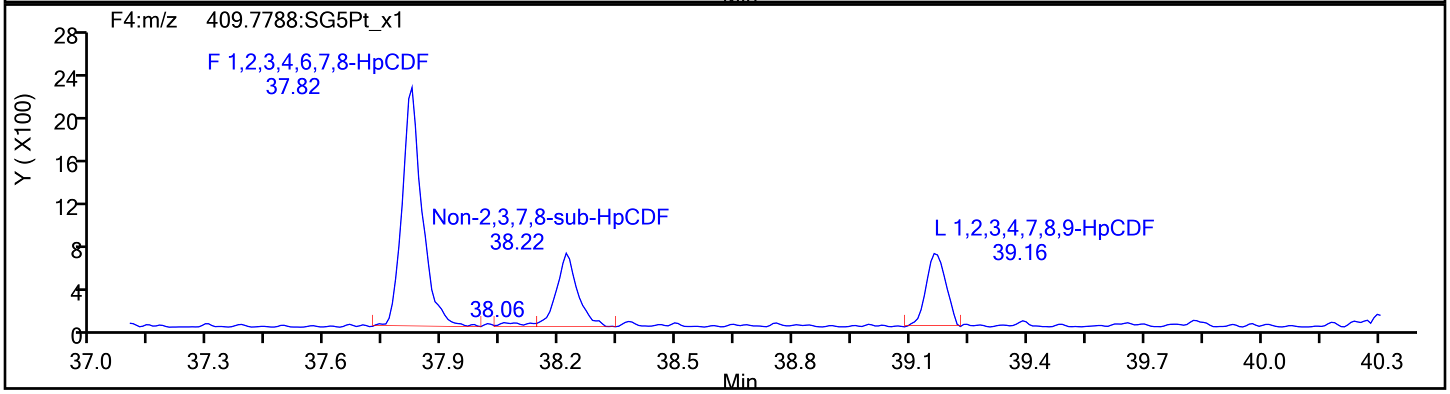

HpCDF Standards

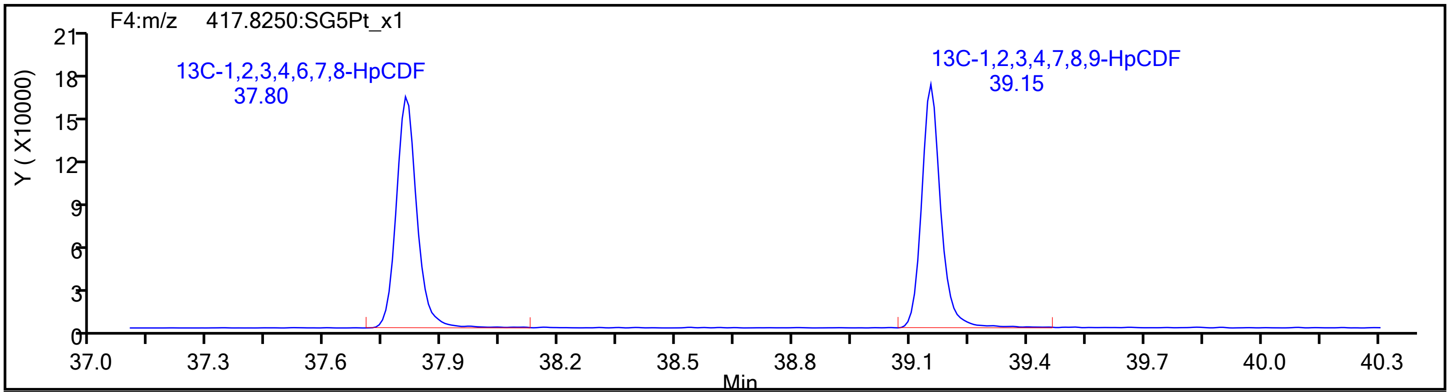

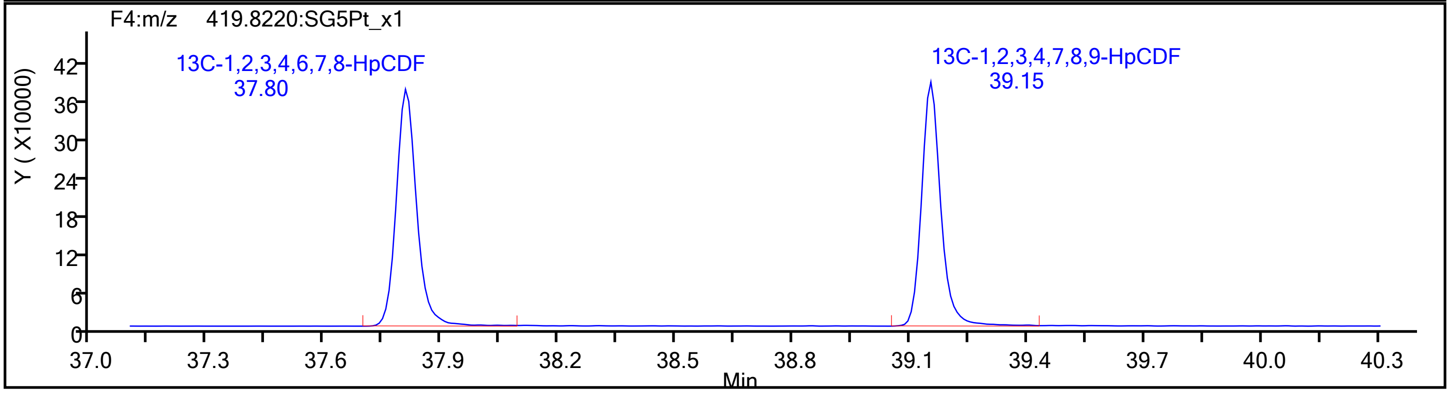

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

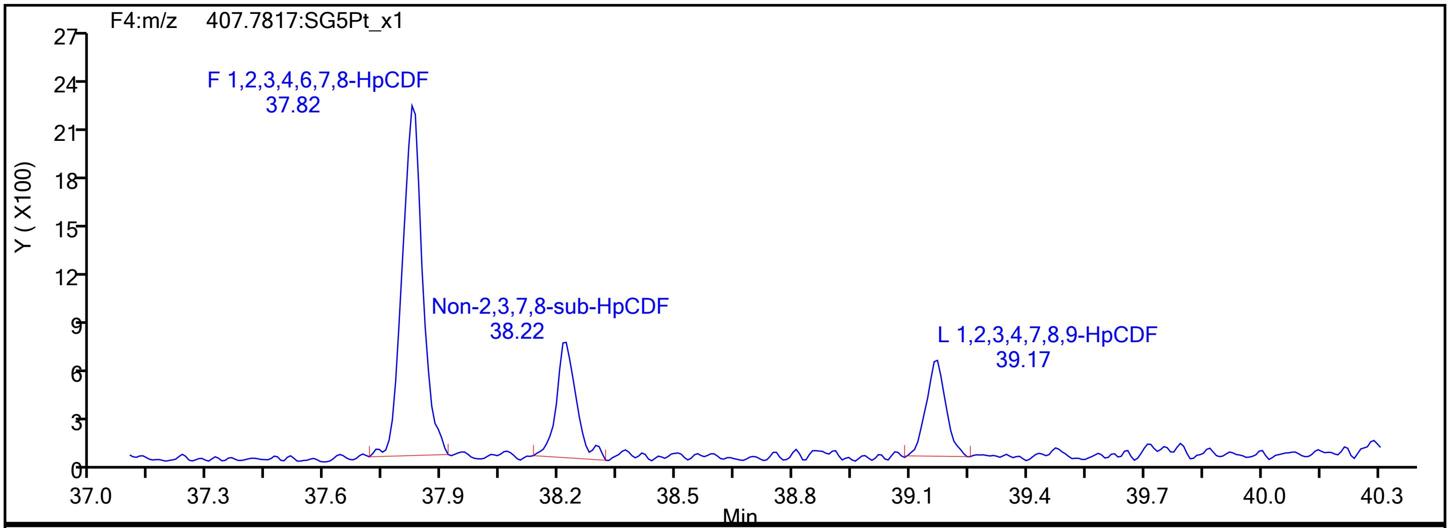

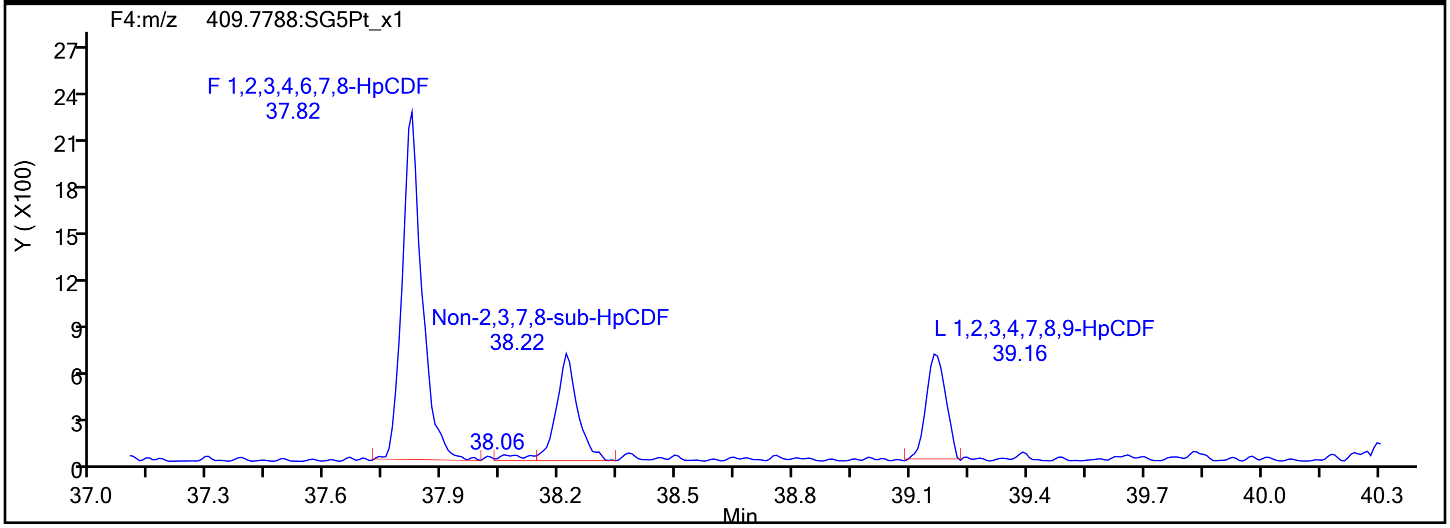

HpCDF Interference Mass

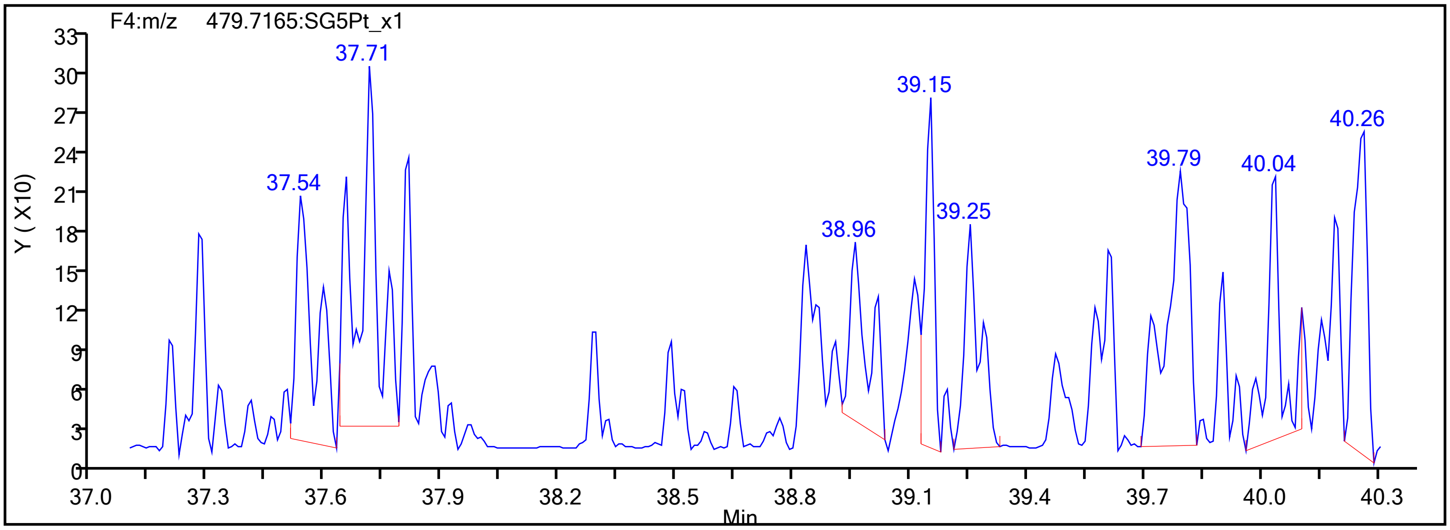

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d
Injection Date: 12-Mar-2021 18:32:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-1mm
Worklist#: 469779
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

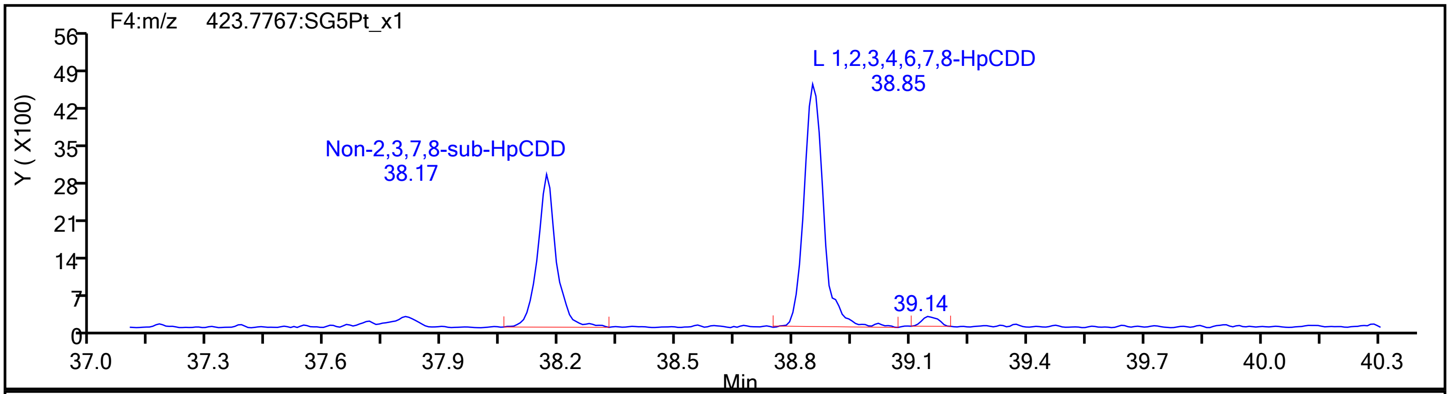

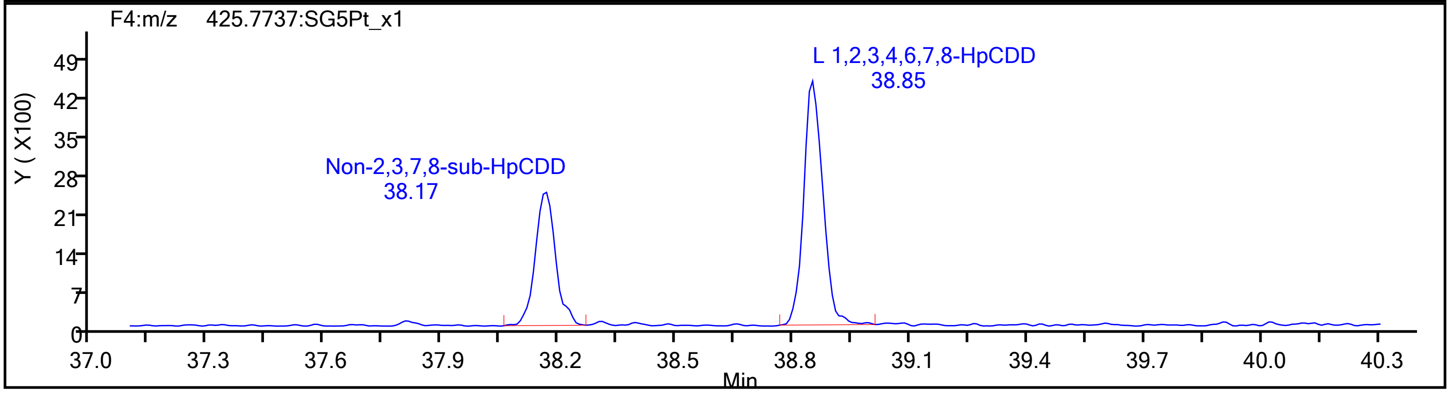

HpCDD Standards

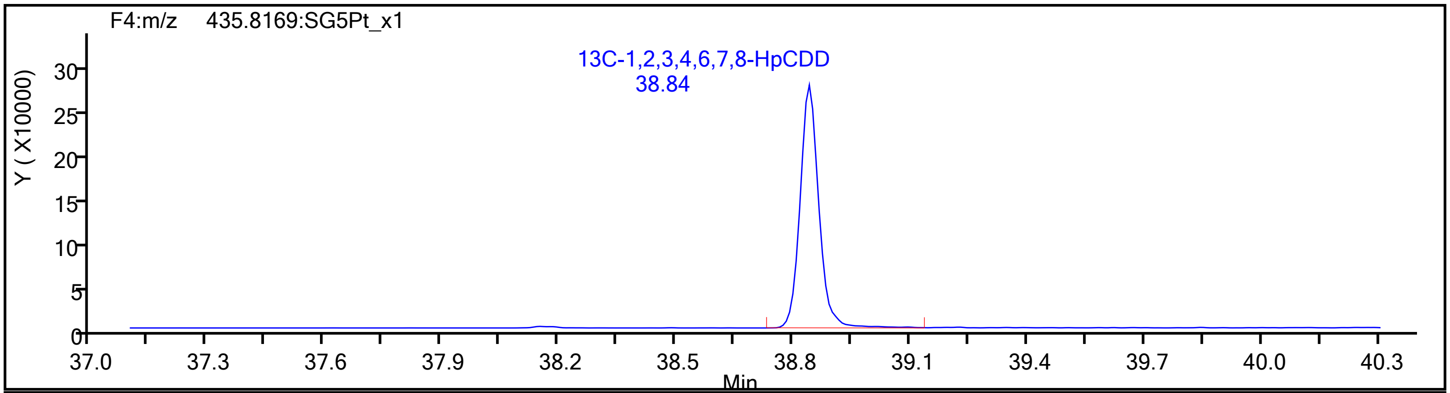

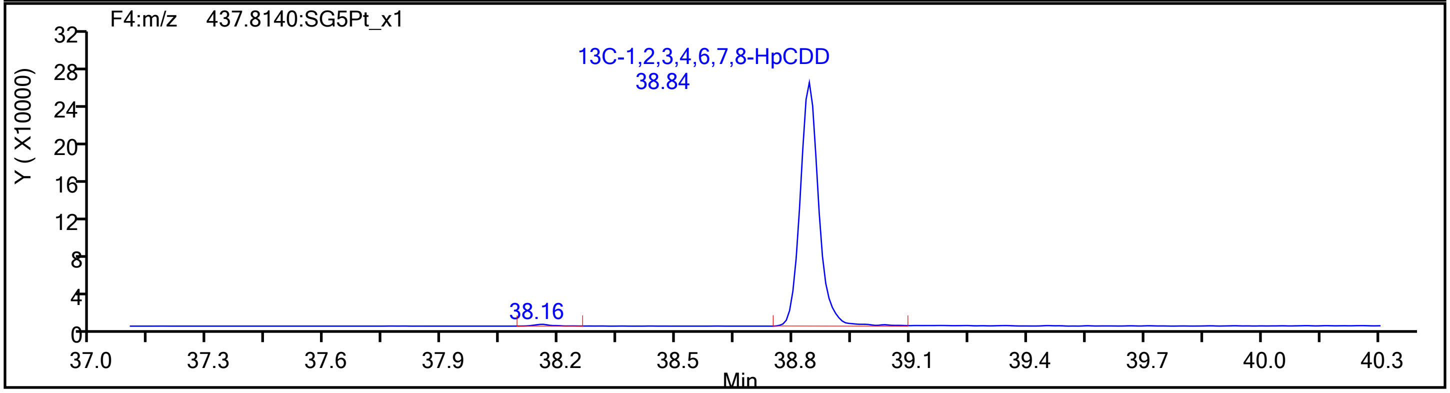

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

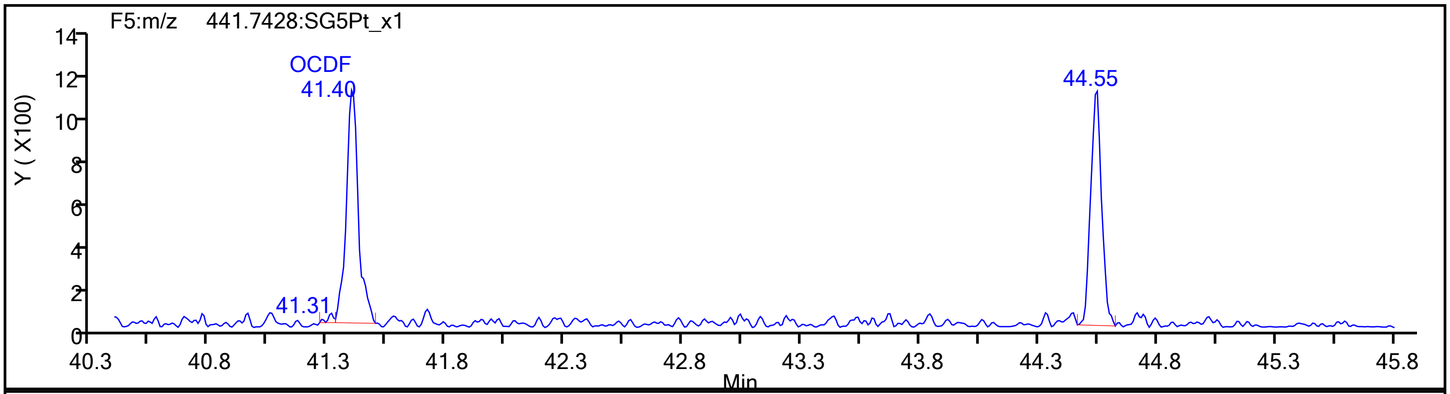

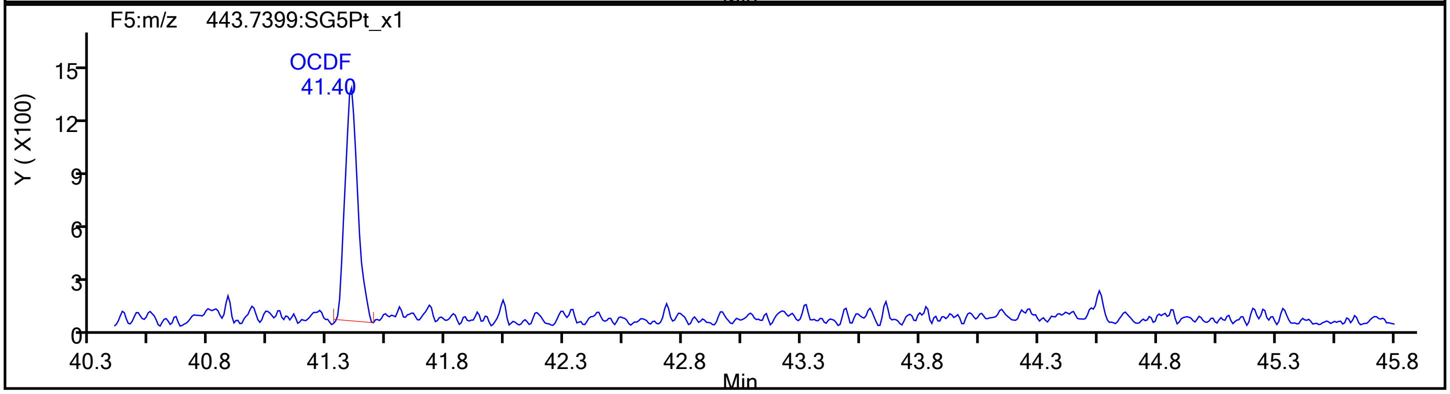

OCDF Standards

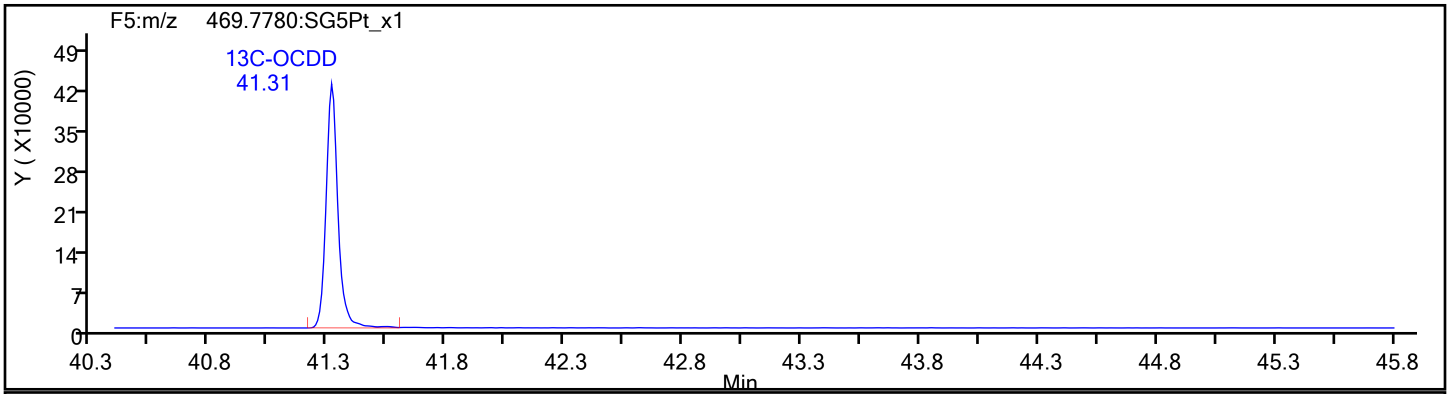

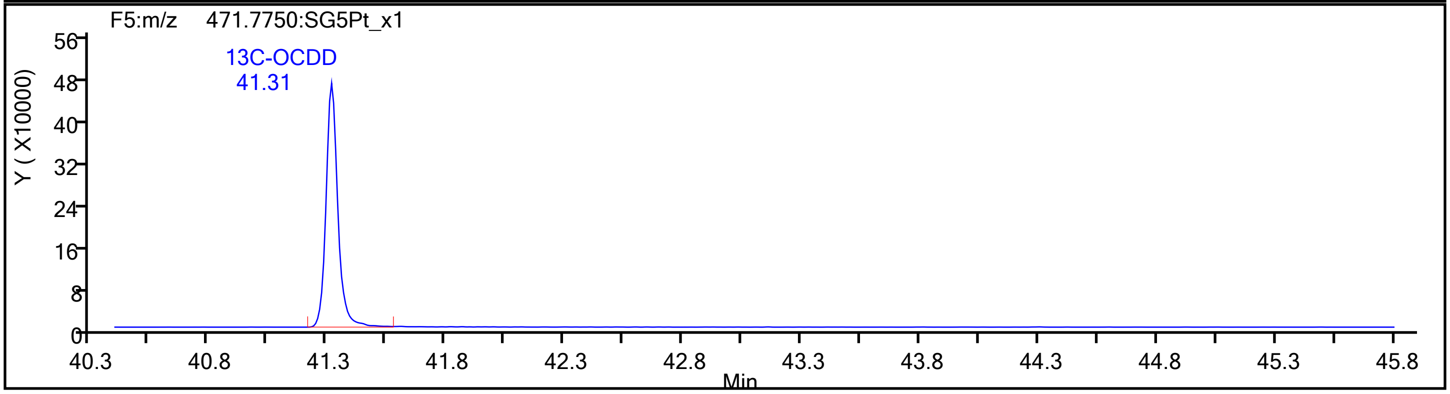

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

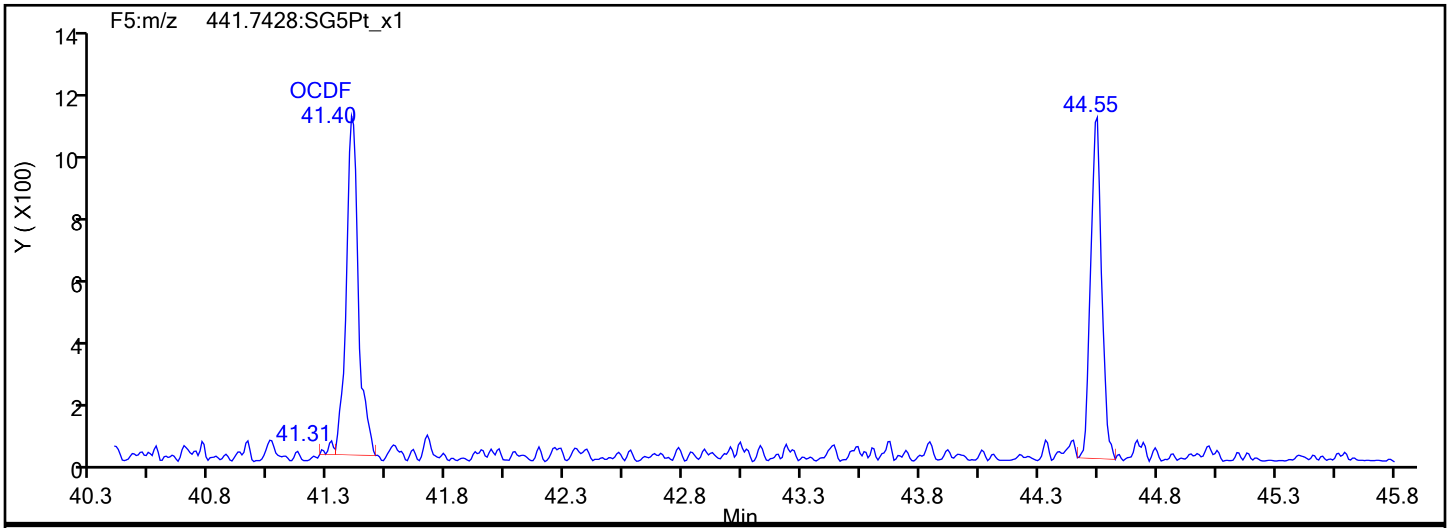

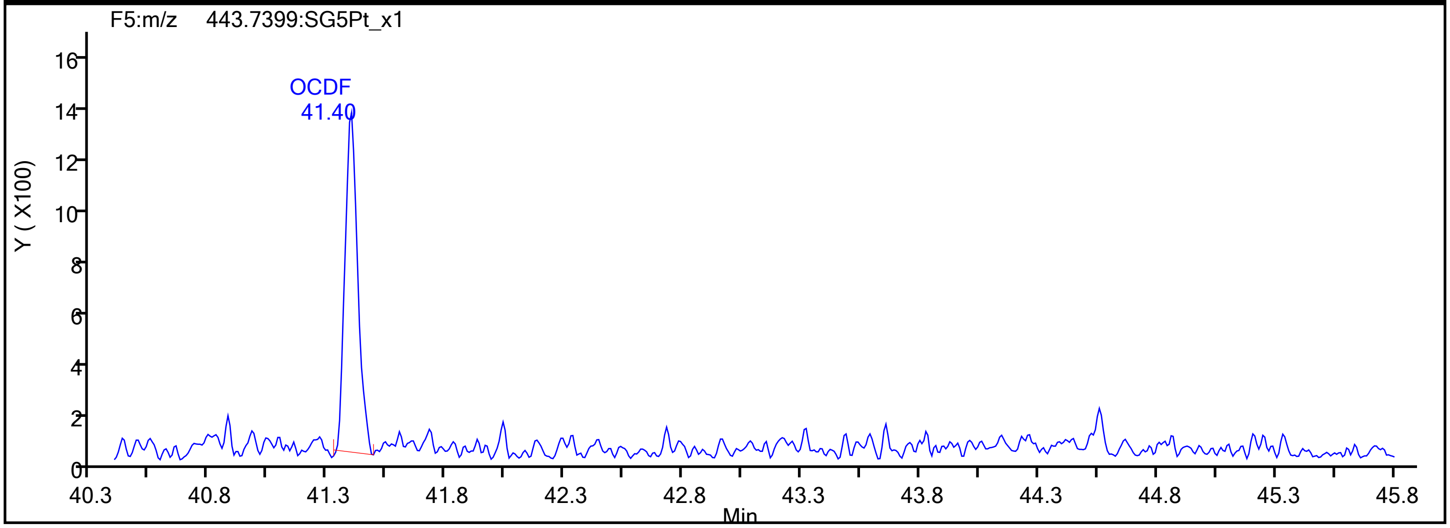

OCDF Interference Mass

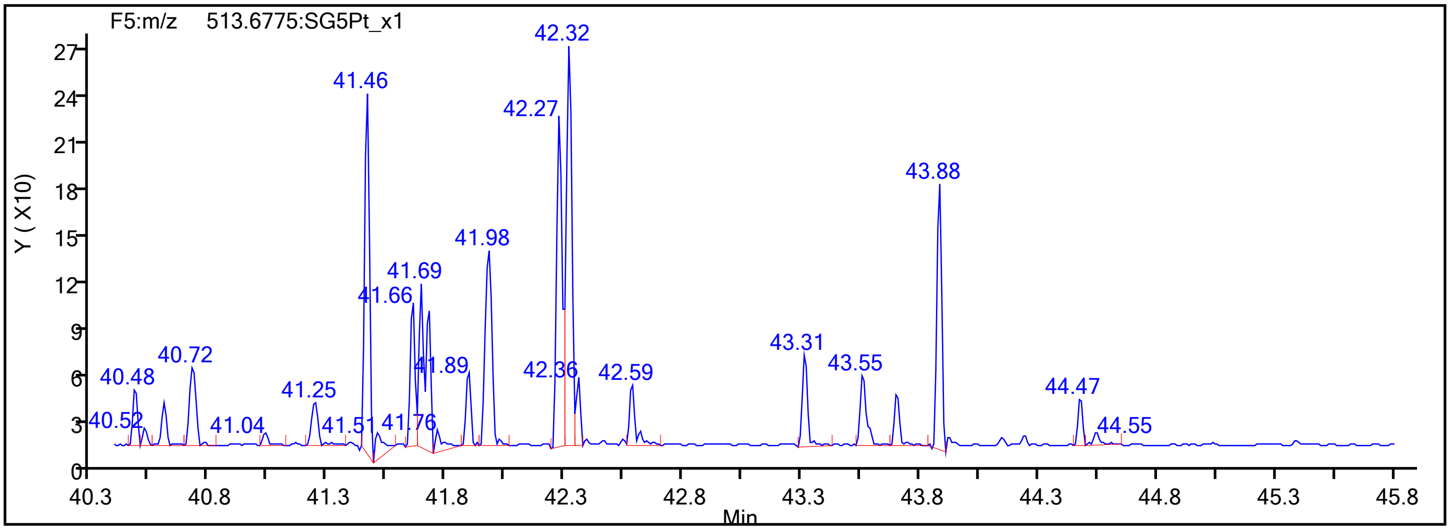

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

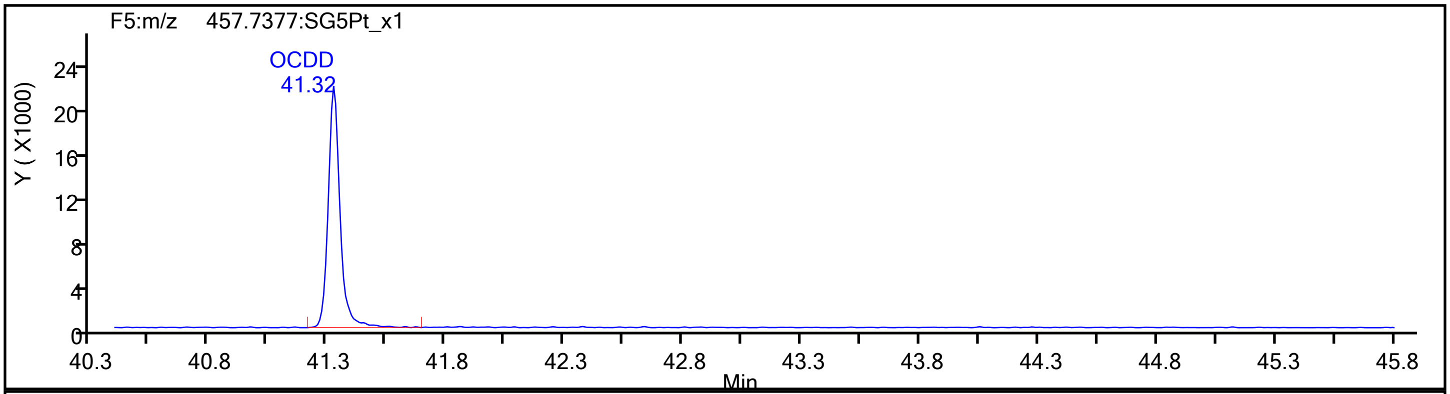

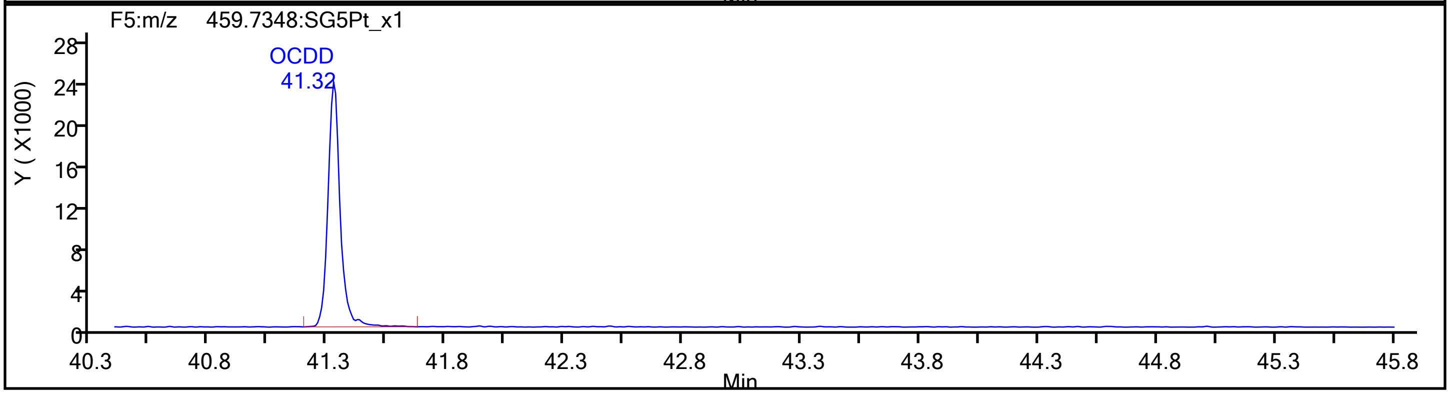

OCDD Standards

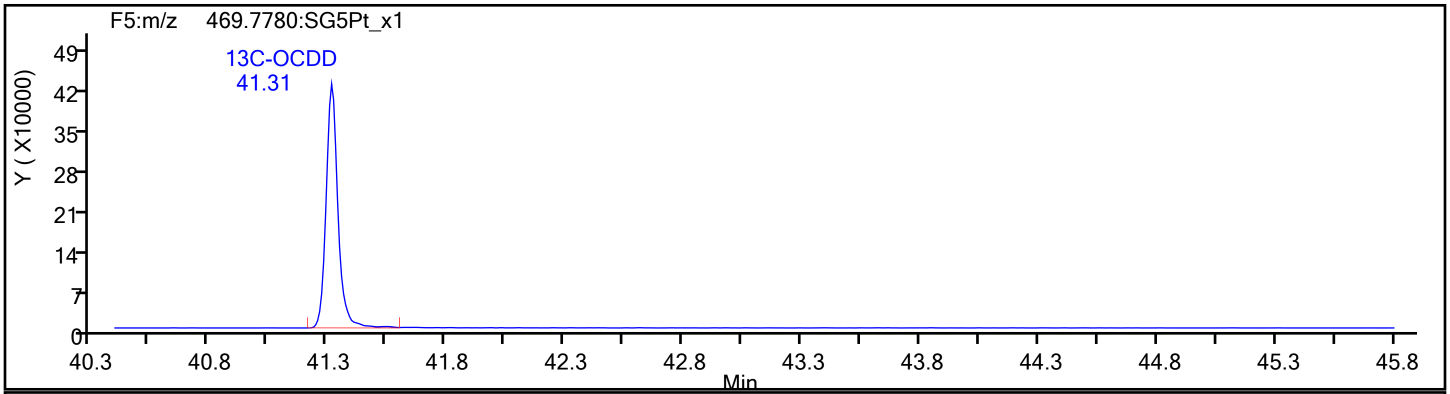

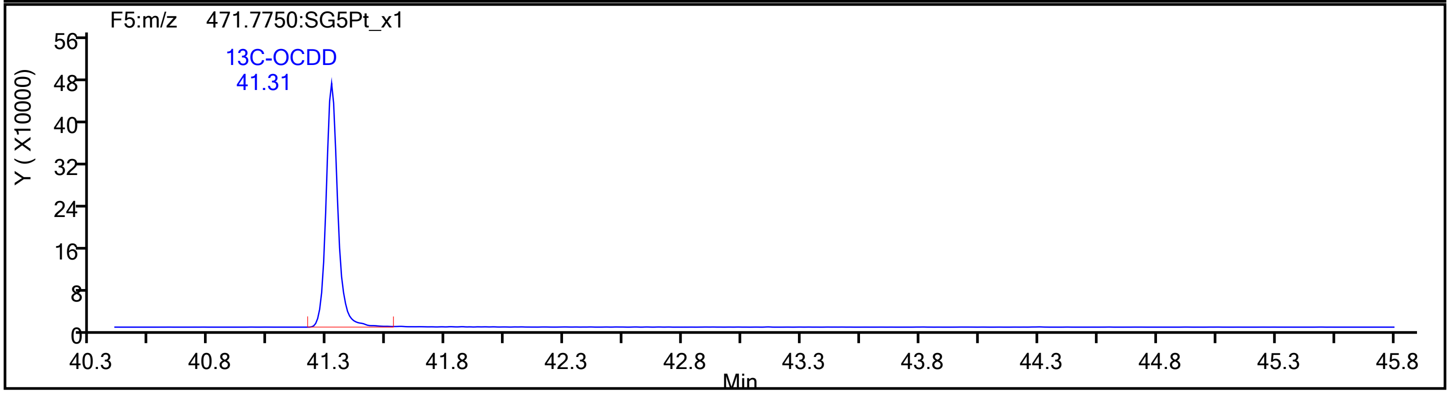

Report Date: 16-Mar-2021 09:35:55 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

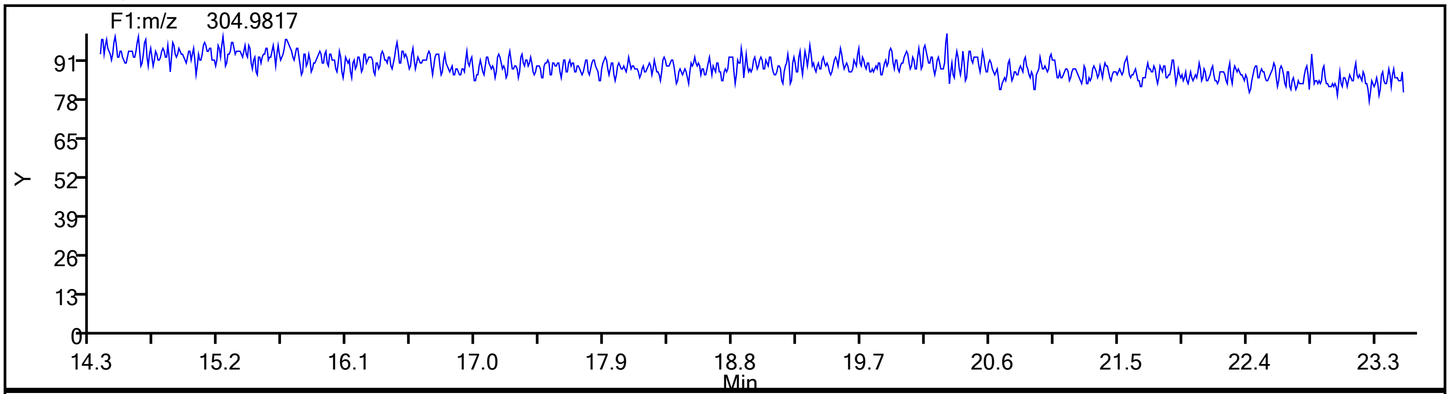

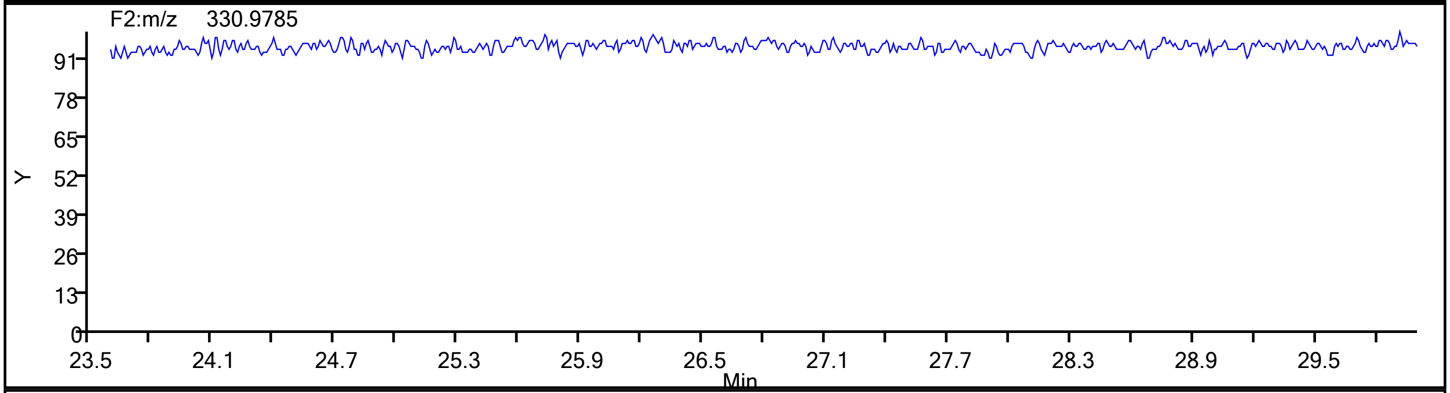

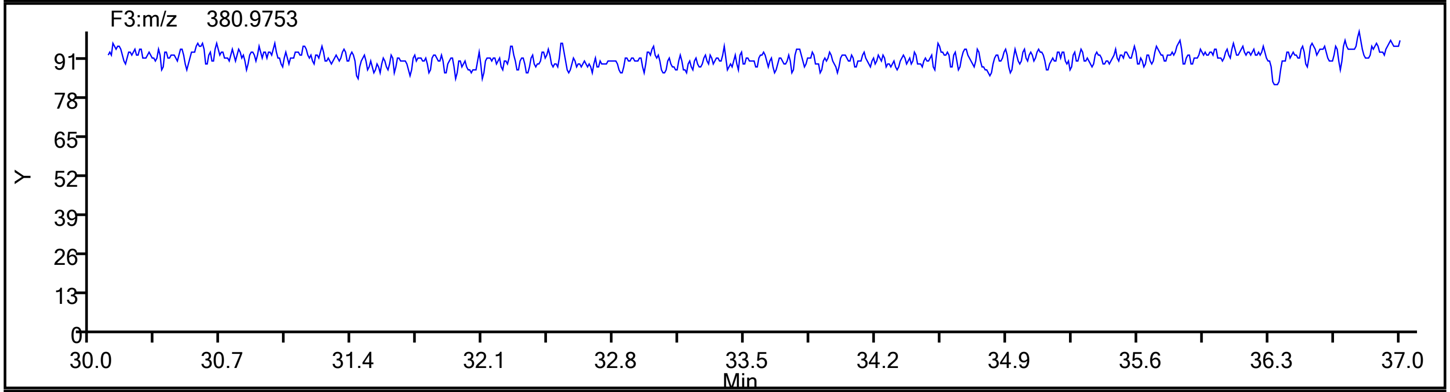

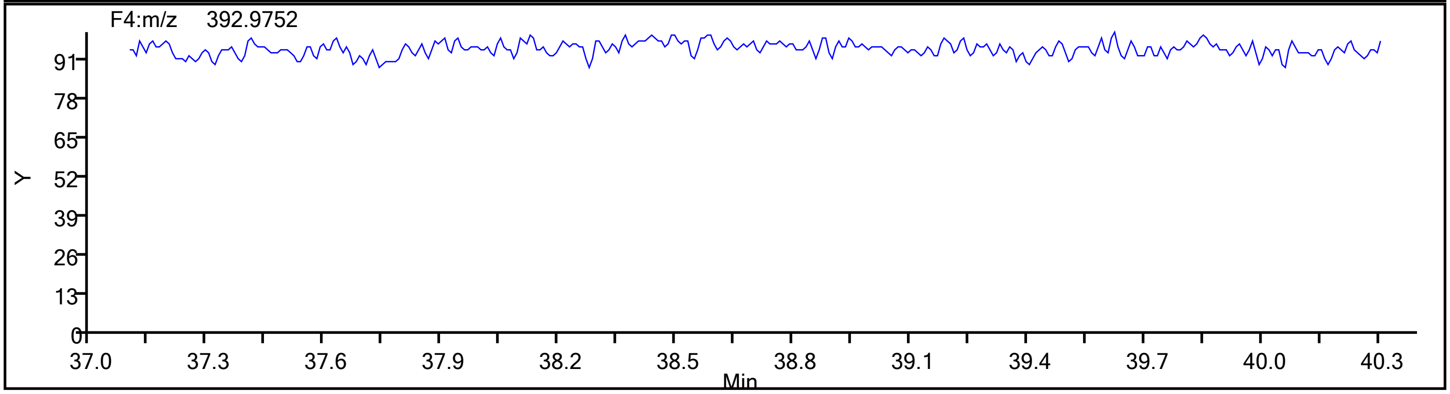

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_12.d		
Injection Date:	12-Mar-2021 18:32:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-1mm		
Worklist#:	469779	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

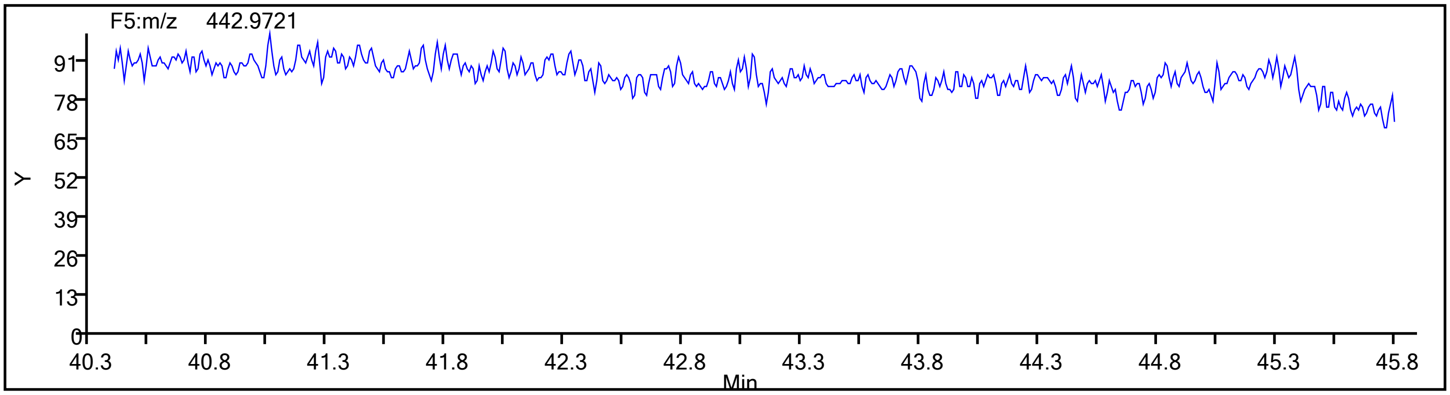

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-0.45mm RA Lab Sample ID: 320-70797-11 RA

Matrix: Water Lab File ID: 11MR2111D2_004.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1023.3(mL) Date Analyzed: 03/11/2021 15:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469703 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	11	B	9.8	0.40

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	114		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d				
Lims ID:	320-70797-A-11-A				
Client ID:	11215702-Tank2-0.45mm				
Sample Type:	Client				
Inject. Date:	11-Mar-2021 15:45:49	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-70797-A-11-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 11:08:26	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				
First Level Reviewer: bilottag		Date:	12-Mar-2021 11:00:43		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.025	226185462	0.78	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.149	216529893	0.80	1.3057	73.3	73.3	0.1165	0.1165	73.32	
2,3,7,8-TCDF	16.177	1151321	0.74	0.9242	0.5753	0.5753	0.0203	0.0203		M
D 13C-2,3,7,8-TCDD	14.791	129478162	0.77	0.8971	63.8	63.8	0.1543	0.1543	63.81	
2,3,7,8-TCDD	14.791	434464	0.65	0.9989	0.3359	0.3359	0.0492	0.0492		M
$ 37Cl4-2,3,7,8-TCDD	14.805	87673034		0.8499	45.6	45.6	0.0335	0.0335	114	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Report Date: 12-Mar-2021 11:08:27 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d
Lims ID: 320-70797-A-11-A
Client ID: 11215702-Tank2-0.45mm
Sample Type: Client
Inject. Date: 11-Mar-2021 15:45:49 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-11-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:00:43

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.025	15.013	1		98805569	23892085	14019	35047	1704		
333.9339	15.025	15.013	1		127379893	30652575	16183	40457	1894	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.149	16.152	0	1.075	96422473	21503526	17622	44055	1220		
317.9389	16.149	16.152	0	1.075	120107420	26475082	15577	38942	1700	0.80(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	16.177	16.166	1	1.002	489105	111525	1537	3842	73		M
305.8987	16.163	16.166	0	1.001	662216	151196	2055	5137	74	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.791	14.794	0	0.984	56213669	14077091	14019	35047	1004		
333.9339	14.791	14.794	0	0.984	73264493	17805184	16183	40457	1100	0.77(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	14.791	14.807	-1	1.000	171929	29261	3132	7830	9		M
321.8936	14.805	14.807	0	1.001	262535	64583	3141	7852	21	0.65(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8840	14.805	14.807	0	0.985	87673034	21803096	6210	15525	3511		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d
Injection Date: 11-Mar-2021 15:45:49
Instrument ID: 11D2
Lims ID: 320-70797-A-11-A
Lab Sample ID: 320-70797-11
Client ID: 11215702-Tank2-0.45mm
Operator ID:
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Column: DB-225 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT: 16.18
Area: 504842
Amount: 0.583211
Amount Units: pg/ul

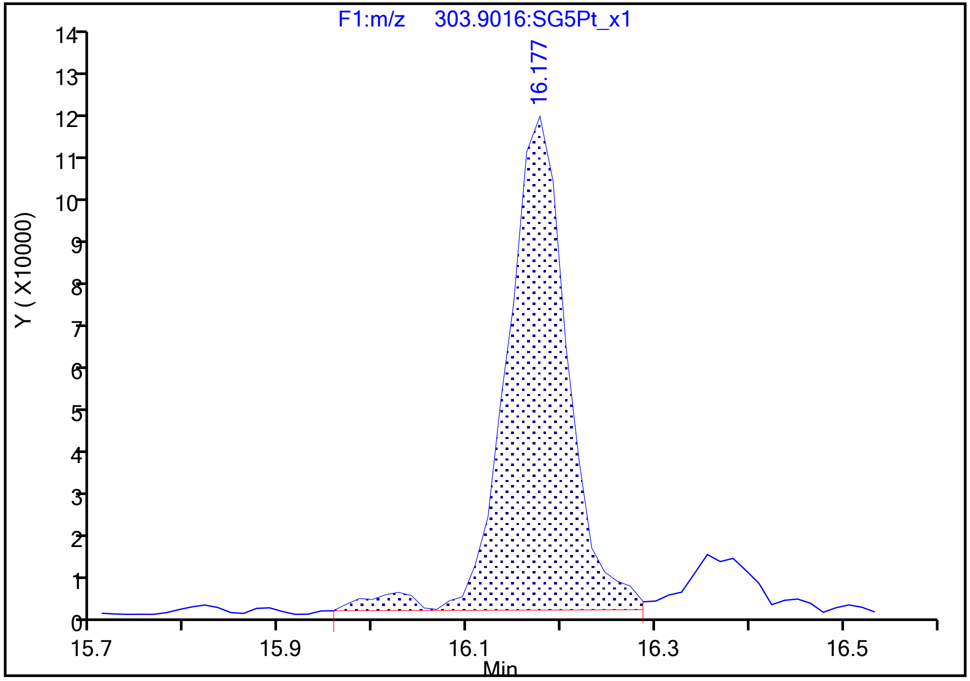

Manual Integration Results

RT: 16.18
Area: 489105
Amount: 0.575347
Amount Units: pg/ul

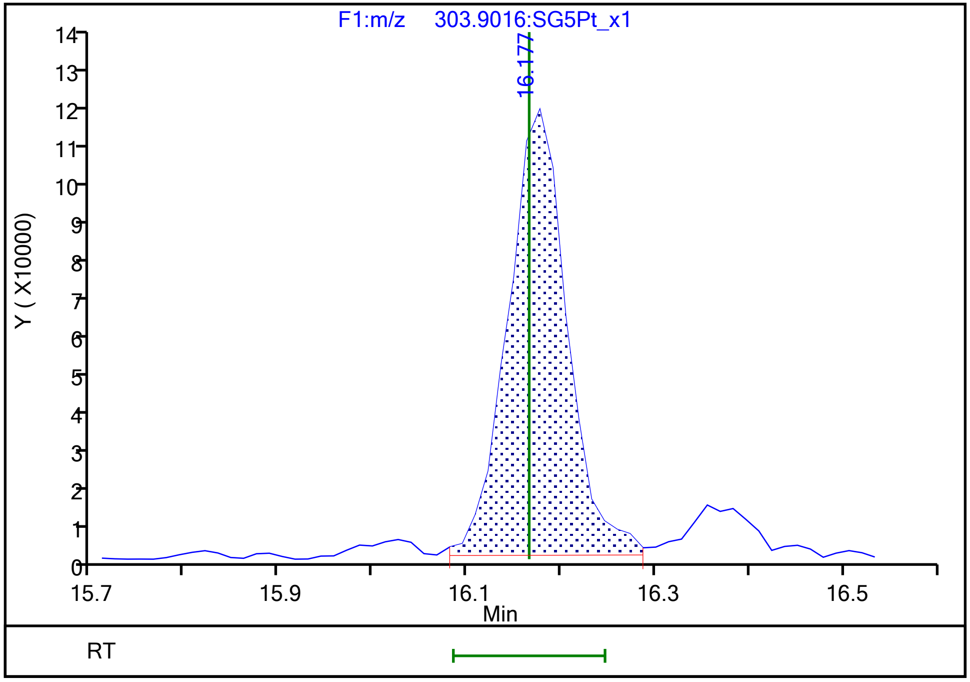

Reviewer: bilottag, 12-Mar-2021 11:00:38

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Report Date: 12-Mar-2021 11:08:27
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d
Injection Date: 11-Mar-2021 15:45:49
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469703
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

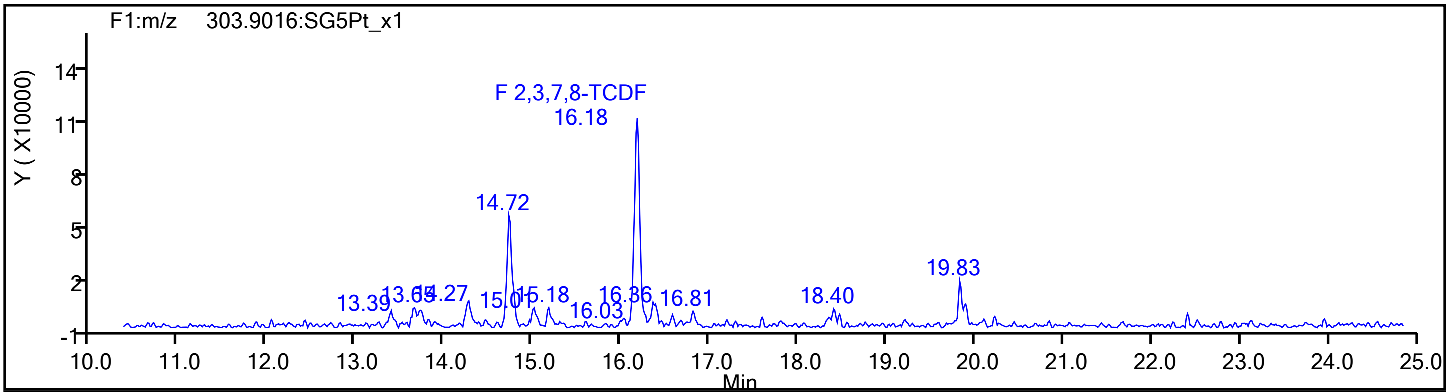

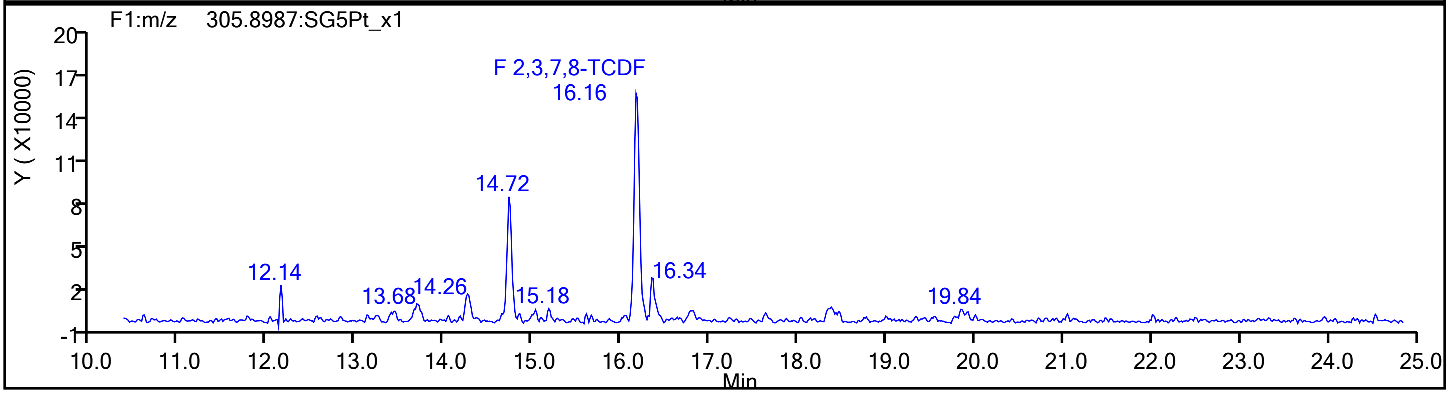

TCDF Standards

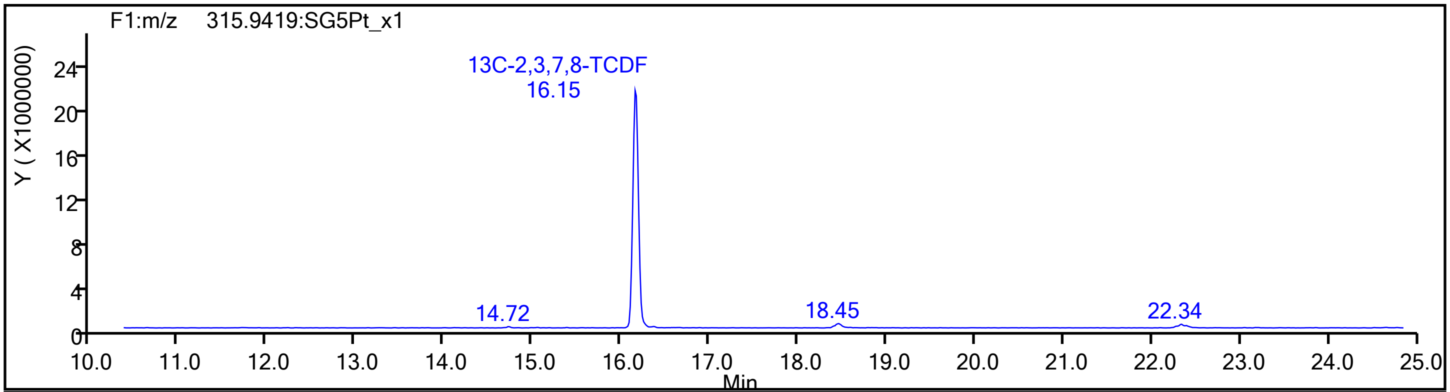

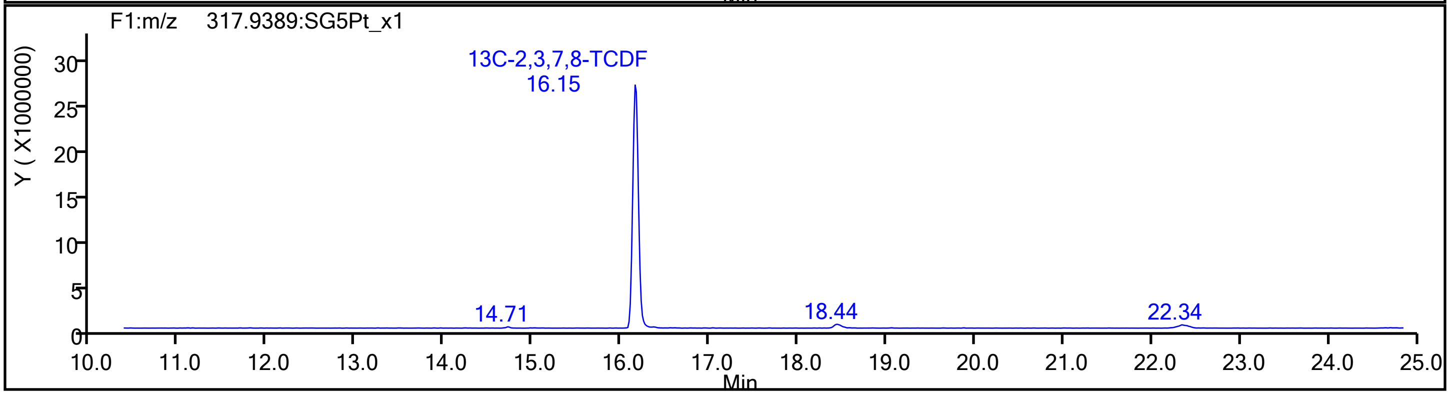

Report Date: 12-Mar-2021 11:08:28 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d
Injection Date: 11-Mar-2021 15:45:49
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469703
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

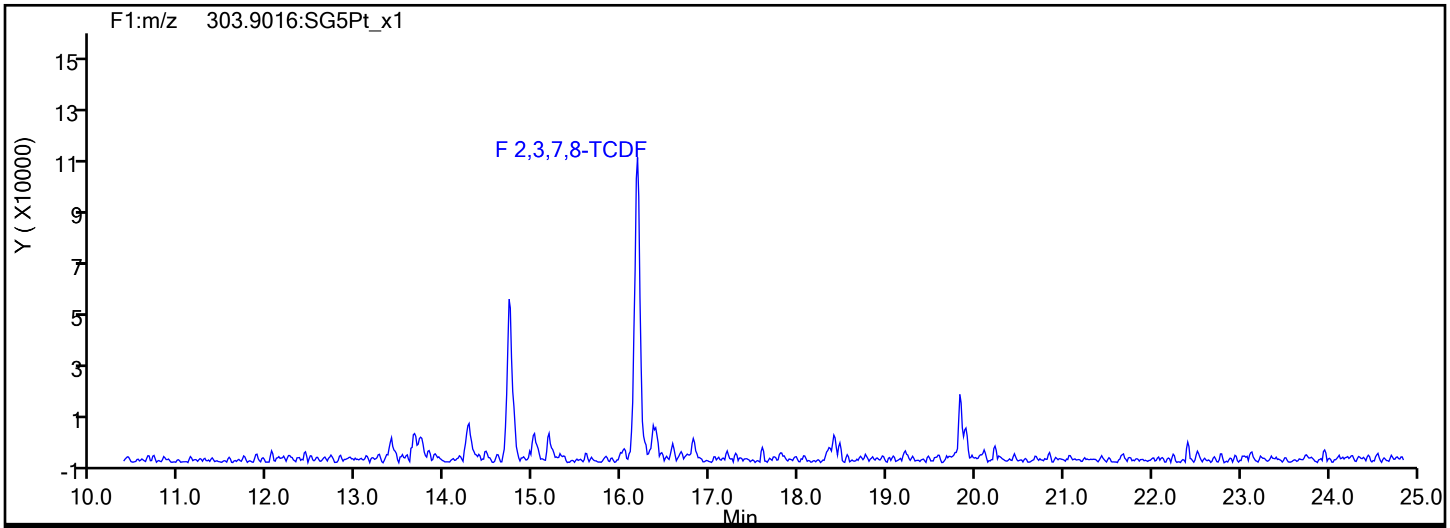

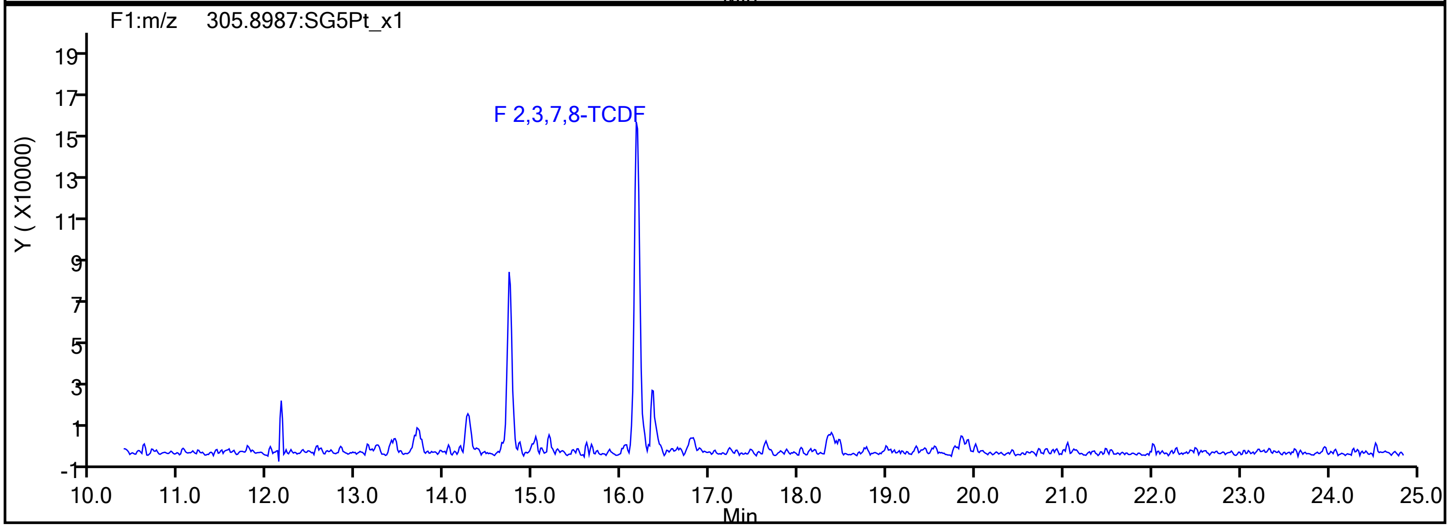

TCDF Interference Mass

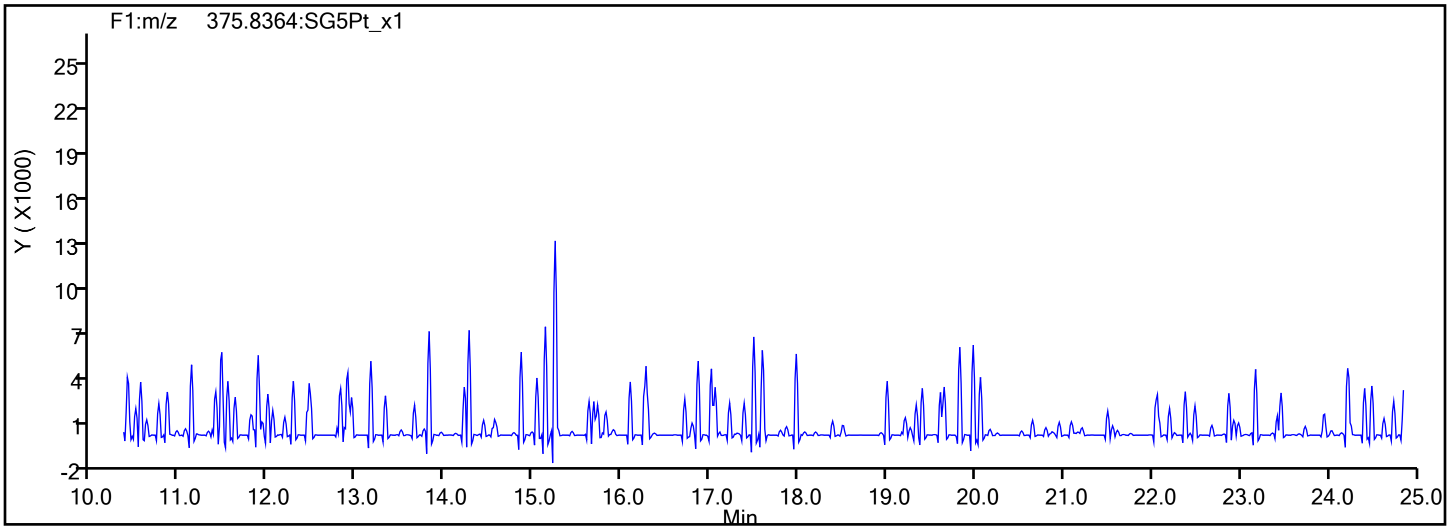

Report Date: 12-Mar-2021 11:08:28 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d		
Injection Date:	11-Mar-2021 15:45:49	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469703	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

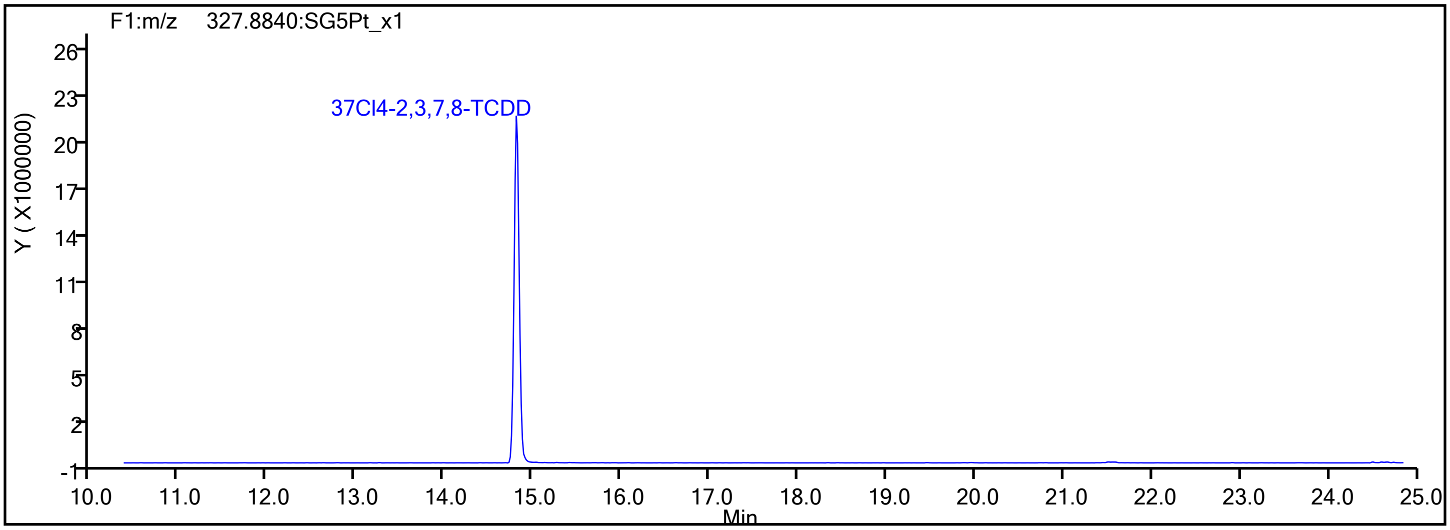

37Cl4-TCDD Standards

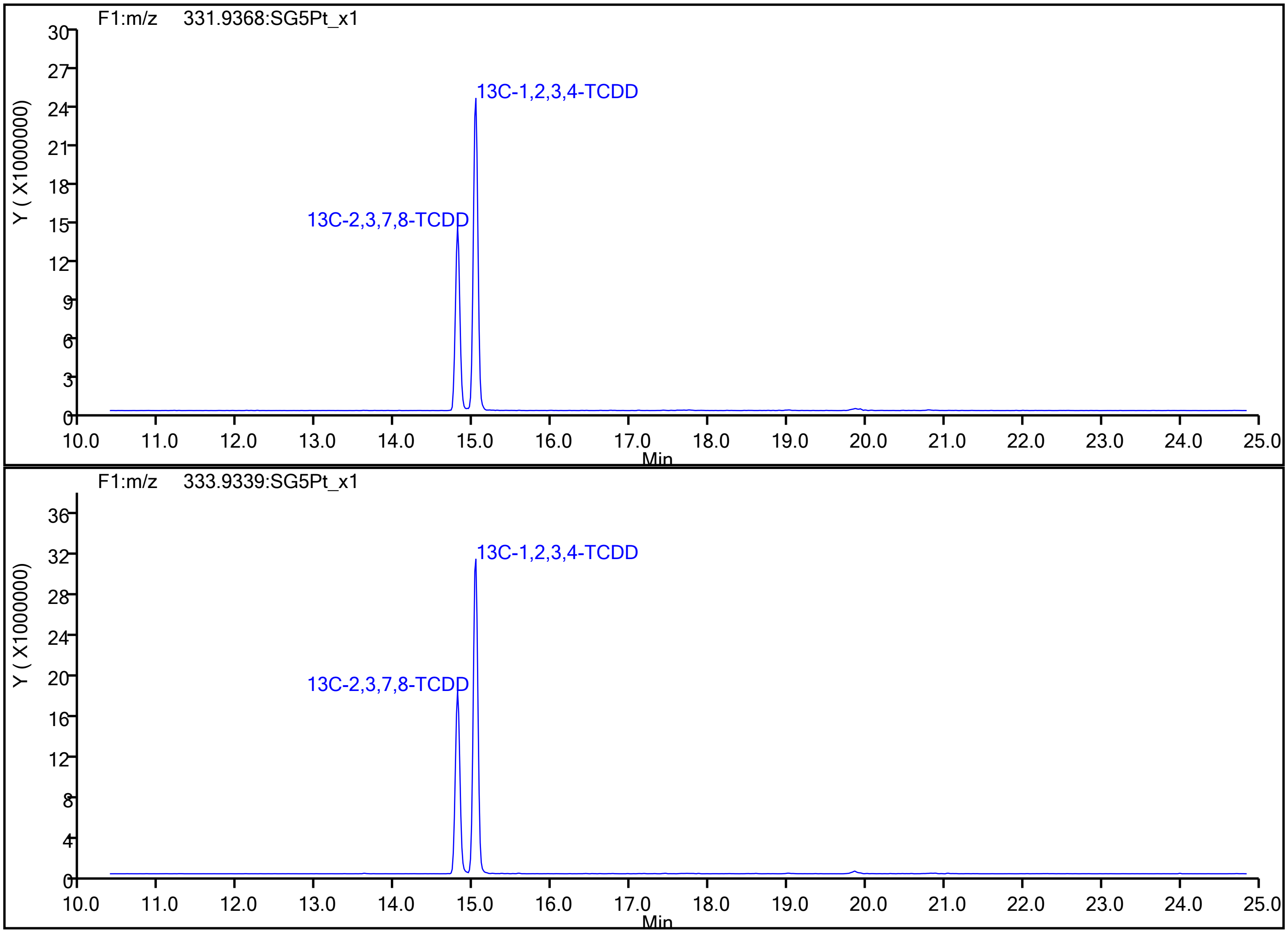

Report Date: 12-Mar-2021 11:08:28 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_004.d

Injection Date: 11-Mar-2021 15:45:49 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469703 Sample Line#: 4

Column Type: DB-225 Column Dia: 0.32 mm

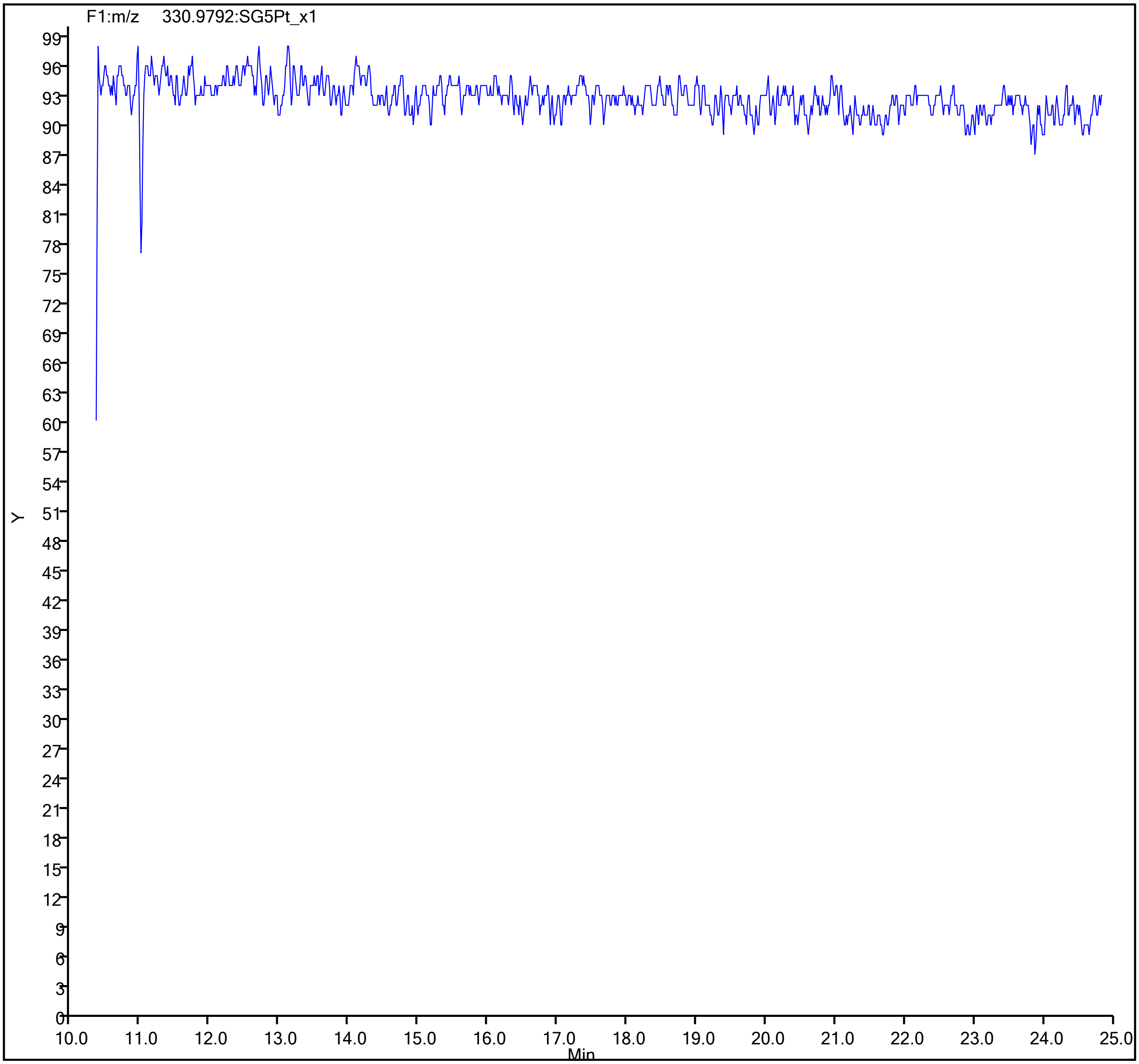

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-0.45mm	Lab Sample ID: 320-70797-11
Matrix: Water	Lab File ID: 12mr21adfs1_13.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1023.3(mL)	Date Analyzed: 03/12/2021 19:20
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	4.5	J q	9.8	0.56
40321-76-4	1,2,3,7,8-PeCDD	ND		49	0.46
57117-41-6	1,2,3,7,8-PeCDF	1.4	J	49	0.30
57117-31-4	2,3,4,7,8-PeCDF	ND		49	0.34
39227-28-6	1,2,3,4,7,8-HxCDD	2.0	J	49	0.28
57653-85-7	1,2,3,6,7,8-HxCDD	1.2	J	49	0.27
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J q	49	0.25
70648-26-9	1,2,3,4,7,8-HxCDF	2.0	J B	49	0.30
57117-44-9	1,2,3,6,7,8-HxCDF	0.90	J B q	49	0.27
72918-21-9	1,2,3,7,8,9-HxCDF	1.4	J B q	49	0.24
60851-34-5	2,3,4,6,7,8-HxCDF	0.93	J B	49	0.24
35822-46-9	1,2,3,4,6,7,8-HpCDD	3.7	J B	49	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.6	J B q	49	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J B q	49	0.38
3268-87-9	OCDD	15	J B	98	0.48
39001-02-0	OCDF	2.0	J B q	98	0.54
41903-57-5	Total TCDD	4.5	J B q	9.8	0.56
30402-14-3	Total TCDF	21	B q	9.8	0.43
36088-22-9	Total PeCDD	ND		49	0.52
30402-15-4	Total PeCDF	1.4	J	49	0.32
34465-46-8	Total HxCDD	4.3	J q	49	0.26
55684-94-1	Total HxCDF	5.2	J B q	49	0.26
37871-00-4	Total HpCDD	6.8	J B	49	0.30
38998-75-3	Total HpCDF	2.6	J B q	49	0.38

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-0.45mm	Lab Sample ID: 320-70797-11
Matrix: Water	Lab File ID: 12mr21adfs1_13.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1023.3(mL)	Date Analyzed: 03/12/2021 19:20
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		25-164
89059-46-1	13C-2,3,7,8-TCDF	54		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	59		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	53		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	55		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	58		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	58		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	57		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	58		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	69		26-138
114423-97-1	13C-OCDD	77		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Lims ID: 320-70797-A-11-A
Client ID: 11215702-Tank2-0.45mm
Sample Type: Client
Inject. Date: 12-Mar-2021 19:20:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-11-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:21:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: bilottag Date: 15-Mar-2021 07:17:56

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.465	3346442	0.78	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.605	2771806	0.78	1.5437	53.7	53.7	0.1271	0.1271	53.66	
2,3,7,8-TCDF	18.605	22625	0.84	1.1258	0.7250	0.7250	0.0219	0.0219		M
A Non-2,3,7,8-sub-TCDF	18.115	10632	0.77	1.1258	0.3814	0.3407	0.0219	0.2888		RQ
S Total TCDF					1.106	1.066	0.0219	0.0219		RQ
D 13C-2,3,7,8-TCDD	19.800	2010222	0.80	0.9687	62.0	62.0	0.1497	0.1497	62.01	
$ 37Cl4-2,3,7,8-TCDD	19.835	1393282		1.0841	38.4	38.4	0.0321	0.0321	96.01	
2,3,7,8-TCDD	19.817	5491	0.77	1.1904	0.2975	0.2295	0.0287	0.0287		RQM
A Non-2,3,7,8-sub-TCDD	18.876						0.0287	0.0287		
S Total TCDD					0.2975	0.2295	0.0287	0.0287		RQ
D 13C-1,2,3,7,8-PeCDF	25.648	2332417	1.54	1.3124	53.1	53.1	0.2877	0.2877	53.11	
1,2,3,7,8-PeCDF	25.657	1830	1.47	1.1163	0.0703	0.0703	0.0155	0.0155		M
D 13C-2,3,4,7,8-PeCDF	27.029	2442807	1.54	1.3352	54.7	54.7	0.2828	0.2828	54.67	
2,3,4,7,8-PeCDF	27.040						0.0172	0.0172		
A F1 PeCDFs	22.791						0.009519	0.009519		RQU
A Non-2,3,7,8-sub-PeCDF	26.224						0.0163	0.0163		
S Total PeCDF					0.0703	0.0703	0.0163	0.0163		
D 13C-1,2,3,7,8-PeCDD	27.779	1515057	1.59	0.7716	58.7	58.7	0.1241	0.1241	58.68	
1,2,3,7,8-PeCDD	27.829						0.0234	0.0234		U
A Non-2,3,7,8-sub-PeCDD	26.609						0.0234	0.0268		RQU
S Total PeCDD							0.0268	0.0268		
D 13C-1,2,3,4,7,8-HxCDF	33.546	1971600	0.52	1.0931	56.3	56.3	0.1973	0.1973	56.31	
1,2,3,4,7,8-HxCDF	33.588	2354	1.14	1.1831	0.1009	0.1009	0.0154	0.0154		M
D 13C-1,2,3,6,7,8-HxCDF	33.757	2086812	0.53	1.1278	57.8	57.8	0.1912	0.1912	57.77	
1,2,3,6,7,8-HxCDF	33.765	1202	1.24	1.2484	0.0581	0.0461	0.0140	0.0140		RQM
D 13C-2,3,4,6,7,8-HxCDF	34.751	1950528	0.53	1.0552	57.7	57.7	0.2044	0.2044	57.71	
2,3,4,6,7,8-HxCDF	34.751	1183	1.29	1.2750	0.0476	0.0476	0.0122	0.0122		Ma
D 13C-1,2,3,7,8,9-HxCDF	35.770	1806741	0.52	0.9938	56.8	56.8	0.2170	0.2170	56.76	
1,2,3,7,8,9-HxCDF	35.803	1658	1.24	1.2953	0.0831	0.0708	0.0122	0.0122		RQM
A Non-2,3,7,8-sub-HxCDF	33.496						0.0134	0.0211		RMU
S Total HxCDF					0.2897	0.2655	0.0135	0.0135		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.567	3202851	1.24	1.1E+05	100.0	100.0				a
D 13C-1,2,3,4,7,8-HxCDD	35.012	1472644	1.31	0.7895	58.2	58.2	0.2029	0.2029	58.24	
1,2,3,4,7,8-HxCDD	35.029	1661	1.28	1.0950	0.1030	0.1030	0.0141	0.0141		
D 13C-1,2,3,6,7,8-HxCDD	35.147	1676556	1.22	0.8495	61.6	61.6	0.1886	0.1886	61.62	
1,2,3,6,7,8-HxCDD	35.147	1031	1.34	1.0201	0.0603	0.0603	0.0138	0.0138		M
1,2,3,7,8,9-HxCDD	35.584	1032	1.24	1.1549	0.0688	0.0568	0.0127	0.0127		RQM
A Non-2,3,7,8-sub-HxCDD	34.039						0.0135	0.0262		RQU
S Total HxCDD					0.2321	0.2200	0.0135	0.0135		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	37.818	1627828	0.45	0.7854	64.7	64.7	0.3386	0.3386	64.71	
1,2,3,4,6,7,8-HpCDF	37.835	1993	1.04	1.4859	0.0914	0.0824	0.0189	0.0189		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	39.166	1594707	0.45	0.7230	68.9	68.9	0.3678	0.3678	68.87	
1,2,3,4,7,8,9-HpCDF	39.191	1184	1.04	1.4048	0.0582	0.0529	0.0196	0.0196		RQM
A Non-2,3,7,8-sub-HpCDF	38.451						0.0192	0.0192		
S Total HpCDF					0.1495	0.1353	0.0192	0.0192		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.854	1531825	1.07	0.6413	74.6	74.6	0.2331	0.2331	74.57	
1,2,3,4,6,7,8-HpCDD	38.871	3307	0.95	1.1489	0.1879	0.1879	0.0153	0.0153		M
A Non-2,3,7,8-sub-HpCDD	39.230	2794	0.97	1.1489	0.1588	0.1588	0.0153	0.1588		M
S Total HpCDD					0.3467	0.3467	0.0153	0.0153		
D 13C-OCDD	41.327	2548373	0.89	0.5141	154.8	154.8	0.1708	0.1708	77.39	
OCDF	41.403	2074	0.89	1.5776	0.1248	0.1032	0.0277	0.0277		RQ
OCDD	41.336	11282	0.90	1.1706	0.7564	0.7564	0.0245	0.0245		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Lims ID: 320-70797-A-11-A
Client ID: 11215702-Tank2-0.45mm
Sample Type: Client
Inject. Date: 12-Mar-2021 19:20:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-11-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:21:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1613

First Level Reviewer: bilottag Date: 15-Mar-2021 07:17:56

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.465	19.417	3		1471329	230974	191	477	1209		
333.9338	19.465	19.417	3		1875113	306704	121	302	2535	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.605	18.557	3	0.956	1215717	193008	299	747	646		
317.9389	18.596	18.557	2	0.955	1556089	260558	123	307	2118	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	18.605	18.574	2	1.000	10325	1491	14	35	107		M
305.8987	18.614	18.574	2	1.000	12300	1817	31	77	59	0.84(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	17.521	18.115	-36	0.942	911	165	14	35	12		
	Empc Correction				705	146	14	35	10		
305.8987	17.539	18.115	-35	0.943	916	190	31	77	6	0.99(0.65-0.89)	
303.9016	17.986	18.115	-8	0.967	4983	951	14	35	68		
	Empc Correction				3920	699	14	35	50		
305.8987	17.986	18.115	-8	0.967	5091	908	31	77	29	0.98(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.800	19.761	2	1.017	893715	140128	191	477	734		
333.9338	19.809	19.761	3	1.018	1116507	167087	121	302	1381	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.835	19.778	3	1.019	1393282	213794	75	187	2851		
2,3,7,8-TCDD											RQM
319.8965	19.817	19.787	2	1.001	2389	384	31	77	12		
321.8936	19.817	19.787	2	1.001	4731	743	11	27	68	0.50(0.65-0.89)	M
	Empc Correction				3102	498	11	27	45		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											
319.8965	18.876						31	77			
321.8936	18.876						11	27			
13C-1,2,3,7,8-PeCDF											
351.9000	25.648	25.600	3	1.318	1414444	253922	491	1227	517		
353.8970	25.648	25.600	3	1.318	917973	161584	321	802	503	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	25.657	25.625	2	1.000	1088	228	6	15	38		M
341.8567	25.657	25.625	2	1.000	742	179	23	57	8	1.47(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	27.029	26.980	3	1.389	1479671	239183	491	1227	487		
353.8970	27.037	26.980	3	1.389	963136	157090	321	802	489	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.006						6	15			
341.8567	27.006						23	57			
A F1 PeCDFs											U
339.8597	22.791	22.791	0	0.889	88	37	1	2			
341.8567	22.791	22.791	0	0.889	542	168	16	40		0.16(1.32-1.78)	
	Empc Correction				56	23	16	40	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.224						6	15			
341.8567	26.224						23	57			
13C-1,2,3,7,8-PeCDD											
367.8949	27.779	27.721	3	1.427	930080	149643	98	245	1527		
369.8919	27.787	27.721	4	1.428	584977	94360	108	270	874	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											U
355.8546	27.755						22	55			
357.8516	27.755						4	10			
A Non-2,3,7,8-sub-PeCDD											U
355.8546	24.604	26.609	-120	0.886	280	108	22	55	5		
357.8516	24.562	26.609	-123	0.884	181	51	4	10	13	1.55(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.546	33.504	3	0.943	678571	115213	214	535	538		
385.8610	33.554	33.504	3	0.943	1293029	225324	390	975	578	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	33.588	33.521	4	1.001	1256	311	15	37	21		M
375.8178	33.605	33.521	5	1.002	1098	185	10	25	19	1.14(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.757	33.706	3	0.949	721453	124860	214	535	583		
385.8610	33.757	33.706	3	0.949	1365359	229222	390	975	588	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQM
373.8208	33.765	33.723	3	1.000	977	193	15	37	13		
	Empc Correction				665	161	15	37	11		
375.8178	33.757	33.723	2	1.000	537	130	10	25	13	1.82(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.751	34.709	3	0.977	673586	138492	214	535	647		
385.8610	34.751	34.709	3	0.977	1276942	260607	390	975	668	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											Ma
373.8208	34.751	34.725	2	1.000	667	120	15	37	8		M
375.8178	34.759	34.725	2	1.000	516	132	10	25	13	1.29(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.770	35.736	2	1.006	617563	135641	214	535	634		
385.8610	35.778	35.736	3	1.006	1189178	255781	390	975	656	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	35.803	35.753	3	1.001	918	272	15	37	18		M
375.8178	35.786	35.753	2	1.000	1027	262	10	25	26	0.89(1.05-1.43)	M
	Empc Correction				740	219	10	25	22		
A Non-2,3,7,8-sub-HxCDF											MU
373.8208	33.496	33.496	0	0.999			15	37			
375.8178	33.496	33.496	0	0.999	516	132	10	25		0.00(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDD											a
401.8559	35.567	35.525	3		1775595	387884	246	615	1577		a
403.8529	35.567	35.525	3		1427256	312346	203	507	1539	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.012	34.970	3	0.984	834000	182061	246	615	740		
403.8529	35.012	34.970	3	0.984	638644	141506	203	507	697	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.029	34.995	2	1.000	934	238	7	17	34		
391.8127	35.054	34.995	4	1.001	727	142	13	32	11	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.147	35.105	3	0.988	922188	200241	246	615	814		
403.8529	35.147	35.105	3	0.988	754368	155663	203	507	767	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.147	35.121	2	1.000	591	116	7	17	17		
391.8127	35.172	35.121	3	1.001	440	102	13	32	8	1.34(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											RQM
389.8158	35.584	35.542	3	1.016	790	166	7	17	24		
	Empc Correction				571	163	7	17	23		
391.8127	35.576	35.542	2	1.016	461	132	13	32	10	1.71(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											U
389.8158	34.039	34.039	0	0.968	383	66	7	17			
	Empc Correction				249	81	7	17	0		
391.8127	34.039	34.039	0	0.968	201	66	13	32		1.91(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.818	37.786	2	1.063	502747	135402	261	652	519		
419.8220	37.818	37.786	2	1.063	1125081	299666	484	1210	619	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7817	37.835	37.794	2	1.000	1233	405	32	80	13		M
	Empc Correction				1016	325	32	80	10		
409.7788	37.835	37.794	2	1.000	977	313	17	42	18	1.26(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.166	39.133	2	1.101	495045	135925	261	652	521		
419.8220	39.166	39.133	2	1.101	1099662	306812	484	1210	634	0.45(0.37-0.51)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8,9-HpCDF											RQM
407.7817	39.191	39.142	3	1.001	604	149	32	80	5		
409.7788	39.174	39.142	2	1.000	699	226	17	42	13	0.86(0.88-1.20)	M
	Empc Correction				580	143	17	42	8		
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.451						32	80			
409.7788	38.451						17	42			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.854	38.822	2	1.092	791104	233147	237	592	984		
437.8140	38.854	38.822	2	1.092	740721	222062	182	455	1220	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	38.871	38.830	2	1.000	1613	454	20	50	23		M
425.7737	38.863	38.830	2	1.000	1694	506	12	30	42	0.95(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											M
423.7767	38.172	39.230	-63	0.982	1379	390	20	50	20		M
425.7737	38.181	39.230	-63	0.983	1415	352	12	30	29	0.97(0.88-1.20)	M
13C-OCDD											
469.7780	41.327	41.293	2	1.162	1196454	327417	132	330	2480		
471.7750	41.327	41.293	2	1.162	1351919	368593	114	285	3233	0.89(0.76-1.02)	
OCDF											RQ
441.7428	41.403	41.377	2	1.002	977	257	18	45	14		
443.7399	41.412	41.377	2	1.002	1531	484	43	107	11	0.64(0.76-1.02)	
	Empc Correction				1097	288	43	107	7		
OCDD											M
457.7377	41.336	41.301	2	1.000	5351	1591	18	45	88		M
459.7348	41.336	41.301	2	1.000	5931	1708	22	55	78	0.90(0.76-1.02)	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Lims ID:	320-70797-A-11-A		
Client ID:	11215702-Tank2-0.45mm		
Inject. Date:	12-Mar-2021 19:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	2771806	453566

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	2771806	453566

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.521	911	165	916	190	0.0585	0.99	RQ
17.521	705	146	916	190	0.0519		Empc Correction
17.986	4983	951	5091	908	0.3228	0.98	RQ
17.986	3920	699	5091	908	0.2888		Empc Correction
Signal Totals:							
	4625	845	6007	1098			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11901	2214				0.98	RQ
	10632	1943					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3814 = (11901 * 100.000) / (2771806 * 1.126)
Empc Amount: 0.3407 = (10632 * 100.000) / (2771806 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Lims ID: 320-70797-A-11-A
Client ID: 11215702-Tank2-0.45mm
Inject. Date: 12-Mar-2021 19:20:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 469779 Lims Sample ID: 12

F1 PeCDFs, RT: 22.791

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	2332417	415506
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	2442807	396273

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	2387612	405889

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.006	88	37	542	168	0.0243	0.16	RQ
23.006	88	37	56	23	0.005548		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Lims ID:	320-70797-A-11-A		
Client ID:	11215702-Tank2-0.45mm		
Inject. Date:	12-Mar-2021 19:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	12

Non-2,3,7,8-sub-PeCDD, RT: 26.609

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1515057	244003

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1515057	244003

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
24.604	280	108	181	51	0.0268	1.55	
28.688	467	117	177	43	0.0374	2.64	RQ
28.688	274	66	177	43	0.0262		Empc Correction

Compound is Marked ND

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Lims ID:	320-70797-A-11-A		
Client ID:	11215702-Tank2-0.45mm		
Inject. Date:	12-Mar-2021 19:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	1971600	340537
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2086812	354082
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	1950528	399099
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	1806741	391422

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	1953920	371285

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
34.759	0	0	516	132	0.0211	0.00	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Lims ID:	320-70797-A-11-A		
Client ID:	11215702-Tank2-0.45mm		
Inject. Date:	12-Mar-2021 19:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1472644	323567
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	1676556	355904
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	1574600	339735

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.144	383	66	201	66	0.0340	1.91	RQ
34.144	249	81	201	66	0.0262		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Lims ID:	320-70797-A-11-A		
Client ID:	11215702-Tank2-0.45mm		
Inject. Date:	12-Mar-2021 19:20:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1531825	455209

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1531825	455209

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.172	1379	390	1415	352	0.1588	0.97	M
Signal Totals:							
	1379	390	1415	352			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2794	742				0.97	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1588 = (2794 * 100.000) / (1531825 * 1.149)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 09:21:19   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

RT:	18.61
Area:	11121
Amount:	0.767889
Amount Units:	pg/ul

Processing Integration Results

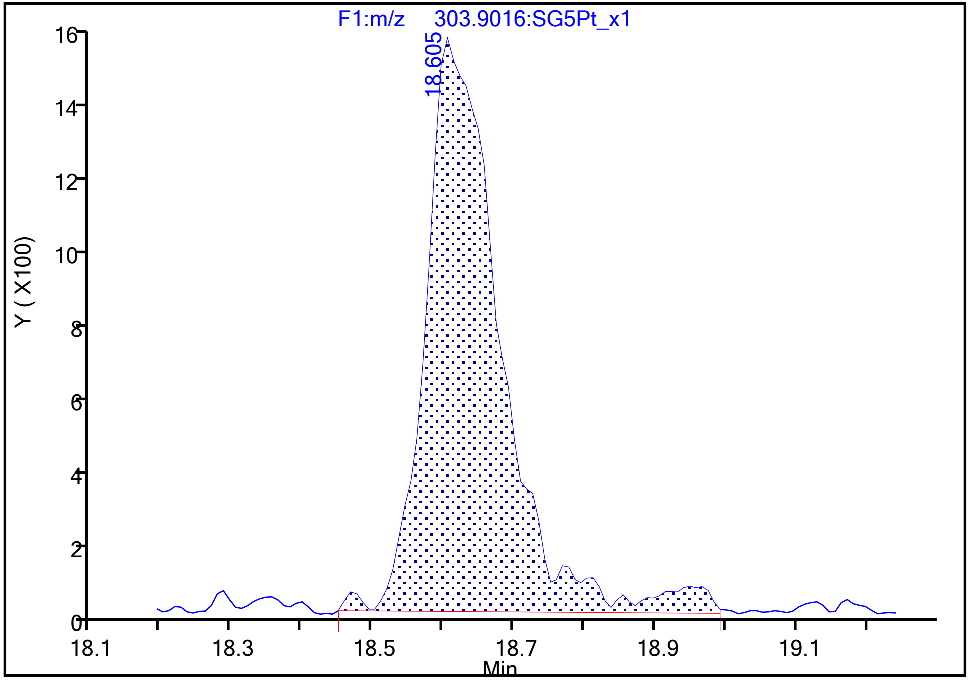

RT:	18.61
Area:	10325
Amount:	0.725043
Amount Units:	pg/ul

Manual Integration Results

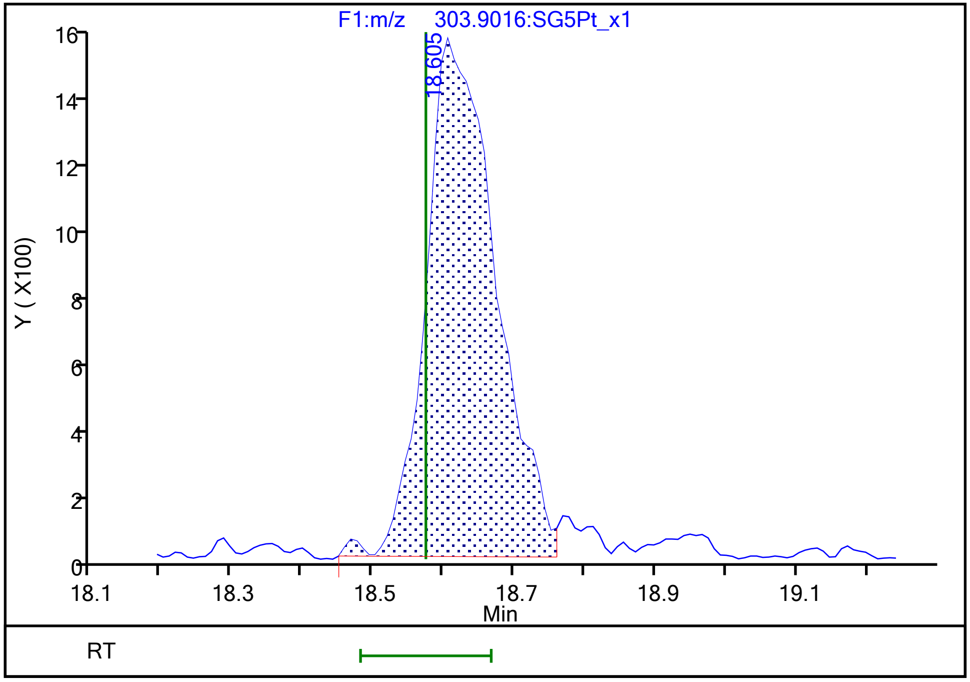

Reviewer: dadunj, 16-Mar-2021 09:16:56

Audit Action: Split an Integrated Peak   Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11
Client ID:	11215702-Tank2-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

Processing Integration Results

RT:	18.61
Area:	12841
Amount:	0.767889
Amount Units:	pg/ul

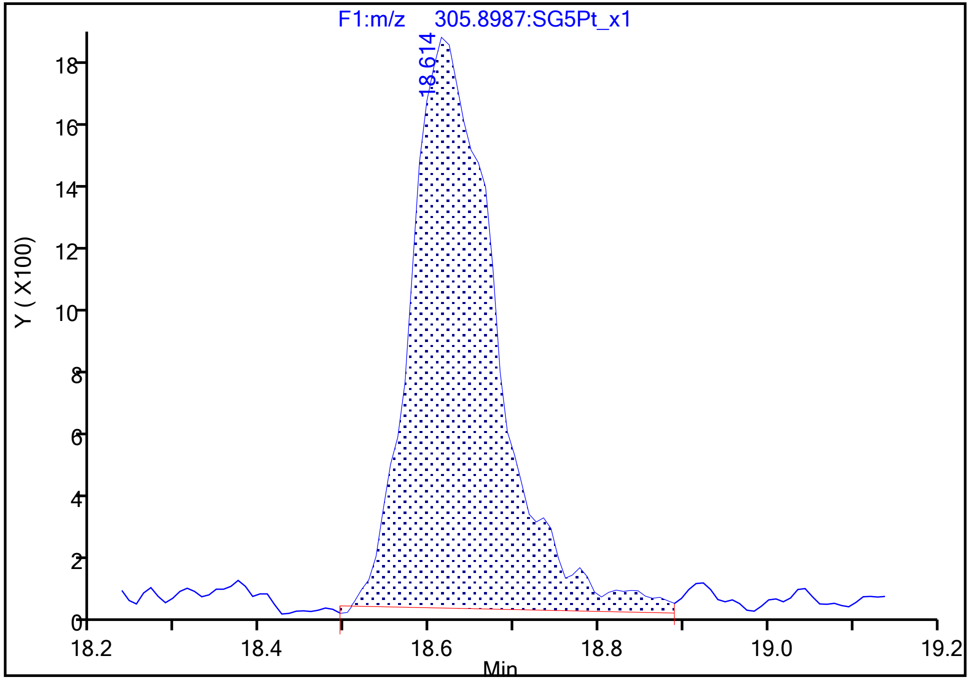

Manual Integration Results

RT:	18.61
Area:	12300
Amount:	0.725043
Amount Units:	pg/ul

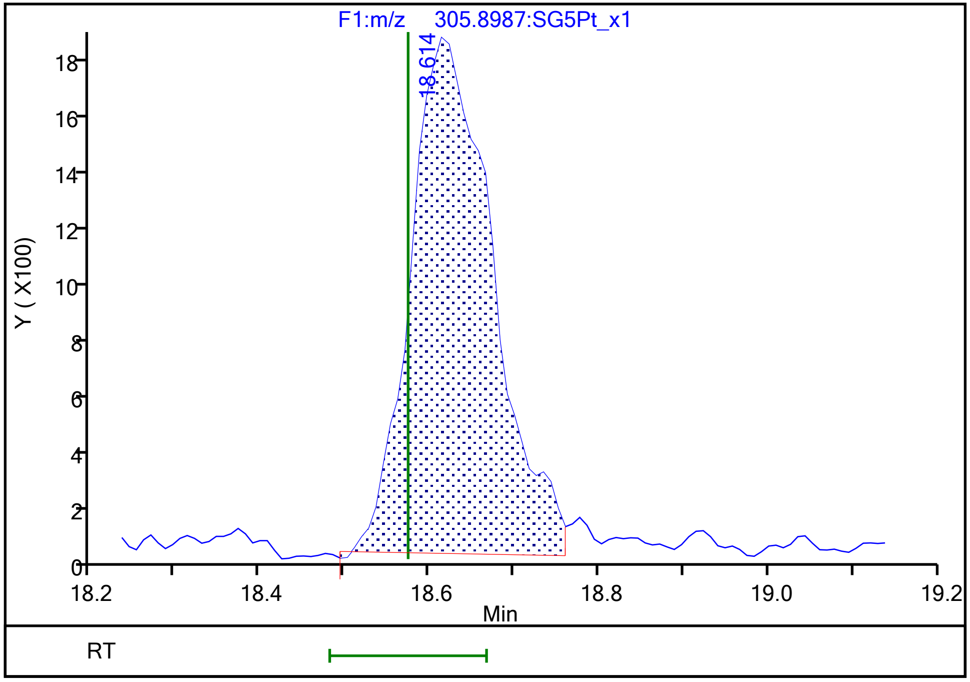

Reviewer: dadunj, 16-Mar-2021 09:16:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11
Client ID:	11215702-Tank2-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 19.82
Area: 4934
Amount: 0.306028
Amount Units: pg/ul

Processing Integration Results

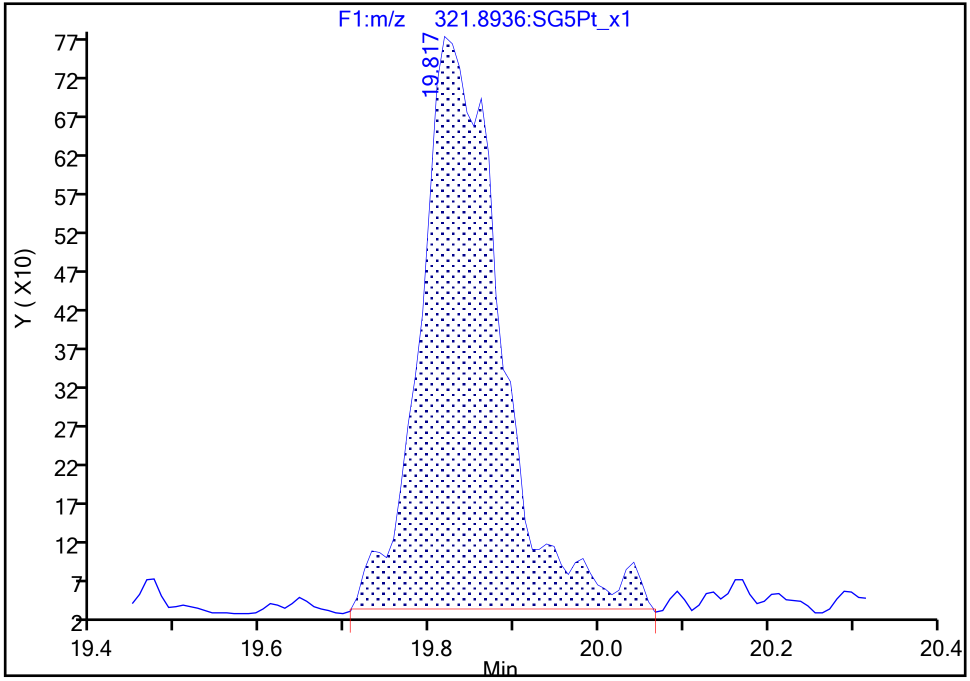

RT: 19.82
Area: 4731
Amount: 0.297544
Amount Units: pg/ul

Manual Integration Results

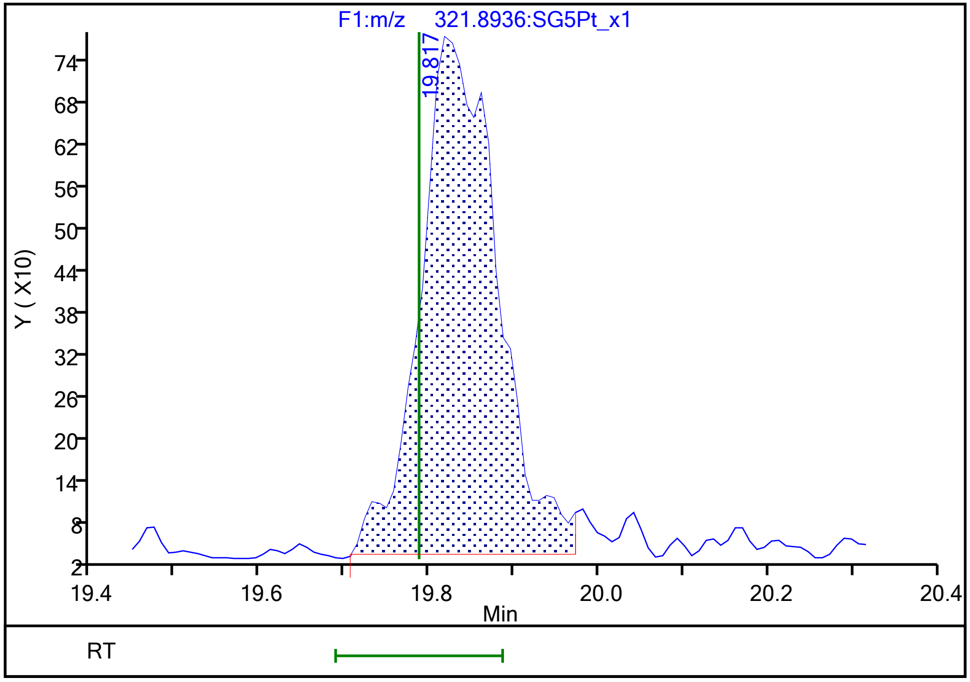

Reviewer: dadunj, 16-Mar-2021 09:17:21

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

RT:	25.66
Area:	167
Amount:	0.055232
Amount Units:	pg/ul

Processing Integration Results

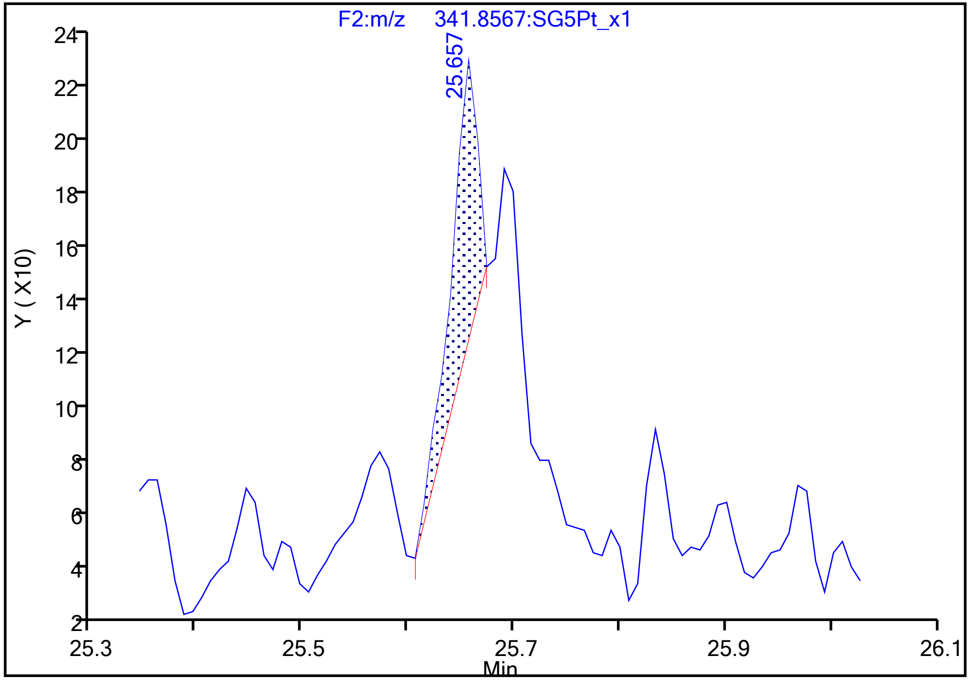

RT:	25.66
Area:	742
Amount:	0.070288
Amount Units:	pg/ul

Manual Integration Results

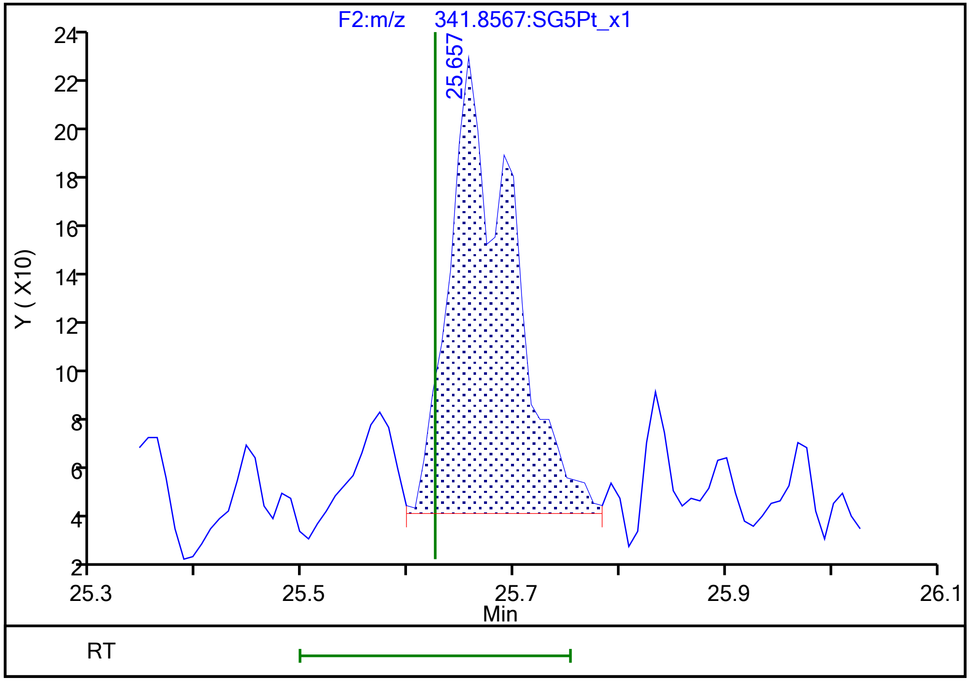

Reviewer: dadunj, 16-Mar-2021 09:17:32

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	25.66
Area:	1271
Amount:	0.055232
Amount Units:	pg/ul

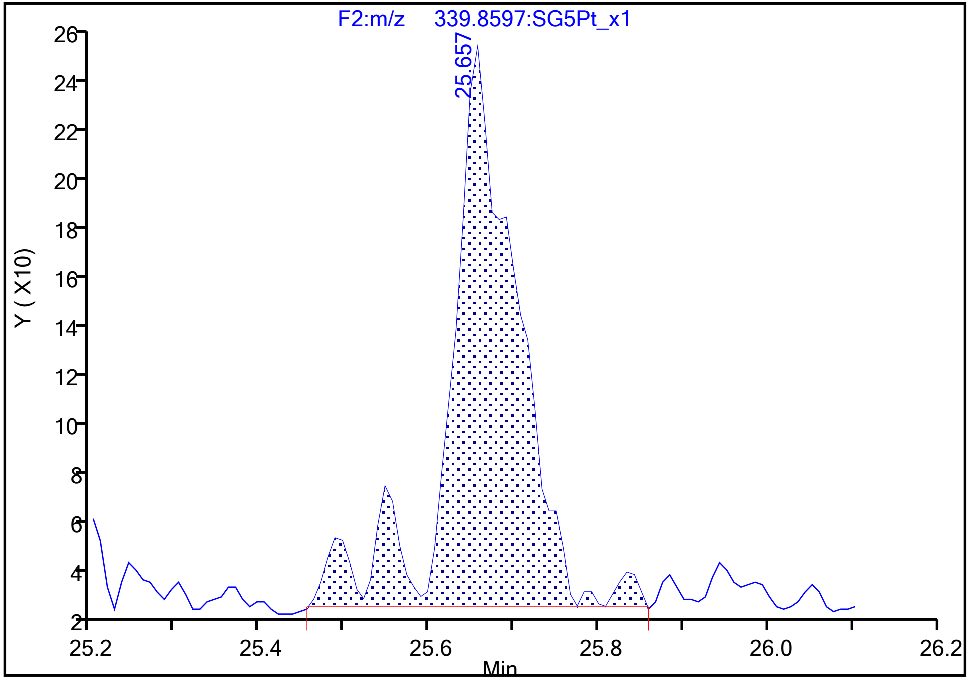

Manual Integration Results

RT:	25.66
Area:	1088
Amount:	0.070288
Amount Units:	pg/ul

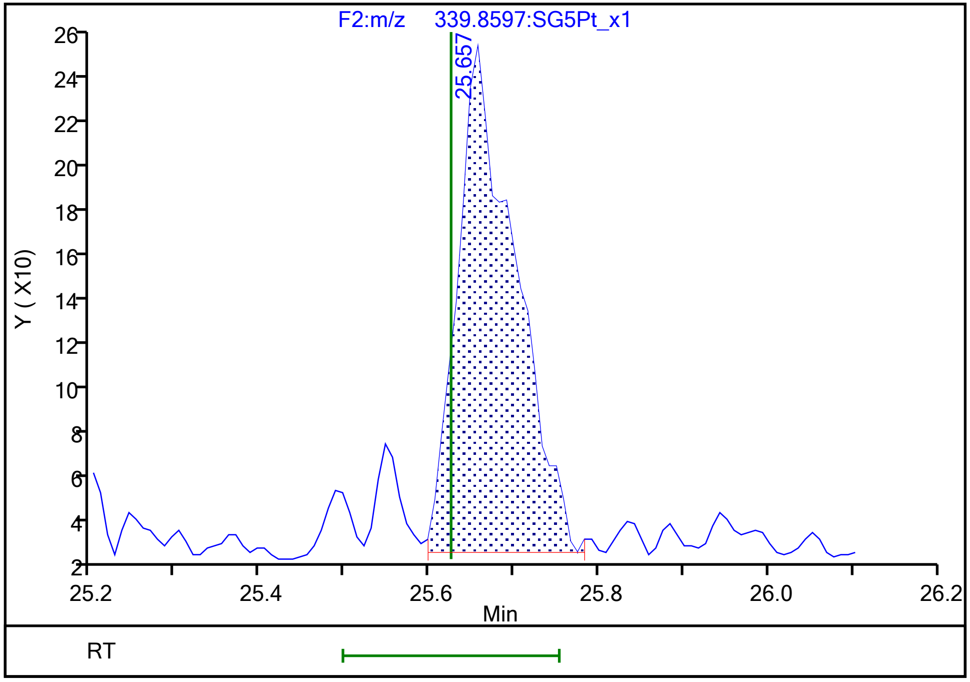

Reviewer: dadunj, 16-Mar-2021 09:17:38

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11
Client ID:	11215702-Tank2-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Processing Integration Results

RT:	33.59
Area:	1504
Amount:	0.111546
Amount Units:	pg/ul

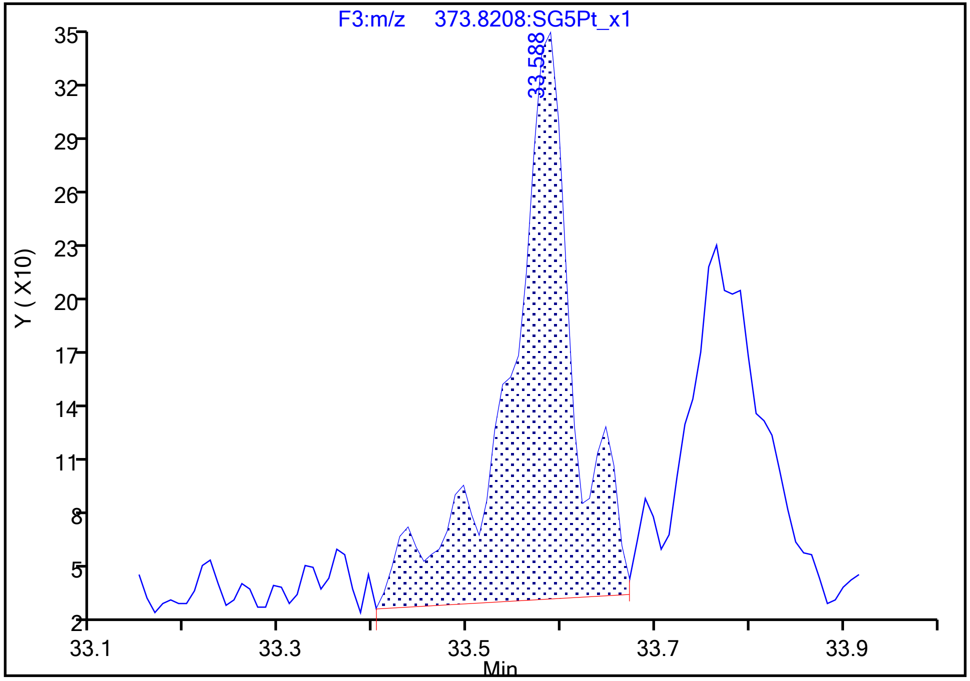

Manual Integration Results

RT:	33.59
Area:	1256
Amount:	0.100914
Amount Units:	pg/ul

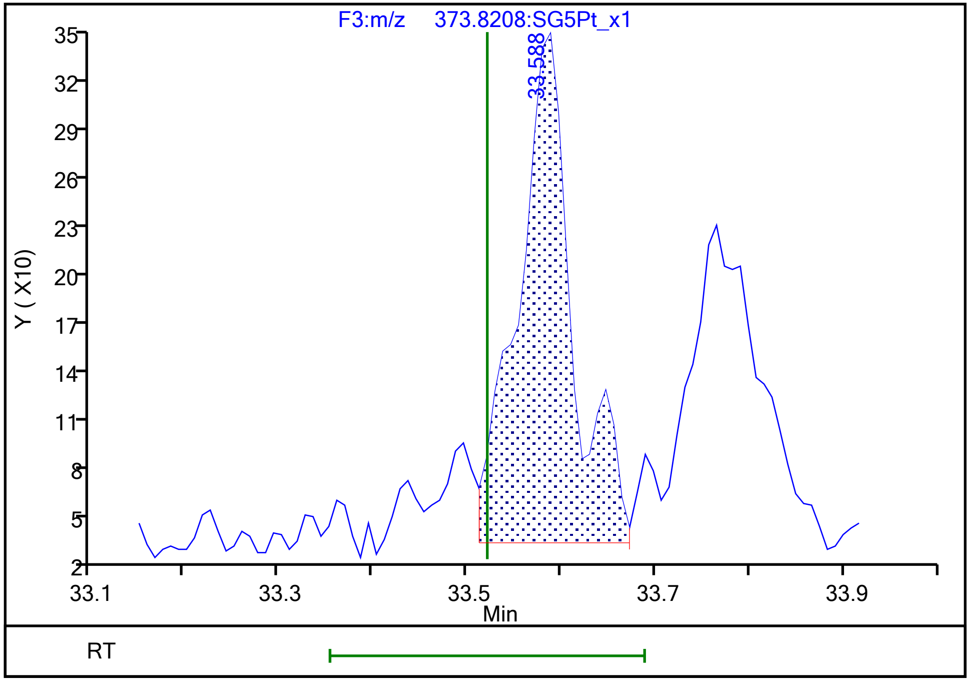

Reviewer: dadunj, 16-Mar-2021 09:18:10

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11
Client ID:	11215702-Tank2-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

RT: 33.76
Area: 602
Amount: 0.060611
Amount Units: pg/ul

Processing Integration Results

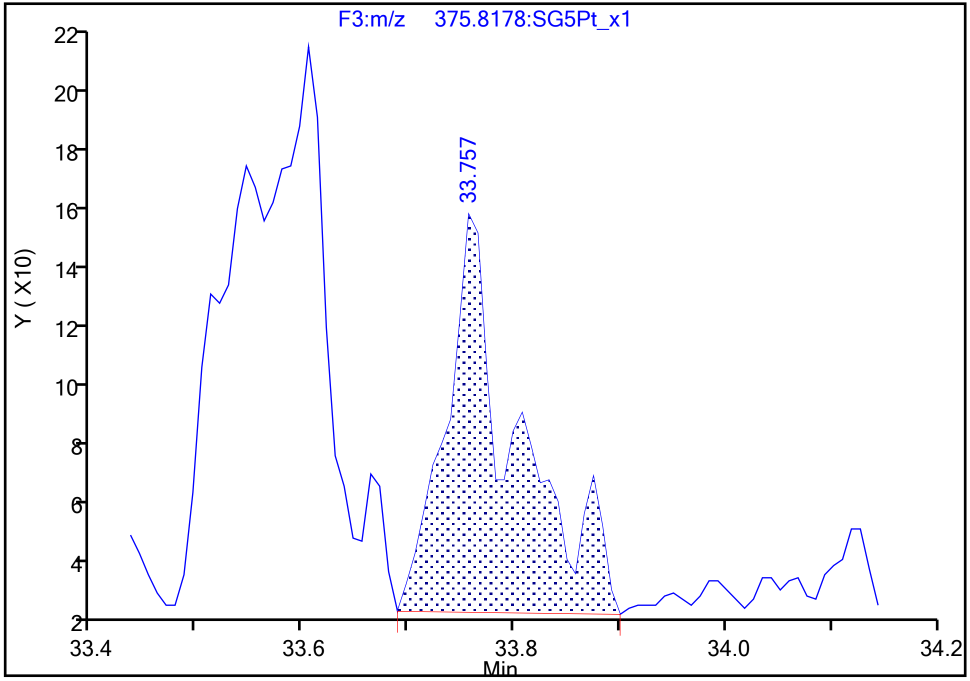

RT: 33.76
Area: 537
Amount: 0.058116
Amount Units: pg/ul

Manual Integration Results

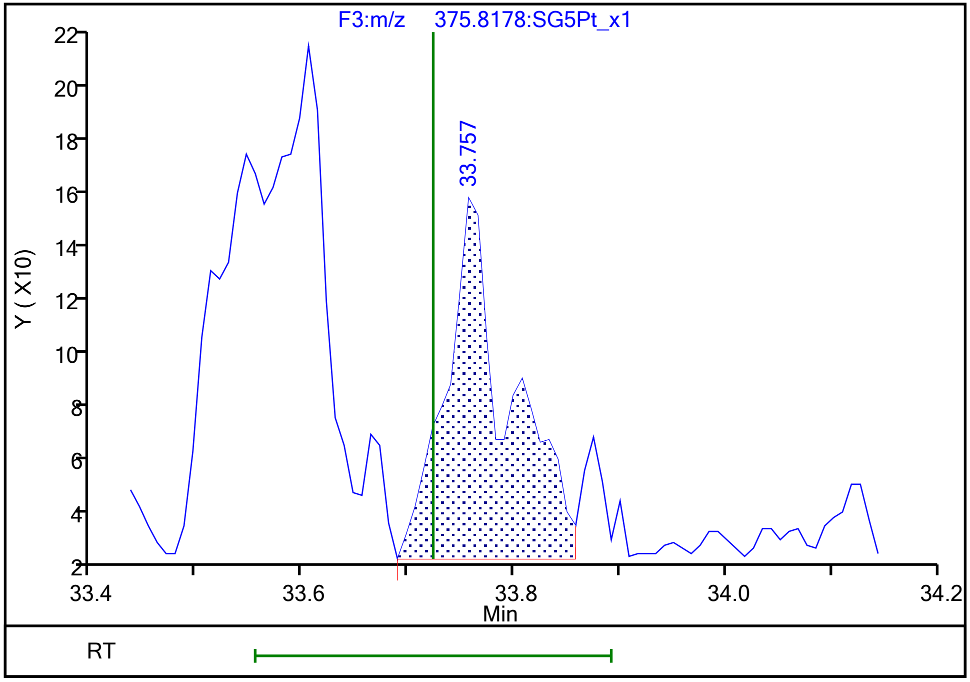

Reviewer: dadunj, 16-Mar-2021 09:18:16

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Not Detected

Expected RT: 34.73

Processing Integration Results

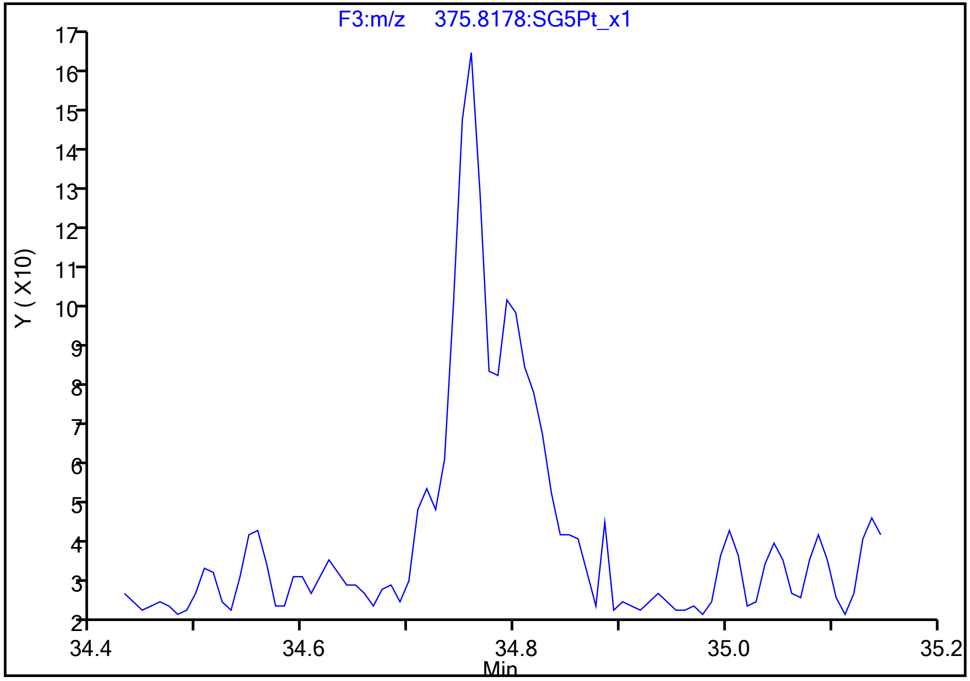

RT:	34.76
Area:	516
Amount:	0.047568
Amount Units:	pg/ul

Manual Integration Results

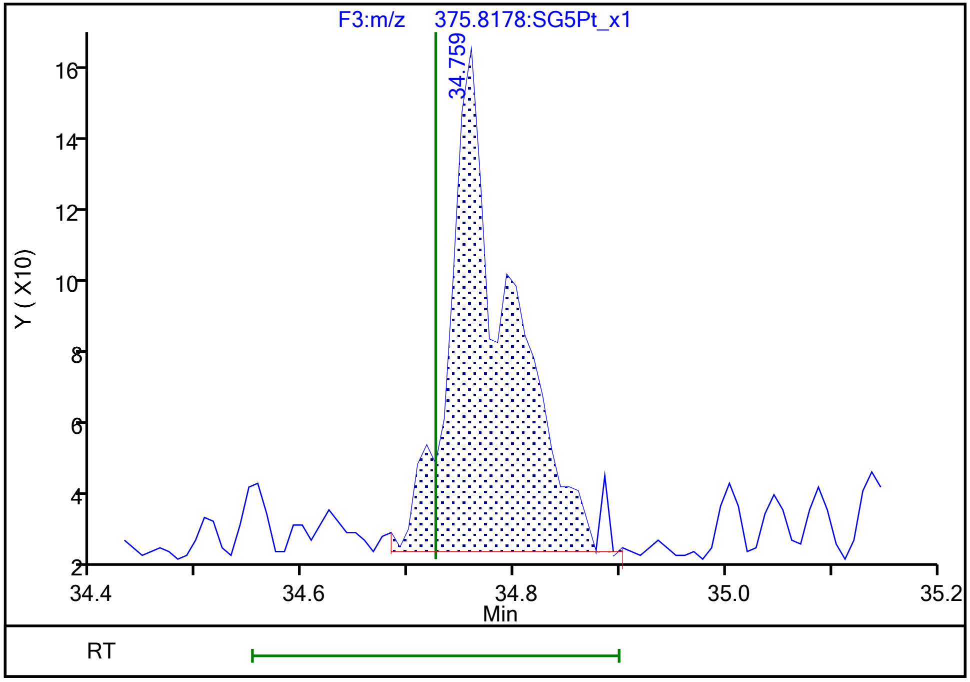

Reviewer: dadunj, 16-Mar-2021 09:18:30

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11
Client ID:	11215702-Tank2-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

Not Detected

Expected RT: 34.73

Processing Integration Results

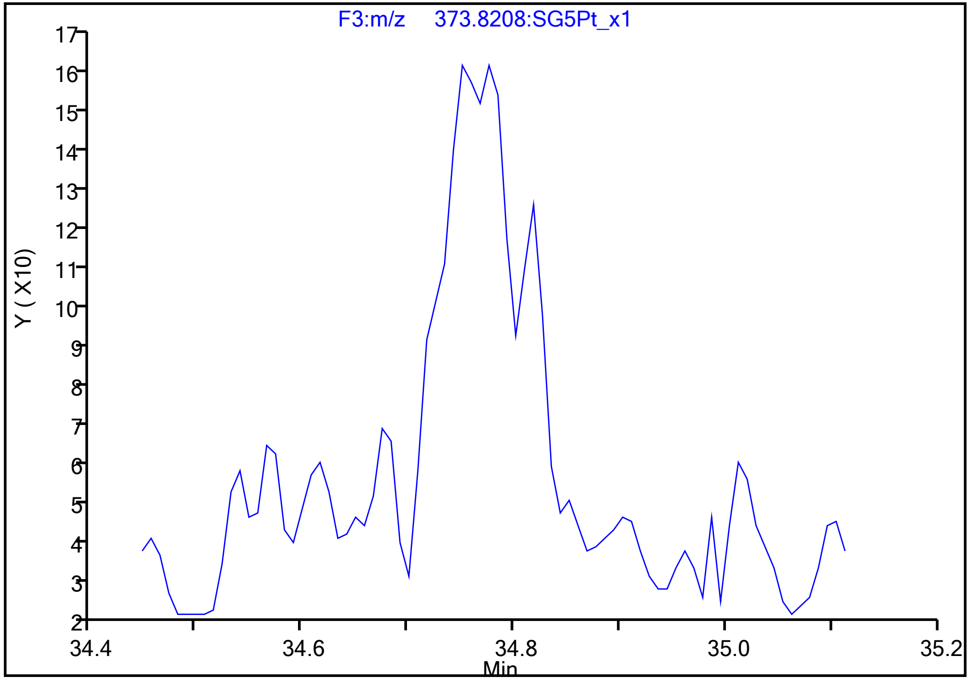

RT: 34.75

Area: 667

Amount: 0.047568

Amount Units: pg/ul

Manual Integration Results

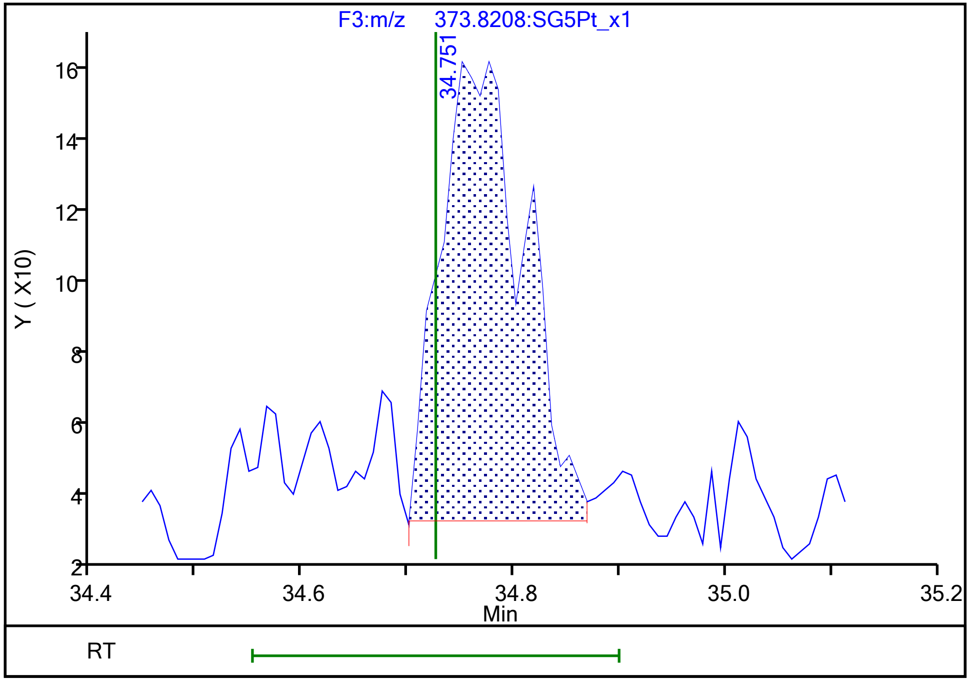

Reviewer: dadunj, 16-Mar-2021 09:18:36

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT: 35.80
Area: 590
Amount: 0.081187
Amount Units: pg/ul

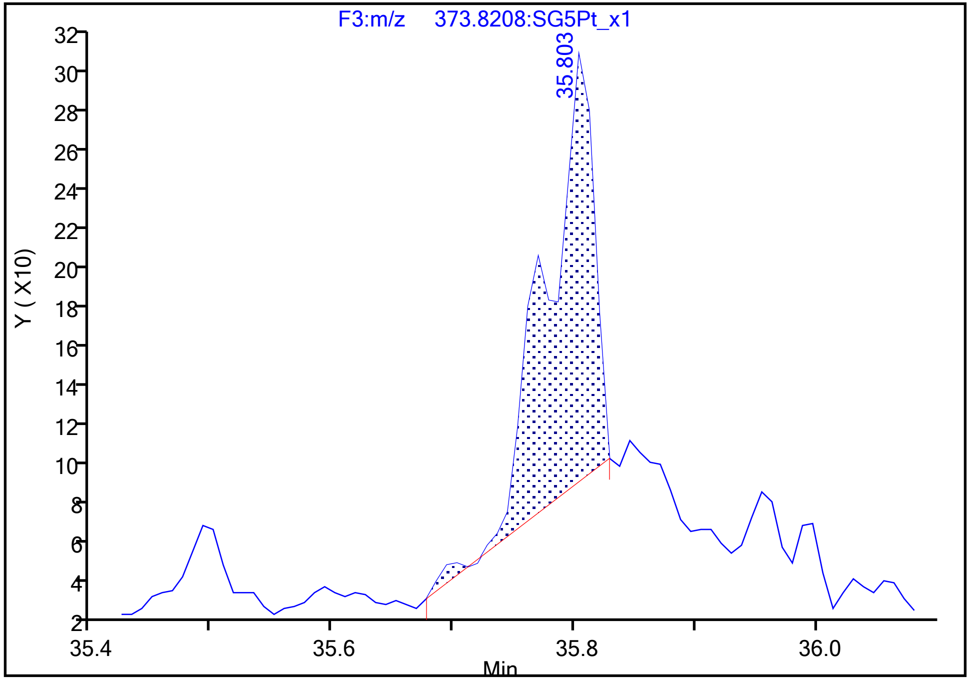

Manual Integration Results

RT: 35.80
Area: 918
Amount: 0.083110
Amount Units: pg/ul

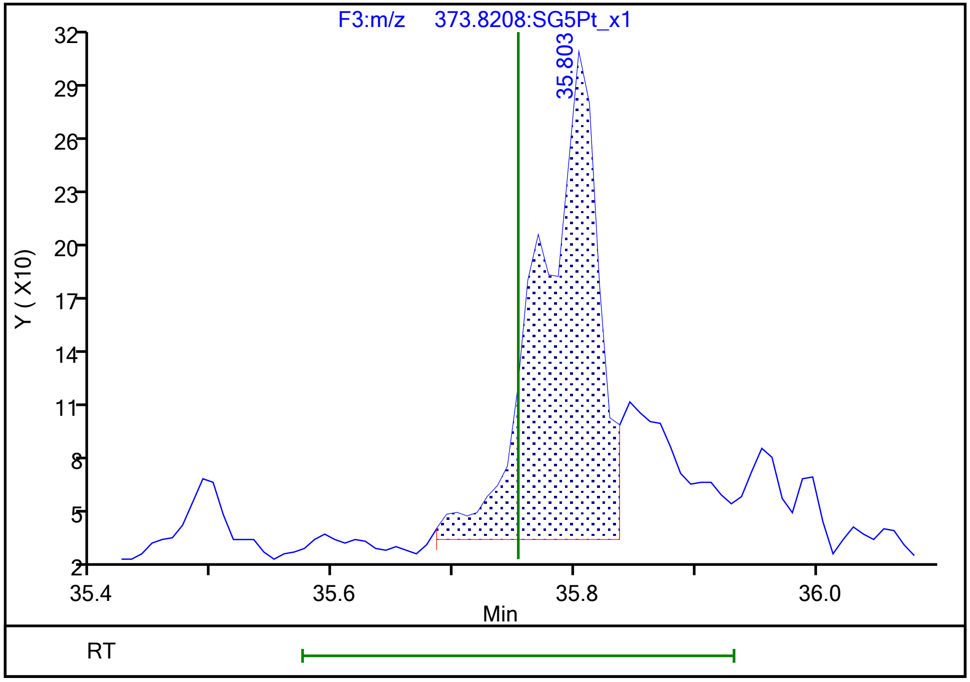

Reviewer: dadunj, 16-Mar-2021 09:18:57

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT: 35.79
Area: 1310
Amount: 0.081187
Amount Units: pg/ul

Processing Integration Results

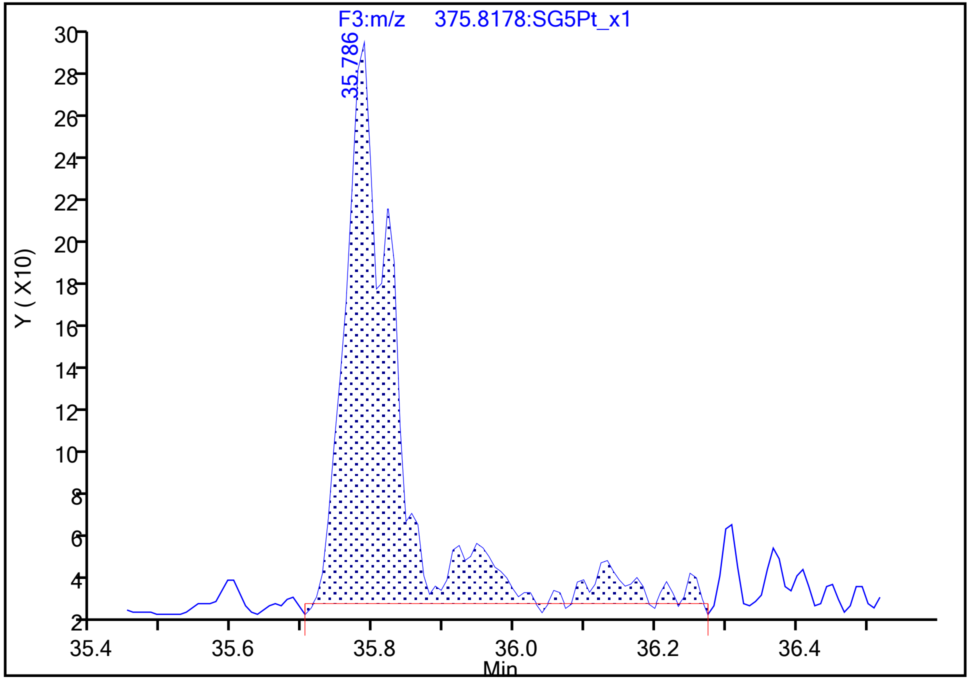

RT: 35.79
Area: 1027
Amount: 0.083110
Amount Units: pg/ul

Manual Integration Results

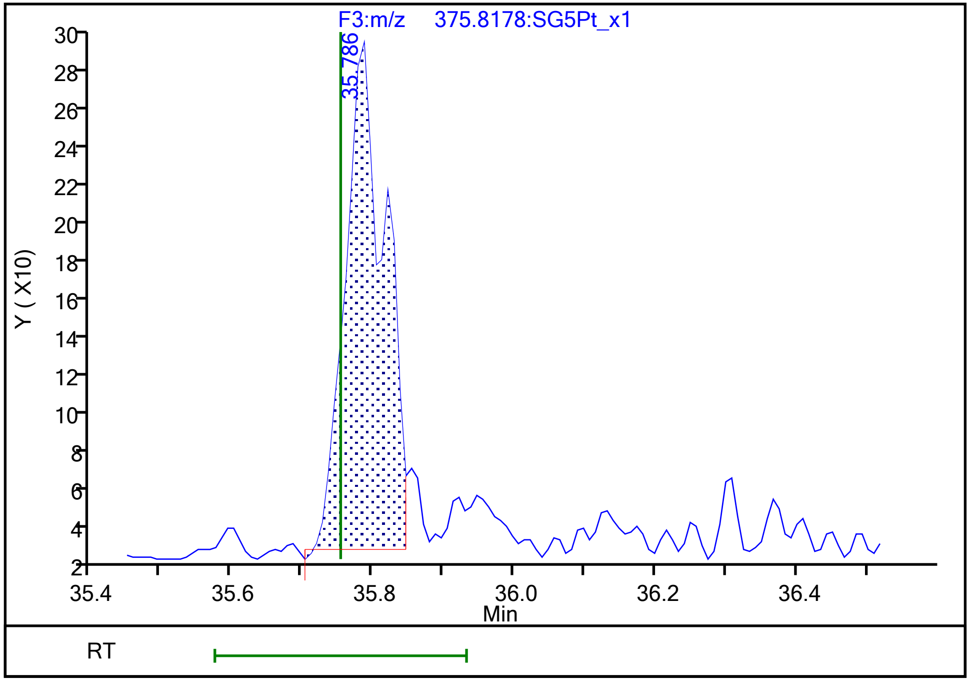

Reviewer: dadunj, 16-Mar-2021 09:19:02

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT: 35.17
Area: 434
Amount: 0.059930
Amount Units: pg/ul

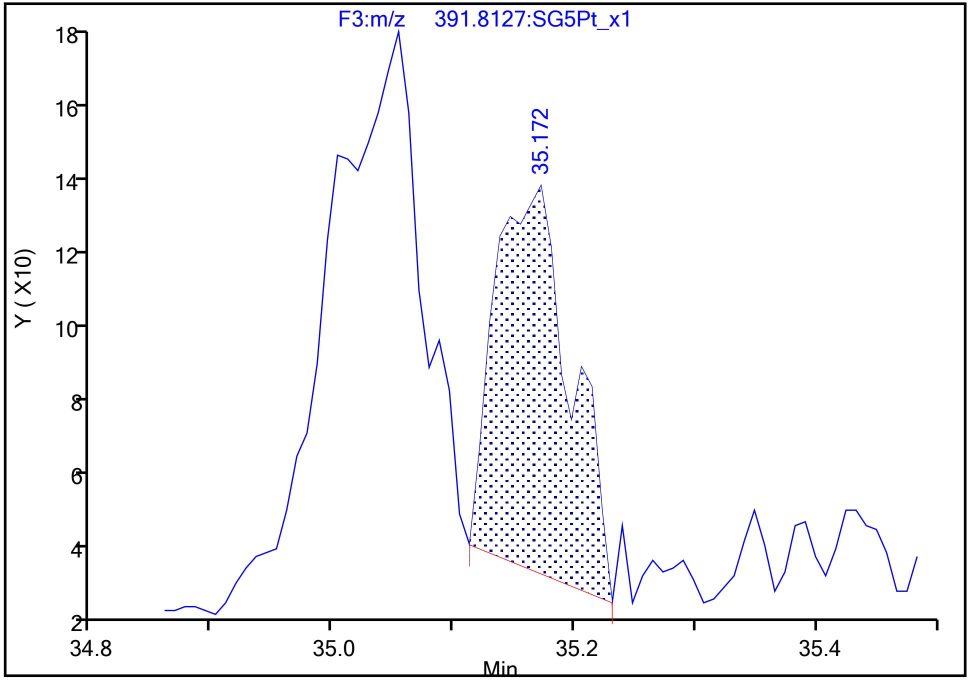

Manual Integration Results

RT: 35.17
Area: 440
Amount: 0.060281
Amount Units: pg/ul

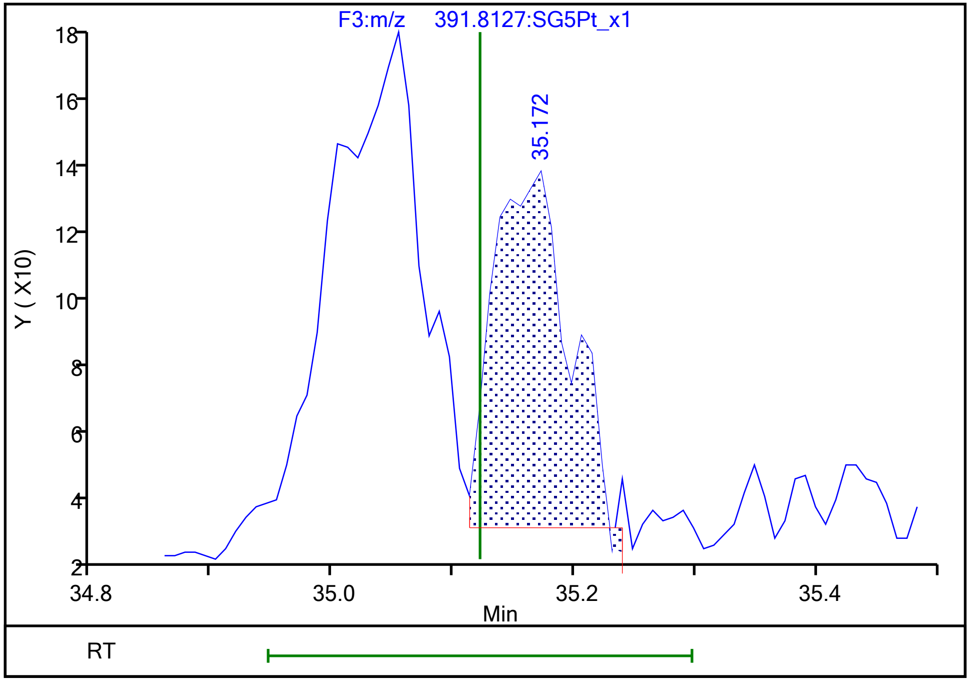

Reviewer: dadunj, 16-Mar-2021 09:19:21

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

RT:	35.58
Area:	640
Amount:	0.078639
Amount Units:	pg/ul

Processing Integration Results

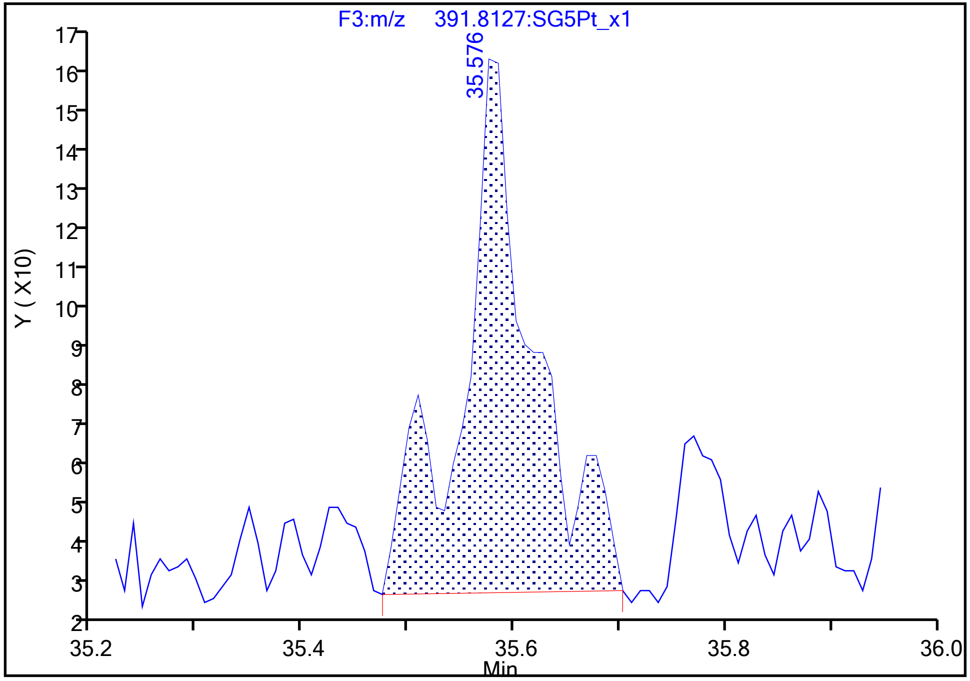

RT:	35.58
Area:	461
Amount:	0.068795
Amount Units:	pg/ul

Manual Integration Results

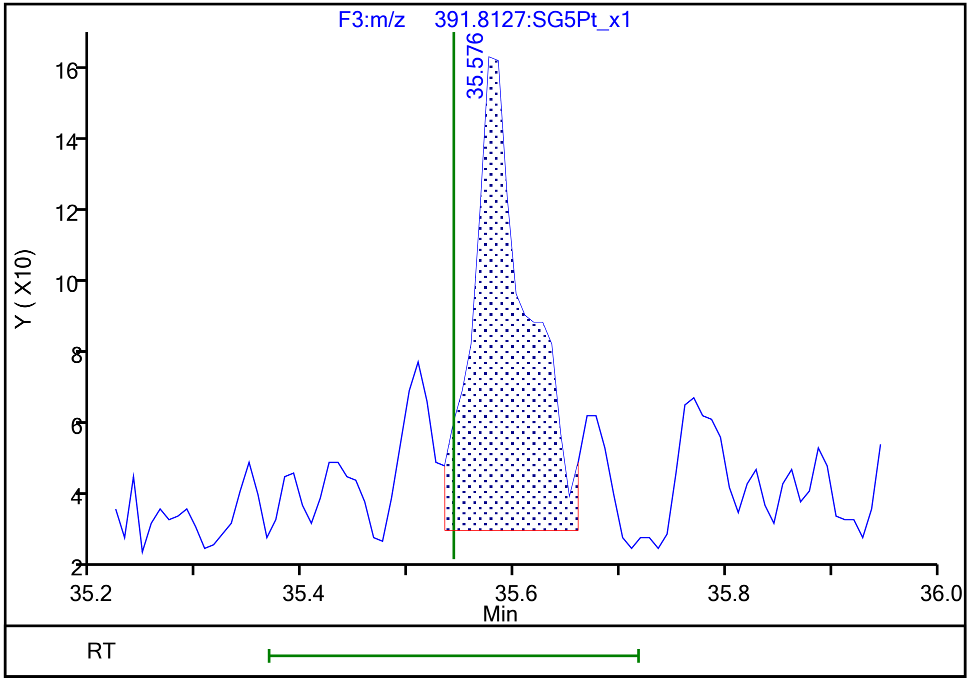

Reviewer: dadunj, 16-Mar-2021 09:19:31

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT:	37.84
Area:	1338
Amount:	0.097365
Amount Units:	pg/ul

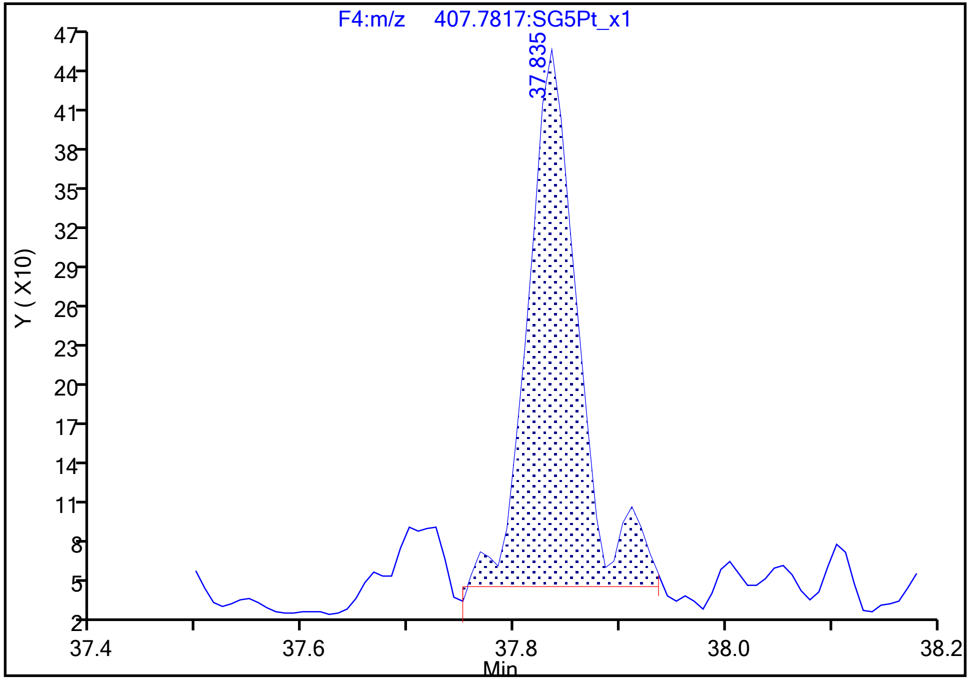

Manual Integration Results

RT:	37.84
Area:	1233
Amount:	0.091370
Amount Units:	pg/ul

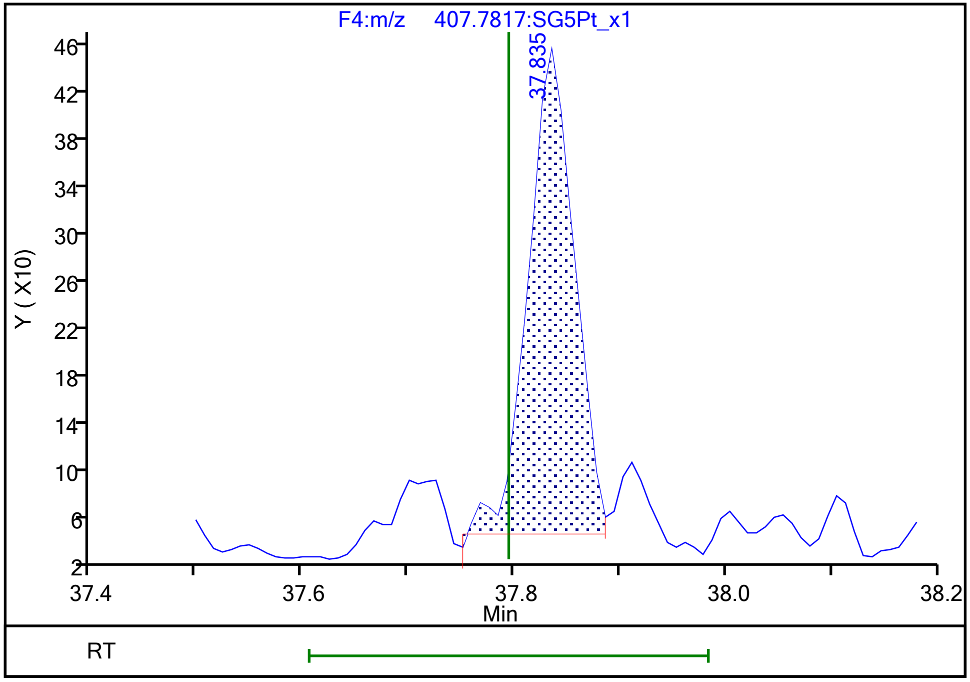

Reviewer: dadunj, 16-Mar-2021 09:19:48

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

RT:	37.84
Area:	1017
Amount:	0.097365
Amount Units:	pg/ul

Processing Integration Results

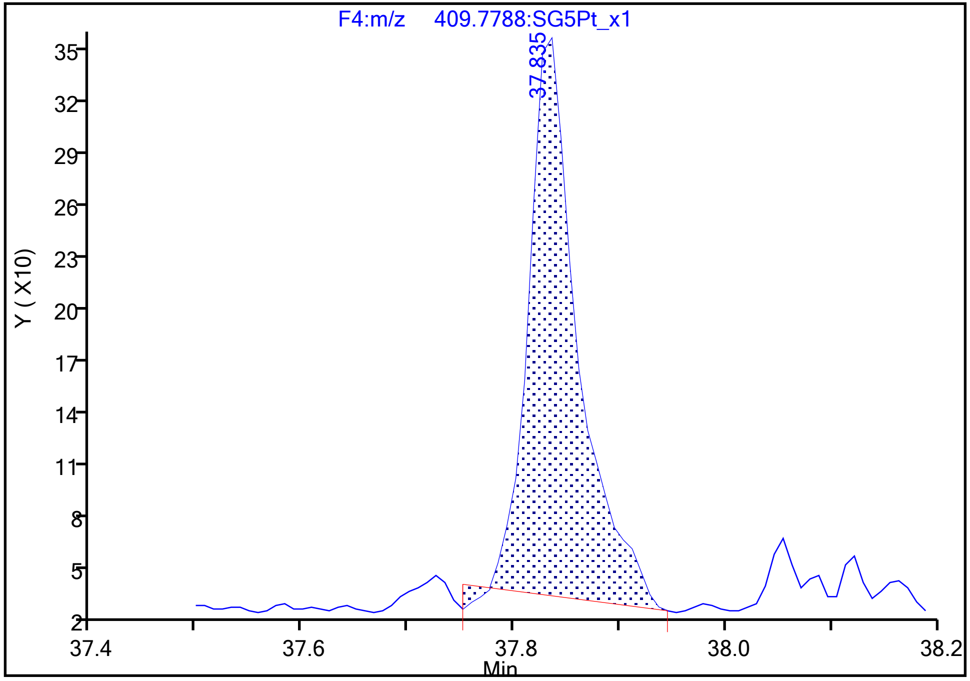

RT:	37.84
Area:	977
Amount:	0.091370
Amount Units:	pg/ul

Manual Integration Results

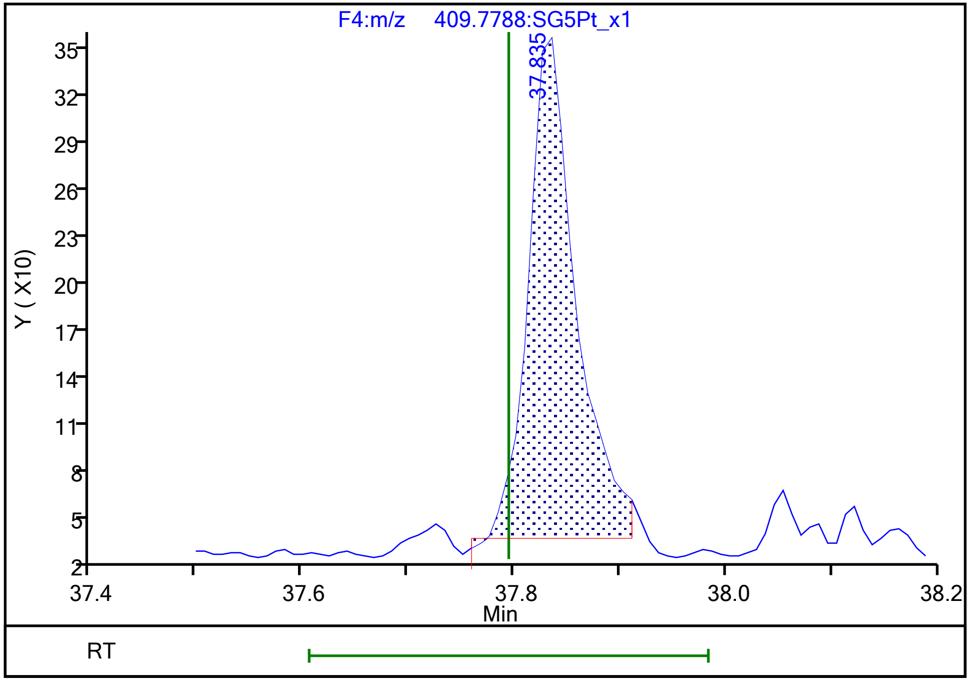

Reviewer: dadunj, 16-Mar-2021 09:19:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Processing Integration Results

RT:	39.17
Area:	719
Amount:	0.059057
Amount Units:	pg/ul

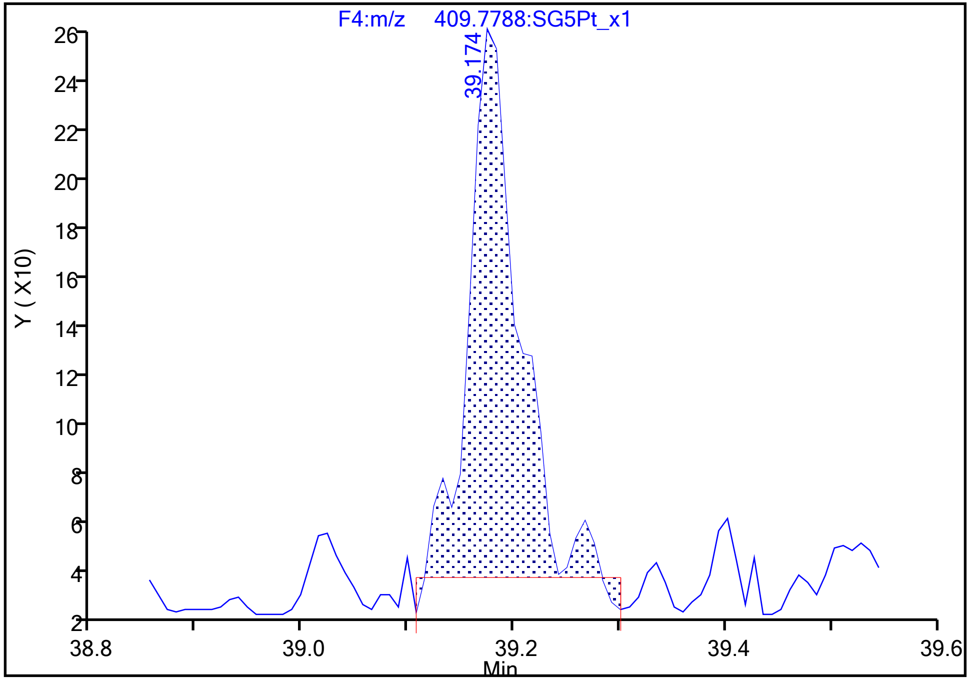

Manual Integration Results

RT:	39.17
Area:	699
Amount:	0.058164
Amount Units:	pg/ul

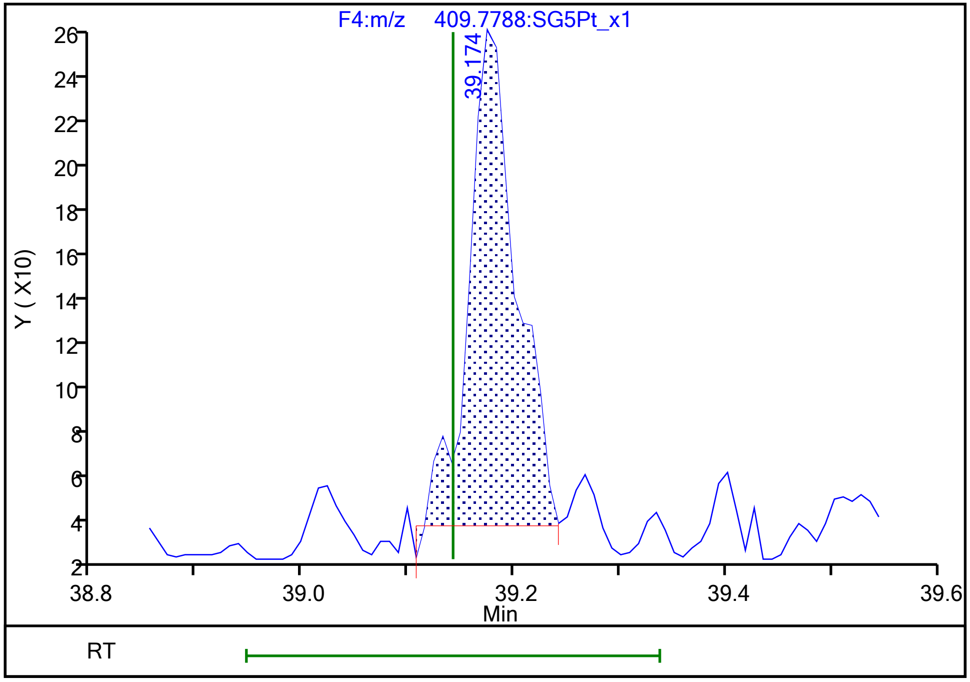

Reviewer: dadunj, 16-Mar-2021 09:19:54

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT: 38.87
Area: 1740
Amount: 0.208810
Amount Units: pg/ul

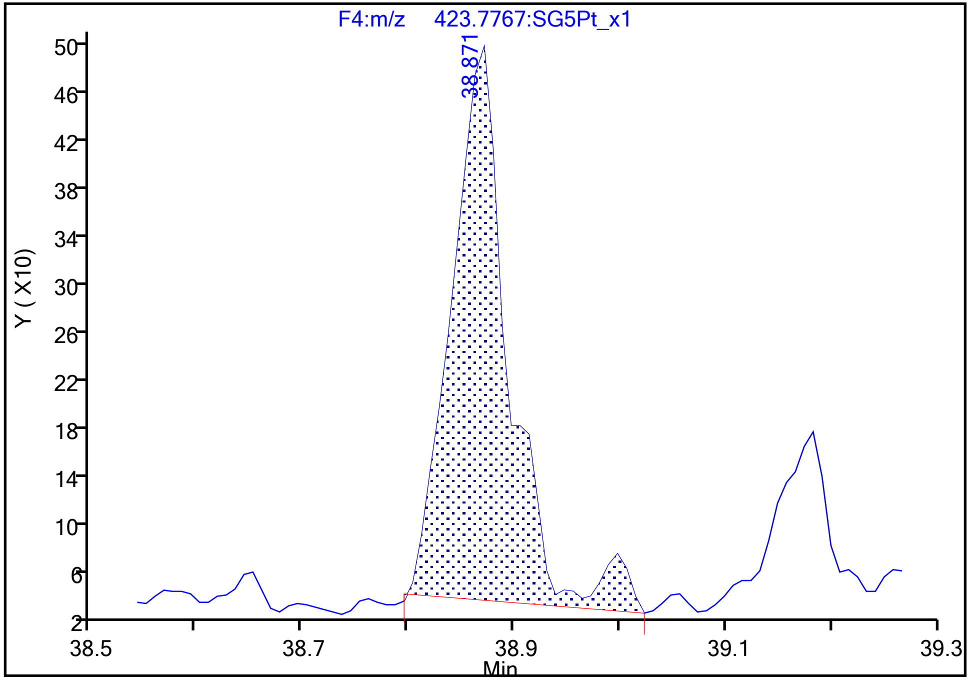

Manual Integration Results

RT: 38.87
Area: 1613
Amount: 0.187900
Amount Units: pg/ul

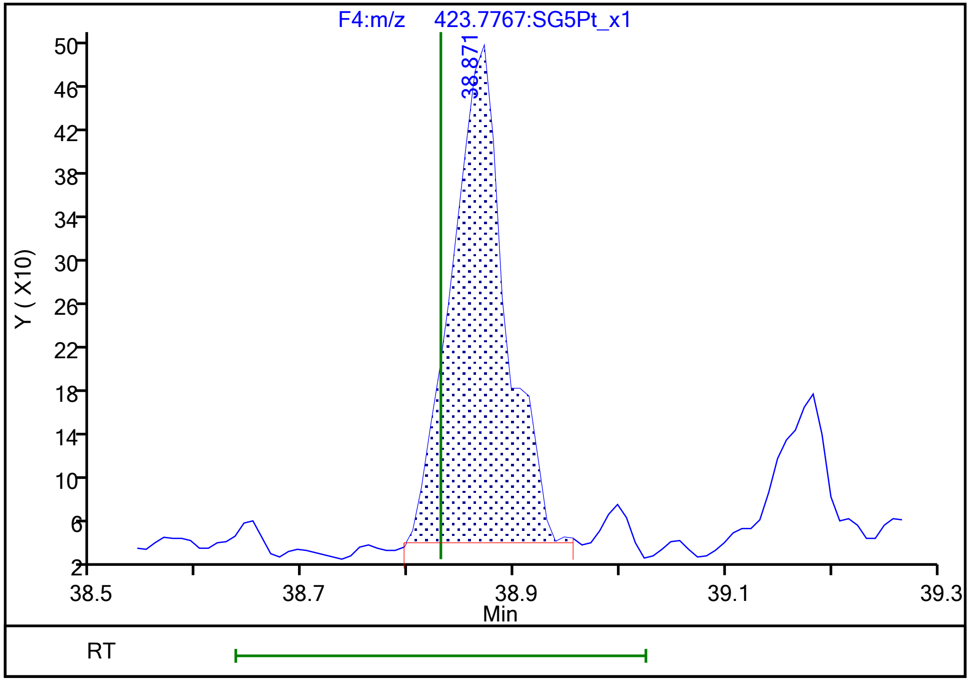

Reviewer: dadunj, 16-Mar-2021 09:20:02

Audit Action: Manually Integrated

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00 Instrument ID: DFS 1

Lims ID: 320-70797-A-11-A Lab Sample ID: 320-70797-11

Client ID: 11215702-Tank2-0.45mm

Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 12

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm) Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT:	38.86
Area:	1935
Amount:	0.208810
Amount Units:	pg/ul

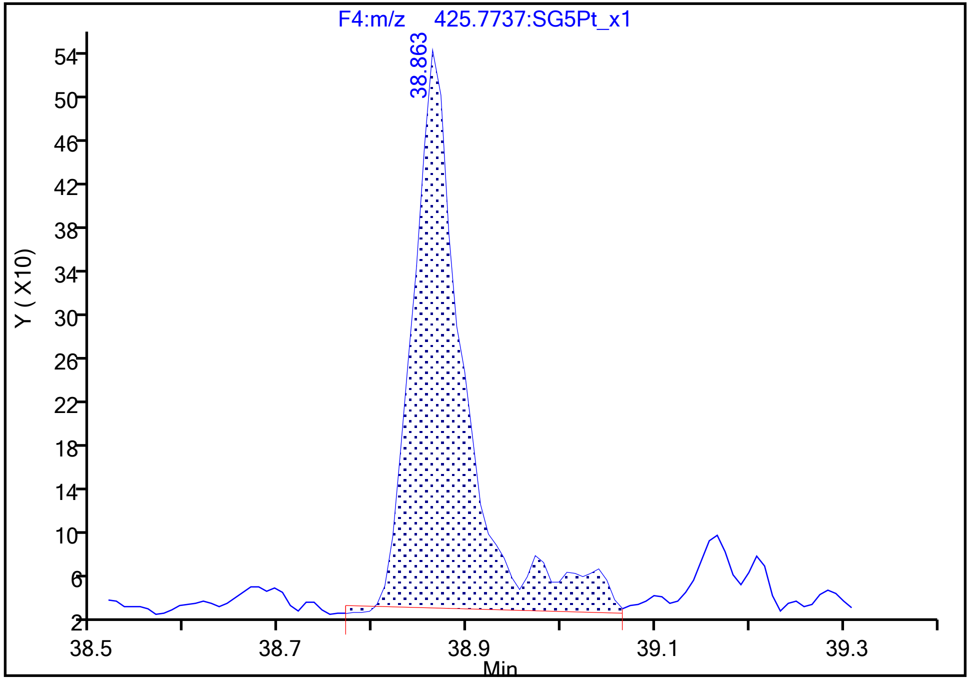

Manual Integration Results

RT:	38.86
Area:	1694
Amount:	0.187900
Amount Units:	pg/ul

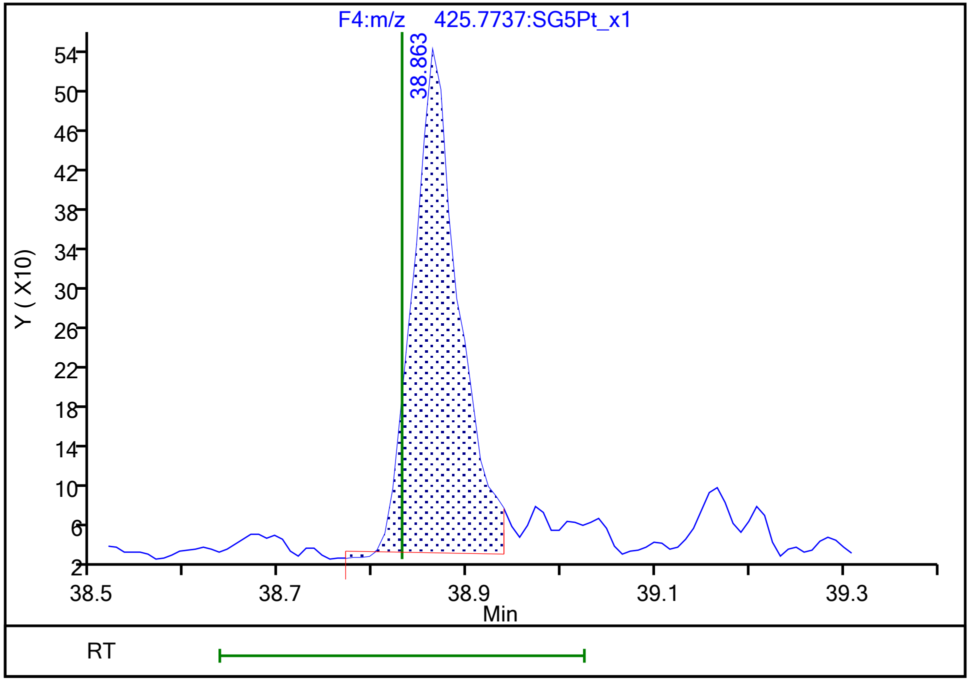

Reviewer: dadunj, 16-Mar-2021 09:20:08

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d				
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.75- 39.71)

Signal: 1

Processing Integration Results

RT = 38.172 Area = 1292

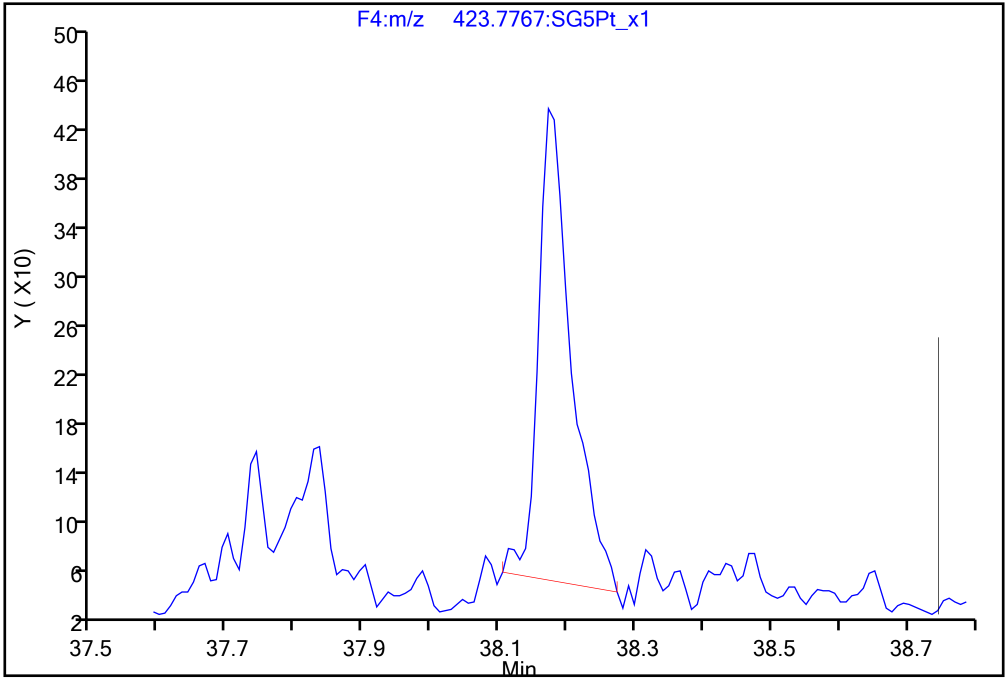

Manual Integration Results

RT = 38.172 Area = 1379 M

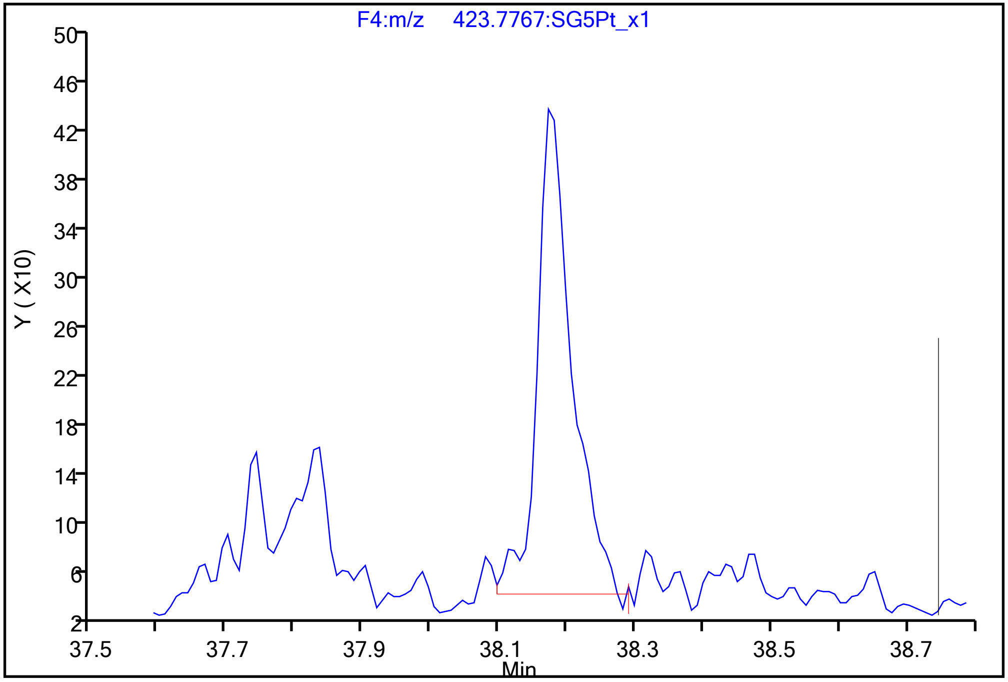

Reviewer: dadunj, 16-Mar-2021 09:20:20

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11
Client ID:	11215702-Tank2-0.45mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (38.75- 39.71)

Signal: 2

Processing Integration Results

RT = 38.181 Area = 1519

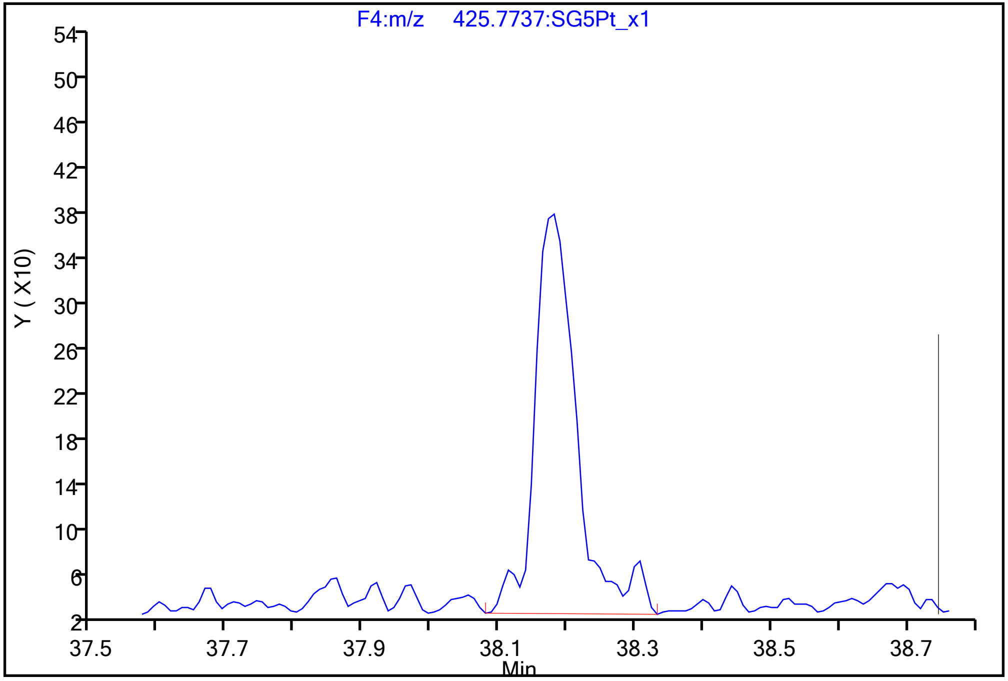

Manual Integration Results

RT = 38.181 Area = 1415 M

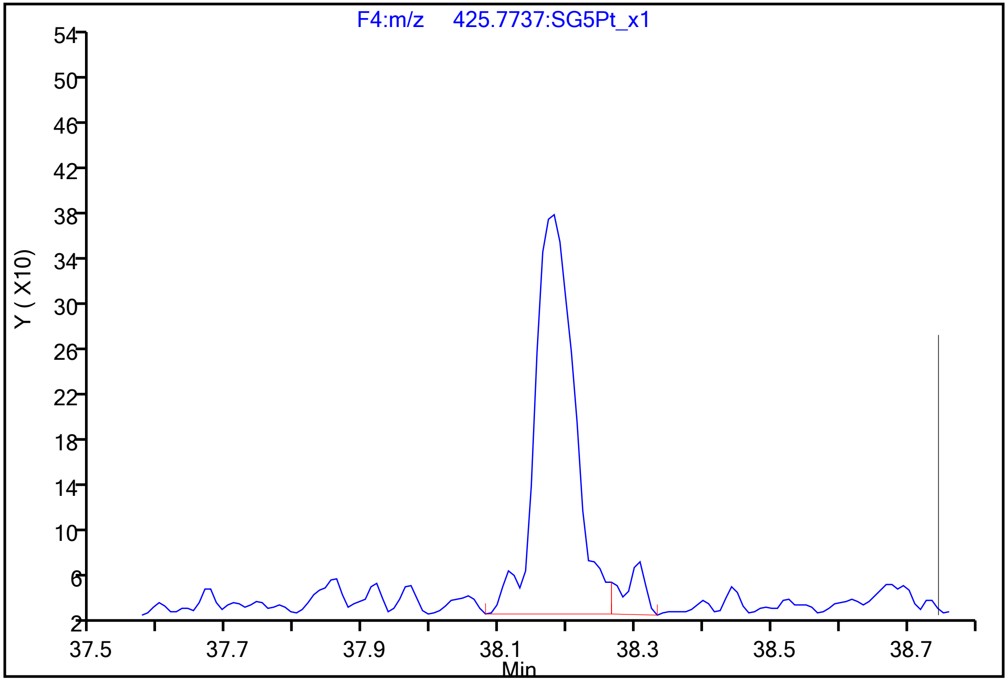

Reviewer: dadunj, 16-Mar-2021 09:20:25

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Injection Date: 12-Mar-2021 19:20:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-11-A
Lab Sample ID: 320-70797-11
Client ID: 11215702-Tank2-0.45mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 12
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5(41.08 :46.00)

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT: 41.34
Area: 5571
Amount: 0.782289
Amount Units: pg/ul

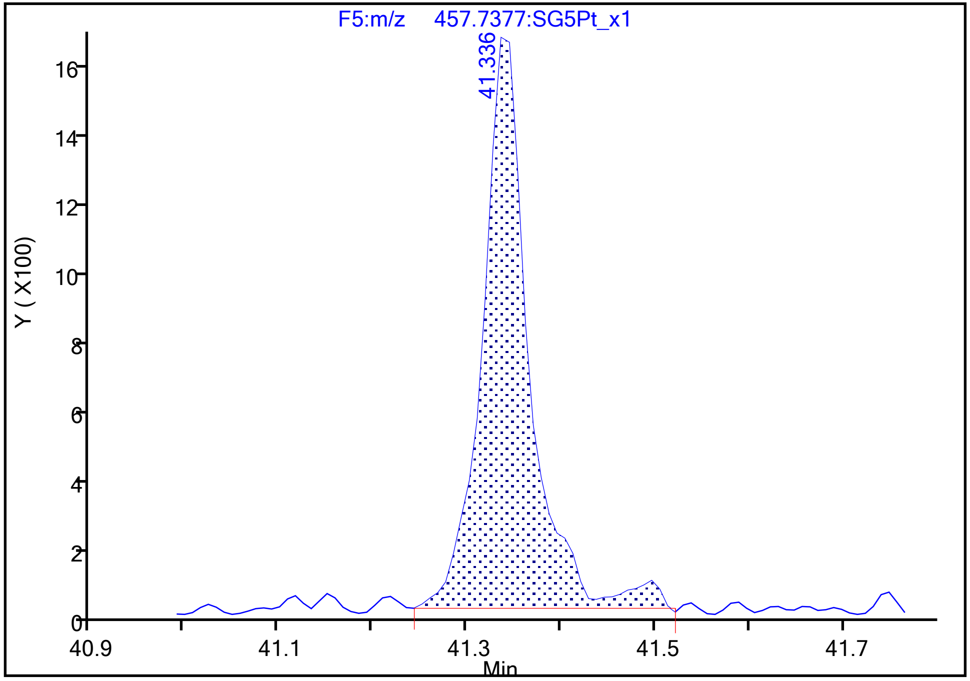

Manual Integration Results

RT: 41.34
Area: 5351
Amount: 0.756410
Amount Units: pg/ul

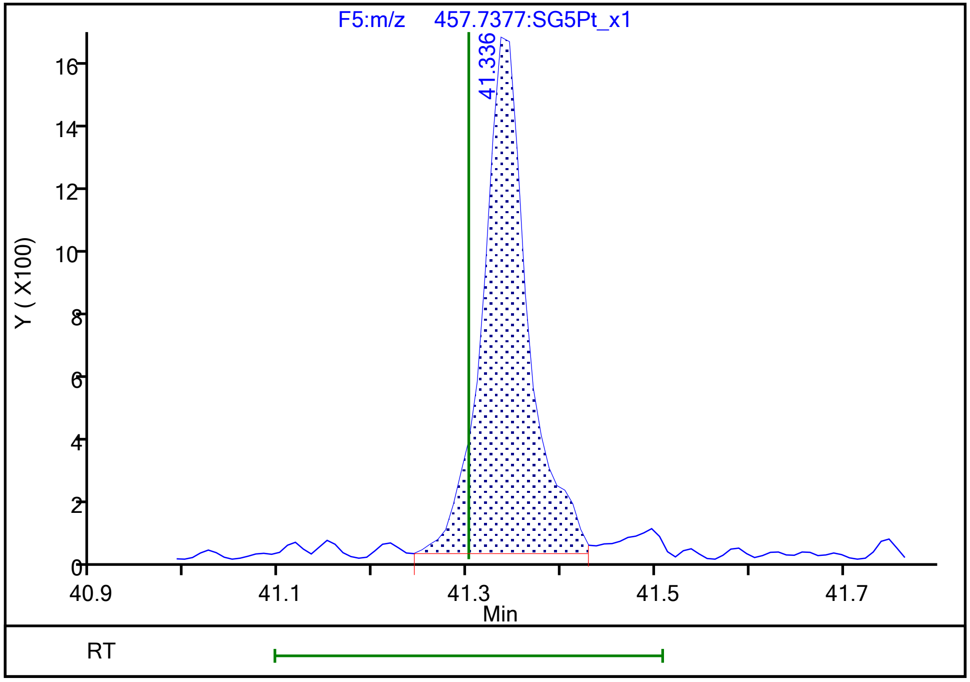

Reviewer: dadunj, 16-Mar-2021 09:20:31
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date:	12-Mar-2021 19:20:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-11-A	Lab Sample ID:	320-70797-11		
Client ID:	11215702-Tank2-0.45mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT: 41.34
Area: 6097
Amount: 0.782289
Amount Units: pg/ul

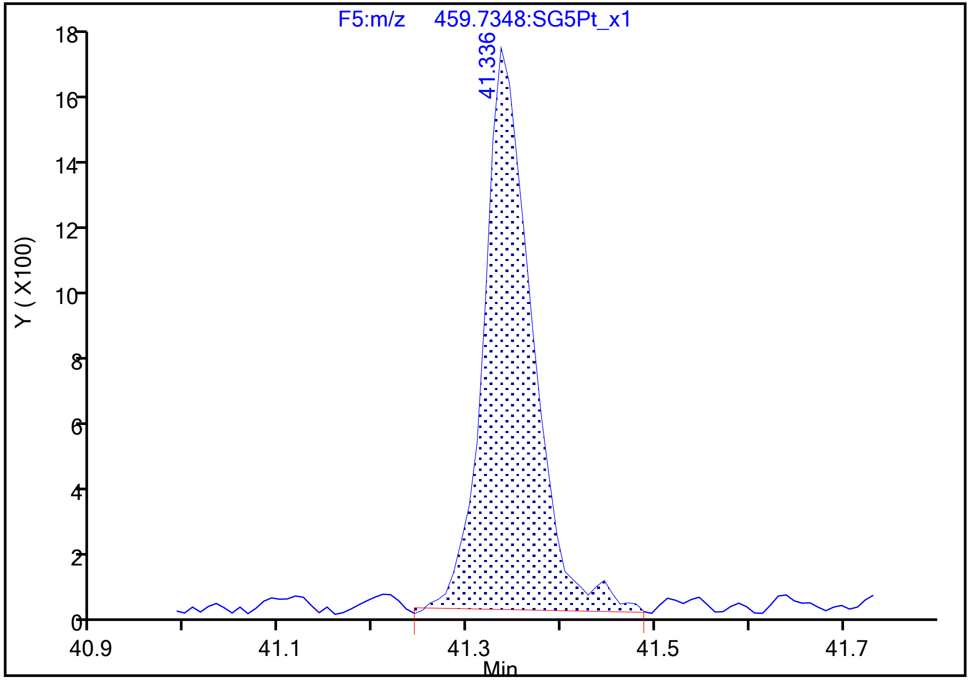

Manual Integration Results

RT: 41.34
Area: 5931
Amount: 0.756410
Amount Units: pg/ul

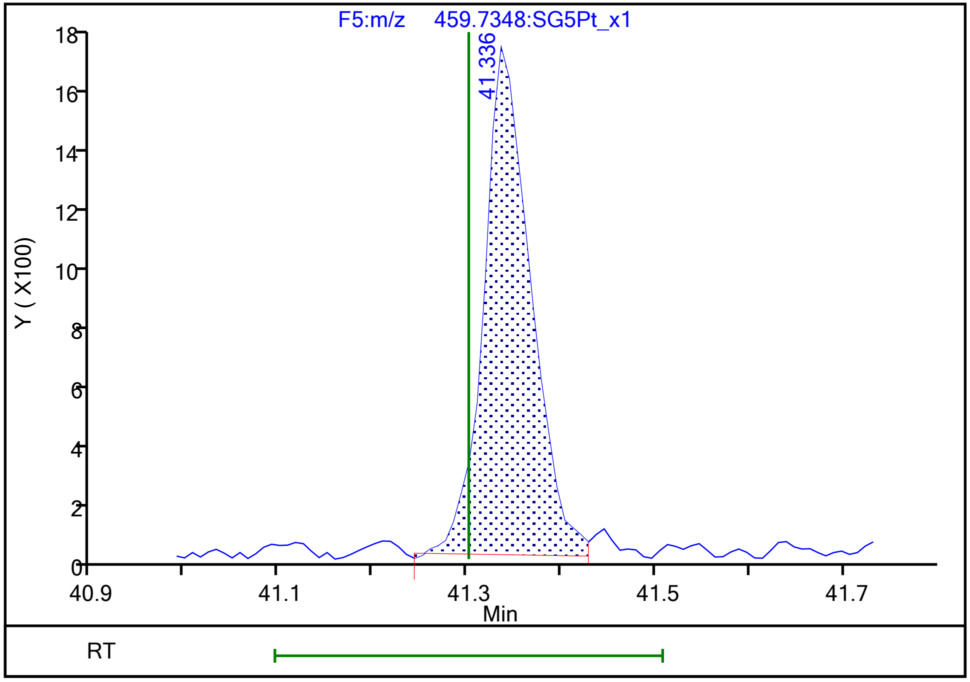

Reviewer: dadunj, 16-Mar-2021 09:20:32

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

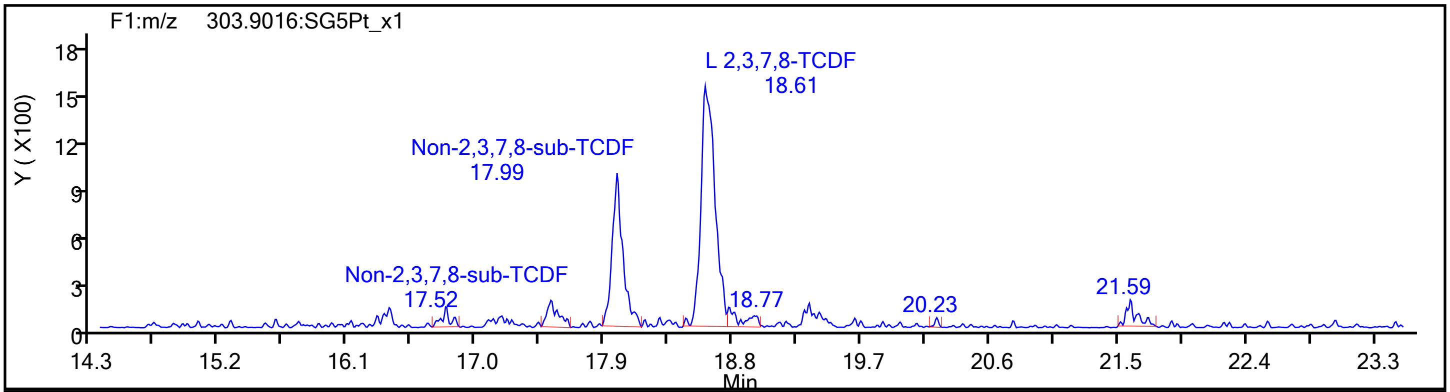

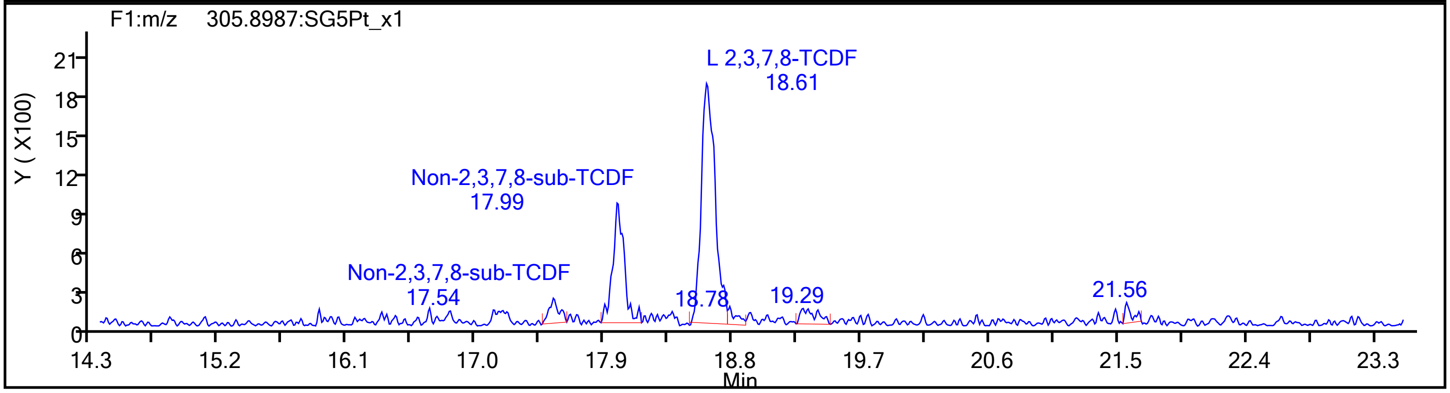

TCDF Standards

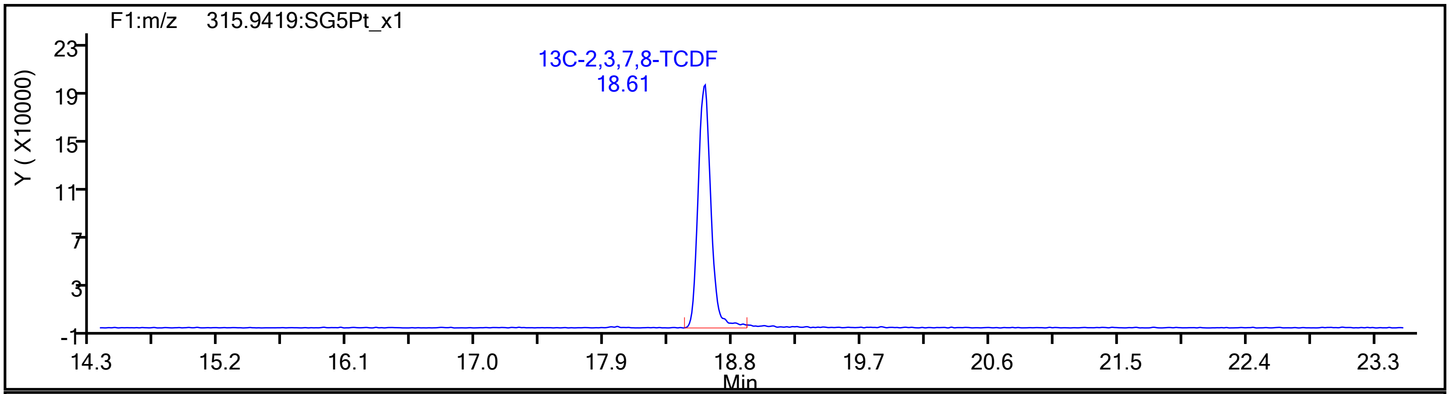

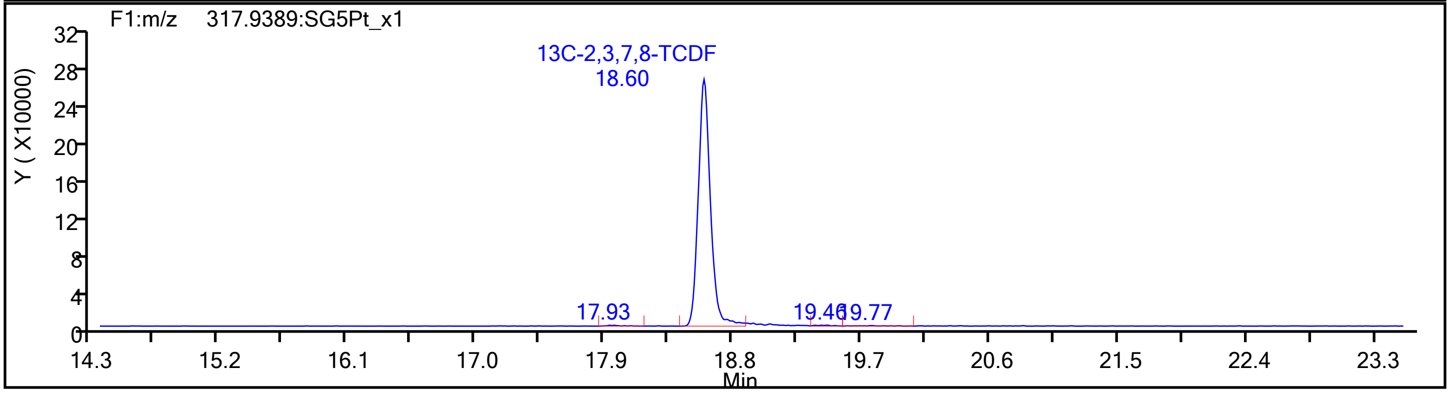

Report Date: 16-Mar-2021 09:21:19
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Injection Date: 12-Mar-2021 19:20:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469779
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

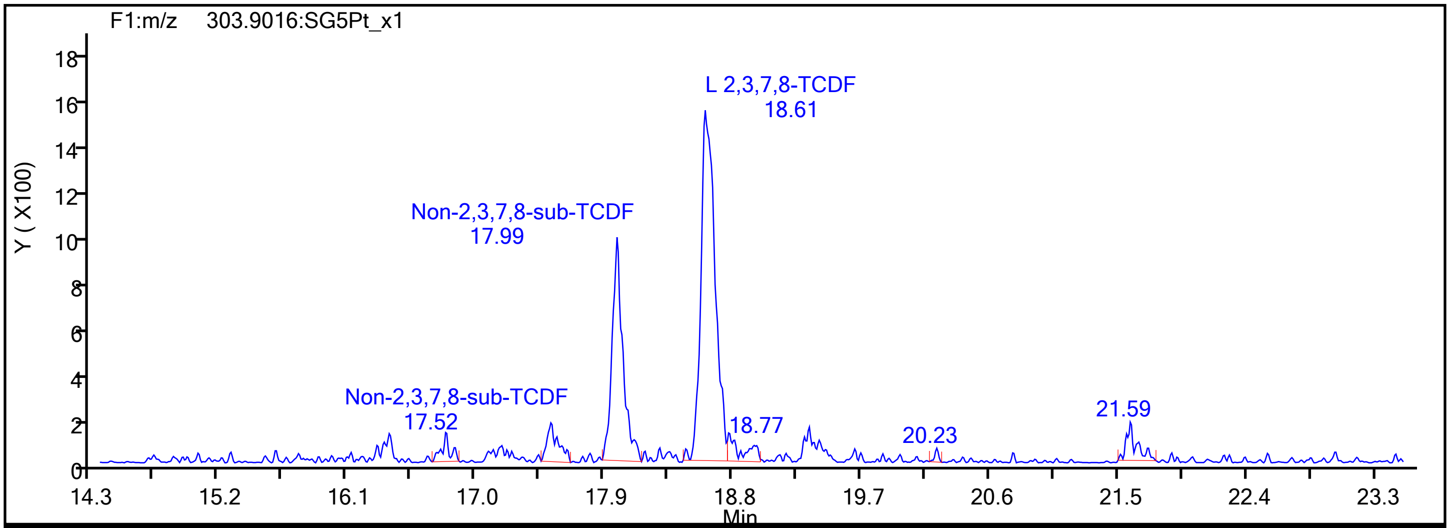

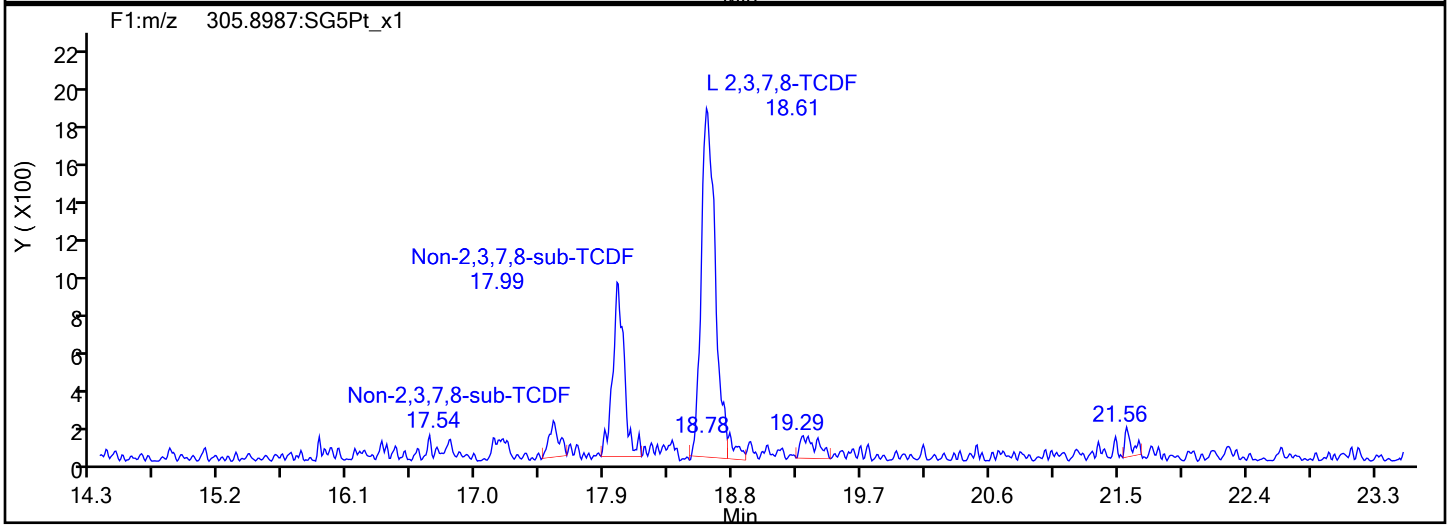

TCDF Interference Mass

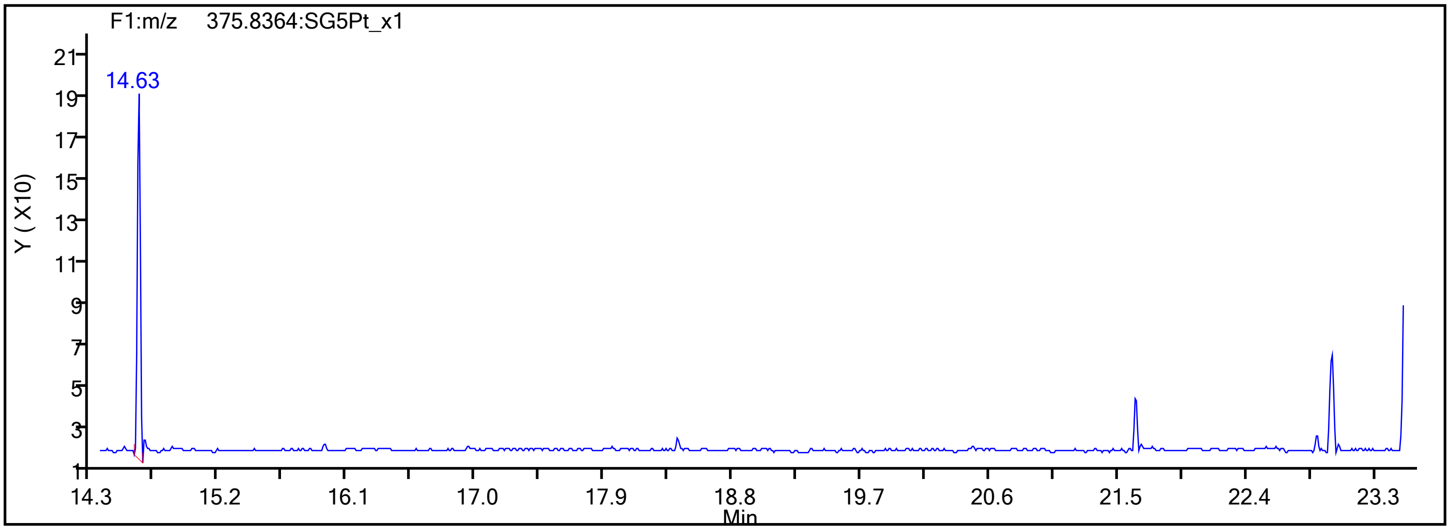

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

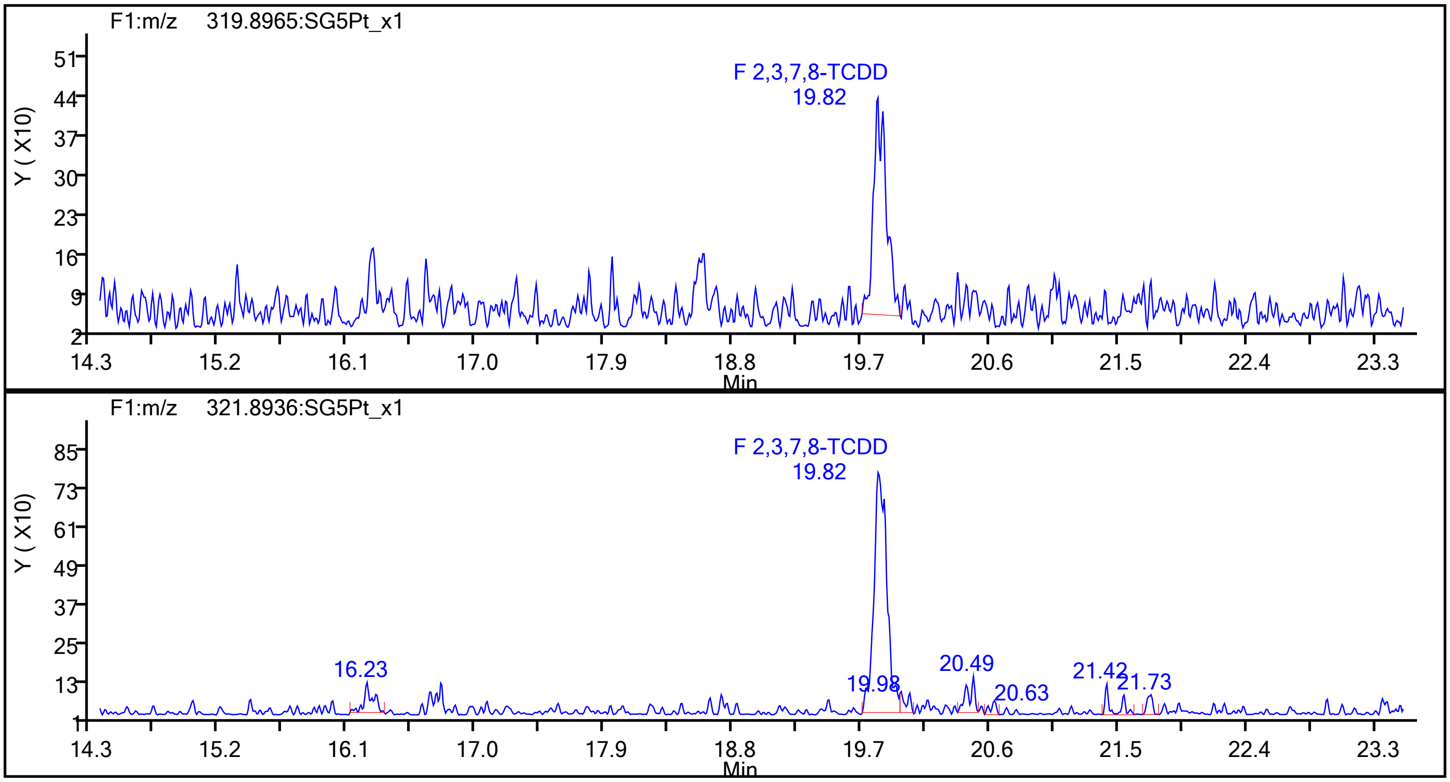

TCDD Standards

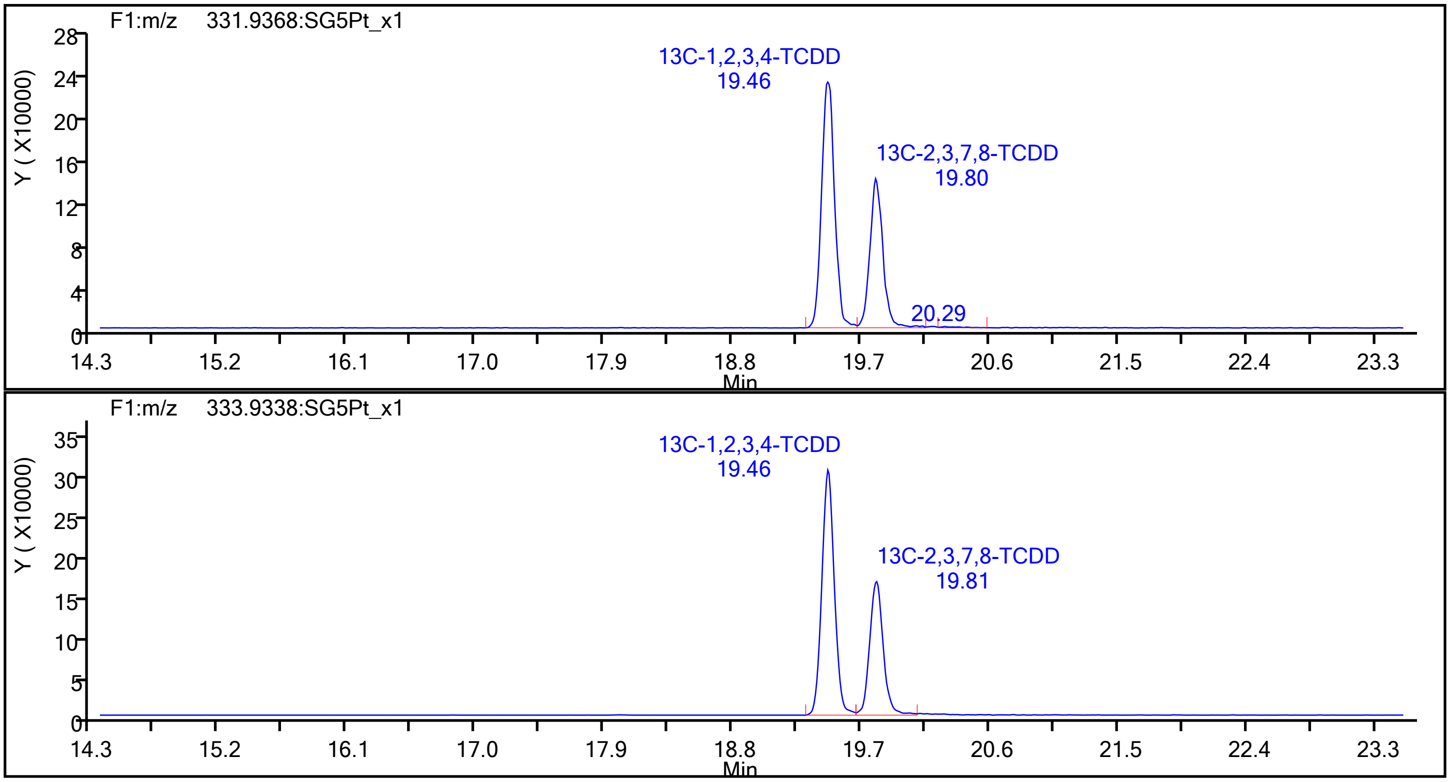

Report Date: 16-Mar-2021 09:21:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Injection Date: 12-Mar-2021 19:20:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469779
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

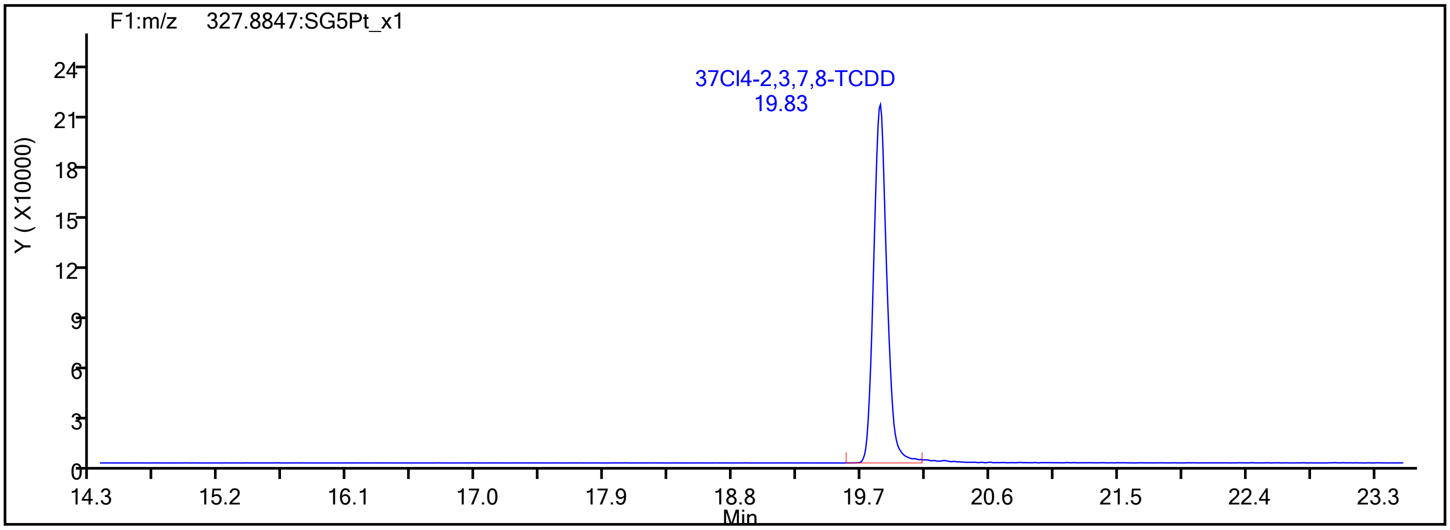

37Cl4-TCDD Standards

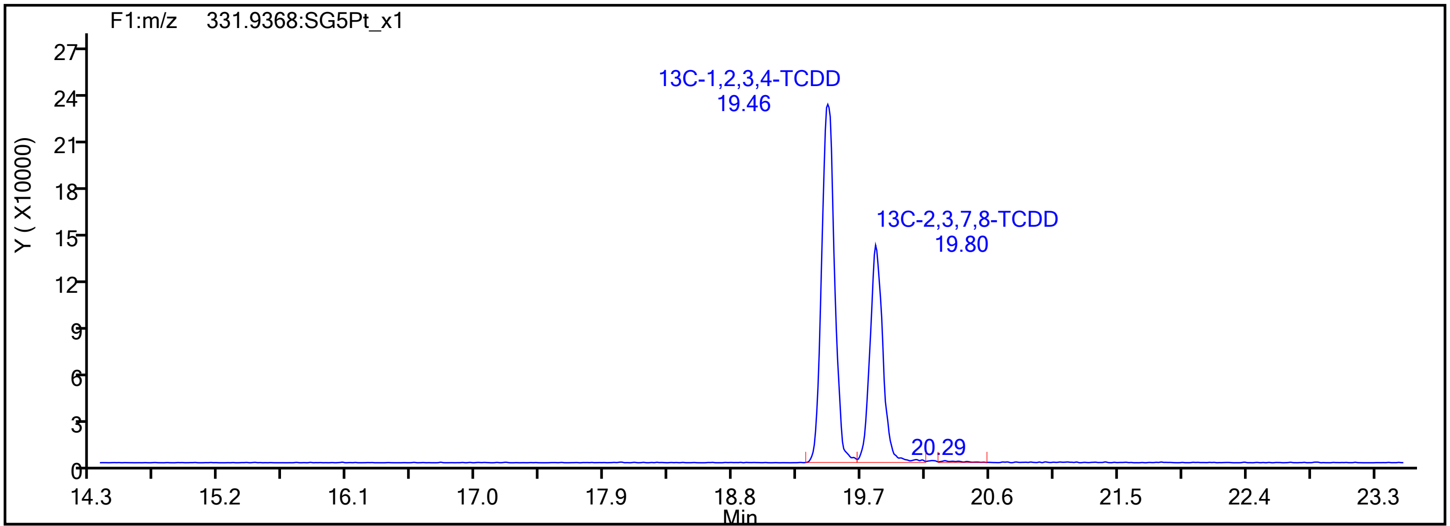

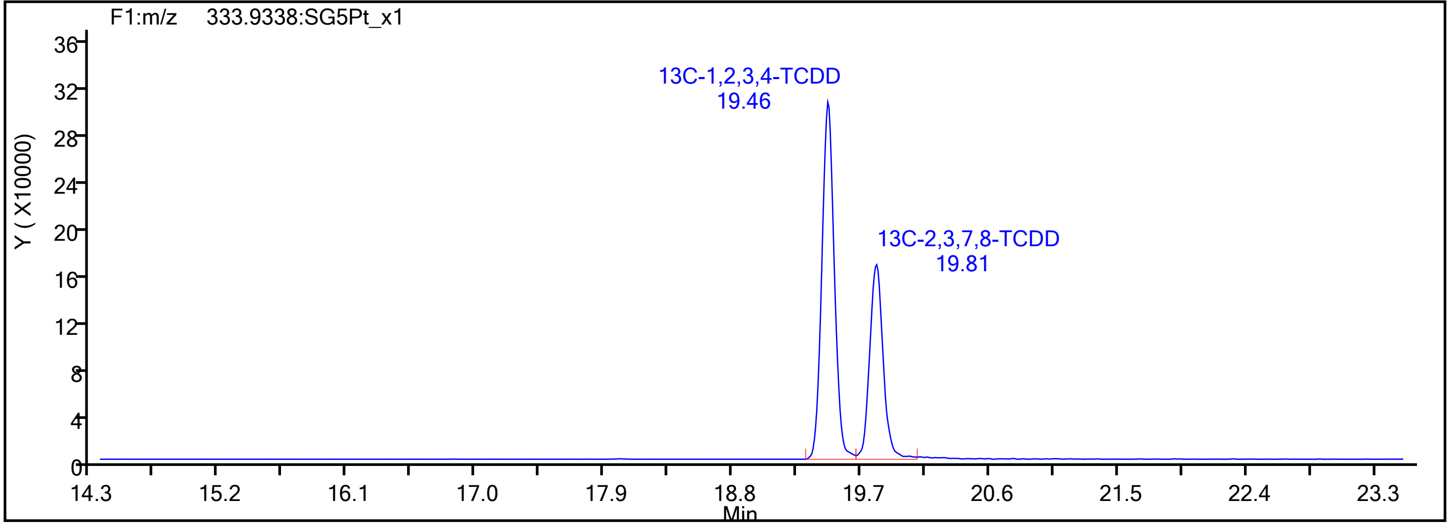

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Injection Date: 12-Mar-2021 19:20:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469779
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

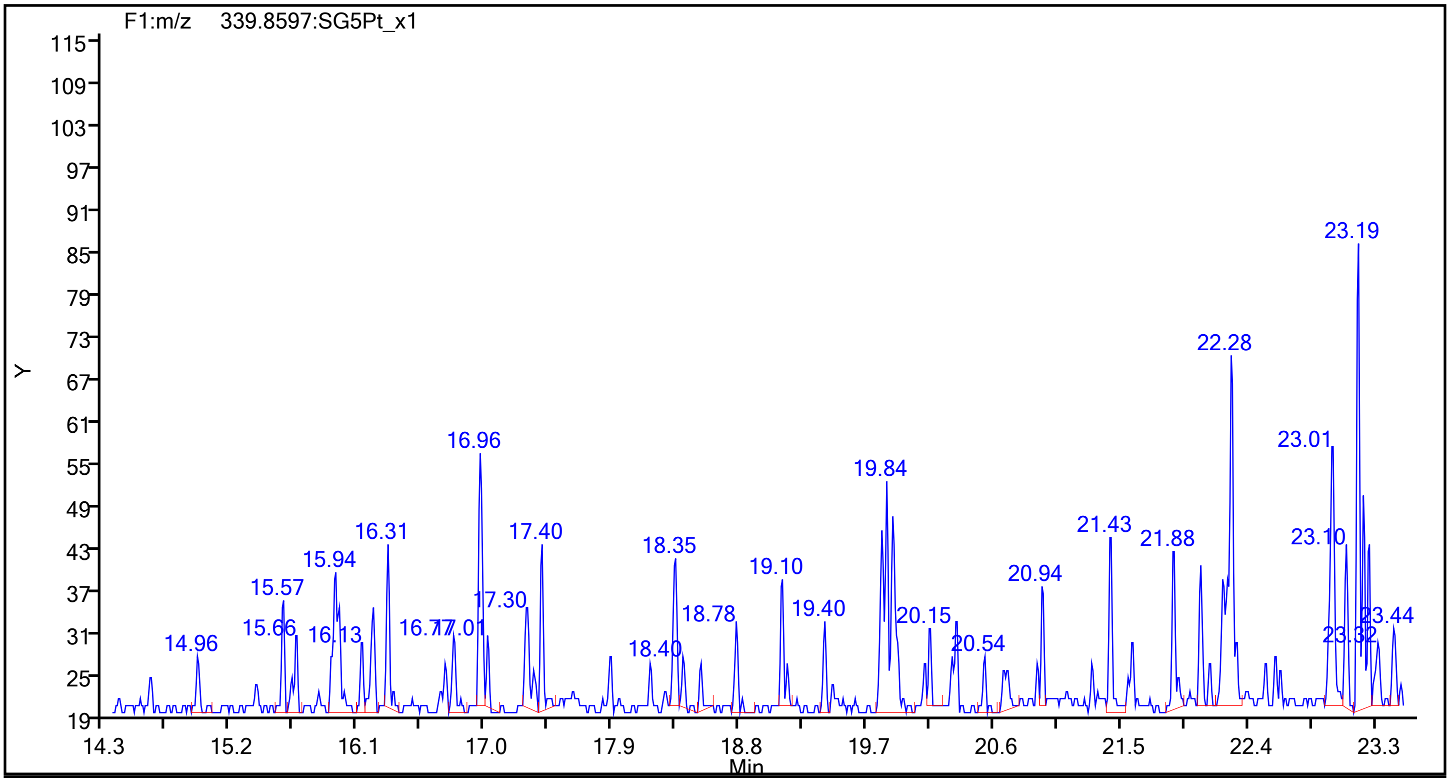

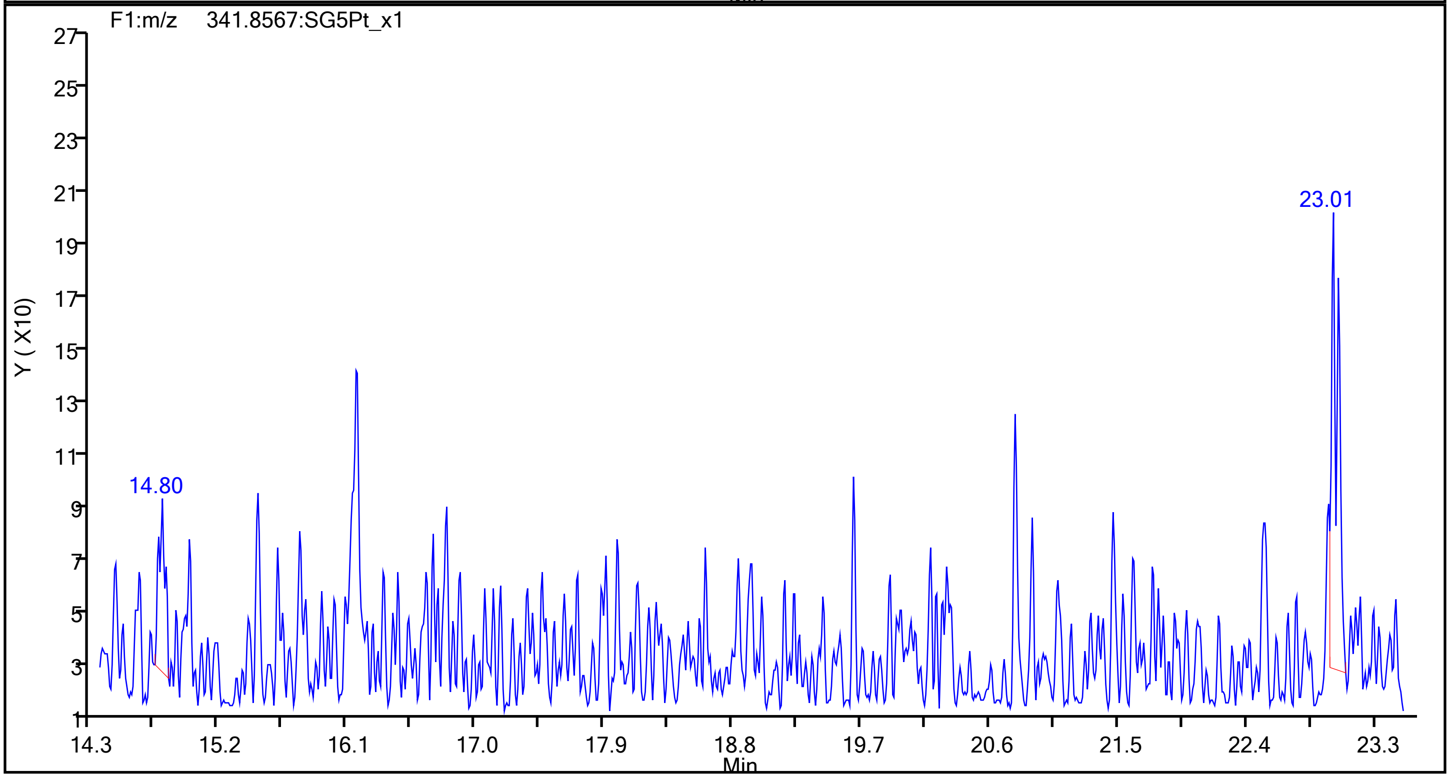

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

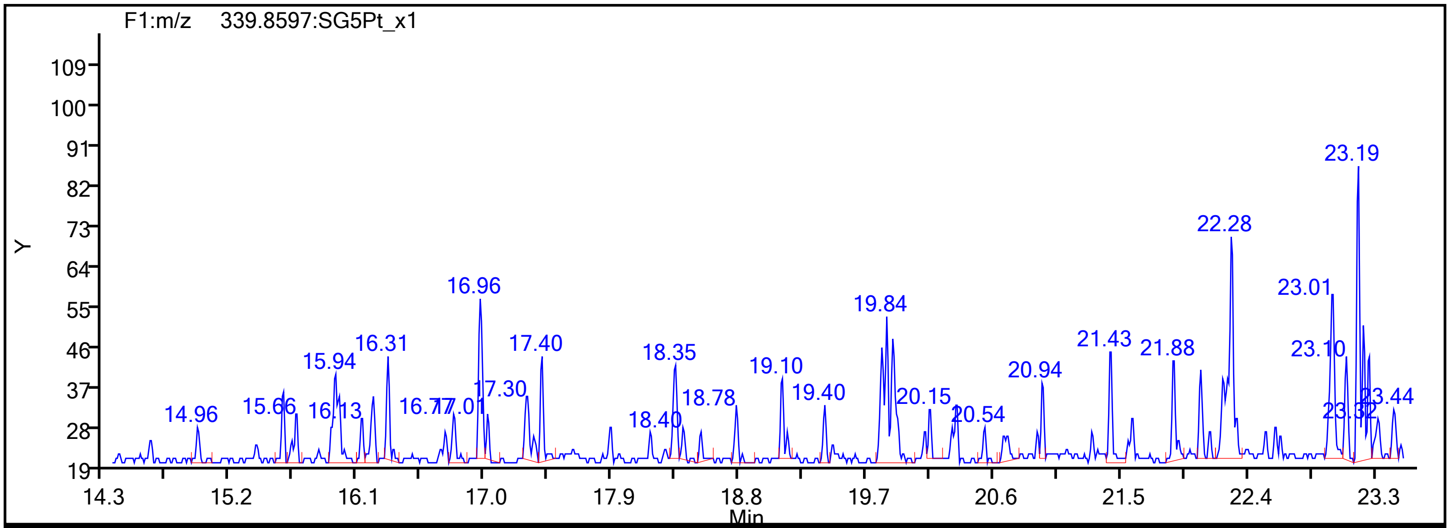

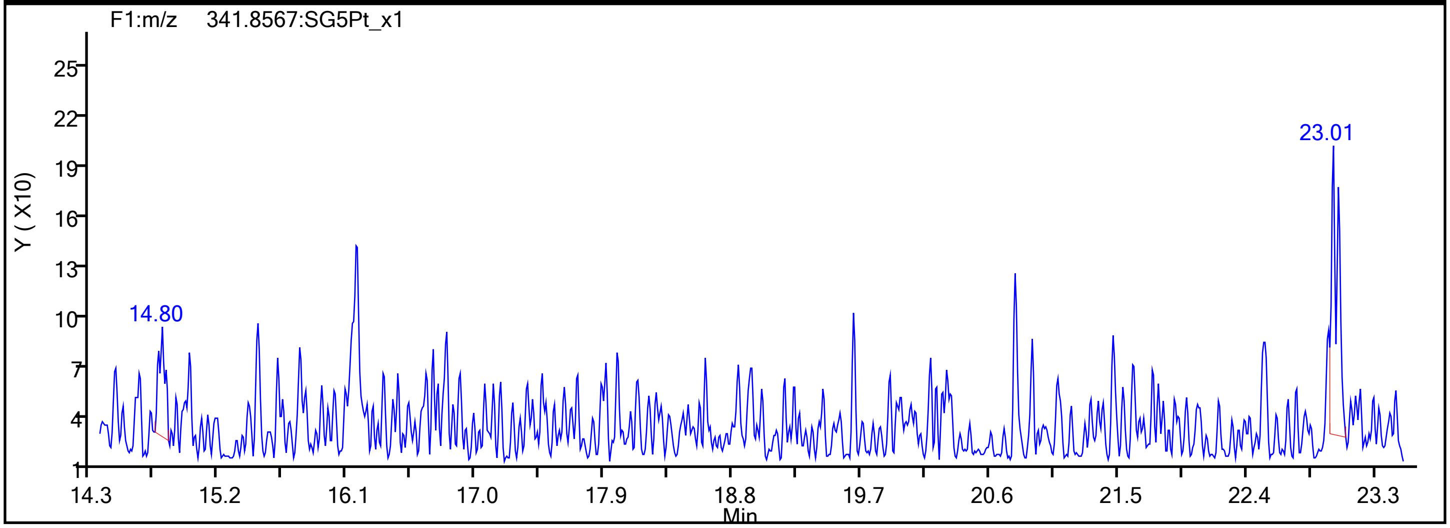

F1 PeCDFs Interference Mass

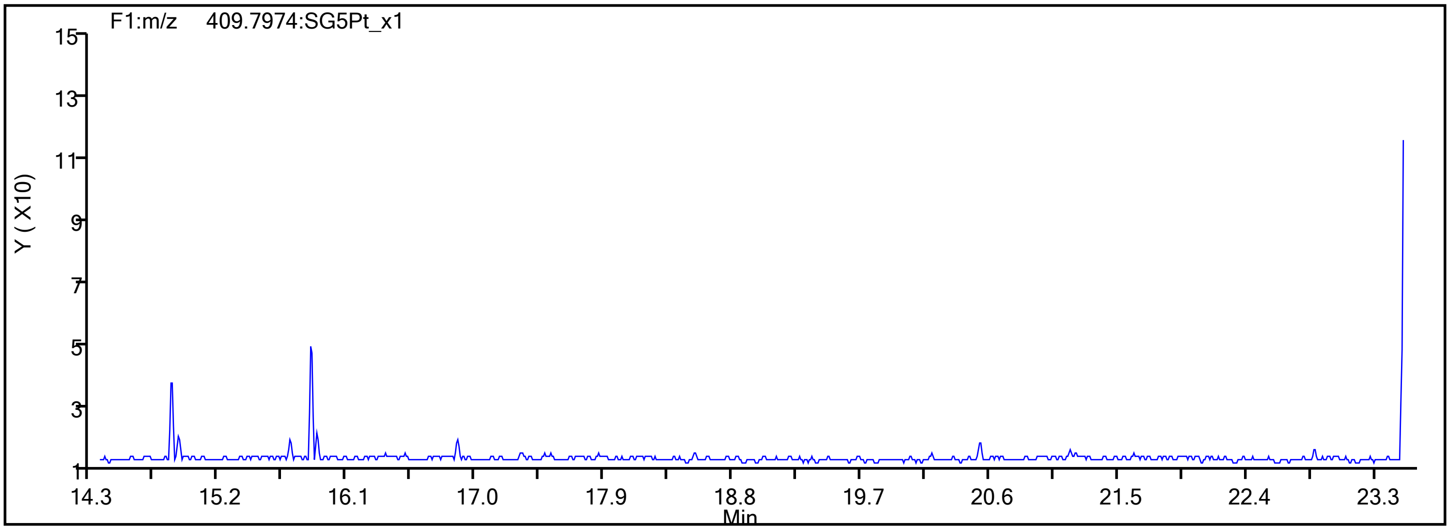

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

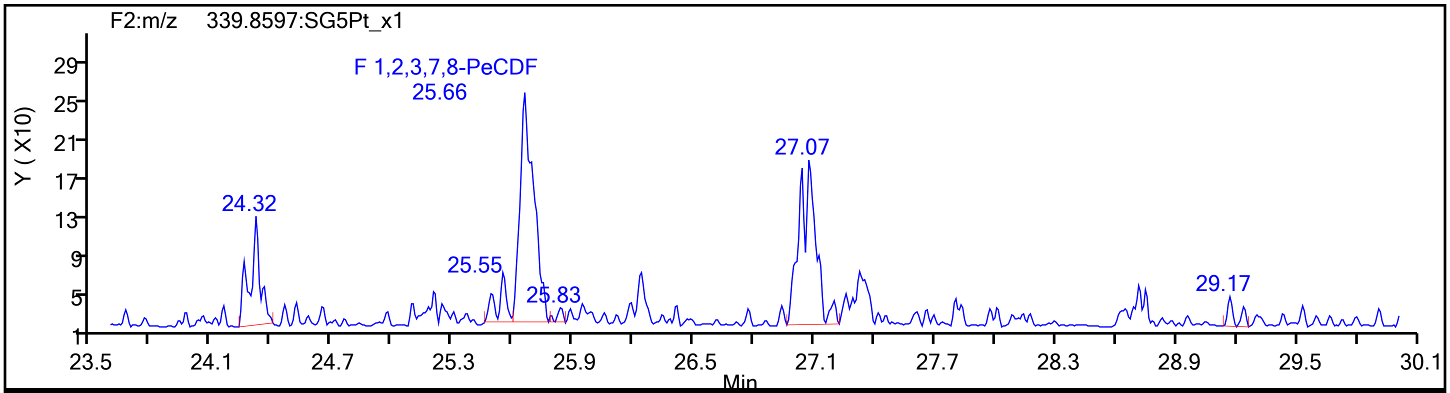

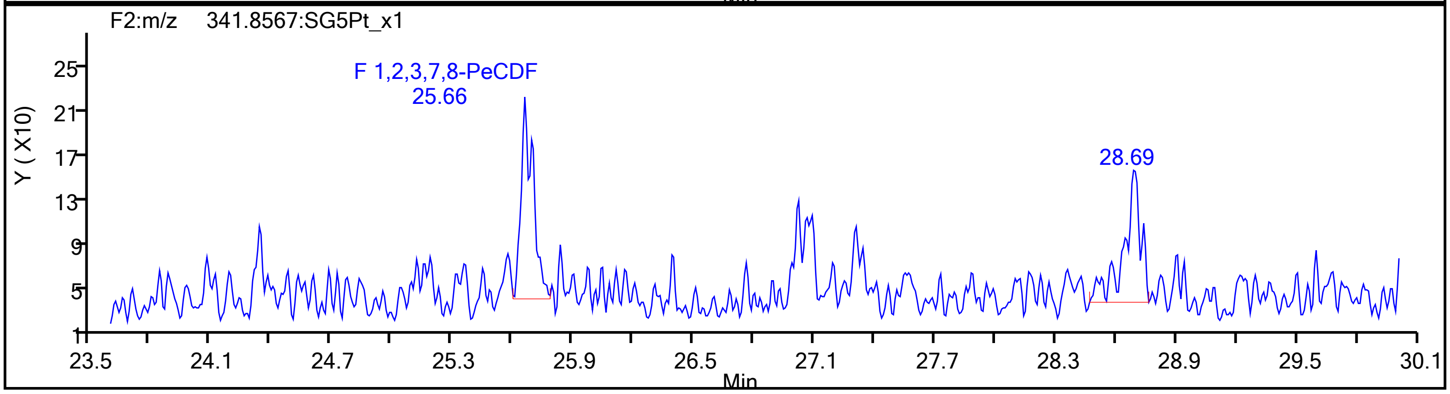

PeCDF Standards

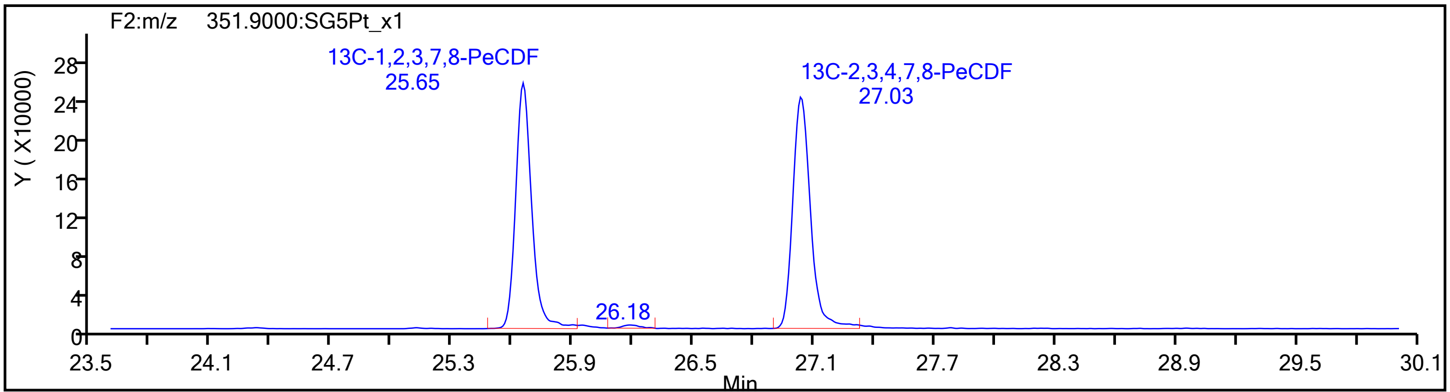

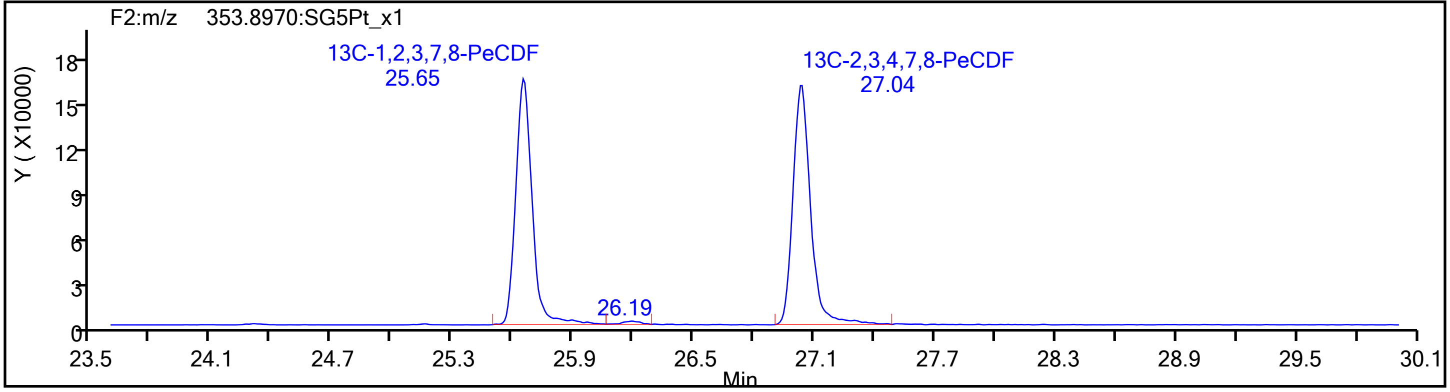

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Injection Date: 12-Mar-2021 19:20:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469779
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

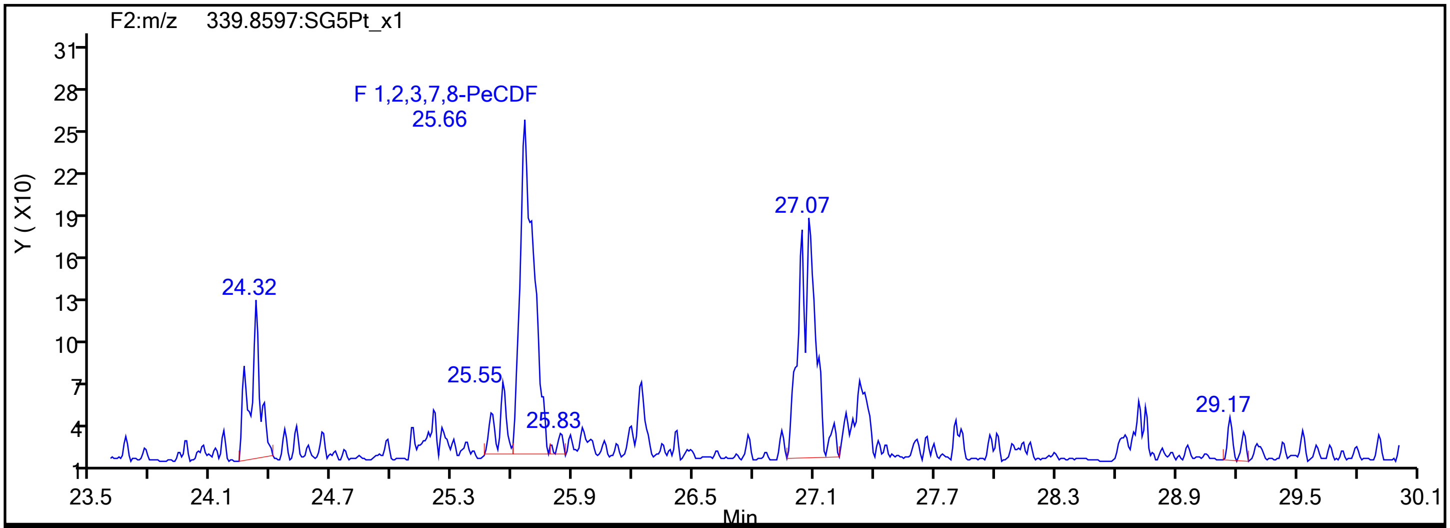

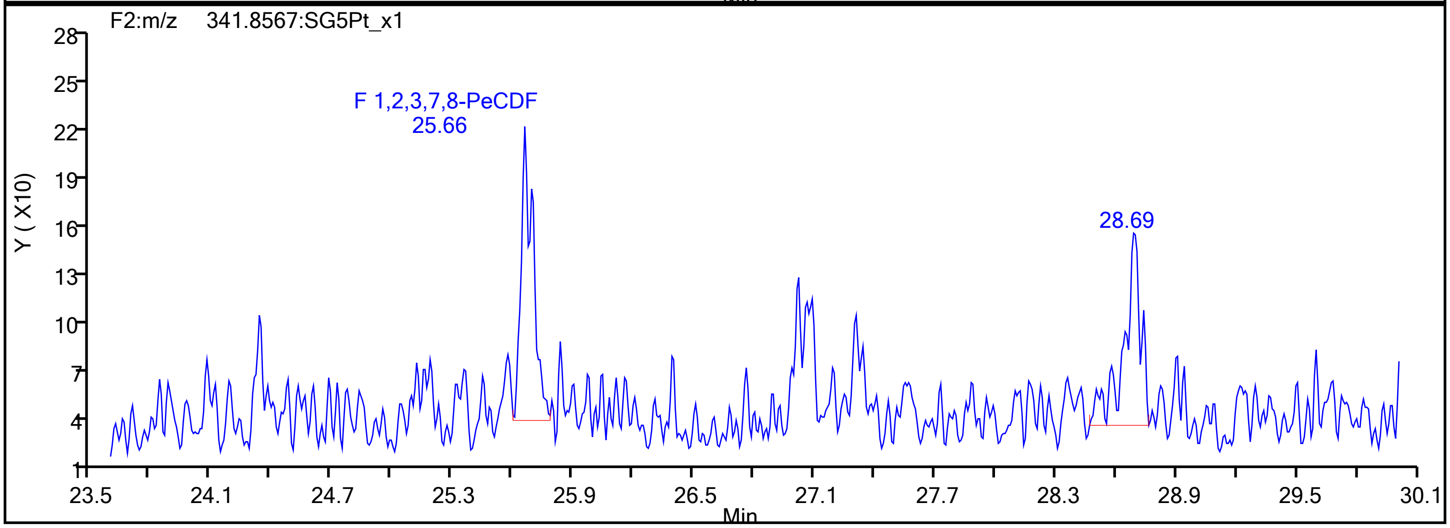

PeCDF Interference Mass

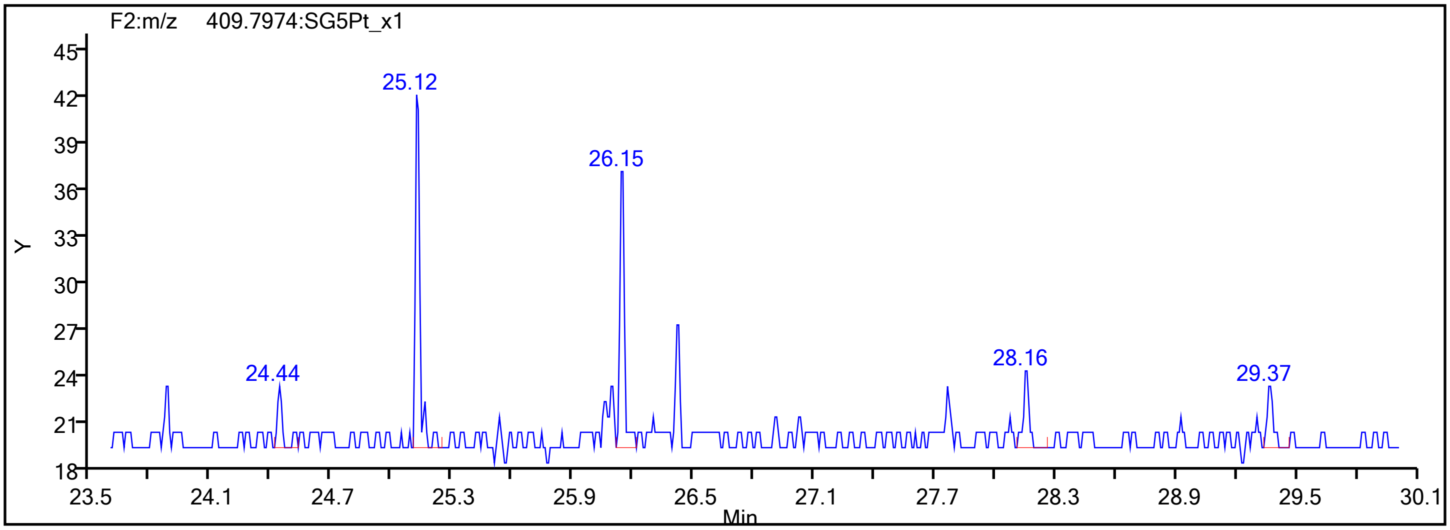

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469779

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

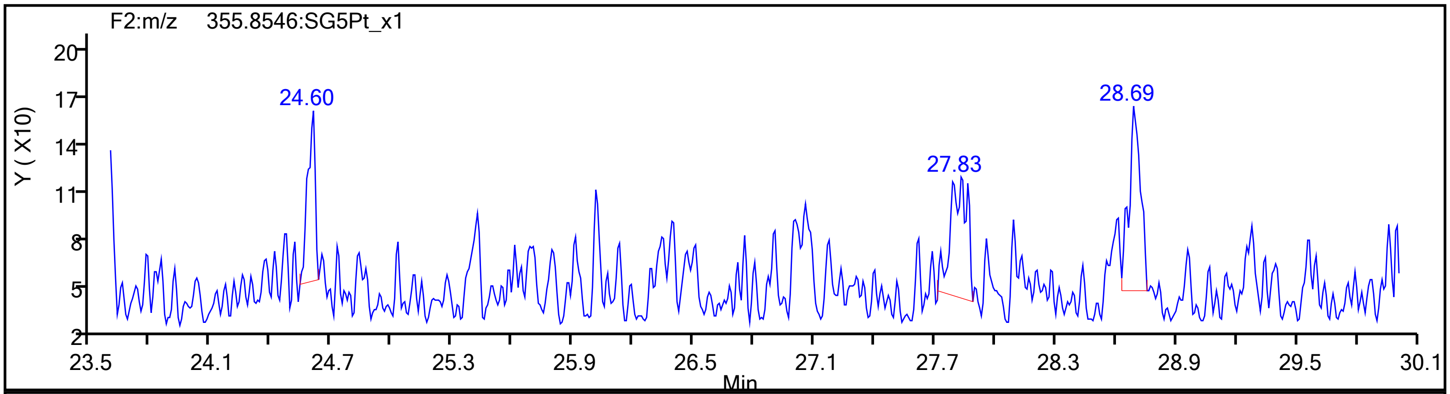

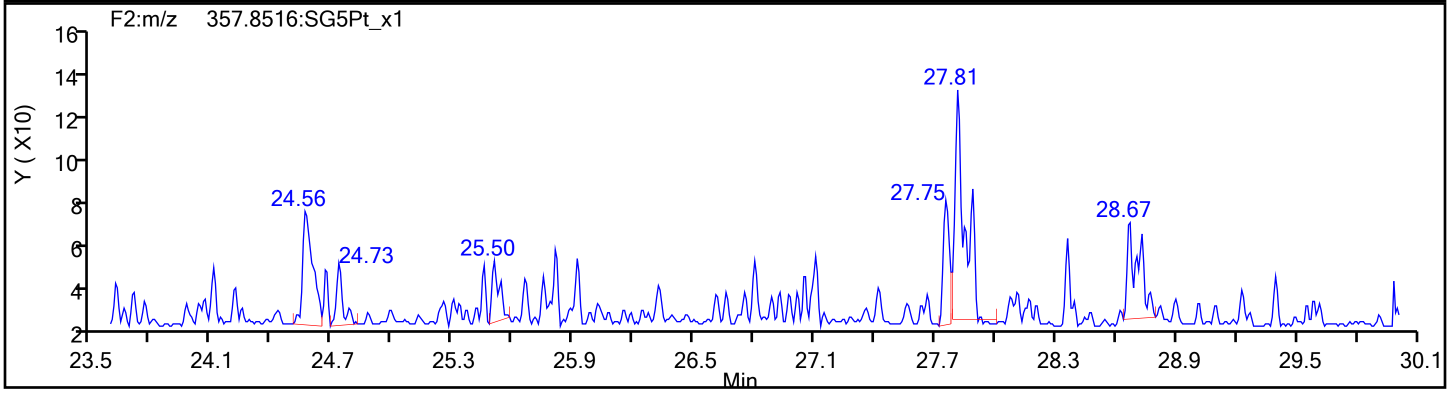

PeCDD Standards

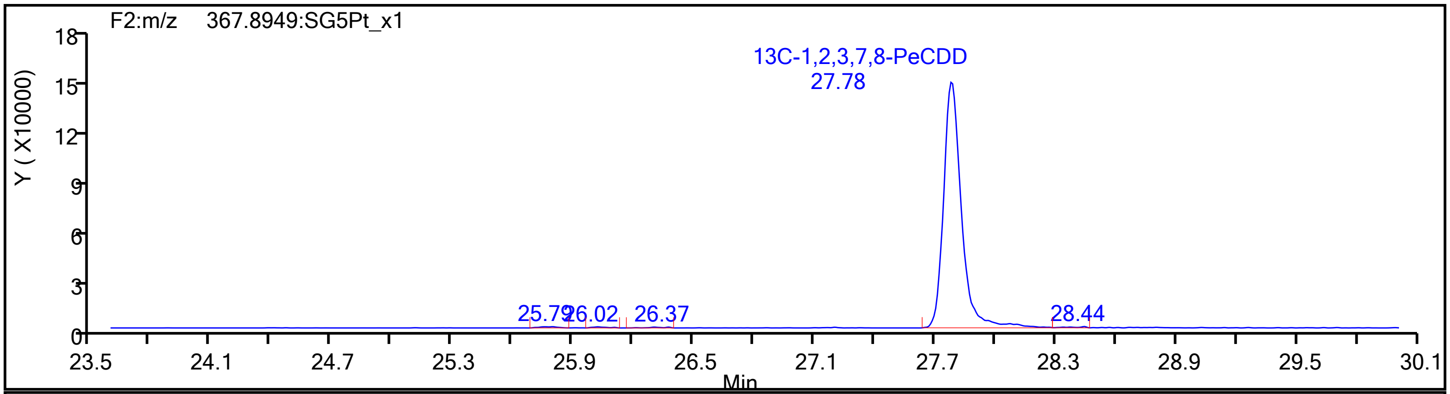

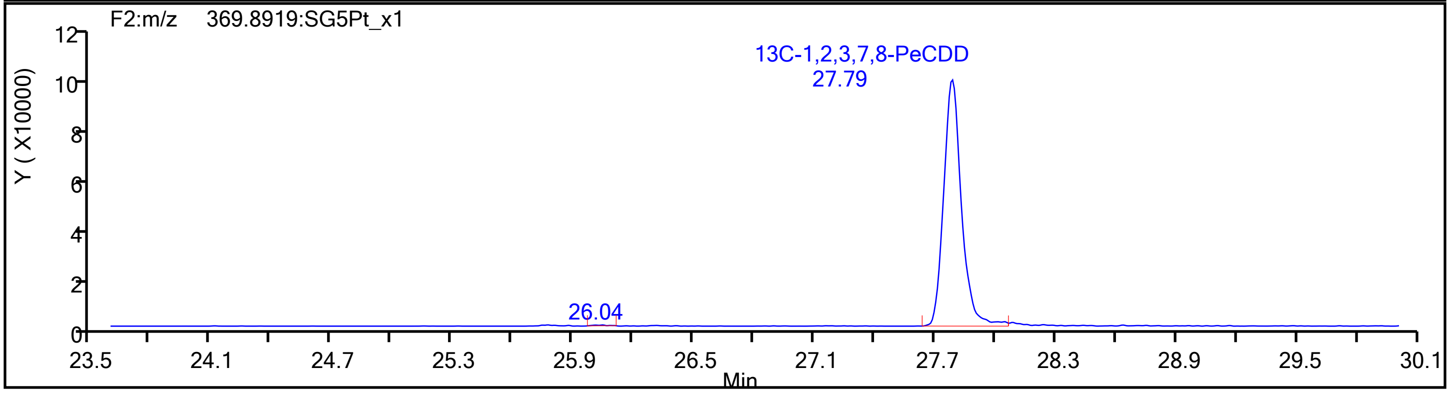

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469779

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

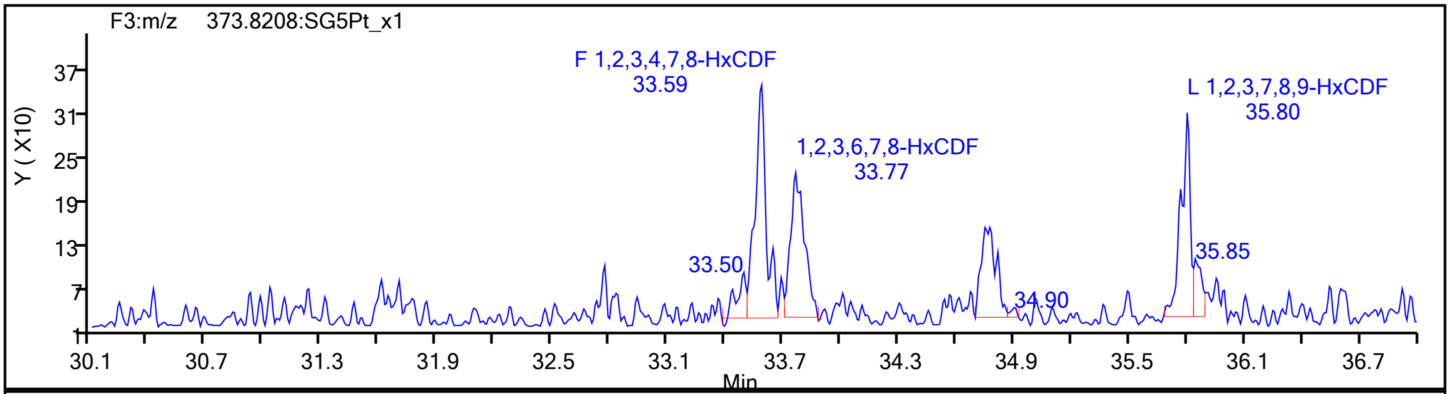

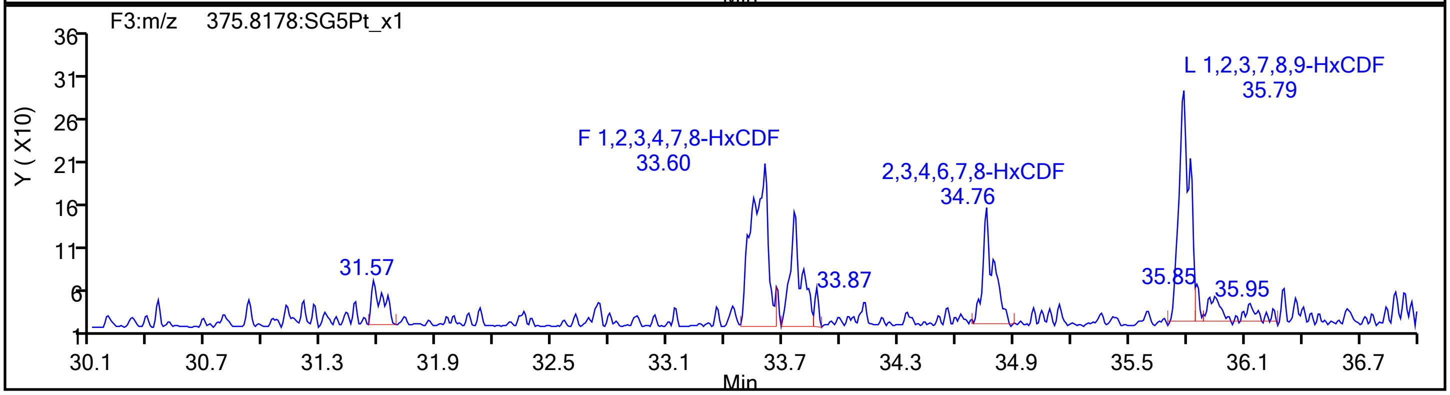

HxCDF Standards

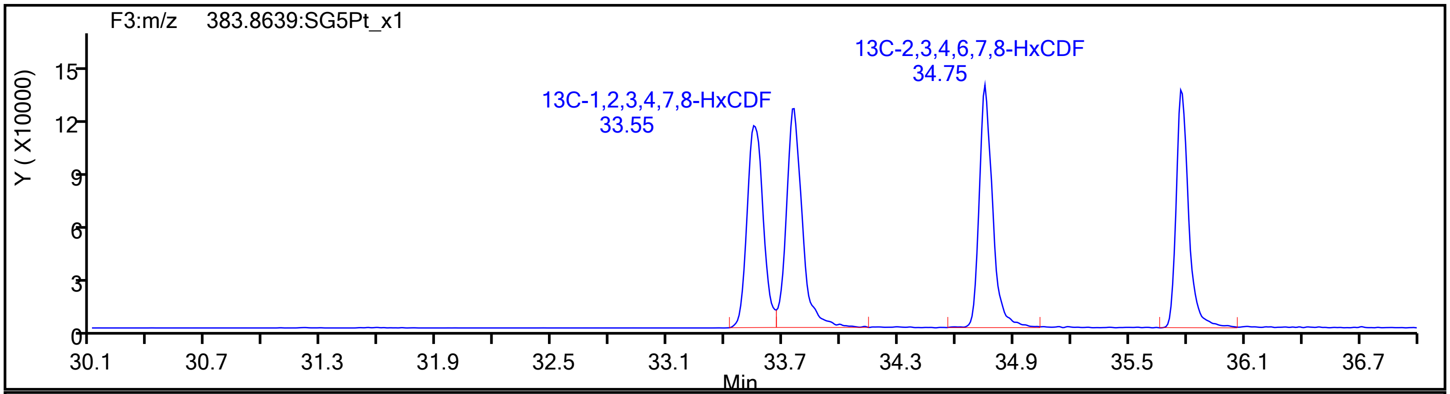

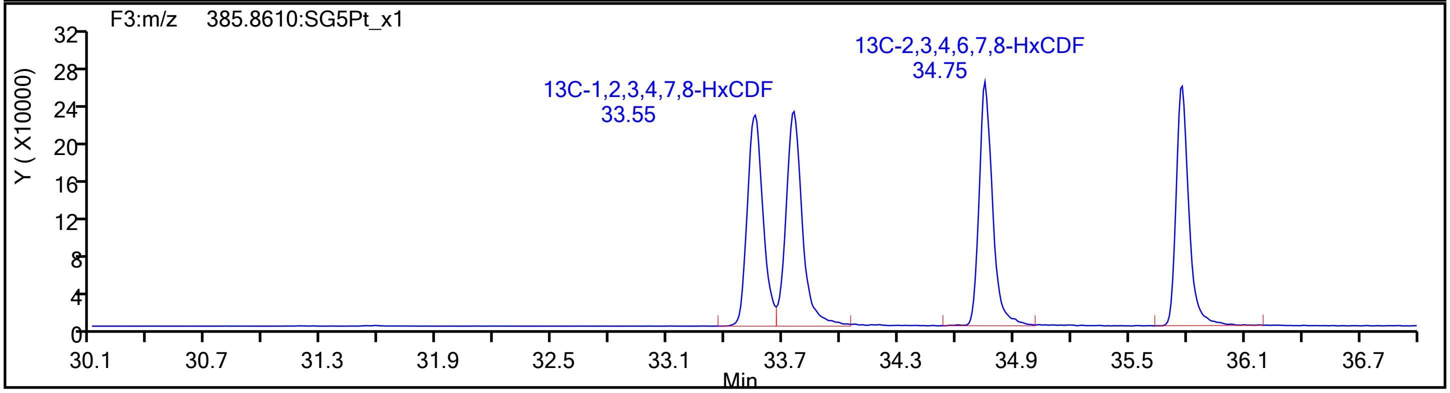

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469779

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

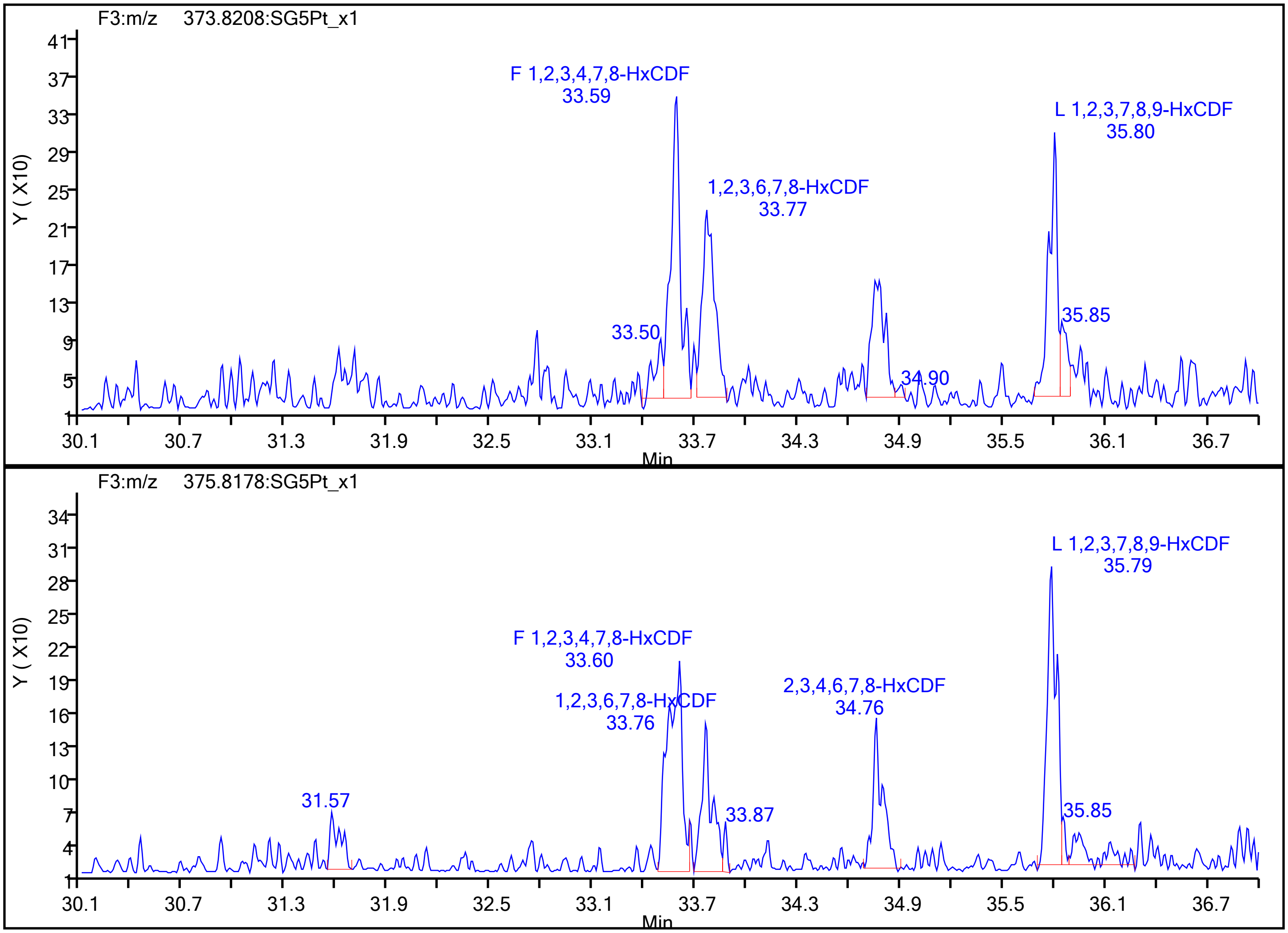

HxCDF Interference Mass

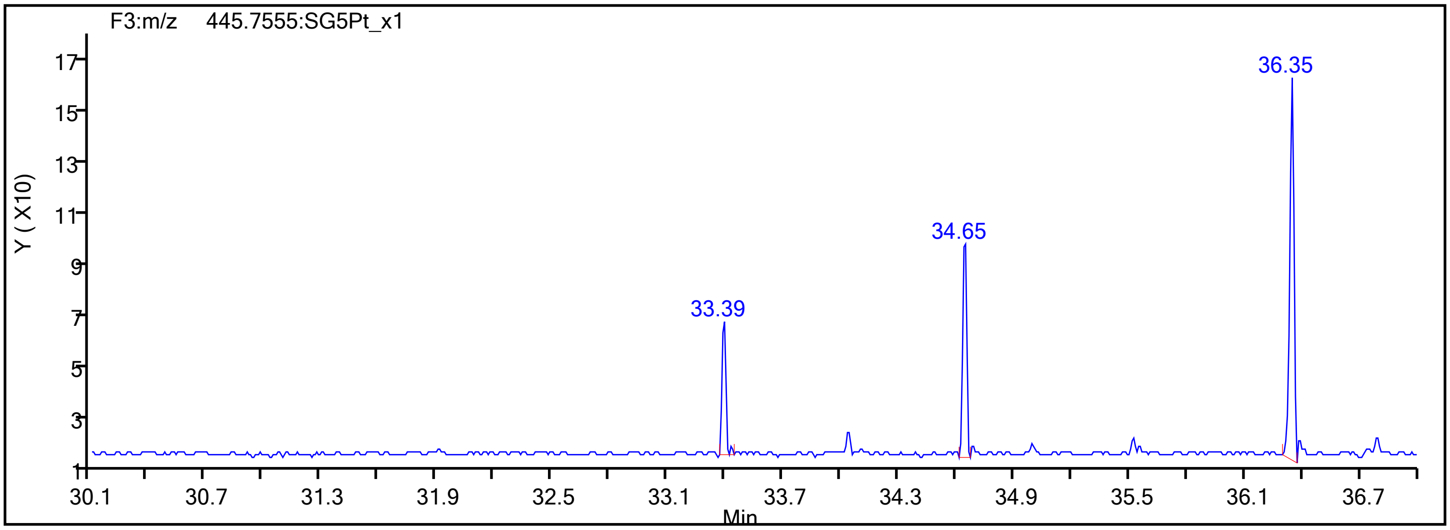

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469779 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

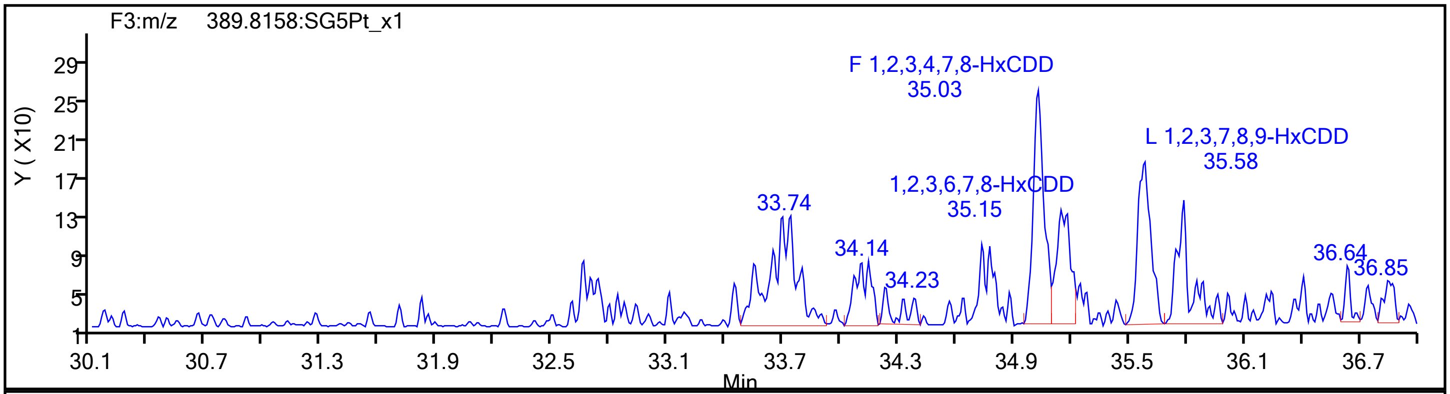

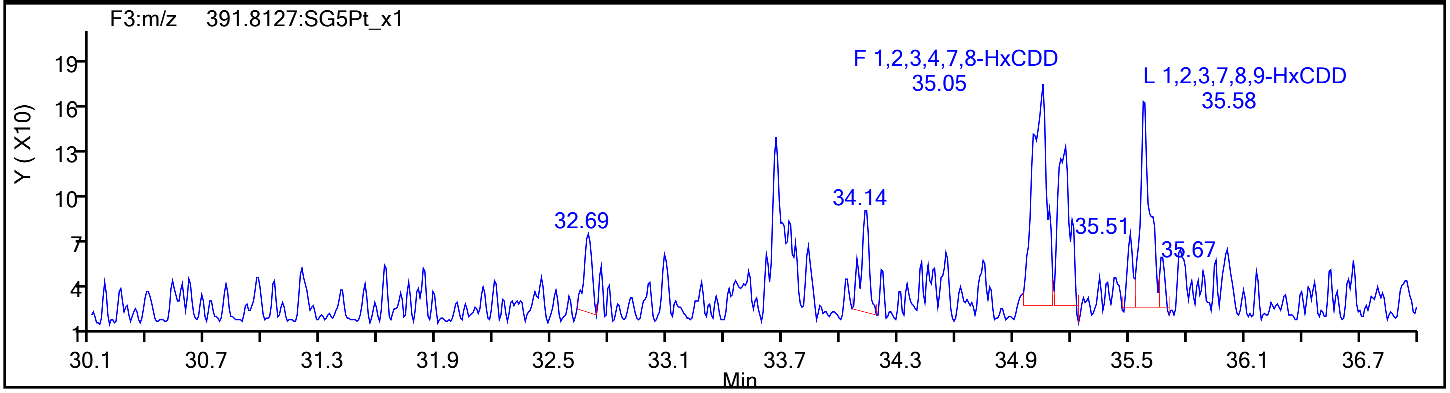

HxCDD Standards

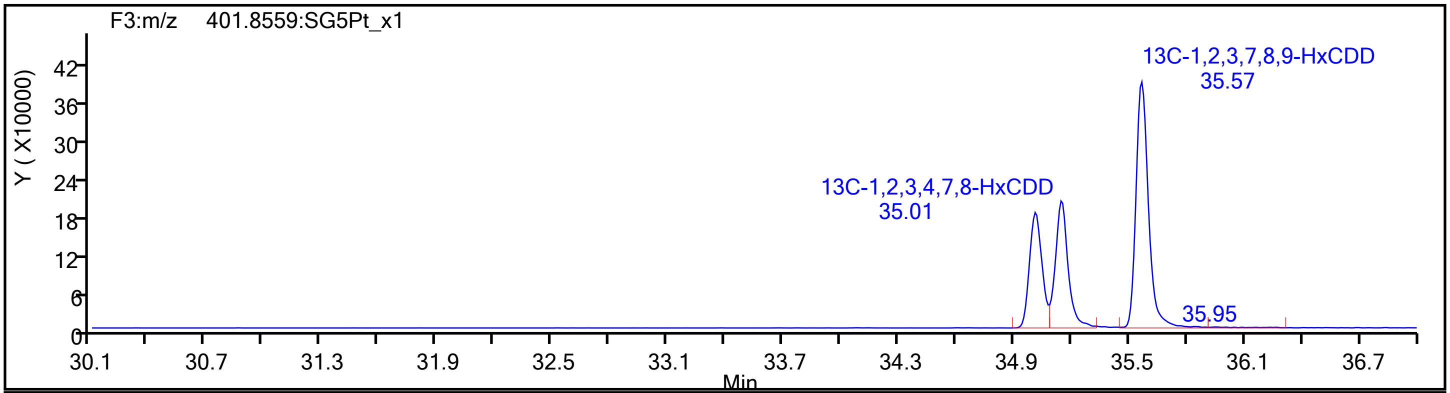

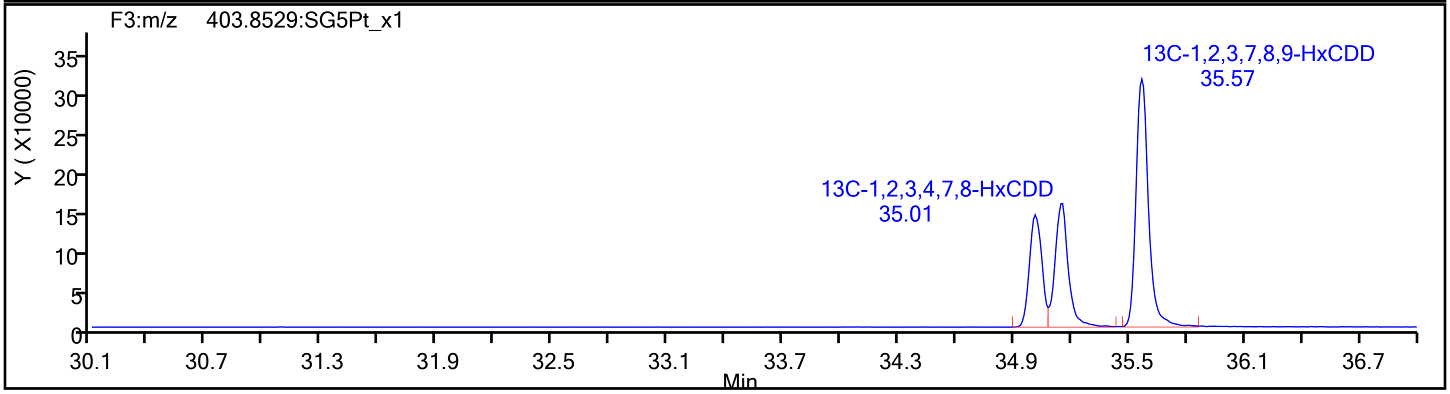

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

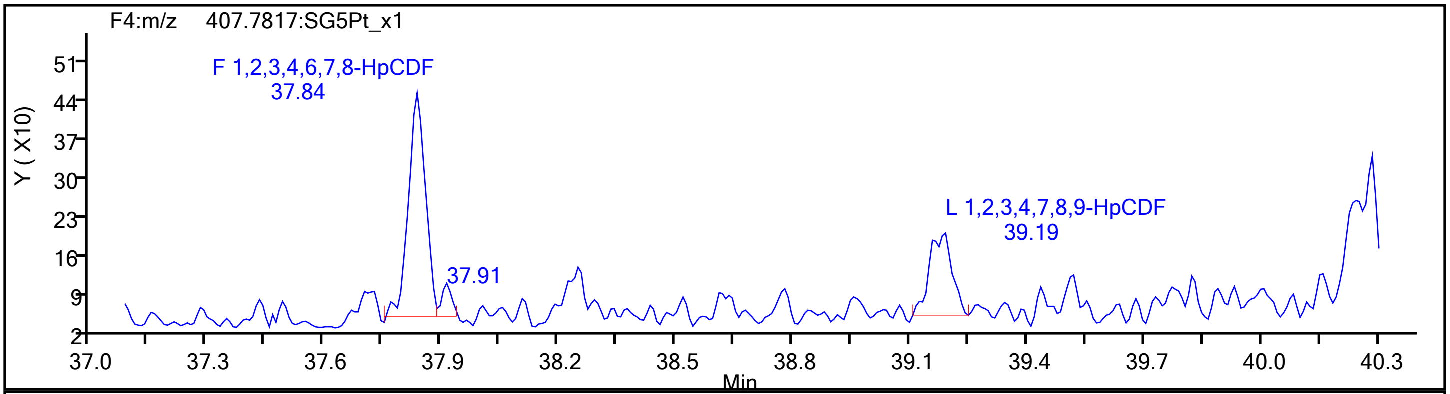

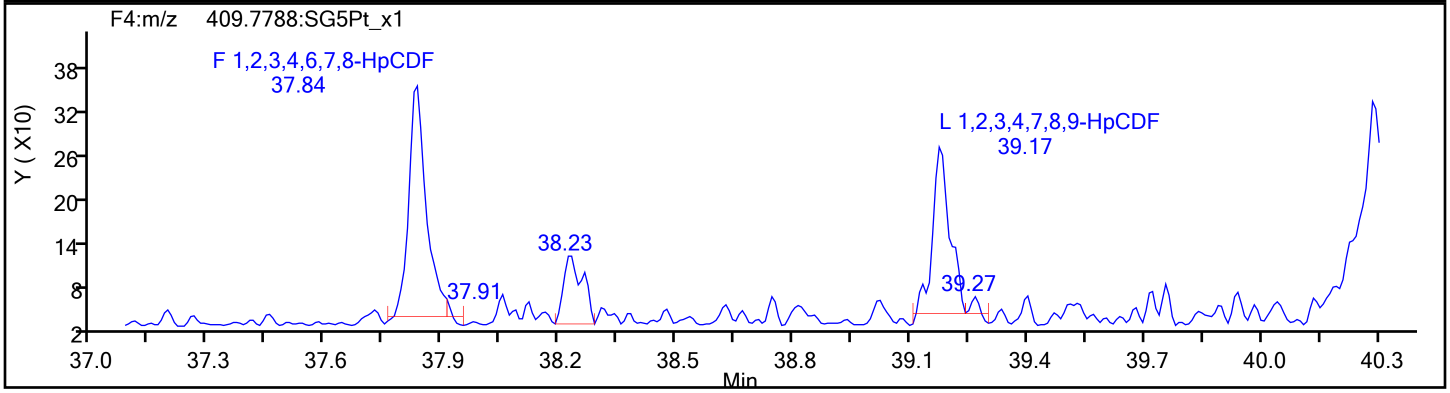

HpCDF Standards

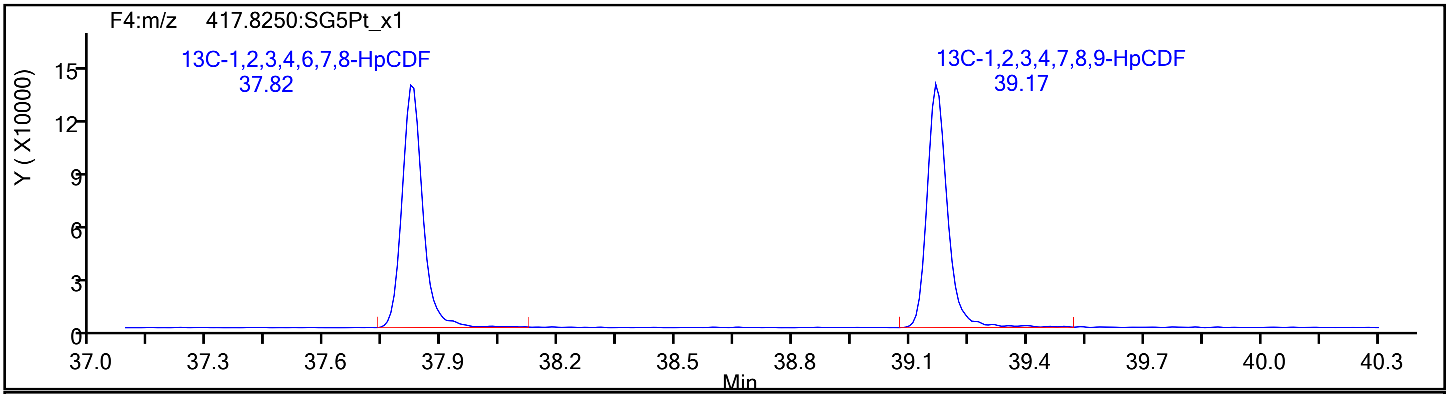

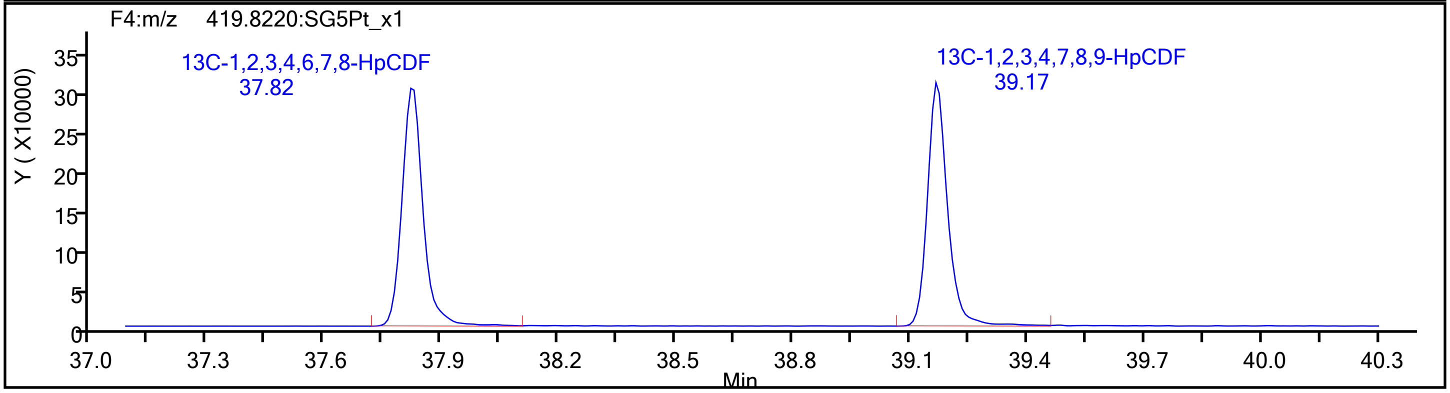

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

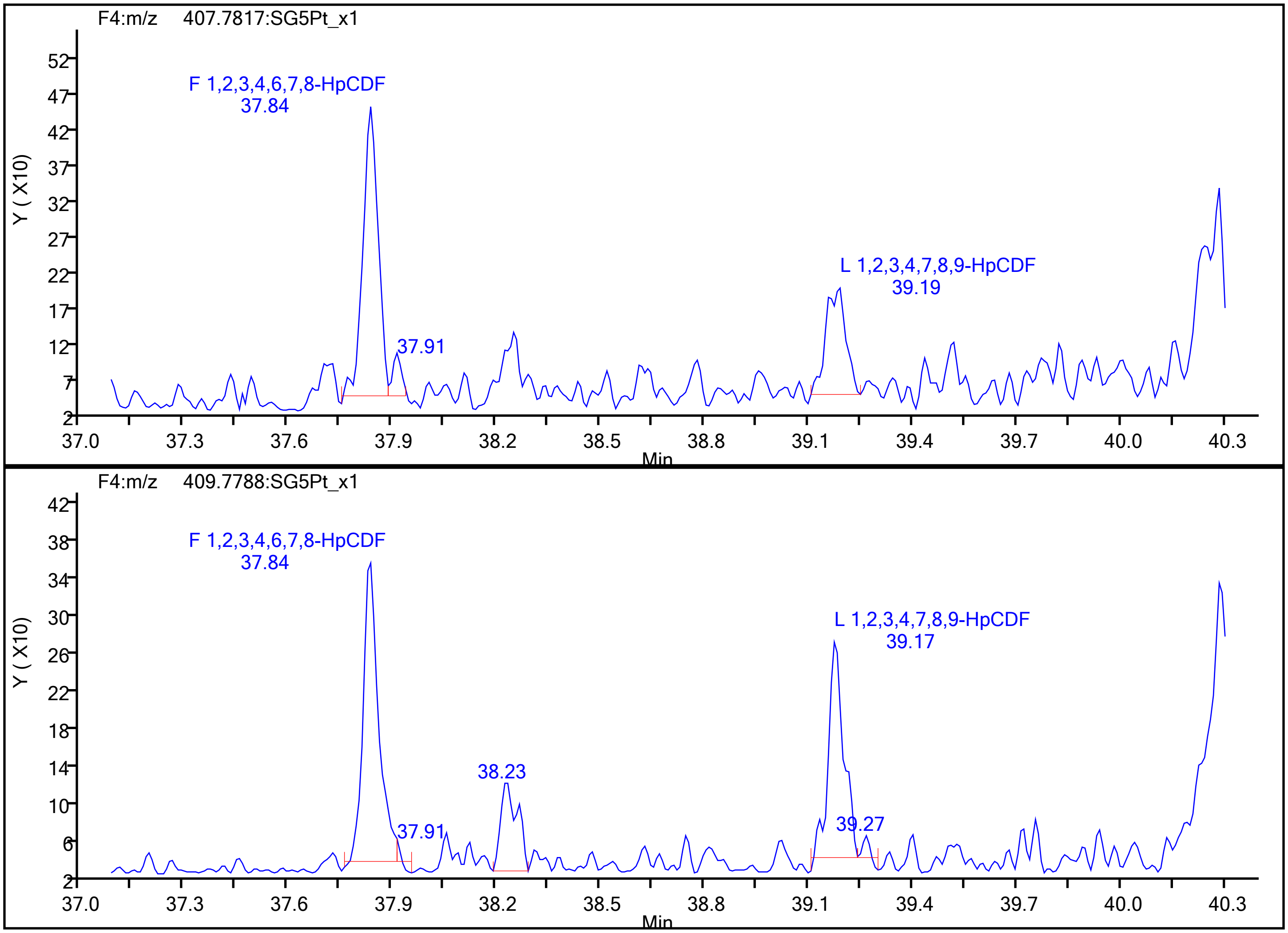

HpCDF Interference Mass

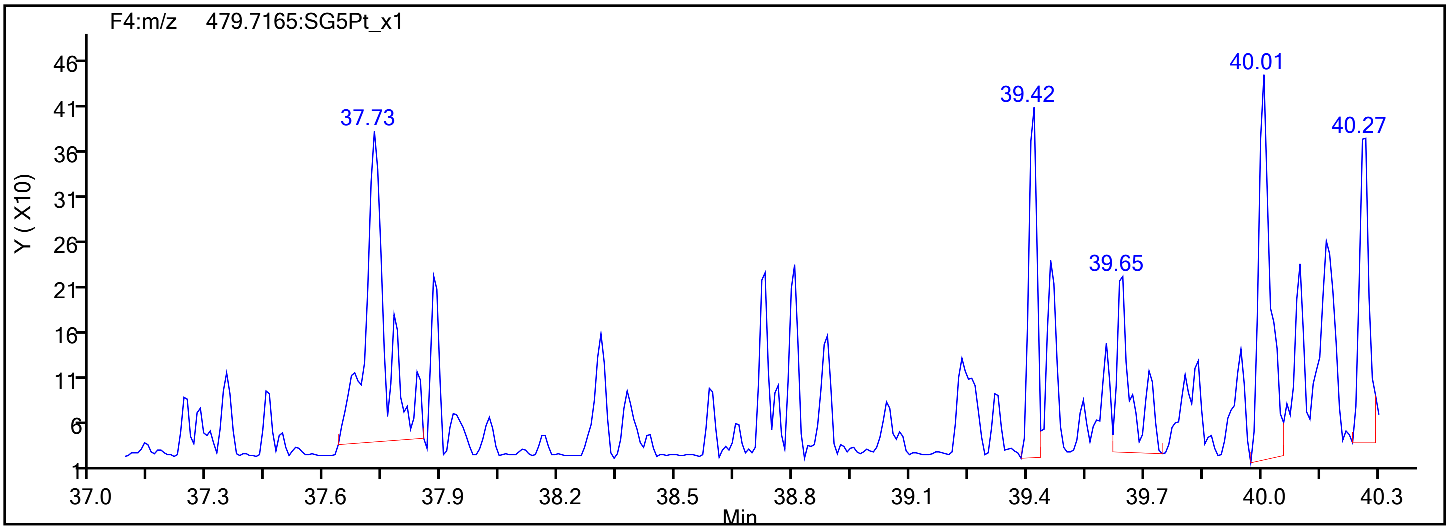

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469779 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

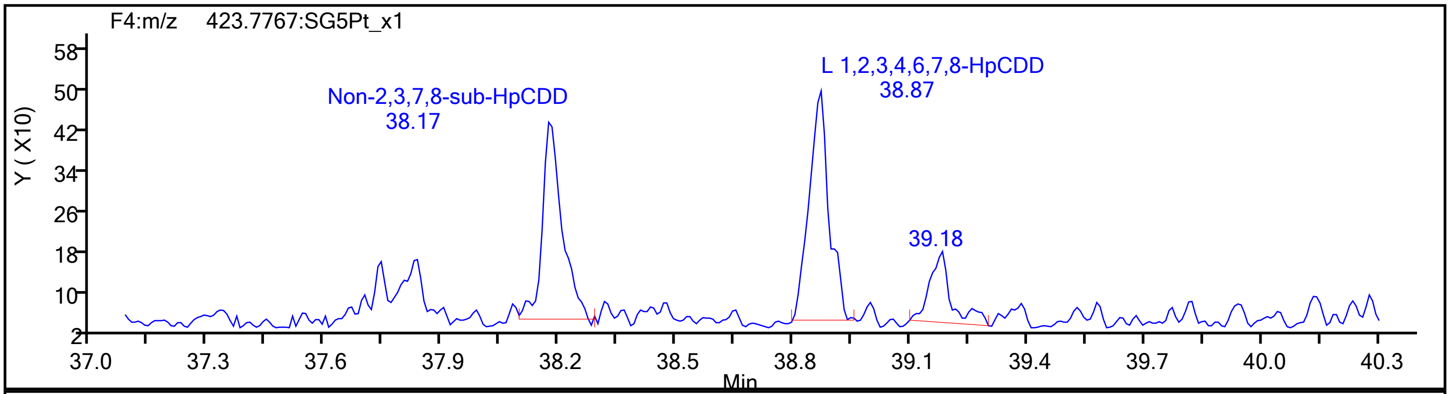

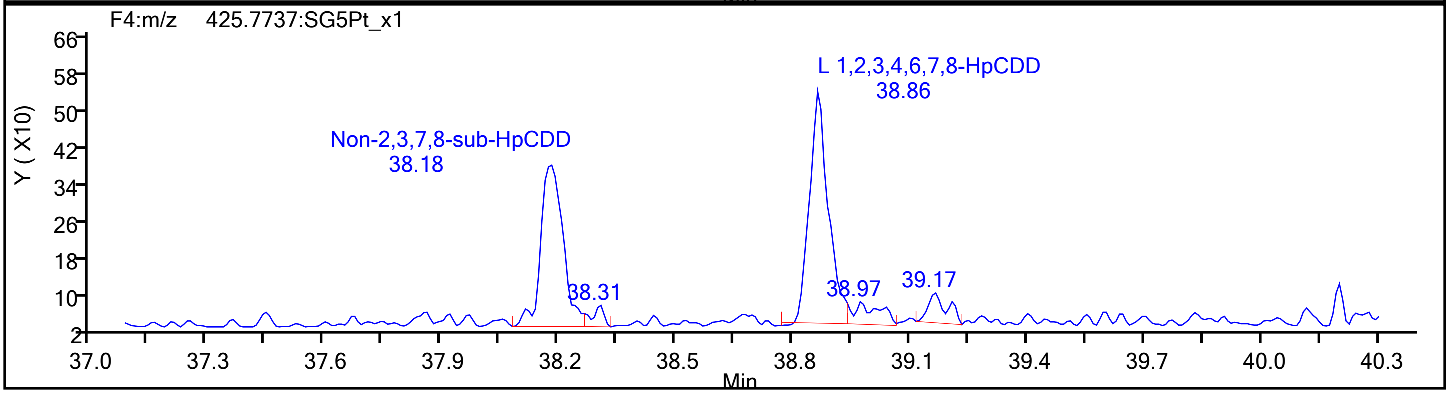

HpCDD Standards

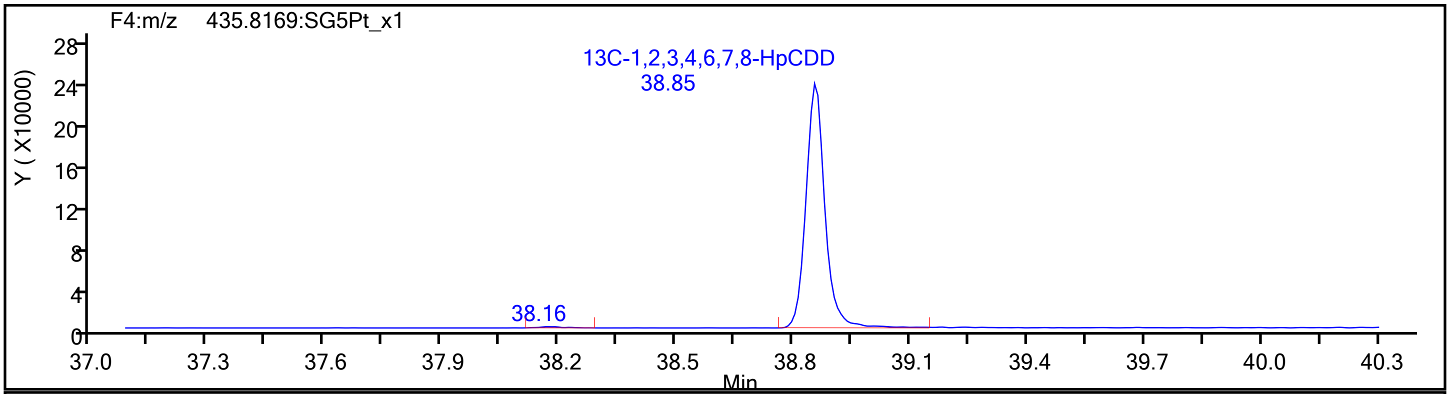

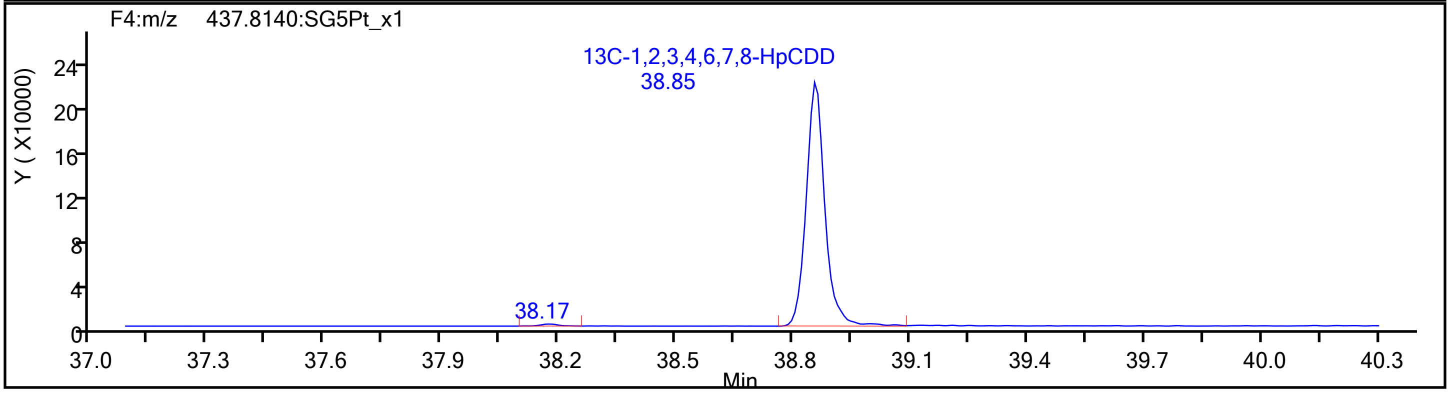

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d

Injection Date: 12-Mar-2021 19:20:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.45mm

Worklist#: 469779 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

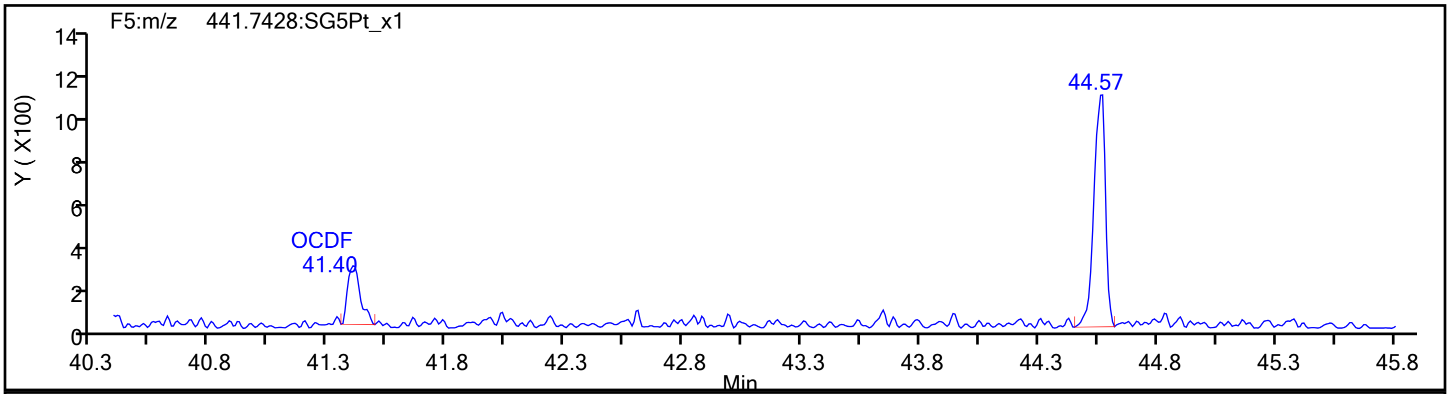

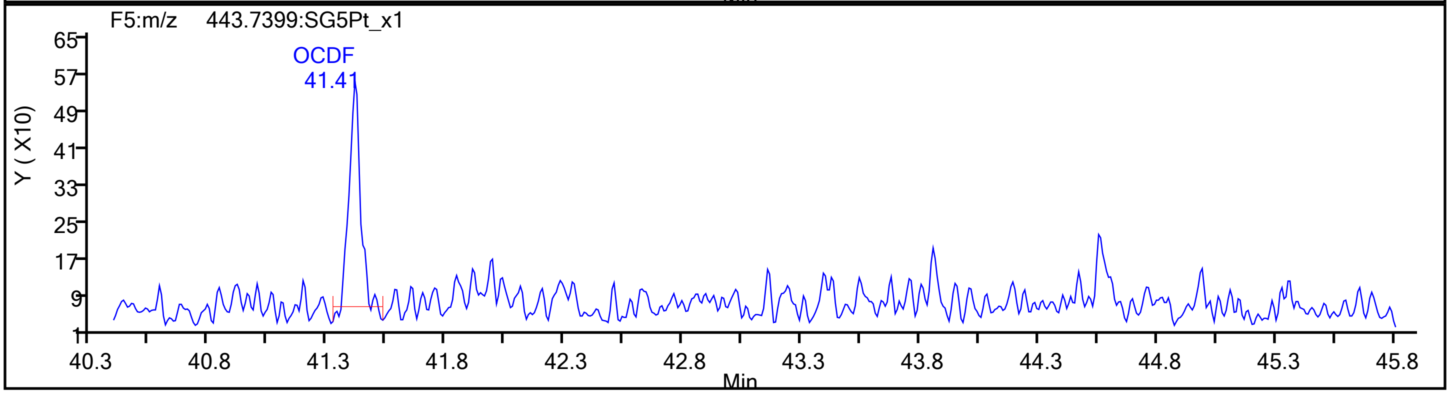

OCDF Standards

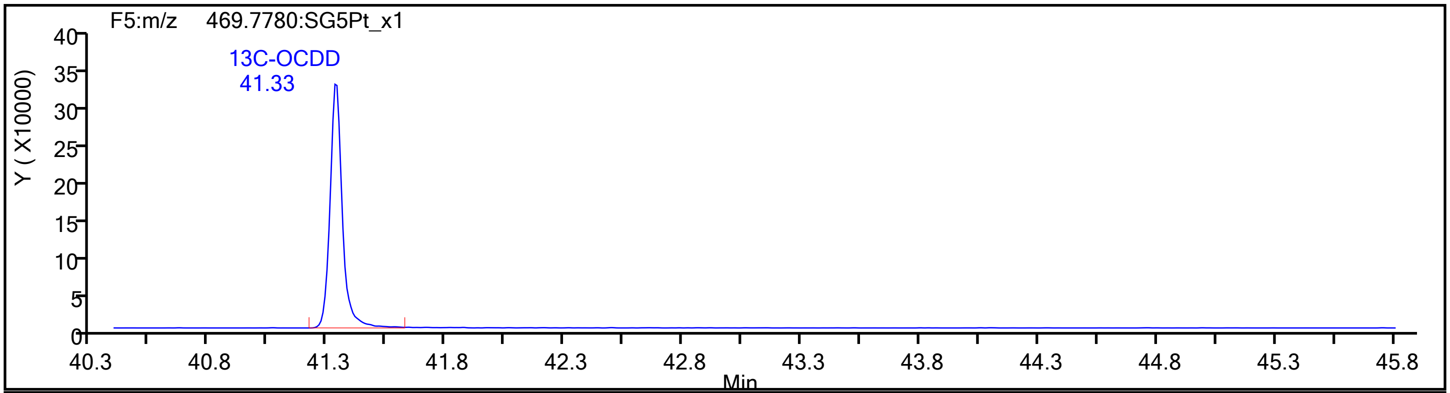

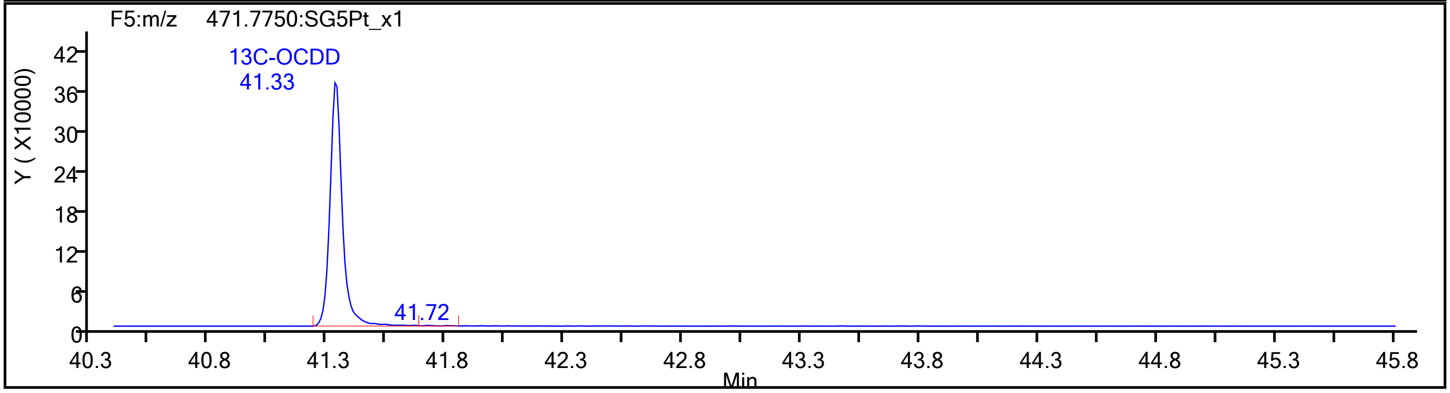

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

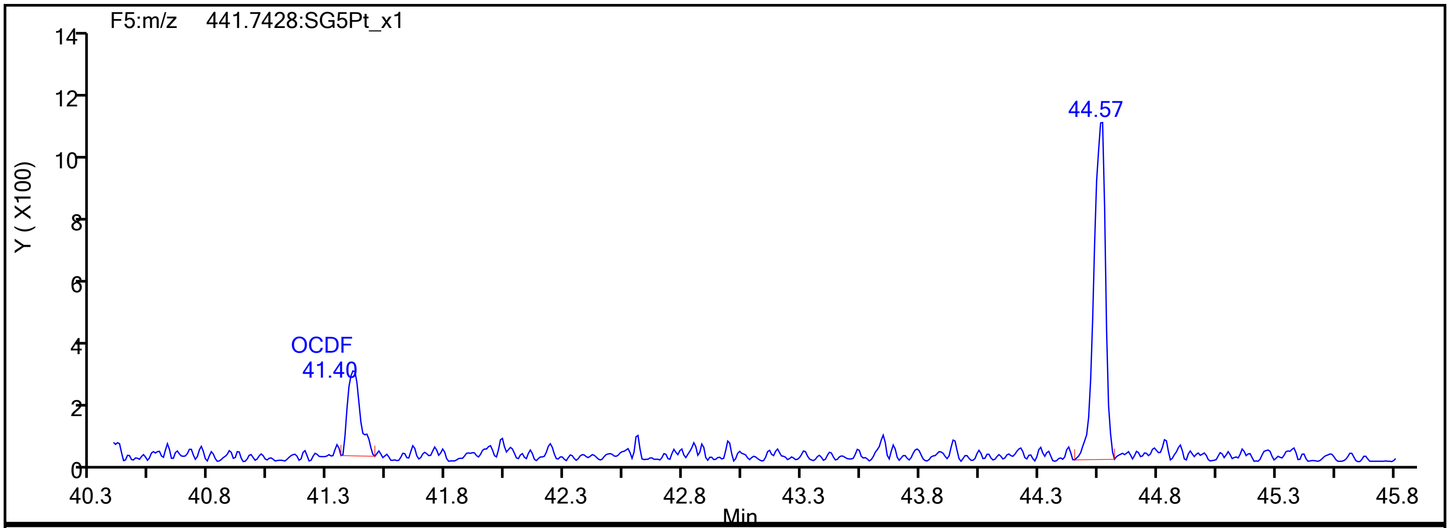

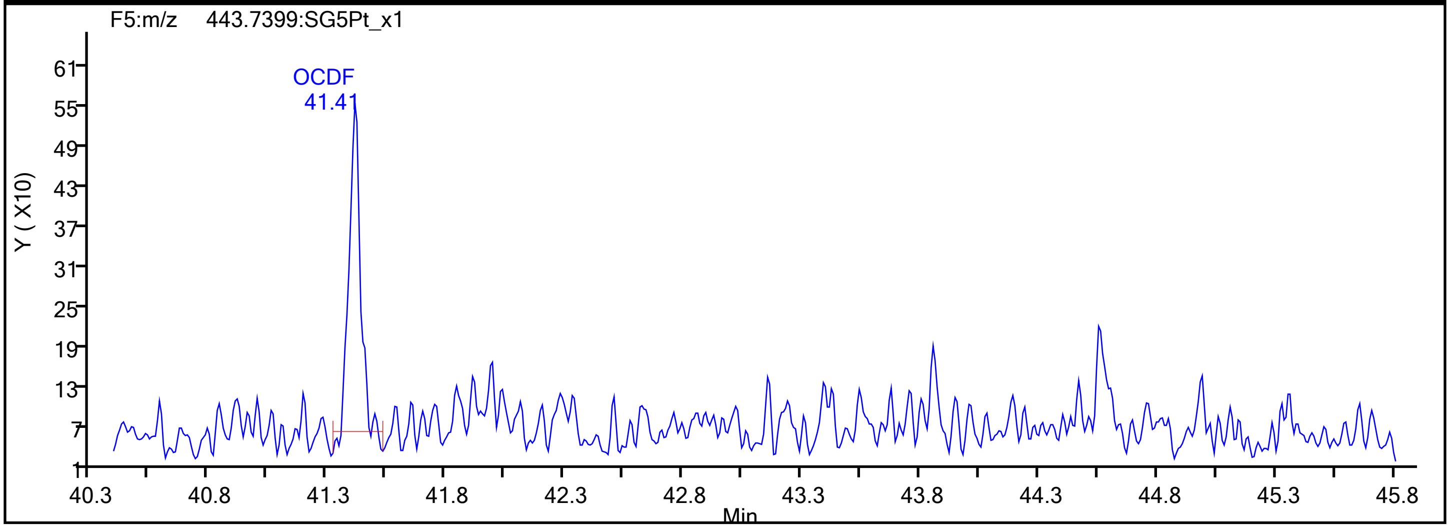

OCDF Interference Mass

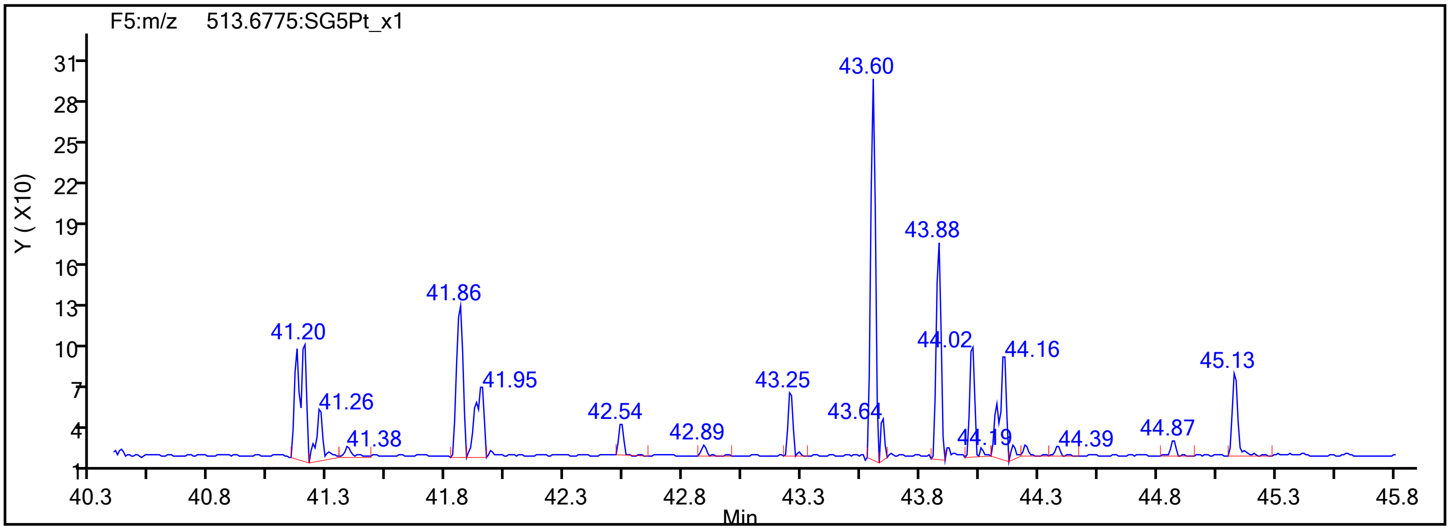

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d
Injection Date: 12-Mar-2021 19:20:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.45mm
Worklist#: 469779
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

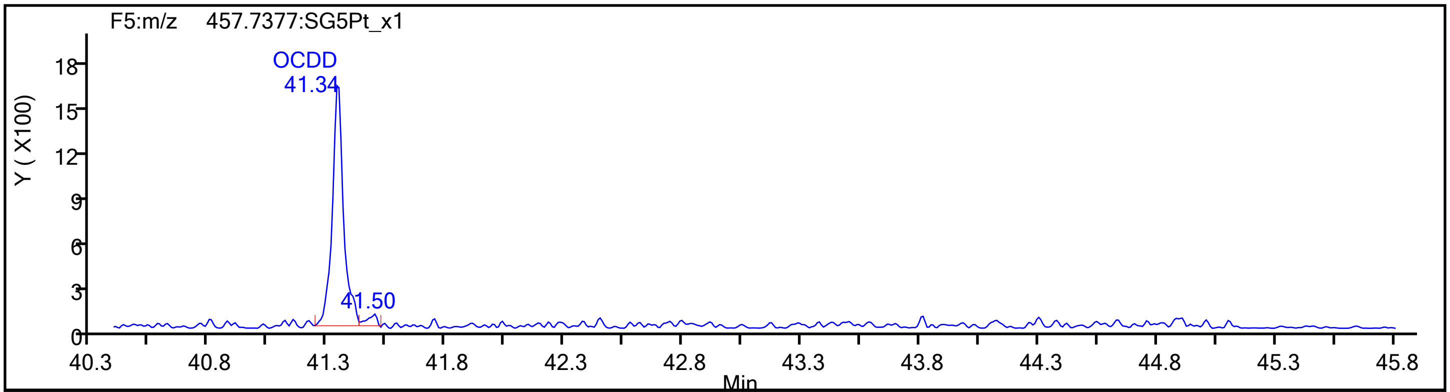

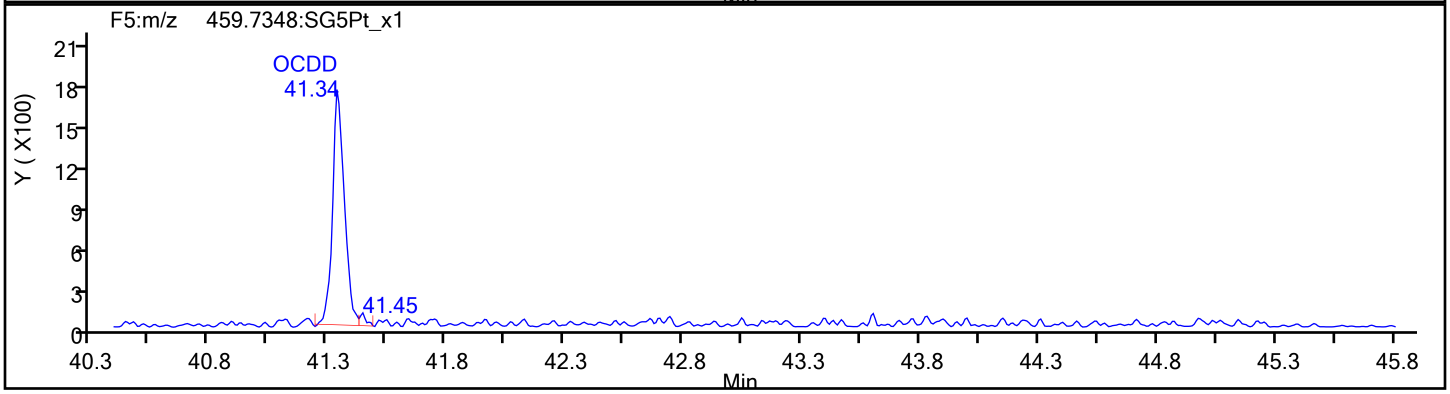

OCDD Standards

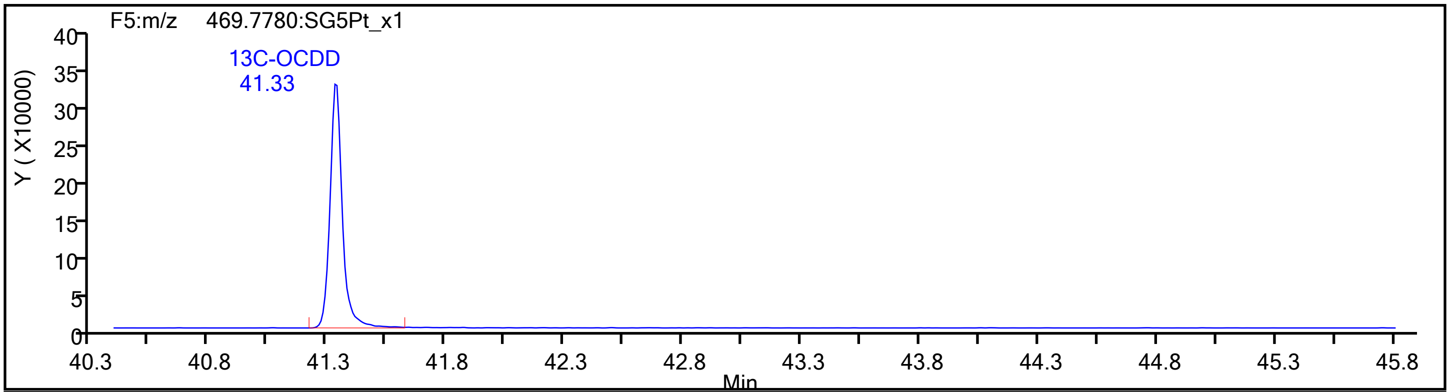

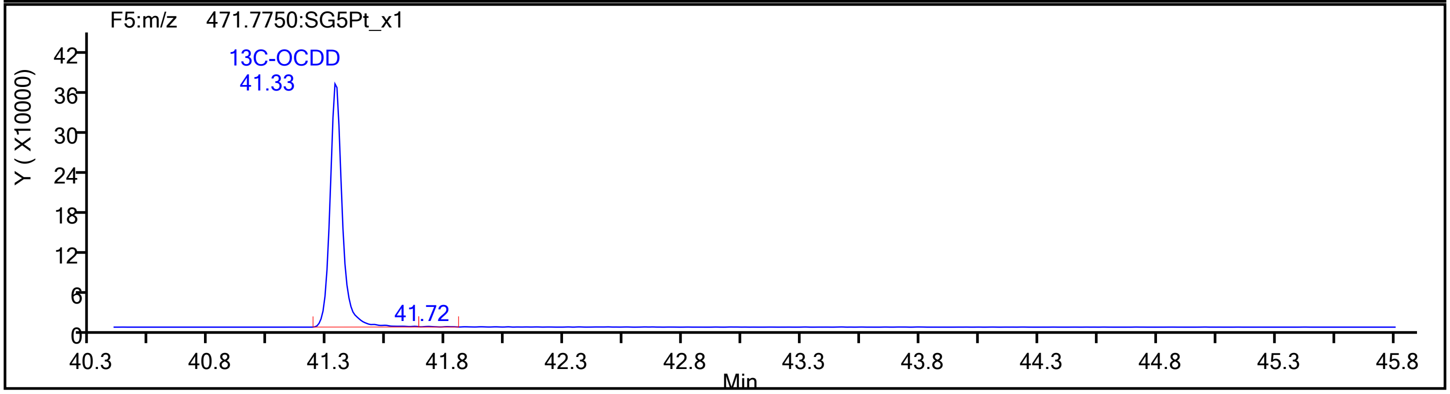

Report Date: 16-Mar-2021 09:21:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

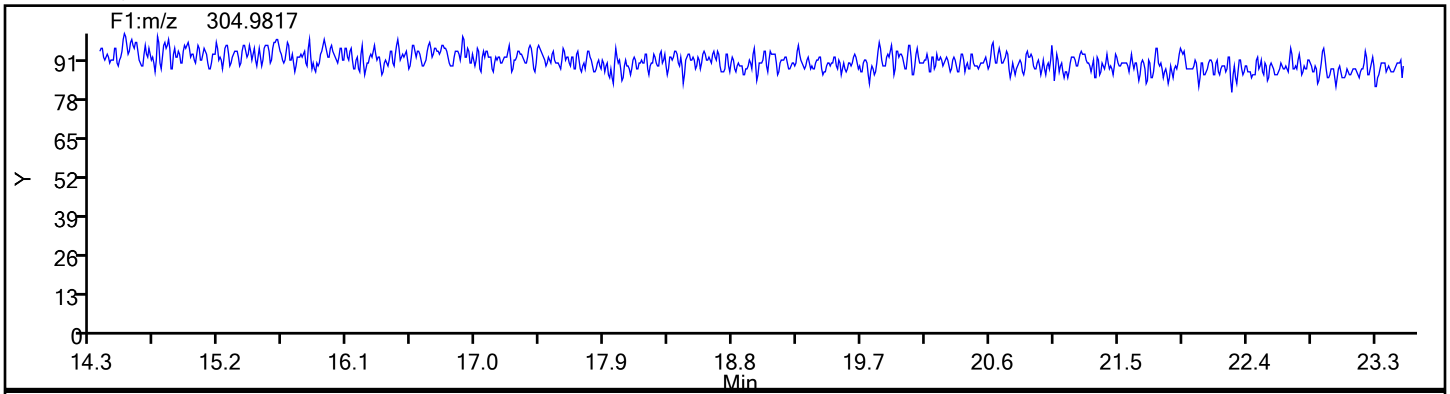

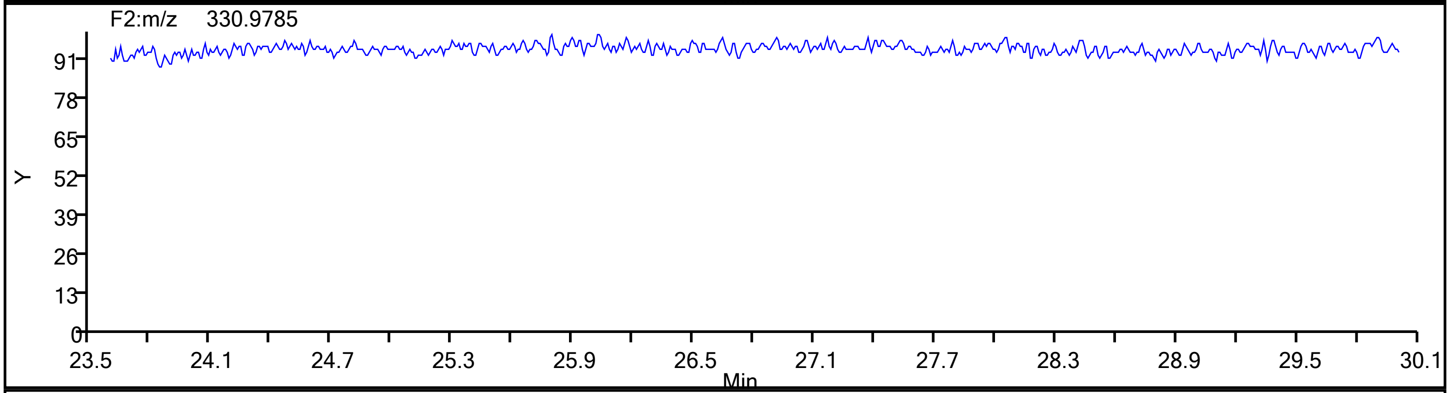

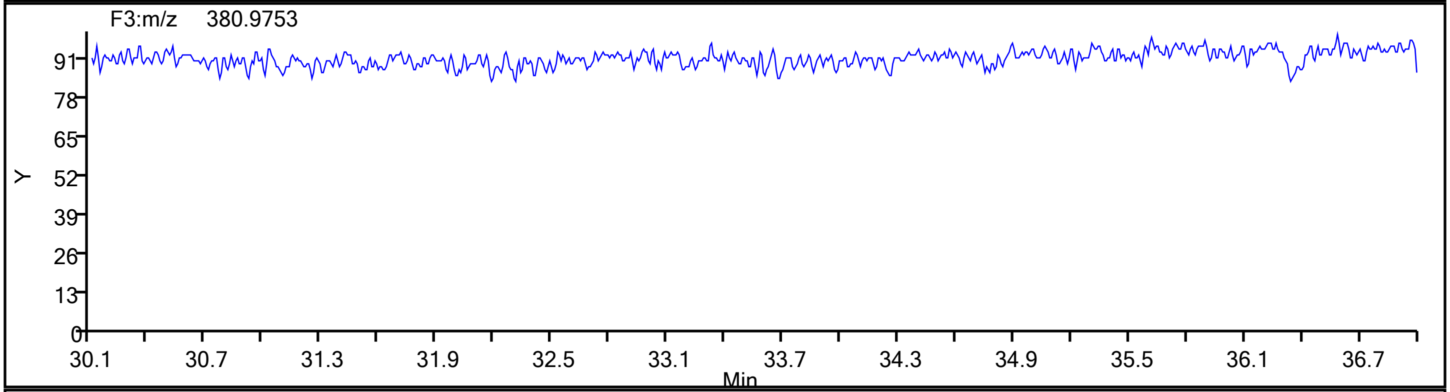

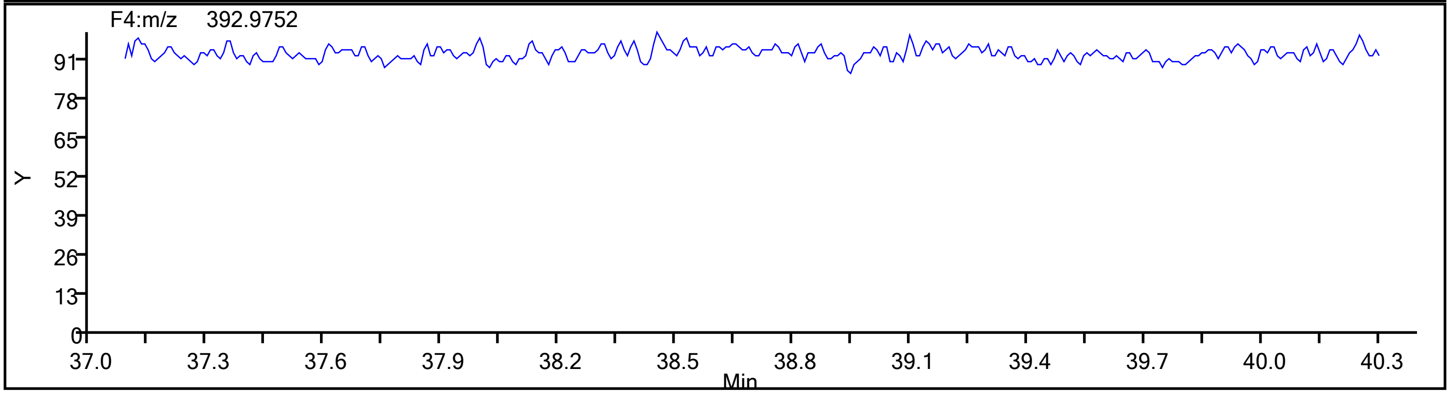

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_13.d		
Injection Date:	12-Mar-2021 19:20:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.45mm		
Worklist#:	469779	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

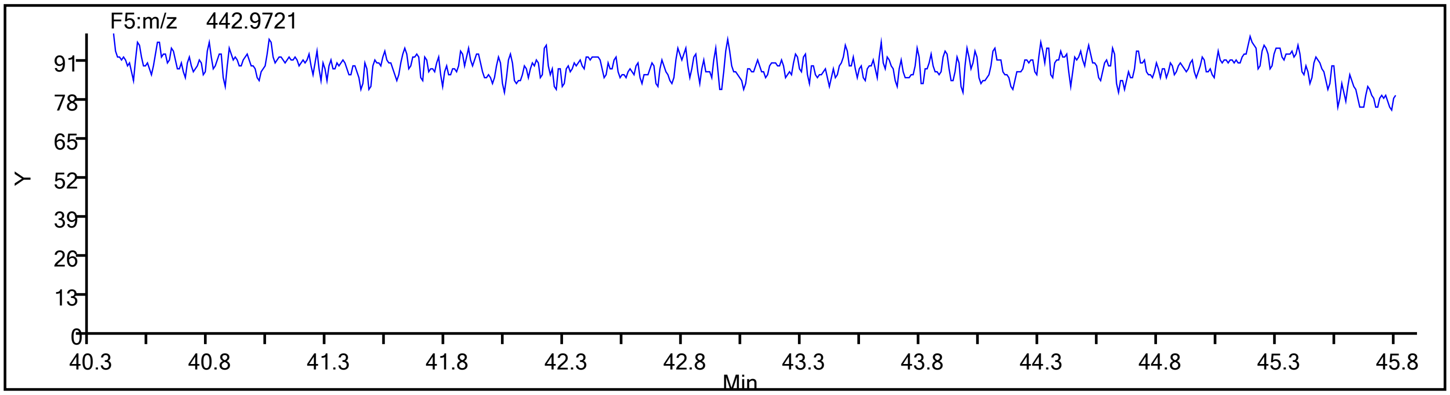

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID: 11215702-Tank2-0.1mm RA	Lab Sample ID: 320-70797-12 RA
Matrix: Water	Lab File ID: 11MR2111D2_008.d
Analysis Method: 1613B	Date Collected: 03/03/2021 15:00
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1022.1(mL)	Date Analyzed: 03/11/2021 18:19
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 469703	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	48	B	9.8	0.59

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	82		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	115		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_008.d
Lims ID: 320-70797-A-12-A
Client ID: 11215702-Tank2-0.1mm
Sample Type: Client
Inject. Date: 11-Mar-2021 18:19:02 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-12-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:02:53

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.011	223395691	0.80	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.149	238124350	0.80	1.3057	81.6	81.6	0.1394	0.1394	81.63	
2,3,7,8-TCDF	16.163	5367816	0.82	0.9242	2.439	2.439	0.0300	0.0300		
D 13C-2,3,7,8-TCDD	14.777	141975344	0.78	0.8971	70.8	70.8	0.2161	0.2161	70.84	
2,3,7,8-TCDD	14.805	1390107	0.71	0.9989	0.9802	0.9802	0.0774	0.0774		
$ 37Cl4-2,3,7,8-TCDD	14.805	87657503		0.8499	46.2	46.2	0.0758	0.0758	115	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 12-Mar-2021 11:08:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_008.d
Lims ID: 320-70797-A-12-A
Client ID: 11215702-Tank2-0.1mm
Sample Type: Client
Inject. Date: 11-Mar-2021 18:19:02 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-A-12-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 11:02:53

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.011	15.013	0		99274370	24675271	20763	51907	1188		
333.9339	15.011	15.013	0		124121321	30923815	22347	55867	1384	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.149	16.152	0	1.076	106084814	23696388	23981	59952	988		
317.9389	16.149	16.152	0	1.076	132039536	29405665	16513	41282	1781	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.163	16.166	0	1.001	2414960	525100	2984	7460	176		
305.8987	16.163	16.166	0	1.001	2952856	669744	2906	7265	230	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.777	14.794	-1	0.984	62431136	15814695	20763	51907	762		
333.9339	14.777	14.794	-1	0.984	79544208	19891589	22347	55867	890	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.805	14.807	0	1.002	577259	152655	5112	12780	30		
321.8936	14.791	14.807	-1	1.001	812848	217593	5937	14842	37	0.71(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.805	14.807	0	0.986	87657503	21464266	14329	35822	1498		

QC Flag Legend

Processing Flags

Report Date: 12-Mar-2021 11:08:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_008.d
Injection Date: 11-Mar-2021 18:19:02
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.1mm
Worklist#: 469703
Sample Line#: 8
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

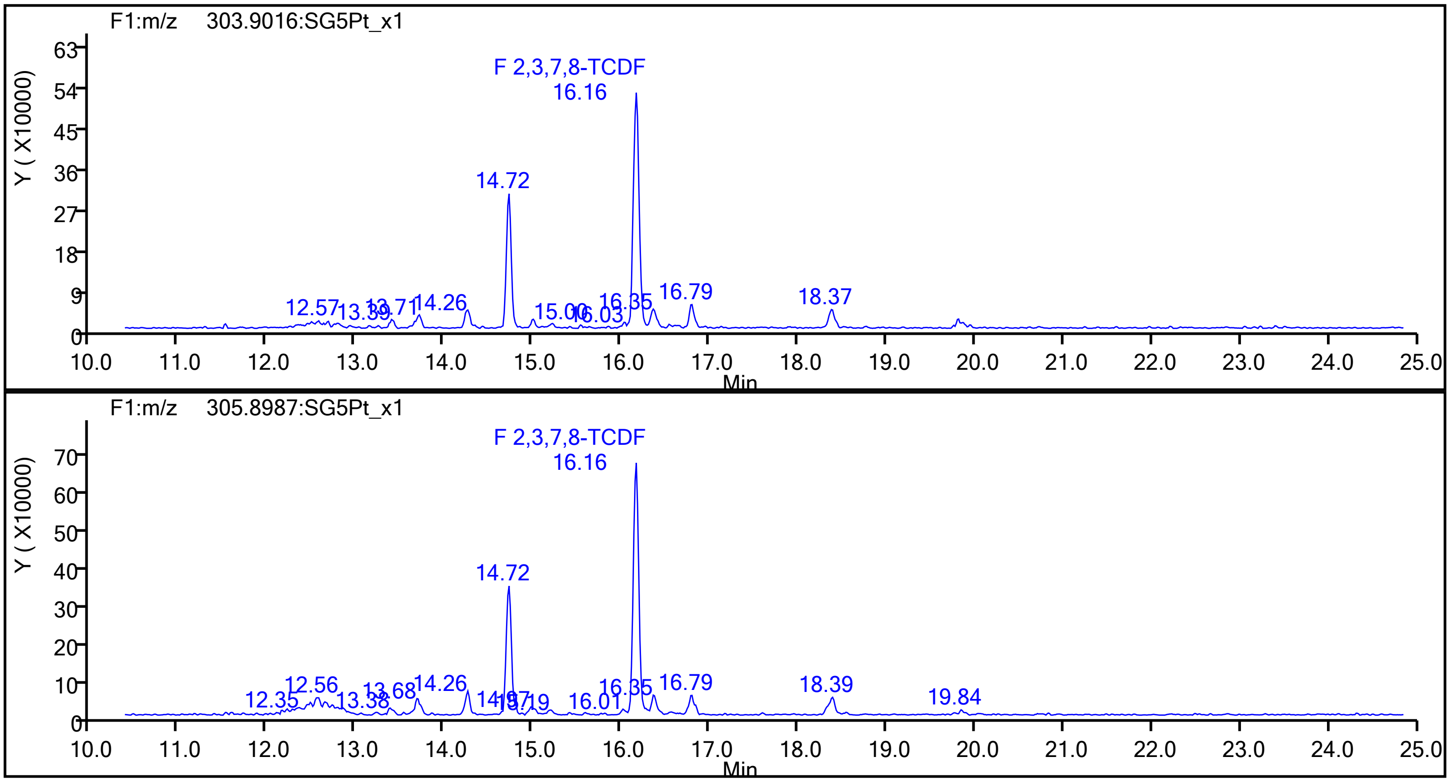

TCDF Standards

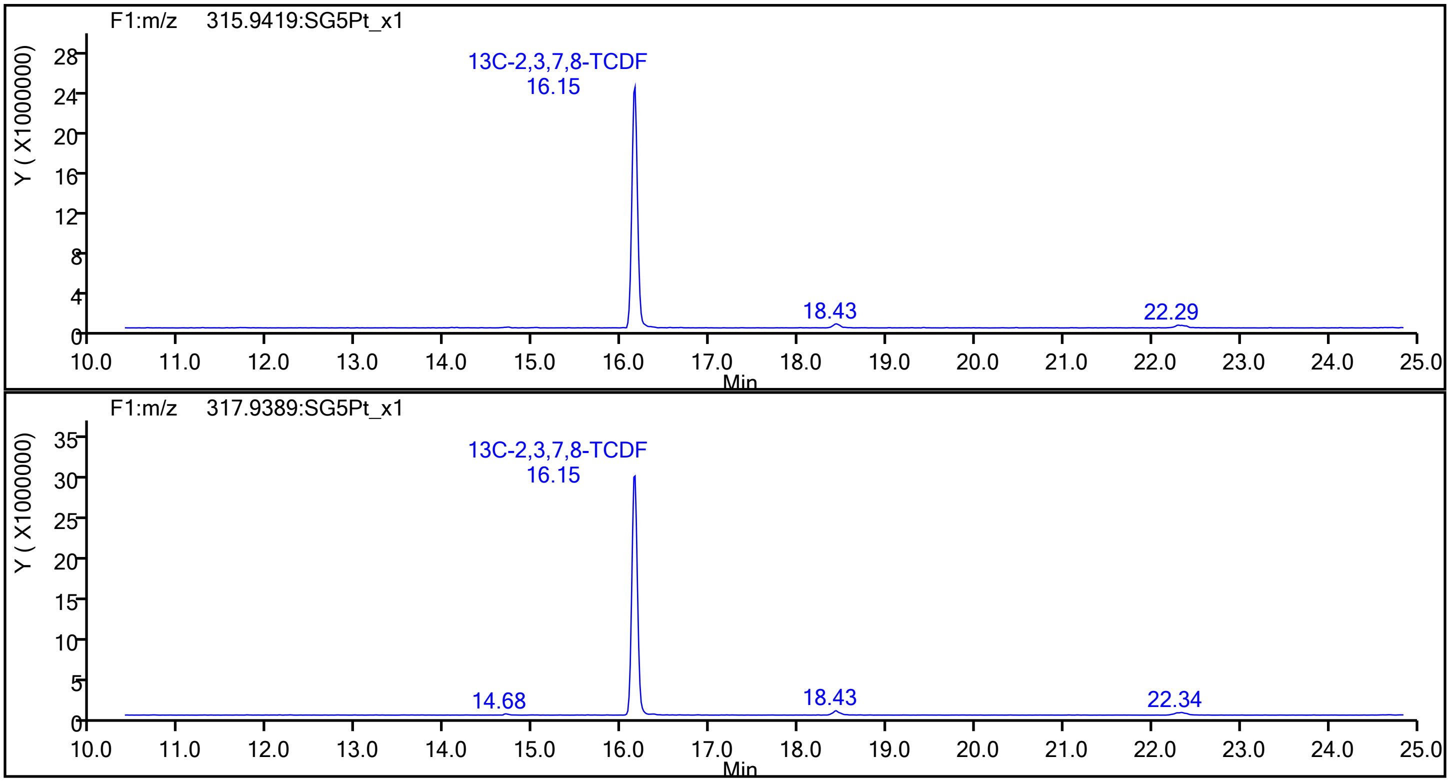

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_008.d		
Injection Date:	11-Mar-2021 18:19:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469703	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

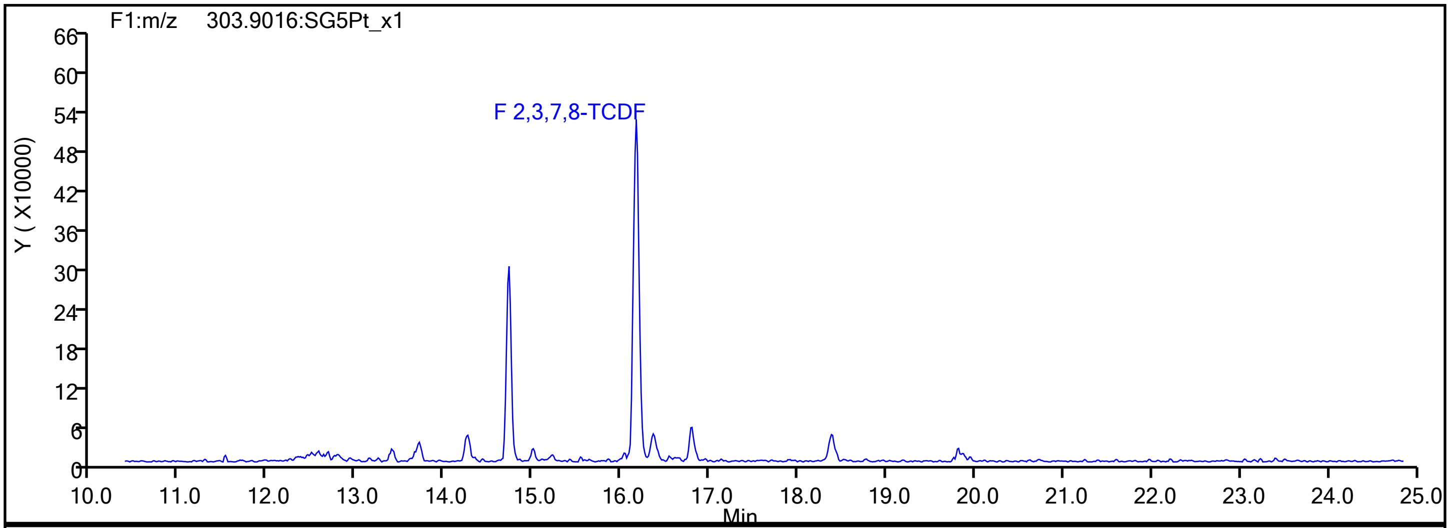

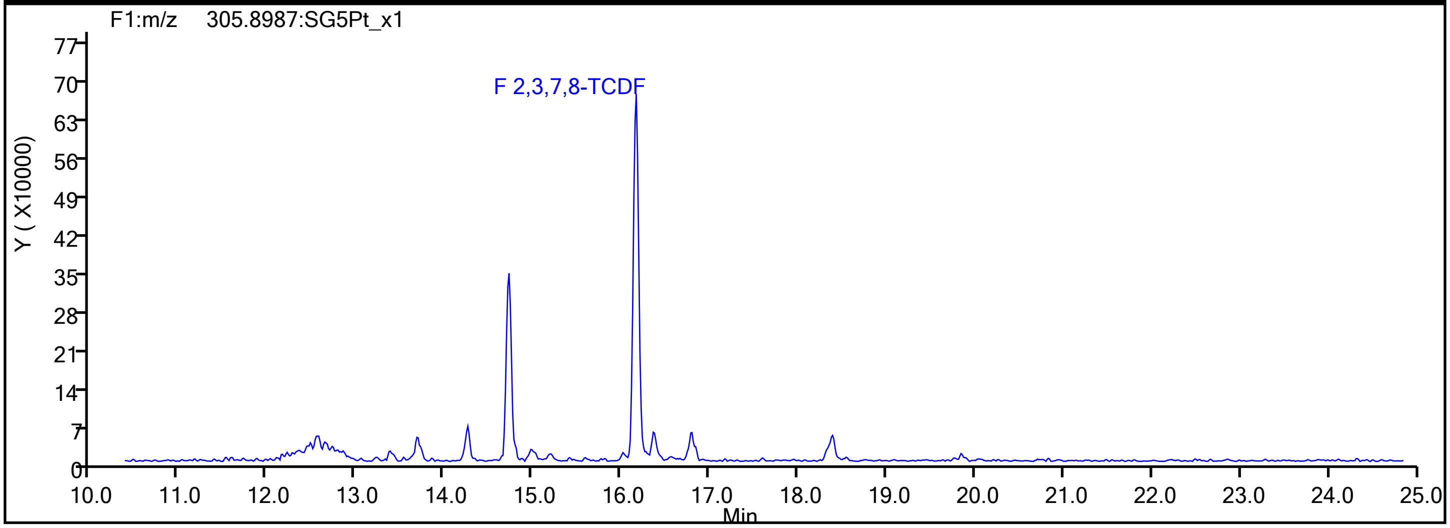

TCDF Interference Mass

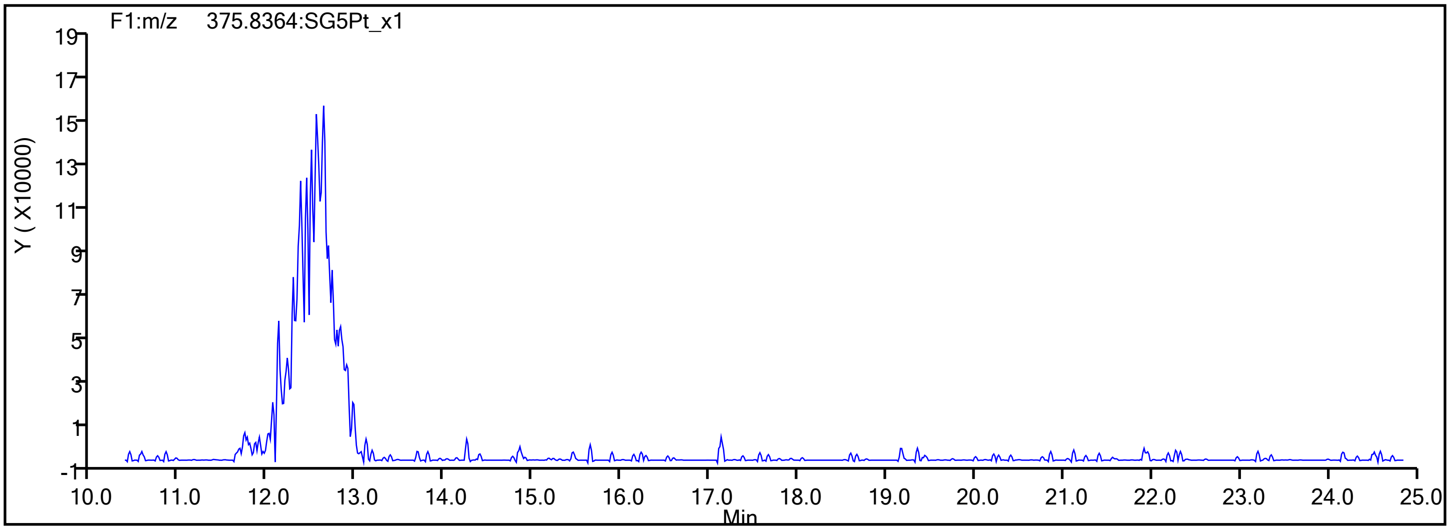

Report Date: 12-Mar-2021 11:08:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_008.d		
Injection Date:	11-Mar-2021 18:19:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469703	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

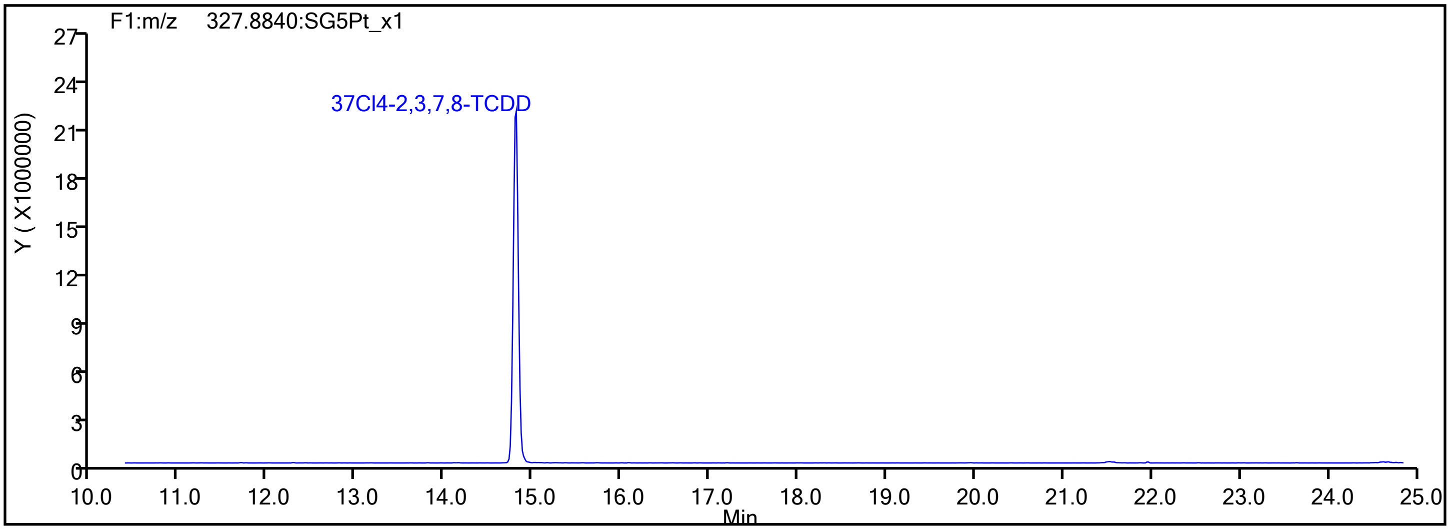

37Cl4-TCDD Standards

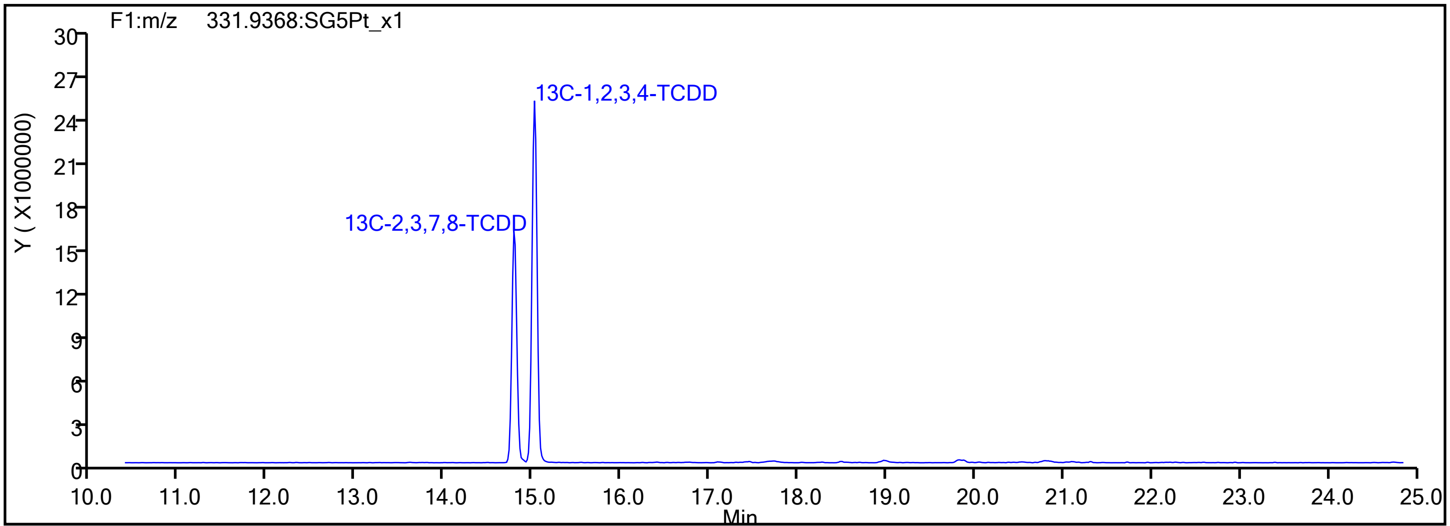

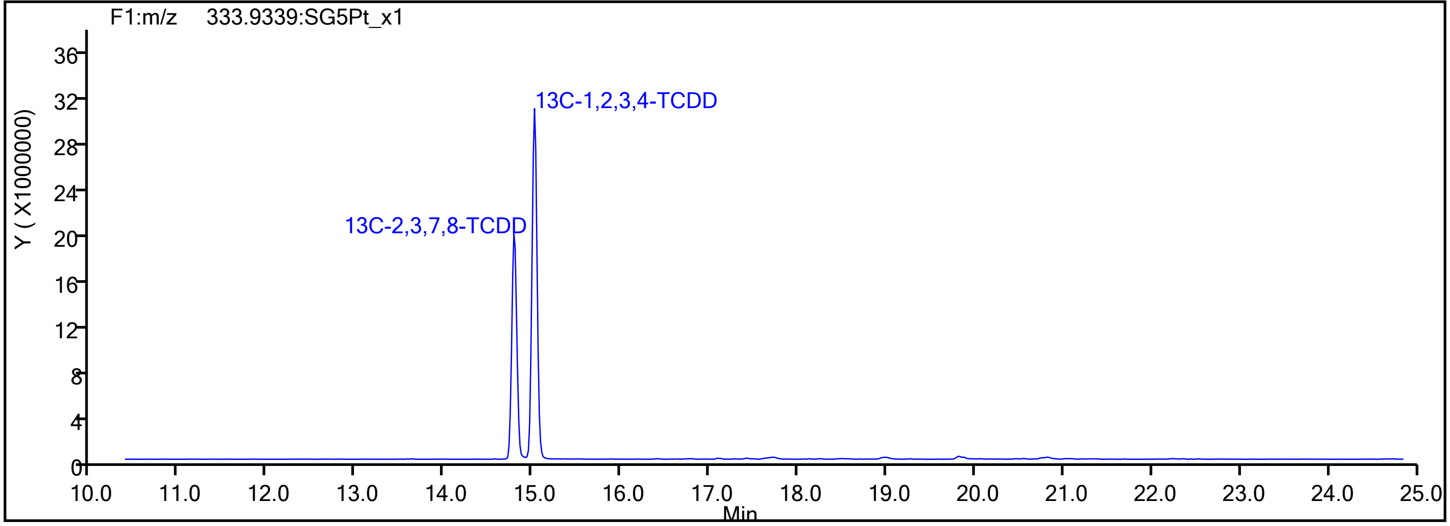

Report Date: 12-Mar-2021 11:08:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_008.d		
Injection Date:	11-Mar-2021 18:19:02	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469703	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

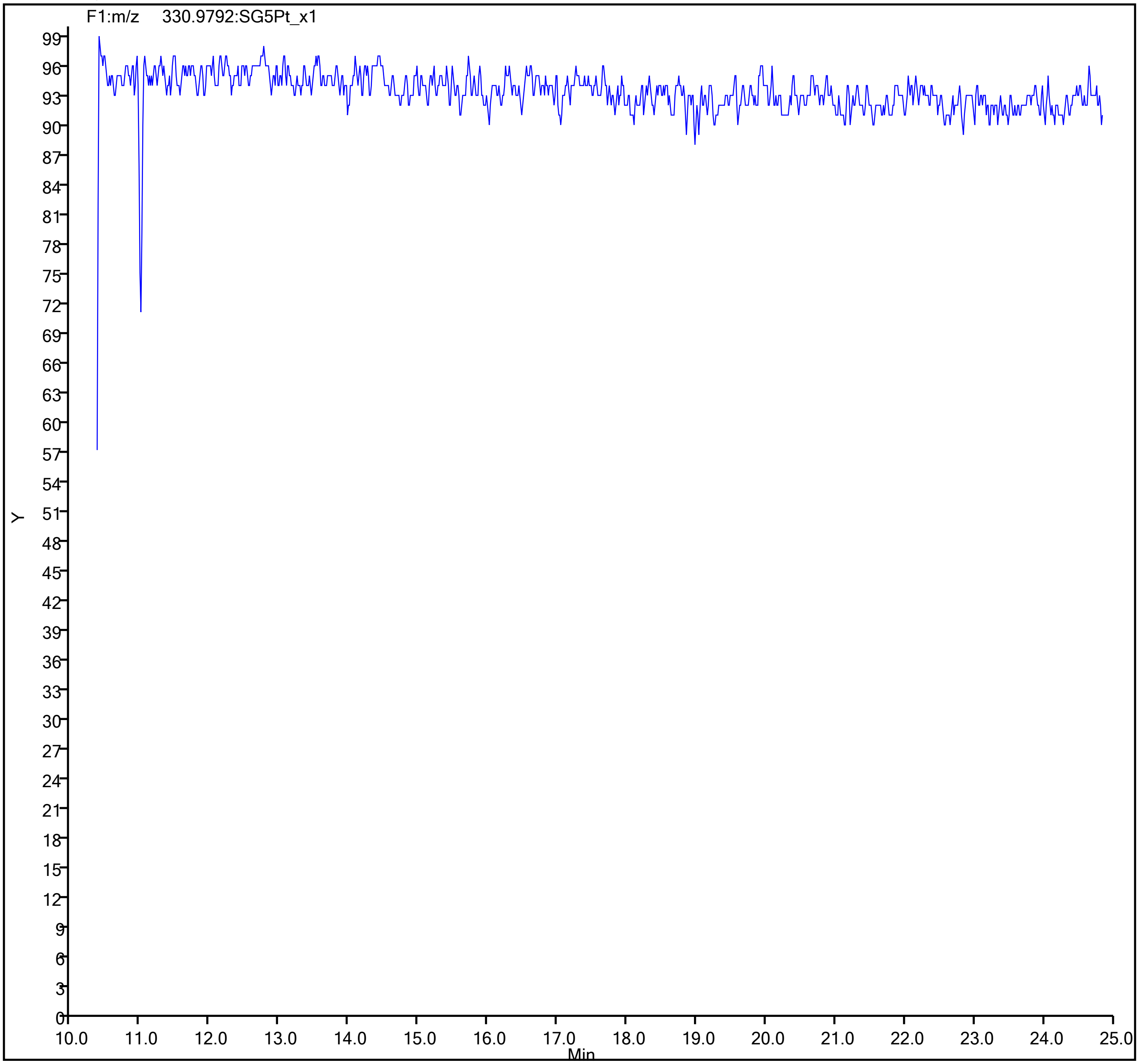

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: 11215702-Tank2-0.1mm Lab Sample ID: 320-70797-12

Matrix: Water Lab File ID: 12mr21adfs1_14.d

Analysis Method: 1613B Date Collected: 03/03/2021 15:00

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1022.1(mL) Date Analyzed: 03/12/2021 20:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 469779 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	15		9.8	0.53
40321-76-4	1,2,3,7,8-PeCDD	1.5	J	49	0.42
57117-41-6	1,2,3,7,8-PeCDF	ND		49	0.37
57117-31-4	2,3,4,7,8-PeCDF	2.1	J	49	0.42
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J	49	0.28
57653-85-7	1,2,3,6,7,8-HxCDD	1.4	J	49	0.28
19408-74-3	1,2,3,7,8,9-HxCDD	1.6	J	49	0.26
70648-26-9	1,2,3,4,7,8-HxCDF	4.2	J B	49	0.28
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J B	49	0.27
72918-21-9	1,2,3,7,8,9-HxCDF	1.9	J B q	49	0.23
60851-34-5	2,3,4,6,7,8-HxCDF	0.86	J B q	49	0.23
35822-46-9	1,2,3,4,6,7,8-HpCDD	5.7	J B	49	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.7	J B	49	0.32
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.0	J B q	49	0.33
3268-87-9	OCDD	25	J B	98	0.42
39001-02-0	OCDF	5.5	J B	98	0.46
41903-57-5	Total TCDD	15	B	9.8	0.53
30402-14-3	Total TCDF	81	B q	9.8	0.63
36088-22-9	Total PeCDD	1.5	J	49	0.42
30402-15-4	Total PeCDF	2.1	J	49	0.40
34465-46-8	Total HxCDD	4.9	J	49	0.27
55684-94-1	Total HxCDF	9.1	J B q	49	0.25
37871-00-4	Total HpCDD	9.1	J B	49	0.24
38998-75-3	Total HpCDF	6.7	J B q	49	0.33

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-70797-1
SDG No.:
Client Sample ID: 11215702-Tank2-0.1mm
Lab Sample ID: 320-70797-12
Matrix: Water
Lab File ID: 12mr21adfs1_14.d
Analysis Method: 1613B
Date Collected: 03/03/2021 15:00
Extract. Method: 1613B
Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1022.1(mL)
Date Analyzed: 03/12/2021 20:08
Con. Extract Vol.: 20(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 469779
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		25-164
89059-46-1	13C-2,3,7,8-TCDF	61		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	67		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	61		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	61		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	68		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	73		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	66		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	66		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	68		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	68		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	84		26-138
114423-97-1	13C-OCDD	97		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		35-197

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d
Lims ID: 320-70797-A-12-A
Client ID: 11215702-Tank2-0.1mm
Sample Type: Client
Inject. Date: 12-Mar-2021 20:08:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-12-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:37:34 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: krenns Date: 16-Mar-2021 09:37:34

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.453	3242952	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.576	3040468	0.78	1.5437	60.7	60.7	0.1295	0.1295	60.73	
2,3,7,8-TCDF	18.602	91285	0.81	1.1258	2.667	2.667	0.0321	0.0321		M
A Non-2,3,7,8-sub-TCDF	18.115	50801	0.77	1.1258	1.515	1.484	0.0321	1.148		RQa
S Total TCDF					4.182	4.151	0.0321	0.0321		RQ
D 13C-2,3,7,8-TCDD	19.789	2200701	0.79	0.9687	70.1	70.1	0.1667	0.1667	70.05	
$ 37Cl4-2,3,7,8-TCDD	19.814	1300819		1.0841	37.0	37.0	0.0323	0.0323	92.50	
2,3,7,8-TCDD	19.797	20616	0.74	1.1904	0.7870	0.7870	0.0272	0.0272		
A Non-2,3,7,8-sub-TCDD	18.876						0.0272	0.0272		
S Total TCDD					0.7870	0.7870	0.0272	0.0272		
D 13C-1,2,3,7,8-PeCDF	25.635	2614889	1.55	1.3124	61.4	61.4	0.2780	0.2780	61.44	
1,2,3,7,8-PeCDF	25.659						0.0190	0.0190		
D 13C-2,3,4,7,8-PeCDF	27.008	2651871	1.54	1.3352	61.2	61.2	0.2732	0.2732	61.25	
2,3,4,7,8-PeCDF	27.024	2988	1.39	1.0579	0.1065	0.1065	0.0214	0.0214		
A F1 PeCDFs	22.791						0.009359	0.009359		
A Non-2,3,7,8-sub-PeCDF	26.224						0.0202	0.0202		
S Total PeCDF					0.1065	0.1065	0.0202	0.0202		
D 13C-1,2,3,7,8-PeCDD	27.757	1688652	1.56	0.7716	67.5	67.5	0.1565	0.1565	67.49	
1,2,3,7,8-PeCDD	27.799	1493	1.70	1.1372	0.0777	0.0777	0.0216	0.0216		M
A Non-2,3,7,8-sub-PeCDD	26.609						0.0216	0.0402		RQU
S Total PeCDD					0.0777	0.0777	0.0216	0.0216		
D 13C-1,2,3,4,7,8-HxCDF	33.528	2188881	0.53	1.0931	66.4	66.4	0.2081	0.2081	66.43	
1,2,3,4,7,8-HxCDF	33.570	5509	1.40	1.1831	0.2127	0.2127	0.0144	0.0144		
D 13C-1,2,3,6,7,8-HxCDF	33.731	2255809	0.53	1.1278	66.4	66.4	0.2017	0.2017	66.36	
1,2,3,6,7,8-HxCDF	33.731	3111	1.43	1.2484	0.1105	0.1105	0.0136	0.0136		M
D 13C-2,3,4,6,7,8-HxCDF	34.733	2160267	0.52	1.0552	67.9	67.9	0.2156	0.2156	67.92	
2,3,4,6,7,8-HxCDF	34.775	1217	1.24	1.2750	0.0504	0.0442	0.0120	0.0120		RQM
D 13C-1,2,3,7,8,9-HxCDF	35.760	2023876	0.54	0.9938	67.6	67.6	0.2289	0.2289	67.56	
1,2,3,7,8,9-HxCDF	35.785	2515	1.24	1.2953	0.1056	0.0959	0.0115	0.0115		RQM
A Non-2,3,7,8-sub-HxCDF	33.496						0.0128	0.0544		RQU
S Total HxCDF					0.4792	0.4633	0.0129	0.0129		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.549	3014283	1.26	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.994	1611967	1.24	0.7895	67.7	67.7	0.1897	0.1897	67.73	
1,2,3,4,7,8-HxCDD	35.010	1754	1.38	1.0950	0.0994	0.0994	0.0142	0.0142		M
D 13C-1,2,3,6,7,8-HxCDD	35.128	1870659	1.23	0.8495	73.1	73.1	0.1763	0.1763	73.06	
1,2,3,6,7,8-HxCDD	35.145	1331	1.13	1.0201	0.0697	0.0697	0.0144	0.0144		M
1,2,3,7,8,9-HxCDD	35.566	1627	1.35	1.1549	0.0809	0.0809	0.0131	0.0131		M
A Non-2,3,7,8-sub-HxCDD	34.039						0.0138	0.0138		U
S Total HxCDD					0.2500	0.2500	0.0139	0.0139		
D 13C-1,2,3,4,6,7,8-HpCDF	37.802	1871594	0.45	0.7854	79.1	79.1	0.3566	0.3566	79.06	
1,2,3,4,6,7,8-HpCDF	37.819	5284	1.18	1.4859	0.1900	0.1900	0.0166	0.0166		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.149	1827070	0.45	0.7230	83.8	83.8	0.3874	0.3874	83.84	
1,2,3,4,7,8,9-HpCDF	39.166	2633	1.04	1.4048	0.1133	0.1026	0.0170	0.0170		RQM
A Non-2,3,7,8-sub-HpCDF	38.451	1371	0.90	1.4453	0.0513	0.0513	0.0167	0.0513		
S Total HpCDF					0.3546	0.3439	0.0168	0.0168		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.838	1727154	1.05	0.6413	89.3	89.3	0.2663	0.2663	89.34	
1,2,3,4,6,7,8-HpCDD	38.854	5805	1.15	1.1489	0.2925	0.2925	0.0124	0.0124		
A Non-2,3,7,8-sub-HpCDD	39.230	3444	0.94	1.1489	0.1736	0.1736	0.0124	0.1736		Ma
S Total HpCDD					0.4661	0.4661	0.0124	0.0124		
D 13C-OCDD	41.316	2992991	0.90	0.5141	193.1	193.1	0.2539	0.2539	96.57	
OCDF	41.392	6648	0.85	1.5776	0.2816	0.2816	0.0236	0.0236		M
OCDD	41.325	22365	0.87	1.1706	1.277	1.277	0.0215	0.0215		M

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d
Lims ID: 320-70797-A-12-A
Client ID: 11215702-Tank2-0.1mm
Sample Type: Client
Inject. Date: 12-Mar-2021 20:08:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-70797-a-12-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 16-Mar-2021 09:37:34 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1616

First Level Reviewer: krenns Date: 16-Mar-2021 09:37:34

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.453	19.417	2		1450229	234942	198	495	1187		
333.9338	19.453	19.417	2		1792723	292731	143	357	2047	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.576	18.557	1	0.955	1330088	221100	250	625	884		
317.9389	18.584	18.557	2	0.955	1710380	282303	172	430	1641	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	18.602	18.574	2	1.001	40875	6514	22	55	296		M
305.8987	18.610	18.574	2	1.002	50410	7728	51	127	152	0.81(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQa
303.9016	17.983	18.115	-8	0.968	17473	2974	22	55	135		
305.8987	17.965	18.115	-9	0.967	21821	3642	51	127	71	0.80(0.65-0.89)	
303.9016	19.315	18.115	72	1.040	3026	508	22	55	23		
	Empc Correction				2398	348	22	55	16		
305.8987	19.281	18.115	70	1.038	3115	452	51	127	9	0.97(0.65-0.89)	
303.9016	21.577	18.115	207	1.162	3041	443	22	55	20		a
	Empc Correction				2607	366	22	55	17		
305.8987	21.594	18.115	208	1.162	3387	476	51	127	9	0.90(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.789	19.761	2	1.017	968546	143219	198	495	723		
333.9338	19.789	19.761	2	1.017	1232155	180966	143	357	1265	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.814	19.778	2	1.019	1300819	196025	74	185	2649		
2,3,7,8-TCDD											
319.8965	19.797	19.787	1	1.000	8765	1260	31	77	41		
321.8936	19.832	19.787	3	1.002	11851	1777	11	27	162	0.74(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-TCDD											
319.8965	18.876						31	77			
321.8936	18.876						11	27			
13C-1,2,3,7,8-PeCDF											
351.9000	25.635	25.600	2	1.318	1588658	277696	495	1237	561		
353.8970	25.626	25.600	2	1.317	1026231	179149	275	687	651	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.625						10	25			
341.8567	25.625						29	72			
13C-2,3,4,7,8-PeCDF											
351.9000	27.008	26.980	2	1.388	1607798	258909	495	1237	523		
353.8970	27.008	26.980	2	1.388	1044073	168806	275	687	614	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.024	27.006	1	1.001	1740	284	10	25	28		
341.8567	27.050	27.006	3	1.002	1248	165	29	72	6	1.39(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.791						1	2			
341.8567	22.791						17	42			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.224						10	25			
341.8567	26.224						29	72			
13C-1,2,3,7,8-PeCDD											
367.8949	27.757	27.721	2	1.427	1028894	160539	154	385	1042		
369.8919	27.757	27.721	2	1.427	659758	104015	101	252	1030	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	27.799	27.755	3	1.002	940	142	20	50	7		M
357.8516	27.791	27.755	2	1.001	553	109	6	15	18	1.70(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.609	26.609	0	0.959	540	106	20	50			
	Empc Correction				359	83	20	50	0		
357.8516	26.609	26.609	0	0.959	232	54	6	15		2.33(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.528	33.504	1	0.943	756884	131729	184	460	716		
385.8610	33.528	33.504	1	0.943	1431997	250169	445	1112	562	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.570	33.521	3	1.001	3213	532	17	42	31		
375.8178	33.545	33.521	1	1.001	2296	421	9	22	47	1.40(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.731	33.706	1	0.949	781371	132705	184	460	721		
385.8610	33.731	33.706	1	0.949	1474438	249466	445	1112	561	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											M
373.8208	33.731	33.723	0	1.000	1833	376	17	42	22		M
375.8178	33.739	33.723	1	1.000	1278	257	9	22	29	1.43(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.733	34.709	1	0.977	738170	143930	184	460	782		
385.8610	34.733	34.709	1	0.977	1422097	282333	445	1112	634	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											RQM
373.8208	34.775	34.725	3	1.001	674	209	17	42	12		M
375.8178	34.766	34.725	2	1.001	714	173	9	22	19	0.94(1.05-1.43)	M
	Empc Correction				543	168	9	22	19		
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.760	35.736	1	1.006	708811	152723	184	460	830		
385.8610	35.760	35.736	1	1.006	1315065	283098	445	1112	636	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	35.785	35.753	2	1.001	1646	382	17	42	22		M
	Empc Correction				1392	321	17	42	19		
375.8178	35.768	35.753	1	1.000	1123	259	9	22	29	1.47(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											U
373.8208	31.600	33.496	-114	0.942	911	123	17	42	7		
	Empc Correction				689	112	17	42	0		
375.8178	31.617	33.496	-113	0.943	556	91	9	22	10	1.64(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.549	35.525	1		1682125	381516	226	565	1688		
403.8529	35.549	35.525	1		1332158	309412	188	470	1646	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	34.994	34.970	1	0.984	893210	205411	226	565	909		
403.8529	34.994	34.970	1	0.984	718757	161435	188	470	859	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.010	34.995	1	1.000	1016	307	11	27	28		M
391.8127	35.010	34.995	1	1.000	738	159	12	30	13	1.38(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.128	35.105	1	0.988	1031849	215934	226	565	955		
403.8529	35.128	35.105	1	0.988	838810	172759	188	470	919	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											M
389.8158	35.145	35.121	1	1.000	707	151	11	27	14		M
391.8127	35.137	35.121	1	1.000	624	210	12	30	18	1.13(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8158	35.566	35.542	1	1.016	936	239	11	27	22		
391.8127	35.558	35.542	1	1.016	691	170	12	30	14	1.35(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											U
389.8158	34.039						11	27			
391.8127	34.039						12	30			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.802	37.786	1	1.063	576391	152384	286	715	533		
419.8220	37.802	37.786	1	1.063	1295203	343727	488	1220	704	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	37.819	37.794	1	1.000	2862	780	35	87	22		
409.7788	37.819	37.794	1	1.000	2422	646	14	35	46	1.18(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.149	39.133	1	1.101	566883	162106	286	715	567		
419.8220	39.149	39.133	1	1.101	1260187	350132	488	1220	717	0.45(0.37-0.51)	

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8,9-HpCDF											RQM
407.7817	39.166	39.142	1	1.000	1618	474	35	87	14		
	Empc Correction				1342	384	35	87	11		
409.7788	39.166	39.142	1	1.000	1291	370	14	35	26	1.25(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.231	38.451	-13	1.011	651	204	35	87	6		
409.7788	38.214	38.451	-14	1.011	720	255	14	35	18	0.90(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.838	38.822	1	1.092	886663	257653	235	587	1096		
437.8140	38.838	38.822	1	1.092	840491	246329	237	592	1039	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.854	38.830	1	1.000	3100	887	19	47	47		
425.7737	38.846	38.830	1	1.000	2705	727	10	25	73	1.15(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											Ma
423.7767	38.155	39.230	-64	0.982	1667	432	19	47	23		M
425.7737	38.164	39.230	-64	0.983	1777	538	10	25	54	0.94(0.88-1.20)	M
13C-OCDD											
469.7780	41.316	41.293	1	1.162	1415527	388887	137	342	2839		
471.7750	41.308	41.293	1	1.162	1577464	444212	224	560	1983	0.90(0.76-1.02)	
OCDF											M
441.7428	41.392	41.377	1	1.002	3058	876	20	50	44		M
443.7399	41.401	41.377	1	1.002	3590	879	42	105	21	0.85(0.76-1.02)	
OCDD											M
457.7377	41.325	41.301	1	1.000	10427	3002	20	50	150		M
459.7348	41.316	41.301	1	1.000	11938	3602	22	55	164	0.87(0.76-1.02)	M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Lims ID:	320-70797-A-12-A		
Client ID:	11215702-Tank2-0.1mm		
Inject. Date:	12-Mar-2021 20:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	13

Non-2,3,7,8-sub-TCDF, RT: 18.115

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3040468	503403

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3040468	503403

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.983	17473	2974	21821	3642	1.15	0.80	
19.315	3026	508	3115	452	0.1794	0.97	RQ
19.315	2398	348	3115	452	0.1611		Empc Correction
21.577	3041	443	3387	476	0.1878	0.90	RQa
21.577	2607	366	3387	476	0.1751		Empc Correction
Signal Totals:							
	22478	3688	28323	4570			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	51863	8495				0.83	RQa
	50801	8258					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.515 = (51863 * 100.000) / (3040468 * 1.126)
Empc Amount: 1.484 = (50801 * 100.000) / (3040468 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d
Lims ID: 320-70797-A-12-A
Client ID: 11215702-Tank2-0.1mm
Inject. Date: 12-Mar-2021 20:08:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 469779
Lims Sample ID: 13

Non-2,3,7,8-sub-PeCDD, RT: 26.609

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1688652	264554

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1688652	264554

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
28.641	540	106	232	54	0.0402	2.33	RQ
28.641	359	83	232	54			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Lims ID:	320-70797-A-12-A		
Client ID:	11215702-Tank2-0.1mm		
Inject. Date:	12-Mar-2021 20:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDF, RT: 33.496

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	2188881	381898
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	2255809	382171
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	2160267	426263
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	2023876	435821

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	2157208	406538

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
31.600	911	123	556	91	0.0544	1.64	RQ
31.600	689	112	556	91			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Lims ID:	320-70797-A-12-A		
Client ID:	11215702-Tank2-0.1mm		
Inject. Date:	12-Mar-2021 20:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDD, RT: 34.039

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1611967	366846
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	1870659	388693
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	1741313	377769

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Lims ID:	320-70797-A-12-A		
Client ID:	11215702-Tank2-0.1mm		
Inject. Date:	12-Mar-2021 20:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDF, RT: 38.451

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.486	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	1871594	496111
1,2,3,4,7,8,9-HpCDF	1.405	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	1827070	512238

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.445		100.000	1849332	504174

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.231	651	204	720	255	0.0513	0.90	
Signal Totals:							
	651	204	720	255			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1371	459				0.90	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0513 = (1371 * 100.000) / (1849332 * 1.445)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Lims ID:	320-70797-A-12-A		
Client ID:	11215702-Tank2-0.1mm		
Inject. Date:	12-Mar-2021 20:08:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDD, RT: 39.230

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1727154	503982

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1727154	503982

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.155	1667	432	1777	538	0.1736	0.94	M
Signal Totals:							
	1667	432	1777	538			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3444	970				0.94	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1736 = (3444 * 100.000) / (1727154 * 1.149)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	18.60
Area:	39662
Amount:	2.631403
Amount Units:	pg/ul

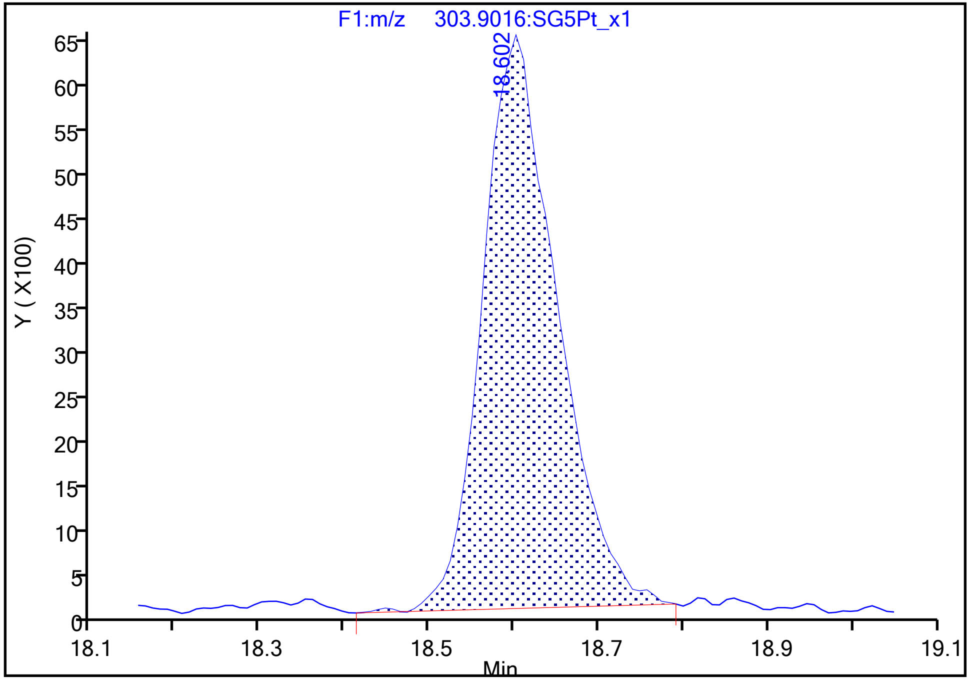

Manual Integration Results

RT:	18.60
Area:	40875
Amount:	2.666840
Amount Units:	pg/ul

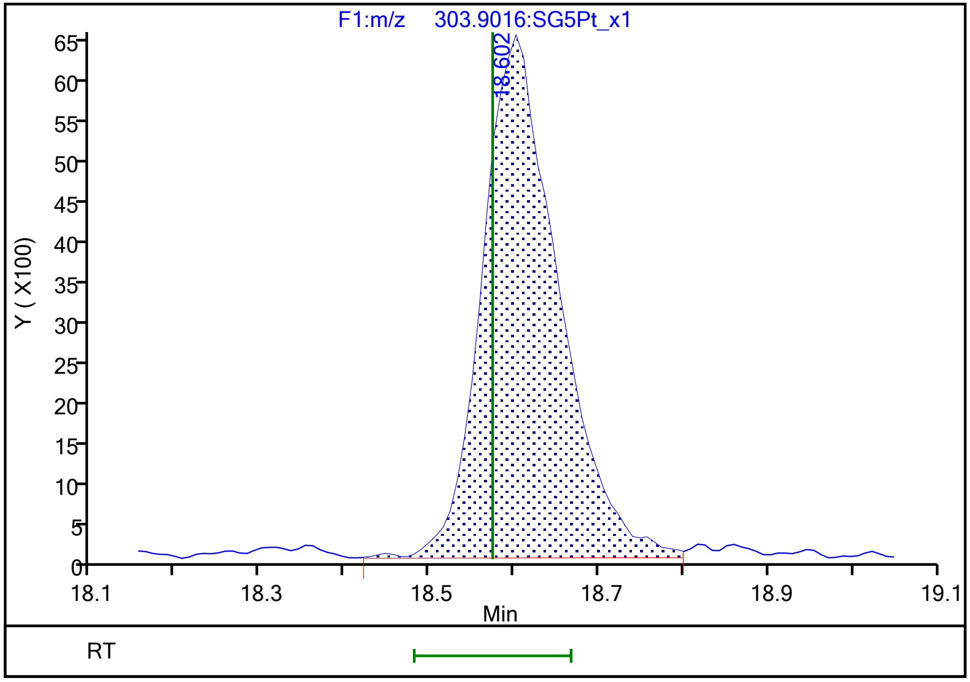

Reviewer: dadunj, 16-Mar-2021 09:21:39

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

RT: 27.80
Area: 969
Amount: 0.079258
Amount Units: pg/ul

Processing Integration Results

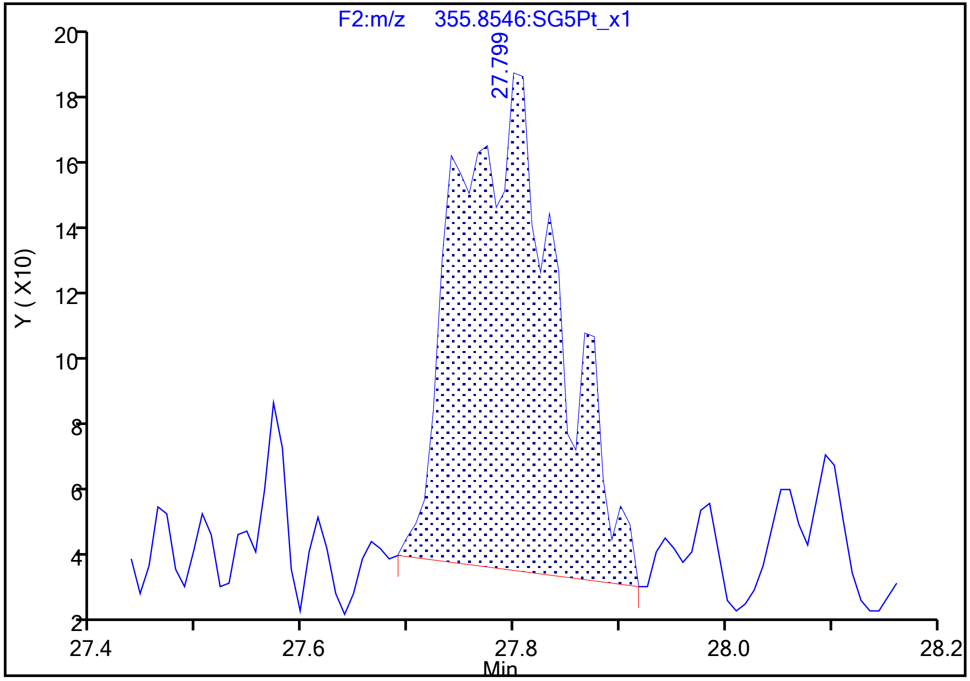

RT: 27.80
Area: 940
Amount: 0.077748
Amount Units: pg/ul

Manual Integration Results

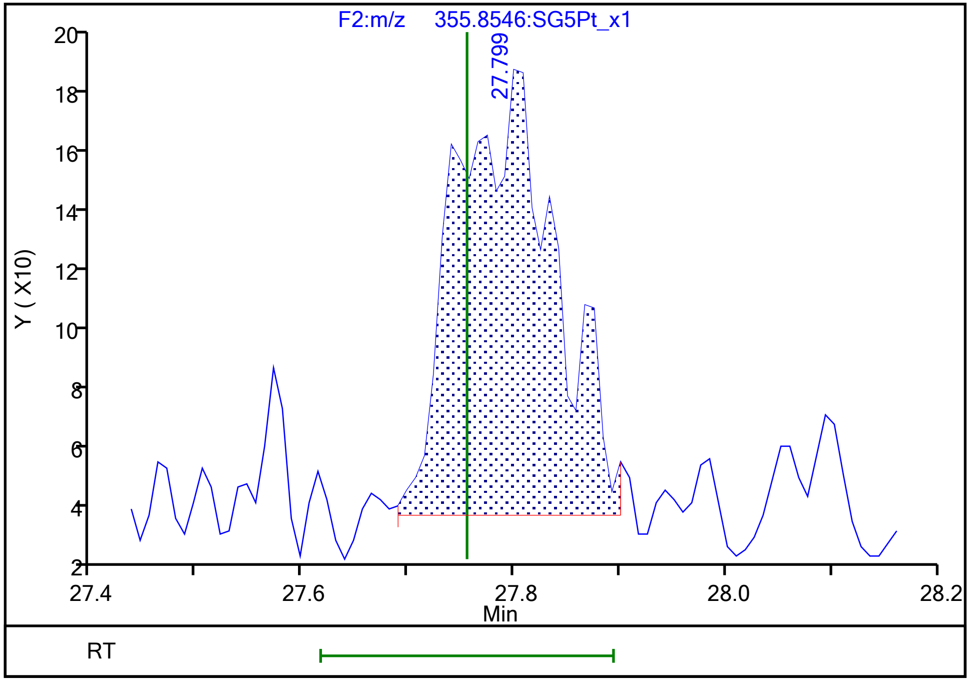

Reviewer: dadunj, 16-Mar-2021 09:22:22
Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

RT:	33.73
Area:	2290
Amount:	0.126699
Amount Units:	pg/ul

Processing Integration Results

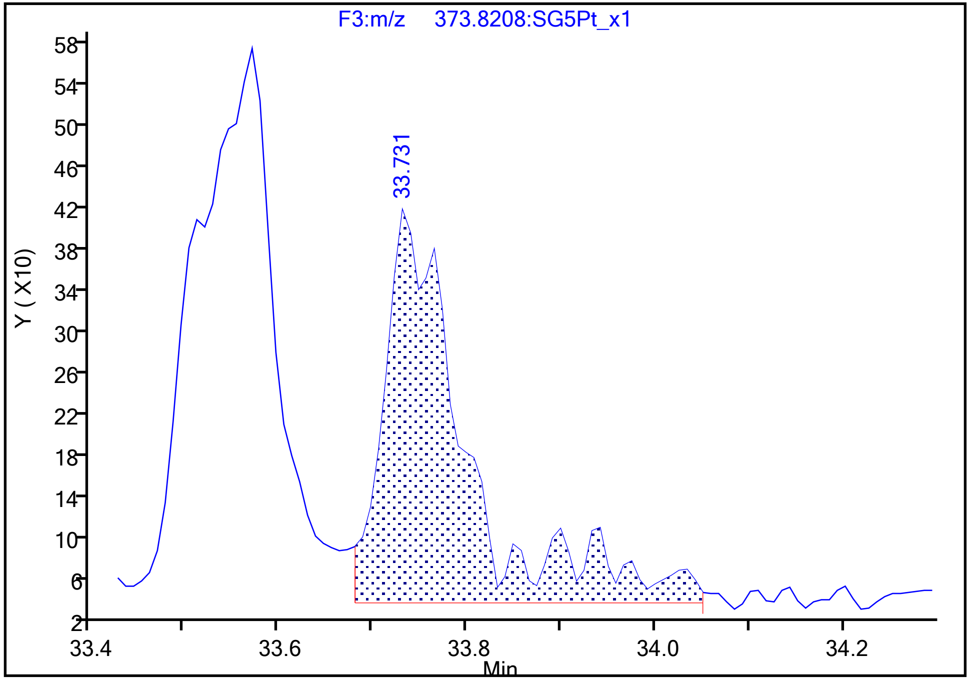

RT:	33.73
Area:	1833
Amount:	0.110471
Amount Units:	pg/ul

Manual Integration Results

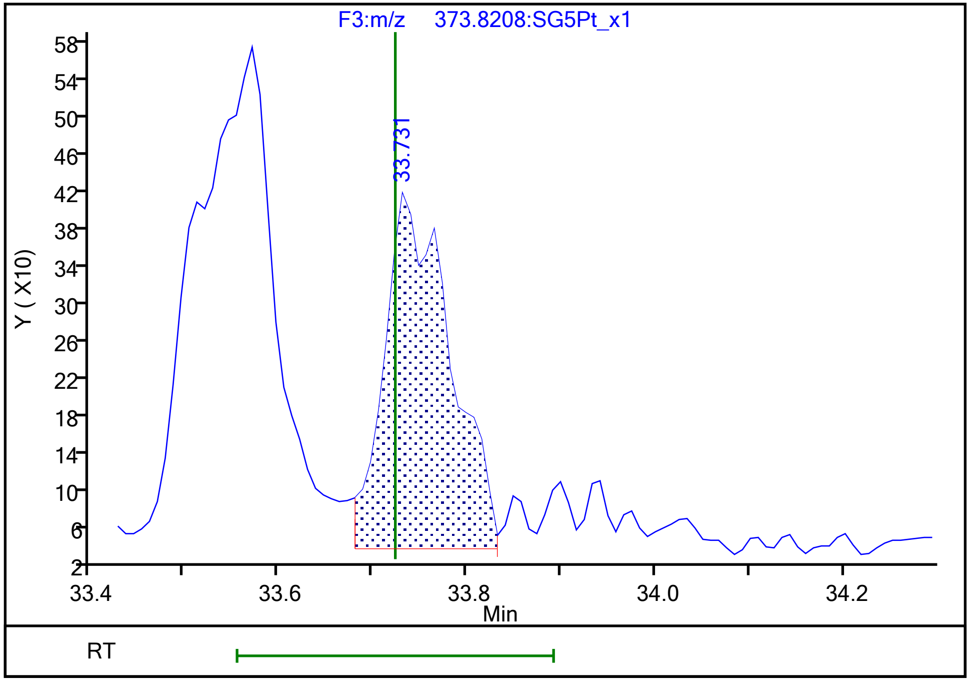

Reviewer: dadunj, 16-Mar-2021 09:22:38

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT: 34.77
Area: 398
Amount: 0.046980
Amount Units: pg/ul

Processing Integration Results

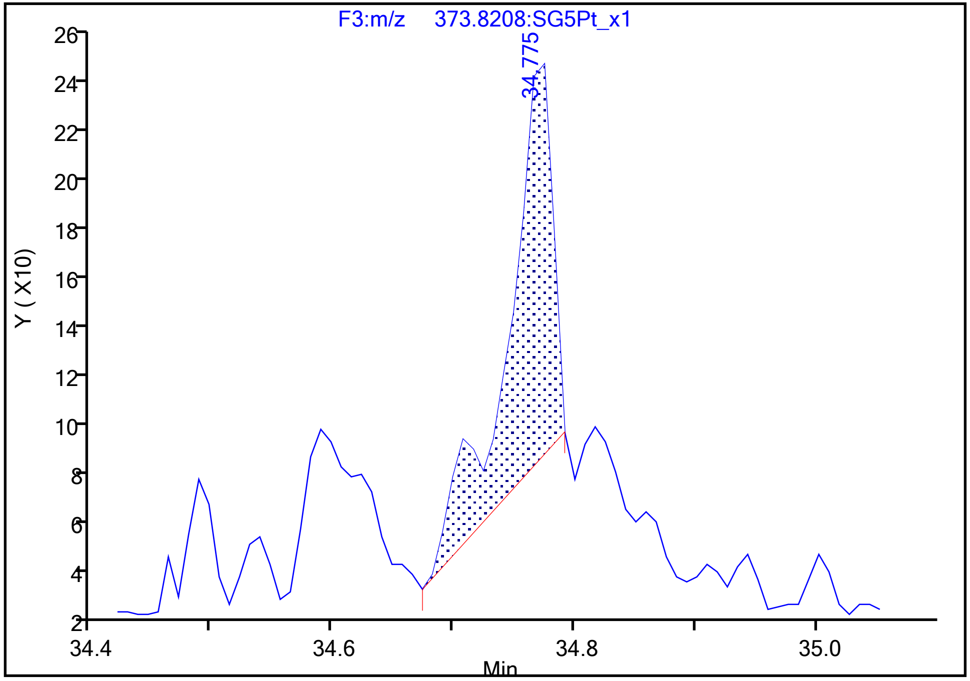

RT: 34.77
Area: 674
Amount: 0.050393
Amount Units: pg/ul

Manual Integration Results

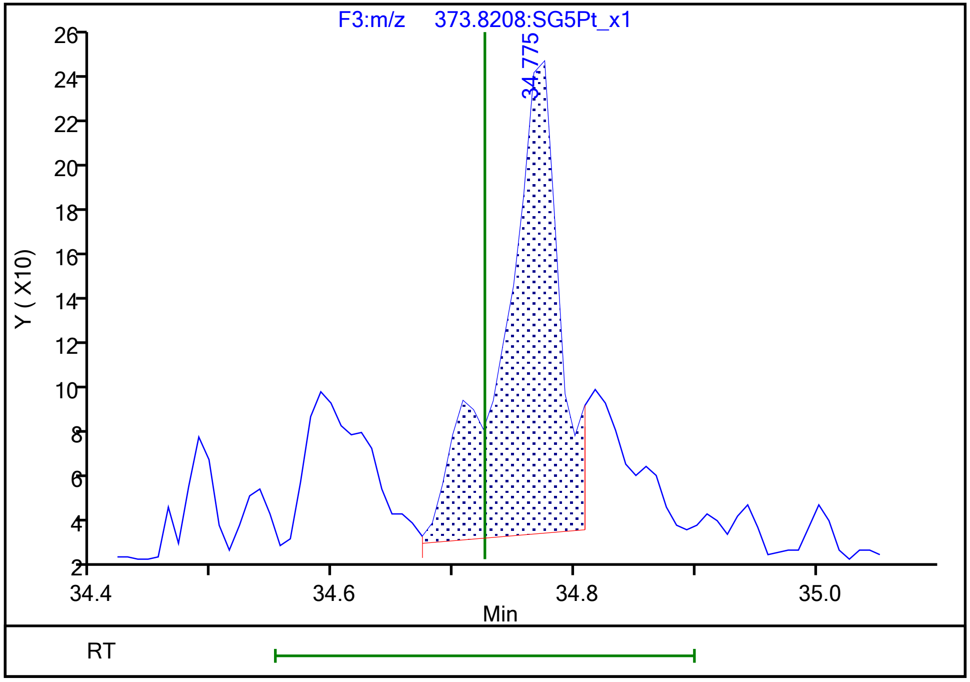

Reviewer: dadunj, 16-Mar-2021 09:22:46

Audit Action: Manually Integrated Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:37:35

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT:	34.77
Area:	896
Amount:	0.046980
Amount Units:	pg/ul

Processing Integration Results

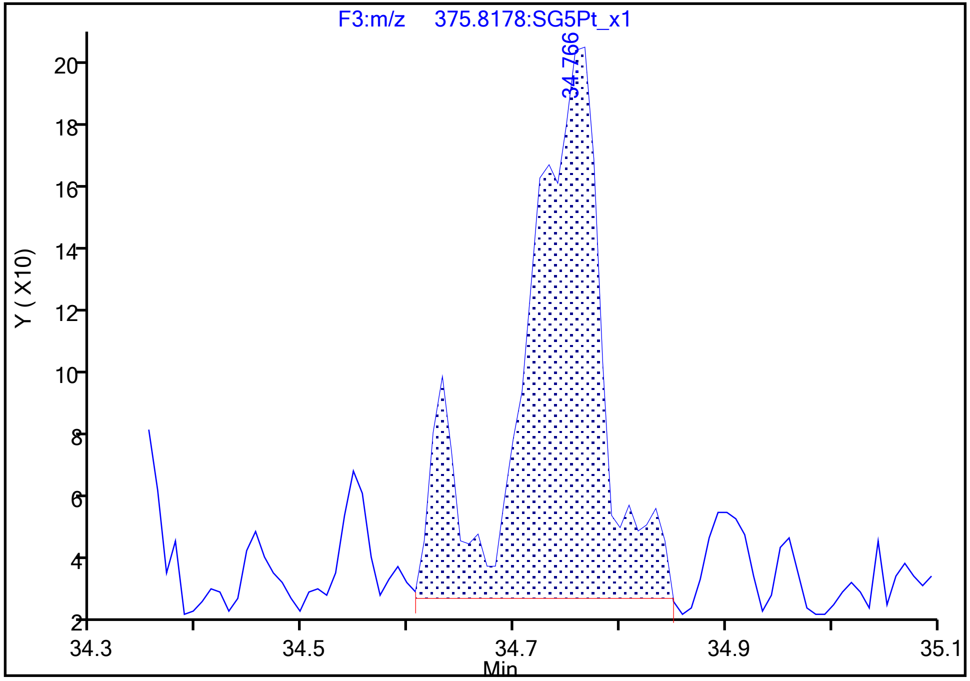

RT:	34.77
Area:	714
Amount:	0.050393
Amount Units:	pg/ul

Manual Integration Results

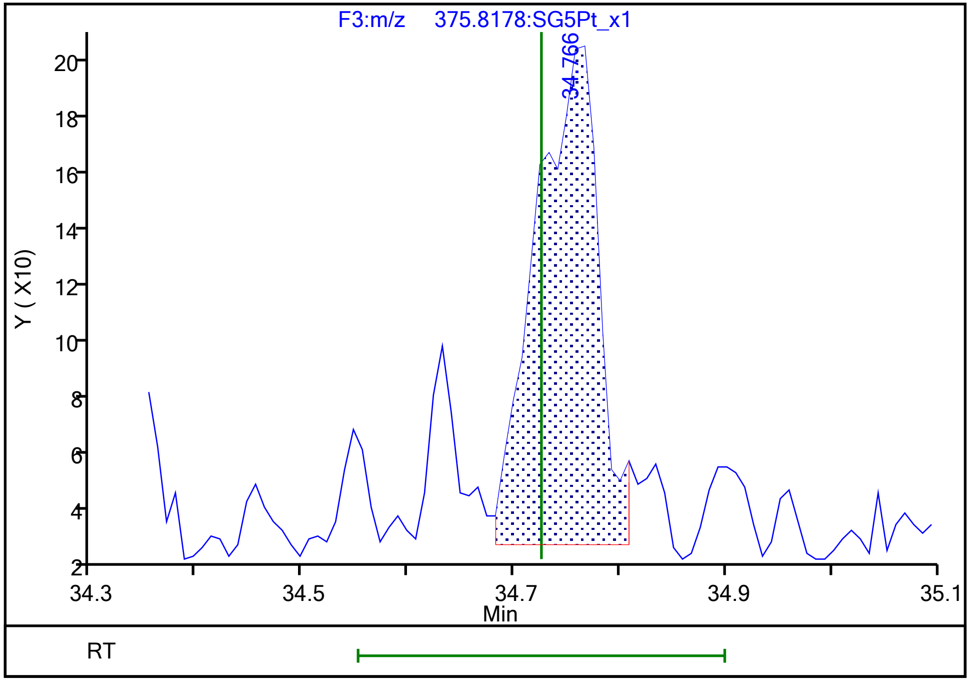

Reviewer: dadunj, 16-Mar-2021 09:22:52

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT:	35.78
Area:	2020
Amount:	0.119892
Amount Units:	pg/ul

Processing Integration Results

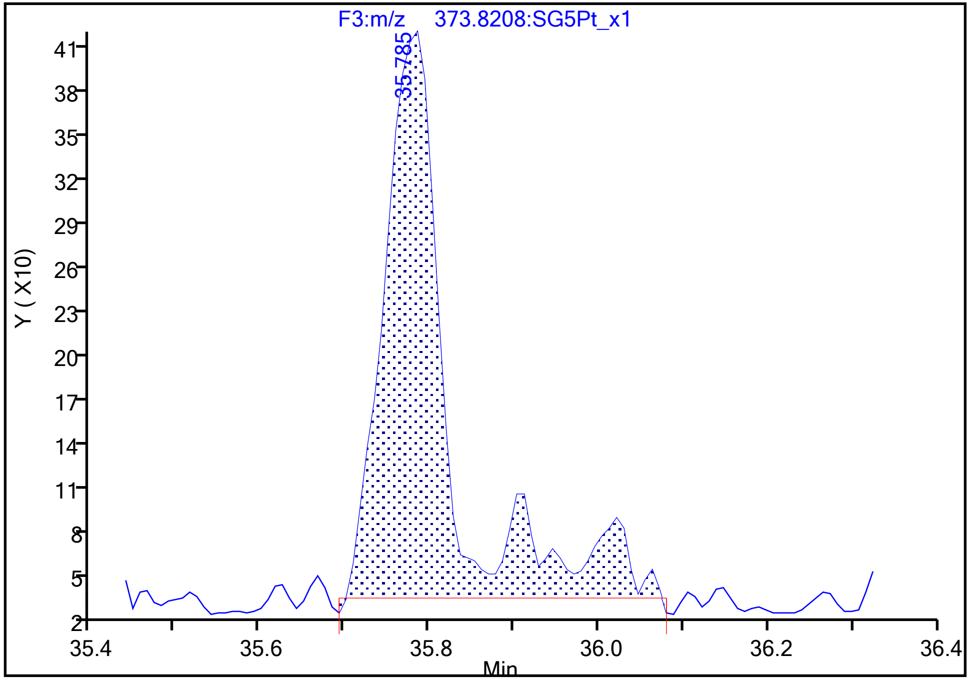

RT:	35.78
Area:	1646
Amount:	0.105626
Amount Units:	pg/ul

Manual Integration Results

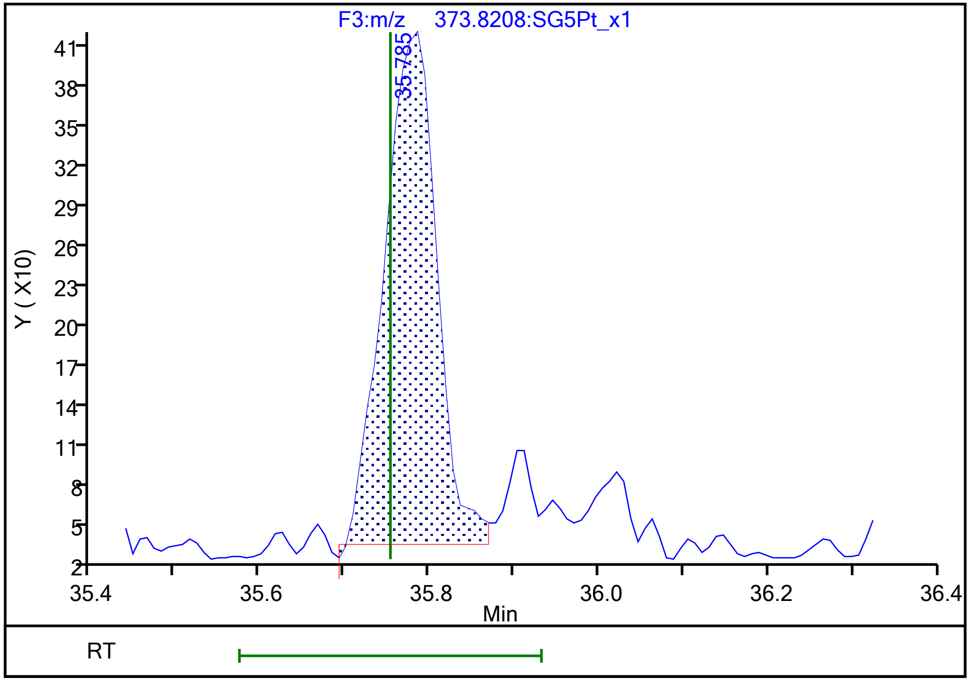

Reviewer: dadunj, 16-Mar-2021 09:22:57

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d
Injection Date: 12-Mar-2021 20:08:00
Instrument ID: DFS 1
Lims ID: 320-70797-A-12-A
Lab Sample ID: 320-70797-12
Client ID: 11215702-Tank2-0.1mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 13
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 35.01
Area: 1075
Amount: 0.102718
Amount Units: pg/ul

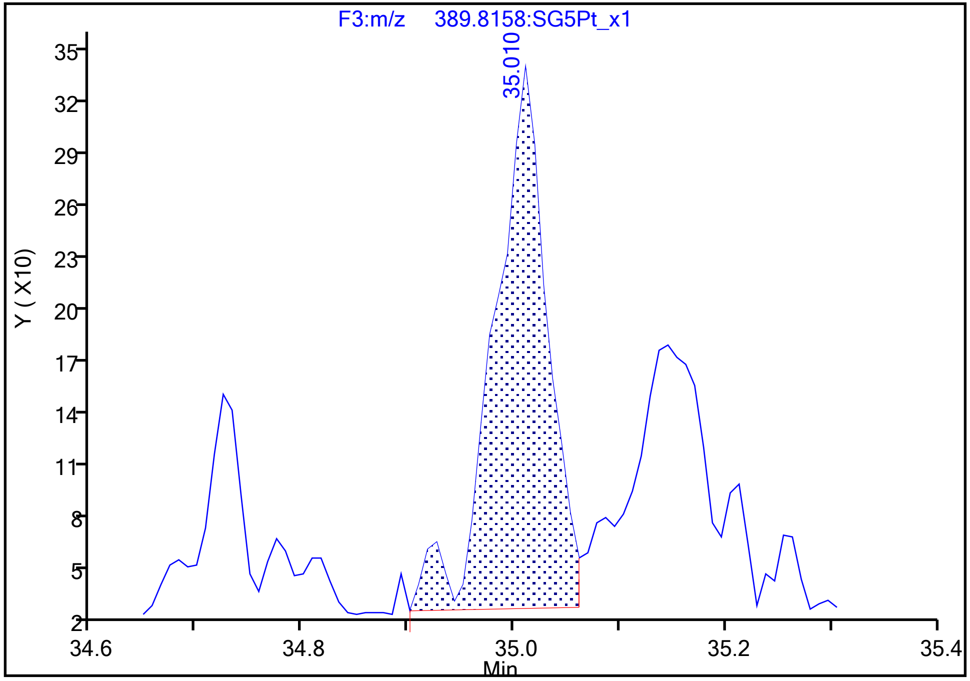

Manual Integration Results

RT: 35.01
Area: 1016
Amount: 0.099375
Amount Units: pg/ul

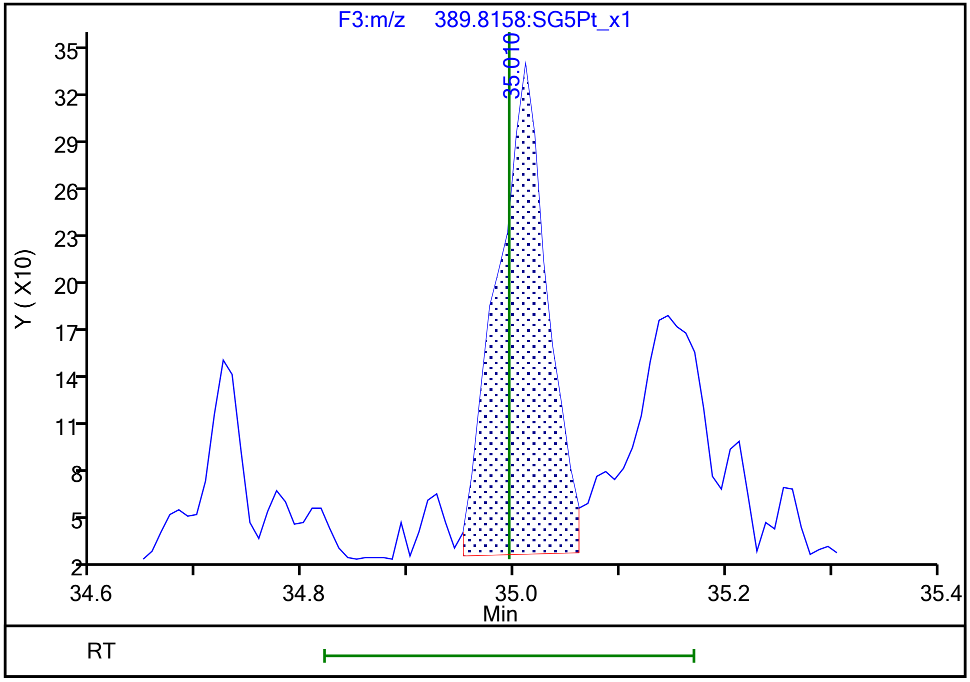

Reviewer: dadunj, 16-Mar-2021 09:23:08

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT: 35.14
Area: 683
Amount: 0.078602
Amount Units: pg/ul

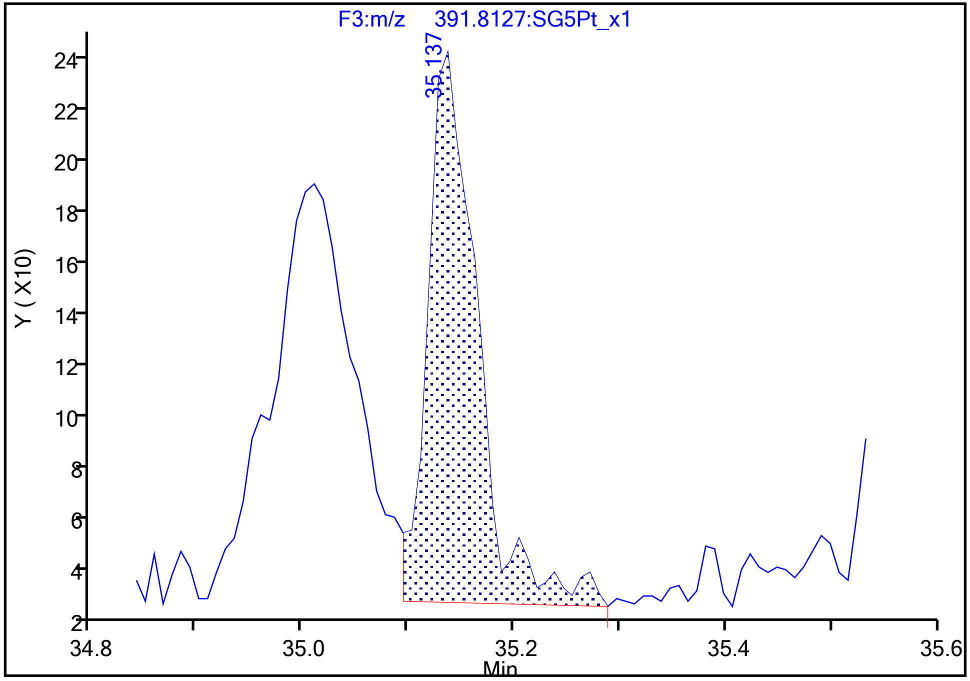

Manual Integration Results

RT: 35.14
Area: 624
Amount: 0.069746
Amount Units: pg/ul

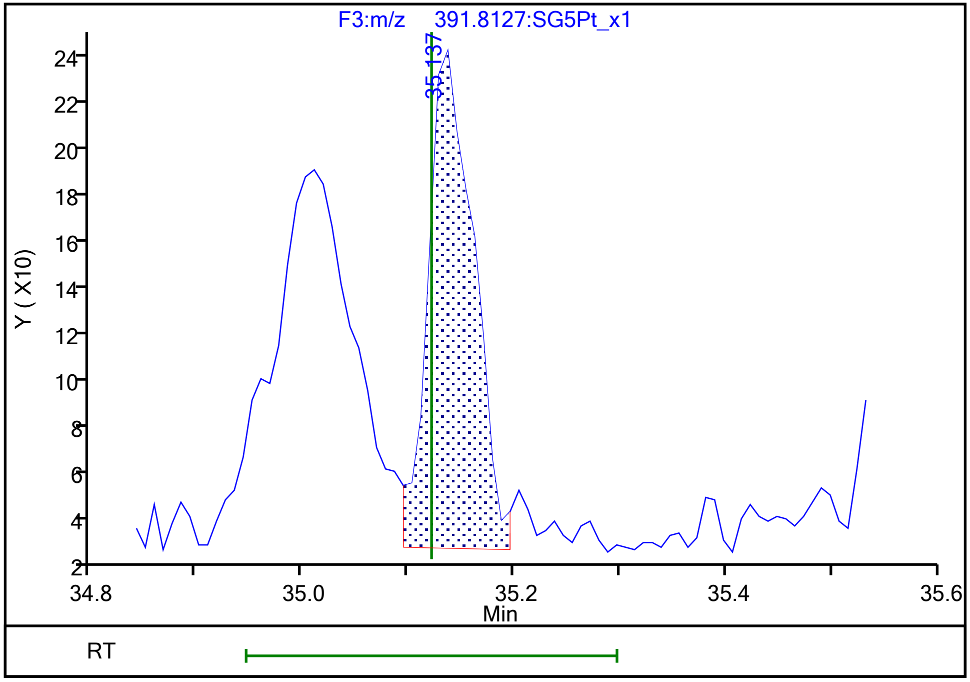

Reviewer: dadunj, 16-Mar-2021 09:23:14

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT: 35.15
Area: 817
Amount: 0.078602
Amount Units: pg/ul

Processing Integration Results

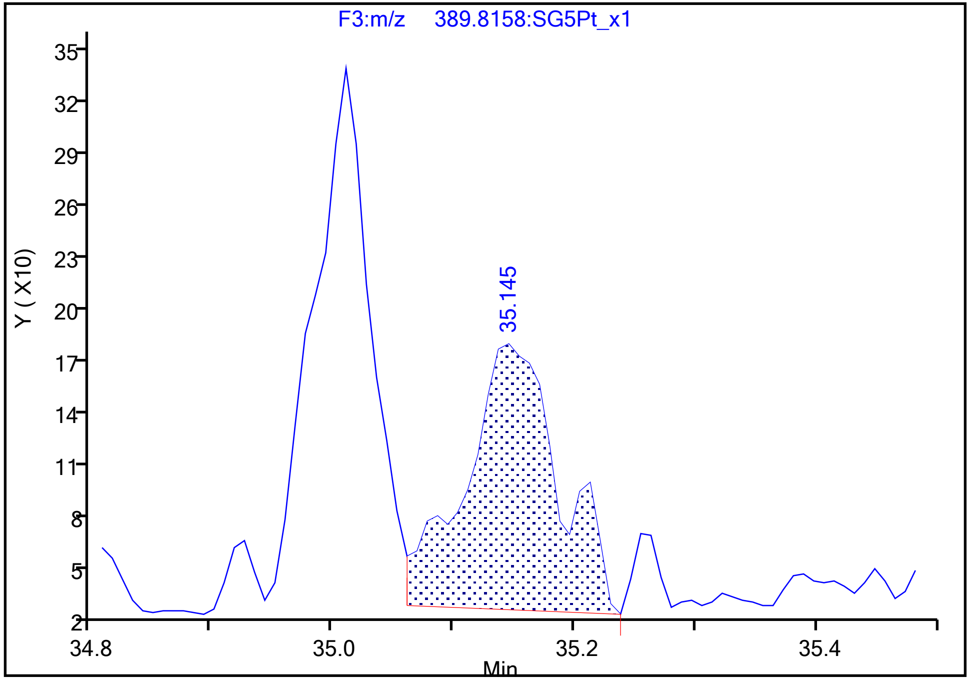

RT: 35.15
Area: 707
Amount: 0.069746
Amount Units: pg/ul

Manual Integration Results

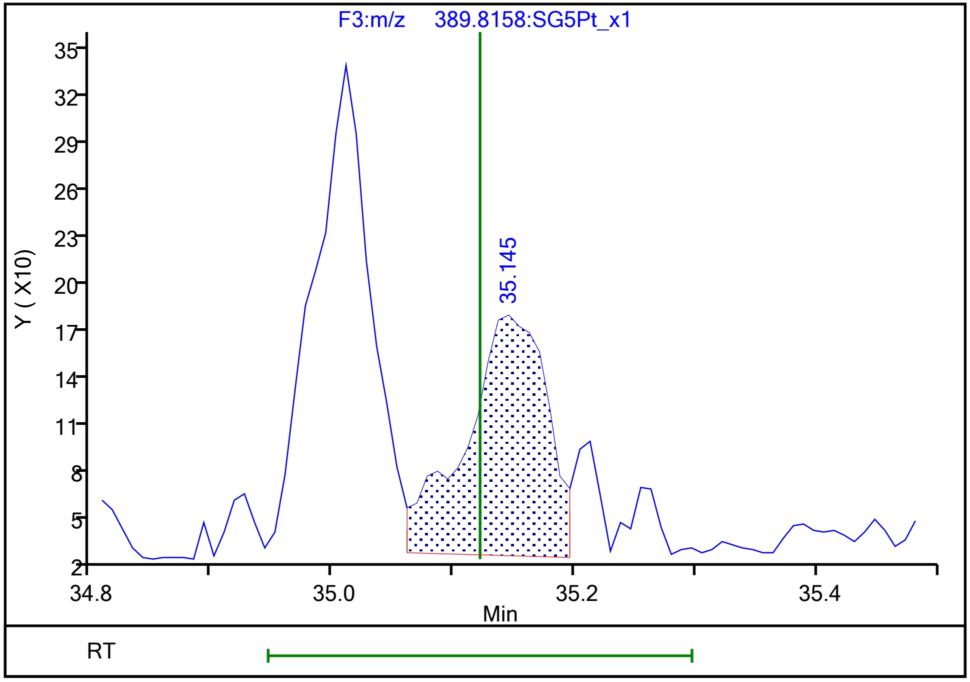

Reviewer: dadunj, 16-Mar-2021 09:23:19

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Processing Integration Results

RT:	35.56
Area:	824
Amount:	0.087520
Amount Units:	pg/ul

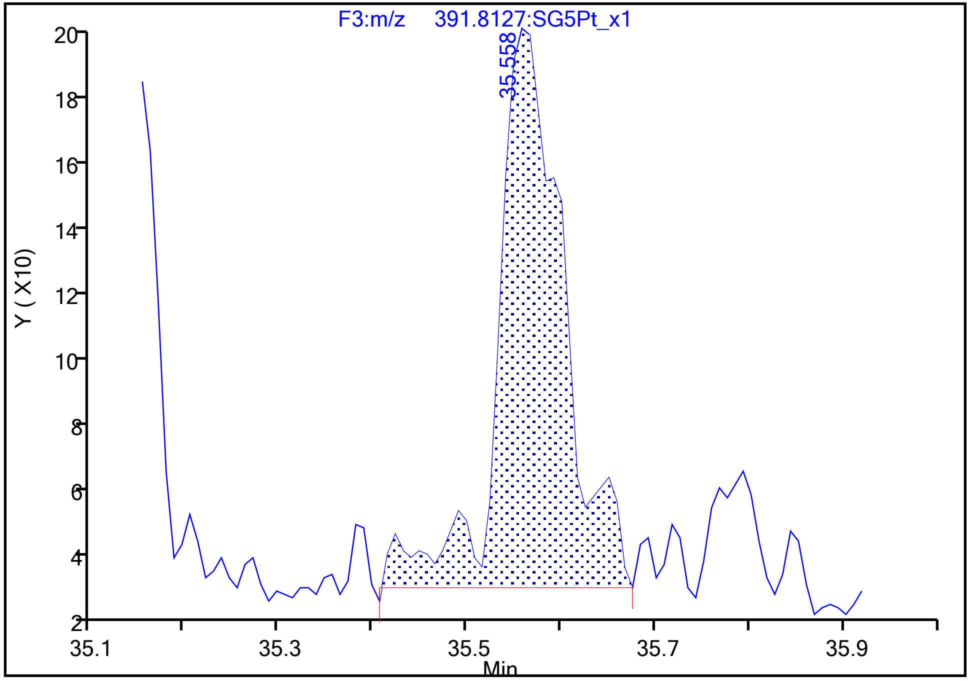

Manual Integration Results

RT:	35.56
Area:	691
Amount:	0.080906
Amount Units:	pg/ul

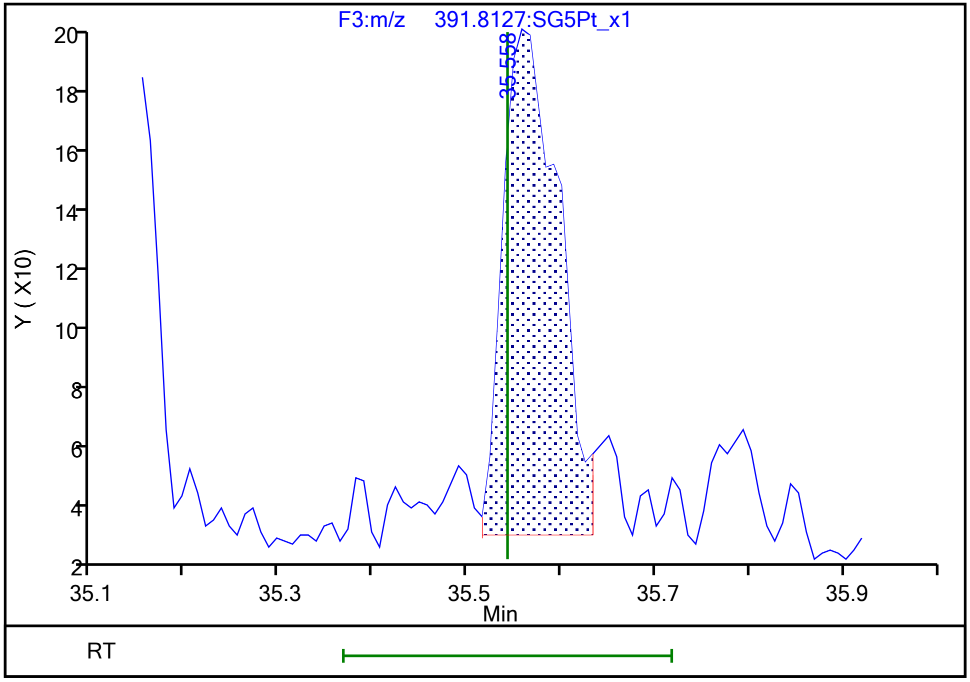

Reviewer: dadunj, 16-Mar-2021 09:23:26

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 37.82
Area: 2574
Amount: 0.195474
Amount Units: pg/ul

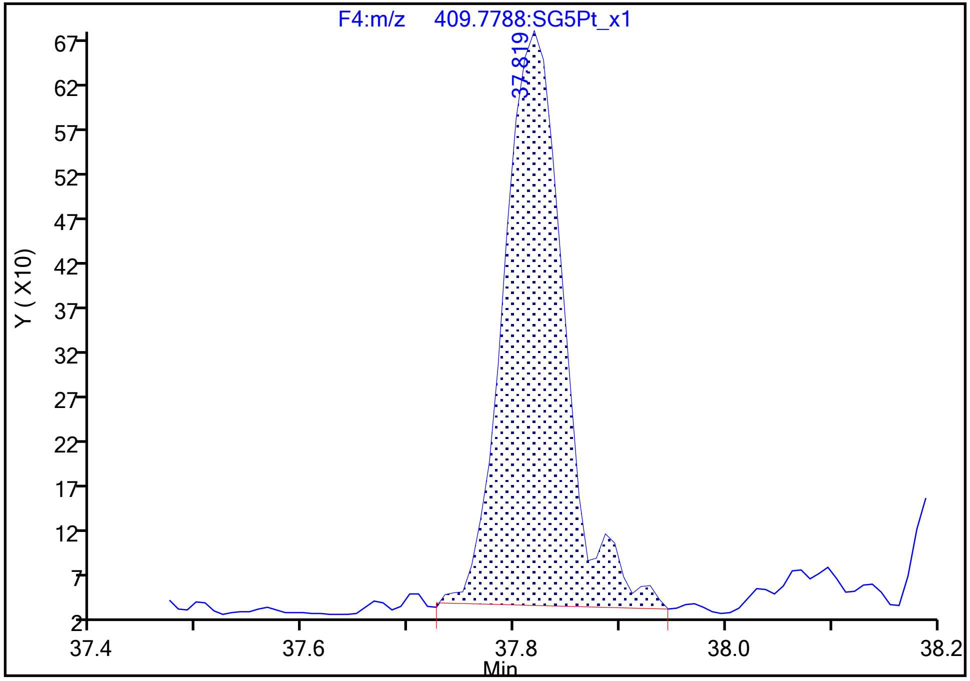

Manual Integration Results

RT: 37.82
Area: 2422
Amount: 0.190008
Amount Units: pg/ul

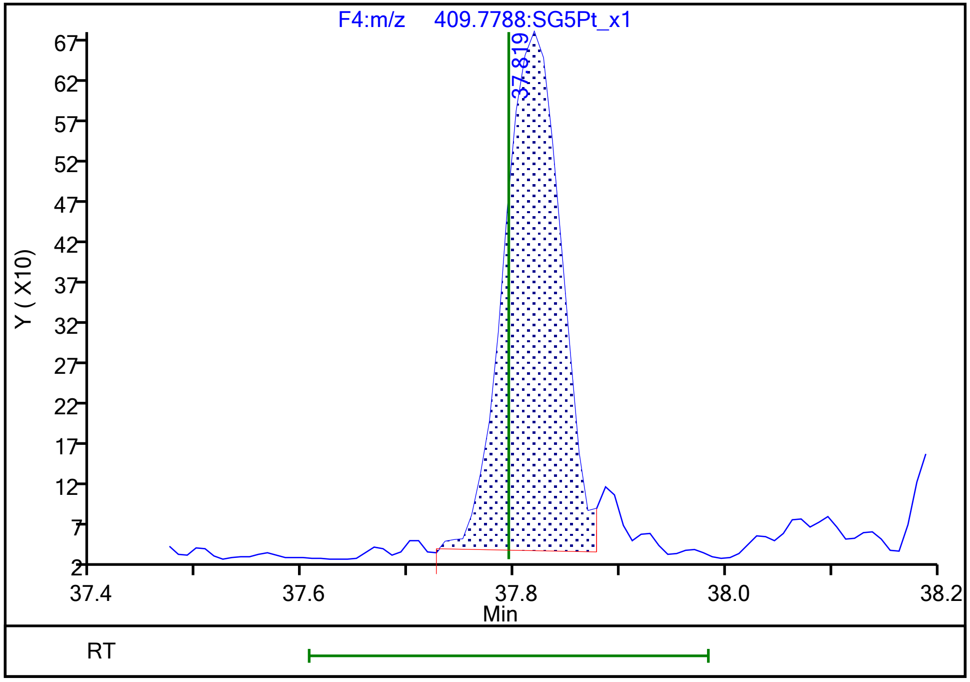

Reviewer: dadunj, 16-Mar-2021 09:23:34

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:37:35

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT:	39.17
Area:	1397
Amount:	0.117469
Amount Units:	pg/ul

Processing Integration Results

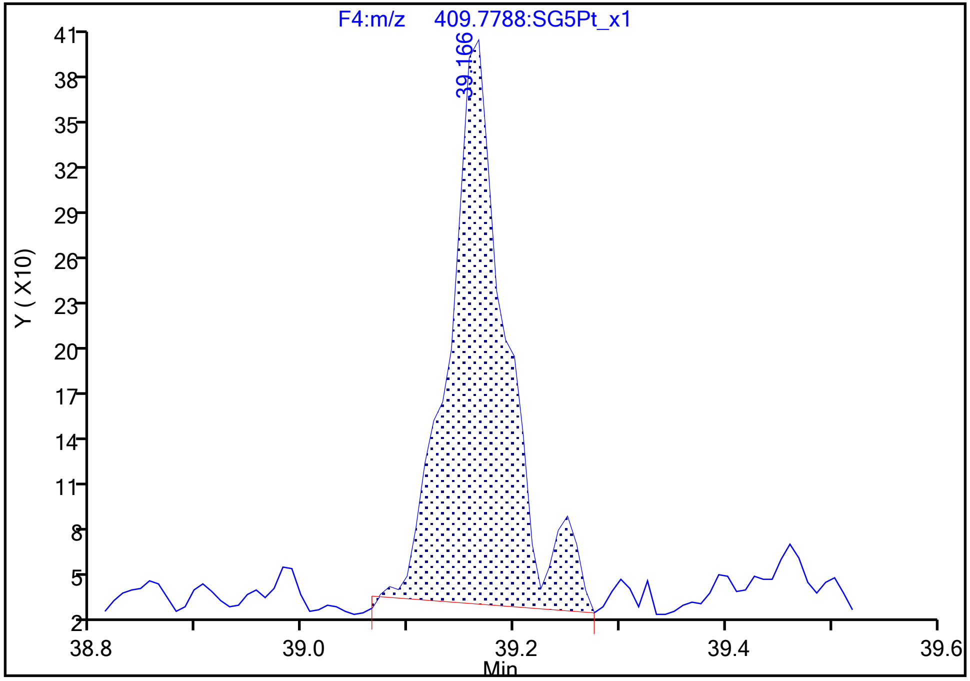

RT:	39.17
Area:	1291
Amount:	0.113339
Amount Units:	pg/ul

Manual Integration Results

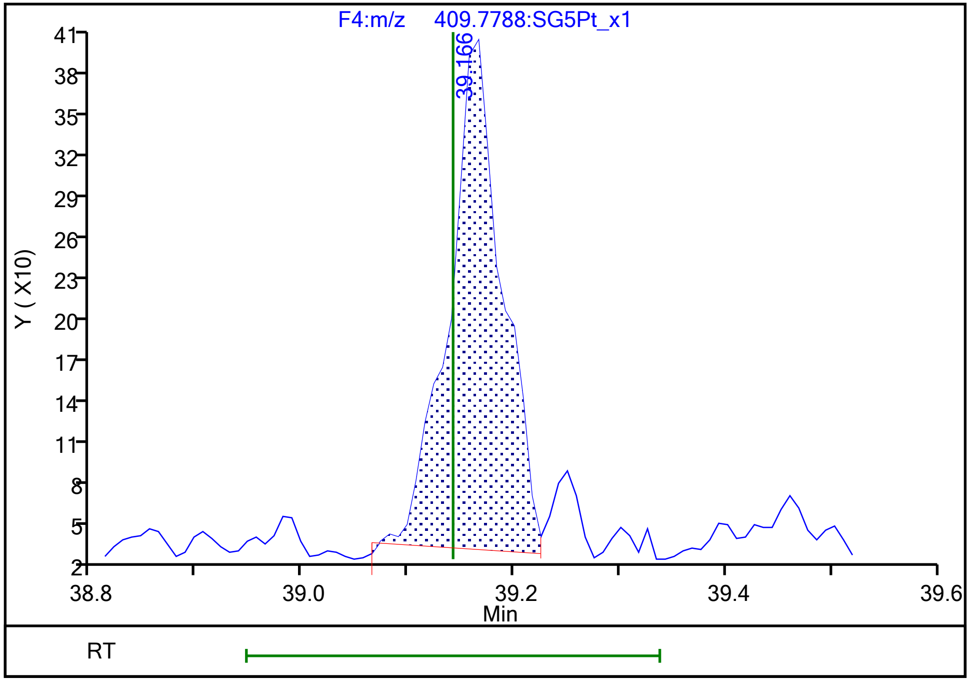

Reviewer: dadunj, 16-Mar-2021 09:23:38

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:37:35

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.75- 39.71)

Signal: 1

Processing Integration Results

RT = 38.155 Area = 1892

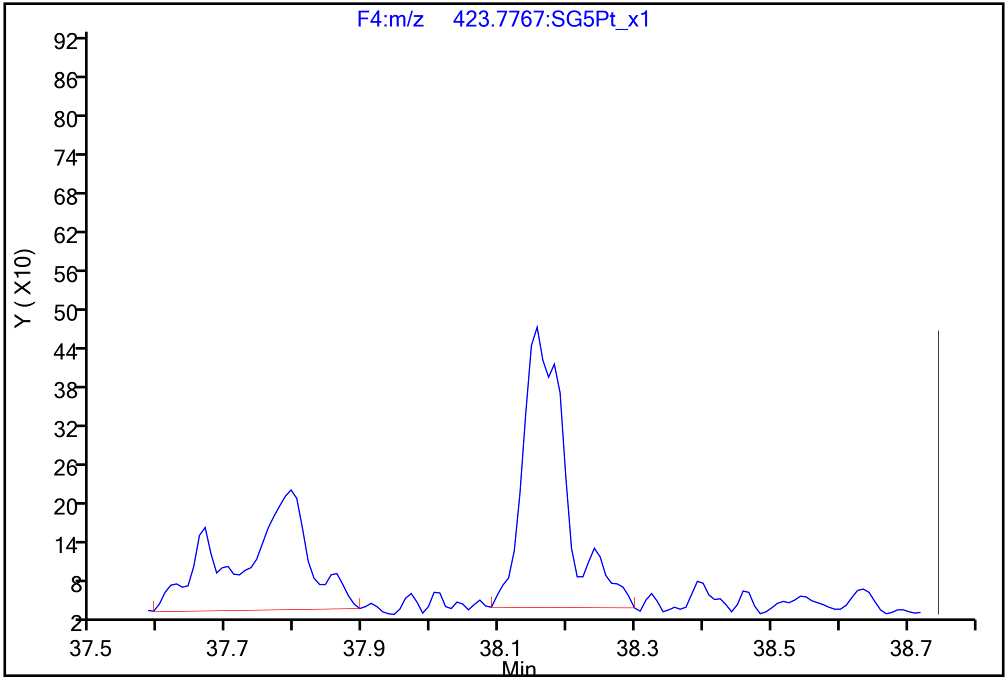

Manual Integration Results

RT = 38.155 Area = 1667 M

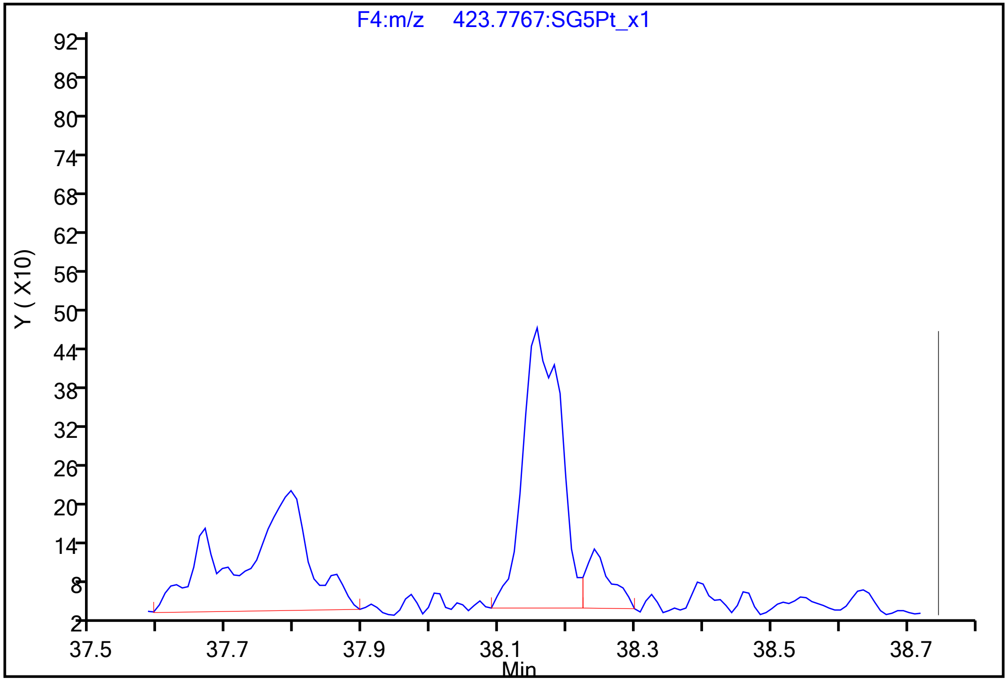

Reviewer: dadunj, 16-Mar-2021 09:23:48

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (38.75- 39.71)

Signal: 2

Processing Integration Results

RT = 38.164 Area = 1835

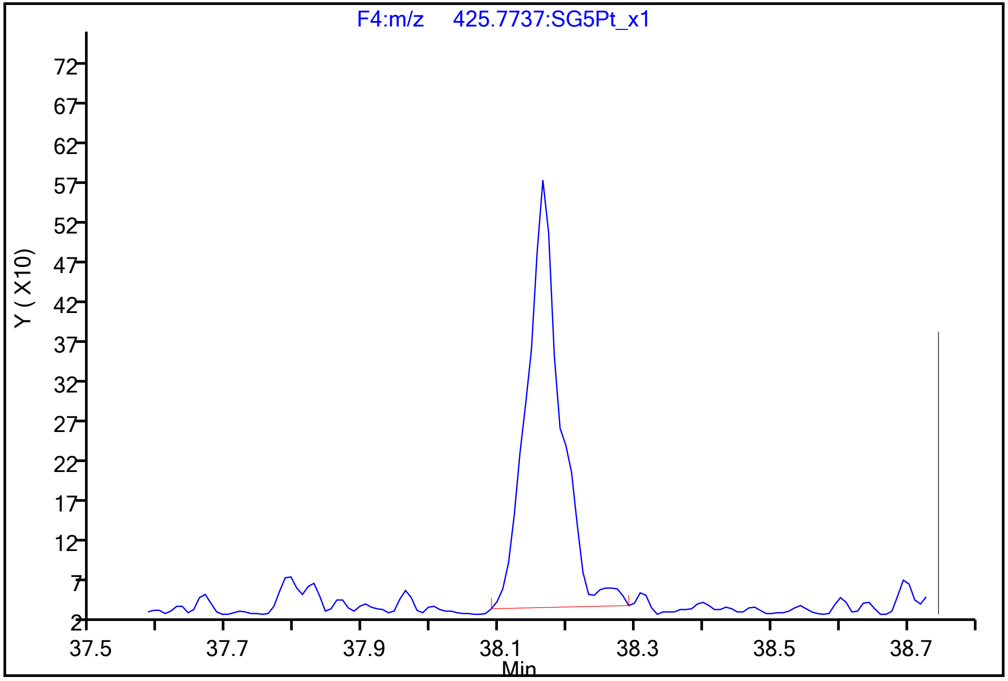

Manual Integration Results

RT = 38.164 Area = 1777 M

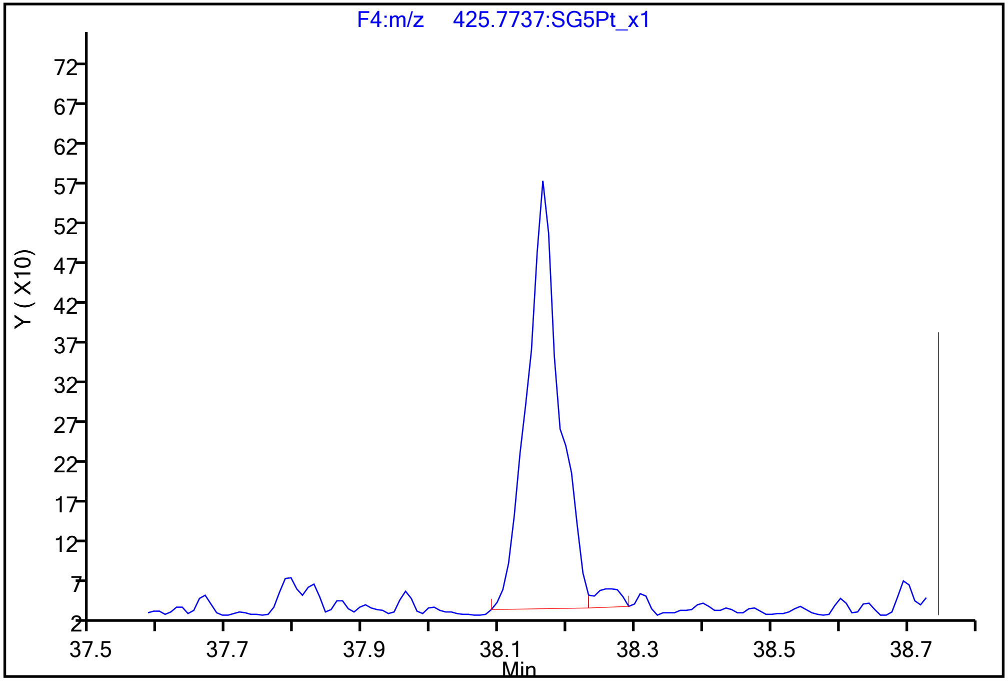

Reviewer: dadunj, 16-Mar-2021 09:23:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT:	41.39
Area:	3375
Amount:	0.295010
Amount Units:	pg/ul

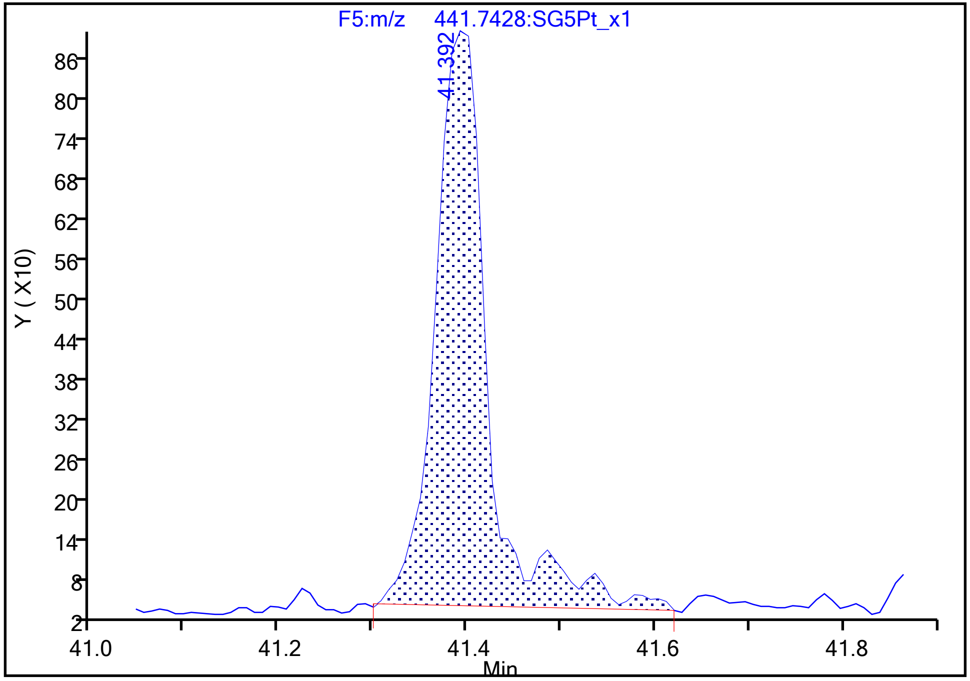

Manual Integration Results

RT:	41.39
Area:	3058
Amount:	0.281584
Amount Units:	pg/ul

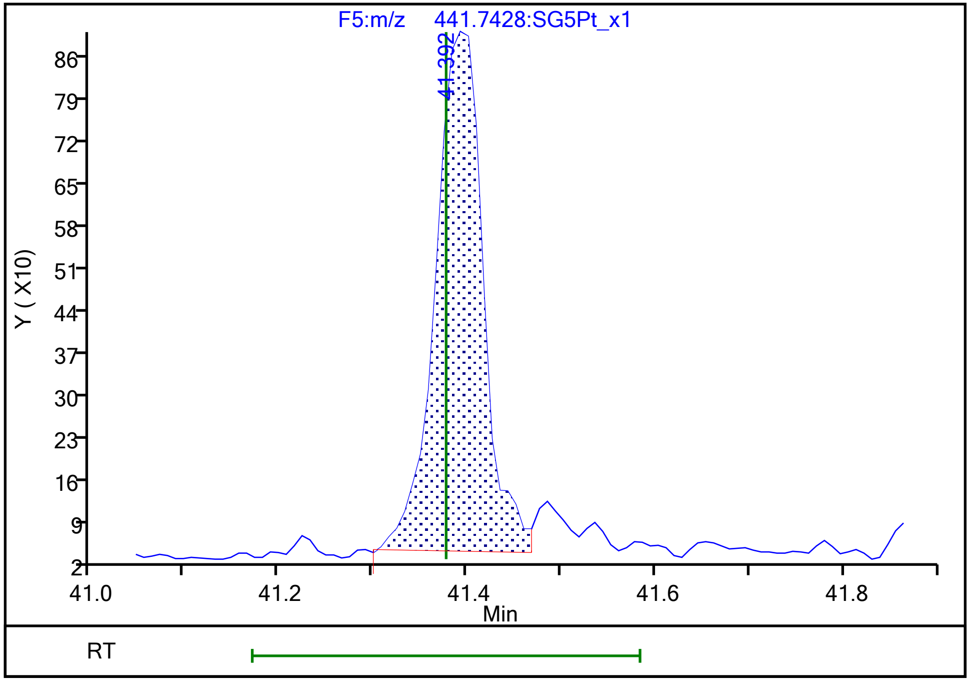

Reviewer: dadunj, 16-Mar-2021 09:23:55

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:37:35

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12
Client ID:	11215702-Tank2-0.1mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)

OCDD, CAS: 3268-87-9

Signal: 1

Processing Integration Results

RT:	41.32
Area:	10853
Amount:	1.309378
Amount Units:	pg/ul

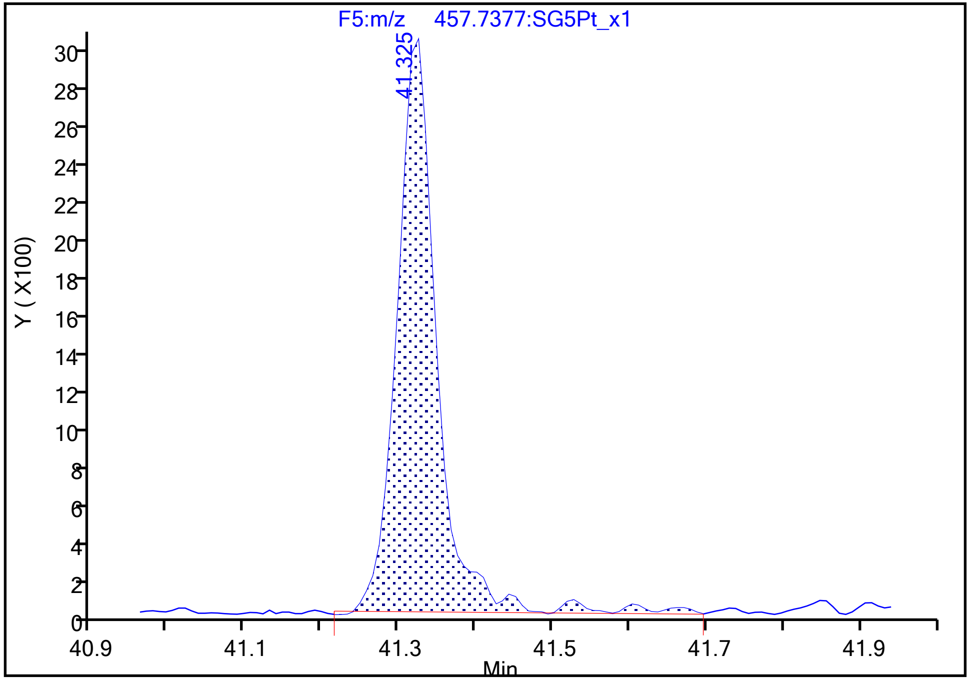

Manual Integration Results

RT:	41.32
Area:	10427
Amount:	1.276725
Amount Units:	pg/ul

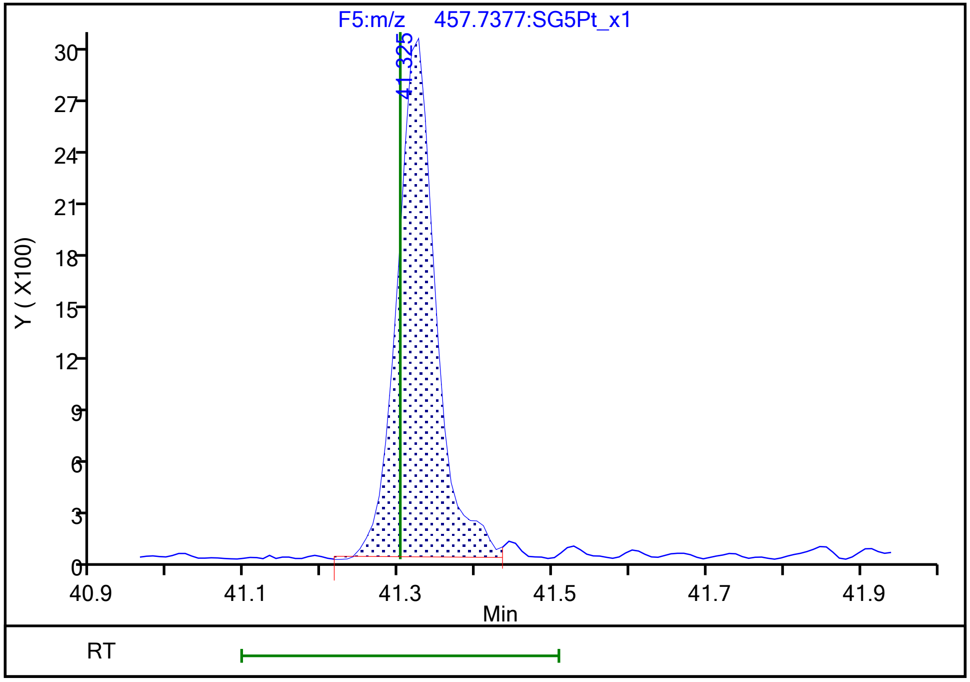

Reviewer: dadunj, 16-Mar-2021 09:23:58

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d				
Injection Date:	12-Mar-2021 20:08:00	Instrument ID:	DFS 1		
Lims ID:	320-70797-A-12-A	Lab Sample ID:	320-70797-12		
Client ID:	11215702-Tank2-0.1mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT:	41.32
Area:	12084
Amount:	1.309378
Amount Units:	pg/ul

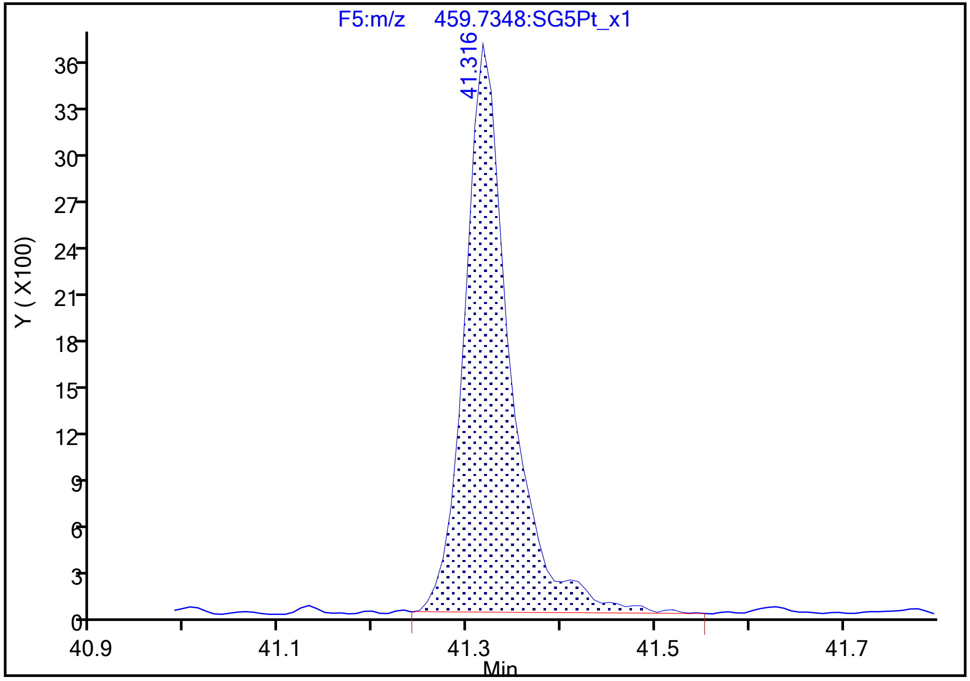

Manual Integration Results

RT:	41.32
Area:	11938
Amount:	1.276725
Amount Units:	pg/ul

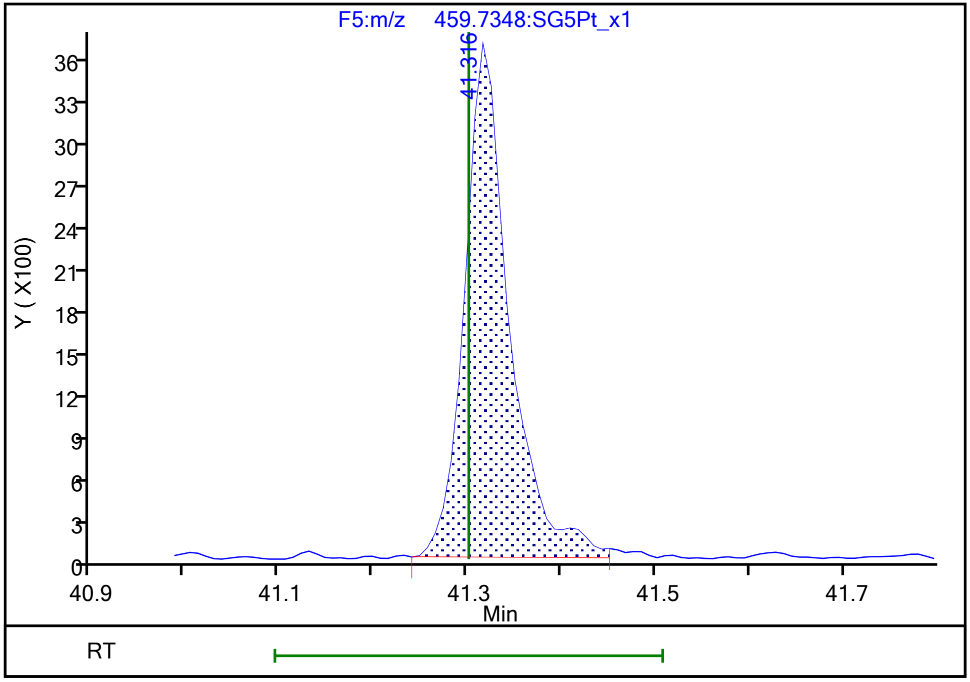

Reviewer: dadunj, 16-Mar-2021 09:23:59

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 16-Mar-2021 09:37:35 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

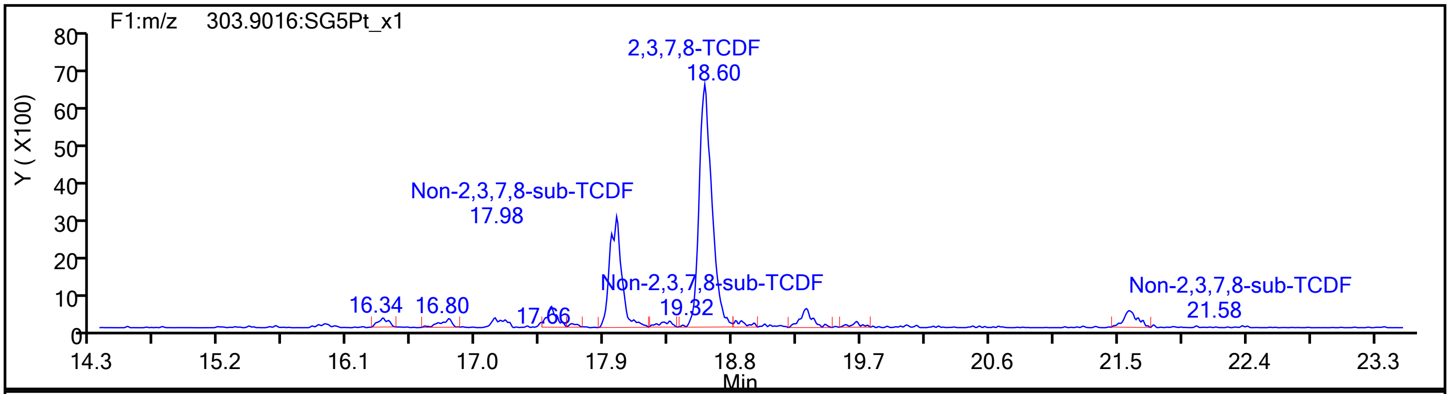

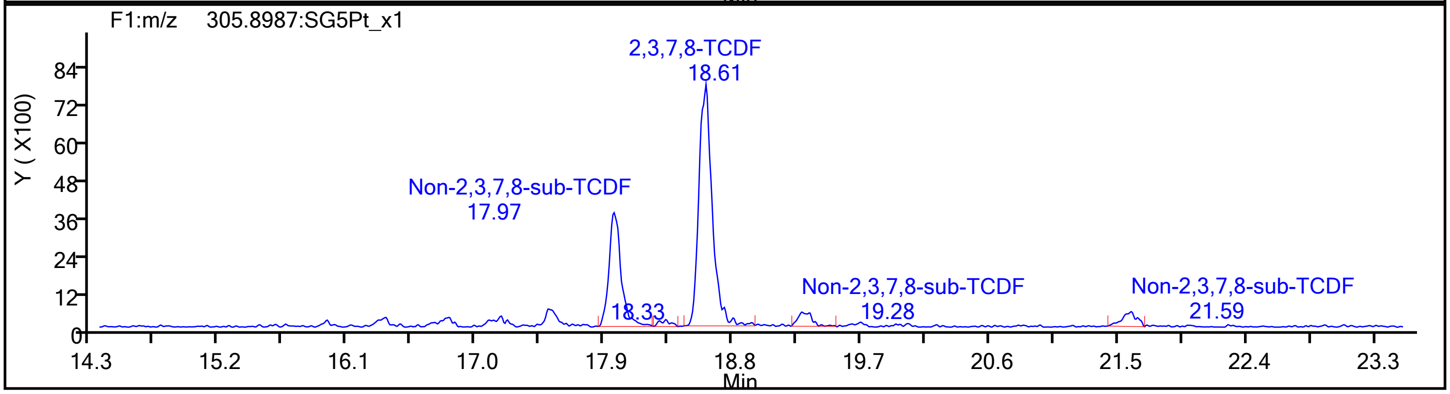

TCDF Standards

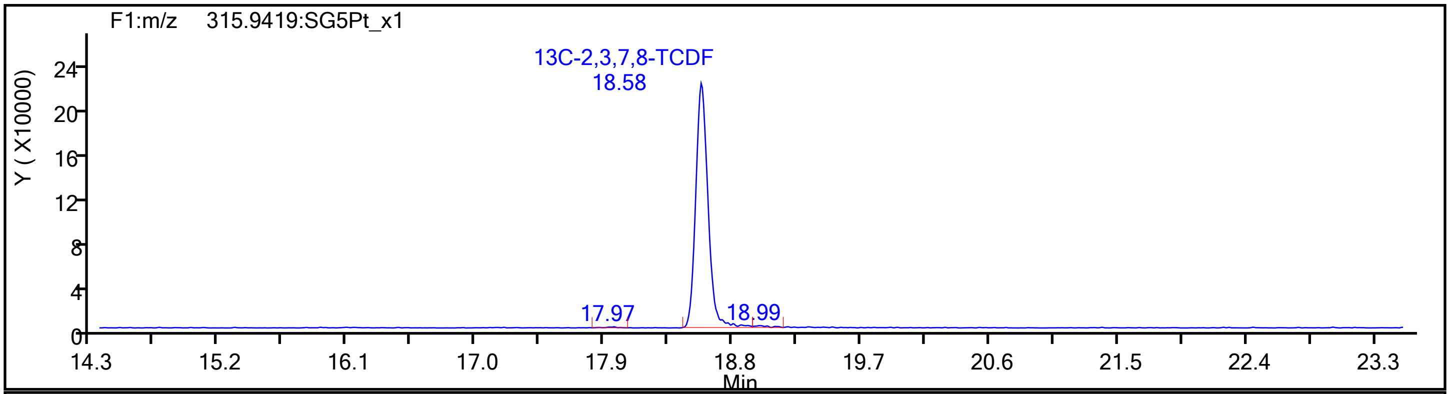

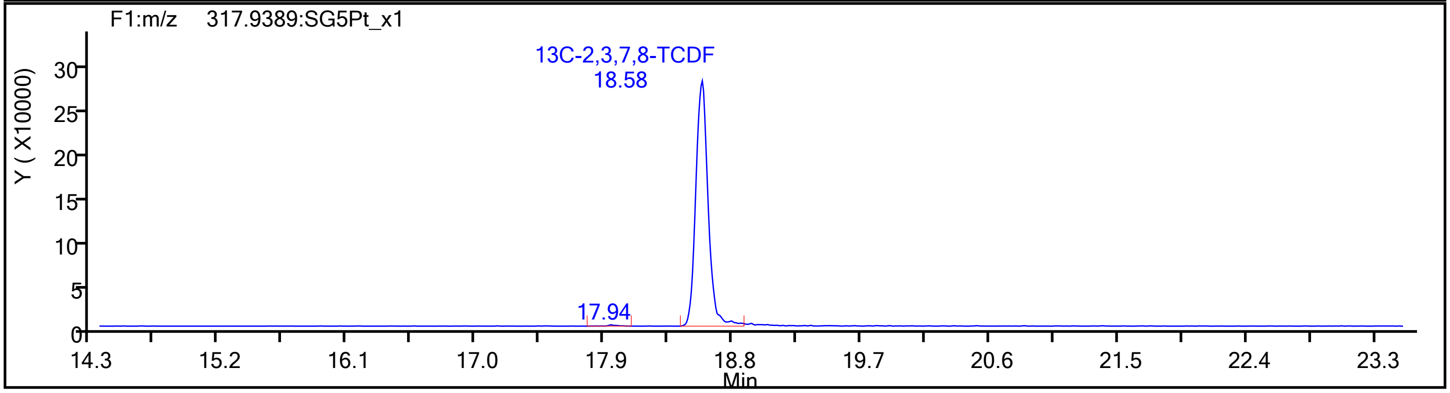

Report Date: 16-Mar-2021 09:37:35
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d
Injection Date: 12-Mar-2021 20:08:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.1mm
Worklist#: 469779
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

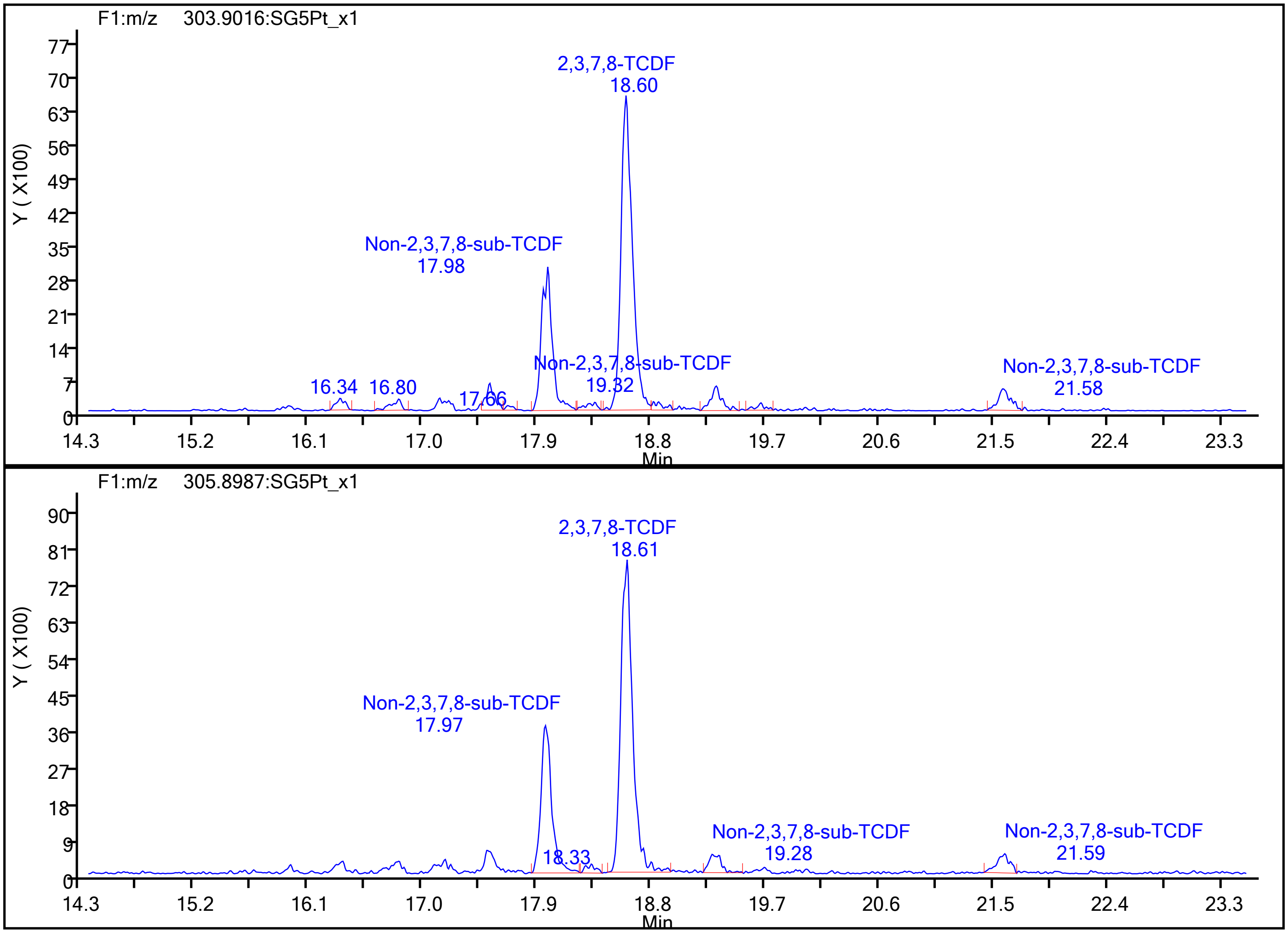

TCDF Interference Mass

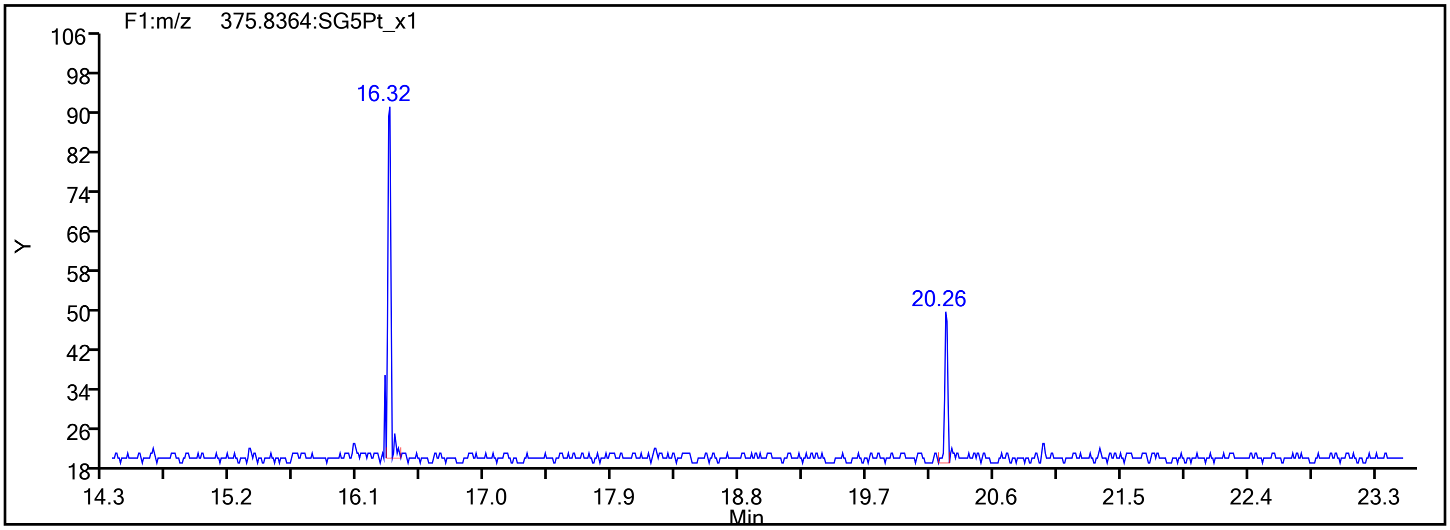

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

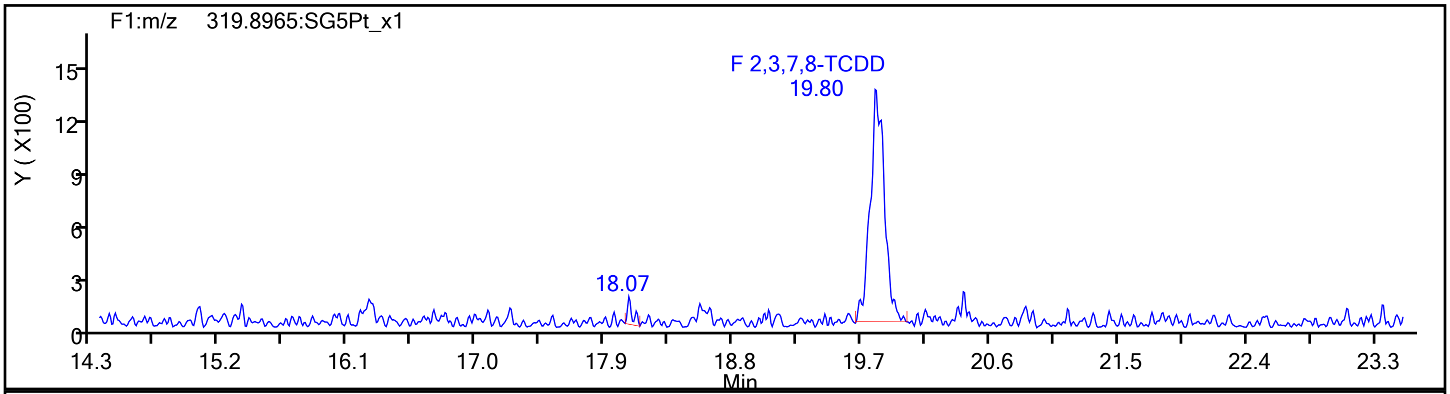

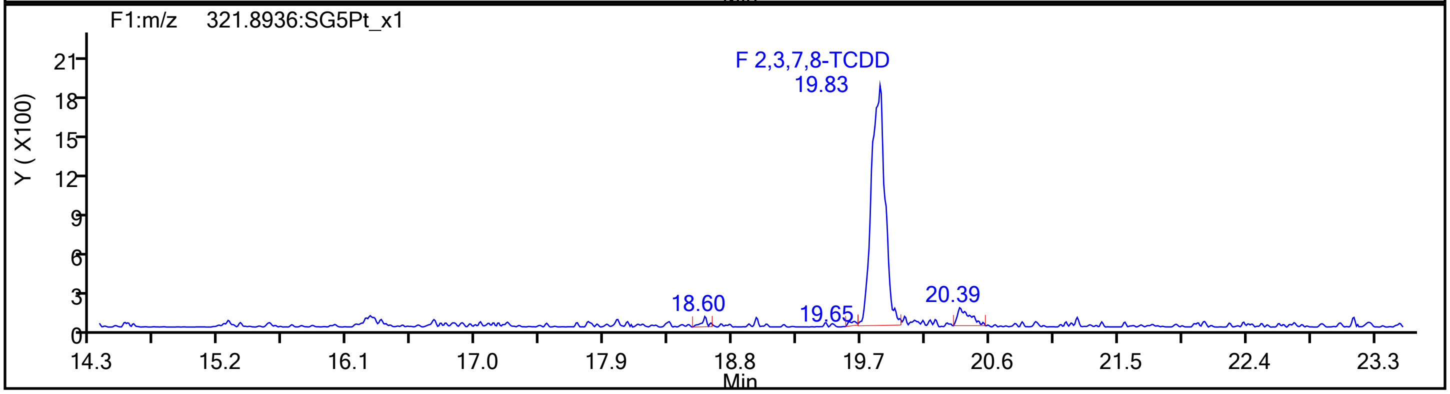

TCDD Standards

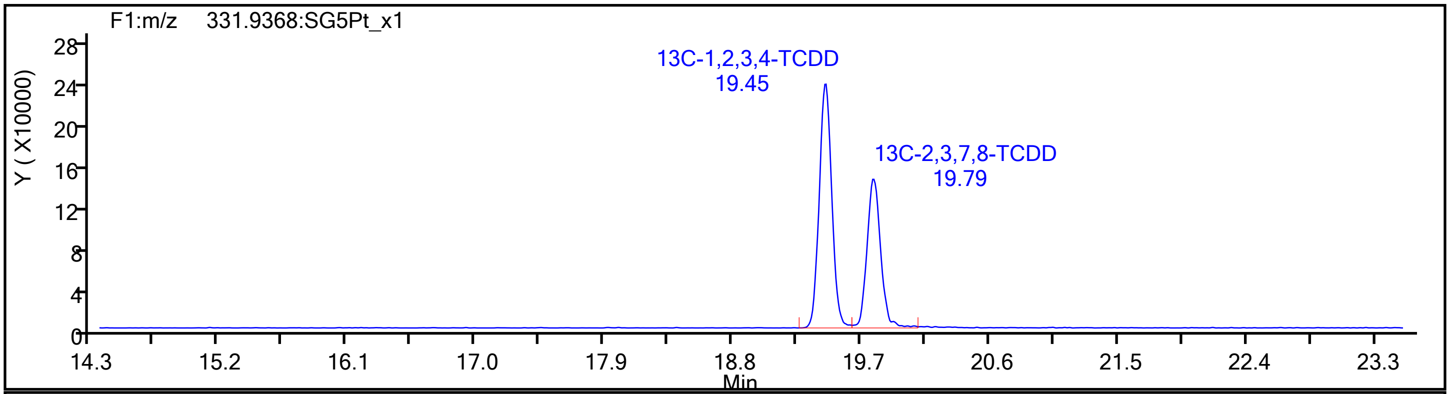

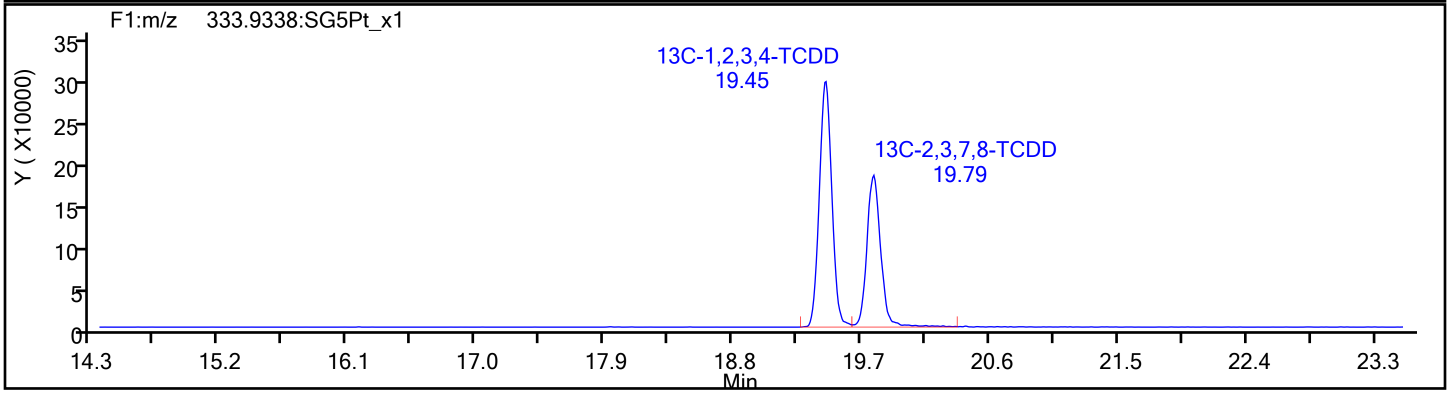

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d

Injection Date: 12-Mar-2021 20:08:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.1mm

Worklist#: 469779 Sample Line#: 13

Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

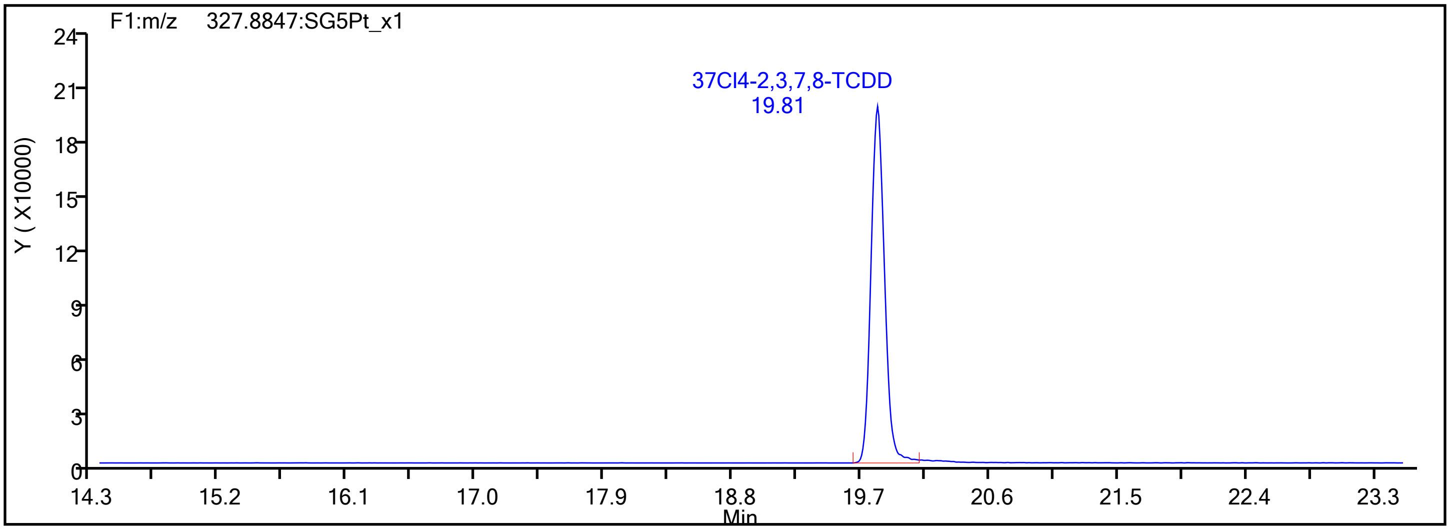

37Cl4-TCDD Standards

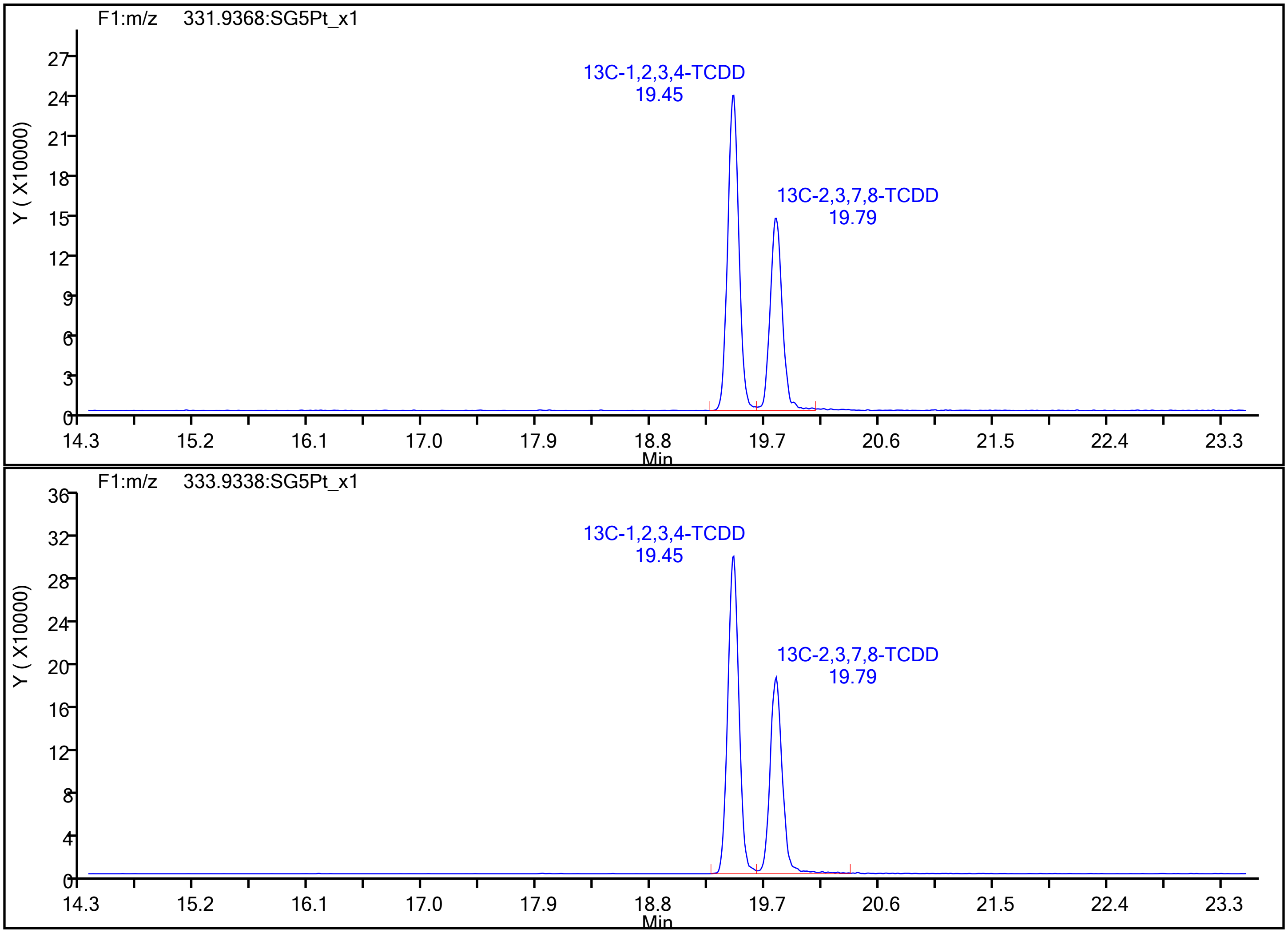

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

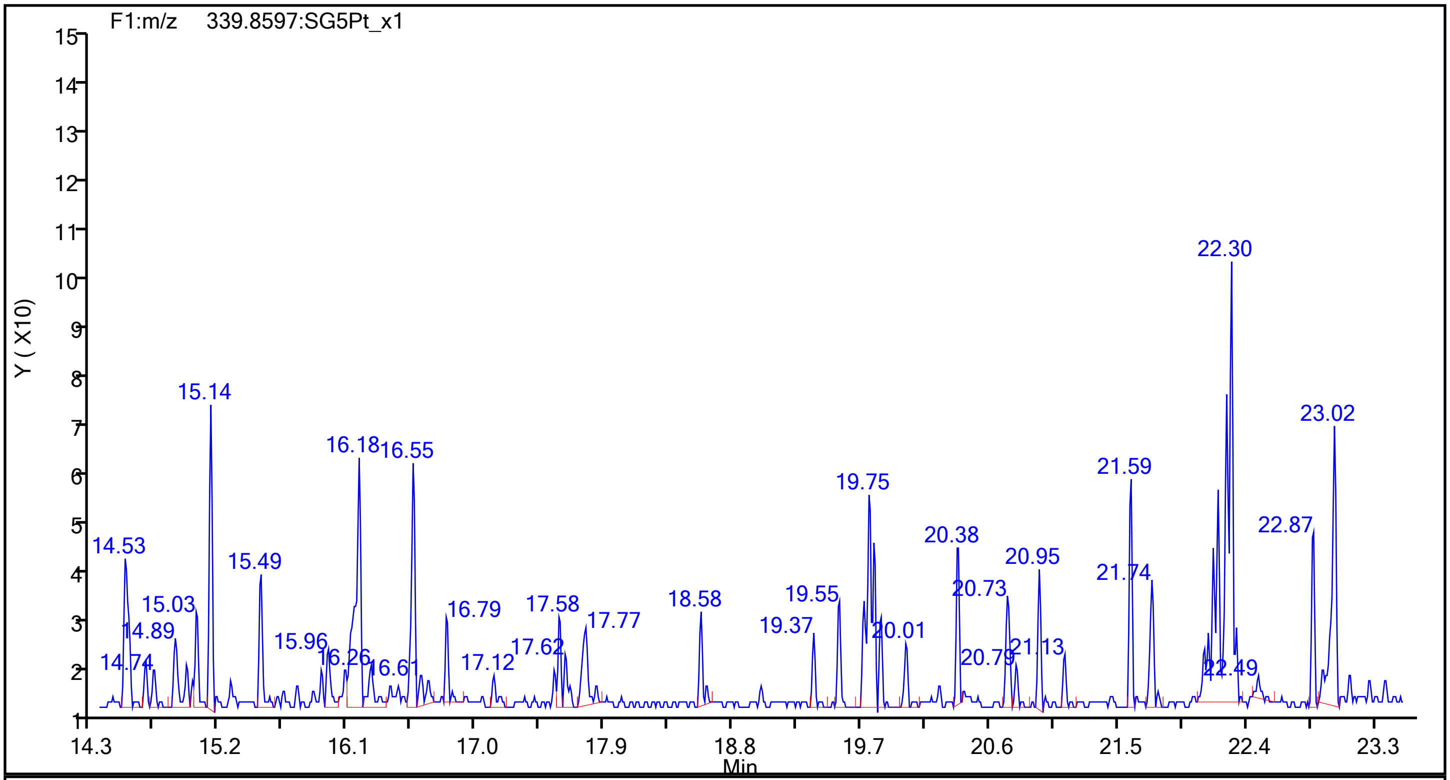

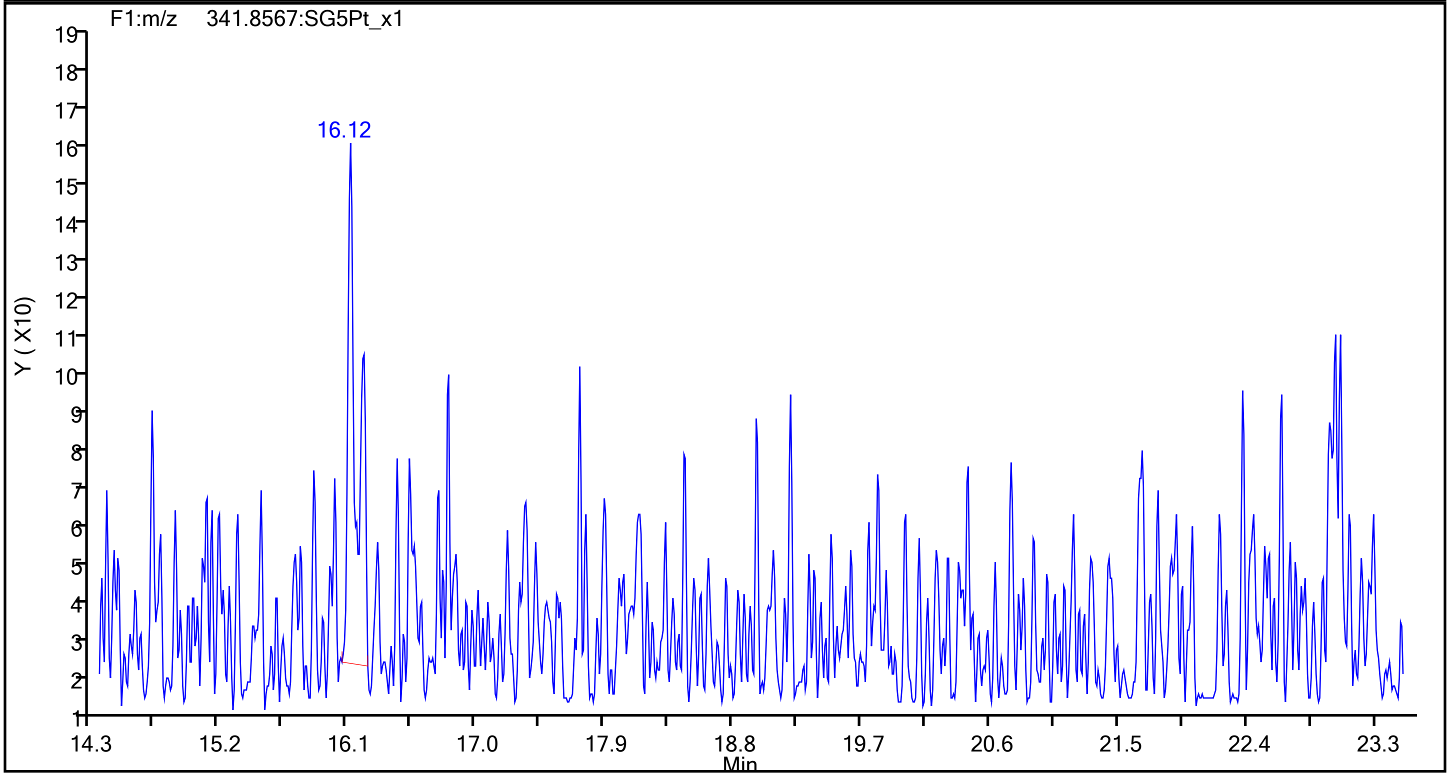

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

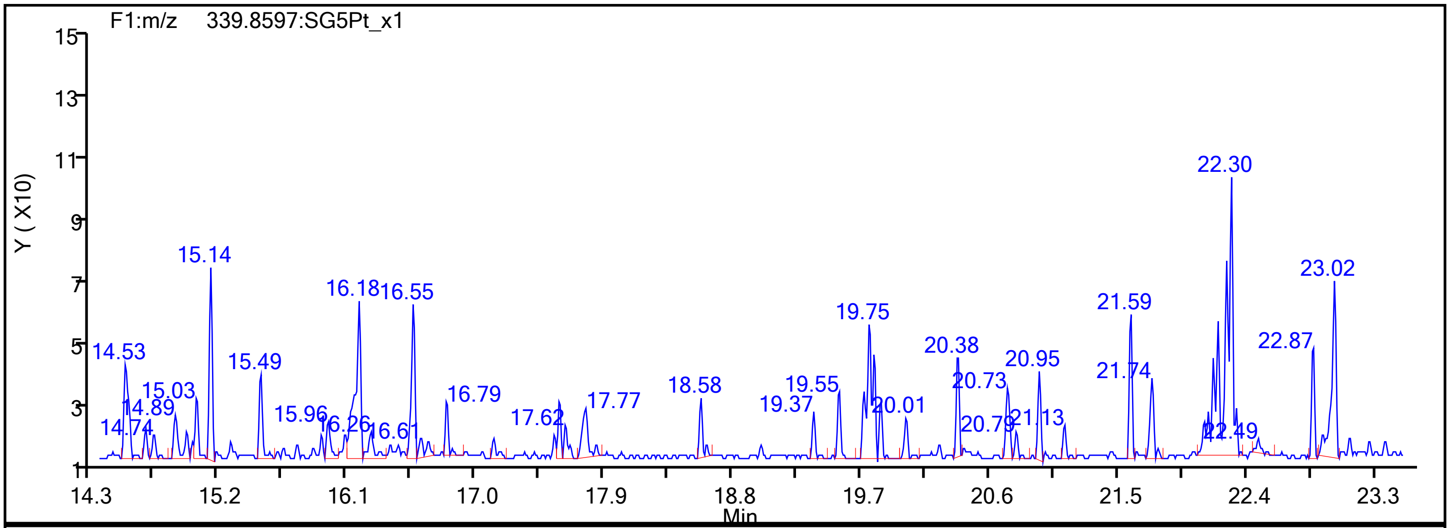

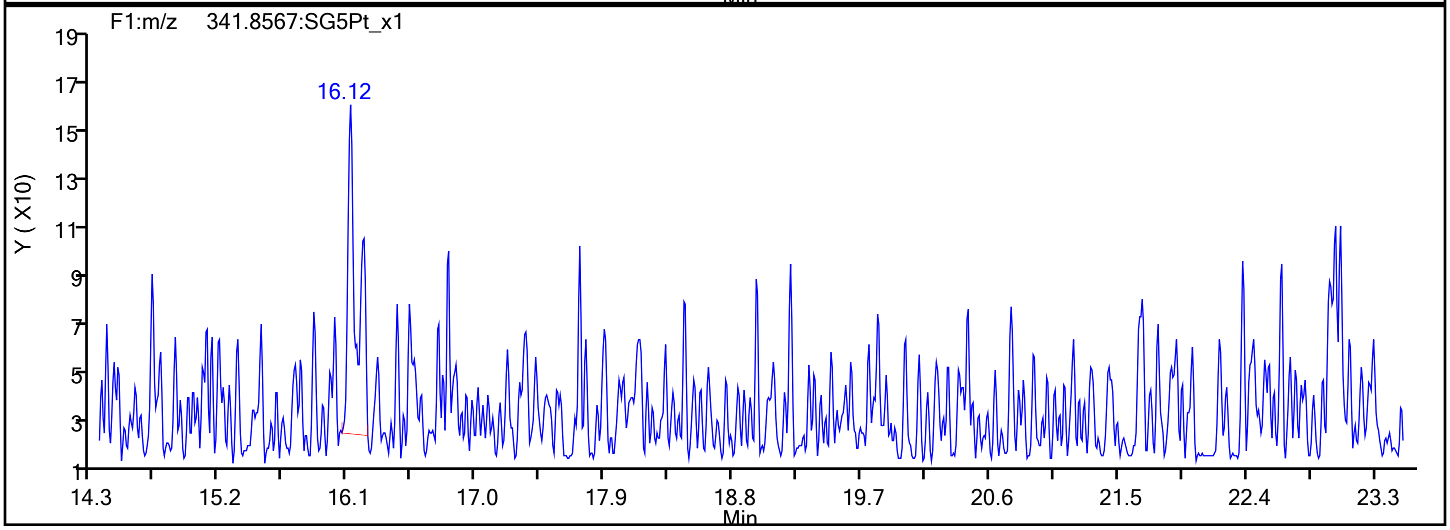

F1 PeCDFs Interference Mass

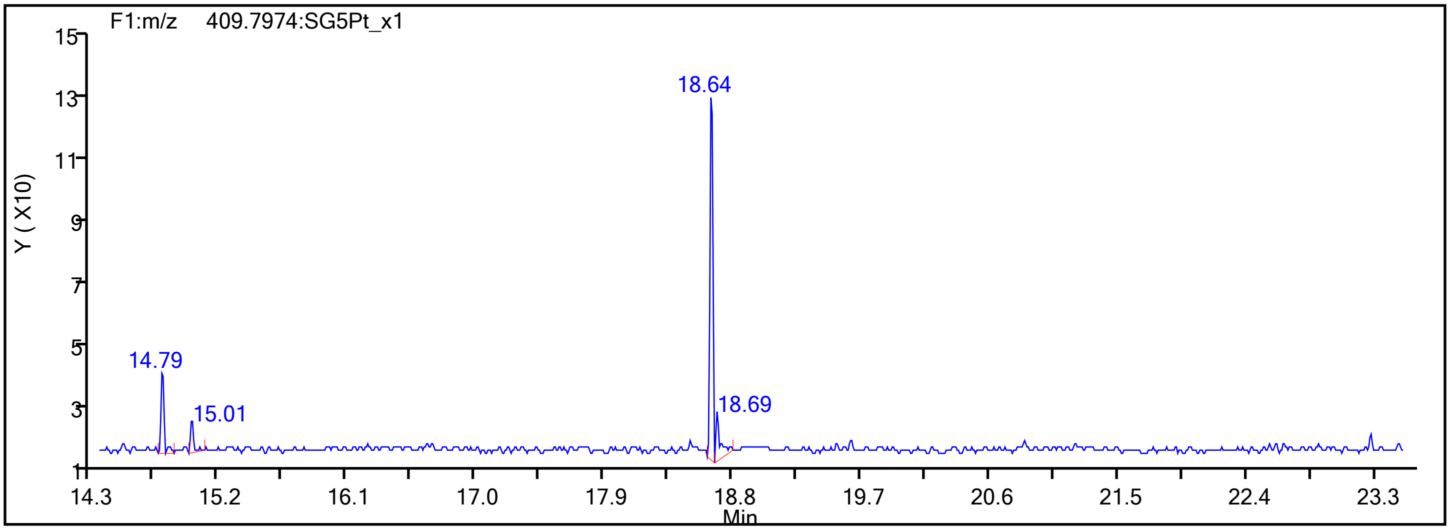

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d

Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

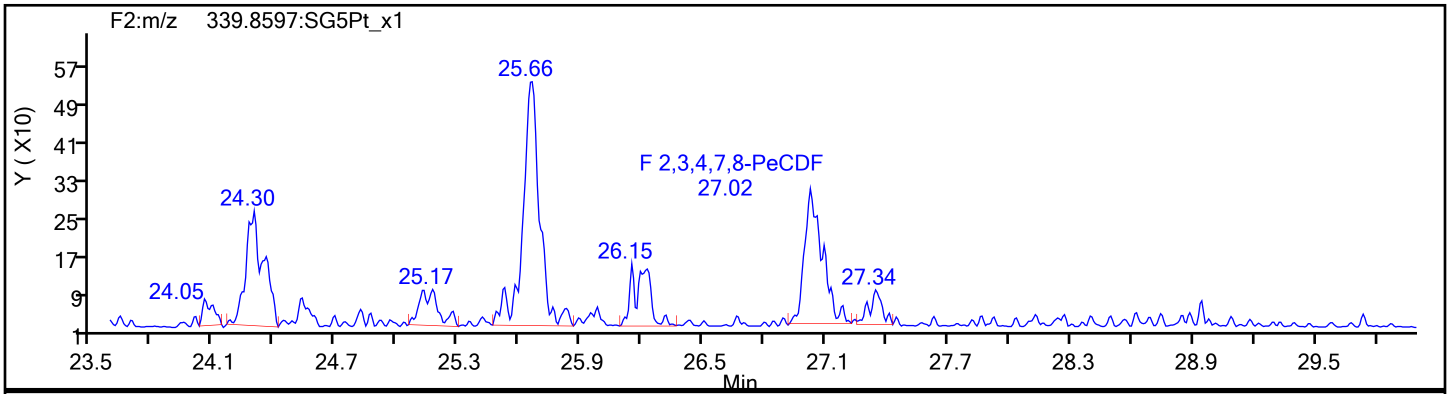

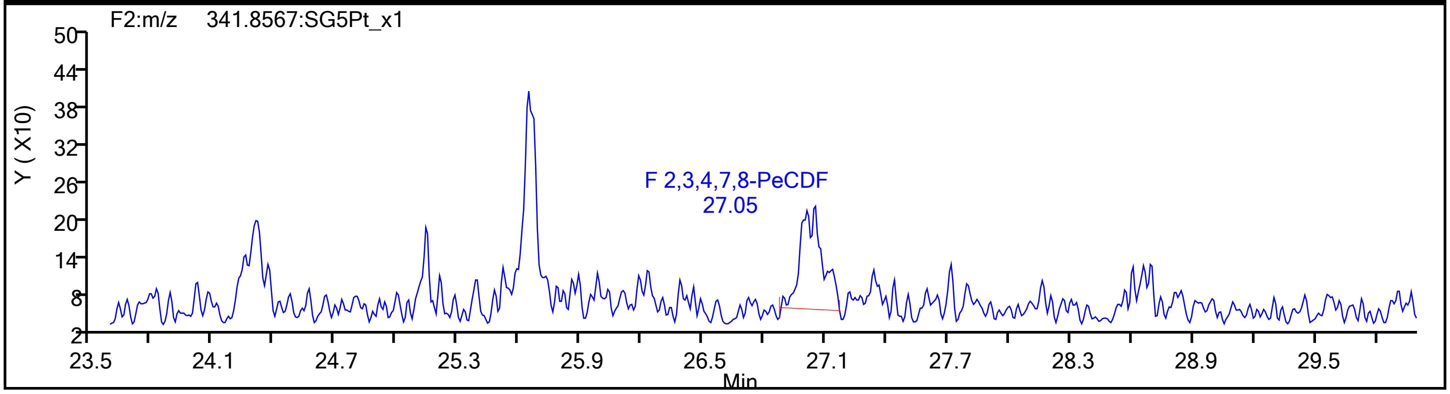

PeCDF Standards

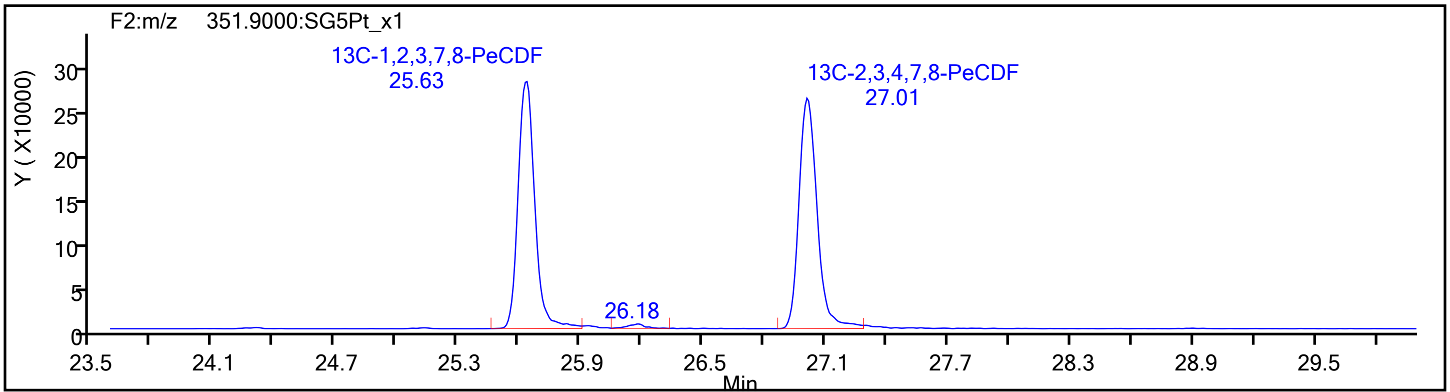

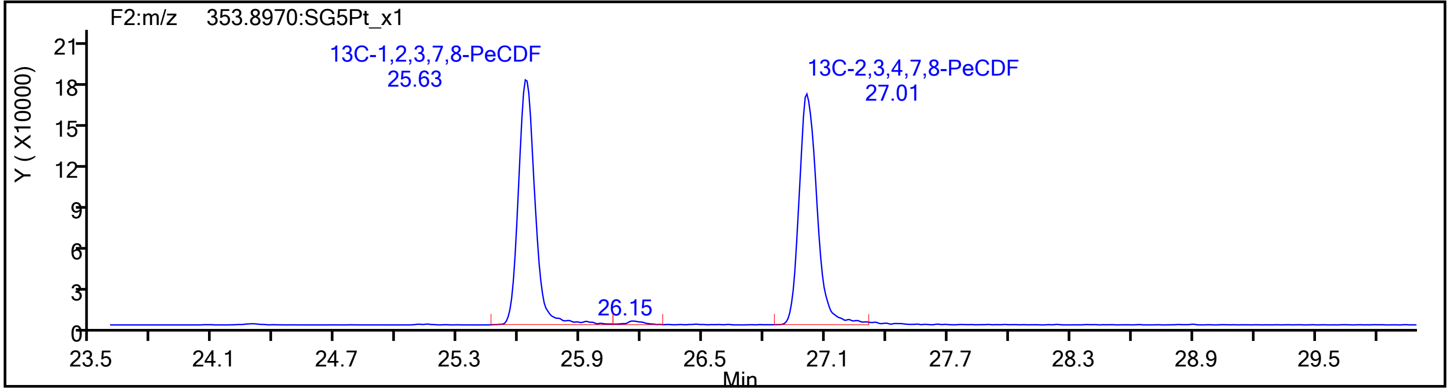

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

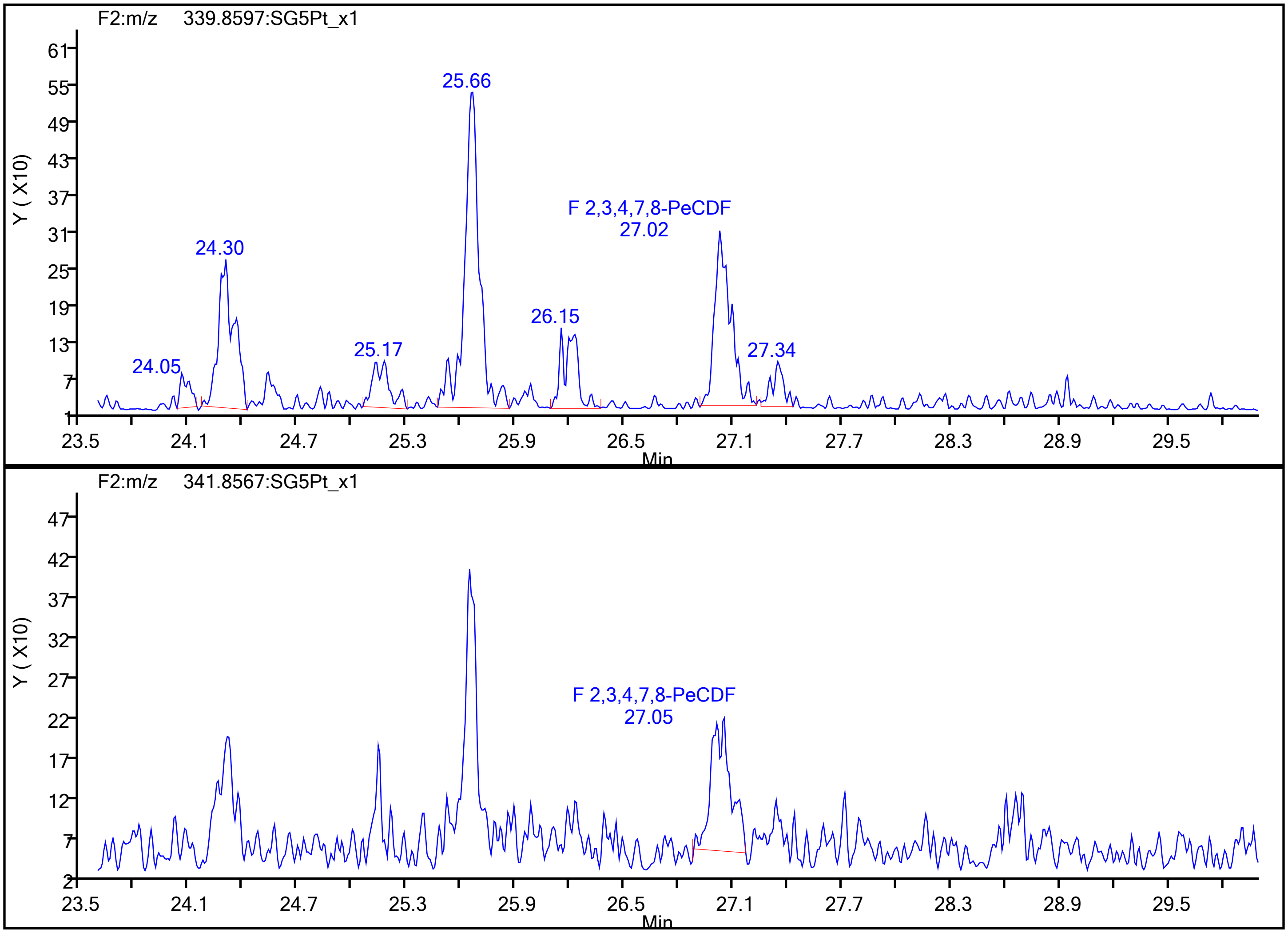

PeCDF Interference Mass

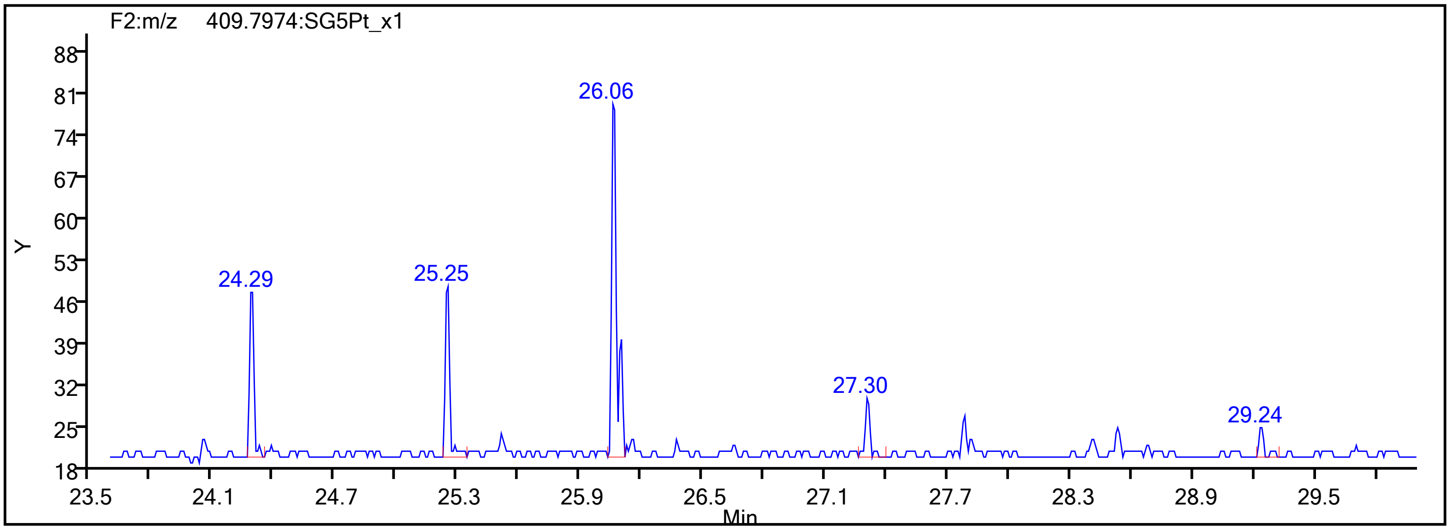

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

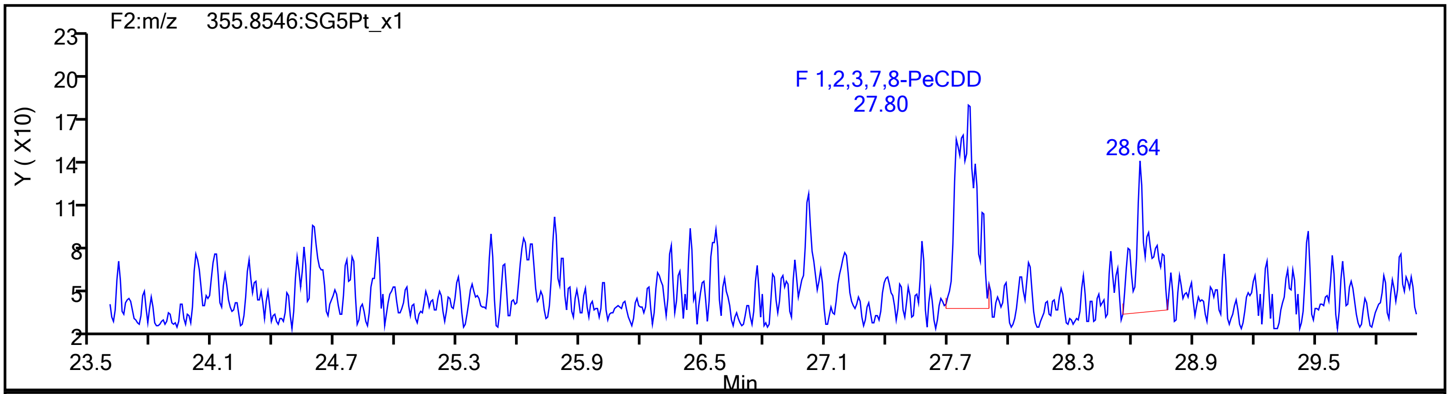

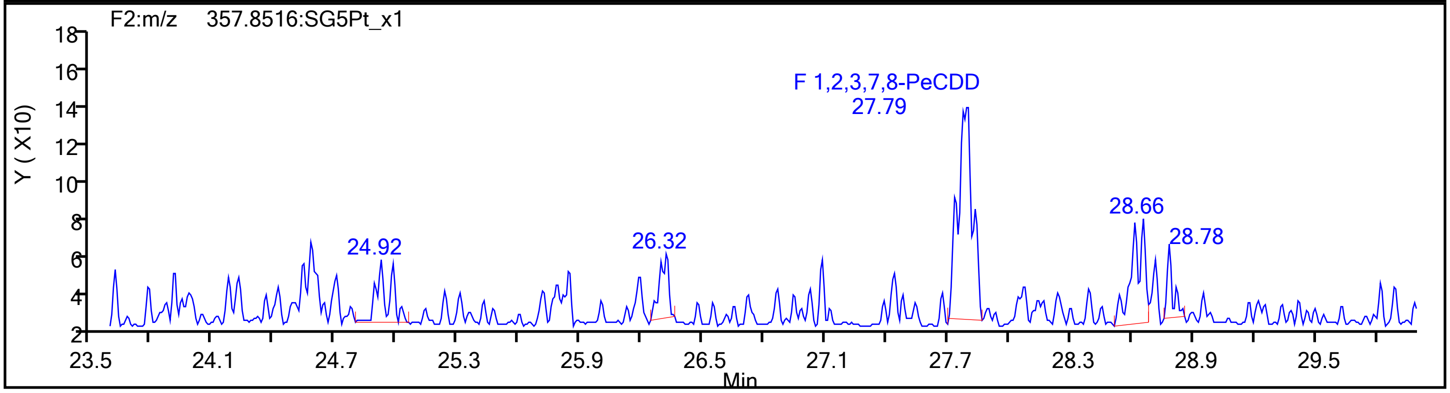

PeCDD Standards

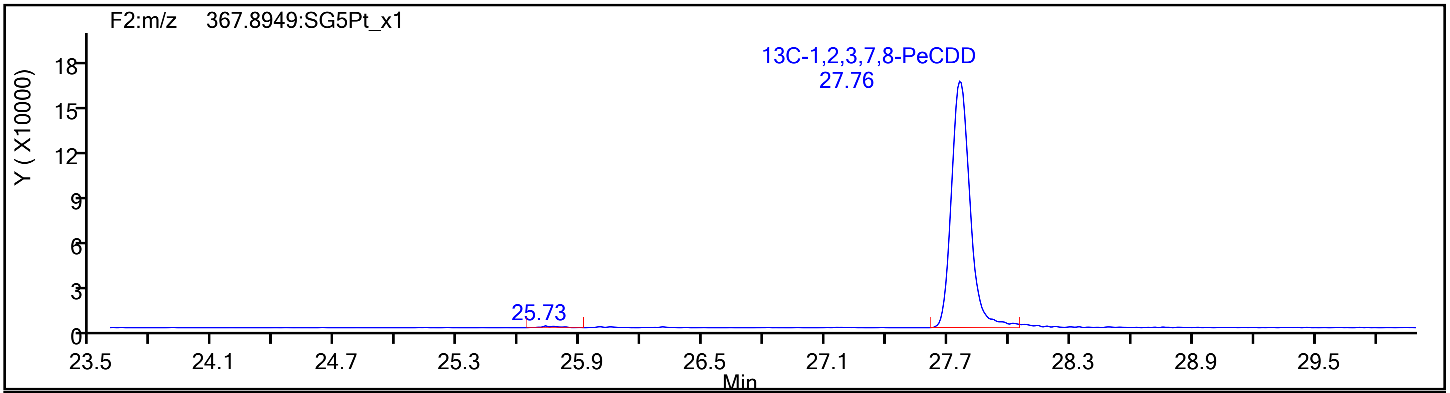

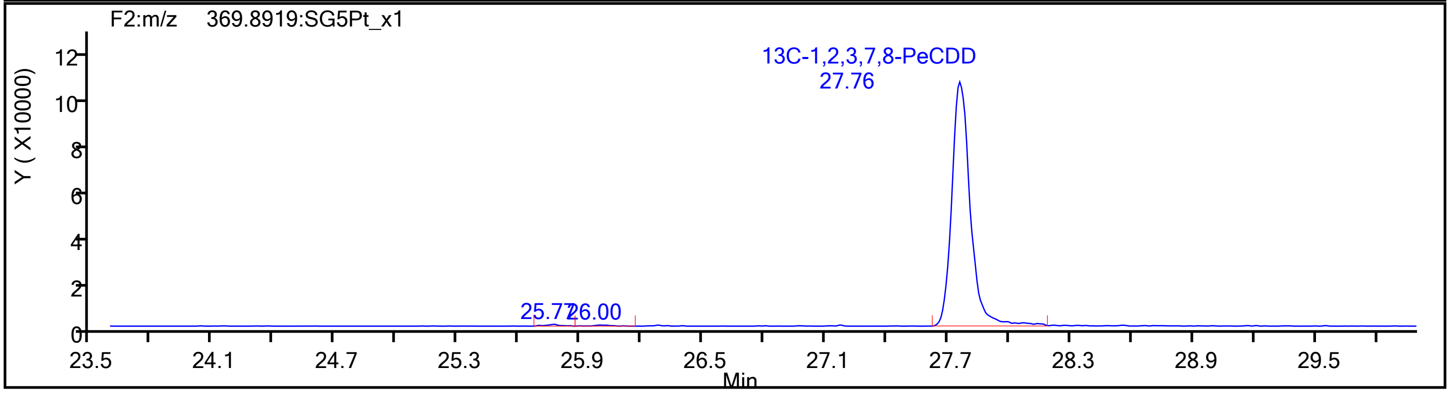

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

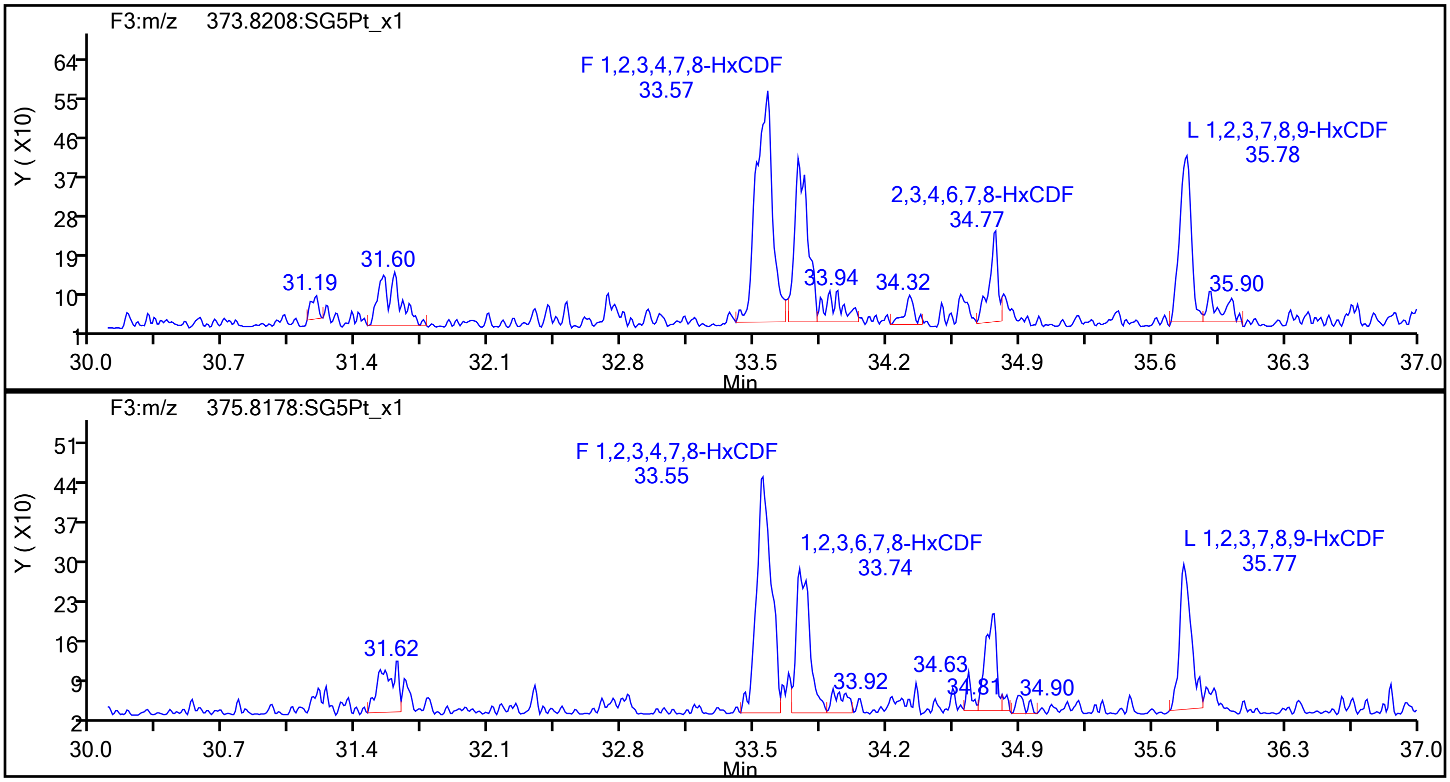

HxCDF Standards

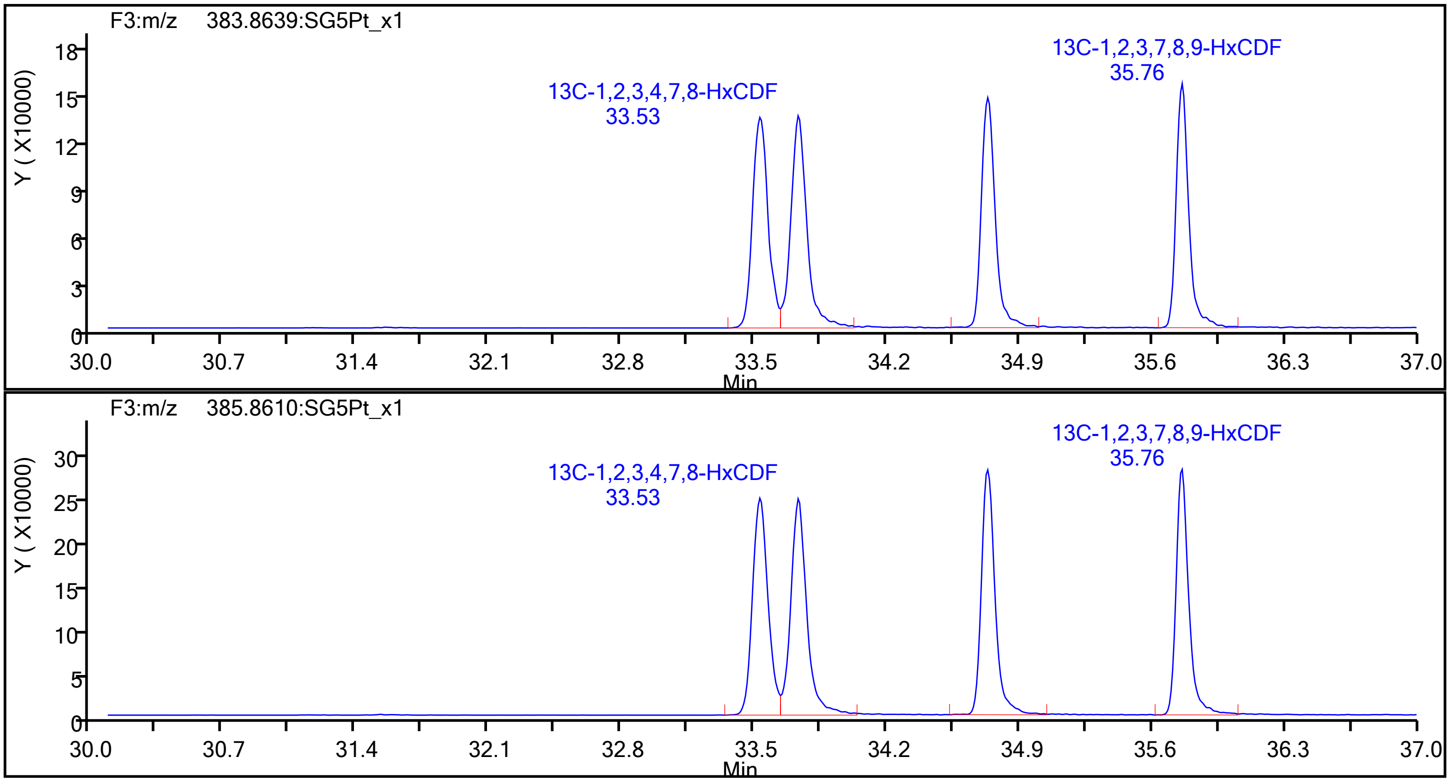

Report Date: 16-Mar-2021 09:37:36		Chrom Revision: 2.3 05-Feb-2021 00:13:28	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

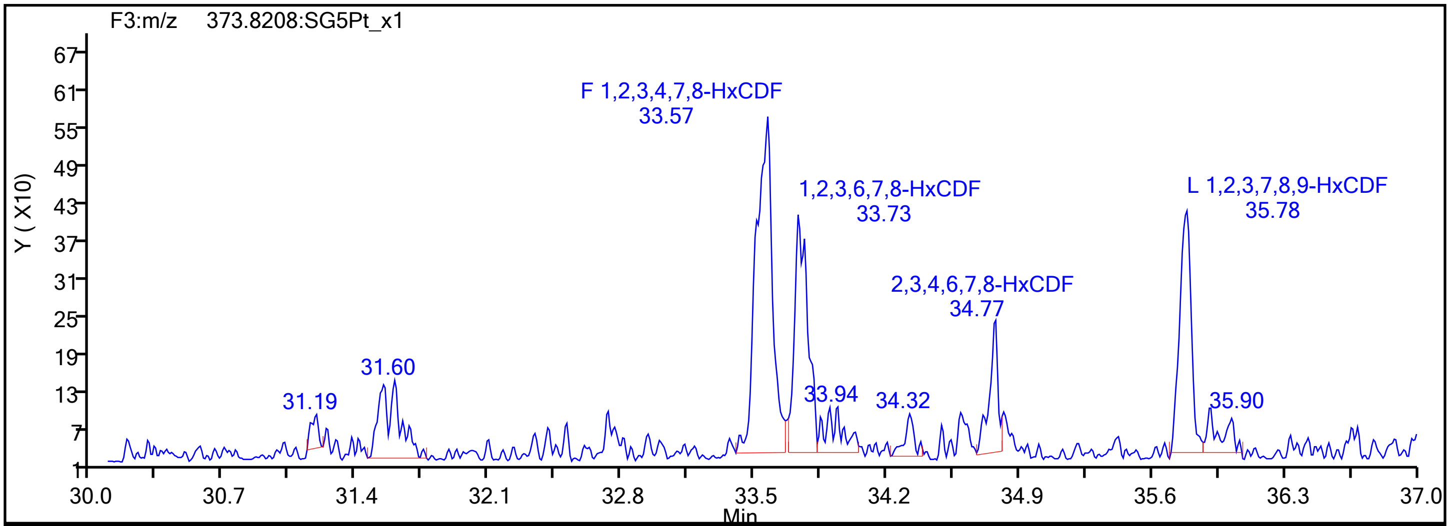

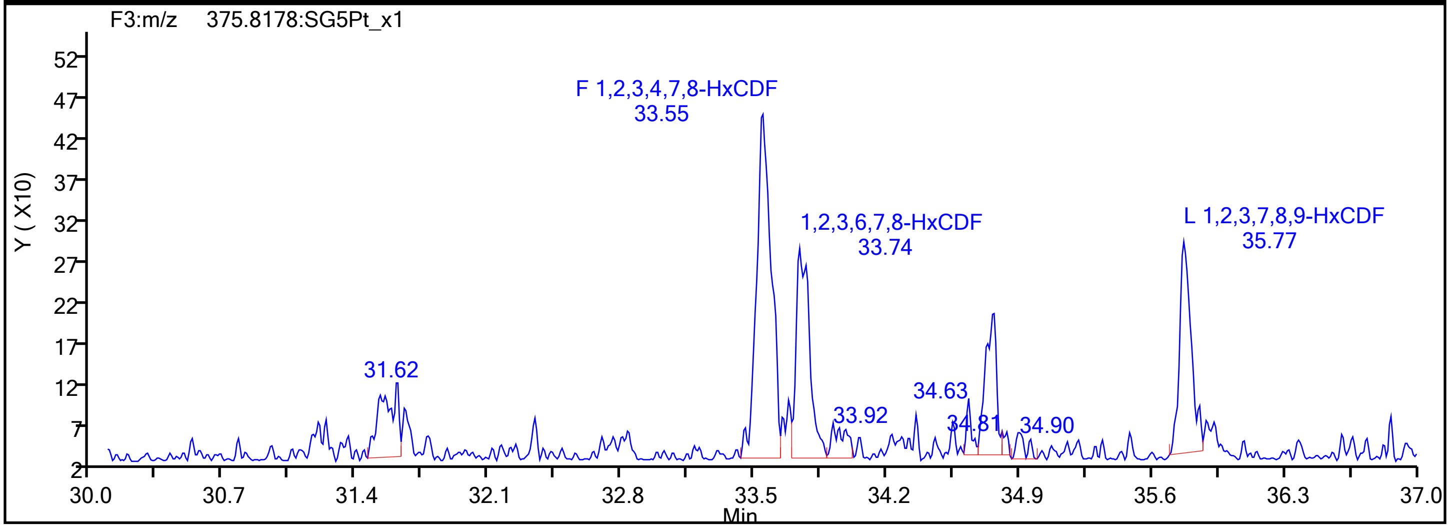

HxCDF Interference Mass

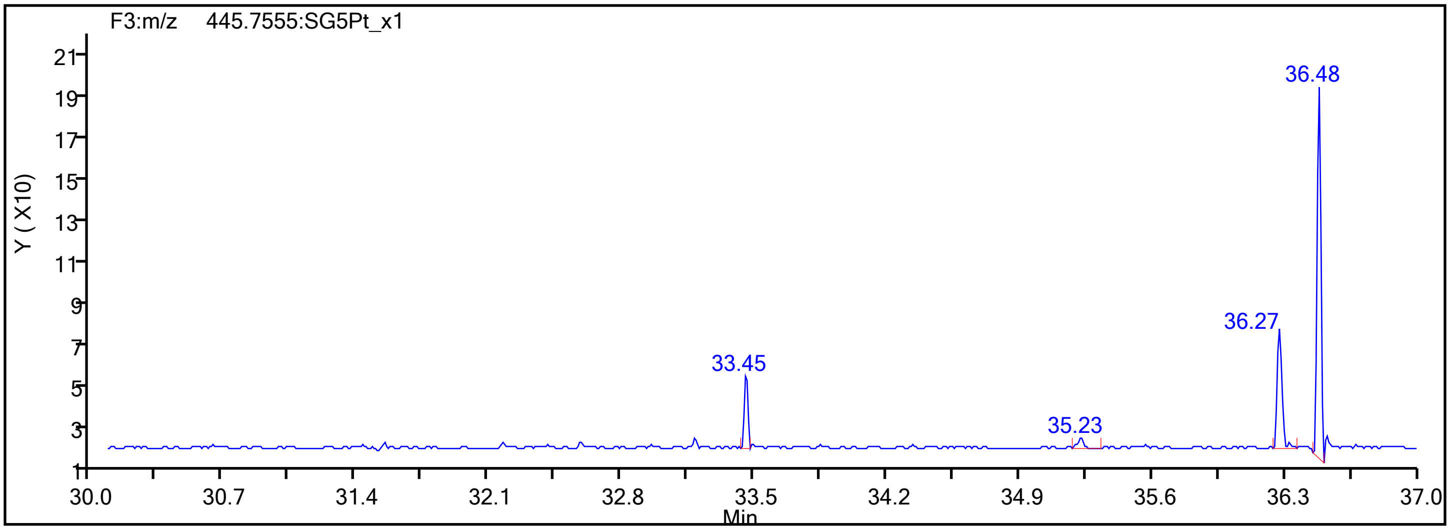

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

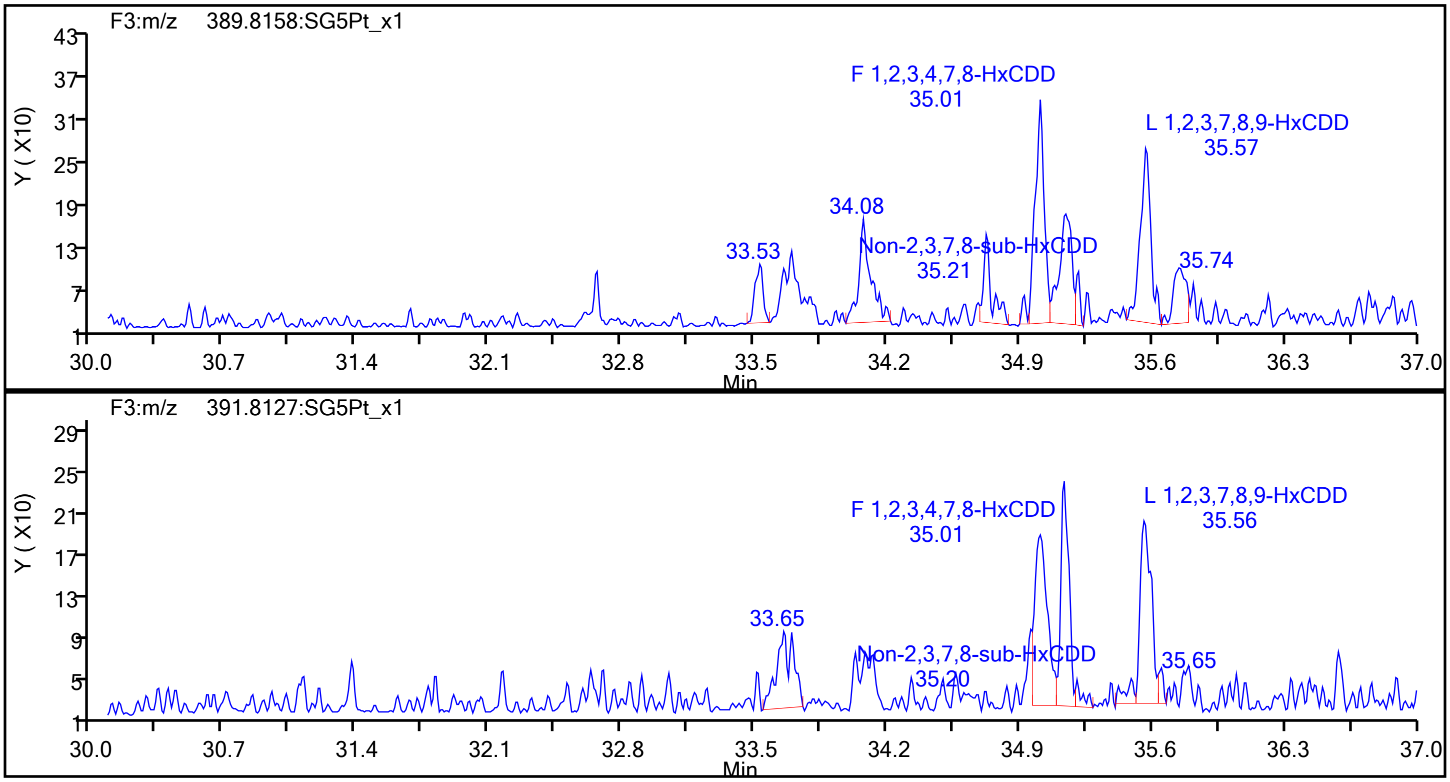

HxCDD Standards

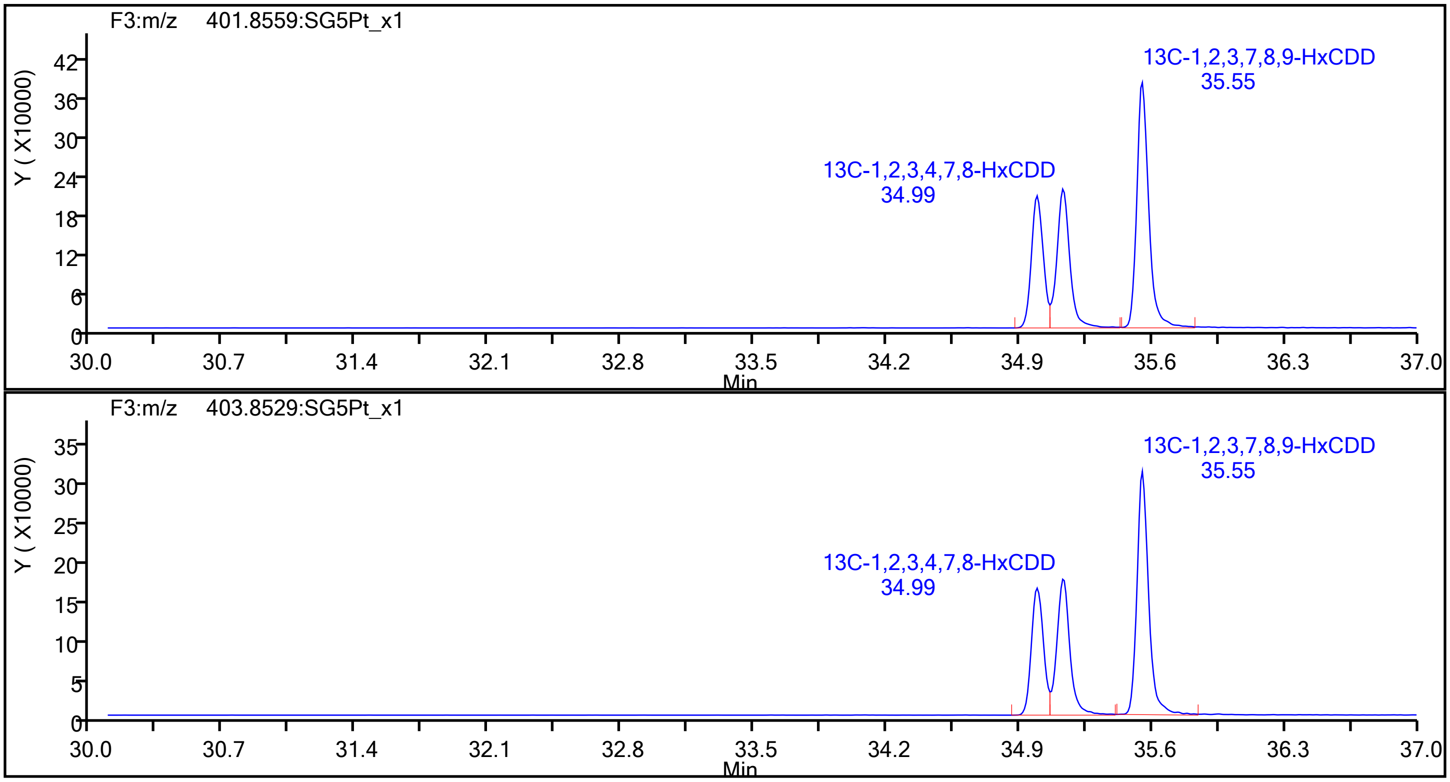

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d
Injection Date: 12-Mar-2021 20:08:00 Injection Vol: 2.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Tank2-0.1mm
Worklist#: 469779 Sample Line#: 13
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

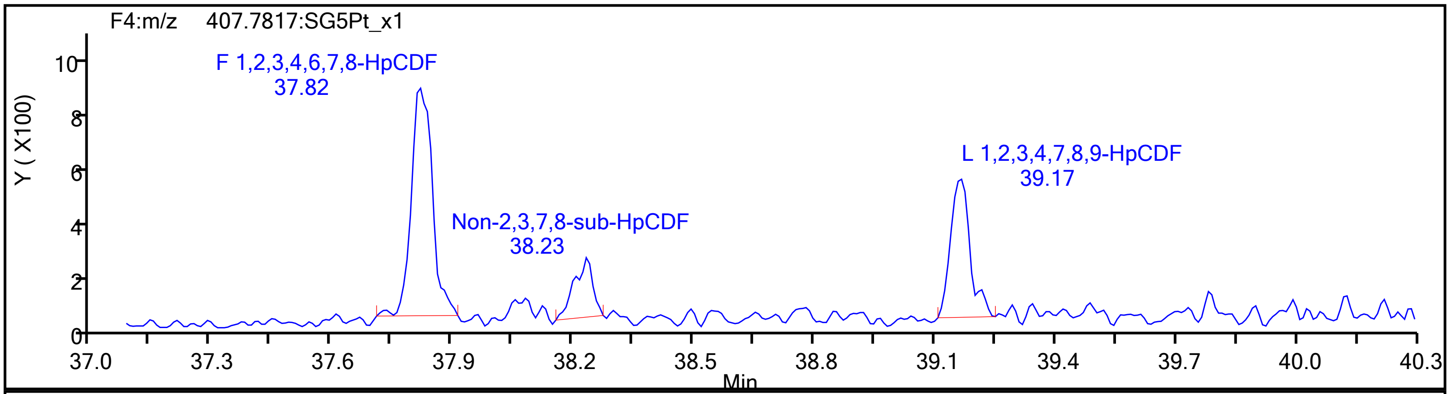

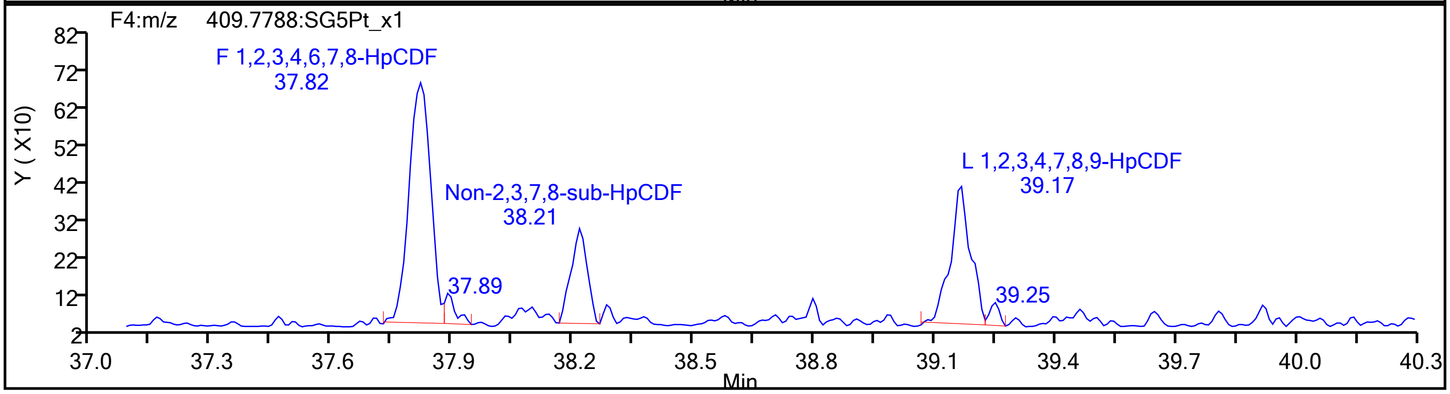

HpCDF Standards

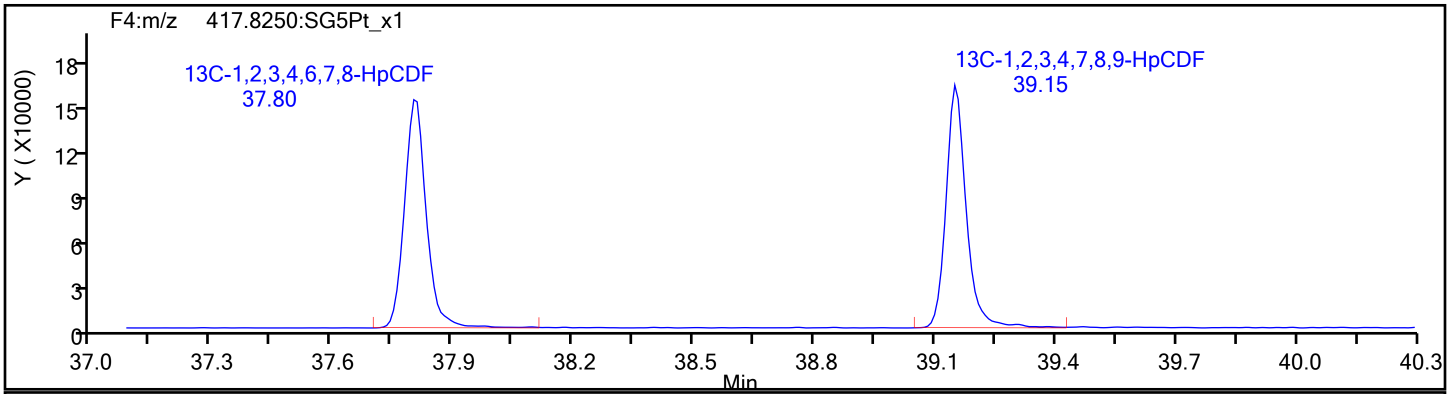

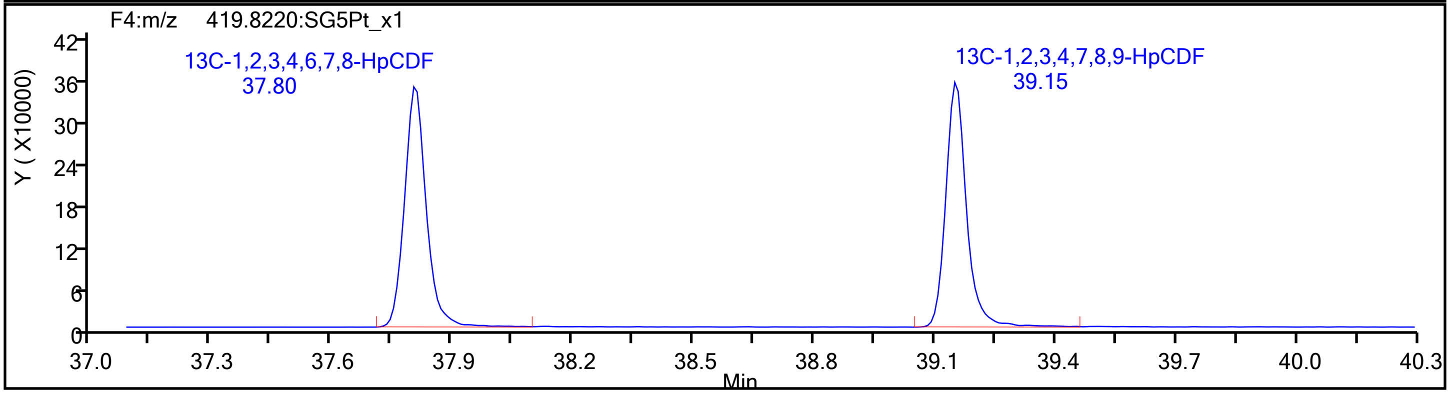

Report Date: 16-Mar-2021 09:37:36 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

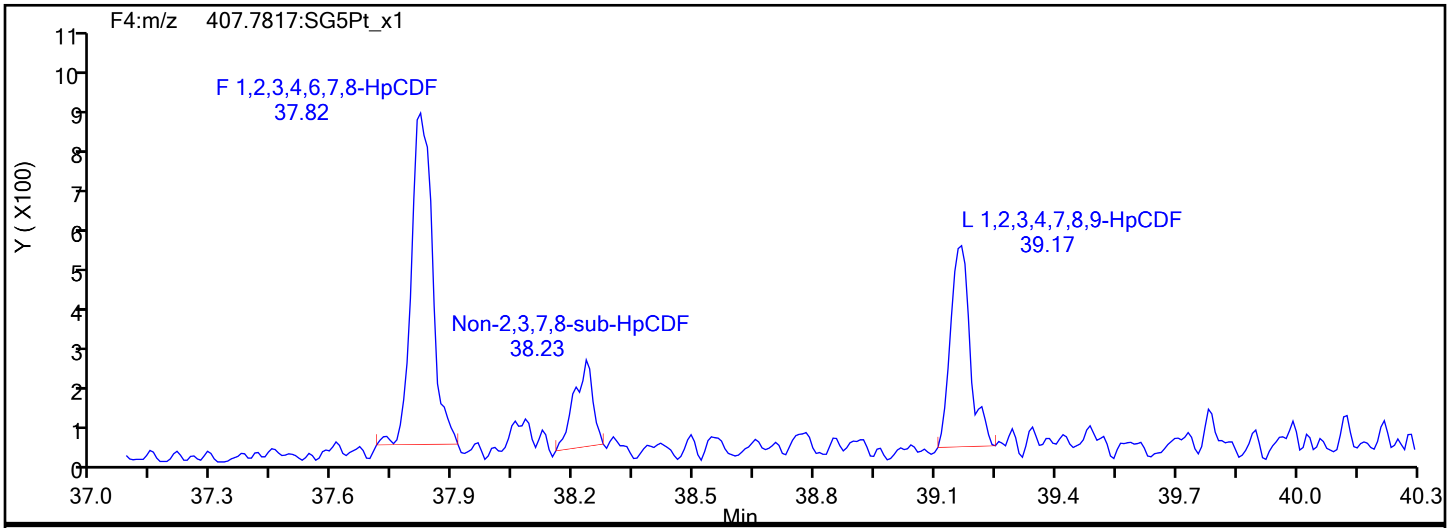

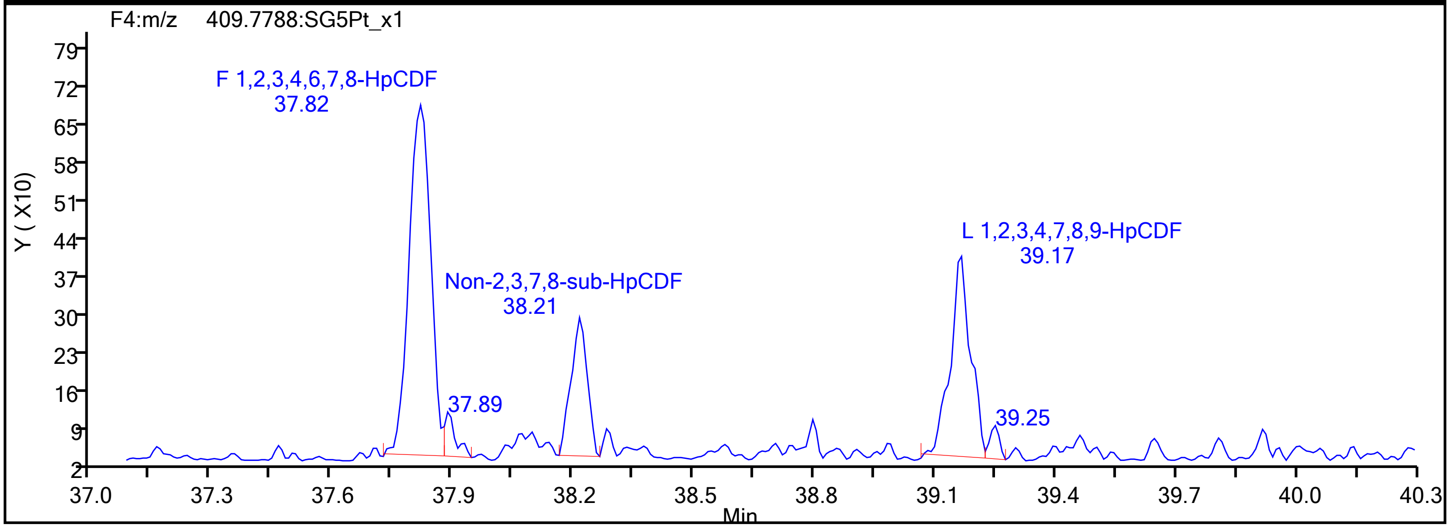

HpCDF Interference Mass

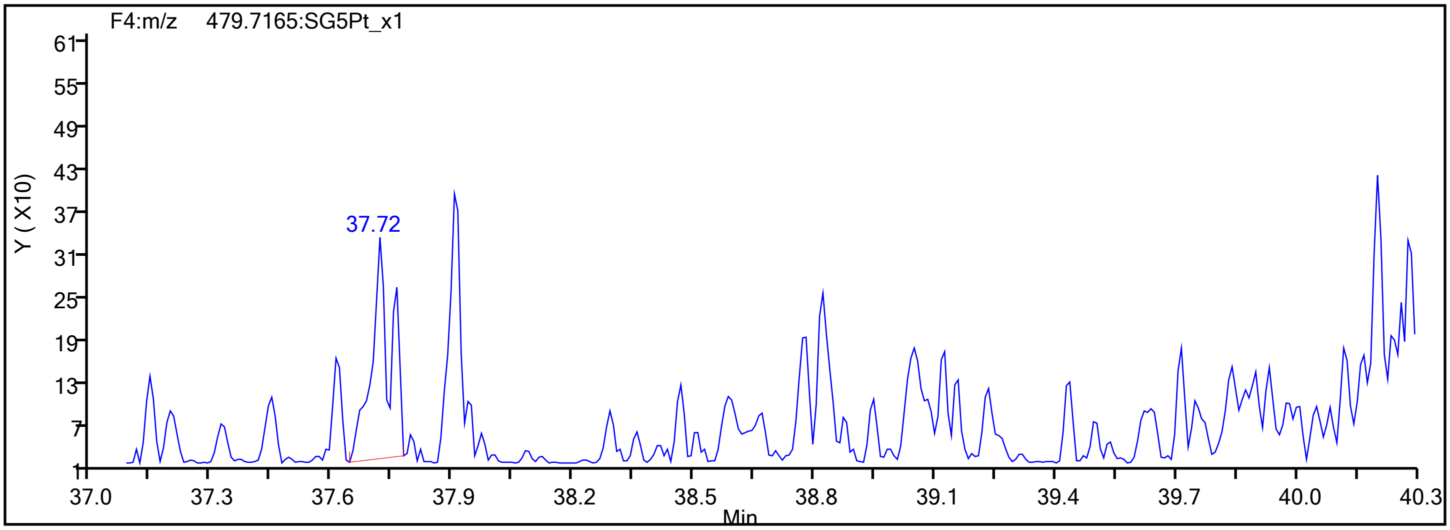

Report Date: 16-Mar-2021 09:37:37 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

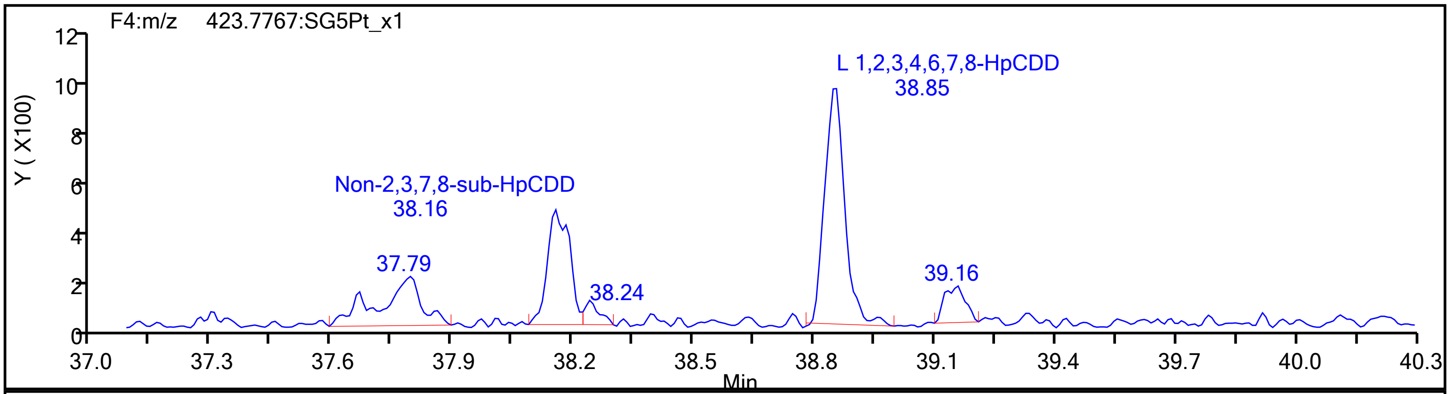

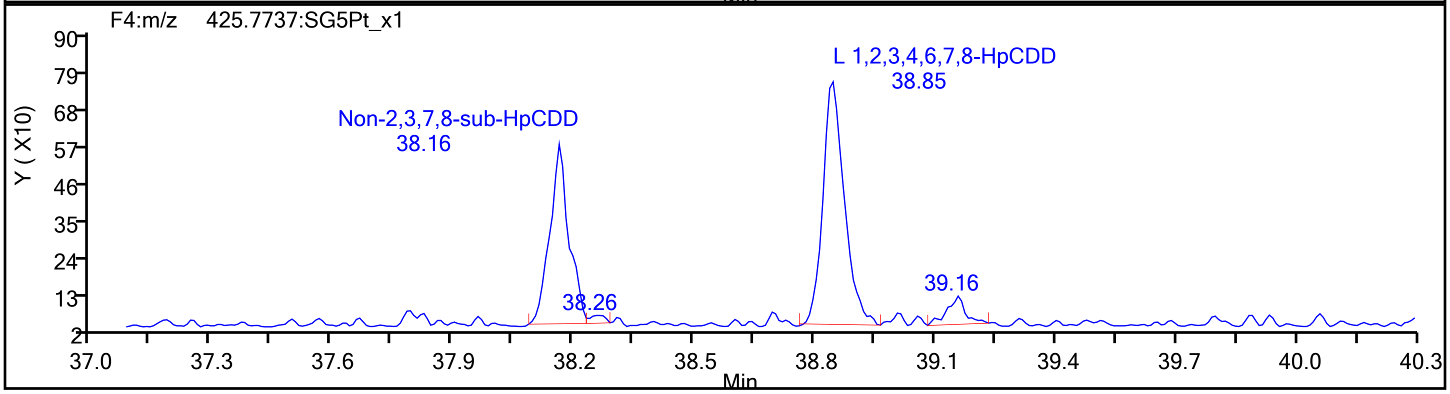

HpCDD Standards

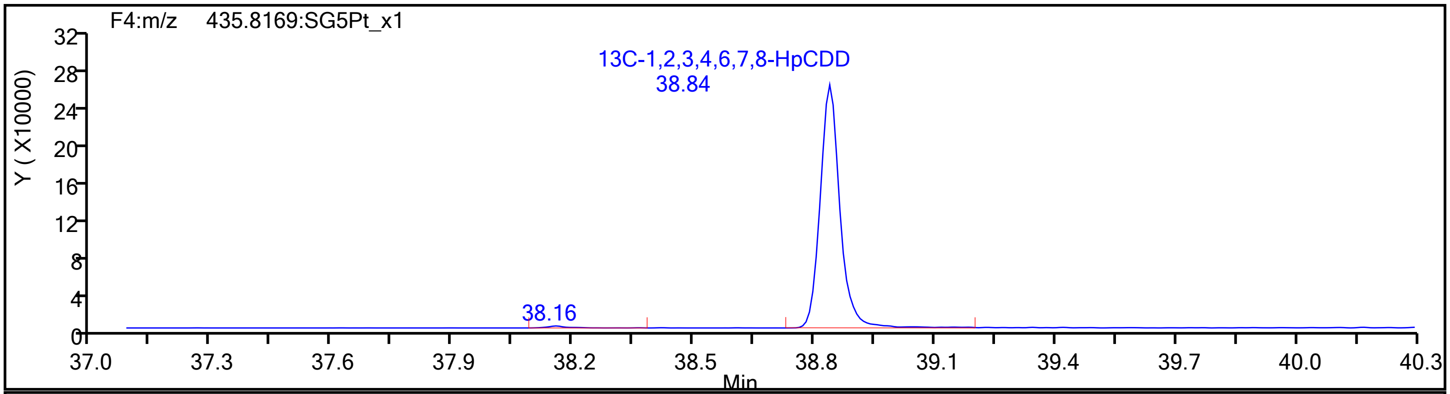

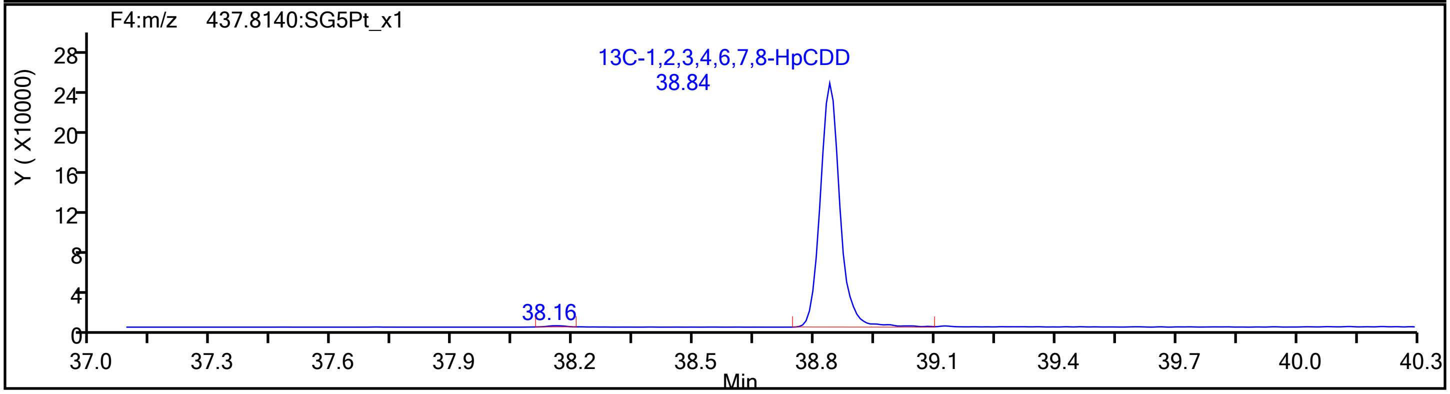

Report Date: 16-Mar-2021 09:37:37 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

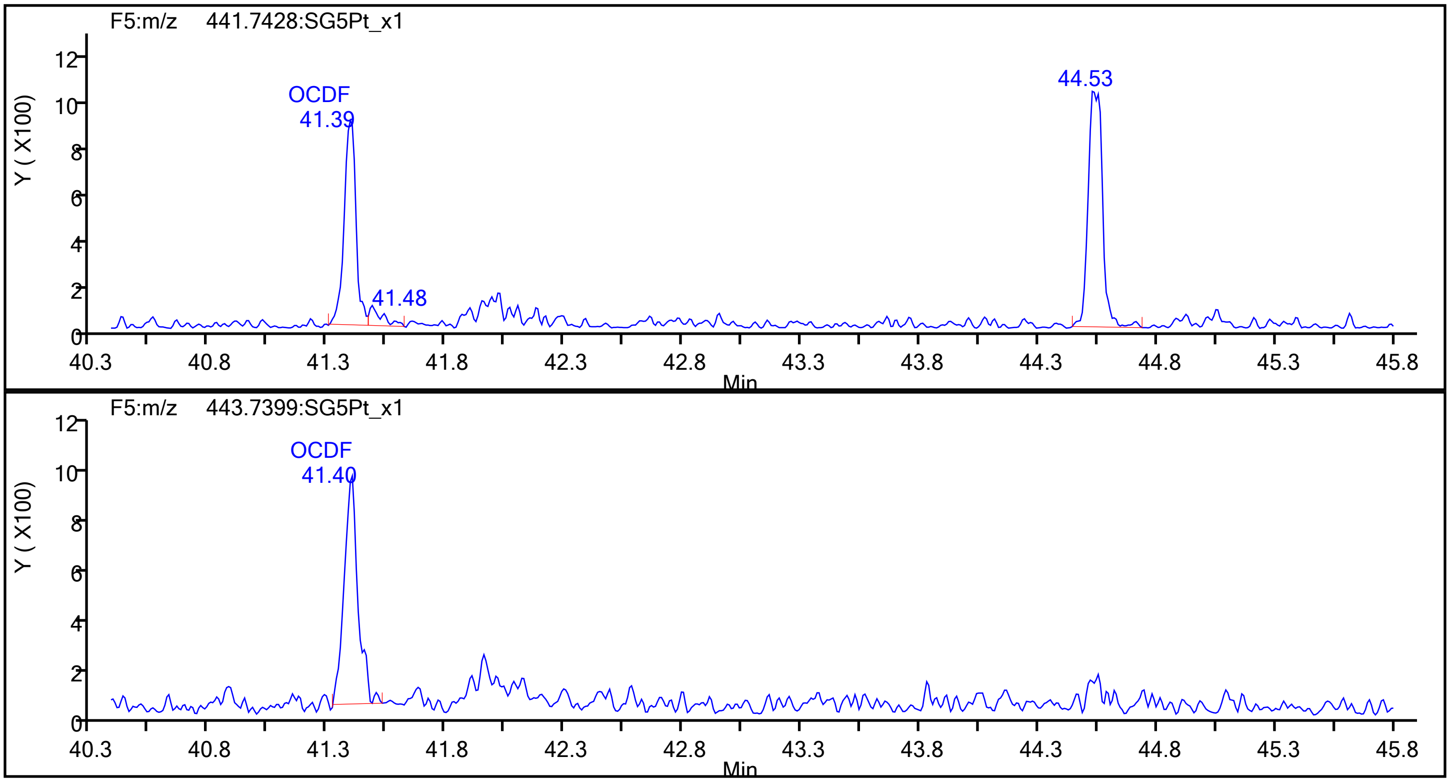

OCDF Standards

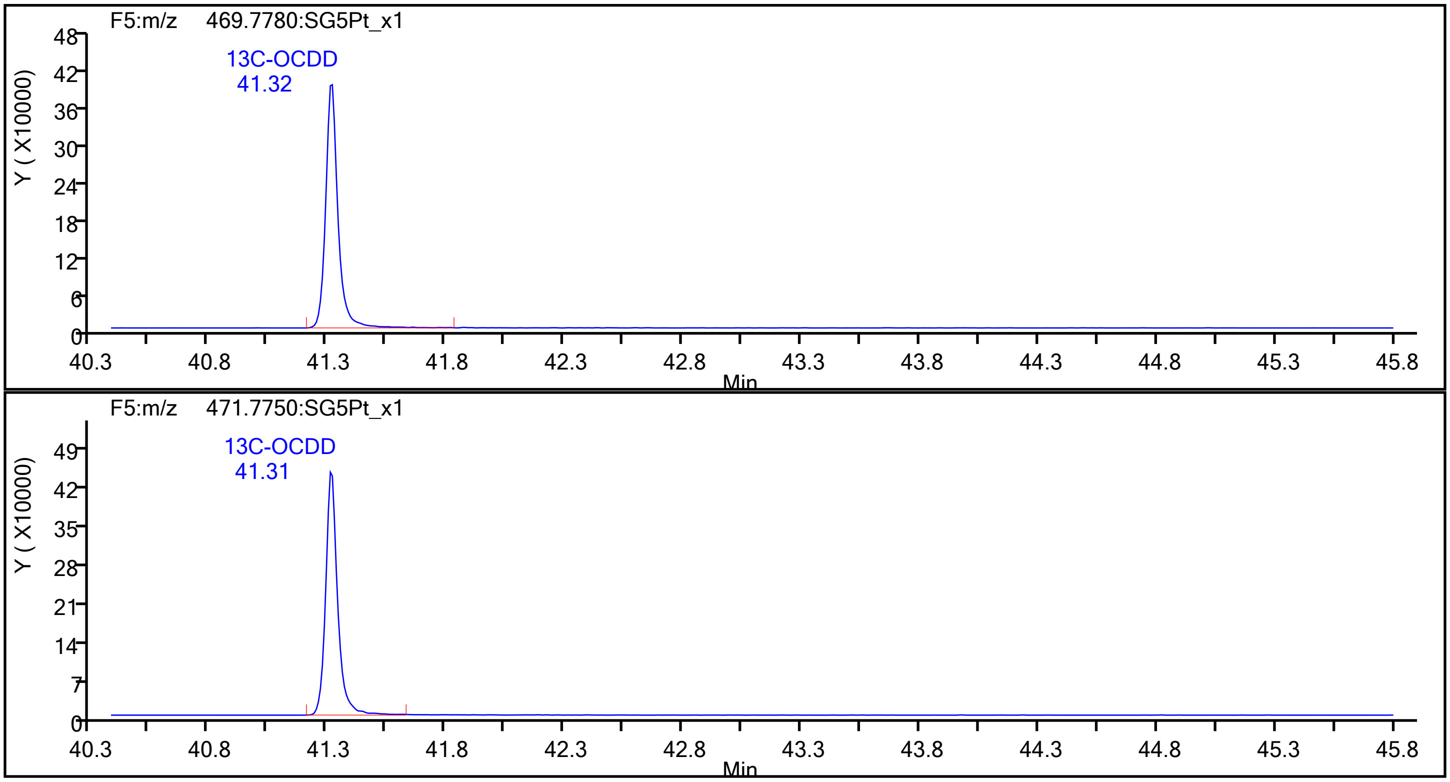

Report Date: 16-Mar-2021 09:37:37 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d

Injection Date: 12-Mar-2021 20:08:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.1mm

Worklist#: 469779 Sample Line#: 13

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

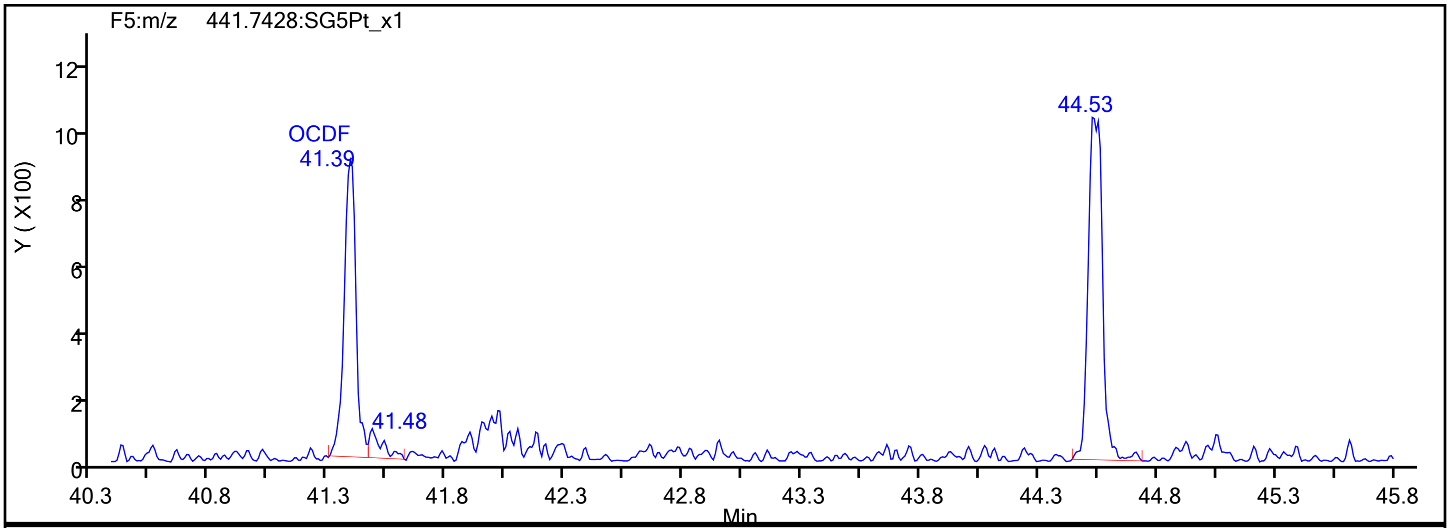

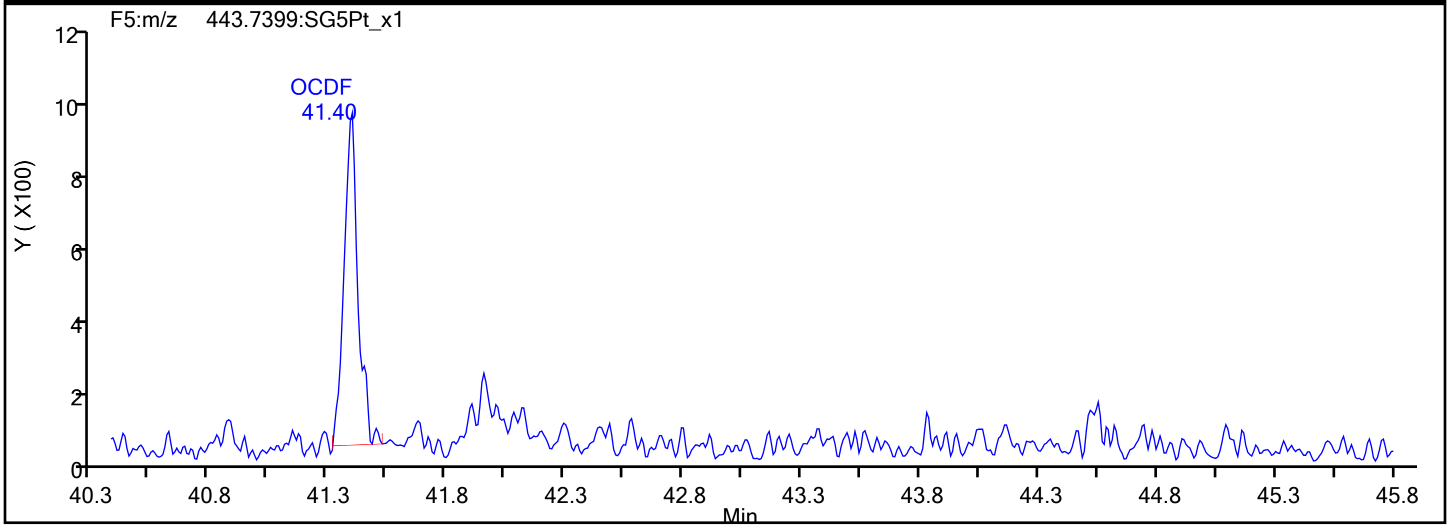

OCDF Interference Mass

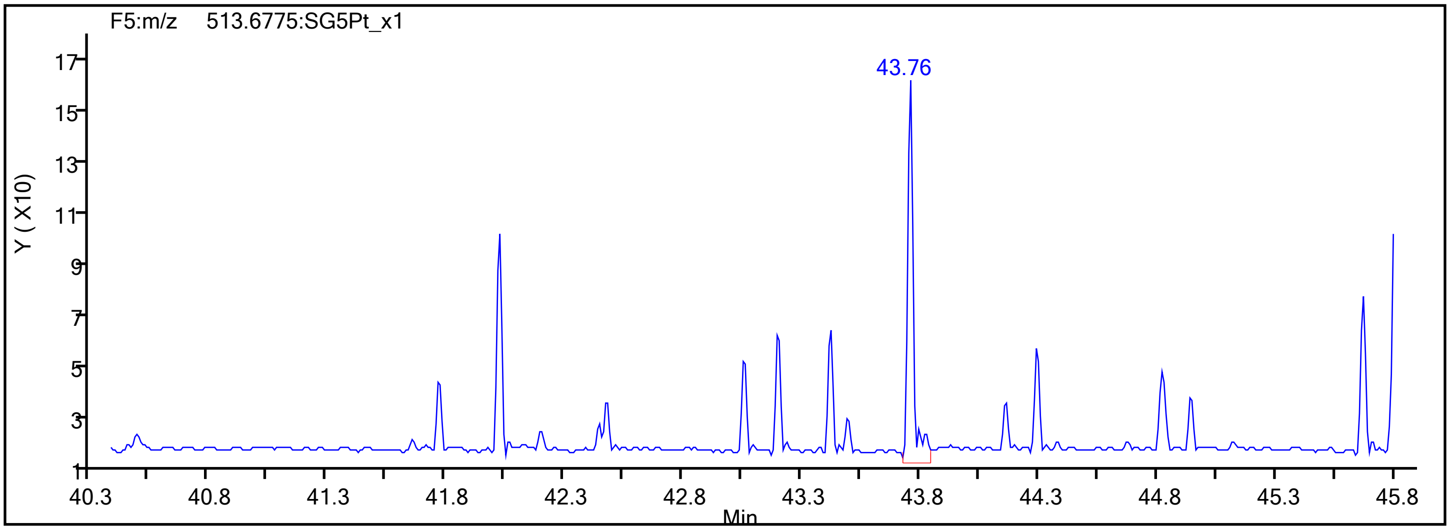

Report Date: 16-Mar-2021 09:37:37 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

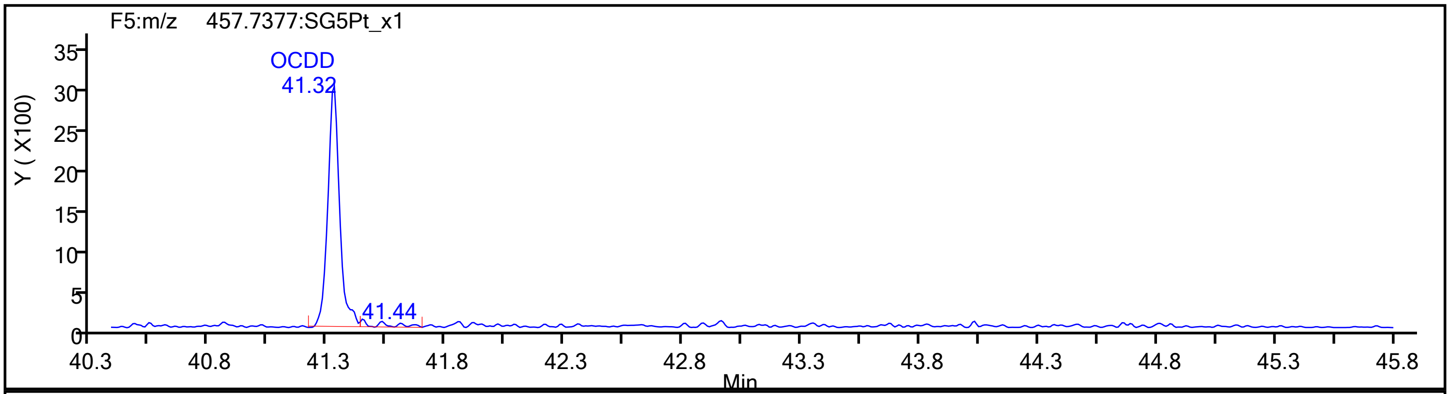

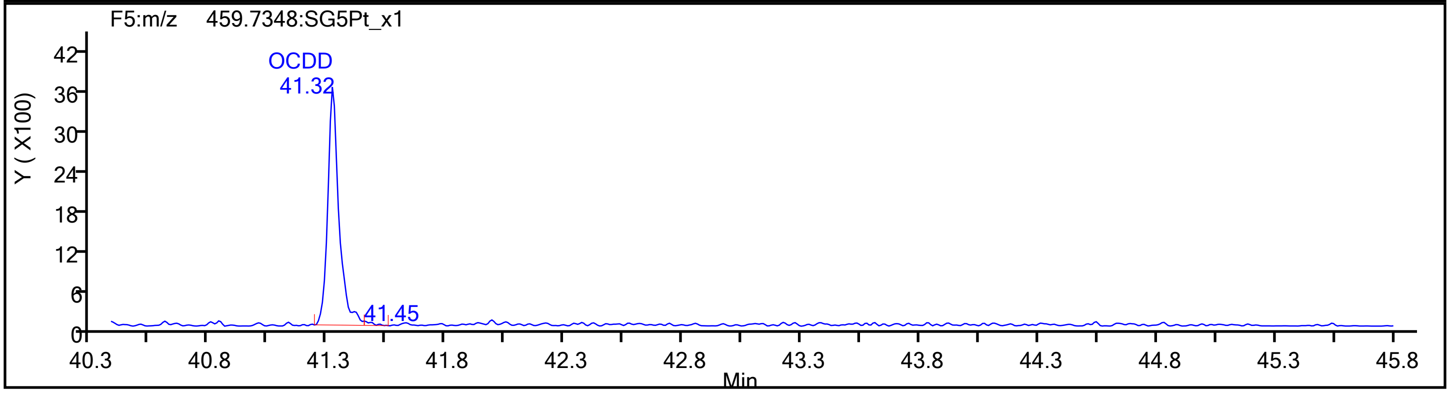

OCDD Standards

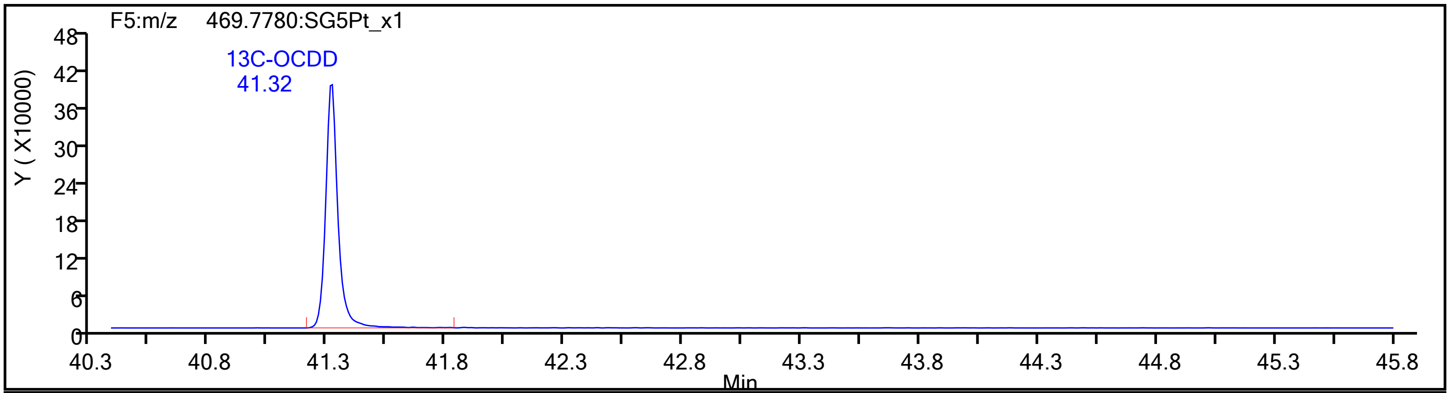

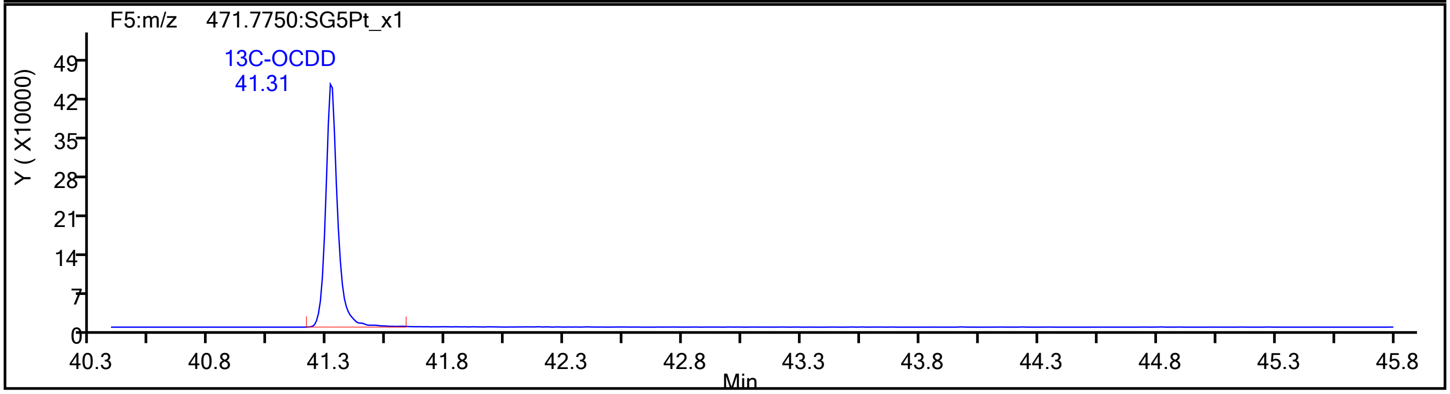

Report Date: 16-Mar-2021 09:37:37 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d

Injection Date: 12-Mar-2021 20:08:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Tank2-0.1mm

Worklist#: 469779

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

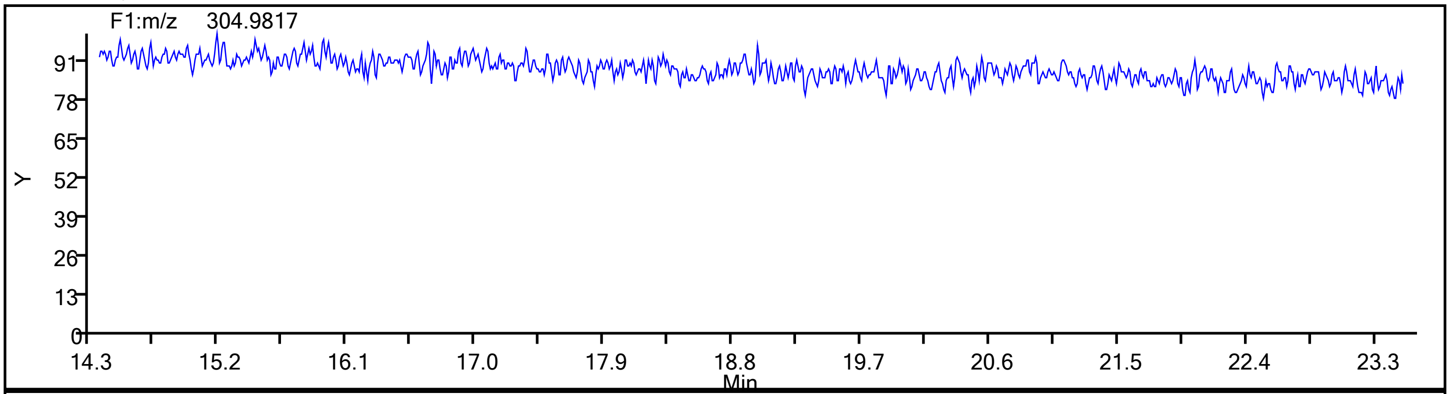

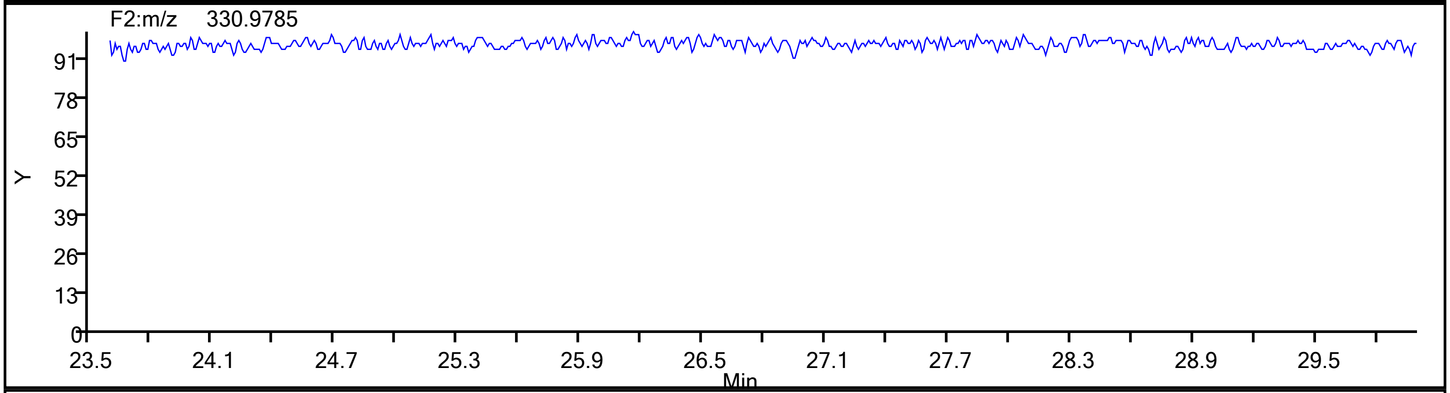

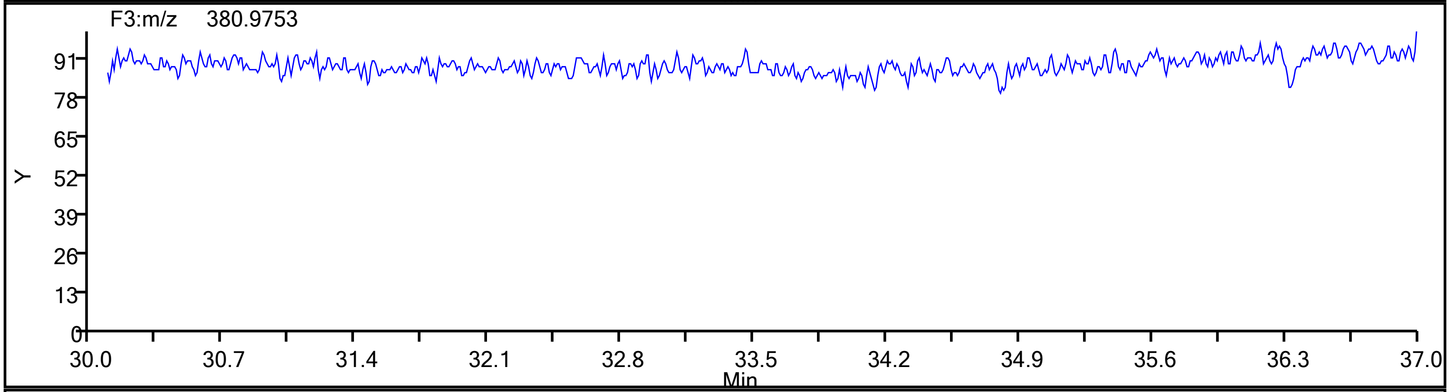

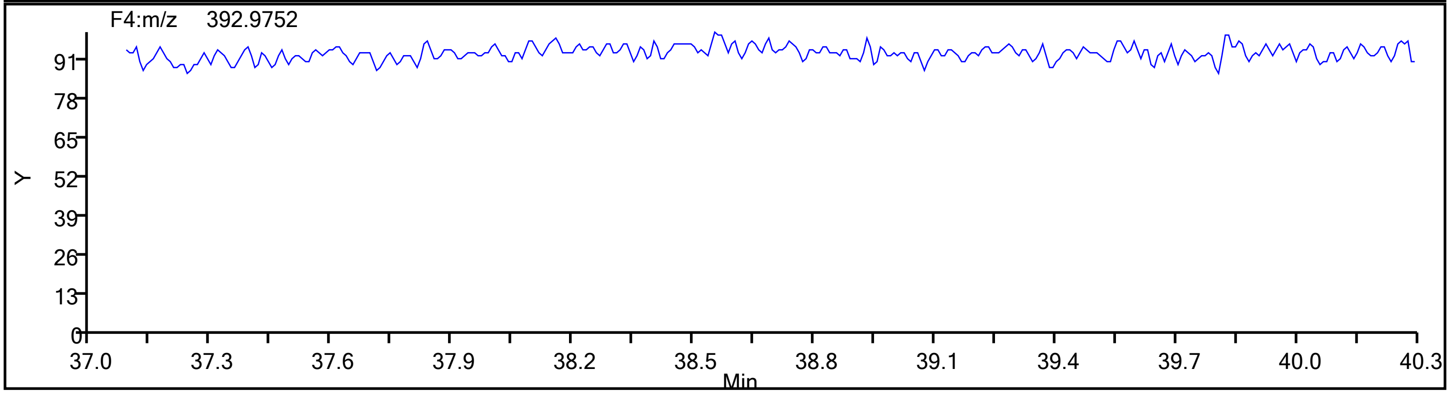

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_14.d		
Injection Date:	12-Mar-2021 20:08:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Tank2-0.1mm		
Worklist#:	469779	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

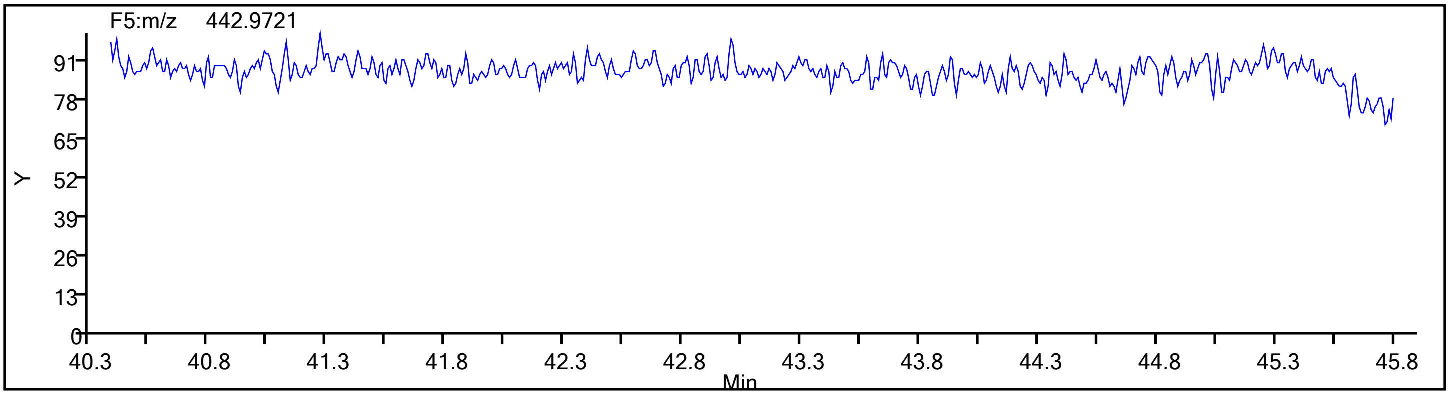

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 470907

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2021 01:10 Calibration End Date: 03/17/2021 04:10 Calibration ID: 54606

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-470907/3	16MR21C10D5_3.d
Level 2	IC 320-470907/4	16MR21C10D5_4.d
Level 3	IC 320-470907/5	16MR21C10D5_5.d
Level 4	IC 320-470907/6	16MR21C10D5_6.d
Level 5	IC 320-470907/7	16MR21C10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.0327	0.8606	0.9919	1.0533	1.0129	AveID		0.9903				7.7		20.0			
2,3,7,8-TCDD	1.2381	0.9079	1.0681	1.1476	1.1338	AveID		1.0991				11.2		20.0			
1,2,3,7,8-PeCDF	1.0560	0.8657	1.0596	1.0791	1.0443	AveID		1.0209				8.6		20.0			
2,3,4,7,8-PeCDF	1.0137	0.8148	1.0181	1.0733	0.9751	AveID		0.9790				10.0		20.0			
1,2,3,7,8-PeCDD	1.0439	0.8535	1.0115	1.0630	1.0193	AveID		0.9982				8.4		20.0			
1,2,3,4,7,8-HxCDF	1.1332	0.8899	1.1010	1.1540	1.0552	AveID		1.0667				9.9		20.0			
1,2,3,6,7,8-HxCDF	1.1669	0.9504	1.1559	1.1837	1.1323	AveID		1.1178				8.5		20.0			
2,3,4,6,7,8-HxCDF	1.1818	0.9813	1.1699	1.2224	1.1557	AveID		1.1422				8.2		20.0			
1,2,3,4,7,8-HxCDD	1.0736	0.8711	1.0602	1.1488	1.0248	AveID		1.0357				9.9		20.0			
1,2,3,6,7,8-HxCDD	0.9801	0.8117	1.0088	1.0384	0.9902	AveID		0.9658				9.2		20.0			
1,2,3,7,8,9-HxCDD	1.0677	0.8597	1.1472	1.1951	1.0937	AveID		1.0727				12.0		20.0			
1,2,3,7,8,9-HxCDF	1.1855	0.9631	1.1946	1.2262	1.1583	AveID		1.1455				9.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.4175	1.1874	1.4718	1.5045	1.4272	AveID		1.4017				8.9		20.0			
1,2,3,4,6,7,8-HpCDD	1.0575	0.8826	1.0771	1.1007	1.0515	AveID		1.0339				8.4		20.0			
1,2,3,4,7,8,9-HpCDF	1.3296	1.0907	1.3542	1.4289	1.2944	AveID		1.2995				9.8		20.0			
OCDD	1.0827	0.9042	1.0932	1.1307	1.0770	AveID		1.0576				8.3		20.0			
OCDF	1.2990	1.1062	1.3695	1.4199	1.3732	AveID		1.3135				9.4		20.0			
13C-2,3,7,8-TCDF	1.3942	1.3054	1.3523	1.3512	1.3737	Ave		1.3554				2.4		35.0			
13C-2,3,7,8-TCDD	0.9396	0.8924	0.9221	0.9233	0.9272	Ave		0.9209				1.9		35.0			
13C-1,2,3,7,8-PeCDF	1.1082	1.0195	1.0815	1.1005	1.1137	Ave		1.0847				3.5		35.0			
13C-2,3,4,7,8-PeCDF	1.1486	1.0214	1.1000	1.0907	1.1676	Ave		1.1057				5.2		35.0			
13C-1,2,3,7,8-PeCDD	0.7896	0.7036	0.7735	0.7803	0.7978	Ave		0.7689				4.9		35.0			
13C-1,2,3,4,7,8-HxCDF	1.0447	1.0455	0.9944	1.0085	1.0674	Ave		1.0321				2.9		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0294	1.0468	0.9911	1.0172	1.0247	Ave		1.0218				2.0		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9935	0.9595	0.9652	0.9680	0.9781	Ave		0.9729				1.4		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7960	0.7566	0.7497	0.7369	0.8054	Ave		0.7689				3.9		35.0			
13C-1,2,3,6,7,8-HxCDD	0.8800	0.8715	0.8403	0.8631	0.8668	Ave		0.8643				1.7		35.0			
13C-1,2,3,7,8,9-HxCDF	0.9483	1.0006	0.9112	0.9311	0.9433	Ave		0.9469				3.5		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 470907

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2021 01:10 Calibration End Date: 03/17/2021 04:10 Calibration ID: 54606

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C-1,2,3,4,6,7,8-HpCDF	0.7640	0.6823	0.7164	0.7242	0.7297	Ave		0.7233				4.0		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7134	0.6614	0.6678	0.6867	0.6982	Ave		0.6855				3.1		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.6677	0.6749	0.6517	0.6574	0.7086	Ave		0.6720				3.3		35.0			
13C-OCDD	0.5193	0.4555	0.4902	0.5099	0.5231	Ave		0.4996				5.6		35.0			
37Cl4-2,3,7,8-TCDD	0.9658	0.9087	1.0364	1.0782	1.0905	Ave		1.0159				7.6					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 470907

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2021 01:10 Calibration End Date: 03/17/2021 04:10 Calibration ID: 54606

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-470907/3	16MR21C10D5_3.d
Level 2	IC 320-470907/4	16MR21C10D5_4.d
Level 3	IC 320-470907/5	16MR21C10D5_5.d
Level 4	IC 320-470907/6	16MR21C10D5_6.d
Level 5	IC 320-470907/7	16MR21C10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	379301	866742	7651723	33587557	176227922	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	306488	625094	5618621	25003898	133140046	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	1541509	3404794	32687525	140120398	736490885	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	1533694	3210512	31945303	138135217	720960457	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1085665	2316537	22317187	97869473	514946816	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	1434540	2808215	28767356	127500591	657684987	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	1455528	3002376	30100019	131910792	677459199	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	1422843	2841595	29671605	129635270	660041754	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1035602	1989198	20886093	92749353	481902898	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1045139	2134953	22272817	98186161	501185437	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1084147	2112136	23963675	104746465	533926500	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	1362334	2908456	28602707	125079659	637999595	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1312275	2445186	27703949	119374778	608093723	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	914148	1761793	18900297	82806395	428663744	2.50	10.0	50.0	200	1000

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 470907

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2021 01:10 Calibration End Date: 03/17/2021 04:10 Calibration ID: 54606

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
1,2,3,4,7,8,9-HpCDF		AveID	1075695	2221551	23188551	102914552	535549540	2.50	10.0	50.0	200	1000
OCDD		AveID	1362562	2486179	28164868	126336028	657930816	5.00	20.0	100	400	2000
OCDF		AveID	1634705	3041361	35282022	158650098	838841264	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	73459076	50358373	77145484	79722247	86988713	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	49508681	34425797	52605423	54471906	58712323	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	58393095	39330879	61696360	64926391	70522450	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	60520258	39403105	62753914	64348319	73937882	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	41601694	27141714	44125952	46036052	50517938	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	50636356	31554822	52255820	55243673	62326448	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	49893250	31592088	52082737	55719806	59831180	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	48157462	28956799	50722895	53024531	57111280	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	38583102	22835892	39398721	40366933	47025482	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	42652788	26303141	44158951	47276754	50613988	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	45965019	30198983	47888248	51001144	55080975	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	37029825	20592597	37647100	39671285	42606325	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	34578342	19961913	35095772	37615875	40768221	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	32361768	20368580	34247640	36012214	41373383	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	50339162	27495006	51526489	55865969	61088074	200	200	200	200	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 470907

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/17/2021 01:10 Calibration End Date: 03/17/2021 04:10 Calibration ID: 54606

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
37Cl4-2,3,7,8-TCDD	13CT CDD	Ave	254432	701062	5912219	25445827	138103821	0.500	2.00	10.0	40.0	200

Curve Type Legend
Ave = Average ISTD
AveID = Average isotope dilution

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\16MR21C10D5.SPL

Last Modified: Wednesday, March 17, 2021 10:58:24 Pacific Daylight Time

Printed: Wednesday, March 17, 2021 10:58:27 Pacific Daylight Time

Page 1 of 3

Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	16MR21C10D5_1	WDM HRDXNCP_00042	WDM 031621B	Tray01:1	Dioxin		ALM
2	16MR21C10D5_2	SB Solvent Blank C-14	SB 031621A	Tray01:3			ALM
3	16MR21C10D5_3	CS-2 HRDXNL2_00032	IC 031621	Tray01:4	Dioxin		ALM
4	16MR21C10D5_4	CS-3 HRDXNL3_00029	IC 031621A	Tray01:5	Dioxin		ALM
5	16MR21C10D5_5	CS-4 HRDXNL4_00097	IC 031621B	Tray01:2	Dioxin		ALM
6	16MR21C10D5_6	CS-5 HRDXNL5_00032	IC 031621C	Tray01:6	Dioxin		ALM
7	16MR21C10D5_7	CS-6 HRDXNL6_00028	IC 031621D	Tray01:7	Dioxin		ALM
8	16MR21C10D5_8	SB Solvent Blank C-14	SB 031621B	Tray01:3			ALM
9	16MR21C10D5_9	ICV HRDXNIC_00047	ICV 031621	Tray01:8	Dioxin ← Not used; bad injection		ALM
10	16MR21C10D5_10	CS-4 HRDXNL4_00097	CCV 031621E	Tray01:2	Dioxin		ALM
11	16MR21C10D5_11	WDM HRDXNCP_00042	WDM 031621C	Tray01:1	Dioxin		ALM

Logfile ✓'d
3/17/21
KSS

Sample Size	Units	MS File	Inlet File	Inject Volume	Process
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

Process Options	**Action On Error**	**s5**
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
---	---	C:\CHROM
---	---	C:\CHROM

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, March 16, 2021 23:33:50 Pacific Daylight Time

M 292.9824 R 11570

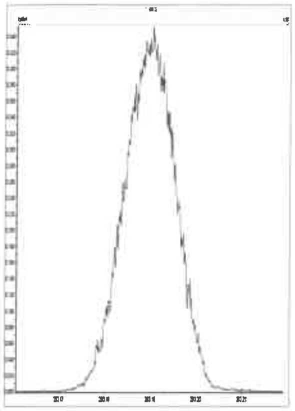

M 304.9824 R 11732

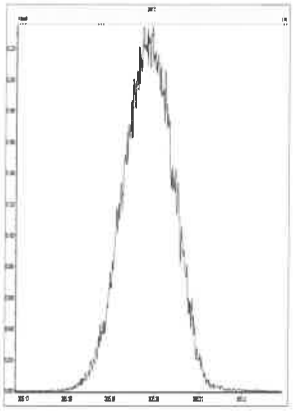

M 318.9792 R 12194

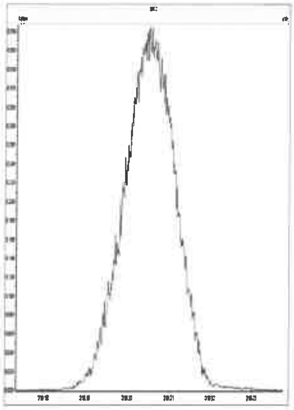

M 330.9792 R 11631

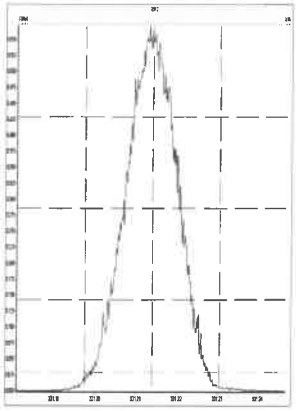

M 342.9792 R 11313

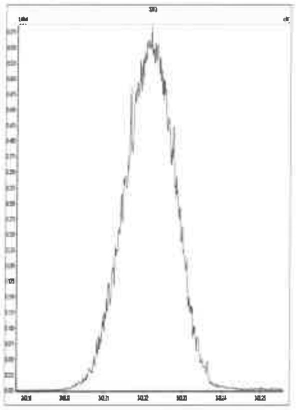

M 354.9792 R 11792

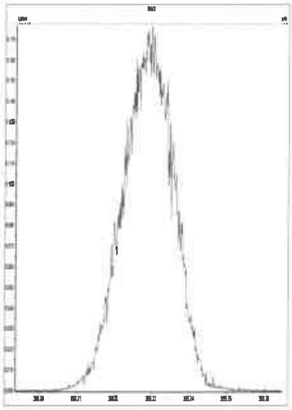

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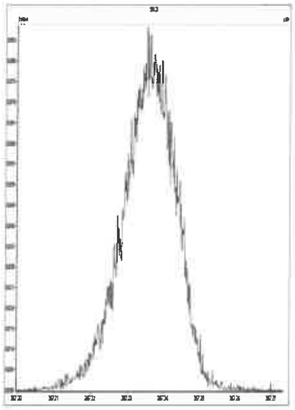

M 380.9760 R 11417

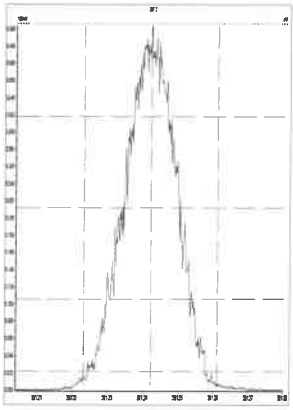

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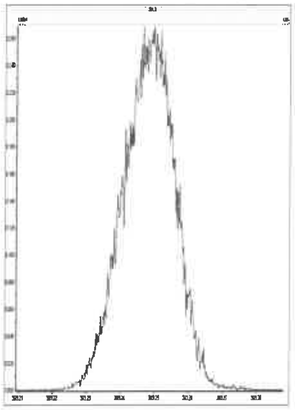

M 404.9760 R 11061

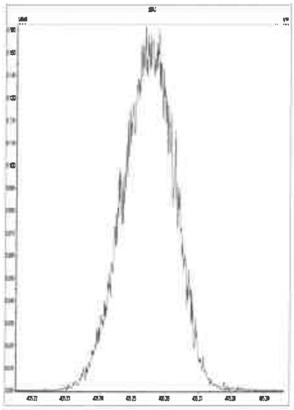

M 416.9760 R 12317

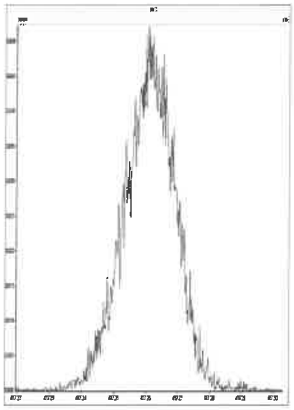

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, March 16, 2021 23:34:48 Pacific Daylight Time

M 318.9792 R 11792

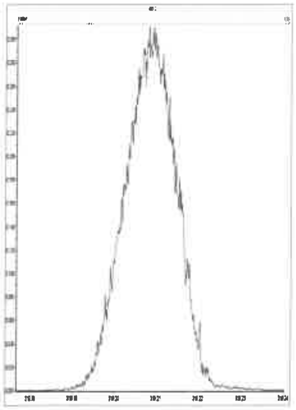

M 330.9792 R 11466

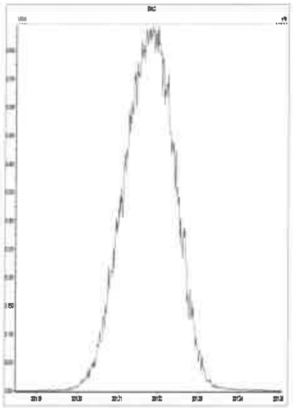

M 342.9792 R 11794

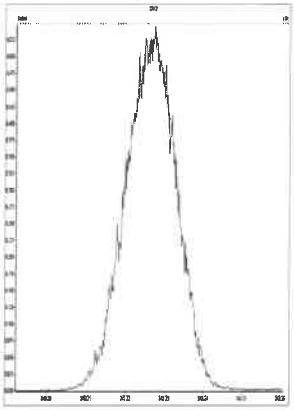

M 354.9792 R 11905

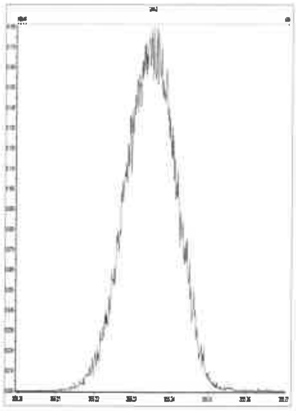

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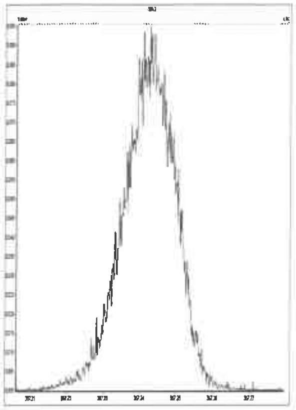

M 380.9760 R 11571

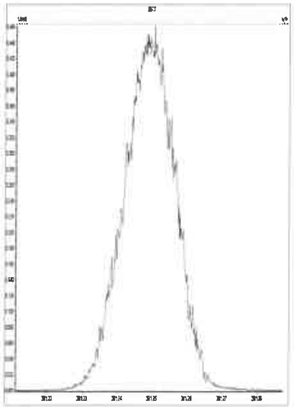

M 392.9760 R 11629

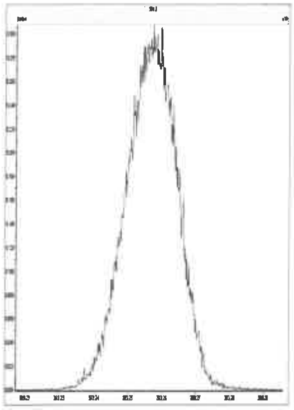

M 404.9760 R 11311

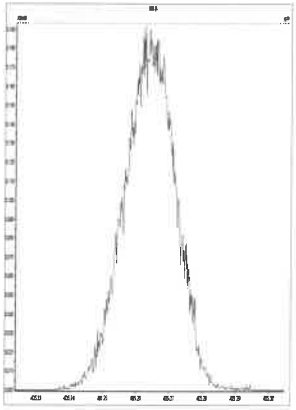

M 416.9760 R 11680

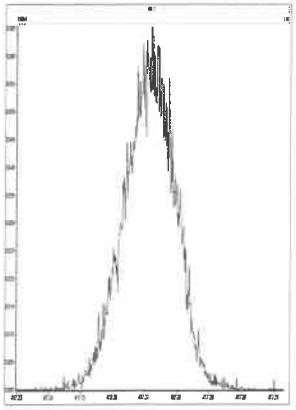

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, March 16, 2021 23:35:59 Pacific Daylight Time

M 366.9792 R 11792

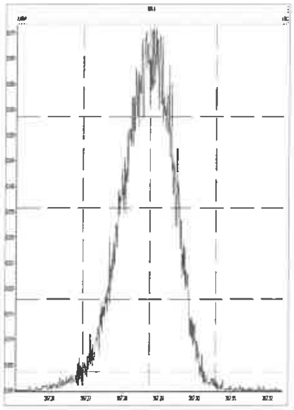

M 380.9760 R 11578

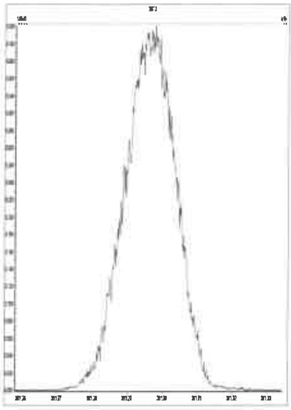

M 392.9760 R 11790

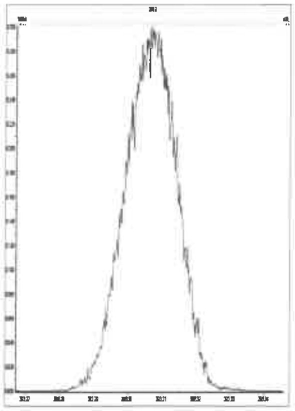

M 404.9760 R 11958

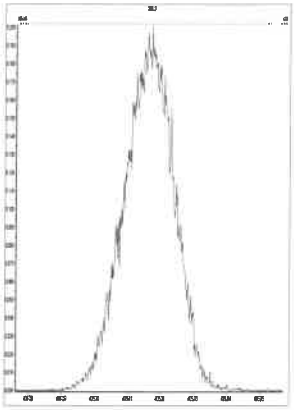

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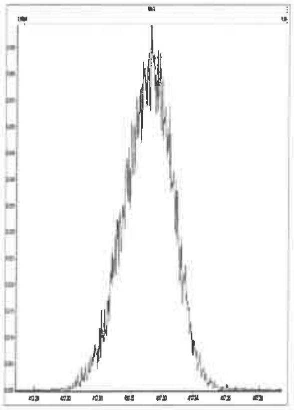

M 430.9728 R 11681

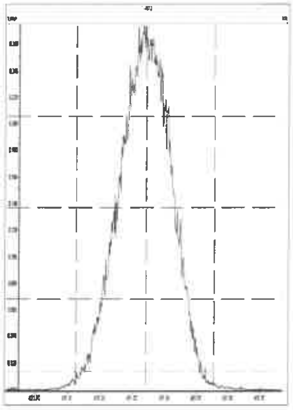

M 442.9728 R 11465

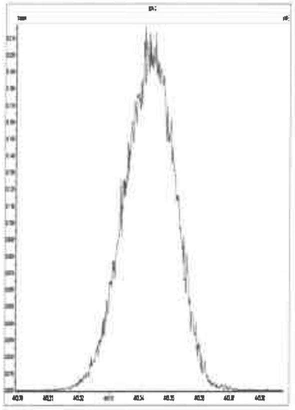

M 454.9728 R 11211

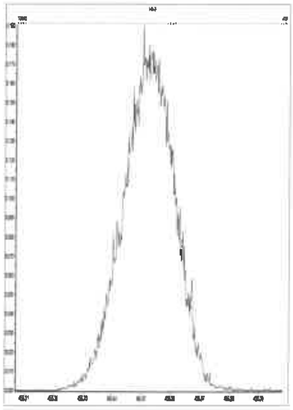

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, March 16, 2021 23:37:50 Pacific Daylight Time

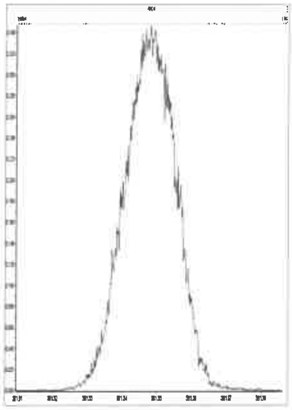
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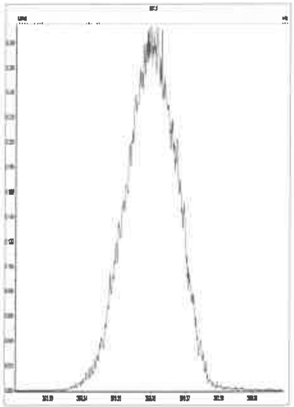
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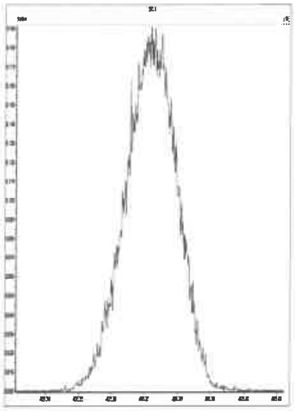
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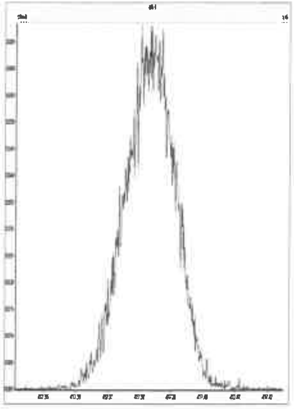
M 416.9760 R 12020

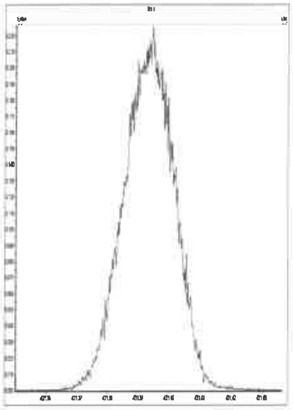
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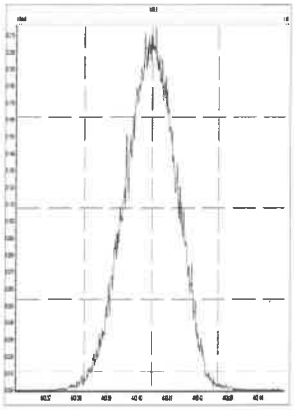
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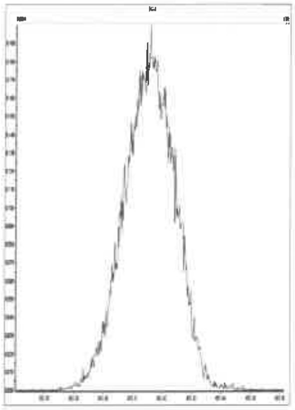
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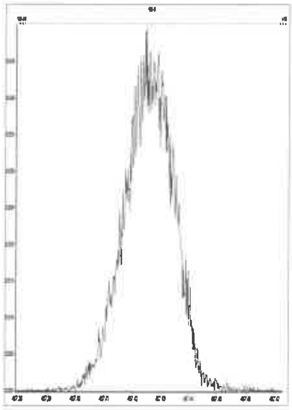
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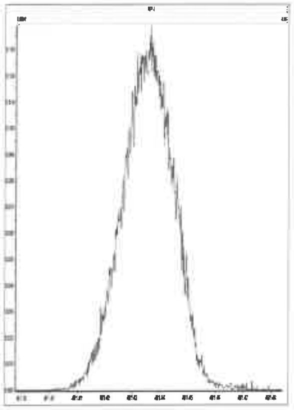
M 480.9696 R 11468

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, March 16, 2021 23:39:12 Pacific Daylight Time

M 380.9760 R 11905

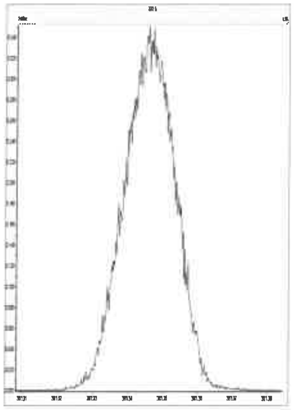

M 392.9760 R 11681

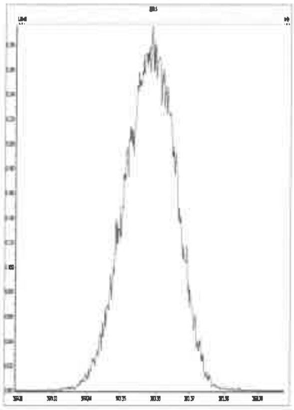

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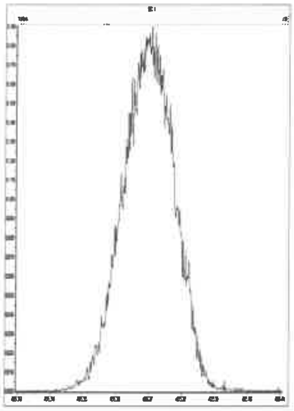

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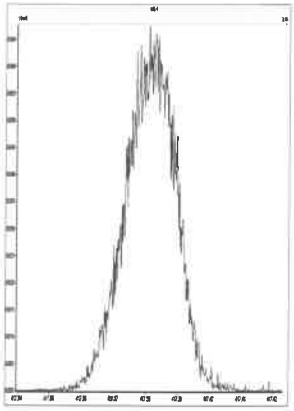

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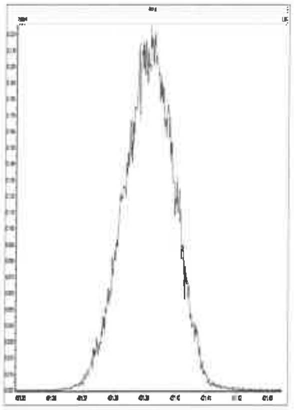

M 442.9728 R 11260

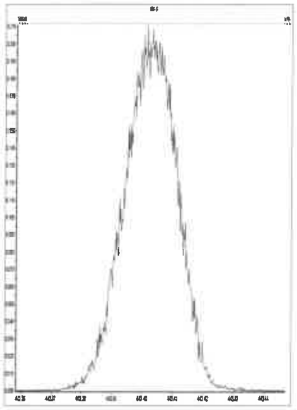

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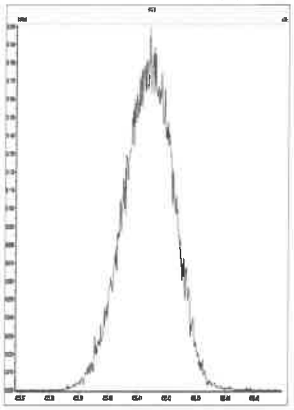

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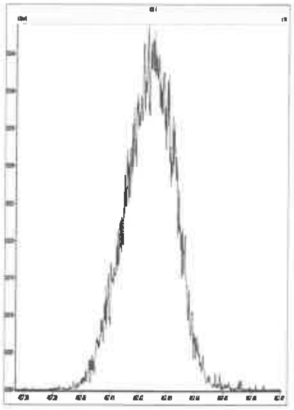

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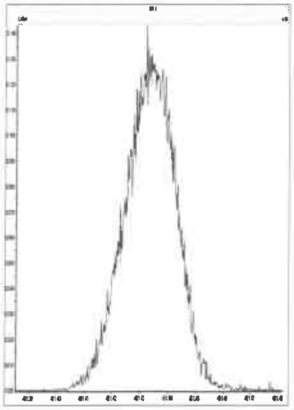

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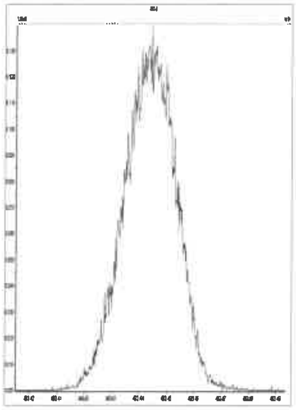

M 504.9696 R 11790

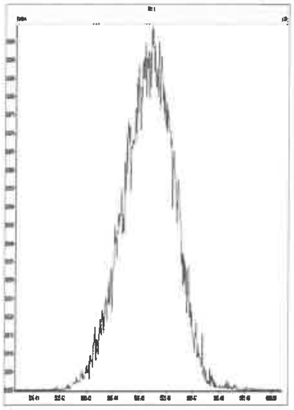

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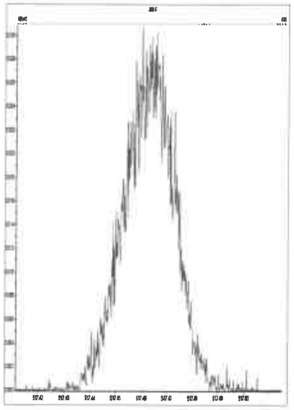

Resolution Check Report **MassLynx 4.1**

Printed: Wednesday, March 17, 2021 05:05:27 Pacific Daylight Time

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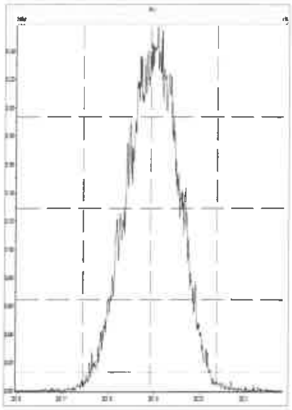

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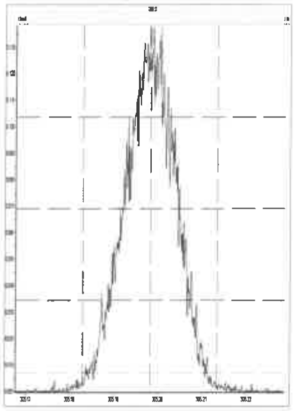

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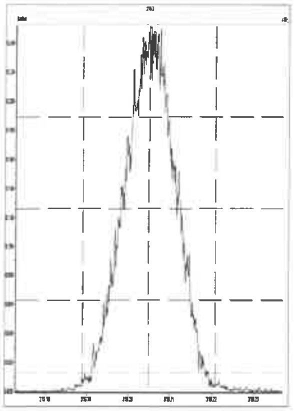

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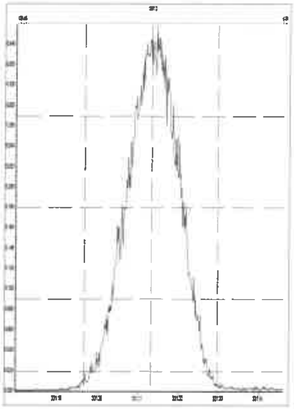

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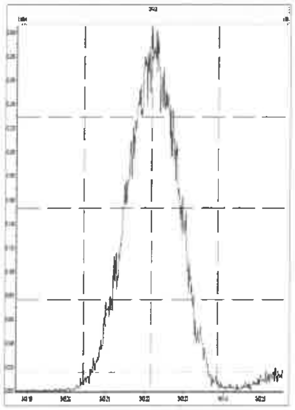

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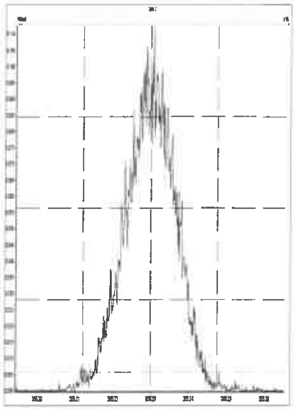

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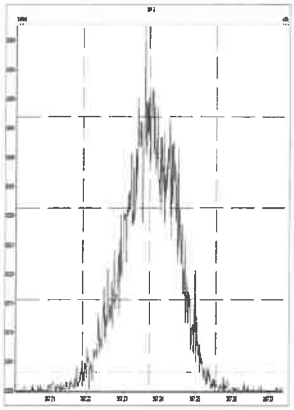

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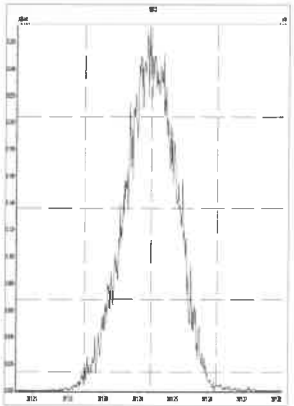

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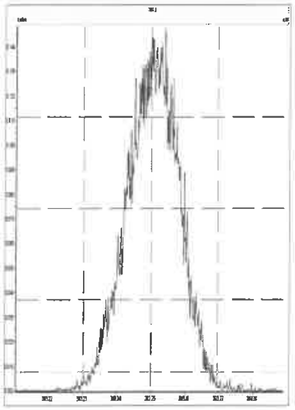

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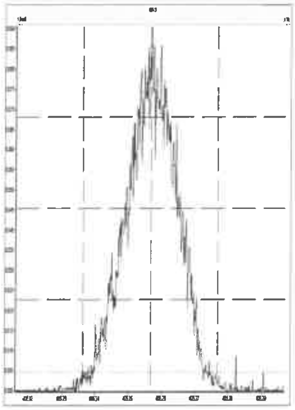

M 416.9760 R 12890

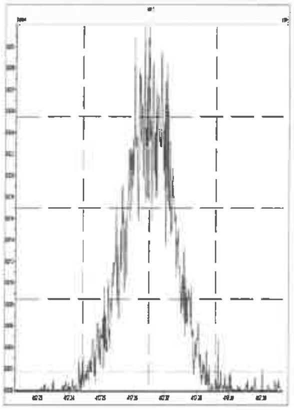

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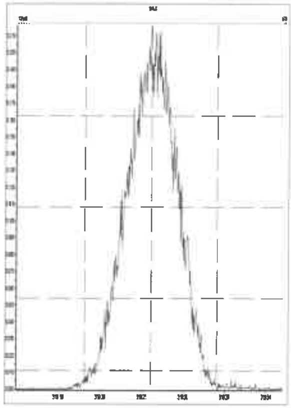

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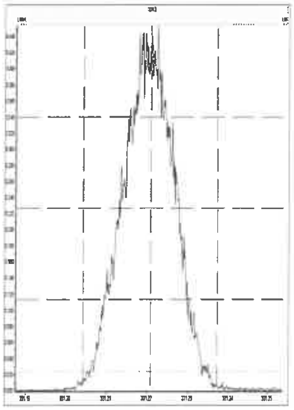

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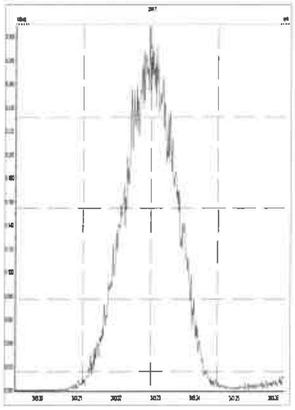

M 354.9792 R 11767

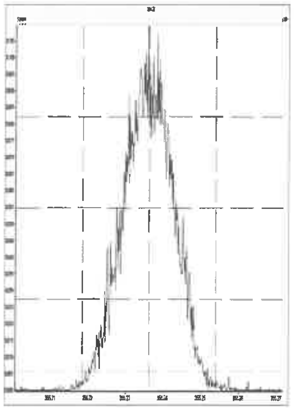

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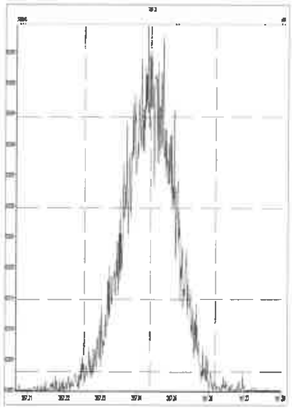

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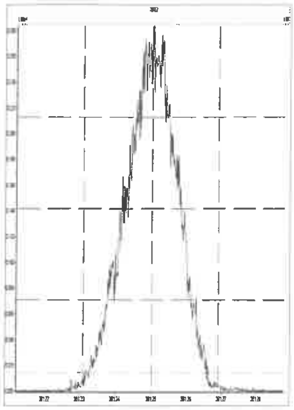

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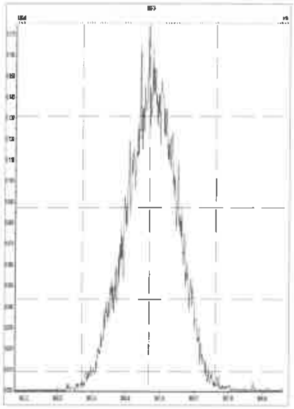

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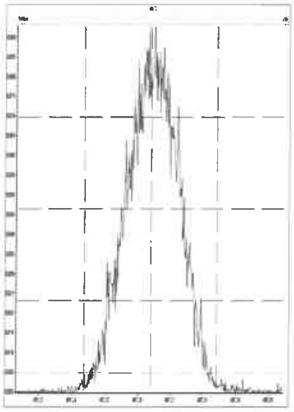

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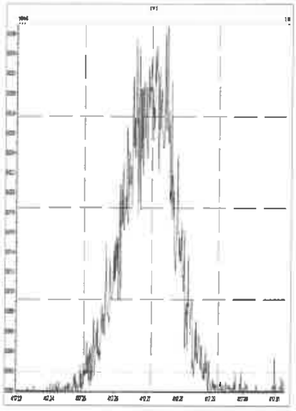

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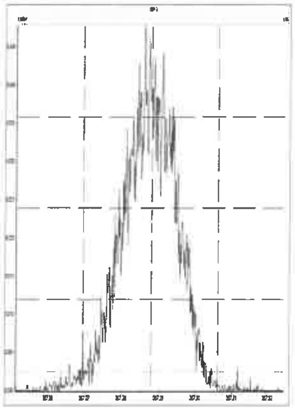

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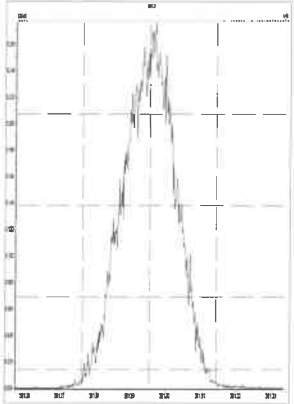

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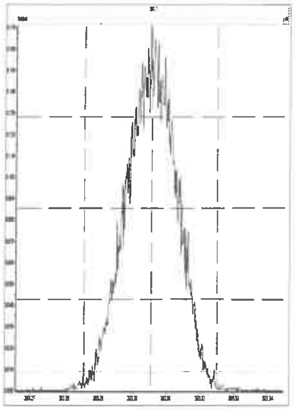

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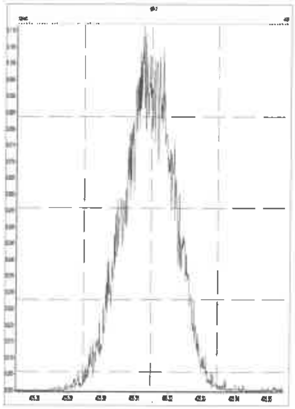

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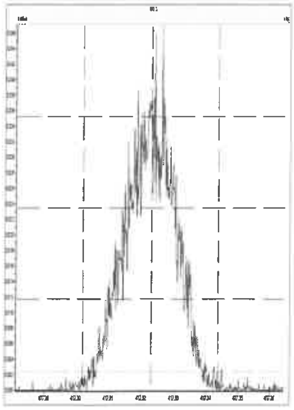

M 430.9728 R 11654

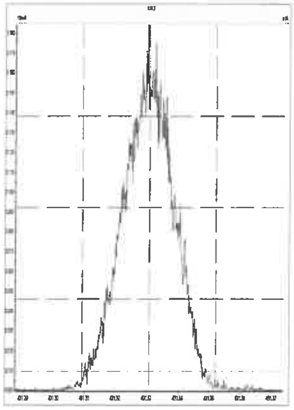

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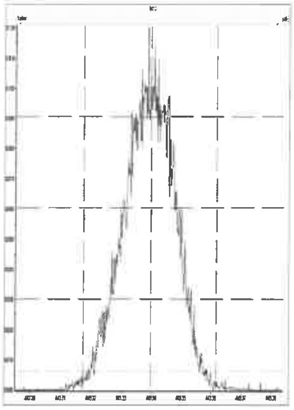

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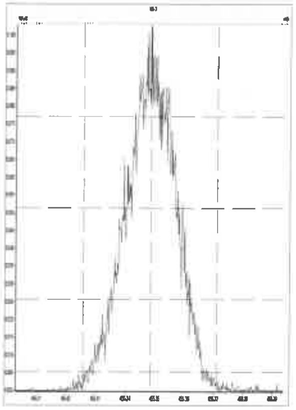

M 380.9760 R 11468

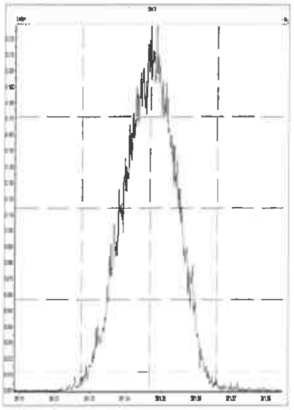

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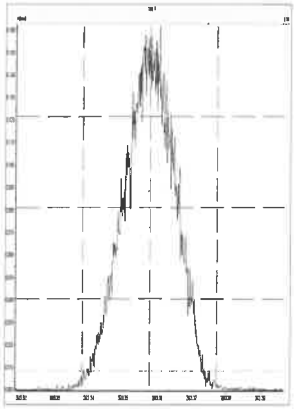

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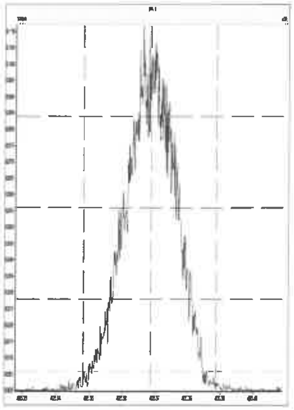

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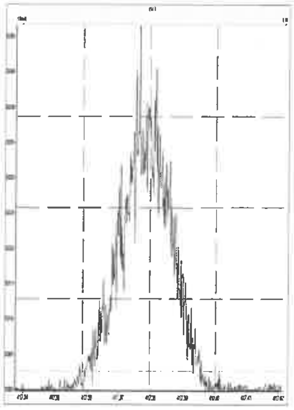

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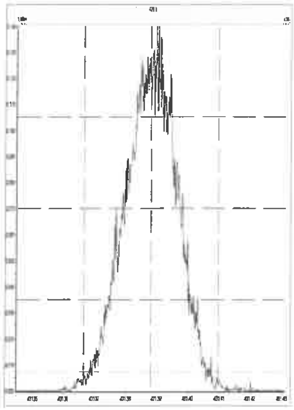

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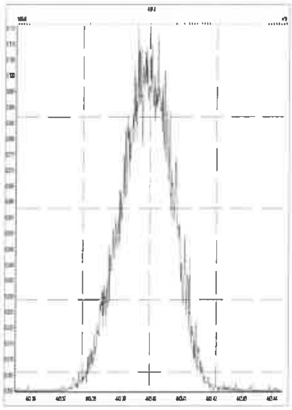

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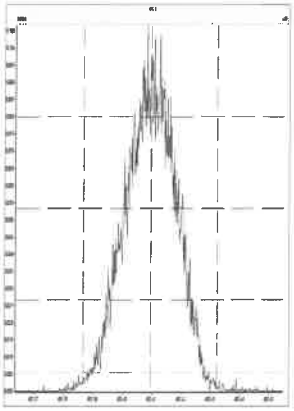

M 466.9728 R 13106

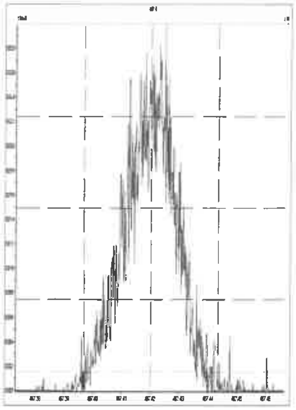

M 480.9696 R 11611

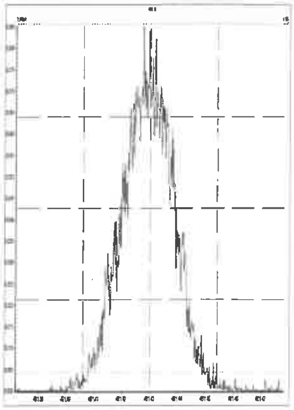

M 380.9760 R 11363

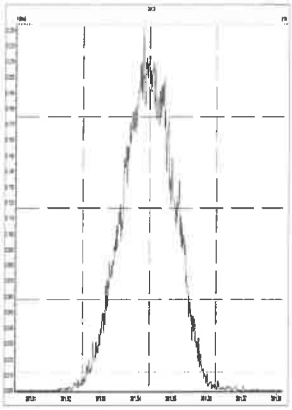

M 392.9760 R 11783

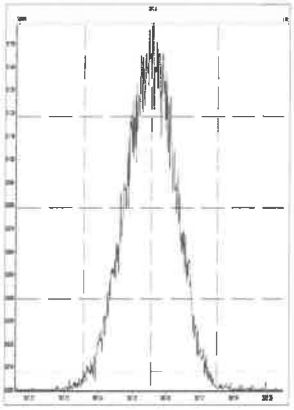

M 404.9760 R 11585

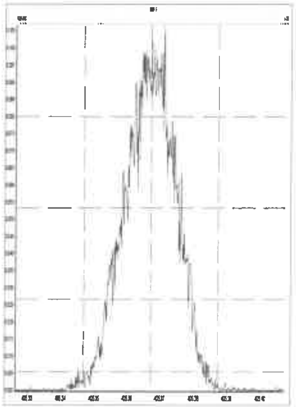

M 416.9760 R 12477

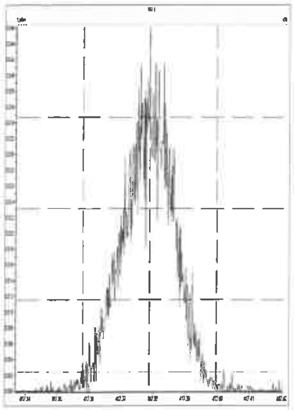

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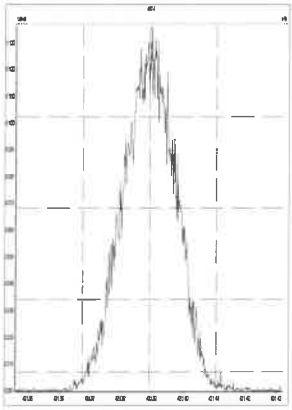

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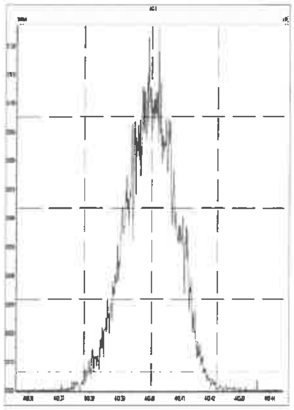

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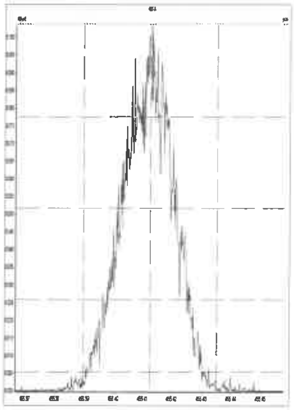

M 466.9728 R 12920

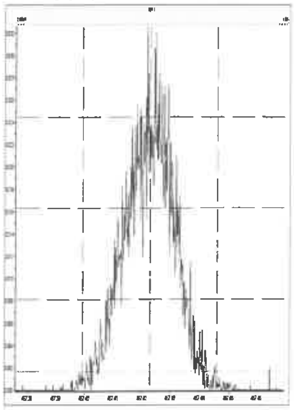

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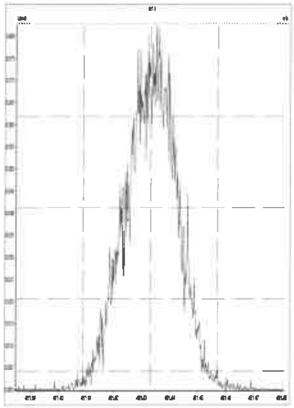

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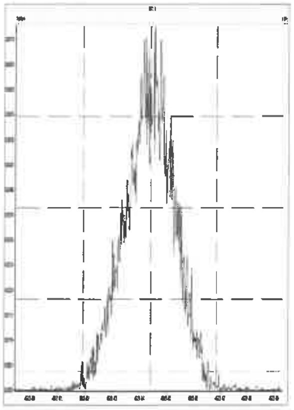

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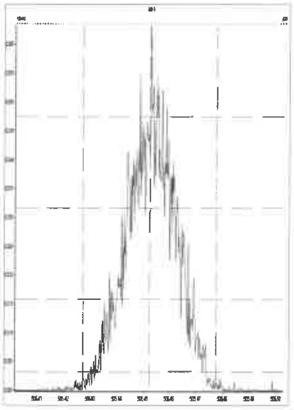

M 516.9697 R 12107

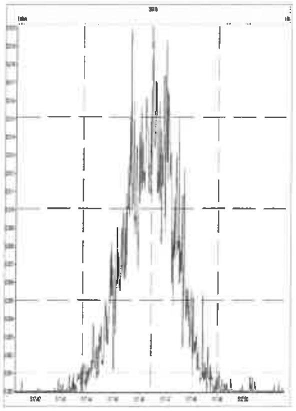

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 08:39:55 Pacific Daylight Time

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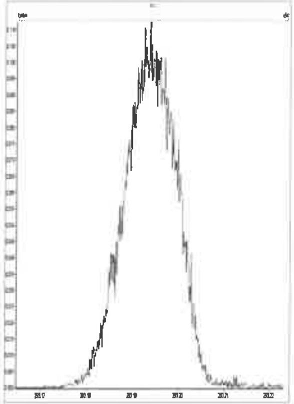

M 304.9824 R 11849

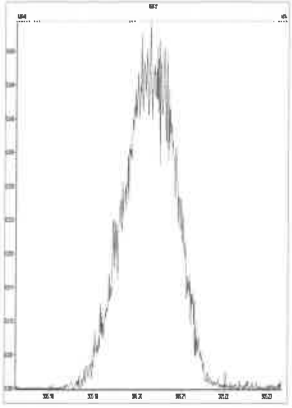

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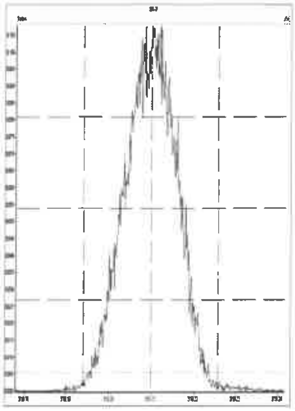

M 330.9792 R 11735

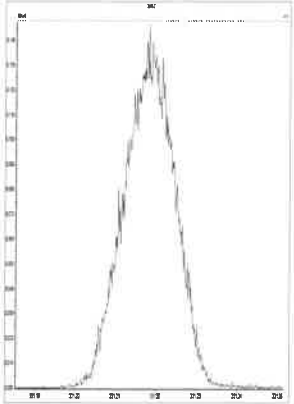

M 342.9792 R 11624

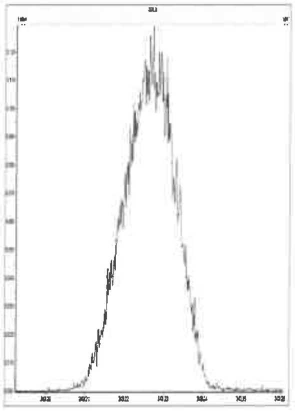

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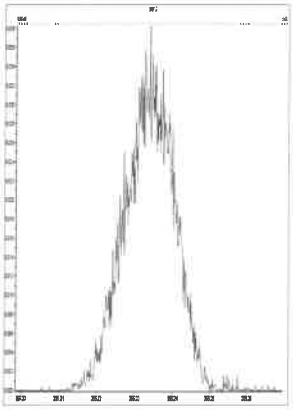

M 366.9792 R 12075

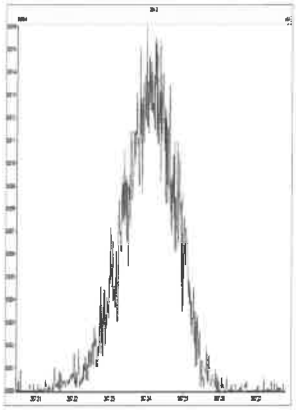

M 380.9760 R 12133

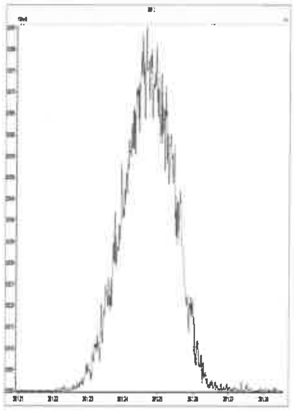

M 392.9760 R 11793

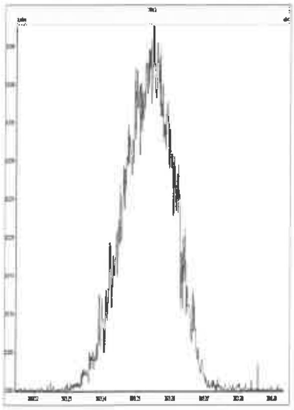

M 404.9760 R 12194

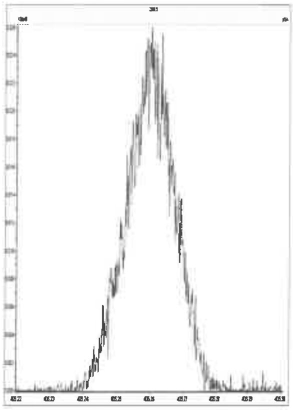

M 416.9760 R 14454

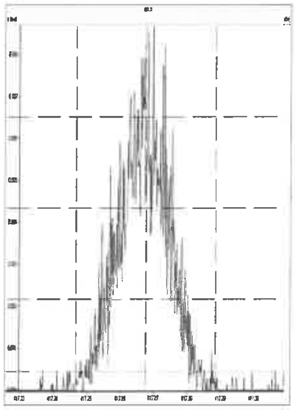

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 08:40:58 Pacific Daylight Time

M 318.9792 R 11467

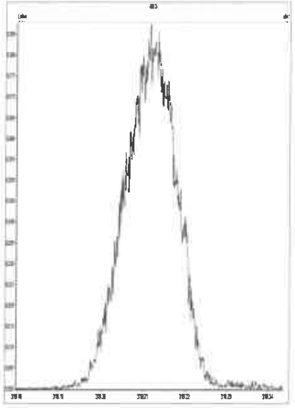

M 330.9792 R 11790

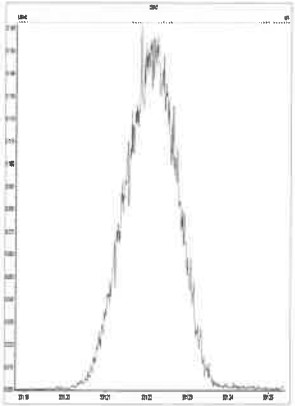

M 342.9792 R 11412

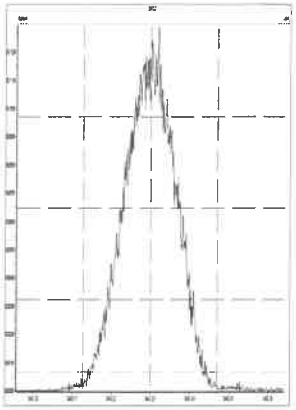

M 354.9792 R 12820

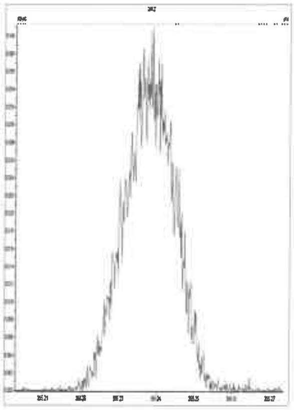

M 366.9792 R 12193

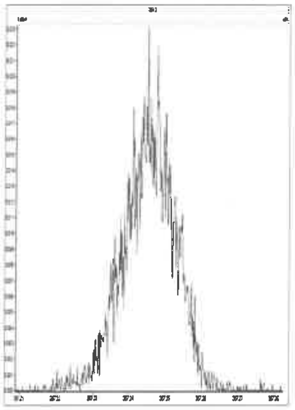

M 380.9760 R 11959

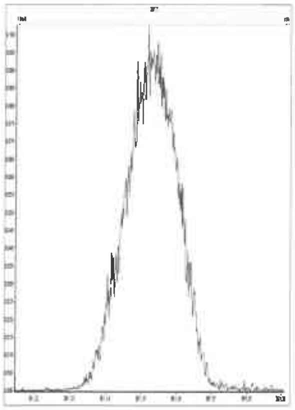

M 392.9760 R 11575

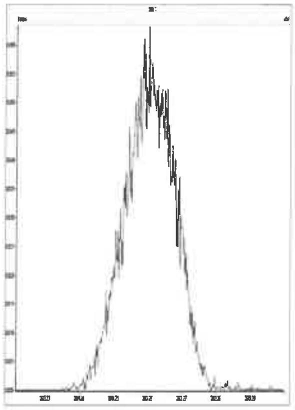

M 404.9760 R 12019

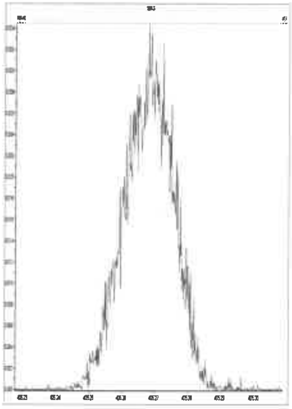

M 416.9760 R 13296

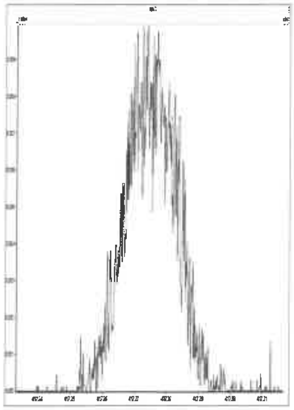

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 08:41:49 Pacific Daylight Time

M 366.9792 R 11520

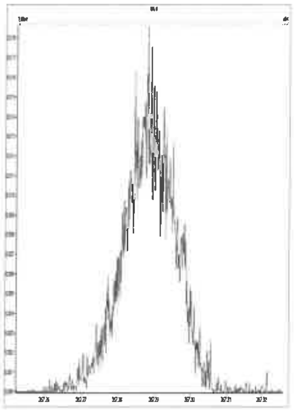

M 380.9760 R 11578

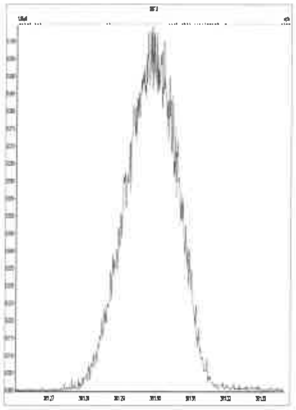

M 392.9760 R 12257

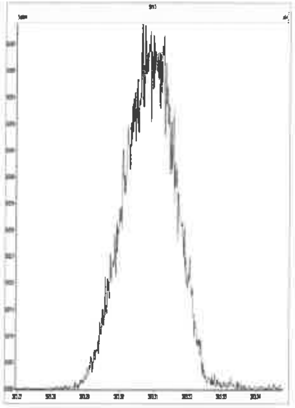

M 404.9760 R 12316

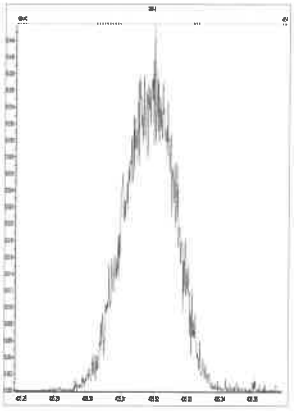

M 416.9760 R 12376

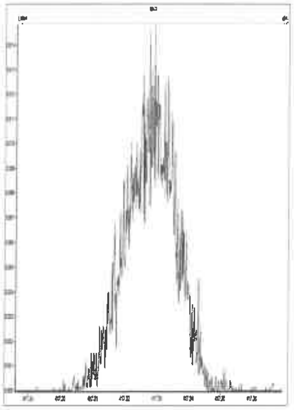

M 430.9728 R 11573

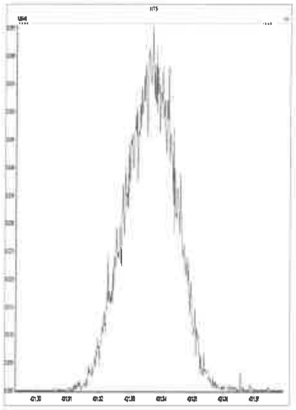

M 442.9728 R 12560

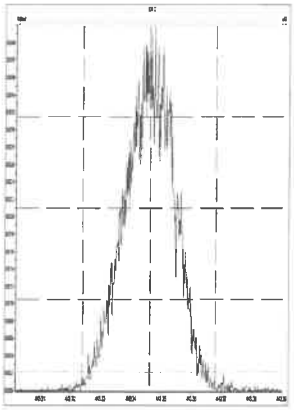

M 454.9728 R 12500

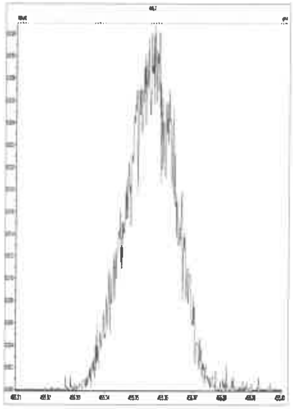

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 08:43:38 Pacific Daylight Time

M 380.9760 R 12020

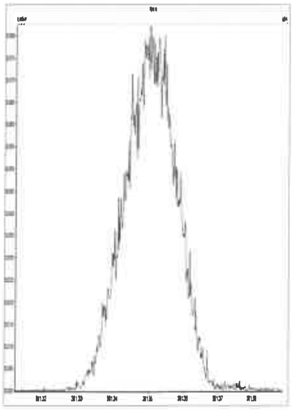

M 392.9760 R 11627

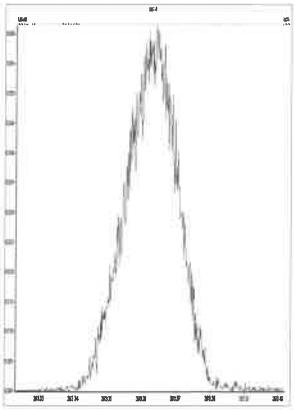

M 404.9760 R 11846

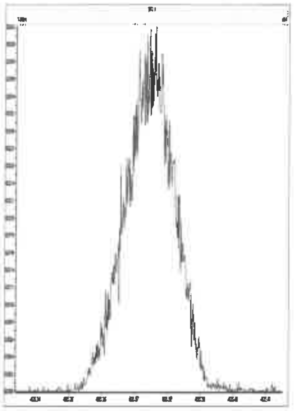

M 416.9760 R 13365

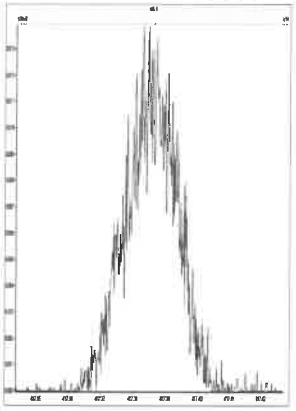

M 430.9728 R 11628

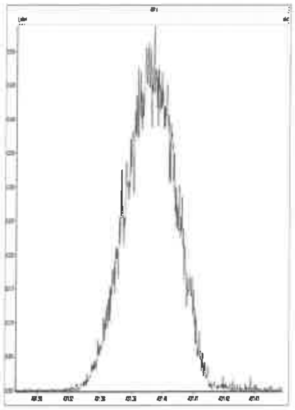

M 442.9728 R 12499

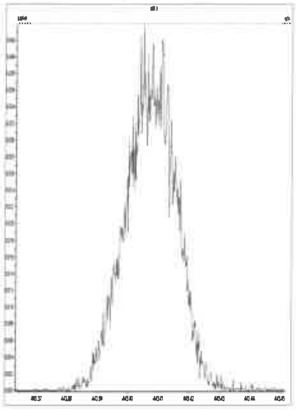

M 454.9728 R 11417

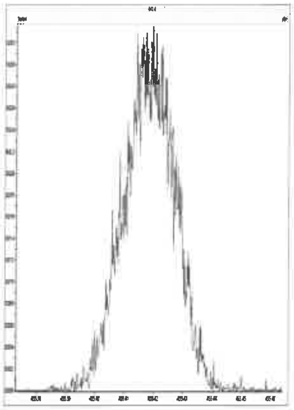

M 466.9728 R 12016

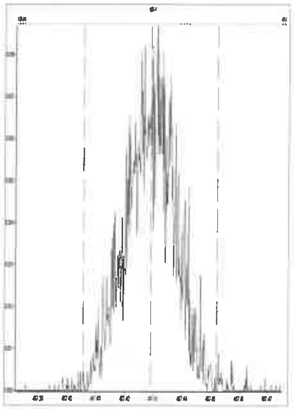

M 480.9696 R 12376

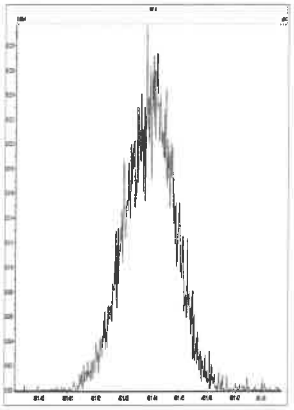

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 08:45:11 Pacific Daylight Time

M 380.9760 R 11793

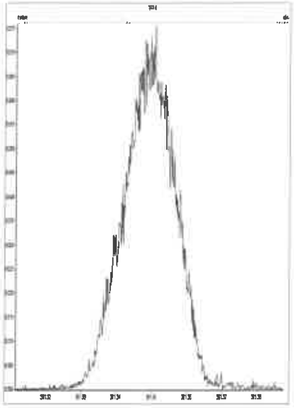

M 392.9760 R 12194

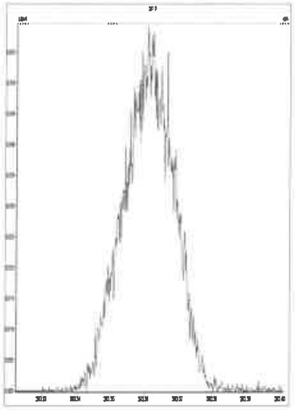

M 404.9760 R 12313

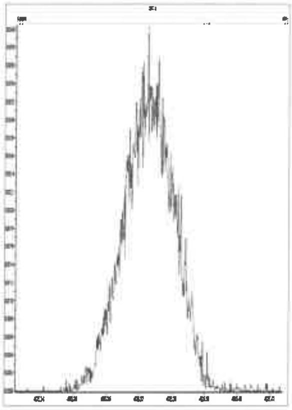

M 416.9760 R 12434

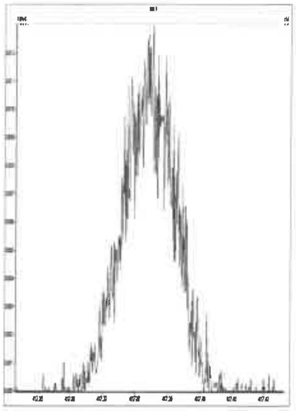

M 430.9728 R 11905

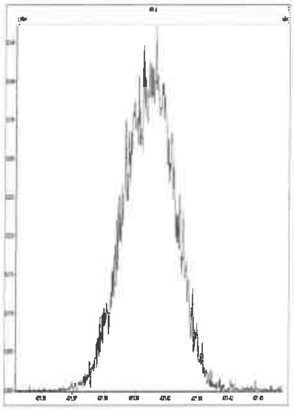

M 442.9728 R 12018

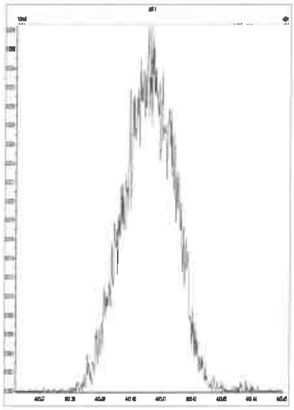

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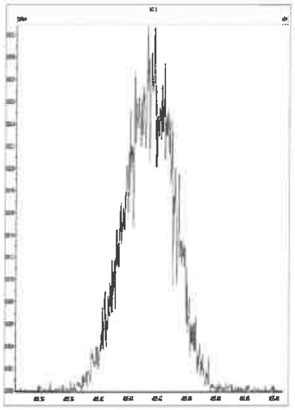

M 466.9728 R 13737

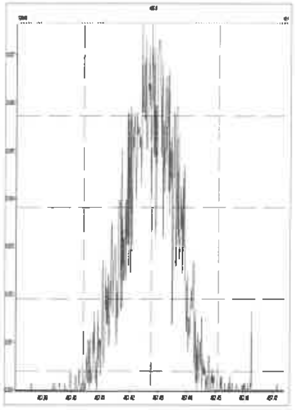

M 480.9696 R 12136

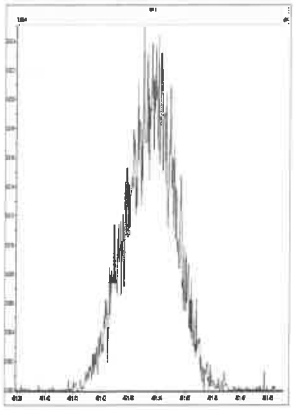

M 492.9696 R 13088

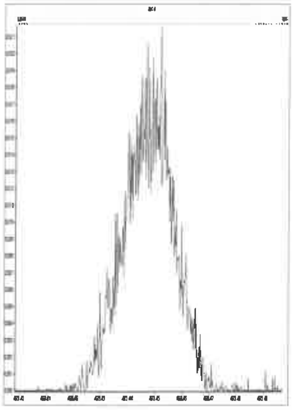

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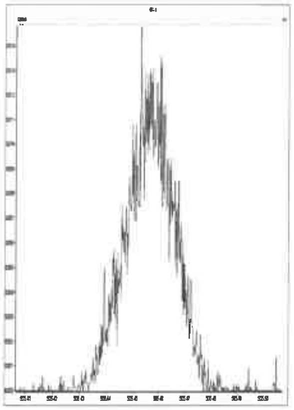

M 516.9697 R 14364

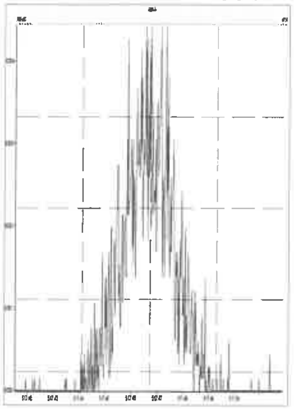

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\17MR2110D5.SPL Page 1 of 3
Last Modified: Wednesday, March 17, 2021 13:11:35 Pacific Daylight Time
Printed: Wednesday, March 17, 2021 13:45:40 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	17MR2110D5_1	WDM HRDXNCP_00042	WDM 031721	Tray01:1	Dioxin		KSS
2	17MR2110D5_2	ICV HRDXNIC_00047	ICV 031721	Tray01:57	Dioxin		KSS
3	17MR2110D5_3	CS-4 HRDXNL4_00097	CCV 031721	Tray01:2	Dioxin		KSS
4	17MR2110D5_4	WDM HRDXNCP_00042	WDM 031721A	Tray01:1	Dioxin		KSS
5	17MR2110D5_5	SB Solvent Blank C-14	SB 031721	Tray01:3			KSS
6	17MR2110D5_6	MB 320-468935/1-A	MB 320-468935/1-A	Tray01:4	8290/Water	97	KSS
7	17MR2110D5_7	LCS 320-468935/2-A	LCS 320-468935/2-A	Tray01:5	8290/Water		KSS
8	17MR2110D5_8	LCSD 320-468935/3-A	LCSD 320-468935/3-A	Tray01:6	8290/Water		KSS
9	17MR2110D5_9	440-279851-A-1-A	440-279851-A-1-A	Tray01:7	8290/Water		KSS
10	17MR2110D5_10	320-70797-A-2-A 10X	320-70797-A-2-A	Tray01:8	1613B/Water	D220	KSS
11	17MR2110D5_11	320-70797-A-7-A 10X	320-70797-A-7-A	Tray01:9	1613B/Water		KSS
12	17MR2110D5_12	320-70797-A-1-A 20X	320-70797-A-1-A	Tray01:10	1613B/Water		KSS
13	17MR2110D5_13	320-70797-A-8-A 20X	320-70797-A-8-A	Tray01:11	1613B/Water		KSS
14	17MR2110D5_14	570-52894-M-3-A	570-52894-M-3-A	Tray01:12	8290/Water	97	KSS
15	17MR2110D5_15	SB Solvent Blank C-14	SB 031721A	Tray01:3			KSS
16	17MR2110D5_16	CS-4 HRDXNL4_00097	CCV 031721A	Tray01:2	Dioxin		KSS
17	17MR2110D5_17	WDM HRDXNCP_00042	WDM 031721B	Tray01:1	Dioxin		KSS
18	17MR2110D5_18	SB Solvent Blank C-14	SB 031721B	Tray01:3			KSS

Log file checked
03/17/21 SMA

Sample Size	Units	MS File	Inlet File	Inject Volume	Process
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1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
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1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

Process Options	Action On Error	s5
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Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 10:07:44 Pacific Daylight Time

M 292.9824 R 11164

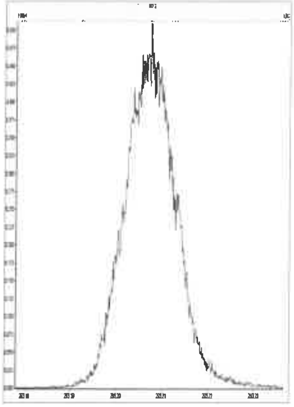

M 304.9824 R 12078

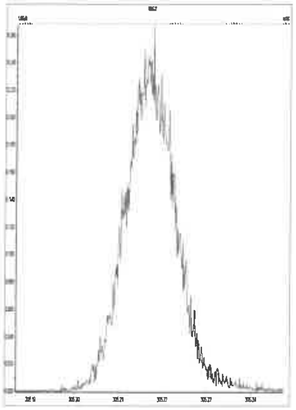

M 318.9792 R 12563

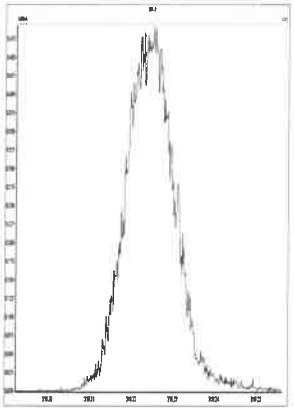

M 330.9792 R 11686

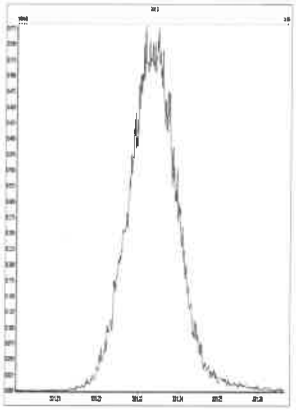

M 342.9792 R 11684

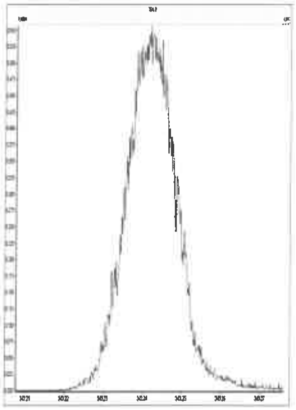

M 354.9792 R 11521

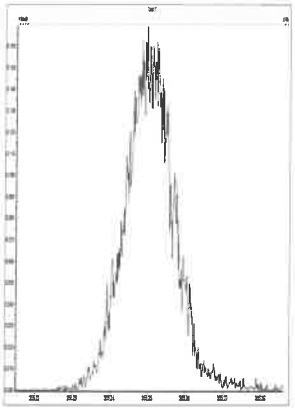

M 366.9792 R 11414

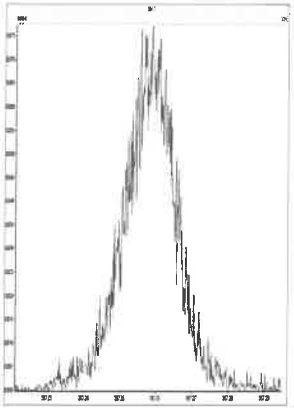

M 380.9760 R 11064

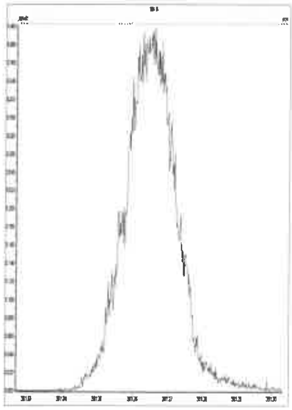

M 392.9760 R 11629

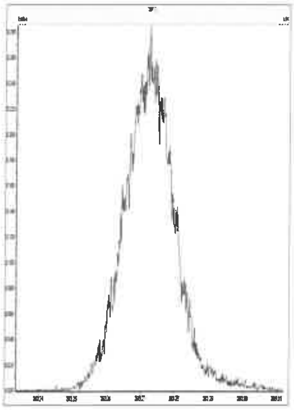

M 404.9760 R 11848

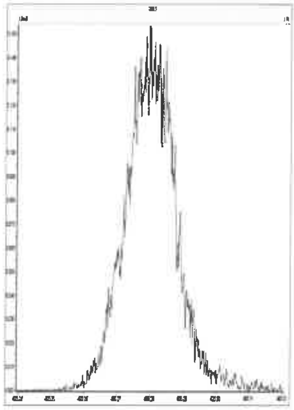

M 416.9760 R 11626

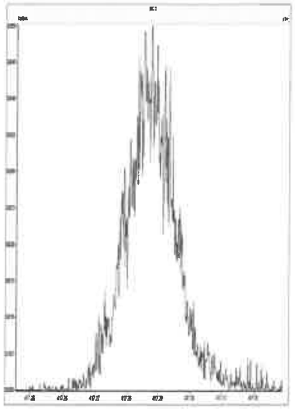

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 10:08:26 Pacific Daylight Time

M 318.9792 R 11793

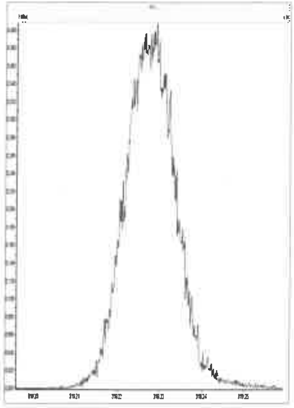

M 330.9792 R 11741

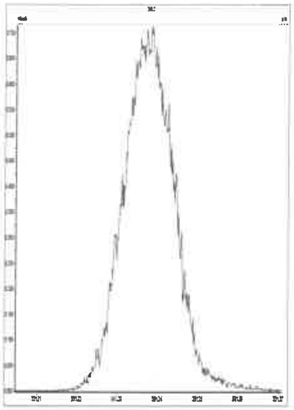

M 342.9792 R 12016

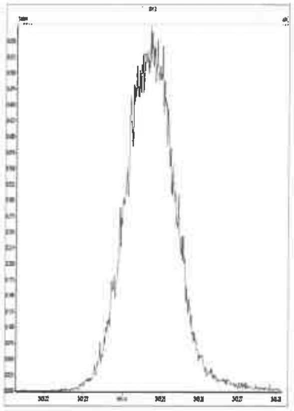

M 354.9792 R 12377

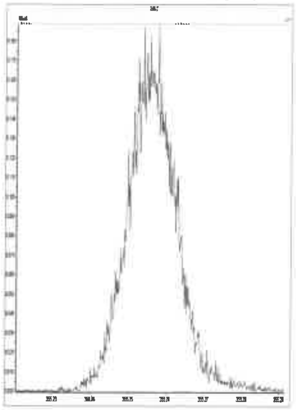

M 366.9792 R 11791

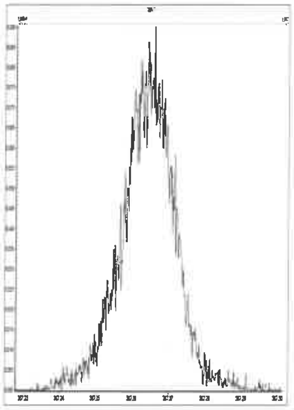

M 380.9760 R 11791

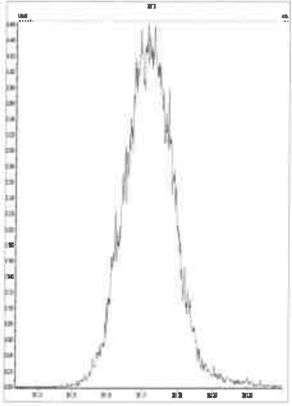

M 392.9760 R 12021

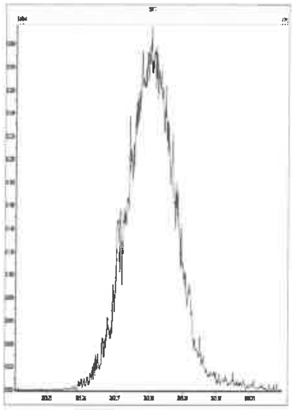

M 404.9760 R 11628

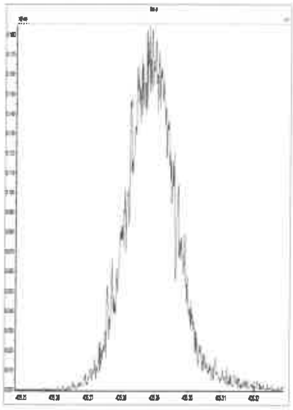

M 416.9760 R 13024

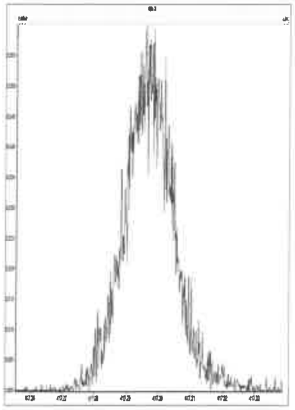

Experiment Calibration Report **MassLynx 4.1**

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 10:09:10 Pacific Daylight Time

M 366.9792 R 10965

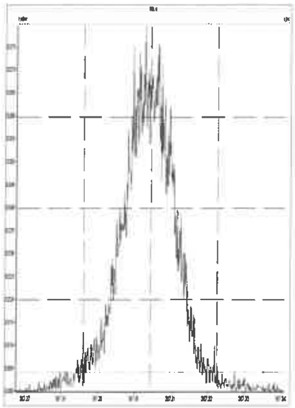

M 380.9760 R 12820

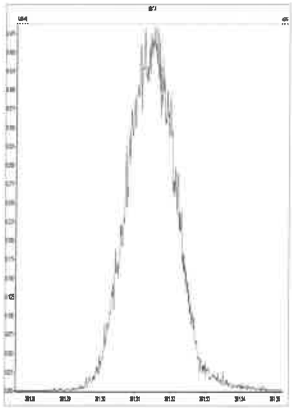

M 392.9760 R 11735

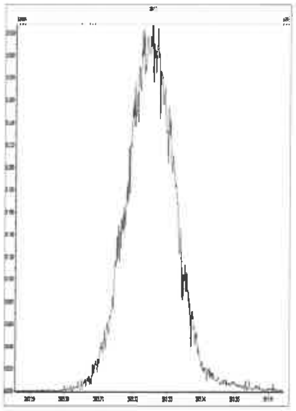

M 404.9760 R 12692

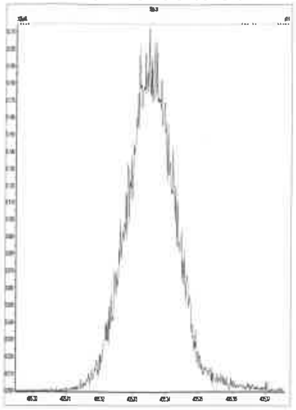

M 416.9760 R 11792

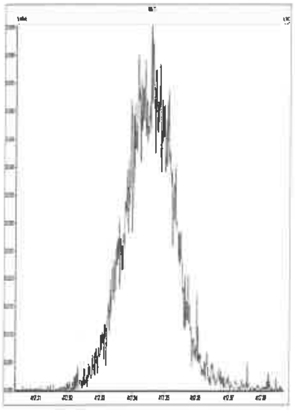

M 430.9728 R 11847

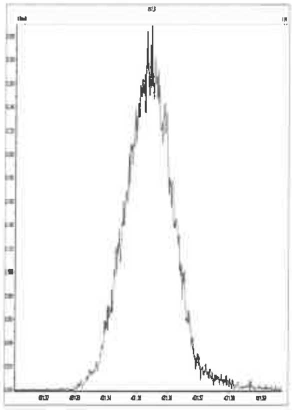

M 442.9728 R 13087

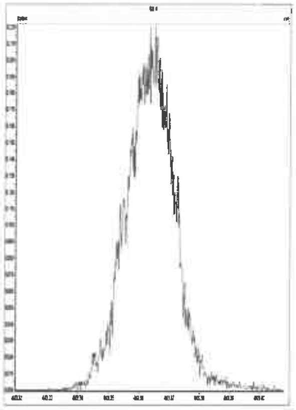

M 454.9728 R 12196

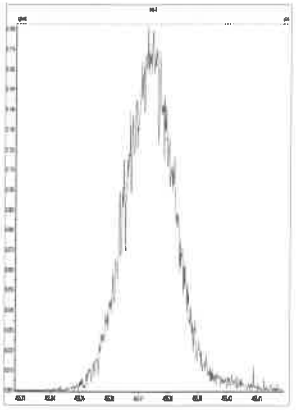

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 10:09:55 Pacific Daylight Time

M 380.9760 R 11958

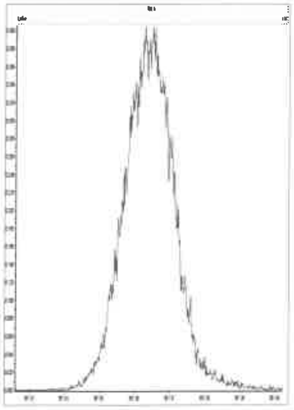

M 392.9760 R 12626

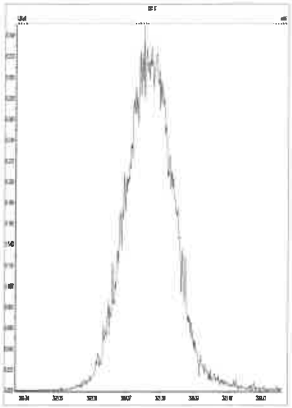

M 404.9760 R 11626

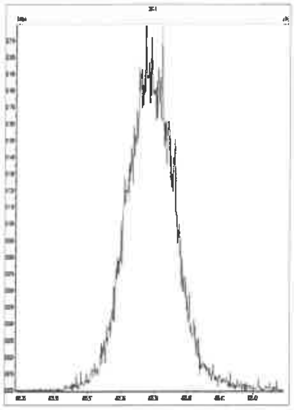

M 416.9760 R 11794

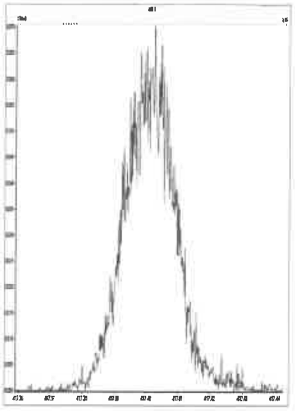

M 430.9728 R 12316

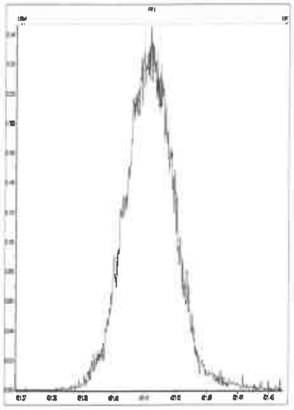

M 442.9728 R 11848

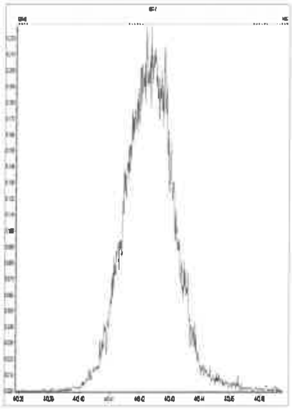

M 454.9728 R 12080

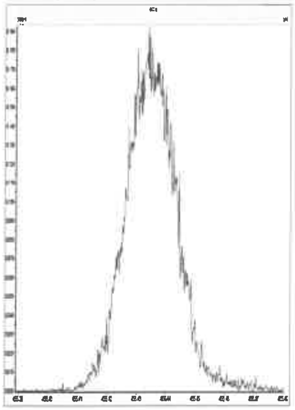

M 466.9728 R 13159

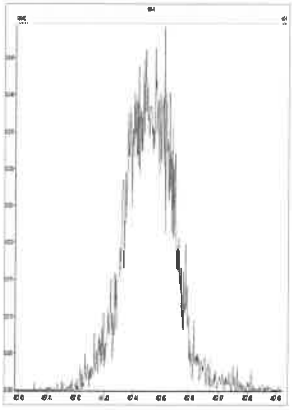

M 480.9696 R 12078

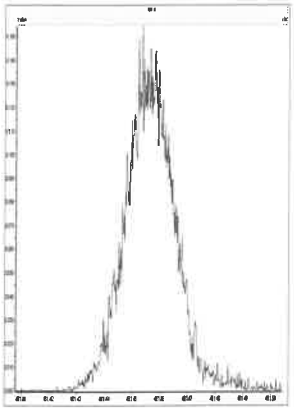

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, March 17, 2021 10:10:38 Pacific Daylight Time

M 380.9760 R 11738

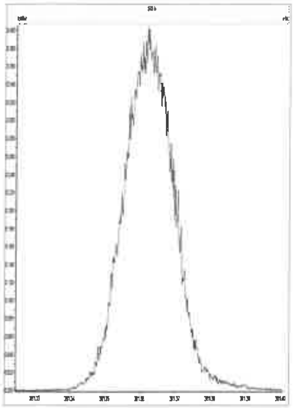

M 392.9760 R 11628

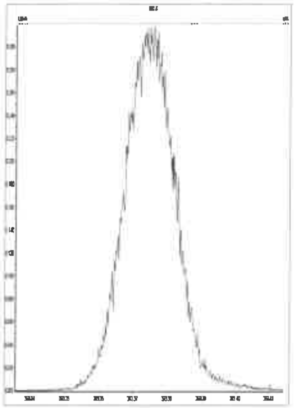

M 404.9760 R 11577

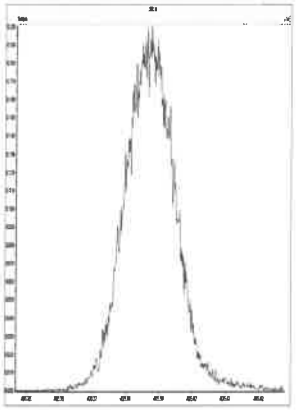

M 416.9760 R 11625

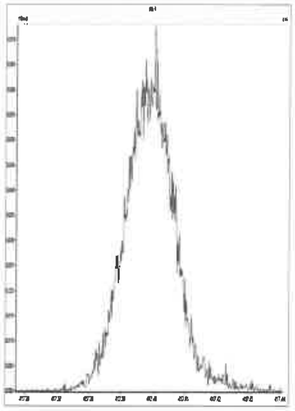

M 430.9728 R 12020

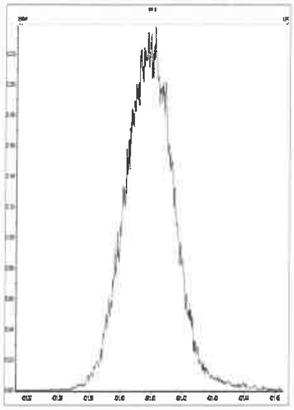

M 442.9728 R 11574

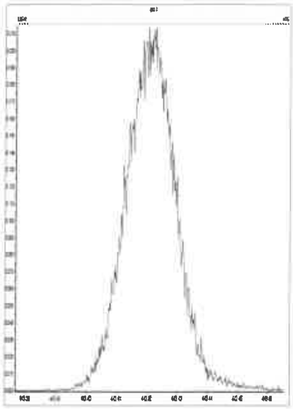

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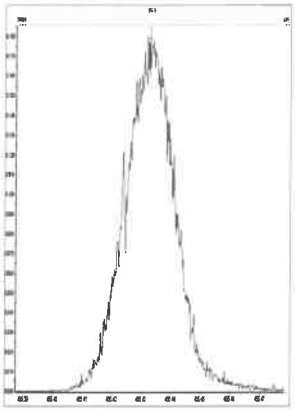

M 466.9728 R 13022

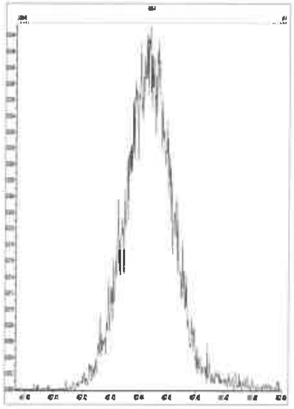

M 480.9696 R 11575

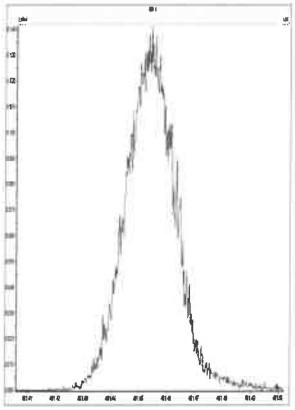

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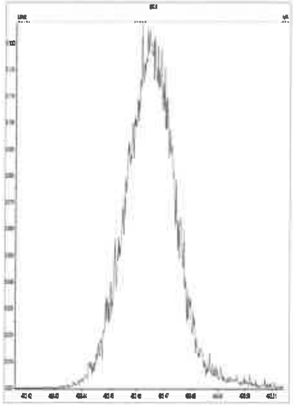

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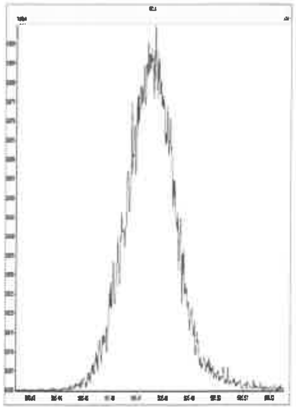

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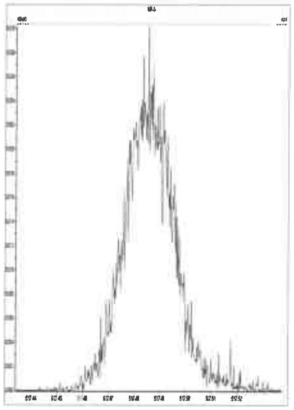

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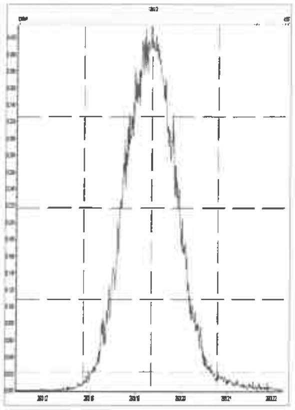

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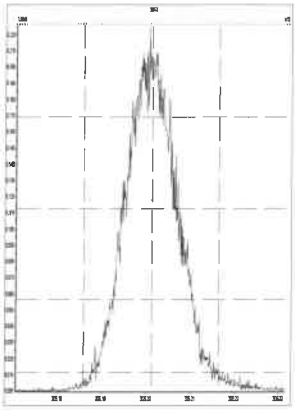

M 318.9792 R 11848

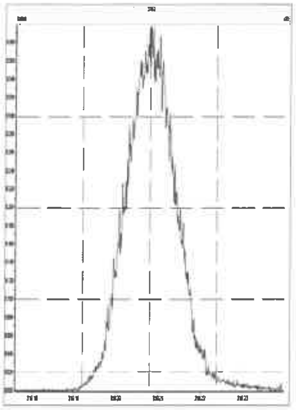

M 330.9792 R 11765

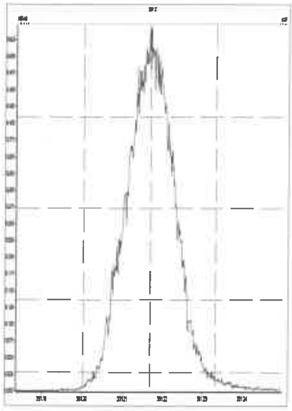

M 342.9792 R 11737

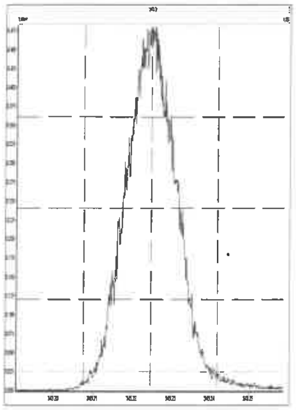

M 354.9792 R 11677

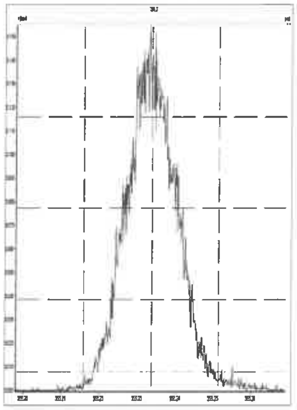

M 366.9792 R 11076

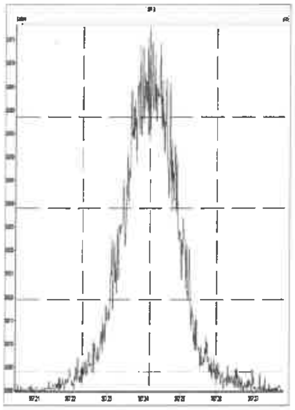

M 380.9760 R 11482

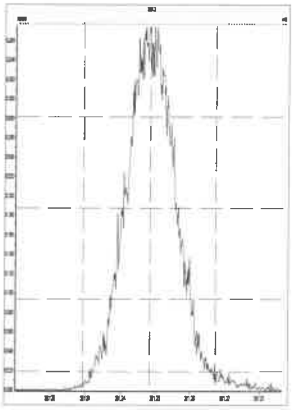

M 392.9760 R 11765

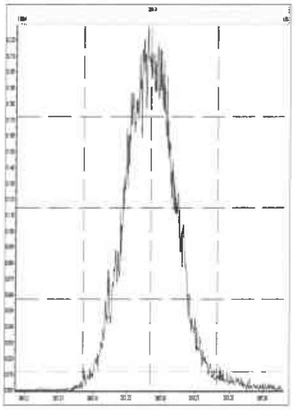

M 404.9760 R 11547

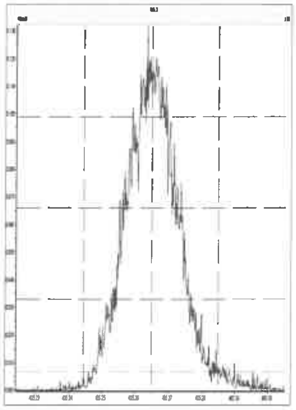

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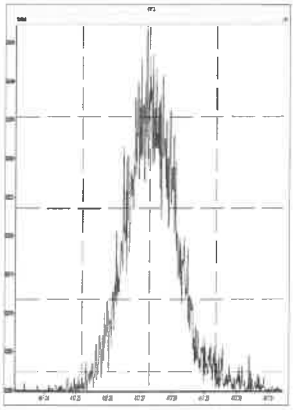

M 318.9792 R 11934

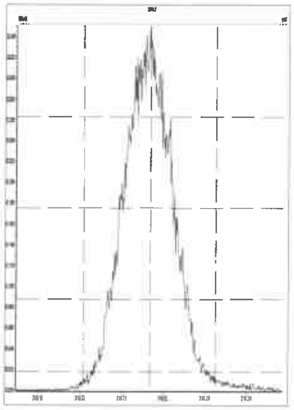

M 330.9792 R 11633

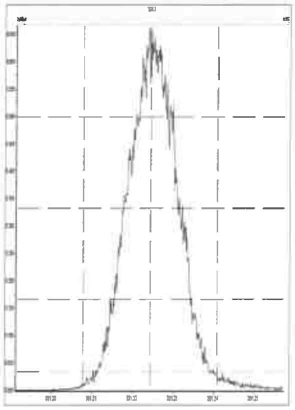

M 342.9792 R 11709

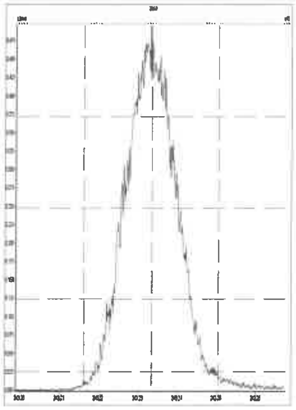

M 354.9792 R 11821

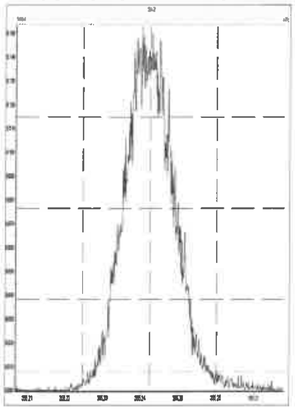

M 366.9792 R 10949

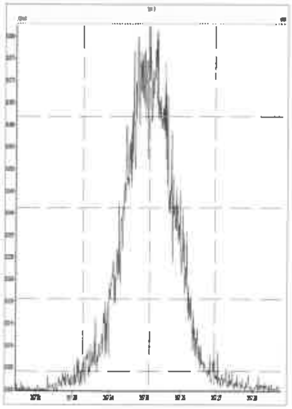

M 380.9760 R 11655

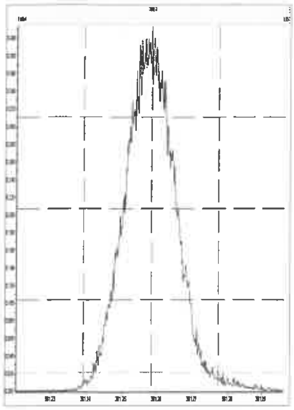

M 392.9760 R 11737

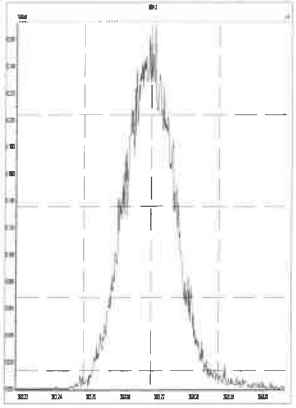

M 404.9760 R 12077

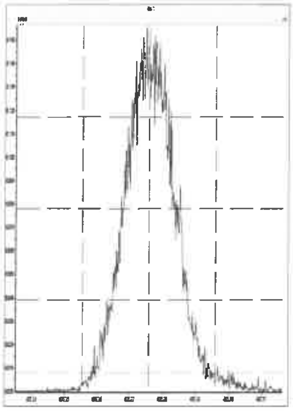

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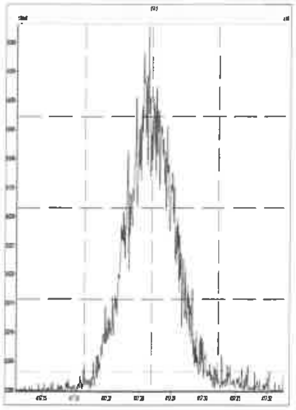

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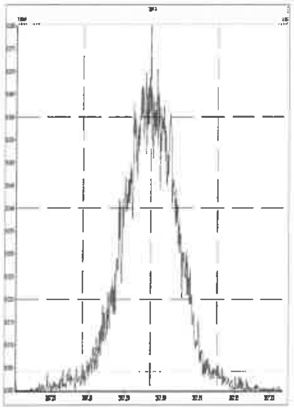

M 380.9760 R 11792

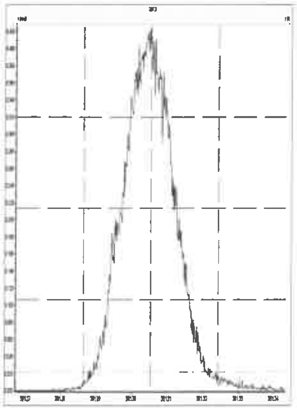

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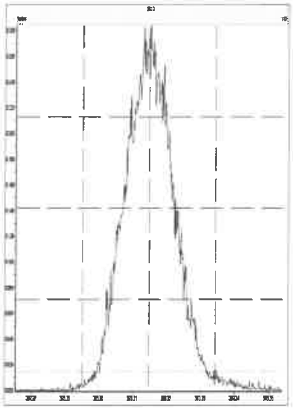

M 404.9760 R 11600

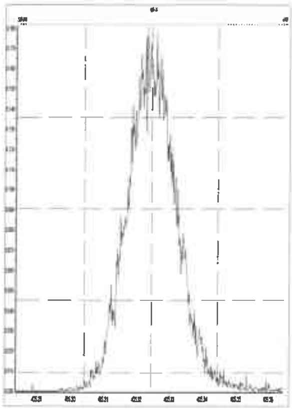

M 416.9760 R 12533

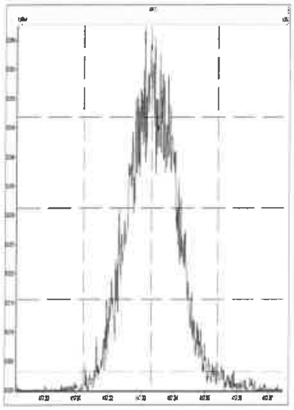

M 430.9728 R 11854

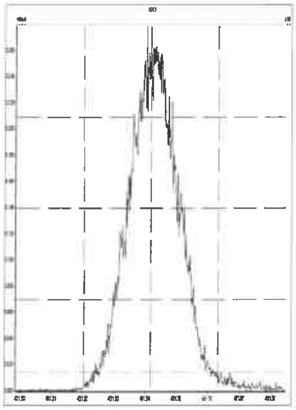

M 442.9728 R 12407

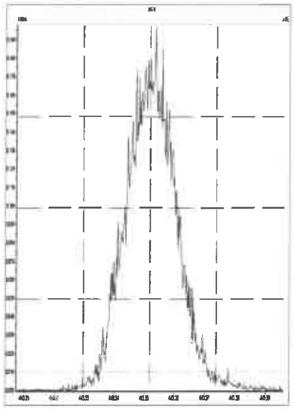

M 454.9728 R 11831

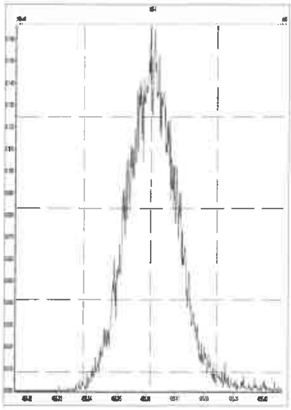

M 380.9760 R 11633

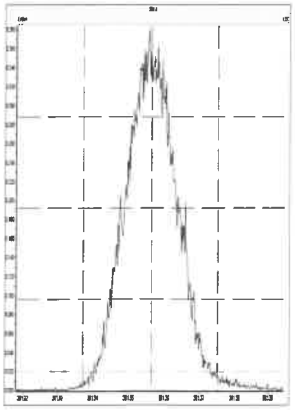

M 392.9760 R 12228

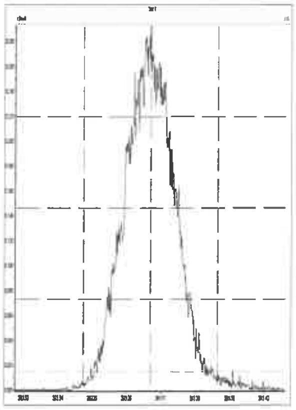

M 404.9760 R 11908

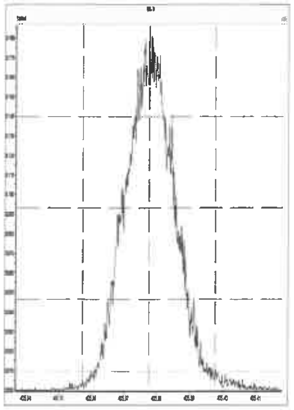

M 416.9760 R 12634

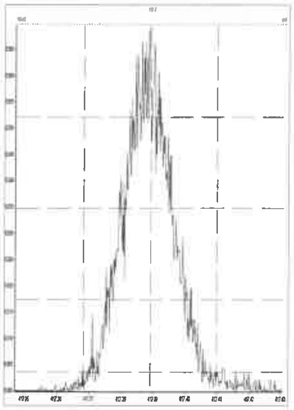

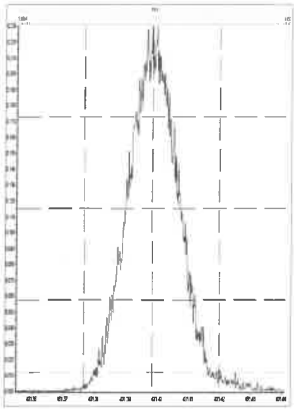
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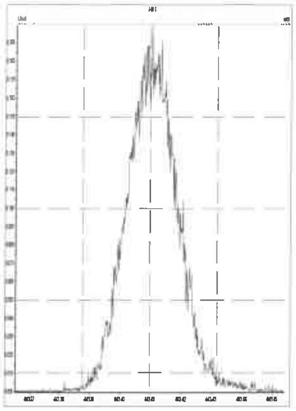
M 442.9728 R 11792

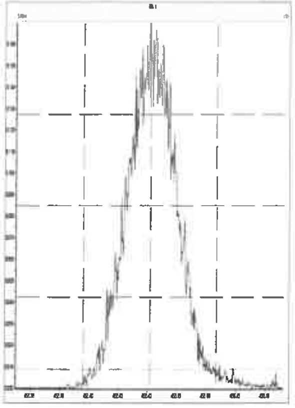
M 454.9728 R 11998

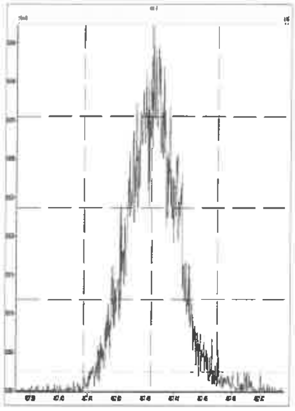
M 466.9728 R 12797

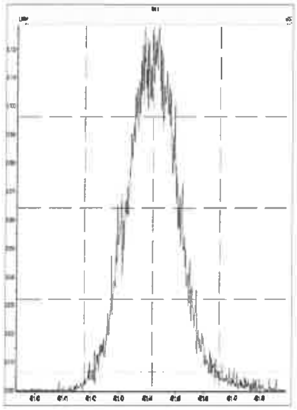
M 480.9696 R 11849

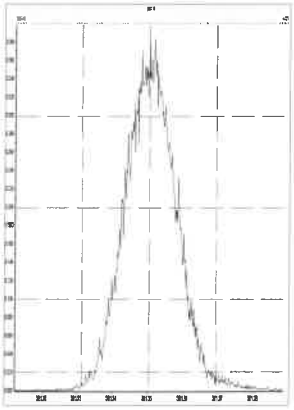
M 380.9760 R 11932

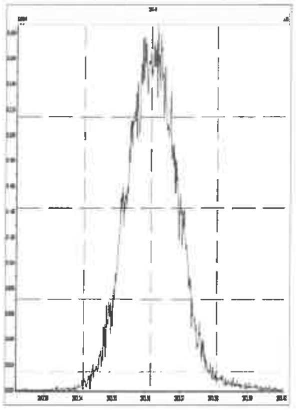
M 392.9760 R 11524

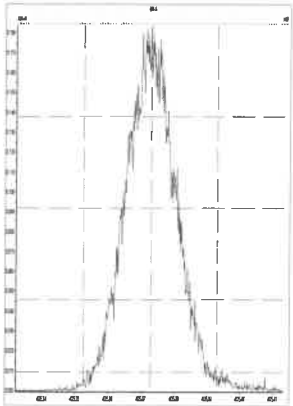
M 404.9760 R 11878

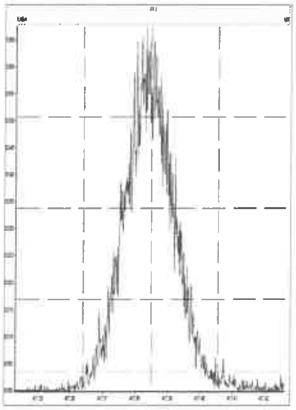
M 416.9760 R 12957

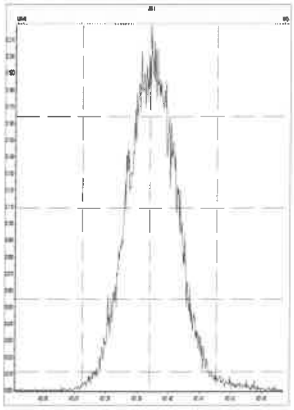
M 430.9728 R 12285

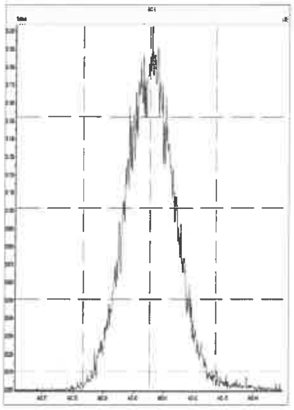
M 442.9728 R 11878

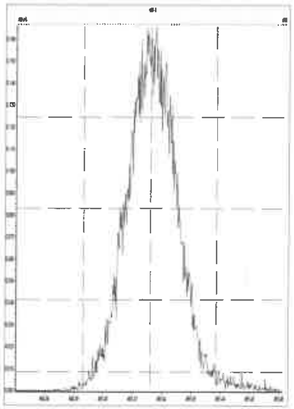
M 454.9728 R 11934

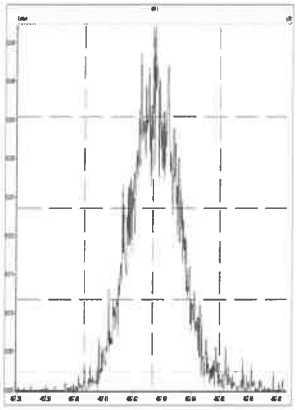
M 466.9728 R 12667

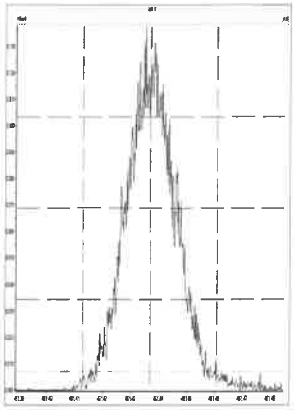
M 480.9696 R 12259

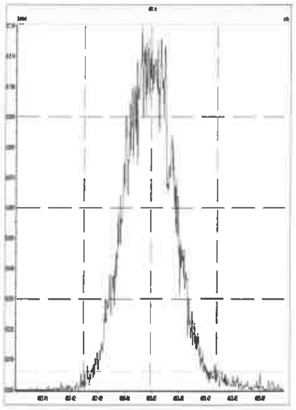
M 492.9696 R 11908

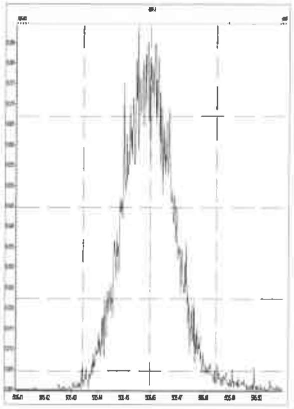
M 504.9696 R 11653

M 516.9697 R 12533

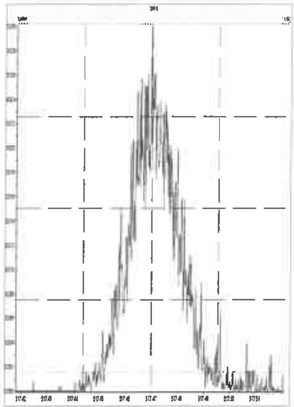

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Mar-2021 01:10:41 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621 CS-2 HRDXNL2_00032
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:35:47 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: stephensk Date: 17-Mar-2021 10:55:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.536	52690058	0.68	5.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.037	73459076	0.78	1.3554	102.9	102.9	0.1965	0.1965	103	
2,3,7,8-TCDF	17.052	379301	0.85	0.9903	0.5214	0.5214	0.0137	0.0137	104	
S Total TCDF					0.5214	0.5214	0.0137	0.0137		
D 13C-2,3,7,8-TCDD	17.717	49508681	0.69	0.9209	102.0	102.0	0.2075	0.2075	102	
$ 37Cl4-2,3,7,8-TCDD	17.733	254432		1.0159	0.4753	0.4753	0.0130	0.0130	95.07	
2,3,7,8-TCDD	17.748	306488	0.77	1.0991	0.5632	0.5632	0.0215	0.0215	113	
S Total TCDD					0.5632	0.5632	0.0215	0.0215		
D 13C-1,2,3,7,8-PeCDF	21.937	58393095	1.56	1.0847	102.2	102.2	0.2006	0.2006	102	
1,2,3,7,8-PeCDF	21.950	1541509	1.60	1.0209	2.586	2.586	0.0254	0.0254	103	
D 13C-2,3,4,7,8-PeCDF	23.246	60520258	1.57	1.1057	103.9	103.9	0.1968	0.1968	104	
2,3,4,7,8-PeCDF	23.273	1533694	1.50	0.9790	2.589	2.589	0.0271	0.0271	104	
S Total PeCDF					5.174	5.174	0.0263	0.0263		
D 13C-1,2,3,7,8-PeCDD	23.955	41601694	1.62	0.7689	102.7	102.7	0.1137	0.1137	103	
1,2,3,7,8-PeCDD	23.969	1085665	1.62	0.9982	2.614	2.614	0.0287	0.0287	105	
S Total PeCDD					2.614	2.614	0.0287	0.0287		
D 13C-1,2,3,4,7,8-HxCDF	30.108	50636356	0.51	1.0321	101.2	101.2	0.3008	0.3008	101	
1,2,3,4,7,8-HxCDF	30.134	1434540	1.21	1.0667	2.656	2.656	0.0263	0.0263	106	
D 13C-1,2,3,6,7,8-HxCDF	30.320	49893250	0.53	1.0218	100.7	100.7	0.3039	0.3039	101	
1,2,3,6,7,8-HxCDF	30.347	1455528	1.23	1.1178	2.610	2.610	0.0239	0.0239	104	
D 13C-2,3,4,6,7,8-HxCDF	31.252	48157462	0.53	0.9729	102.1	102.1	0.3192	0.3192	102	
2,3,4,6,7,8-HxCDF	31.265	1422843	1.21	1.1422	2.587	2.587	0.0175	0.0175	103	
D 13C-1,2,3,7,8,9-HxCDF	32.104	45965019	0.52	0.9469	100.1	100.1	0.3279	0.3279	100	
1,2,3,7,8,9-HxCDF	32.117	1362334	1.15	1.1455	2.587	2.587	0.0165	0.0165	103	
S Total HxCDF					10.4	10.4	0.0210	0.0210		
* 13C-1,2,3,7,8,9-HxCDD	31.918	48470513	1.26	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.452	38583102	1.25	0.7689	103.5	103.5	0.2674	0.2674	104	
1,2,3,4,7,8-HxCDD	31.479	1035602	1.28	1.0357	2.592	2.592	0.0204	0.0204	104	
D 13C-1,2,3,6,7,8-HxCDD	31.572	42652788	1.27	0.8643	101.8	101.8	0.2379	0.2379	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.585	1045139	1.21	0.9658	2.537	2.537	0.0194	0.0194	101	
1,2,3,7,8,9-HxCDD	31.931	1084147	1.21	1.0727	2.488	2.488	0.0185	0.0185	99.53	
S Total HxCDD					7.617	7.617	0.0195	0.0195		
D 13C-1,2,3,4,6,7,8-HpCDF	33.592	37029825	0.42	0.7233	105.6	105.6	0.9493	0.9493	106	
1,2,3,4,6,7,8-HpCDF	33.604	1312275	1.12	1.4017	2.528	2.528	0.0223	0.0223	101	
D 13C-1,2,3,4,7,8,9-HpCDF	34.662	32361768	0.44	0.6720	99.3	99.3	1.022	1.022	99.35	
1,2,3,4,7,8,9-HpCDF	34.674	1075695	1.06	1.2995	2.558	2.558	0.0299	0.0299	102	
S Total HpCDF					5.086	5.086	0.0261	0.0261		
D 13C-1,2,3,4,6,7,8-HpCDD	34.382	34578342	1.03	0.6855	104.1	104.1	0.4558	0.4558	104	
1,2,3,4,6,7,8-HpCDD	34.394	914148	1.09	1.0339	2.557	2.557	0.0242	0.0242	102	
S Total HpCDD					2.557	2.557	0.0242	0.0242		
D 13C-OCDD	36.697	50339162	0.90	0.4996	207.9	207.9	0.1643	0.1643	104	
OCDF	36.793	1634705	0.89	1.3135	4.945	4.945	0.0223	0.0223	98.89	
OCDD	36.709	1362562	0.90	1.0576	5.119	5.119	0.0193	0.0193	102	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00032 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:35:52 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 17-Mar-2021 01:10:41 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621 CS-2 HRDXNL2_00032
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:35:47 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: stephensk Date: 17-Mar-2021 10:55:19

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.536	17.527	1		21392103	5422147	3592	8980	1510		
333.9339	17.536	17.527	1		31297955	7816546	6525	16312	1198	0.68(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.037	17.025	1	0.972	32104022	7941771	8845	22112	898		
317.9389	17.022	17.025	0	0.971	41355054	10241864	5262	13155	1946	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.052	17.043	1	1.001	174683	41436	326	815	127		
305.8987	17.037	17.043	0	1.000	204618	50965	660	1650	77	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.717	17.714	0	1.010	20281656	4946188	3592	8980	1377		
333.9339	17.717	17.714	0	1.010	29227025	7034404	6525	16312	1078	0.69(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.733	17.729	0	1.011	254432	61921	699	1747	89		
2,3,7,8-TCDD											
319.8965	17.748	17.733	1	1.002	133385	31707	698	1745	45		
321.8936	17.748	17.733	1	1.002	173103	42235	437	1092	97	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.937	21.923	1	1.251	35618209	6490108	6887	17217	942		
353.8970	21.937	21.923	1	1.251	22774886	4093781	4635	11587	883	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.950	21.945	0	1.001	948063	164666	415	1037	397		
341.8567	21.950	21.945	0	1.001	593446	105720	684	1710	155	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.246	23.232	1	1.326	36949533	6351306	6887	17217	922		
353.8970	23.246	23.232	1	1.326	23570725	4010653	4635	11587	865	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.273	23.260	1	1.001	920725	144463	415	1037	348		
341.8567	23.273	23.260	1	1.001	612969	96455	684	1710	141	1.50(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.955	23.939	1	1.366	25751451	3945644	2726	6815	1447		
369.8919	23.955	23.939	1	1.366	15850243	2567147	1904	4760	1348	1.62(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.969	23.963	0	1.001	671191	99302	513	1282	194		
357.8516	23.982	23.963	1	1.001	414474	60196	234	585	257	1.62(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.108	30.094	1	0.943	17067671	2752379	5464	13660	504		
385.8610	30.108	30.094	1	0.943	33568685	5381645	9930	24825	542	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.134	30.123	1	1.001	785332	125690	500	1250	251		
375.8178	30.134	30.123	1	1.001	649208	103900	412	1030	252	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.320	30.315	0	0.950	17185025	2913182	5464	13660	533		
385.8610	30.320	30.315	0	0.950	32708225	5616407	9930	24825	566	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.347	30.336	1	1.001	803571	134041	500	1250	268		
375.8178	30.347	30.336	1	1.001	651957	111846	412	1030	271	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.252	31.239	1	0.979	16601952	3926197	5464	13660	719		
385.8610	31.252	31.239	1	0.979	31555510	7474484	9930	24825	753	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.265	31.257	0	1.000	778680	186724	500	1250	373		
375.8178	31.265	31.257	0	1.000	644163	153184	412	1030	372	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.104	32.101	0	1.006	15654666	4148706	5464	13660	759		
385.8610	32.104	32.101	0	1.006	30310353	7942774	9930	24825	800	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.117	32.115	0	1.000	729823	187055	500	1250	374		
375.8178	32.117	32.115	0	1.000	632511	162138	412	1030	394	1.15(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.918	31.907	1		27065816	6874892	5387	13467	1276		
403.8529	31.918	31.907	1		21404697	5519512	4808	12020	1148	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.452	31.449	0	0.985	21464776	5404058	5387	13467	1003		
403.8529	31.452	31.449	0	0.985	17118326	4268614	4808	12020	888	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.479	31.465	1	1.001	581008	144036	420	1050	343		
391.8127	31.479	31.465	1	1.001	454594	114542	398	995	288	1.28(1.05-1.43)	

Report Date: 17-Mar-2021 13:35:52 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.572	31.563	0	0.989	23835979	6065470	5387	13467	1126		
403.8529	31.572	31.563	0	0.989	18816809	4830096	4808	12020	1005	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.585	31.579	0	1.000	572225	145599	420	1050	347		
391.8127	31.585	31.579	0	1.000	472914	114927	398	995	289	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.931	31.926	0	1.015	592868	152056	420	1050	362		
391.8127	31.931	31.926	0	1.015	491279	117762	398	995	296	1.21(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.592	33.587	0	1.052	11029127	3797709	9756	24390	389		
419.8220	33.592	33.587	0	1.052	26000698	8857699	24285	60712	365	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.604	33.600	0	1.000	693542	229428	878	2195	261		
409.7789	33.604	33.600	0	1.000	618733	214394	701	1752	306	1.12(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.662	34.659	0	1.086	9844867	3046023	9756	24390	312		
419.8220	34.662	34.659	0	1.086	22516901	7119721	24285	60712	293	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.674	34.669	0	1.000	554574	162007	878	2195	185		
409.7789	34.674	34.669	0	1.000	521121	156102	701	1752	223	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.382	34.377	0	1.077	17552891	5787822	7764	19410	745		
437.8140	34.382	34.377	0	1.077	17025451	5547046	7728	19320	718	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.394	34.387	0	1.000	475780	153519	615	1537	250		
425.7737	34.394	34.387	0	1.000	438368	146417	520	1300	282	1.09(0.88-1.20)	
13C-OCDD											
469.7779	36.697	36.694	0	1.150	23783700	6554613	1993	4982	3289		
471.7750	36.697	36.694	0	1.150	26555462	7370540	2076	5190	3550	0.90(0.76-1.02)	
OCDF											
441.7428	36.793	36.790	0	1.003	767828	212045	350	875	606		
443.7399	36.793	36.790	0	1.003	866877	235276	466	1165	505	0.89(0.76-1.02)	
OCDD											
457.7377	36.709	36.704	0	1.000	646765	181176	265	662	684		
459.7348	36.709	36.704	0	1.000	715797	189876	303	757	627	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00032 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d

Injection Date: 17-Mar-2021 01:10:41 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

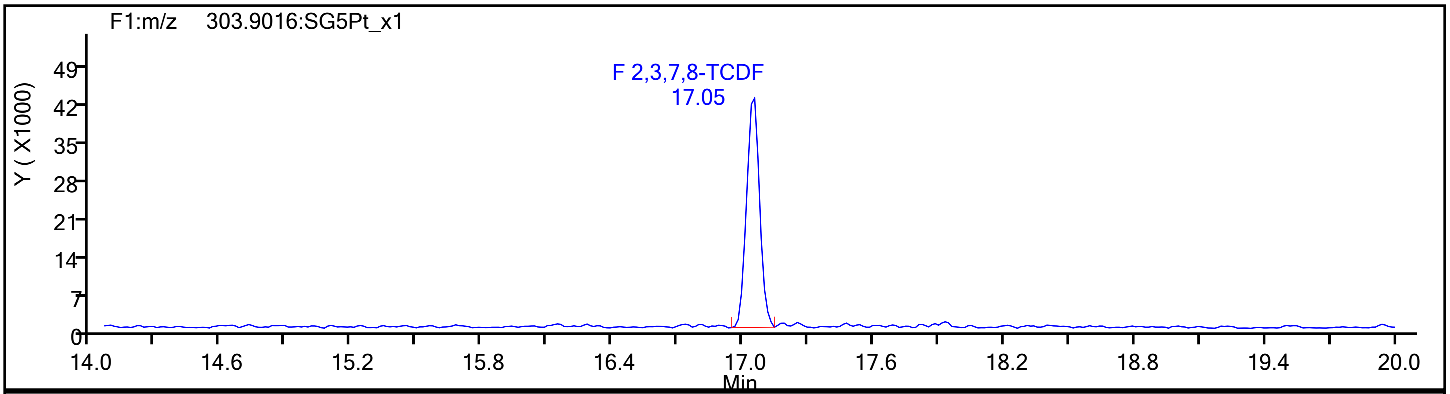

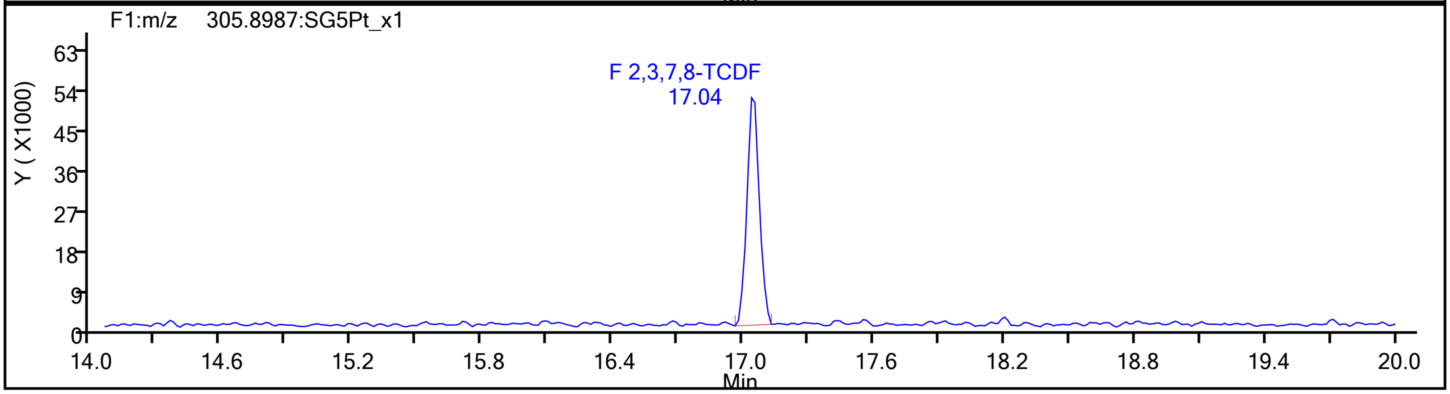

TCDF Standards

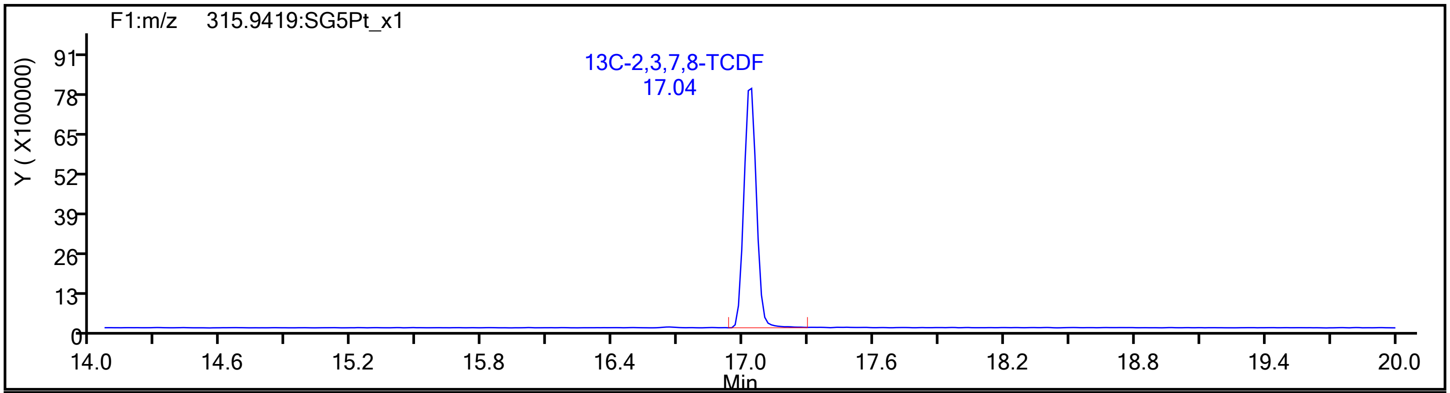

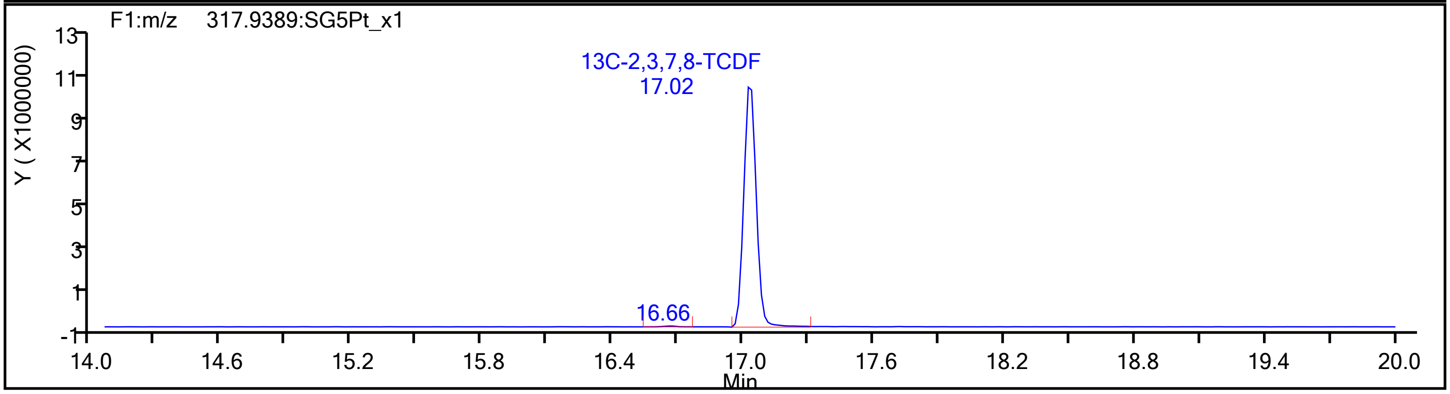

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

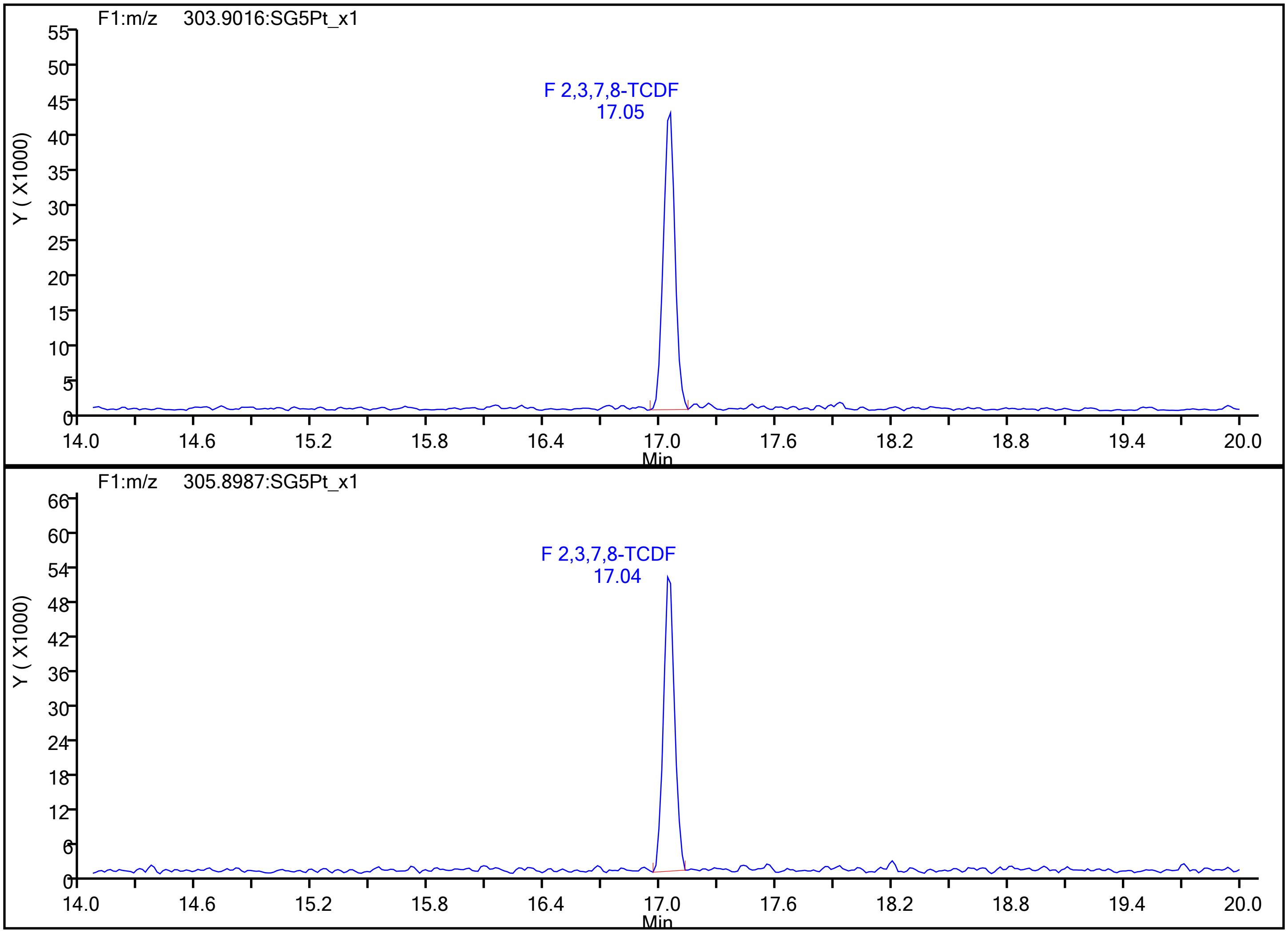

TCDF Interference Mass

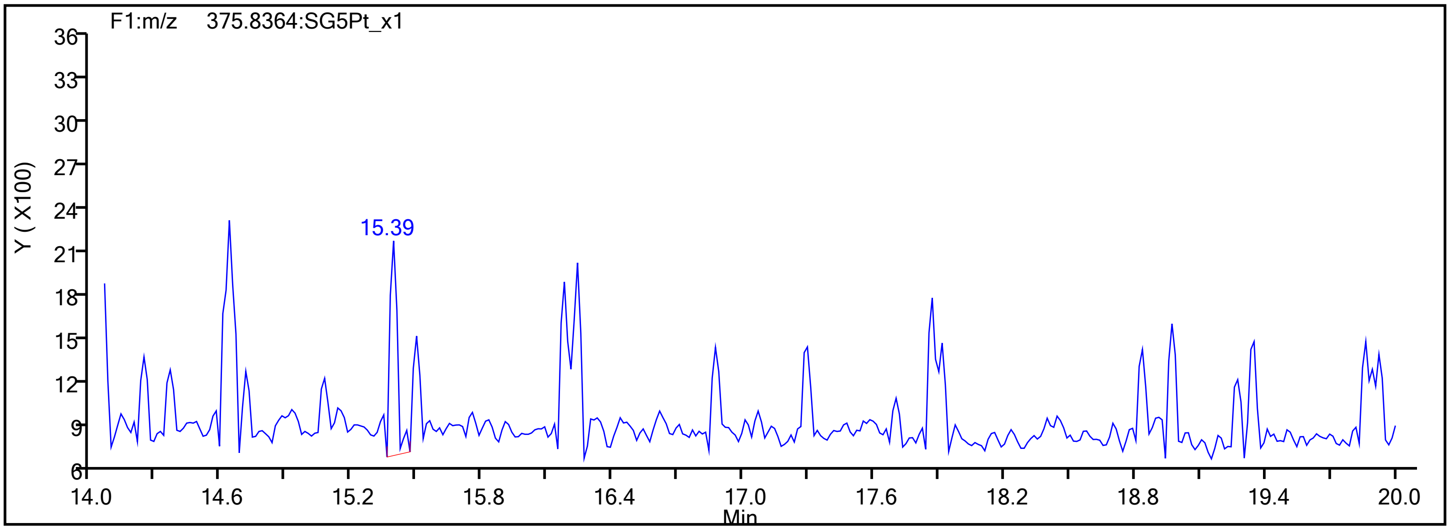

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d

Injection Date: 17-Mar-2021 01:10:41 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: ALM

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

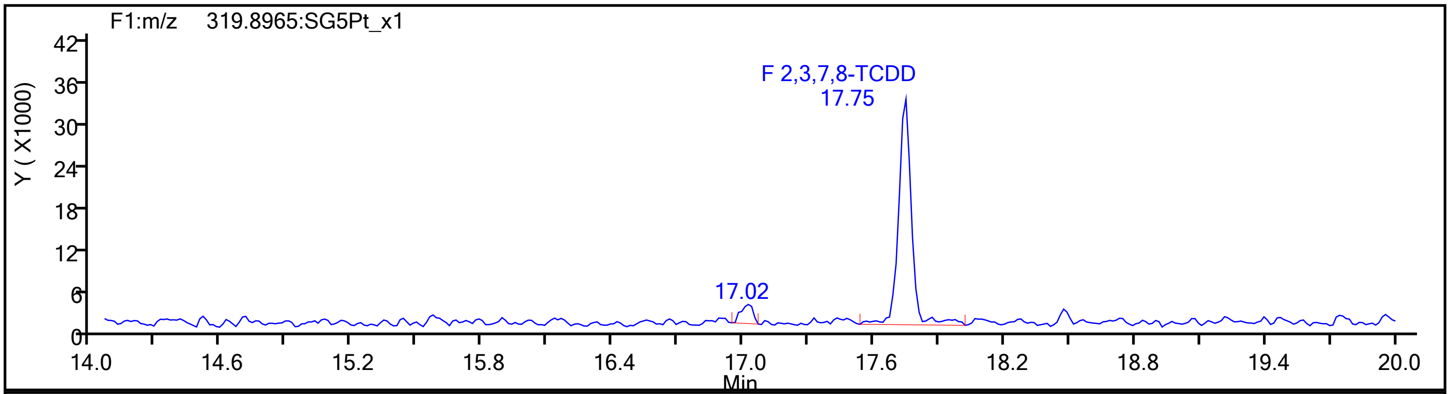

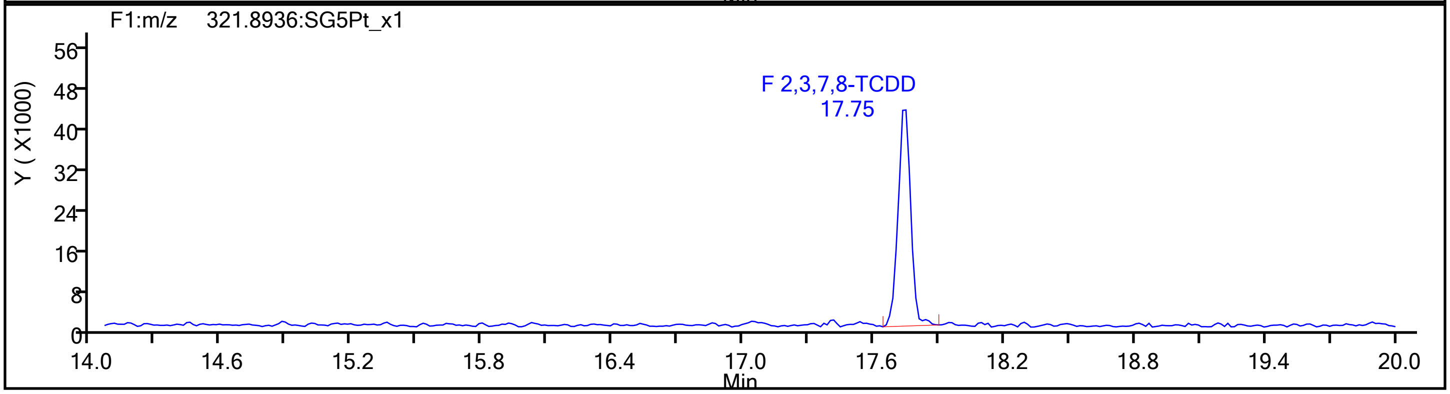

TCDD Standards

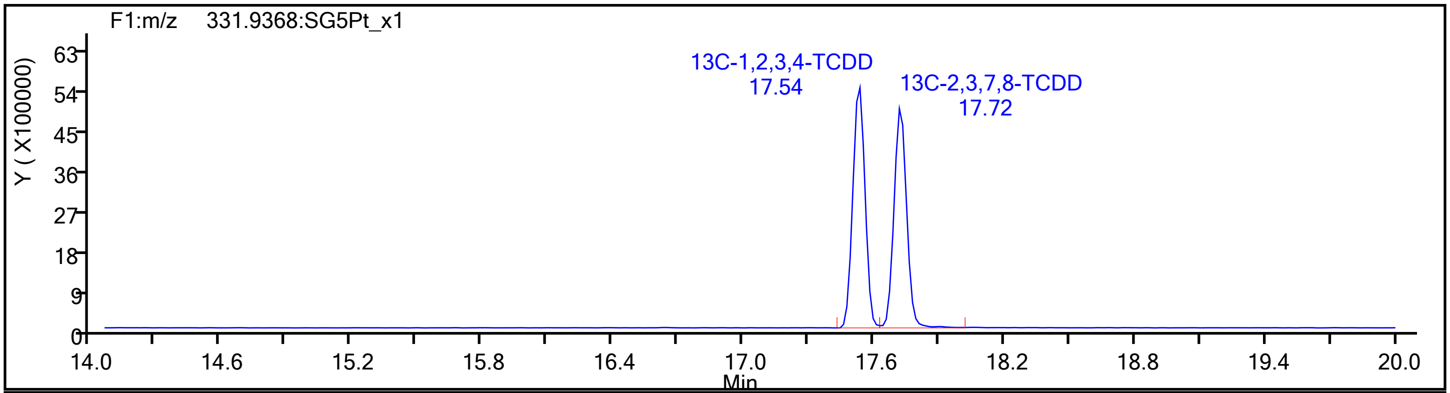

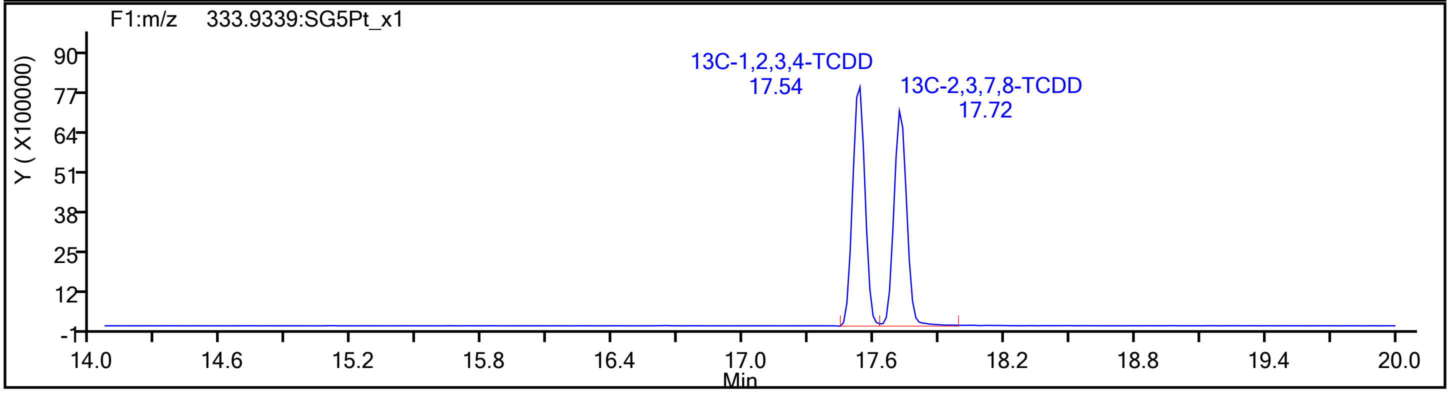

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d
Injection Date: 17-Mar-2021 01:10:41
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

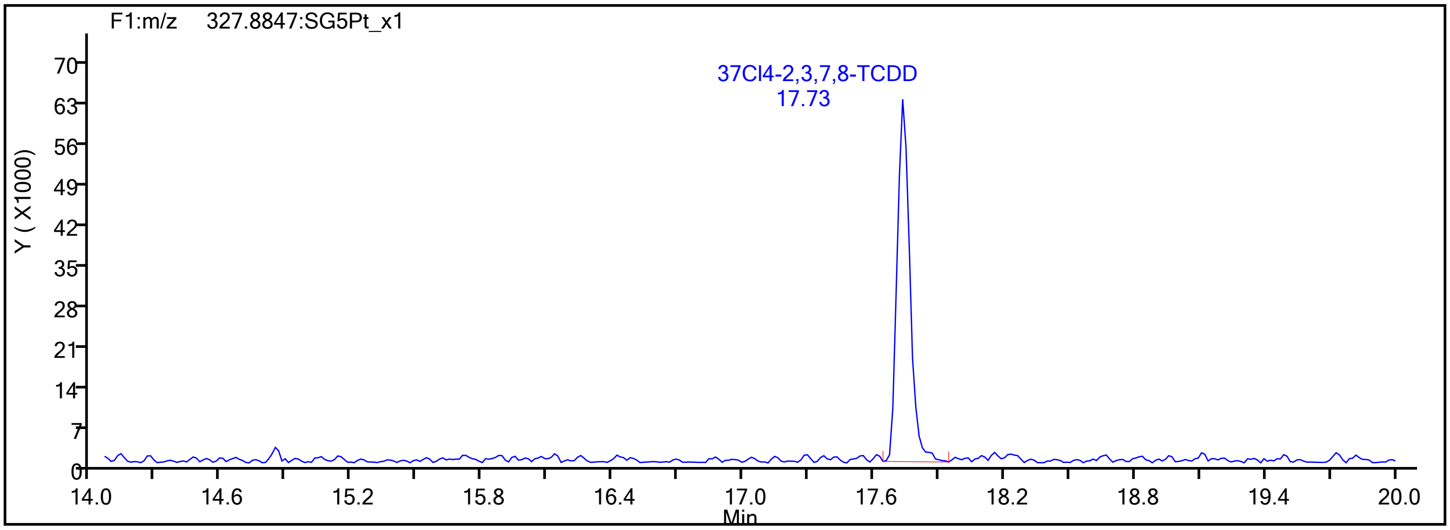

37Cl4-TCDD Standards

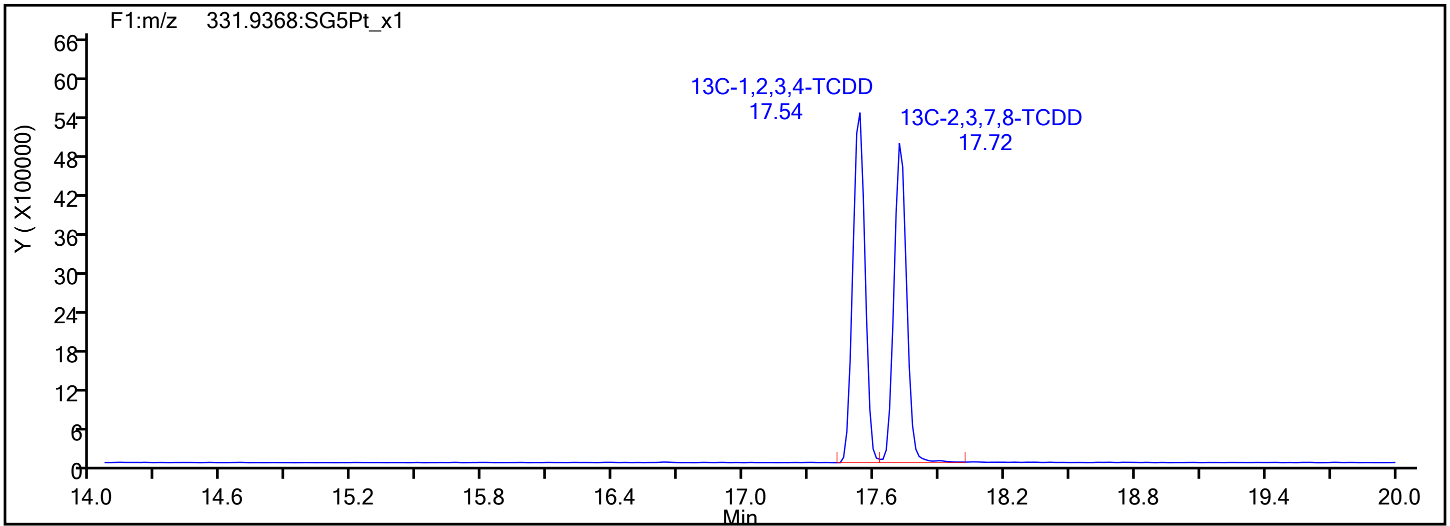

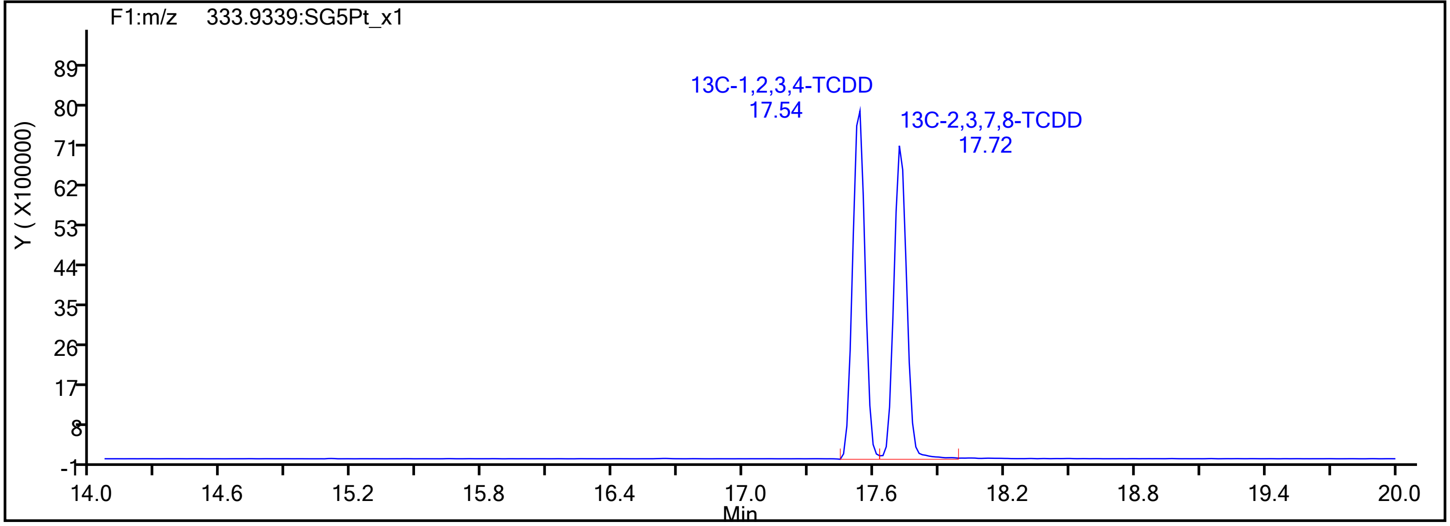

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Mar-2021 01:10:41	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

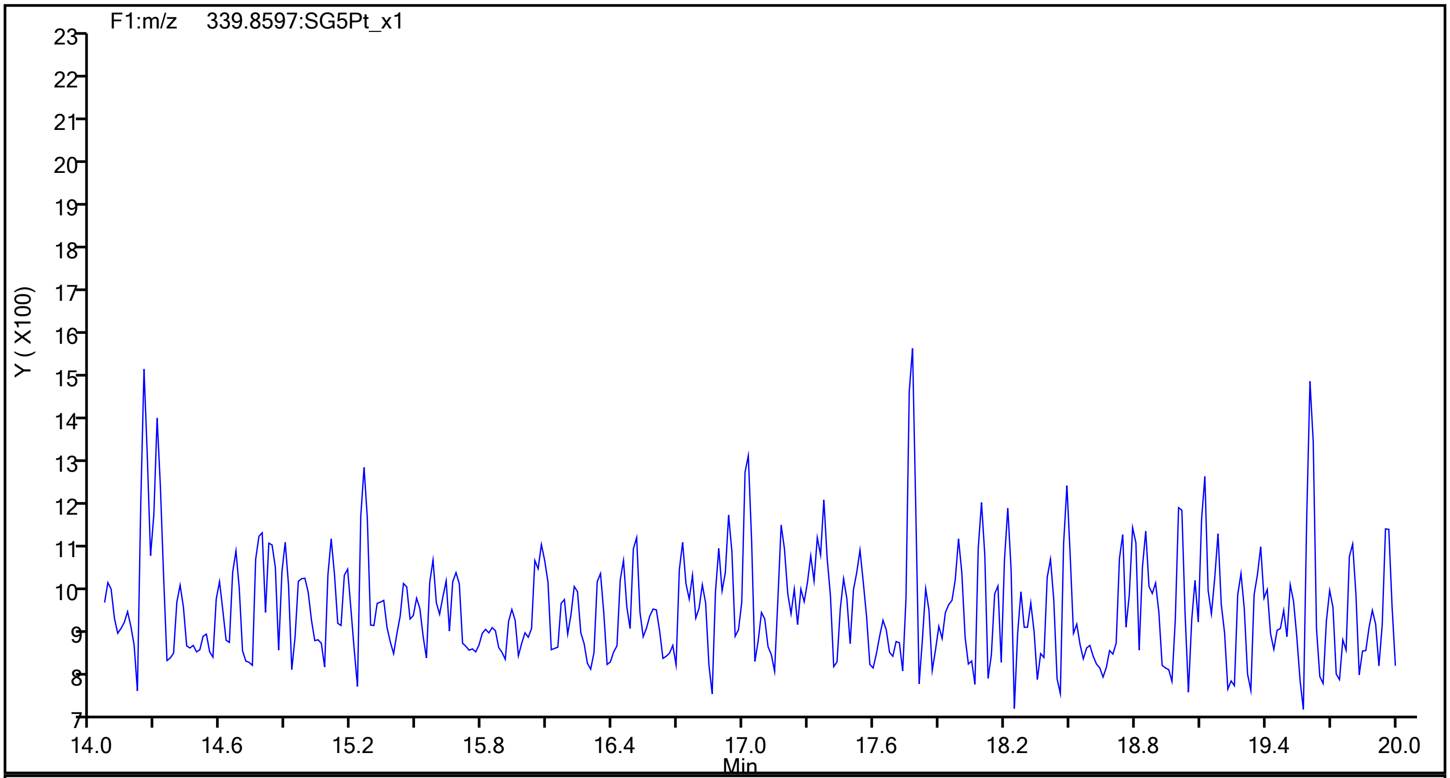

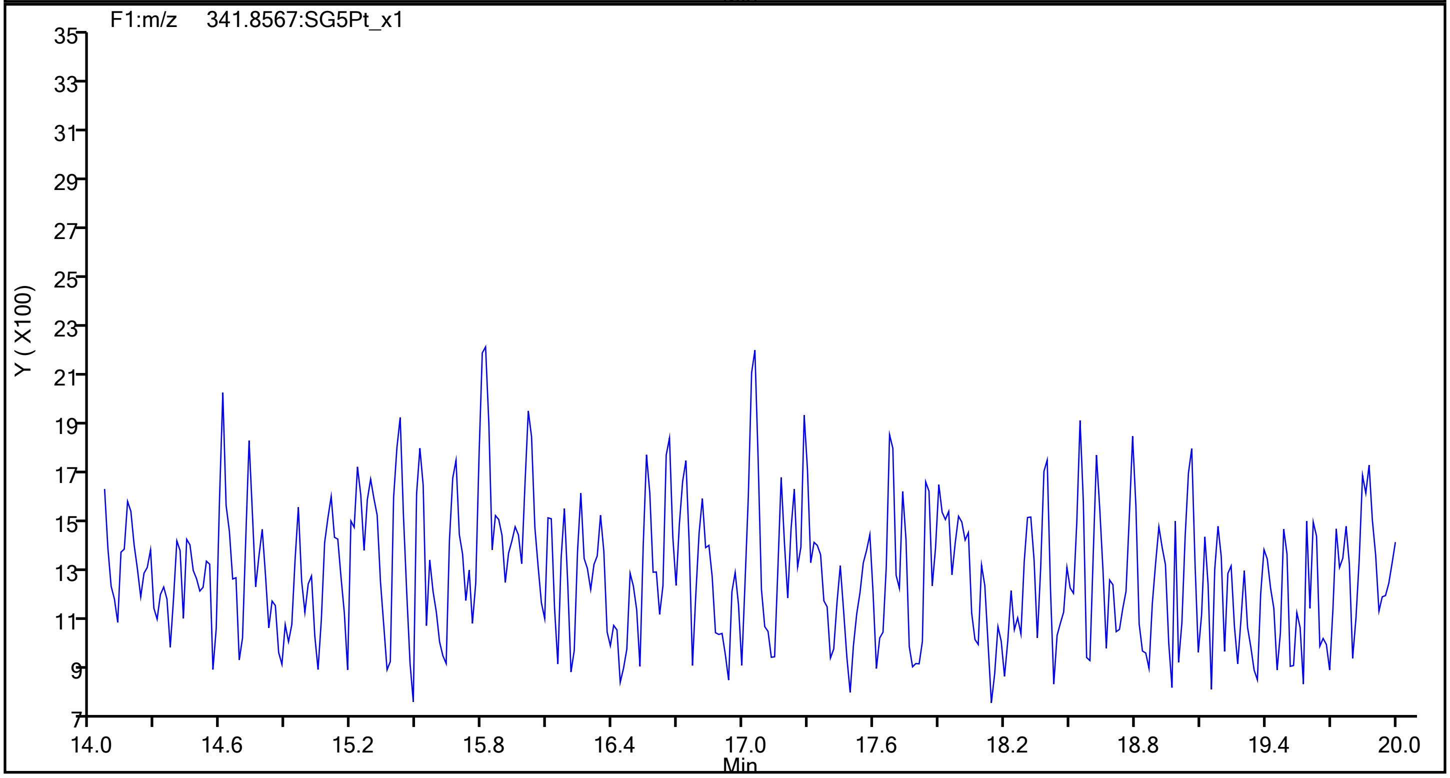

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Mar-2021 01:10:41	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

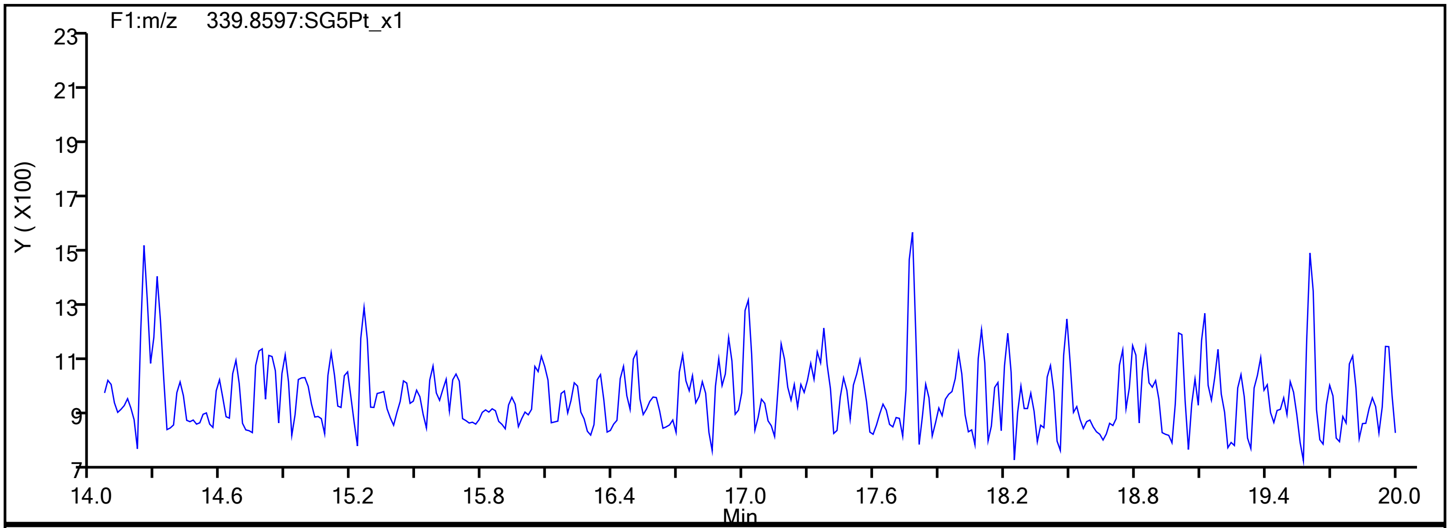

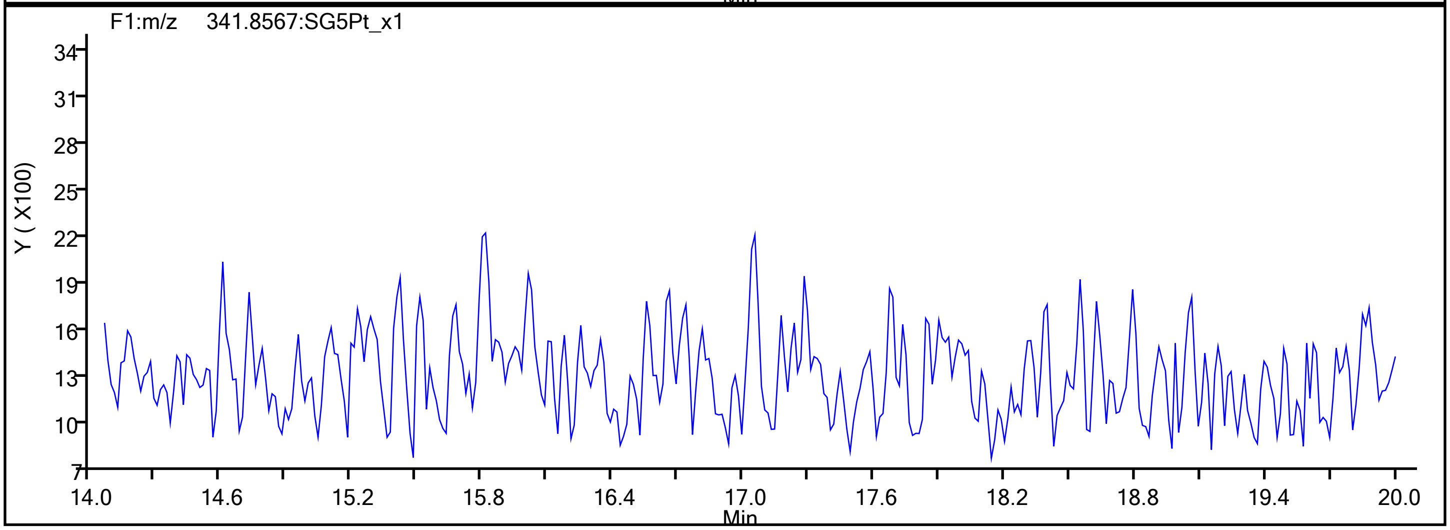

F1 PeCDFs Interference Mass

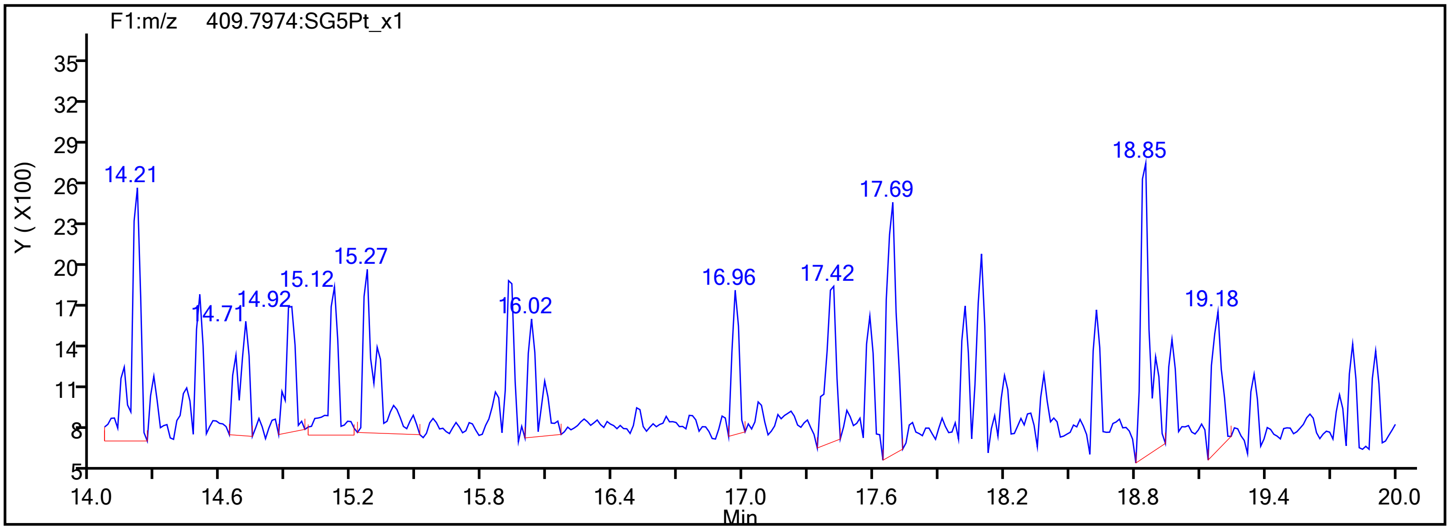

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

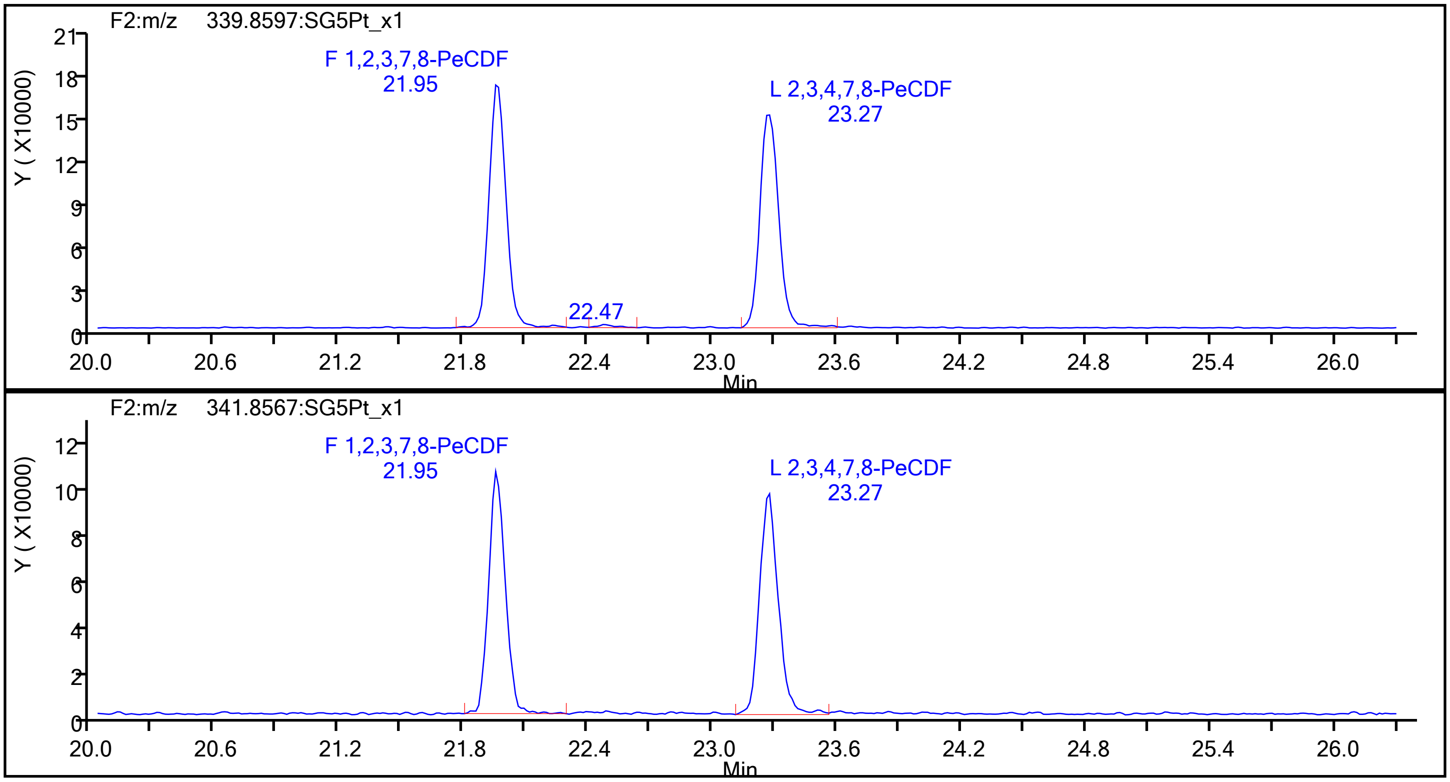

PeCDF Standards

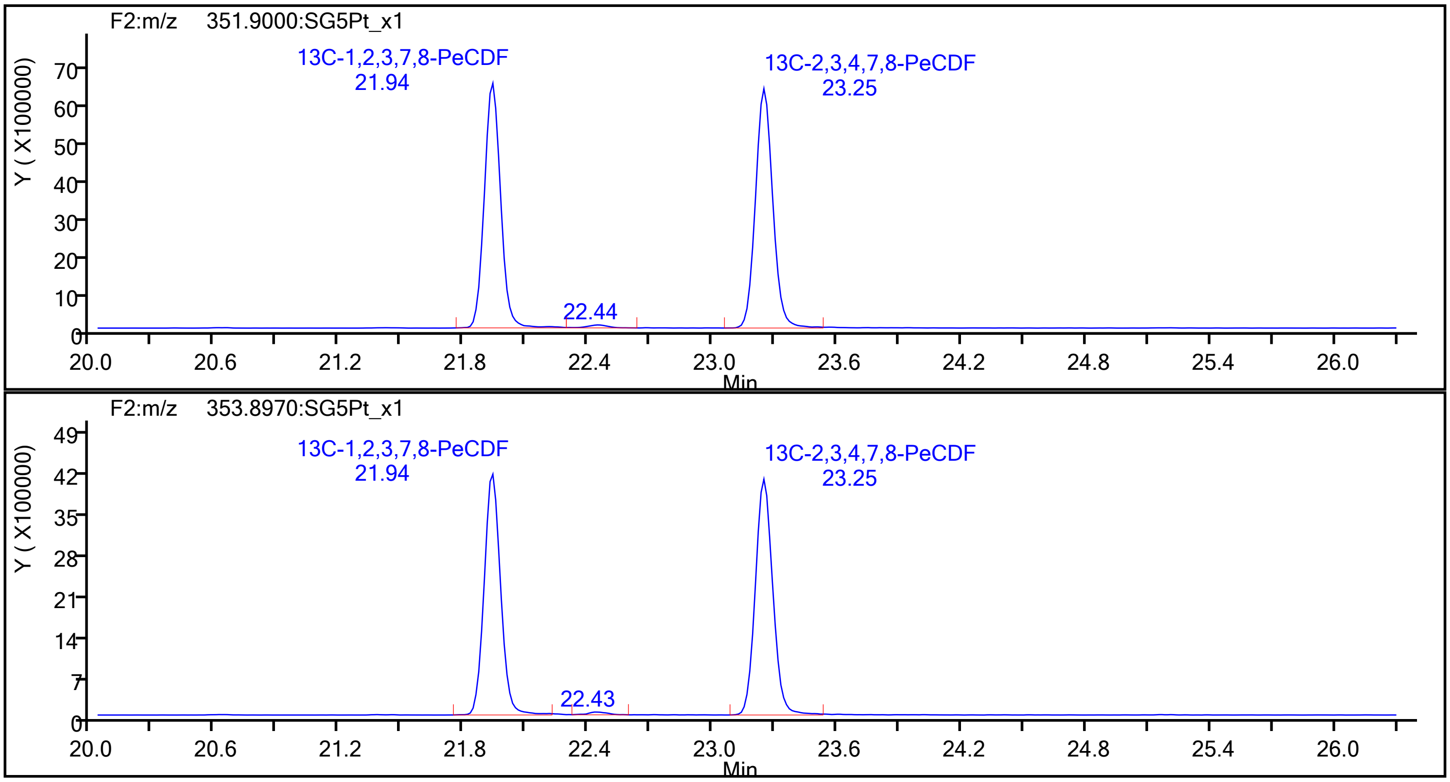

Report Date: 17-Mar-2021 13:35:53
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d		
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Instrument ID:	10D5	Operator ID:	ALM
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Client ID:			
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PeCDF

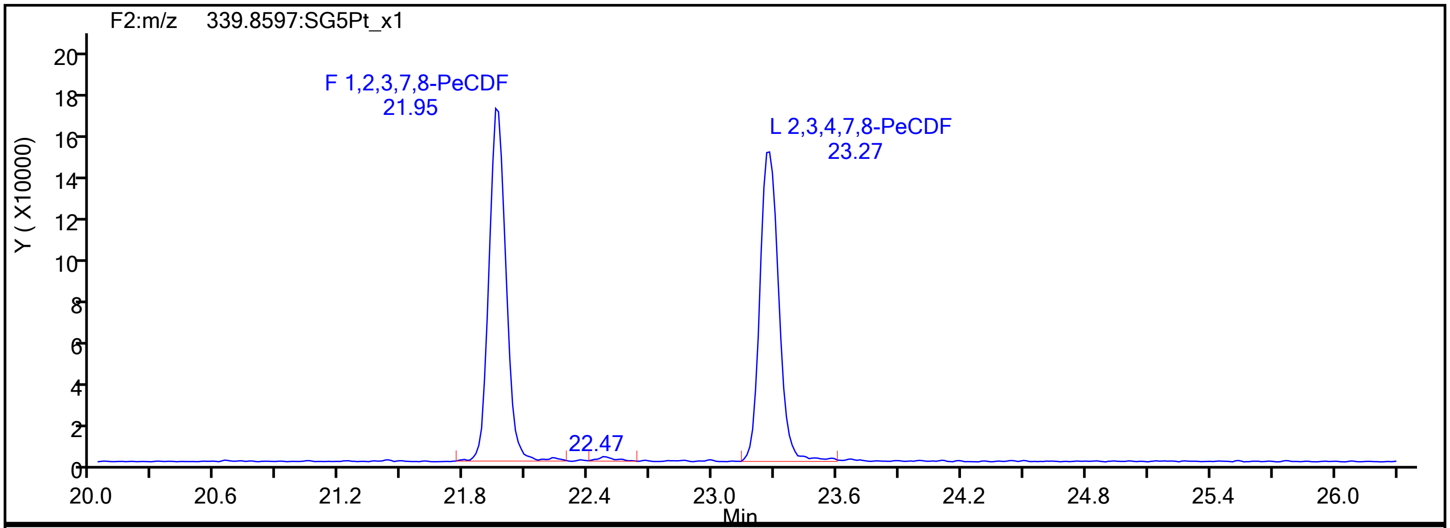

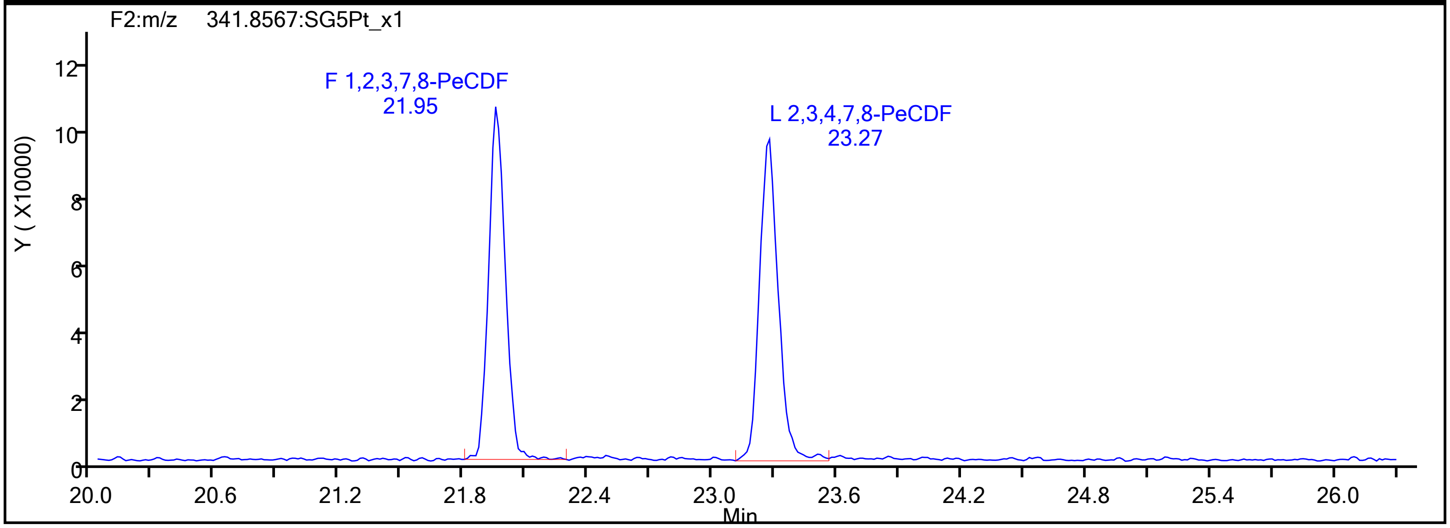

PeCDF Interference Mass

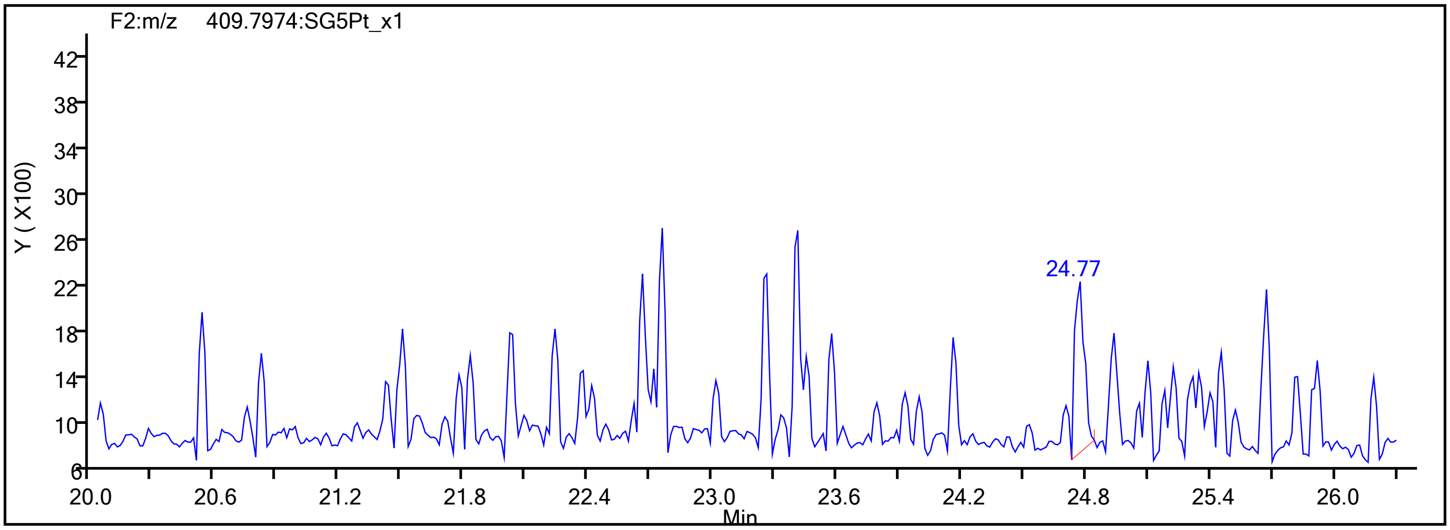

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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PeCDD

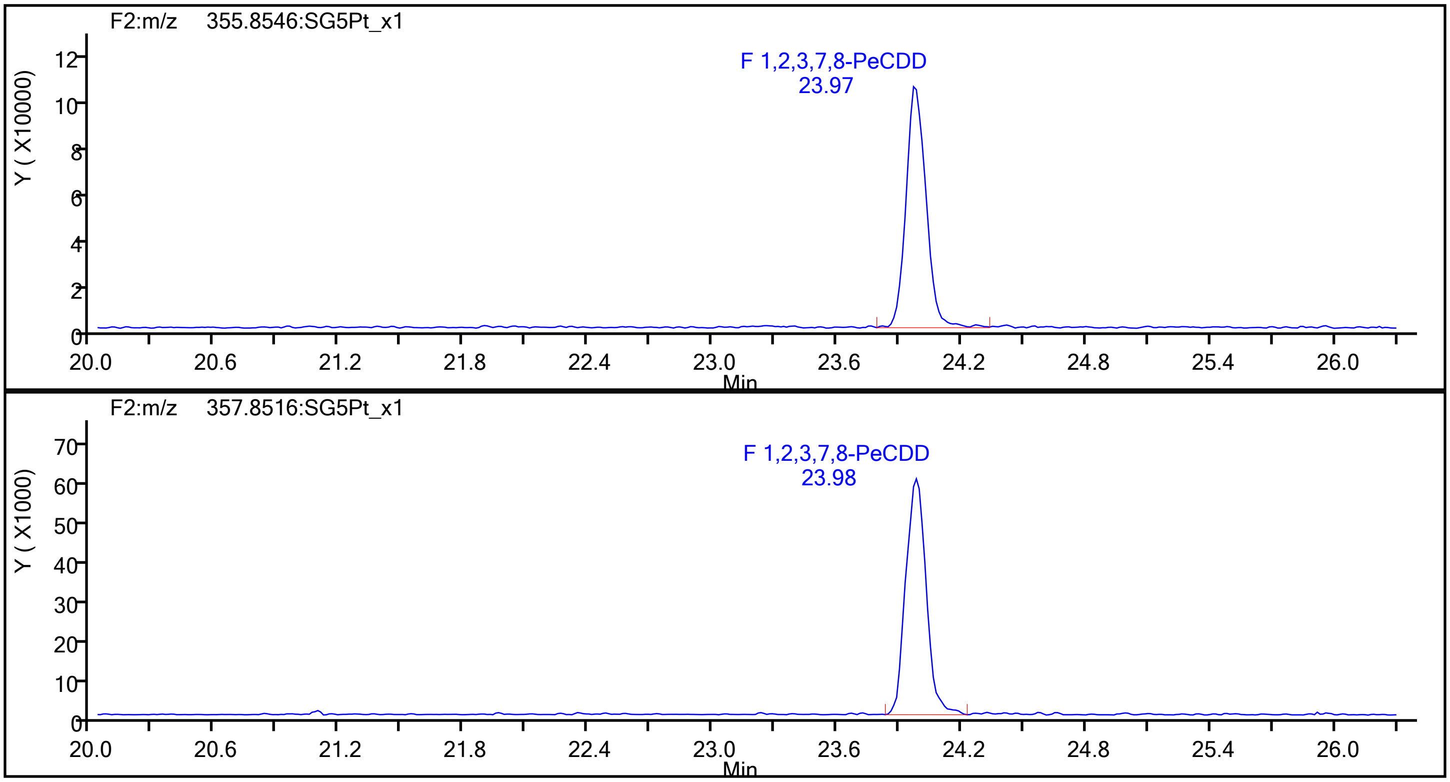

PeCDD Standards

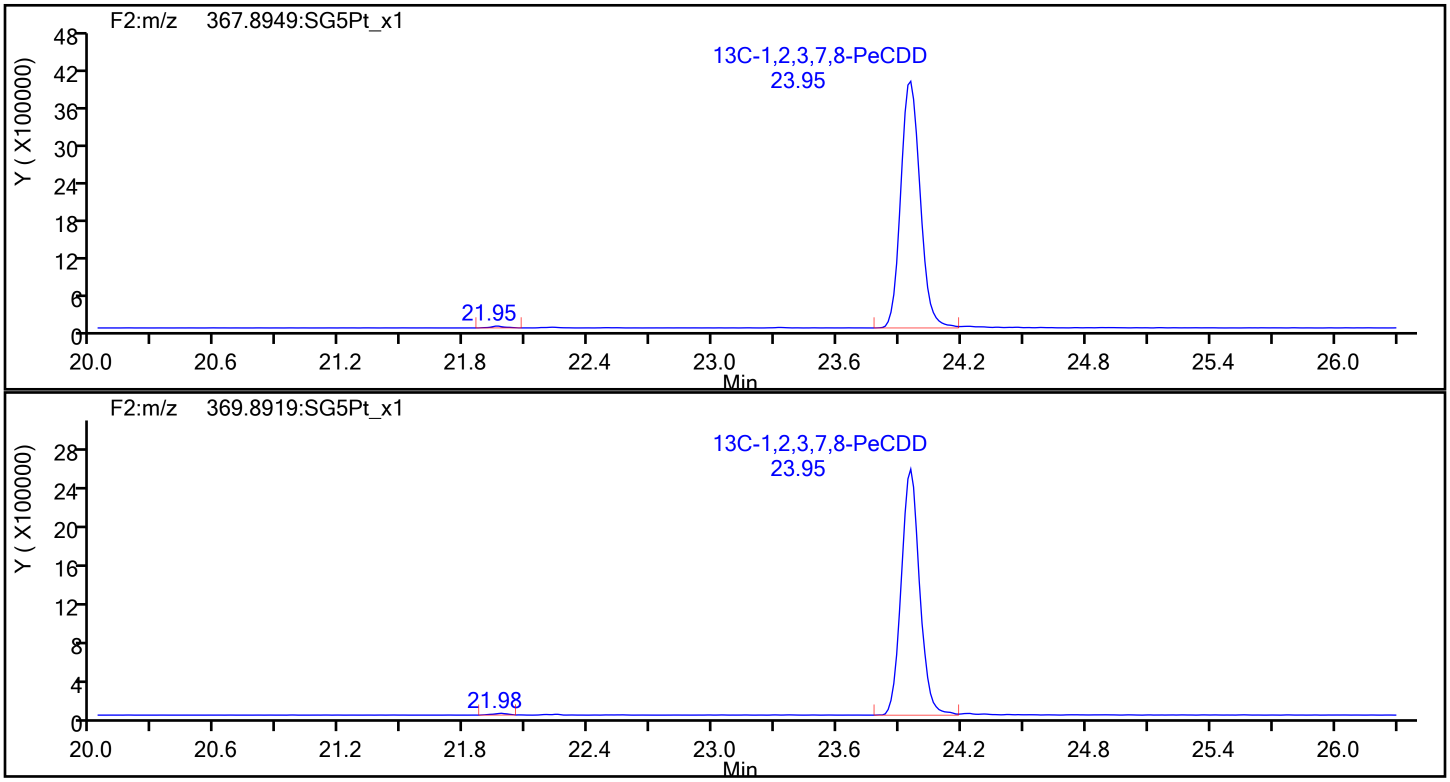

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

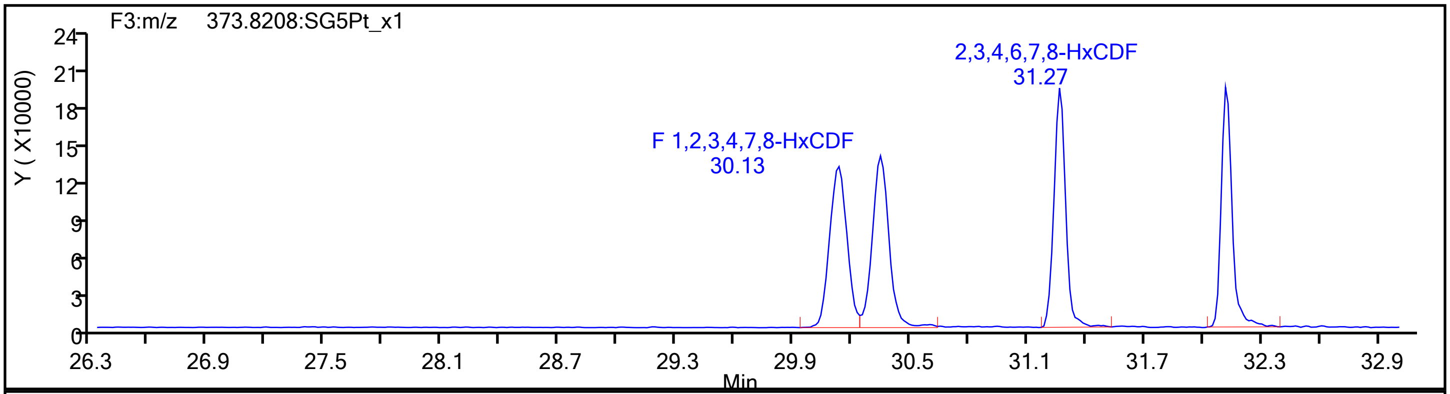

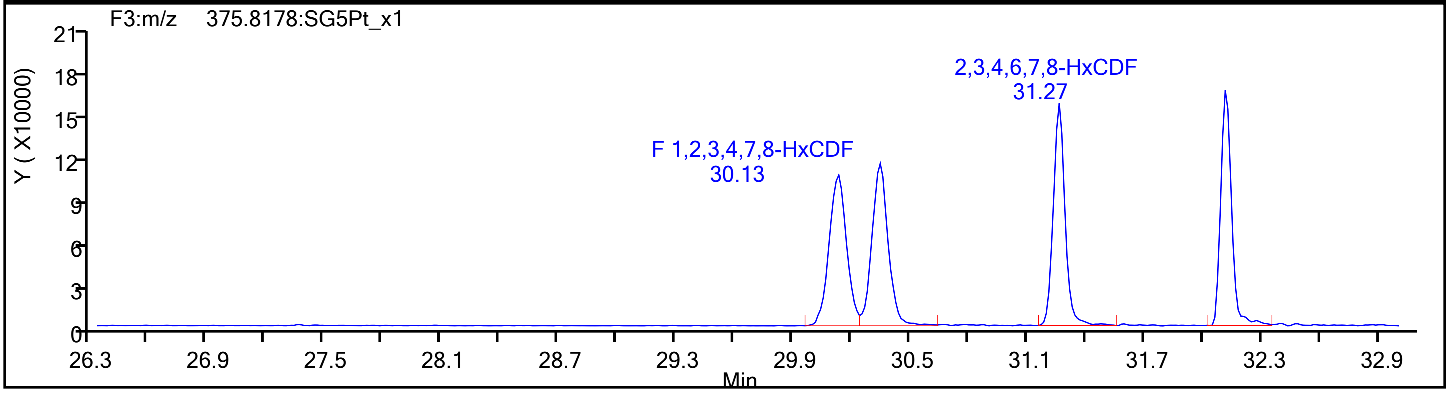

HxCDF Standards

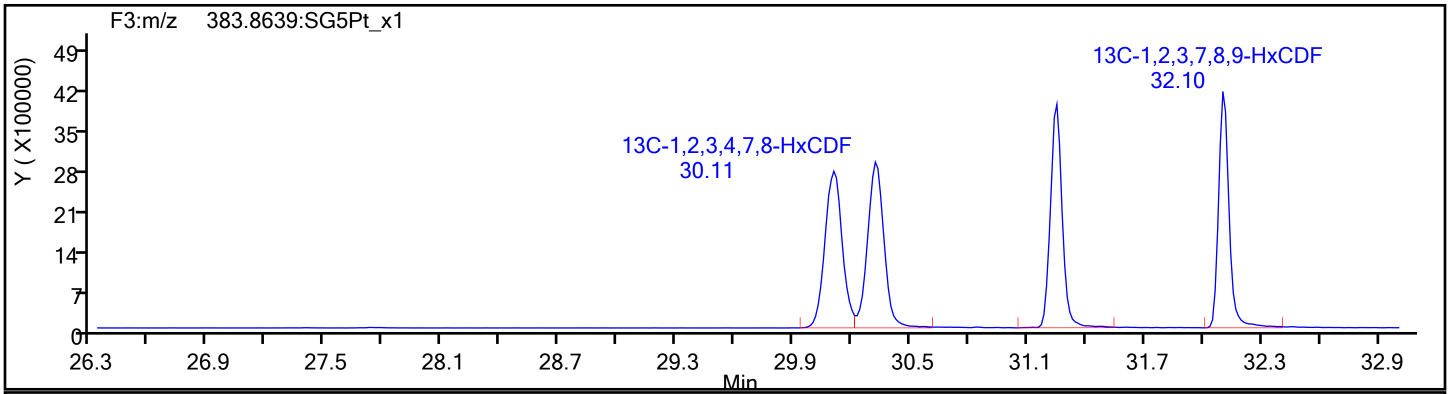

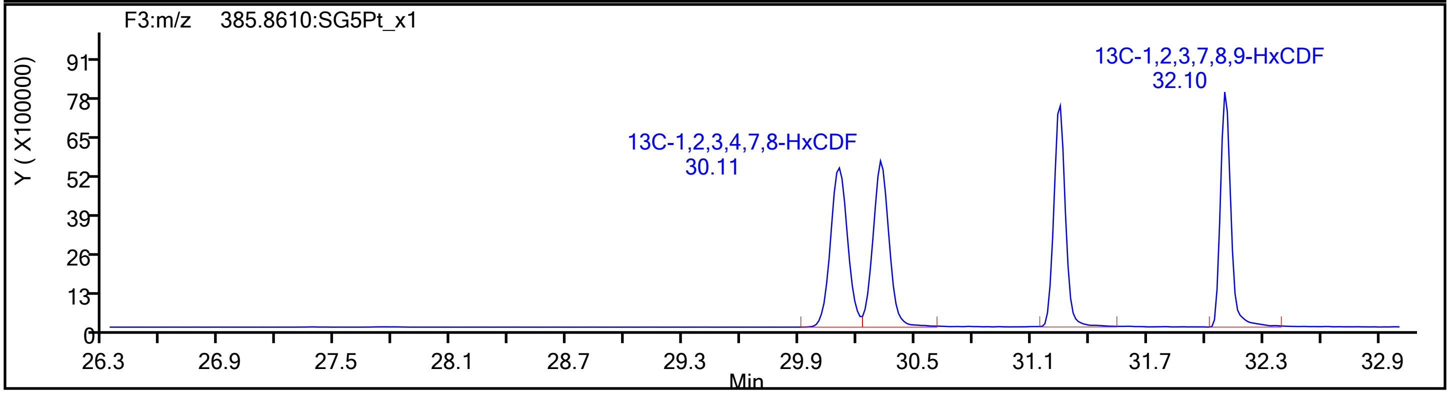

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

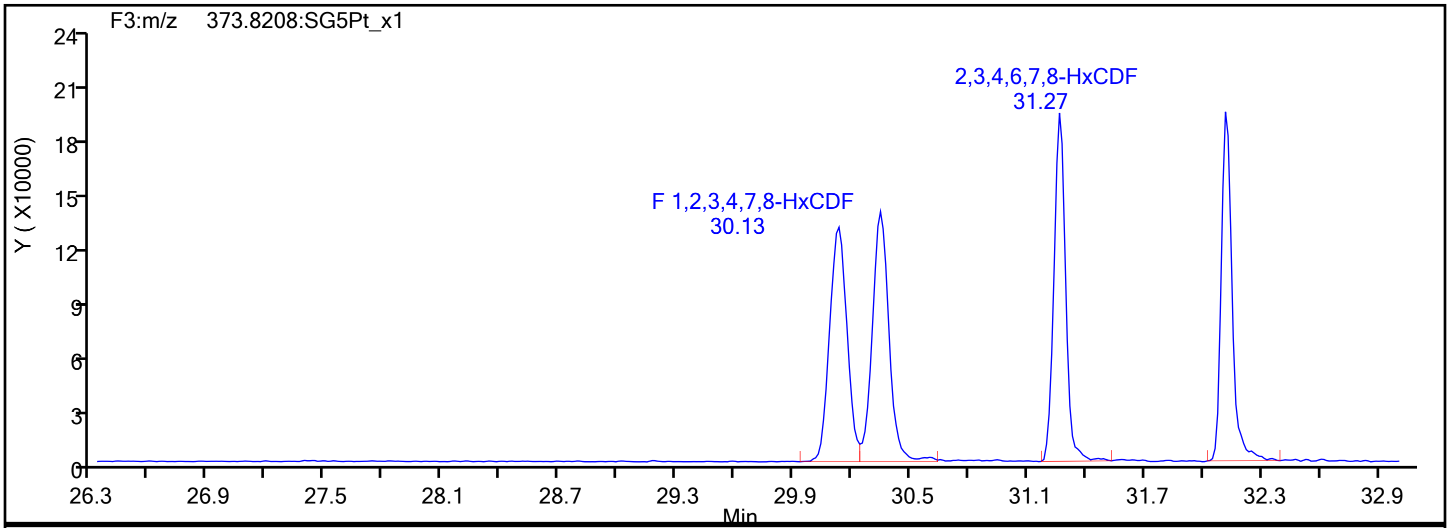

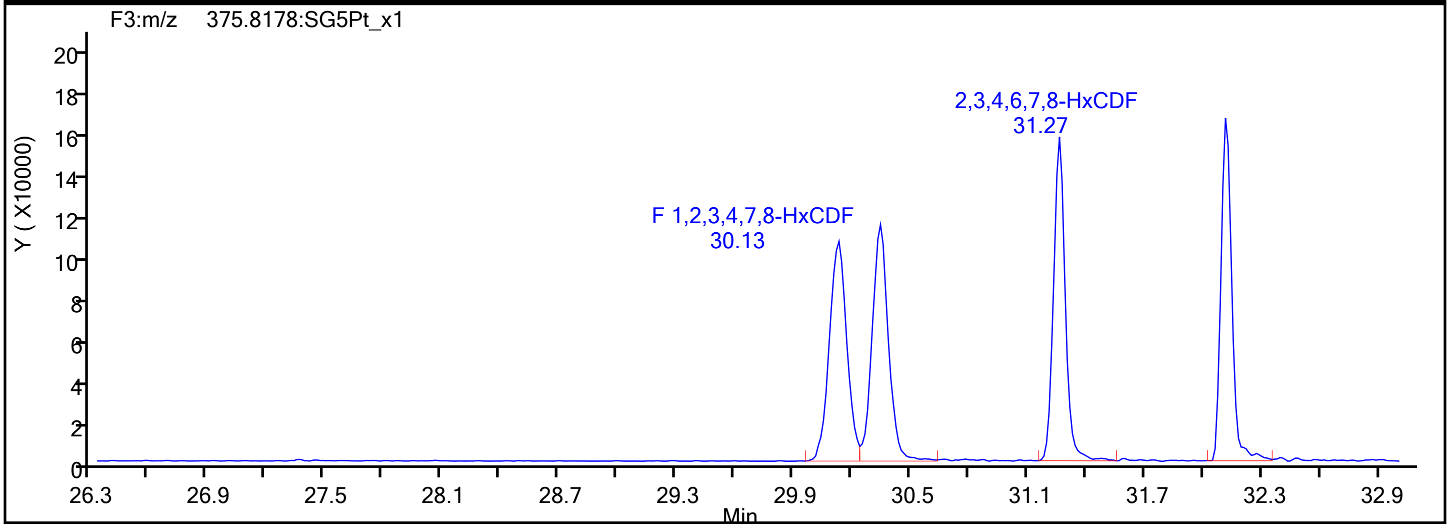

HxCDF Interference Mass

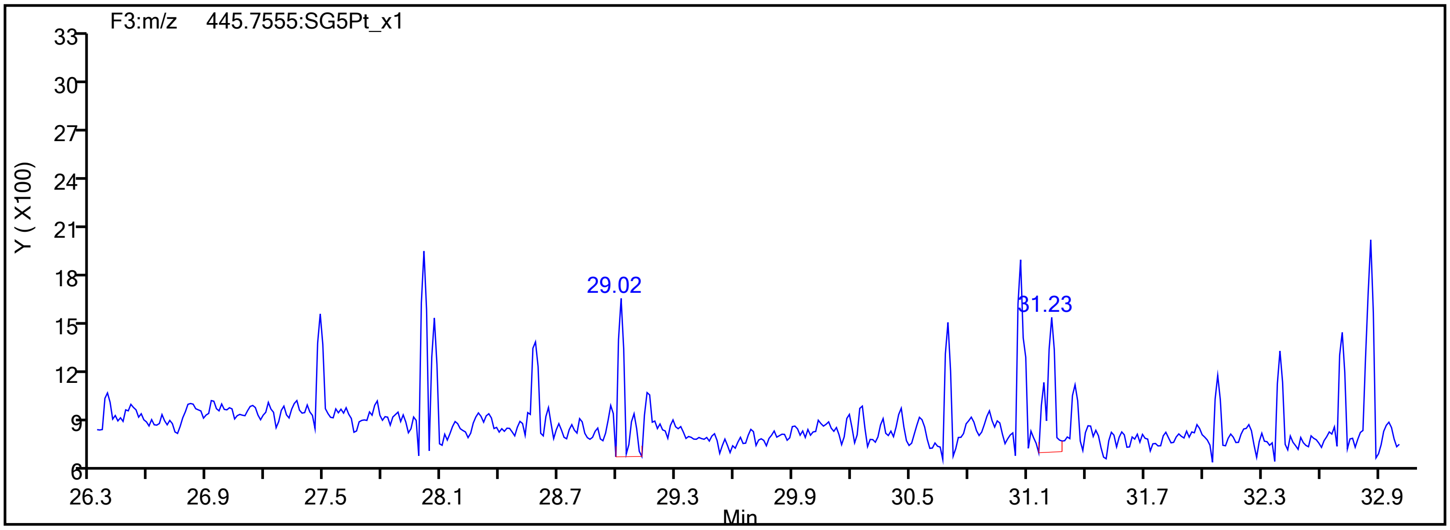

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 01:10:41 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907 Sample Line#: 3
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HxCDD

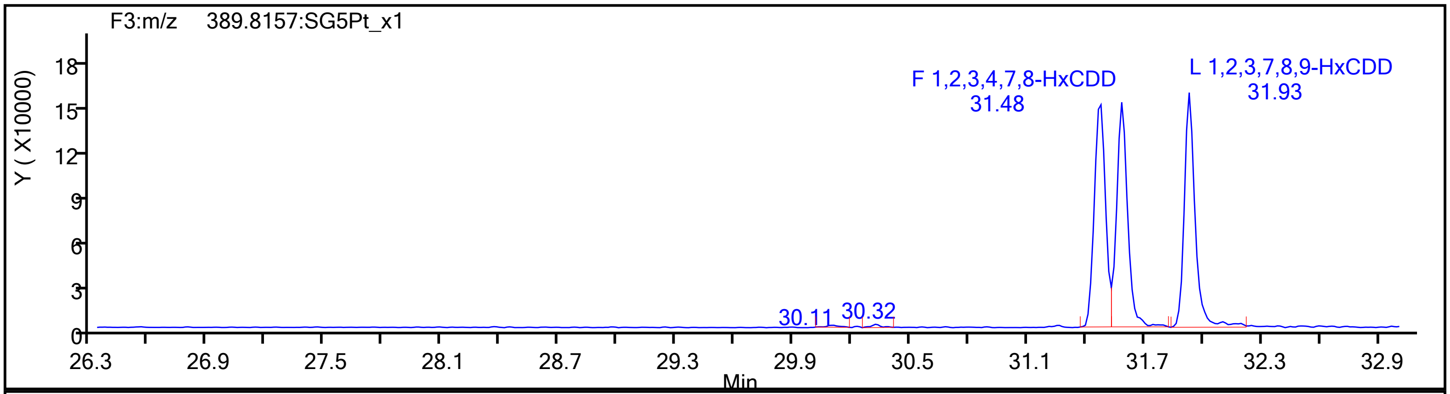

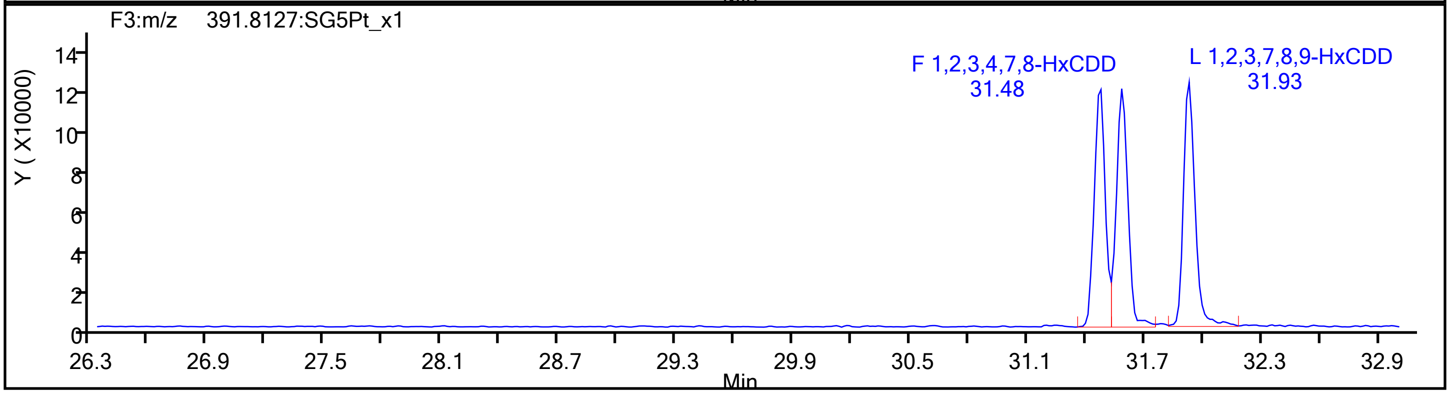

HxCDD Standards

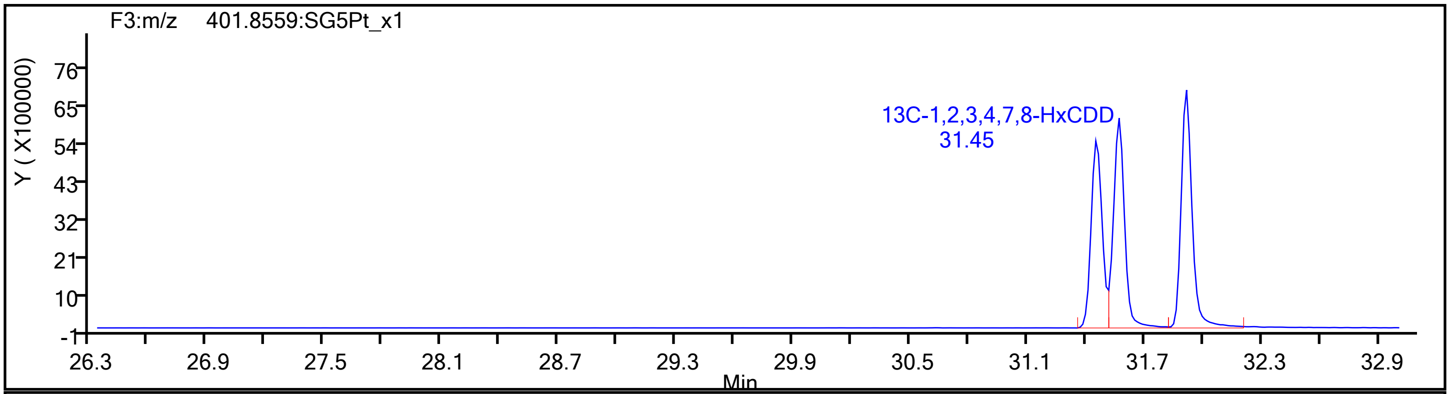

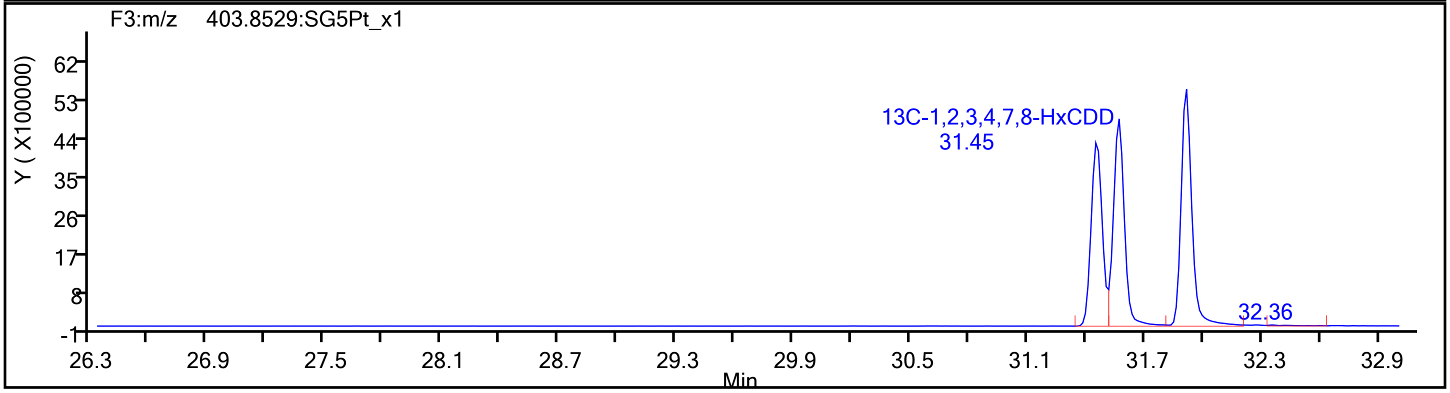

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
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HpCDF

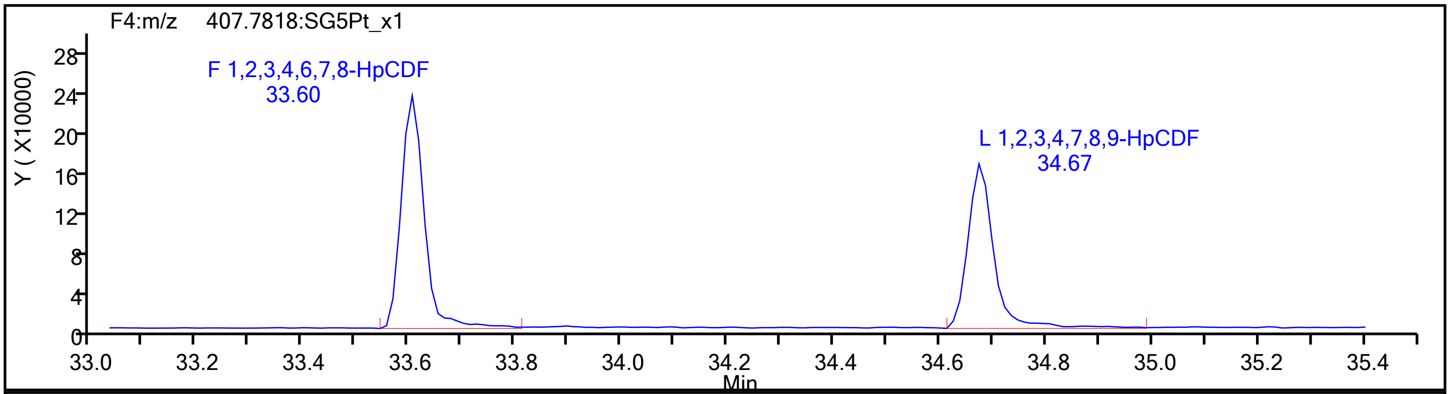

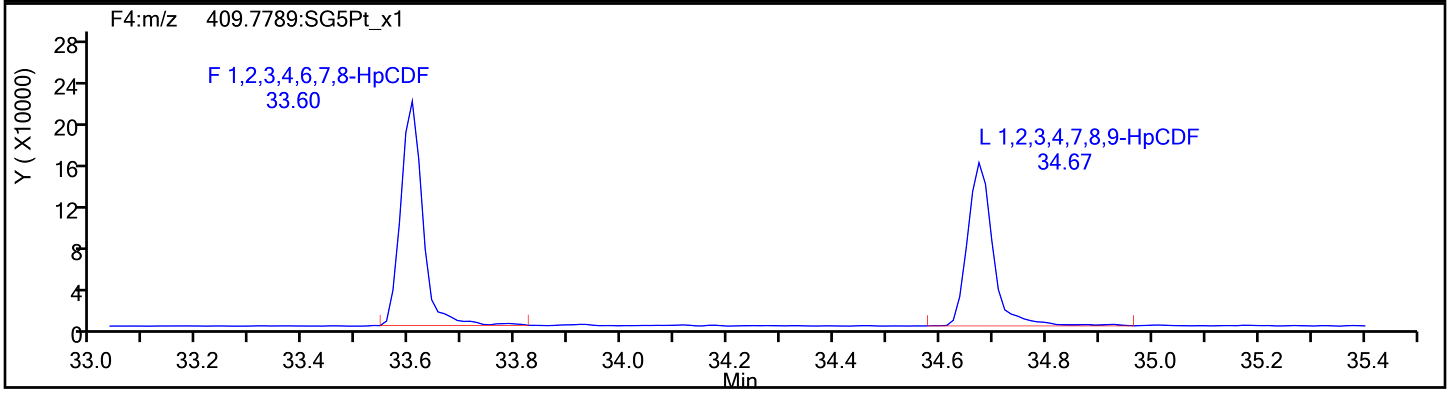

HpCDF Standards

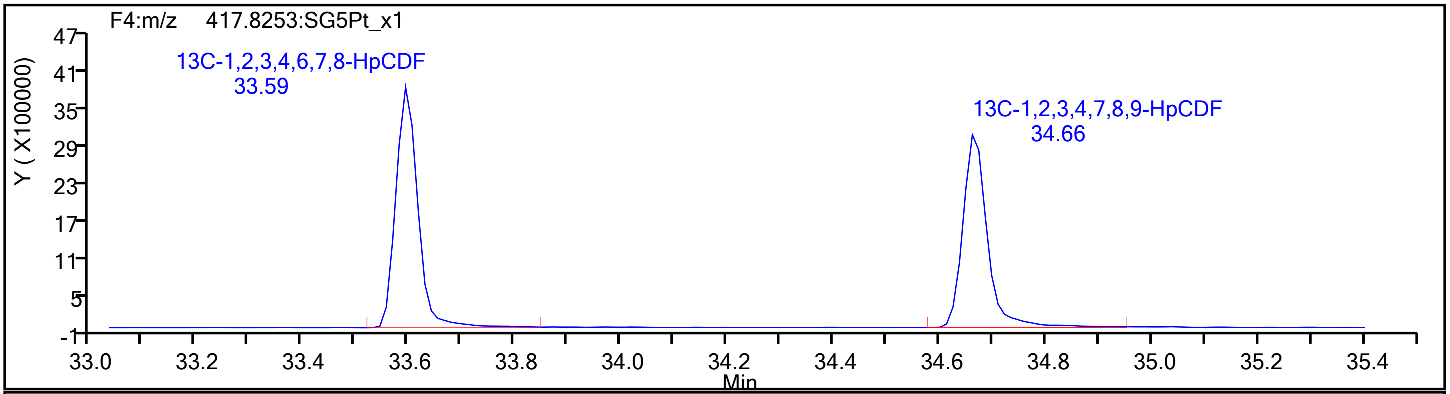

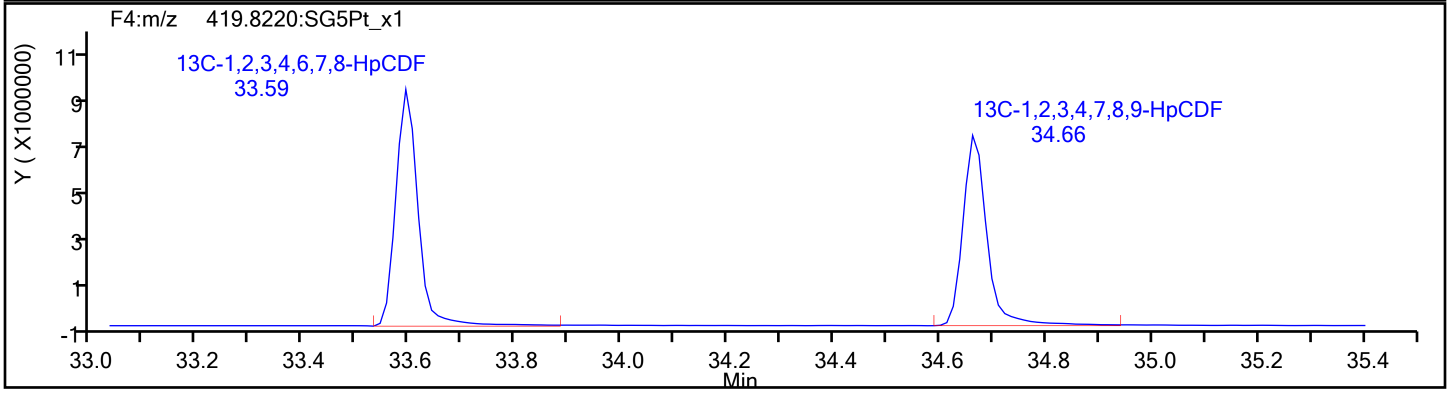

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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HpCDF

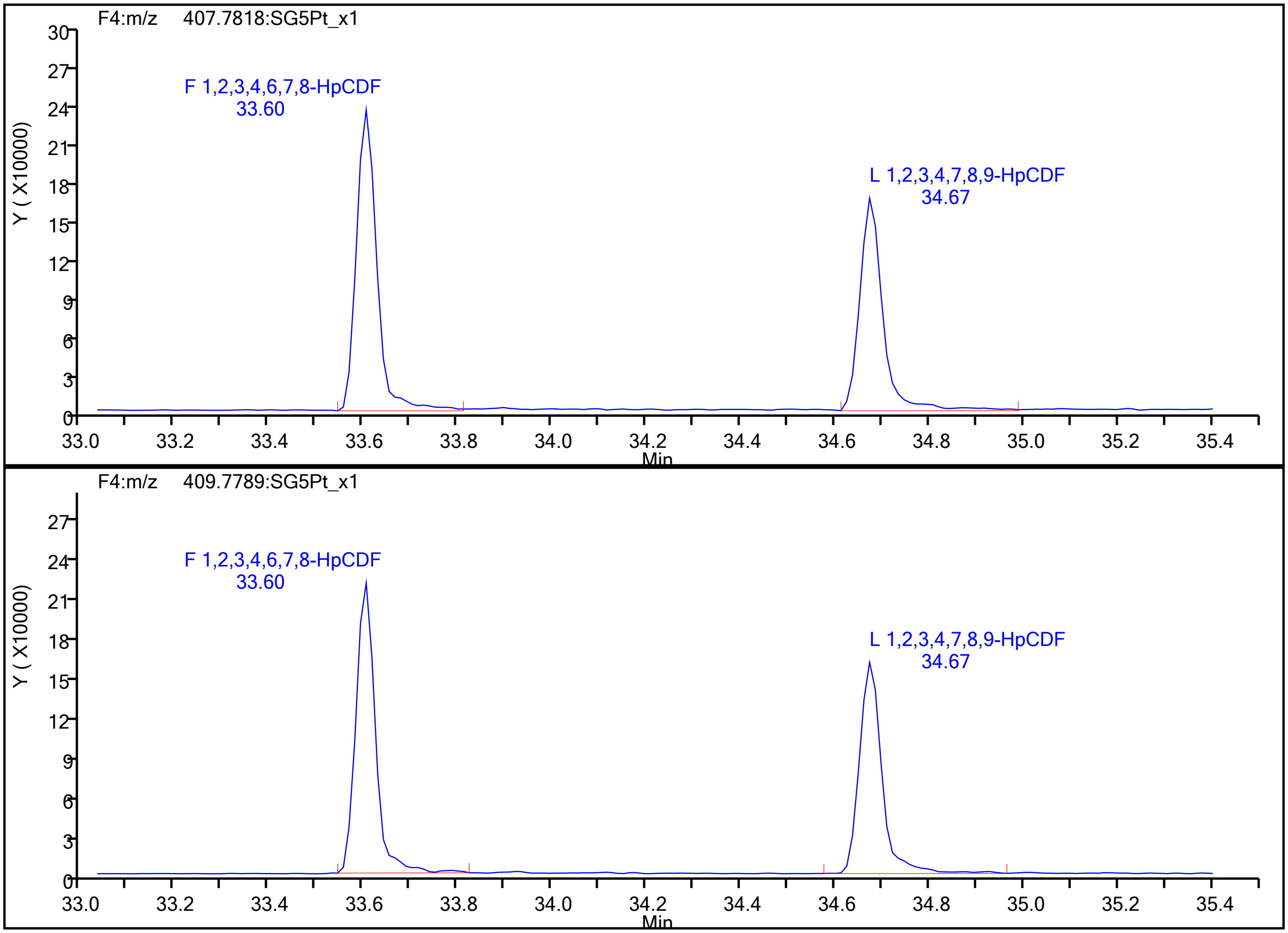

HpCDF Interference Mass

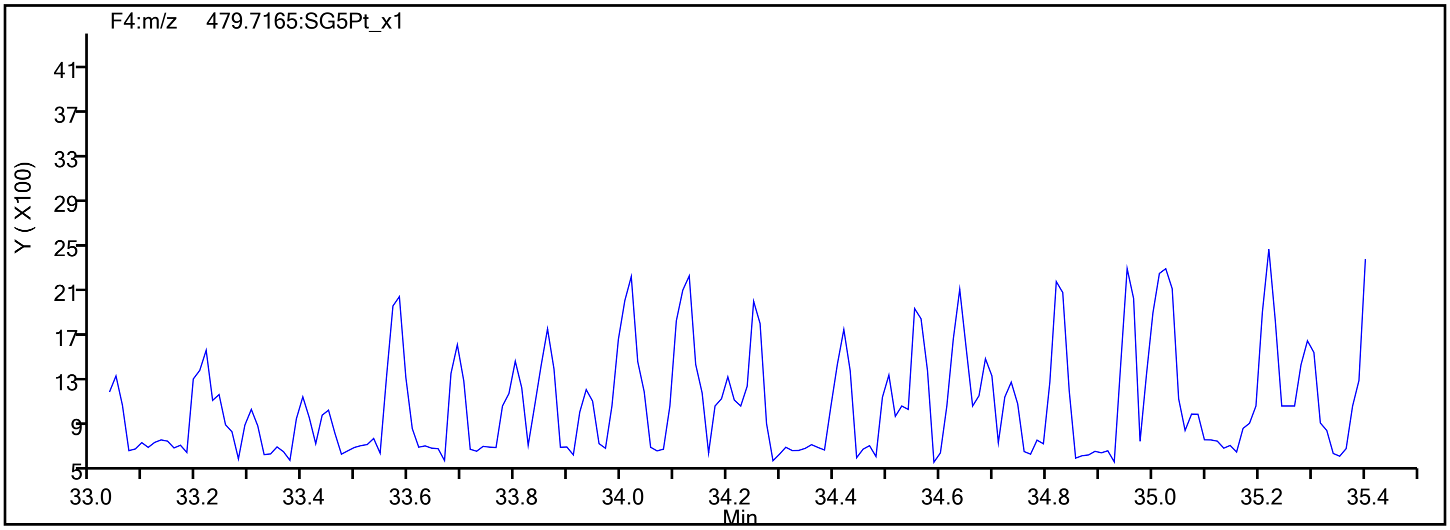

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d		
Injection Date:	17-Mar-2021 01:10:41	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

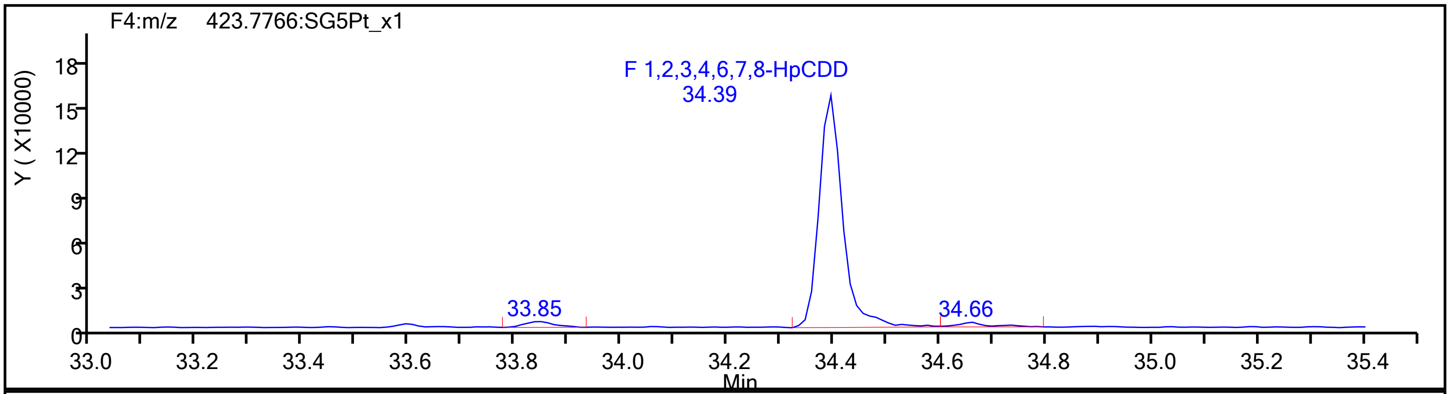

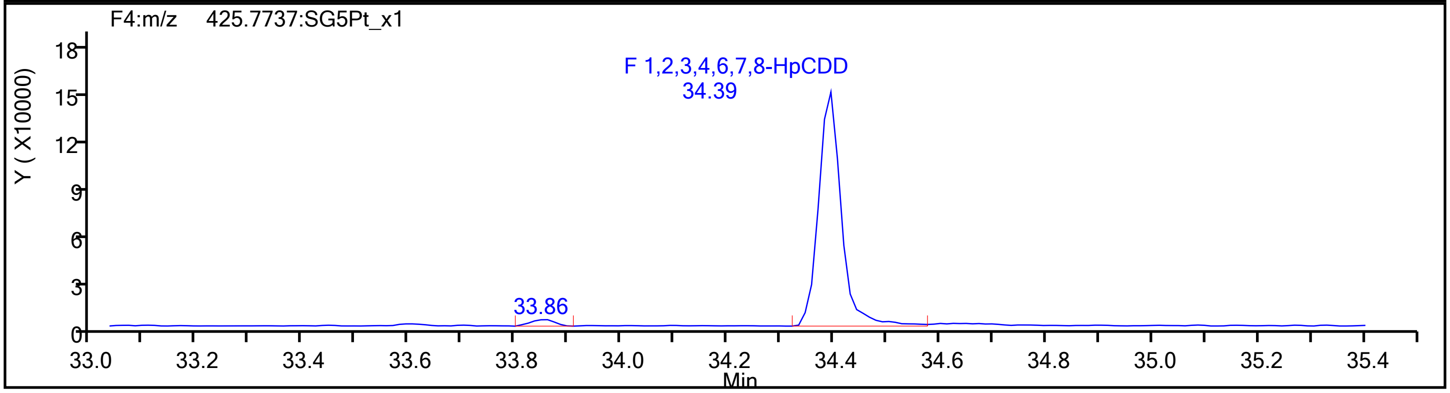

HpCDD Standards

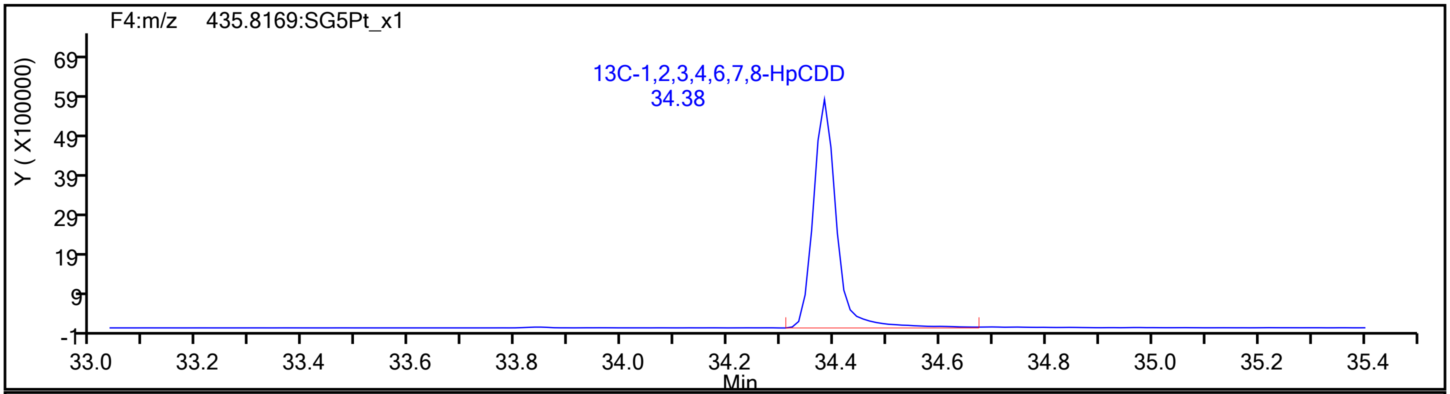

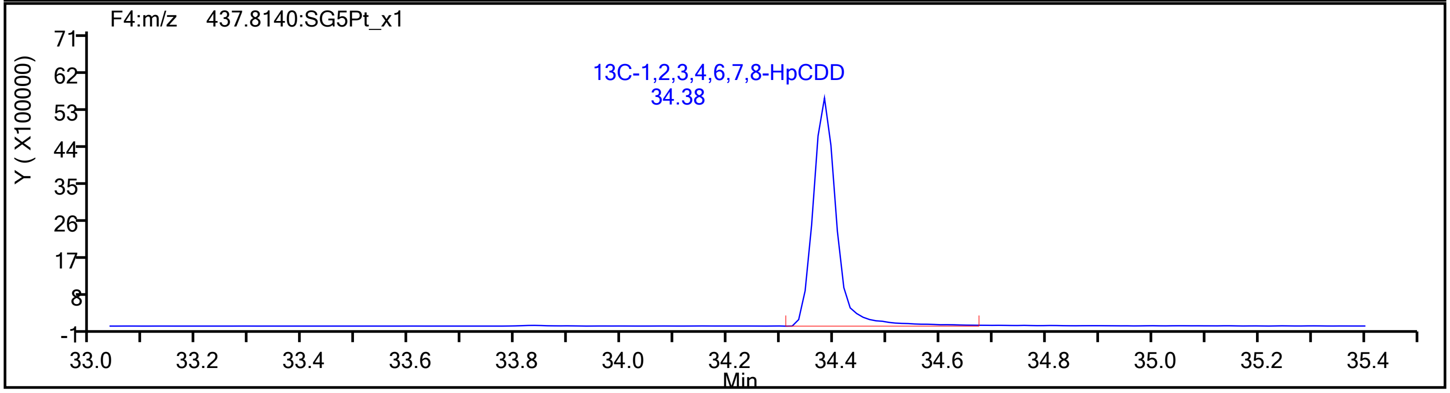

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d
Injection Date: 17-Mar-2021 01:10:41
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

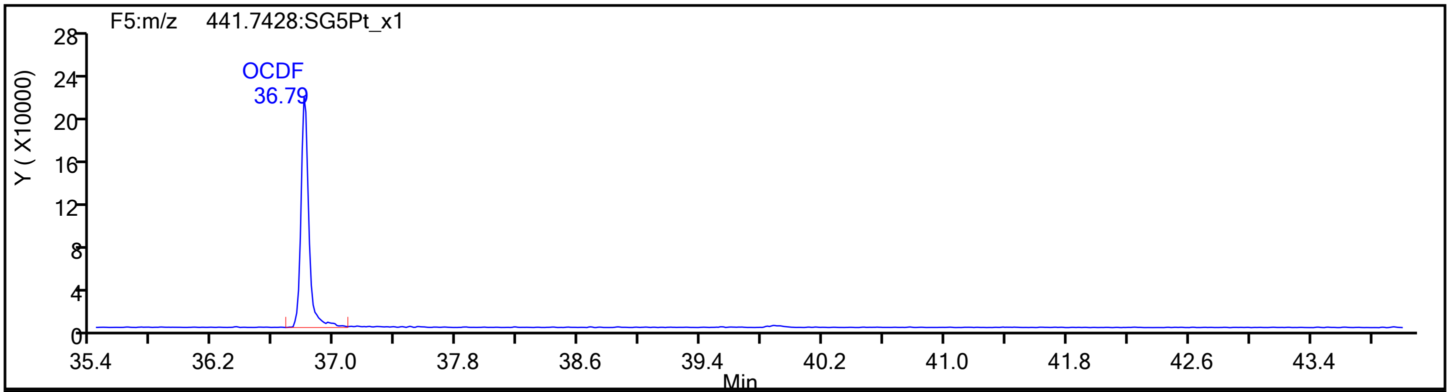

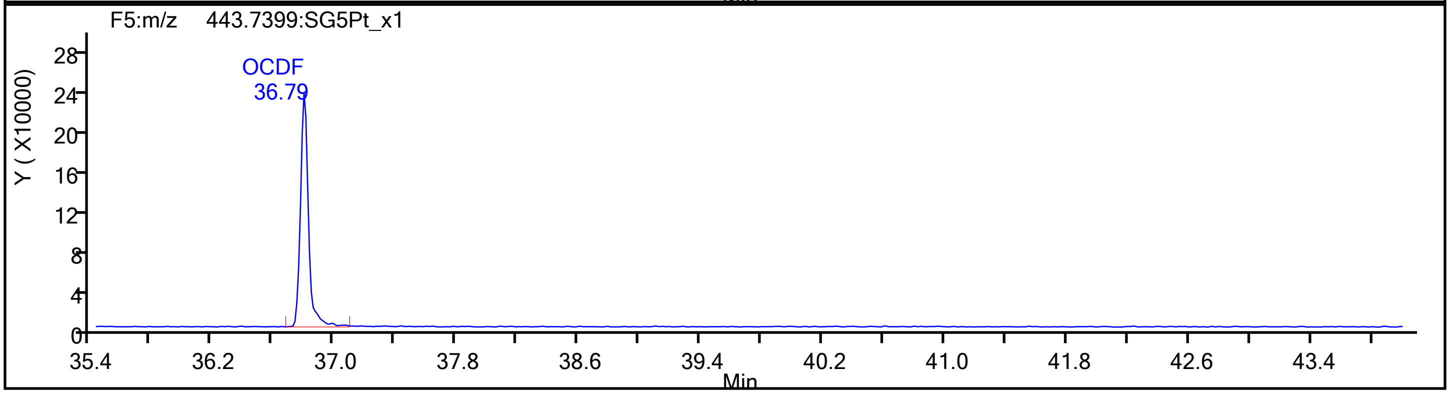

OCDF Standards

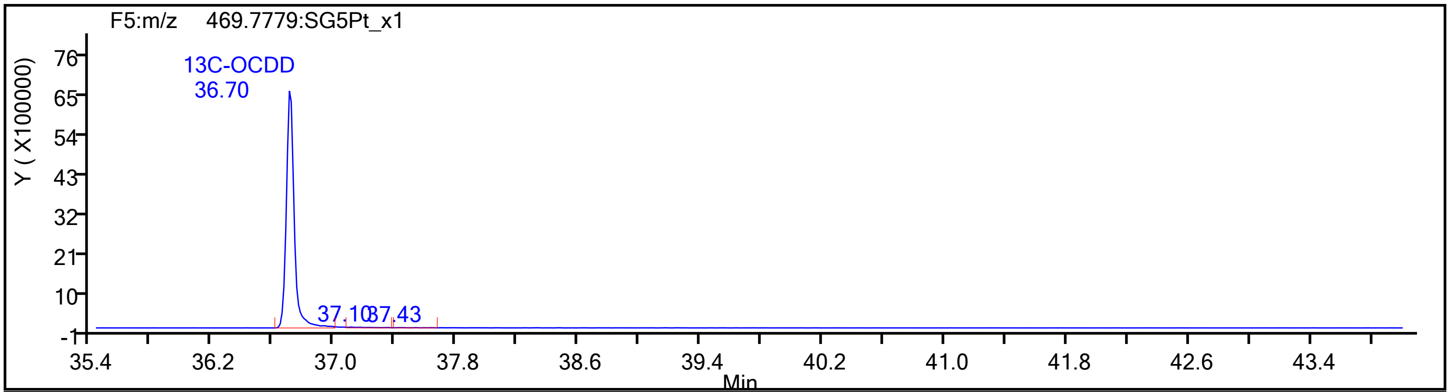

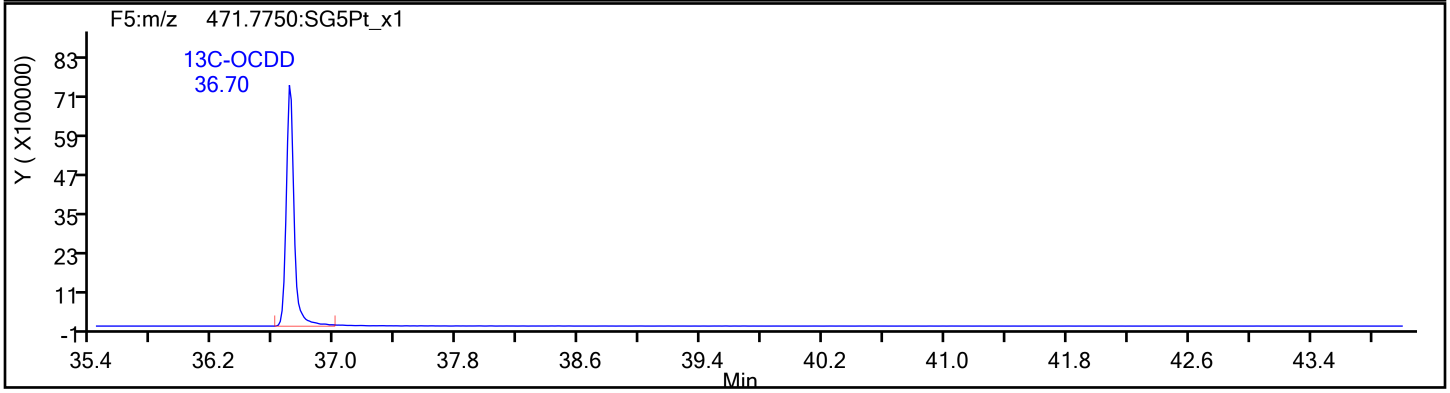

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d
Injection Date: 17-Mar-2021 01:10:41 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907 Sample Line#: 3
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

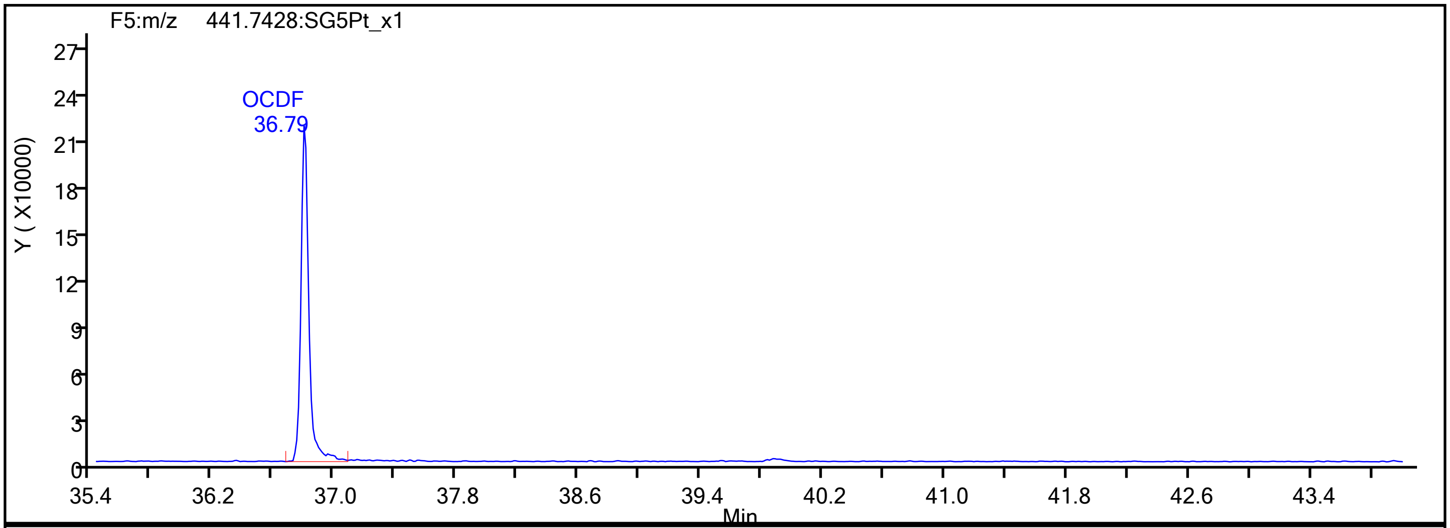

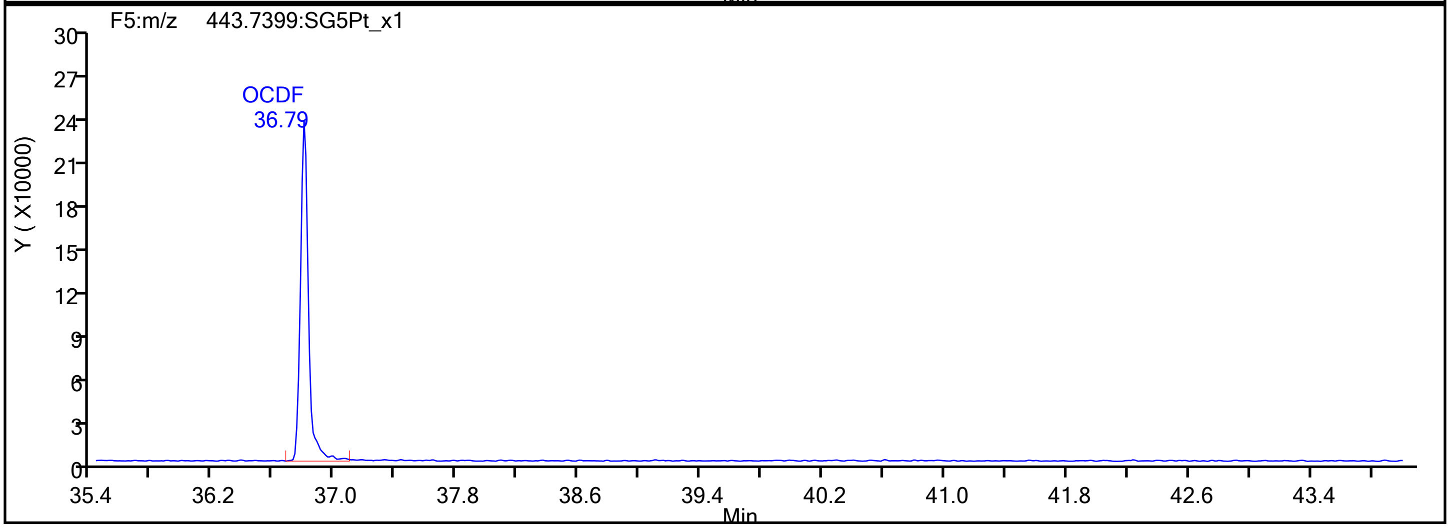

OCDF Interference Mass

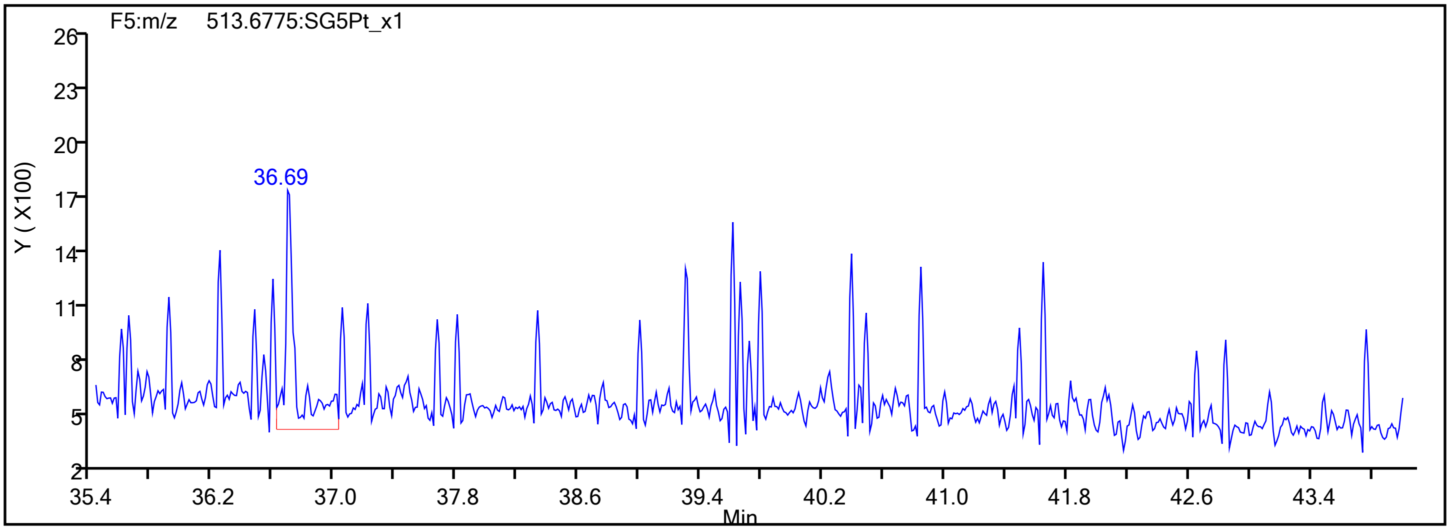

Report Date: 17-Mar-2021 13:35:53
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d
Injection Date: 17-Mar-2021 01:10:41
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

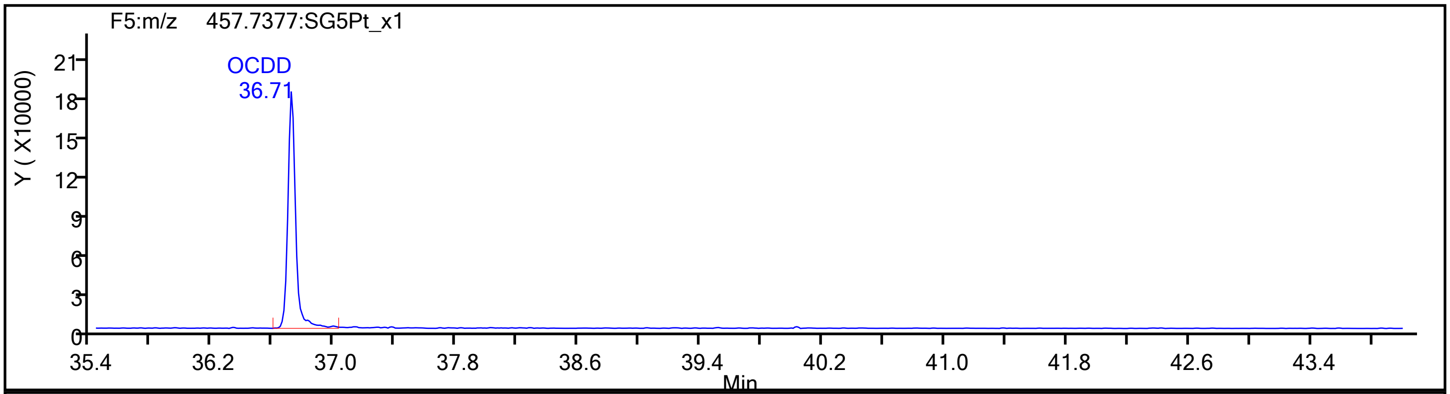

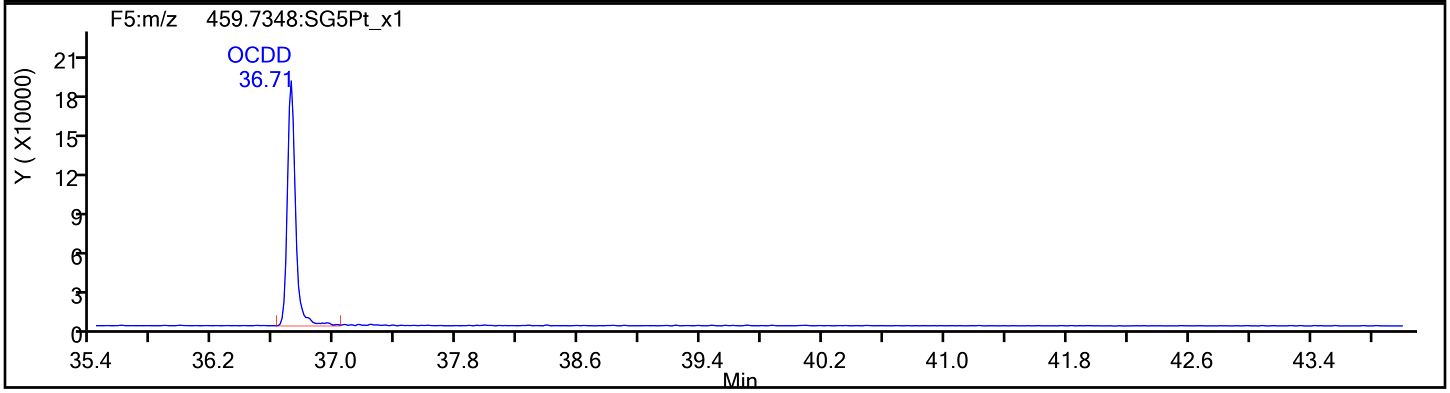

OCDD Standards

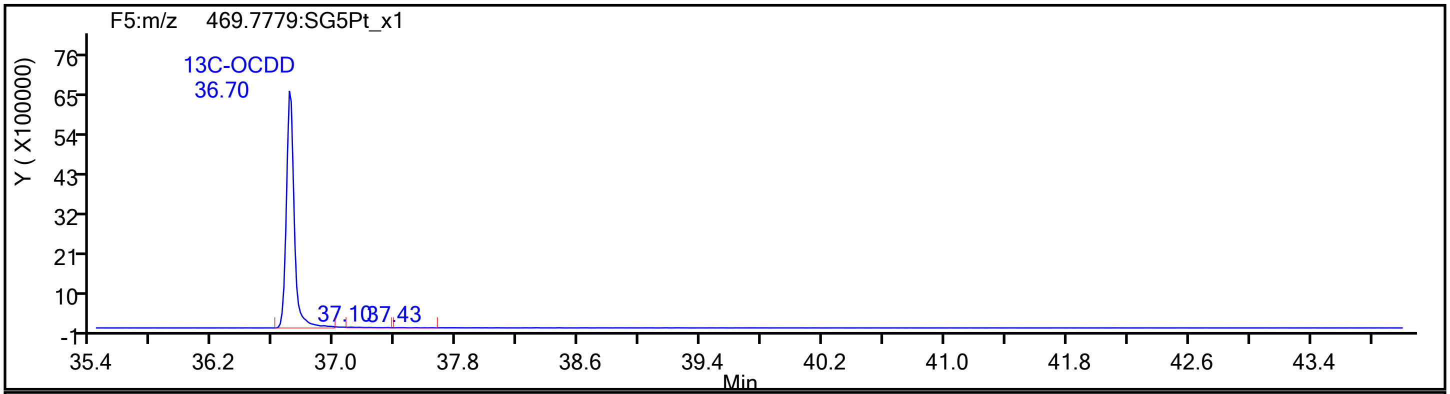

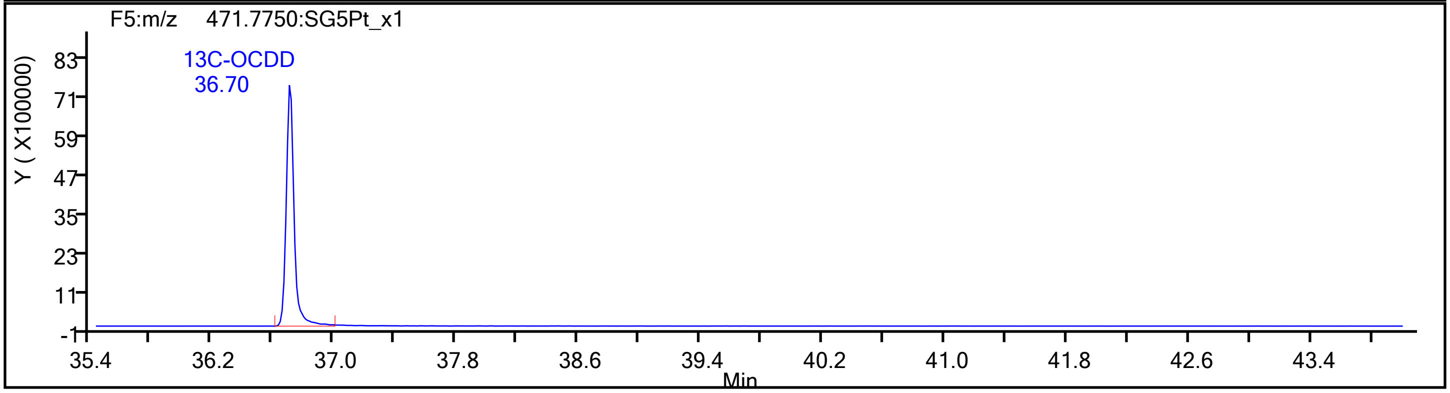

Report Date: 17-Mar-2021 13:35:53 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d		
Injection Date:	17-Mar-2021 01:10:41	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

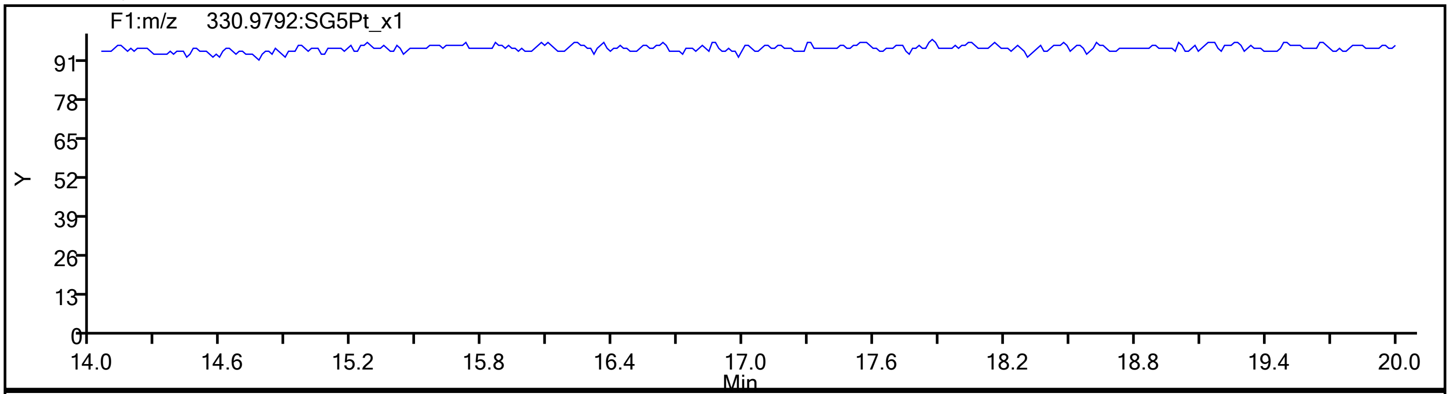

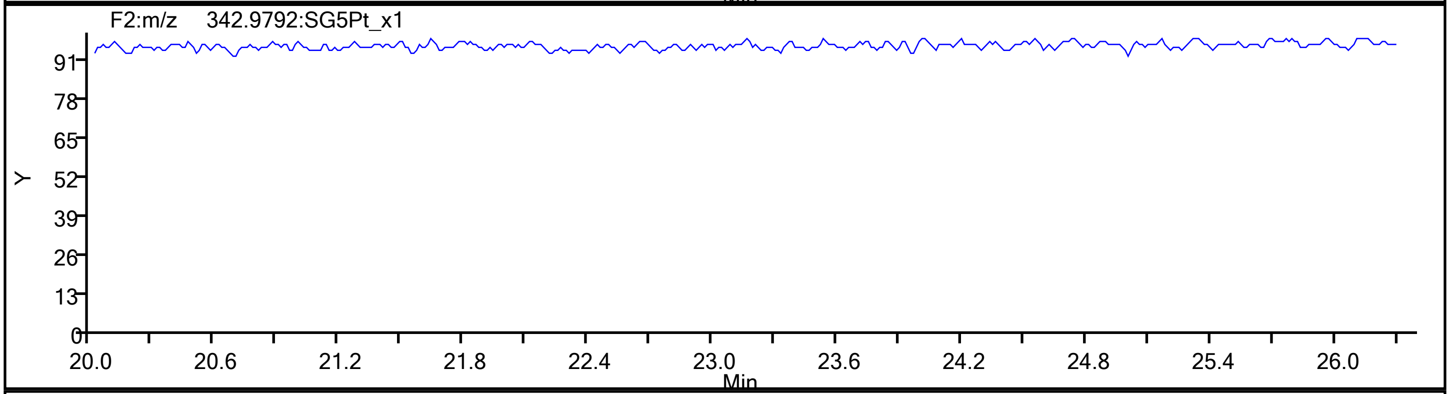

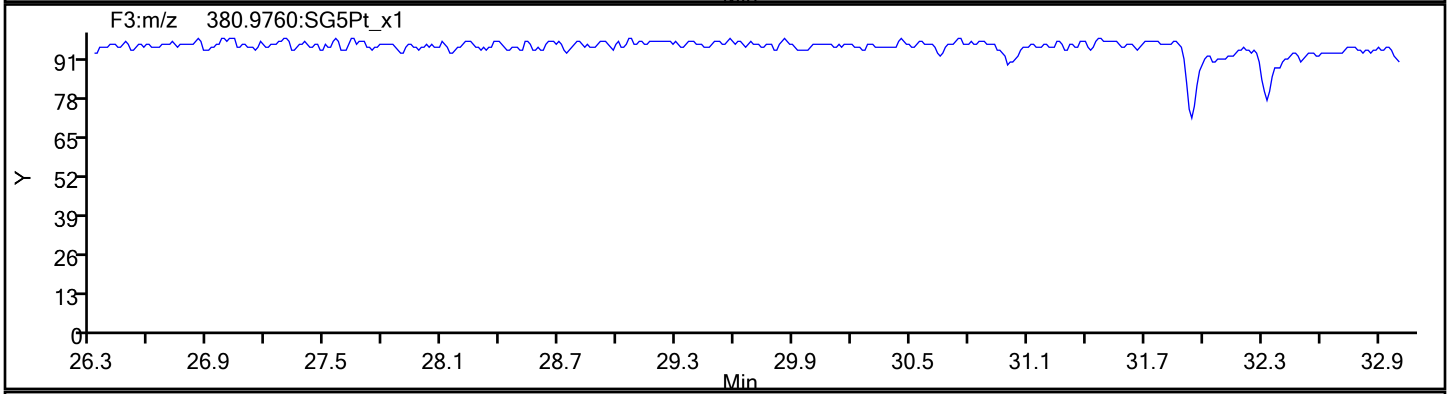

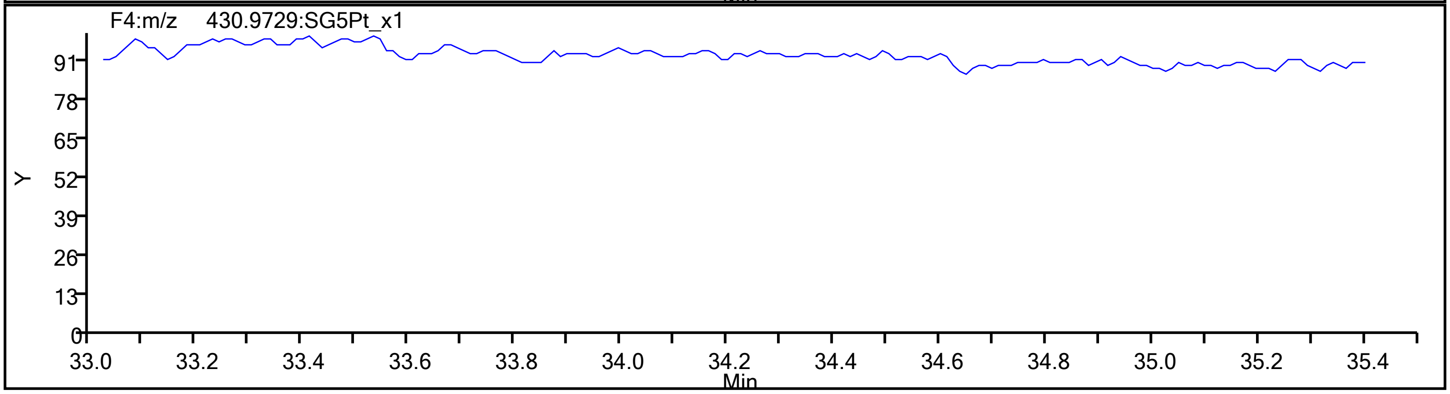

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_3.d		
Injection Date:	17-Mar-2021 01:10:41	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

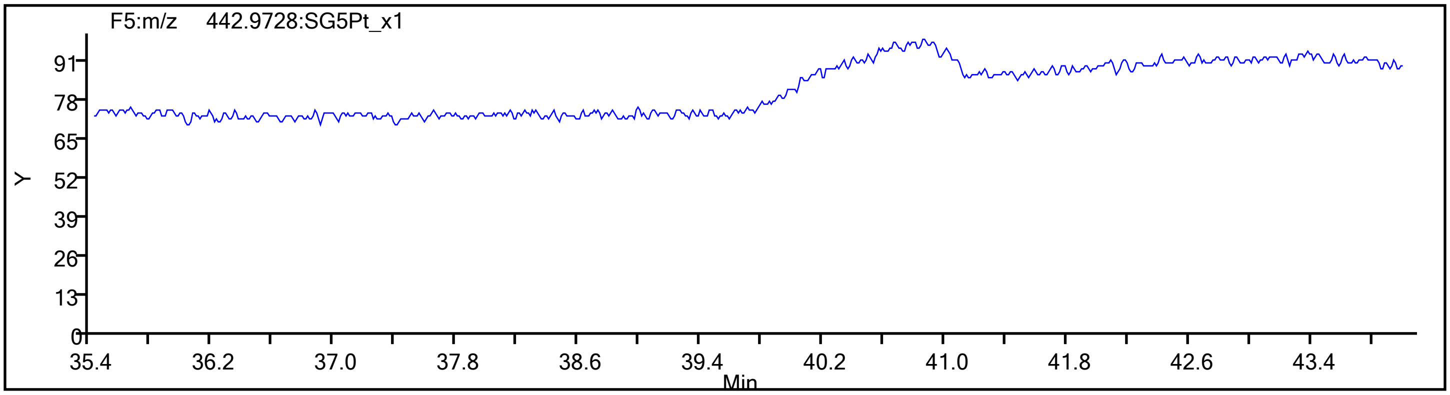

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Mar-2021 01:55:38 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621A CS-3 HRDXNL3_00029
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:35:56 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:25:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.536	38576771	0.69	5.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.022	50358373	0.77	1.3554	96.3	96.3	0.2243	0.2243	96.31	
2,3,7,8-TCDF	17.052	866742	0.78	0.9903	1.738	1.738	0.0193	0.0193	86.90	
S Total TCDF					1.738	1.738	0.0193	0.0193		
D 13C-2,3,7,8-TCDD	17.717	34425797	0.70	0.9209	96.9	96.9	0.1790	0.1790	96.90	
$ 37Cl4-2,3,7,8-TCDD	17.733	701062		1.0159	1.789	1.789	0.0161	0.0161	89.44	
2,3,7,8-TCDD	17.733	625094	0.83	1.0991	1.652	1.652	0.0352	0.0352	82.60	
S Total TCDD					1.652	1.652	0.0352	0.0352		
D 13C-1,2,3,7,8-PeCDF	21.923	39330879	1.53	1.0847	94.0	94.0	0.1961	0.1961	93.99	
1,2,3,7,8-PeCDF	21.951	3404794	1.54	1.0209	8.479	8.479	0.0409	0.0409	84.79	
D 13C-2,3,4,7,8-PeCDF	23.232	39403105	1.54	1.1057	92.4	92.4	0.1924	0.1924	92.38	
2,3,4,7,8-PeCDF	23.260	3210512	1.54	0.9790	8.323	8.323	0.0465	0.0465	83.23	
S Total PeCDF					16.8	16.8	0.0437	0.0437		
D 13C-1,2,3,7,8-PeCDD	23.941	27141714	1.65	0.7689	91.5	91.5	0.1217	0.1217	91.50	
1,2,3,7,8-PeCDD	23.969	2316537	1.60	0.9982	8.550	8.550	0.0384	0.0384	85.50	
S Total PeCDD					8.550	8.550	0.0384	0.0384		
D 13C-1,2,3,4,7,8-HxCDF	30.094	31554822	0.52	1.0321	101.3	101.3	0.3290	0.3290	101	
1,2,3,4,7,8-HxCDF	30.134	2808215	1.22	1.0667	8.343	8.343	0.0582	0.0582	83.43	
D 13C-1,2,3,6,7,8-HxCDF	30.320	31592088	0.51	1.0218	102.4	102.4	0.3323	0.3323	102	
1,2,3,6,7,8-HxCDF	30.334	3002376	1.24	1.1178	8.502	8.502	0.0517	0.0517	85.02	
D 13C-2,3,4,6,7,8-HxCDF	31.239	28956799	0.52	0.9729	98.6	98.6	0.3490	0.3490	98.62	
2,3,4,6,7,8-HxCDF	31.265	2841595	1.21	1.1422	8.591	8.591	0.0396	0.0396	85.91	
D 13C-1,2,3,7,8,9-HxCDF	32.104	30198983	0.52	0.9469	105.7	105.7	0.3586	0.3586	106	
1,2,3,7,8,9-HxCDF	32.117	2908456	1.24	1.1455	8.407	8.407	0.0335	0.0335	84.07	
S Total HxCDF					33.8	33.8	0.0457	0.0457		
* 13C-1,2,3,7,8,9-HxCDD	31.904	30180564	1.25	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.452	22835892	1.28	0.7689	98.4	98.4	0.2576	0.2576	98.40	
1,2,3,4,7,8-HxCDD	31.465	1989198	1.35	1.0357	8.410	8.410	0.0351	0.0351	84.10	
D 13C-1,2,3,6,7,8-HxCDD	31.572	26303141	1.25	0.8643	100.8	100.8	0.2292	0.2292	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.585	2134953	1.19	0.9658	8.404	8.404	0.0351	0.0351	84.04	
1,2,3,7,8,9-HxCDD	31.931	2112136	1.29	1.0727	8.014	8.014	0.0327	0.0327	80.14	
S Total HxCDD					24.8	24.8	0.0343	0.0343		
D 13C-1,2,3,4,6,7,8-HpCDF	33.592	20592597	0.44	0.7233	94.3	94.3	1.098	1.098	94.33	
1,2,3,4,6,7,8-HpCDF	33.604	2445186	1.04	1.4017	8.471	8.471	0.0596	0.0596	84.71	
D 13C-1,2,3,4,7,8,9-HpCDF	34.661	20368580	0.43	0.6720	100.4	100.4	1.182	1.182	100	
1,2,3,4,7,8,9-HpCDF	34.674	2221551	1.07	1.2995	8.393	8.393	0.0705	0.0705	83.93	
S Total HpCDF					16.9	16.9	0.0650	0.0650		
D 13C-1,2,3,4,6,7,8-HpCDD	34.382	19961913	1.03	0.6855	96.5	96.5	0.3654	0.3654	96.49	
1,2,3,4,6,7,8-HpCDD	34.382	1761793	1.03	1.0339	8.537	8.537	0.0433	0.0433	85.37	
S Total HpCDD					8.537	8.537	0.0433	0.0433		
D 13C-OCDD	36.697	27495006	0.89	0.4996	182.3	182.3	0.2062	0.2062	91.17	
OCDF	36.793	3041361	0.90	1.3135	16.8	16.8	0.0339	0.0339	84.21	
OCDD	36.709	2486179	0.87	1.0576	17.1	17.1	0.0266	0.0266	85.50	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00029 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 17-Mar-2021 01:55:38 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621A CS-3 HRDXNL3_00029
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:35:56 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:25:30

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.536	17.527	1		15817122	3916318	3601	9002	1088		
333.9339	17.521	17.527	0		22759649	5635466	2697	6742	2090	0.69(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.025	0	0.971	21832066	5444496	7272	18180	749		
317.9389	17.022	17.025	0	0.971	28526307	7046442	4345	10862	1622	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.052	17.043	1	1.002	380110	94720	327	817	290		
305.8987	17.037	17.043	0	1.001	486632	121718	630	1575	193	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.717	17.714	0	1.010	14166885	3475100	3601	9002	965		
333.9339	17.717	17.714	0	1.010	20258912	4925325	2697	6742	1826	0.70(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.733	17.729	0	1.011	701062	168538	624	1560	270		
2,3,7,8-TCDD											
319.8965	17.733	17.733	0	1.001	284006	68171	854	2135	80		
321.8936	17.733	17.733	0	1.001	341088	80533	446	1115	181	0.83(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.923	21.923	0	1.250	23795620	4443888	4814	12035	923		
353.8970	21.923	21.923	0	1.250	15535259	2860489	3313	8282	863	1.53(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.951	21.945	0	1.001	2065898	364443	579	1447	629		
341.8567	21.951	21.945	0	1.001	1338896	242885	642	1605	378	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.232	23.232	0	1.325	23915355	4093990	4814	12035	850		
353.8970	23.232	23.232	0	1.325	15487750	2605967	3313	8282	787	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.260	23.260	0	1.001	1947299	325694	579	1447	563		
341.8567	23.260	23.260	0	1.001	1263213	210036	642	1605	327	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.941	23.939	0	1.365	16884322	2691860	2110	5275	1276		
369.8919	23.941	23.939	0	1.365	10257392	1642410	1464	3660	1122	1.65(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.969	23.963	0	1.001	1427117	224762	464	1160	484		
357.8516	23.969	23.963	0	1.001	889420	144925	201	502	721	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.094	30.094	0	0.943	10795020	1716711	3837	9592	447		
385.8610	30.094	30.094	0	0.943	20759802	3292722	6493	16232	507	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.134	30.123	1	1.001	1544885	243392	722	1805	337		
375.8178	30.121	30.123	0	1.001	1263330	193130	522	1305	370	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.320	30.315	0	0.950	10627715	1827937	3837	9592	476		
385.8610	30.320	30.315	0	0.950	20964373	3555269	6493	16232	548	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.334	30.336	0	1.000	1664340	280344	722	1805	388		
375.8178	30.347	30.336	1	1.001	1338036	224402	522	1305	430	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.239	31.239	0	0.979	9908799	2352593	3837	9592	613		
385.8610	31.239	31.239	0	0.979	19048000	4526006	6493	16232	697	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.265	31.257	0	1.001	1558230	357466	722	1805	495		
375.8178	31.265	31.257	0	1.001	1283365	297737	522	1305	570	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.104	32.101	0	1.006	10371587	2780988	3837	9592	725		
385.8610	32.104	32.101	0	1.006	19827396	5321660	6493	16232	820	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.117	32.115	0	1.000	1611683	435228	722	1805	603		
375.8178	32.117	32.115	0	1.000	1296773	353454	522	1305	677	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.907	0		16784937	4195091	3345	8362	1254		
403.8529	31.904	31.907	0		13395627	3411311	2682	6705	1272	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.452	31.449	0	0.986	12833004	3439745	3345	8362	1028		
403.8529	31.452	31.449	0	0.986	10002888	2674431	2682	6705	997	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.465	31.465	0	1.000	1143710	286343	444	1110	645		
391.8127	31.465	31.465	0	1.000	845488	223147	444	1110	503	1.35(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.572	31.563	0	0.990	14628185	3619107	3345	8362	1082		
403.8529	31.572	31.563	0	0.990	11674956	2923641	2682	6705	1090	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.585	31.579	0	1.000	1158014	293033	444	1110	660		
391.8127	31.585	31.579	0	1.000	976939	234006	444	1110	527	1.19(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.931	31.926	0	1.015	1188256	282960	444	1110	637		
391.8127	31.917	31.926	0	1.015	923880	219984	444	1110	495	1.29(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.592	33.587	0	1.053	6293853	2192148	6804	17010	322		
419.8220	33.592	33.587	0	1.053	14298744	4954478	17355	43387	285	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.604	33.600	0	1.000	1249063	432878	1361	3402	318		
409.7789	33.592	33.600	0	1.000	1196123	400151	1027	2567	390	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.661	34.659	0	1.086	6123017	1957961	6804	17010	288		
419.8220	34.661	34.659	0	1.086	14245563	4559649	17355	43387	263	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.674	34.669	0	1.000	1147169	355486	1361	3402	261		
409.7789	34.661	34.669	0	1.000	1074382	316498	1027	2567	308	1.07(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.382	34.377	0	1.078	10149911	3316942	3776	9440	878		
437.8140	34.382	34.377	0	1.078	9812002	3154729	3845	9612	820	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.387	0	1.000	894984	285695	643	1607	444		
425.7737	34.382	34.387	0	1.000	866809	282893	515	1287	549	1.03(0.88-1.20)	
13C-OCDD											
469.7779	36.697	36.694	0	1.150	12959523	3753129	1162	2905	3230		
471.7750	36.697	36.694	0	1.150	14535483	4265864	1973	4932	2162	0.89(0.76-1.02)	
OCDF											
441.7428	36.793	36.790	0	1.003	1442542	419112	255	637	1644		
443.7399	36.793	36.790	0	1.003	1598819	446420	459	1147	973	0.90(0.76-1.02)	
OCDD											
457.7377	36.709	36.704	0	1.000	1159942	325991	234	585	1393		
459.7348	36.709	36.704	0	1.000	1326237	367300	218	545	1685	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00029 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d		
Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

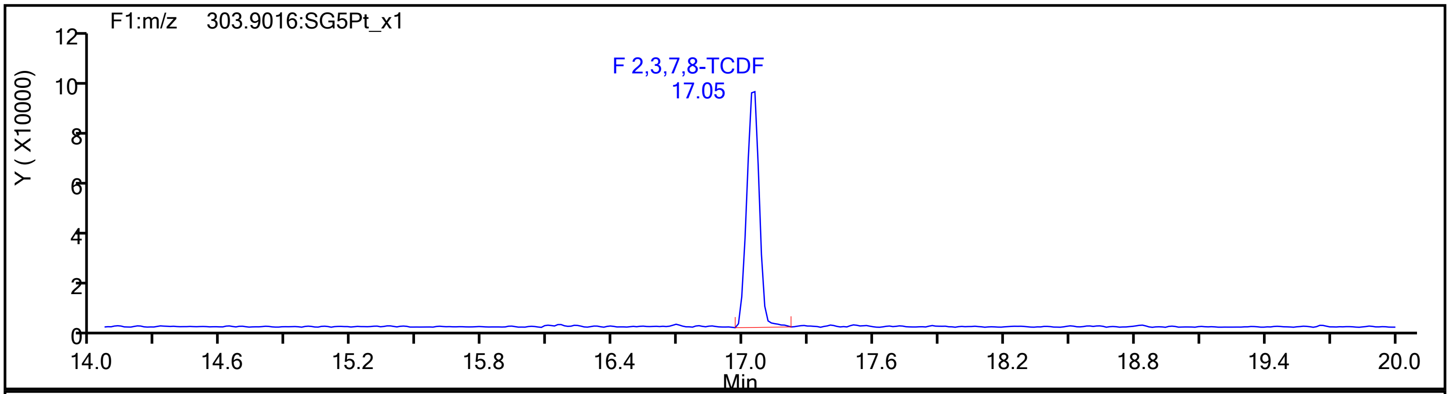

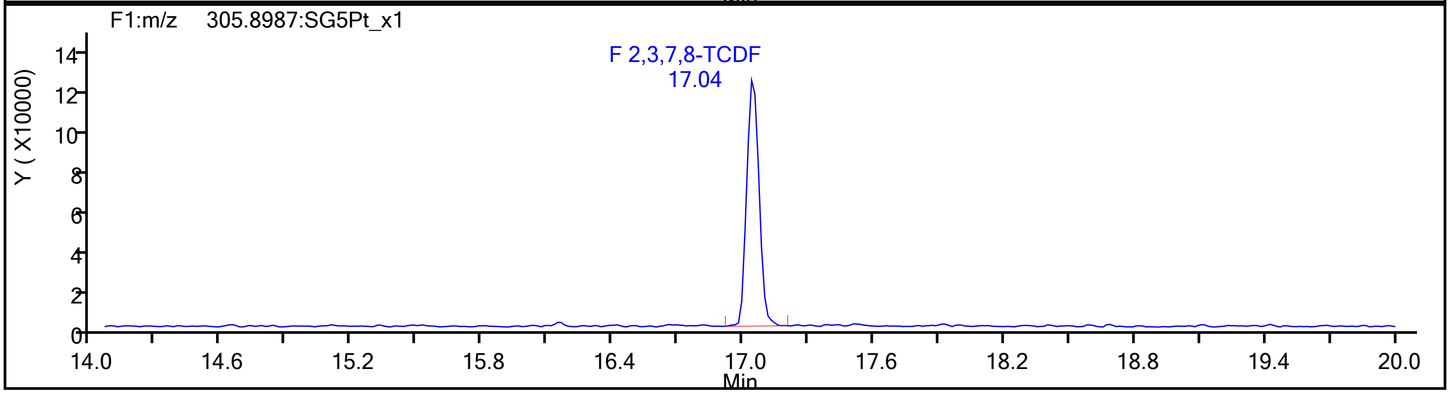

TCDF Standards

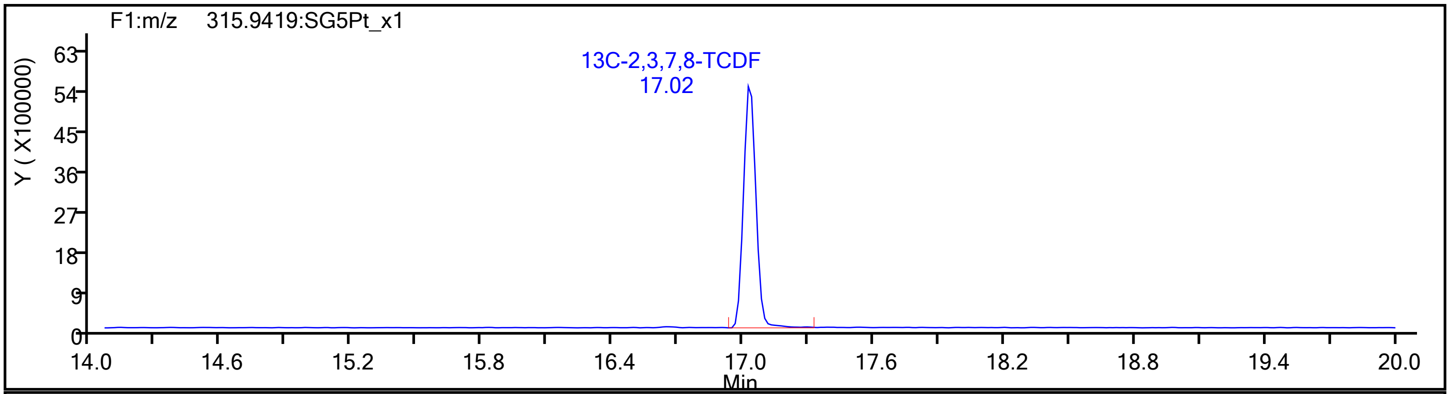

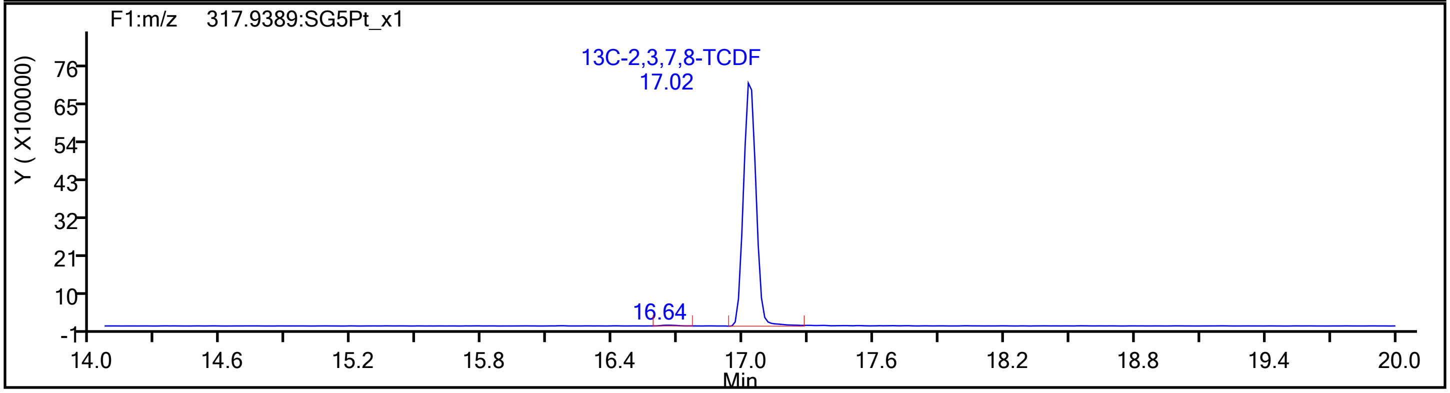

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 01:55:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
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Client ID:
Worklist#: 470907
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

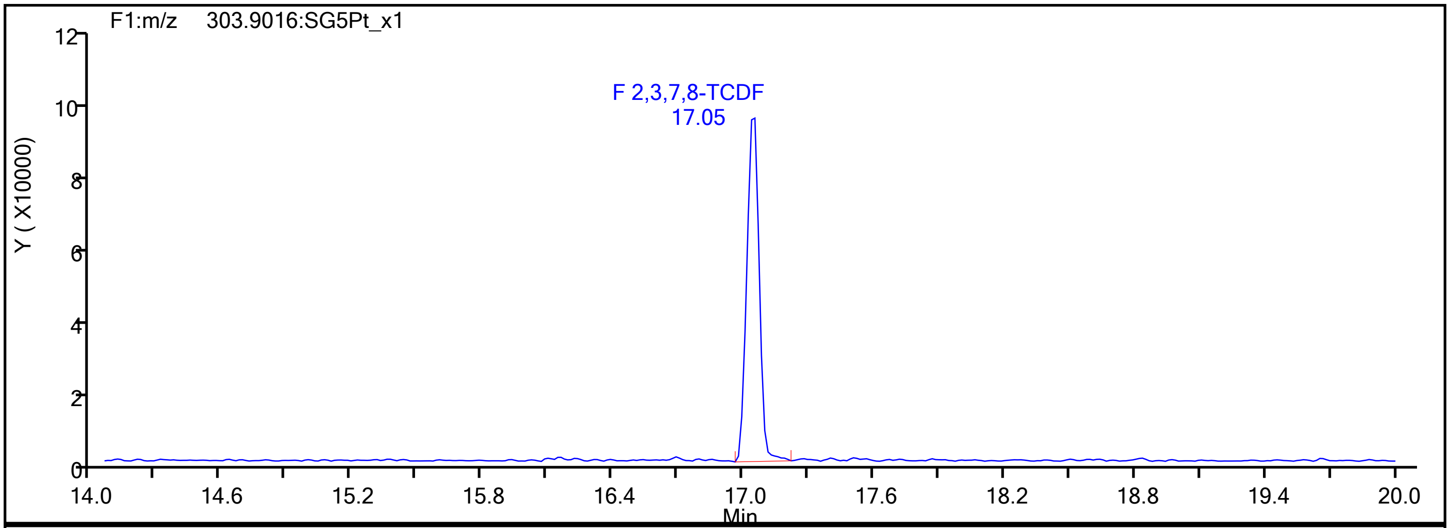

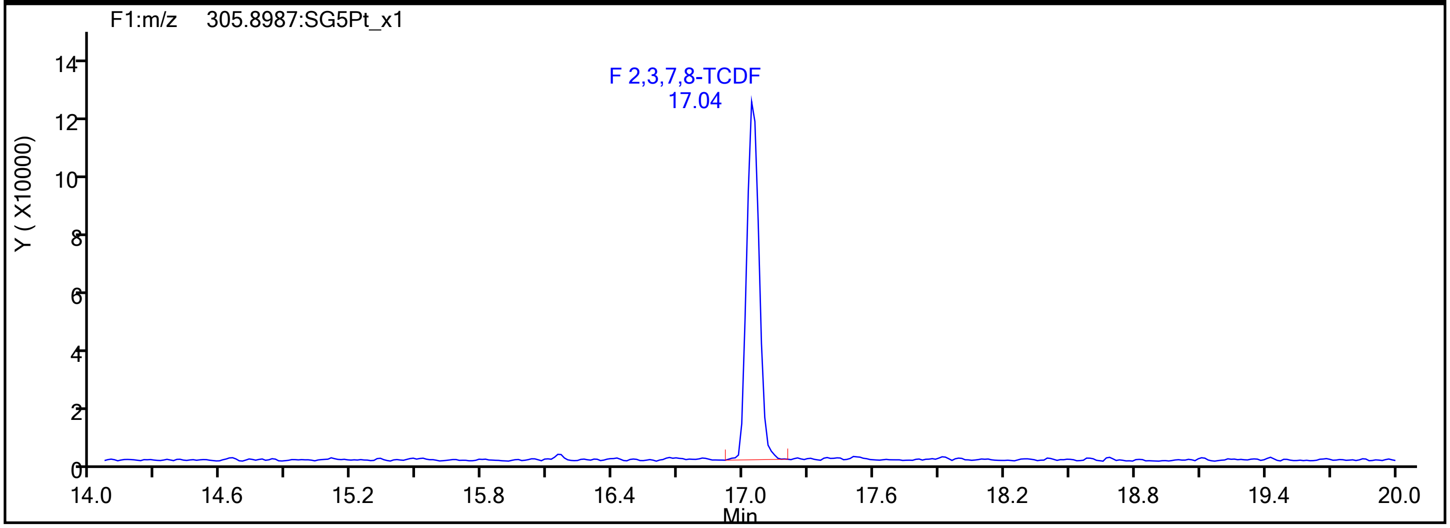

TCDF Interference Mass

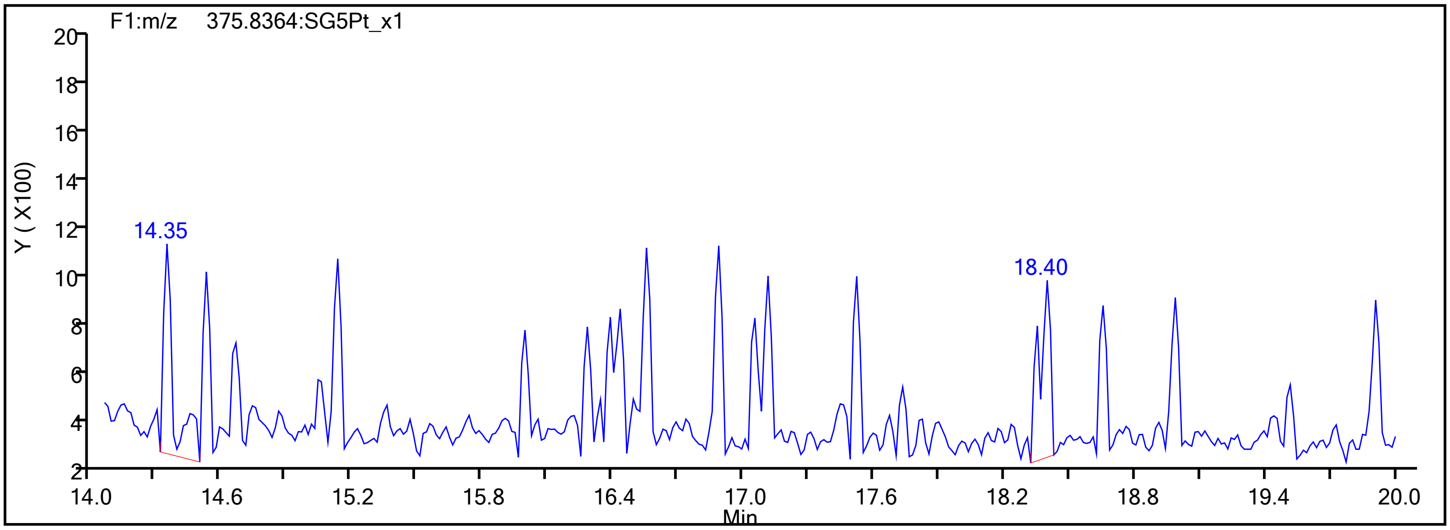

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

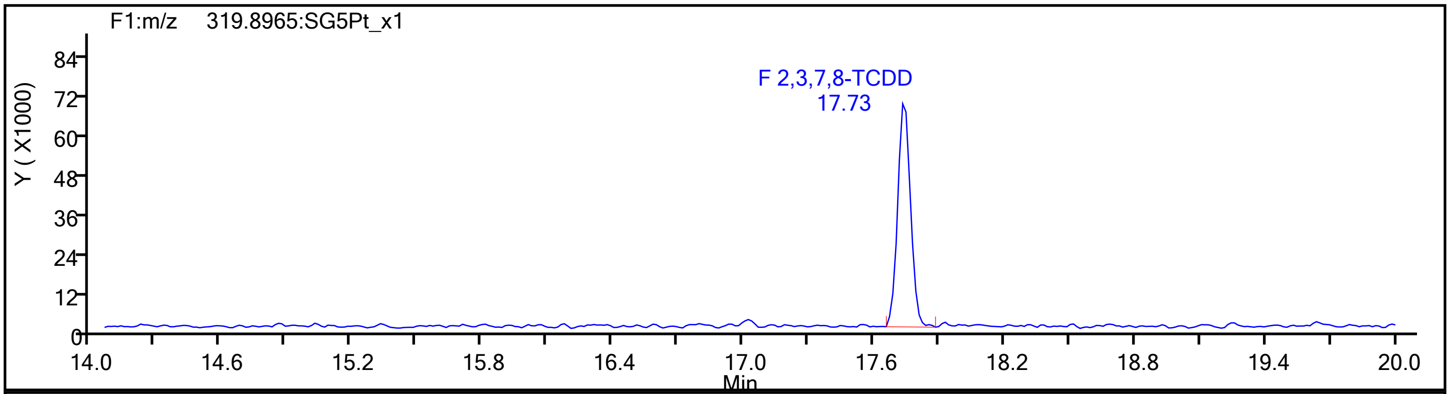

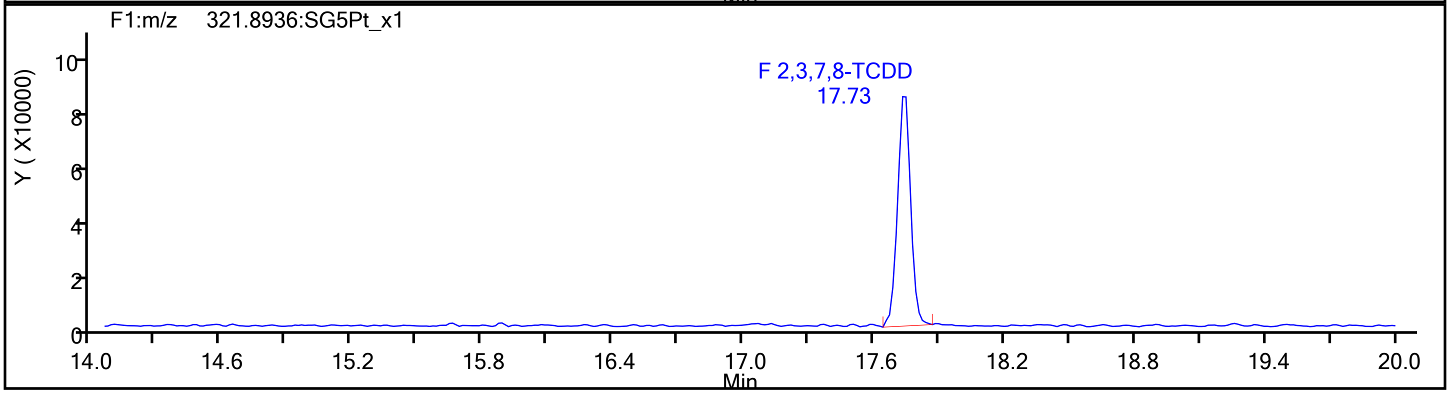

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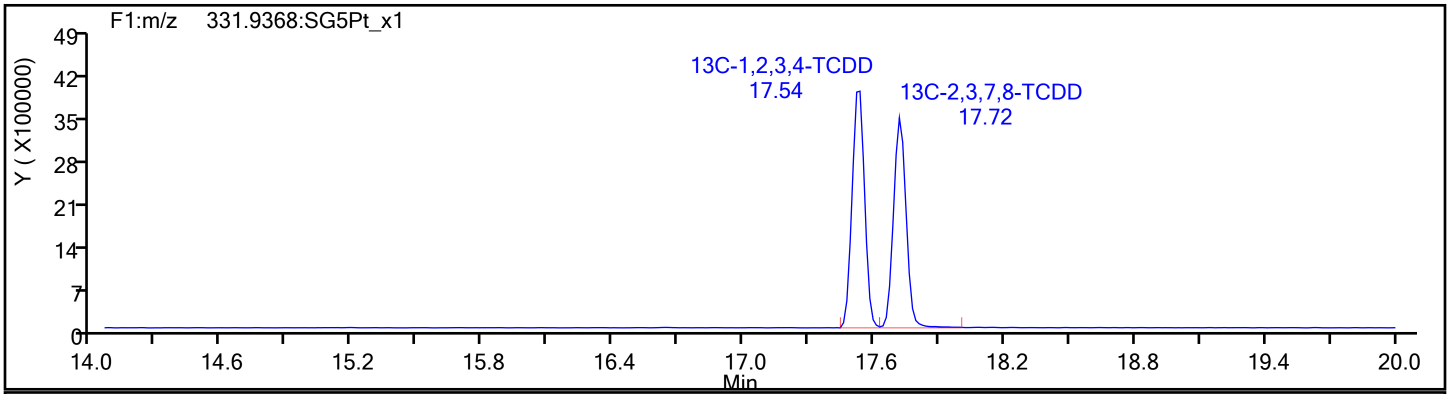

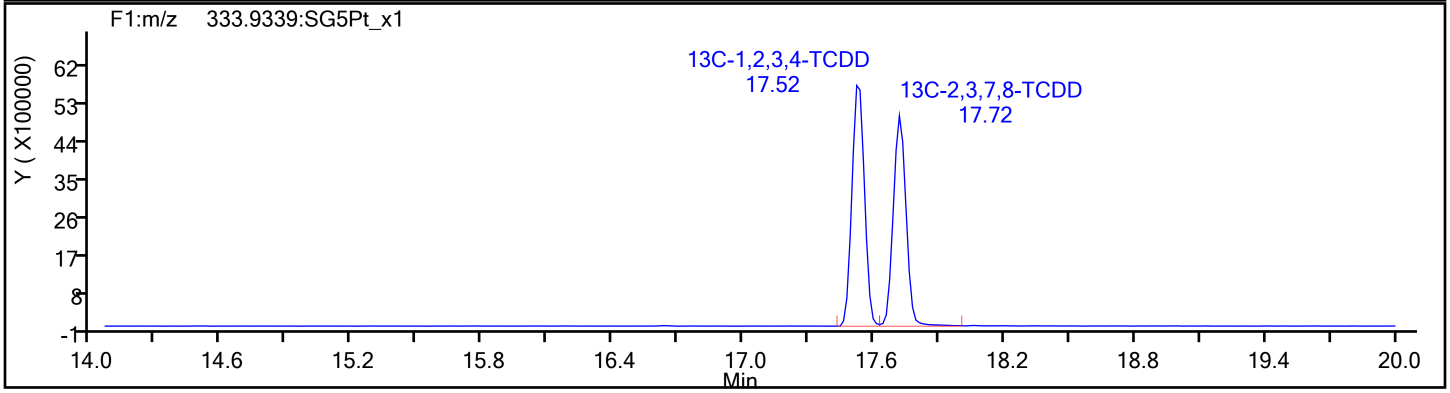

Report Date: 17-Mar-2021 13:36:01
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

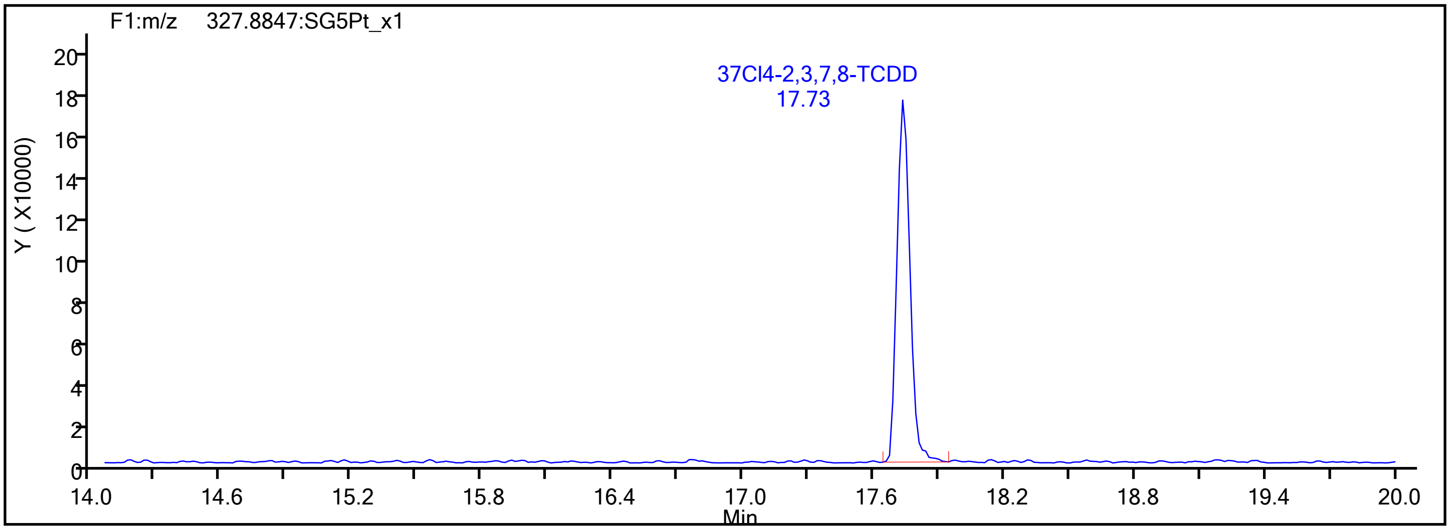

37Cl4-TCDD Standards

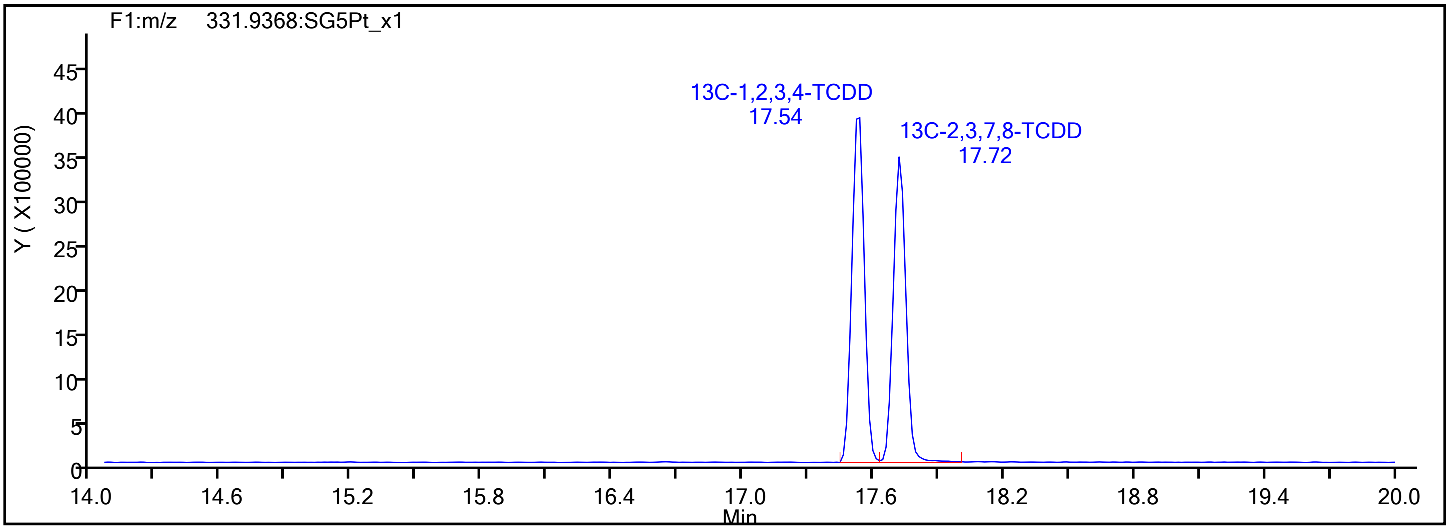

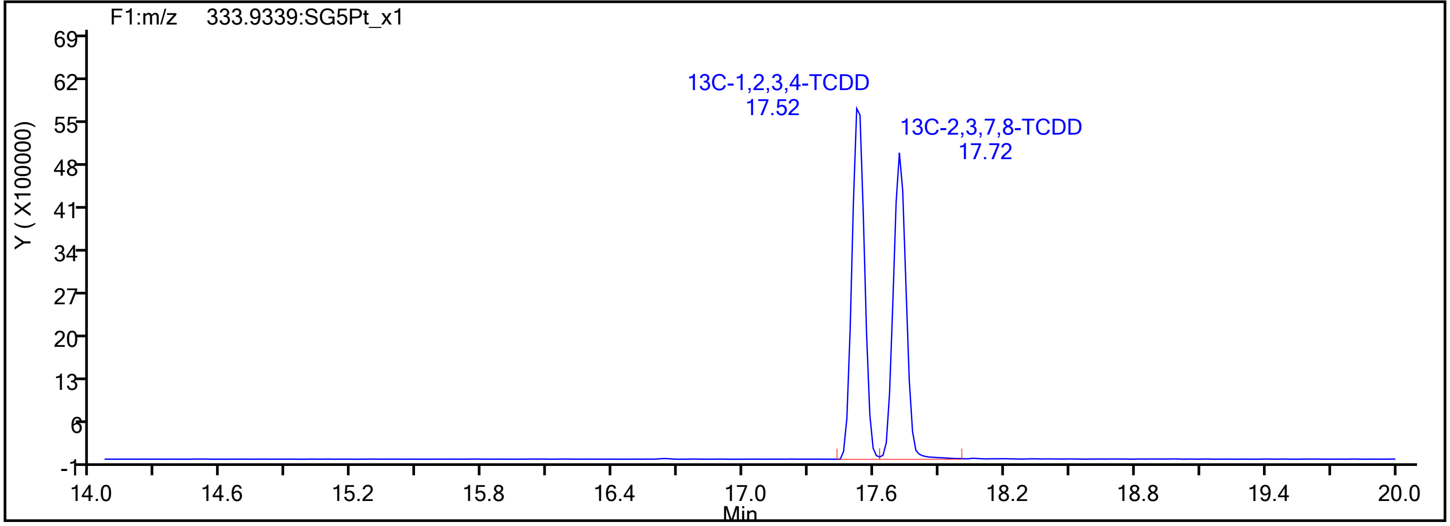

Report Date: 17-Mar-2021 13:36:01 | Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

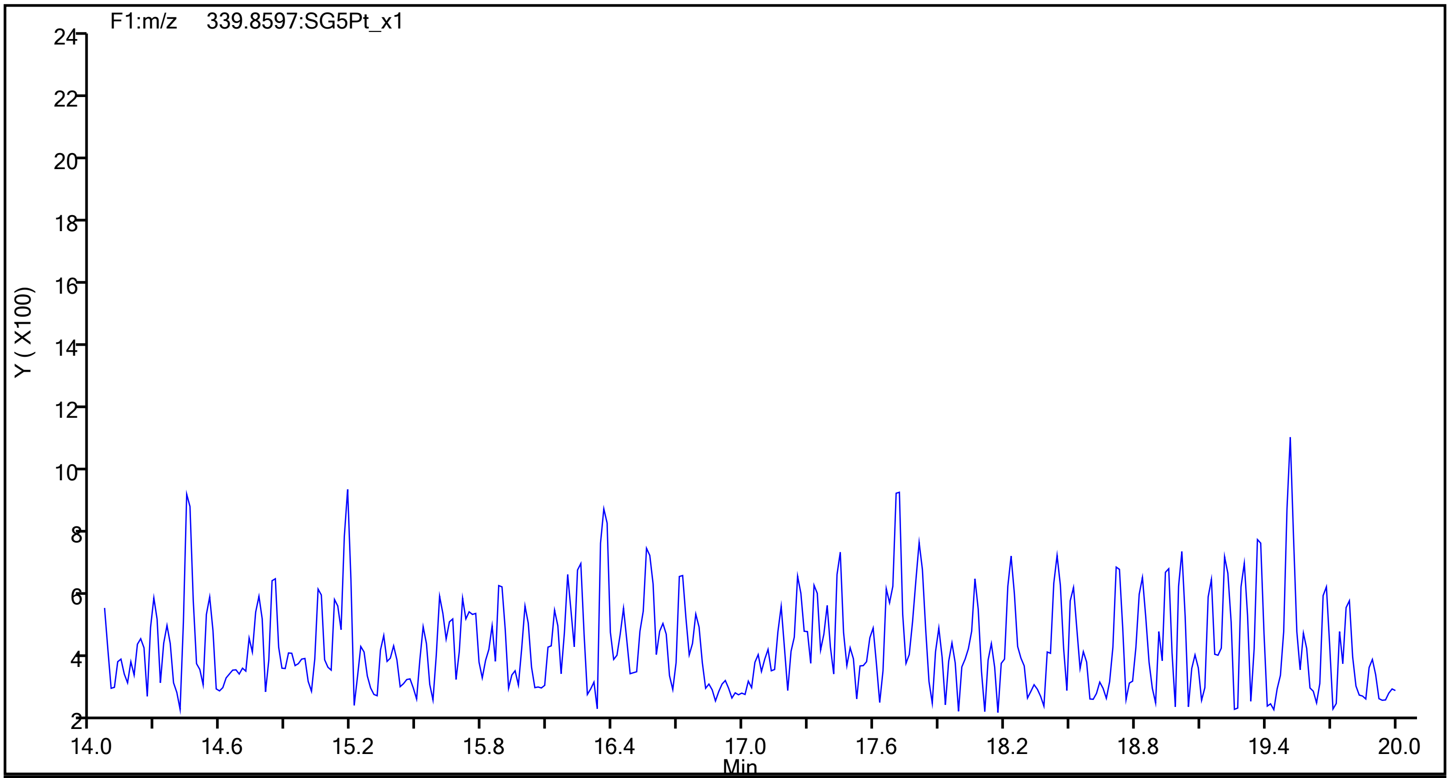

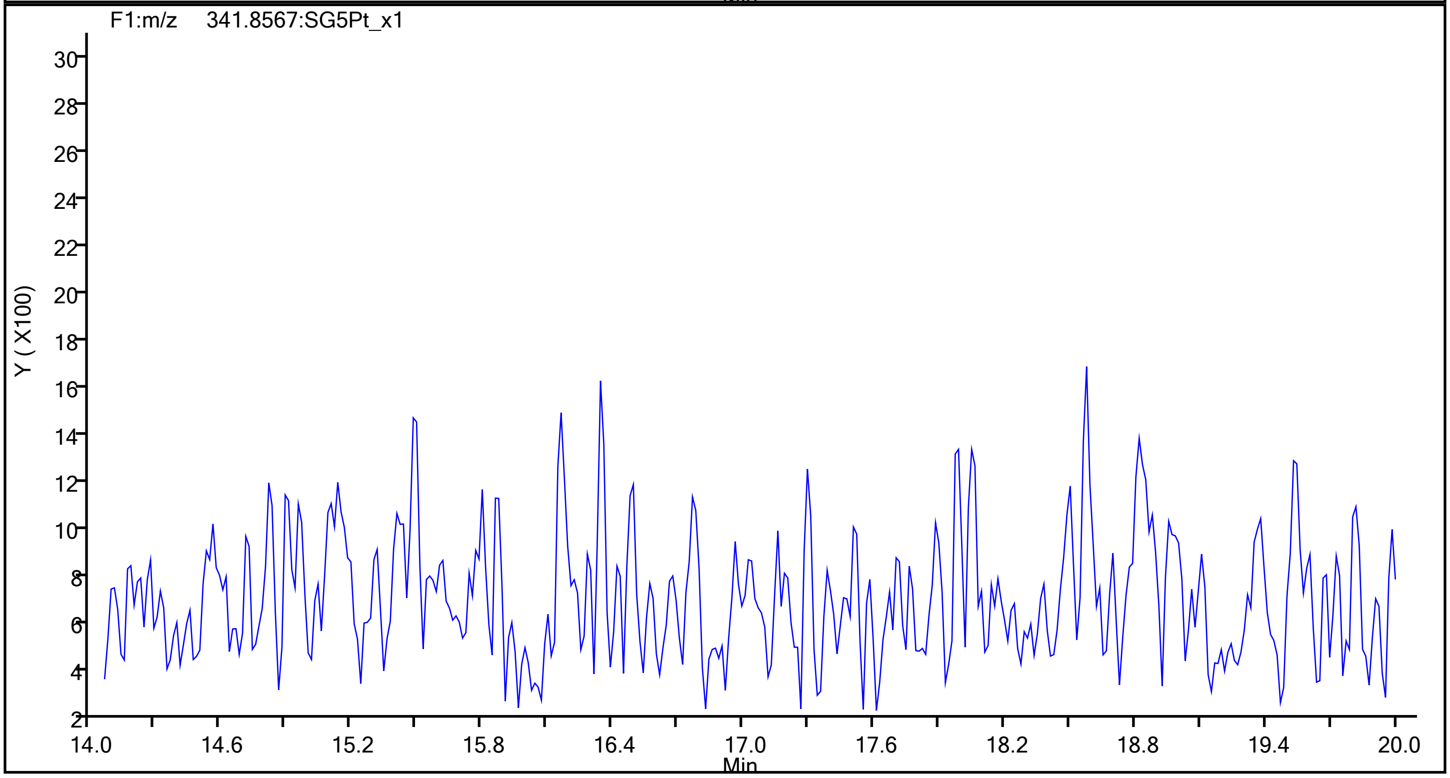

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

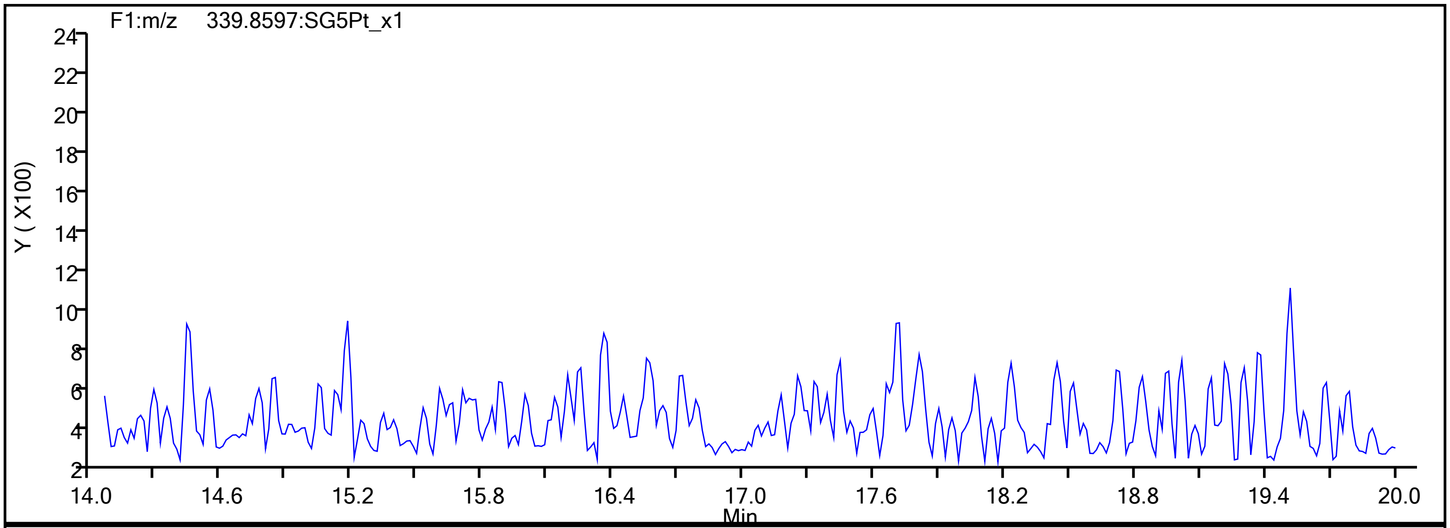

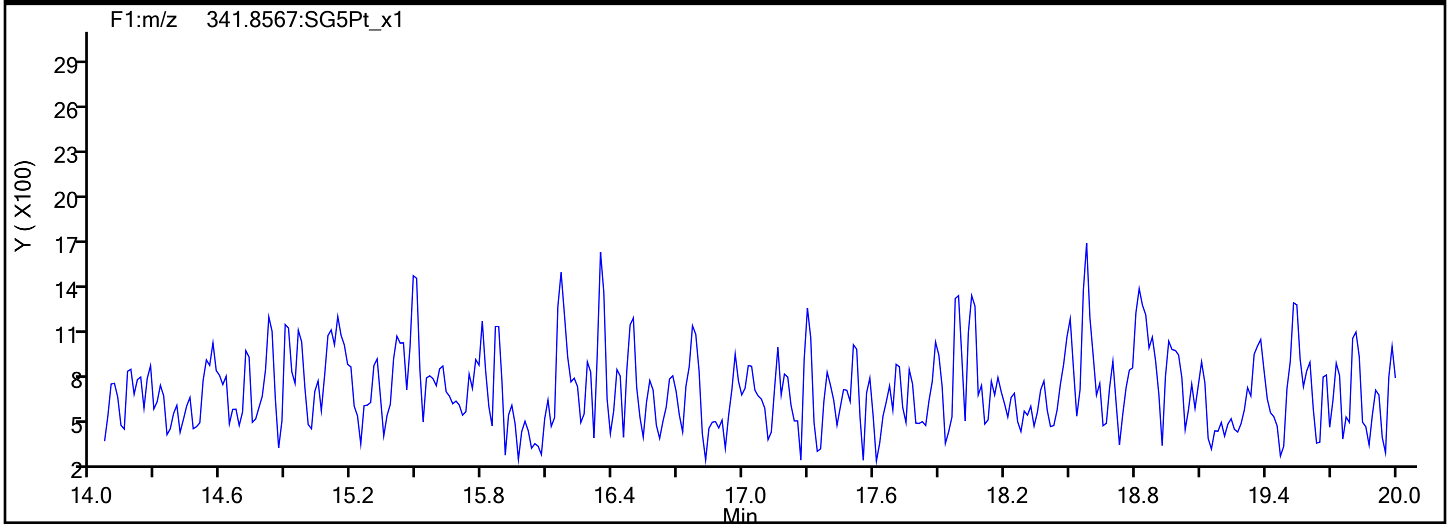

F1 PeCDFs Interference Mass

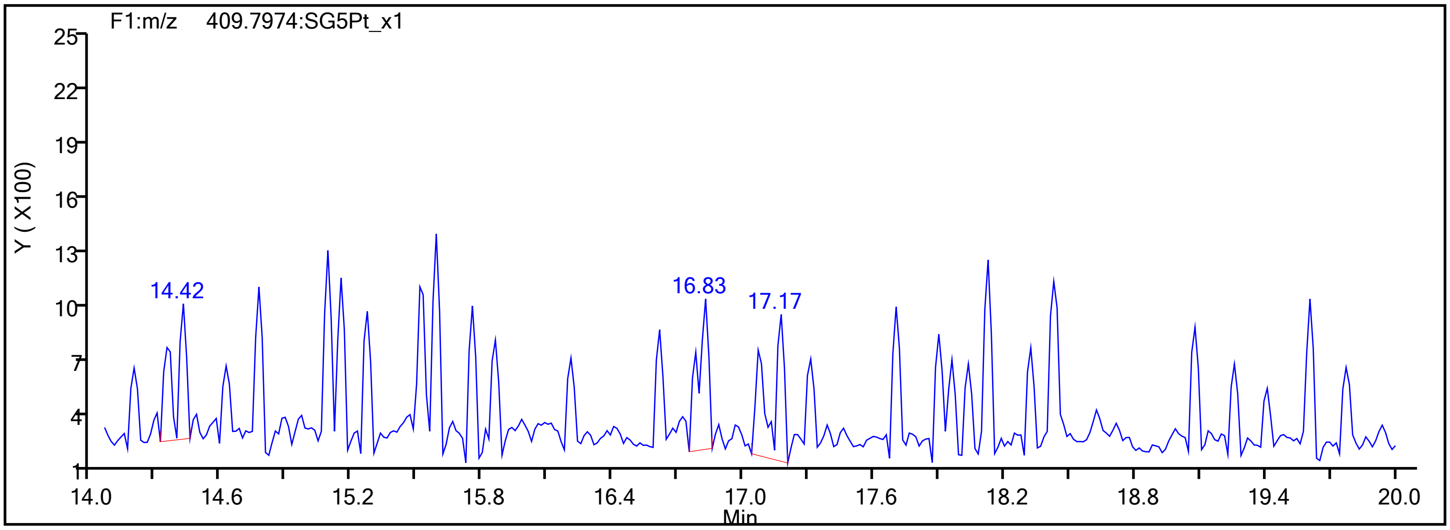

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d
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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
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Client ID:
Worklist#: 470907
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

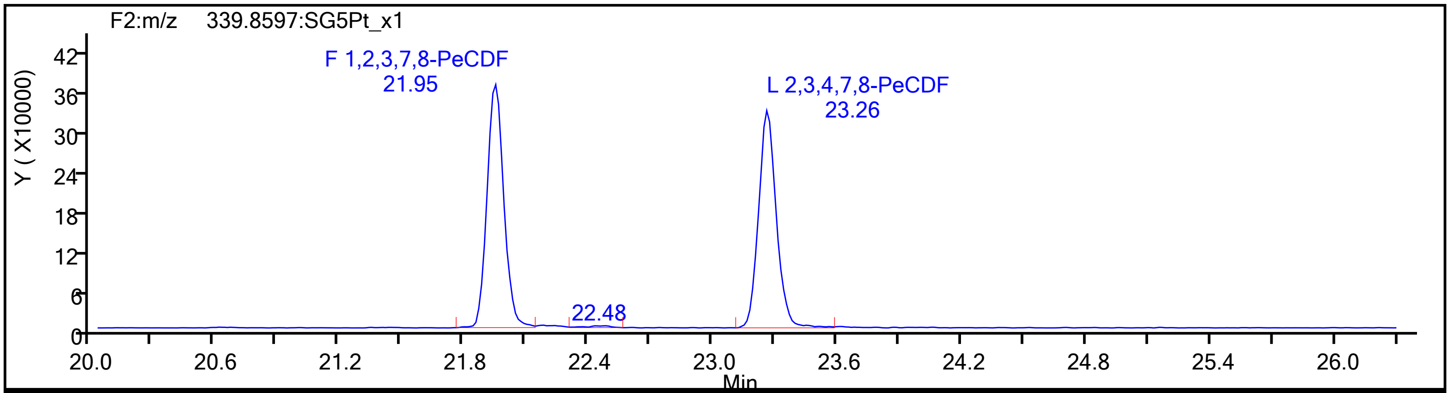

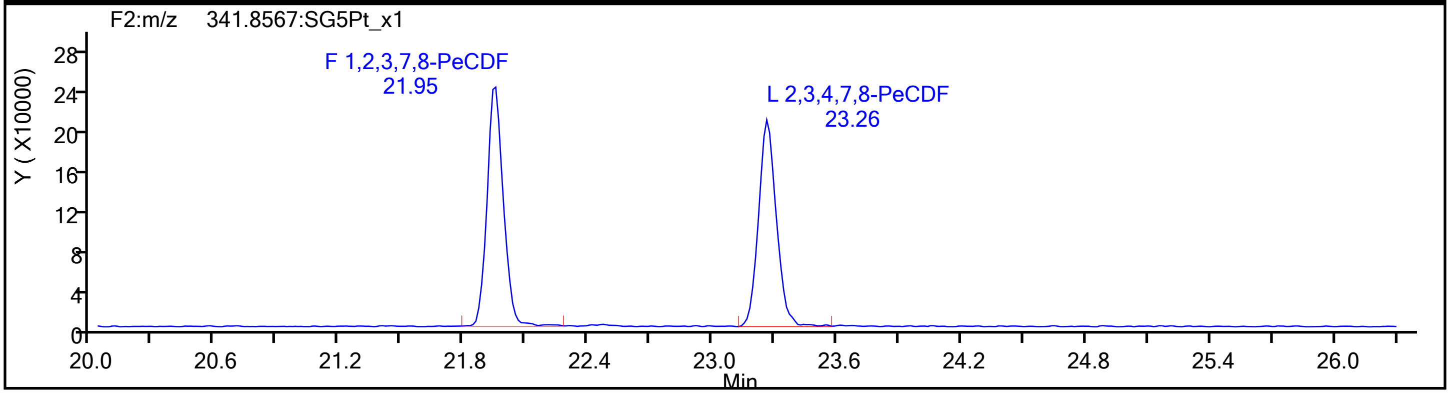

PeCDF Standards

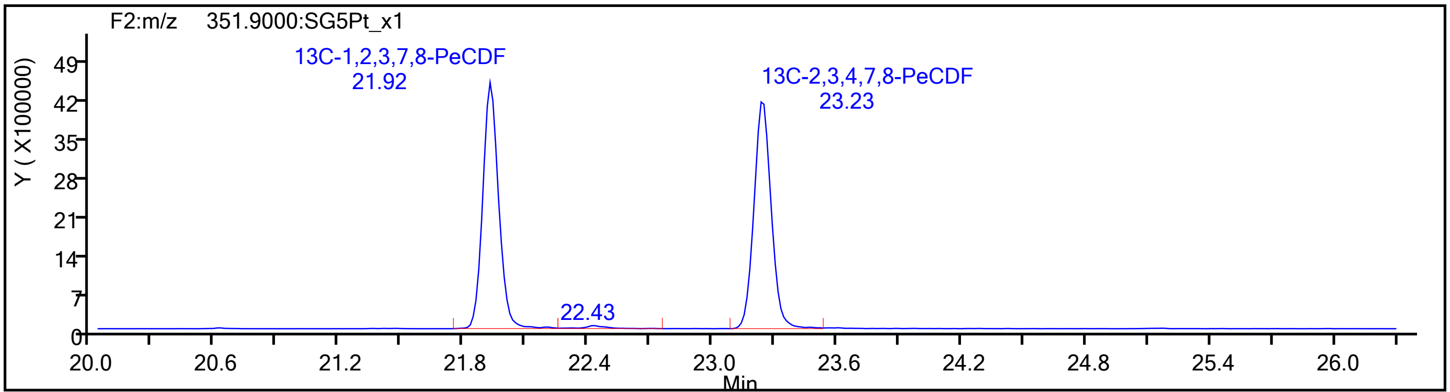

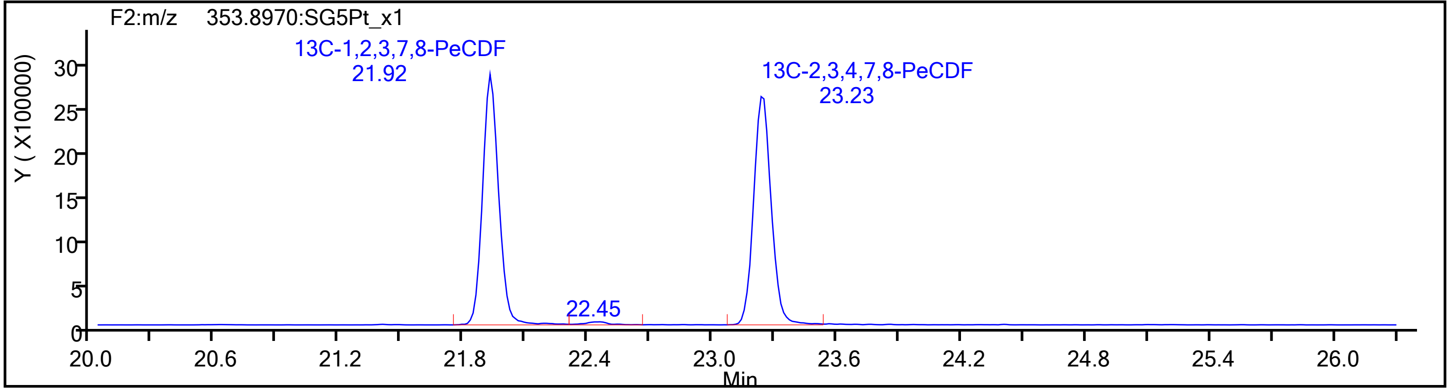

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

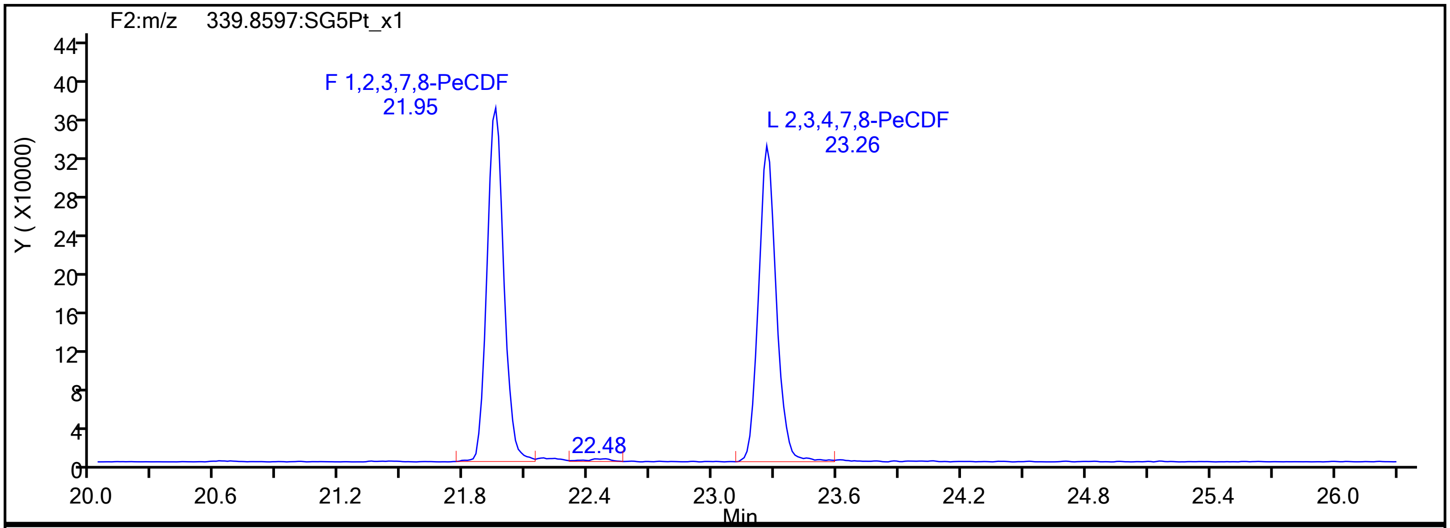

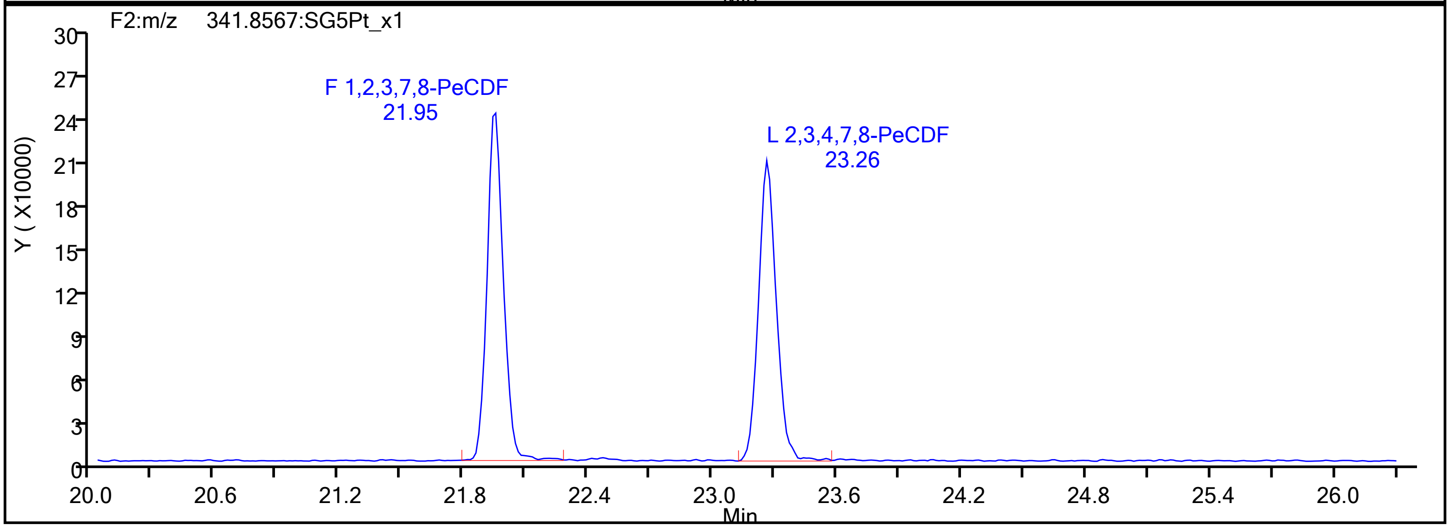

PeCDF Interference Mass

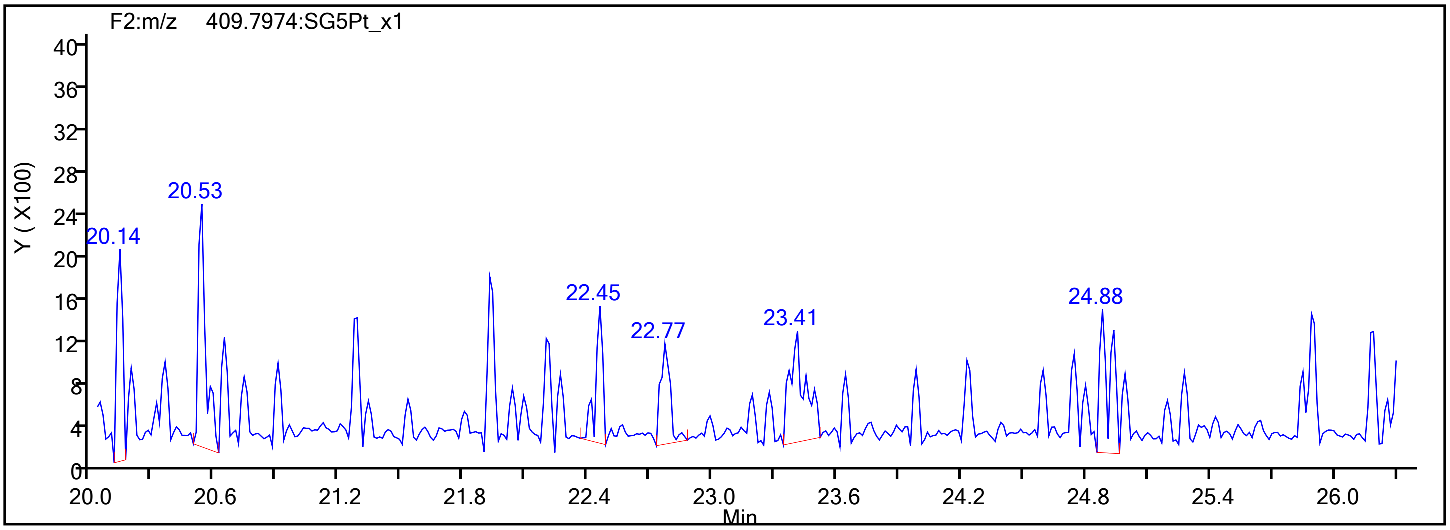

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d
Injection Date: 17-Mar-2021 01:55:38 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
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PeCDD

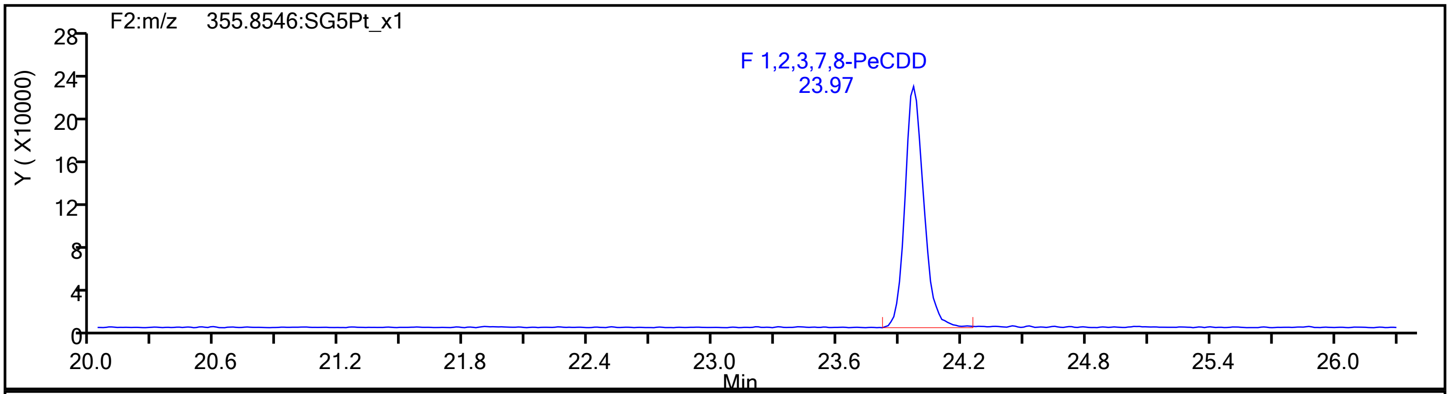

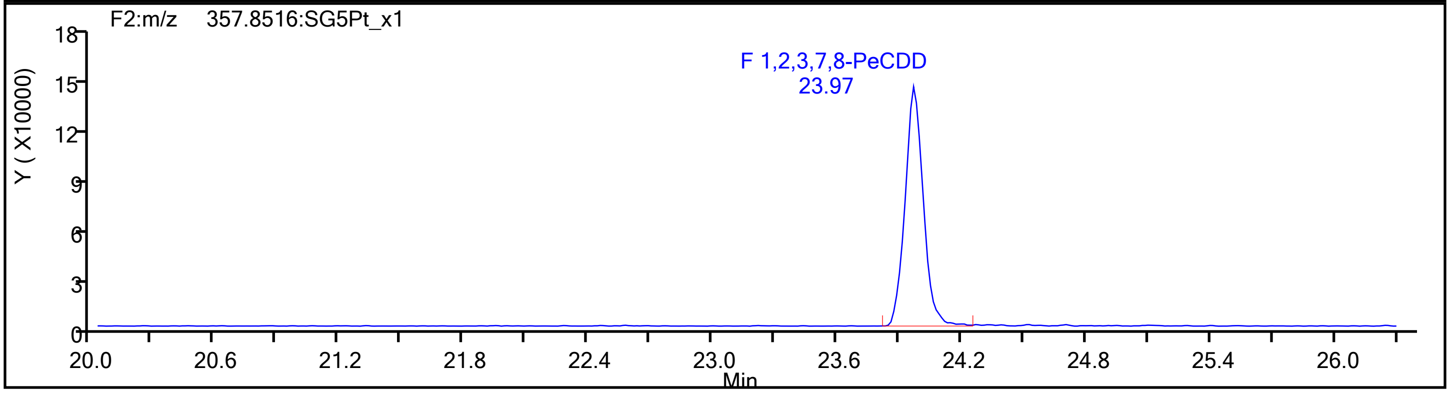

PeCDD Standards

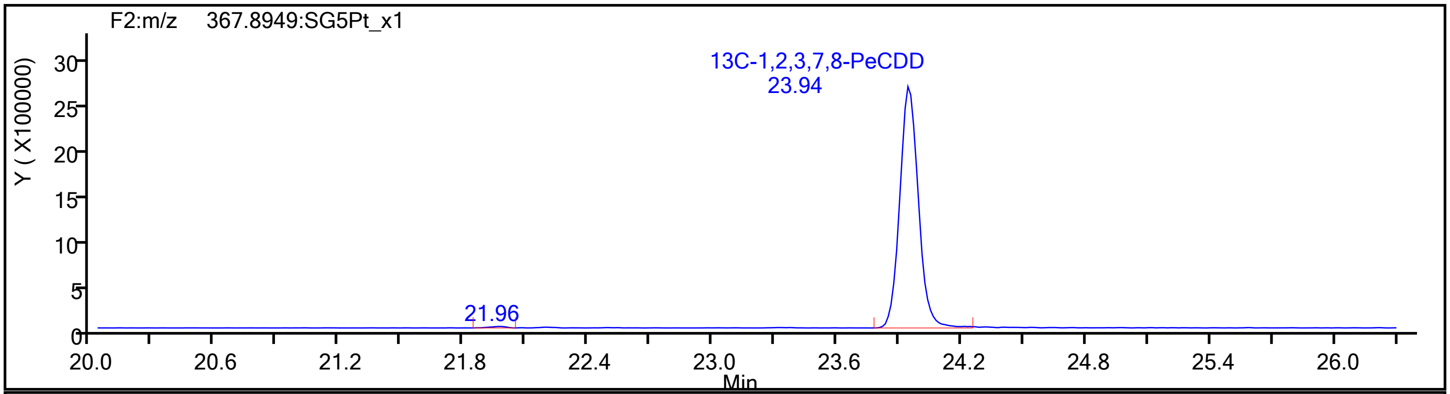

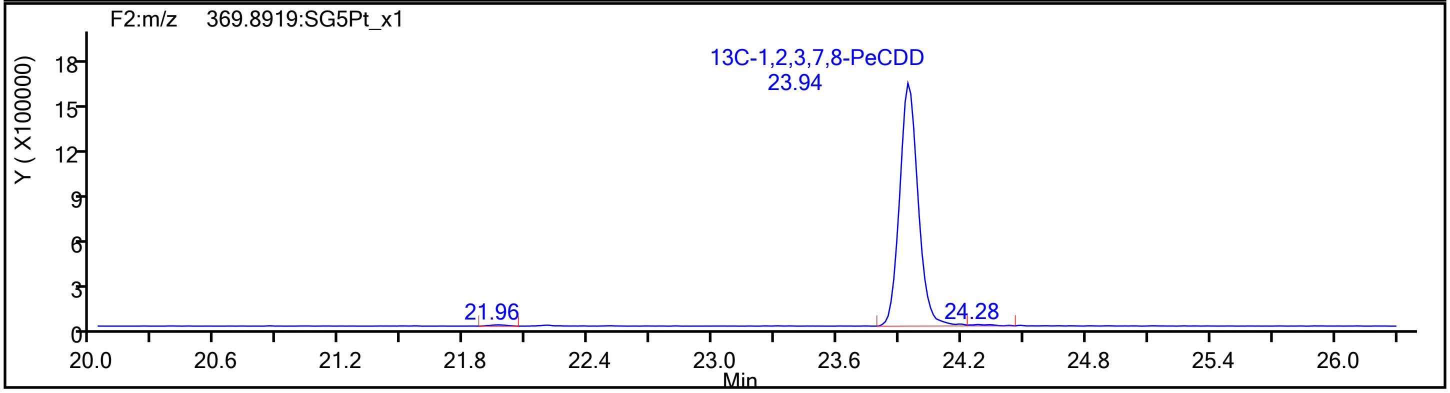

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d		
Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

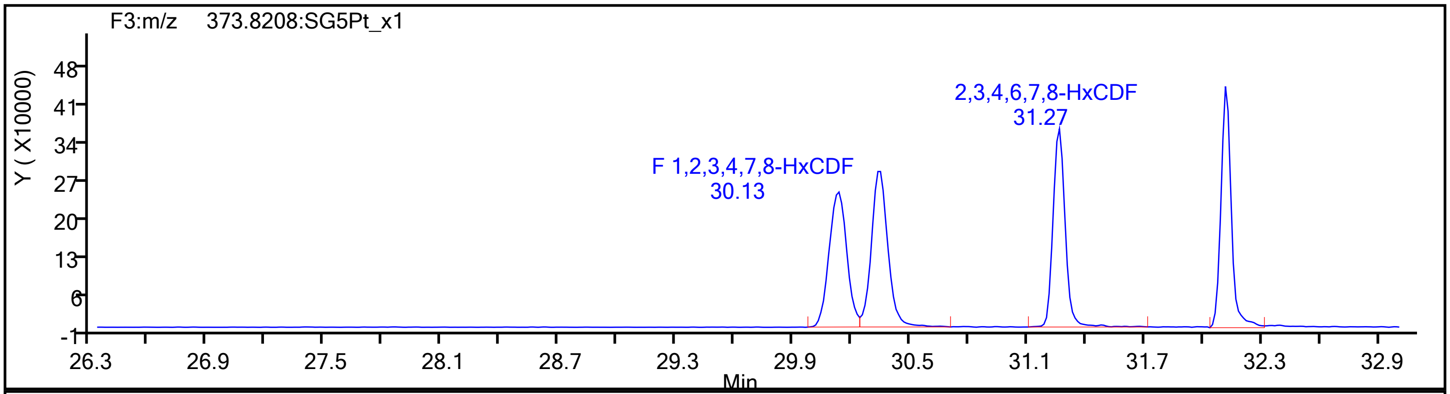

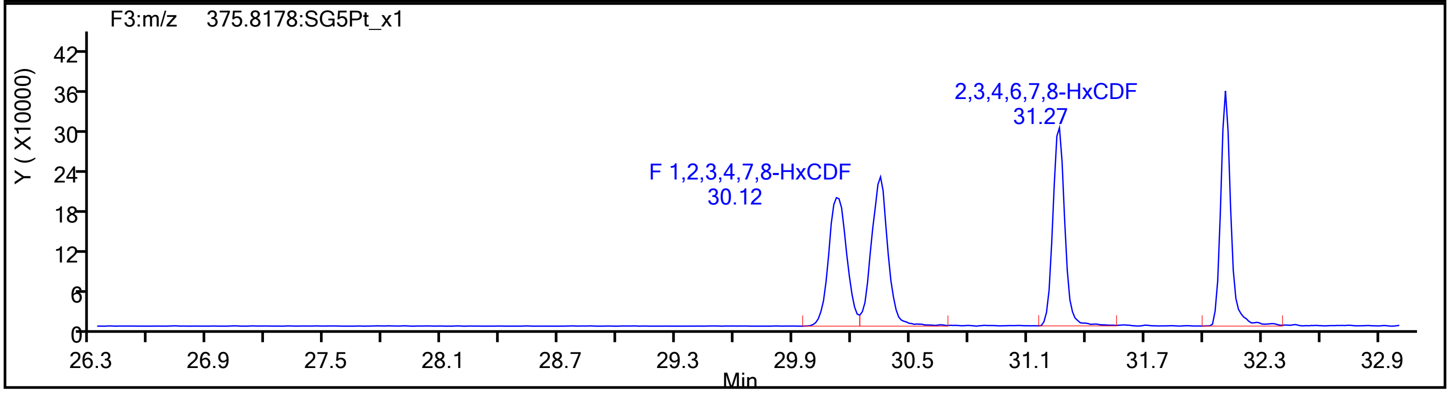

HxCDF Standards

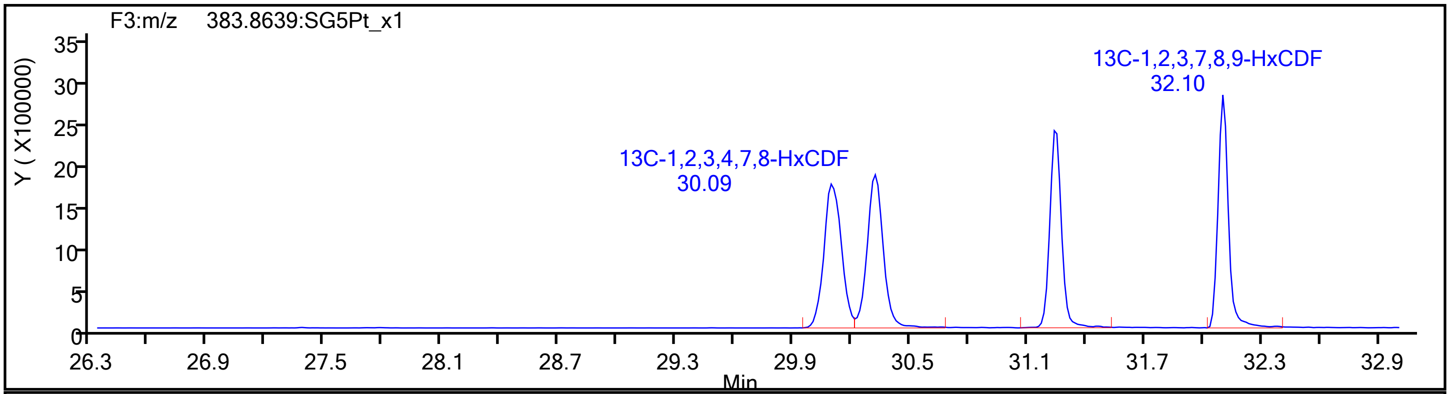

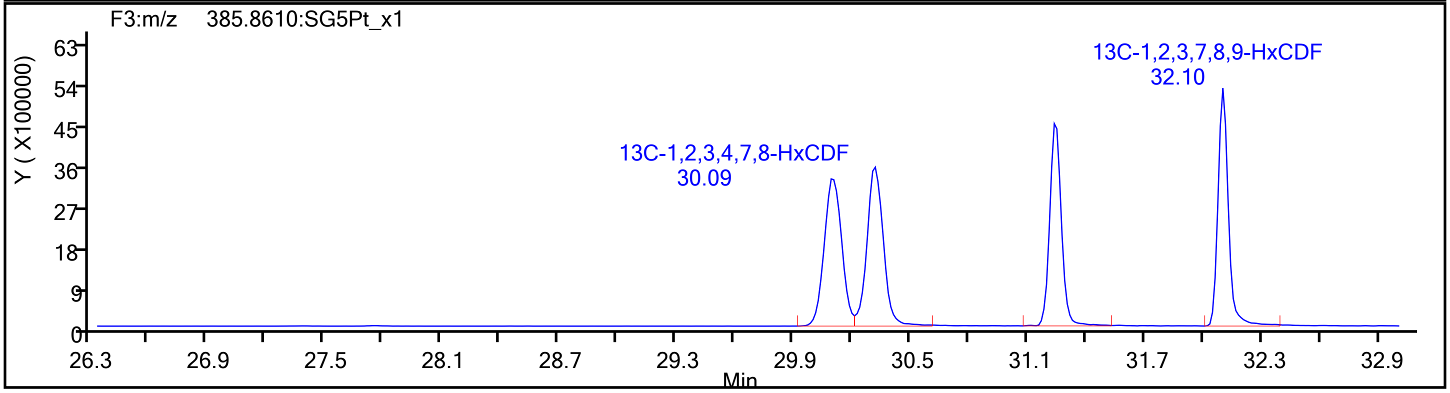

Report Date: 17-Mar-2021 13:36:01
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 01:55:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
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Client ID:
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Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

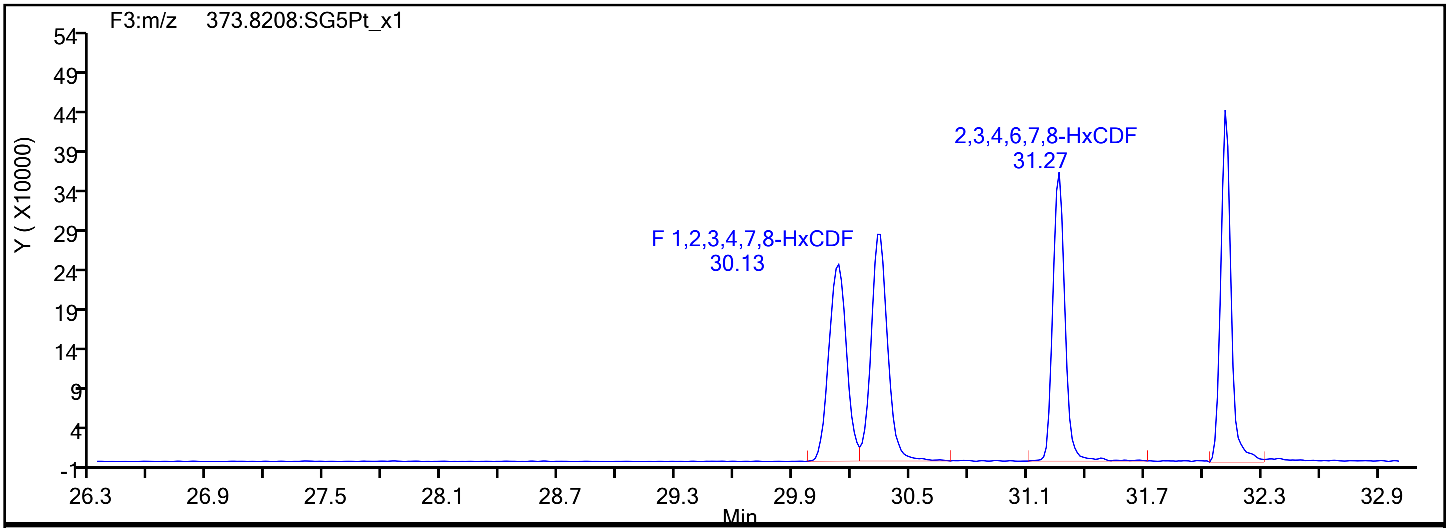

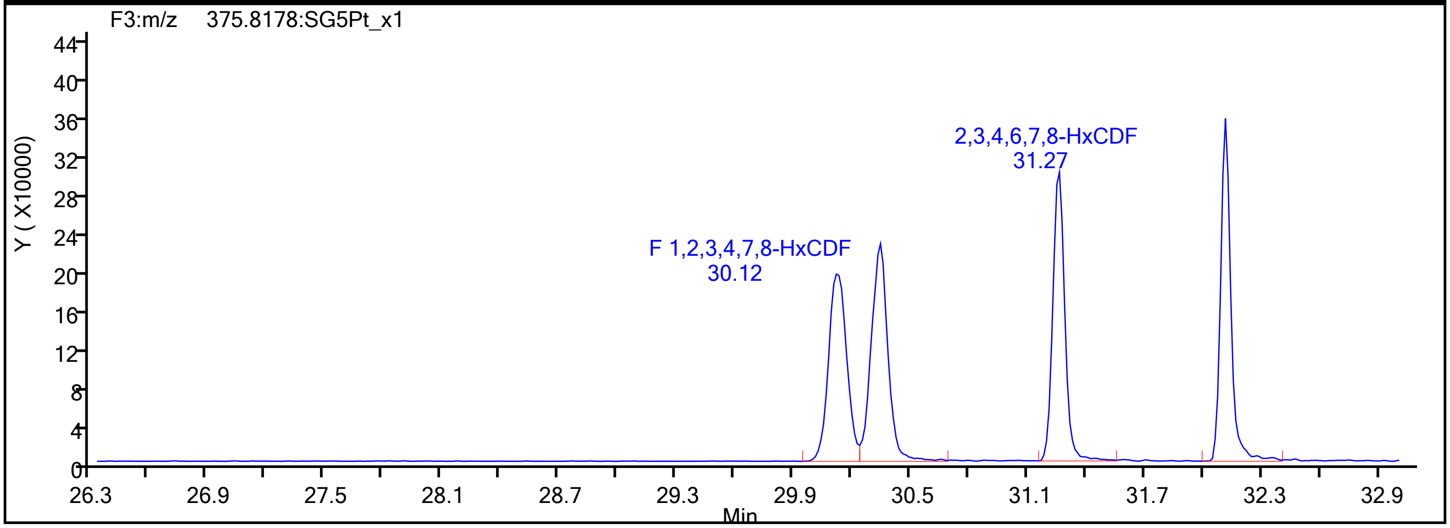

HxCDF Interference Mass

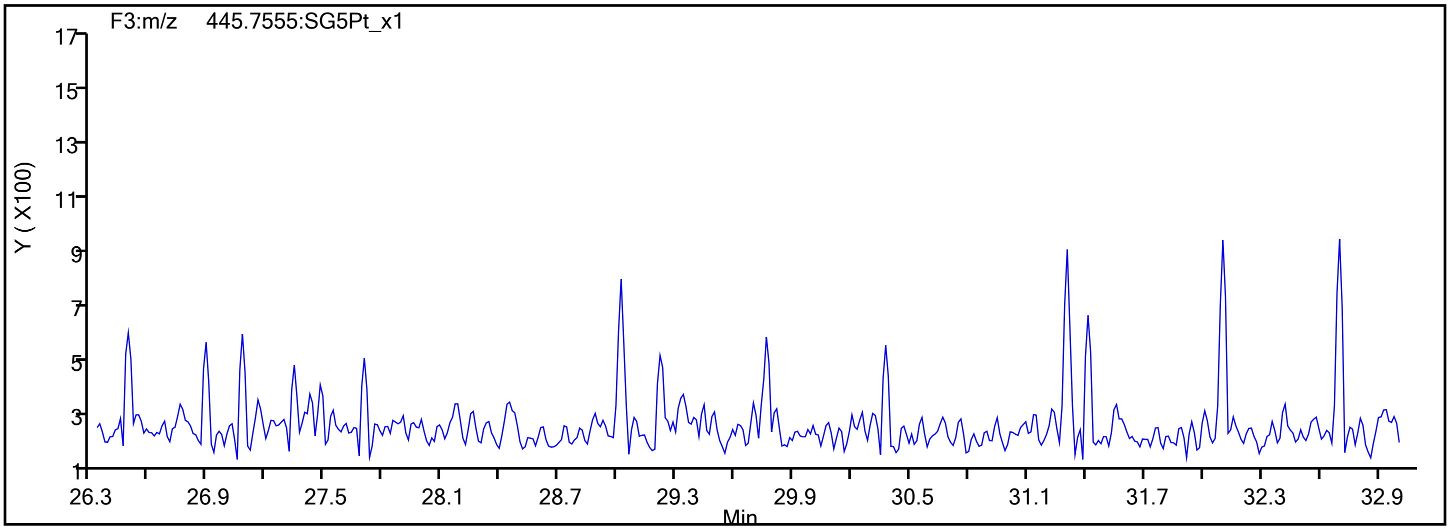

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d
Injection Date: 17-Mar-2021 01:55:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

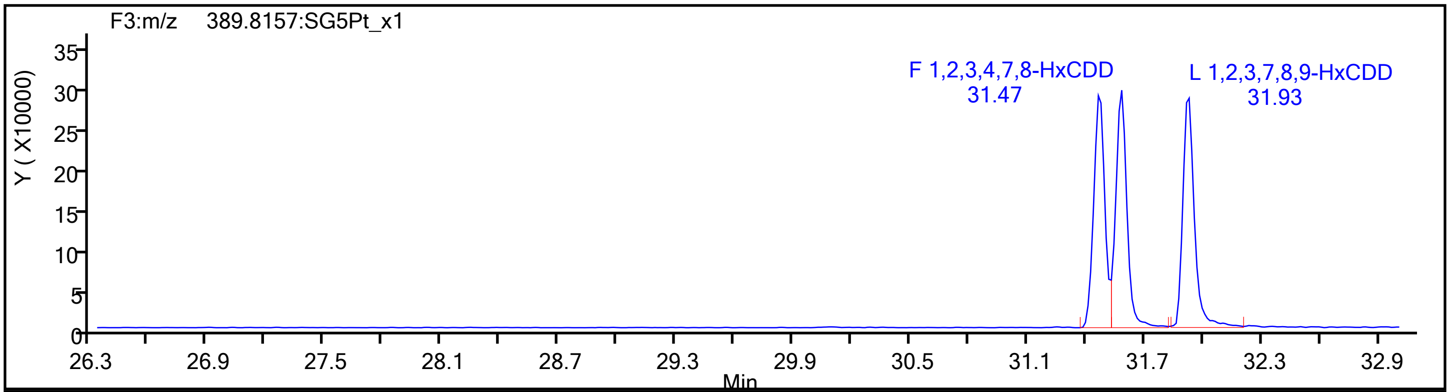

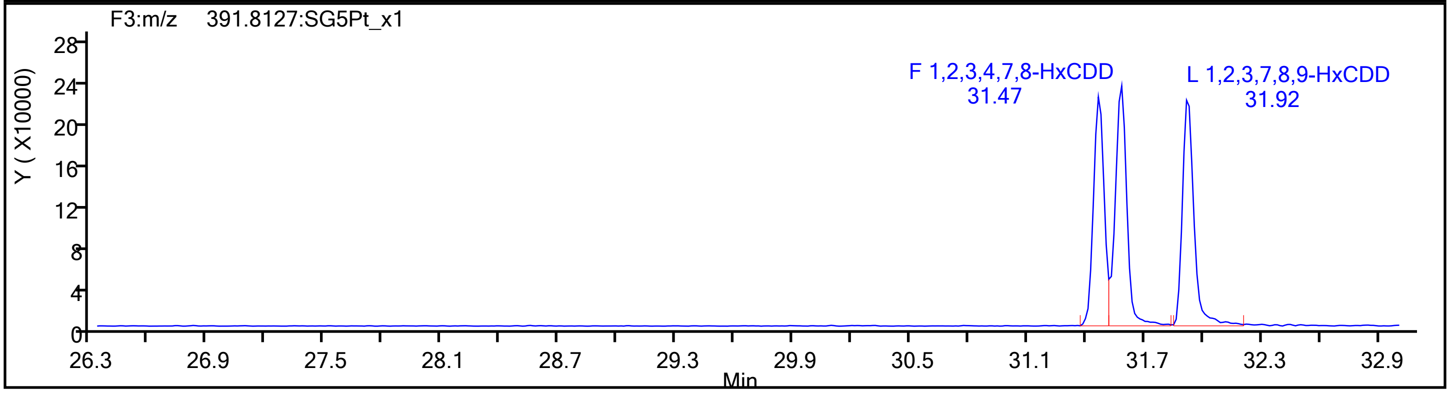

HxCDD Standards

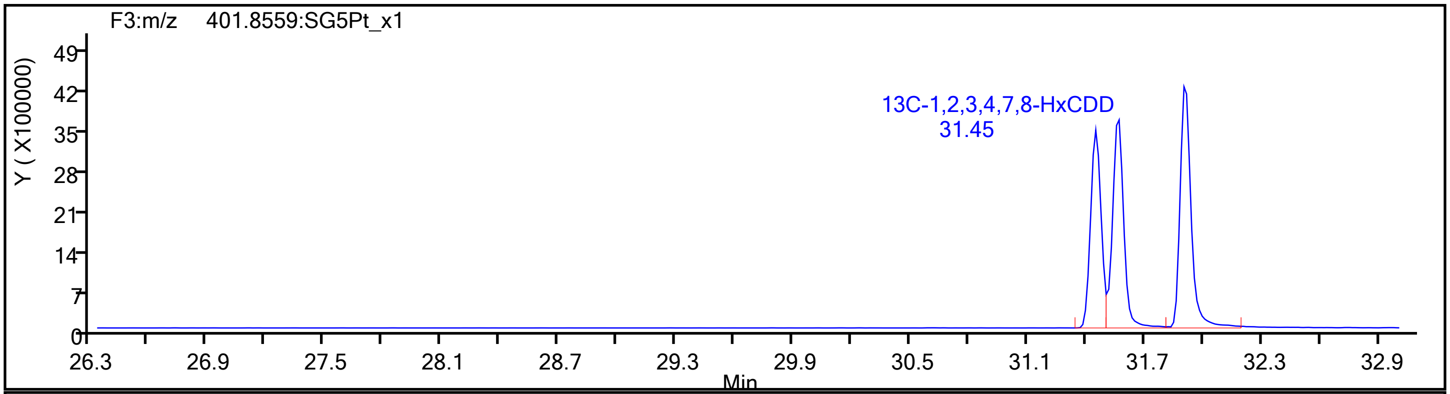

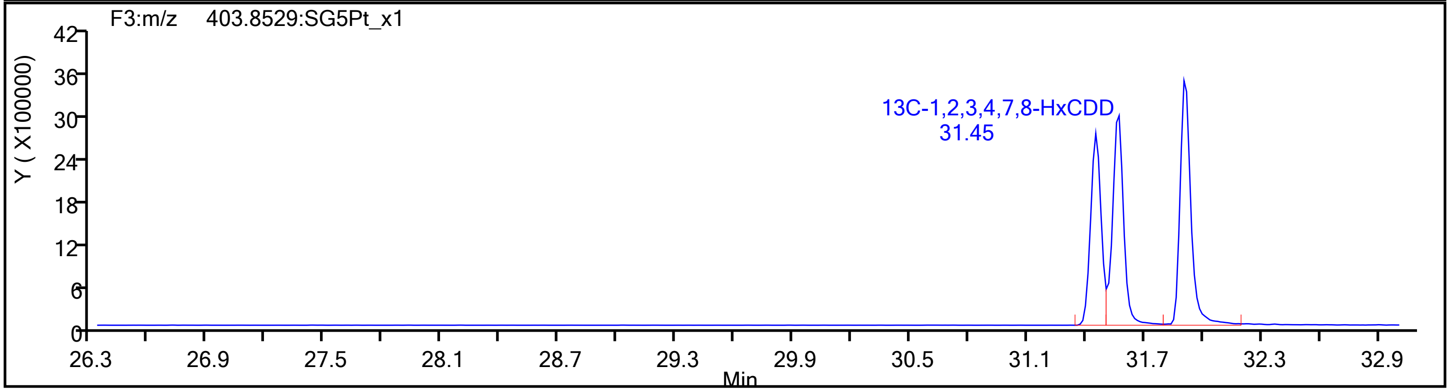

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d		
Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

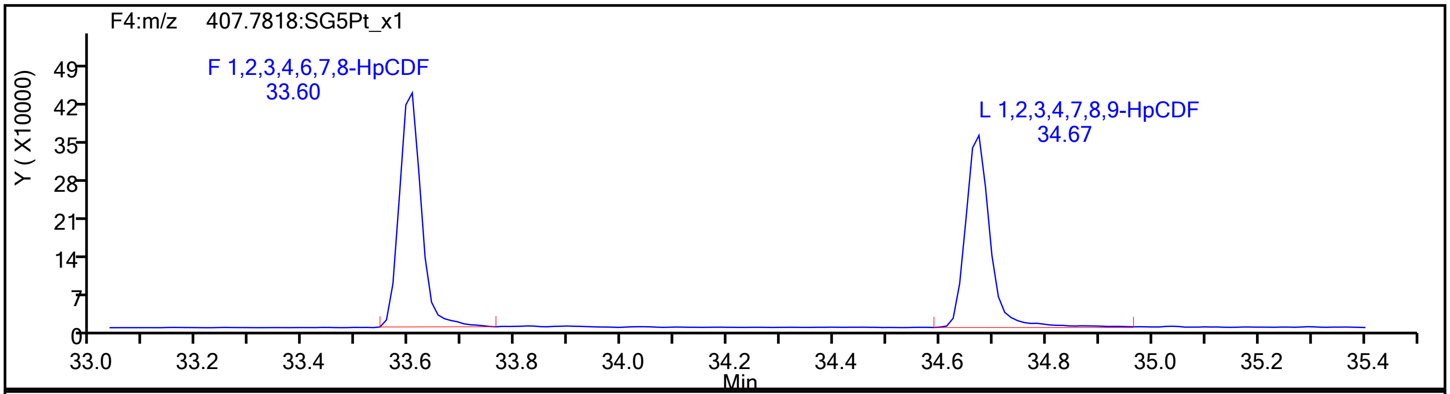

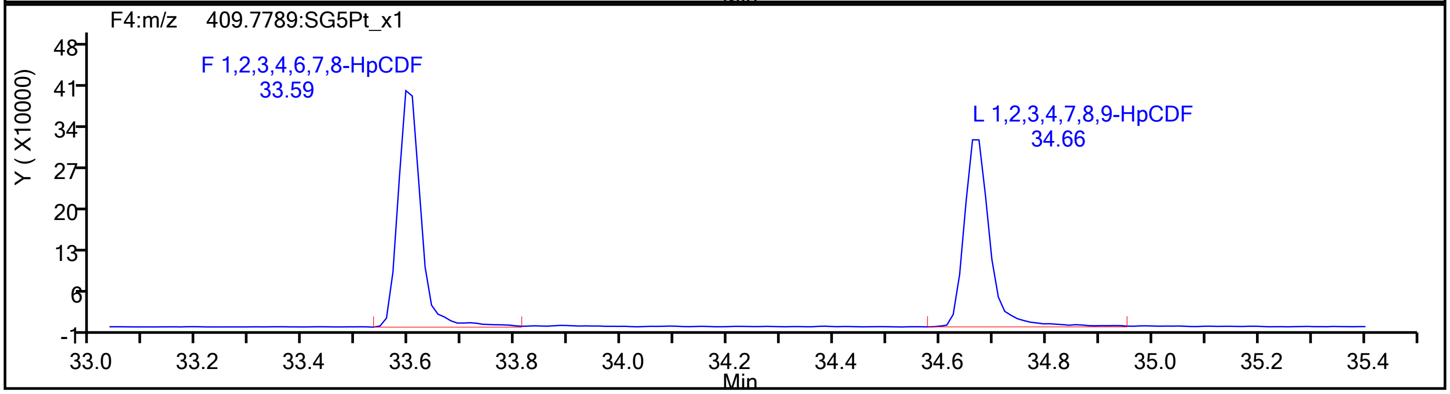

HpCDF Standards

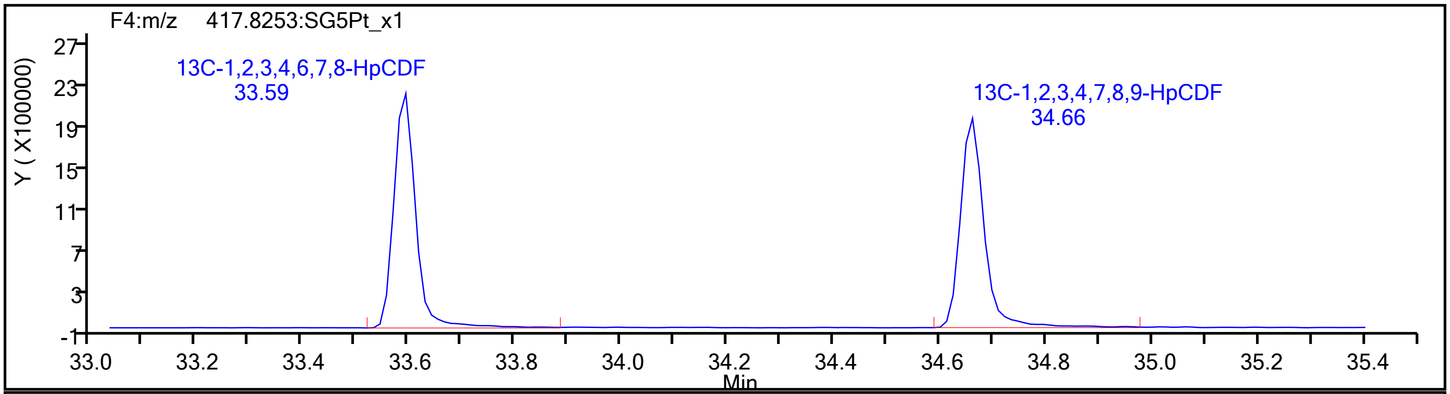

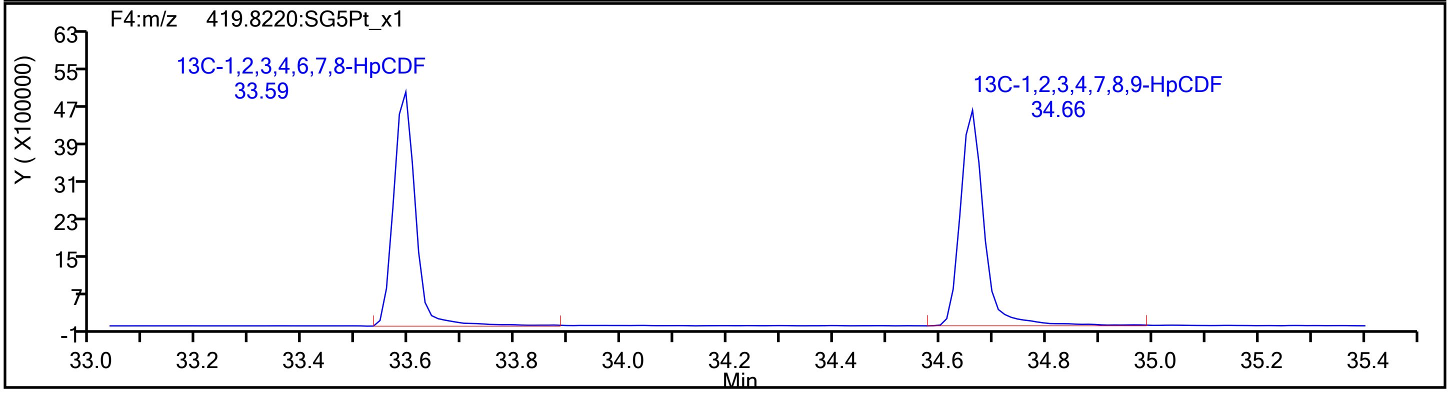

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d
Injection Date: 17-Mar-2021 01:55:38
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

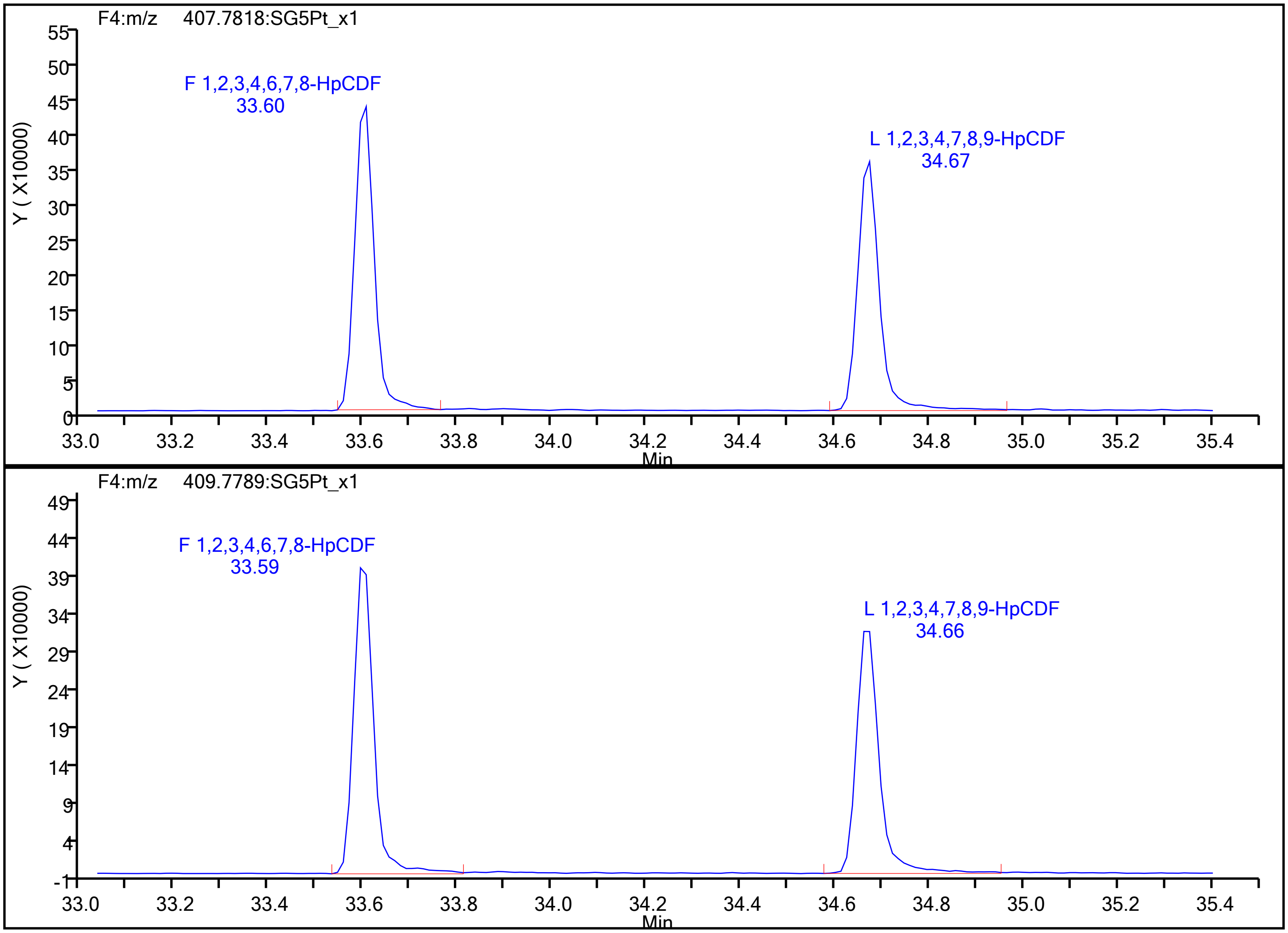

HpCDF Interference Mass

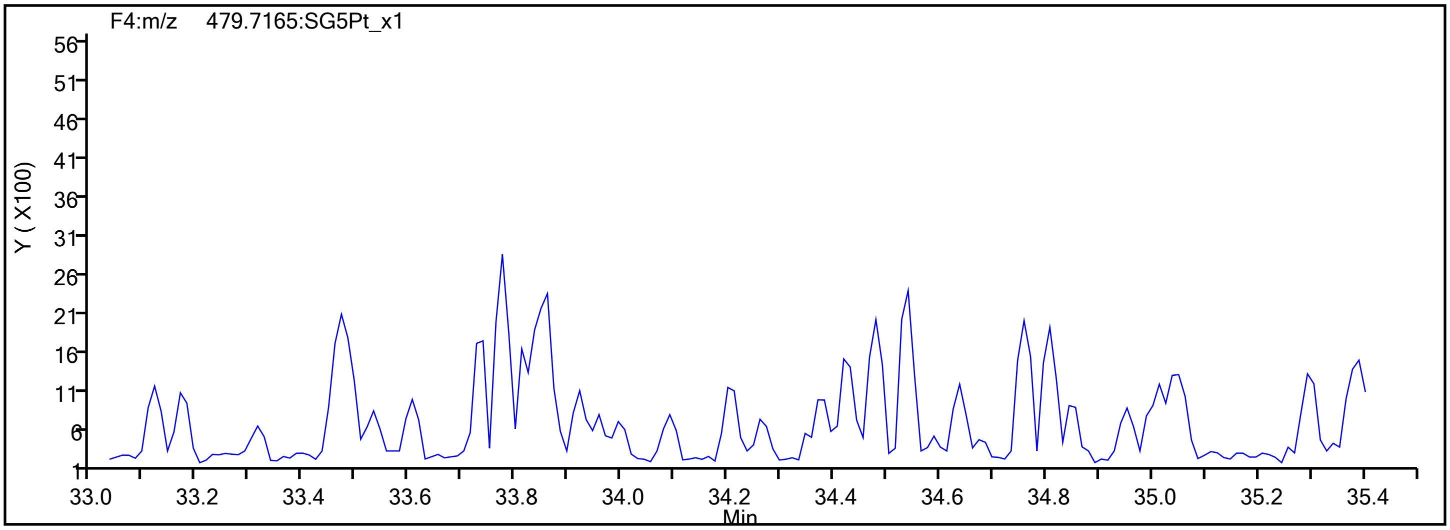

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d		
Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

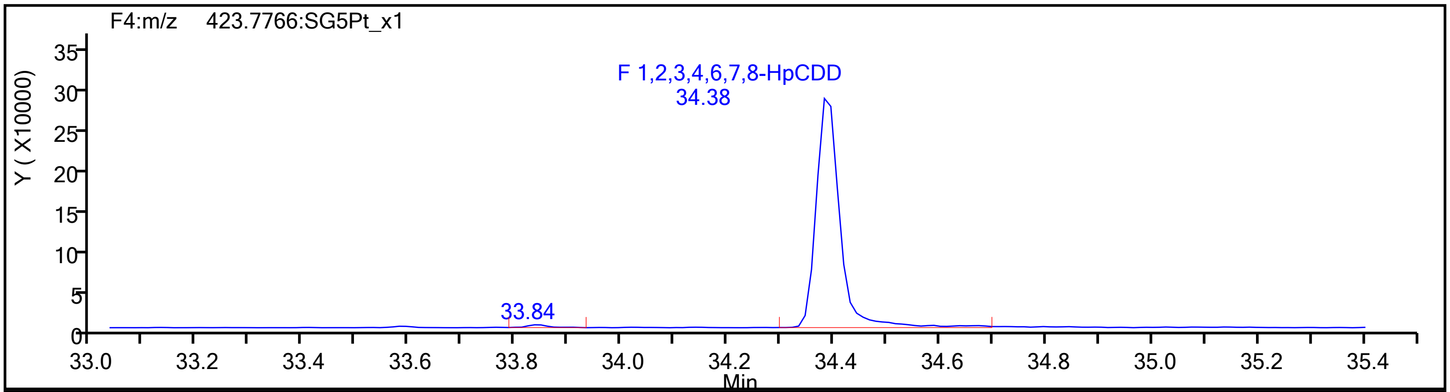

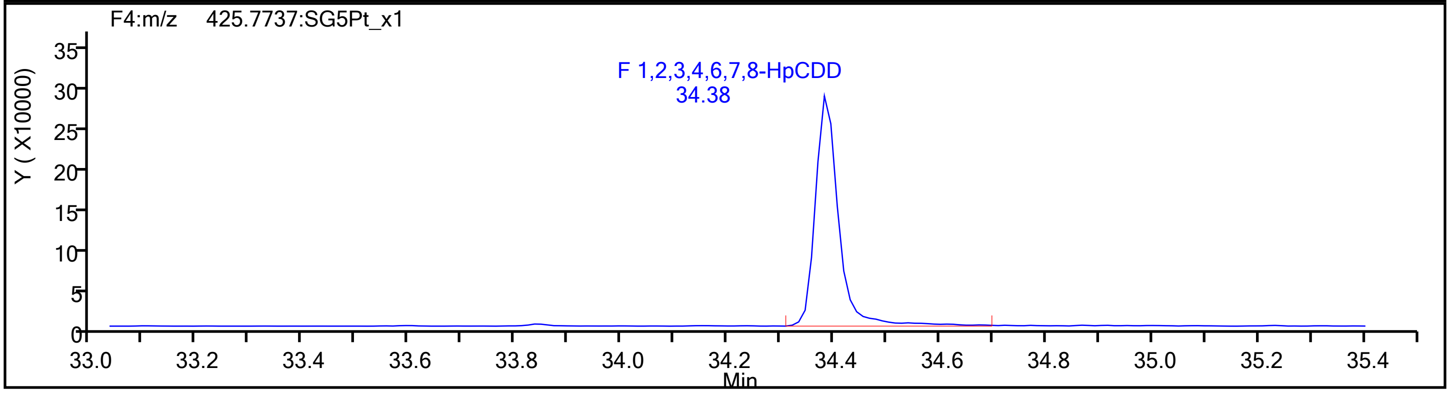

HpCDD Standards

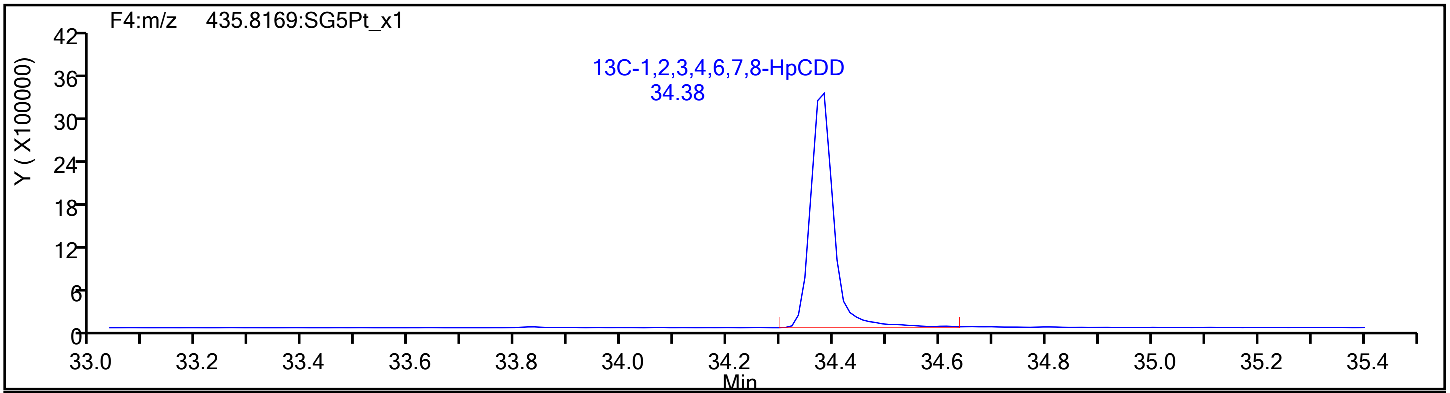

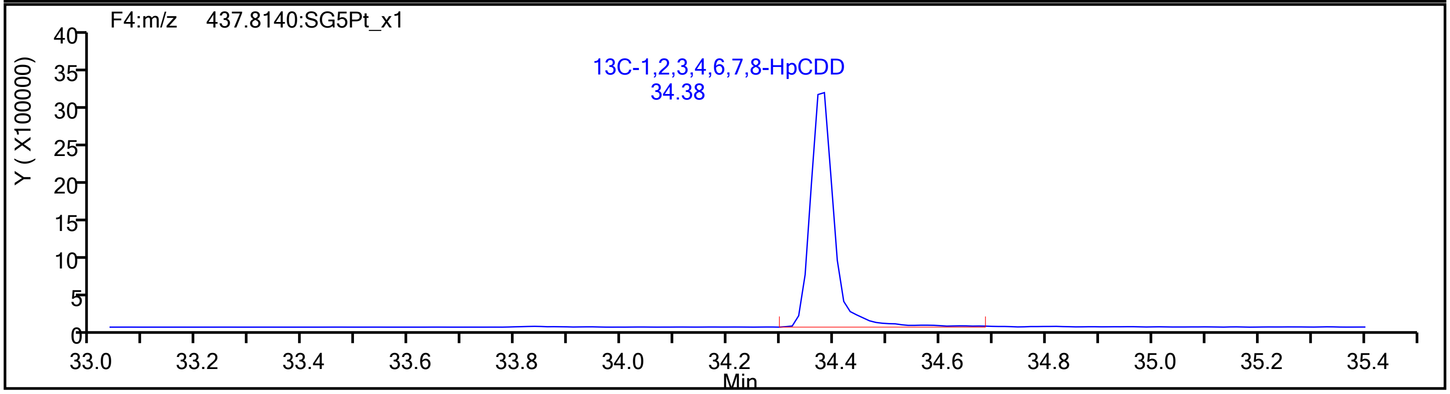

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d

Injection Date: 17-Mar-2021 01:55:38

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

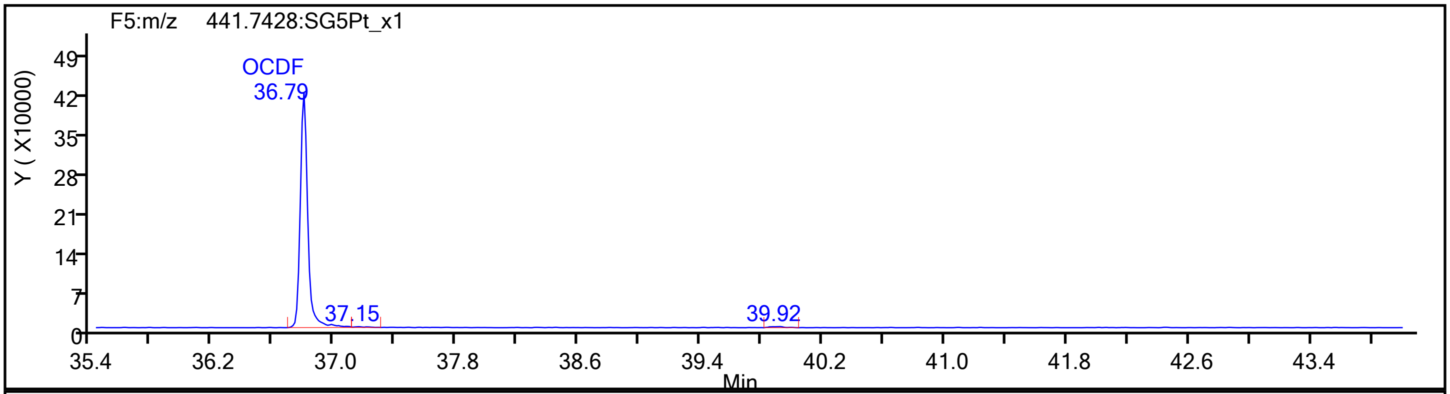

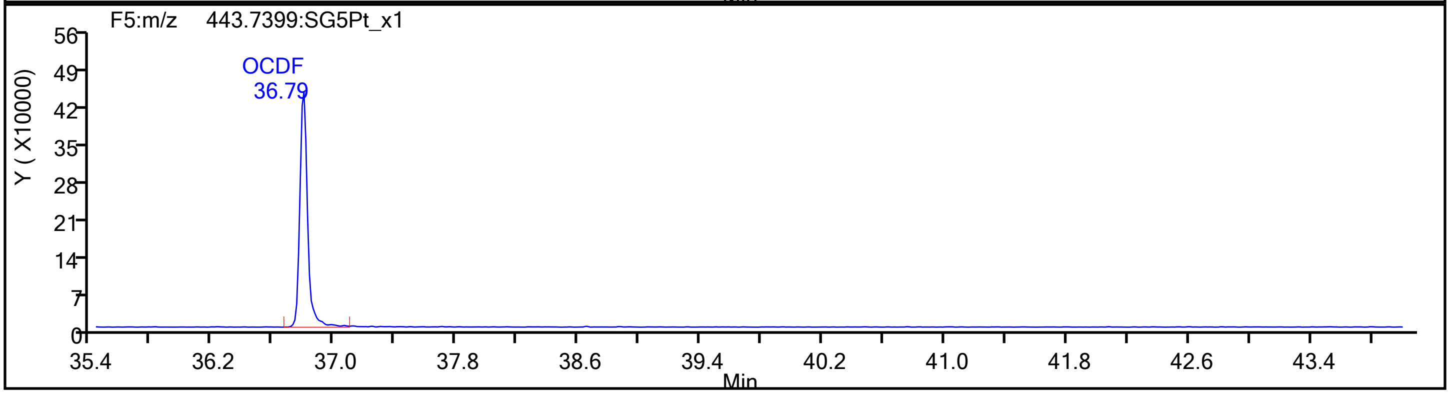

OCDF Standards

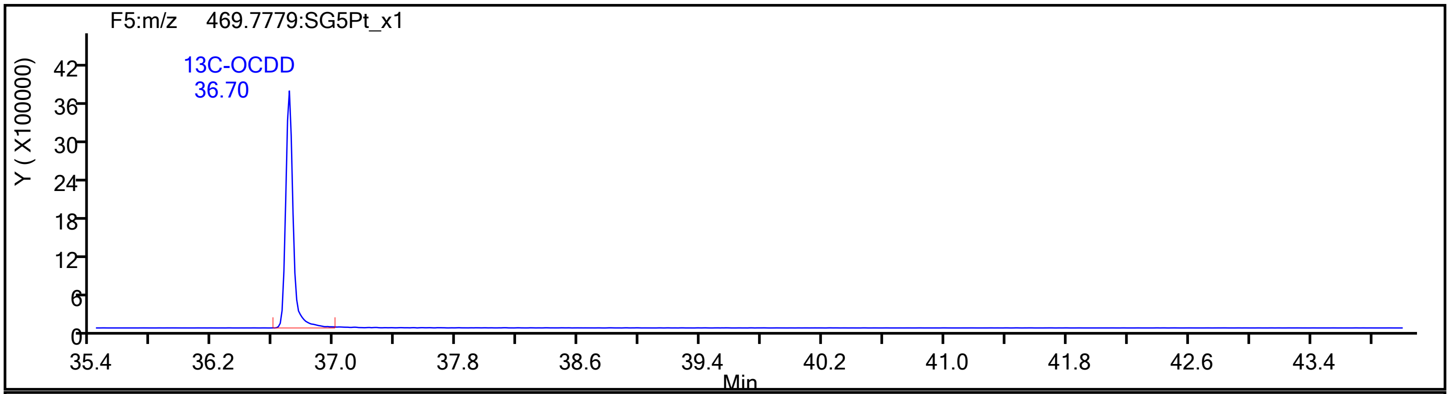

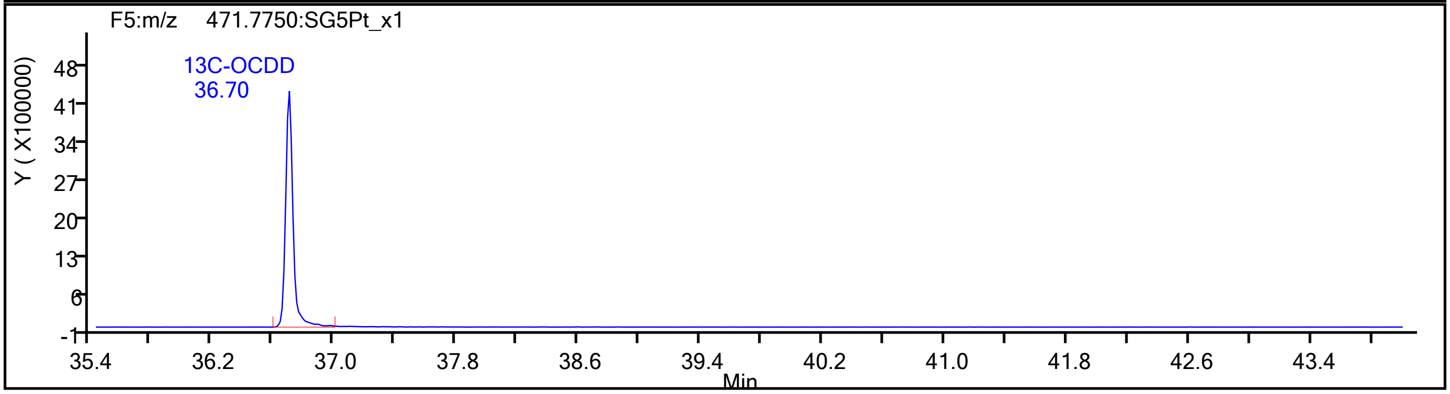

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d

Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

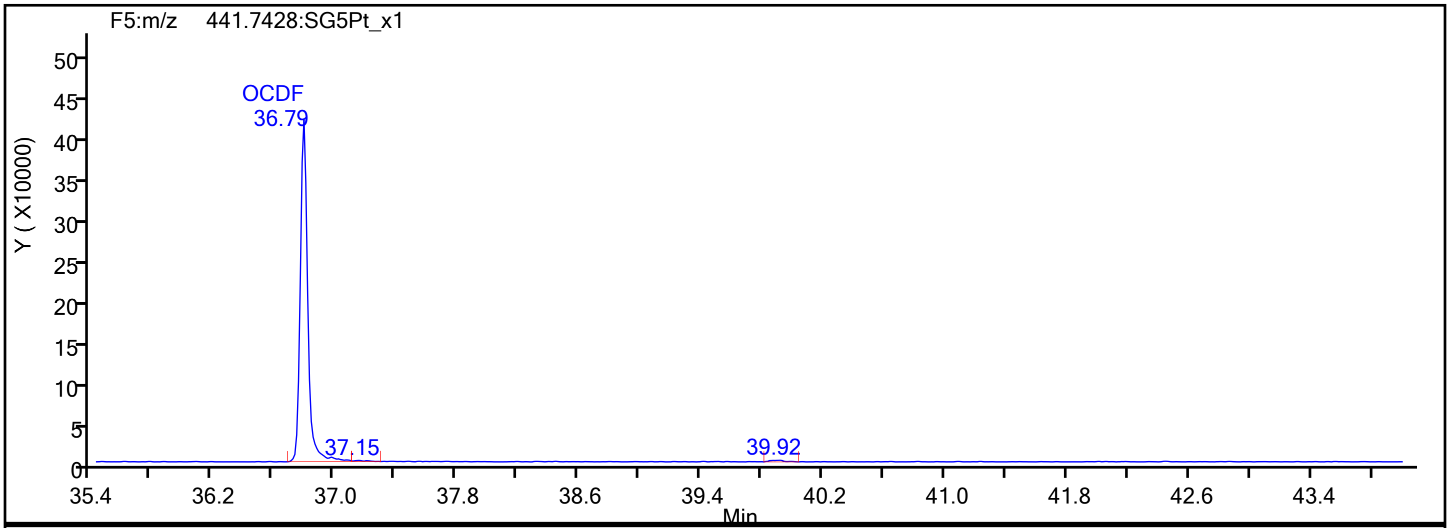

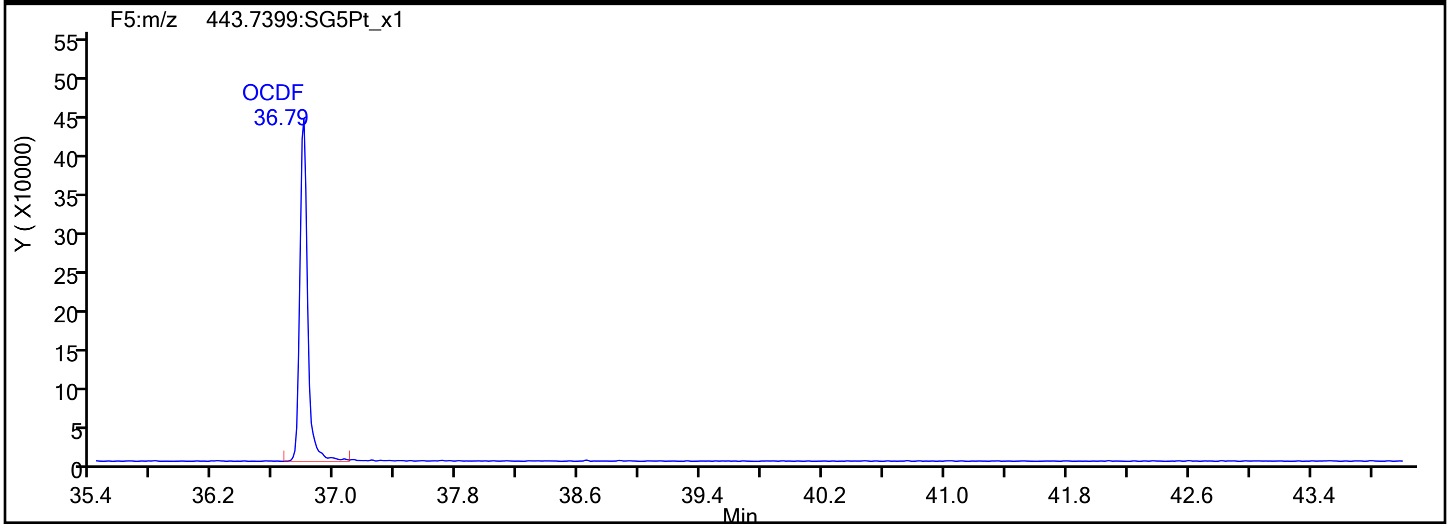

OCDF Interference Mass

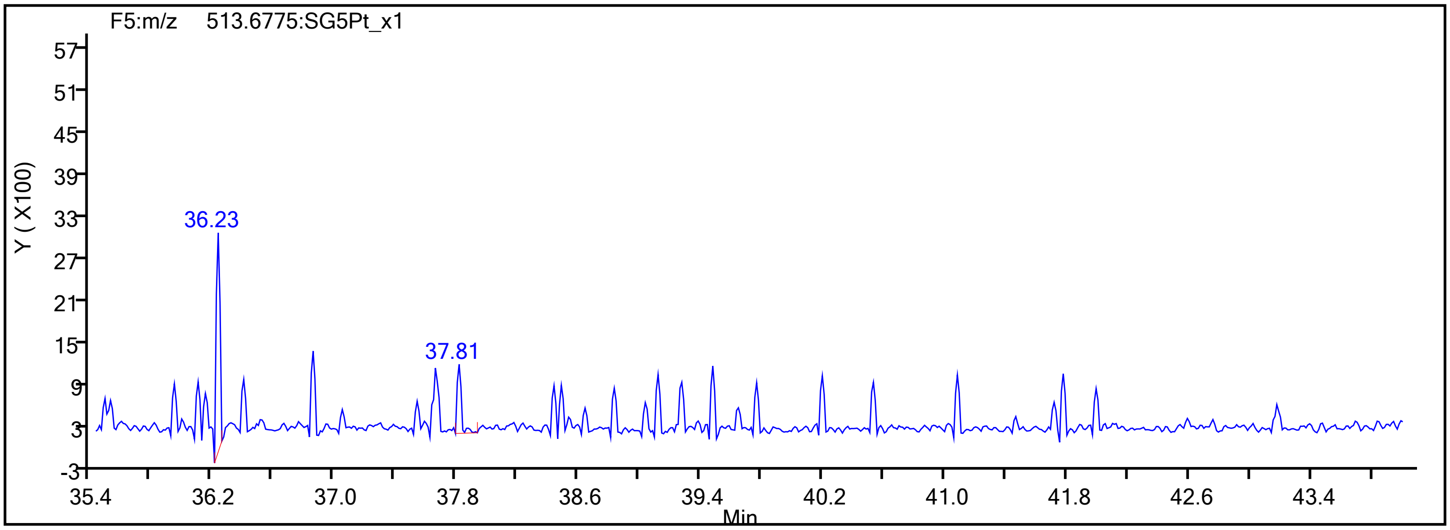

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d		
Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

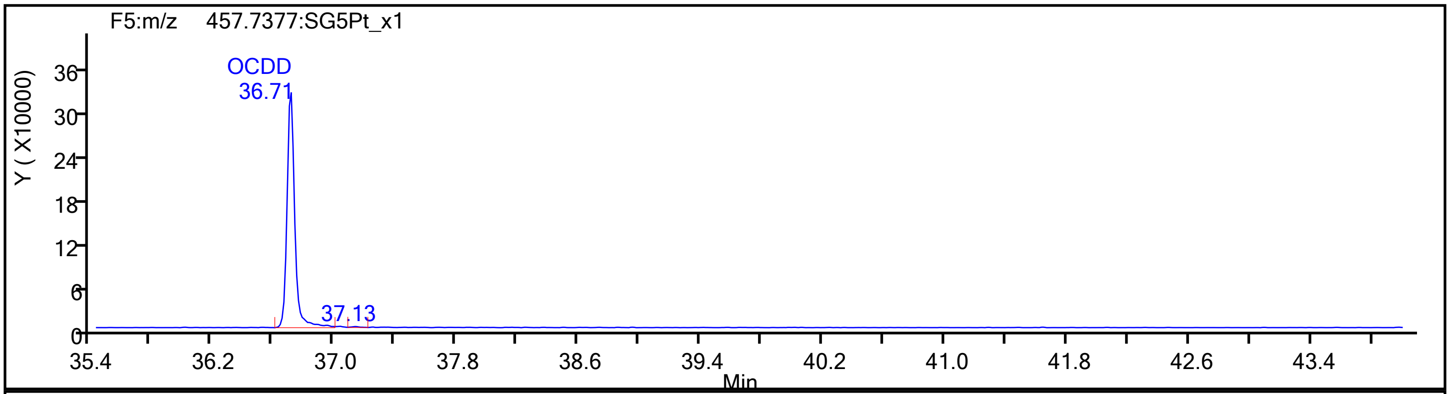

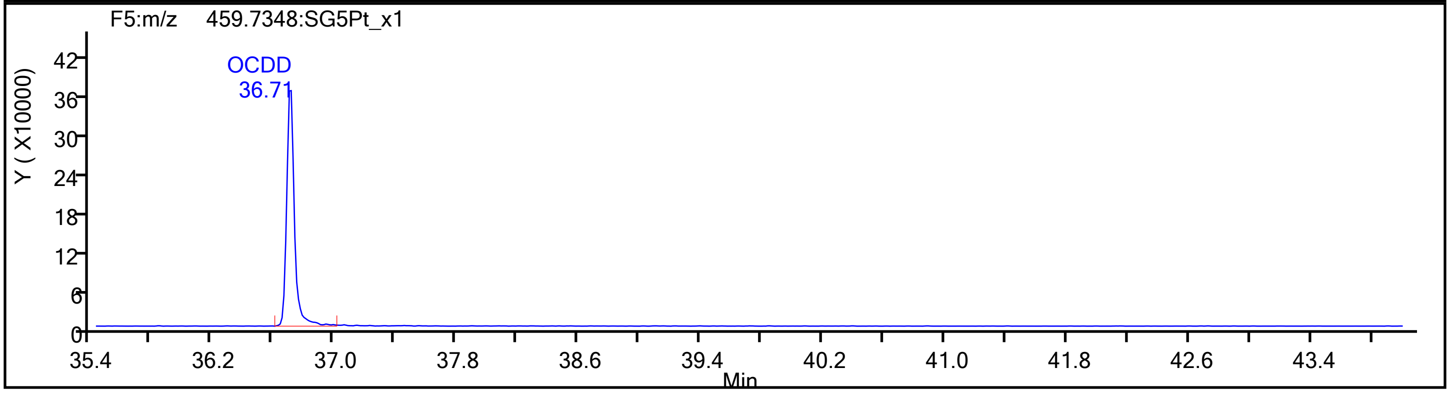

OCDD Standards

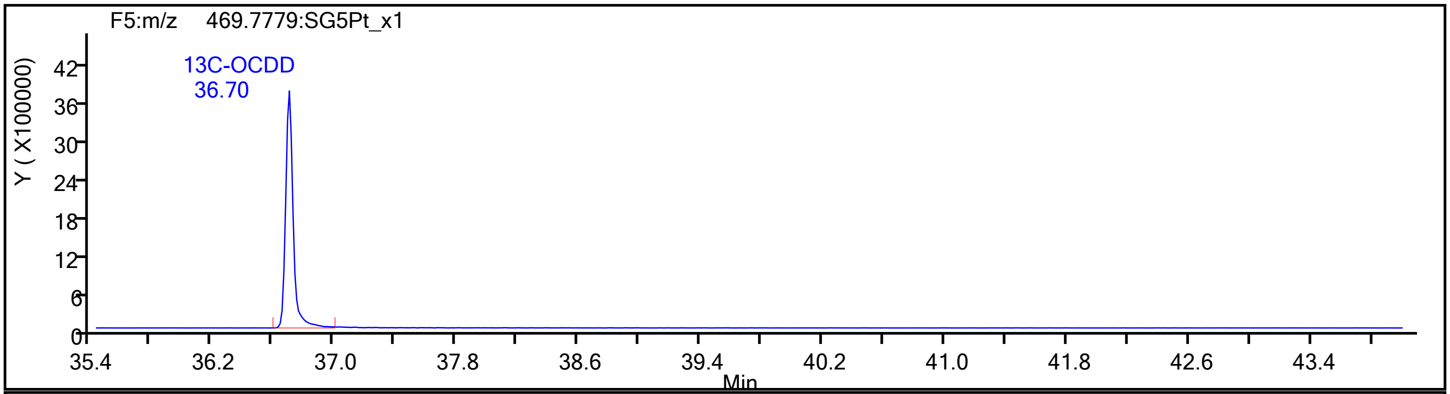

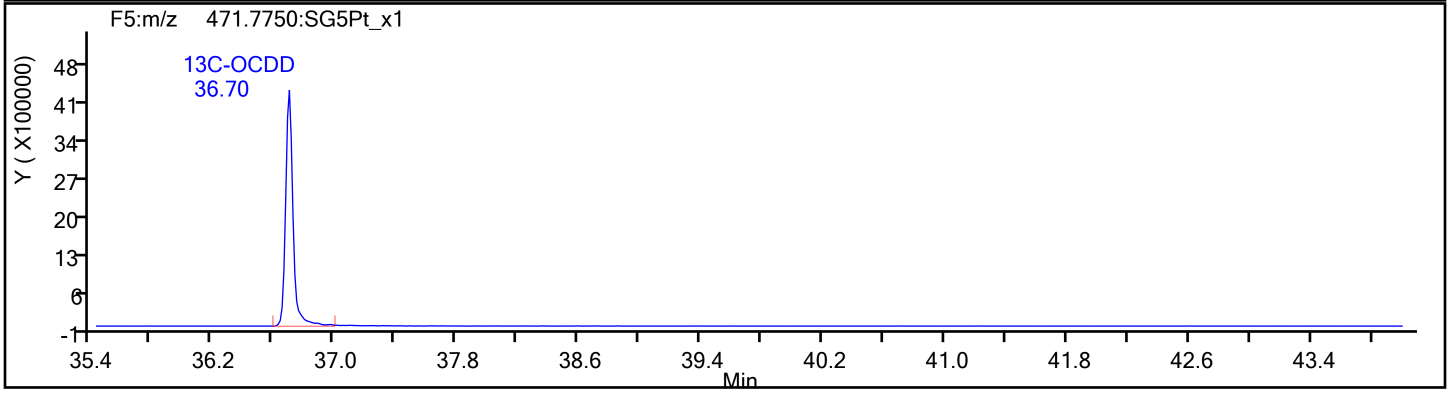

Report Date: 17-Mar-2021 13:36:01 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d

Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
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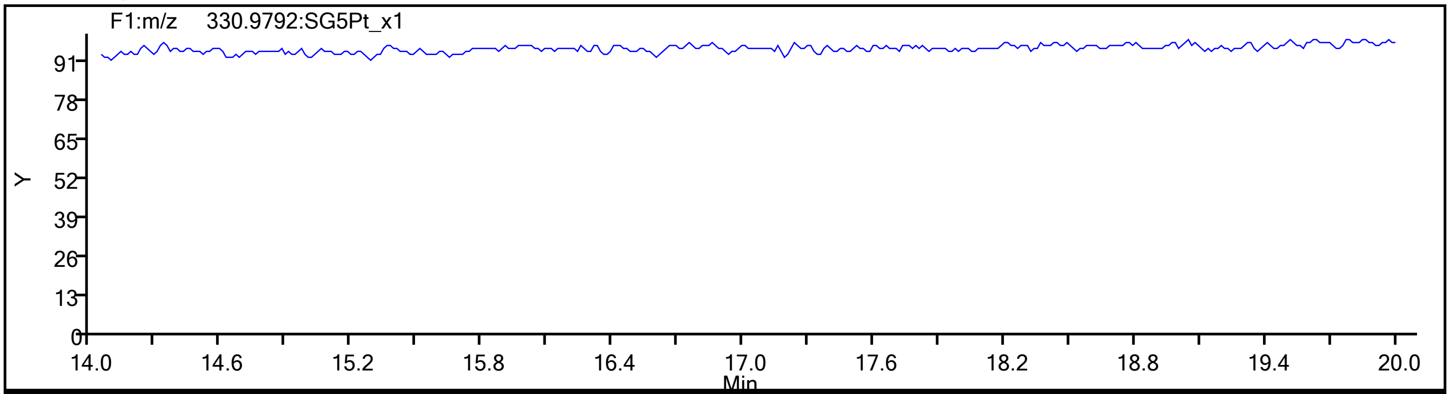

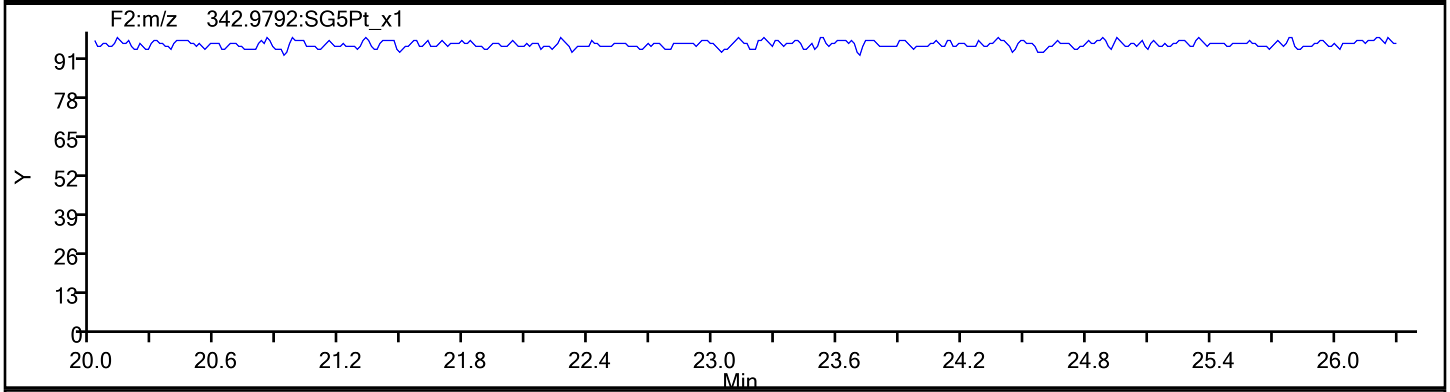

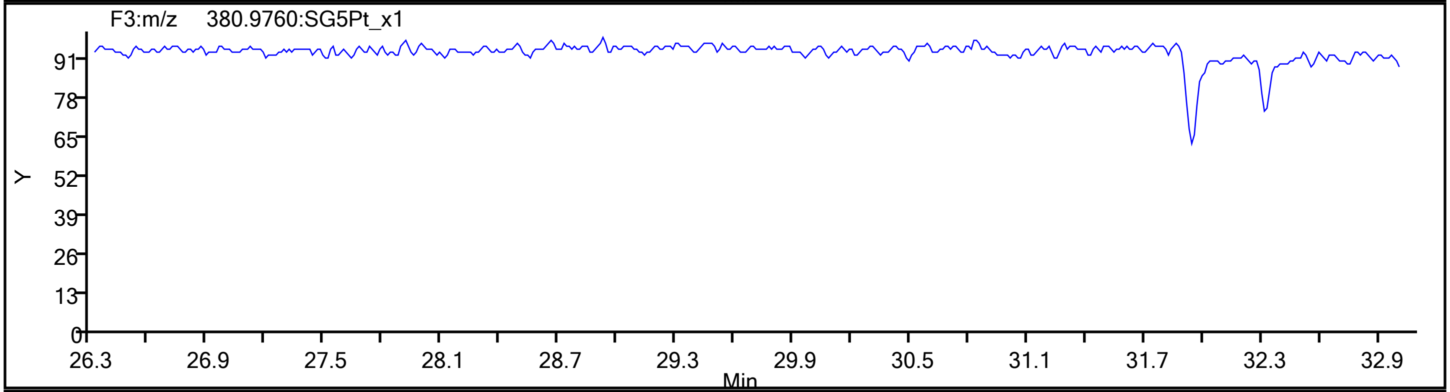

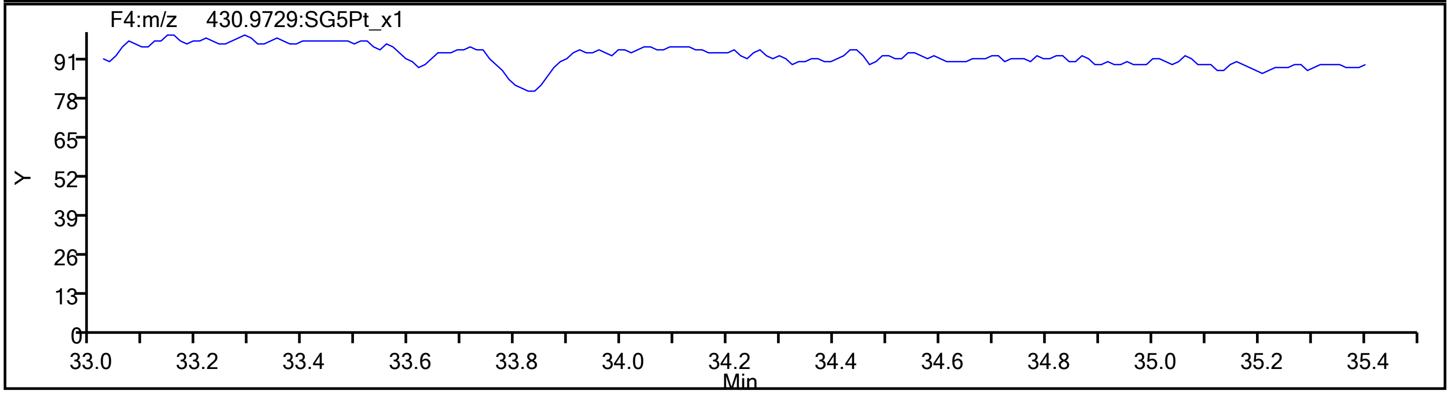

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_4.d

Injection Date:	17-Mar-2021 01:55:38	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

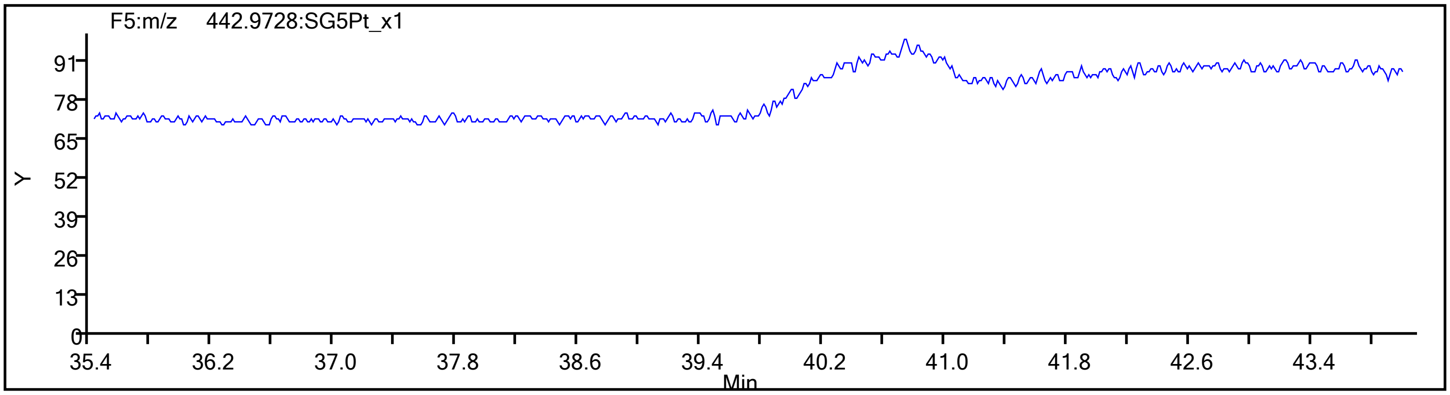

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 17-Mar-2021 02:40:35 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621B CS-4 HRDXNL4_00097
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:36:04 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:26:02

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.521	57046835	0.70	5.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.022	77145484	0.79	1.3554	99.8	99.8	0.1608	0.1608	99.77	
2,3,7,8-TCDF	17.037	7651723	0.77	0.9903	10.0	10.0	0.0335	0.0335	100	
S Total TCDF					10.0	10.0	0.0335	0.0335		
D 13C-2,3,7,8-TCDD	17.718	52605423	0.68	0.9209	100.1	100.1	0.1514	0.1514	100	
$ 37Cl4-2,3,7,8-TCDD	17.733	5912219		1.0159	10.2	10.2	0.0167	0.0167	102	
2,3,7,8-TCDD	17.733	5618621	0.81	1.0991	9.718	9.718	0.0249	0.0249	97.18	
S Total TCDD					9.718	9.718	0.0249	0.0249		
D 13C-1,2,3,7,8-PeCDF	21.923	61696360	1.56	1.0847	99.7	99.7	0.1898	0.1898	99.71	
1,2,3,7,8-PeCDF	21.951	32687525	1.60	1.0209	51.9	51.9	0.1340	0.1340	104	
D 13C-2,3,4,7,8-PeCDF	23.232	62753914	1.60	1.1057	99.5	99.5	0.1862	0.1862	99.49	
2,3,4,7,8-PeCDF	23.260	31945303	1.58	0.9790	52.0	52.0	0.1437	0.1437	104	
S Total PeCDF					103.9	103.9	0.1388	0.1388		
D 13C-1,2,3,7,8-PeCDD	23.941	44125952	1.60	0.7689	100.6	100.6	0.1064	0.1064	101	
1,2,3,7,8-PeCDD	23.969	22317187	1.59	0.9982	50.7	50.7	0.0599	0.0599	101	
S Total PeCDD					50.7	50.7	0.0599	0.0599		
D 13C-1,2,3,4,7,8-HxCDF	30.094	52255820	0.52	1.0321	96.3	96.3	0.2501	0.2501	96.34	
1,2,3,4,7,8-HxCDF	30.121	28767356	1.24	1.0667	51.6	51.6	0.2220	0.2220	103	
D 13C-1,2,3,6,7,8-HxCDF	30.320	52082737	0.52	1.0218	97.0	97.0	0.2526	0.2526	96.99	
1,2,3,6,7,8-HxCDF	30.334	30100019	1.23	1.1178	51.7	51.7	0.2027	0.2027	103	
D 13C-2,3,4,6,7,8-HxCDF	31.239	50722895	0.52	0.9729	99.2	99.2	0.2653	0.2653	99.21	
2,3,4,6,7,8-HxCDF	31.252	29671605	1.23	1.1422	51.2	51.2	0.1463	0.1463	102	
D 13C-1,2,3,7,8,9-HxCDF	32.104	47888248	0.52	0.9469	96.2	96.2	0.2726	0.2726	96.23	
1,2,3,7,8,9-HxCDF	32.117	28602707	1.24	1.1455	52.1	52.1	0.1394	0.1394	104	
S Total HxCDF					206.7	206.7	0.1776	0.1776		
* 13C-1,2,3,7,8,9-HxCDD	31.904	52552489	1.27	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.452	39398721	1.26	0.7689	97.5	97.5	0.2416	0.2416	97.50	
1,2,3,4,7,8-HxCDD	31.465	20886093	1.26	1.0357	51.2	51.2	0.1080	0.1080	102	
D 13C-1,2,3,6,7,8-HxCDD	31.558	44158951	1.27	0.8643	97.2	97.2	0.2149	0.2149	97.22	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.572	22272817	1.25	0.9658	52.2	52.2	0.1061	0.1061	104	
1,2,3,7,8,9-HxCDD	31.917	23963675	1.27	1.0727	53.5	53.5	0.0997	0.0997	107	
S Total HxCDD					156.9	156.9	0.1046	0.1046		
D 13C-1,2,3,4,6,7,8-HpCDF	33.580	37647100	0.43	0.7233	99.0	99.0	1.008	1.008	99.04	
1,2,3,4,6,7,8-HpCDF	33.592	27703949	1.07	1.4017	52.5	52.5	0.3274	0.3274	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.661	34247640	0.44	0.6720	97.0	97.0	1.085	1.085	96.97	
1,2,3,4,7,8,9-HpCDF	34.661	23188551	1.05	1.2995	52.1	52.1	0.4297	0.4297	104	
S Total HpCDF					104.6	104.6	0.3785	0.3785		
D 13C-1,2,3,4,6,7,8-HpCDD	34.370	35095772	1.04	0.6855	97.4	97.4	0.3364	0.3364	97.42	
1,2,3,4,6,7,8-HpCDD	34.382	18900297	1.04	1.0339	52.1	52.1	0.1420	0.1420	104	
S Total HpCDD					52.1	52.1	0.1420	0.1420		
D 13C-OCDD	36.697	51526489	0.90	0.4996	196.2	196.2	0.1453	0.1453	98.12	
OCDF	36.793	35282022	0.91	1.3135	104.3	104.3	0.0661	0.0661	104	
OCDD	36.697	28164868	0.88	1.0576	103.4	103.4	0.0688	0.0688	103	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	17-Mar-2021 02:40:35	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 031621B CS-4 HRDXNL4_00097				
Misc. Info.:	16MR21C10D5				
Operator ID:	ALM	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	17-Mar-2021 13:36:04	Calib Date:	17-Mar-2021 04:10:31		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1668				
First Level Reviewer: arghestanis		Date:	17-Mar-2021 12:26:02		

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.521	17.527	0		23442258	5943432	3723	9307	1596		
333.9339	17.521	17.527	0		33604577	8451236	4303	10757	1964	0.70(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.025	0	0.972	34071427	8646699	6515	16287	1327		
317.9389	17.022	17.025	0	0.972	43074057	11000609	6032	15080	1824	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.043	0	1.001	3335307	851361	1328	3320	641		
305.8987	17.037	17.043	0	1.001	4316416	1100896	1283	3207	858	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.718	17.714	0	1.011	21371838	5335829	3723	9307	1433		
333.9339	17.718	17.714	0	1.011	31233585	7760781	4303	10757	1804	0.68(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.733	17.729	0	1.012	5912219	1464067	979	2447	1495		
2,3,7,8-TCDD											
319.8965	17.733	17.733	0	1.001	2521938	616258	862	2155	715		
321.8936	17.733	17.733	0	1.001	3096683	776738	571	1427	1360	0.81(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.923	21.923	0	1.251	37579060	6710057	7209	18022	931		
353.8970	21.923	21.923	0	1.251	24117300	4253636	4647	11617	915	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.951	21.945	0	1.001	20122507	3636078	3420	8550	1063		
341.8567	21.951	21.945	0	1.001	12565018	2251289	2579	6447	873	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.232	23.232	0	1.326	38619578	6513073	7209	18022	903		
353.8970	23.232	23.232	0	1.326	24134336	4147608	4647	11617	893	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.260	23.260	0	1.001	19548618	3326229	3420	8550	973		
341.8567	23.260	23.260	0	1.001	12396685	2131218	2579	6447	826	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.941	23.939	0	1.366	27134607	4260058	2682	6705	1588		
369.8919	23.941	23.939	0	1.366	16991345	2655249	2030	5075	1308	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.969	23.963	0	1.001	13696947	2231438	1108	2770	2014		
357.8516	23.969	23.963	0	1.001	8620240	1404983	547	1367	2569	1.59(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.094	30.094	0	0.943	17952272	3041301	5021	12552	606		
385.8610	30.094	30.094	0	0.943	34303548	5655414	9478	23695	597	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.121	30.123	0	1.001	15896127	2591160	4549	11372	570		
375.8178	30.121	30.123	0	1.001	12871229	2125203	3688	9220	576	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.320	30.315	0	0.950	17814006	3123611	5021	12552	622		
385.8610	30.320	30.315	0	0.950	34268731	5966292	9478	23695	629	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.334	30.336	0	1.000	16577790	2887595	4549	11372	635		
375.8178	30.334	30.336	0	1.000	13522229	2348749	3688	9220	637	1.23(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.239	31.239	0	0.979	17332504	4242603	5021	12552	845		
385.8610	31.239	31.239	0	0.979	33390391	8081726	9478	23695	853	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.252	31.257	0	1.000	16352190	3916428	4549	11372	861		
375.8178	31.252	31.257	0	1.000	13319415	3215329	3688	9220	872	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.104	32.101	0	1.006	16406635	4484874	5021	12552	893		
385.8610	32.104	32.101	0	1.006	31481613	8412279	9478	23695	888	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.117	32.115	0	1.000	15832816	4401744	4549	11372	968		
375.8178	32.117	32.115	0	1.000	12769891	3494344	3688	9220	947	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.907	0		29433039	7878668	6672	16680	1181		
403.8529	31.904	31.907	0		23119450	6165105	3763	9407	1638	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.452	31.449	0	0.986	21934132	5827154	6672	16680	873		
403.8529	31.452	31.449	0	0.986	17464589	4587351	3763	9407	1219	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.465	31.465	0	1.000	11626539	3198529	2774	6935	1153		
391.8127	31.465	31.465	0	1.000	9259554	2493656	1885	4712	1323	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.558	31.563	0	0.989	24682414	6350785	6672	16680	952		
403.8529	31.558	31.563	0	0.989	19476537	5019463	3763	9407	1334	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.572	31.579	0	1.000	12381481	3056437	2774	6935	1102		
391.8127	31.572	31.579	0	1.000	9891336	2502940	1885	4712	1328	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.917	31.926	0	1.015	13410689	3519820	2774	6935	1269		
391.8127	31.917	31.926	0	1.015	10552986	2841371	1885	4712	1507	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.580	33.587	0	1.053	11406141	4020770	14106	35265	285		
419.8220	33.580	33.587	0	1.053	26240959	9182429	26859	67147	342	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.600	0	1.000	14325100	5135596	11951	29877	430		
409.7789	33.592	33.600	0	1.000	13378849	4823696	12284	30710	393	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.661	34.659	0	1.086	10393695	3284147	14106	35265	233		
419.8220	34.649	34.659	-1	1.086	23853945	7566682	26859	67147	282	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.661	34.669	0	1.000	11877669	3842751	11951	29877	322		
409.7789	34.661	34.669	0	1.000	11310882	3756431	12284	30710	306	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.370	34.377	0	1.077	17869613	6079003	6546	16365	929		
437.8140	34.370	34.377	0	1.077	17226159	5834820	6407	16017	911	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.387	0	1.000	9624374	3302348	3660	9150	902		
425.7737	34.382	34.387	0	1.000	9275923	3194826	3336	8340	958	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.697	36.694	0	1.150	24347915	6978892	2061	5152	3386		
471.7750	36.697	36.694	0	1.150	27178574	7702353	2017	5042	3819	0.90(0.76-1.02)	
OCDF											
441.7428	36.793	36.790	0	1.003	16800214	4907804	1139	2847	4309		
443.7399	36.781	36.790	-1	1.002	18481808	5365573	1410	3525	3805	0.91(0.76-1.02)	
OCDD											
457.7377	36.697	36.704	0	1.000	13218532	3850330	1012	2530	3805		
459.7348	36.697	36.704	0	1.000	14946336	4472372	1124	2810	3979	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d

Injection Date: 17-Mar-2021 02:40:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

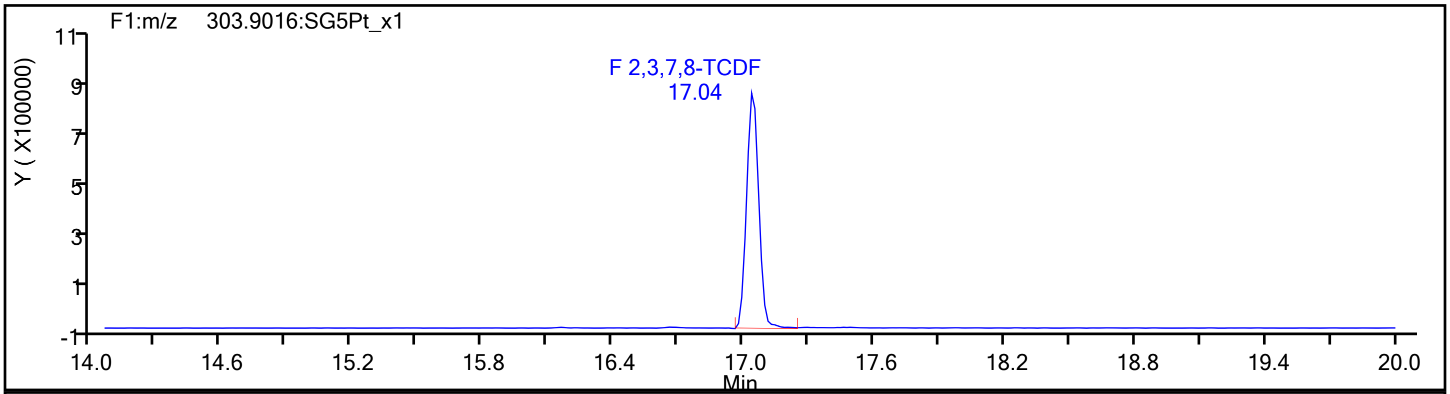

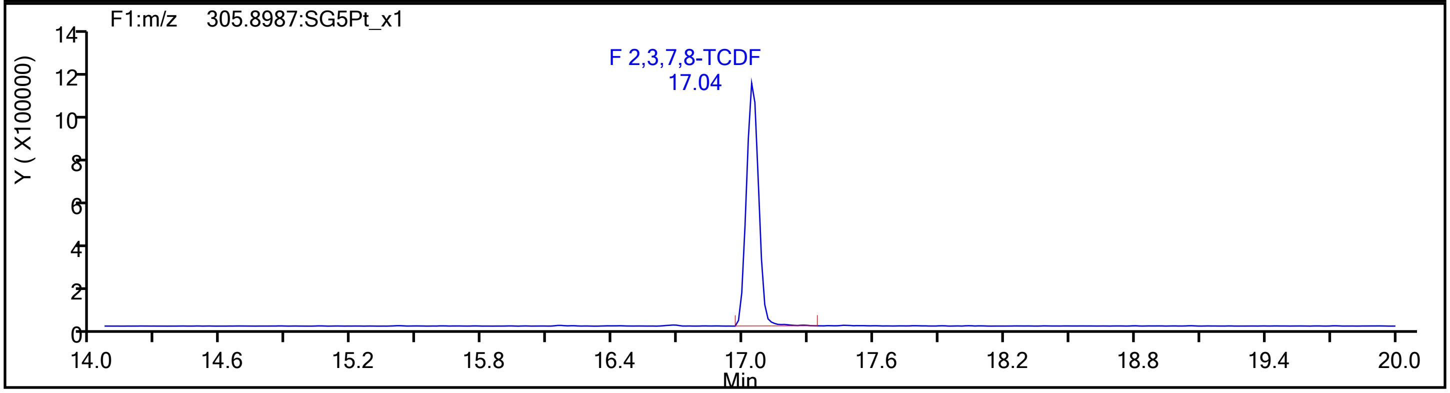

TCDF Standards

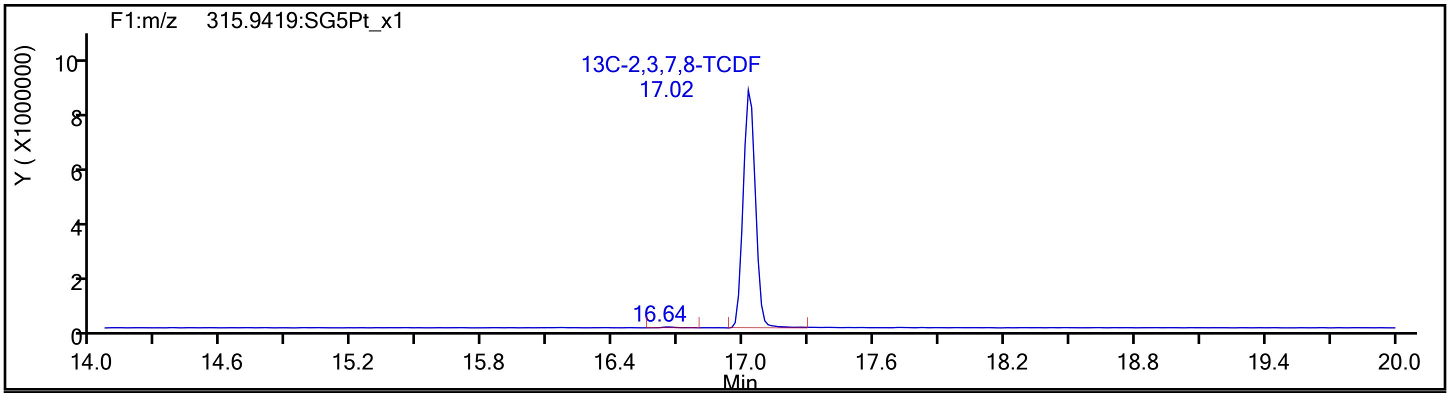

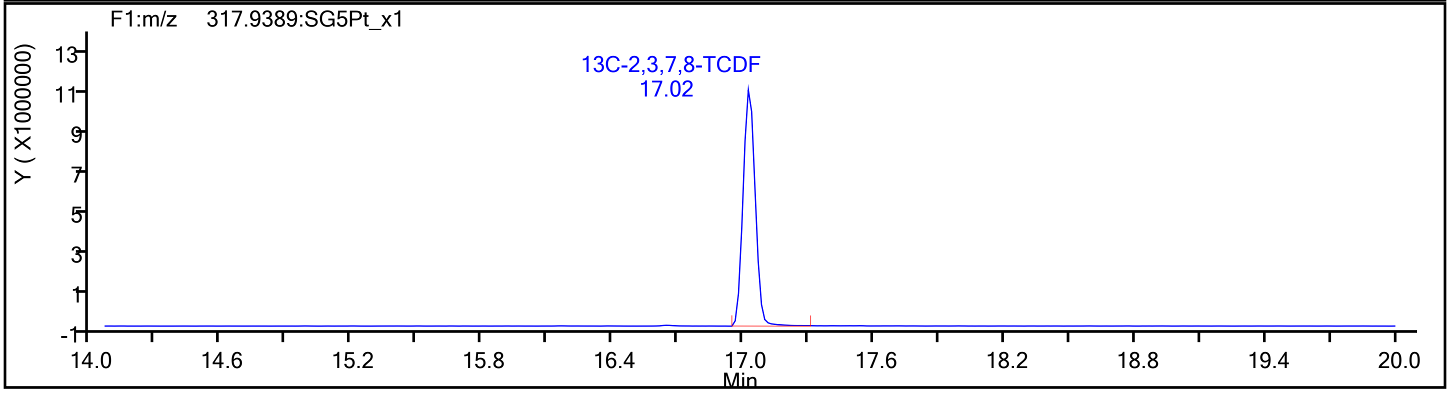

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

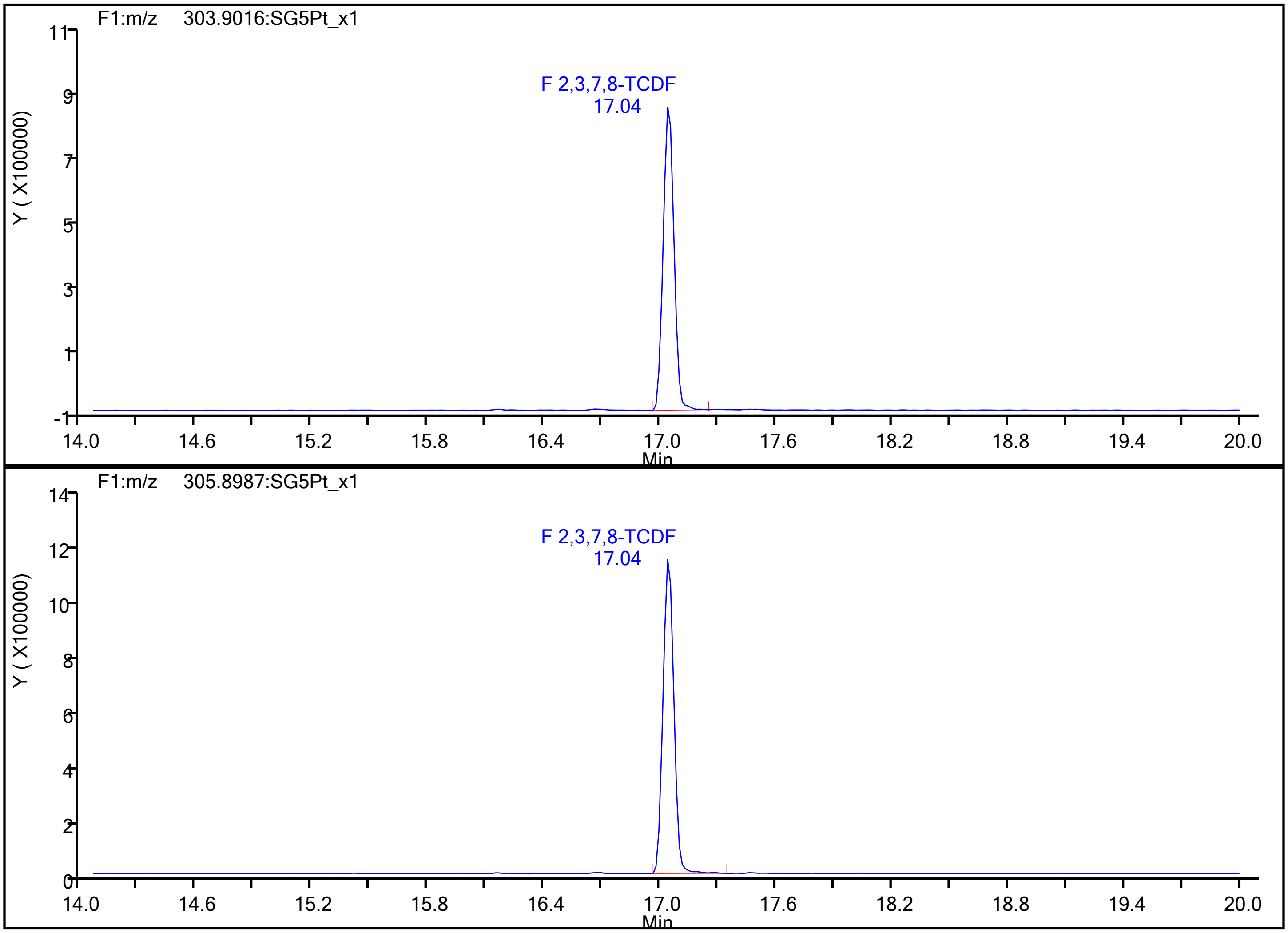

TCDF Interference Mass

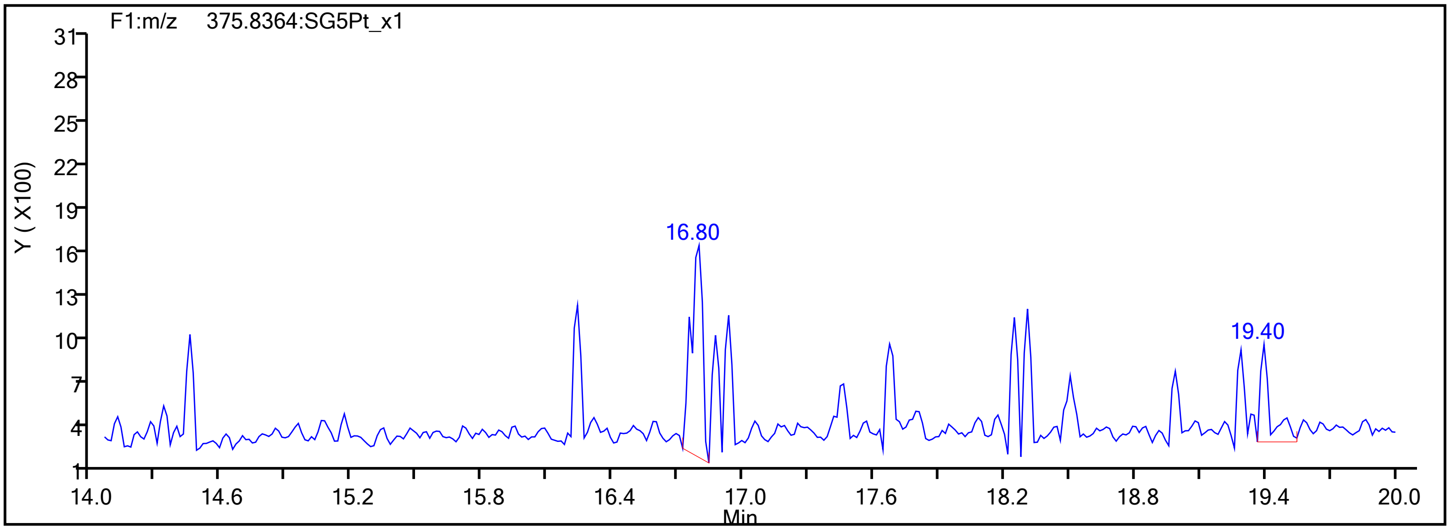

Report Date: 17-Mar-2021 13:36:08
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d
Injection Date: 17-Mar-2021 02:40:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

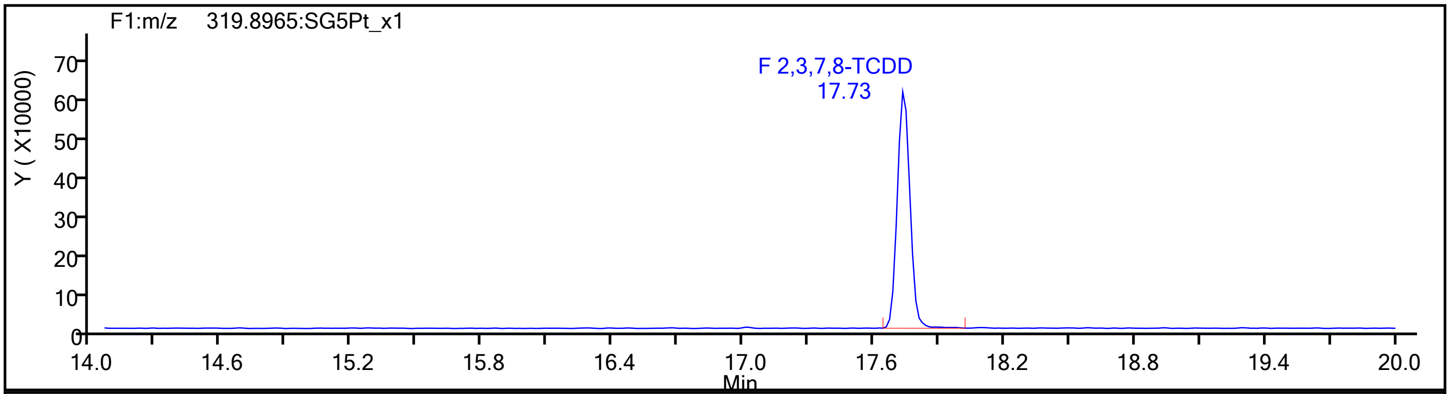

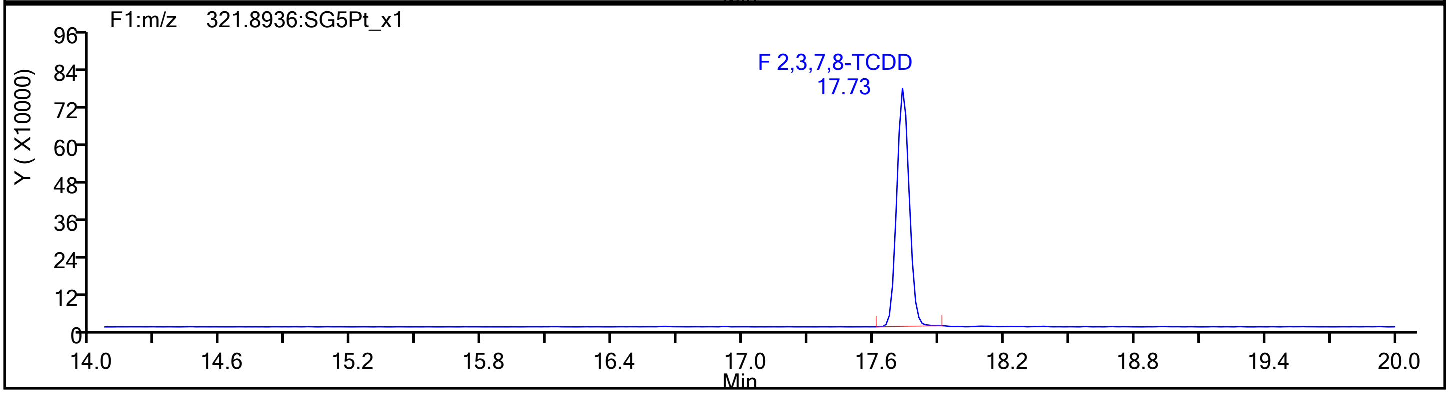

TCDD Standards

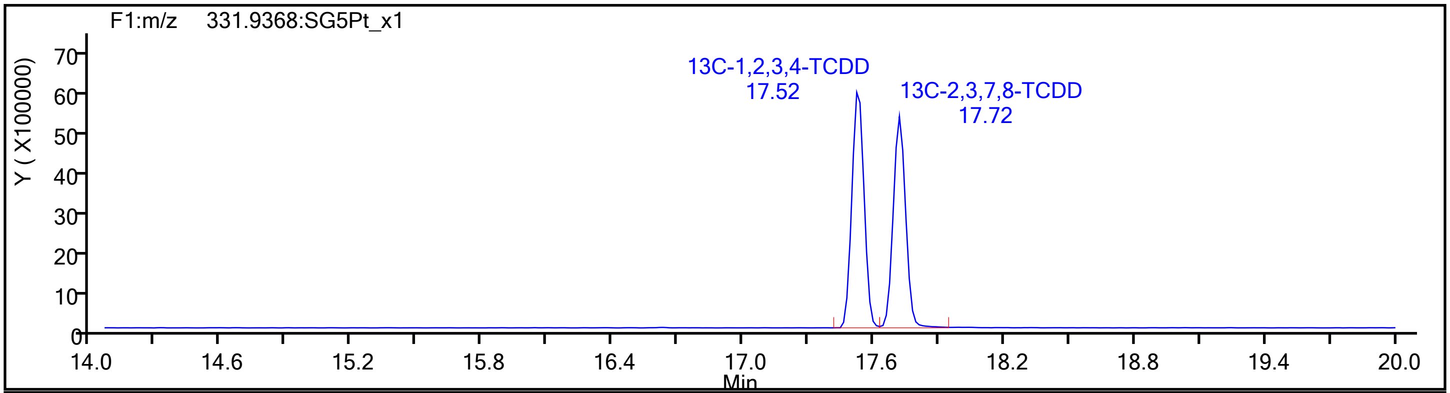

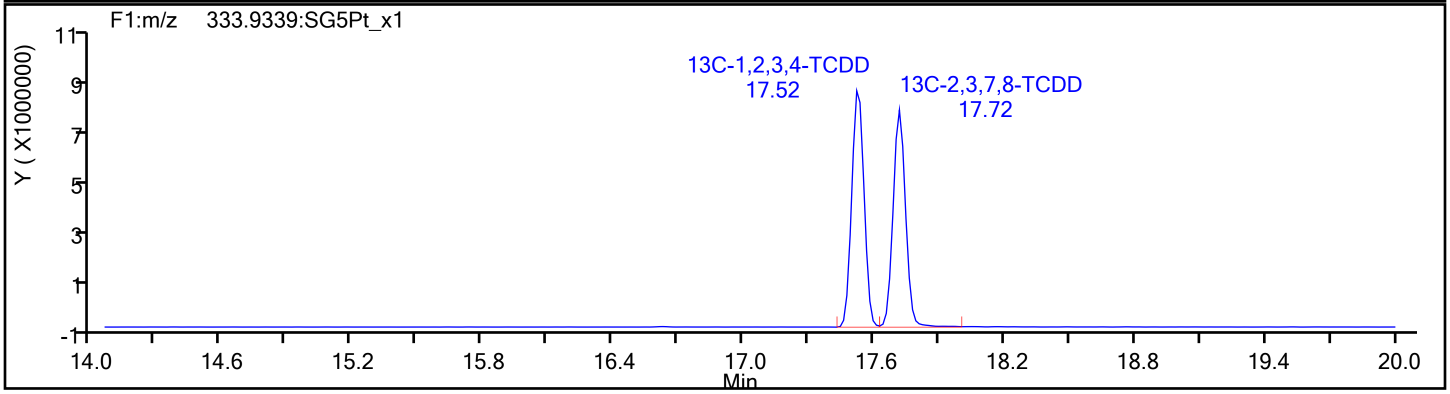

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d
Injection Date: 17-Mar-2021 02:40:35 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: ALM
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

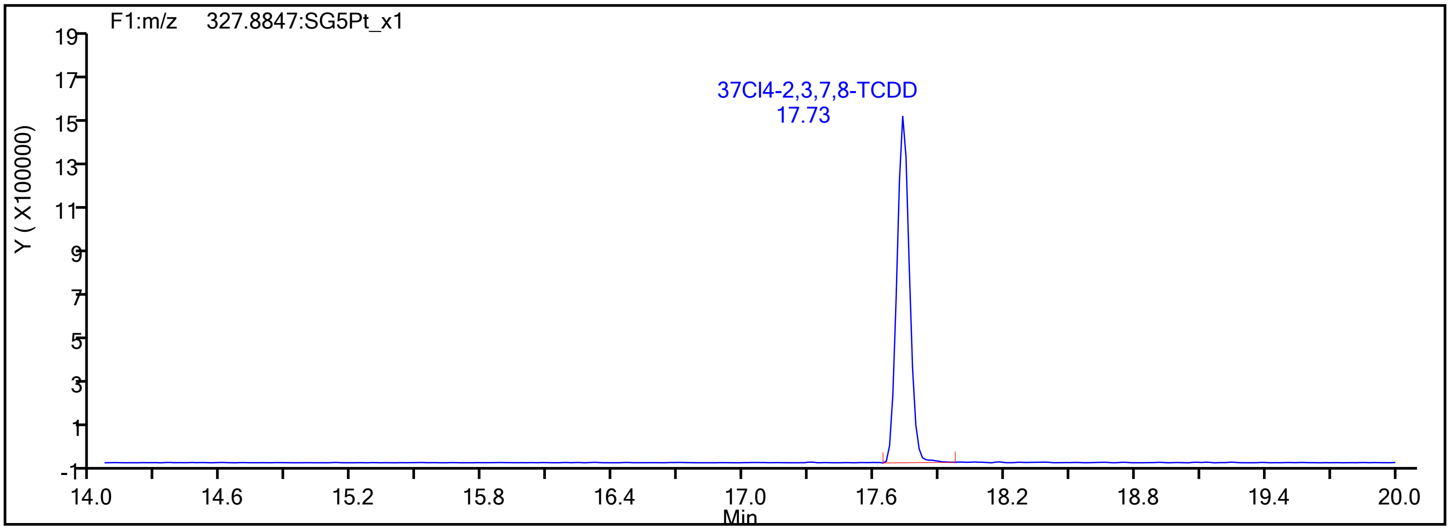

37Cl4-TCDD Standards

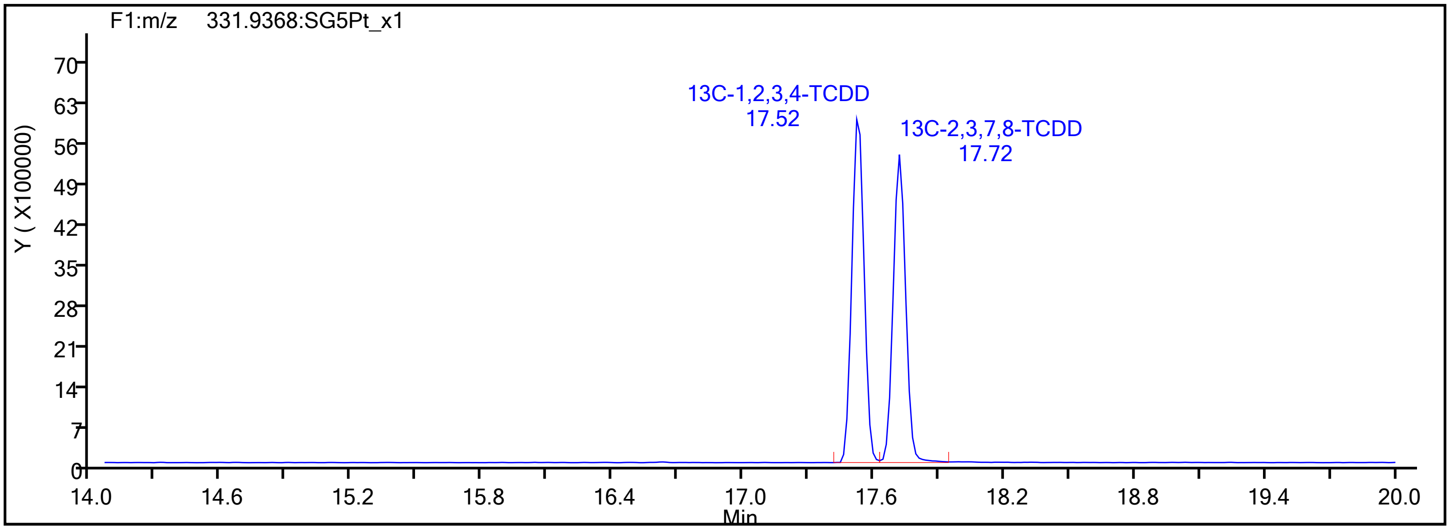

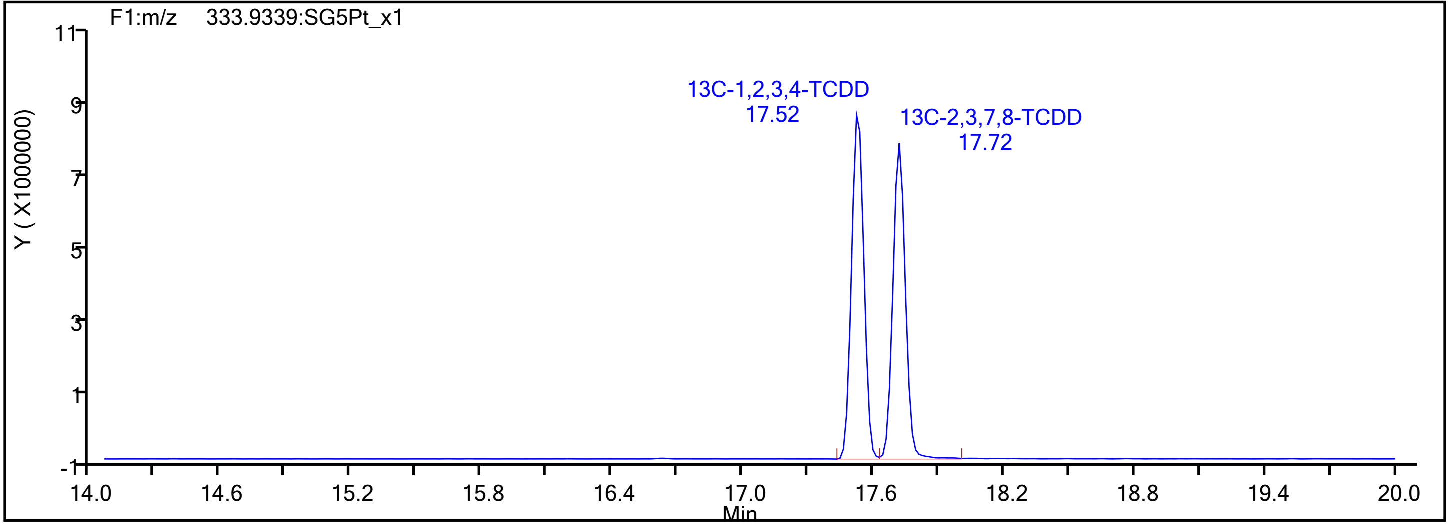

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d

Injection Date:	17-Mar-2021 02:40:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

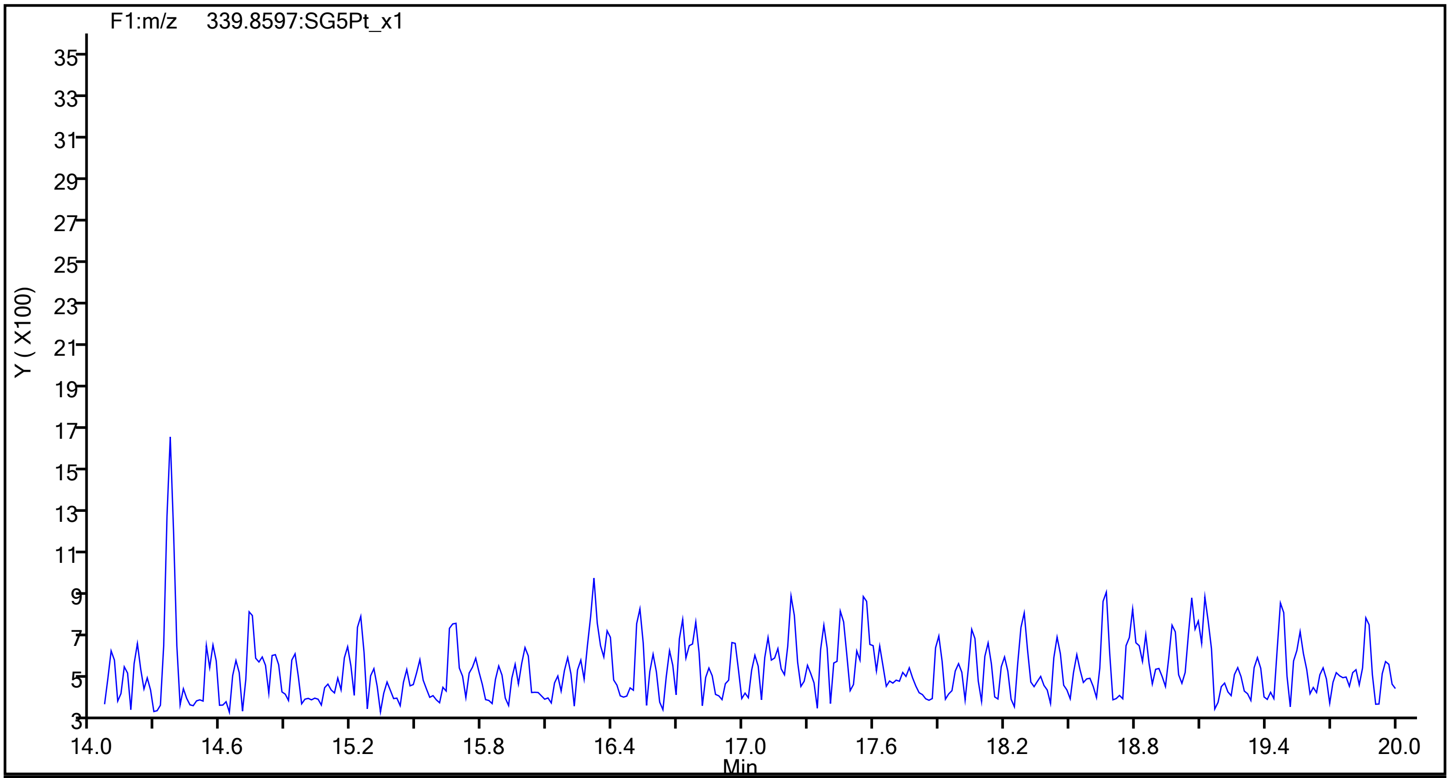

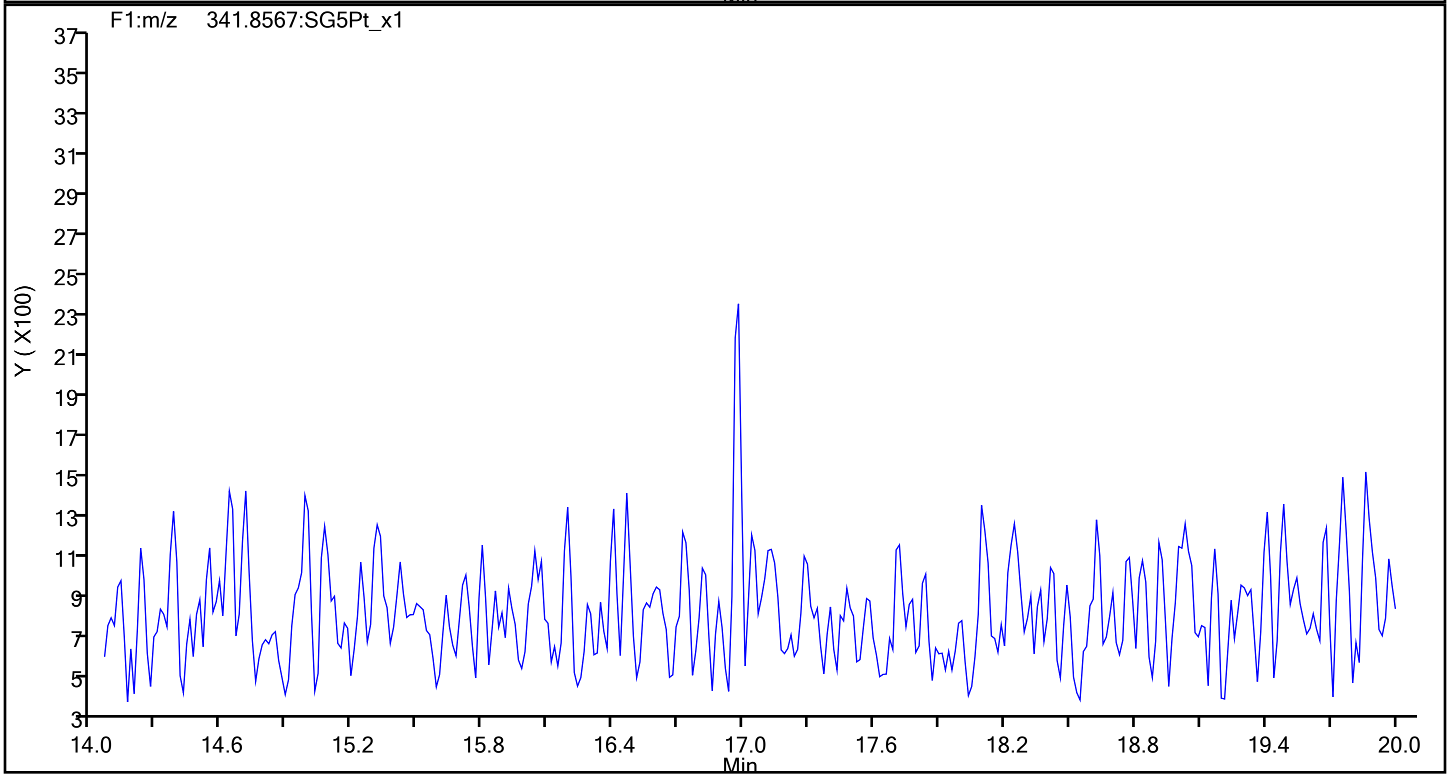

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d		
Injection Date:	17-Mar-2021 02:40:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

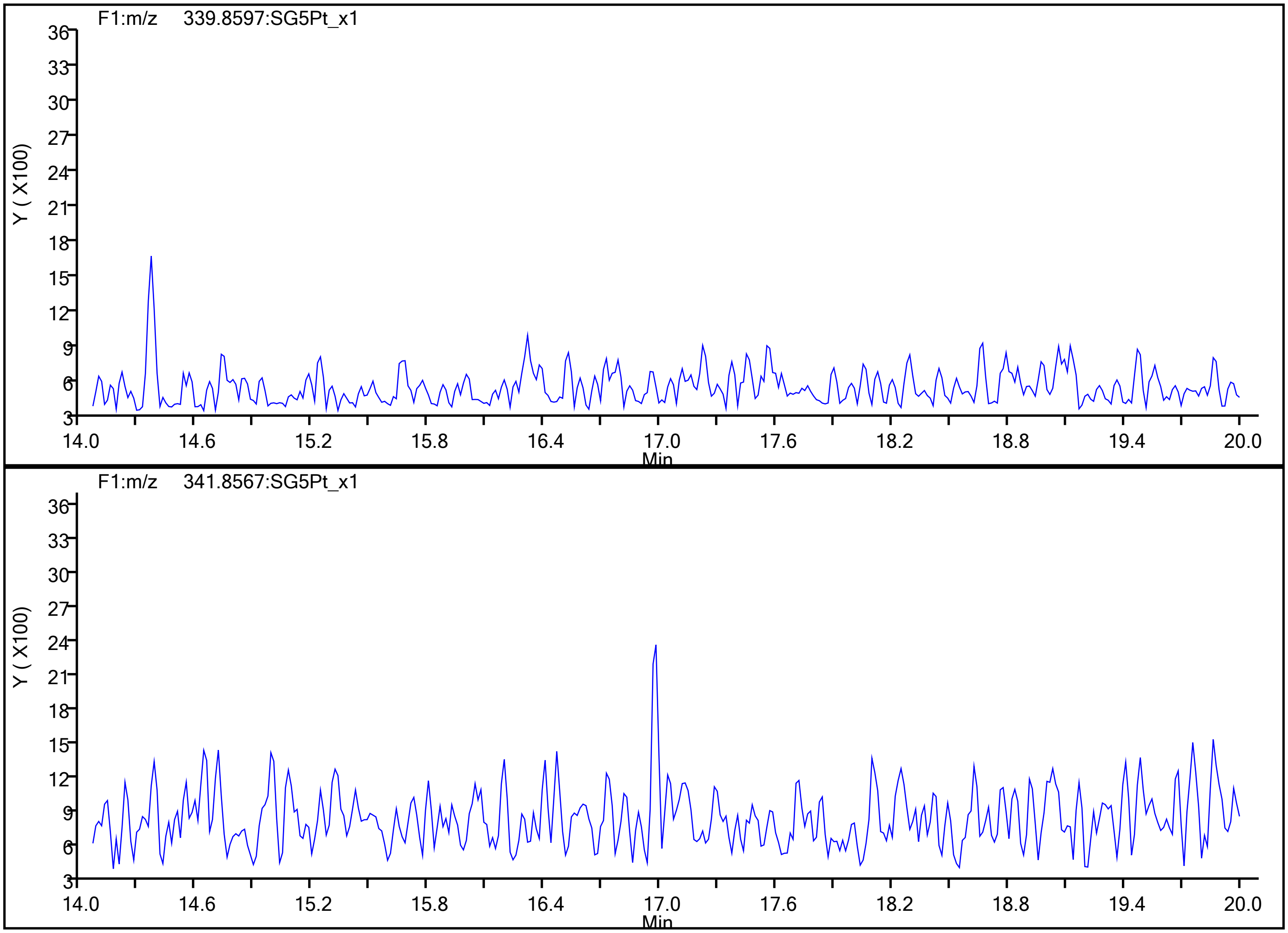

F1 PeCDFs Interference Mass

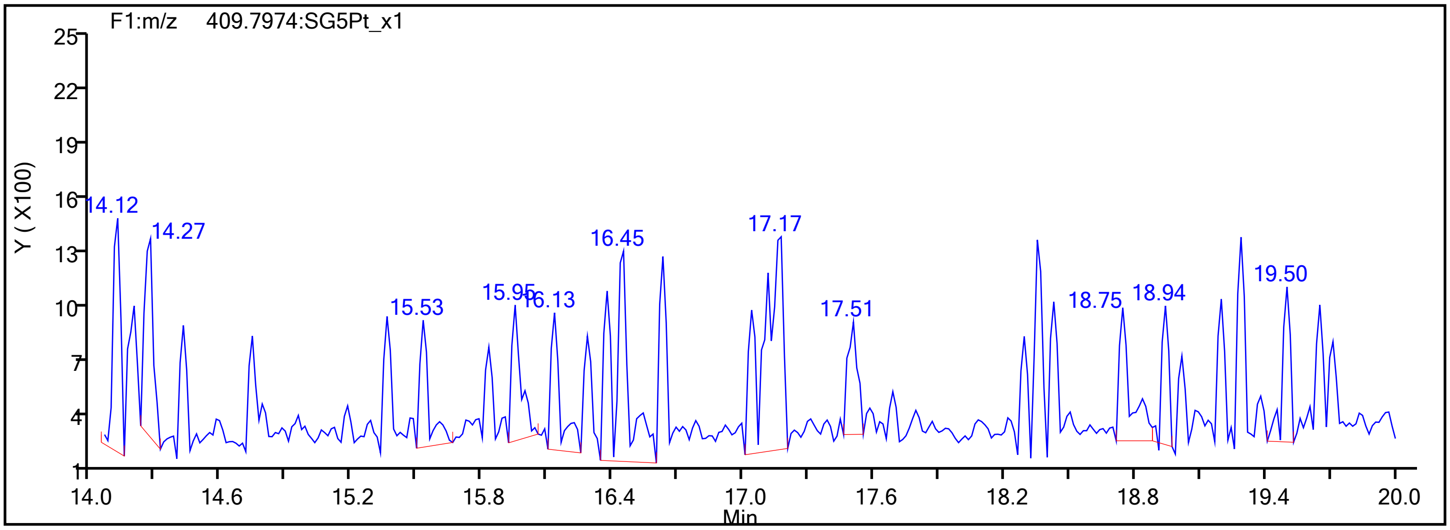

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d
Injection Date: 17-Mar-2021 02:40:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

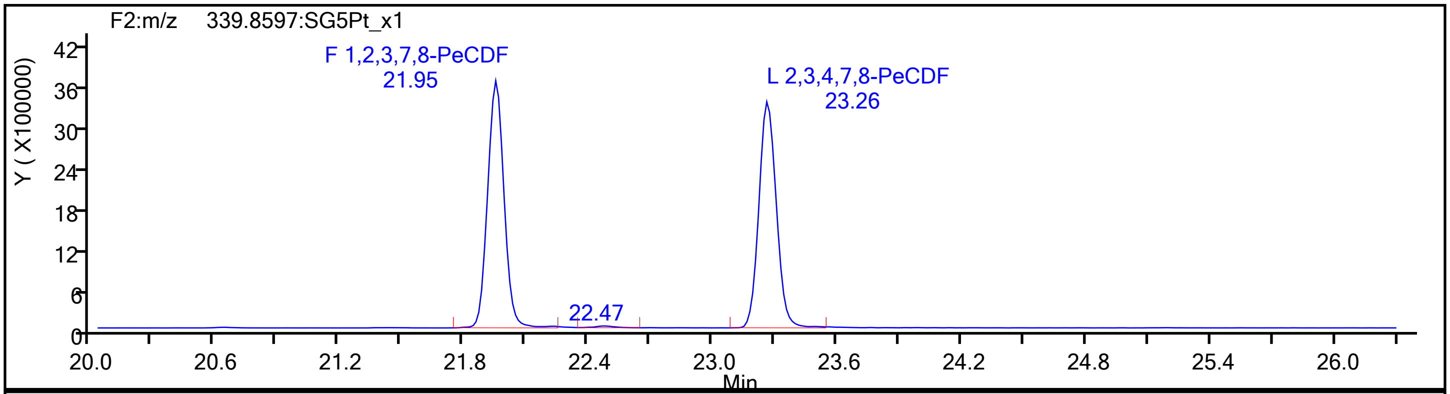

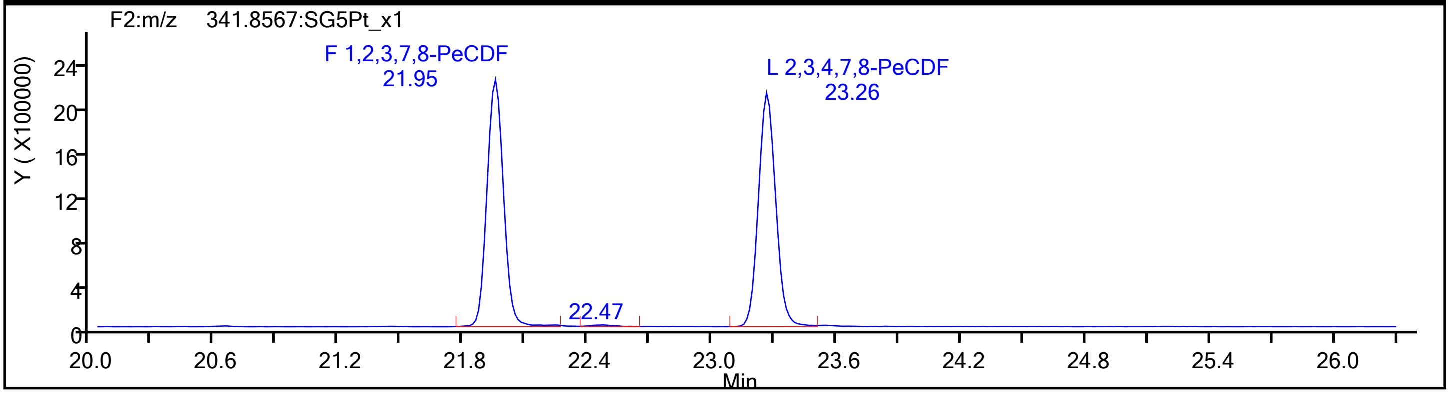

PeCDF Standards

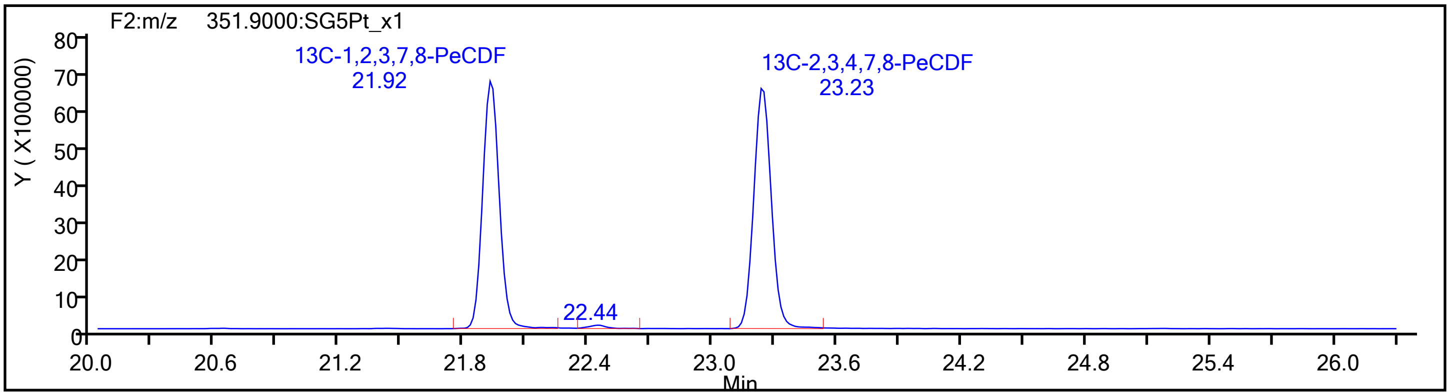

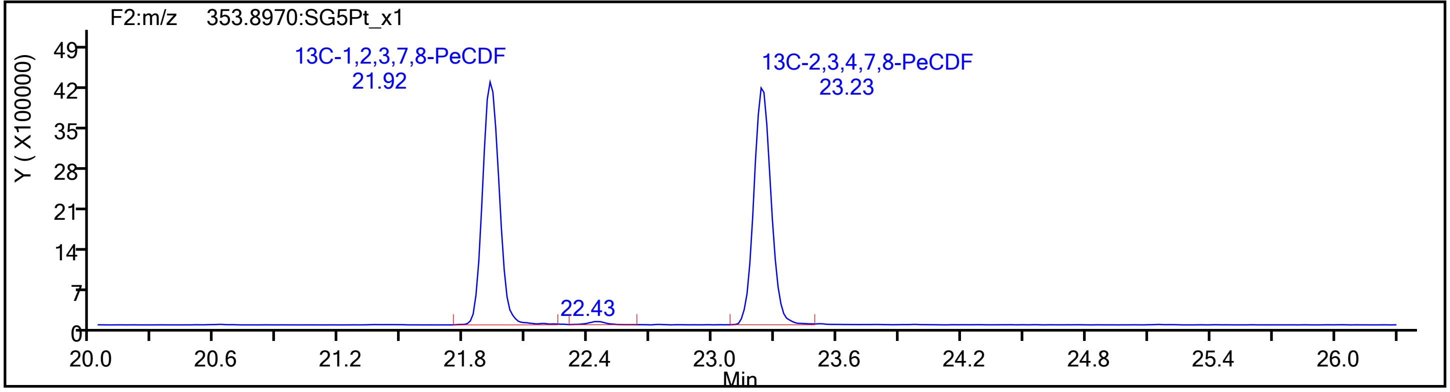

Report Date: 17-Mar-2021 13:36:08
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d
Injection Date: 17-Mar-2021 02:40:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

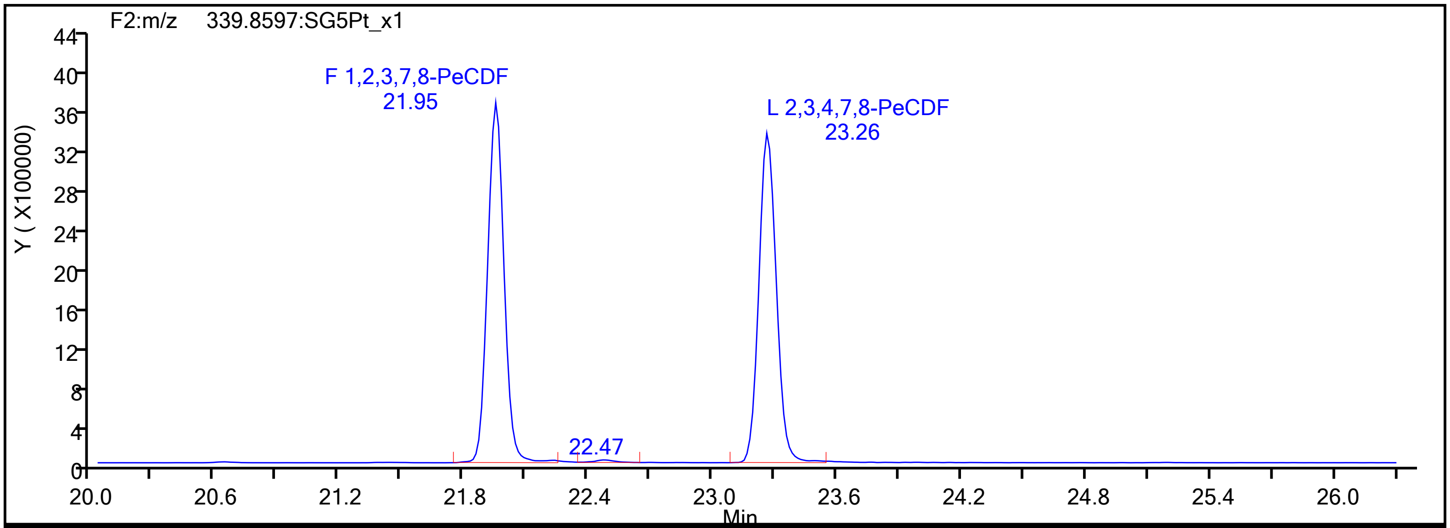

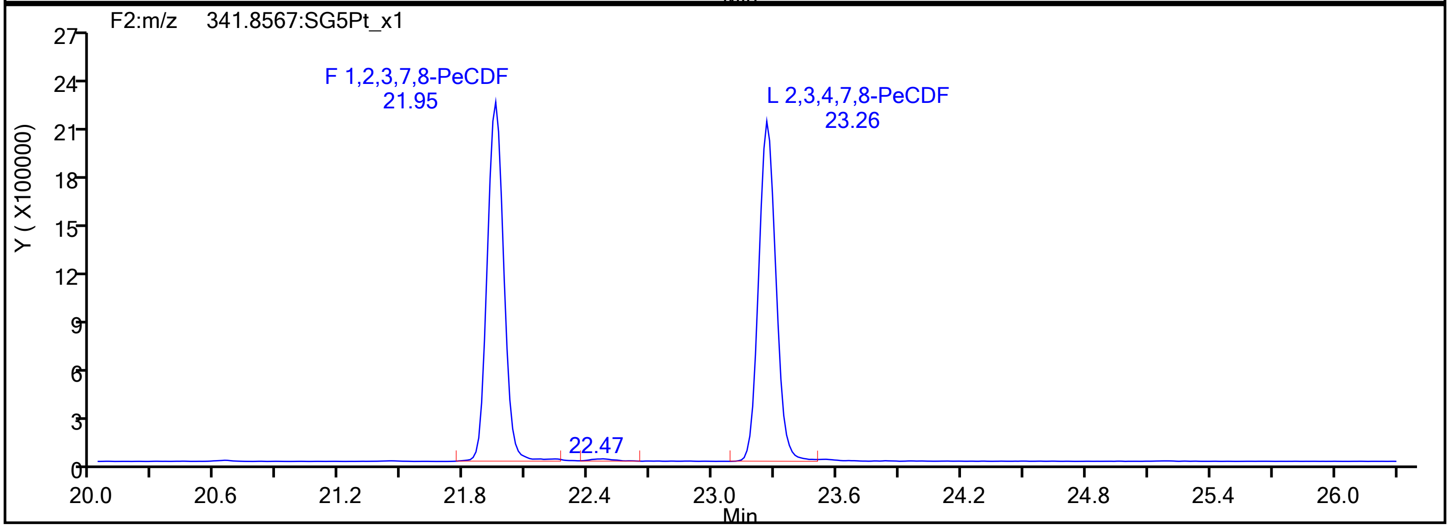

PeCDF Interference Mass

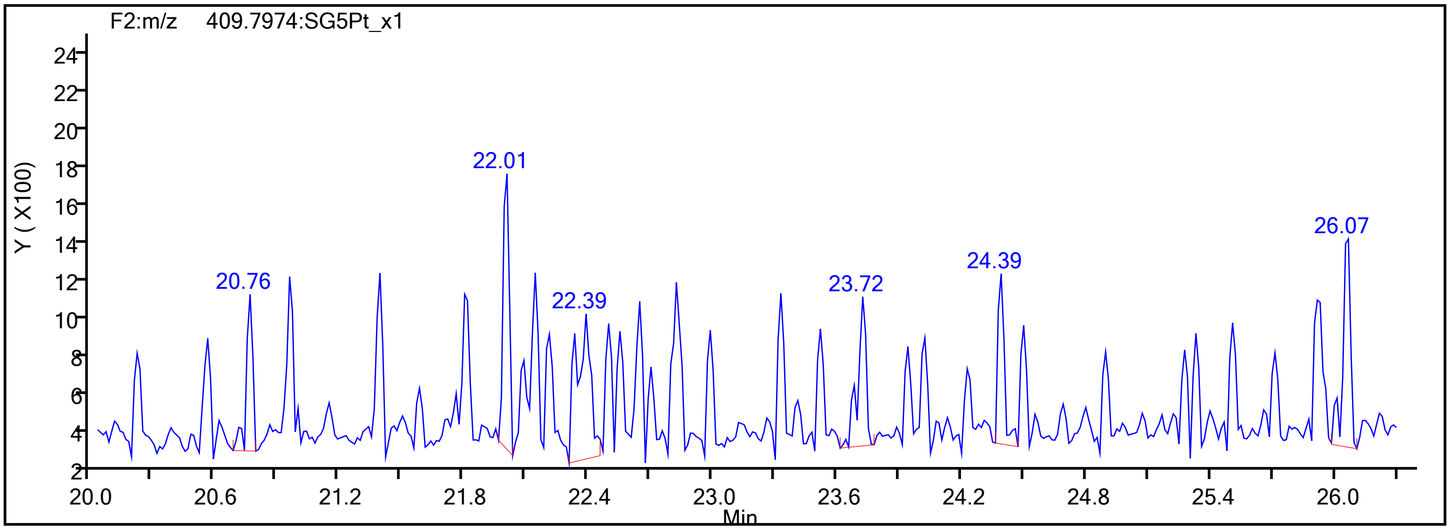

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_5.d
Injection Date: 17-Mar-2021 02:40:35
Injection Vol: 2.0 ul
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Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

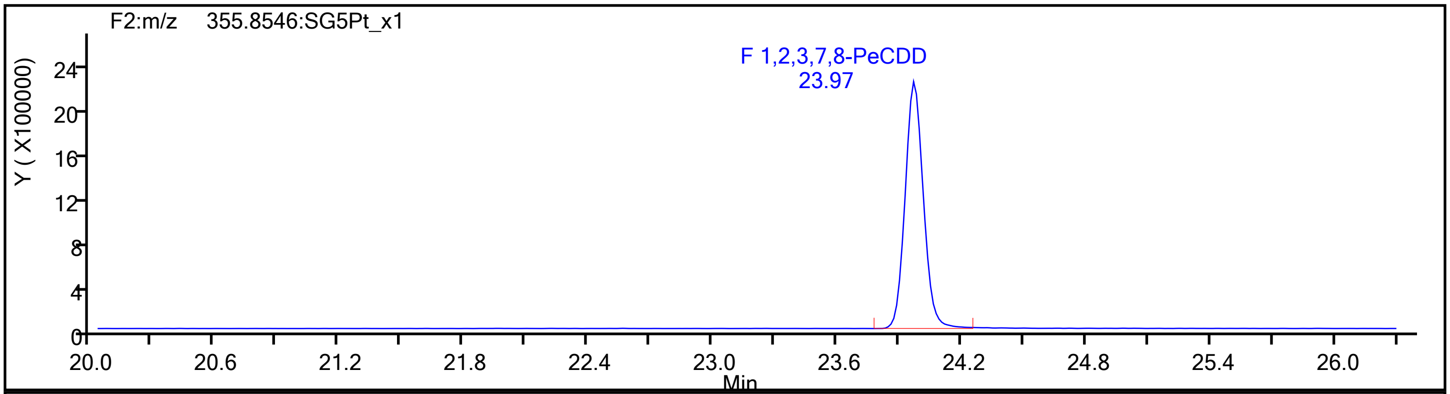

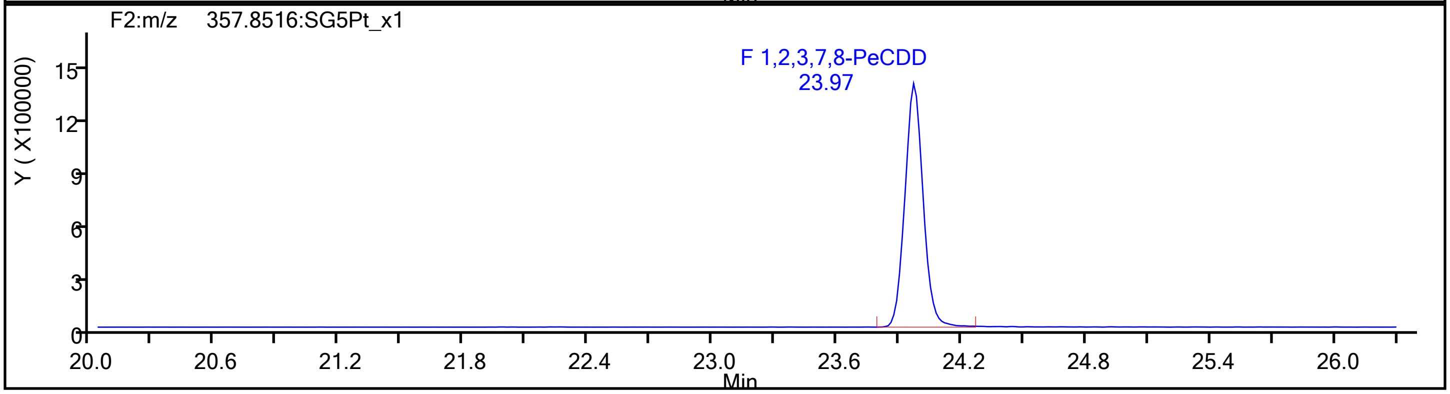

PeCDD Standards

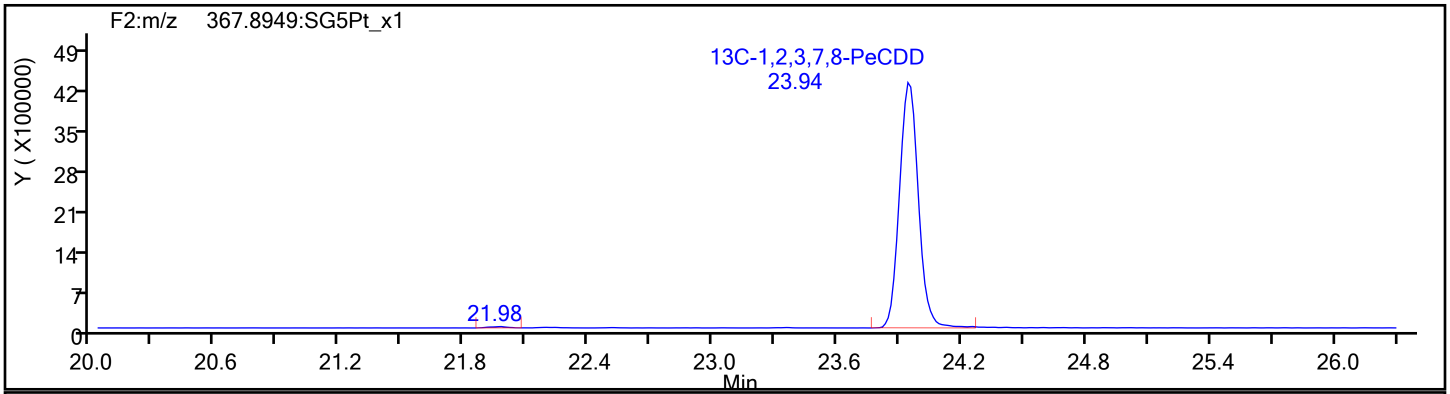

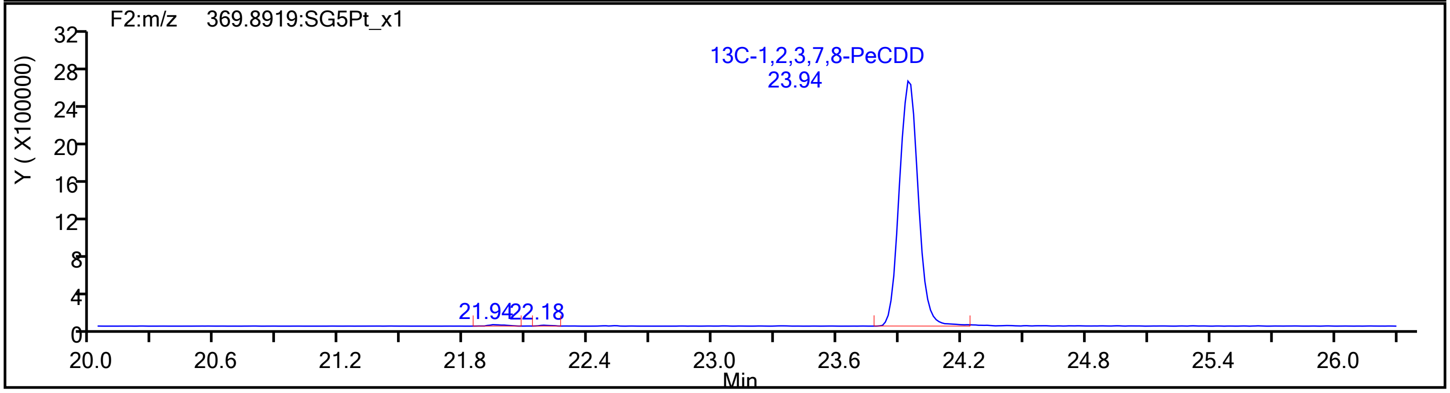

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

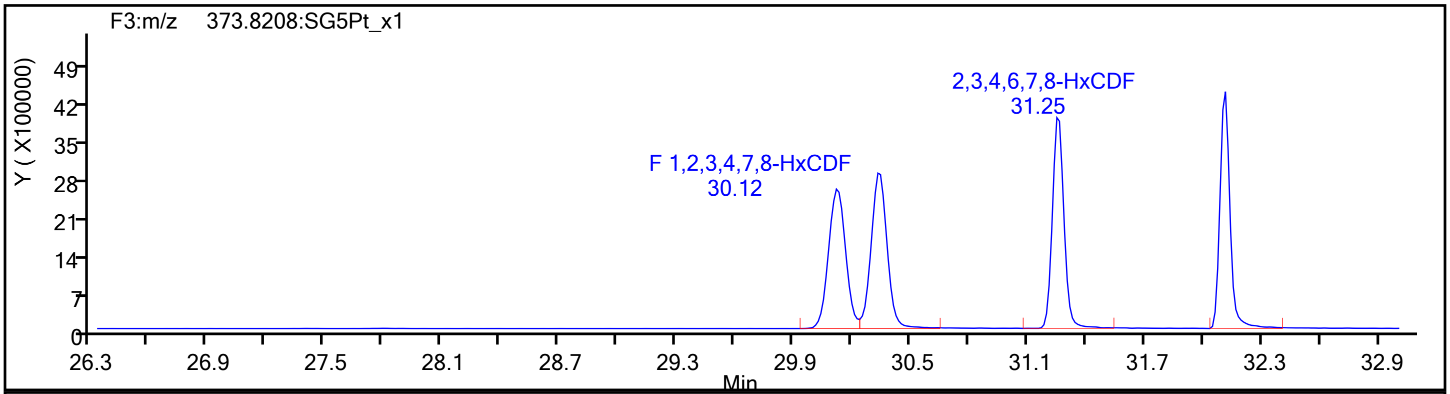

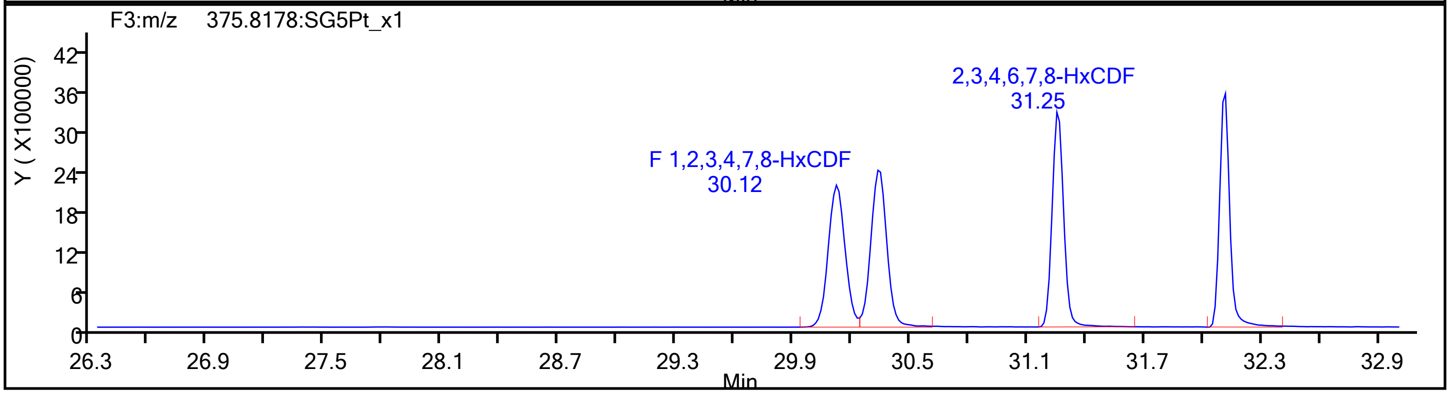

HxCDF Standards

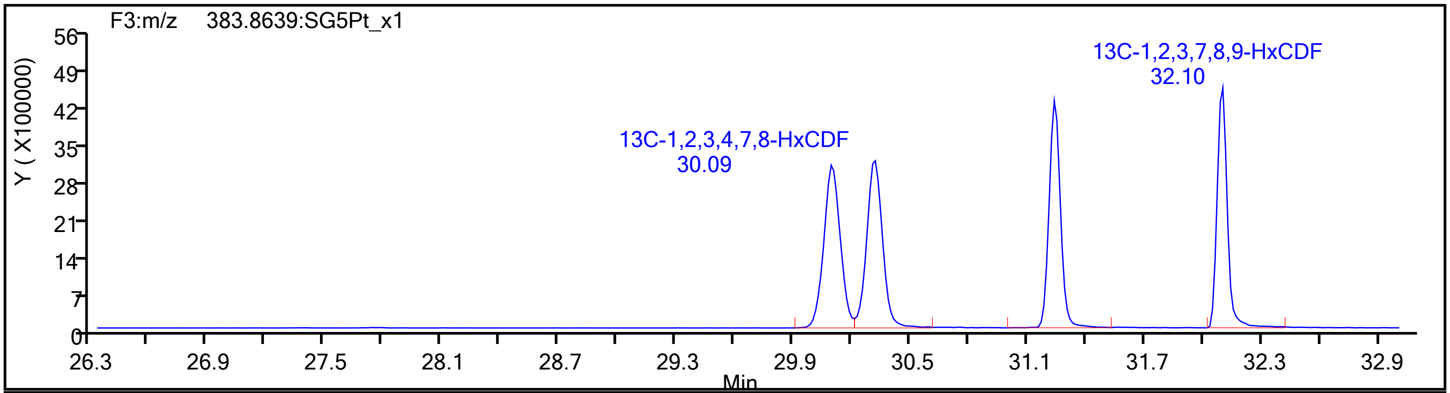

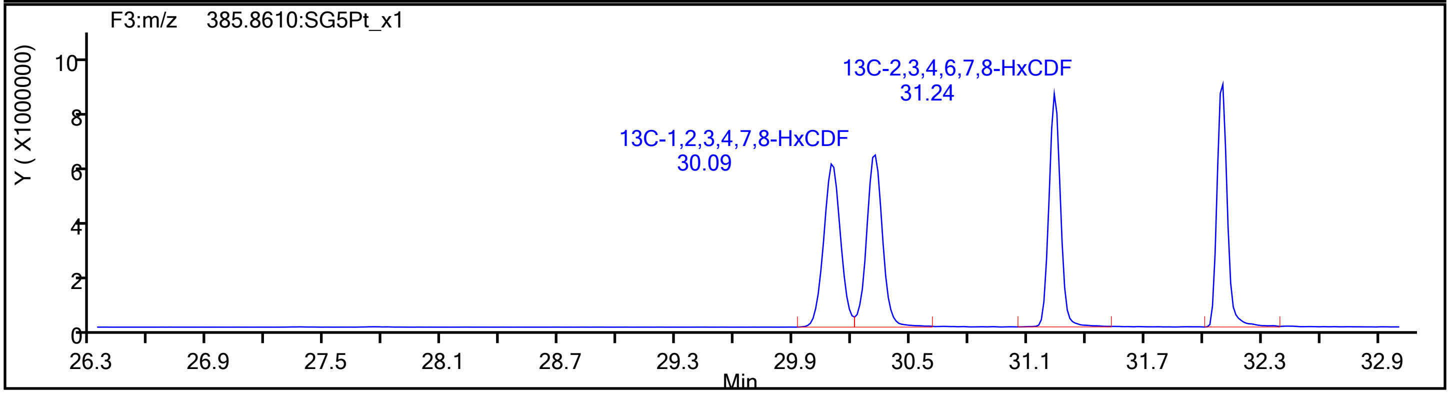

Report Date: 17-Mar-2021 13:36:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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HxCDF

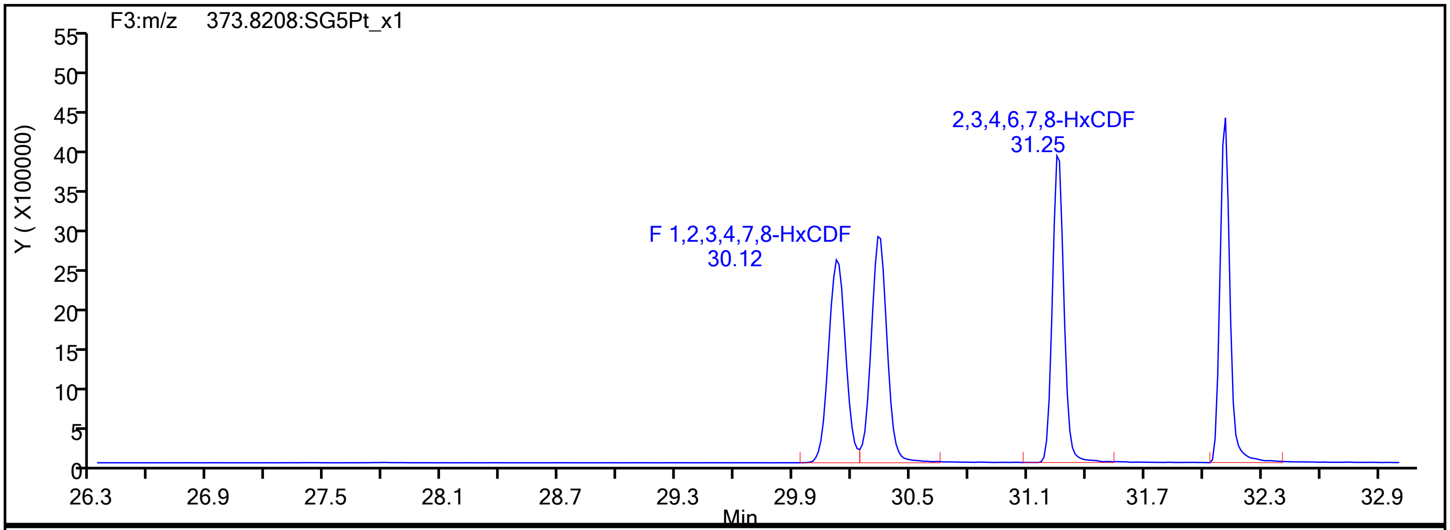

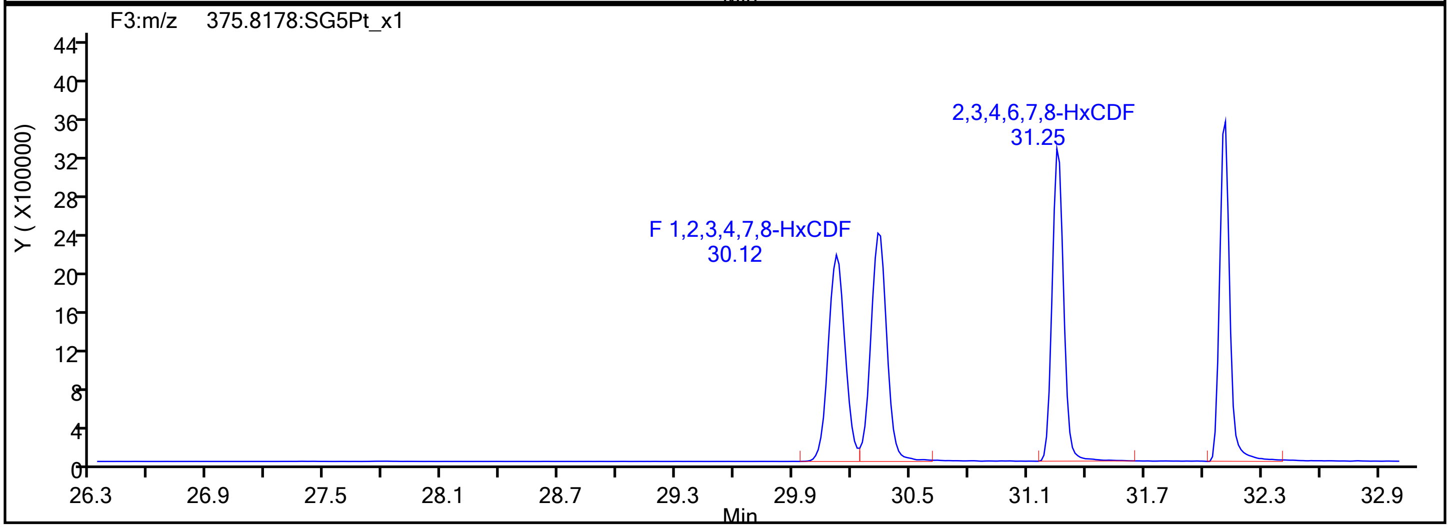

HxCDF Interference Mass

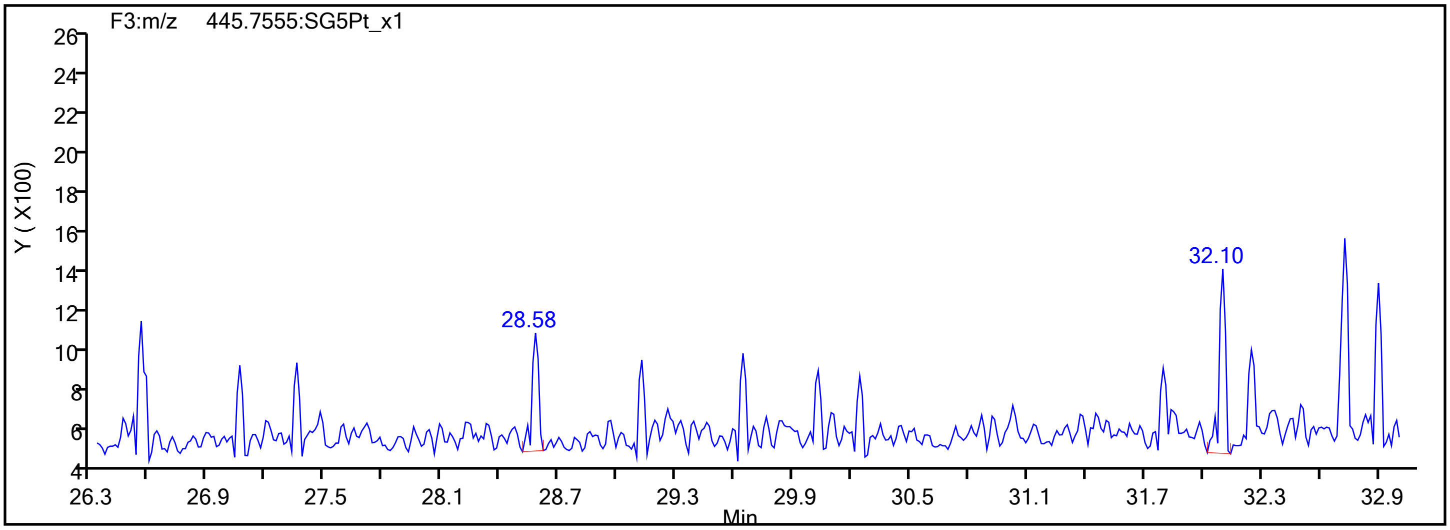

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

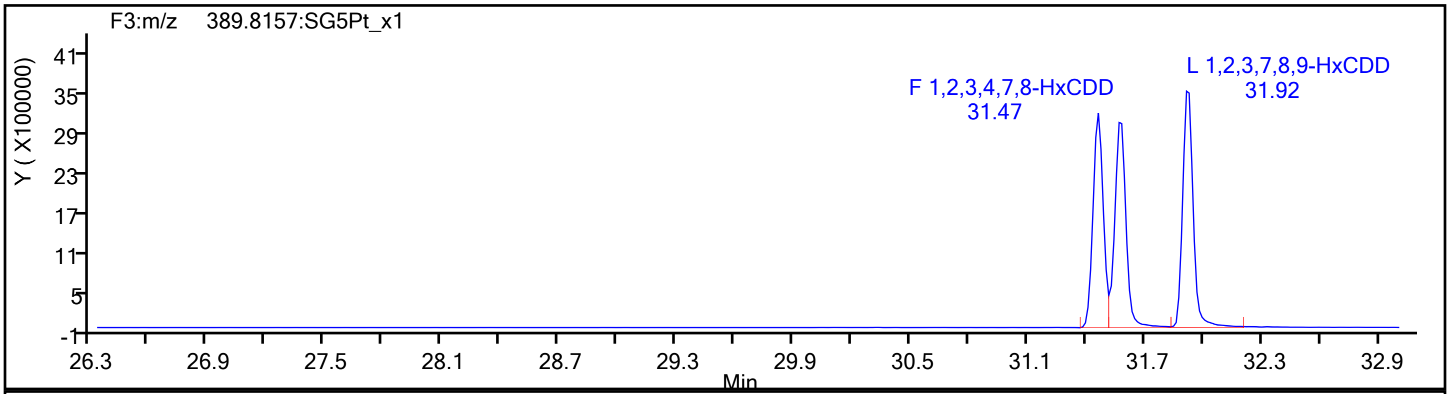

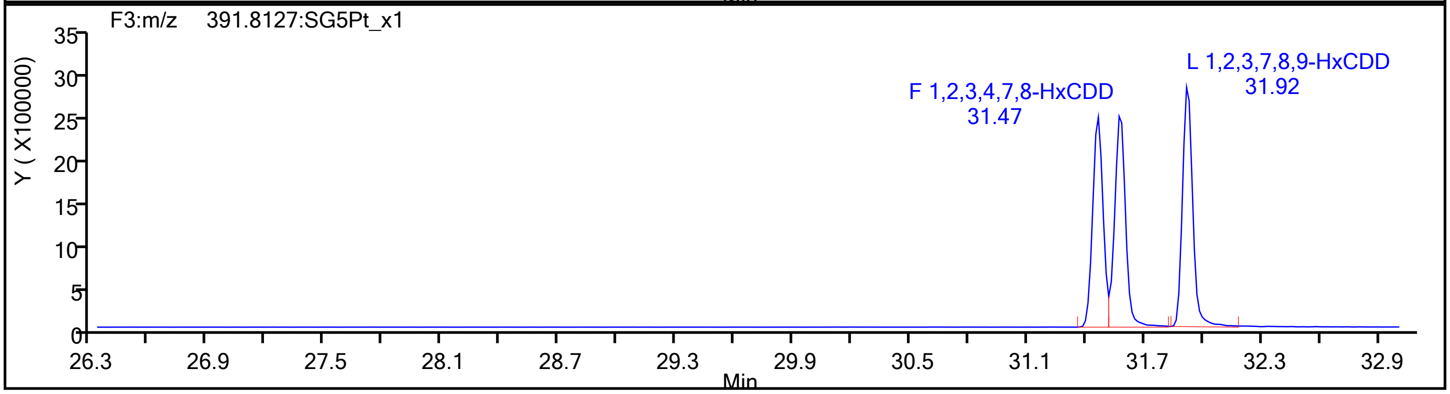

HxCDD Standards

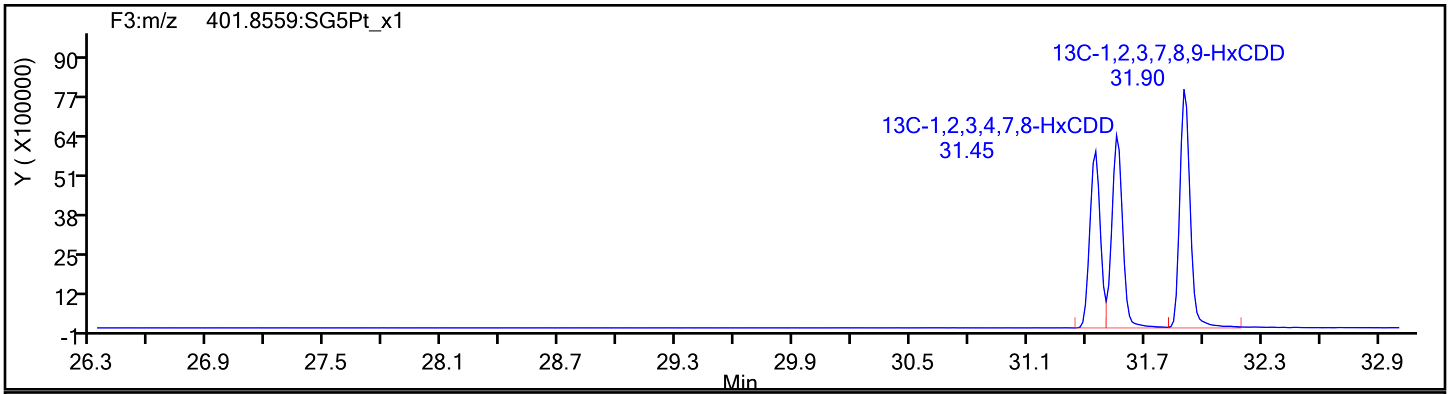

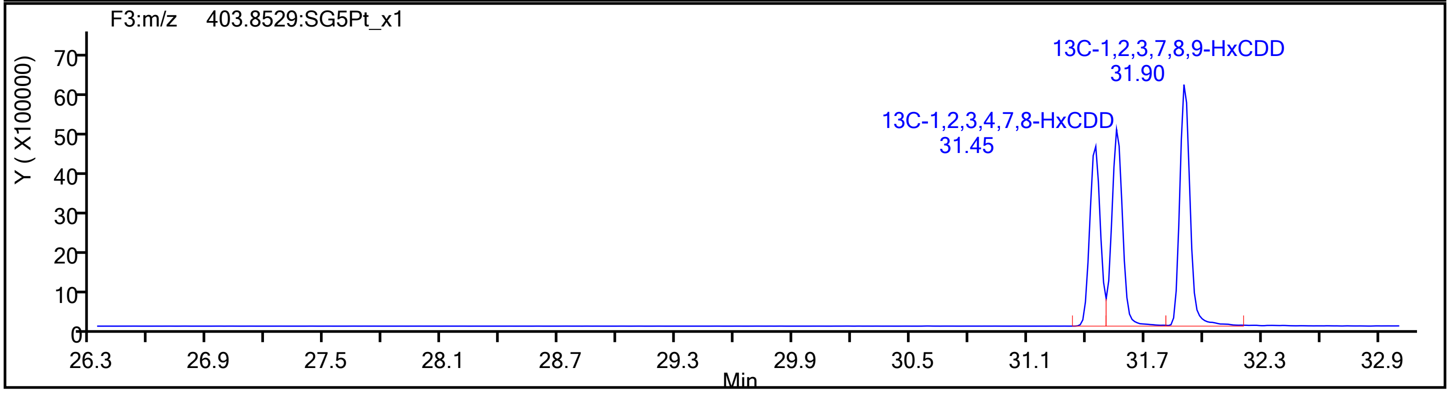

Report Date: 17-Mar-2021 13:36:09 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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HpCDF

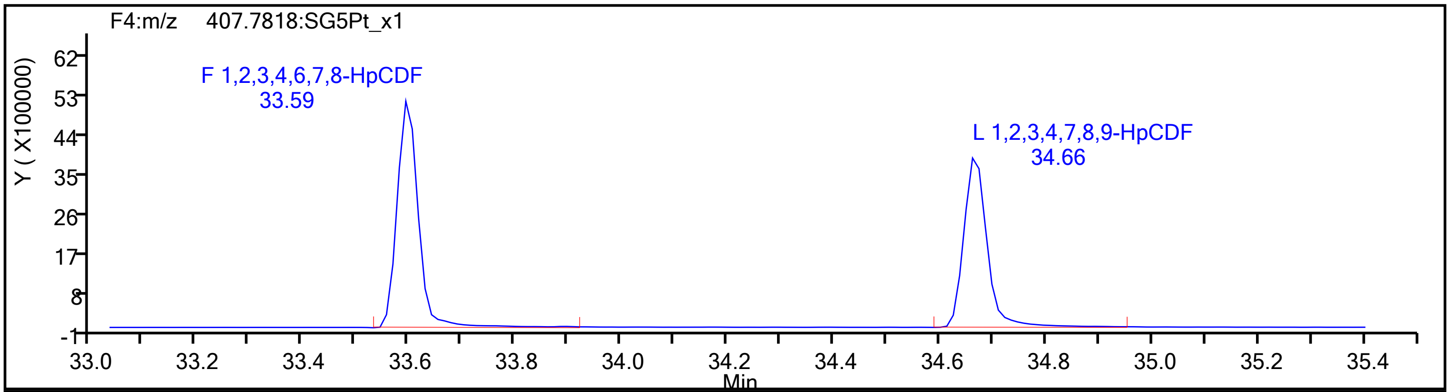

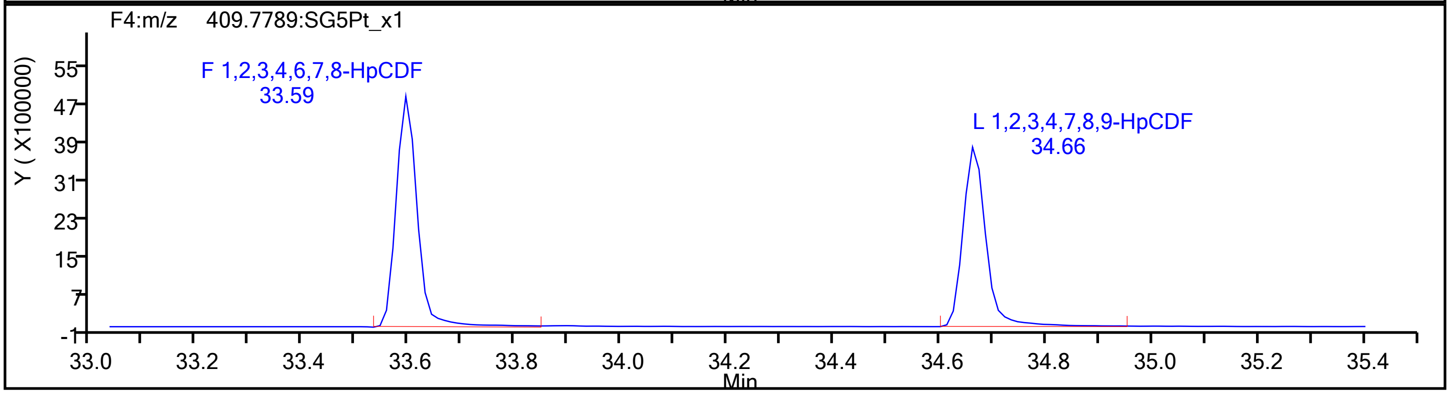

HpCDF Standards

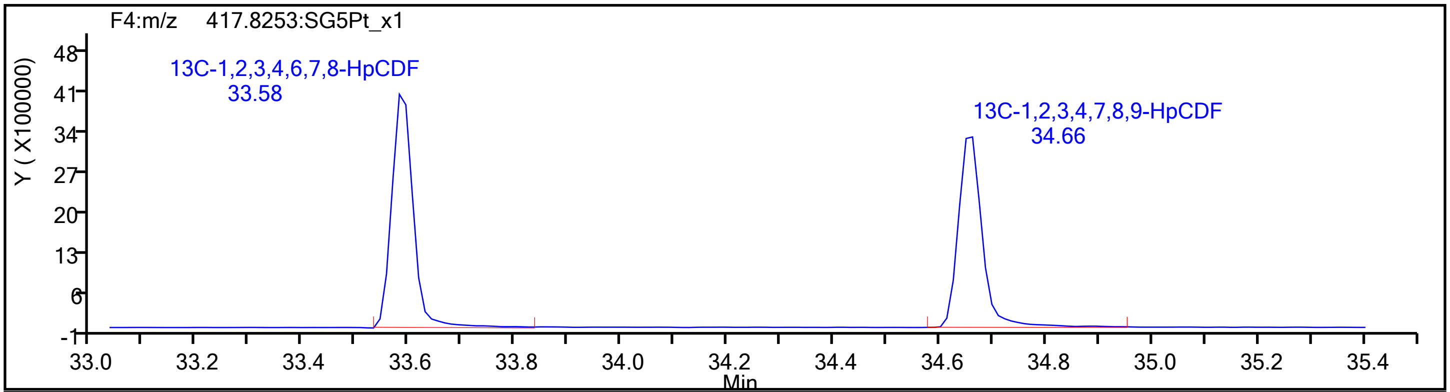

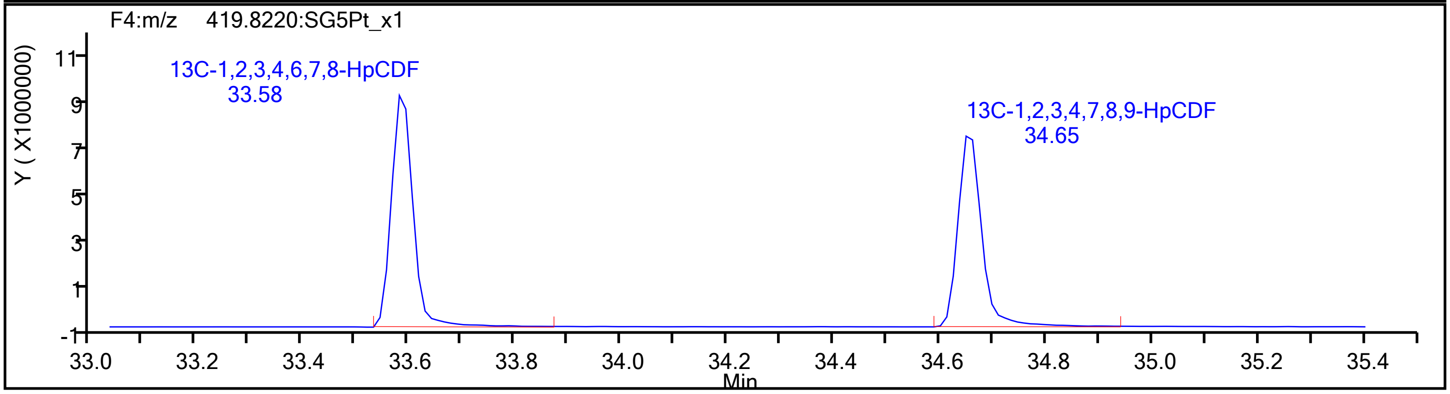

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Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

HpCDF

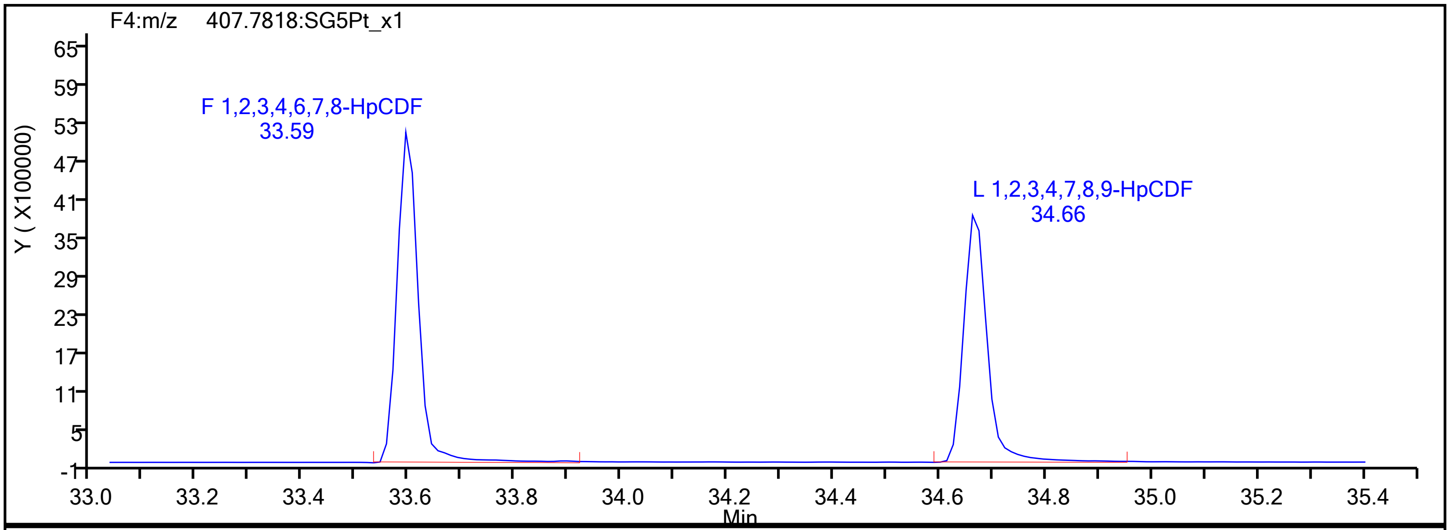

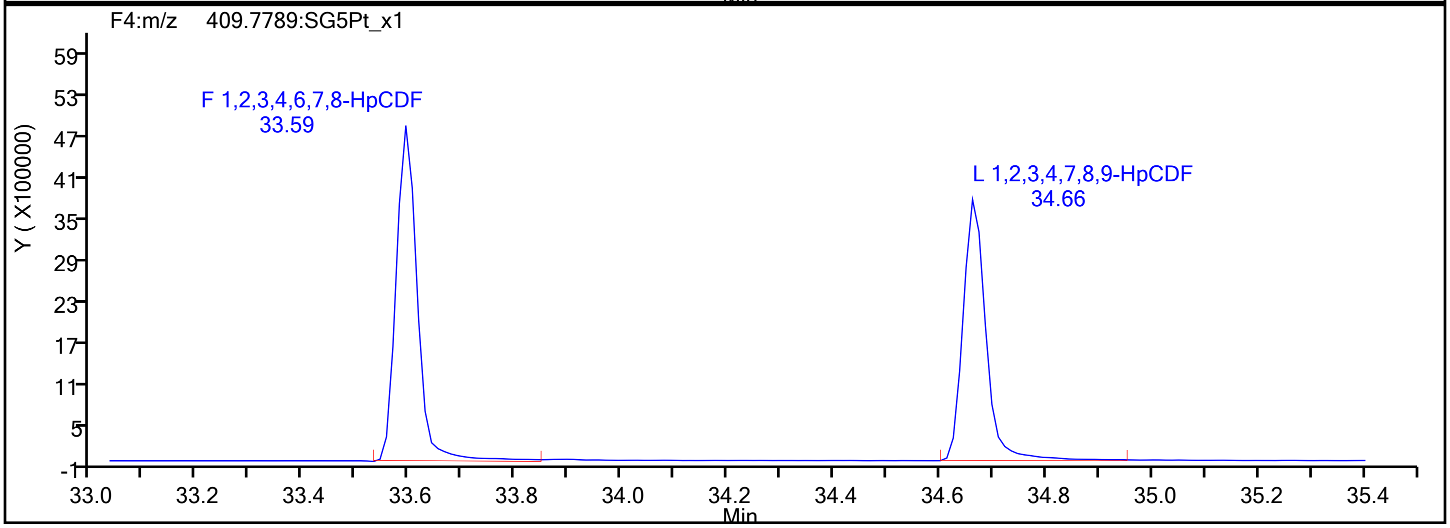

HpCDF Interference Mass

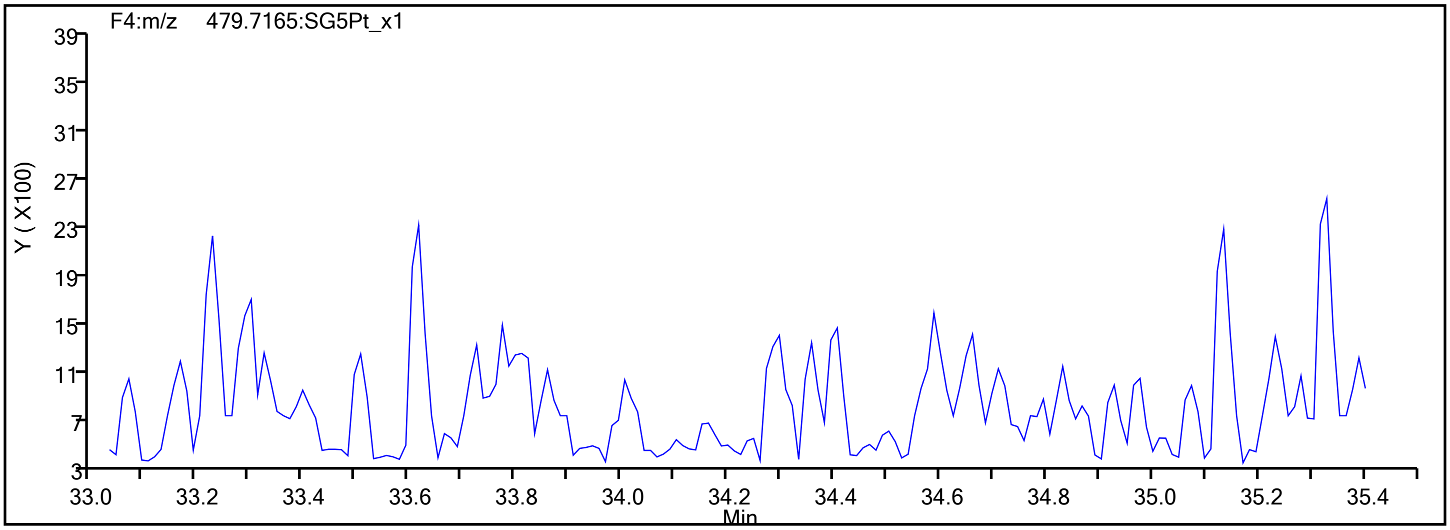

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Eurofins TestAmerica, Sacramento

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HpCDD

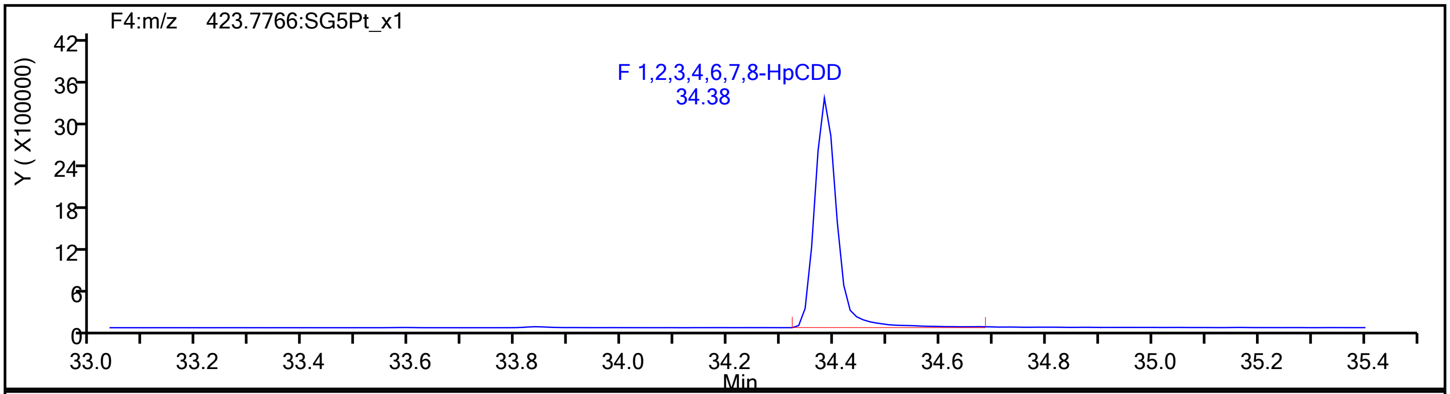

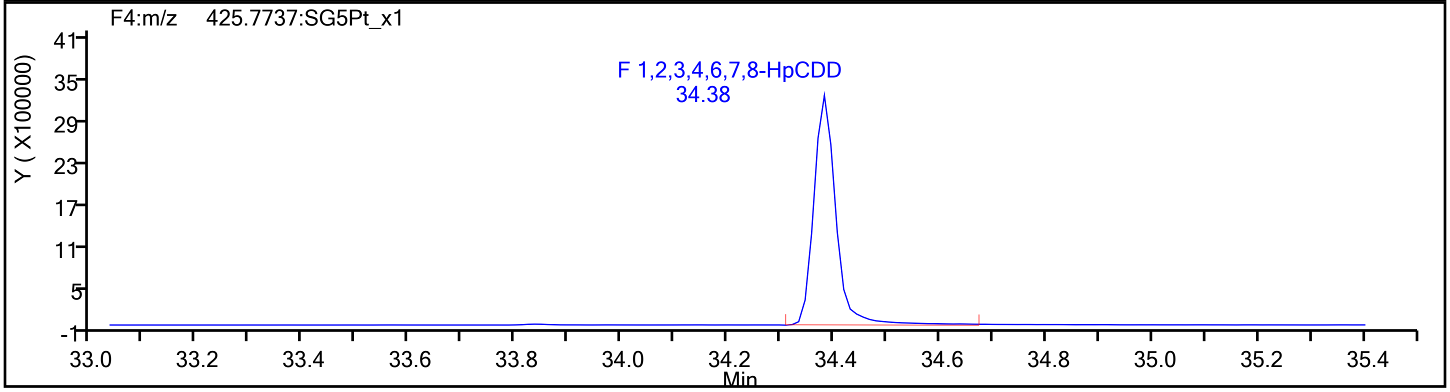

HpCDD Standards

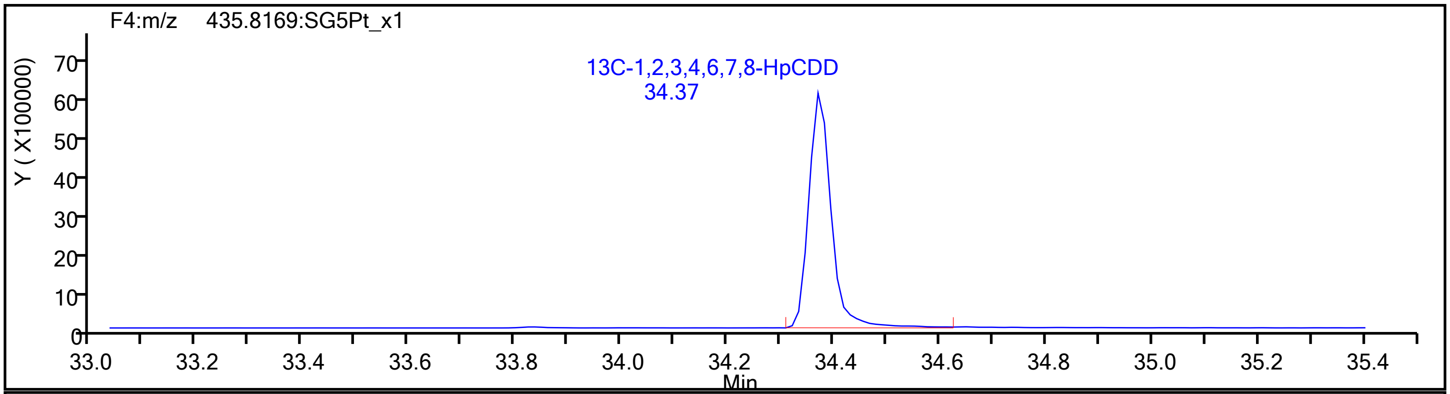

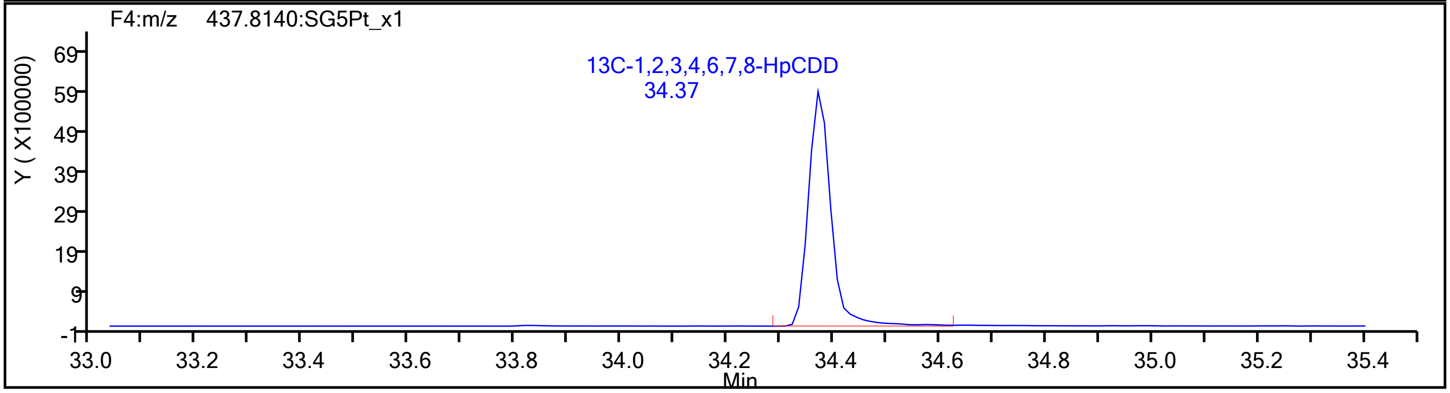

Report Date: 17-Mar-2021 13:36:09   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

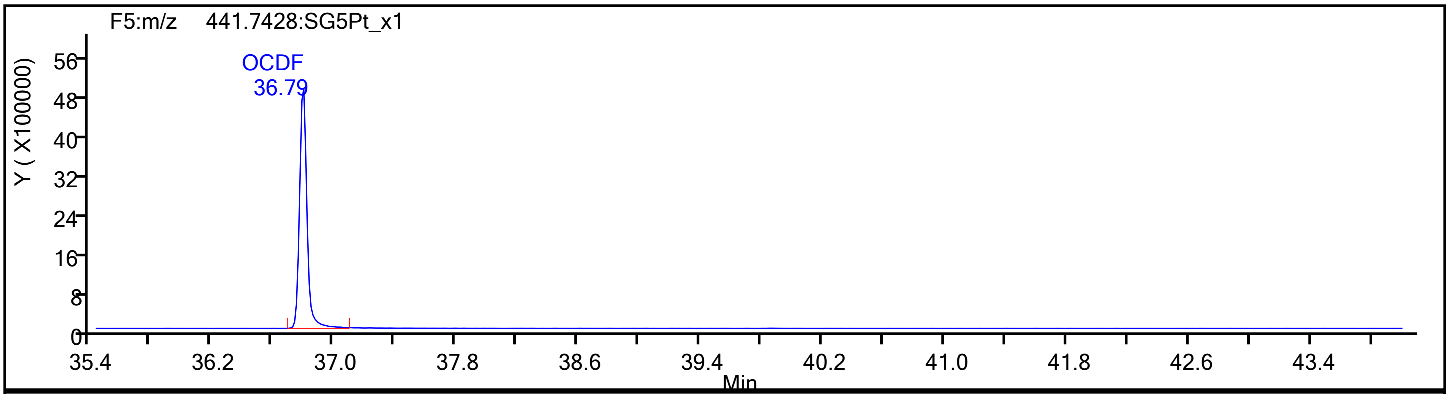

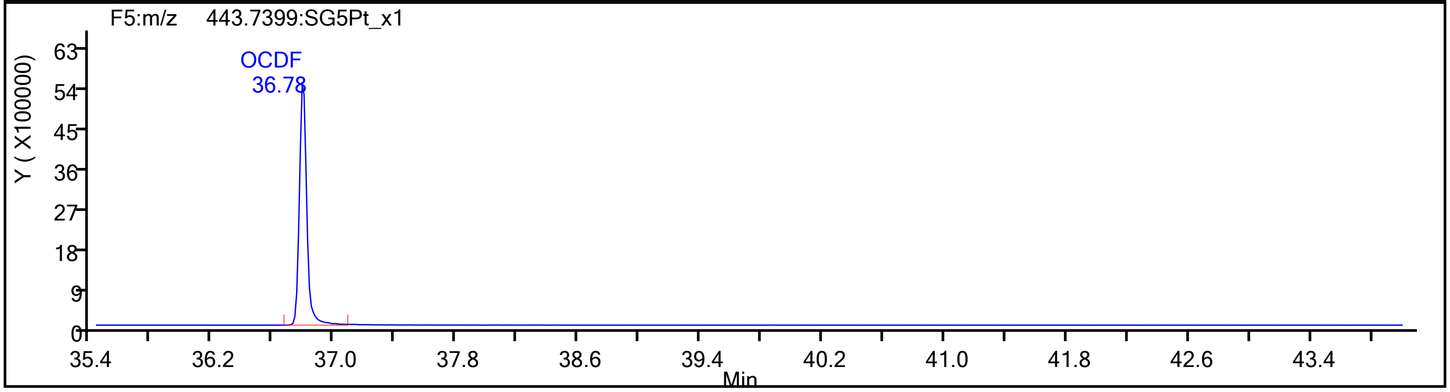

OCDF Standards

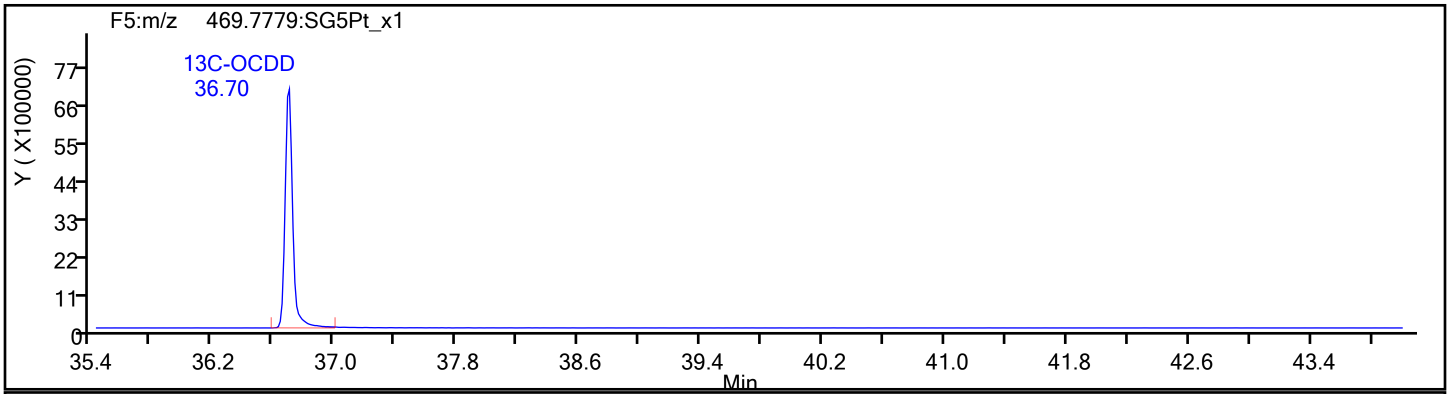

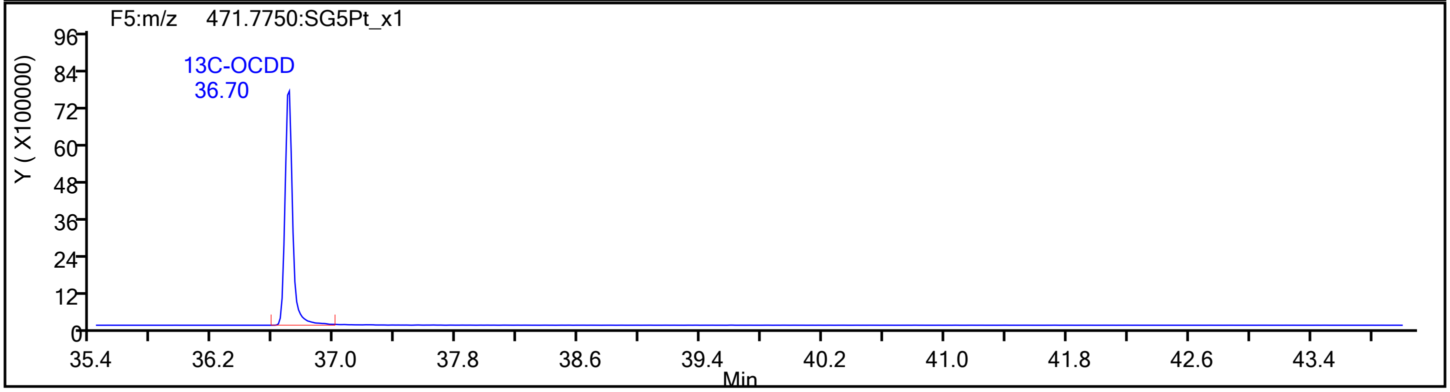

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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OCDF

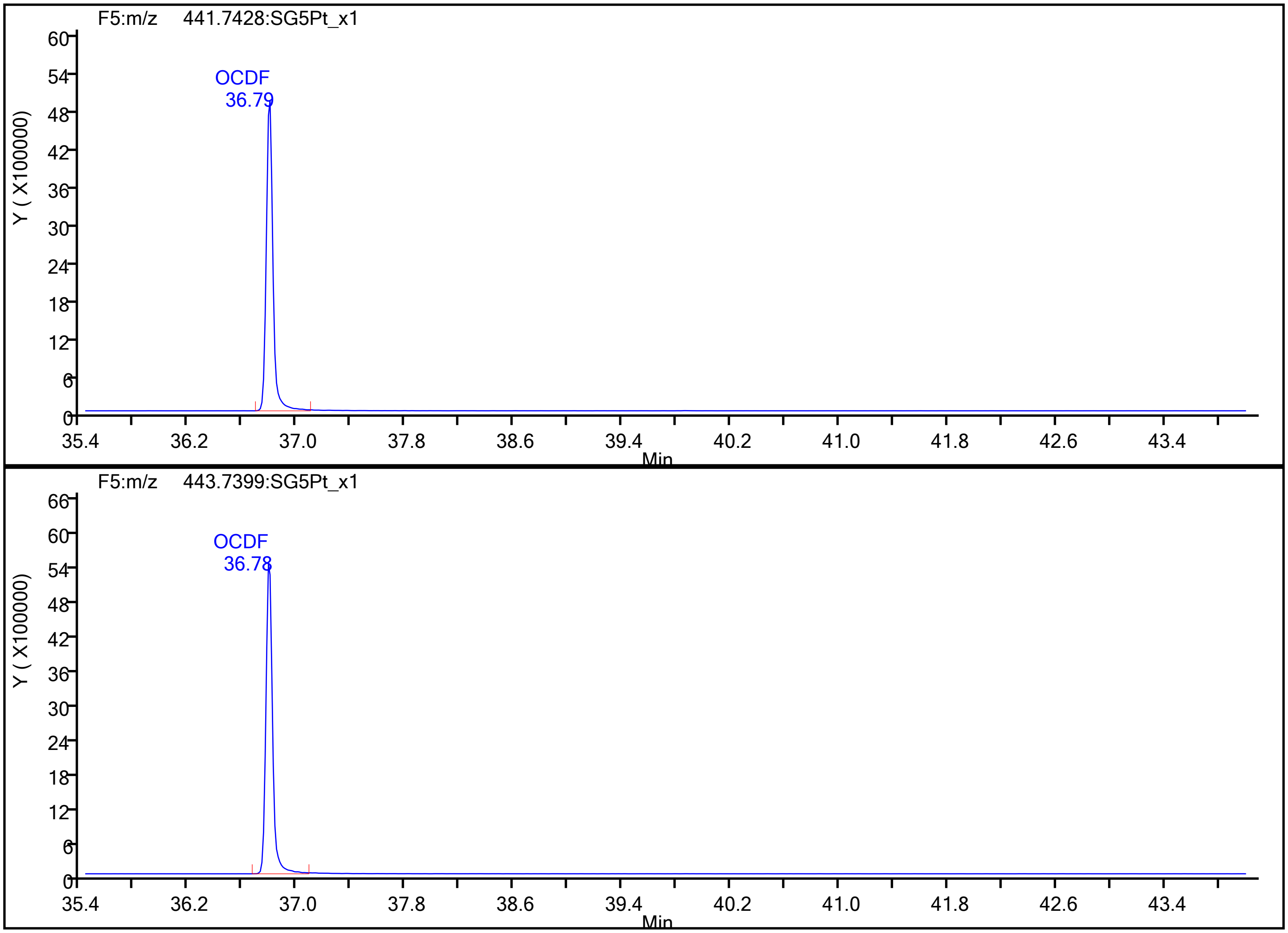

OCDF Interference Mass

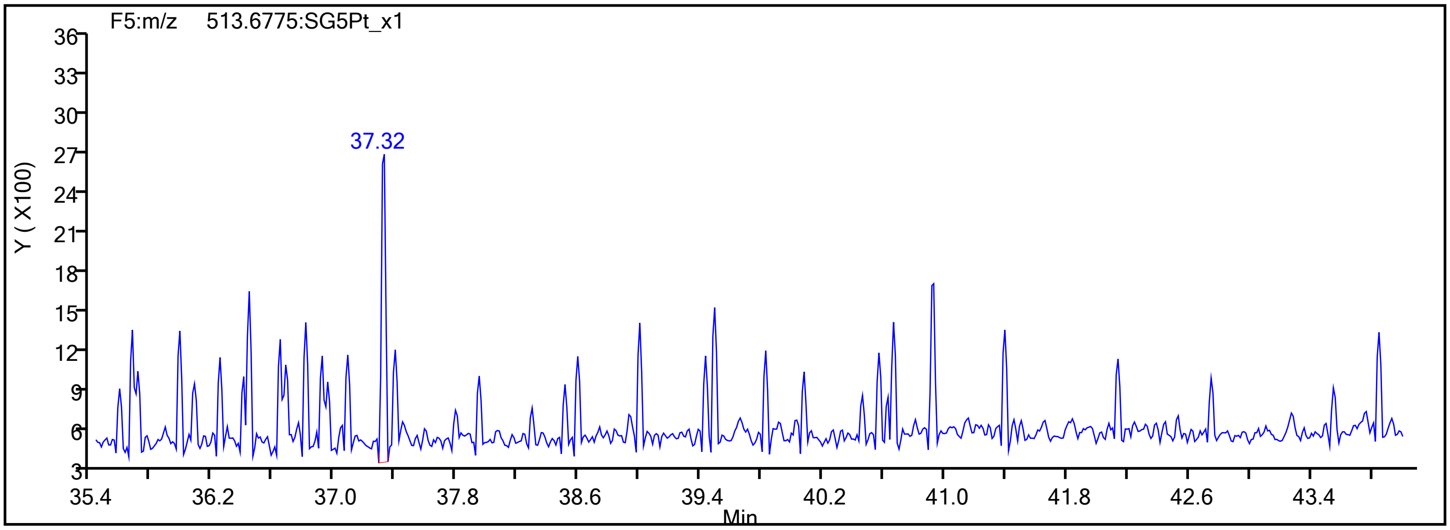

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 02:40:35

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

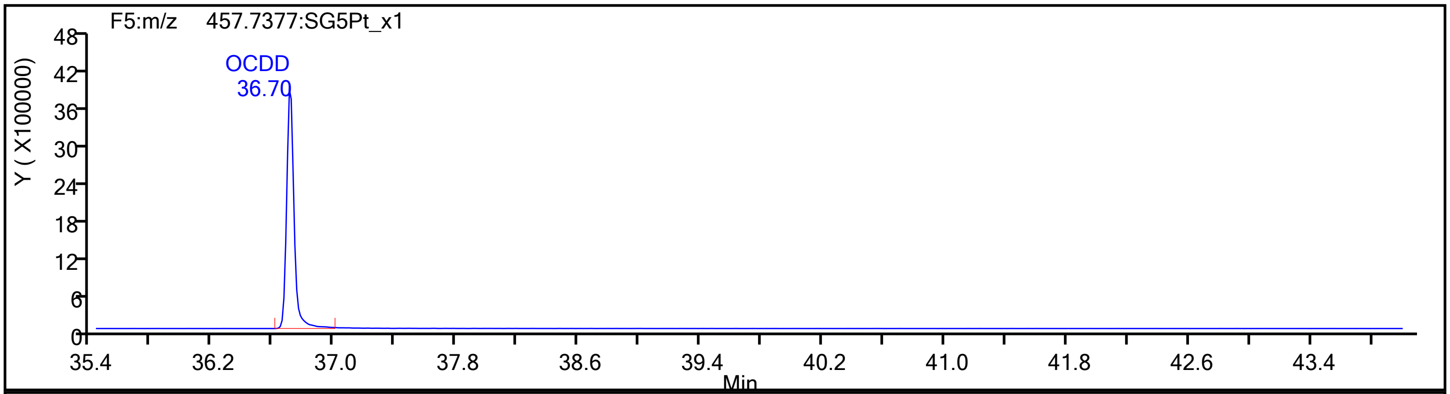

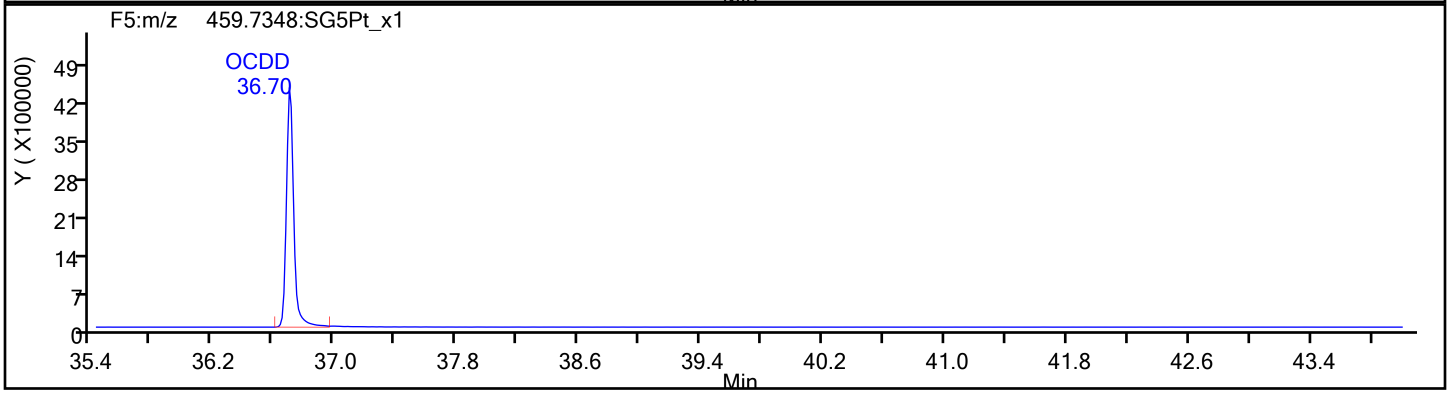

OCDD Standards

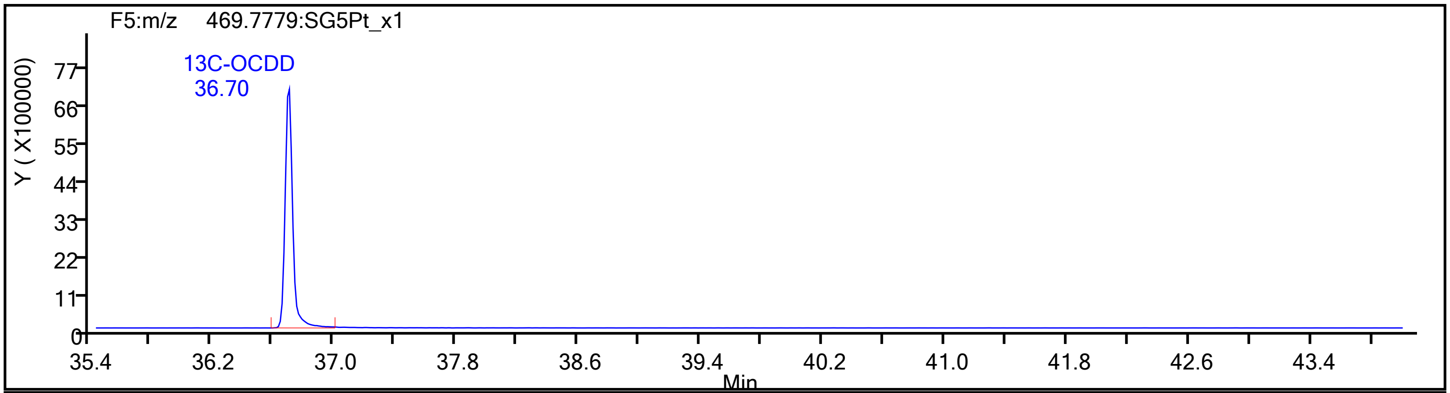

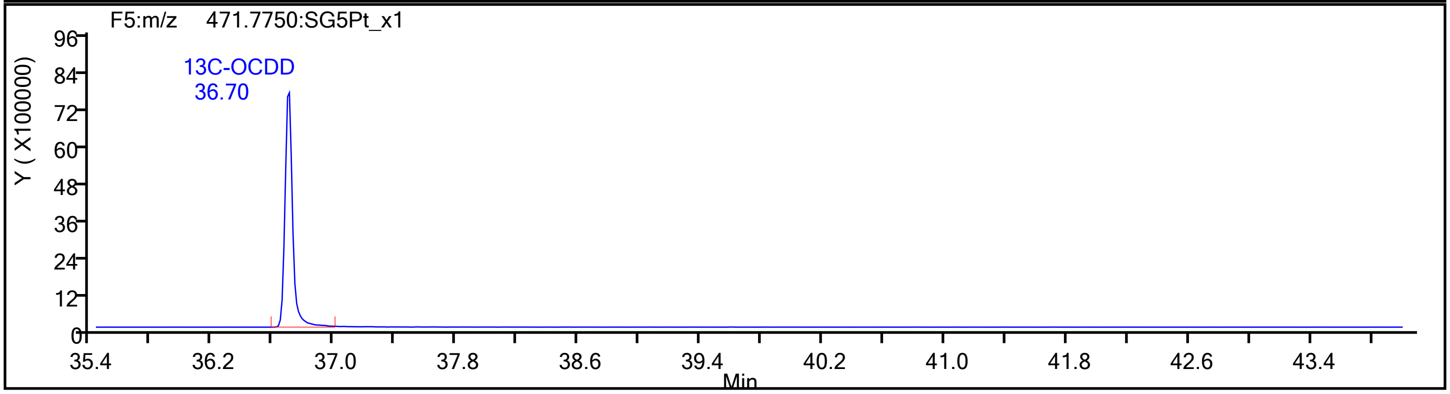

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Eurofins TestAmerica, Sacramento

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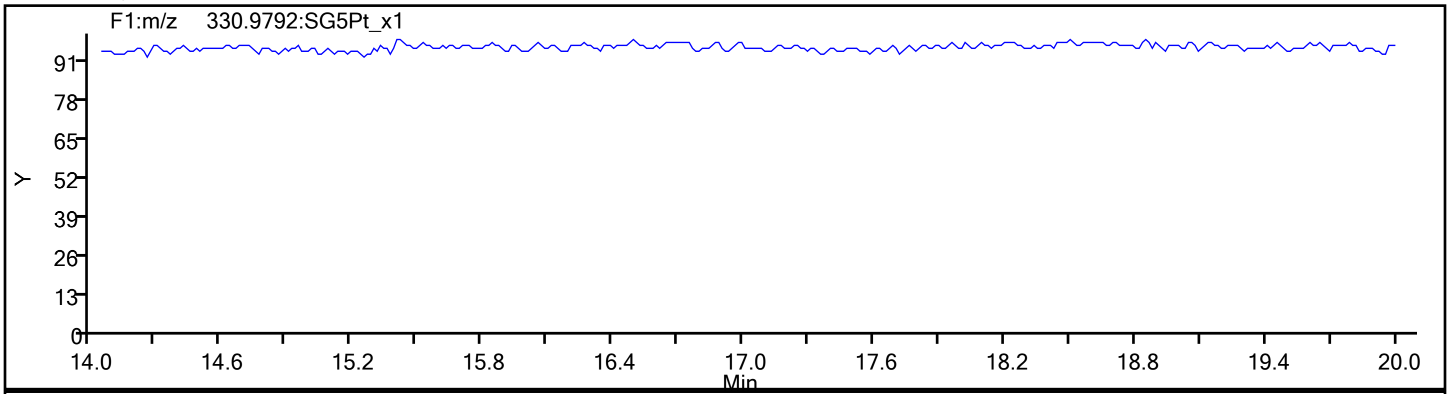

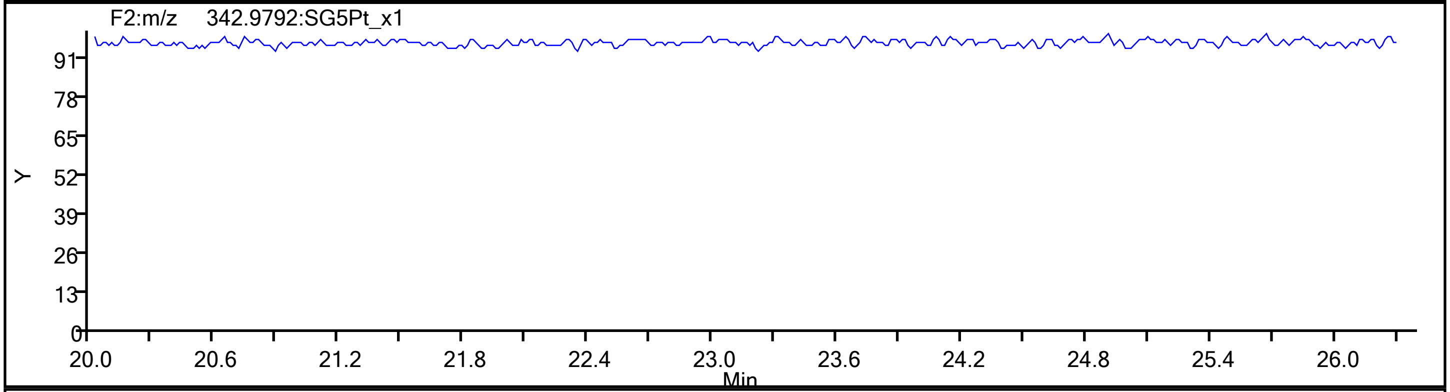

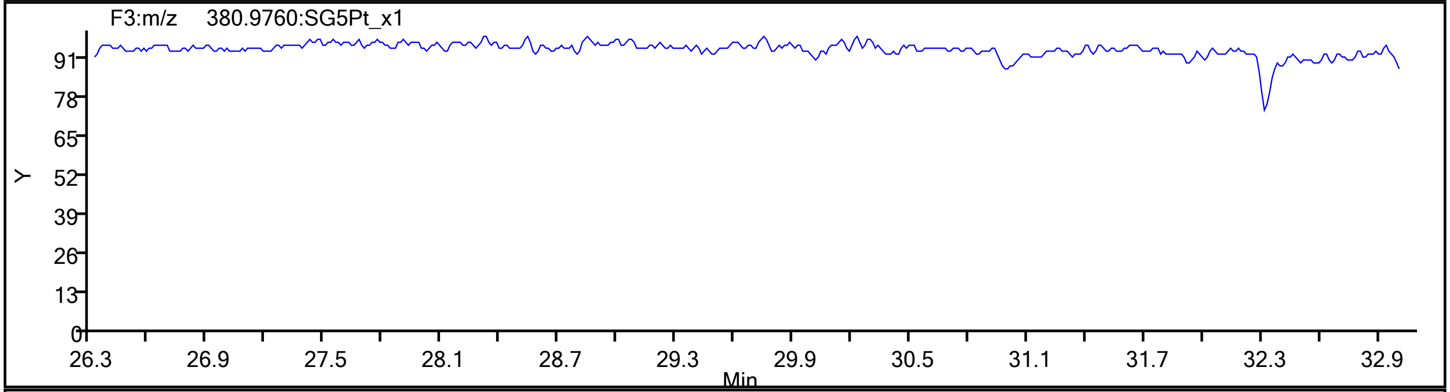

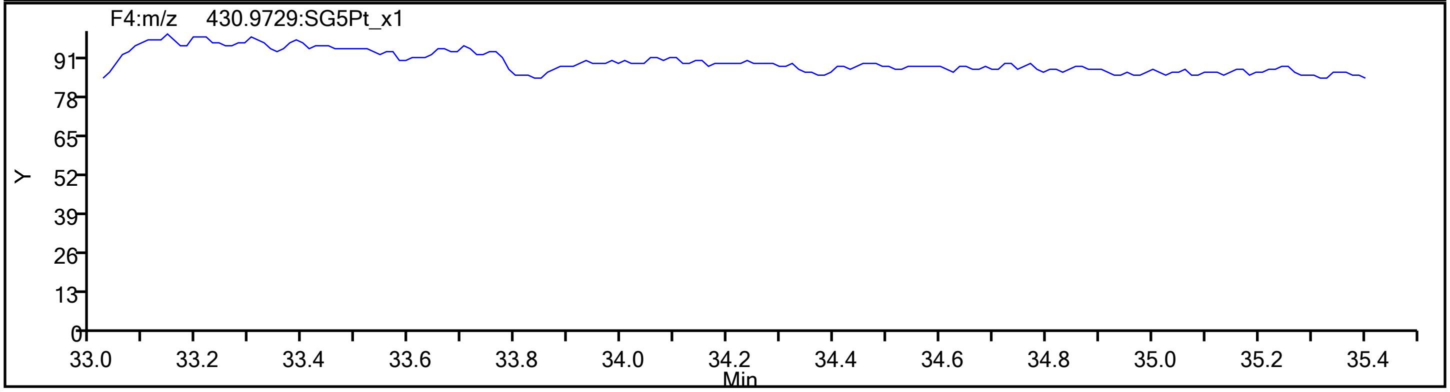

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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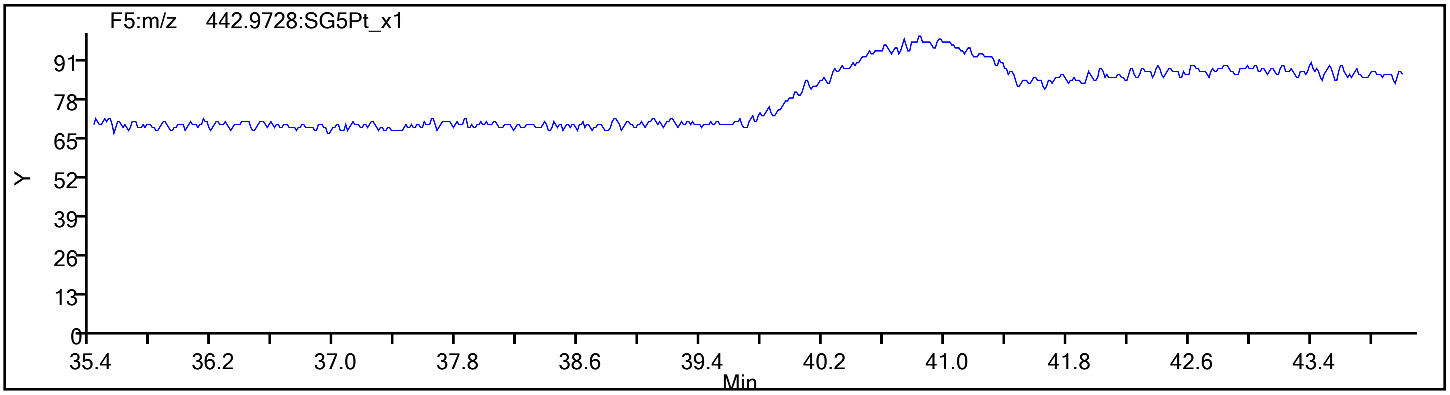

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Mar-2021 03:25:34 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621C CS-5 HRDXNL5_00032
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:36:11 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:26:38

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.521	58999381	0.71	5.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.022	79722247	0.78	1.3554	99.7	99.7	0.2253	0.2253	99.70	
2,3,7,8-TCDF	17.037	33587557	0.75	0.9903	42.5	42.5	0.0769	0.0769	106	
S Total TCDF					42.5	42.5	0.0769	0.0769		
D 13C-2,3,7,8-TCDD	17.702	54471906	0.70	0.9209	100.3	100.3	0.2170	0.2170	100	
$ 37Cl4-2,3,7,8-TCDD	17.717	25445827		1.0159	42.5	42.5	0.0241	0.0241	106	
2,3,7,8-TCDD	17.717	25003898	0.80	1.0991	41.8	41.8	0.0403	0.0403	104	
S Total TCDD					41.8	41.8	0.0403	0.0403		
D 13C-1,2,3,7,8-PeCDF	21.910	64926391	1.58	1.0847	101.5	101.5	0.1838	0.1838	101	
1,2,3,7,8-PeCDF	21.937	140120398	1.57	1.0209	211.4	211.4	0.4667	0.4667	106	
D 13C-2,3,4,7,8-PeCDF	23.219	64348319	1.56	1.1057	98.6	98.6	0.1803	0.1803	98.64	
2,3,4,7,8-PeCDF	23.246	138135217	1.58	0.9790	219.3	219.3	0.5346	0.5346	110	
S Total PeCDF					430.7	430.7	0.5007	0.5007		
D 13C-1,2,3,7,8-PeCDD	23.928	46036052	1.61	0.7689	101.5	101.5	0.0991	0.0991	101	
1,2,3,7,8-PeCDD	23.955	97869473	1.59	0.9982	213.0	213.0	0.1778	0.1778	106	
S Total PeCDD					213.0	213.0	0.1778	0.1778		
D 13C-1,2,3,4,7,8-HxCDF	30.080	55243673	0.51	1.0321	97.7	97.7	0.2594	0.2594	97.72	
1,2,3,4,7,8-HxCDF	30.107	127500591	1.23	1.0667	216.4	216.4	0.8301	0.8301	108	
D 13C-1,2,3,6,7,8-HxCDF	30.307	55719806	0.52	1.0218	99.6	99.6	0.2620	0.2620	99.55	
1,2,3,6,7,8-HxCDF	30.333	131910792	1.21	1.1178	211.8	211.8	0.7552	0.7552	106	
D 13C-2,3,4,6,7,8-HxCDF	31.225	53024531	0.53	0.9729	99.5	99.5	0.2752	0.2752	99.50	
2,3,4,6,7,8-HxCDF	31.252	129635270	1.22	1.1422	214.0	214.0	0.5688	0.5688	107	
D 13C-1,2,3,7,8,9-HxCDF	32.090	51001144	0.52	0.9469	98.3	98.3	0.2827	0.2827	98.33	
1,2,3,7,8,9-HxCDF	32.104	125079659	1.23	1.1455	214.1	214.1	0.5042	0.5042	107	
S Total HxCDF					856.3	856.3	0.6646	0.6646		
* 13C-1,2,3,7,8,9-HxCDD	31.904	54776183	1.24	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.438	40366933	1.25	0.7689	95.8	95.8	0.2119	0.2119	95.84	
1,2,3,4,7,8-HxCDD	31.451	92749353	1.31	1.0357	221.8	221.8	0.3452	0.3452	111	
D 13C-1,2,3,6,7,8-HxCDD	31.558	47276754	1.27	0.8643	99.9	99.9	0.1885	0.1885	99.86	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.571	98186161	1.22	0.9658	215.0	215.0	0.3388	0.3388	108	
1,2,3,7,8,9-HxCDD	31.917	104746465	1.24	1.0727	222.8	222.8	0.3185	0.3185	111	
S Total HxCDD					659.7	659.7	0.3341	0.3341		
D 13C-1,2,3,4,6,7,8-HpCDF	33.580	39671285	0.44	0.7233	100.1	100.1	0.7951	0.7951	100	
1,2,3,4,6,7,8-HpCDF	33.592	119374778	1.05	1.4017	214.7	214.7	1.261	1.261	107	
D 13C-1,2,3,4,7,8,9-HpCDF	34.649	36012214	0.43	0.6720	97.8	97.8	0.8557	0.8557	97.83	
1,2,3,4,7,8,9-HpCDF	34.661	102914552	1.06	1.2995	219.9	219.9	1.646	1.646	110	
S Total HpCDF					434.6	434.6	1.453	1.453		
D 13C-1,2,3,4,6,7,8-HpCDD	34.370	37615875	1.05	0.6855	100.2	100.2	0.3264	0.3264	100	
1,2,3,4,6,7,8-HpCDD	34.382	82806395	1.04	1.0339	212.9	212.9	0.5217	0.5217	106	
S Total HpCDD					212.9	212.9	0.5217	0.5217		
D 13C-OCDD	36.685	55865969	0.90	0.4996	204.1	204.1	0.1570	0.1570	102	
OCDF	36.780	158650098	0.92	1.3135	432.4	432.4	0.1842	0.1842	108	
OCDD	36.696	126336028	0.89	1.0576	427.7	427.7	0.2639	0.2639	107	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00032 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 17-Mar-2021 03:25:34 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621C CS-5 HRDXNL5_00032
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:36:11 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:26:38

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.521	17.527	0		24460409	6097427	4161	10402	1465		
333.9339	17.521	17.527	0		34538972	8606706	7591	18977	1134	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.025	0	0.972	34985422	8804876	7636	19090	1153		
317.9389	17.022	17.025	0	0.972	44736825	11154560	10324	25810	1080	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.043	0	1.001	14433586	3680432	1892	4730	1945		
305.8987	17.022	17.043	-1	1.000	19153971	4769525	4188	10470	1139	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.702	17.714	-1	1.010	22347671	5502278	4161	10402	1322		
333.9339	17.702	17.714	-1	1.010	32124235	7767009	7591	18977	1023	0.70(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.717	17.729	-1	1.011	25445827	6159046	1438	3595	4283		
2,3,7,8-TCDD											
319.8965	17.717	17.733	-1	1.001	11100222	2680280	1187	2967	2258		
321.8936	17.717	17.733	-1	1.001	13903676	3389586	1165	2912	2910	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.910	21.923	-1	1.250	39719629	7367520	7246	18115	1017		
353.8970	21.910	21.923	-1	1.250	25206762	4655325	4479	11197	1039	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.937	21.945	0	1.001	85496046	15746902	13831	34577	1139		
341.8567	21.923	21.945	-1	1.001	54624352	9954155	9084	22710	1096	1.57(1.32-1.78)	

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.219	23.232	-1	1.325	39228736	6591263	7246	18115	910		
353.8970	23.219	23.232	-1	1.325	25119583	4354130	4479	11197	972	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.246	23.260	-1	1.001	84622625	14243884	13831	34577	1030		
341.8567	23.246	23.260	-1	1.001	53512592	9037952	9084	22710	995	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.928	23.939	-1	1.366	28408713	4460882	2715	6787	1643		
369.8919	23.928	23.939	-1	1.366	17627339	2822834	1769	4422	1596	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.955	23.963	0	1.001	60037827	9475726	3251	8127	2915		
357.8516	23.955	23.963	0	1.001	37831646	5989657	1919	4797	3121	1.59(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.080	30.094	-1	0.943	18689275	3121062	5305	13262	588		
385.8610	30.080	30.094	-1	0.943	36554398	5921703	10004	25010	592	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.107	30.123	-1	1.001	70270784	11400909	17797	44492	641		
375.8178	30.107	30.123	-1	1.001	57229807	9409576	14230	35575	661	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.307	30.315	0	0.950	19073463	3257212	5305	13262	614		
385.8610	30.307	30.315	0	0.950	36646343	6227539	10004	25010	623	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.333	30.336	0	1.001	72224913	12324355	17797	44492	692		
375.8178	30.320	30.336	-1	1.000	59685879	10208625	14230	35575	717	1.21(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.225	31.239	-1	0.979	18351171	4306665	5305	13262	812		
385.8610	31.225	31.239	-1	0.979	34673360	8017761	10004	25010	801	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.252	31.257	0	1.001	71289300	17075466	17797	44492	959		
375.8178	31.252	31.257	0	1.001	58345970	13951290	14230	35575	980	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.090	32.101	-1	1.006	17494361	4737643	5305	13262	893		
385.8610	32.090	32.101	-1	1.006	33506783	9124803	10004	25010	912	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.104	32.115	-1	1.000	69009990	18830509	17797	44492	1058		
375.8178	32.104	32.115	-1	1.000	56069669	15356763	14230	35575	1079	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.907	0		30359515	7882619	5426	13565	1453		
403.8529	31.904	31.907	0		24416668	6413045	3890	9725	1649	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.438	31.449	-1	0.985	22433188	5938254	5426	13565	1094		
403.8529	31.438	31.449	-1	0.985	17933745	4766850	3890	9725	1225	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.451	31.465	-1	1.000	52512409	13311984	8290	20725	1606		
391.8127	31.451	31.465	-1	1.000	40236944	10673198	7018	17545	1521	1.31(1.05-1.43)	

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Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.558	31.563	0	0.989	26409677	6490010	5426	13565	1196		
403.8529	31.558	31.563	0	0.989	20867077	5206769	3890	9725	1339	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.571	31.579	0	1.000	53888651	13911165	8290	20725	1678		
391.8127	31.571	31.579	0	1.000	44297510	11063125	7018	17545	1576	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.917	31.926	0	1.015	58042234	15551709	8290	20725	1876		
391.8127	31.917	31.926	0	1.015	46704231	12426807	7018	17545	1771	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.580	33.587	0	1.053	12164082	4389103	8491	21227	517		
419.8220	33.580	33.587	0	1.053	27507203	9837508	24394	60985	403	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.600	0	1.000	61082984	21391899	55930	139825	382		
409.7789	33.592	33.600	0	1.000	58291794	20098339	44684	111710	450	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.649	34.659	-1	1.086	10915480	3555295	8491	21227	419		
419.8220	34.649	34.659	-1	1.086	25096734	8207176	24394	60985	336	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.661	34.669	0	1.000	52891755	17375780	55930	139825	311		
409.7789	34.661	34.669	0	1.000	50022797	16374997	44684	111710	366	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.370	34.377	0	1.077	19235952	6575904	6163	15407	1067		
437.8140	34.370	34.377	0	1.077	18379923	6239639	6632	16580	941	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.387	0	1.000	42281229	14295750	14322	35805	998		
425.7737	34.382	34.387	0	1.000	40525166	13452192	13325	33312	1010	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.685	36.694	-1	1.150	26469817	7595387	2159	5397	3518		
471.7750	36.685	36.694	-1	1.150	29396152	8496121	2326	5815	3653	0.90(0.76-1.02)	
OCDF											
441.7428	36.780	36.790	-1	1.003	75898506	21833283	3908	9770	5587		
443.7399	36.780	36.790	-1	1.003	82751592	24226842	3878	9695	6247	0.92(0.76-1.02)	
OCDD											
457.7377	36.696	36.704	0	1.000	59644723	17514222	4571	11427	3832		
459.7348	36.696	36.704	0	1.000	66691305	19755362	4411	11027	4479	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00032 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d
Injection Date: 17-Mar-2021 03:25:34
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

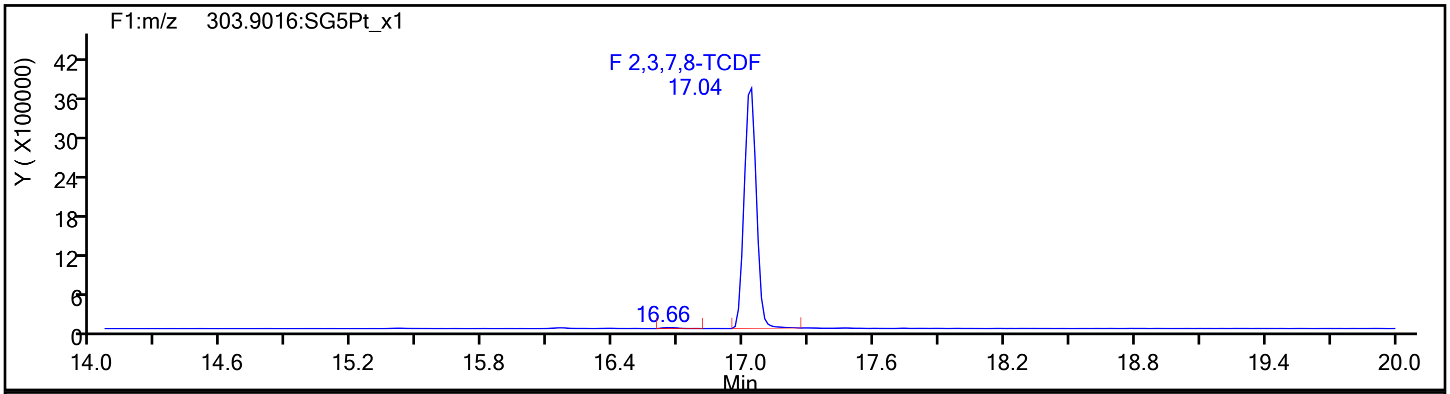

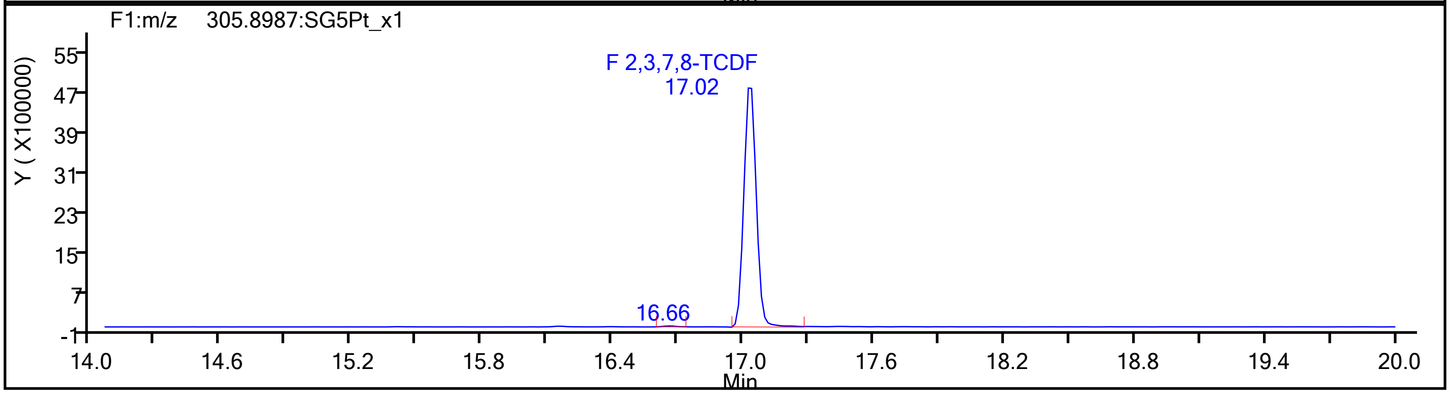

TCDF Standards

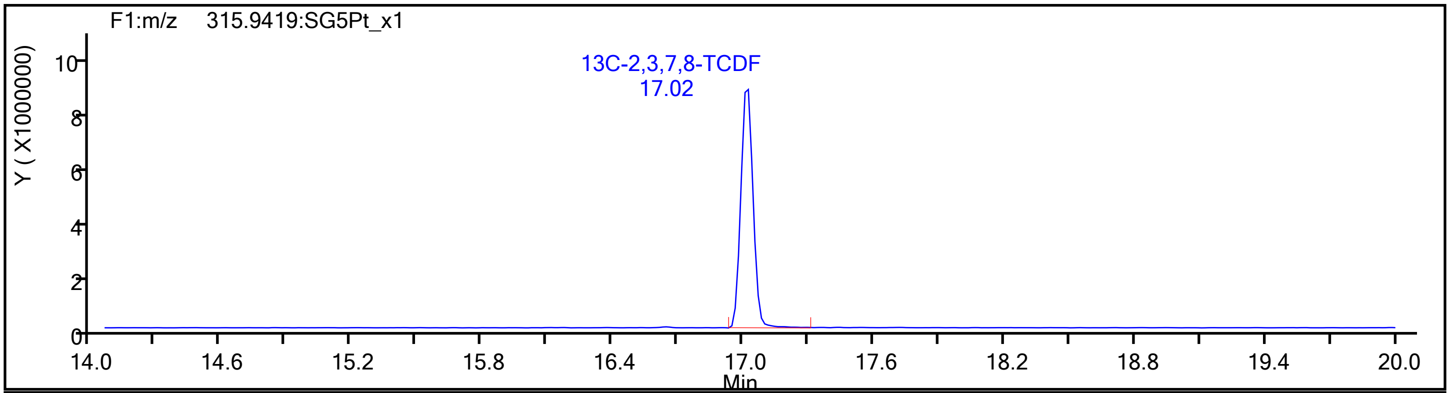

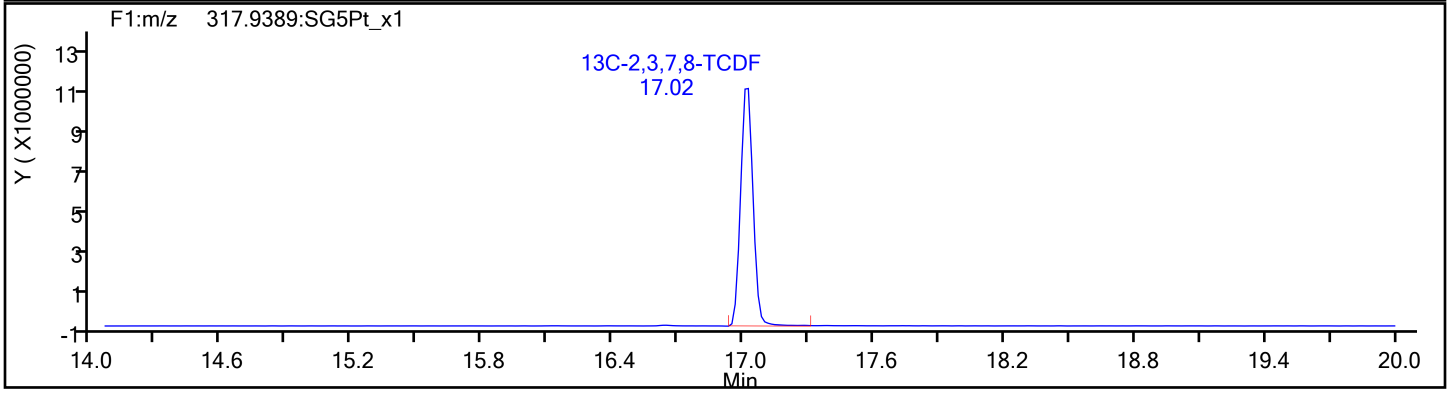

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d		
Injection Date:	17-Mar-2021 03:25:34	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

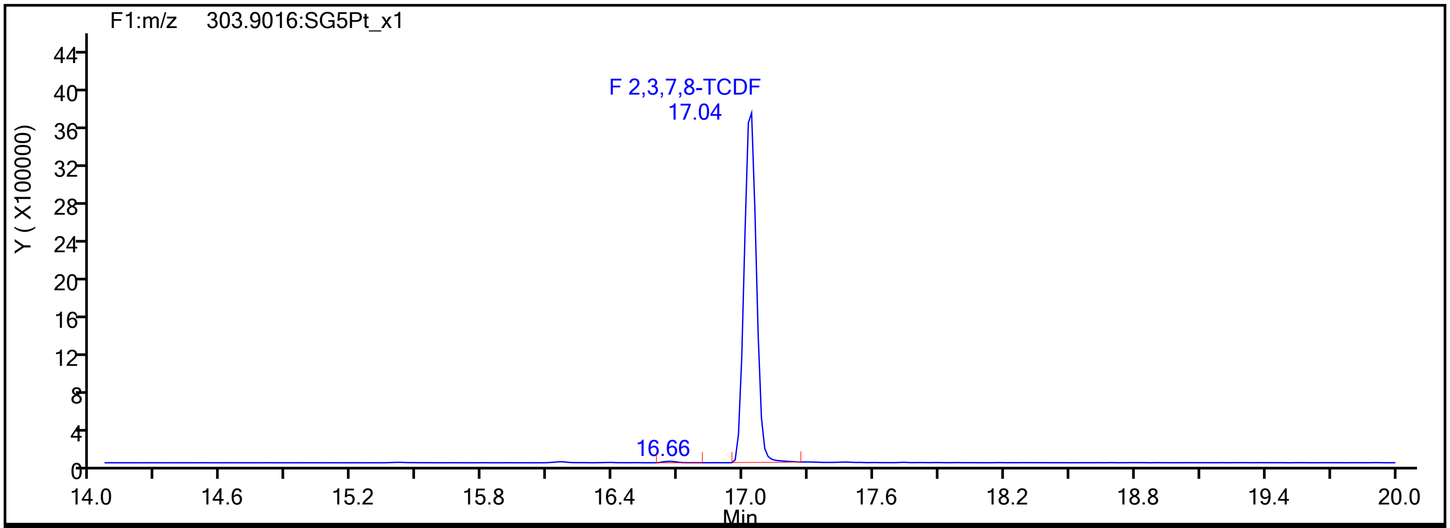

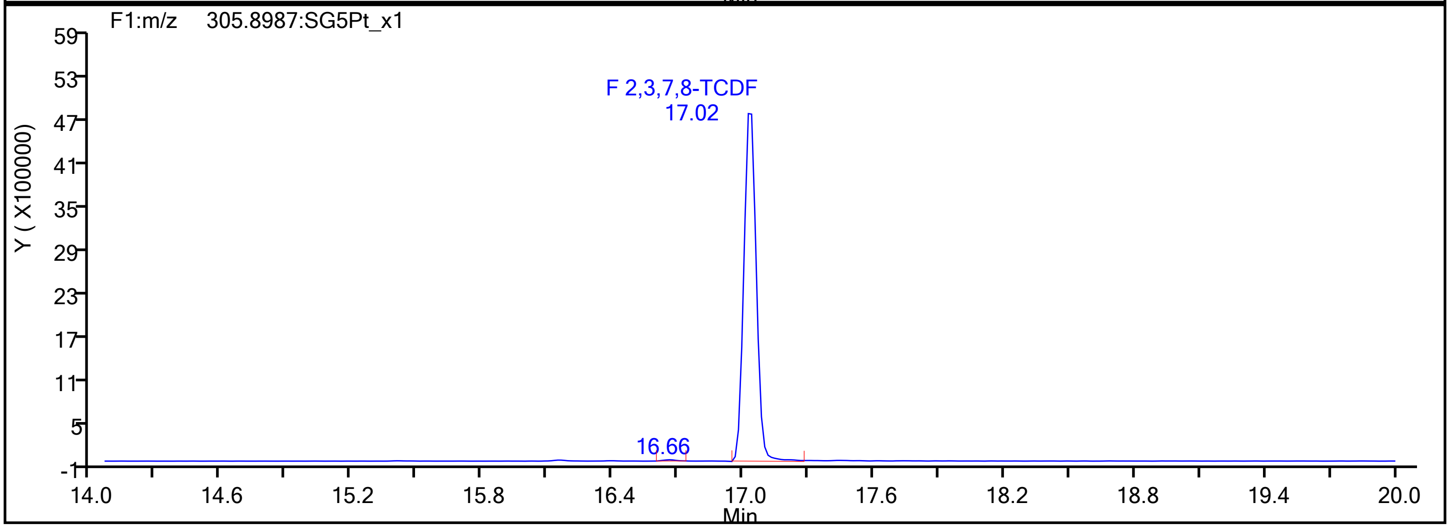

TCDF Interference Mass

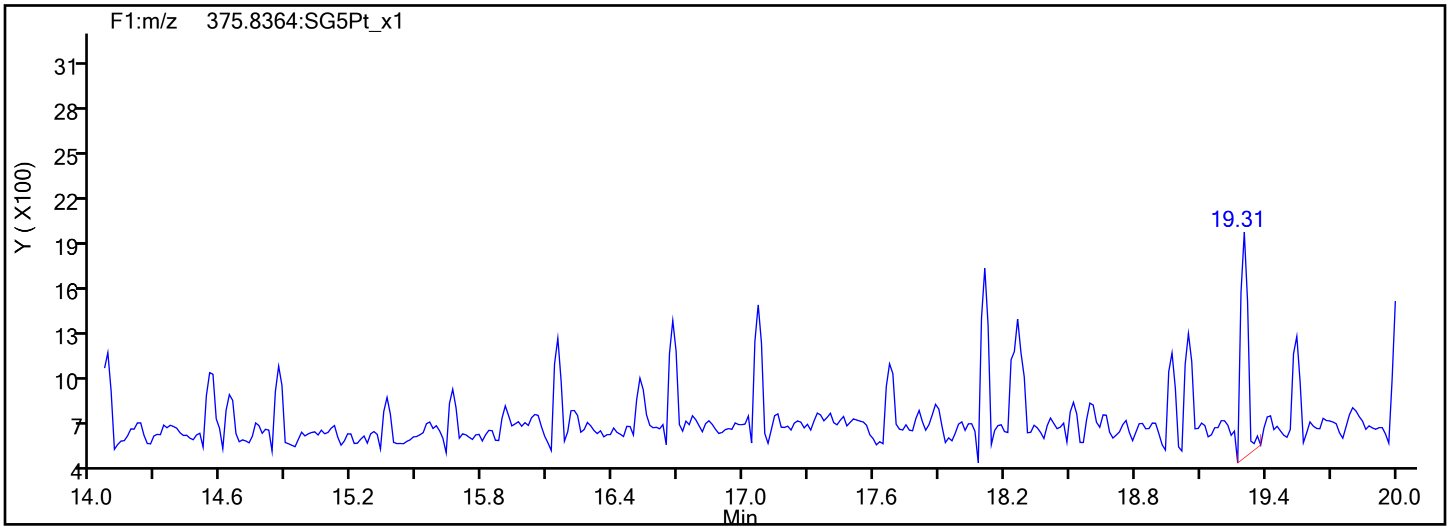

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d		
Injection Date:	17-Mar-2021 03:25:34	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

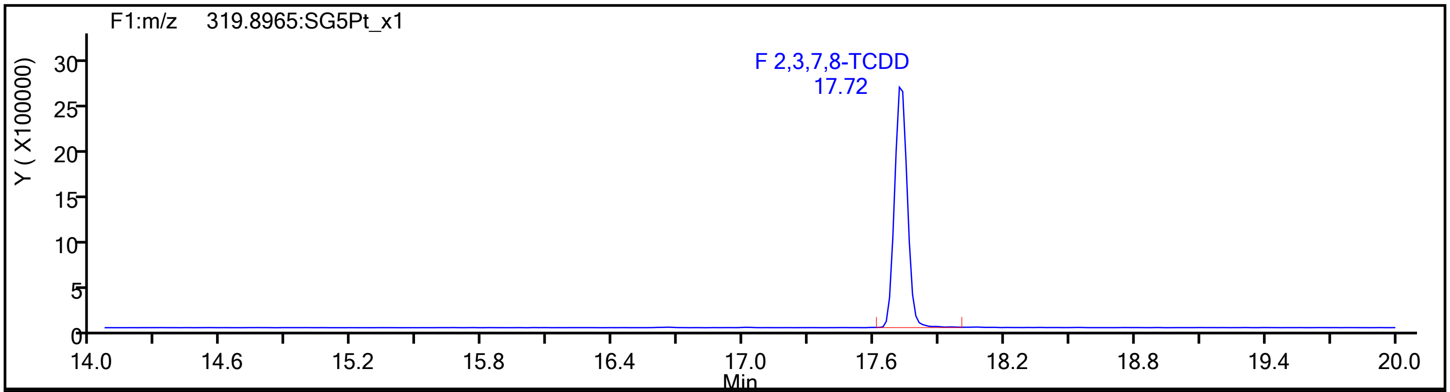

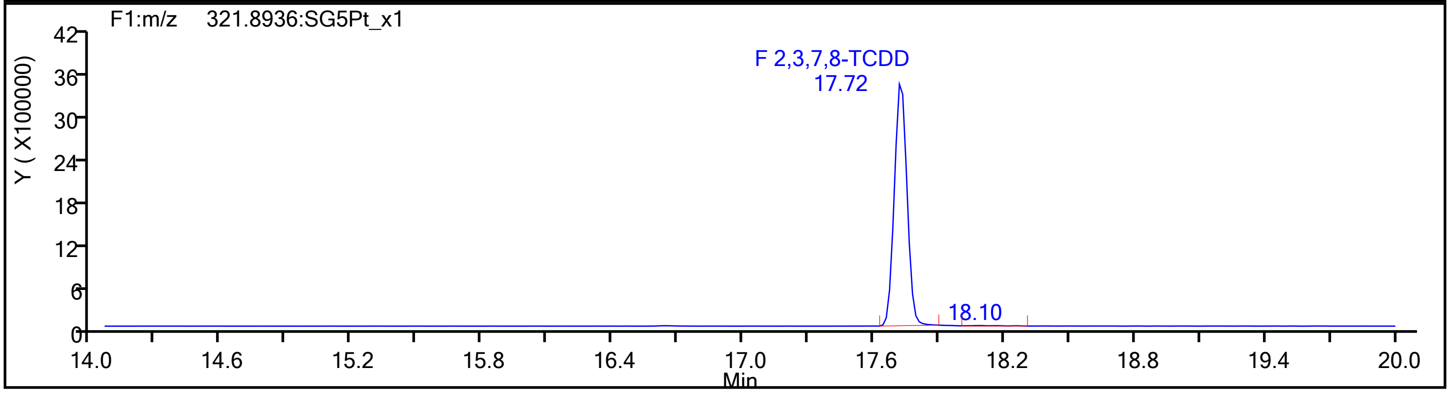

TCDD Standards

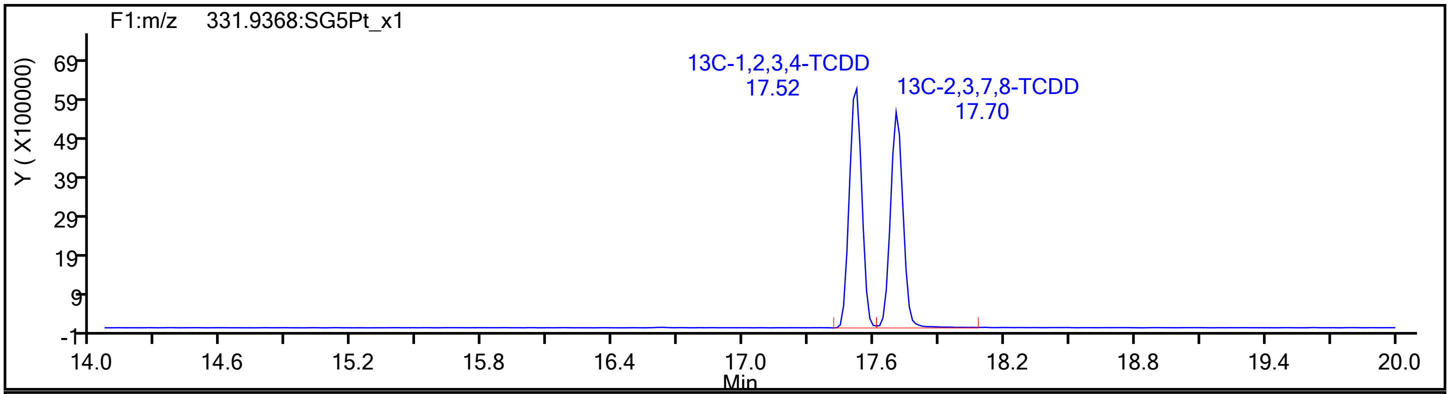

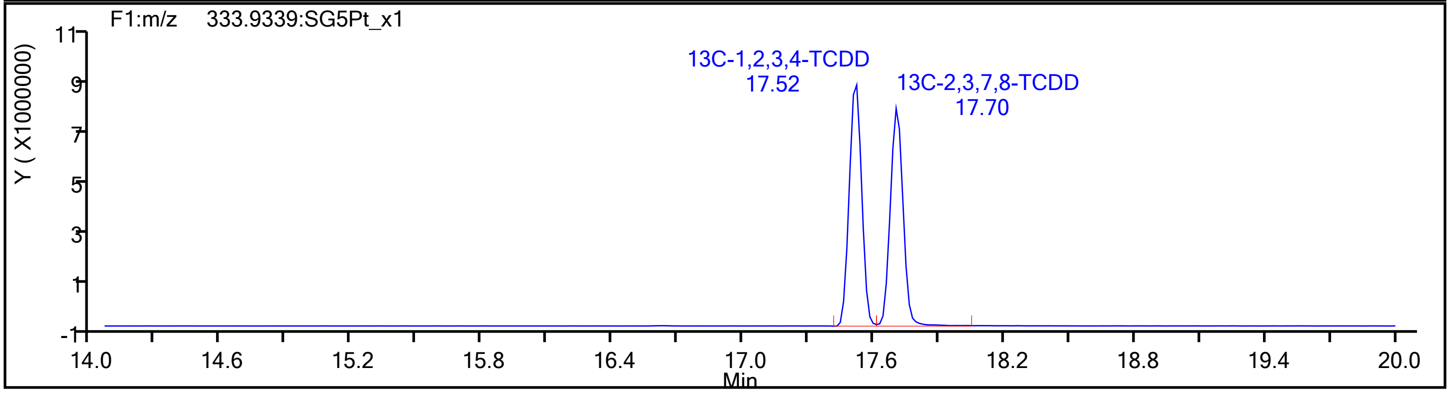

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d		
Injection Date:	17-Mar-2021 03:25:34	Injection Vol:	2.0 ul
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

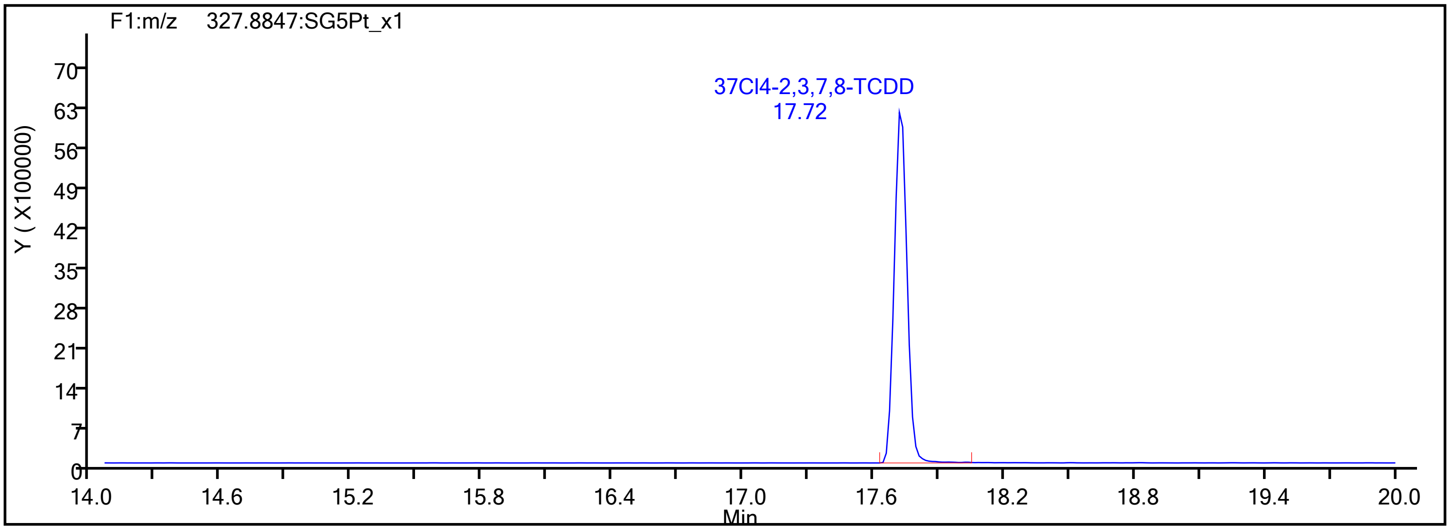

37Cl4-TCDD Standards

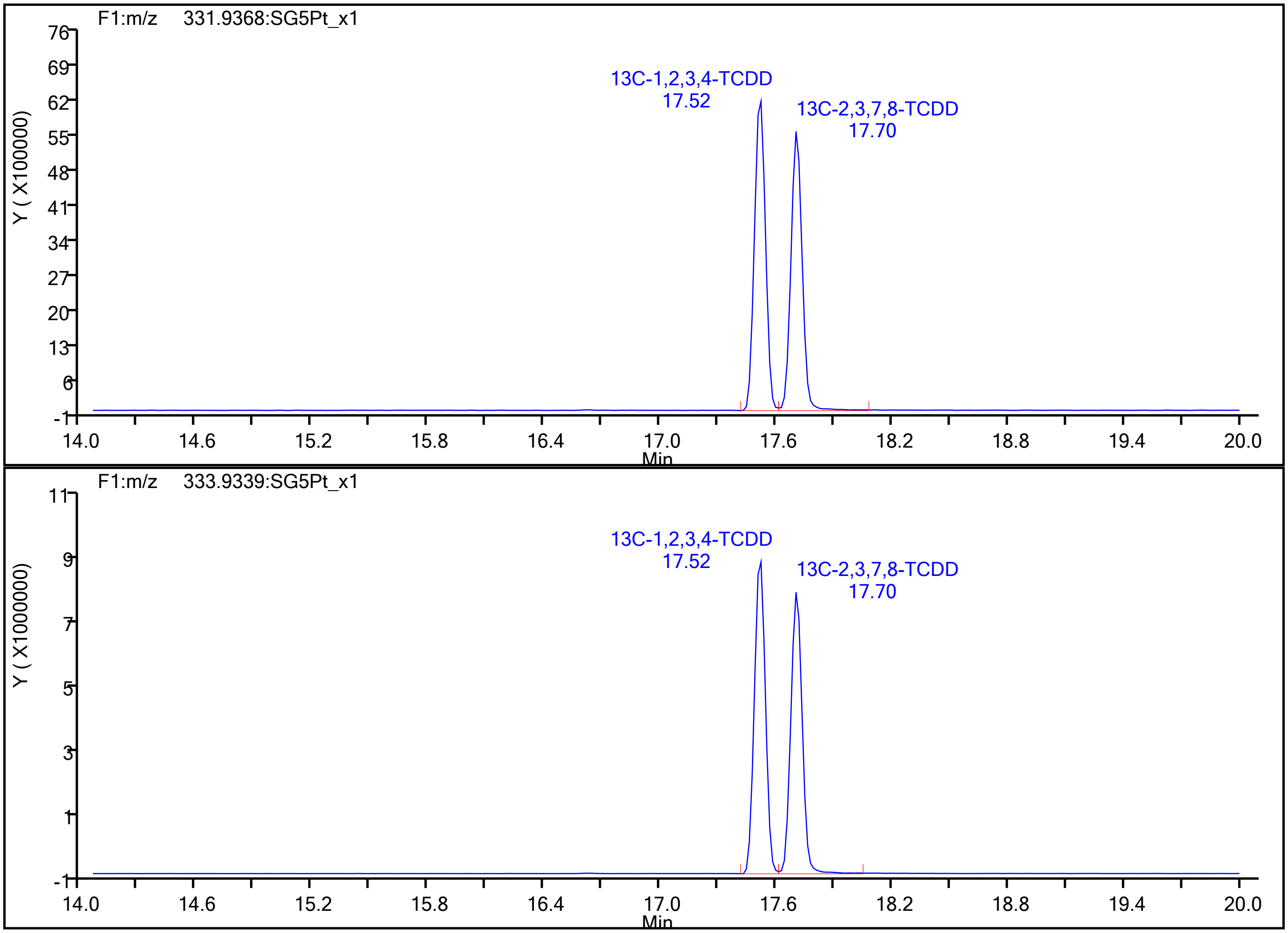

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

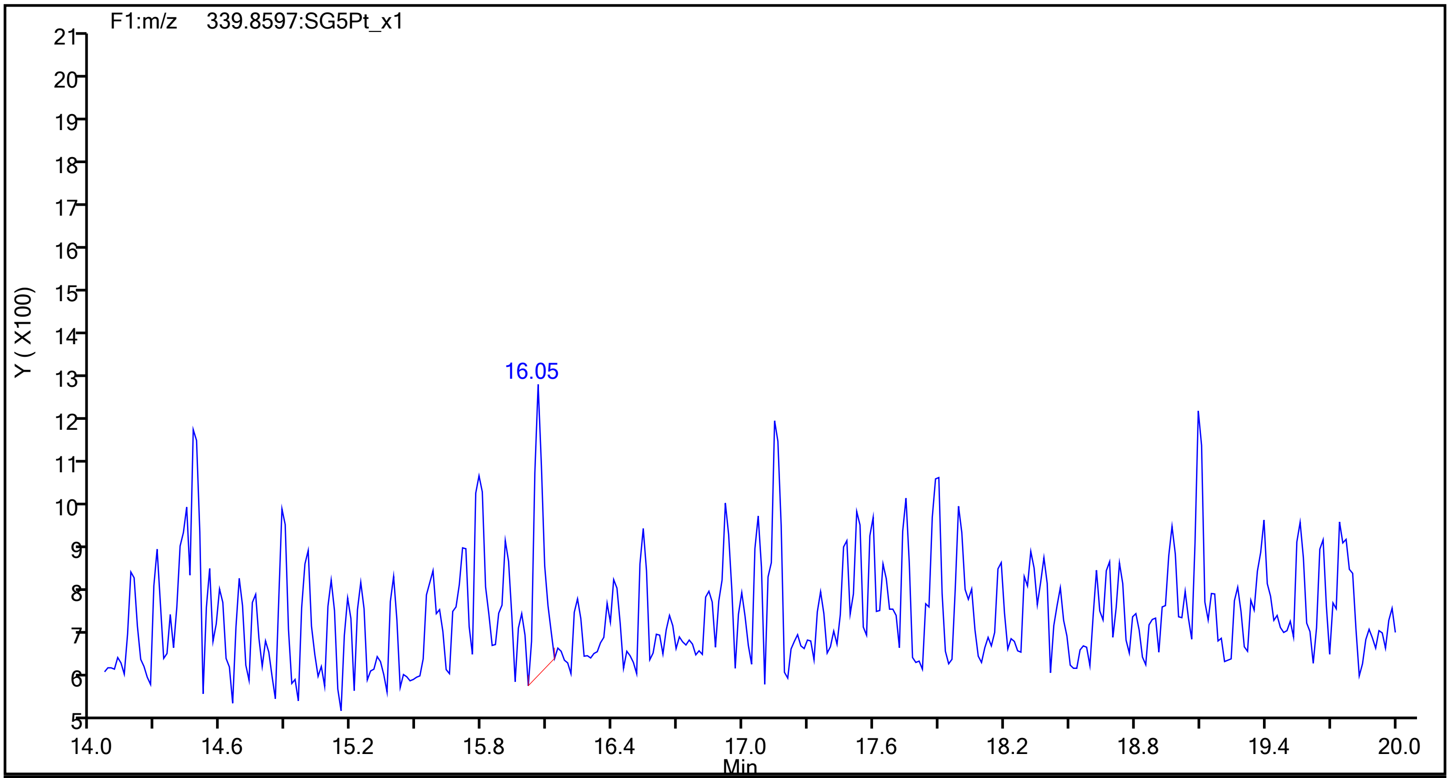

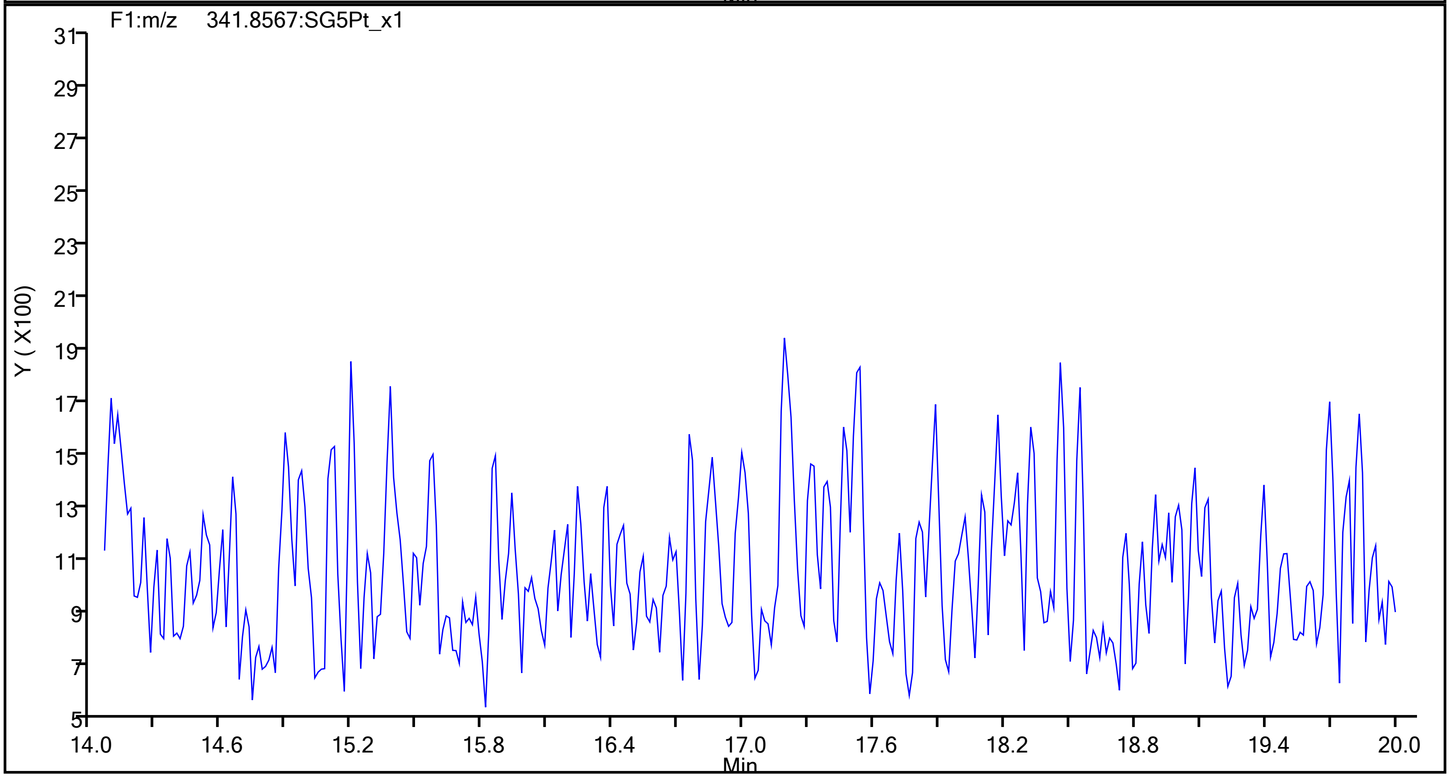

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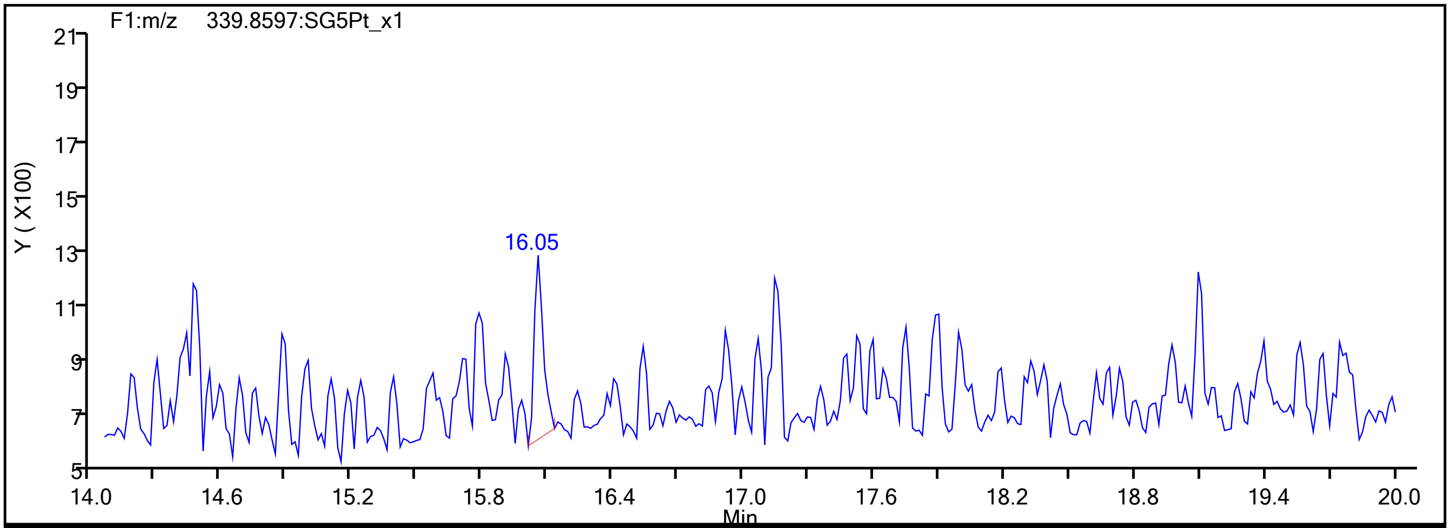

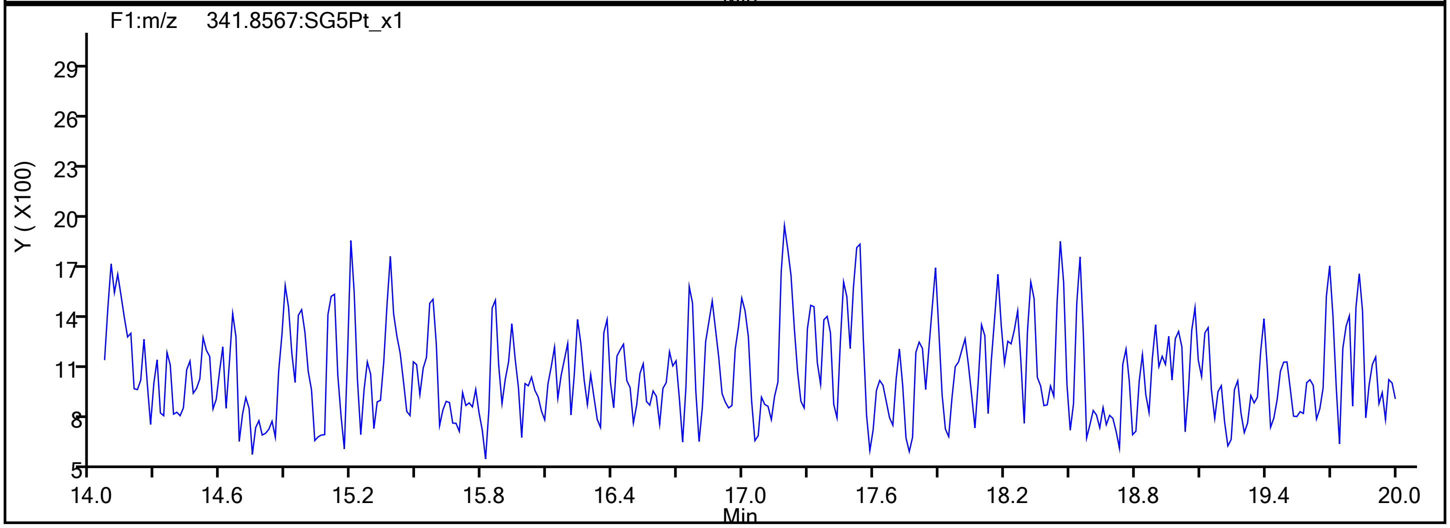

F1 PeCDFs Interference Mass

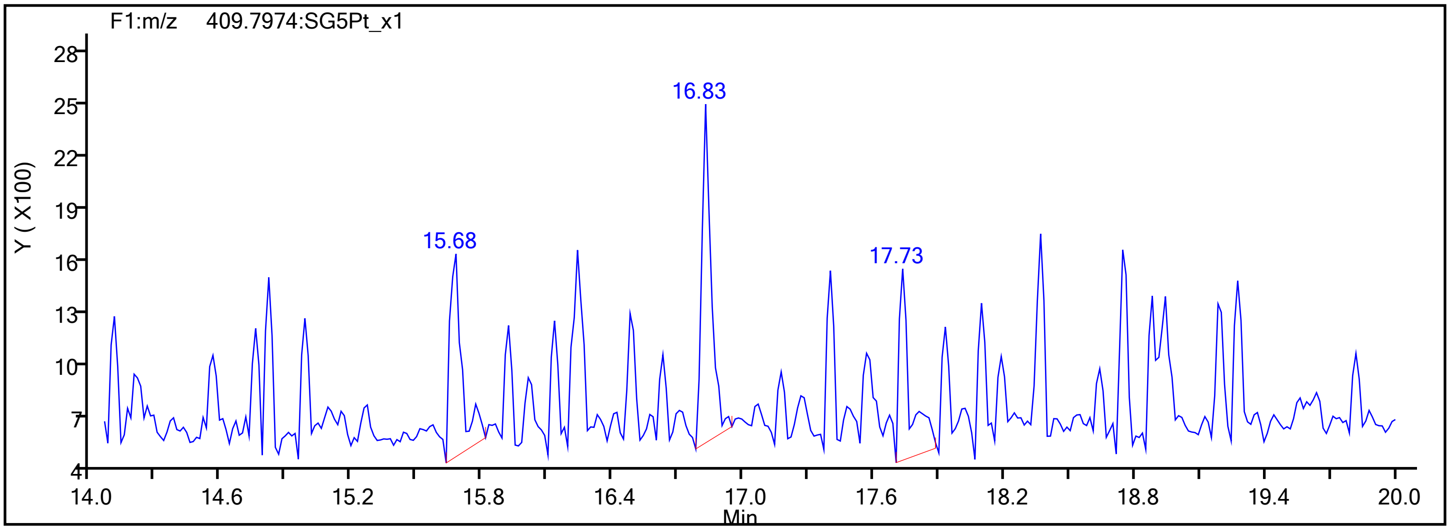

Report Date: 17-Mar-2021 13:36:15
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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PeCDF

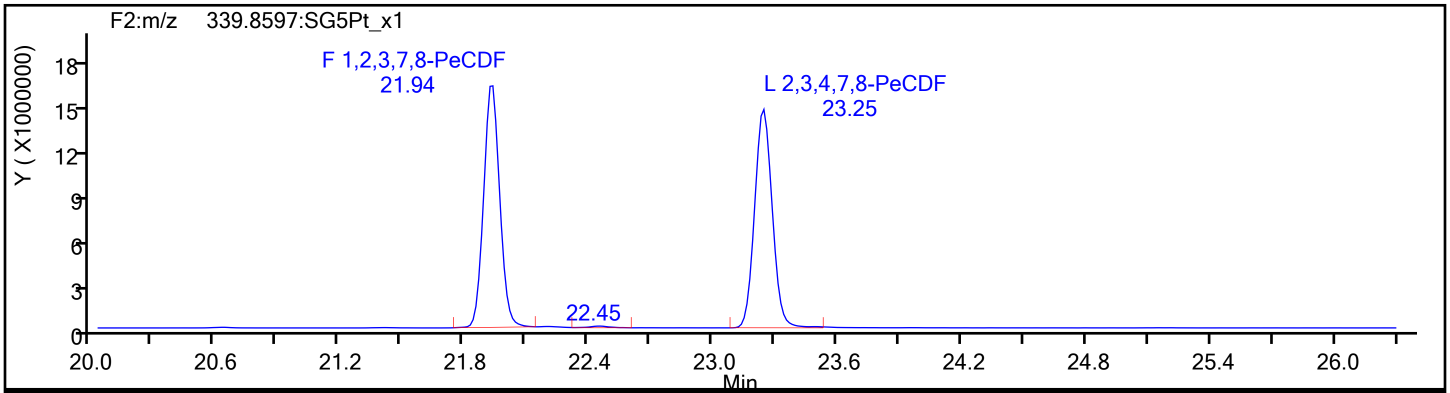

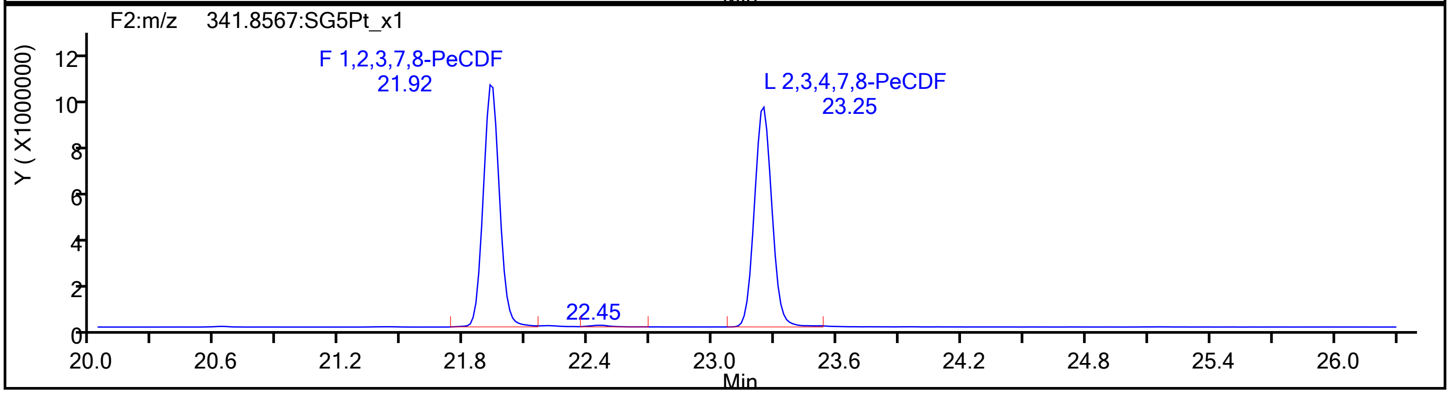

PeCDF Standards

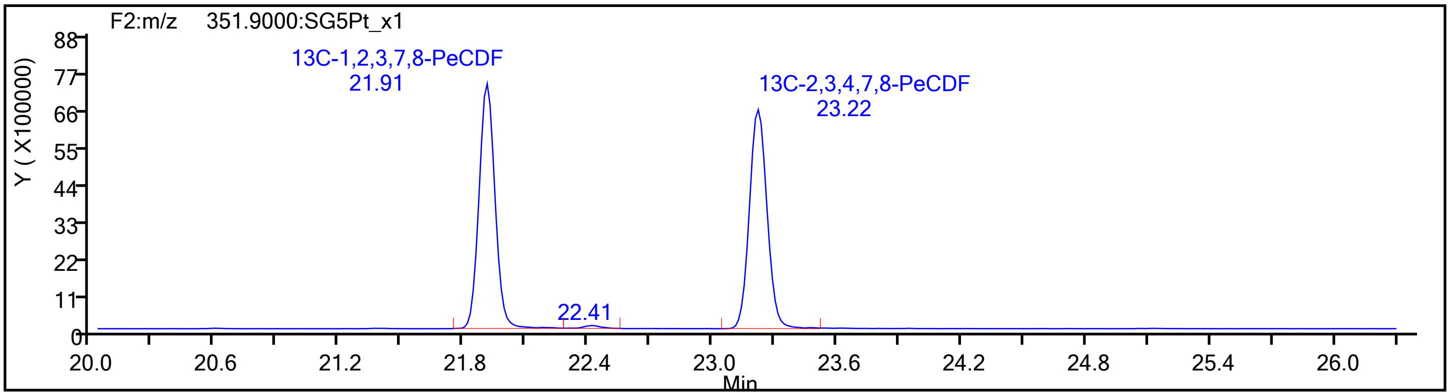

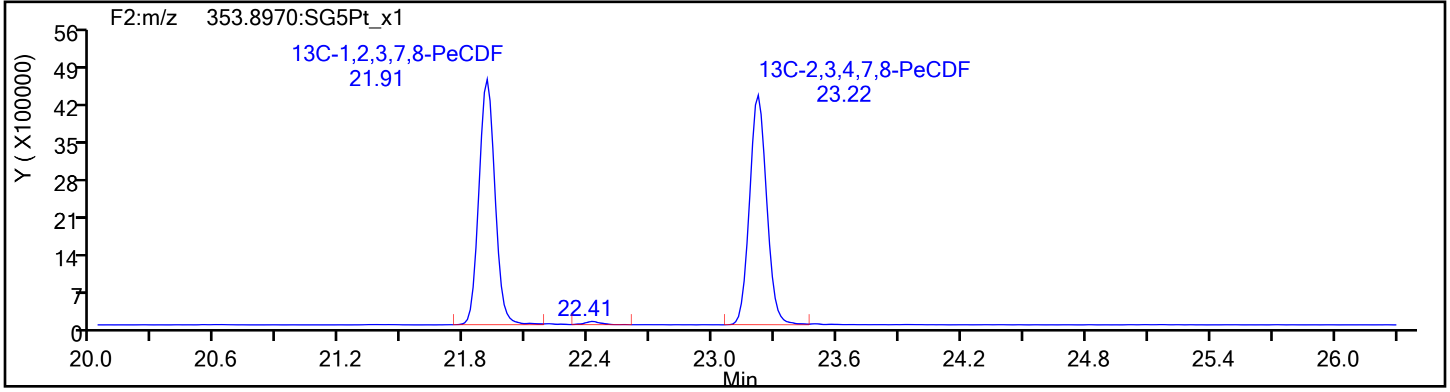

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Eurofins TestAmerica, Sacramento

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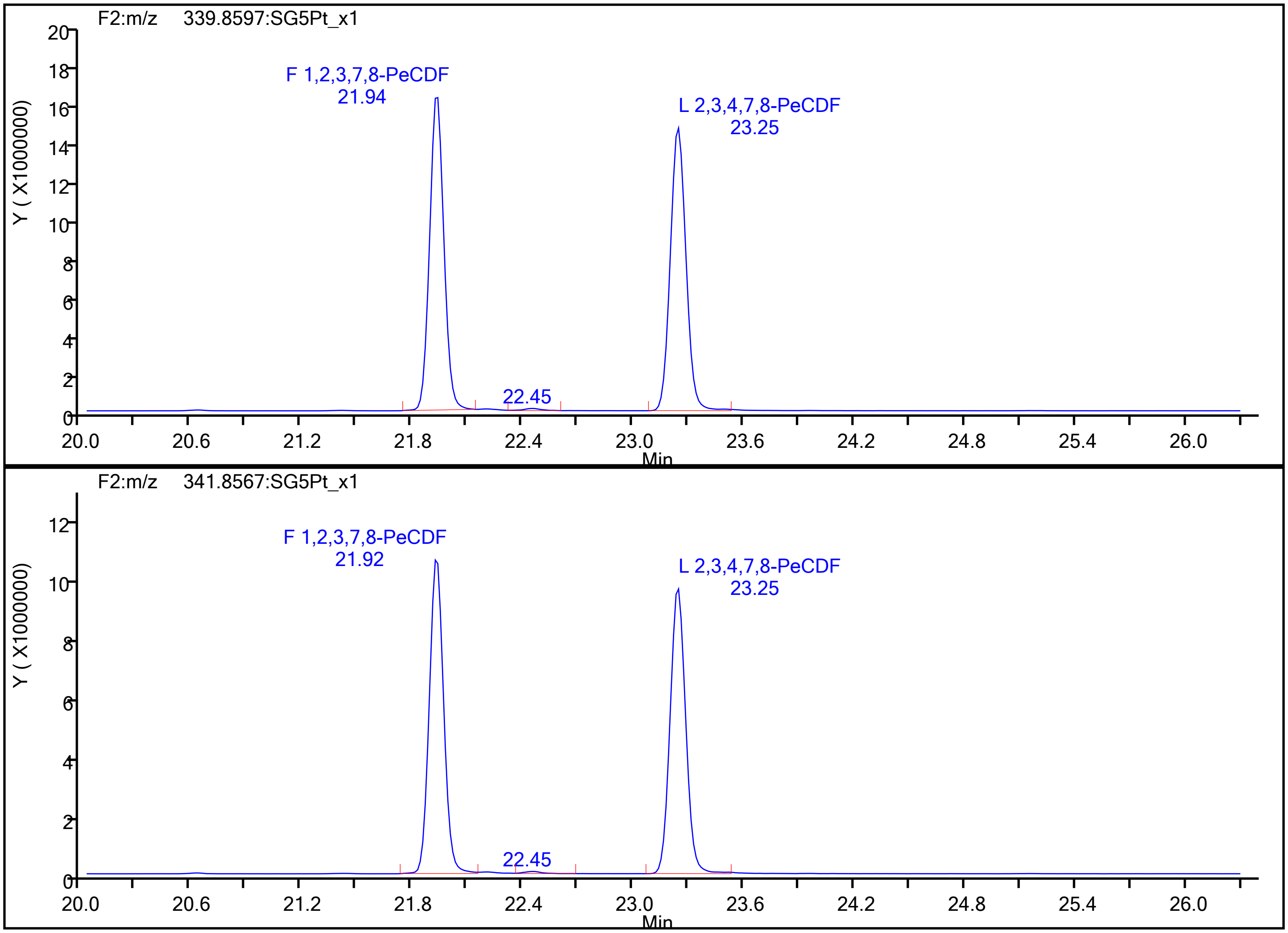

PeCDF Interference Mass

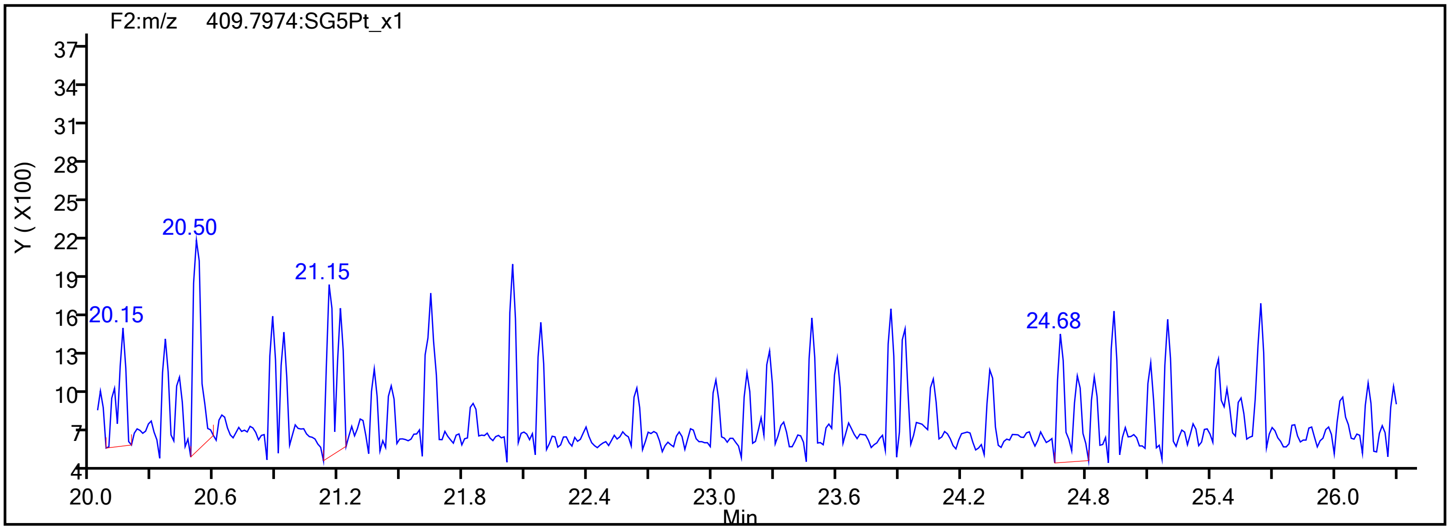

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Eurofins TestAmerica, Sacramento

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PeCDD

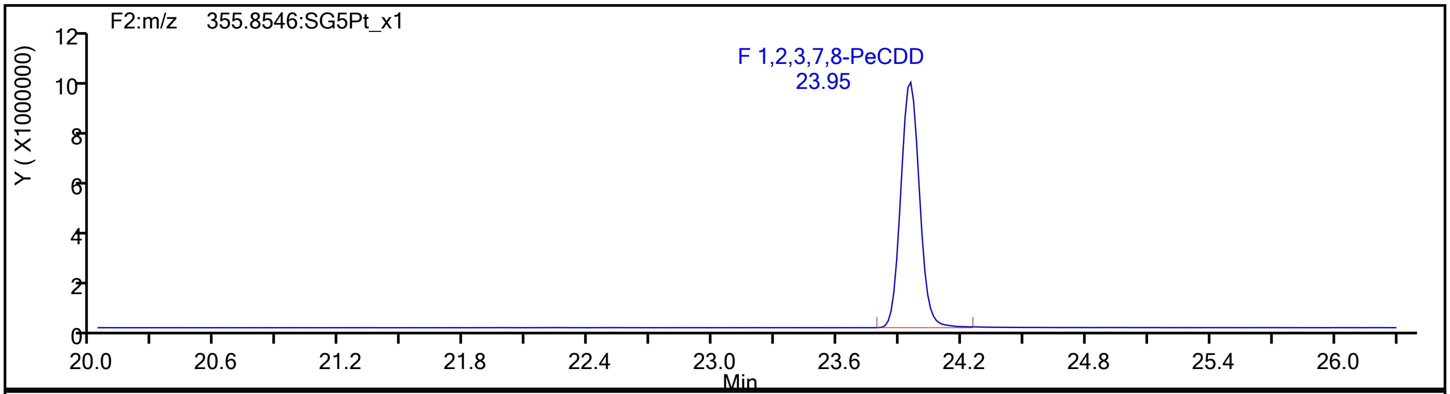

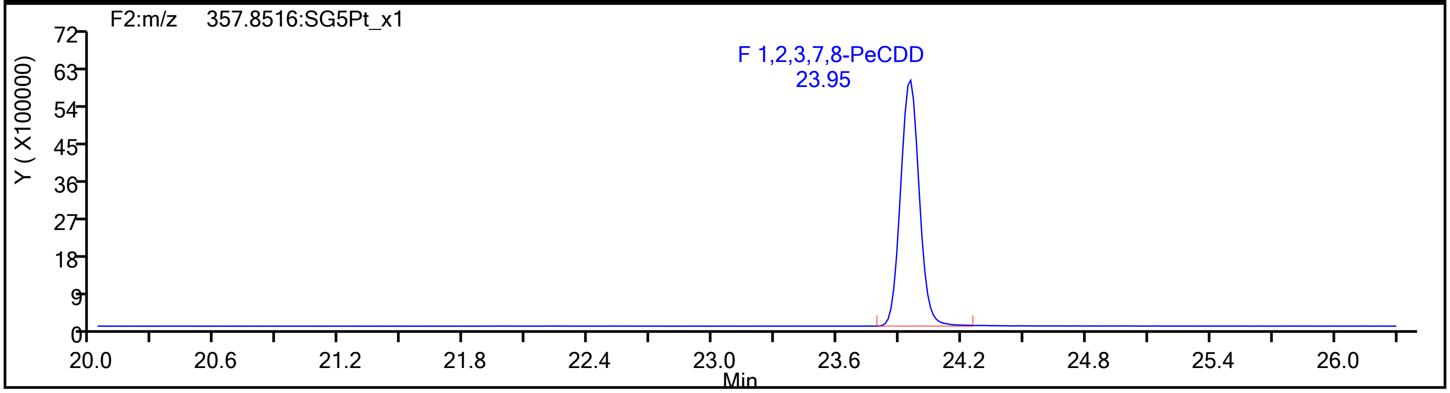

PeCDD Standards

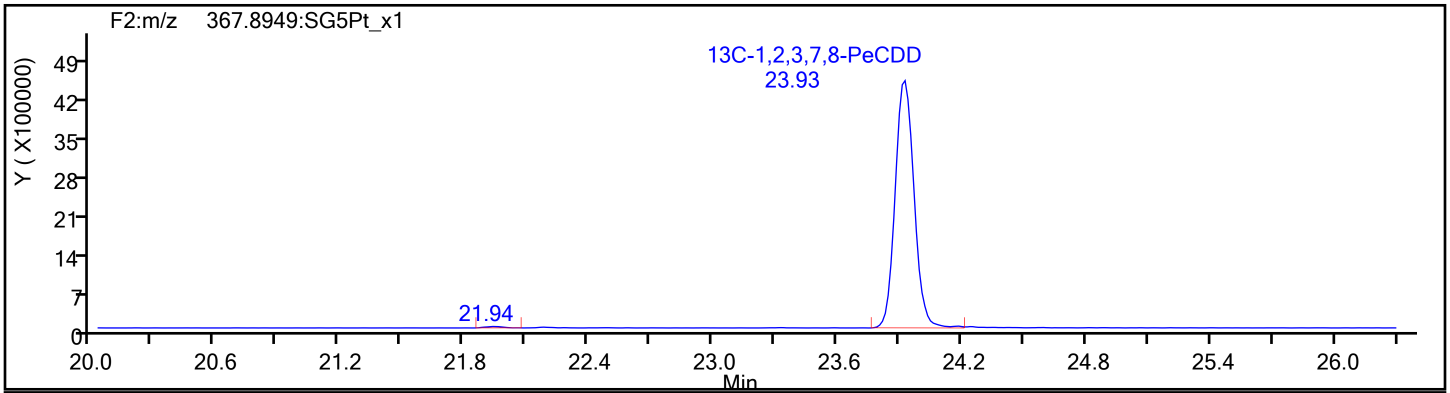

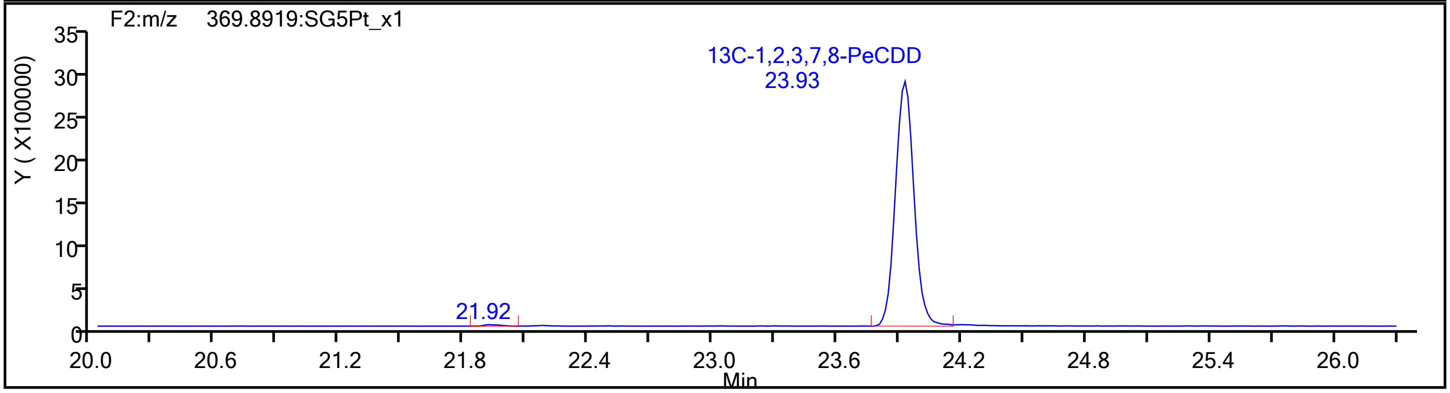

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Eurofins TestAmerica, Sacramento

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HxCDF

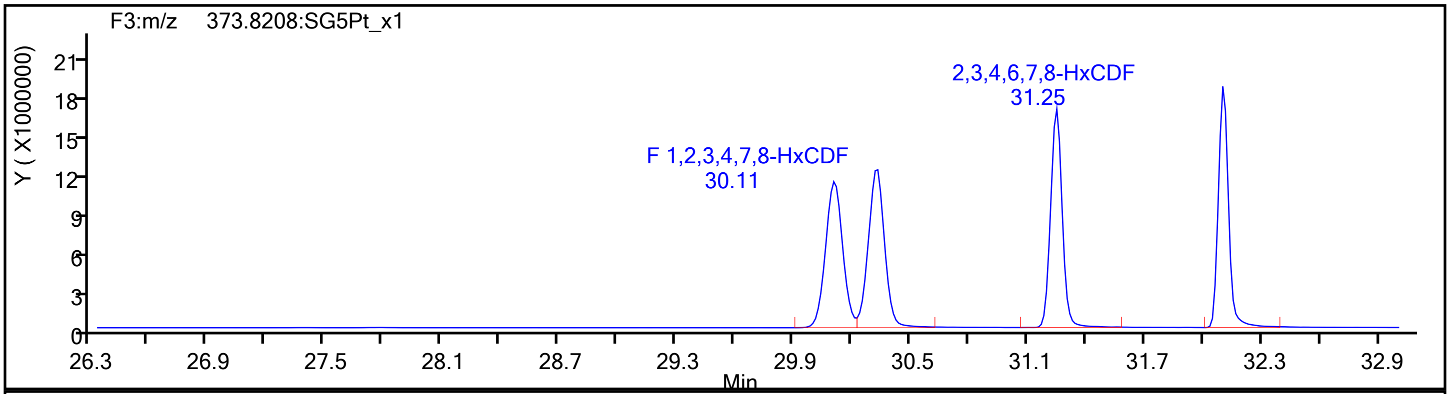

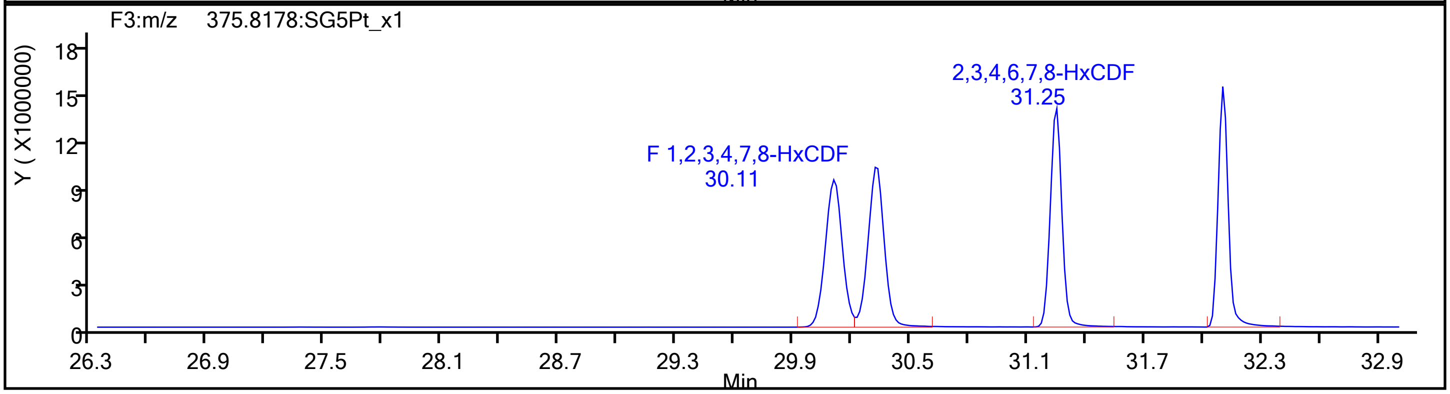

HxCDF Standards

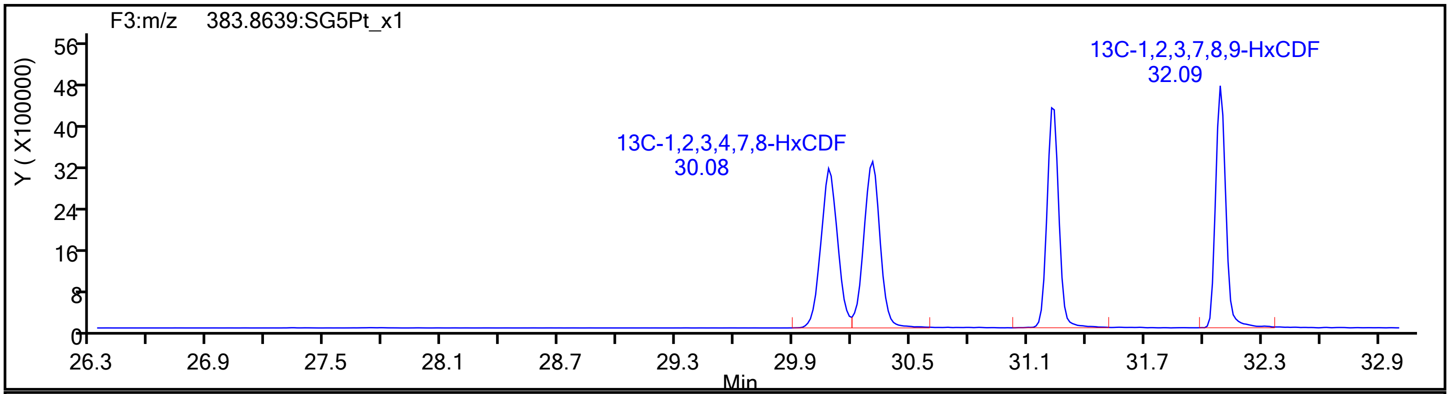

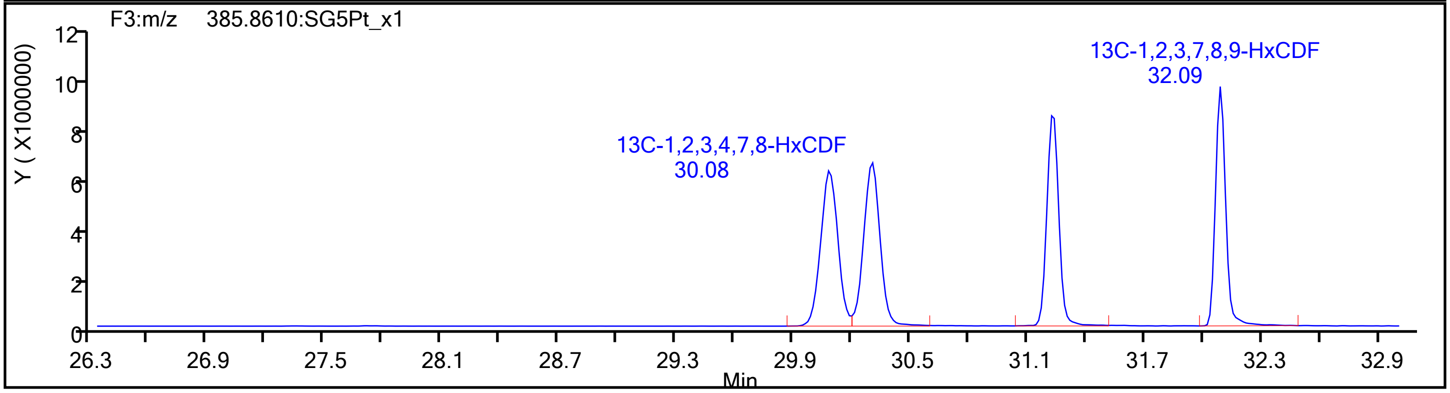

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Eurofins TestAmerica, Sacramento

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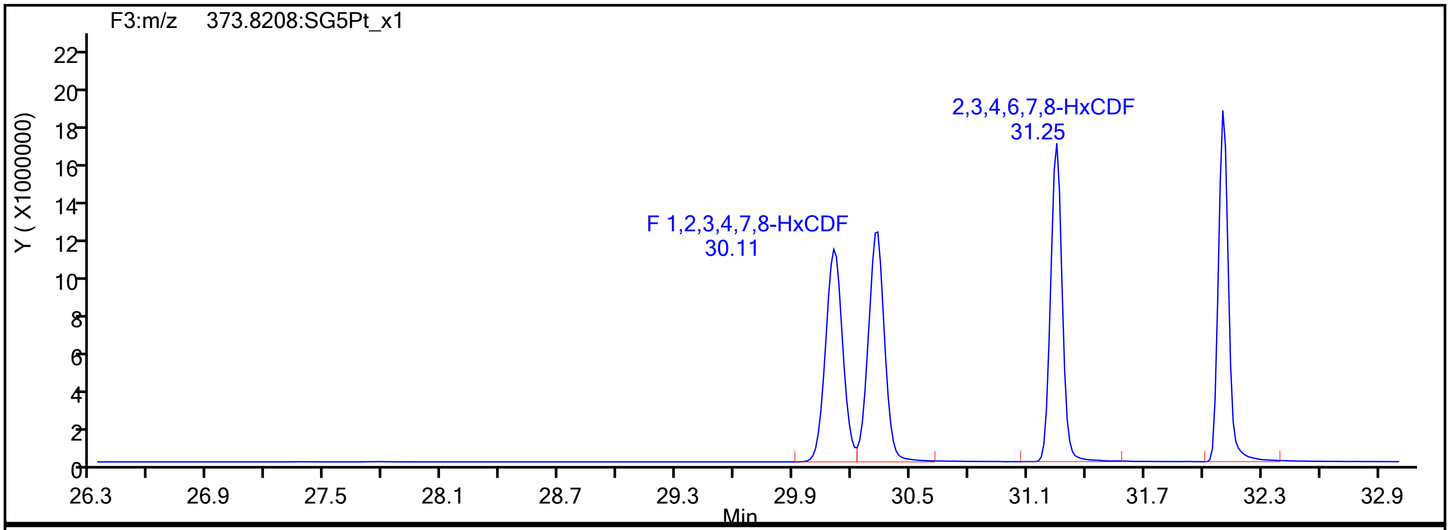

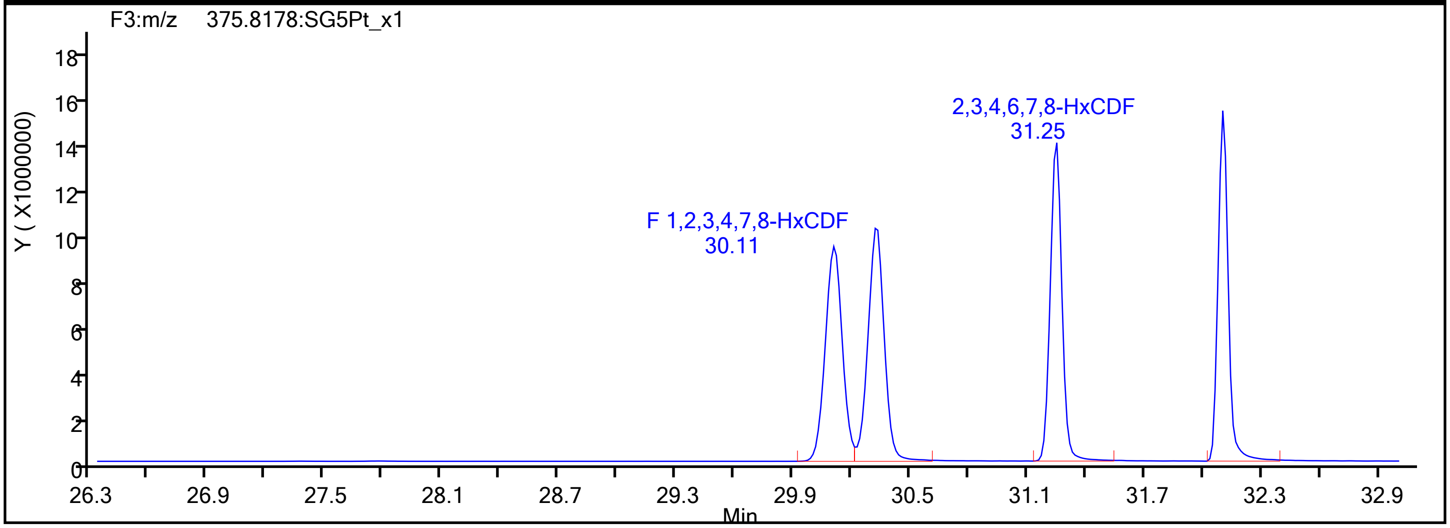

HxCDF Interference Mass

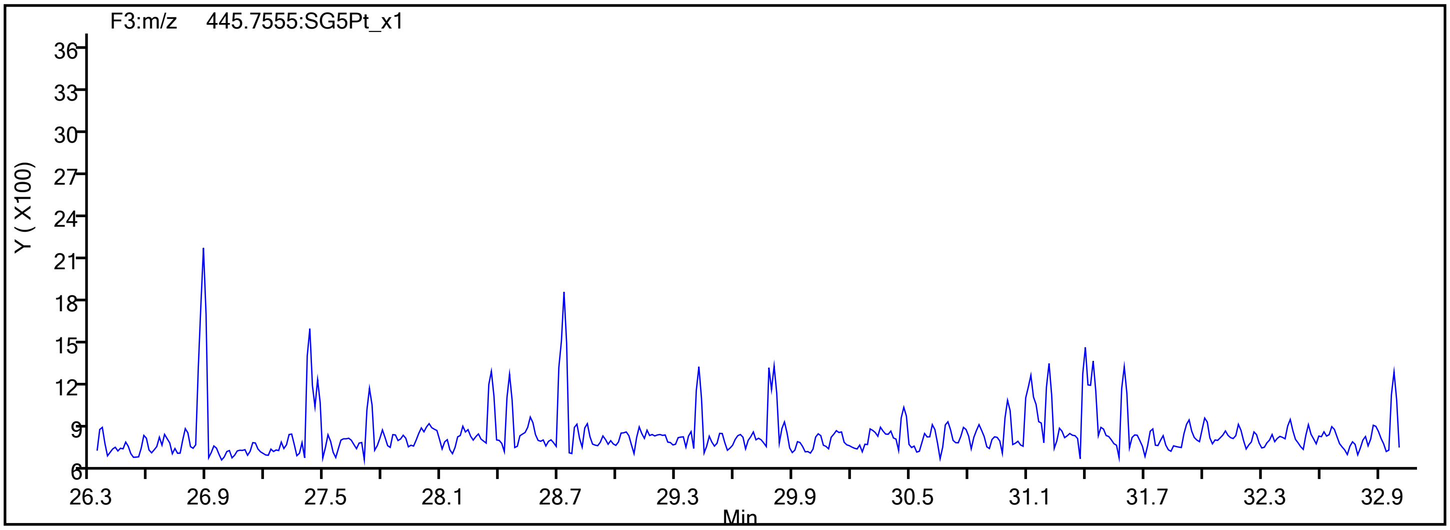

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Eurofins TestAmerica, Sacramento

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HxCDD

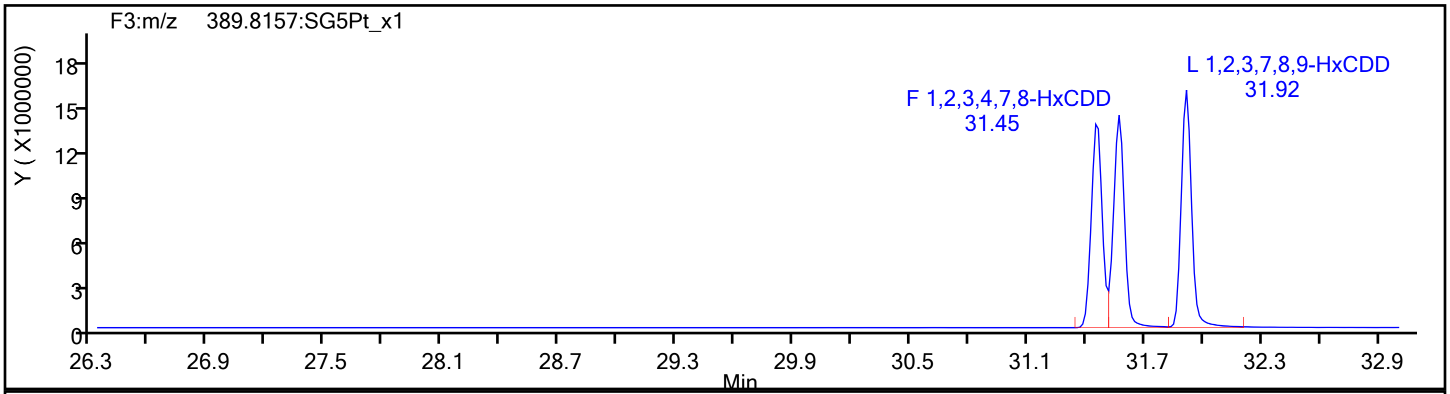

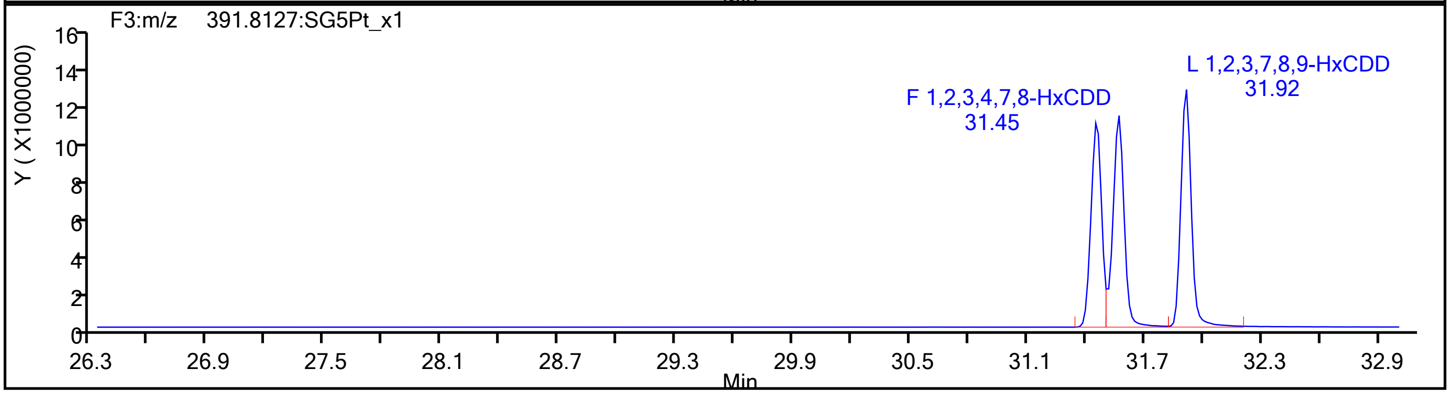

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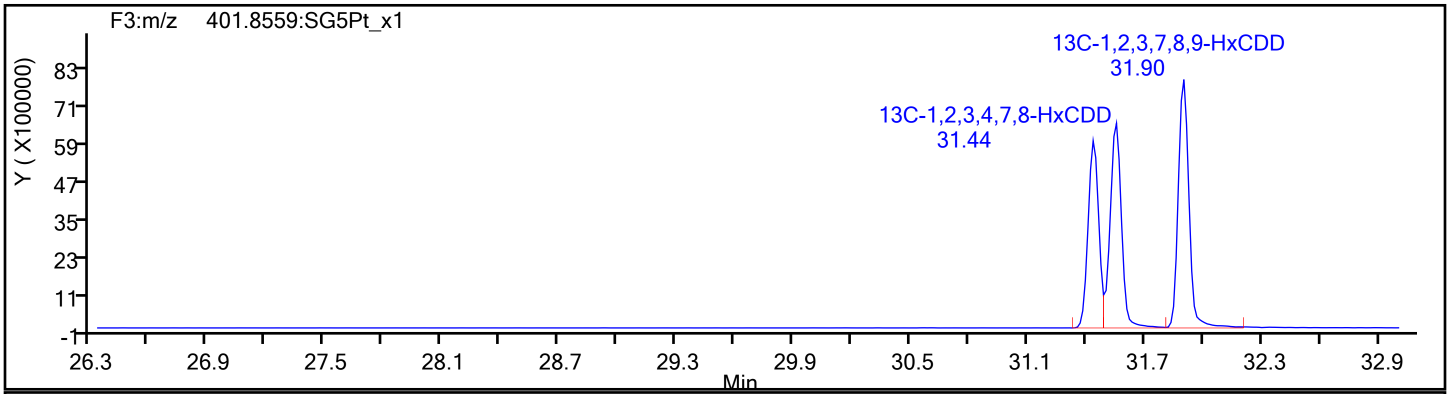

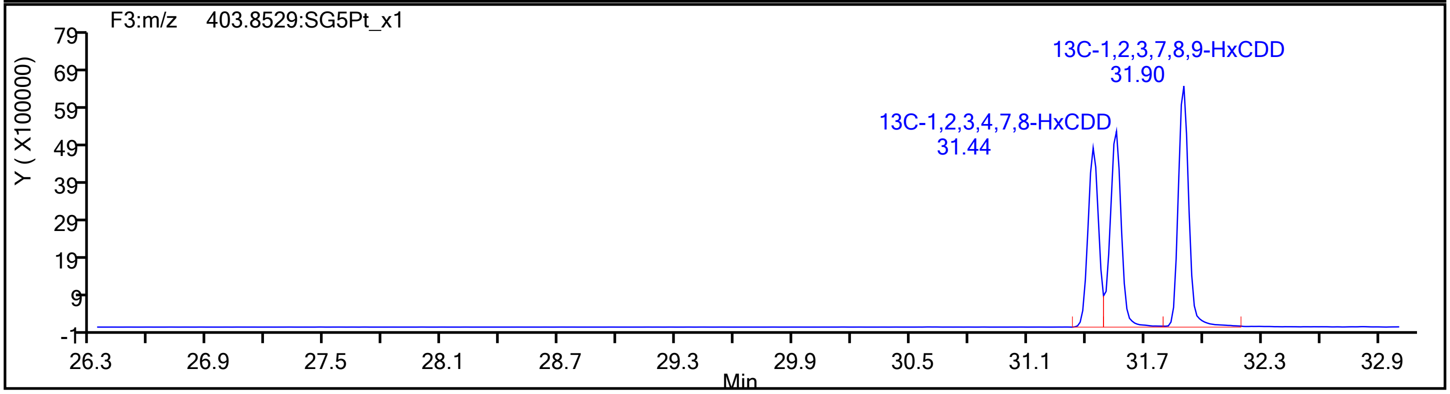

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HpCDF

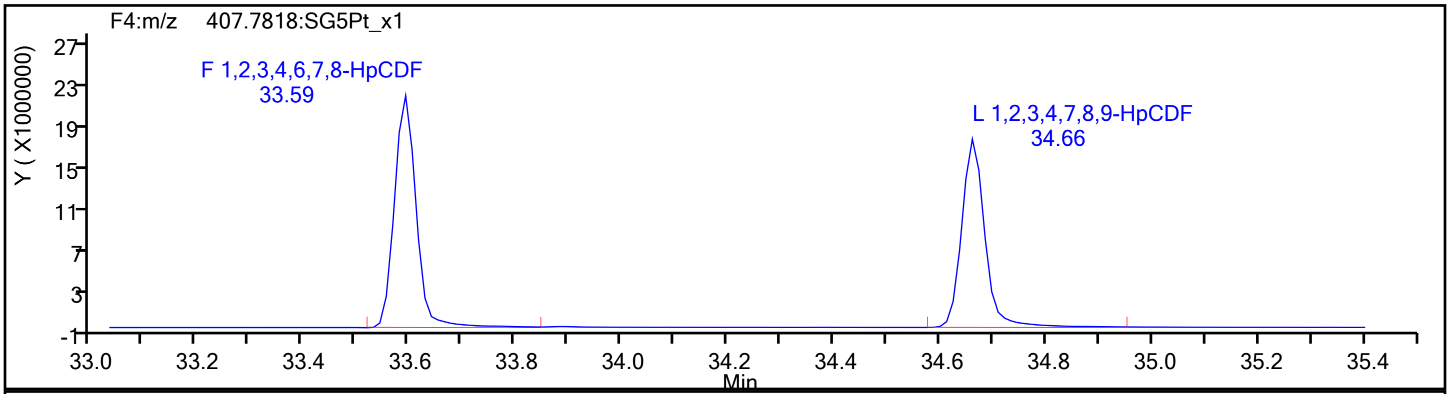

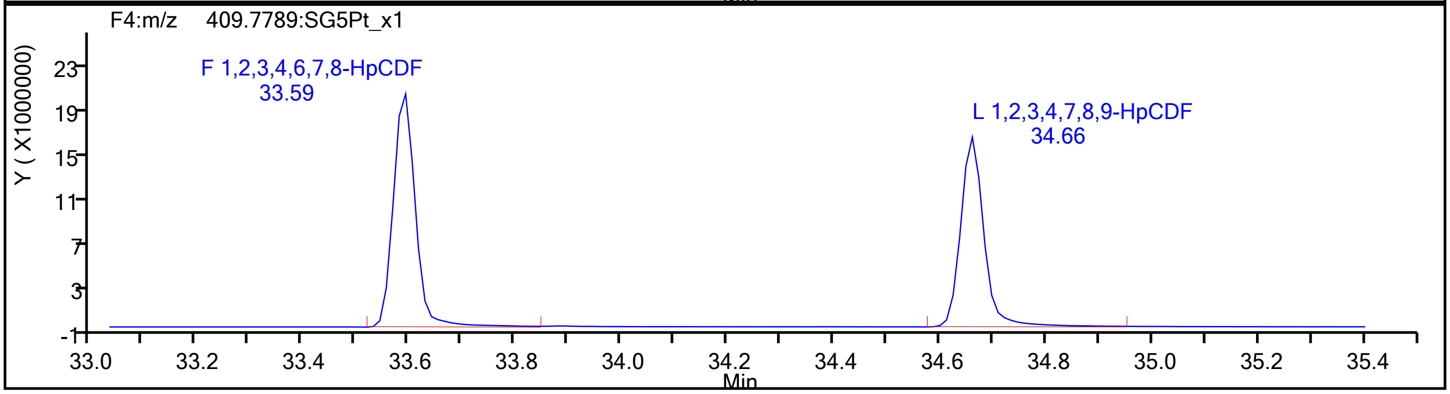

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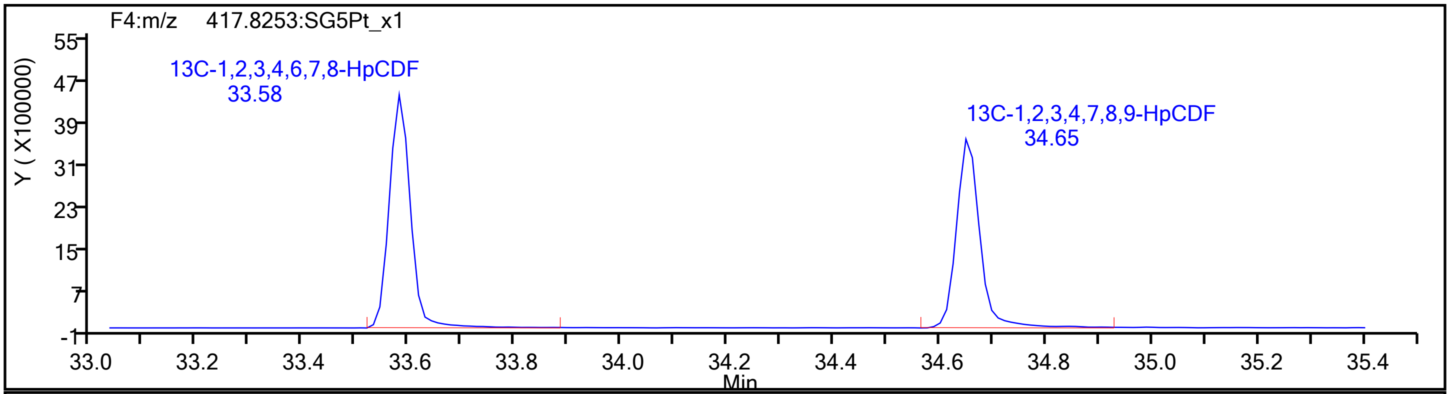

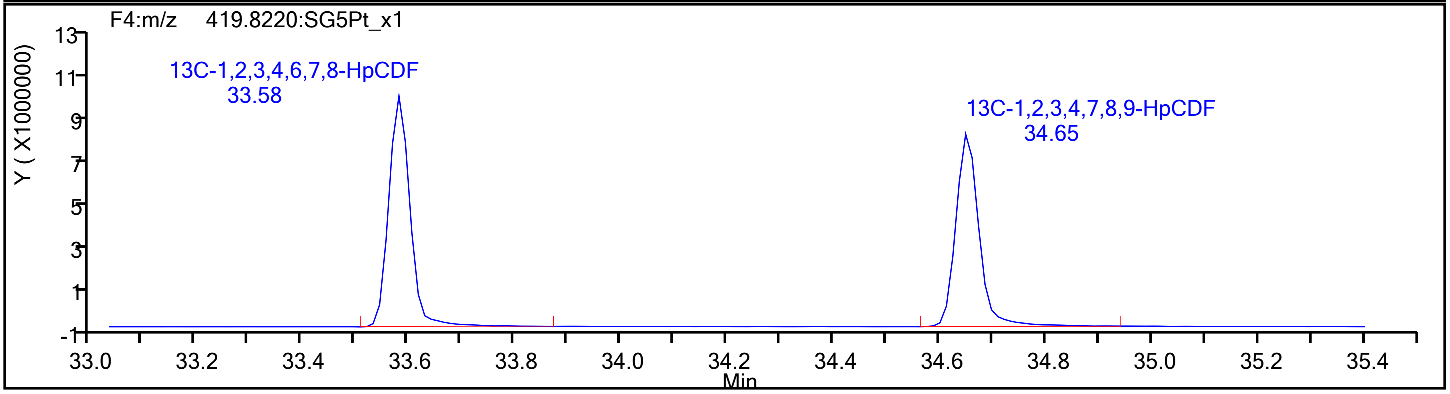

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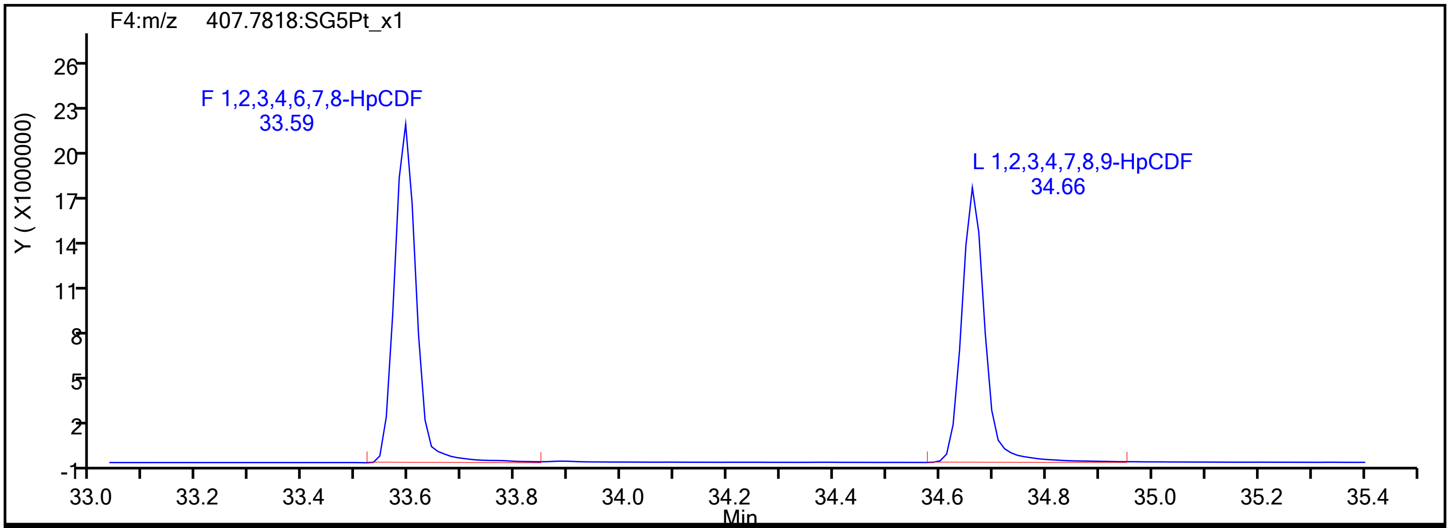

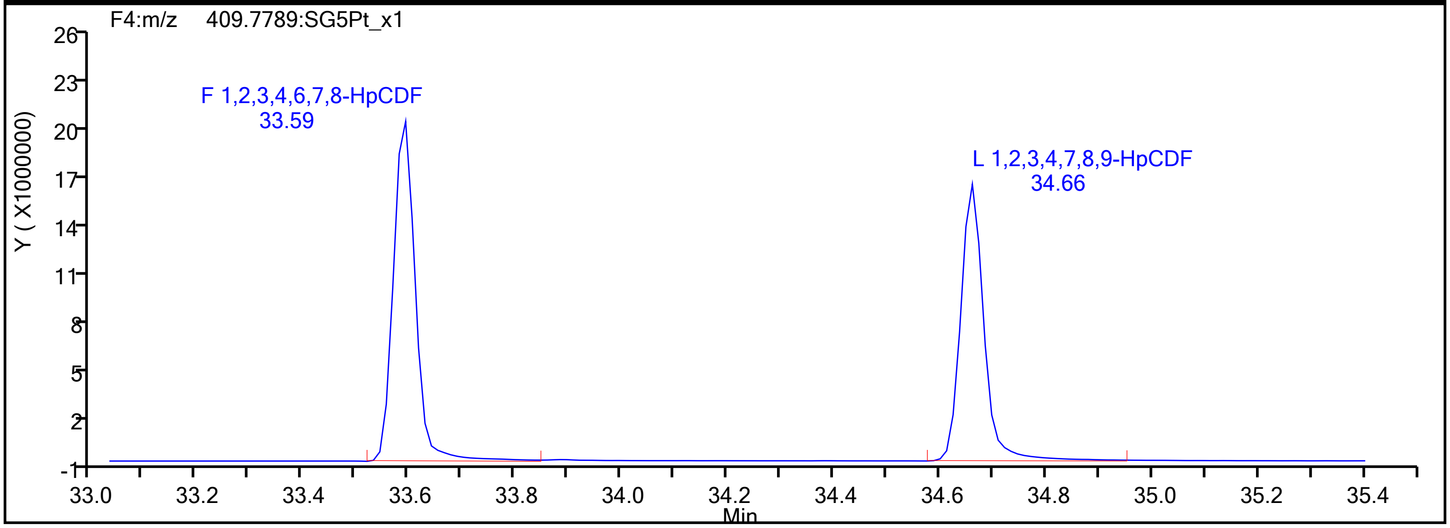

HpCDF Interference Mass

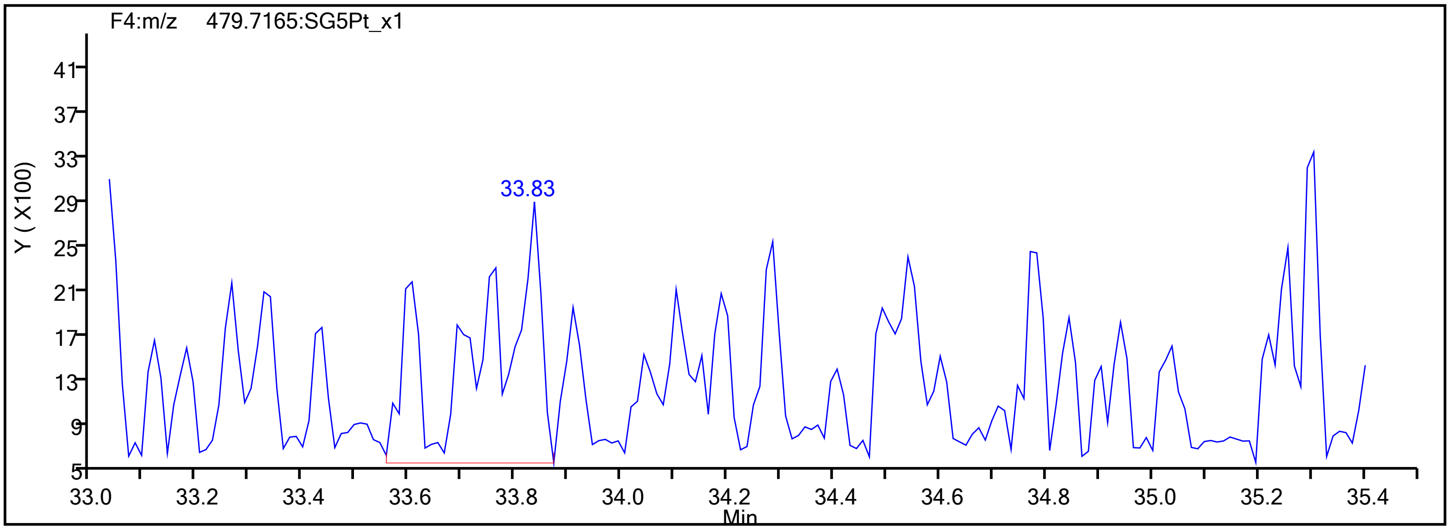

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HpCDD

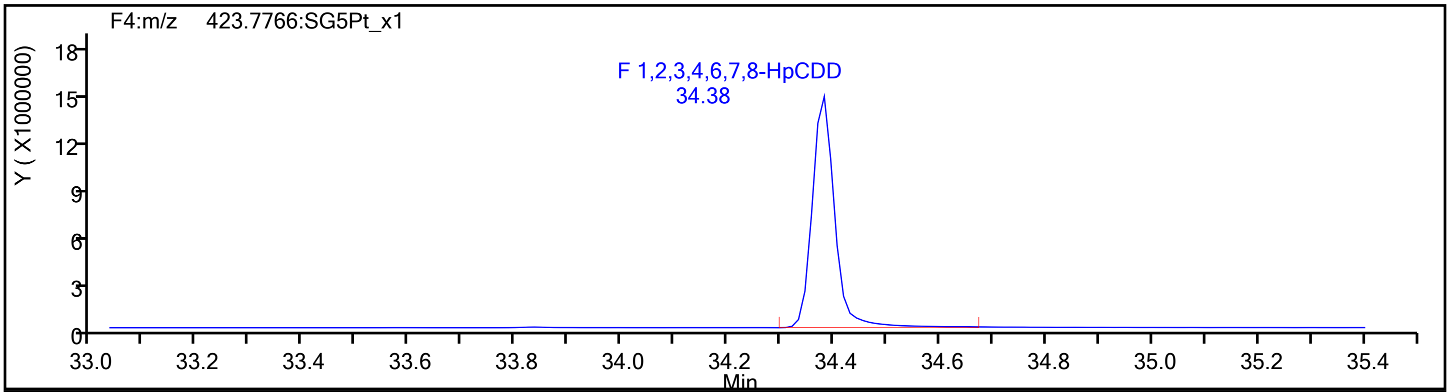

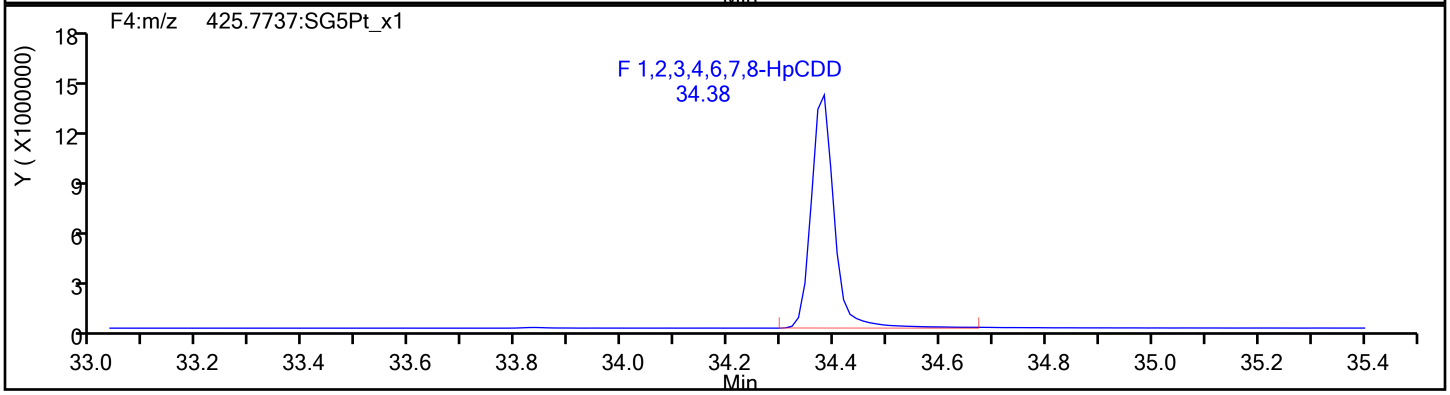

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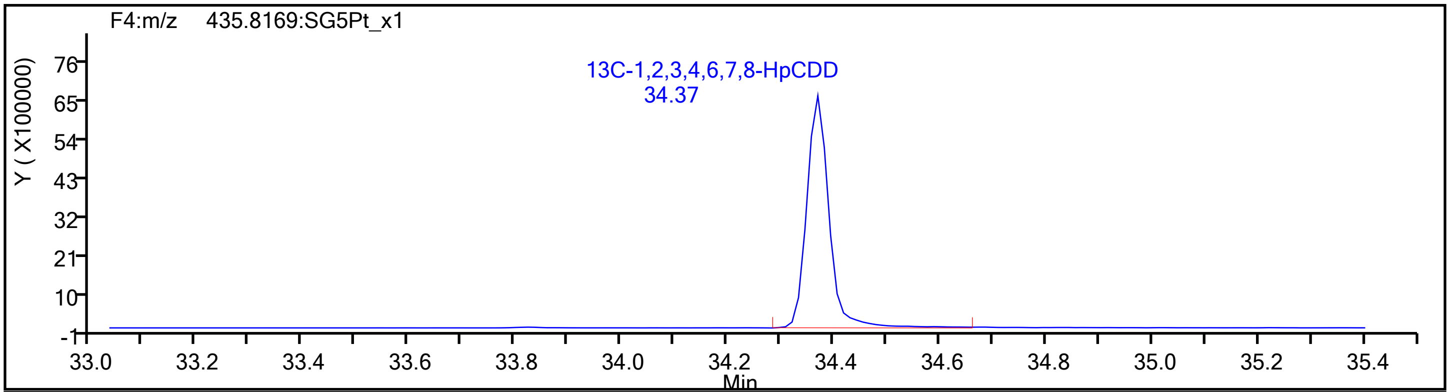

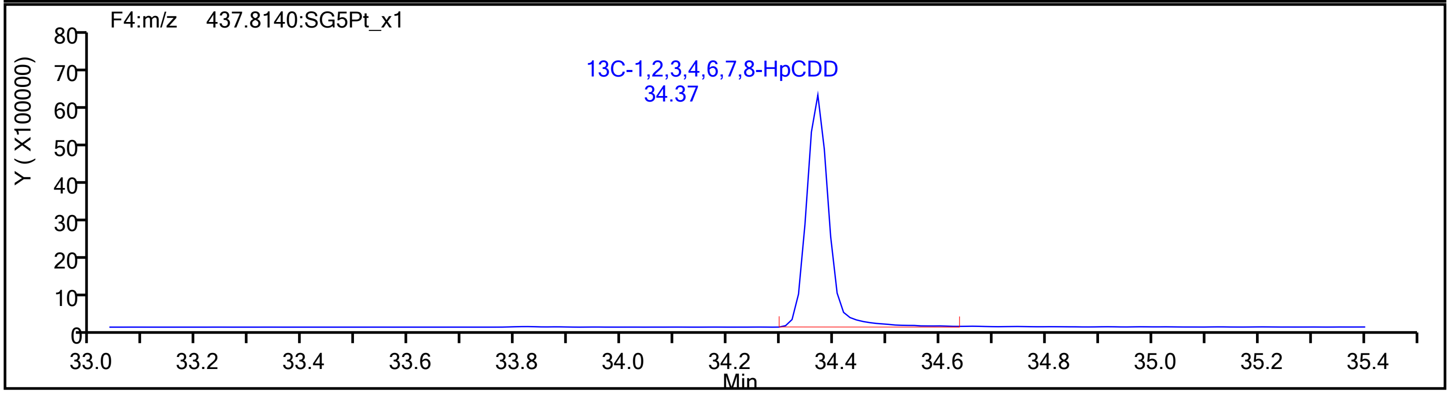

Report Date: 17-Mar-2021 13:36:15	Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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OCDF

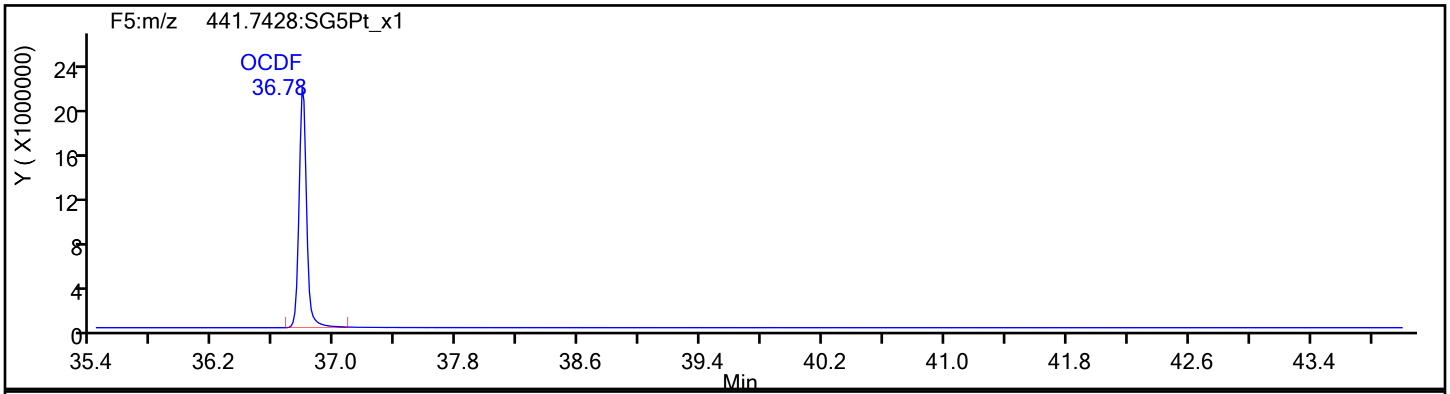

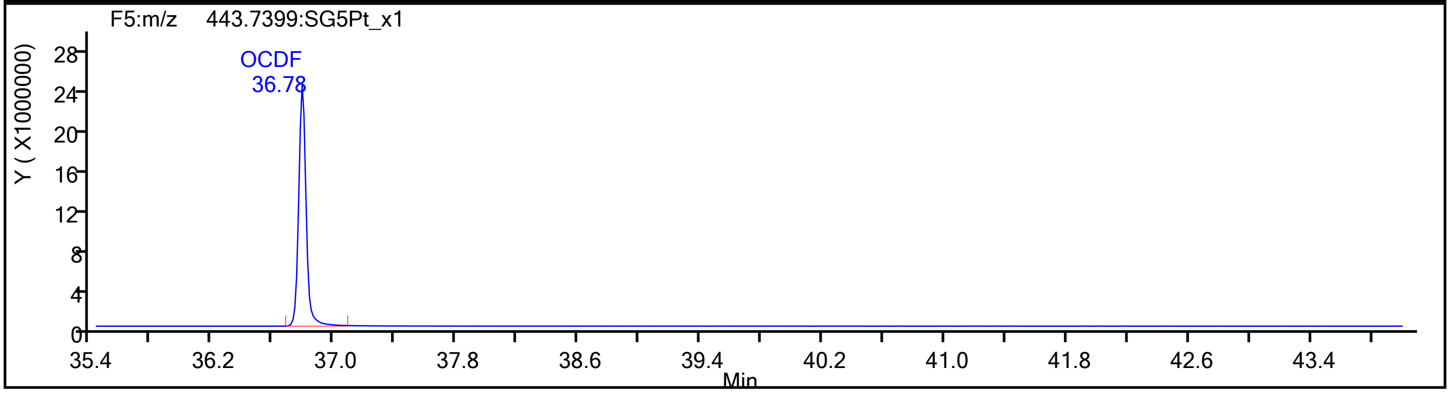

OCDF Standards

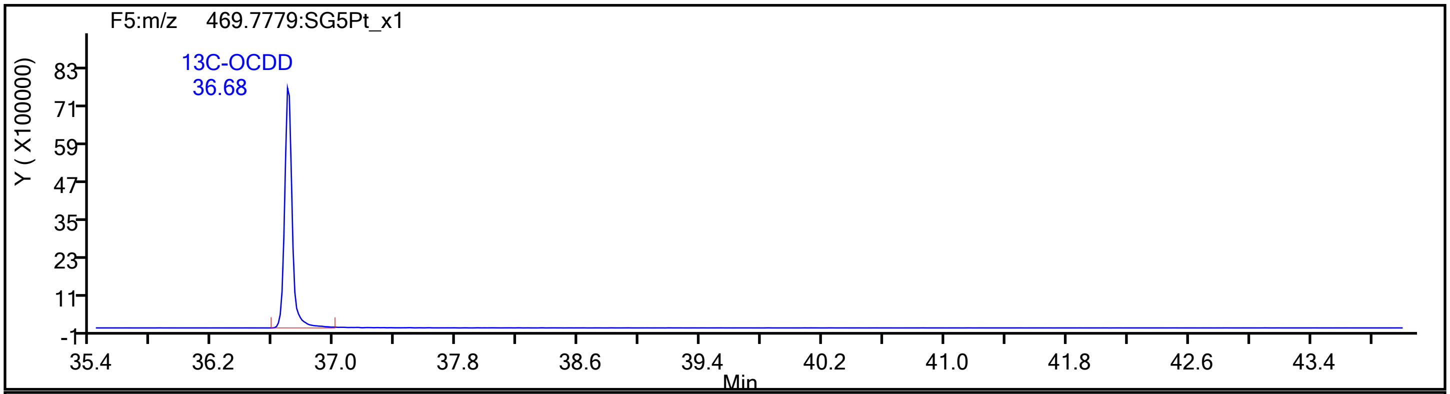

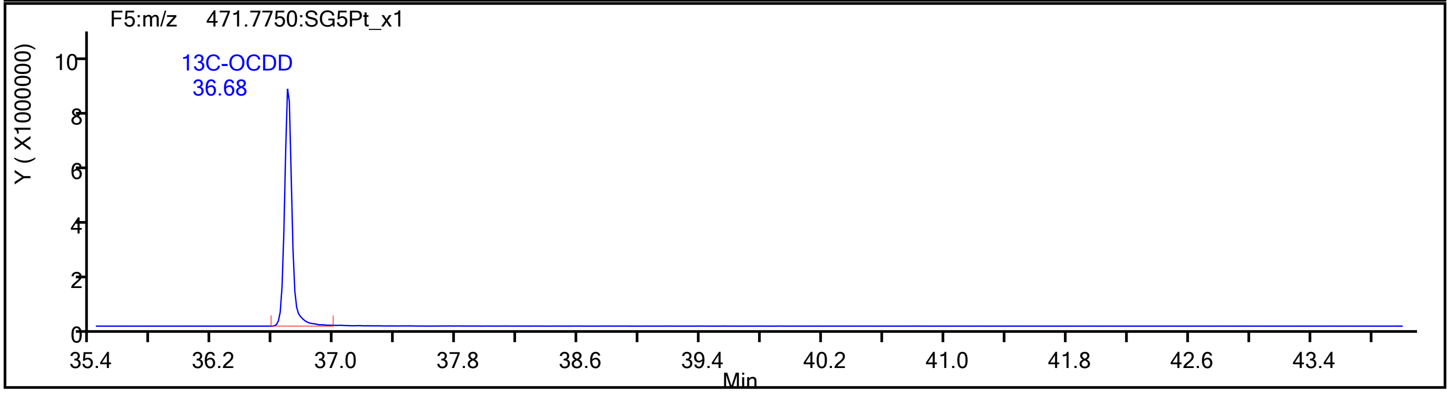

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Eurofins TestAmerica, Sacramento

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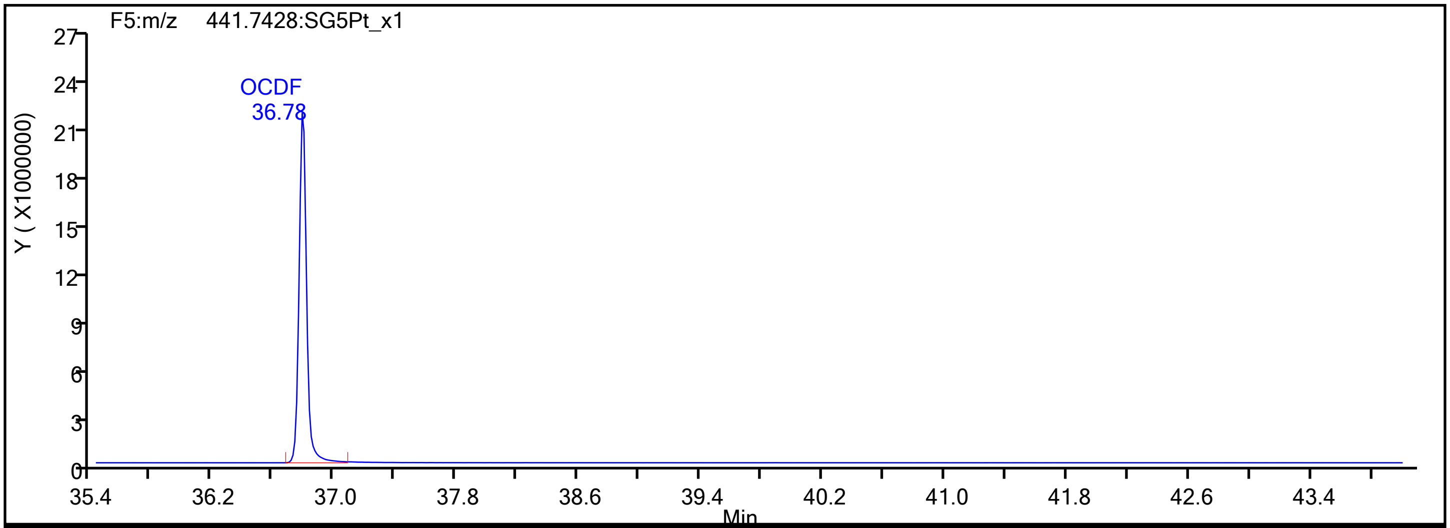

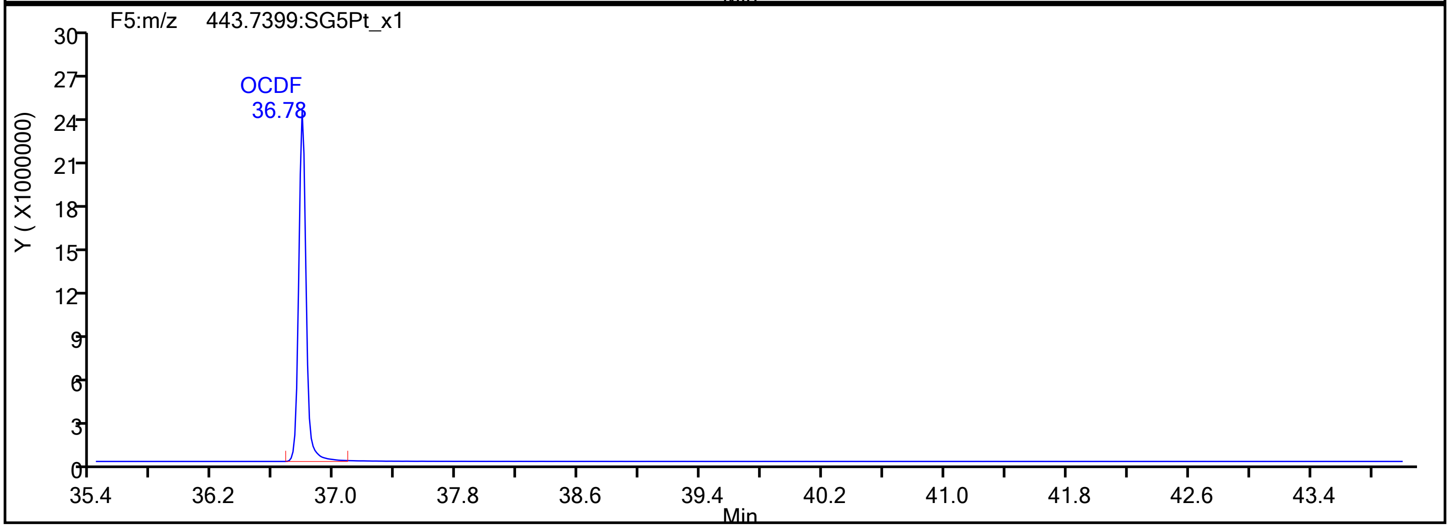

OCDF Interference Mass

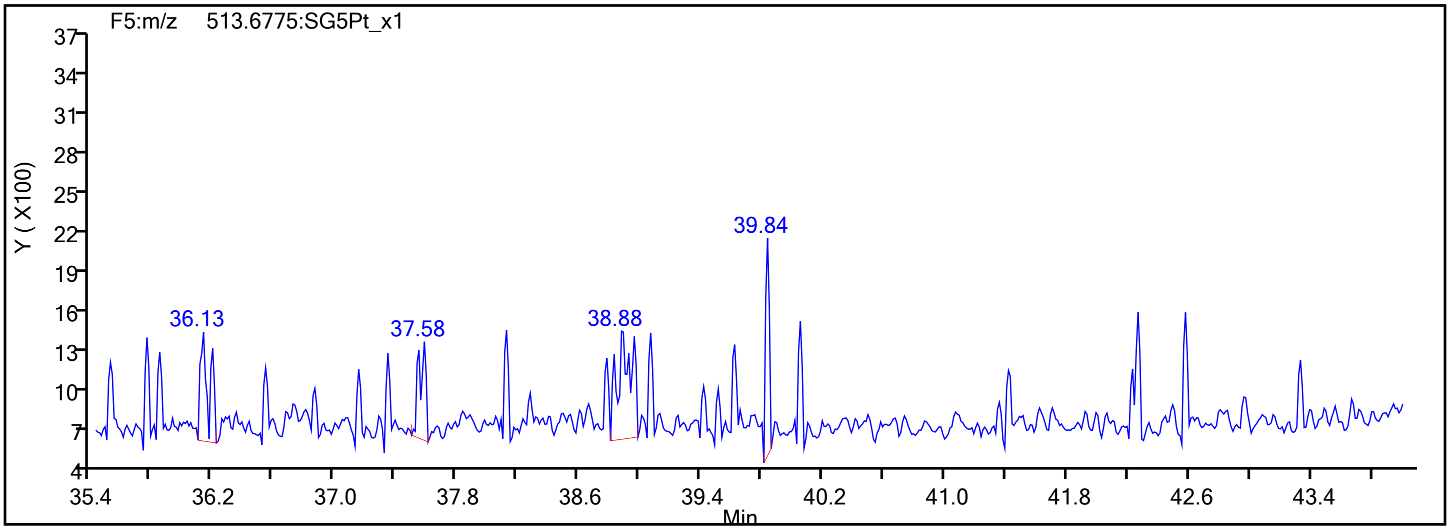

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Eurofins TestAmerica, Sacramento

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OCDD

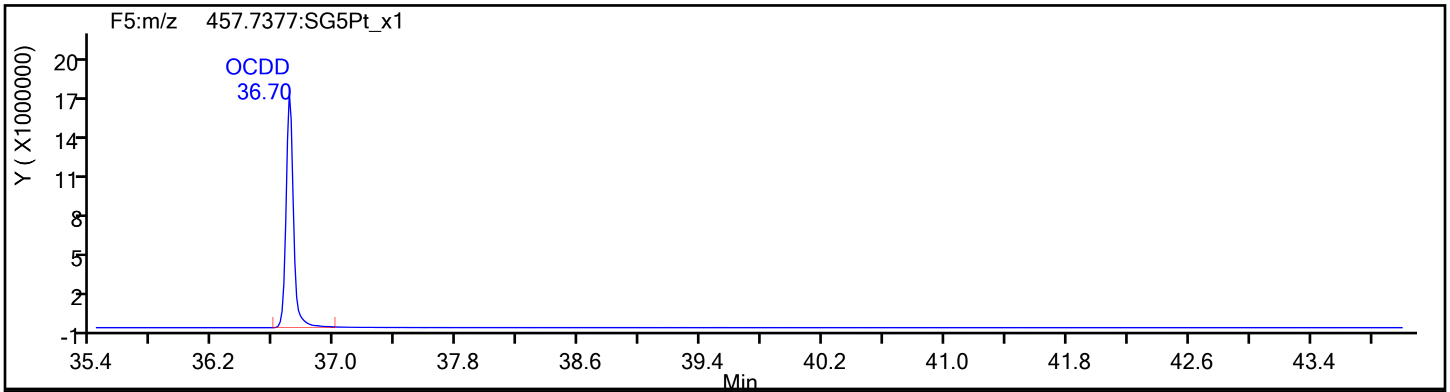

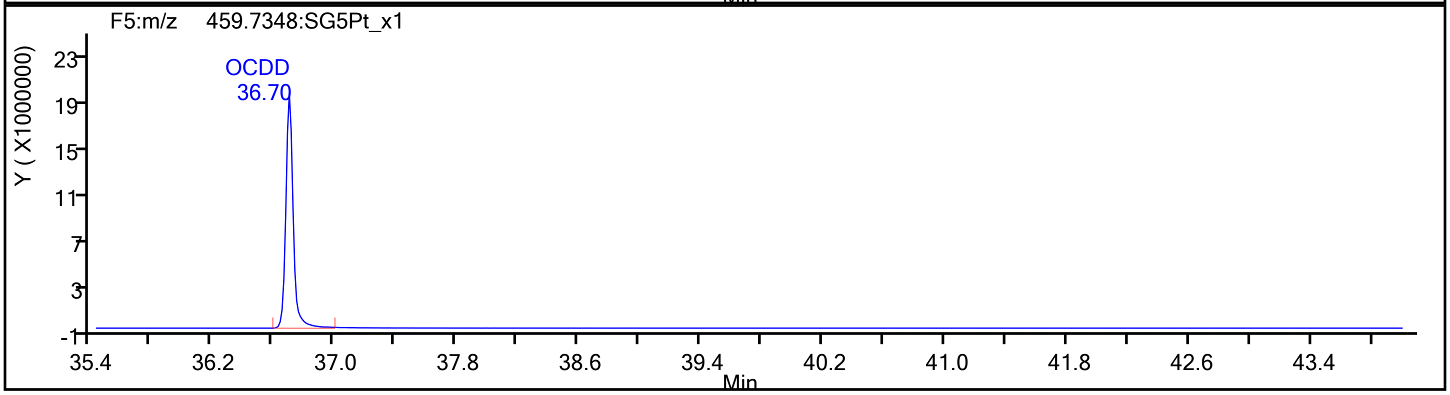

OCDD Standards

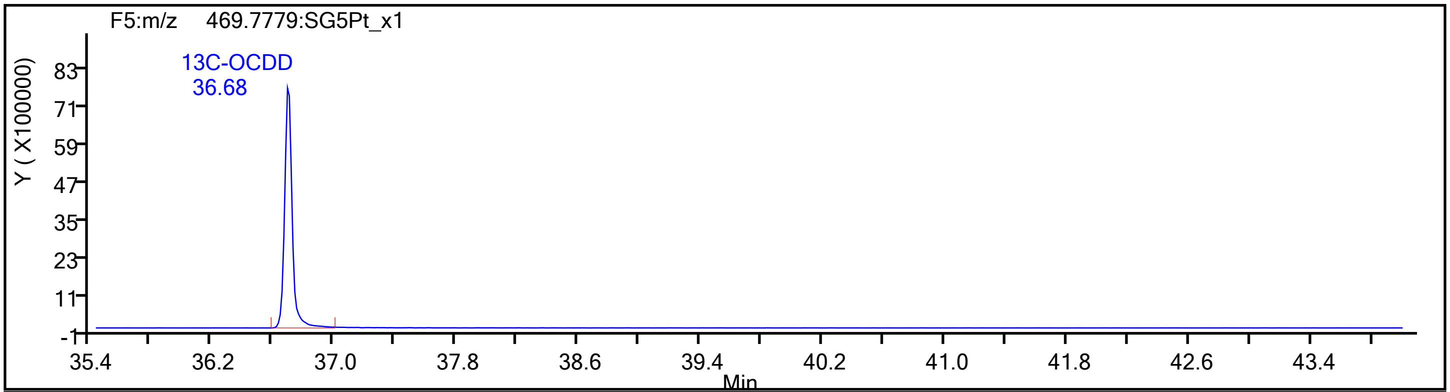

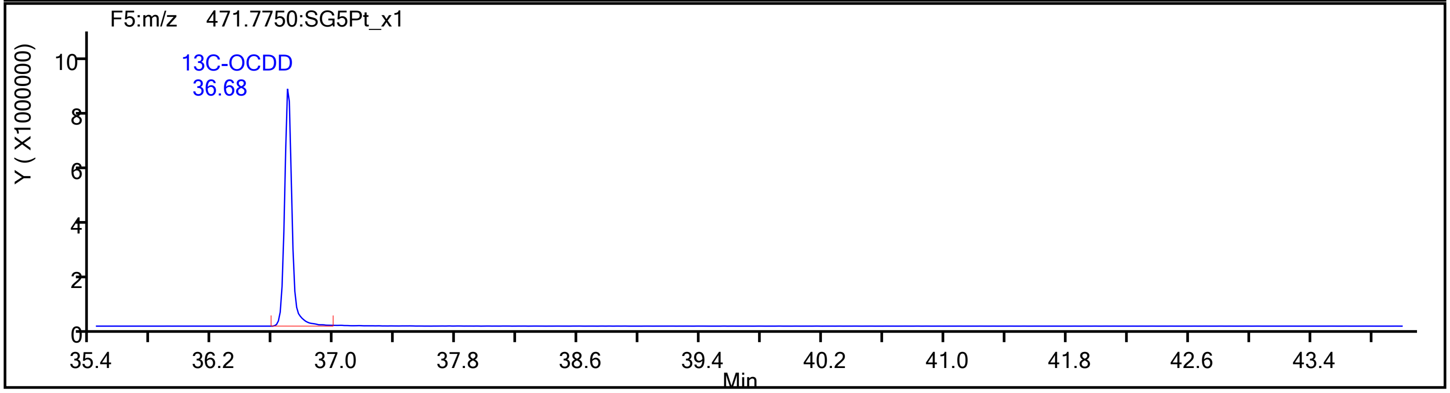

Report Date: 17-Mar-2021 13:36:15 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d		
Injection Date:	17-Mar-2021 03:25:34	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

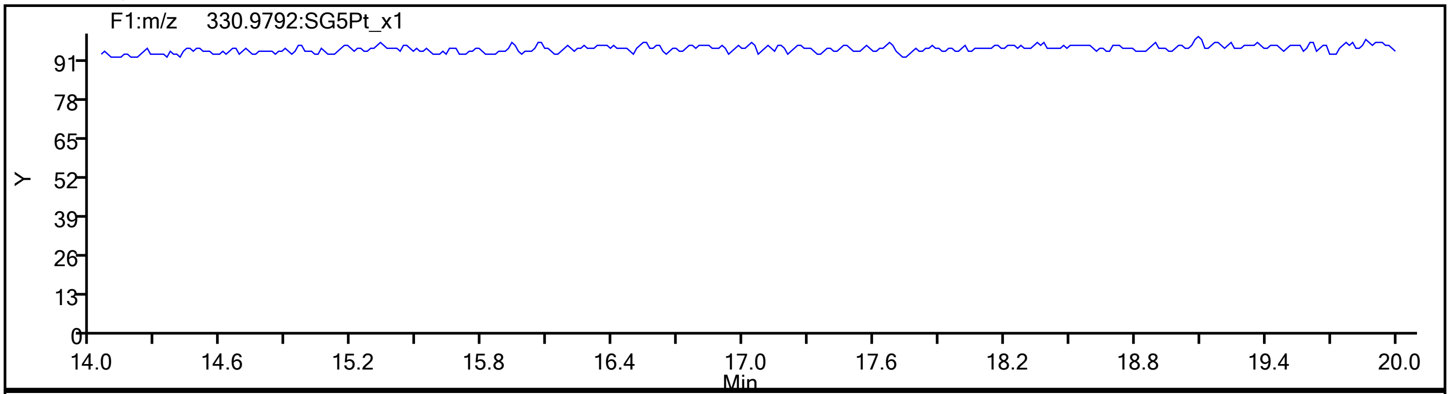

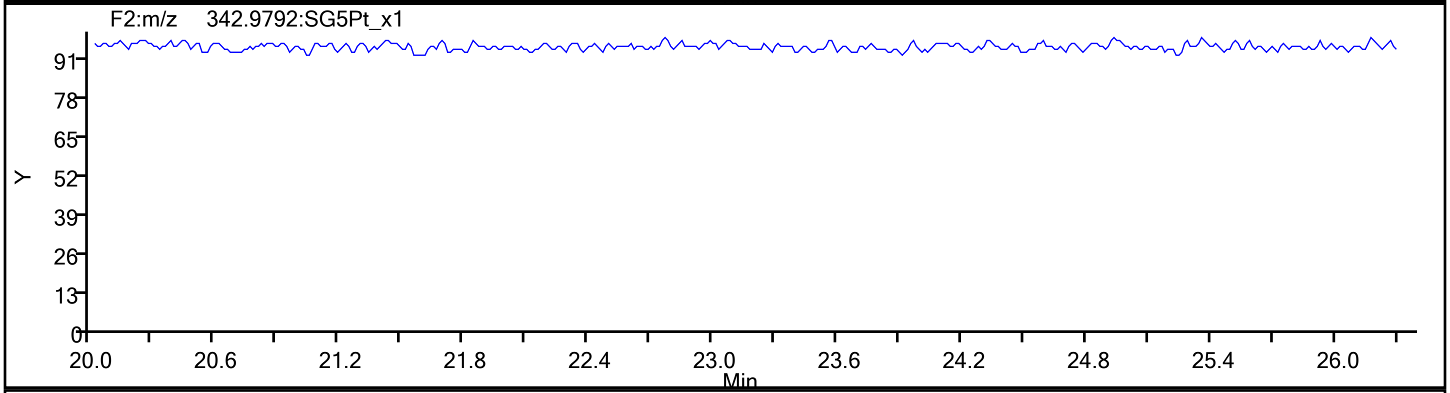

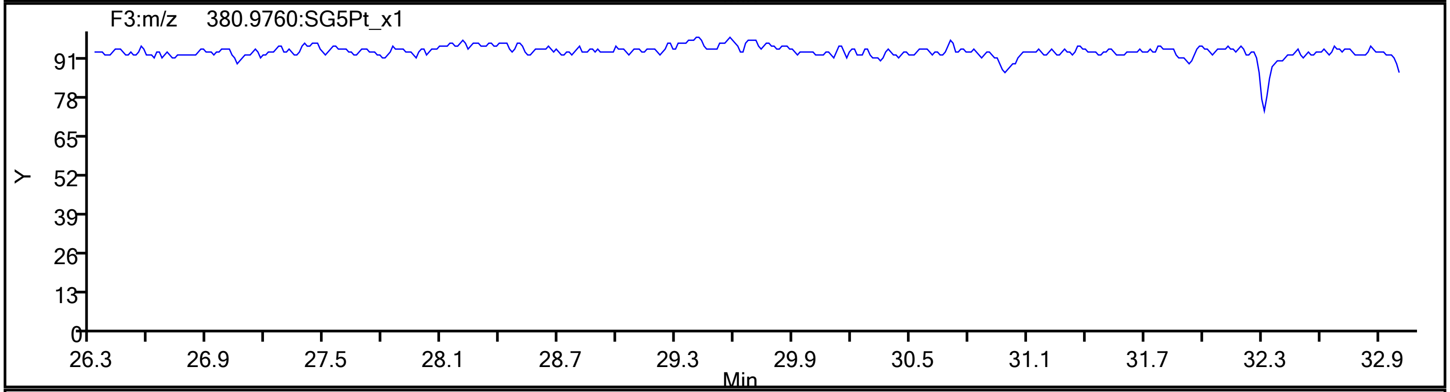

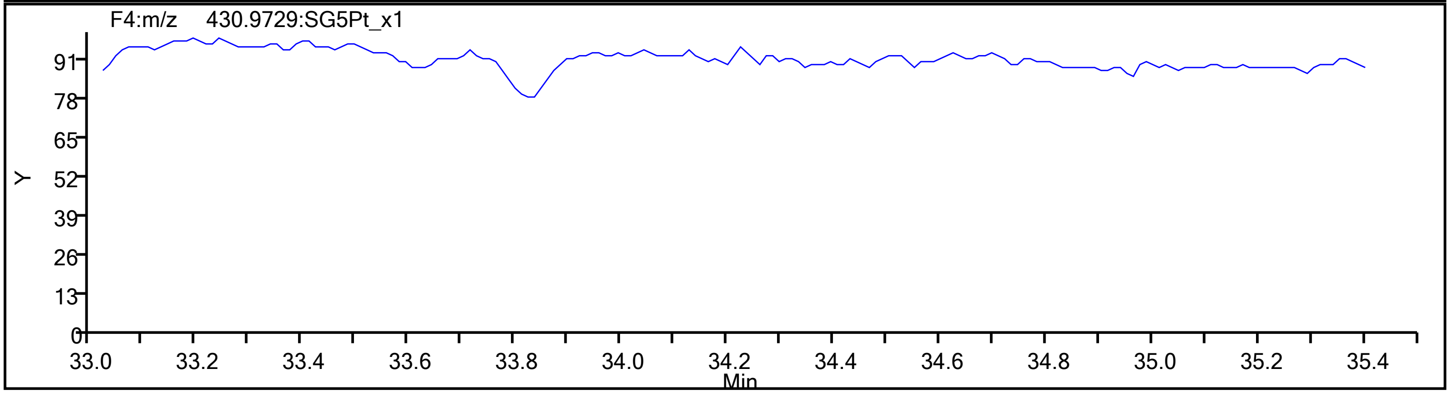

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_6.d		
Injection Date:	17-Mar-2021 03:25:34	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

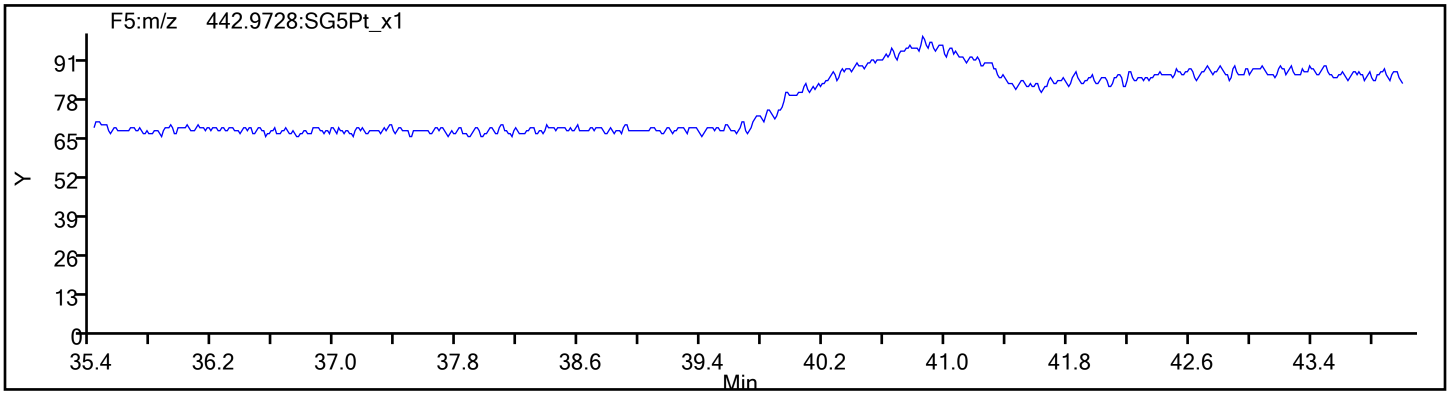

Report Date: 17-Mar-2021 13:36:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Mar-2021 04:10:31 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621D CS-6 HRDXNL6_00028
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:36:18 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: stephensk Date: 17-Mar-2021 10:52:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.521	63323330	0.71	5.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.022	86988713	0.80	1.3554	101.4	101.4	0.1420	0.1420	101	
2,3,7,8-TCDF	17.037	176227922	0.77	0.9903	204.6	204.6	0.2071	0.2071	102	
S Total TCDF					204.6	204.6	0.2071	0.2071		
D 13C-2,3,7,8-TCDD	17.717	58712323	0.70	0.9209	100.7	100.7	0.1216	0.1216	101	
$ 37Cl4-2,3,7,8-TCDD	17.733	138103821		1.0159	214.7	214.7	0.2828	0.2828	107	
2,3,7,8-TCDD	17.733	133140046	0.78	1.0991	206.3	206.3	0.1114	0.1114	103	
S Total TCDD					206.3	206.3	0.1114	0.1114		
D 13C-1,2,3,7,8-PeCDF	21.923	70522450	1.55	1.0847	102.7	102.7	0.1671	0.1671	103	
1,2,3,7,8-PeCDF	21.937	736490885	1.59	1.0209	1022.9	1022.9	1.890	1.890	102	
D 13C-2,3,4,7,8-PeCDF	23.232	73937882	1.54	1.1057	105.6	105.6	0.1639	0.1639	106	
2,3,4,7,8-PeCDF	23.260	720960457	1.57	0.9790	996.0	996.0	2.041	2.041	99.60	
S Total PeCDF					2018.9	2018.9	1.965	1.965		
D 13C-1,2,3,7,8-PeCDD	23.928	50517938	1.60	0.7689	103.8	103.8	0.0957	0.0957	104	
1,2,3,7,8-PeCDD	23.955	514946816	1.57	0.9982	1021.1	1021.1	0.5853	0.5853	102	
S Total PeCDD					1021.1	1021.1	0.5853	0.5853		
D 13C-1,2,3,4,7,8-HxCDF	30.094	62326448	0.52	1.0321	103.4	103.4	0.2133	0.2133	103	
1,2,3,4,7,8-HxCDF	30.121	657684987	1.21	1.0667	989.3	989.3	3.009	3.009	98.93	
D 13C-1,2,3,6,7,8-HxCDF	30.307	59831180	0.52	1.0218	100.3	100.3	0.2154	0.2154	100	
1,2,3,6,7,8-HxCDF	30.333	677459199	1.21	1.1178	1012.9	1012.9	2.812	2.812	101	
D 13C-2,3,4,6,7,8-HxCDF	31.239	57111280	0.52	0.9729	100.5	100.5	0.2263	0.2263	101	
2,3,4,6,7,8-HxCDF	31.252	660041754	1.22	1.1422	1011.8	1011.8	2.095	2.095	101	
D 13C-1,2,3,7,8,9-HxCDF	32.104	55080975	0.52	0.9469	99.6	99.6	0.2325	0.2325	99.62	
1,2,3,7,8,9-HxCDF	32.117	637999595	1.22	1.1455	1011.1	1011.1	1.856	1.856	101	
S Total HxCDF					4025.1	4025.1	2.443	2.443		
* 13C-1,2,3,7,8,9-HxCDD	31.904	58389969	1.26	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.452	47025482	1.24	0.7689	104.7	104.7	0.1629	0.1629	105	
1,2,3,4,7,8-HxCDD	31.465	481902898	1.25	1.0357	989.4	989.4	1.259	1.259	98.94	
D 13C-1,2,3,6,7,8-HxCDD	31.558	50613988	1.25	0.8643	100.3	100.3	0.1449	0.1449	100	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.585	501185437	1.25	0.9658	1025.2	1025.2	1.245	1.245	103	
1,2,3,7,8,9-HxCDD	31.931	533926500	1.24	1.0727	1019.6	1019.6	1.167	1.167	102	
S Total HxCDD					3034.3	3034.3	1.224	1.224		
D 13C-1,2,3,4,6,7,8-HpCDF	33.592	42606325	0.43	0.7233	100.9	100.9	0.6160	0.6160	101	
1,2,3,4,6,7,8-HpCDF	33.604	608093723	1.05	1.4017	1018.2	1018.2	5.468	5.468	102	
D 13C-1,2,3,4,7,8,9-HpCDF	34.661	41373383	0.43	0.6720	105.4	105.4	0.6630	0.6630	105	
1,2,3,4,7,8,9-HpCDF	34.674	535549540	1.06	1.2995	996.1	996.1	6.480	6.480	99.61	
S Total HpCDF					2014.3	2014.3	5.974	5.974		
D 13C-1,2,3,4,6,7,8-HpCDD	34.382	40768221	1.06	0.6855	101.9	101.9	0.3337	0.3337	102	
1,2,3,4,6,7,8-HpCDD	34.394	428663744	1.04	1.0339	1017.0	1017.0	2.224	2.224	102	
S Total HpCDD					1017.0	1017.0	2.224	2.224		
D 13C-OCDD	36.697	61088074	0.90	0.4996	209.4	209.4	0.1700	0.1700	105	
OCDF	36.793	838841264	0.91	1.3135	2090.8	2090.8	0.7339	0.7339	105	
OCDD	36.709	657930816	0.90	1.0576	2036.8	2036.8	1.100	1.100	102	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00028 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 17-Mar-2021 04:10:31 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 031621D CS-6 HRDXNL6_00028
Misc. Info.: 16MR21C10D5
Operator ID: ALM Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:36:18 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: stephensk Date: 17-Mar-2021 10:52:52

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.521	17.527	0		26229060	6585434	3637	9092	1811		
333.9339	17.521	17.527	0		37094270	9257597	3458	8645	2677	0.71(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.022	17.025	0	0.972	38529499	9858792	7403	18507	1332		
317.9389	17.022	17.025	0	0.972	48459214	12509931	4792	11980	2611	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.043	0	1.001	76919817	19603870	7389	18472	2653		
305.8987	17.037	17.043	0	1.001	99308105	25503541	10957	27392	2328	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.717	17.714	0	1.011	24192253	6045272	3637	9092	1662		
333.9339	17.717	17.714	0	1.011	34520070	8591311	3458	8645	2484	0.70(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.733	17.729	0	1.012	138103821	33728041	18209	45522	1852		
2,3,7,8-TCDD											
319.8965	17.733	17.733	0	1.001	58477117	14378065	3375	8437	4260		
321.8936	17.733	17.733	0	1.001	74662929	18328324	3791	9477	4835	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.923	21.923	0	1.251	42868943	7805040	6765	16912	1154		
353.8970	21.923	21.923	0	1.251	27653507	5156113	4722	11805	1092	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.937	21.945	0	1.001	451709548	81498703	60834	152085	1340		
341.8567	21.937	21.945	0	1.001	284781337	52072391	39185	97962	1329	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.232	23.232	0	1.326	44868651	7640425	6765	16912	1129		
353.8970	23.232	23.232	0	1.326	29069231	4873064	4722	11805	1032	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.260	23.260	0	1.001	440577998	75351475	60834	152085	1239		
341.8567	23.246	23.260	-1	1.001	280382459	47839088	39185	97962	1221	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.928	23.939	-1	1.366	31099438	5094537	2697	6742	1889		
369.8919	23.941	23.939	0	1.366	19418500	3123572	1968	4920	1587	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.955	23.963	0	1.001	314226188	51147315	11736	29340	4358		
357.8516	23.955	23.963	0	1.001	200720628	32738792	7471	18677	4382	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.094	30.094	0	0.943	21321575	3459914	4735	11837	731		
385.8610	30.094	30.094	0	0.943	41004873	6534261	8531	21327	766	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.121	30.123	0	1.001	360669890	57732142	69889	174722	826		
375.8178	30.121	30.123	0	1.001	297015097	47271839	58424	146060	809	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.307	30.315	0	0.950	20593894	3527896	4735	11837	745		
385.8610	30.307	30.315	0	0.950	39237286	6675935	8531	21327	783	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.333	30.336	0	1.001	371601963	64487591	69889	174722	923		
375.8178	30.333	30.336	0	1.001	305857236	53046970	58424	146060	908	1.21(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.239	31.239	0	0.979	19627964	4627014	4735	11837	977		
385.8610	31.239	31.239	0	0.979	37483316	8776708	8531	21327	1029	0.52(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.252	31.257	0	1.000	362568805	82722457	69889	174722	1184		
375.8178	31.252	31.257	0	1.000	297472949	68212550	58424	146060	1168	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.104	32.101	0	1.006	18897539	5202176	4735	11837	1099		
385.8610	32.104	32.101	0	1.006	36183436	9883219	8531	21327	1159	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.117	32.115	0	1.000	350638145	95708597	69889	174722	1369		
375.8178	32.117	32.115	0	1.000	287361450	77834015	58424	146060	1332	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.907	0		32563882	8385312	3923	9807	2137		
403.8529	31.904	31.907	0		25826087	6679396	3624	9060	1843	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.452	31.449	0	0.986	26043421	6483652	3923	9807	1653		
403.8529	31.452	31.449	0	0.986	20982061	5210067	3624	9060	1438	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.465	31.465	0	1.000	267975672	68349918	33300	83250	2053		
391.8127	31.465	31.465	0	1.000	213927226	54297603	27717	69292	1959	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.558	31.563	0	0.989	28073916	6930813	3923	9807	1767		
403.8529	31.558	31.563	0	0.989	22540072	5751685	3624	9060	1587	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.585	31.579	0	1.001	278774408	67249361	33300	83250	2020		
391.8127	31.571	31.579	0	1.000	222411029	54913381	27717	69292	1981	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.931	31.926	0	1.015	296059040	76623067	33300	83250	2301		
391.8127	31.917	31.926	0	1.015	237867460	61653641	27717	69292	2224	1.24(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.592	33.587	0	1.053	12881771	4459763	7351	18377	607		
419.8220	33.592	33.587	0	1.053	29724554	10239208	19497	48742	525	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.604	33.600	0	1.000	311673551	105266756	223088	557720	472		
409.7789	33.604	33.600	0	1.000	296420172	97574577	227541	568852	429	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.661	34.659	0	1.086	12515977	4050528	7351	18377	551		
419.8220	34.661	34.659	0	1.086	28857406	9326887	19497	48742	478	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.674	34.669	0	1.000	275272125	87550854	223088	557720	392		
409.7789	34.674	34.669	0	1.000	260277415	81255798	227541	568852	357	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.382	34.377	0	1.078	21016347	6691145	6438	16095	1039		
437.8140	34.382	34.377	0	1.078	19751874	6209924	7345	18362	845	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.394	34.387	0	1.000	218777713	68114592	56039	140097	1215		
425.7737	34.382	34.387	0	1.000	209886031	65978816	62590	156475	1054	1.04(0.88-1.20)	
13C-OCDD											
469.7779	36.697	36.694	0	1.150	29000799	7831862	2495	6237	3139		
471.7750	36.697	36.694	0	1.150	32087275	8793520	2624	6560	3351	0.90(0.76-1.02)	
OCDF											
441.7428	36.793	36.790	0	1.003	400069439	107188952	15433	38582	6945		
443.7399	36.793	36.790	0	1.003	438771825	120249293	16620	41550	7235	0.91(0.76-1.02)	
OCDD											
457.7377	36.709	36.704	0	1.000	310992257	86037628	17521	43802	4911		
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QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00028 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:36:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d		
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

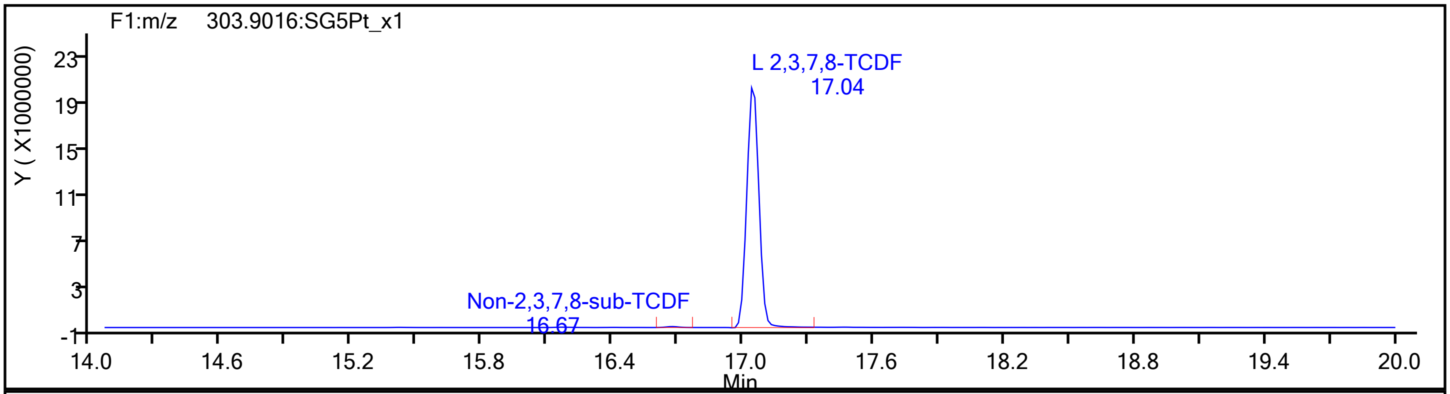

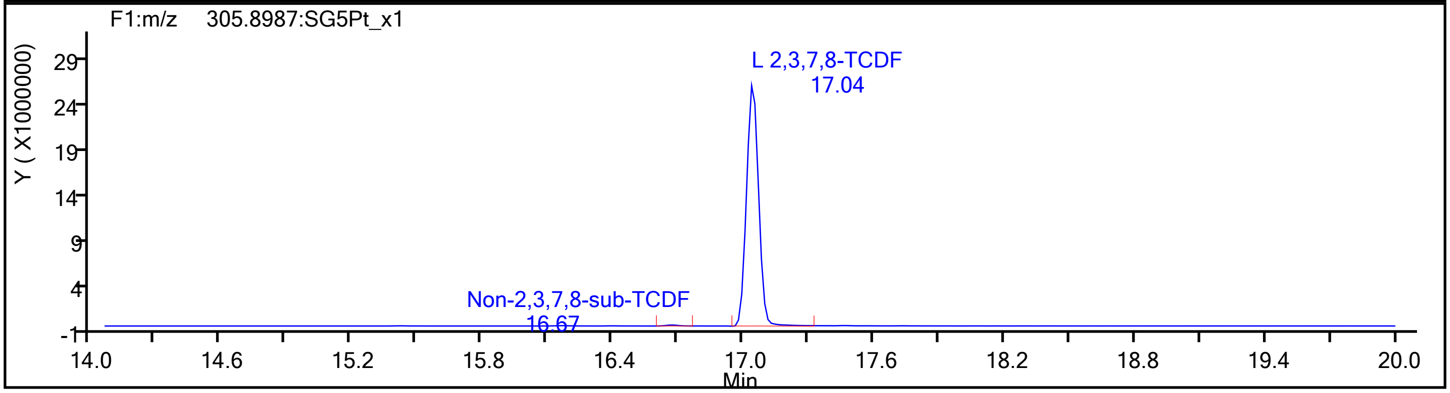

TCDF Standards

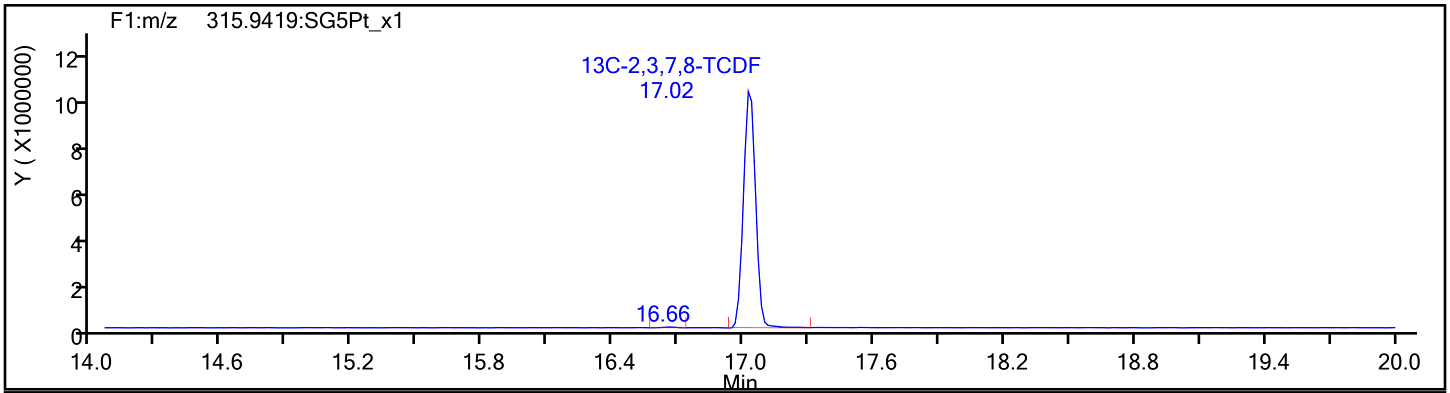

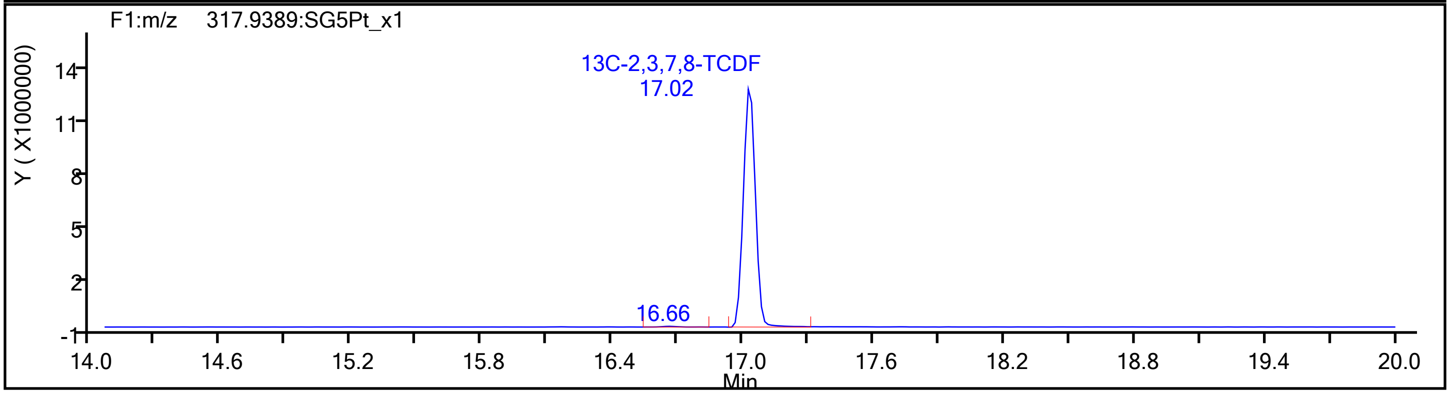

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

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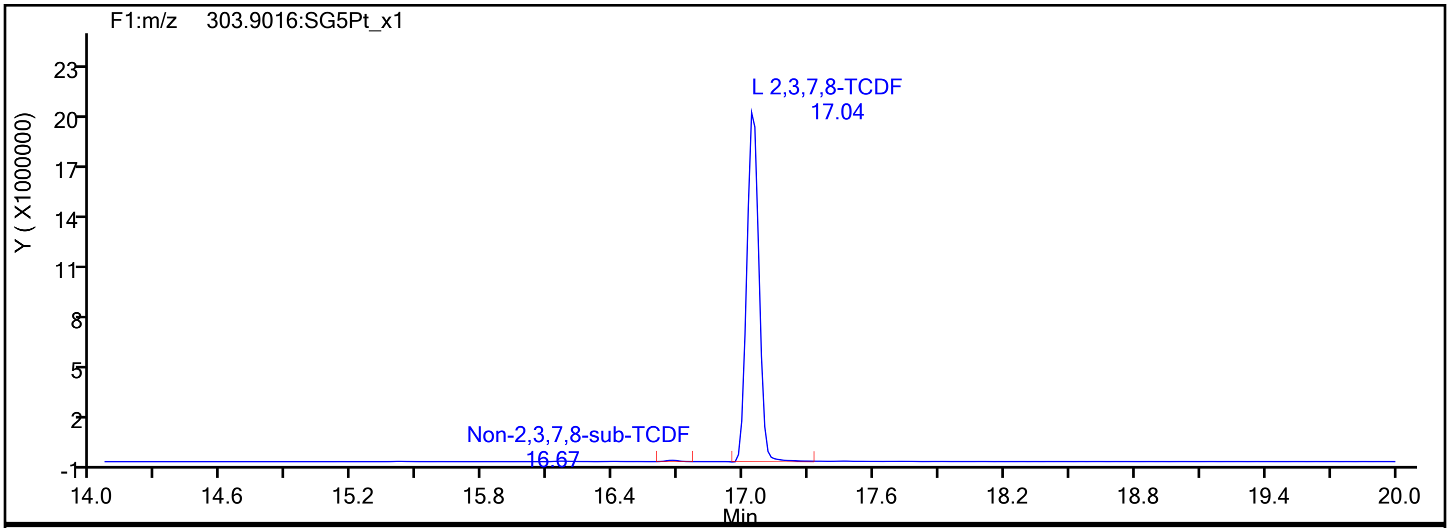

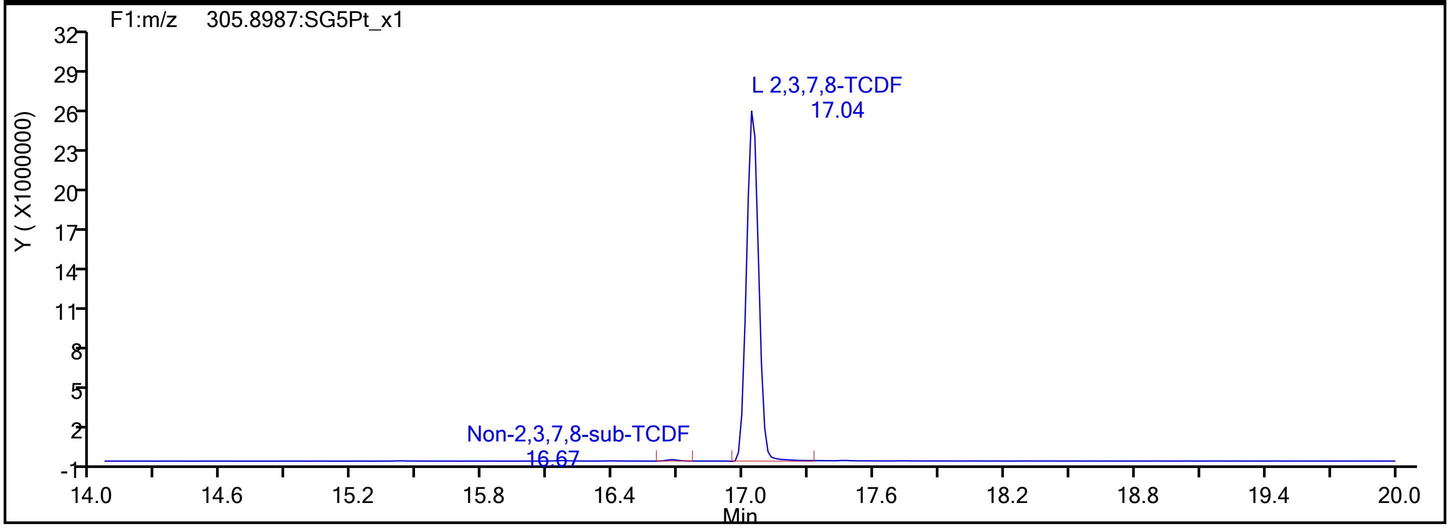

TCDF Interference Mass

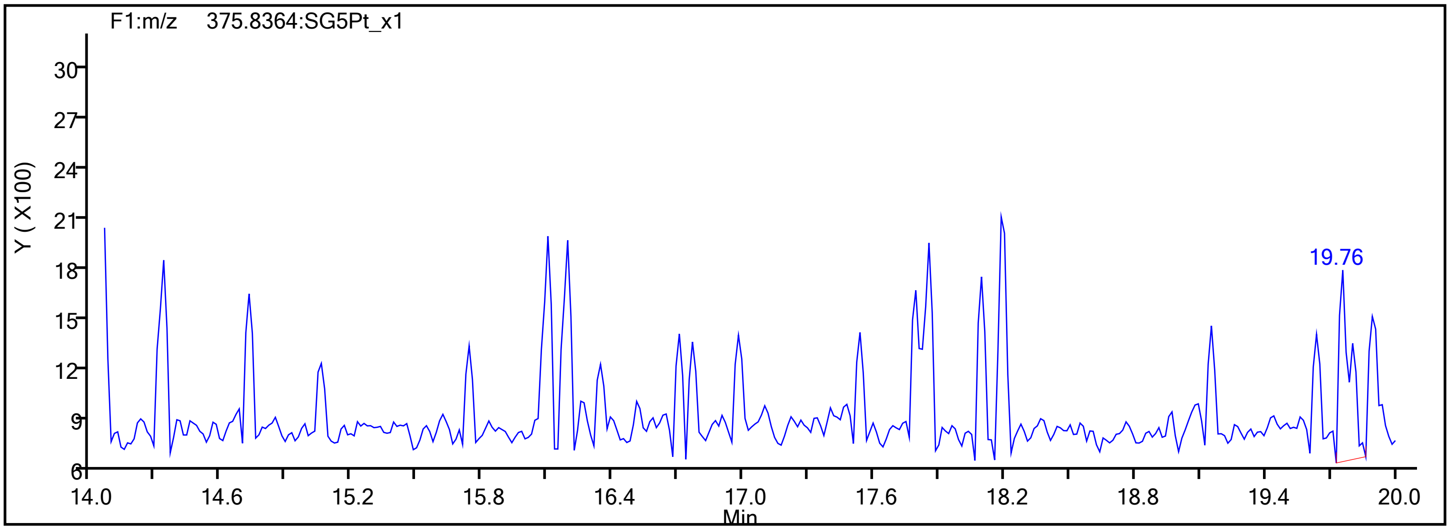

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Eurofins TestAmerica, Sacramento

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TCDD

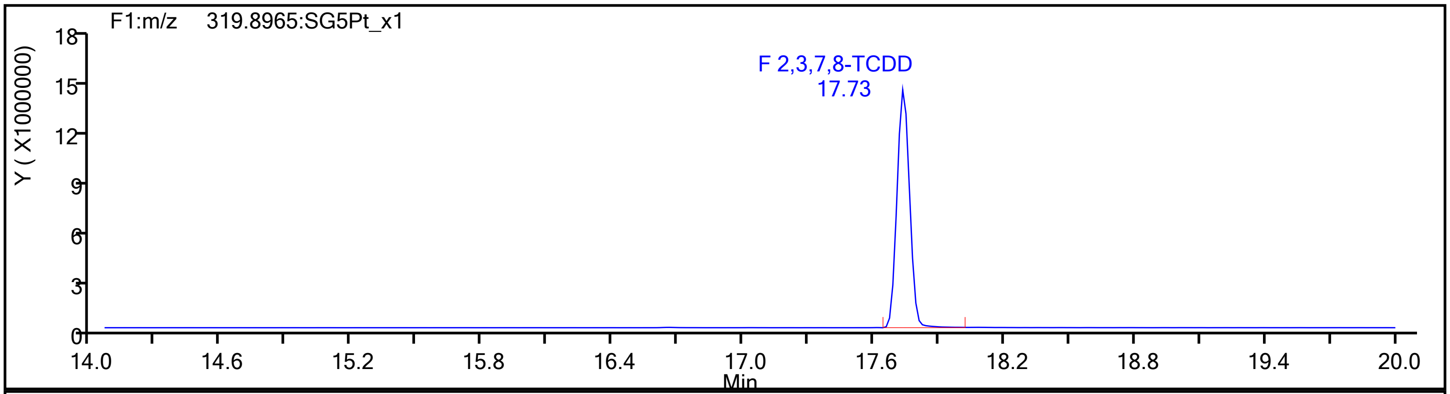

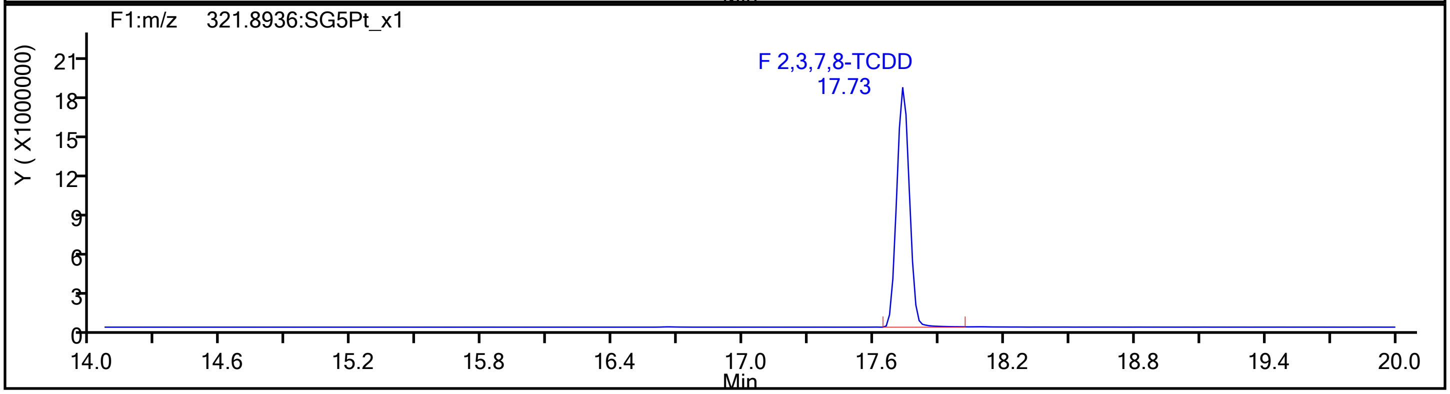

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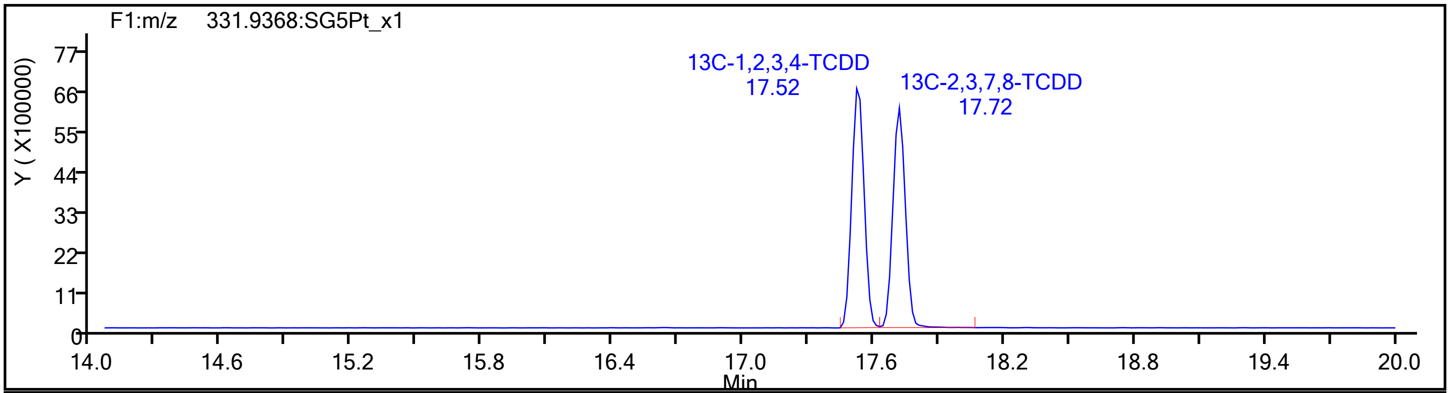

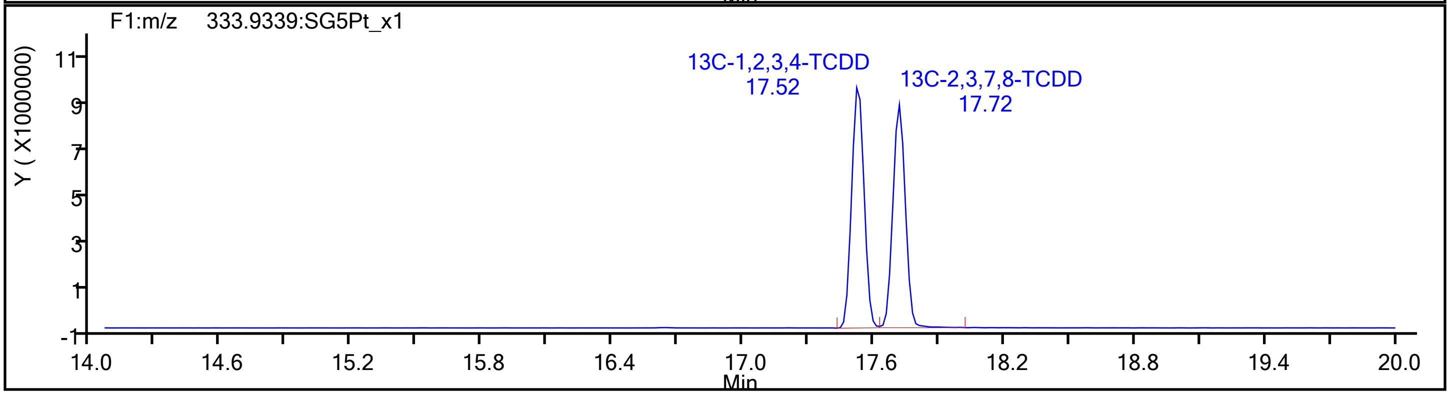

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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37Cl4-TCDD

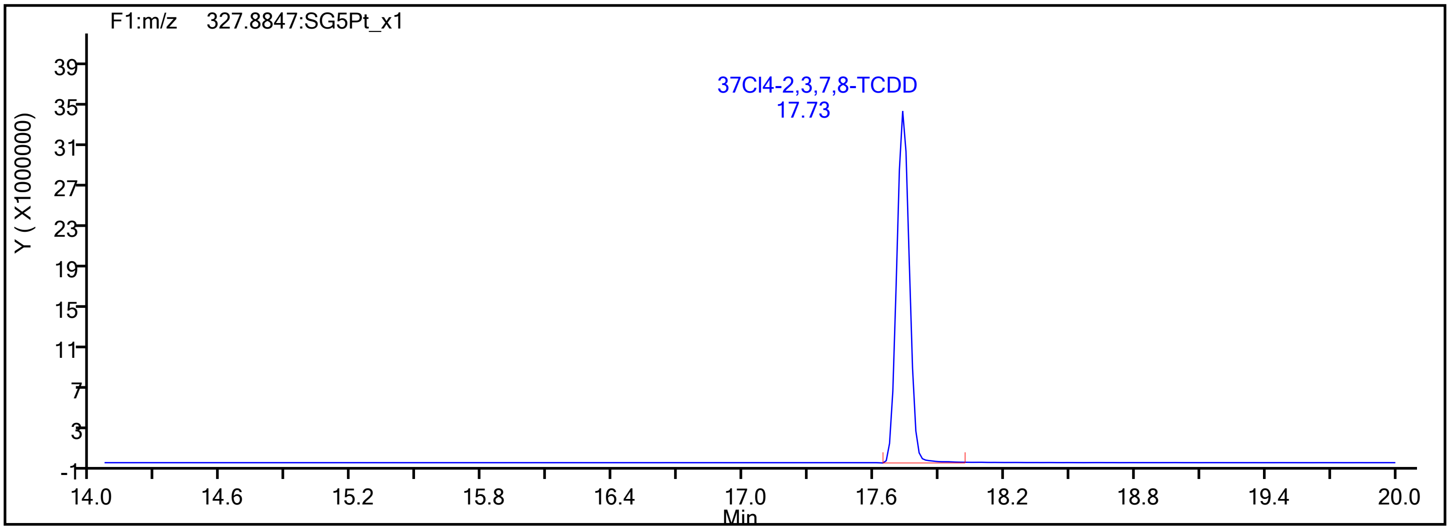

37Cl4-TCDD Standards

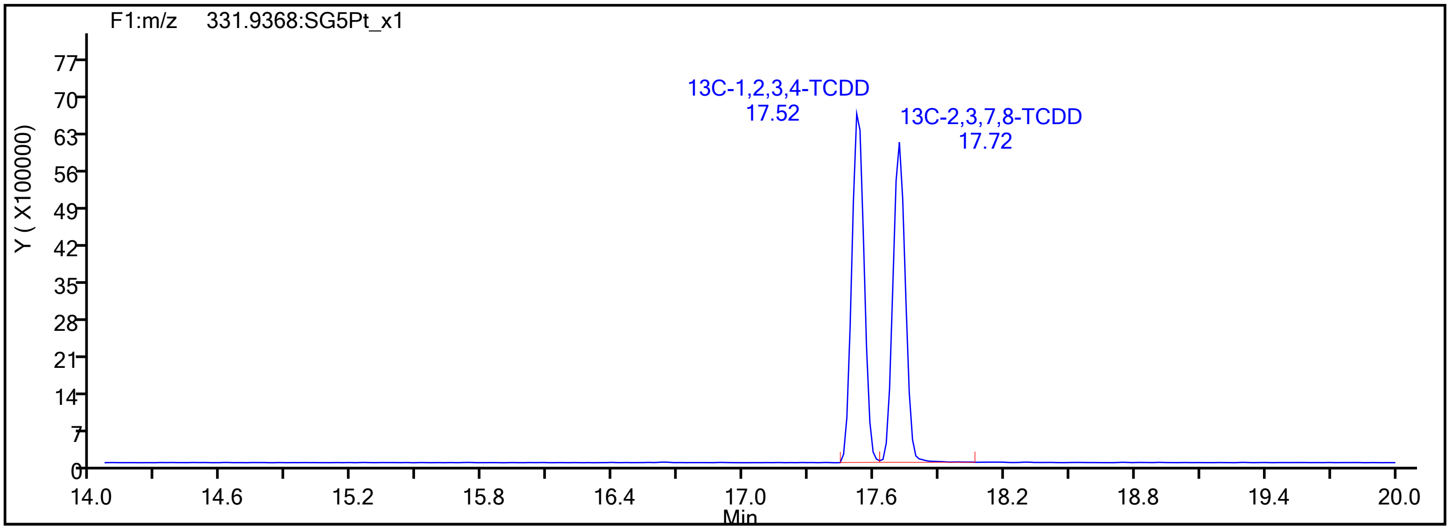

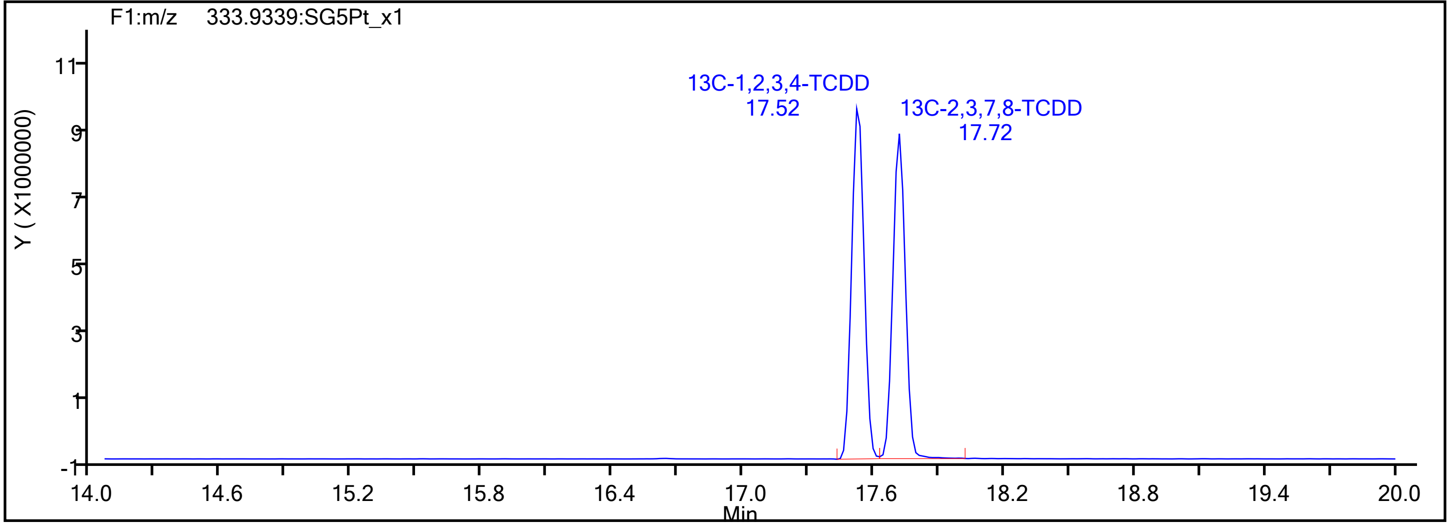

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

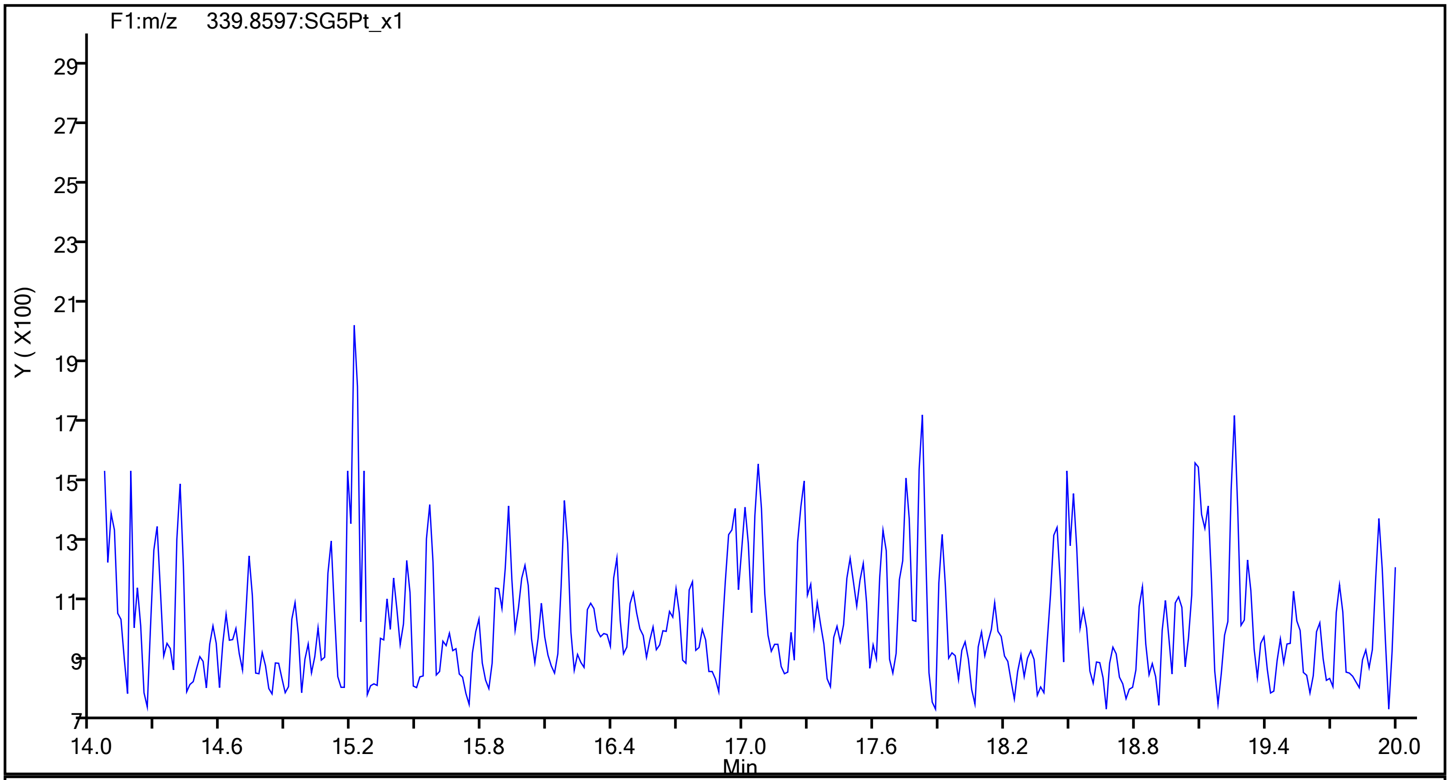

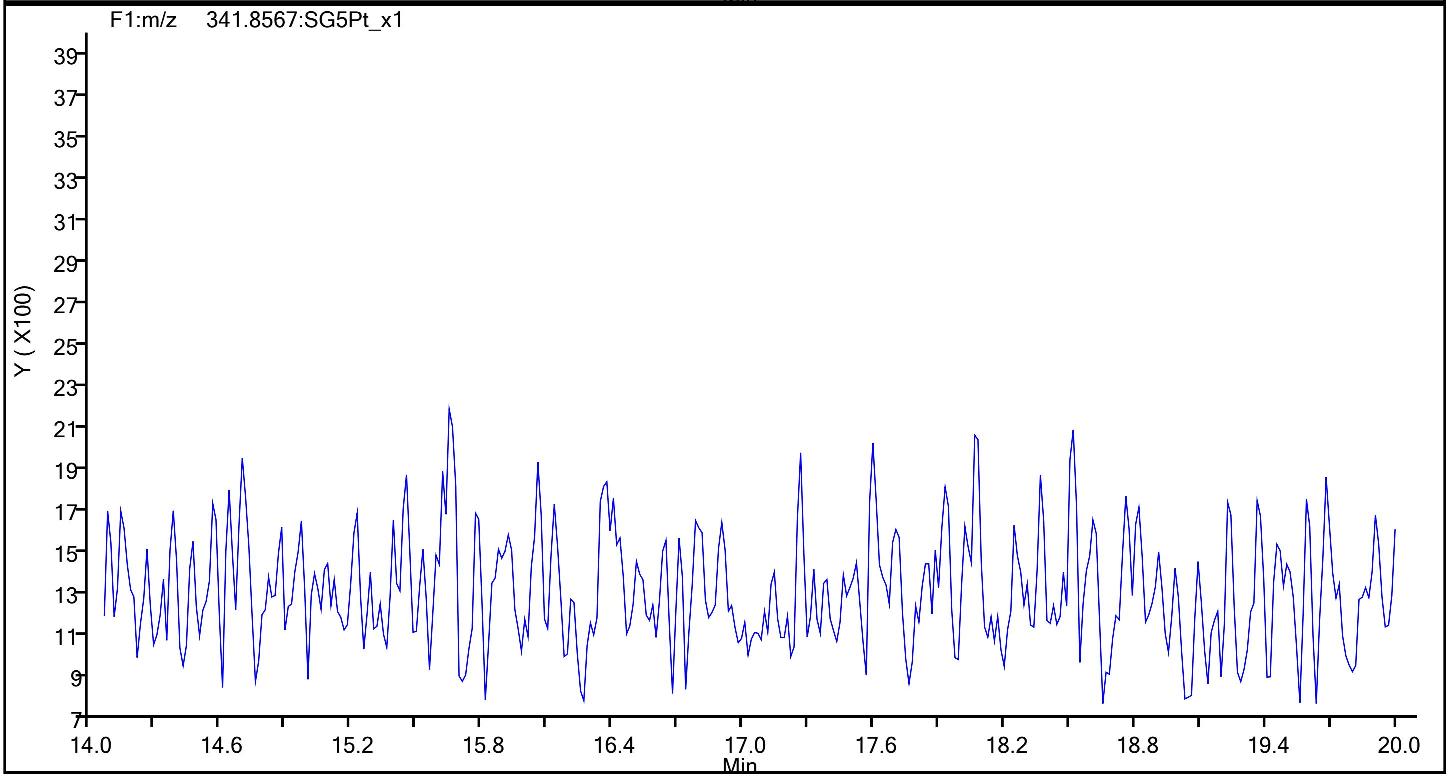

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

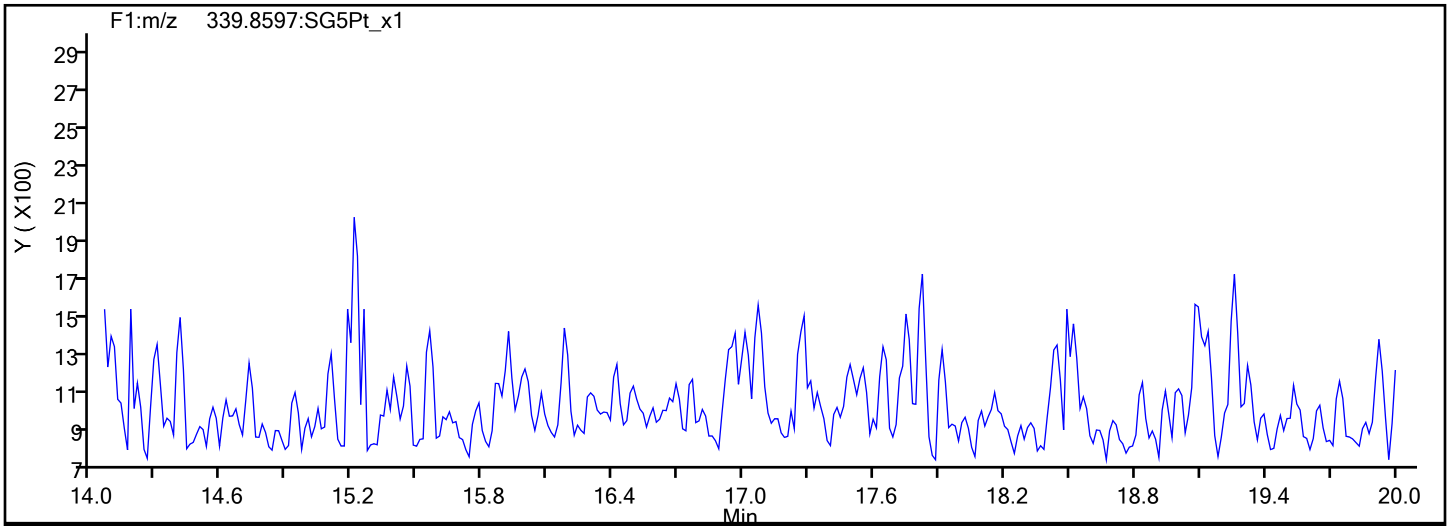

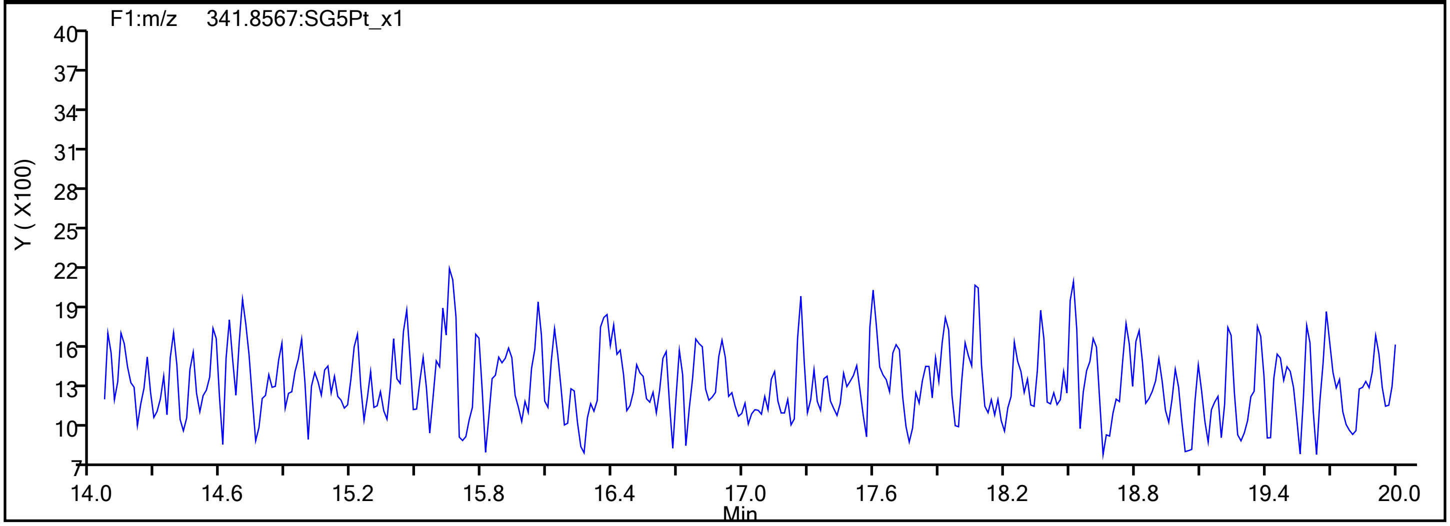

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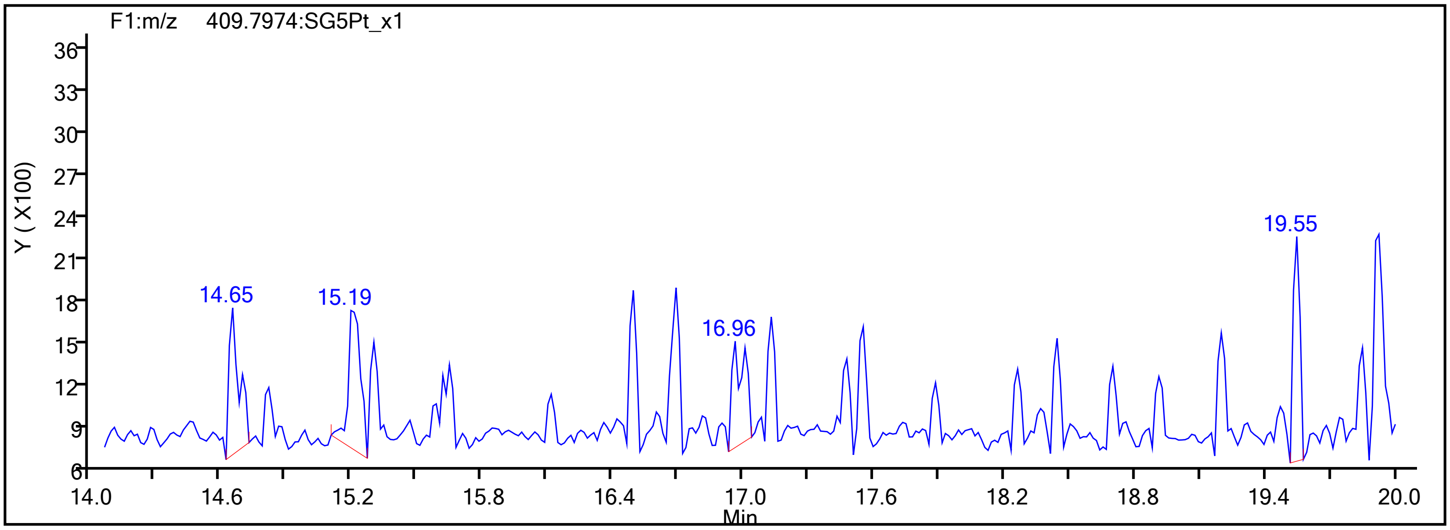

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Eurofins TestAmerica, Sacramento

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PeCDF

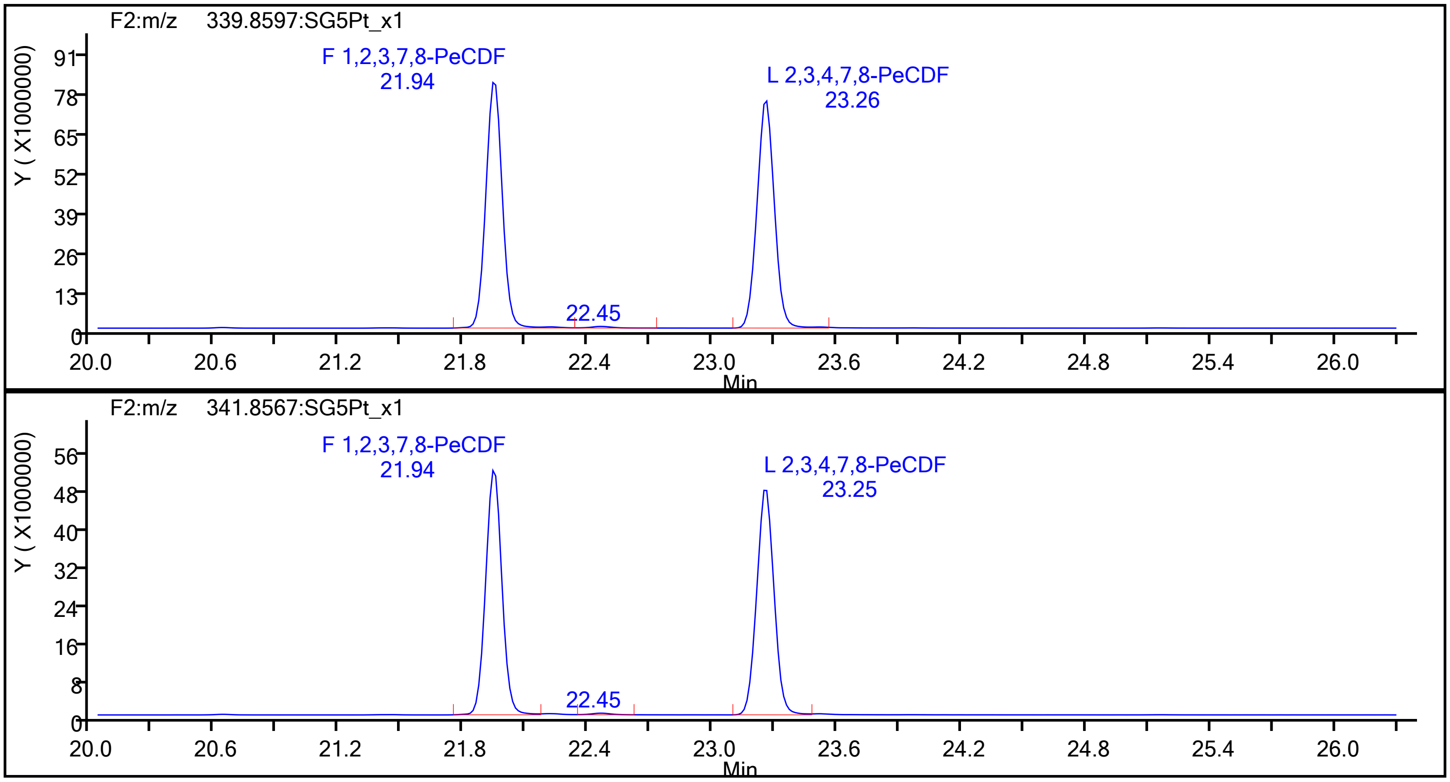

PeCDF Standards

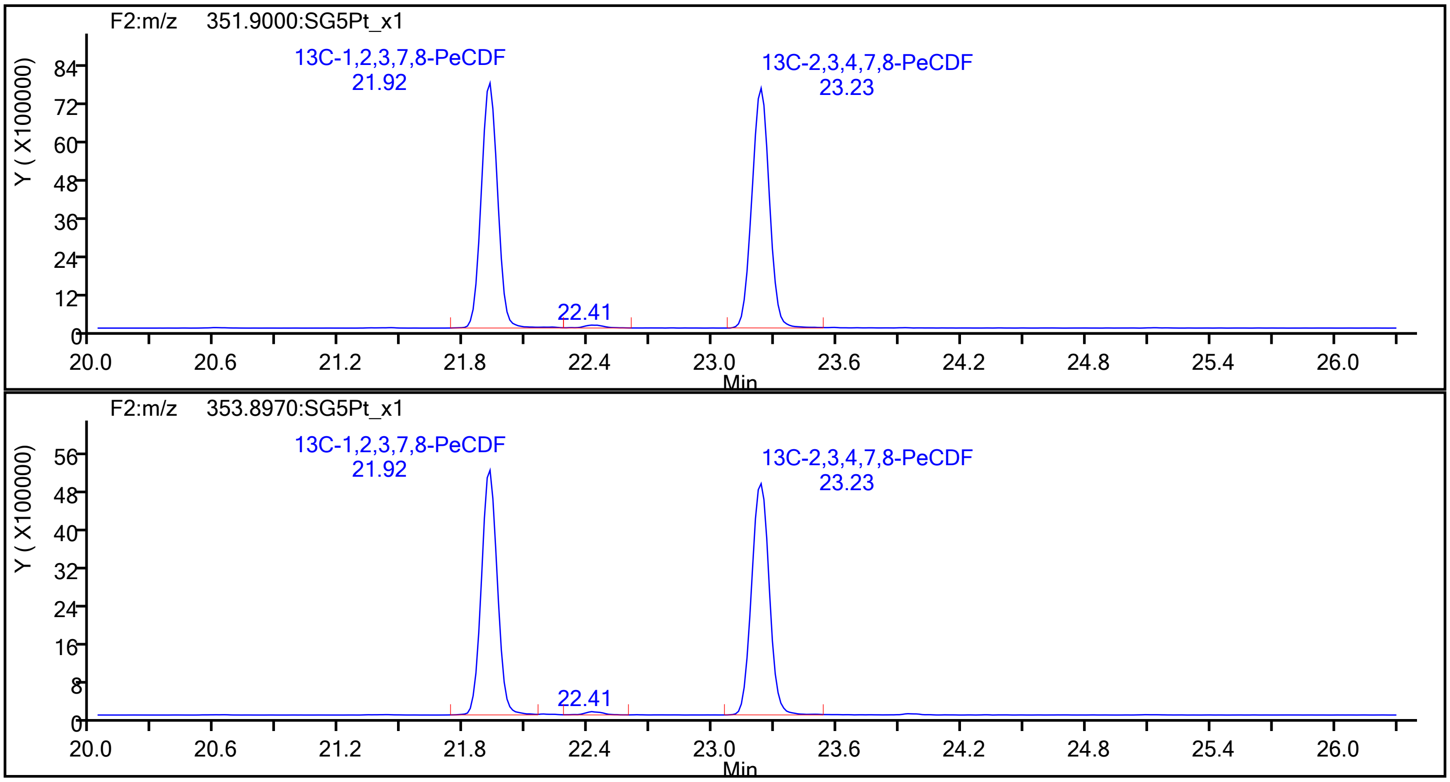

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Eurofins TestAmerica, Sacramento

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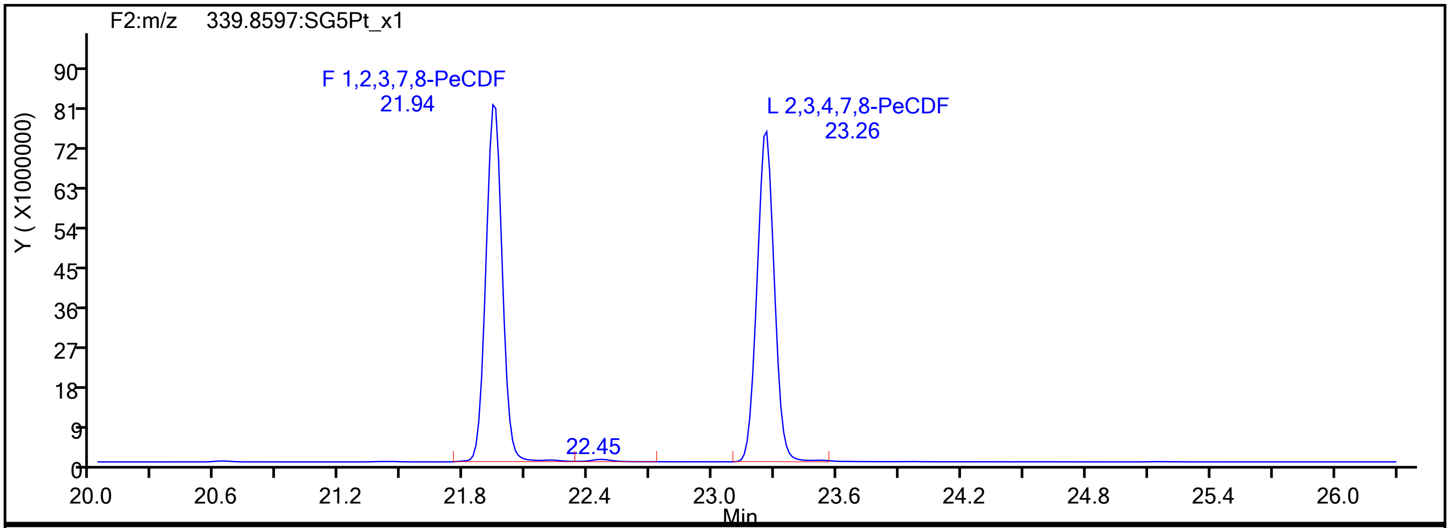

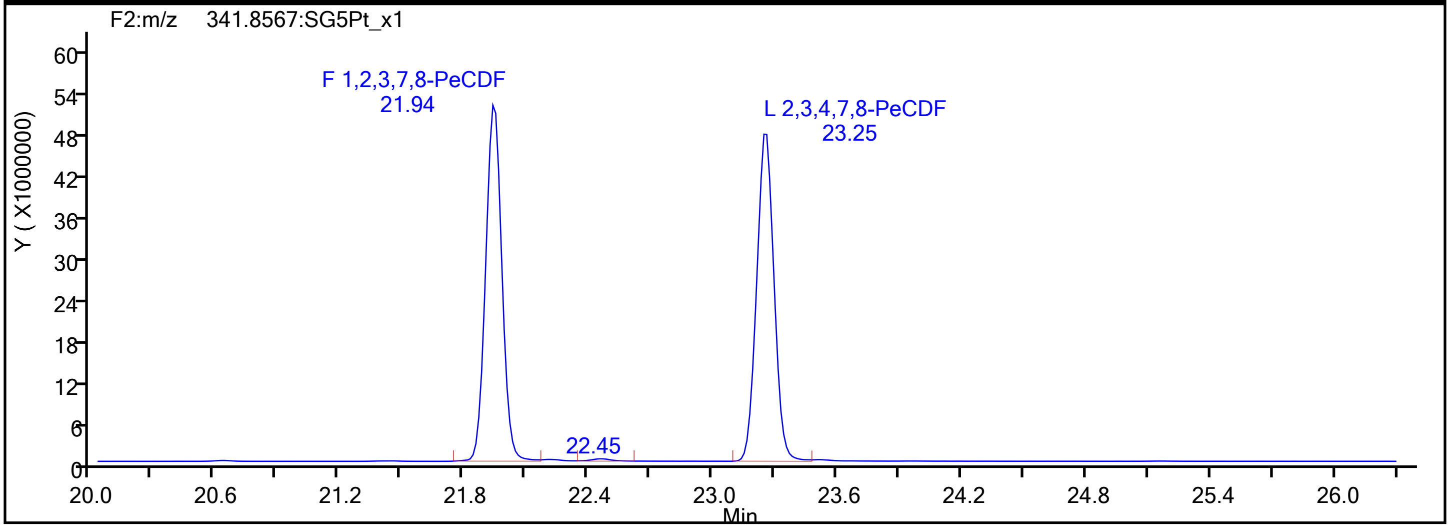

PeCDF Interference Mass

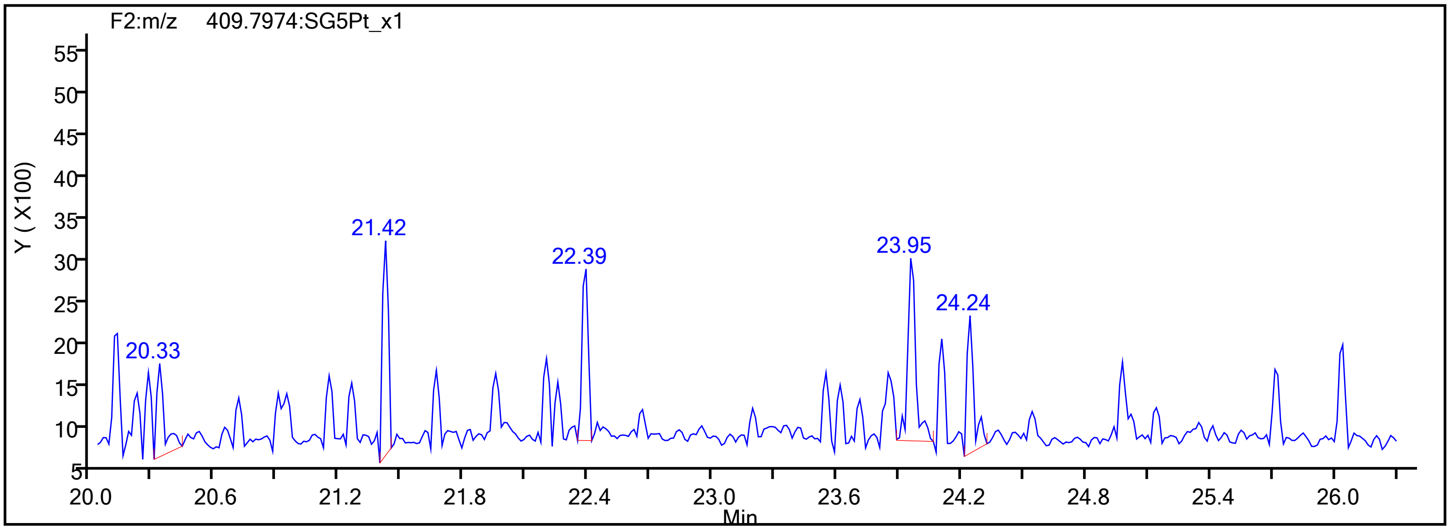

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 04:10:31

Injection Vol: 2.0 ul

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Operator ID: ALM

Method: Dioxin_10D5

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Client ID:

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Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

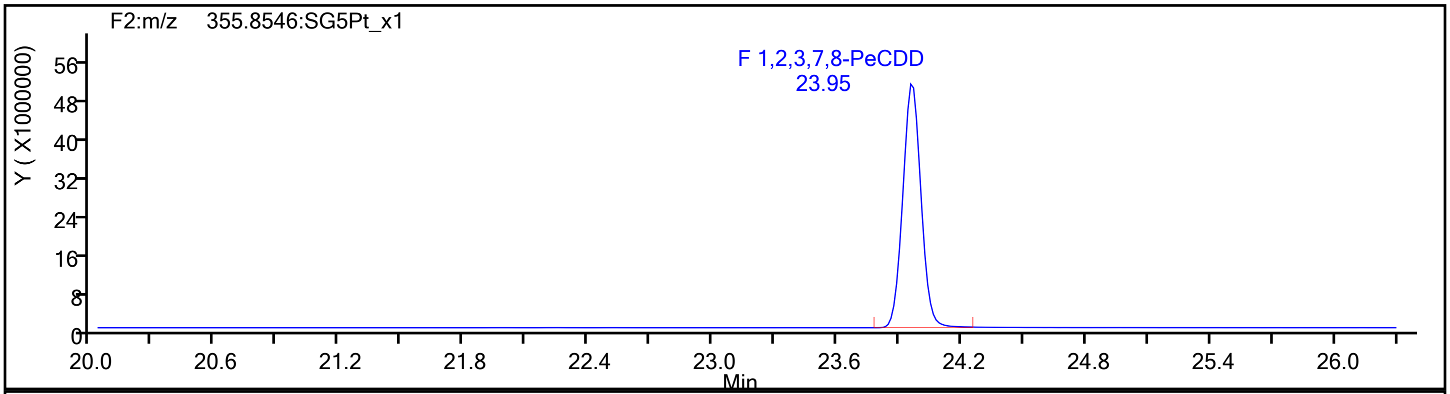

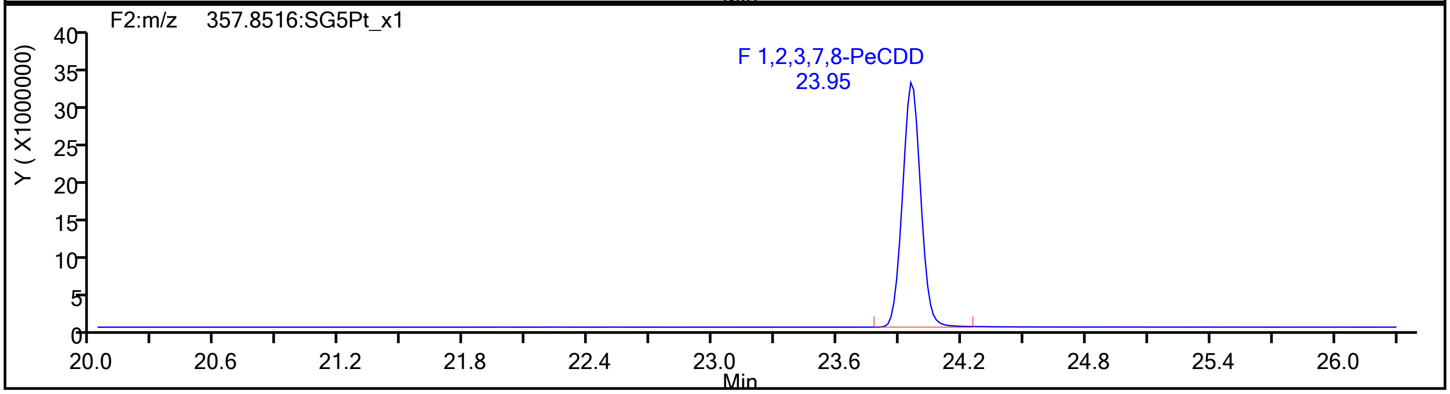

PeCDD Standards

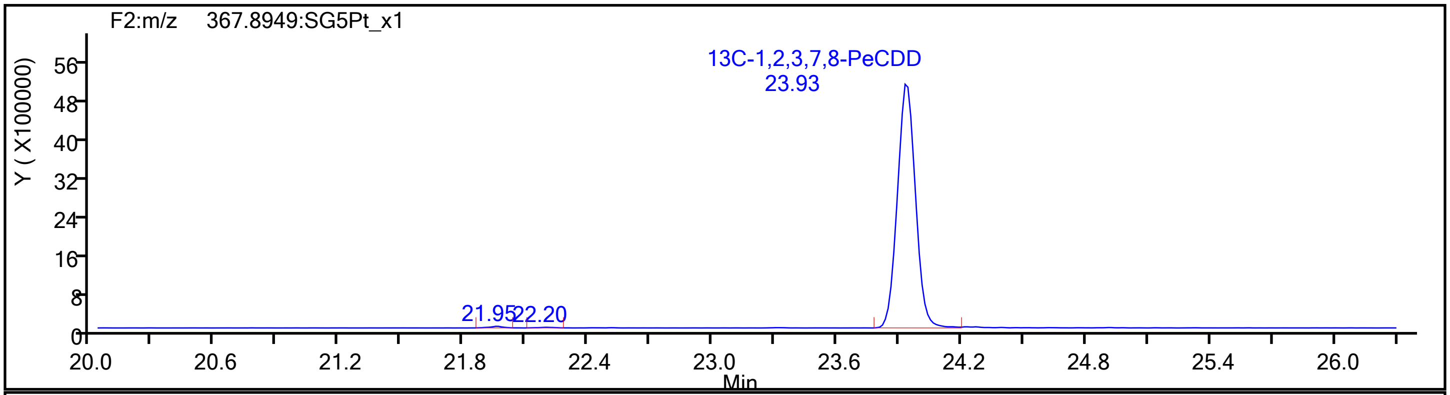

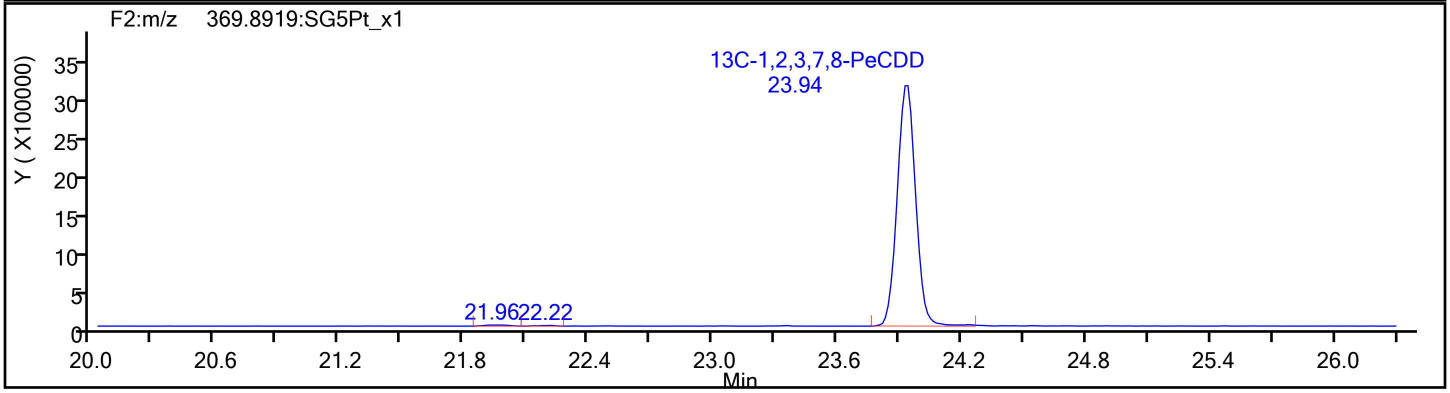

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Eurofins TestAmerica, Sacramento

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HxCDF

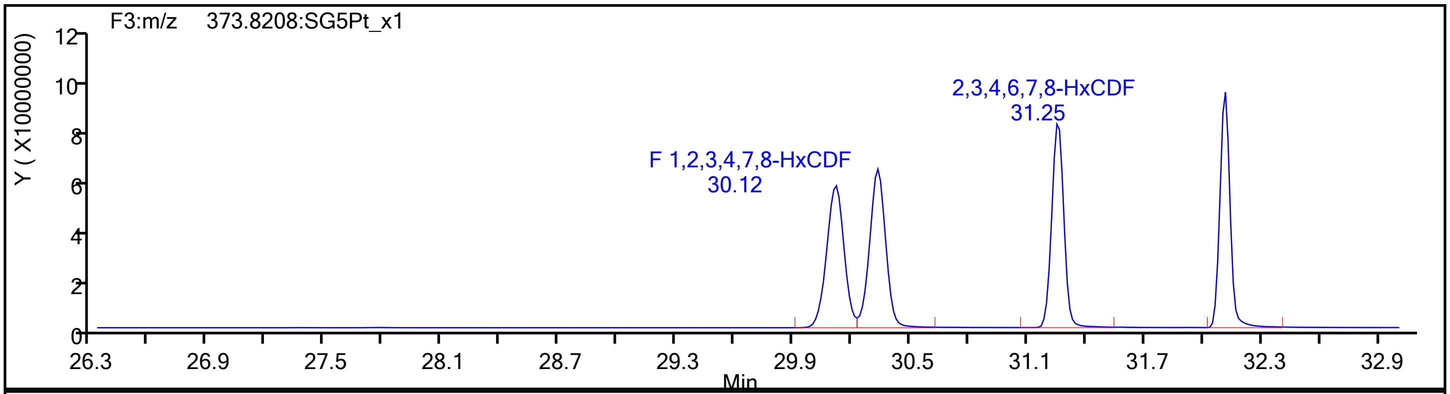

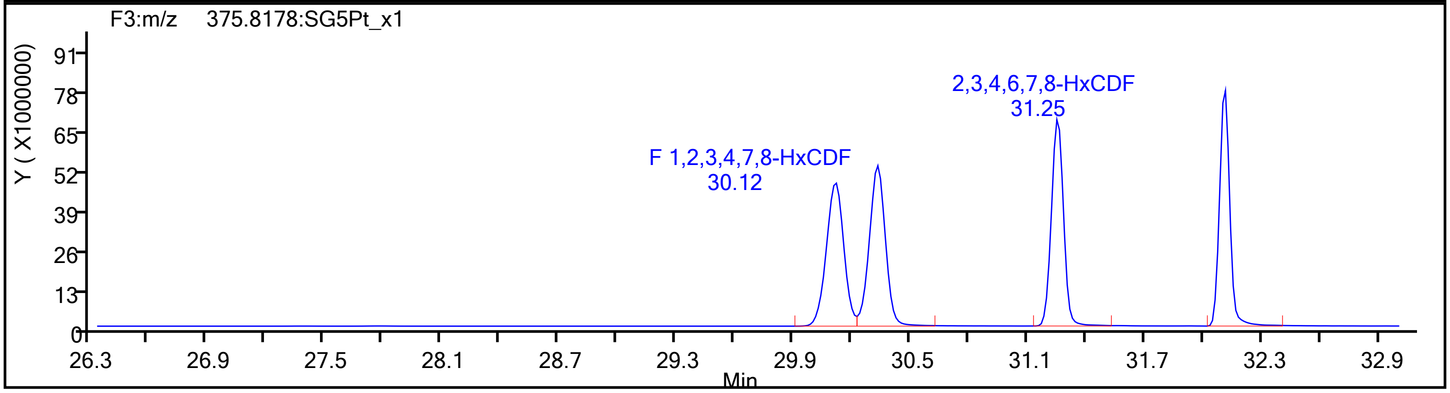

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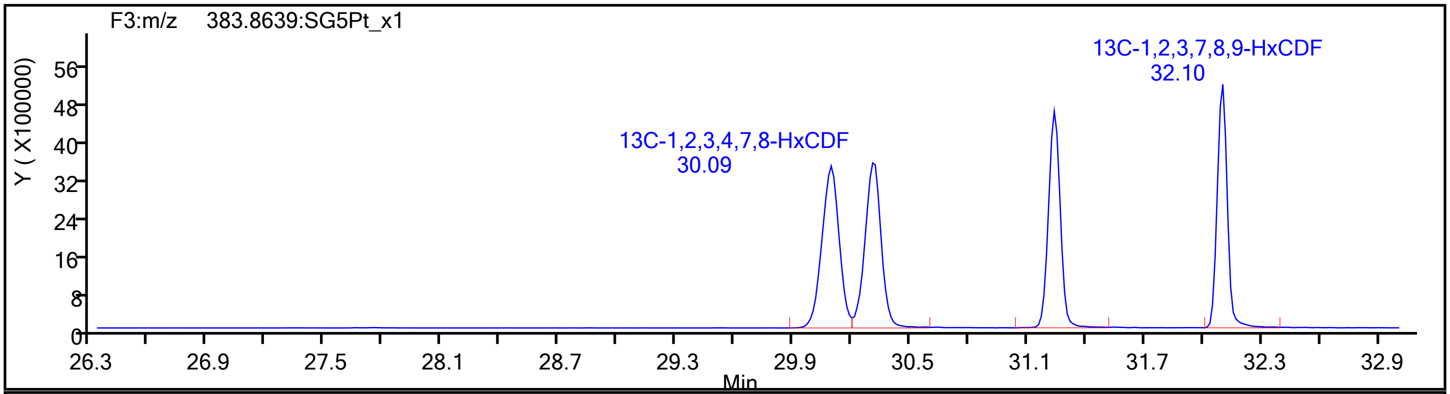

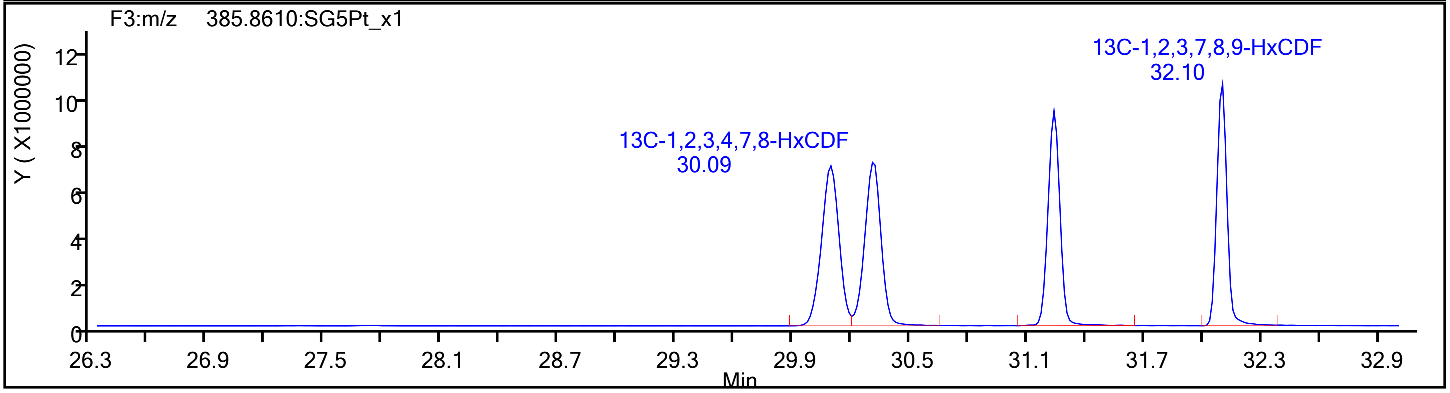

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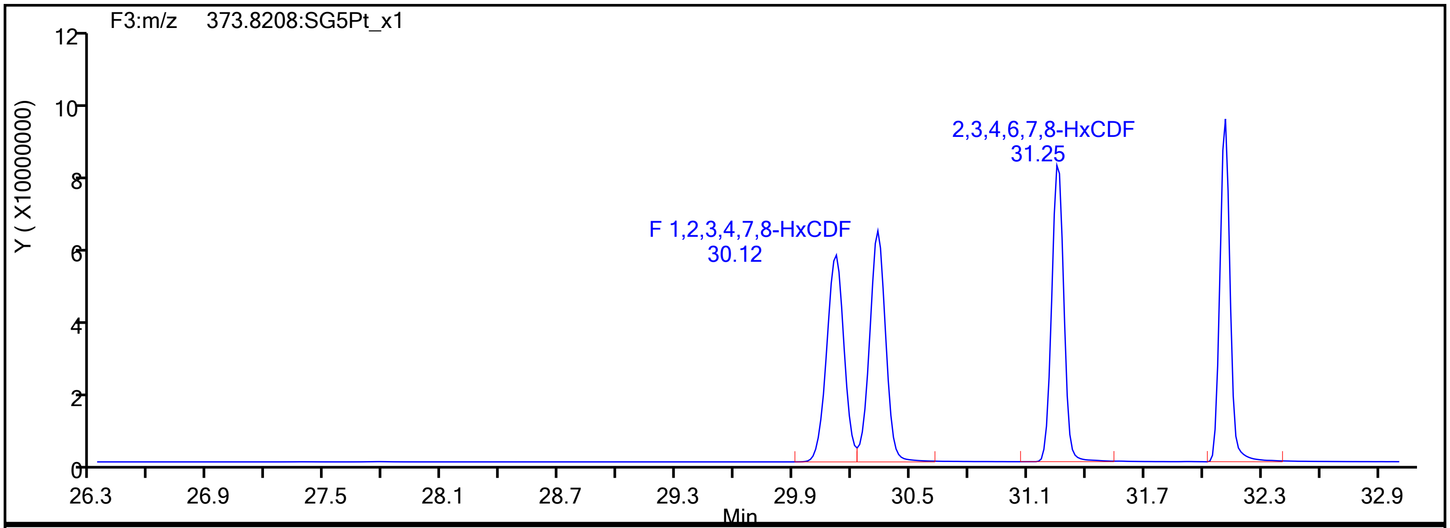

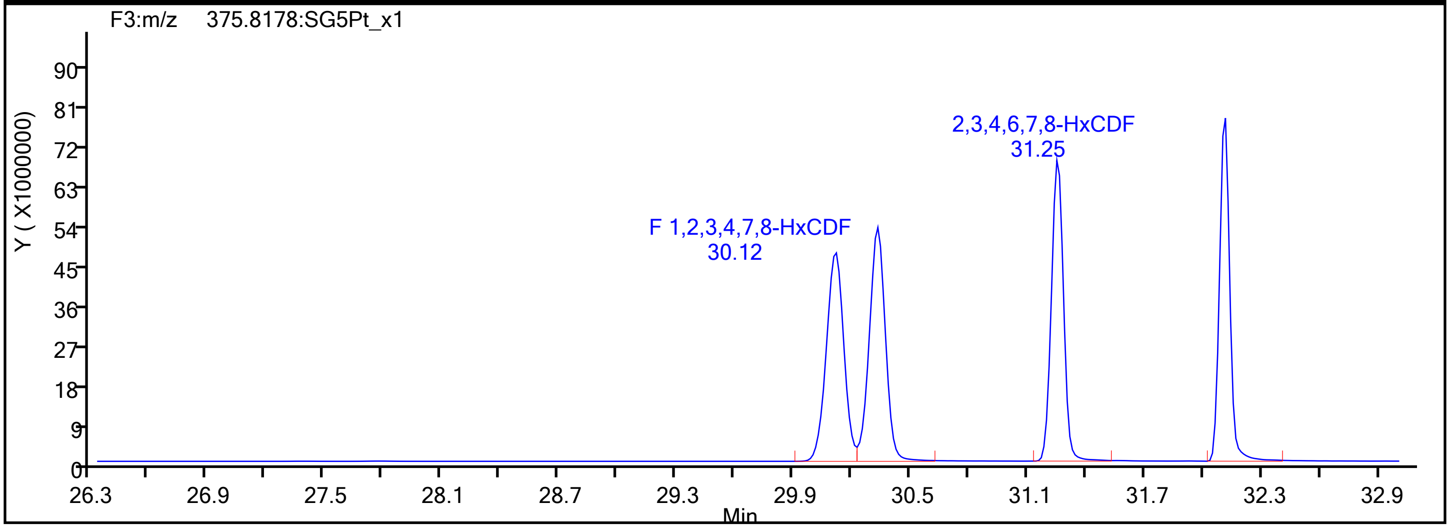

HxCDF Interference Mass

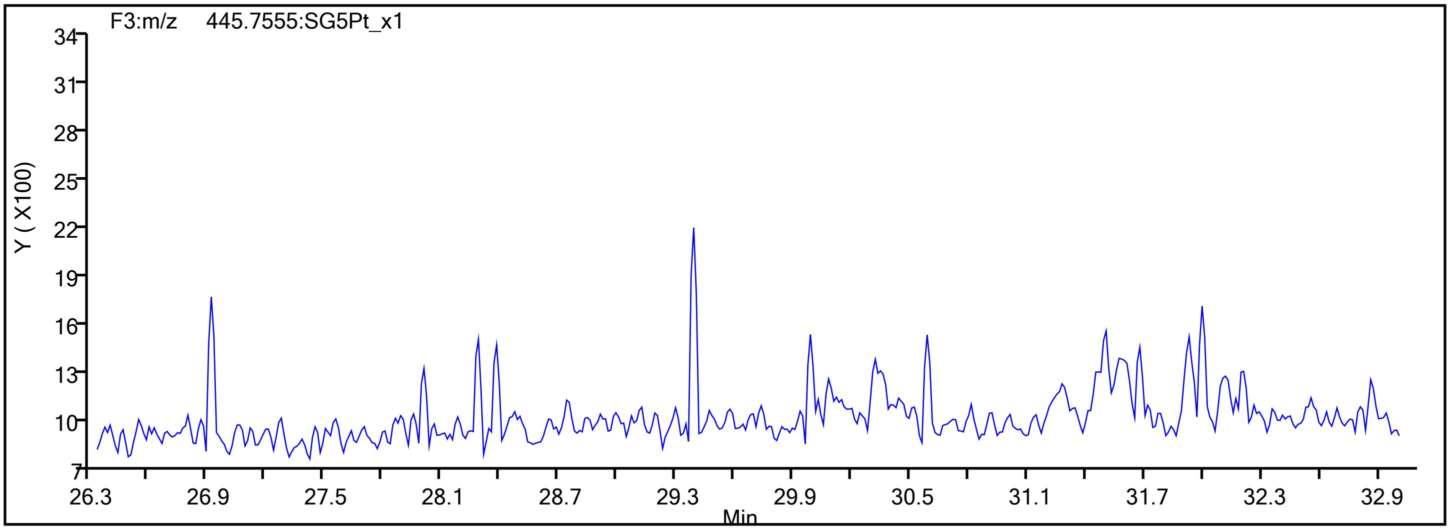

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 04:10:31 Injection Vol: 2.0 ul
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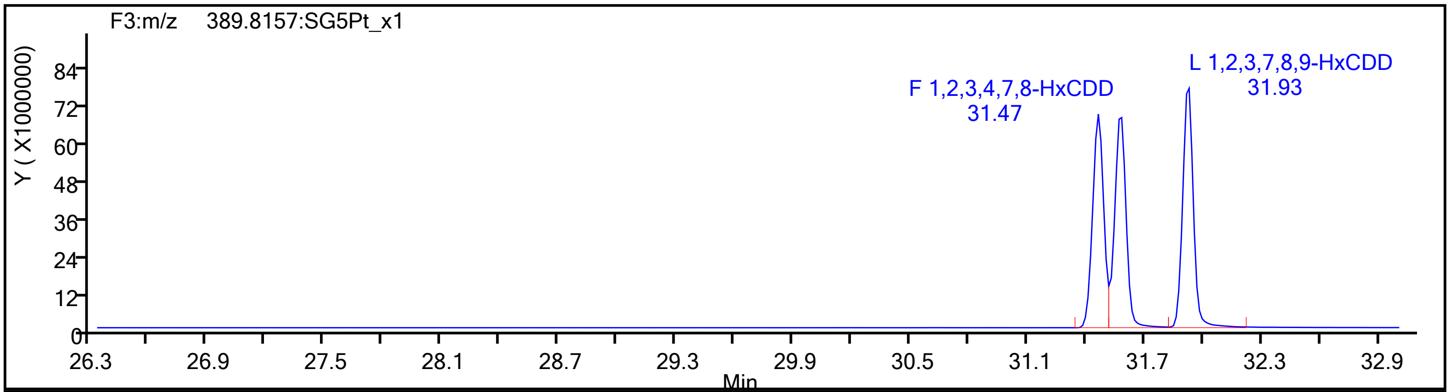

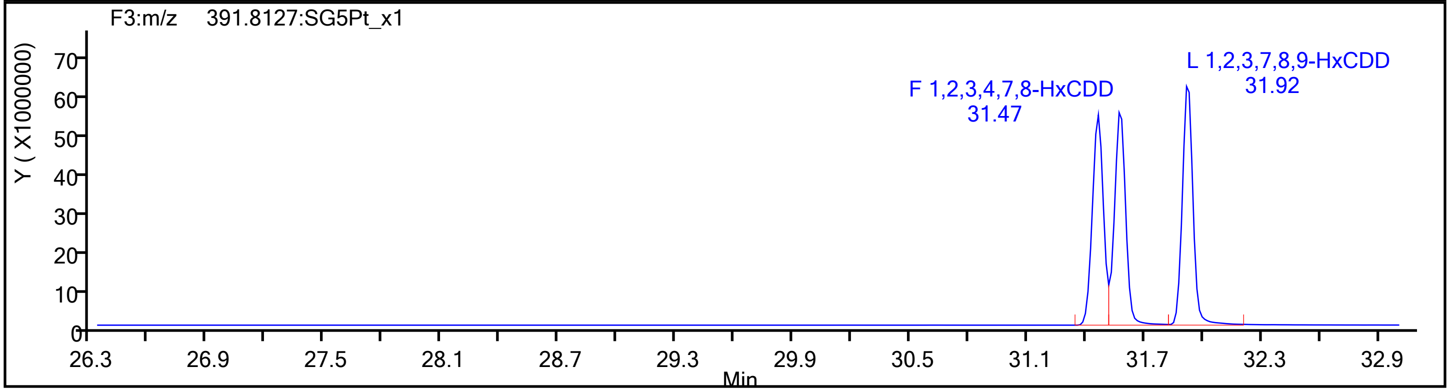

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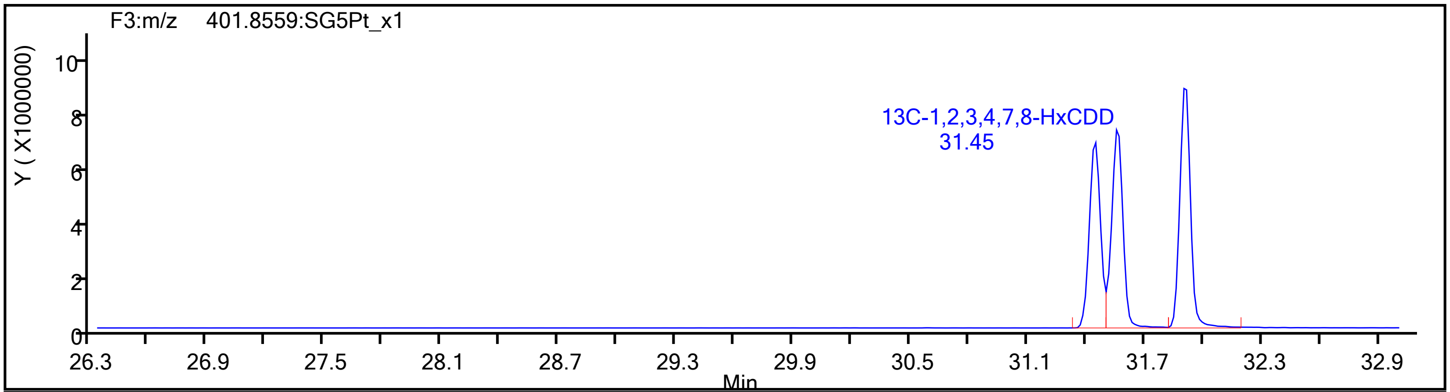

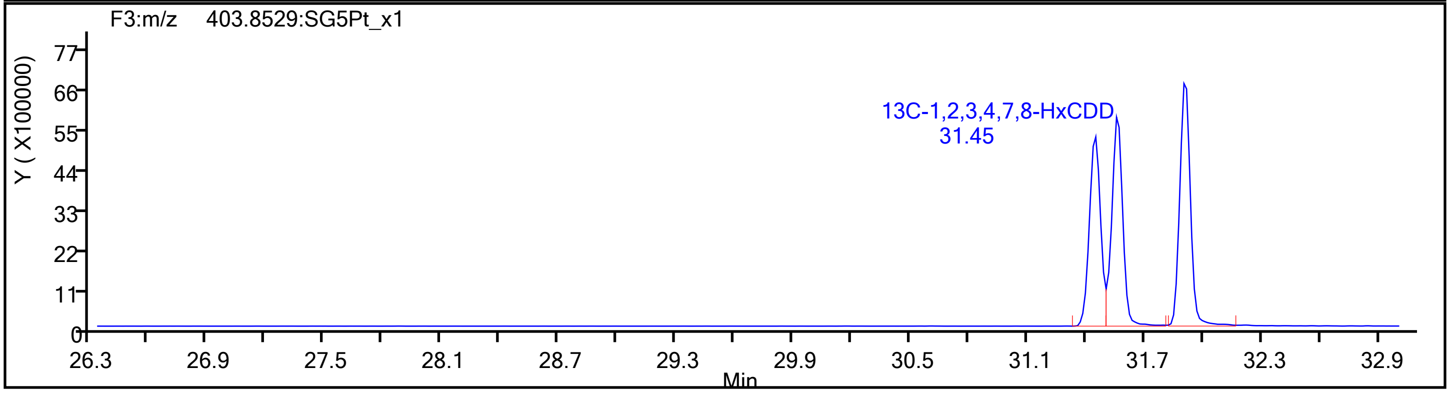

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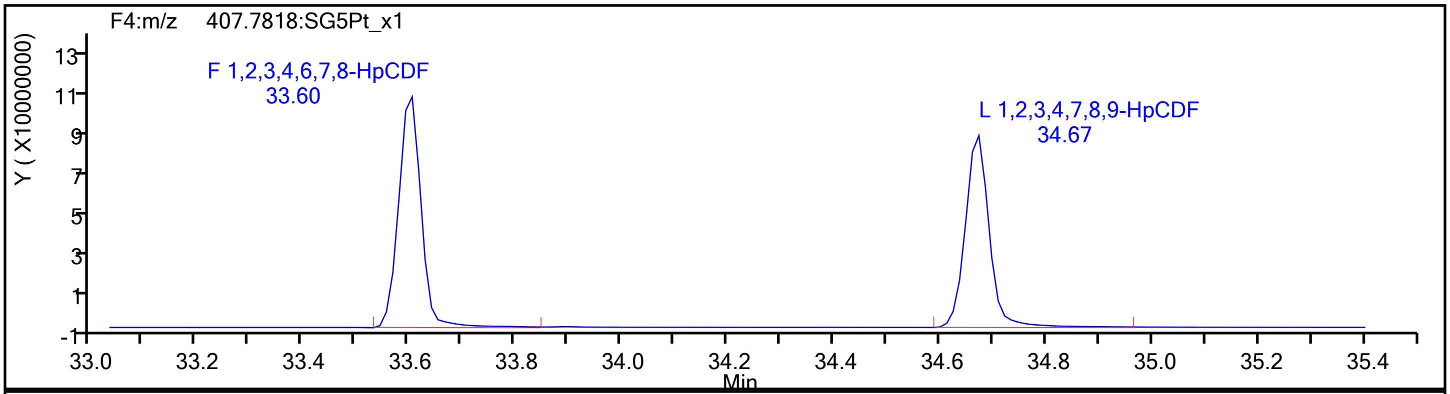

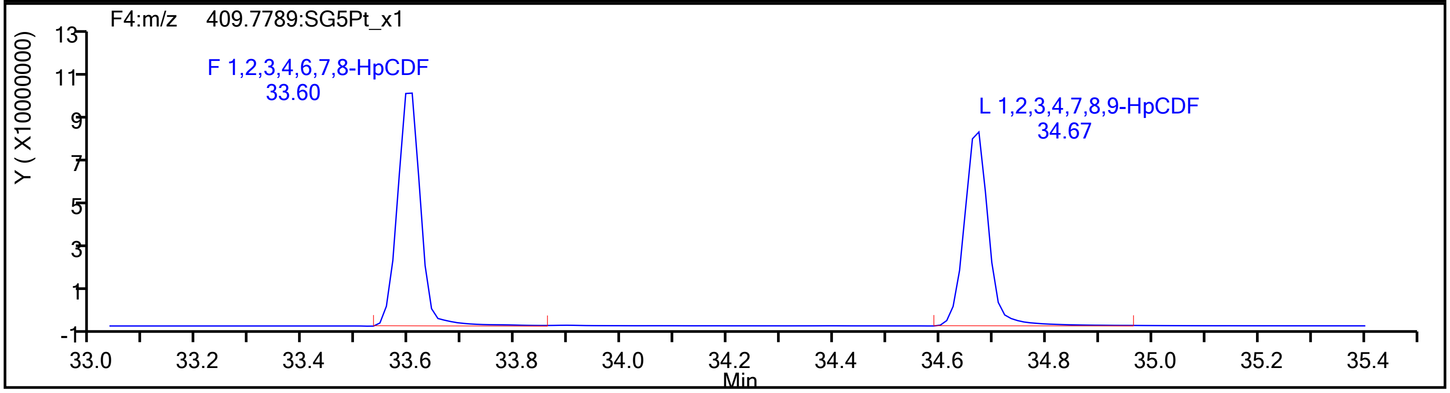

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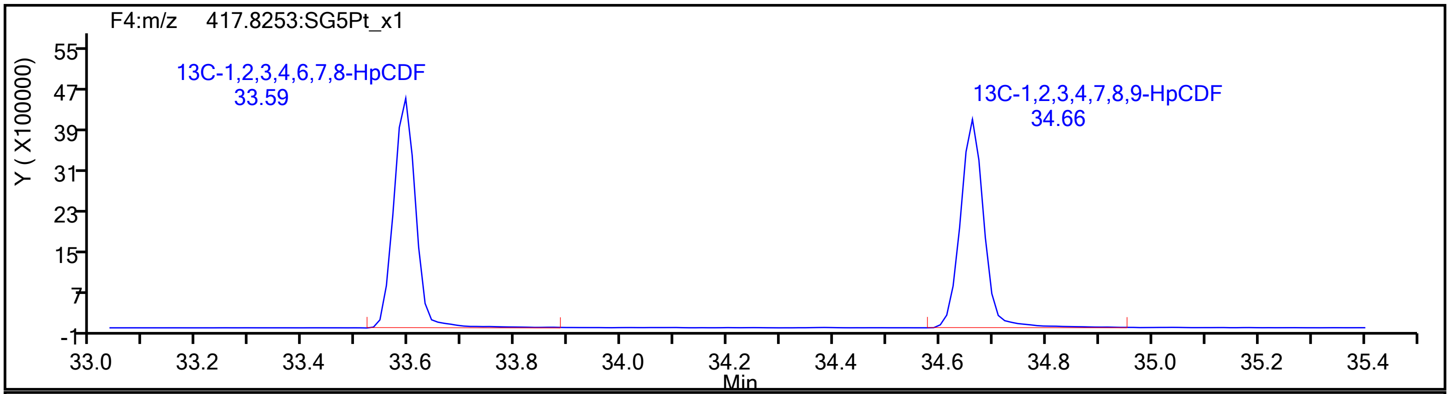

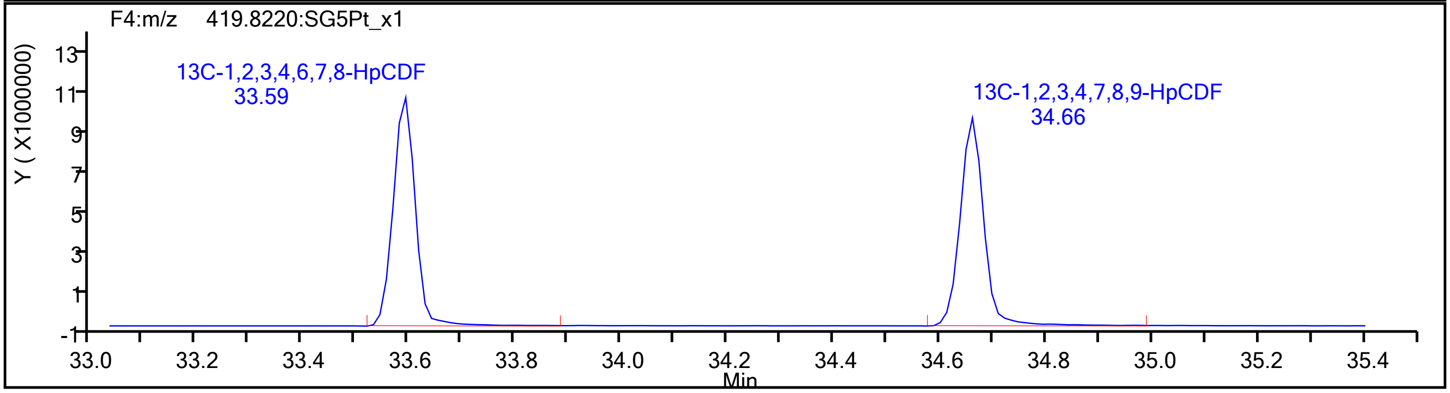

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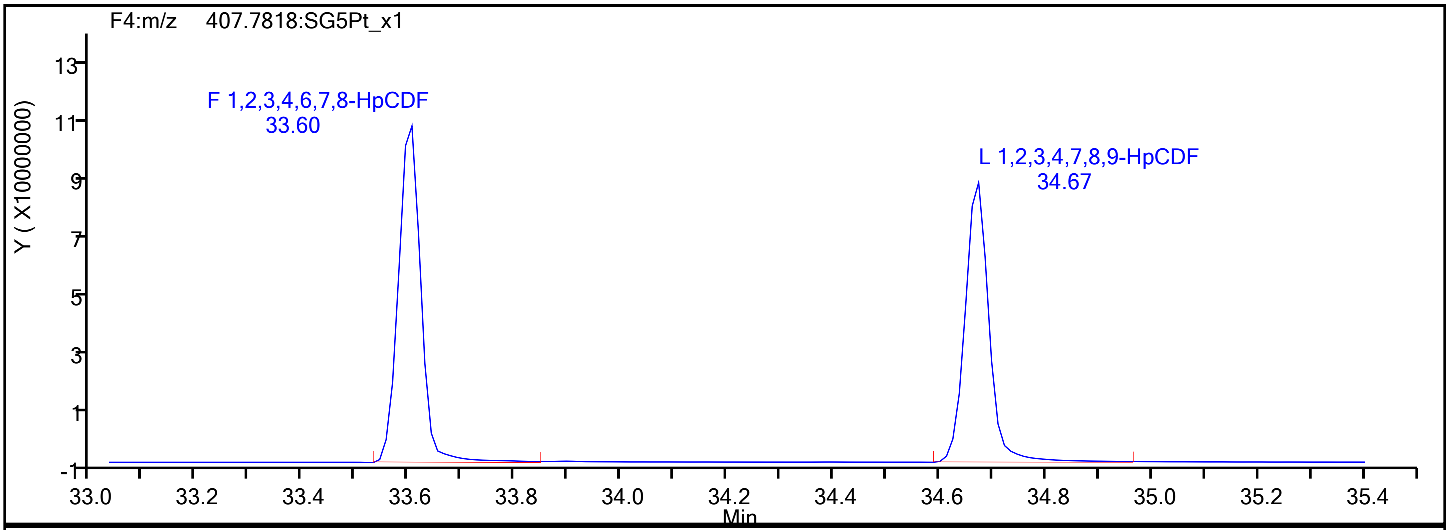

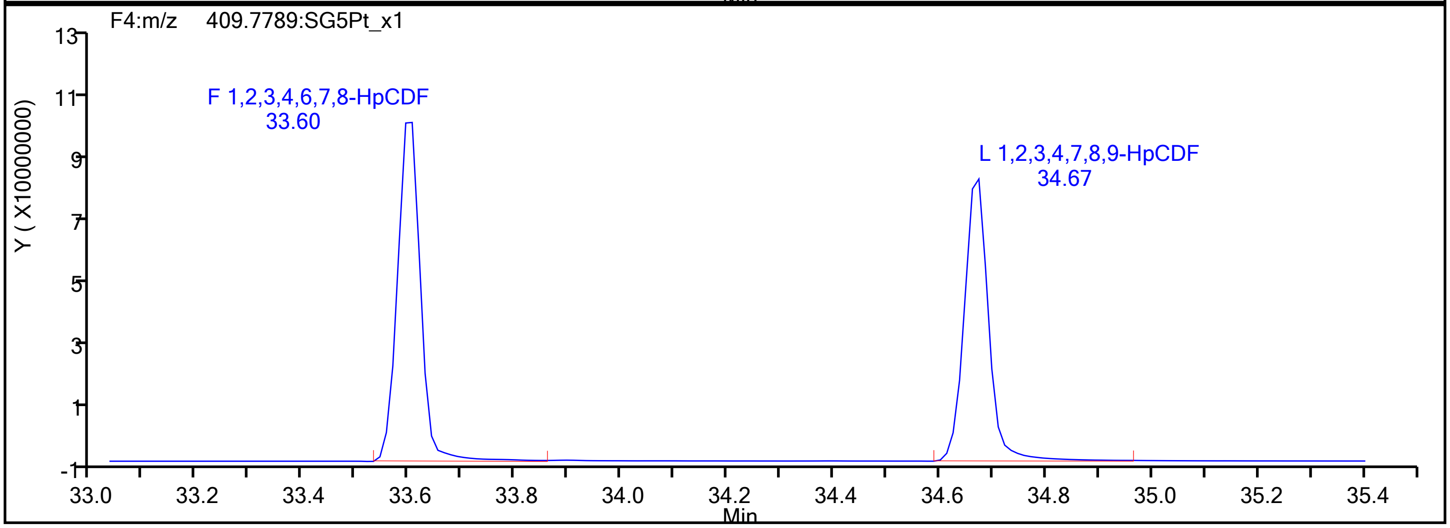

HpCDF Interference Mass

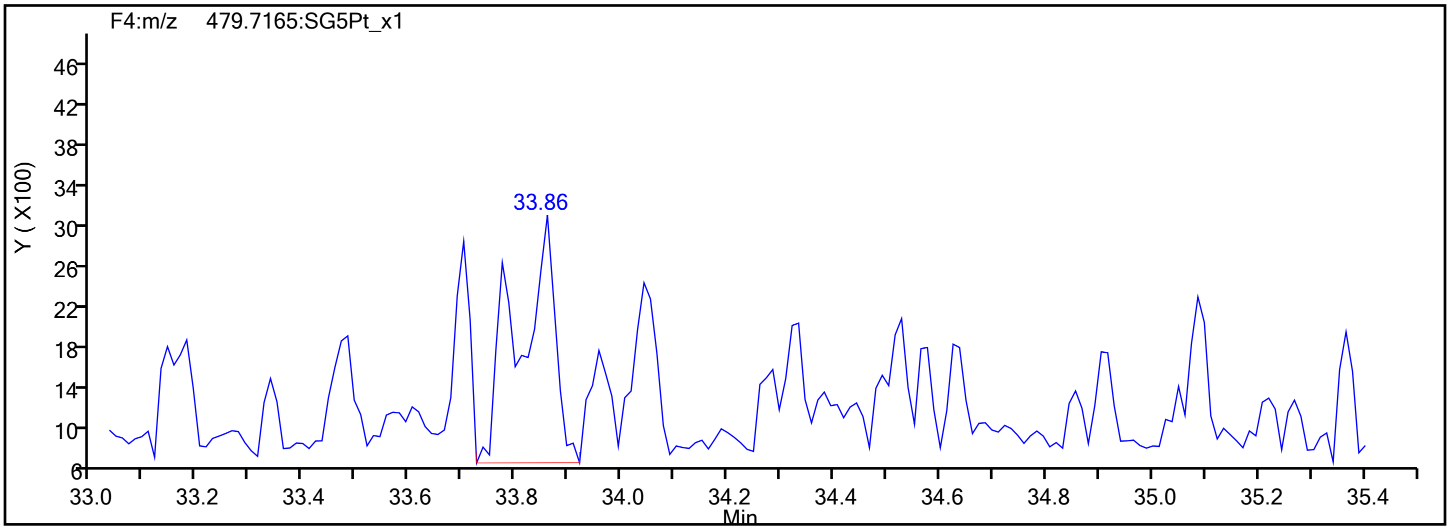

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HpCDD

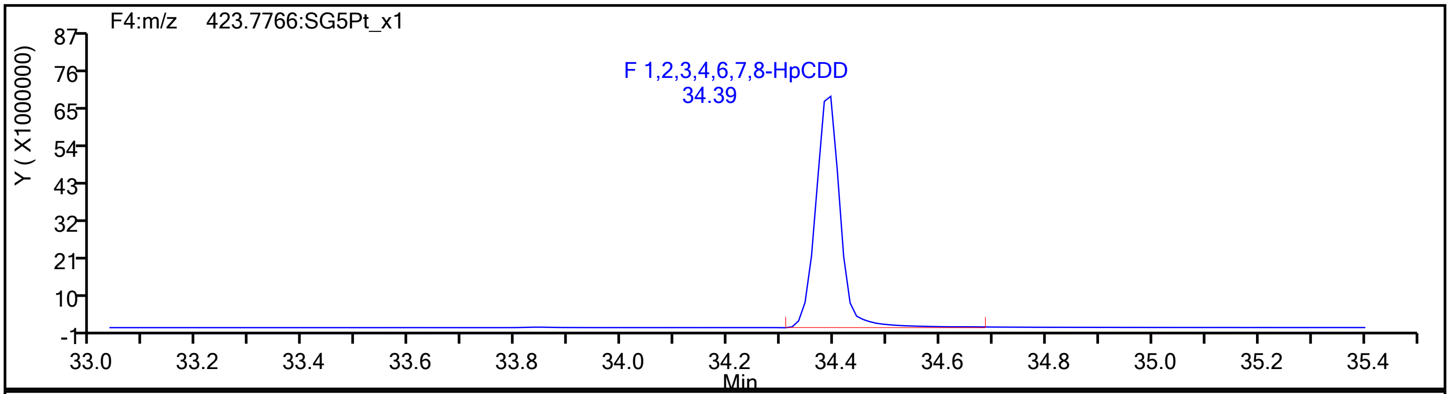

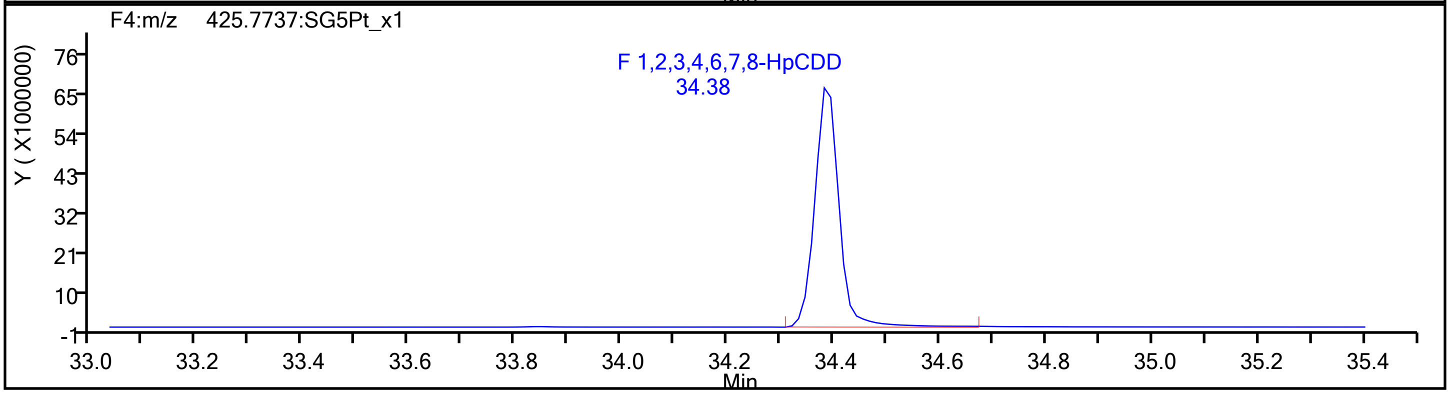

HpCDD Standards

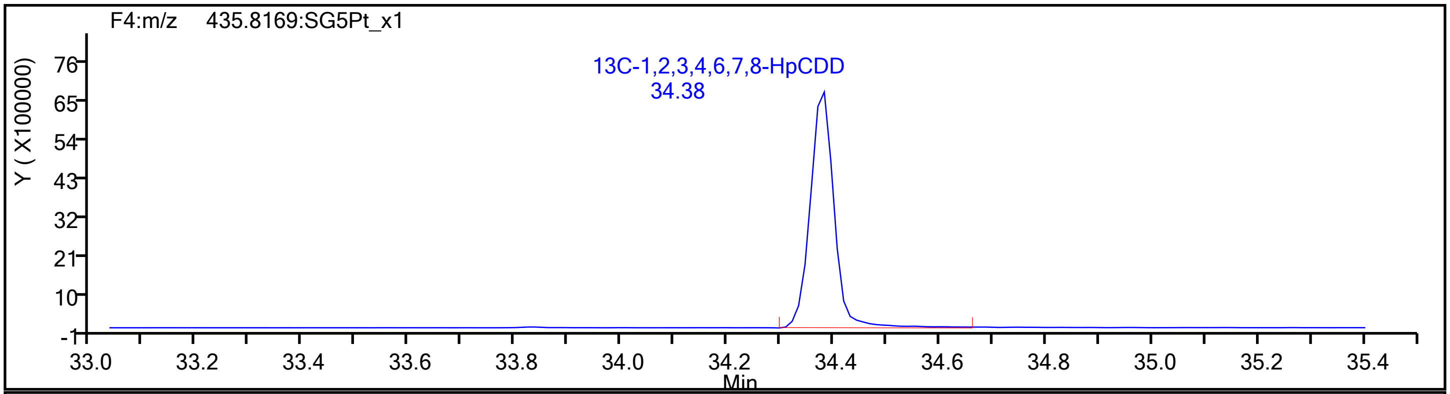

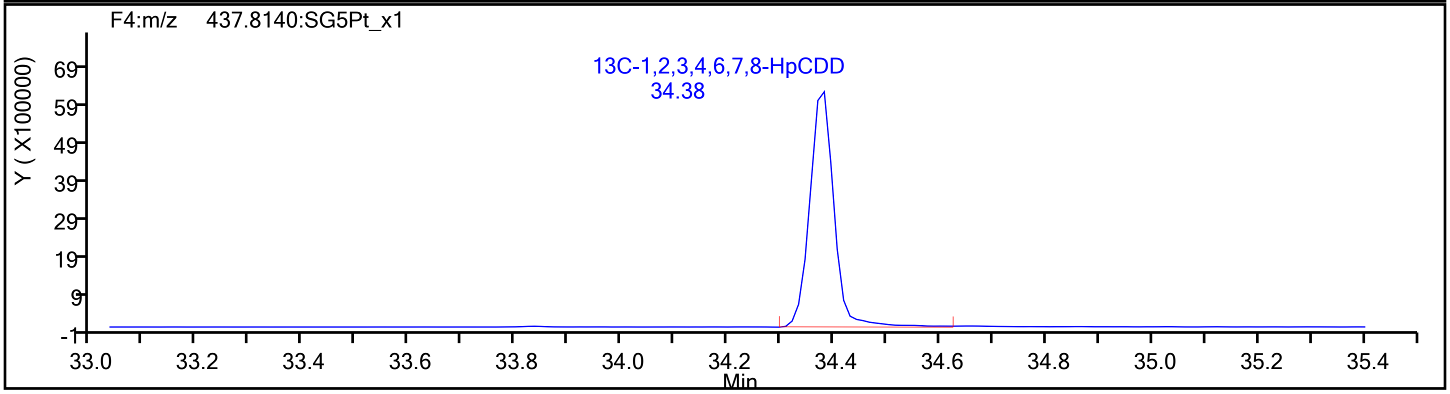

Report Date: 17-Mar-2021 13:36:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d
Injection Date: 17-Mar-2021 04:10:31
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

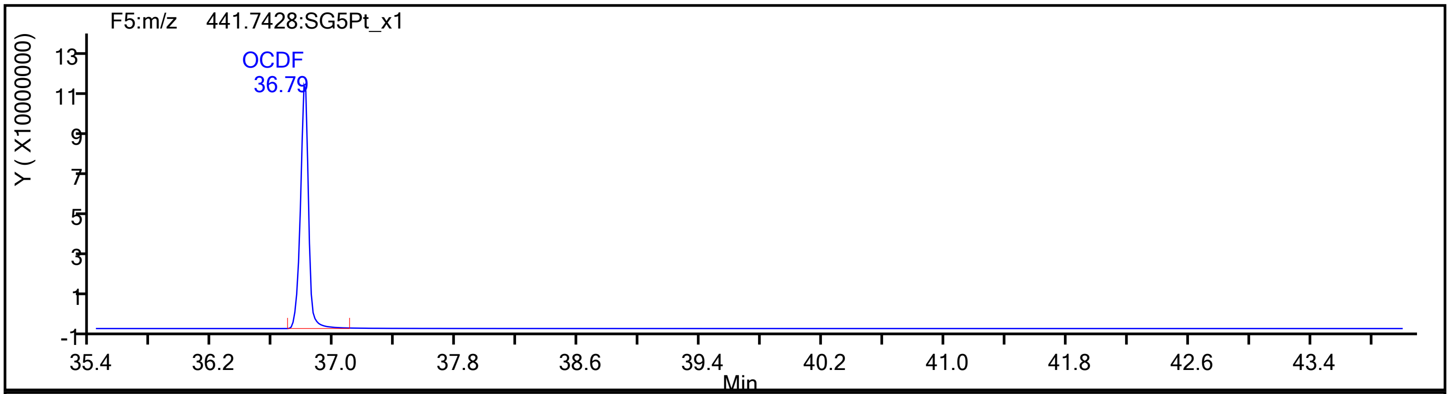

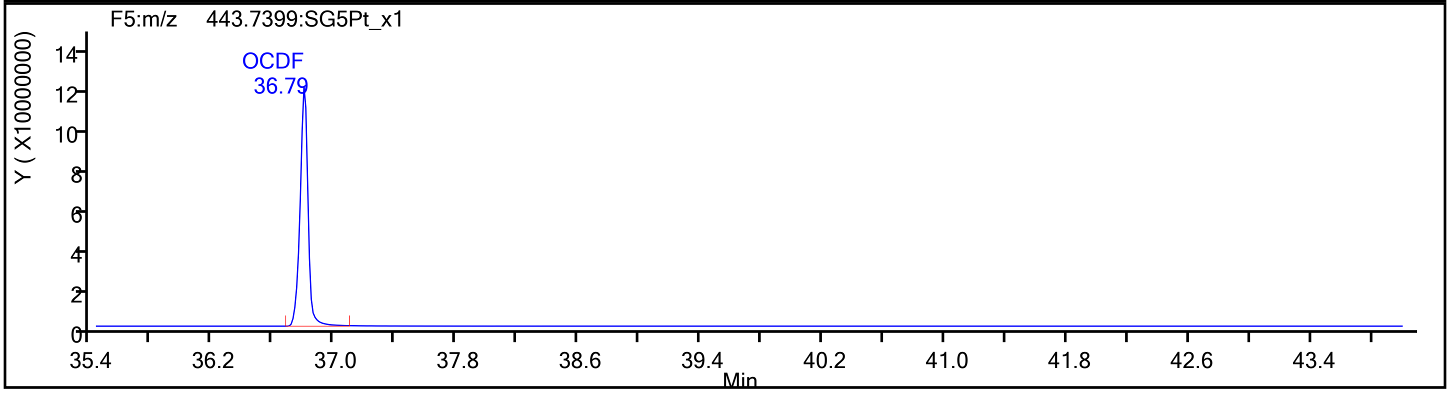

OCDF Standards

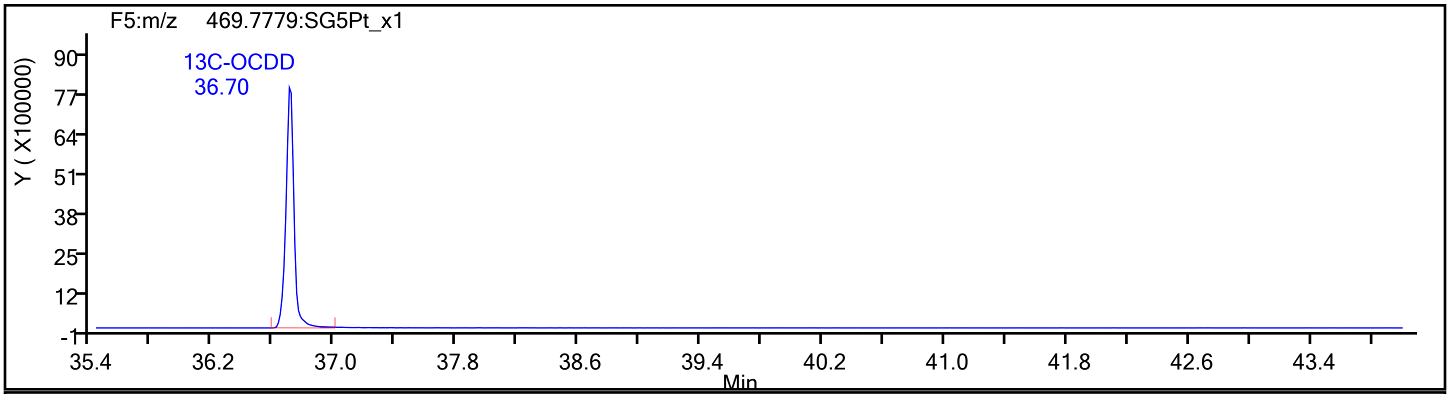

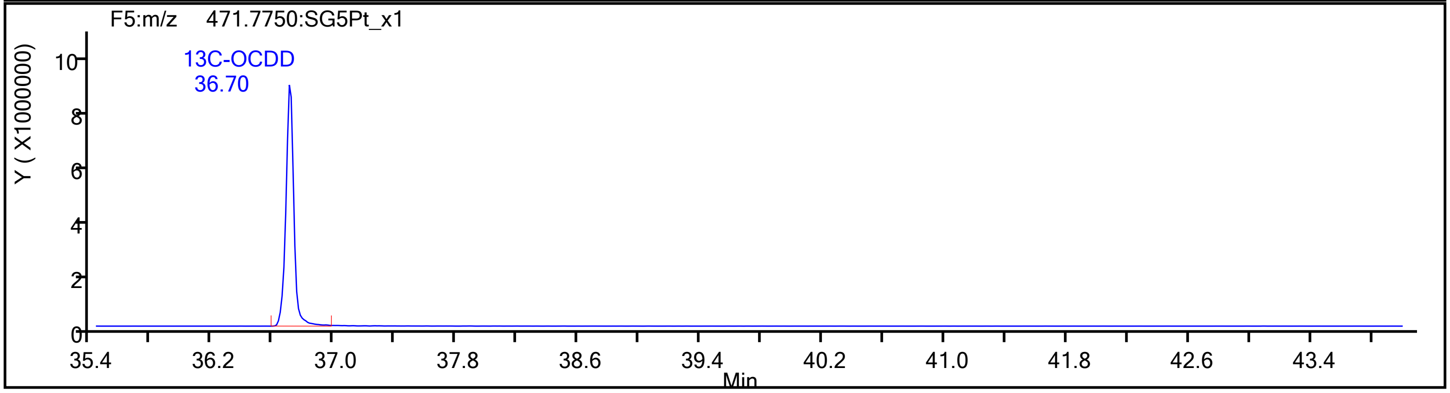

Report Date: 17-Mar-2021 13:36:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d
Injection Date: 17-Mar-2021 04:10:31
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

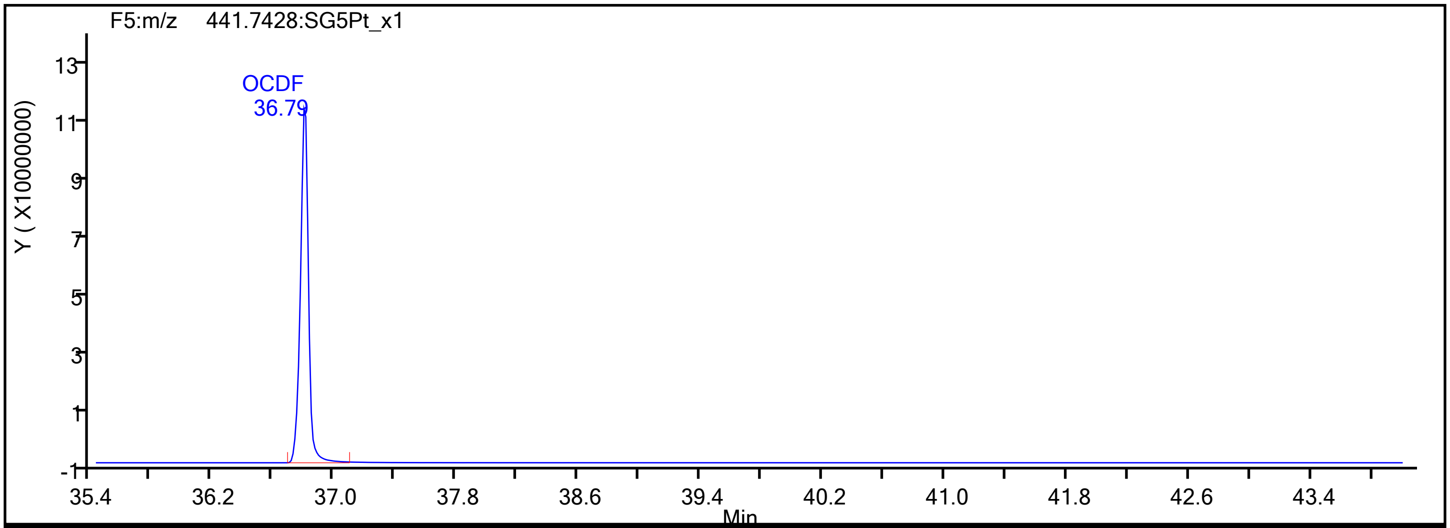

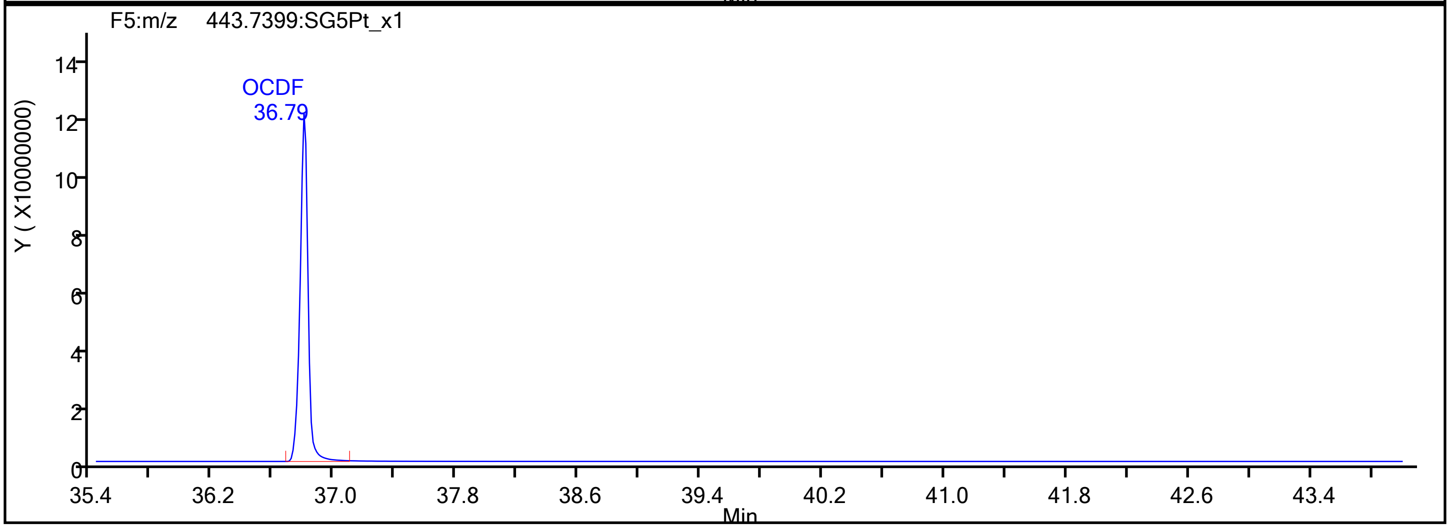

OCDF Interference Mass

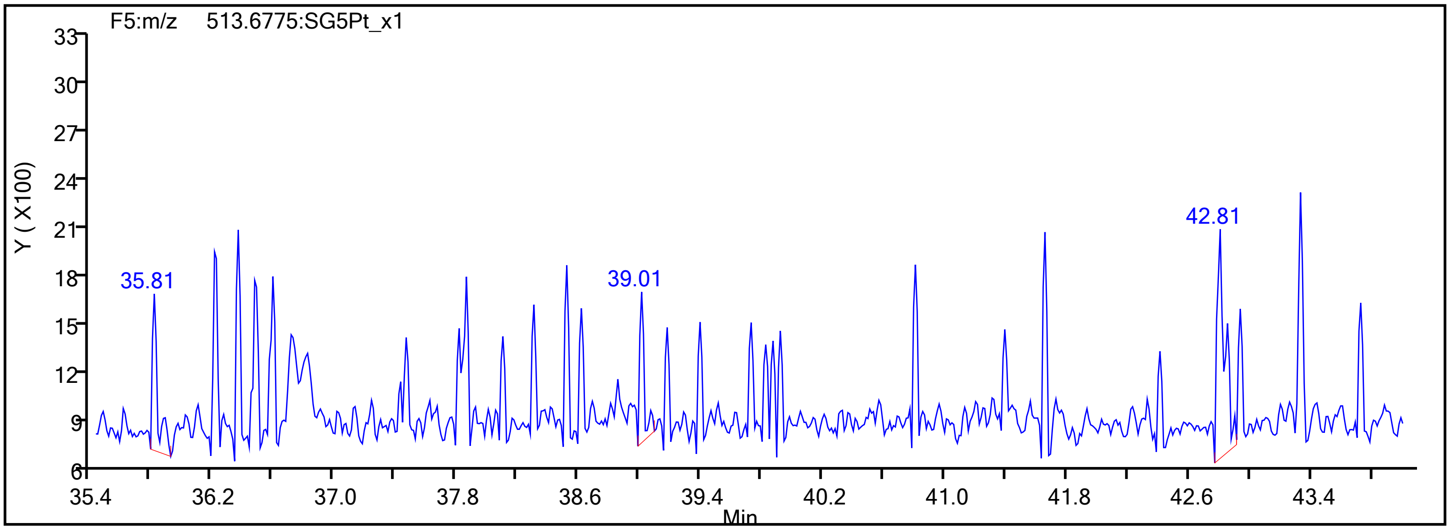

Report Date: 17-Mar-2021 13:36:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d		
Injection Date:	17-Mar-2021 04:10:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

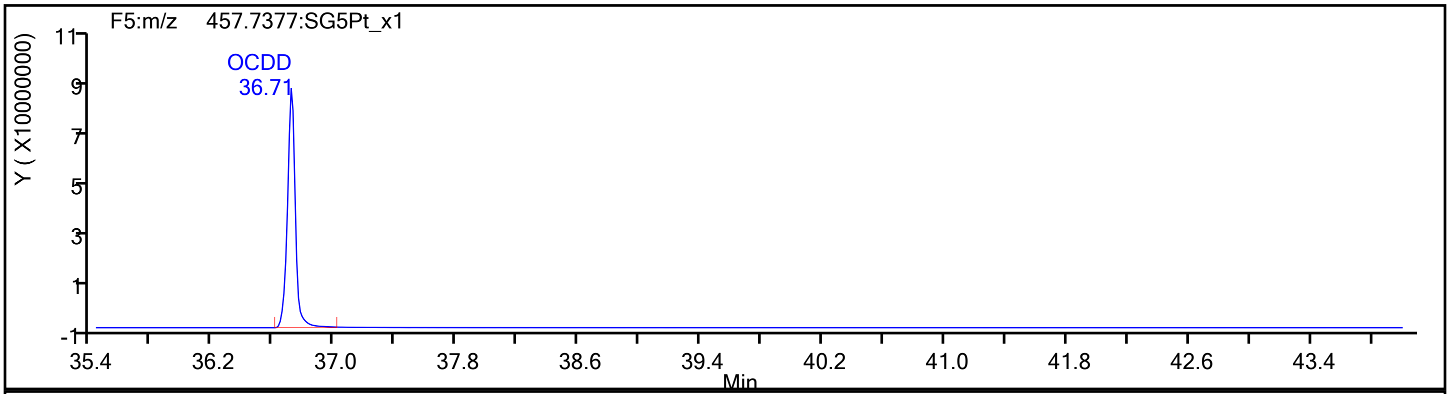

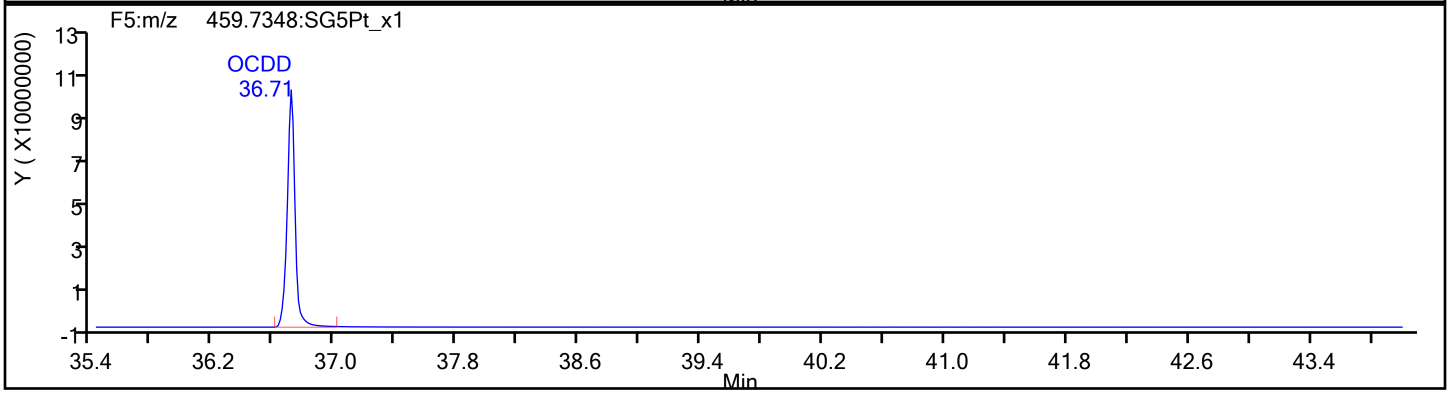

OCDD Standards

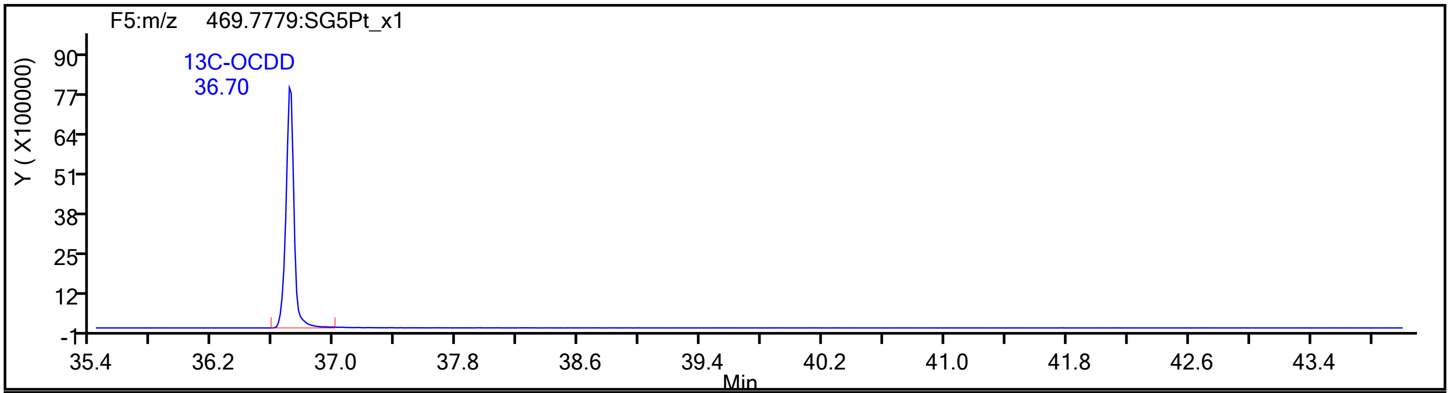

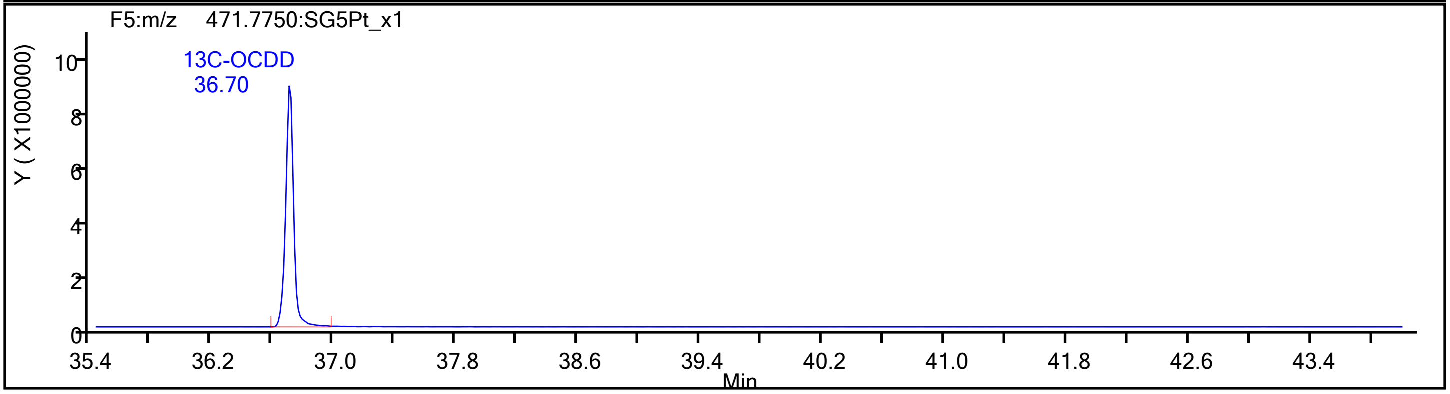

Report Date: 17-Mar-2021 13:36:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d		
Injection Date:	17-Mar-2021 04:10:31	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

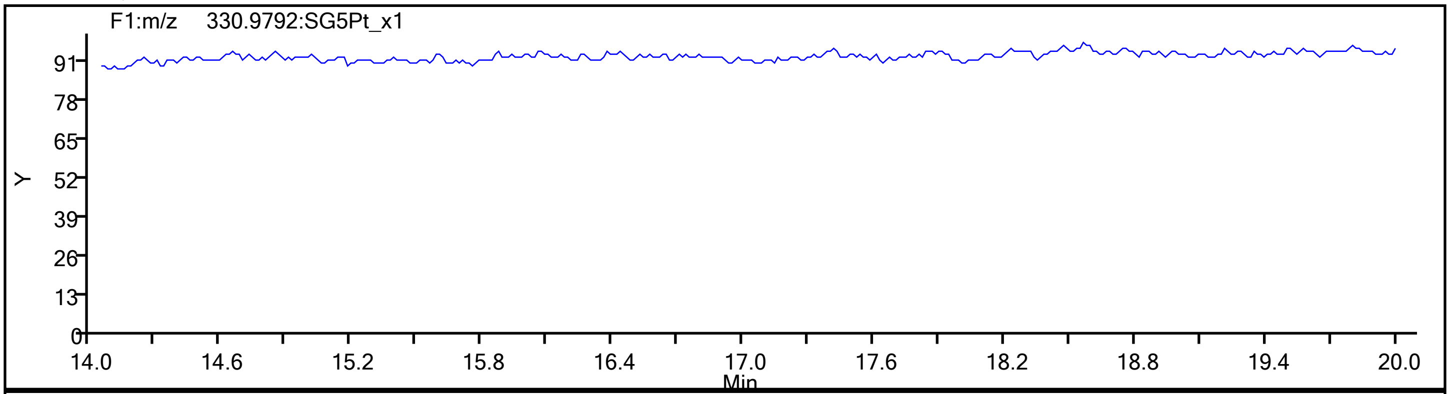

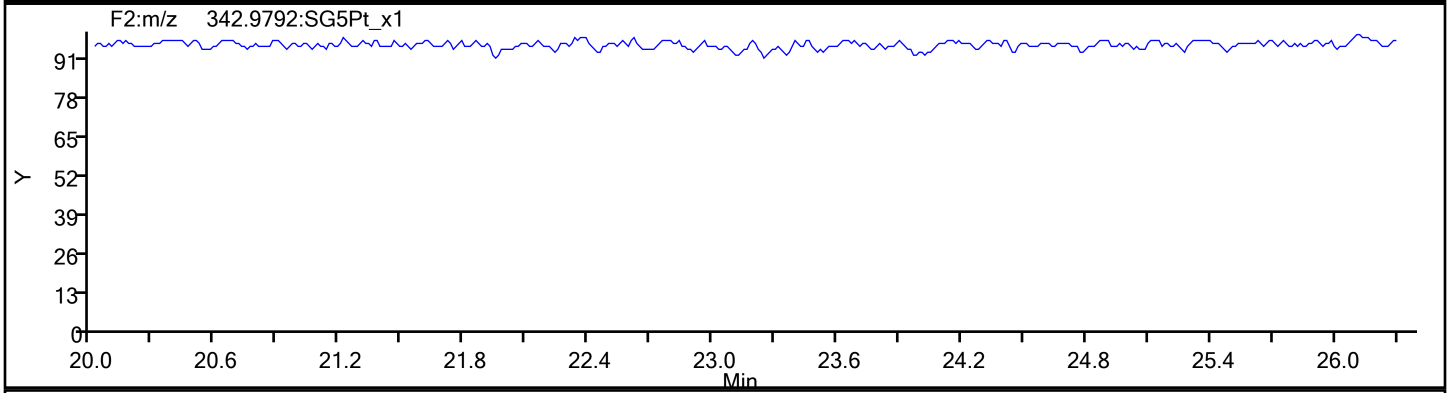

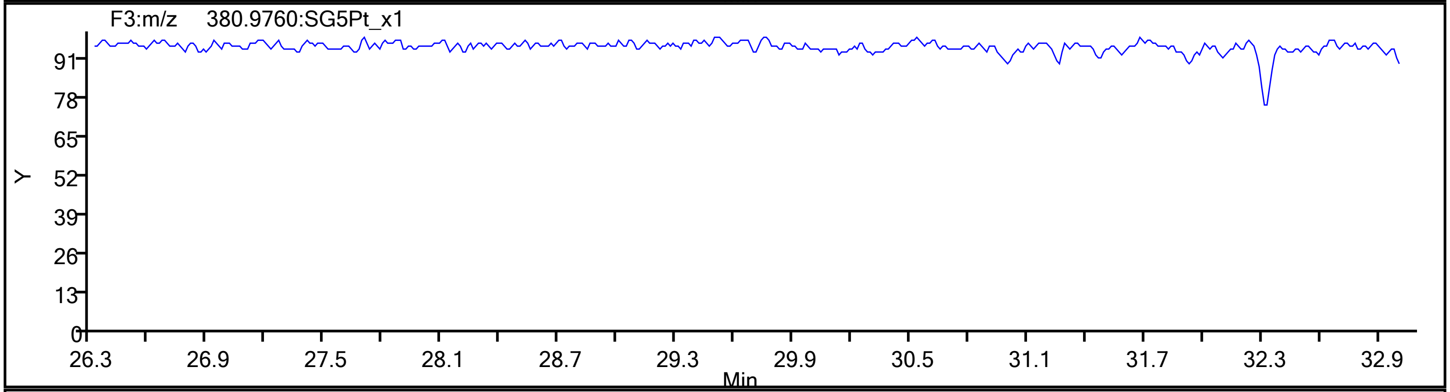

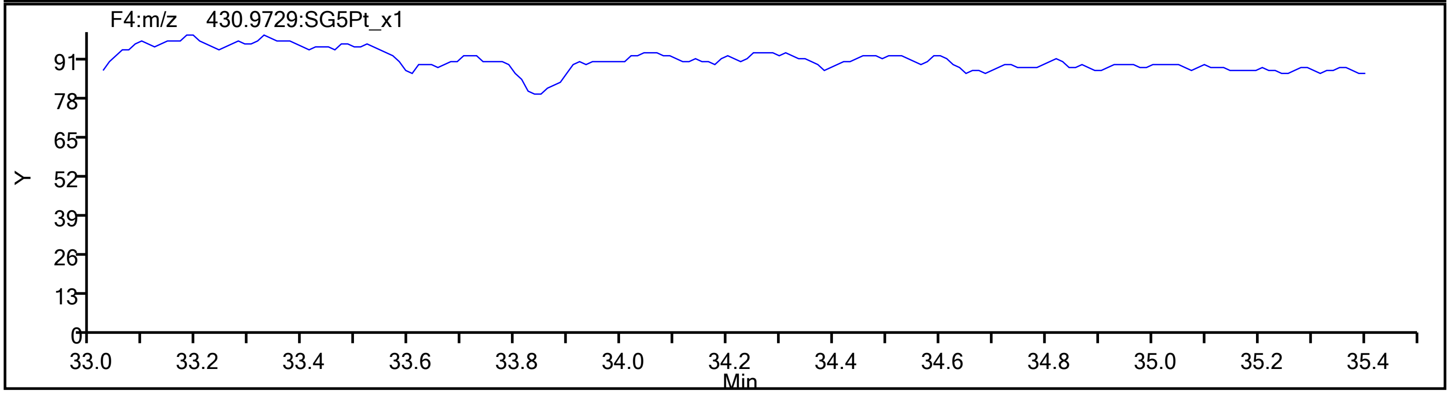

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d		
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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

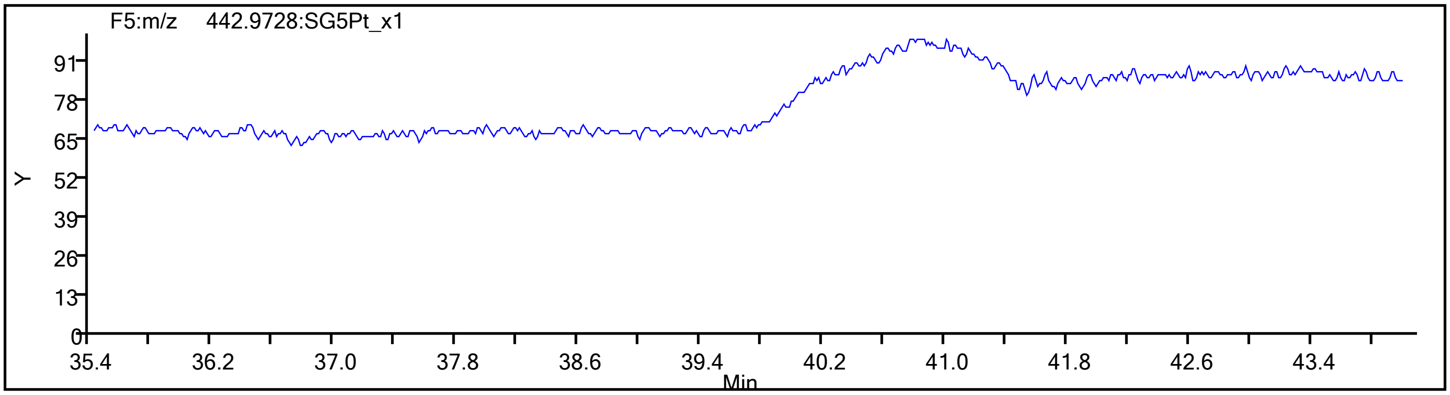

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.034

Error Coefficients

Standard Error:	219000000
Relative Standard Error:	8.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.643701	100.0	34578342.0	1.05748	Y
2	IC 320-470907/4	10.0	8.825772	100.0	19961913.0	0.882577	Y
3	IC 320-470907/5	50.0	53.853487	100.0	35095772.0	1.07707	Y
4	IC 320-470907/6	200.0	220.136831	100.0	37615875.0	1.100684	Y
5	IC 320-470907/7	1000.0	1051.465415	100.0	40768221.0	1.051465	Y

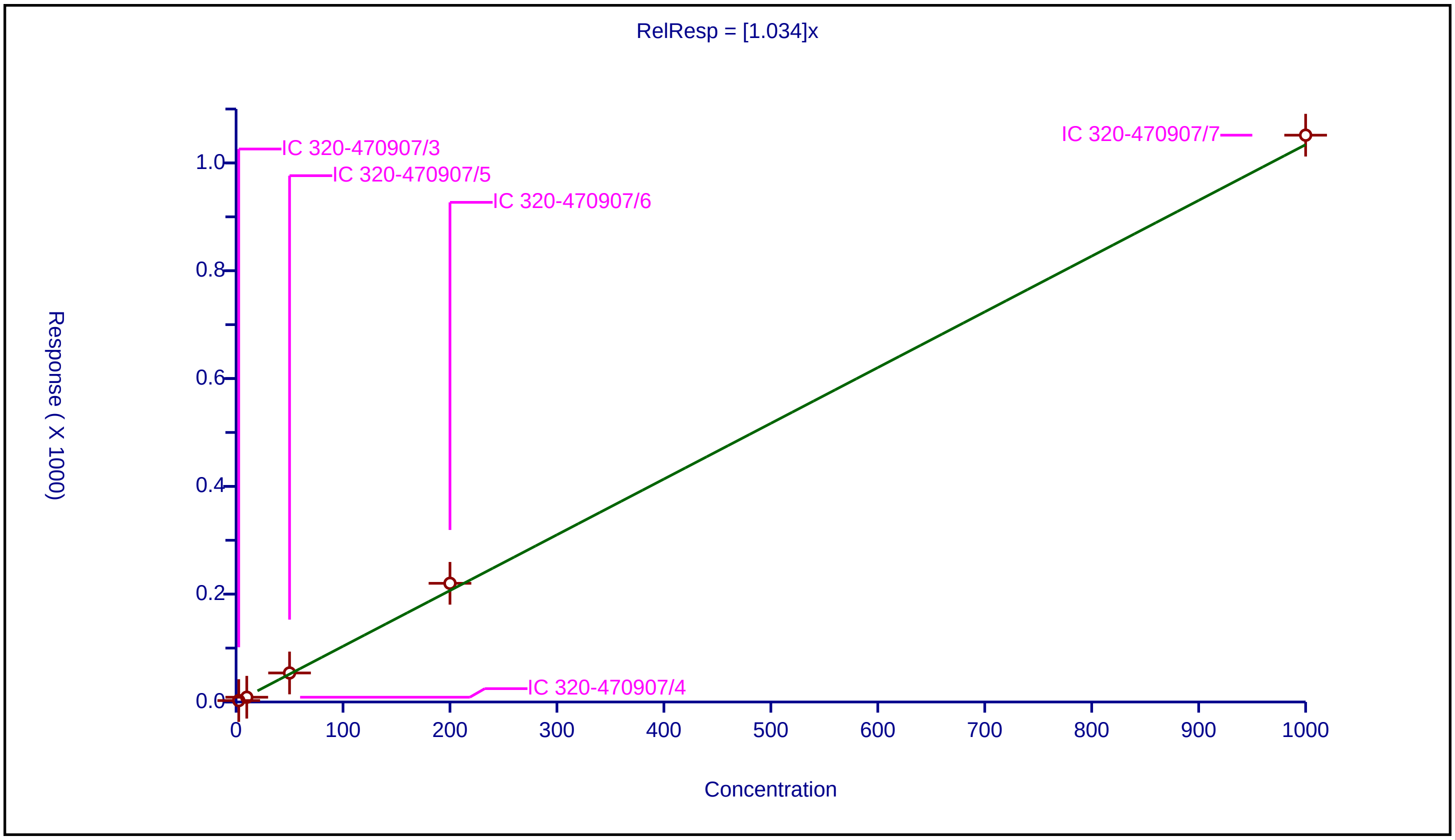

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.402

Error Coefficients

Standard Error:	310000000
Relative Standard Error:	8.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	3.543833	100.0	37029825.0	1.417533	Y
2	IC 320-470907/4	10.0	11.874102	100.0	20592597.0	1.18741	Y
3	IC 320-470907/5	50.0	73.588534	100.0	37647100.0	1.471771	Y
4	IC 320-470907/6	200.0	300.909784	100.0	39671285.0	1.504549	Y
5	IC 320-470907/7	1000.0	1427.238146	100.0	42606325.0	1.427238	Y

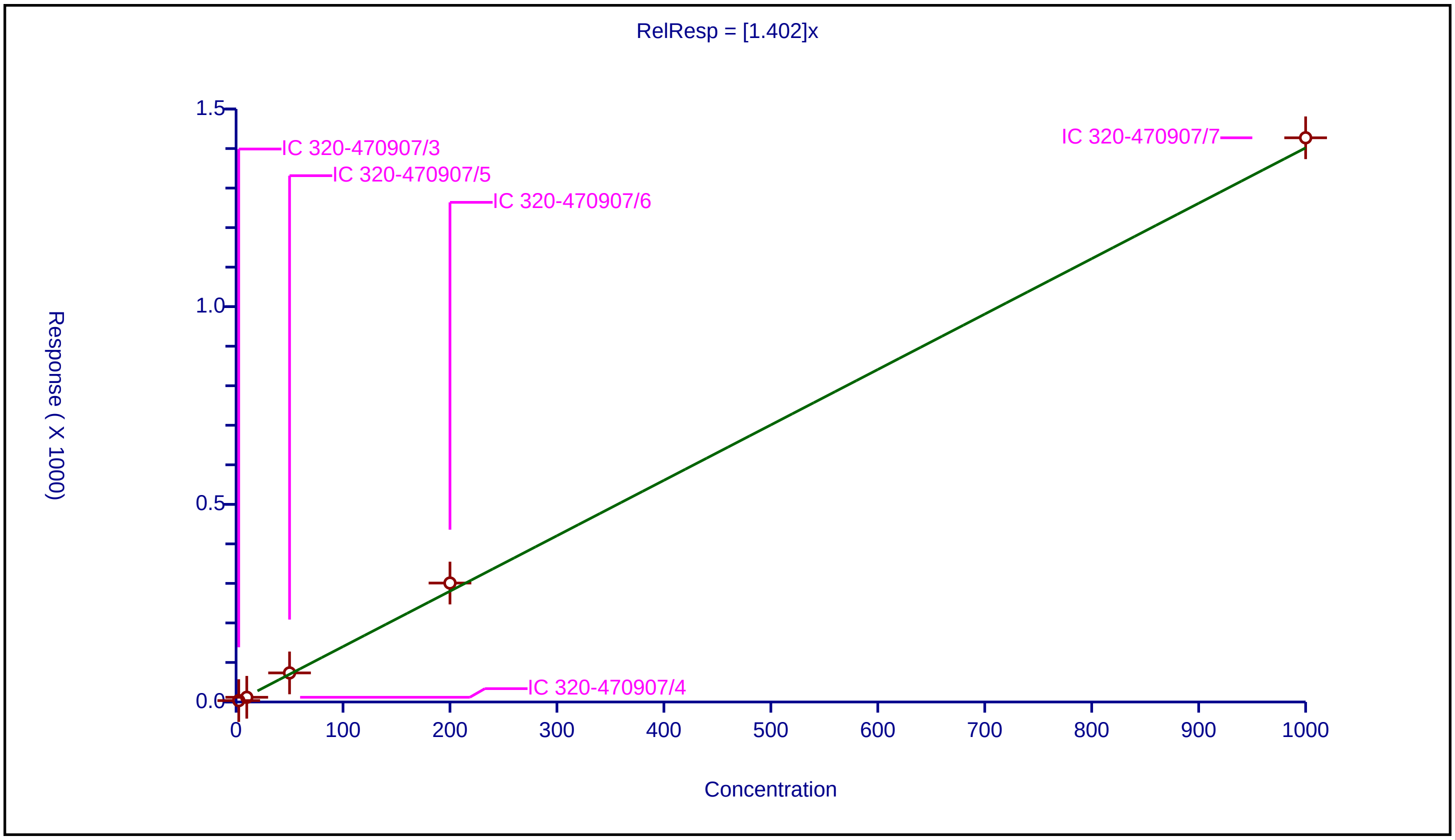

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.3

Error Coefficients

Standard Error:	273000000
Relative Standard Error:	9.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	3.323969	100.0	32361768.0	1.329587	Y
2	IC 320-470907/4	10.0	10.906754	100.0	20368580.0	1.090675	Y
3	IC 320-470907/5	50.0	67.708464	100.0	34247640.0	1.354169	Y
4	IC 320-470907/6	200.0	285.776798	100.0	36012214.0	1.428884	Y
5	IC 320-470907/7	1000.0	1294.430141	100.0	41373383.0	1.29443	Y

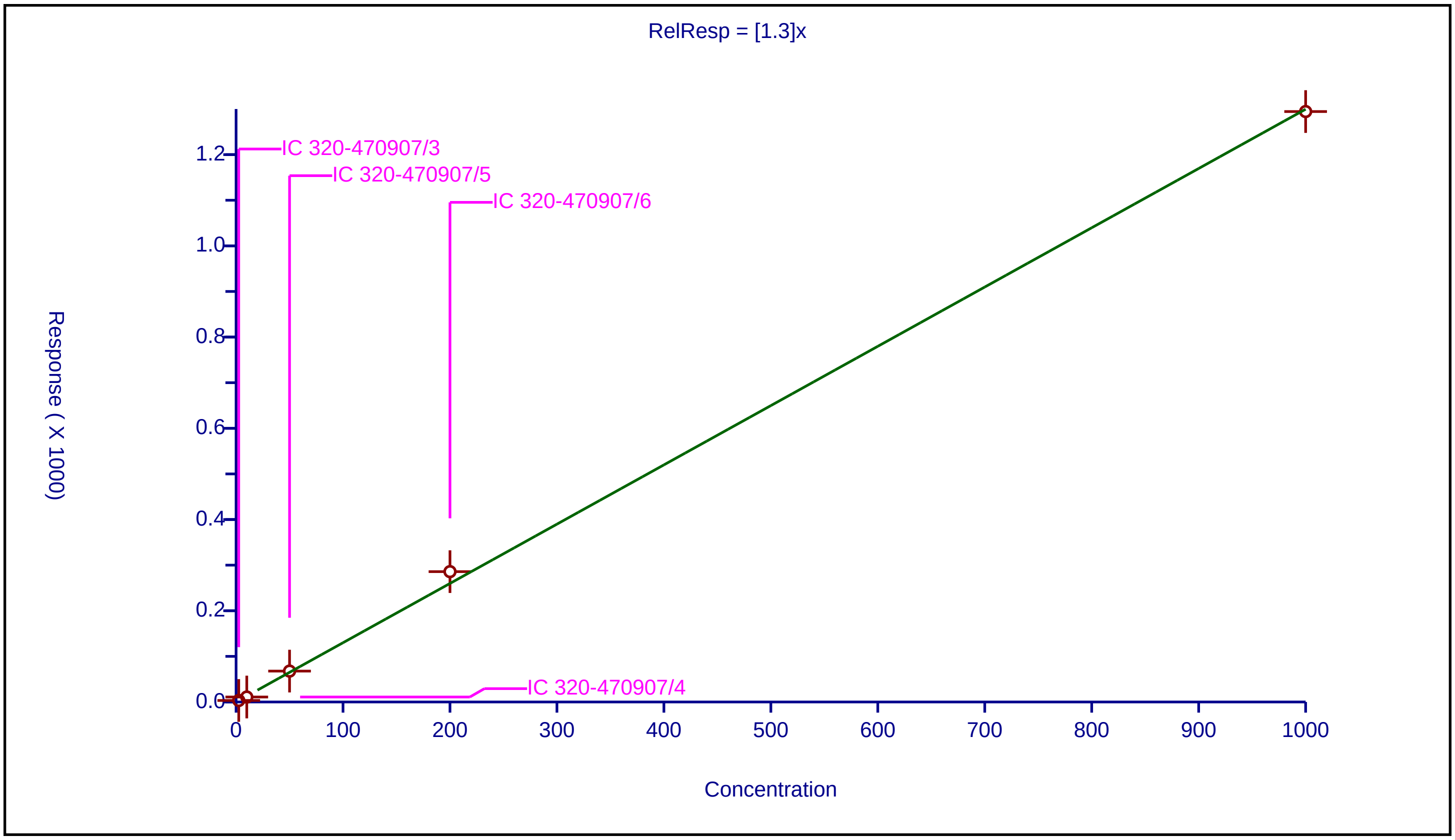

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.036

Error Coefficients

Standard Error:	246000000
Relative Standard Error:	9.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.684082	100.0	38583102.0	1.073633	Y
2	IC 320-470907/4	10.0	8.71084	100.0	22835892.0	0.871084	Y
3	IC 320-470907/5	50.0	53.012109	100.0	39398721.0	1.060242	Y
4	IC 320-470907/6	200.0	229.765667	100.0	40366933.0	1.148828	Y
5	IC 320-470907/7	1000.0	1024.769715	100.0	47025482.0	1.02477	Y

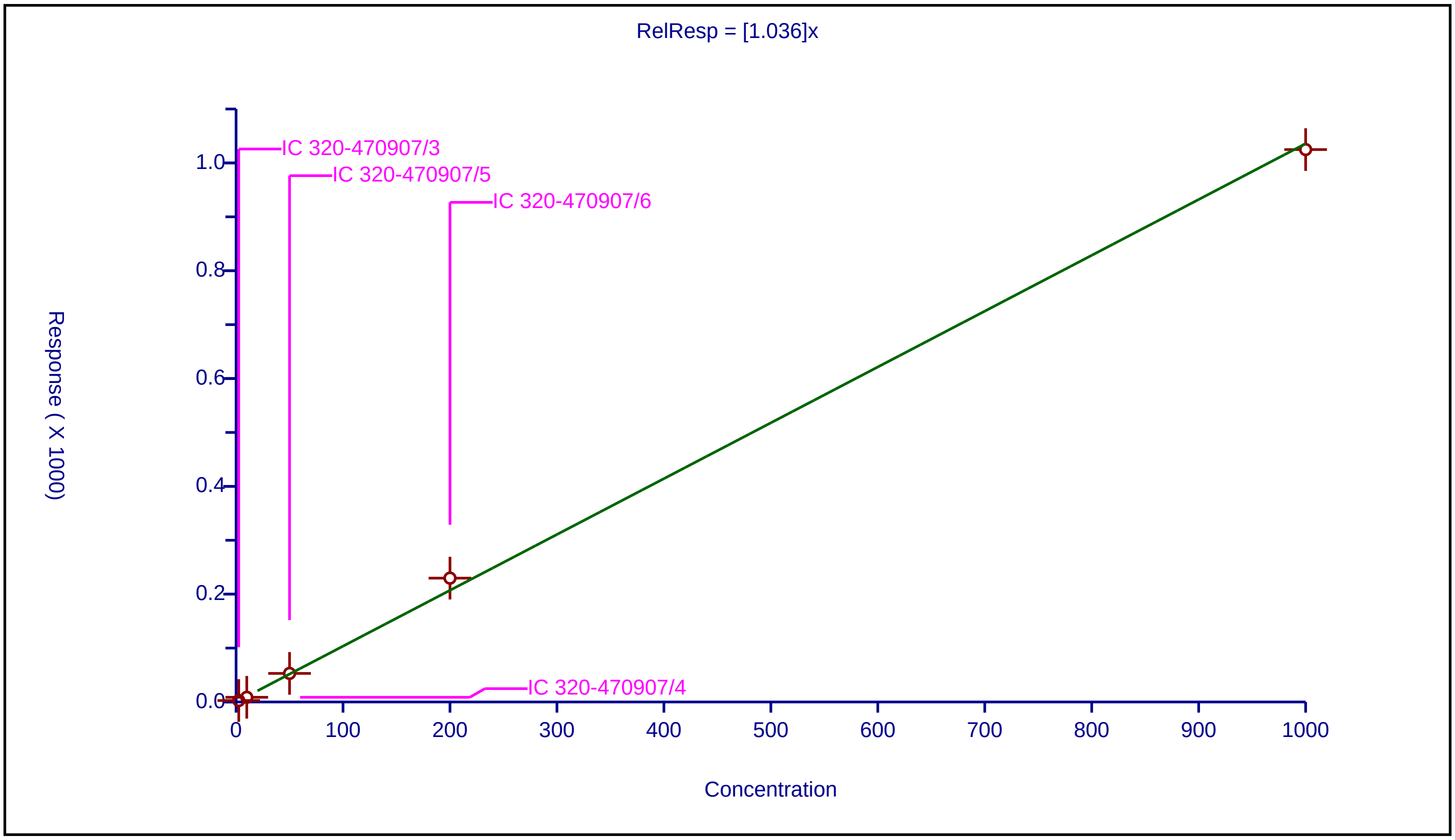

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.067

Error Coefficients

Standard Error:	335000000
Relative Standard Error:	9.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.833024	100.0	50636356.0	1.13321	Y
2	IC 320-470907/4	10.0	8.89948	100.0	31554822.0	0.889948	Y
3	IC 320-470907/5	50.0	55.051009	100.0	52255820.0	1.10102	Y
4	IC 320-470907/6	200.0	230.79673	100.0	55243673.0	1.153984	Y
5	IC 320-470907/7	1000.0	1055.226165	100.0	62326448.0	1.055226	Y

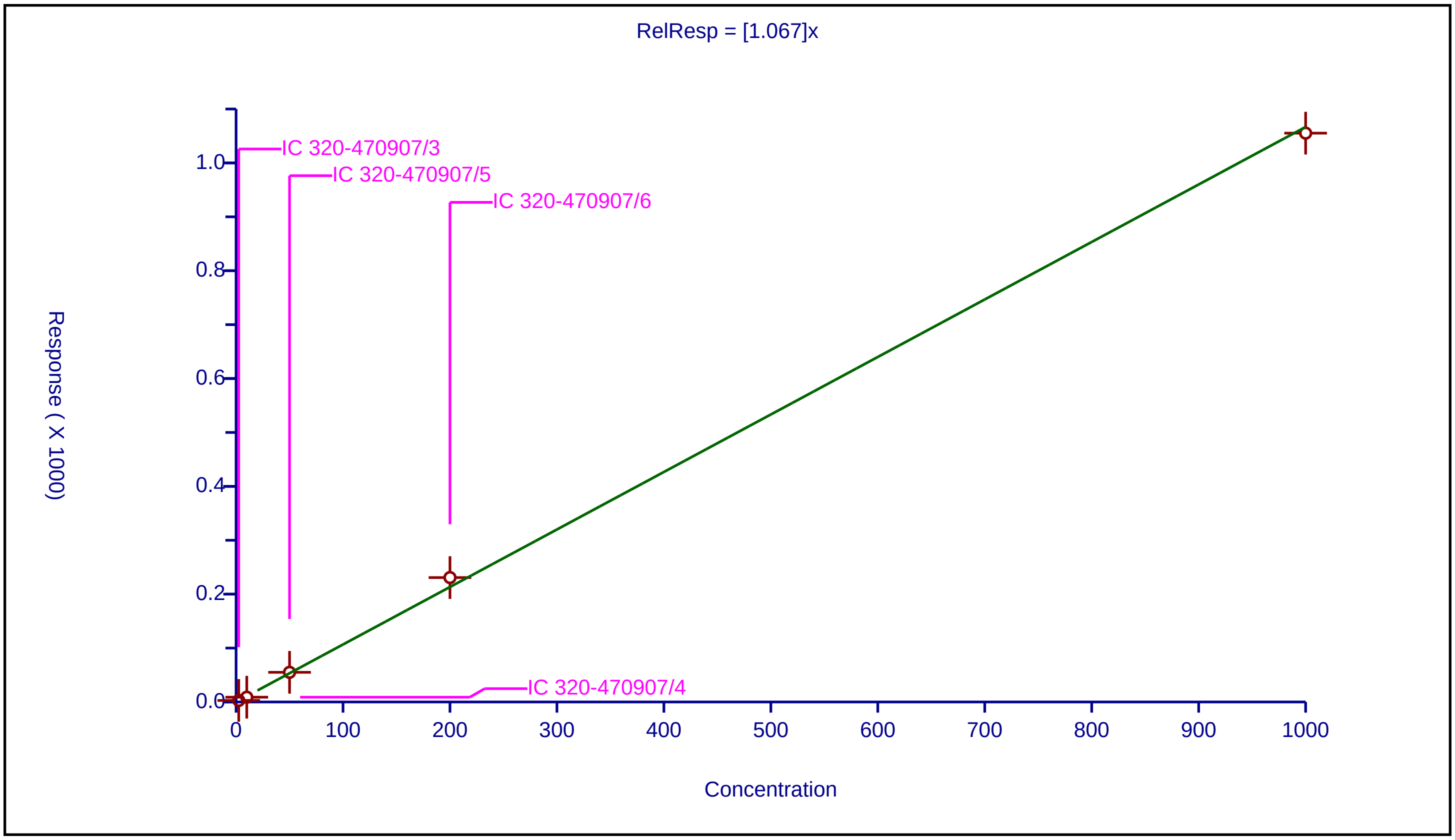

Calibration / 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9658

Error Coefficients

Standard Error:	256000000
Relative Standard Error:	9.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.450342	100.0	42652788.0	0.980137	Y
2	IC 320-470907/4	10.0	8.116723	100.0	26303141.0	0.811672	Y
3	IC 320-470907/5	50.0	50.437831	100.0	44158951.0	1.008757	Y
4	IC 320-470907/6	200.0	207.683804	100.0	47276754.0	1.038419	Y
5	IC 320-470907/7	1000.0	990.211317	100.0	50613988.0	0.990211	Y

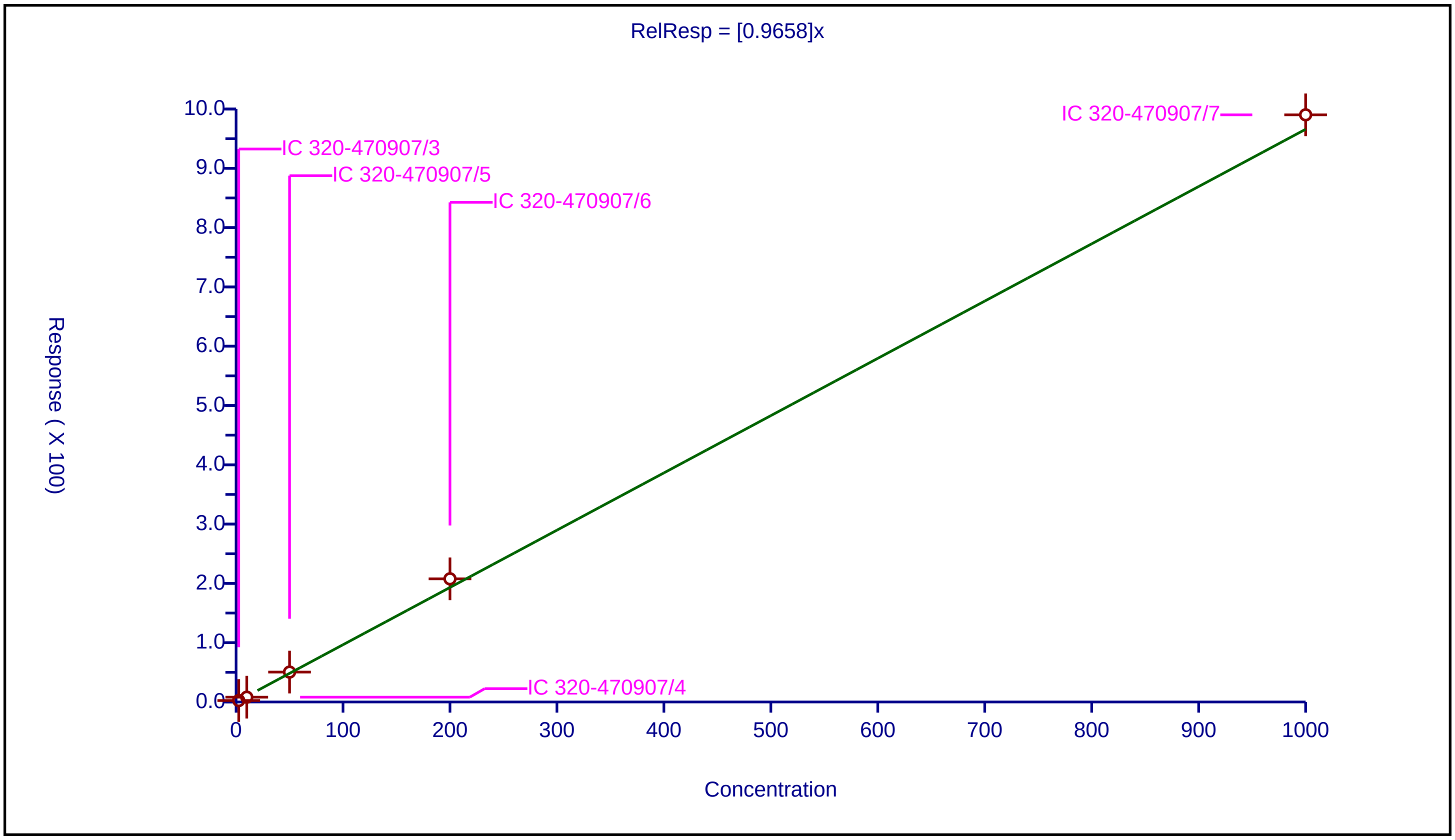

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.118

Error Coefficients

Standard Error:	345000000
Relative Standard Error:	8.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.917284	100.0	49893250.0	1.166914	Y
2	IC 320-470907/4	10.0	9.503569	100.0	31592088.0	0.950357	Y
3	IC 320-470907/5	50.0	57.792698	100.0	52082737.0	1.155854	Y
4	IC 320-470907/6	200.0	236.739503	100.0	55719806.0	1.183698	Y
5	IC 320-470907/7	1000.0	1132.284536	100.0	59831180.0	1.132285	Y

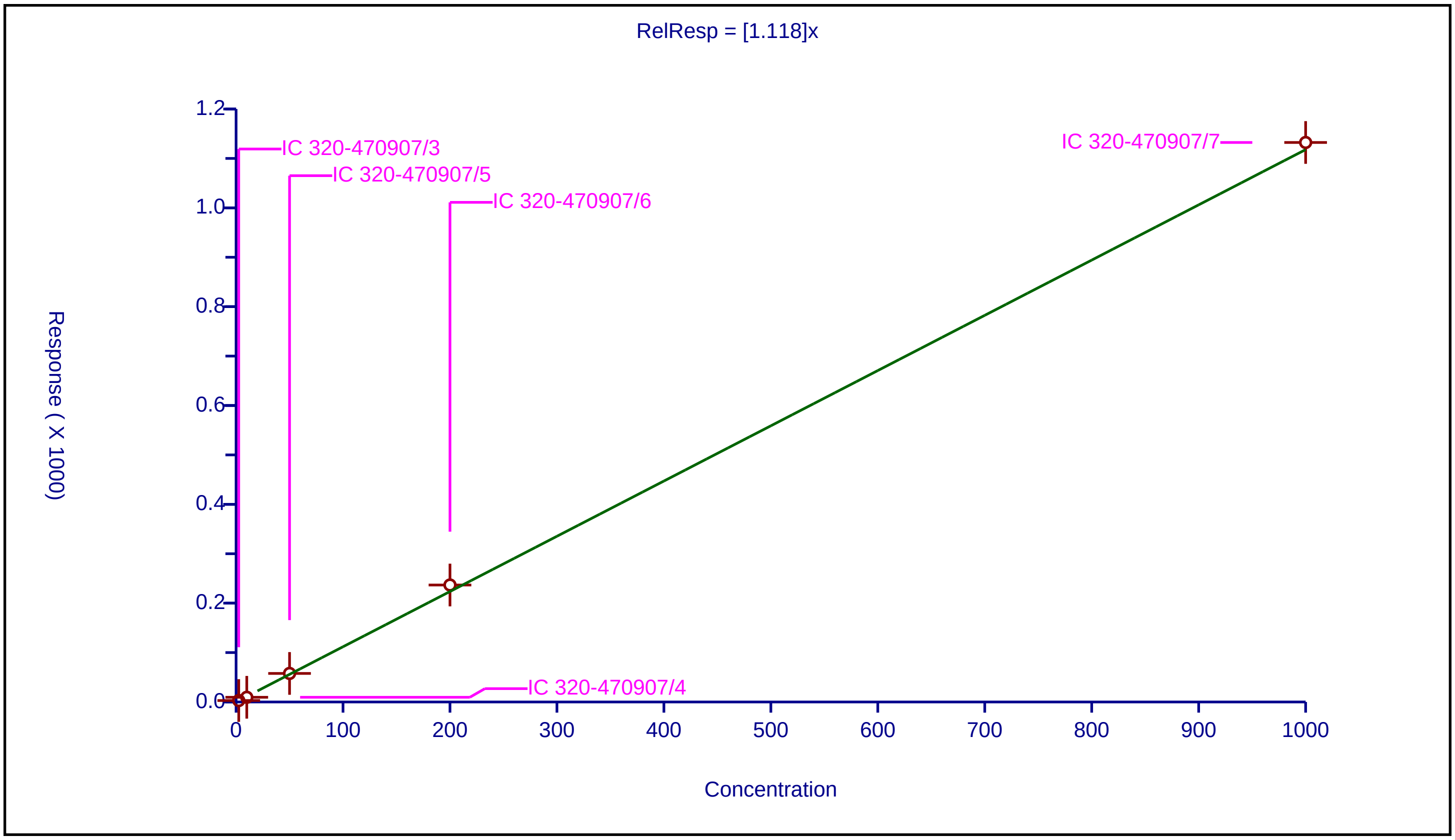

Calibration / 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.14

Error Coefficients

Standard Error:	272000000
Relative Standard Error:	12.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.983

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.809901	100.0	38583102.0	1.12396	Y
2	IC 320-470907/4	10.0	9.249194	100.0	22835892.0	0.924919	Y
3	IC 320-470907/5	50.0	60.823485	100.0	39398721.0	1.21647	Y
4	IC 320-470907/6	200.0	259.485815	100.0	40366933.0	1.297429	Y
5	IC 320-470907/7	1000.0	1135.398251	100.0	47025482.0	1.135398	Y

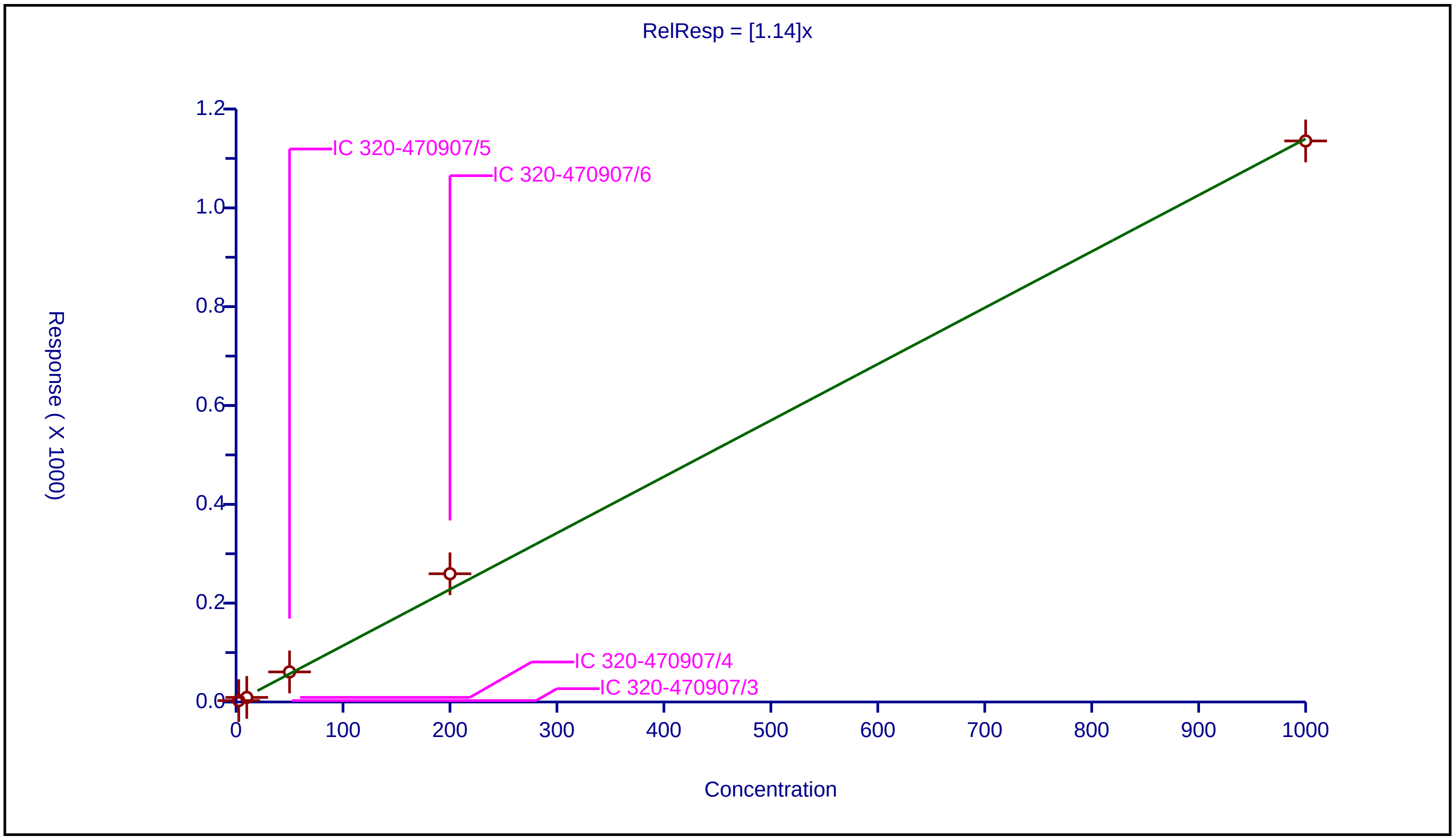

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.146

Error Coefficients

Standard Error:	325000000
Relative Standard Error:	9.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.96385	100.0	45965019.0	1.18554	Y
2	IC 320-470907/4	10.0	9.630973	100.0	30198983.0	0.963097	Y
3	IC 320-470907/5	50.0	59.72803	100.0	47888248.0	1.194561	Y
4	IC 320-470907/6	200.0	245.248732	100.0	51001144.0	1.226244	Y
5	IC 320-470907/7	1000.0	1158.293939	100.0	55080975.0	1.158294	Y

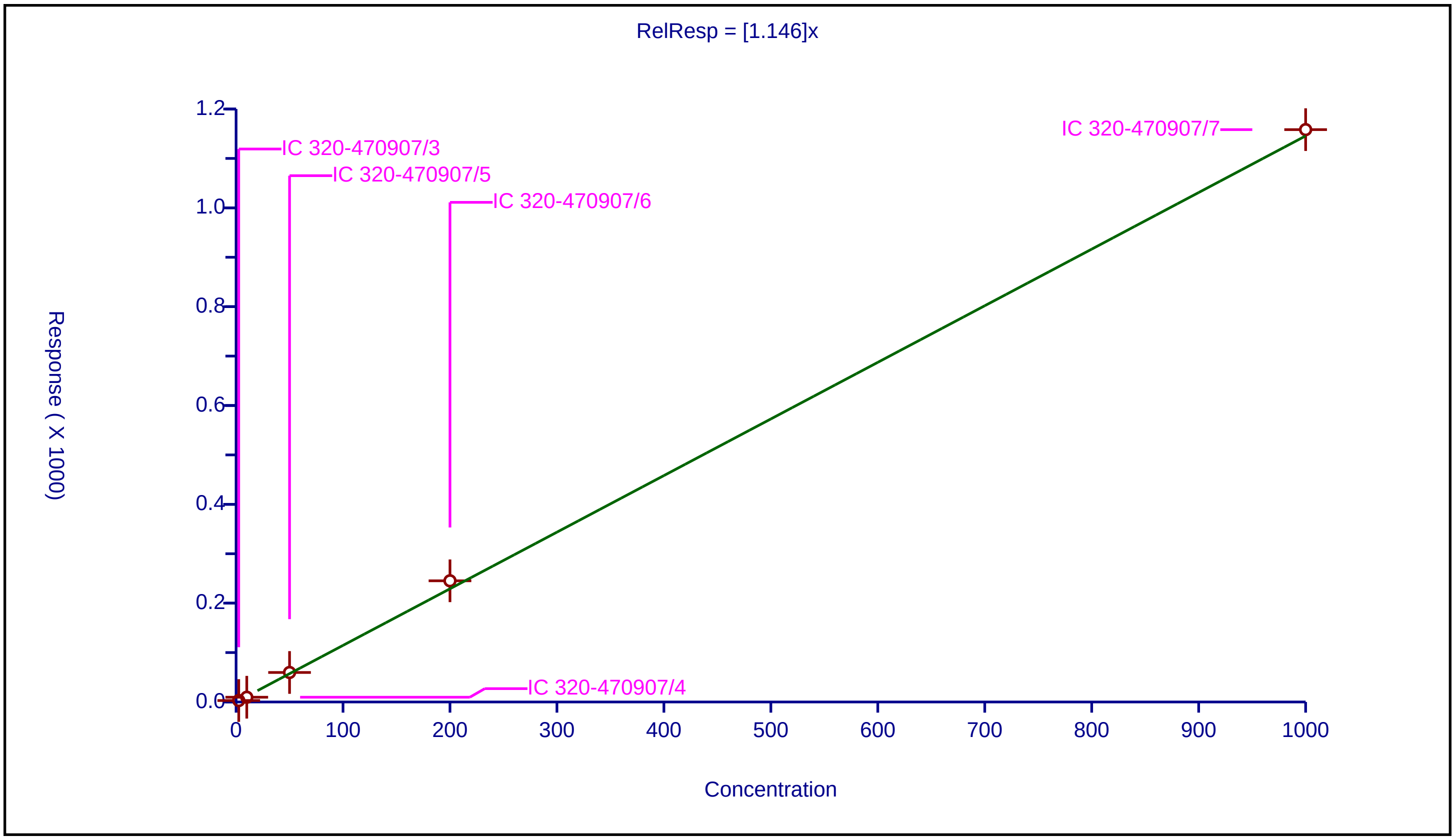

Calibration / 1,2,3,7,8-PeCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9982

Error Coefficients

Standard Error:	262000000
Relative Standard Error:	8.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.609665	100.0	41601694.0	1.043866	Y
2	IC 320-470907/4	10.0	8.534969	100.0	27141714.0	0.853497	Y
3	IC 320-470907/5	50.0	50.576103	100.0	44125952.0	1.011522	Y
4	IC 320-470907/6	200.0	212.593106	100.0	46036052.0	1.062966	Y
5	IC 320-470907/7	1000.0	1019.33459	100.0	50517938.0	1.019335	Y

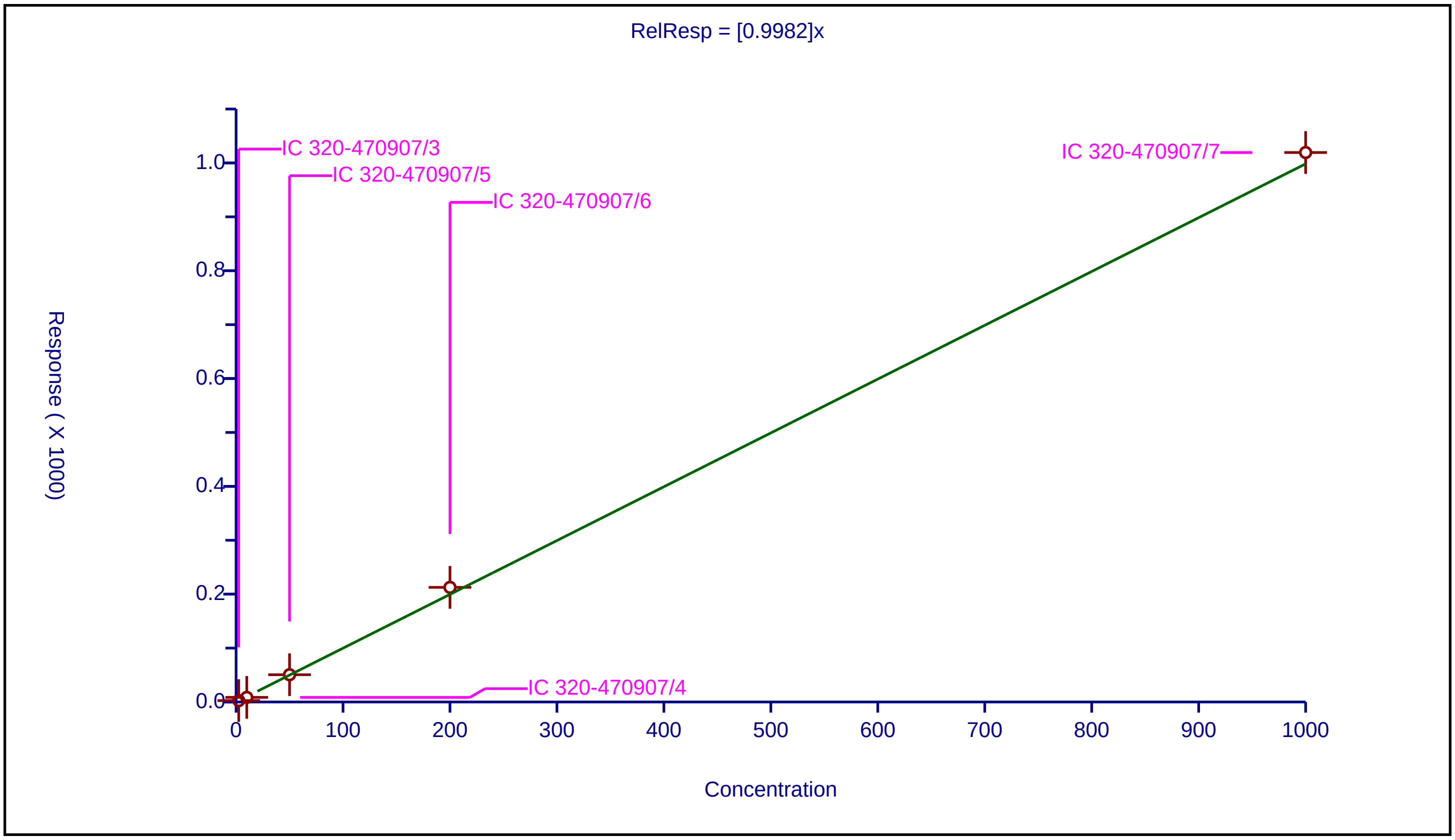

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.021

Error Coefficients

Standard Error:	375000000
Relative Standard Error:	8.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.639882	100.0	58393095.0	1.055953	Y
2	IC 320-470907/4	10.0	8.656796	100.0	39330879.0	0.86568	Y
3	IC 320-470907/5	50.0	52.981286	100.0	61696360.0	1.059626	Y
4	IC 320-470907/6	200.0	215.814241	100.0	64926391.0	1.079071	Y
5	IC 320-470907/7	1000.0	1044.335364	100.0	70522450.0	1.044335	Y

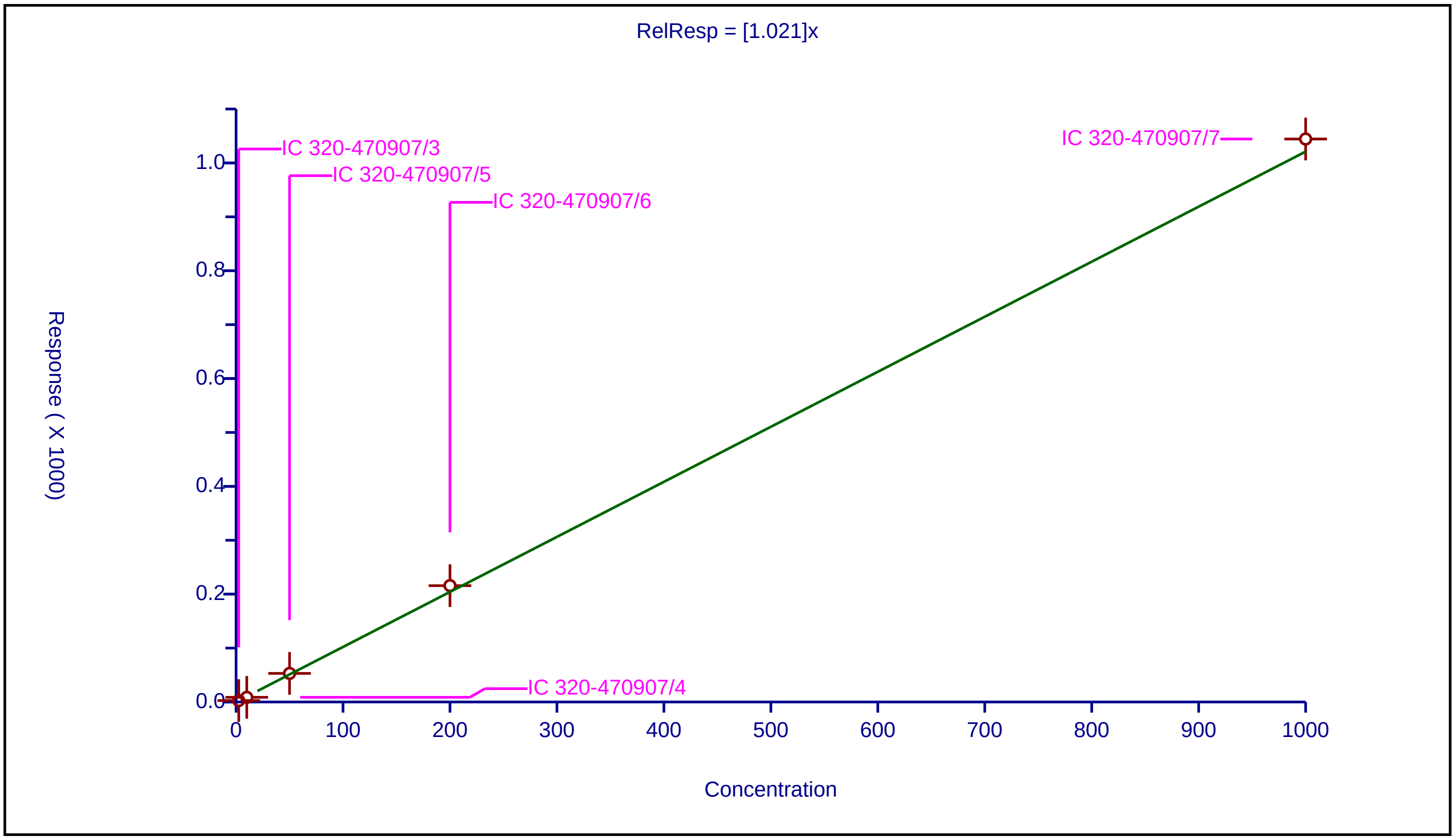

Calibration

/ 2,3,4,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.142

Error Coefficients

Standard Error:	337000000
Relative Standard Error:	8.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.954564	100.0	48157462.0	1.181826	Y
2	IC 320-470907/4	10.0	9.813222	100.0	28956799.0	0.981322	Y
3	IC 320-470907/5	50.0	58.49746	100.0	50722895.0	1.169949	Y
4	IC 320-470907/6	200.0	244.481691	100.0	53024531.0	1.222408	Y
5	IC 320-470907/7	1000.0	1155.711716	100.0	57111280.0	1.155712	Y

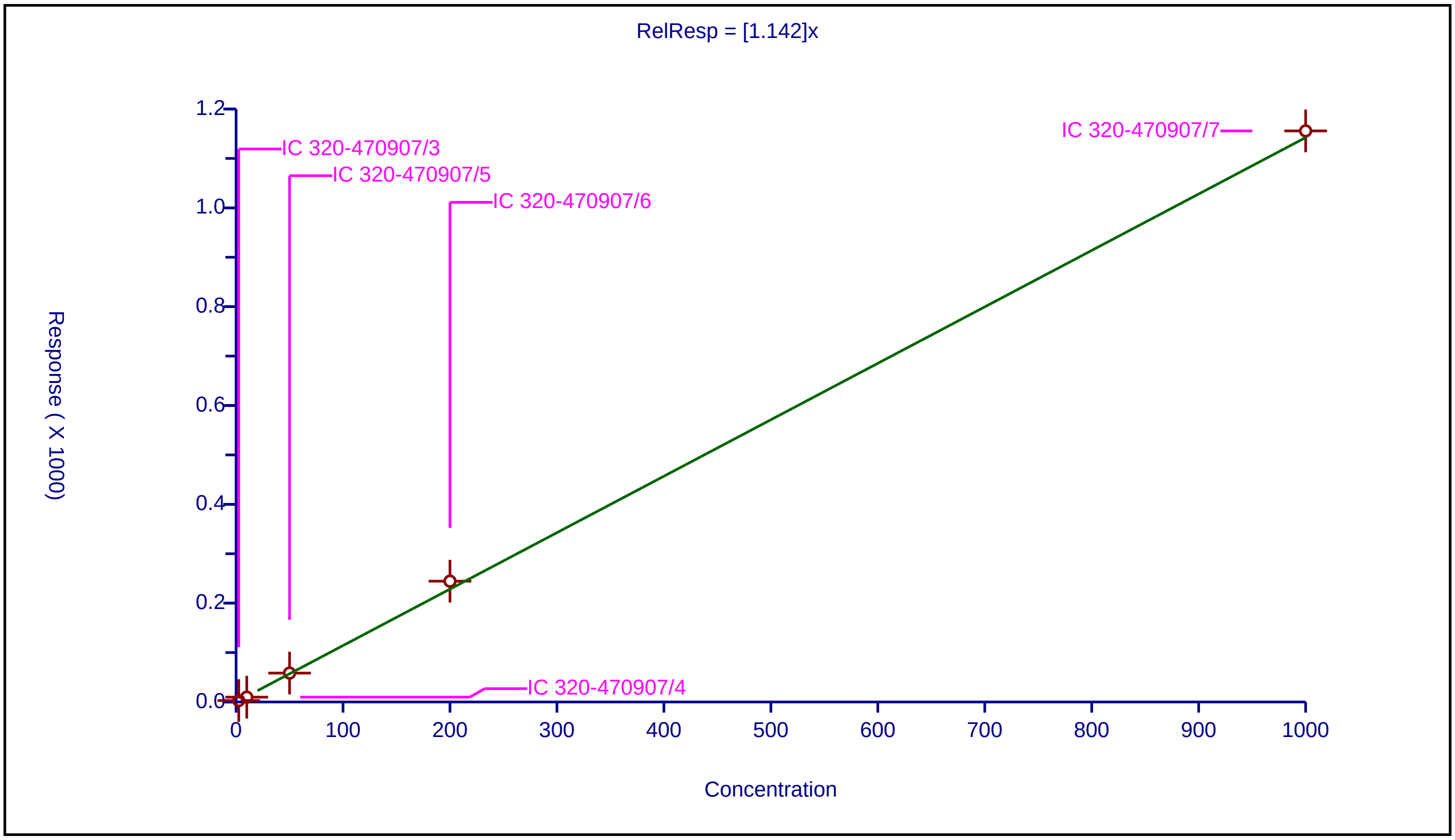

Calibration

/ 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.979

Error Coefficients

Standard Error:	367000000
Relative Standard Error:	10.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	2.5	2.534183	100.0	60520258.0	1.013673	Y
2	IC 320-470907/4	10.0	8.147866	100.0	39403105.0	0.814787	Y
3	IC 320-470907/5	50.0	50.905674	100.0	62753914.0	1.018113	Y
4	IC 320-470907/6	200.0	214.66795	100.0	64348319.0	1.07334	Y
5	IC 320-470907/7	1000.0	975.08941	100.0	73937882.0	0.975089	Y

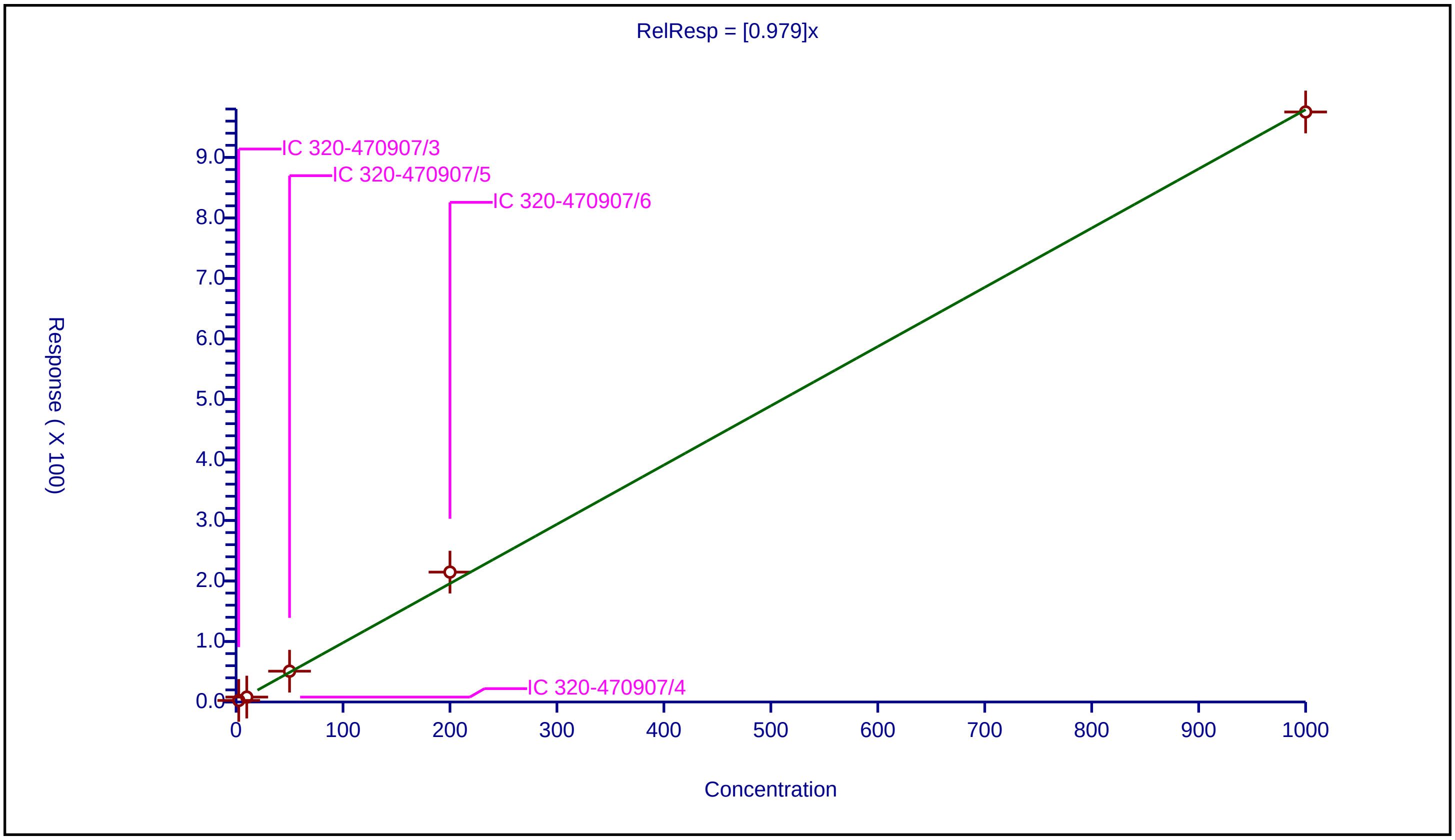

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.099

Error Coefficients

Standard Error:	67800000
Relative Standard Error:	11.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.984

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	0.5	0.619059	100.0	49508681.0	1.238118	Y
2	IC 320-470907/4	2.0	1.815772	100.0	34425797.0	0.907886	Y
3	IC 320-470907/5	10.0	10.680688	100.0	52605423.0	1.068069	Y
4	IC 320-470907/6	40.0	45.902374	100.0	54471906.0	1.147559	Y
5	IC 320-470907/7	200.0	226.766783	100.0	58712323.0	1.133834	Y

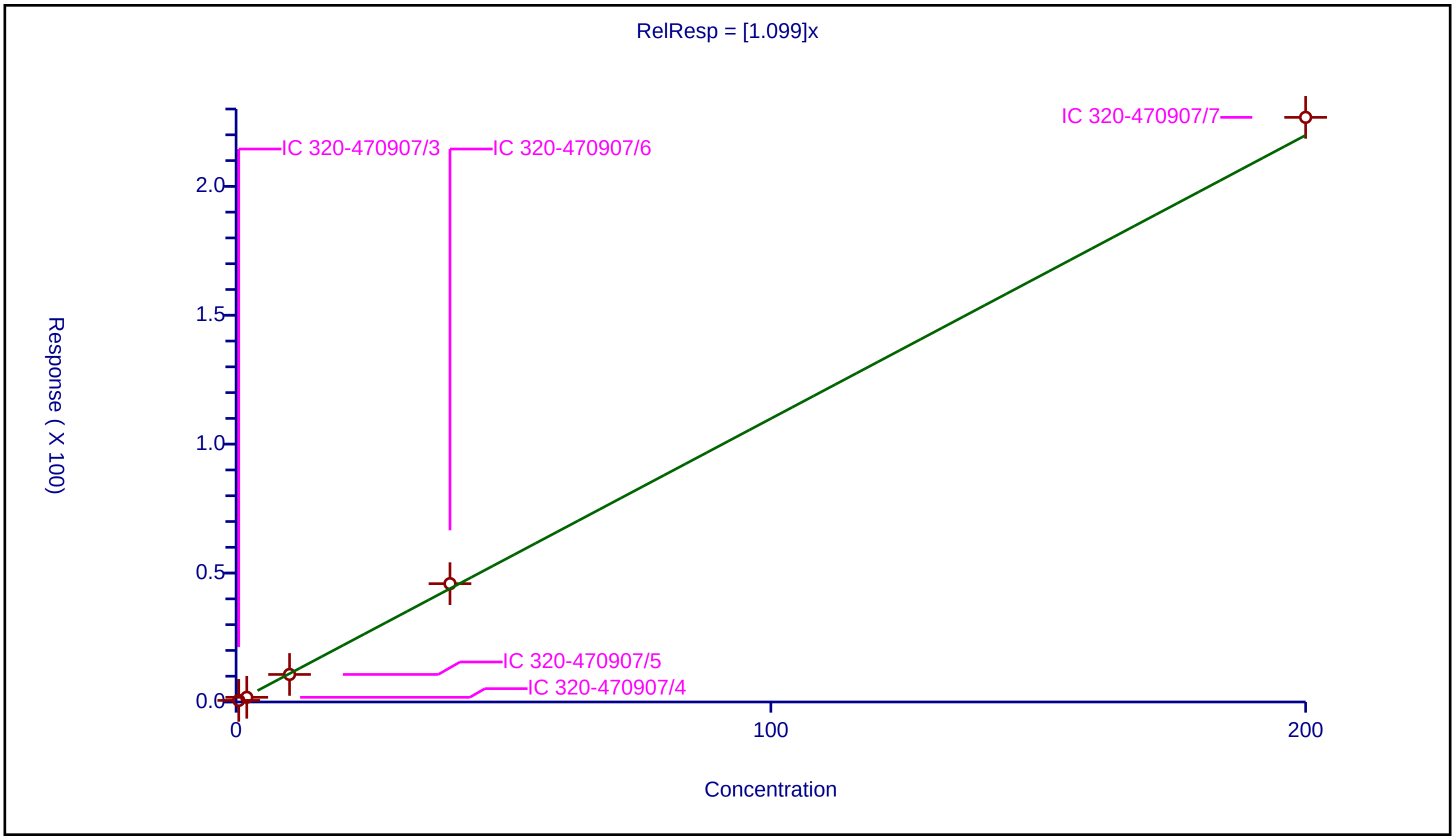

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9903

Error Coefficients

Standard Error:	89800000
Relative Standard Error:	7.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	0.5	0.516343	100.0	73459076.0	1.032687	Y
2	IC 320-470907/4	2.0	1.721148	100.0	50358373.0	0.860574	Y
3	IC 320-470907/5	10.0	9.918562	100.0	77145484.0	0.991856	Y
4	IC 320-470907/6	40.0	42.13072	100.0	79722247.0	1.053268	Y
5	IC 320-470907/7	200.0	202.587113	100.0	86988713.0	1.012936	Y

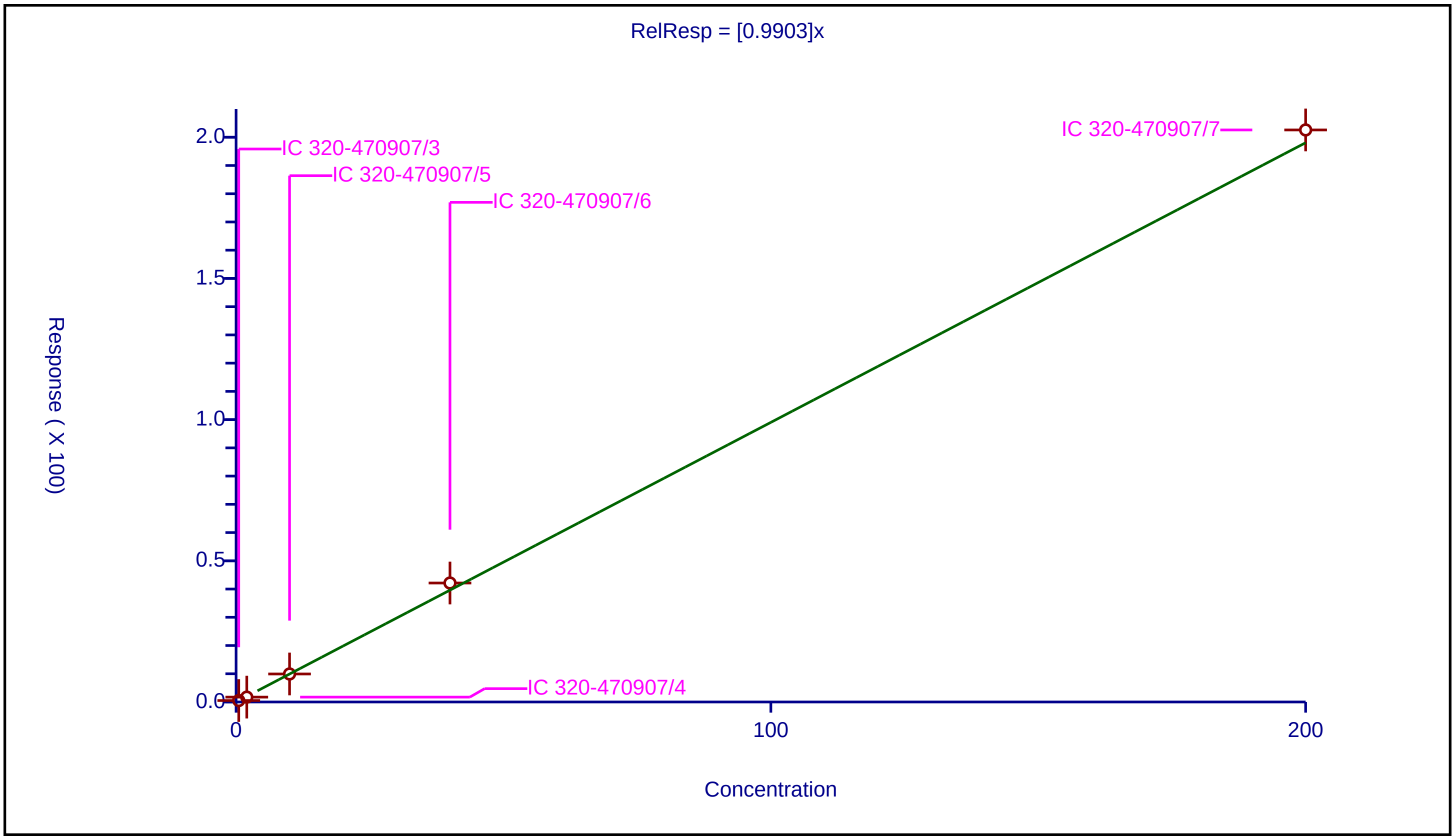

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.016

Error Coefficients

Standard Error:	70300000
Relative Standard Error:	7.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	0.5	0.482884	100.0	52690058.0	0.965769	Y
2	IC 320-470907/4	2.0	1.817316	100.0	38576771.0	0.908658	Y
3	IC 320-470907/5	10.0	10.363798	100.0	57046835.0	1.03638	Y
4	IC 320-470907/6	40.0	43.128973	100.0	58999381.0	1.078224	Y
5	IC 320-470907/7	200.0	218.093112	100.0	63323330.0	1.090466	Y

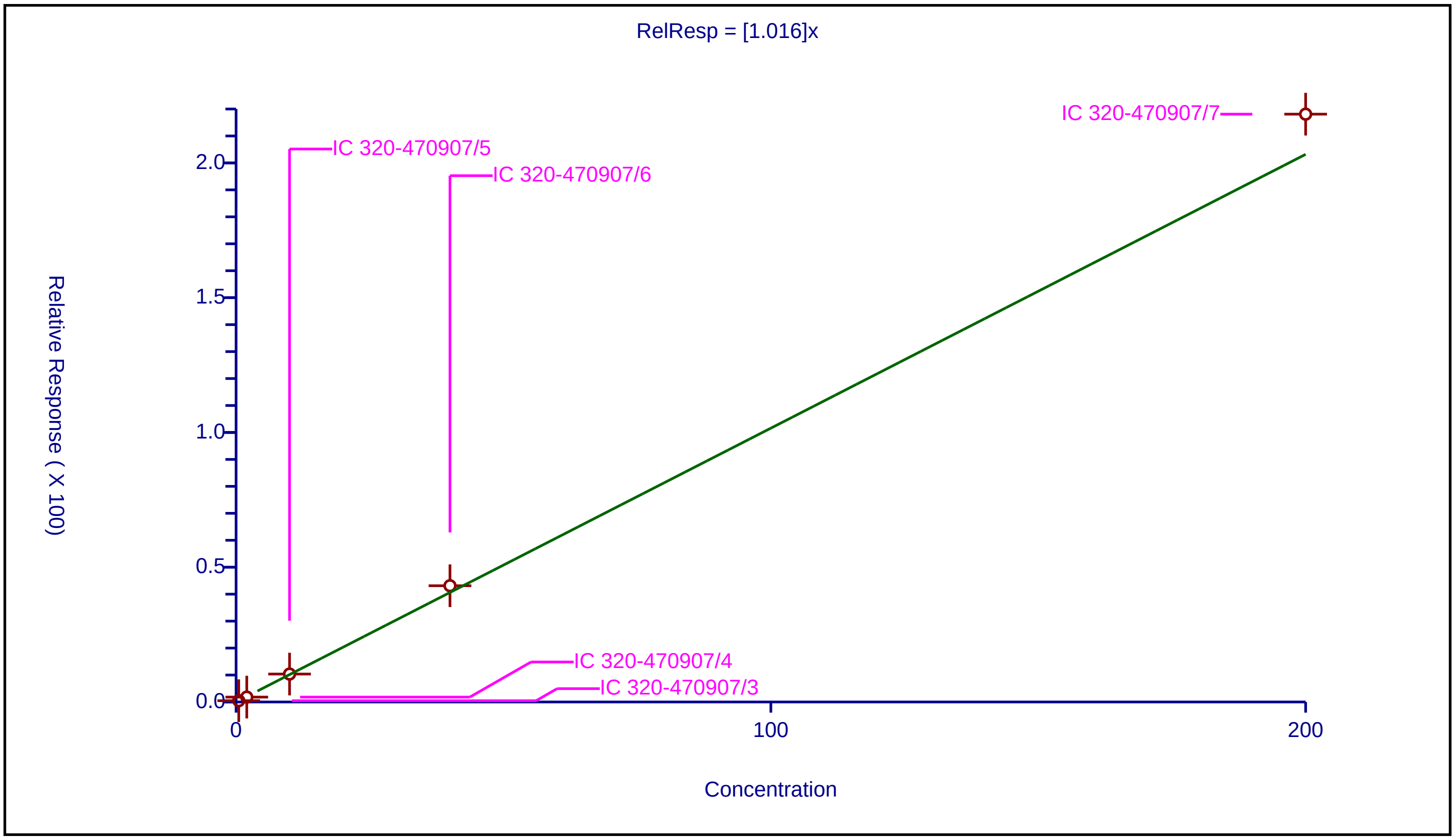

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.058

Error Coefficients

Standard Error:	335000000
Relative Standard Error:	8.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	5.0	5.413527	200.0	50339162.0	1.082705	Y
2	IC 320-470907/4	20.0	18.084586	200.0	27495006.0	0.904229	Y
3	IC 320-470907/5	100.0	109.321898	200.0	51526489.0	1.093219	Y
4	IC 320-470907/6	400.0	452.282598	200.0	55865969.0	1.130706	Y
5	IC 320-470907/7	2000.0	2154.040136	200.0	61088074.0	1.07702	Y

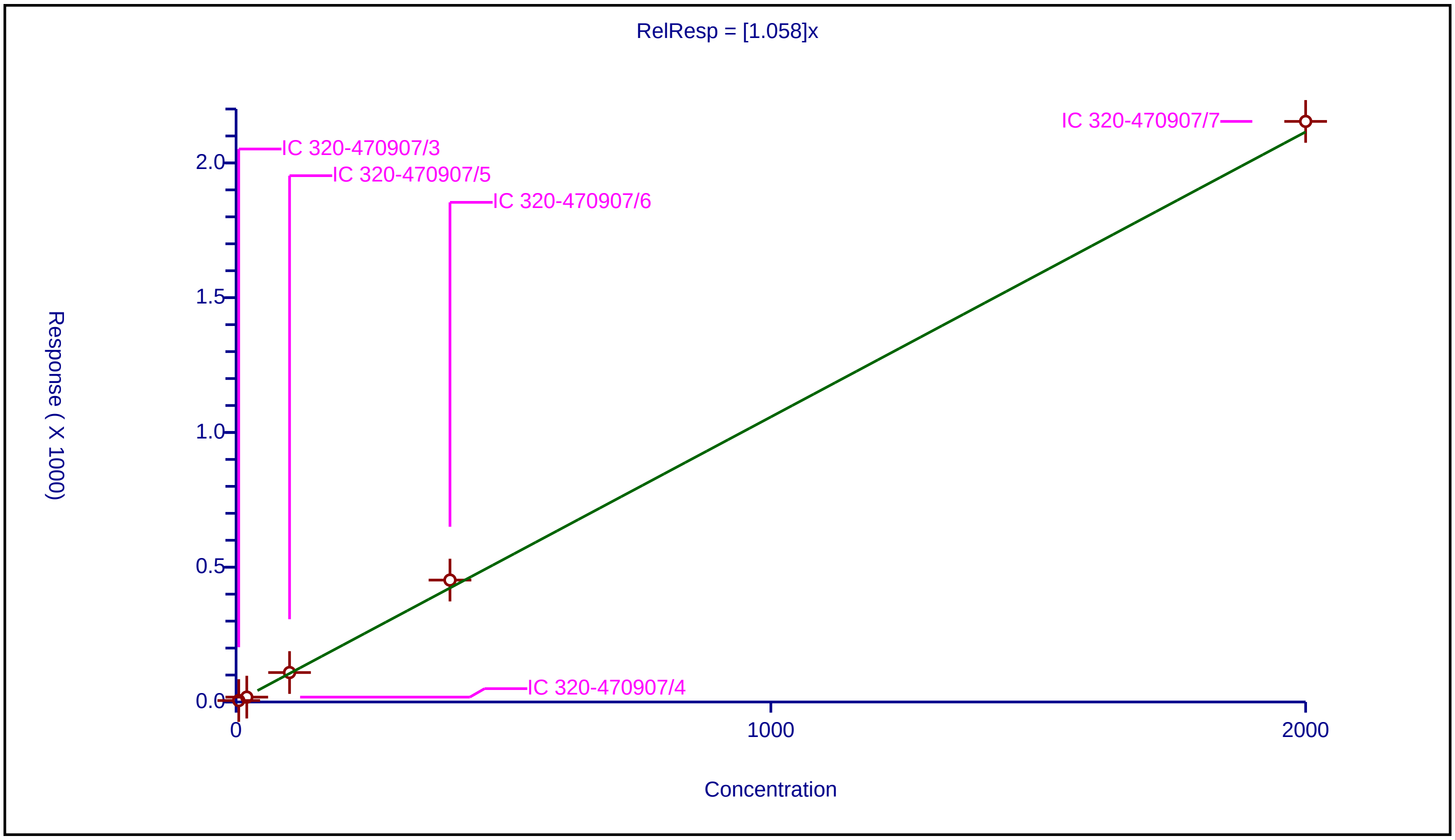

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.314

Error Coefficients

Standard Error:	427000000
Relative Standard Error:	9.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-470907/3	5.0	6.494764	200.0	50339162.0	1.298953	Y
2	IC 320-470907/4	20.0	22.123007	200.0	27495006.0	1.10615	Y
3	IC 320-470907/5	100.0	136.947122	200.0	51526489.0	1.369471	Y
4	IC 320-470907/6	400.0	567.966871	200.0	55865969.0	1.419917	Y
5	IC 320-470907/7	2000.0	2746.33397	200.0	61088074.0	1.373167	Y

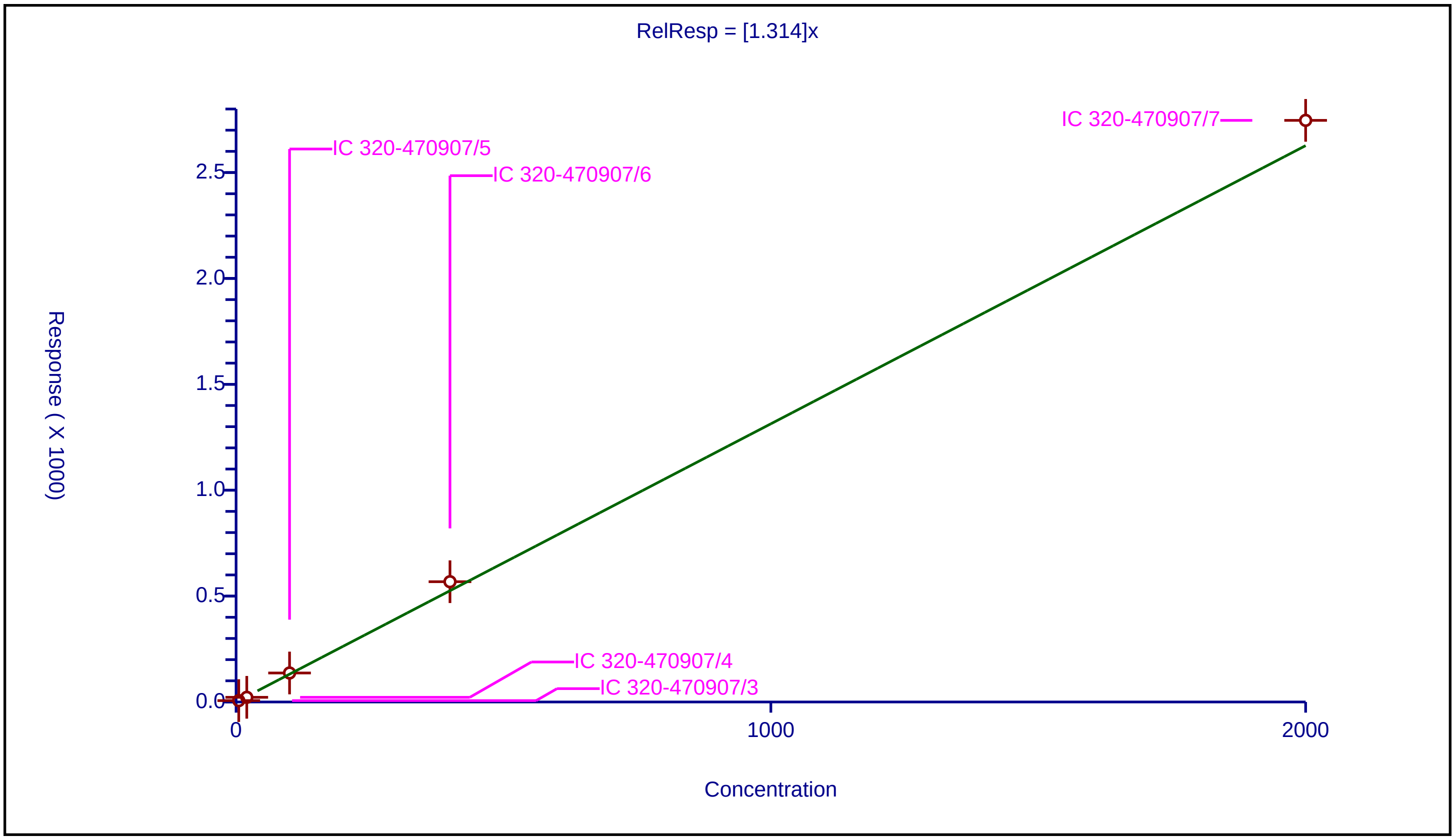

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 458526

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/03/2021 14:40 Calibration End Date: 02/03/2021 17:13 Calibration ID: 53975

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-458526/4	03FE2111D2_004.d
Level 2	IC 320-458526/5	03FE2111D2_005.d
Level 3	IC 320-458526/6	03FE2111D2_006.d
Level 4	IC 320-458526/7	03FE2111D2_007.d
Level 5	IC 320-458526/8	03FE2111D2_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.0646	0.8047	1.0208	1.0639	1.0404	AveID		0.9989				11.0		20.0			
2,3,7,8-TCDF	1.0192	0.8037	0.9168	0.9593	0.9219	AveID		0.9242				8.5		20.0			
13C-2,3,7,8-TCDD	0.9333	0.8722	0.8648	0.9112	0.9043	Ave		0.8971				3.2		35.0			
13C-2,3,7,8-TCDF	1.3338	1.2230	1.2981	1.3231	1.3507	Ave		1.3057				3.8		35.0			
37Cl4-2,3,7,8-TCDD	0.8717	0.7677	0.7991	0.9094	0.9018	Ave		0.8499				7.5					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1   Analy Batch No.: 458526

SDG No.:

Instrument ID: 11D2   GC Column: DB-225   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 02/03/2021 14:40   Calibration End Date: 02/03/2021 17:13   Calibration ID: 53975

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-458526/4	03FE2111D2_004.d
Level 2	IC 320-458526/5	03FE2111D2_005.d
Level 3	IC 320-458526/6	03FE2111D2_006.d
Level 4	IC 320-458526/7	03FE2111D2_007.d
Level 5	IC 320-458526/8	03FE2111D2_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	896765	2626055	16192524	72502759	334963625	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	1226939	3677832	21829070	94924152	443344371	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCDD	Ave	168467807	163166292	158625376	170373065	160983665	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCDD	Ave	240760670	228800695	238108839	247390619	240462837	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	786706	2872358	14656467	68013566	321084188	0.500	2.00	10.0	40.0	200

Curve Type Legend

Ave = Average ISTD

AveID = Average isotope dilution

Report Date: 04-Feb-2021 15:00:51 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 03-Feb-2021 14:40:17 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00032
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:00:48 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:50:13

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.151	180504909	0.77	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.290	240760670	0.81	1.3057	102.1	102.1	0.1740	0.1740	102	
2,3,7,8-TCDF	16.304	1226939	0.84	0.9242	0.5514	0.5514	0.0170	0.0170	110	
D 13C-2,3,7,8-TCDD	14.891	168467807	0.77	0.8971	104.0	104.0	0.2791	0.2791	104	
2,3,7,8-TCDD	14.904	896765	0.72	0.9989	0.5329	0.5329	0.2385	0.2385	107	n
$ 37Cl4-2,3,7,8-TCDD	14.918	786706		0.8499	0.5128	0.5128	0.0285	0.0285	103	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Reagents:

HRDXNL2_00032 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d				
Lims ID:	IC 2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	03-Feb-2021 14:40:17	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00032				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				

Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	04-Feb-2021 15:00:48	Calib Date:	03-Feb-2021 17:13:46
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		

Column 1 :	DB-225 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1681	

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:50:13

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.151	15.141	1		78273051	18956144	14162	35405	1339		
333.9339	15.151	15.141	1		102231858	24758626	29616	74040	836	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.290	16.280	1	1.075	107959002	23980997	21011	52527	1141		
317.9389	16.290	16.280	1	1.075	132801668	29460840	18719	46797	1574	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.304	16.302	0	1.001	559010	127921	1494	3735	86		
305.8987	16.304	16.302	0	1.001	667929	138810	1858	4645	75	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.891	14.889	0	0.983	73165086	17972765	14162	35405	1269		
333.9339	14.891	14.889	0	0.983	95302721	23063530	29616	74040	779	0.77(0.65-0.89)	
2,3,7,8-TCDD											n
319.8965	14.904	14.906	0	1.001	375245	91207	15584	38960	6		
321.8936	14.904	14.906	0	1.001	521520	127469	23522	58805	5	0.72(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.918	14.906	1	0.985	786706	181686	4242	10605	43		

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Reagents:

HRDXNL2_00032 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:00:51 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d

Injection Date: 03-Feb-2021 14:40:17
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

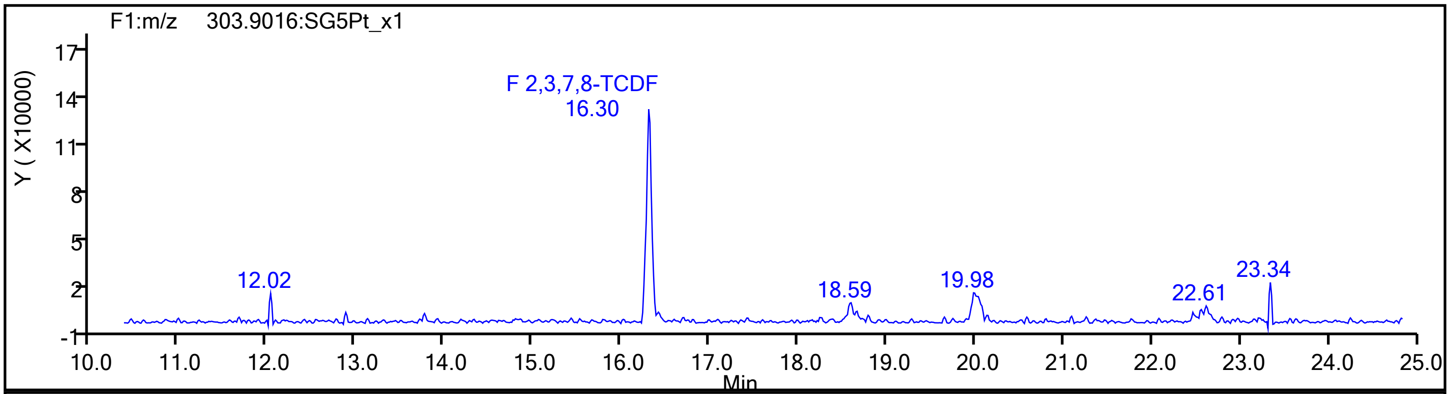

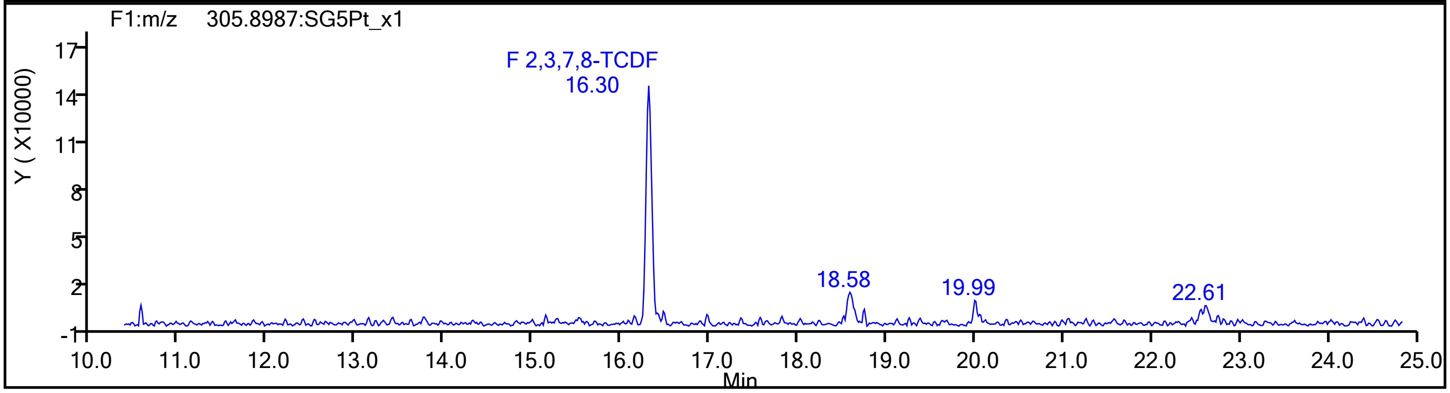

TCDF Standards

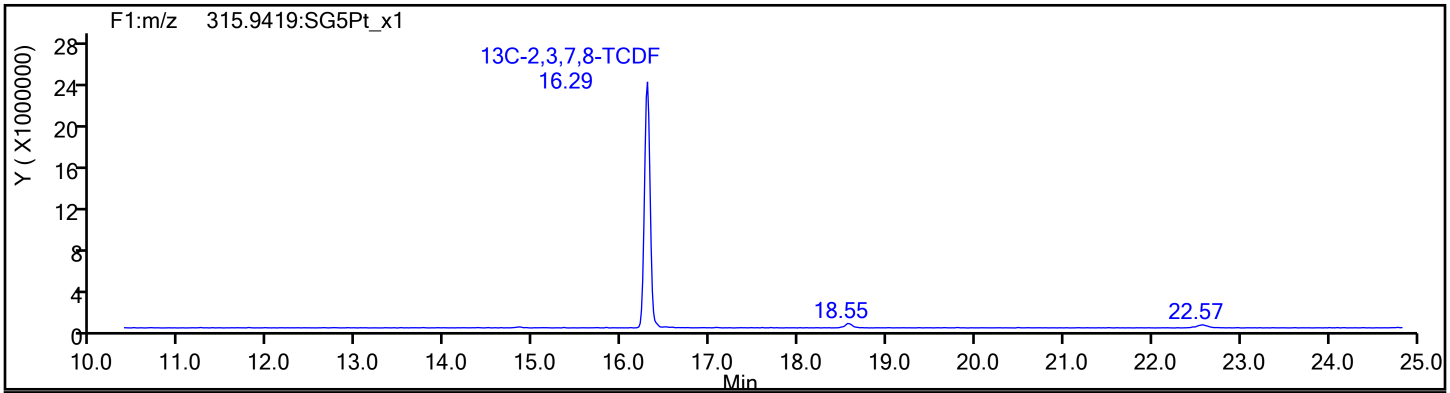

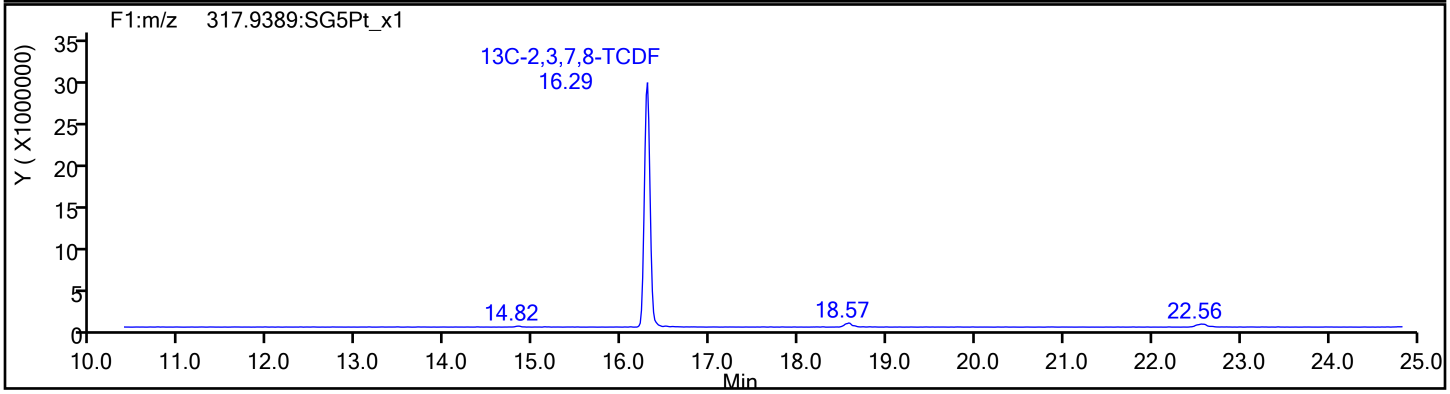

Report Date: 04-Feb-2021 15:00:51 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d
Injection Date: 03-Feb-2021 14:40:17 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

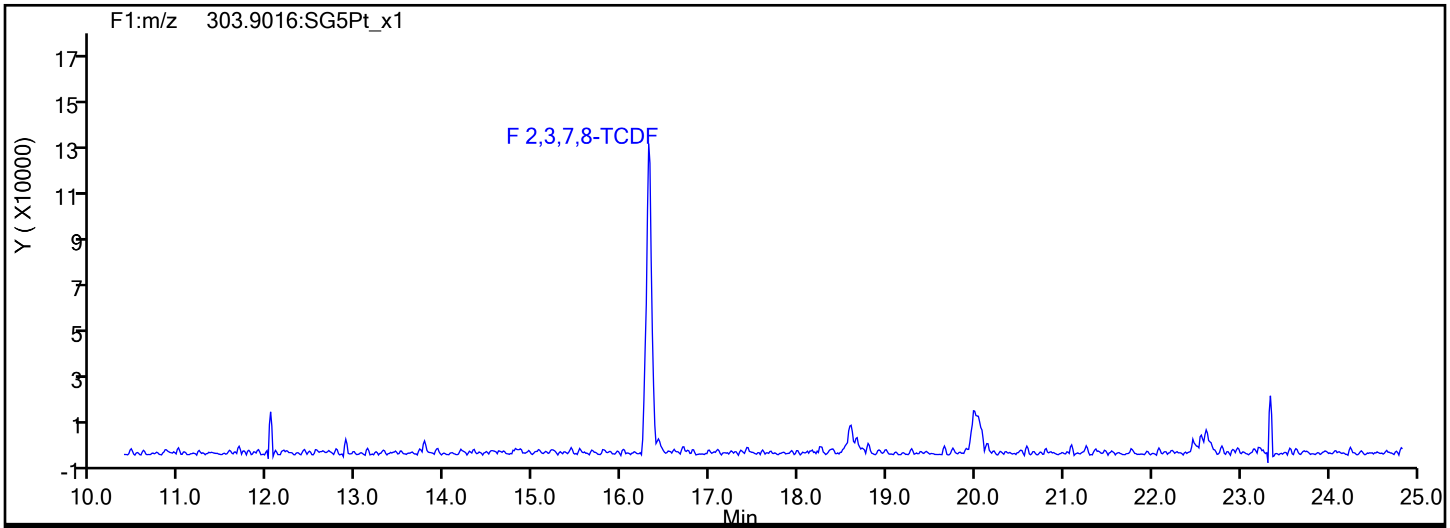

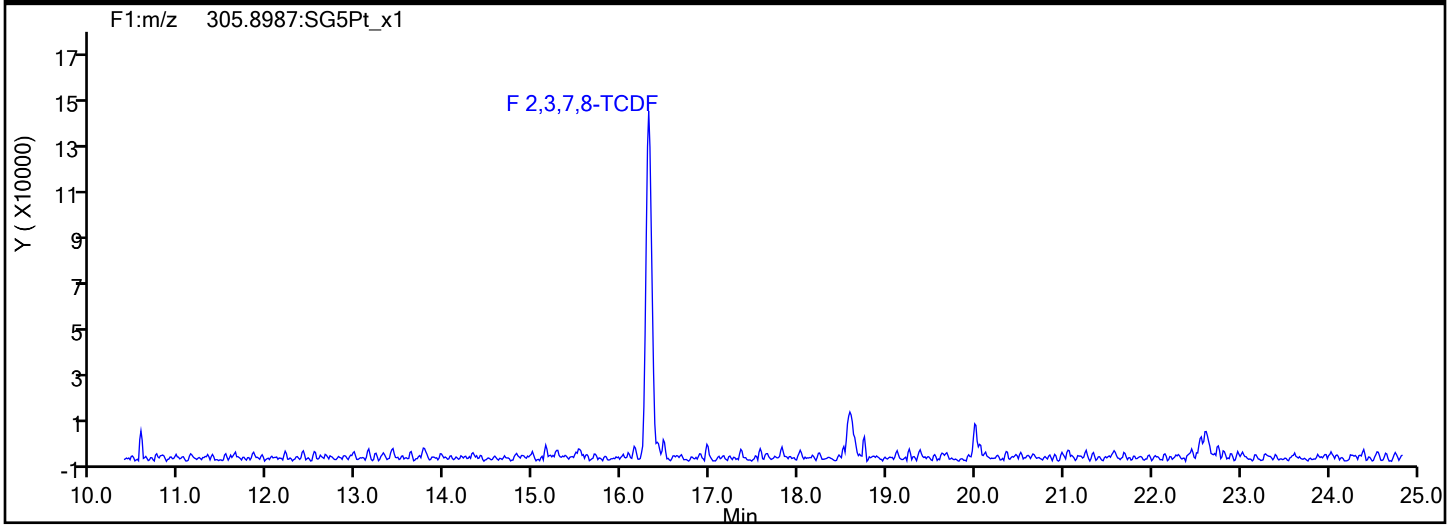

TCDF Interference Mass

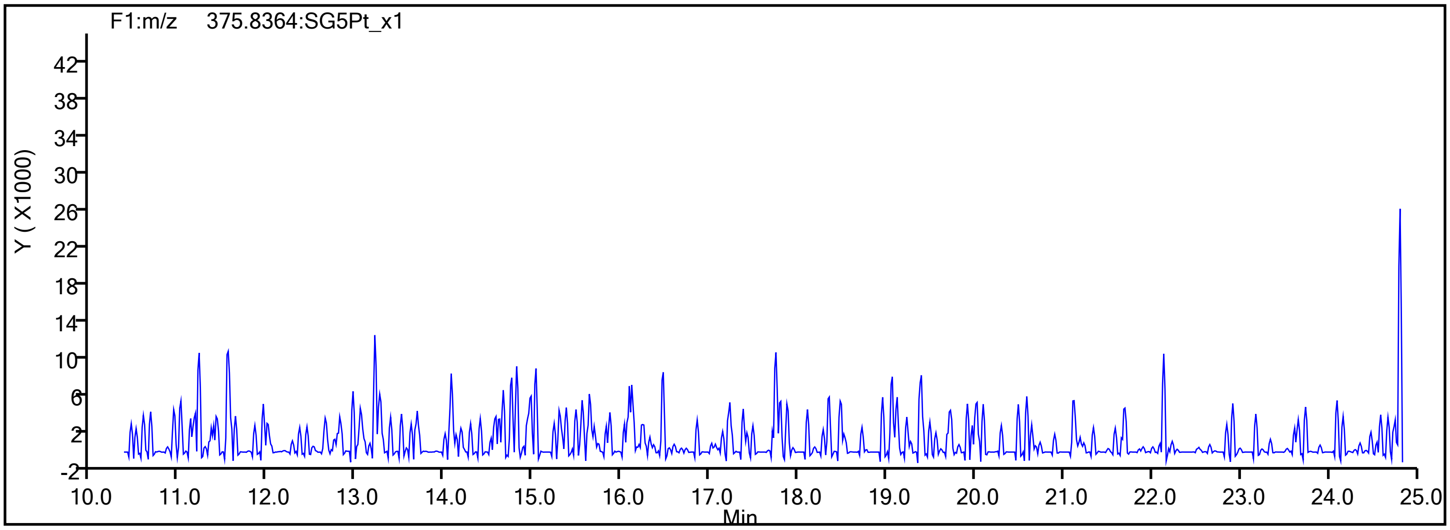

Report Date: 04-Feb-2021 15:00:51   Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d		
Injection Date:	03-Feb-2021 14:40:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

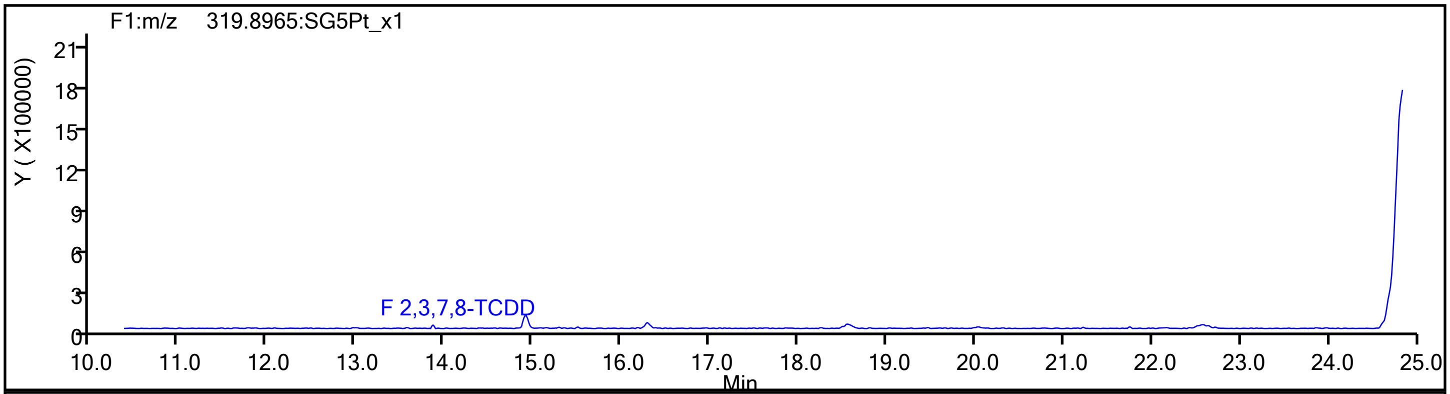

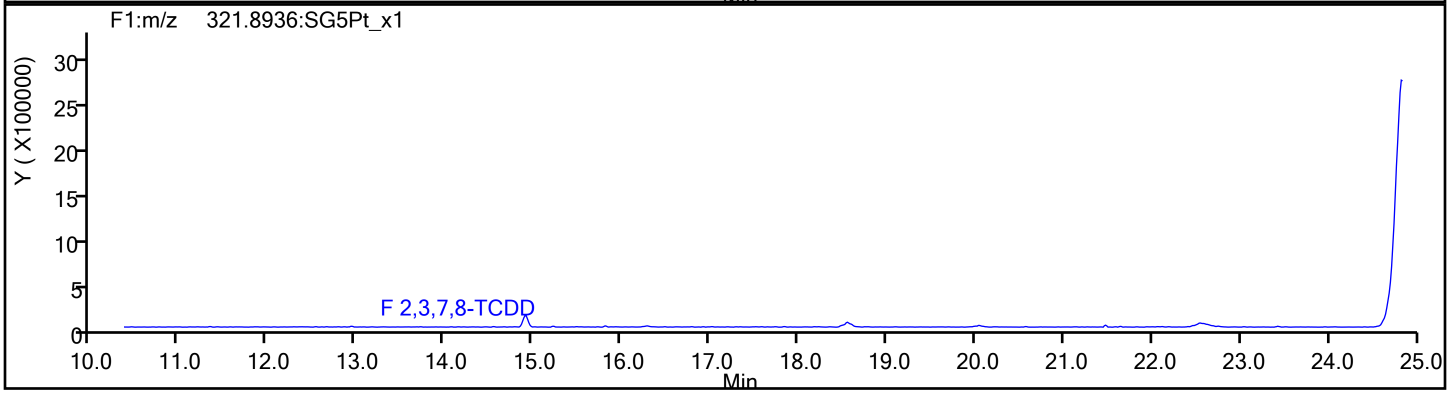

TCDD Standards

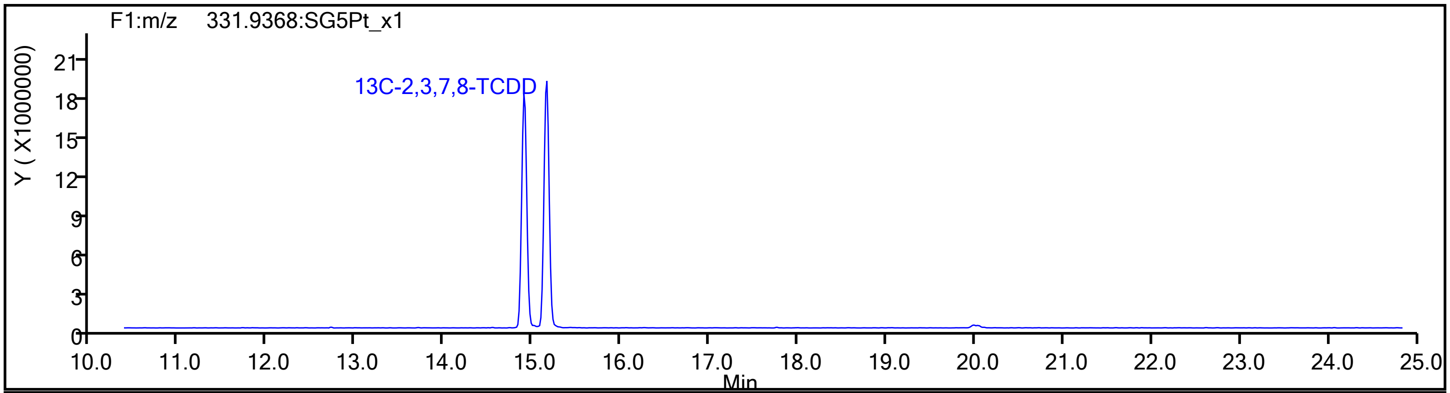

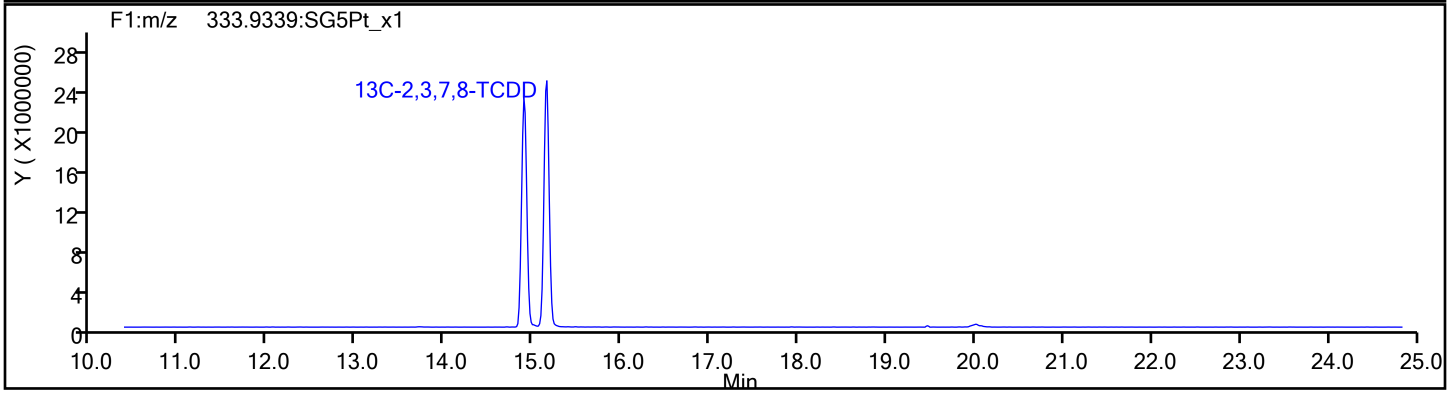

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d		
Injection Date:	03-Feb-2021 14:40:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

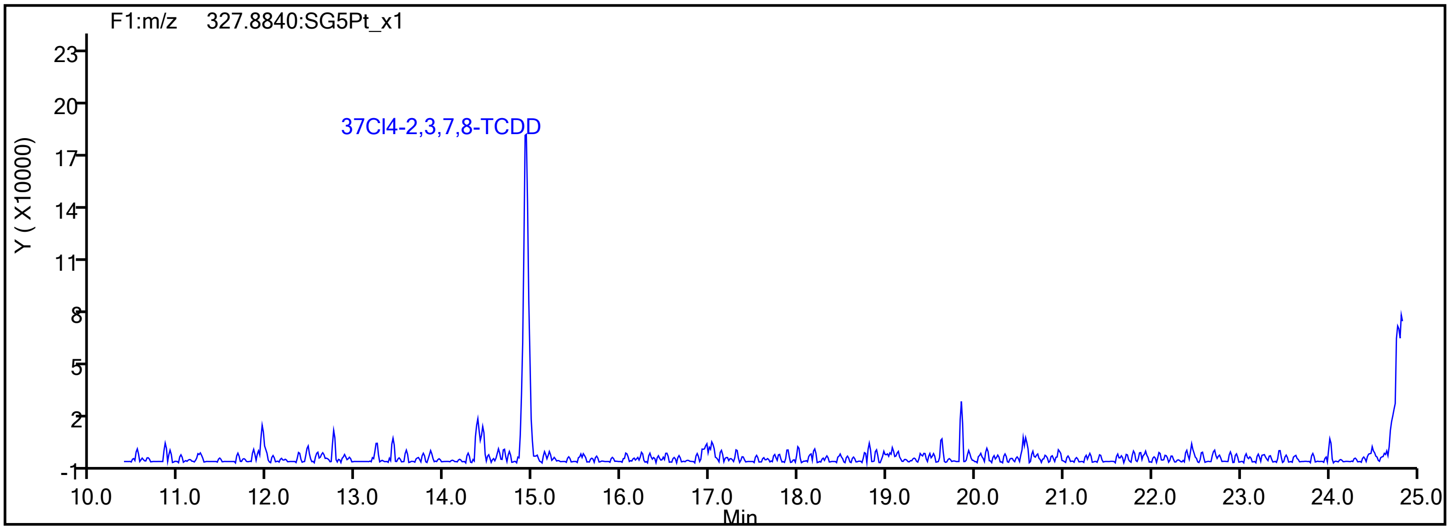

37Cl4-TCDD Standards

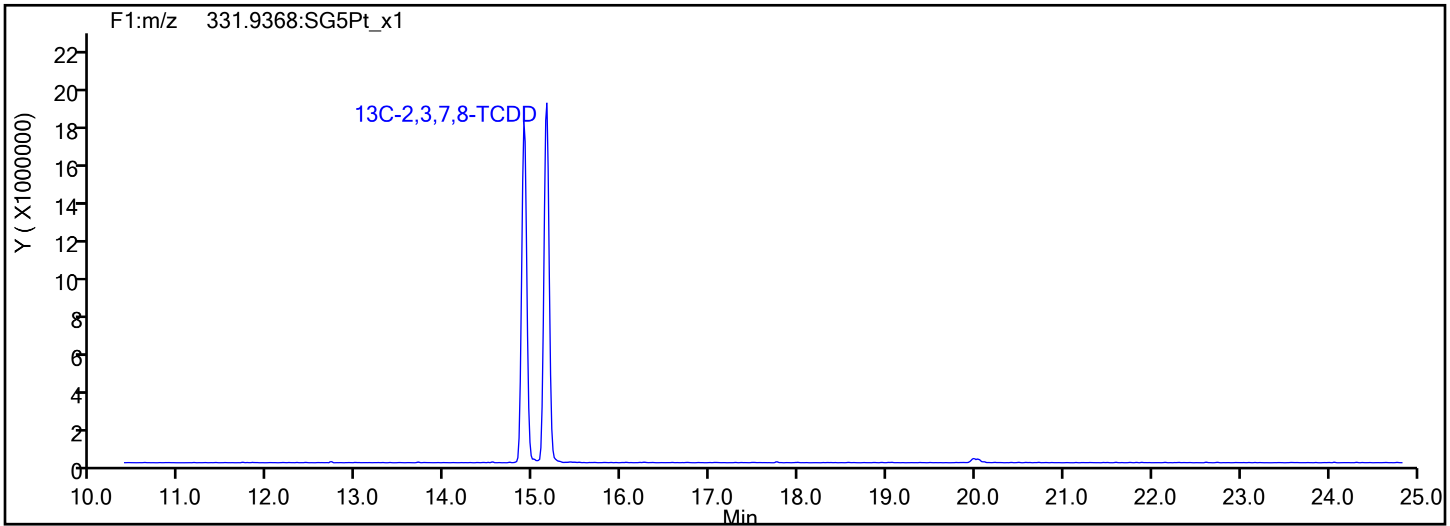

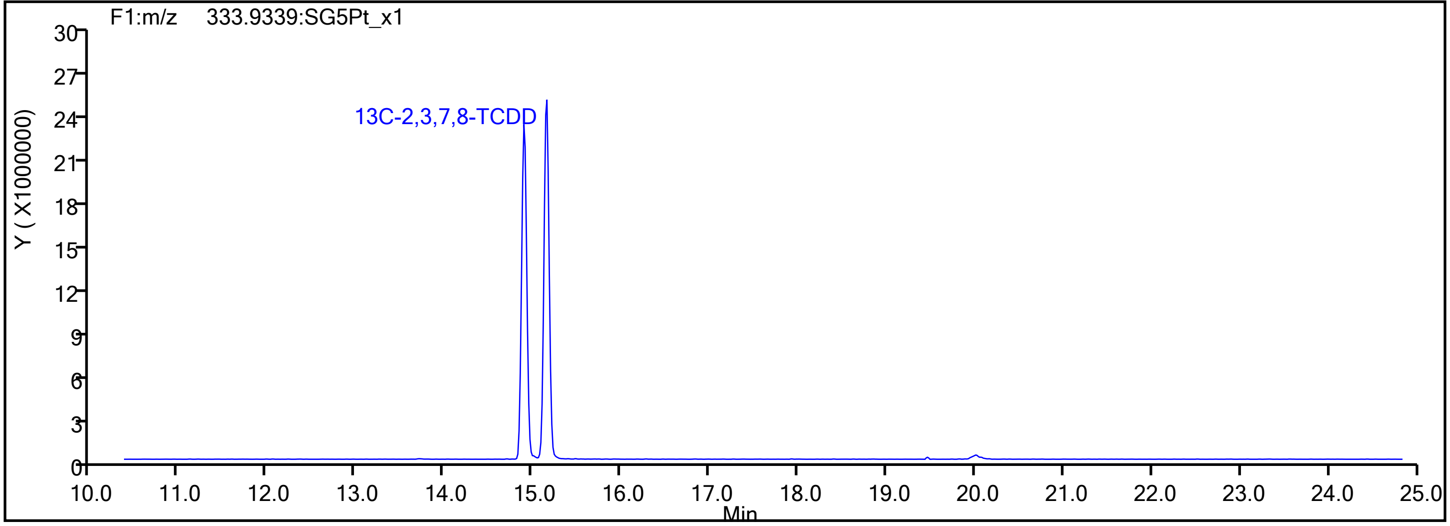

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_004.d		
Injection Date:	03-Feb-2021 14:40:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

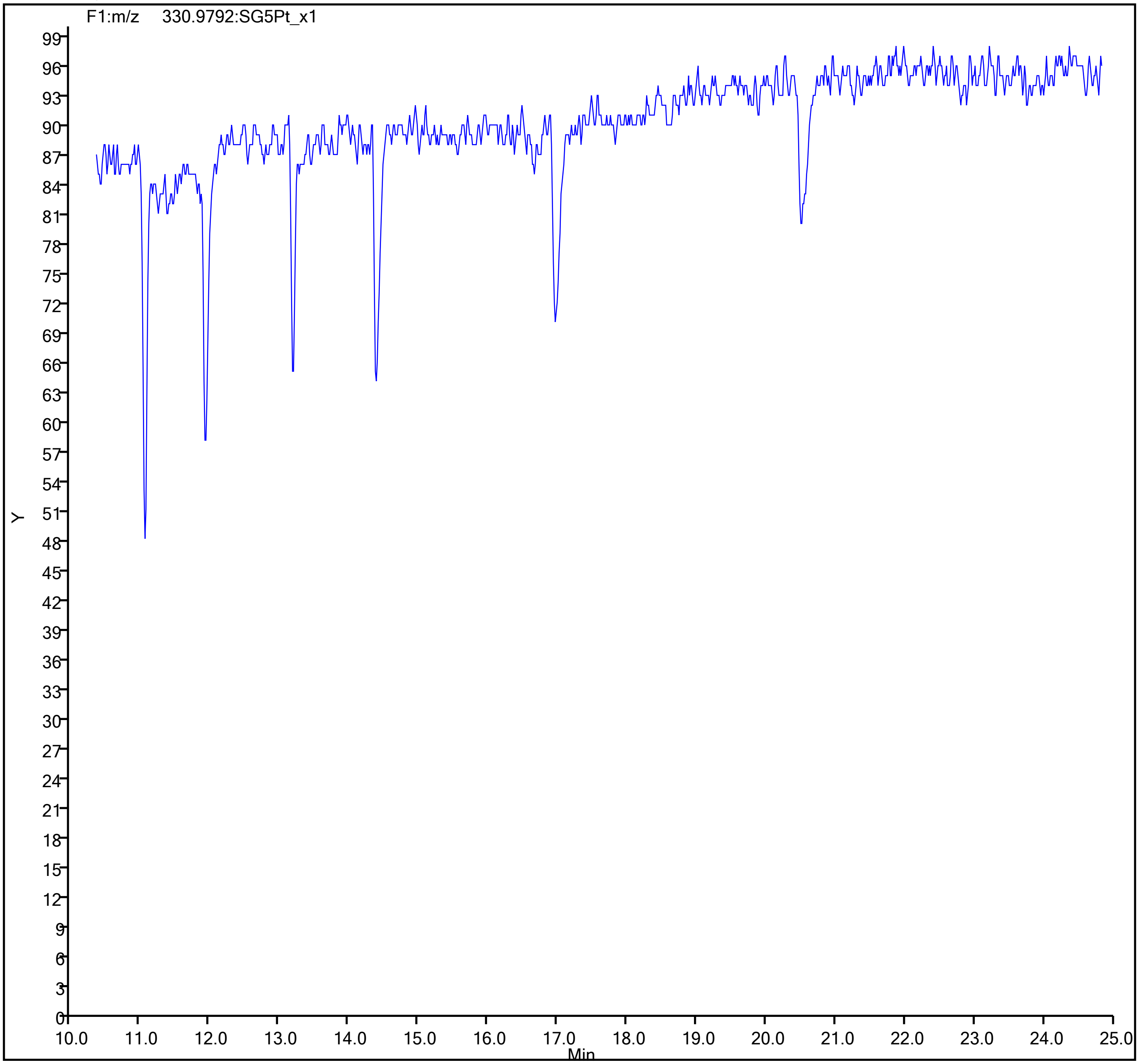

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
03FE2111D2	1	CPS 020321	CPS HRDXNCP_00042				1.00000	
03FE2111D2	2	CCV 020321	CCV CS-4 HRDXNL4_00097		Dioxin		1.00000	
03FE2111D2	3	SB 020321	SB Solvent Blank				1.00000	
03FE2111D2	4	IC 020321	CS-2 HRDXNL2_00032				1.00000	
03FE2111D2	5	IC 020321A	CS-3 HRDXNL3_00029				1.00000	
03FE2111D2	6	IC 020321B	CS-4 HRDXNL4_00097		Dioxin		1.00000	
03FE2111D2	7	IC 020321C	CS-5 HRDXNL5_00032				1.00000	
03FE2111D2	8	IC 020321D	CS-6 HRDXNL6_00028				1.00000	
03FE2111D2	9	SB 020321A	SB Solvent Blank				1.00000	
03FE2111D2	10	ICV 020321	ICV HRDXNIC_00047				1.00000	
03FE2111D2	11						1.00000	
03FE2111D2	12						1.00000	
03FE2111D2	13						1.00000	
03FE2111D2	14						1.00000	
03FE2111D2	15						1.00000	
03FE2111D2	16						1.00000	
03FE2111D2	17						1.00000	
03FE2111D2	18						1.00000	
03FE2111D2	19		SMA, ALM 02-03-21				1.00000	
03FE2111D2	20						1.00000	

logfile checked
2-03-21 ALM

Peak Locate Examination: 3-FEB-2021:12:43 File:03FE2111D2
Experiment:DB225RES Function:1 Reference:PFK

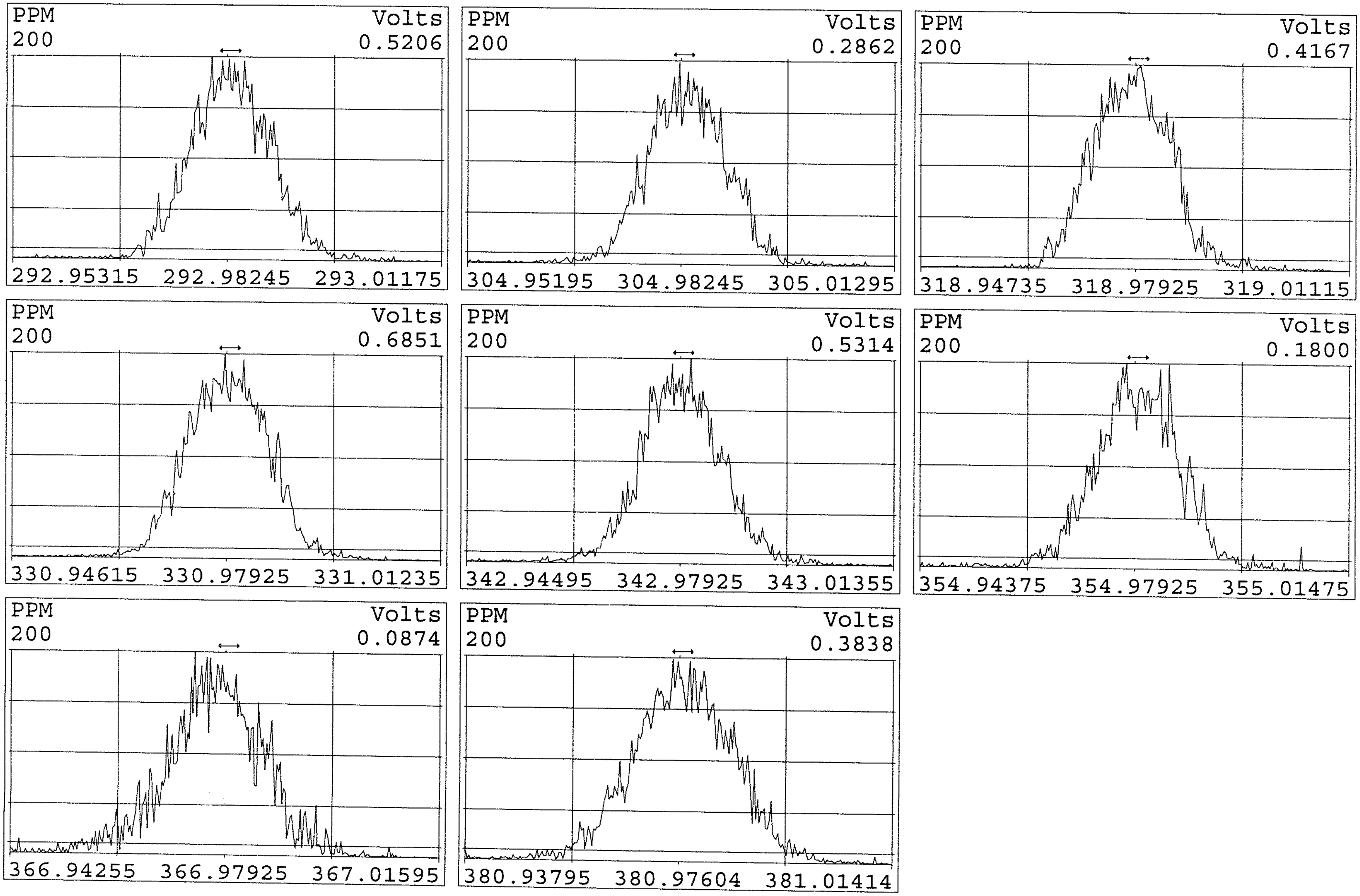

Peak Locate Examination: 3-FEB-2021:19:37 File:RESCHK03FE2111D2
Experiment:DB225RES Function:1 Reference:PFK

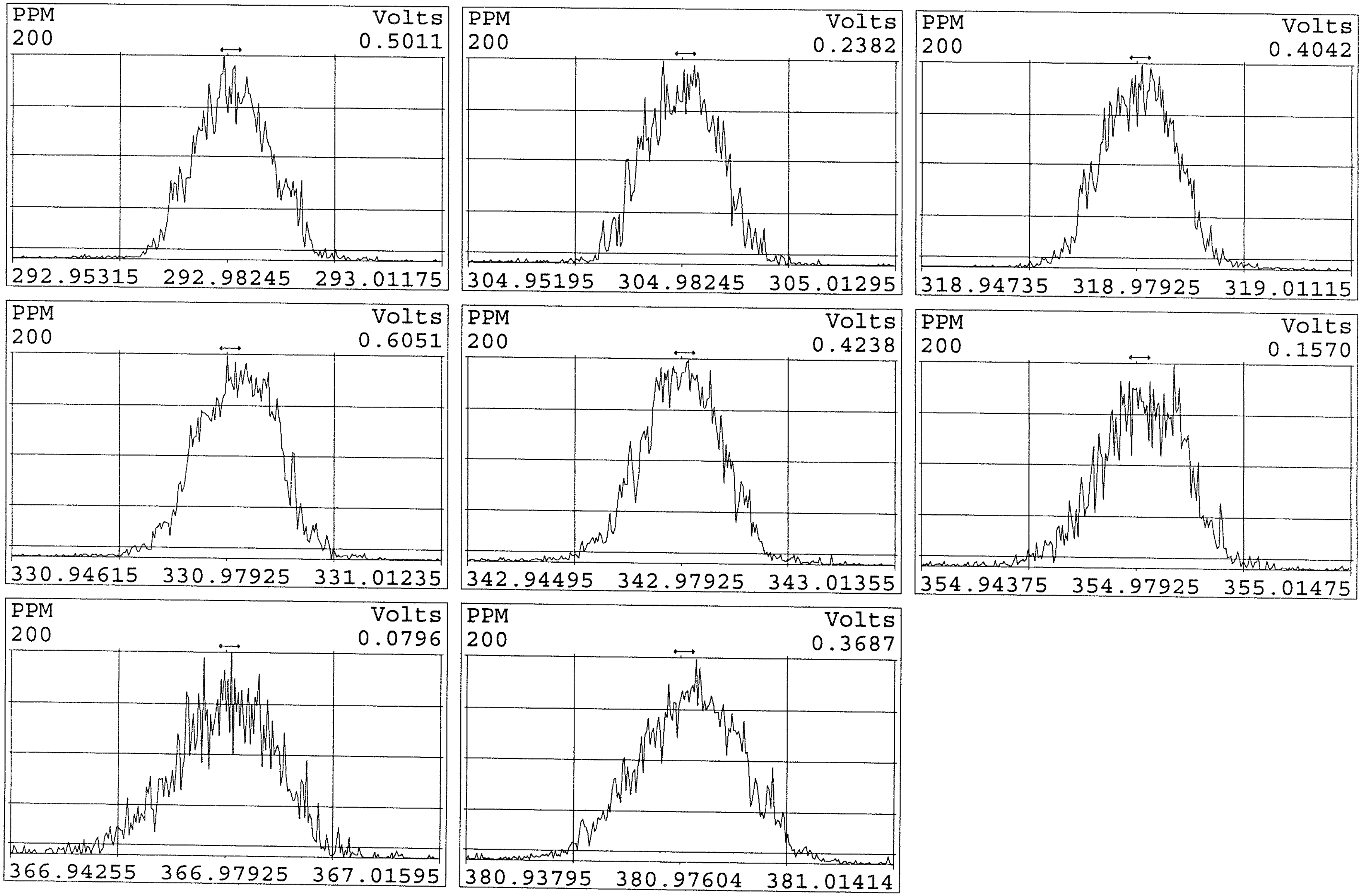

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	03-Feb-2021 15:18:40	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Feb-2021 15:00:53	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1681				
First Level Reviewer: arghestanis		Date:	04-Feb-2021 14:50:30		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.149	187084092	0.75	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.287	228800695	0.81	1.3057	93.7	93.7	0.1849	0.1849	93.66	
2,3,7,8-TCDF	16.301	3677832	0.82	0.9242	1.739	1.739	0.0211	0.0211	86.97	
D 13C-2,3,7,8-TCDD	14.888	163166292	0.77	0.8971	97.2	97.2	0.1486	0.1486	97.21	
2,3,7,8-TCDD	14.916	2626055	0.78	0.9989	1.611	1.611	0.2729	0.2729	80.56	
$ 37Cl4-2,3,7,8-TCDD	14.902	2872358		0.8499	1.806	1.806	0.0259	0.0259	90.32	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00029	Amount Added: 2.00	Units: uL

Report Date: 04-Feb-2021 15:00:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 03-Feb-2021 15:18:40 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:00:53 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:50:30

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.149	15.141	0		80386958	19330763	14059	35147	1375		
333.9339	15.135	15.141	0		106697134	25285458	9735	24337	2597	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.287	16.280	0	1.075	102590205	22526076	23190	57975	971		
317.9389	16.274	16.280	0	1.074	126210490	27701879	19890	49725	1393	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.301	16.302	0	1.001	1655111	361864	1939	4847	187		
305.8987	16.301	16.302	0	1.001	2022721	447388	1981	4952	226	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.888	14.889	0	0.983	71097736	17664848	14059	35147	1256		
333.9339	14.888	14.889	0	0.983	92068556	23427492	9735	24337	2407	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.916	14.906	1	1.002	1148300	277728	17656	44140	16		
321.8936	14.916	14.906	1	1.002	1477755	370532	27144	67860	14	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.902	14.906	0	0.984	2872358	711310	3929	9822	181		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00029 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:00:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d		
Injection Date:	03-Feb-2021 15:18:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

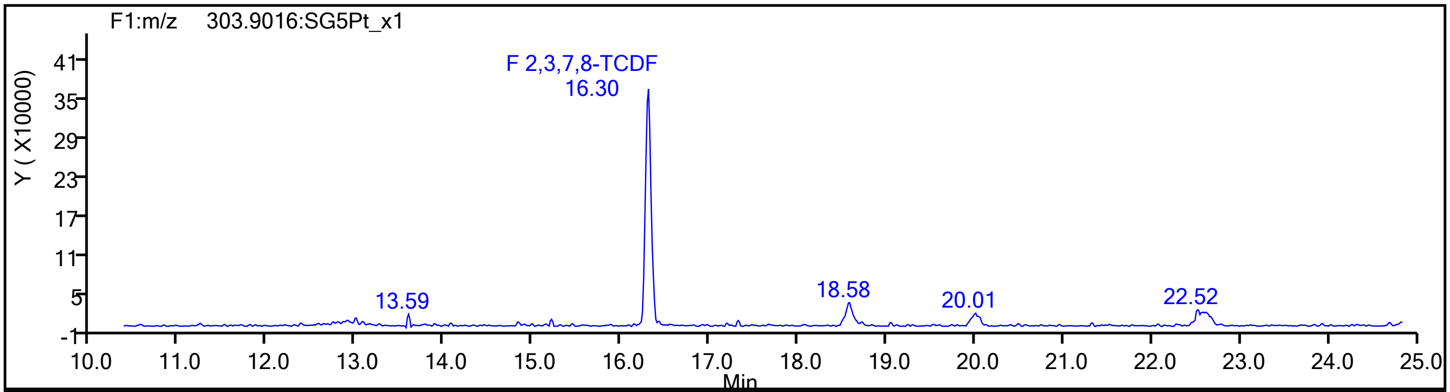

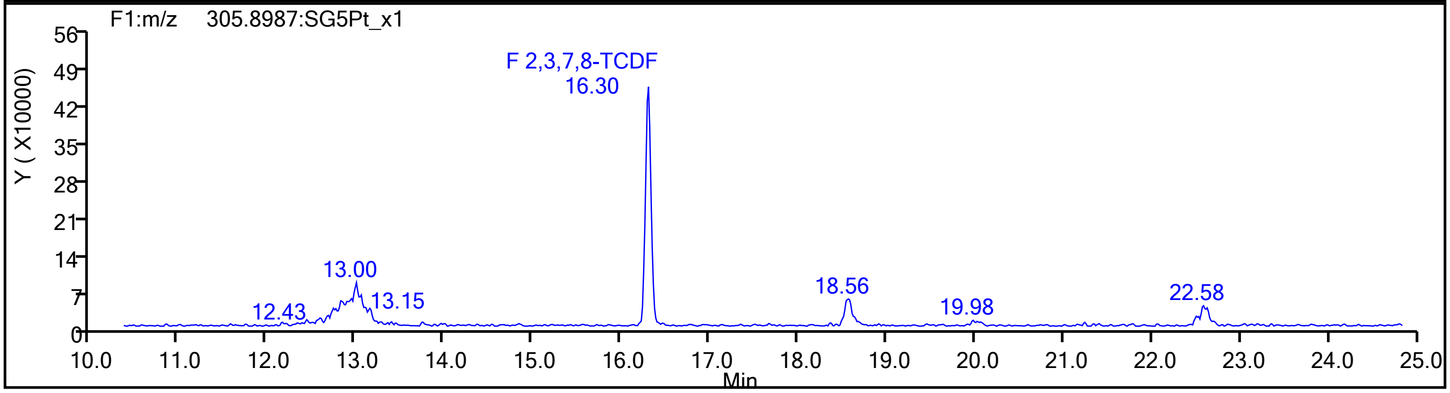

TCDF Standards

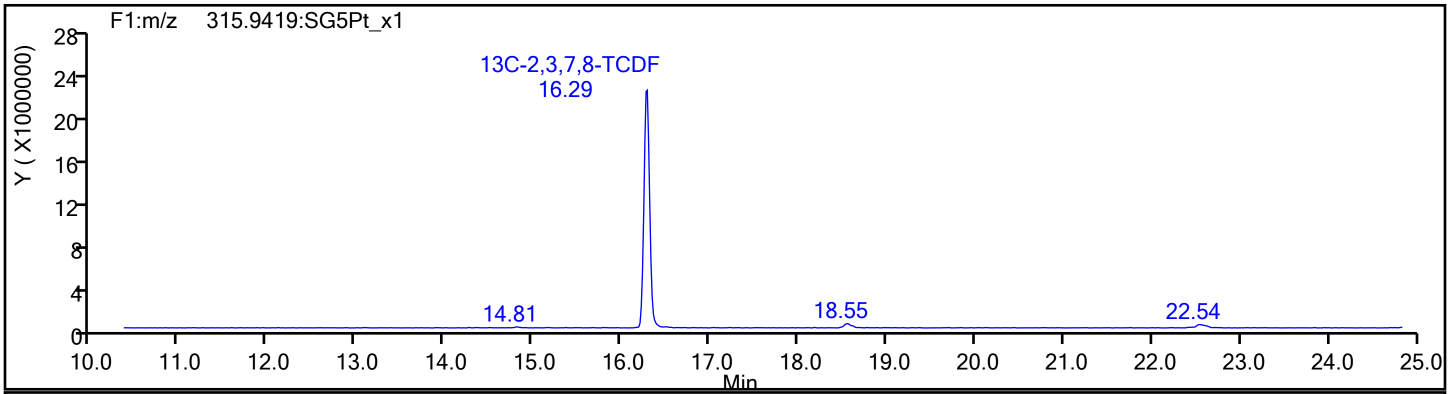

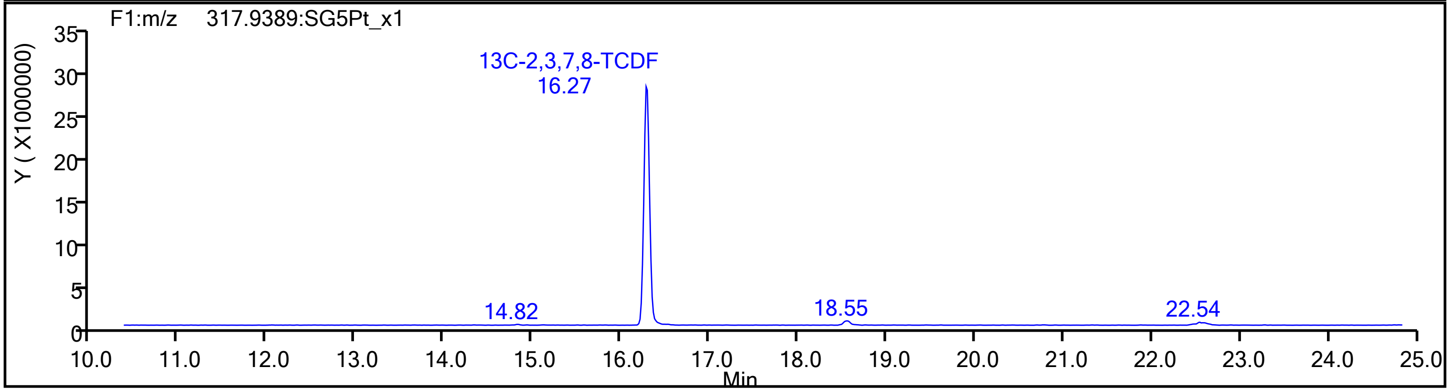

Report Date: 04-Feb-2021 15:00:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d		
Injection Date:	03-Feb-2021 15:18:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

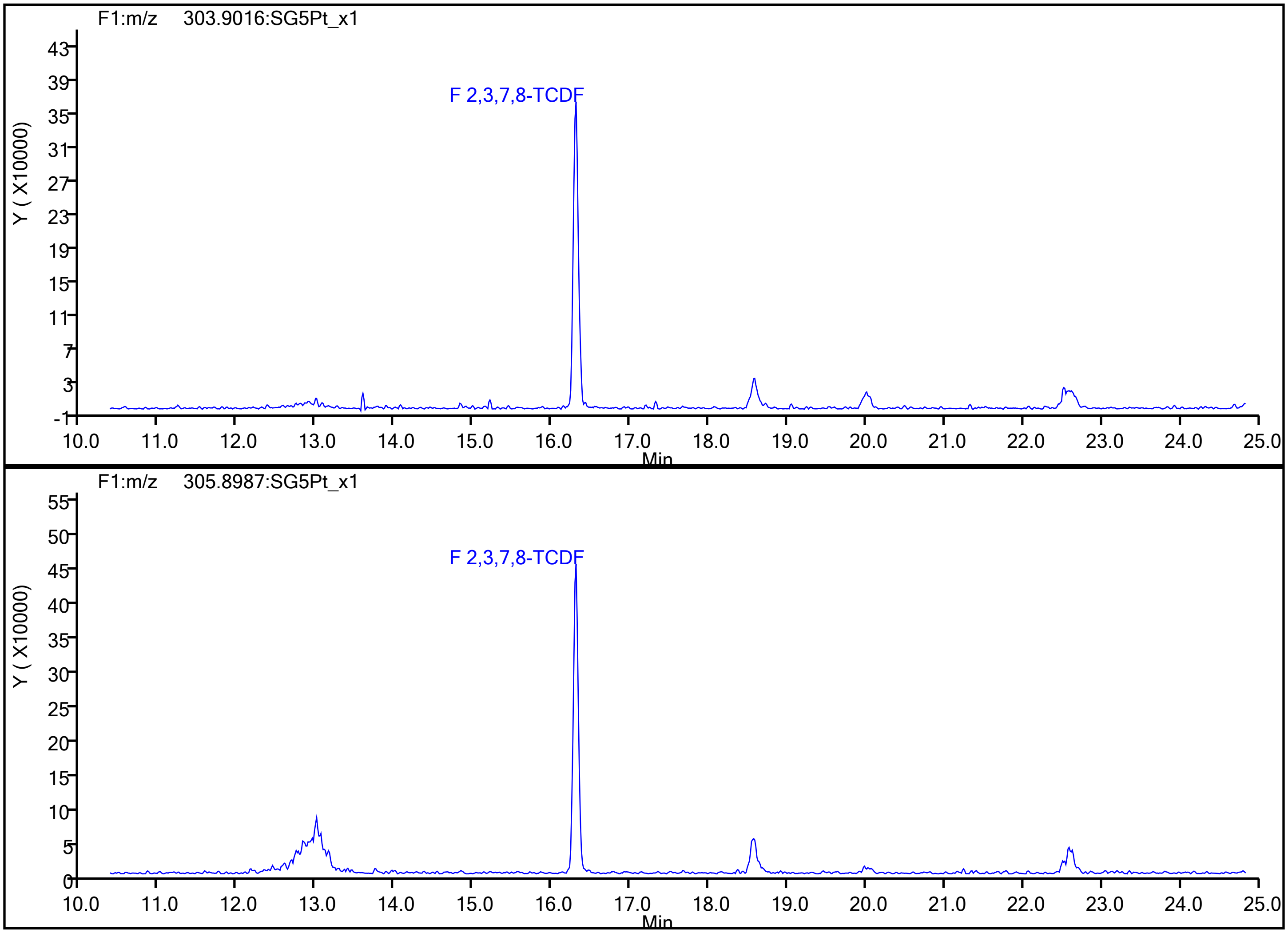

TCDF Interference Mass

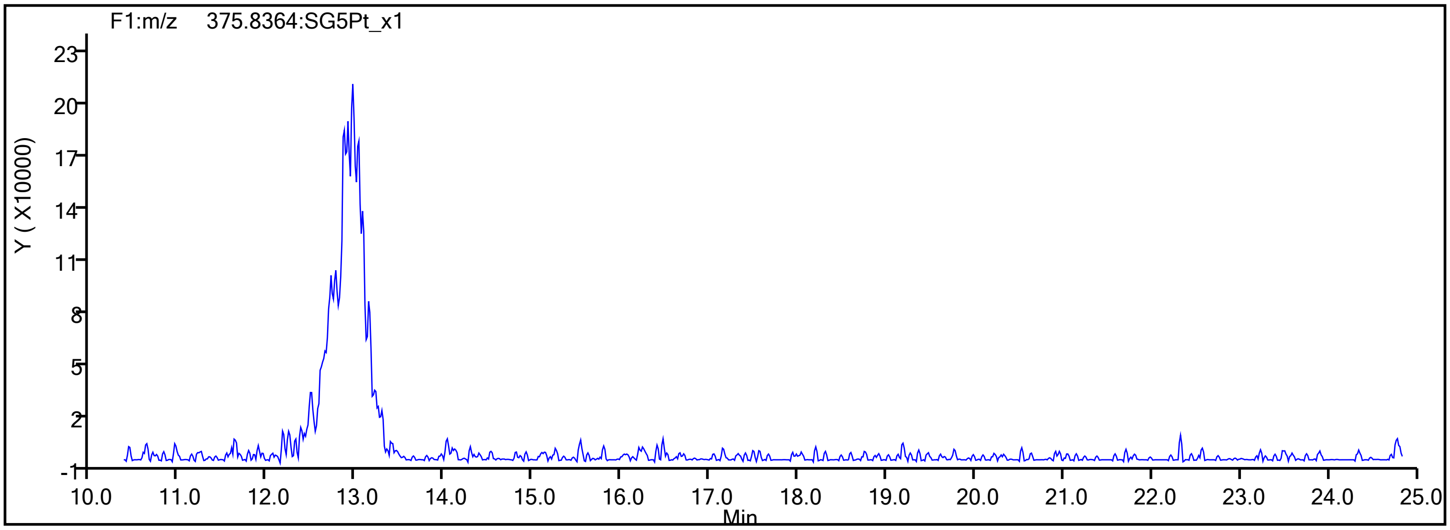

Report Date: 04-Feb-2021 15:00:56		Chrom Revision: 2.3 09-Dec-2020 16:22:14	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d		
Injection Date:	03-Feb-2021 15:18:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

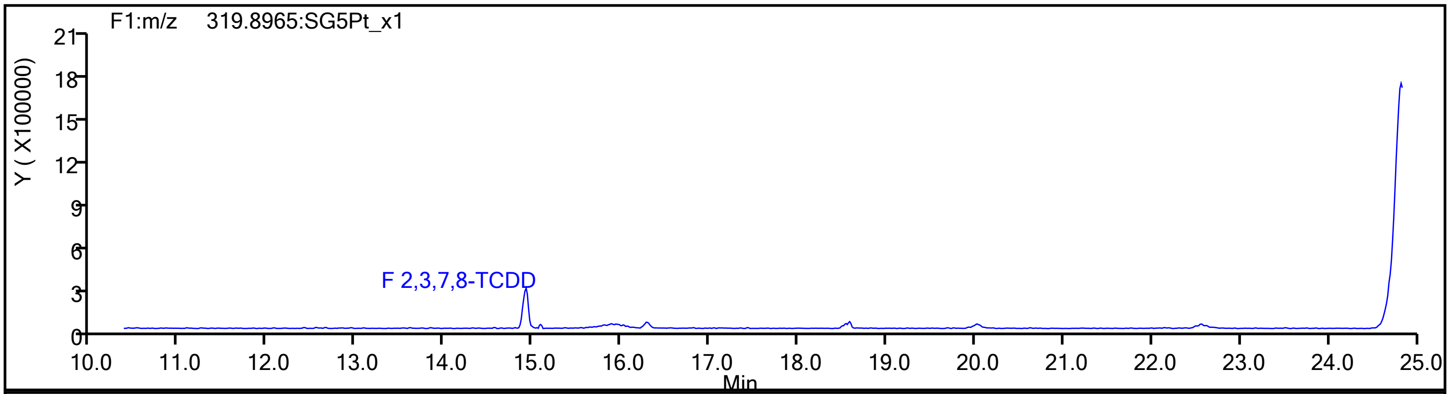

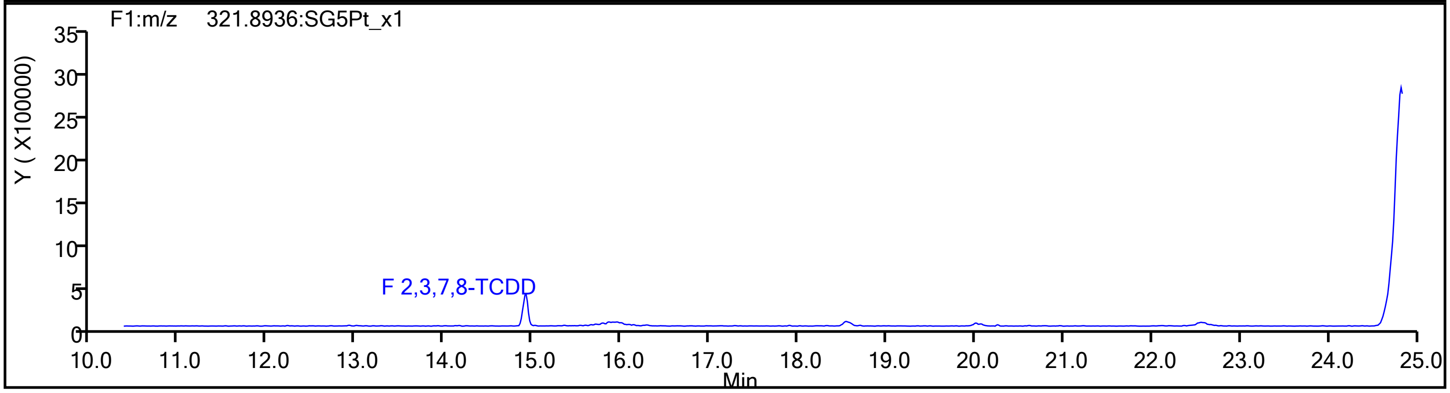

TCDD Standards

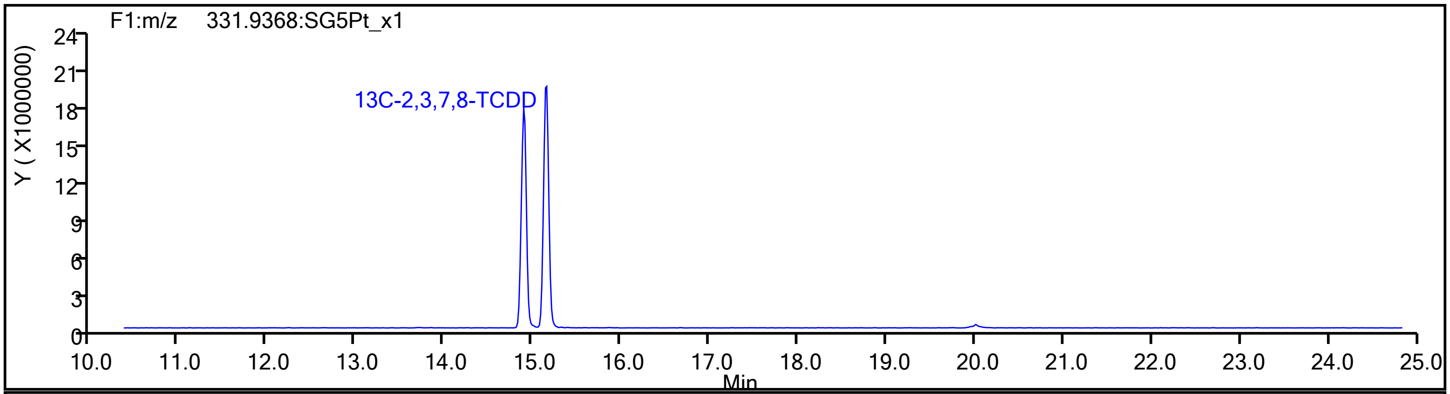

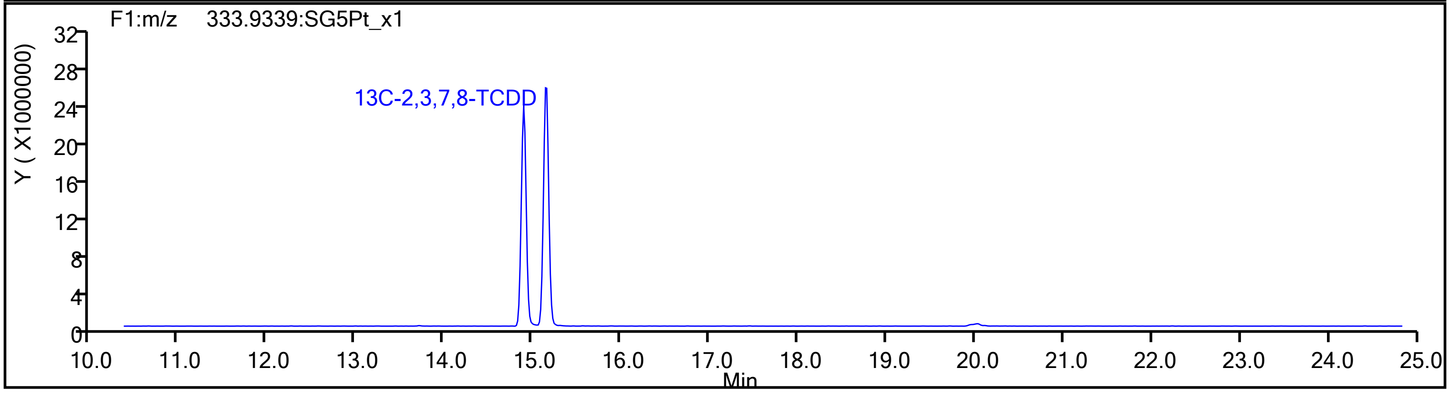

Report Date: 04-Feb-2021 15:00:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d		
Injection Date:	03-Feb-2021 15:18:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

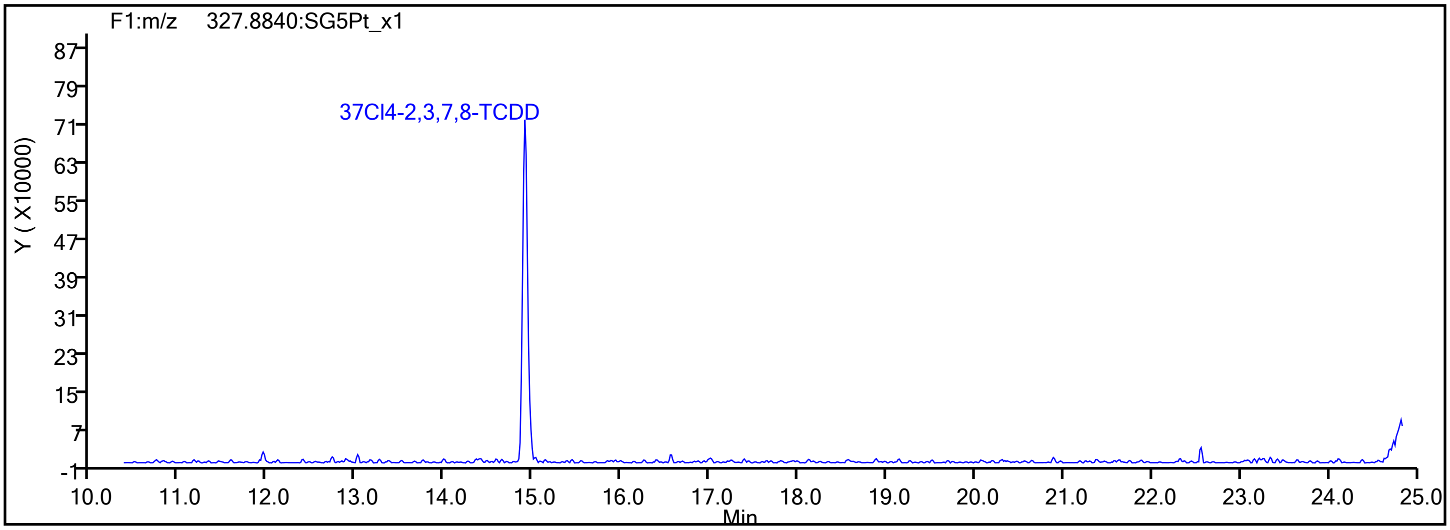

37Cl4-TCDD Standards

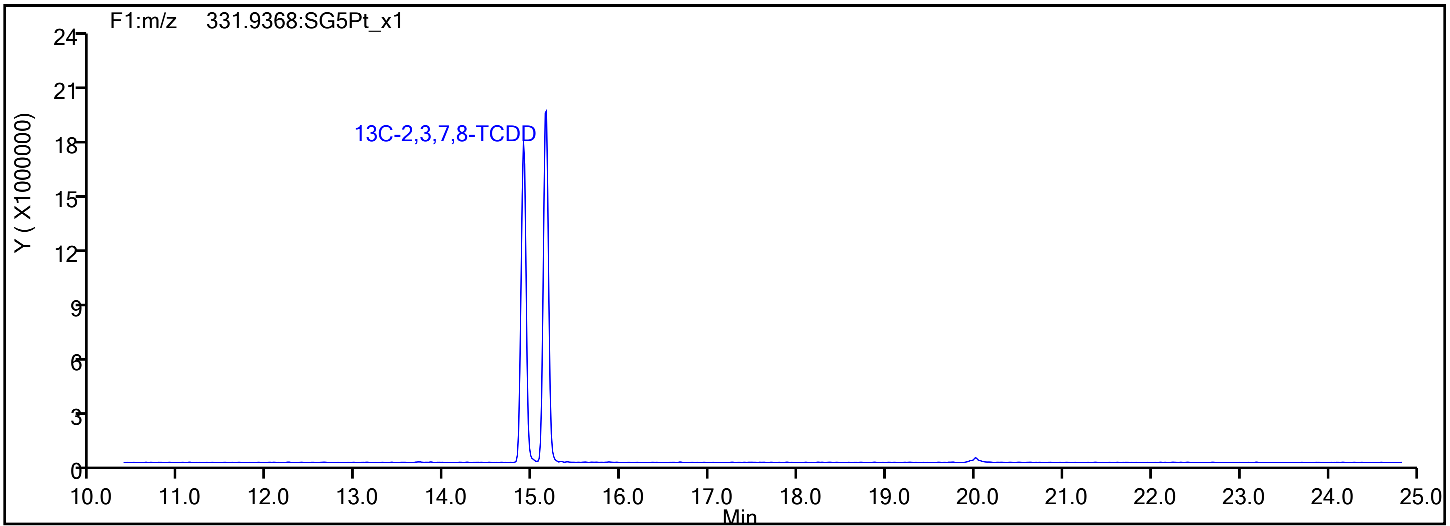

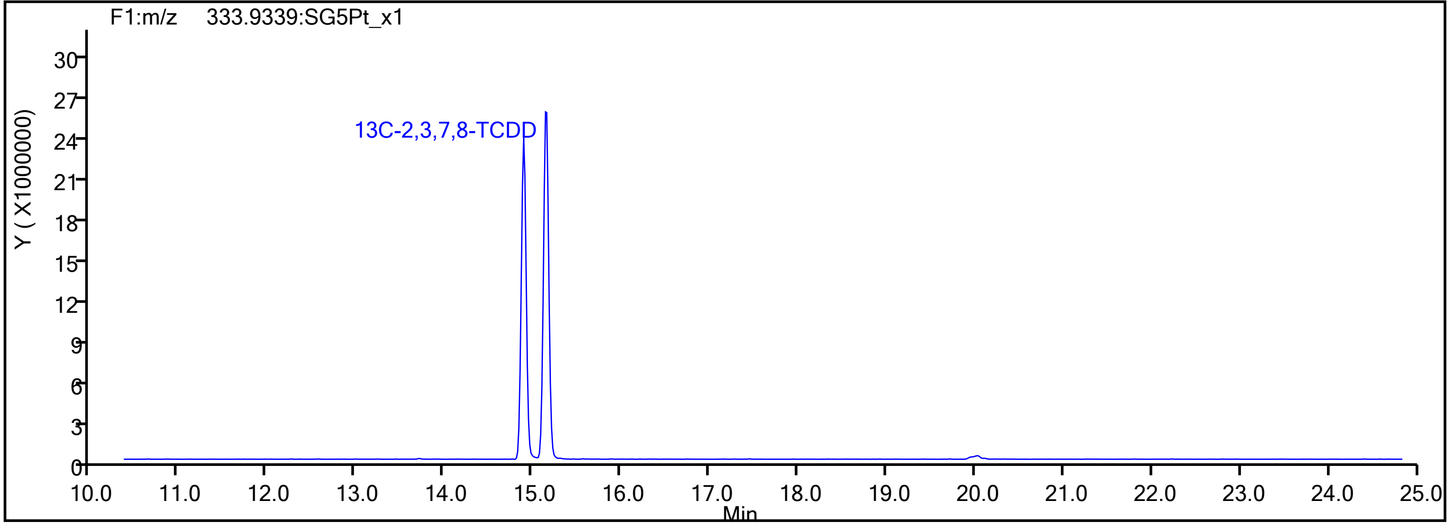

Report Date: 04-Feb-2021 15:00:56 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_005.d		
Injection Date:	03-Feb-2021 15:18:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

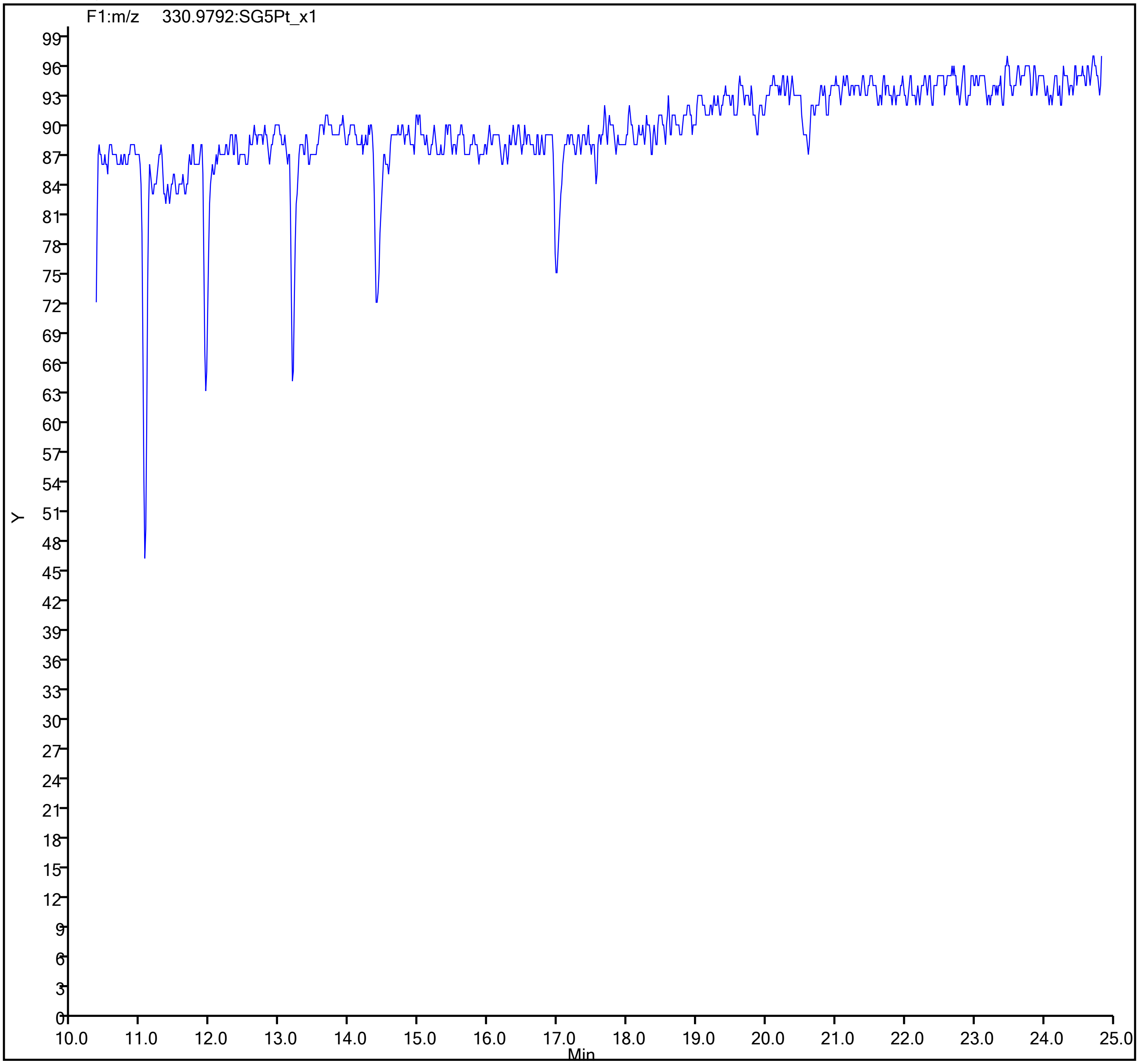

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 03-Feb-2021 15:57:01 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00097
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:00:59 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:50:44

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.134	183421799	0.77	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.273	238108839	0.82	1.3057	99.4	99.4	0.1922	0.1922	99.42	
2,3,7,8-TCDF	16.300	21829070	0.81	0.9242	9.920	9.920	0.0363	0.0363	99.20	
D 13C-2,3,7,8-TCDD	14.887	158625376	0.77	0.8971	96.4	96.4	0.1359	0.1359	96.40	
2,3,7,8-TCDD	14.901	16192524	0.78	0.9989	10.2	10.2	0.1199	0.1199	102	
$ 37Cl4-2,3,7,8-TCDD	14.901	14656467		0.8499	9.402	9.402	0.0377	0.0377	94.02	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Reagents:
HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:01:02 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d				
Lims ID:	IC 4				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	03-Feb-2021 15:57:01	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00097				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Feb-2021 15:00:59	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1681				

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:50:44

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.134	15.141	0		79559793	19494071	11902	29755	1638		
333.9339	15.134	15.141	0		103862006	25043764	9824	24560	2549	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.273	16.280	0	1.075	107357134	23766291	21409	53522	1110		
317.9389	16.273	16.280	0	1.075	130751705	29042674	23293	58232	1247	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.300	16.302	0	1.002	9781612	2247564	3104	7760	724		
305.8987	16.300	16.302	0	1.002	12047458	2705138	3988	9970	678	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.887	14.889	0	0.984	69118679	17002530	11902	29755	1429		
333.9339	14.887	14.889	0	0.984	89506697	22118351	9824	24560	2251	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.901	14.906	0	1.001	7077538	1647904	7682	19205	215		
321.8936	14.901	14.906	0	1.001	9114986	2207375	11059	27647	200	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.901	14.906	0	0.985	14656467	3619635	5705	14262	634		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:01:02 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d		
Injection Date:	03-Feb-2021 15:57:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

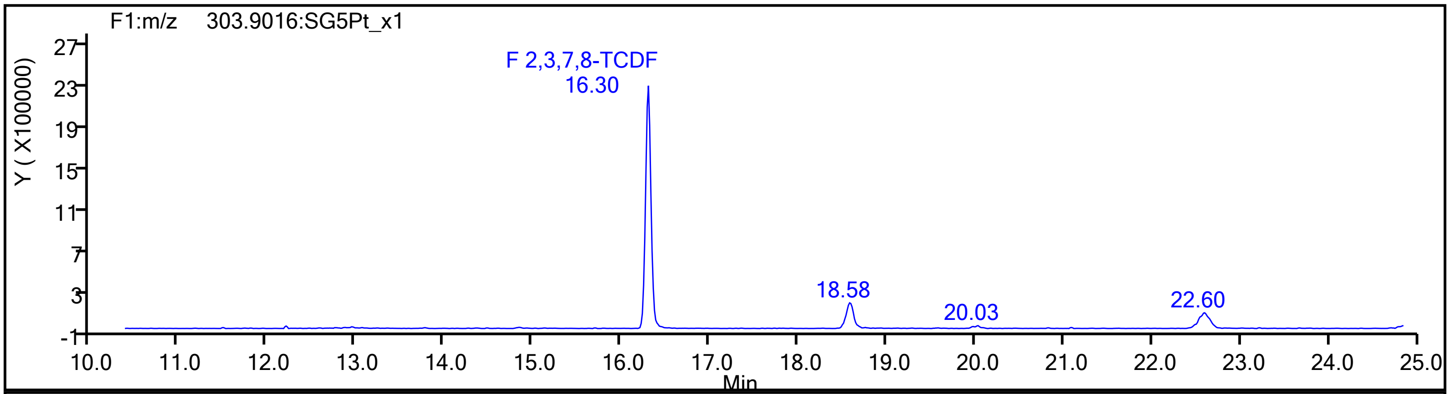

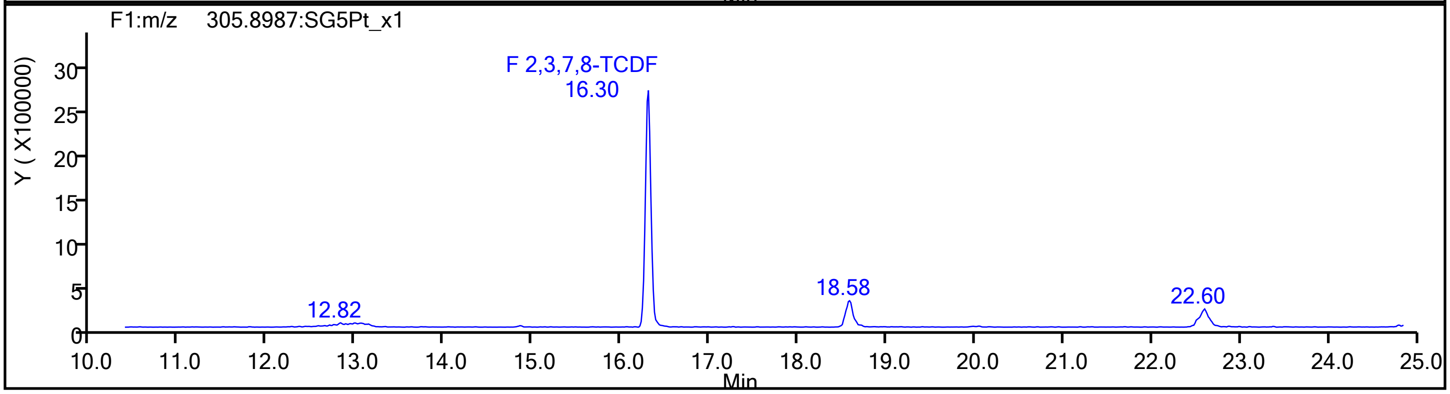

TCDF Standards

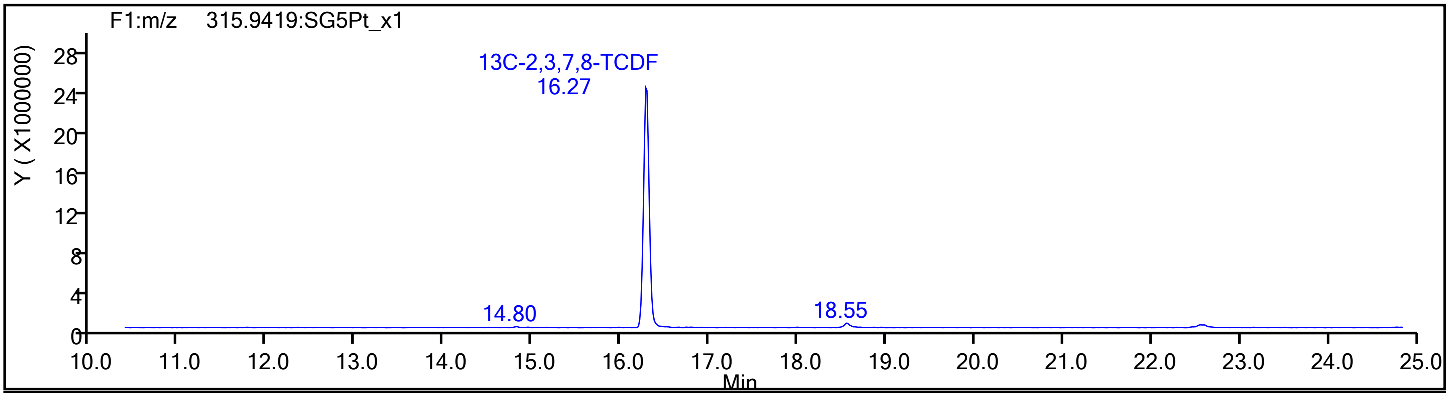

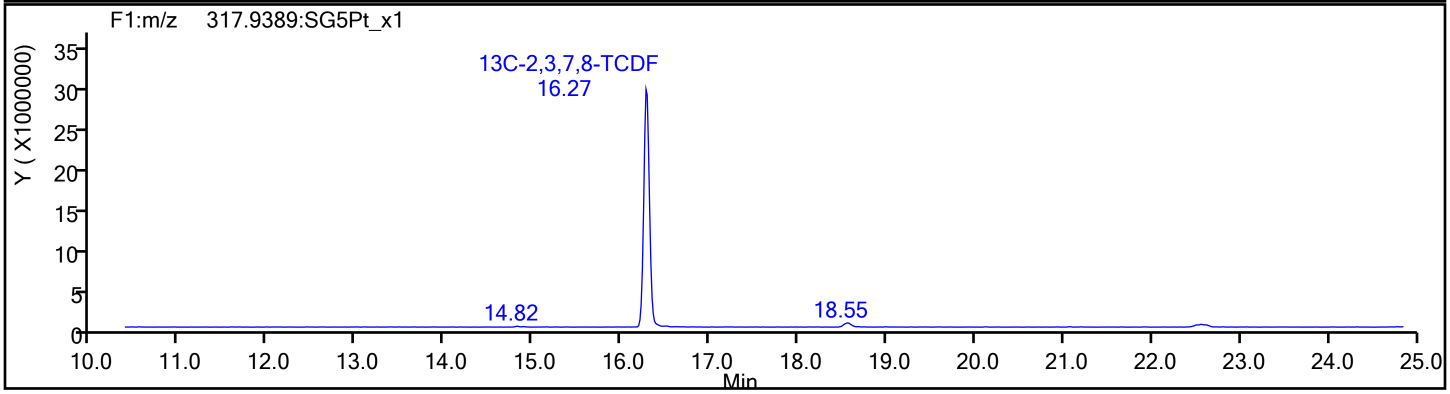

Report Date: 04-Feb-2021 15:01:02 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d		
Injection Date:	03-Feb-2021 15:57:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

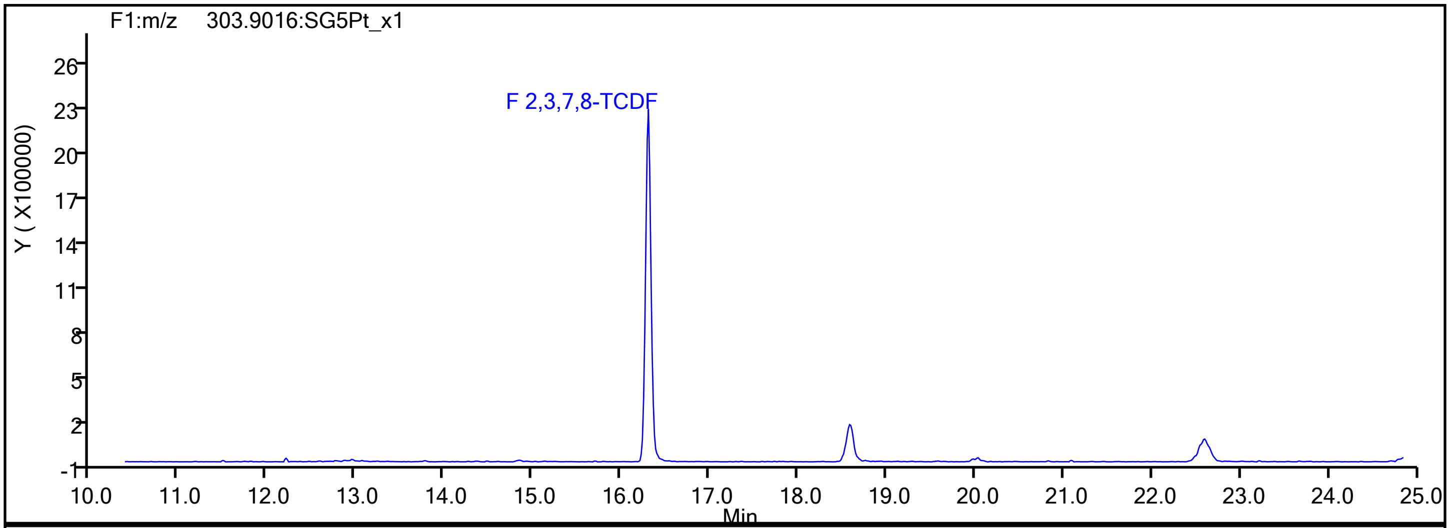

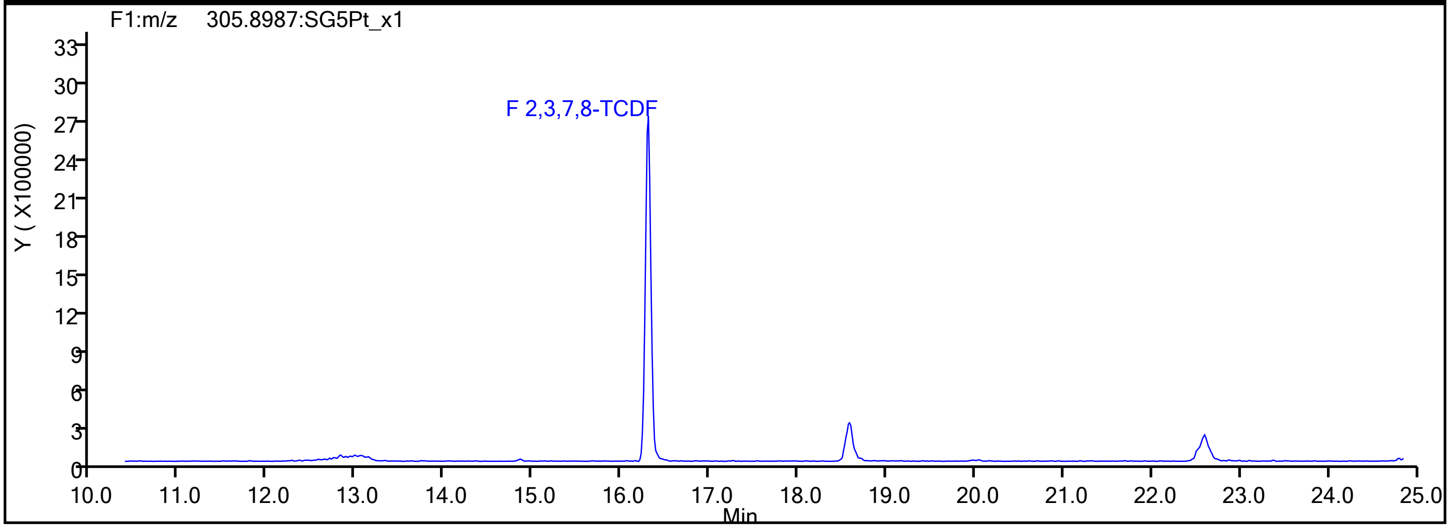

TCDF Interference Mass

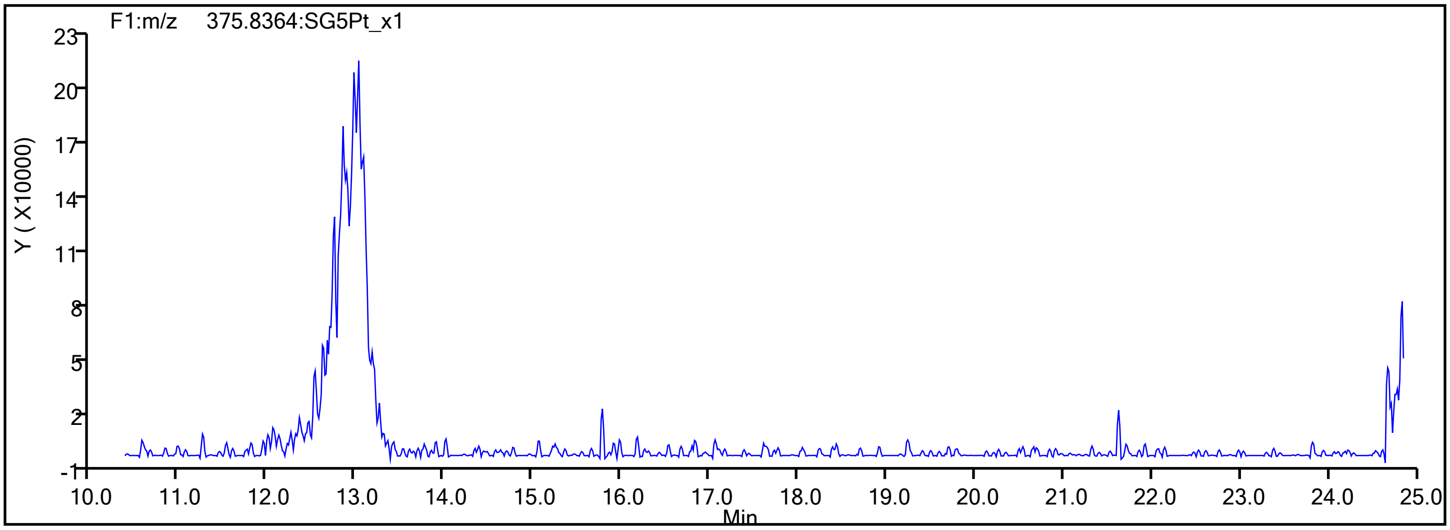

Report Date: 04-Feb-2021 15:01:03 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d
Injection Date: 03-Feb-2021 15:57:01
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

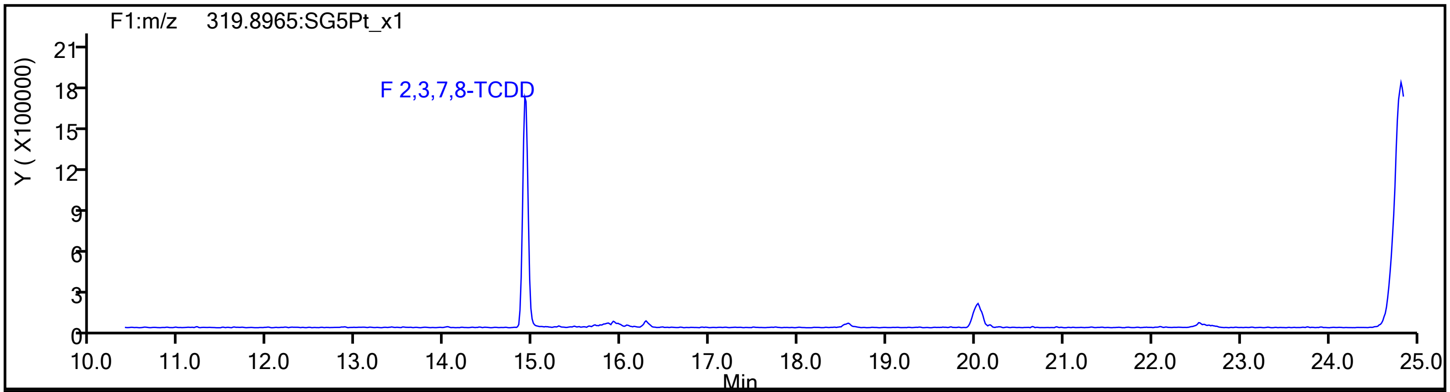

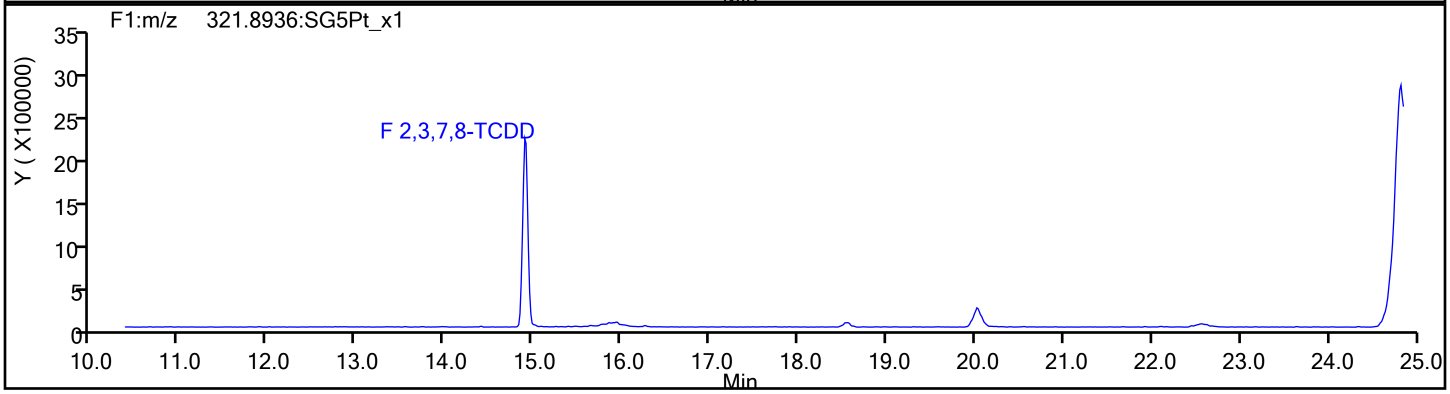

TCDD Standards

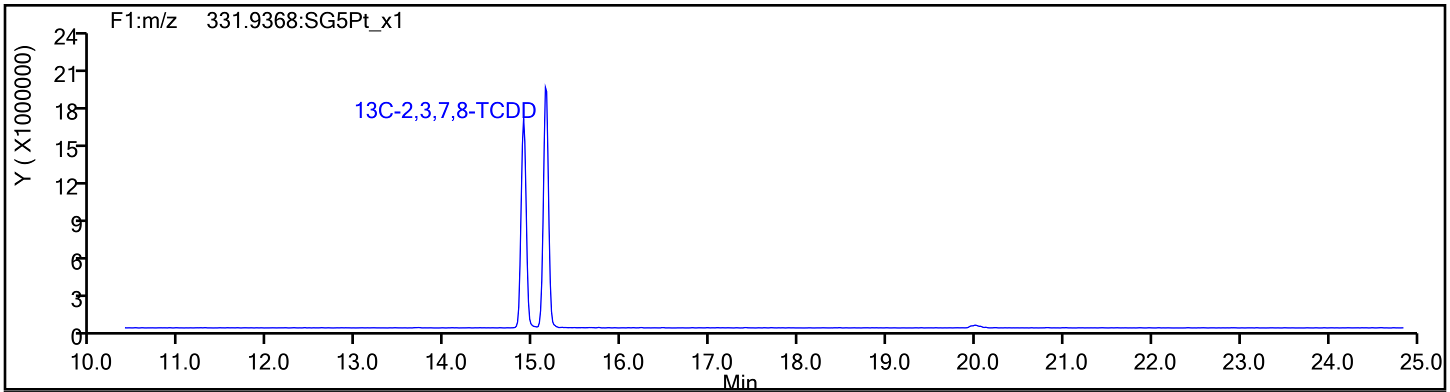

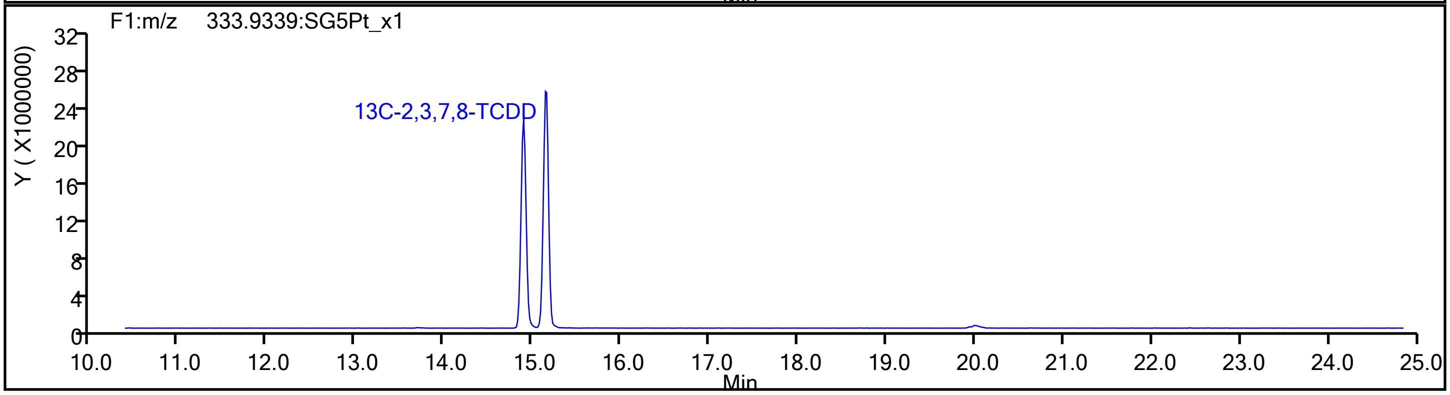

Report Date: 04-Feb-2021 15:01:03 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d
Injection Date: 03-Feb-2021 15:57:01
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

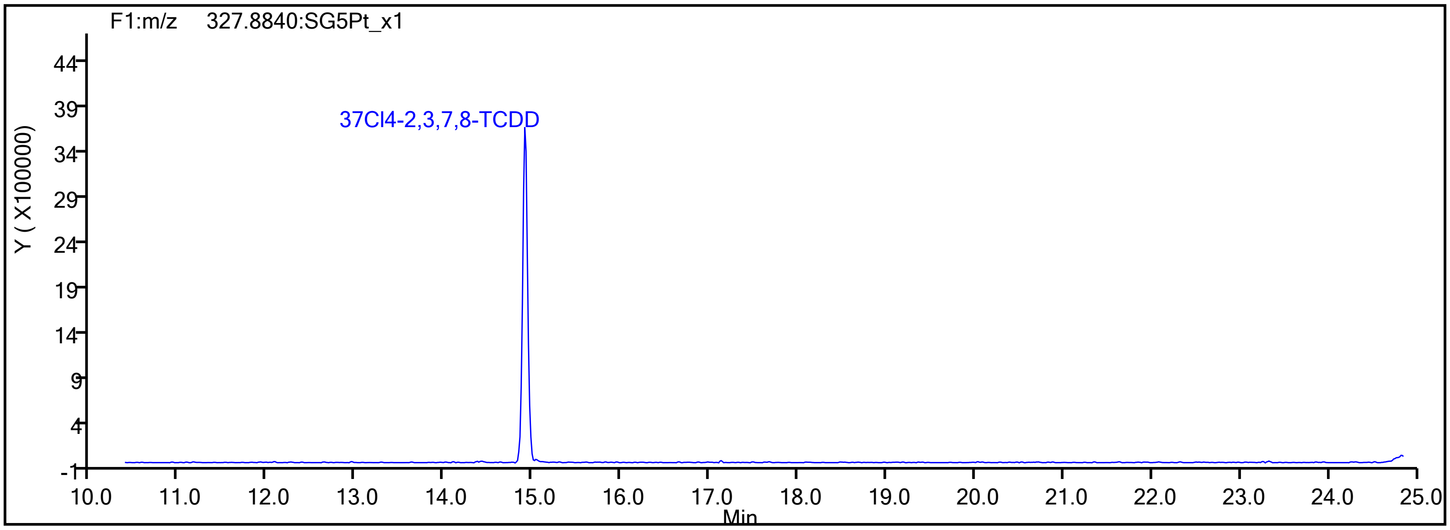

37Cl4-TCDD Standards

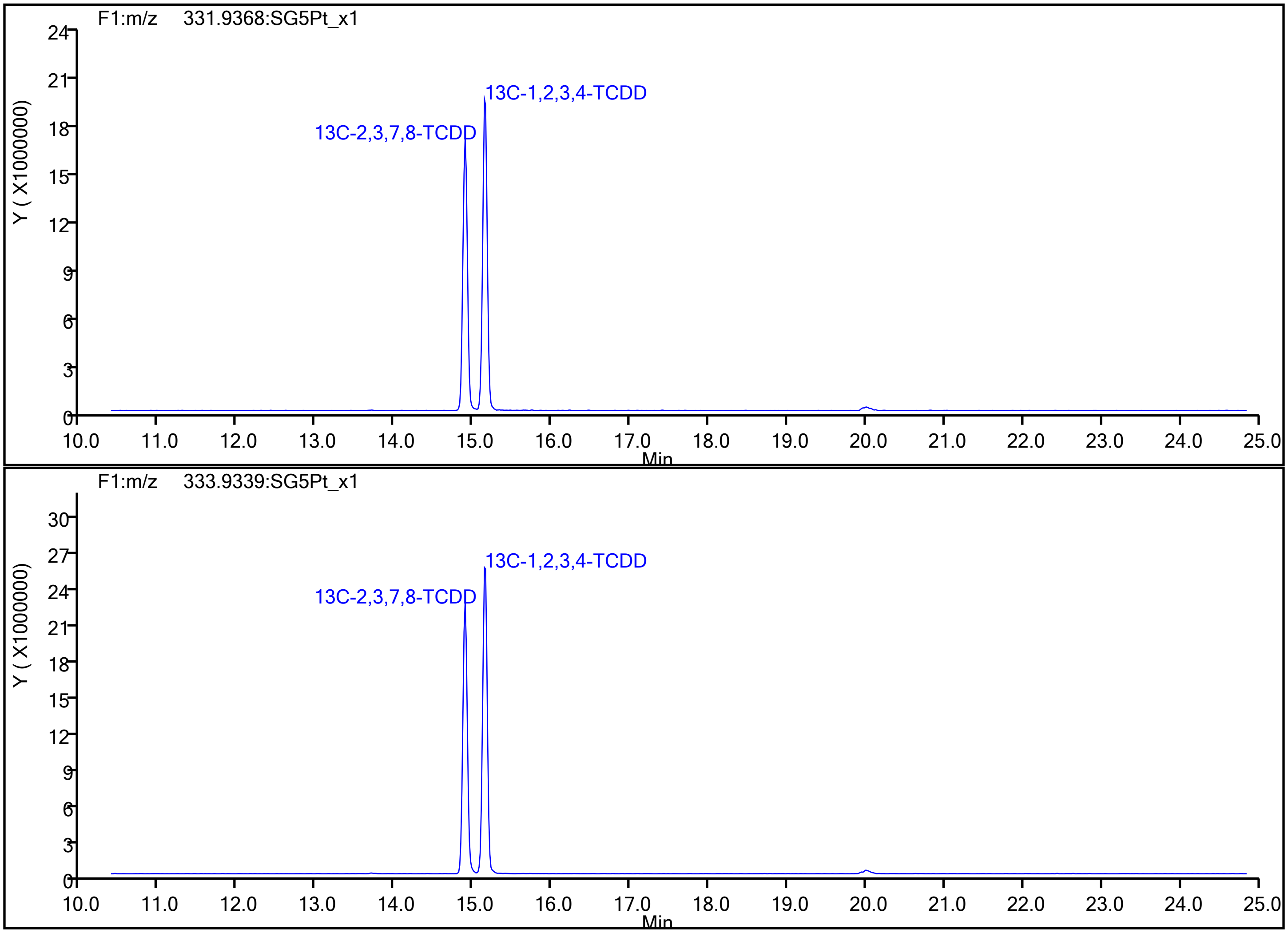

Report Date: 04-Feb-2021 15:01:03 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_006.d		
Injection Date:	03-Feb-2021 15:57:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

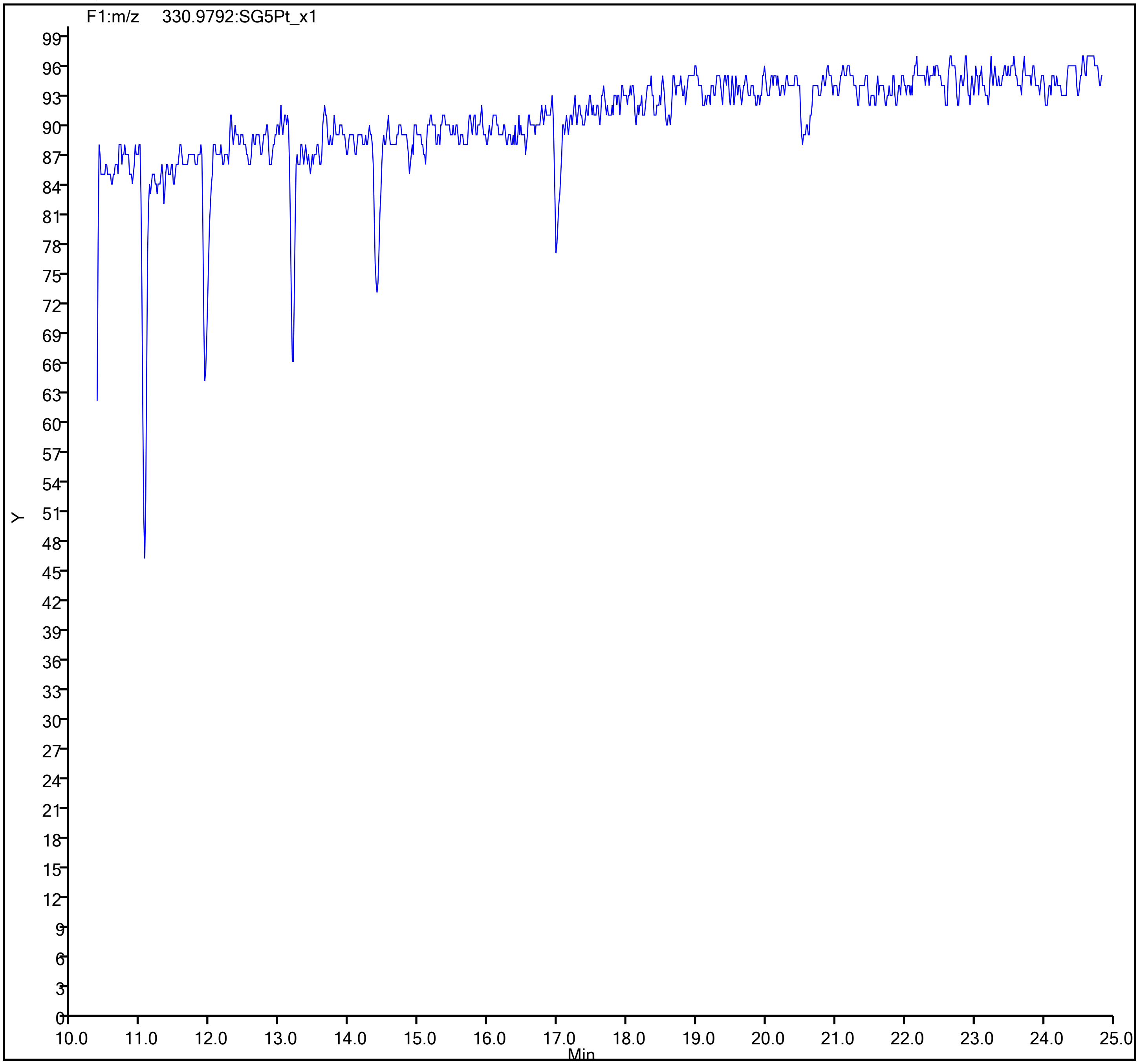

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	03-Feb-2021 16:35:23	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00032				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Feb-2021 15:01:05	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1681				
First Level Reviewer: arghestanis		Date:	04-Feb-2021 14:50:58		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.136	186980173	0.76	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.274	247390619	0.79	1.3057	101.3	101.3	0.1905	0.1905	101	
2,3,7,8-TCDF	16.302	94924152	0.78	0.9242	41.5	41.5	0.0636	0.0636	104	
D 13C-2,3,7,8-TCDD	14.889	170373065	0.76	0.8971	101.6	101.6	0.1369	0.1369	102	
2,3,7,8-TCDD	14.902	72502759	0.80	0.9989	42.6	42.6	0.2822	0.2822	107	
$ 37Cl4-2,3,7,8-TCDD	14.902	68013566		0.8499	42.8	42.8	0.0694	0.0694	107	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00032 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d
Lims ID: IC 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 03-Feb-2021 16:35:23 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00032
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:01:05 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:50:58

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.136	15.141	0		81001033	20397551	13266	33165	1538		
333.9339	15.136	15.141	0		105979140	26617375	9838	24595	2706	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.274	16.280	0	1.075	109322874	23920456	22947	57367	1042		
317.9389	16.274	16.280	0	1.075	138067745	30855555	23836	59590	1294	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.302	16.302	0	1.002	41613382	9215287	6304	15760	1462		
305.8987	16.302	16.302	0	1.002	53310770	11600157	6579	16447	1763	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.889	14.889	0	0.984	73394836	18344797	13266	33165	1383		
333.9339	14.889	14.889	0	0.984	96978229	23874794	9838	24595	2427	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.902	14.906	0	1.001	32322159	7948126	19053	47632	417		
321.8936	14.902	14.906	0	1.001	40180600	10016032	28558	71395	351	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.902	14.906	0	0.985	68013566	16684974	11086	27715	1505		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00032 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:01:08 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d
Injection Date: 03-Feb-2021 16:35:23 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

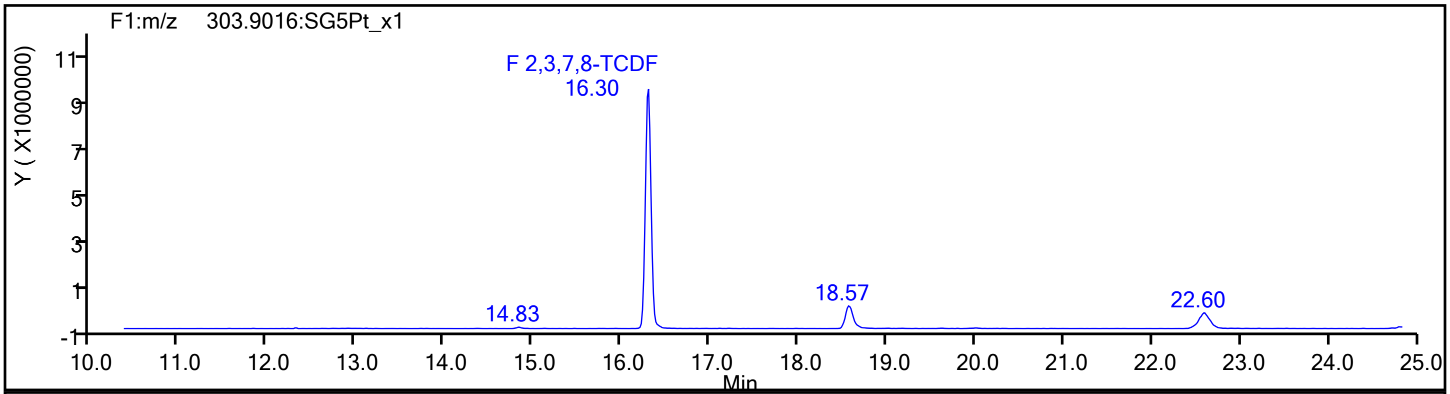

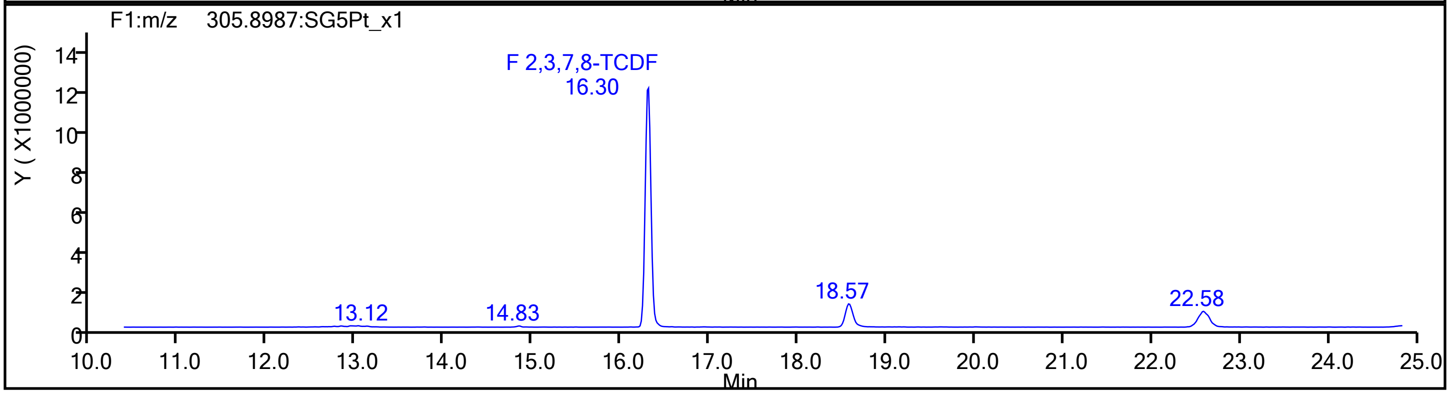

TCDF Standards

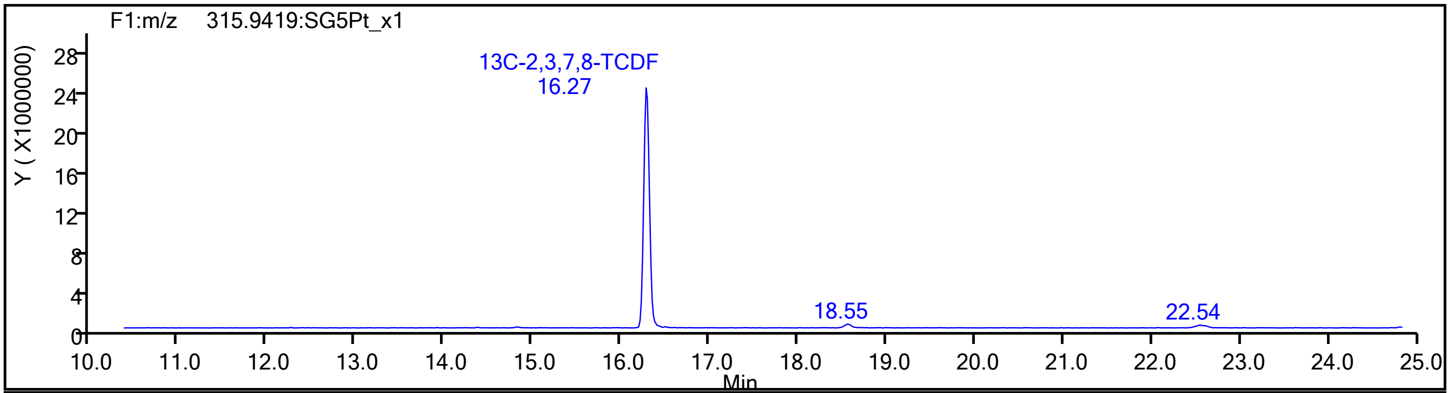

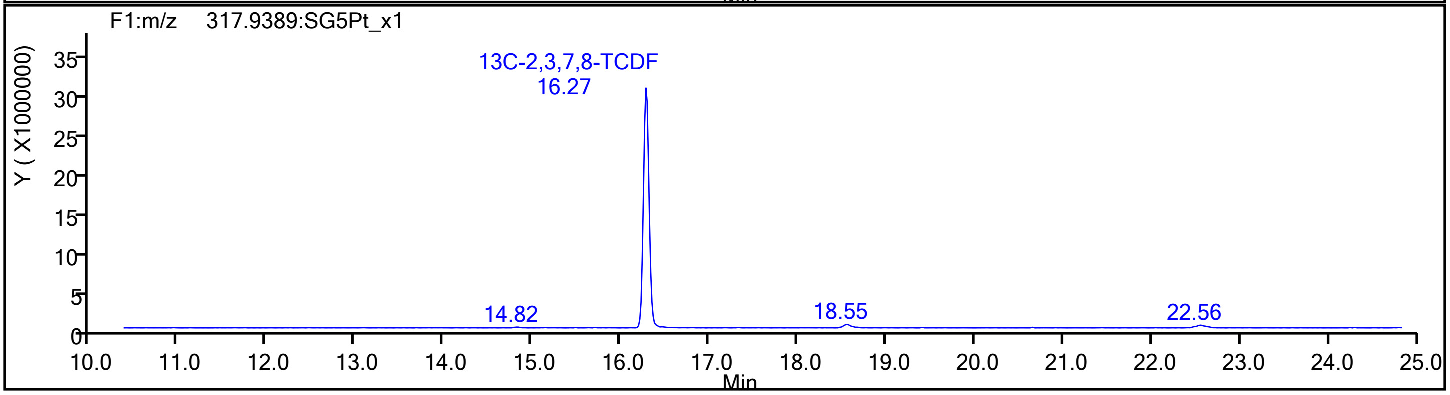

Report Date: 04-Feb-2021 15:01:08 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d
Injection Date: 03-Feb-2021 16:35:23
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 7
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

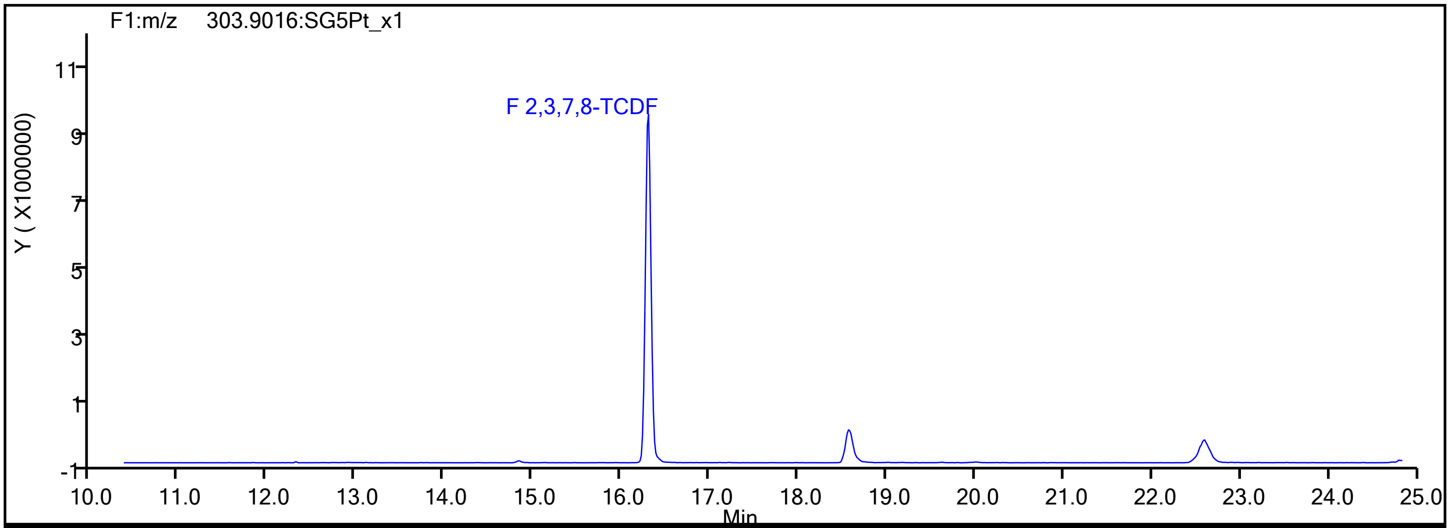

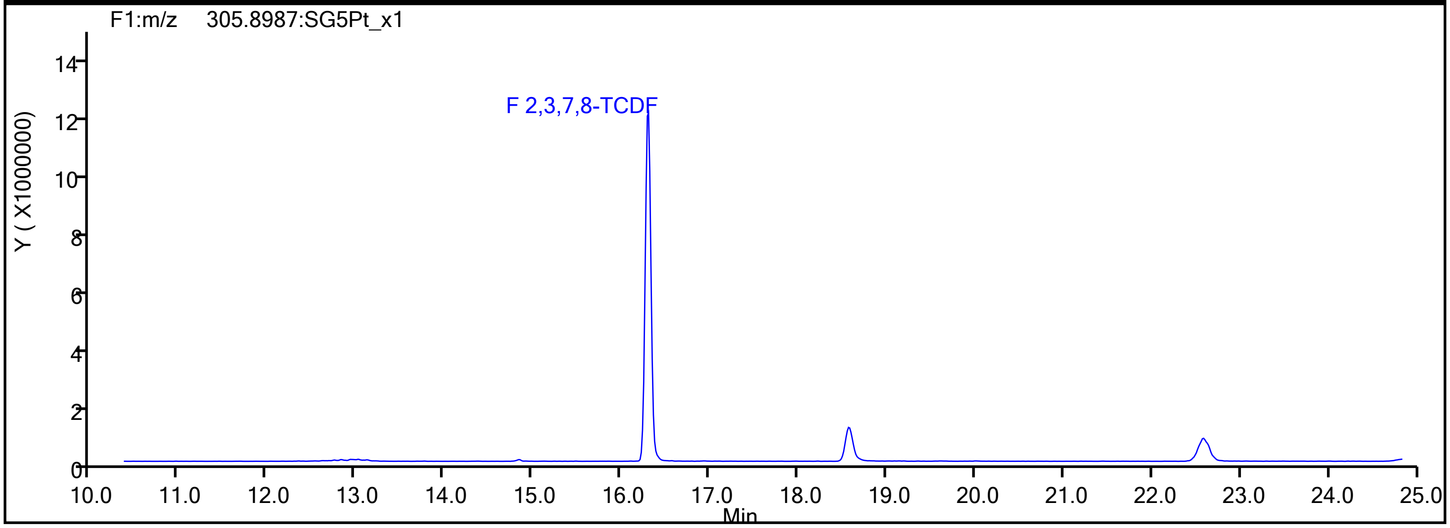

TCDF Interference Mass

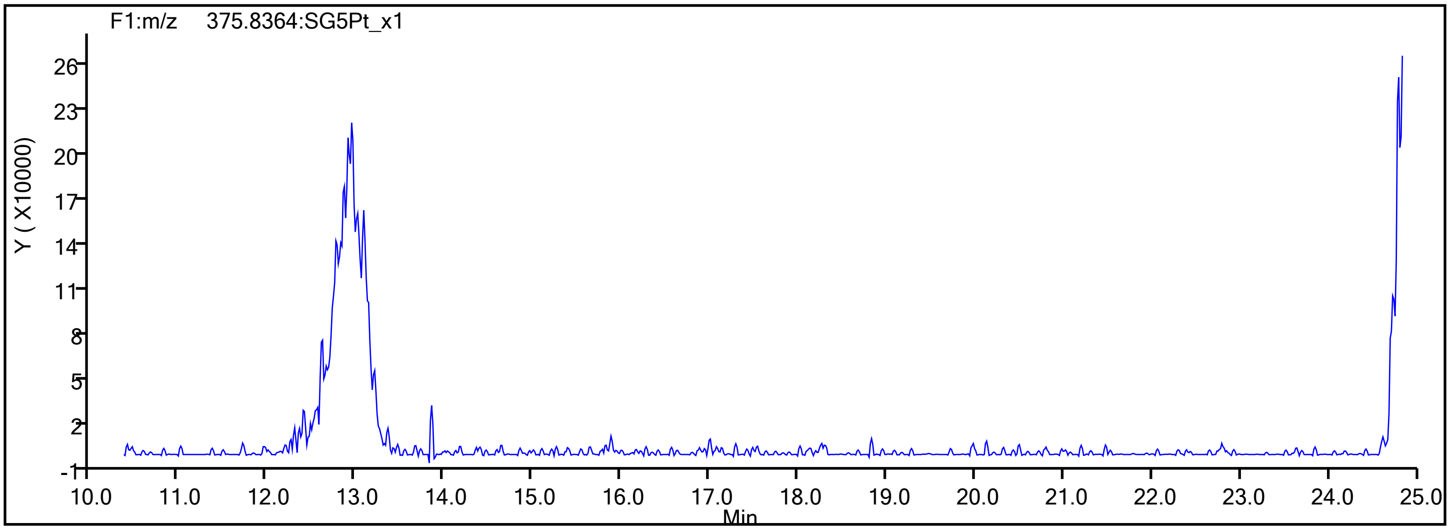

Report Date: 04-Feb-2021 15:01:08 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d		
Injection Date:	03-Feb-2021 16:35:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

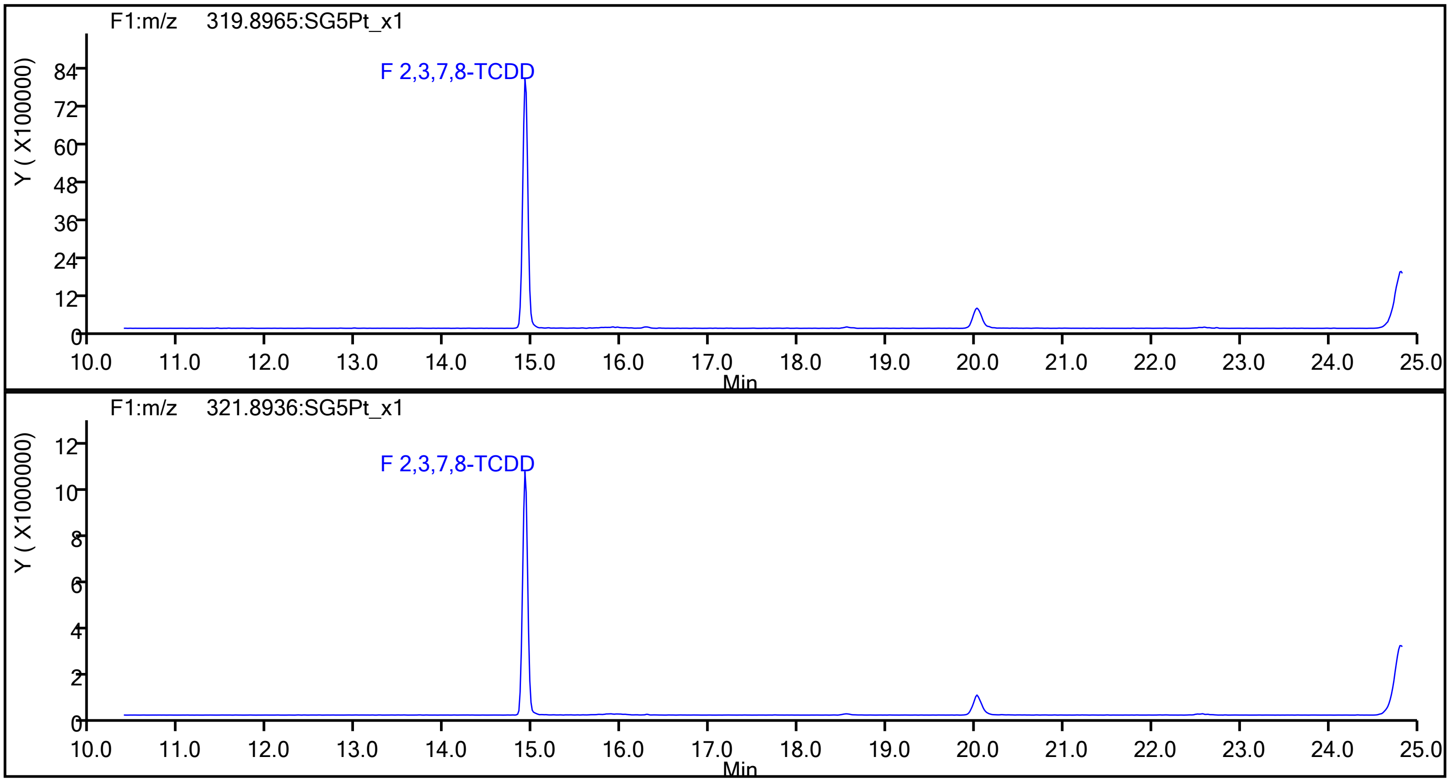

TCDD Standards

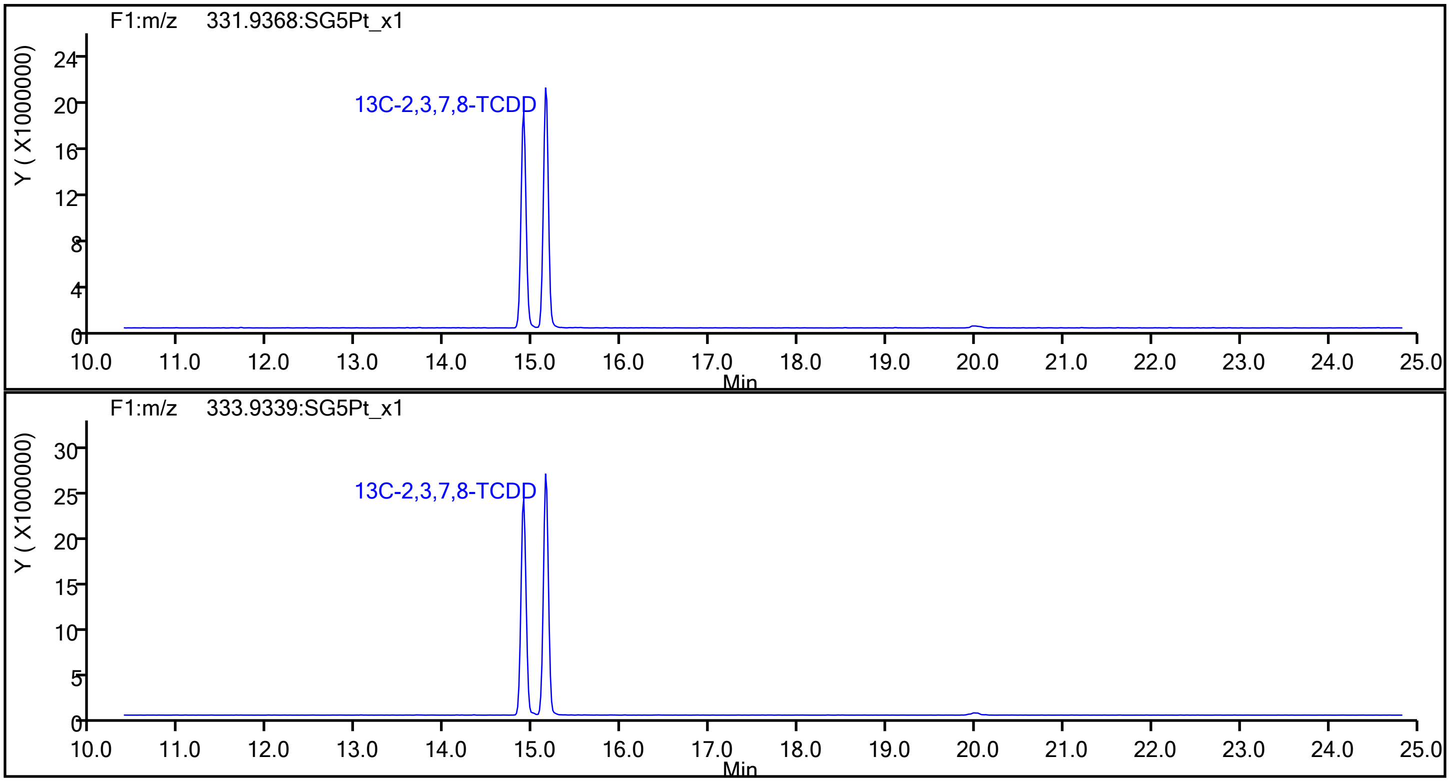

Report Date: 04-Feb-2021 15:01:08 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d
Injection Date: 03-Feb-2021 16:35:23 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

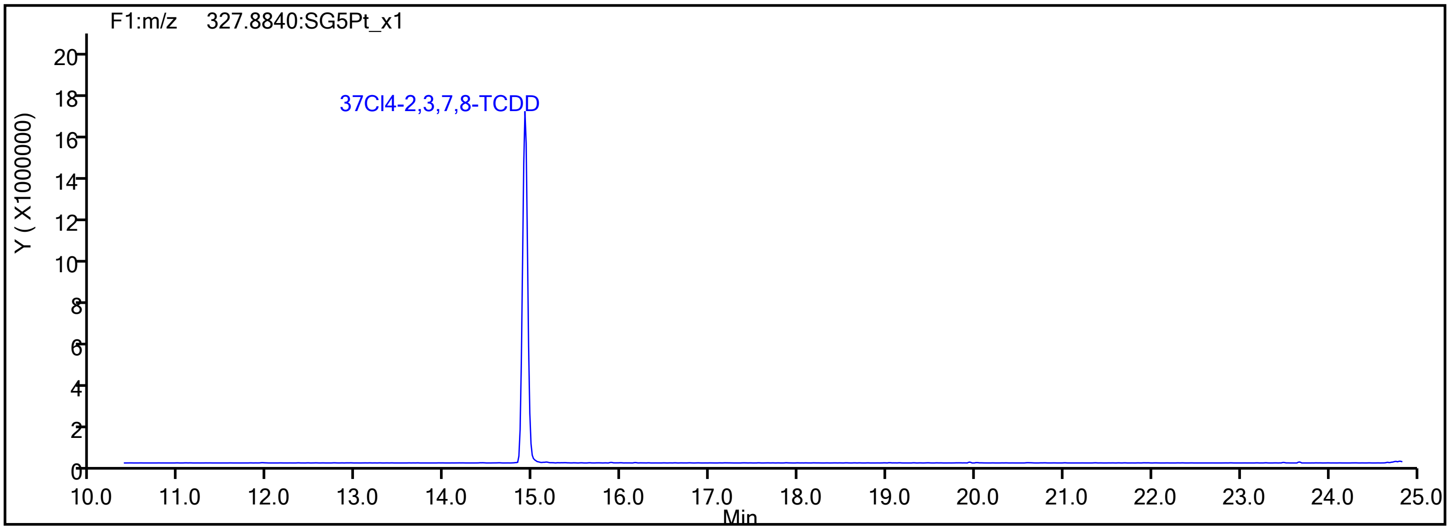

37Cl4-TCDD Standards

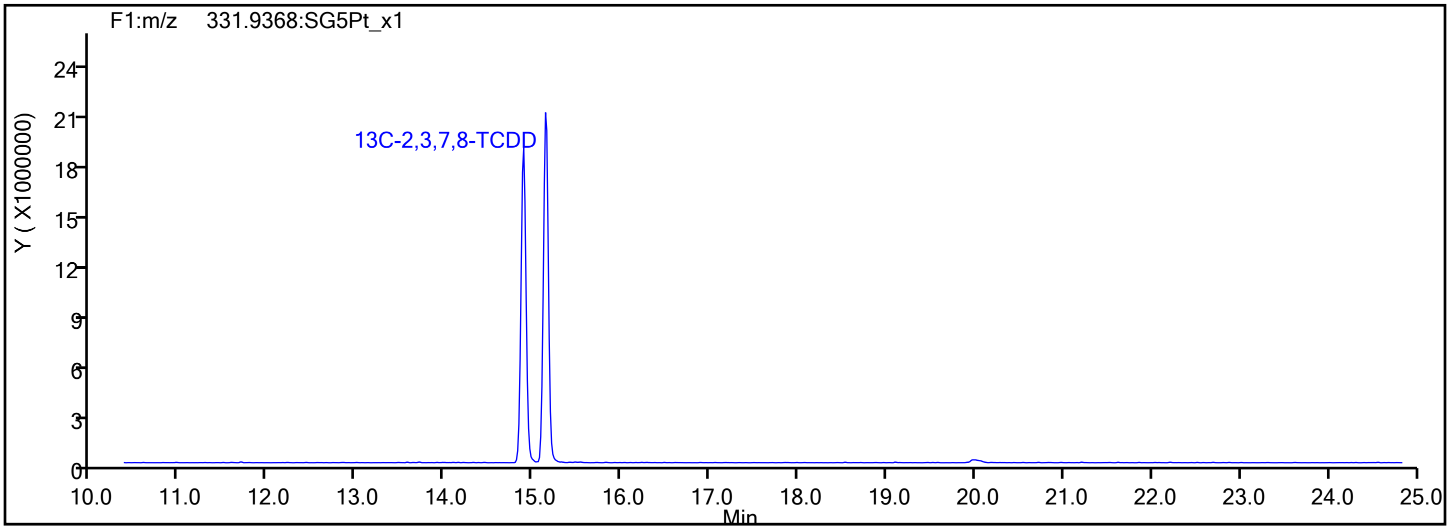

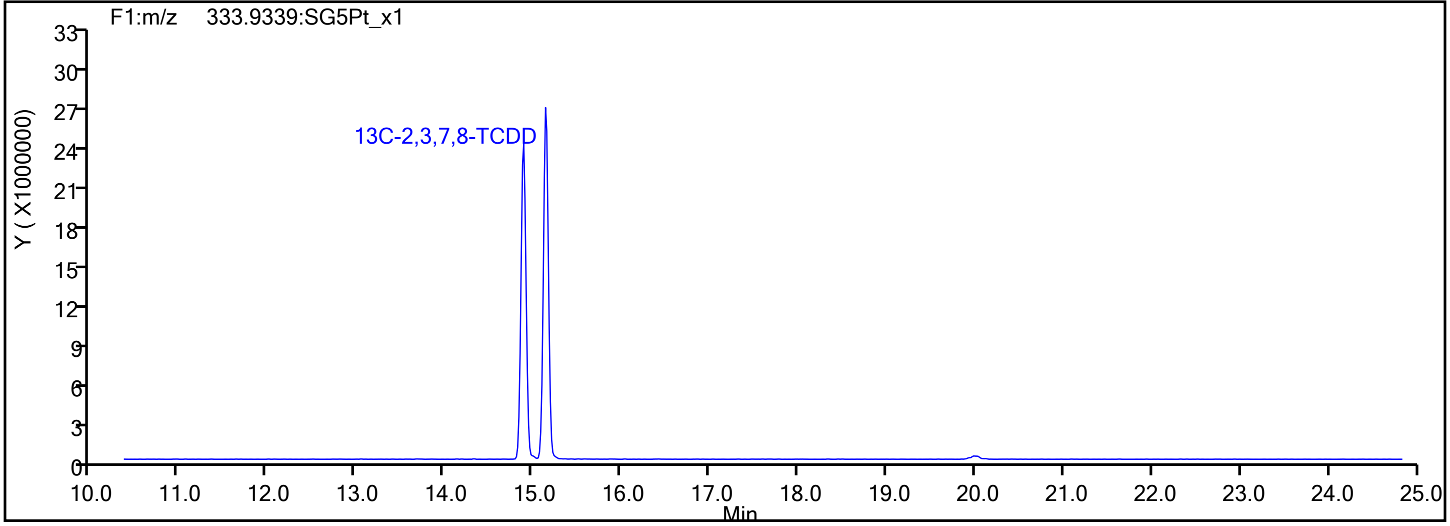

Report Date: 04-Feb-2021 15:01:08 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_007.d		
Injection Date:	03-Feb-2021 16:35:23	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

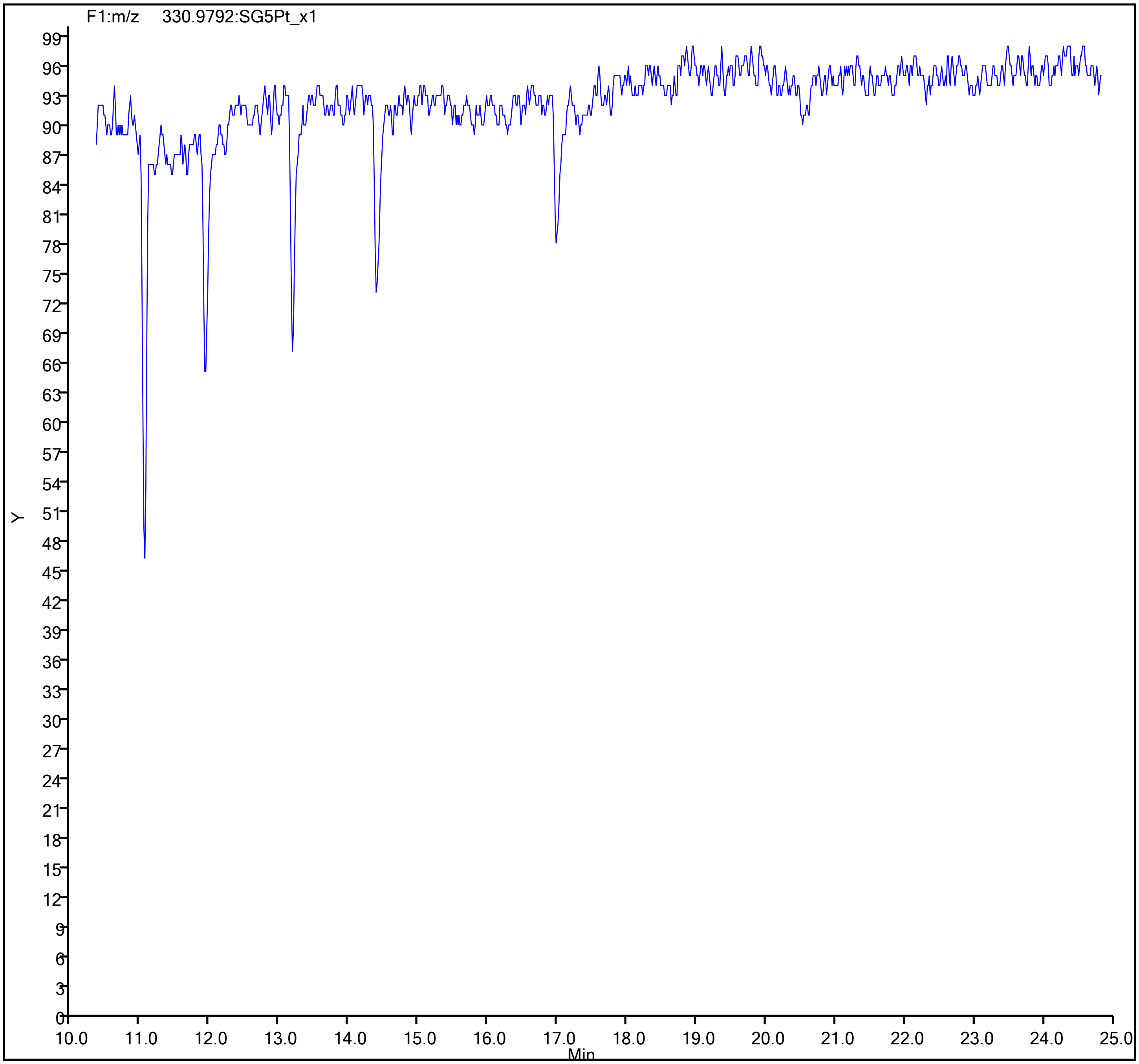

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	03-Feb-2021 17:13:46	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00028				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Feb-2021 15:01:11	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1681				
First Level Reviewer: arghestanis		Date:	04-Feb-2021 14:51:11		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.137	178029591	0.75	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.276	240462837	0.78	1.3057	103.4	103.4	0.2029	0.2029	103	
2,3,7,8-TCDF	16.303	443344371	0.79	0.9242	199.5	199.5	0.1331	0.1331	99.75	
D 13C-2,3,7,8-TCDD	14.890	160983665	0.75	0.8971	100.8	100.8	0.1781	0.1781	101	
2,3,7,8-TCDD	14.904	334963625	0.80	0.9989	208.3	208.3	0.3531	0.3531	104	
$ 37Cl4-2,3,7,8-TCDD	14.904	321084188		0.8499	212.2	212.2	0.0793	0.0793	106	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00028 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:01:14 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 03-Feb-2021 17:13:46 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00028
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:01:11 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:51:11

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.137	15.141	0		76554303	18942635	17505	43762	1082		
333.9339	15.137	15.141	0		101475288	24763011	10429	26072	2374	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.276	16.280	0	1.075	105726714	24126380	22805	57012	1058		
317.9389	16.276	16.280	0	1.075	134736123	30529582	23516	58790	1298	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.303	16.302	0	1.002	195529387	43546313	11303	28257	3853		
305.8987	16.303	16.302	0	1.002	247814984	54707276	15591	38977	3509	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.890	14.889	0	0.984	68903222	16947778	17505	43762	968		
333.9339	14.890	14.889	0	0.984	92080443	22454732	10429	26072	2153	0.75(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.904	14.906	0	1.001	148618230	36179758	22717	56792	1593		
321.8936	14.904	14.906	0	1.001	186345395	45450122	32872	82180	1383	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.904	14.906	0	0.985	321084188	77623296	11778	29445	6591		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00028 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:01:14 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		
Injection Date:	03-Feb-2021 17:13:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

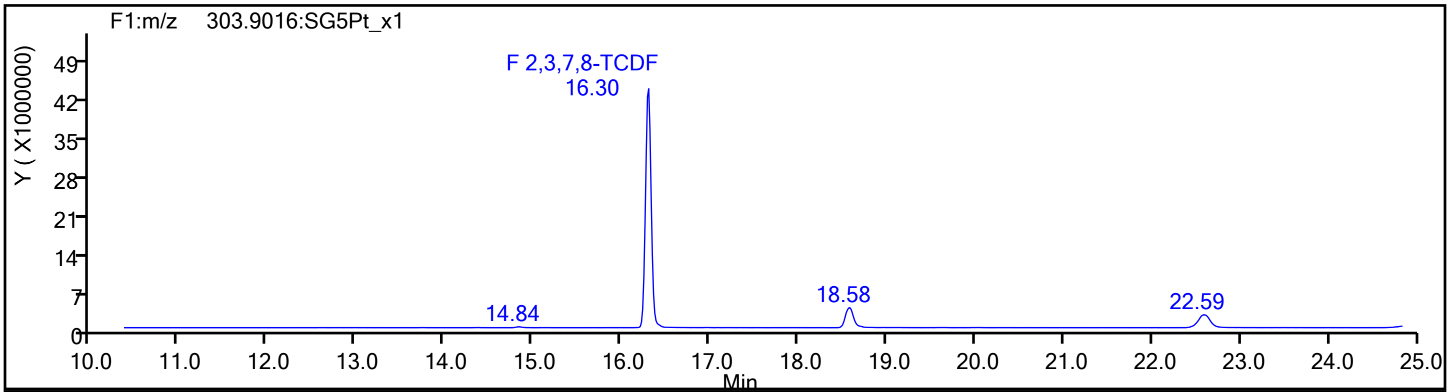

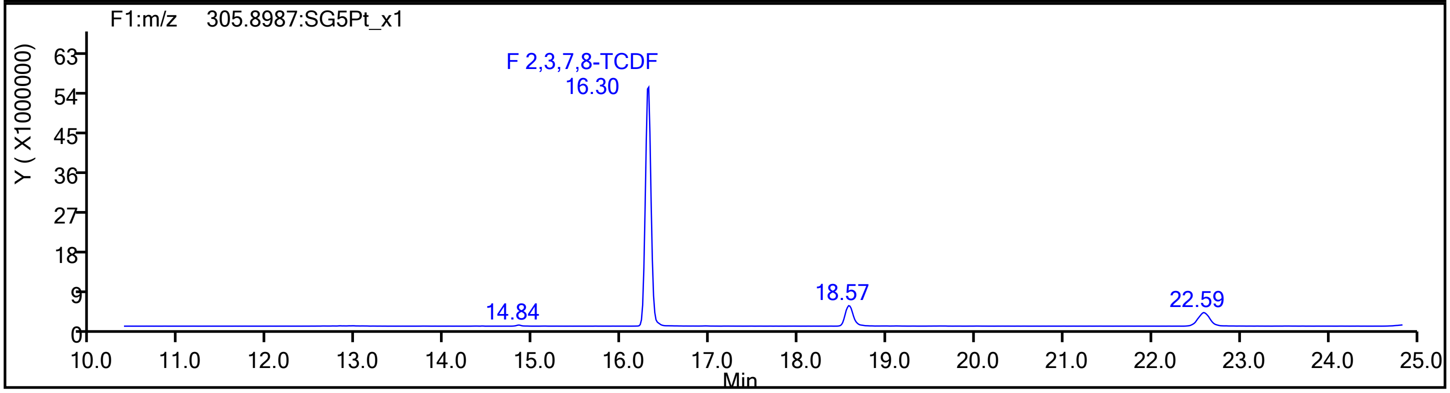

TCDF Standards

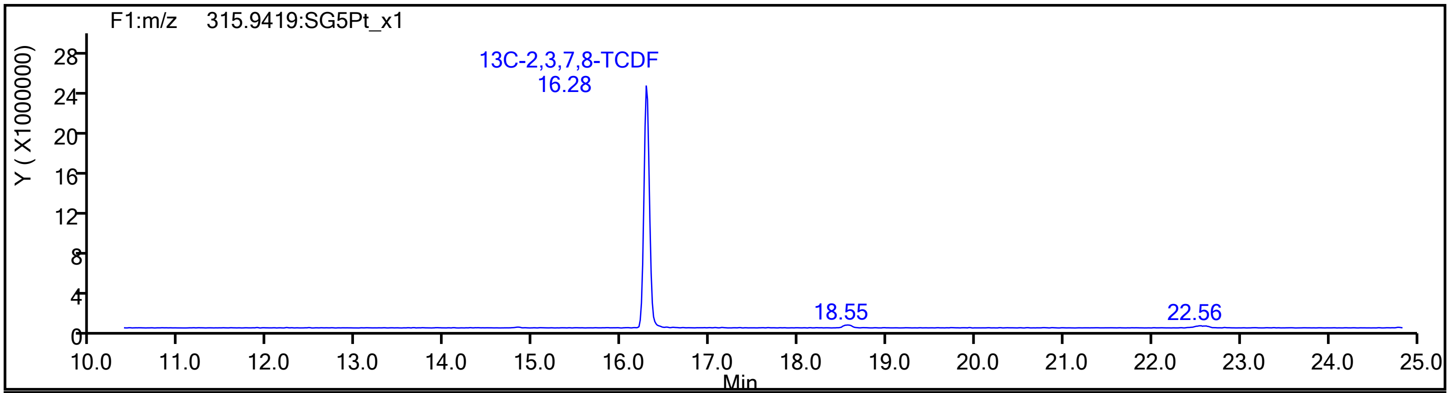

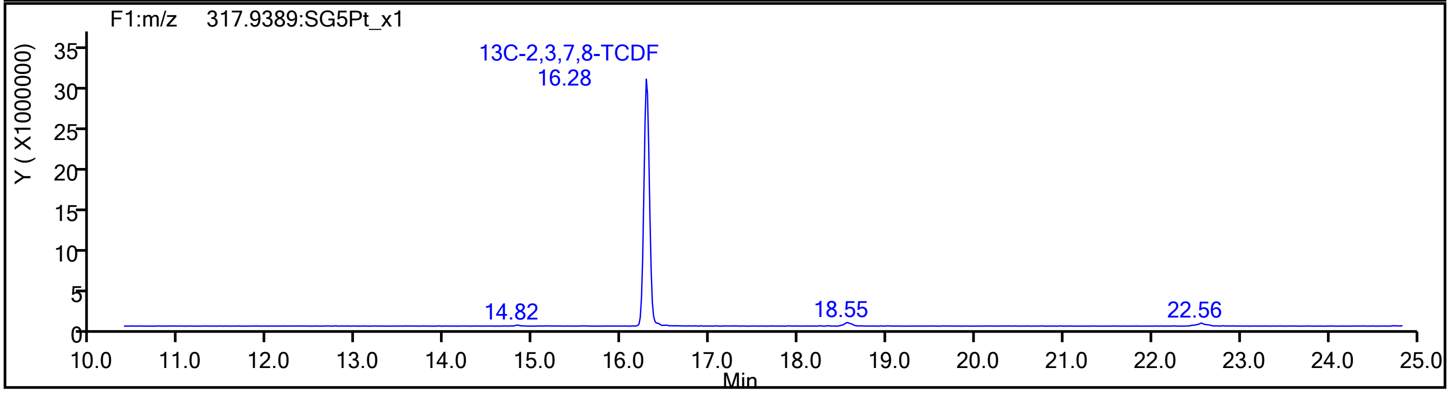

Report Date: 04-Feb-2021 15:01:14 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		
Injection Date:	03-Feb-2021 17:13:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

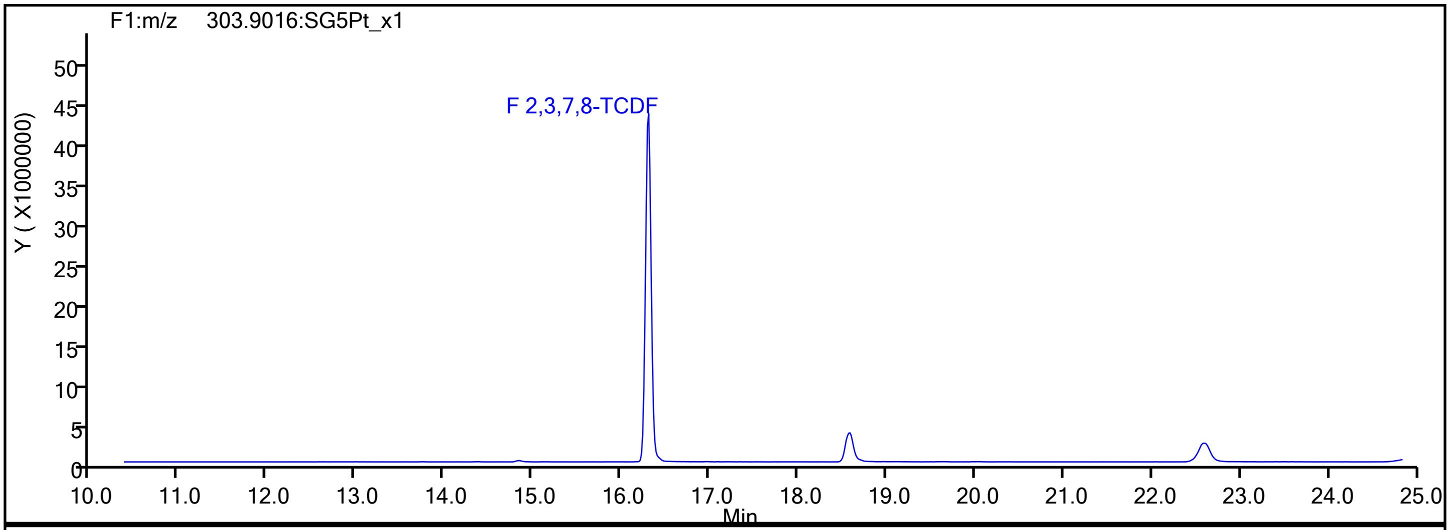

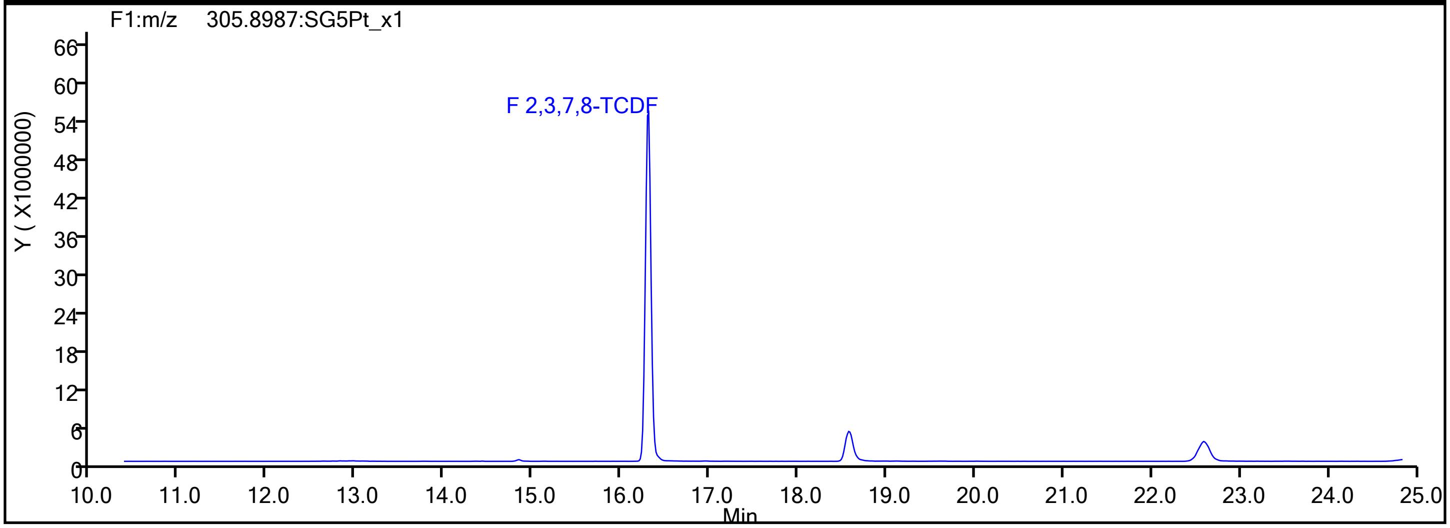

TCDF Interference Mass

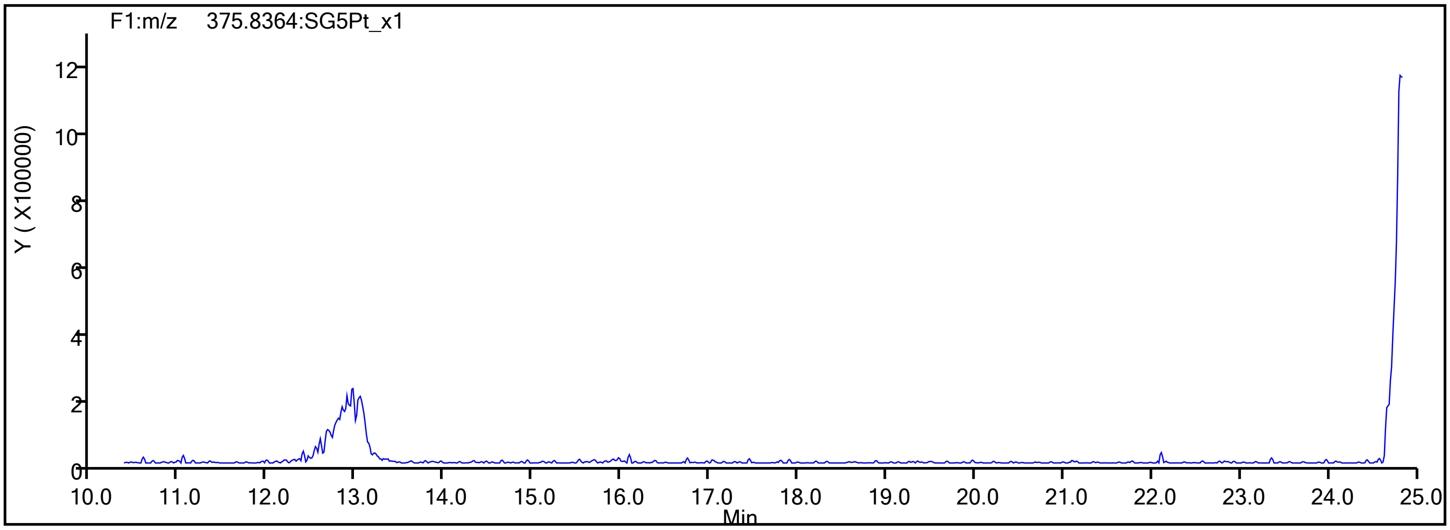

Report Date: 04-Feb-2021 15:01:14 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		
Injection Date:	03-Feb-2021 17:13:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

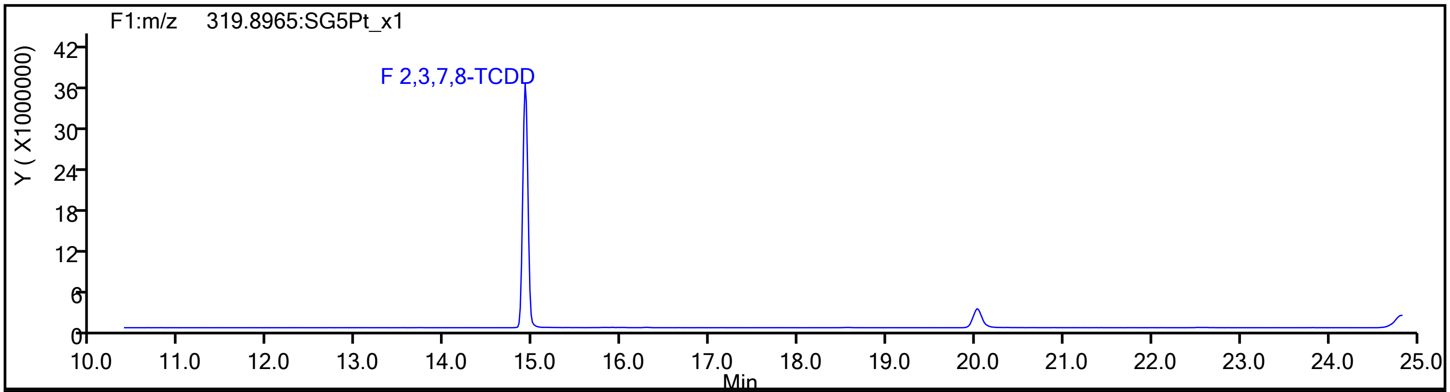

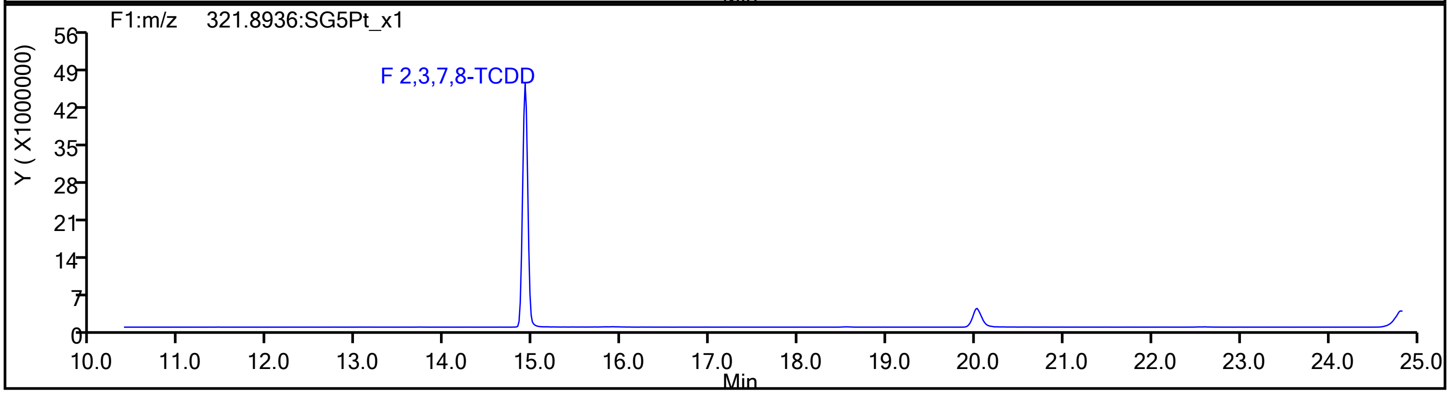

TCDD Standards

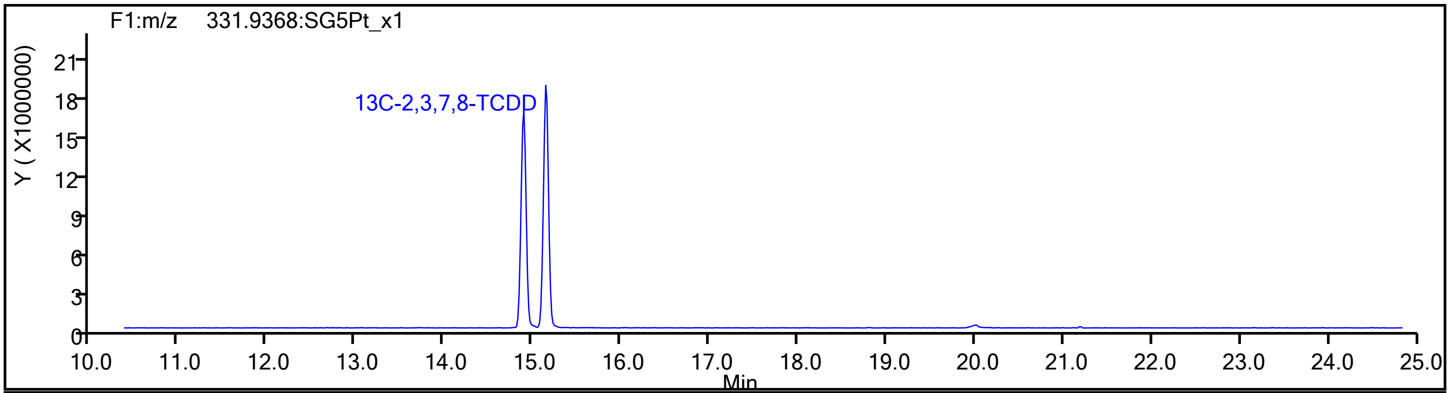

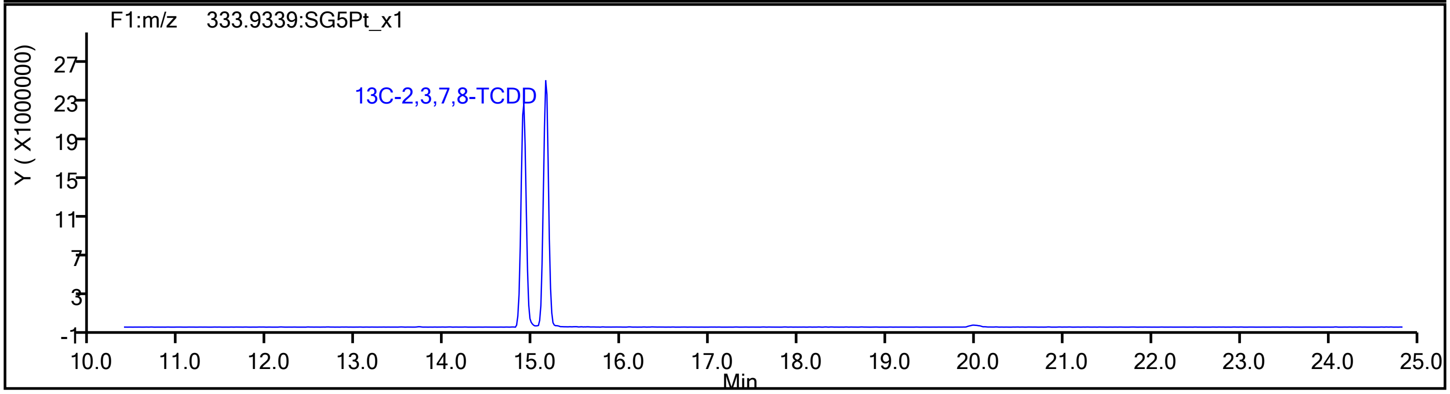

Report Date: 04-Feb-2021 15:01:14 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Injection Date: 03-Feb-2021 17:13:46 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458526 Sample Line#: 8

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

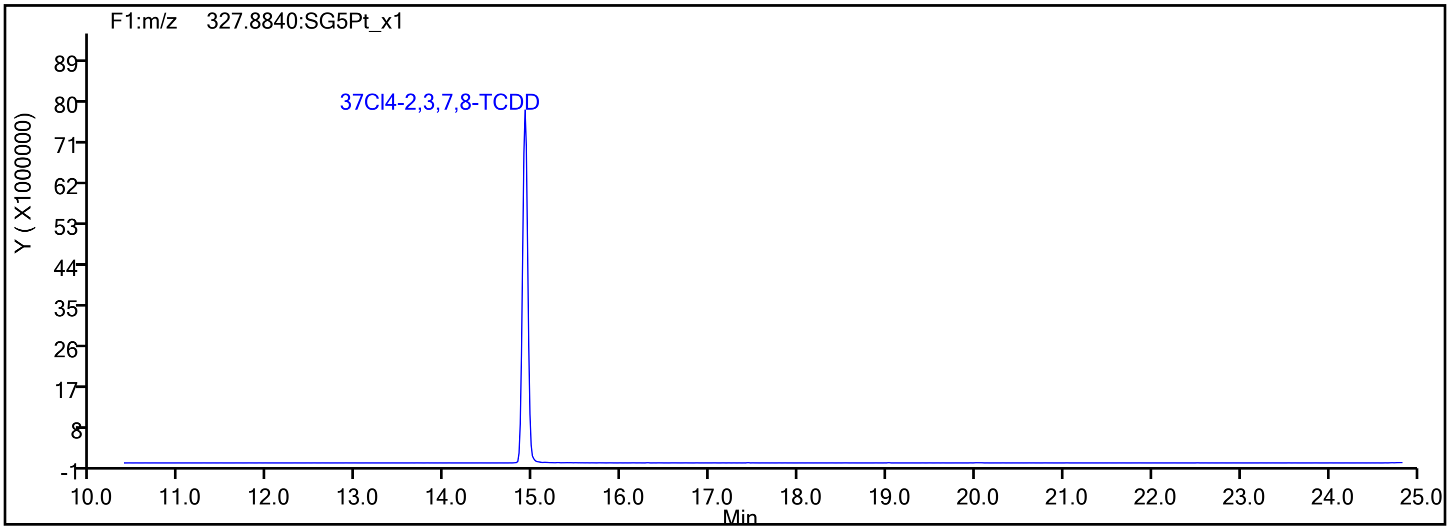

37Cl4-TCDD Standards

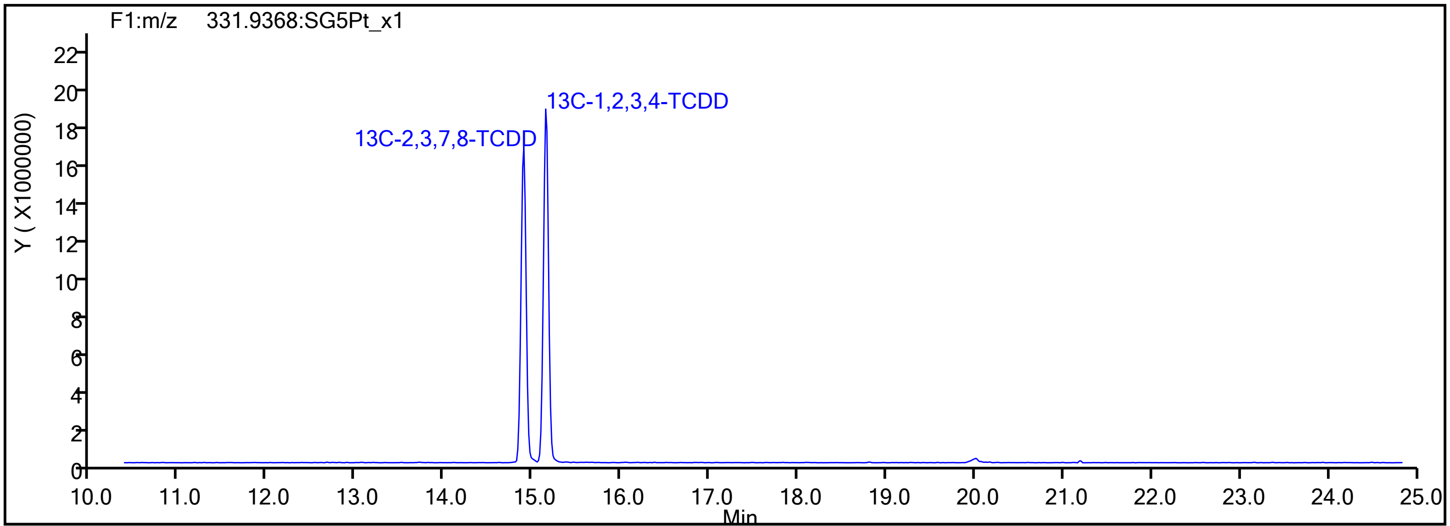

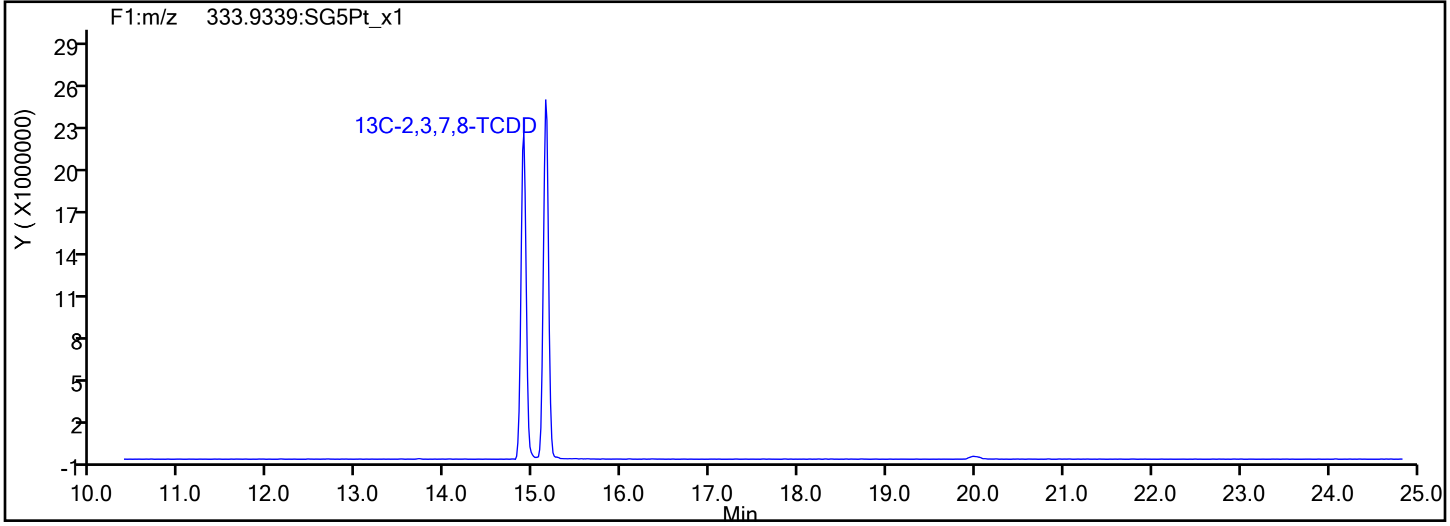

Report Date: 04-Feb-2021 15:01:14

Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d		
Injection Date:	03-Feb-2021 17:13:46	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

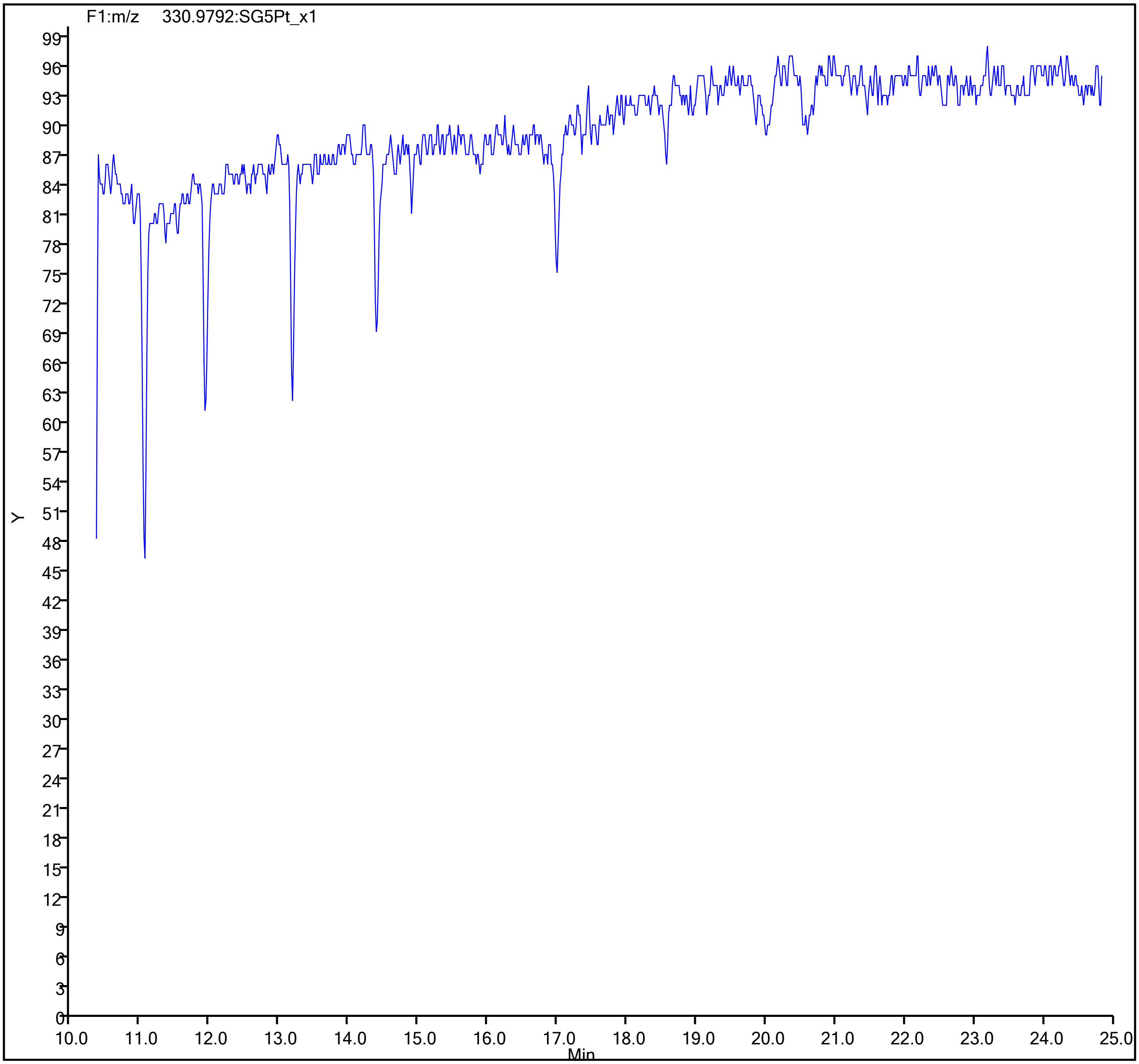

Calibration / 2,3,7,8-TCDD

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients	
Intercept:	0
Slope:	0.9989

Error Coefficients	
Standard Error:	172000000
Relative Standard Error:	11.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.986

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458526/4	0.5	0.532306	100.0	168467807.0	1.064613	Y
2	IC 320-458526/5	2.0	1.609435	100.0	163166292.0	0.804717	Y
3	IC 320-458526/6	10.0	10.208029	100.0	158625376.0	1.020803	Y
4	IC 320-458526/7	40.0	42.555294	100.0	170373065.0	1.063882	Y
5	IC 320-458526/8	200.0	208.073052	100.0	160983665.0	1.040365	Y

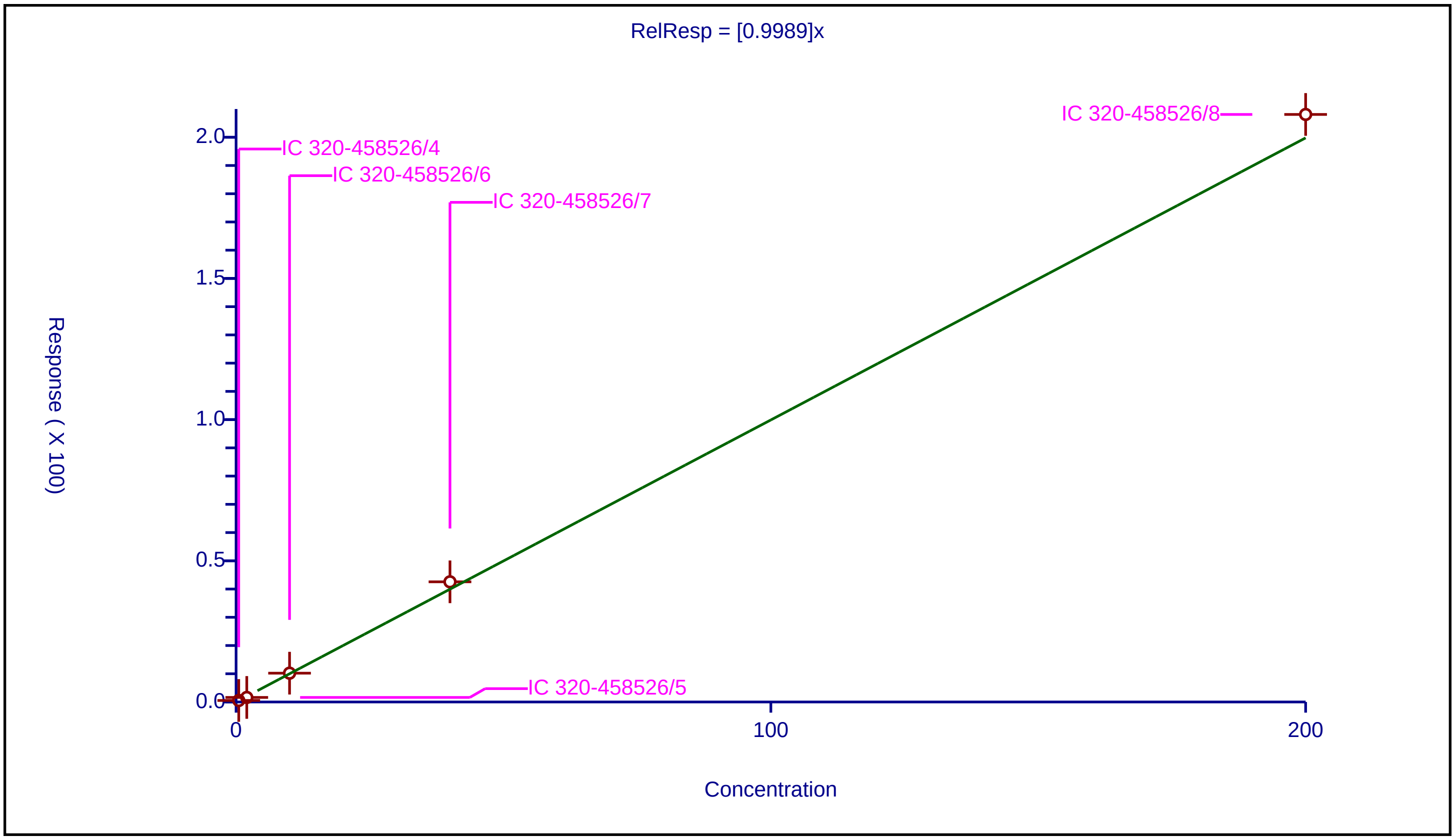

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9242

Error Coefficients

Standard Error:	227000000
Relative Standard Error:	8.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458526/4	0.5	0.509609	100.0	240760670.0	1.019219	Y
2	IC 320-458526/5	2.0	1.607439	100.0	228800695.0	0.80372	Y
3	IC 320-458526/6	10.0	9.167686	100.0	238108839.0	0.916769	Y
4	IC 320-458526/7	40.0	38.37015	100.0	247390619.0	0.959254	Y
5	IC 320-458526/8	200.0	184.371264	100.0	240462837.0	0.921856	Y

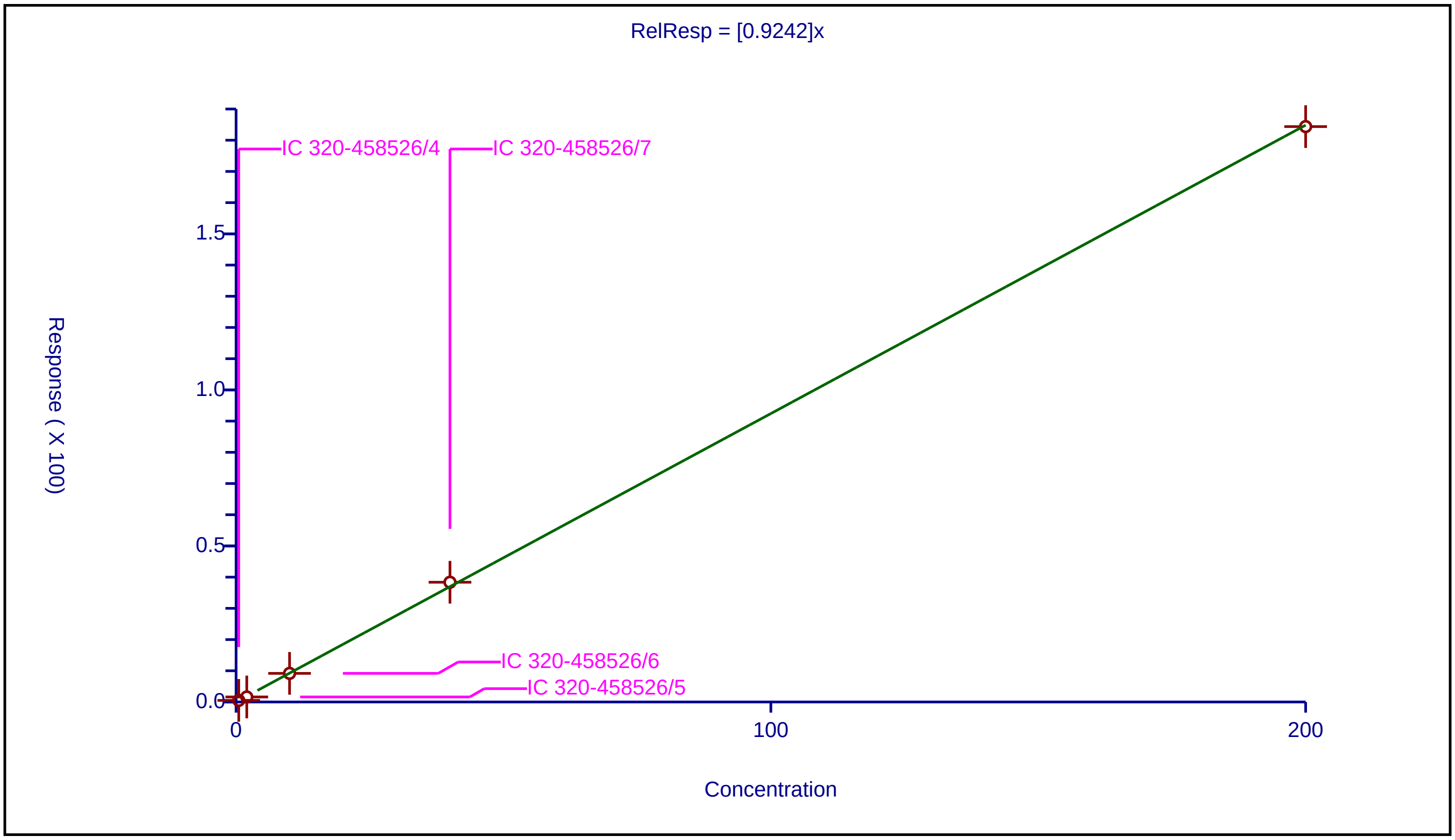

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8499

Error Coefficients

Standard Error:	164000000
Relative Standard Error:	7.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458526/4	0.5	0.435836	100.0	180504909.0	0.871673	Y
2	IC 320-458526/5	2.0	1.53533	100.0	187084092.0	0.767665	Y
3	IC 320-458526/6	10.0	7.990581	100.0	183421799.0	0.799058	Y
4	IC 320-458526/7	40.0	36.374748	100.0	186980173.0	0.909369	Y
5	IC 320-458526/8	200.0	180.354393	100.0	178029591.0	0.901772	Y

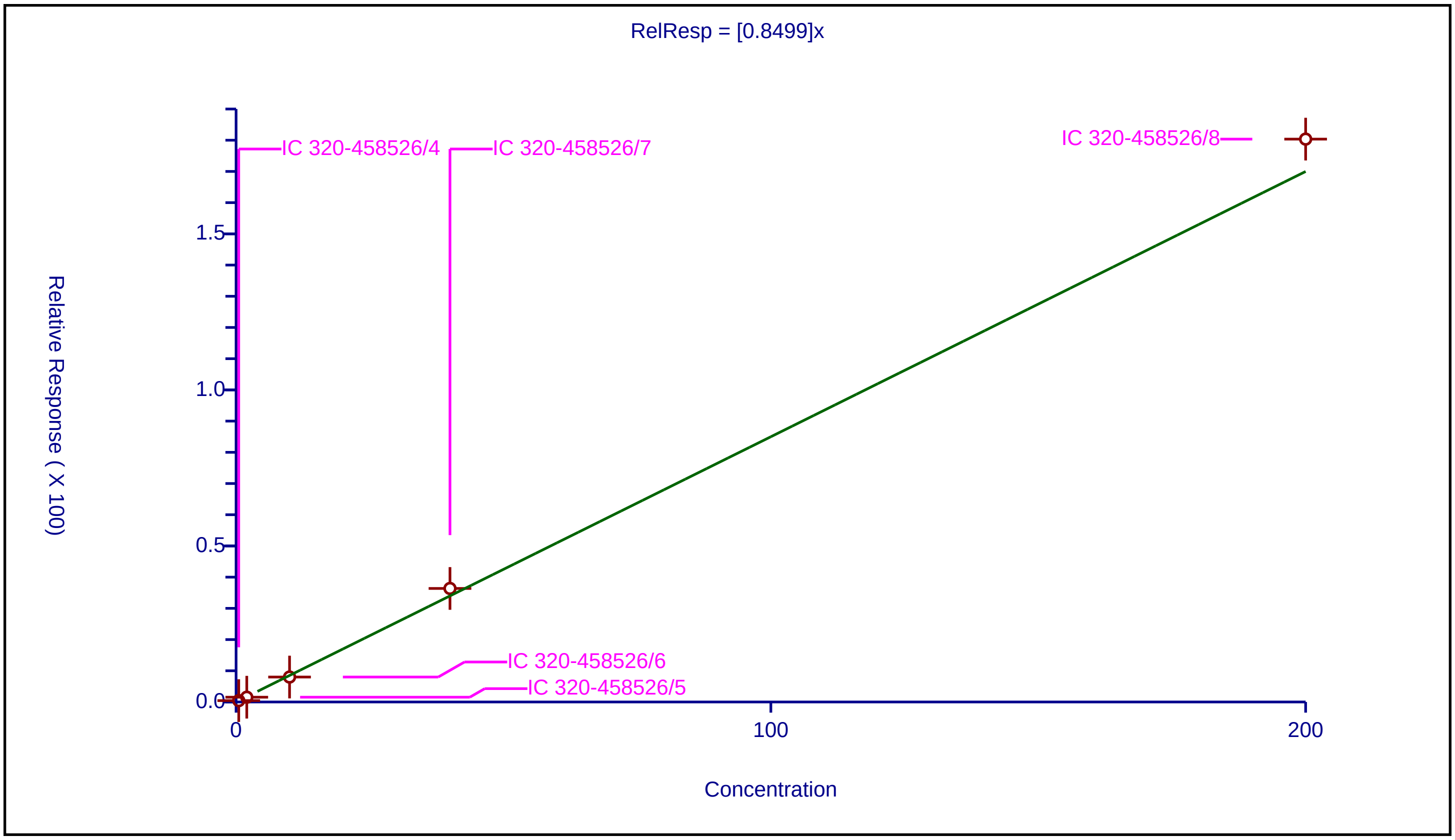

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1   Analy Batch No.: 458037

SDG No.:

Instrument ID: DFS 1   GC Column: DB-5   ID: 0.32(mm)   Heated Purge: (Y/N) N

Calibration Start Date: 02/02/2021 21:46   Calibration End Date: 02/03/2021 00:57   Calibration ID: 53942

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-458037/3	02fe21dfs1_4.d
Level 2	IC 320-458037/4	02fe21dfs1_5.d
Level 3	IC 320-458037/5	02fe21dfs1_6.d
Level 4	IC 320-458037/6	02fe21dfs1_7.d
Level 5	IC 320-458037/7	02fe21dfs1_8.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.2063	1.0454	1.1728	1.1472	1.0573	AveID		1.1258				6.3		20.0			
2,3,7,8-TCDD	1.3591	1.0692	1.1965	1.2035	1.1236	AveID		1.1904				9.2		20.0			
1,2,3,7,8-PeCDF	1.2464	1.0075	1.0990	1.0871	1.1412	AveID		1.1163				7.8		20.0			
2,3,4,7,8-PeCDF	1.2025	0.9464	1.0417	1.0480	1.0509	AveID		1.0579				8.7		20.0			
1,2,3,7,8-PeCDD	1.2969	1.0326	1.1258	1.1205	1.1102	AveID		1.1372				8.5		20.0			
1,2,3,4,7,8-HxCDF	1.3109	1.0487	1.2098	1.1713	1.1750	AveID		1.1831				7.9		20.0			
1,2,3,6,7,8-HxCDF	1.3902	1.1122	1.2435	1.2237	1.2724	AveID		1.2484				8.0		20.0			
2,3,4,6,7,8-HxCDF	1.3905	1.1593	1.2688	1.2427	1.3137	AveID		1.2750				6.7		20.0			
1,2,3,4,7,8-HxCDD	1.2424	0.9888	1.1003	1.0887	1.0545	AveID		1.0950				8.5		20.0			
1,2,3,6,7,8-HxCDD	1.1079	0.9479	1.0275	1.0098	1.0075	AveID		1.0201				5.6		20.0			
1,2,3,7,8,9-HxCDD	1.2869	1.0575	1.1611	1.1309	1.1379	AveID		1.1549				7.2		20.0			
1,2,3,7,8,9-HxCDF	1.4401	1.1835	1.2837	1.2394	1.3298	AveID		1.2953				7.5		20.0			
1,2,3,4,6,7,8-HpCDF	1.6108	1.3196	1.4803	1.4634	1.5552	AveID		1.4859				7.4		20.0			
1,2,3,4,6,7,8-HpCDD	1.3066	1.0155	1.1438	1.1120	1.1669	AveID		1.1489				9.2		20.0			
1,2,3,4,7,8,9-HpCDF	1.5664	1.2382	1.3980	1.3811	1.4402	AveID		1.4048				8.4		20.0			
OCDD	1.2605	1.0368	1.1568	1.1729	1.2257	AveID		1.1706				7.3		20.0			
OCDF	1.6095	1.3344	1.4795	1.6536	1.8112	AveID		1.5776				11.4		20.0			
13C-2,3,7,8-TCDF	1.6049	1.5151	1.5301	1.5219	1.5465	Ave		1.5437				2.3		35.0			
13C-2,3,7,8-TCDD	0.9737	0.9178	1.0000	0.9707	0.9816	Ave		0.9687				3.2		35.0			
13C-1,2,3,7,8-PeCDF	1.3257	1.2979	1.3069	1.3142	1.3174	Ave		1.3124				0.8		35.0			
13C-2,3,4,7,8-PeCDF	1.3131	1.3386	1.3308	1.3119	1.3814	Ave		1.3352				2.1		35.0			
13C-1,2,3,7,8-PeCDD	0.7376	0.7662	0.8050	0.7980	0.7510	Ave		0.7716				3.8		35.0			
13C-1,2,3,4,7,8-HxCDF	1.1222	1.1026	1.0627	1.0454	1.1329	Ave		1.0931				3.5		35.0			
13C-1,2,3,6,7,8-HxCDF	1.1501	1.1253	1.1109	1.1135	1.1391	Ave		1.1278				1.5		35.0			
13C-2,3,4,6,7,8-HxCDF	1.0739	1.0445	1.0461	1.0403	1.0713	Ave		1.0552				1.5		35.0			
13C-1,2,3,4,7,8-HxCDD	0.7873	0.7769	0.7865	0.7835	0.8135	Ave		0.7895				1.8		35.0			
13C-1,2,3,6,7,8-HxCDD	0.8709	0.8102	0.8567	0.8459	0.8637	Ave		0.8495				2.8		35.0			
13C-1,2,3,7,8,9-HxCDF	1.0046	0.9774	0.9875	0.9873	1.0124	Ave		0.9938				1.4		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 458037

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/02/2021 21:46 Calibration End Date: 02/03/2021 00:57 Calibration ID: 53942

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C-1,2,3,4,6,7,8-HpCDF	0.7917	0.7599	0.7864	0.7873	0.8016	Ave		0.7854				2.0		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6212	0.6322	0.6645	0.6685	0.6203	Ave		0.6413				3.7		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7115	0.7140	0.7243	0.7174	0.7477	Ave		0.7230				2.0		35.0			
13C-OCDD	0.5248	0.5003	0.5176	0.4894	0.5383	Ave		0.5141				3.8		35.0			
37Cl4-2,3,7,8-TCDD	1.0869	1.0522	1.1369	1.0992	1.0452	Ave		1.0841				3.4					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 458037

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/02/2021 21:46 Calibration End Date: 02/03/2021 00:57 Calibration ID: 53942

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-458037/3	02fe21dfs1_4.d
Level 2	IC 320-458037/4	02fe21dfs1_5.d
Level 3	IC 320-458037/5	02fe21dfs1_6.d
Level 4	IC 320-458037/6	02fe21dfs1_7.d
Level 5	IC 320-458037/7	02fe21dfs1_8.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	89381	312717	1809816	7637293	36134323	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	61096	193741	1206723	5110407	24371143	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	381424	1290875	7242997	31249662	166113030	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	364482	1250730	6990738	30072672	160398673	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	220808	781011	4570250	19558221	92123669	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	368031	1253149	6957116	28826039	166887030	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	399974	1356347	7475199	32079523	181716524	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	373544	1312419	7182454	30433760	176457583	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	244677	832563	4683328	20080924	107551431	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	241380	832354	4763674	20109421	109097971	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	266901	909456	5162435	21690536	119638717	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	361947	1253722	6859476	28806483	168791331	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	319021	1086793	6299588	27124729	156297407	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	203035	695834	4112563	17500883	90753740	2.50	10.0	50.0	200	1000

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 458037

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/02/2021 21:46 Calibration End Date: 02/03/2021 00:57 Calibration ID: 53942

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
1,2,3,4,7,8,9-HpCDF		AveID	278807	958081	5479281	23323871	135012761	2.50	10.0	50.0	200	1000
OCDD		AveID	330969	1124435	6480048	27025871	165463156	5.00	20.0	100	400	2000
OCDF		AveID	422591	1447224	8287616	38101128	244491091	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	14819484	14956457	15431304	16643910	17087371	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	8990592	9060077	10085583	10615427	10845589	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	12240891	12812752	13180648	14372299	14555682	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	12124391	13214981	13421278	14346989	15262904	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	6810498	7563859	8119034	8727260	8298048	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	11229956	11949358	11501437	12304940	14203528	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	11508274	12195218	12023241	13107466	14281719	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	10745692	11320363	11321298	12245155	13432252	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	7877845	8419662	8512505	9222117	10199306	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	8714501	8780738	9272147	9957071	10828444	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	10053199	10592907	10687355	11621340	12693265	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	7921895	8236012	8510945	9267651	10050206	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	6215692	6852107	7191171	7869445	7777551	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	7119486	7737822	7838699	8444193	9374417	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	10502373	10845106	11203239	11520865	13499008	200	200	200	200	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1 Analy Batch No.: 458037

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/02/2021 21:46 Calibration End Date: 02/03/2021 00:57 Calibration ID: 53942

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
37Cl4-2,3,7,8-TCDD	13CT CDD	Ave	50182	207747	1146614	4808628	23096628	0.500	2.00	10.0	40.0	200

Curve Type Legend

Ave = Average ISTD

AveID = Average isotope dilution

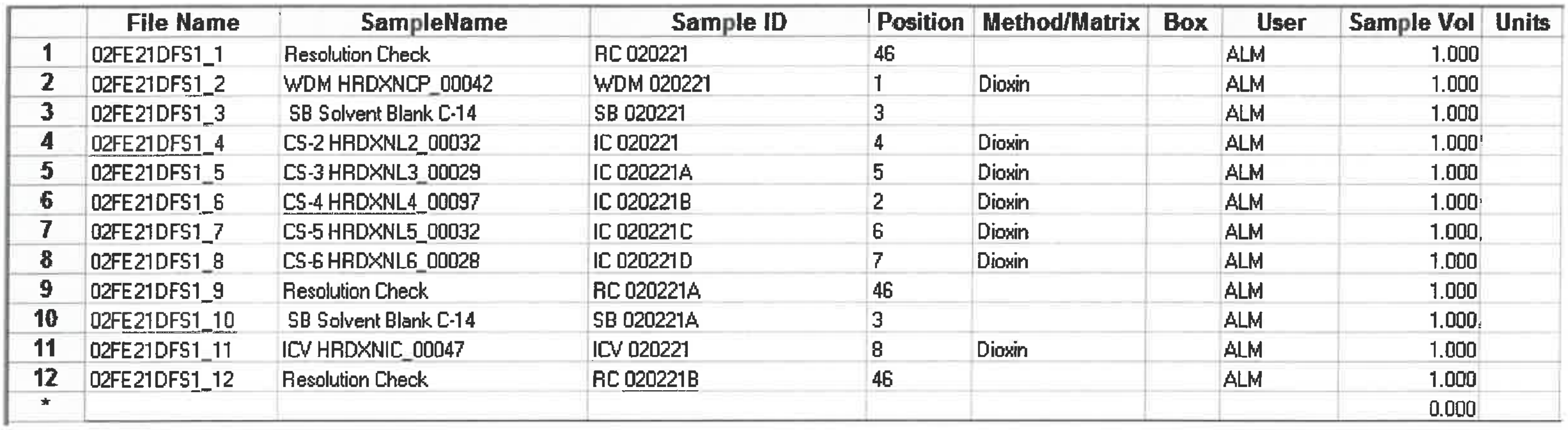

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	02FE21DFS1_1	Resolution Check	RC 020221	46			ALM	1.000	
2	02FE21DFS1_2	WDM HRDXNCP_00042	WDM 020221	1	Dioxin		ALM	1.000	
3	02FE21DFS1_3	SB Solvent Blank C-14	SB 020221	3			ALM	1.000	
4	02FE21DFS1_4	CS-2 HRDXNL2_00032	IC 020221	4	Dioxin		ALM	1.000	
5	02FE21DFS1_5	CS-3 HRDXNL3_00029	IC 020221A	5	Dioxin		ALM	1.000	
6	02FE21DFS1_6	CS-4 HRDXNL4_00097	IC 020221B	2	Dioxin		ALM	1.000	
7	02FE21DFS1_7	CS-5 HRDXNL5_00032	IC 020221C	6	Dioxin		ALM	1.000	
8	02FE21DFS1_8	CS-6 HRDXNL6_00028	IC 020221D	7	Dioxin		ALM	1.000	
9	02FE21DFS1_9	Resolution Check	RC 020221A	46			ALM	1.000	
10	02FE21DFS1_10	SB Solvent Blank C-14	SB 020221A	3			ALM	1.000	
11	02FE21DFS1_11	ICV HRDXNIC_00047	ICV 020221	8	Dioxin		ALM	1.000	
12	02FE21DFS1_12	Resolution Check	RC 020221B	46			ALM	1.000	
*								0.000	

Logfile ✓'d
2/3/21
KSS

Resolution Check Report (DFS SN: 3487)

Date:	02 Feb 2021 19:43
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11708 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11056 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11445 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11501 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11179 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11228 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10350 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11190 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11264 [5%height]

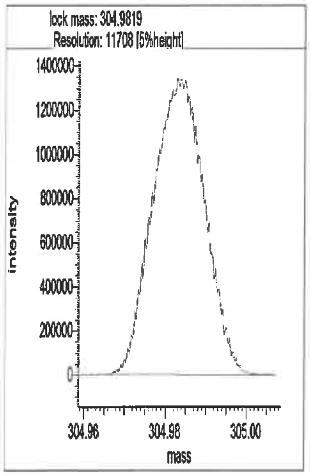

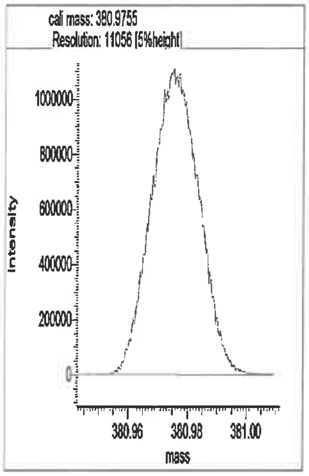

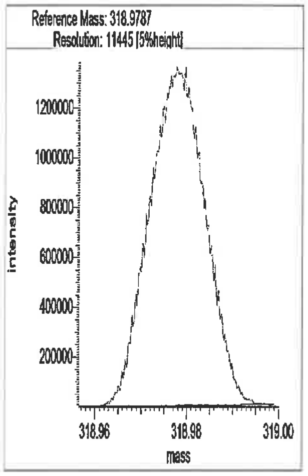

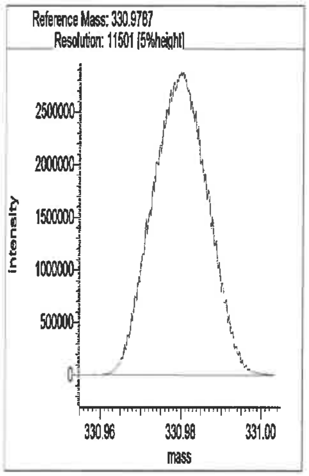

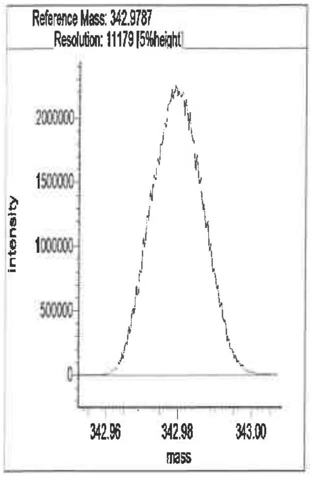

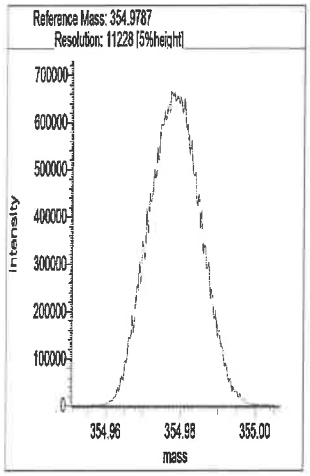

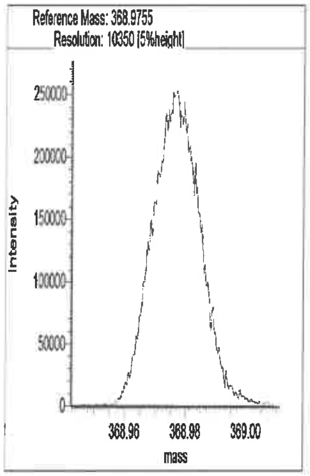

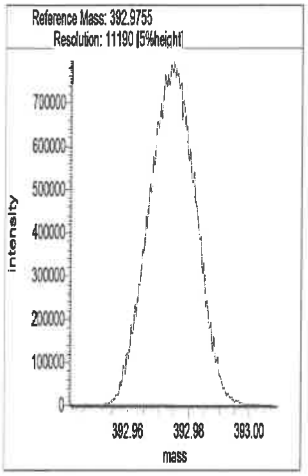

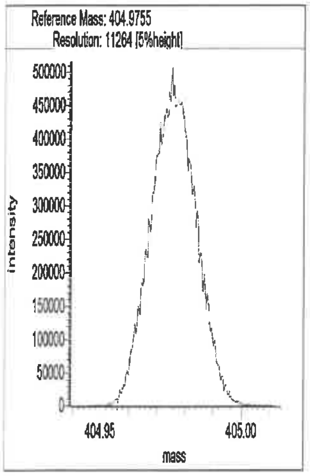

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11818 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11499 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11727 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11924 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10986 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11406 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11221 [5%height]

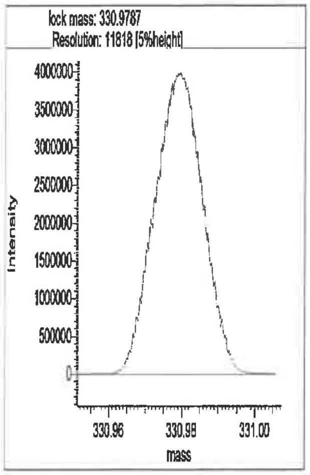

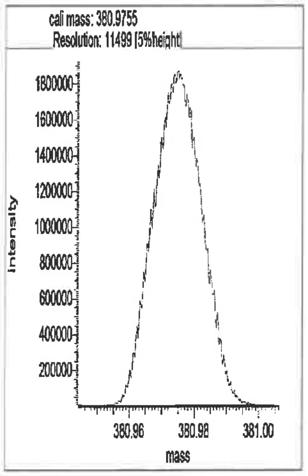

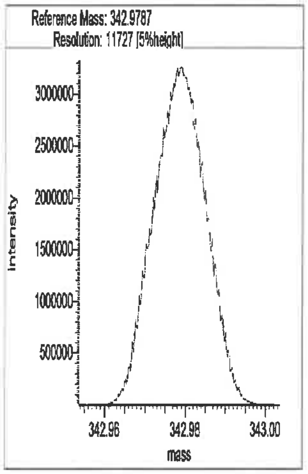

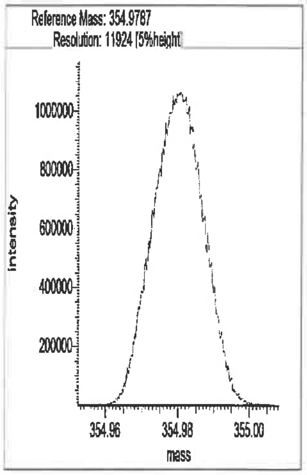

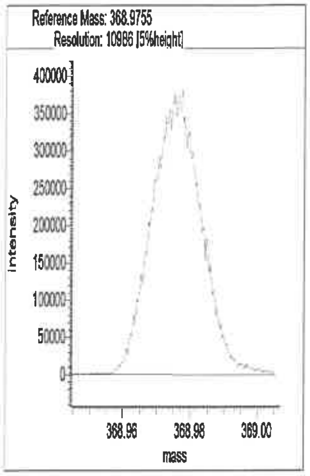

Reference Mass: 368.9755
Resolution: 10986 [5%height]

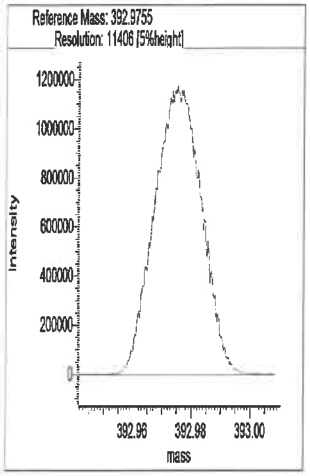

Reference Mass: 392.9755
Resolution: 11406 [5%height]

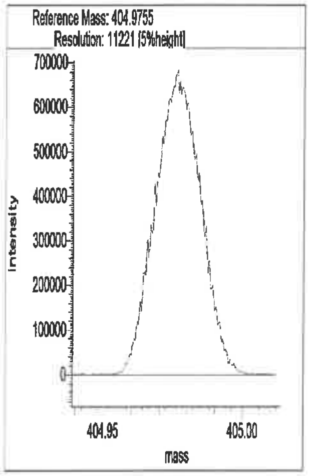

Reference Mass: 404.9755
Resolution: 11221 [5%height]

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11573 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11399 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11536 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11566 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11720 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11422 [5%height]

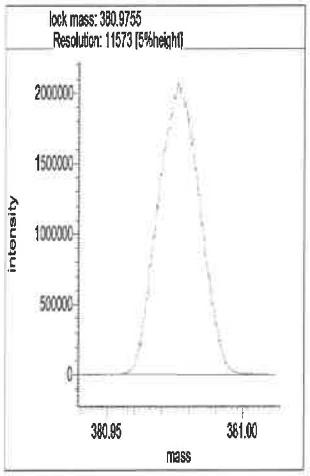

lock mass: 380.9755
Resolution: 11573 [5%height]

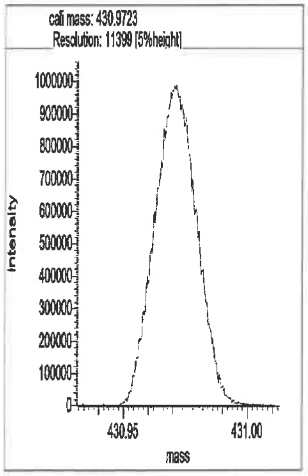

cali mass: 430.9723
Resolution: 11399 [5%height]

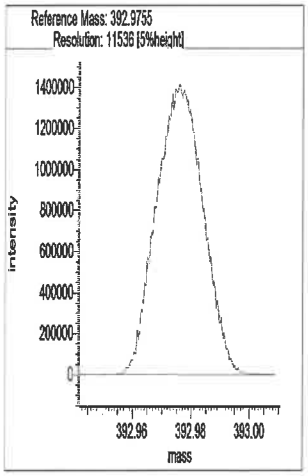

Reference Mass: 392.9755
Resolution: 11536 [5%height]

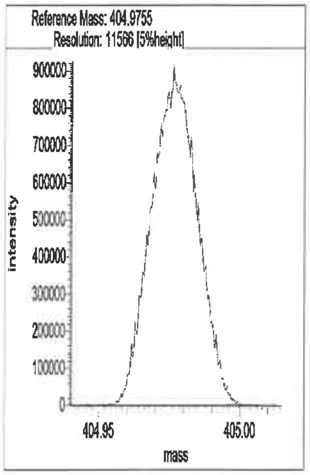

Reference Mass: 404.9755
Resolution: 11566 [5%height]

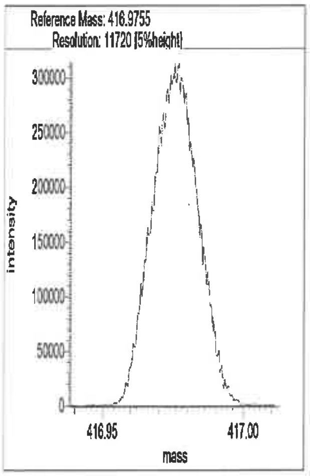

Reference Mass: 416.9755
Resolution: 11720 [5%height]

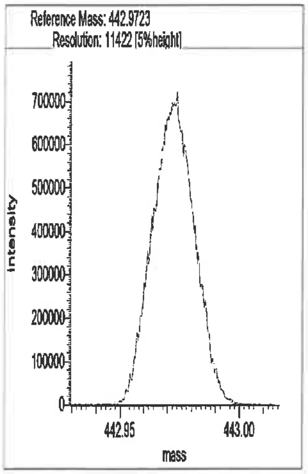

Reference Mass: 442.9723
Resolution: 11422 [5%height]

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11776 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11112 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11841 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11650 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11389 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11319 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11504 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11326 [5%height]

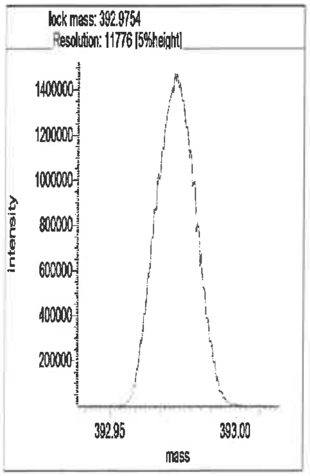

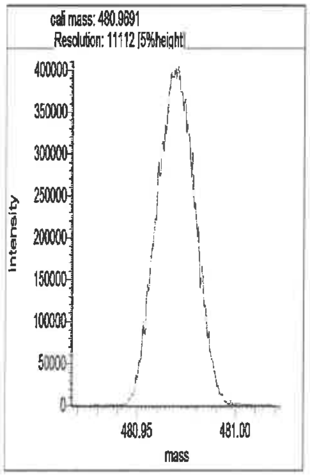

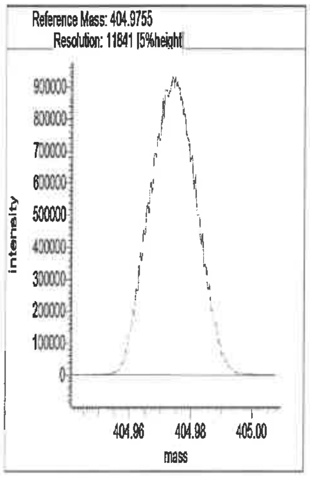

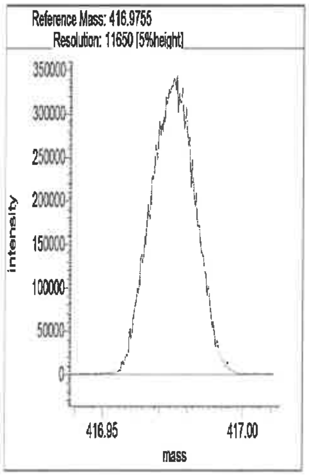

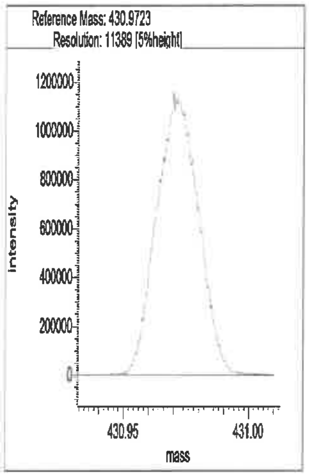

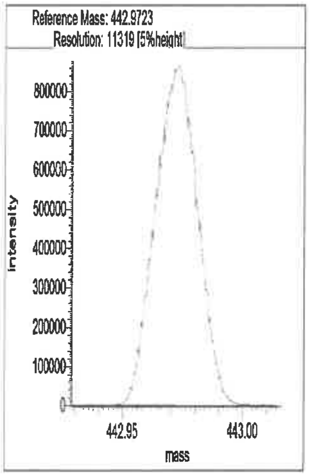

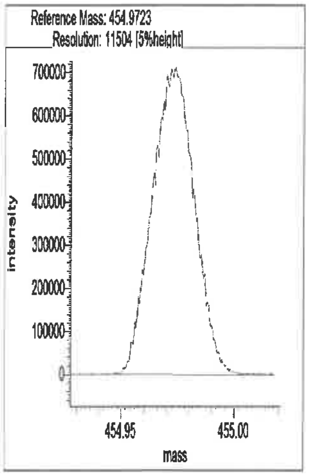

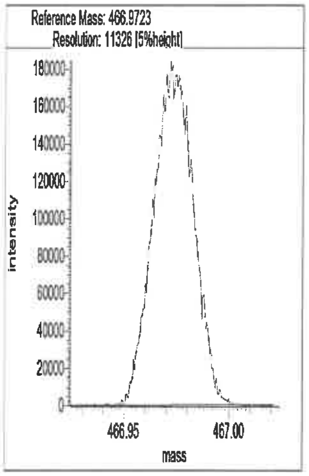

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12003 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11374 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11556 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11814 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11537 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11396 [5%height]

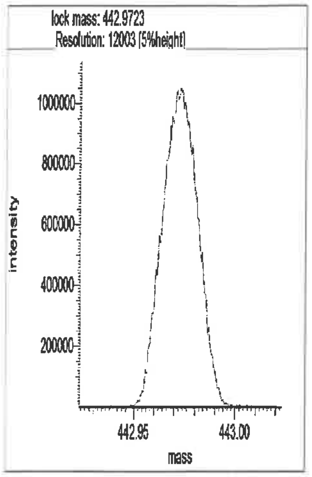
lock mass: 442.9723
Resolution: 12003 [5%height]
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600000
400000
200000
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443.00
mass

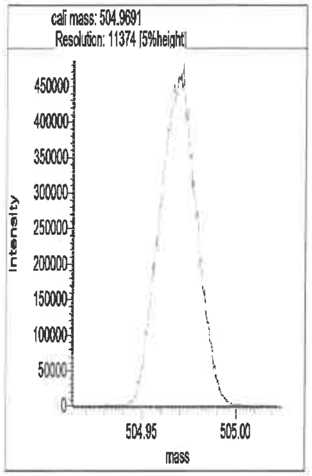
cali mass: 504.9691
Resolution: 11374 [5%height]
intensity
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350000
300000
250000
200000
150000
100000
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0
504.95
505.00
mass

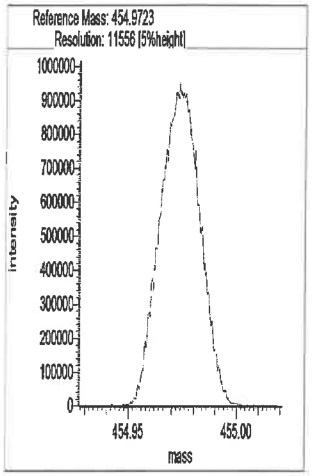
Reference Mass: 454.9723
Resolution: 11556 [5%height]
intensity
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600000
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0
454.95
455.00
mass

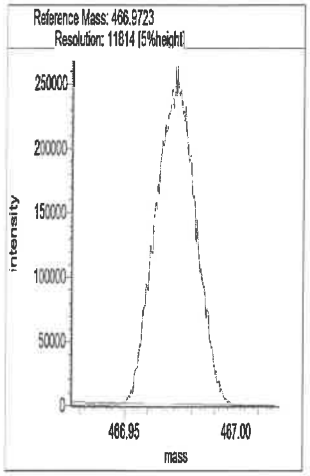
Reference Mass: 466.9723
Resolution: 11814 [5%height]
intensity
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50000
0
466.95
467.00
mass

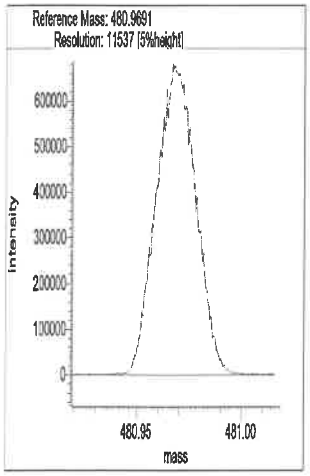
Reference Mass: 480.9691
Resolution: 11537 [5%height]
intensity
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500000
400000
300000
200000
100000
0
480.95
481.00
mass

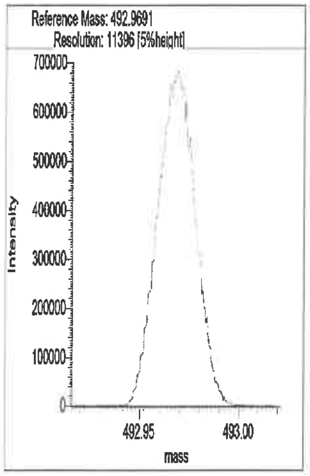
Reference Mass: 492.9691
Resolution: 11396 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date: 03 Feb 2021 01:45
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11788 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11117 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11801 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11672 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11590 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11419 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 9626 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11253 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11019 [5%height]

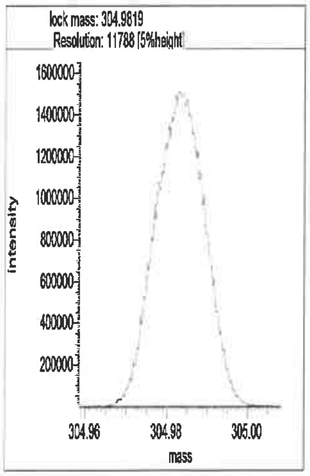

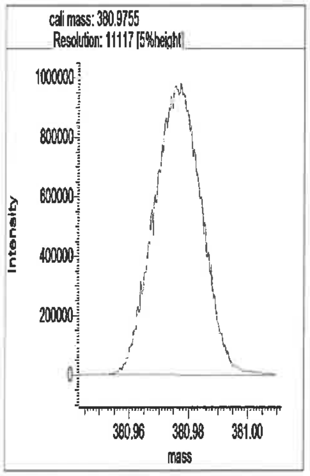

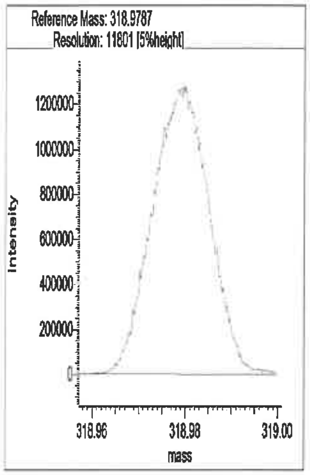

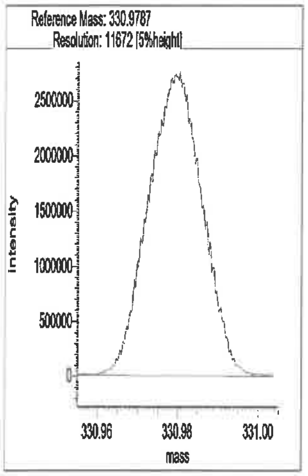

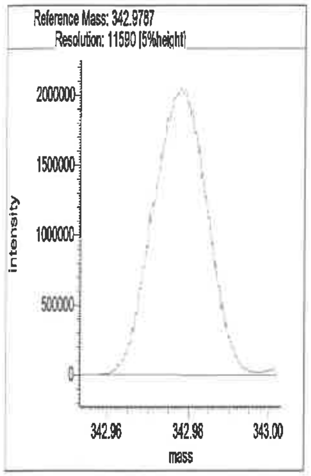

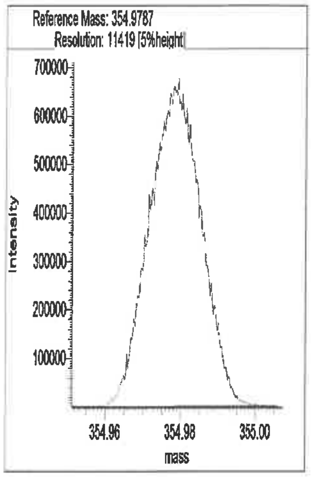

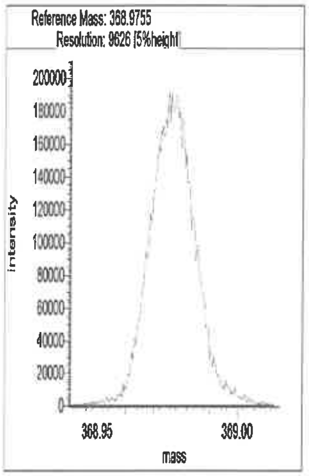

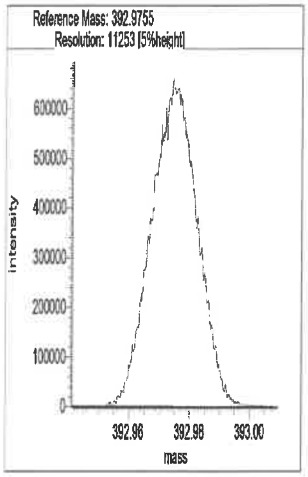

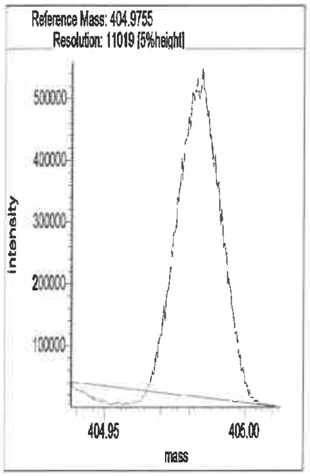

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11626 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11544 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12241 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11726 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10746 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11486 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11234 [5%height]

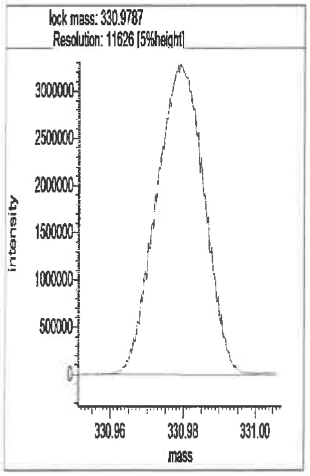

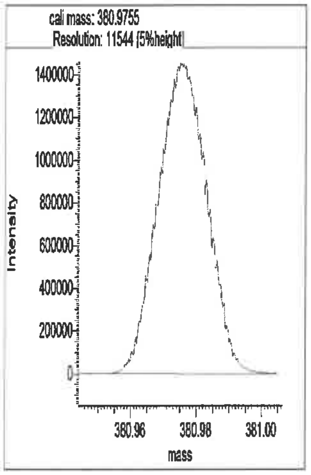

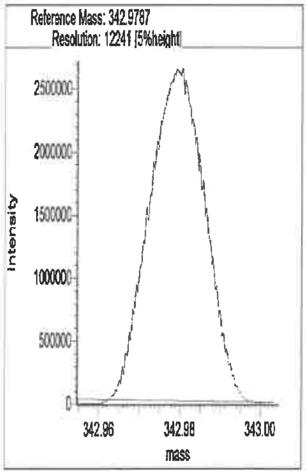

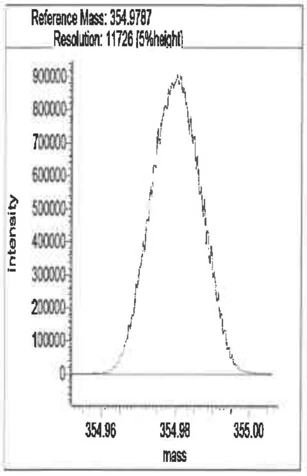

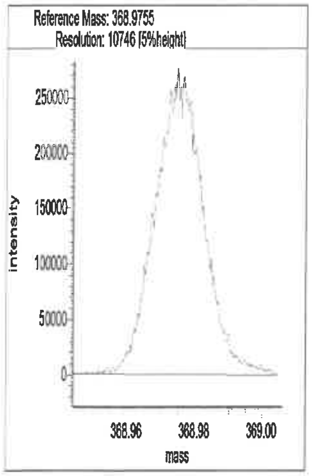

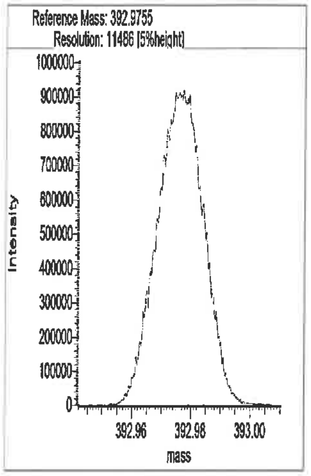

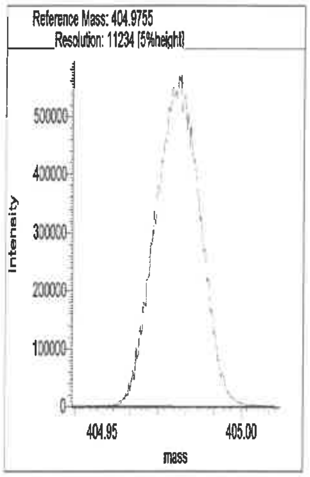

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11649 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11340 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11935 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12072 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11588 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11550 [5%height]

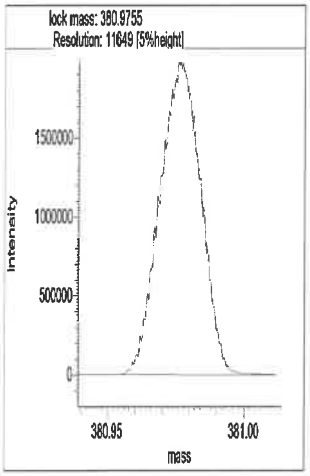

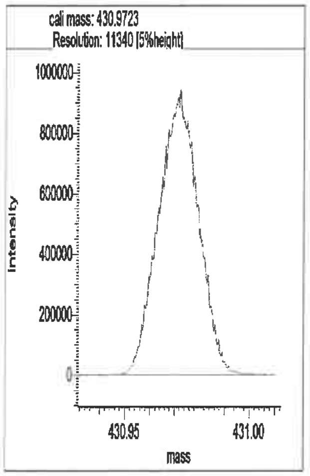

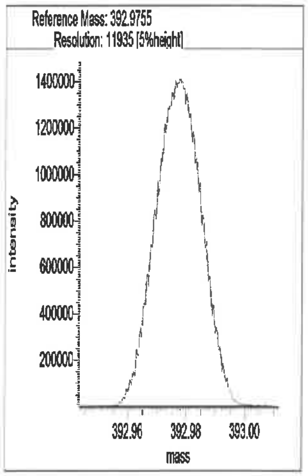

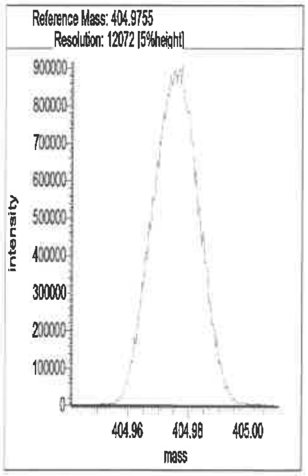

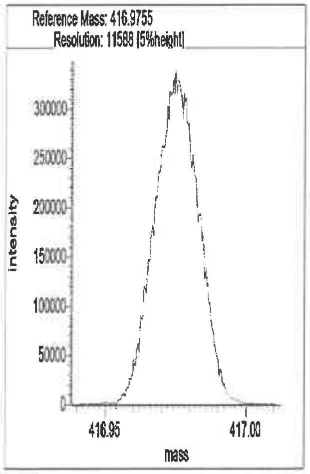

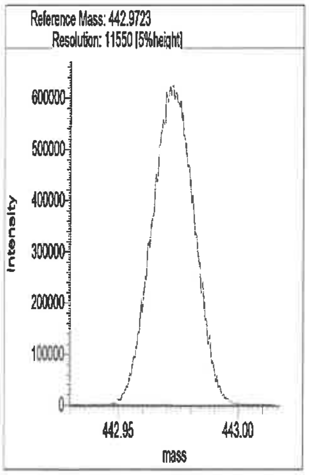

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11797 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11425 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11859 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11792 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11724 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11528 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11503 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11255 [5%height]

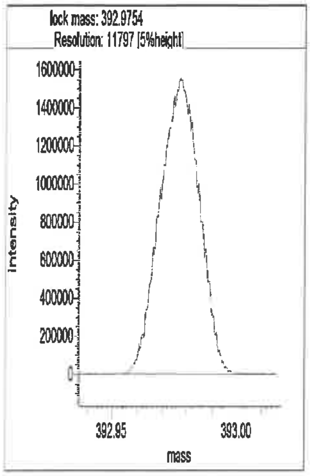

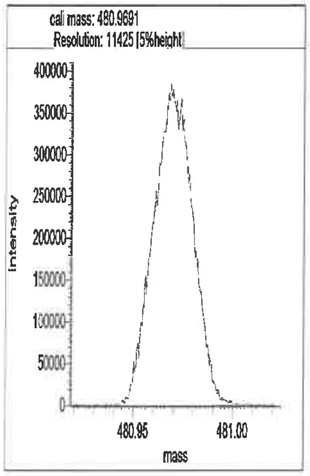

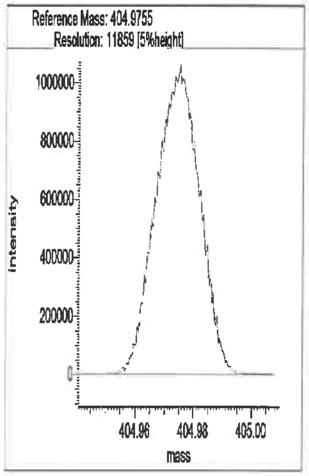

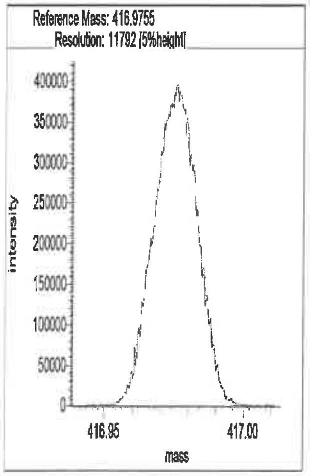

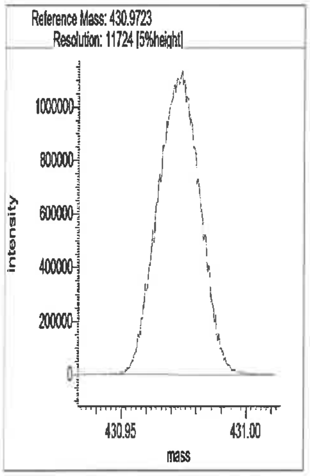

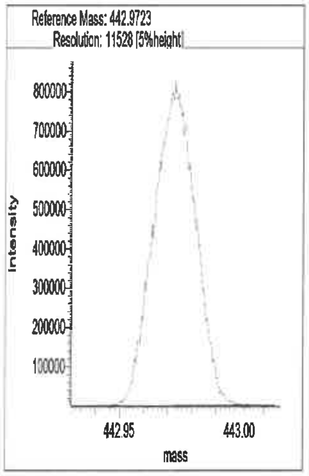

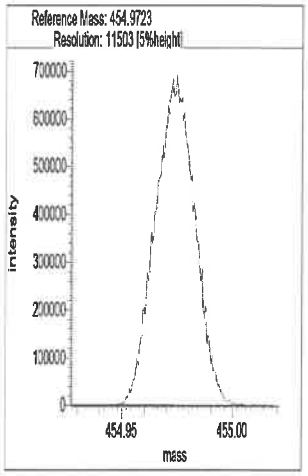

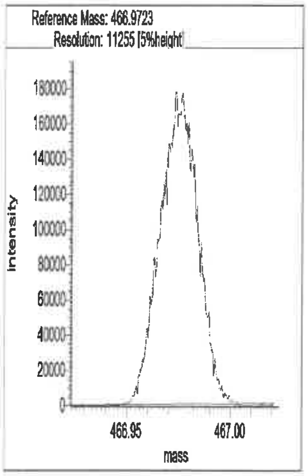

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11563 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11684 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12117 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11873 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11724 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11396 [5%height]

lock mass: 442.9723
Resolution: 11563 [5%height]

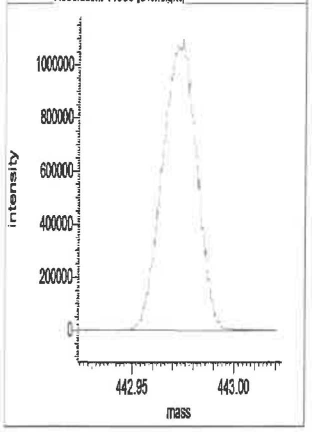

cali mass: 504.9691
Resolution: 11684 [5%height]

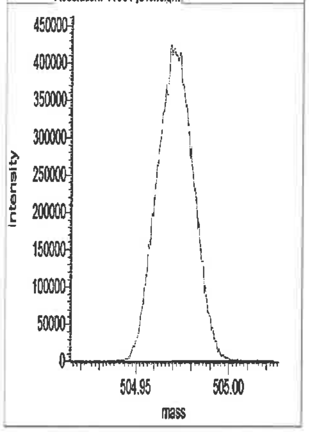

Reference Mass: 454.9723
Resolution: 12117 [5%height]

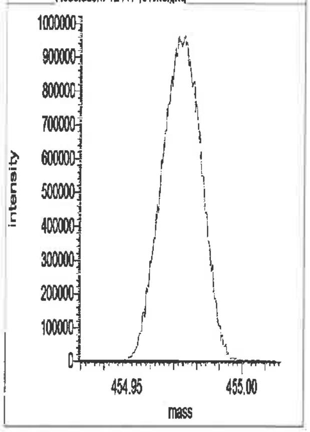

Reference Mass: 466.9723
Resolution: 11873 [5%height]

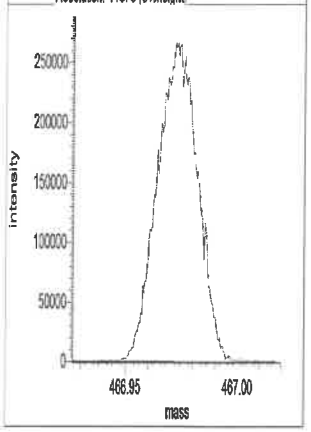

Reference Mass: 480.9691
Resolution: 11724 [5%height]

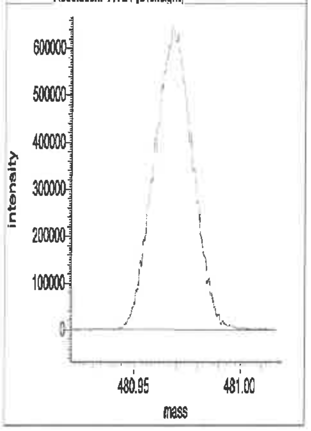

Reference Mass: 492.9691
Resolution: 11396 [5%height]

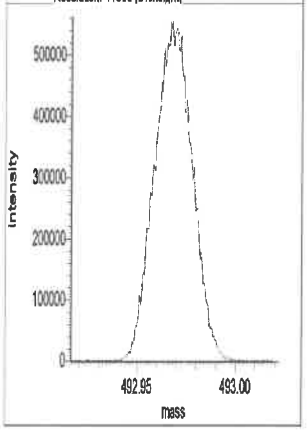

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date:	03 Feb 2021 03:41
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11687 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11065 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11532 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11560 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11536 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11338 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10413 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11293 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11060 [5%height]

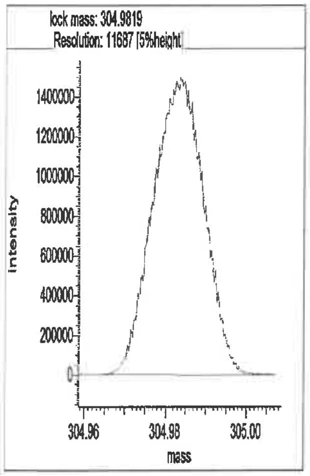

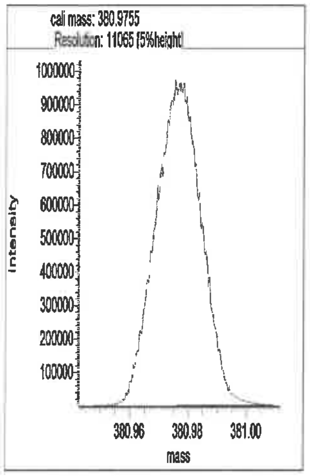

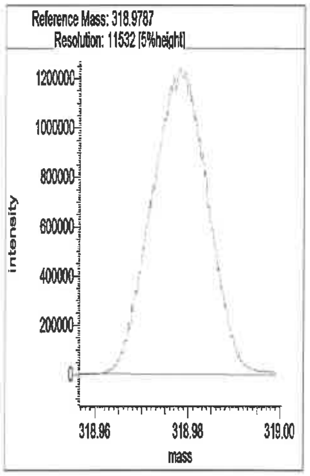

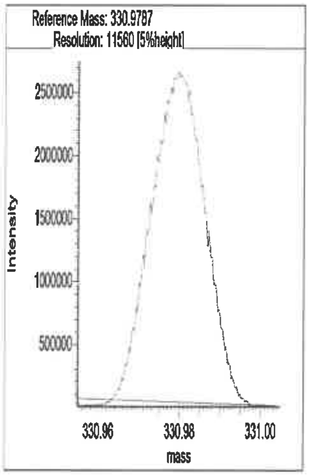

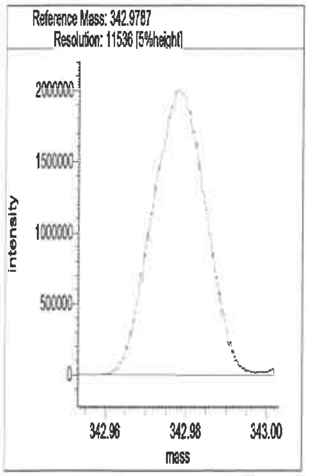

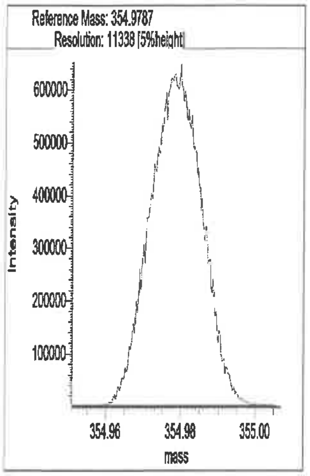

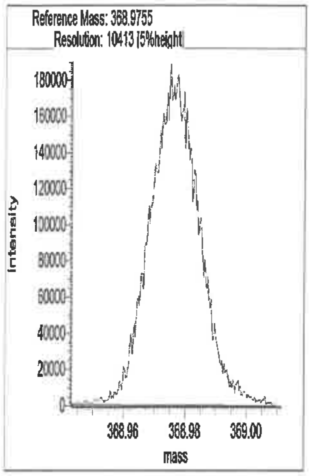

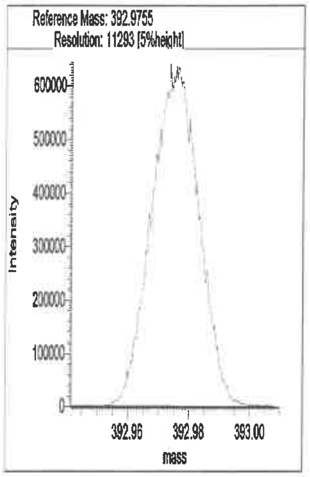

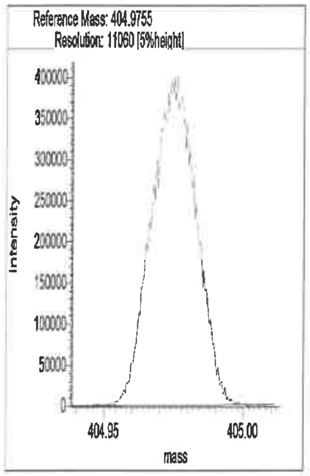

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11534 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11435 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11935 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11929 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10617 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11446 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11360 [5%height]

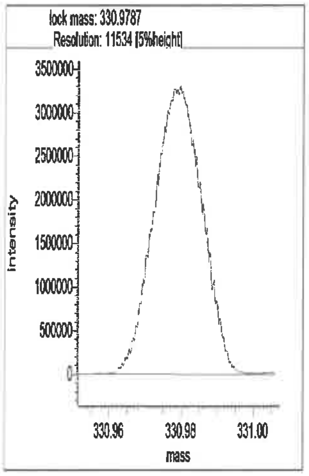

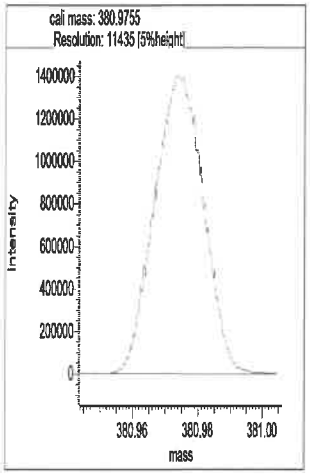

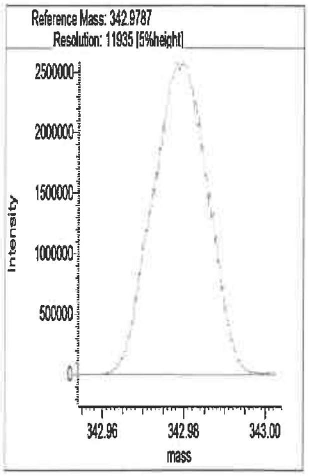

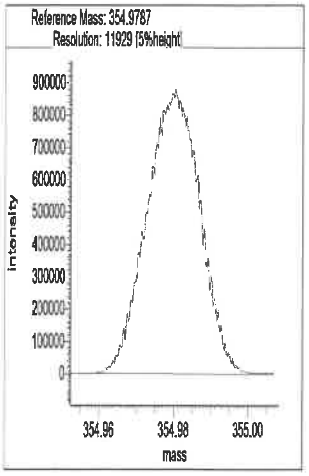

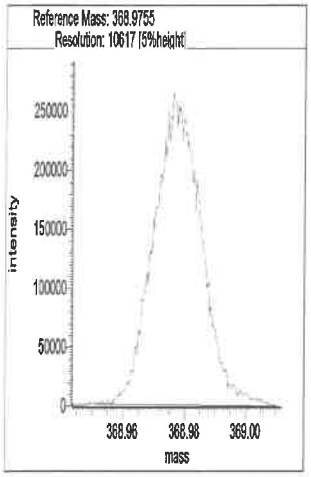

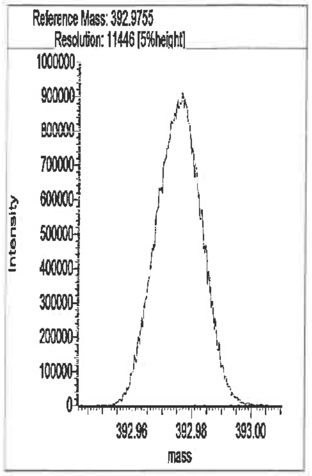

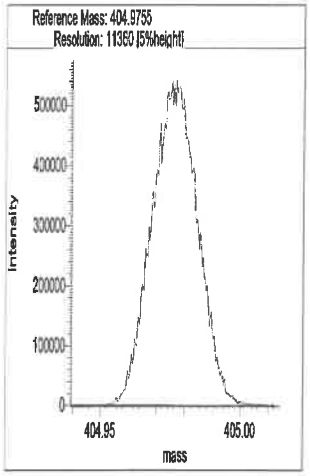

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11700 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11496 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11641 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11774 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11353 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11339 [5%height]

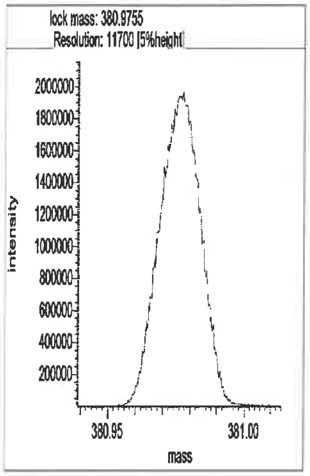

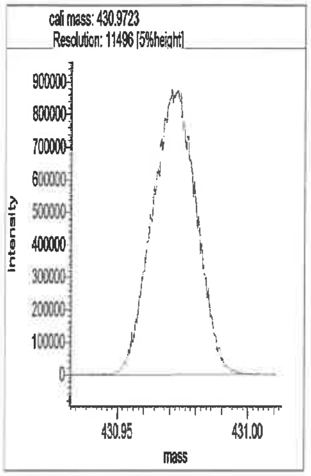

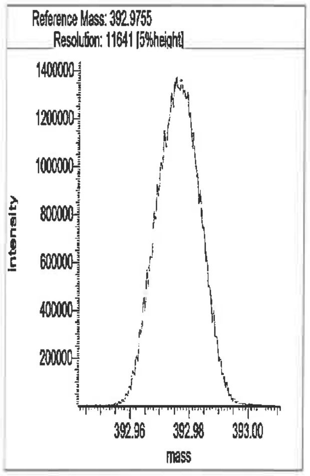

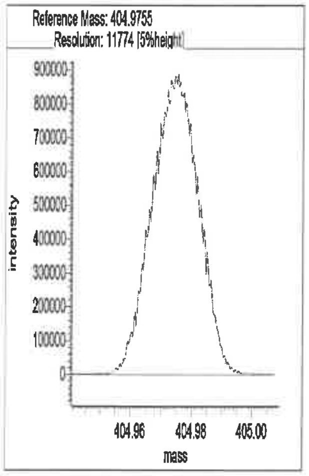

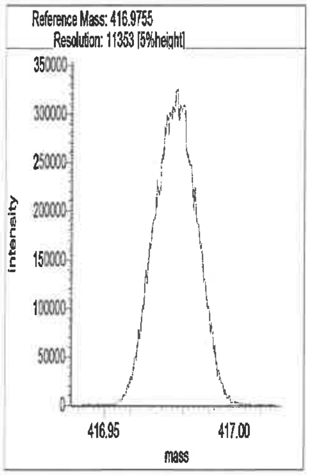

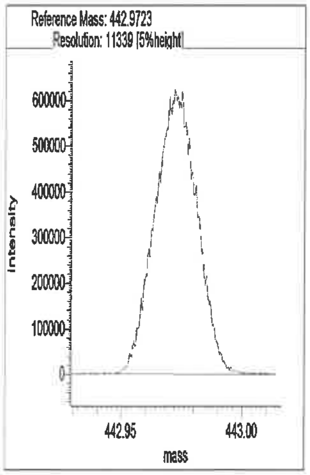

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12161 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11362 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11677 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12030 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11672 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11505 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11521 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11622 [5%height]

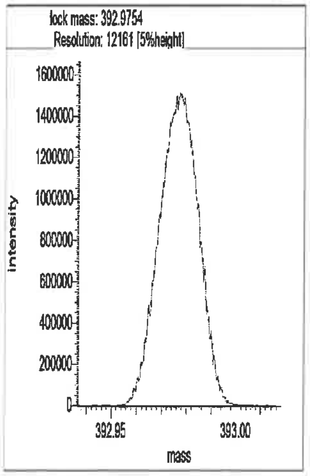

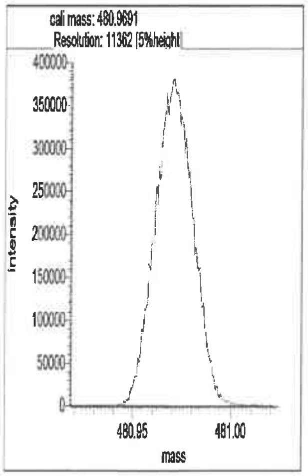

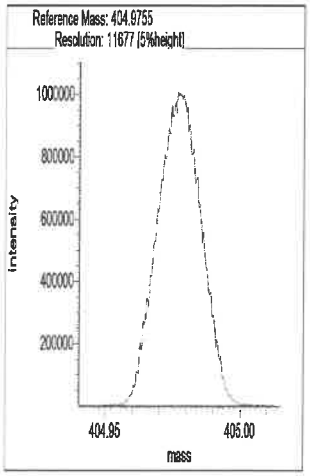

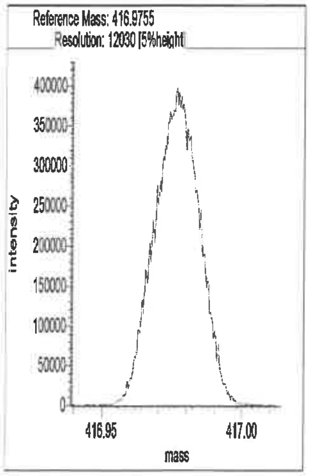

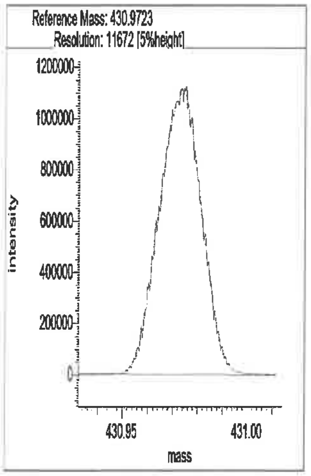

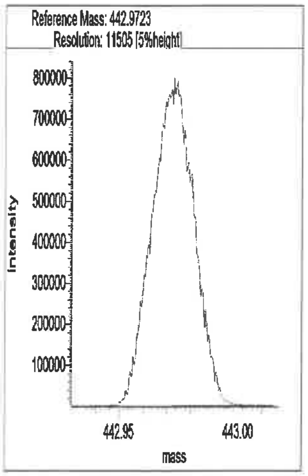

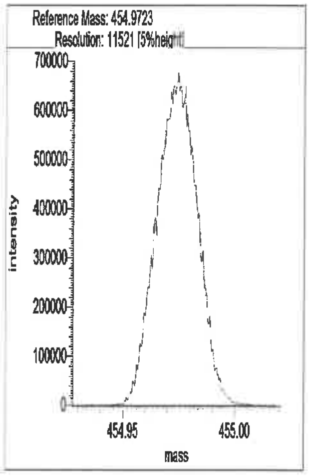

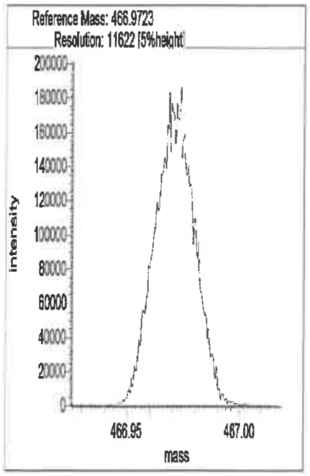

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12126 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11483 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11658 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11732 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11506 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11364 [5%height]

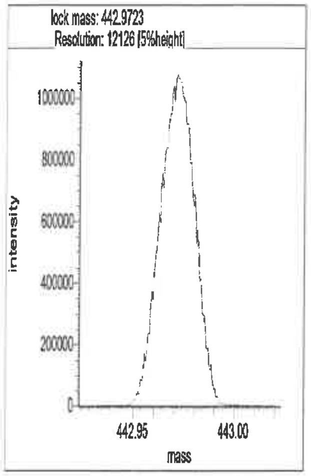
lock mass: 442.9723
Resolution: 12126 [5%height]
intensity
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800000
600000
400000
200000
0
442.95
443.00
mass

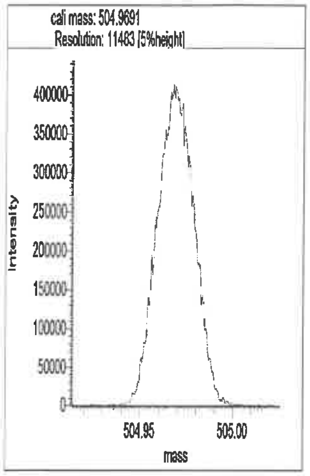
cali mass: 504.9691
Resolution: 11483 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

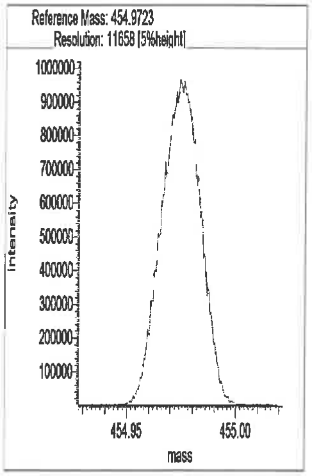
Reference Mass: 454.9723
Resolution: 11658 [5%height]
intensity
1000000
900000
800000
700000
600000
500000
400000
300000
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100000
454.95
455.00
mass

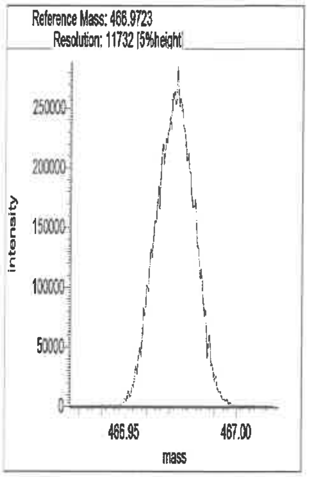
Reference Mass: 466.9723
Resolution: 11732 [5%height]
intensity
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200000
150000
100000
50000
0
466.95
467.00
mass

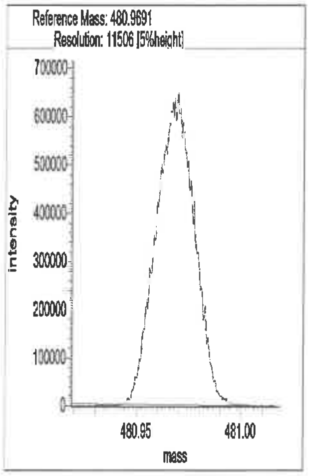
Reference Mass: 480.9691
Resolution: 11506 [5%height]
intensity
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600000
500000
400000
300000
200000
100000
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480.95
481.00
mass

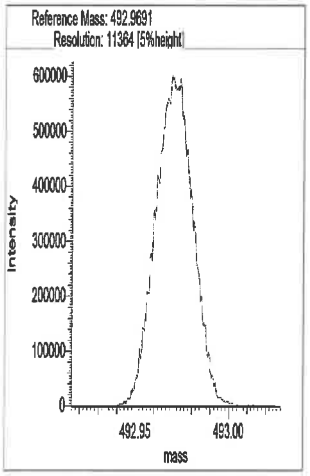
Reference Mass: 492.9691
Resolution: 11364 [5%height]
intensity
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 02-Feb-2021 21:46:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00032
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:45:20 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: messecara Date: 03-Feb-2021 01:49:43

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.880	9233704	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.926	14819484	0.82	1.5437	104.0	104.0	0.1607	0.1607	104	
2,3,7,8-TCDF	19.951	89381	0.80	1.1258	0.5357	0.5357	0.008892	0.008892	107	
S Total TCDF					0.5357	0.5357	0.008892	0.008892		
D 13C-2,3,7,8-TCDD	21.241	8990592	0.82	0.9687	100.5	100.5	0.1494	0.1494	101	
$ 37Cl4-2,3,7,8-TCDD	21.276	50182		1.0841	0.5013	0.5013	0.0111	0.0111	100	
2,3,7,8-TCDD	21.284	61096	0.84	1.1904	0.5709	0.5709	0.0153	0.0153	114	
S Total TCDD					0.5709	0.5709	0.0153	0.0153		
D 13C-1,2,3,7,8-PeCDF	26.872	12240891	1.58	1.3124	101.0	101.0	0.3330	0.3330	101	
1,2,3,7,8-PeCDF	26.906	381424	1.57	1.1163	2.791	2.791	0.0228	0.0228	112	
D 13C-2,3,4,7,8-PeCDF	28.370	12124391	1.60	1.3352	98.3	98.3	0.3273	0.3273	98.35	a
2,3,4,7,8-PeCDF	28.387	364482	1.55	1.0579	2.842	2.842	0.0258	0.0258	114	
S Total PeCDF					5.633	5.633	0.0243	0.0243		
D 13C-1,2,3,7,8-PeCDD	29.161	6810498	1.60	0.7716	95.6	95.6	0.1390	0.1390	95.59	
1,2,3,7,8-PeCDD	29.195	220808	1.60	1.1372	2.851	2.851	0.0230	0.0230	114	
S Total PeCDD					2.851	2.851	0.0230	0.0230		
D 13C-1,2,3,4,7,8-HxCDF	34.636	11229956	0.54	1.0931	102.7	102.7	0.3245	0.3245	103	a
1,2,3,4,7,8-HxCDF	34.661	368031	1.30	1.1831	2.770	2.770	0.0207	0.0207	111	
D 13C-1,2,3,6,7,8-HxCDF	34.812	11508274	0.54	1.1278	102.0	102.0	0.3145	0.3145	102	
1,2,3,6,7,8-HxCDF	34.829	399974	1.26	1.2484	2.784	2.784	0.0188	0.0188	111	
D 13C-2,3,4,6,7,8-HxCDF	35.663	10745692	0.54	1.0552	101.8	101.8	0.3362	0.3362	102	
2,3,4,6,7,8-HxCDF	35.679	373544	1.24	1.2750	2.726	2.726	0.0174	0.0174	109	
D 13C-1,2,3,7,8,9-HxCDF	36.580	10053199	0.54	0.9938	101.1	101.1	0.3569	0.3569	101	
1,2,3,7,8,9-HxCDF	36.597	361947	1.25	1.2953	2.780	2.780	0.0172	0.0172	111	
S Total HxCDF					11.1	11.1	0.0185	0.0185		
* 13C-1,2,3,7,8,9-HxCDD	36.378	10006670	1.26	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.881	7877845	1.26	0.7895	99.7	99.7	0.2131	0.2131	99.71	a
1,2,3,4,7,8-HxCDD	35.898	244677	1.28	1.0950	2.837	2.837	0.0244	0.0244	113	
D 13C-1,2,3,6,7,8-HxCDD	35.999	8714501	1.27	0.8495	102.5	102.5	0.1980	0.1980	103	
1,2,3,6,7,8-HxCDD	36.016	241380	1.28	1.0201	2.715	2.715	0.0246	0.0246	109	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.386	266901	1.31	1.1549	2.786	2.786	0.0224	0.0224	111	
S Total HxCDD					8.337	8.337	0.0238	0.0238		
D 13C-1,2,3,4,6,7,8-HpCDF	38.428	7921895	0.47	0.7854	100.8	100.8	0.2672	0.2672	101	
1,2,3,4,6,7,8-HpCDF	38.437	319021	1.06	1.4859	2.710	2.710	0.0222	0.0222	108	
D 13C-1,2,3,4,7,8,9-HpCDF	39.691	7119486	0.47	0.7230	98.4	98.4	0.2903	0.2903	98.41	a
1,2,3,4,7,8,9-HpCDF	39.699	278807	1.11	1.4048	2.788	2.788	0.0237	0.0237	112	
S Total HpCDF					5.498	5.498	0.0230	0.0230		
D 13C-1,2,3,4,6,7,8-HpCDD	39.387	6215692	1.08	0.6413	96.9	96.9	0.2353	0.2353	96.85	
1,2,3,4,6,7,8-HpCDD	39.396	203035	1.03	1.1489	2.843	2.843	0.0170	0.0170	114	
S Total HpCDD					2.843	2.843	0.0170	0.0170		
D 13C-OCDD	41.841	10502373	0.92	0.5141	204.2	204.2	0.1694	0.1694	102	
OCDF	41.933	422591	0.91	1.5776	5.101	5.101	0.0281	0.0281	102	
OCDD	41.849	330969	0.92	1.1706	5.384	5.384	0.0213	0.0213	108	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL2_00032 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	02-Feb-2021 21:46:00	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00032				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	03-Feb-2021 14:45:20	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1619				
First Level Reviewer: messecara		Date:	03-Feb-2021 01:49:43		

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.880	20.870	1		4129701	643617	572	1430	1125		
333.9338	20.871	20.870	0		5104003	774091	249	622	3109	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.926	19.910	1	0.954	6671025	1041002	834	2085	1248		
317.9389	19.917	19.910	0	0.954	8148459	1306484	573	1432	2280	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.951	19.937	1	1.001	39856	6676	21	52	318		
305.8987	19.943	19.937	0	1.001	49525	8339	73	182	114	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.241	21.233	0	1.017	4052019	593866	572	1430	1038		
333.9338	21.241	21.233	0	1.017	4938573	726972	249	622	2920	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.276	21.260	1	1.019	50182	7315	68	170	108		
2,3,7,8-TCDD											
319.8965	21.284	21.262	1	1.002	27827	3903	80	200	49		
321.8936	21.284	21.262	1	1.002	33269	4959	16	40	310	0.84(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.872	26.859	1	1.287	7502772	1296121	1527	3817	849		
353.8970	26.880	26.859	1	1.287	4738119	810291	951	2377	852	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.906	26.886	1	1.001	233115	40157	68	170	591		
341.8567	26.906	26.886	1	1.001	148309	26110	146	365	179	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	28.370	28.348	1	1.359	7461071	1204887	1527	3817	789		a
353.8970	28.370	28.348	1	1.359	4663320	754620	951	2377	794	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.387	28.373	1	1.001	221334	36245	68	170	533		
341.8567	28.396	28.373	1	1.001	143148	23794	146	365	163	1.55(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.161	29.144	1	1.397	4186998	646972	332	830	1949		
369.8919	29.161	29.144	1	1.397	2623500	393910	276	690	1427	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.195	29.174	1	1.001	135998	20984	83	207	253		
357.8516	29.186	29.174	1	1.001	84810	13079	26	65	503	1.60(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											a
383.8639	34.636	34.620	1	0.952	3935716	873758	1272	3180	687		a
385.8610	34.636	34.620	1	0.952	7294240	1579956	2494	6235	634	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.661	34.638	1	1.001	207869	48117	129	322	373		
375.8178	34.652	34.638	1	1.000	160162	36185	111	277	326	1.30(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.812	34.792	1	0.957	4035652	900120	1272	3180	708		
385.8610	34.812	34.792	1	0.957	7472622	1655036	2494	6235	664	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.829	34.808	1	1.000	222657	48933	129	322	379		
375.8178	34.821	34.808	1	1.000	177317	38241	111	277	345	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.663	35.644	1	0.980	3783425	954885	1272	3180	751		
385.8610	35.663	35.644	1	0.980	6962267	1751003	2494	6235	702	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.679	35.662	1	1.000	207136	52082	129	322	404		
375.8178	35.679	35.662	1	1.000	166408	42000	111	277	378	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.580	36.560	1	1.006	3524168	961251	1272	3180	756		
385.8610	36.580	36.560	1	1.006	6529031	1736932	2494	6235	696	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.597	36.576	1	1.000	201005	52854	129	322	410		
375.8178	36.588	36.576	1	1.000	160942	43908	111	277	396	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.378	36.359	1		5583959	1474028	993	2482	1484		
403.8529	36.378	36.359	1		4422711	1180076	793	1982	1488	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	35.881	35.864	1	0.986	4398856	1169336	993	2482	1178		a
403.8529	35.881	35.864	1	0.986	3478989	924230	793	1982	1165	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.898	35.879	1	1.000	137230	36583	133	332	275		
391.8127	35.898	35.879	1	1.000	107447	28835	91	227	317	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.999	35.985	1	0.990	4879270	1259800	993	2482	1269		
403.8529	35.999	35.985	1	0.990	3835231	973468	793	1982	1228	1.27(1.05-1.43)	

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.016	35.999	1	1.000	135340	32901	133	332	247		
391.8127	36.016	35.999	1	1.000	106040	26015	91	227	286	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.386	36.373	1	1.014	151165	38489	133	332	289		
391.8127	36.386	36.373	1	1.014	115736	30194	91	227	332	1.31(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.428	38.412	1	1.056	2518016	821622	874	2185	940		
419.8220	38.428	38.412	1	1.056	5403879	1735994	1354	3385	1282	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.437	38.422	1	1.000	163825	52735	233	582	226		
409.7788	38.437	38.422	1	1.000	155196	50970	105	262	485	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8250	39.691	39.676	1	1.091	2285054	822502	874	2185	941		a
419.8220	39.691	39.676	1	1.091	4834432	1717028	1354	3385	1268	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.699	39.686	1	1.000	146362	51982	233	582	223		
409.7788	39.699	39.686	1	1.000	132445	48215	105	262	459	1.11(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.387	39.370	1	1.083	3223474	1113902	866	2165	1286		
437.8140	39.387	39.370	1	1.083	2992218	1031968	736	1840	1402	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.396	39.381	1	1.000	103196	36715	106	265	346		
425.7737	39.396	39.381	1	1.000	99839	35291	62	155	569	1.03(0.88-1.20)	
13C-OCDD											
469.7780	41.841	41.826	1	1.150	5036997	1688196	517	1292	3265		
471.7750	41.841	41.826	1	1.150	5465376	1812892	408	1020	4443	0.92(0.76-1.02)	
OCDF											
441.7428	41.933	41.921	1	1.002	201713	69500	138	345	504		
443.7399	41.933	41.921	1	1.002	220878	73596	172	430	428	0.91(0.76-1.02)	
OCDD											
457.7377	41.849	41.835	1	1.000	158756	54343	83	207	655		
459.7348	41.849	41.835	1	1.000	172213	56611	92	230	615	0.92(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL2_00032 Amount Added: 1.00 Units: mL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d				
Injection Date:	02-Feb-2021 21:46:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Not Detected

Expected RT: 28.35

Processing Integration Results

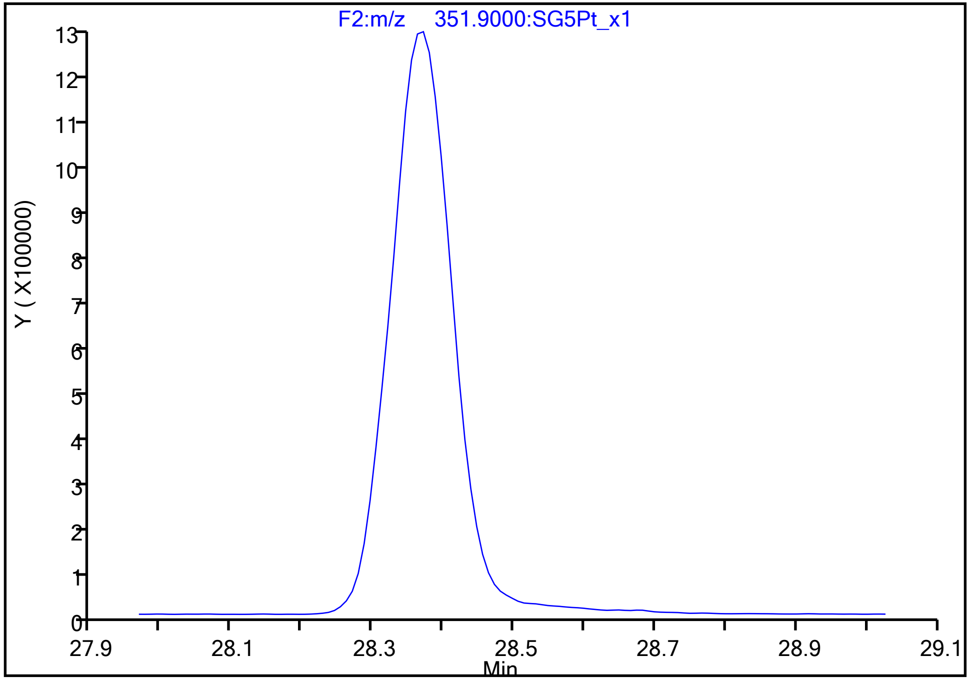

RT: 28.37

Area: 7461071

Amount: 98.345330

Amount Units: pg/ul

Manual Integration Results

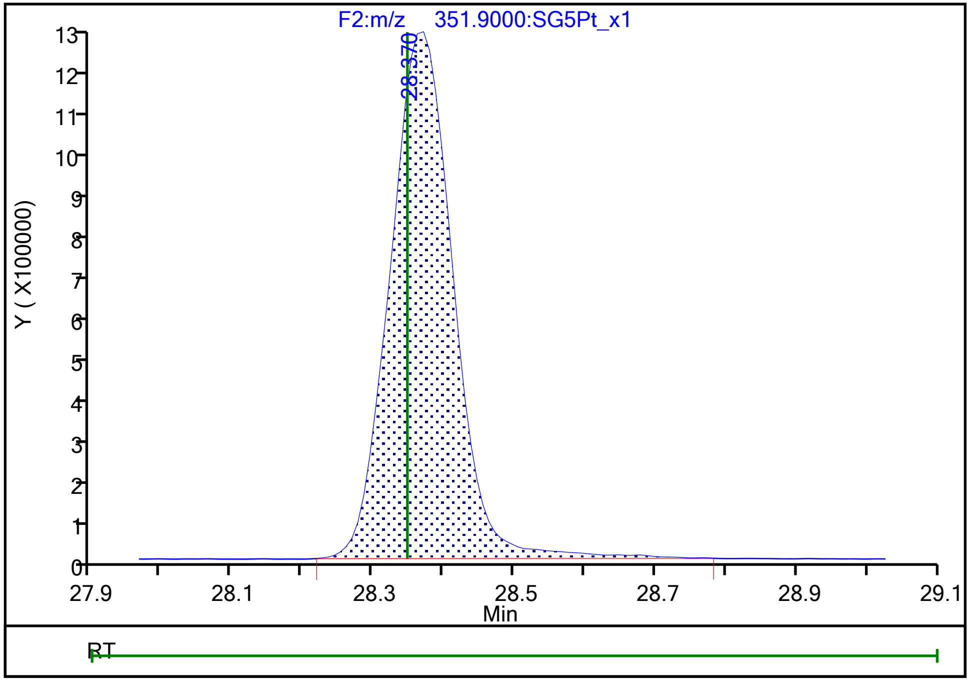

Reviewer: messecara, 03-Feb-2021 01:54:43

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 03-Feb-2021 14:45:30

Chrom Revision: 2.3 18-Dec-2020 13:34:10
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d				
Injection Date:	02-Feb-2021 21:46:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Not Detected
Expected RT: 34.62

Processing Integration Results

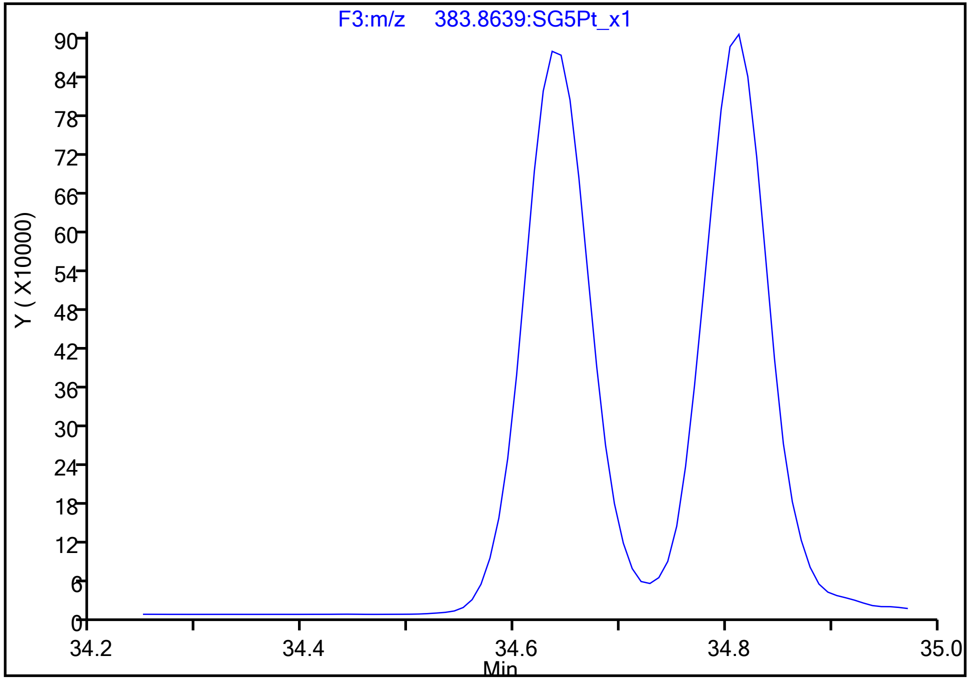

RT:	34.64
Area:	3935716
Amount:	102.6619
Amount Units:	pg/ul

Manual Integration Results

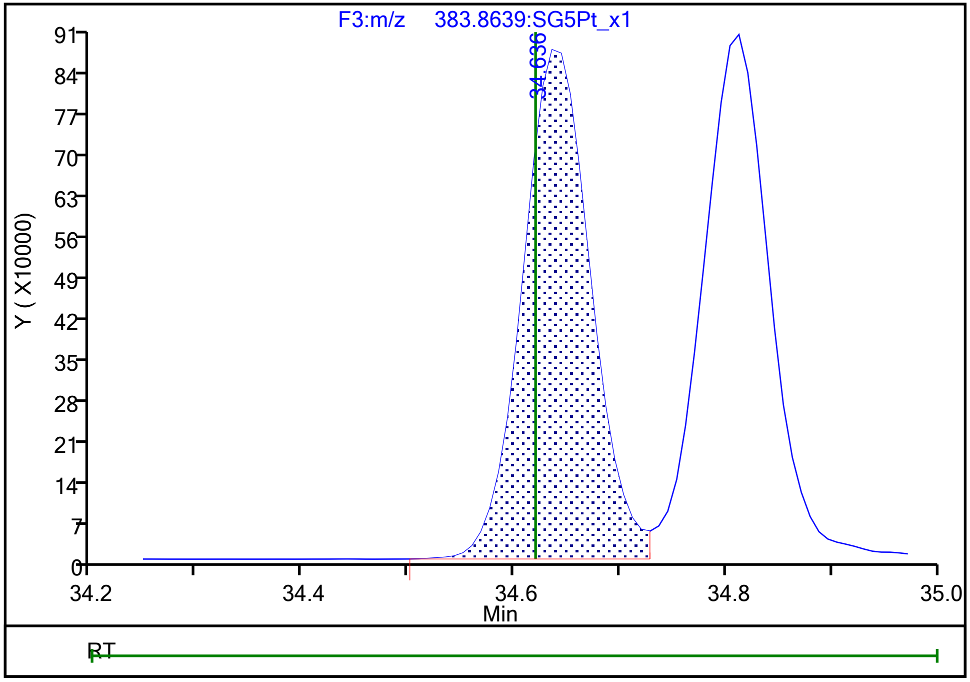

Reviewer: messecara, 03-Feb-2021 01:54:51

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d				
Injection Date:	02-Feb-2021 21:46:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected

Expected RT: 35.86

Processing Integration Results

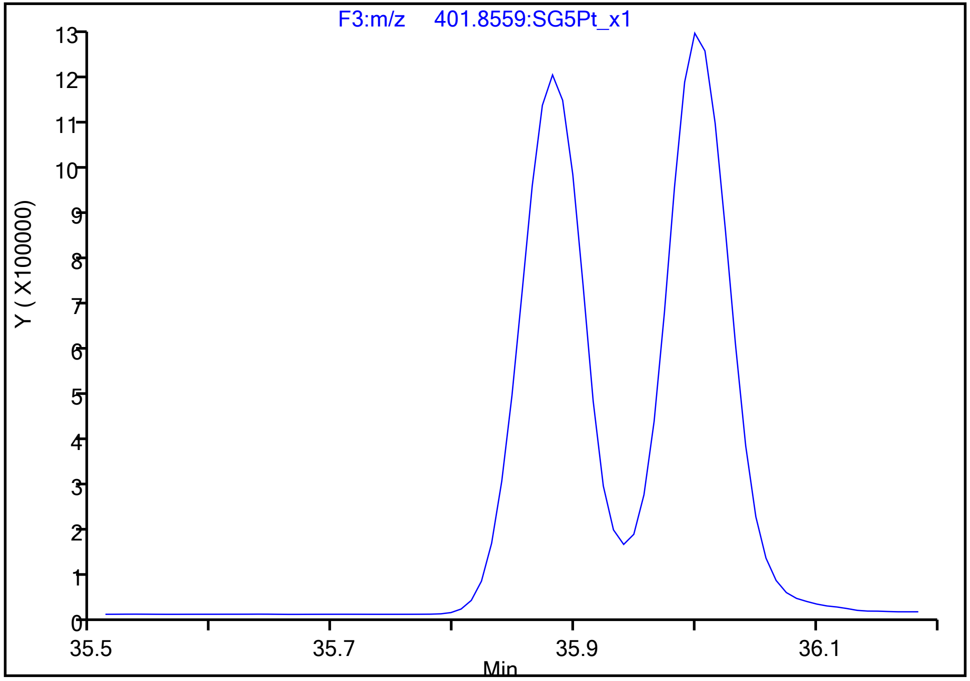

RT: 35.88

Area: 4398856

Amount: 99.713028

Amount Units: pg/ul

Manual Integration Results

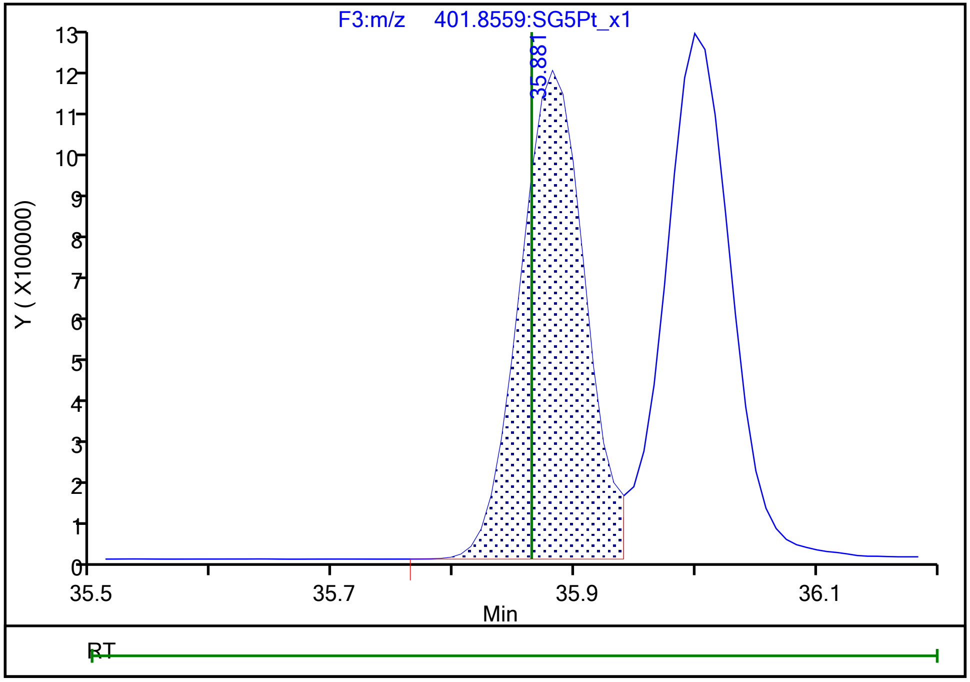

Reviewer: messecara, 03-Feb-2021 01:55:01

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d				
Injection Date:	02-Feb-2021 21:46:00	Instrument ID:	DFS 1		
Lims ID:	IC				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Not Detected

Expected RT: 39.68

Processing Integration Results

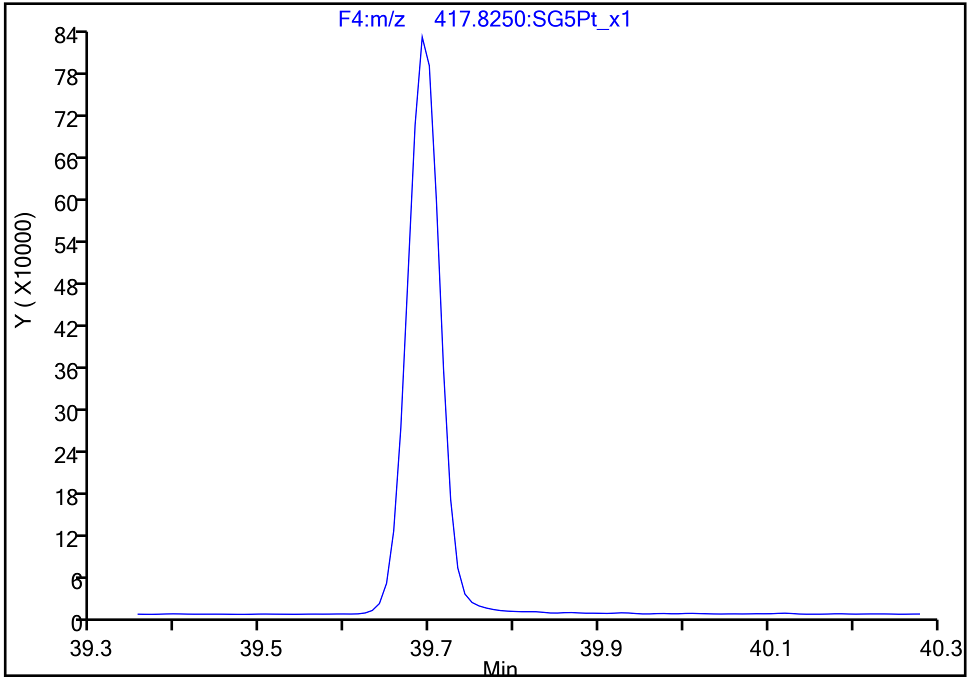

RT:	39.69
Area:	2285054
Amount:	98.411583
Amount Units:	pg/ul

Manual Integration Results

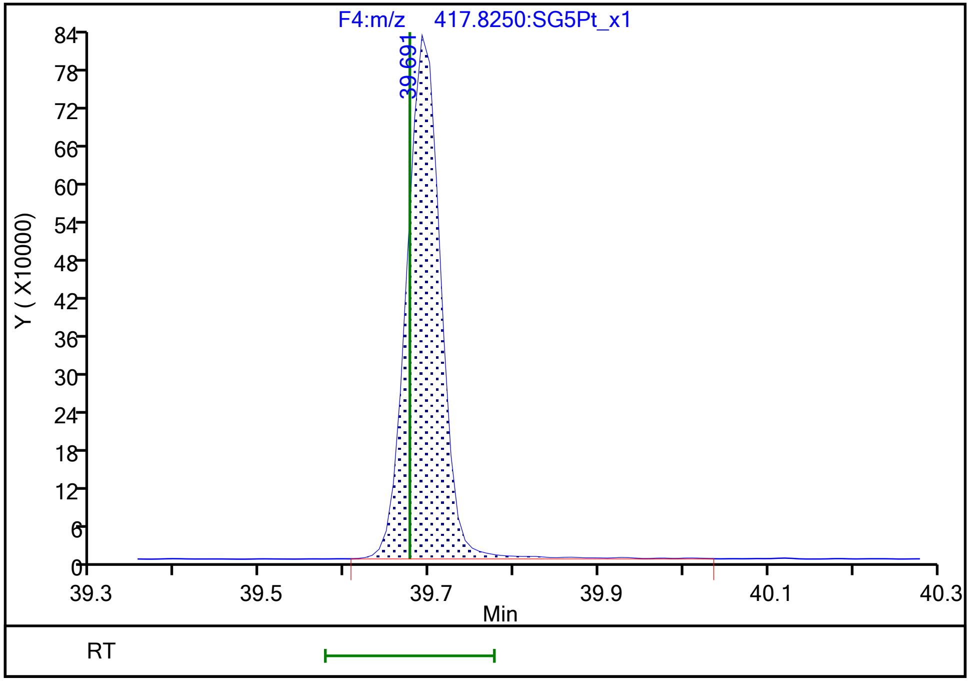

Reviewer: messecara, 03-Feb-2021 01:55:10

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Injection Date: 02-Feb-2021 21:46:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

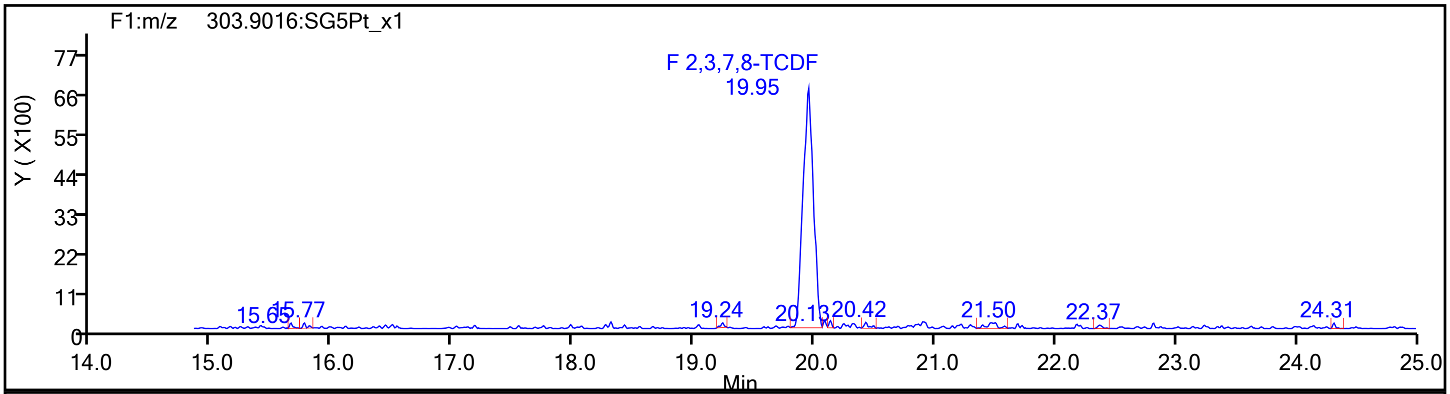

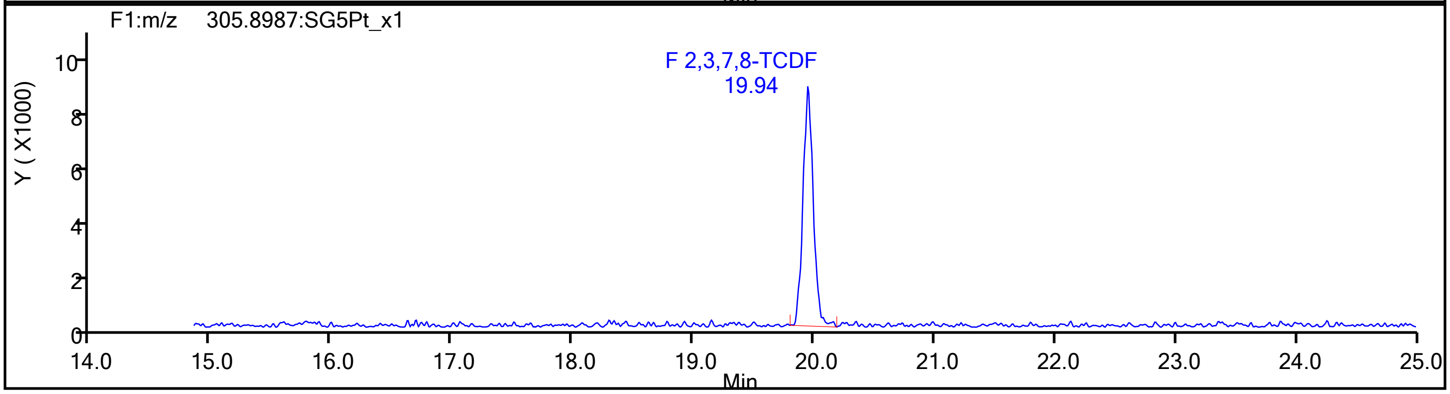

TCDF Standards

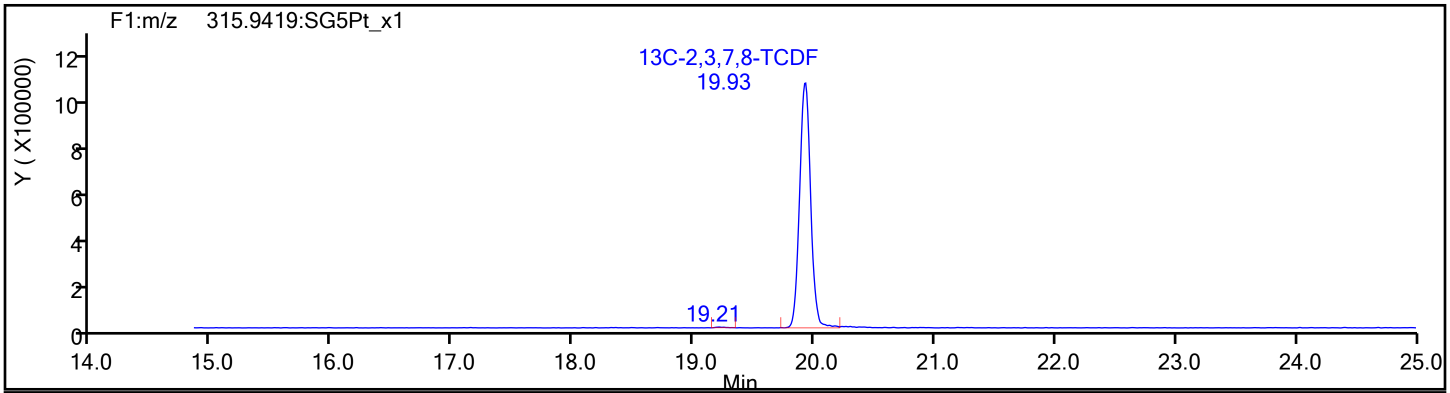

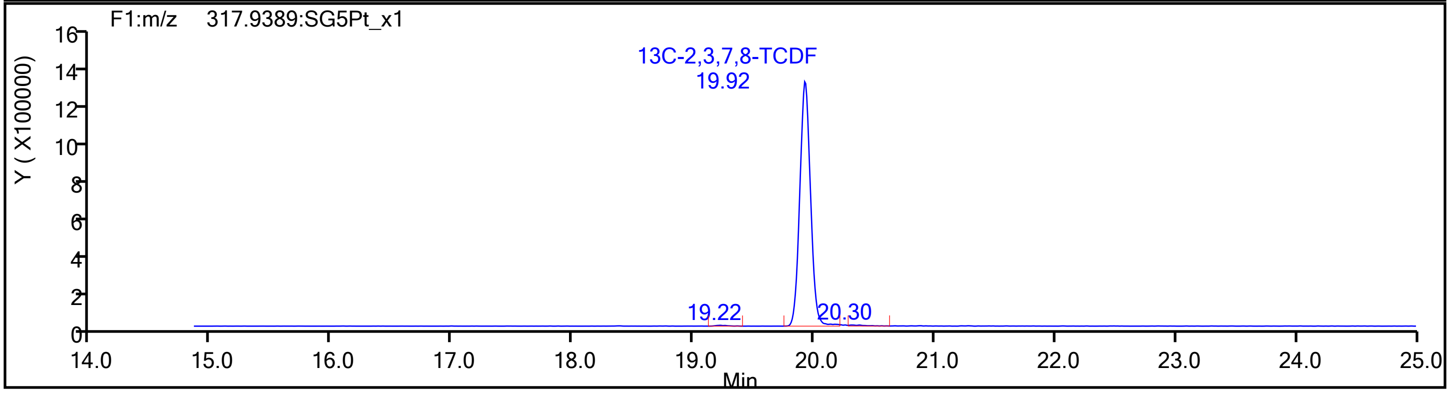

Report Date: 03-Feb-2021 14:45:30　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d
Injection Date: 02-Feb-2021 21:46:00　Injection Vol: 2.0 ul
Instrument ID: DFS 1　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037　Sample Line#: 3
Column Type: DB-5　Column Dia: 0.32 mm

TCDF

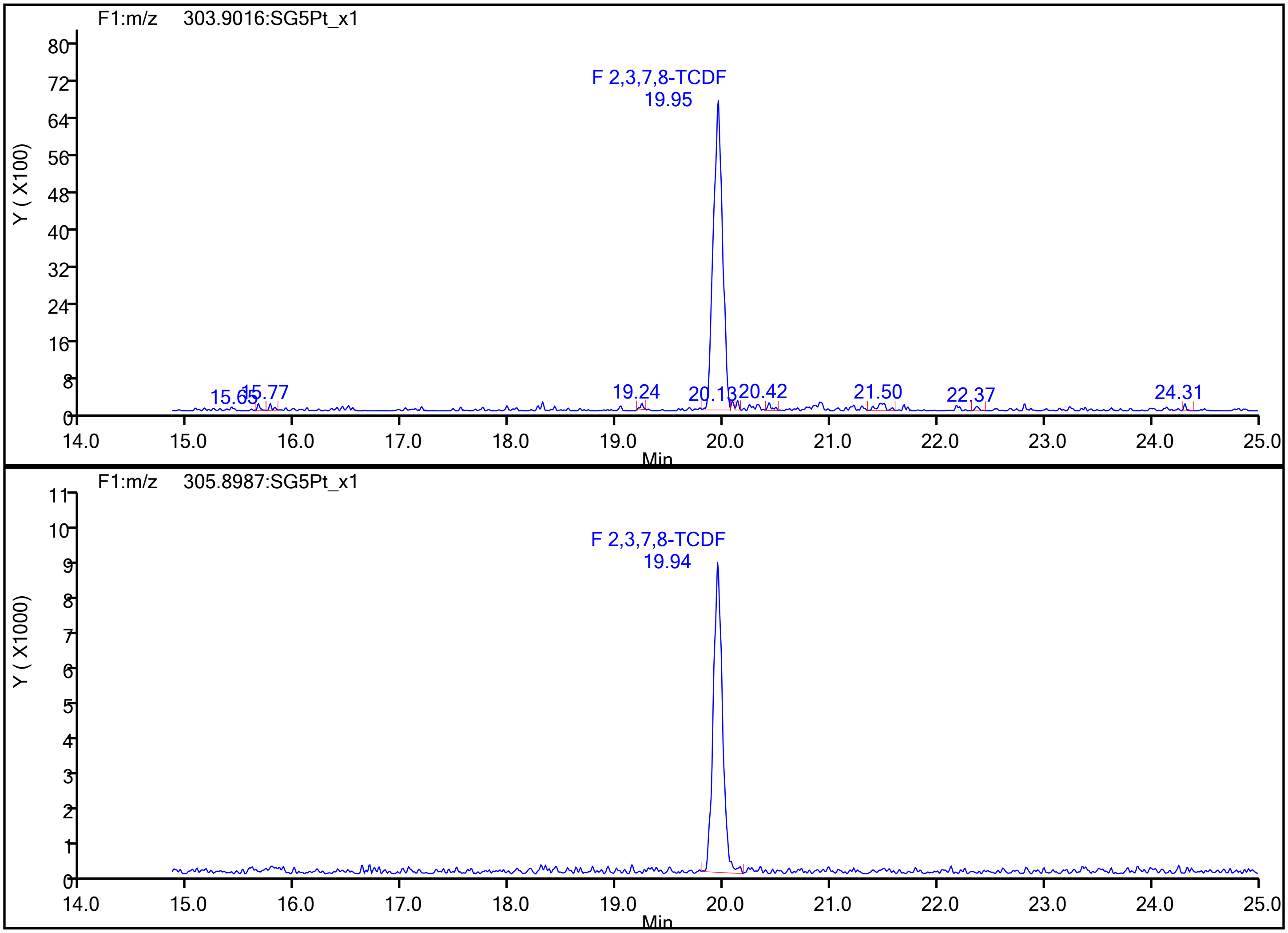

TCDF Interference Mass

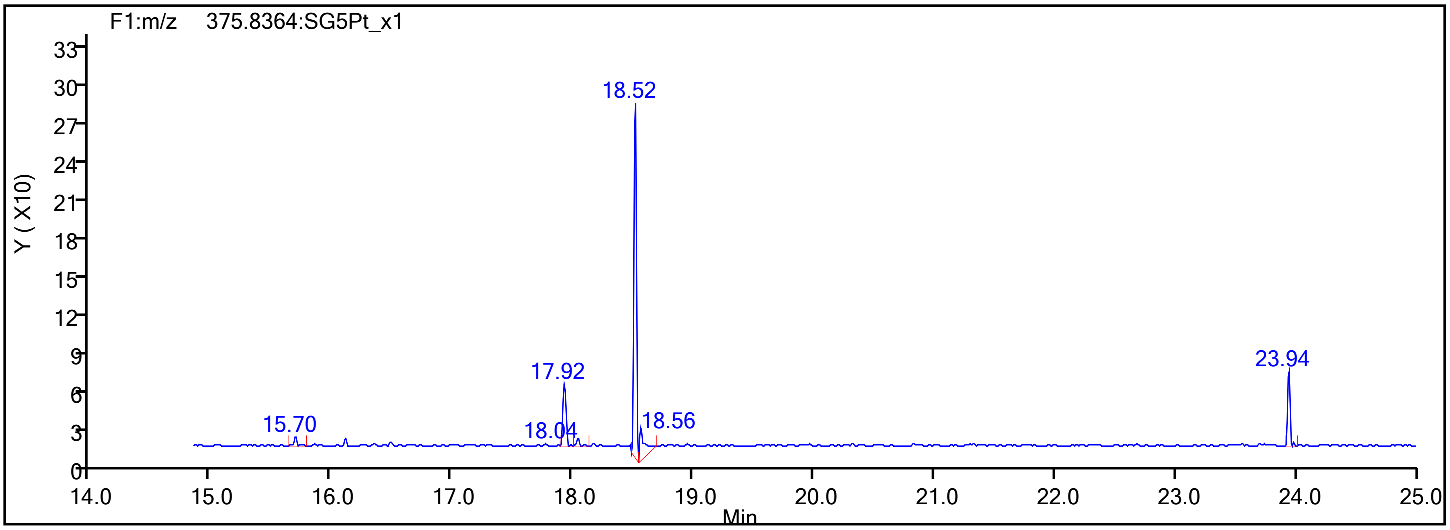

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d
Injection Date: 02-Feb-2021 21:46:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

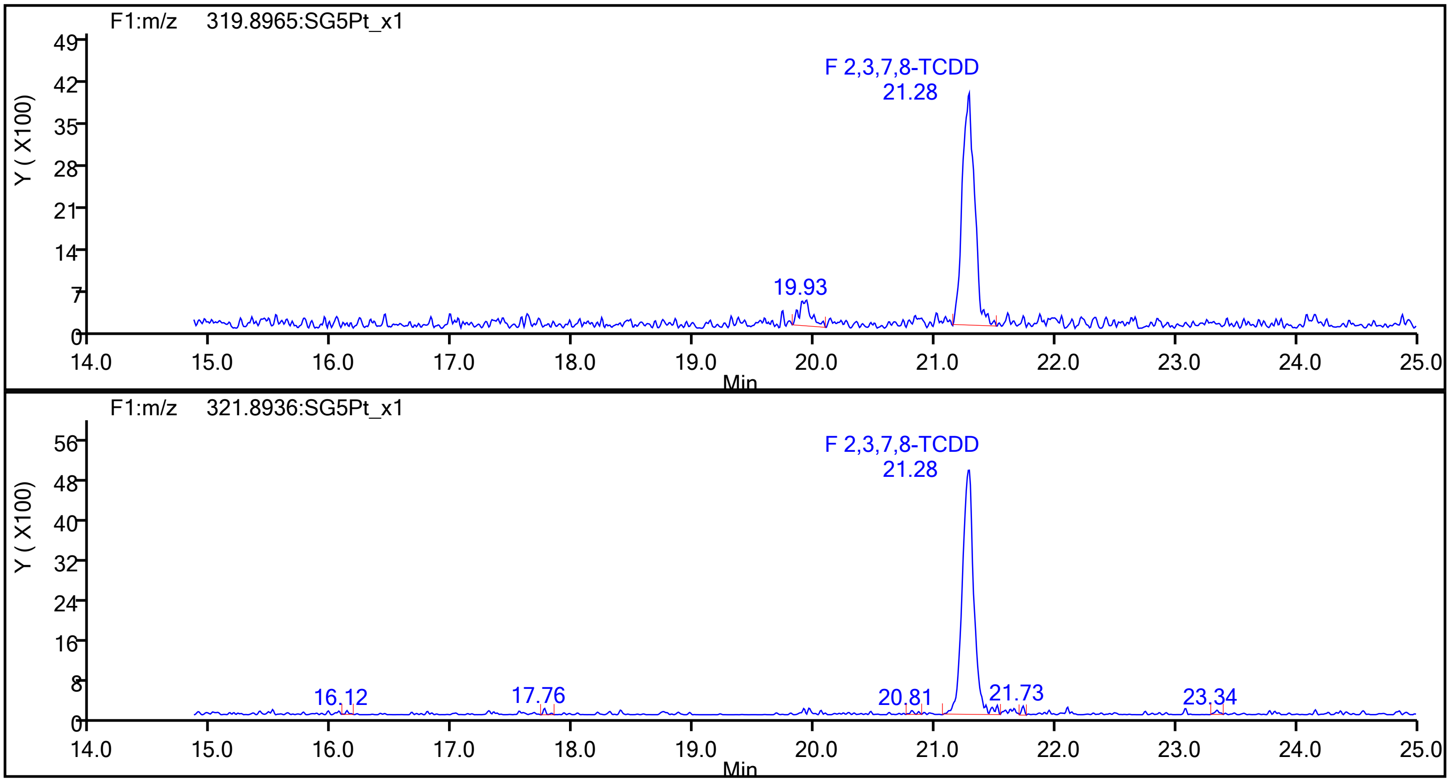

TCDD Standards

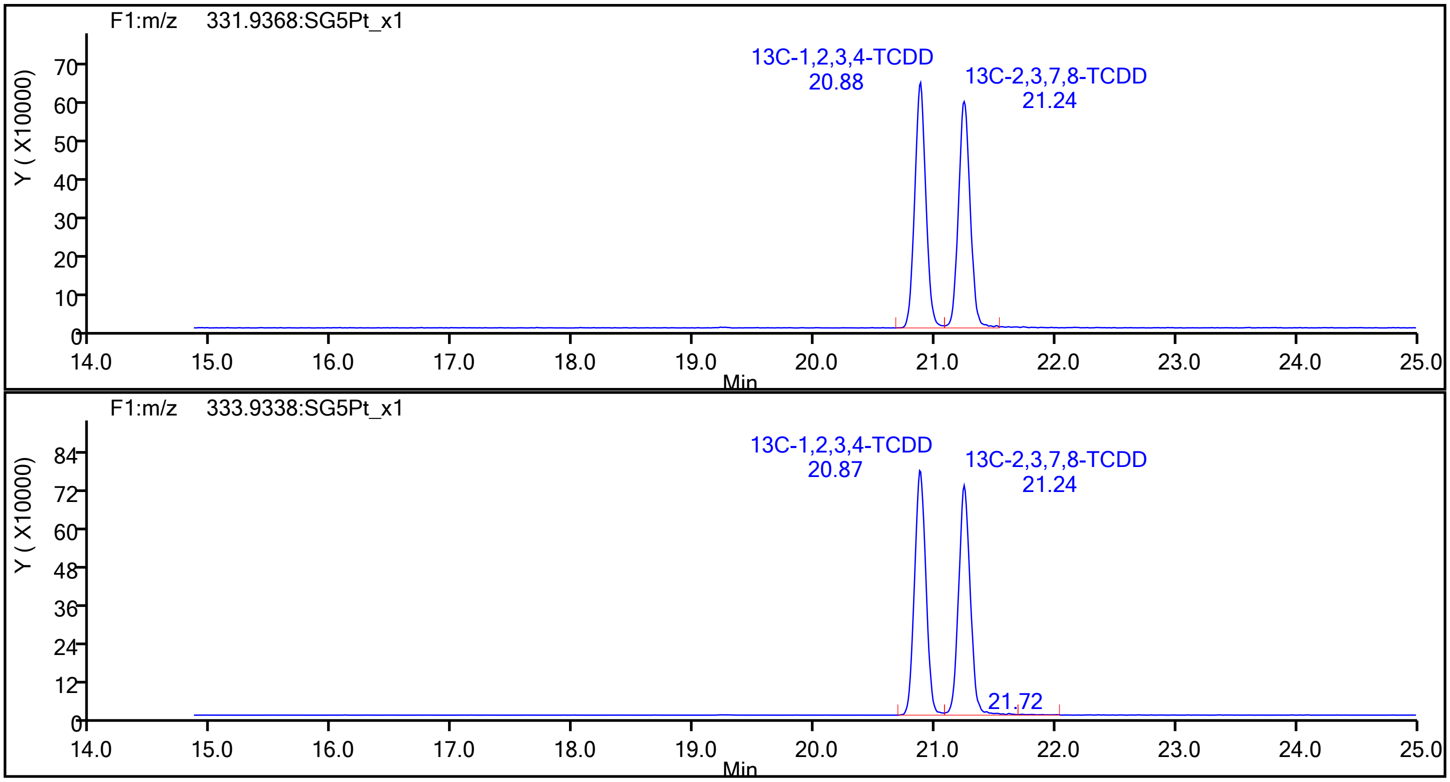

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

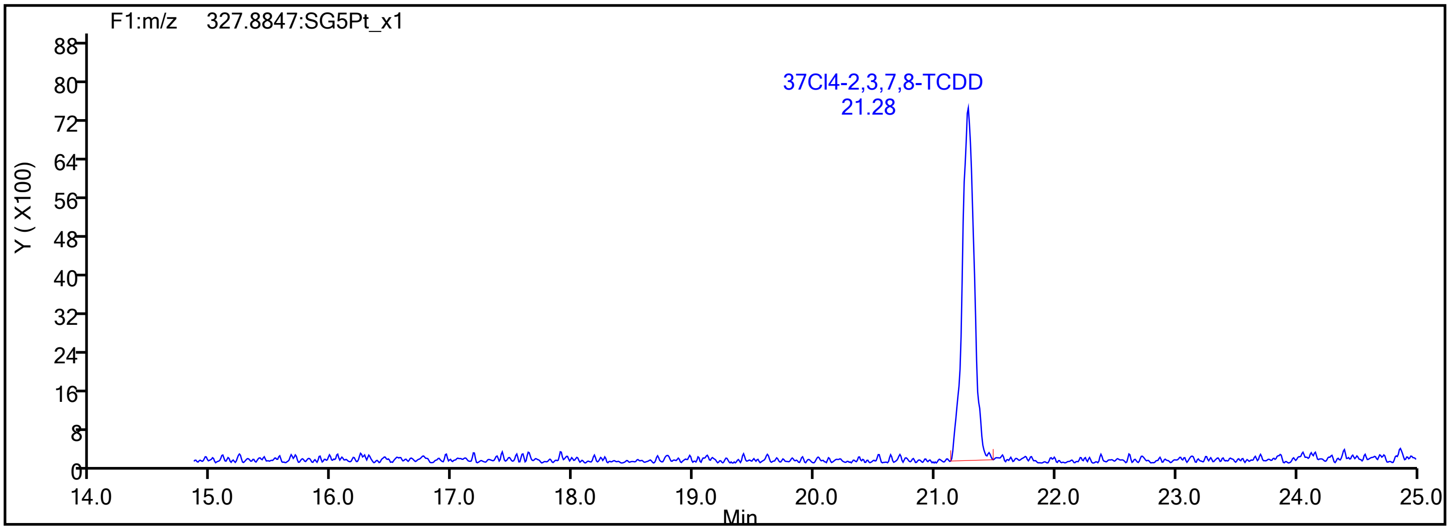

37Cl4-TCDD Standards

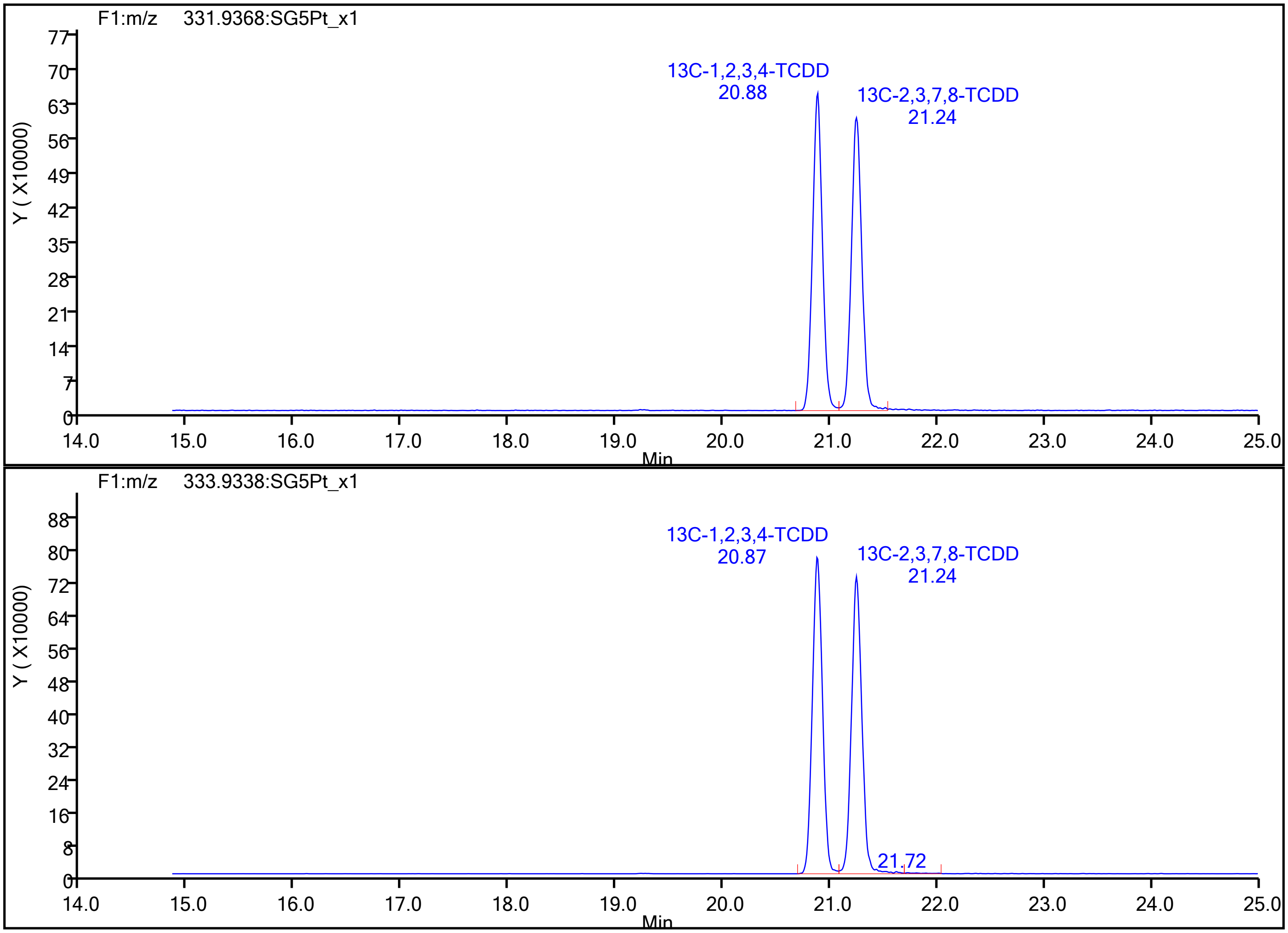

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

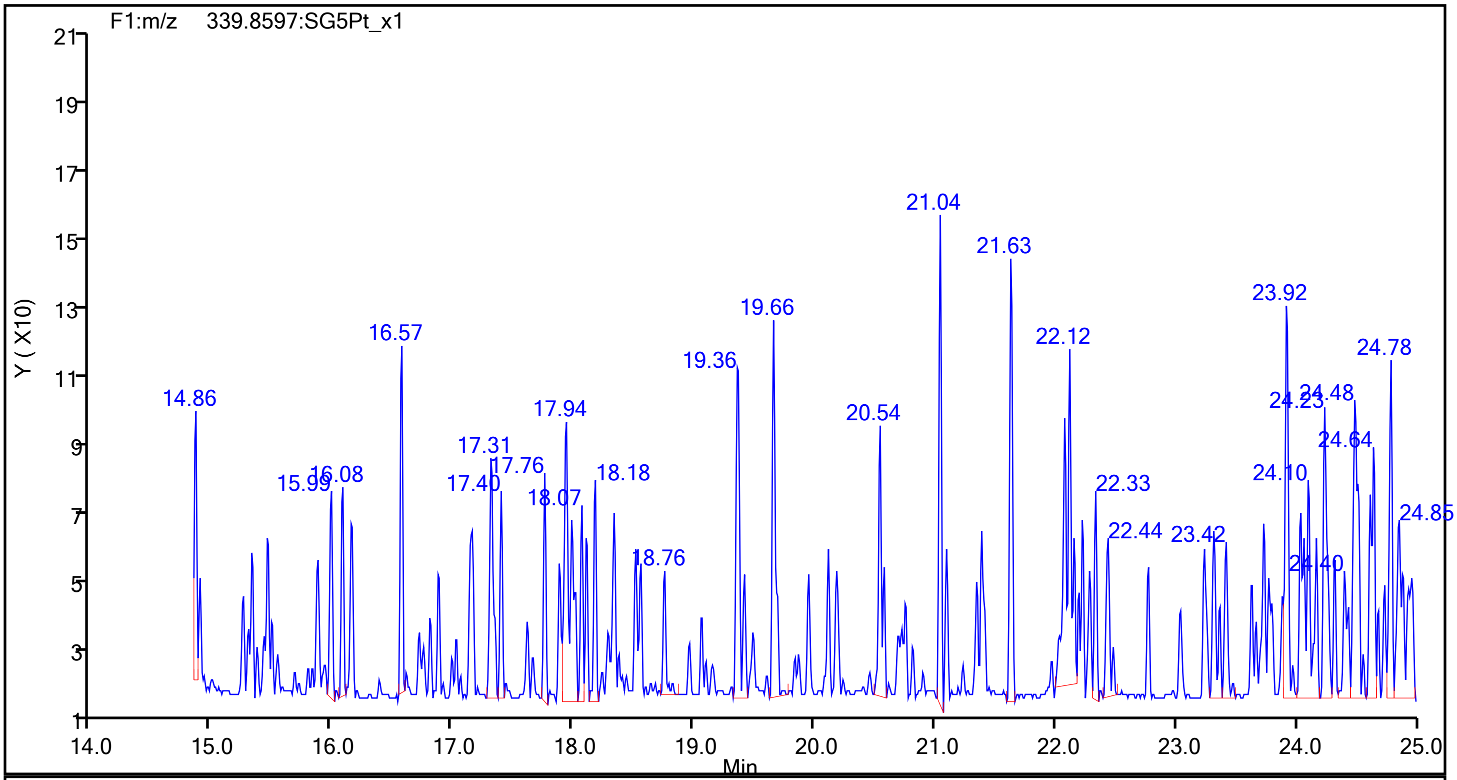

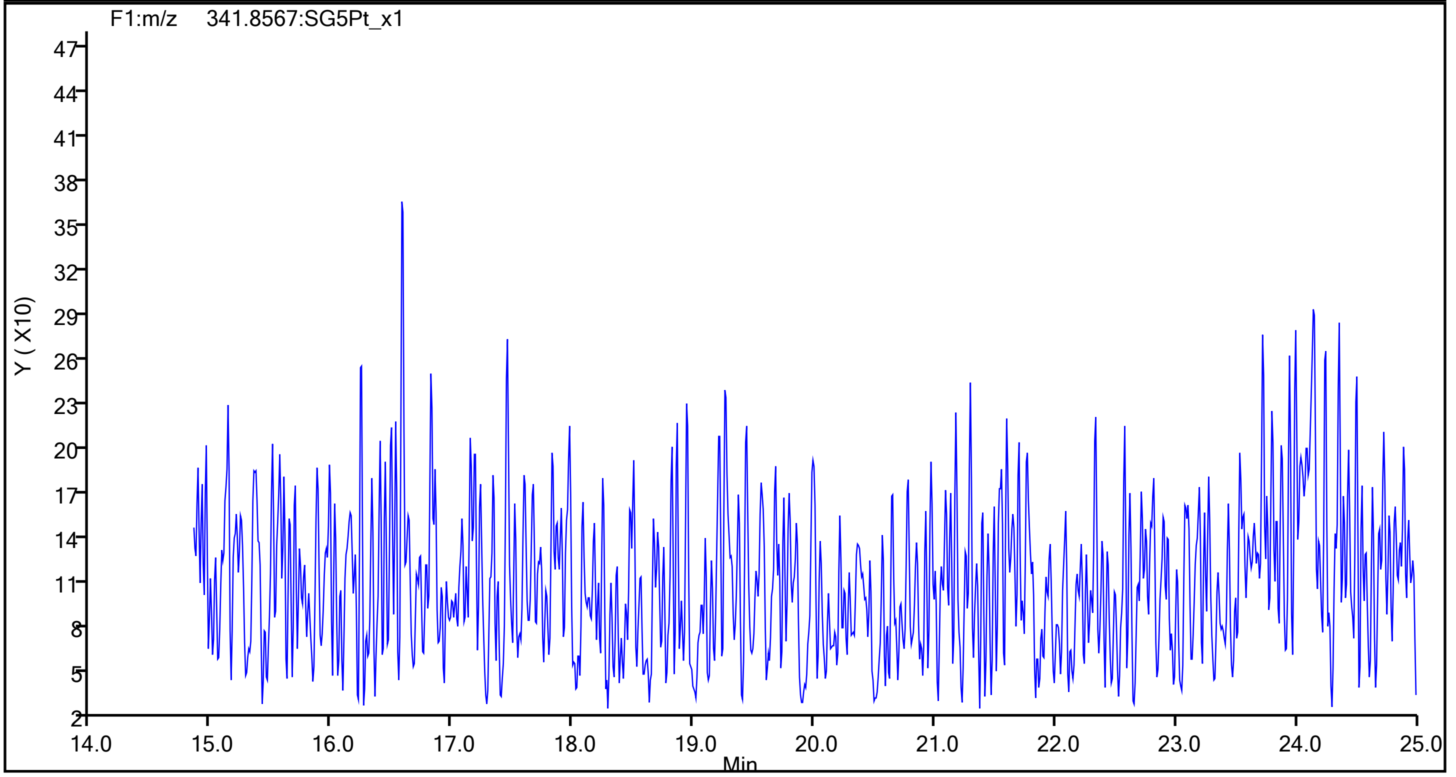

Report Date: 03-Feb-2021 14:45:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

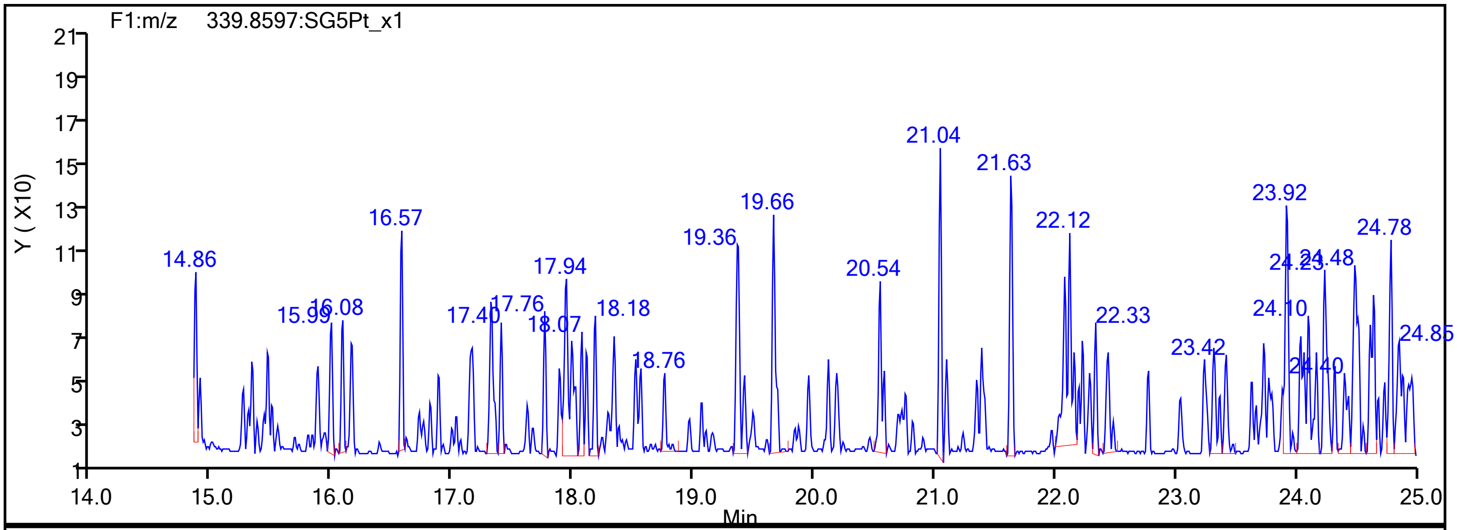

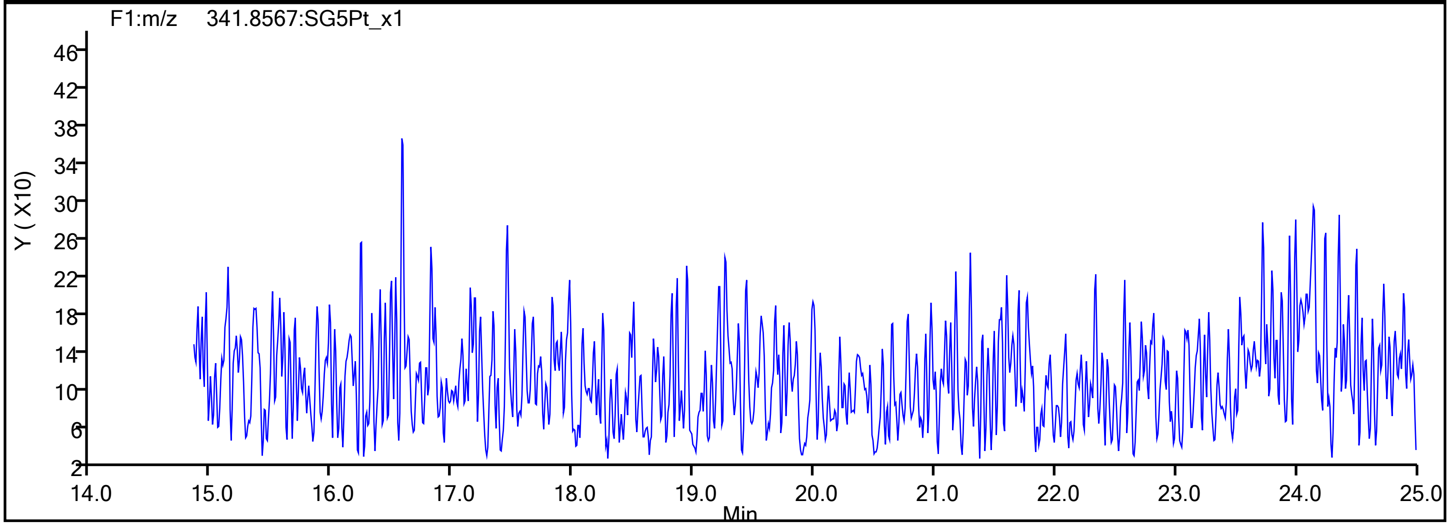

F1 PeCDFs Interference Mass

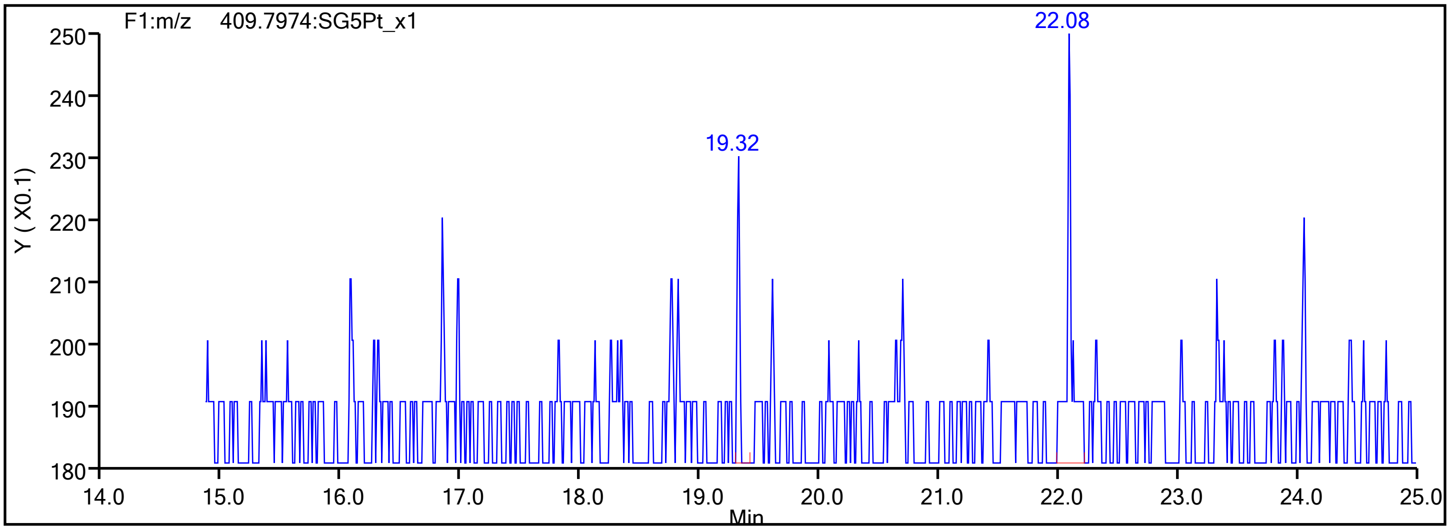

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

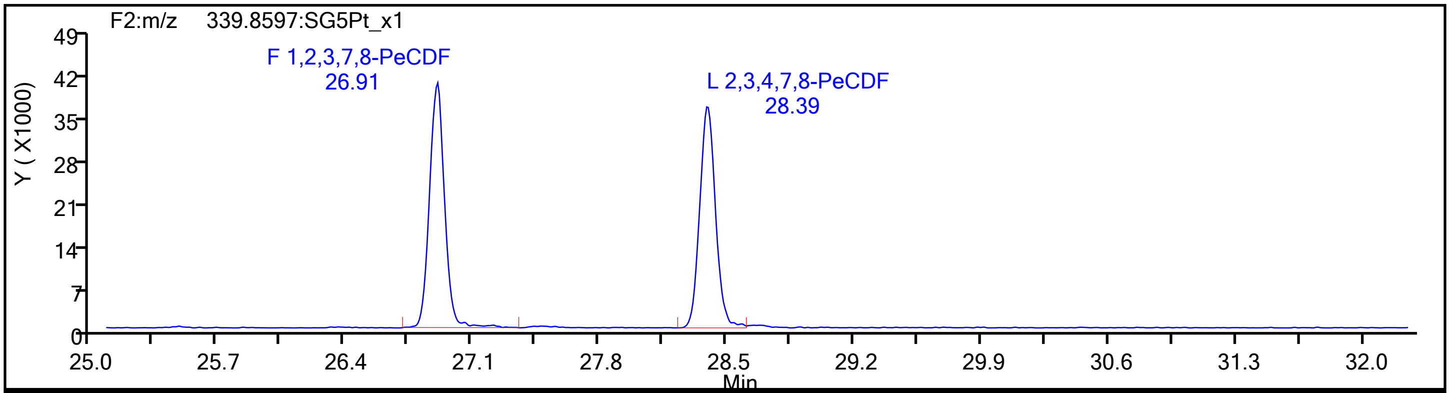

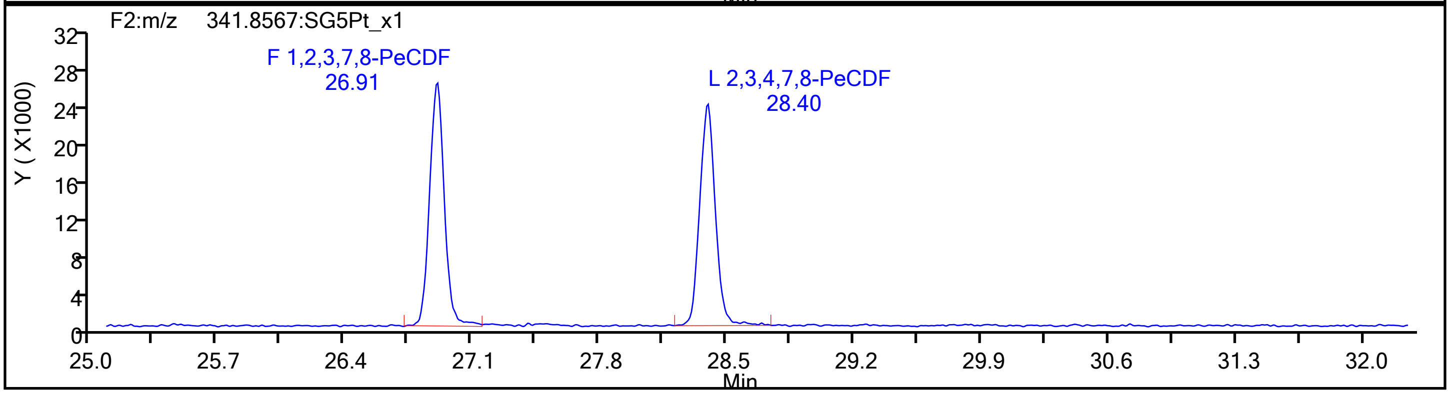

PeCDF Standards

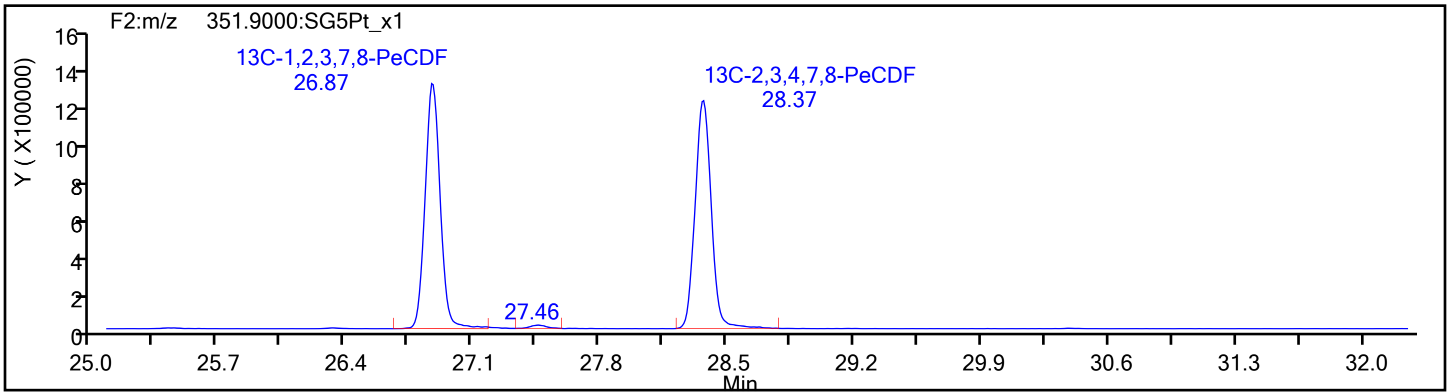

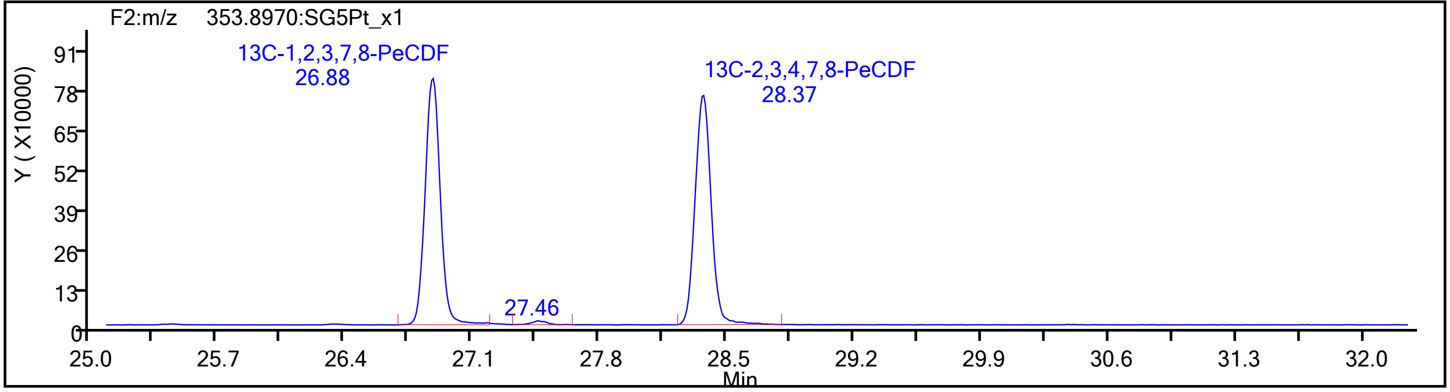

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

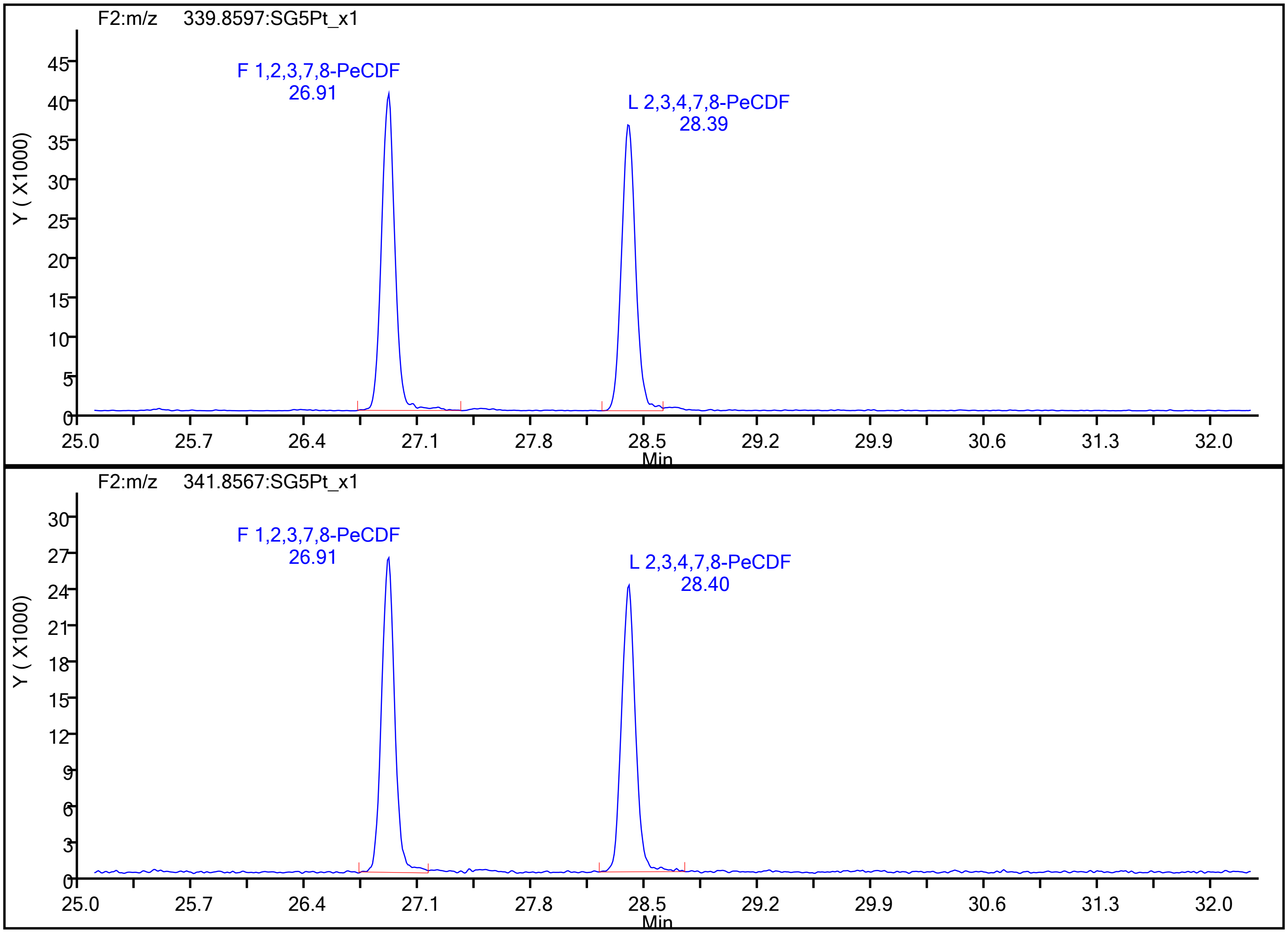

PeCDF Interference Mass

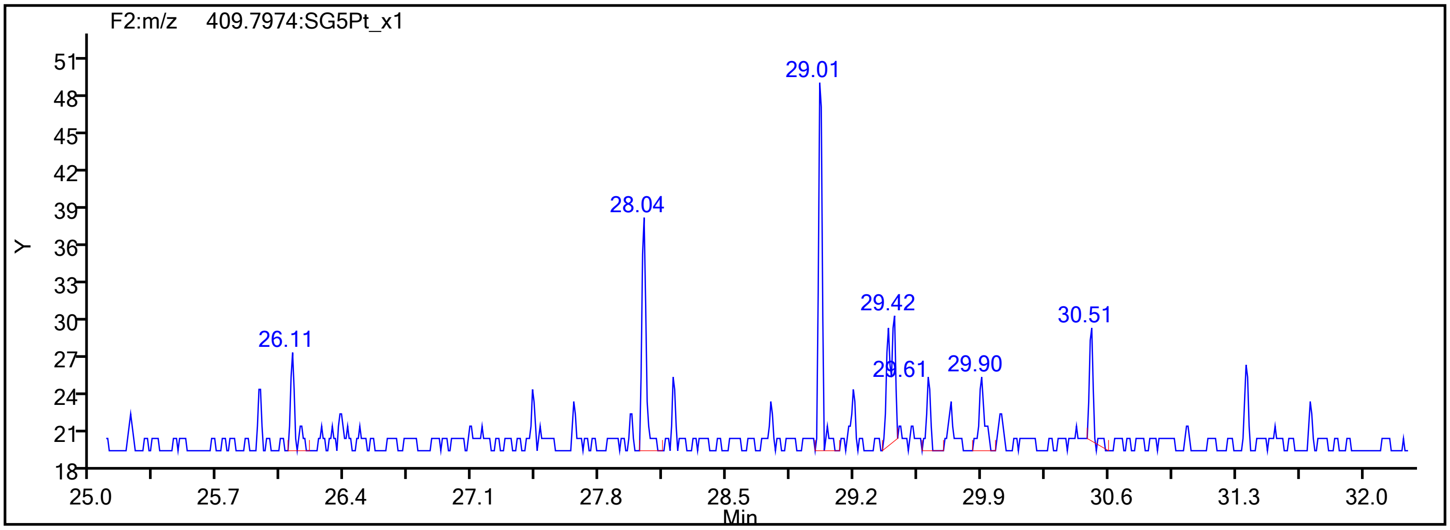

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Injection Date: 02-Feb-2021 21:46:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

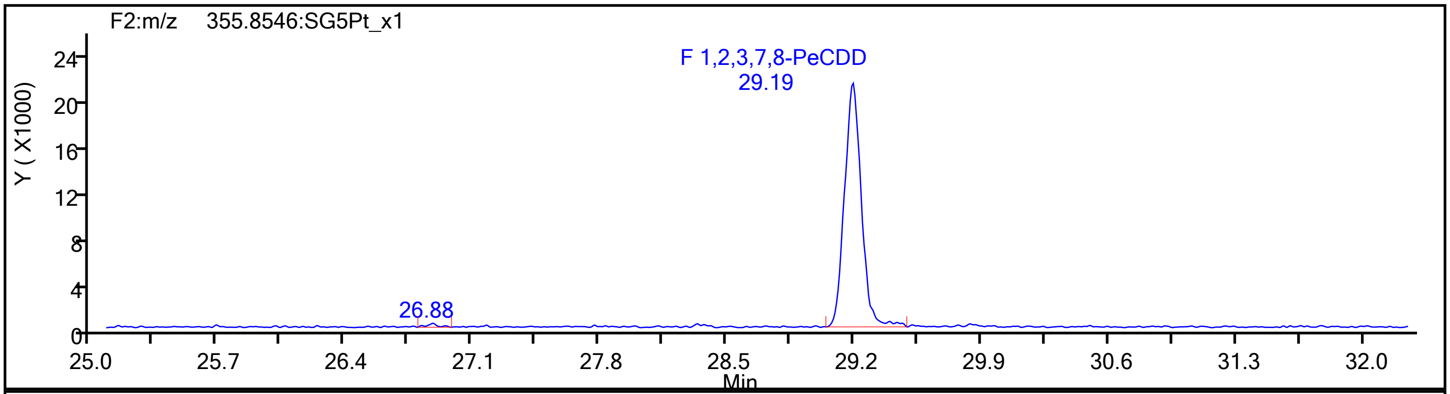

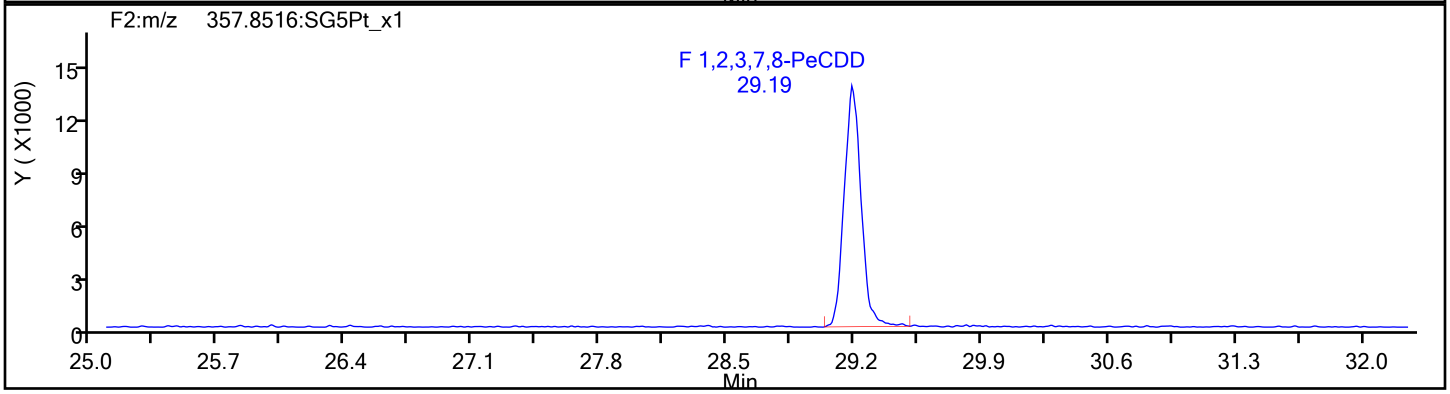

PeCDD Standards

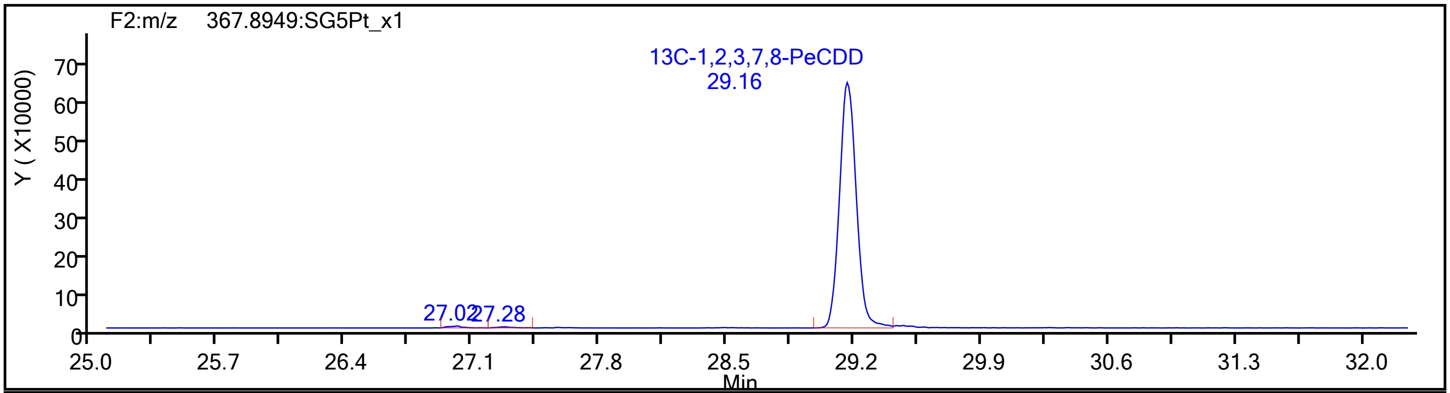

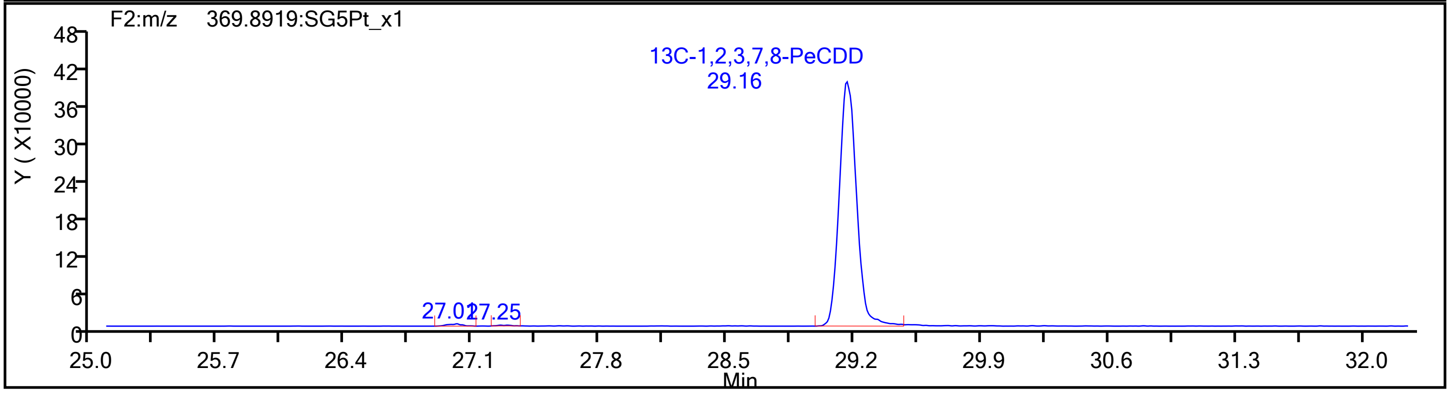

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d
Injection Date: 02-Feb-2021 21:46:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

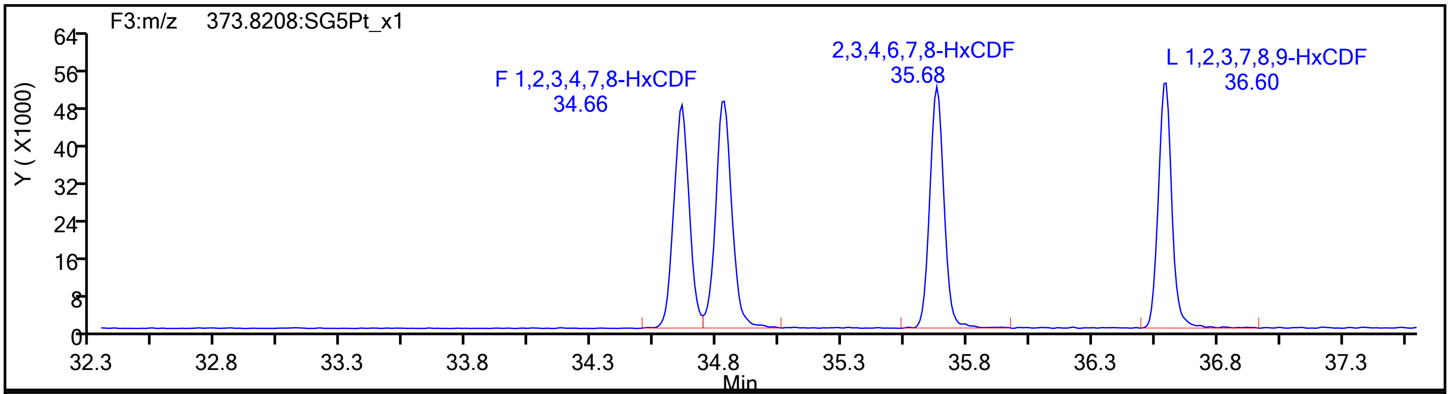

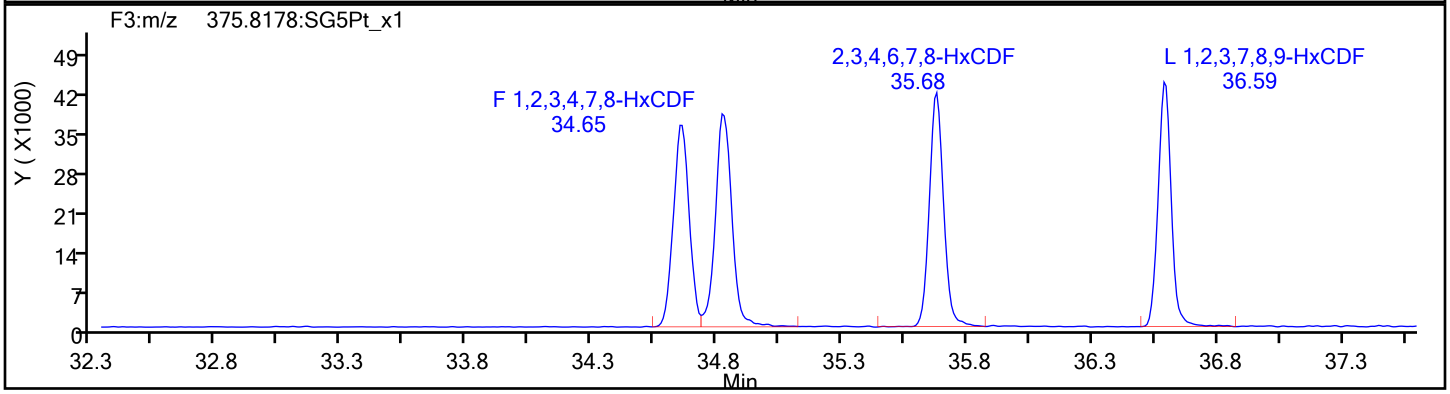

HxCDF Standards

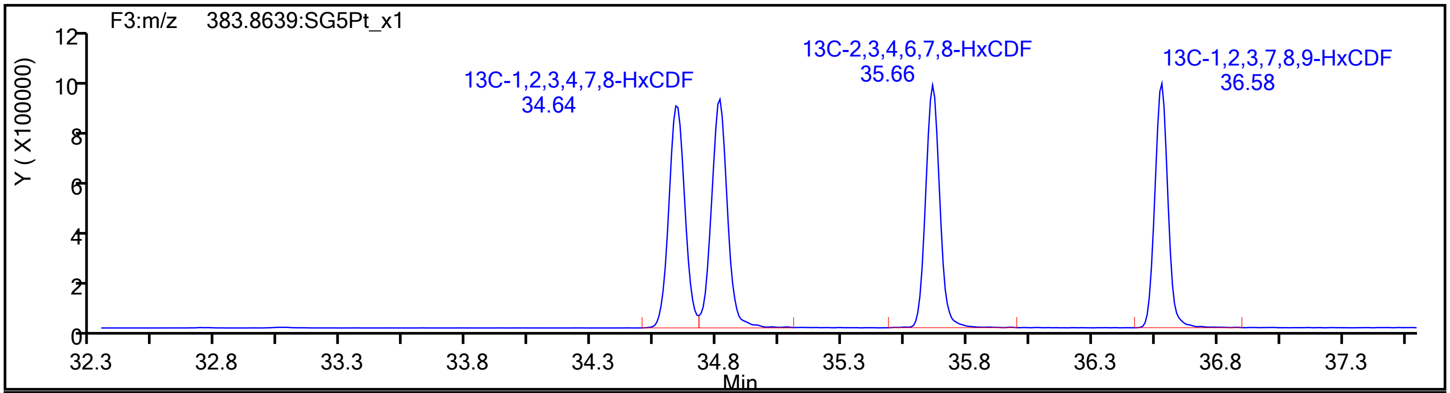

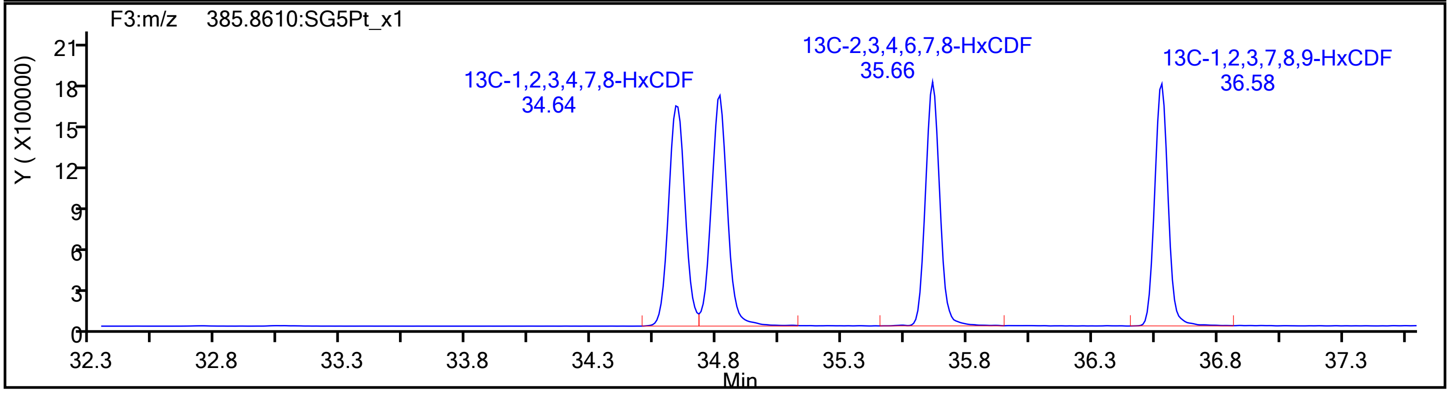

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

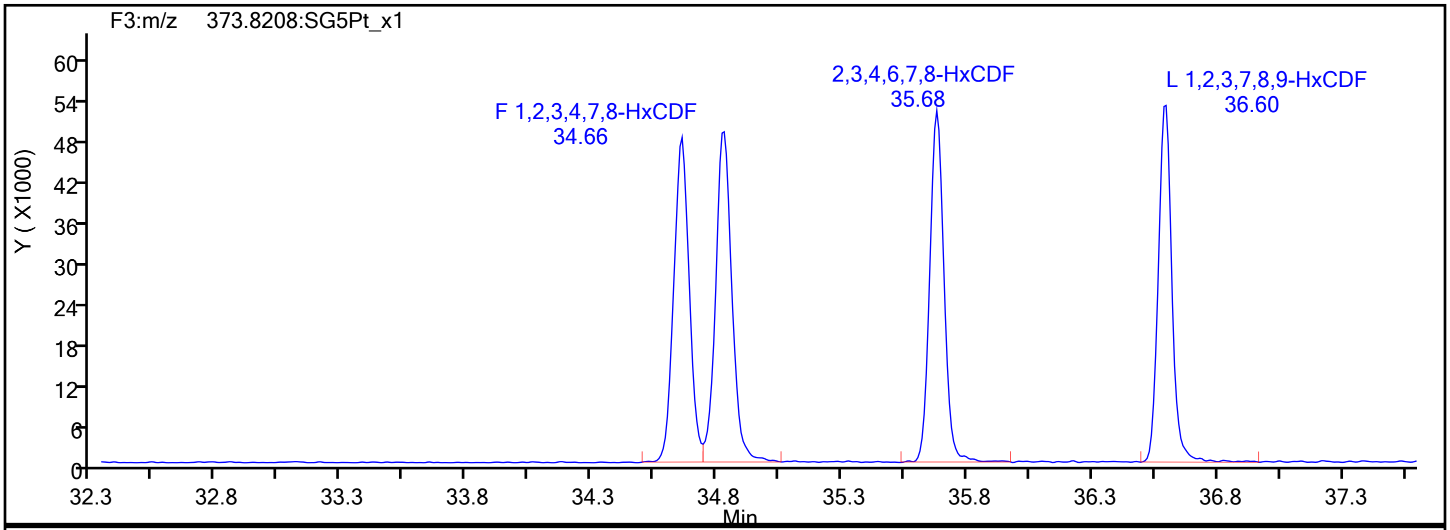

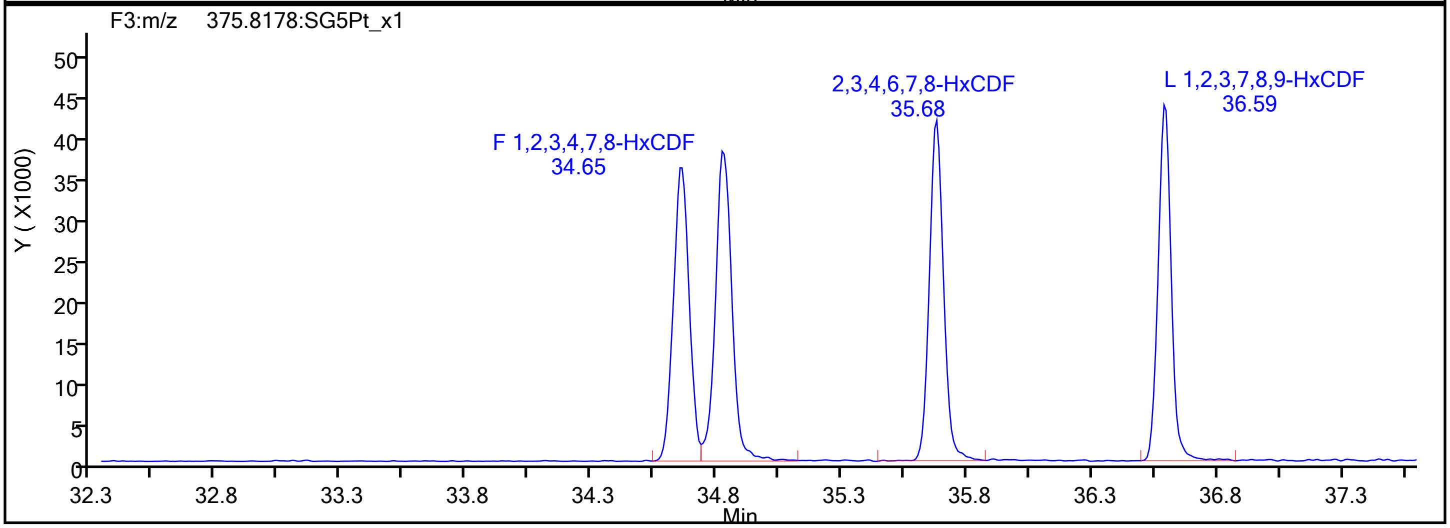

HxCDF Interference Mass

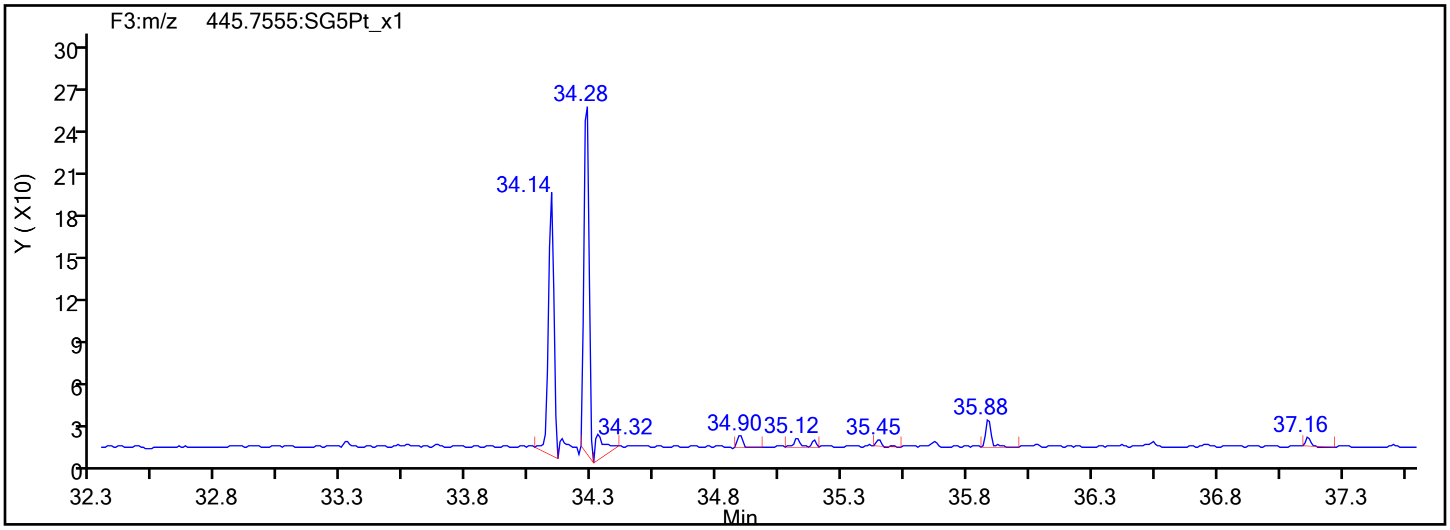

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Injection Date: 02-Feb-2021 21:46:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 3

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

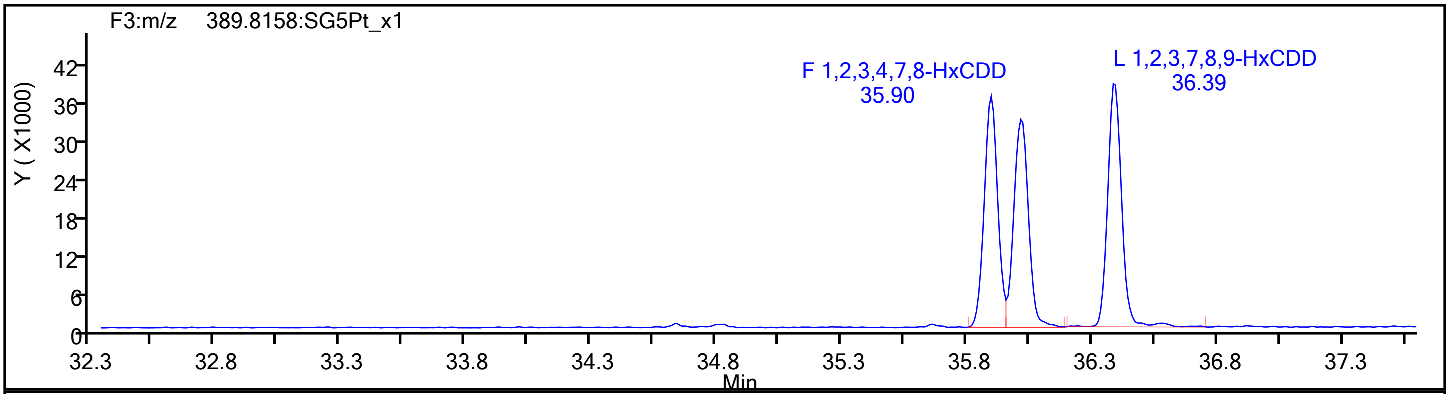

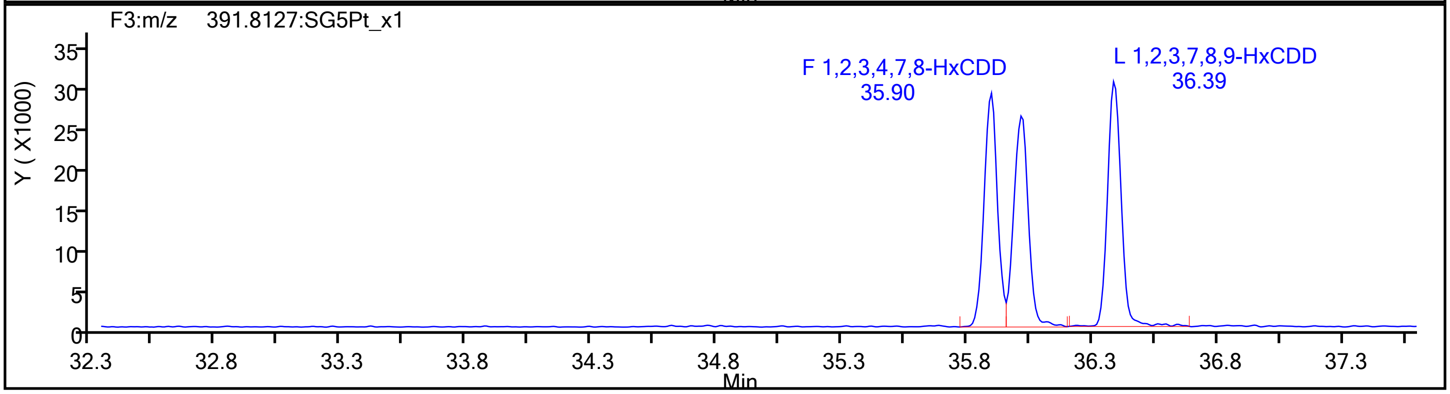

HxCDD Standards

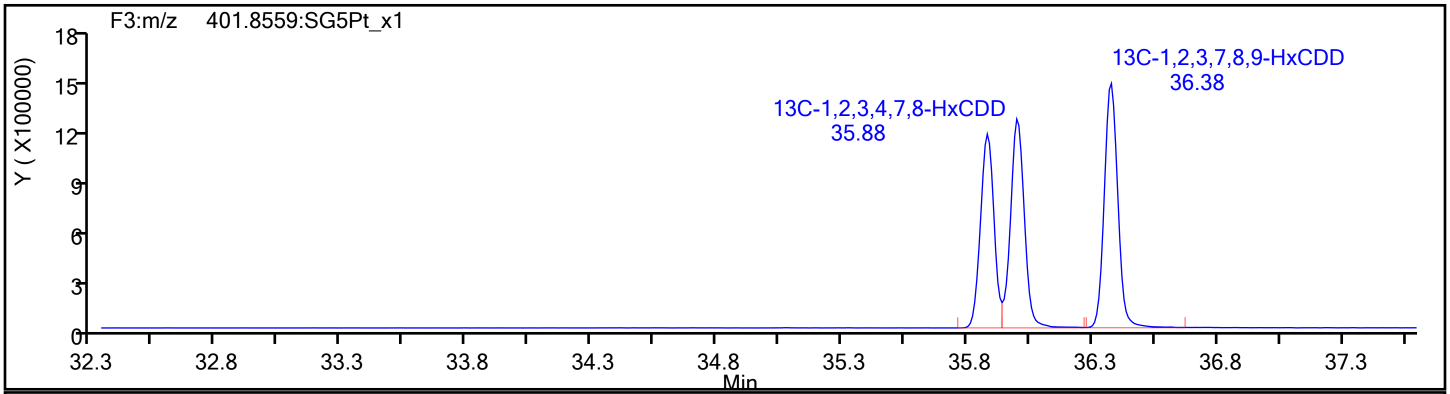

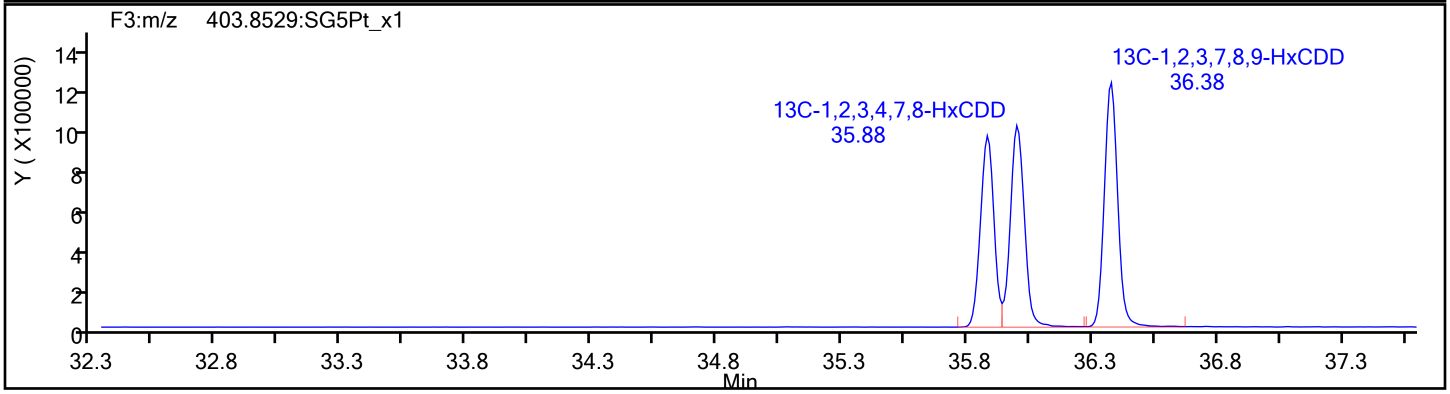

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

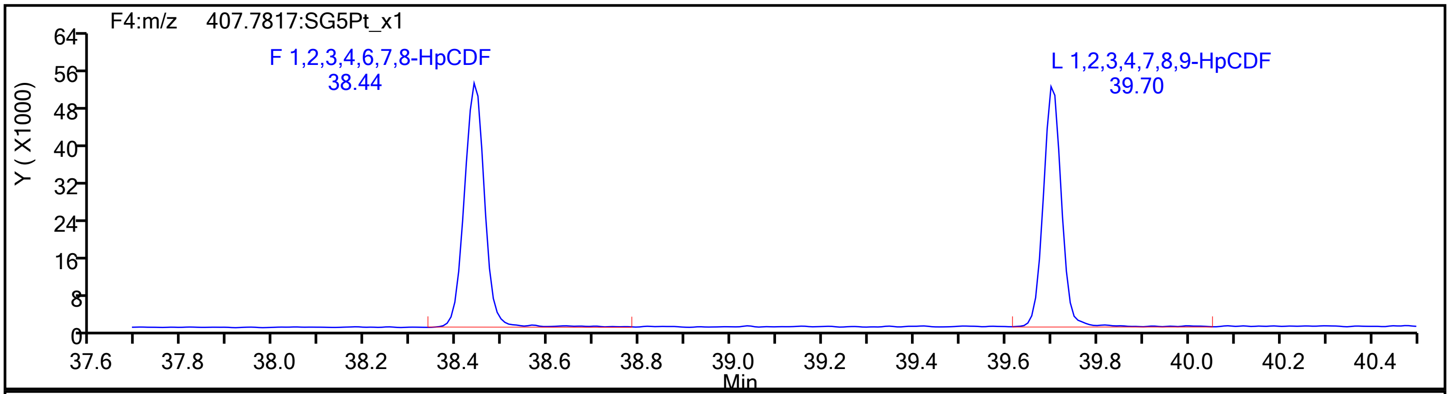

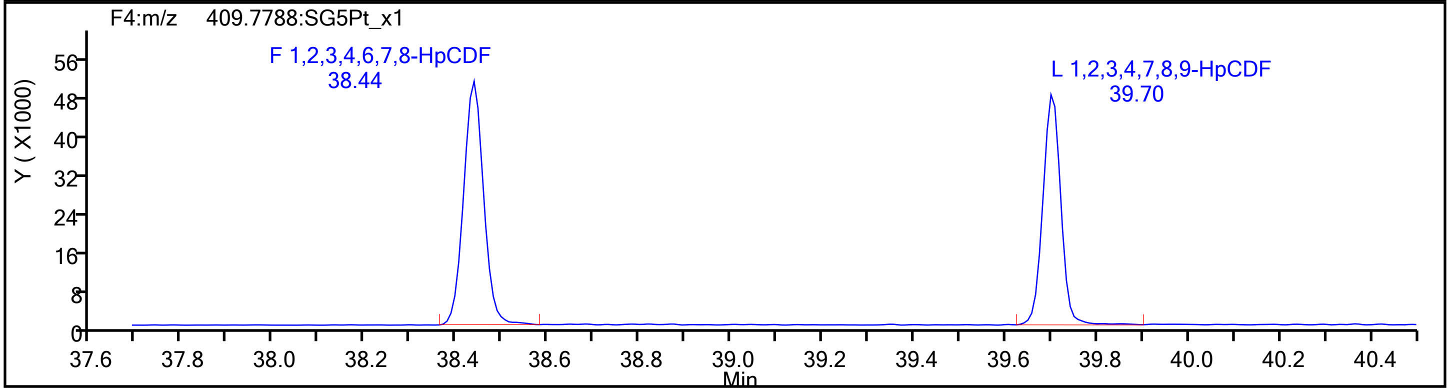

HpCDF Standards

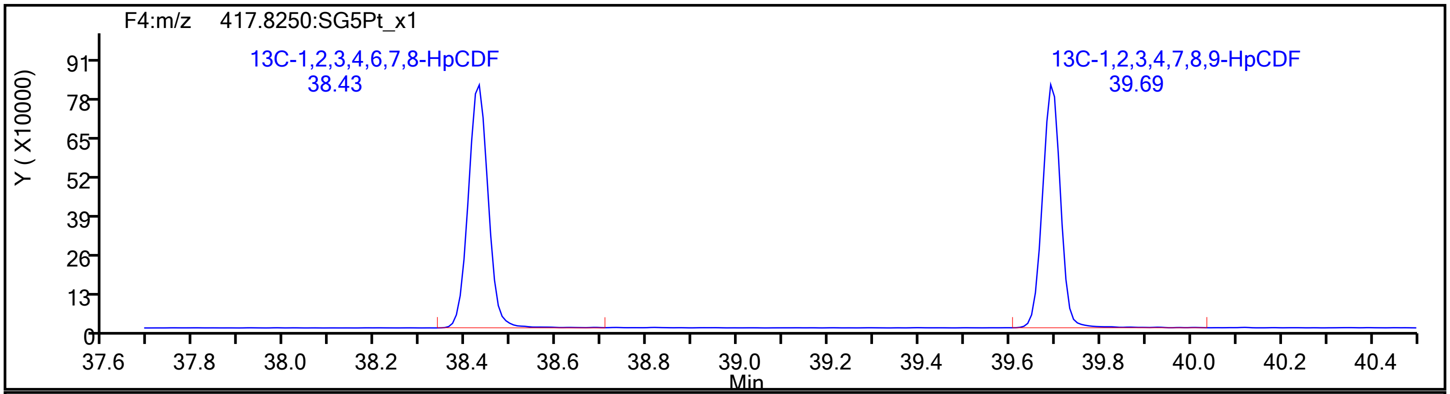

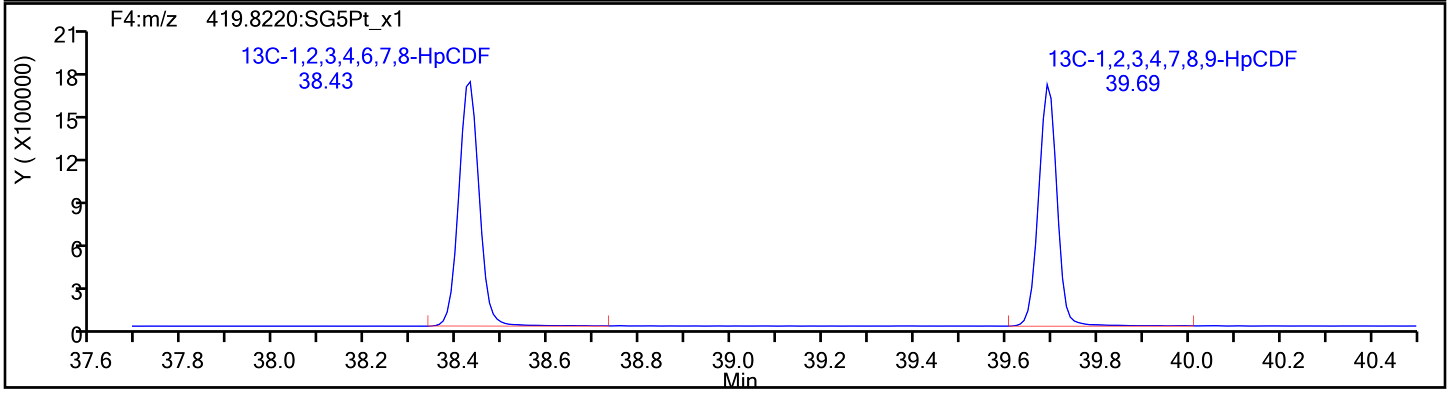

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

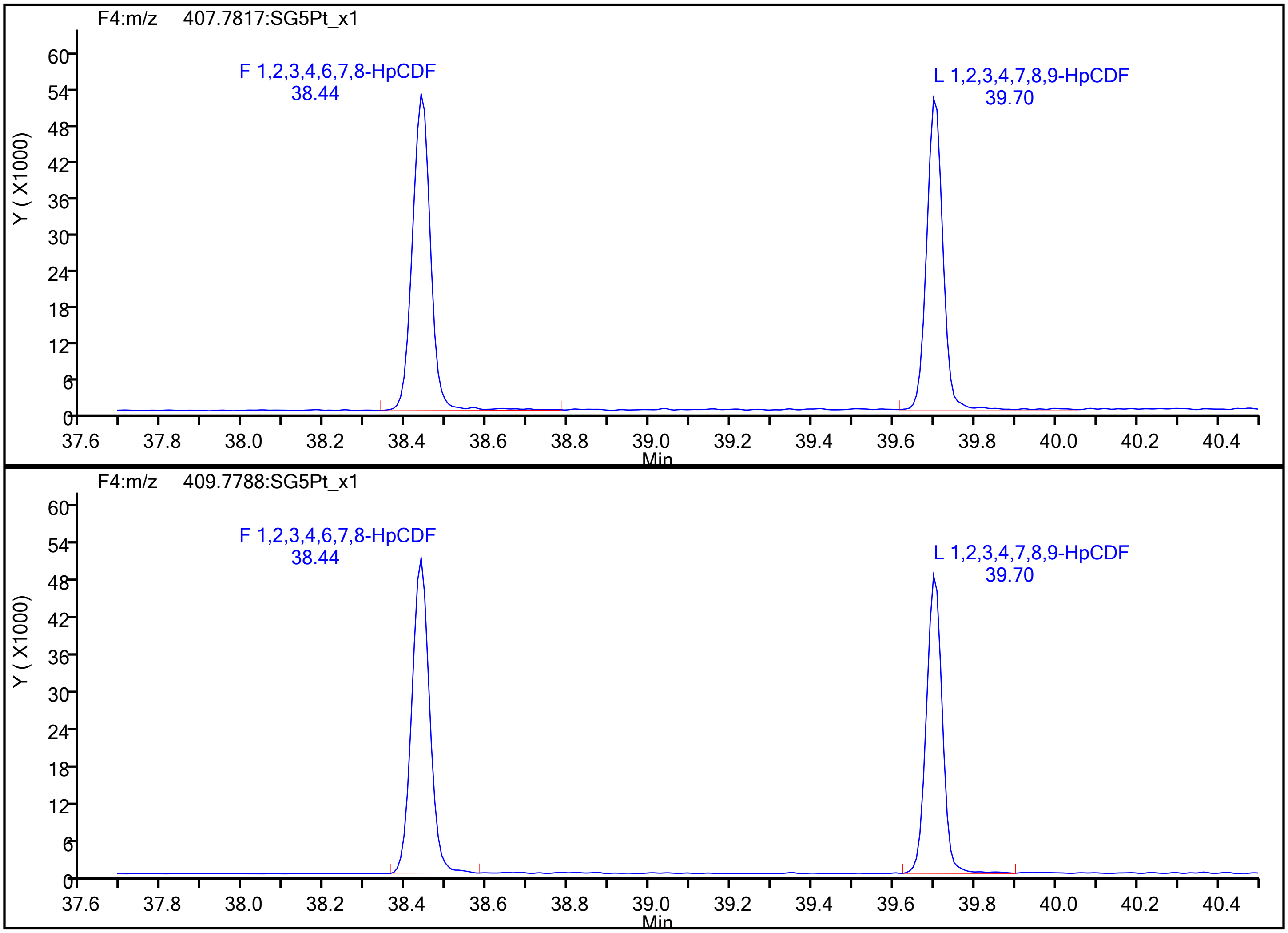

HpCDF Interference Mass

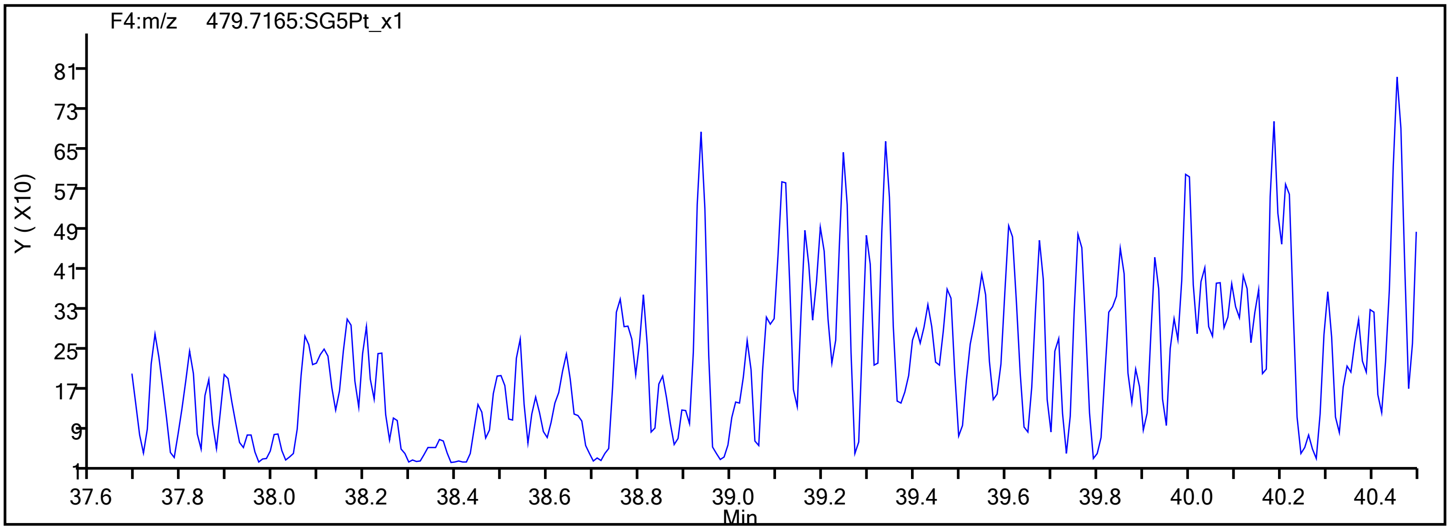

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d
Injection Date: 02-Feb-2021 21:46:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

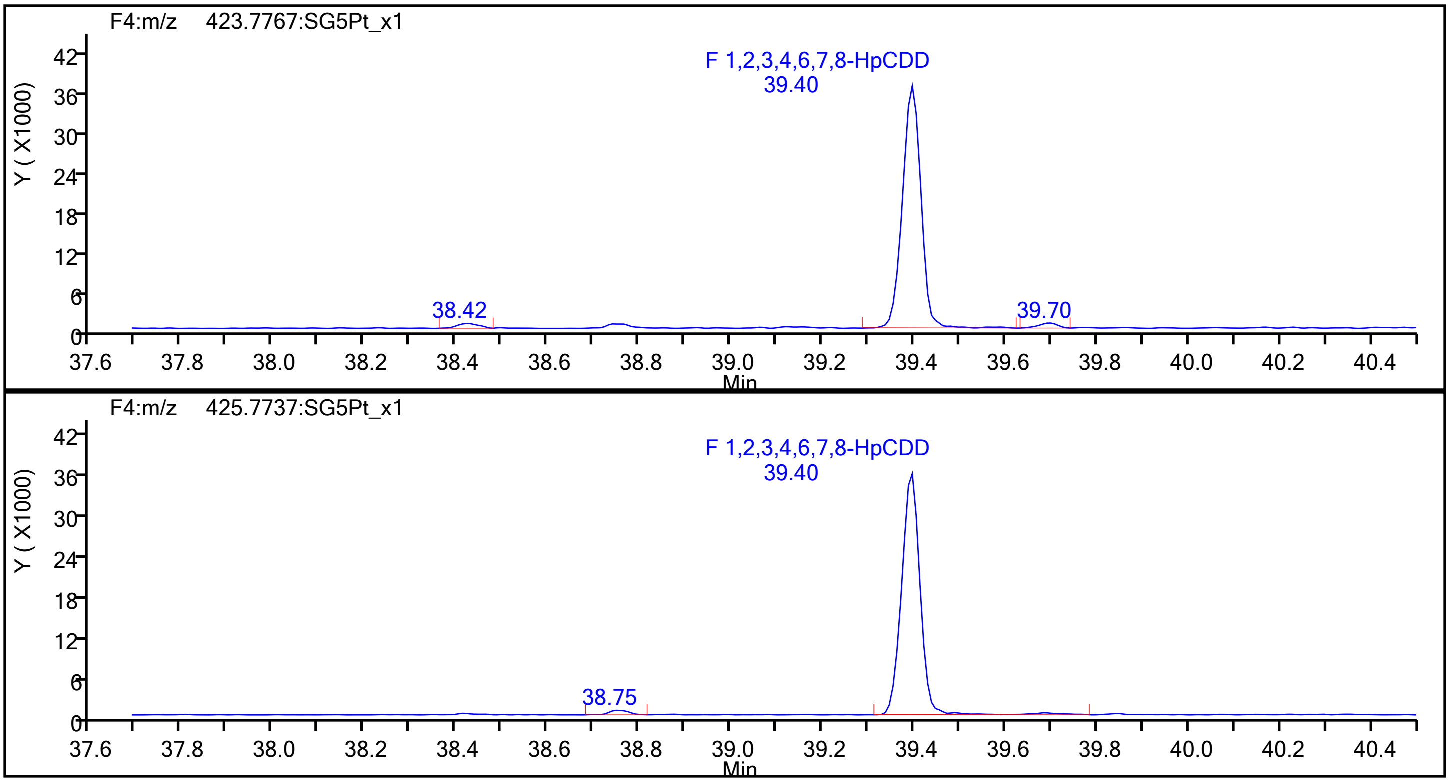

HpCDD Standards

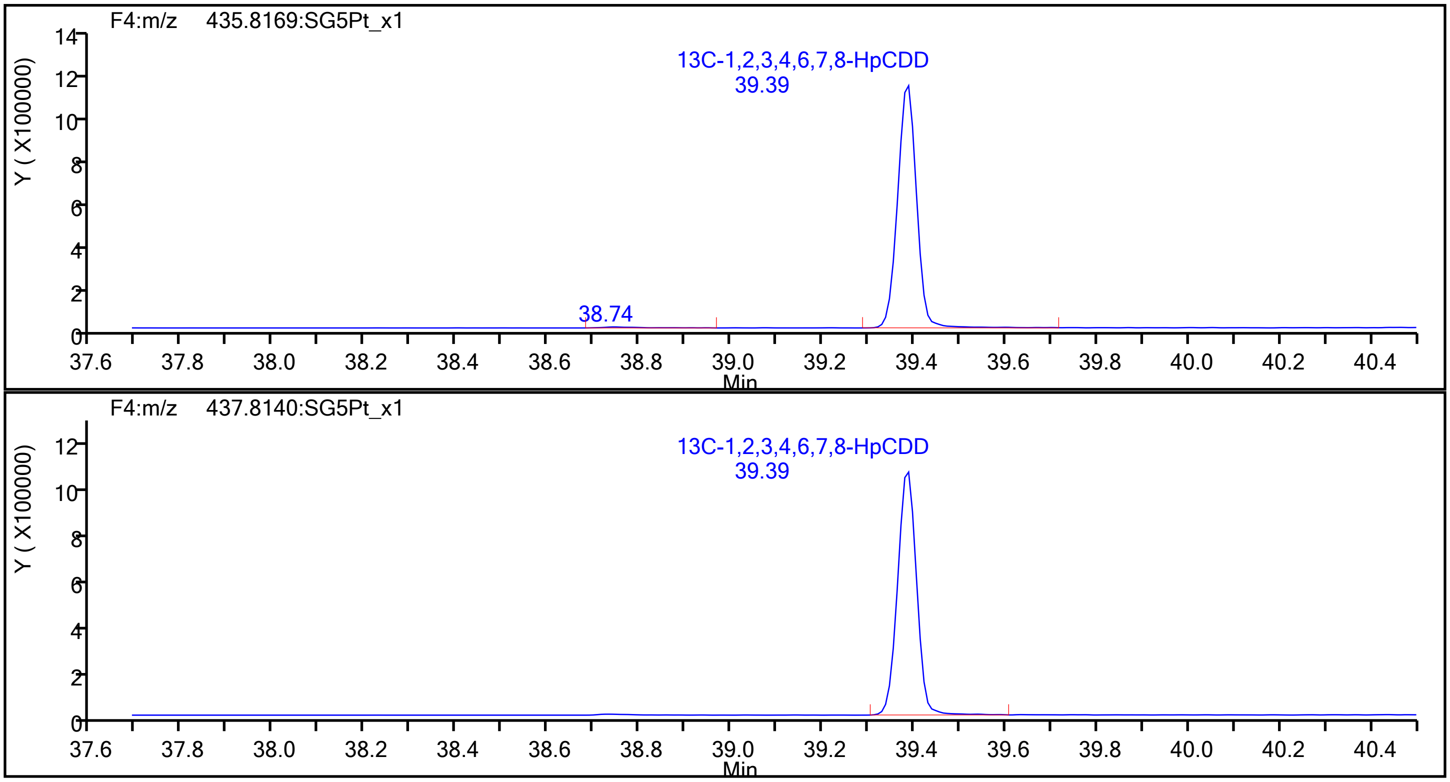

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

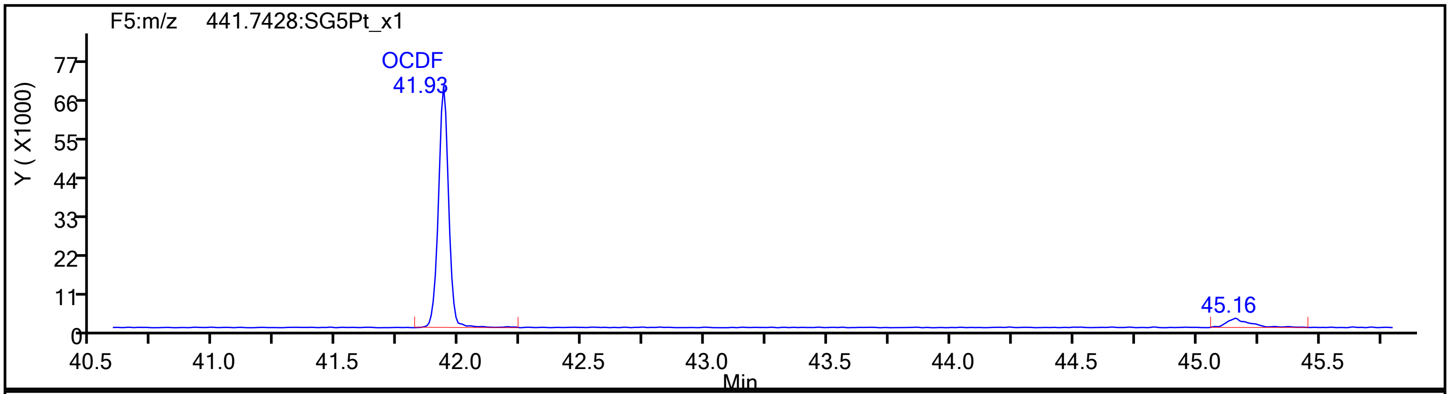

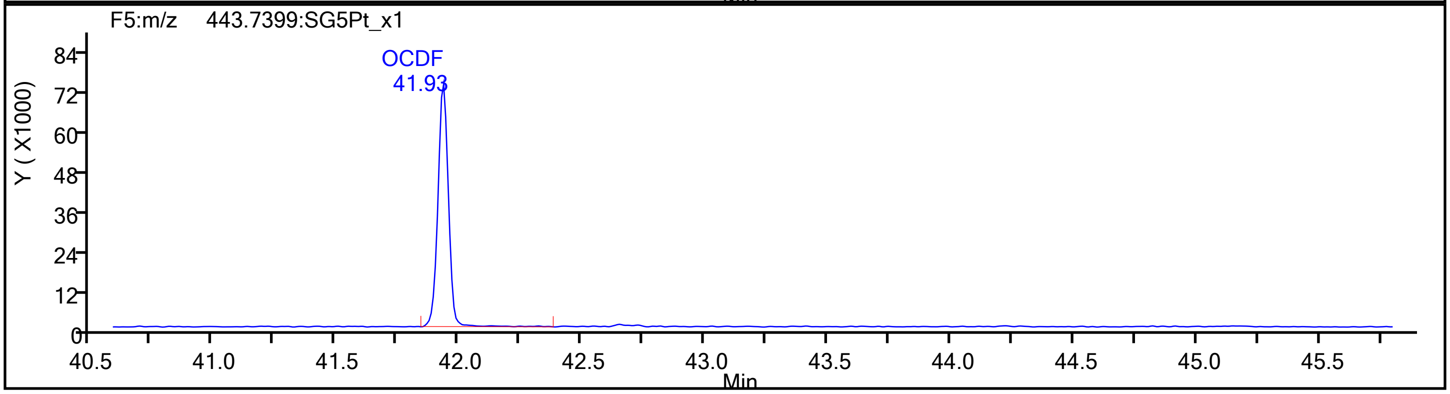

OCDF Standards

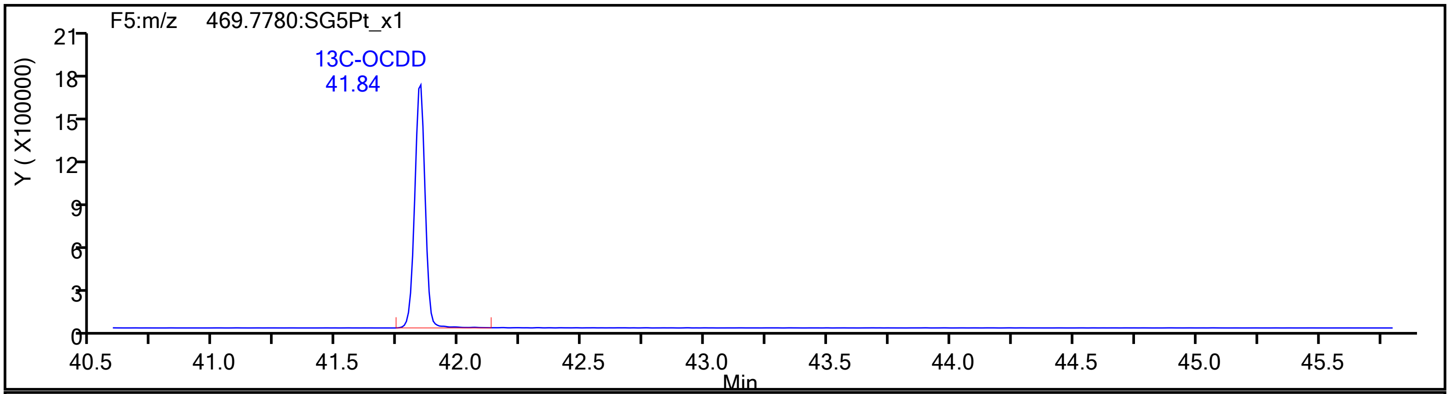

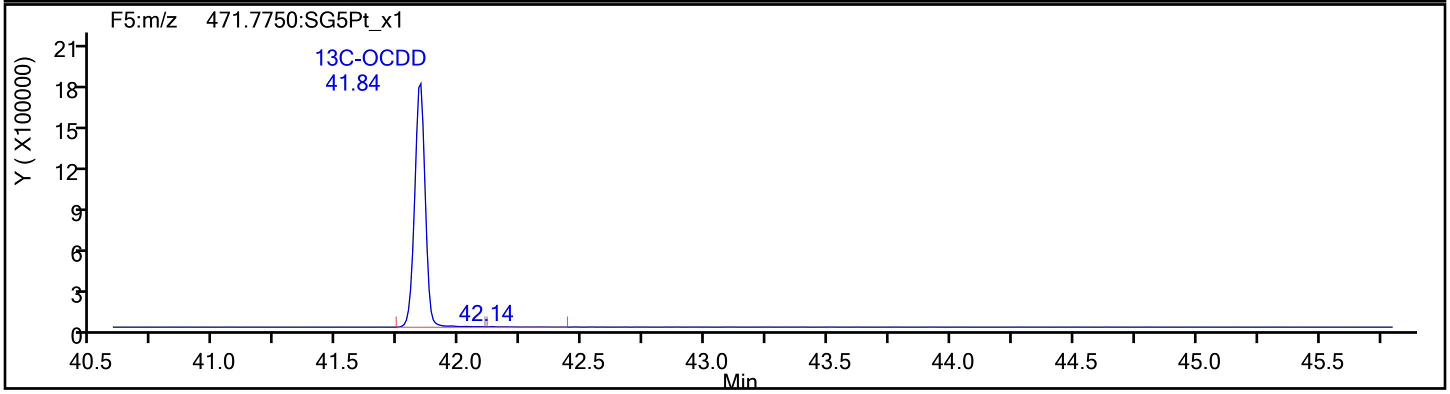

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

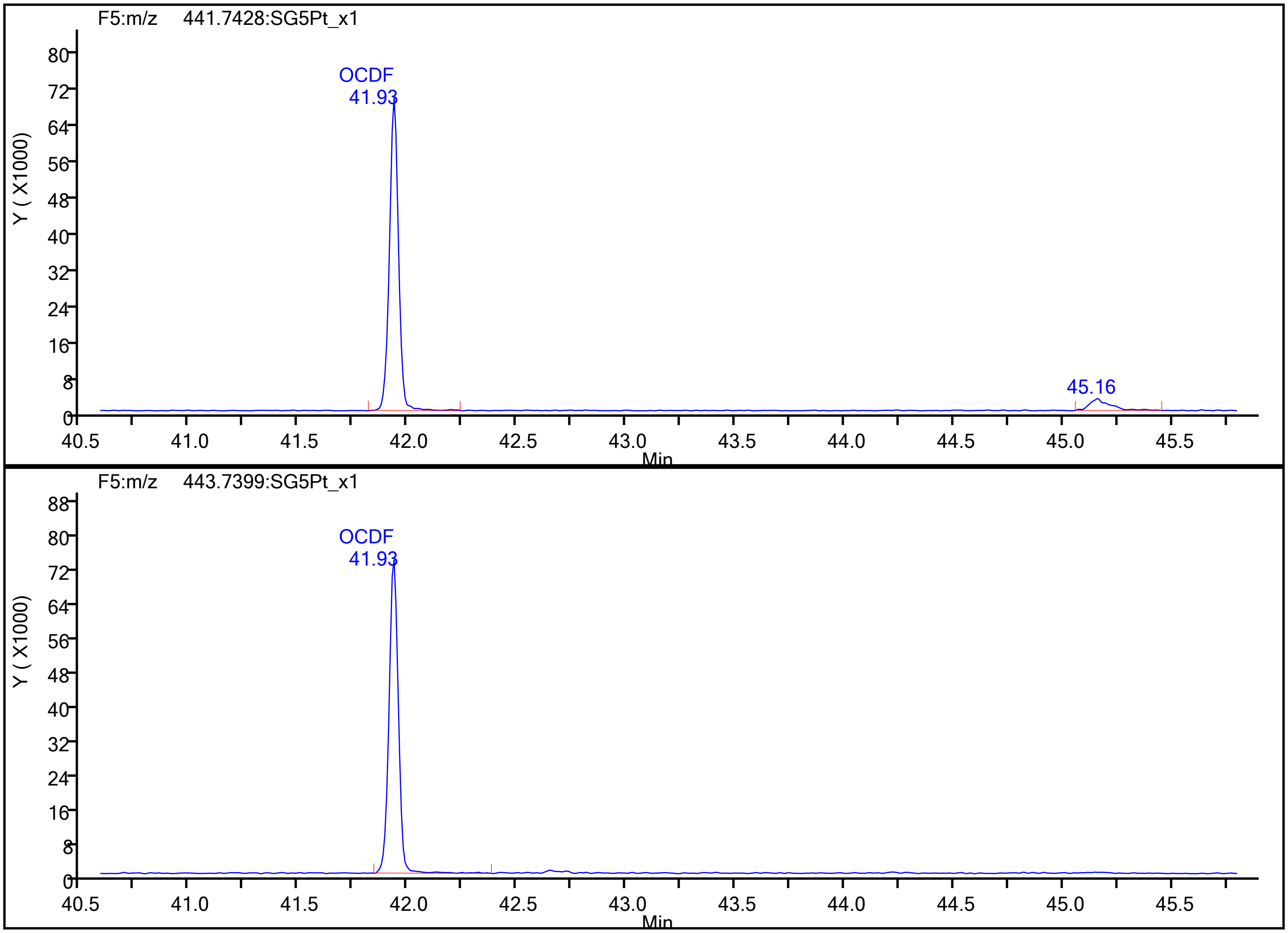

OCDF Interference Mass

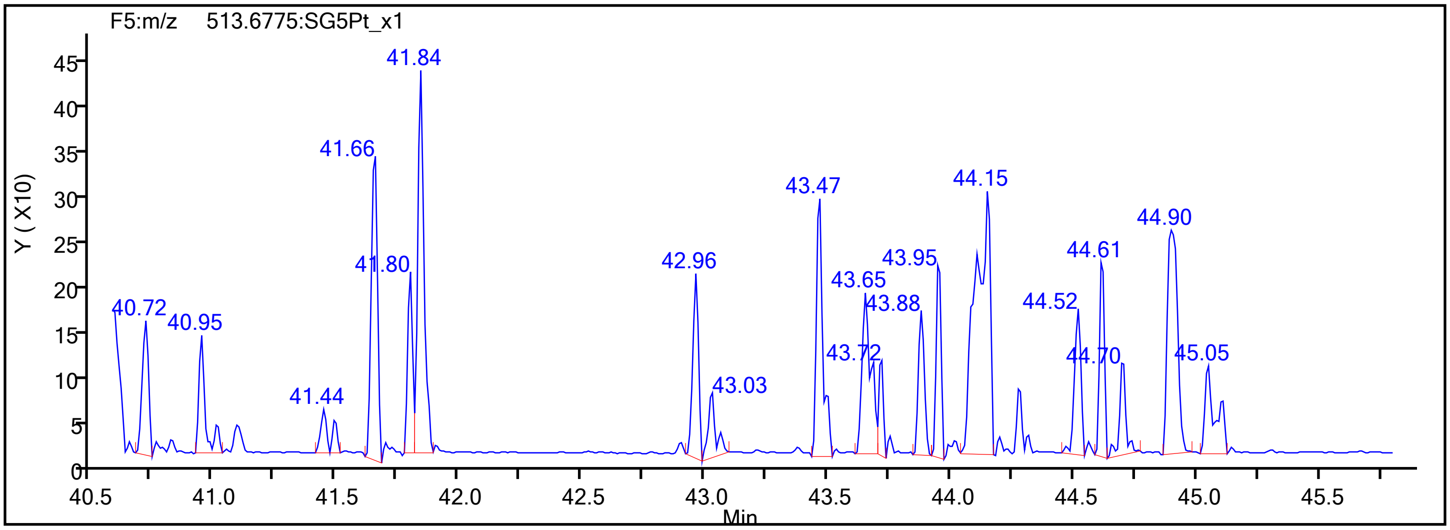

Report Date: 03-Feb-2021 14:45:31
Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d
Injection Date: 02-Feb-2021 21:46:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 3
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

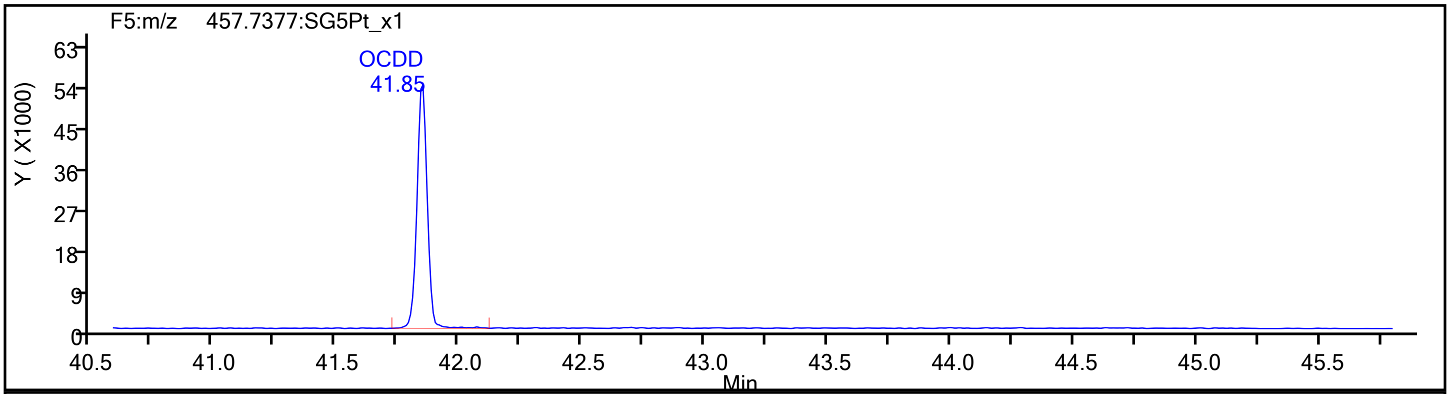

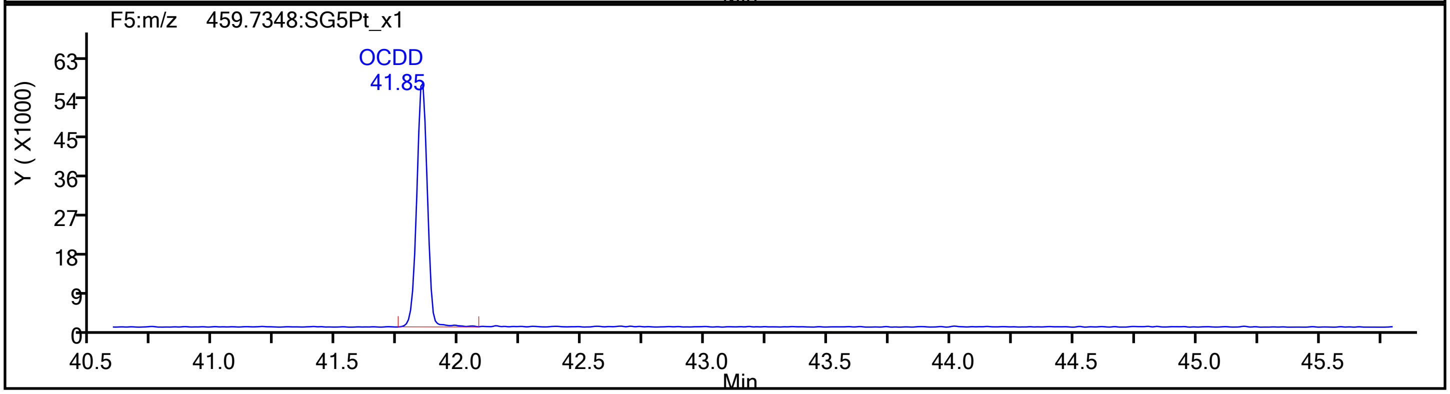

OCDD Standards

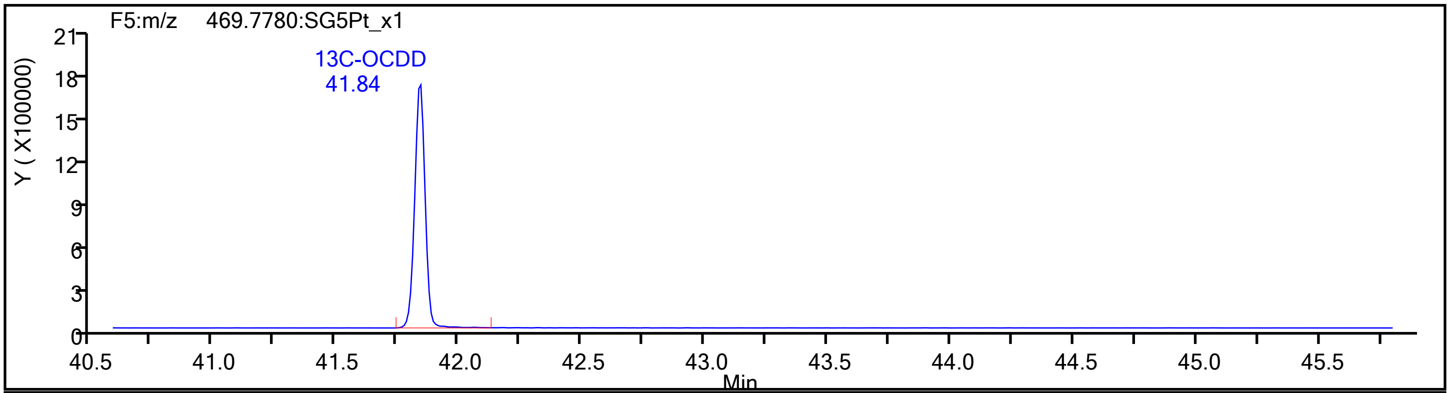

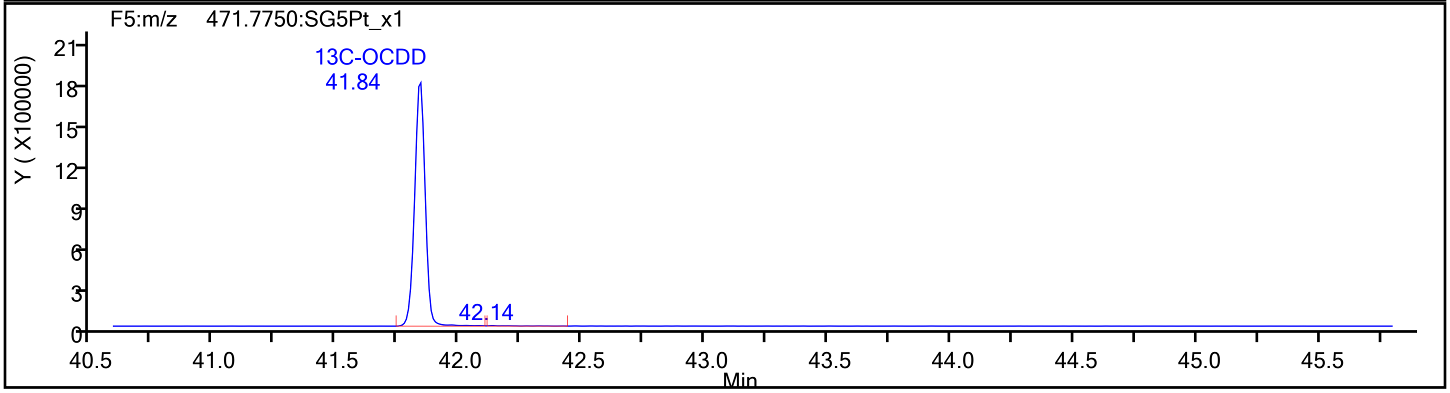

Report Date: 03-Feb-2021 14:45:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d

Injection Date: 02-Feb-2021 21:46:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 3

Column Type: DB-5

Column Dia: 0.32 mm

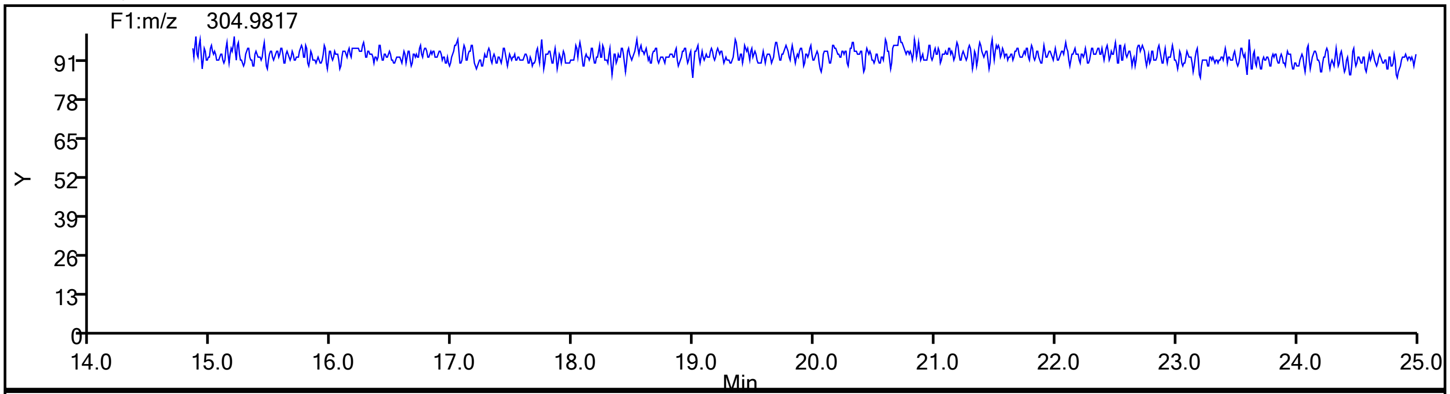

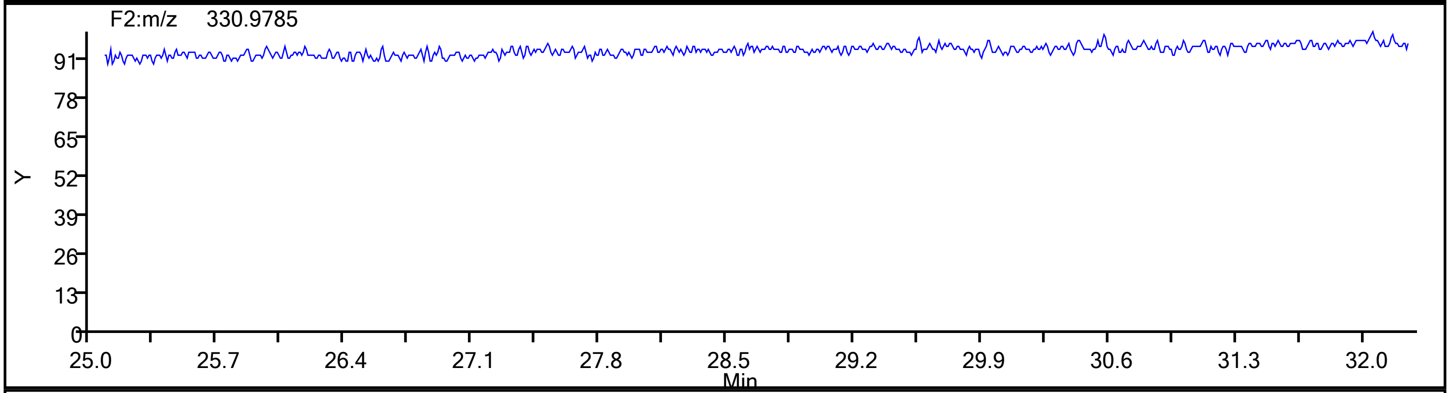

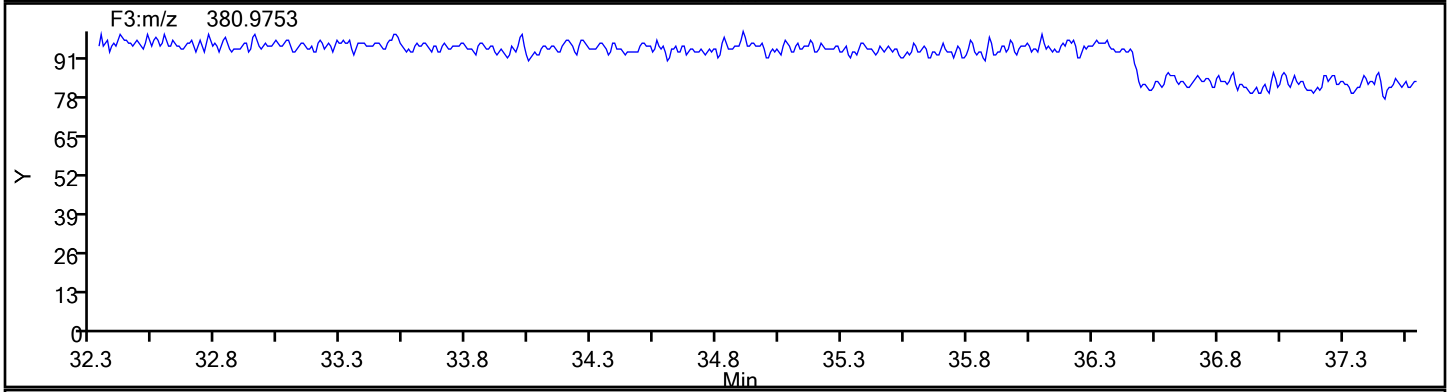

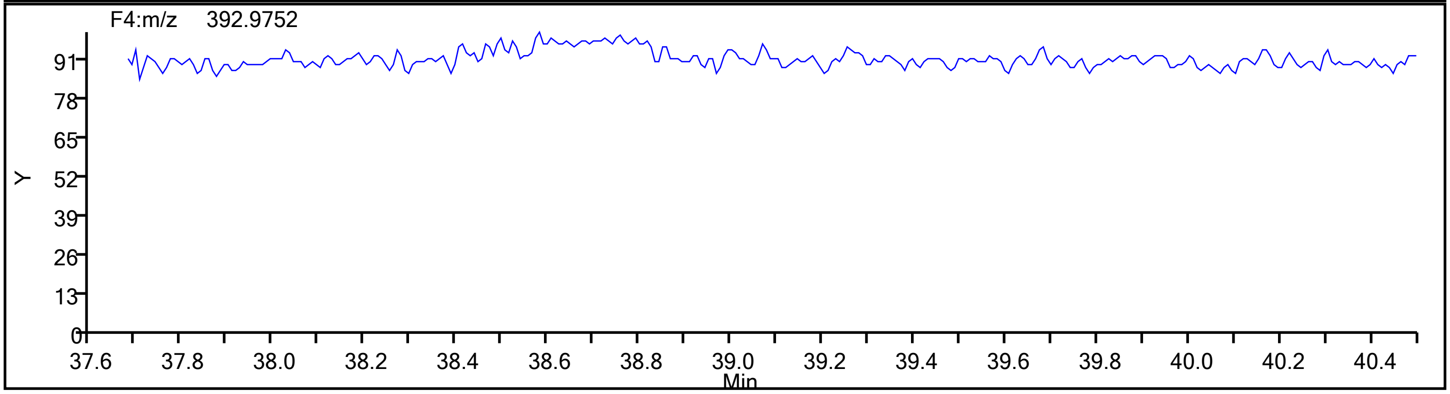

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_4.d		
Injection Date:	02-Feb-2021 21:46:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

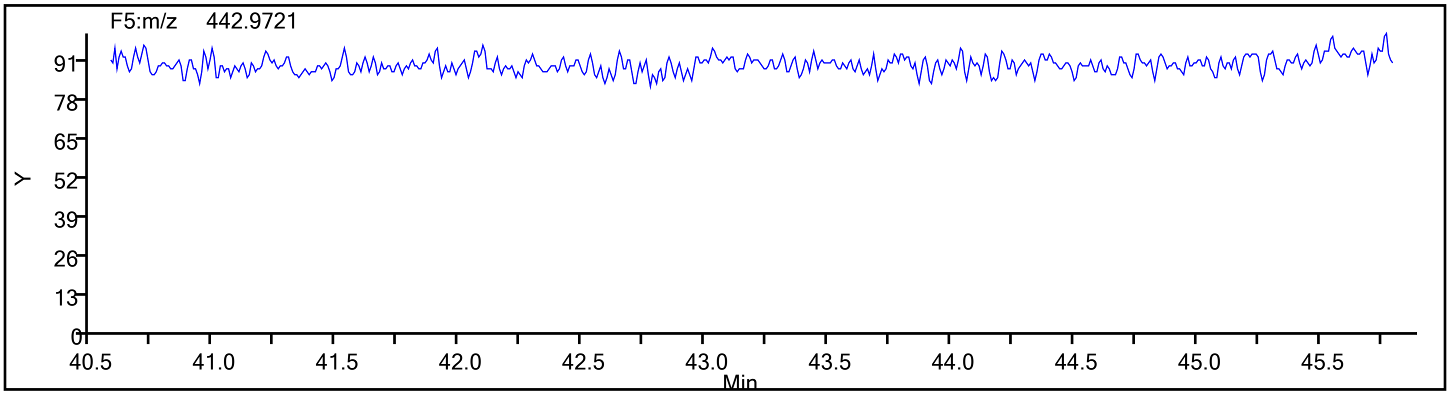

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 02-Feb-2021 22:34:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00029
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:45:34 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: messecara Date: 03-Feb-2021 01:51:41

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.882	9871895	0.83	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.920	14956457	0.81	1.5437	98.1	98.1	0.1605	0.1605	98.14	
2,3,7,8-TCDF	19.946	312717	0.84	1.1258	1.857	1.857	0.0108	0.0108	92.86	
S Total TCDF					1.857	1.857	0.0108	0.0108		
D 13C-2,3,7,8-TCDD	21.243	9060077	0.82	0.9687	94.7	94.7	0.1377	0.1377	94.74	
$ 37Cl4-2,3,7,8-TCDD	21.269	207747		1.0841	1.941	1.941	0.0122	0.0122	97.06	
2,3,7,8-TCDD	21.269	193741	0.76	1.1904	1.796	1.796	0.0205	0.0205	89.82	
S Total TCDD					1.796	1.796	0.0205	0.0205		
D 13C-1,2,3,7,8-PeCDF	26.862	12812752	1.57	1.3124	98.9	98.9	0.3604	0.3604	98.89	
1,2,3,7,8-PeCDF	26.888	1290875	1.59	1.1163	9.026	9.026	0.0402	0.0402	90.26	
D 13C-2,3,4,7,8-PeCDF	28.353	13214981	1.59	1.3352	100.3	100.3	0.3543	0.3543	100	
2,3,4,7,8-PeCDF	28.378	1250730	1.58	1.0579	8.946	8.946	0.0443	0.0443	89.46	
S Total PeCDF					18.0	18.0	0.0423	0.0423		
D 13C-1,2,3,7,8-PeCDD	29.152	7563859	1.60	0.7716	99.3	99.3	0.1759	0.1759	99.30	
1,2,3,7,8-PeCDD	29.178	781011	1.57	1.1372	9.080	9.080	0.0253	0.0253	90.80	
S Total PeCDD					9.080	9.080	0.0253	0.0253		
D 13C-1,2,3,4,7,8-HxCDF	34.619	11949358	0.54	1.0931	100.9	100.9	0.3119	0.3119	101	
1,2,3,4,7,8-HxCDF	34.636	1253149	1.28	1.1831	8.864	8.864	0.0415	0.0415	88.64	
D 13C-1,2,3,6,7,8-HxCDF	34.787	12195218	0.54	1.1278	99.8	99.8	0.3023	0.3023	99.78	
1,2,3,6,7,8-HxCDF	34.804	1356347	1.26	1.2484	8.909	8.909	0.0397	0.0397	89.09	
D 13C-2,3,4,6,7,8-HxCDF	35.637	11320363	0.54	1.0552	99.0	99.0	0.3231	0.3231	98.99	
2,3,4,6,7,8-HxCDF	35.662	1312419	1.26	1.2750	9.093	9.093	0.0369	0.0369	90.93	
D 13C-1,2,3,7,8,9-HxCDF	36.555	10592907	0.54	0.9938	98.3	98.3	0.3431	0.3431	98.35	
1,2,3,7,8,9-HxCDF	36.572	1253722	1.30	1.2953	9.137	9.137	0.0356	0.0356	91.37	
S Total HxCDF					36.0	36.0	0.0384	0.0384		
* 13C-1,2,3,7,8,9-HxCDD	36.353	10837771	1.29	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.865	8419662	1.30	0.7895	98.4	98.4	0.1851	0.1851	98.40	
1,2,3,4,7,8-HxCDD	35.873	832563	1.28	1.0950	9.031	9.031	0.0301	0.0301	90.31	
D 13C-1,2,3,6,7,8-HxCDD	35.982	8780738	1.26	0.8495	95.4	95.4	0.1720	0.1720	95.38	
1,2,3,6,7,8-HxCDD	35.999	832354	1.23	1.0201	9.292	9.292	0.0316	0.0316	92.92	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.370	909456	1.27	1.1549	9.157	9.157	0.0282	0.0282	91.57	
S Total HxCDD					27.5	27.5	0.0300	0.0300		
D 13C-1,2,3,4,6,7,8-HpCDF	38.409	8236012	0.47	0.7854	96.8	96.8	0.2565	0.2565	96.76	
1,2,3,4,6,7,8-HpCDF	38.417	1086793	1.05	1.4859	8.881	8.881	0.0379	0.0379	88.81	
D 13C-1,2,3,4,7,8,9-HpCDF	39.671	7737822	0.47	0.7230	98.8	98.8	0.2786	0.2786	98.76	
1,2,3,4,7,8,9-HpCDF	39.680	958081	1.06	1.4048	8.814	8.814	0.0388	0.0388	88.14	
S Total HpCDF					17.7	17.7	0.0384	0.0384		
D 13C-1,2,3,4,6,7,8-HpCDD	39.368	6852107	1.09	0.6413	98.6	98.6	0.2248	0.2248	98.58	
1,2,3,4,6,7,8-HpCDD	39.377	695834	1.07	1.1489	8.839	8.839	0.0239	0.0239	88.39	
S Total HpCDD					8.839	8.839	0.0239	0.0239		
D 13C-OCDD	41.821	10845106	0.91	0.5141	194.7	194.7	0.1648	0.1648	97.33	
OCDF	41.913	1447224	0.94	1.5776	16.9	16.9	0.0280	0.0280	84.59	
OCDD	41.829	1124435	0.89	1.1706	17.7	17.7	0.0233	0.0233	88.57	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00029 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:45:44   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 3
Inject. Date: 02-Feb-2021 22:34:00   ALS Bottle#: 0   Worklist Smp#: 4
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: CS-3 HRDXNL3_00029
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:45:34   Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: messecara   Date: 03-Feb-2021 01:51:41

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.882	20.870	1		4463654	678062	543	1357	1249		
333.9338	20.882	20.870	1		5408241	813950	253	632	3217	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.920	19.910	1	0.954	6712908	1045895	902	2255	1160		
317.9389	19.920	19.910	1	0.954	8243549	1302077	577	1442	2257	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.946	19.937	0	1.001	142738	23061	34	85	678		
305.8987	19.946	19.937	0	1.001	169979	28055	80	200	351	0.84(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.243	21.233	1	1.017	4075176	595782	543	1357	1097		
333.9338	21.243	21.233	1	1.017	4984901	720868	253	632	2849	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.269	21.260	1	1.019	207747	30489	79	197	386		
2,3,7,8-TCDD											
319.8965	21.269	21.262	0	1.001	83903	12696	98	245	130		
321.8936	21.269	21.262	0	1.001	109838	15981	31	77	516	0.76(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.862	26.859	0	1.286	7835106	1372995	1741	4352	789		
353.8970	26.862	26.859	0	1.286	4977646	870143	1082	2705	804	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.888	26.886	0	1.001	792392	137331	184	460	746		
341.8567	26.888	26.886	0	1.001	498483	86307	219	547	394	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.353	28.348	0	1.358	8121660	1309129	1741	4352	752		
353.8970	28.344	28.348	0	1.357	5093321	838565	1082	2705	775	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.378	28.373	0	1.001	766045	127186	184	460	691		
341.8567	28.378	28.373	0	1.001	484685	79585	219	547	363	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.152	29.144	0	1.396	4659982	729104	489	1222	1491		
369.8919	29.152	29.144	0	1.396	2903877	453903	321	802	1414	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.178	29.174	0	1.001	476967	75678	101	252	749		
357.8516	29.178	29.174	0	1.001	304044	47814	35	87	1366	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.619	34.620	0	0.952	4200357	958317	1383	3457	693		
385.8610	34.619	34.620	0	0.952	7749001	1725665	2593	6482	666	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.636	34.638	0	1.000	703917	161188	299	747	539		
375.8178	34.636	34.638	0	1.000	549232	122721	228	570	538	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.787	34.792	0	0.957	4290225	951083	1383	3457	688		
385.8610	34.787	34.792	0	0.957	7904993	1707510	2593	6482	659	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.804	34.808	0	1.000	757097	166078	299	747	555		
375.8178	34.804	34.808	0	1.000	599250	129119	228	570	566	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.637	35.644	0	0.980	3977332	987924	1383	3457	714		
385.8610	35.637	35.644	0	0.980	7343031	1813112	2593	6482	699	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.662	35.662	0	1.001	731642	179494	299	747	600		
375.8178	35.662	35.662	0	1.001	580777	142065	228	570	623	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.555	36.560	0	1.006	3720220	1006268	1383	3457	728		
385.8610	36.555	36.560	0	1.006	6872687	1847689	2593	6482	713	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.572	36.576	0	1.000	707940	193121	299	747	646		
375.8178	36.572	36.576	0	1.000	545782	148353	228	570	651	1.30(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.353	36.359	0		6105992	1632861	908	2270	1798		
403.8529	36.353	36.359	0		4731779	1282281	796	1990	1611	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.865	35.864	0	0.987	4752711	1259981	908	2270	1388		
403.8529	35.865	35.864	0	0.987	3666951	981704	796	1990	1233	1.30(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.873	35.879	0	1.000	467927	125349	178	445	704		
391.8127	35.873	35.879	0	1.000	364636	99181	118	295	841	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.982	35.985	0	0.990	4898362	1279907	908	2270	1410		
403.8529	35.982	35.985	0	0.990	3882376	1016084	796	1990	1276	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.999	35.999	0	1.000	459196	120559	178	445	677		
391.8127	35.999	35.999	0	1.000	373158	97326	118	295	825	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.370	36.373	0	1.014	508110	136698	178	445	768		
391.8127	36.370	36.373	0	1.014	401346	107230	118	295	909	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.409	38.412	0	1.057	2629796	873422	907	2267	963		
419.8220	38.409	38.412	0	1.057	5606216	1833458	1442	3605	1271	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.417	38.422	0	1.000	557570	186871	393	982	475		
409.7788	38.417	38.422	0	1.000	529223	177223	217	542	817	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.671	39.676	0	1.091	2472050	901951	907	2267	994		
419.8220	39.671	39.676	0	1.091	5265772	1892702	1442	3605	1313	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.680	39.686	0	1.000	493470	176261	393	982	449		
409.7788	39.680	39.686	0	1.000	464611	167988	217	542	774	1.06(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.368	39.370	0	1.083	3577796	1288971	882	2205	1461		
437.8140	39.368	39.370	0	1.083	3274311	1175390	799	1997	1471	1.09(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.377	39.381	0	1.000	359280	129271	163	407	793		
425.7737	39.377	39.381	0	1.000	336554	120954	108	270	1120	1.07(0.88-1.20)	
13C-OCDD											
469.7780	41.821	41.826	0	1.150	5164675	1755867	504	1260	3484		
471.7750	41.821	41.826	0	1.150	5680431	1922016	484	1210	3971	0.91(0.76-1.02)	
OCDF											
441.7428	41.913	41.921	0	1.002	701029	234155	121	302	1935		
443.7399	41.913	41.921	0	1.002	746195	250352	204	510	1227	0.94(0.76-1.02)	
OCDD											
457.7377	41.829	41.835	0	1.000	530147	183681	90	225	2041		
459.7348	41.829	41.835	0	1.000	594288	207102	111	277	1866	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00029 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:45:44   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d
Injection Date: 02-Feb-2021 22:34:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

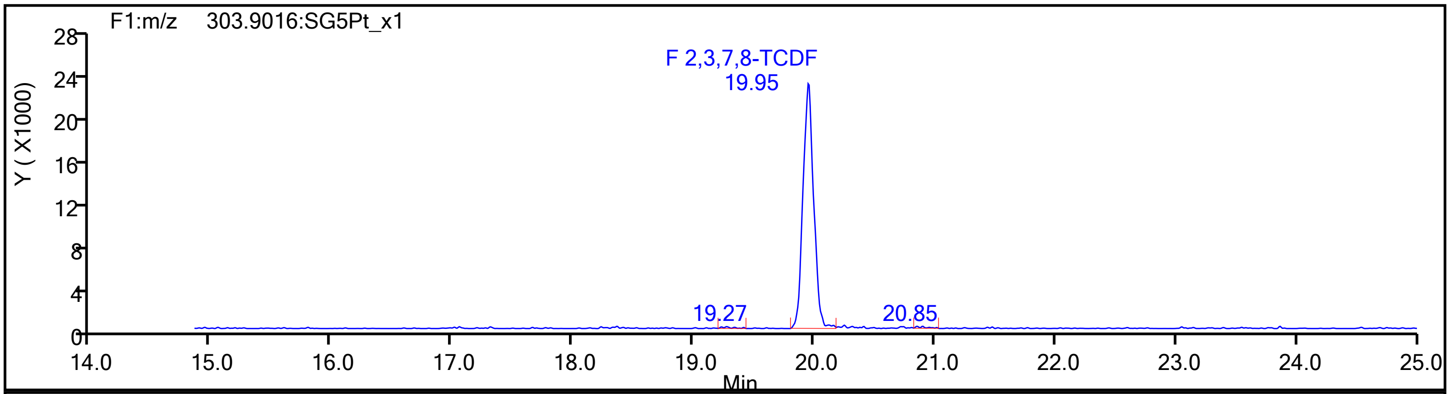
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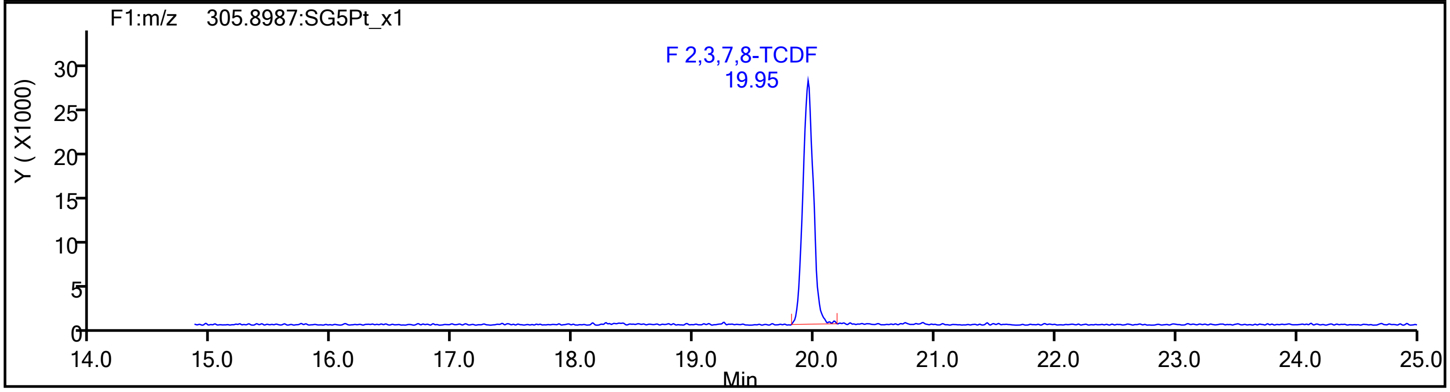
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TCDF Standards

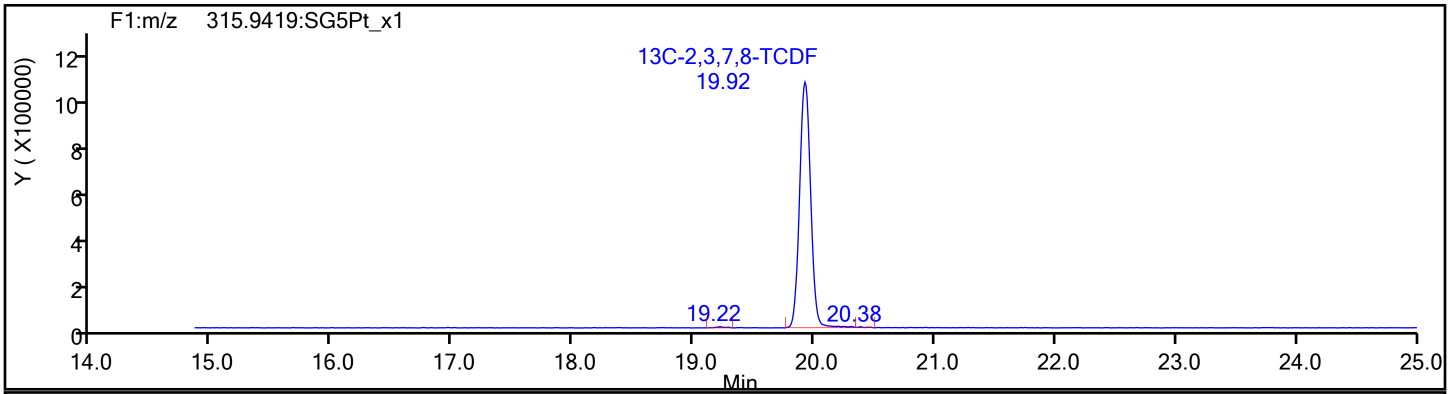
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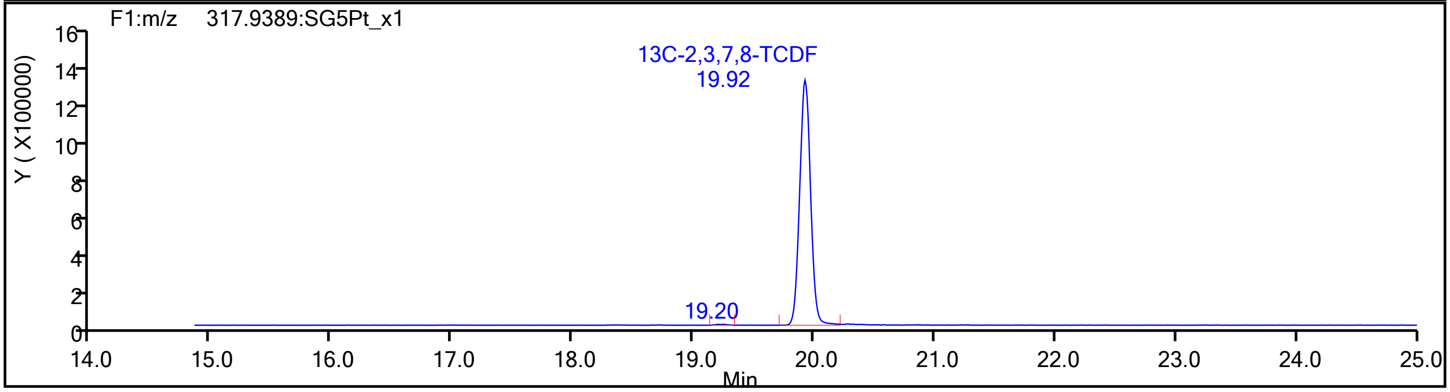
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Report Date: 03-Feb-2021 14:45:44   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d		
Injection Date:	02-Feb-2021 22:34:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

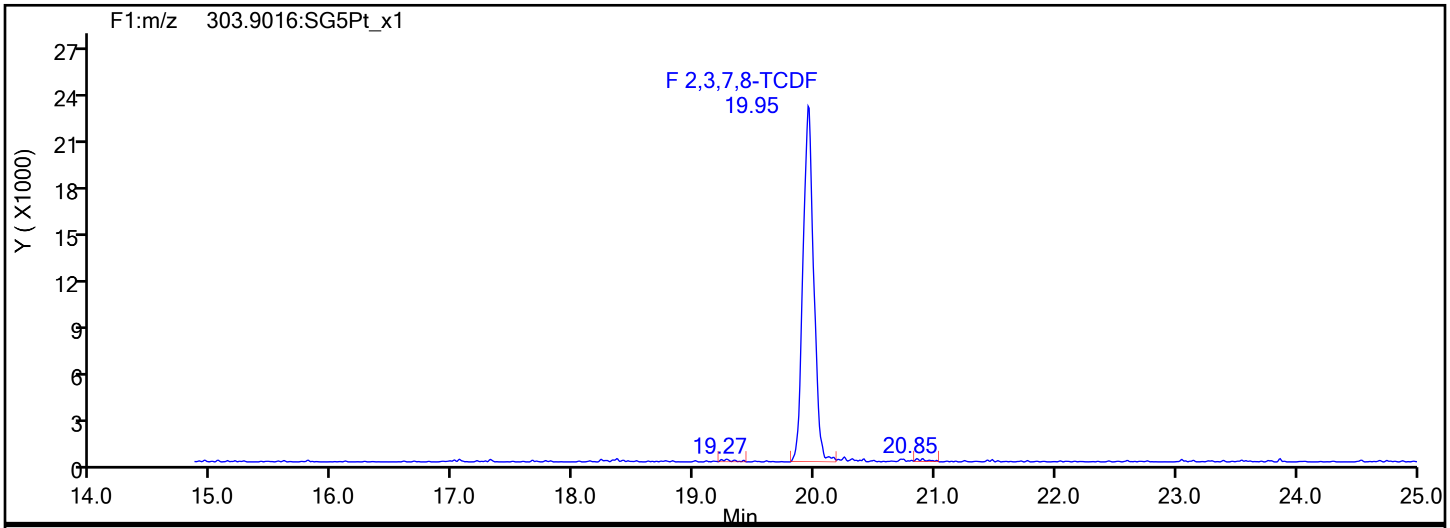

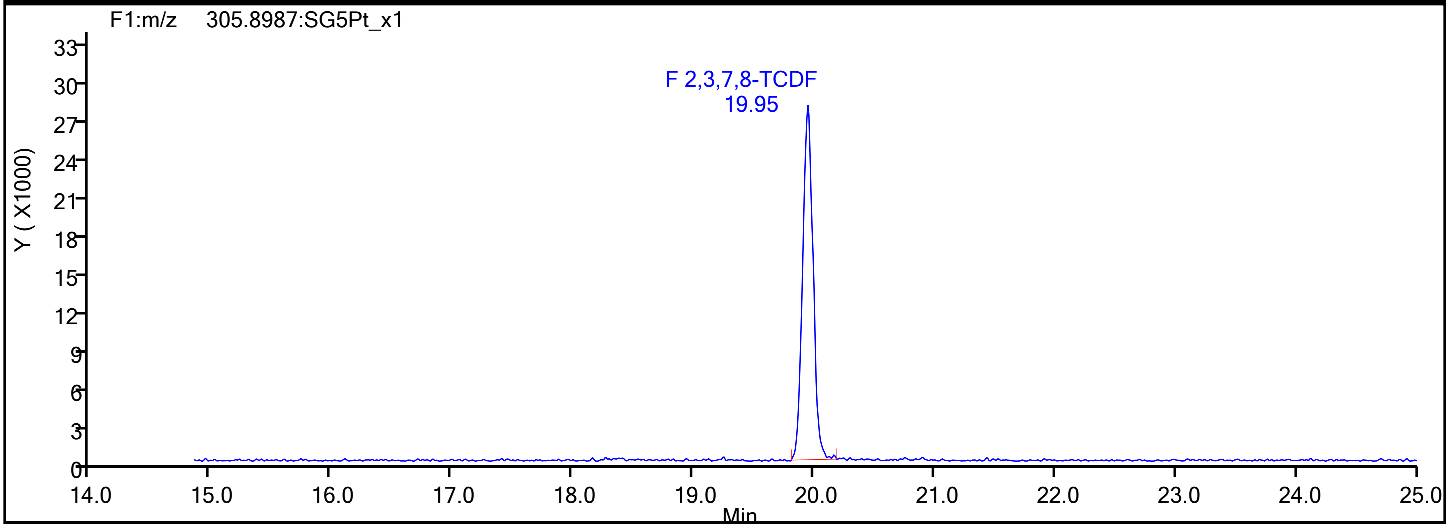

TCDF Interference Mass

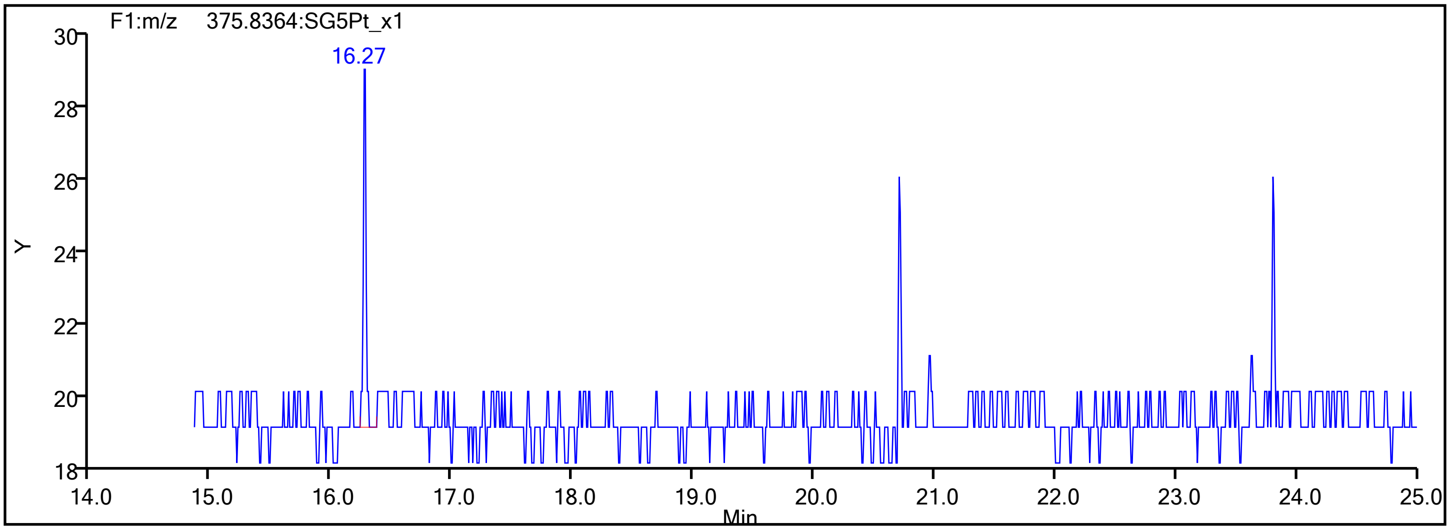

Report Date: 03-Feb-2021 14:45:44		Chrom Revision: 2.3 18-Dec-2020 13:34:10	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d		
Injection Date:	02-Feb-2021 22:34:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

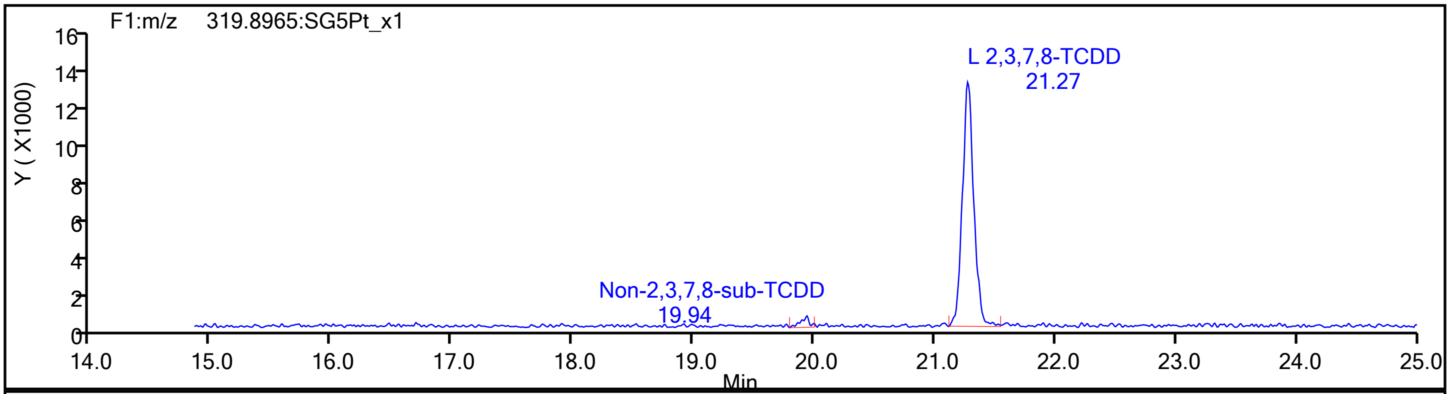

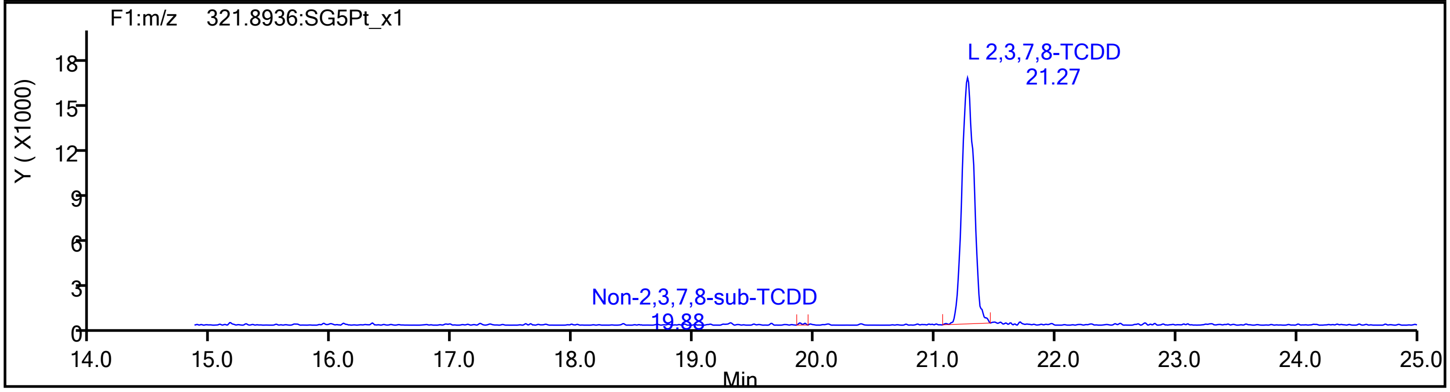

TCDD Standards

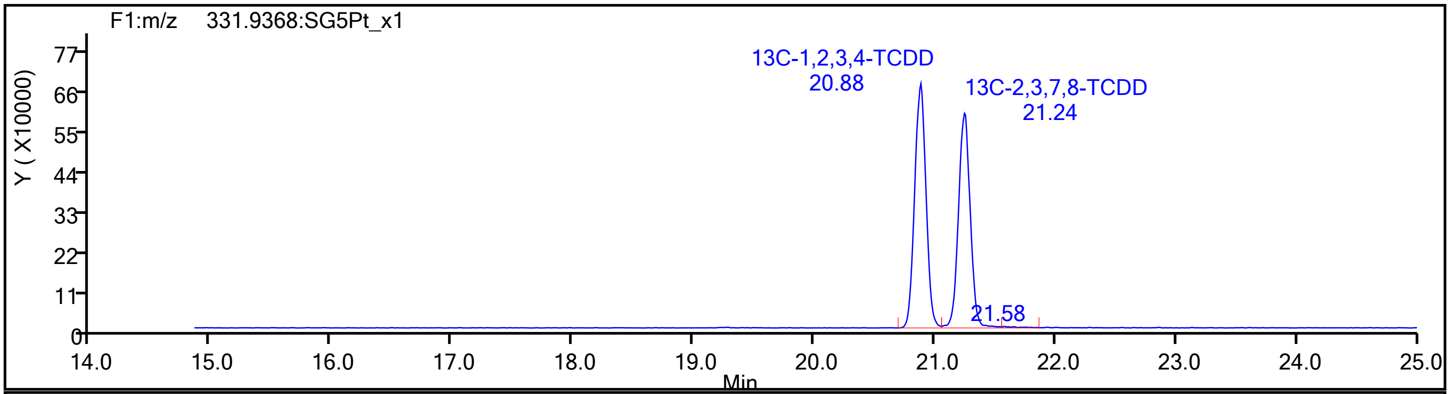

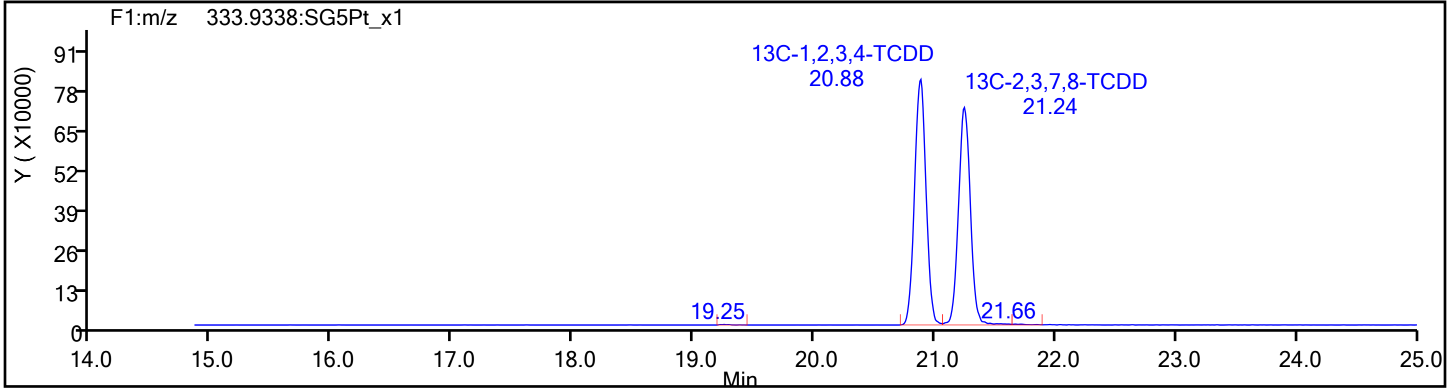

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d		
Injection Date:	02-Feb-2021 22:34:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

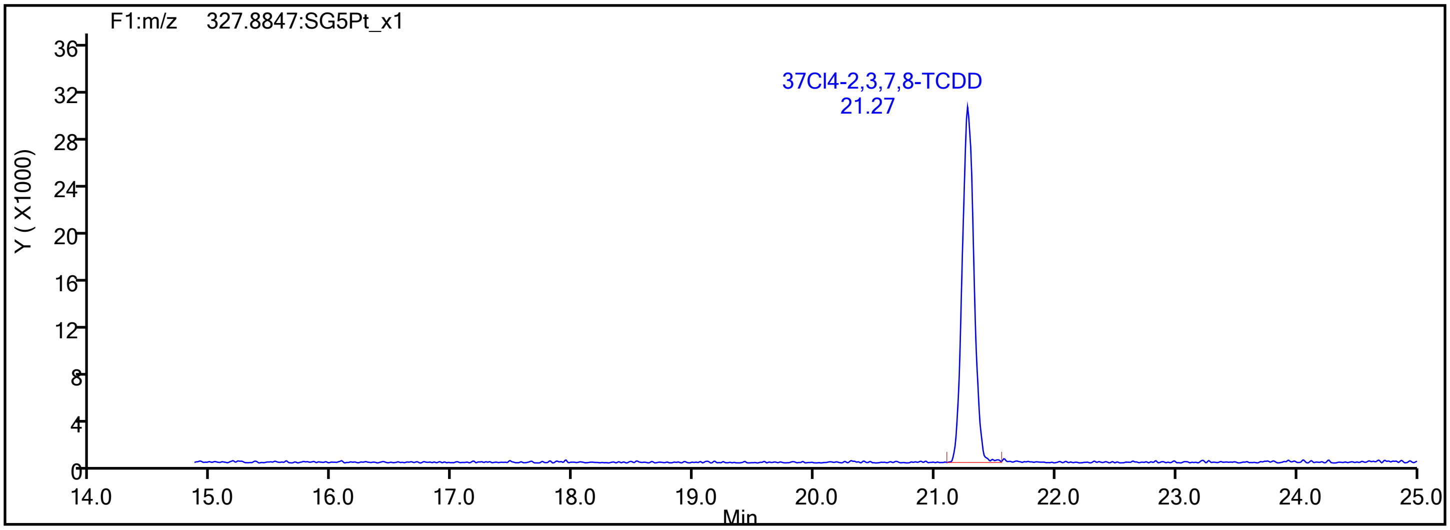

37Cl4-TCDD Standards

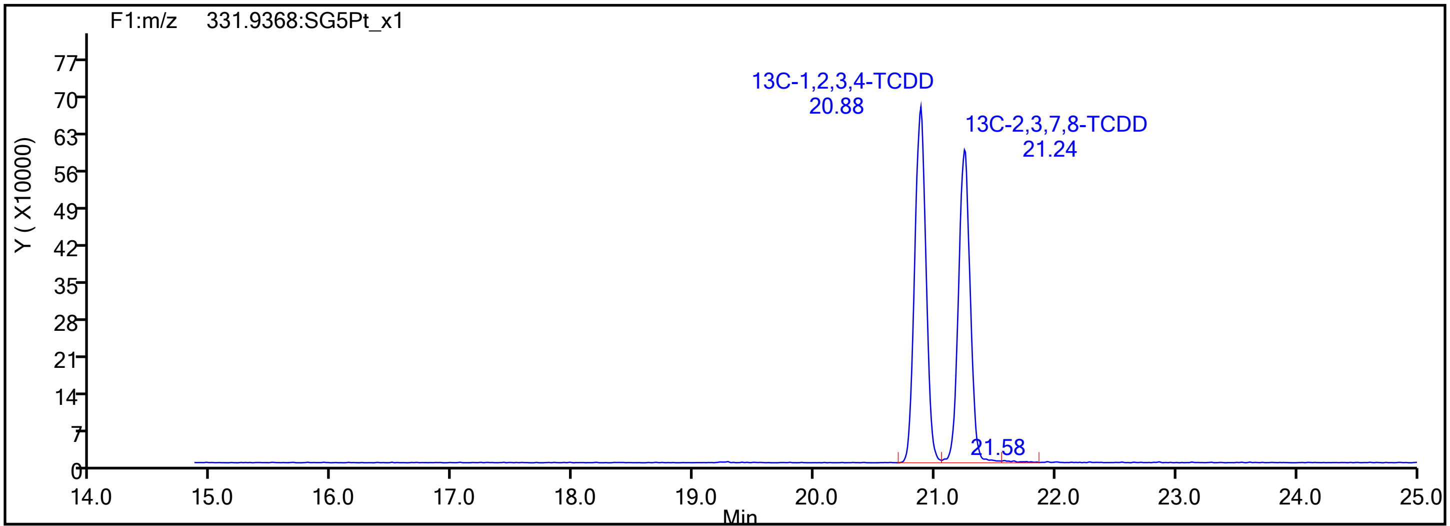

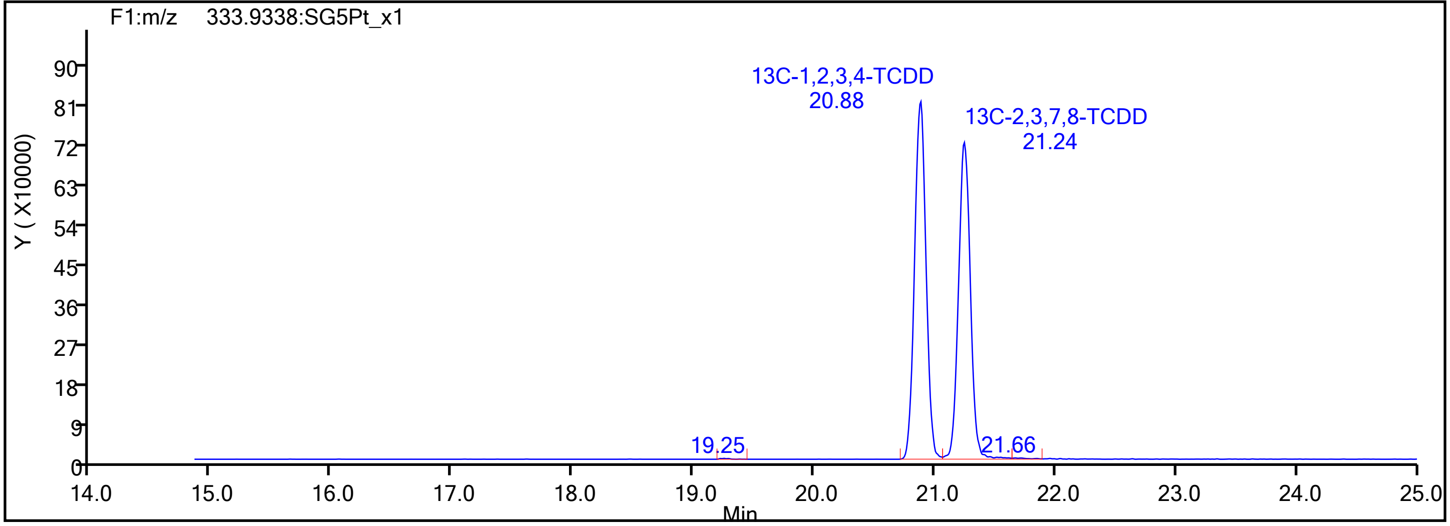

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d

Injection Date: 02-Feb-2021 22:34:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

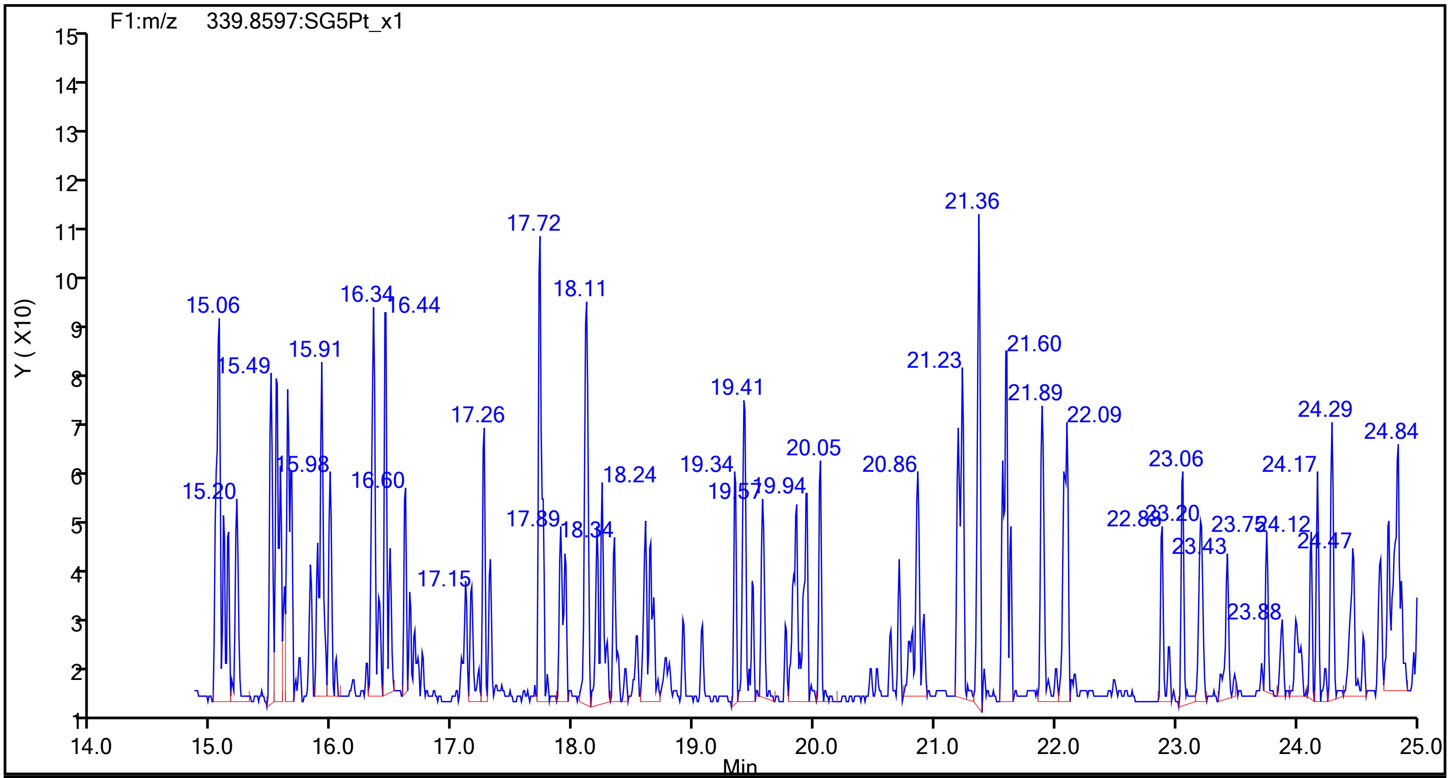

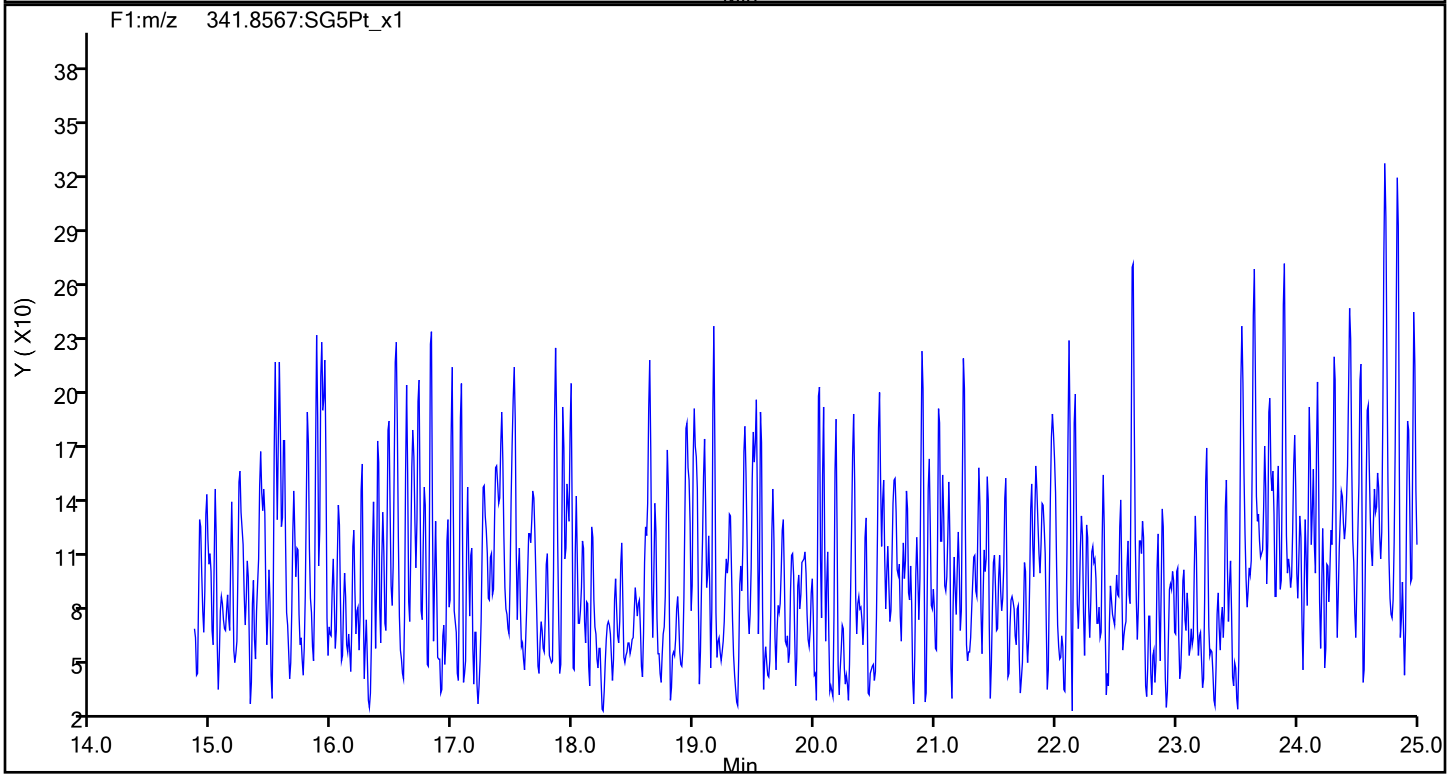

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d

Injection Date: 02-Feb-2021 22:34:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

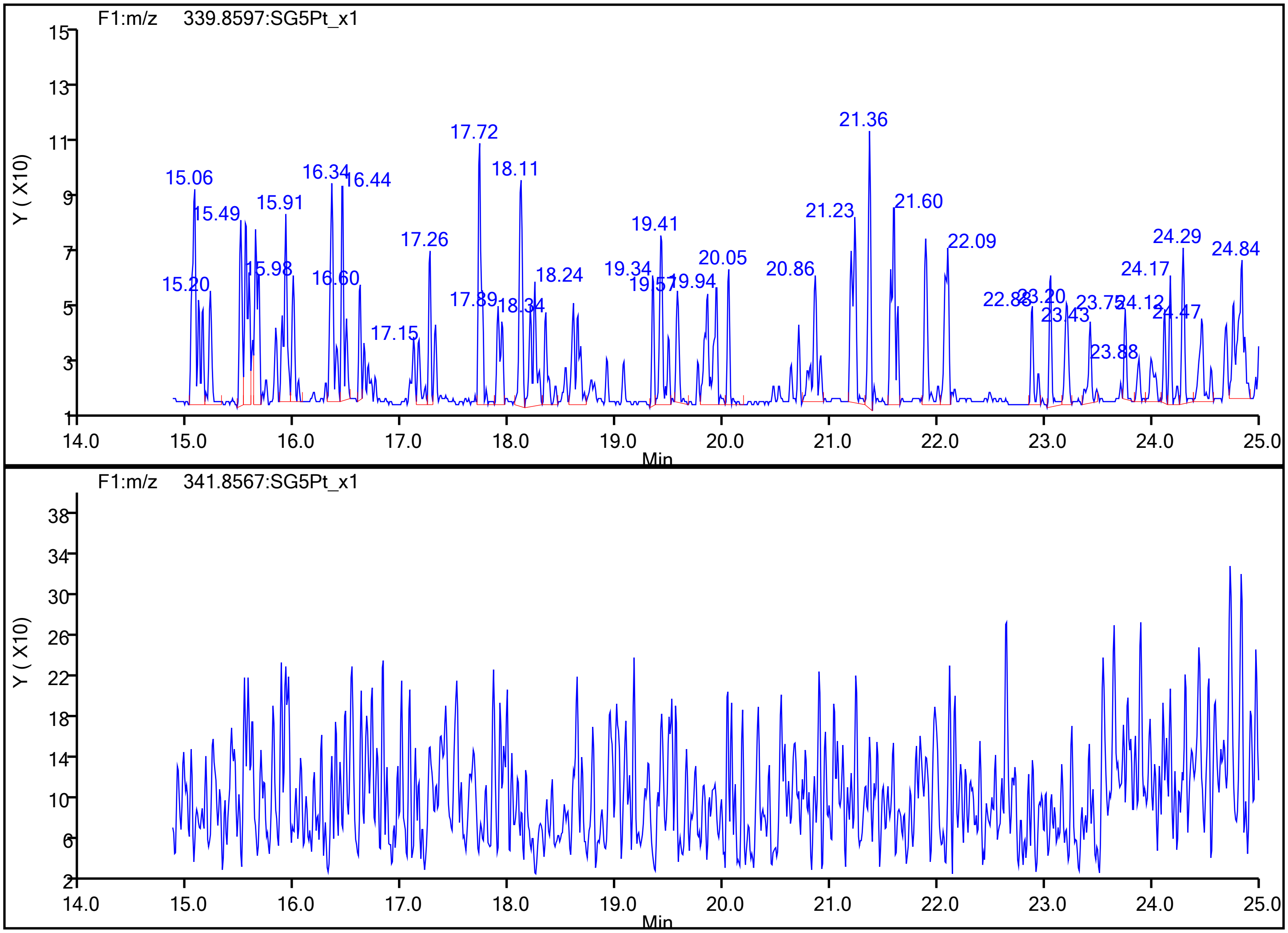

F1 PeCDFs Interference Mass

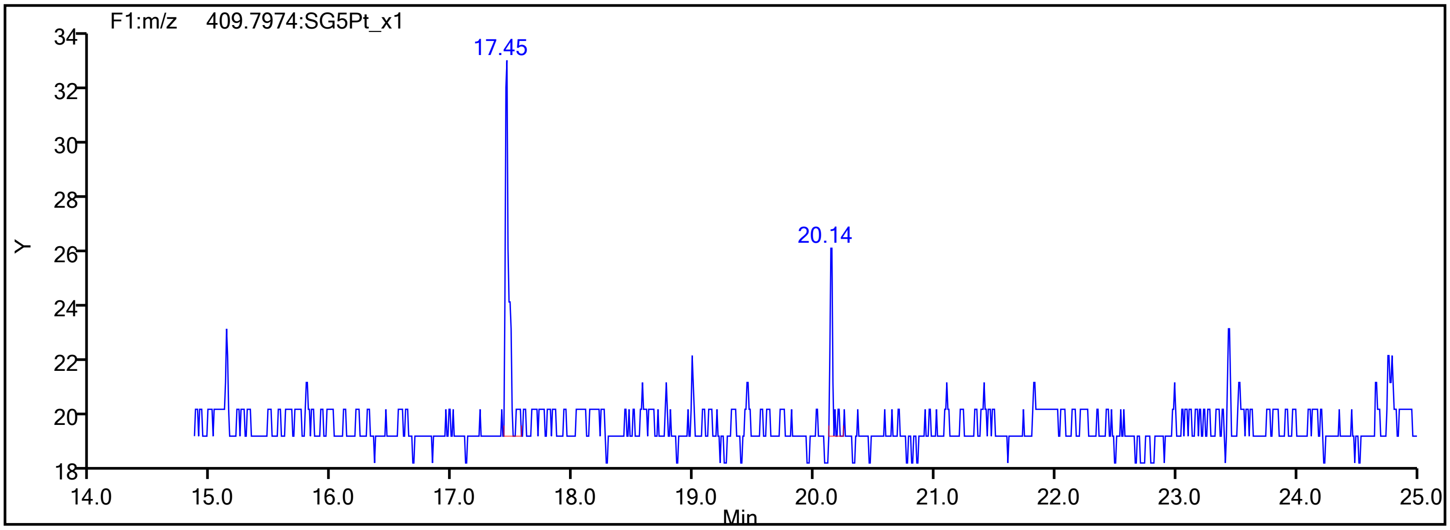

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d
Injection Date: 02-Feb-2021 22:34:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

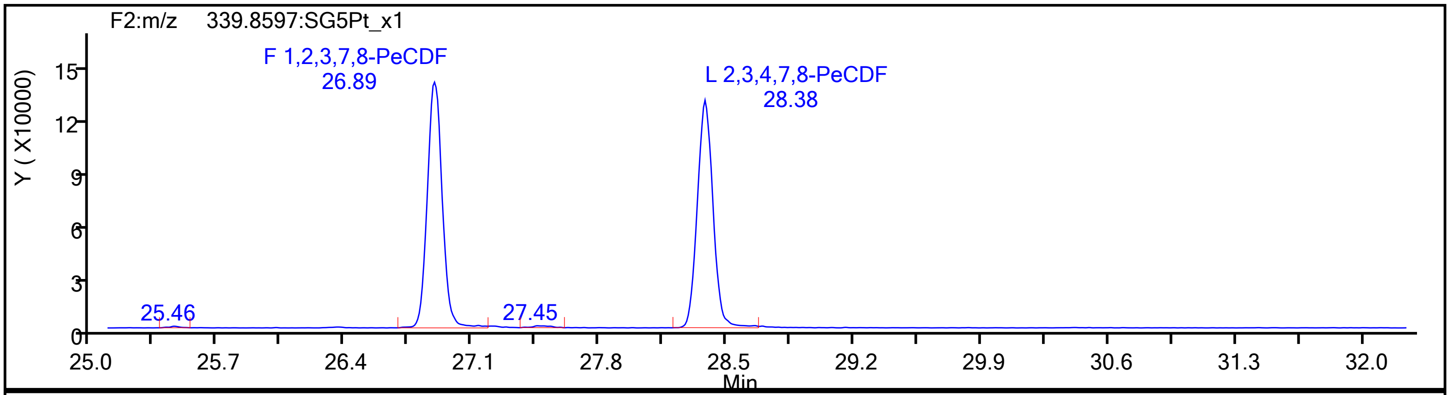

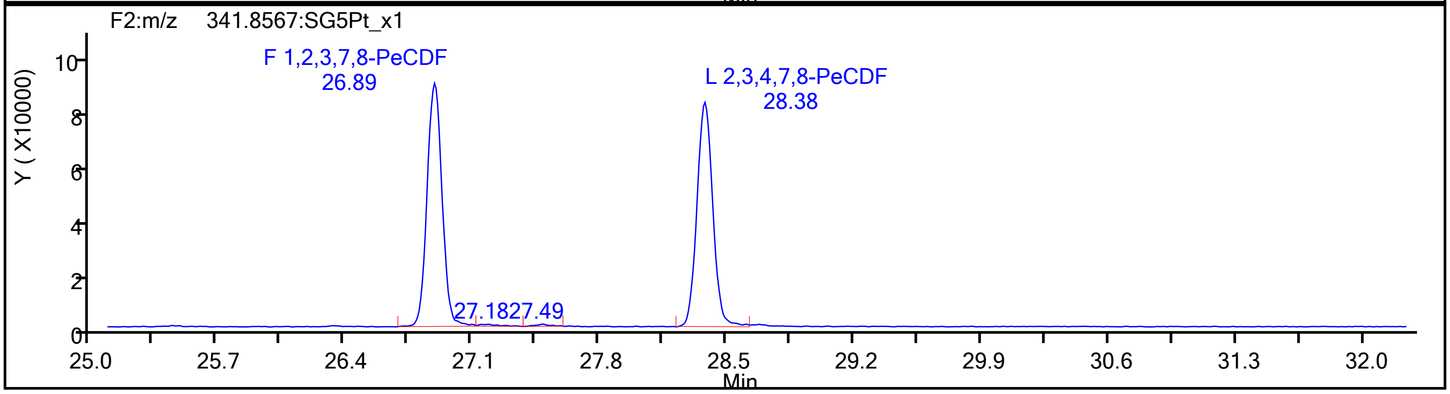

PeCDF Standards

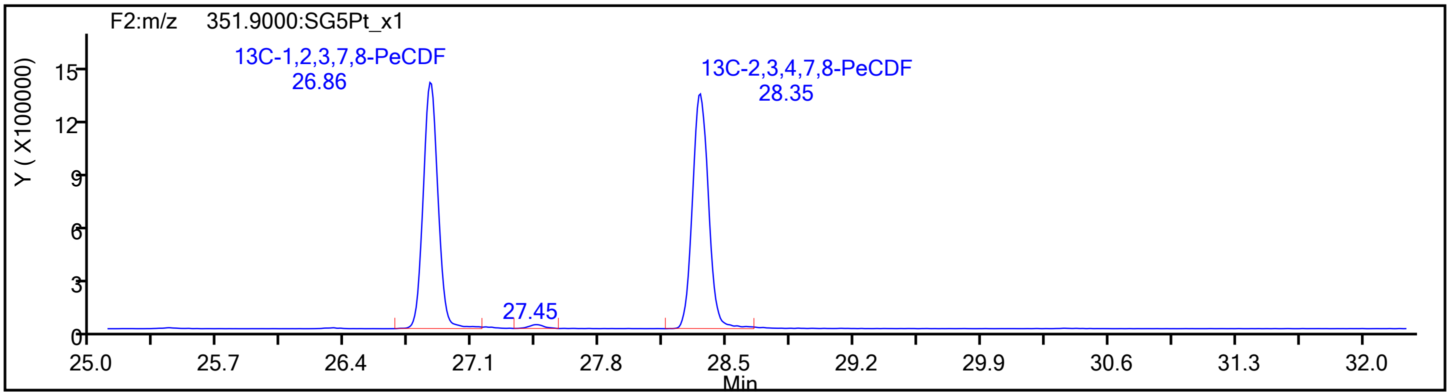

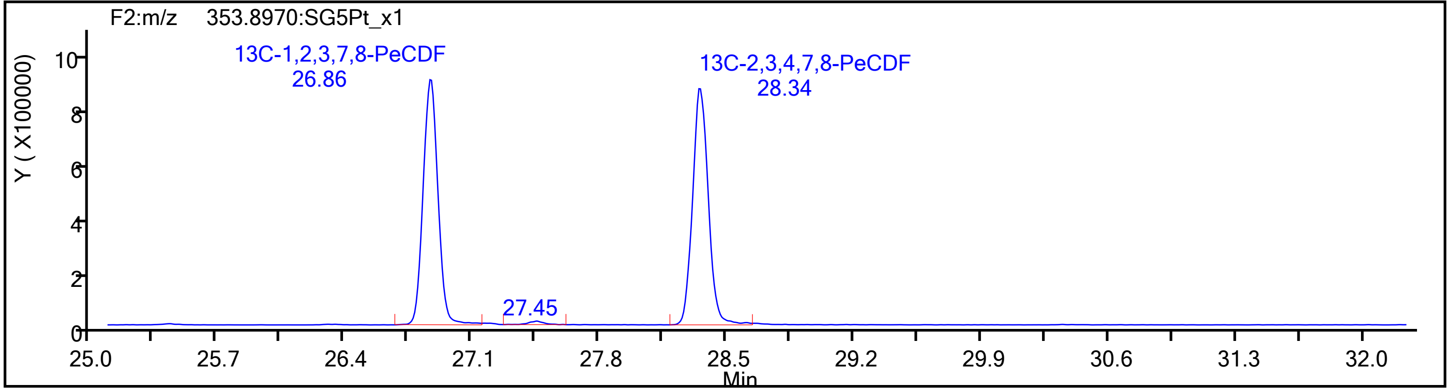

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d		
Injection Date:	02-Feb-2021 22:34:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

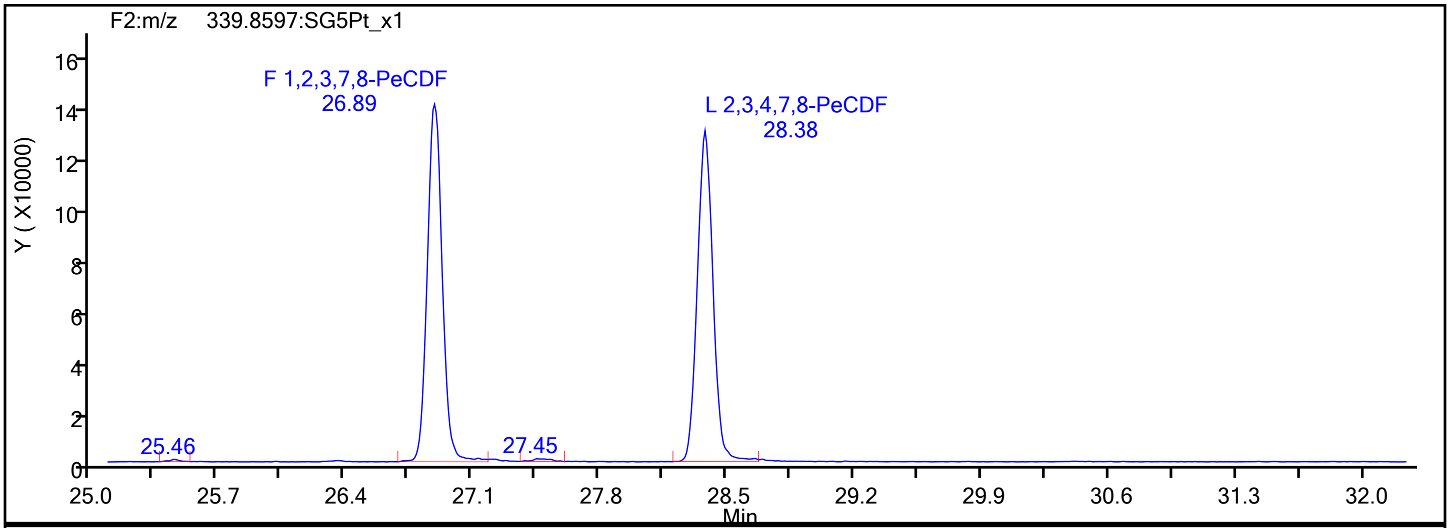

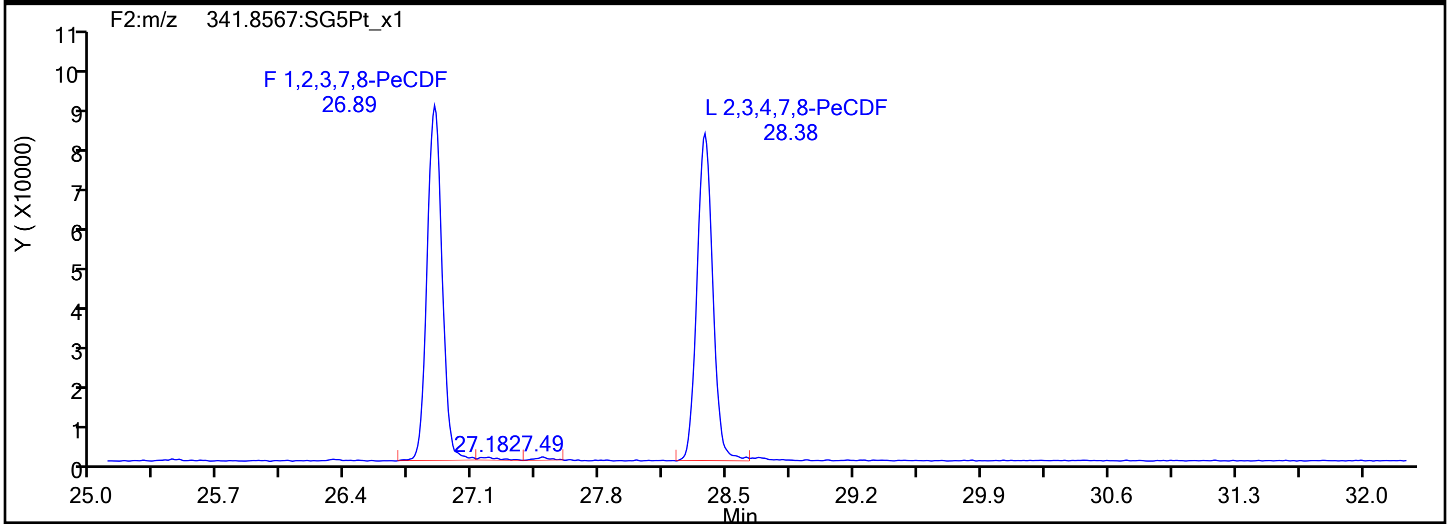

PeCDF Interference Mass

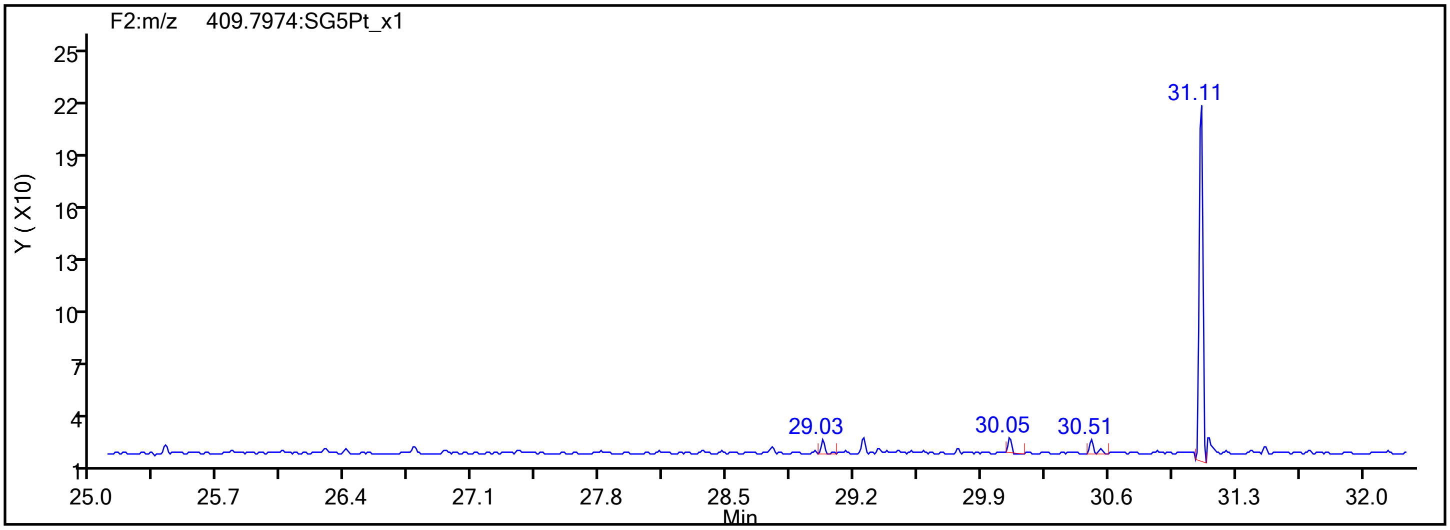

Report Date: 03-Feb-2021 14:45:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

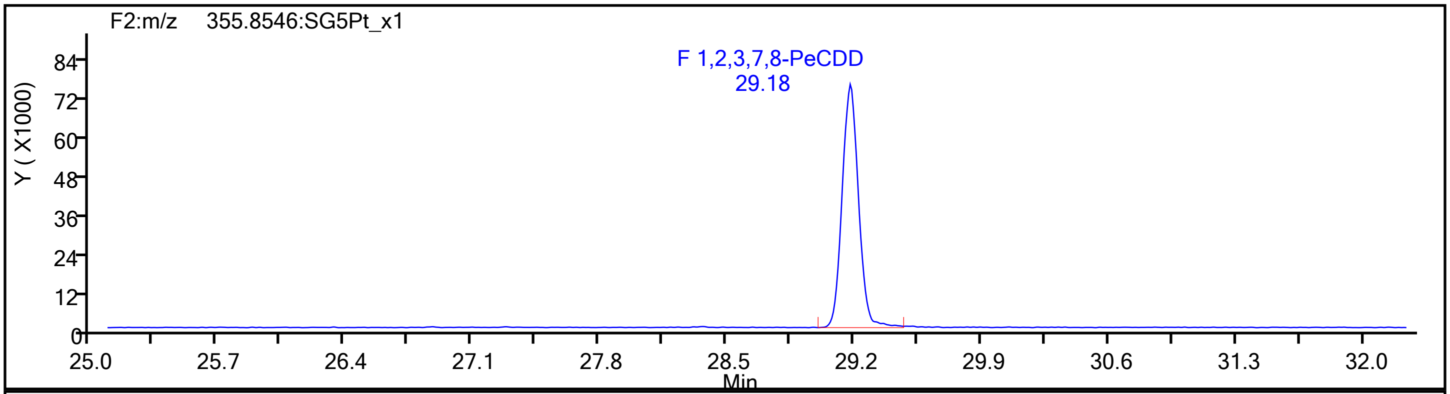

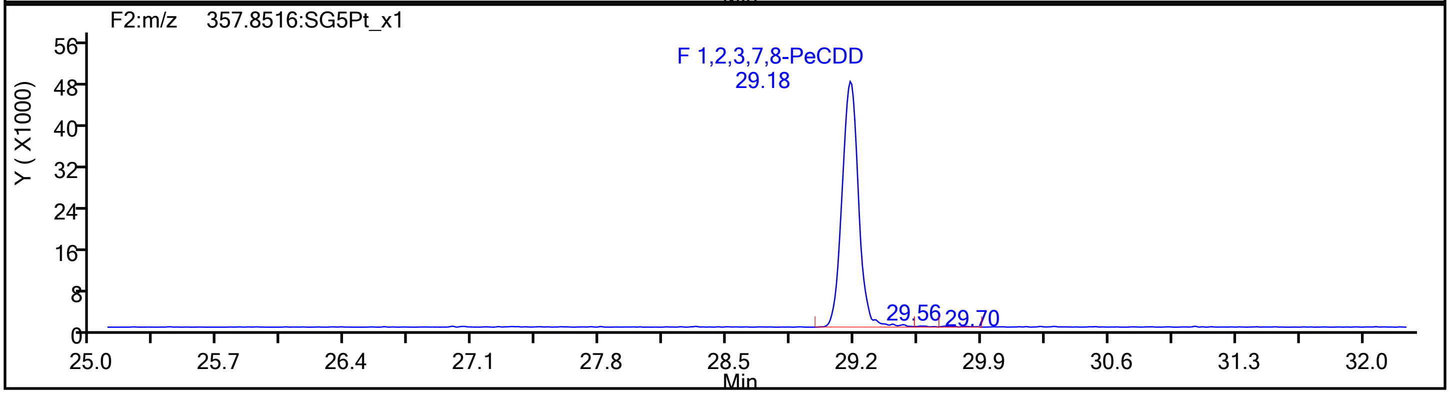

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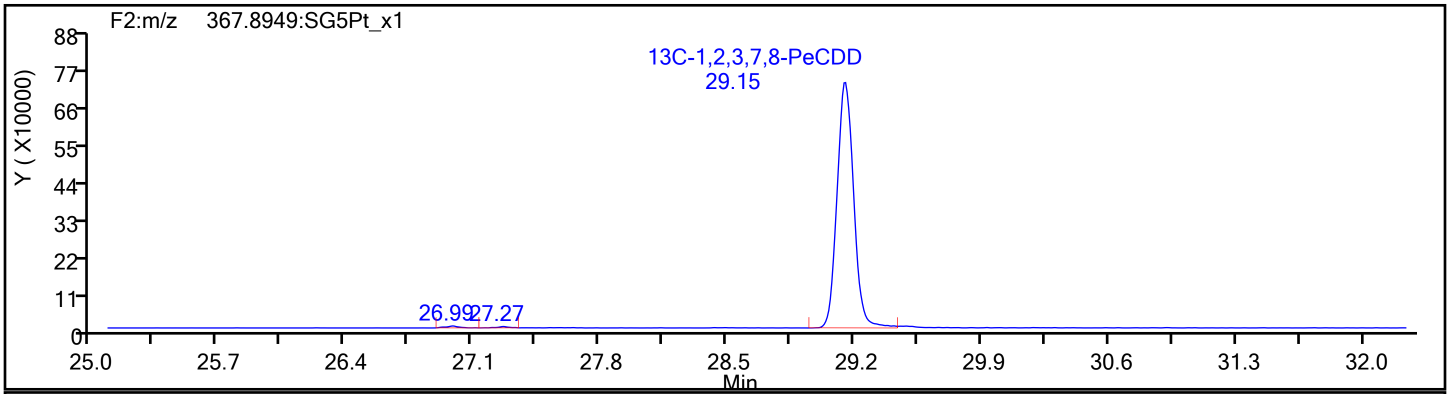

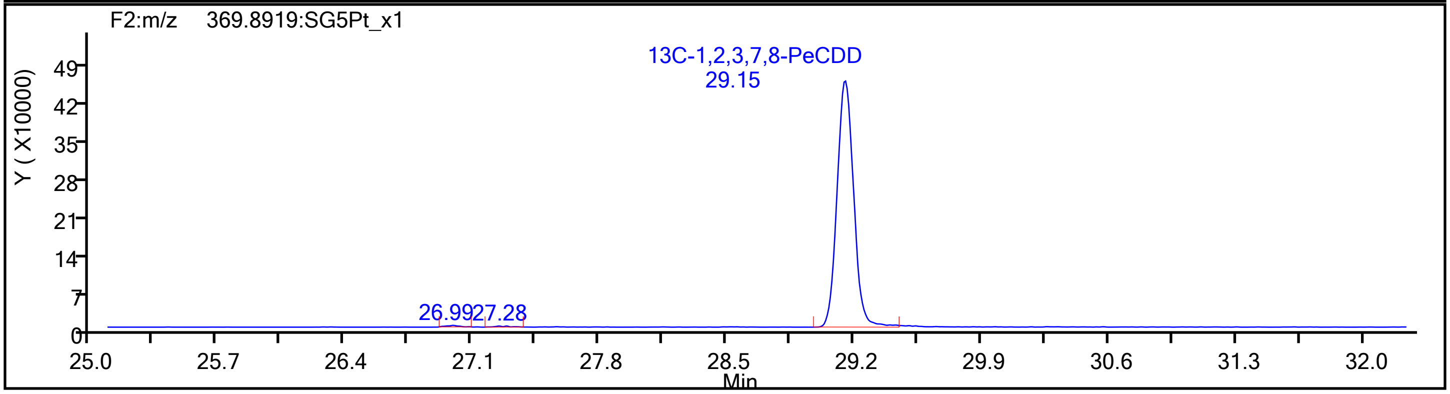

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Eurofins TestAmerica, Sacramento
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Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

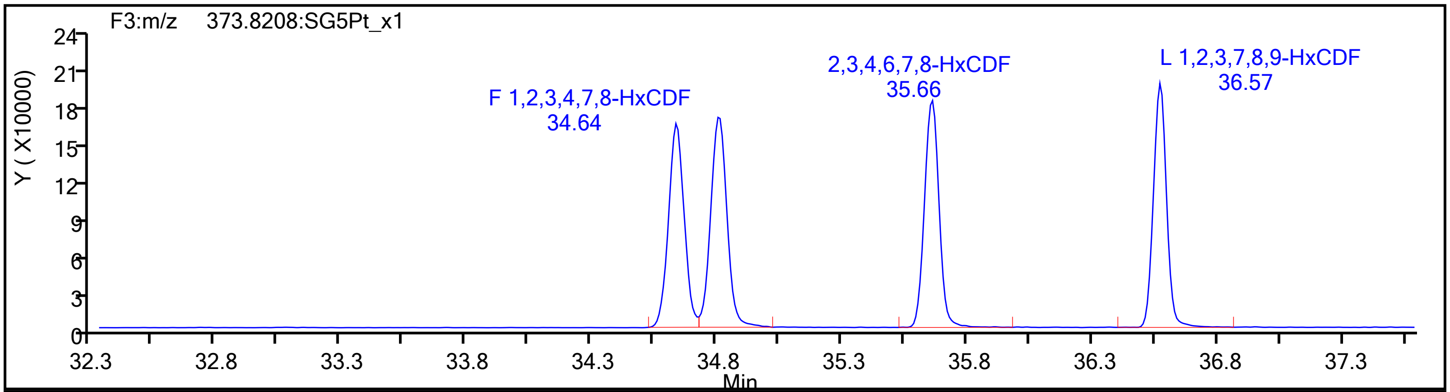

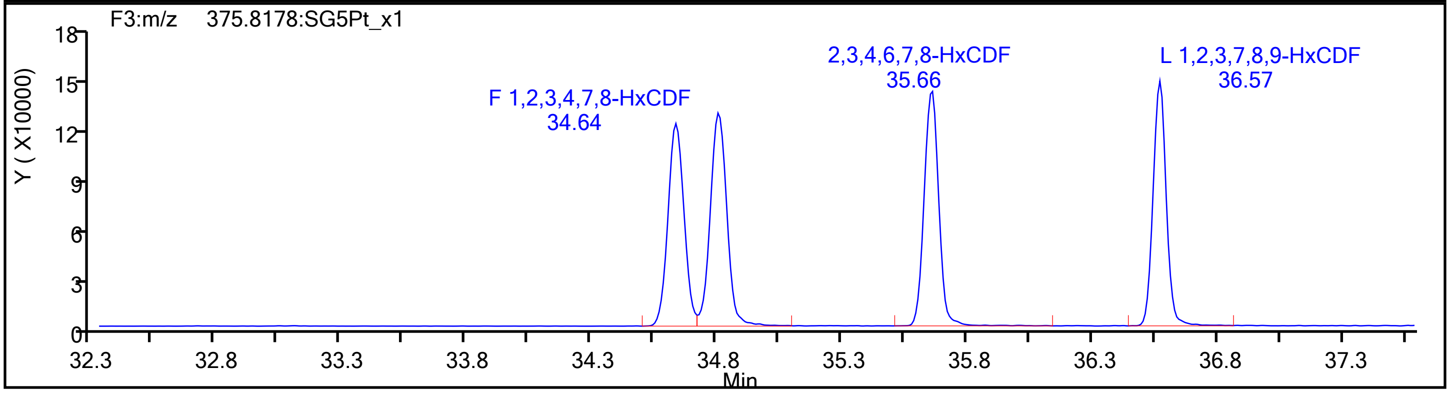

HxCDF Standards

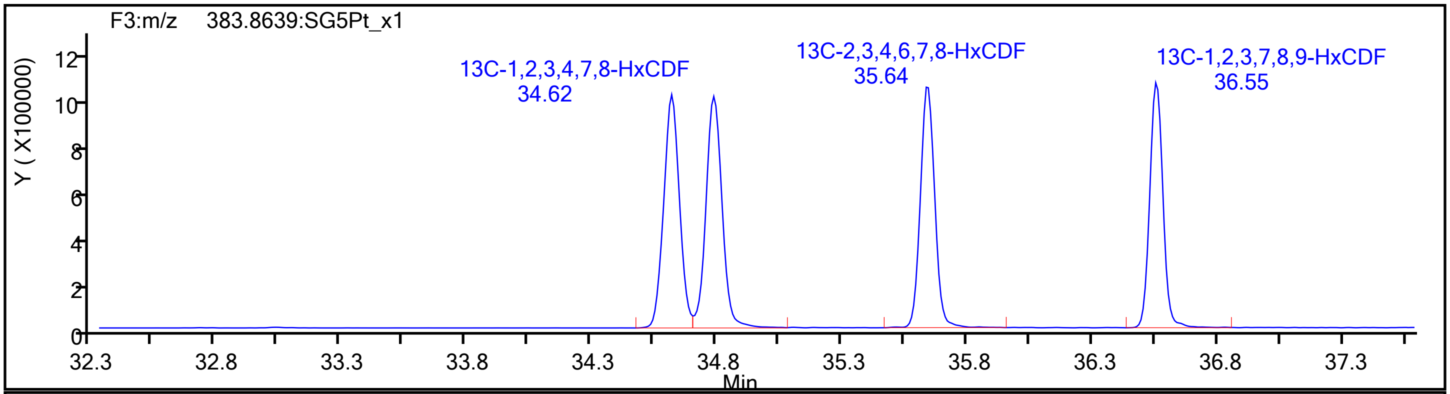

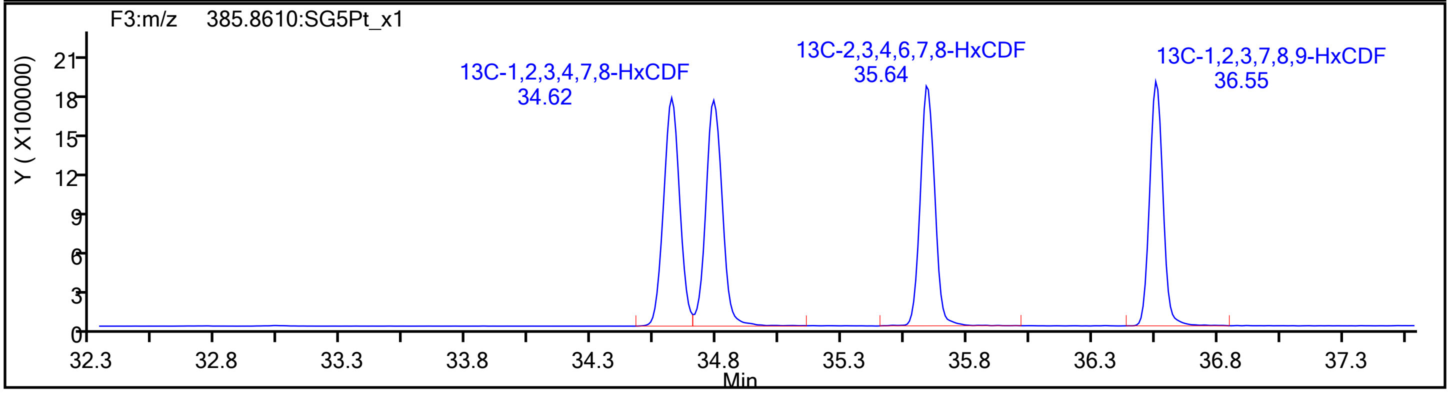

Report Date: 03-Feb-2021 14:45:45 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

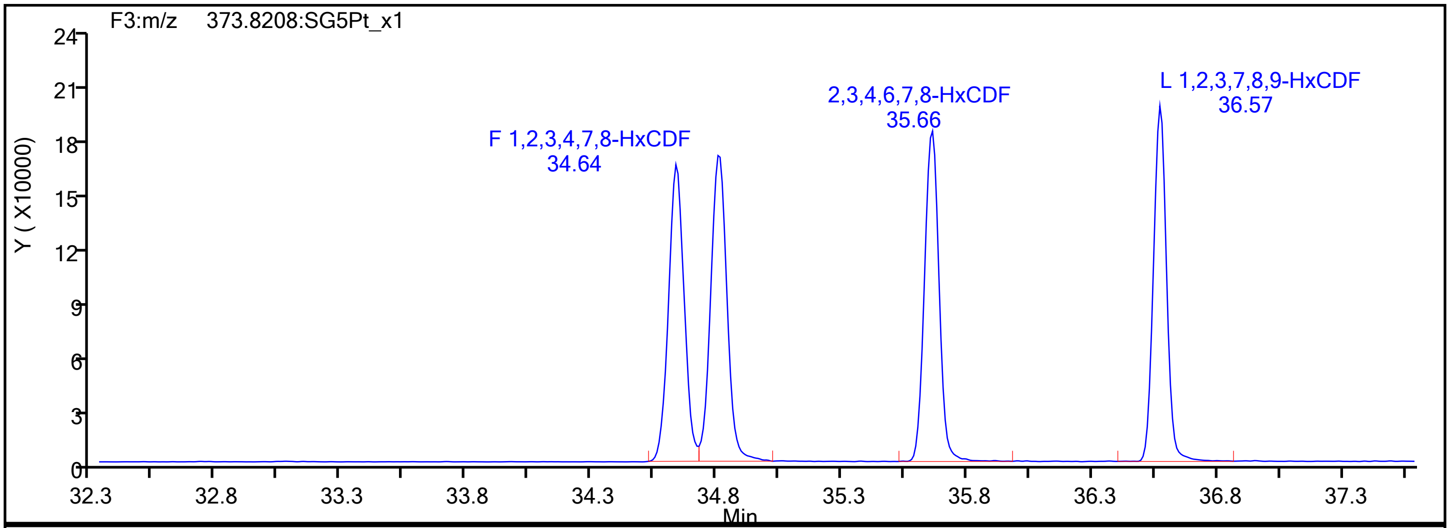

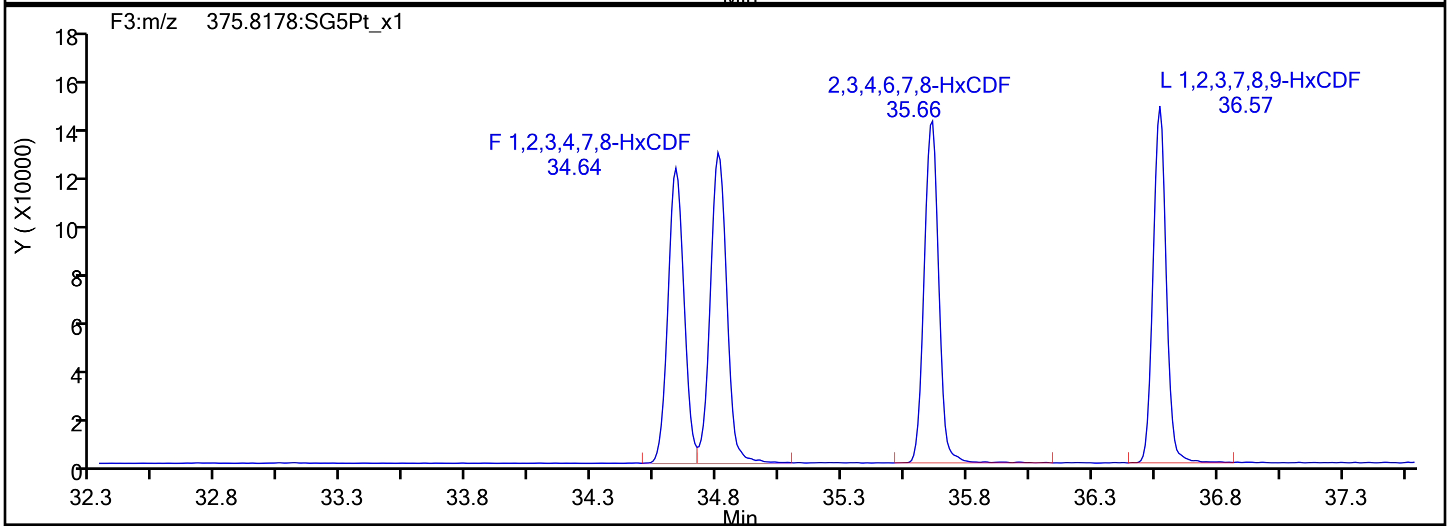

HxCDF Interference Mass

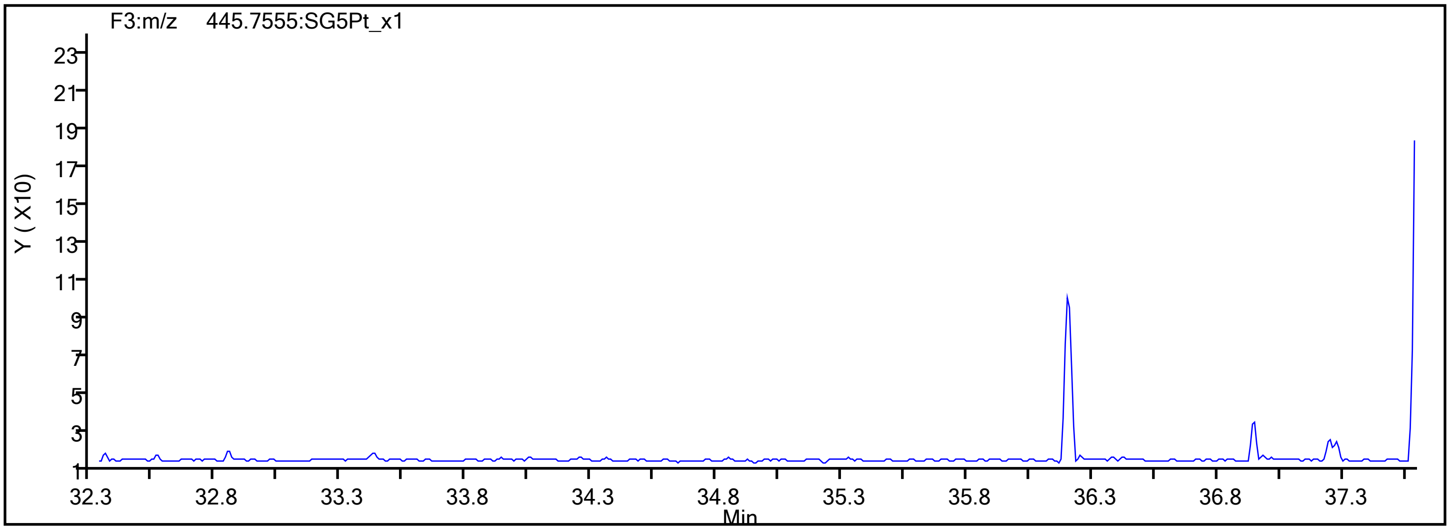

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

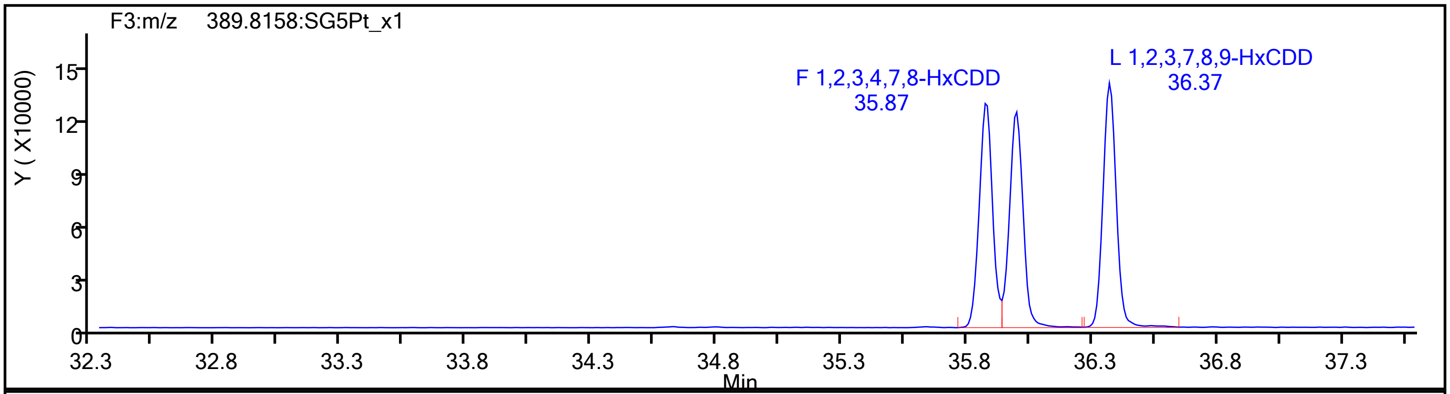

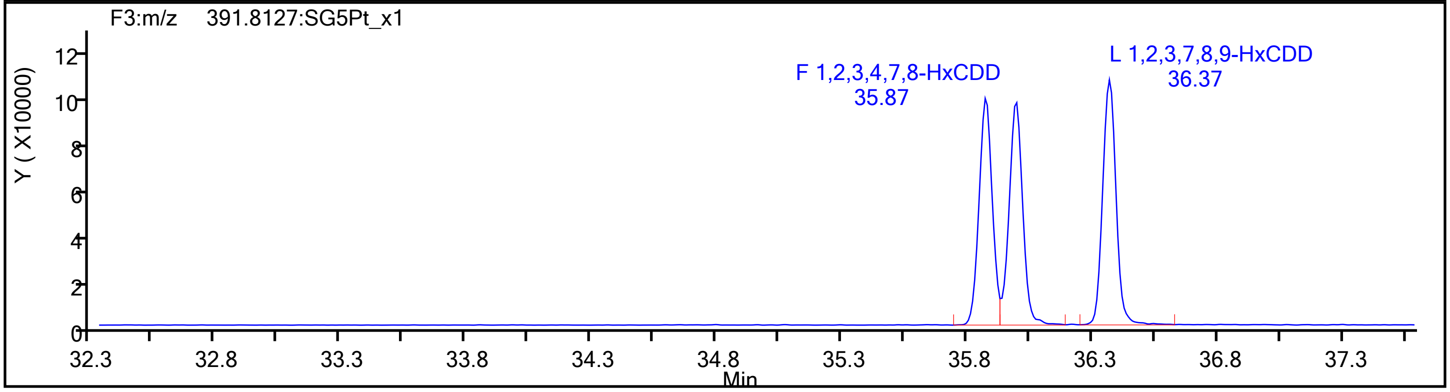

HxCDD Standards

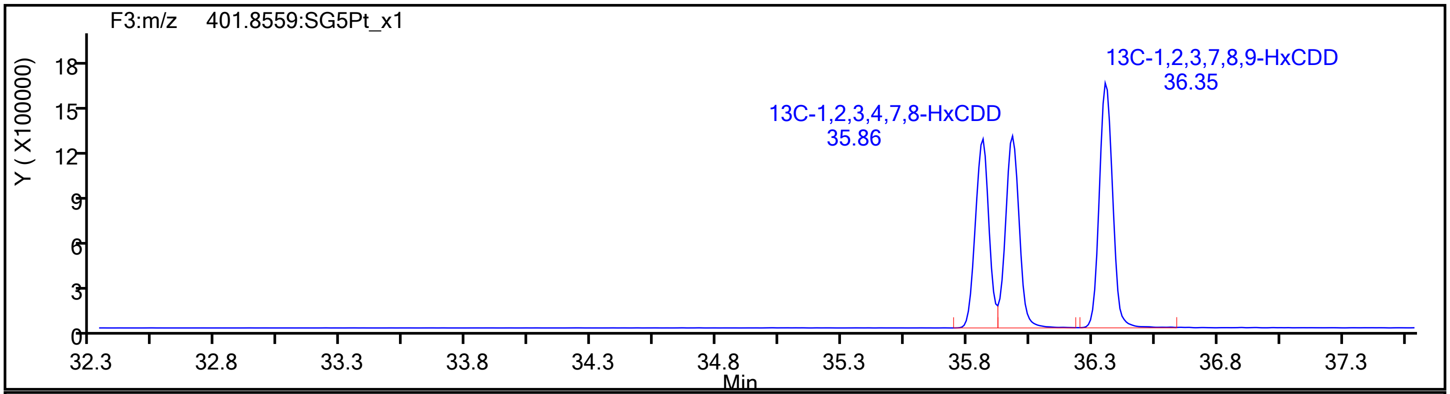

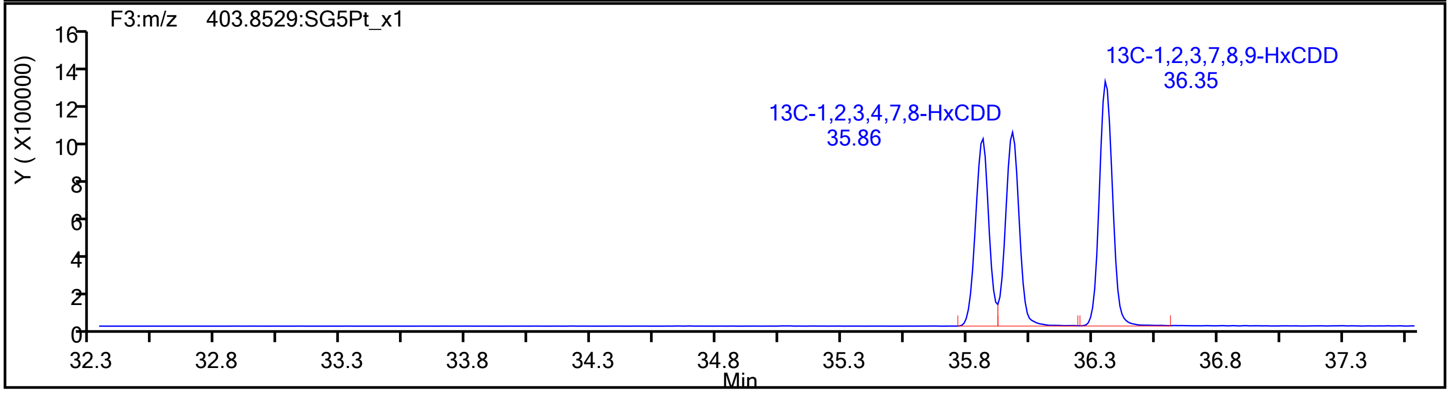

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Column Dia: 0.32 mm

HpCDF

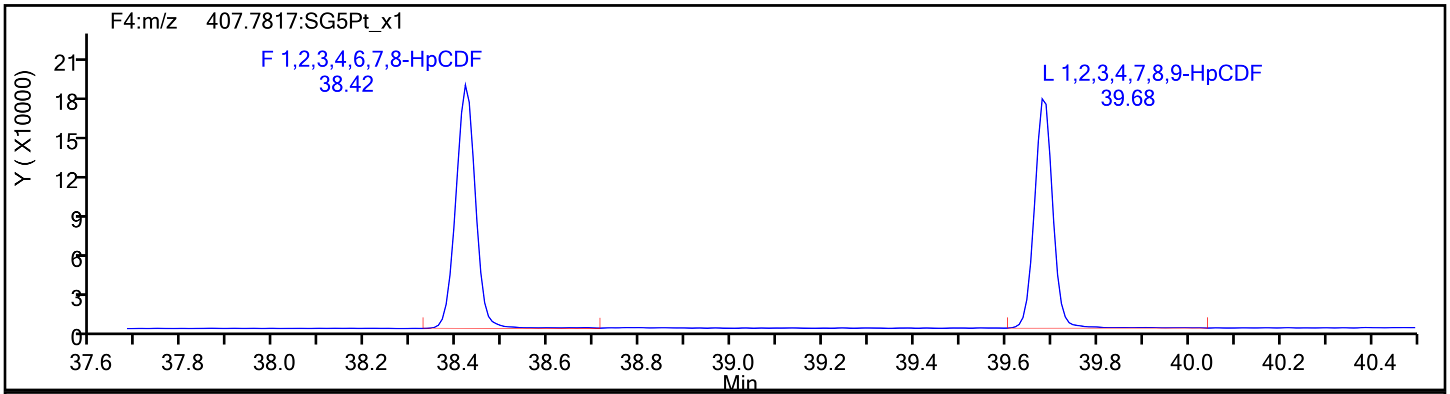

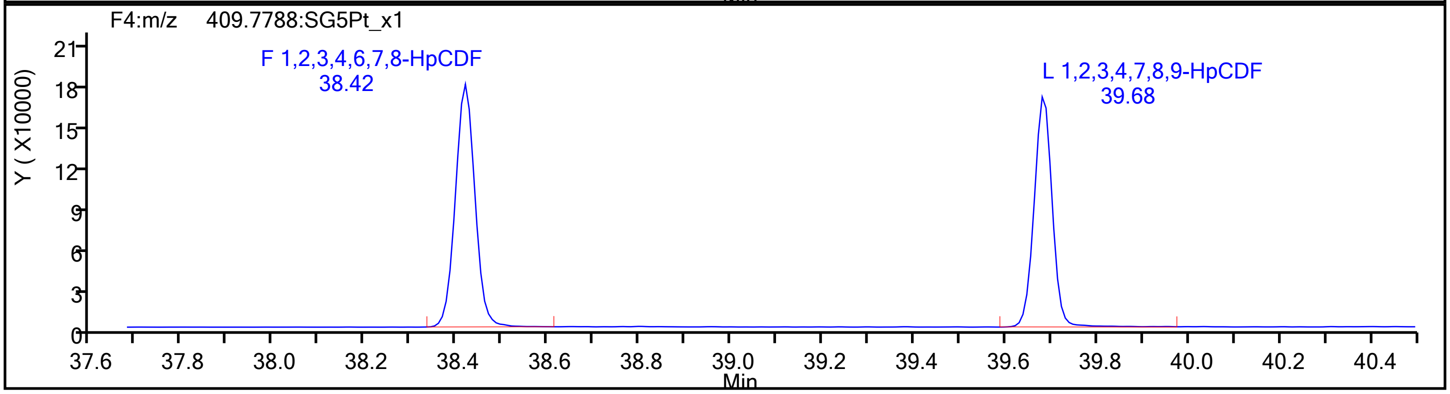

HpCDF Standards

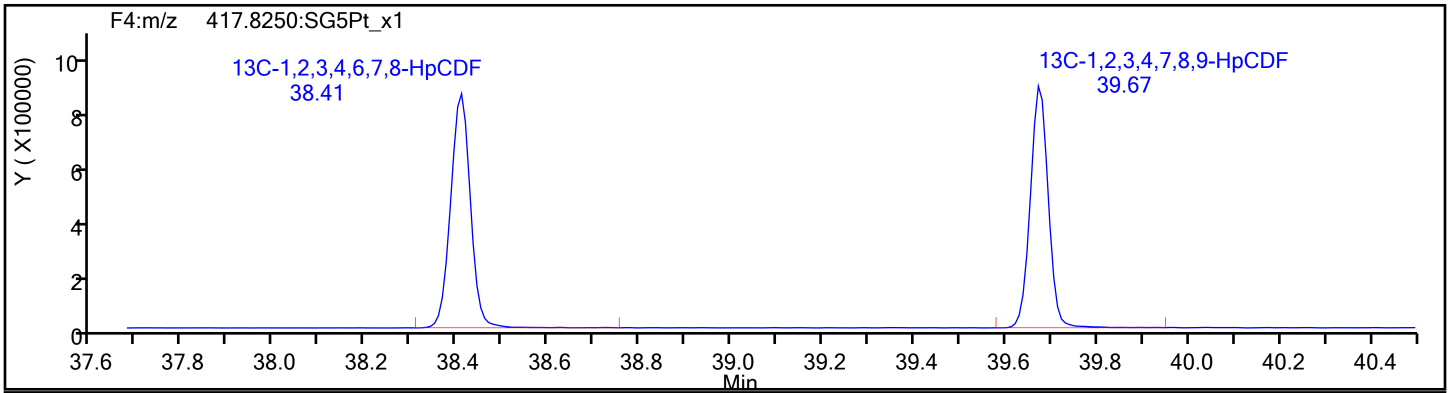

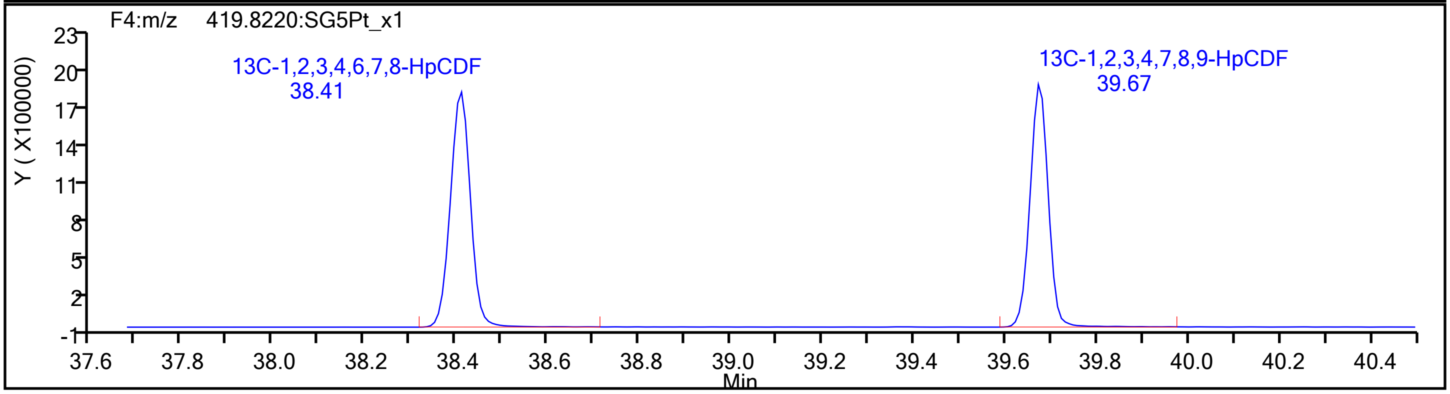

Report Date: 03-Feb-2021 14:45:45 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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HpCDF

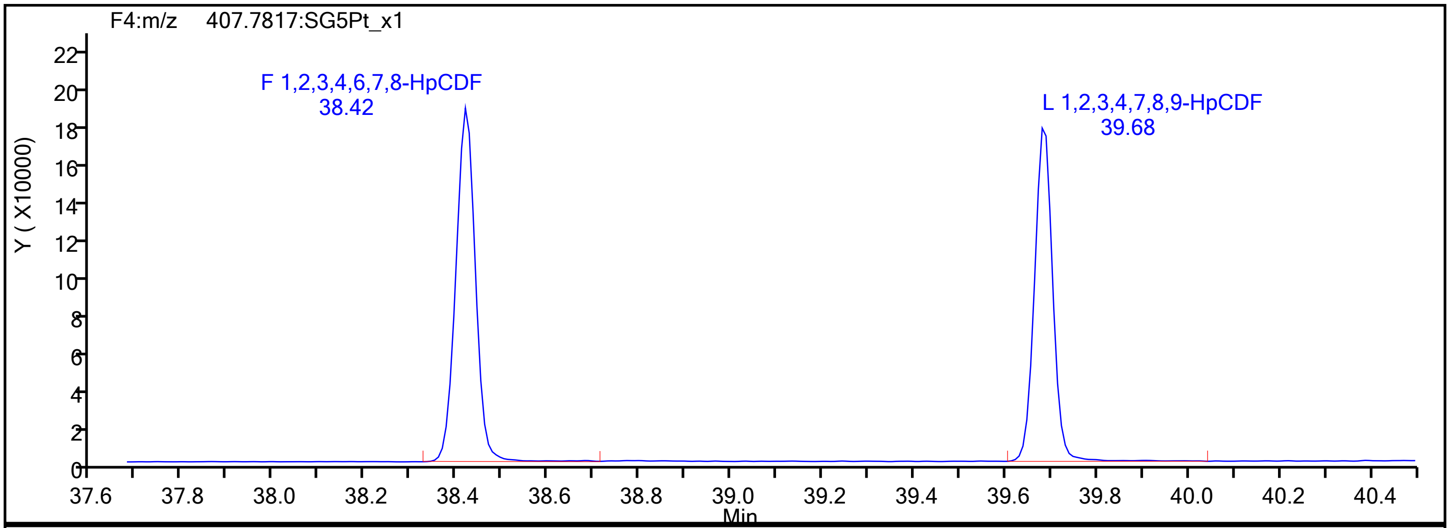

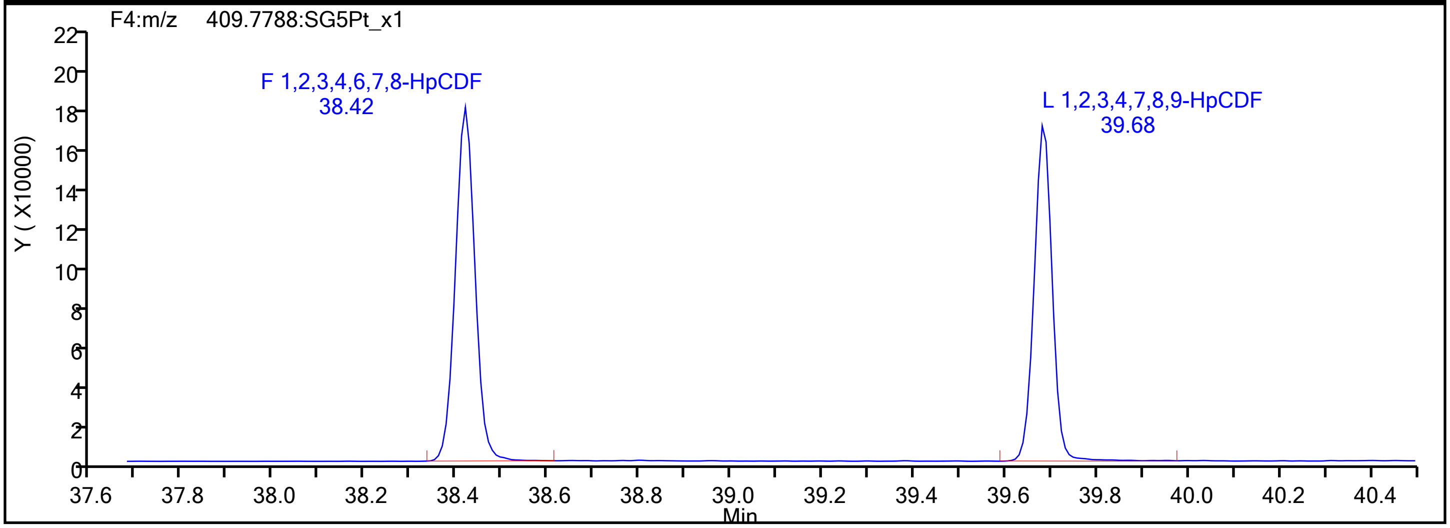

HpCDF Interference Mass

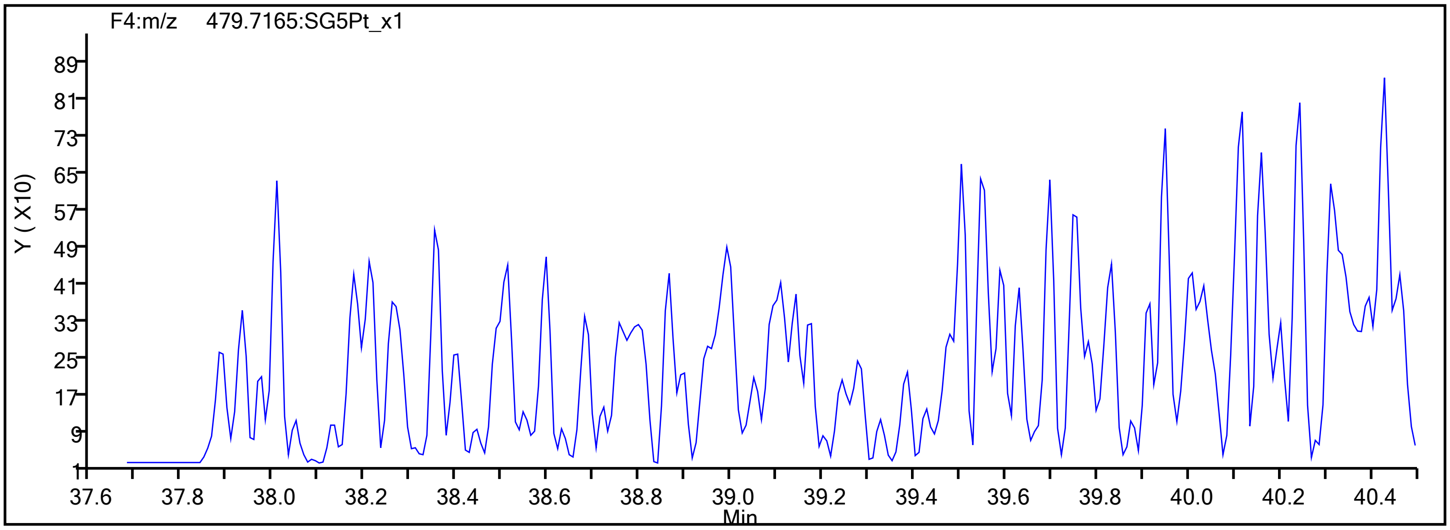

Report Date: 03-Feb-2021 14:45:45 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date: 02-Feb-2021 22:34:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

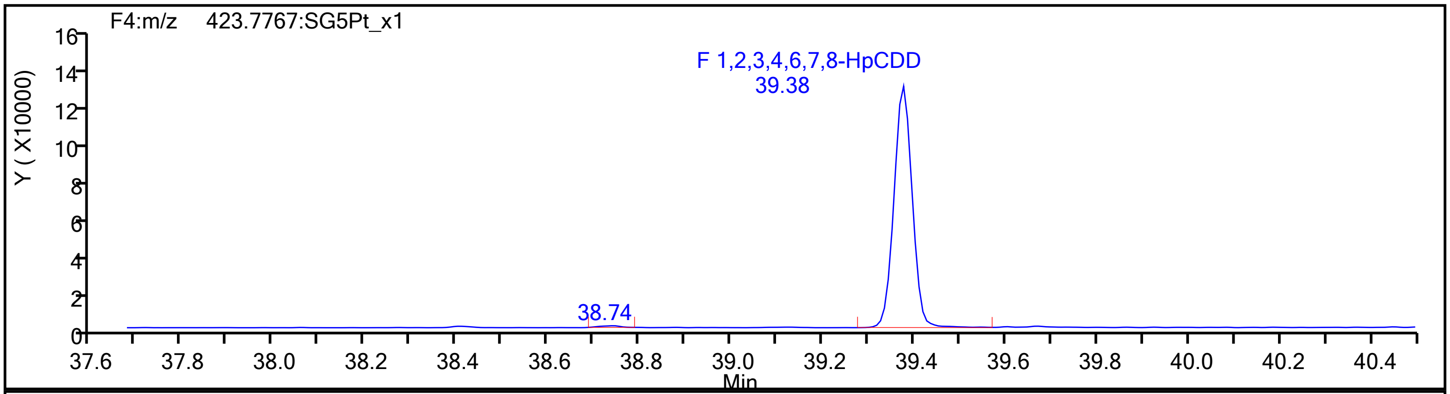

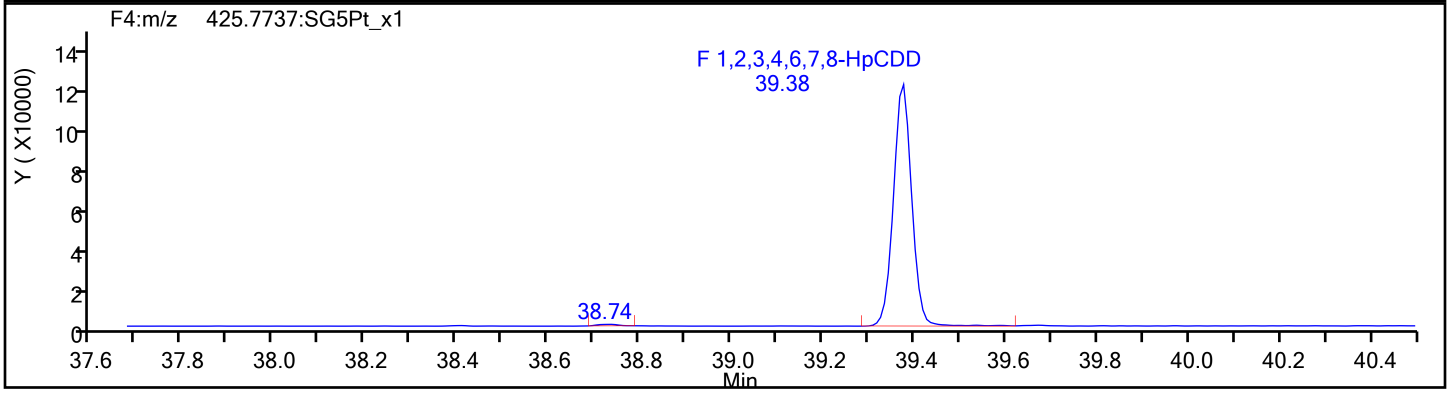

HpCDD Standards

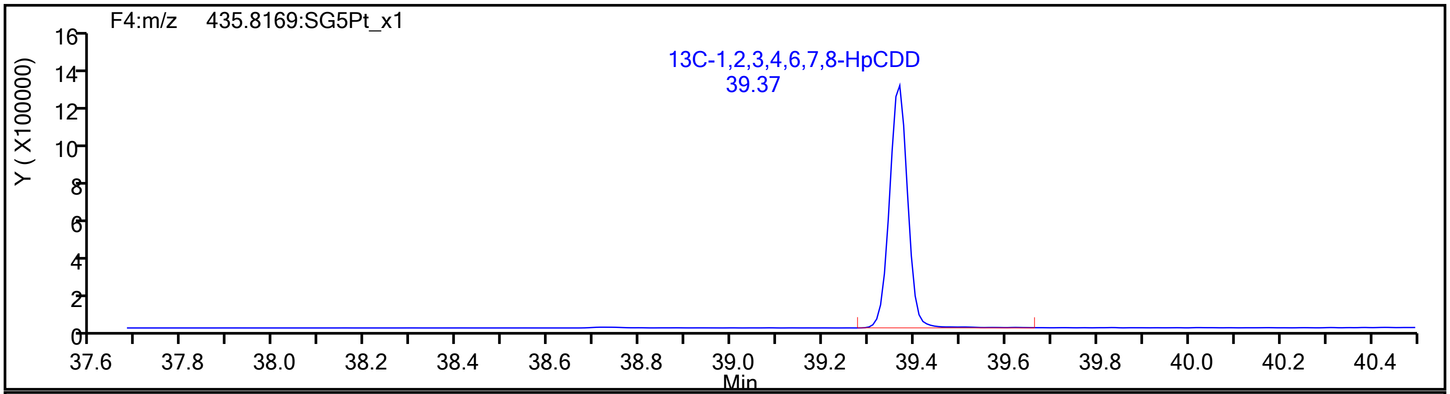

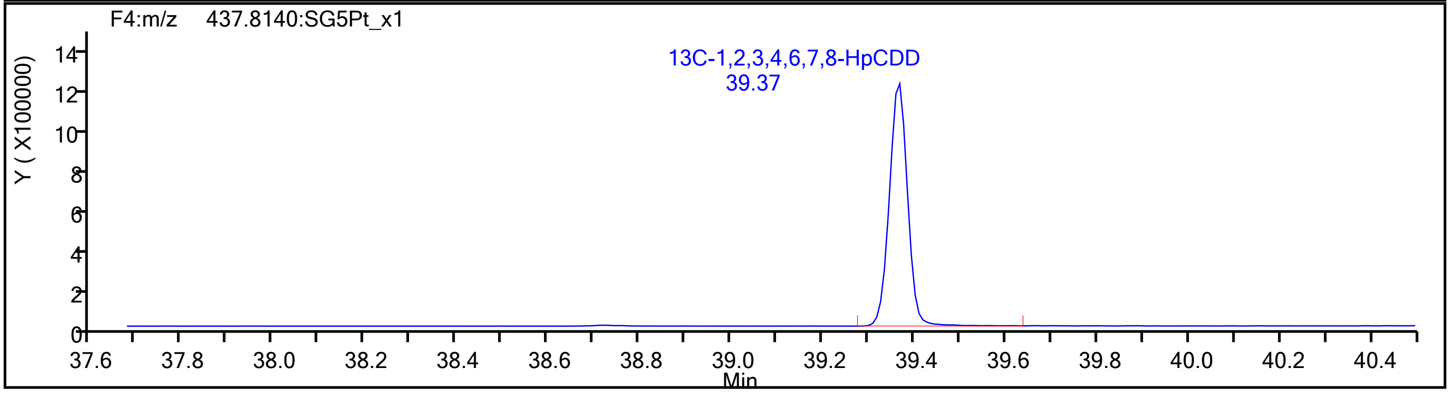

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

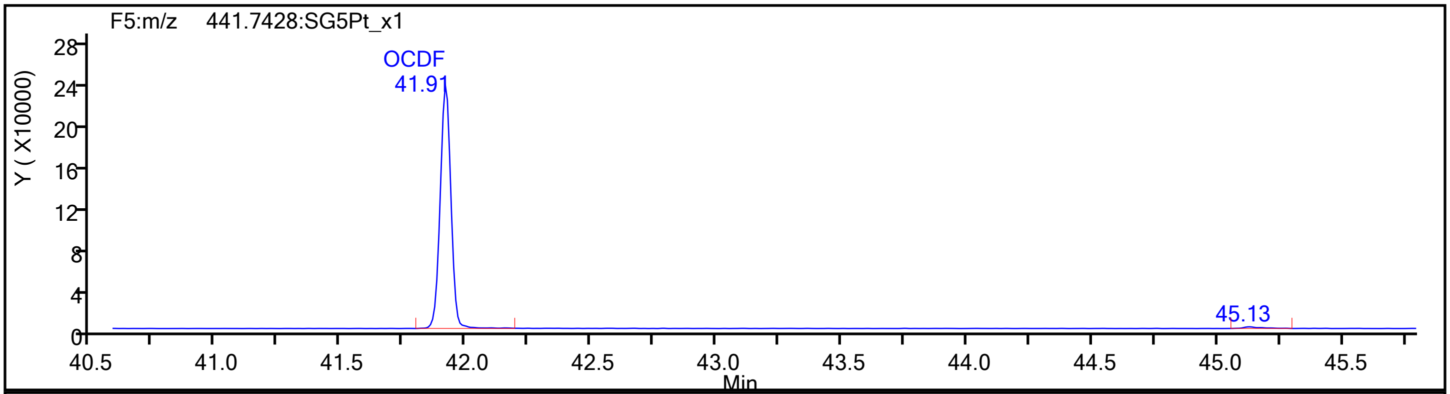

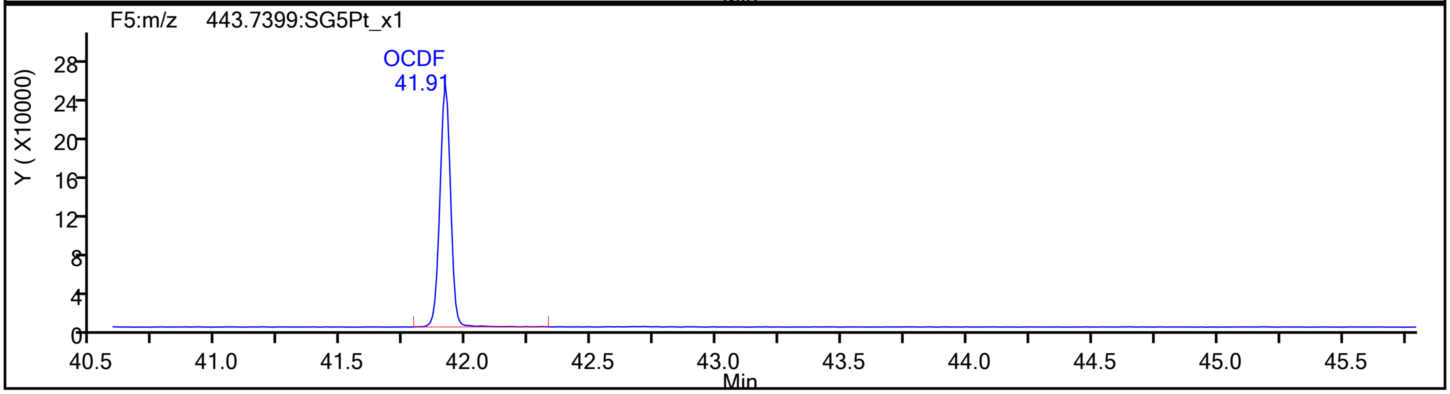

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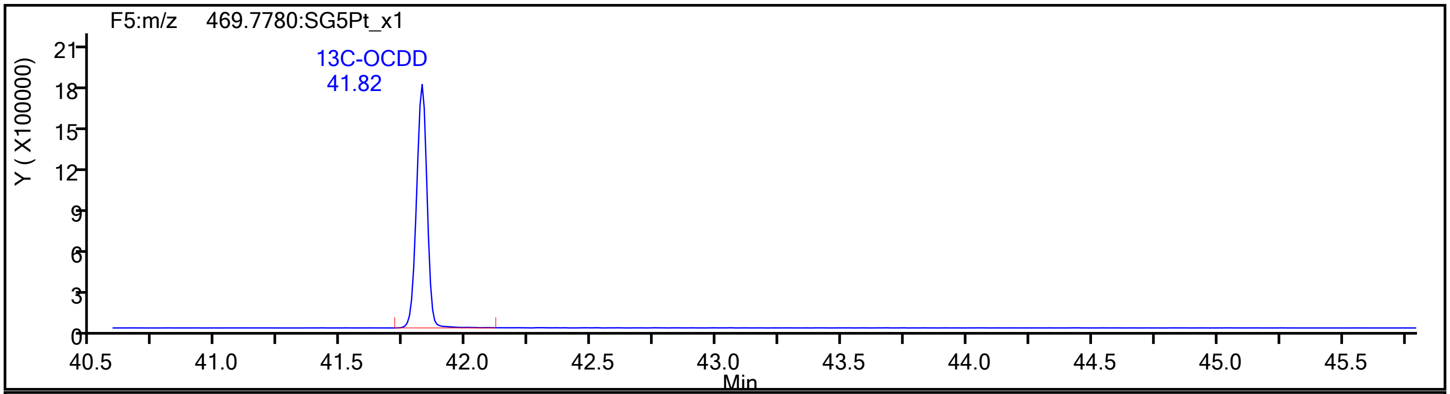

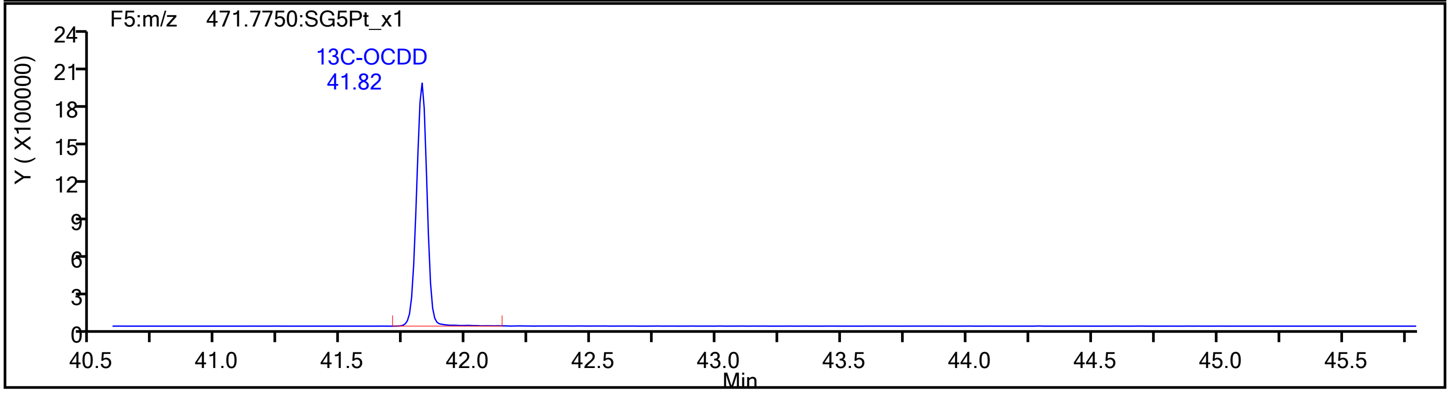

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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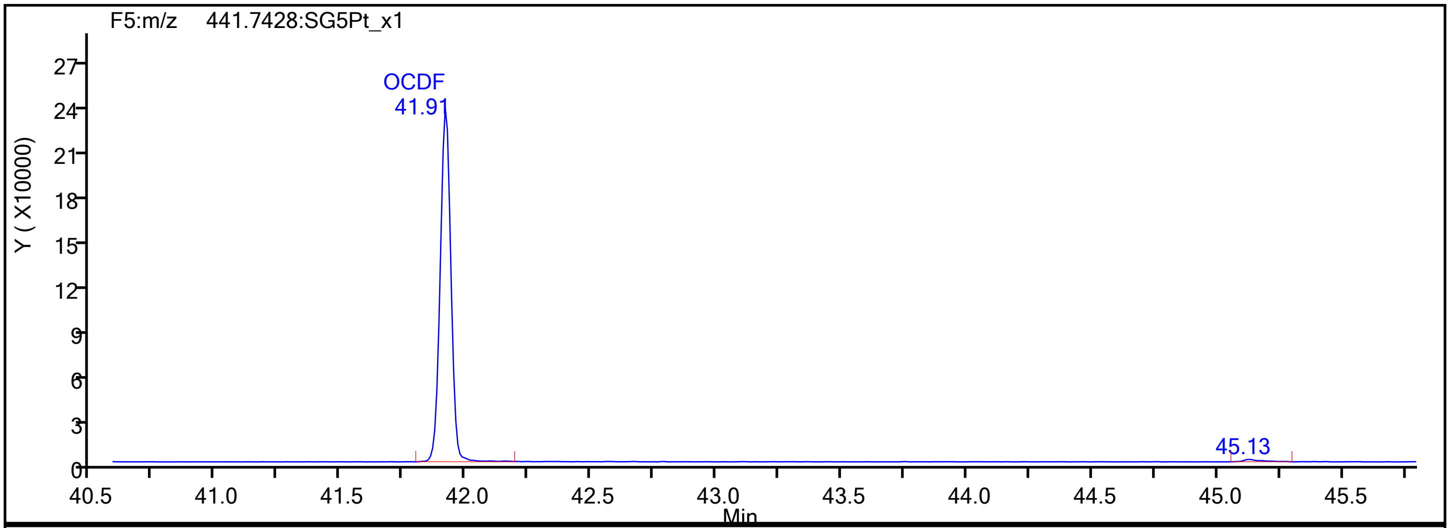

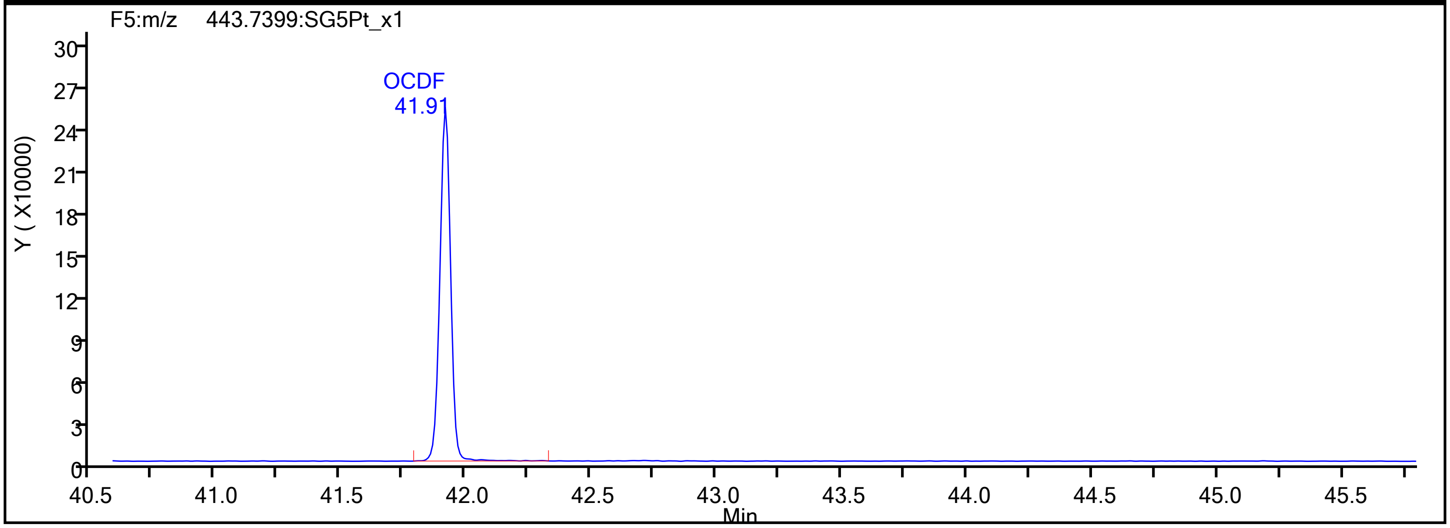

OCDF Interference Mass

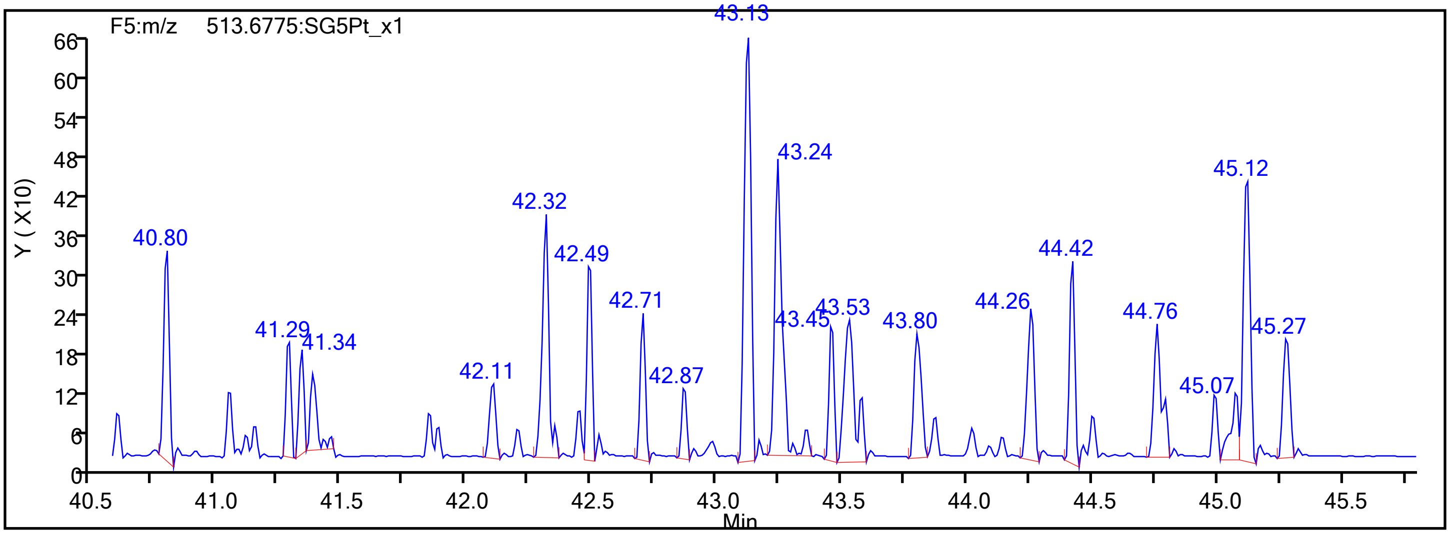

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

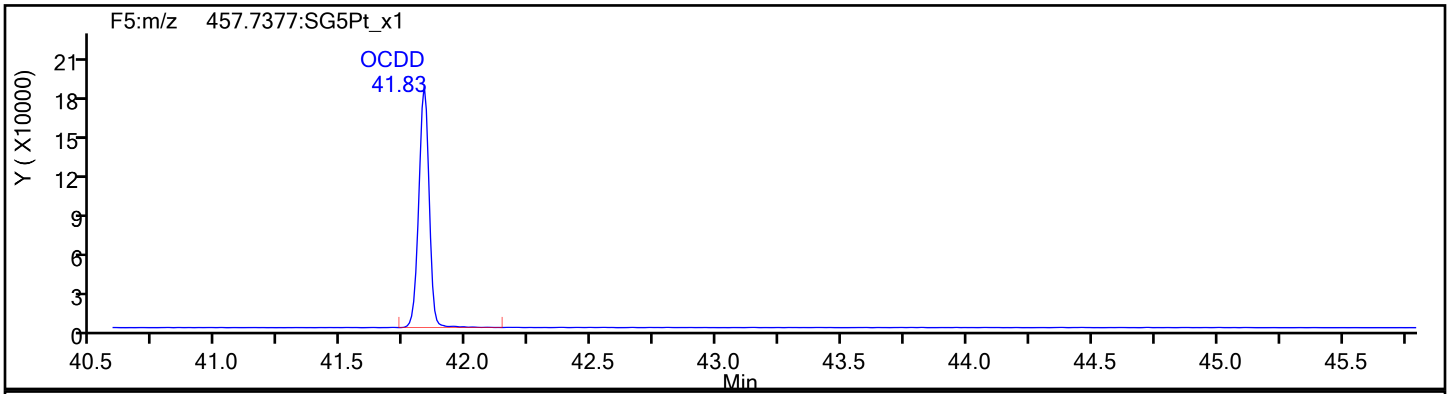

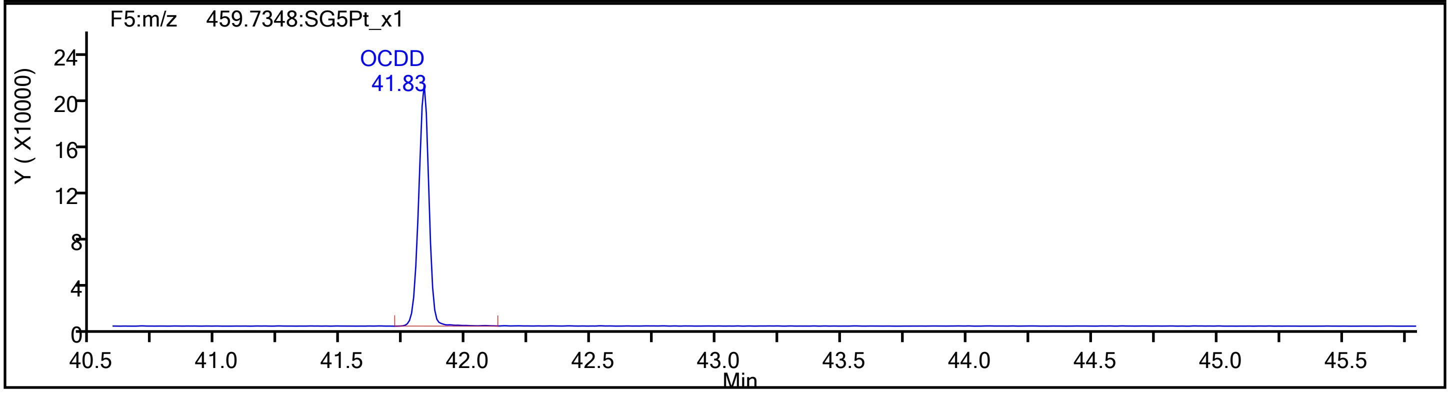

OCDD Standards

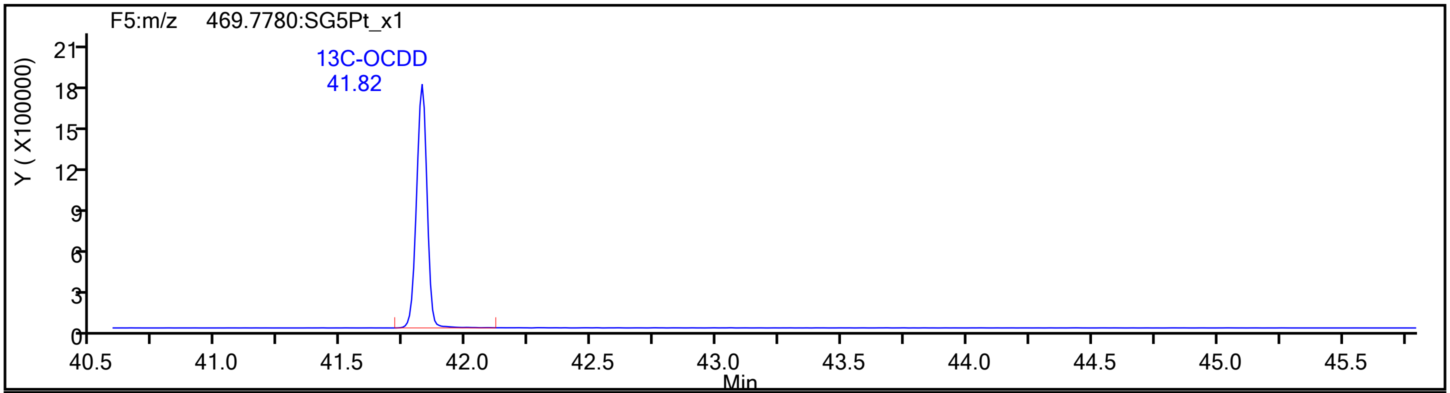

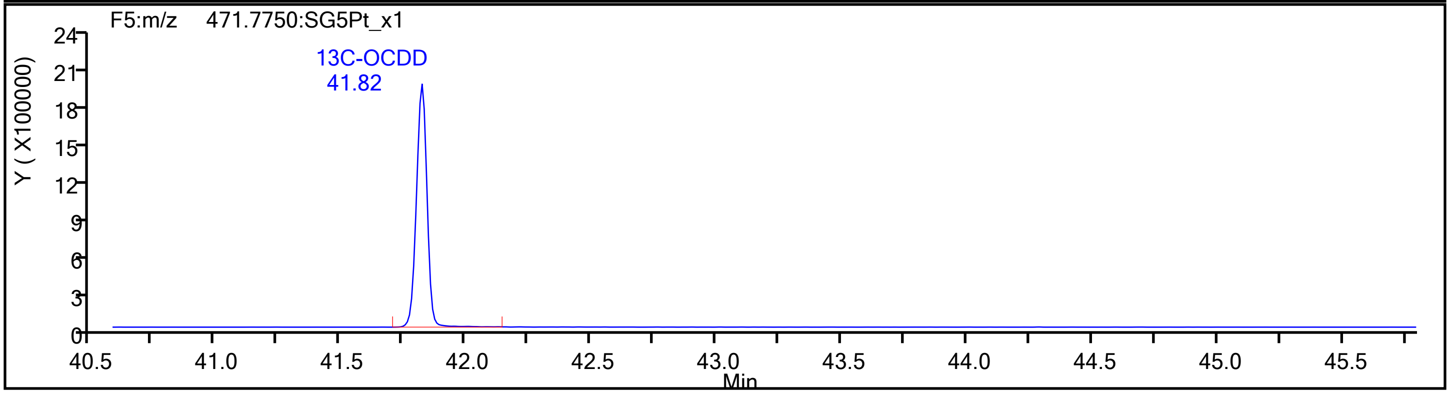

Report Date: 03-Feb-2021 14:45:45 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Injection Date: 02-Feb-2021 22:34:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

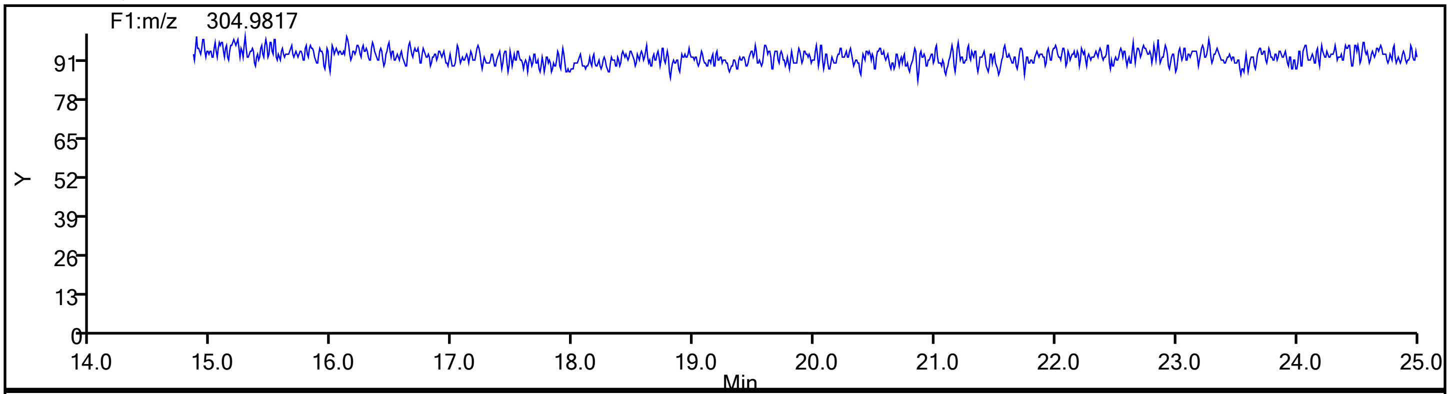

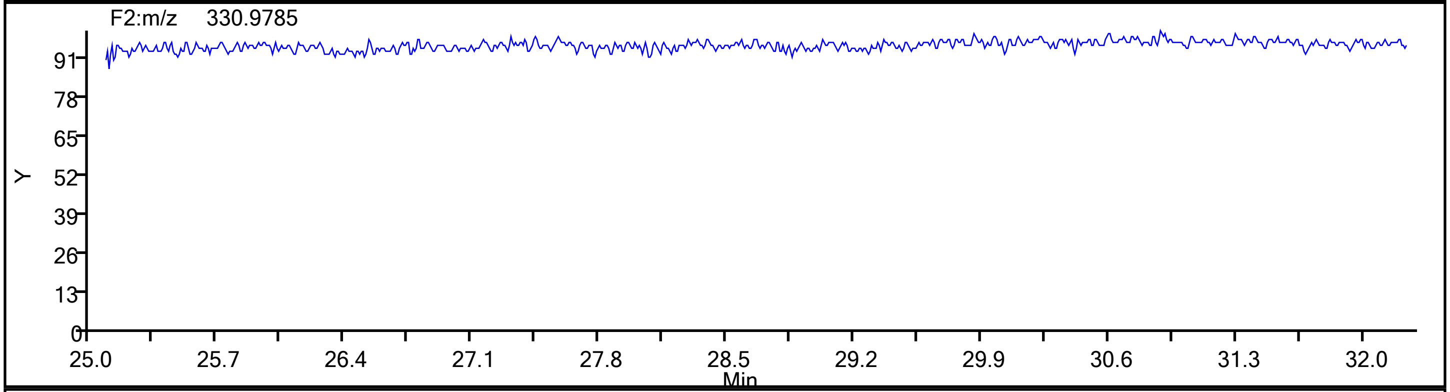

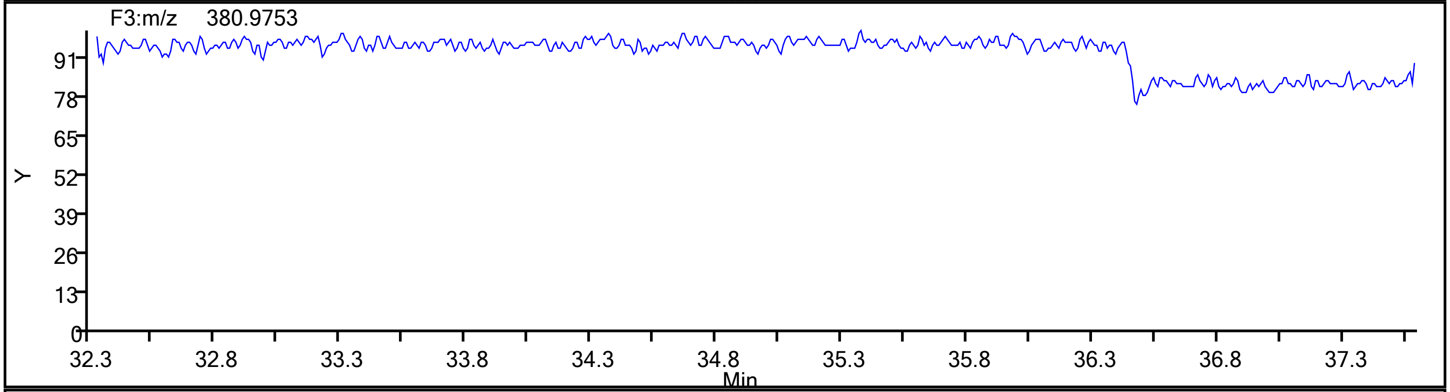

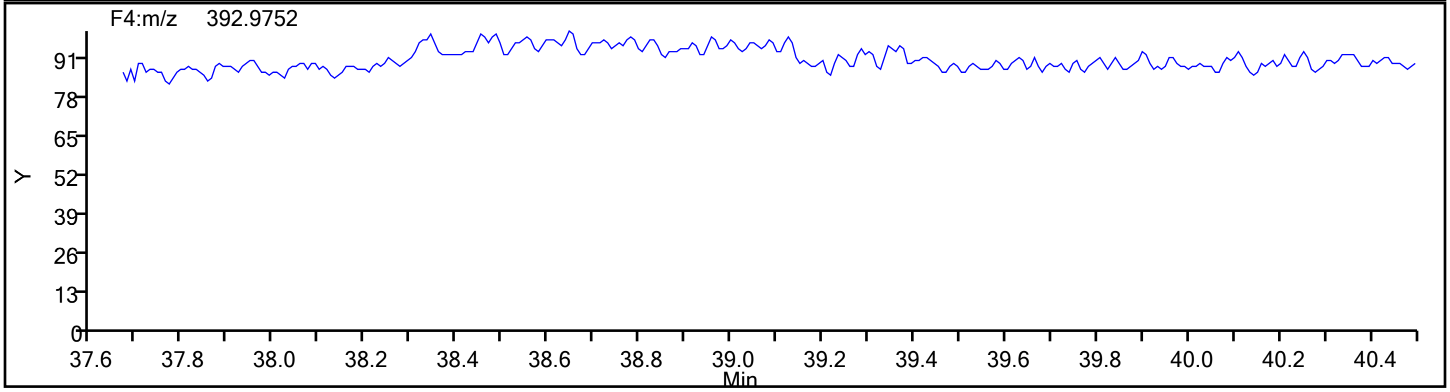

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

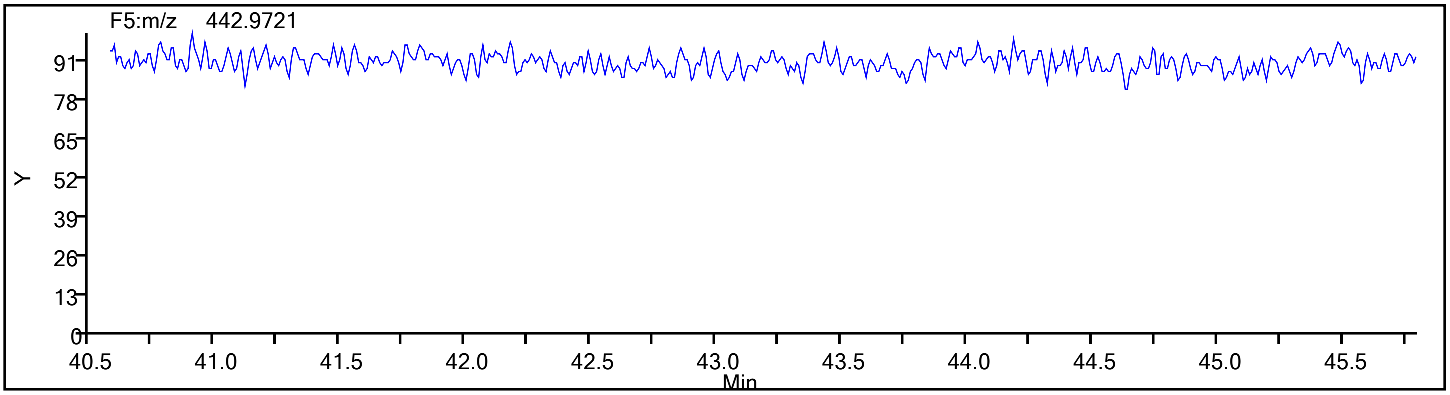

Report Date: 03-Feb-2021 14:45:57   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 4
Inject. Date: 02-Feb-2021 23:22:00   ALS Bottle#: 0   Worklist Smp#: 5
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00097
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:45:47   Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: messecara   Date: 03-Feb-2021 01:53:03

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.865	10085149	0.83	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.902	15431304	0.81	1.5437	99.1	99.1	0.1650	0.1650	99.12	
2,3,7,8-TCDF	19.928	1809816	0.79	1.1258	10.4	10.4	0.0201	0.0201	104	
S Total TCDF					10.4	10.4	0.0201	0.0201		
D 13C-2,3,7,8-TCDD	21.226	10085583	0.81	0.9687	103.2	103.2	0.1496	0.1496	103	
$ 37Cl4-2,3,7,8-TCDD	21.251	1146614		1.0841	10.5	10.5	0.0152	0.0152	105	
2,3,7,8-TCDD	21.251	1206723	0.80	1.1904	10.1	10.1	0.0215	0.0215	101	
S Total TCDD					10.1	10.1	0.0215	0.0215		
D 13C-1,2,3,7,8-PeCDF	26.854	13180648	1.57	1.3124	99.6	99.6	0.3556	0.3556	99.58	
1,2,3,7,8-PeCDF	26.879	7242997	1.57	1.1163	49.2	49.2	0.1493	0.1493	98.46	
D 13C-2,3,4,7,8-PeCDF	28.344	13421278	1.57	1.3352	99.7	99.7	0.3495	0.3495	99.67	
2,3,4,7,8-PeCDF	28.369	6990738	1.58	1.0579	49.2	49.2	0.1676	0.1676	98.47	
S Total PeCDF					98.5	98.5	0.1584	0.1584		
D 13C-1,2,3,7,8-PeCDD	29.135	8119034	1.60	0.7716	104.3	104.3	0.1681	0.1681	104	
1,2,3,7,8-PeCDD	29.169	4570250	1.58	1.1372	49.5	49.5	0.0655	0.0655	99.00	
S Total PeCDD					49.5	49.5	0.0655	0.0655		
D 13C-1,2,3,4,7,8-HxCDF	34.621	11501437	0.53	1.0931	97.2	97.2	0.3076	0.3076	97.22	
1,2,3,4,7,8-HxCDF	34.630	6957116	1.26	1.1831	51.1	51.1	0.1991	0.1991	102	
D 13C-1,2,3,6,7,8-HxCDF	34.790	12023241	0.53	1.1278	98.5	98.5	0.2982	0.2982	98.51	
1,2,3,6,7,8-HxCDF	34.807	7475199	1.27	1.2484	49.8	49.8	0.1807	0.1807	99.60	
D 13C-2,3,4,6,7,8-HxCDF	35.640	11321298	0.54	1.0552	99.1	99.1	0.3187	0.3187	99.13	
2,3,4,6,7,8-HxCDF	35.657	7182454	1.27	1.2750	49.8	49.8	0.1665	0.1665	99.52	
D 13C-1,2,3,7,8,9-HxCDF	36.558	10687355	0.53	0.9938	99.4	99.4	0.3384	0.3384	99.36	
1,2,3,7,8,9-HxCDF	36.575	6859476	1.28	1.2953	49.6	49.6	0.1557	0.1557	99.10	
S Total HxCDF					200.2	200.2	0.1755	0.1755		
* 13C-1,2,3,7,8,9-HxCDD	36.356	10822701	1.26	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.859	8512505	1.29	0.7895	99.6	99.6	0.2012	0.2012	99.62	
1,2,3,4,7,8-HxCDD	35.876	4683328	1.25	1.0950	50.2	50.2	0.0915	0.0915	100	
D 13C-1,2,3,6,7,8-HxCDD	35.986	9272147	1.26	0.8495	100.9	100.9	0.1870	0.1870	101	
1,2,3,6,7,8-HxCDD	35.994	4763674	1.25	1.0201	50.4	50.4	0.0926	0.0926	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.373	5162435	1.25	1.1549	50.3	50.3	0.0842	0.0842	101	
S Total HxCDD					150.9	150.9	0.0894	0.0894		
D 13C-1,2,3,4,6,7,8-HpCDF	38.405	8510945	0.46	0.7854	100.1	100.1	0.2529	0.2529	100	
1,2,3,4,6,7,8-HpCDF	38.422	6299588	1.04	1.4859	49.8	49.8	0.1423	0.1423	99.63	
D 13C-1,2,3,4,7,8,9-HpCDF	39.676	7838699	0.47	0.7230	100.2	100.2	0.2748	0.2748	100	
1,2,3,4,7,8,9-HpCDF	39.684	5479281	1.04	1.4048	49.8	49.8	0.1500	0.1500	99.52	
S Total HpCDF					99.6	99.6	0.1461	0.1461		
D 13C-1,2,3,4,6,7,8-HpCDD	39.365	7191171	1.08	0.6413	103.6	103.6	0.2357	0.2357	104	
1,2,3,4,6,7,8-HpCDD	39.381	4112563	1.05	1.1489	49.8	49.8	0.0911	0.0911	99.55	
S Total HpCDD					49.8	49.8	0.0911	0.0911		
D 13C-OCDD	41.826	11203239	0.91	0.5141	201.4	201.4	0.1581	0.1581	101	
OCDF	41.919	8287616	0.93	1.5776	93.8	93.8	0.0587	0.0587	93.78	
OCDD	41.835	6480048	0.89	1.1706	98.8	98.8	0.0614	0.0614	98.83	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:45:57　　Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC　　Calib Level: 4
Inject. Date: 02-Feb-2021 23:22:00　　ALS Bottle#: 0　　Worklist Smp#: 5
Injection Vol: 2.0 ul　　Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00097
Operator ID: Xcalibur_System　　Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:45:47　　Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution　　Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)　　Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: messecara　　Date: 03-Feb-2021 01:53:03

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.865	20.870	0		4577396	679547	560	1400	1213		
333.9338	20.865	20.870	0		5507753	839783	321	802	2616	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.902	19.910	0	0.954	6926048	1089748	900	2250	1211		
317.9389	19.902	19.910	0	0.954	8505256	1349704	648	1620	2083	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.928	19.937	-1	1.001	799091	128399	85	212	1511		
305.8987	19.937	19.937	0	1.002	1010725	153730	136	340	1130	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.226	21.233	0	1.017	4524673	657713	560	1400	1174		
333.9338	21.226	21.233	0	1.017	5560910	807527	321	802	2516	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.251	21.260	-1	1.019	1146614	169017	100	250	1690		
2,3,7,8-TCDD											
319.8965	21.251	21.262	-1	1.001	536092	80292	98	245	819		
321.8936	21.251	21.262	-1	1.001	670631	100823	52	130	1939	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.854	26.859	0	1.287	8047211	1427936	1695	4237	842		
353.8970	26.854	26.859	0	1.287	5133437	925345	1141	2852	811	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.879	26.886	0	1.001	4423509	774087	908	2270	853		
341.8567	26.879	26.886	0	1.001	2819488	500637	661	1652	757	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.344	28.348	0	1.358	8194833	1341939	1695	4237	792		
353.8970	28.344	28.348	0	1.358	5226445	870550	1141	2852	763	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.369	28.373	0	1.001	4278655	700413	908	2270	771		
341.8567	28.361	28.373	-1	1.001	2712083	449456	661	1652	680	1.58(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.135	29.144	-1	1.396	5000978	786606	494	1235	1592		
369.8919	29.135	29.144	-1	1.396	3118056	496189	294	735	1688	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.169	29.174	0	1.001	2799590	432567	245	612	1766		
357.8516	29.161	29.174	-1	1.001	1770660	274354	137	342	2003	1.58(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.621	34.620	0	0.952	4005321	892685	1378	3445	648		
385.8610	34.613	34.620	0	0.952	7496116	1646995	2622	6555	628	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.630	34.638	-1	1.000	3881949	857719	1347	3367	637		
375.8178	34.630	34.638	-1	1.000	3075167	684619	1046	2615	655	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.790	34.792	0	0.957	4185867	925790	1378	3445	672		
385.8610	34.790	34.792	0	0.957	7837374	1725822	2622	6555	658	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.807	34.808	0	1.000	4176975	916905	1347	3367	681		
375.8178	34.807	34.808	0	1.000	3298224	726035	1046	2615	694	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.640	35.644	0	0.980	3961373	996861	1378	3445	723		
385.8610	35.640	35.644	0	0.980	7359925	1821090	2622	6555	695	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.657	35.662	0	1.000	4013270	1013970	1347	3367	753		
375.8178	35.657	35.662	0	1.000	3169184	799388	1046	2615	764	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.558	36.560	0	1.006	3720212	1028972	1378	3445	747		
385.8610	36.558	36.560	0	1.006	6967143	1936485	2622	6555	739	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.575	36.576	0	1.000	3851934	1062528	1347	3367	789		
375.8178	36.567	36.576	-1	1.000	3007542	828352	1046	2615	792	1.28(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.356	36.359	0		6043494	1655227	1041	2602	1590		
403.8529	36.356	36.359	0		4779207	1318584	849	2122	1553	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.859	35.864	0	0.986	4788149	1283896	1041	2602	1233		
403.8529	35.859	35.864	0	0.986	3724356	1005033	849	2122	1184	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.876	35.879	0	1.000	2603356	694269	527	1317	1317		
391.8127	35.876	35.879	0	1.000	2079972	551649	390	975	1414	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.986	35.985	0	0.990	5178263	1353803	1041	2602	1300		
403.8529	35.986	35.985	0	0.990	4093884	1073296	849	2122	1264	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.994	35.999	0	1.000	2649830	703206	527	1317	1334		
391.8127	35.994	35.999	0	1.000	2113844	568172	390	975	1457	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.373	36.373	0	1.014	2866772	786695	527	1317	1493		
391.8127	36.373	36.373	0	1.014	2295663	631778	390	975	1620	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.405	38.412	0	1.056	2677253	891486	940	2350	948		
419.8220	38.405	38.412	0	1.056	5833692	1940483	1423	3557	1364	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.422	38.422	0	1.000	3205615	1048999	1276	3190	822		
409.7788	38.414	38.422	0	1.000	3093973	1007861	1119	2797	901	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.676	39.676	0	1.091	2515159	919914	940	2350	979		
419.8220	39.676	39.676	0	1.091	5323540	1921244	1423	3557	1350	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.684	39.686	0	1.000	2793352	1014469	1276	3190	795		
409.7788	39.684	39.686	0	1.000	2685929	973488	1119	2797	870	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.365	39.370	0	1.083	3740713	1297669	947	2367	1370		
437.8140	39.365	39.370	0	1.083	3450458	1206044	851	2127	1417	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.381	39.381	0	1.000	2107254	752464	552	1380	1363		
425.7737	39.373	39.381	-1	1.000	2005309	706168	496	1240	1424	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.826	41.826	0	1.150	5351988	1826216	504	1260	3623		
471.7750	41.826	41.826	0	1.150	5851251	1947112	463	1157	4205	0.91(0.76-1.02)	
OCDF											
441.7428	41.919	41.921	0	1.002	3986439	1357139	329	822	4125		
443.7399	41.919	41.921	0	1.002	4301177	1454631	370	925	3931	0.93(0.76-1.02)	
OCDD											
457.7377	41.835	41.835	0	1.000	3057530	1041158	254	635	4099		
459.7348	41.835	41.835	0	1.000	3422518	1161545	288	720	4033	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:45:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d		
Injection Date:	02-Feb-2021 23:22:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

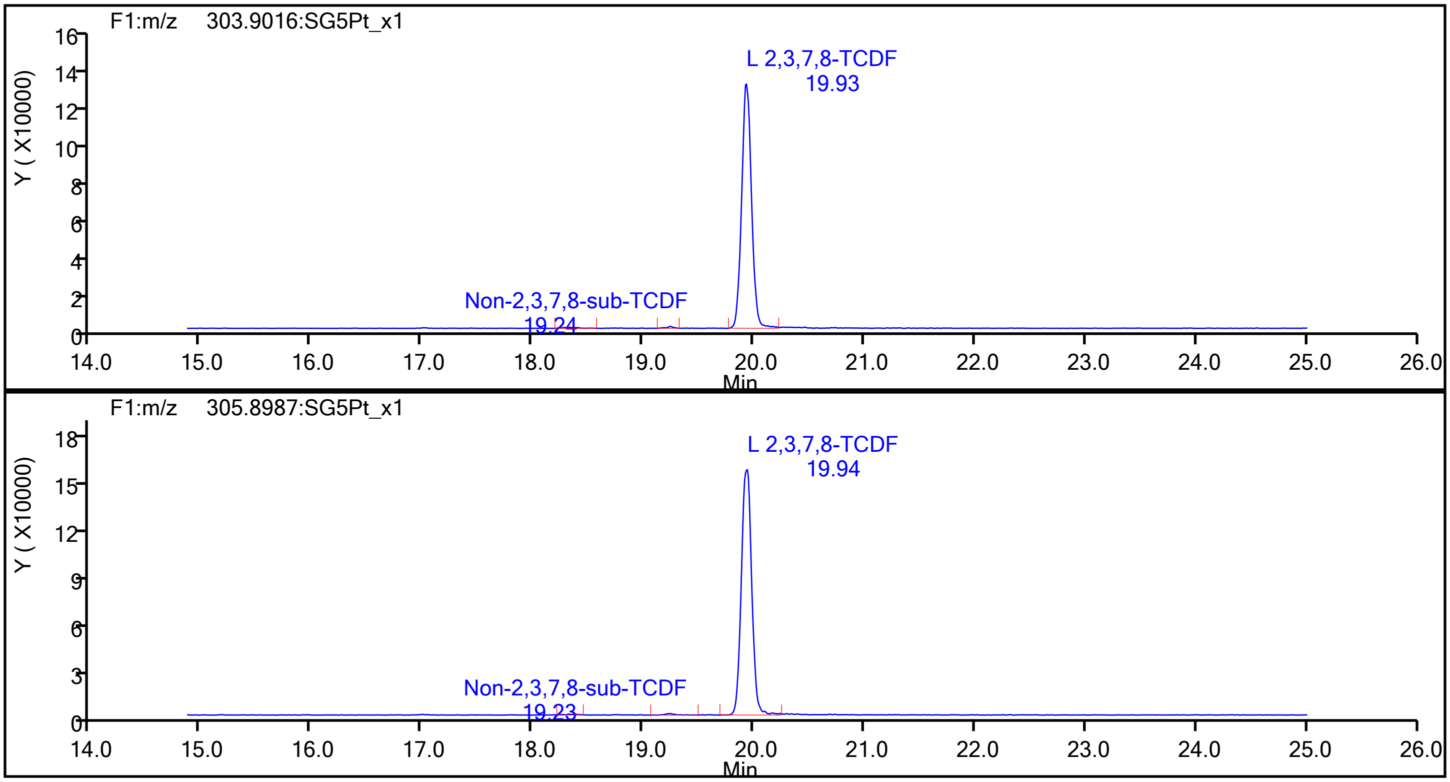

TCDF Standards

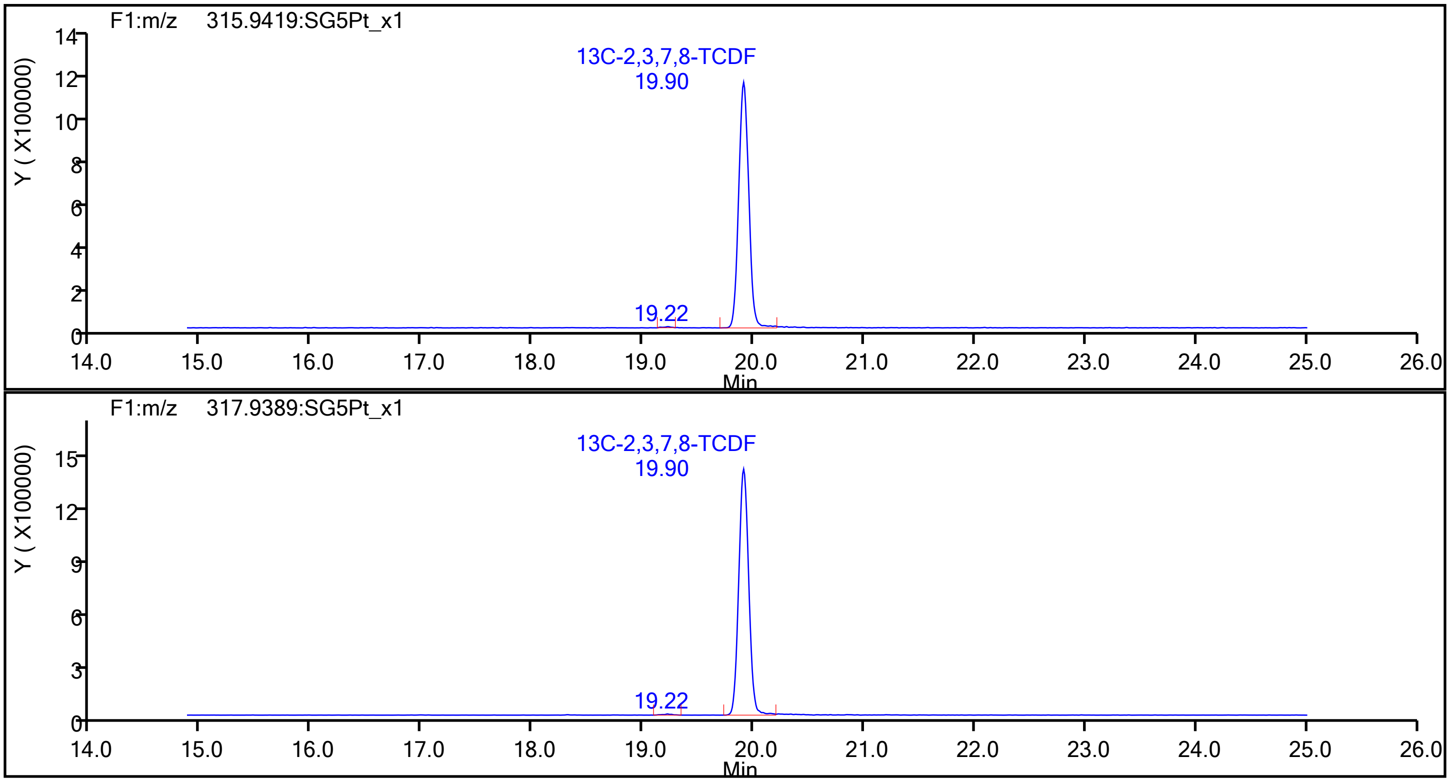

Report Date: 03-Feb-2021 14:45:57
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d
Injection Date: 02-Feb-2021 23:22:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

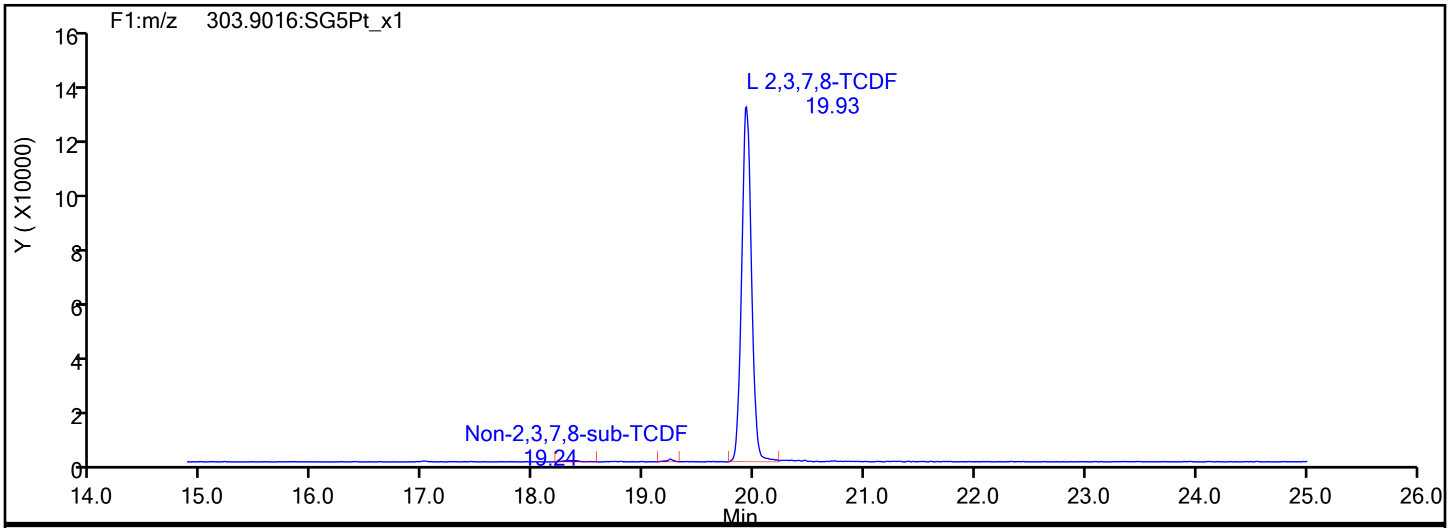

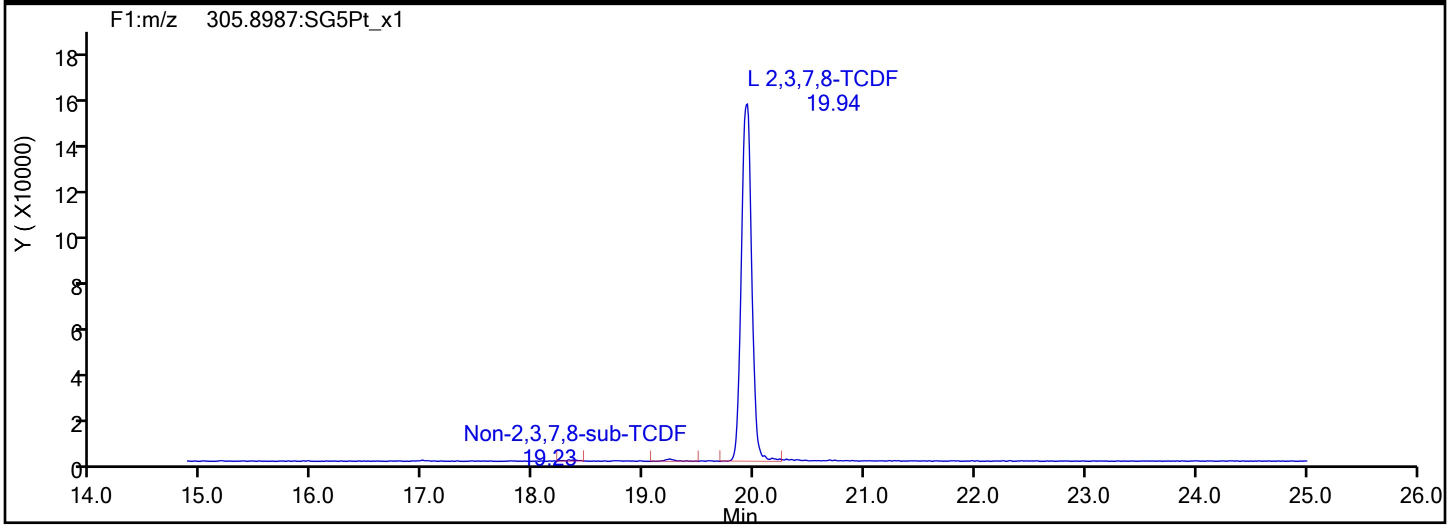

TCDF Interference Mass

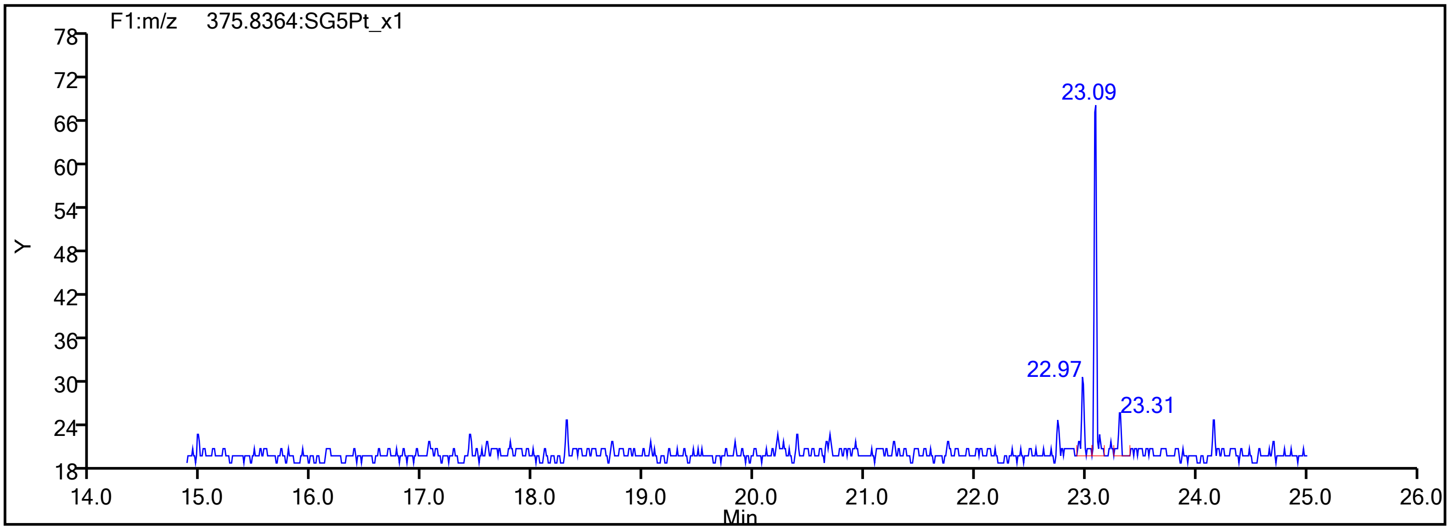

Report Date: 03-Feb-2021 14:45:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

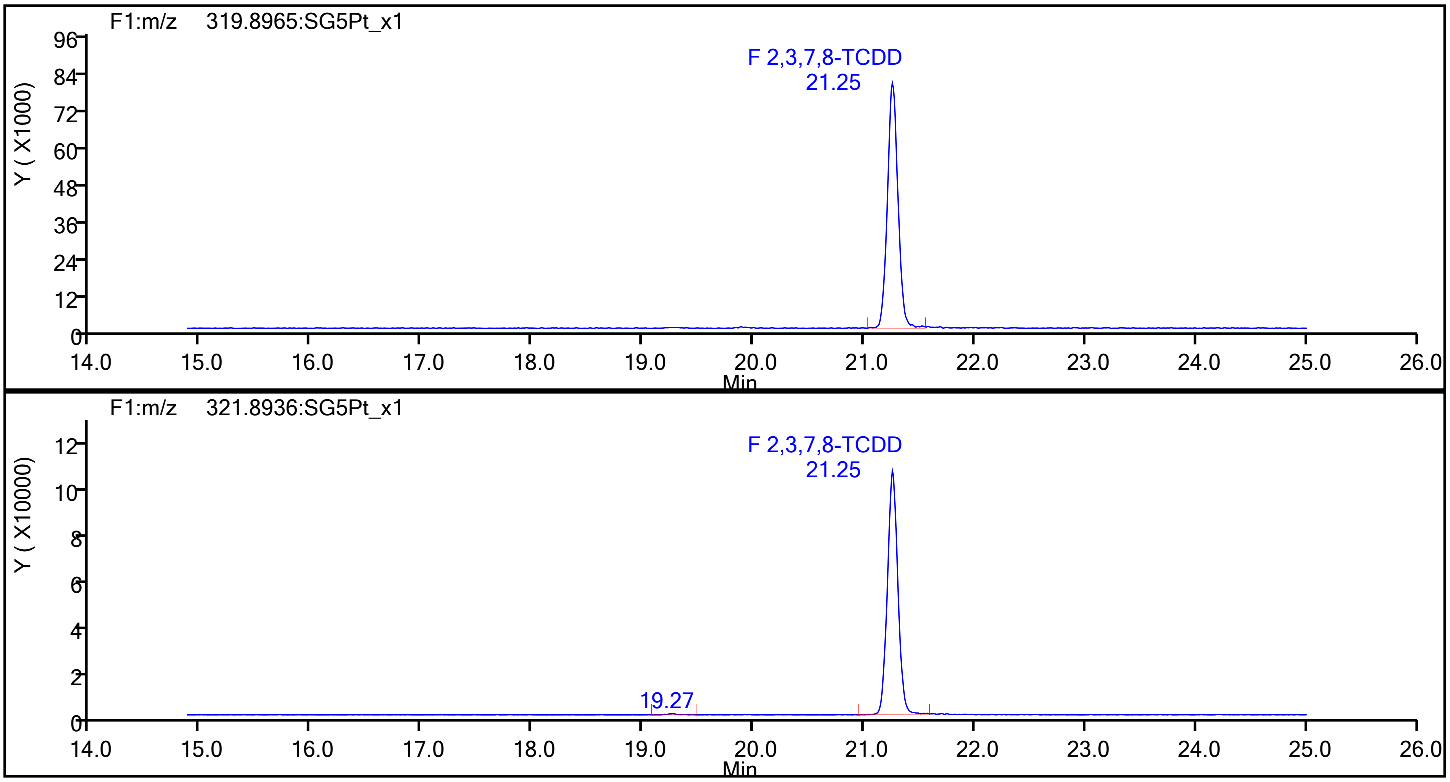

TCDD Standards

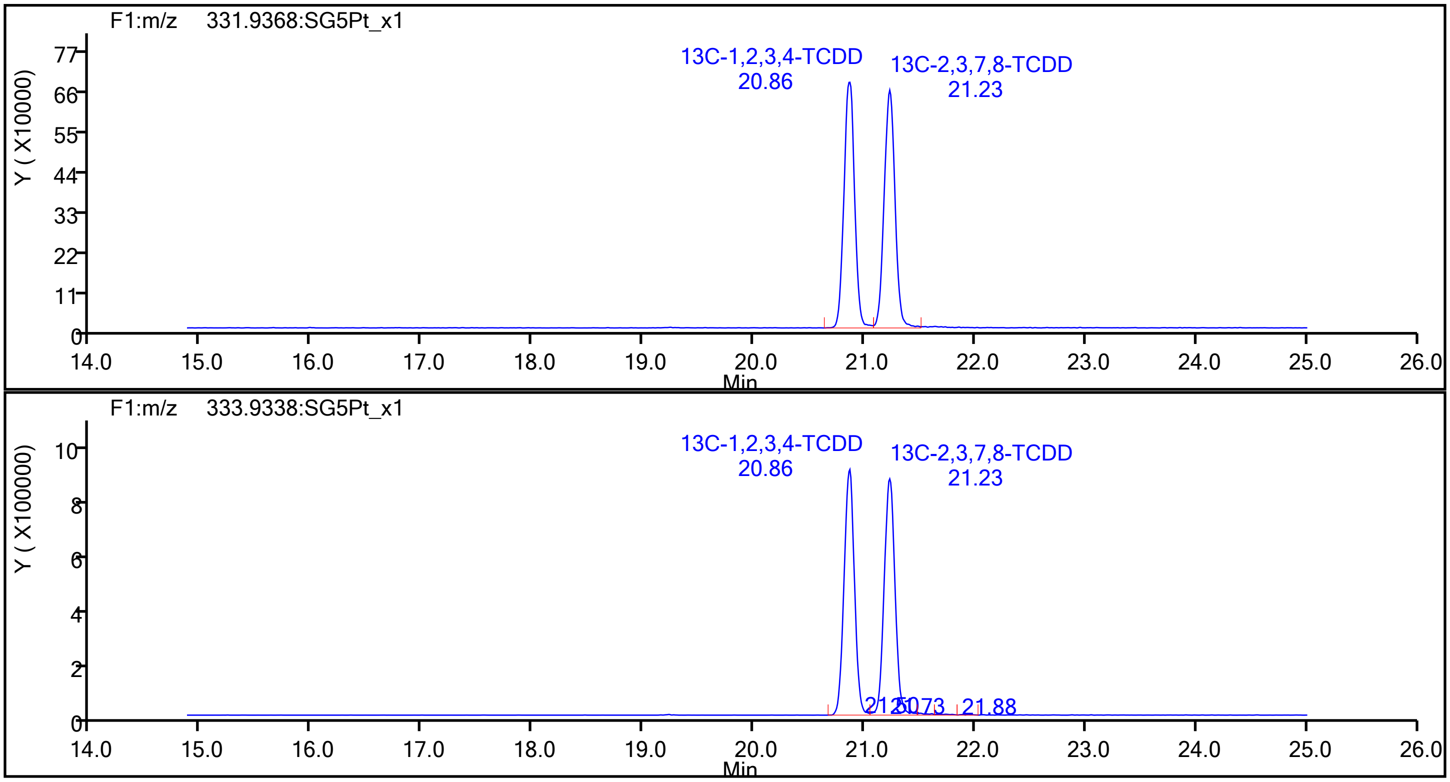

Report Date: 03-Feb-2021 14:45:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d		
Injection Date:	02-Feb-2021 23:22:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

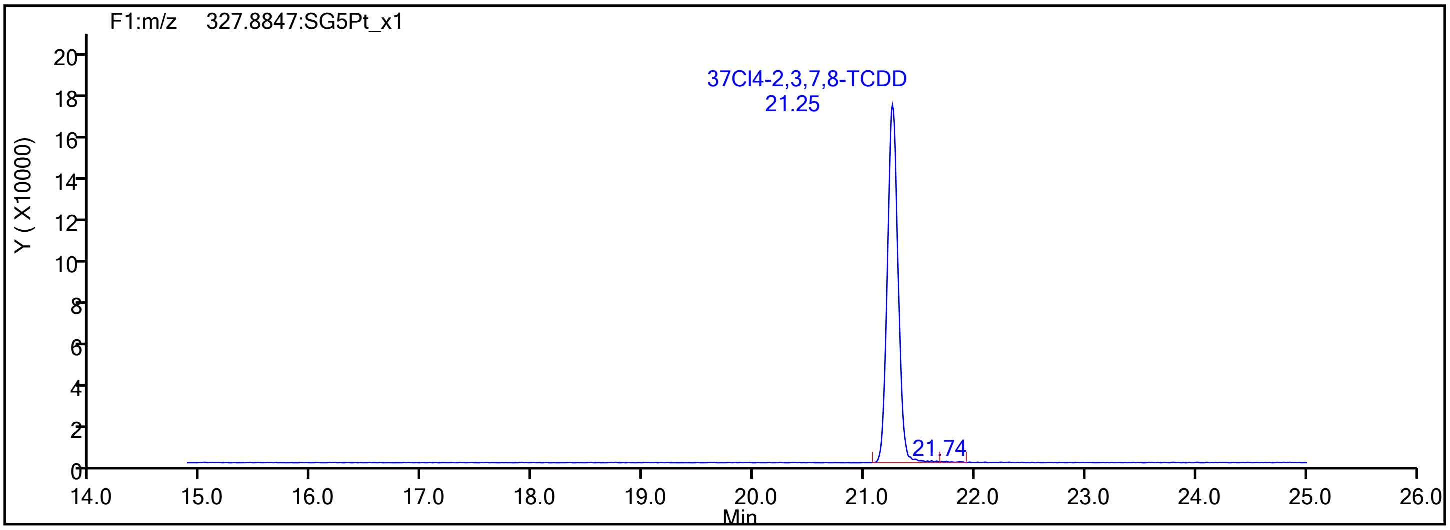

37Cl4-TCDD Standards

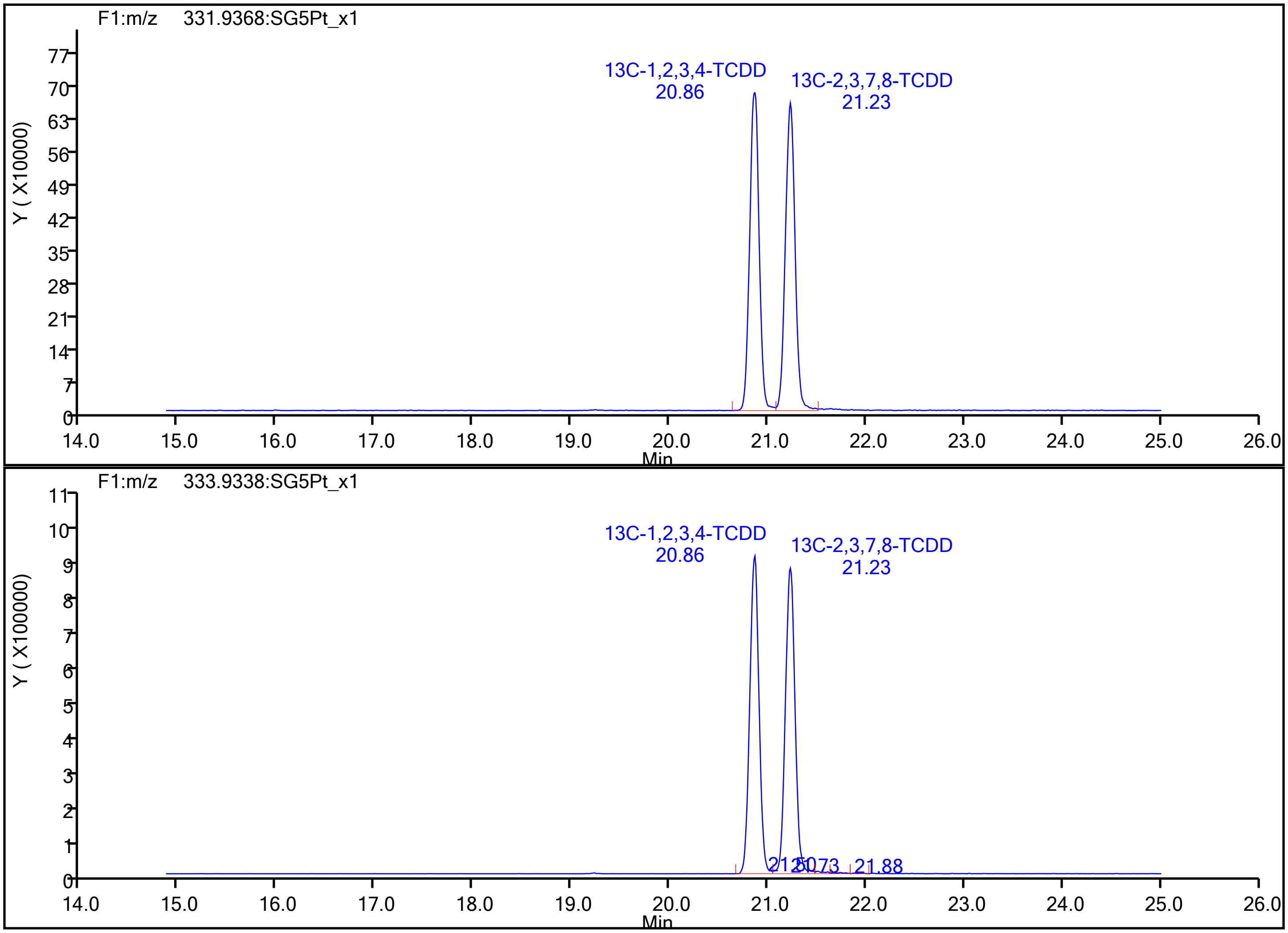

Report Date: 03-Feb-2021 14:45:57 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

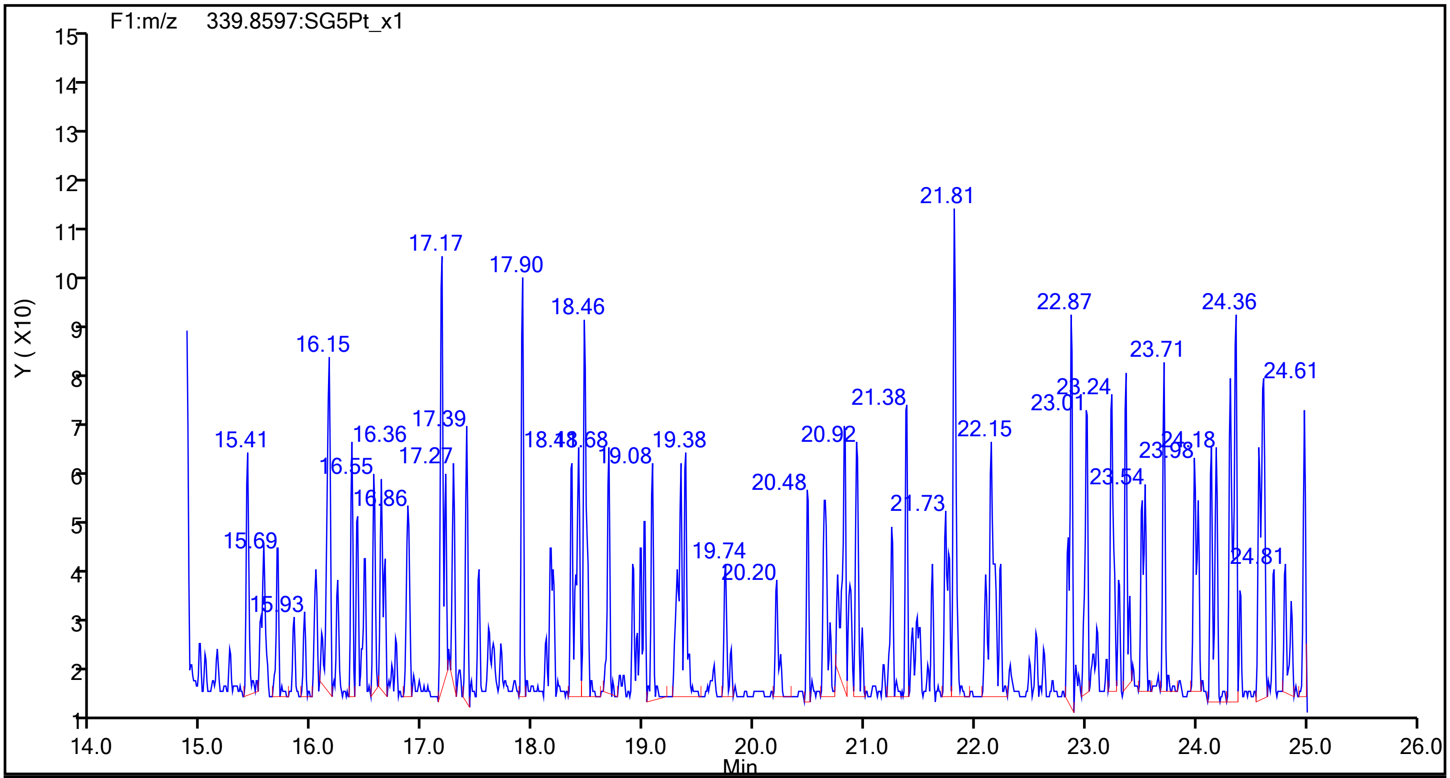

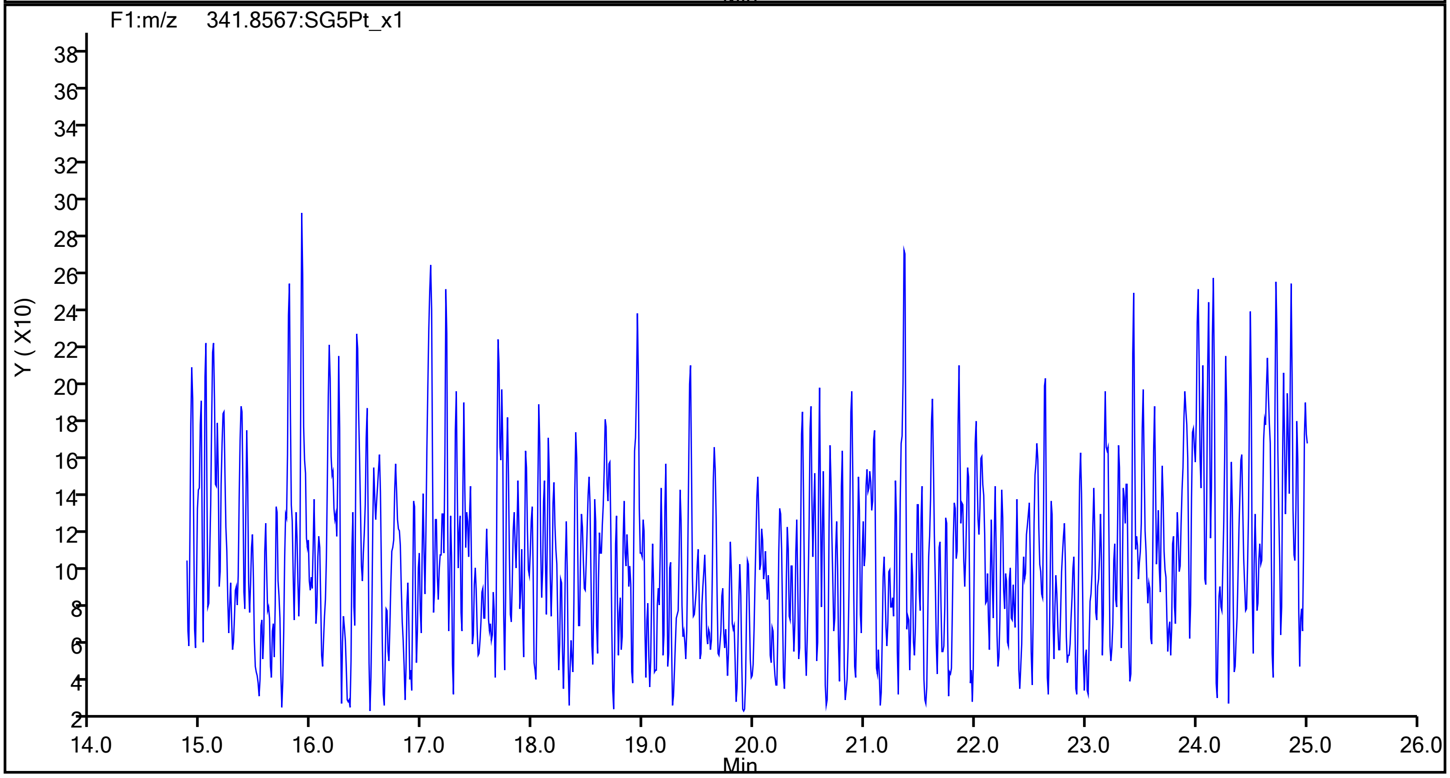

Report Date: 03-Feb-2021 14:45:58 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

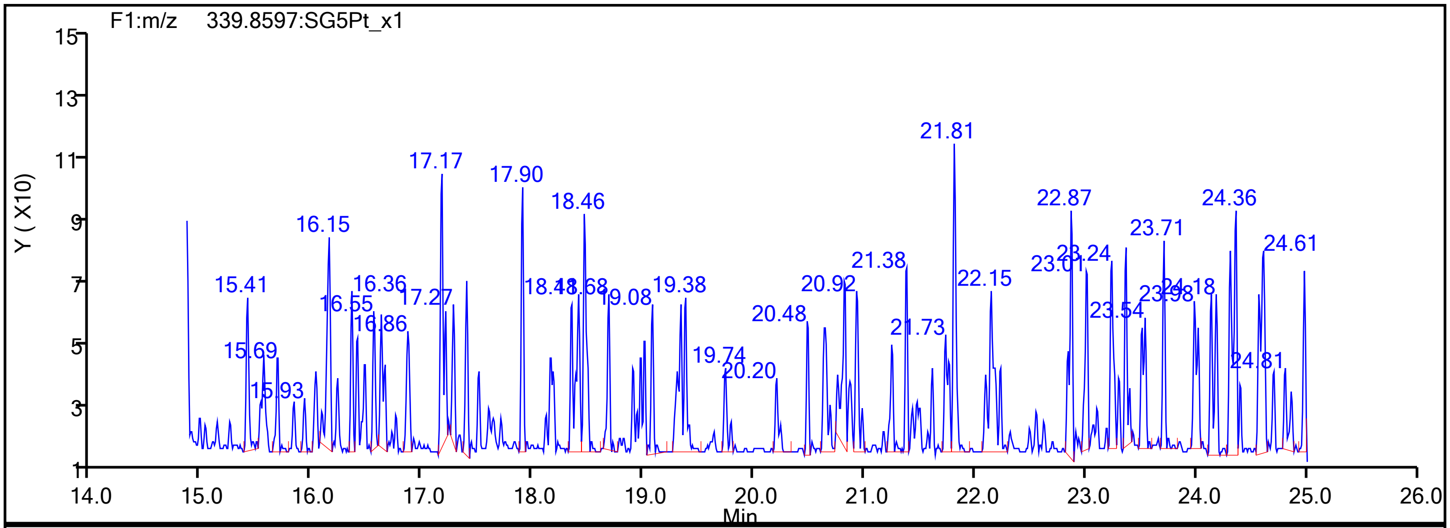

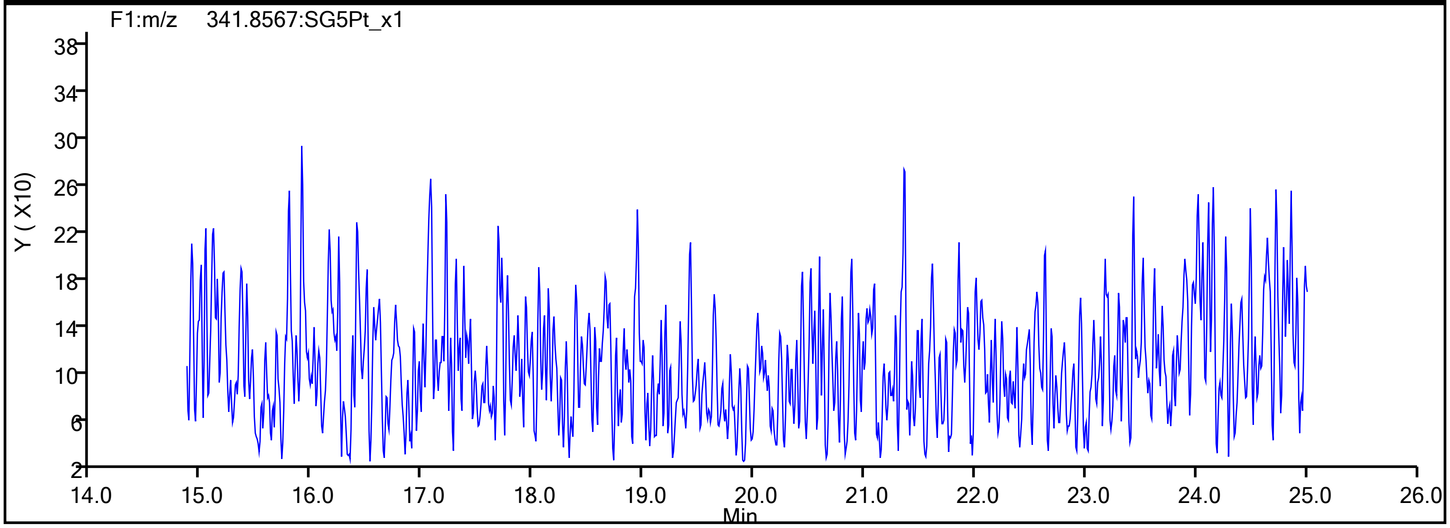

F1 PeCDFs Interference Mass

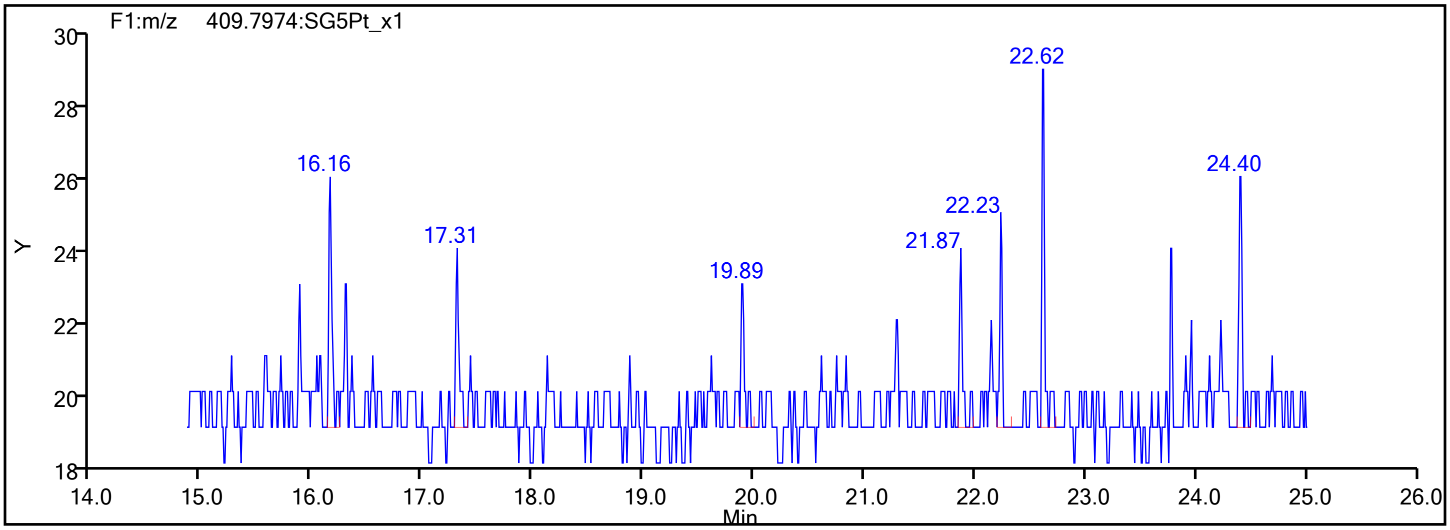

Report Date: 03-Feb-2021 14:45:58 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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PeCDF

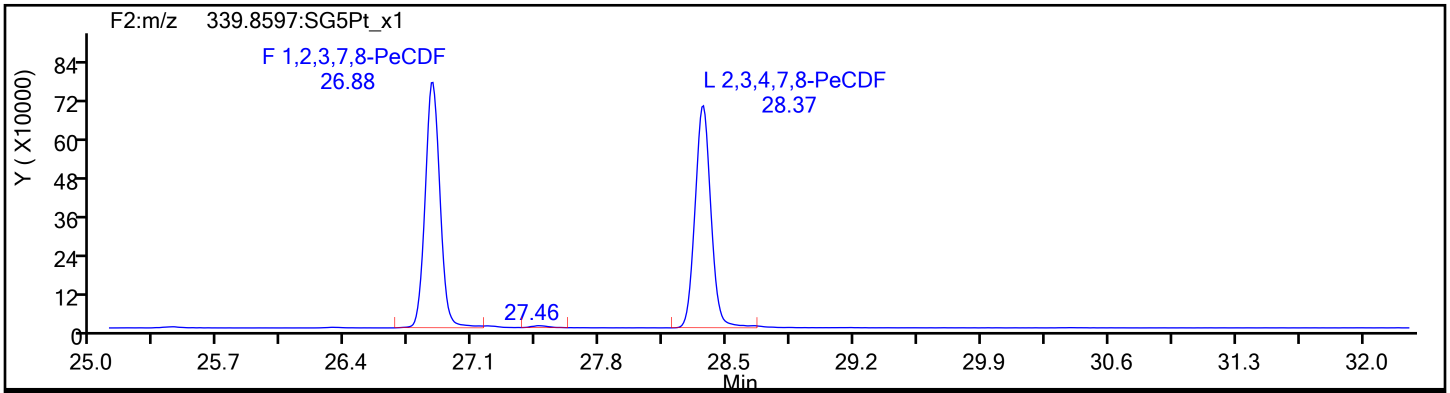

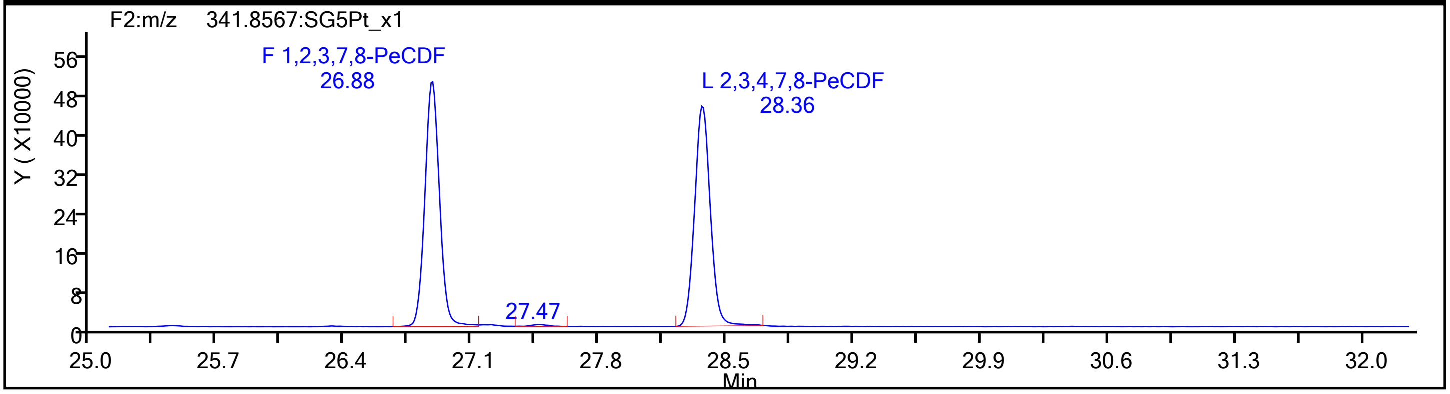

PeCDF Standards

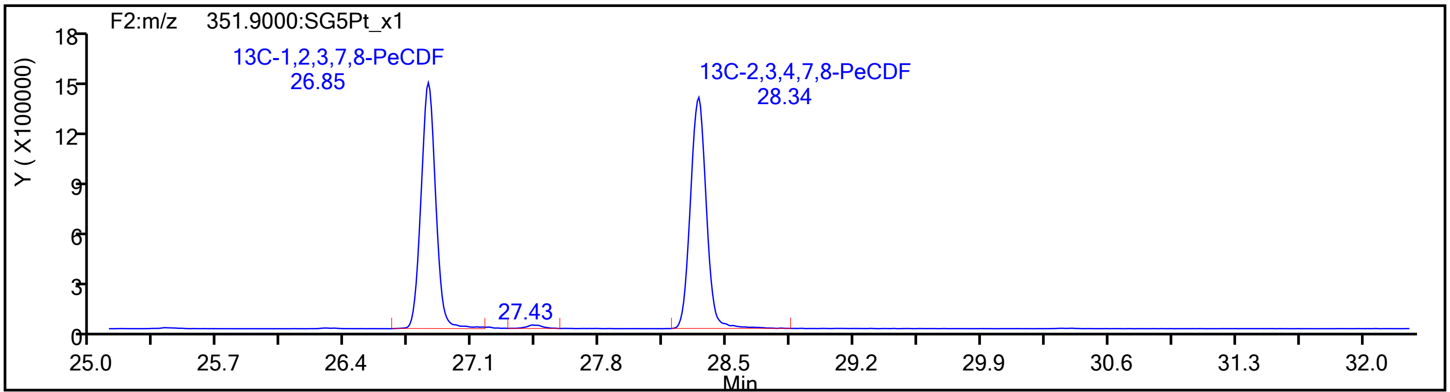

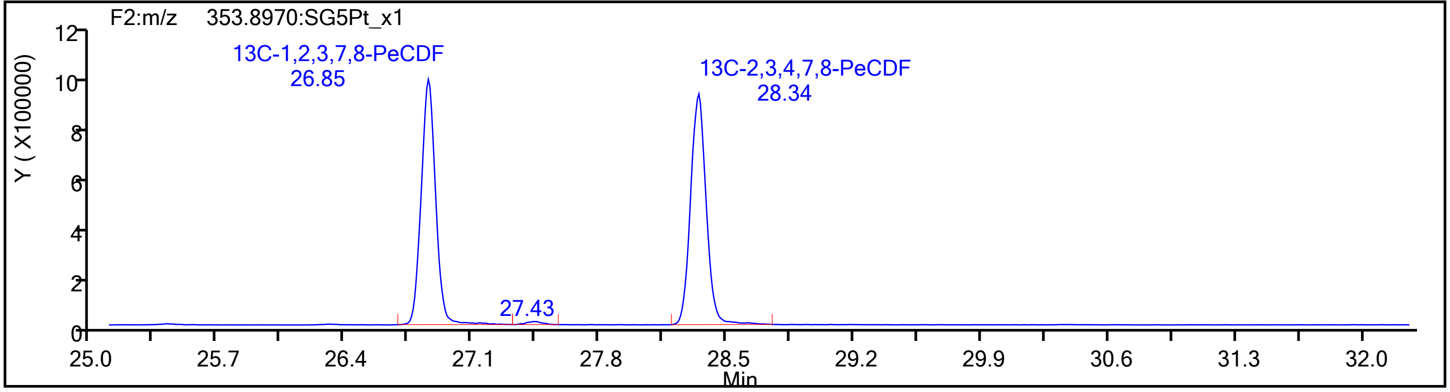

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Eurofins TestAmerica, Sacramento

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PeCDF

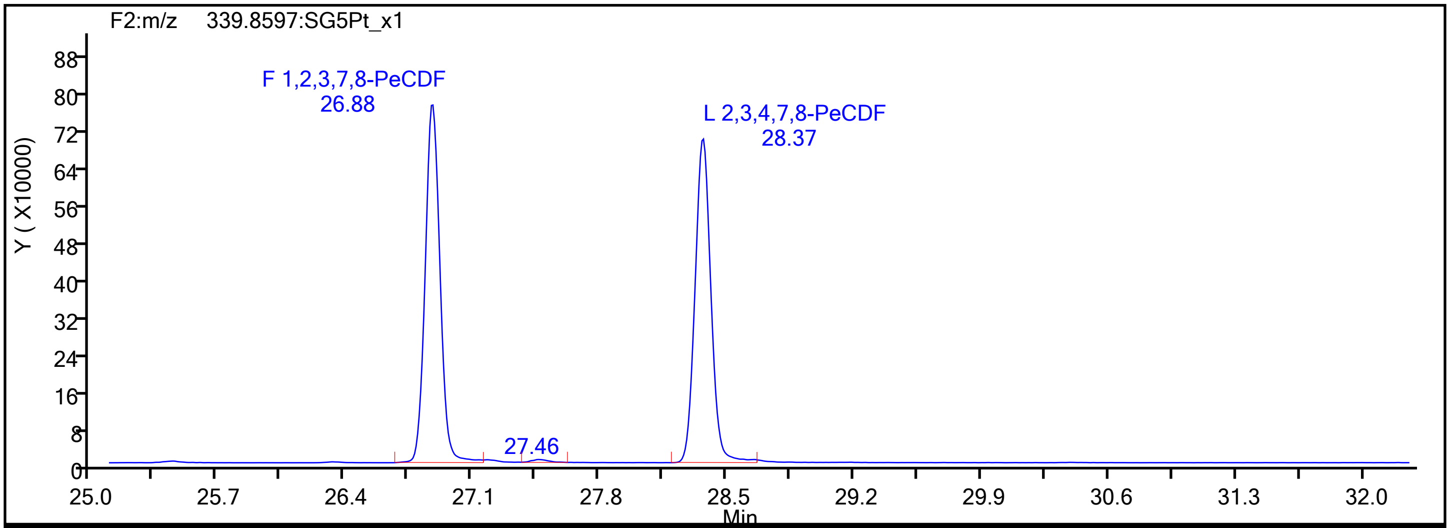

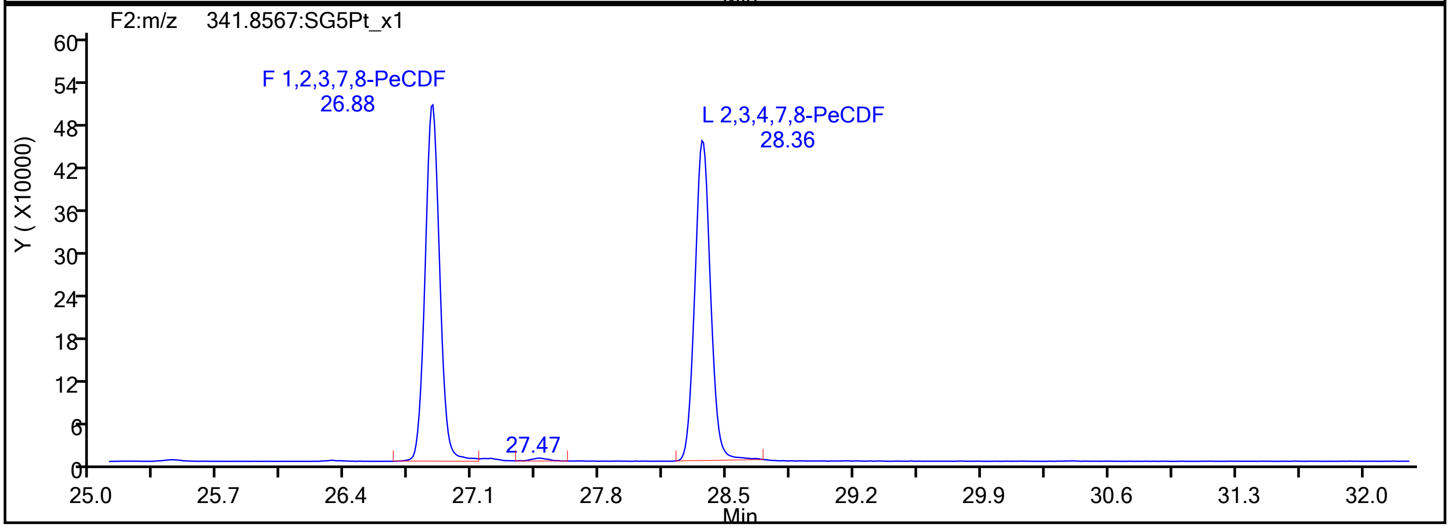

PeCDF Interference Mass

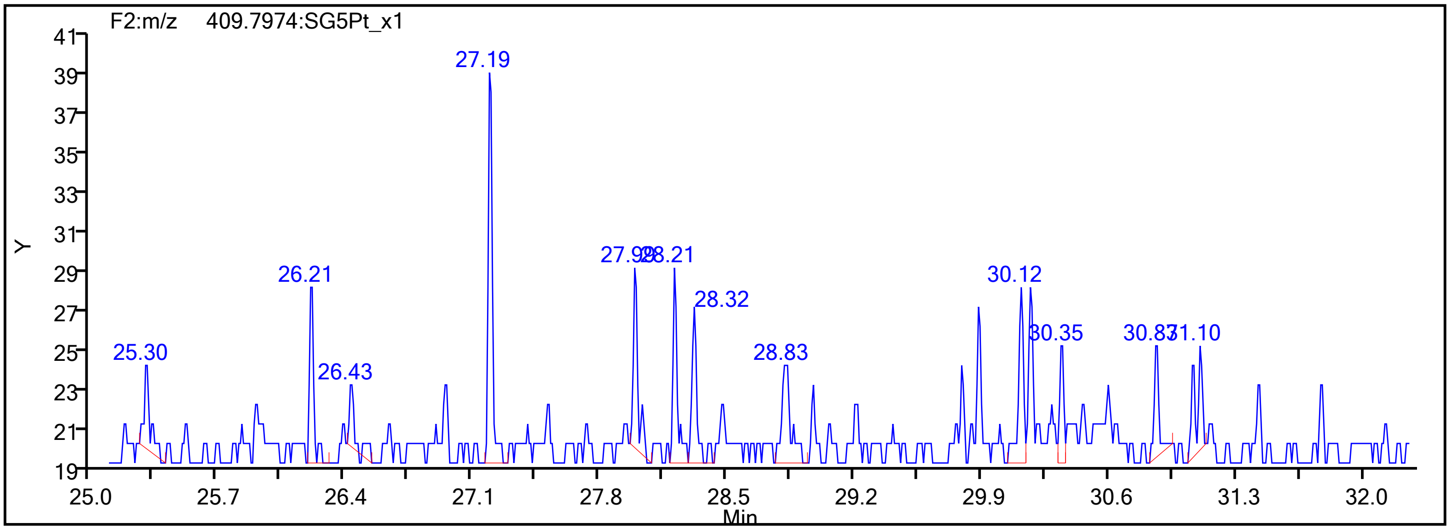

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

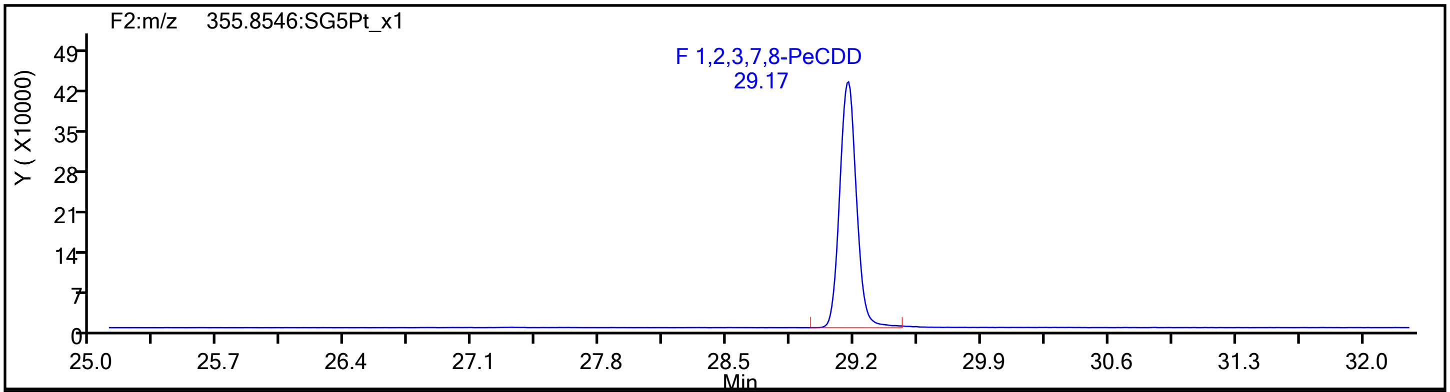

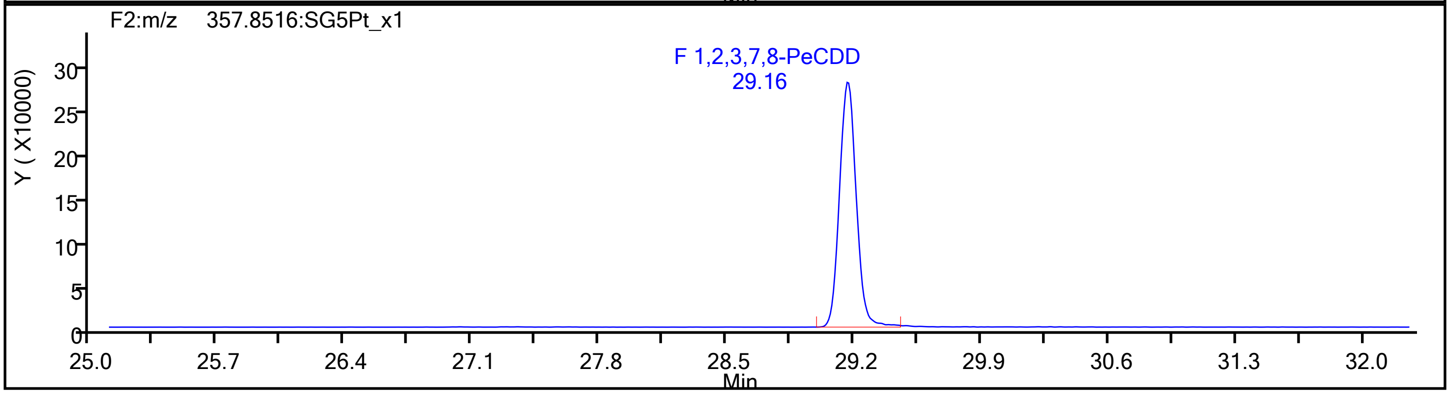

PeCDD Standards

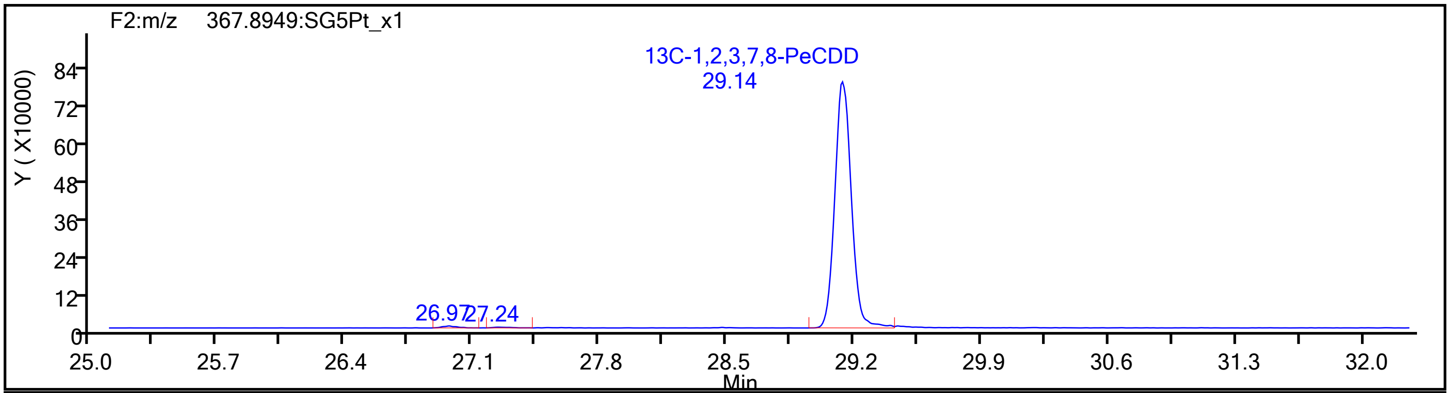

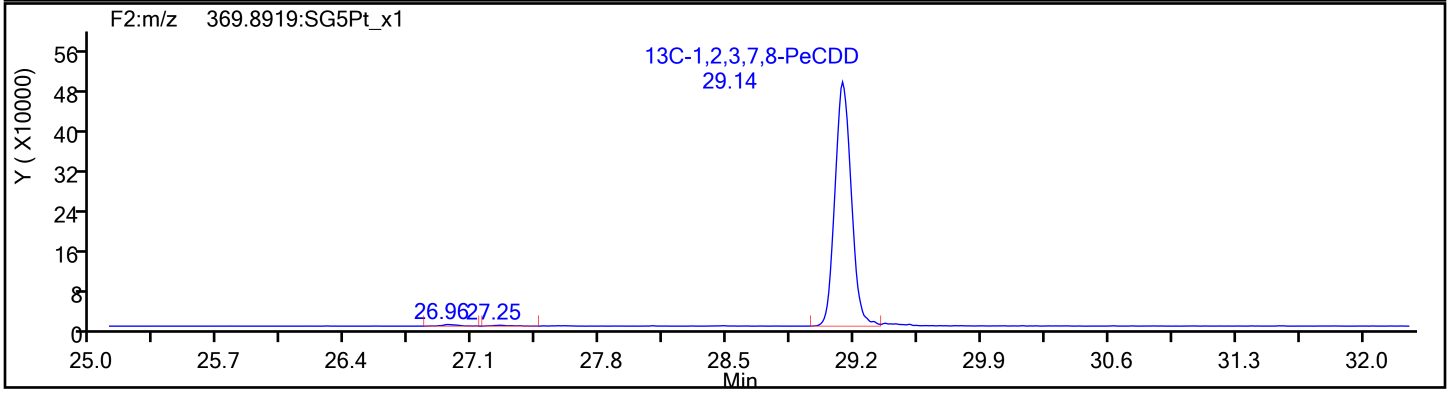

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Eurofins TestAmerica, Sacramento

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Injection Date: 02-Feb-2021 23:22:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

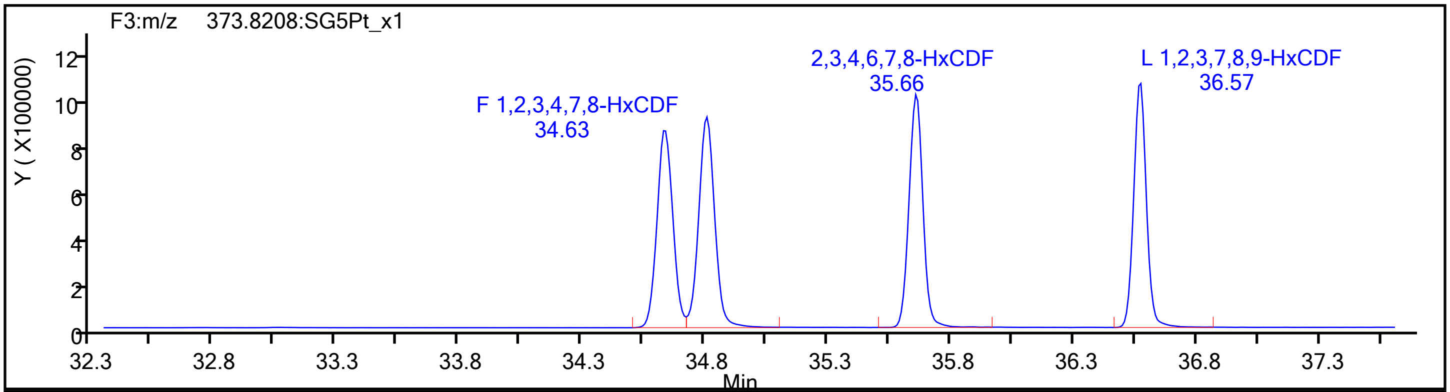

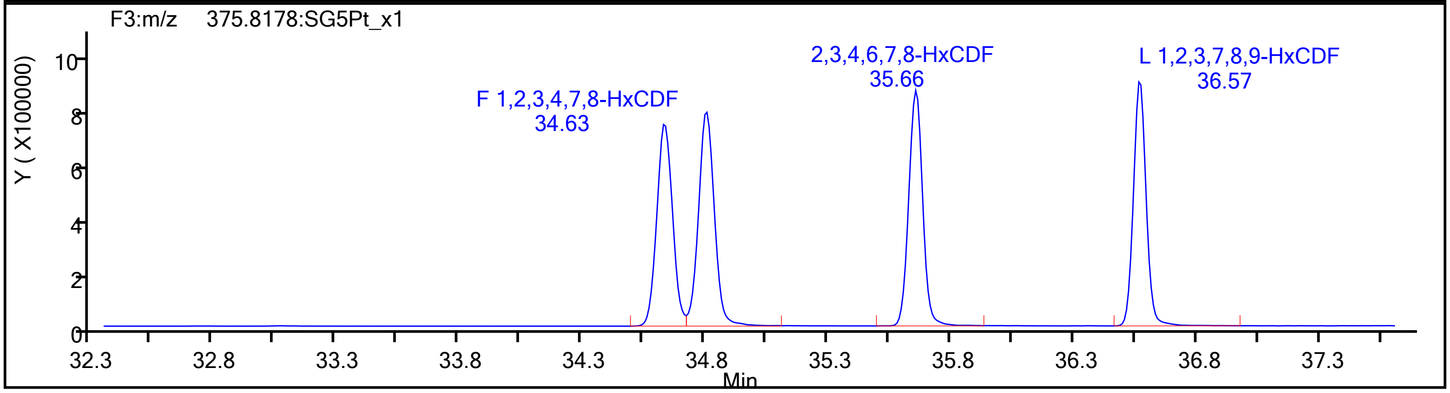

HxCDF Standards

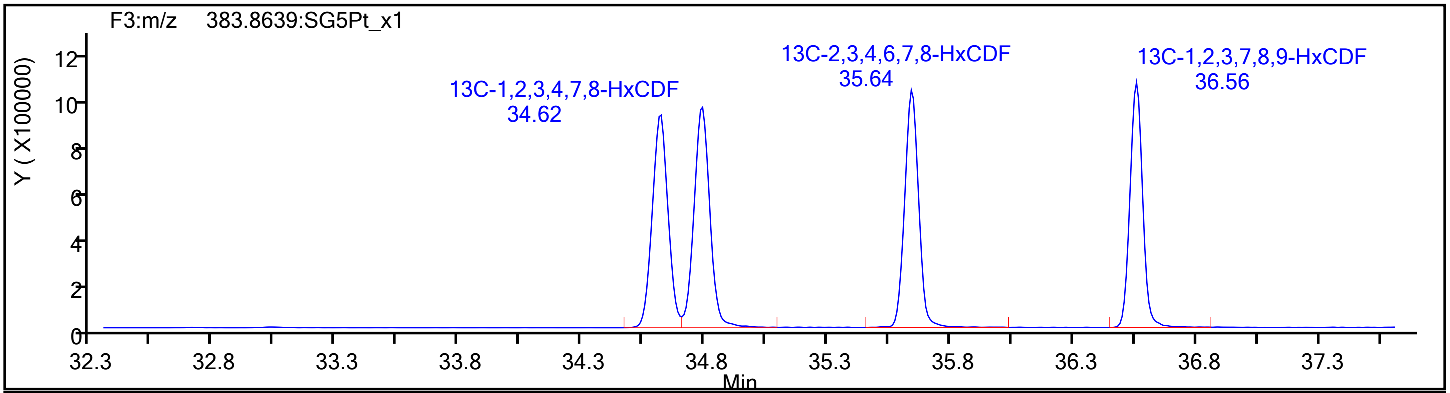

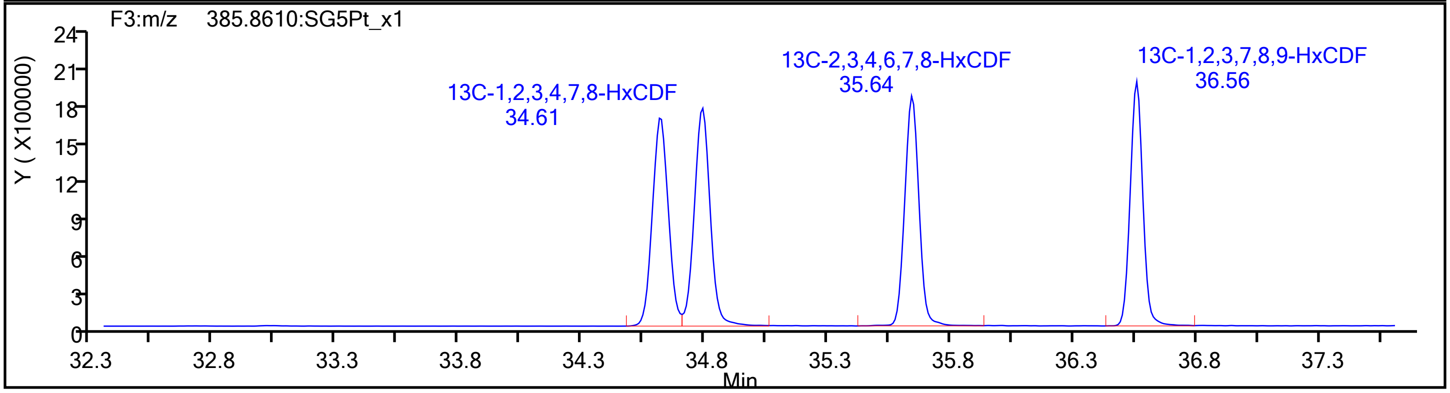

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

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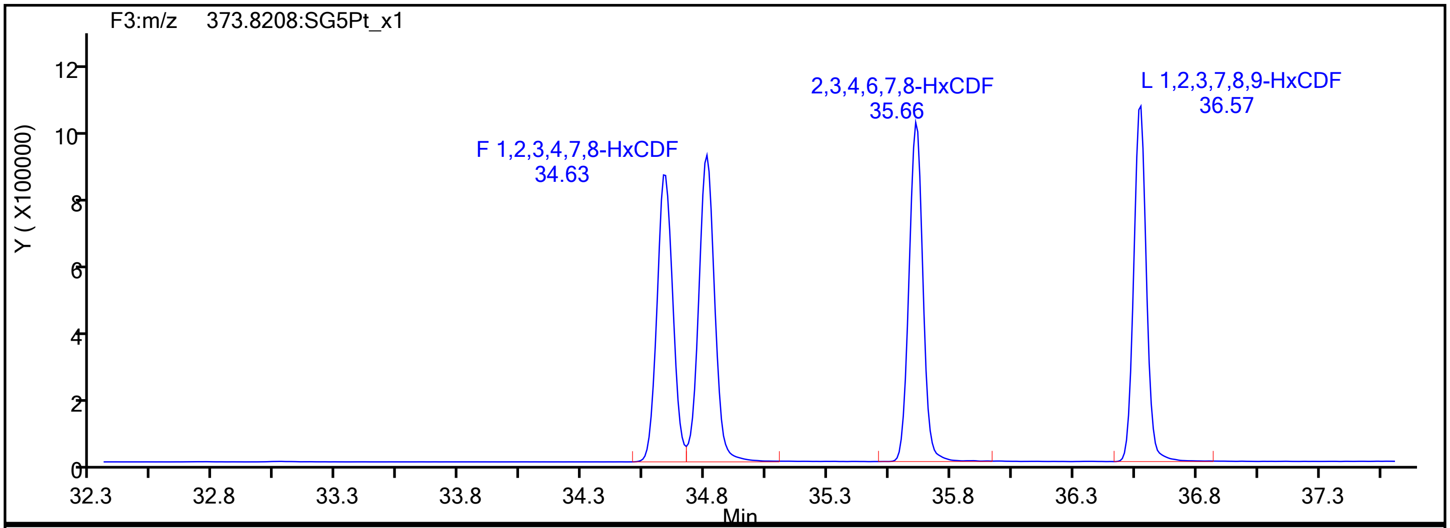

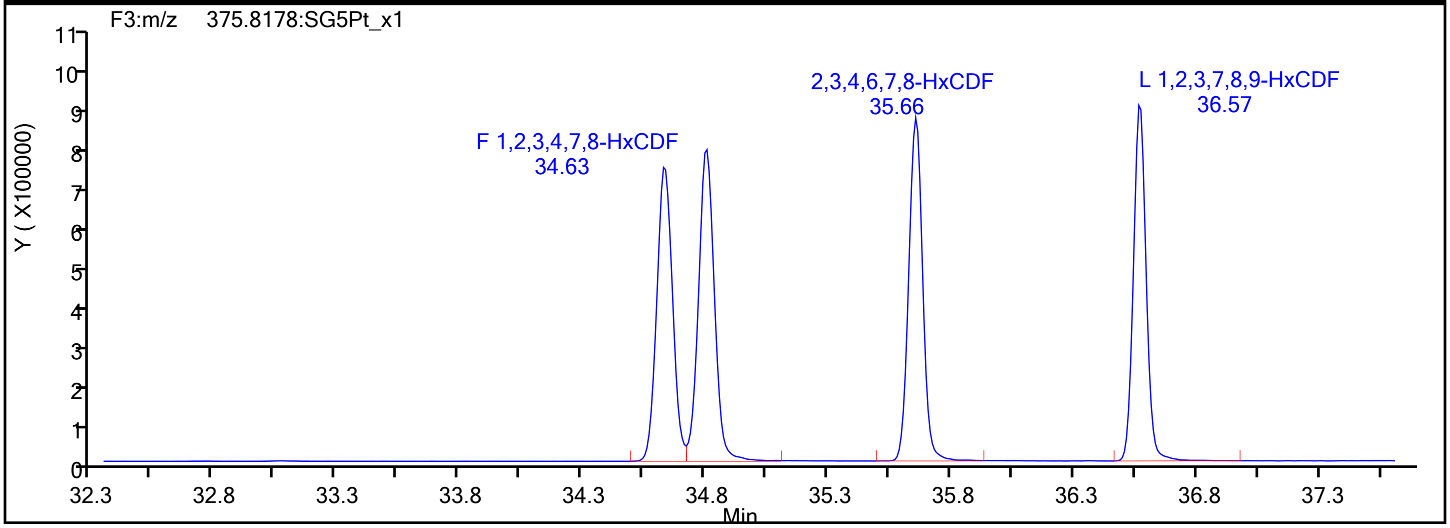

HxCDF Interference Mass

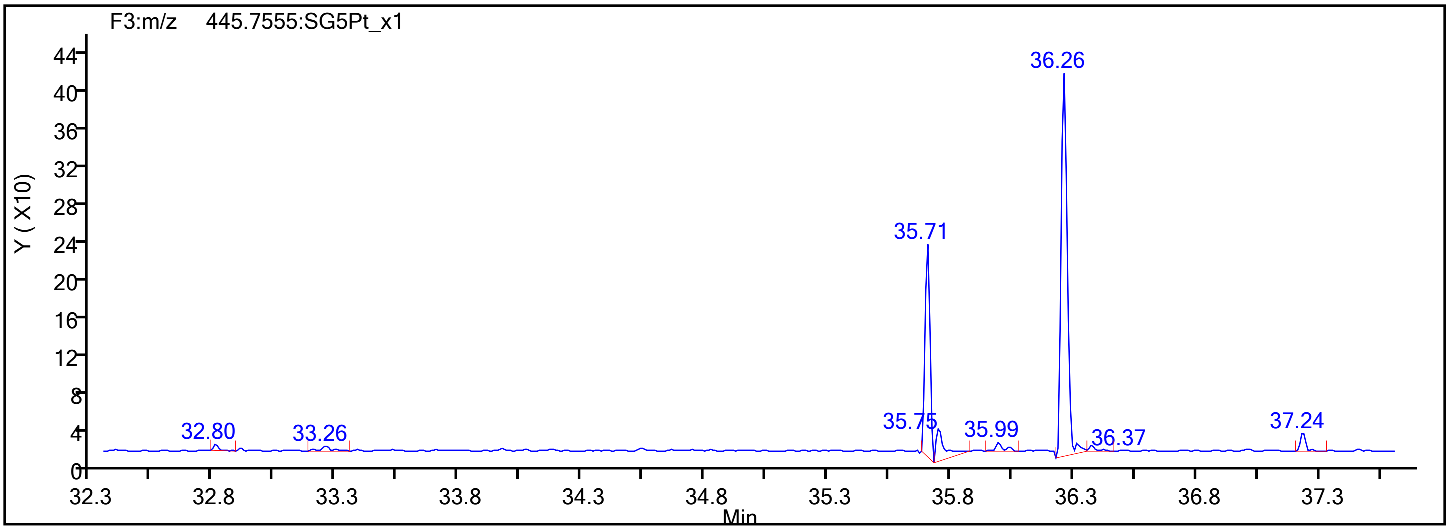

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Eurofins TestAmerica, Sacramento

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HxCDD

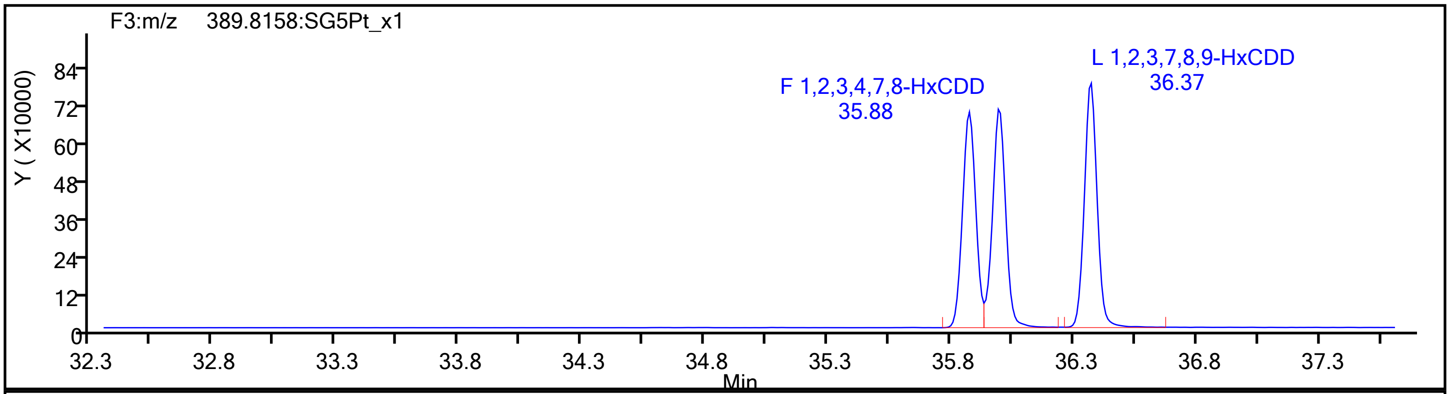

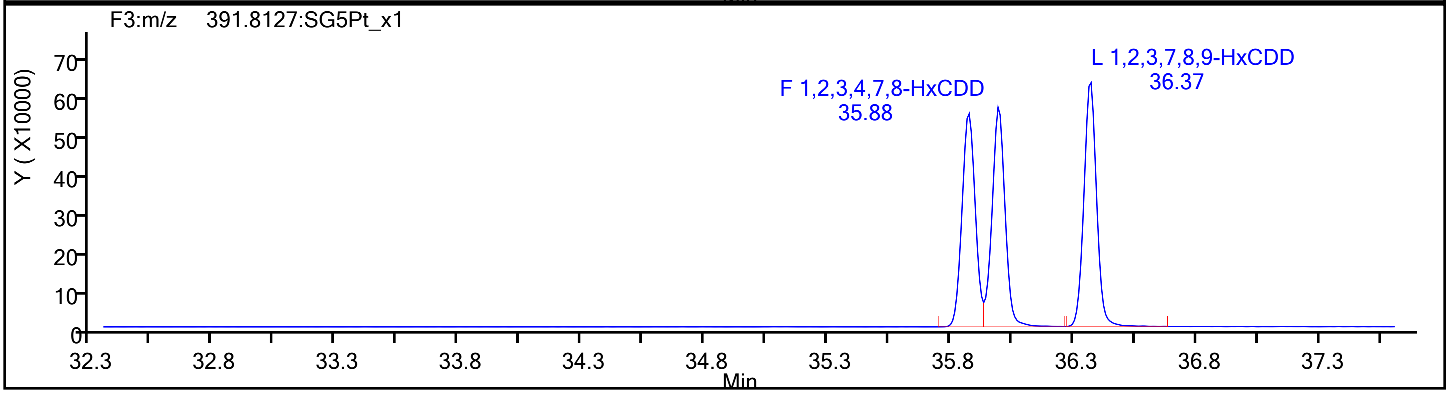

HxCDD Standards

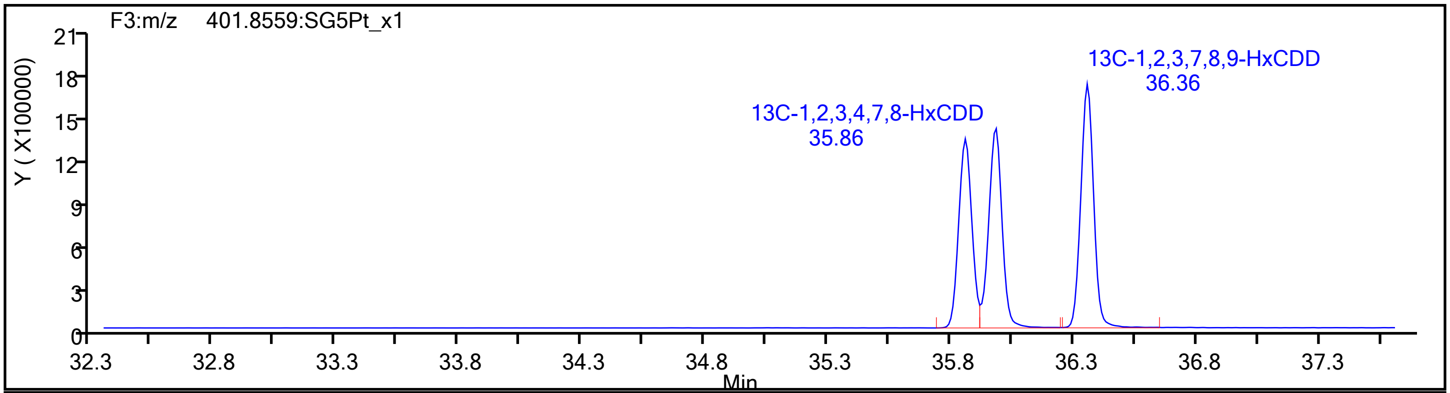

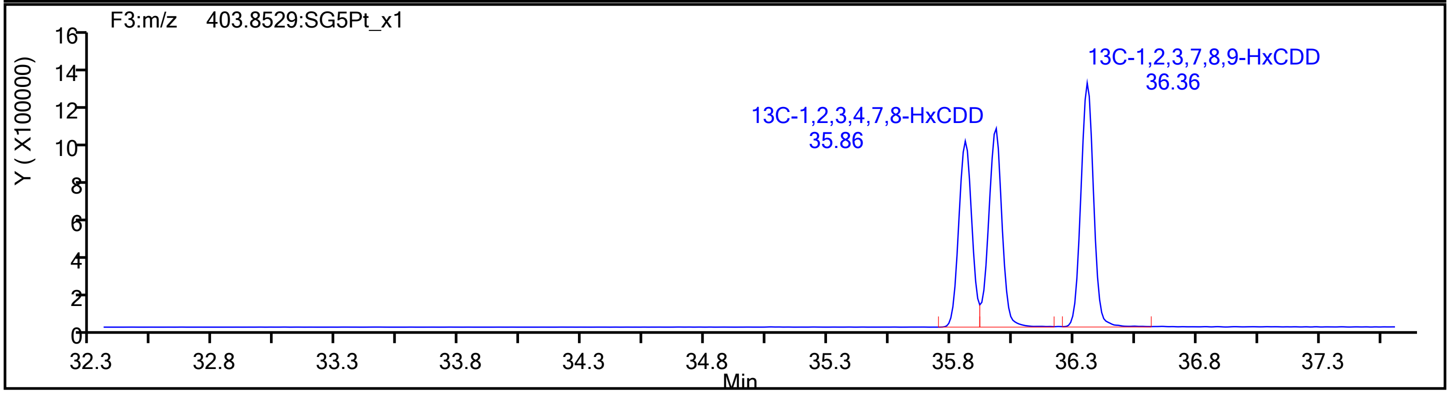

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Eurofins TestAmerica, Sacramento

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HpCDF

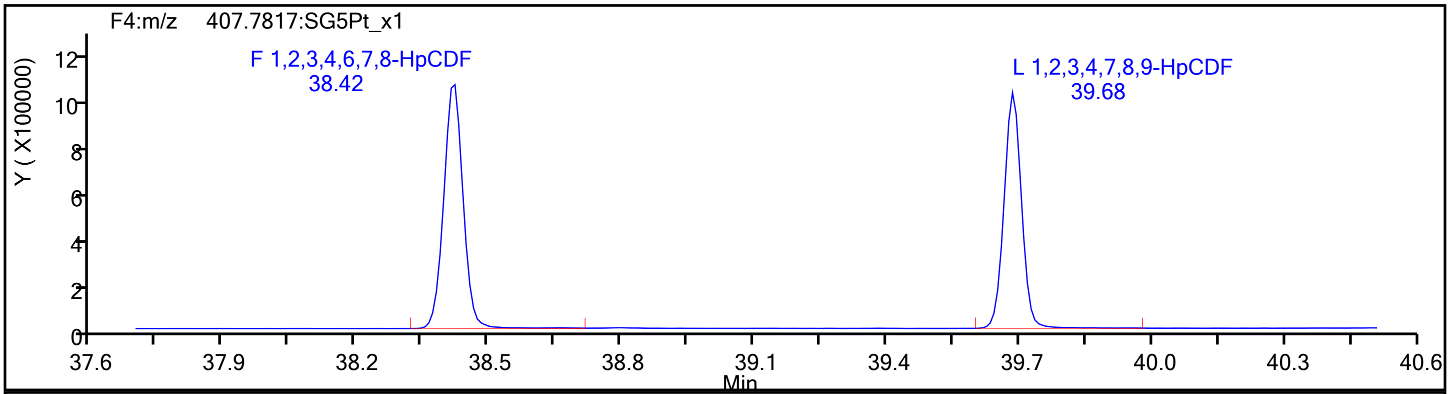

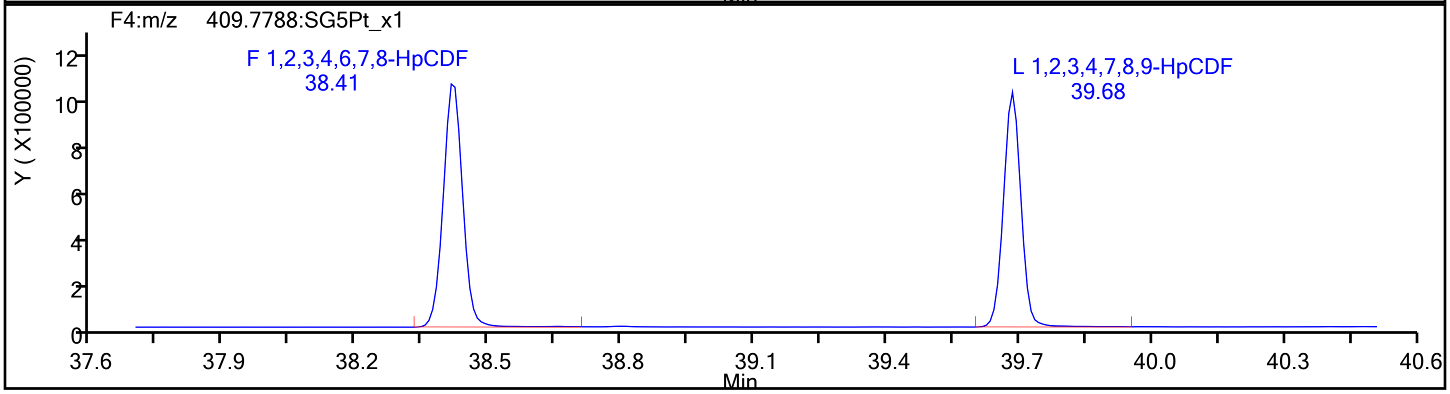

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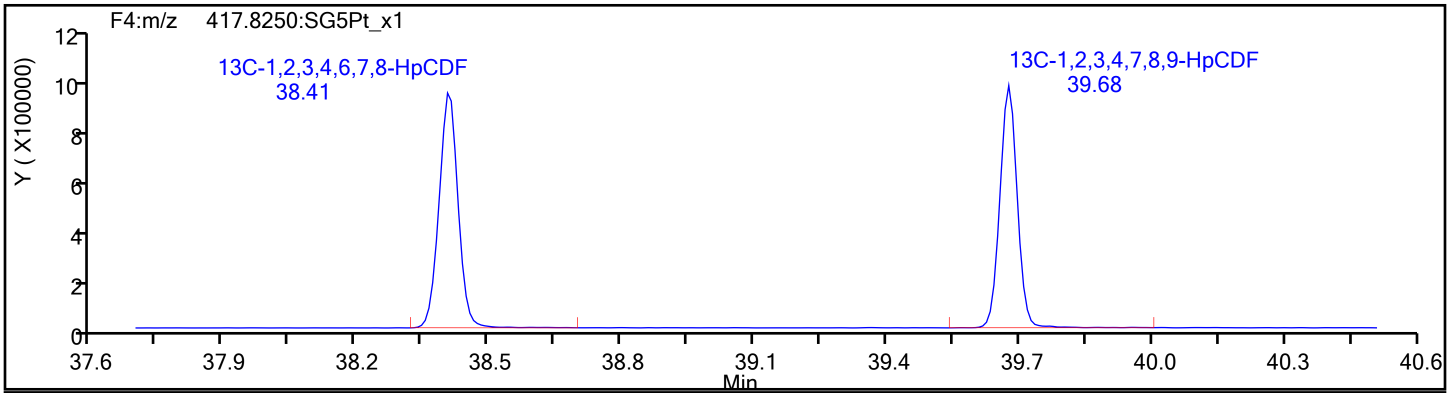

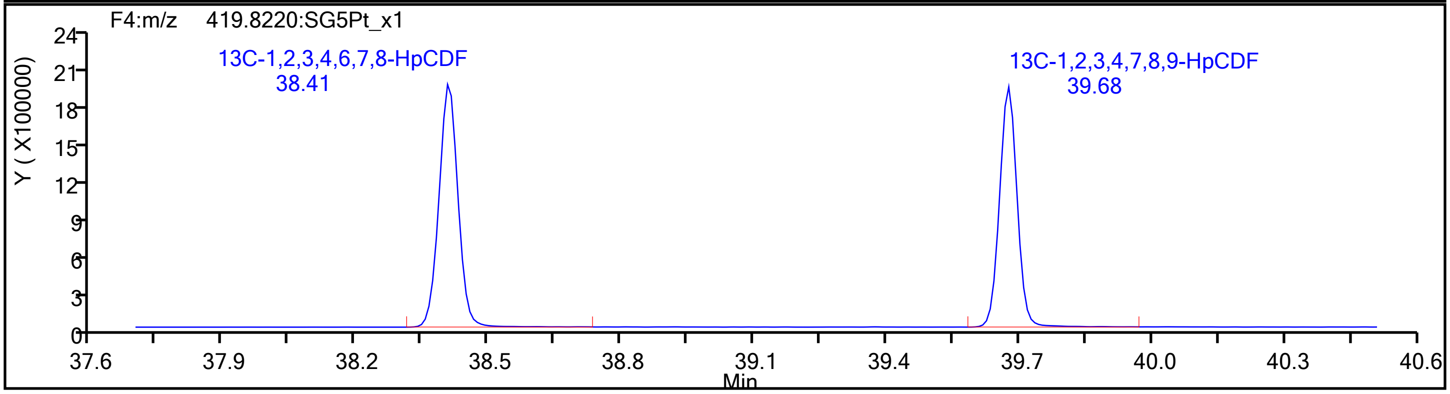

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Eurofins TestAmerica, Sacramento

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HpCDF

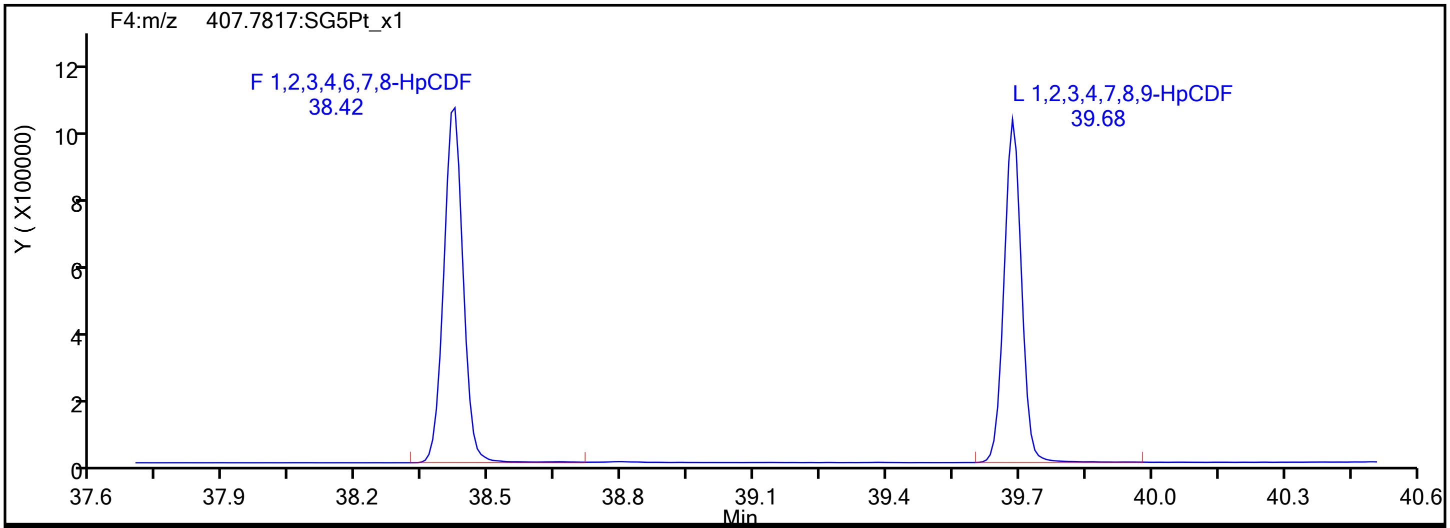

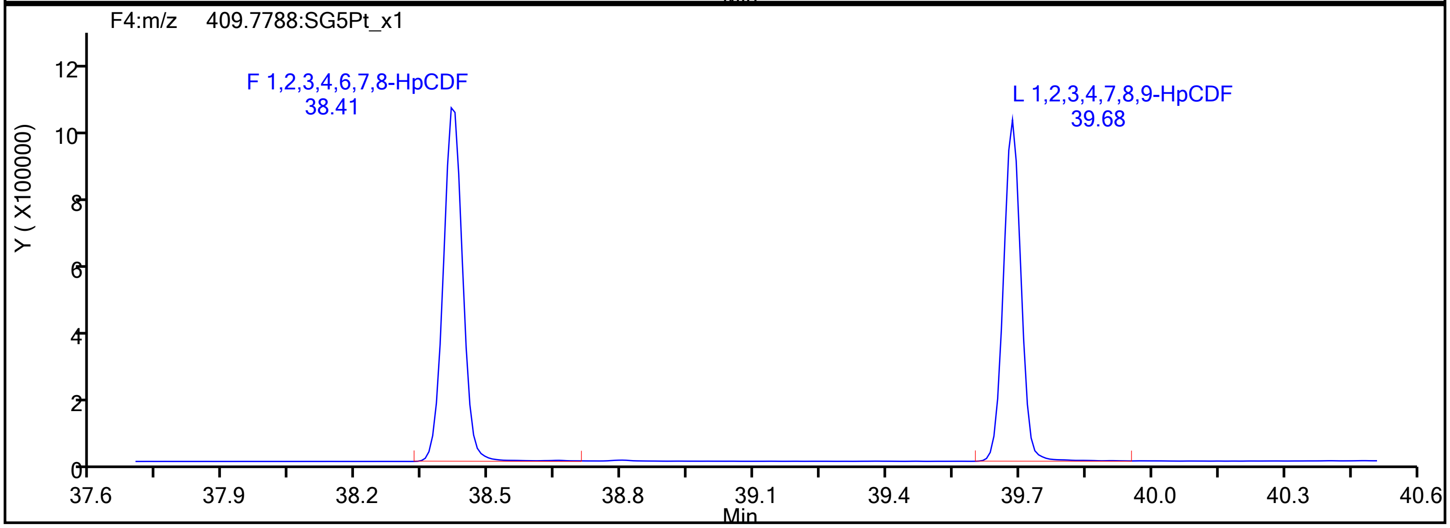

HpCDF Interference Mass

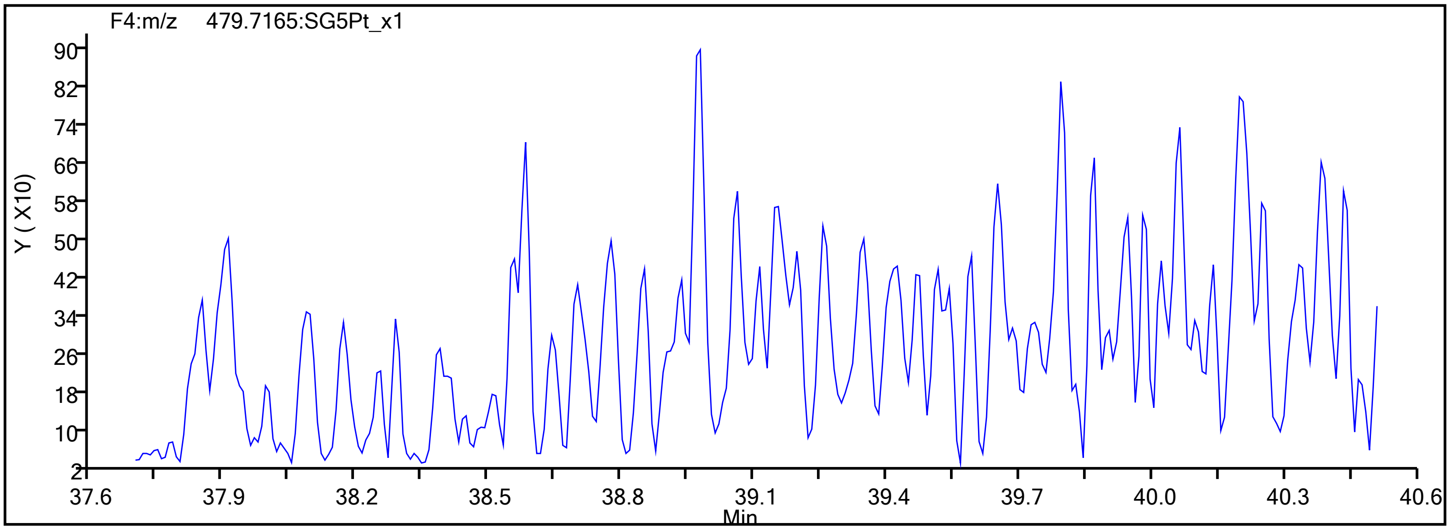

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Eurofins TestAmerica, Sacramento

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HpCDD

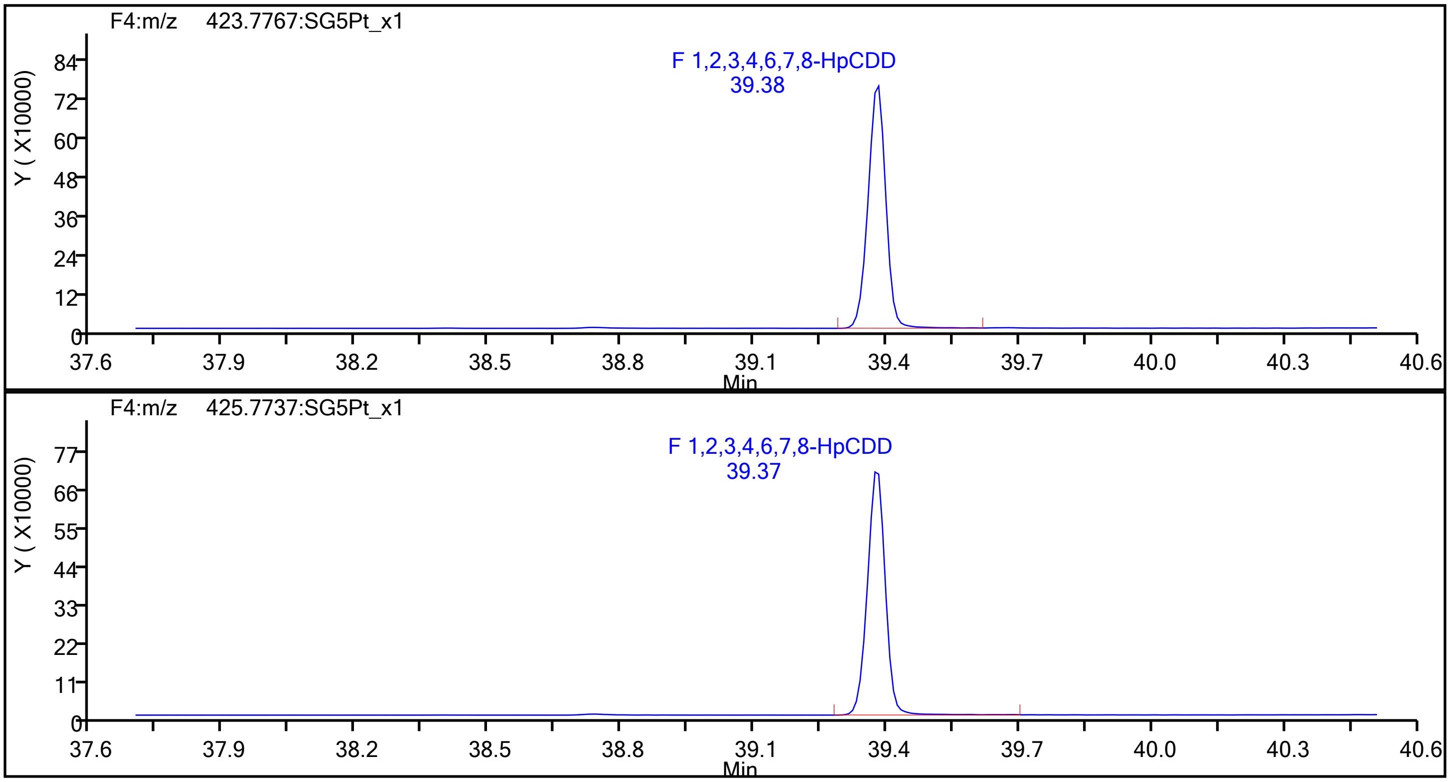

HpCDD Standards

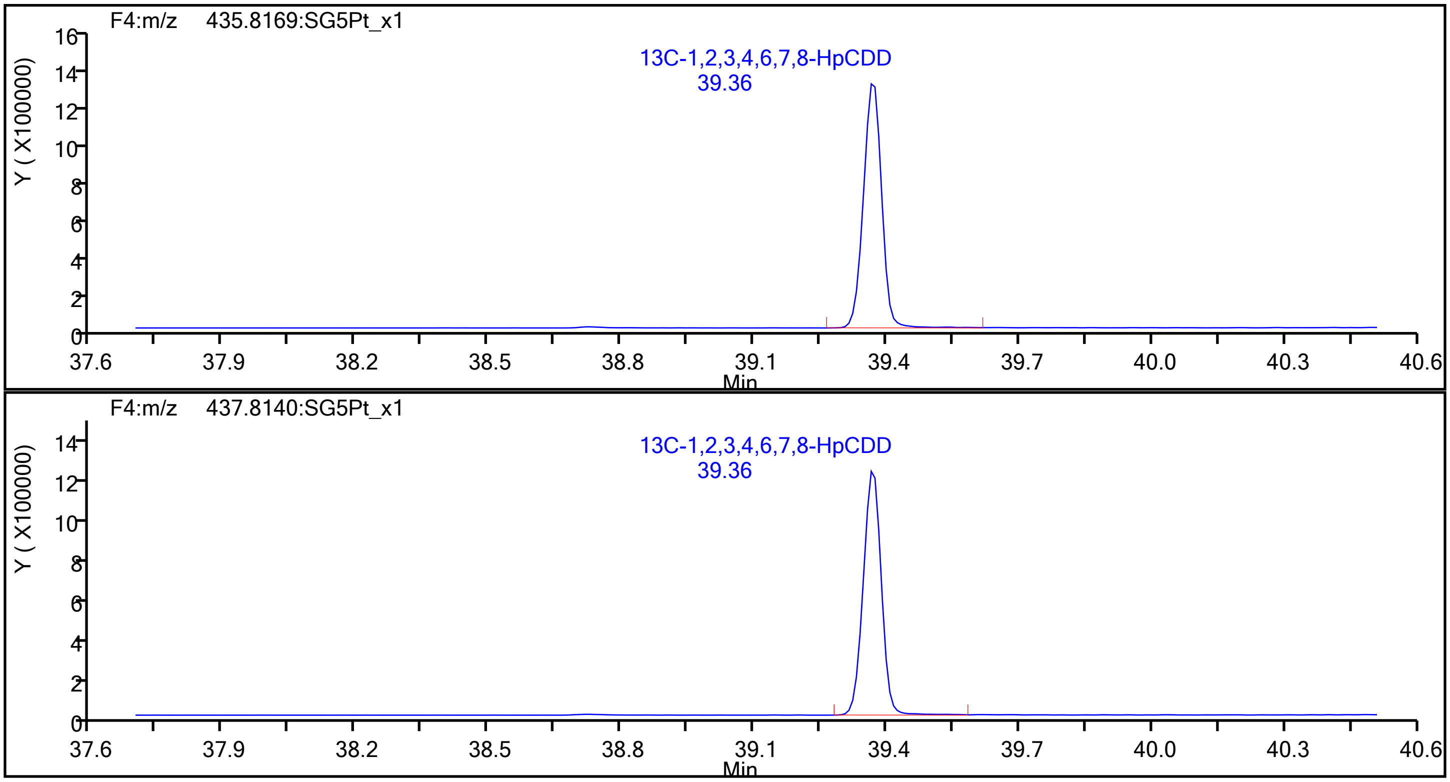

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Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

OCDF

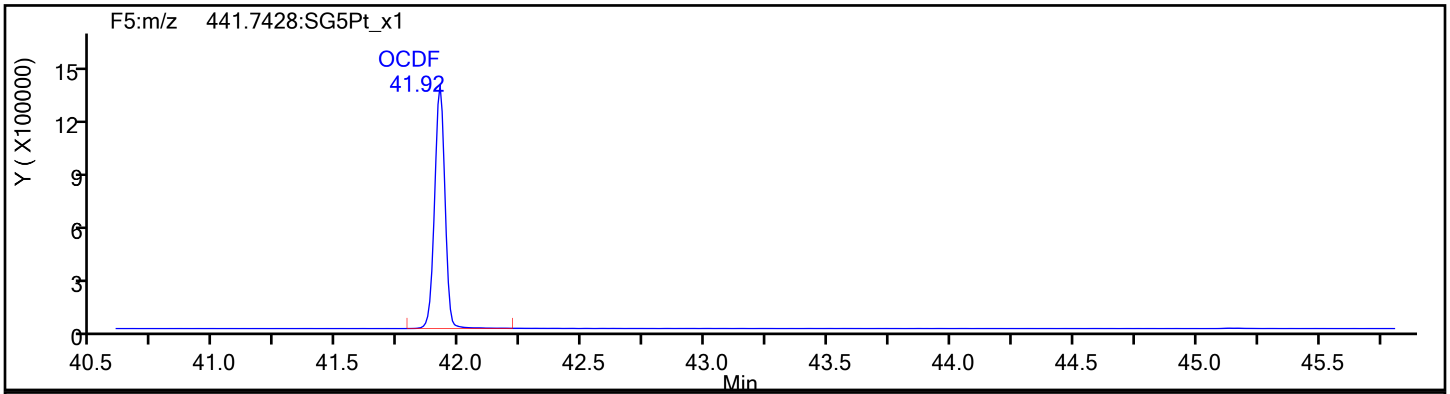

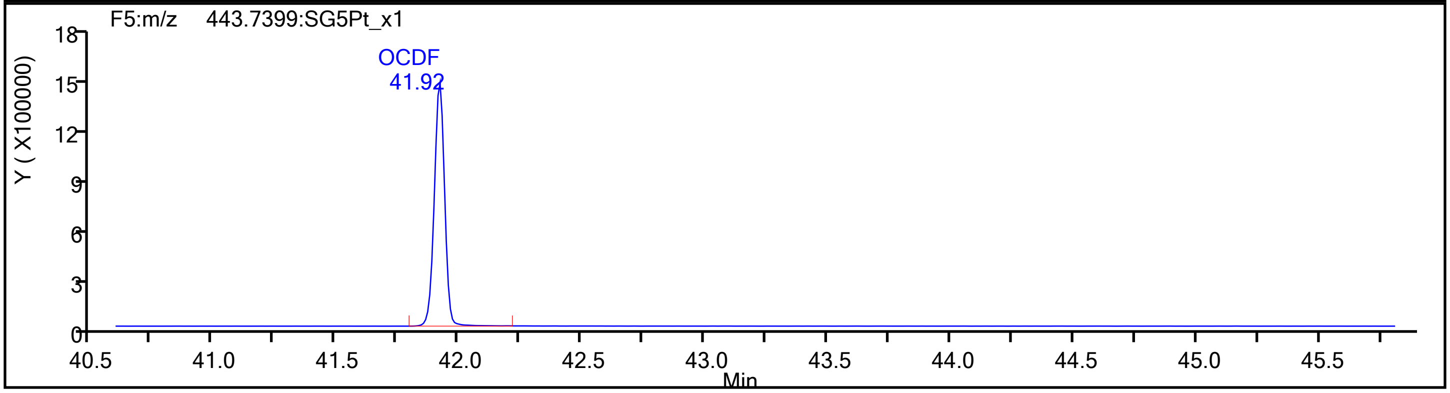

OCDF Standards

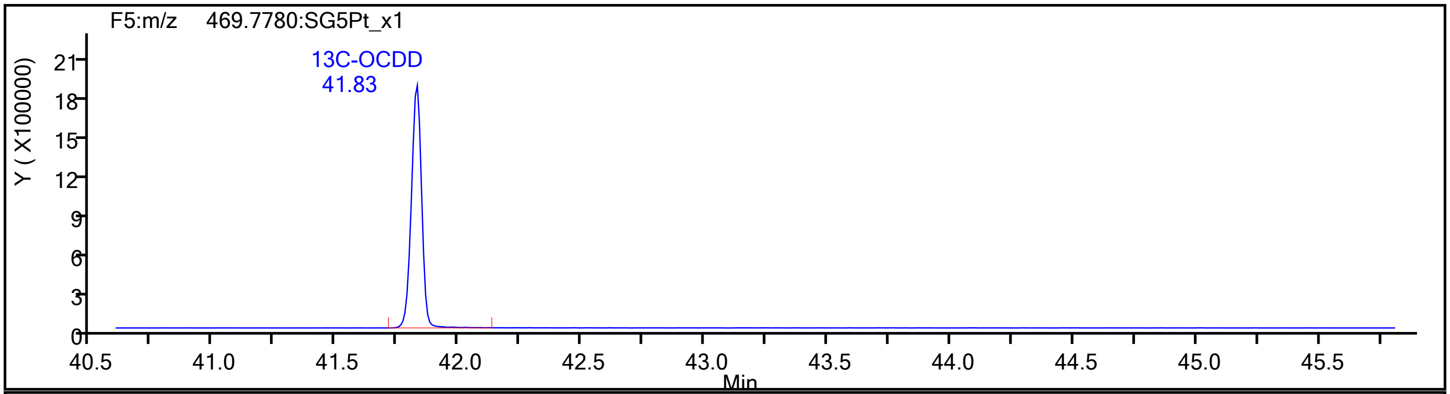

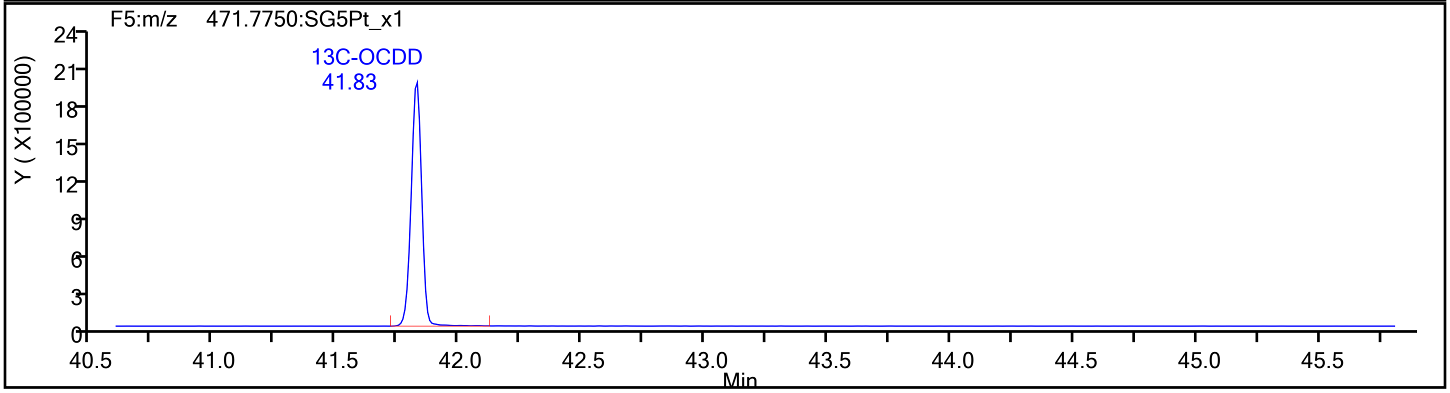

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Eurofins TestAmerica, Sacramento

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OCDF

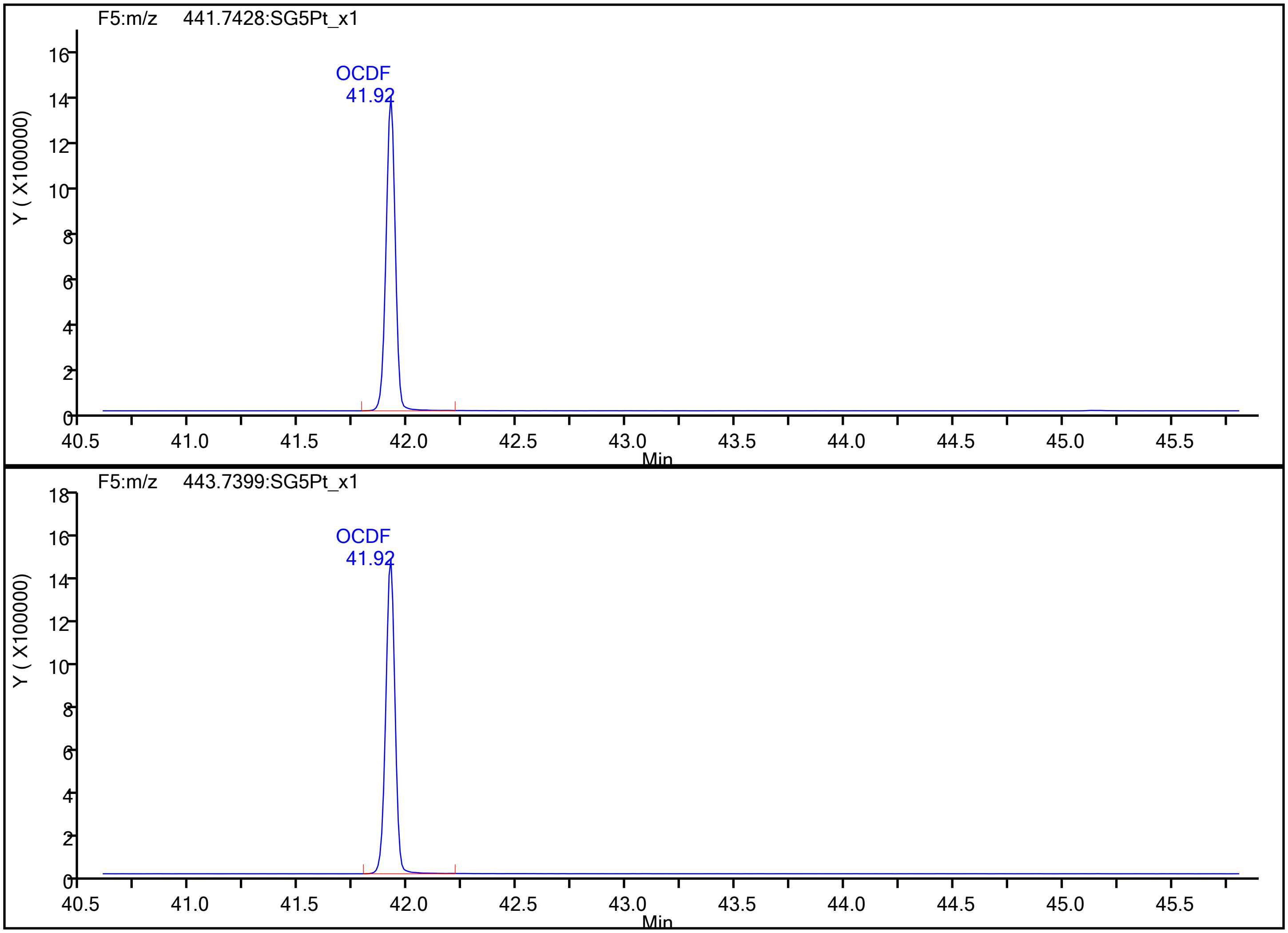

OCDF Interference Mass

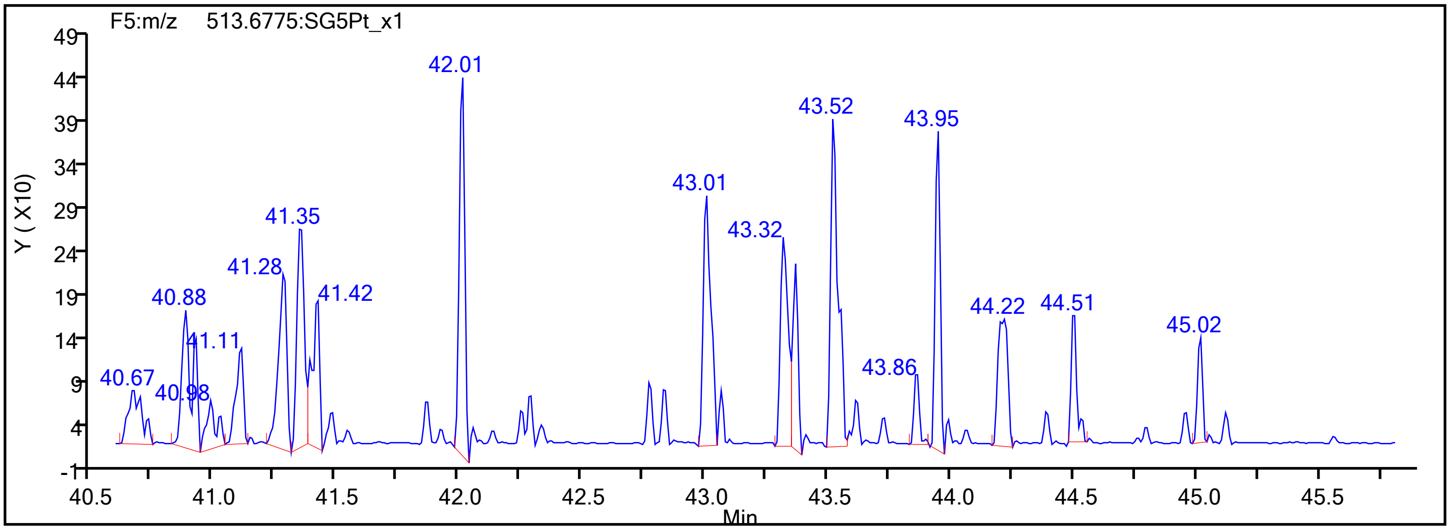

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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OCDD

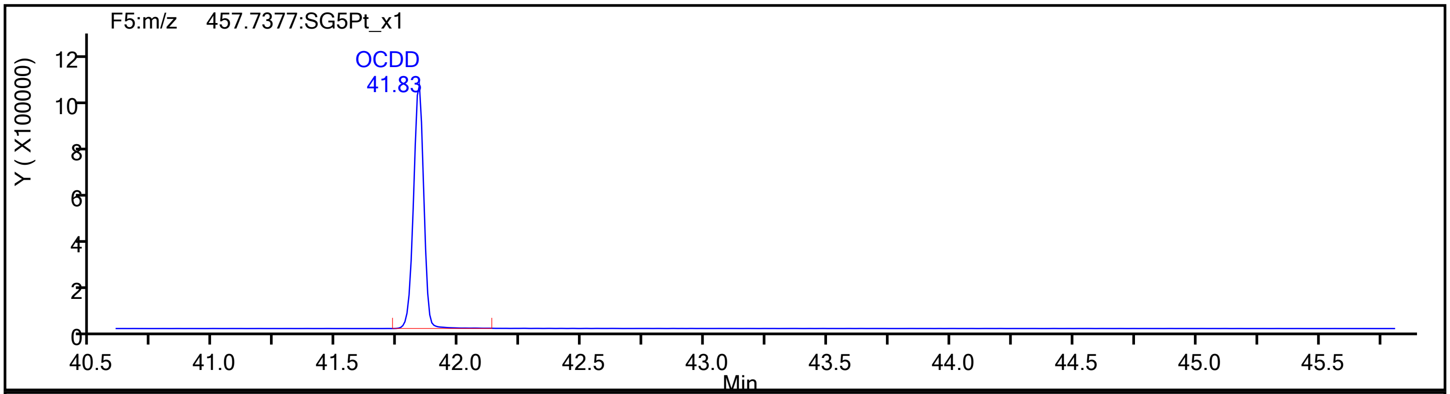

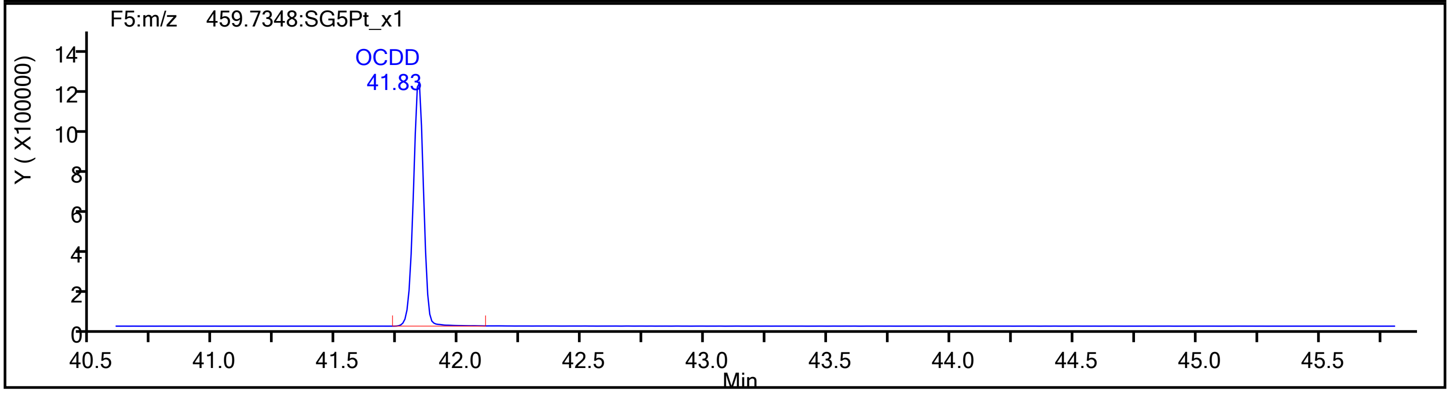

OCDD Standards

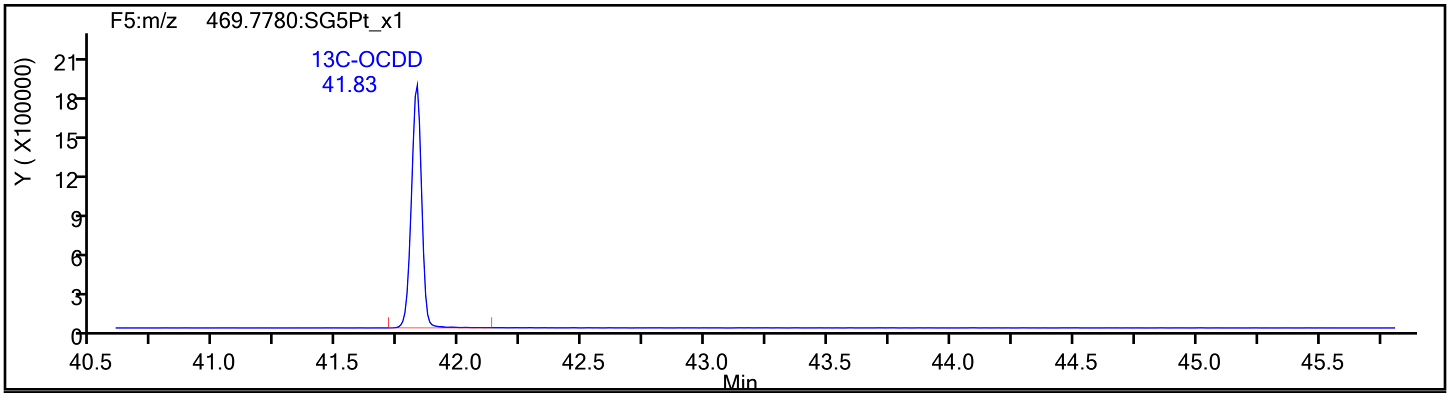

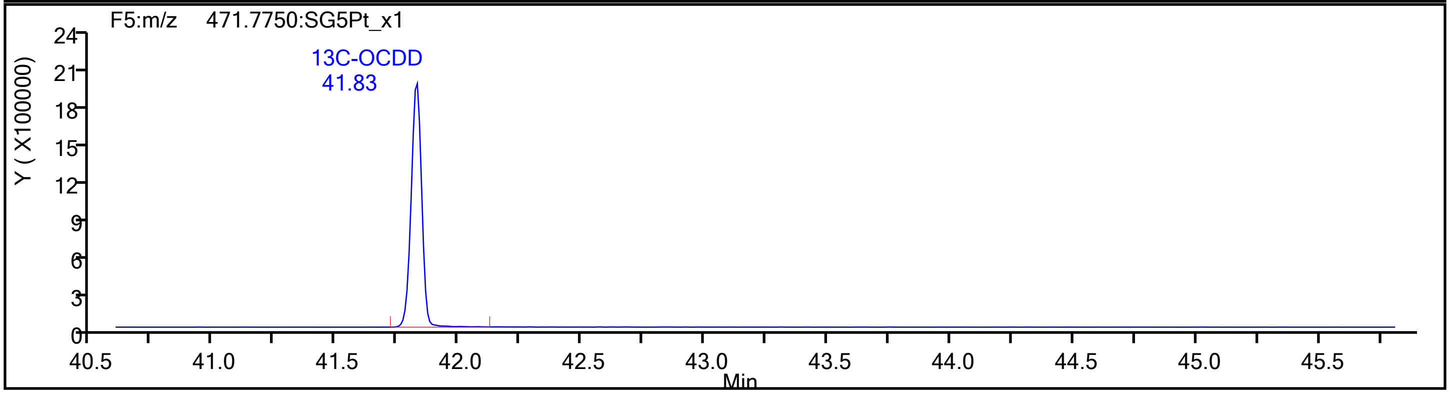

Report Date: 03-Feb-2021 14:45:58 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

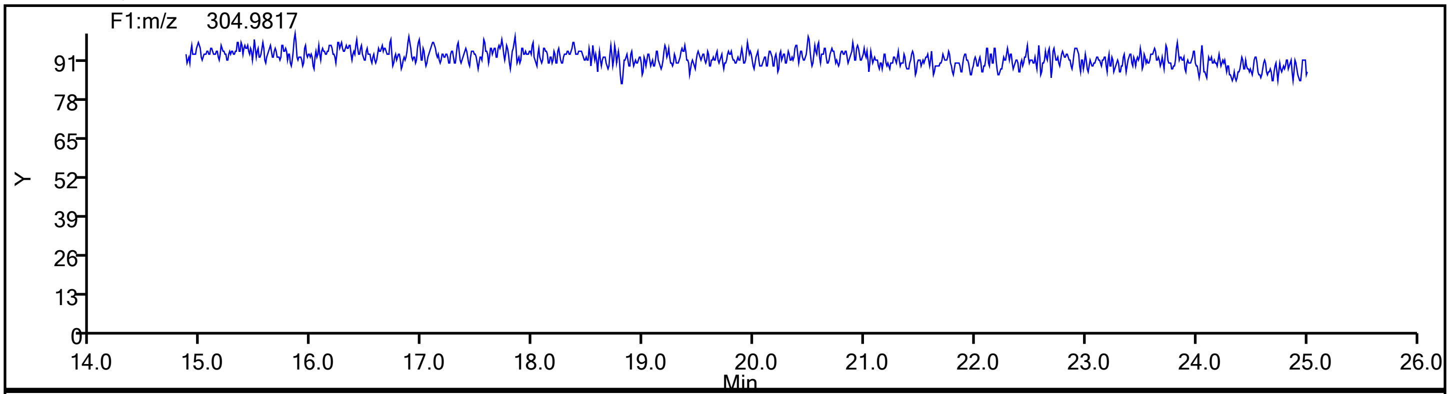

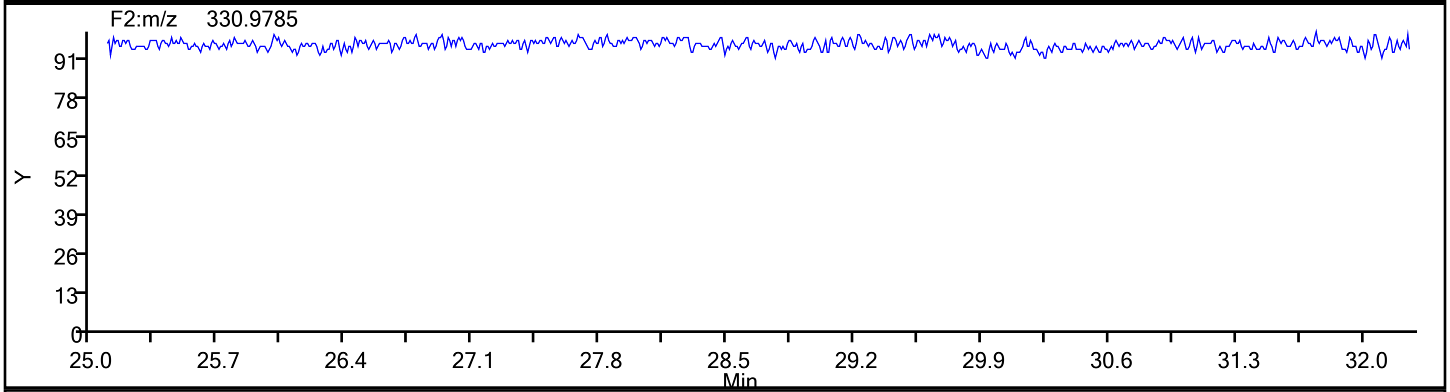

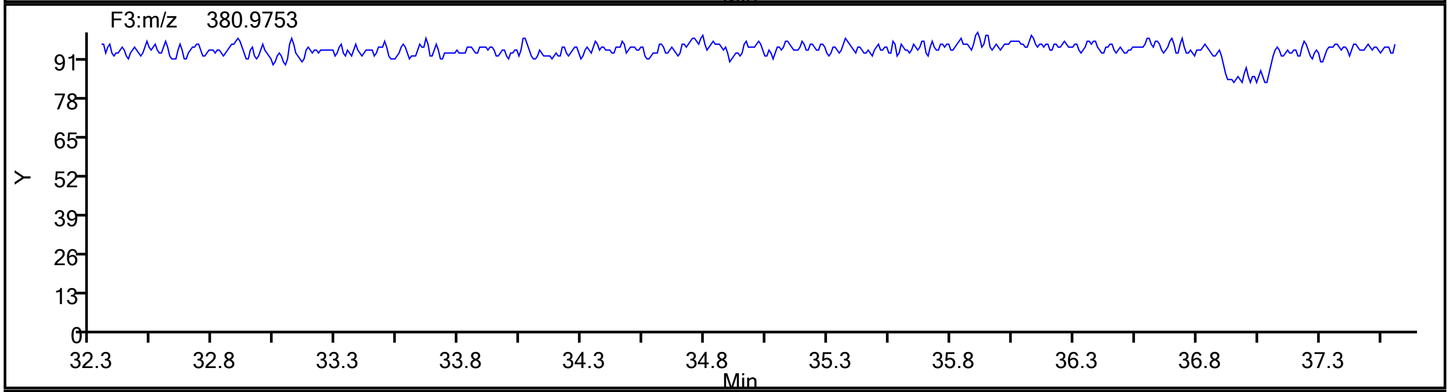

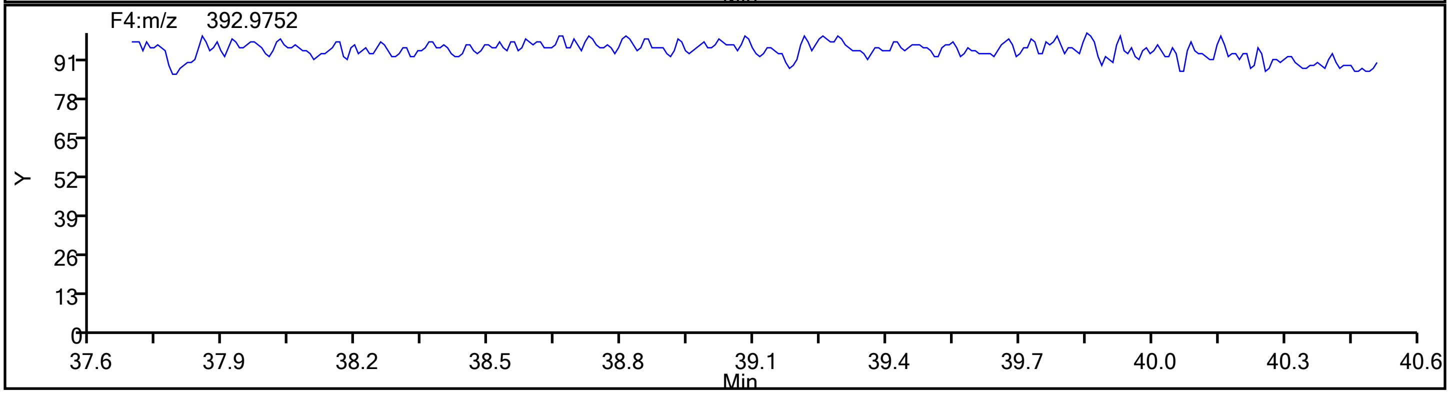

Report Date: 03-Feb-2021 14:45:58 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_6.d

Injection Date: 02-Feb-2021 23:22:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

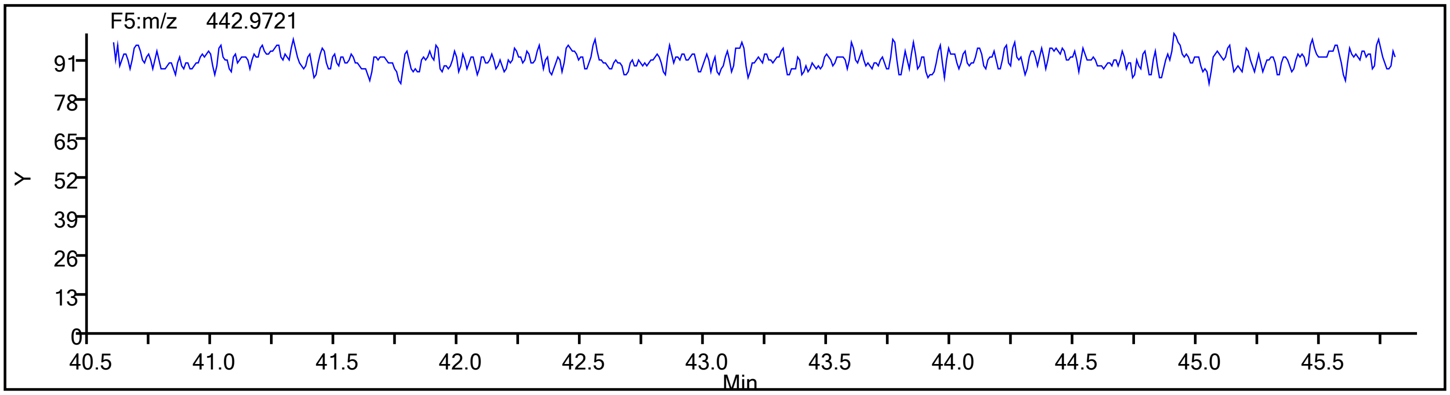

Report Date: 03-Feb-2021 14:46:11   Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 5
Inject. Date: 03-Feb-2021 00:10:00   ALS Bottle#: 0   Worklist Smp#: 6
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00032
Operator ID: Xcalibur_System   Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:46:01   Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk   Date: 03-Feb-2021 14:39:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.863	10936301	0.82	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.901	16643910	0.81	1.5437	98.6	98.6	0.1505	0.1505	98.59	
2,3,7,8-TCDF	19.935	7637293	0.81	1.1258	40.8	40.8	0.0559	0.0559	102	
S Total TCDF					40.8	40.8	0.0559	0.0559		
D 13C-2,3,7,8-TCDD	21.232	10615427	0.81	0.9687	100.2	100.2	0.1580	0.1580	100	
$ 37Cl4-2,3,7,8-TCDD	21.257	4808628		1.0841	40.6	40.6	0.0291	0.0291	101	
2,3,7,8-TCDD	21.257	5110407	0.79	1.1904	40.4	40.4	0.0487	0.0487	101	
S Total TCDD					40.4	40.4	0.0487	0.0487		
D 13C-1,2,3,7,8-PeCDF	26.851	14372299	1.58	1.3124	100.1	100.1	0.3547	0.3547	100	
1,2,3,7,8-PeCDF	26.876	31249662	1.56	1.1163	194.8	194.8	0.5428	0.5428	97.39	
D 13C-2,3,4,7,8-PeCDF	28.333	14346989	1.57	1.3352	98.3	98.3	0.3487	0.3487	98.26	
2,3,4,7,8-PeCDF	28.366	30072672	1.54	1.0579	198.1	198.1	0.6318	0.6318	99.07	
S Total PeCDF					392.9	392.9	0.5873	0.5873		
D 13C-1,2,3,7,8-PeCDD	29.132	8727260	1.60	0.7716	103.4	103.4	0.1645	0.1645	103	
1,2,3,7,8-PeCDD	29.166	19558221	1.56	1.1372	197.1	197.1	0.1958	0.1958	98.53	
S Total PeCDD					197.1	197.1	0.1958	0.1958		
D 13C-1,2,3,4,7,8-HxCDF	34.609	12304940	0.54	1.0931	95.6	95.6	0.2812	0.2812	95.63	
1,2,3,4,7,8-HxCDF	34.626	28826039	1.26	1.1831	198.0	198.0	0.6934	0.6934	99.00	
D 13C-1,2,3,6,7,8-HxCDF	34.778	13107466	0.54	1.1278	98.7	98.7	0.2726	0.2726	98.74	
1,2,3,6,7,8-HxCDF	34.795	32079523	1.27	1.2484	196.0	196.0	0.6457	0.6457	98.02	
D 13C-2,3,4,6,7,8-HxCDF	35.637	12245155	0.53	1.0552	98.6	98.6	0.2913	0.2913	98.58	
2,3,4,6,7,8-HxCDF	35.654	30433760	1.27	1.2750	194.9	194.9	0.5845	0.5845	97.46	
D 13C-1,2,3,7,8,9-HxCDF	36.546	11621340	0.54	0.9938	99.3	99.3	0.3093	0.3093	99.34	
1,2,3,7,8,9-HxCDF	36.563	28806483	1.27	1.2953	191.4	191.4	0.5520	0.5520	95.68	
S Total HxCDF					780.3	780.3	0.6189	0.6189		
* 13C-1,2,3,7,8,9-HxCDD	36.352	11771014	1.26	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.856	9222117	1.27	0.7895	99.2	99.2	0.1776	0.1776	99.23	
1,2,3,4,7,8-HxCDD	35.872	20080924	1.27	1.0950	198.9	198.9	0.2746	0.2746	99.43	
D 13C-1,2,3,6,7,8-HxCDD	35.973	9957071	1.28	0.8495	99.6	99.6	0.1650	0.1650	99.58	
1,2,3,6,7,8-HxCDD	35.990	20109421	1.23	1.0201	198.0	198.0	0.2722	0.2722	98.99	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.361	21690536	1.25	1.1549	195.9	195.9	0.2500	0.2500	97.93	
S Total HxCDD					592.7	592.7	0.2656	0.2656		
D 13C-1,2,3,4,6,7,8-HpCDF	38.403	9267651	0.47	0.7854	100.2	100.2	0.2310	0.2310	100	
1,2,3,4,6,7,8-HpCDF	38.411	27124729	1.04	1.4859	197.0	197.0	0.4764	0.4764	98.49	
D 13C-1,2,3,4,7,8,9-HpCDF	39.666	8444193	0.47	0.7230	99.2	99.2	0.2510	0.2510	99.23	
1,2,3,4,7,8,9-HpCDF	39.683	23323871	1.05	1.4048	196.6	196.6	0.5064	0.5064	98.31	
S Total HpCDF					393.6	393.6	0.4914	0.4914		
D 13C-1,2,3,4,6,7,8-HpCDD	39.363	7869445	1.08	0.6413	104.2	104.2	0.1988	0.1988	104	
1,2,3,4,6,7,8-HpCDD	39.371	17500883	1.05	1.1489	193.6	193.6	0.2791	0.2791	96.78	
S Total HpCDD					193.6	193.6	0.2791	0.2791		
D 13C-OCDD	41.816	11520865	0.92	0.5141	190.4	190.4	0.1411	0.1411	95.19	
OCDF	41.909	38101128	0.93	1.5776	419.3	419.3	0.1691	0.1691	105	
OCDD	41.825	27025871	0.90	1.1706	400.8	400.8	0.1764	0.1764	100	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00032 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC
Calib Level: 5
Inject. Date: 03-Feb-2021 00:10:00
ALS Bottle#: 0
Worklist Smp#: 6
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00032
Operator ID: Xcalibur_System
Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:46:01
Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)
Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk
Date: 03-Feb-2021 14:39:57

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.863	20.870	0		4927906	754013	663	1657	1137		
333.9338	20.863	20.870	0		6008395	910005	356	890	2556	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.901	19.910	-1	0.954	7427438	1179906	926	2315	1274		
317.9389	19.901	19.910	-1	0.954	9216472	1459015	621	1552	2349	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.935	19.937	0	1.002	3412301	535783	277	692	1934		
305.8987	19.935	19.937	0	1.002	4224992	665306	387	967	1719	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.232	21.233	0	1.018	4745441	677343	663	1657	1022		
333.9338	21.232	21.233	0	1.018	5869986	857947	356	890	2410	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.257	21.260	0	1.019	4808628	714430	210	525	3402		
2,3,7,8-TCDD											
319.8965	21.257	21.262	0	1.001	2257444	337498	196	490	1722		
321.8936	21.257	21.262	0	1.001	2852963	424321	160	400	2652	0.79(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.851	26.859	-1	1.287	8795706	1540722	1863	4657	827		
353.8970	26.851	26.859	-1	1.287	5576593	991703	1236	3090	802	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.876	26.886	-1	1.001	19041723	3356793	3741	9352	897		
341.8567	26.876	26.886	-1	1.001	12207939	2131785	2397	5992	889	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.333	28.348	-1	1.358	8765907	1394217	1863	4657	748		
353.8970	28.333	28.348	-1	1.358	5581082	901449	1236	3090	729	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.366	28.373	0	1.001	18242485	3016574	3741	9352	806		
341.8567	28.366	28.373	0	1.001	11830187	1946921	2397	5992	812	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.132	29.144	-1	1.396	5374279	846263	522	1305	1621		
369.8919	29.132	29.144	-1	1.396	3352981	535855	323	807	1659	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.166	29.174	0	1.001	11908023	1846375	762	1905	2423		
357.8516	29.166	29.174	0	1.001	7650198	1199544	469	1172	2558	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.609	34.620	-1	0.952	4313476	972679	1280	3200	760		
385.8610	34.609	34.620	-1	0.952	7991464	1813403	2571	6427	705	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.626	34.638	-1	1.000	16080248	3679034	5086	12715	723		
375.8178	34.626	34.638	-1	1.000	12745791	2906552	4056	10140	717	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.778	34.792	-1	0.957	4603439	1006161	1280	3200	786		
385.8610	34.786	34.792	0	0.957	8504027	1829078	2571	6427	711	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.795	34.808	-1	1.000	17935785	3973941	5086	12715	781		
375.8178	34.795	34.808	-1	1.000	14143738	3135591	4056	10140	773	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.637	35.644	0	0.980	4266808	1080545	1280	3200	844		
385.8610	35.637	35.644	0	0.980	7978347	1986223	2571	6427	773	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.654	35.662	-1	1.000	16998115	4330439	5086	12715	851		
375.8178	35.645	35.662	-1	1.000	13435645	3405085	4056	10140	840	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.546	36.560	-1	1.005	4095050	1134412	1280	3200	886		
385.8610	36.546	36.560	-1	1.005	7526290	2062020	2571	6427	802	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.563	36.576	-1	1.000	16103733	4533813	5086	12715	891		
375.8178	36.563	36.576	-1	1.000	12702750	3542419	4056	10140	873	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.352	36.359	0		6561044	1750481	966	2415	1812		
403.8529	36.352	36.359	0		5209970	1381027	790	1975	1748	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.856	35.864	-1	0.986	5155035	1344952	966	2415	1392		
403.8529	35.856	35.864	-1	0.986	4067082	1068932	790	1975	1353	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.872	35.879	0	1.000	11234018	2971323	1635	4087	1817		
391.8127	35.864	35.879	-1	1.000	8846906	2373644	1268	3170	1872	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.973	35.985	-1	0.990	5595291	1465012	966	2415	1517		
403.8529	35.973	35.985	-1	0.990	4361780	1148685	790	1975	1454	1.28(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.990	35.999	-1	1.000	11099209	2876176	1635	4087	1759		
391.8127	35.990	35.999	-1	1.000	9010212	2299555	1268	3170	1814	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.361	36.373	-1	1.014	12034090	3254546	1635	4087	1991		
391.8127	36.361	36.373	-1	1.014	9656446	2615902	1268	3170	2063	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.403	38.412	-1	1.056	2946922	970842	889	2222	1092		
419.8220	38.403	38.412	-1	1.056	6320729	2081037	1384	3460	1504	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.411	38.422	-1	1.000	13817253	4621288	4436	11090	1042		
409.7788	38.411	38.422	-1	1.000	13307476	4424989	4206	10515	1052	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.666	39.676	-1	1.091	2705889	980290	889	2222	1103		
419.8220	39.666	39.676	-1	1.091	5738304	2056989	1384	3460	1486	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.683	39.686	0	1.000	11930163	4218988	4436	11090	951		
409.7788	39.674	39.686	-1	1.000	11393708	4109745	4206	10515	977	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.363	39.370	0	1.083	4077951	1431601	809	2022	1770		
437.8140	39.363	39.370	0	1.083	3791494	1324505	788	1970	1681	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.371	39.381	-1	1.000	8969210	3189586	1835	4587	1738		
425.7737	39.371	39.381	-1	1.000	8531673	3013382	1700	4250	1773	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.816	41.826	-1	1.150	5521531	1844095	484	1210	3810		
471.7750	41.816	41.826	-1	1.150	5999334	2001205	425	1062	4709	0.92(0.76-1.02)	
OCDF											
441.7428	41.909	41.921	-1	1.002	18324937	6310467	1006	2515	6273		
443.7399	41.909	41.921	-1	1.002	19776191	6849534	1046	2615	6548	0.93(0.76-1.02)	
OCDD											
457.7377	41.825	41.835	-1	1.000	12778685	4381406	744	1860	5889		
459.7348	41.825	41.835	-1	1.000	14247186	4902168	844	2110	5808	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00032 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:46:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d		
Injection Date:	03-Feb-2021 00:10:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

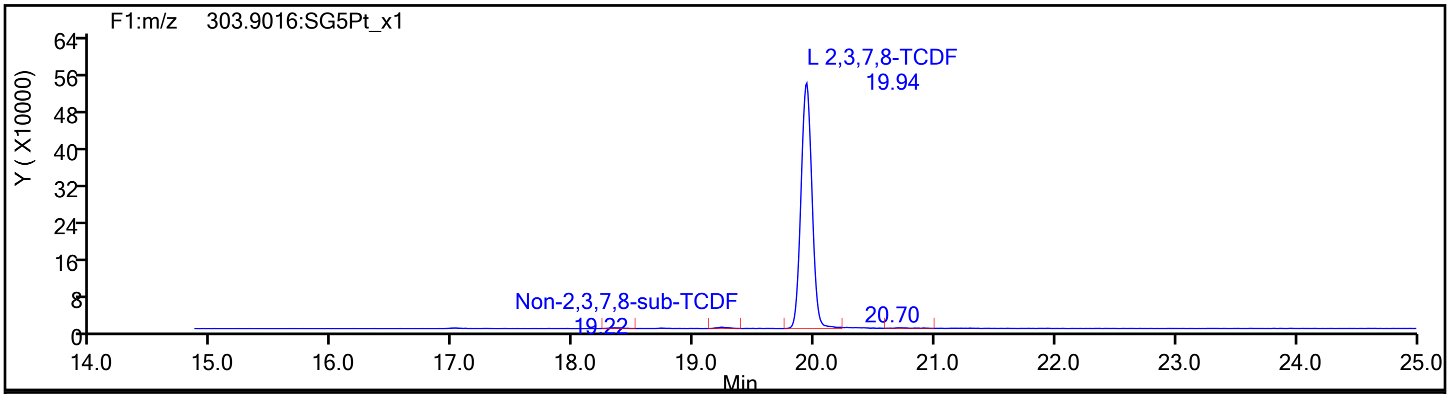

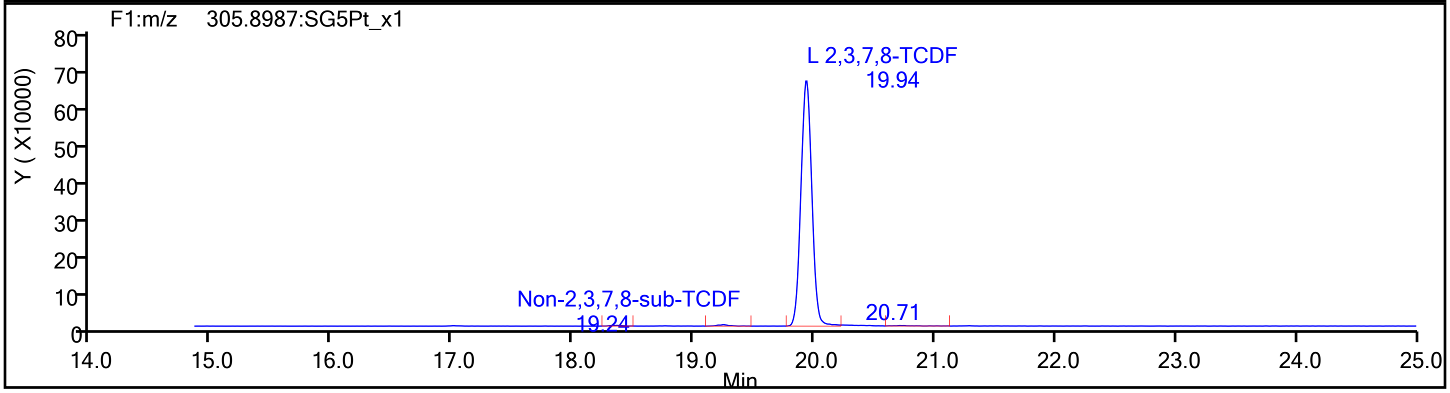

TCDF Standards

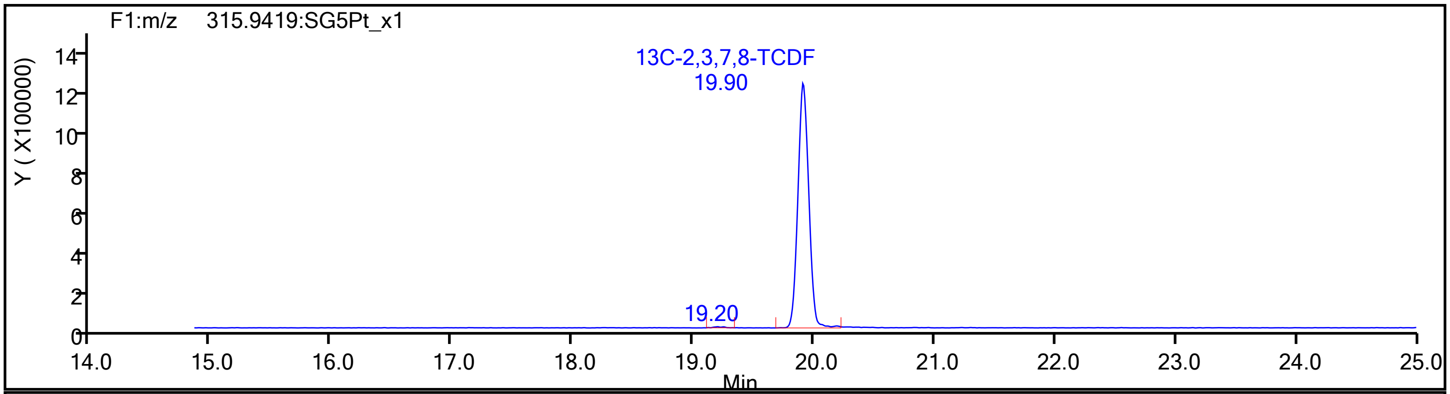

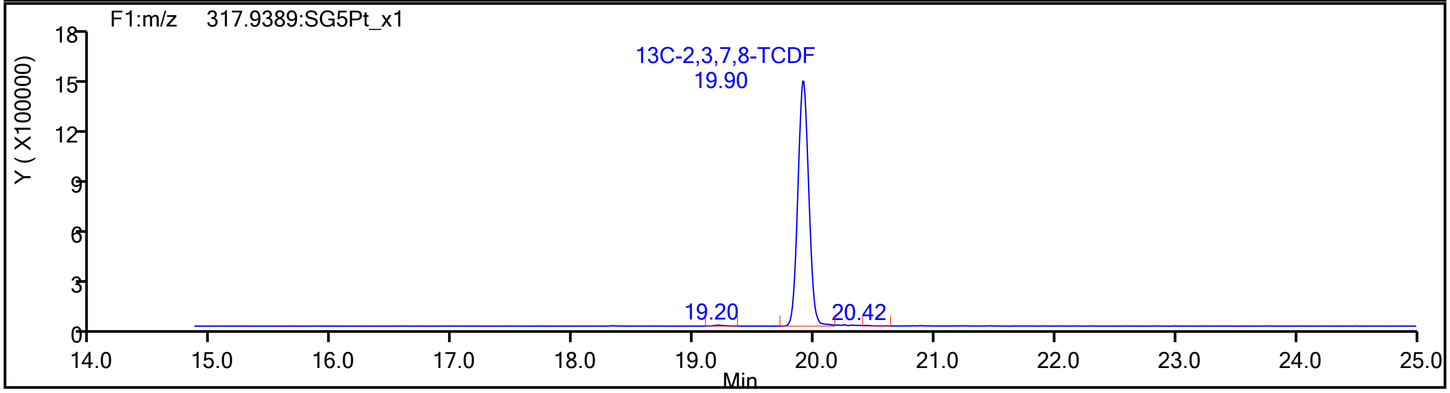

Report Date: 03-Feb-2021 14:46:11 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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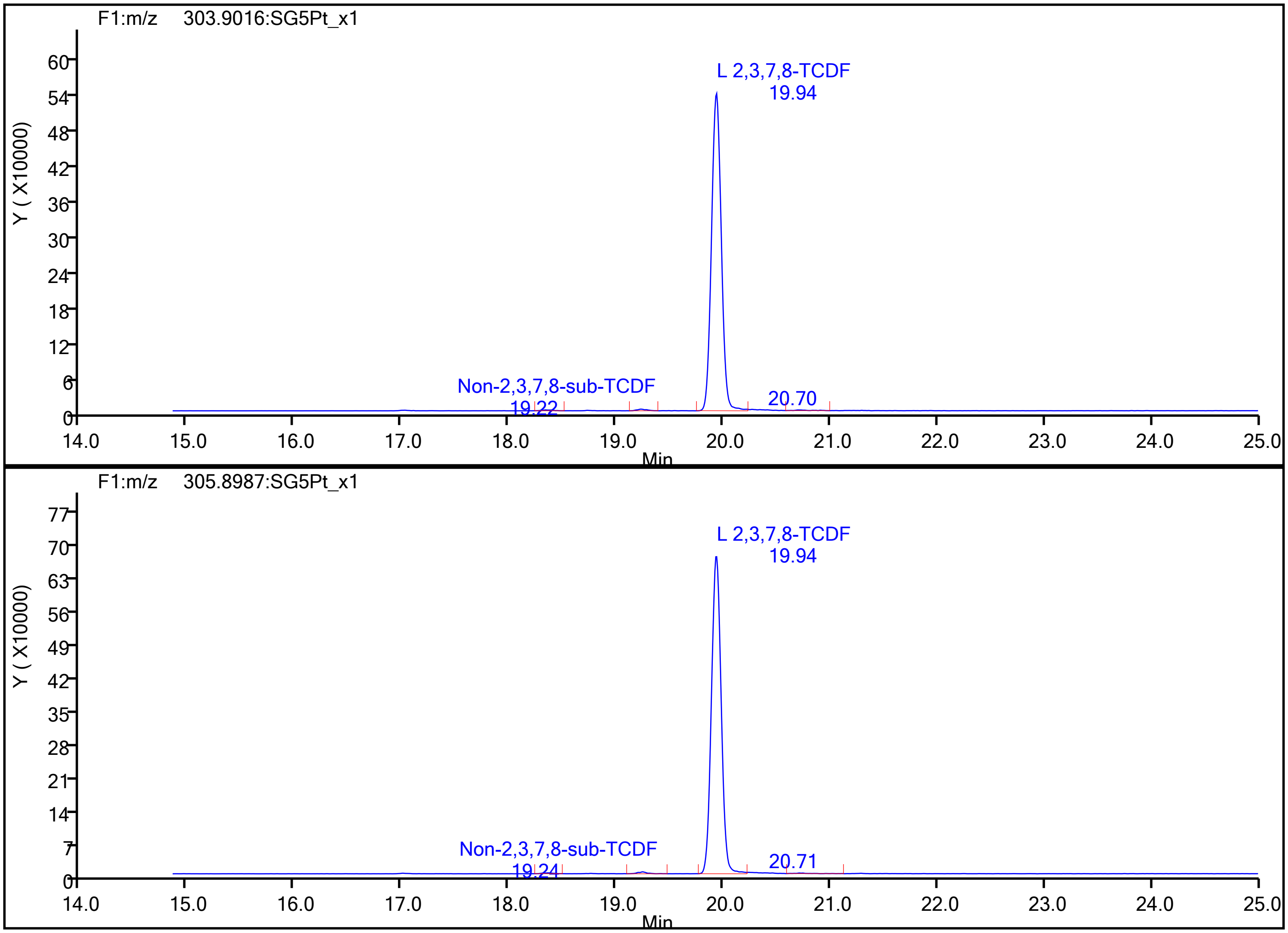

TCDF Interference Mass

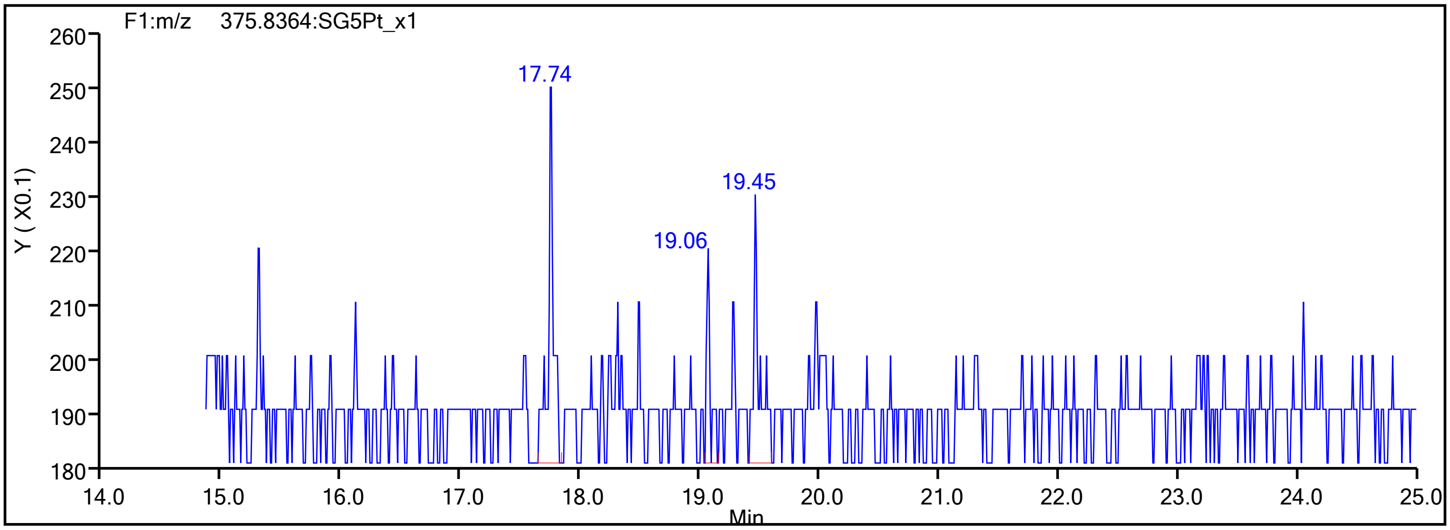

Report Date: 03-Feb-2021 14:46:12 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

TCDD

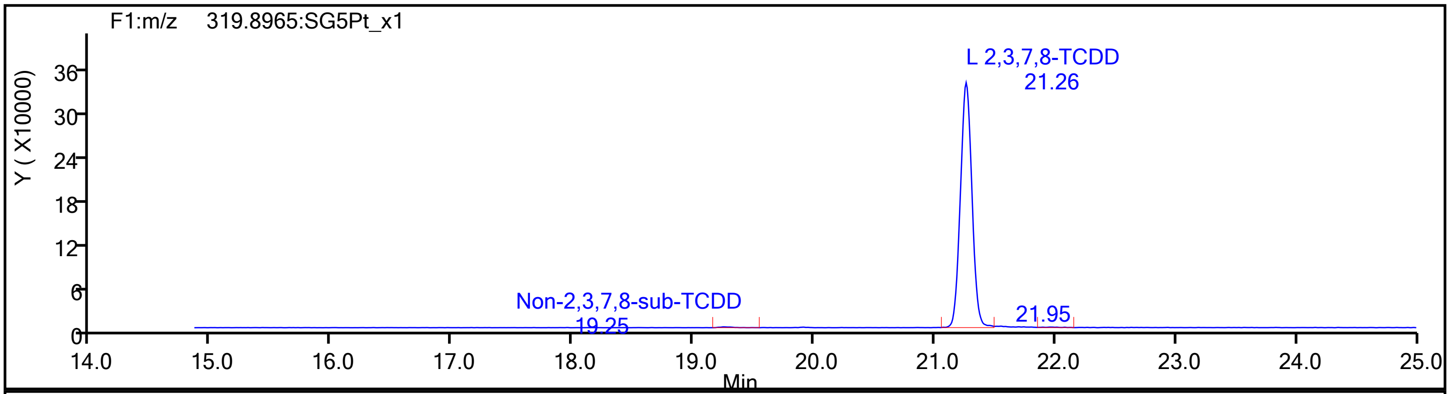

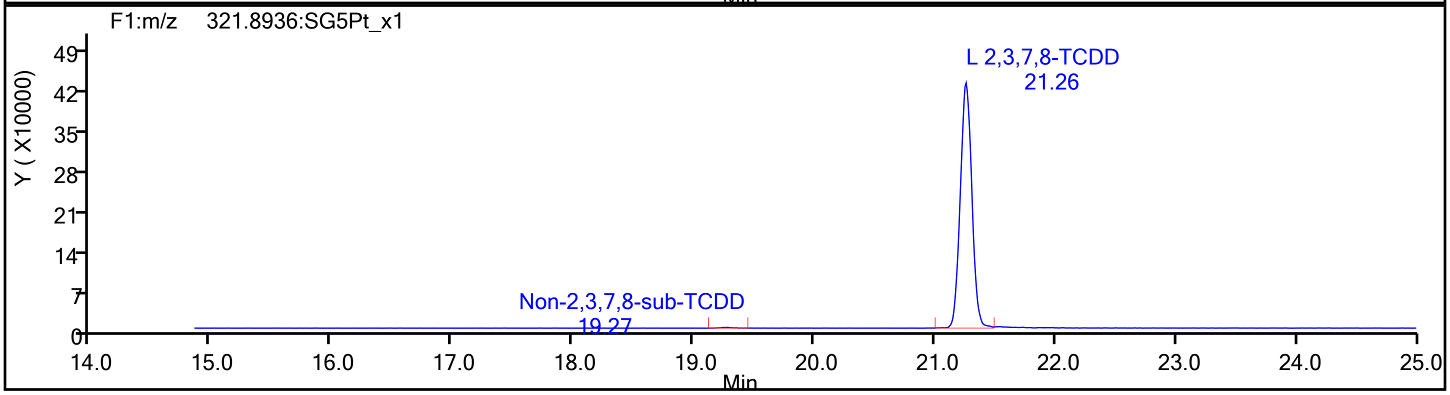

TCDD Standards

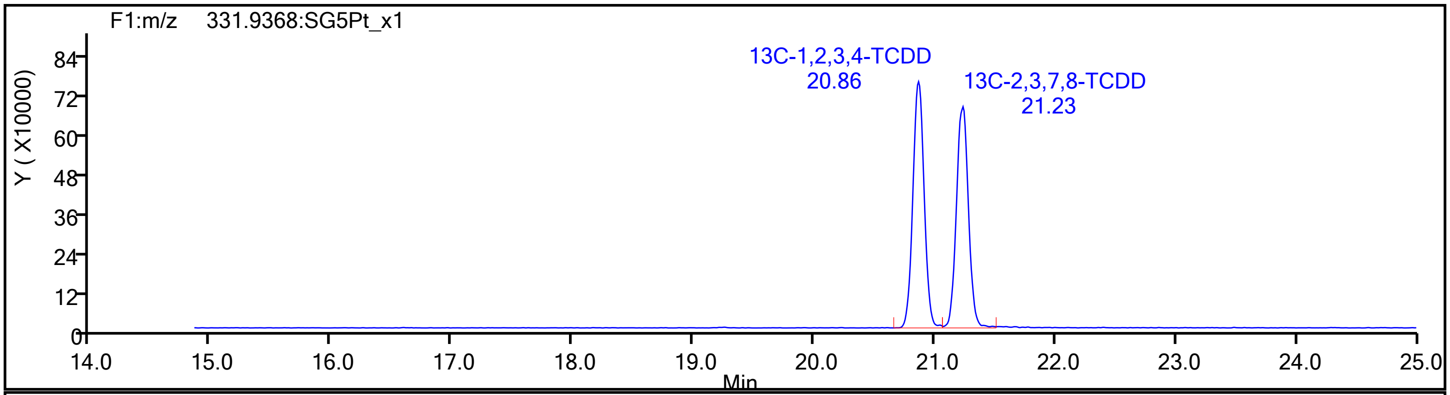

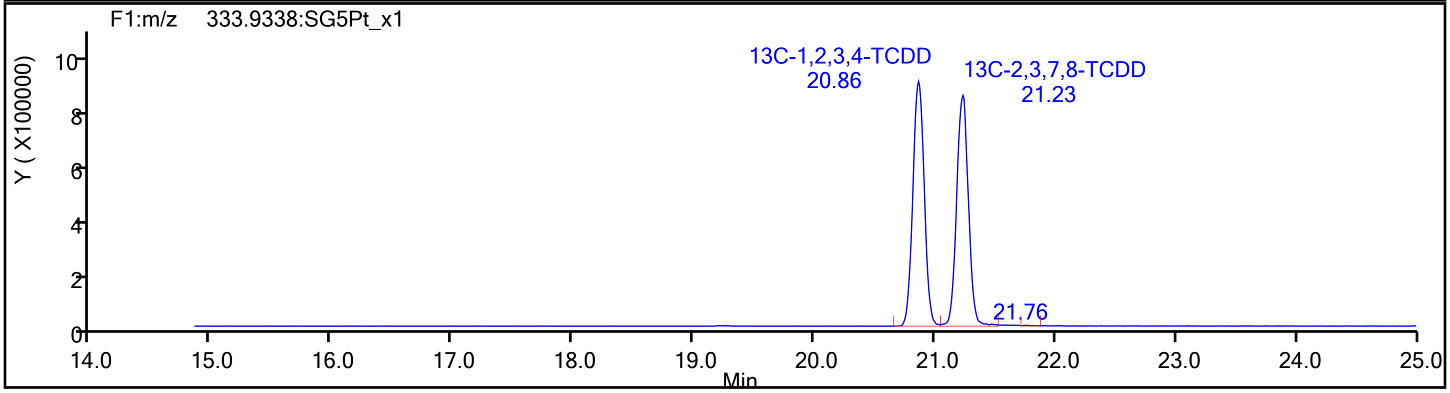

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

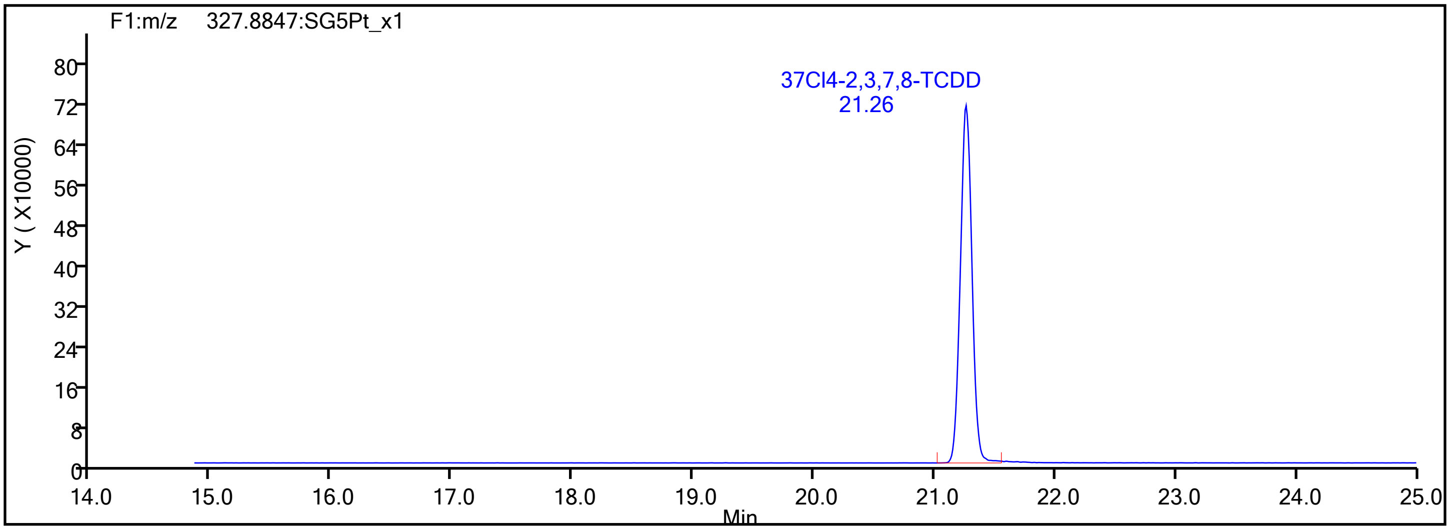

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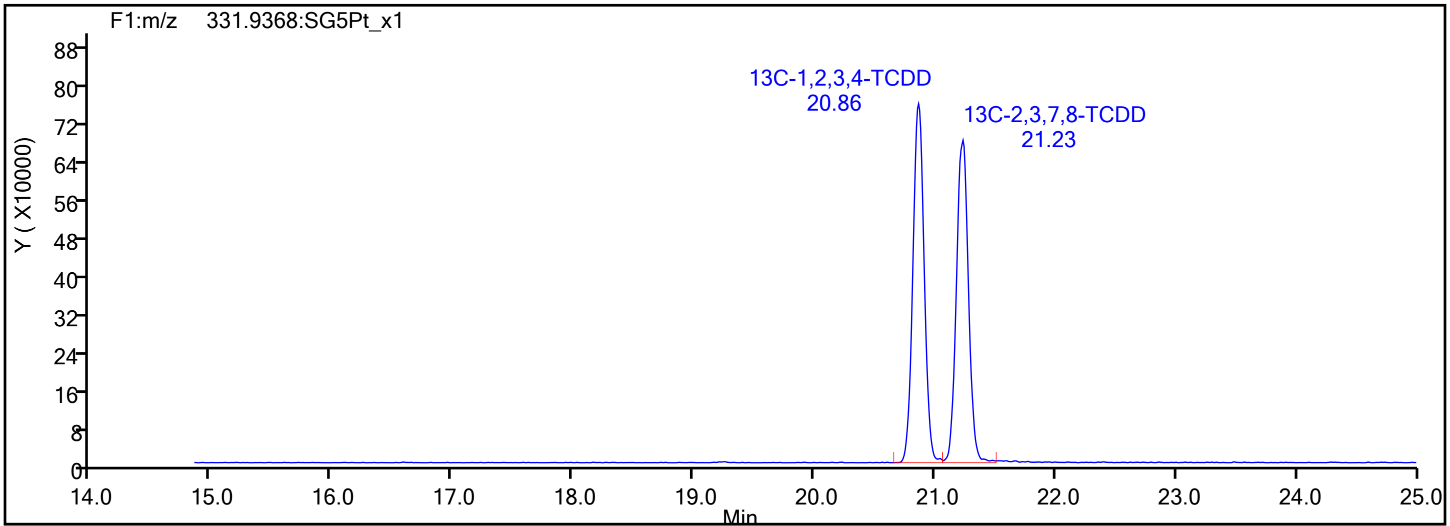

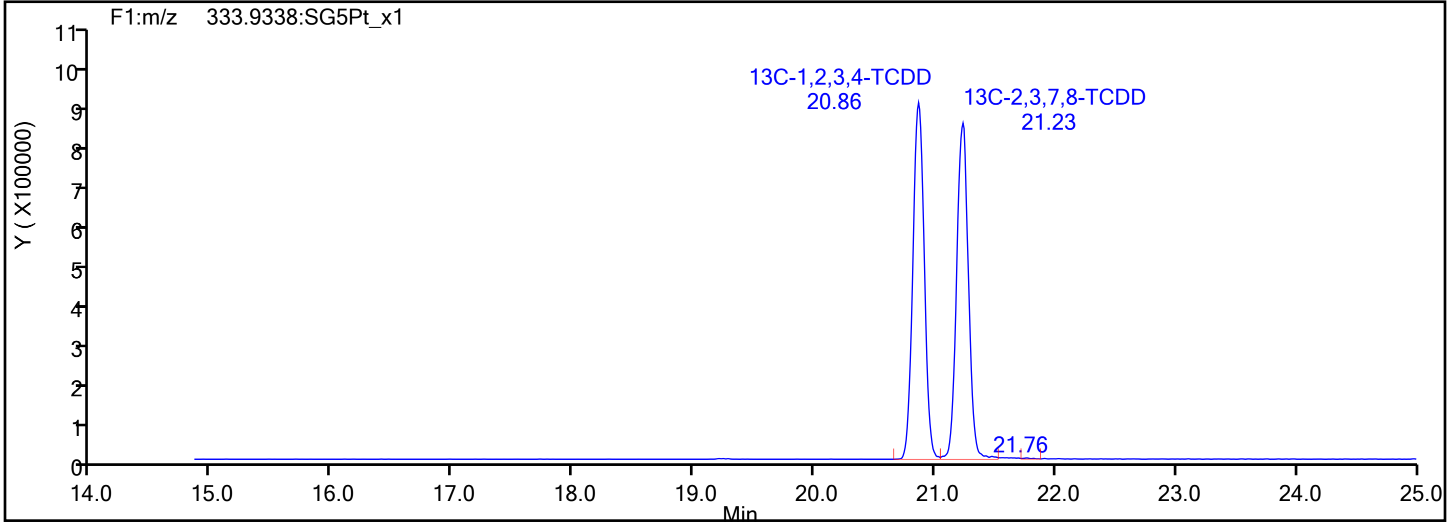

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Eurofins TestAmerica, Sacramento

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Client ID:

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F1 PeCDFs

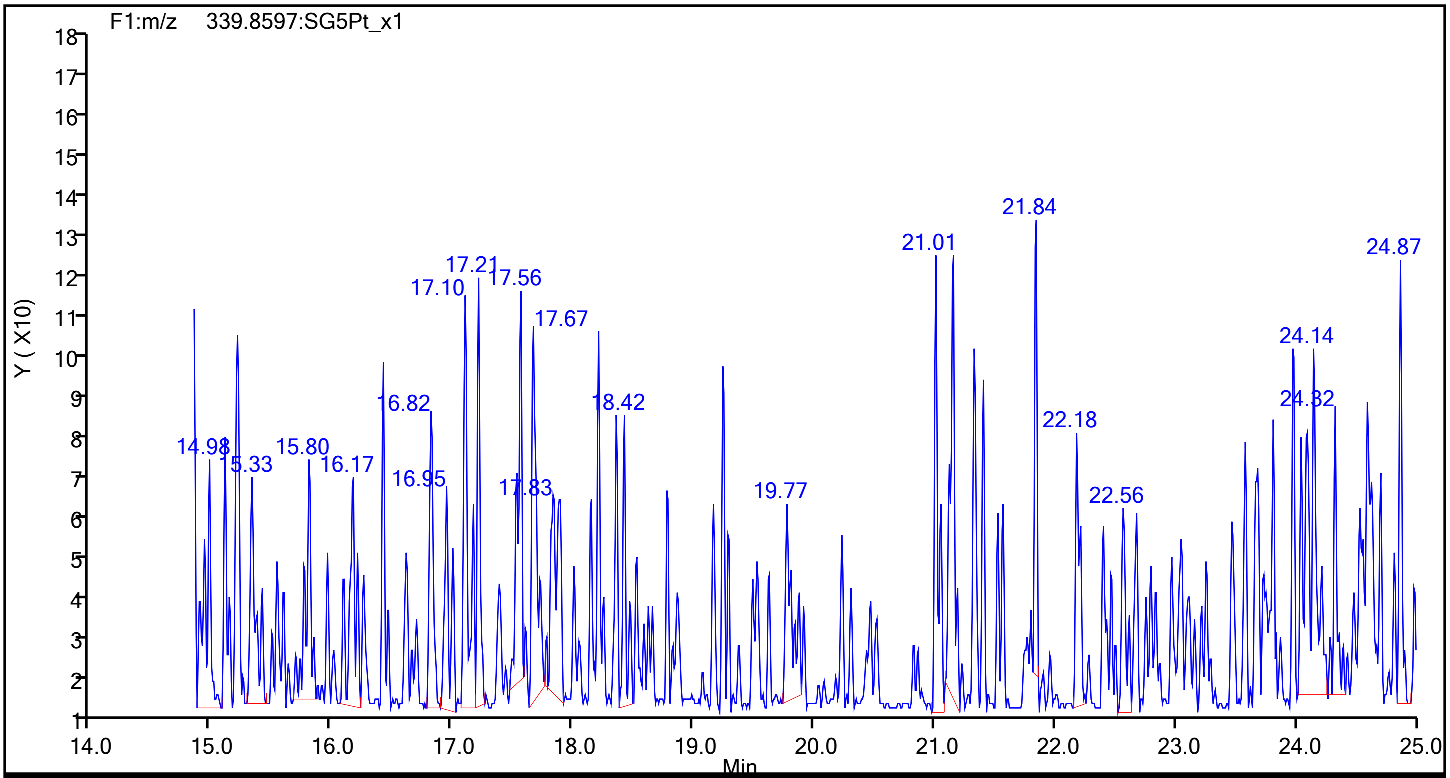

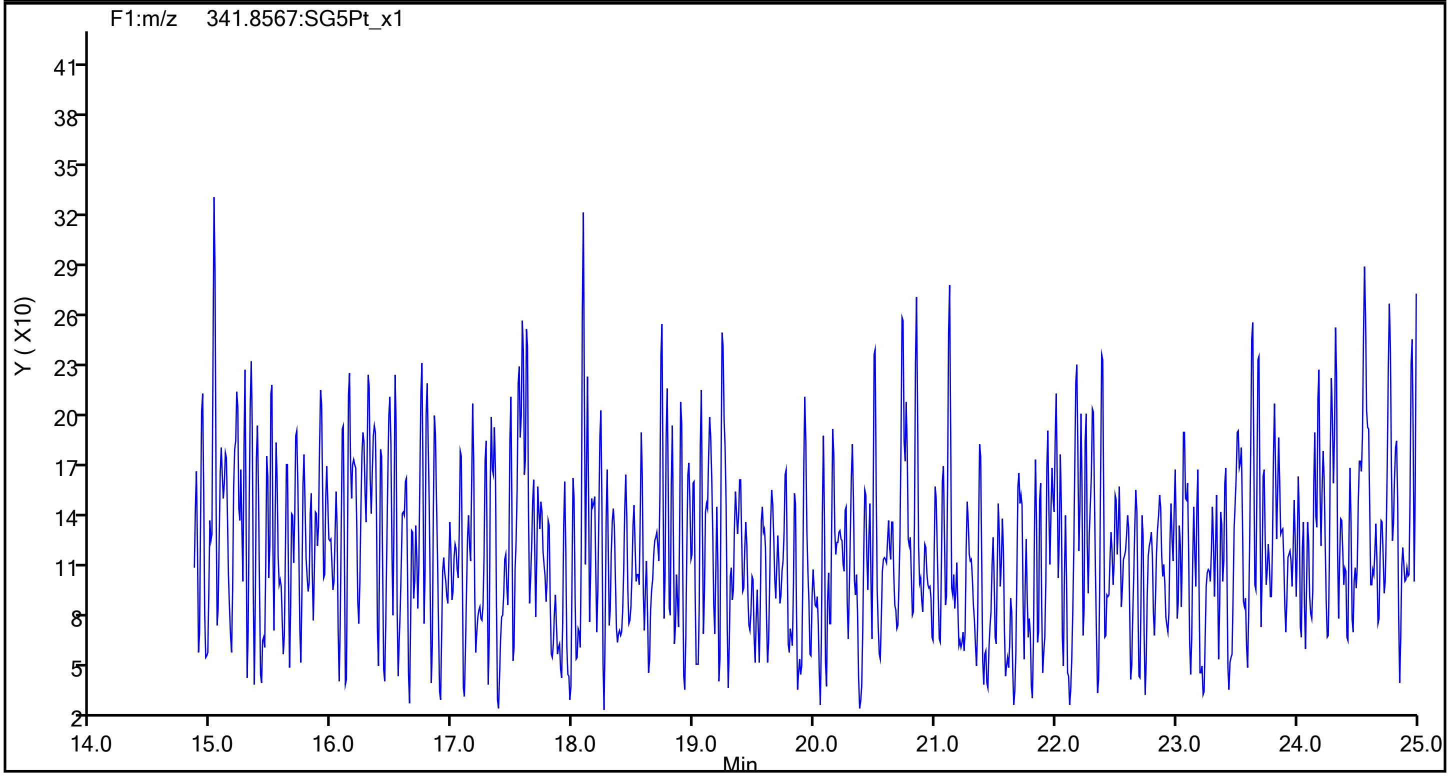

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Eurofins TestAmerica, Sacramento

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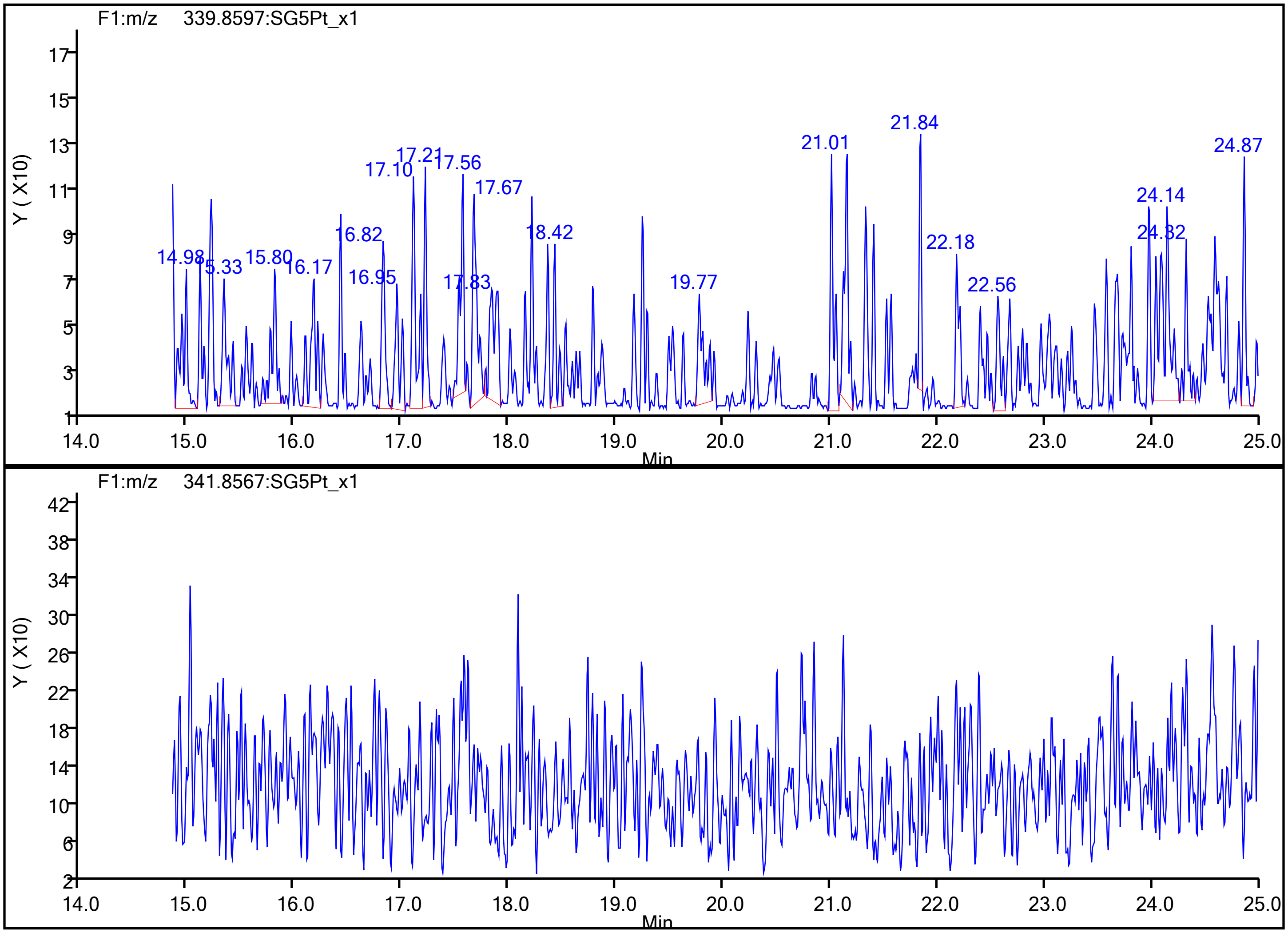

F1 PeCDFs Interference Mass

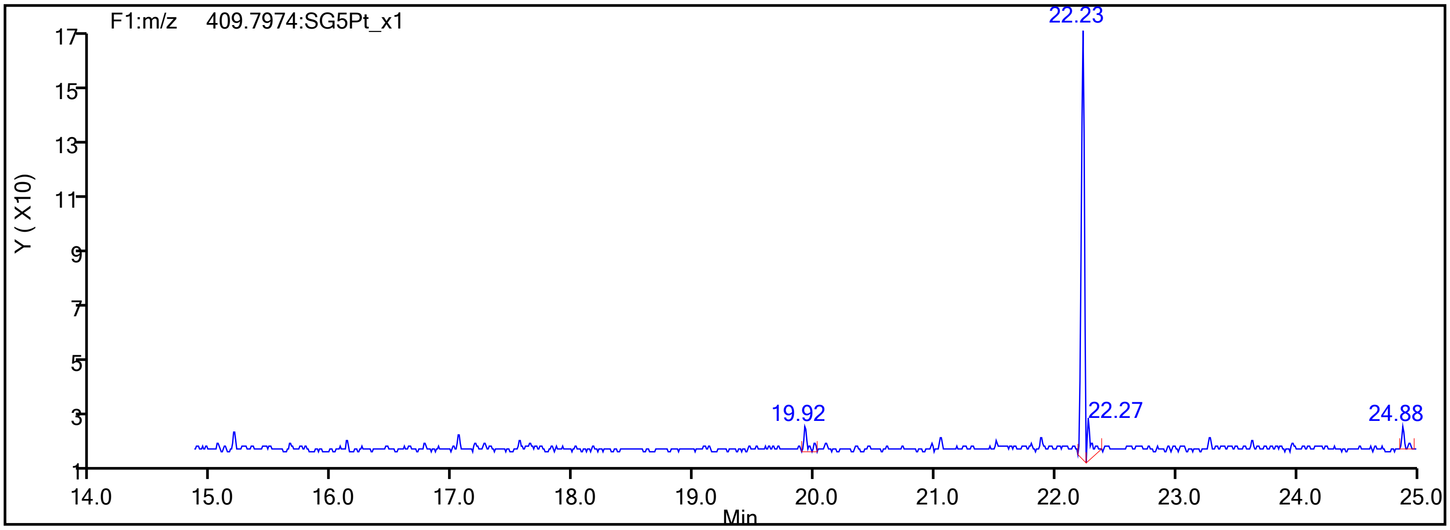

Eurofins TestAmerica, Sacramento

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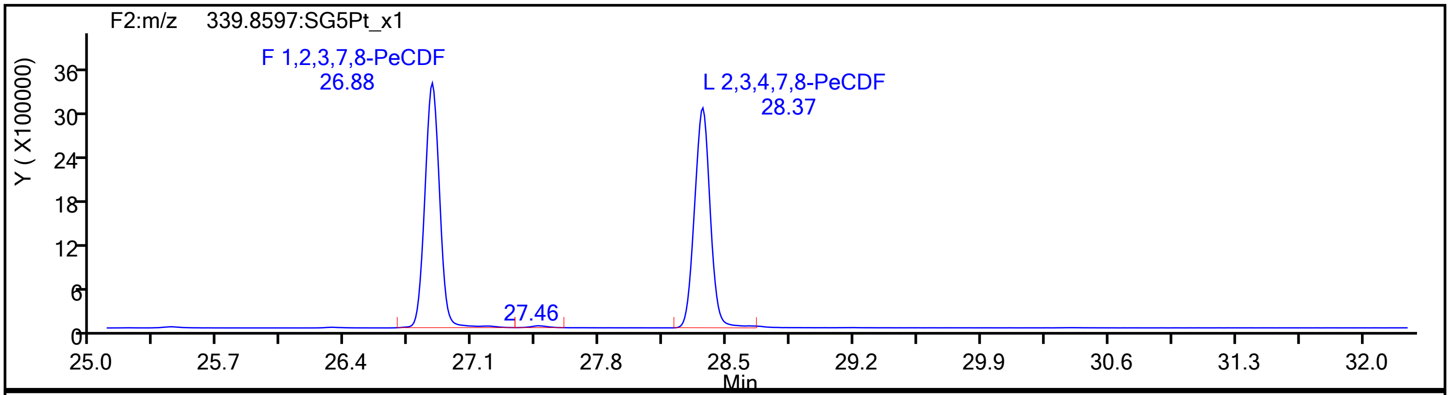

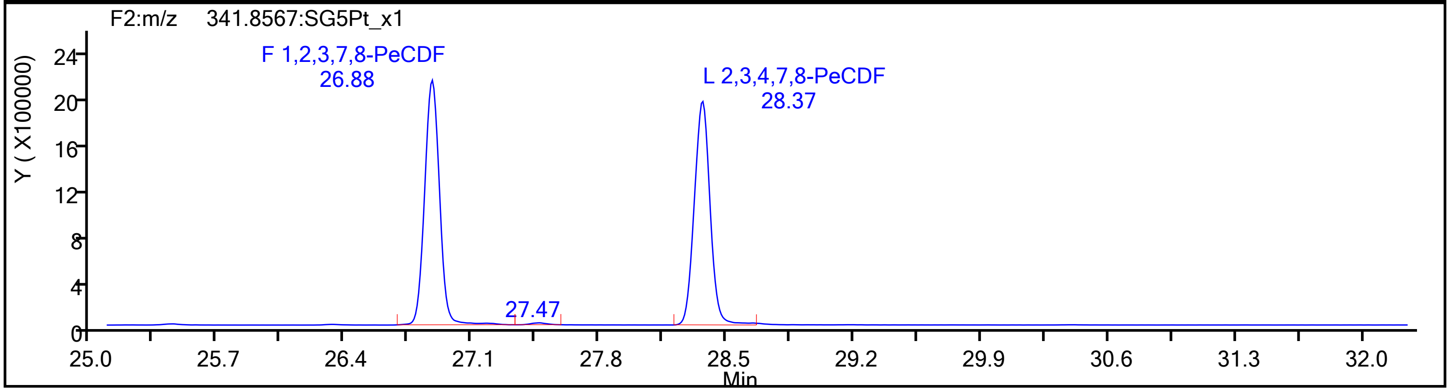

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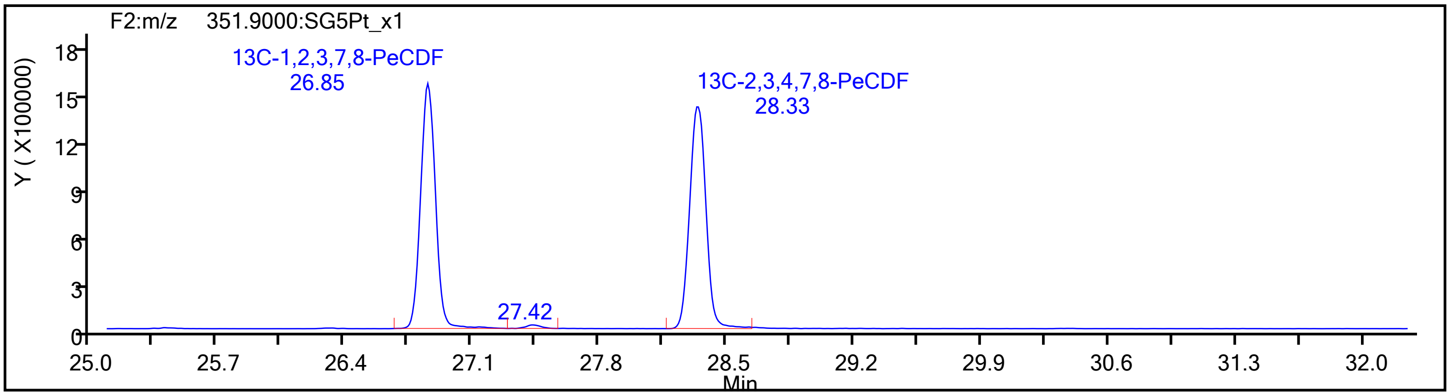

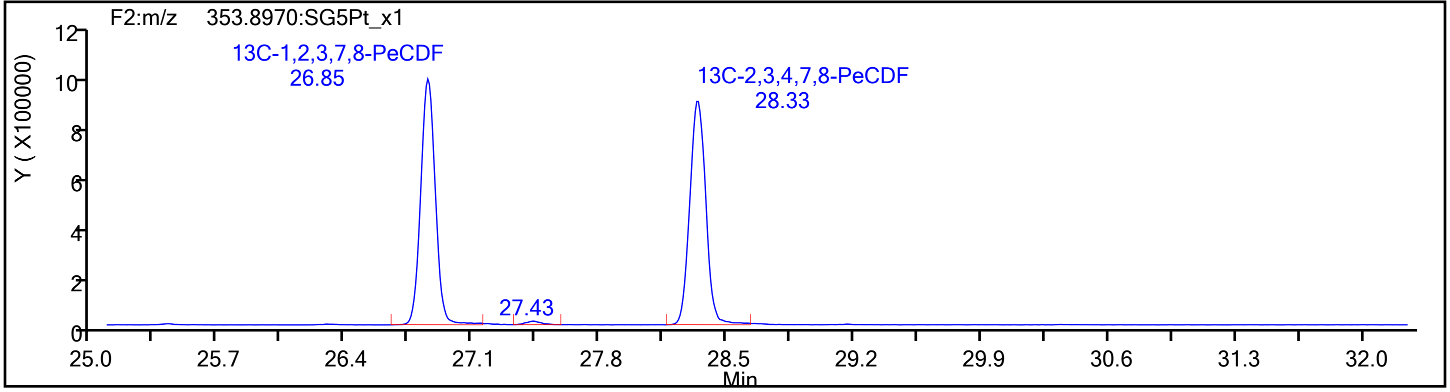

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Eurofins TestAmerica, Sacramento

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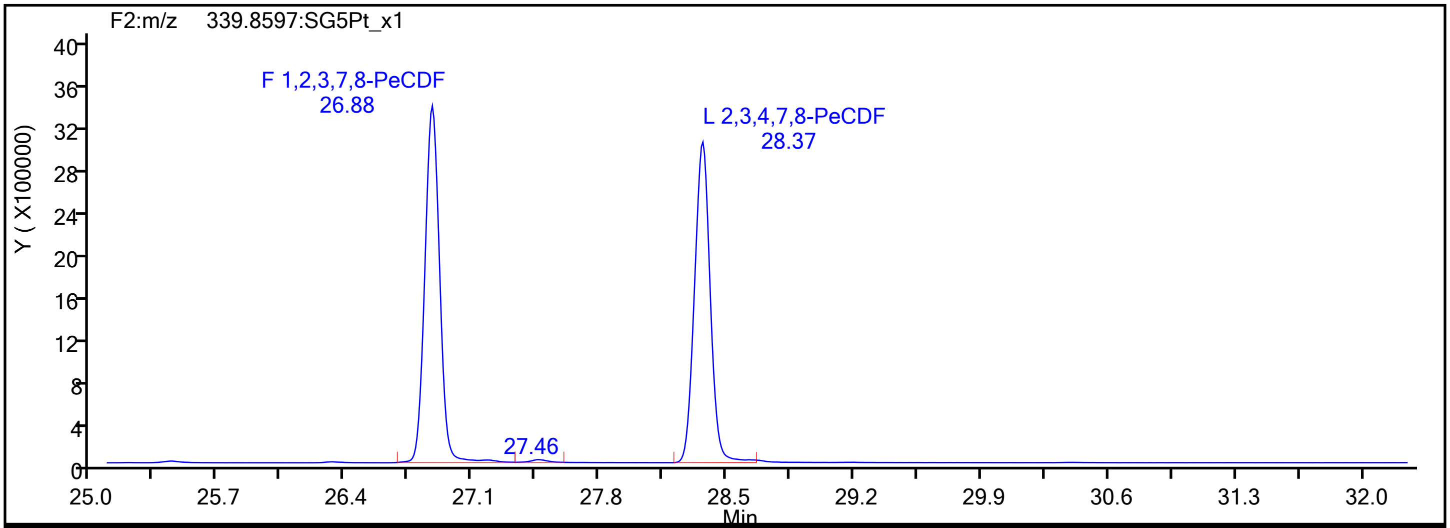

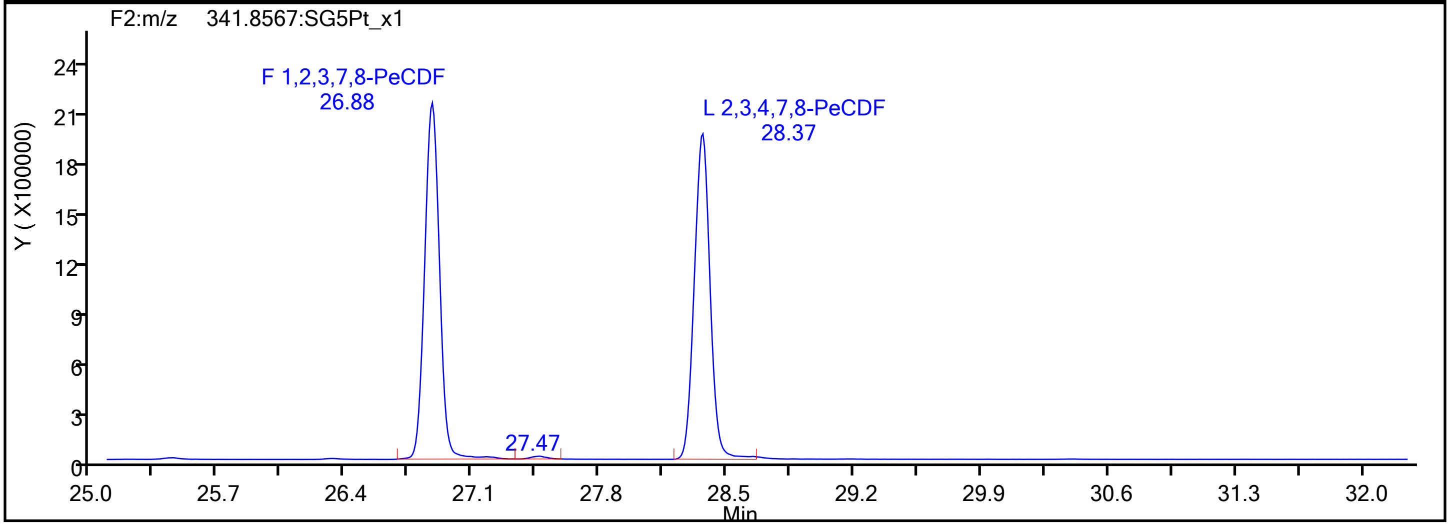

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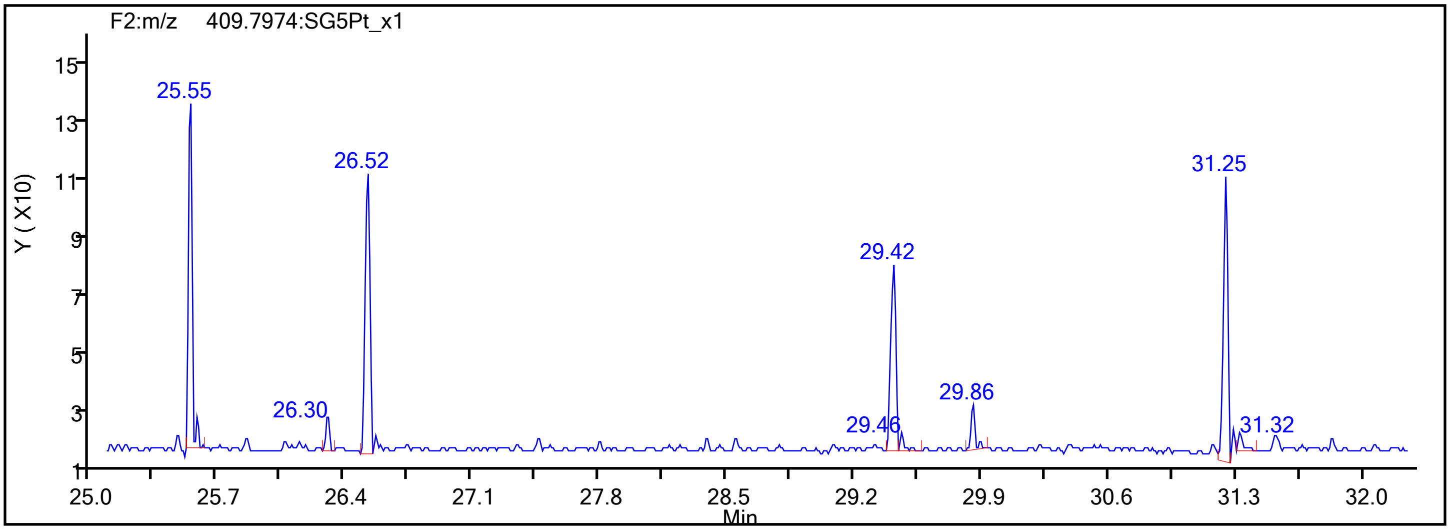

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Eurofins TestAmerica, Sacramento

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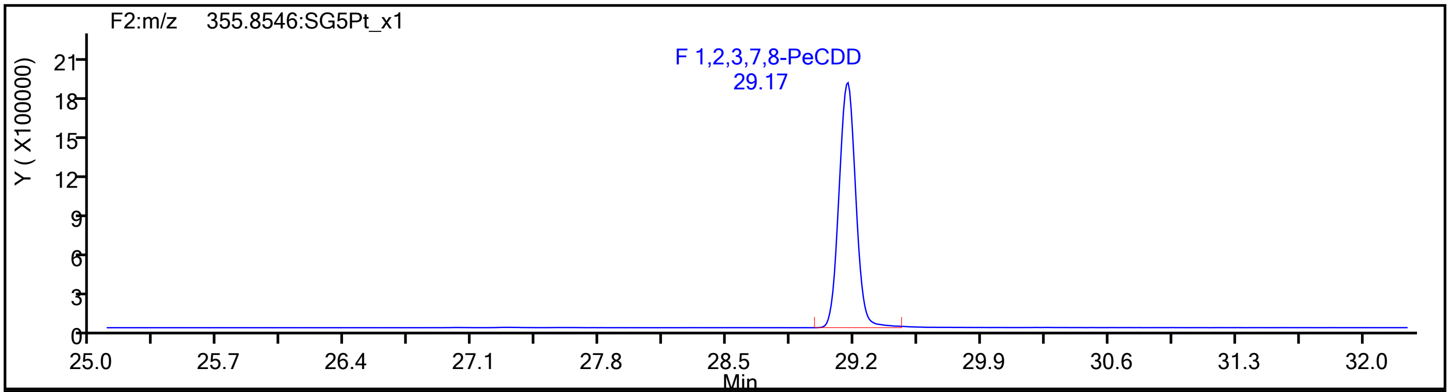

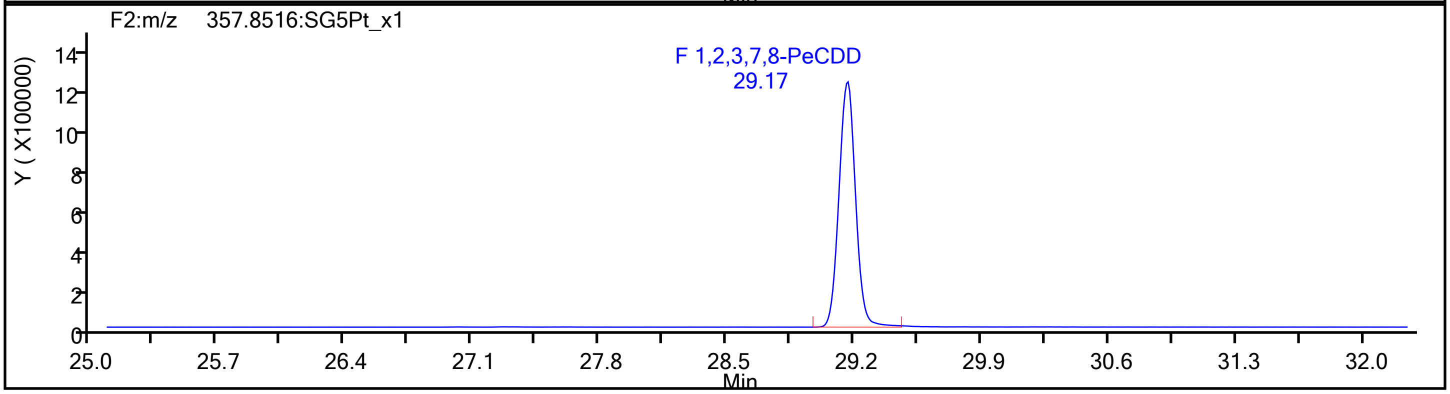

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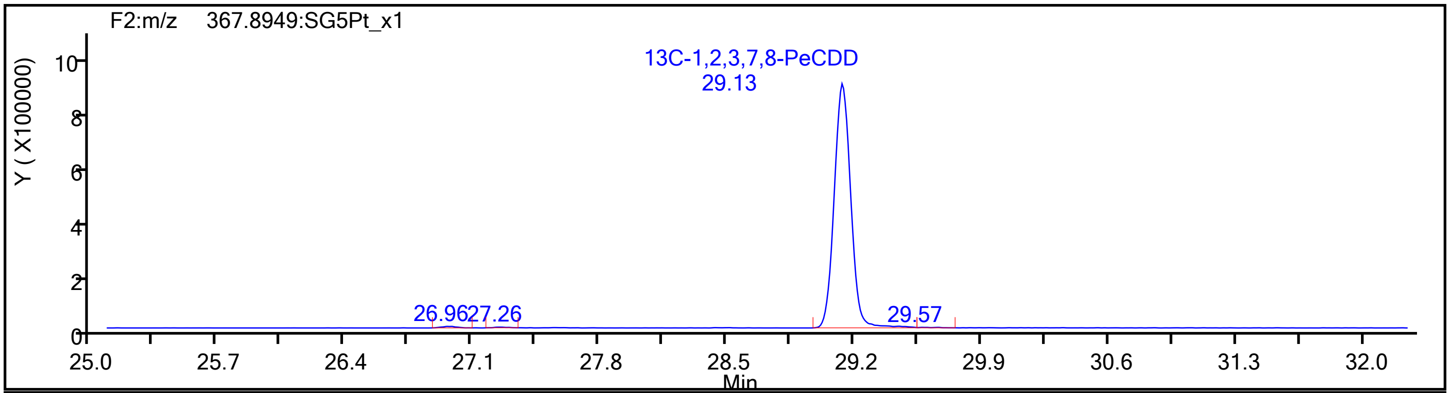

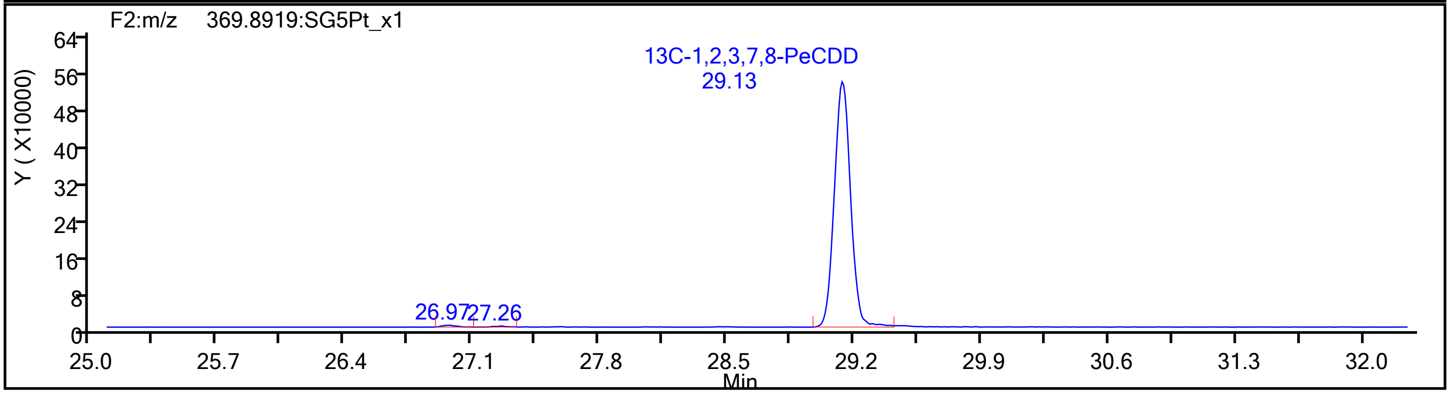

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Eurofins TestAmerica, Sacramento

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HxCDF

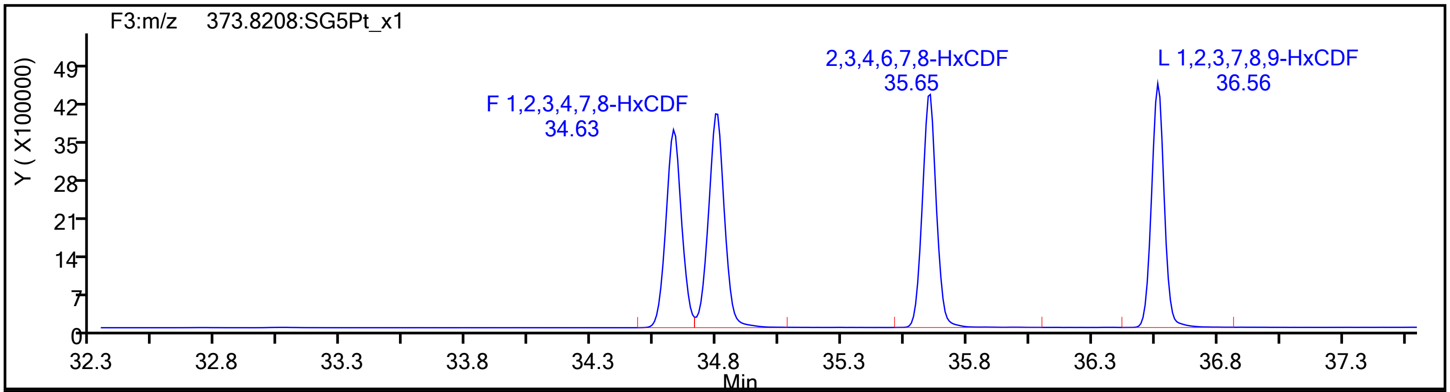

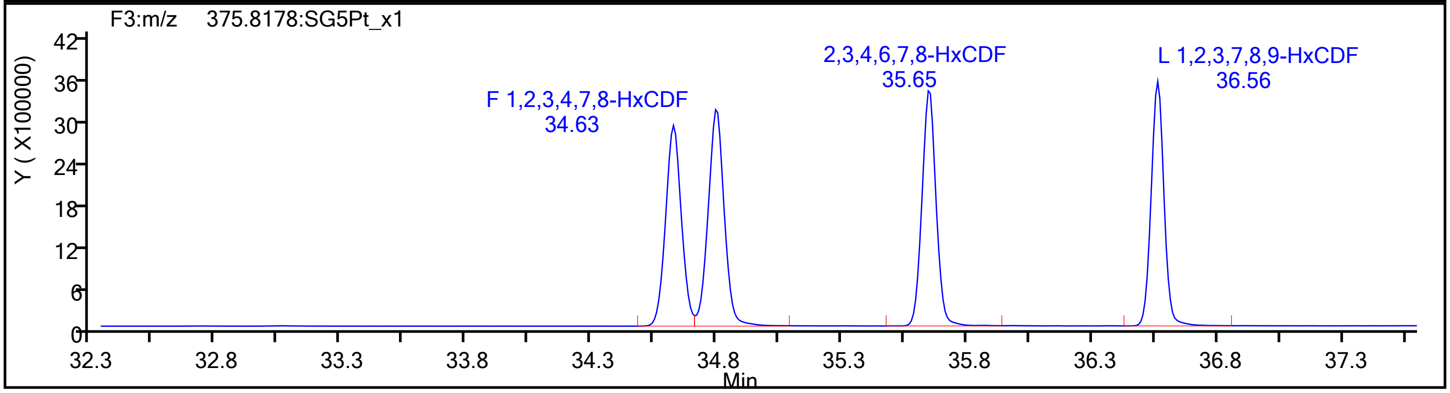

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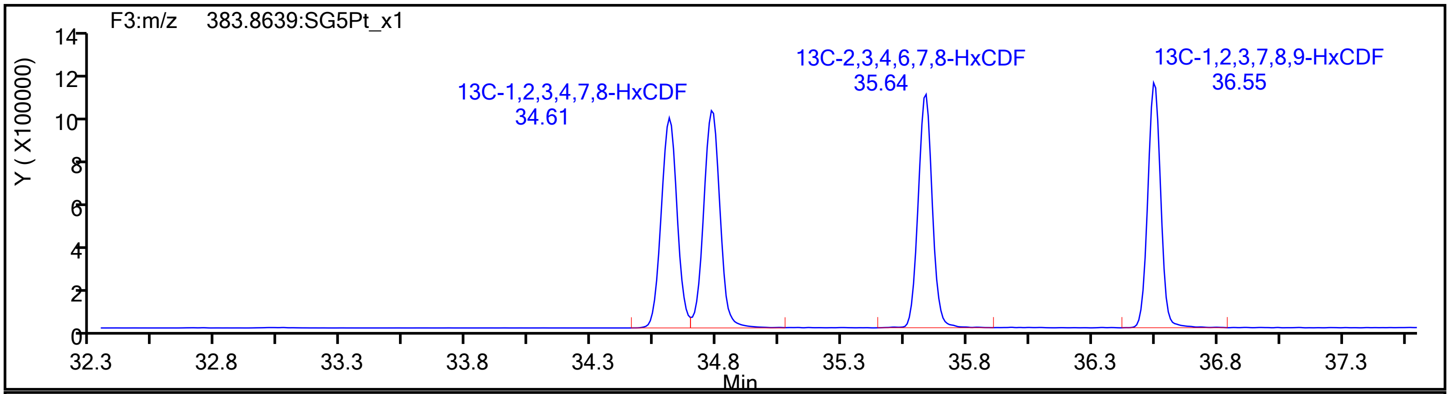

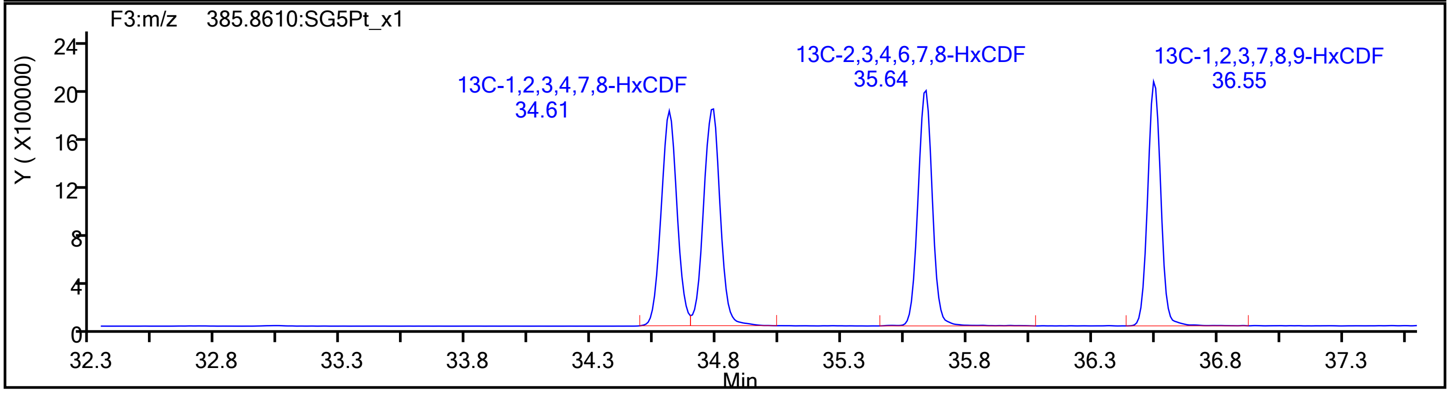

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Eurofins TestAmerica, Sacramento

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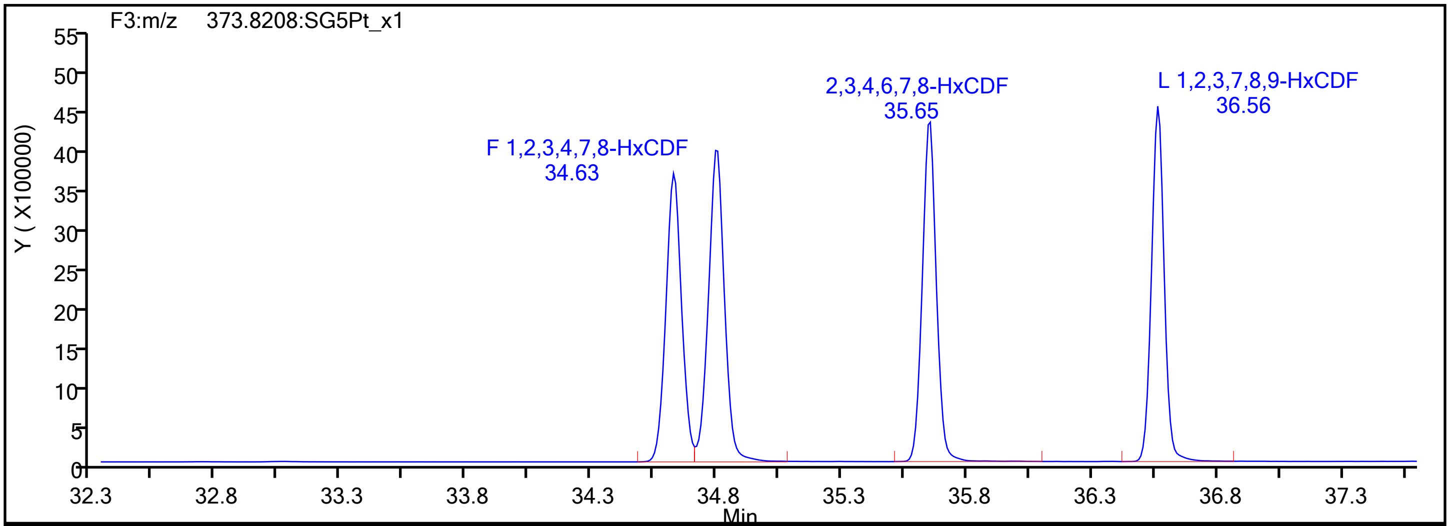

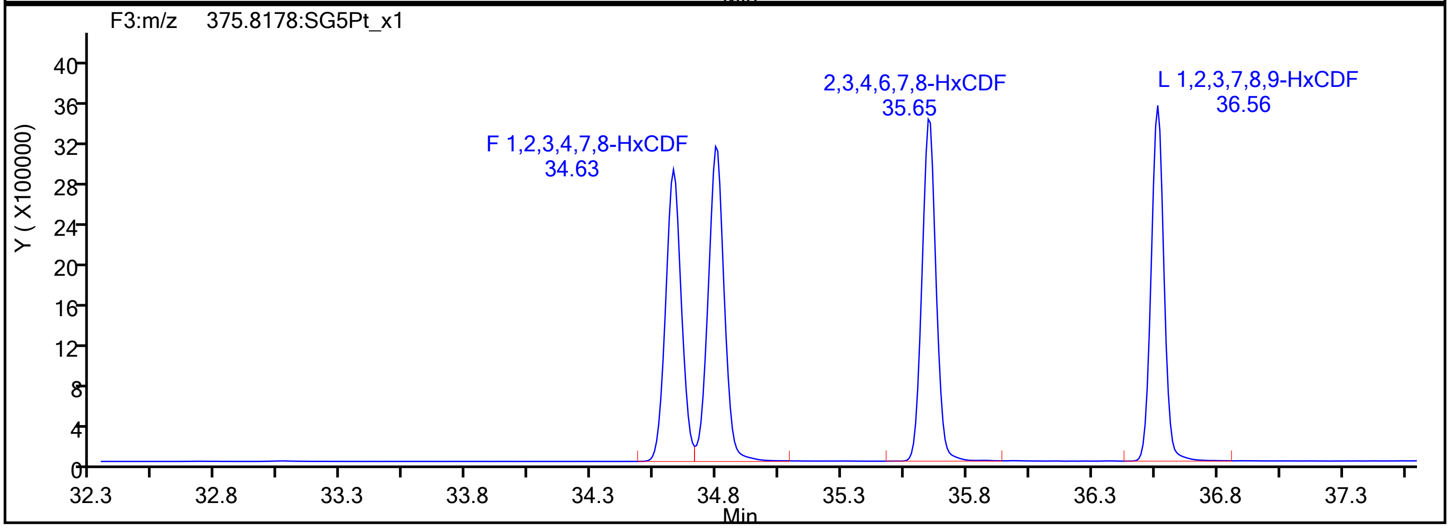

HxCDF Interference Mass

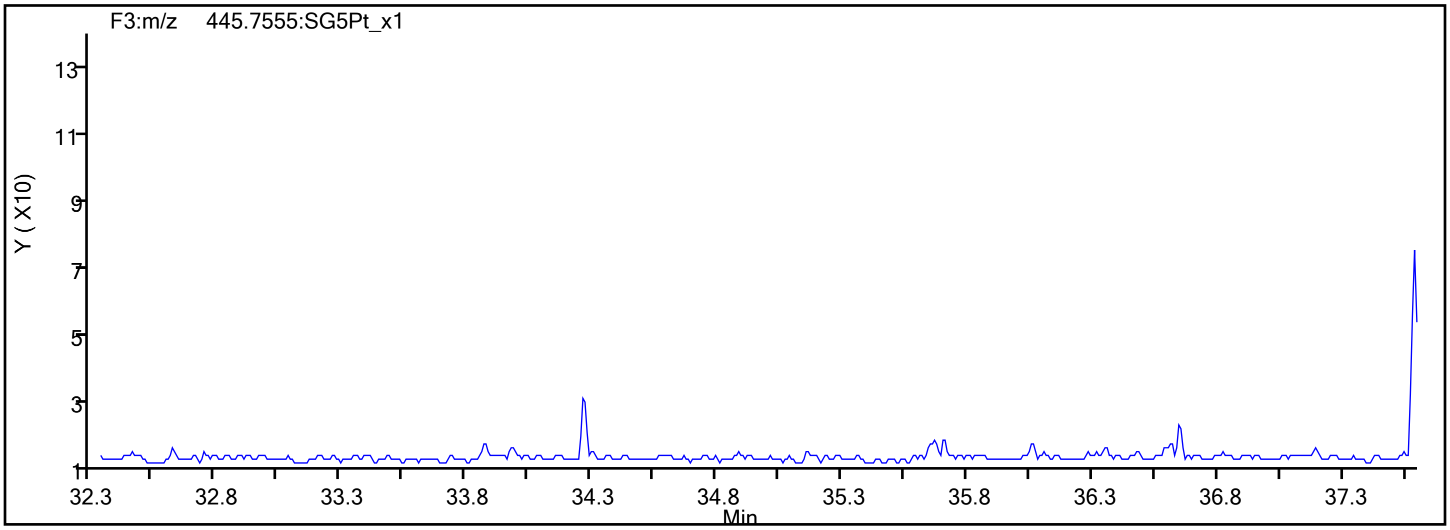

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Eurofins TestAmerica, Sacramento

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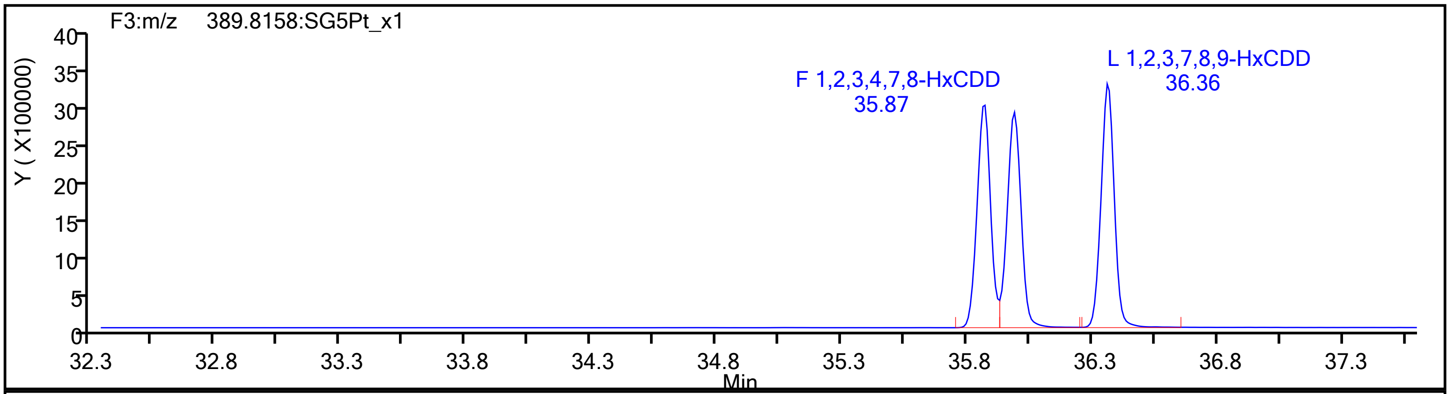

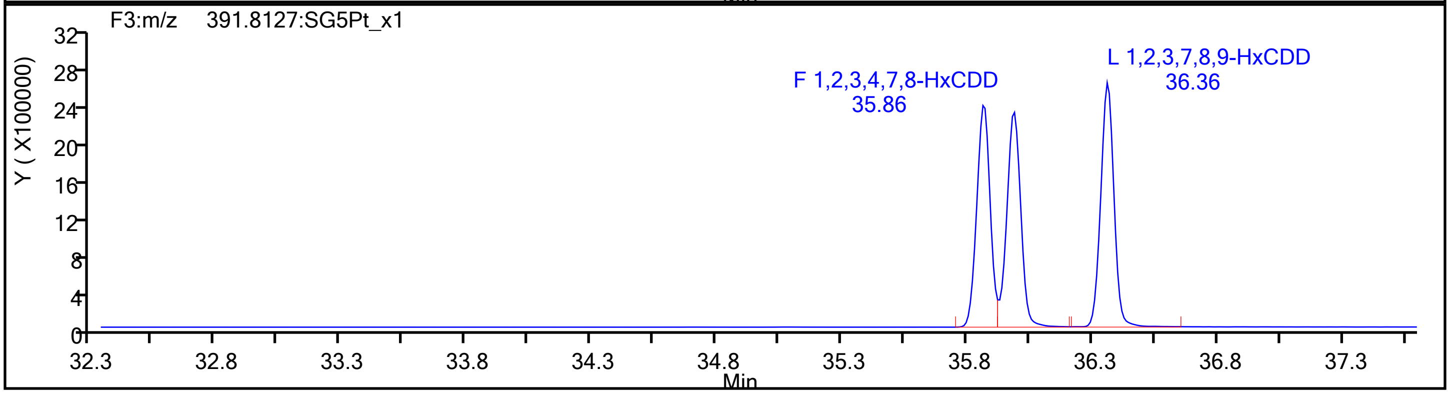

HxCDD Standards

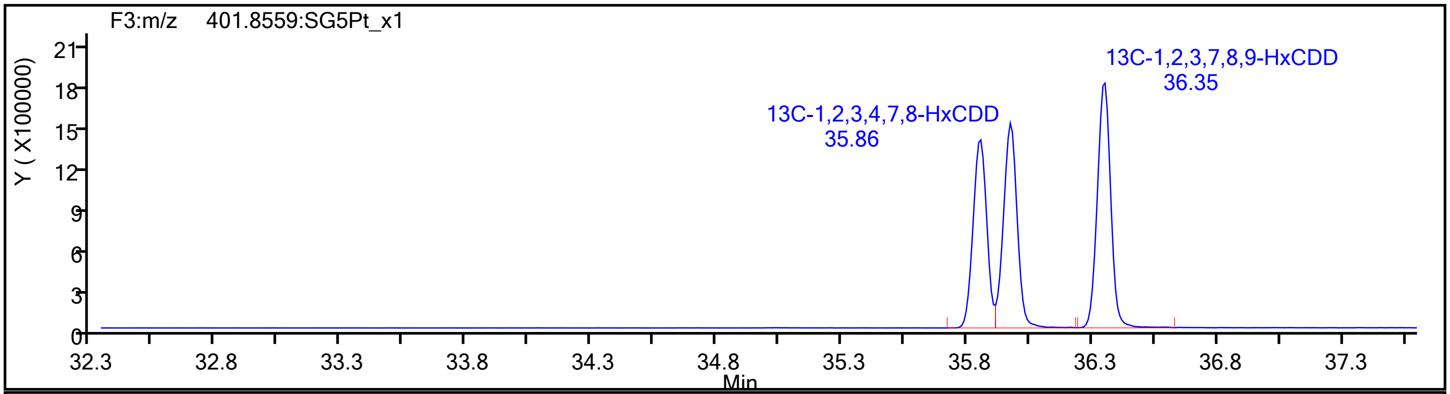

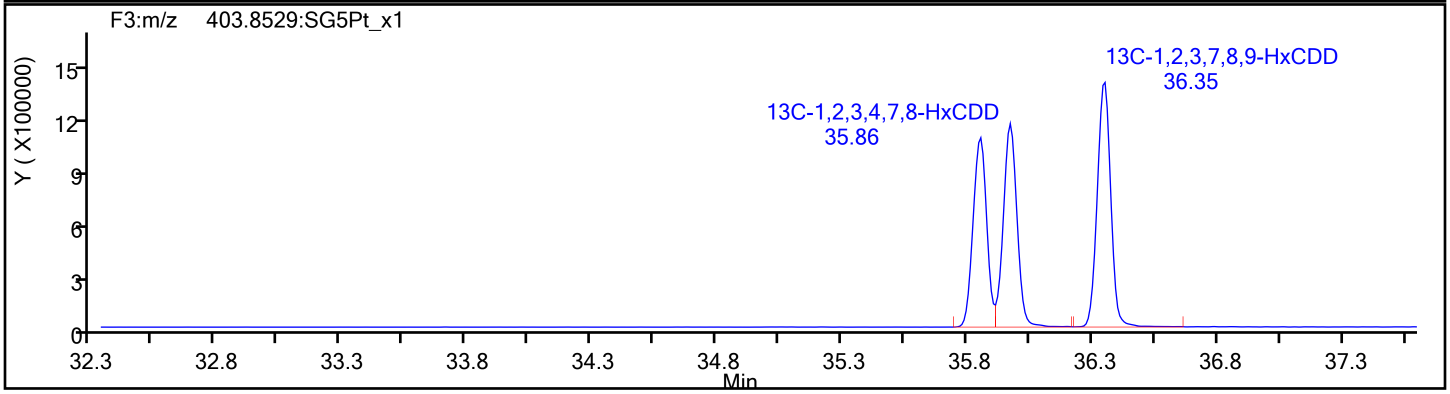

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Eurofins TestAmerica, Sacramento

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HpCDF

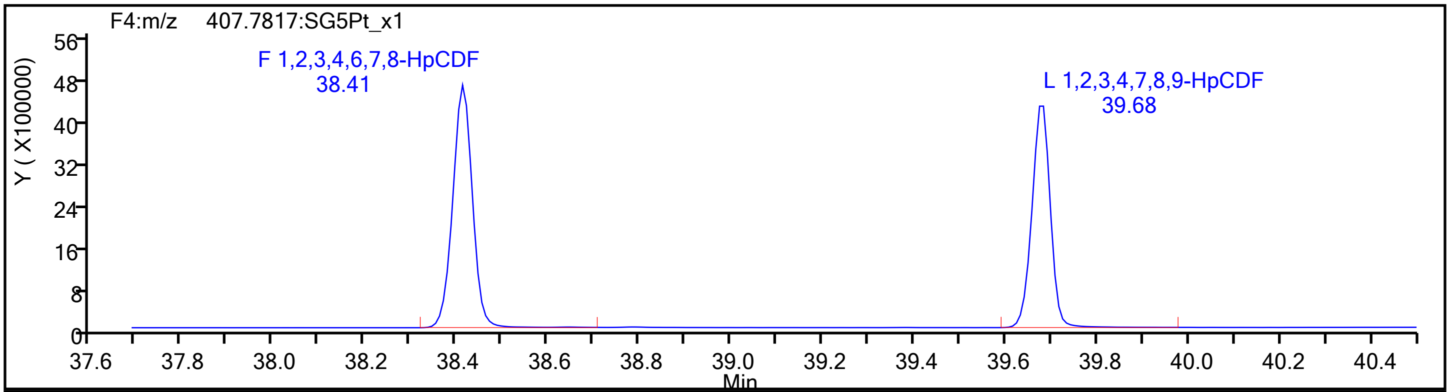

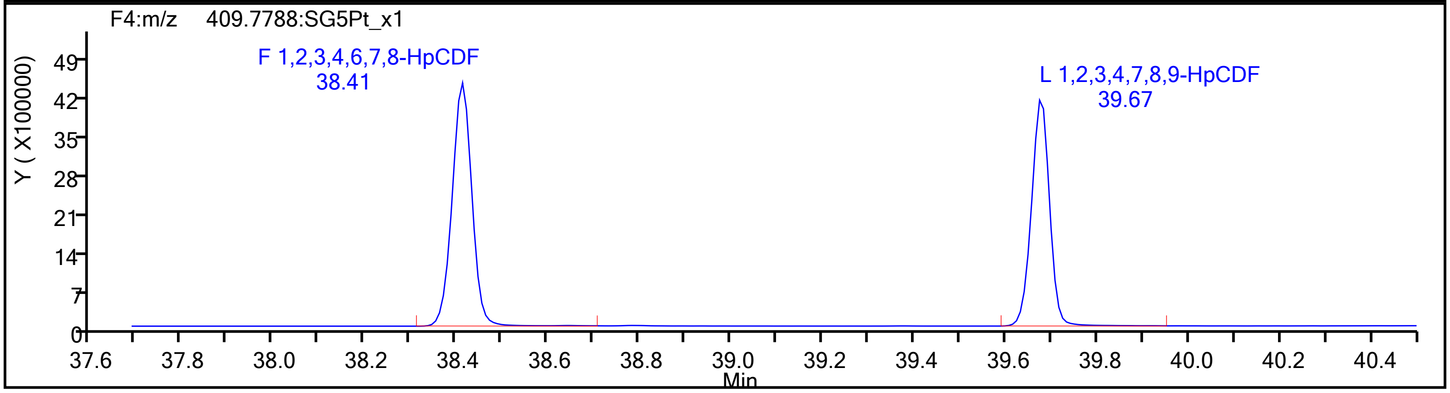

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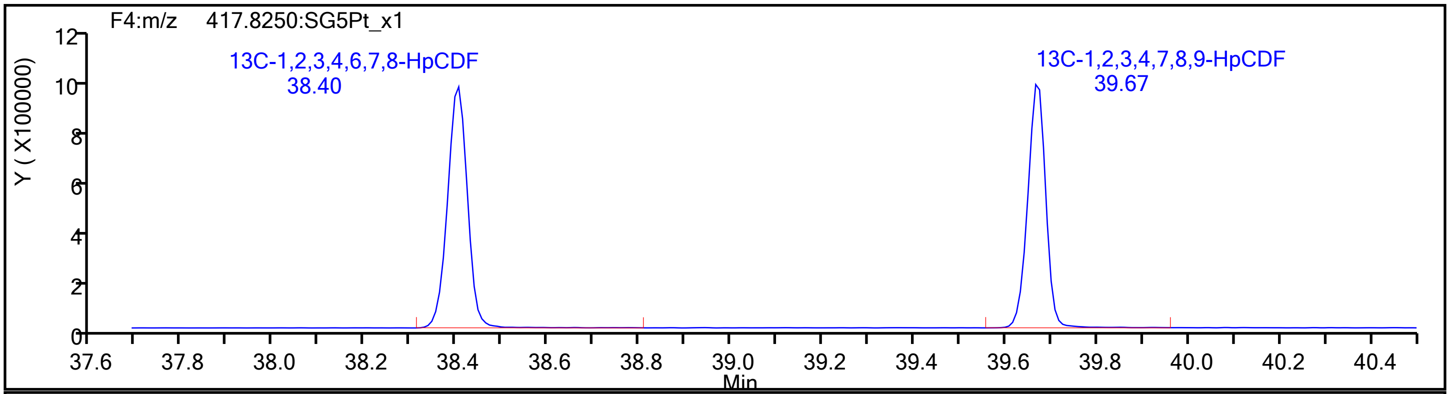

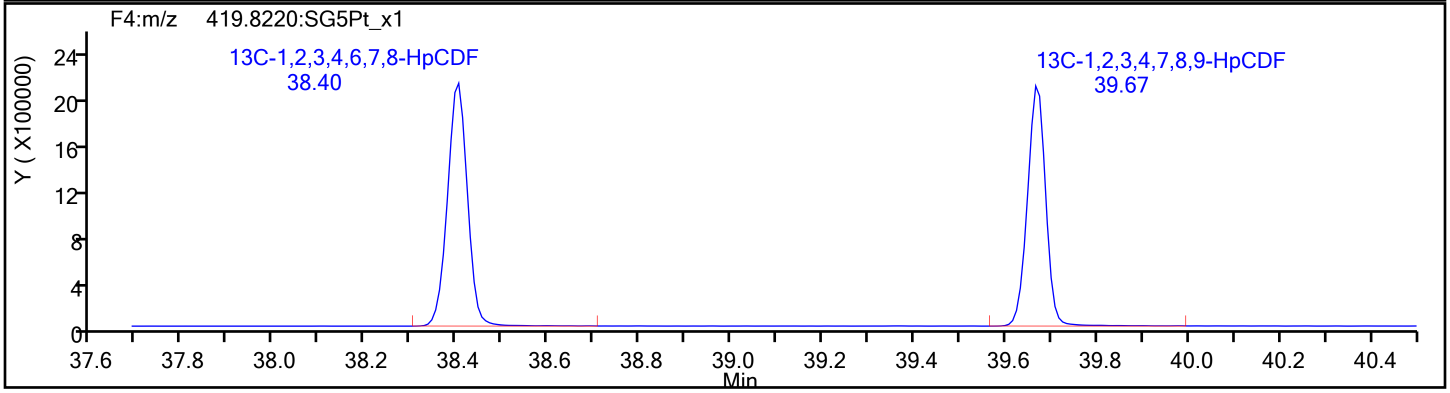

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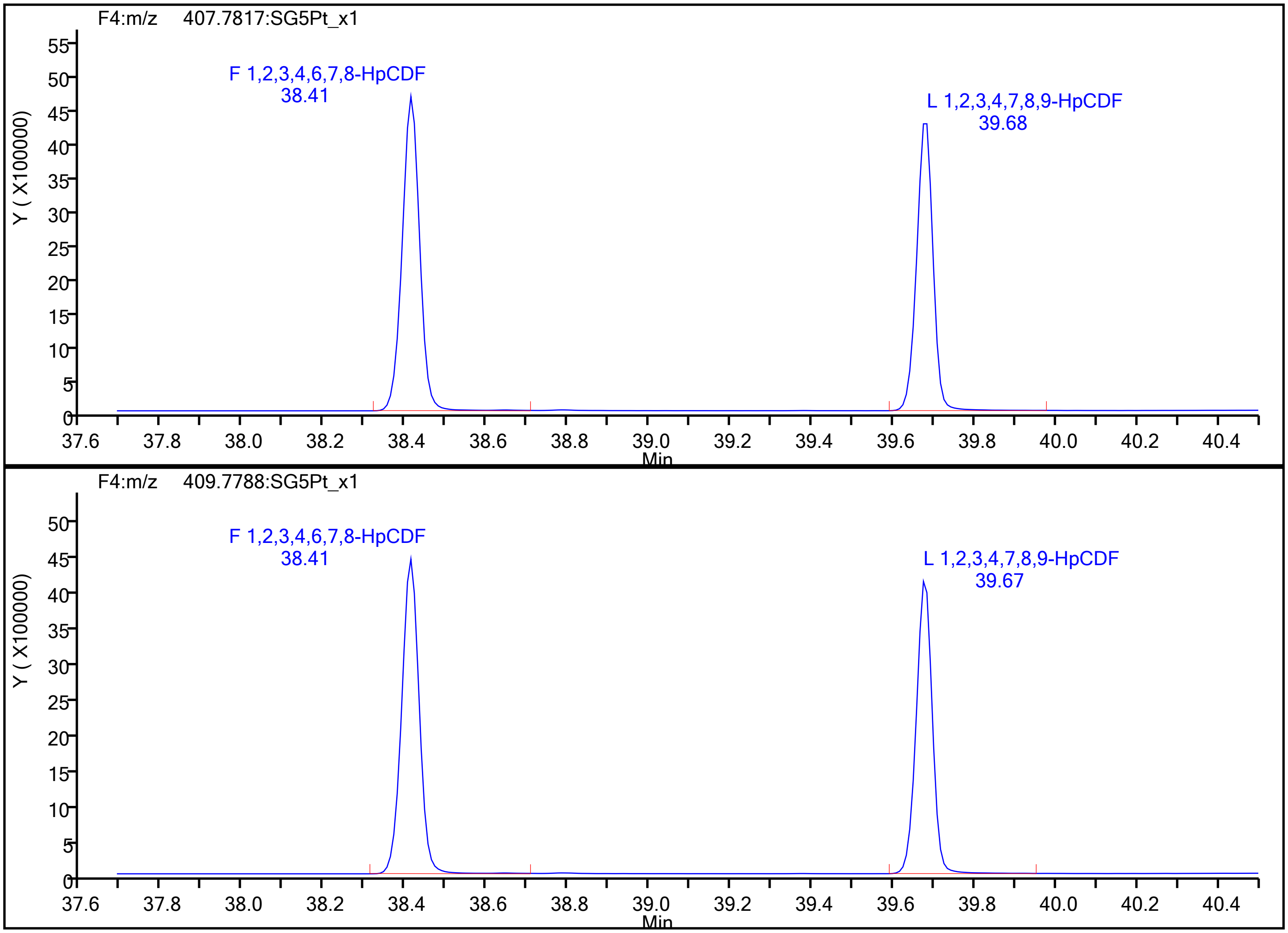

HpCDF Interference Mass

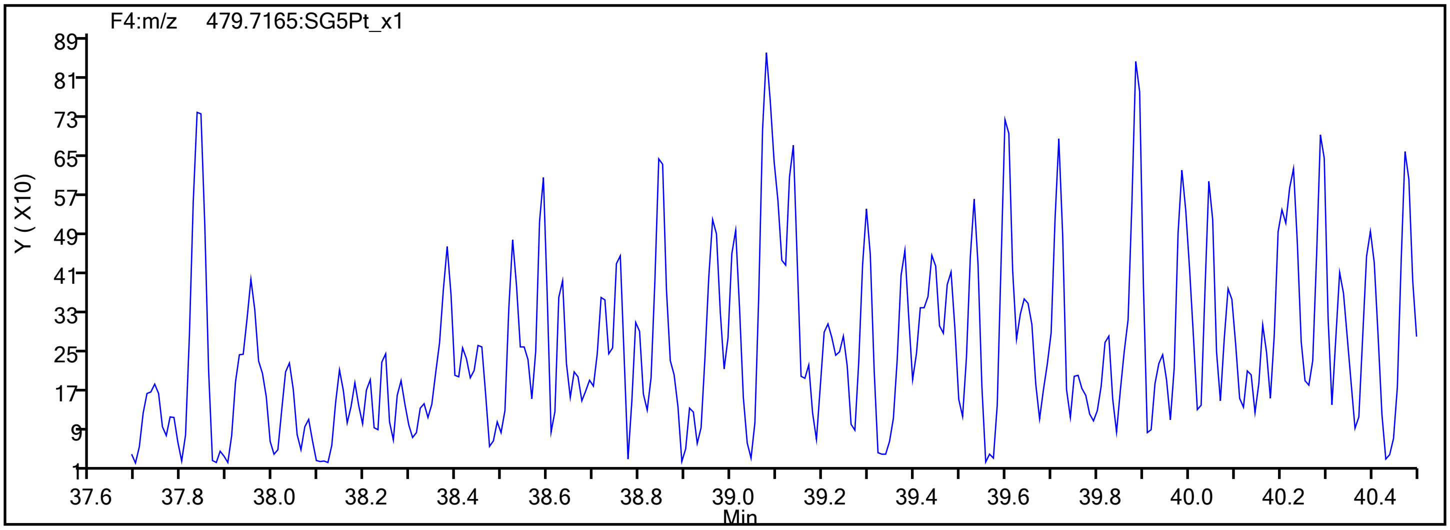

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Eurofins TestAmerica, Sacramento

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HpCDD

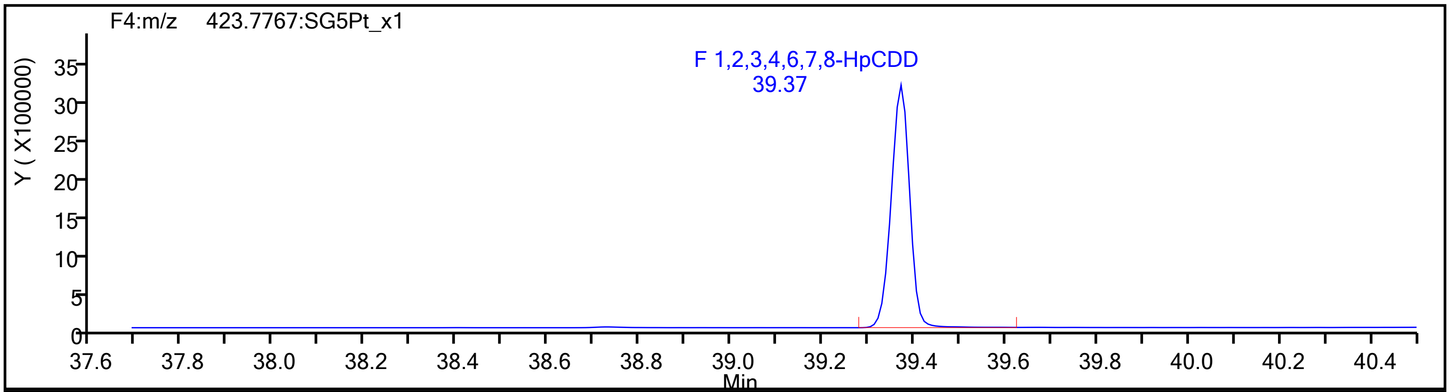

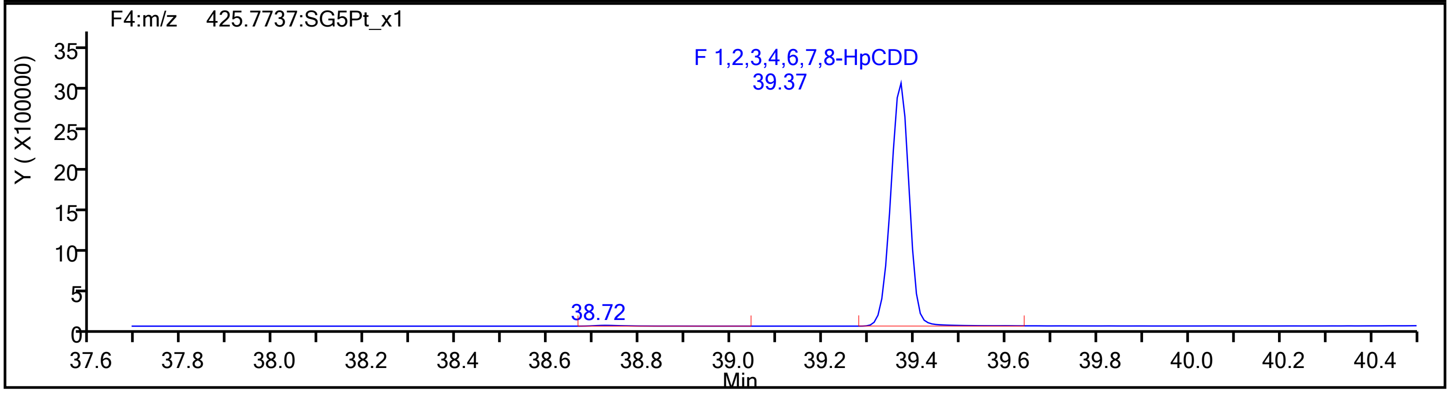

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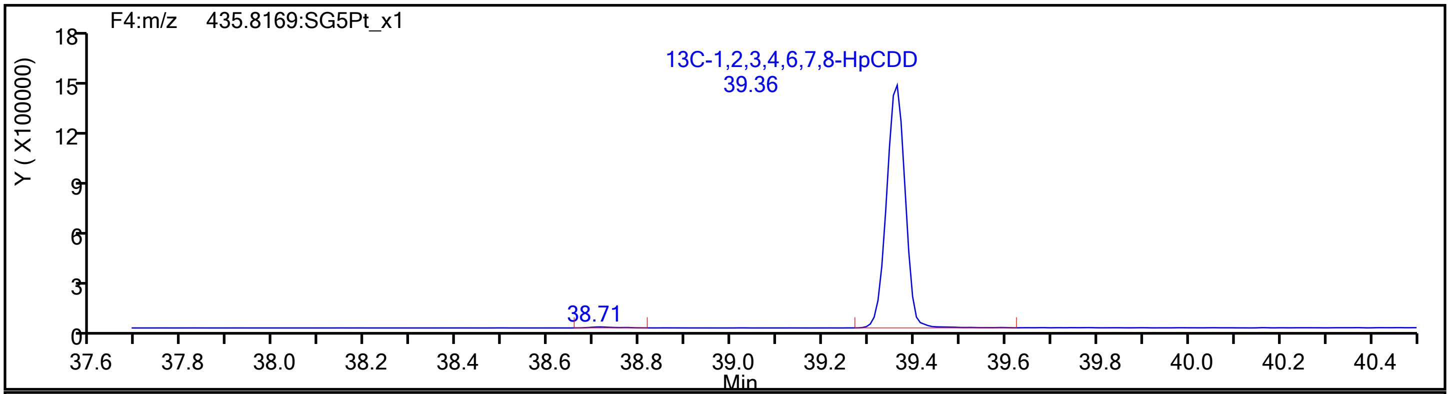

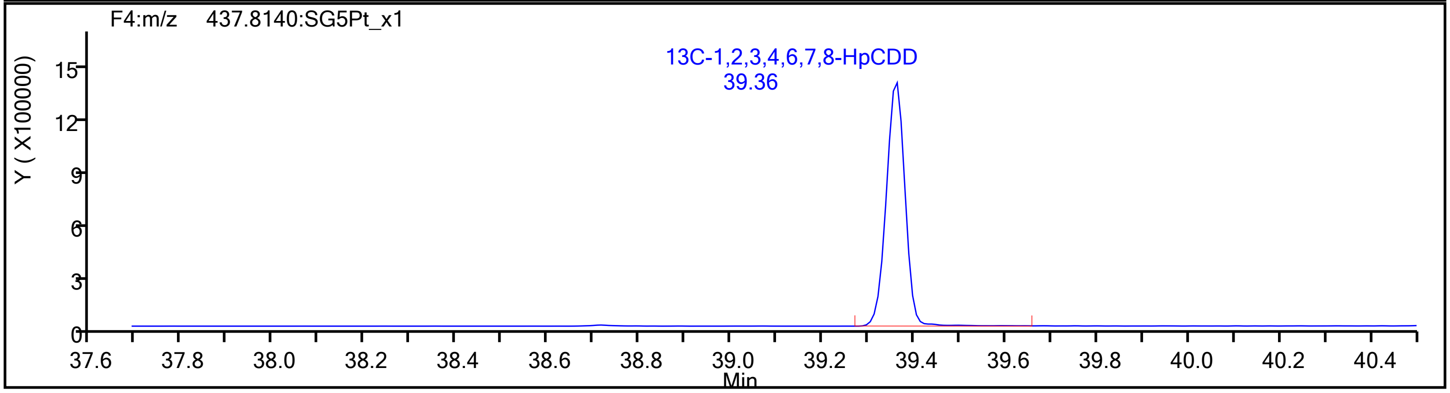

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Eurofins TestAmerica, Sacramento

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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

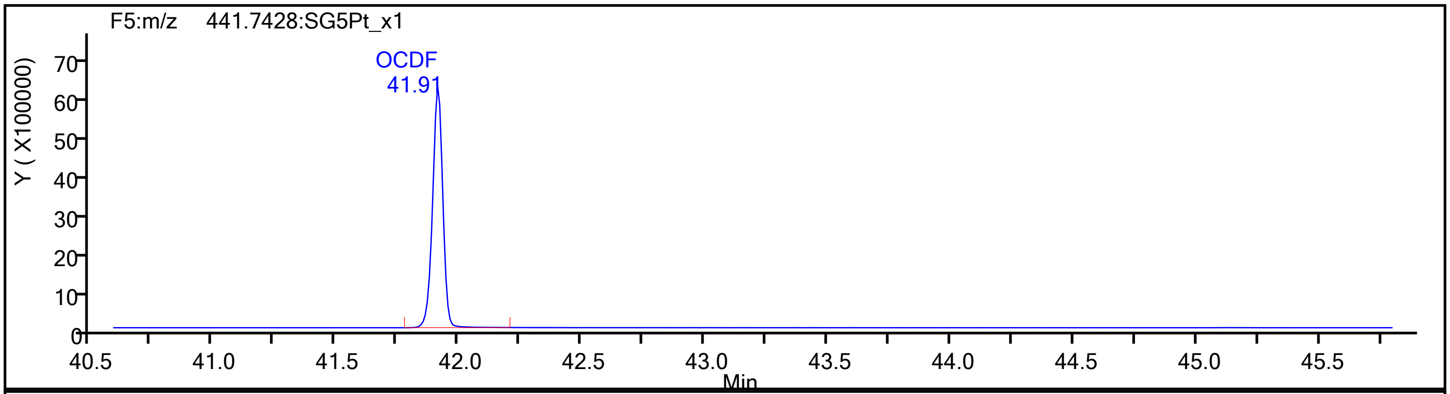

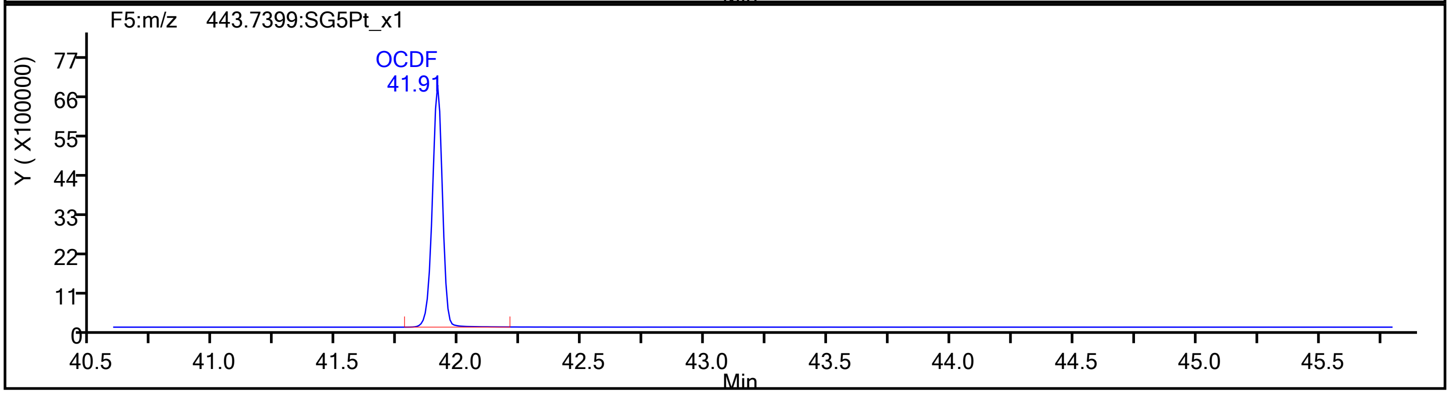

OCDF Standards

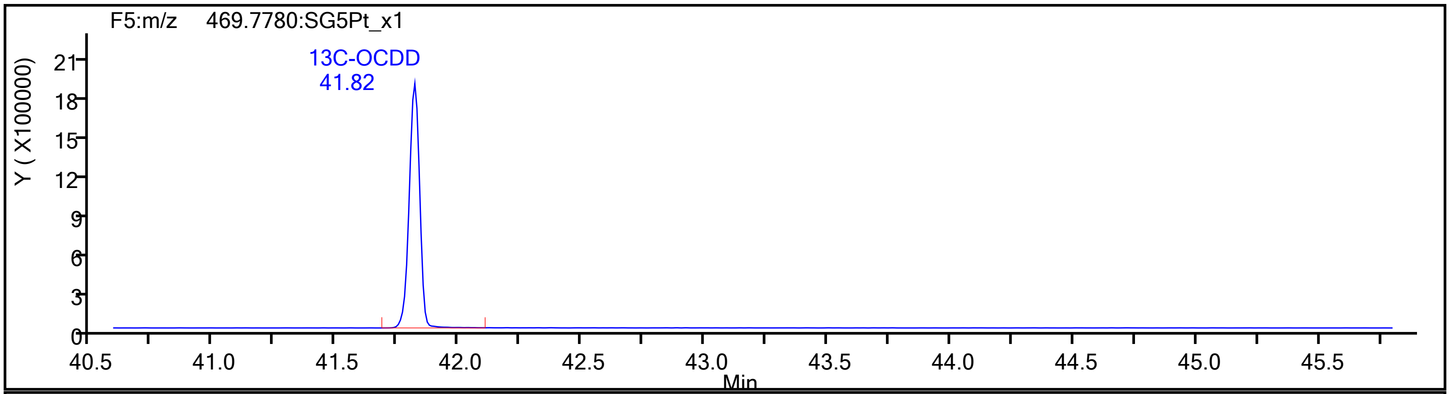

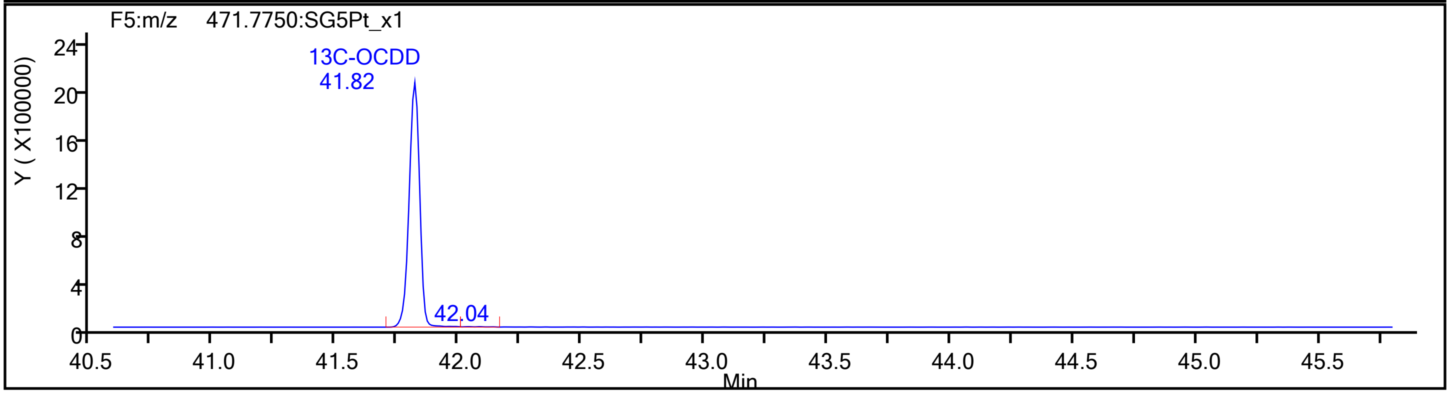

Report Date: 03-Feb-2021 14:46:12 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d		
Injection Date:	03-Feb-2021 00:10:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

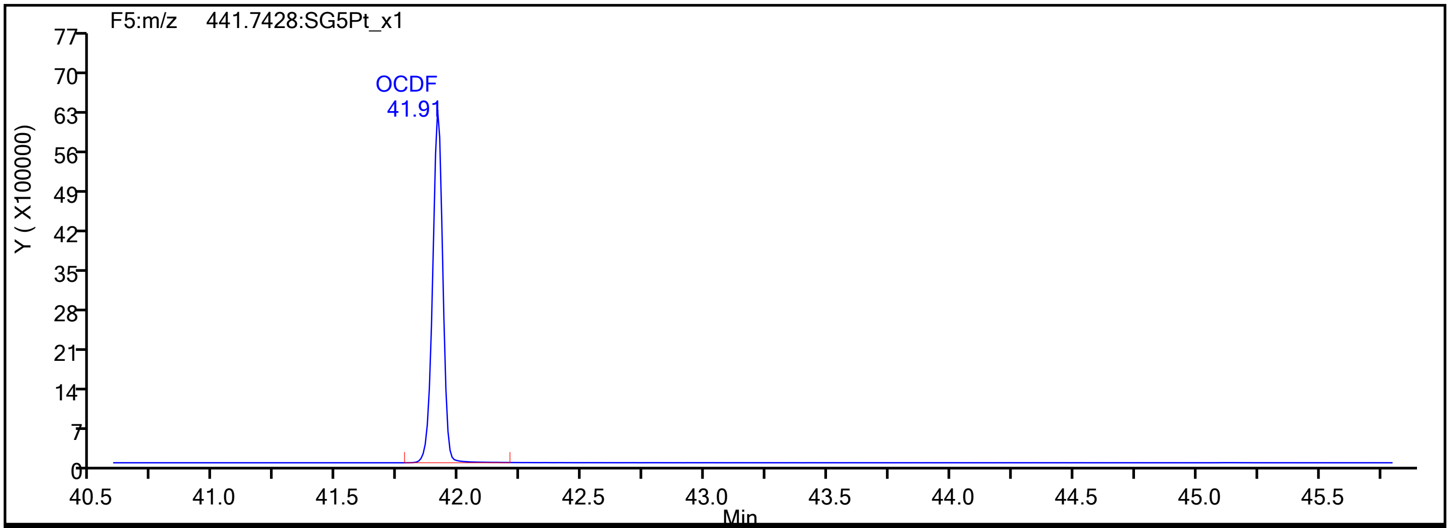

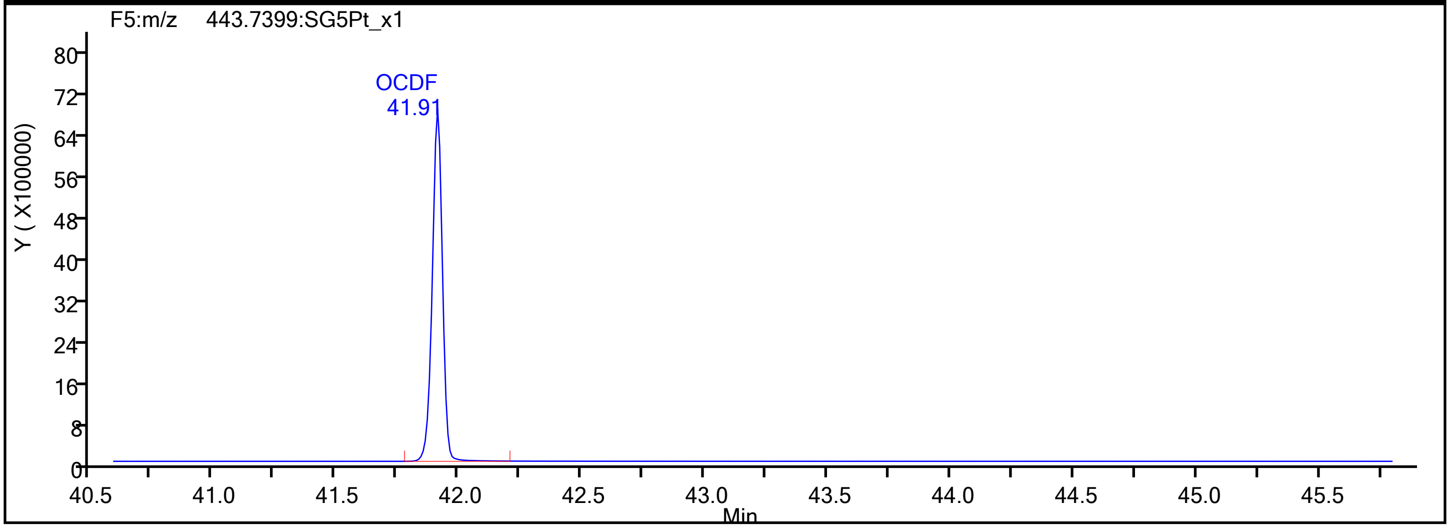

OCDF Interference Mass

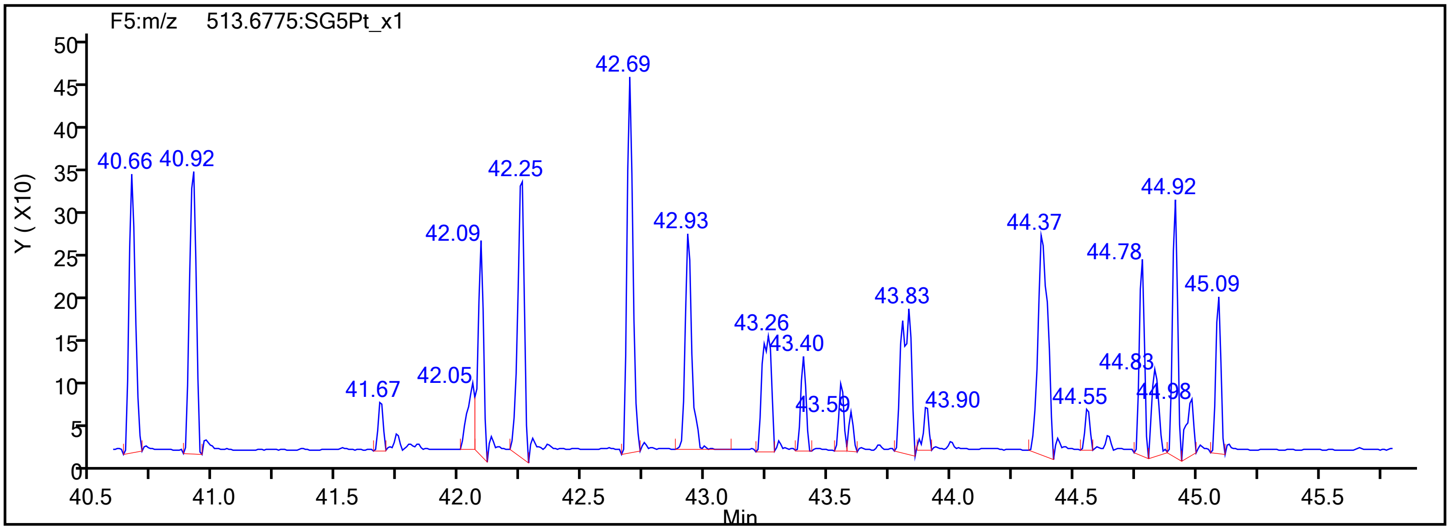

Report Date: 03-Feb-2021 14:46:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d		
Injection Date:	03-Feb-2021 00:10:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

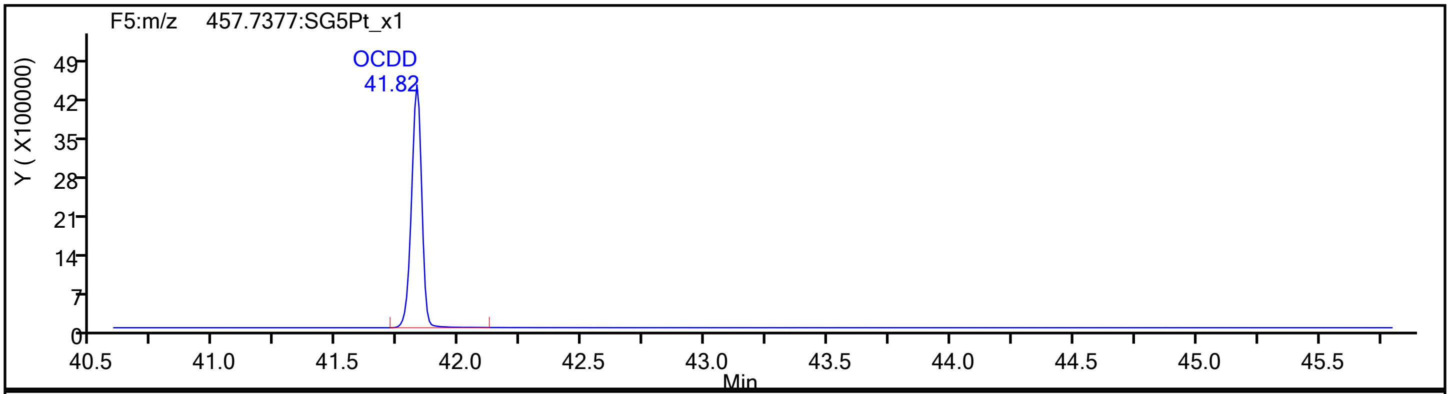

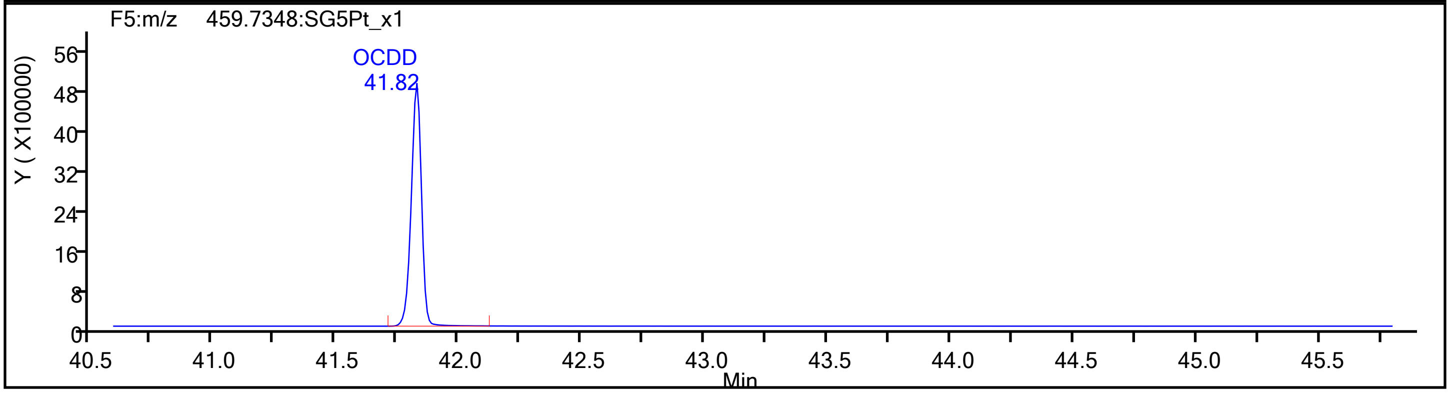

OCDD Standards

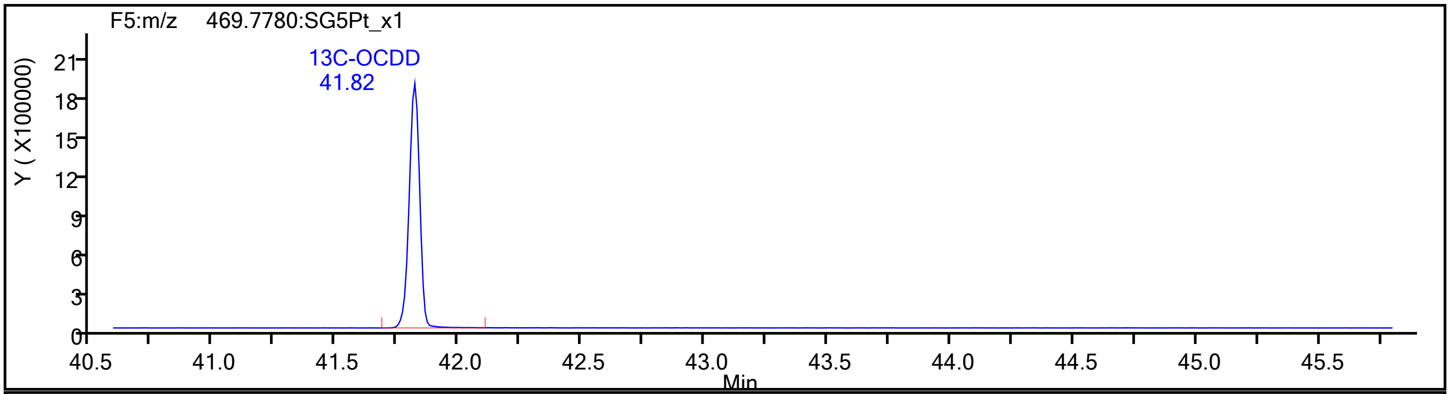

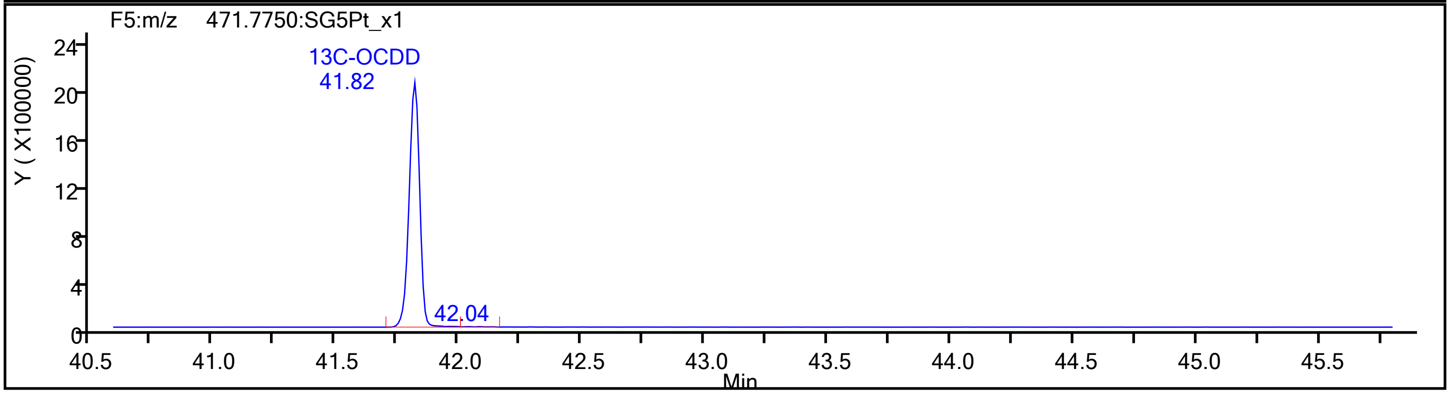

Report Date: 03-Feb-2021 14:46:13 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d

Injection Date: 03-Feb-2021 00:10:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

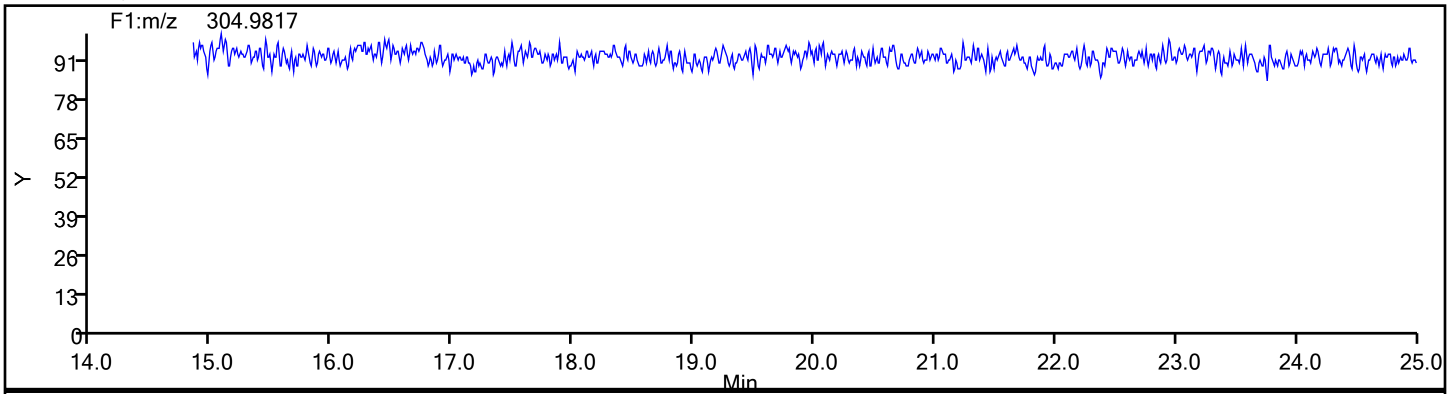

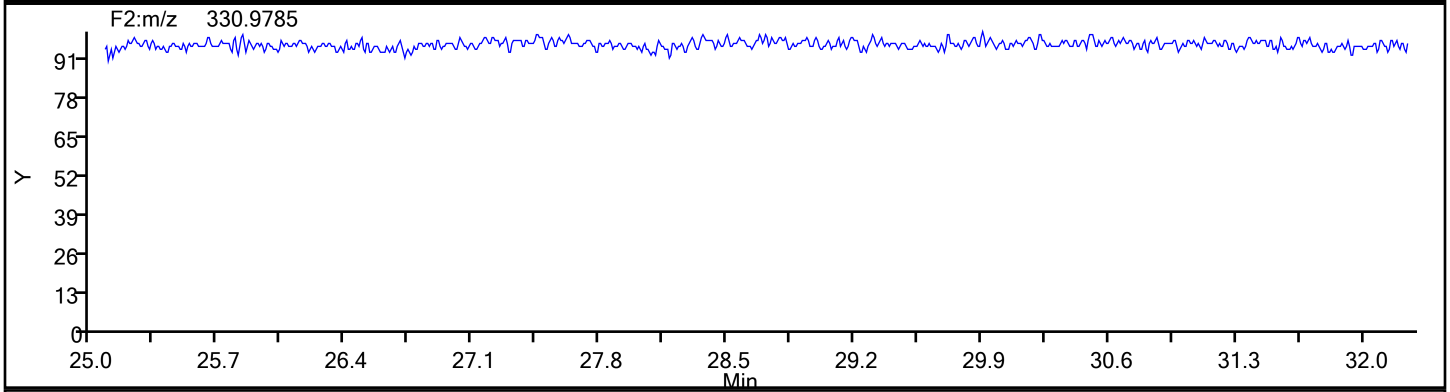

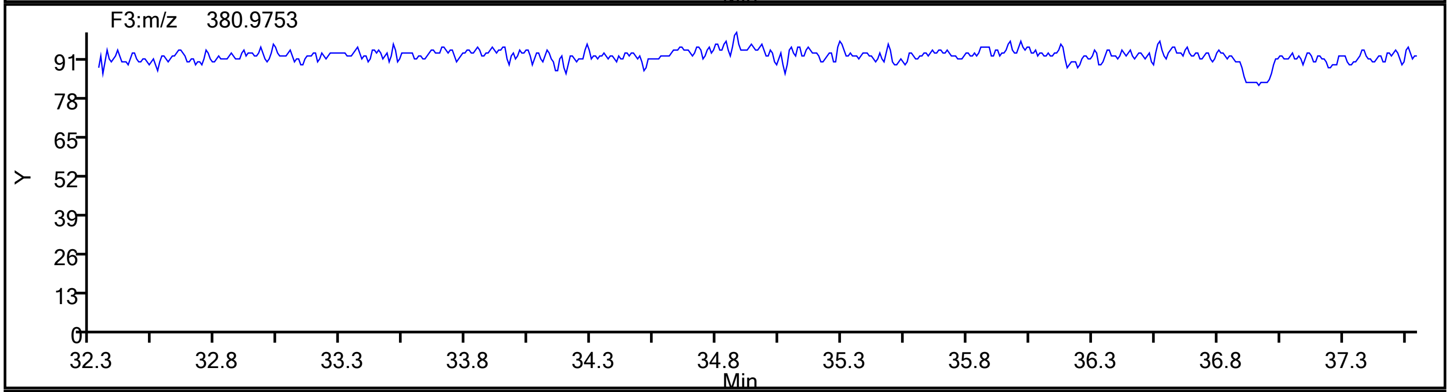

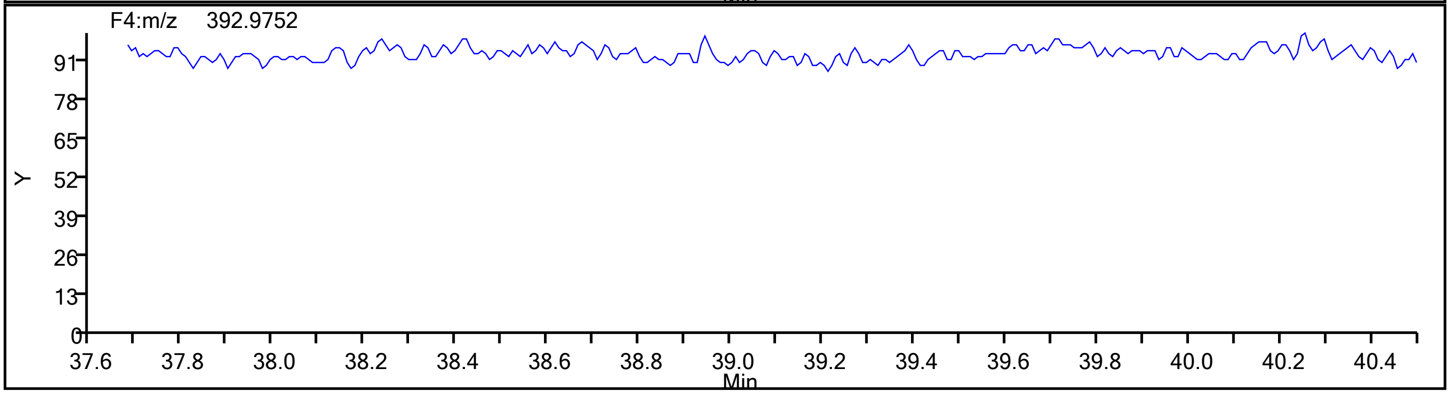

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_7.d		
Injection Date:	03-Feb-2021 00:10:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

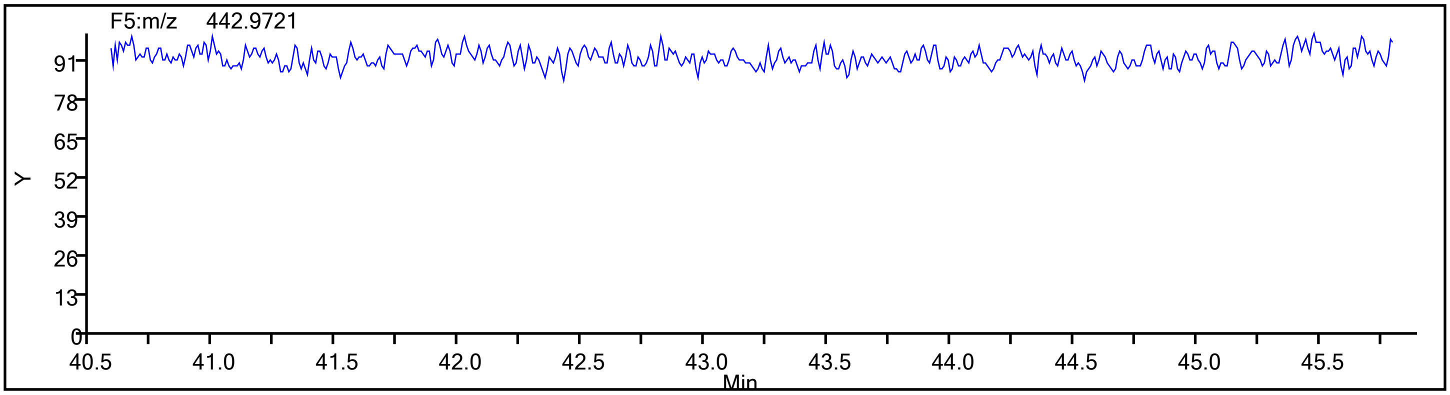

Report Date: 03-Feb-2021 14:46:25 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC
Calib Level: 6
Inject. Date: 03-Feb-2021 00:57:00
ALS Bottle#: 0
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00028
Operator ID: Xcalibur_System
Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:46:15
Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution
Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)
Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk
Date: 03-Feb-2021 14:40:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.862	11049002	0.82	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.901	17087371	0.81	1.5437	100.2	100.2	0.1576	0.1576	100	
2,3,7,8-TCDF	19.927	36134323	0.81	1.1258	187.8	187.8	0.1924	0.1924	93.92	
S Total TCDF					187.8	187.8	0.1924	0.1924		
D 13C-2,3,7,8-TCDD	21.223	10845589	0.82	0.9687	101.3	101.3	0.1287	0.1287	101	
$ 37Cl4-2,3,7,8-TCDD	21.249	23096628		1.0841	192.8	192.8	0.0720	0.0720	96.41	
2,3,7,8-TCDD	21.249	24371143	0.80	1.1904	188.8	188.8	0.1203	0.1203	94.39	
S Total TCDD					188.8	188.8	0.1203	0.1203		
D 13C-1,2,3,7,8-PeCDF	26.856	14555682	1.59	1.3124	100.4	100.4	0.3016	0.3016	100	
1,2,3,7,8-PeCDF	26.882	166113030	1.63	1.1163	1022.4	1022.4	2.340	2.340	102	
D 13C-2,3,4,7,8-PeCDF	28.339	15262904	1.59	1.3352	103.5	103.5	0.2965	0.2965	103	
2,3,4,7,8-PeCDF	28.364	160398673	1.62	1.0579	993.4	993.4	2.528	2.528	99.34	
S Total PeCDF					2015.7	2015.7	2.434	2.434		
D 13C-1,2,3,7,8-PeCDD	29.139	8298048	1.64	0.7716	97.3	97.3	0.1401	0.1401	97.34	
1,2,3,7,8-PeCDD	29.164	92123669	1.61	1.1372	976.3	976.3	0.6912	0.6912	97.63	
S Total PeCDD					976.3	976.3	0.6912	0.6912		
D 13C-1,2,3,4,7,8-HxCDF	34.614	14203528	0.55	1.0931	103.6	103.6	0.2848	0.2848	104	
1,2,3,4,7,8-HxCDF	34.639	166887030	1.29	1.1831	993.1	993.1	3.191	3.191	99.31	
D 13C-1,2,3,6,7,8-HxCDF	34.791	14281719	0.54	1.1278	101.0	101.0	0.2761	0.2761	101	
1,2,3,6,7,8-HxCDF	34.807	181716524	1.29	1.2484	1019.2	1019.2	2.932	2.932	102	
D 13C-2,3,4,6,7,8-HxCDF	35.641	13432252	0.54	1.0552	101.5	101.5	0.2951	0.2951	102	
2,3,4,6,7,8-HxCDF	35.658	176457583	1.29	1.2750	1030.3	1030.3	2.700	2.700	103	
D 13C-1,2,3,7,8,9-HxCDF	36.559	12693265	0.55	0.9938	101.9	101.9	0.3133	0.3133	102	
1,2,3,7,8,9-HxCDF	36.576	168791331	1.30	1.2953	1026.6	1026.6	2.524	2.524	103	
S Total HxCDF					4069.3	4069.3	2.837	2.837		
* 13C-1,2,3,7,8,9-HxCDD	36.357	12537818	1.28	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.860	10199306	1.27	0.7895	103.0	103.0	0.1776	0.1776	103	
1,2,3,4,7,8-HxCDD	35.877	107551431	1.27	1.0950	963.1	963.1	1.271	1.271	96.31	
D 13C-1,2,3,6,7,8-HxCDD	35.986	10828444	1.27	0.8495	101.7	101.7	0.1651	0.1651	102	
1,2,3,6,7,8-HxCDD	35.995	109097971	1.27	1.0201	987.6	987.6	1.281	1.281	98.76	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.373	119638717	1.27	1.1549	985.3	985.3	1.167	1.167	98.53	
S Total HxCDD					2936.0	2936.0	1.240	1.240		
D 13C-1,2,3,4,6,7,8-HpCDF	38.414	10050206	0.47	0.7854	102.1	102.1	0.2388	0.2388	102	
1,2,3,4,6,7,8-HpCDF	38.422	156297407	1.04	1.4859	1046.6	1046.6	1.968	1.968	105	
D 13C-1,2,3,4,7,8,9-HpCDF	39.677	9374417	0.47	0.7230	103.4	103.4	0.2595	0.2595	103	
1,2,3,4,7,8,9-HpCDF	39.685	135012761	1.04	1.4048	1025.2	1025.2	1.974	1.974	103	
S Total HpCDF					2071.9	2071.9	1.971	1.971		
D 13C-1,2,3,4,6,7,8-HpCDD	39.365	7777551	1.08	0.6413	96.7	96.7	0.1599	0.1599	96.72	
1,2,3,4,6,7,8-HpCDD	39.382	90753740	1.06	1.1489	1015.6	1015.6	1.076	1.076	102	
S Total HpCDD					1015.6	1015.6	1.076	1.076		
D 13C-OCDD	41.828	13499008	0.92	0.5141	209.4	209.4	0.1525	0.1525	105	
OCDF	41.929	244491091	0.91	1.5776	2296.1	2296.1	0.7342	0.7342	115	
OCDD	41.836	165463156	0.87	1.1706	2094.3	2094.3	0.8138	0.8138	105	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00028 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 03-Feb-2021 00:57:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00028
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:46:15 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk Date: 03-Feb-2021 14:40:52

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.862	20.870	0		4978184	751132	567	1417	1325		
333.9338	20.862	20.870	0		6070818	923138	268	670	3445	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.901	19.910	-1	0.954	7650897	1192882	1020	2550	1169		
317.9389	19.901	19.910	-1	0.954	9436474	1482805	609	1522	2435	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.927	19.937	-1	1.001	16195979	2544066	942	2355	2701		
305.8987	19.927	19.937	-1	1.001	19938344	3181880	1377	3442	2311	0.81(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.223	21.233	-1	1.017	4887164	728788	567	1417	1285		
333.9338	21.232	21.233	0	1.018	5958425	891022	268	670	3325	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.249	21.260	-1	1.019	23096628	3436672	523	1307	6571		
2,3,7,8-TCDD											
319.8965	21.249	21.262	-1	1.001	10844204	1601075	451	1127	3550		
321.8936	21.249	21.262	-1	1.001	13526939	1998488	477	1192	4190	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.856	26.859	0	1.287	8936235	1570102	1578	3945	995		
353.8970	26.856	26.859	0	1.287	5619447	997563	1073	2682	930	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	26.882	26.886	0	1.001	103006585	19522074	16406	41015	1190		
341.8567	26.882	26.886	0	1.001	63106445	11830071	10417	26042	1136	1.63(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.339	28.348	-1	1.358	9364134	1537307	1578	3945	974		
353.8970	28.347	28.348	0	1.359	5898770	970032	1073	2682	904	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	28.364	28.373	-1	1.001	99131167	17181243	16406	41015	1047		
341.8567	28.364	28.373	-1	1.001	61267506	10507218	10417	26042	1009	1.62(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.139	29.144	0	1.397	5157809	806108	452	1130	1783		
369.8919	29.139	29.144	0	1.397	3140239	496820	272	680	1827	1.64(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.164	29.174	-1	1.001	56863253	9117366	2586	6465	3526		
357.8516	29.164	29.174	-1	1.001	35260416	5599884	1511	3777	3706	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.614	34.620	0	0.952	5013970	1090541	1476	3690	739		
385.8610	34.614	34.620	0	0.952	9189558	1965230	2685	6712	732	0.55(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.639	34.638	0	1.001	93889570	21815545	26055	65137	837		
375.8178	34.639	34.638	0	1.001	72997460	16807189	20089	50222	837	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.791	34.792	0	0.957	4978478	1110638	1476	3690	752		
385.8610	34.791	34.792	0	0.957	9303241	2041247	2685	6712	760	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.807	34.808	0	1.000	102370144	24476540	26055	65137	939		
375.8178	34.807	34.808	0	1.000	79346380	18808162	20089	50222	936	1.29(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.641	35.644	0	0.980	4718122	1191470	1476	3690	807		
385.8610	35.641	35.644	0	0.980	8714130	2159737	2685	6712	804	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.658	35.662	0	1.000	99414999	26917400	26055	65137	1033		
375.8178	35.658	35.662	0	1.000	77042584	20667996	20089	50222	1029	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.559	36.560	0	1.006	4499576	1264499	1476	3690	857		
385.8610	36.559	36.560	0	1.006	8193689	2263748	2685	6712	843	0.55(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.576	36.576	0	1.000	95422810	28474658	26055	65137	1093		
375.8178	36.576	36.576	0	1.000	73368521	21534473	20089	50222	1072	1.30(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.357	36.359	0		7027575	1877575	1017	2542	1846		
403.8529	36.357	36.359	0		5510243	1463373	857	2142	1708	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.860	35.864	0	0.986	5703133	1462762	1017	2542	1438		
403.8529	35.860	35.864	0	0.986	4496173	1155578	857	2142	1348	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.877	35.879	0	1.000	60251160	16643543	8041	20102	2070		
391.8127	35.877	35.879	0	1.000	47300271	12997743	6534	16335	1989	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.986	35.985	0	0.990	6051319	1557675	1017	2542	1532		
403.8529	35.986	35.985	0	0.990	4777125	1230383	857	2142	1436	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	35.995	35.999	0	1.000	60993808	16611918	8041	20102	2066		
391.8127	35.995	35.999	0	1.000	48104163	13172381	6534	16335	2016	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.373	36.373	0	1.014	67042385	19186311	8041	20102	2386		
391.8127	36.373	36.373	0	1.014	52596332	14934371	6534	16335	2286	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.414	38.412	0	1.057	3223750	1045506	990	2475	1056		
419.8220	38.414	38.412	0	1.057	6826456	2163742	1517	3792	1426	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.422	38.422	0	1.000	79540776	27871764	19229	48072	1449		
409.7788	38.422	38.422	0	1.000	76756631	26862006	18303	45757	1468	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.677	39.676	0	1.091	3009703	1090952	990	2475	1102		
419.8220	39.677	39.676	0	1.091	6364714	2292341	1517	3792	1511	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.685	39.686	0	1.000	68955299	26639857	19229	48072	1385		
409.7788	39.685	39.686	0	1.000	66057462	25731404	18303	45757	1406	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.365	39.370	0	1.083	4030986	1422140	712	1780	1997		
437.8140	39.365	39.370	0	1.083	3746565	1322706	659	1647	2007	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.382	39.381	0	1.000	46683747	17321219	6962	17405	2488		
425.7737	39.374	39.381	0	1.000	44069993	16095945	6611	16527	2435	1.06(0.88-1.20)	
13C-OCDD											
469.7780	41.828	41.826	0	1.150	6466922	2116240	516	1290	4101		
471.7750	41.828	41.826	0	1.150	7032086	2314985	532	1330	4351	0.92(0.76-1.02)	
OCDF											
441.7428	41.929	41.921	0	1.002	116346973	41081506	4977	12442	8254		
443.7399	41.920	41.921	0	1.002	128144118	45192861	5288	13220	8546	0.91(0.76-1.02)	
OCDD											
457.7377	41.836	41.835	0	1.000	77195527	27223925	4098	10245	6643		
459.7348	41.836	41.835	0	1.000	88267629	31591850	4344	10860	7273	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00028 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:46:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d		
Injection Date:	03-Feb-2021 00:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

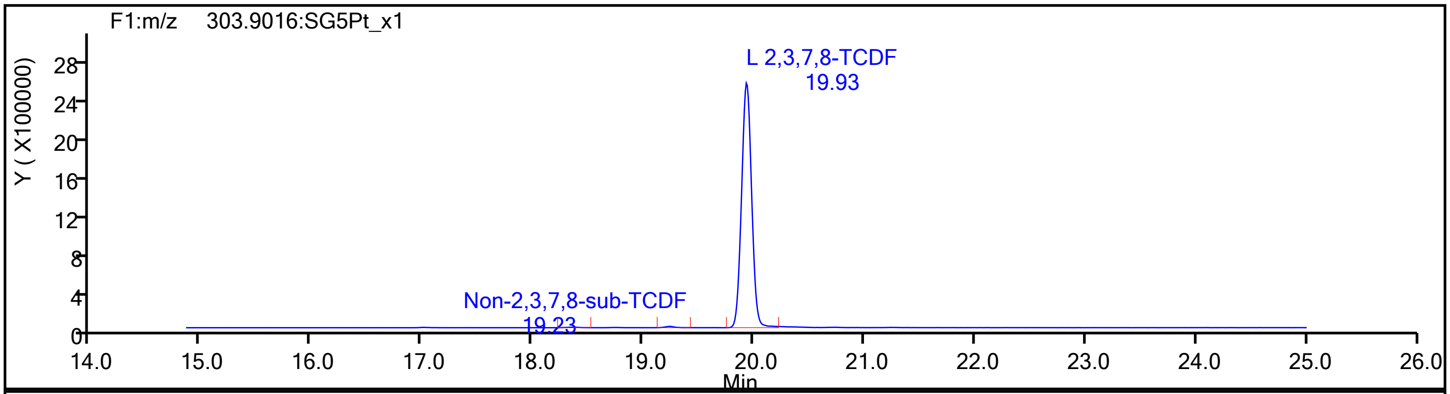

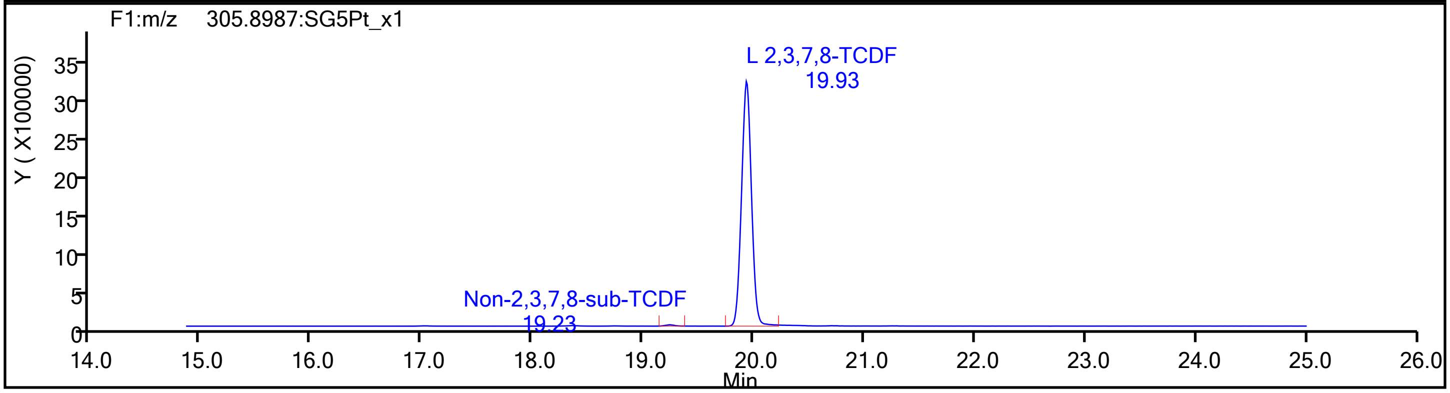

TCDF Standards

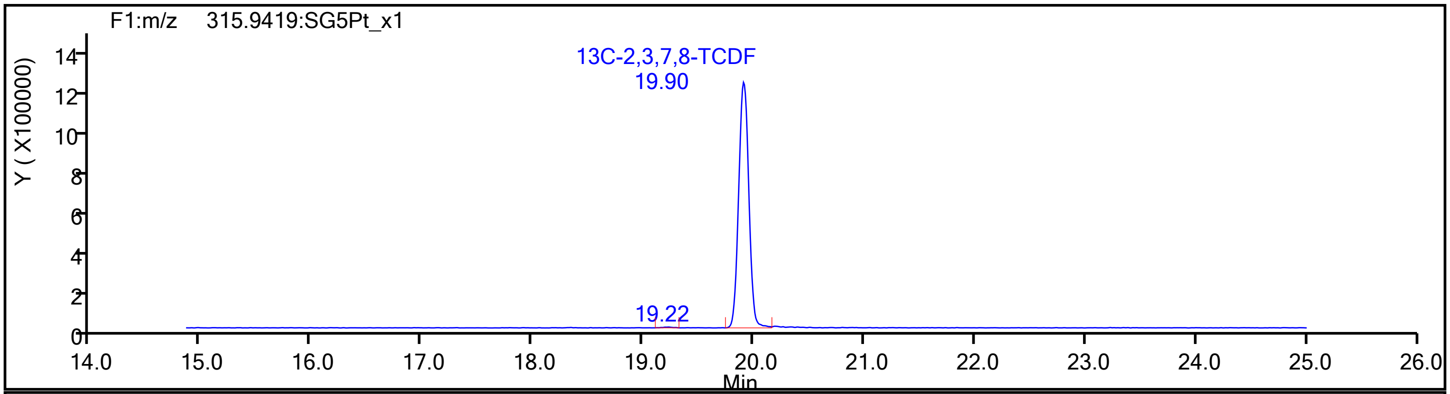

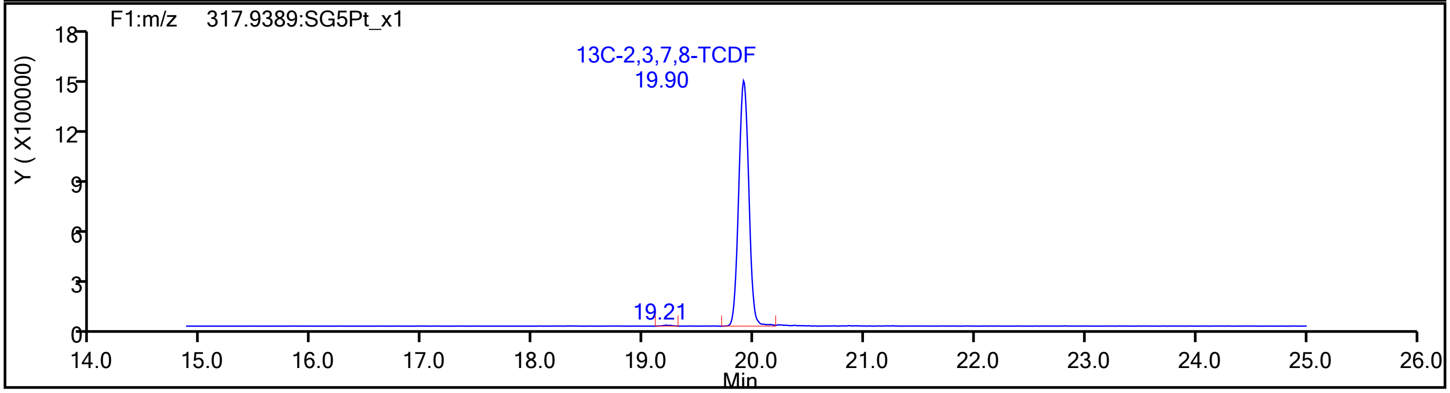

Report Date: 03-Feb-2021 14:46:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

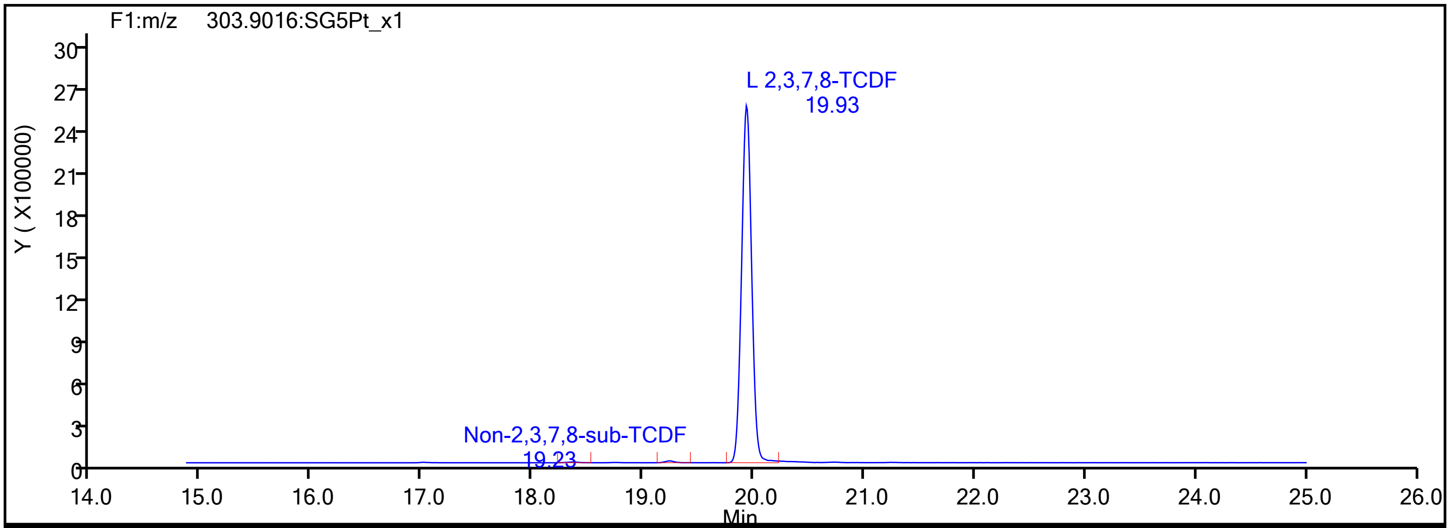

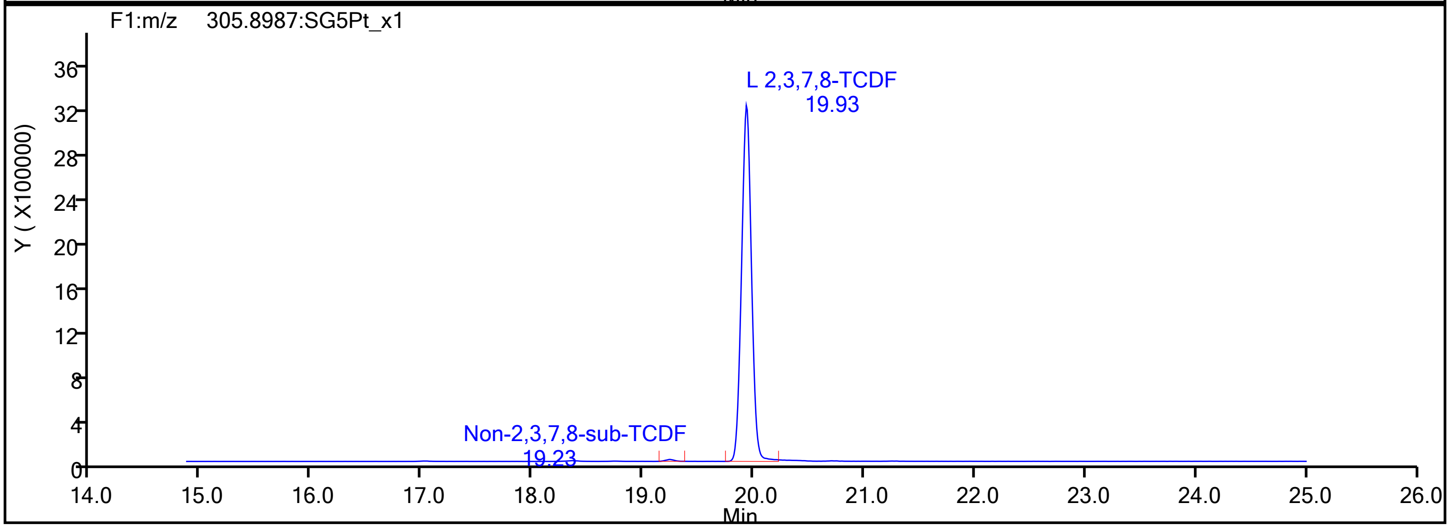

TCDF Interference Mass

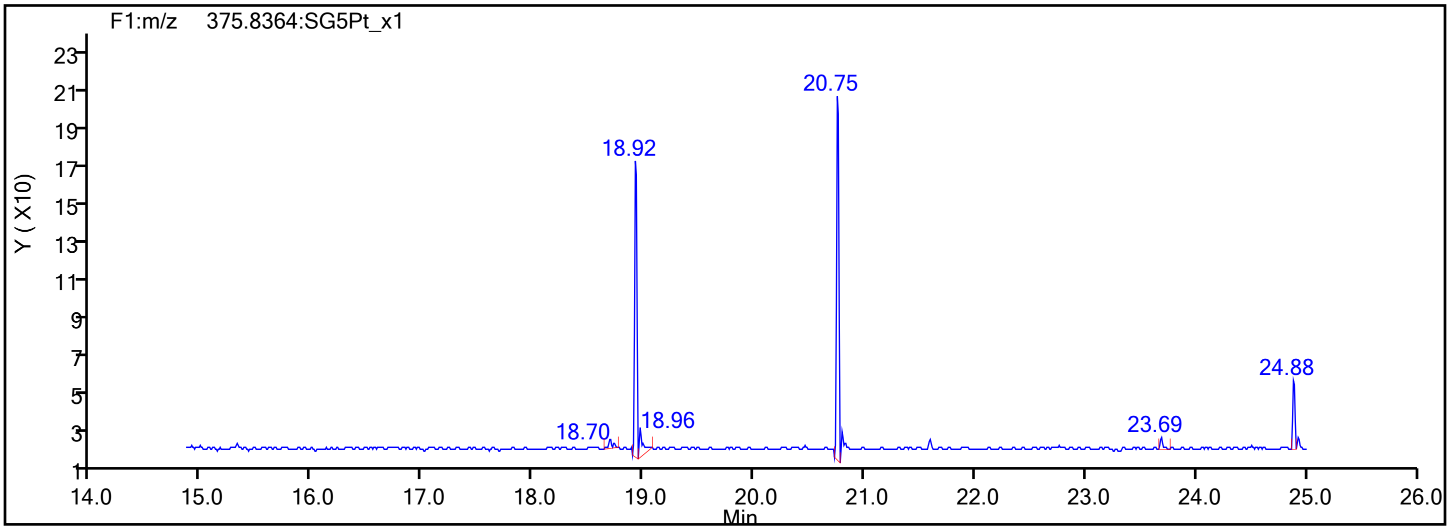

Report Date: 03-Feb-2021 14:46:26 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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TCDD

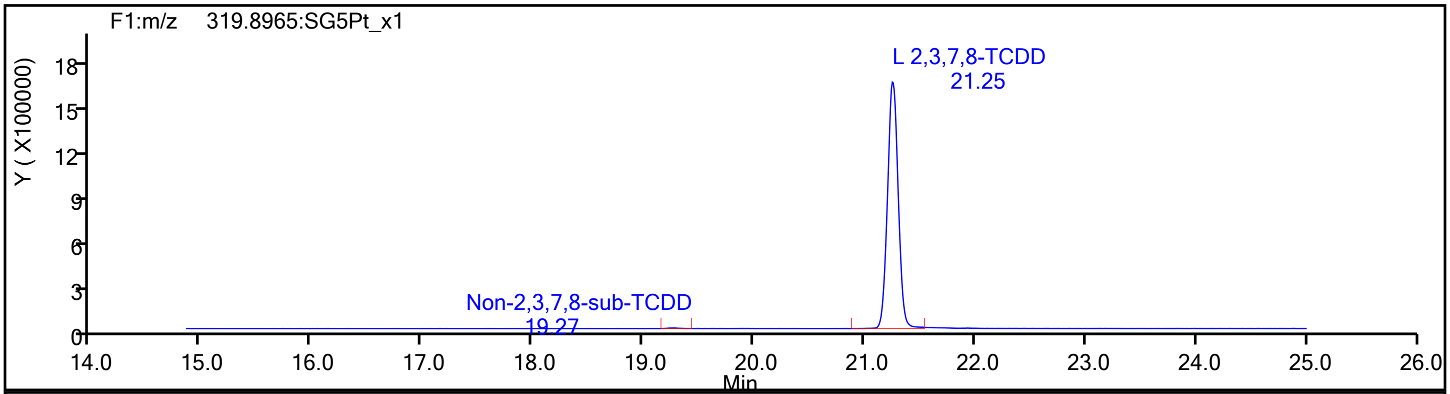

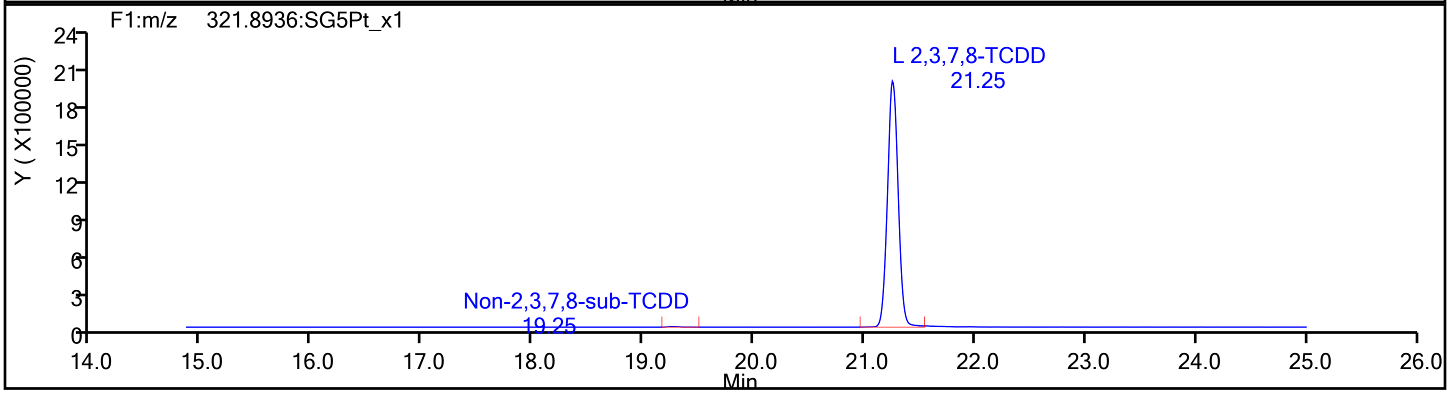

TCDD Standards

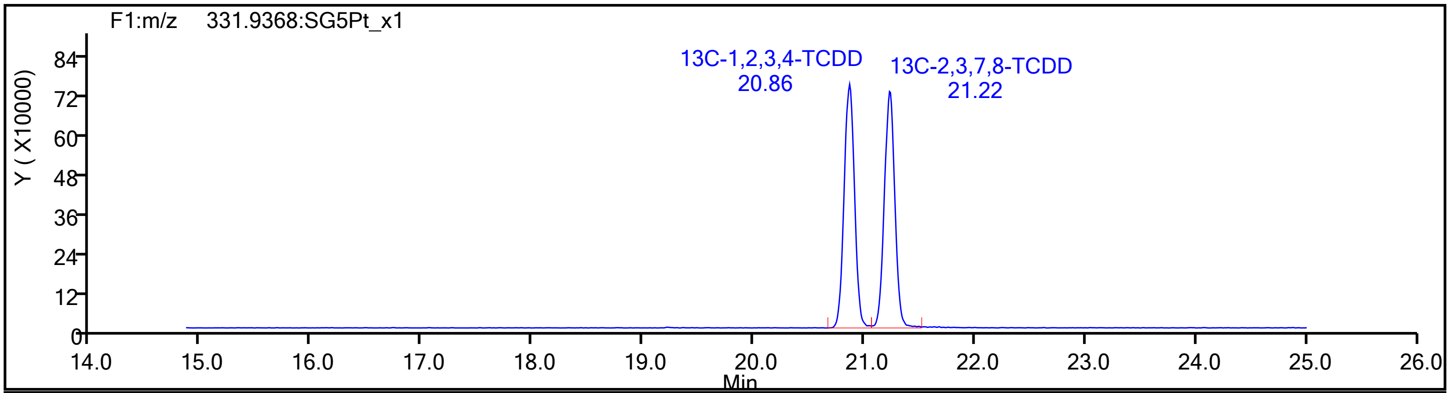

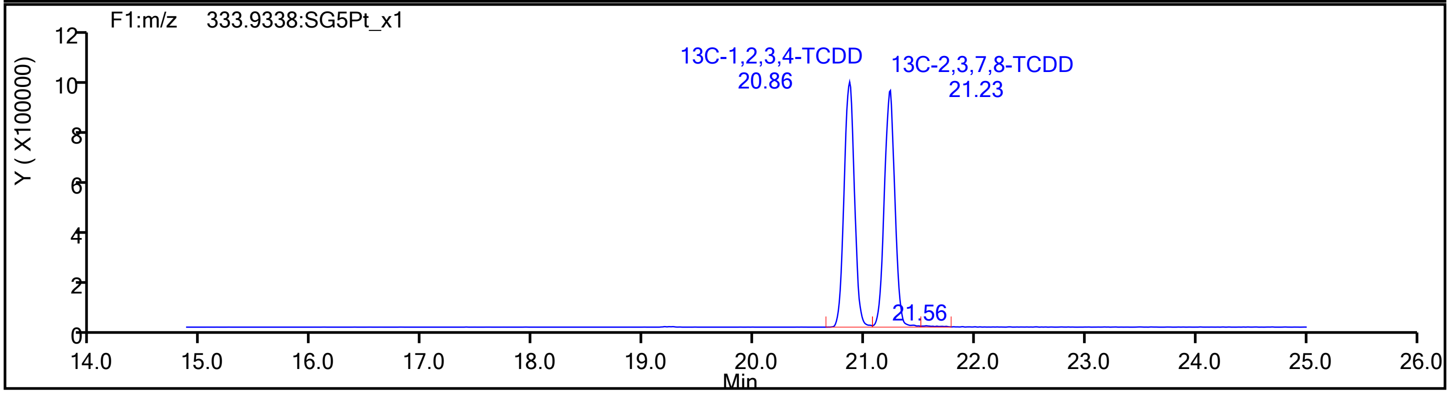

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

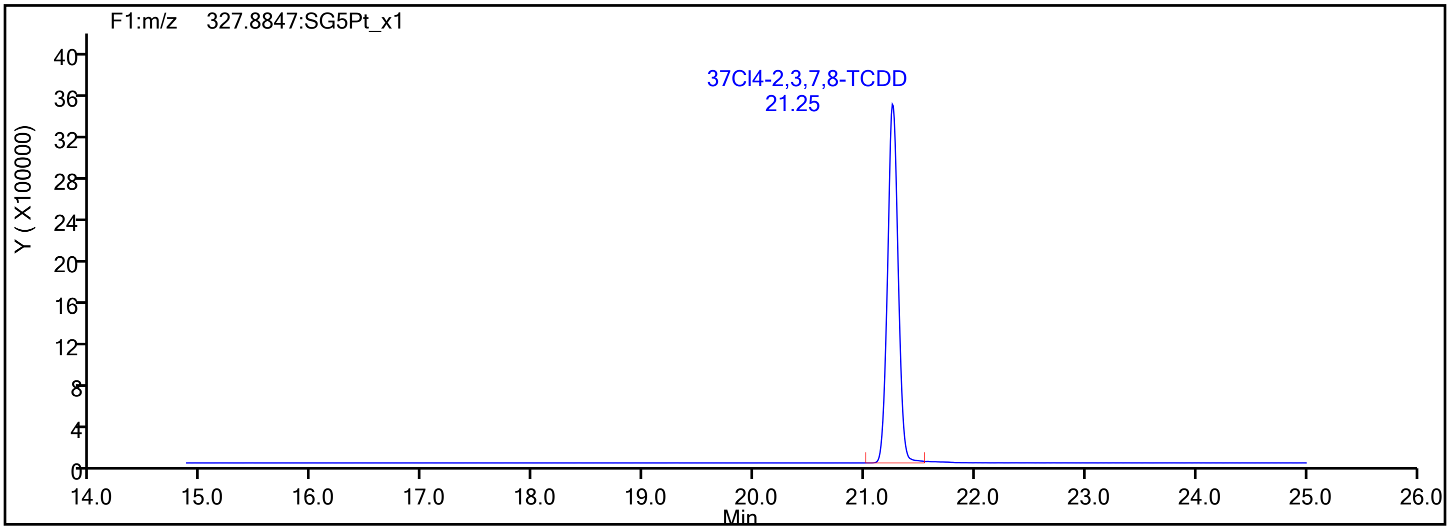

37Cl4-TCDD Standards

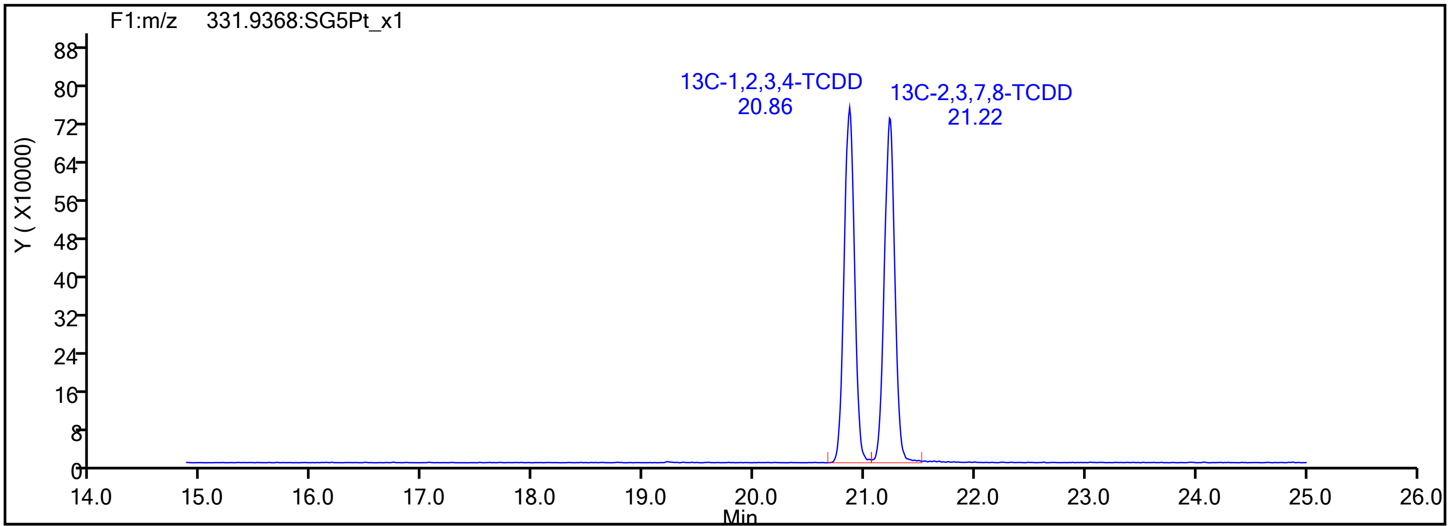

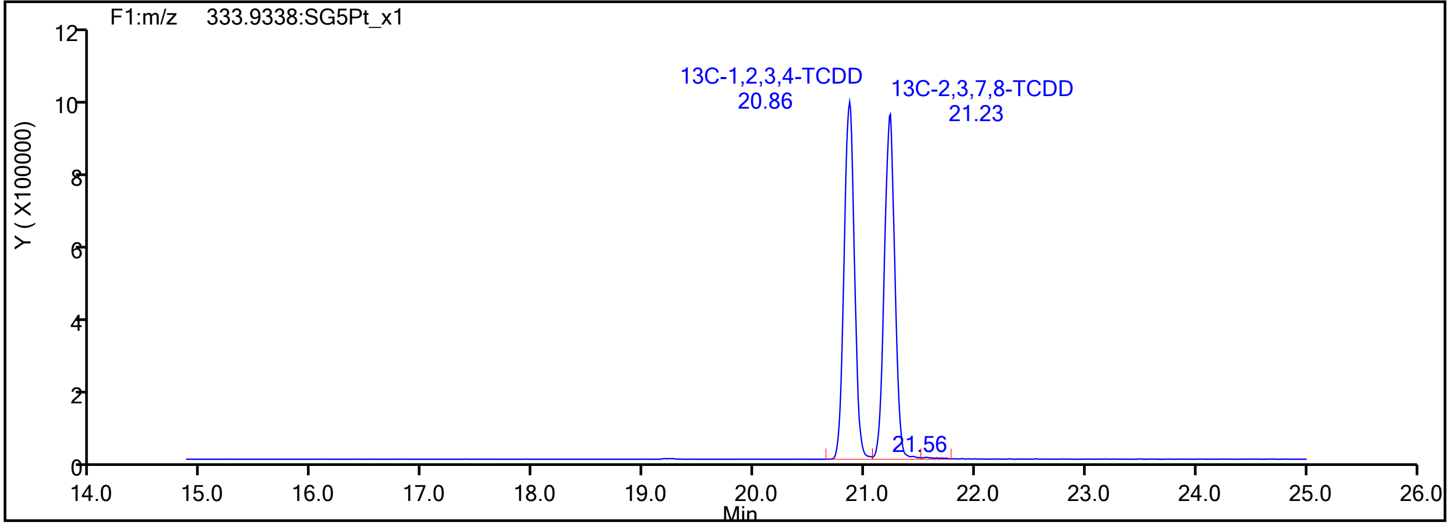

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

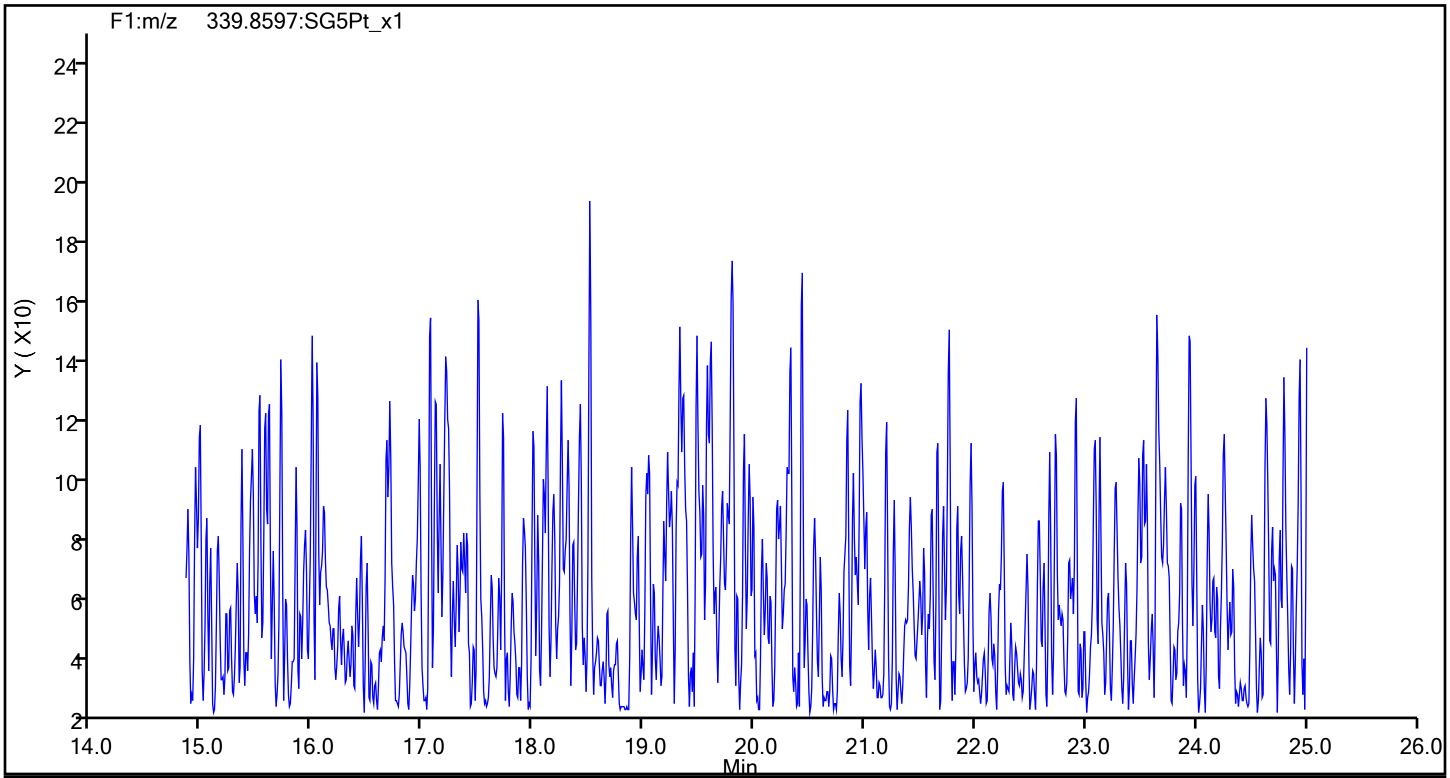

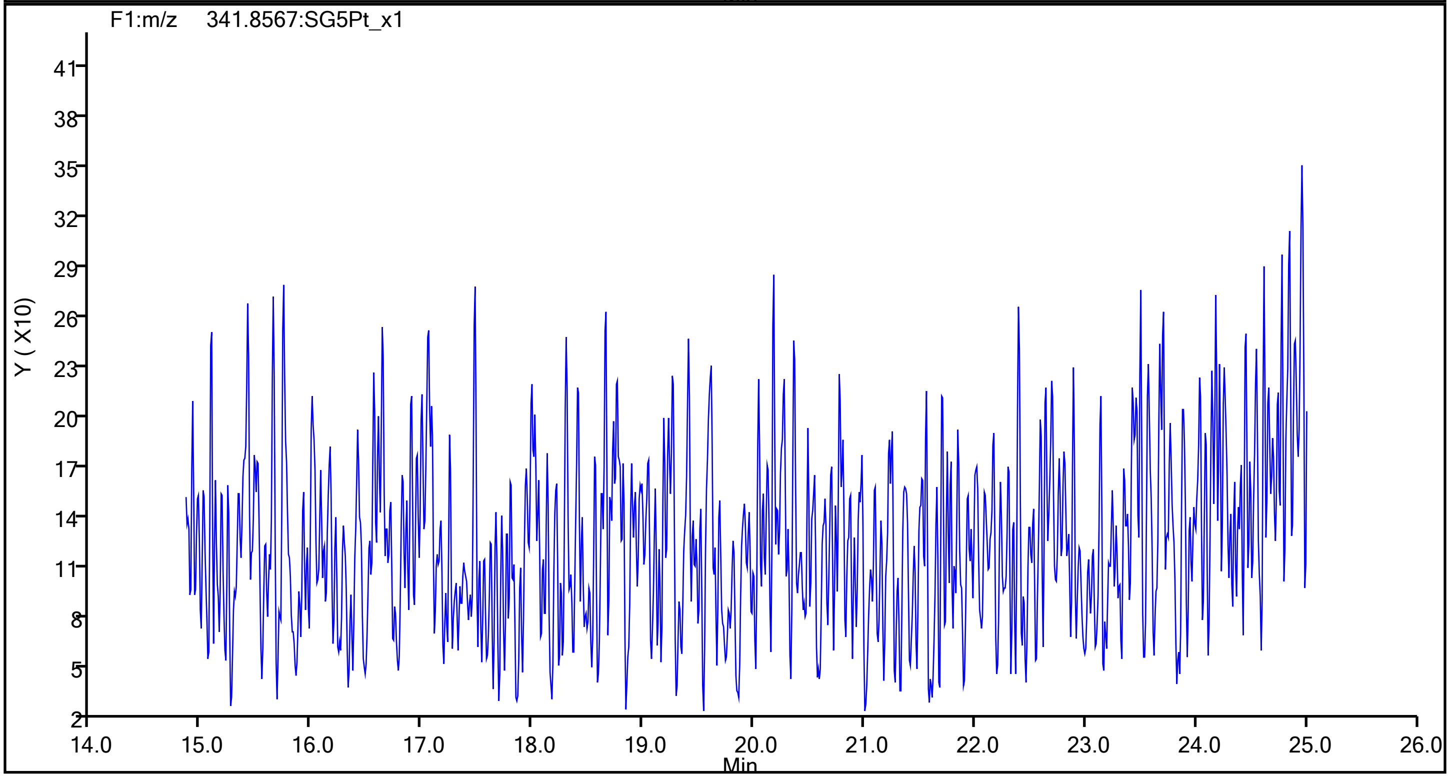

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

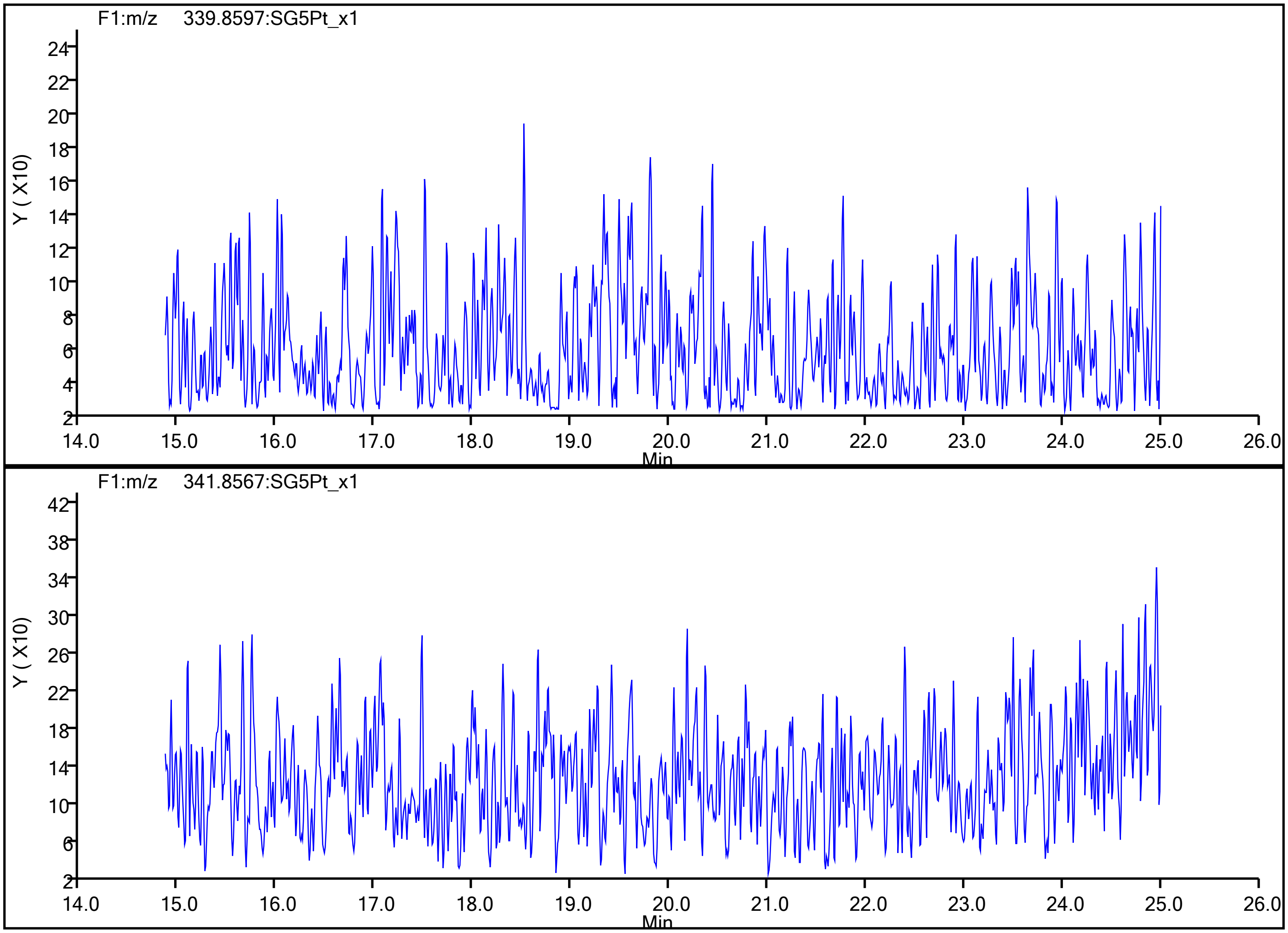

F1 PeCDFs Interference Mass

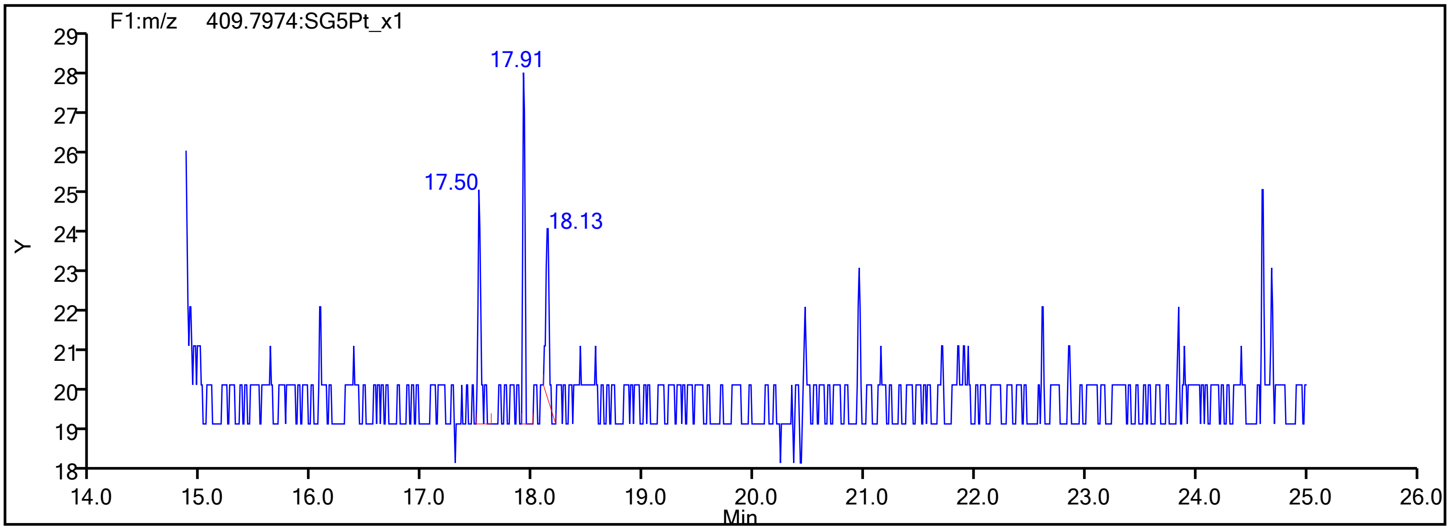

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Eurofins TestAmerica, Sacramento

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PeCDF

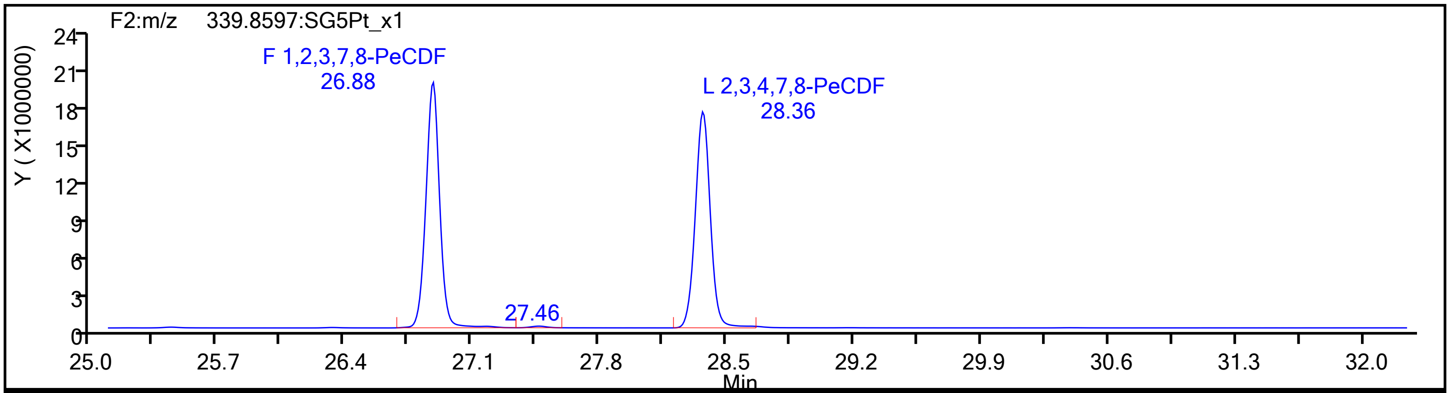

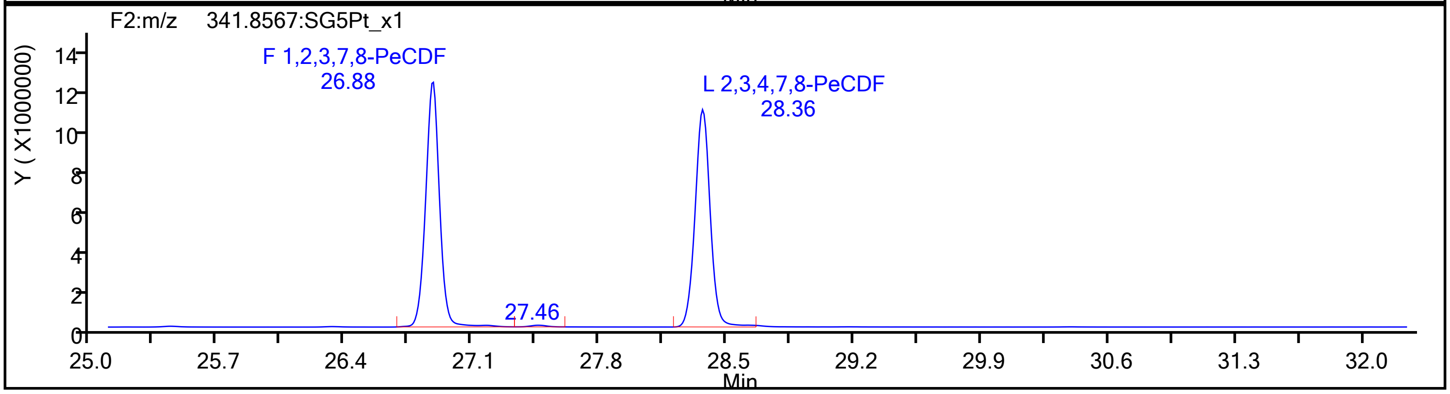

PeCDF Standards

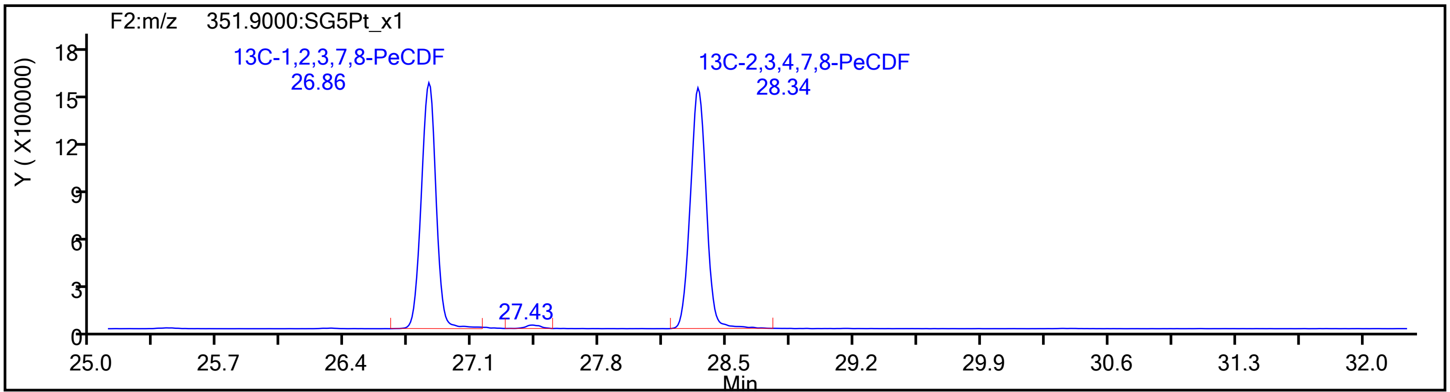

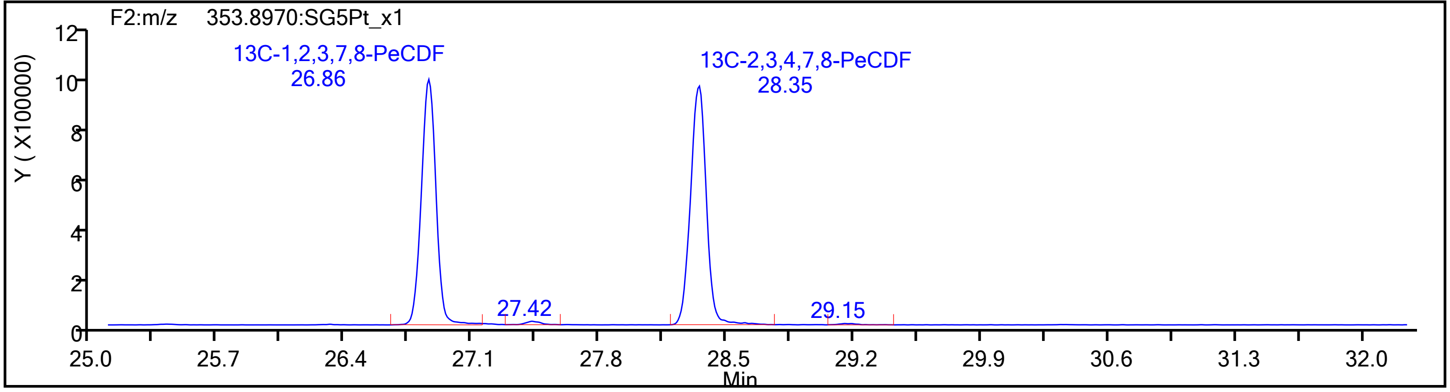

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

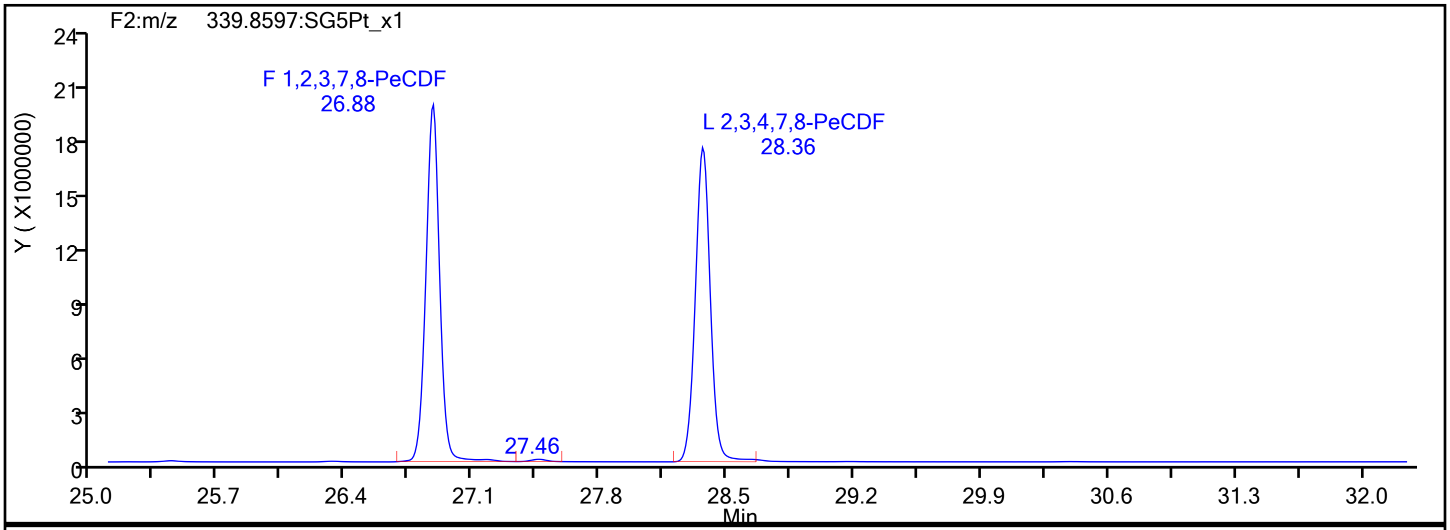

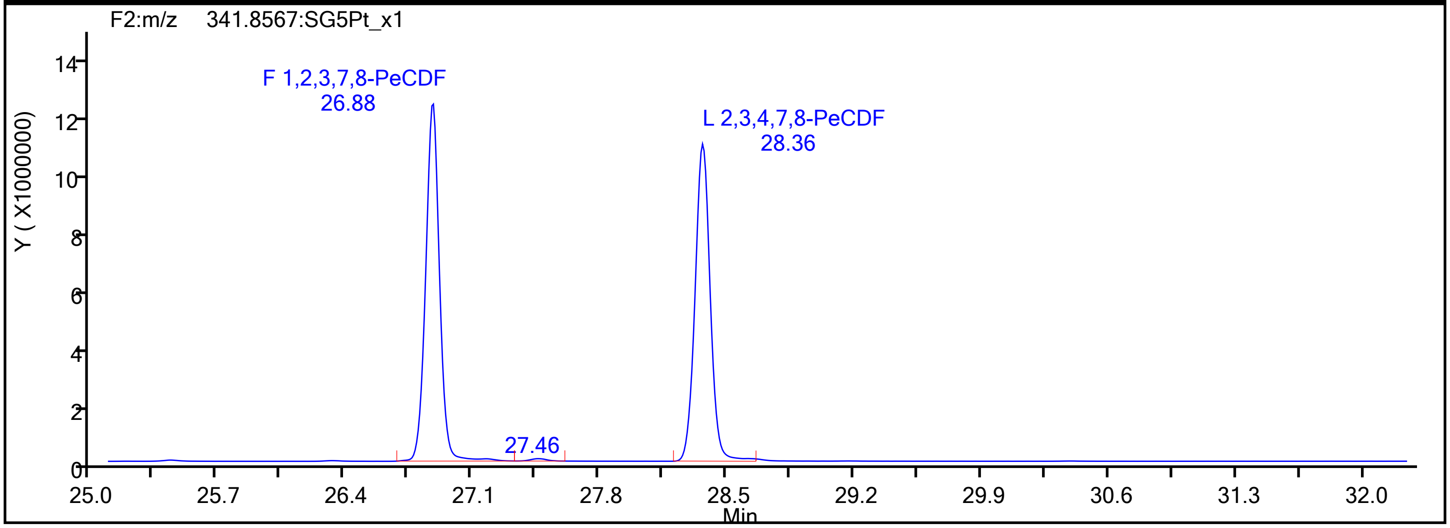

PeCDF Interference Mass

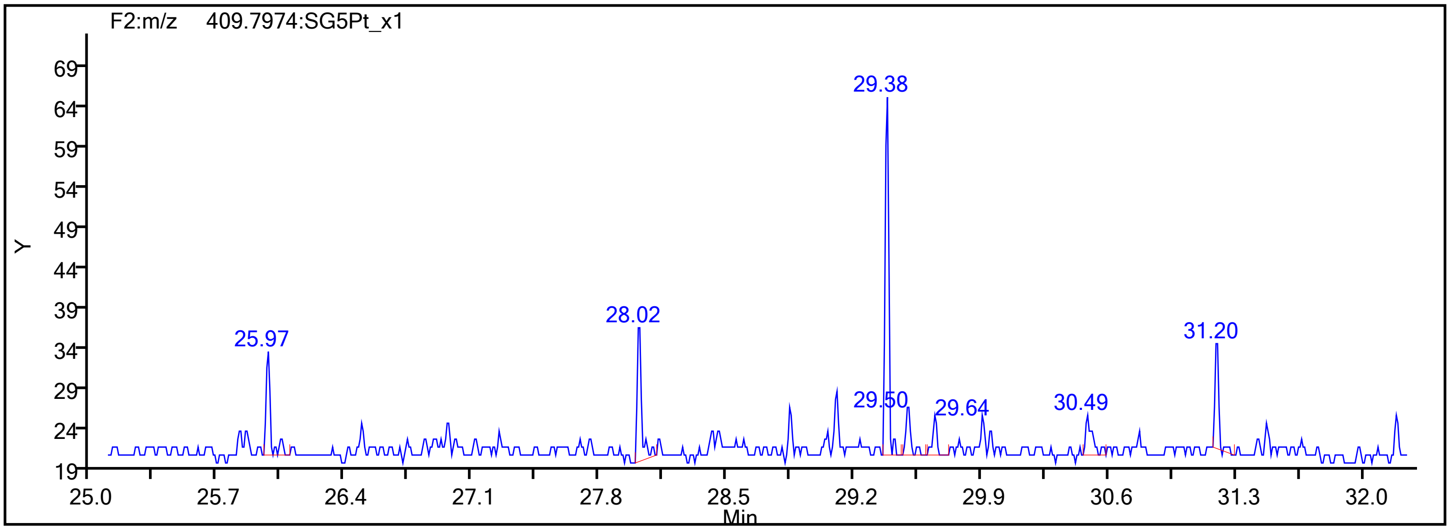

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Eurofins TestAmerica, Sacramento

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PeCDD

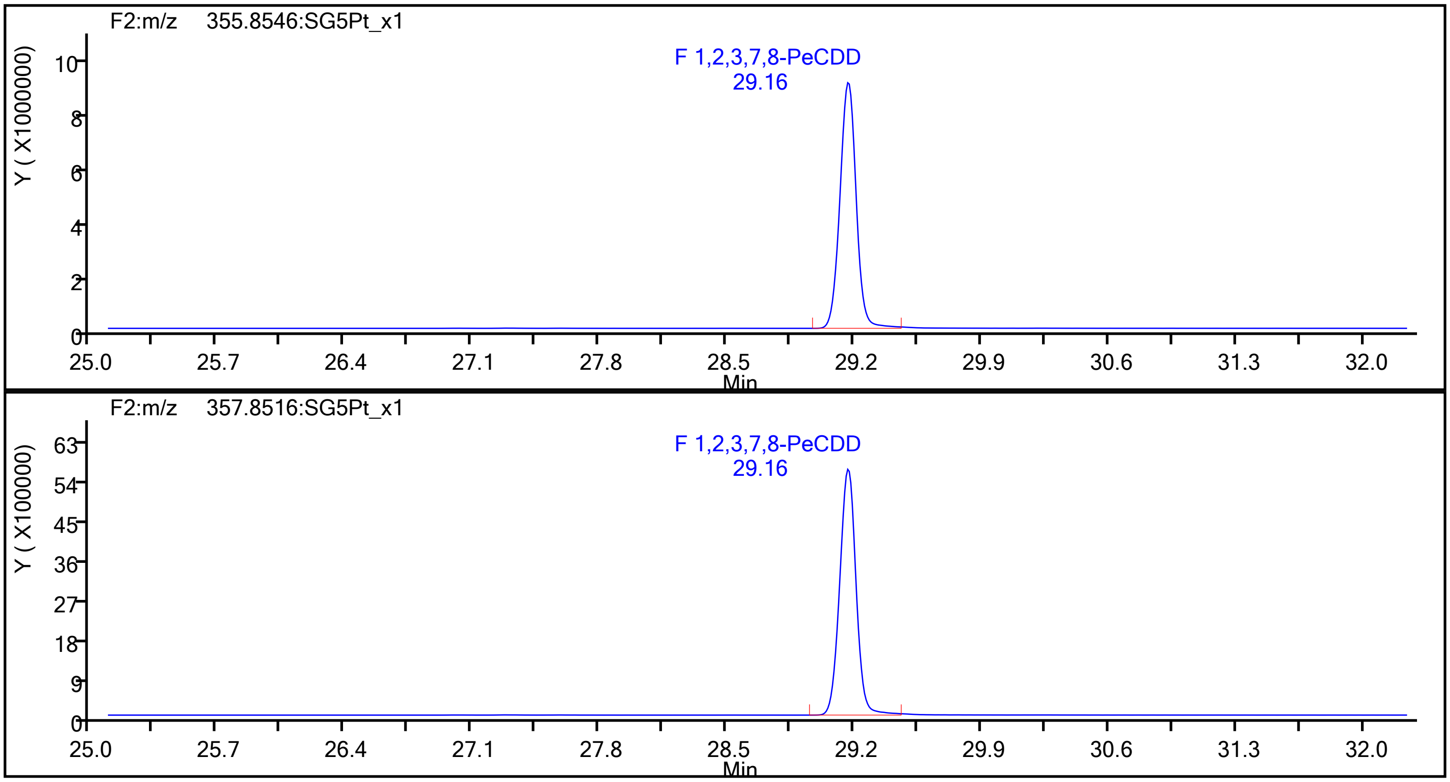

PeCDD Standards

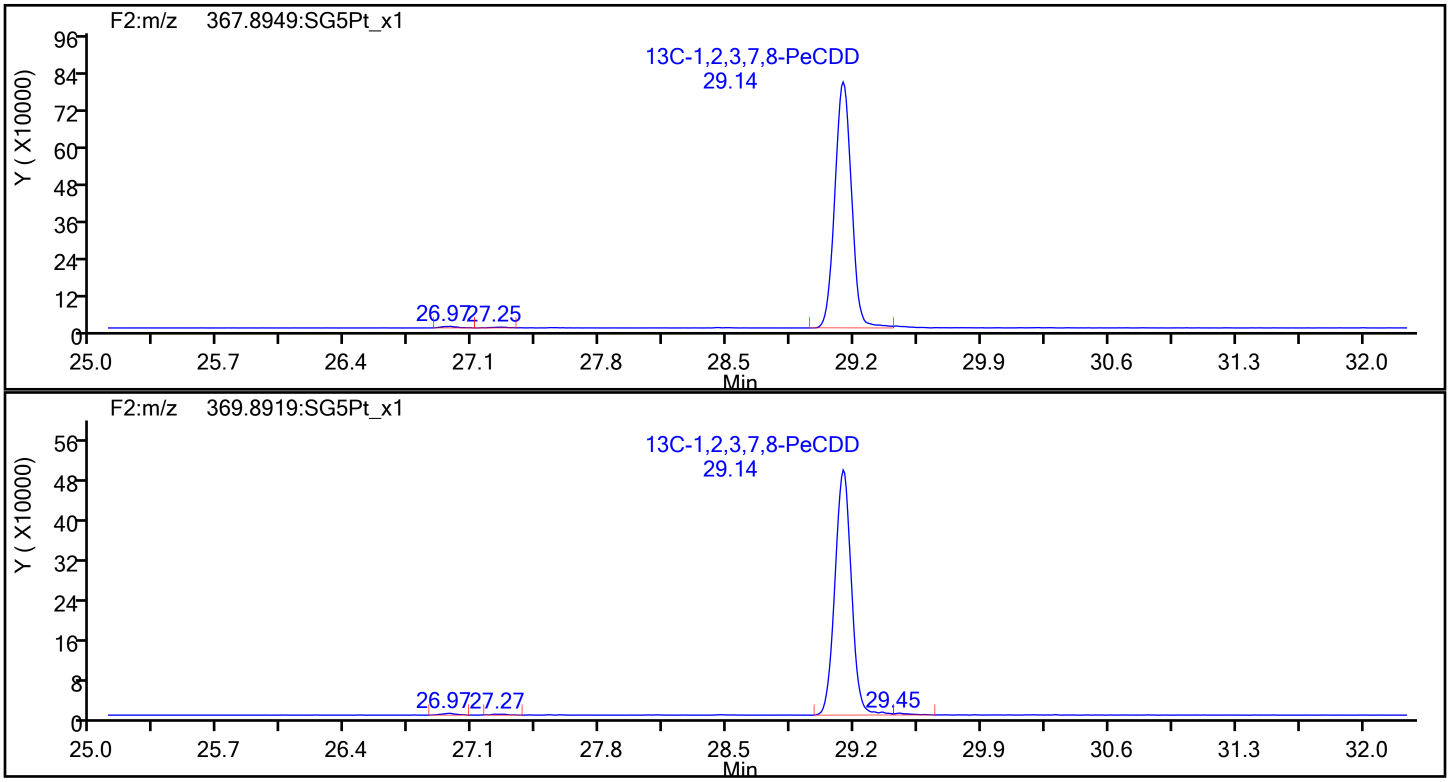

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Eurofins TestAmerica, Sacramento

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HxCDF

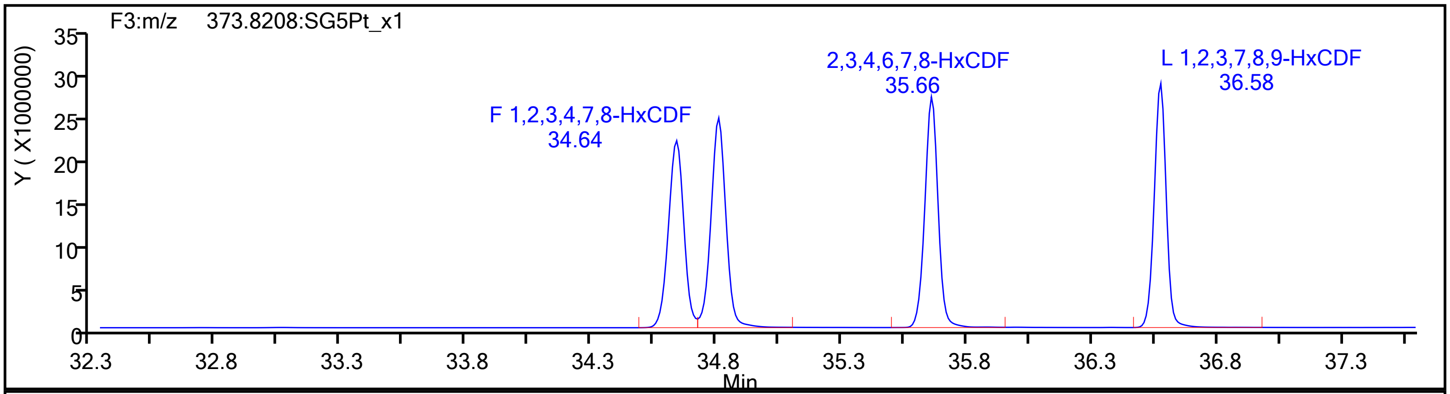

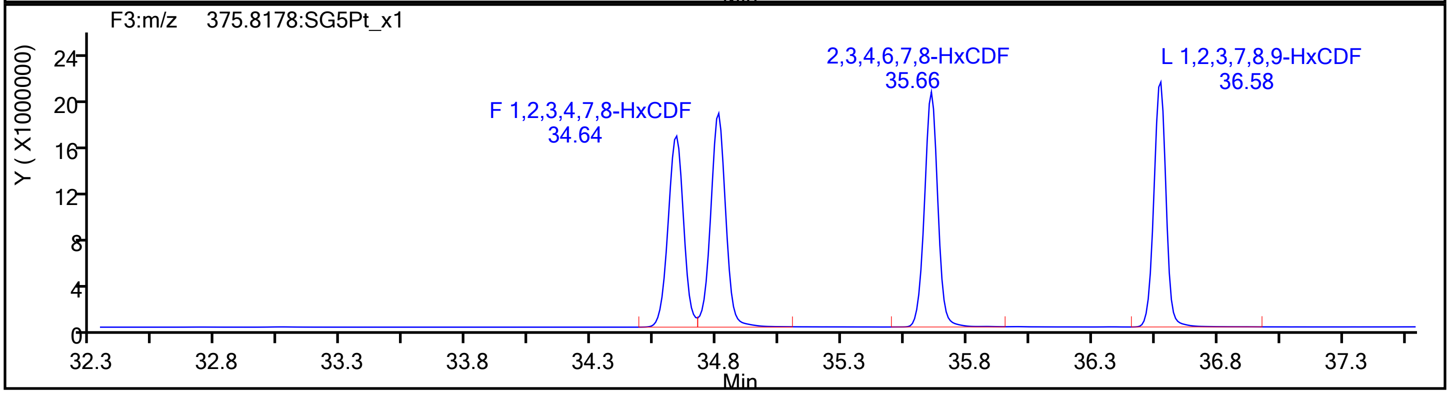

HxCDF Standards

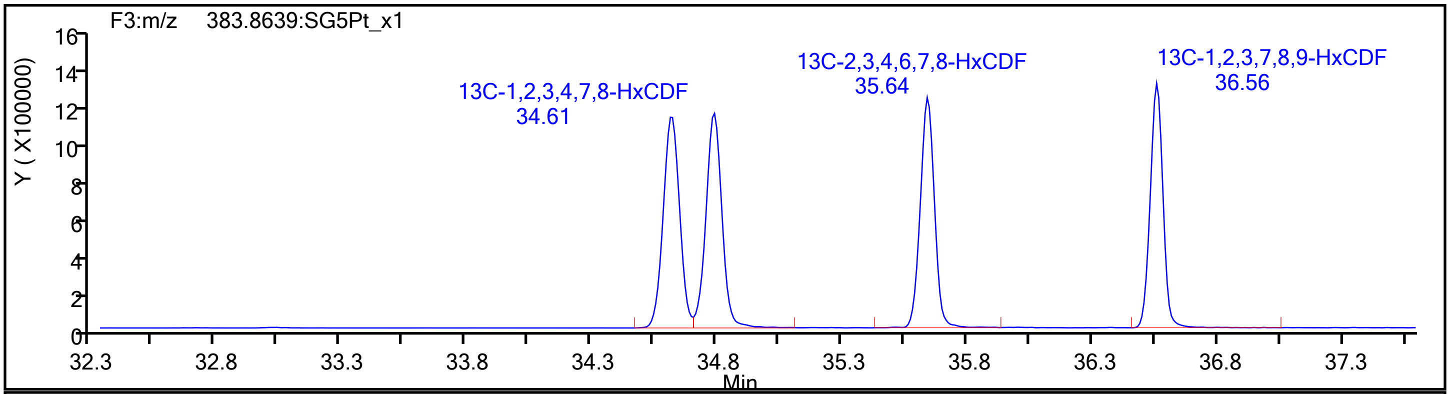

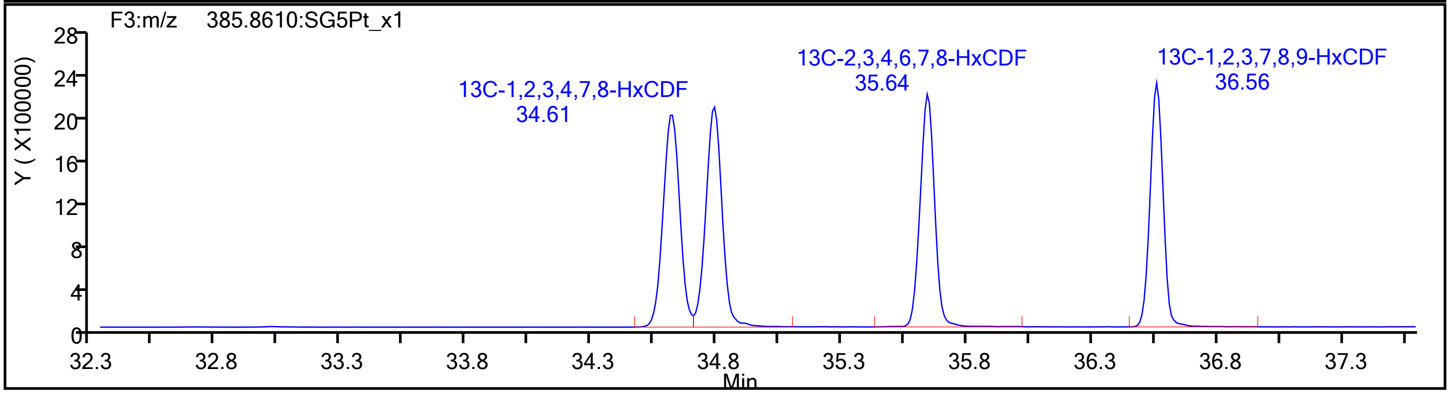

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Eurofins TestAmerica, Sacramento

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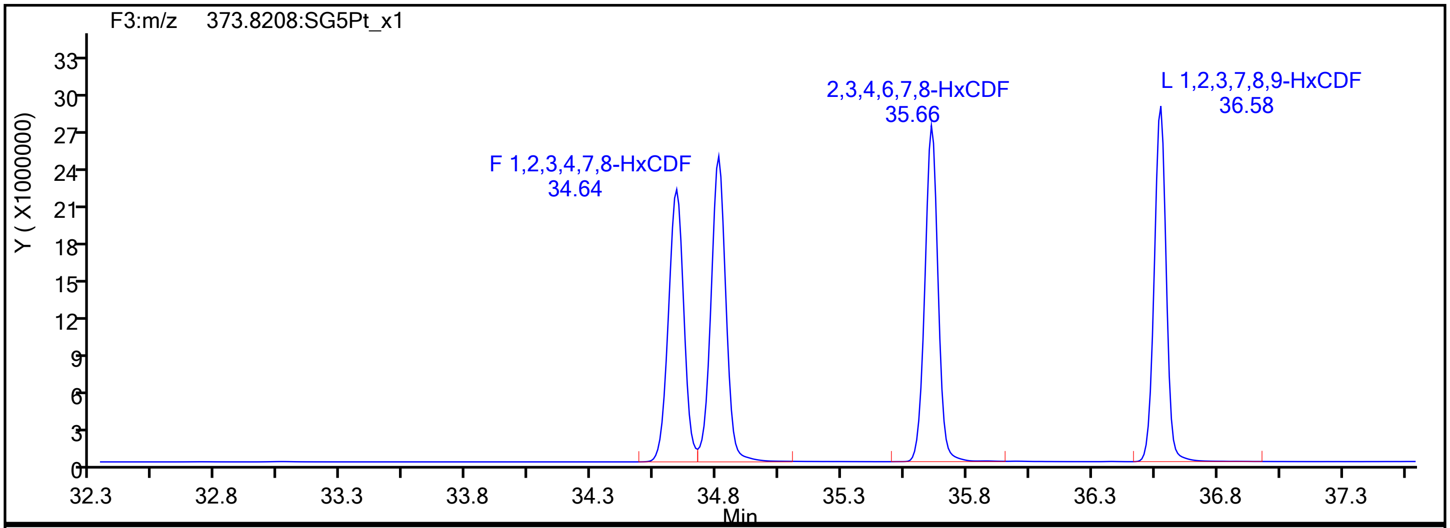

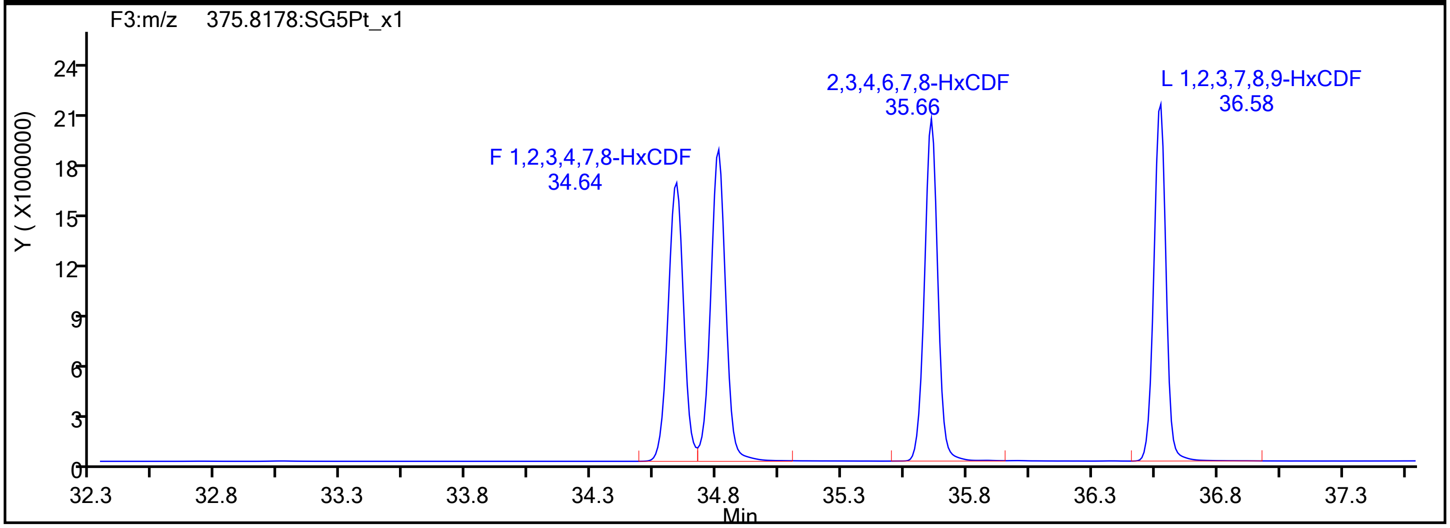

HxCDF Interference Mass

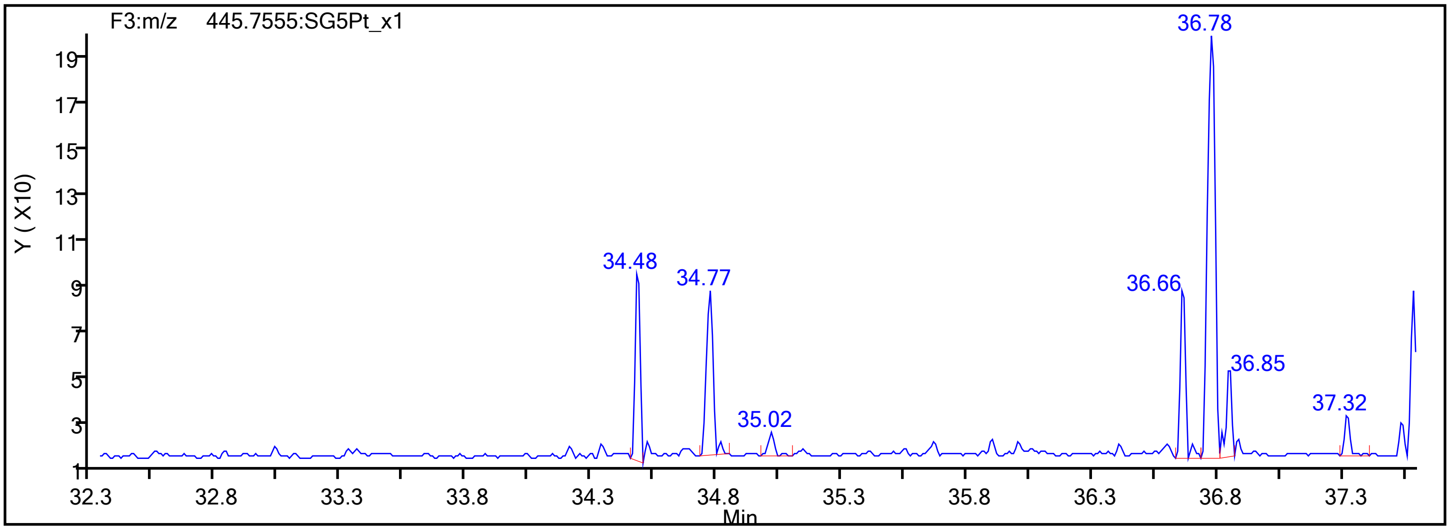

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDD

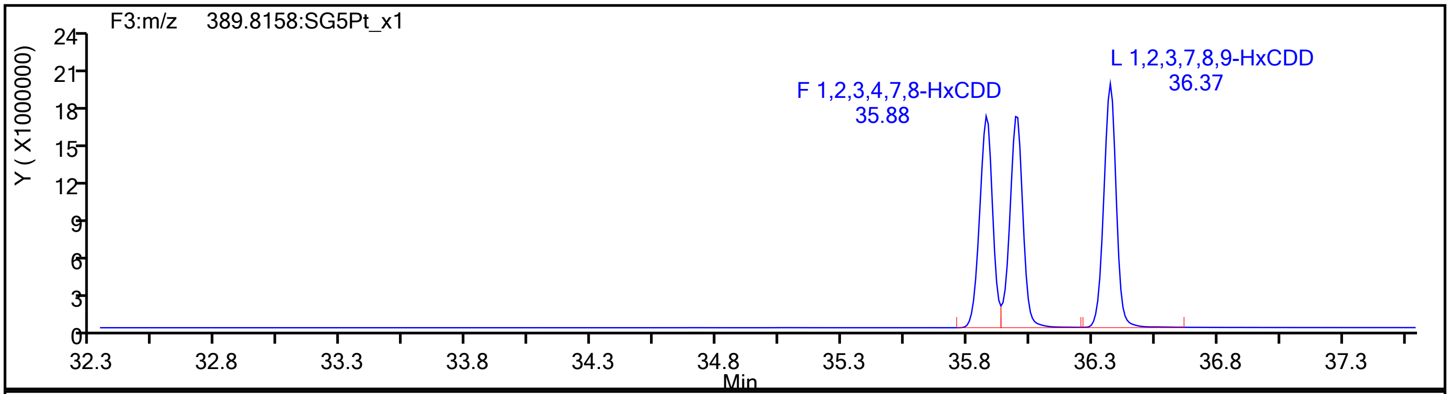

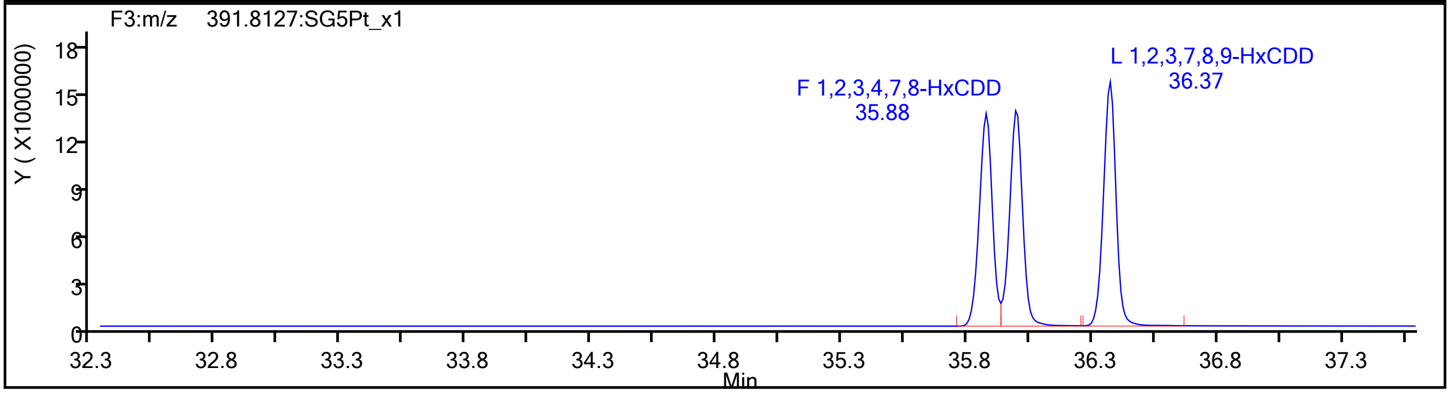

HxCDD Standards

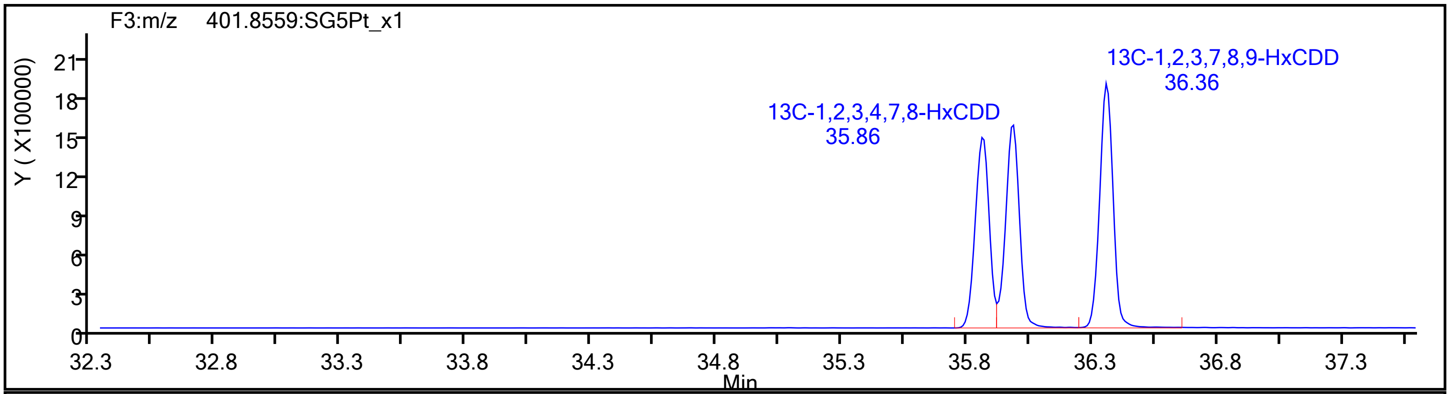

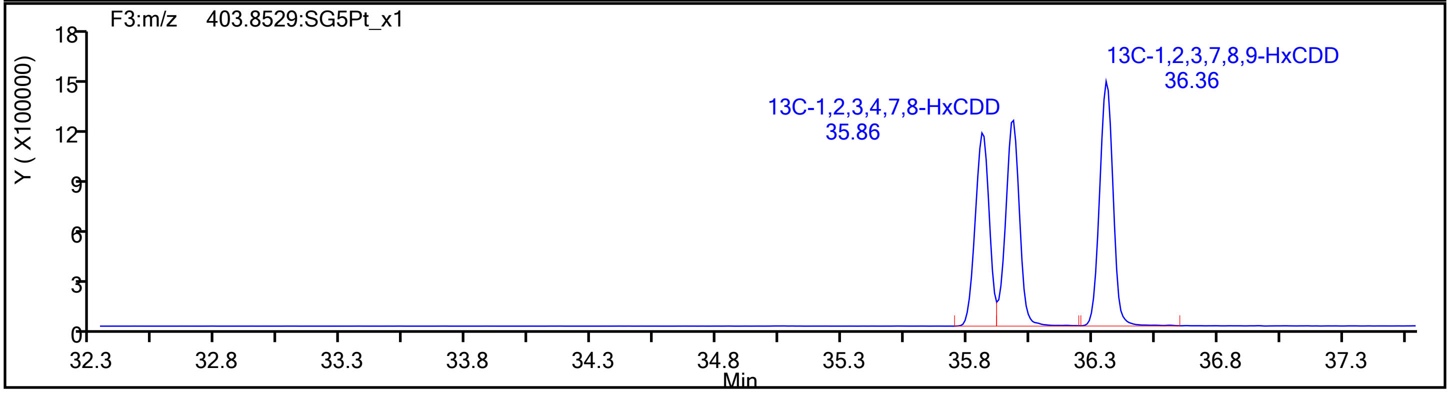

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

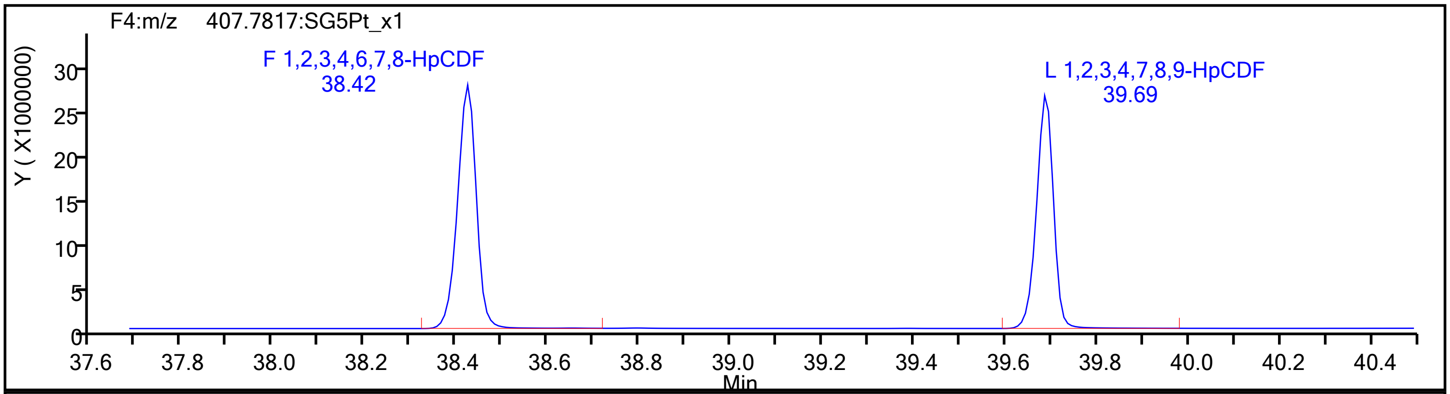

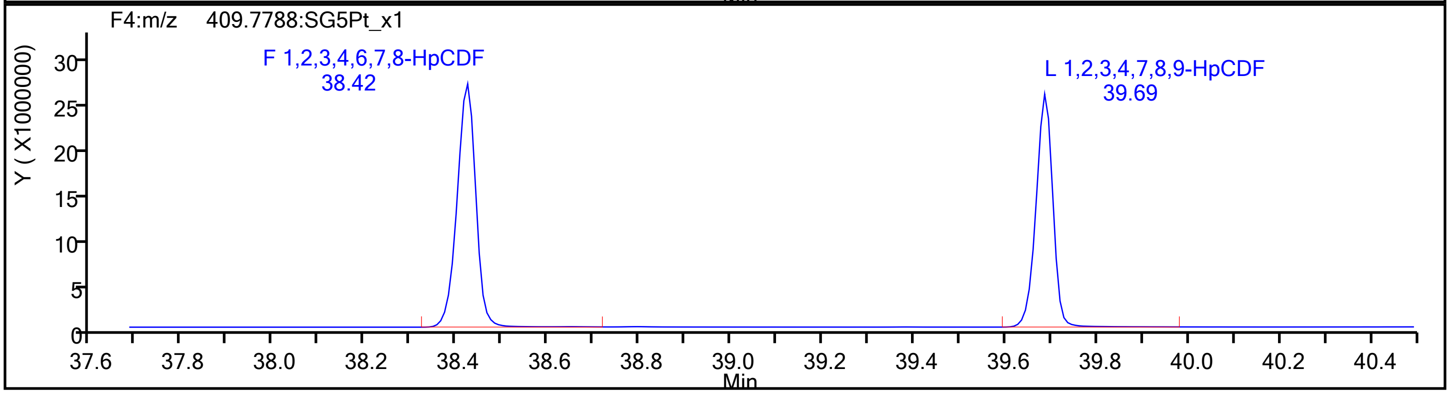

HpCDF Standards

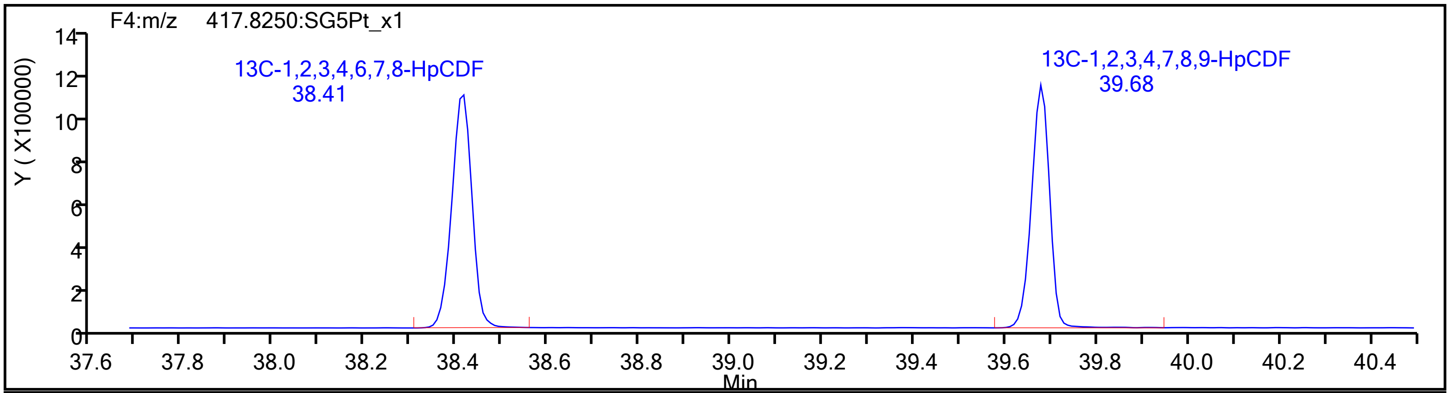

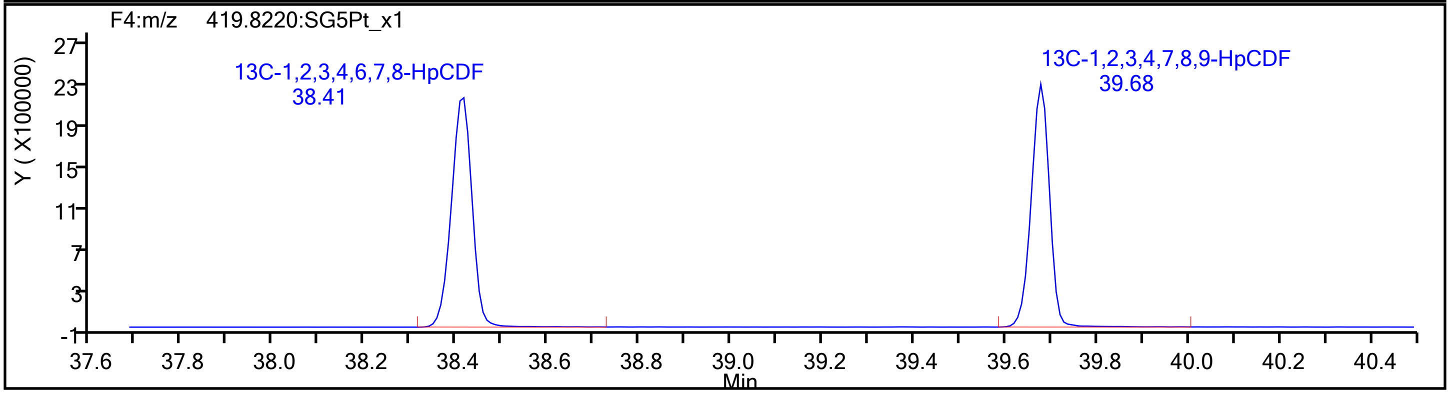

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

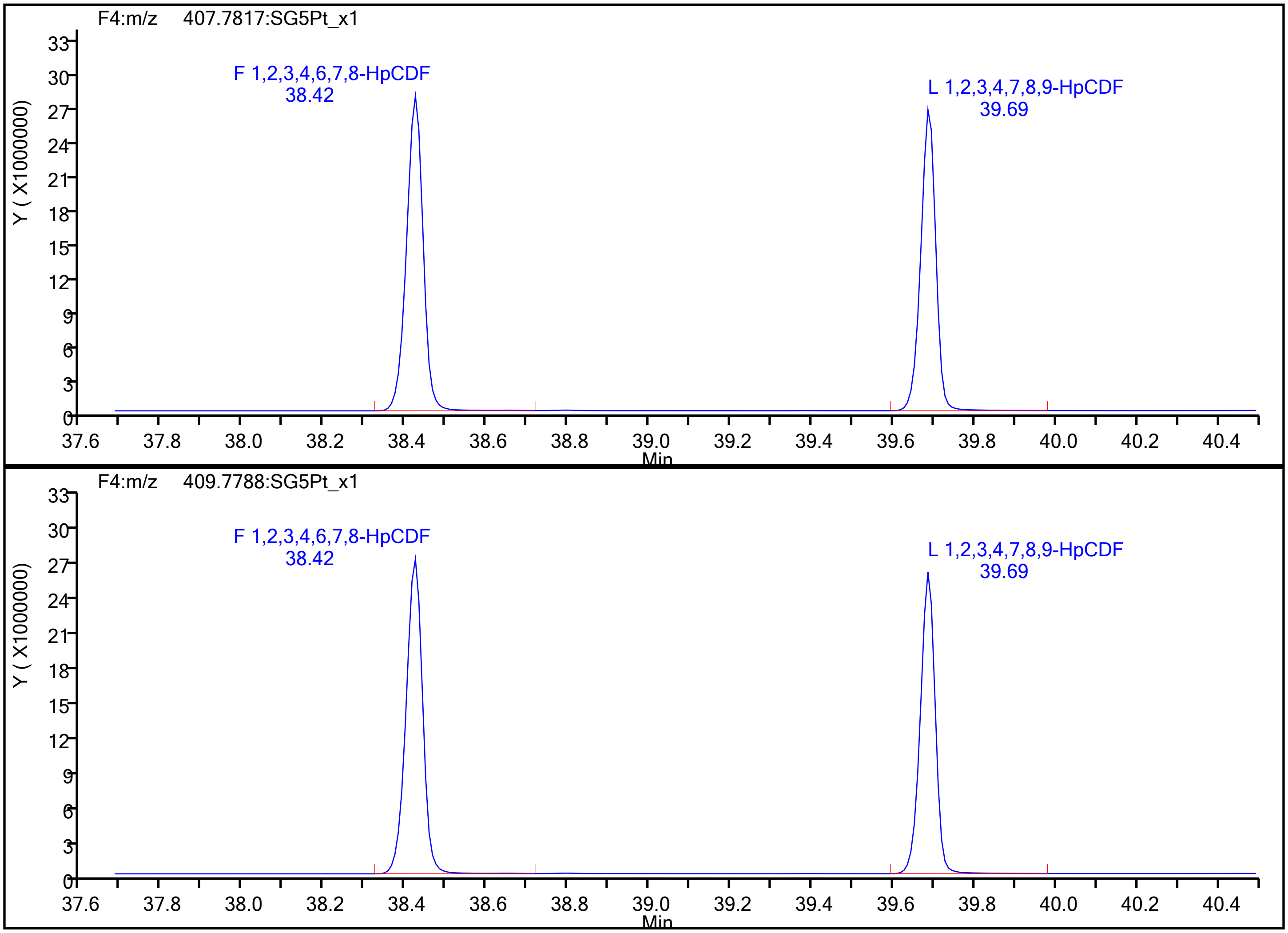

HpCDF Interference Mass

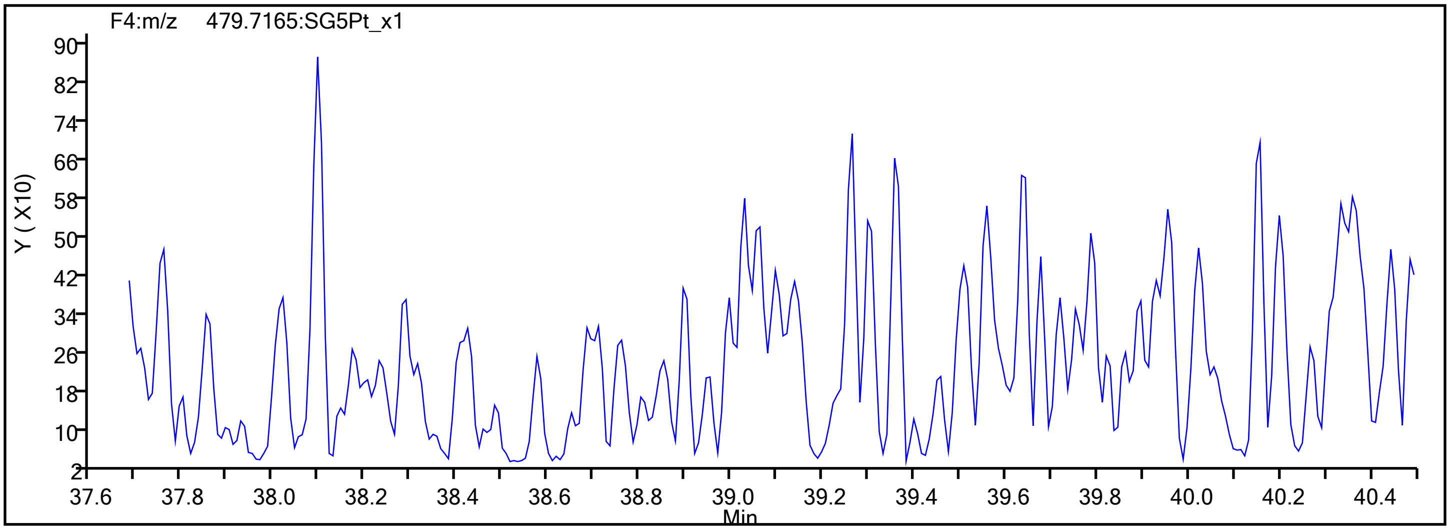

Report Date: 03-Feb-2021 14:46:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Injection Date: 03-Feb-2021 00:57:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

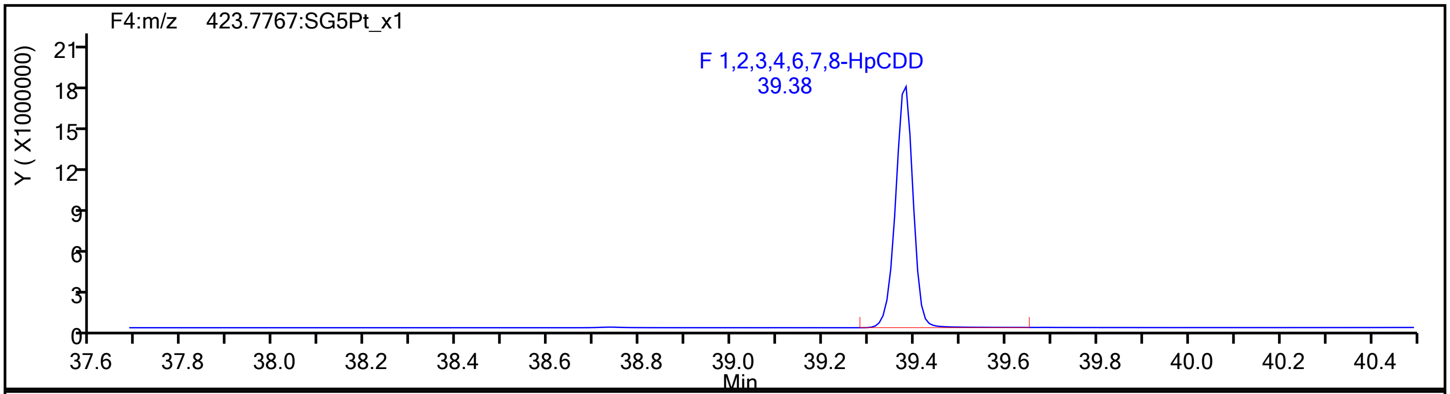

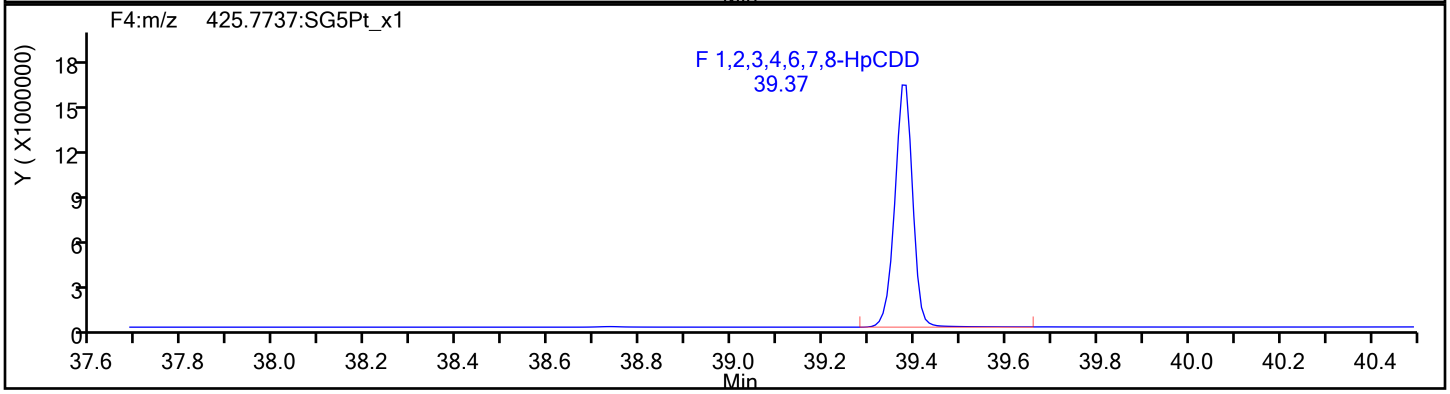

HpCDD Standards

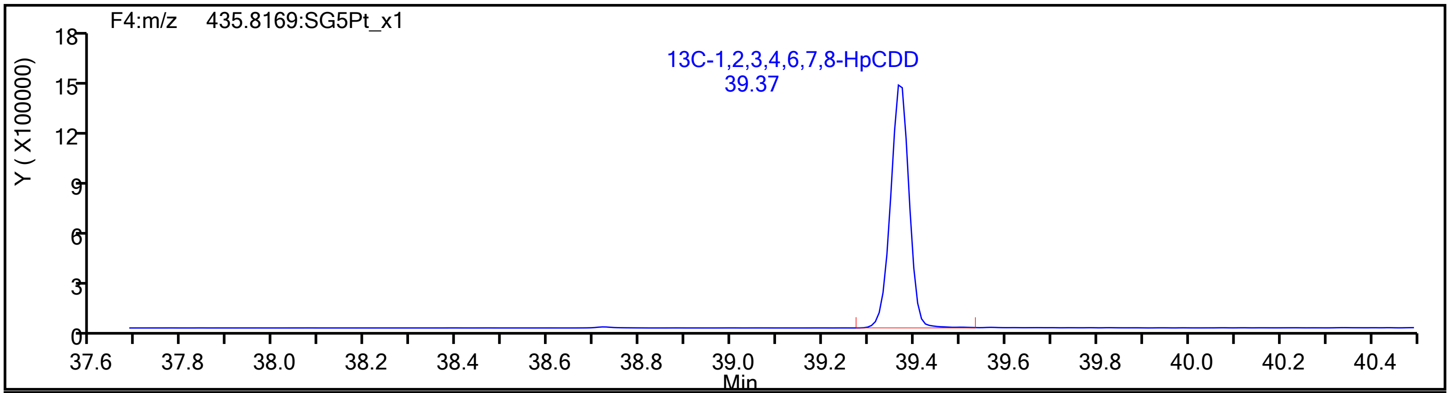

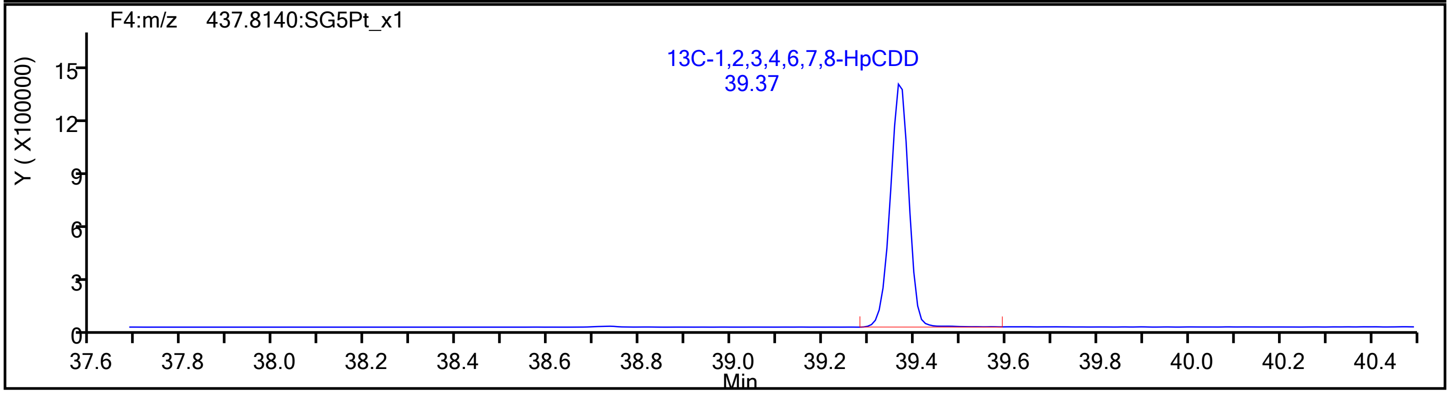

Report Date: 03-Feb-2021 14:46:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d		
Injection Date:	03-Feb-2021 00:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

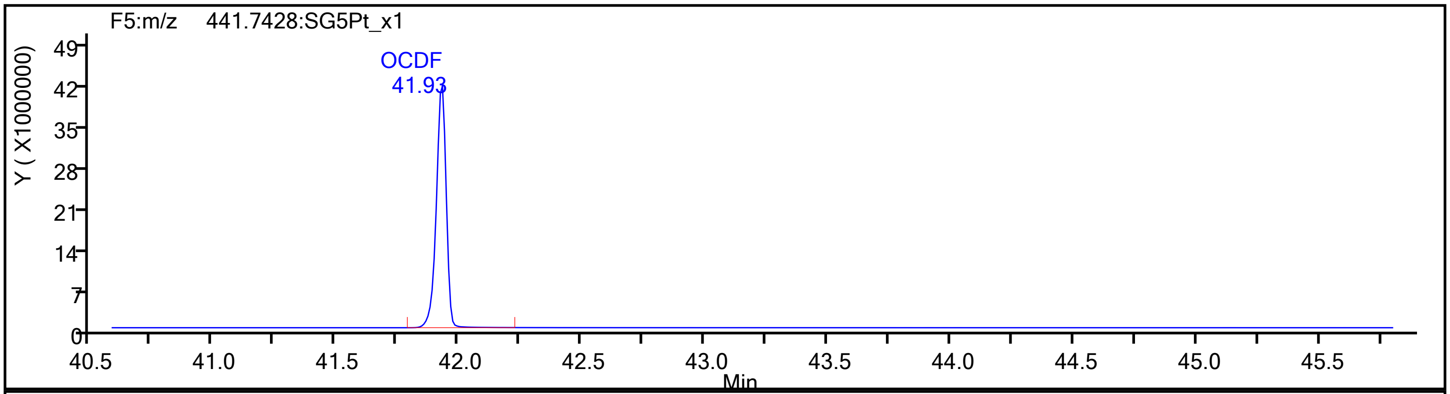

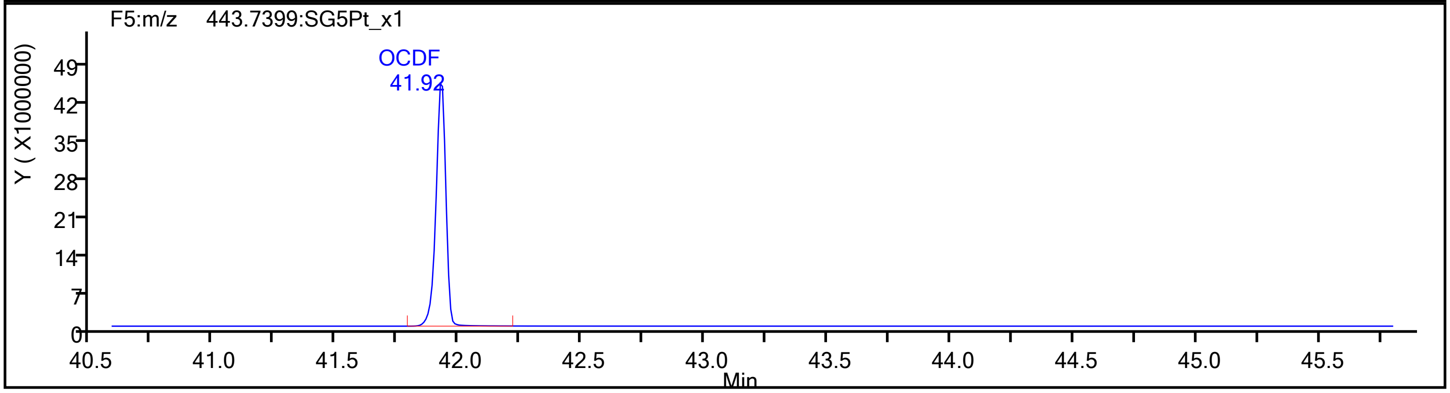

OCDF Standards

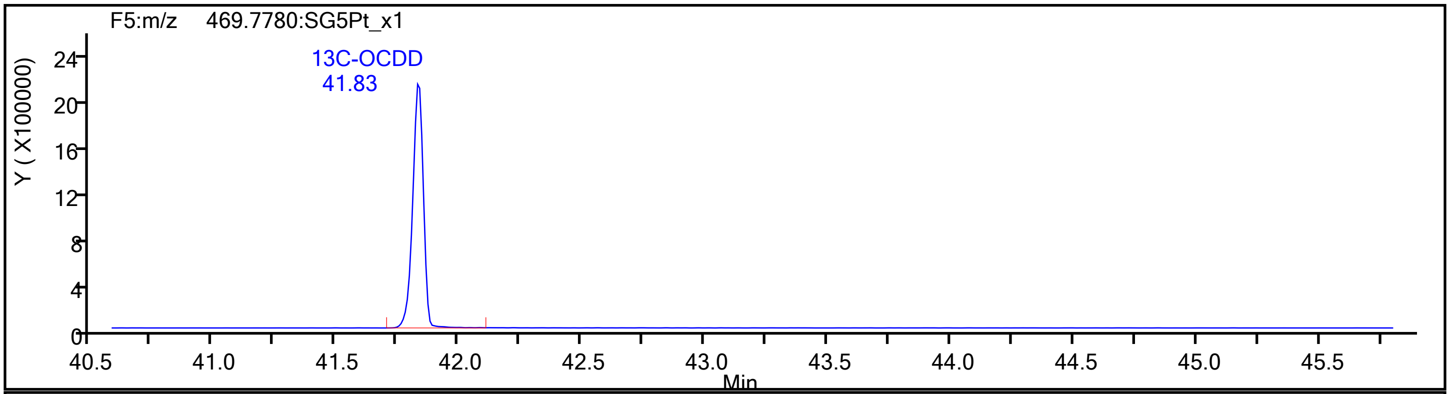

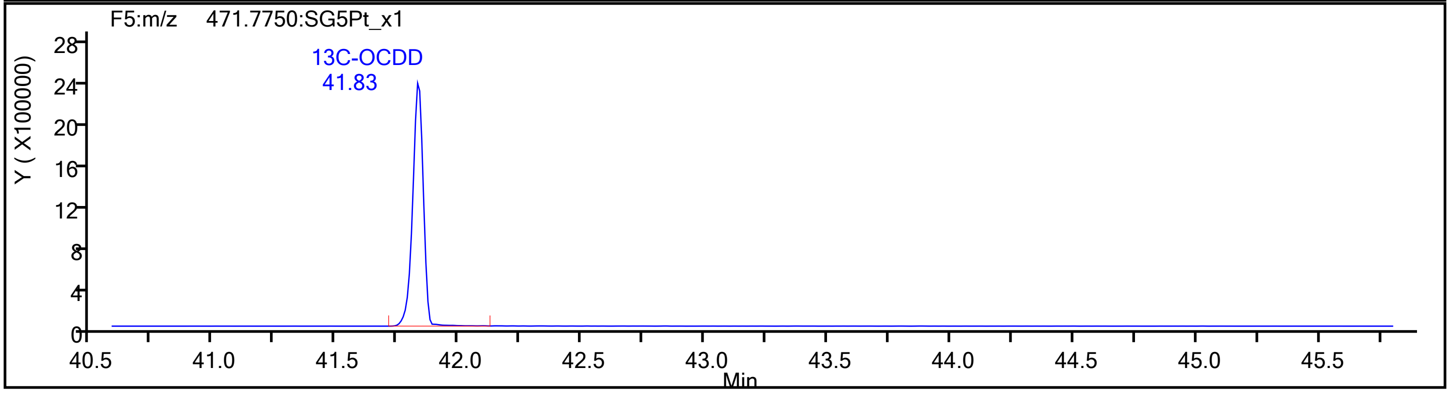

Report Date: 03-Feb-2021 14:46:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d		
Injection Date:	03-Feb-2021 00:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

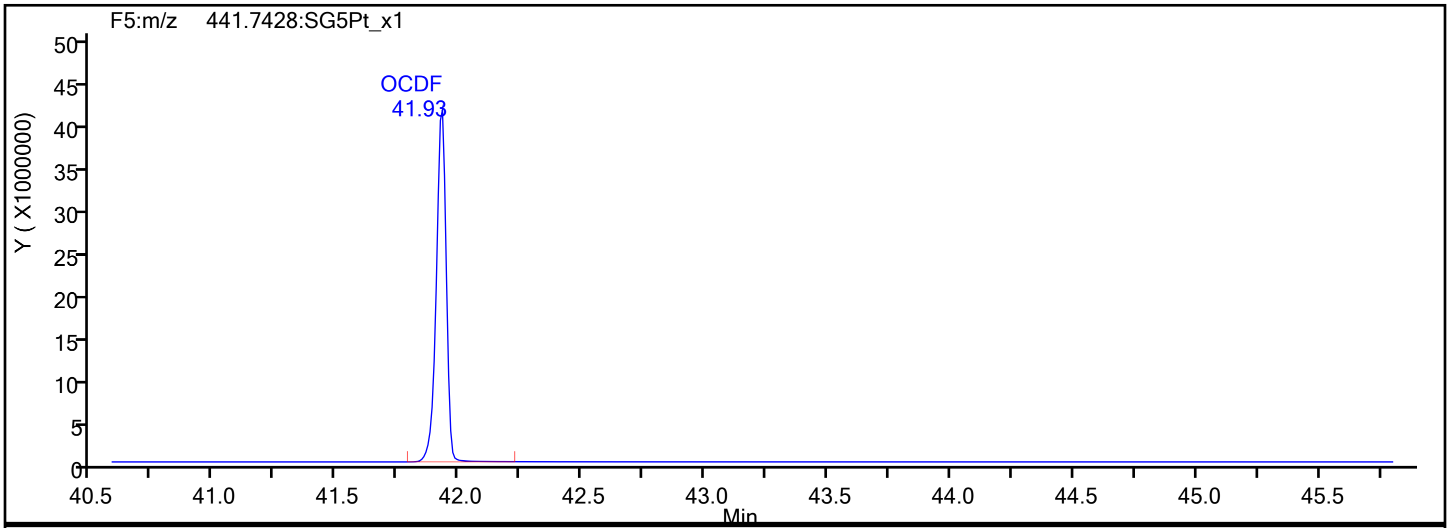

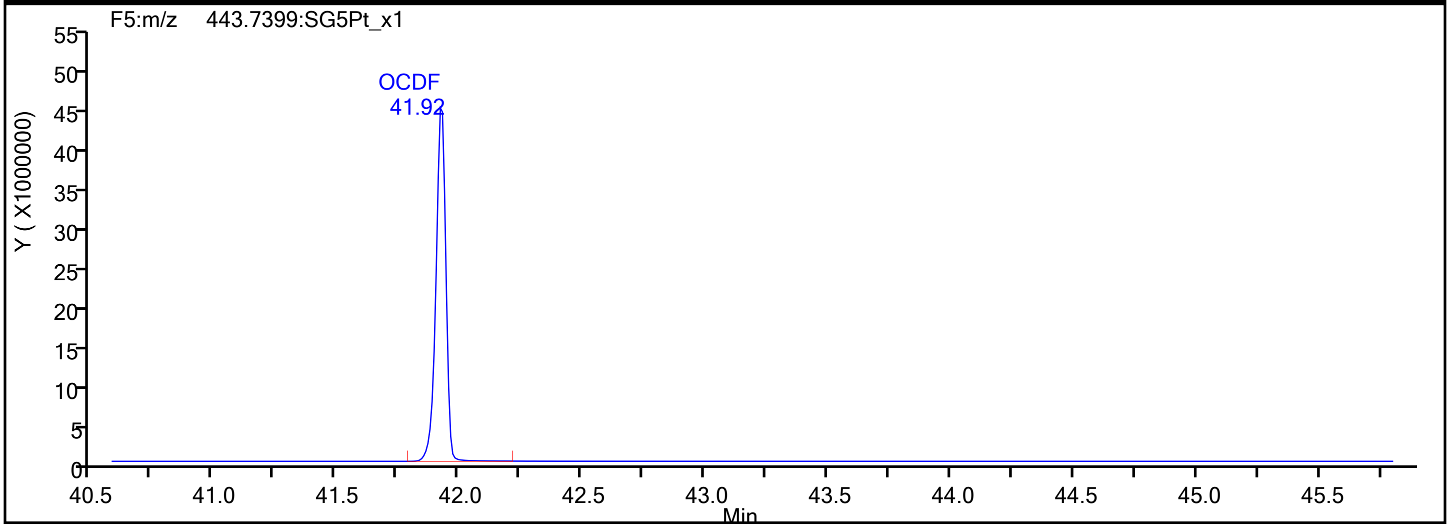

OCDF Interference Mass

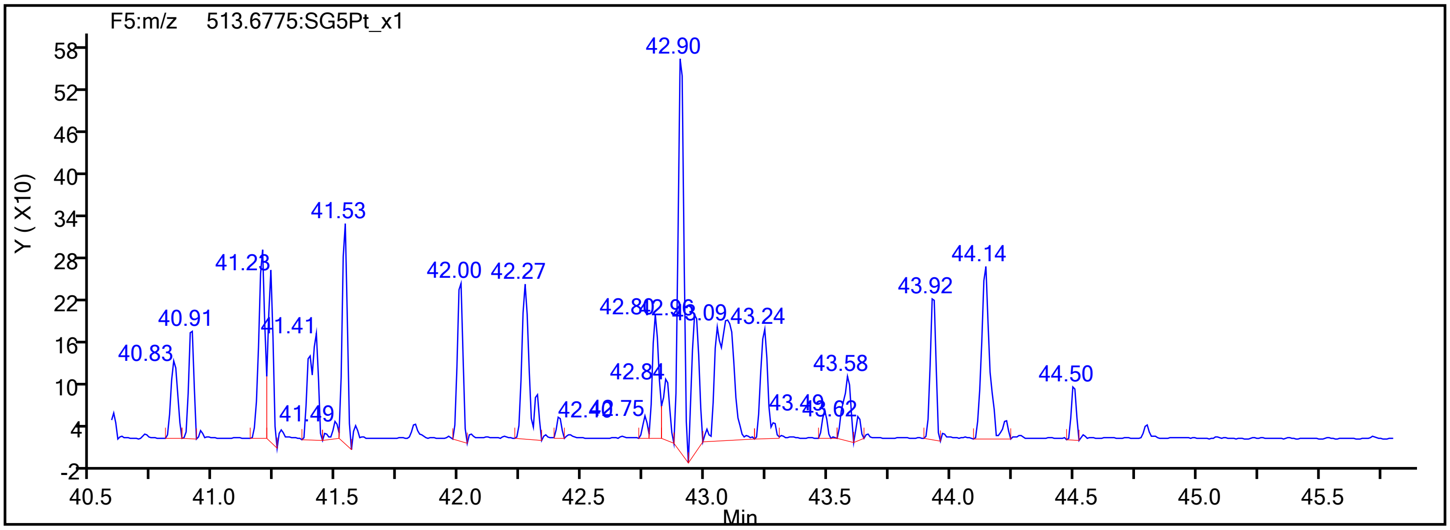

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

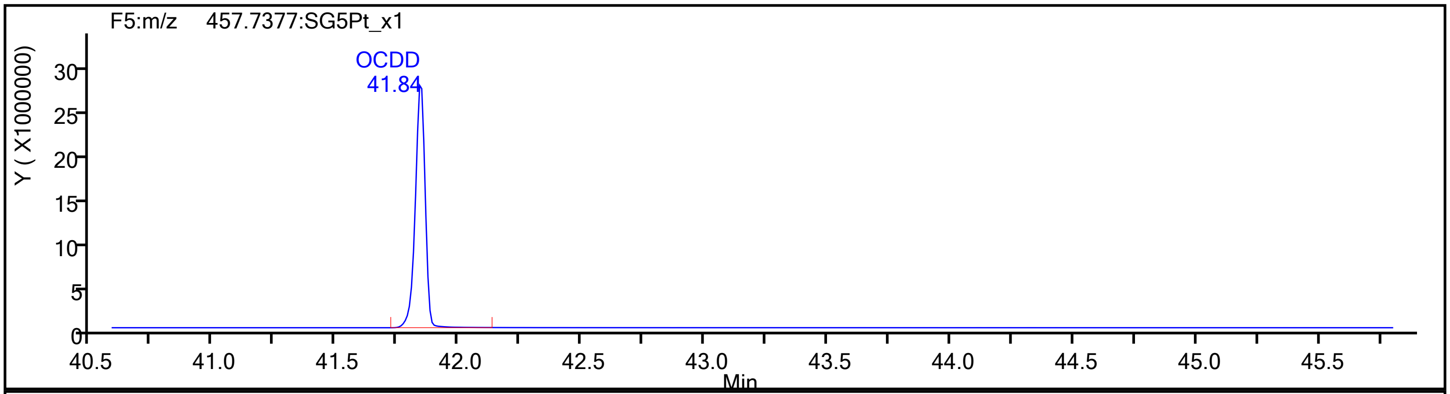

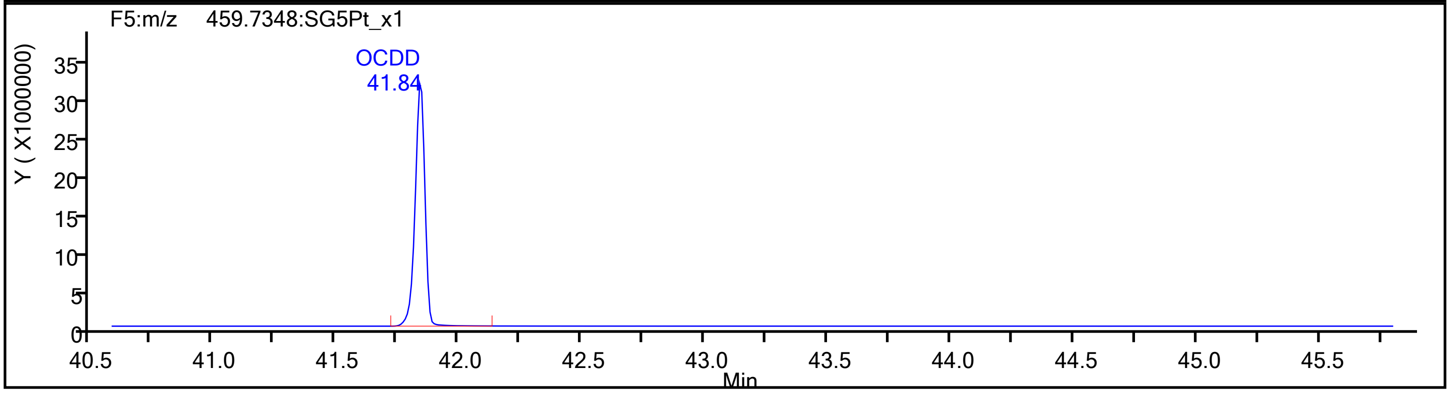

OCDD Standards

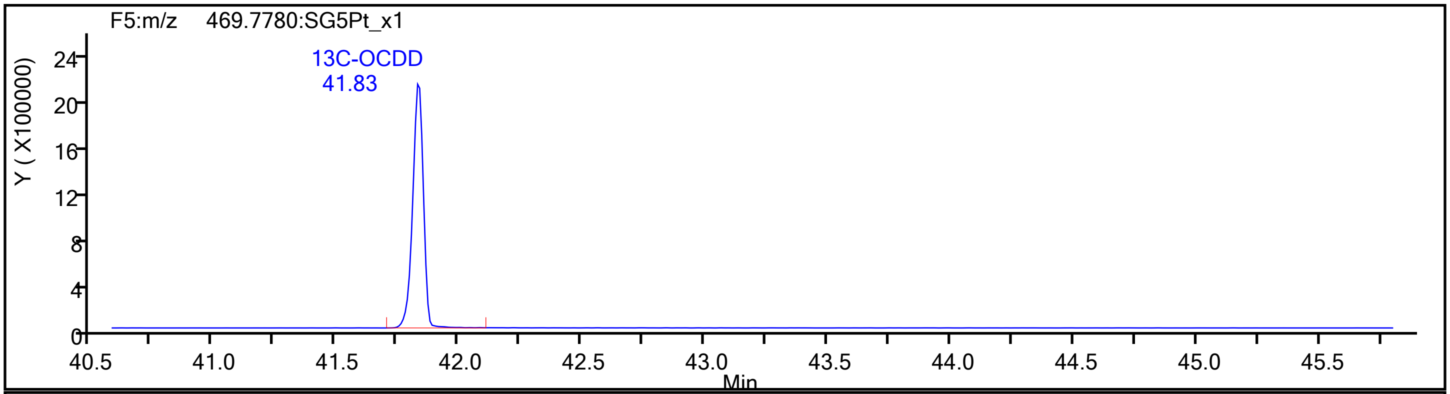

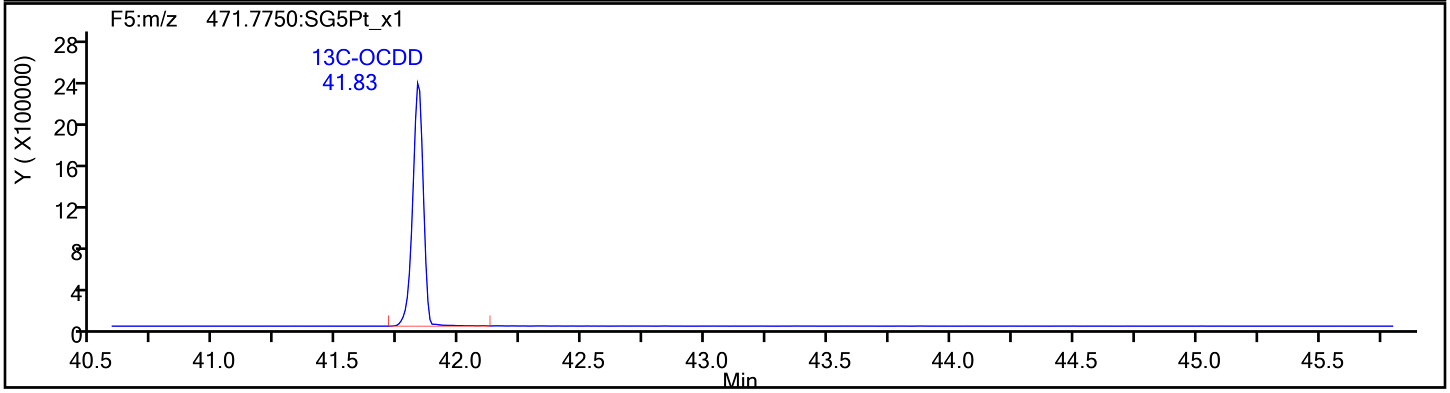

Report Date: 03-Feb-2021 14:46:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d		
Injection Date:	03-Feb-2021 00:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

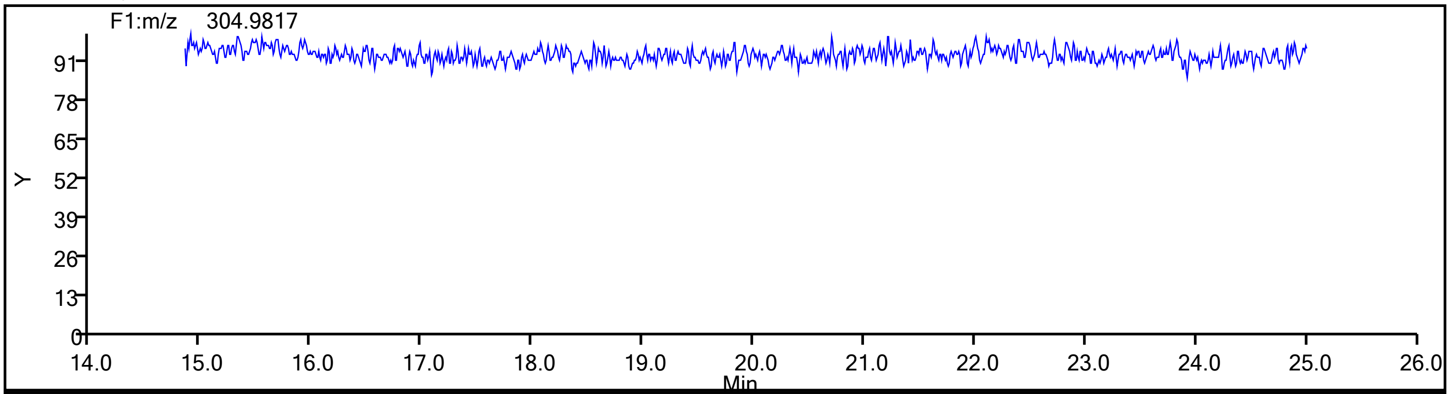

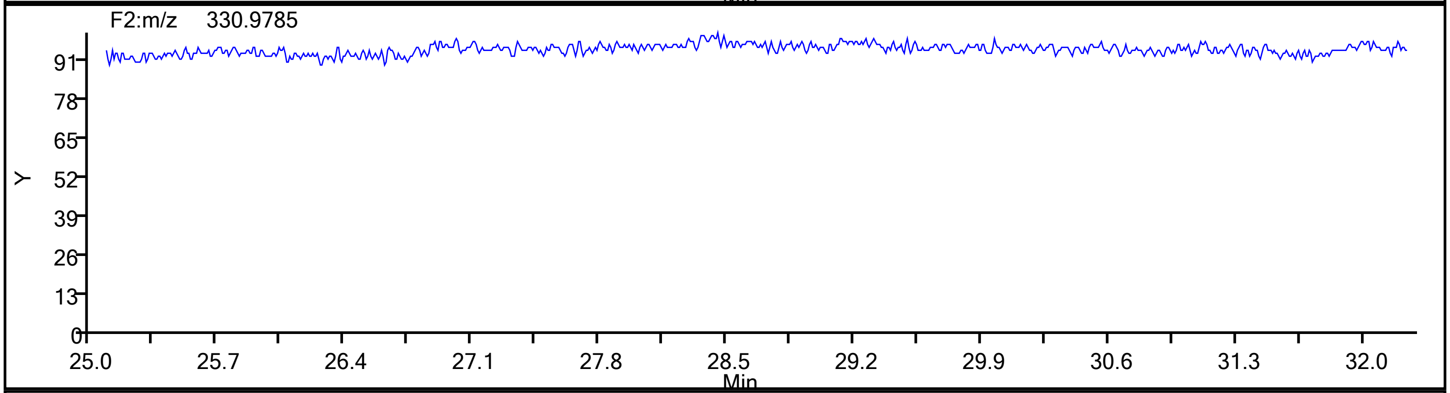

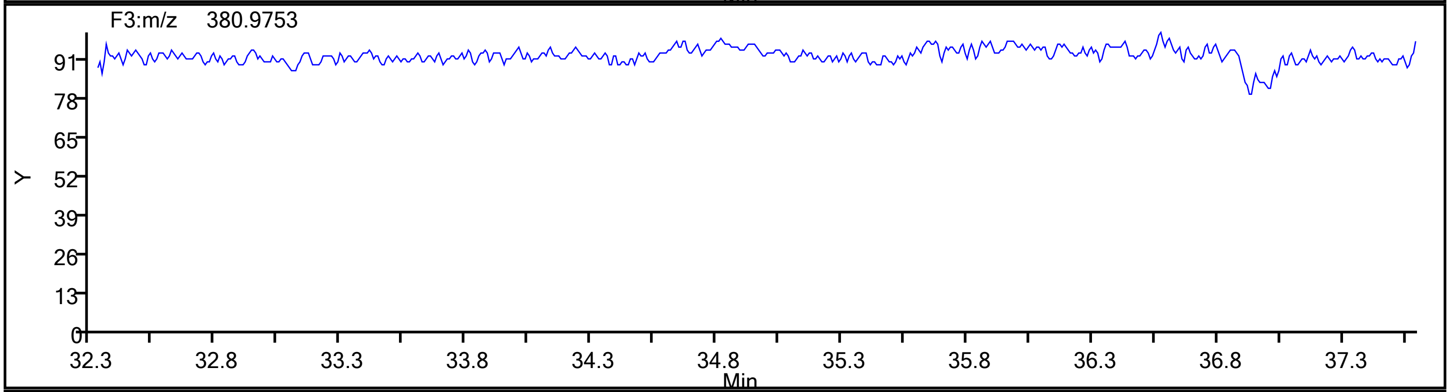

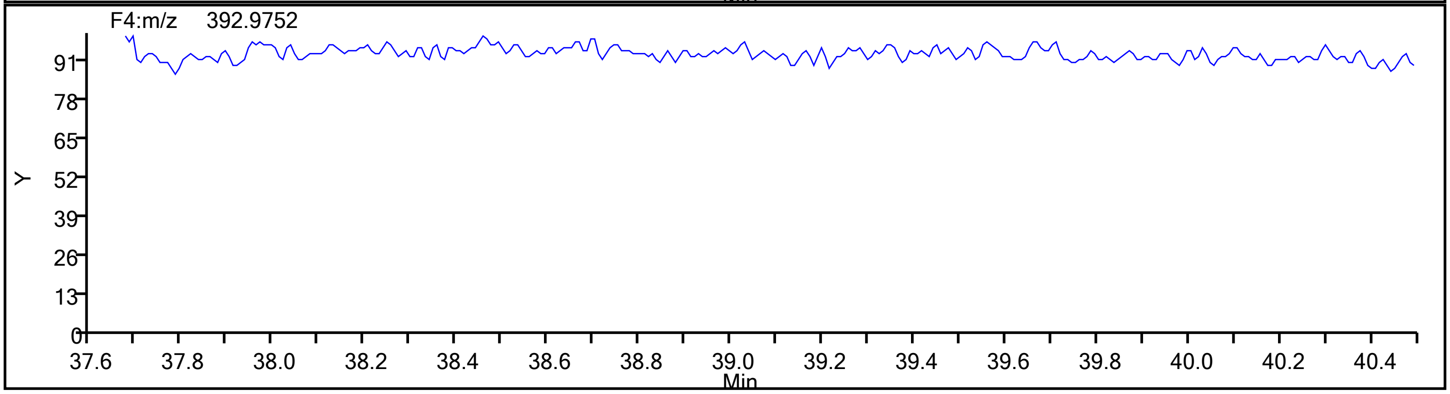

Report Date: 03-Feb-2021 14:46:27 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Injection Date:	03-Feb-2021 00:57:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

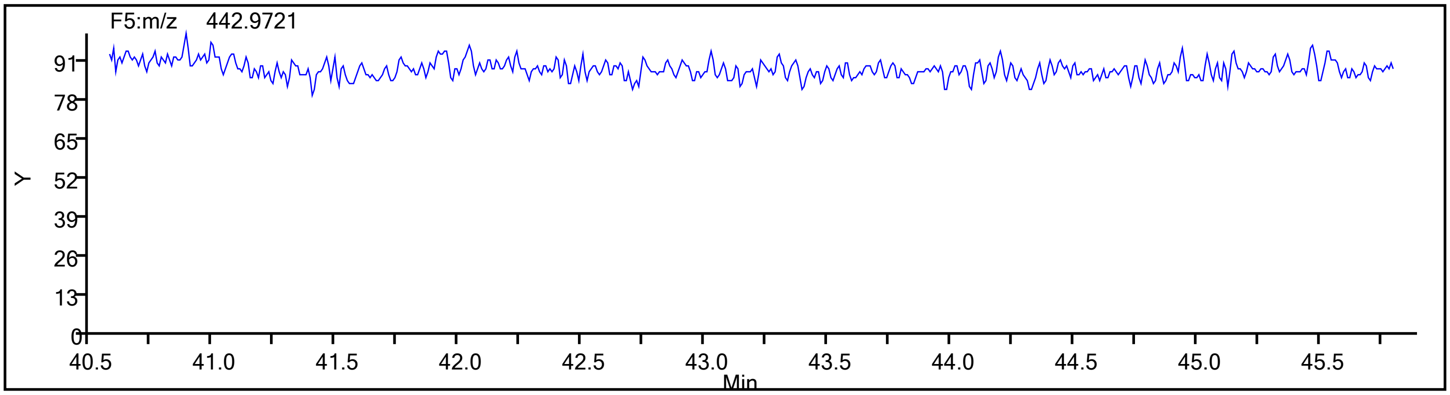

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.149

Error Coefficients

Standard Error:	46300000
Relative Standard Error:	9.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.266491	100.0	6215692.0	1.306596	Y
2	IC 320-458037/4	10.0	10.155037	100.0	6852107.0	1.015504	Y
3	IC 320-458037/5	50.0	57.189059	100.0	7191171.0	1.143781	Y
4	IC 320-458037/6	200.0	222.390308	100.0	7869445.0	1.111952	Y
5	IC 320-458037/7	1000.0	1166.867823	100.0	7777551.0	1.166868	Y

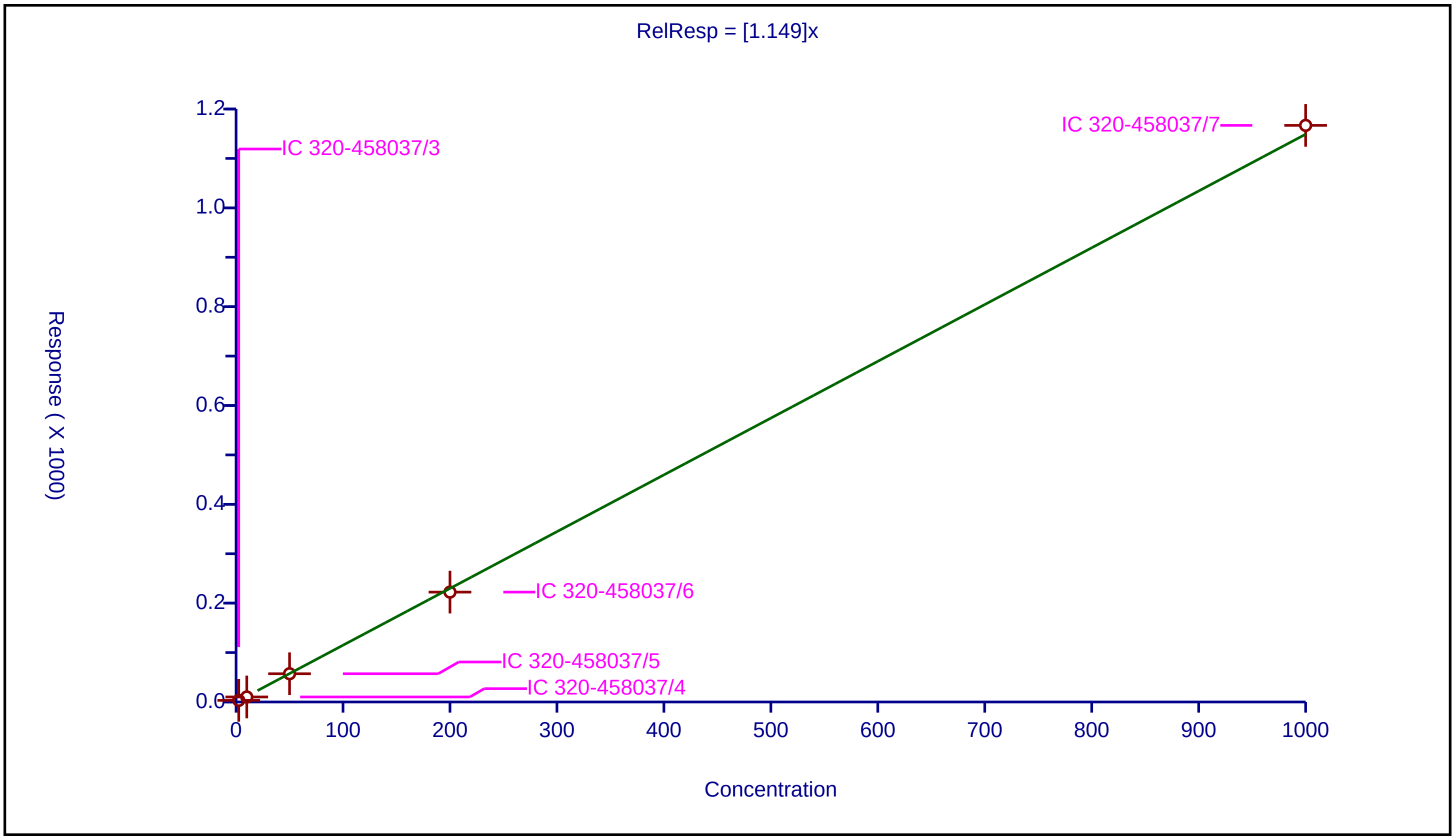

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.486

Error Coefficients

Standard Error:	79400000
Relative Standard Error:	7.4
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	4.027079	100.0	7921895.0	1.610832	Y
2	IC 320-458037/4	10.0	13.195622	100.0	8236012.0	1.319562	Y
3	IC 320-458037/5	50.0	74.017492	100.0	8510945.0	1.48035	Y
4	IC 320-458037/6	200.0	292.681813	100.0	9267651.0	1.463409	Y
5	IC 320-458037/7	1000.0	1555.166203	100.0	10050206.0	1.555166	Y

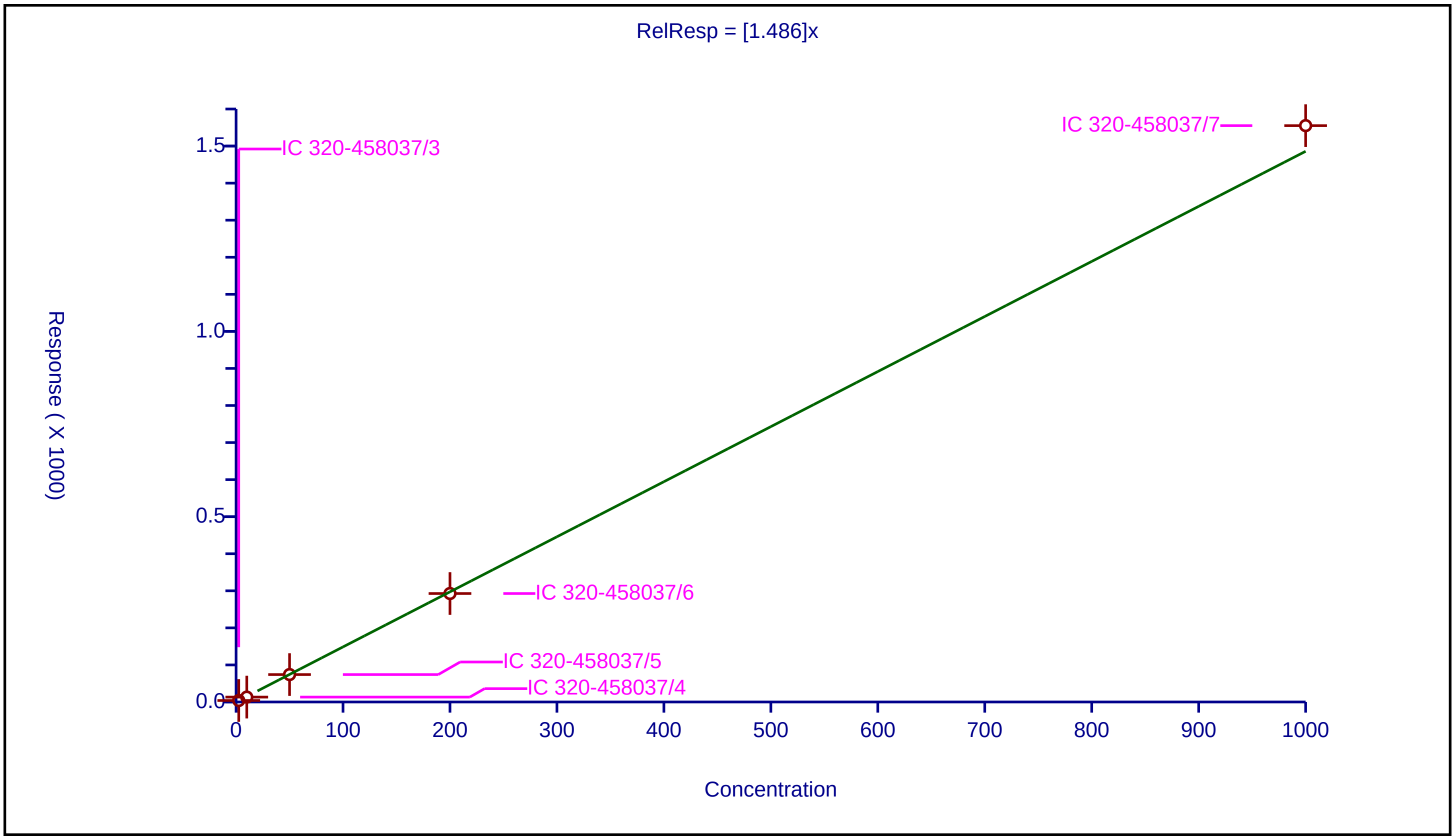

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.405

Error Coefficients

Standard Error:	68600000
Relative Standard Error:	8.4
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.916111	100.0	7119486.0	1.566445	Y
2	IC 320-458037/4	10.0	12.381792	100.0	7737822.0	1.238179	Y
3	IC 320-458037/5	50.0	69.900388	100.0	7838699.0	1.398008	Y
4	IC 320-458037/6	200.0	276.21196	100.0	8444193.0	1.38106	Y
5	IC 320-458037/7	1000.0	1440.22568	100.0	9374417.0	1.440226	Y

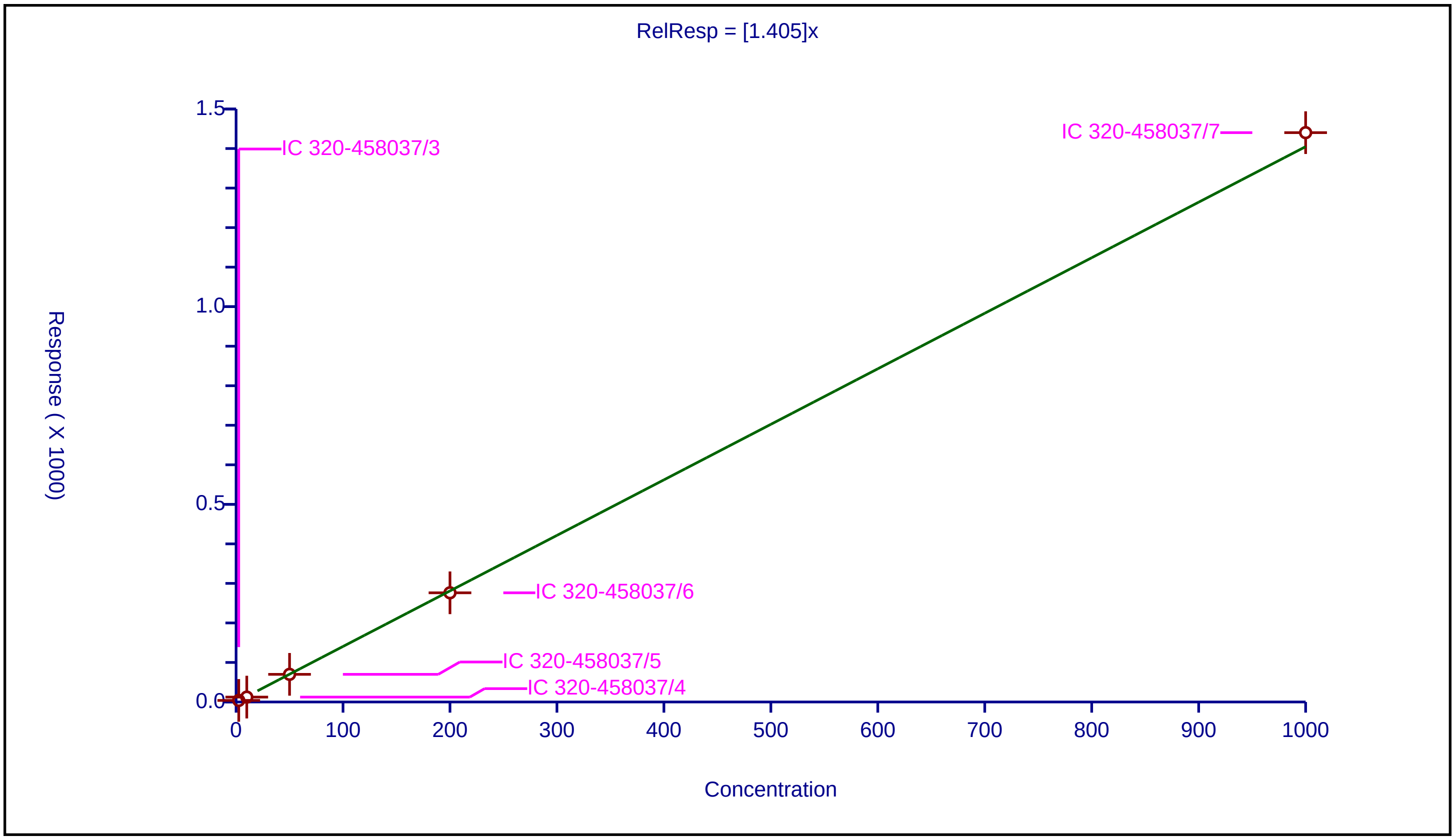

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.095

Error Coefficients

Standard Error:	54800000
Relative Standard Error:	8.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.105887	100.0	7877845.0	1.242355	Y
2	IC 320-458037/4	10.0	9.888319	100.0	8419662.0	0.988832	Y
3	IC 320-458037/5	50.0	55.017037	100.0	8512505.0	1.100341	Y
4	IC 320-458037/6	200.0	217.747443	100.0	9222117.0	1.088737	Y
5	IC 320-458037/7	1000.0	1054.497541	100.0	10199306.0	1.054498	Y

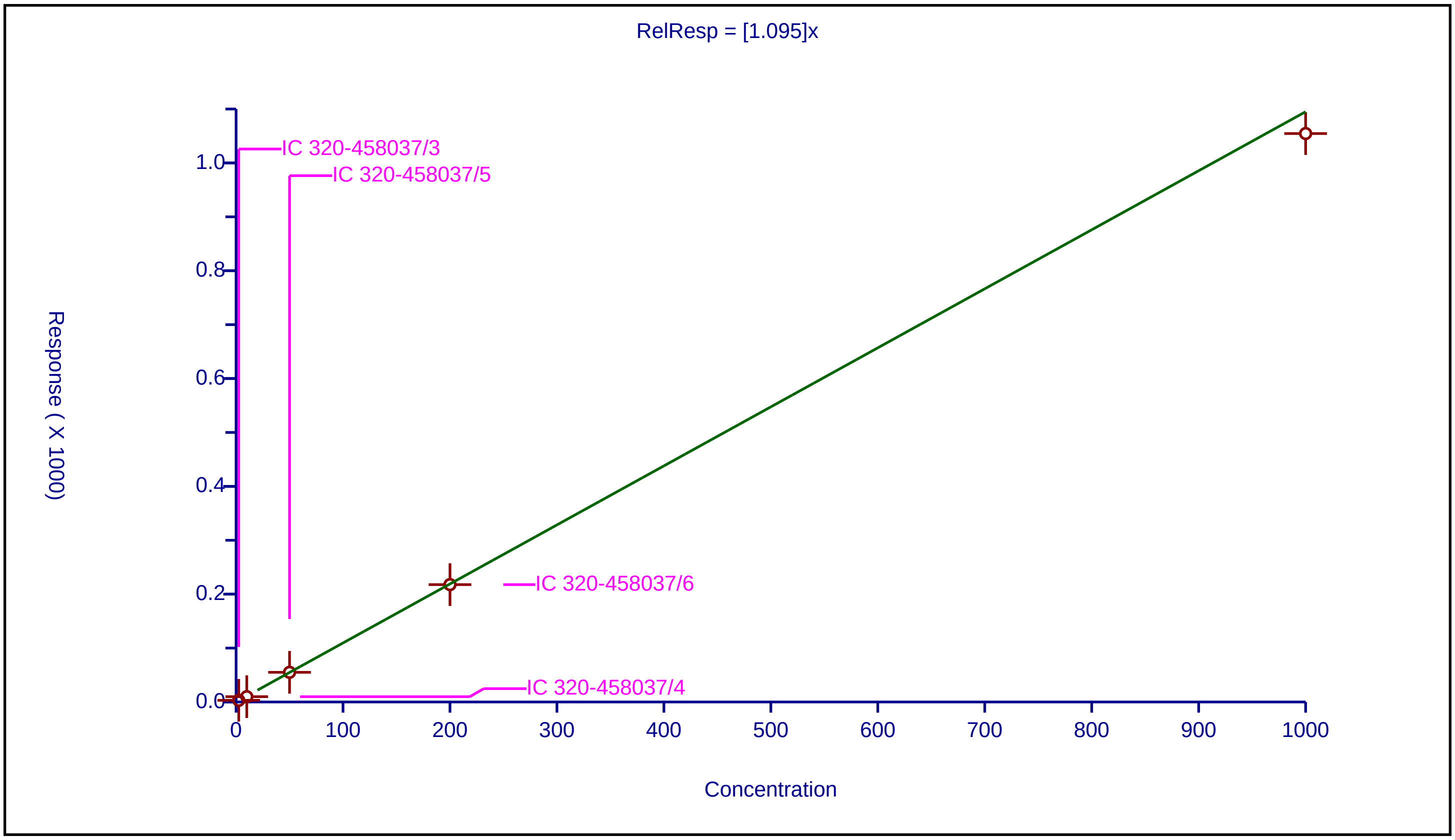

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.183

Error Coefficients

Standard Error:	84800000
Relative Standard Error:	7.9
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.277226	100.0	11229956.0	1.31089	Y
2	IC 320-458037/4	10.0	10.487166	100.0	11949358.0	1.048717	Y
3	IC 320-458037/5	50.0	60.489102	100.0	11501437.0	1.209782	Y
4	IC 320-458037/6	200.0	234.263954	100.0	12304940.0	1.17132	Y
5	IC 320-458037/7	1000.0	1174.968853	100.0	14203528.0	1.174969	Y

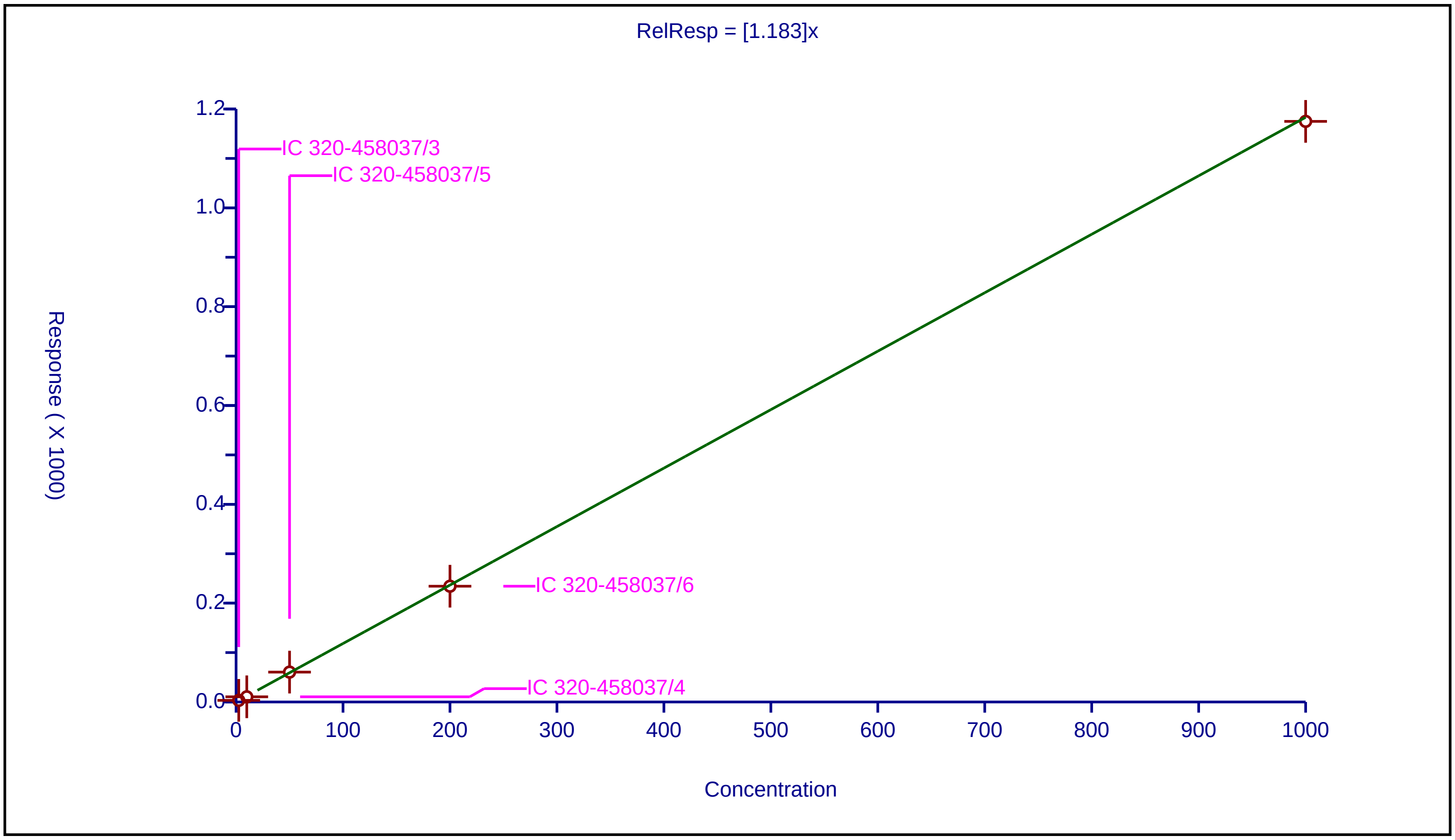

Calibration

/ 1,2,3,6,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.02

Error Coefficients

Standard Error:	55500000
Relative Standard Error:	5.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	2.769866	100.0	8714501.0	1.107946	Y
2	IC 320-458037/4	10.0	9.479317	100.0	8780738.0	0.947932	Y
3	IC 320-458037/5	50.0	51.37617	100.0	9272147.0	1.027523	Y
4	IC 320-458037/6	200.0	201.961209	100.0	9957071.0	1.009806	Y
5	IC 320-458037/7	1000.0	1007.512908	100.0	10828444.0	1.007513	Y

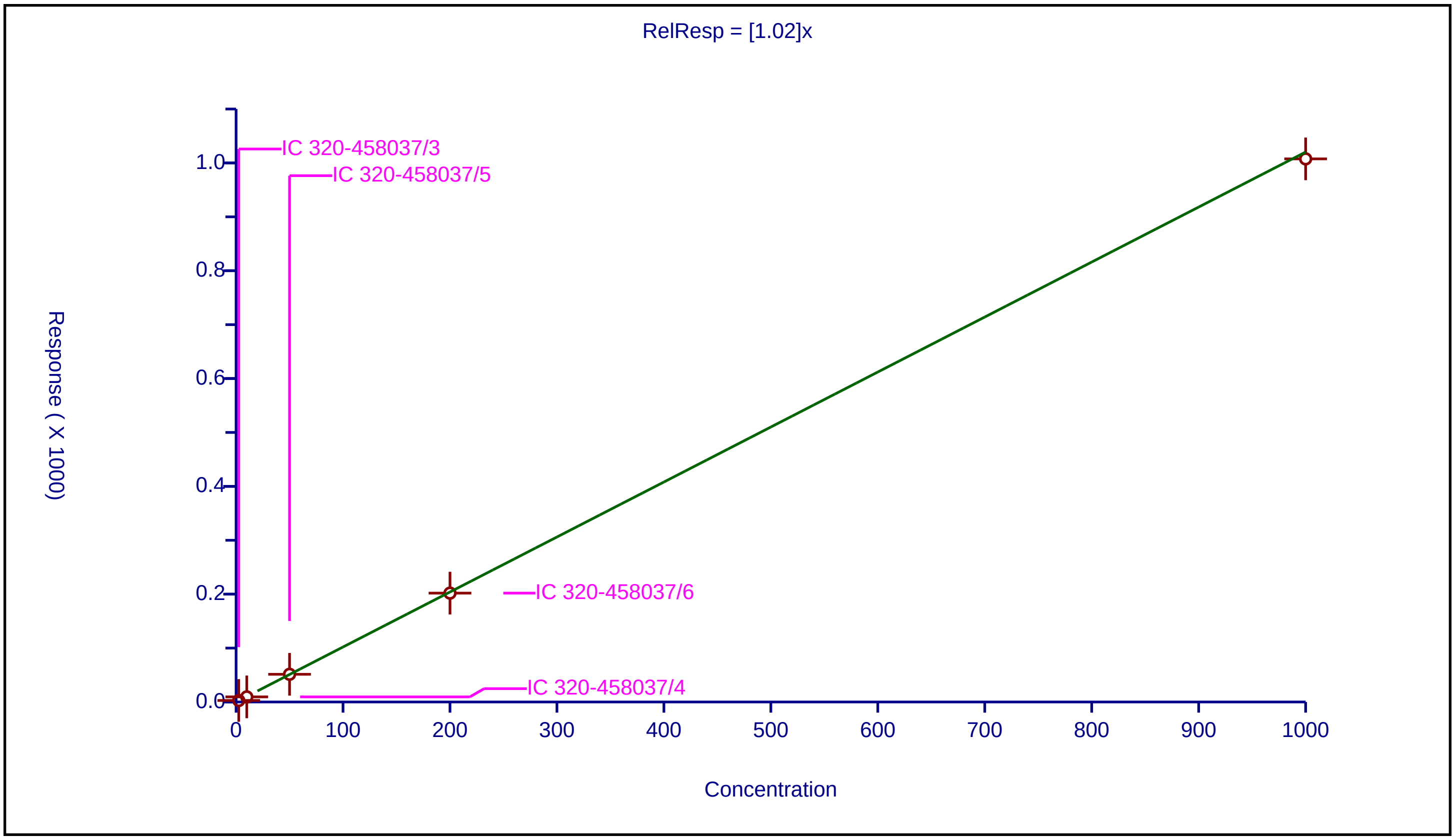

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.248

Error Coefficients

Standard Error:	92300000
Relative Standard Error:	8.0
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.475534	100.0	11508274.0	1.390214	Y
2	IC 320-458037/4	10.0	11.121958	100.0	12195218.0	1.112196	Y
3	IC 320-458037/5	50.0	62.172912	100.0	12023241.0	1.243458	Y
4	IC 320-458037/6	200.0	244.74237	100.0	13107466.0	1.223712	Y
5	IC 320-458037/7	1000.0	1272.371512	100.0	14281719.0	1.272372	Y

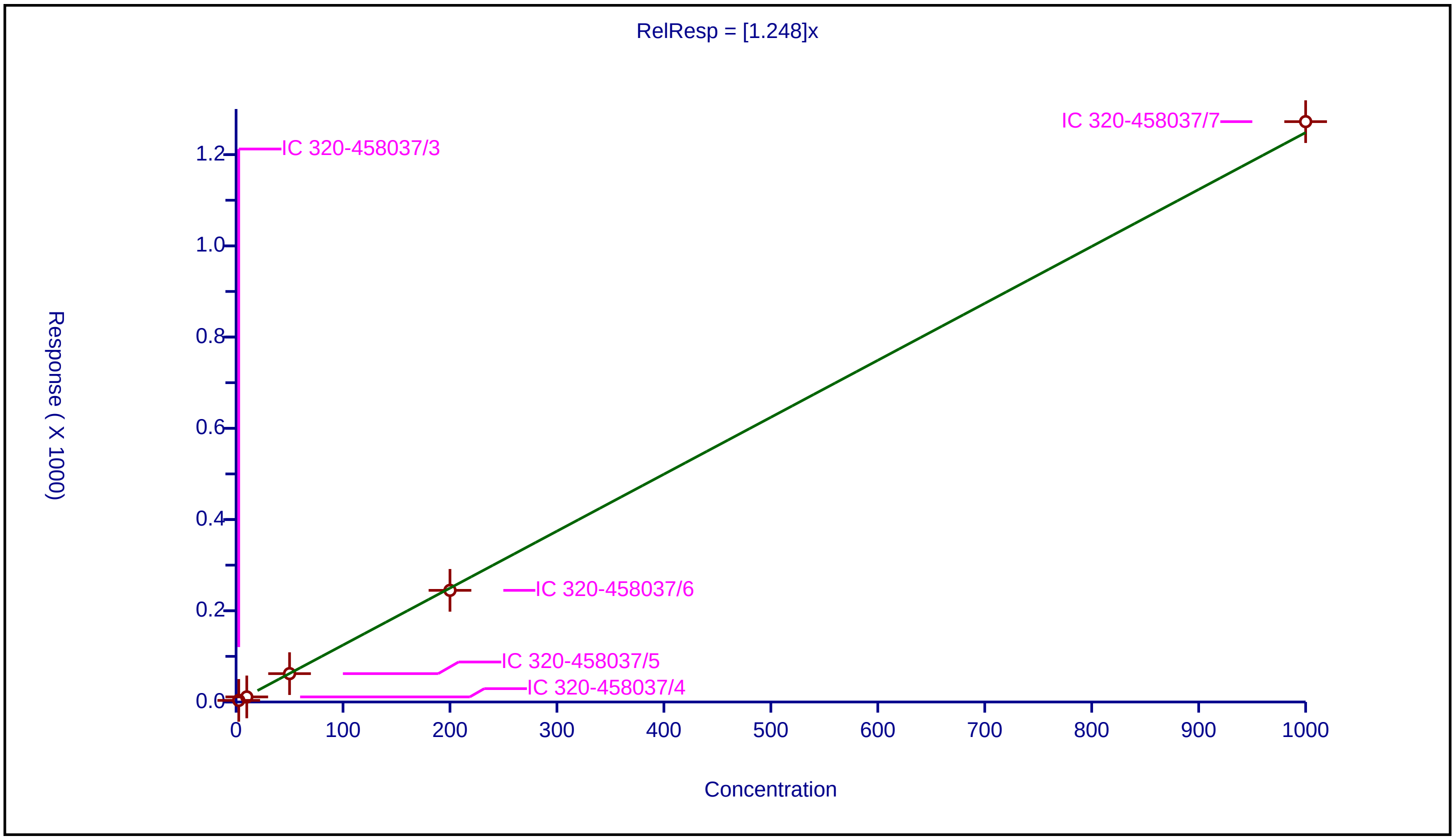

Calibration

/ 1,2,3,7,8,9-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.199

Error Coefficients

Standard Error:	60900000
Relative Standard Error:	8.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.387995	100.0	7877845.0	1.355198	Y
2	IC 320-458037/4	10.0	10.801574	100.0	8419662.0	1.080157	Y
3	IC 320-458037/5	50.0	60.645309	100.0	8512505.0	1.212906	Y
4	IC 320-458037/6	200.0	235.201267	100.0	9222117.0	1.176006	Y
5	IC 320-458037/7	1000.0	1173.008409	100.0	10199306.0	1.173008	Y

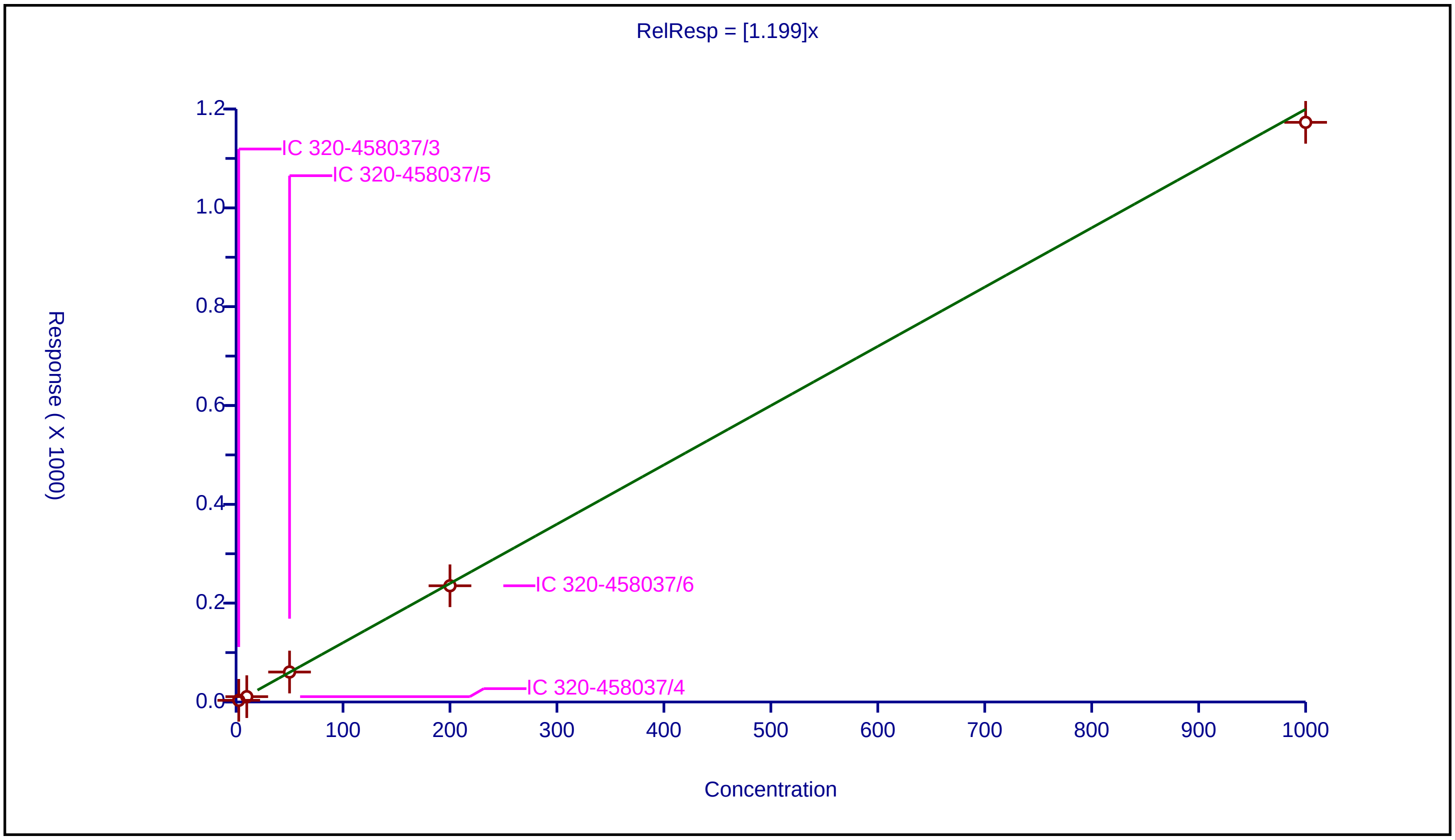

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.295

Error Coefficients

Standard Error:	85700000
Relative Standard Error:	7.5
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.600317	100.0	10053199.0	1.440127	Y
2	IC 320-458037/4	10.0	11.835486	100.0	10592907.0	1.183549	Y
3	IC 320-458037/5	50.0	64.183102	100.0	10687355.0	1.283662	Y
4	IC 320-458037/6	200.0	247.875744	100.0	11621340.0	1.239379	Y
5	IC 320-458037/7	1000.0	1329.770796	100.0	12693265.0	1.329771	Y

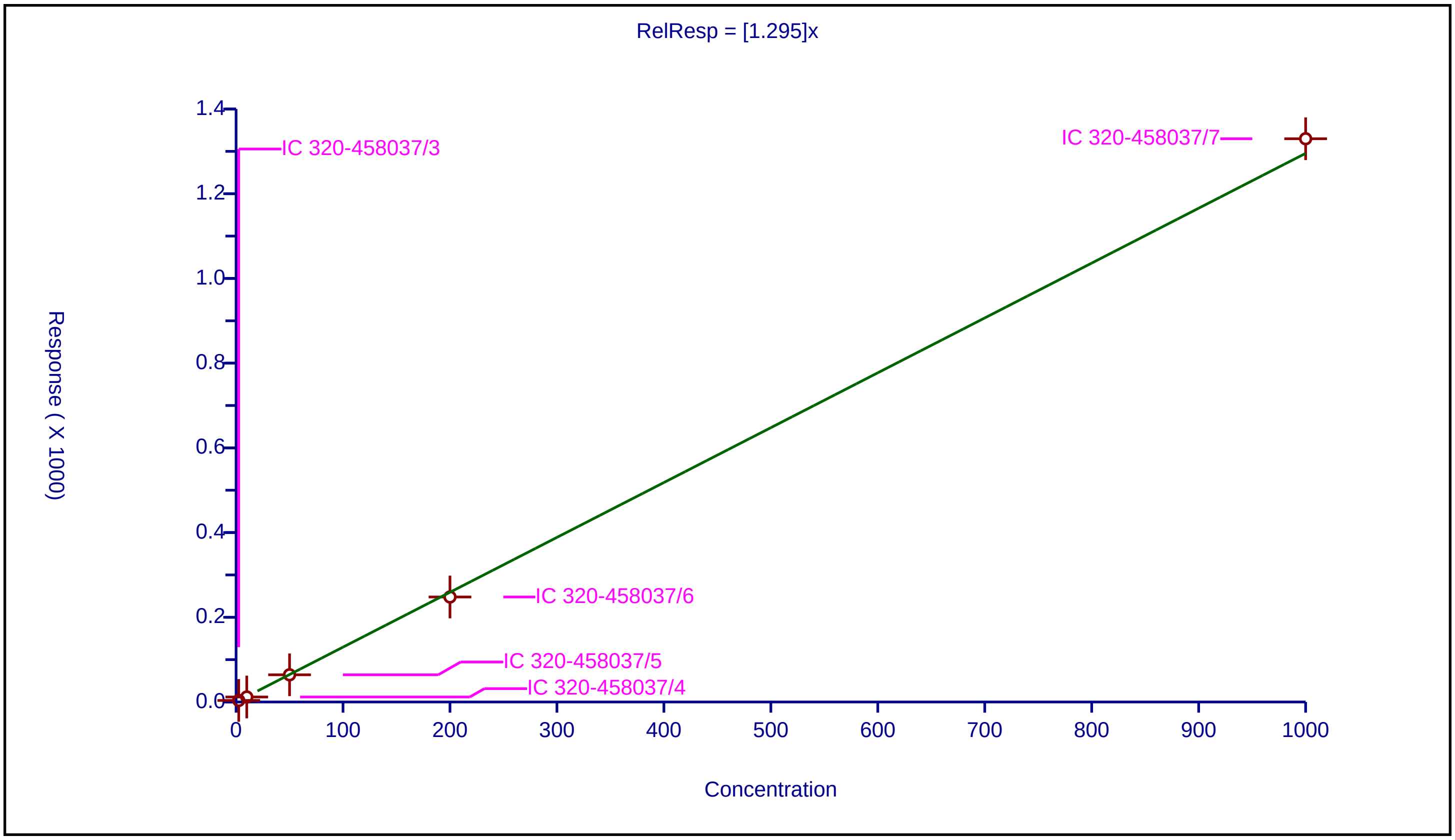

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.137

Error Coefficients

Standard Error:	47100000
Relative Standard Error:	8.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.242171	100.0	6810498.0	1.296868	Y
2	IC 320-458037/4	10.0	10.325563	100.0	7563859.0	1.032556	Y
3	IC 320-458037/5	50.0	56.290564	100.0	8119034.0	1.125811	Y
4	IC 320-458037/6	200.0	224.104942	100.0	8727260.0	1.120525	Y
5	IC 320-458037/7	1000.0	1110.184817	100.0	8298048.0	1.110185	Y

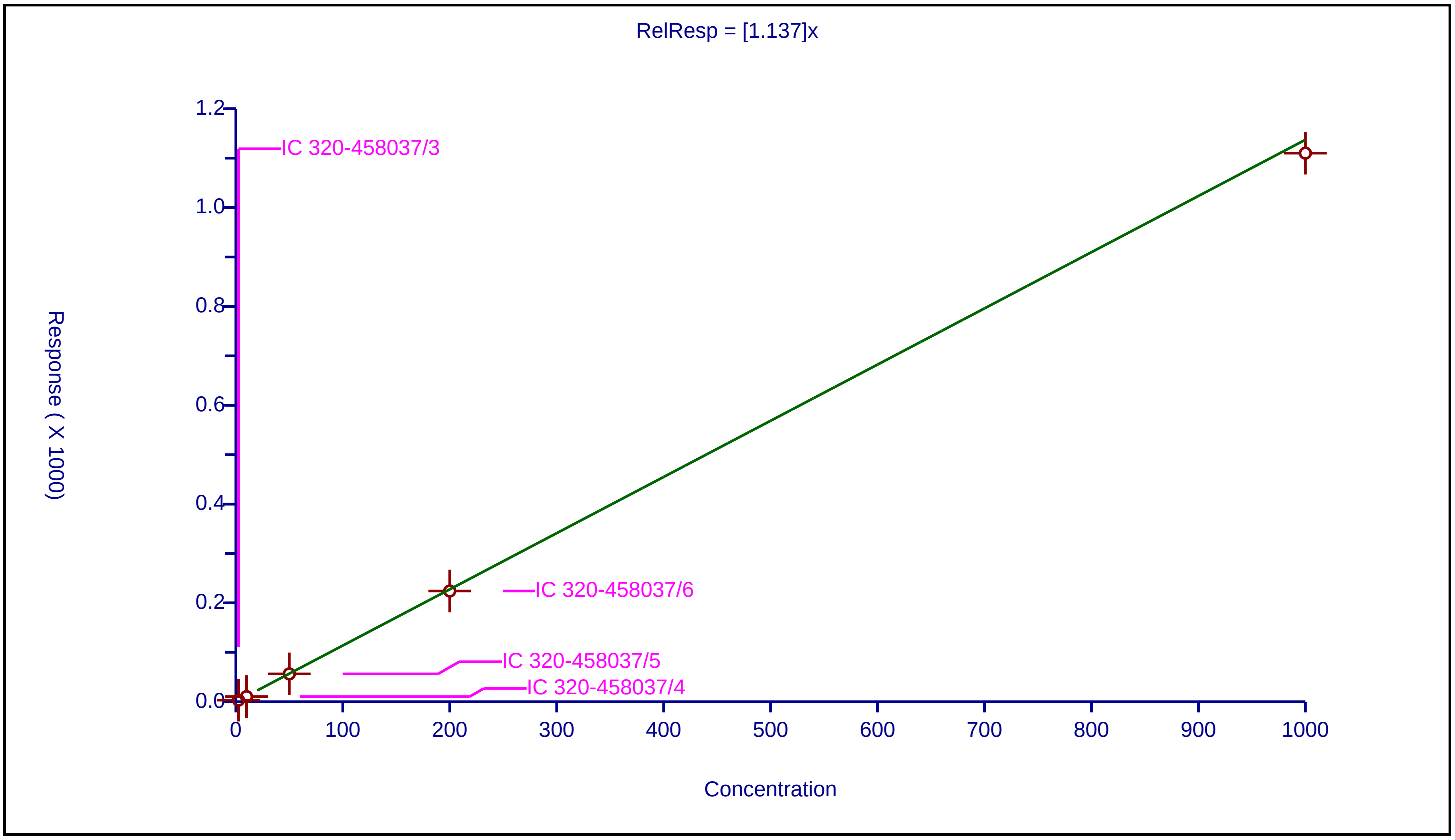

Calibration

/ 1,2,3,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.116

Error Coefficients

Standard Error:	84600000
Relative Standard Error:	7.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.115982	100.0	12240891.0	1.246393	Y
2	IC 320-458037/4	10.0	10.074924	100.0	12812752.0	1.007492	Y
3	IC 320-458037/5	50.0	54.951752	100.0	13180648.0	1.099035	Y
4	IC 320-458037/6	200.0	217.429807	100.0	14372299.0	1.087149	Y
5	IC 320-458037/7	1000.0	1141.224643	100.0	14555682.0	1.141225	Y

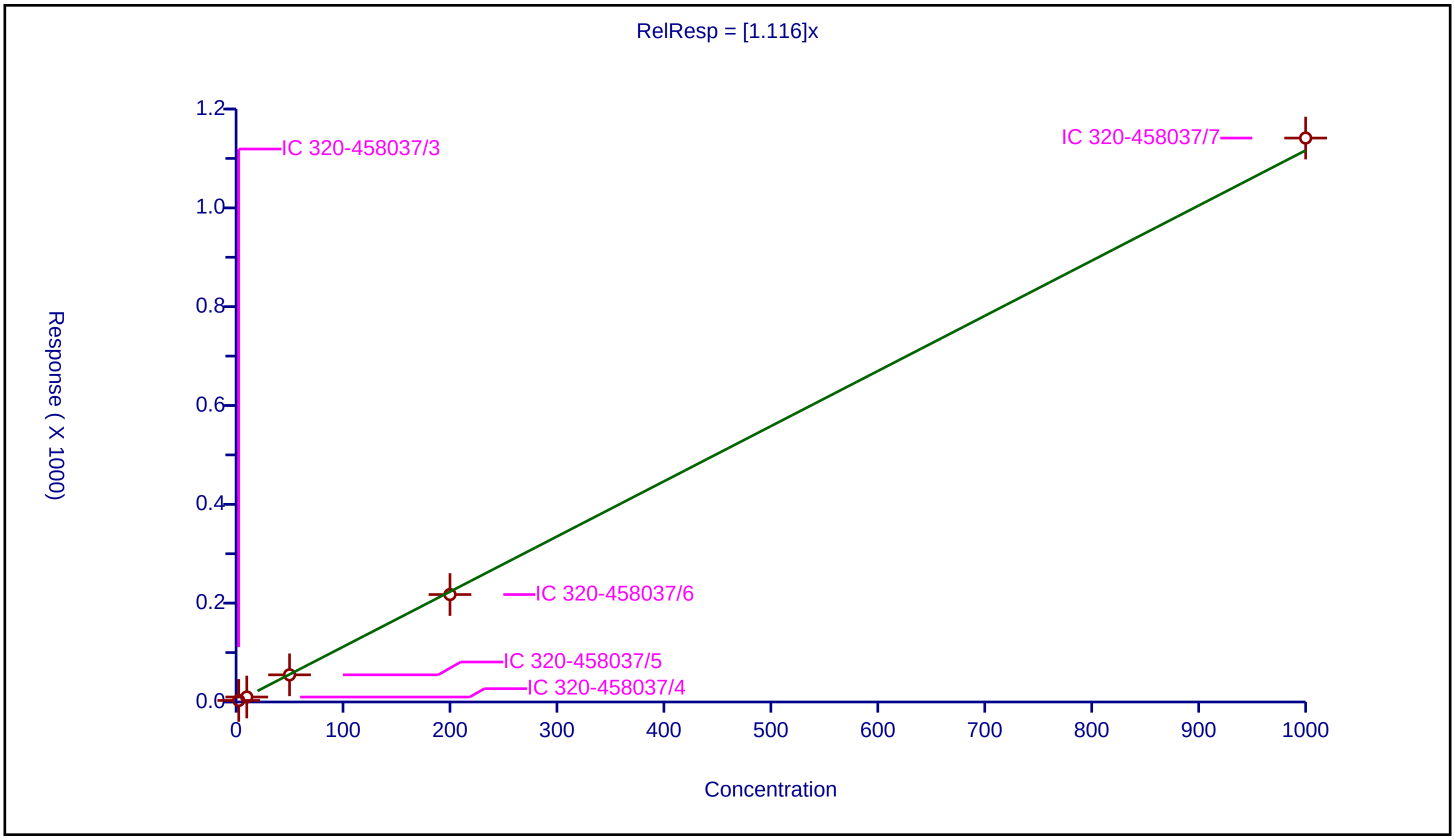

Calibration

/ 2,3,4,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.275

Error Coefficients

Standard Error:	89600000
Relative Standard Error:	6.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.476221	100.0	10745692.0	1.390488	Y
2	IC 320-458037/4	10.0	11.593436	100.0	11320363.0	1.159344	Y
3	IC 320-458037/5	50.0	63.441966	100.0	11321298.0	1.268839	Y
4	IC 320-458037/6	200.0	248.537156	100.0	12245155.0	1.242686	Y
5	IC 320-458037/7	1000.0	1313.685769	100.0	13432252.0	1.313686	Y

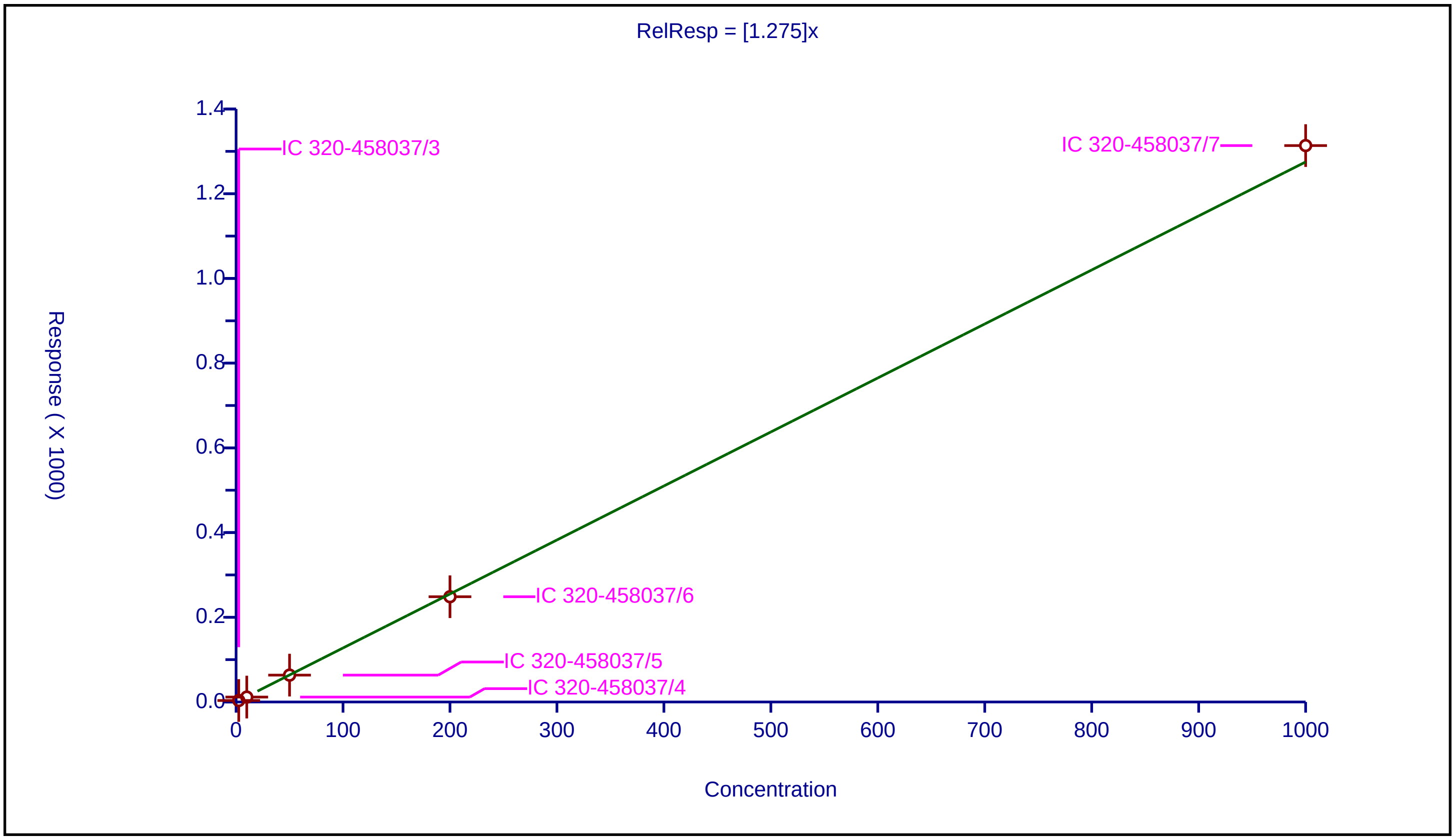

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.058

Error Coefficients

Standard Error:	81700000
Relative Standard Error:	8.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	2.5	3.006188	100.0	12124391.0	1.202475	Y
2	IC 320-458037/4	10.0	9.464486	100.0	13214981.0	0.946449	Y
3	IC 320-458037/5	50.0	52.086977	100.0	13421278.0	1.04174	Y
4	IC 320-458037/6	200.0	209.60964	100.0	14346989.0	1.048048	Y
5	IC 320-458037/7	1000.0	1050.905339	100.0	15262904.0	1.050905	Y

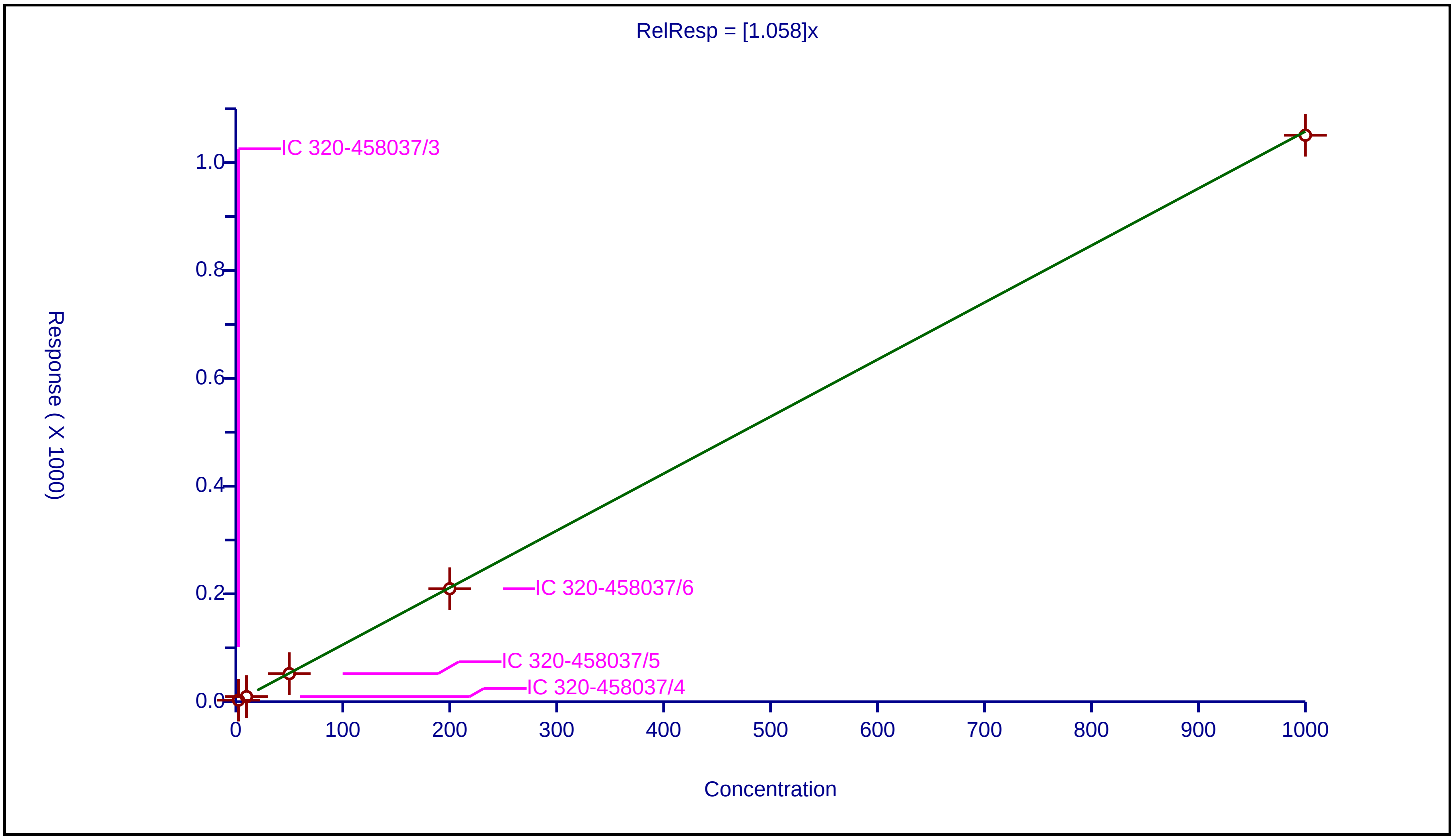

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.19

Error Coefficients

Standard Error:	12500000
Relative Standard Error:	9.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	0.5	0.679555	100.0	8990592.0	1.35911	Y
2	IC 320-458037/4	2.0	2.138403	100.0	9060077.0	1.069202	Y
3	IC 320-458037/5	10.0	11.964831	100.0	10085583.0	1.196483	Y
4	IC 320-458037/6	40.0	48.141323	100.0	10615427.0	1.203533	Y
5	IC 320-458037/7	200.0	224.710184	100.0	10845589.0	1.123551	Y

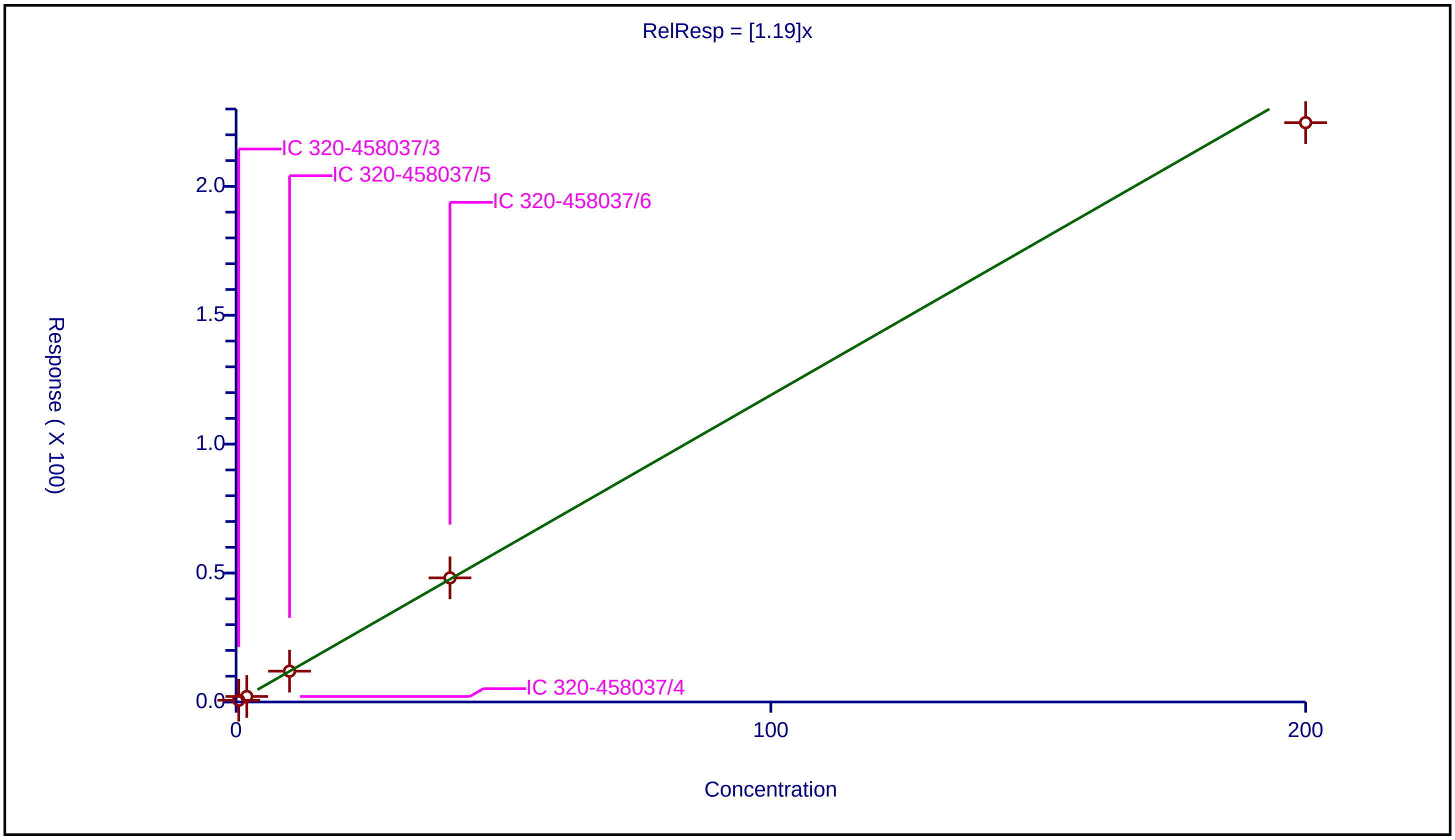

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.126

Error Coefficients

Standard Error:	18500000
Relative Standard Error:	6.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	0.5	0.603132	100.0	14819484.0	1.206263	Y
2	IC 320-458037/4	2.0	2.090849	100.0	14956457.0	1.045425	Y
3	IC 320-458037/5	10.0	11.728212	100.0	15431304.0	1.172821	Y
4	IC 320-458037/6	40.0	45.886411	100.0	16643910.0	1.14716	Y
5	IC 320-458037/7	200.0	211.468008	100.0	17087371.0	1.05734	Y

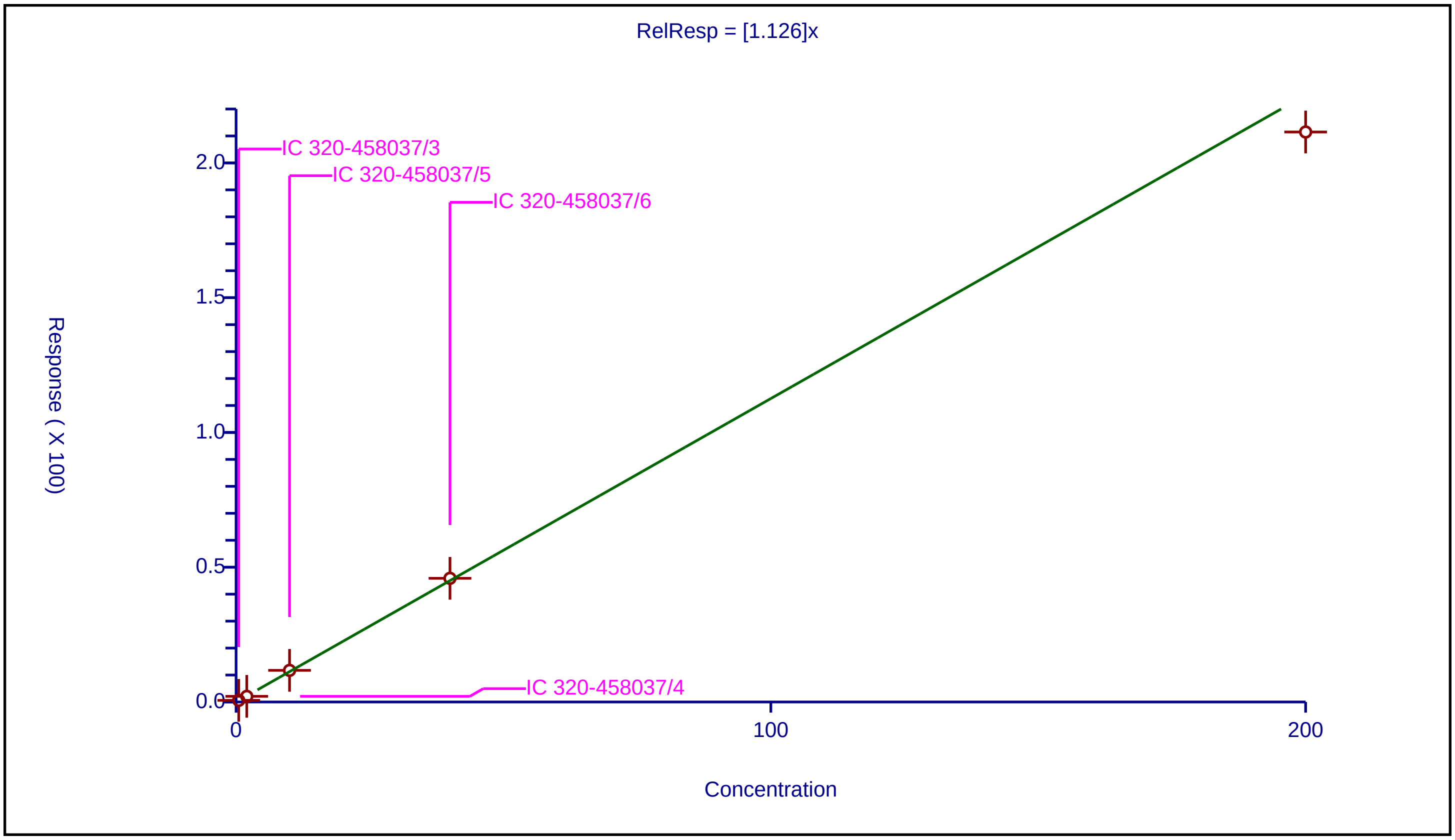

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.084

Error Coefficients

Standard Error:	11800000
Relative Standard Error:	3.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	0.5	0.543466	100.0	9233704.0	1.086931	Y
2	IC 320-458037/4	2.0	2.104429	100.0	9871895.0	1.052214	Y
3	IC 320-458037/5	10.0	11.369331	100.0	10085149.0	1.136933	Y
4	IC 320-458037/6	40.0	43.969419	100.0	10936301.0	1.099235	Y
5	IC 320-458037/7	200.0	209.038138	100.0	11049002.0	1.045191	Y

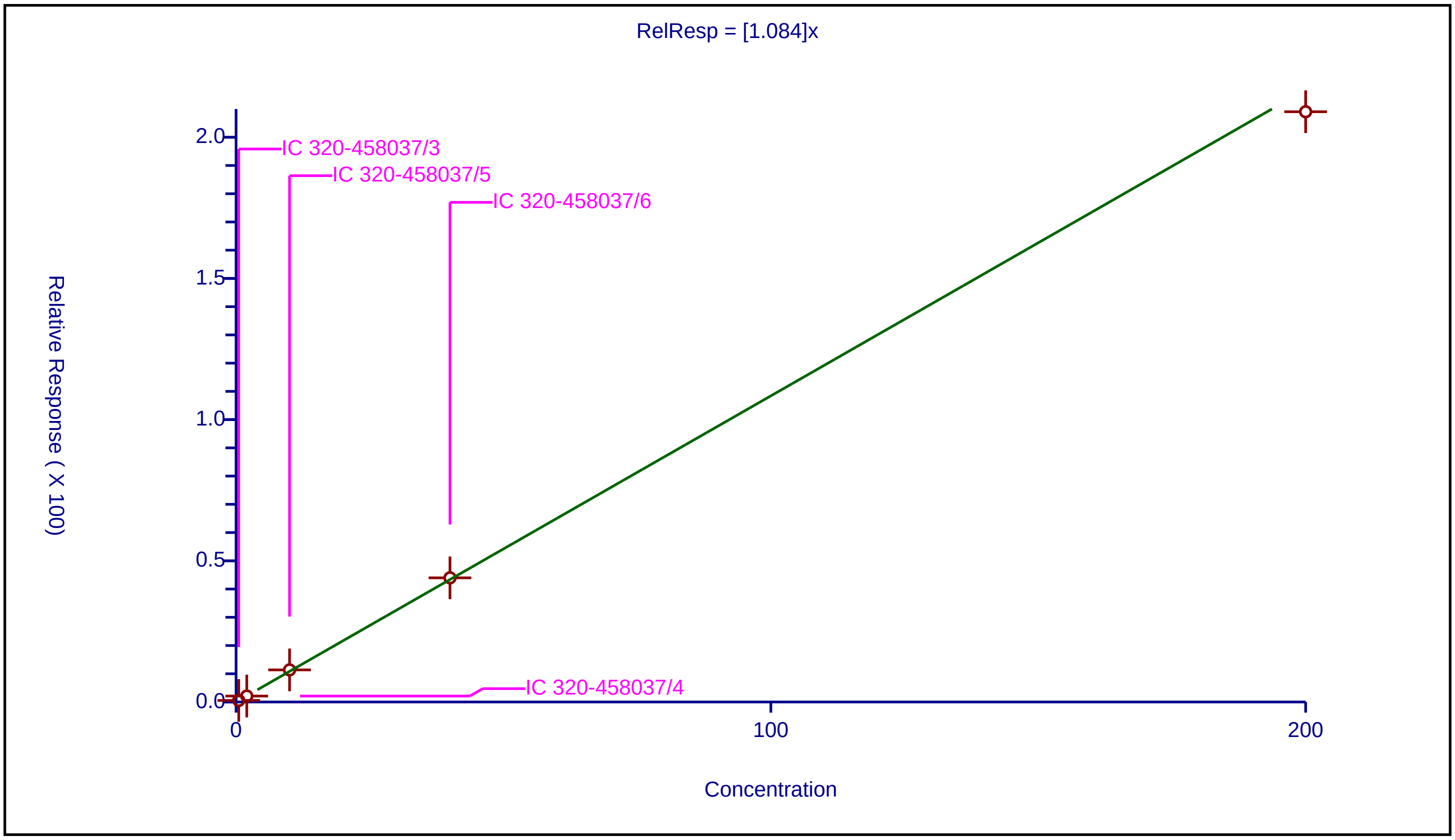

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.171

Error Coefficients

Standard Error:	83900000
Relative Standard Error:	7.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	5.0	6.302747	200.0	10502373.0	1.260549	Y
2	IC 320-458037/4	20.0	20.736266	200.0	10845106.0	1.036813	Y
3	IC 320-458037/5	100.0	115.681688	200.0	11203239.0	1.156817	Y
4	IC 320-458037/6	400.0	469.163921	200.0	11520865.0	1.17291	Y
5	IC 320-458037/7	2000.0	2451.486154	200.0	13499008.0	1.225743	Y

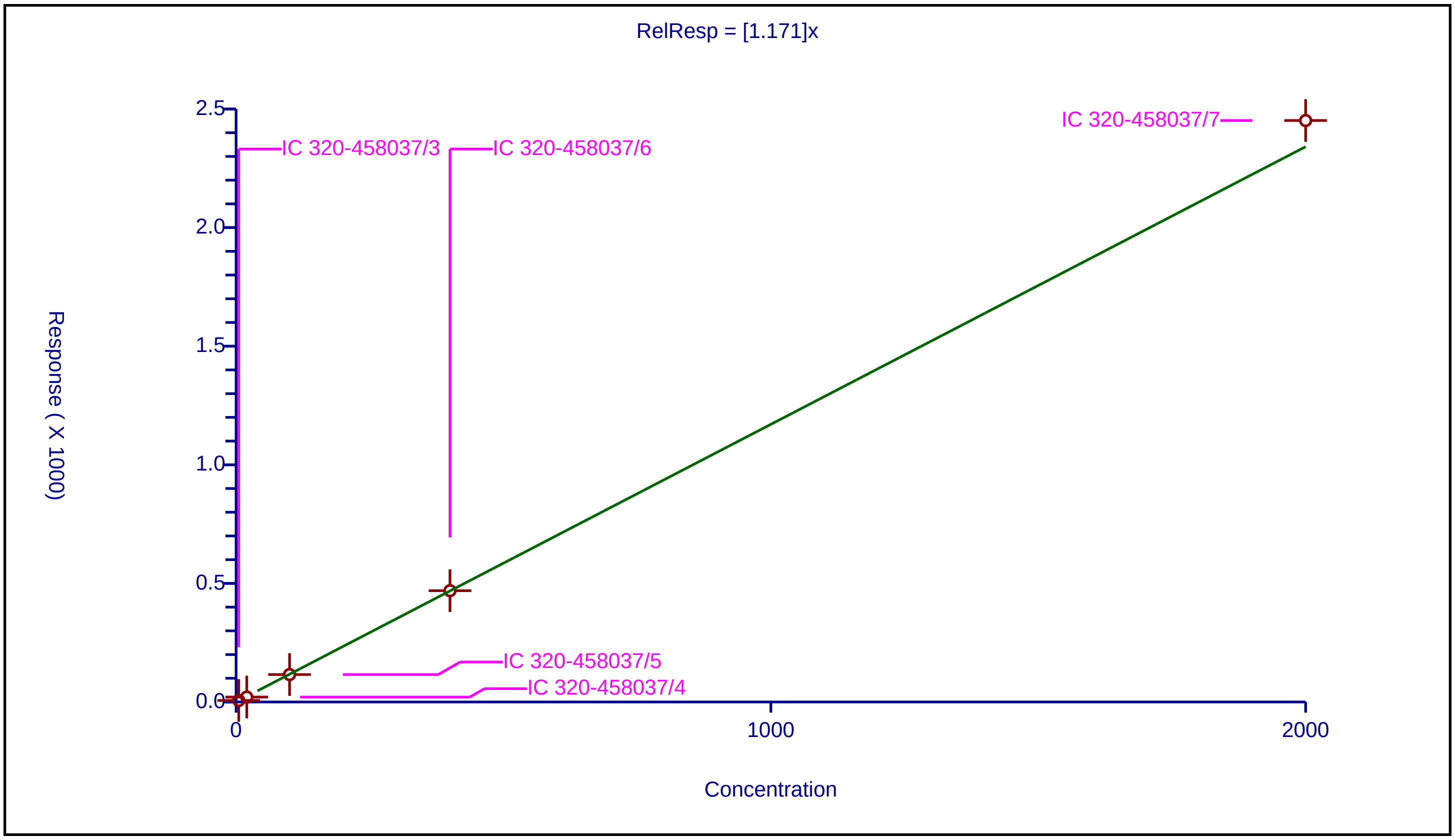

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	1.578

Error Coefficients

Standard Error:	124000000
Relative Standard Error:	11.4
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.985

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-458037/3	5.0	8.047534	200.0	10502373.0	1.609507	Y
2	IC 320-458037/4	20.0	26.688978	200.0	10845106.0	1.334449	Y
3	IC 320-458037/5	100.0	147.950356	200.0	11203239.0	1.479504	Y
4	IC 320-458037/6	400.0	661.428252	200.0	11520865.0	1.653571	Y
5	IC 320-458037/7	2000.0	3622.356413	200.0	13499008.0	1.811178	Y

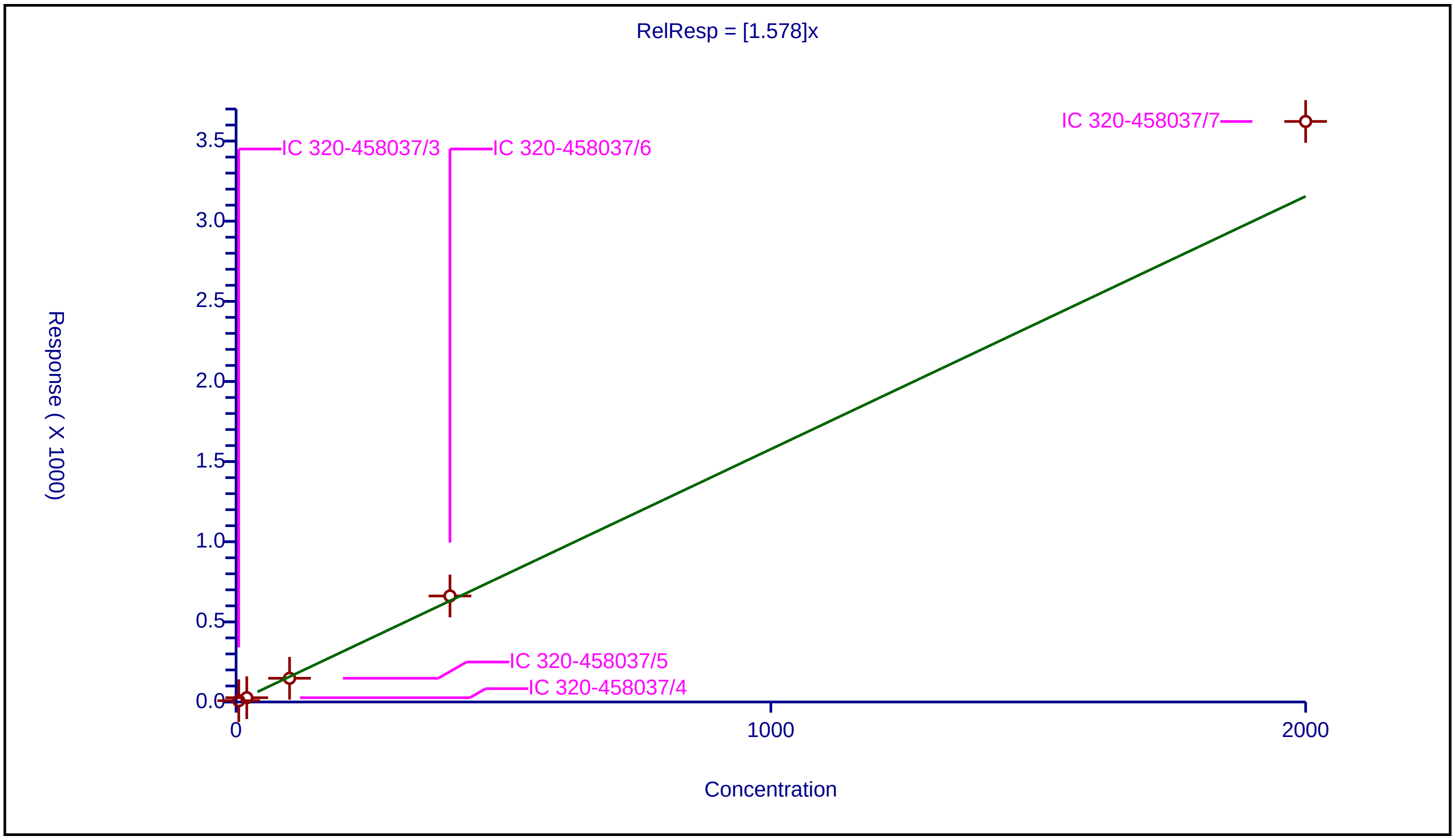

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): WDM 320-458037/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 02/02/2021 20:03

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.33	12

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d				
Injection Date:	02-Feb-2021 20:03:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 38383
H (Peak Height) = 312190

%R = 12 <= 25
Passed

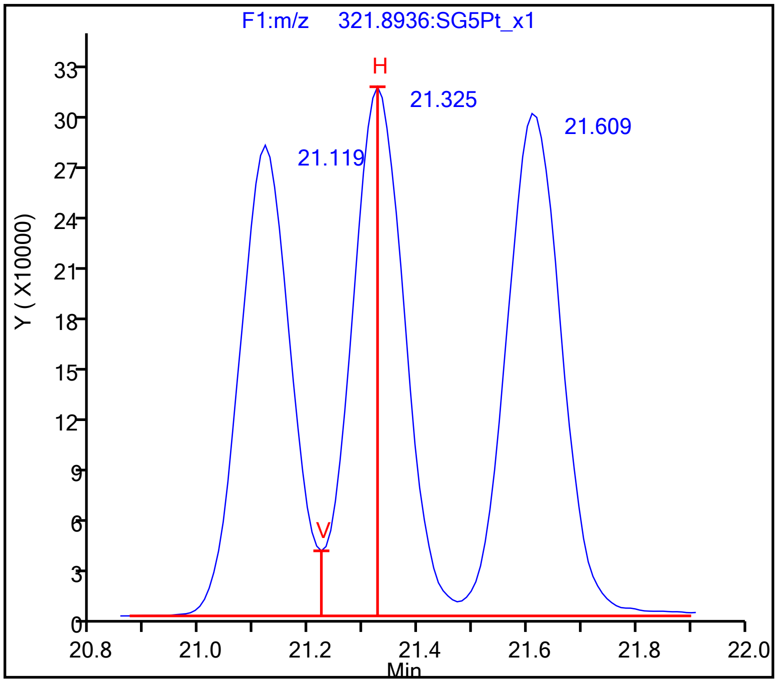

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	320-70797-1
SDG No.:			
Lab Sample ID (1):	CPS 320-458526/1	Instrument ID (1):	11D2
GC Column (1):	DB-225 ID: 0.32(mm)	Date Analyzed (1):	02/03/2021 12:45

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.30	18

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d				
Injection Date:	03-Feb-2021 12:45:12	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2870786

H (Peak Height) = 16397703

%R = 18 <= 25

Passed

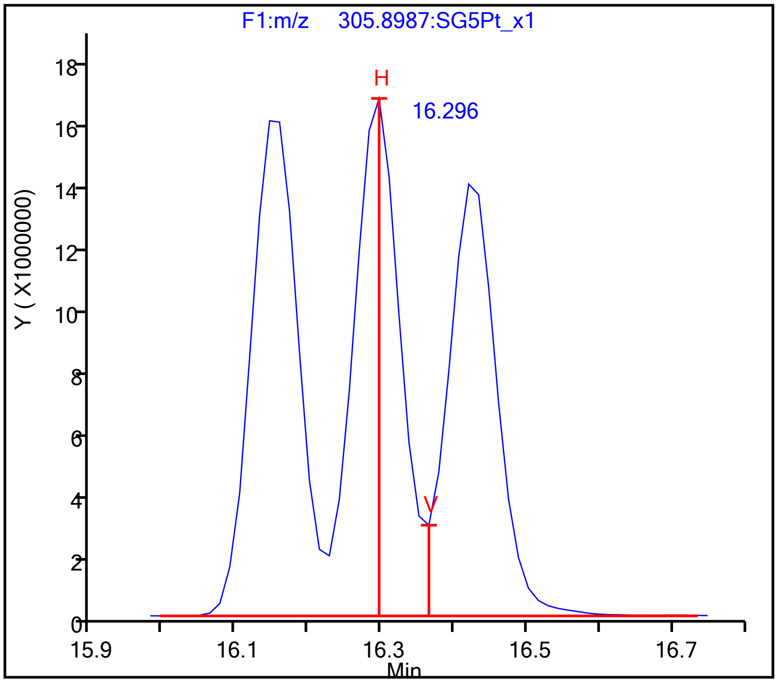

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d				
Injection Date:	03-Feb-2021 12:45:12	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): WDM 320-468973/2 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 03/10/2021 09:38

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.82	17

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d				
Injection Date:	10-Mar-2021 09:38:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 27604
H (Peak Height) = 163501

%R = 17 <= 25
Passed

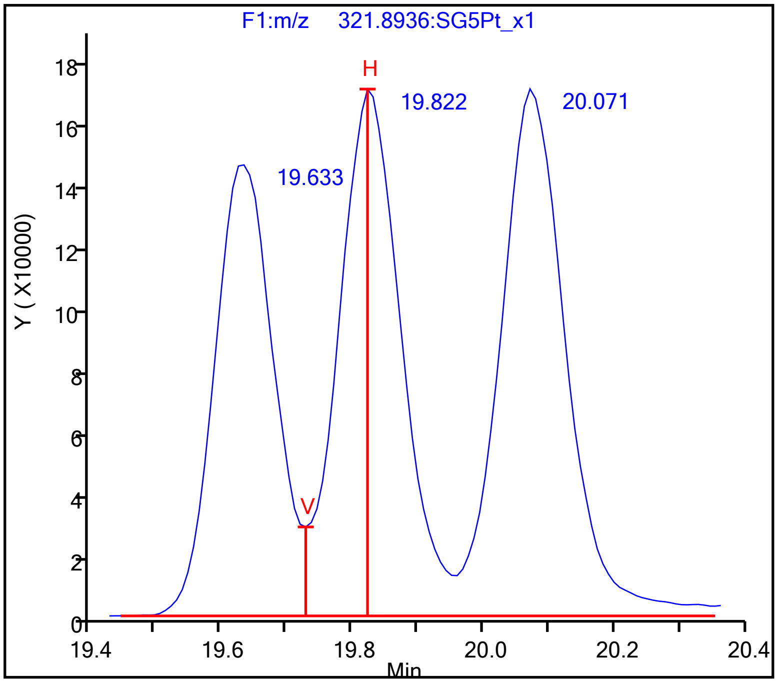

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): CPS 320-469703/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 03/11/2021 13:50

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.16	20

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d				
Injection Date:	11-Mar-2021 13:50:56	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3758259
H (Peak Height) = 18998496

%R = 20 <= 25
Passed

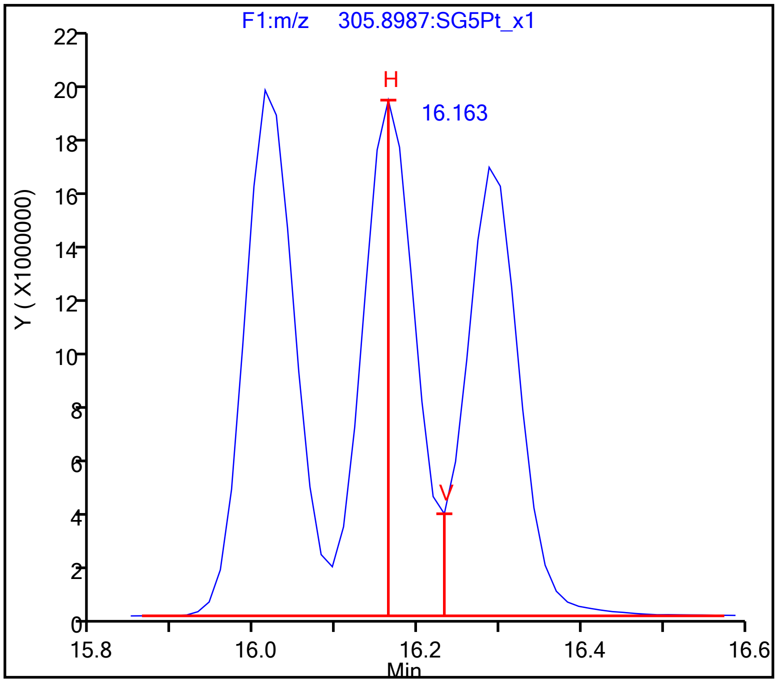

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d				
Injection Date:	11-Mar-2021 13:50:56	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): WDM 320-469779/2 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 03/12/2021 11:21

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.78	17

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d				
Injection Date:	12-Mar-2021 11:21:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 23052
H (Peak Height) = 132228

%R = 17 <= 25
Passed

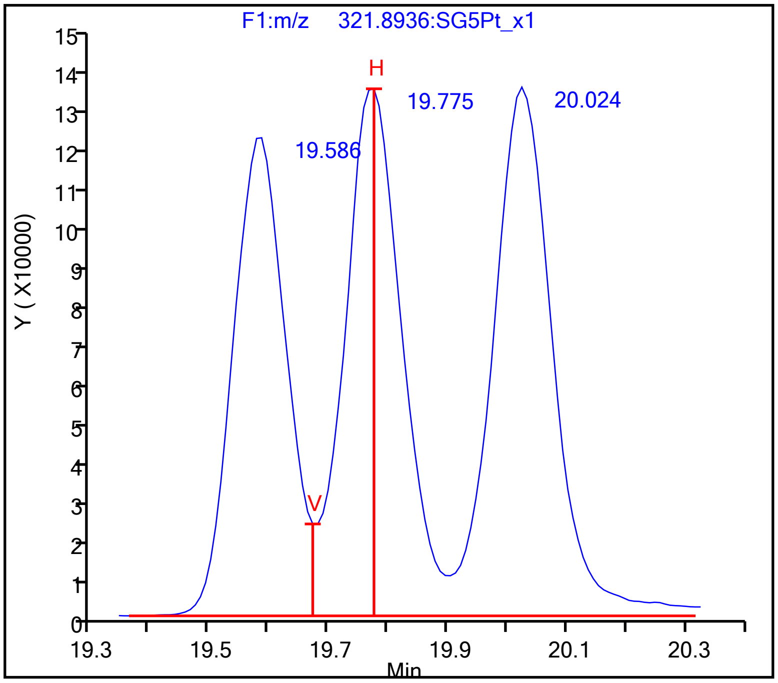

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): CPS 320-470865/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 03/16/2021 20:53

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.15	18

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d				
Injection Date:	16-Mar-2021 20:53:10	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

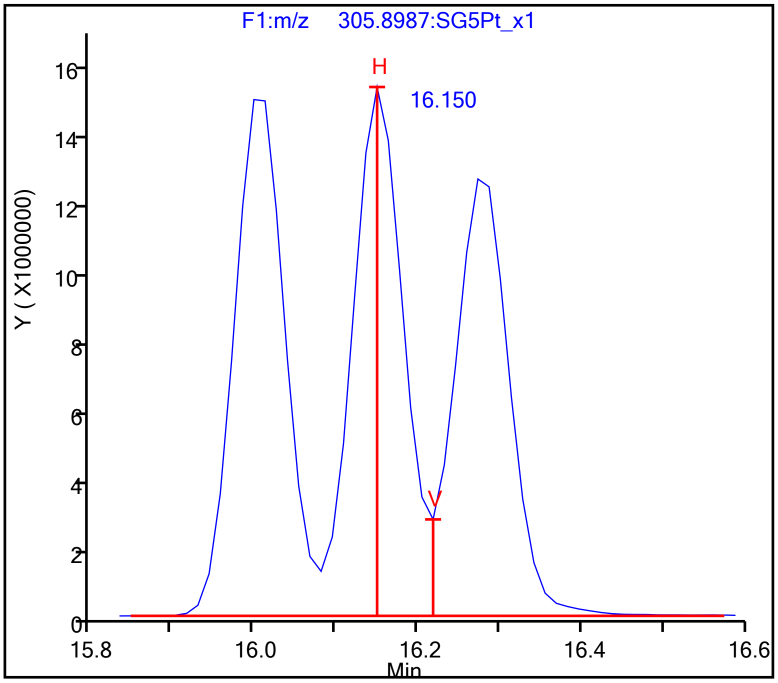

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2759887
H (Peak Height) = 15144716

%R = 18 <= 25
Passed

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d				
Injection Date:	16-Mar-2021 20:53:10	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): WDM 320-470907/1   Instrument ID (1): 10D5

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 03/16/2021 23:40

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.72	21

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d				
Injection Date:	16-Mar-2021 23:40:35	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	ALM	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 720498
H (Peak Height) = 3404079

%R = 21 <= 25
Passed

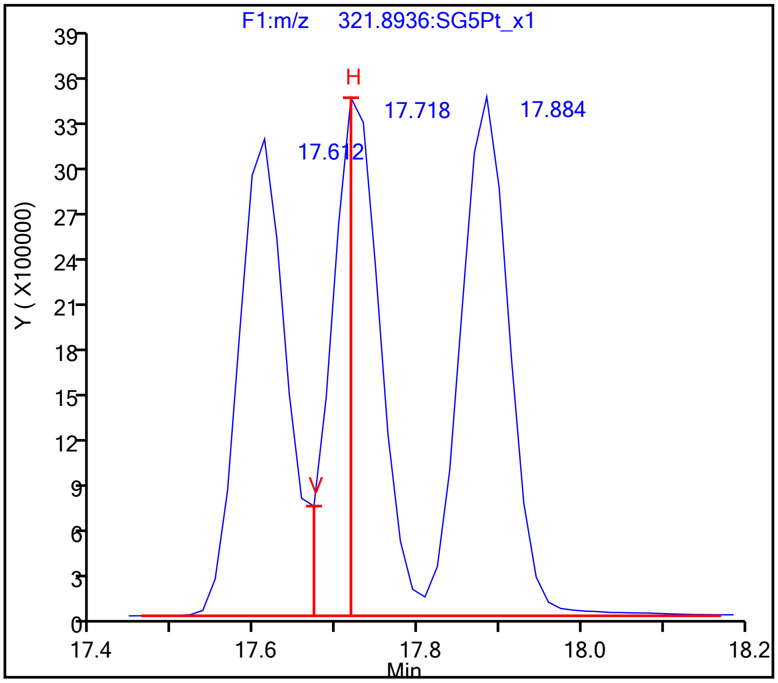

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab Sample ID (1): WDM 320-471421/4   Instrument ID (1): 10D5

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 03/17/2021 12:43

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.72	18

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Resolution Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54 Instrument ID: 10D5
Lims ID: WDM
Client ID:
Operator ID: KSS ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Column: DB-5 (0.32 mm)
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 403871
H (Peak Height) = 2191272

%R = 18 <= 25
Passed

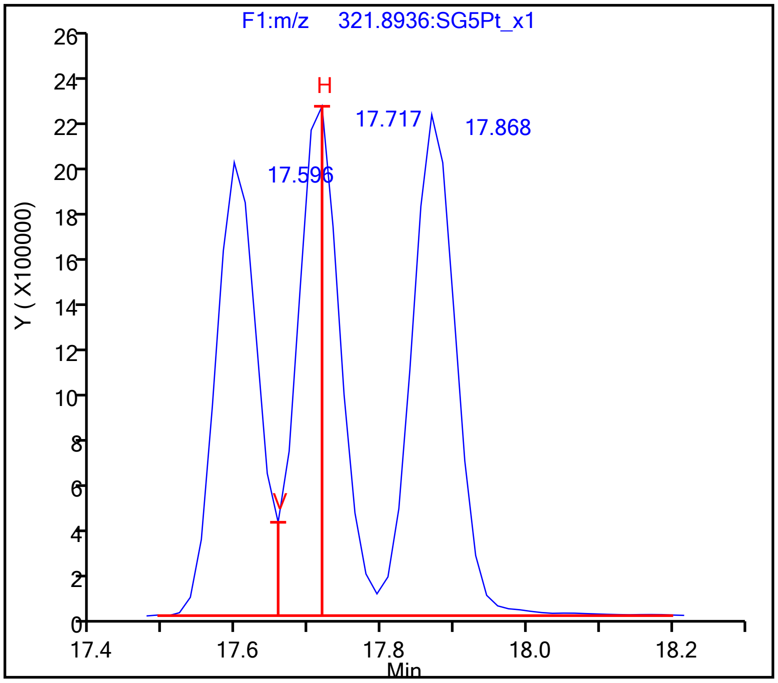

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento　　Job No.: 320-70797-1

SDG No.:

Lab Sample ID: ICV 320-470907/9　　Calibration Date: 03/17/2021 11:03

Instrument ID: 10D5　　Calib Start Date: 03/17/2021 01:10

GC Column: DB-5　　ID: 0.32(mm)　　Calib End Date: 03/17/2021 04:10

Lab File ID: 17MR2110D5_2.d　　Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9903	1.052		42.5	40.0	106	70-130
2,3,7,8-TCDD	AveID	1.099	1.199		43.6	40.0	109	70-130
1,2,3,7,8-PeCDF	AveID	1.021	1.035		203	200	101	70-130
2,3,4,7,8-PeCDF	AveID	0.9790	1.114		228	200	114	70-130
1,2,3,7,8-PeCDD	AveID	0.998	1.013		203	200	101	70-130
1,2,3,4,7,8-HxCDF	AveID	1.067	1.148		215	200	108	70-130
1,2,3,6,7,8-HxCDF	AveID	1.118	1.246		223	200	112	70-130
2,3,4,6,7,8-HxCDF	AveID	1.142	1.315		230	200	115	70-130
1,2,3,4,7,8-HxCDD	AveID	1.036	1.104		213	200	107	70-130
1,2,3,6,7,8-HxCDD	AveID	0.9658	1.111		230	200	115	70-130
1,2,3,7,8,9-HxCDD	AveID	1.073	1.176		219	200	110	70-130
1,2,3,7,8,9-HxCDF	AveID	1.146	1.222		213	200	107	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.402	1.538		219	200	110	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.034	1.141		221	200	110	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.300	1.312		202	200	101	70-130
OCDD	AveID	1.058	1.216		460	400	115	70-130
OCDF	AveID	1.314	1.514		461	400	115	70-130
13C-2,3,7,8-TCDF	Ave	1.355	1.341		98.9	100	99	71-140
13C-2,3,7,8-TCDD	Ave	0.9209	0.8885		96.5	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.085	1.088		100	100	100	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.106	1.110		100	100	100	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7689	0.7608		98.9	100	99	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.032	1.013		98.1	100	98	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.022	1.015		99.4	100	99	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9729	0.9221		94.8	100	95	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7689	0.7446		96.8	100	97	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8643	0.8542		98.8	100	99	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9469	0.9157		96.7	100	97	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7233	0.7337		101	100	101	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6855	0.6781		98.9	100	99	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.6720	0.7130		106	100	106	77-129
13C-OCDD	Ave	0.4996	0.4918		197	200	98	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.016	1.043		41.1	40.0	103	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Mar-2021 11:03:40 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 031621 ICV HRDXNIC_00047
Misc. Info.: 16MR21C10D5
Operator ID: KSS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:41:03 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:22:46

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.490	24207375	0.68	5.4E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	16.992	32461002	0.79	1.3554	98.9	98.9	0.3683	0.3683	98.94	
2,3,7,8-TCDF	17.007	13663016	0.76	0.9903	42.5	42.5	0.1000	0.1000	106	
A Non-2,3,7,8-sub-TCDF	16.735	122593	0.77	0.9903	0.3814	0.3814	0.1000	0.3814		
S Total TCDF					42.9	42.9	0.1000	0.1000		
D 13C-2,3,7,8-TCDD	17.672	21508191	0.70	0.9209	96.5	96.5	0.2938	0.2938	96.48	
2,3,7,8-TCDD	17.702	10315096	0.79	1.0991	43.6	43.6	0.1121	0.1121	109	
$ 37Cl4-2,3,7,8-TCDD	17.702	10096437		1.0159	41.1	41.1	0.0579	0.0579	103	
A Non-2,3,7,8-sub-TCDD	17.181	179730	0.83	1.0991	0.7603	0.7603	0.1121	0.7603		
S Total TCDD					44.4	44.4	0.1121	0.1121		
D 13C-1,2,3,7,8-PeCDF	21.896	26345735	1.52	1.0847	100.3	100.3	0.2709	0.2709	100	
1,2,3,7,8-PeCDF	21.910	54514574	1.58	1.0209	202.7	202.7	0.8440	0.8440	101	
D 13C-2,3,4,7,8-PeCDF	23.205	26873569	1.57	1.1057	100.4	100.4	0.2657	0.2657	100	a
2,3,4,7,8-PeCDF	23.232	59877628	1.58	0.9790	227.6	227.6	0.9313	0.9313	114	
A F1 PeCDFs	19.524						0.0435	0.0435		
A Non-2,3,7,8-sub-PeCDF	22.600	1302348	1.61	1.0000	4.894	4.894	0.8860	4.894		
S Total PeCDF					435.2	435.2	0.8876	0.8876		
D 13C-1,2,3,7,8-PeCDD	23.914	18416703	1.60	0.7689	98.9	98.9	0.1670	0.1670	98.94	
1,2,3,7,8-PeCDD	23.941	37294850	1.61	0.9982	202.9	202.9	0.3389	0.3389	101	
A Non-2,3,7,8-sub-PeCDD	22.878						0.3389	0.3389		
S Total PeCDD					202.9	202.9	0.3389	0.3389		
D 13C-1,2,3,4,7,8-HxCDF	30.067	22156541	0.51	1.0321	98.1	98.1	0.4710	0.4710	98.13	a
1,2,3,4,7,8-HxCDF	30.094	50854368	1.25	1.0667	215.2	215.2	1.454	1.454	108	
D 13C-1,2,3,6,7,8-HxCDF	30.294	22212121	0.52	1.0218	99.4	99.4	0.4757	0.4757	99.36	
1,2,3,6,7,8-HxCDF	30.307	55369865	1.22	1.1178	223.0	223.0	1.314	1.314	112	
D 13C-2,3,4,6,7,8-HxCDF	31.225	20172516	0.50	0.9729	94.8	94.8	0.4997	0.4997	94.78	
2,3,4,6,7,8-HxCDF	31.239	53044015	1.25	1.1422	230.2	230.2	1.034	1.034	115	
D 13C-1,2,3,7,8,9-HxCDF	32.077	20032843	0.52	0.9469	96.7	96.7	0.5134	0.5134	96.70	
1,2,3,7,8,9-HxCDF	32.104	48964746	1.25	1.1455	213.4	213.4	0.9322	0.9322	107	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	29.795						1.151	1.151		
S Total HxCDF					881.8	881.8	1.184	1.184		
* 13C-1,2,3,7,8,9-HxCDD	31.891	21876910	1.24	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.425	16288502	1.27	0.7689	96.8	96.8	0.3623	0.3623	96.83	a
1,2,3,4,7,8-HxCDD	31.452	35978366	1.26	1.0357	213.3	213.3	0.6338	0.6338	107	
D 13C-1,2,3,6,7,8-HxCDD	31.545	18687223	1.22	0.8643	98.8	98.8	0.3223	0.3223	98.83	
1,2,3,6,7,8-HxCDD	31.558	41529684	1.25	0.9658	230.1	230.1	0.6049	0.6049	115	
1,2,3,7,8,9-HxCDD	31.904	41136504	1.24	1.0727	219.3	219.3	0.5764	0.5764	110	
A Non-2,3,7,8-sub-HxCDD	30.440						0.6033	0.6033		
S Total HxCDD					662.7	662.7	0.6050	0.6050		
D 13C-1,2,3,4,6,7,8-HpCDF	33.568	16051720	0.42	0.7233	101.4	101.4	1.440	1.440	101	
1,2,3,4,6,7,8-HpCDF	33.580	49378735	1.05	1.4017	219.5	219.5	2.566	2.566	110	
D 13C-1,2,3,4,7,8,9-HpCDF	34.649	15597333	0.42	0.6720	106.1	106.1	1.550	1.550	106	a
1,2,3,4,7,8,9-HpCDF	34.649	40922338	1.06	1.2995	201.9	201.9	3.037	3.037	101	
A Non-2,3,7,8-sub-HpCDF	34.127						2.787	2.787		
S Total HpCDF					421.4	421.4	2.802	2.802		
D 13C-1,2,3,4,6,7,8-HpCDD	34.358	14833716	1.08	0.6855	98.9	98.9	0.7033	0.7033	98.91	
1,2,3,4,6,7,8-HpCDD	34.370	33859401	1.03	1.0339	220.8	220.8	1.056	1.056	110	
A Non-2,3,7,8-sub-HpCDD	34.460						1.056	1.056		
S Total HpCDD					220.8	220.8	1.056	1.056		
D 13C-OCDD	36.685	21518133	0.90	0.4996	196.9	196.9	0.3160	0.3160	98.44	
OCDF	36.781	65137721	0.91	1.3135	460.9	460.9	0.3310	0.3310	115	
OCDD	36.685	52336474	0.90	1.0576	460.0	460.0	0.4101	0.4101	115	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNIC_00047 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 17-Mar-2021 11:03:40 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 031621 ICV HRDXNIC_00047
Misc. Info.: 16MR21C10D5
Operator ID: KSS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:41:03 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: arghestanis Date: 17-Mar-2021 12:22:46

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.490	17.521	-2		9806360	2488530	3779	9447	659		a
333.9339	17.490	17.521	-2		14401015	3606386	2818	7045	1280	0.68(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.992	17.007	-1	0.971	14283858	3575887	7673	19182	466		
317.9389	16.992	17.007	-1	0.971	18177144	4531613	4496	11240	1008	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.007	17.037	-2	1.001	5913430	1487609	1235	3087	1205		
305.8987	17.007	17.037	-2	1.001	7749586	1885917	1975	4937	955	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.357	16.735	-23	0.963	53191	13921	1235	3087	11		
305.8987	16.357	16.735	-23	0.963	69402	18215	1975	4937	9	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.672	17.702	-2	1.010	8846313	2004546	3779	9447	530		
333.9339	17.687	17.702	-1	1.011	12661878	2901119	2818	7045	1029	0.70(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.702	17.718	-1	1.002	4551581	1070426	1417	3542	755		
321.8936	17.702	17.718	-1	1.002	5763515	1325402	1001	2502	1324	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.702	17.733	-2	1.012	10096437	2370272	1435	3587	1652		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.596	17.181	25	0.996	81313	23641	1417	3542	17		
321.8936	17.596	17.181	25	0.996	98417	27012	1001	2502	27	0.83(0.65-0.89)	

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	21.896	21.923	-2	1.252	15870373	2828552	4165	10412	679		
353.8970	21.896	21.923	-2	1.252	10475362	1843346	2998	7495	615	1.52(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.910	21.937	-2	1.001	33366463	5943069	9747	24367	610		
341.8567	21.910	21.937	-2	1.001	21148111	3780006	6356	15890	595	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	23.205	23.232	-2	1.327	16412310	2715768	4165	10412	652		a
353.8970	23.205	23.232	-2	1.327	10461259	1699844	2998	7495	567	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.232	23.260	-2	1.001	36710578	5969779	9747	24367	612		
341.8567	23.219	23.260	-2	1.001	23167050	3778383	6356	15890	594	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.524						267	667			
341.8567	19.524						524	1310			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.428	22.600	-10	1.024	803833	126018	9747	24367	13		
341.8567	22.428	22.600	-10	1.024	498515	78850	6356	15890	12	1.61(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.914	23.928	-1	1.367	11330738	1683000	1974	4935	853		
369.8919	23.914	23.928	-1	1.367	7085965	1089955	1157	2892	942	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.941	23.955	-1	1.001	22987893	3571231	2336	5840	1529		
357.8516	23.928	23.955	-2	1.001	14306957	2207913	1417	3542	1558	1.61(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.878						2336	5840			
357.8516	22.878						1417	3542			
13C-1,2,3,4,7,8-HxCDF											a
383.8639	30.067	30.094	-2	0.943	7525146	1173737	3542	8855	331		a
385.8610	30.067	30.094	-2	0.943	14631395	2281700	6801	17002	335	0.51(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.094	30.121	-2	1.001	28293580	4512410	11866	29665	380		
375.8178	30.094	30.121	-2	1.001	22560788	3611142	9577	23942	377	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.294	30.307	-1	0.950	7594773	1231188	3542	8855	348		
385.8610	30.280	30.307	-2	0.949	14617348	2418397	6801	17002	356	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.307	30.333	-2	1.000	30413302	5032073	11866	29665	424		
375.8178	30.307	30.333	-2	1.000	24956563	4096626	9577	23942	428	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.225	31.239	-1	0.979	6720267	1500391	3542	8855	424		
385.8610	31.225	31.239	-1	0.979	13452249	3040371	6801	17002	447	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.239	31.252	-1	1.000	29423268	6866189	11866	29665	579		
375.8178	31.239	31.252	-1	1.000	23620747	5457697	9577	23942	570	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.077	32.104	-2	1.006	6842697	1686924	3542	8855	476		
385.8610	32.077	32.104	-2	1.006	13190146	3332831	6801	17002	490	0.52(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.104	32.117	-1	1.001	27247198	6799775	11866	29665	573		
375.8178	32.090	32.117	-2	1.000	21717548	5518794	9577	23942	576	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.795						11866	29665			
375.8178	29.795						9577	23942			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.891	31.904	-1		12118319	2913423	3479	8697	837		
403.8529	31.891	31.904	-1		9758591	2405785	2448	6120	983	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	31.425	31.452	-2	0.985	9102727	2271055	3479	8697	653		a
403.8529	31.425	31.452	-2	0.985	7185775	1775147	2448	6120	725	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.452	31.465	-1	1.001	20046411	5105079	5878	14695	869		
391.8127	31.438	31.465	-2	1.000	15931955	4028757	4747	11867	849	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.545	31.558	-1	0.989	10268384	2510487	3479	8697	722		
403.8529	31.545	31.558	-1	0.989	8418839	2036275	2448	6120	832	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.558	31.585	-2	1.000	23095978	5594610	5878	14695	952		
391.8127	31.558	31.585	-2	1.000	18433706	4574223	4747	11867	964	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.904	31.931	-2	1.015	22786684	5694596	5878	14695	969		
391.8127	31.904	31.931	-2	1.015	18349820	4631047	4747	11867	976	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.440						5878	14695			
391.8127	30.440						4747	11867			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.568	33.592	-1	1.053	4720521	1521751	7464	18660	204		
419.8220	33.580	33.592	-1	1.053	11331199	3665897	14693	36732	249	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.580	33.592	-1	1.000	25261785	8487457	39228	98070	216		
409.7789	33.580	33.592	-1	1.000	24116950	8241887	35413	88532	233	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8253	34.649	34.661	-1	1.086	4575883	1398172	7464	18660	187		a
419.8220	34.649	34.661	-1	1.086	11021450	3330075	14693	36732	227	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.649	34.661	-1	1.000	21010606	6355990	39228	98070	162		
409.7789	34.649	34.661	-1	1.000	19911732	6168834	35413	88532	174	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.127						39228	98070			
409.7789	34.127						35413	88532			

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.358	34.382	-1	1.077	7705092	2440613	4913	12282	497		
437.8140	34.358	34.382	-1	1.077	7128624	2222438	5345	13362	416	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.370	34.382	-1	1.000	17204346	5474842	11532	28830	475		
425.7737	34.370	34.382	-1	1.000	16655055	5347336	8825	22062	606	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.460						11532	28830			
425.7737	34.460						8825	22062			
13C-OCDD											
469.7779	36.685	36.697	-1	1.150	10211025	2757838	1742	4355	1583		
471.7750	36.685	36.697	-1	1.150	11307108	3073347	1617	4042	1901	0.90(0.76-1.02)	
OCDF											
441.7428	36.781	36.793	-1	1.003	30970233	8629484	2459	6147	3509		
443.7399	36.769	36.793	-1	1.002	34167488	9554523	2612	6530	3658	0.91(0.76-1.02)	
OCDD											
457.7377	36.685	36.709	-1	1.000	24749356	6761020	2406	6015	2810		
459.7348	36.685	36.709	-1	1.000	27587118	7649826	2652	6630	2885	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test
Review Flags
a - User Assigned ID

Reagents:

HRDXNIC_00047 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d
Lims ID: ICV
Client ID:
Inject. Date: 17-Mar-2021 11:03:40
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5
Operator: KSS
Lims Batch ID: 470907
Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-TCDF, RT: 16.735

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.990	D 13C-2,3,7,8-TCDF	100.000	32461002	8107500

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.990		100.000	32461002	8107500

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.357	53191	13921	69402	18215	0.3814	0.77	n
Signal Totals:							
	53191	13921	69402	18215			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	122593	32136				0.77	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3814 = (122593 * 100.000) / (32461002 * 0.990)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Mar-2021 11:03:40	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	470907	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDD, RT: 17.181

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.099	D 13C-2,3,7,8-TCDD	100.000	21508191	4905665

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.099		100.000	21508191	4905665

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
17.596	81313	23641	98417	27012	0.7603	0.83	
Signal Totals:							
	81313	23641	98417	27012			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	179730	50653				0.83	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7603 = (179730 * 100.000) / (21508191 * 1.099)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	17-Mar-2021 11:03:40	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	470907	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-PeCDF, RT: 22.600

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021	D 13C-1,2,3,7,8-PeCDF	100.000	26345735	4671898
2,3,4,7,8-PeCDF	0.979	D 13C-2,3,4,7,8-PeCDF	100.000	26873569	4415612

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	26609652	4543755

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.428	803833	126018	498515	78850	4.89	1.61	
Signal Totals:							
	803833	126018	498515	78850			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1302348	204868				1.61	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.894 = (1302348 * 100.000) / (26609652 * 1.000)

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d				
Injection Date:	17-Mar-2021 11:03:40	Instrument ID:	10D5		
Lims ID:	ICV				
Client ID:					
Operator ID:	KSS	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Processing Integration Results

Not Detected

Expected RT: 17.52

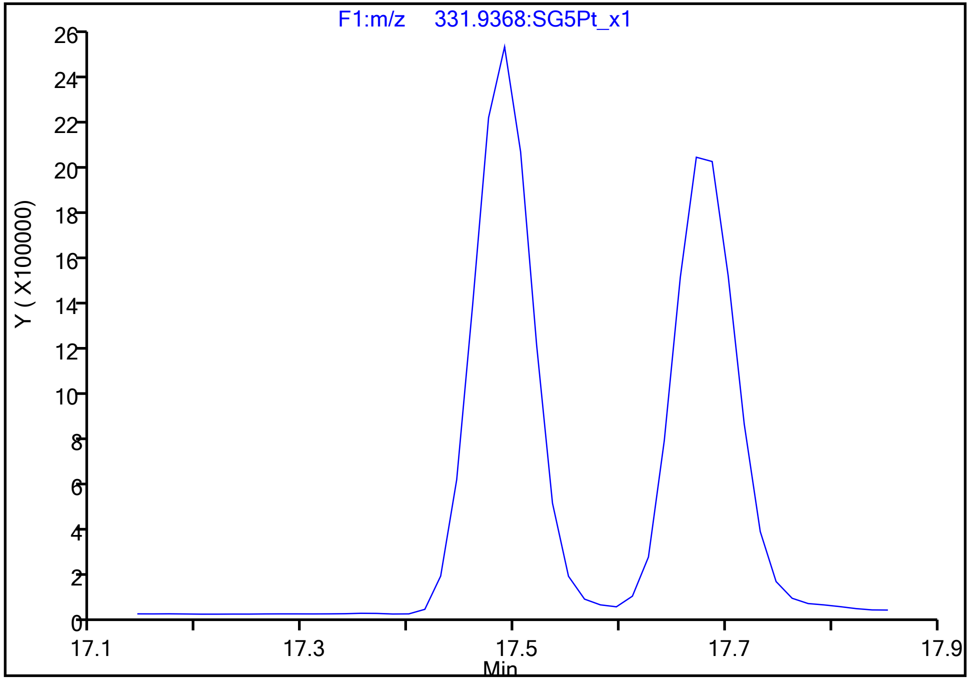

Manual Integration Results

RT: 17.49

Area: 9806360

Amount: 100.0000

Amount Units: pg/ul

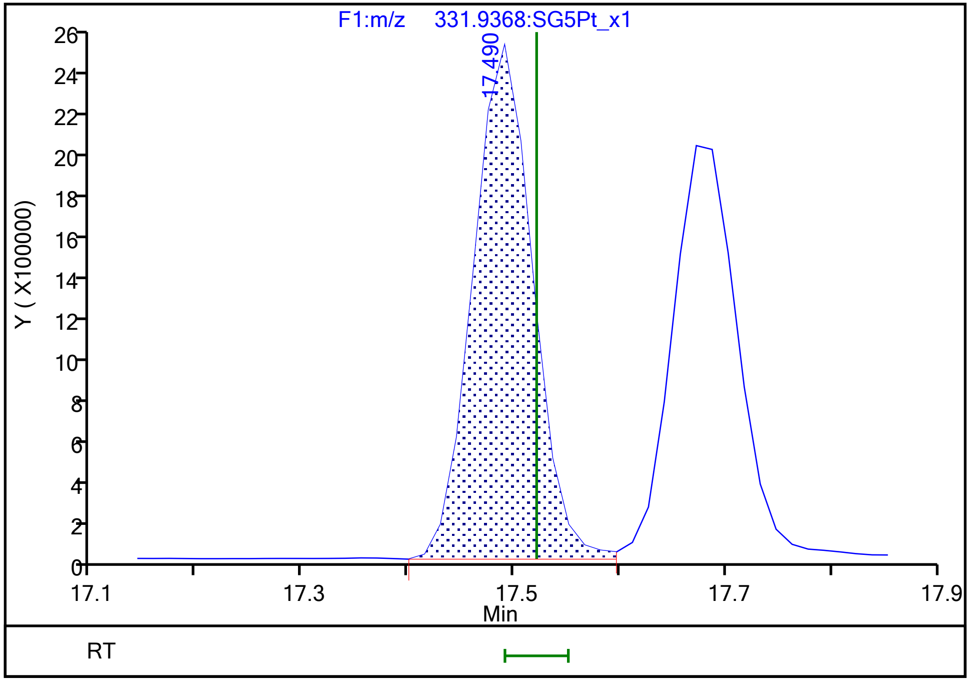

Reviewer: arghestanis, 17-Mar-2021 12:21:36

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d				
Injection Date:	17-Mar-2021 11:03:40	Instrument ID:	10D5		
Lims ID:	ICV				
Client ID:					
Operator ID:	KSS	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Not Detected

Expected RT: 23.23

Processing Integration Results

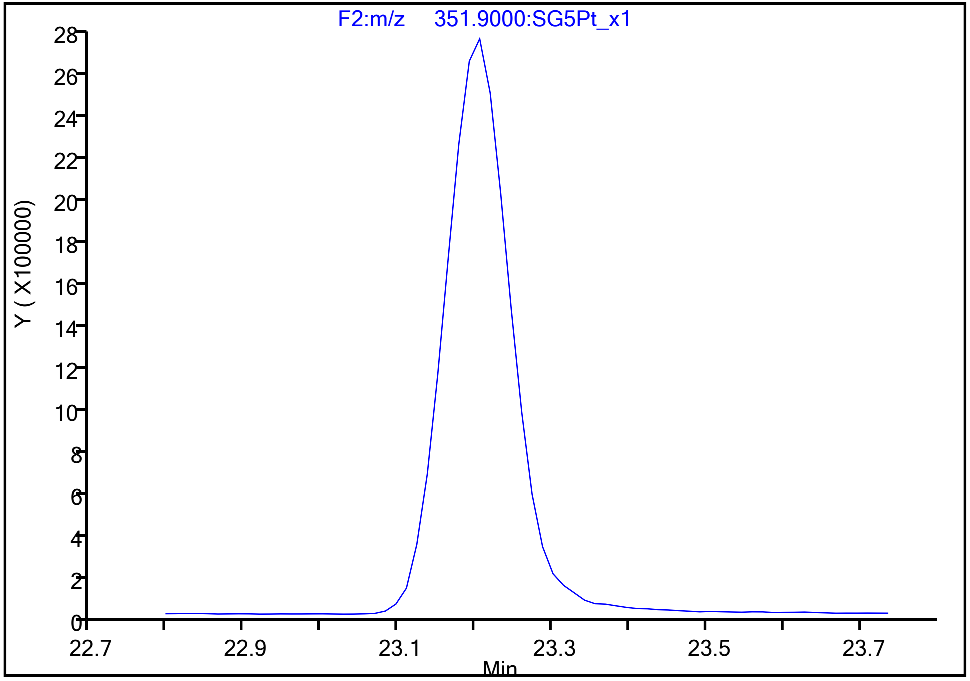

RT: 23.20

Area: 16412310

Amount: 100.4041

Amount Units: pg/ul

Manual Integration Results

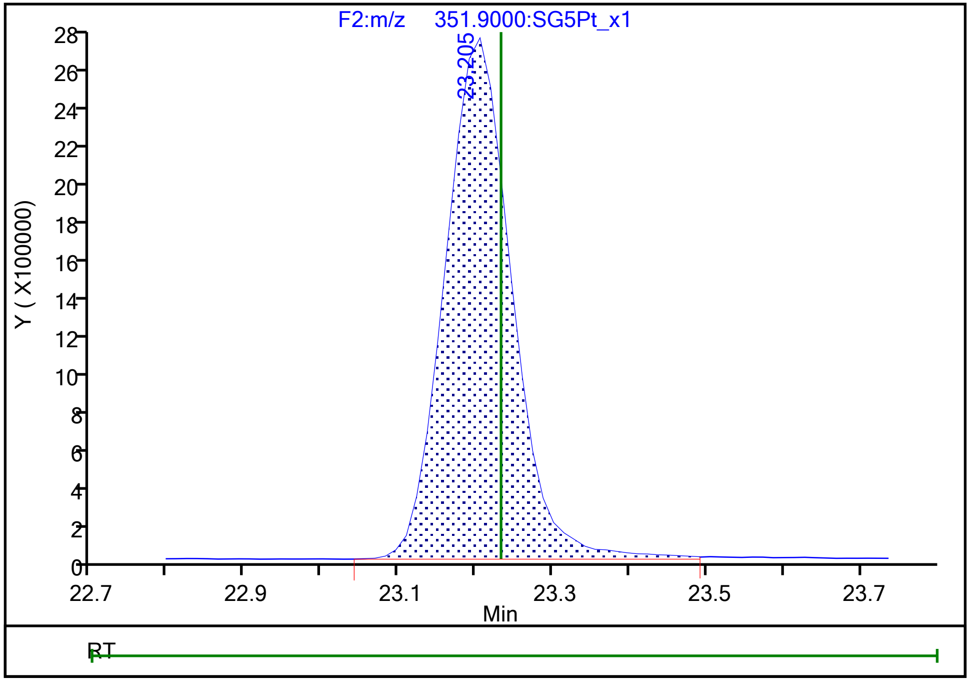

Reviewer: arghestanis, 17-Mar-2021 12:21:47

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 17-Mar-2021 13:41:07

Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d				
Injection Date:	17-Mar-2021 11:03:40	Instrument ID:	10D5		
Lims ID:	ICV				
Client ID:					
Operator ID:	KSS	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Processing Integration Results

Not Detected

Expected RT: 30.09

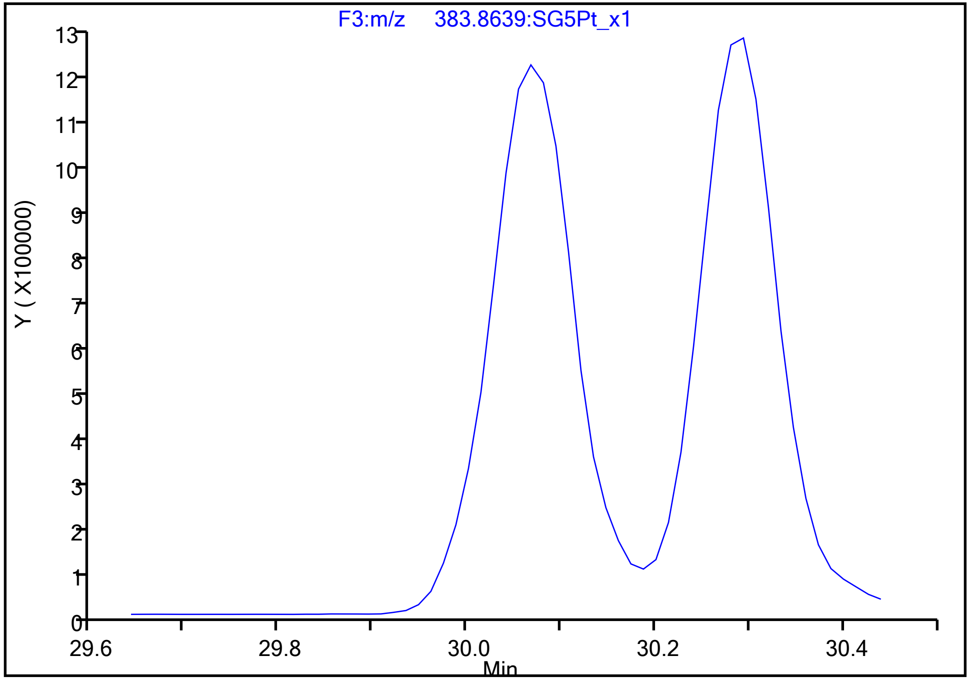

Manual Integration Results

RT: 30.07

Area: 7525146

Amount: 98.127815

Amount Units: pg/ul

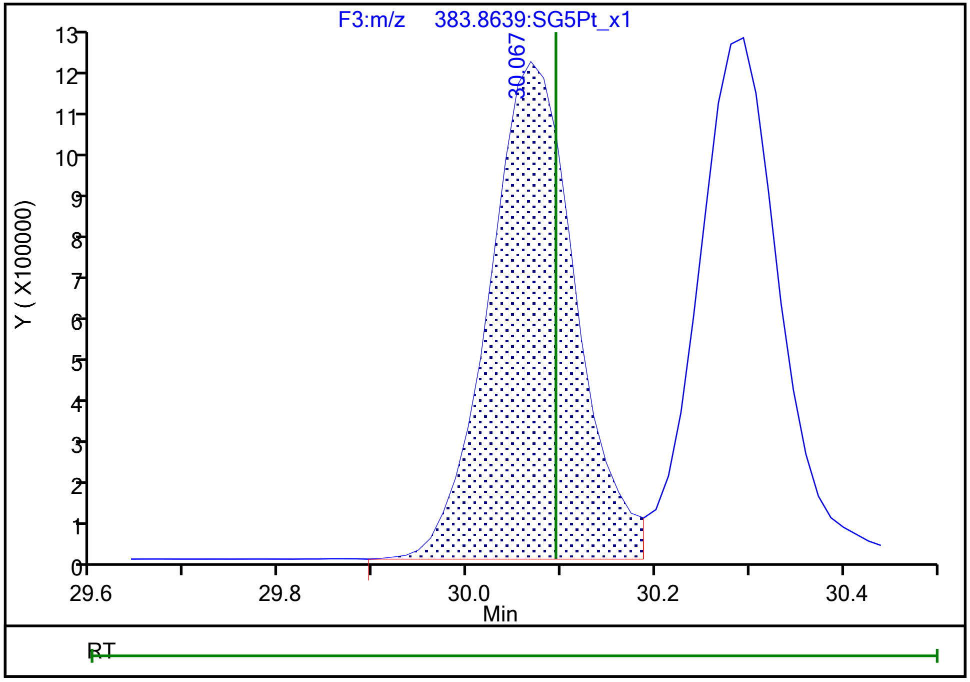

Reviewer: arghestanis, 17-Mar-2021 12:22:05

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d
Injection Date: 17-Mar-2021 11:03:40
Instrument ID: 10D5
Lims ID: ICV
Client ID:
Operator ID: KSS
ALS Bottle#: 4
Worklist Smp#: 9
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3:HRSIR

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 31.45

Processing Integration Results

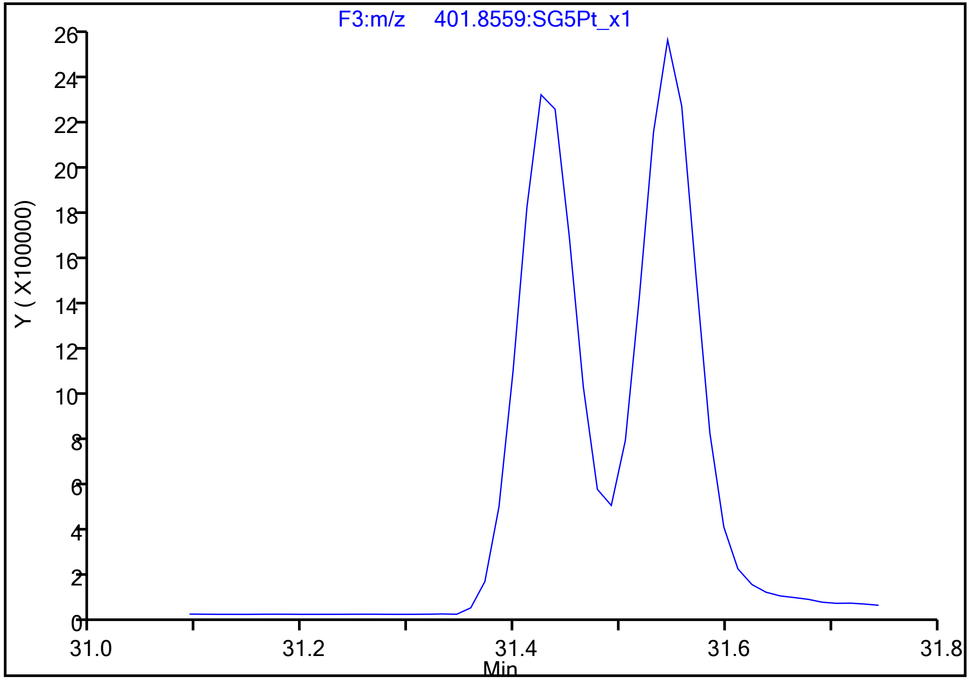

RT: 31.42
Area: 9102727
Amount: 96.829177
Amount Units: pg/ul

Manual Integration Results

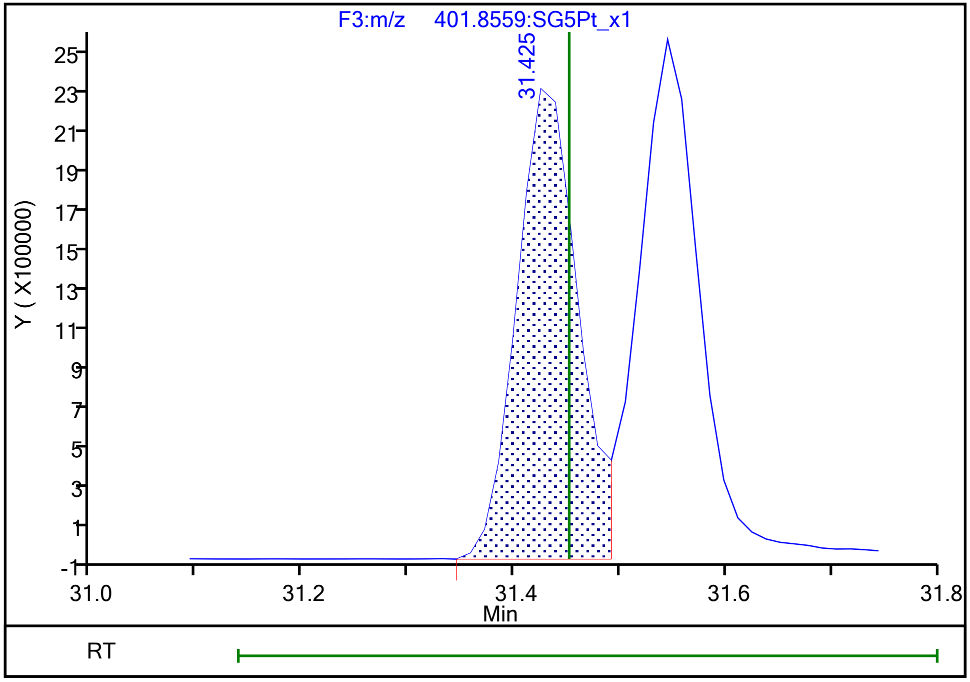

Reviewer: arghestanis, 17-Mar-2021 12:22:20
Audit Action: Assigned Compound ID
Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d				
Injection Date:	17-Mar-2021 11:03:40	Instrument ID:	10D5		
Lims ID:	ICV				
Client ID:					
Operator ID:	KSS	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Not Detected

Expected RT: 34.66

Processing Integration Results

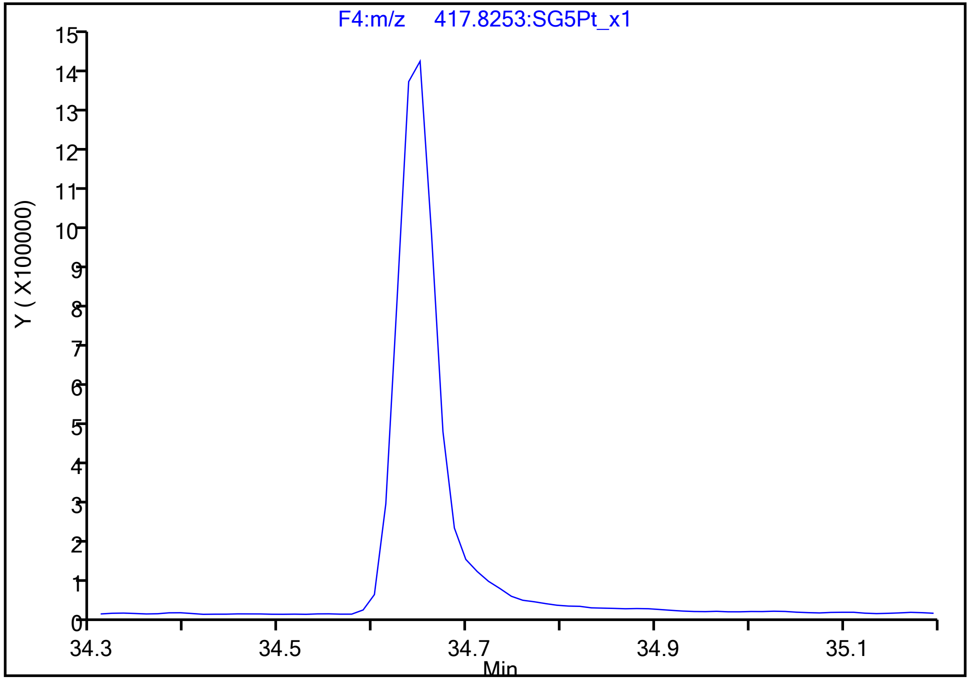

Manual Integration Results

RT: 34.65
Area: 4575883
Amount: 106.0872
Amount Units: pg/ul

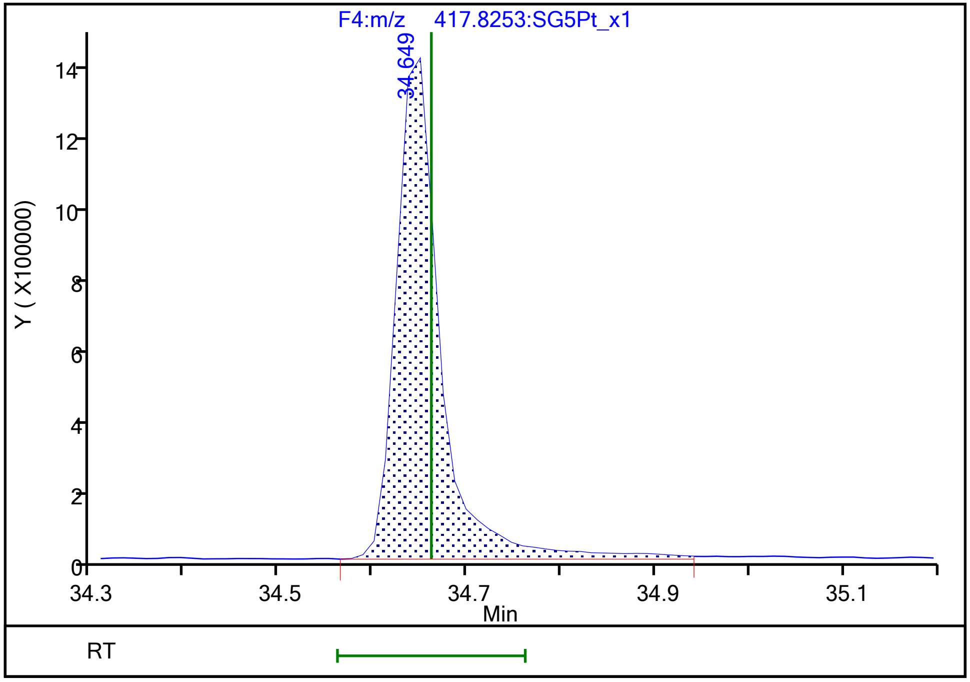

Reviewer: arghestanis, 17-Mar-2021 12:22:36

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d
Injection Date: 17-Mar-2021 11:03:40
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

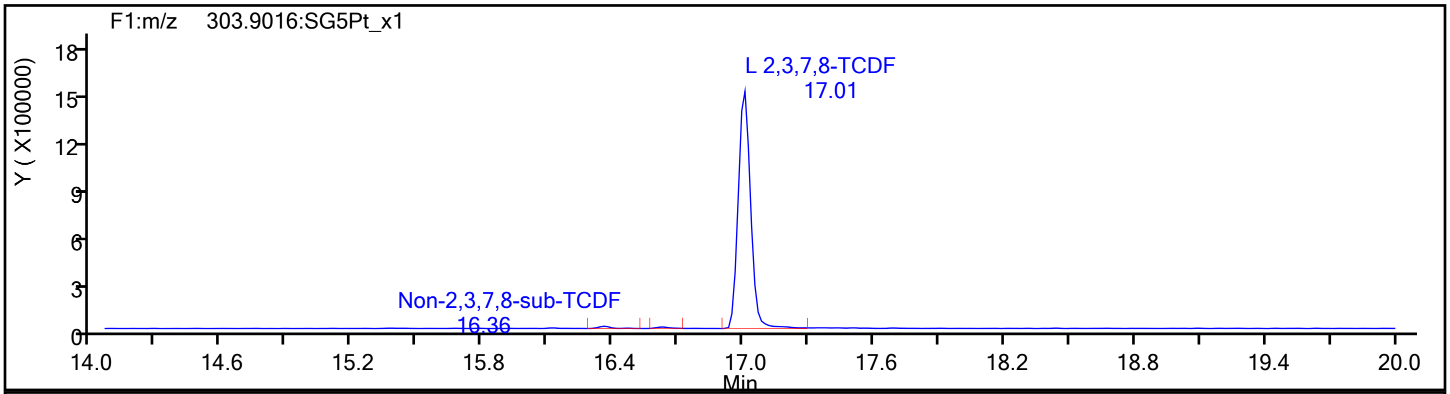

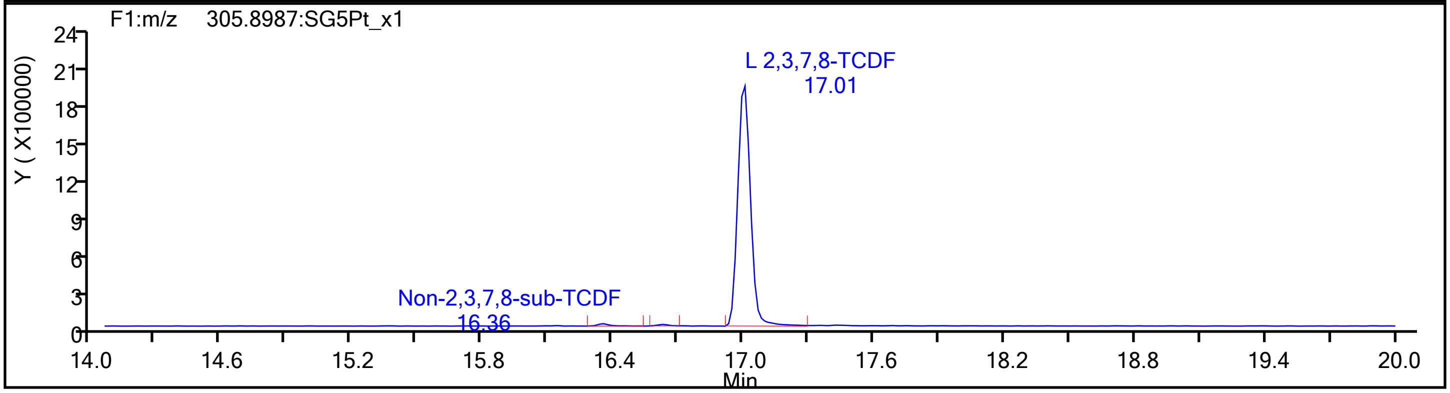

TCDF Standards

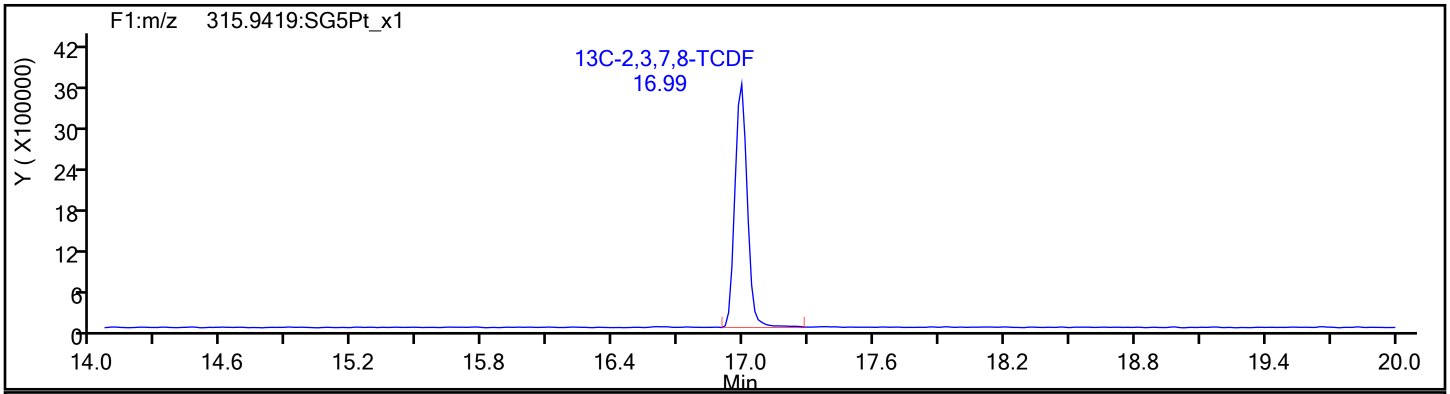

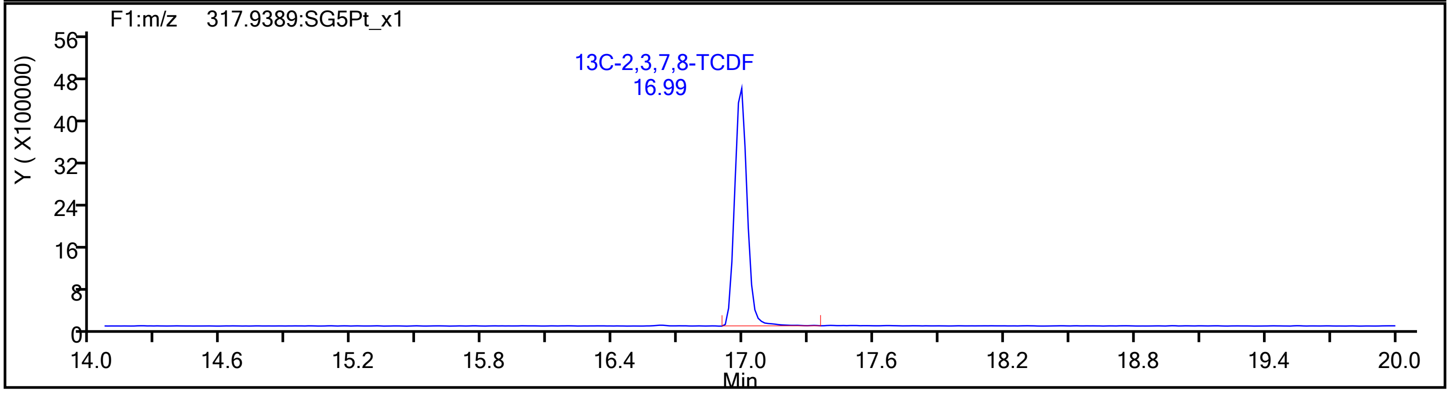

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d
Injection Date: 17-Mar-2021 11:03:40
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

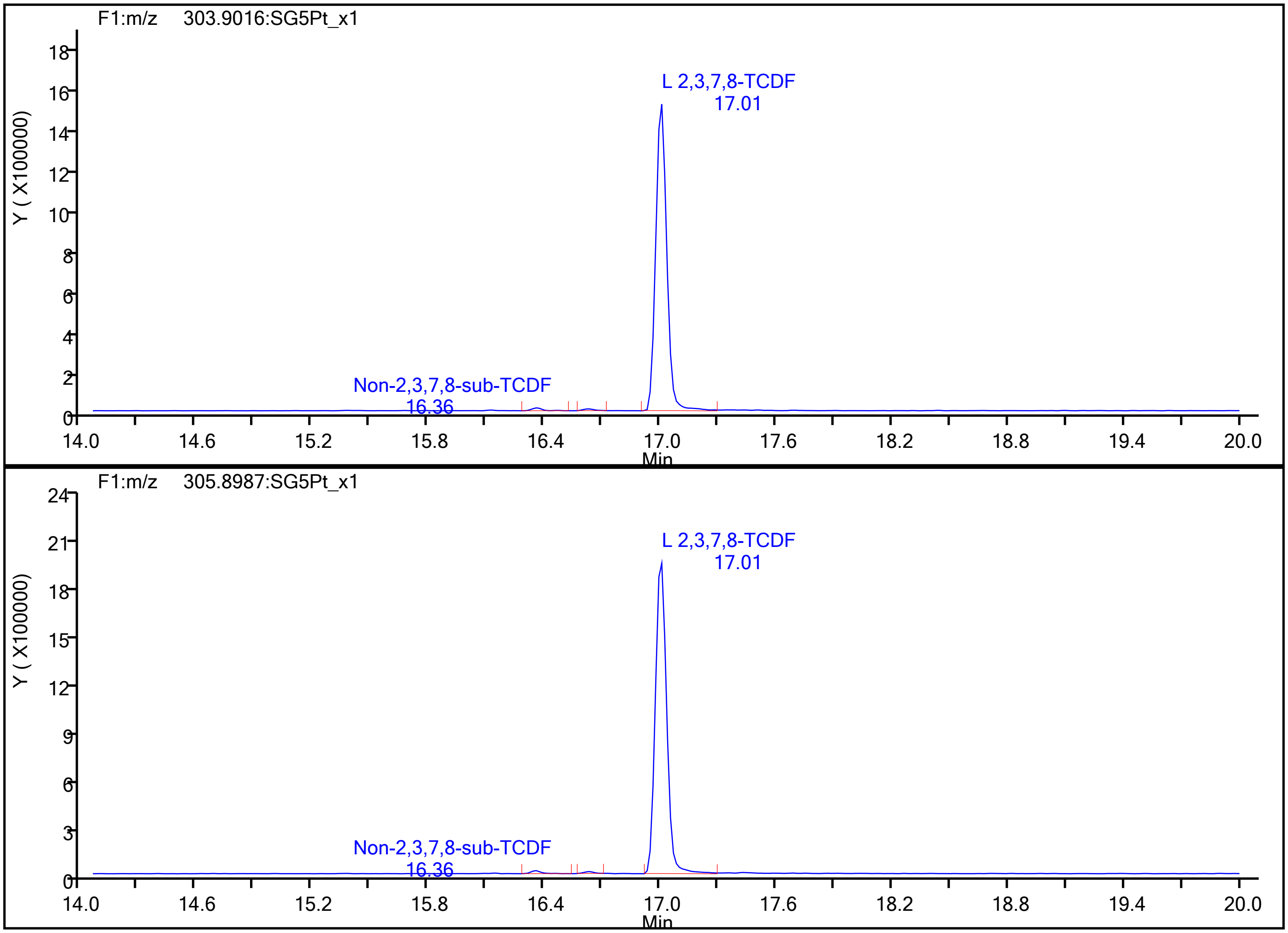

TCDF Interference Mass

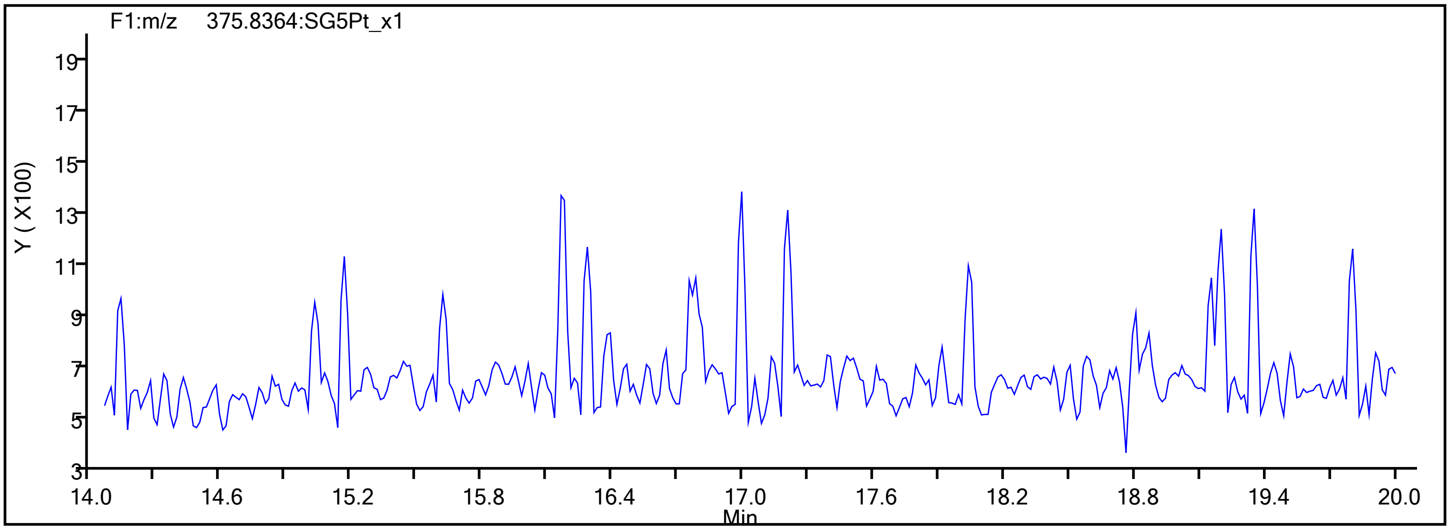

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d

Injection Date: 17-Mar-2021 11:03:40

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: KSS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907

Sample Line#: 9

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

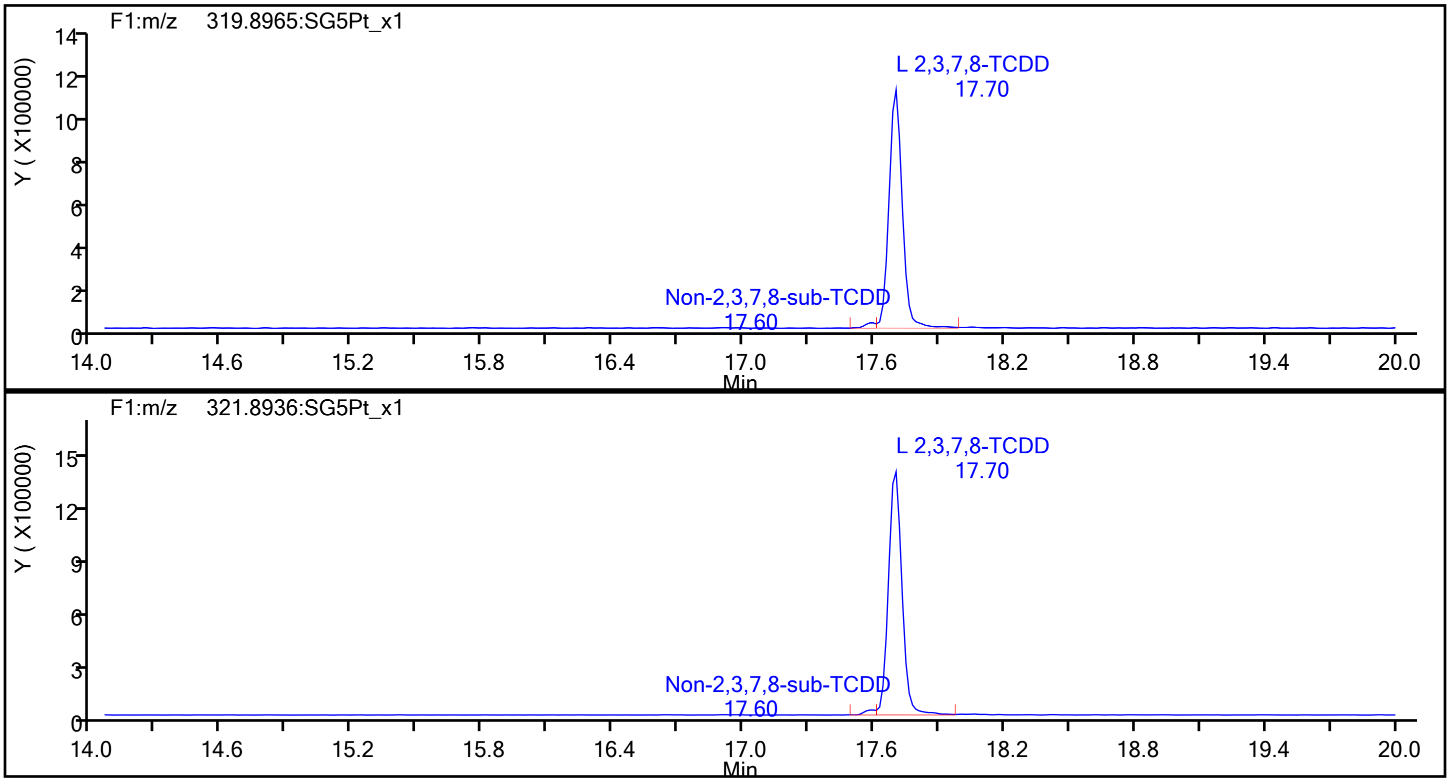

TCDD Standards

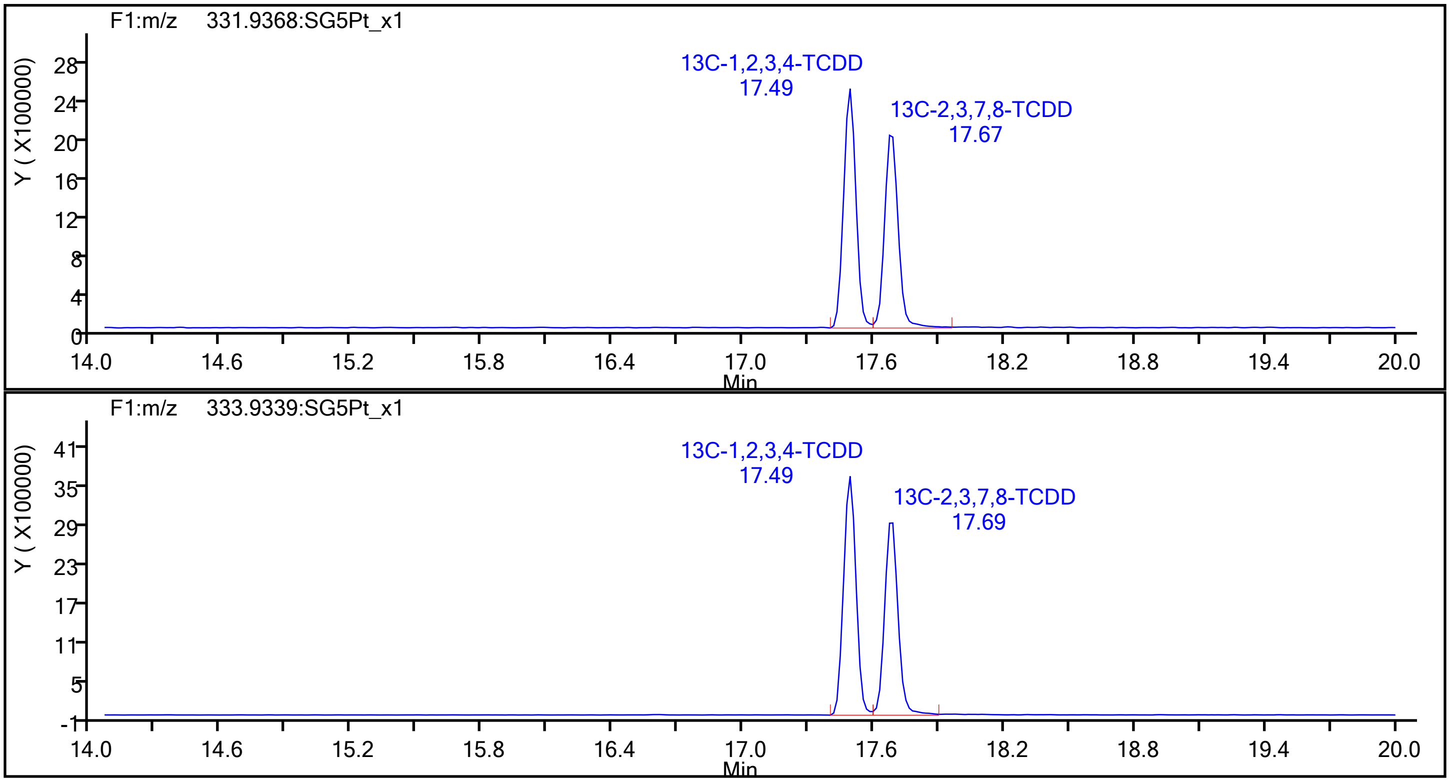

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 11:03:40
Injection Vol: 2.0 ul
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Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 9
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37Cl4-TCDD

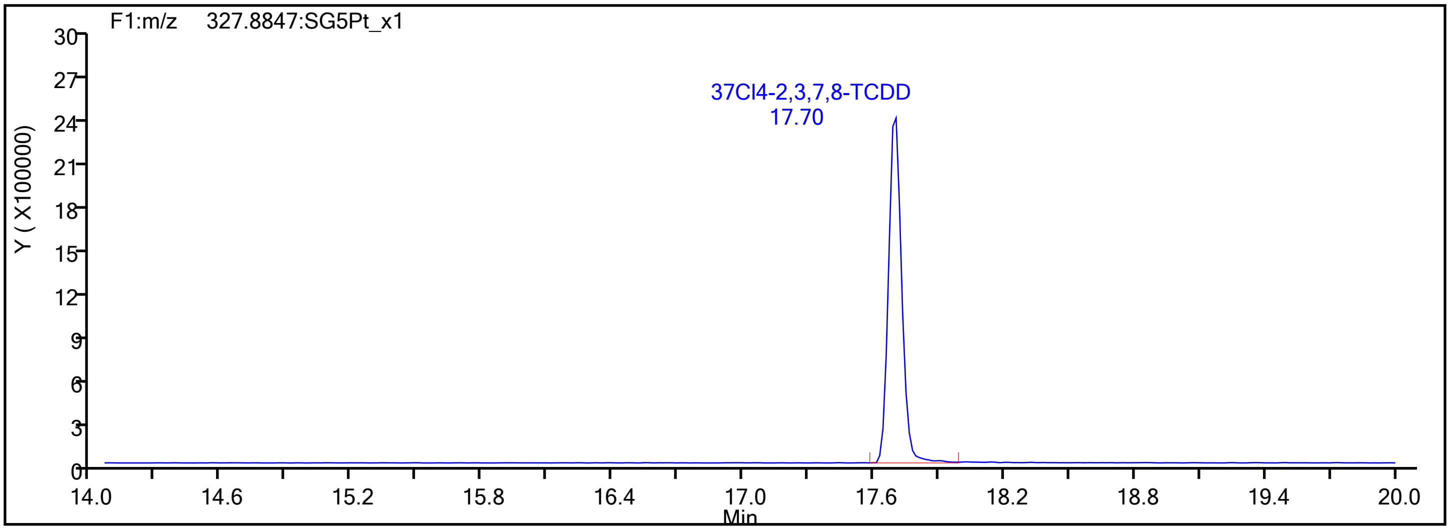

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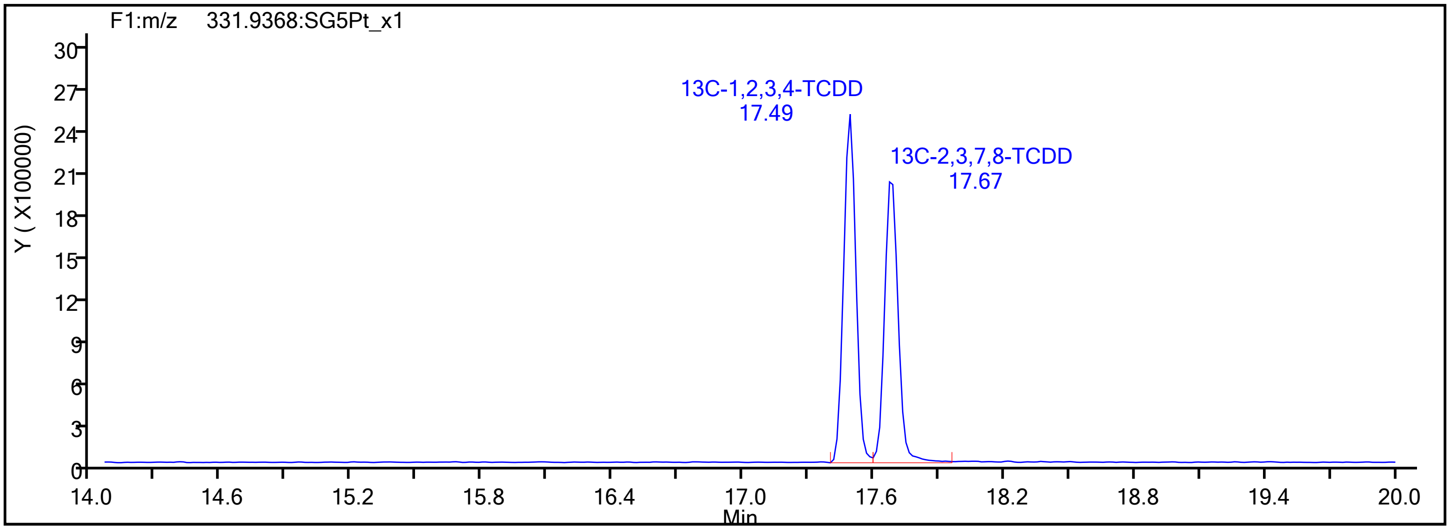

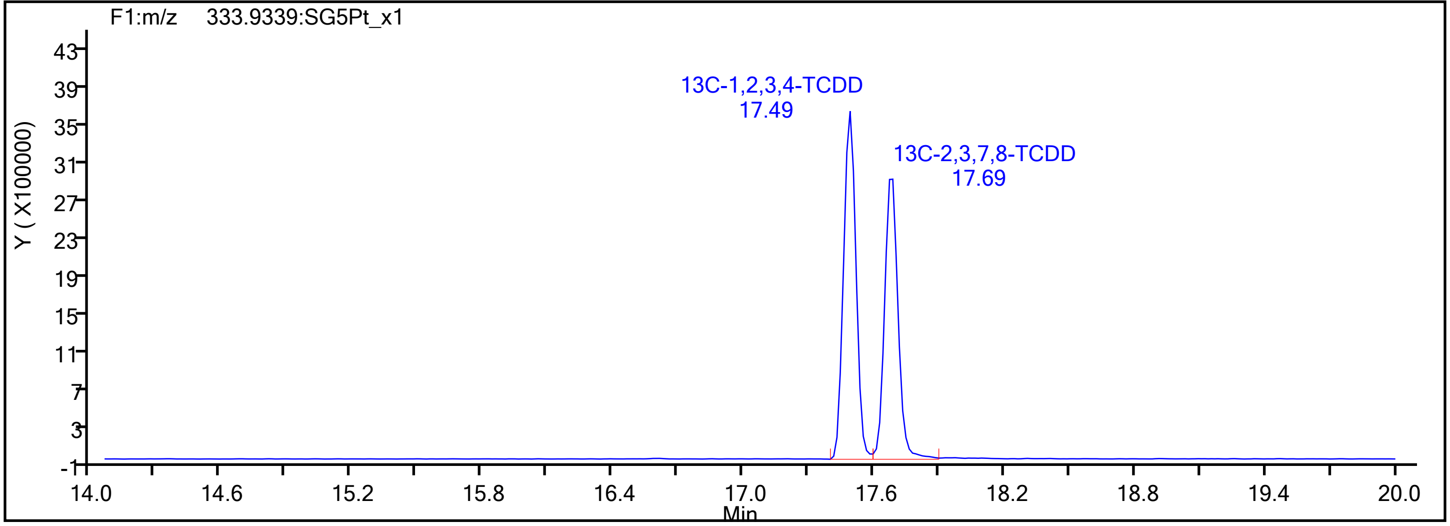

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

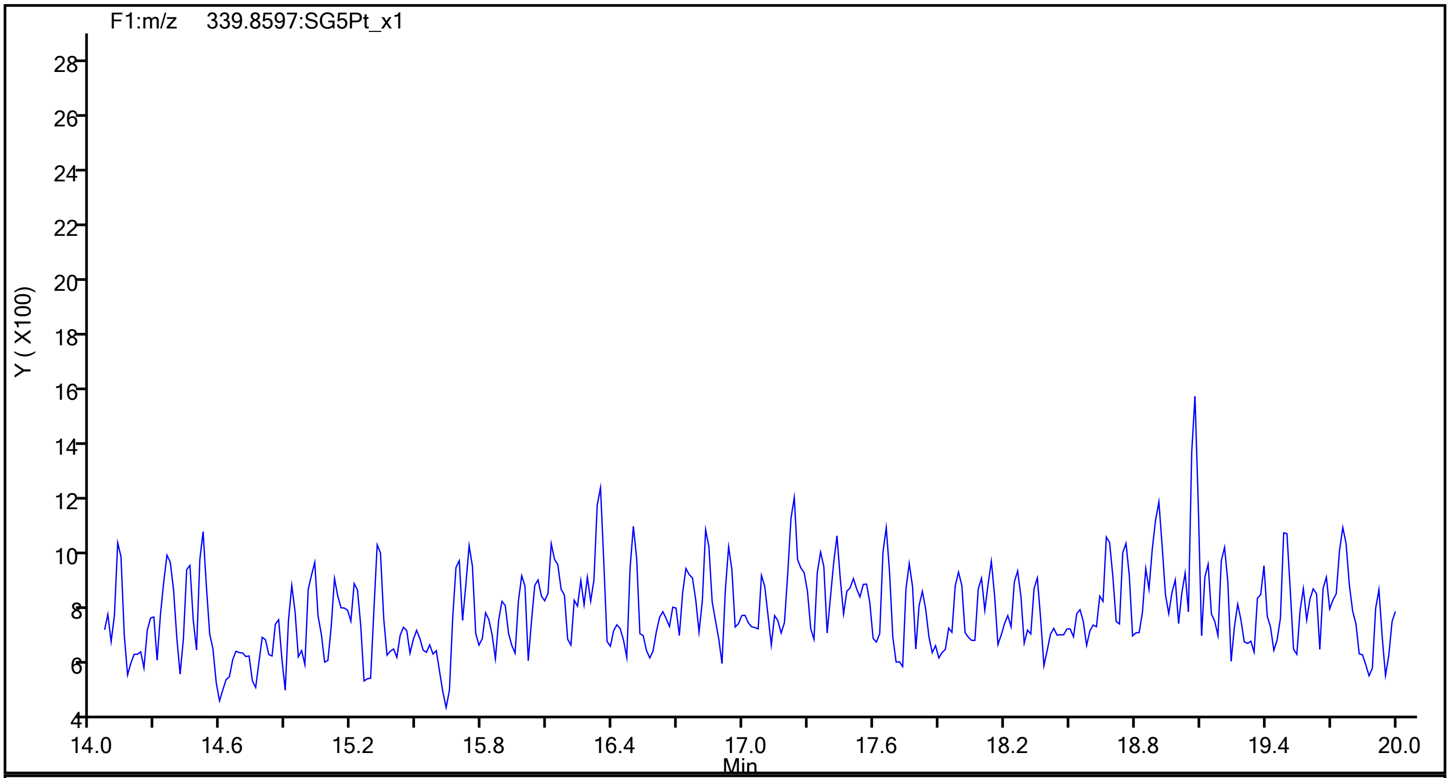

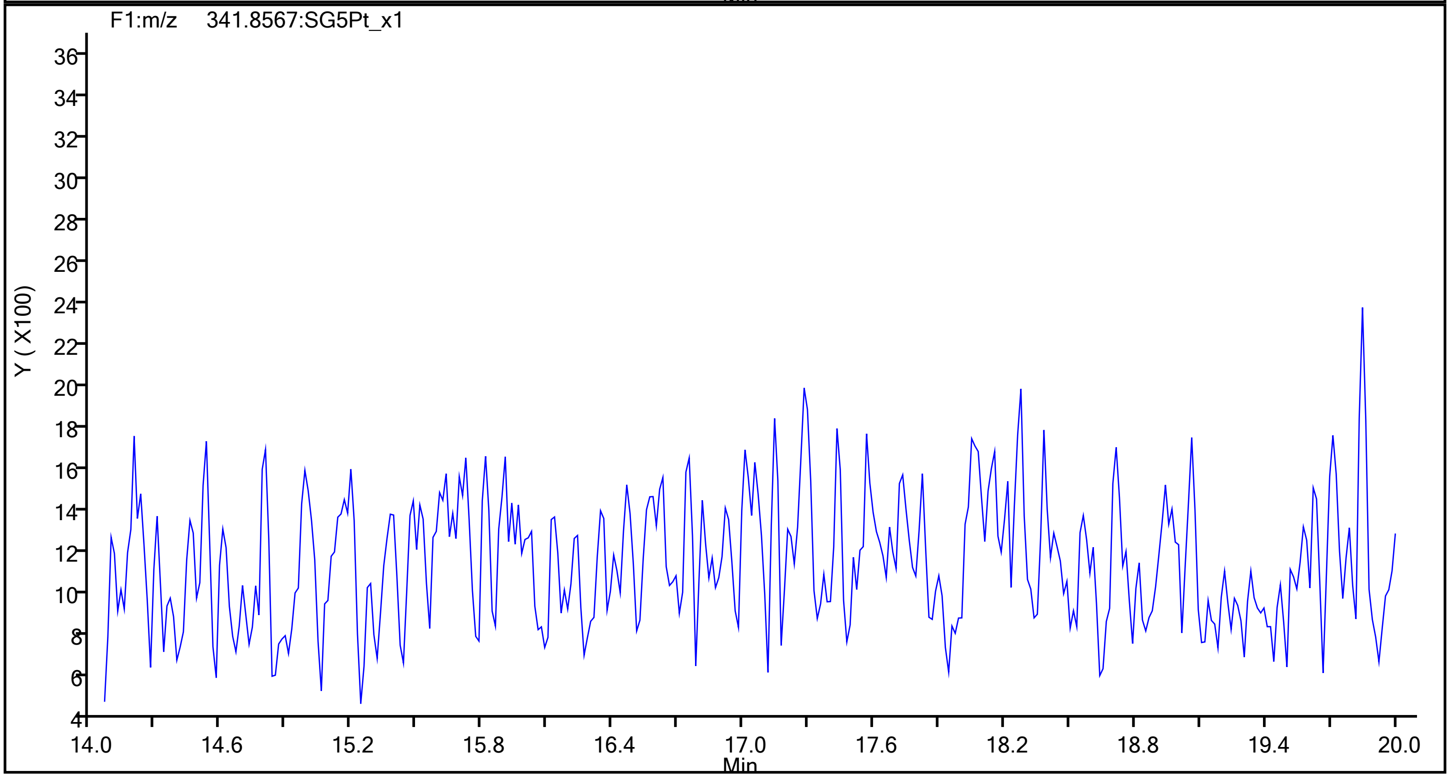

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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F1 PeCDFs

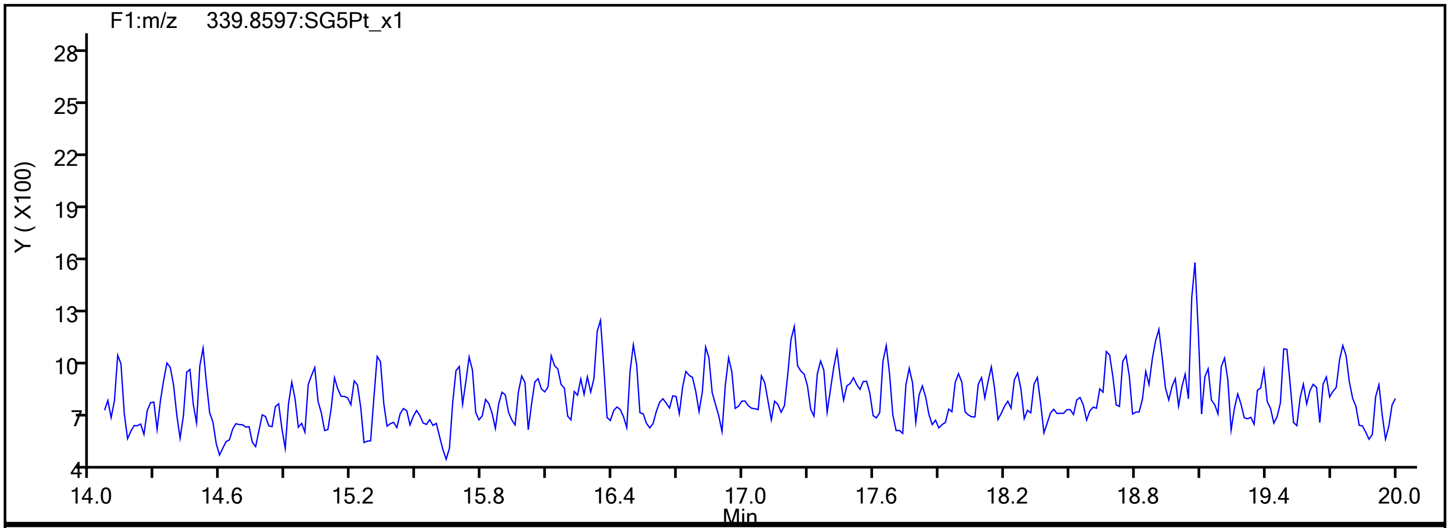

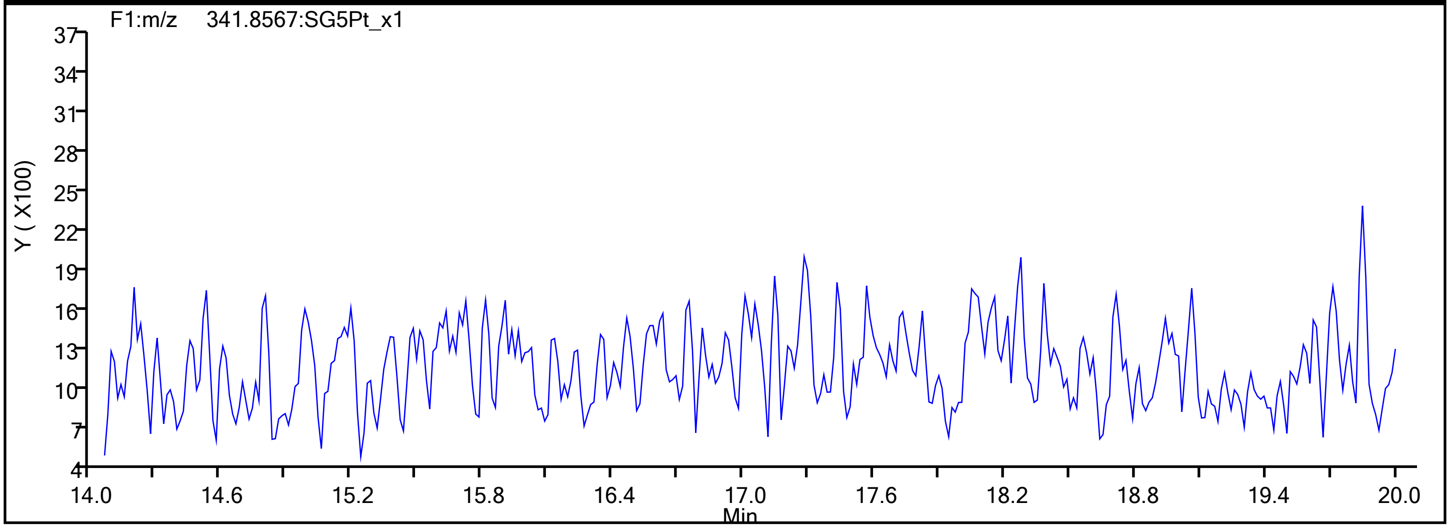

F1 PeCDFs Interference Mass

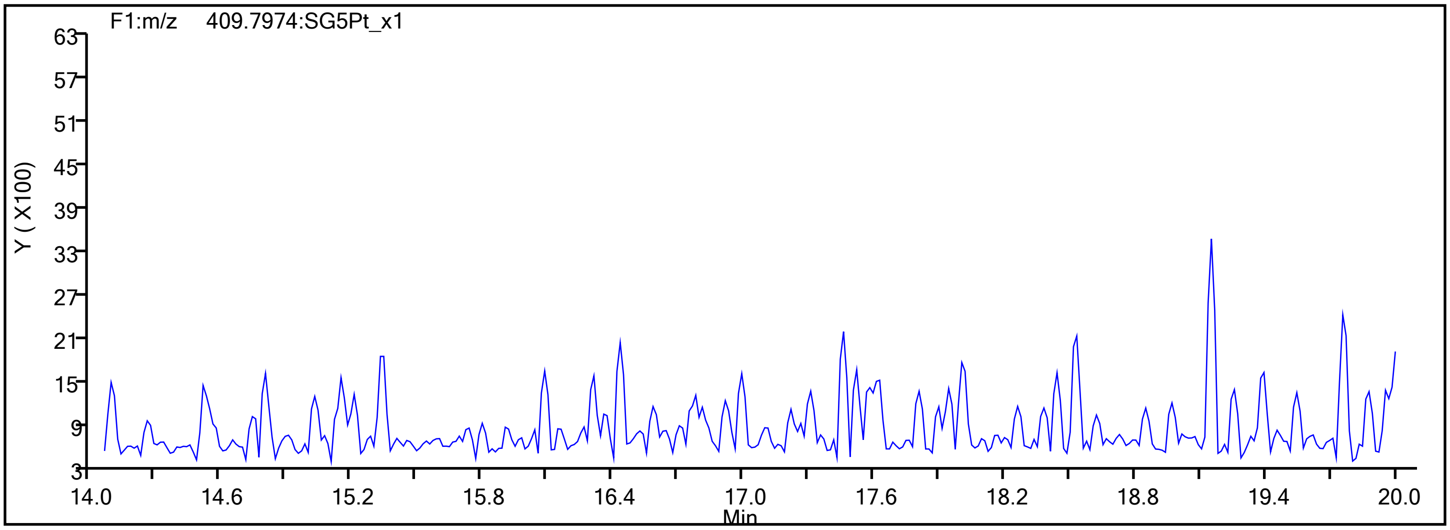

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Eurofins TestAmerica, Sacramento

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Client ID:
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Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

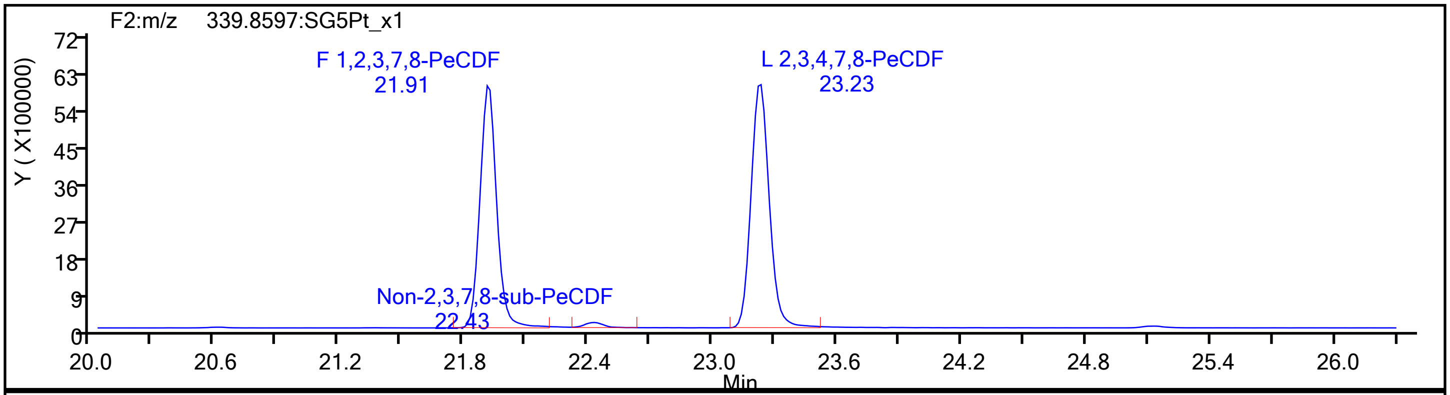

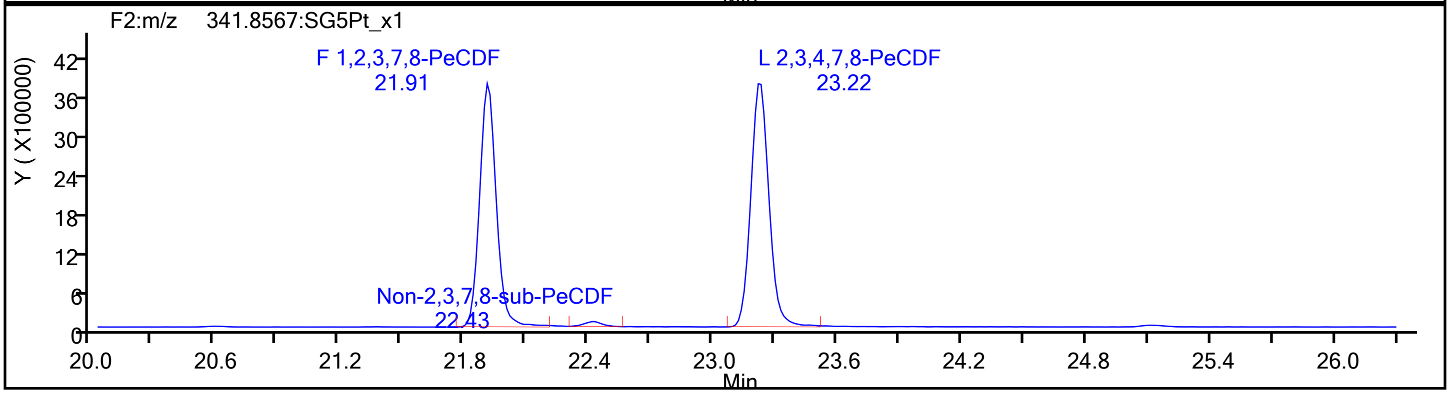

PeCDF Standards

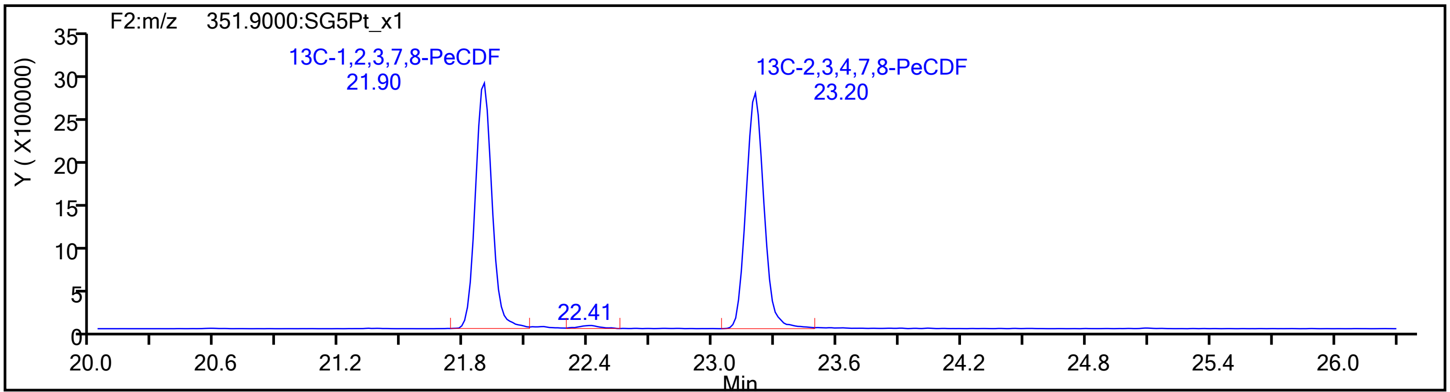

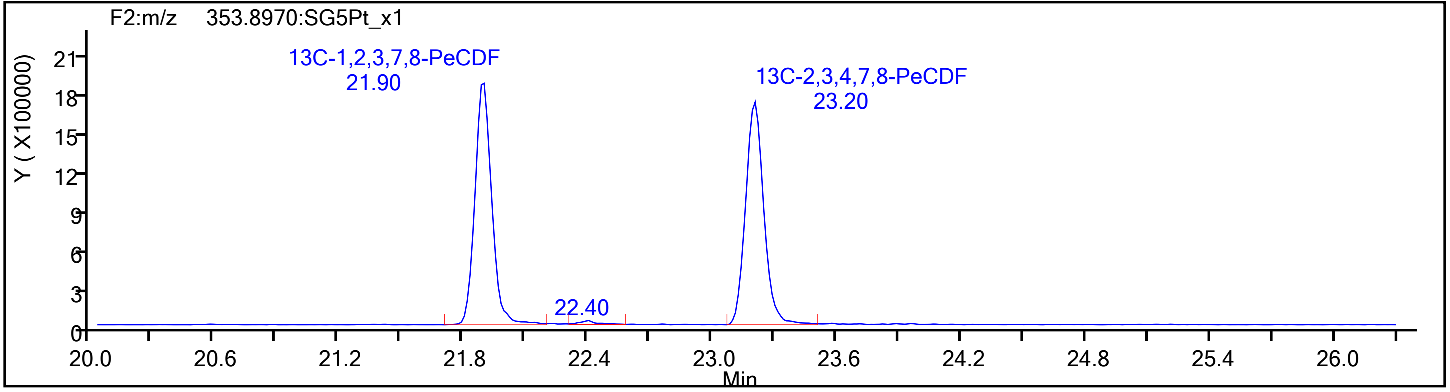

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Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

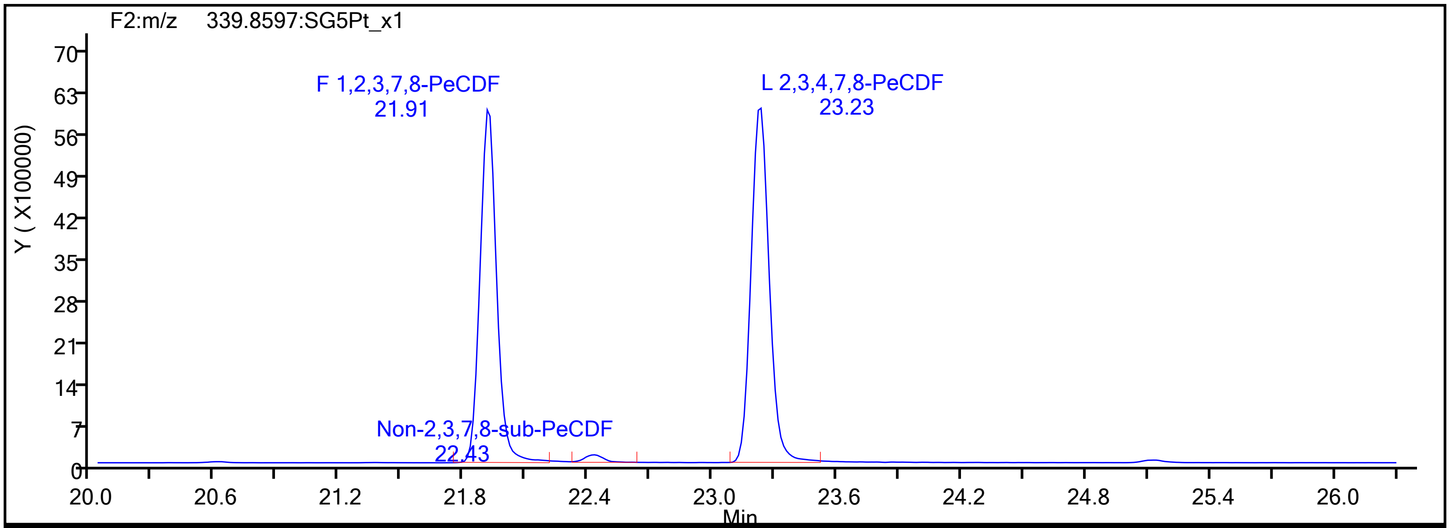

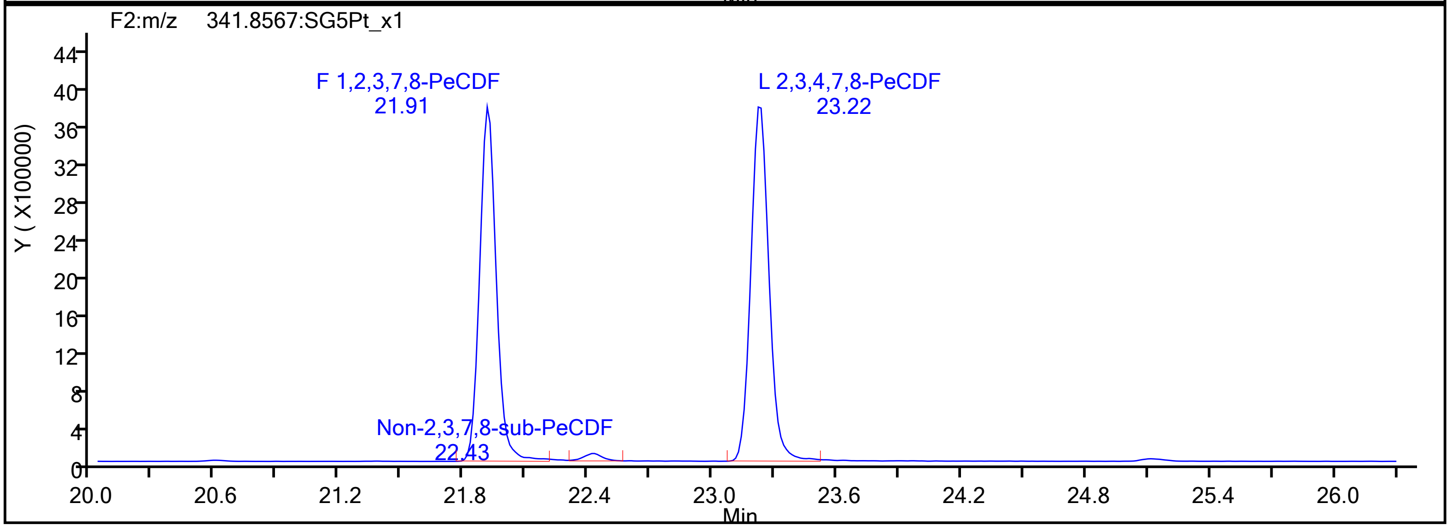

PeCDF Interference Mass

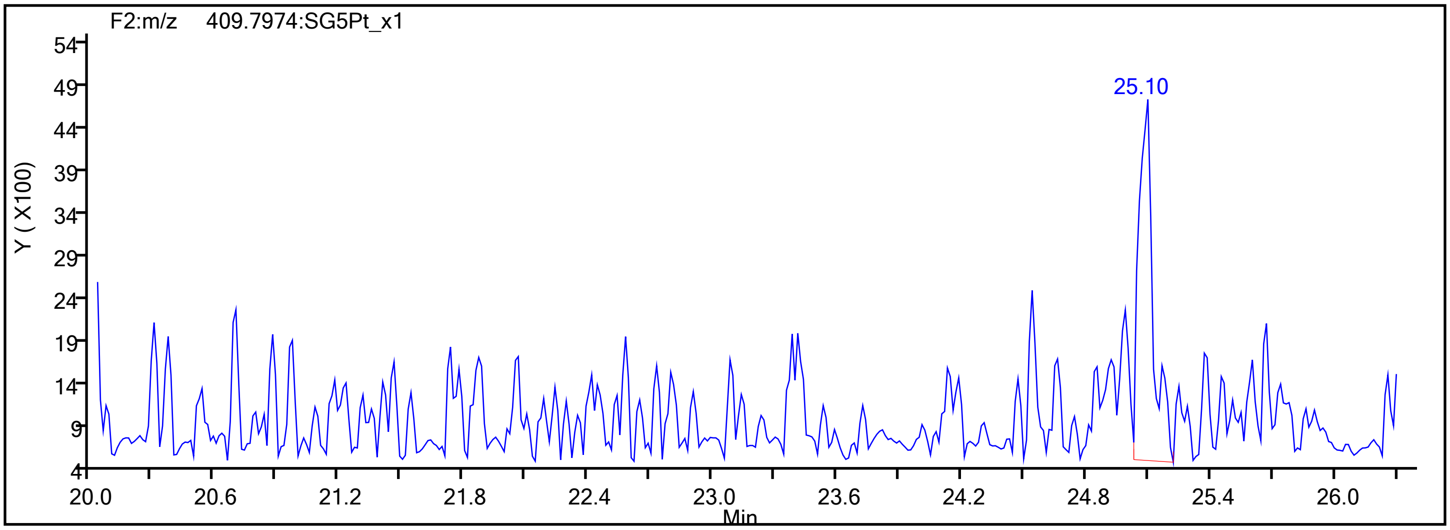

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Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

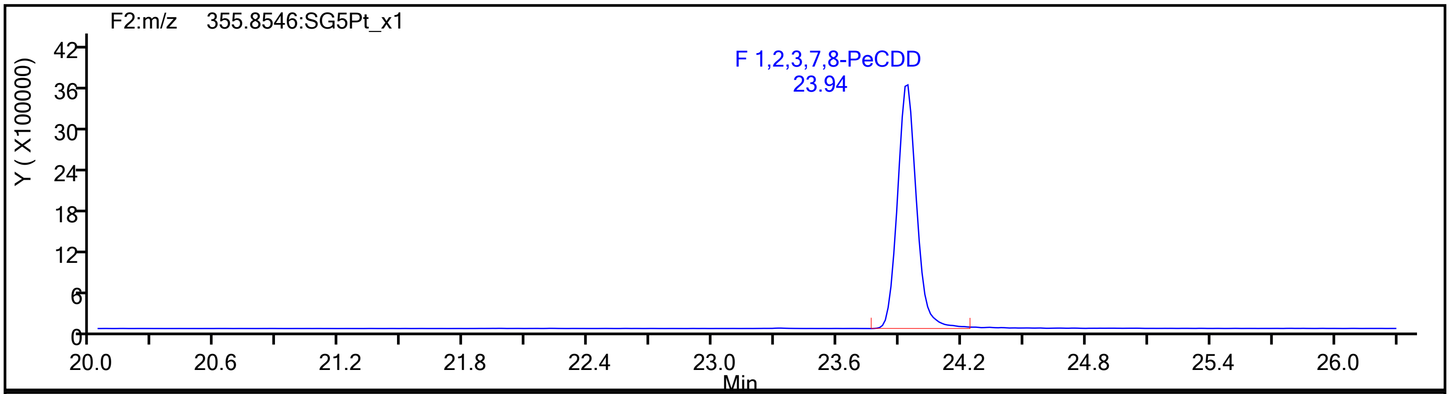

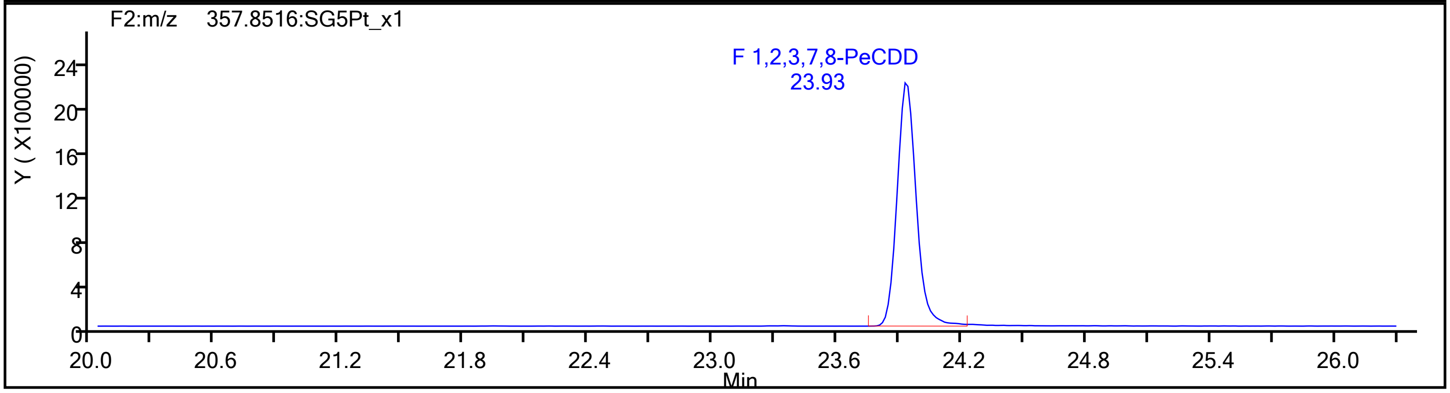

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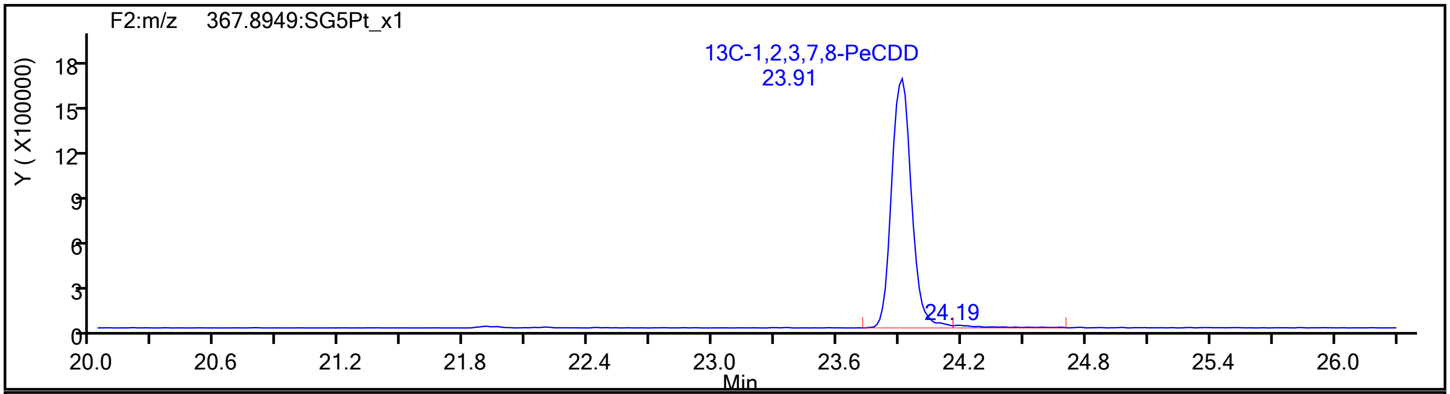

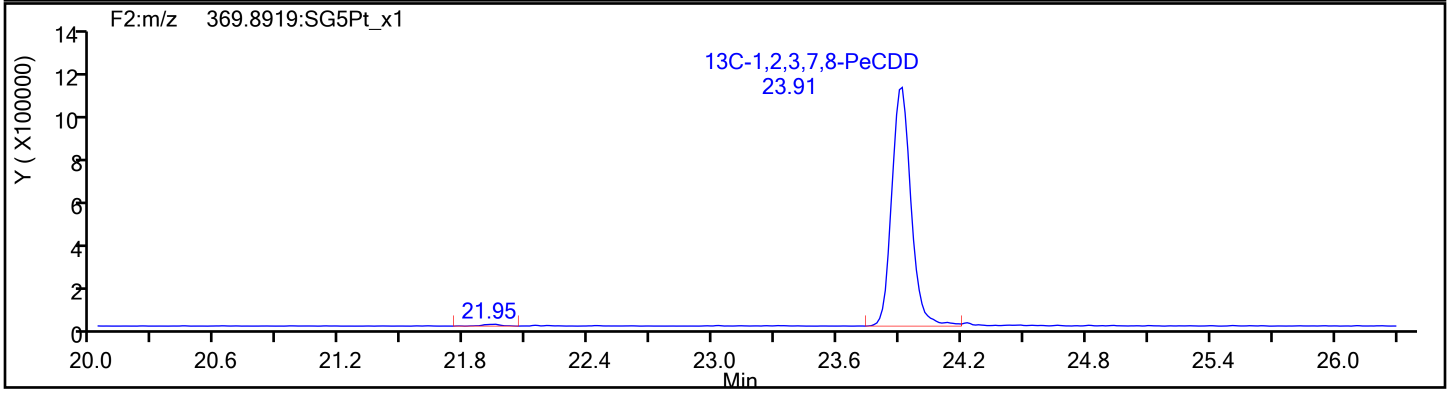

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

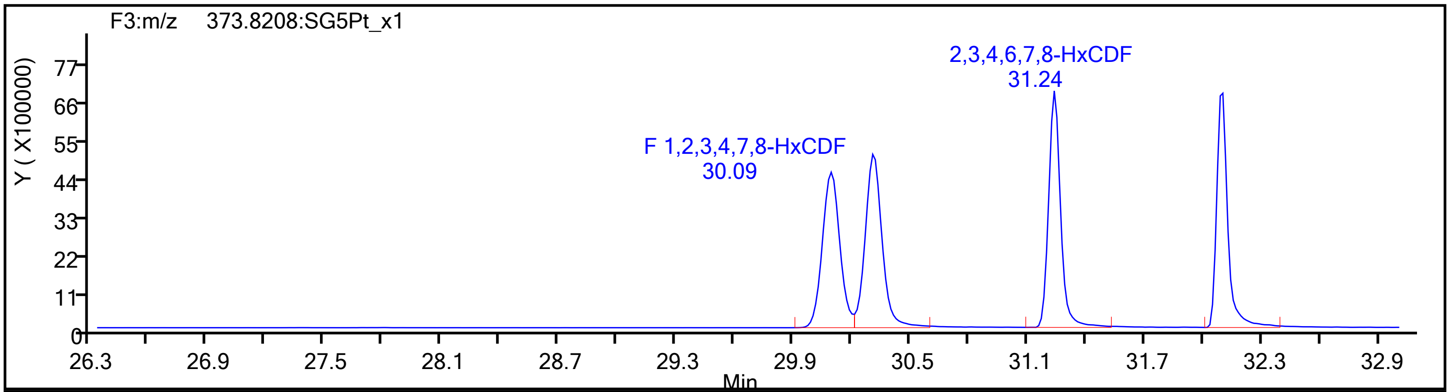

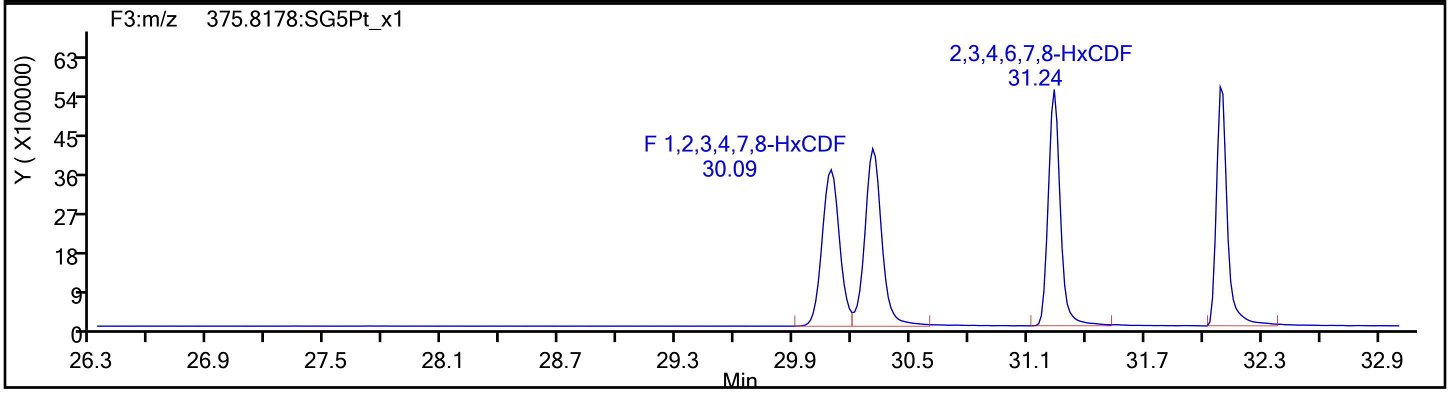

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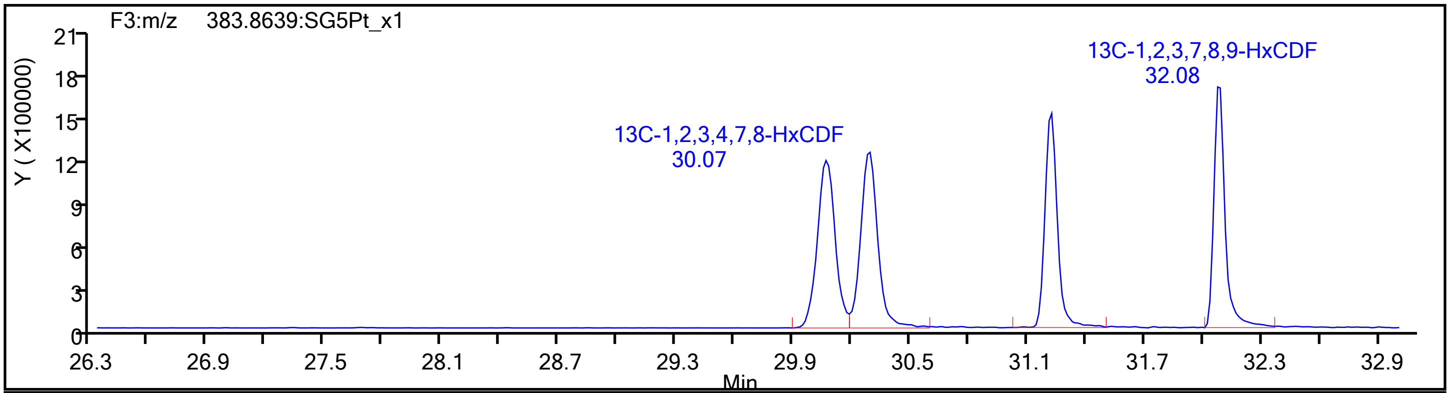

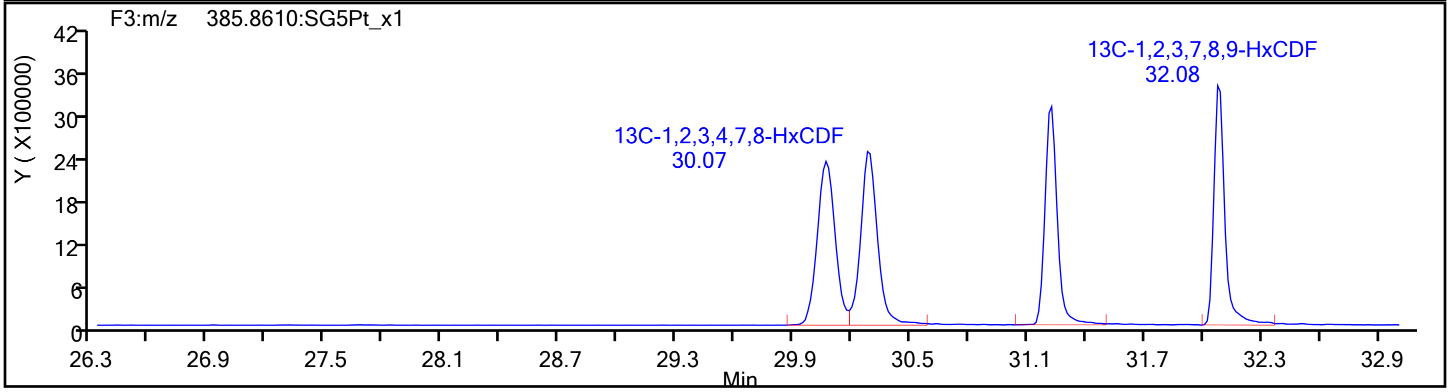

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Eurofins TestAmerica, Sacramento

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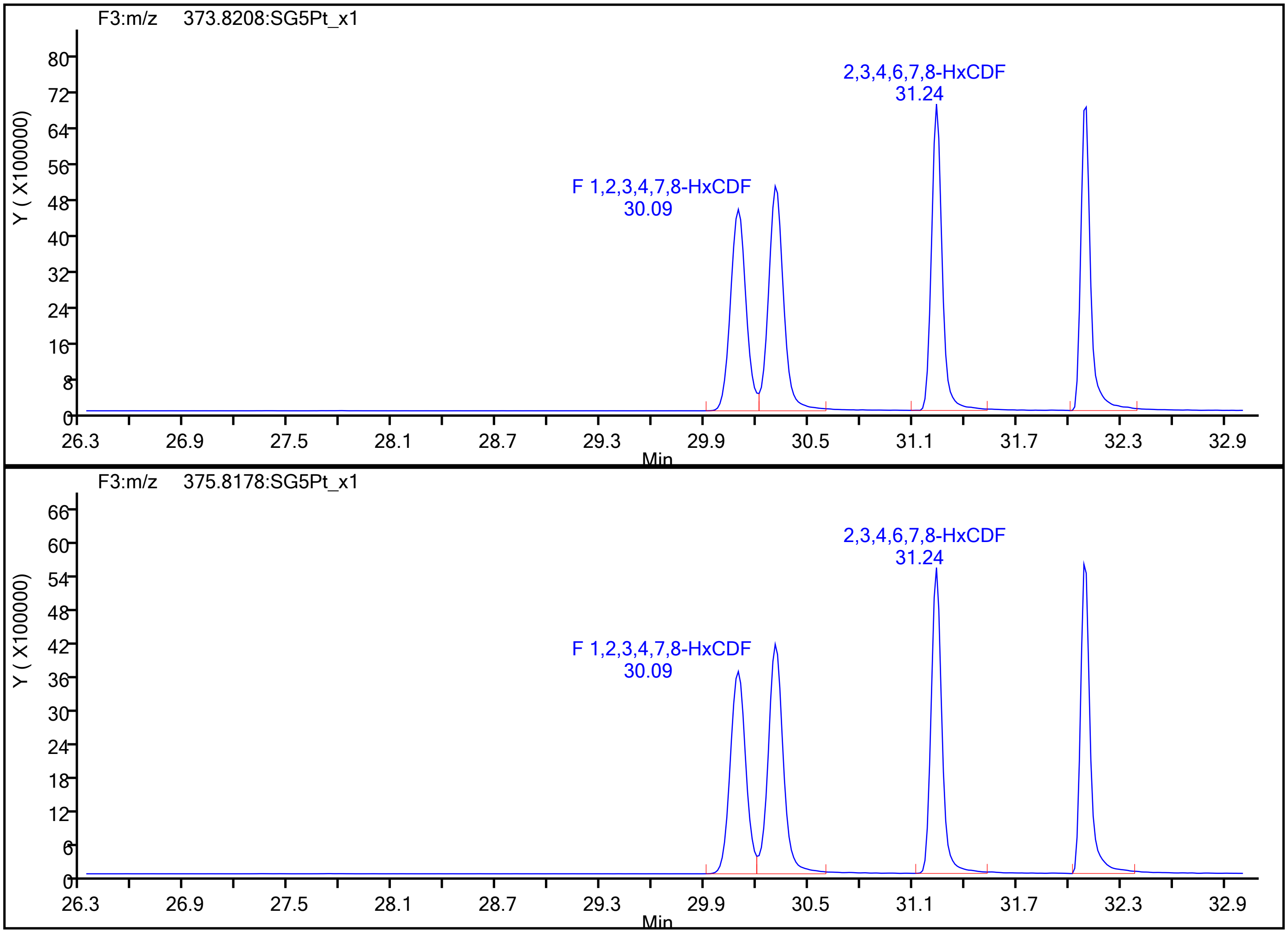

HxCDF Interference Mass

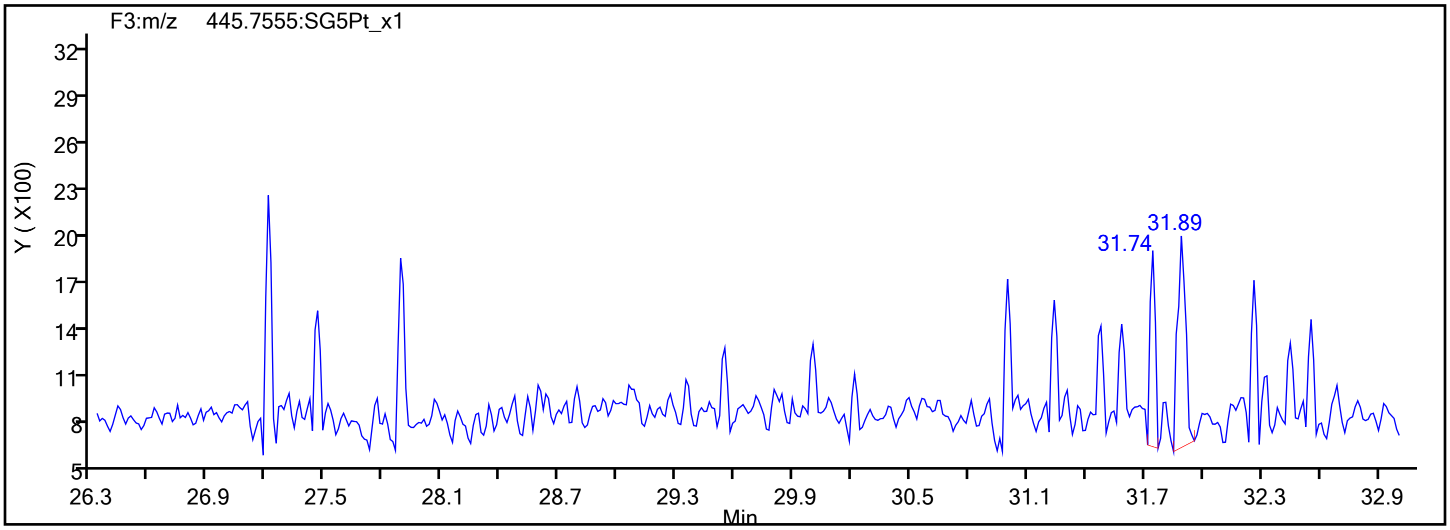

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 11:03:40 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

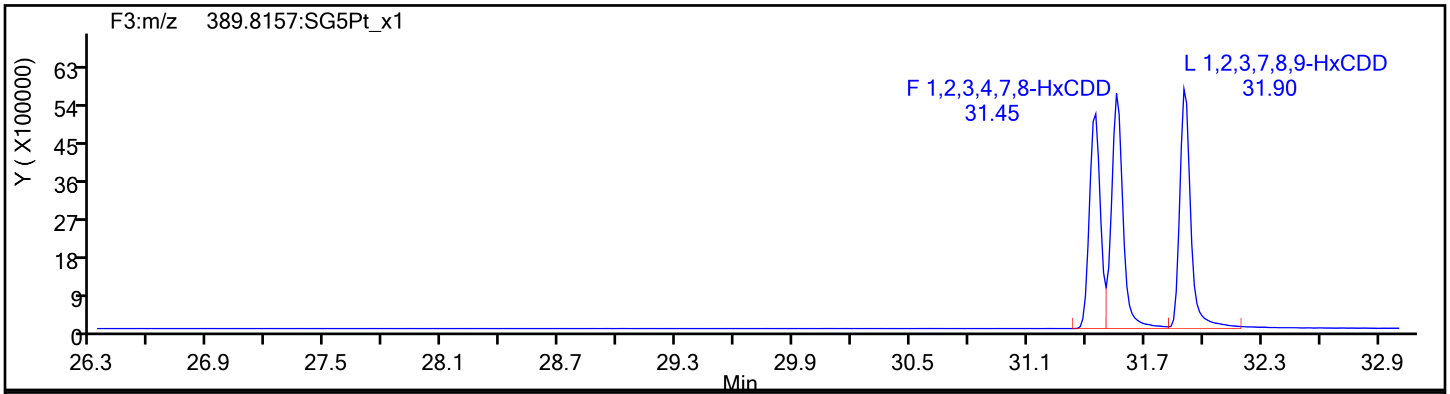

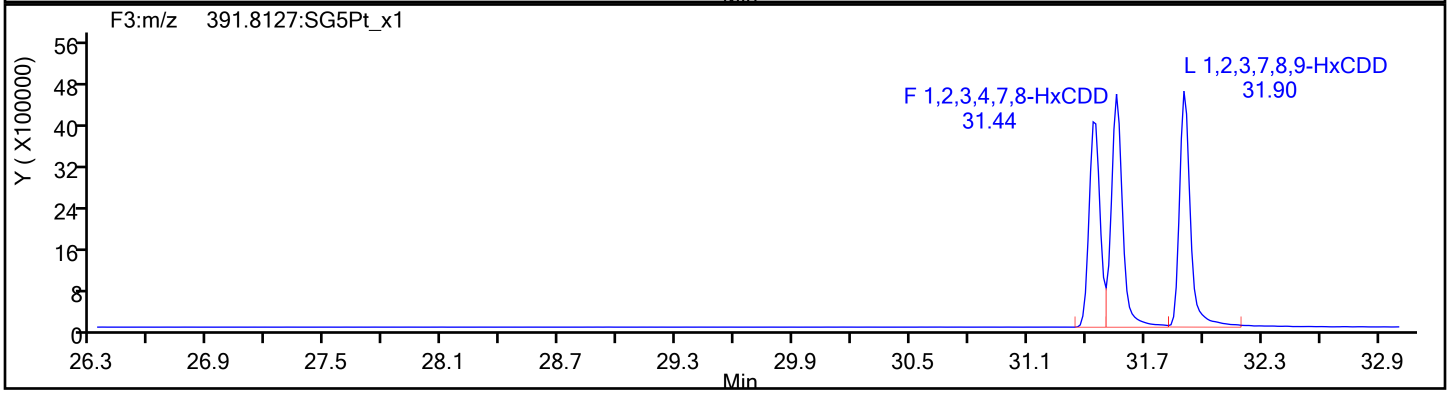

HxCDD Standards

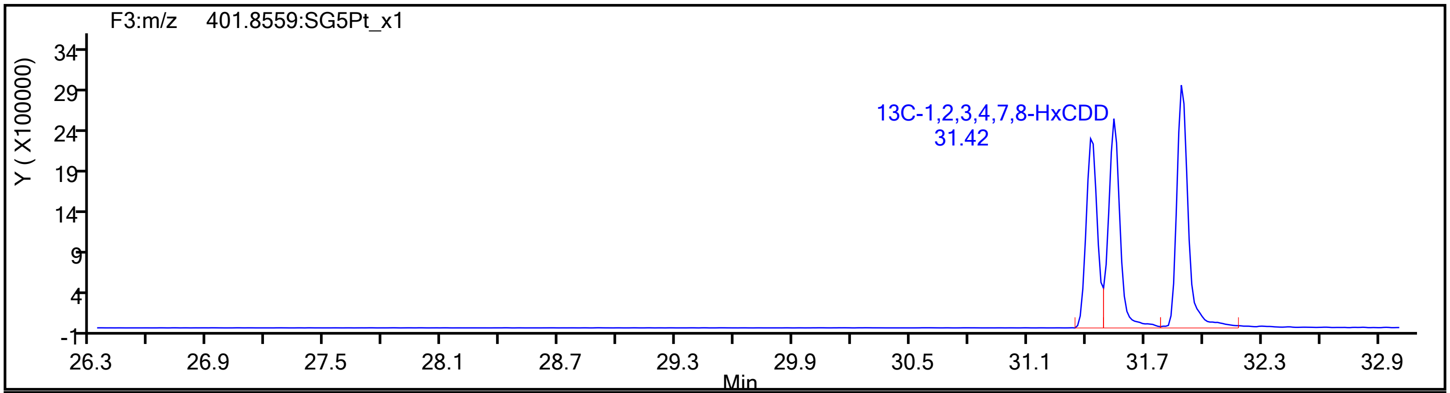

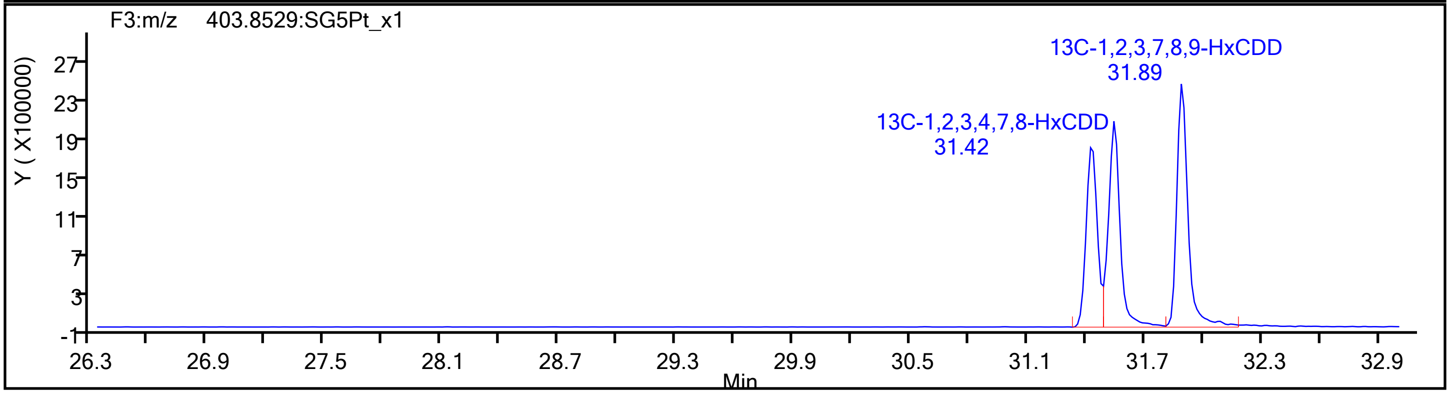

Report Date: 17-Mar-2021 13:41:07
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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HpCDF

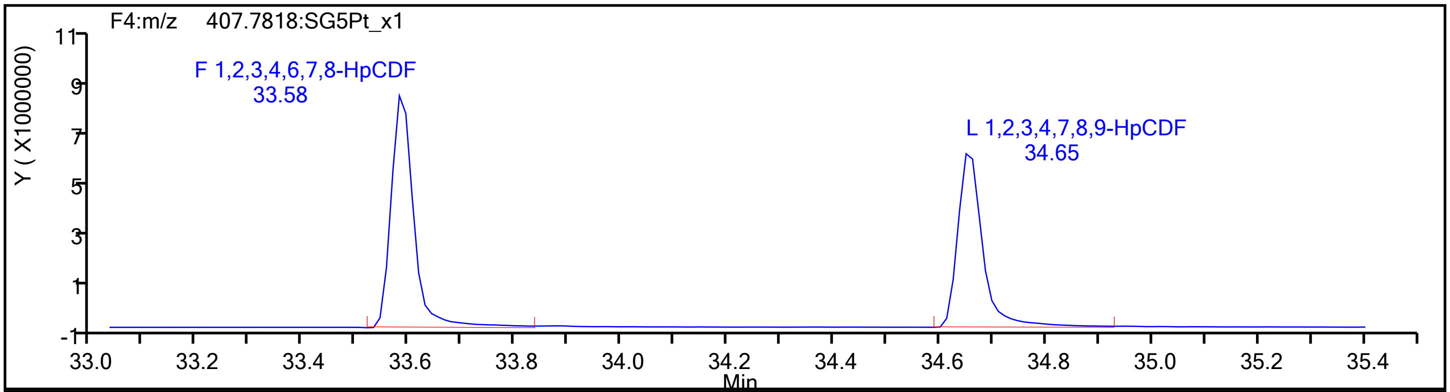

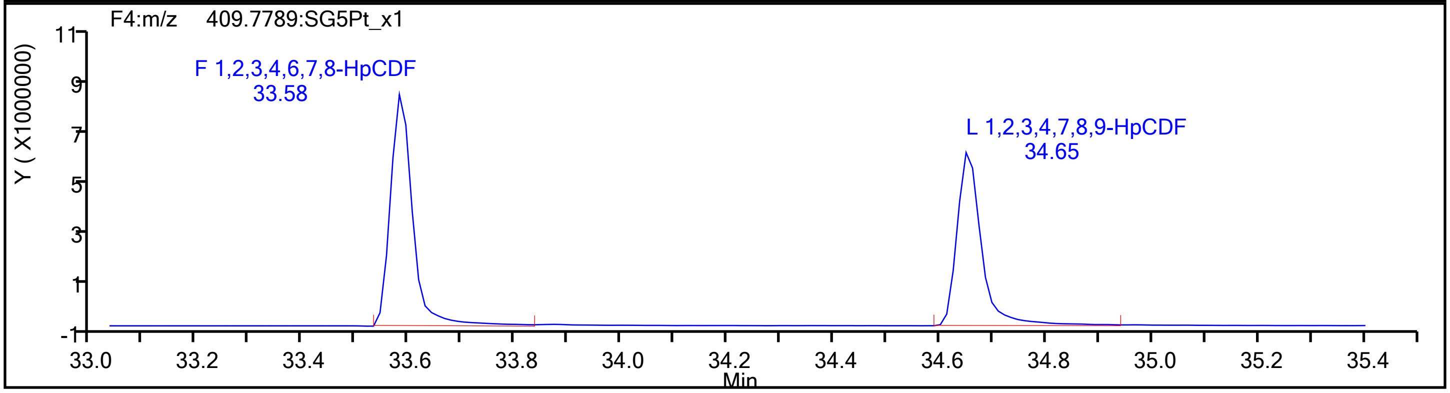

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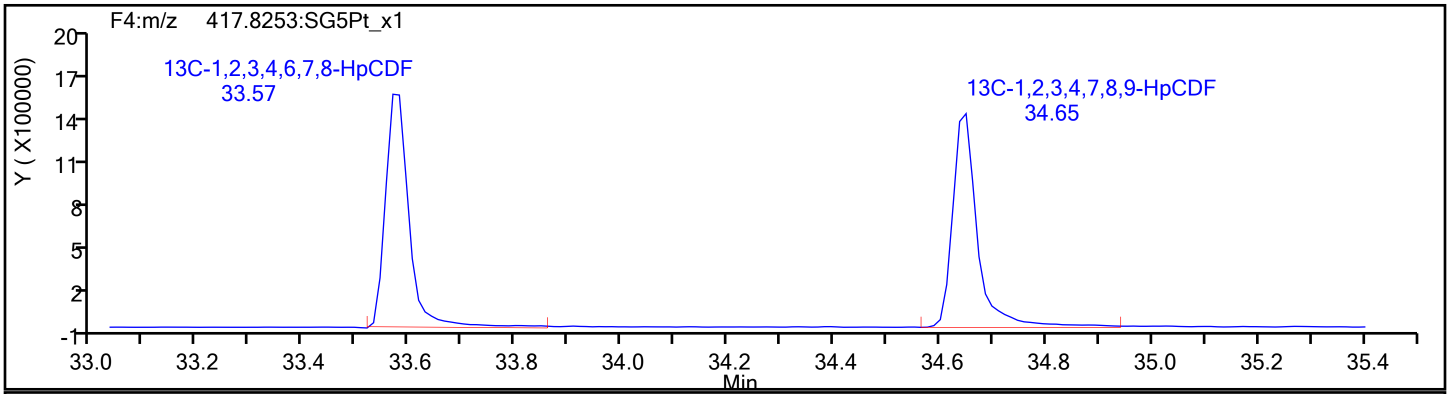

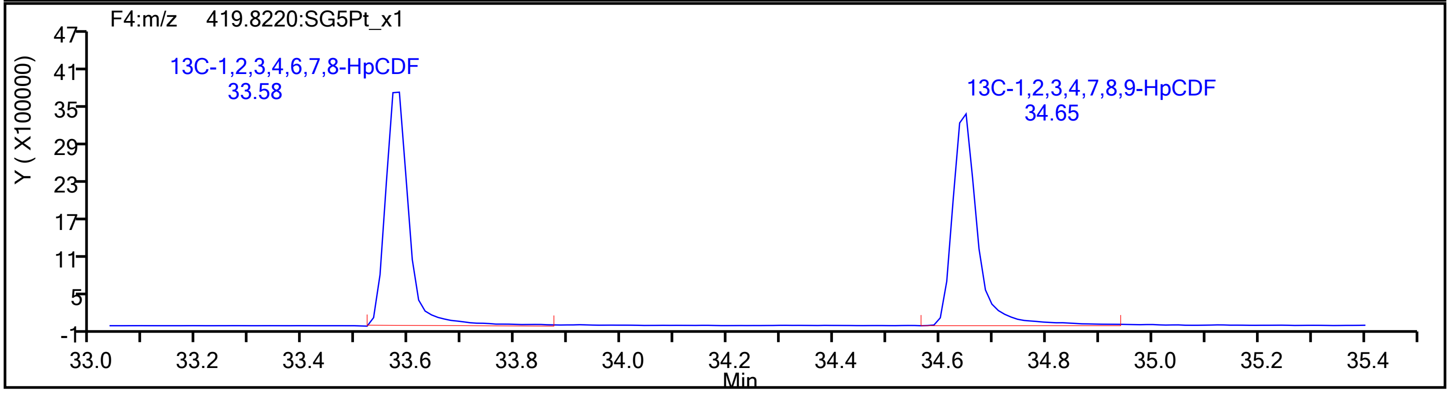

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Eurofins TestAmerica, Sacramento

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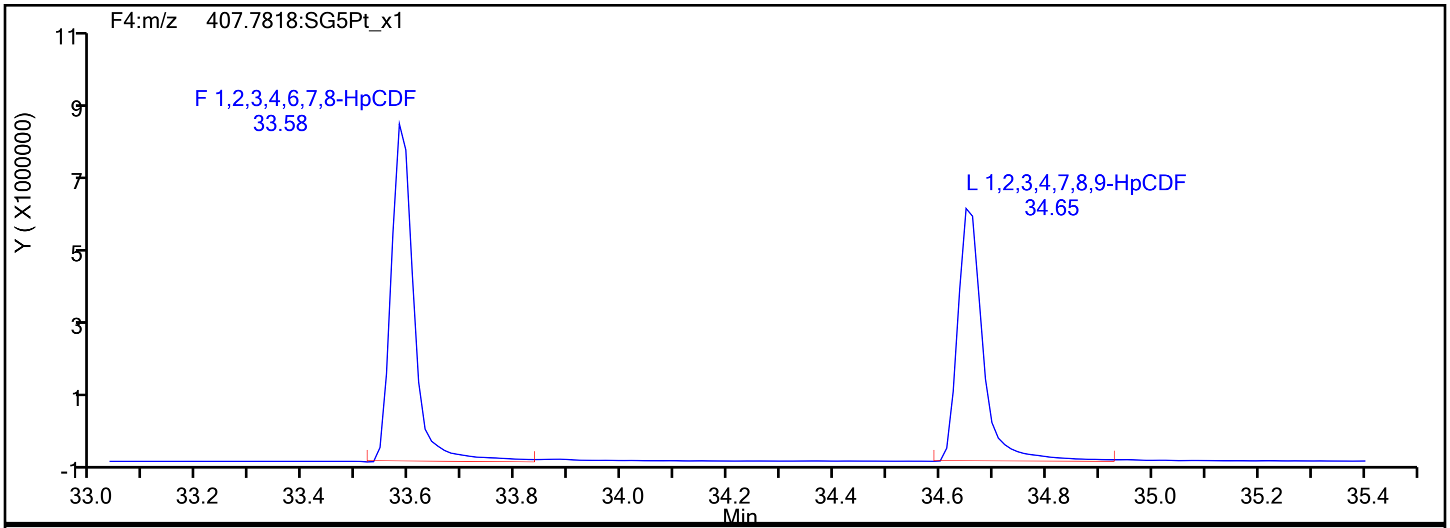

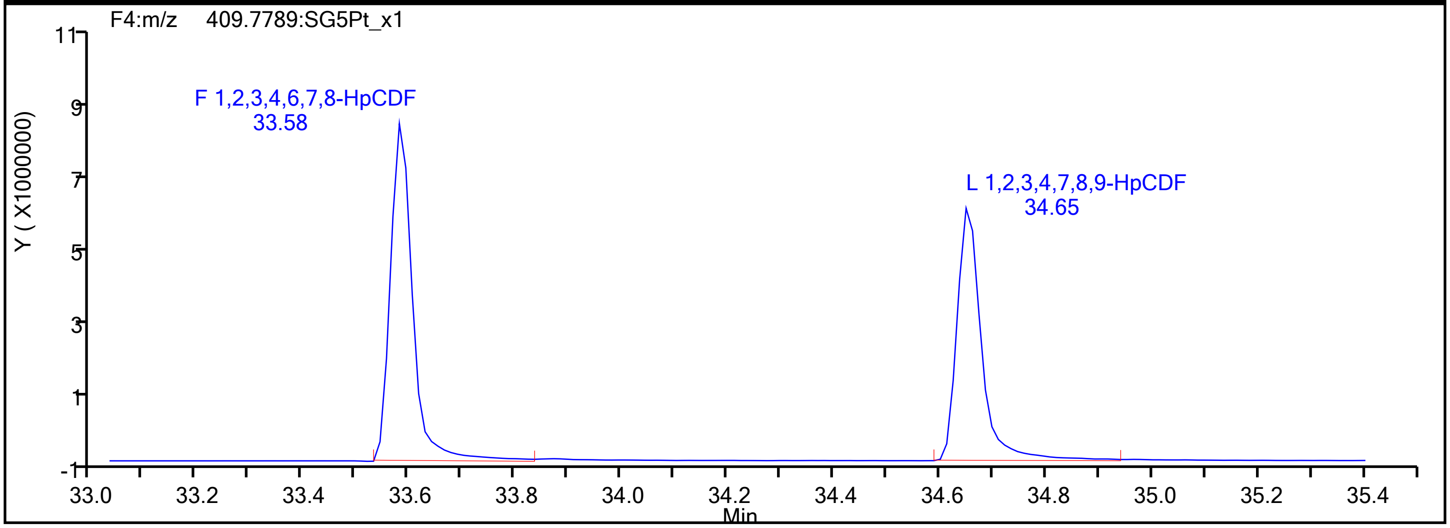

HpCDF Interference Mass

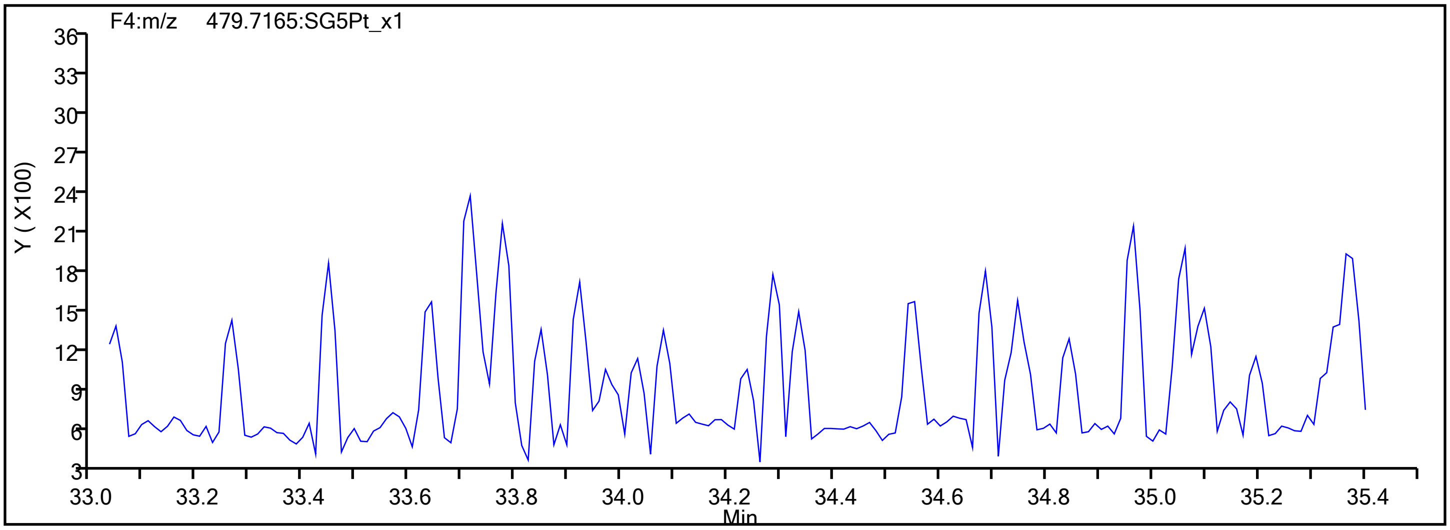

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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

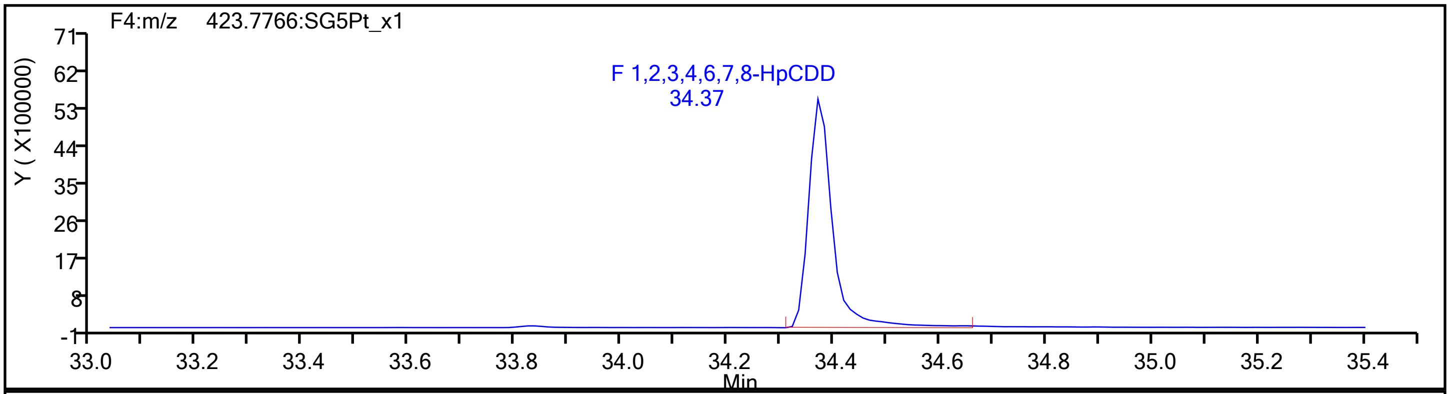

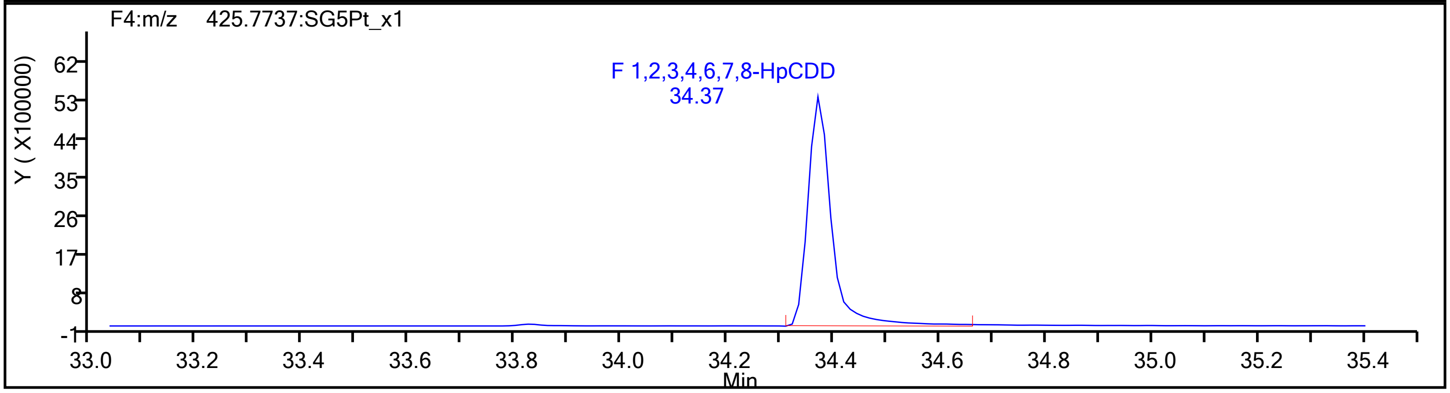

HpCDD Standards

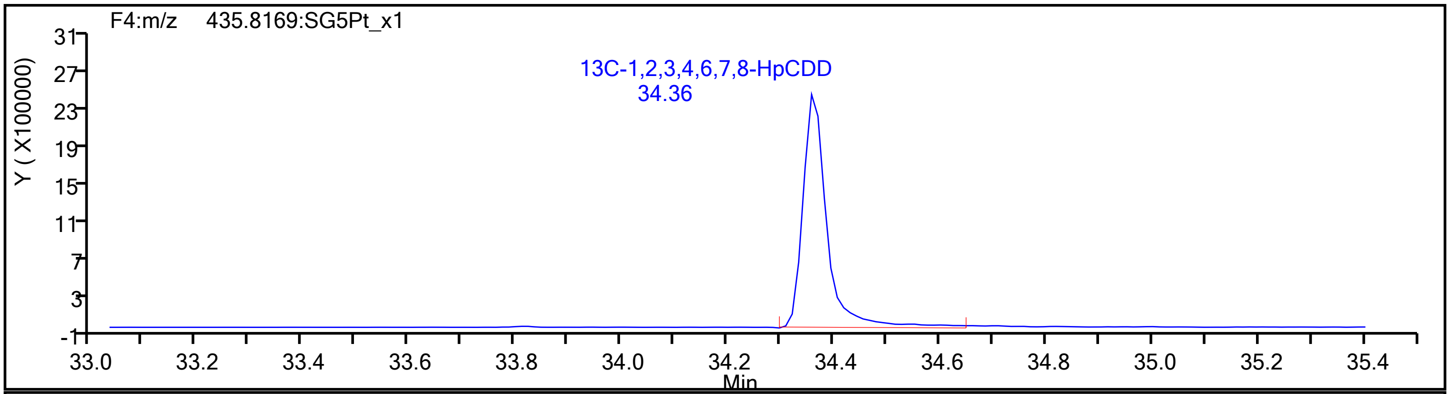

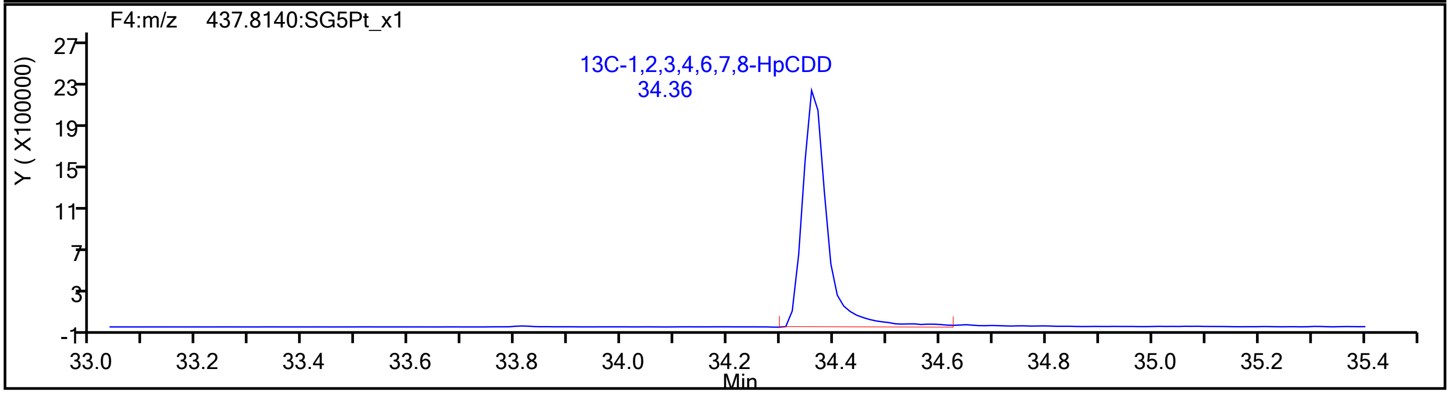

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	470907	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

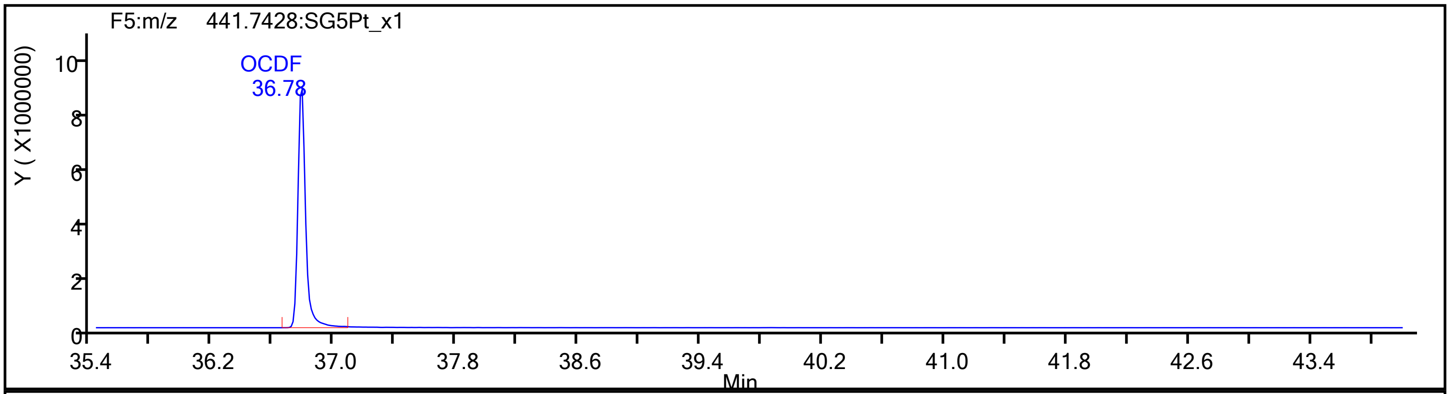

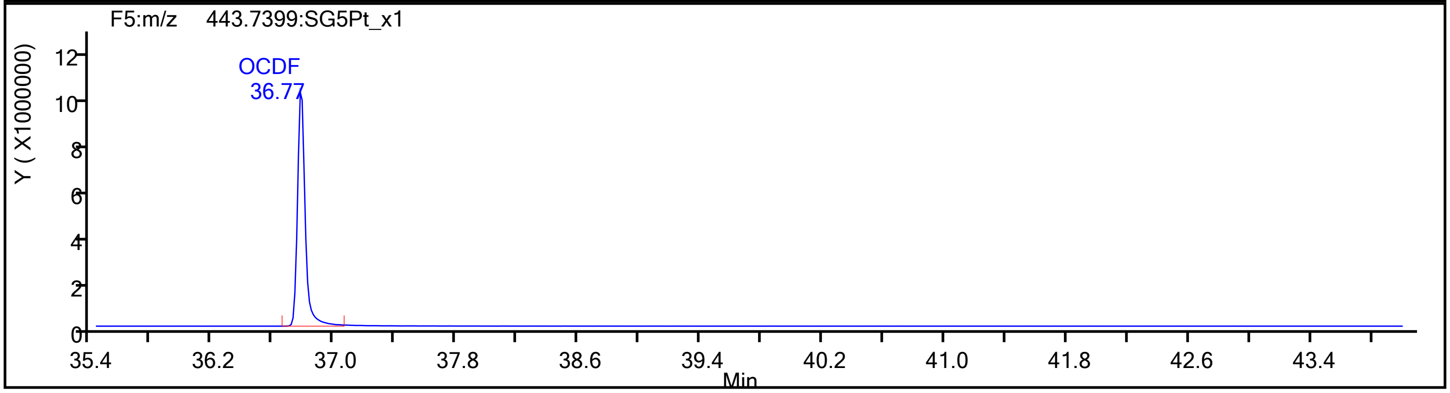

OCDF Standards

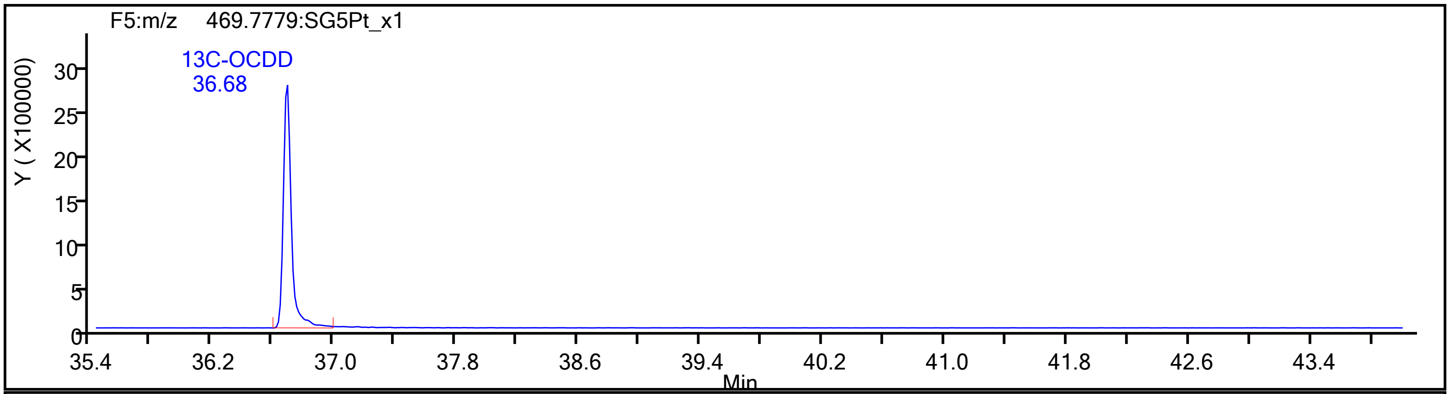

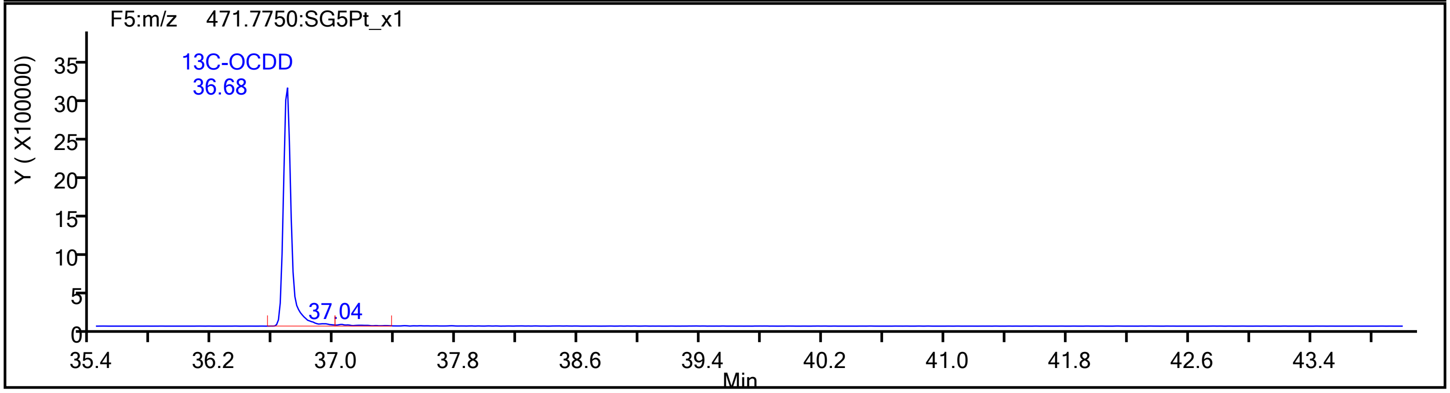

Report Date: 17-Mar-2021 13:41:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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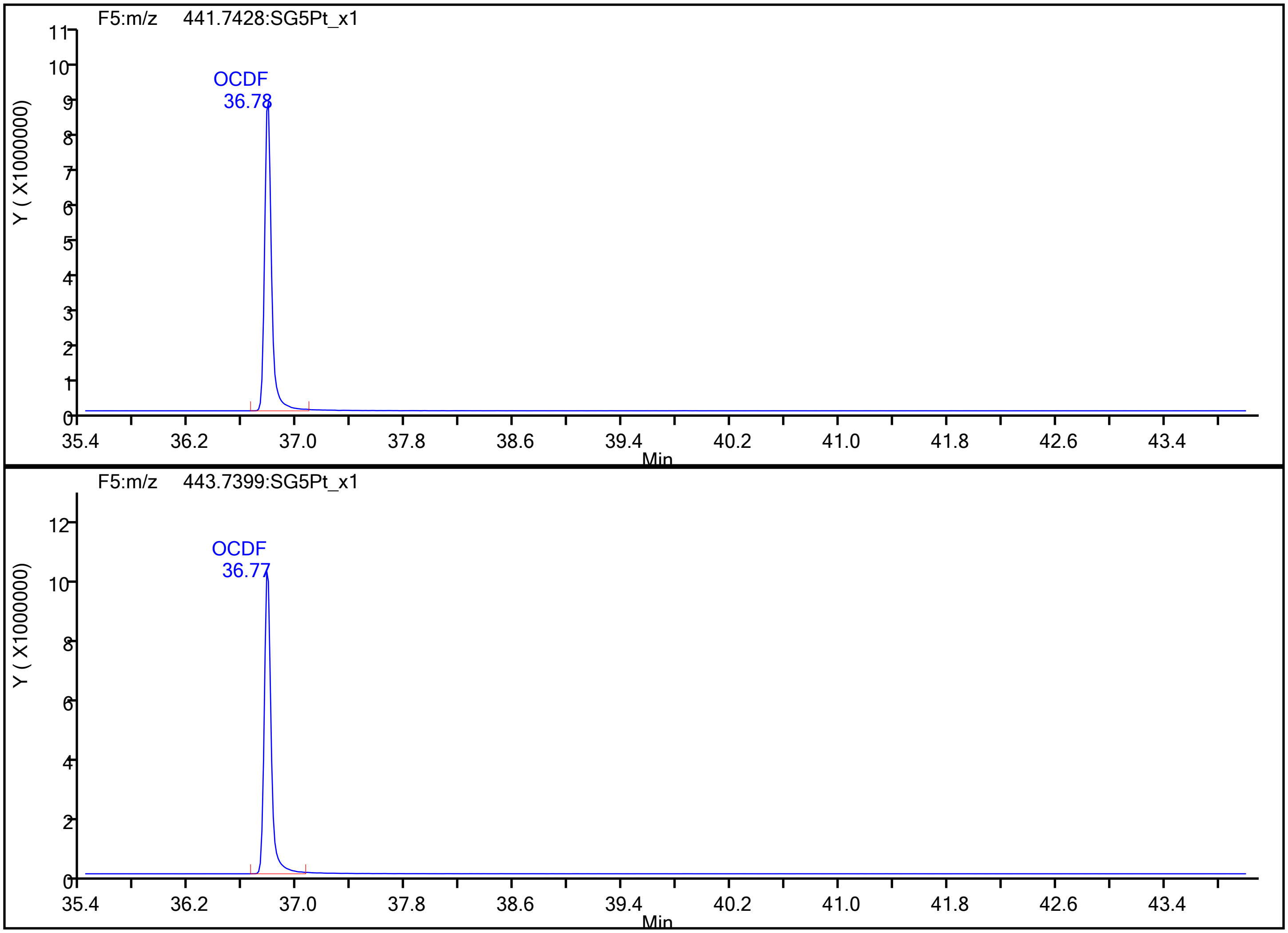

OCDF Interference Mass

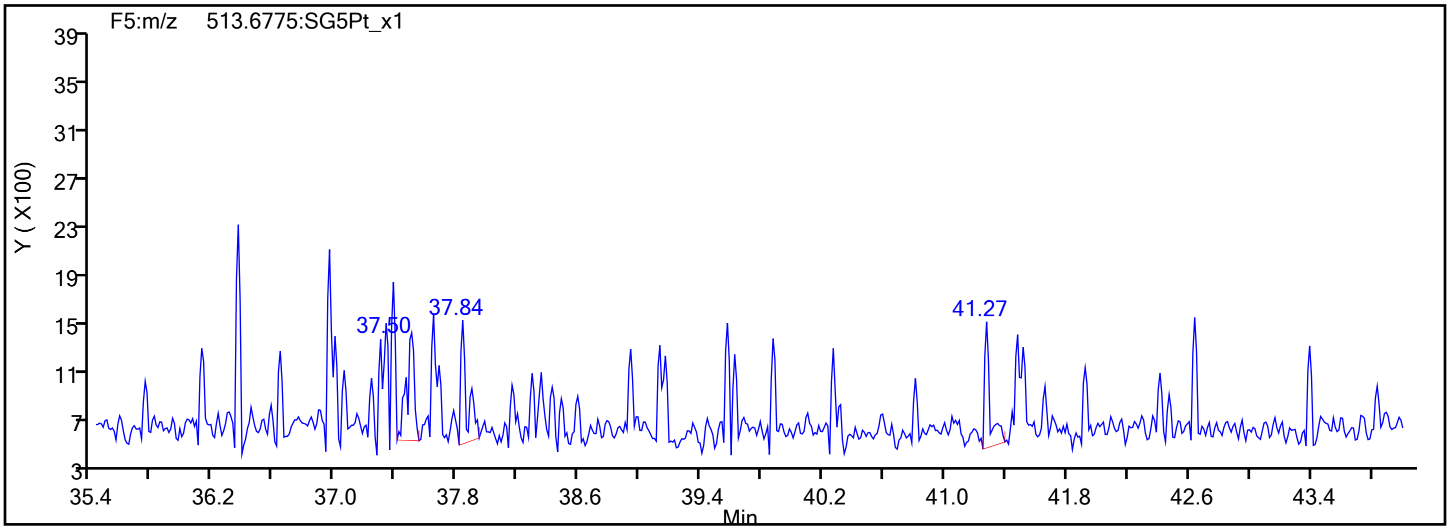

Report Date: 17-Mar-2021 13:41:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

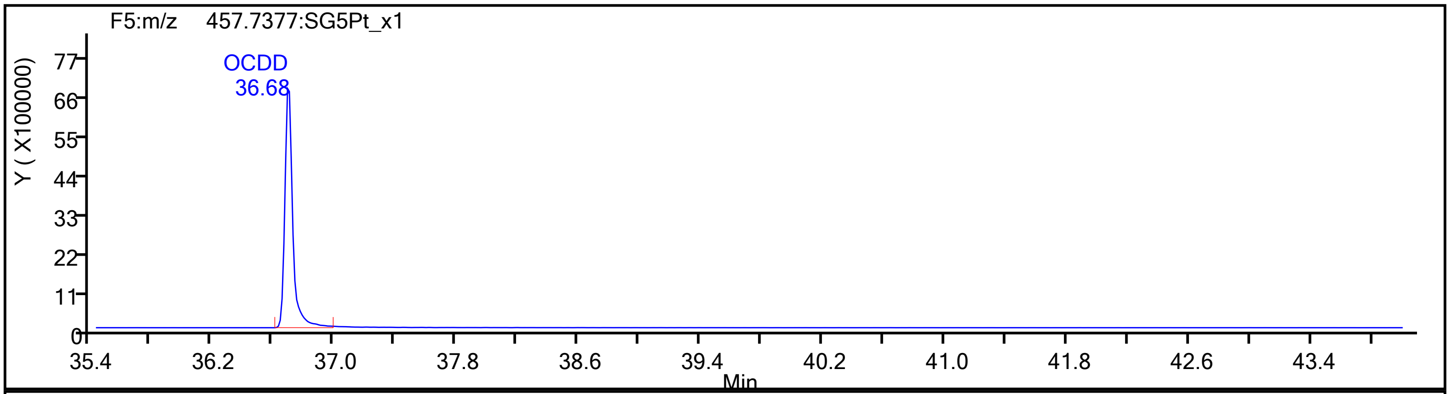

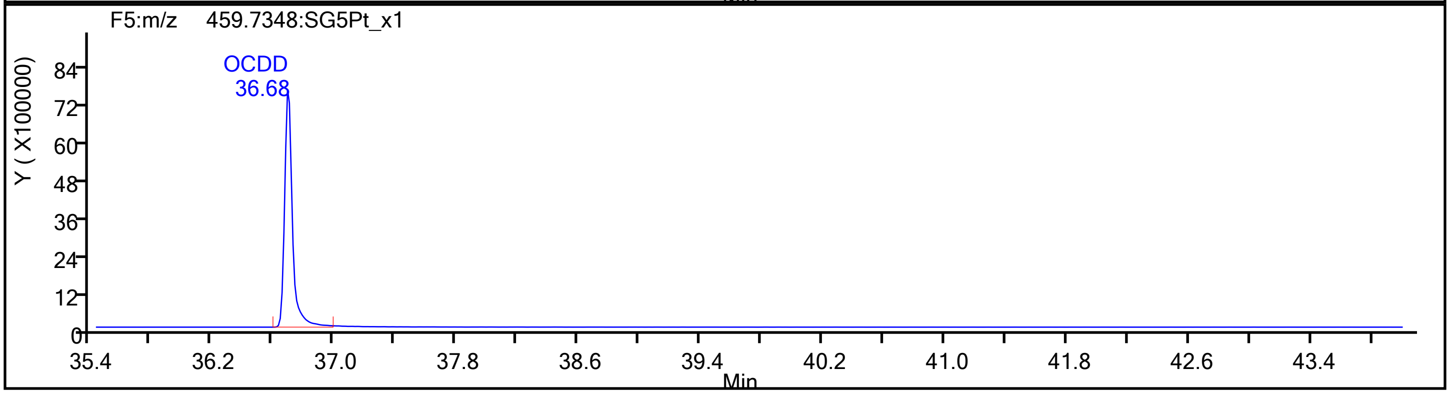

OCDD Standards

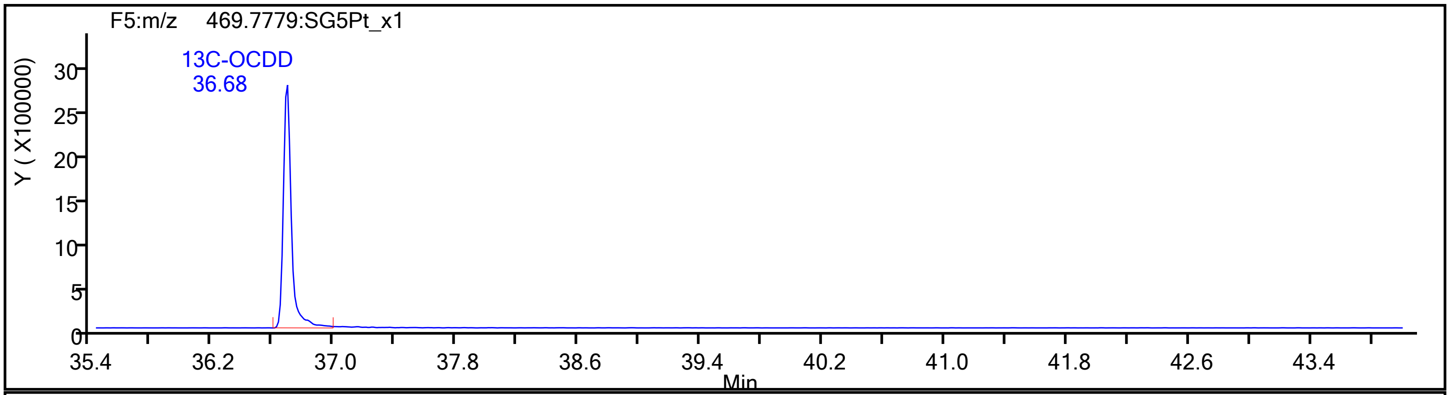

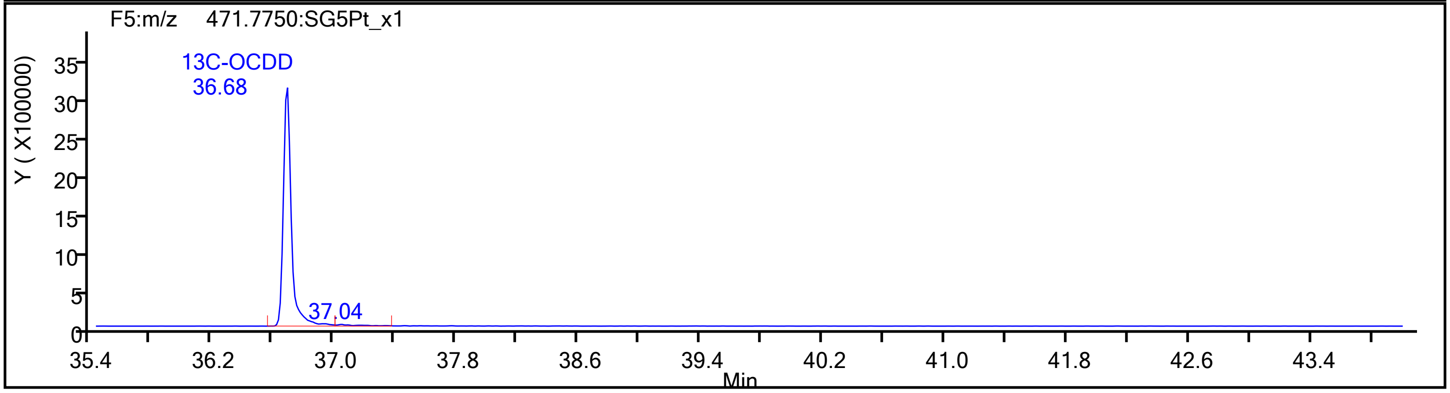

Report Date: 17-Mar-2021 13:41:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d		
Injection Date:	17-Mar-2021 11:03:40	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

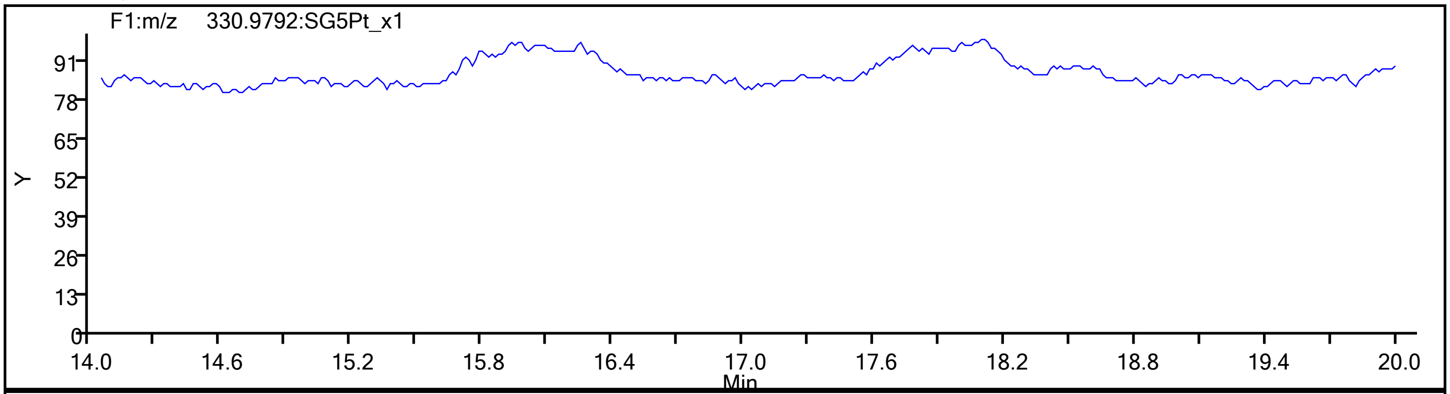

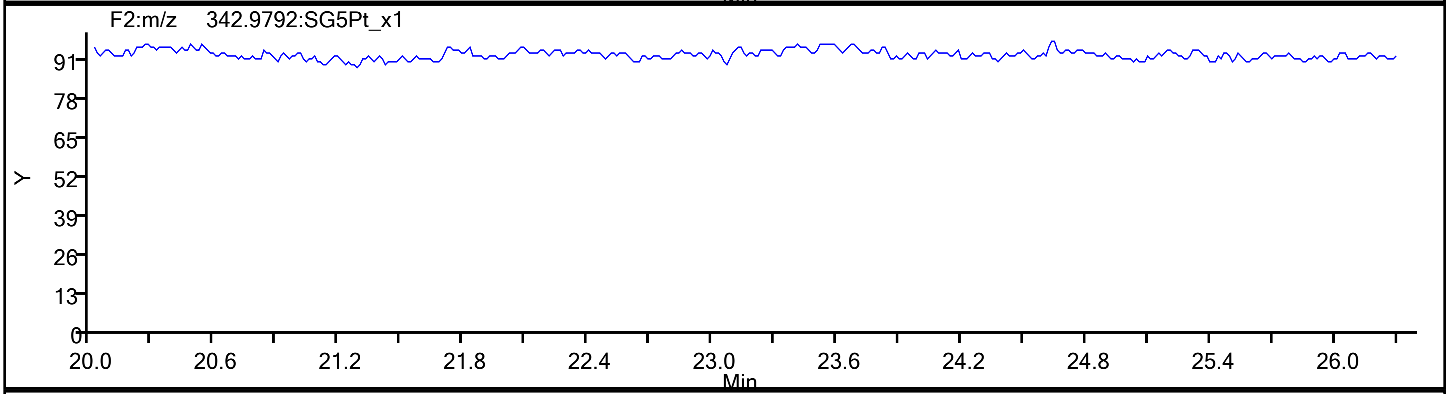

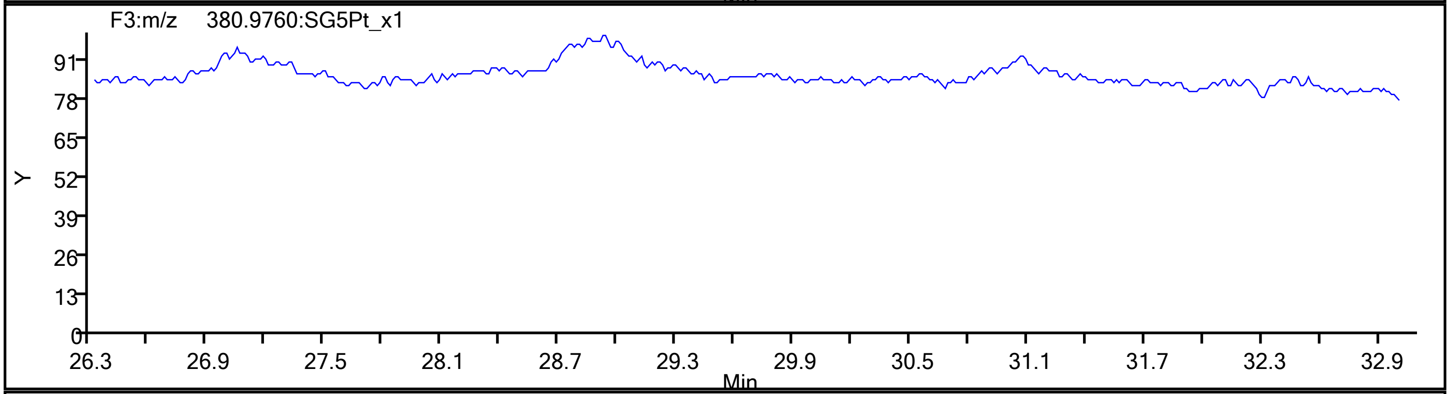

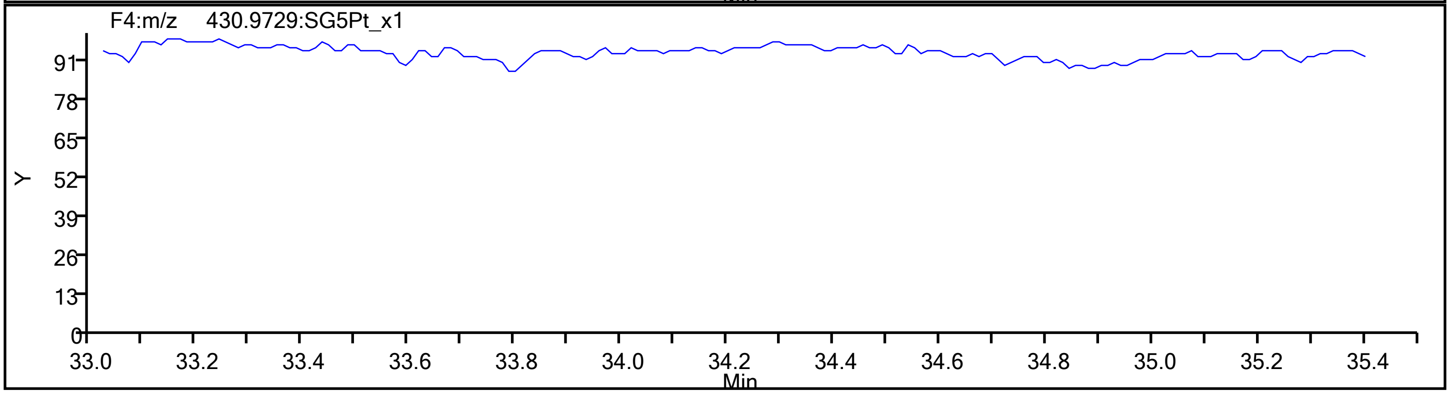

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\17MR2110D5_2.d		
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Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

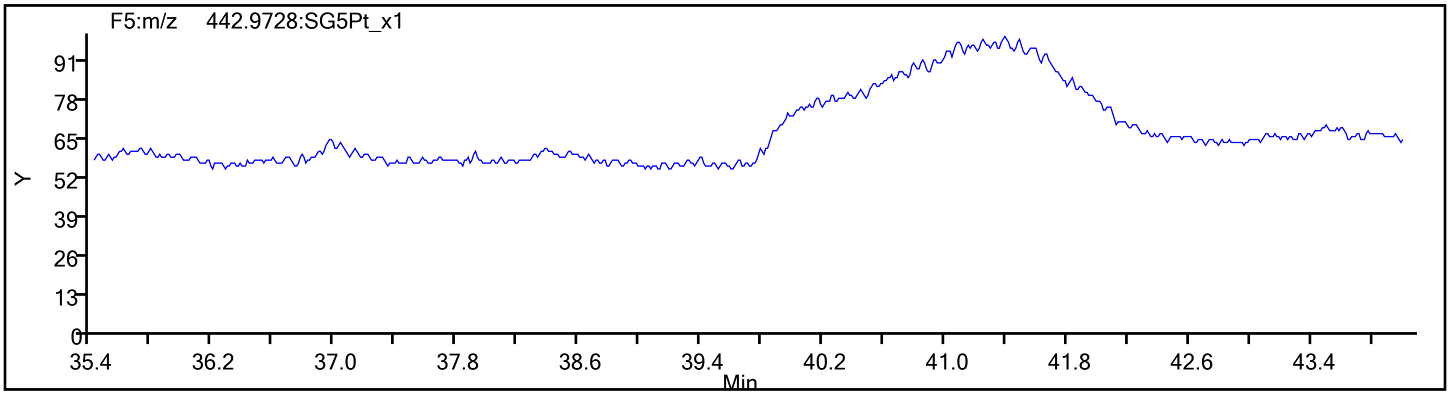

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID: CCV 320-471421/3 Calibration Date: 03/17/2021 11:58

Instrument ID: 10D5 Calib Start Date: 03/17/2021 01:10

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 03/17/2021 04:10

Lab File ID: 17MR2110D5_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.9903	0.9878		9.98	10.0	100	84-120
2,3,7,8-TCDD	AveID	1.099	1.134		10.3	10.0	103	78-129
1,2,3,7,8-PeCDF	AveID	1.021	1.034		50.6	50.0	101	82-120
2,3,4,7,8-PeCDF	AveID	0.9790	1.015		51.8	50.0	104	82-122
1,2,3,7,8-PeCDD	AveID	0.998	1.028		51.5	50.0	103	78-130
1,2,3,4,7,8-HxCDF	AveID	1.067	1.135		53.2	50.0	106	90-112
1,2,3,6,7,8-HxCDF	AveID	1.118	1.165		52.1	50.0	104	88-114
2,3,4,6,7,8-HxCDF	AveID	1.142	1.198		52.4	50.0	105	88-114
1,2,3,4,7,8-HxCDD	AveID	1.036	1.066		51.5	50.0	103	78-128
1,2,3,6,7,8-HxCDD	AveID	0.9658	0.999		51.7	50.0	103	78-128
1,2,3,7,8,9-HxCDD	AveID	1.073	1.132		52.8	50.0	106	82-122
1,2,3,7,8,9-HxCDF	AveID	1.146	1.209		52.8	50.0	106	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.402	1.475		52.6	50.0	105	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.034	1.067		51.6	50.0	103	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.300	1.367		52.6	50.0	105	86-116
OCDD	AveID	1.058	1.120		106	100	106	79-126
OCDF	AveID	1.314	1.427		109	100	109	63-159
13C-2,3,7,8-TCDF	Ave	1.355	1.362		100	100	100	71-140
13C-2,3,7,8-TCDD	Ave	0.9209	0.9135		99.2	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.085	1.115		103	100	103	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.106	1.127		102	100	102	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7689	0.7896		103	100	103	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.032	0.9921		96.1	100	96	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.022	1.044		102	100	102	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9729	0.9731		100	100	100	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7689	0.7189		93.5	100	93	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8643	0.9083		105	100	105	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9469	0.8892		93.9	100	94	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7233	0.7306		101	100	101	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6855	0.6770		98.8	100	99	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.6720	0.6335		94.3	100	94	77-129
13C-OCDD	Ave	0.4996	0.4797		192	200	96	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.016	0.9946		9.79	10.0	98	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\17MR2110D5.SPL Page 1 of 3
Last Modified: Wednesday, March 17, 2021 13:11:35 Pacific Daylight Time
Printed: Wednesday, March 17, 2021 13:45:40 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	17MR2110D5_1	WDM HRDXNCP_00042	WDM 031721	Tray01:1	Dioxin		KSS
2	17MR2110D5_2	ICV HRDXNIC_00047	ICV 031721	Tray01:57	Dioxin		KSS
3	17MR2110D5_3	CS-4 HRDXNL4_00097	CCV 031721	Tray01:2	Dioxin		KSS
4	17MR2110D5_4	WDM HRDXNCP_00042	WDM 031721A	Tray01:1	Dioxin		KSS
5	17MR2110D5_5	SB Solvent Blank C-14	SB 031721	Tray01:3			KSS
6	17MR2110D5_6	MB 320-468935/1-A	MB 320-468935/1-A	Tray01:4	8290/Water	97	KSS
7	17MR2110D5_7	LCS 320-468935/2-A	LCS 320-468935/2-A	Tray01:5	8290/Water		KSS
8	17MR2110D5_8	LCSD 320-468935/3-A	LCSD 320-468935/3-A	Tray01:6	8290/Water		KSS
9	17MR2110D5_9	440-279851-A-1-A	440-279851-A-1-A	Tray01:7	8290/Water		KSS
10	17MR2110D5_10	320-70797-A-2-A 10X	320-70797-A-2-A	Tray01:8	1613B/Water	D220	KSS
11	17MR2110D5_11	320-70797-A-7-A 10X	320-70797-A-7-A	Tray01:9	1613B/Water		KSS
12	17MR2110D5_12	320-70797-A-1-A 20X	320-70797-A-1-A	Tray01:10	1613B/Water		KSS
13	17MR2110D5_13	320-70797-A-8-A 20X	320-70797-A-8-A	Tray01:11	1613B/Water		KSS
14	17MR2110D5_14	570-52894-M-3-A	570-52894-M-3-A	Tray01:12	8290/Water	97	KSS
15	17MR2110D5_15	SB Solvent Blank C-14	SB 031721A	Tray01:3			KSS
16	17MR2110D5_16	CS-4 HRDXNL4_00097	CCV 031721A	Tray01:2	Dioxin		KSS
17	17MR2110D5_17	WDM HRDXNCP_00042	WDM 031721B	Tray01:1	Dioxin		KSS
18	17MR2110D5_18	SB Solvent Blank C-14	SB 031721B	Tray01:3			KSS

Log file checked
03/17/21 SMA

Sample Size	Units	MS File	Inlet File	Inject Volume	Process
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

Process Options	Action On Error	s5
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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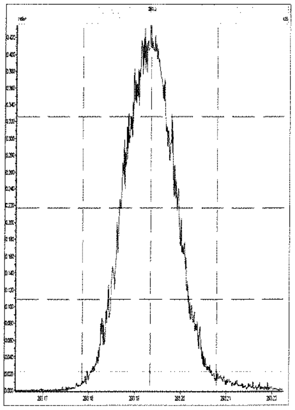

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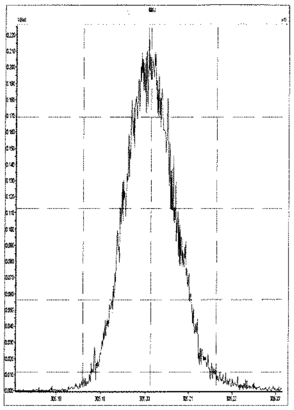

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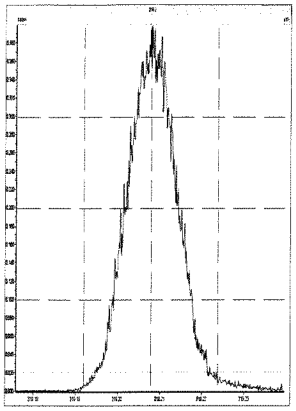

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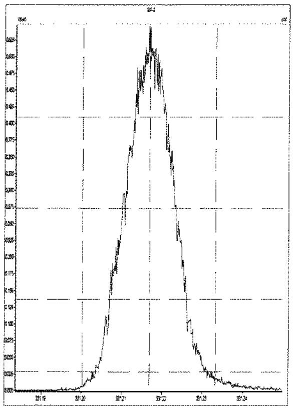

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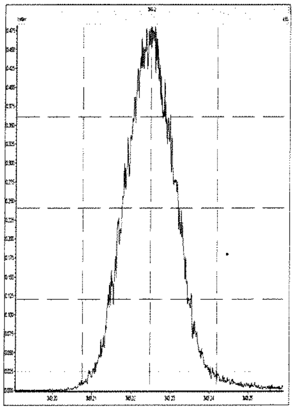

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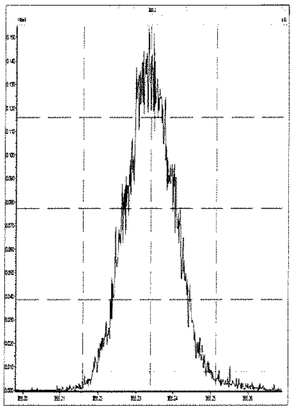

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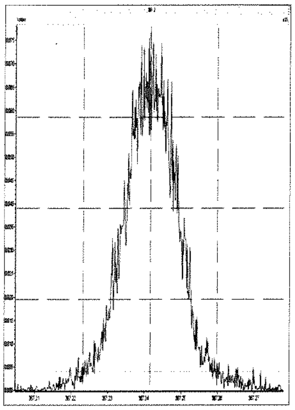

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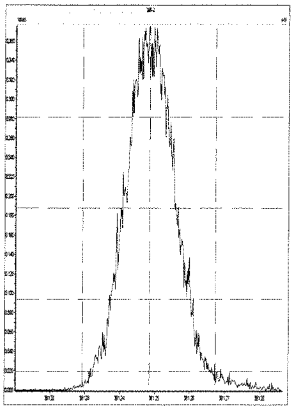

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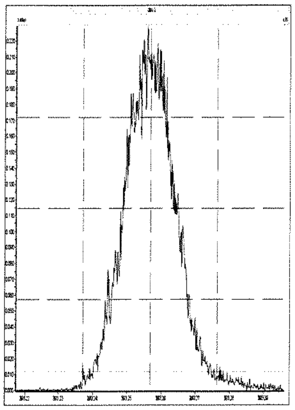

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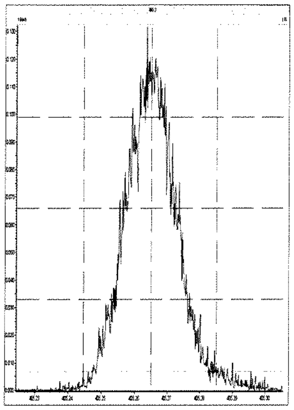

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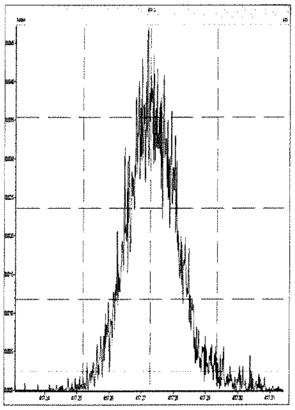

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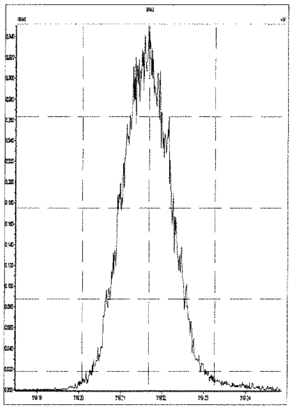

M 330.9792 R 11633

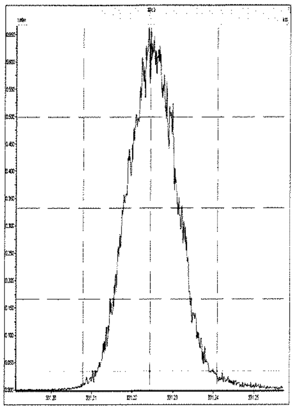

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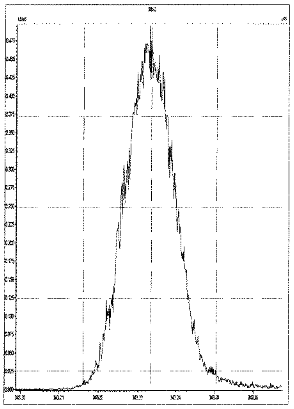

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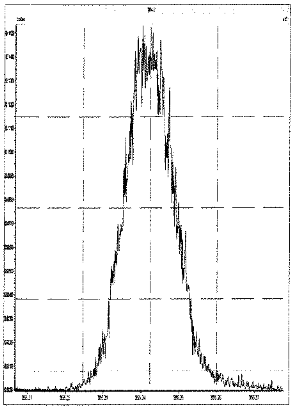

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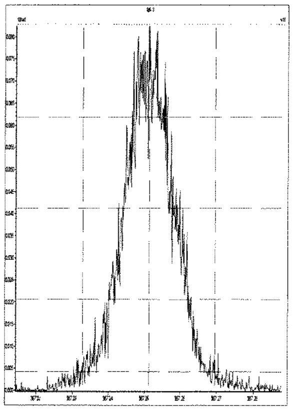

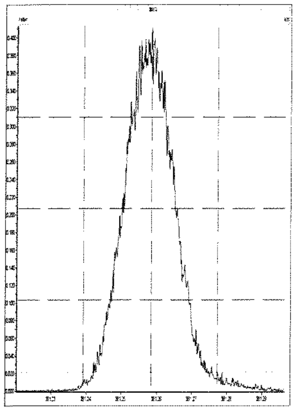
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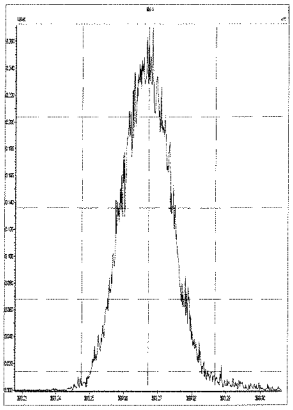
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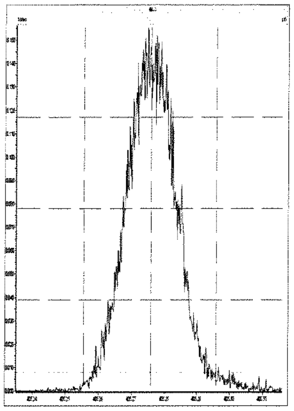
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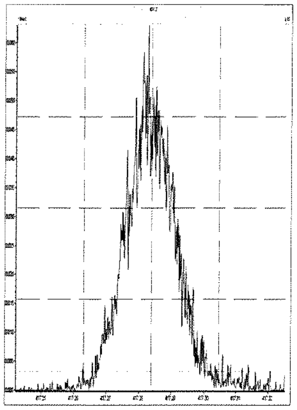
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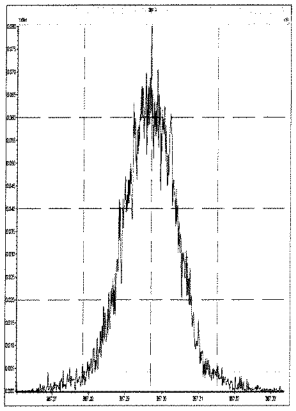
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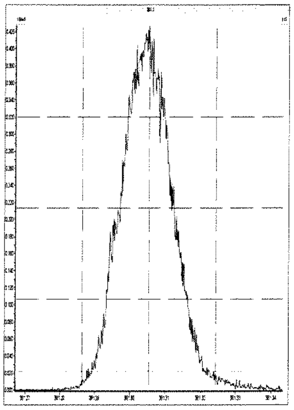
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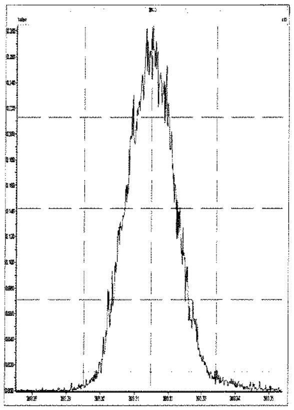
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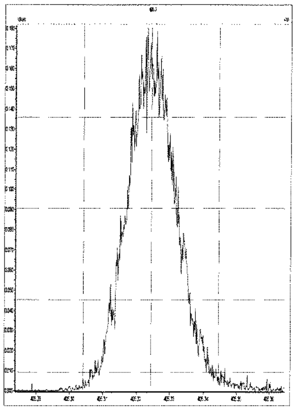
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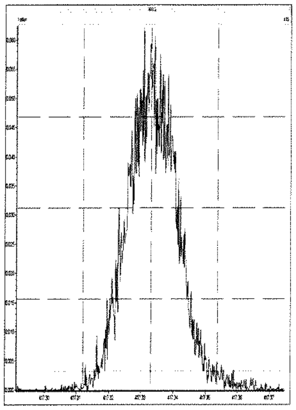
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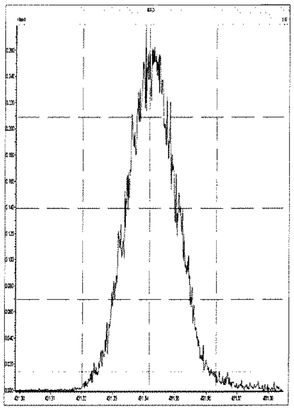
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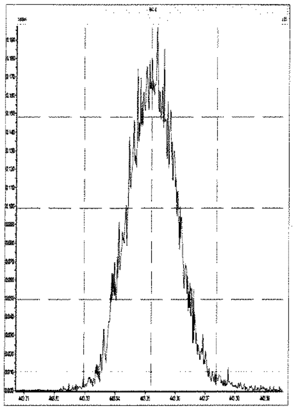
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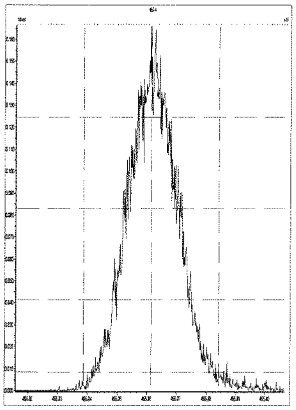
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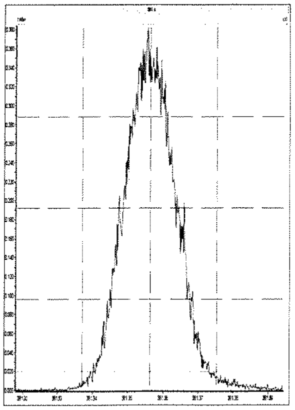
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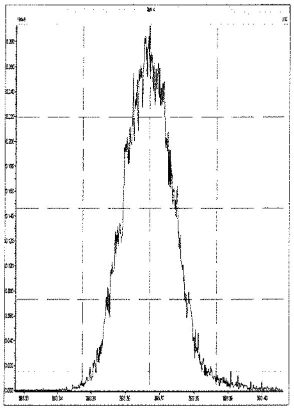
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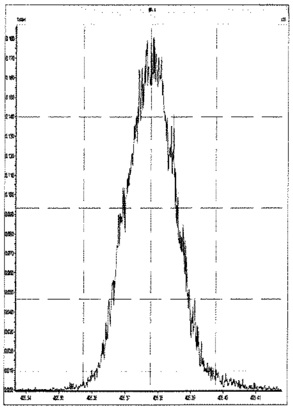
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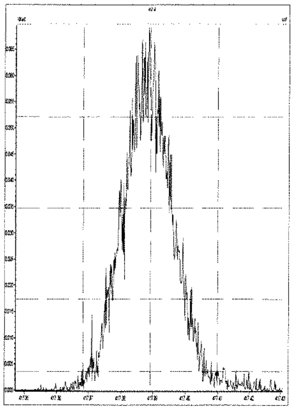
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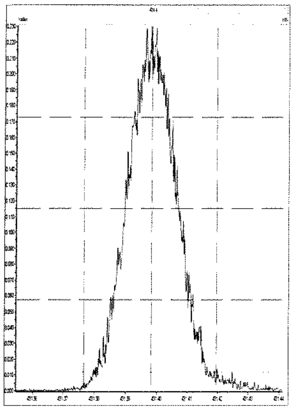

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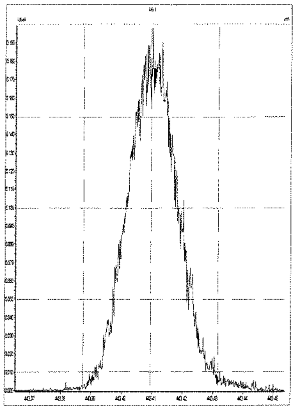

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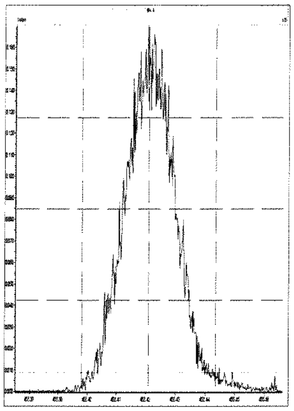

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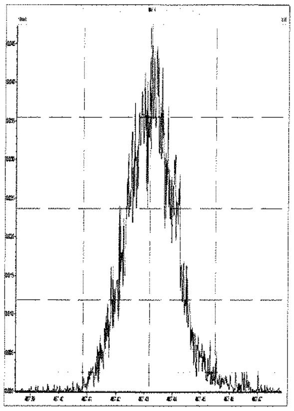

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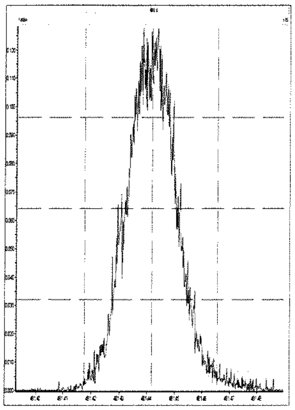

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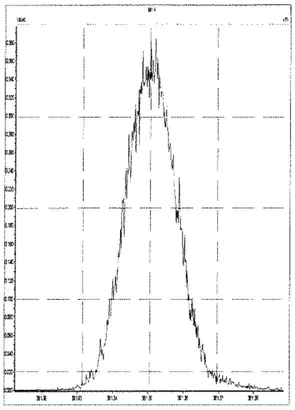

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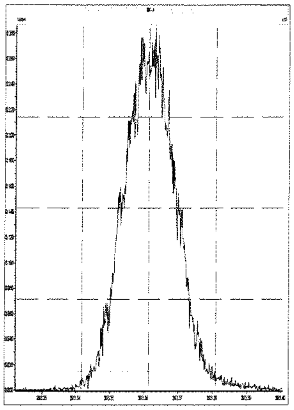

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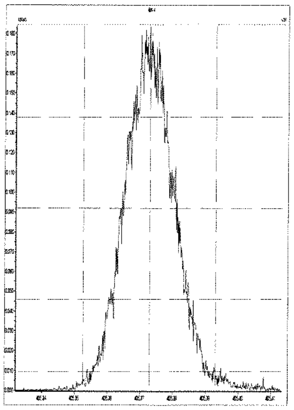

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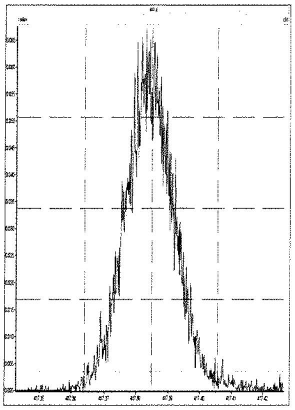

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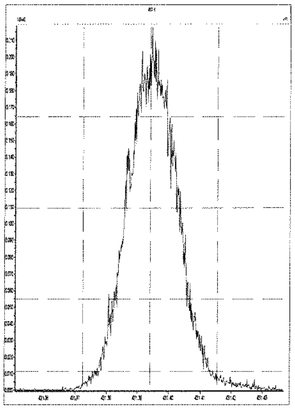

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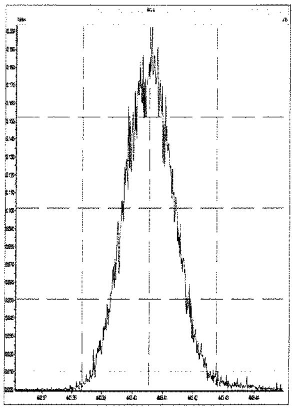

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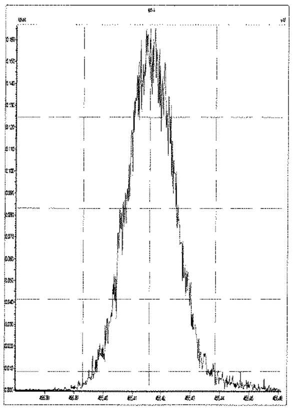

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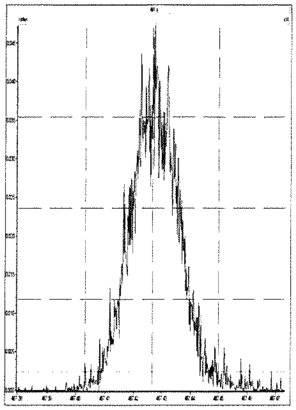

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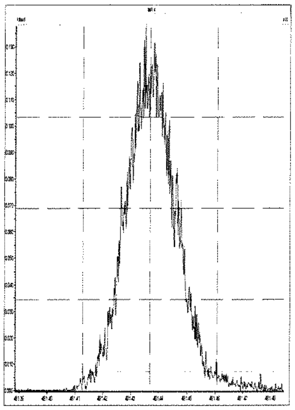

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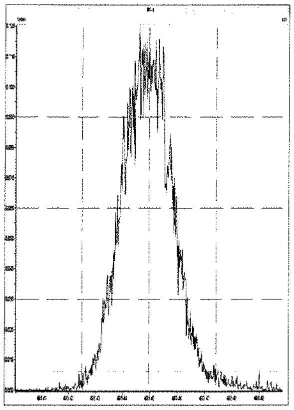

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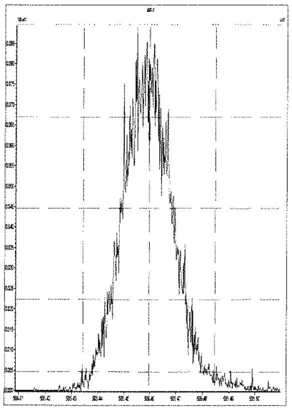

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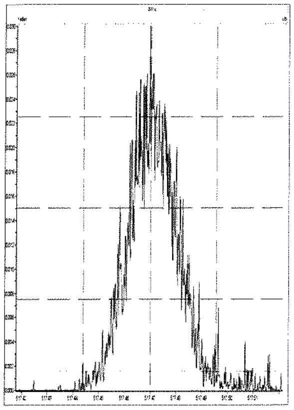

Resolution Check Report **MassLynx 4.1**

Printed: Wednesday, March 17, 2021 22:48:50 Pacific Daylight Time

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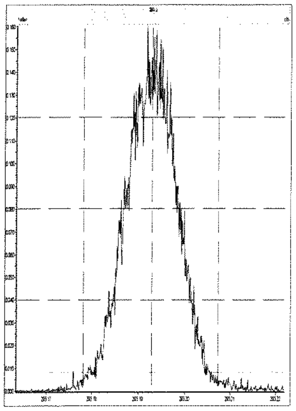

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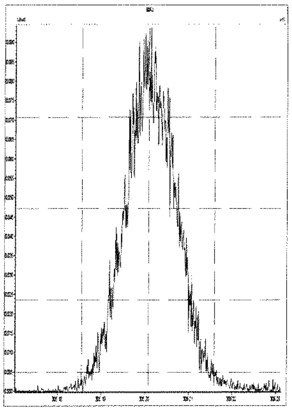

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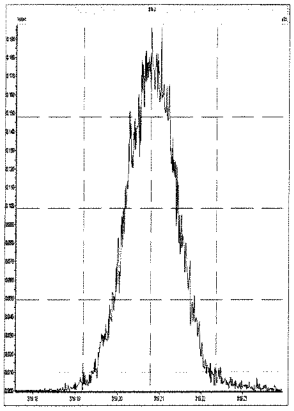

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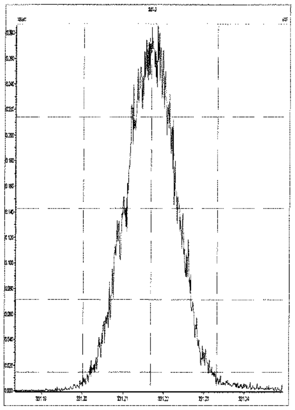

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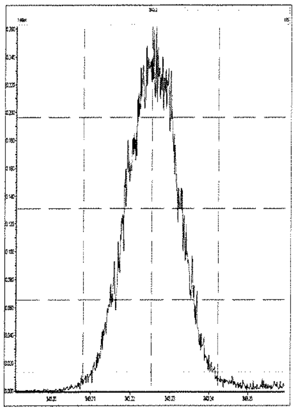

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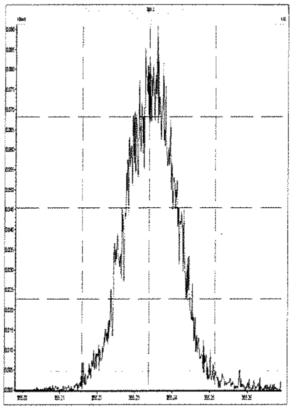

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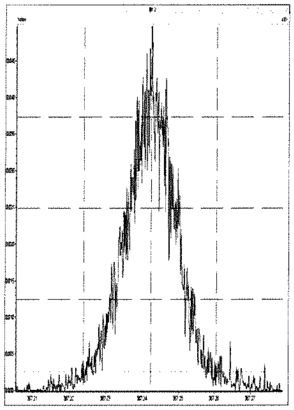

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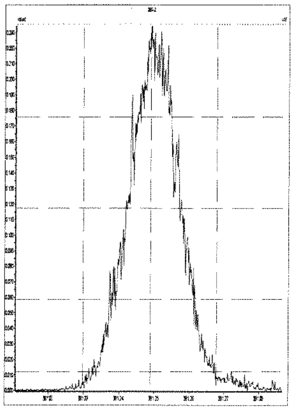

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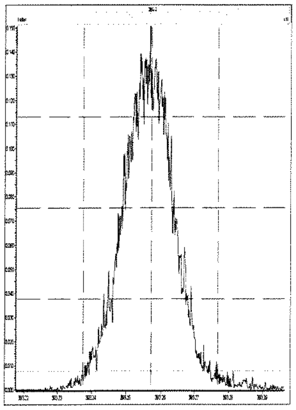

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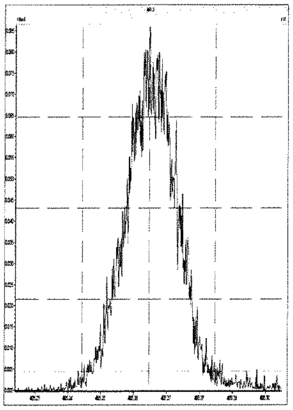

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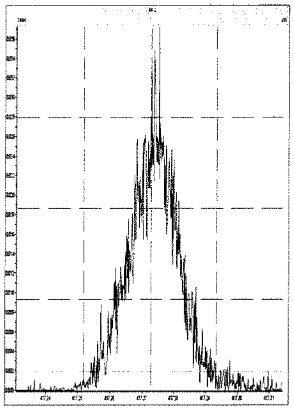

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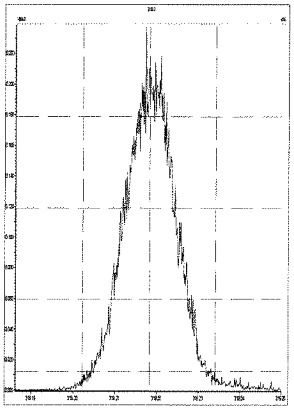

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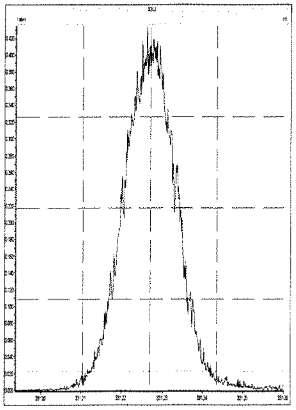

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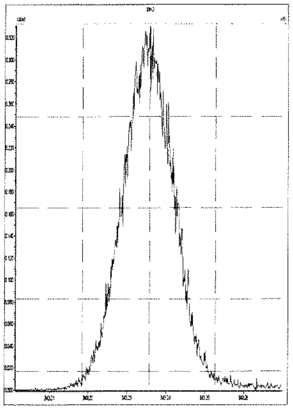

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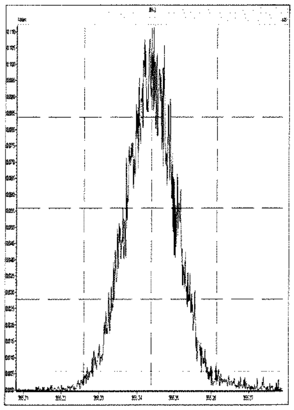

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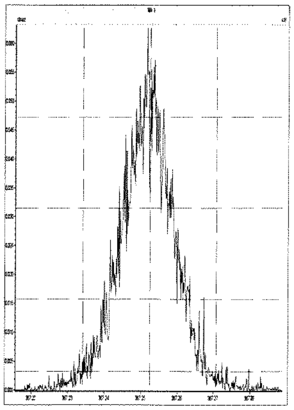

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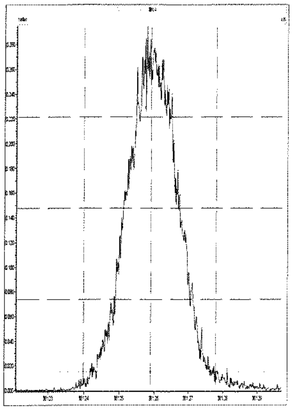

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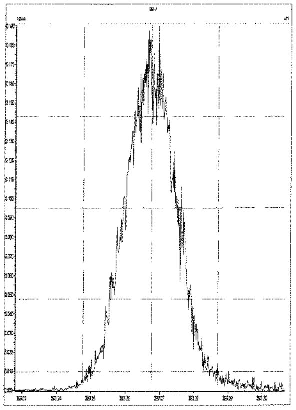

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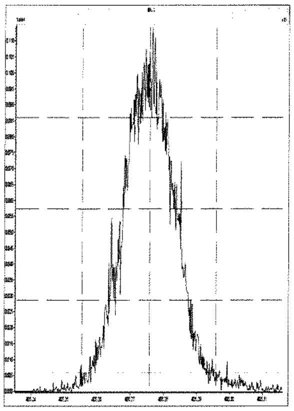

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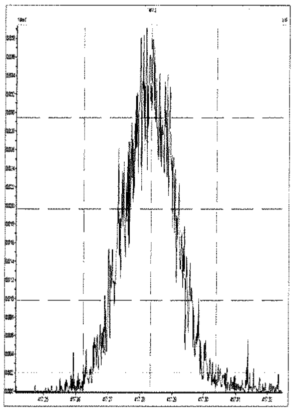

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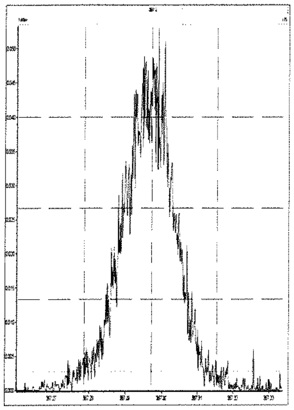

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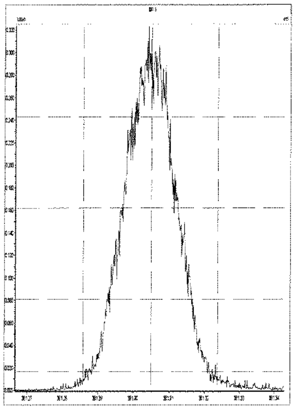

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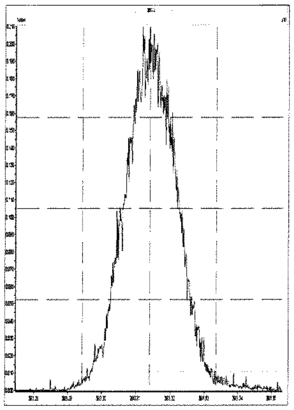

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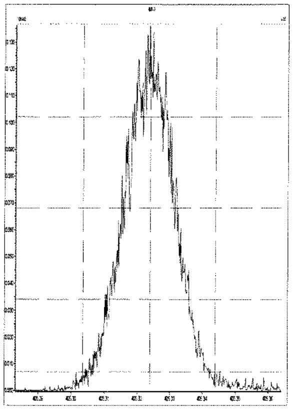

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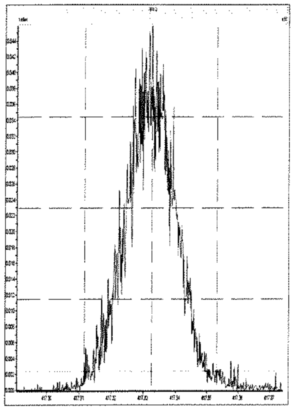

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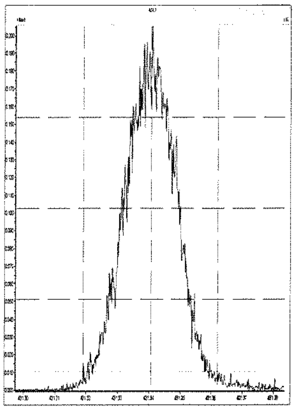

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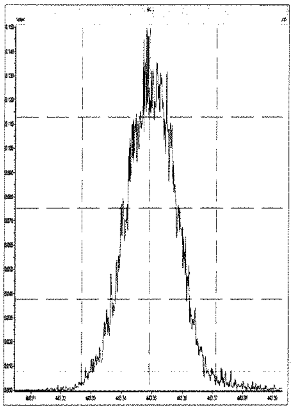

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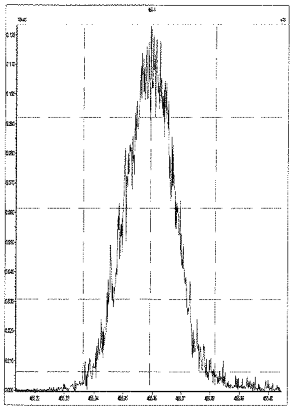

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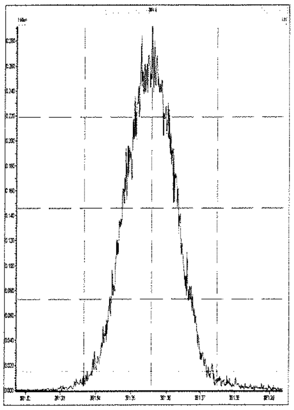

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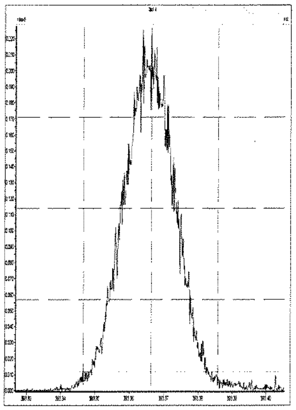

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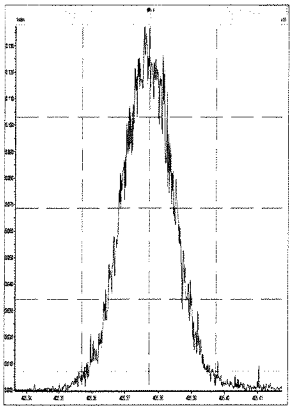

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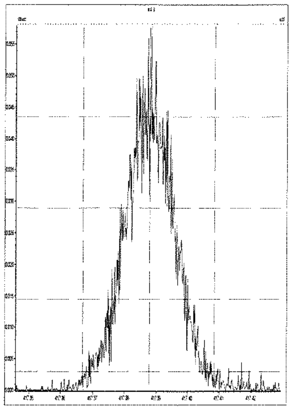

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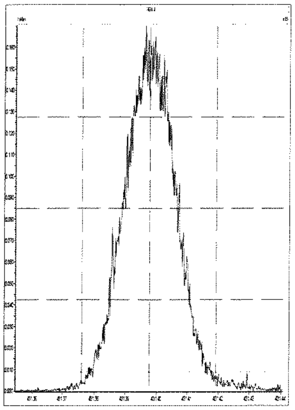

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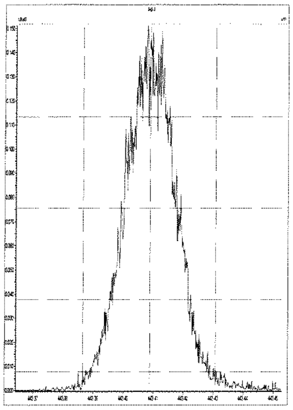

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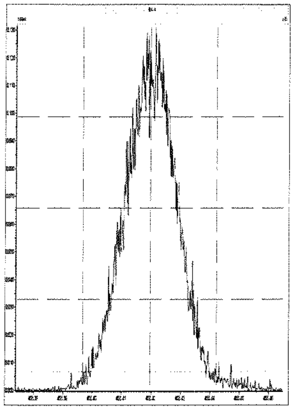

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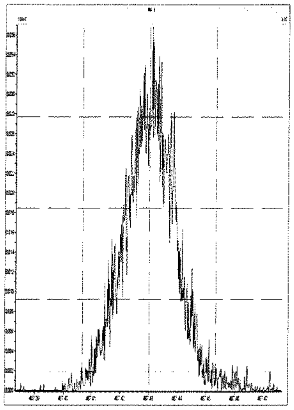

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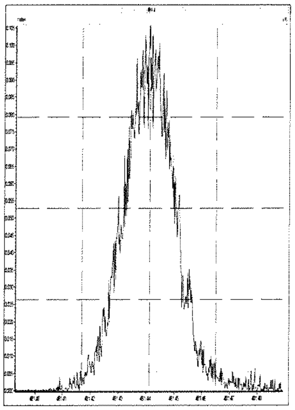

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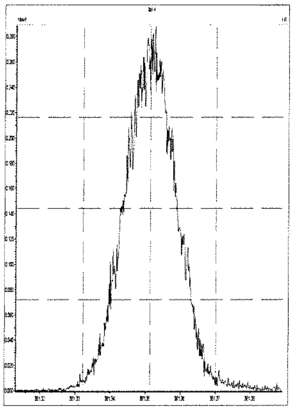

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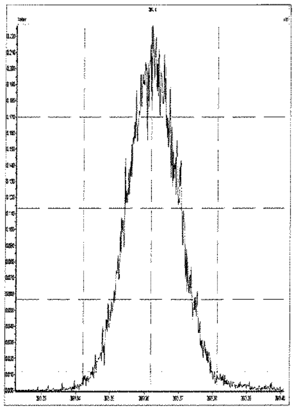

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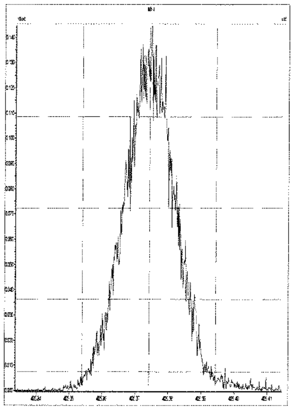

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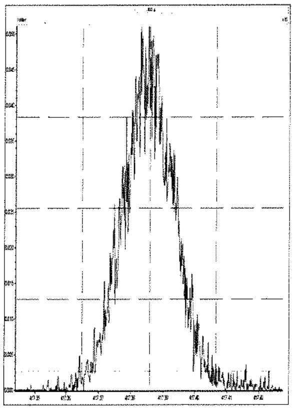

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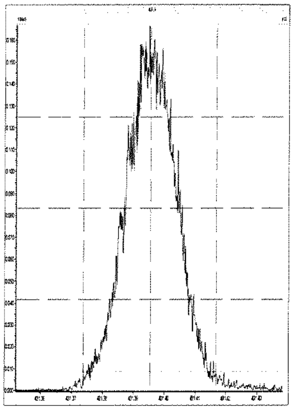

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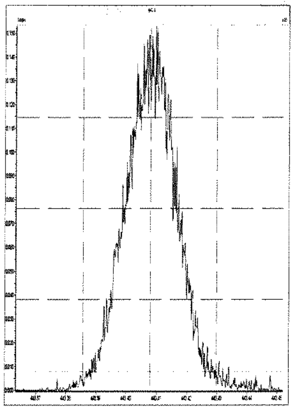

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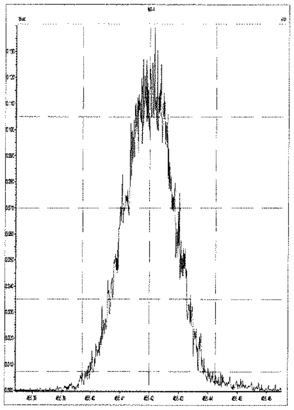

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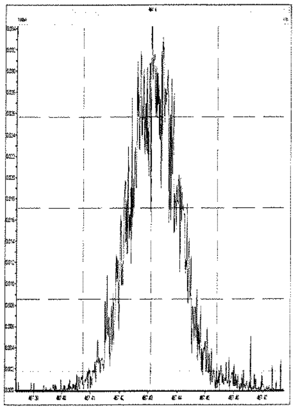

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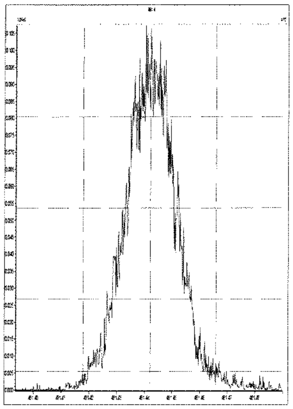

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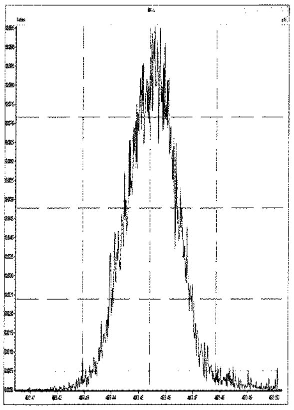

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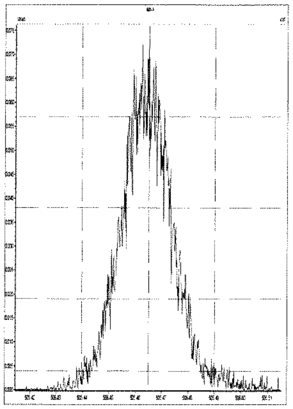

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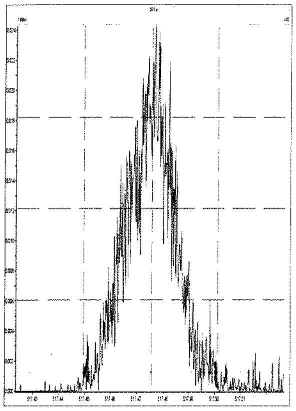

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 17-Mar-2021 11:58:50 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 031721 CS-4 HRDXNL4_00097
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 23:05:28 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1613

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.506	34455345	0.68	5.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.007	46930114	0.77	1.3554	100.5	100.5	0.4135	0.4135	100	
2,3,7,8-TCDF	17.022	4635782	0.76	0.9903	9.975	9.975	0.0357	0.0357	99.75	
A Non-2,3,7,8-sub-TCDF	16.719						0.0357	0.0357		
S Total TCDF					9.975	9.975	0.0357	0.0357		
D 13C-2,3,7,8-TCDD	17.702	31474415	0.69	0.9209	99.2	99.2	0.2502	0.2502	99.19	
2,3,7,8-TCDD	17.717	3568122	0.78	1.0991	10.3	10.3	0.0544	0.0544	103	
$ 37Cl4-2,3,7,8-TCDD	17.717	3426957		1.0159	9.790	9.790	0.0244	0.0244	97.90	
A Non-2,3,7,8-sub-TCDD	17.165						0.0544	0.0544		
S Total TCDD					10.3	10.3	0.0544	0.0544		
D 13C-1,2,3,7,8-PeCDF	21.896	38421649	1.55	1.0847	102.8	102.8	0.2776	0.2776	103	
1,2,3,7,8-PeCDF	21.923	19858700	1.58	1.0209	50.6	50.6	0.2039	0.2039	101	
D 13C-2,3,4,7,8-PeCDF	23.205	38828222	1.58	1.1057	101.9	101.9	0.2723	0.2723	102	
2,3,4,7,8-PeCDF	23.232	19705522	1.61	0.9790	51.8	51.8	0.2194	0.2194	104	
A F1 PeCDFs	19.524						0.0339	0.0339		
A Non-2,3,7,8-sub-PeCDF	22.586						0.2114	0.2114		
S Total PeCDF					102.5	102.5	0.2116	0.2116		
D 13C-1,2,3,7,8-PeCDD	23.914	27205323	1.63	0.7689	102.7	102.7	0.1676	0.1676	103	
1,2,3,7,8-PeCDD	23.941	13983991	1.60	0.9982	51.5	51.5	0.0887	0.0887	103	
A Non-2,3,7,8-sub-PeCDD	22.857						0.0887	0.0887		
S Total PeCDD					51.5	51.5	0.0887	0.0887		
D 13C-1,2,3,4,7,8-HxCDF	30.067	32082424	0.52	1.0321	96.1	96.1	0.5533	0.5533	96.13	
1,2,3,4,7,8-HxCDF	30.094	18203393	1.24	1.0667	53.2	53.2	0.4651	0.4651	106	
D 13C-1,2,3,6,7,8-HxCDF	30.294	33751717	0.51	1.0218	102.1	102.1	0.5589	0.5589	102	
1,2,3,6,7,8-HxCDF	30.320	19664724	1.26	1.1178	52.1	52.1	0.4127	0.4127	104	
D 13C-2,3,4,6,7,8-HxCDF	31.225	31466338	0.51	0.9729	100.0	100.0	0.5870	0.5870	100	
2,3,4,6,7,8-HxCDF	31.239	18851079	1.23	1.1422	52.4	52.4	0.3130	0.3130	105	
D 13C-1,2,3,7,8,9-HxCDF	32.090	28755402	0.52	0.9469	93.9	93.9	0.6031	0.6031	93.91	
1,2,3,7,8,9-HxCDF	32.104	17376232	1.26	1.1455	52.8	52.8	0.3058	0.3058	106	
A Non-2,3,7,8-sub-HxCDF	29.781						0.3638	0.3638		
S Total HxCDF					210.5	210.5	0.3742	0.3742		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.904	32336721	1.24	4.9E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.438	23246343	1.28	0.7689	93.5	93.5	0.4112	0.4112	93.49	
1,2,3,4,7,8-HxCDD	31.451	12395225	1.26	1.0357	51.5	51.5	0.1807	0.1807	103	
D 13C-1,2,3,6,7,8-HxCDD	31.545	29371005	1.25	0.8643	105.1	105.1	0.3658	0.3658	105	
1,2,3,6,7,8-HxCDD	31.571	14671011	1.27	0.9658	51.7	51.7	0.1726	0.1726	103	
1,2,3,7,8,9-HxCDD	31.917	14897020	1.26	1.0727	52.8	52.8	0.1644	0.1644	106	
A Non-2,3,7,8-sub-HxCDD	30.433						0.1721	0.1721		
S Total HxCDD					156.0	156.0	0.1726	0.1726		
D 13C-1,2,3,4,6,7,8-HpCDF	33.580	23624735	0.41	0.7233	101.0	101.0	1.547	1.547	101	
1,2,3,4,6,7,8-HpCDF	33.592	17425226	1.05	1.4017	52.6	52.6	0.5538	0.5538	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.649	20485545	0.43	0.6720	94.3	94.3	1.664	1.664	94.26	
1,2,3,4,7,8,9-HpCDF	34.661	14006140	1.04	1.2995	52.6	52.6	0.7617	0.7617	105	
A Non-2,3,7,8-sub-HpCDF	34.127						0.6443	0.6443		
S Total HpCDF					105.2	105.2	0.6578	0.6578		
D 13C-1,2,3,4,6,7,8-HpCDD	34.370	21892237	1.06	0.6855	98.8	98.8	0.6722	0.6722	98.76	
1,2,3,4,6,7,8-HpCDD	34.382	11684850	1.05	1.0339	51.6	51.6	0.2537	0.2537	103	
A Non-2,3,7,8-sub-HpCDD	34.460						0.2537	0.2537		
S Total HpCDD					51.6	51.6	0.2537	0.2537		
D 13C-OCDD	36.685	31022037	0.91	0.4996	192.0	192.0	0.2834	0.2834	96.01	
OCDF	36.780	22135019	0.90	1.3135	108.6	108.6	0.1219	0.1219	109	
OCDD	36.697	17376414	0.89	1.0576	105.9	105.9	0.1561	0.1561	106	

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 17-Mar-2021 11:58:50 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 031721 CS-4 HRDXNL4_00097
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 23:05:28 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1613

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.506	17.506	0		13988292	3496260	4589	11472	762		
333.9339	17.506	17.506	0		20467053	5044326	3281	8202	1537	0.68(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.007	17.007	0	0.972	20430662	5172562	13852	34630	373		
317.9389	17.007	17.007	0	0.972	26499452	6746026	5293	13232	1275	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.022	17.022	0	1.001	2007600	497299	669	1672	743		
305.8987	17.022	17.022	0	1.001	2628182	652717	1017	2542	642	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.719						669	1672			
305.8987	16.719						1017	2542			
13C-2,3,7,8-TCDD											
331.9368	17.702	17.702	0	1.011	12803084	2992900	4589	11472	652		
333.9339	17.702	17.702	0	1.011	18671331	4392435	3281	8202	1339	0.69(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.717	17.717	0	1.001	1568345	371606	1010	2525	368		
321.8936	17.717	17.717	0	1.001	1999777	478800	756	1890	633	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.717	17.717	0	1.012	3426957	820796	847	2117	969		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.165						1010	2525			
321.8936	17.165						756	1890			
13C-1,2,3,7,8-PeCDF											
351.9000	21.896	21.896	0	1.251	23359241	4116032	6183	15457	666		
353.8970	21.896	21.896	0	1.251	15062408	2686980	4104	10260	655	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.923	21.923	0	1.001	12147323	2162878	3263	8157	663		
341.8567	21.923	21.923	0	1.001	7711377	1360292	2401	6002	567	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.205	23.205	0	1.326	23793347	4029765	6183	15457	652		
353.8970	23.205	23.205	0	1.326	15034875	2562731	4104	10260	624	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.232	23.232	0	1.001	12154011	2020865	3263	8157	619		
341.8567	23.232	23.232	0	1.001	7551511	1262120	2401	6002	526	1.61(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.524						289	722			
341.8567	19.524						620	1550			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.586						3263	8157			
341.8567	22.586						2401	6002			
13C-1,2,3,7,8-PeCDD											
367.8949	23.914	23.914	0	1.366	16850348	2681152	2734	6835	981		
369.8919	23.914	23.914	0	1.366	10354975	1615395	1668	4170	968	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	23.941	23.941	0	1.001	8596441	1353158	879	2197	1539		
357.8516	23.941	23.941	0	1.001	5387550	838309	643	1607	1304	1.60(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.857						879	2197			
357.8516	22.857						643	1607			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.067	30.067	0	0.942	10968125	1696989	5977	14942	284		
385.8610	30.080	30.067	1	0.943	21114299	3273105	11190	27975	293	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.094	30.094	0	1.001	10067492	1567773	5569	13922	282		
375.8178	30.094	30.094	0	1.001	8135901	1290824	4294	10735	301	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.294	30.294	0	0.950	11390772	1814491	5977	14942	304		
385.8610	30.294	30.294	0	0.950	22360945	3529837	11190	27975	315	0.51(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.320	30.320	0	1.001	10954539	1739945	5569	13922	312		
375.8178	30.320	30.320	0	1.001	8710185	1370954	4294	10735	319	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.225	31.225	0	0.979	10682890	2339332	5977	14942	391		
385.8610	31.225	31.225	0	0.979	20783448	4557181	11190	27975	407	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.239	31.239	0	1.000	10402361	2243869	5569	13922	403		
375.8178	31.239	31.239	0	1.000	8448718	1846308	4294	10735	430	1.23(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.090	32.090	0	1.006	9807274	2433459	5977	14942	407		
385.8610	32.090	32.090	0	1.006	18948128	4605847	11190	27975	412	0.52(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.104	32.104	0	1.000	9691051	2395141	5569	13922	430		
375.8178	32.104	32.104	0	1.000	7685181	1929031	4294	10735	449	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.781						5569	13922			
375.8178	29.781						4294	10735			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.904	31.904	0		17922192	4159470	4838	12095	860		
403.8529	31.904	31.904	0		14414529	3355185	4666	11665	719	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.438	31.438	0	0.985	13056961	3272342	4838	12095	676		
403.8529	31.438	31.438	0	0.985	10189382	2579845	4666	11665	553	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.451	31.451	0	1.000	6914599	1797093	2604	6510	690		
391.8127	31.451	31.451	0	1.000	5480626	1413434	1776	4440	796	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.545	31.545	0	0.989	16295634	3630355	4838	12095	750		
403.8529	31.545	31.545	0	0.989	13075371	2936606	4666	11665	629	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.571	31.571	0	1.001	8204045	1817060	2604	6510	698		
391.8127	31.558	31.571	-1	1.000	6466966	1441287	1776	4440	812	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.917	31.917	0	1.015	8314055	1978802	2604	6510	760		
391.8127	31.917	31.917	0	1.015	6582965	1547338	1776	4440	871	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.433						2604	6510			
391.8127	30.433						1776	4440			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.580	33.580	0	1.053	6849972	2272641	11058	27645	206		
419.8220	33.580	33.580	0	1.053	16774763	5434721	22566	56415	241	0.41(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.592	0	1.000	8928426	2861911	12711	31777	225		
409.7789	33.592	33.592	0	1.000	8496800	2684910	11221	28052	239	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.649	34.649	0	1.086	6163379	1823586	11058	27645	165		
419.8220	34.649	34.649	0	1.086	14322166	4220580	22566	56415	187	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.661	34.661	0	1.000	7135832	2130644	12711	31777	168		
409.7789	34.661	34.661	0	1.000	6870308	2000939	11221	28052	178	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.127						12711	31777			
409.7789	34.127						11221	28052			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.370	34.370	0	1.077	11239641	3395396	7004	17510	485		
437.8140	34.370	34.370	0	1.077	10652596	3174912	6848	17120	464	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.382	0	1.000	5977704	1785939	3355	8387	532		
425.7737	34.382	34.382	0	1.000	5707146	1683818	3538	8845	476	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.460						3355	8387			
425.7737	34.460						3538	8845			
13C-OCDD											
469.7779	36.685	36.685	0	1.150	14779067	3838372	1974	4935	1944		
471.7750	36.685	36.685	0	1.150	16242970	4211956	2282	5705	1846	0.91(0.76-1.02)	
OCDF											
441.7428	36.780	36.780	0	1.003	10502278	2755068	1184	2960	2327		
443.7399	36.780	36.780	0	1.003	11632741	3086428	1395	3487	2212	0.90(0.76-1.02)	
OCDD											
457.7377	36.697	36.697	0	1.000	8206388	2183539	1191	2977	1833		
459.7348	36.697	36.697	0	1.000	9170026	2385597	1468	3670	1625	0.89(0.76-1.02)	

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d		
Injection Date:	17-Mar-2021 11:58:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

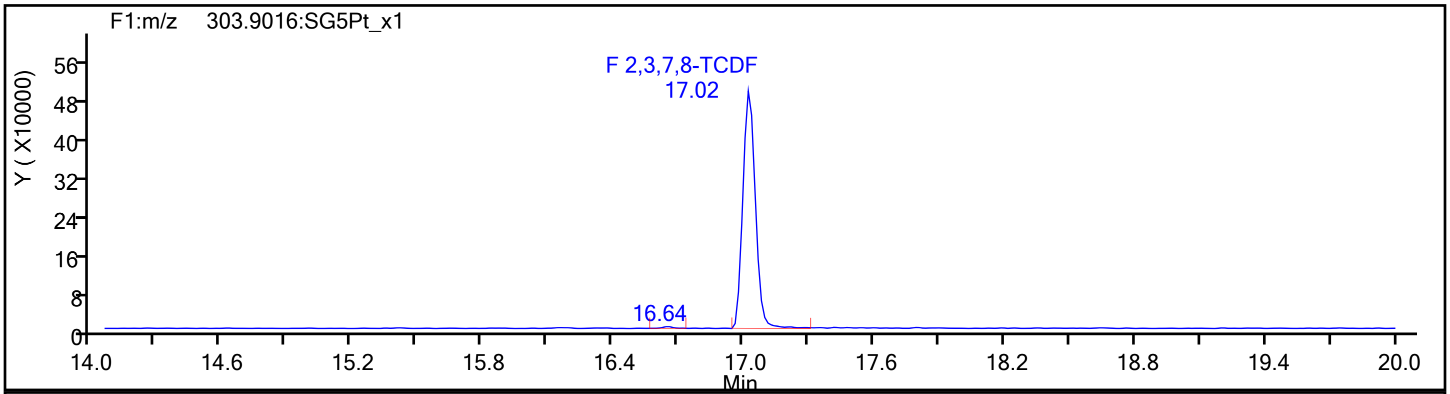

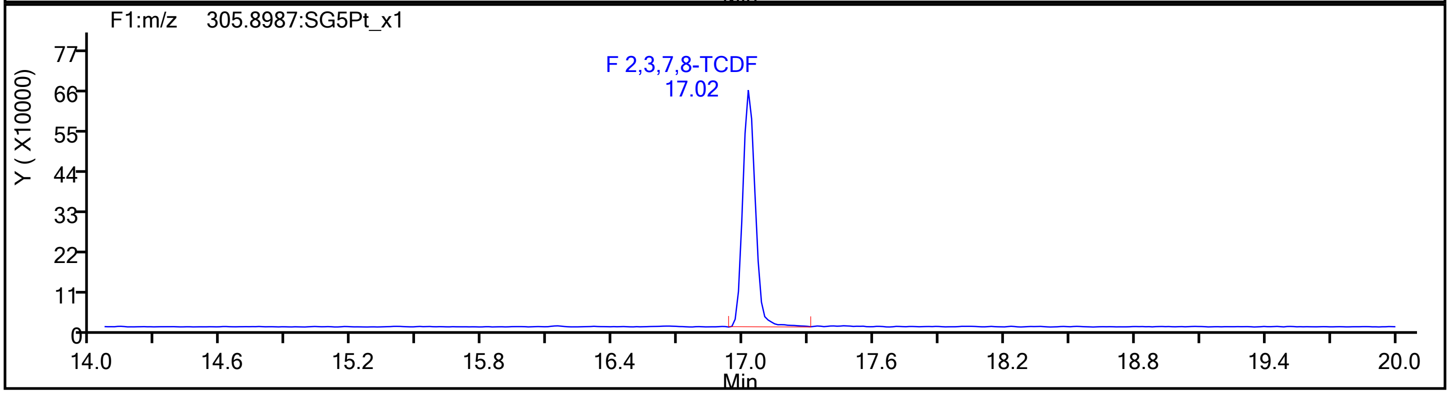

TCDF Standards

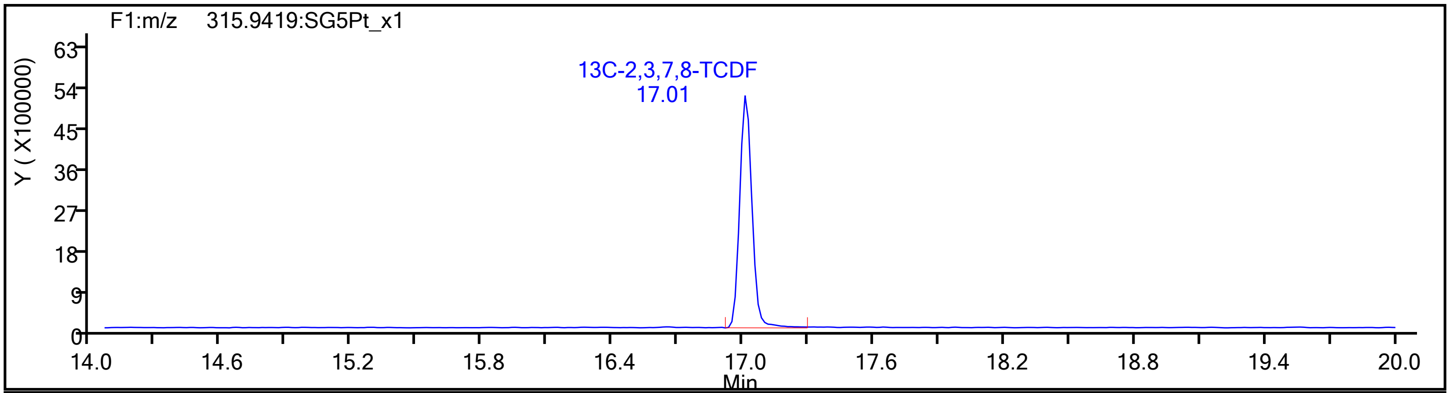

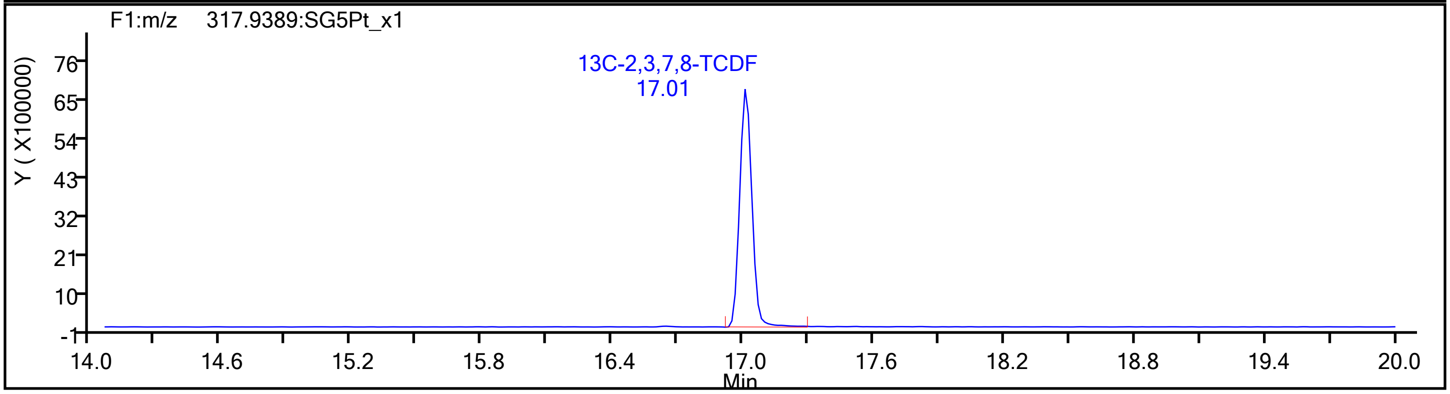

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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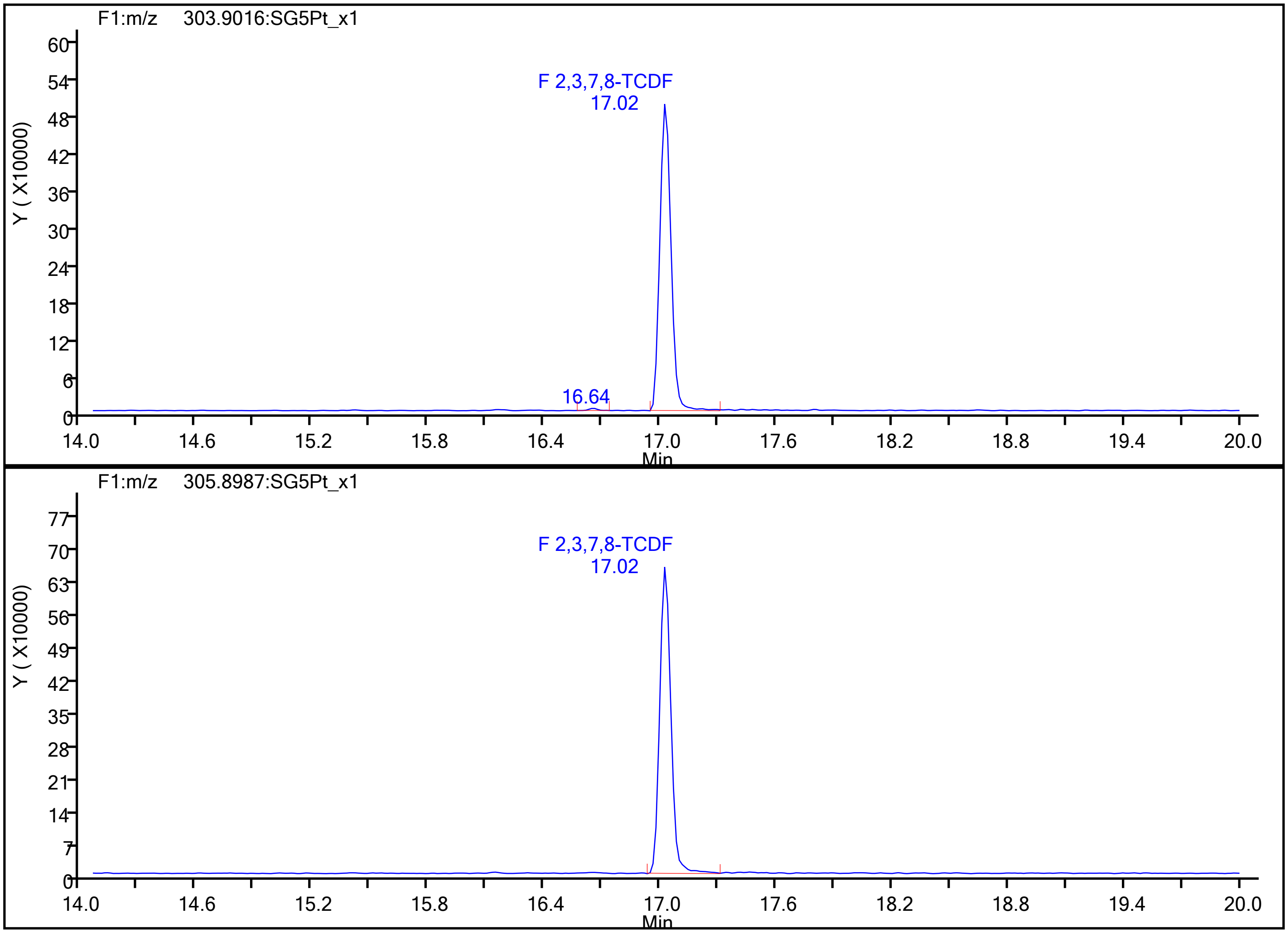

TCDF Interference Mass

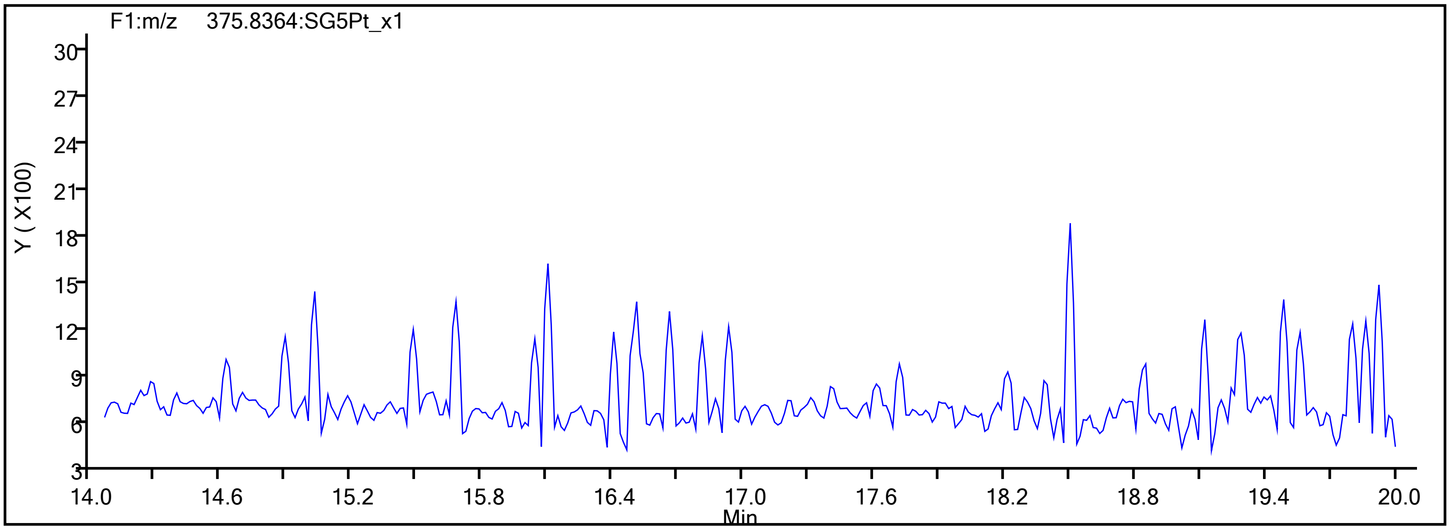

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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TCDD

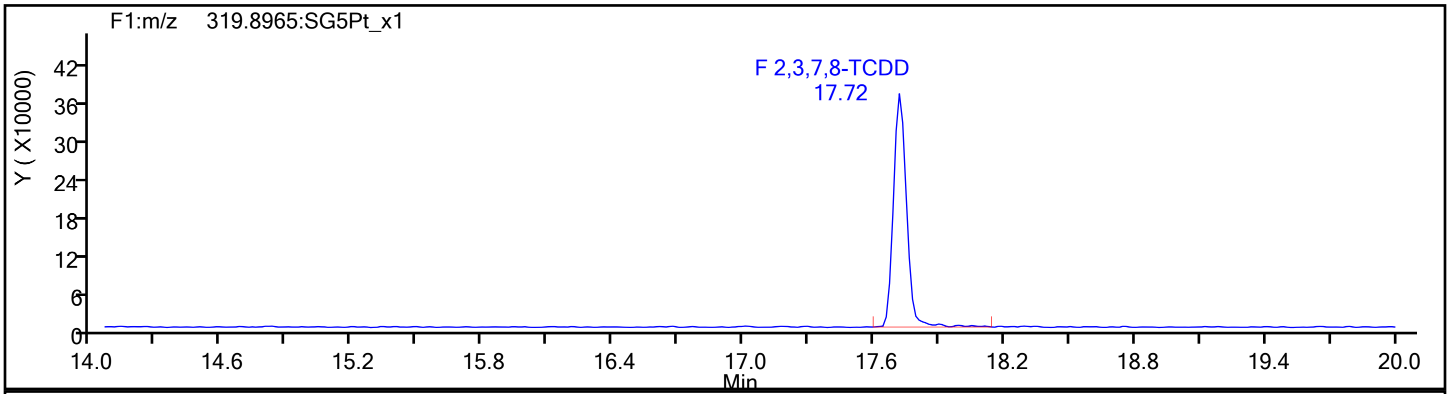

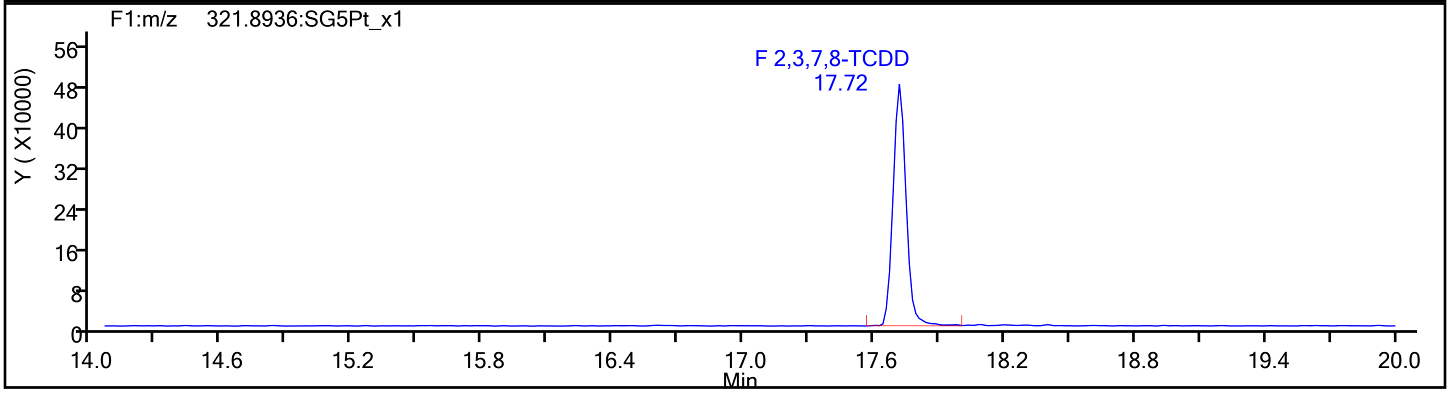

TCDD Standards

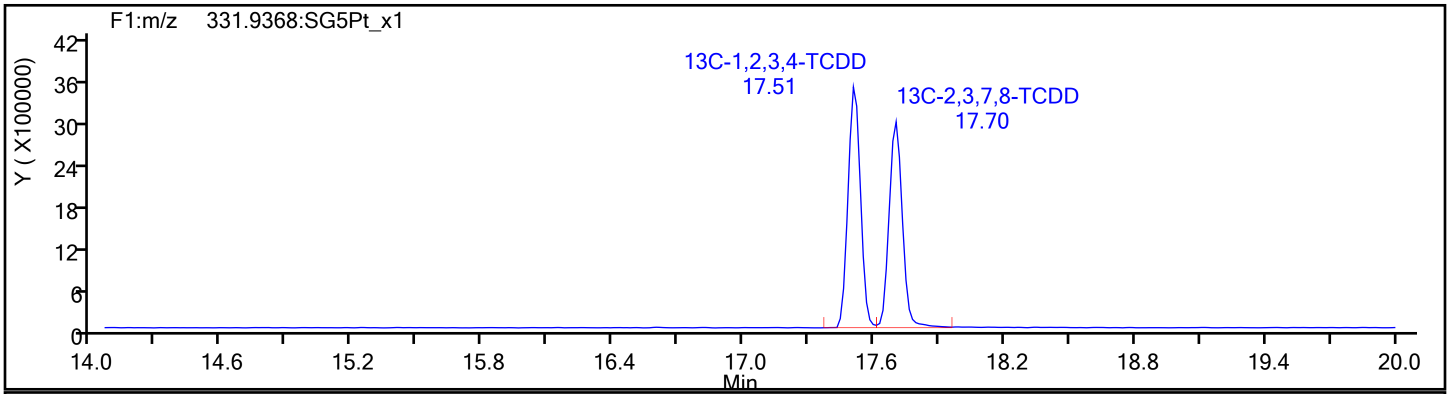

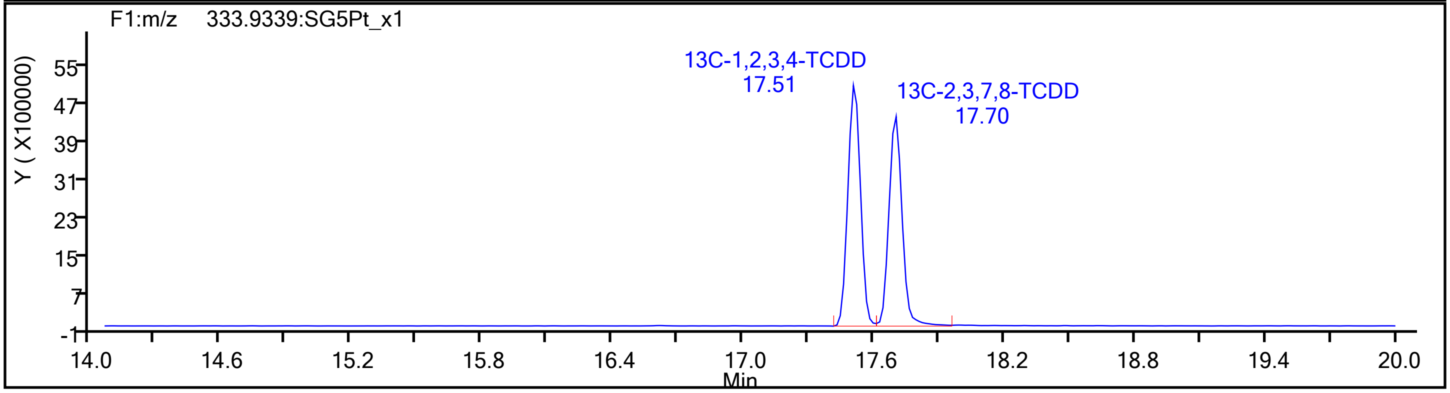

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

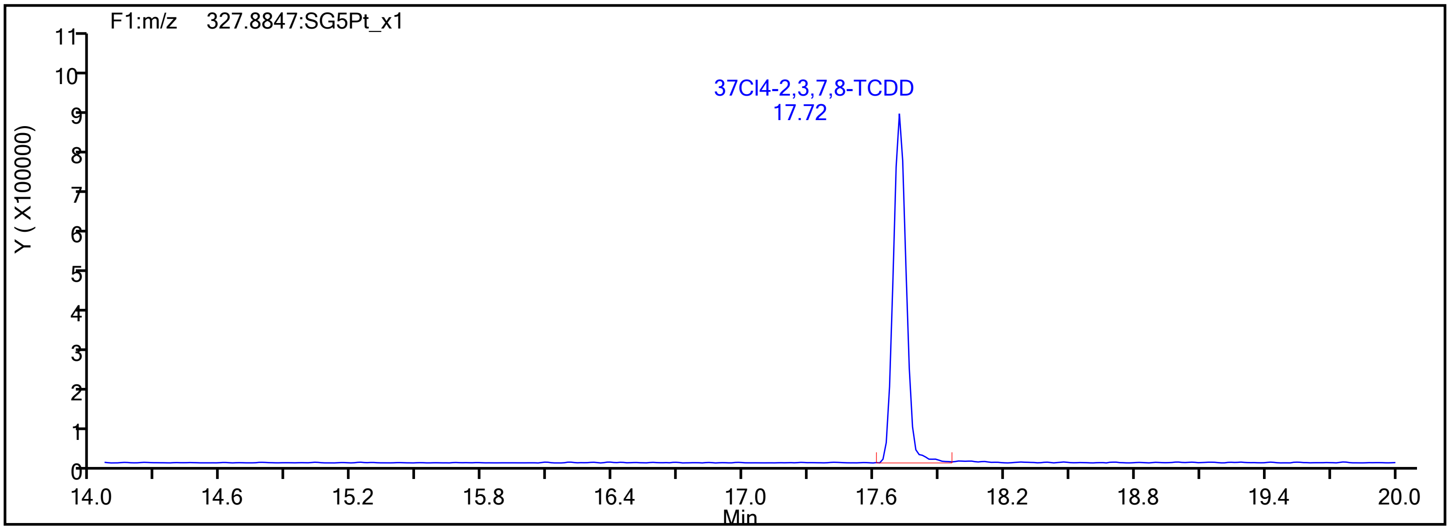

37Cl4-TCDD Standards

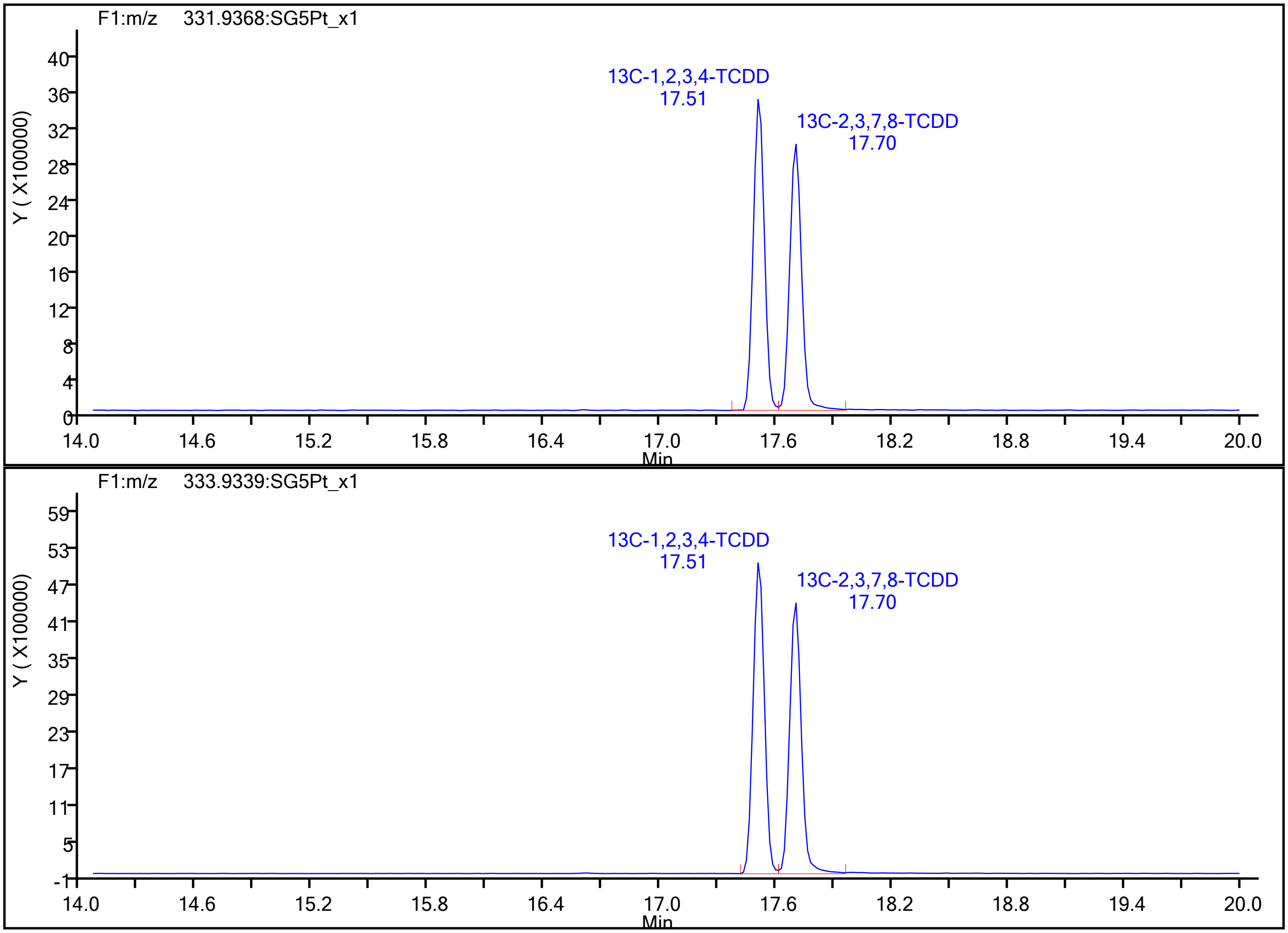

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

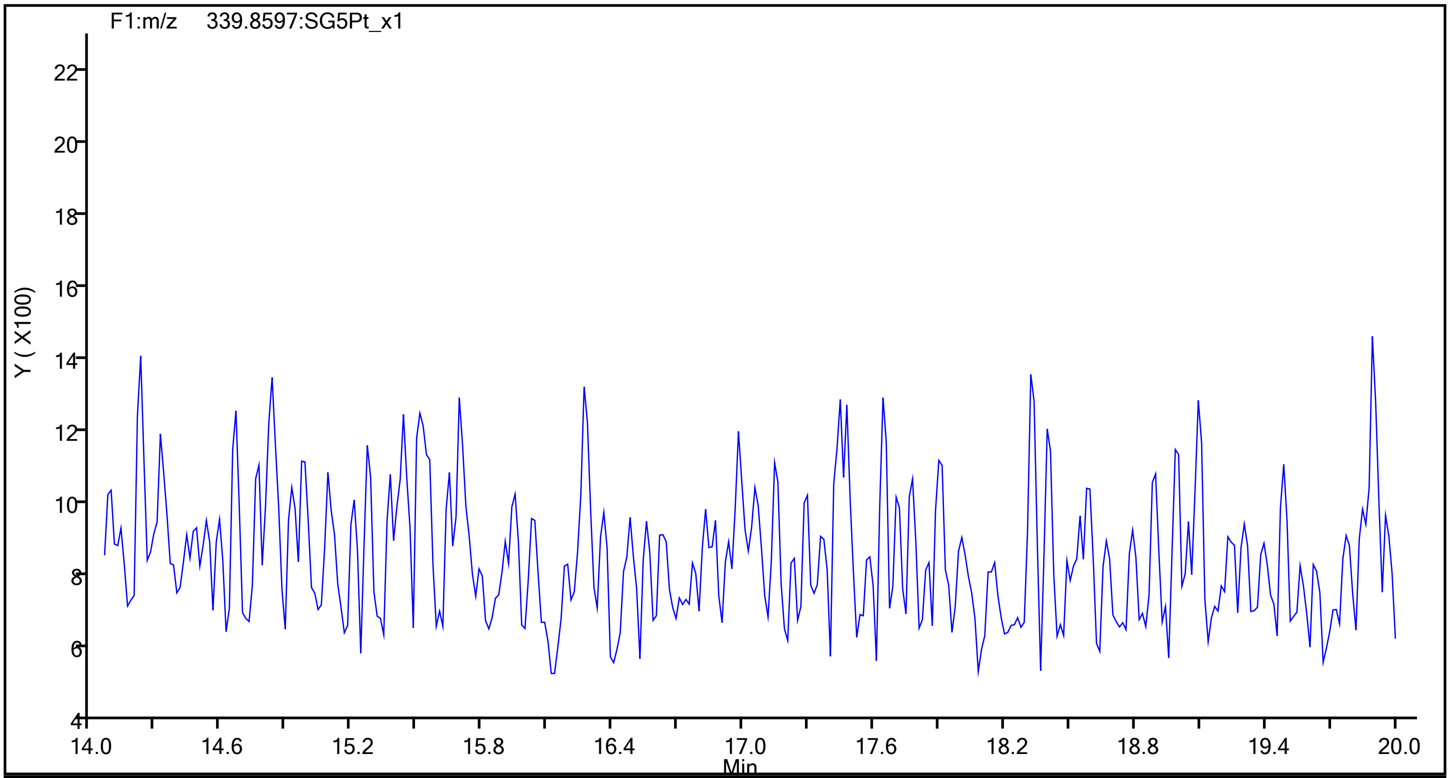

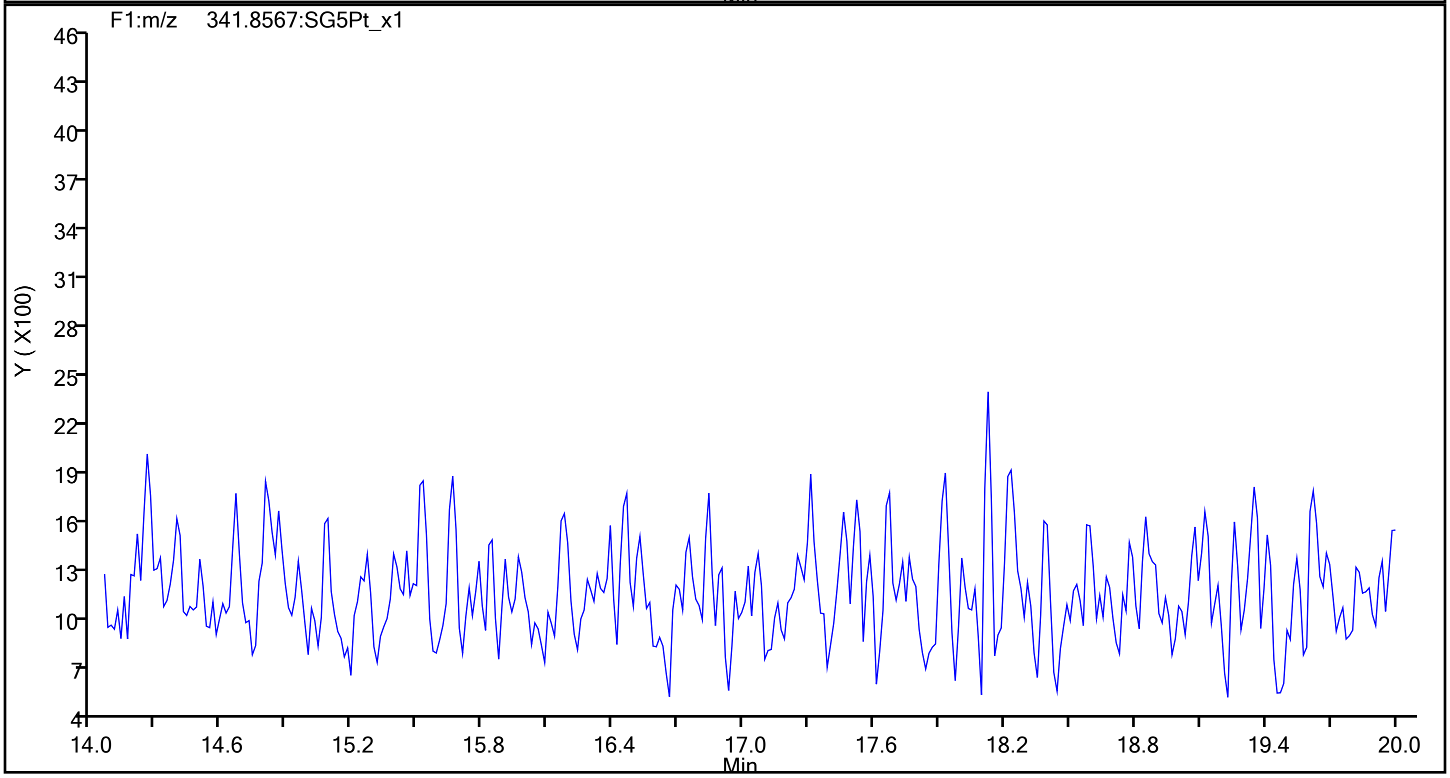

Report Date: 17-Mar-2021 23:05:29 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

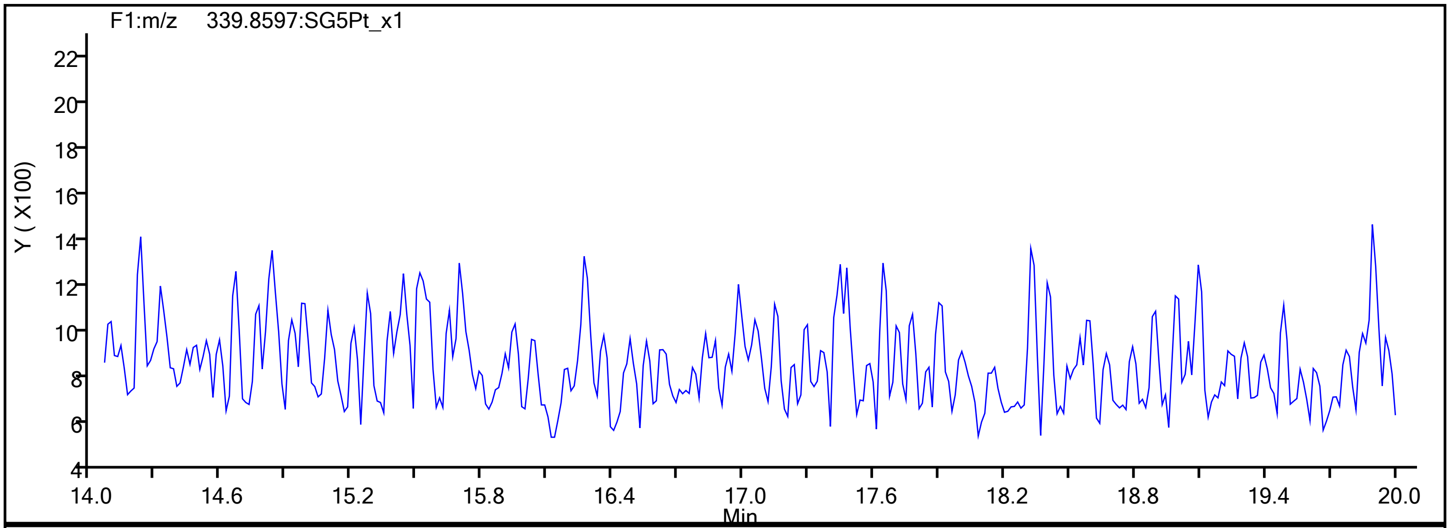

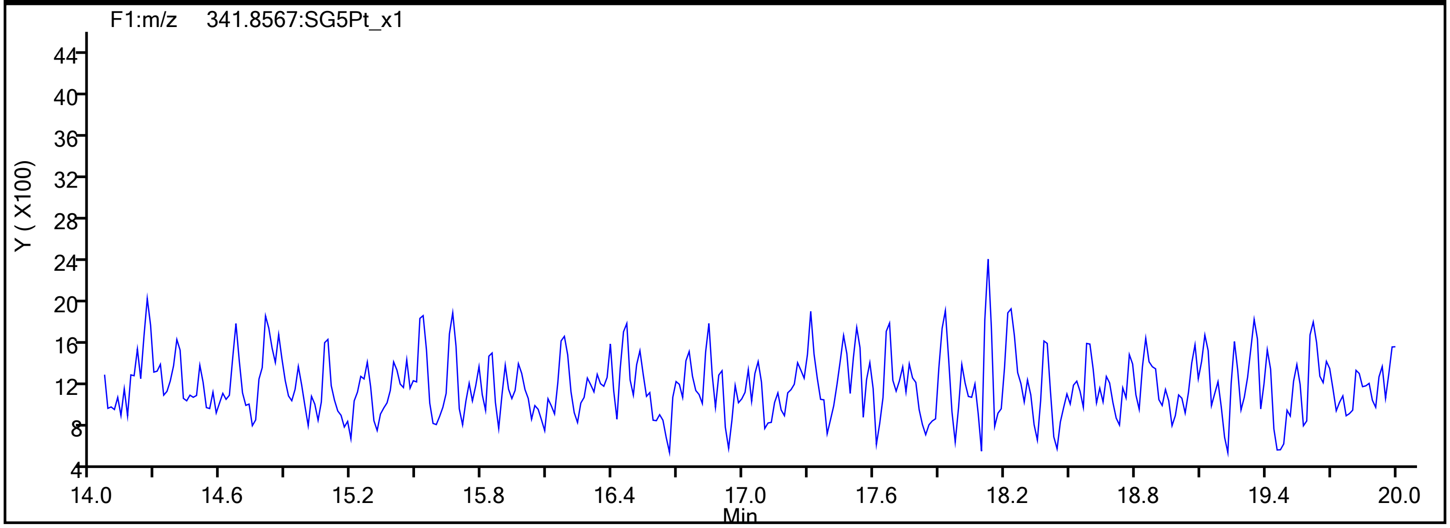

F1 PeCDFs Interference Mass

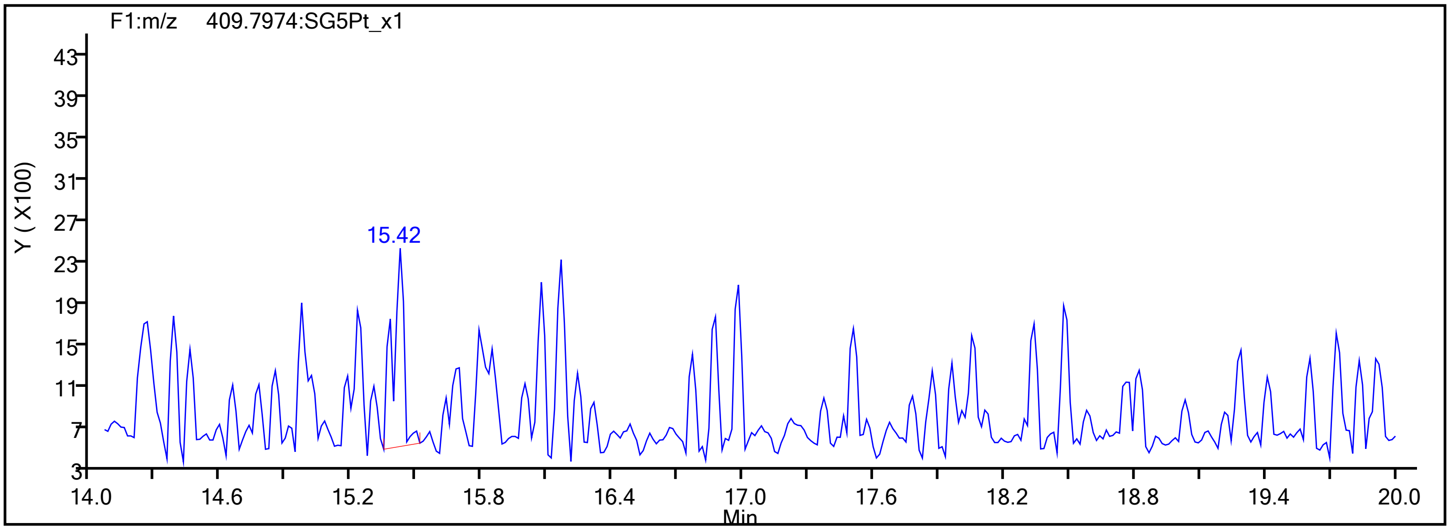

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 11:58:50

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: KSS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 471421

Sample Line#: 3

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

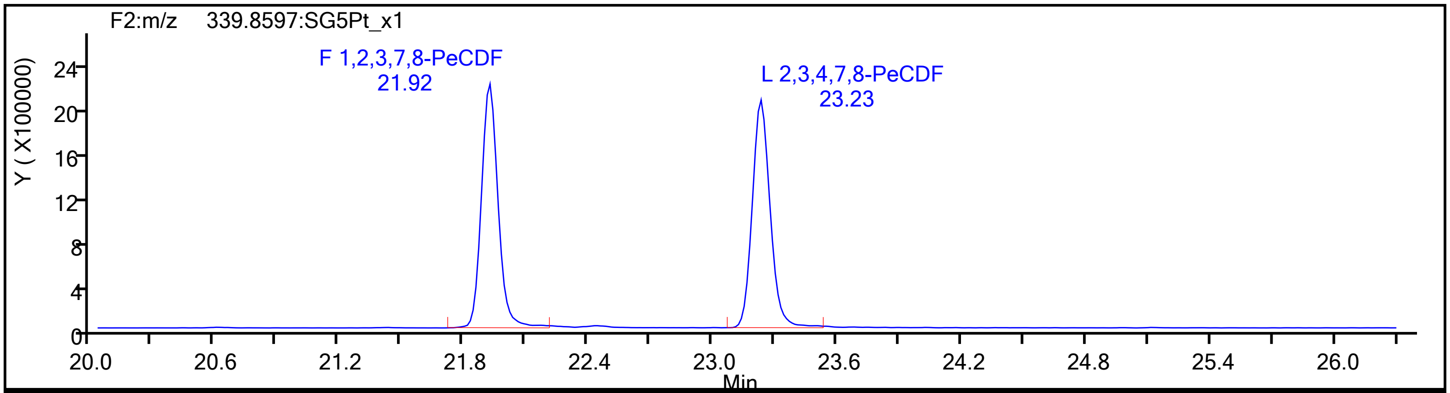

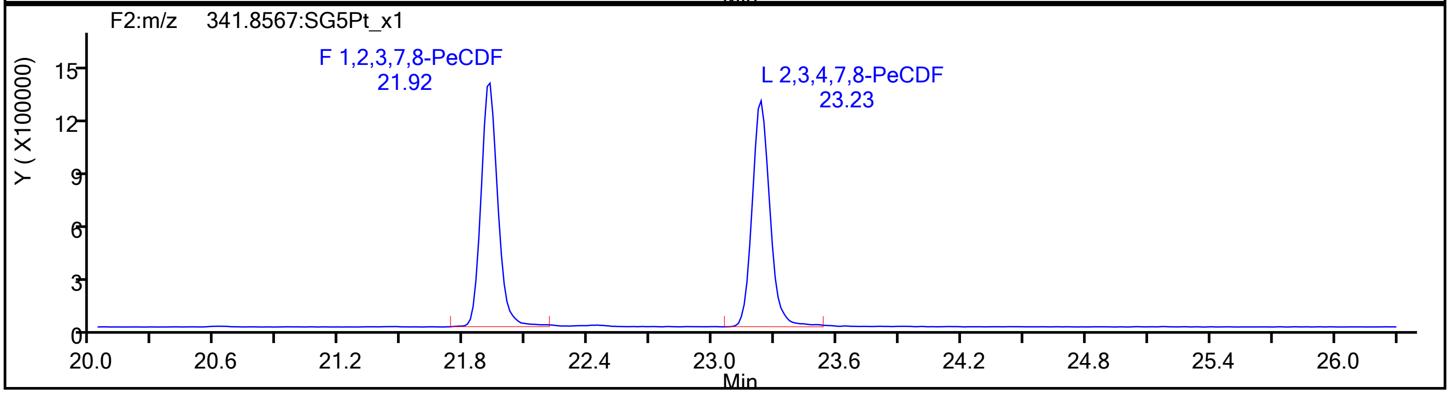

PeCDF Standards

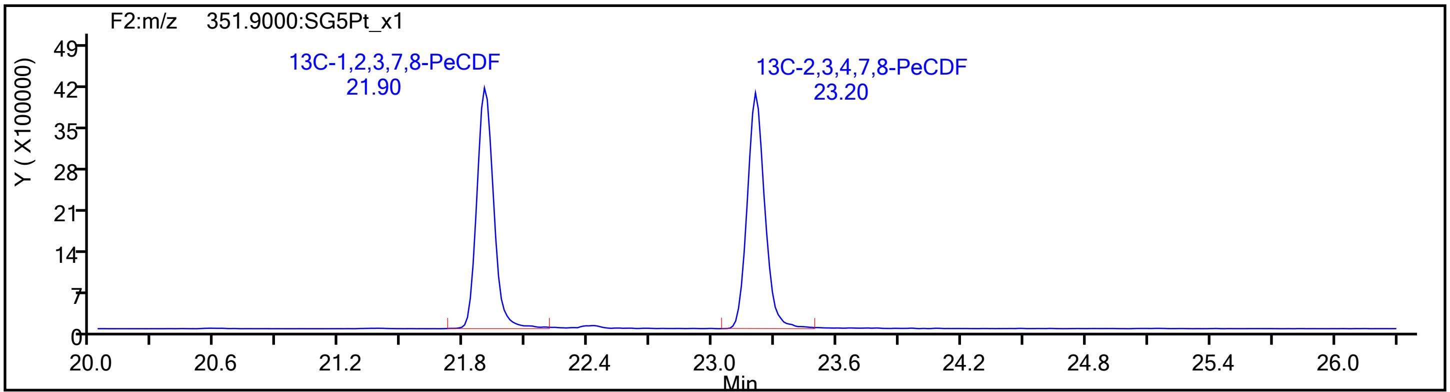

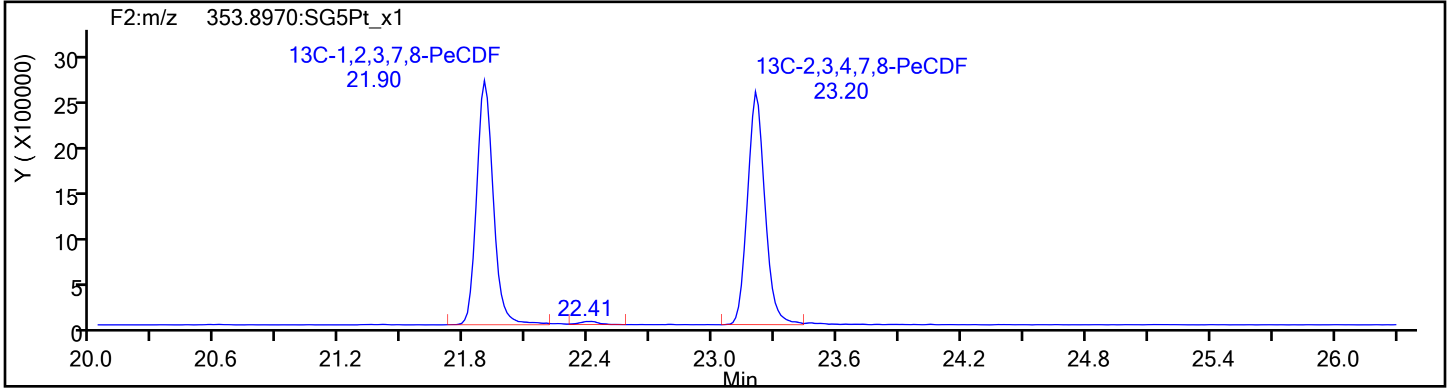

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Eurofins TestAmerica, Sacramento

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PeCDF

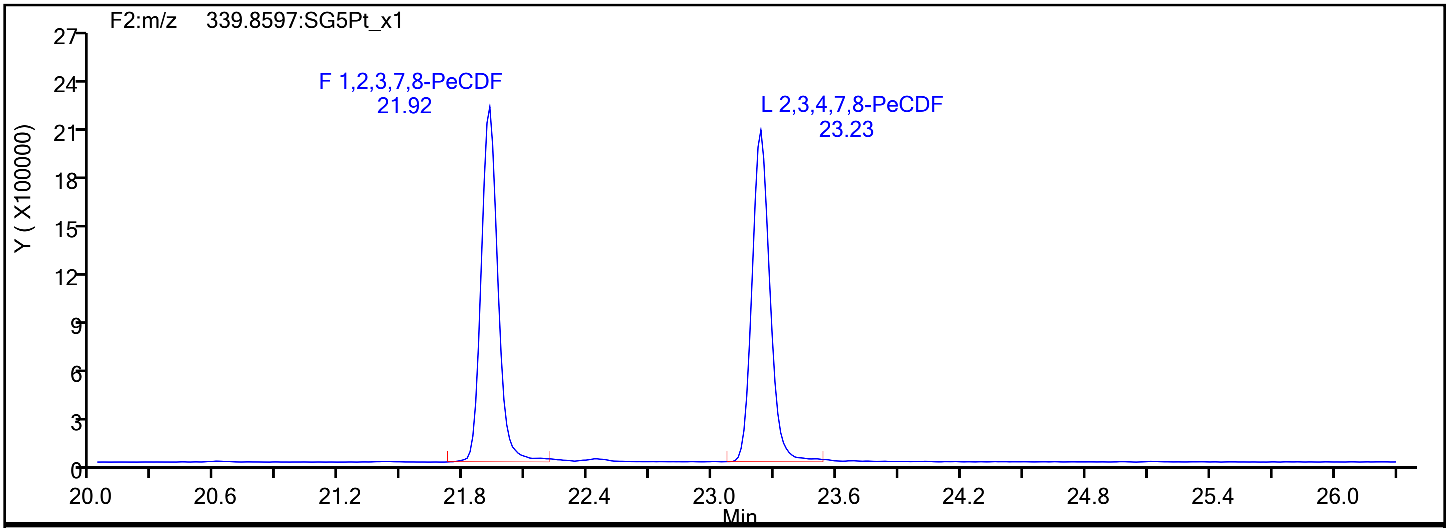

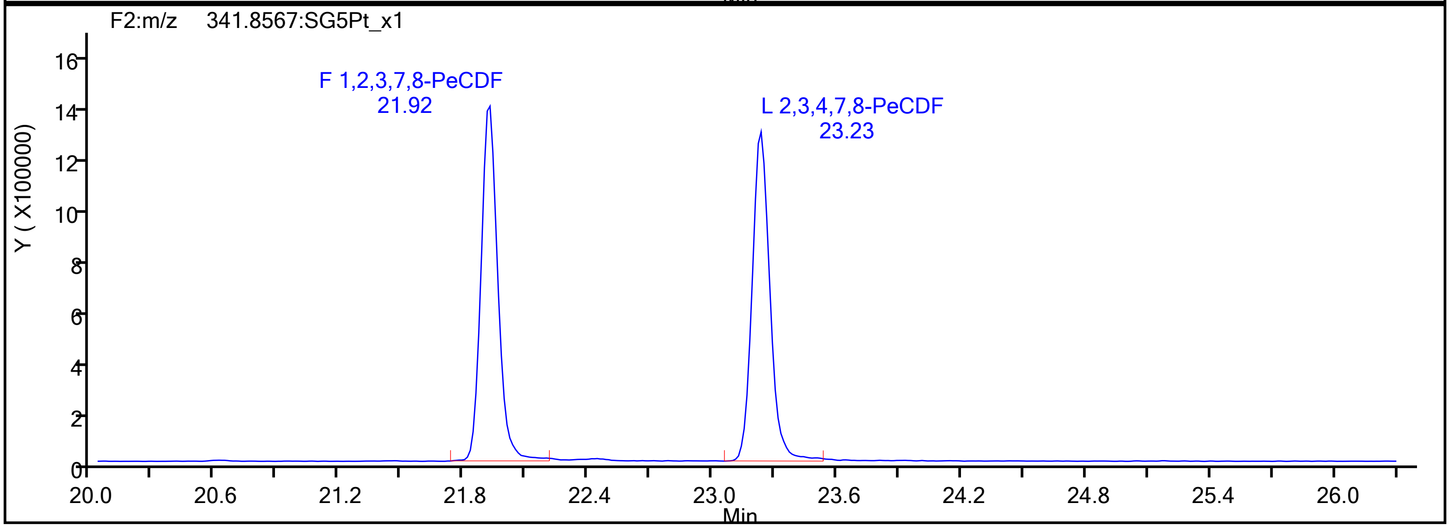

PeCDF Interference Mass

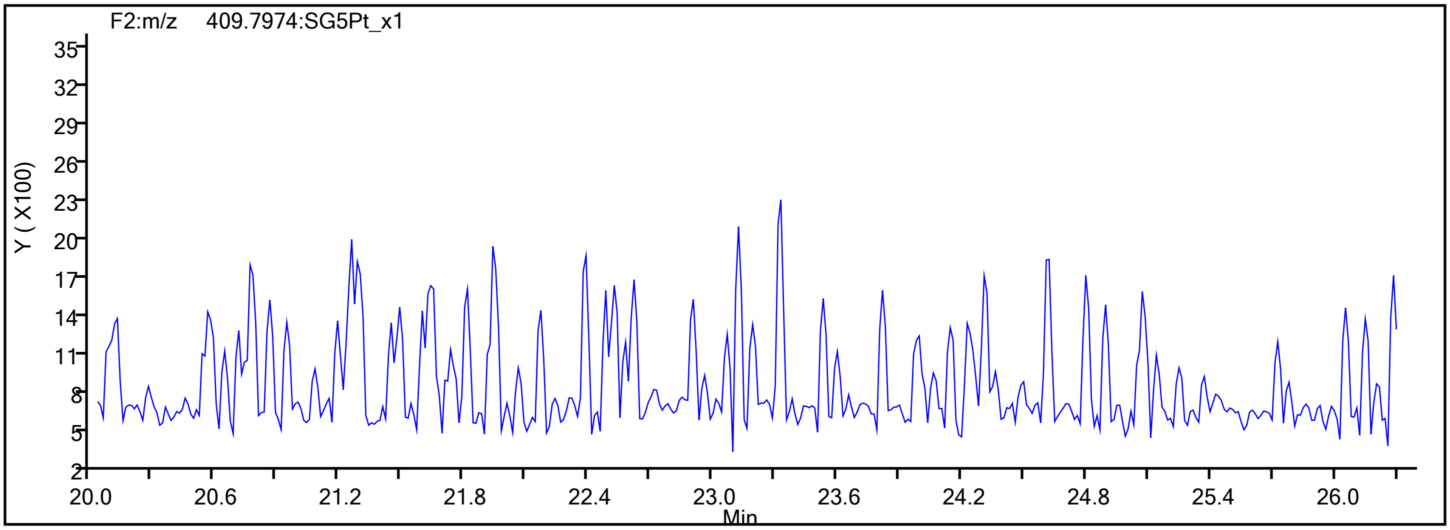

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Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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PeCDD

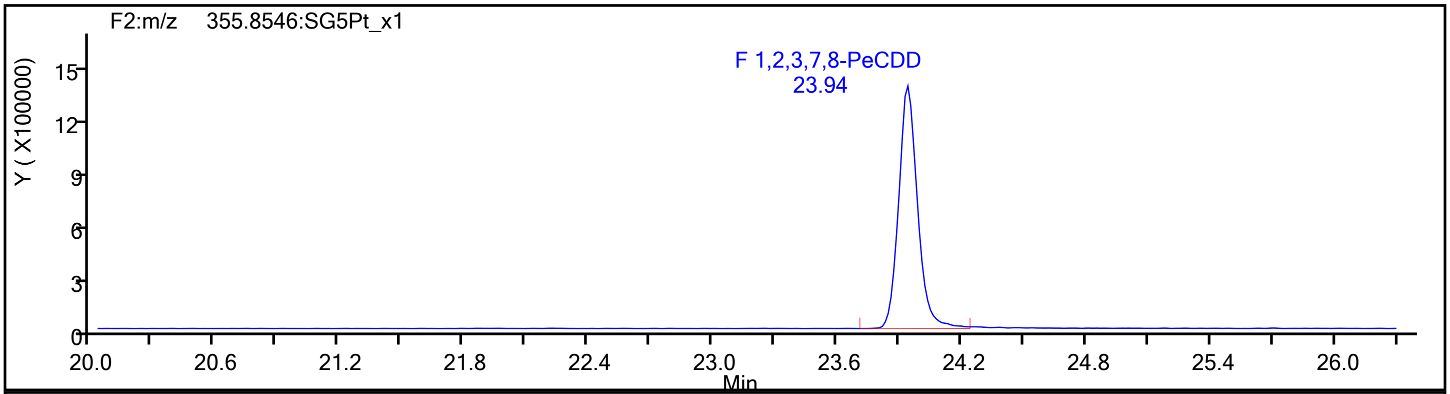

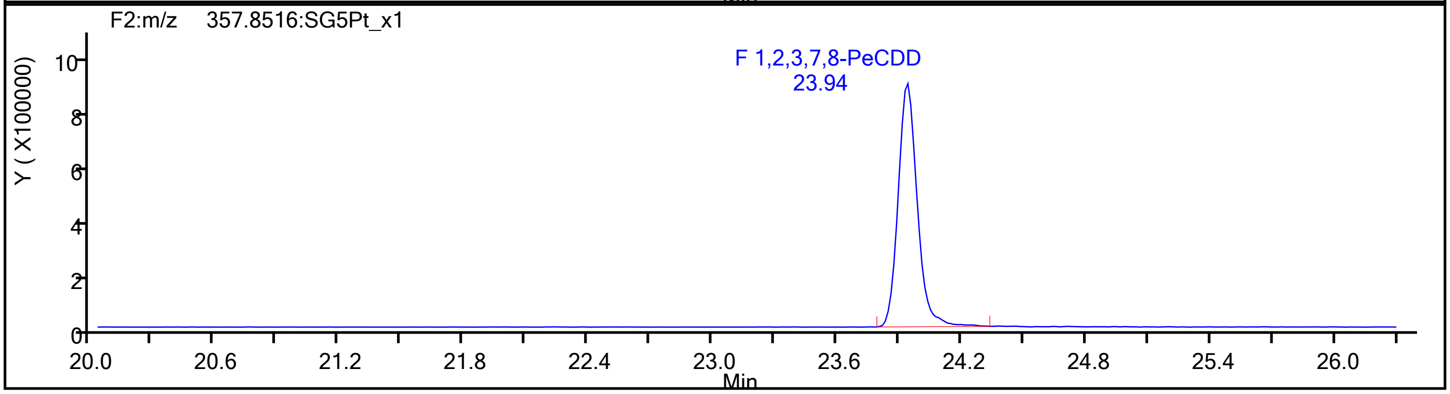

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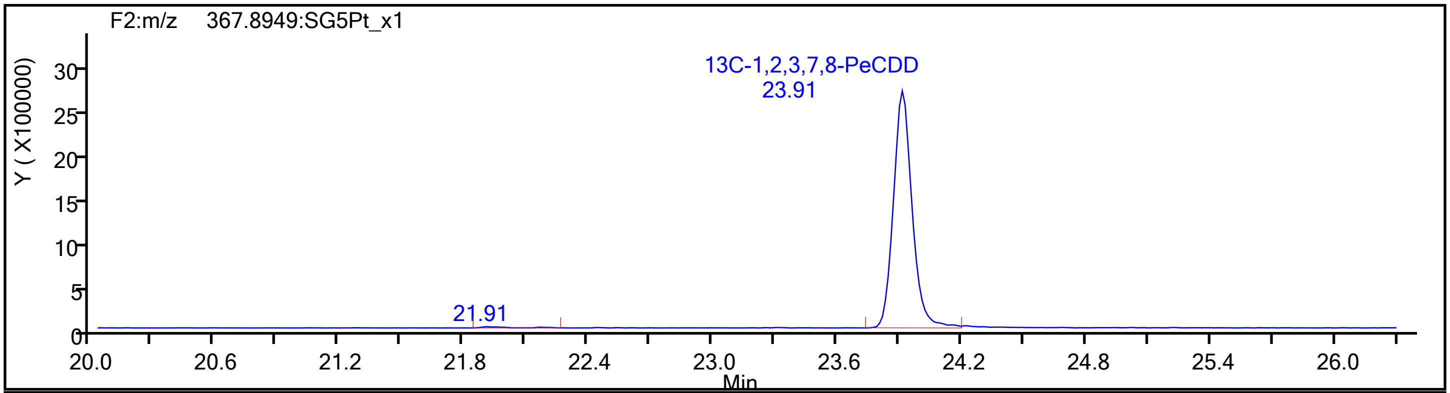

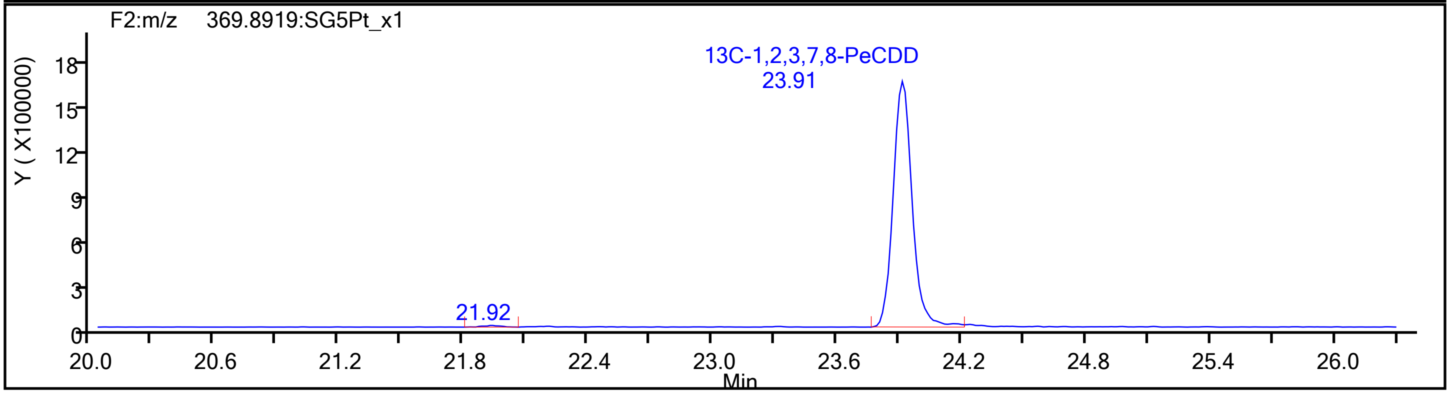

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	3
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HxCDF

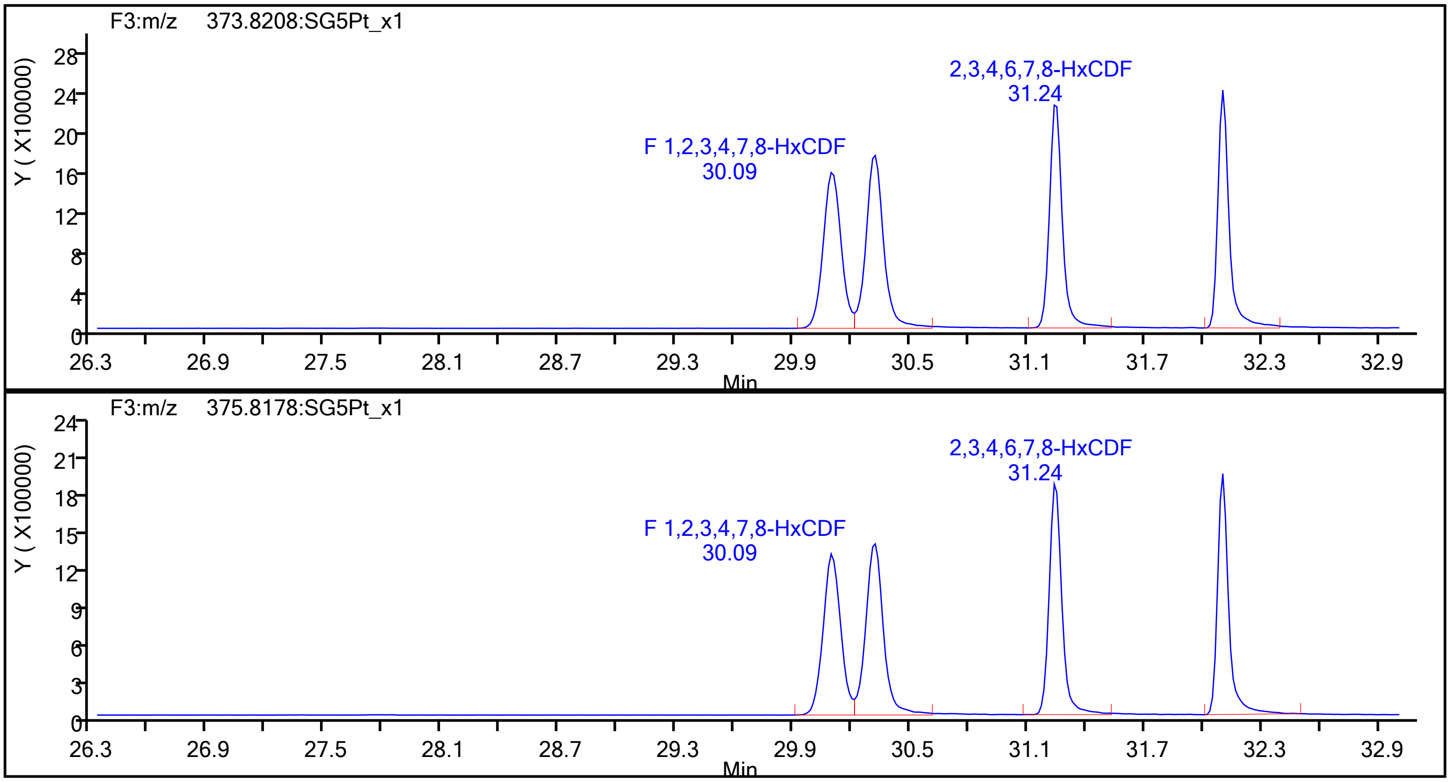

HxCDF Standards

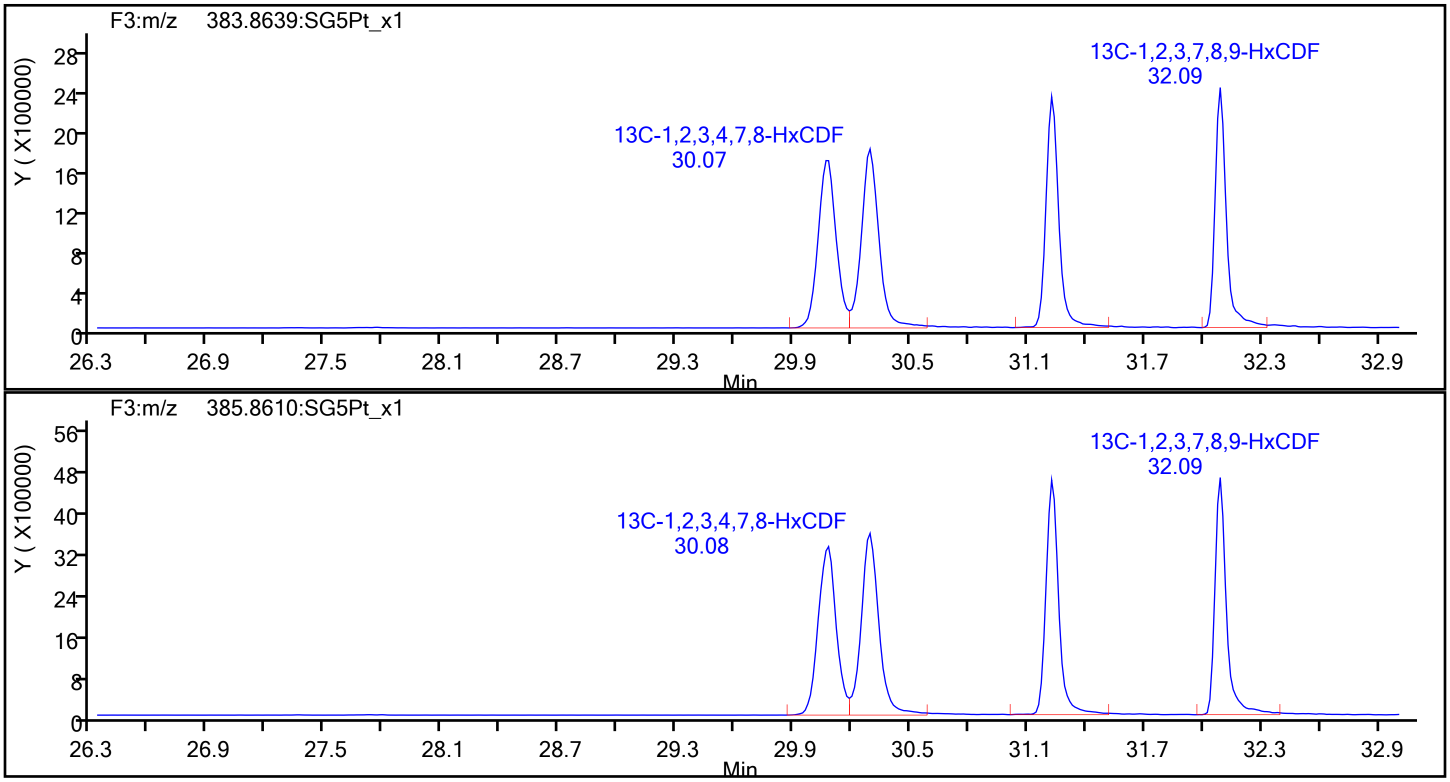

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Eurofins TestAmerica, Sacramento

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Injection Date: 17-Mar-2021 11:58:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 471421 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

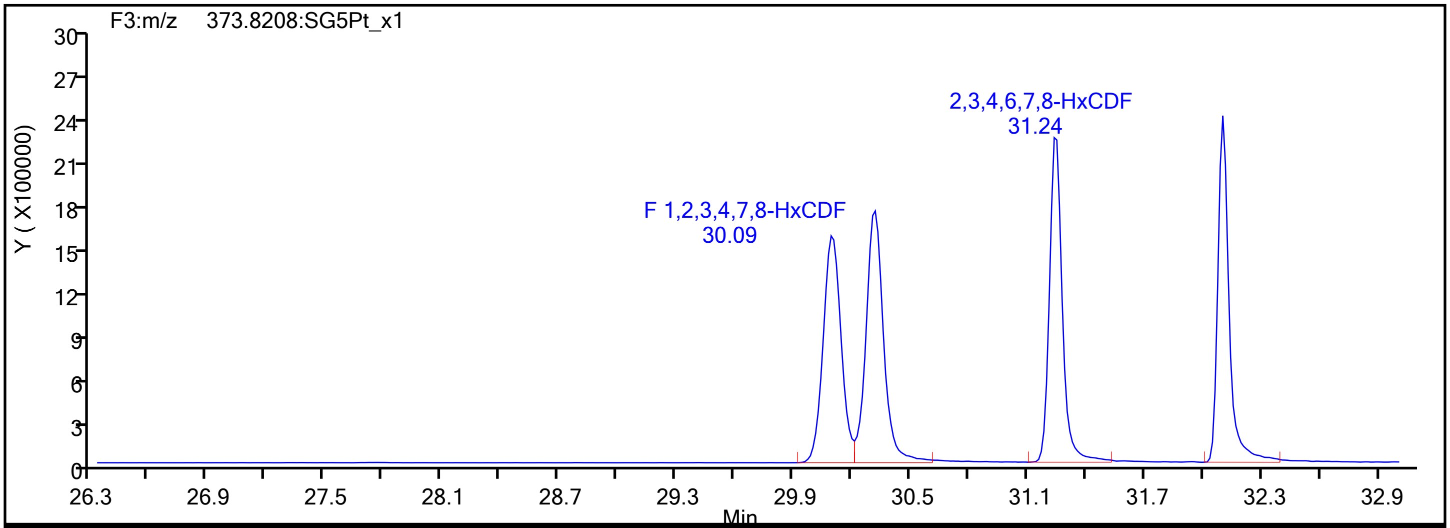

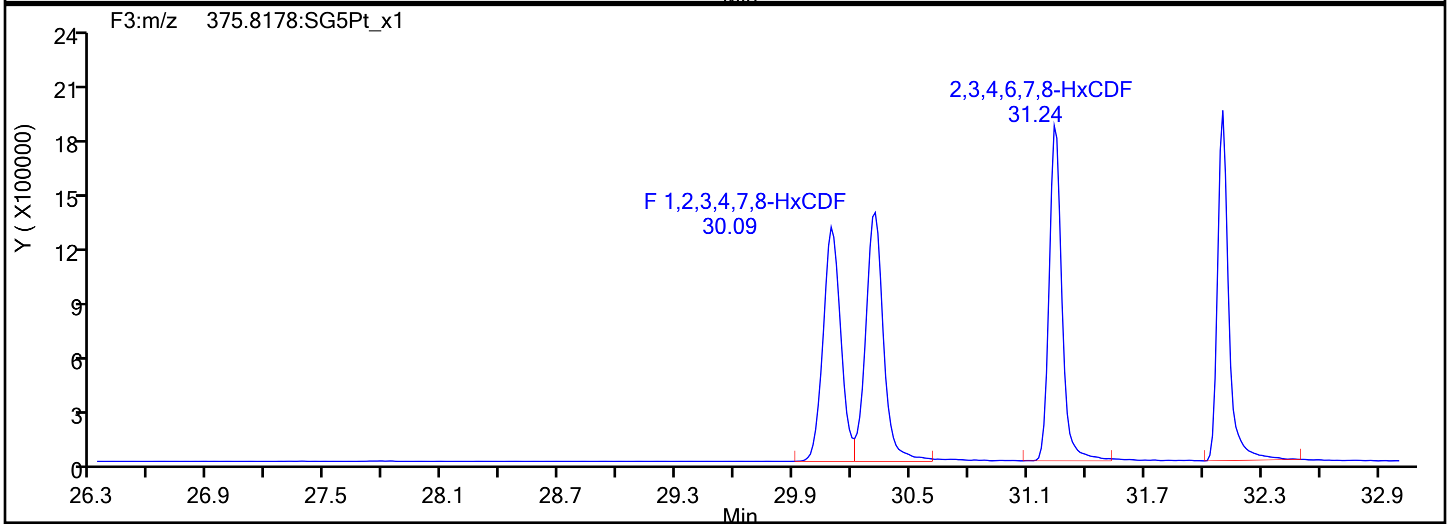

HxCDF Interference Mass

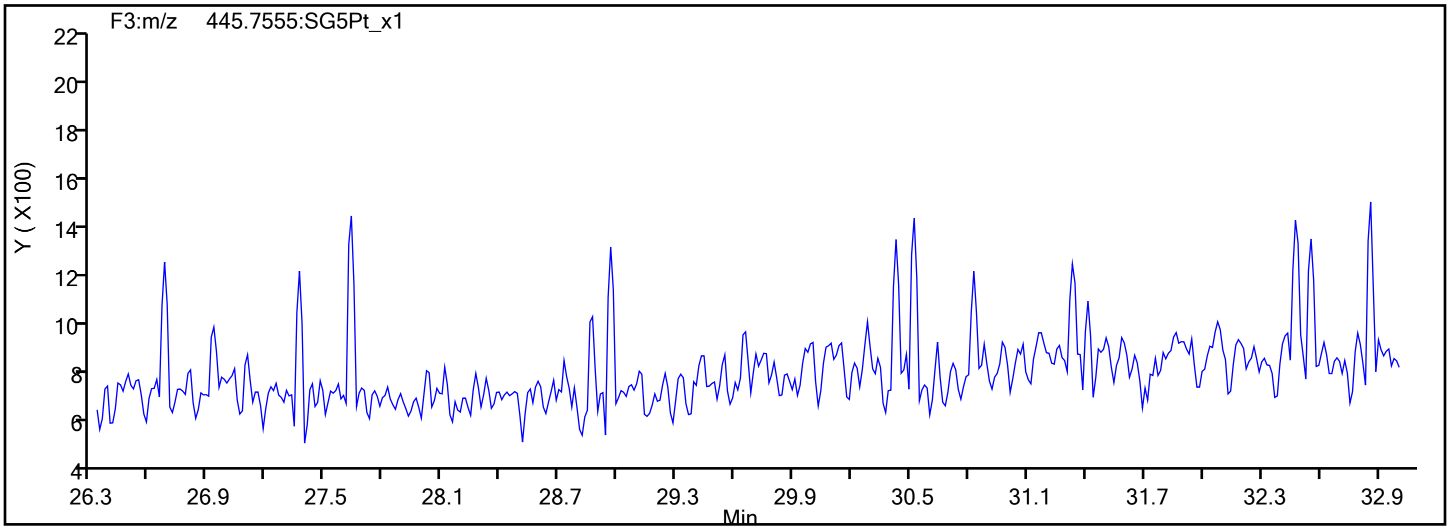

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Eurofins TestAmerica, Sacramento

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HxCDD

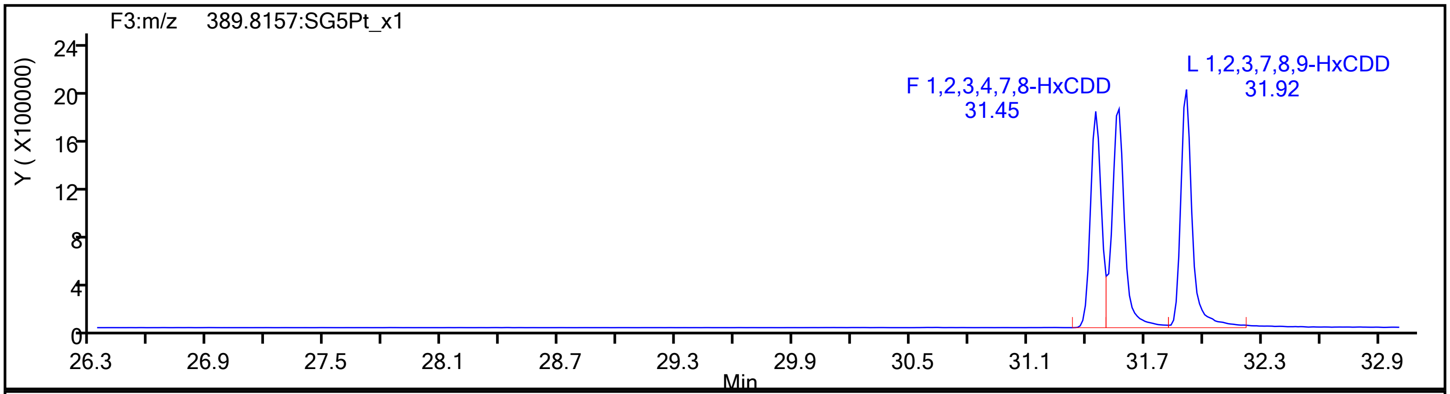

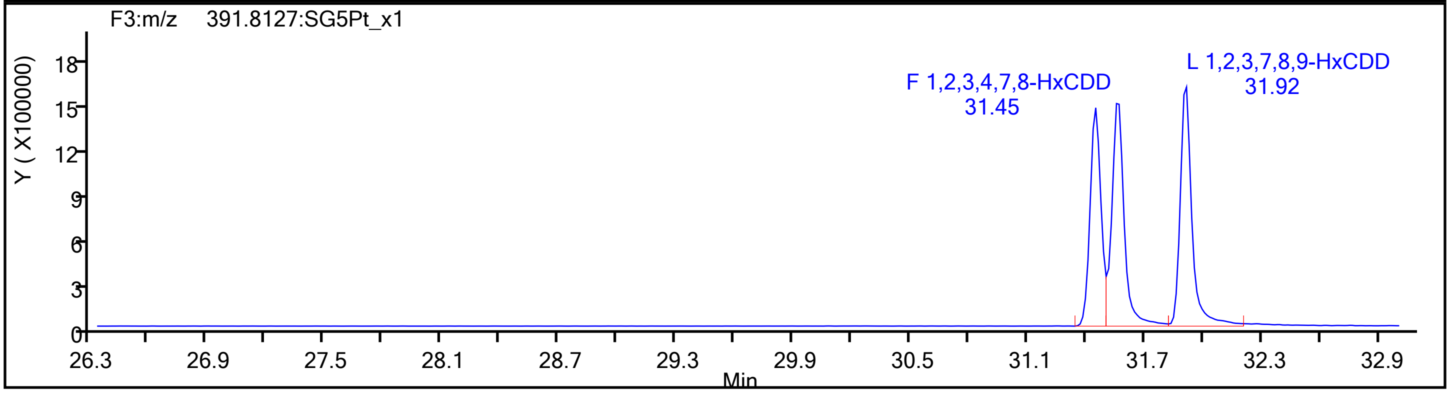

HxCDD Standards

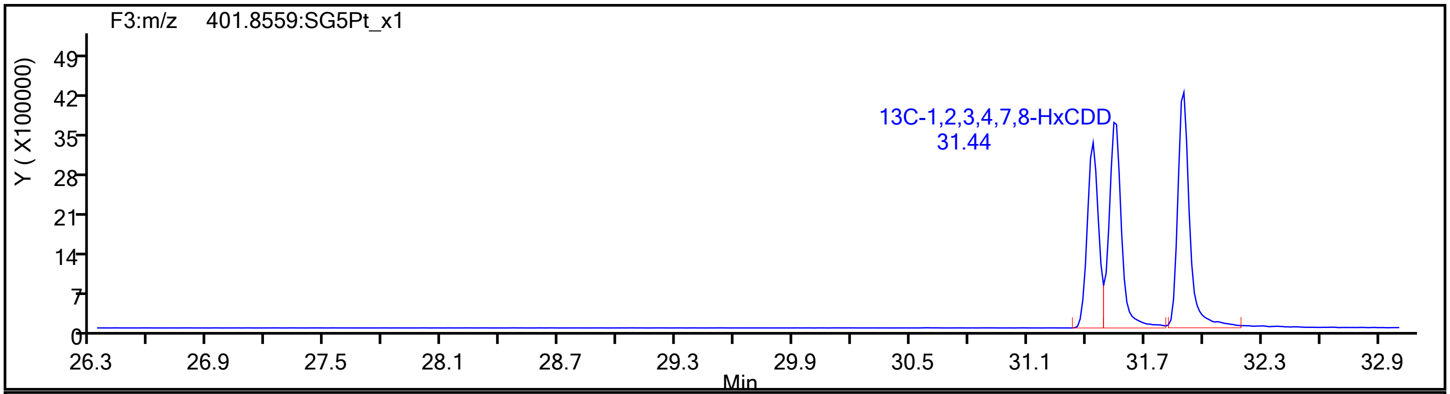

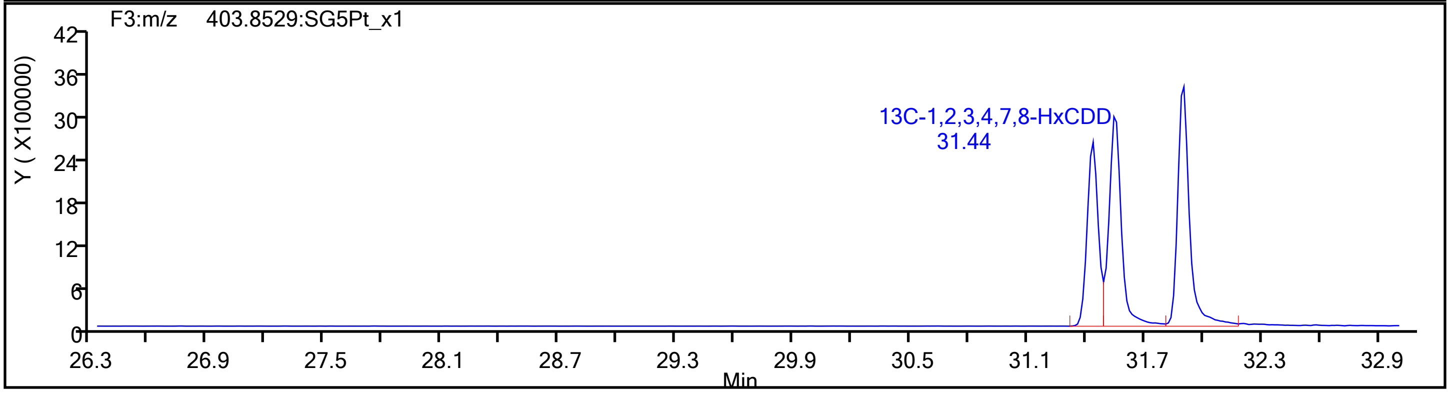

Report Date: 17-Mar-2021 23:05:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5 Operator ID: KSS
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Client ID:
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HpCDF

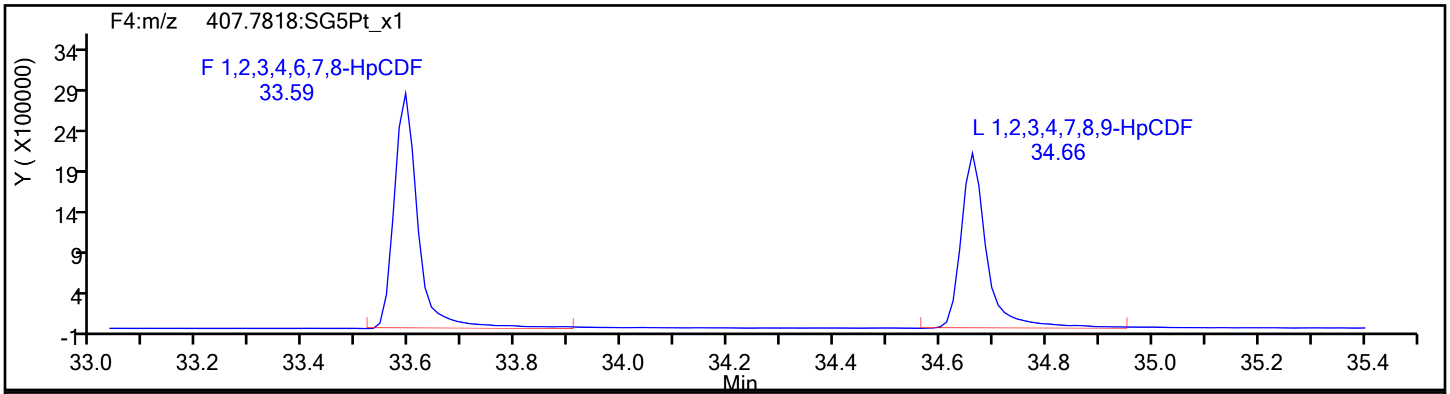

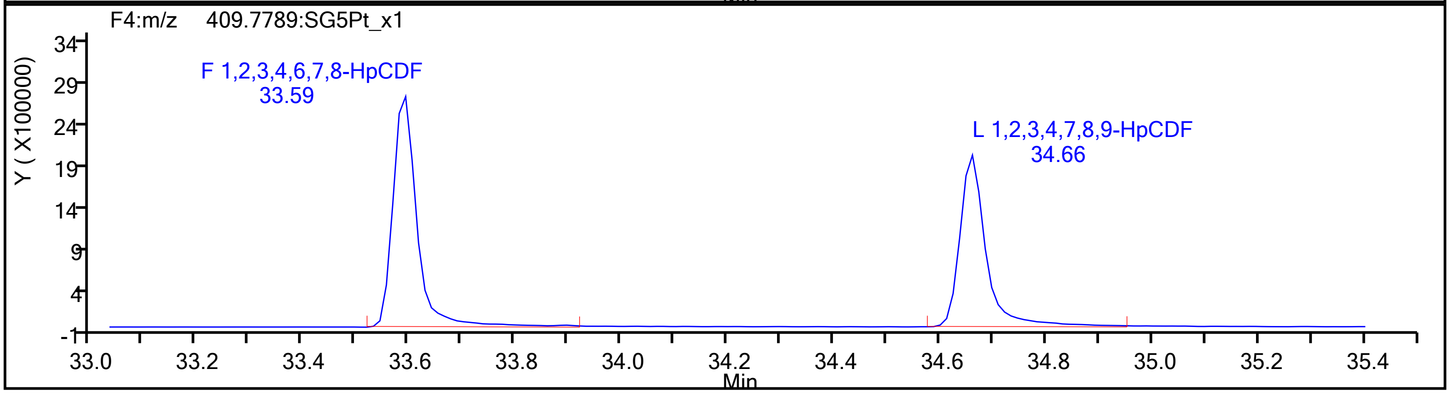

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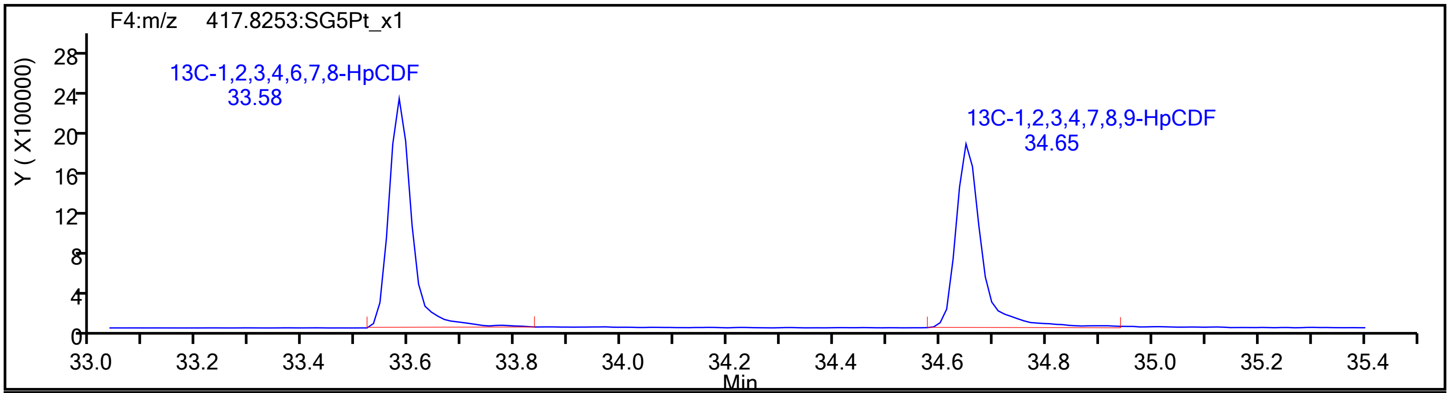

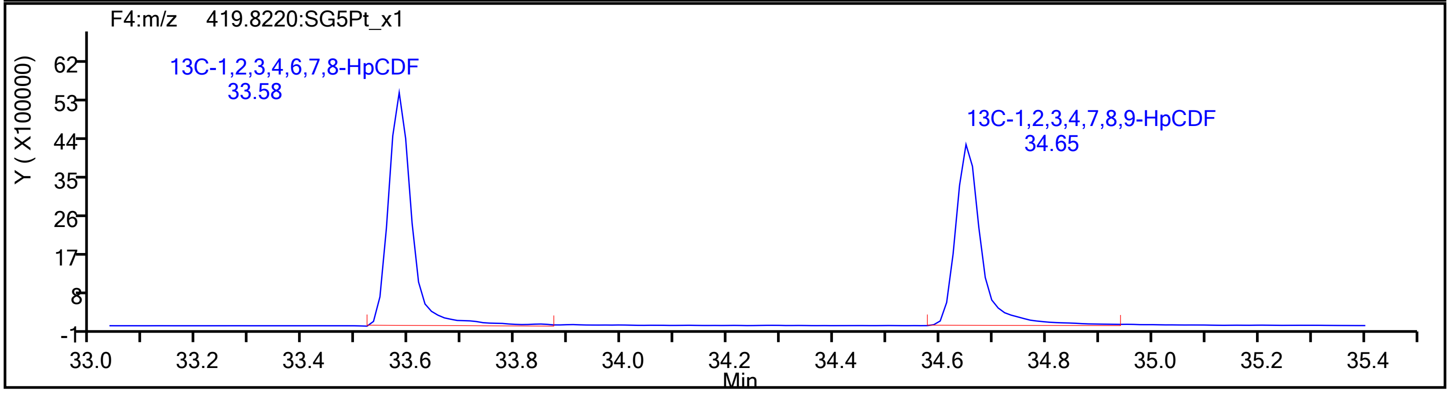

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HpCDF

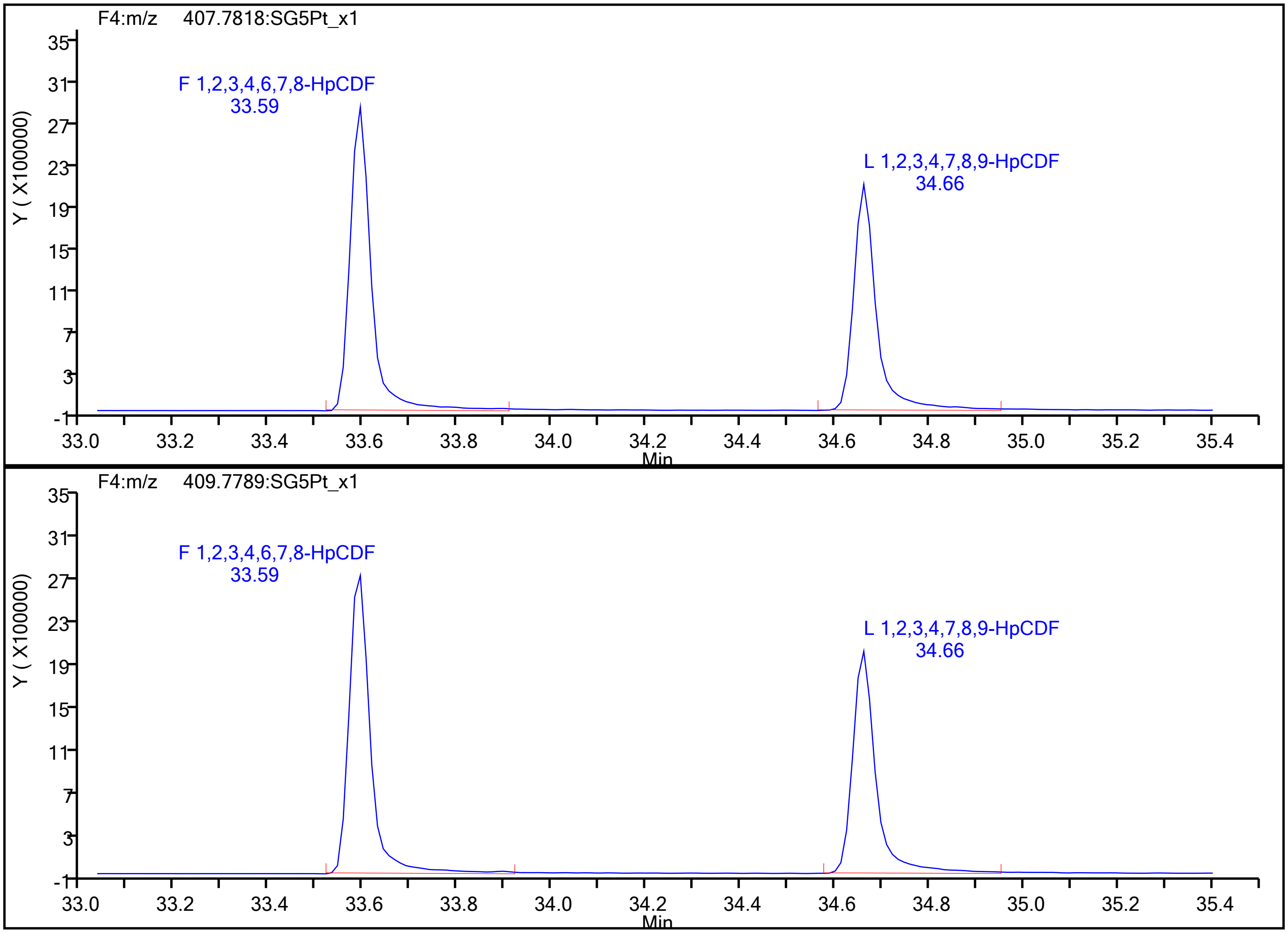

HpCDF Interference Mass

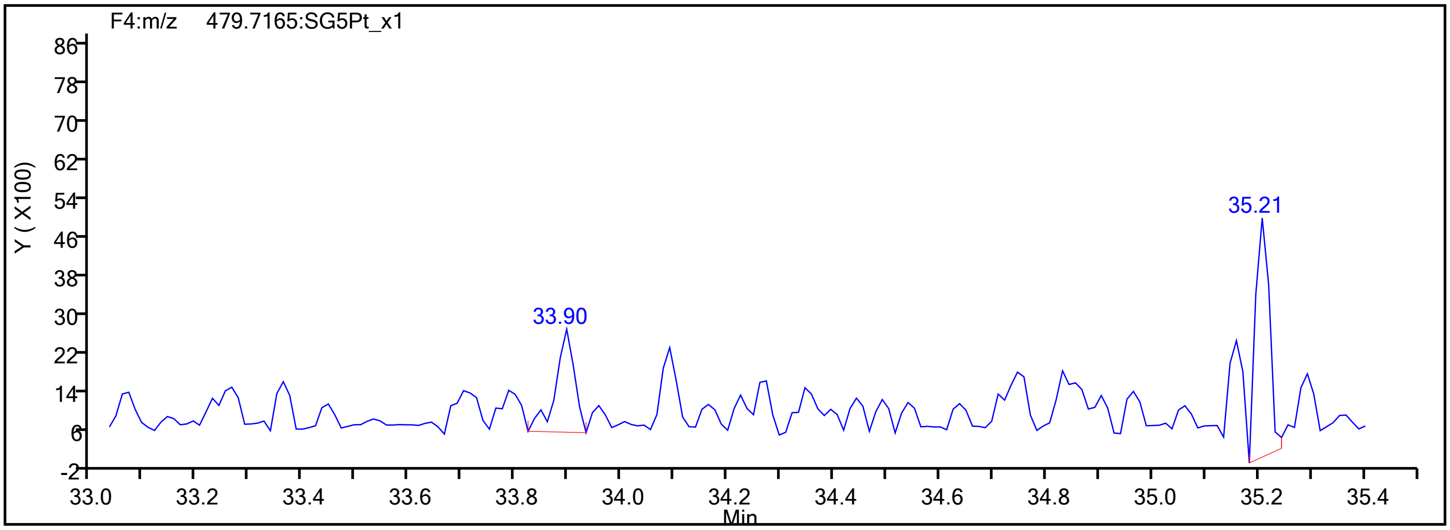

Report Date: 17-Mar-2021 23:05:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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HpCDD

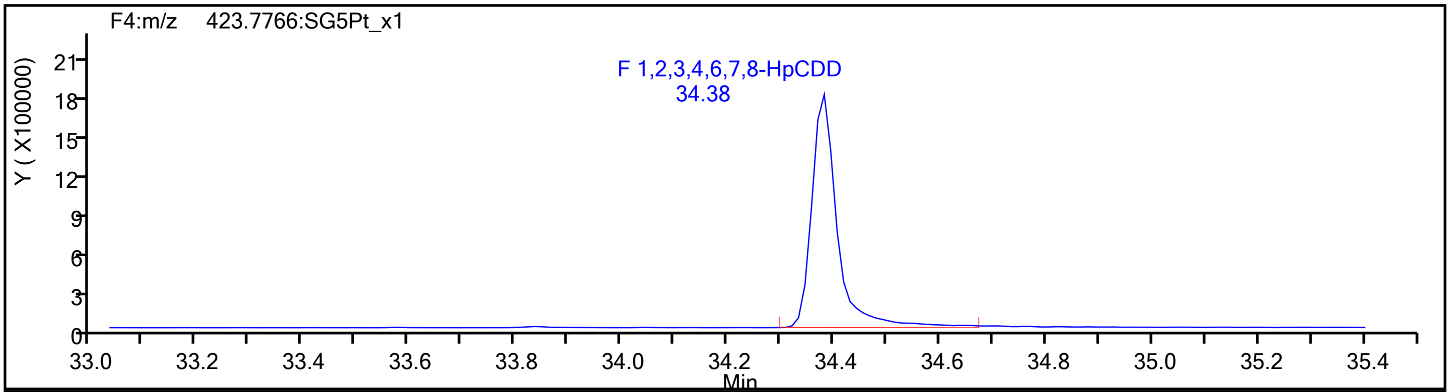

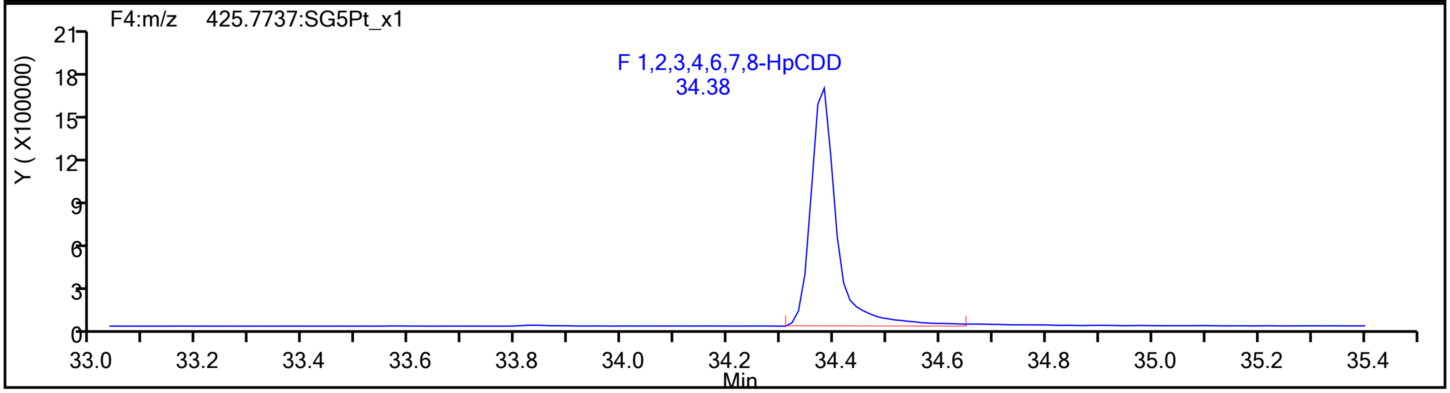

HpCDD Standards

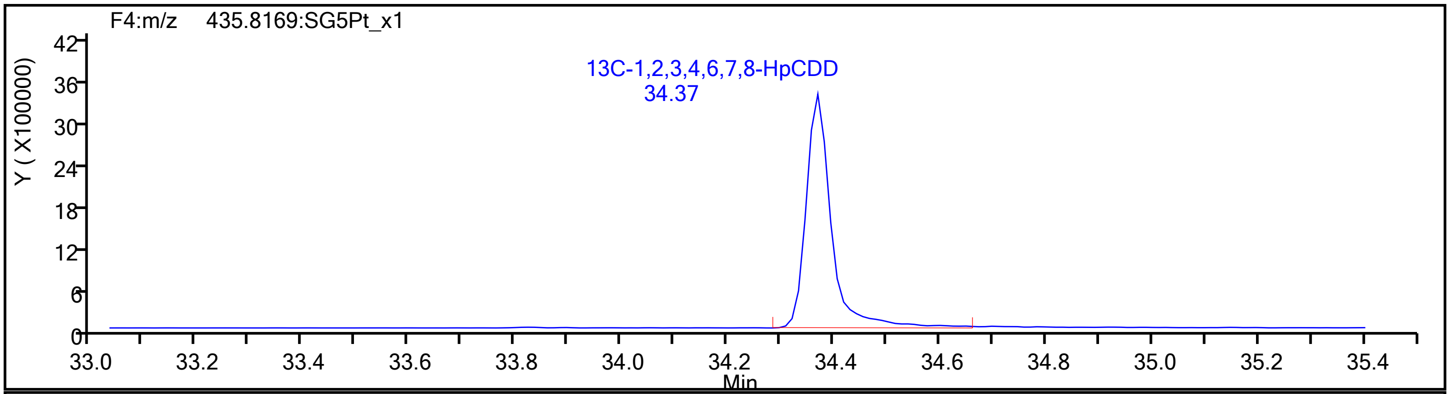

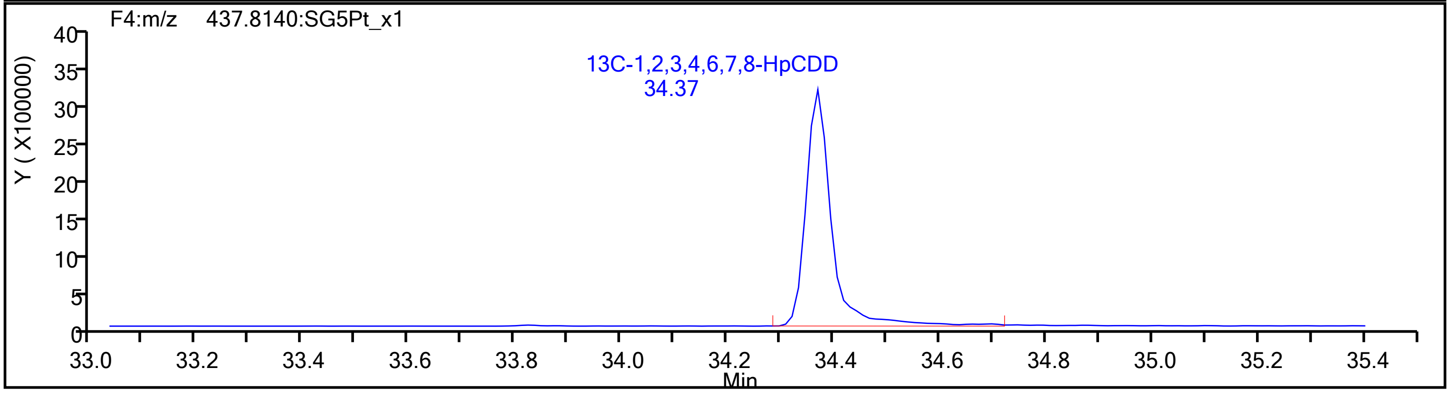

Report Date: 17-Mar-2021 23:05:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

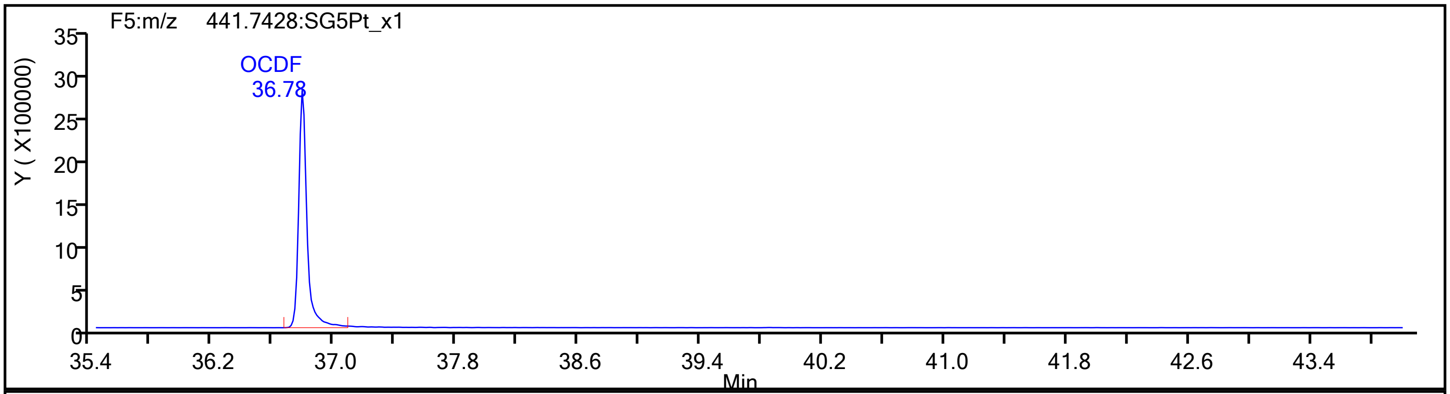

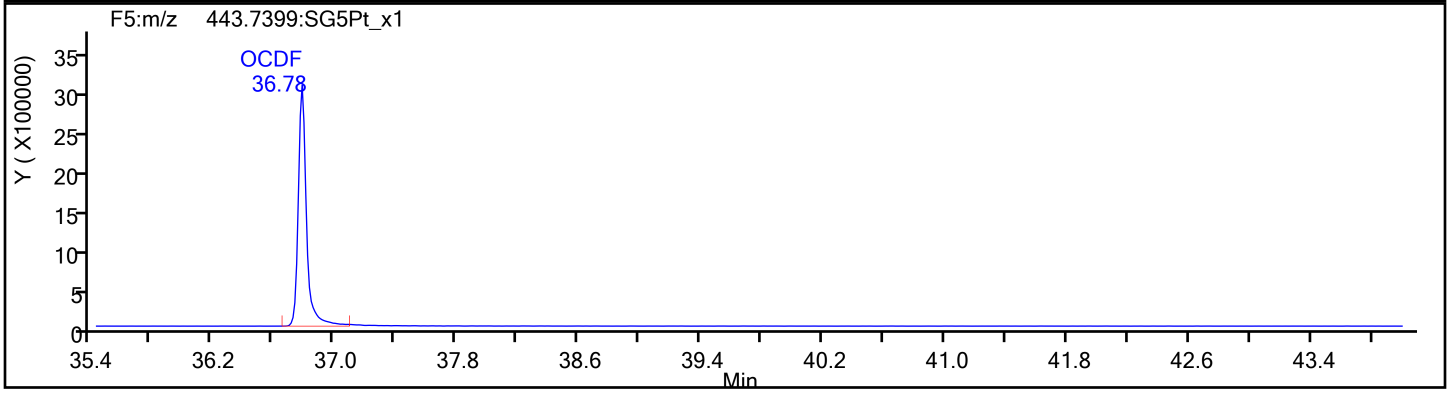

OCDF Standards

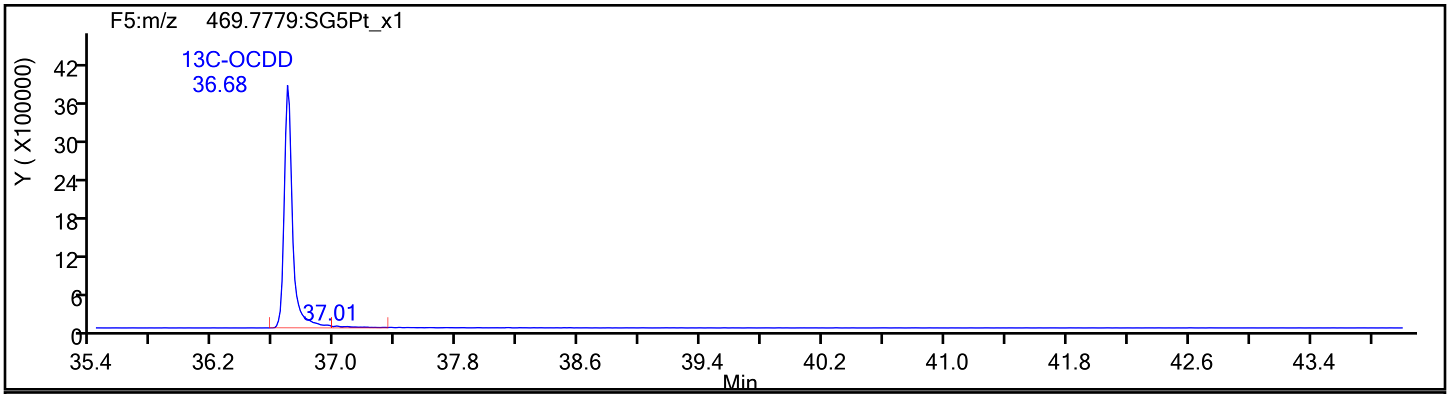

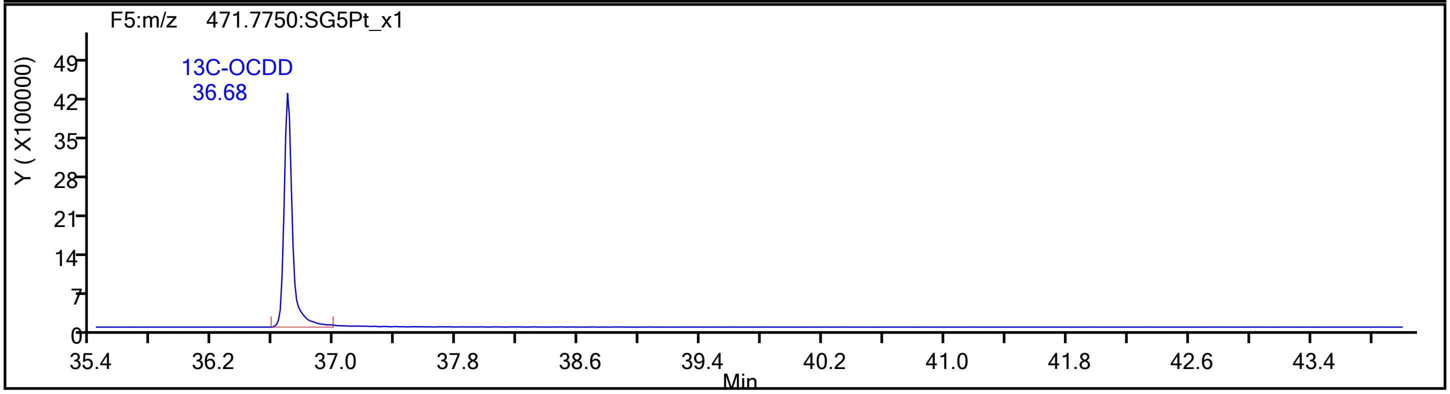

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d		
Injection Date:	17-Mar-2021 11:58:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

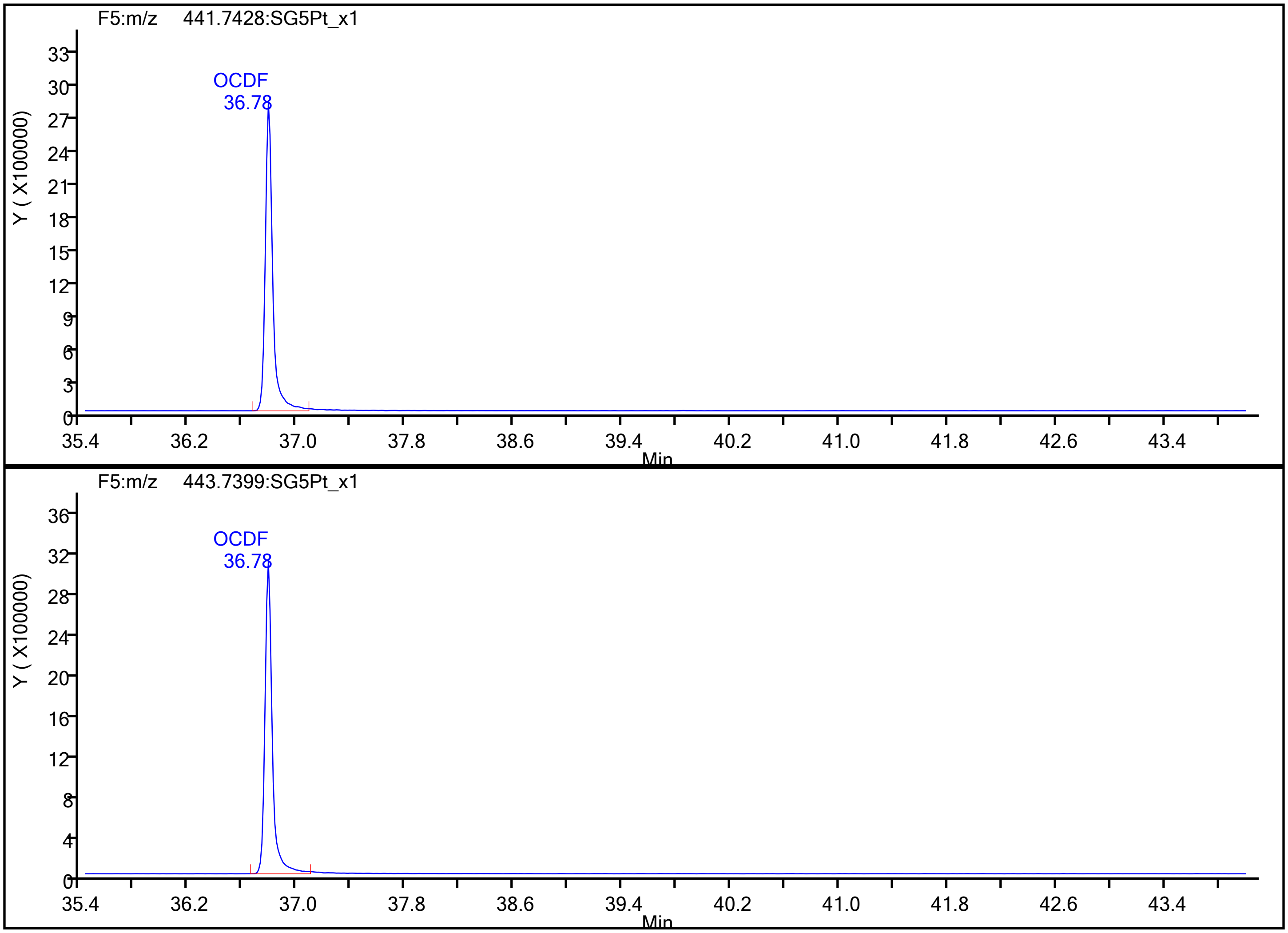

OCDF Interference Mass

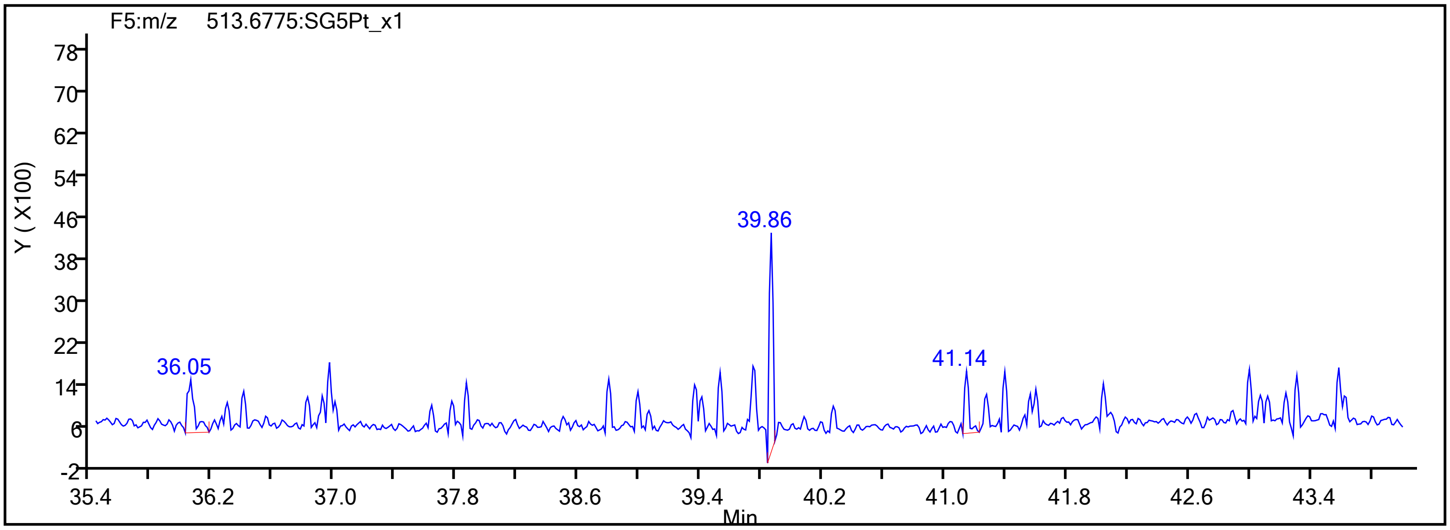

Report Date: 17-Mar-2021 23:05:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d		
Injection Date:	17-Mar-2021 11:58:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

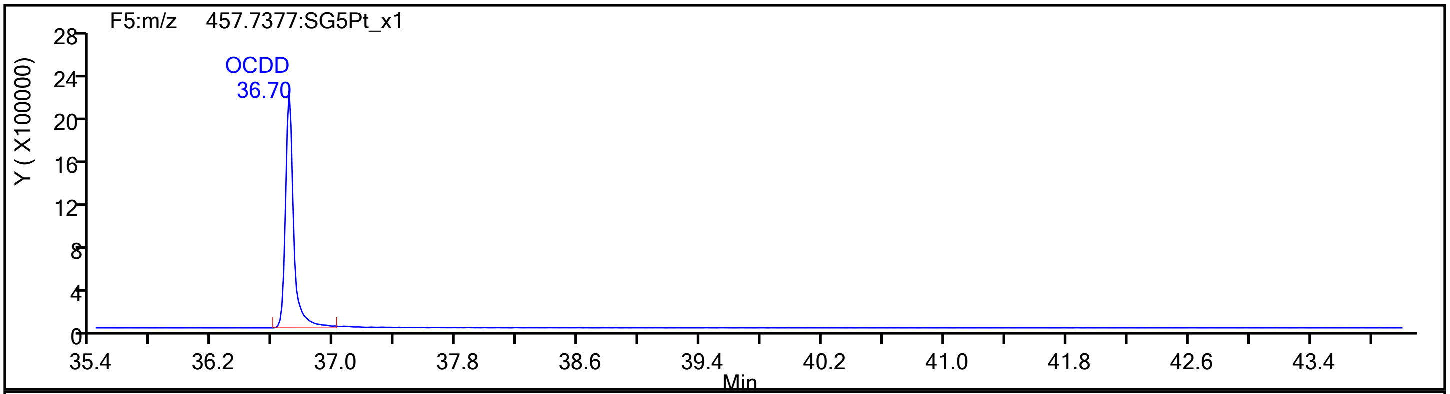

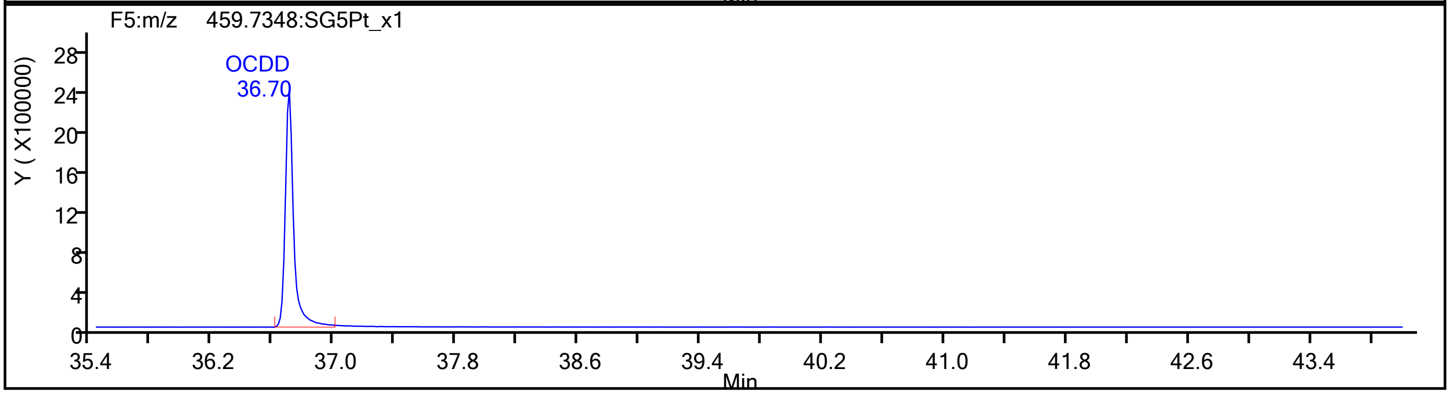

OCDD Standards

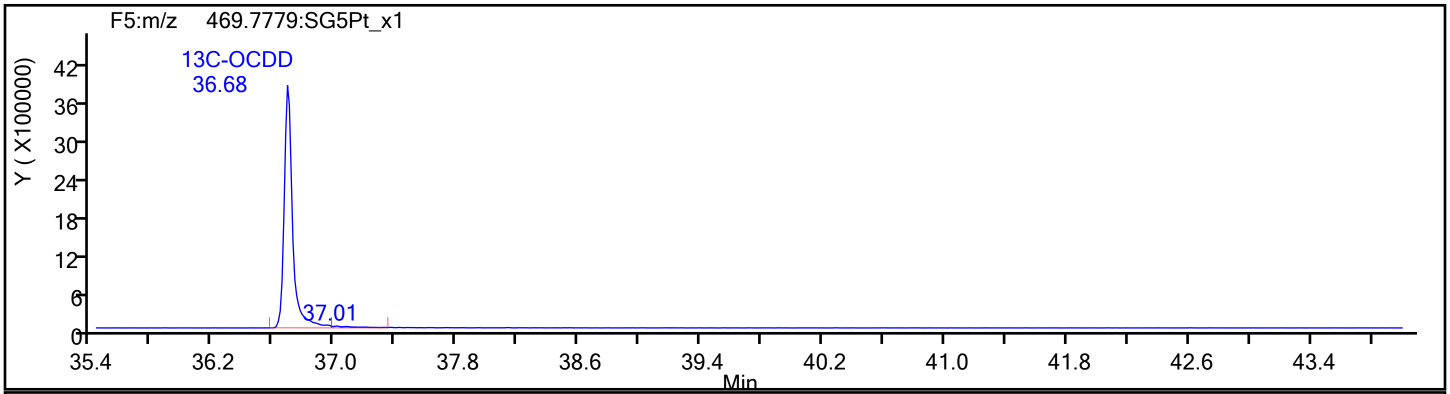

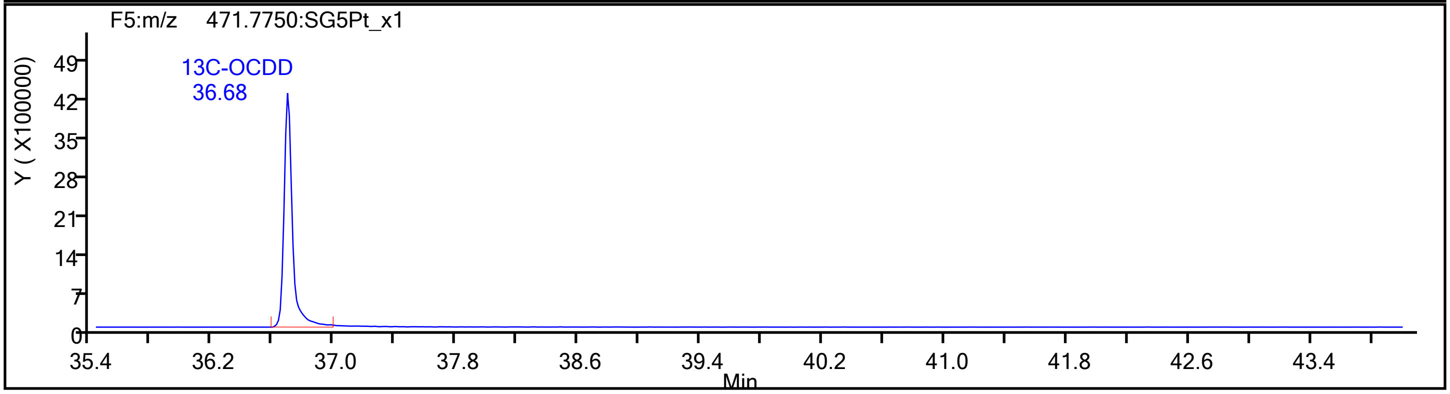

Report Date: 17-Mar-2021 23:05:30 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d

Injection Date: 17-Mar-2021 11:58:50 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: KSS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 471421 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

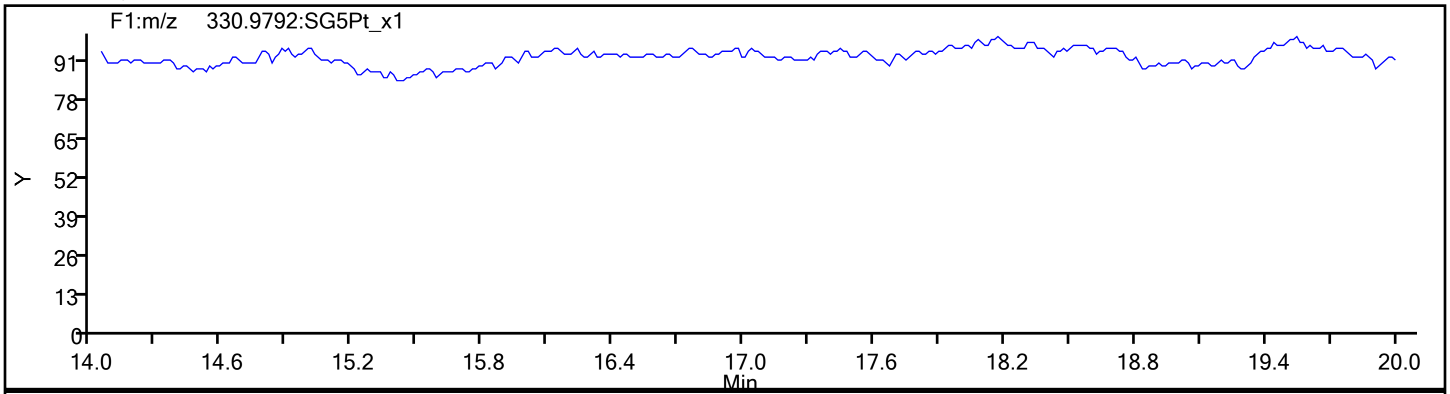

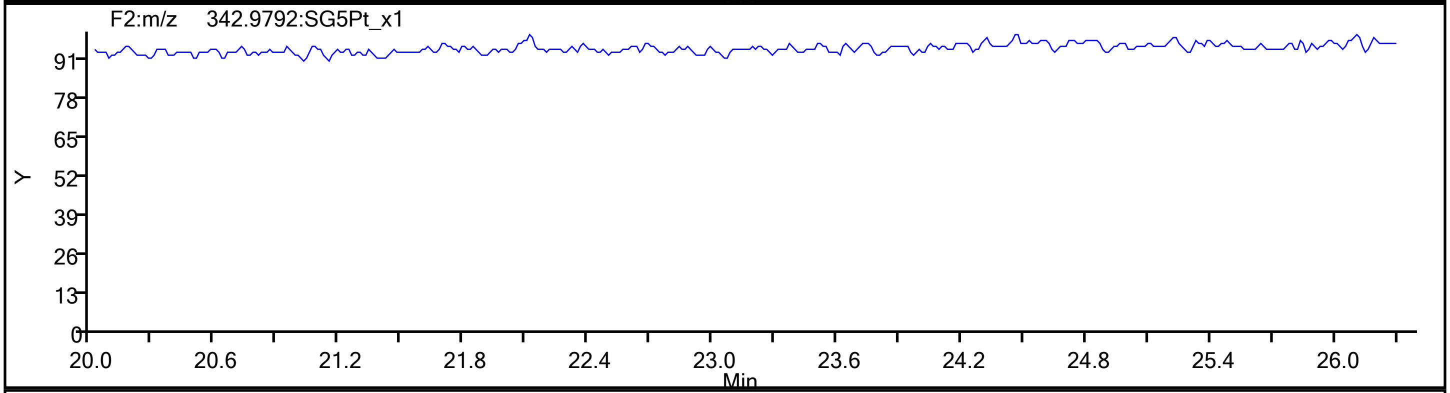

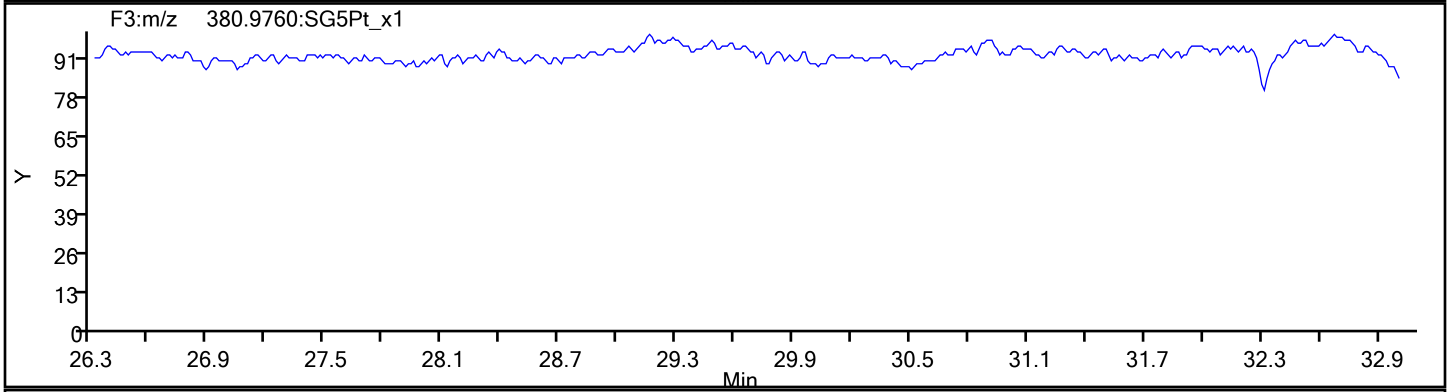

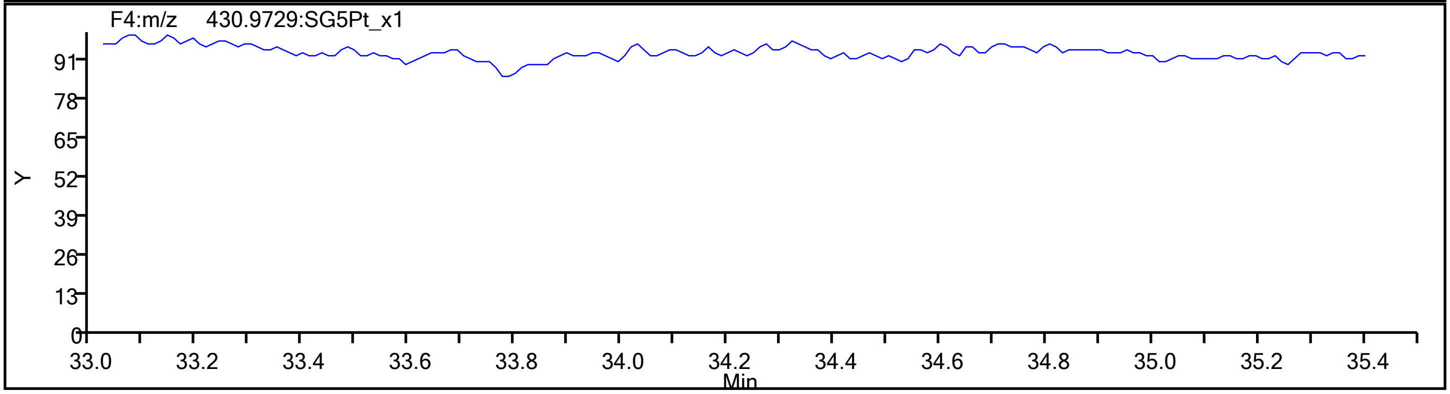

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_3.d

Injection Date:	17-Mar-2021 11:58:50	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

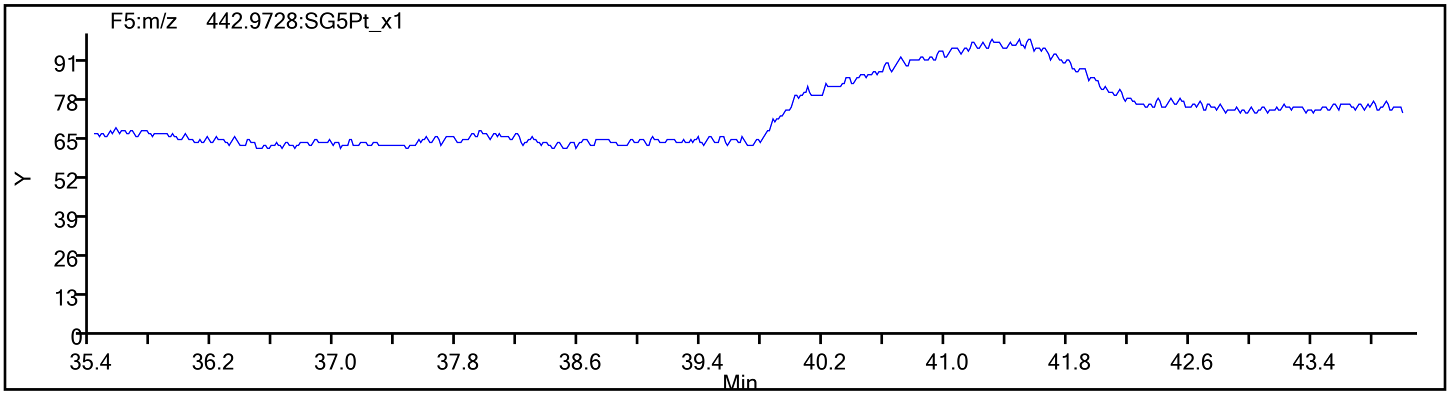

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab Sample ID: ICV 320-458526/10   Calibration Date: 02/03/2021 18:30

Instrument ID: 11D2   Calib Start Date: 02/03/2021 14:40

GC Column: DB-225   ID: 0.32(mm)   Calib End Date: 02/03/2021 17:13

Lab File ID: 03FE2111D2_010.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	0.999	1.119		44.8	40.0	112	70-130
2,3,7,8-TCDF	AveID	0.9242	0.9286		40.2	40.0	100	70-130
13C-2,3,7,8-TCDD	Ave	0.8971	0.9114		102	100	102	82-121
13C-2,3,7,8-TCDF	Ave	1.306	1.330		102	100	102	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.8499	0.9030		42.5	40.0	106	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	03-Feb-2021 18:30:30	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00047				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:					
Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Feb-2021 15:02:34	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1681				
First Level Reviewer: arghestanis		Date:	04-Feb-2021 14:51:31		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.149	148845987	0.76	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.288	197956934	0.79	1.3057	101.9	101.9	0.2271	0.2271	102	
2,3,7,8-TCDF	16.302	73527928	0.78	0.9242	40.2	40.2	0.0556	0.0556	100	
D 13C-2,3,7,8-TCDD	14.889	135663500	0.77	0.8971	101.6	101.6	0.1804	0.1804	102	
2,3,7,8-TCDD	14.902	60734840	0.79	0.9989	44.8	44.8	0.2638	0.2638	112	
$ 37Cl4-2,3,7,8-TCDD	14.902	53763799		0.8499	42.5	42.5	0.0529	0.0529	106	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNIC_00047 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:02:36 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Feb-2021 18:30:30 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00047
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:02:34 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:51:31

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.149	15.137	1		64233097	15207691	13299	33247	1144		
333.9339	15.149	15.137	1		84612890	20129831	9572	23930	2103	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.288	16.282	0	1.075	87210733	20120724	18810	47025	1070		
317.9389	16.288	16.282	0	1.075	110746201	25005543	23108	57770	1082	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.302	16.296	0	1.001	32208595	7110756	4845	12112	1468		
305.8987	16.302	16.296	0	1.001	41319333	9344369	4433	11082	2108	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.889	14.883	0	0.983	59148764	14633723	13299	33247	1100		
333.9339	14.889	14.883	0	0.983	76514736	19080800	9572	23930	1993	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.902	14.897	0	1.001	26856257	6372657	14296	35740	446		
321.8936	14.902	14.897	0	1.001	33878583	8324273	21245	53112	392	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.902	14.904	0	0.984	53763799	13569306	6357	15892	2135		

QC Flag Legend

Processing Flags

Reagents:

HRDXNIC_00047 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:02:36 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d
Injection Date: 03-Feb-2021 18:30:30
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 10
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

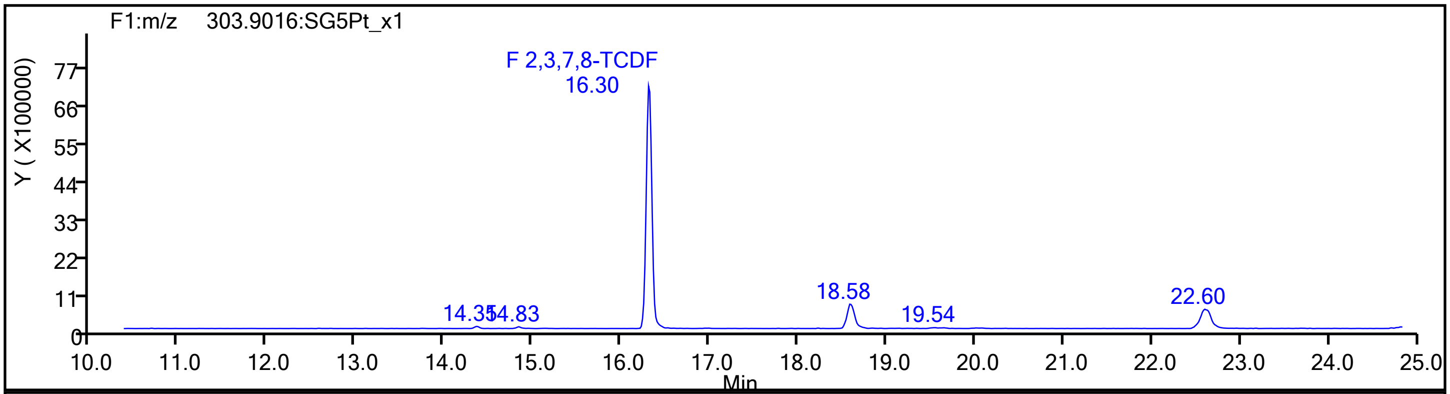

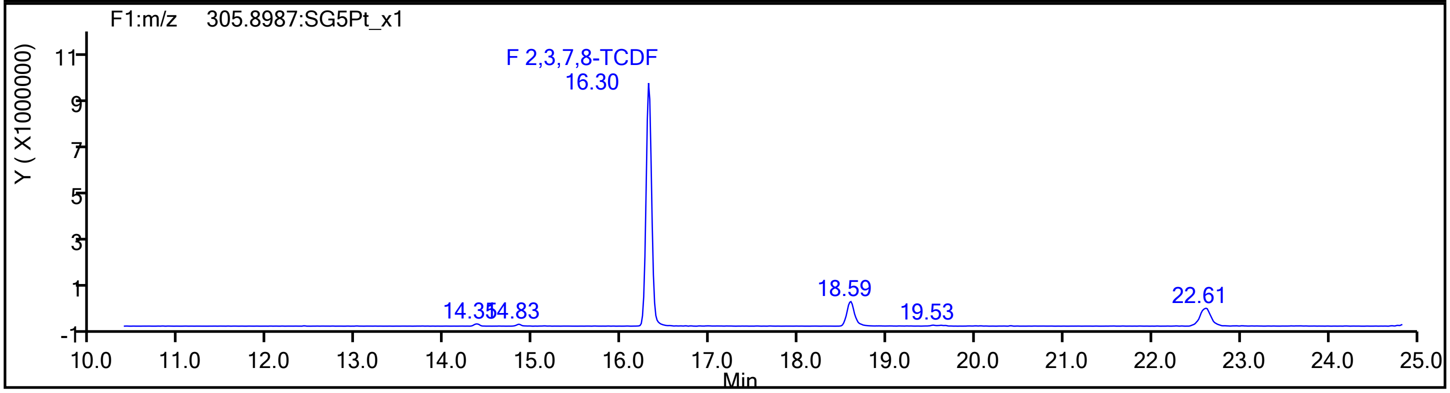

TCDF Standards

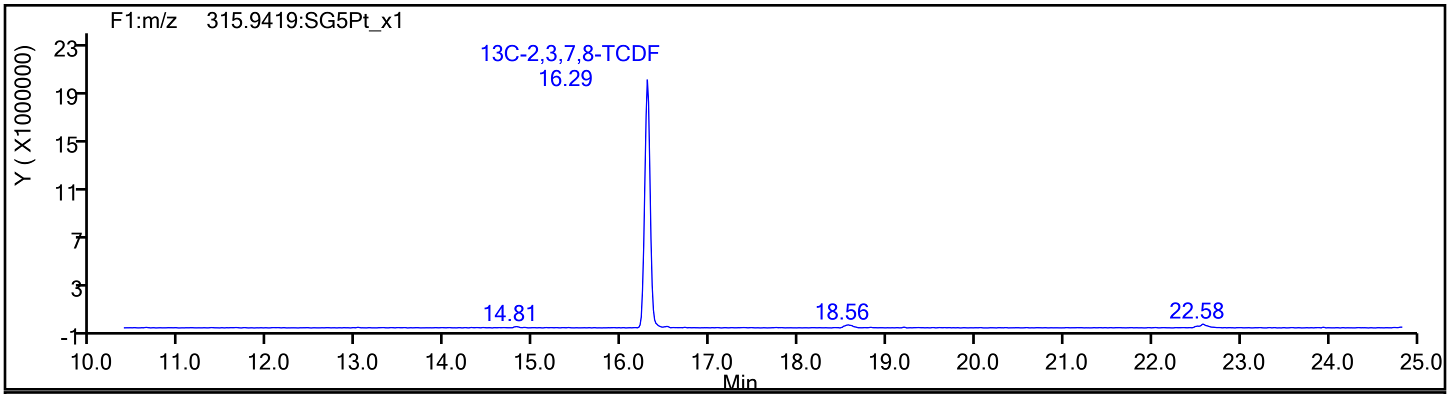

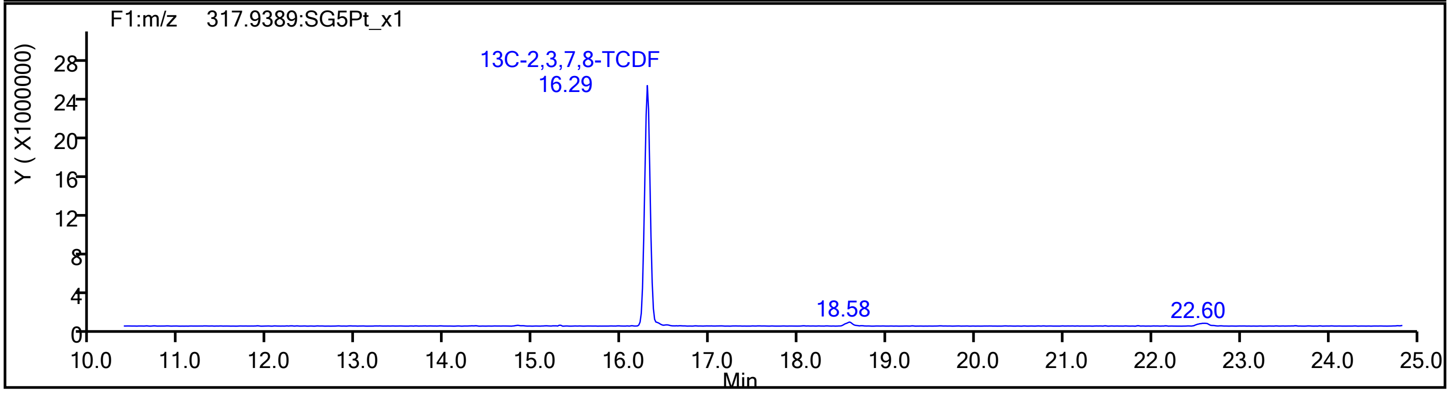

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d		
Injection Date:	03-Feb-2021 18:30:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

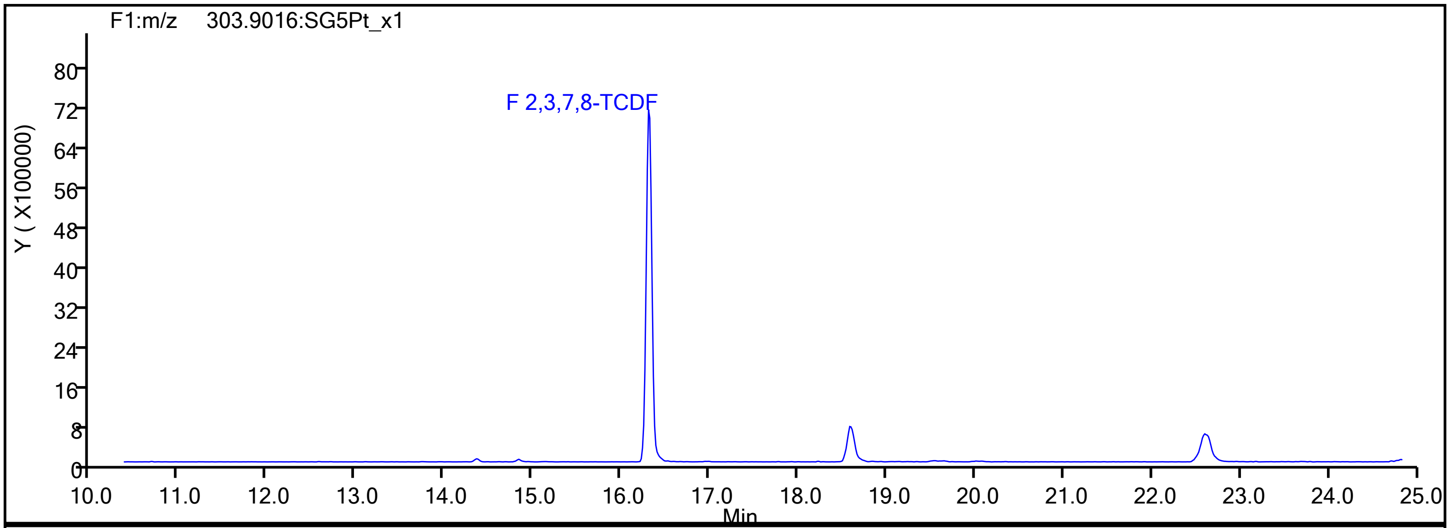

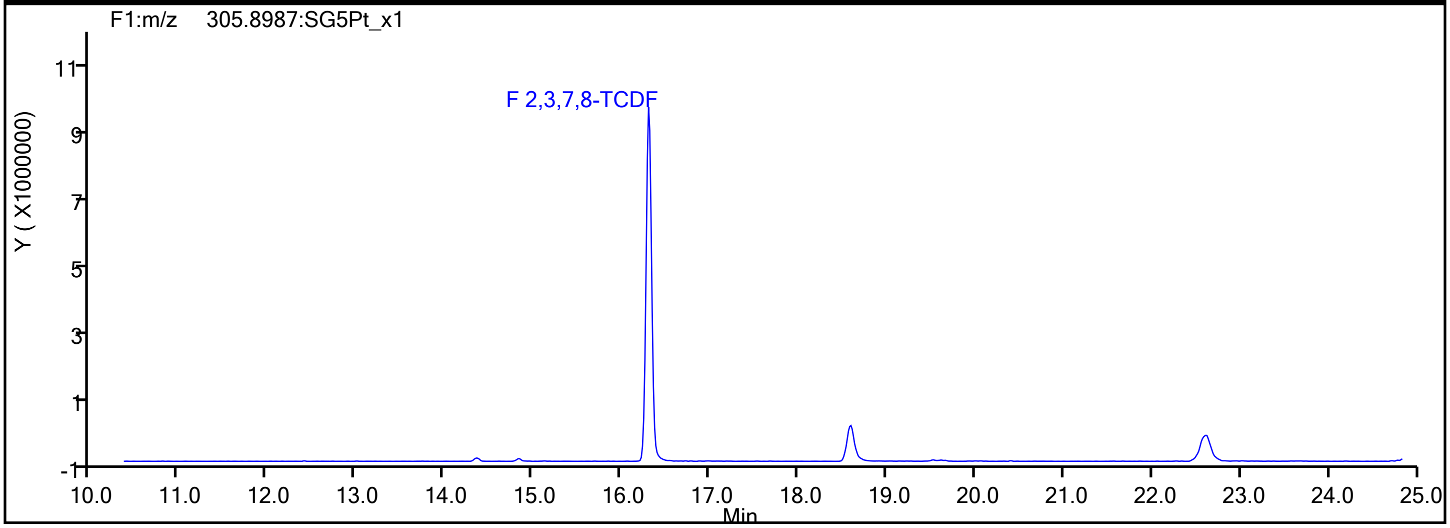

TCDF Interference Mass

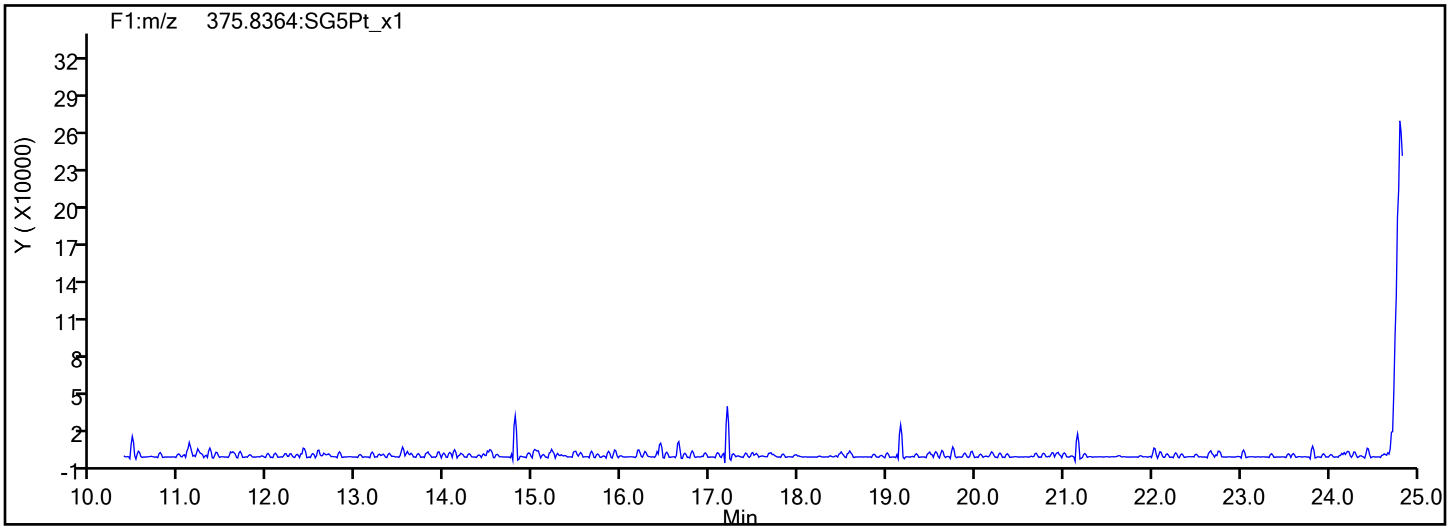

Report Date: 04-Feb-2021 15:02:36 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d
Injection Date: 03-Feb-2021 18:30:30
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 10
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

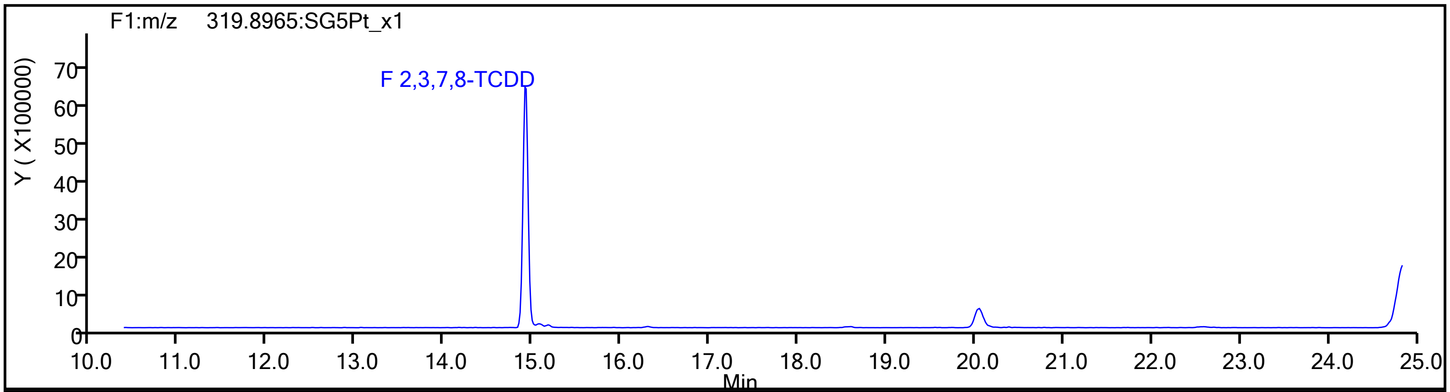

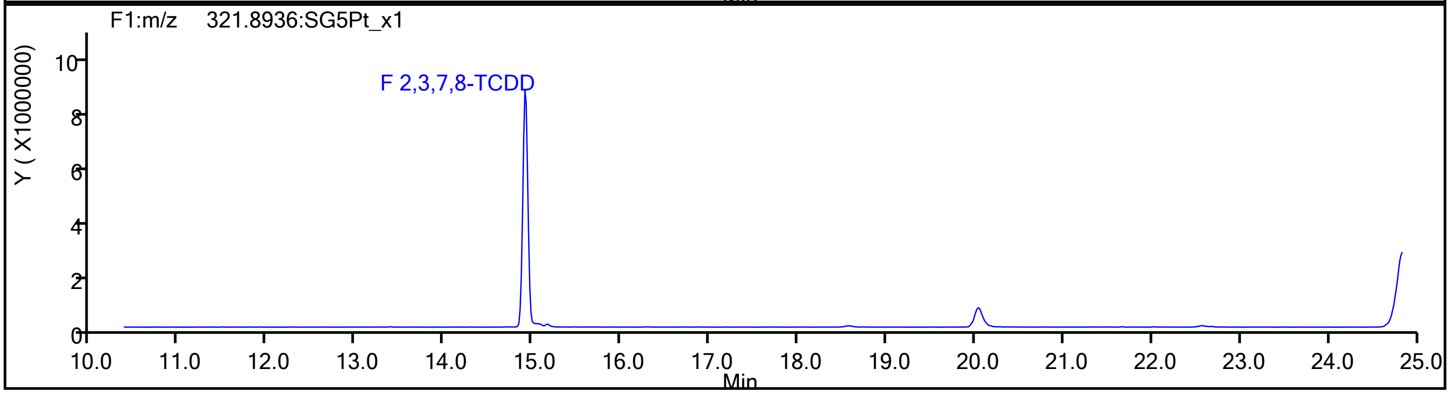

TCDD Standards

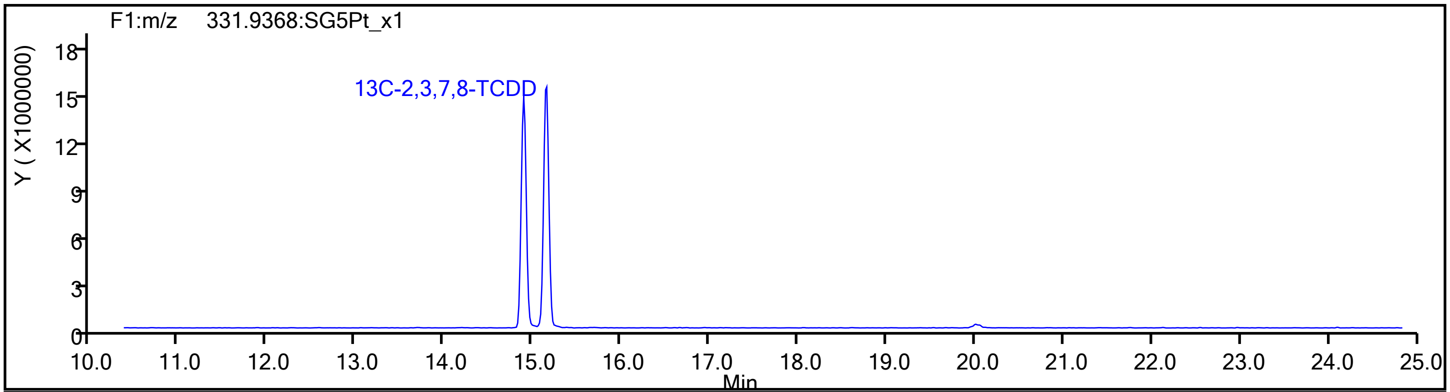

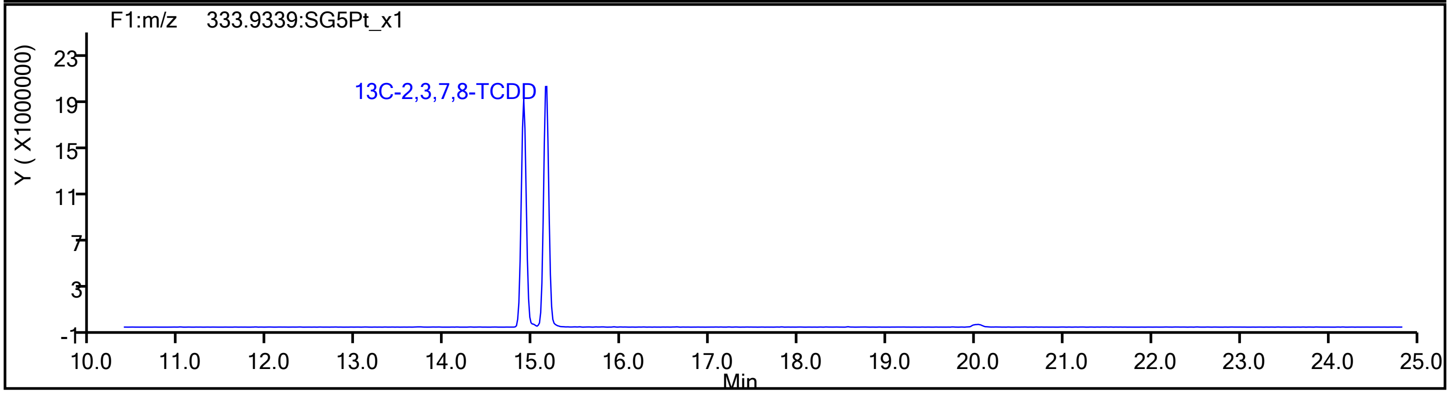

Report Date: 04-Feb-2021 15:02:36 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d		
Injection Date:	03-Feb-2021 18:30:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

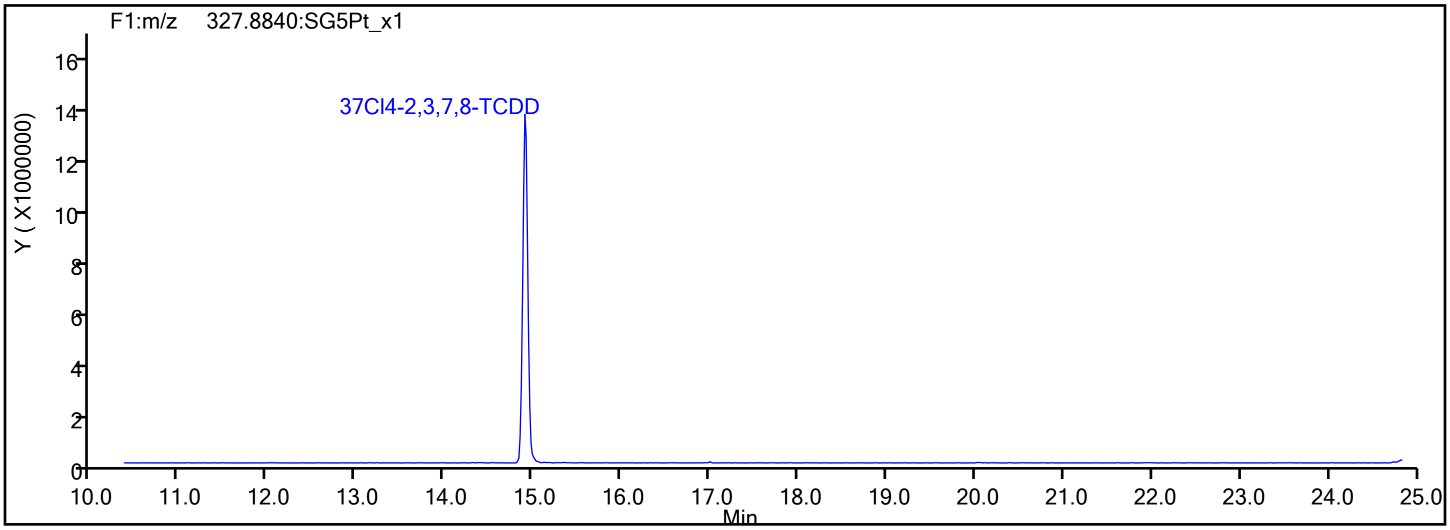

37Cl4-TCDD Standards

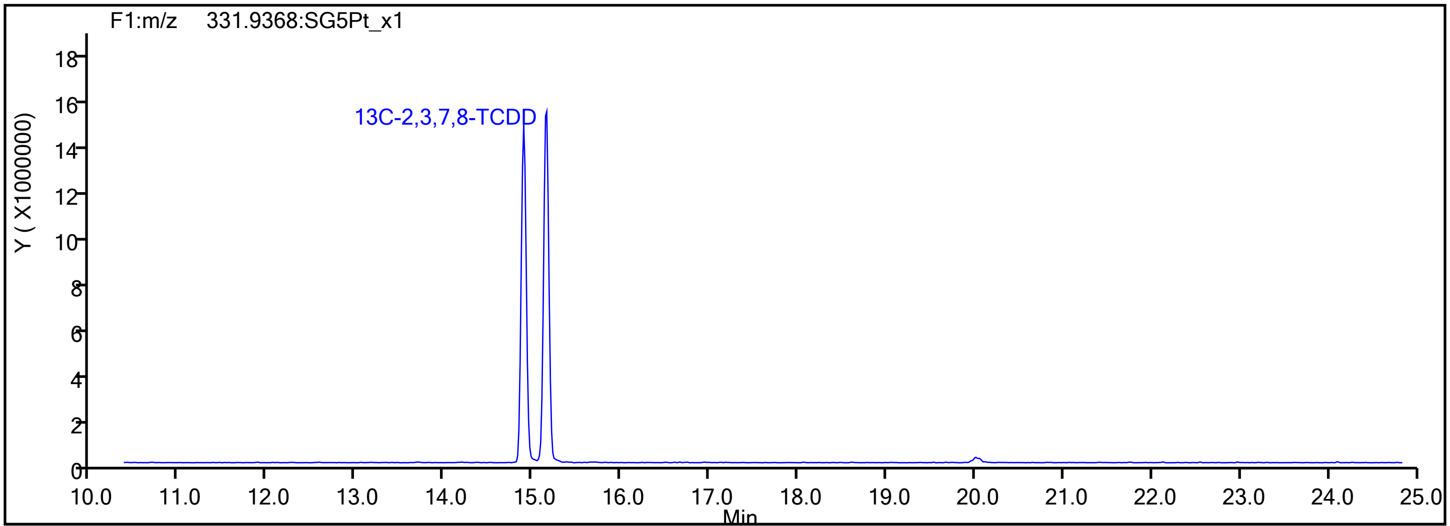

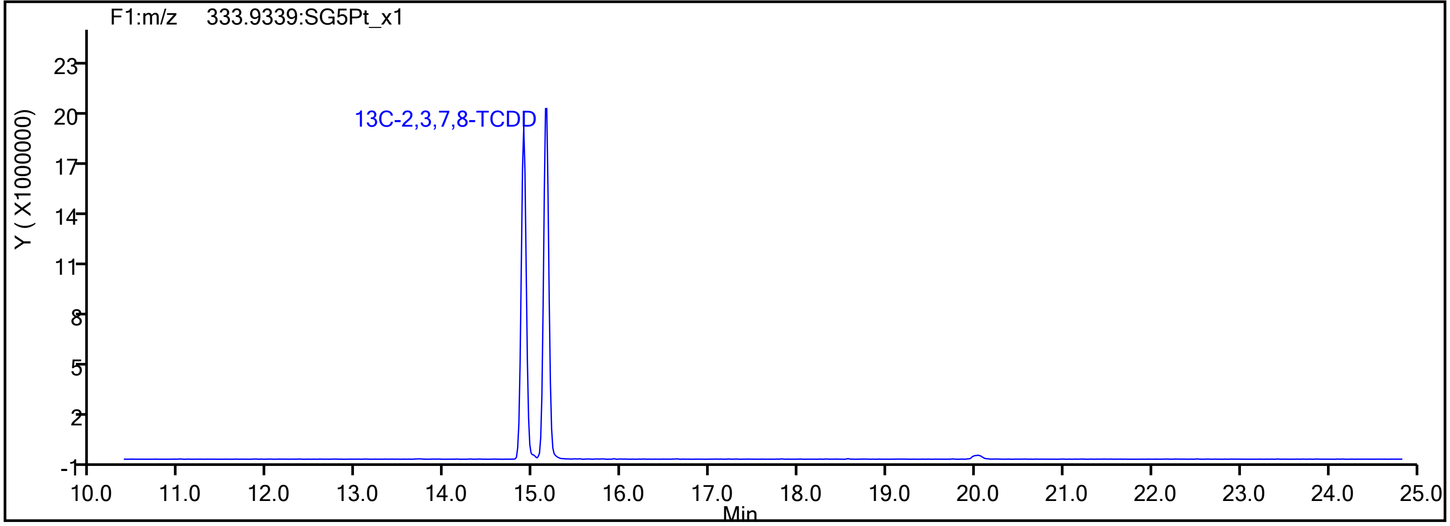

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_010.d		
Injection Date:	03-Feb-2021 18:30:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	10
Column Type:	DB-225	Column Dia:	0.32 mm

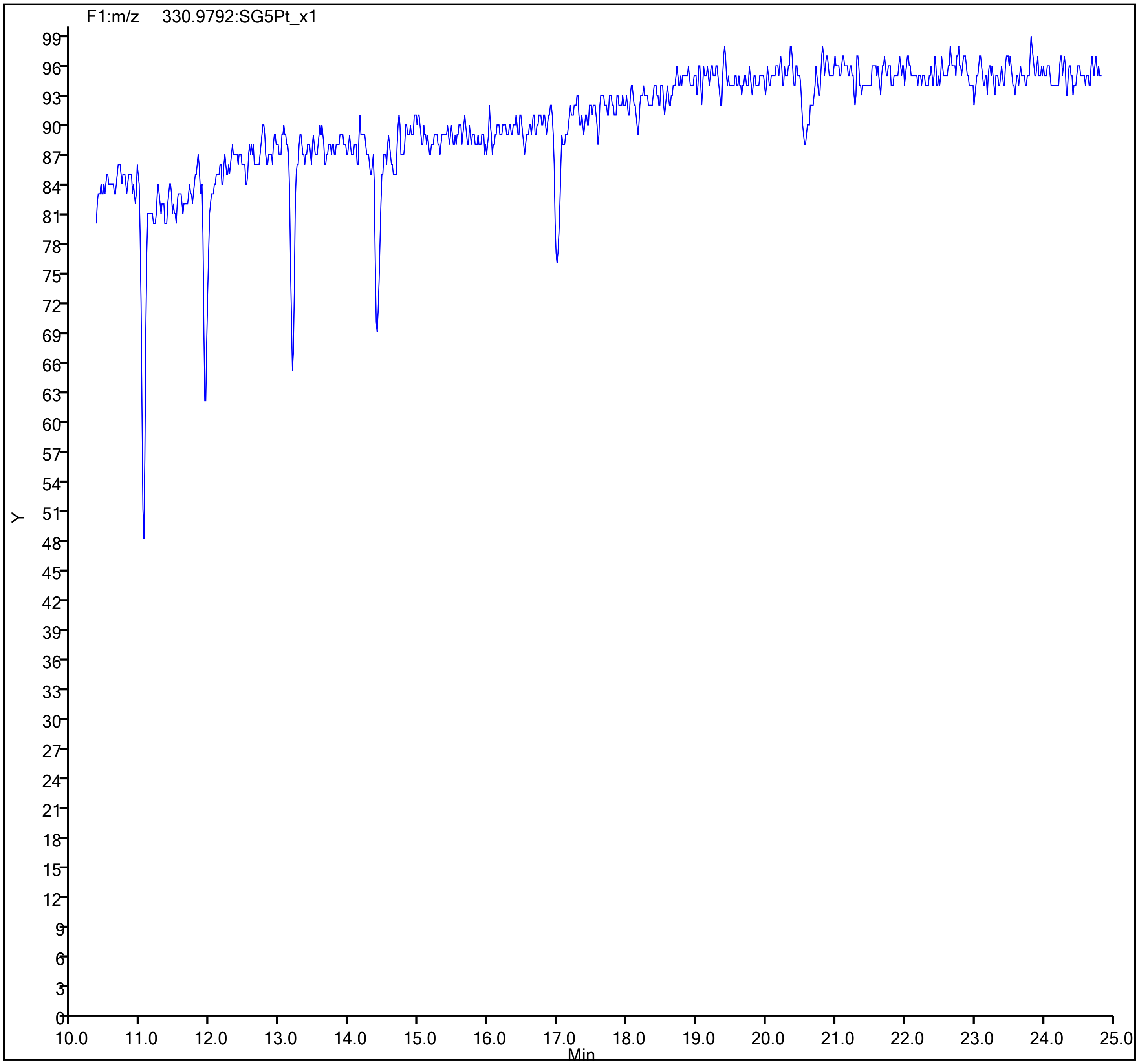

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID: CCV 320-469703/2 Calibration Date: 03/11/2021 14:29

Instrument ID: 11D2 Calib Start Date: 02/03/2021 14:40

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 02/03/2021 17:13

Lab File ID: 11MR2111D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	0.999	1.106		11.1	10.0	111	78-129
2,3,7,8-TCDF	AveID	0.9242	1.006		10.9	10.0	109	84-120
13C-2,3,7,8-TCDD	Ave	0.8971	0.9014		100	100	100	82-121
13C-2,3,7,8-TCDF	Ave	1.306	1.437		110	100	110	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.8499	0.9354		11.0	10.0	110	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
11MR2111D2	1	CPS 031121	CPS HRDXNCP_00042				1.00000	
11MR2111D2	2	CCV 031121	CCV CS-4 HRDXNL4_00097				1.00000	
11MR2111D2	3	SB 031121	SB Solvent Blank C-14				1.00000	
11MR2111D2	4	320-467785	320-70797-A-11-A	20	1613B/WATER	D220	1.00000	L
11MR2111D2	5	320-467785	320-70797-A-5-A	20	1613B/WATER		1.00000	L
11MR2111D2	6	320-467785	320-70797-A-6-A	20	1613B/WATER		1.00000	L
11MR2111D2	7	320-467785	320-70797-A-4-A	20	1613B/WATER		1.00000	L
11MR2111D2	8	320-467785	320-70797-A-12-A	20	1613B/WATER		1.00000	L
11MR2111D2	9	320-467785	320-70797-A-3-A	20	1613B/WATER		1.00000	L
11MR2111D2	10	320-467785	320-70797-A-9-A	20	1613B/WATER		1.00000	L
11MR2111D2	11	320-467785	320-70797-A-10-A	20	1613B/WATER		1.00000	L
11MR2111D2	12	320-467785	320-70797-A-7-A	20	1613B/WATER		1.00000	L
11MR2111D2	13	320-467785	320-70797-A-2-A	20	1613B/WATER		1.00000	L
11MR2111D2	14	320-467785	320-70797-A-1-A	20	1613B/WATER		1.00000	L
11MR2111D2	15	320-467785	320-70797-A-8-A	20	1613B/WATER		1.00000	L
11MR2111D2	16	SB 031121A	SB Solvent Blank C-14				1.00000	
11MR2111D2	17						1.00000	
11MR2111D2	18						1.00000	
11MR2111D2	19						1.00000	
11MR2111D2	20						1.00000	
11MR2111D2	21		GRB,KSS 03-11-21				1.00000	
11MR2111D2	22						1.00000	

LOG FILE ✓'d
03/12/2021
GRB

Peak Locate Examination:11-MAR-2021:13:48 File:11MR2111D2
Experiment:DB225RES Function:1 Reference:PFK

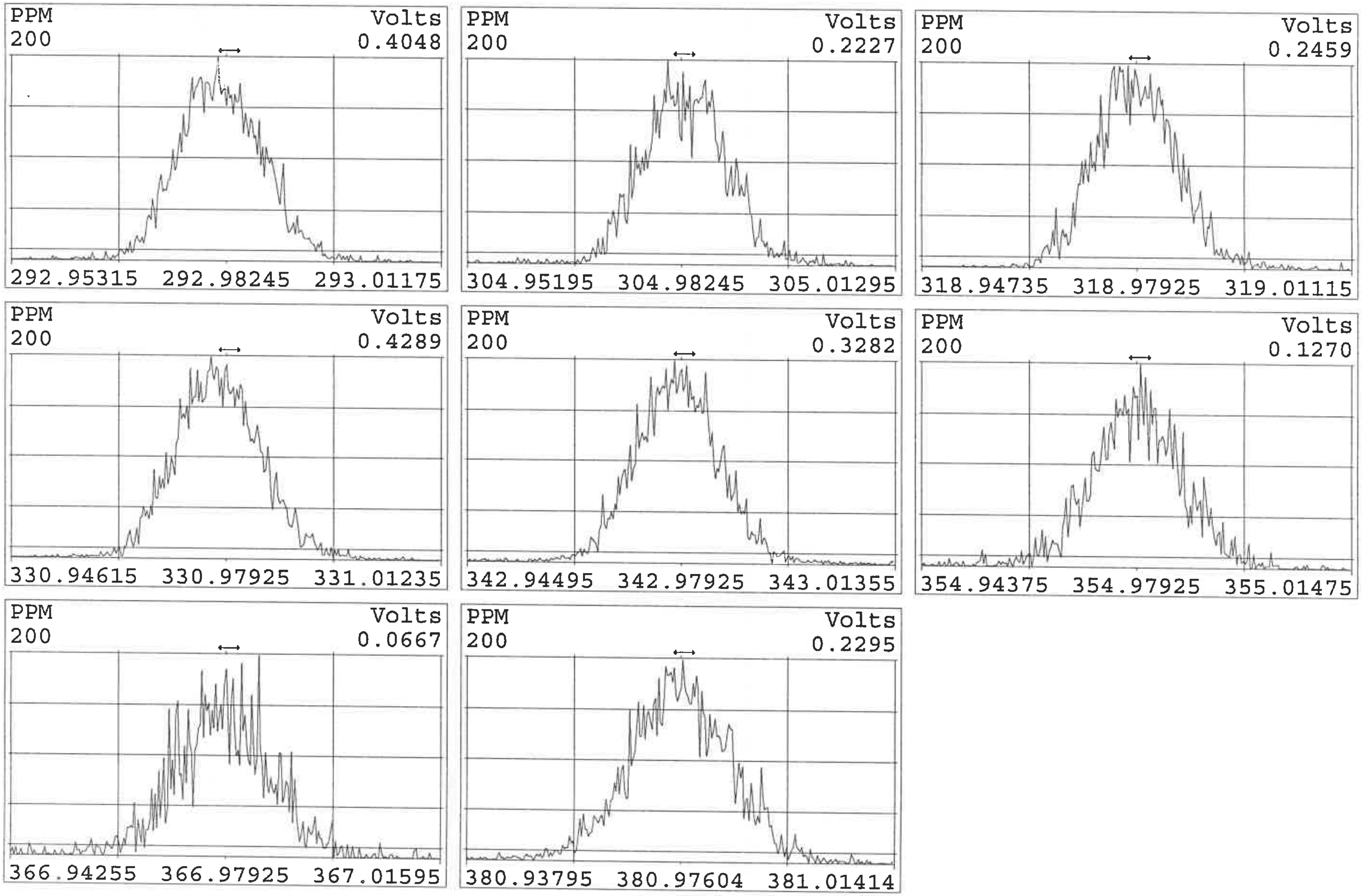

Peak Locate Examination:12-MAR-2021:01:08 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

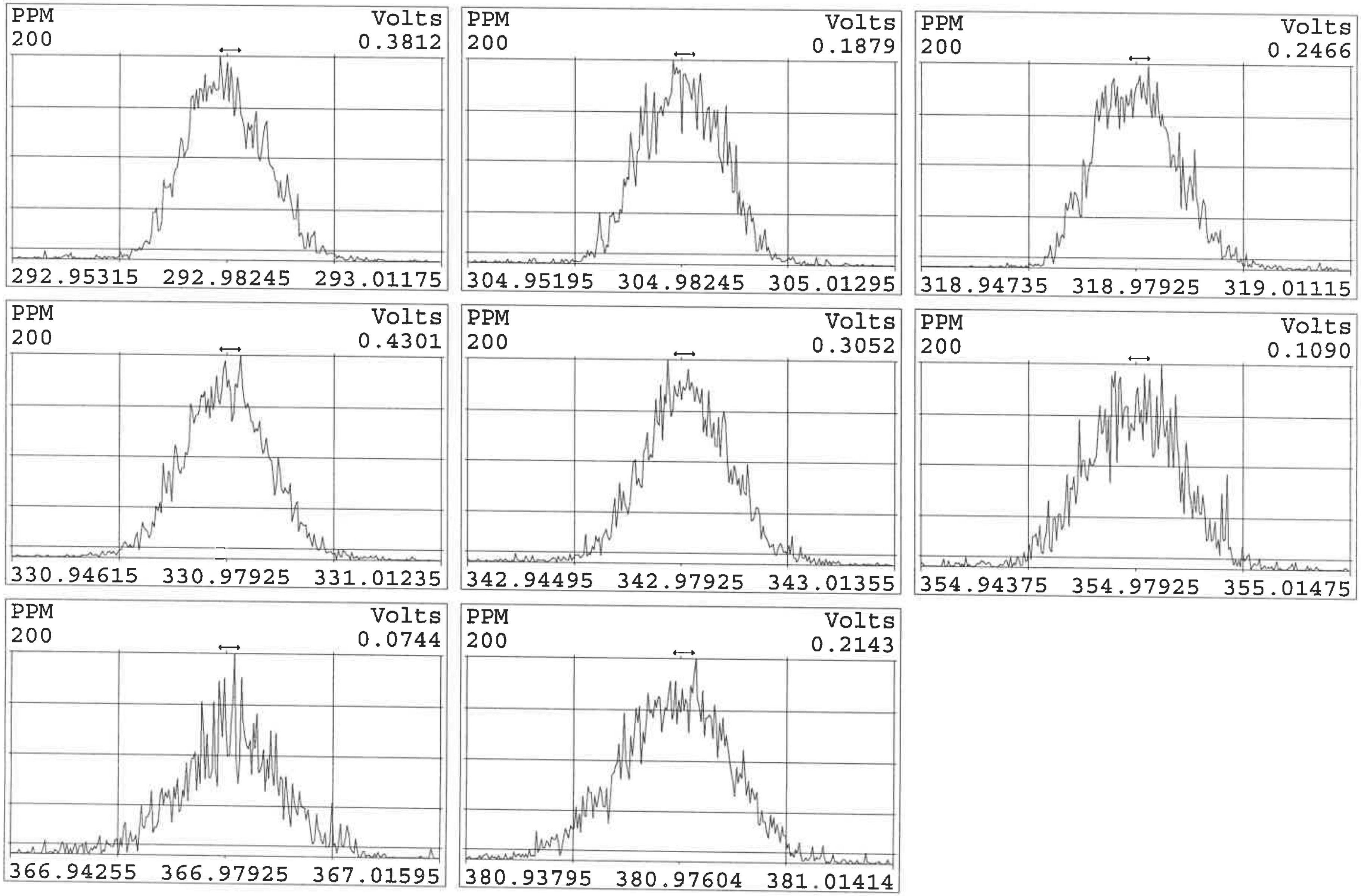

Report Date: 12-Mar-2021 11:08:26 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	11-Mar-2021 14:29:14	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00097				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 11:08:26	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				

First Level Reviewer: bilottag Date: 12-Mar-2021 10:59:50

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.013	242740271	0.78	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.152	348763825	0.80	1.3057	110.0	110.0	0.1425	0.1425	110	
2,3,7,8-TCDF	16.166	35082986	0.79	0.9242	10.9	10.9	0.0249	0.0249	109	
D 13C-2,3,7,8-TCDD	14.794	218795169	0.78	0.8971	100.5	100.5	0.1240	0.1240	100	
2,3,7,8-TCDD	14.807	24192046	0.78	0.9989	11.1	11.1	0.0510	0.0510	111	
$ 37Cl4-2,3,7,8-TCDD	14.807	22706342		0.8499	11.0	11.0	0.0219	0.0219	110	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 11-Mar-2021 14:29:14 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00097
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 11:08:26 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bilottag Date: 12-Mar-2021 10:59:50

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.013	15.013	0		106725811	25541532	16601	41502	1539		
333.9339	15.013	15.013	0		136014460	32225485	9111	22777	3537	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.152	16.152	0	1.076	155382807	35515679	23581	58952	1506		
317.9389	16.152	16.152	0	1.076	193381018	43798395	19413	48532	2256	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.166	16.166	0	1.001	15439893	3363535	3479	8697	967		
305.8987	16.166	16.166	0	1.001	19643093	4394946	3826	9565	1149	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.794	14.794	0	0.985	95972789	23492070	16601	41502	1415		
333.9339	14.794	14.794	0	0.985	122822380	29612617	9111	22777	3250	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.807	14.807	0	1.001	10588405	2581626	4981	12452	518		
321.8936	14.807	14.807	0	1.001	13603641	3209053	5844	14610	549	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.807	14.807	0	0.986	22706342	5415112	4306	10765	1258		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 12-Mar-2021 11:08:26 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d
Injection Date: 11-Mar-2021 14:29:14
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469703
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

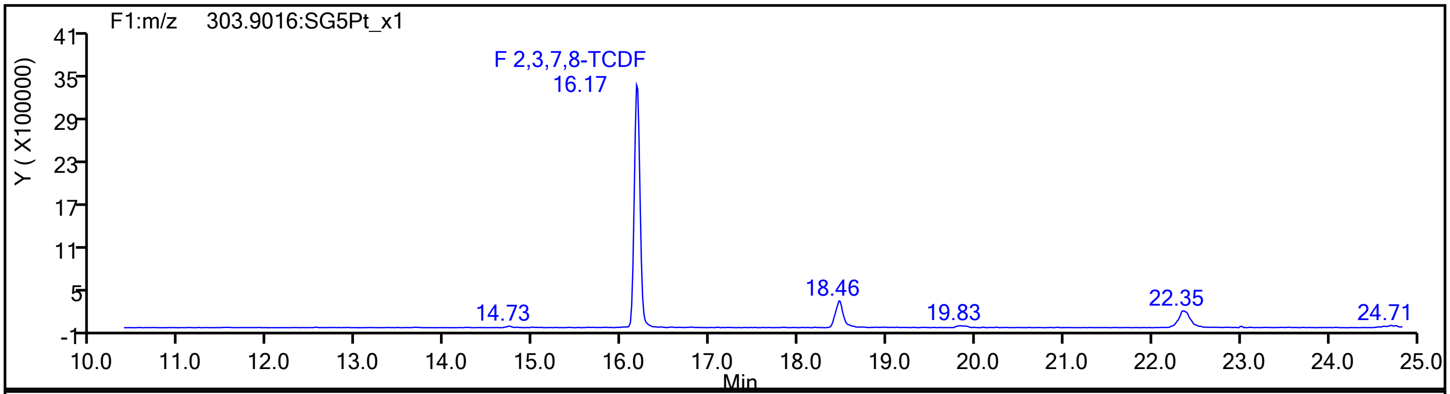

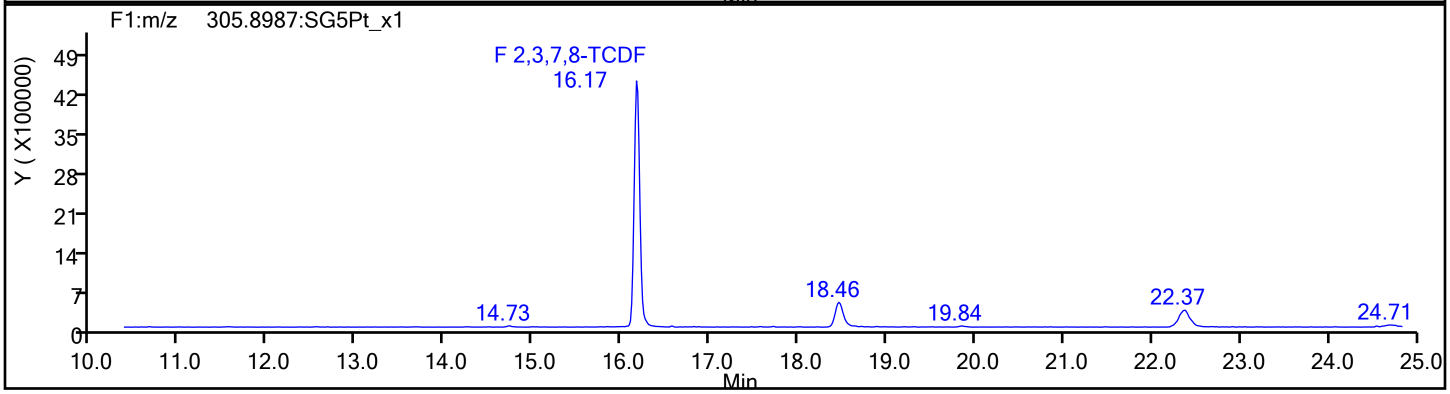

TCDF Standards

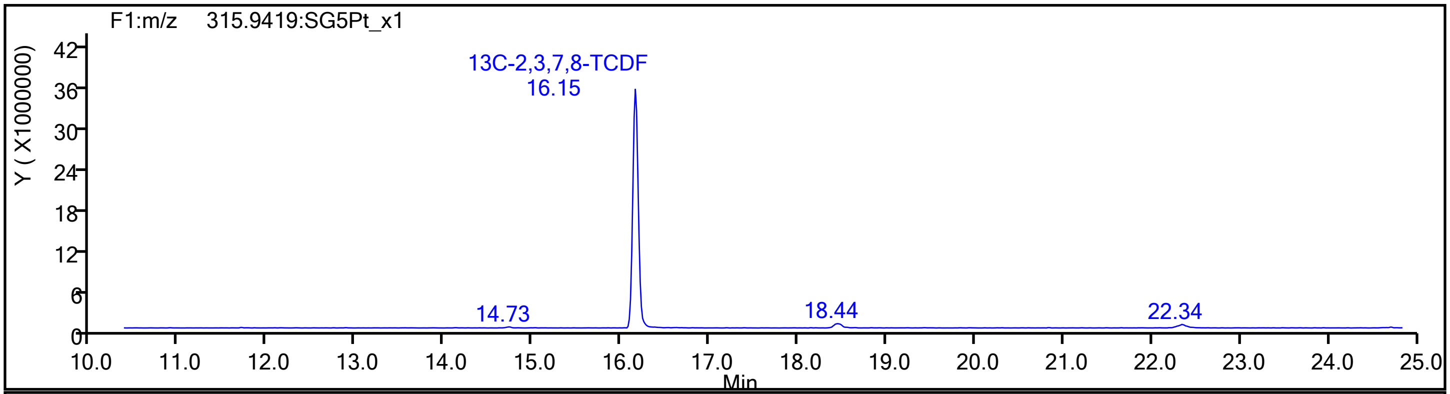

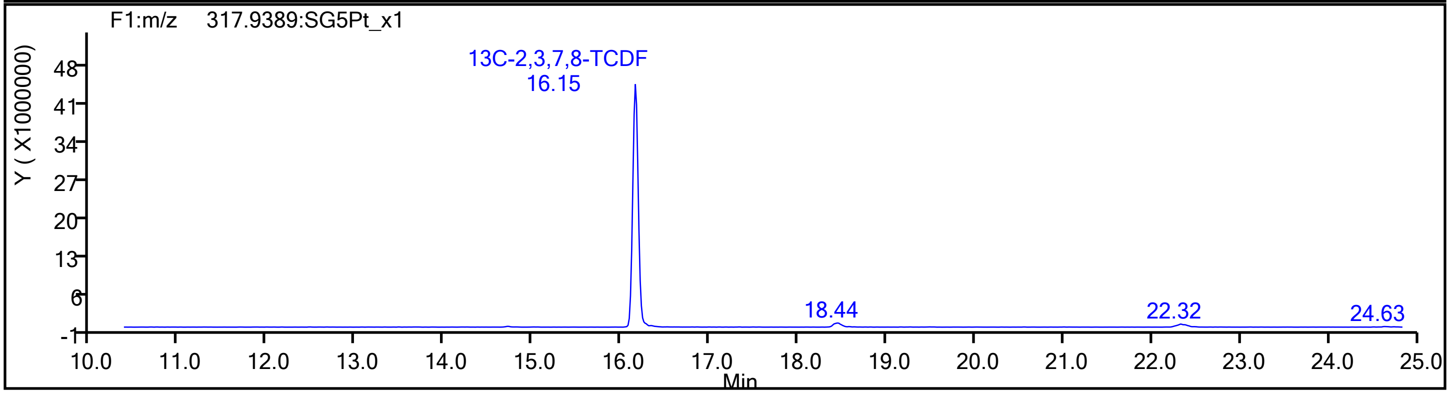

Report Date: 12-Mar-2021 11:08:26 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d		
Injection Date:	11-Mar-2021 14:29:14	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

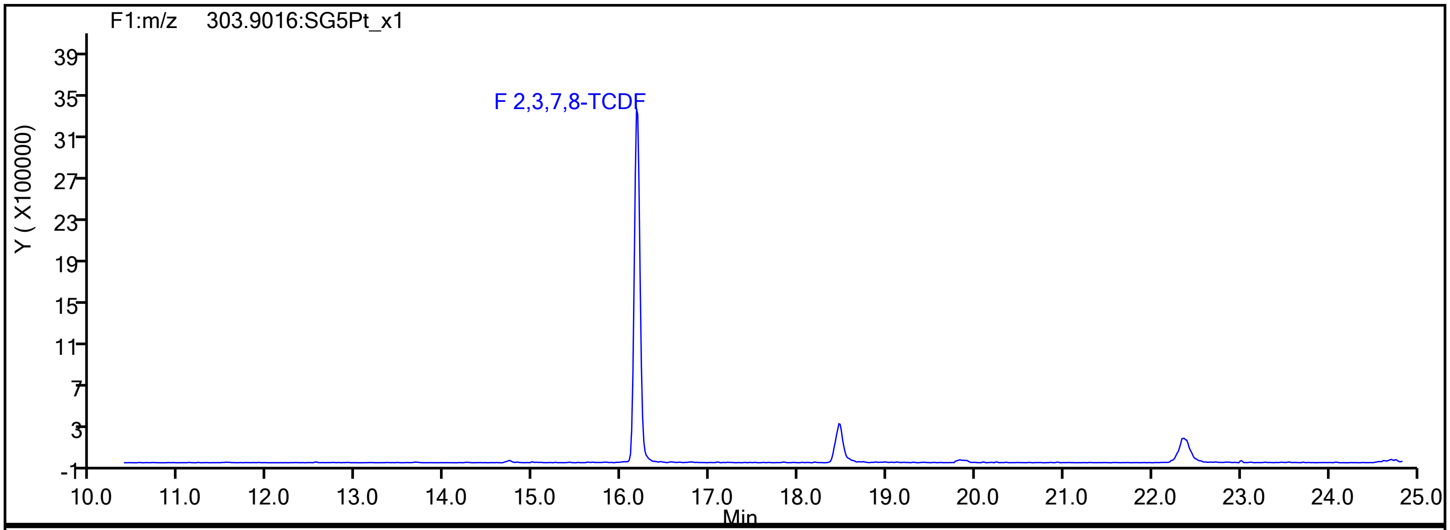

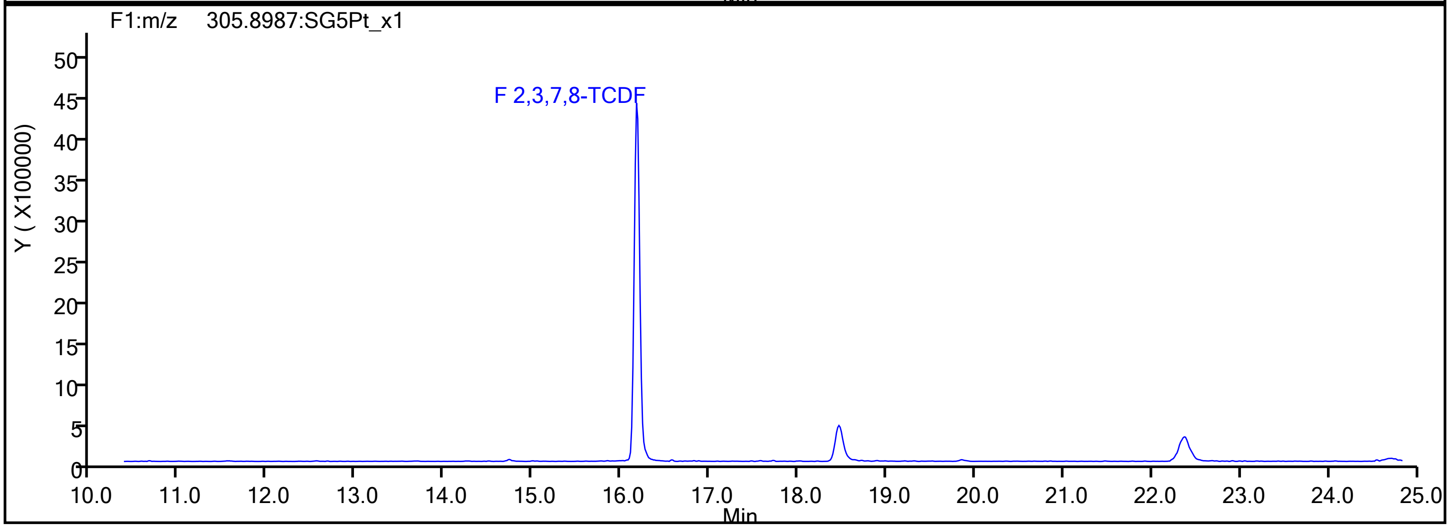

TCDF Interference Mass

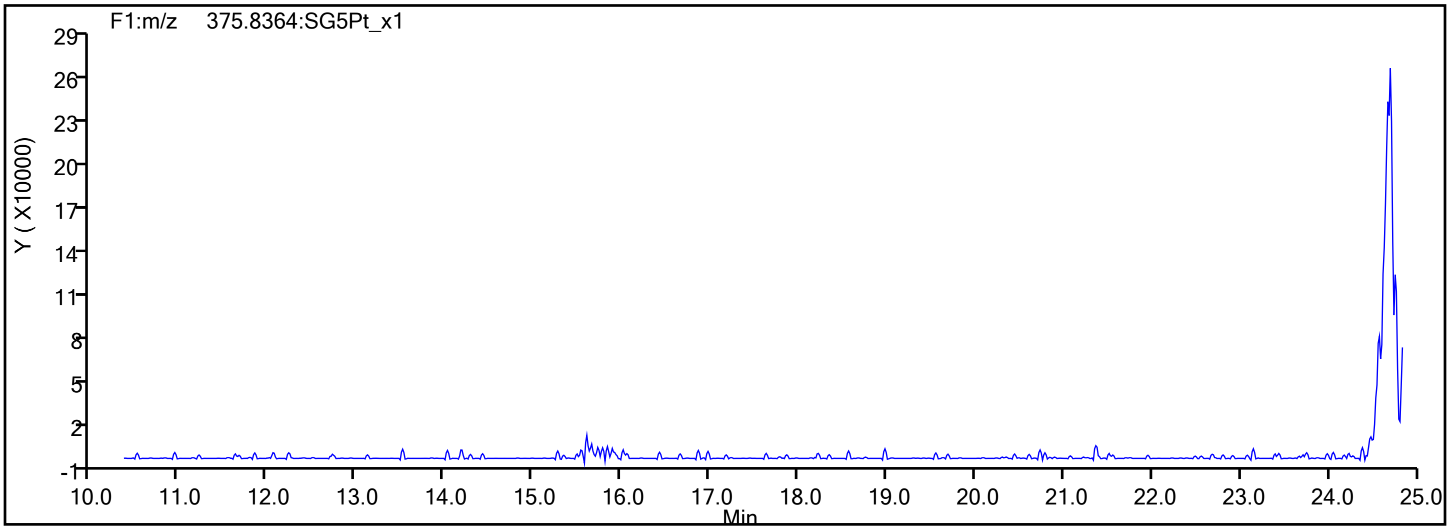

Report Date: 12-Mar-2021 11:08:26 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d		
Injection Date:	11-Mar-2021 14:29:14	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

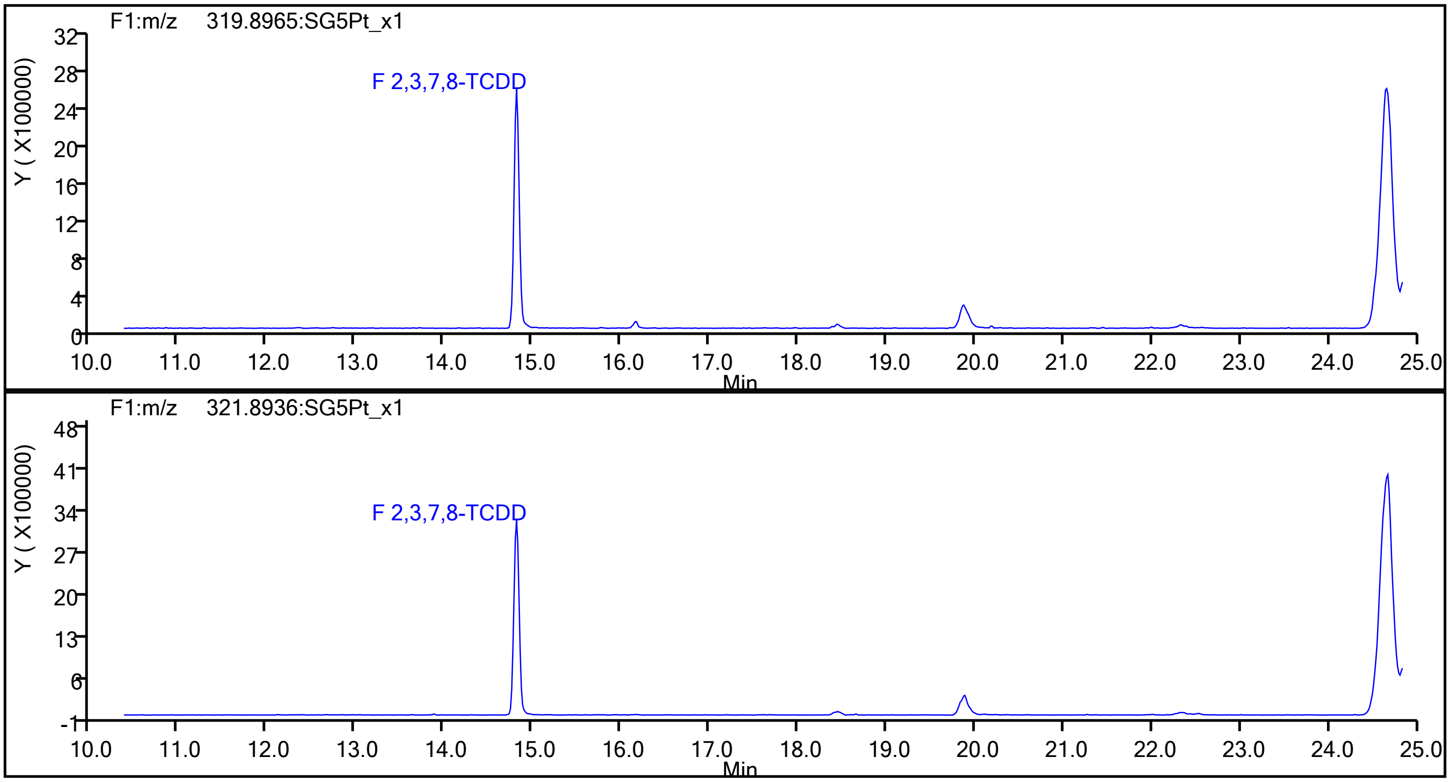

TCDD Standards

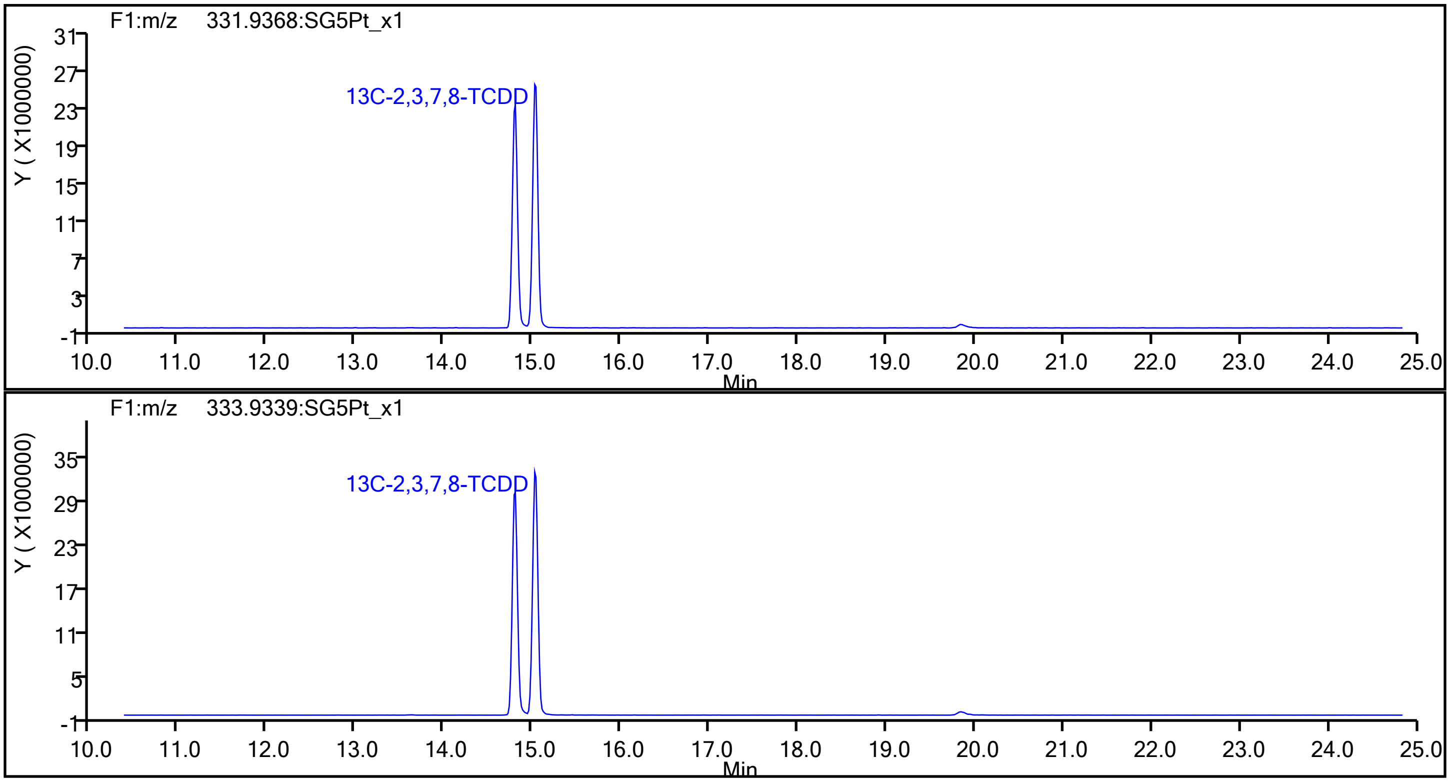

Report Date: 12-Mar-2021 11:08:26 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d		
Injection Date:	11-Mar-2021 14:29:14	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

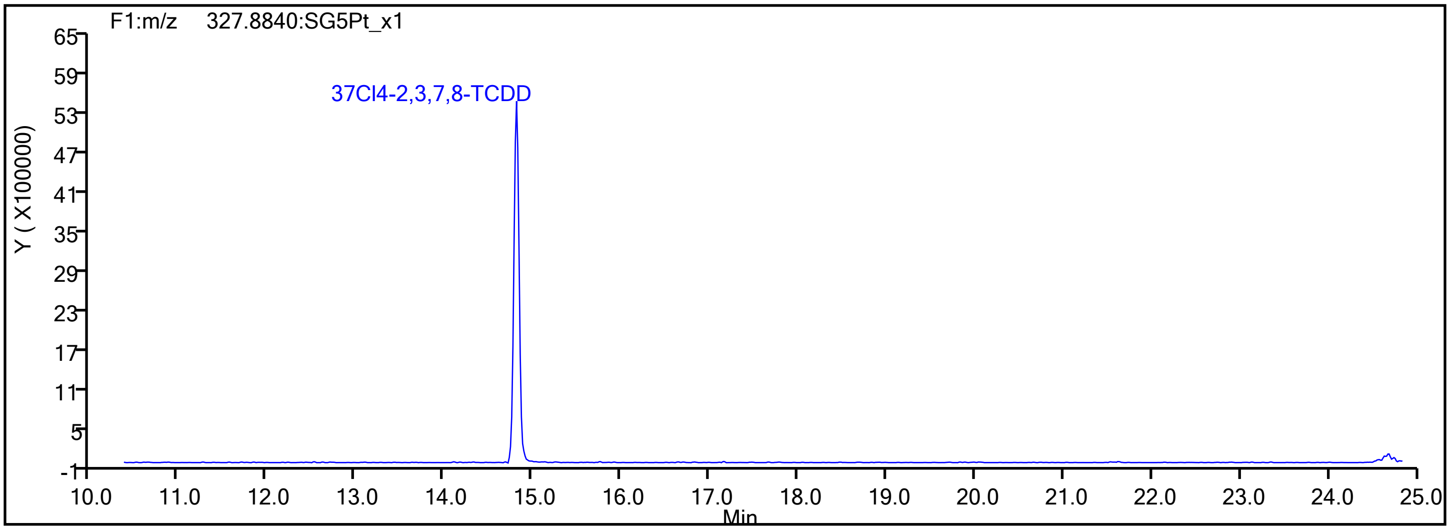

37Cl4-TCDD Standards

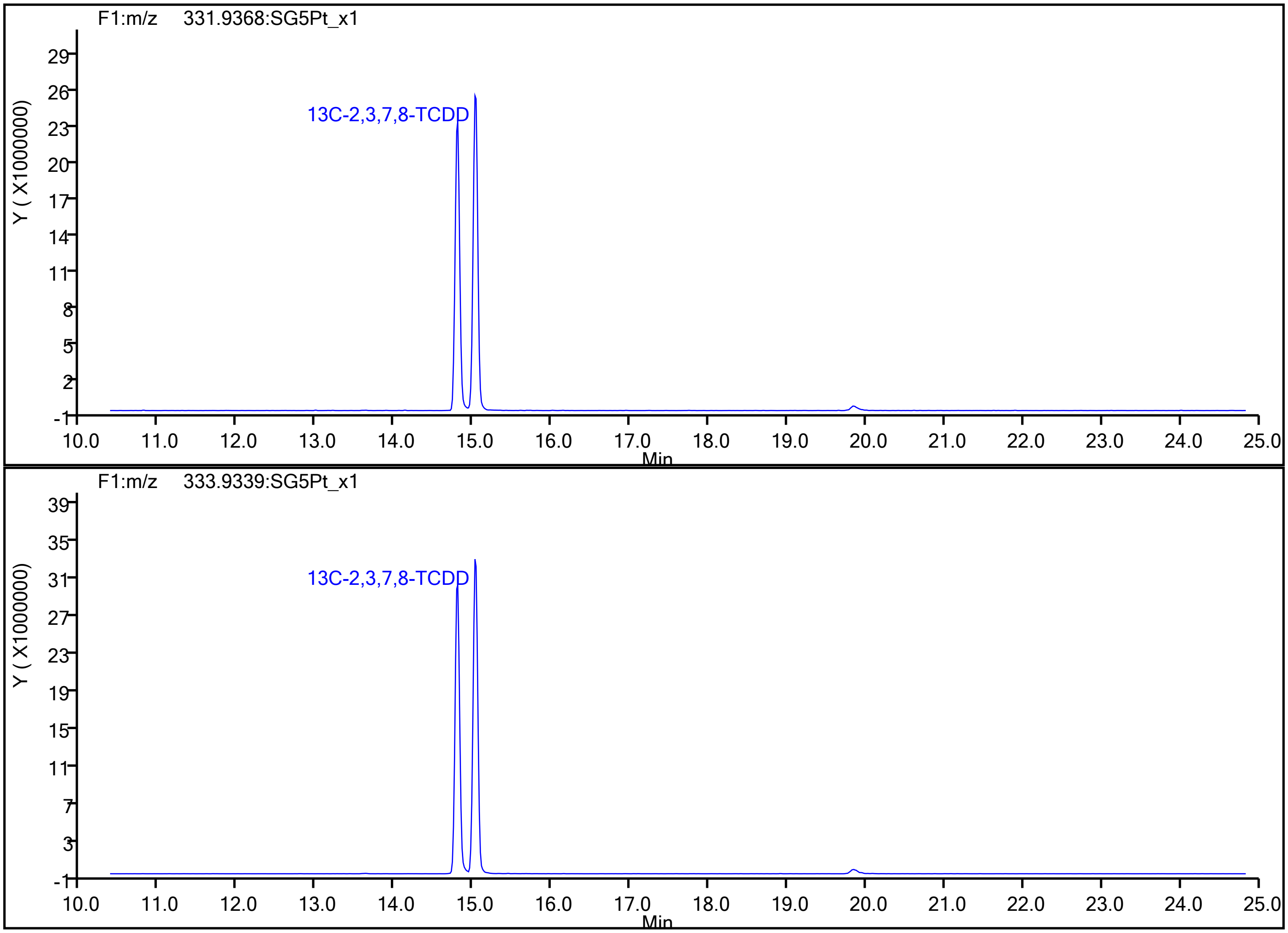

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_002.d		
Injection Date:	11-Mar-2021 14:29:14	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

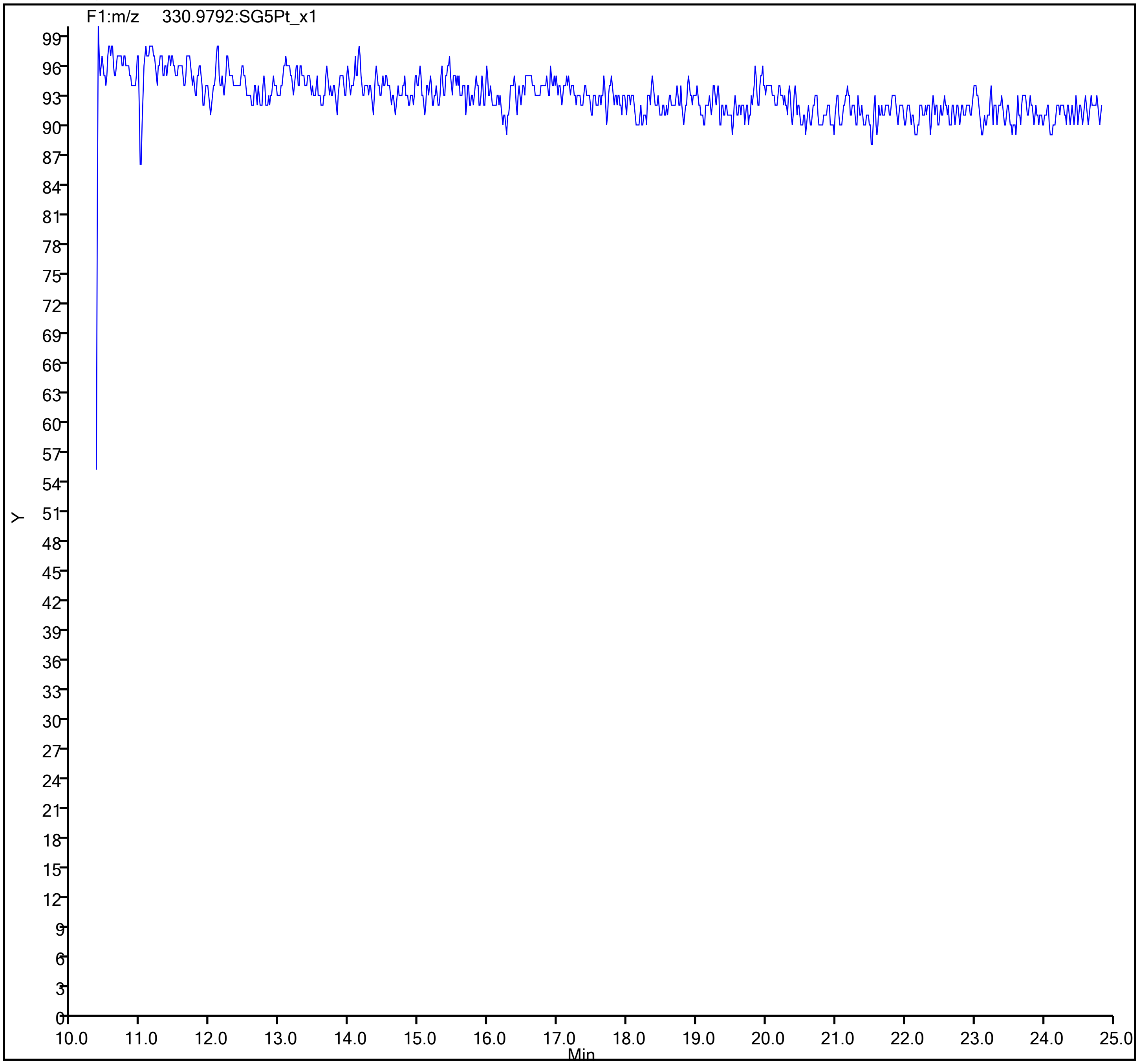

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID: CCV 320-470865/2 Calibration Date: 03/16/2021 21:31

Instrument ID: 11D2 Calib Start Date: 02/03/2021 14:40

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 02/03/2021 17:13

Lab File ID: 16MR2111D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	0.999	1.071		10.7	10.0	107	78-129
2,3,7,8-TCDF	AveID	0.9242	0.9553		10.3	10.0	103	84-120
13C-2,3,7,8-TCDD	Ave	0.8971	0.9044		101	100	101	82-121
13C-2,3,7,8-TCDF	Ave	1.306	1.427		109	100	109	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.8499	0.9412		11.1	10.0	111	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
16MR2111D2	1	CPS 031621	CPS HRDXNCP_00042				1.00000	
16MR2111D2	2	CCV 031621	CCV CS-4 HRDXNL4_00097				1.00000	
16MR2111D2	3	SB 031621	SB Solvent Blank C-14				1.00000	
16MR2111D2	4	320-467785	320-70797-A-1-A (20X)	20	1613B/Water	D220	1.00000	L
16MR2111D2	5	320-467785	320-70797-A-2-A (10X)	20	1613B/Water		1.00000	L
16MR2111D2	6	320-467785	320-70797-A-7-A (10X)	20	1613B/Water		1.00000	L
16MR2111D2	7	320-467785	320-70797-A-8-A (20X)	20	1613B/Water		1.00000	L
16MR2111D2	8	SB 031621A	SB Solvent Blank C-14				1.00000	
16MR2111D2	9						1.00000	
16MR2111D2	10						1.00000	
16MR2111D2	11						1.00000	
16MR2111D2	12						1.00000	
16MR2111D2	13						1.00000	
16MR2111D2	14						1.00000	
16MR2111D2	15						1.00000	
16MR2111D2	16						1.00000	
16MR2111D2	17		ALM 03-16-21				1.00000	
16MR2111D2	18						1.00000	

LOG FILE ✓'d
03/17/2021
GRB

Peak Locate Examination:16-MAR-2021:20:50 File:16MR2111D2
Experiment:DB225RES Function:1 Reference:PFK

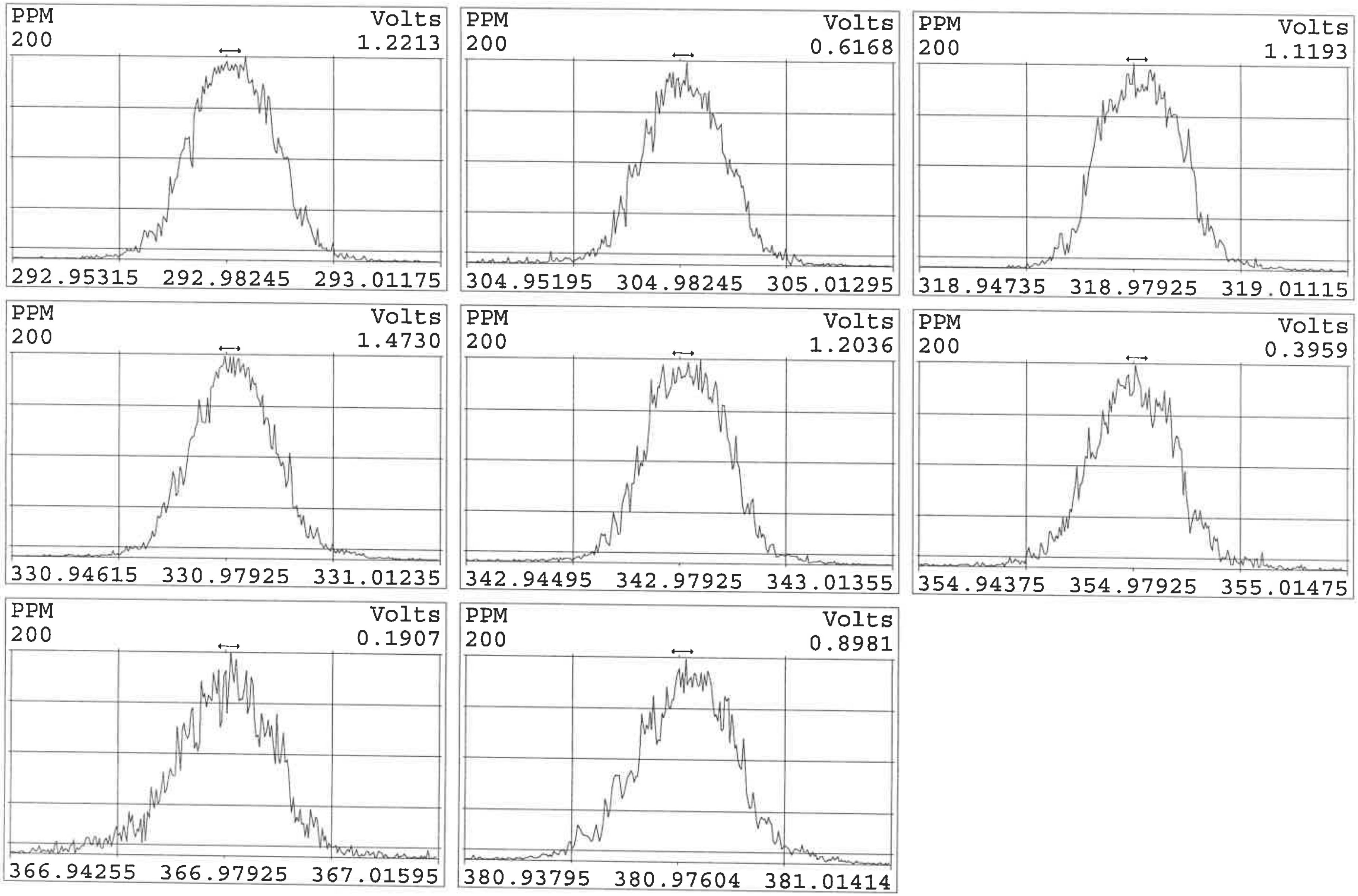

Peak Locate Examination:17-MAR-2021:02:06 File:RESCHK16MR2111D2
Experiment:DB225RES Function:1 Reference:PFK

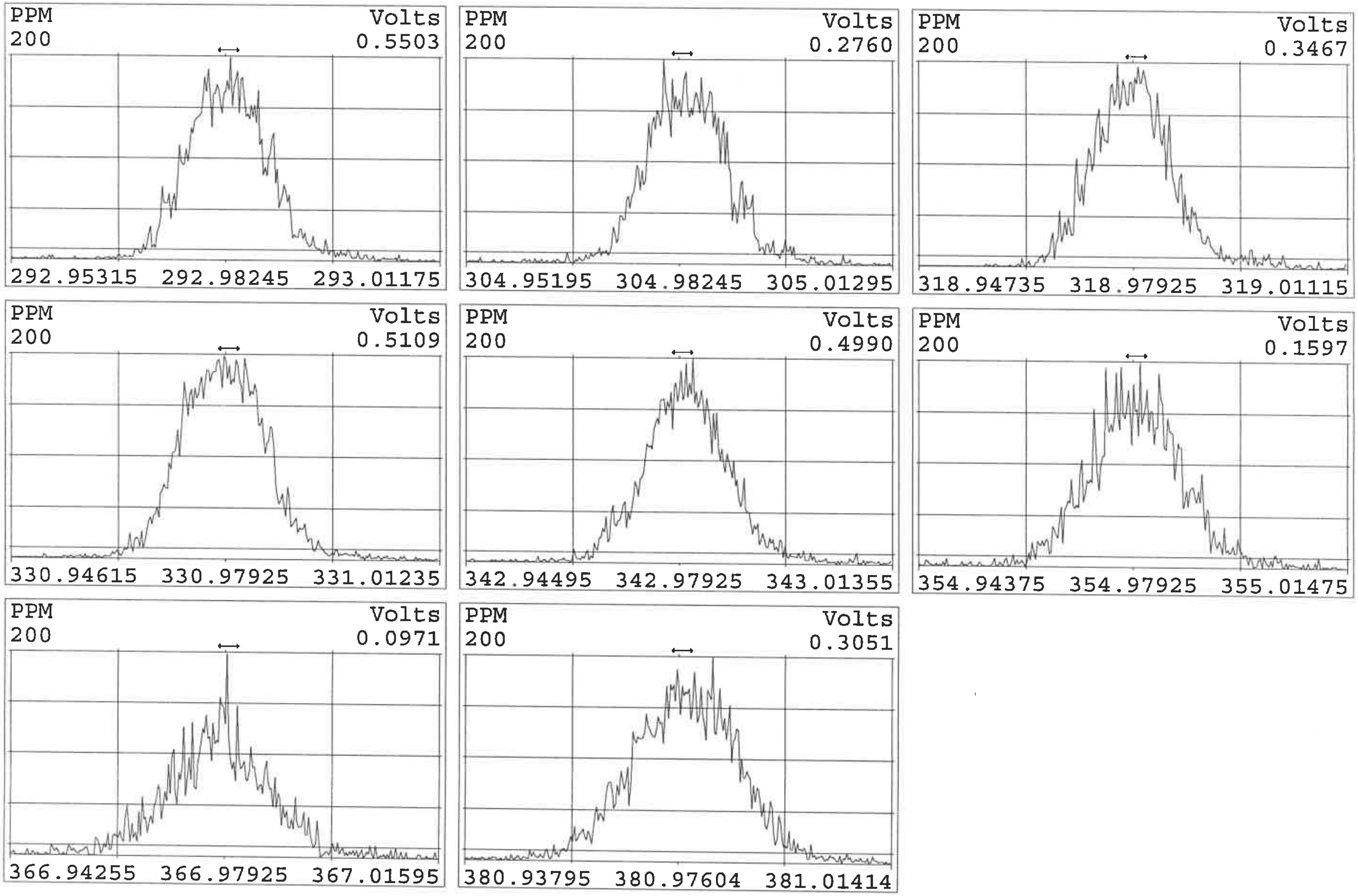

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 16-Mar-2021 21:31:32 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00097
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:09:38

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.023	188704185	0.77	1.8E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.148	269214851	0.79	1.3057	109.3	109.3	0.2591	0.2591	109	
2,3,7,8-TCDF	16.176	25718816	0.77	0.9242	10.3	10.3	0.0378	0.0378	103	
D 13C-2,3,7,8-TCDD	14.790	170659483	0.76	0.8971	100.8	100.8	0.1285	0.1285	101	
2,3,7,8-TCDD	14.804	18282813	0.81	0.9989	10.7	10.7	0.0510	0.0510	107	
$ 37Cl4-2,3,7,8-TCDD	14.804	17760017		0.8499	11.1	11.1	0.0348	0.0348	111	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 08:12:45 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 16-Mar-2021 21:31:32 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00097
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:09:38

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.023	15.023	0		81938057	19579114	11197	27992	1749		
333.9339	15.010	15.023	-1		106766128	25122029	9416	23540	2668	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.148	16.148	0	1.075	118884901	26798314	39954	99885	671		
317.9389	16.148	16.148	0	1.075	150329950	33402233	20528	51320	1627	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.176	16.176	0	1.002	11227463	2528166	3535	8837	715		
305.8987	16.176	16.176	0	1.002	14491353	3204594	4874	12185	657	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.790	14.790	0	0.984	73778541	18230574	11197	27992	1628		
333.9339	14.790	14.790	0	0.984	96880942	23695902	9416	23540	2517	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.804	14.804	0	1.001	8167166	2022627	3384	8460	598		
321.8936	14.804	14.804	0	1.001	10115647	2486044	5159	12897	482	0.81(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	14.804	14.804	0	0.985	17760017	4318868	5290	13225	816		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 08:12:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d

Injection Date: 16-Mar-2021 21:31:32 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470865 Sample Line#: 2

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

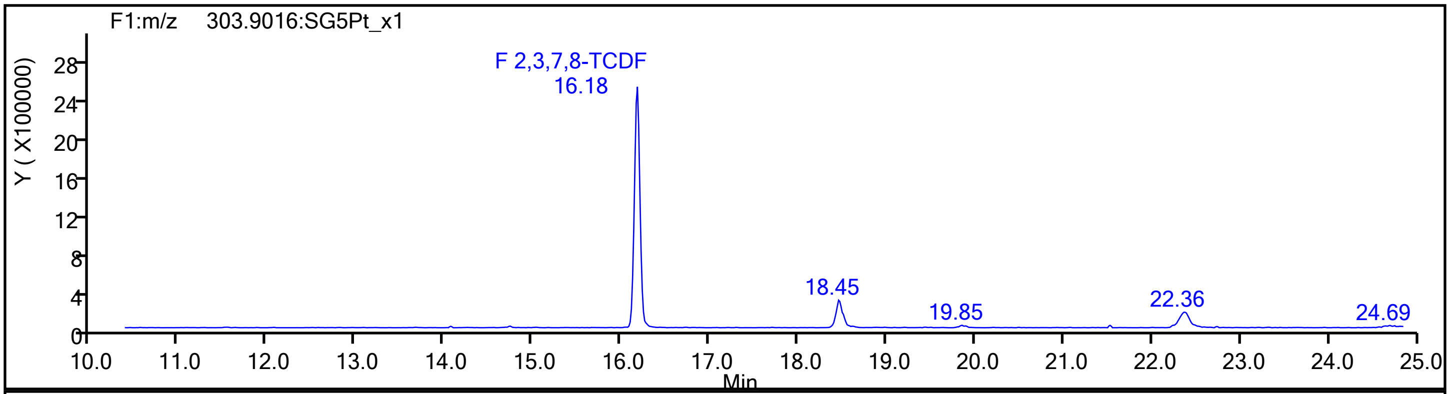

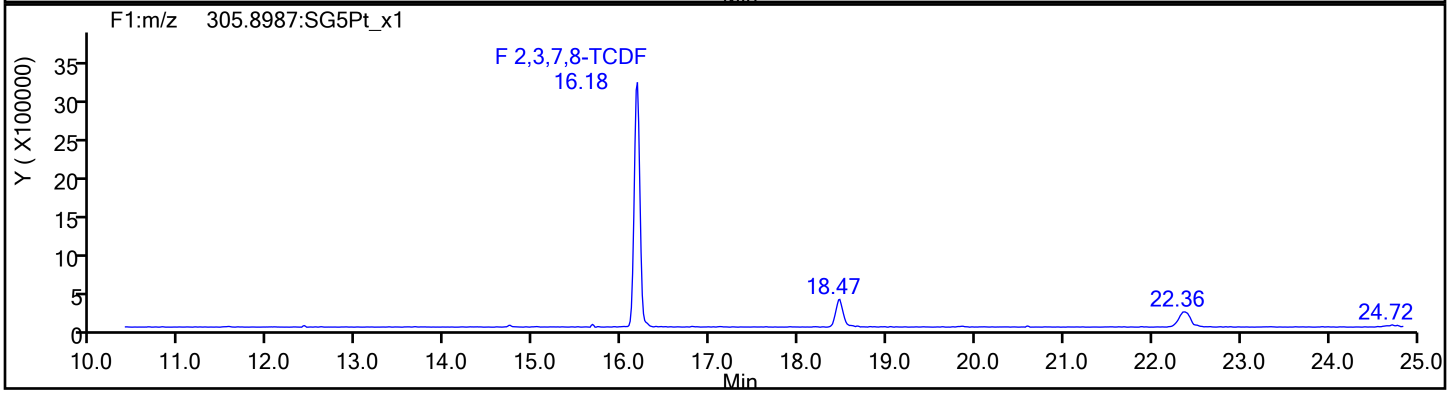

TCDF Standards

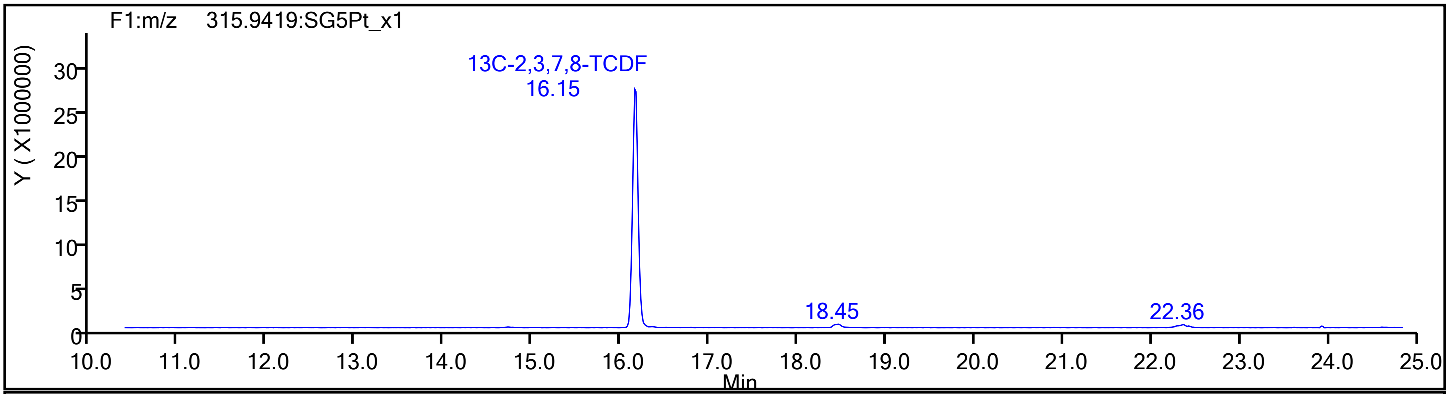

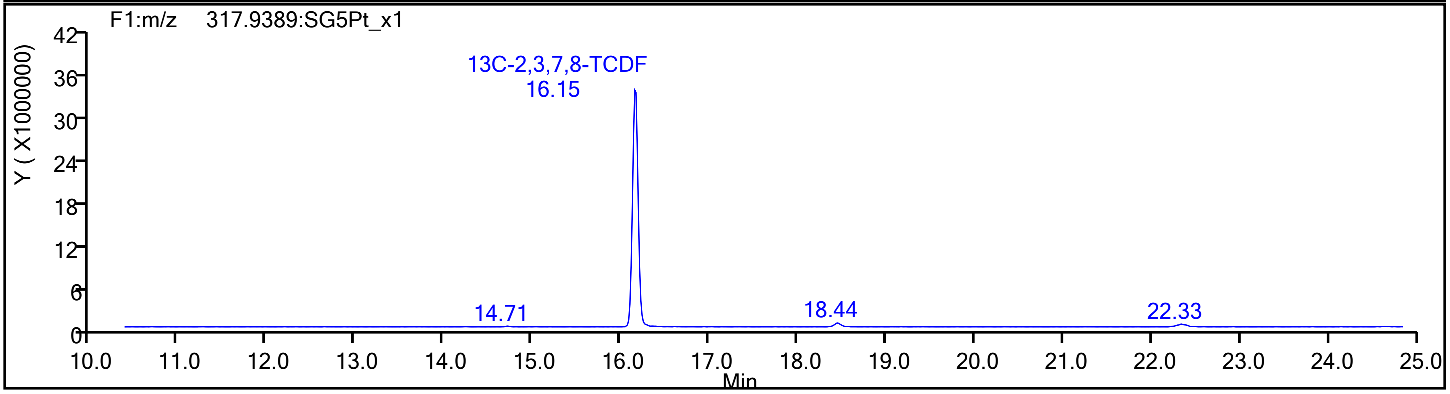

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d		
Injection Date:	16-Mar-2021 21:31:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

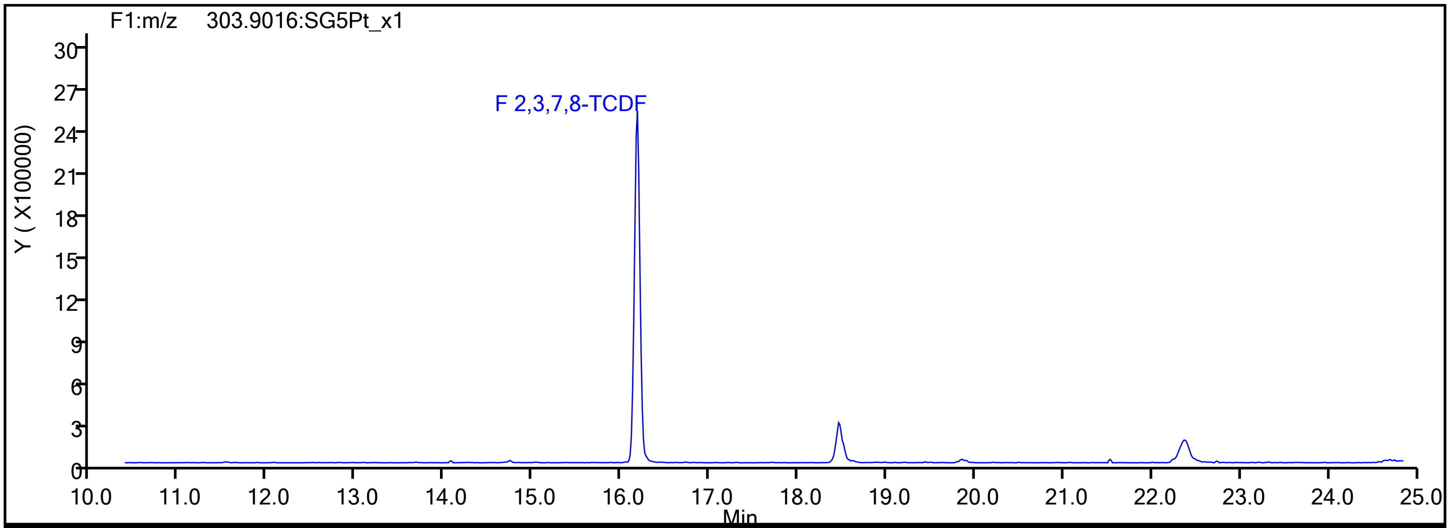

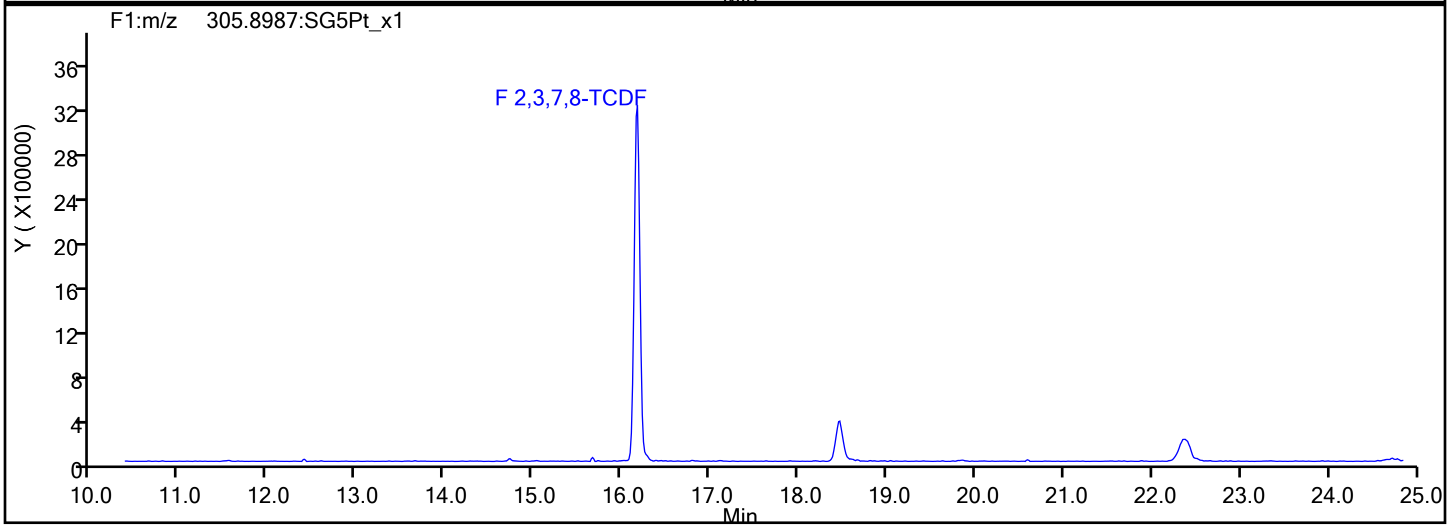

TCDF Interference Mass

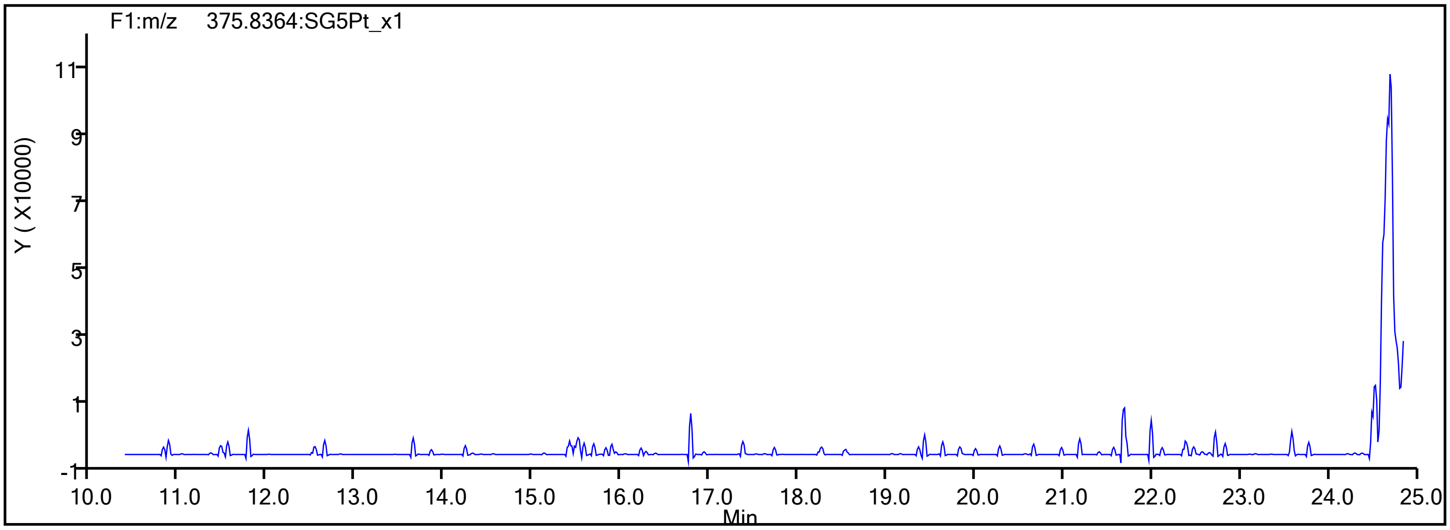

Report Date: 17-Mar-2021 08:12:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d		
Injection Date:	16-Mar-2021 21:31:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

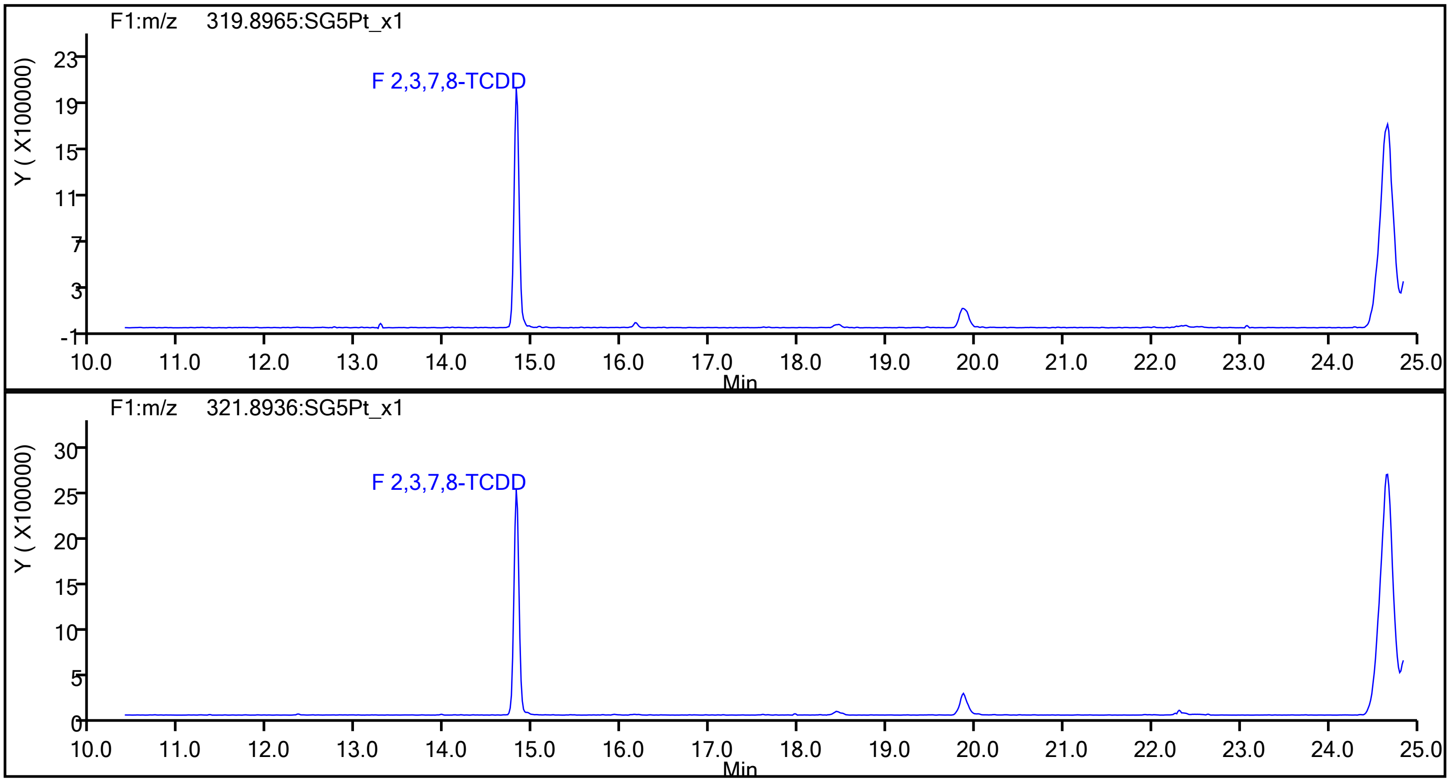

TCDD Standards

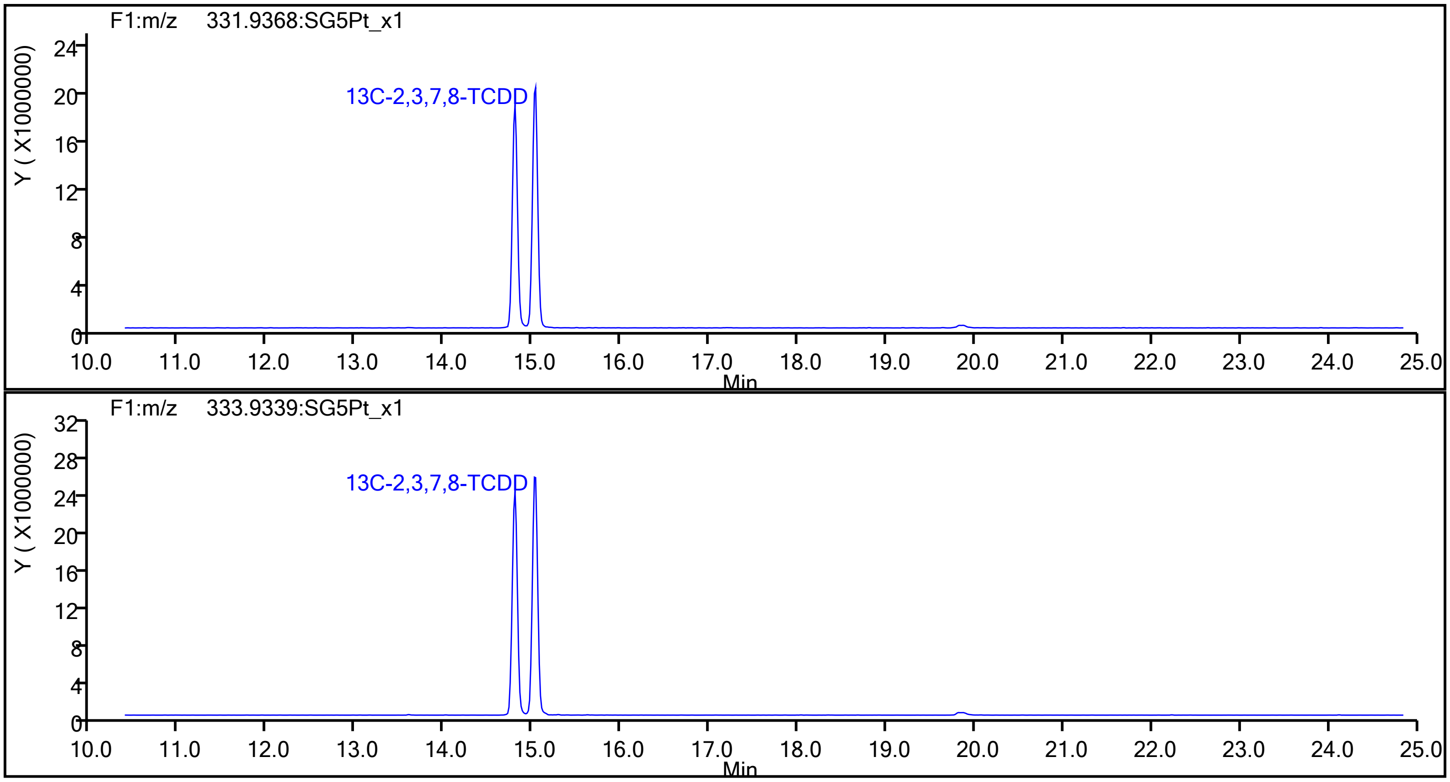

Report Date: 17-Mar-2021 08:12:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d		
Injection Date:	16-Mar-2021 21:31:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

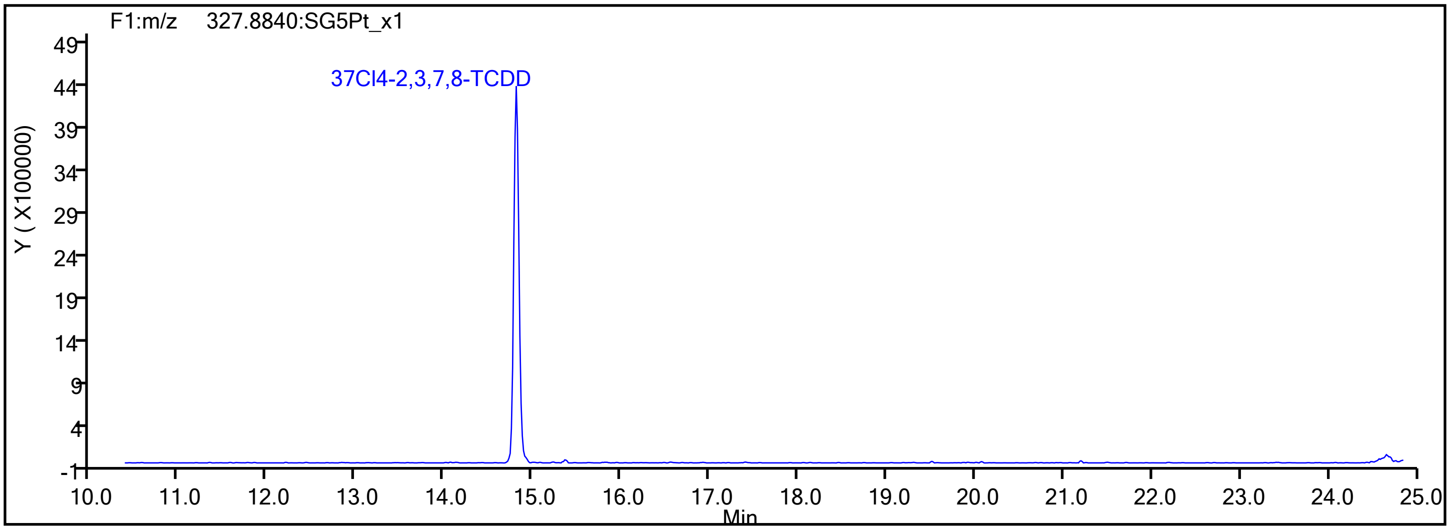

37Cl4-TCDD Standards

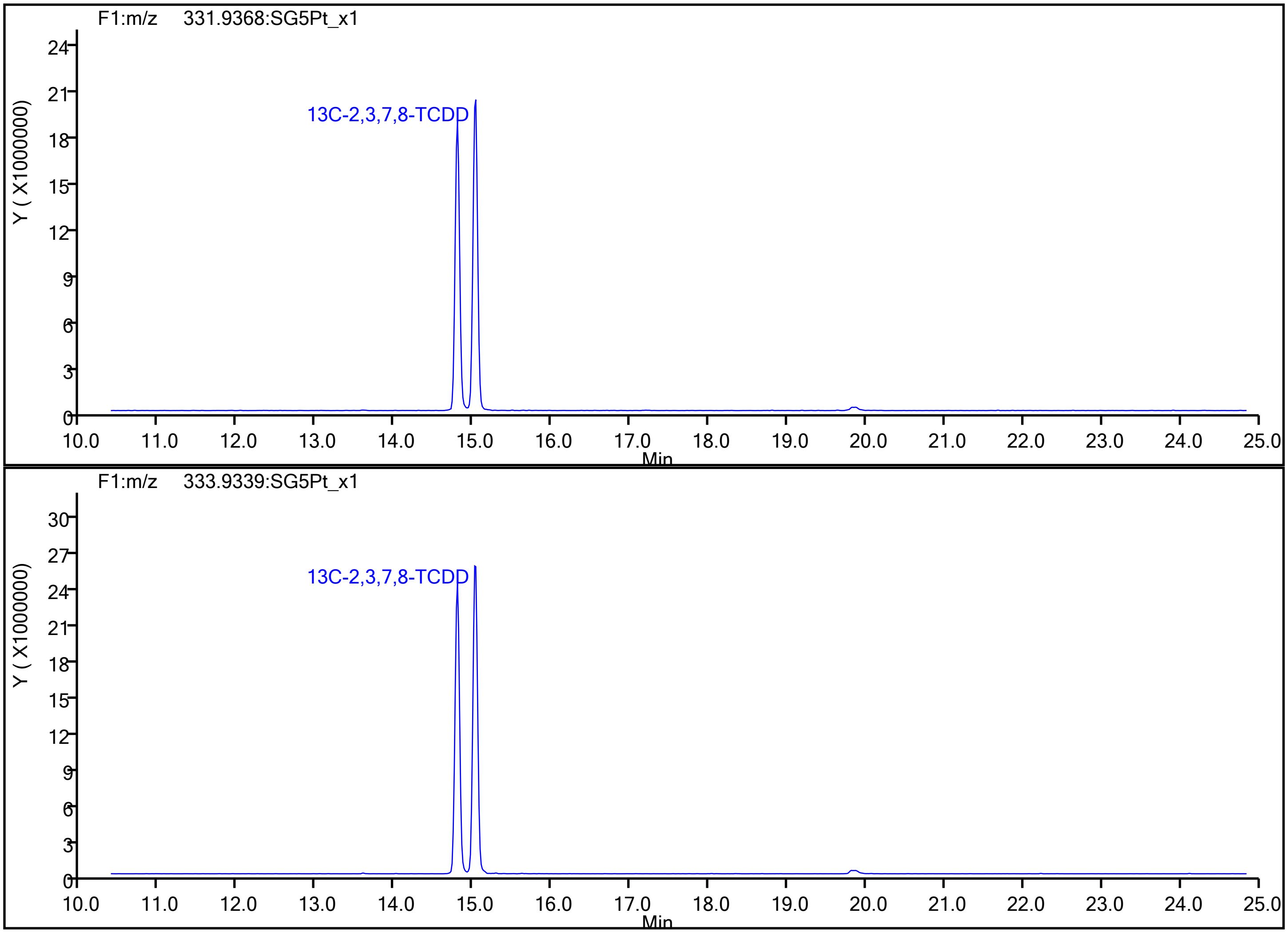

Report Date: 17-Mar-2021 08:12:46 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_002.d		
Injection Date:	16-Mar-2021 21:31:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

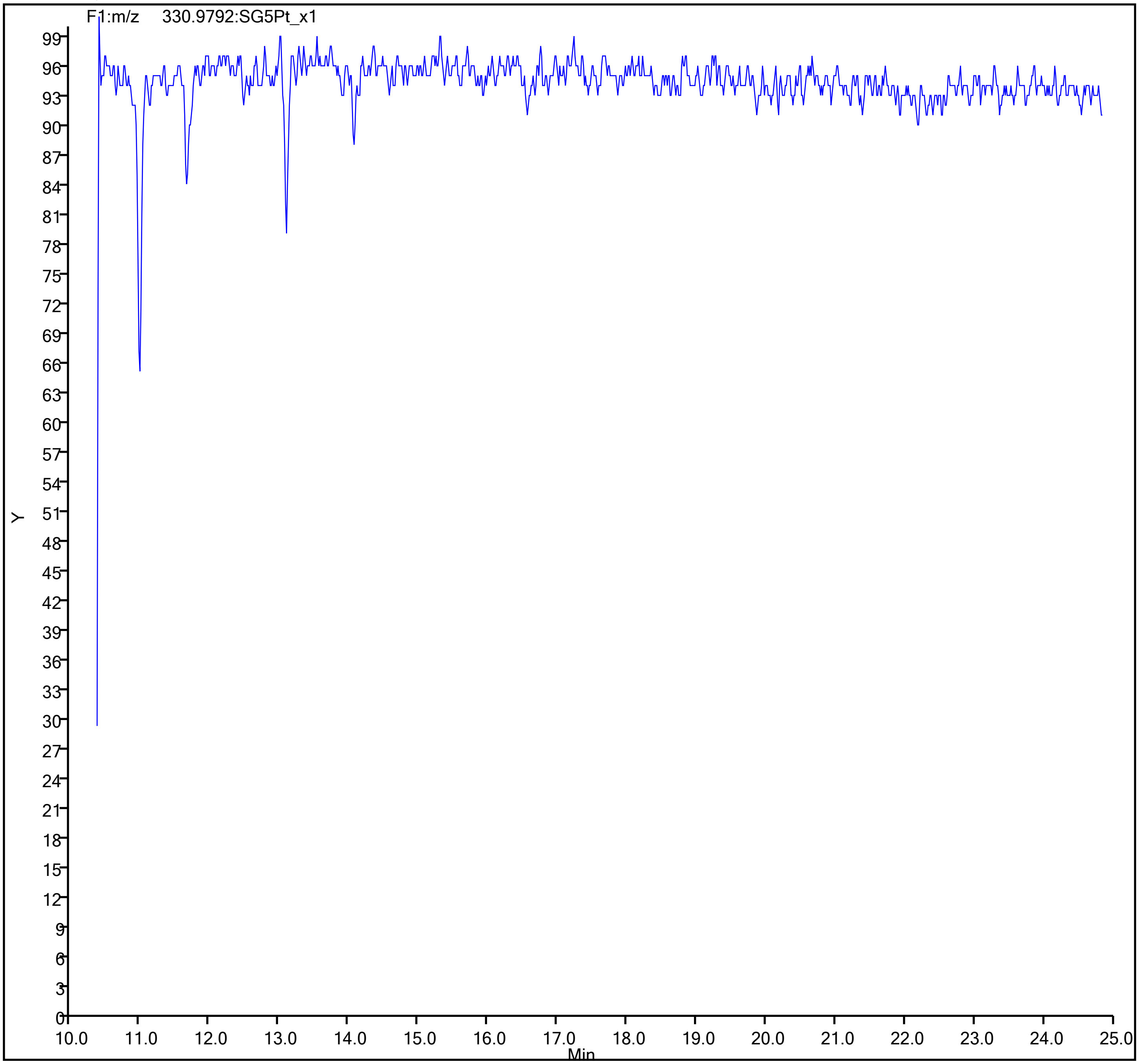

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID: ICV 320-458037/9 Calibration Date: 02/03/2021 02:53

Instrument ID: DFS 1 Calib Start Date: 02/02/2021 21:46

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 02/03/2021 00:57

Lab File ID: 02fe21dfs1_11.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.126	1.148		40.8	40.0	102	70-130
2,3,7,8-TCDD	AveID	1.190	1.271		42.7	40.0	107	70-130
1,2,3,7,8-PeCDF	AveID	1.116	1.092		196	200	98	70-130
2,3,4,7,8-PeCDF	AveID	1.058	1.165		220	200	110	70-130
1,2,3,7,8-PeCDD	AveID	1.137	1.113		196	200	98	70-130
1,2,3,4,7,8-HxCDF	AveID	1.183	1.197		202	200	101	70-130
1,2,3,6,7,8-HxCDF	AveID	1.248	1.281		205	200	103	70-130
2,3,4,6,7,8-HxCDF	AveID	1.275	1.318		207	200	103	70-130
1,2,3,4,7,8-HxCDD	AveID	1.095	1.120		205	200	102	70-130
1,2,3,6,7,8-HxCDD	AveID	1.020	1.121		220	200	110	70-130
1,2,3,7,8,9-HxCDD	AveID	1.155	1.150		199	200	100	70-130
1,2,3,7,8,9-HxCDF	AveID	1.295	1.255		194	200	97	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.486	1.571		211	200	106	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.149	1.160		202	200	101	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.405	1.349		192	200	96	70-130
OCDD	AveID	1.171	1.196		409	400	102	70-130
OCDF	AveID	1.578	1.582		401	400	100	70-130
13C-2,3,7,8-TCDF	Ave	1.544	1.490		96.5	100	96	71-140
13C-2,3,7,8-TCDD	Ave	0.9687	0.9104		94.0	100	94	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.312	1.286		98.0	100	98	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.335	1.333		99.8	100	100	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7716	0.7172		93.0	100	93	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.093	1.187		109	100	109	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.128	1.191		106	100	106	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.055	1.126		107	100	107	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7895	0.7964		101	100	101	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8495	0.8513		100	100	100	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9938	1.027		103	100	103	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7854	0.8171		104	100	104	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6413	0.6626		103	100	103	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7230	0.7791		108	100	108	77-129
13C-OCDD	Ave	0.5141	0.5293		206	200	103	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.084	1.032		38.1	40.0	95	79-127

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Feb-2021 02:53:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00047
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:49:33 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk Date: 03-Feb-2021 14:17:21

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.836	2409103	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.883	3588623	0.79	1.5437	96.5	96.5	0.5766	0.5766	96.50	
2,3,7,8-TCDF	19.908	1648022	0.80	1.1258	40.8	40.8	0.1176	0.1176	102	
A Non-2,3,7,8-sub-TCDF	19.530	15707	0.74	1.1258	0.3888	0.3888	0.1176	0.3888		
S Total TCDF					41.2	41.2	0.1176	0.1176		
$ 37Cl4-2,3,7,8-TCDD	21.248	994904		1.0841	38.1	38.1	0.0753	0.0753	95.23	
D 13C-2,3,7,8-TCDD	21.213	2193132	0.83	0.9687	94.0	94.0	0.4741	0.4741	93.97	
2,3,7,8-TCDD	21.248	1114870	0.80	1.1904	42.7	42.7	0.1319	0.1319	107	
A Non-2,3,7,8-sub-TCDD	20.354	23855	0.88	1.1904	0.9138	0.9138	0.1319	0.9138		
S Total TCDD					43.6	43.6	0.1319	0.1319		
D 13C-1,2,3,7,8-PeCDF	26.882	3098528	1.60	1.3124	98.0	98.0	0.4475	0.4475	98.00	
1,2,3,7,8-PeCDF	26.907	6767414	1.57	1.1163	195.7	195.7	0.9266	0.9266	97.83	
D 13C-2,3,4,7,8-PeCDF	28.381	3211254	1.58	1.3352	99.8	99.8	0.4398	0.4398	99.84	
2,3,4,7,8-PeCDF	28.406	7482175	1.57	1.0579	220.2	220.2	1.018	1.018	110	
A F1 PeCDFs	24.346						0.0595	0.0595		
A Non-2,3,7,8-sub-PeCDF	27.769	164879	1.66	1.0871	4.807	4.807	0.9705	4.807		
S Total PeCDF					420.7	420.7	0.9722	0.9722		
D 13C-1,2,3,7,8-PeCDD	29.180	1727881	1.58	0.7716	93.0	93.0	0.2064	0.2064	92.96	
1,2,3,7,8-PeCDD	29.206	3845057	1.58	1.1372	195.7	195.7	0.2520	0.2520	97.84	
A Non-2,3,7,8-sub-PeCDD	28.086						0.2520	0.2520		n
S Total PeCDD					195.7	195.7	0.2520	0.2520		
D 13C-1,2,3,4,7,8-HxCDF	34.641	2953118	0.54	1.0931	108.6	108.6	0.3857	0.3857	109	
1,2,3,4,7,8-HxCDF	34.666	7072438	1.28	1.1831	202.4	202.4	0.8508	0.8508	101	
D 13C-1,2,3,6,7,8-HxCDF	34.818	2961911	0.53	1.1278	105.6	105.6	0.3739	0.3739	106	
1,2,3,6,7,8-HxCDF	34.835	7590410	1.28	1.2484	205.3	205.3	0.8156	0.8156	103	
D 13C-2,3,4,6,7,8-HxCDF	35.660	2802018	0.54	1.0552	106.7	106.7	0.3996	0.3996	107	
2,3,4,6,7,8-HxCDF	35.677	7386467	1.27	1.2750	206.8	206.8	0.7534	0.7534	103	
D 13C-1,2,3,7,8,9-HxCDF	36.578	2555789	0.54	0.9938	103.4	103.4	0.4243	0.4243	103	
1,2,3,7,8,9-HxCDF	36.595	6414607	1.29	1.2953	193.8	193.8	0.7438	0.7438	96.88	
A Non-2,3,7,8-sub-HxCDF	34.733						0.7889	0.7889		

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					808.2	808.2	0.7909	0.7909		
* 13C-1,2,3,7,8,9-HxCDD	36.376	2487760	1.27	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.879	1981272	1.31	0.7895	100.9	100.9	0.3583	0.3583	101	
1,2,3,4,7,8-HxCDD	35.896	4440023	1.27	1.0950	204.7	204.7	0.3950	0.3950	102	
D 13C-1,2,3,6,7,8-HxCDD	36.005	2117900	1.31	0.8495	100.2	100.2	0.3330	0.3330	100	
1,2,3,6,7,8-HxCDD	36.014	4746995	1.24	1.0201	219.7	219.7	0.4042	0.4042	110	
1,2,3,7,8,9-HxCDD	36.393	4715343	1.25	1.1549	199.2	199.2	0.3656	0.3656	99.61	
A Non-2,3,7,8-sub-HxCDD	35.125						0.3873	0.3873		
S Total HxCDD					623.6	623.6	0.3883	0.3883		
D 13C-1,2,3,4,6,7,8-HpCDF	38.419	2032682	0.46	0.7854	104.0	104.0	0.4019	0.4019	104	
1,2,3,4,6,7,8-HpCDF	38.436	6385430	1.05	1.4859	211.4	211.4	0.5529	0.5529	106	
D 13C-1,2,3,4,7,8,9-HpCDF	39.682	1938295	0.47	0.7230	107.8	107.8	0.4366	0.4366	108	
1,2,3,4,7,8,9-HpCDF	39.699	5229185	1.06	1.4048	192.0	192.0	0.5791	0.5791	96.02	
A Non-2,3,7,8-sub-HpCDF	39.059						0.5656	0.5656		
S Total HpCDF					403.5	403.5	0.5660	0.5660		
D 13C-1,2,3,4,6,7,8-HpCDD	39.379	1648504	1.11	0.6413	103.3	103.3	0.2612	0.2612	103	
1,2,3,4,6,7,8-HpCDD	39.388	3826135	1.05	1.1489	202.0	202.0	0.3712	0.3712	101	
A Non-2,3,7,8-sub-HpCDD	39.339	32170	1.04	1.1489	1.925	1.698	0.3712	1.698		RQ
S Total HpCDD					203.9	203.7	0.3712	0.3712		RQ
D 13C-OCDD	41.833	2633364	0.93	0.5141	205.9	205.9	0.3049	0.3049	103	
OCDF	41.926	8332814	0.93	1.5776	401.1	401.1	0.2427	0.2427	100	
OCDD	41.842	6298471	0.91	1.1706	408.7	408.7	0.2465	0.2465	102	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00047 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Feb-2021 02:53:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00047
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:49:33 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk Date: 03-Feb-2021 14:17:21

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.836	20.862	-2		1076255	154225	435	1087	355		
333.9338	20.844	20.862	-1		1332848	197410	211	527	936	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.883	19.975	-6	0.954	1579736	244015	867	2167	281		
317.9389	19.883	19.975	-6	0.954	2008887	309080	385	962	803	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.908	20.018	-7	1.001	730568	112418	145	362	775		
305.8987	19.908	20.018	-7	1.001	917454	138857	148	370	938	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.706	19.530	-49	0.941	6657	1126	145	362	8		
305.8987	18.706	19.530	-49	0.941	9050	1641	148	370	11	0.74(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.248	21.249	0	1.020	994904	137275	115	287	1194		
13C-2,3,7,8-TCDD											
331.9368	21.213	21.299	-5	1.018	997753	141716	435	1087	326		
333.9338	21.213	21.299	-5	1.018	1195379	170447	211	527	808	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.248	21.325	-5	1.002	494676	69664	125	312	557		
321.8936	21.248	21.325	-5	1.002	620194	86039	71	177	1212	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	21.076	20.354	43	0.994	11173	1683	125	312	13		
321.8936	21.068	20.354	43	0.993	12682	2430	71	177	34	0.88(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.882	26.856	2	1.290	1907484	324529	483	1207	672		
353.8970	26.882	26.856	2	1.290	1191044	198708	343	857	579	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.907	26.882	2	1.001	4133636	692831	1281	3202	541		
341.8567	26.899	26.882	1	1.001	2633778	434604	884	2210	492	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.381	28.339	2	1.362	1966804	309012	483	1207	640		
353.8970	28.381	28.339	2	1.362	1244450	193651	343	857	565	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.406	28.364	2	1.001	4570281	715619	1281	3202	559		
341.8567	28.406	28.364	2	1.001	2911894	455044	884	2210	515	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.346						33	82			
341.8567	24.346						100	250			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.488	27.769	-17	1.023	102785	17044	1281	3202	13		
341.8567	27.496	27.769	-16	1.023	62094	10776	884	2210	12	1.66(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.180	29.139	2	1.401	1058939	159503	138	345	1156		
369.8919	29.172	29.139	2	1.400	668942	95948	86	215	1116	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.206	29.164	2	1.001	2356502	352971	193	482	1829		
357.8516	29.206	29.164	2	1.001	1488555	218967	100	250	2190	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.345	28.002	-39	0.937	5998	910	193	482	5		
357.8516	27.320	28.002	-41	0.936	3686	651	100	250	7	1.63(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.641	34.614	2	0.952	1029970	230212	399	997	577		
385.8610	34.649	34.614	2	0.953	1923148	432623	774	1935	559	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.666	34.639	2	1.001	3970580	881431	1505	3762	586		
375.8178	34.666	34.639	2	1.001	3101858	682201	1164	2910	586	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.818	34.791	2	0.957	1026036	230774	399	997	578		
385.8610	34.818	34.791	2	0.957	1935875	424528	774	1935	548	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.835	34.807	2	1.000	4254452	917824	1505	3762	610		
375.8178	34.835	34.807	2	1.000	3335958	718559	1164	2910	617	1.28(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.660	35.641	1	0.980	986279	247817	399	997	621		
385.8610	35.668	35.641	2	0.981	1815739	446742	774	1935	577	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.677	35.658	1	1.000	4137744	1011122	1505	3762	672		
375.8178	35.677	35.658	1	1.000	3248723	799857	1164	2910	687	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.578	36.559	1	1.006	895856	240270	399	997	602		
385.8610	36.578	36.559	1	1.006	1659933	452293	774	1935	584	0.54(0.43-0.59)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.595	36.576	1	1.000	3613788	961868	1505	3762	639		
375.8178	36.595	36.576	1	1.000	2800819	746122	1164	2910	641	1.29(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.733						1505	3762			
375.8178	34.733						1164	2910			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.376	36.357	1		1392185	388121	454	1135	855		
403.8529	36.376	36.357	1		1095575	307245	333	832	923	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.879	35.860	1	0.986	1123071	301234	454	1135	664		
403.8529	35.879	35.860	1	0.986	858201	228701	333	832	687	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.896	35.877	1	1.000	2488132	659788	519	1297	1271		
391.8127	35.896	35.877	1	1.000	1951891	528507	398	995	1328	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.005	35.986	1	0.990	1202722	318069	454	1135	701		
403.8529	36.005	35.986	1	0.990	915178	237751	333	832	714	1.31(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.014	35.995	1	1.000	2628073	675942	519	1297	1302		
391.8127	36.014	35.995	1	1.000	2118922	544070	398	995	1367	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.393	36.373	1	1.014	2619623	718576	519	1297	1385		
391.8127	36.393	36.373	1	1.014	2095720	578634	398	995	1454	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.125						519	1297			
391.8127	35.125						398	995			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.419	38.414	0	1.056	644080	215229	481	1202	447		
419.8220	38.419	38.414	0	1.056	1388602	481871	397	992	1214	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.436	38.423	1	1.000	3271296	1084098	1242	3105	873		
409.7788	38.428	38.423	0	1.000	3114134	1035926	1049	2622	988	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.682	39.677	0	1.091	621569	224934	481	1202	468		
419.8220	39.682	39.677	0	1.091	1316726	479017	397	992	1207	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.699	39.694	0	1.000	2689574	988045	1242	3105	796		
409.7788	39.699	39.694	0	1.000	2539611	926025	1049	2622	883	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.059						1242	3105			
409.7788	39.059						1049	2622			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.379	39.365	1	1.083	866188	321338	251	627	1280		
437.8140	39.379	39.365	1	1.083	782316	295307	215	537	1374	1.11(0.88-1.20)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.388	39.383	0	1.000	1964000	719853	553	1382	1302		
425.7737	39.388	39.383	0	1.000	1862135	688442	499	1247	1380	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											RQ
423.7767	38.748	39.339	-35	0.984	20690	6575	553	1382	12		
	Empc Correction				16400	5932	553	1382	11		
425.7737	38.748	39.339	-35	0.984	15770	5704	499	1247	11	1.31(0.88-1.20)	
13C-OCDD											
469.7780	41.833	41.828	0	1.150	1268645	444490	240	600	1852		
471.7750	41.833	41.828	0	1.150	1364719	477353	196	490	2435	0.93(0.76-1.02)	
OCDF											
441.7428	41.926	41.929	0	1.002	4016090	1379450	300	750	4598		
443.7399	41.926	41.929	0	1.002	4316724	1476436	406	1015	3637	0.93(0.76-1.02)	
OCDD											
457.7377	41.842	41.836	0	1.000	2995217	1058567	257	642	4119		
459.7348	41.842	41.836	0	1.000	3303254	1153974	275	687	4196	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00047 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Feb-2021 02:53:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	458037	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-TCDF, RT: 19.530

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3588623	553095

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3588623	553095

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.706	6657	1126	9050	1641	0.3888	0.74	n
Signal Totals:							
	6657	1126	9050	1641			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	15707	2767				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3888 = (15707 * 100.000) / (3588623 * 1.126)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Feb-2021 02:53:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	458037	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-TCDD, RT: 20.354

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2193132	312163

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2193132	312163

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.076	11173	1683	12682	2430	0.9138	0.88	
Signal Totals:							
	11173	1683	12682	2430			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	23855	4113				0.88	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.9138 = (23855 * 100.000) / (2193132 * 1.190)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	03-Feb-2021 02:53:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	458037	Lims Sample ID:	9
Sublist:			

Non-2,3,7,8-sub-PeCDF, RT: 27.769

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3098528	523237
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3211254	502663

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3154891	512950

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.488	102785	17044	62094	10776	4.81	1.66	
Signal Totals:							
	102785	17044	62094	10776			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	164879	27820				1.66	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.807 = (164879 * 100.000) / (3154891 * 1.087)

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Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d
Lims ID: ICV
Client ID:
Inject. Date: 03-Feb-2021 02:53:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 458037 Lims Sample ID: 9
Sublist:

Non-2,3,7,8-sub-HpCDD, RT: 39.339

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1648504	616645

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1648504	616645

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.748	20690	6575	15770	5704	1.92	1.31	RQ
38.748	16400	5932	15770	5704	1.70		Empc Correction
Signal Totals:							
	16400	5932	15770	5704			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	36460	12279				1.31	RQ
	32170	11636					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.925 = (36460 * 100.000) / (1648504 * 1.149)
Empc Amount: 1.698 = (32170 * 100.000) / (1648504 * 1.149)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Injection Date:	03-Feb-2021 02:53:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

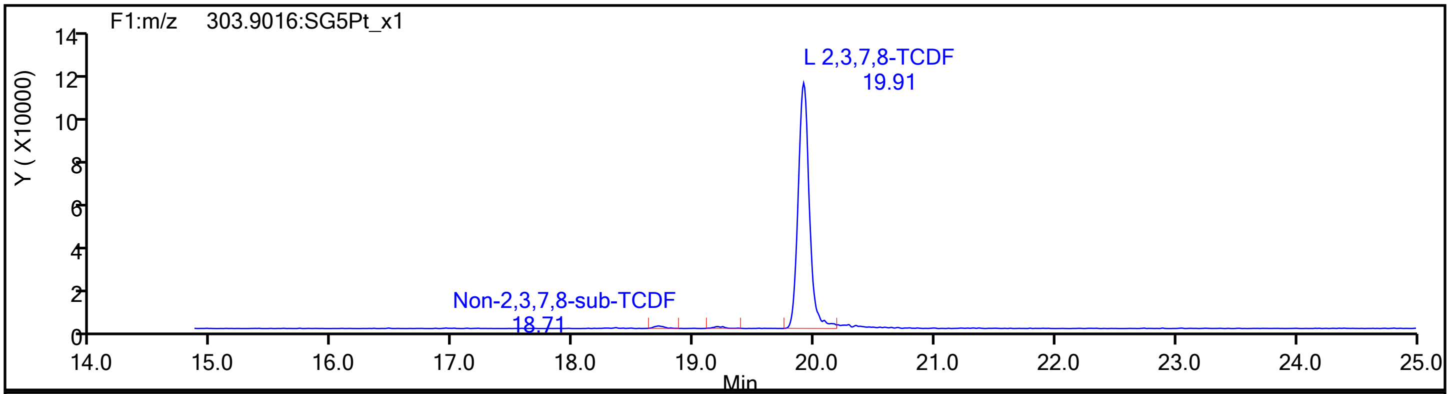

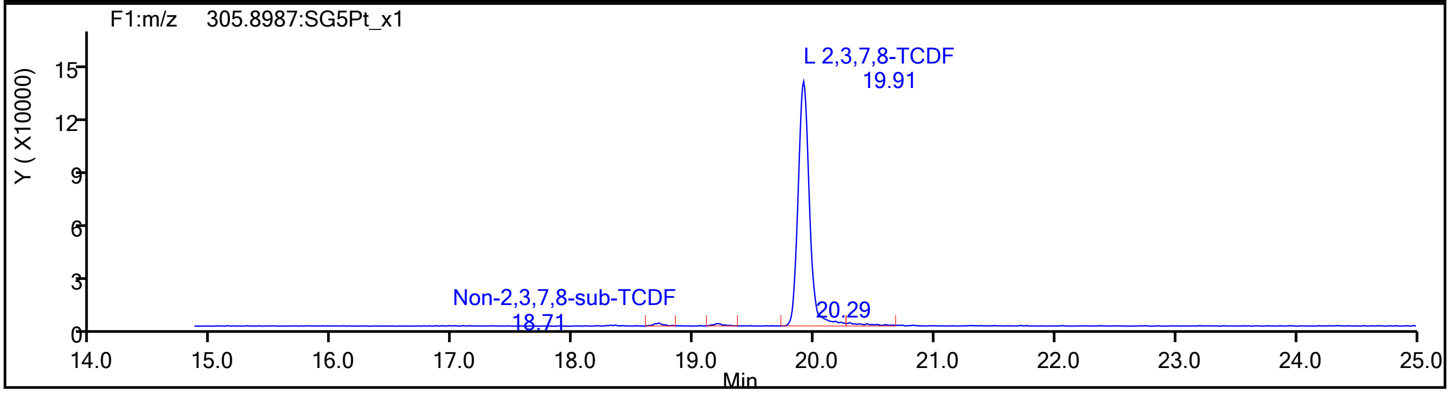

TCDF Standards

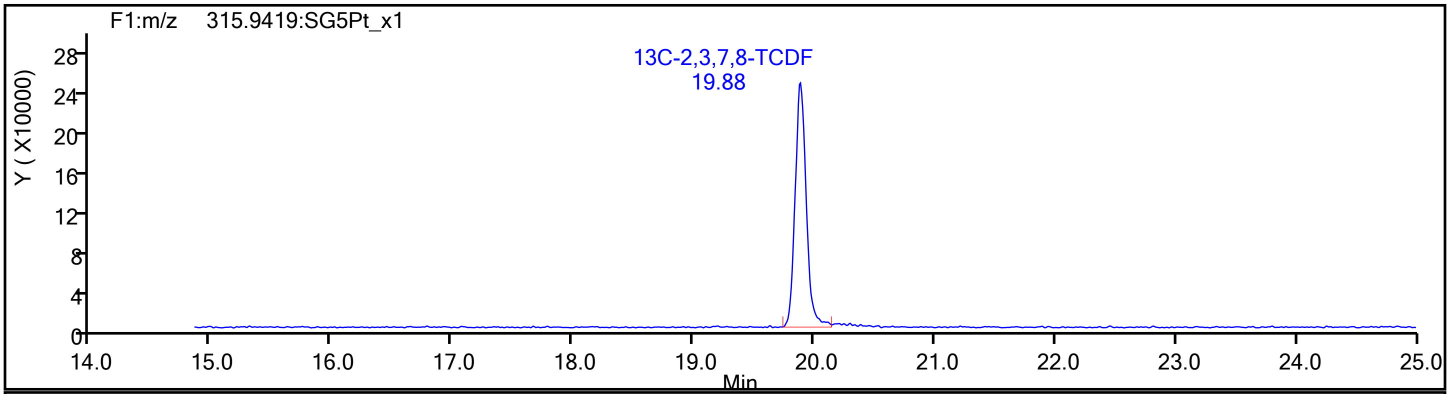

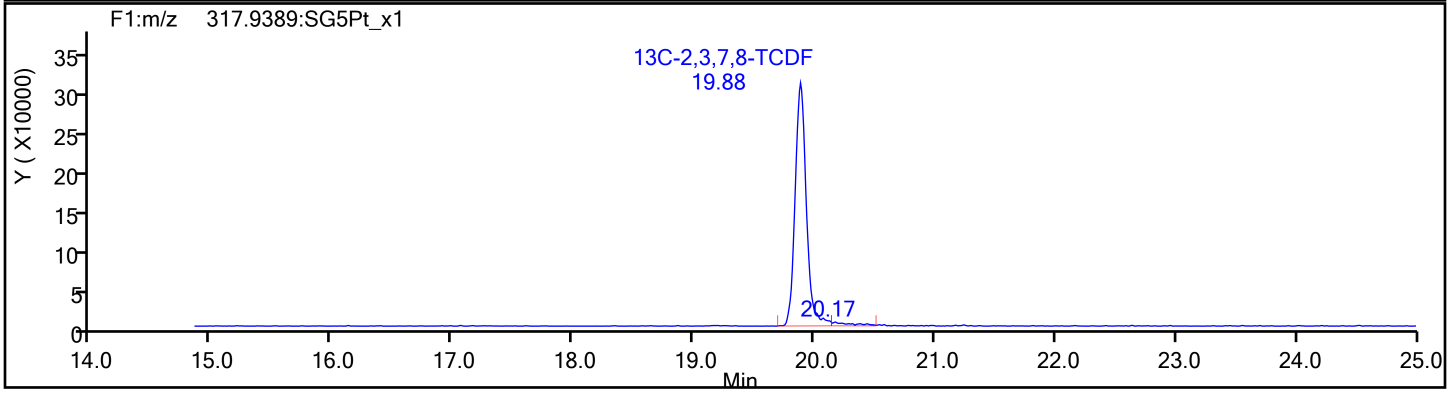

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Injection Date:	03-Feb-2021 02:53:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

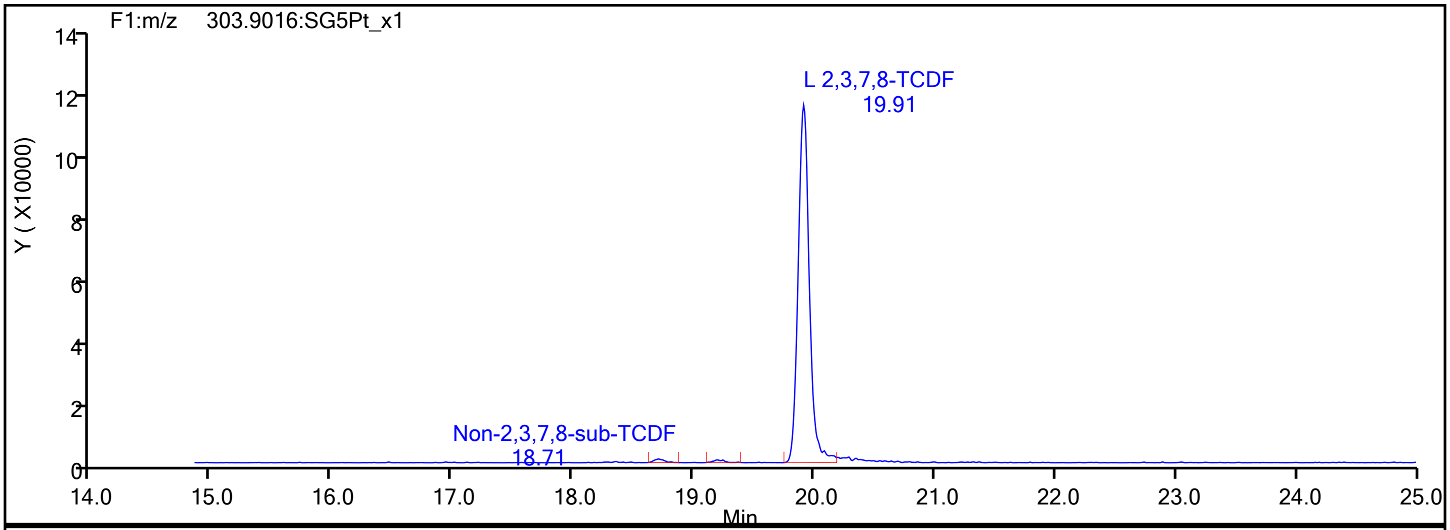

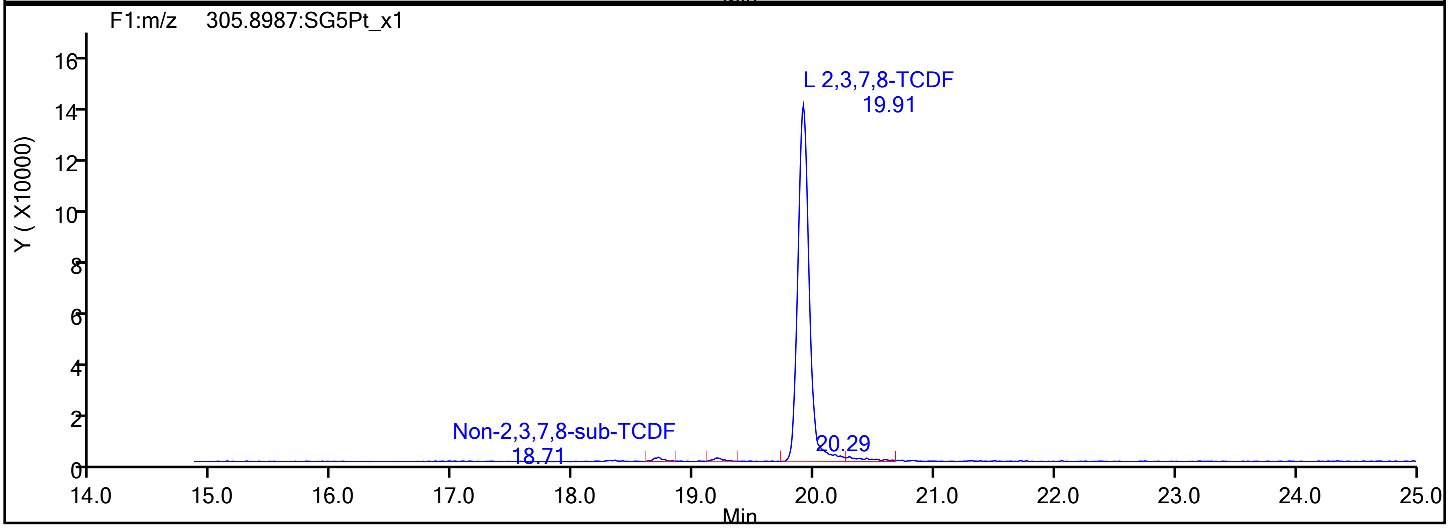

TCDF Interference Mass

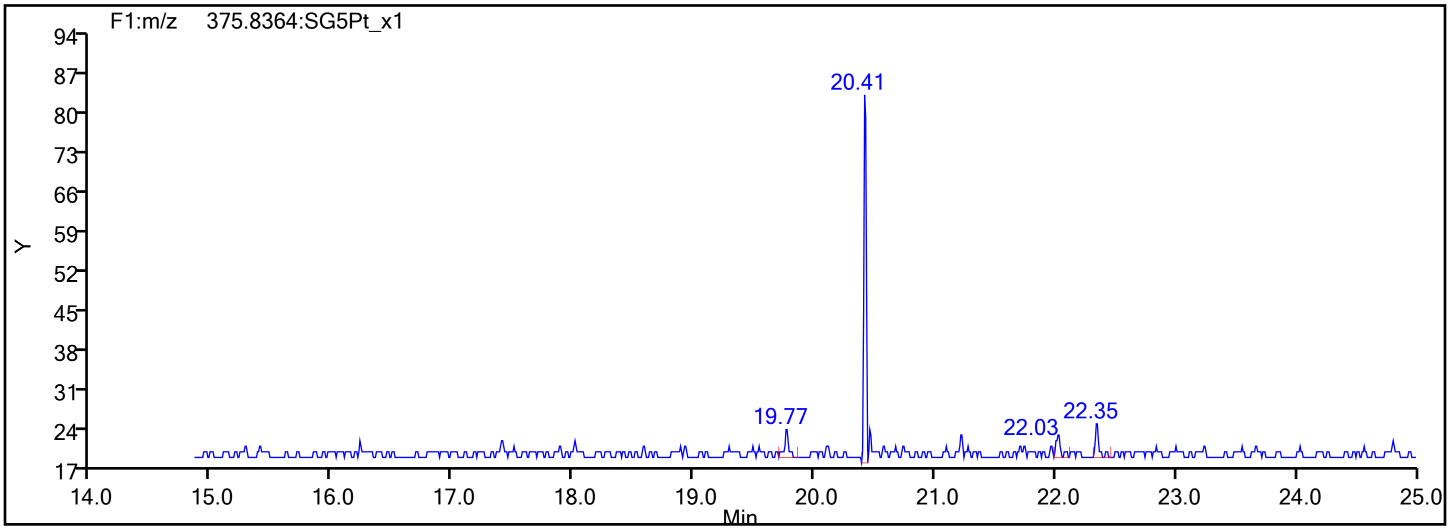

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Injection Date:	03-Feb-2021 02:53:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

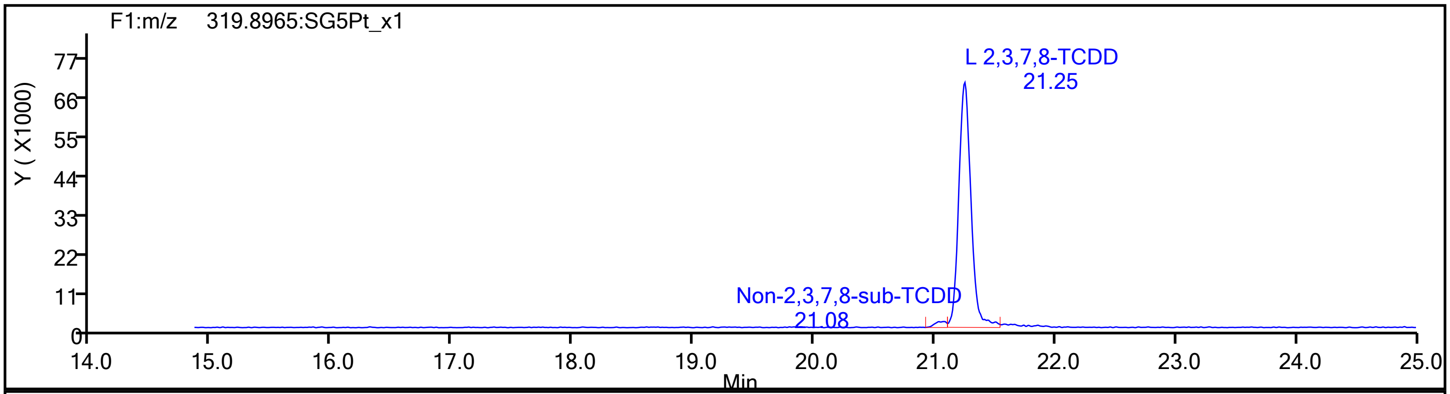

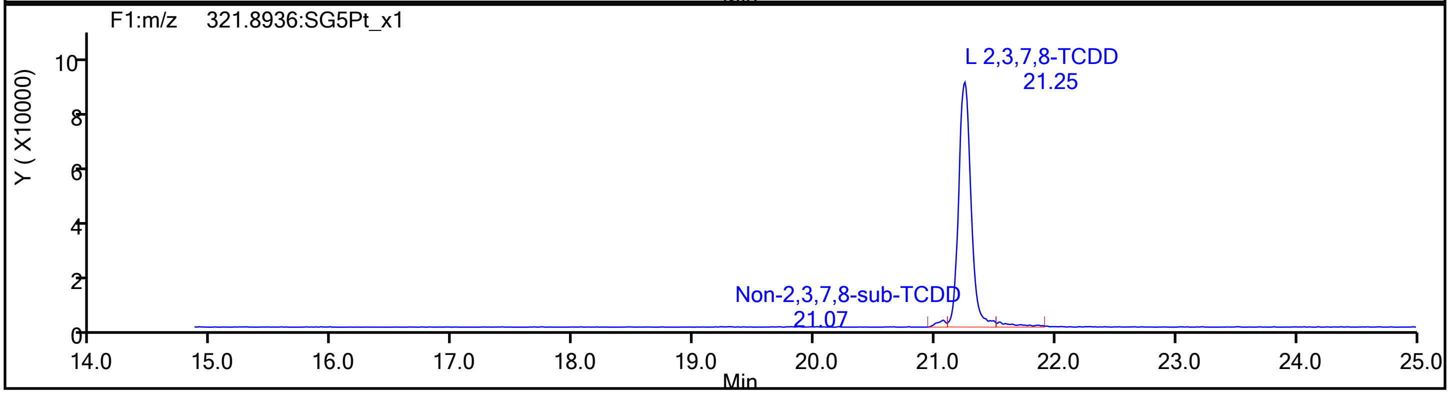

TCDD Standards

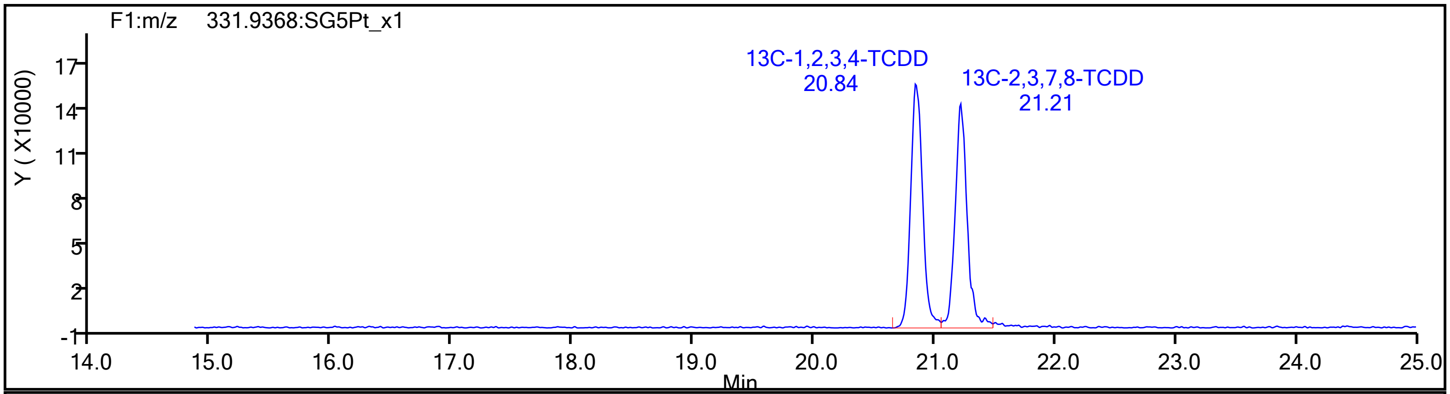

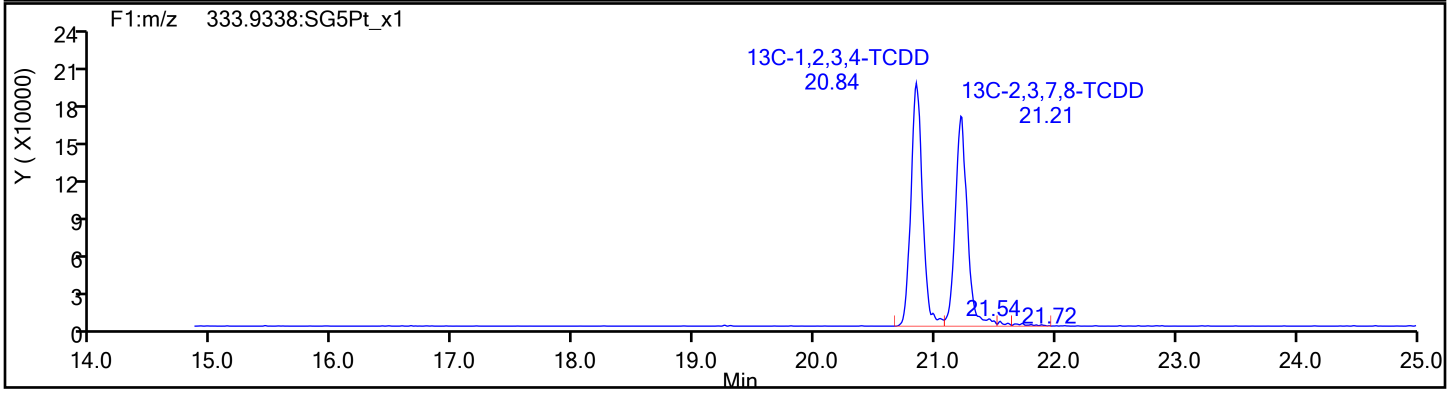

Report Date: 03-Feb-2021 14:49:44 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d

Injection Date: 03-Feb-2021 02:53:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 9
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

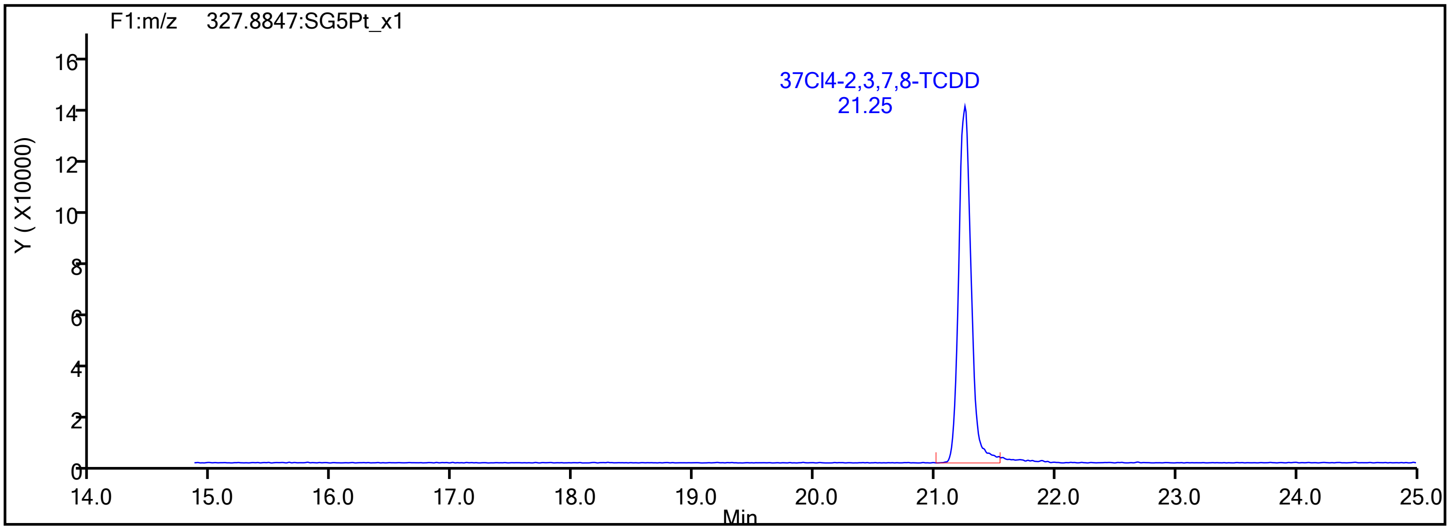

37Cl4-TCDD Standards

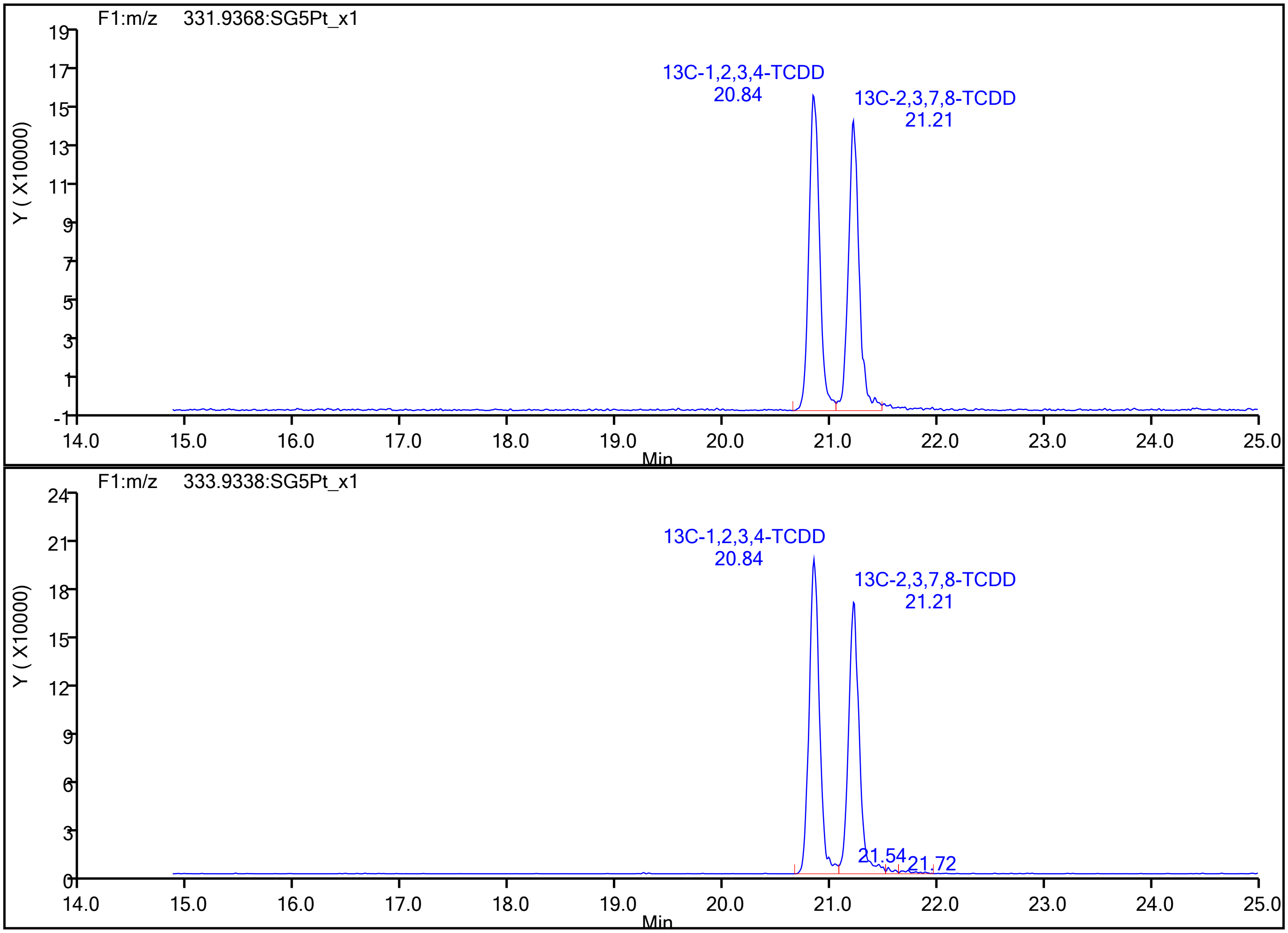

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Eurofins TestAmerica, Sacramento

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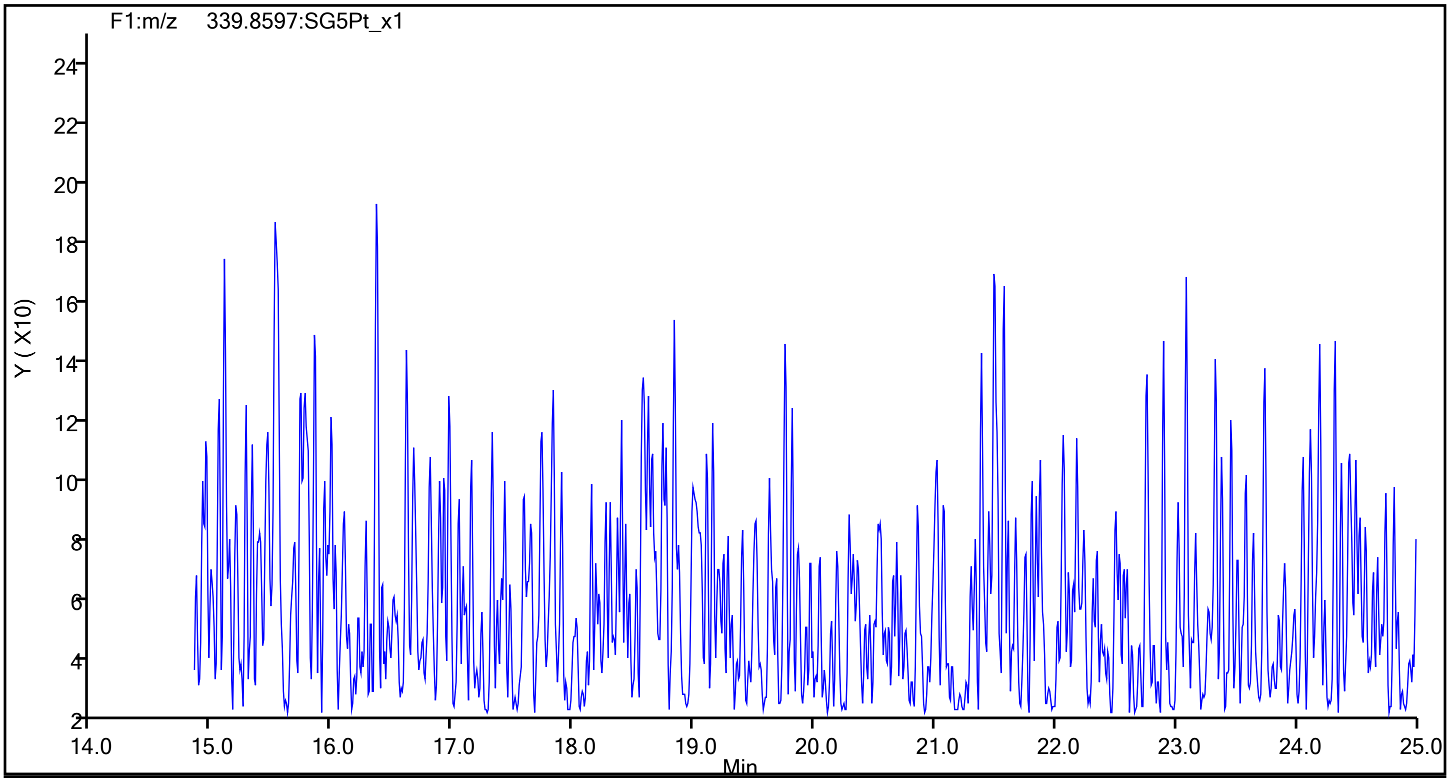

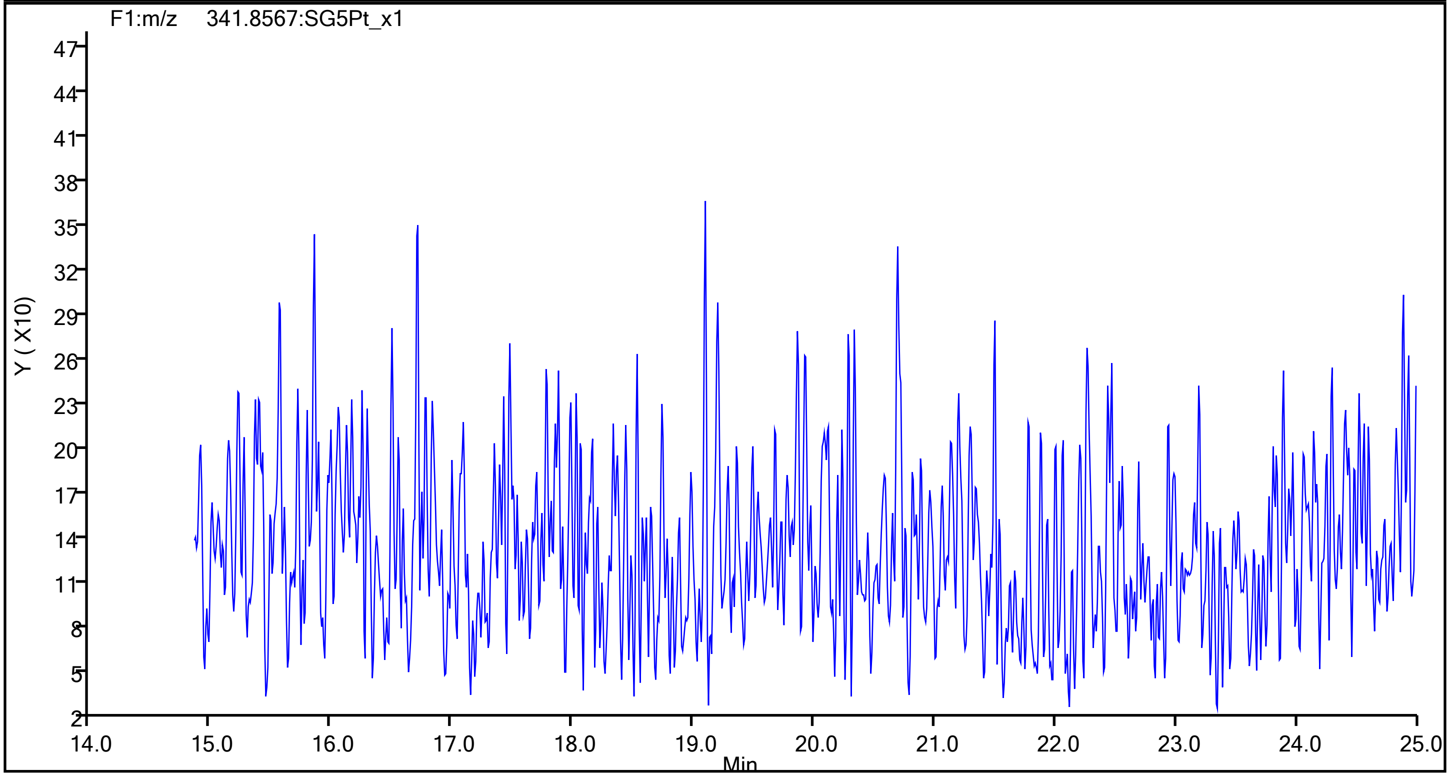

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Eurofins TestAmerica, Sacramento

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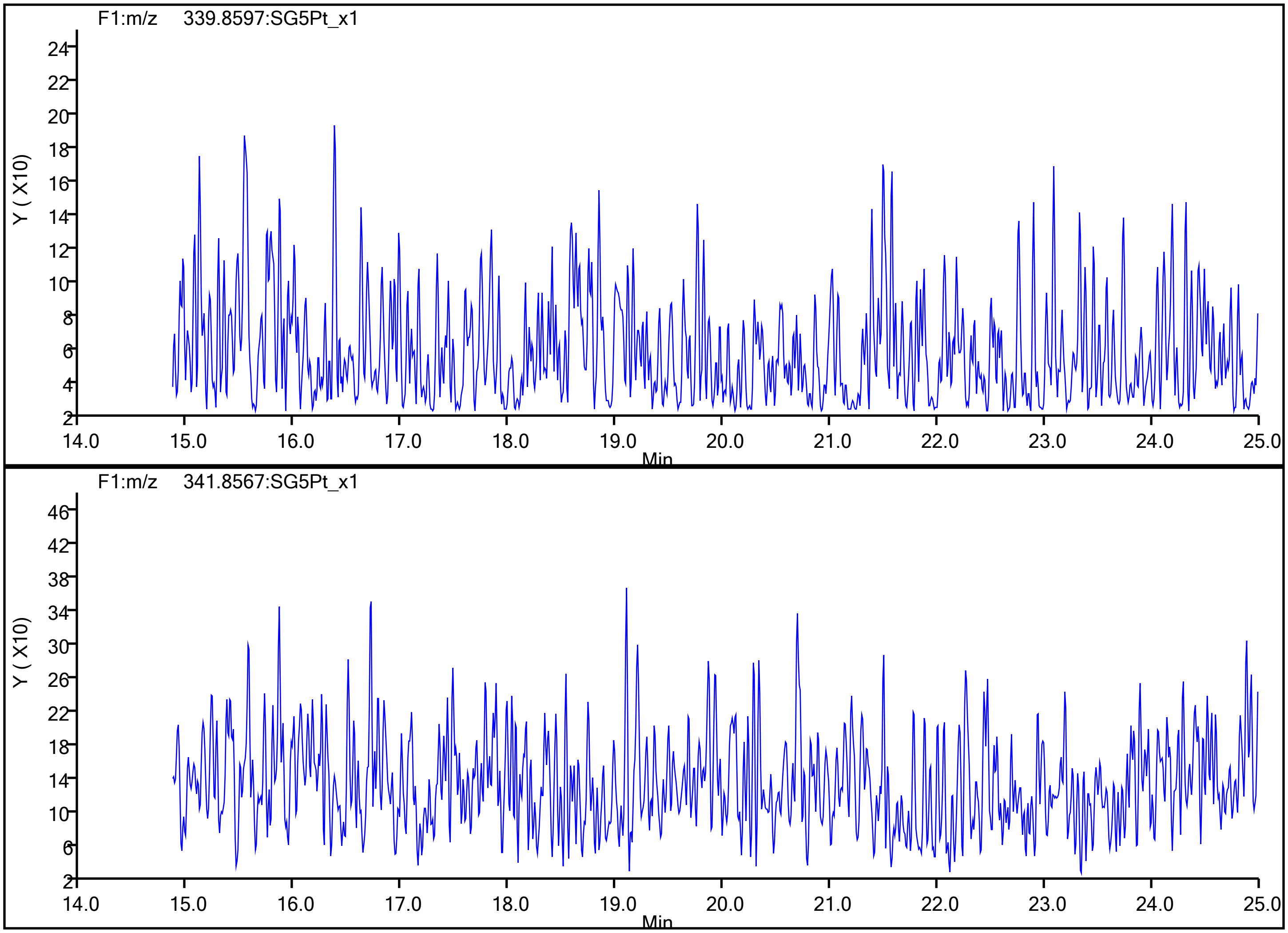

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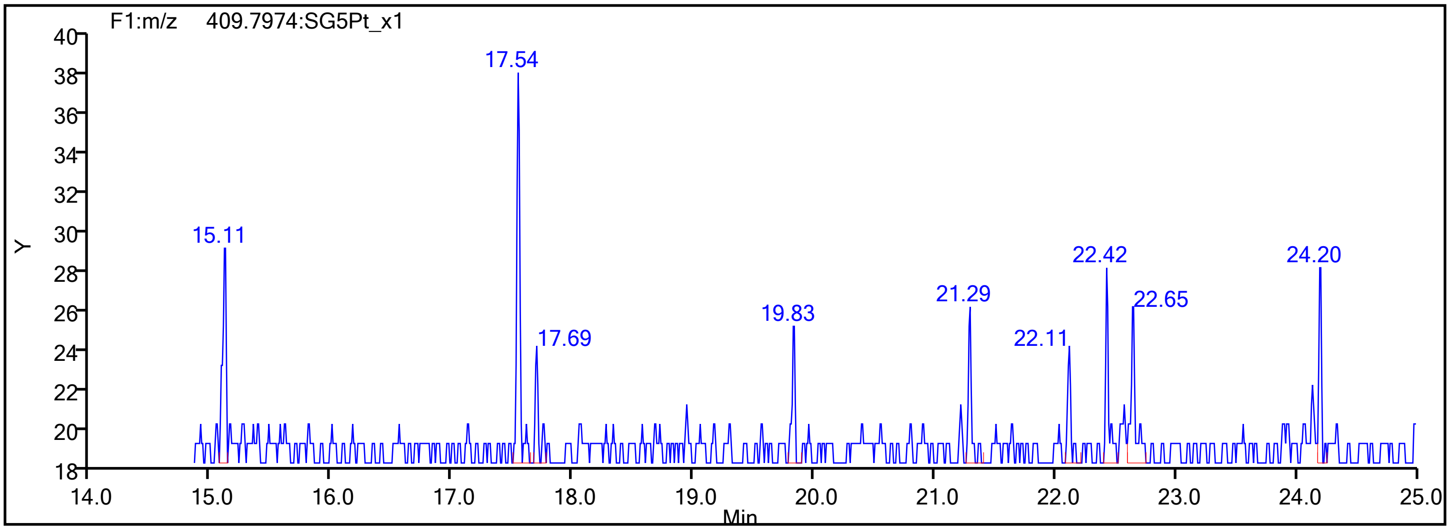

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Eurofins TestAmerica, Sacramento

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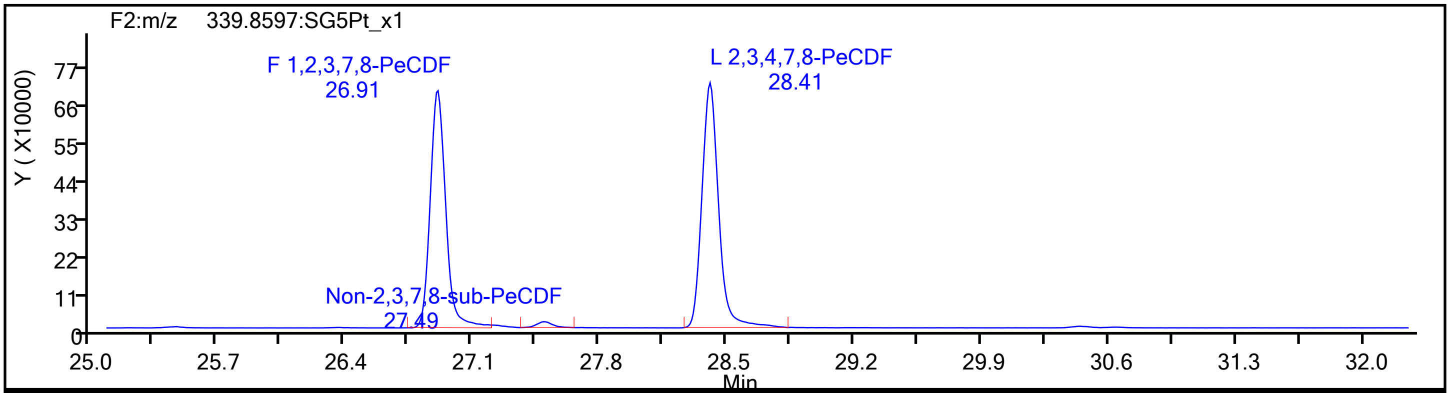

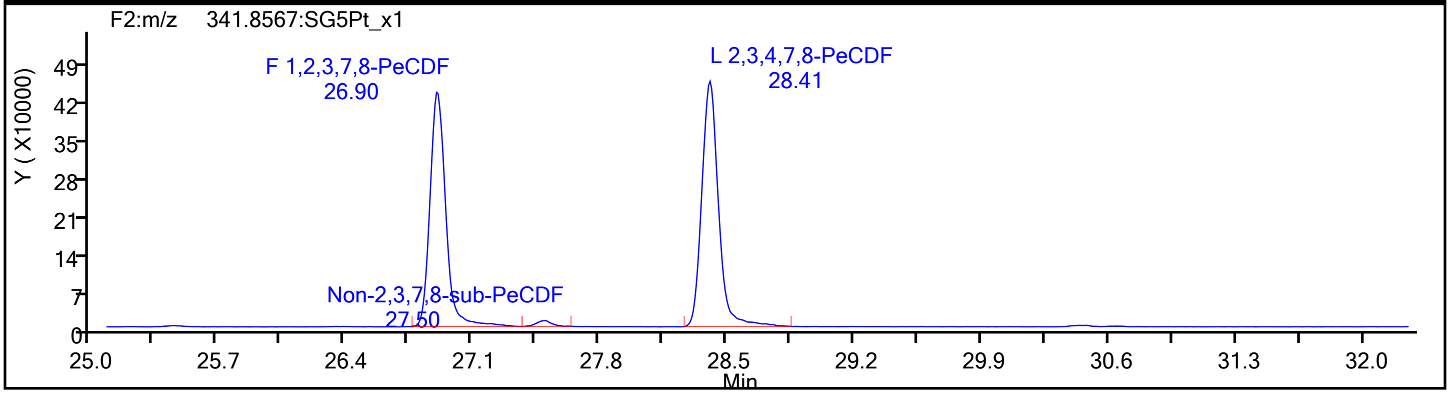

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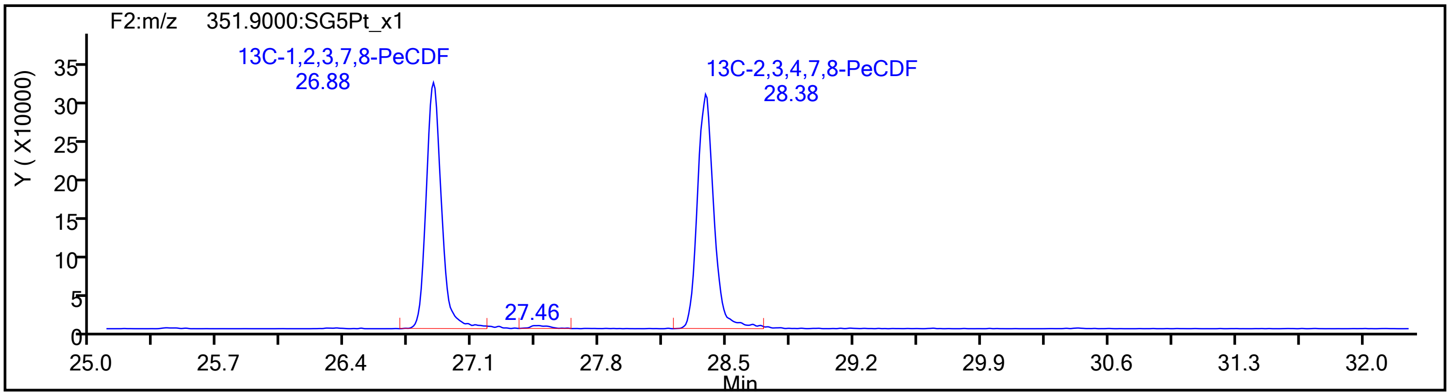

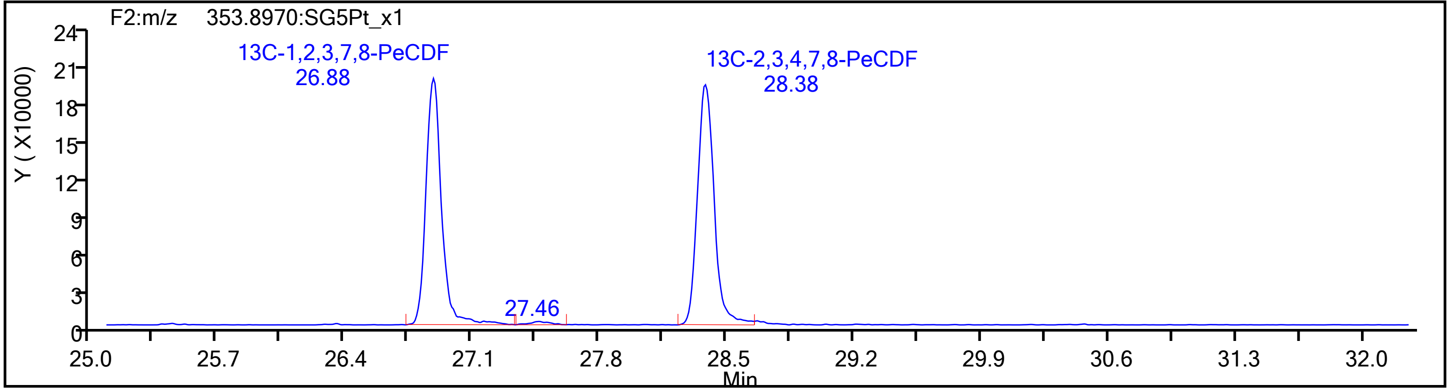

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Eurofins TestAmerica, Sacramento

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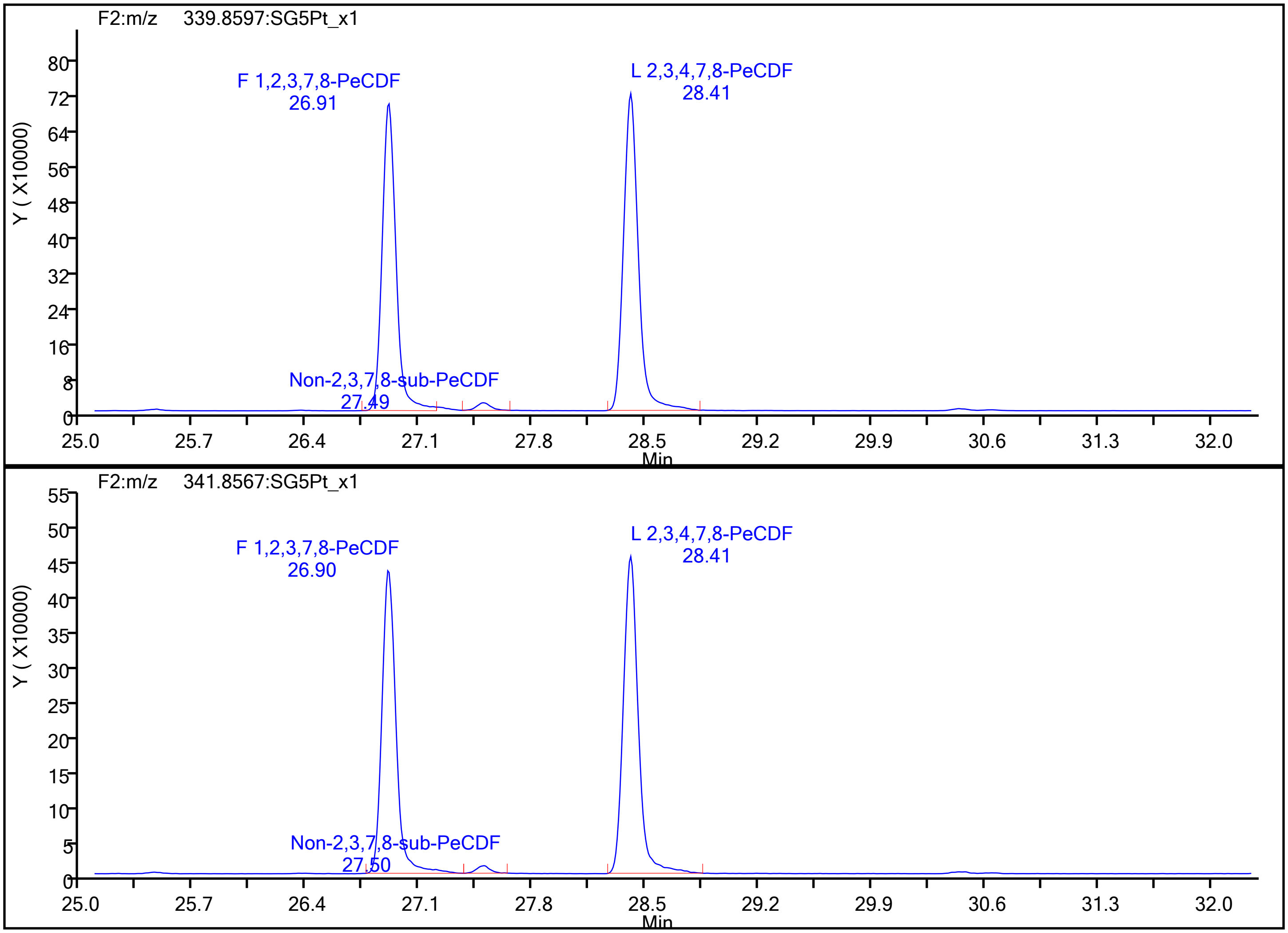

PeCDF Interference Mass

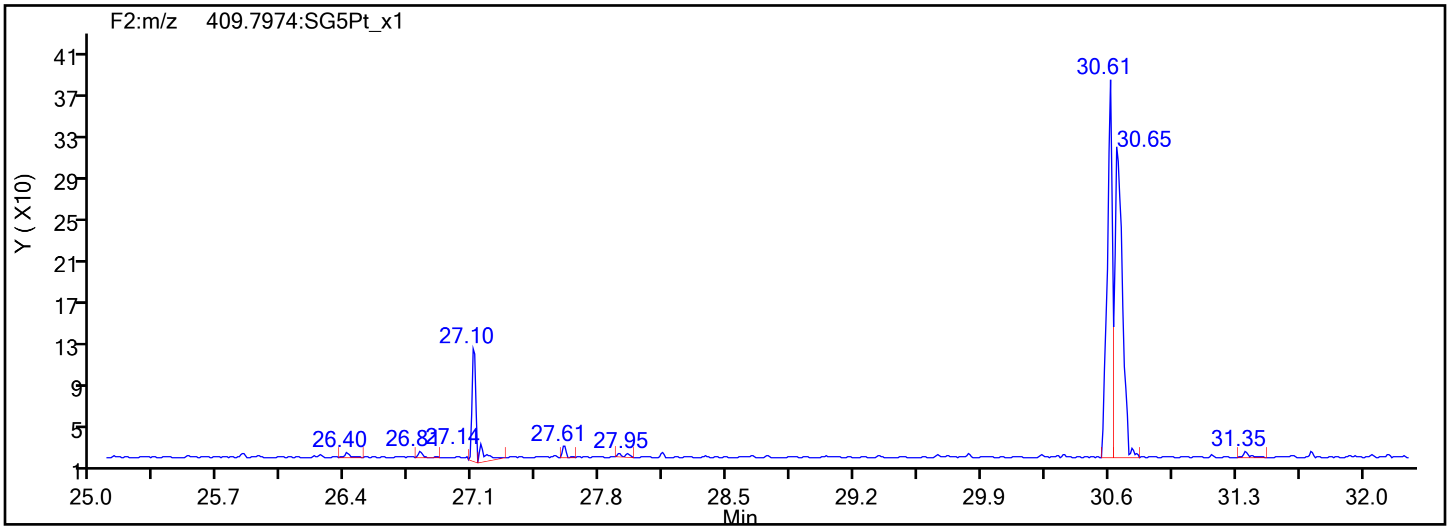

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Eurofins TestAmerica, Sacramento

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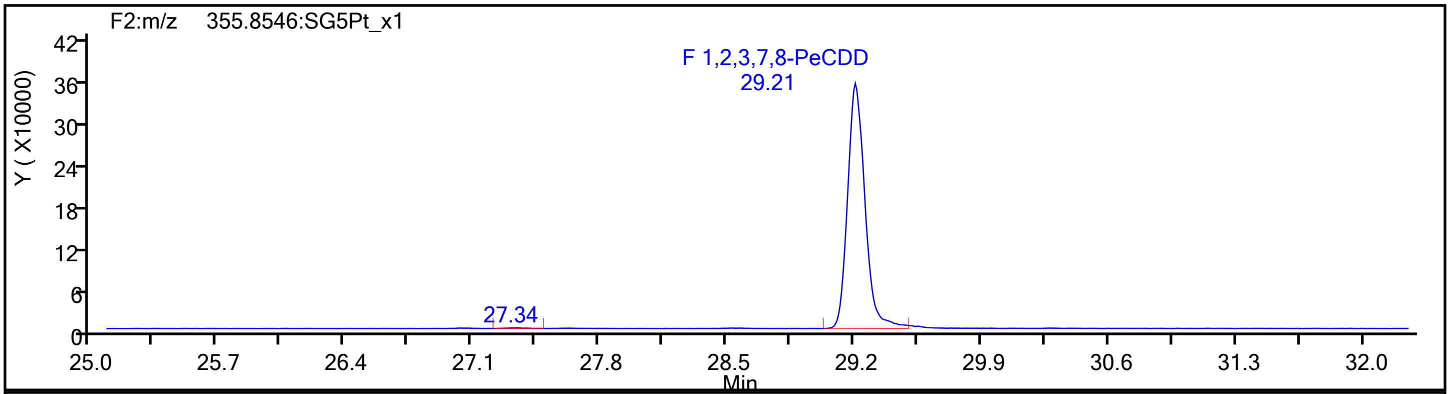

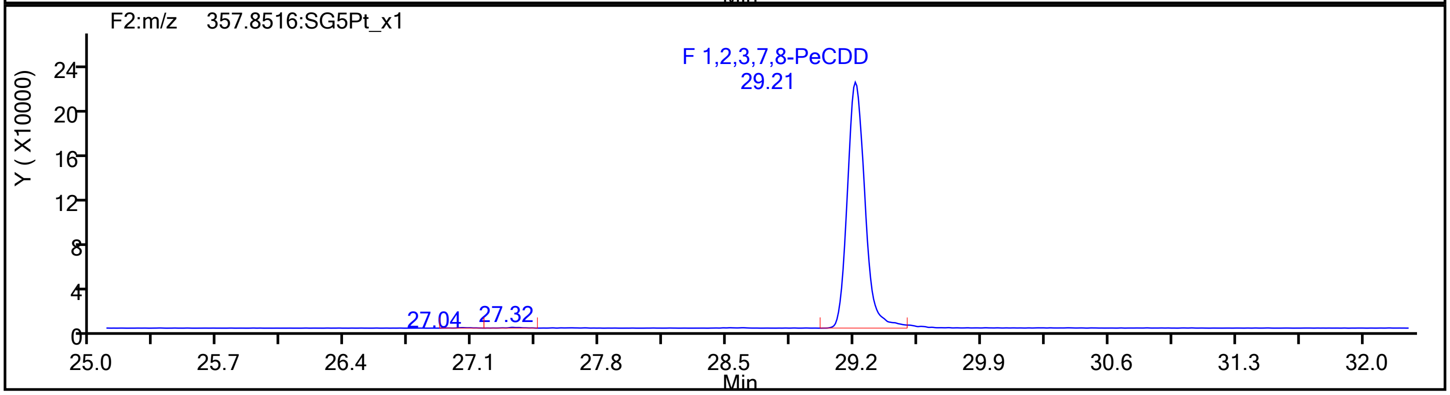

PeCDD Standards

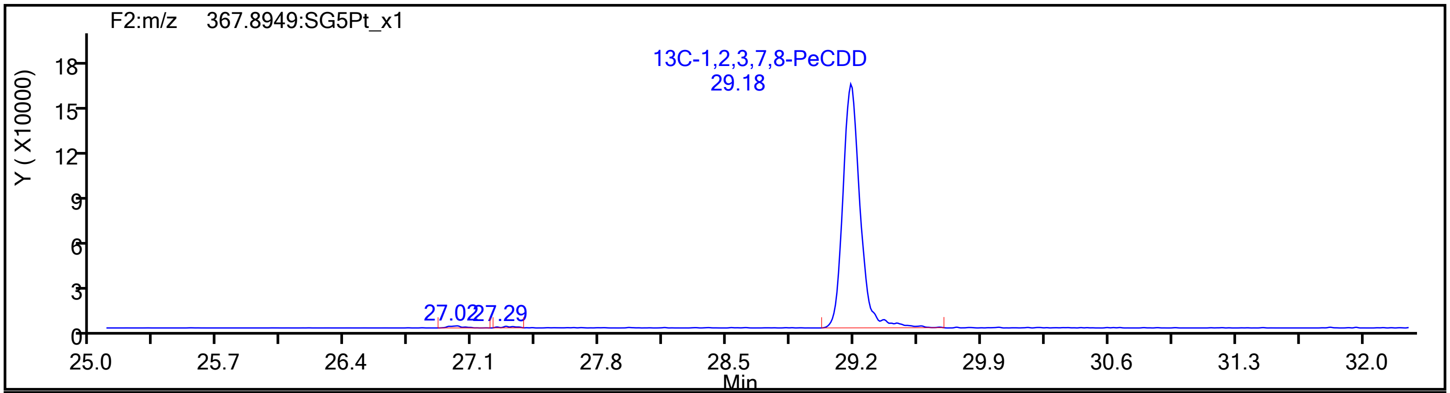

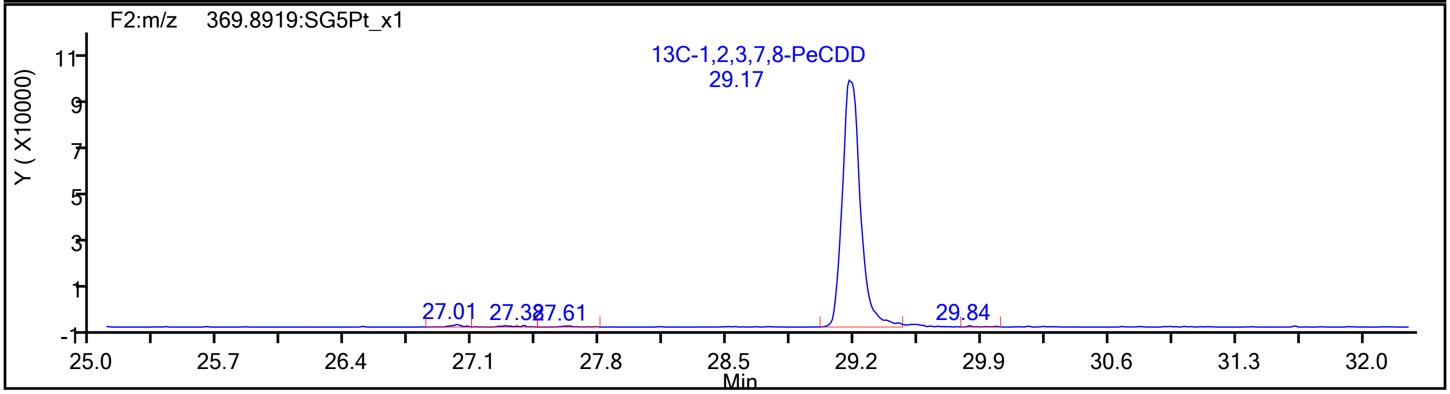

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Eurofins TestAmerica, Sacramento

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HxCDF

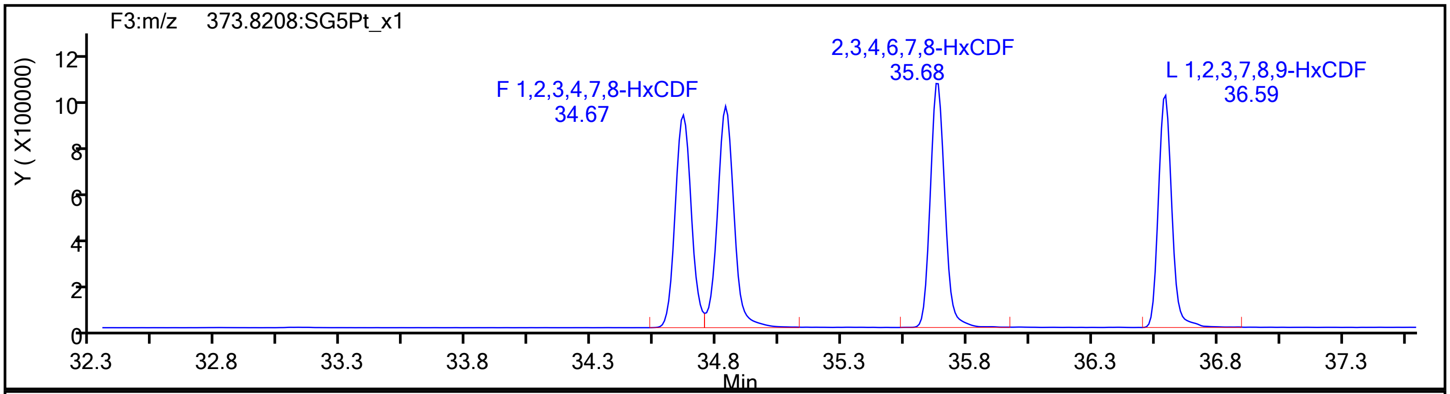

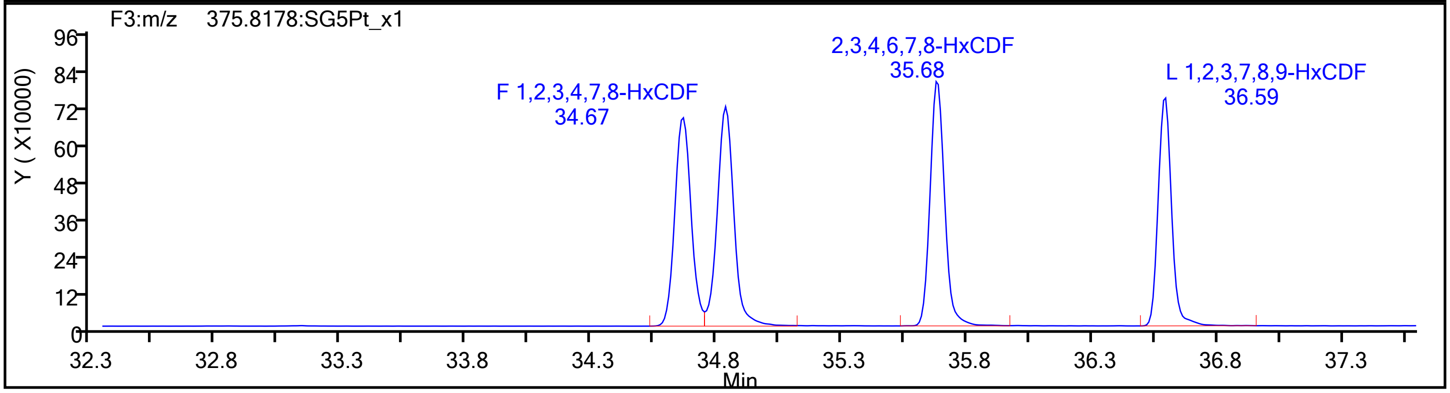

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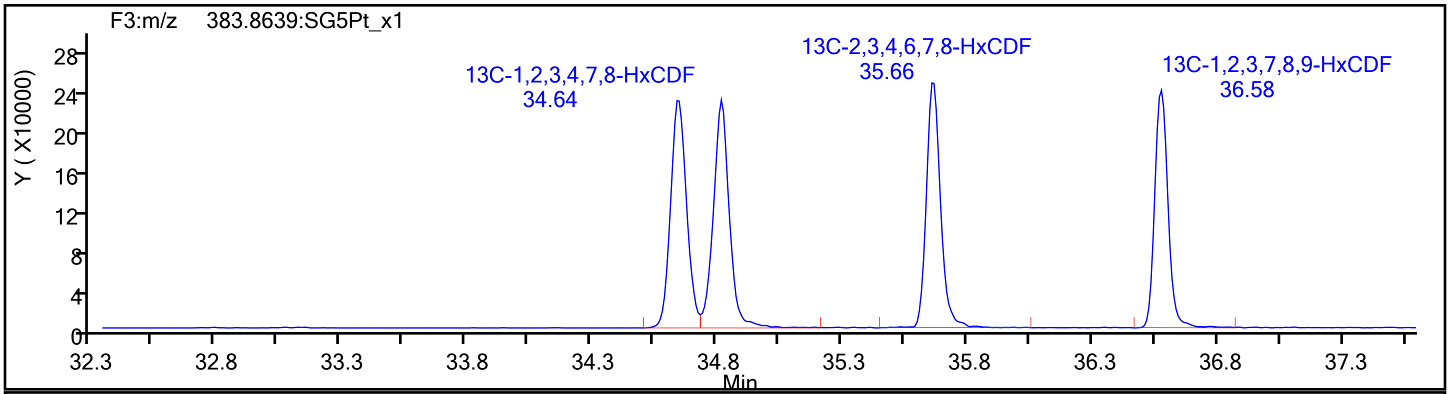

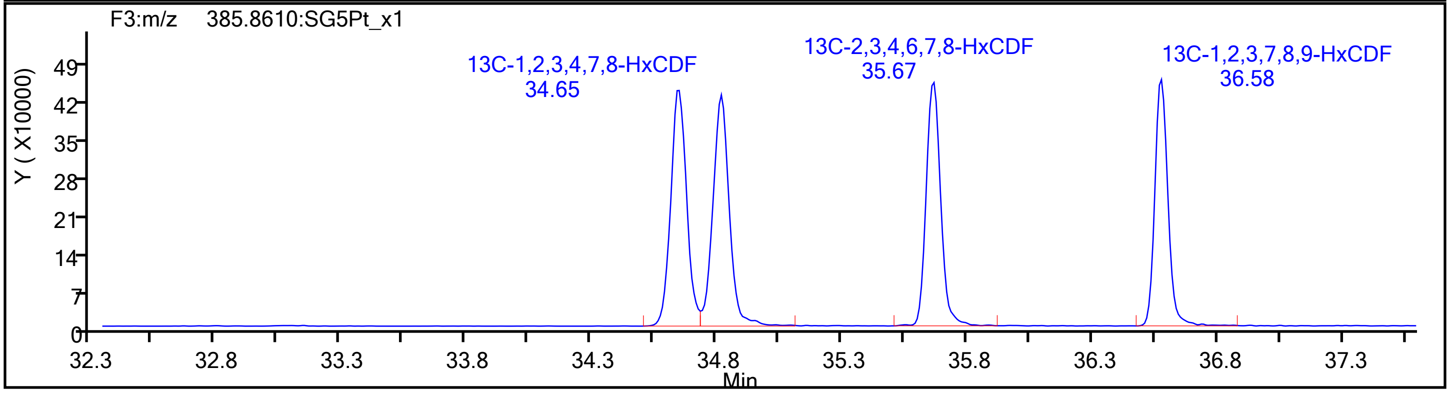

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Eurofins TestAmerica, Sacramento

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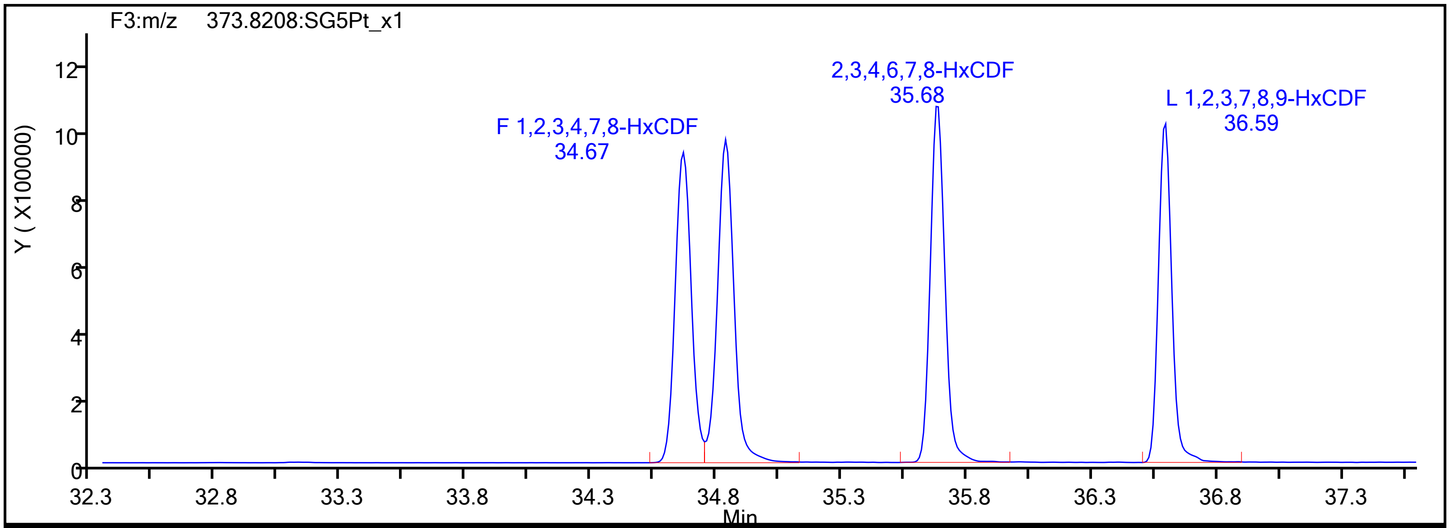

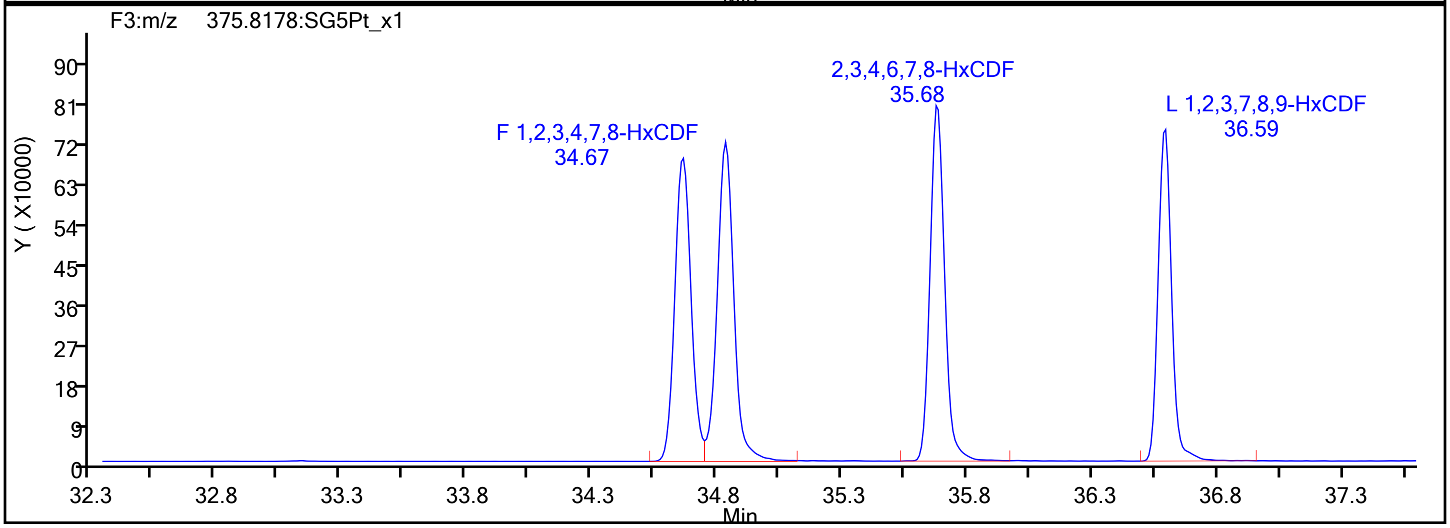

HxCDF Interference Mass

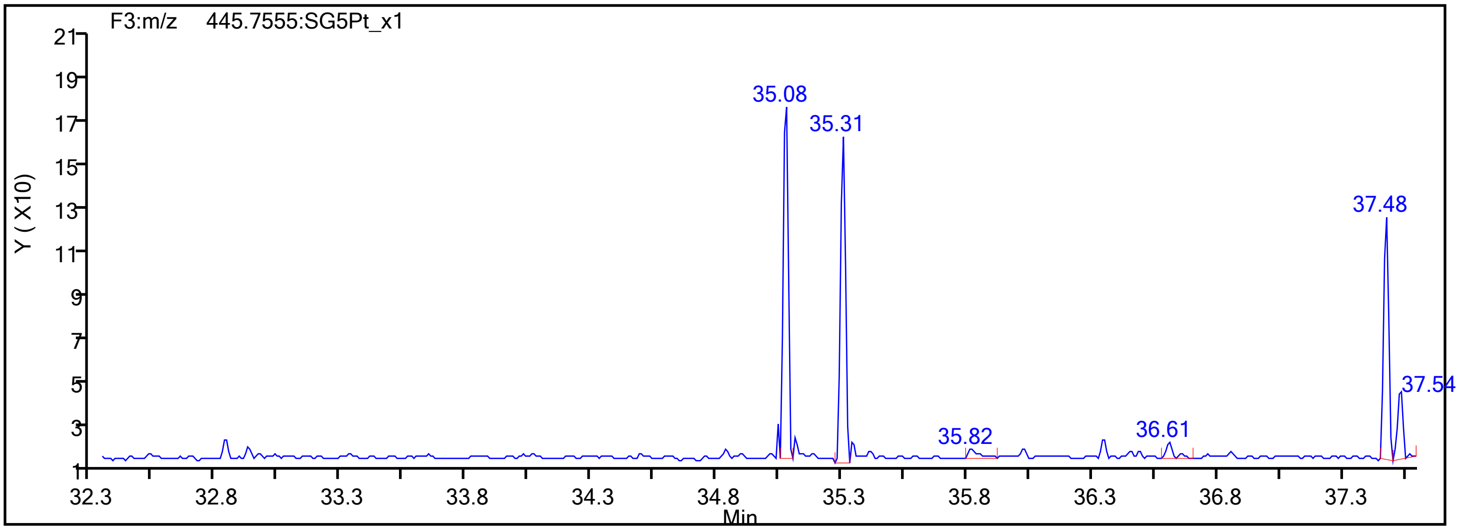

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Eurofins TestAmerica, Sacramento
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HxCDD

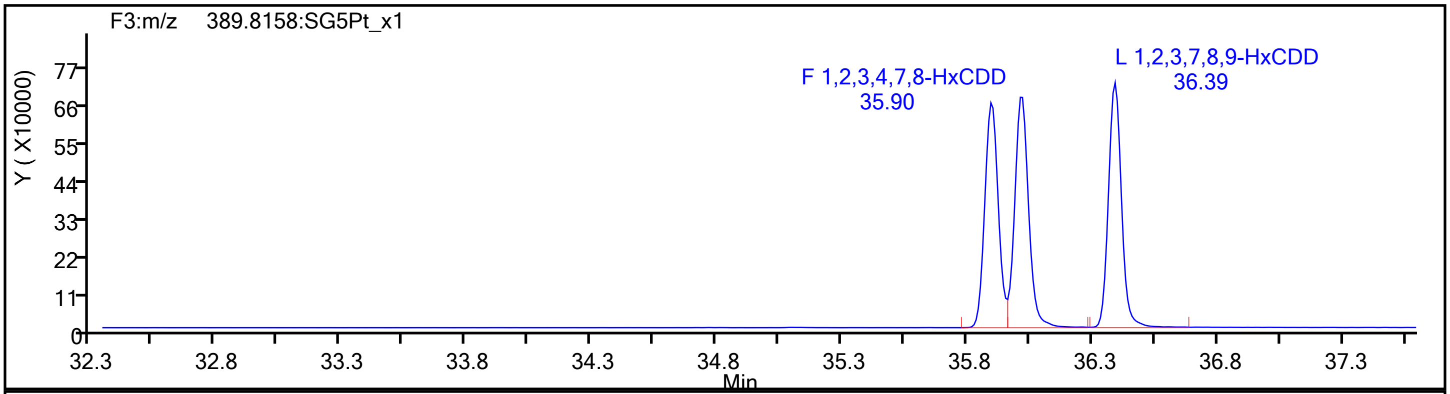

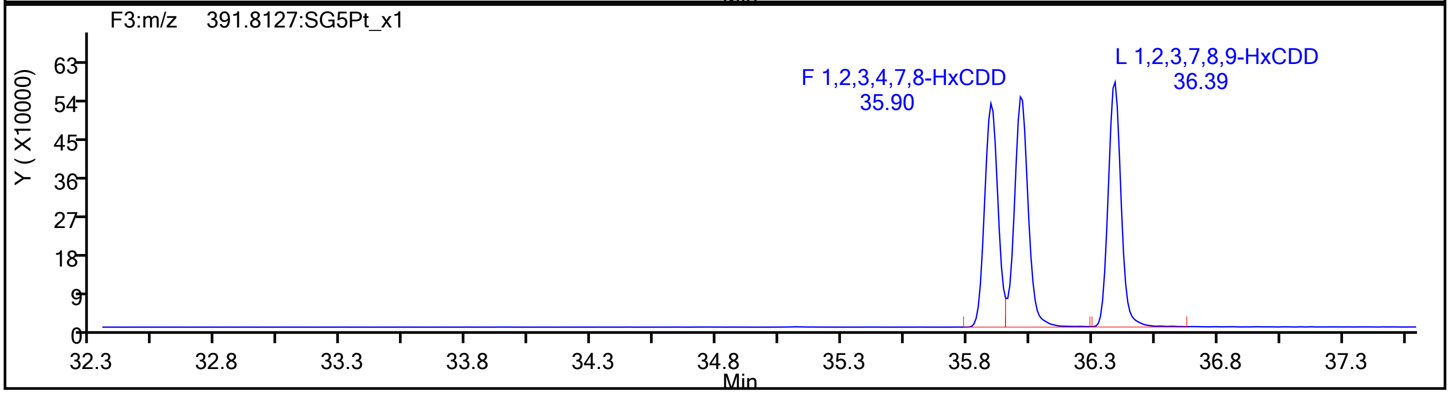

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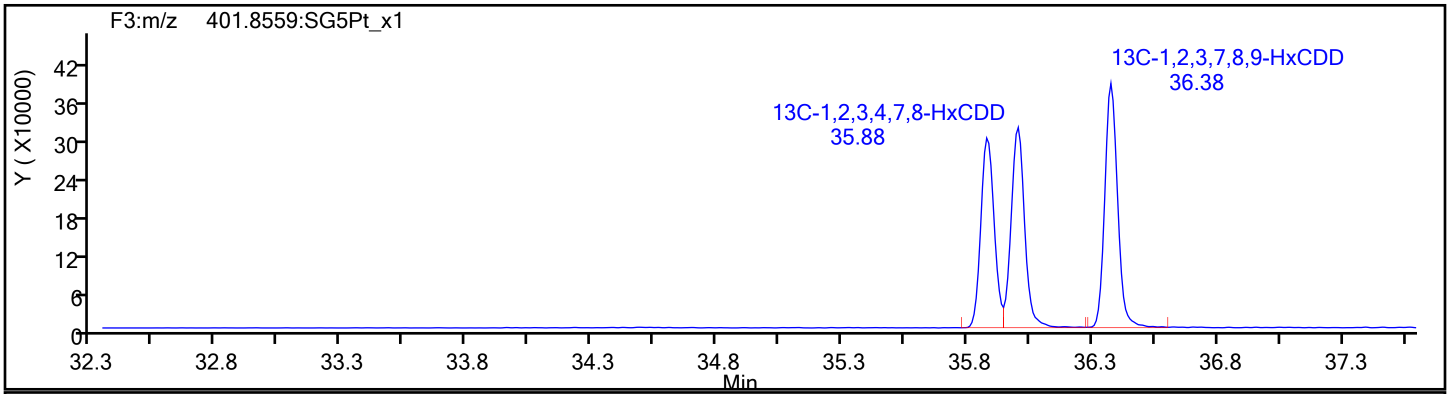

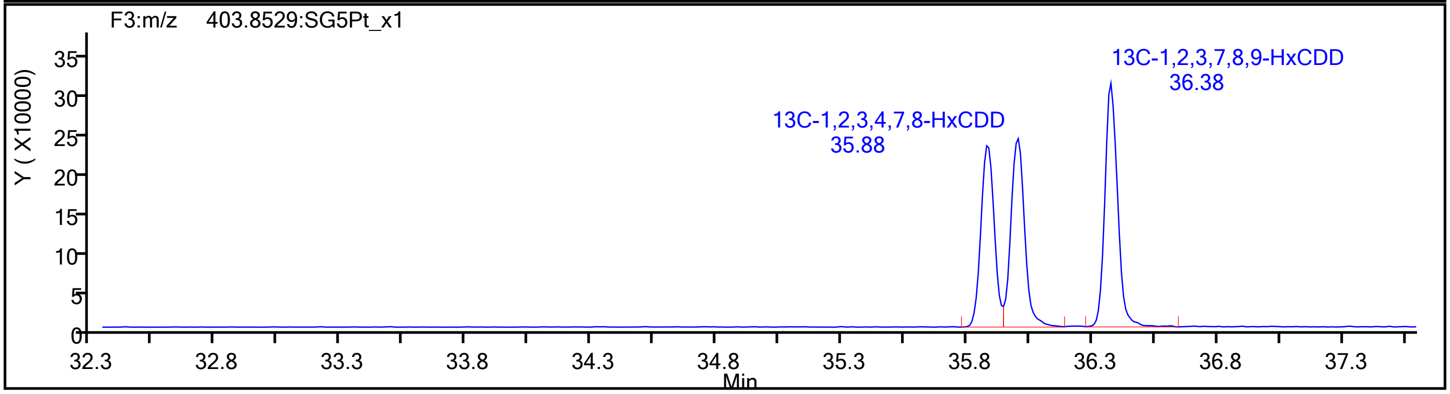

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Eurofins TestAmerica, Sacramento

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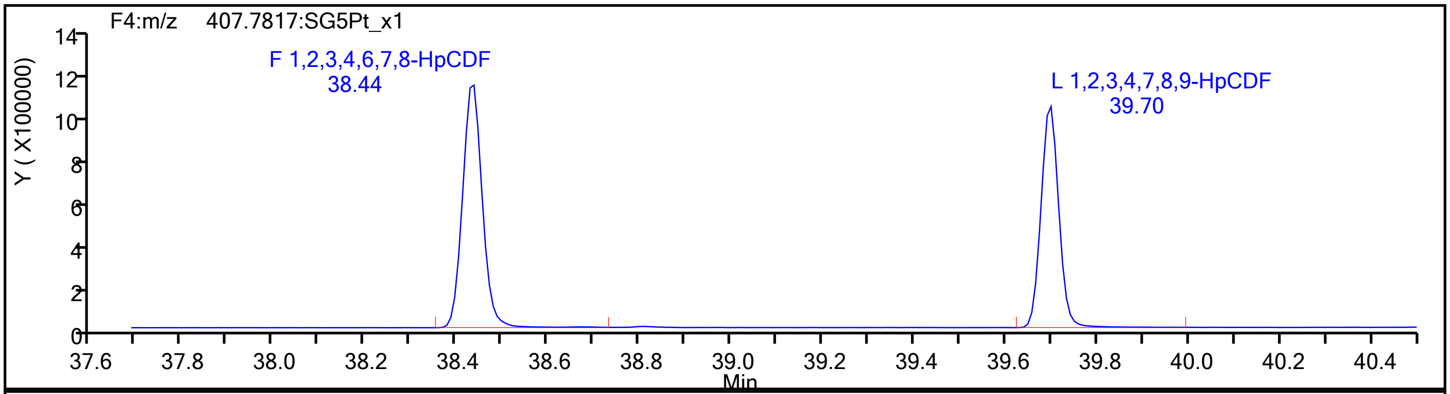

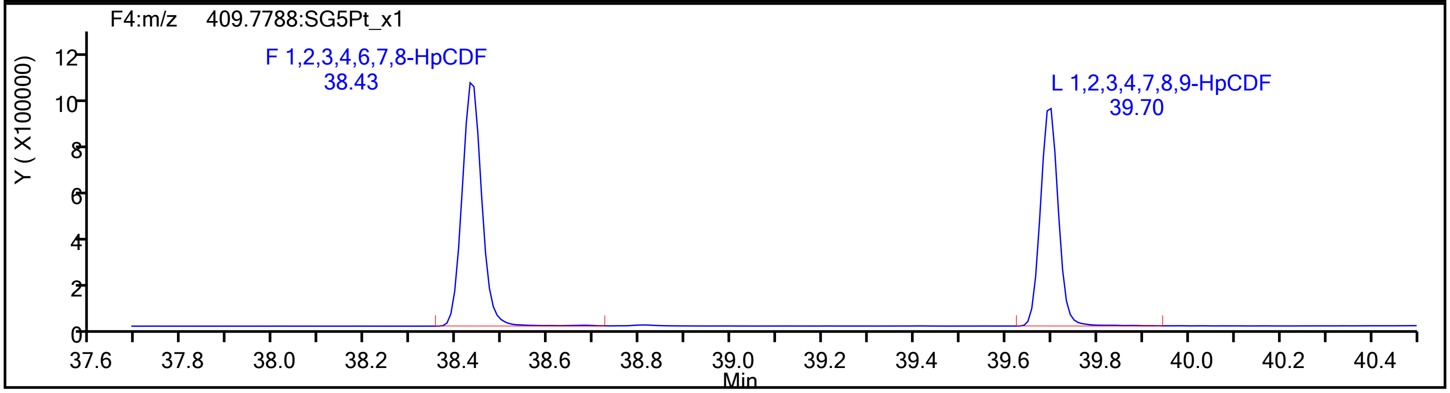

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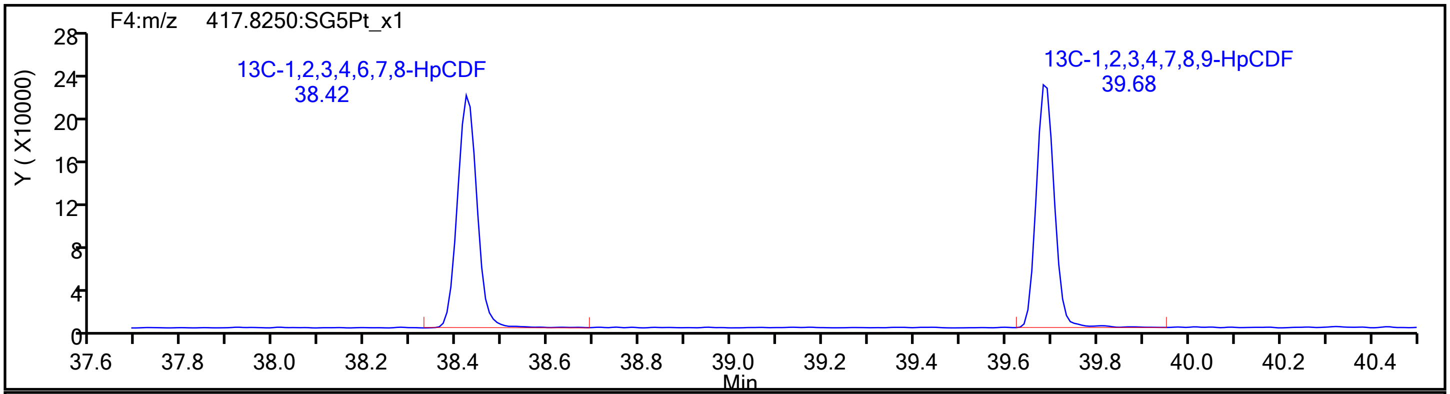

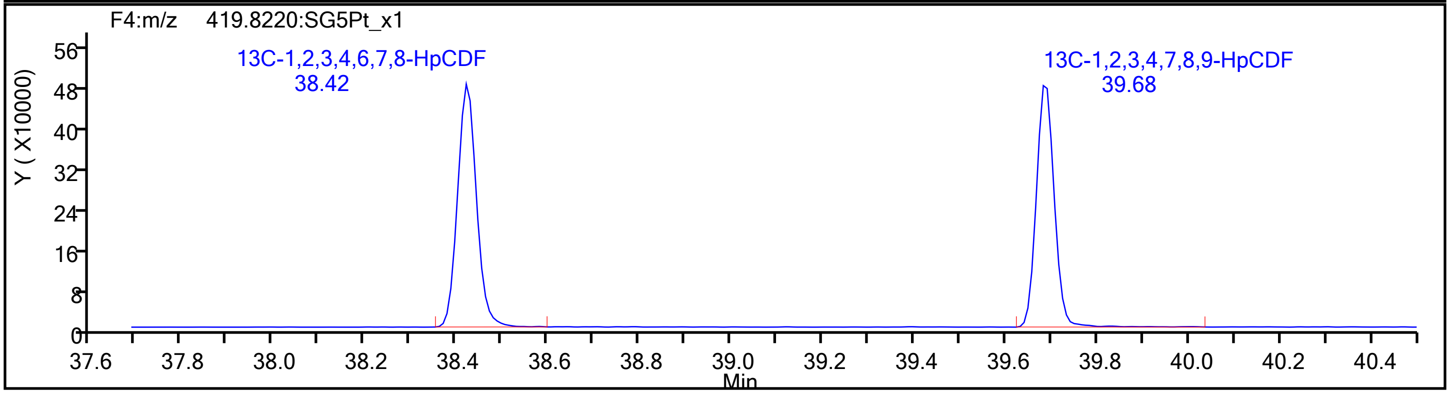

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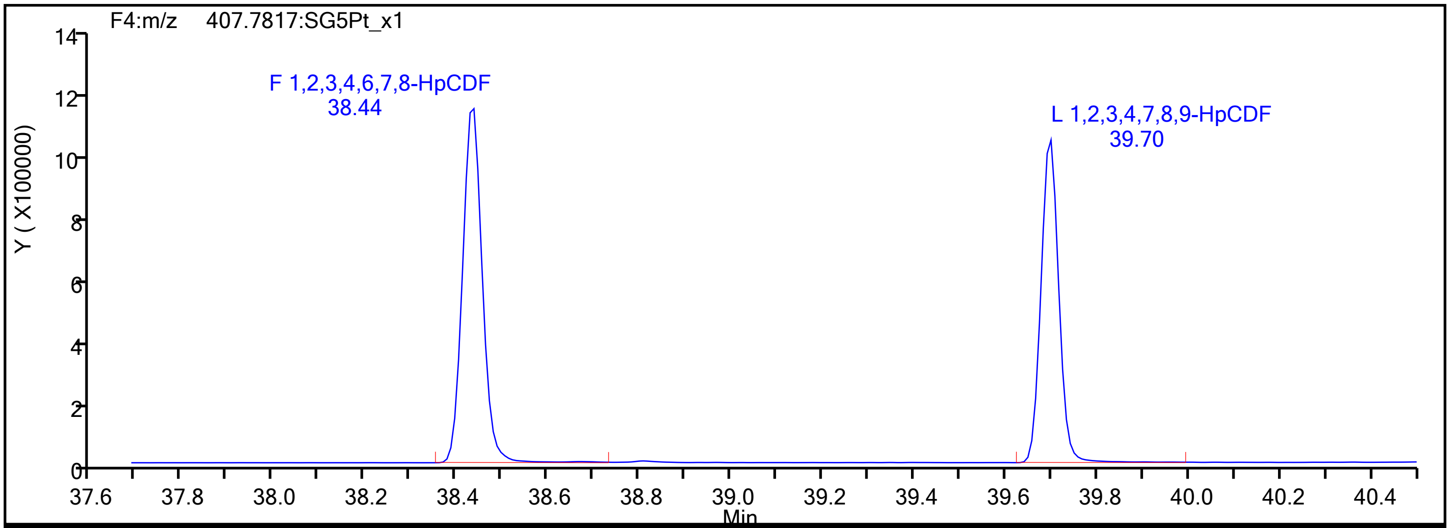

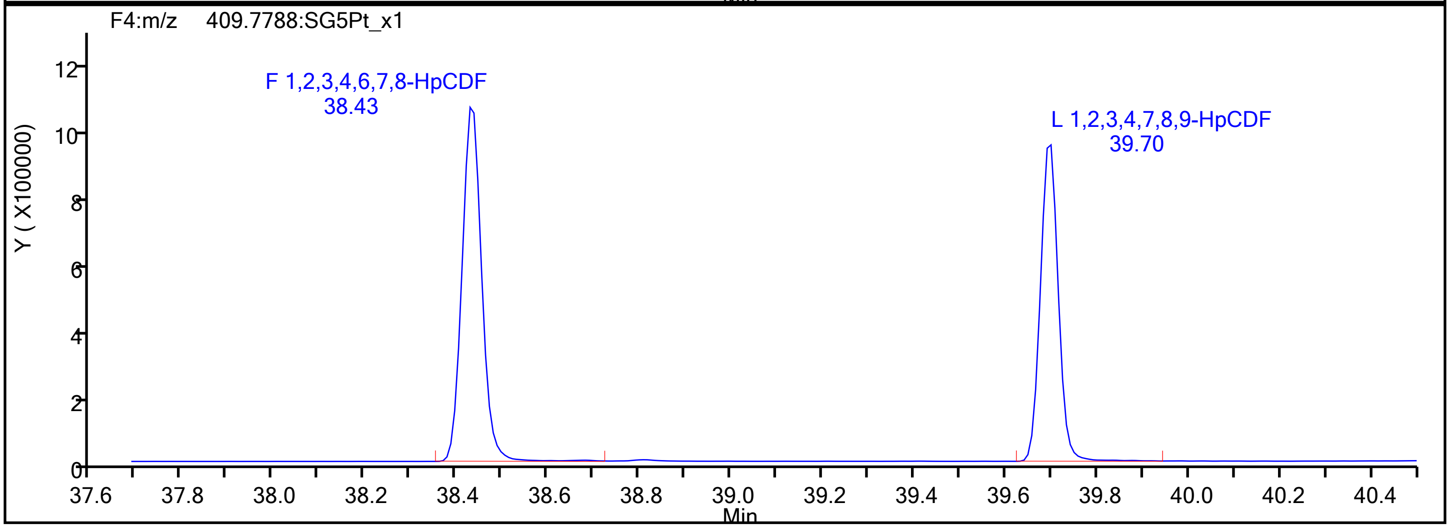

HpCDF Interference Mass

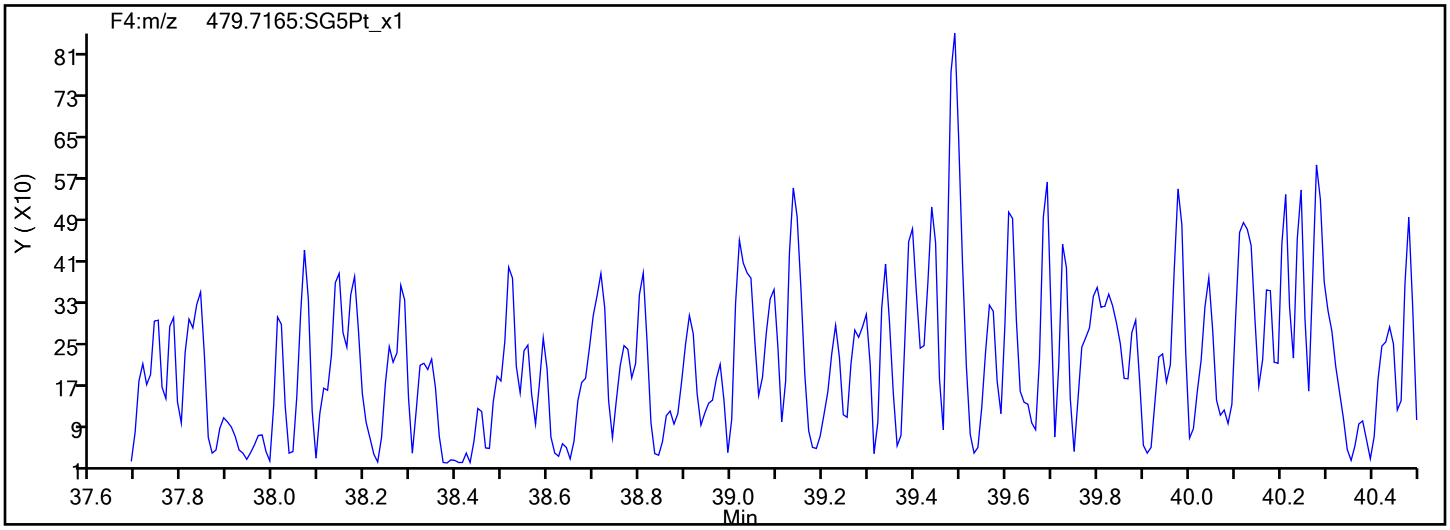

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Eurofins TestAmerica, Sacramento

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HpCDD

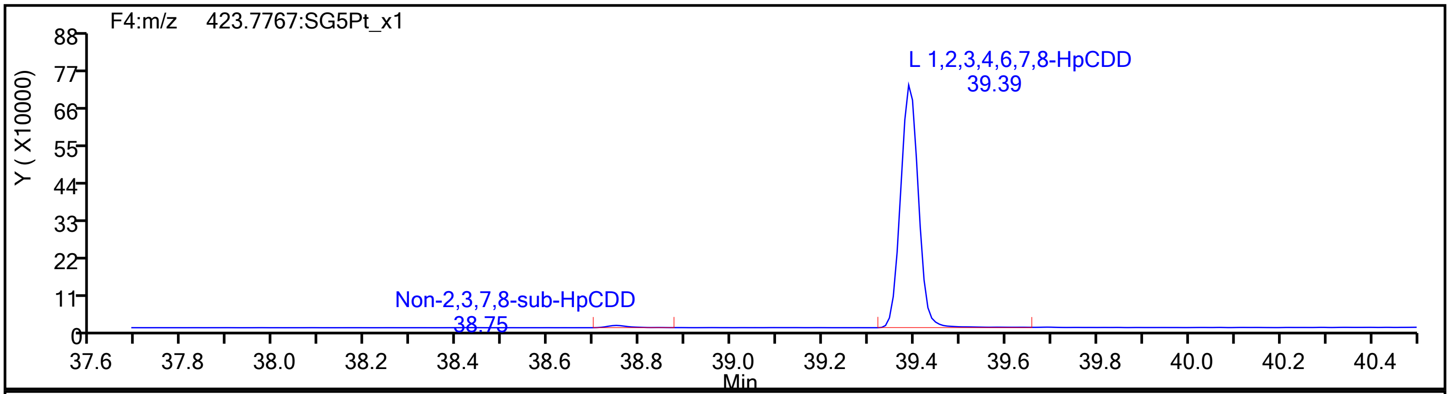

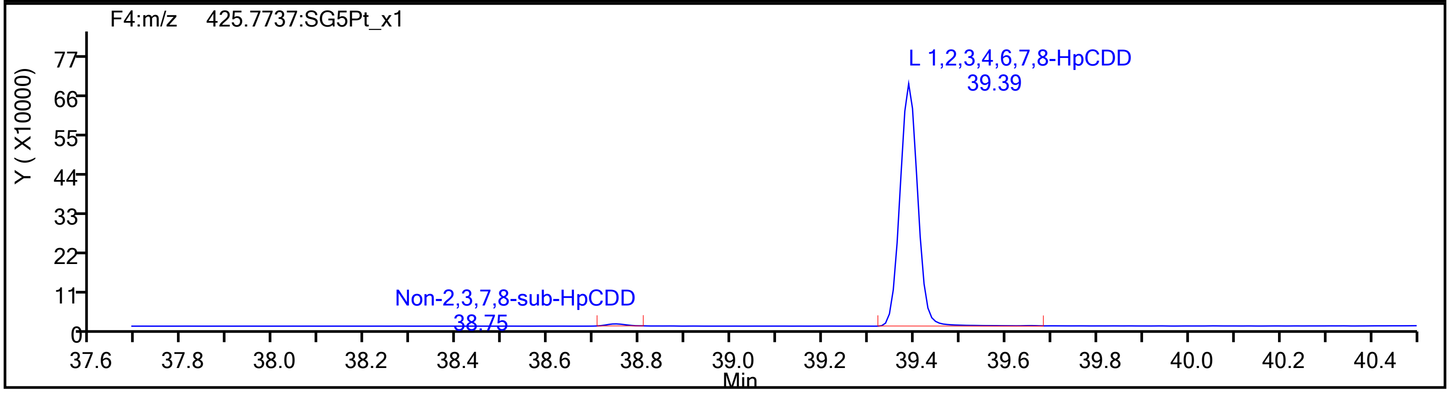

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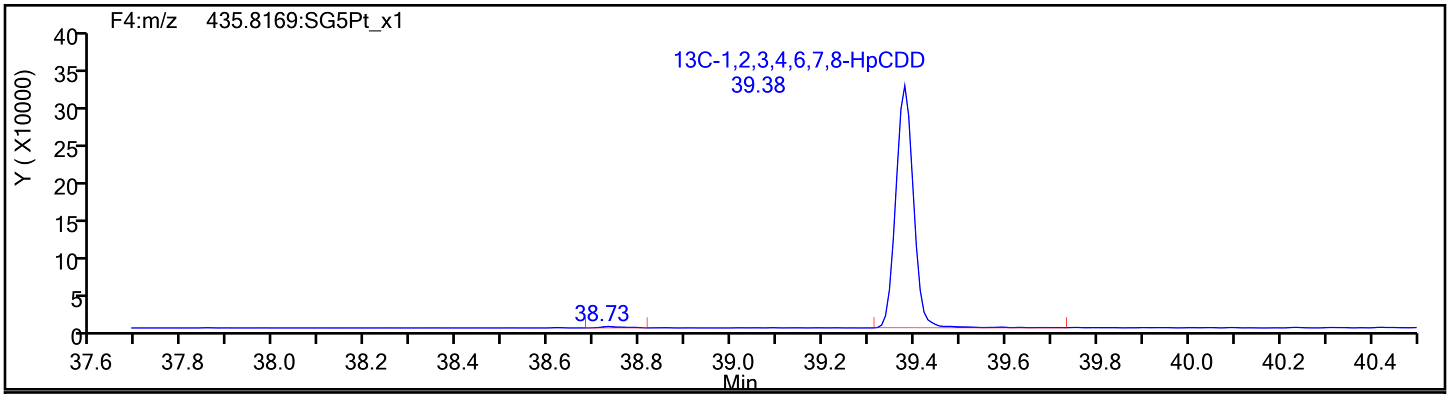

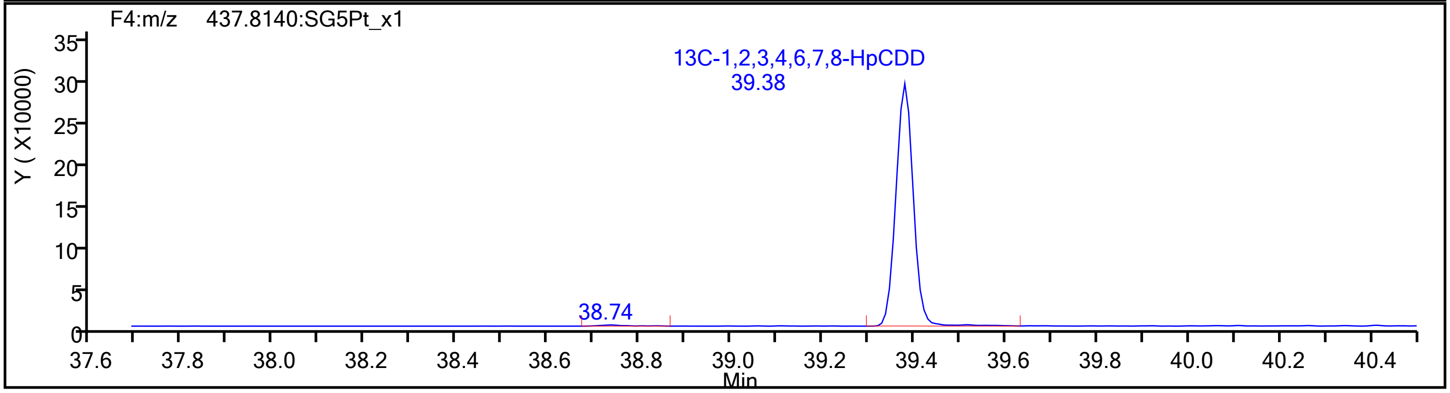

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Eurofins TestAmerica, Sacramento

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OCDF

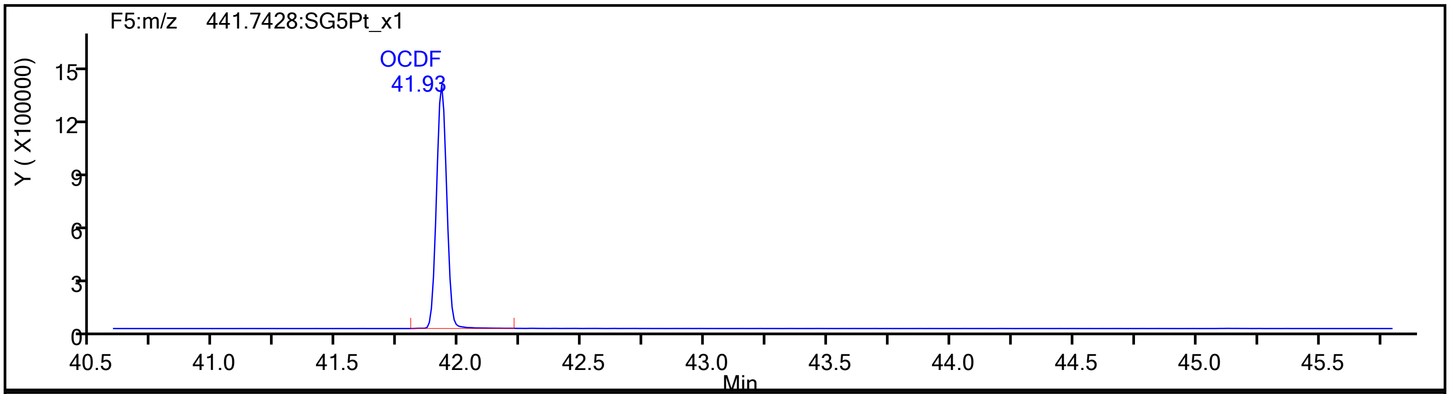

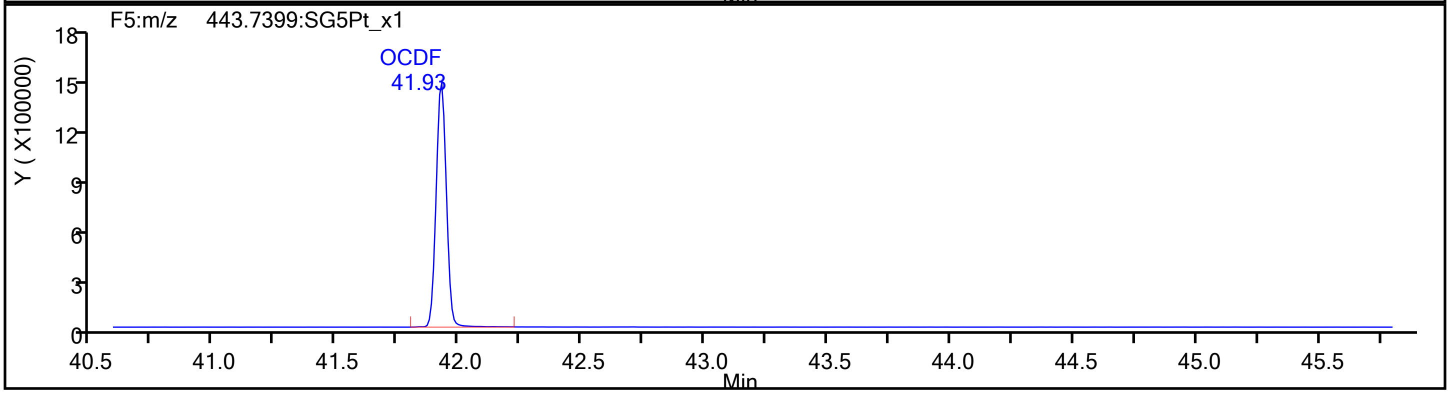

OCDF Standards

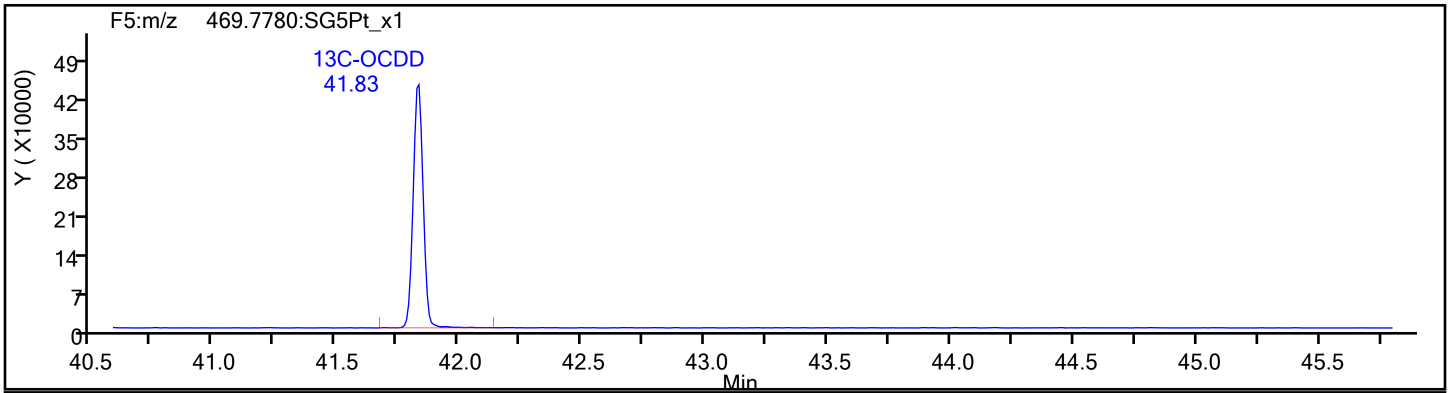

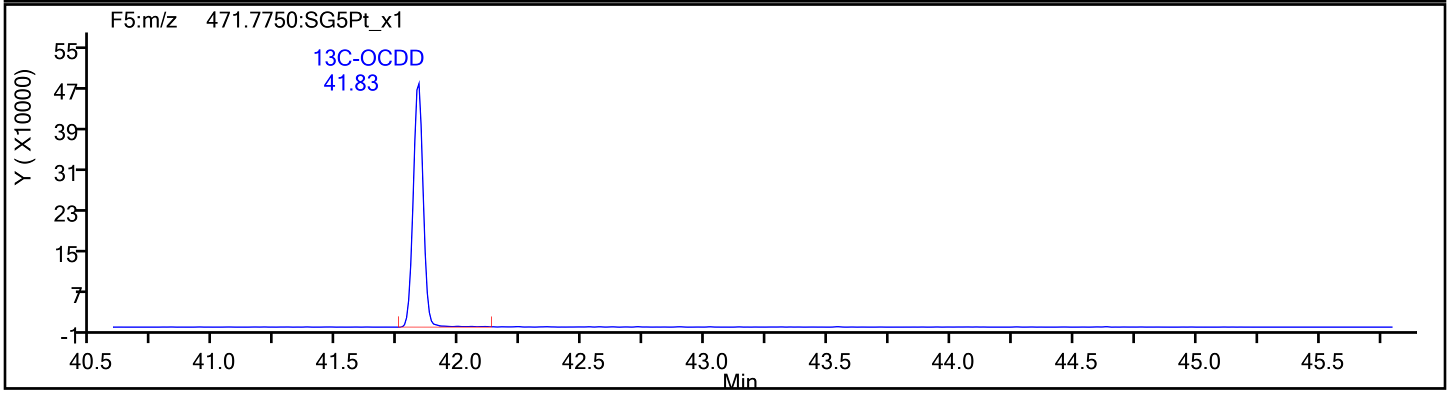

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Eurofins TestAmerica, Sacramento

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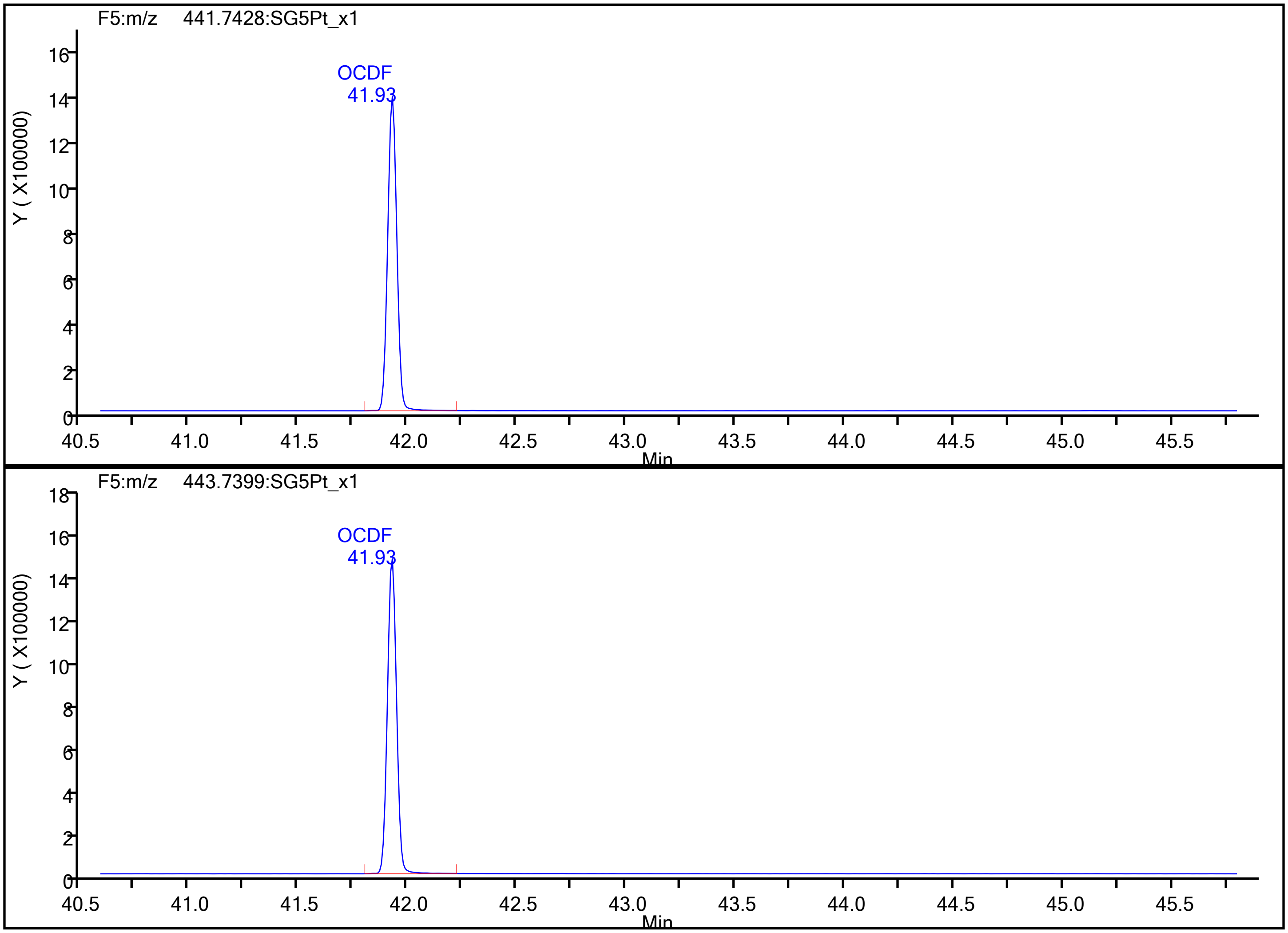

OCDF Interference Mass

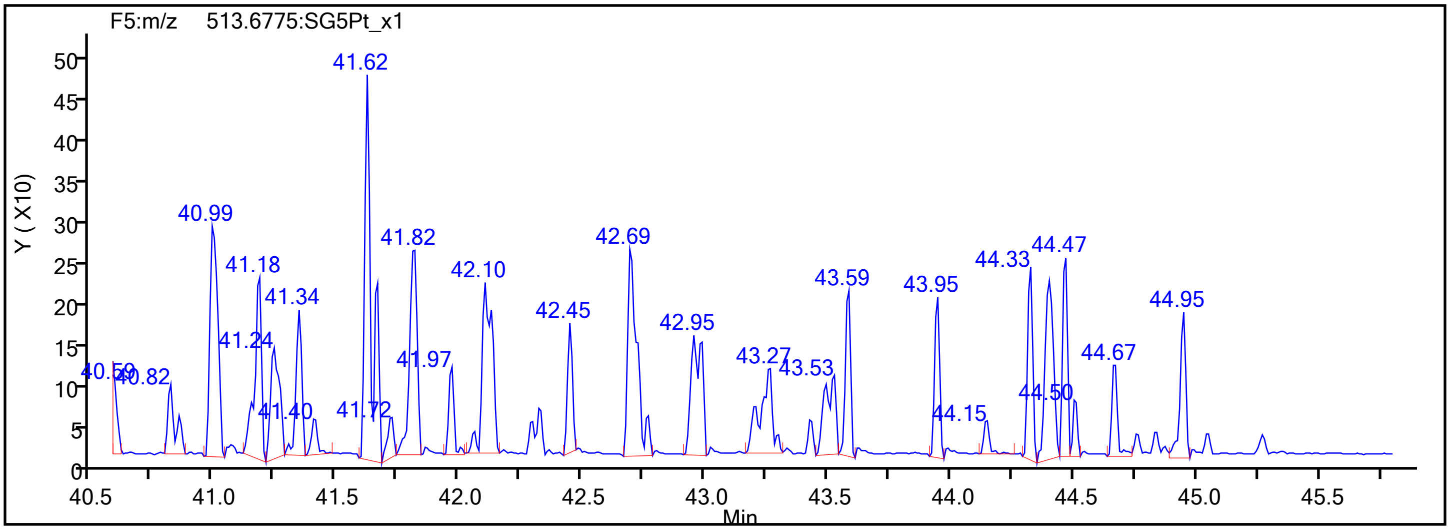

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Eurofins TestAmerica, Sacramento

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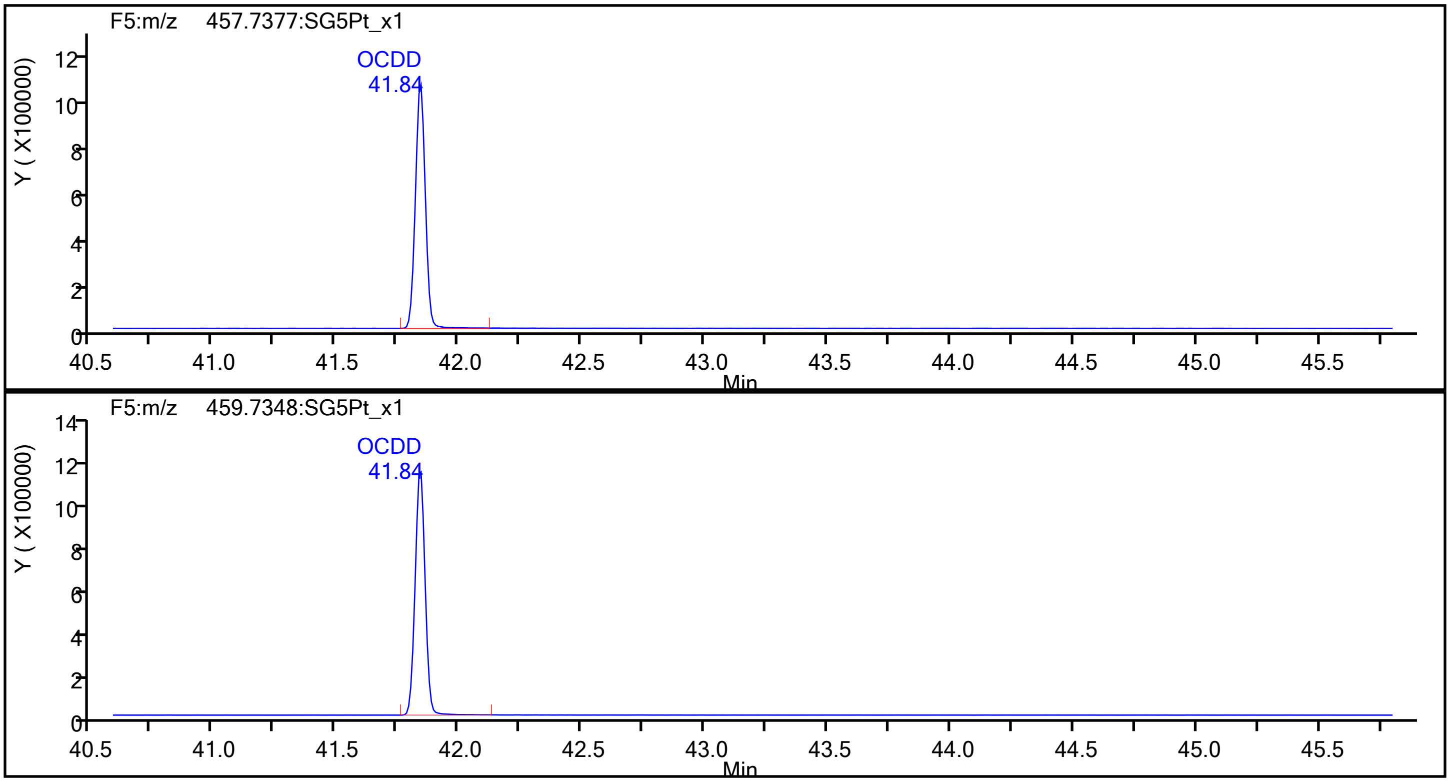

OCDD Standards

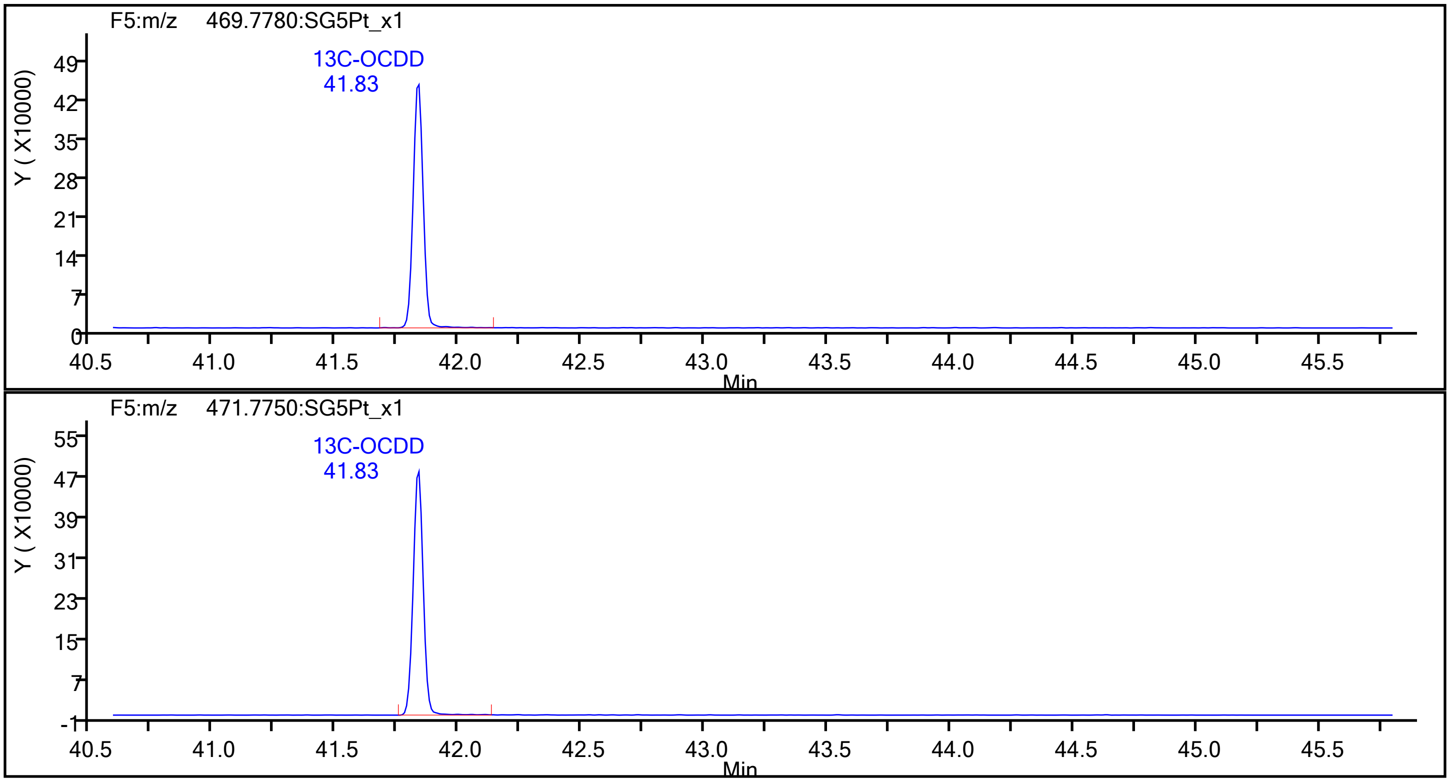

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Eurofins TestAmerica, Sacramento

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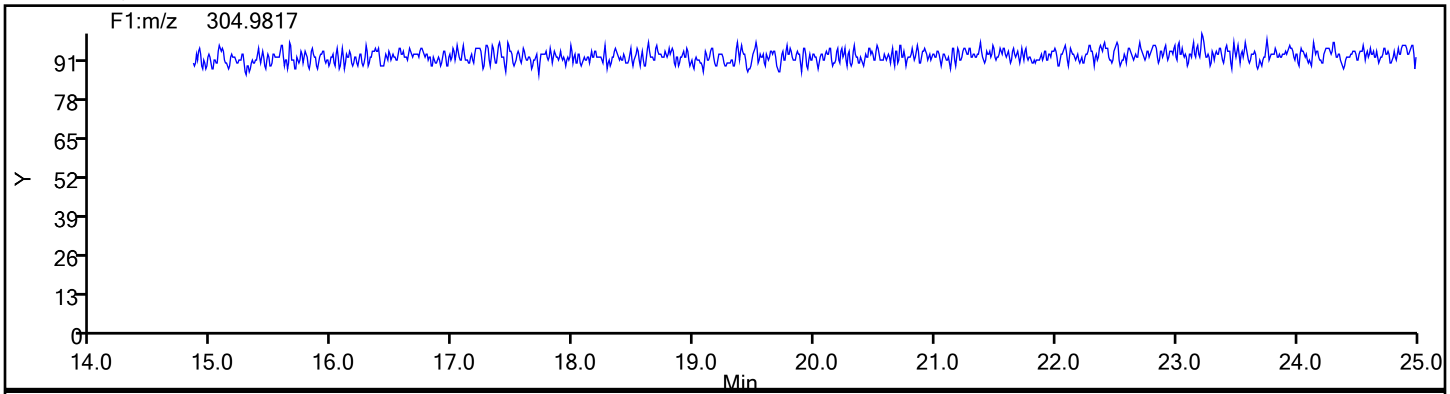

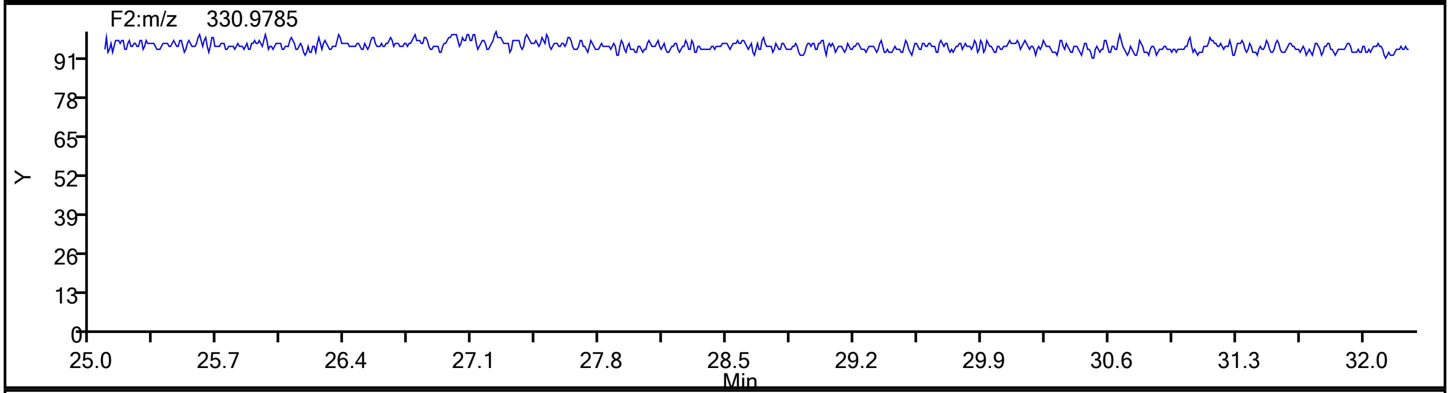

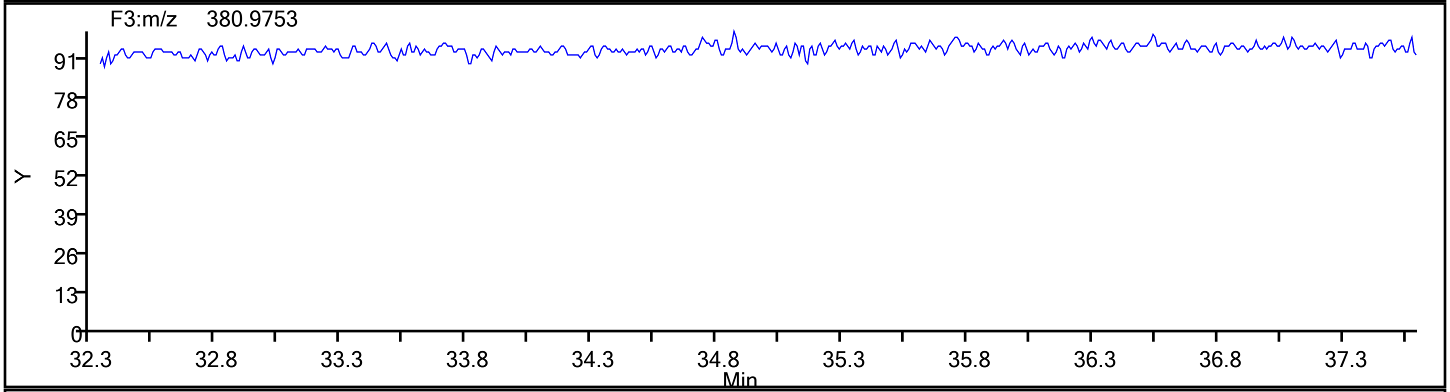

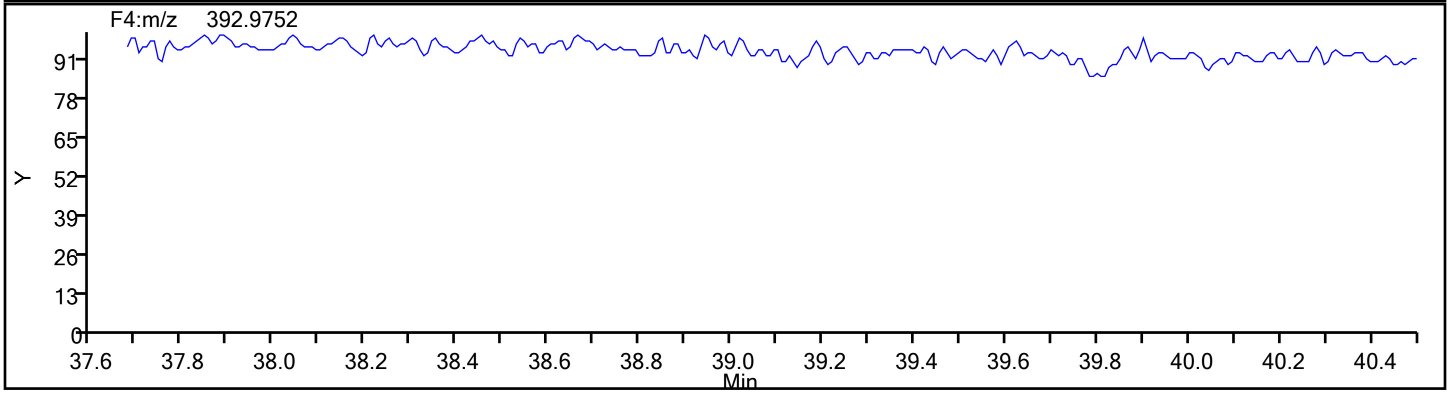

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_11.d		
Injection Date:	03-Feb-2021 02:53:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

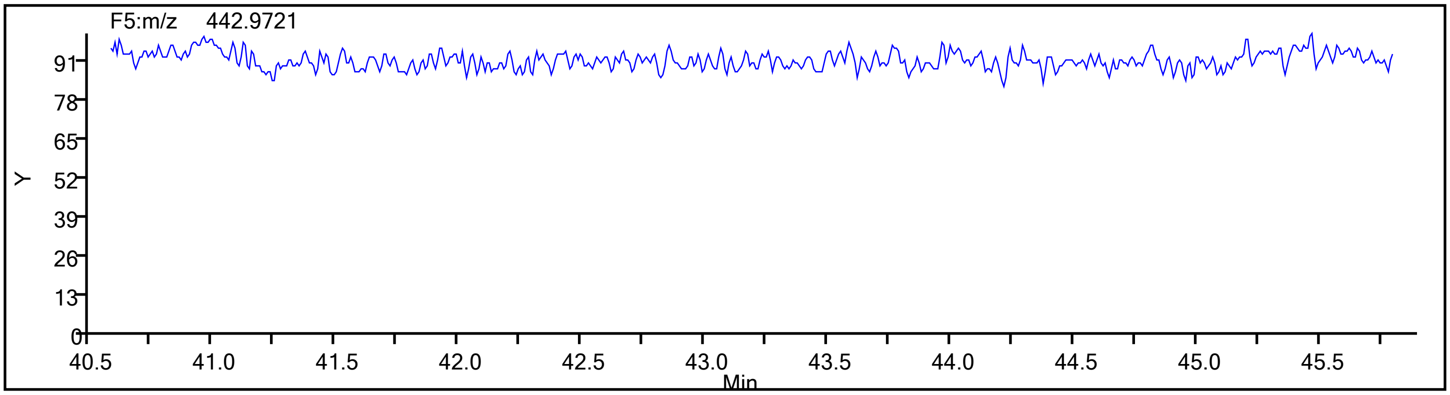

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Lab Sample ID: CCV 320-468973/1   Calibration Date: 03/10/2021 08:50

Instrument ID: DFS 1   Calib Start Date: 02/02/2021 21:46

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 02/03/2021 00:57

Lab File ID: 10mr21dfs1_2.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.126	1.102		9.79	10.0	98	84-120
2,3,7,8-TCDD	AveID	1.190	1.108		9.31	10.0	93	78-129
1,2,3,7,8-PeCDF	AveID	1.116	1.100		49.3	50.0	99	82-120
2,3,4,7,8-PeCDF	AveID	1.058	1.059		50.0	50.0	100	82-122
1,2,3,7,8-PeCDD	AveID	1.137	1.111		48.8	50.0	98	78-130
1,2,3,4,7,8-HxCDF	AveID	1.183	1.212		51.2	50.0	102	90-112
1,2,3,6,7,8-HxCDF	AveID	1.248	1.279		51.2	50.0	102	88-114
2,3,4,6,7,8-HxCDF	AveID	1.275	1.302		51.1	50.0	102	88-114
1,2,3,4,7,8-HxCDD	AveID	1.095	1.147		52.4	50.0	105	78-128
1,2,3,6,7,8-HxCDD	AveID	1.020	1.020		50.0	50.0	100	78-128
1,2,3,7,8,9-HxCDD	AveID	1.155	1.100		47.6	50.0	95	82-122
1,2,3,7,8,9-HxCDF	AveID	1.295	1.285		49.6	50.0	99	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.486	1.473		49.6	50.0	99	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.149	1.080		47.0	50.0	94	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.405	1.370		48.7	50.0	97	86-116
OCDD	AveID	1.171	1.089		93.1	100	93	79-126
OCDF	AveID	1.578	1.329		84.2	100	84	63-159
13C-2,3,7,8-TCDF	Ave	1.544	1.448		93.8	100	94	71-140
13C-2,3,7,8-TCDD	Ave	0.9687	0.9148		94.4	100	94	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.312	1.163		88.6	100	89	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.335	1.175		88.0	100	88	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7716	0.6716		87.0	100	87	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.093	1.128		103	100	103	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.128	1.289		114	100	114	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.055	1.181		112	100	112	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7895	0.7608		96.4	100	96	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8495	0.9713		114	100	114	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9938	0.9846		99.1	100	99	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7854	0.8450		108	100	108	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6413	0.7311		114	100	114	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7230	0.7333		101	100	101	77-129
13C-OCDD	Ave	0.5141	0.5707		222	200	111	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.084	0.9900		9.13	10.0	91	79-127

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	10MR21DFS1_1	Resolution Check	RC 031021	46	Dioxin		GRB,KSS	1.000	
2	10MR21DFS1_2	CS-4 HRDXNL4_00097	CCV 031021	2	Dioxin		GRB,KSS	1.000	
3	10MR21DFS1_3	WDM HRDXNCP_00042	WDM 031021	1	Dioxin		GRB,KSS	1.000	
4	10MR21DFS1_4	SB Solvent Blank C-14	SB 031021	3			GRB,KSS	1.000	
5	10MR21DFS1_5	mb 320-463406/1-a	mb 320-463406/1-a	4	8290/Milk	96	GRB,KSS	125.000	mL
6	10MR21DFS1_6	lcs 320-463406/2-a	lcs 320-463406/2-a	5	8290/Milk		GRB,KSS	125.000	mL
7	10MR21DFS1_7	lcsd 320-463406/3-a	lcsd 320-463406/3-a	6	8290/Milk		GRB,KSS	125.000	mL
8	10MR21DFS1_8	320-70195-a-1-a	320-70195-a-1-a	7	8290/Milk		GRB,KSS	125.000	mL
9	10MR21DFS1_9	320-70797-a-1-a	320-70797-a-1-a	8	1613B/Water	D220	GRB,KSS	1.000	L
10	10MR21DFS1_10	320-70797-a-2-a	320-70797-a-2-a	9	1613B/Water		GRB,KSS	1.000	L
11	10MR21DFS1_11	lcs 320-467785/2-a	lcs 320-467785/2-a	10	1613B/Water		GRB,KSS	1.000	L
12	10MR21DFS1_12	lcsd 320-467785/3-a	lcsd 320-467785/3-a	11	1613B/Water		GRB,KSS	1.000	L
13	10MR21DFS1_13	mb 320-467785/1-a	mb 320-467785/1-a	12	1613B/Water		GRB,KSS	1.000	L
14	10MR21DFS1_14	SB Solvent Blank C-14	SB 031021A	3			GRB,KSS	1.000	
15	10MR21DFS1_15	Resolution Check	RC 031021A	46	Dioxin		GRB,KSS	1.000	
16	10MR21DFS1_16	CS-4 HRDXNL4_00097	CCV 031021A	2	Dioxin		GRB,KSS	1.000	
17	10MR21DFS1_17	Resolution Check	RC 031021B	46	Dioxin		GRB,KSS	1.000	
18	10MR21DFS1_18	WDM HRDXNCP_00042	WDM 031021A	1	Dioxin		GRB,KSS	1.000	
19	10MR21DFS1_19	SB Solvent Blank C-14	SB 031021B	3			GRB,KSS	1.000	
20	10MR21DFS1_20	320-70797-a-3-a	320-70797-a-3-a	13	1613B/Water	D220	GRB,KSS	1.000	L
21	10MR21DFS1_21	320-70797-a-4-a	320-70797-a-4-a	14	1613B/Water		GRB,KSS	1.000	L
22	10MR21DFS1_22	320-70797-a-5-a	320-70797-a-5-a	15	1613B/Water		GRB,KSS	1.000	L
23	10MR21DFS1_23	320-70797-a-6-a	320-70797-a-6-a	16	1613B/Water		GRB,KSS	1.000	L
24	10MR21DFS1_24	320-70797-a-7-a	320-70797-a-7-a	17	1613B/Water		GRB,KSS	1.000	L
25	10MR21DFS1_25	320-70797-a-8-a	320-70797-a-8-a	18	1613B/Water		GRB,KSS	1.000	L
26	10MR21DFS1_26	320-70797-a-9-a	320-70797-a-9-a	19	1613B/Water		GRB,KSS	1.000	L
27	10MR21DFS1_27	320-70797-a-10-a	320-70797-a-10-a	20	1613B/Water		GRB,KSS	1.000	L
28	10MR21DFS1_28	320-70797-a-11-a	320-70797-a-11-a	21	1613B/Water		GRB,KSS	1.000	L
29	10MR21DFS1_29	320-70797-a-12-a	320-70797-a-12-a	22	1613B/Water		GRB,KSS	1.000	L
30	10MR21DFS1_30	Resolution Check	RC 031021C	46	Dioxin		GRB,KSS	1.000	
31	10MR21DFS1_31	CS-4 HRDXNL4_00097	CCV 031021B	2	Dioxin		GRB,KSS	1.000	
32	10MR21DFS1_32	WDM HRDXNCP_00042	WDM 031021B	1	Dioxin		GRB,KSS	1.000	
33	10MR21DFS1_33	SB Solvent Blank C-14	SB 031021C	3			GRB,KSS	1.000	

LOG FILE ✓'d
03/11/2021
GRB

Resolution Check Report (DFS SN: 3487)

Date:	10 Mar 2021 08:30
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 10933 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11109 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11078 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11064 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 10775 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11281 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10176 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 10705 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 10789 [5%height]

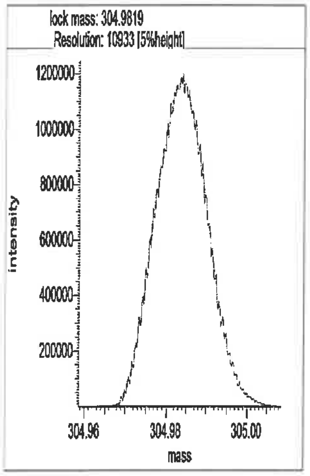

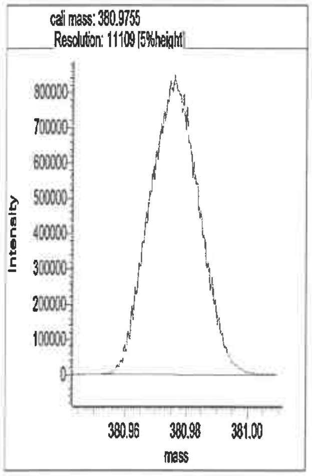

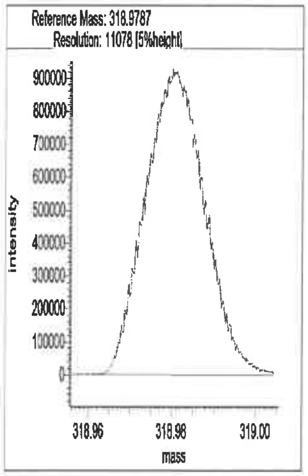

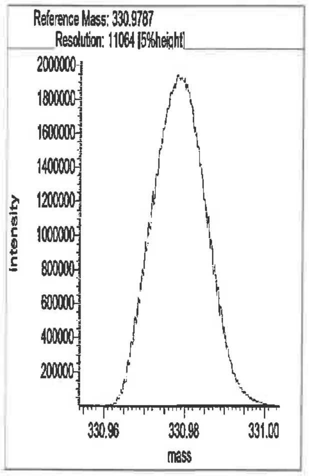

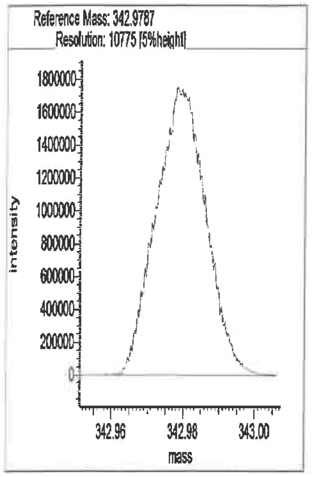

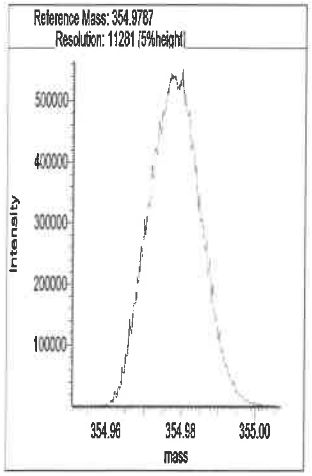

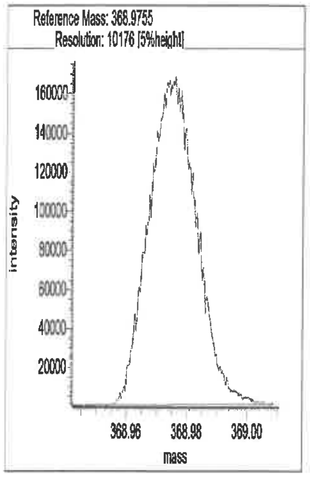

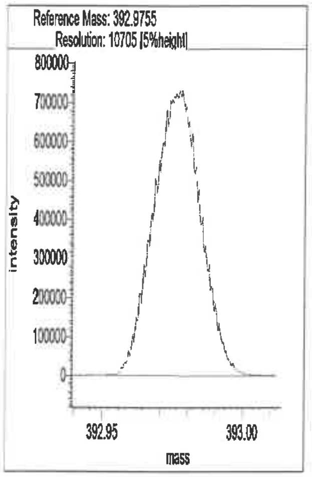

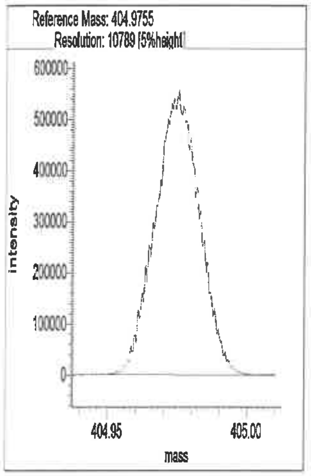

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11283 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11229 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11117 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11163 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10639 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11120 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11184 [5%height]

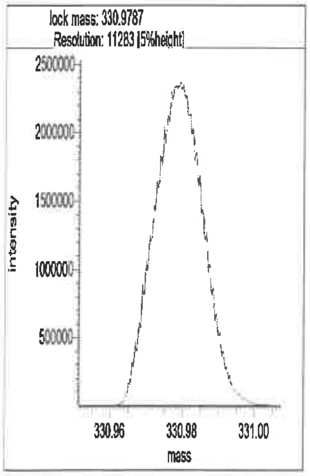

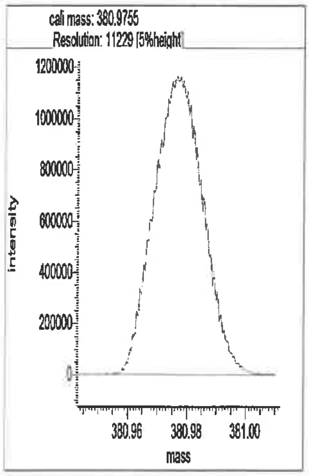

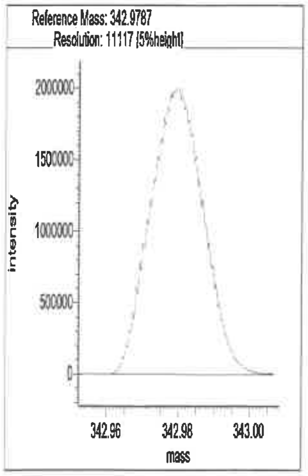

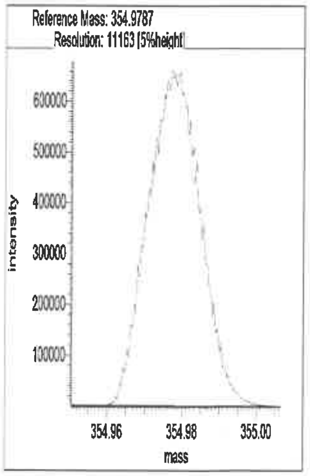

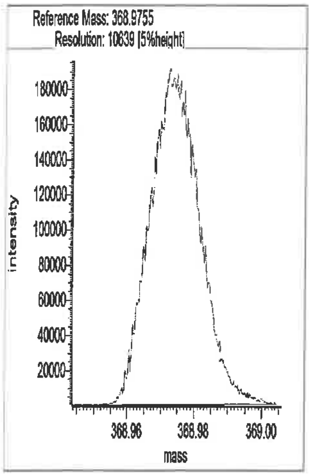

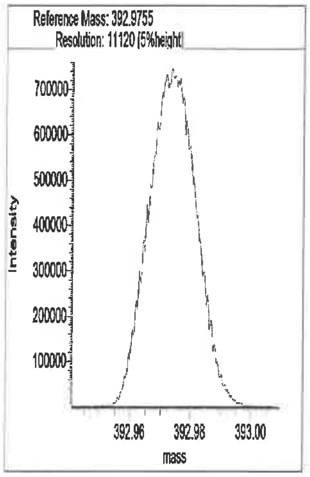

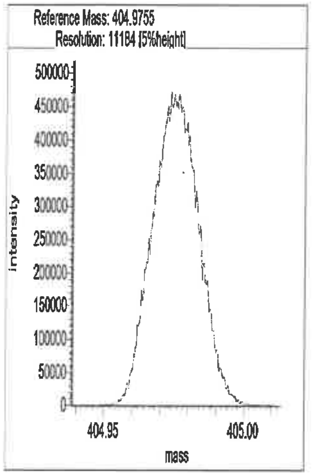

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11307 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11263 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11167 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11440 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11267 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11114 [5%height]

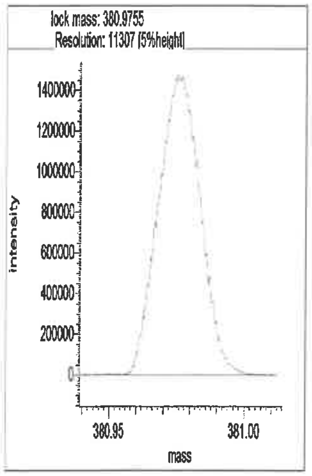

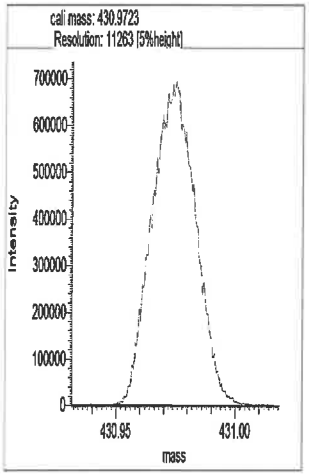

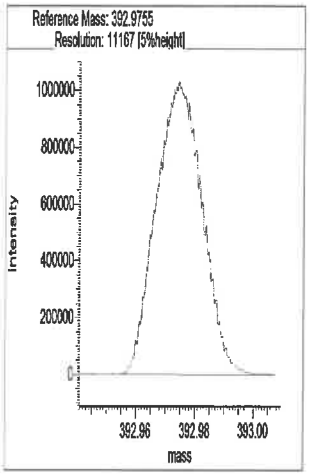

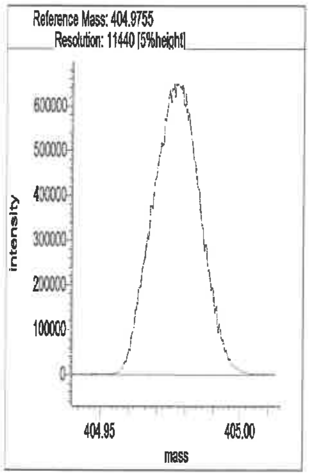

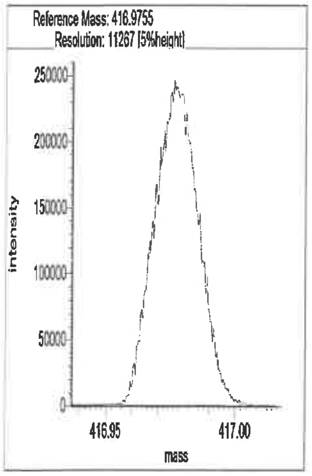

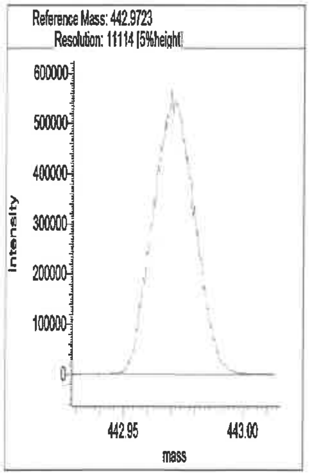

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11288 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11083 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11273 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11268 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11150 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11018 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11065 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 10833 [5%height]

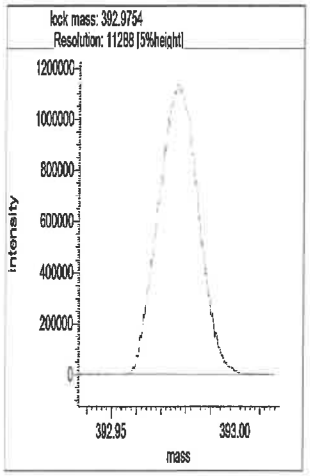

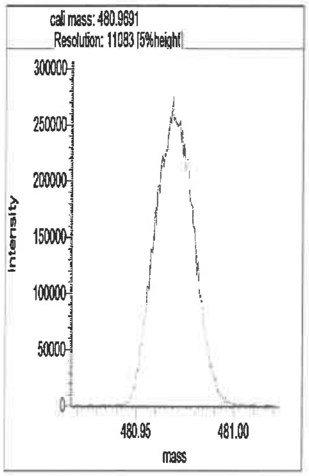

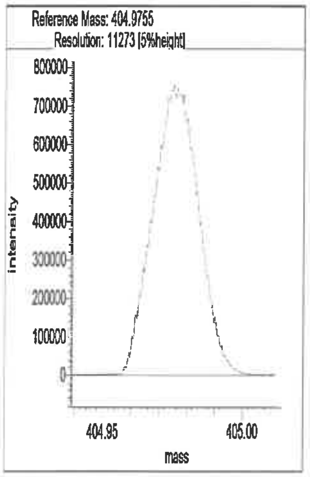

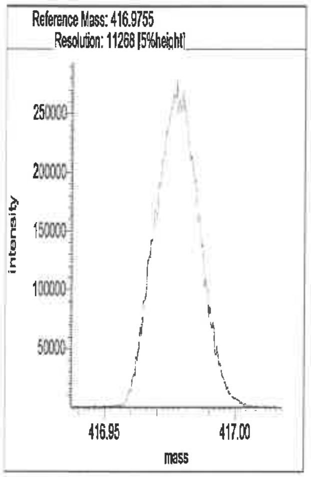

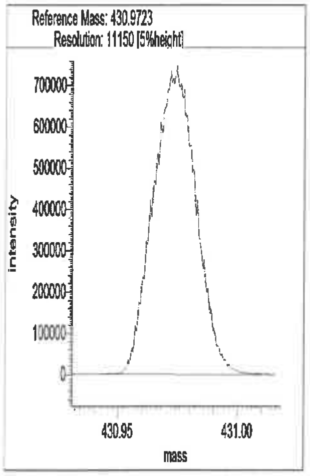

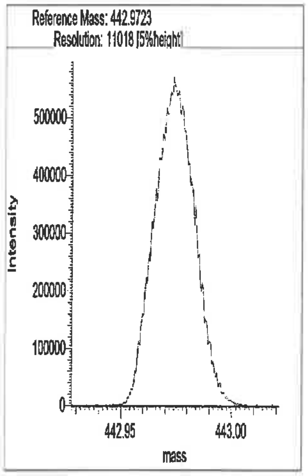

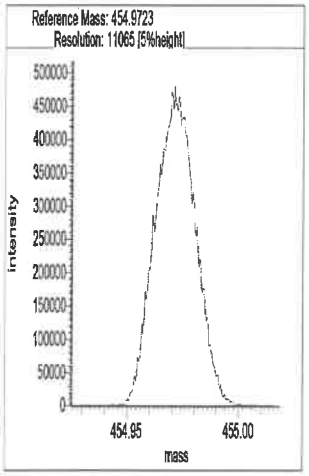

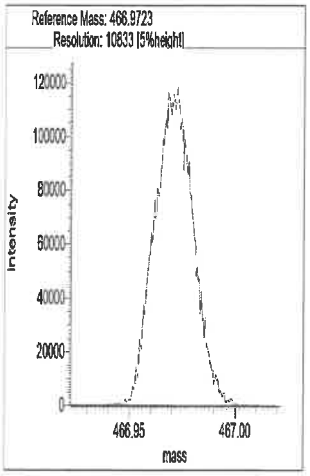

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11351 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11132 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11372 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11584 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 10878 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 10811 [5%height]

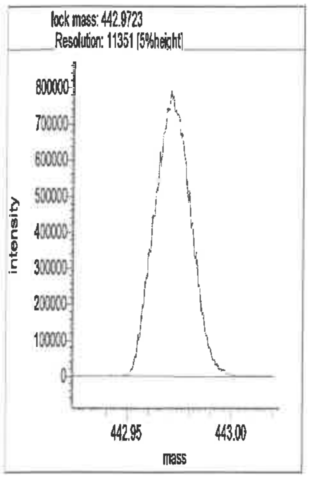
lock mass: 442.9723
Resolution: 11351 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
442.95
443.00
mass

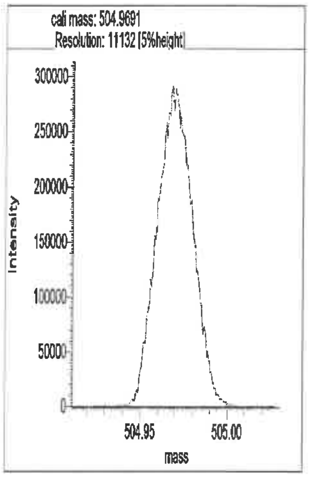
cali mass: 504.9691
Resolution: 11132 [5%height]
intensity
300000
250000
200000
150000
100000
50000
0
504.95
505.00
mass

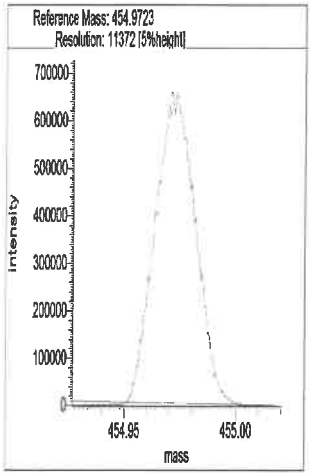
Reference Mass: 454.9723
Resolution: 11372 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
454.95
455.00
mass

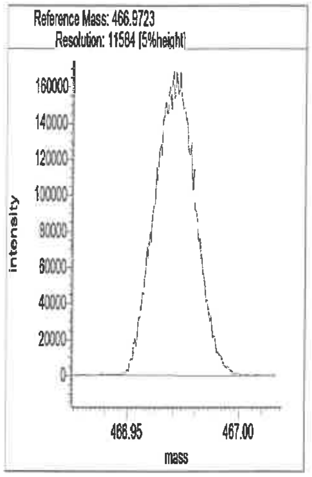
Reference Mass: 466.9723
Resolution: 11584 [5%height]
intensity
160000
140000
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

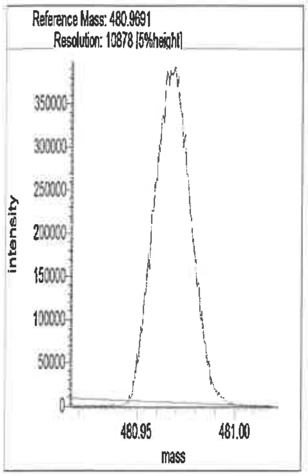
Reference Mass: 480.9691
Resolution: 10878 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
480.95
481.00
mass

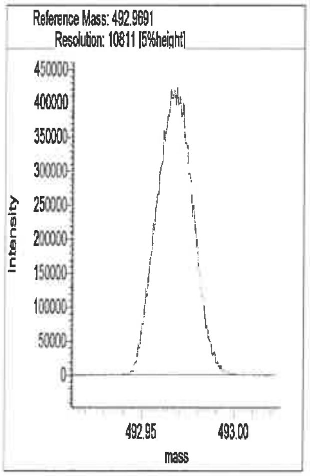
Reference Mass: 492.9691
Resolution: 10811 [5%height]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date: 10 Mar 2021 19:13
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13217 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11907 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12646 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12540 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12723 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12473 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11766 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12110 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12247 [5%height]

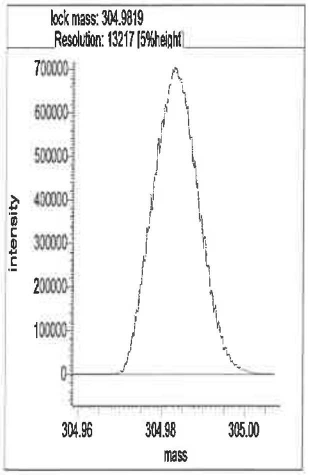

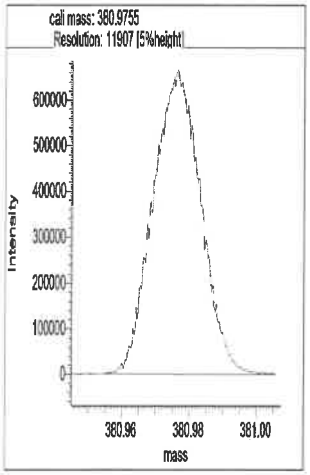

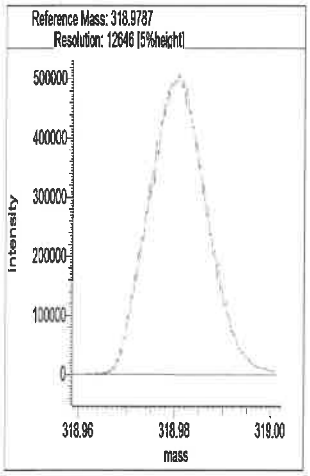

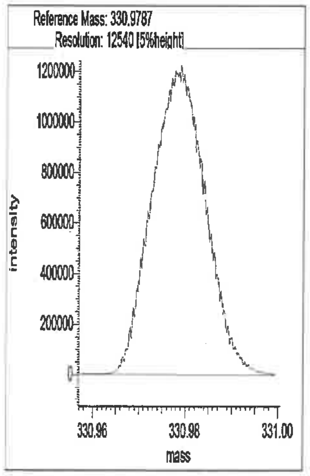

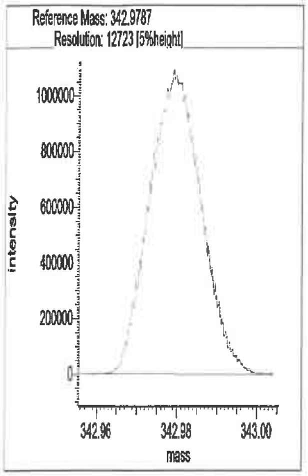

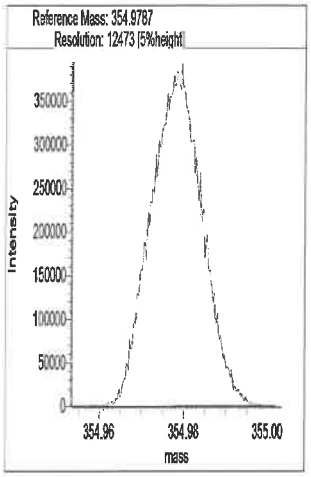

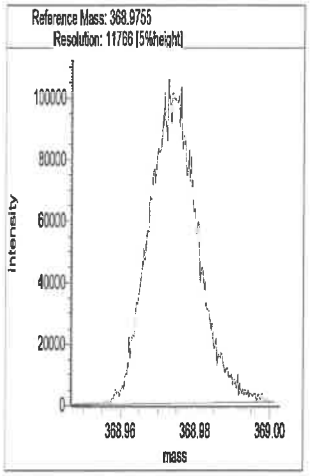

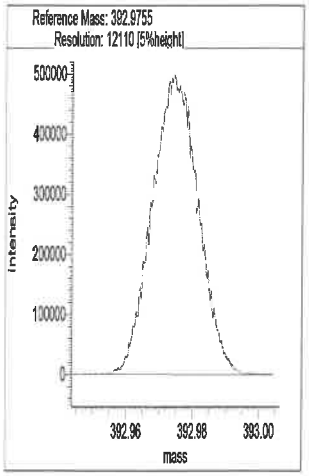

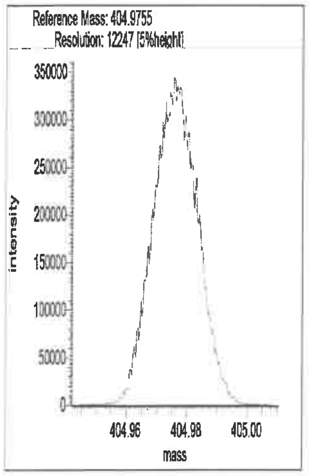

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13190 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12266 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12706 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12670 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10735 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12163 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12363 [5%height]

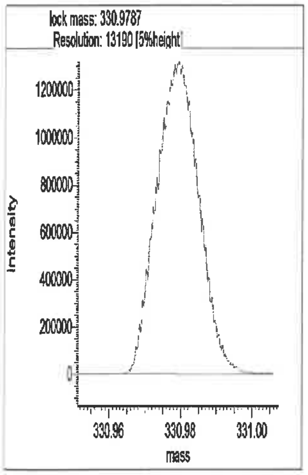

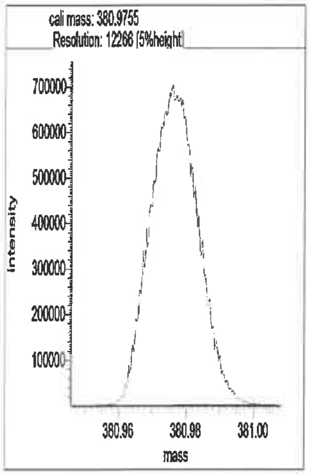

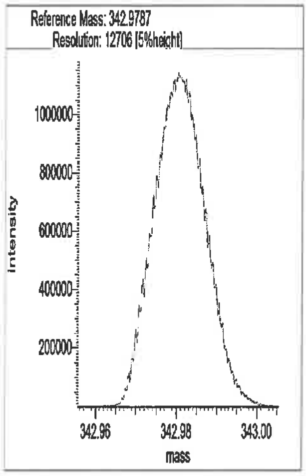

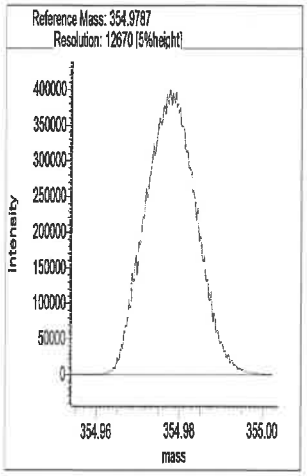

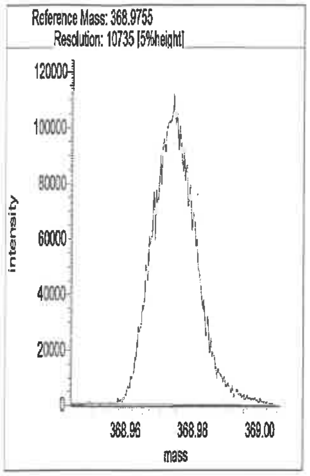

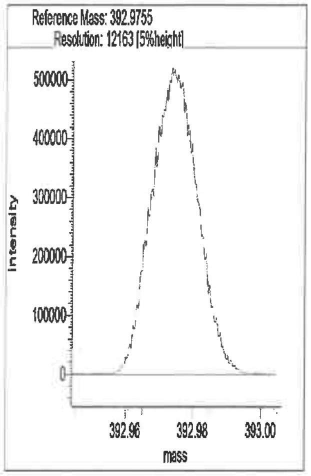

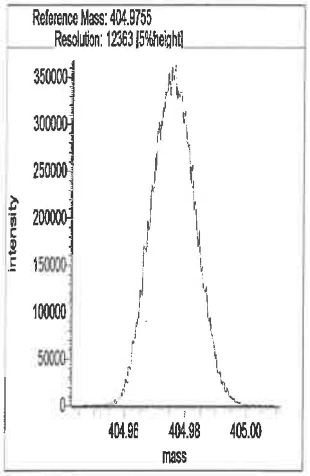

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12614 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12567 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12802 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12816 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12810 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12476 [5%height]

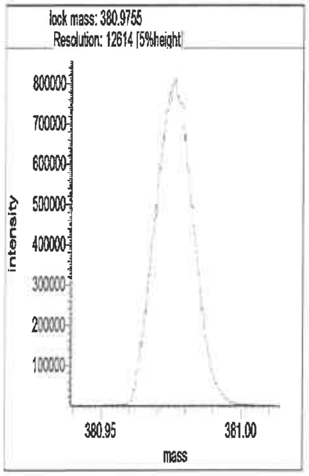

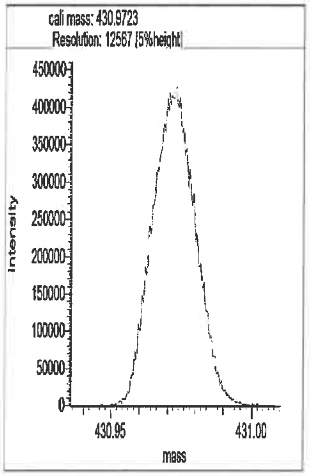

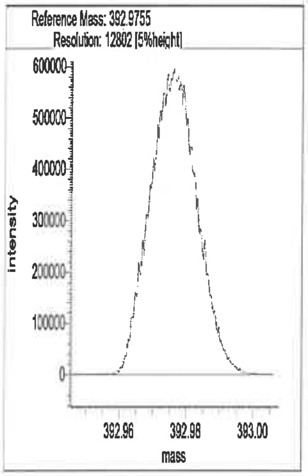

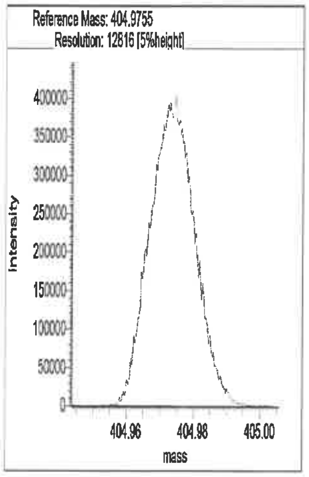

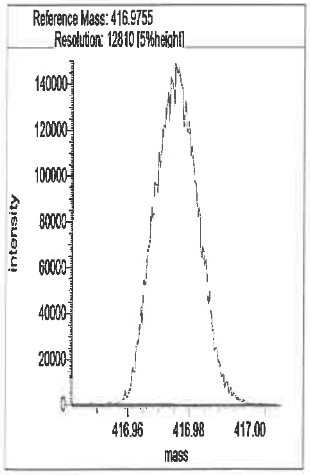

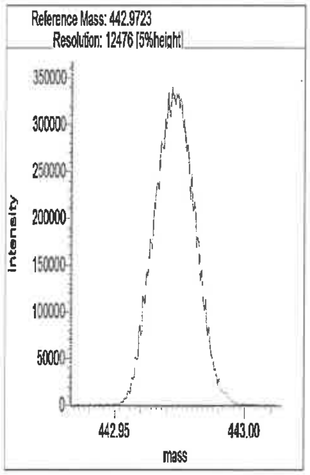

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12941 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12150 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12895 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12838 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12508 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12658 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12270 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12434 [5%height]

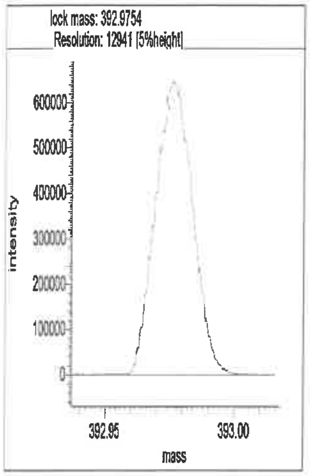

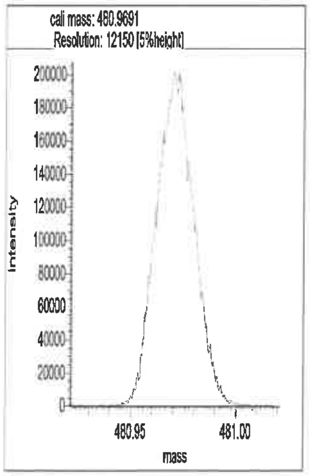

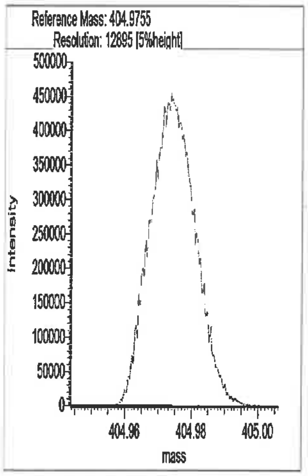

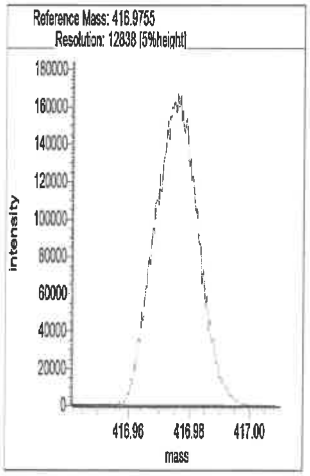

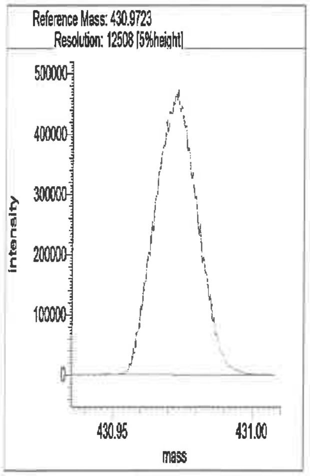

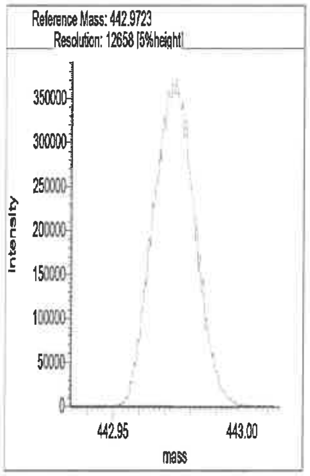

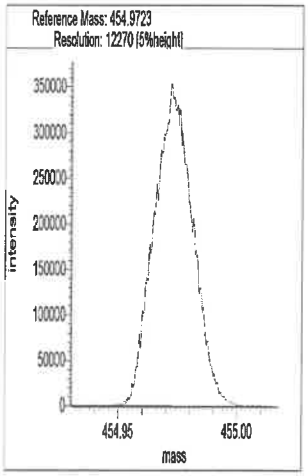

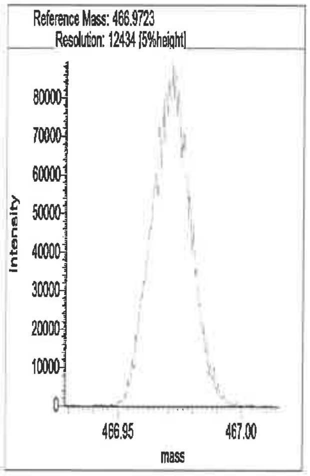

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12722 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12507 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12839 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12807 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12579 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12392 [5%height]

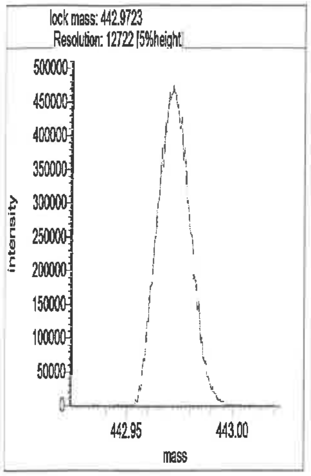
lock mass: 442.9723
Resolution: 12722 [5%height]
intensity
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
442.95
443.00
mass

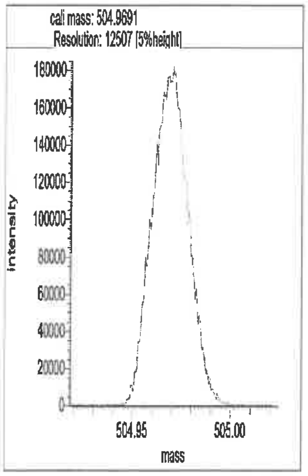
cali mass: 504.9691
Resolution: 12507 [5%height]
intensity
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
504.95
505.00
mass

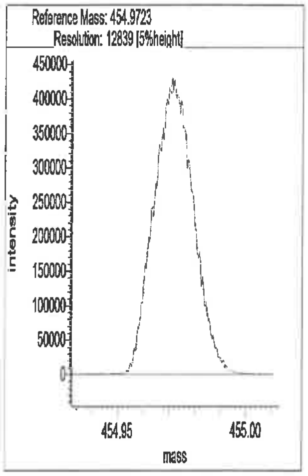
Reference Mass: 454.9723
Resolution: 12839 [5%height]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
454.95
455.00
mass

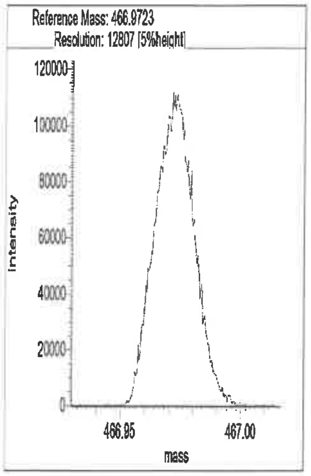
Reference Mass: 466.9723
Resolution: 12807 [5%height]
intensity
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

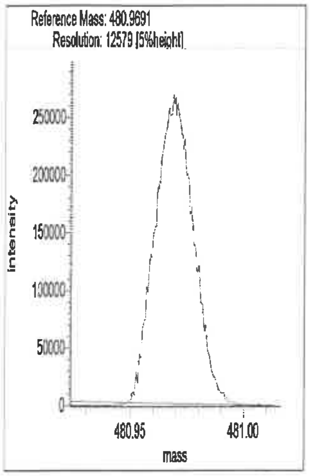
Reference Mass: 480.9691
Resolution: 12579 [5%height]
intensity
250000
200000
150000
100000
50000
0
480.95
481.00
mass

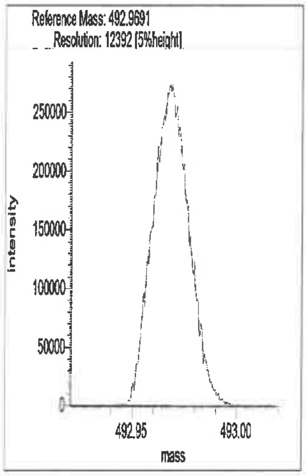
Reference Mass: 492.9691
Resolution: 12392 [5%height]
intensity
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	10 Mar 2021 20:21
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12583 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11931 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11994 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12437 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12150 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12016 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10898 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11860 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11773 [5%height]

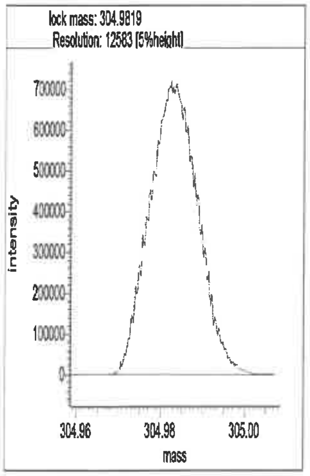

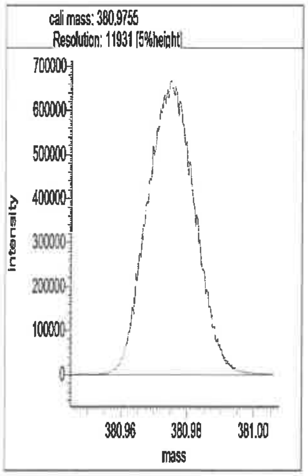

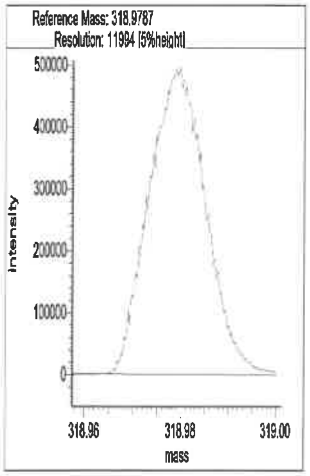

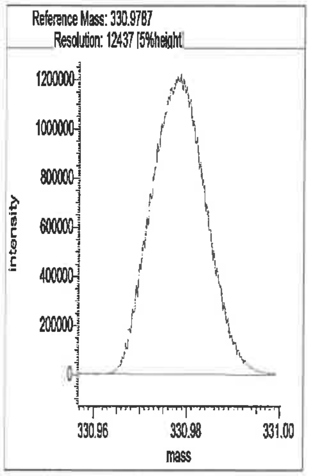

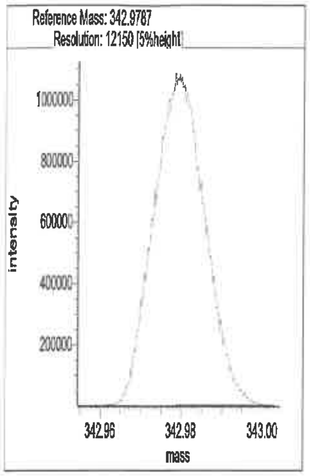

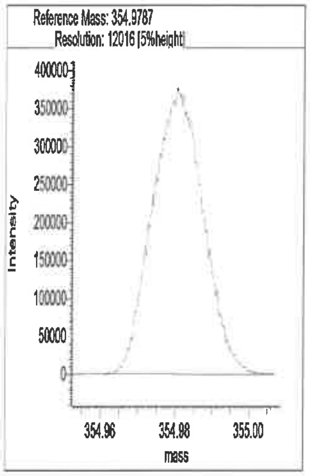

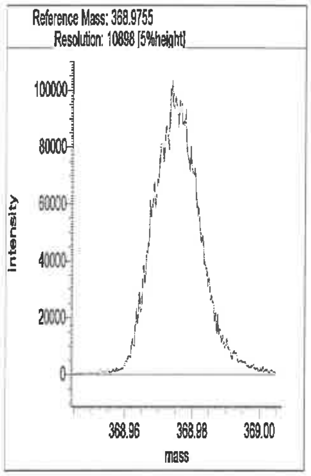

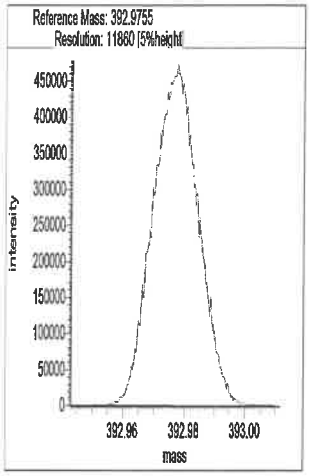

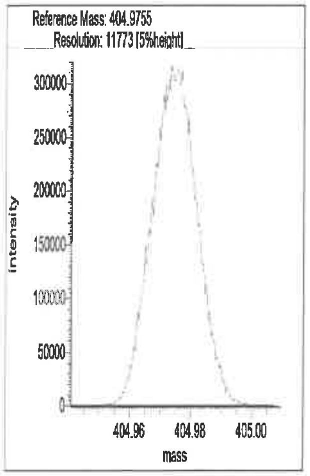

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12496 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12526 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12479 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12040 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11147 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12224 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12205 [5%height]

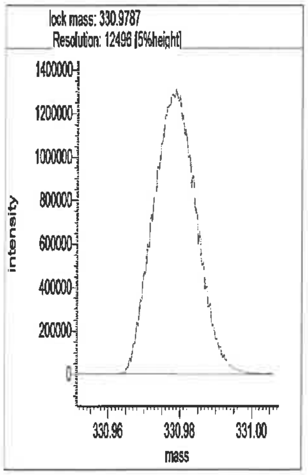

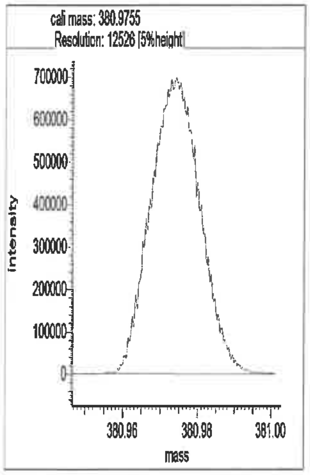

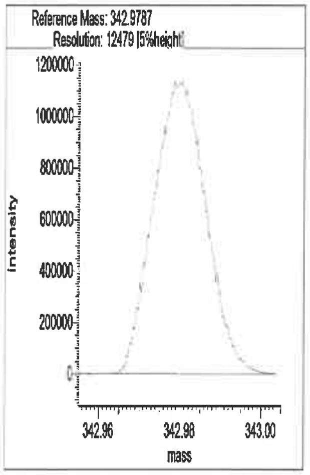

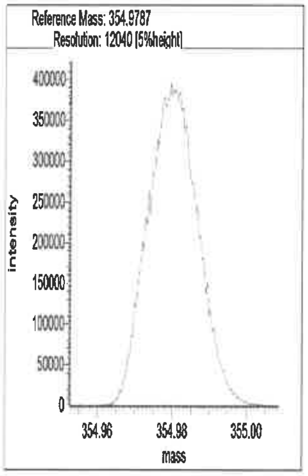

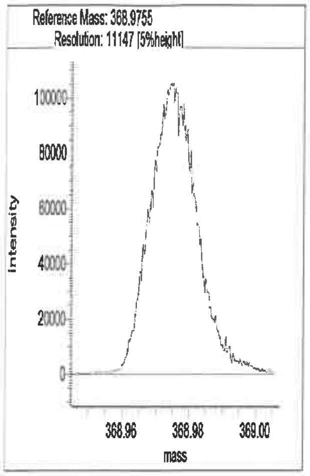
Reference Mass: 368.9755
Resolution: 11147 [5%height]

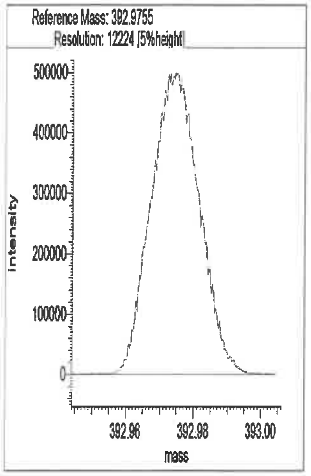
Reference Mass: 392.9755
Resolution: 12224 [5%height]

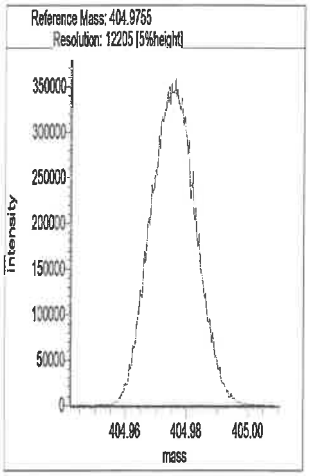
Reference Mass: 404.9755
Resolution: 12205 [5%height]

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12534 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12197 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12498 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12676 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12098 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11983 [5%height]

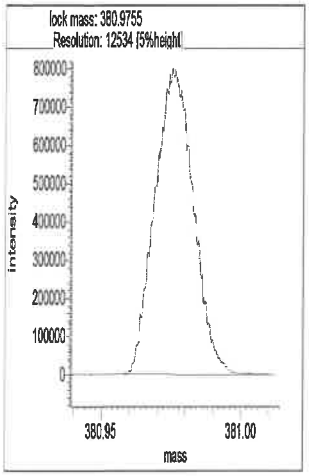
lock mass: 380.9755
Resolution: 12534 [5%height]

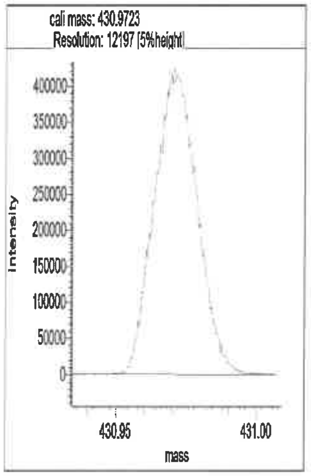
cali mass: 430.9723
Resolution: 12197 [5%height]

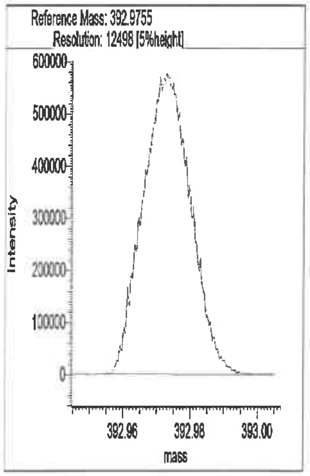
Reference Mass: 392.9755
Resolution: 12498 [5%height]

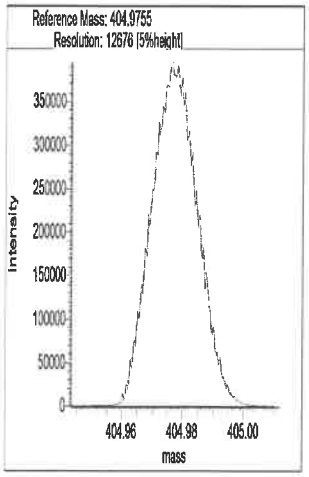
Reference Mass: 404.9755
Resolution: 12676 [5%height]

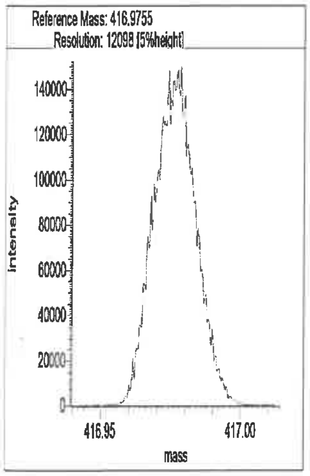
Reference Mass: 416.9755
Resolution: 12098 [5%height]

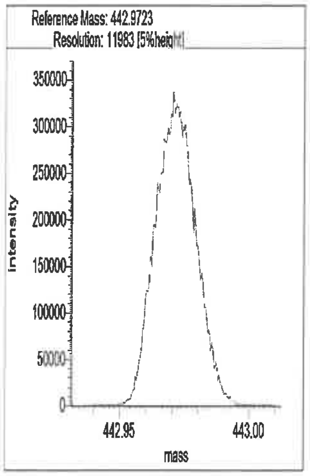
Reference Mass: 442.9723
Resolution: 11983 [5%height]

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12583 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11873 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12634 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12333 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11999 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12236 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11997 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12696 [5%height]

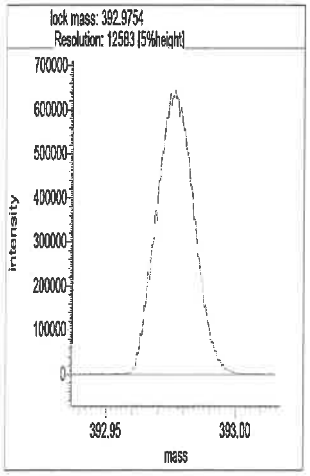

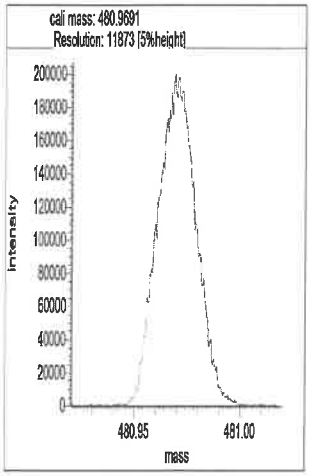

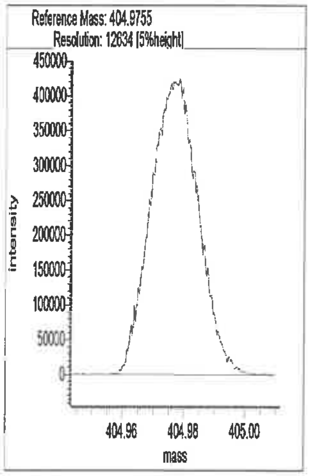

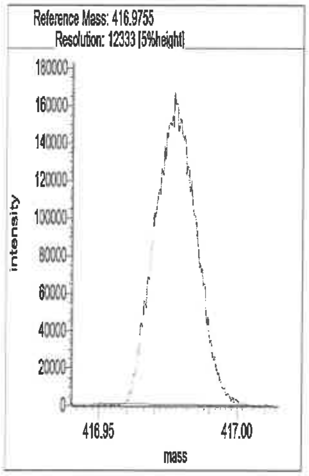

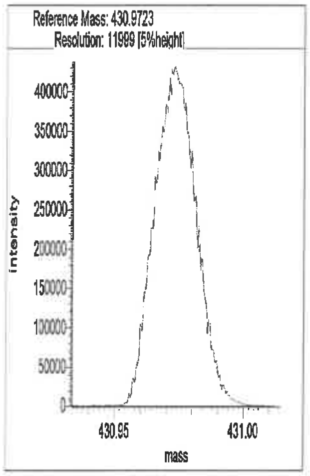

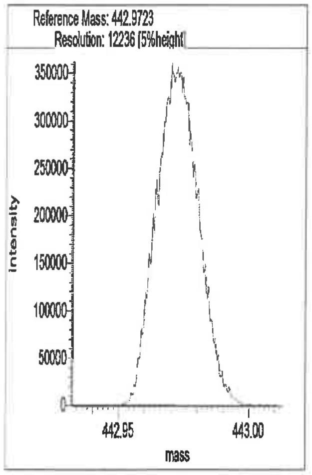

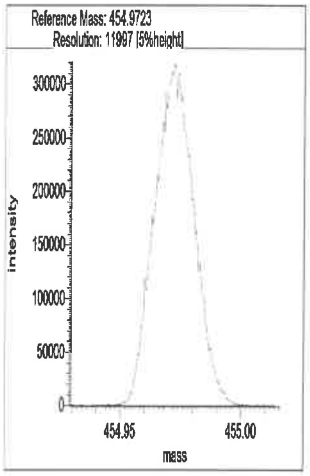

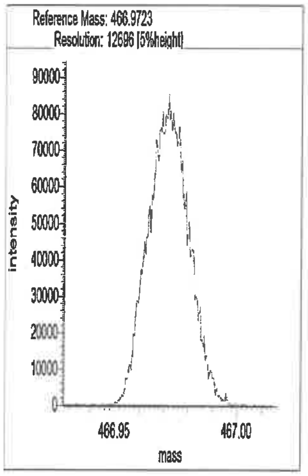

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12653 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12092 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12555 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12968 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12071 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12528 [5%height]

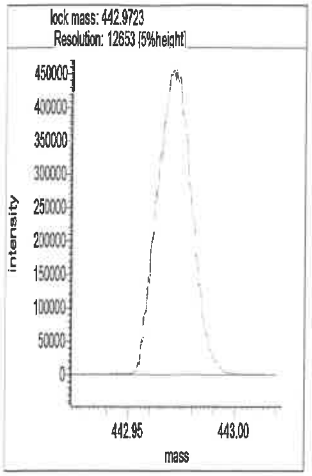
lock mass: 442.9723
Resolution: 12653 [5%height]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
442.95
443.00
mass

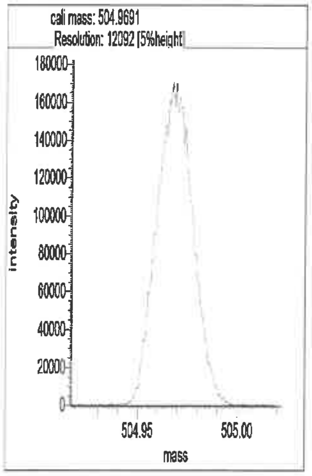
cali mass: 504.9691
Resolution: 12092 [5%height]
intensity
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
504.95
505.00
mass

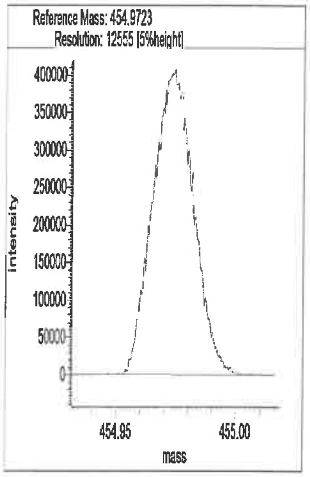
Reference Mass: 454.9723
Resolution: 12555 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
454.95
455.00
mass

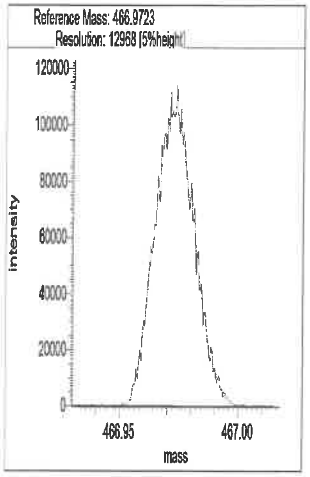
Reference Mass: 466.9723
Resolution: 12968 [5%height]
intensity
120000
100000
80000
60000
40000
20000
0
466.95
467.00
mass

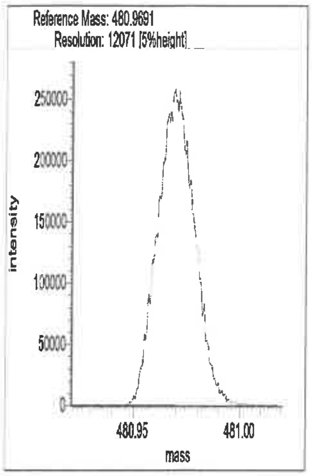
Reference Mass: 480.9691
Resolution: 12071 [5%height]
intensity
250000
200000
150000
100000
50000
0
480.95
481.00
mass

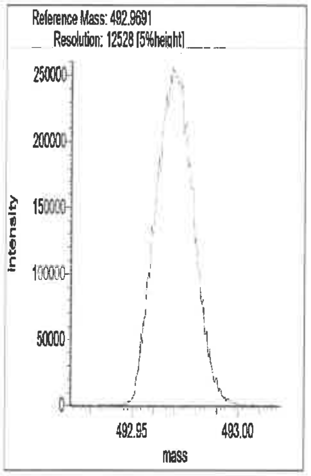
Reference Mass: 492.9691
Resolution: 12528 [5%height]
intensity
250000
200000
150000
100000
50000
0
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 10-Mar-2021 08:50:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00097
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Mar-2021 12:52:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1604

First Level Reviewer: bilottag Date: 10-Mar-2021 09:48:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.529	2490797	0.81	1E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	18.661	3605860	0.82	1.5437	93.8	93.8	0.3581	0.3581	93.78	
2,3,7,8-TCDF	18.687	397537	0.76	1.1258	9.793	9.793	0.0341	0.0341	97.93	
A Non-2,3,7,8-sub-TCDF	18.189						0.0341	0.0341		
S Total TCDF					9.793	9.793	0.0341	0.0341		
D 13C-2,3,7,8-TCDD	19.881	2278662	0.79	0.9687	94.4	94.4	0.2966	0.2966	94.43	
2,3,7,8-TCDD	19.907	252448	0.77	1.1904	9.307	9.307	0.0570	0.0570	93.07	
$ 37Cl4-2,3,7,8-TCDD	19.907	246589		1.0841	9.132	9.132	0.0209	0.0209	91.32	
A Non-2,3,7,8-sub-TCDD	18.953	4787	0.77	1.1904	0.2232	0.1765	0.0570	0.1765	0.00	RQ
S Total TCDD					9.530	9.483	0.0570	0.0570		RQ
D 13C-1,2,3,7,8-PeCDF	25.697	2897427	1.62	1.3124	88.6	88.6	0.5126	0.5126	88.63	
1,2,3,7,8-PeCDF	25.714	1594286	1.57	1.1163	49.3	49.3	0.2490	0.2490	98.59	
D 13C-2,3,4,7,8-PeCDF	27.087	2926829	1.59	1.3352	88.0	88.0	0.5039	0.5039	88.01	
2,3,4,7,8-PeCDF	27.112	1549448	1.57	1.0579	50.0	50.0	0.2993	0.2993	100	
A F1 PeCDFs	22.857						0.0132	0.0132		
A Non-2,3,7,8-sub-PeCDF	26.288						0.2723	0.2723		
S Total PeCDF					99.3	99.3	0.2741	0.2741		
D 13C-1,2,3,7,8-PeCDD	27.837	1672846	1.63	0.7716	87.0	87.0	0.1521	0.1521	87.04	
1,2,3,7,8-PeCDD	27.862	929018	1.59	1.1372	48.8	48.8	0.0810	0.0810	97.67	
A Non-2,3,7,8-sub-PeCDD	26.705						0.0810	0.0810		
S Total PeCDD					48.8	48.8	0.0810	0.0810		
D 13C-1,2,3,4,7,8-HxCDF	33.600	2384424	0.53	1.0931	103.2	103.2	0.3447	0.3447	103	
1,2,3,4,7,8-HxCDF	33.617	1444462	1.24	1.1831	51.2	51.2	0.2134	0.2134	102	
D 13C-1,2,3,6,7,8-HxCDF	33.802	2723708	0.53	1.1278	114.3	114.3	0.3341	0.3341	114	
1,2,3,6,7,8-HxCDF	33.819	1742026	1.24	1.2484	51.2	51.2	0.1917	0.1917	102	
D 13C-2,3,4,6,7,8-HxCDF	34.788	2494768	0.54	1.0552	111.9	111.9	0.3571	0.3571	112	
2,3,4,6,7,8-HxCDF	34.805	1623939	1.24	1.2750	51.1	51.1	0.1717	0.1717	102	
D 13C-1,2,3,7,8,9-HxCDF	35.799	2080778	0.53	0.9938	99.1	99.1	0.3791	0.3791	99.07	
1,2,3,7,8,9-HxCDF	35.815	1337085	1.24	1.2953	49.6	49.6	0.1813	0.1813	99.22	
A Non-2,3,7,8-sub-HxCDF	33.549						0.1886	0.1886		
S Total HxCDF					203.1	203.1	0.1895	0.1895		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.588	2113297	1.29	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.049	1607808	1.24	0.7895	96.4	96.4	0.2462	0.2462	96.36	
1,2,3,4,7,8-HxCDD	35.066	921875	1.26	1.0950	52.4	52.4	0.1065	0.1065	105	
D 13C-1,2,3,6,7,8-HxCDD	35.175	2052605	1.33	0.8495	114.3	114.3	0.2288	0.2288	114	
1,2,3,6,7,8-HxCDD	35.192	1046759	1.28	1.0201	50.0	50.0	0.0999	0.0999	99.98	
1,2,3,7,8,9-HxCDD	35.613	1006729	1.26	1.1549	47.6	47.6	0.0942	0.0942	95.26	
A Non-2,3,7,8-sub-HxCDD	34.143						0.0998	0.0998		
S Total HxCDD					150.0	150.0	0.1002	0.1002		
D 13C-1,2,3,4,6,7,8-HpCDF	37.835	1785821	0.46	0.7854	107.6	107.6	0.6352	0.6352	108	
1,2,3,4,6,7,8-HpCDF	37.844	1315425	1.03	1.4859	49.6	49.6	0.2182	0.2182	99.15	
D 13C-1,2,3,4,7,8,9-HpCDF	39.175	1549727	0.46	0.7230	101.4	101.4	0.6901	0.6901	101	
1,2,3,4,7,8,9-HpCDF	39.184	1061206	1.04	1.4048	48.7	48.7	0.2491	0.2491	97.49	
A Non-2,3,7,8-sub-HpCDF	38.456						0.2329	0.2329		
S Total HpCDF					98.3	98.3	0.2337	0.2337		
D 13C-1,2,3,4,6,7,8-HpCDD	38.855	1545090	1.07	0.6413	114.0	114.0	0.3068	0.3068	114	
1,2,3,4,6,7,8-HpCDD	38.872	834135	1.05	1.1489	47.0	47.0	0.1128	0.1128	93.98	
A Non-2,3,7,8-sub-HpCDD	38.472						0.1128	0.1128		
S Total HpCDD					47.0	47.0	0.1128	0.1128		
D 13C-OCDD	41.328	2411952	0.90	0.5141	222.0	222.0	0.3386	0.3386	111	
OCDF	41.413	1602413	0.92	1.5776	84.2	84.2	0.1466	0.1466	84.22	
OCDD	41.337	1313807	0.89	1.1706	93.1	93.1	0.1010	0.1010	93.07	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	10-Mar-2021 08:50:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00097				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	11-Mar-2021 12:52:18	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1604				

First Level Reviewer: bilottag Date: 10-Mar-2021 09:48:00

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	19.529	19.529	0		1117749	167342	297	742	563		
333.9338	19.537	19.529	1		1373048	216142	144	360	1501	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.661	18.661	0	0.956	1624117	258631	489	1222	529		
317.9389	18.661	18.661	0	0.956	1981743	319654	359	897	890	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.687	18.687	0	1.001	171688	26868	28	70	960		
305.8987	18.687	18.687	0	1.001	225849	35055	61	152	575	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.189						28	70			
305.8987	18.189						61	152			
13C-2,3,7,8-TCDD											
331.9368	19.881	19.881	0	1.018	1003133	143983	297	742	485		
333.9338	19.890	19.881	1	1.018	1275529	187590	144	360	1303	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.907	19.907	0	1.001	110128	15994	66	165	242		
321.8936	19.907	19.907	0	1.001	142320	21276	24	60	887	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.907	19.907	0	1.019	246589	35956	35	87	1027		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	20.164	18.953	73	1.014	3350	437	66	165	7		
	Empc Correction				2082	432	66	165	7		
321.8936	20.207	18.953	75	1.016	2705	562	24	60	23	1.24(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	25.697	25.697	0	1.316	1792656	319659	632	1580	506		
353.8970	25.697	25.697	0	1.316	1104771	198377	400	1000	496	1.62(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.714	25.714	0	1.001	974720	165109	331	827	499		
341.8567	25.714	25.714	0	1.001	619566	105687	245	612	431	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.087	27.087	0	1.387	1797897	284429	632	1580	450		
353.8970	27.087	27.087	0	1.387	1128932	170404	400	1000	426	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.112	27.112	0	1.001	947648	145180	331	827	439		
341.8567	27.112	27.112	0	1.001	601800	91633	245	612	374	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.857						2	5			
341.8567	22.857						26	65			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.288						331	827			
341.8567	26.288						245	612			
13C-1,2,3,7,8-PeCDD											
367.8949	27.837	27.837	0	1.425	1036845	155230	105	262	1478		
369.8919	27.828	27.837	-1	1.425	636001	94588	75	187	1261	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.862	27.862	0	1.001	571007	81561	65	162	1255		
357.8516	27.862	27.862	0	1.001	358011	52239	27	67	1935	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.705						65	162			
357.8516	26.705						27	67			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.600	33.600	0	0.944	820959	134589	220	550	612		
385.8610	33.600	33.600	0	0.944	1563465	258246	412	1030	627	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.617	33.617	0	1.001	798794	132925	223	557	596		
375.8178	33.617	33.617	0	1.001	645668	106568	174	435	612	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.802	33.802	0	0.950	948762	144363	220	550	656		
385.8610	33.802	33.802	0	0.950	1774946	270083	412	1030	656	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.819	33.819	0	1.000	965208	144219	223	557	647		
375.8178	33.819	33.819	0	1.000	776818	117326	174	435	674	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.788	34.788	0	0.978	870786	154333	220	550	702		
385.8610	34.788	34.788	0	0.978	1623982	298697	412	1030	725	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.805	34.805	0	1.000	899822	169086	223	557	758		
375.8178	34.805	34.805	0	1.000	724117	134657	174	435	774	1.24(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.799	35.799	0	1.006	723379	148449	220	550	675		
385.8610	35.799	35.799	0	1.006	1357399	273994	412	1030	665	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	35.815	35.815	0	1.000	741396	145675	223	557	653		
375.8178	35.815	35.815	0	1.000	595689	117813	174	435	677	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.549						223	557			
375.8178	33.549						174	435			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.588	35.588	0		1188458	236198	163	407	1449		
403.8529	35.596	35.588	1		924839	183135	163	407	1124	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.049	35.049	0	0.985	889356	188757	163	407	1158		
403.8529	35.041	35.049	-1	0.985	718452	150105	163	407	921	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.066	35.066	0	1.000	514792	105036	91	227	1154		
391.8127	35.057	35.066	-1	1.000	407083	85585	67	167	1277	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.175	35.175	0	0.988	1170445	220087	163	407	1350		
403.8529	35.175	35.175	0	0.988	882160	167599	163	407	1028	1.33(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.192	35.192	0	1.000	587276	110221	91	227	1211		
391.8127	35.192	35.192	0	1.000	459483	86674	67	167	1294	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.613	35.613	0	1.016	561691	110504	91	227	1214		
391.8127	35.605	35.613	-1	1.016	445038	85839	67	167	1281	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.143						91	227			
391.8127	34.143						67	167			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.835	37.835	0	1.063	565322	143820	290	725	496		
419.8220	37.835	37.835	0	1.063	1220499	305478	547	1367	558	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.844	37.844	0	1.000	666409	169164	303	757	558		
409.7788	37.844	37.844	0	1.000	649016	163678	280	700	585	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.175	39.175	0	1.101	485873	127624	290	725	440		
419.8220	39.167	39.175	-1	1.101	1063854	288730	547	1367	528	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.184	39.184	0	1.000	540663	148417	303	757	490		
409.7788	39.184	39.184	0	1.000	520543	141071	280	700	504	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.456						303	757			
409.7788	38.456						280	700			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.855	38.855	0	1.092	800368	217067	167	417	1300		
437.8140	38.855	38.855	0	1.092	744722	203343	163	407	1248	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	38.872	38.872	0	1.000	427039	117057	123	307	952		
425.7737	38.863	38.872	-1	1.000	407096	111015	95	237	1169	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.472						123	307			
425.7737	38.472						95	237			
13C-OCDD											
469.7780	41.328	41.328	0	1.161	1142146	305266	170	425	1796		
471.7750	41.328	41.328	0	1.161	1269806	349202	122	305	2862	0.90(0.76-1.02)	
OCDF											
441.7428	41.413	41.413	0	1.002	765769	211606	149	372	1420		
443.7399	41.404	41.413	-1	1.002	836644	230366	154	385	1496	0.92(0.76-1.02)	
OCDD											
457.7377	41.337	41.337	0	1.000	620193	166311	73	182	2278		
459.7348	41.337	41.337	0	1.000	693614	186303	82	205	2272	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00097	Amount Added: 2.00	Units: uL

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
Lims ID:	CCV		
Client ID:			
Inject. Date:	10-Mar-2021 08:50:00	Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	1
Sublist:	chrom-Dioxin_DFS1*sub1		

Non-2,3,7,8-sub-TCDD, RT: 18.953

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2278662	331573

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2278662	331573

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.164	3350	437	2705	562	0.2232	1.24	RnQ
20.164	2082	432	2705	562	0.1765		Empc Correction
Signal Totals:							
	2082	432	2705	562			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6055	999				1.24	RQ
	4787	994					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.2232 = (6055 * 100.000) / (2278662 * 1.190)

Empc Amount: 0.1765 = (4787 * 100.000) / (2278662 * 1.190)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

n - Failed Sig-To-Noise Test

Q - EMPC-Estimated Max. Possible Conc.

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
Injection Date:	10-Mar-2021 08:50:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

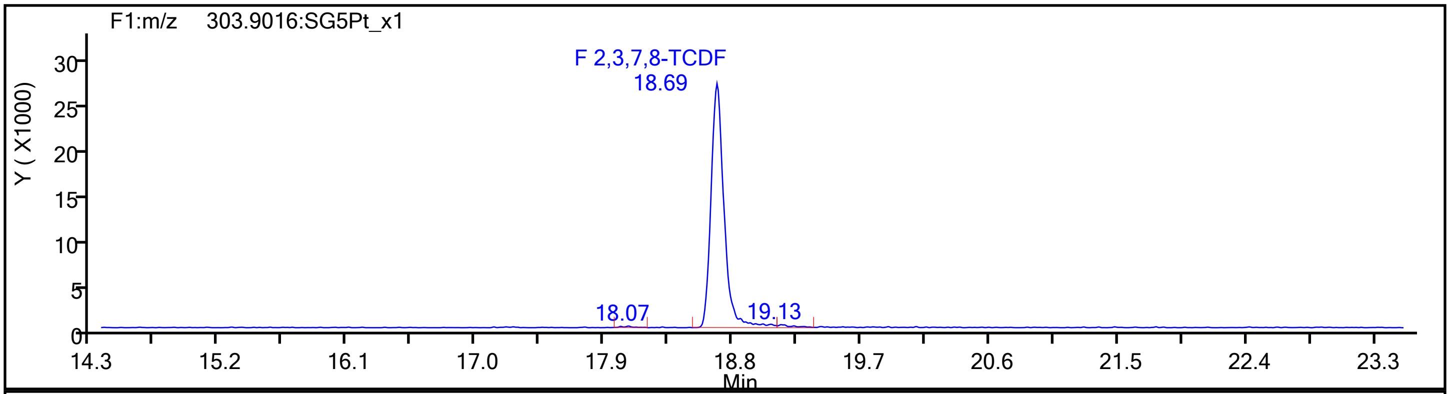

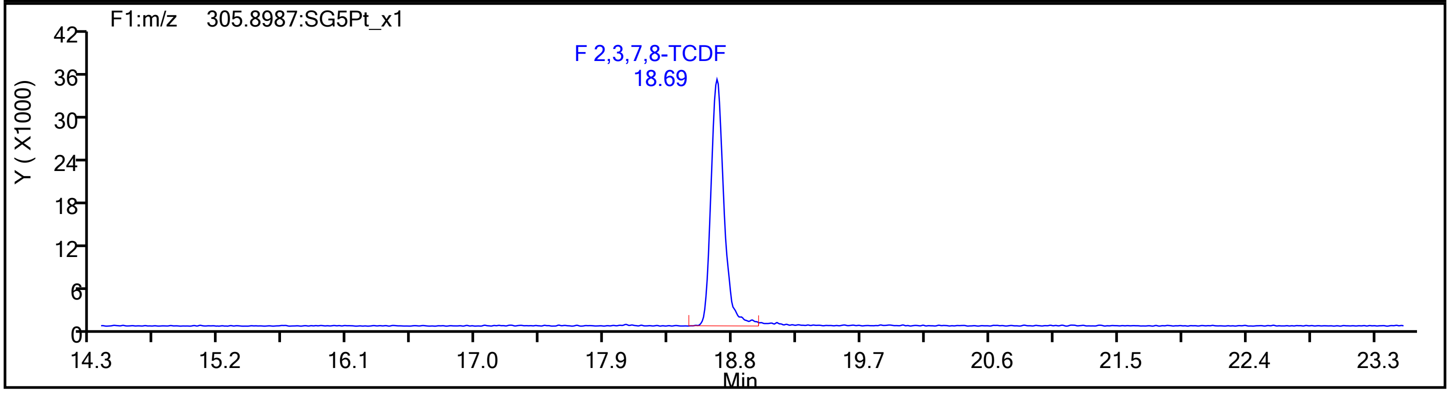

TCDF Standards

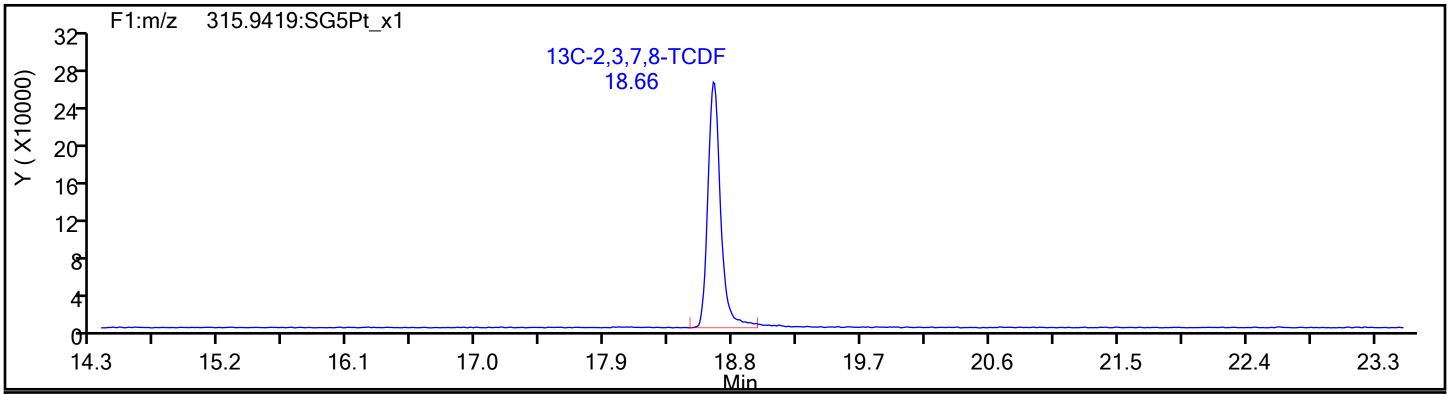

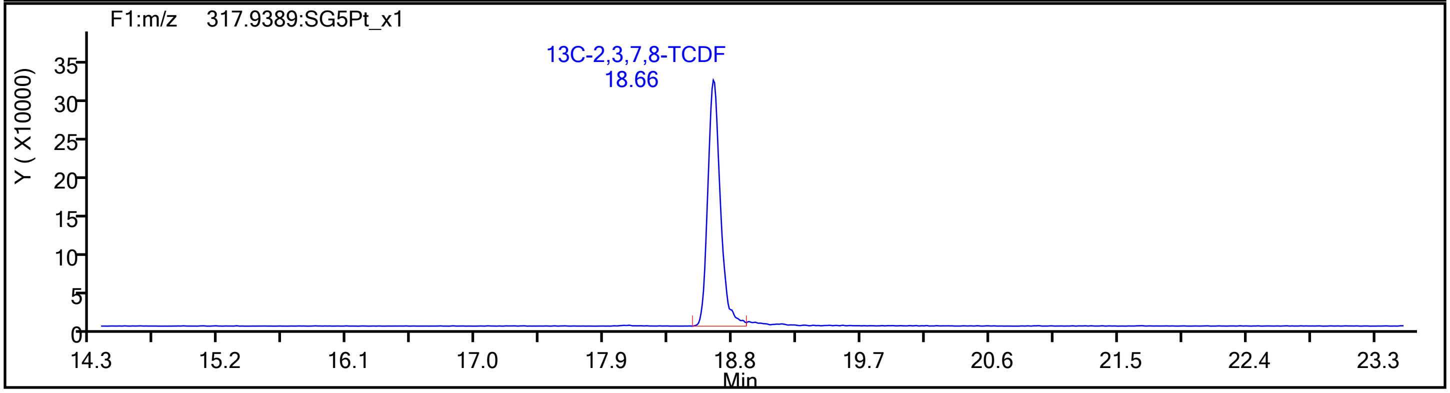

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
Injection Date:	10-Mar-2021 08:50:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

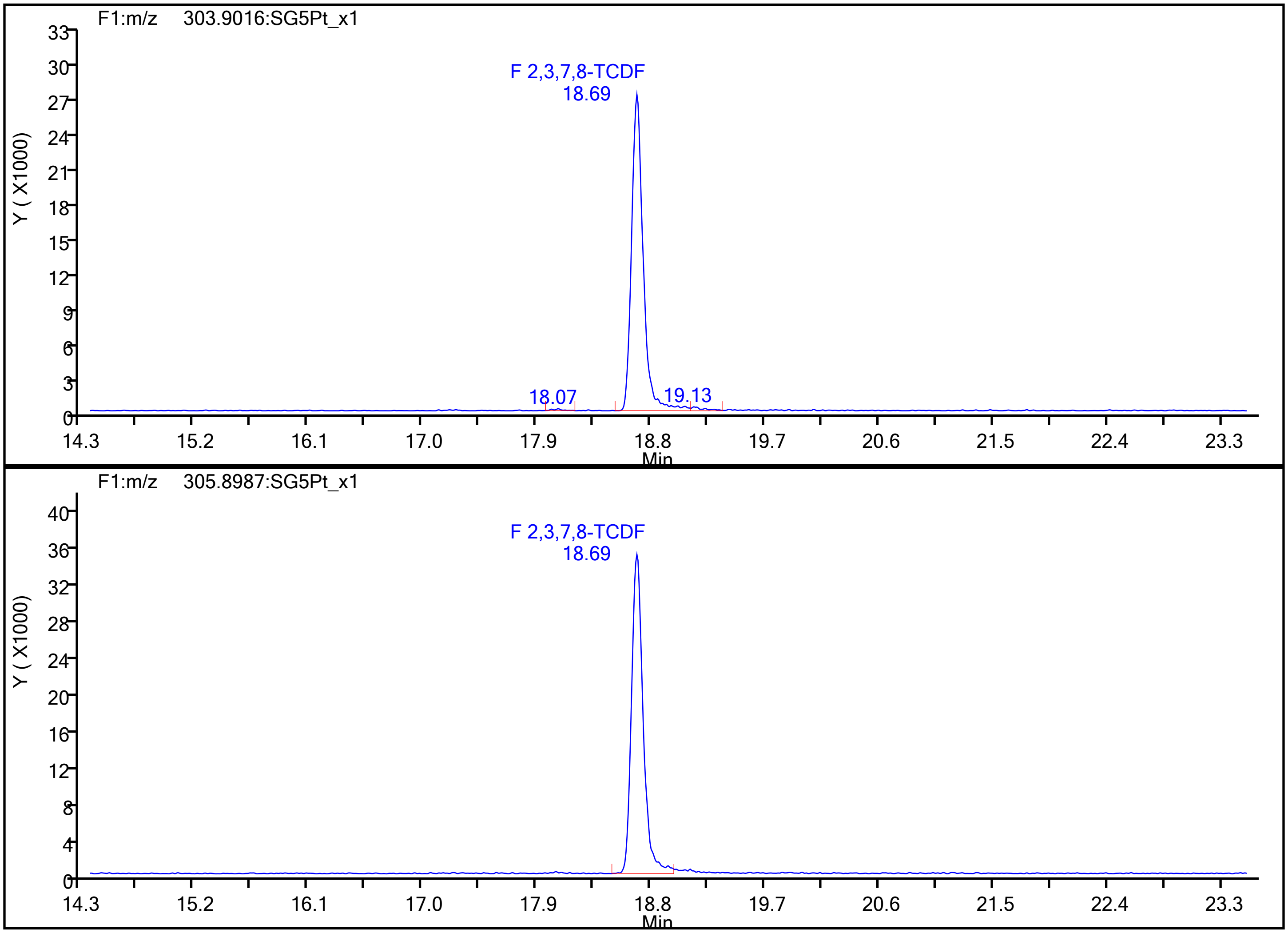

TCDF Interference Mass

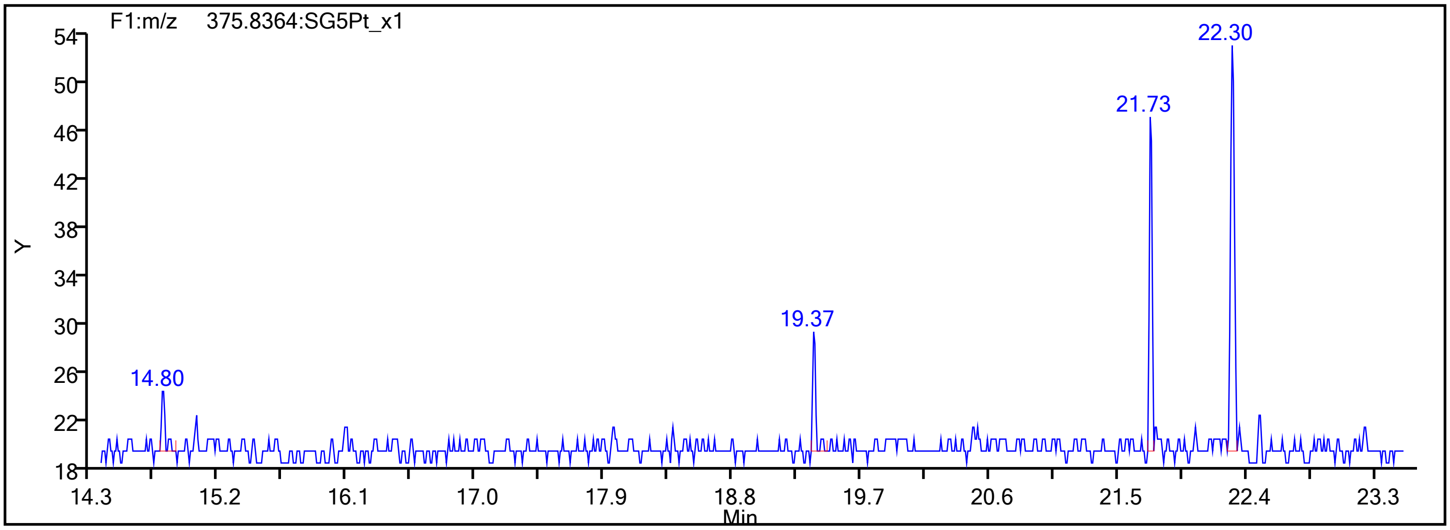

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d

Injection Date: 10-Mar-2021 08:50:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

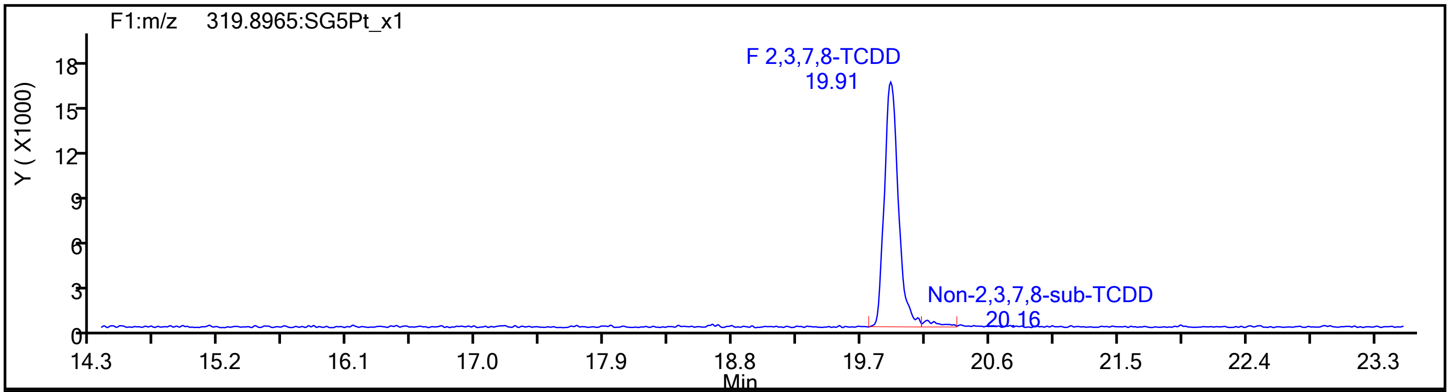

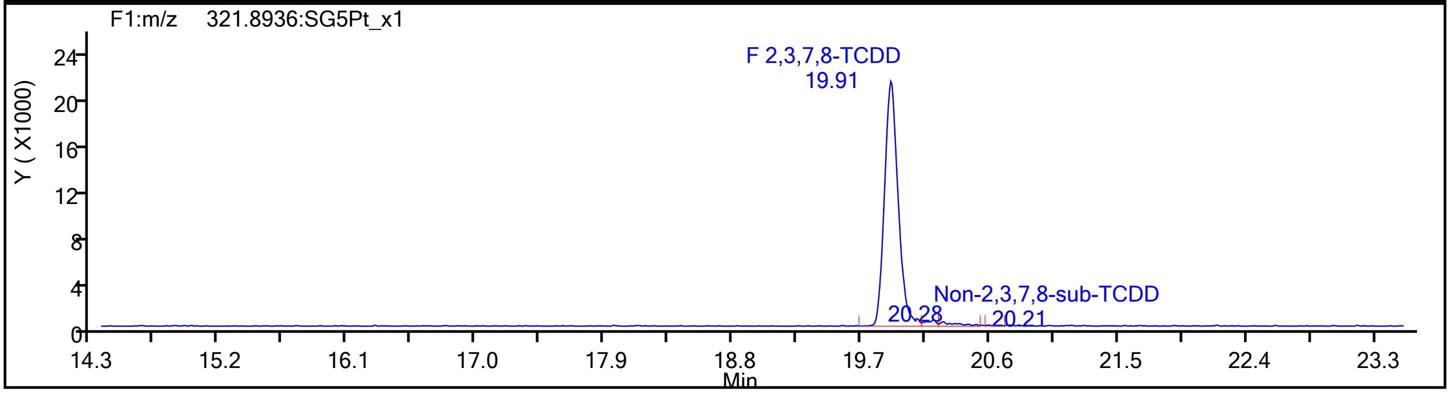

TCDD Standards

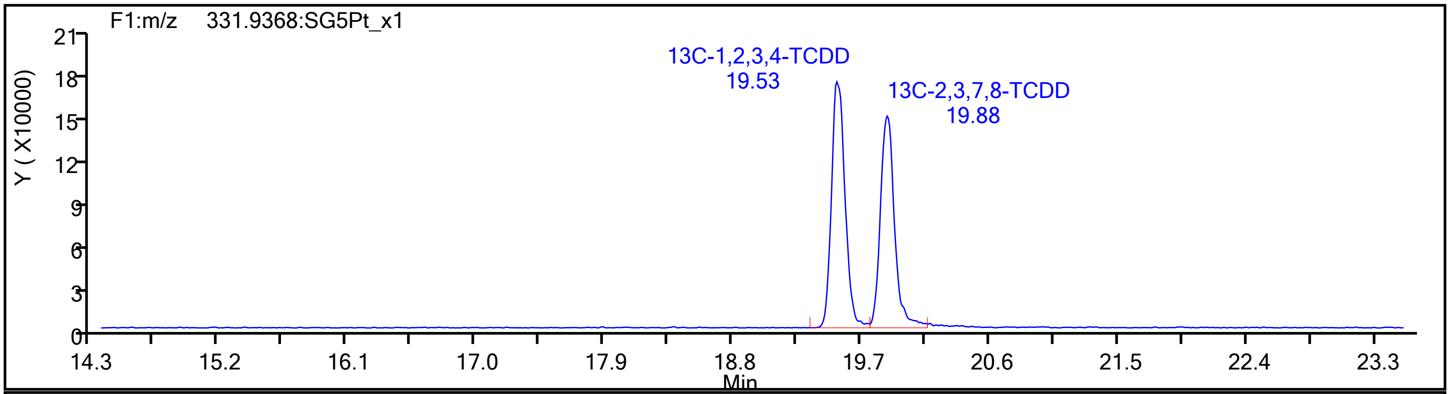

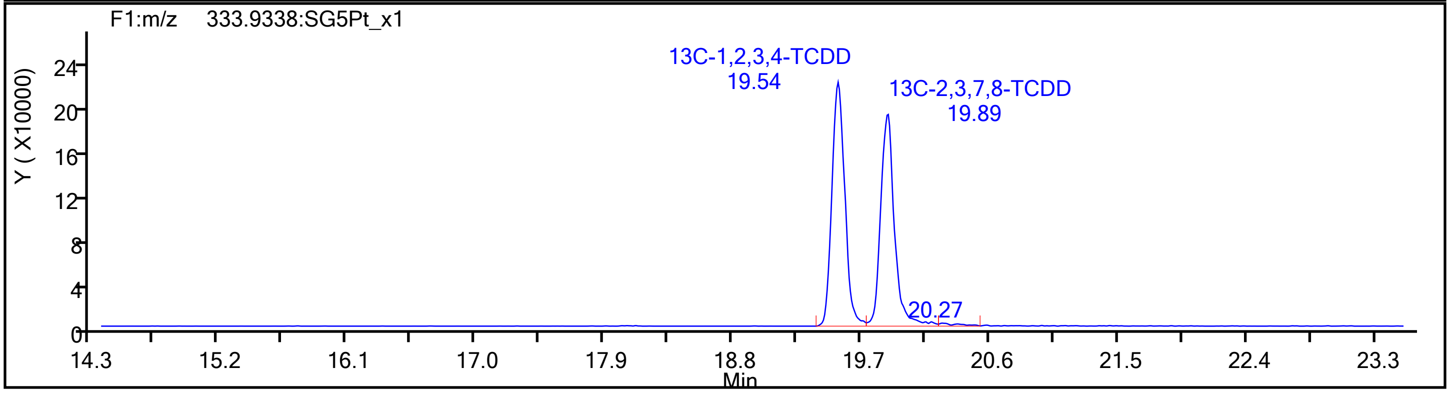

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
Injection Date:	10-Mar-2021 08:50:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

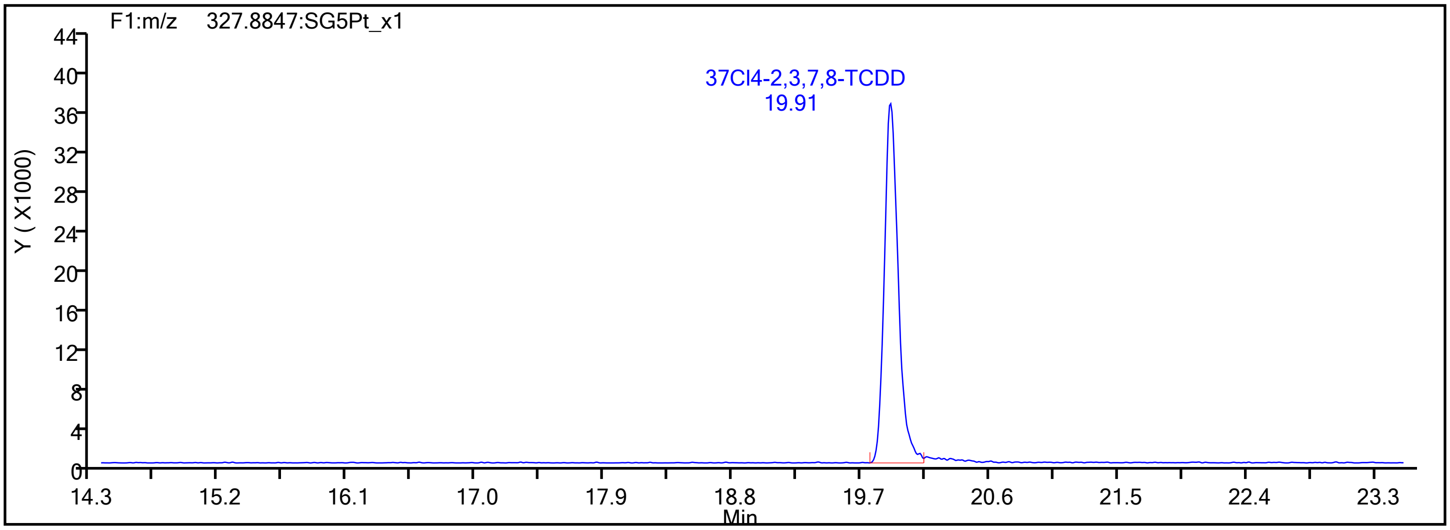

37Cl4-TCDD Standards

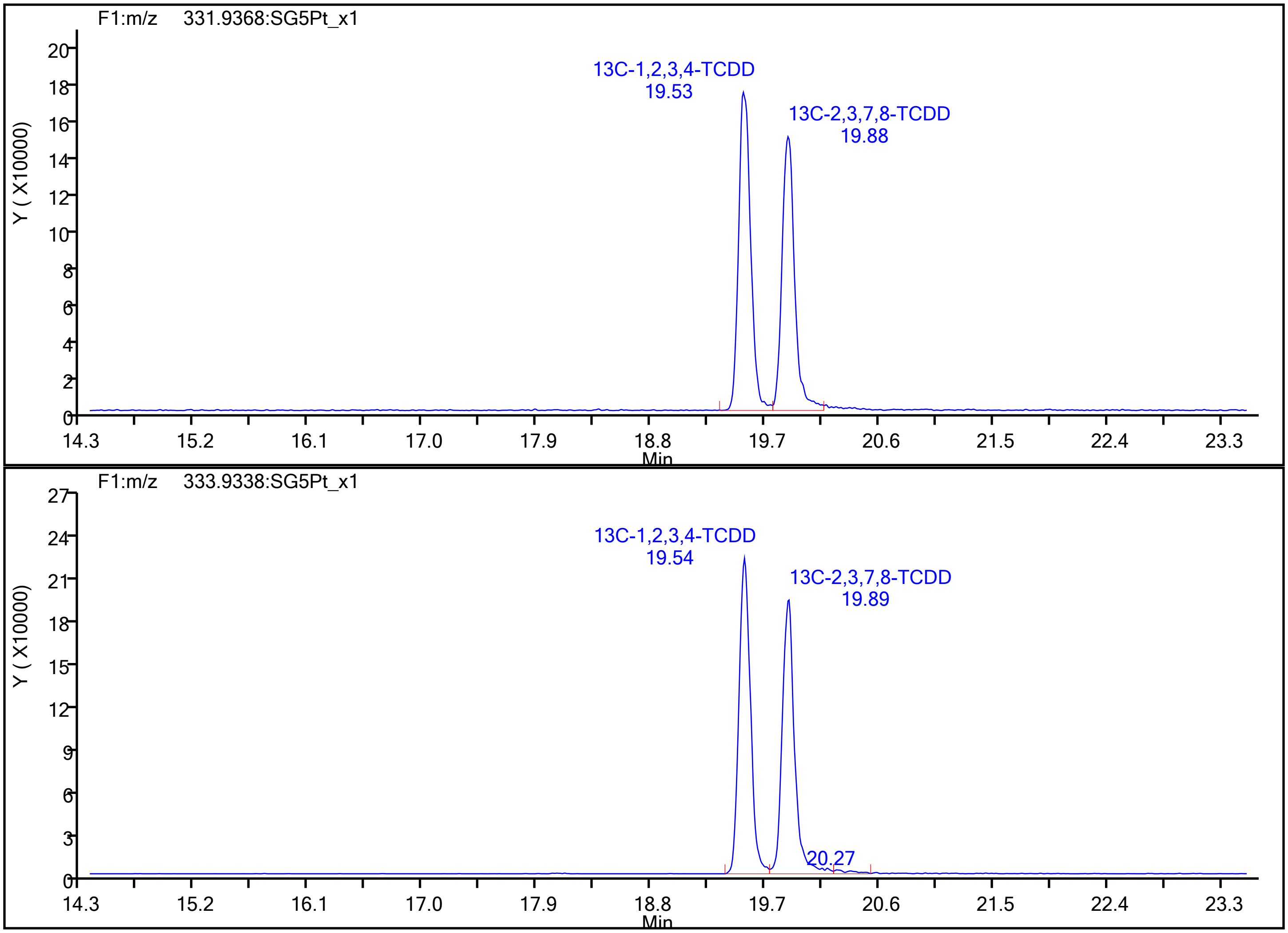

Report Date: 11-Mar-2021 12:52:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d

Injection Date: 10-Mar-2021 08:50:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973
Sample Line#: 1

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

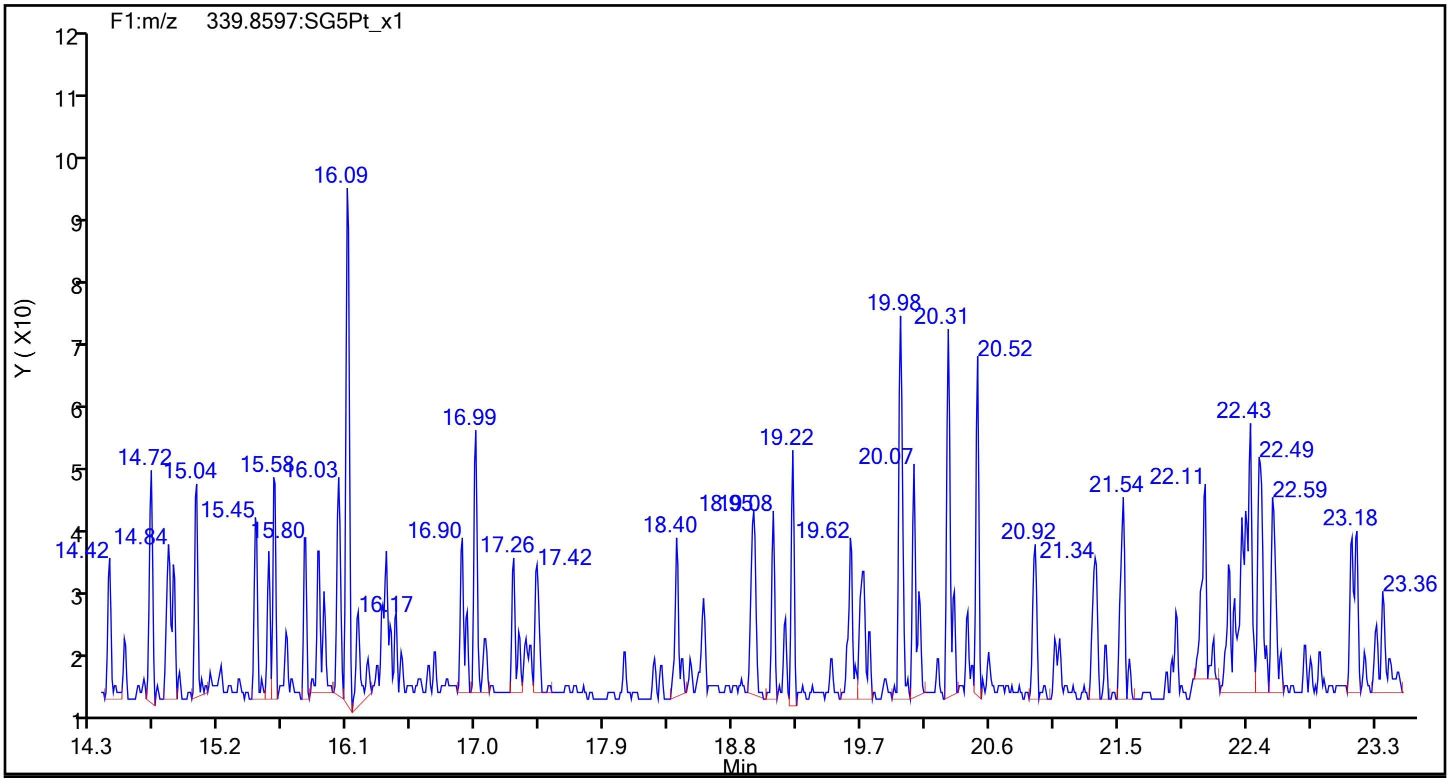

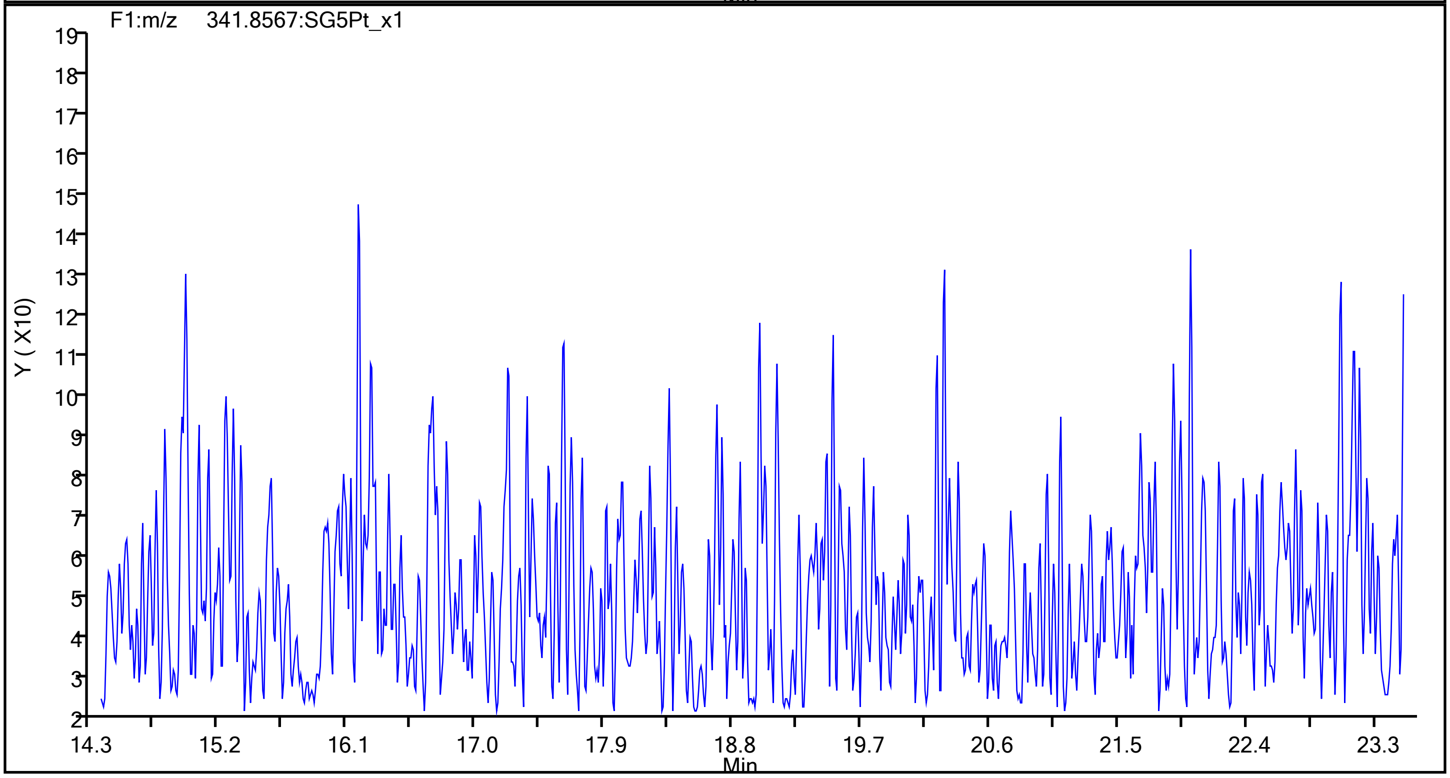

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
Injection Date:	10-Mar-2021 08:50:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

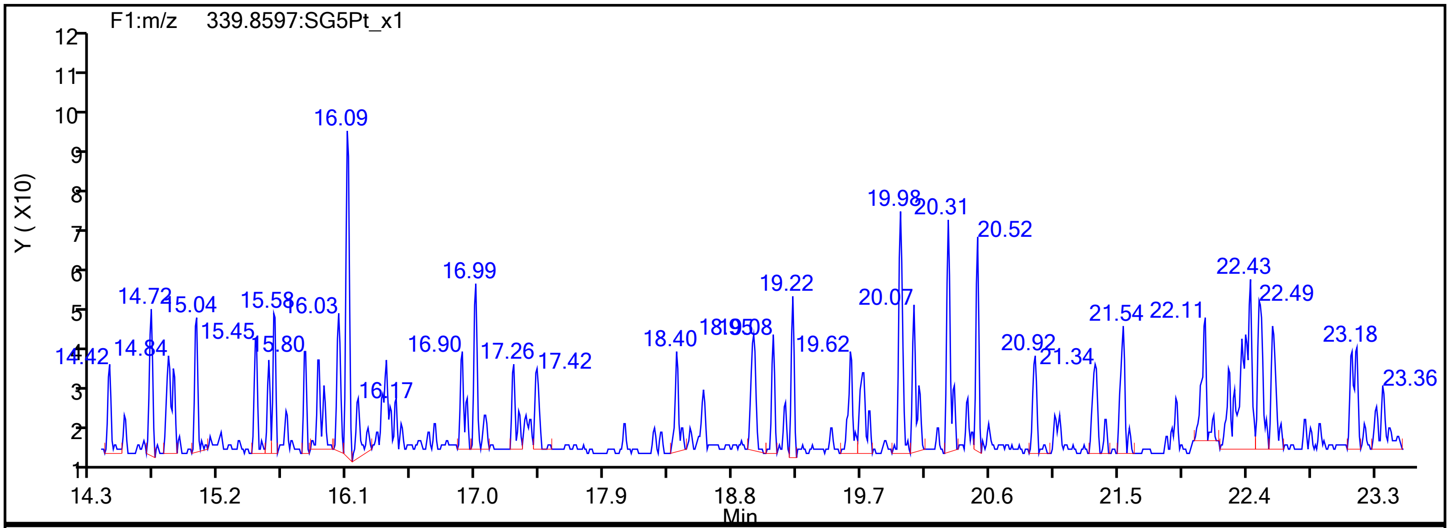

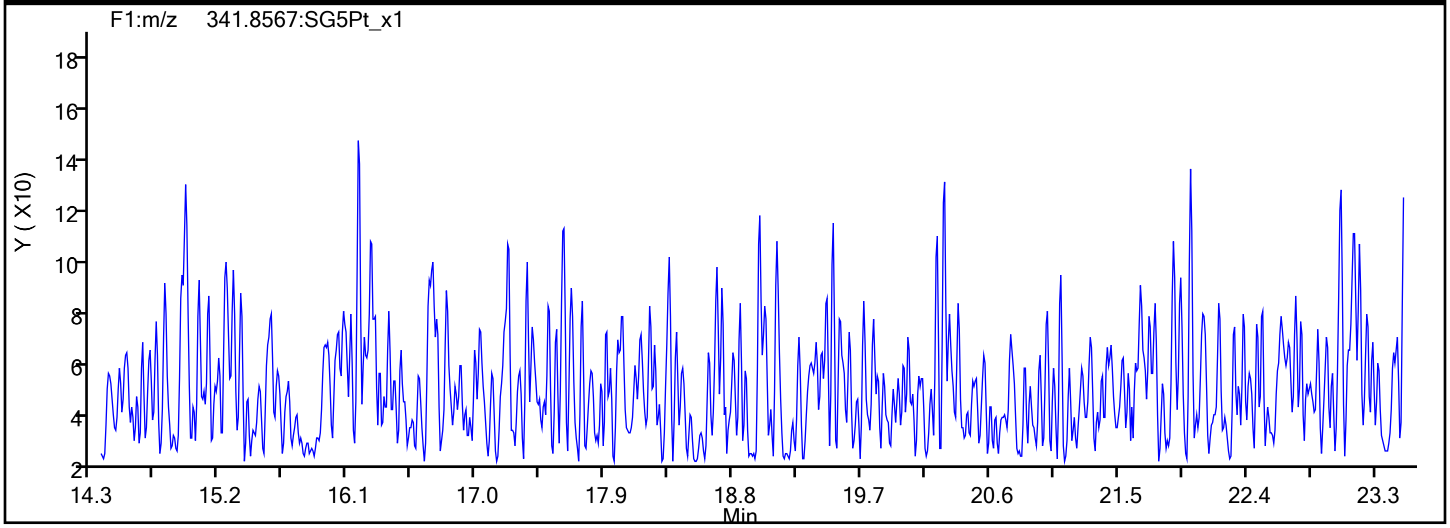

F1 PeCDFs Interference Mass

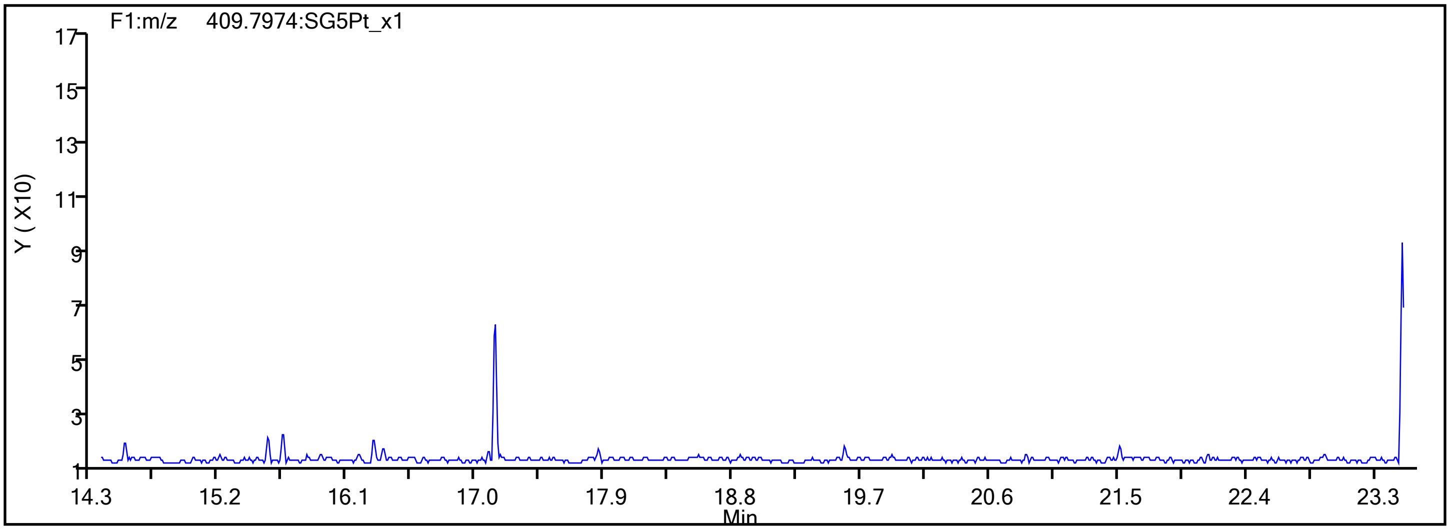

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d
Injection Date: 10-Mar-2021 08:50:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

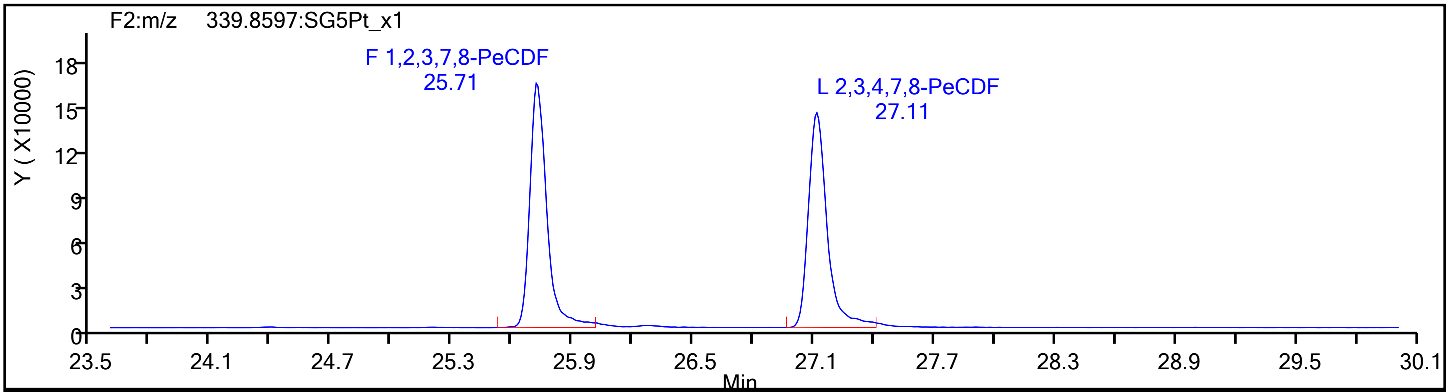

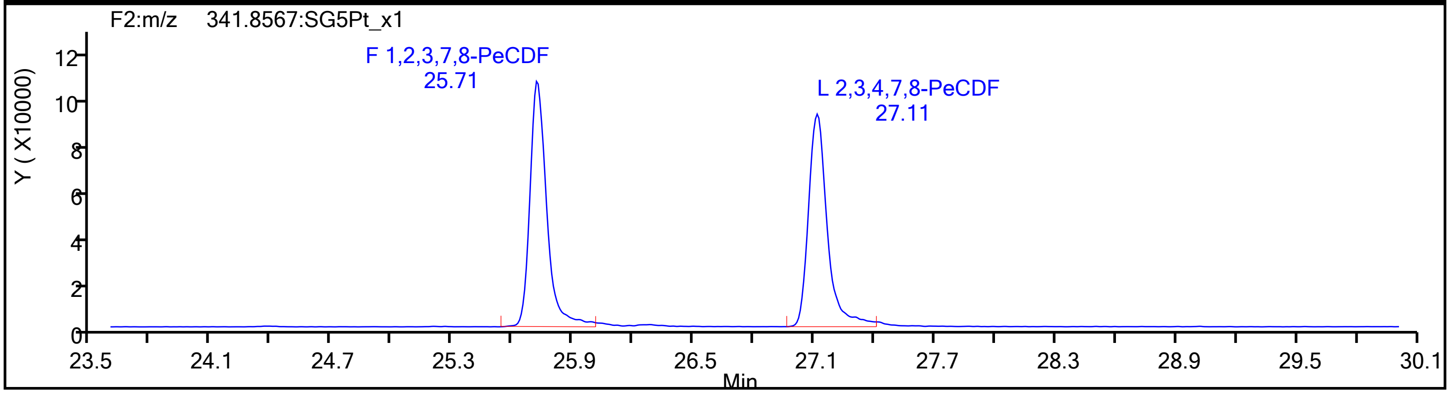

PeCDF Standards

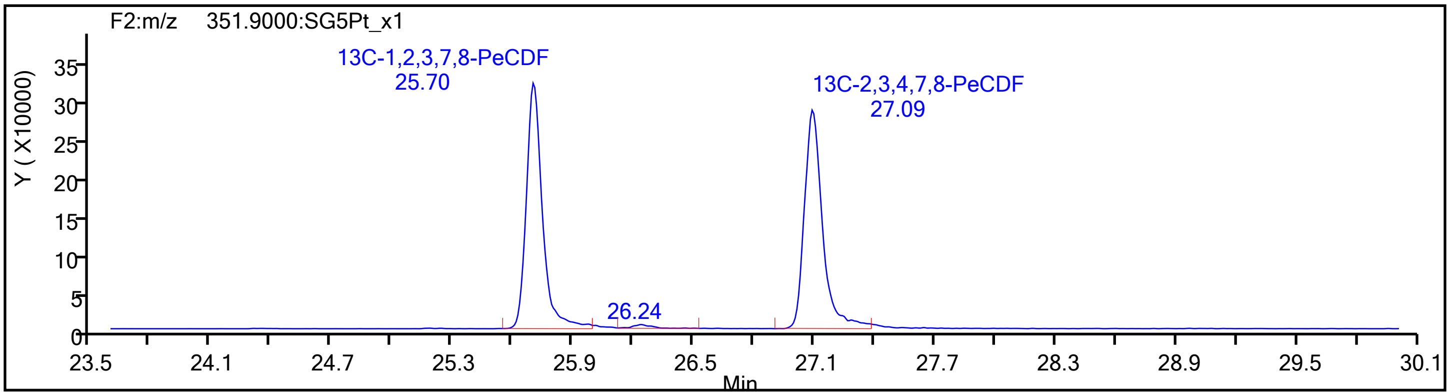

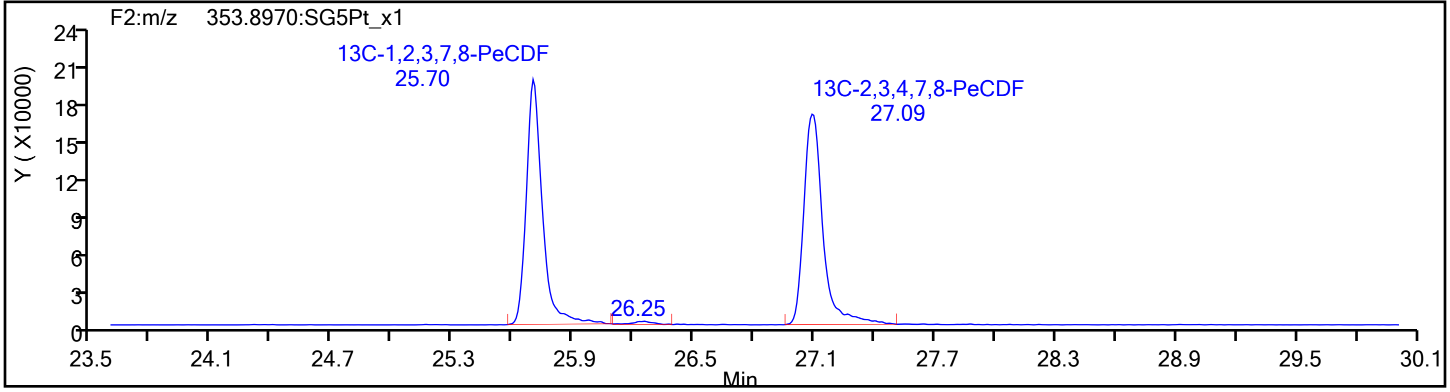

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
Injection Date:	10-Mar-2021 08:50:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

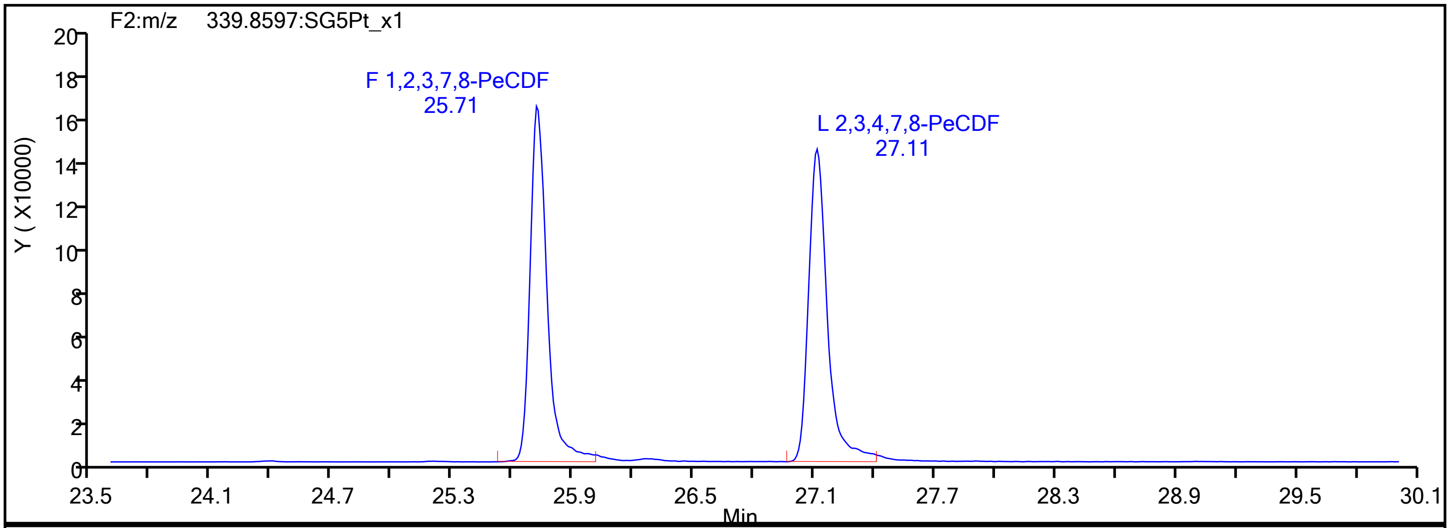

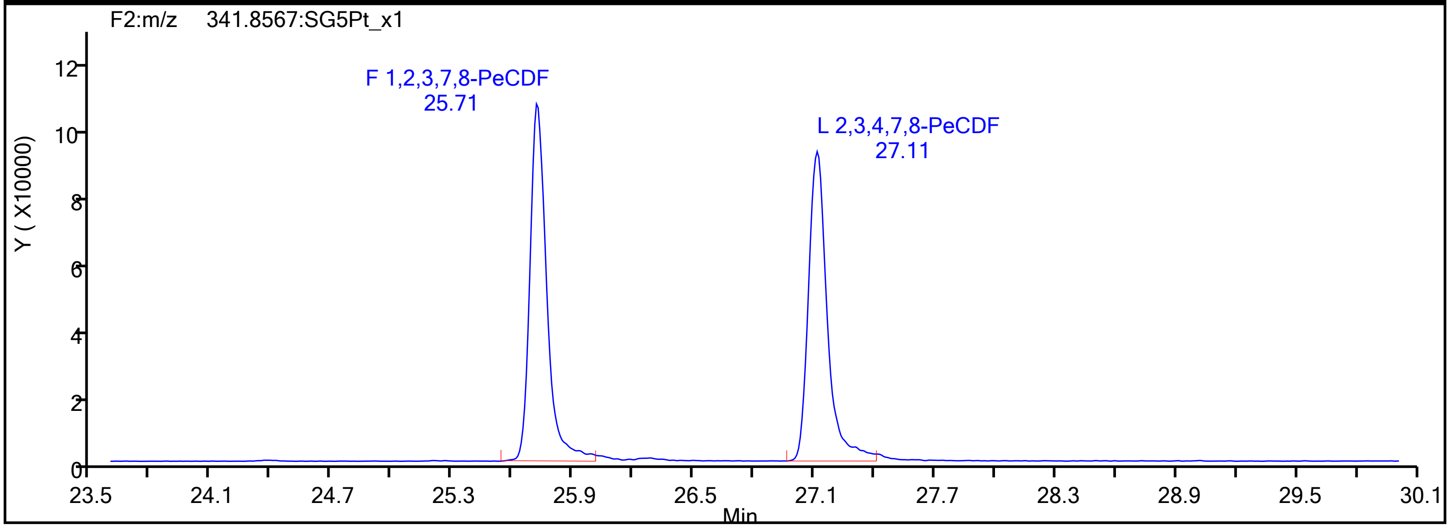

PeCDF Interference Mass

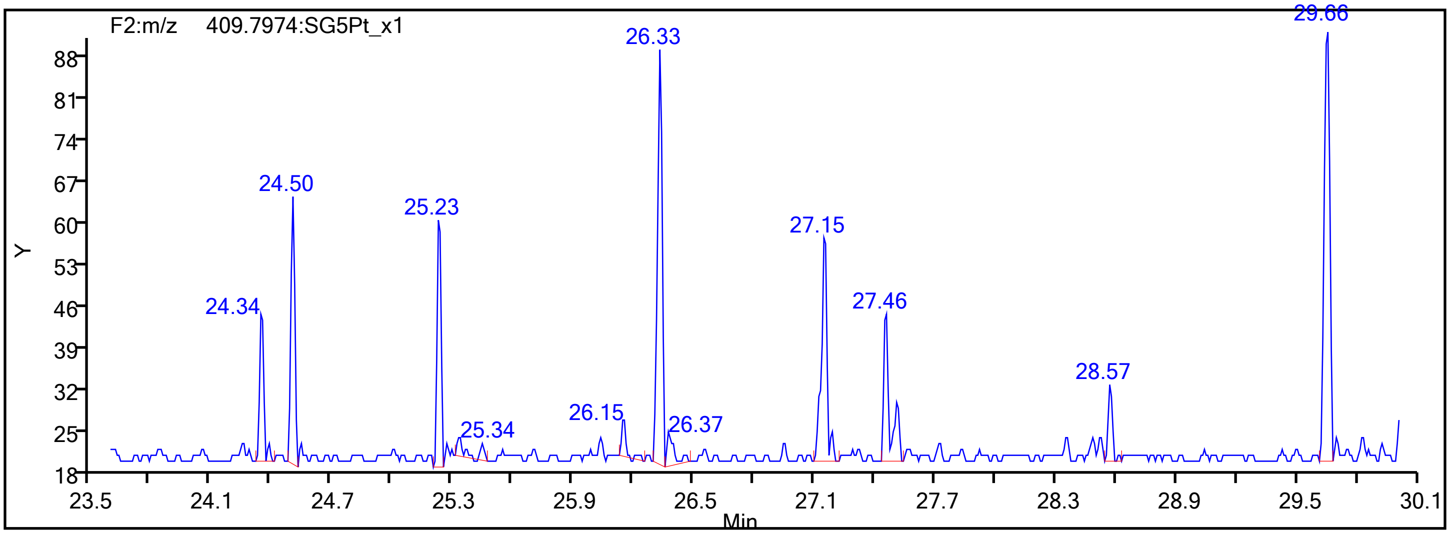

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d

Injection Date: 10-Mar-2021 08:50:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

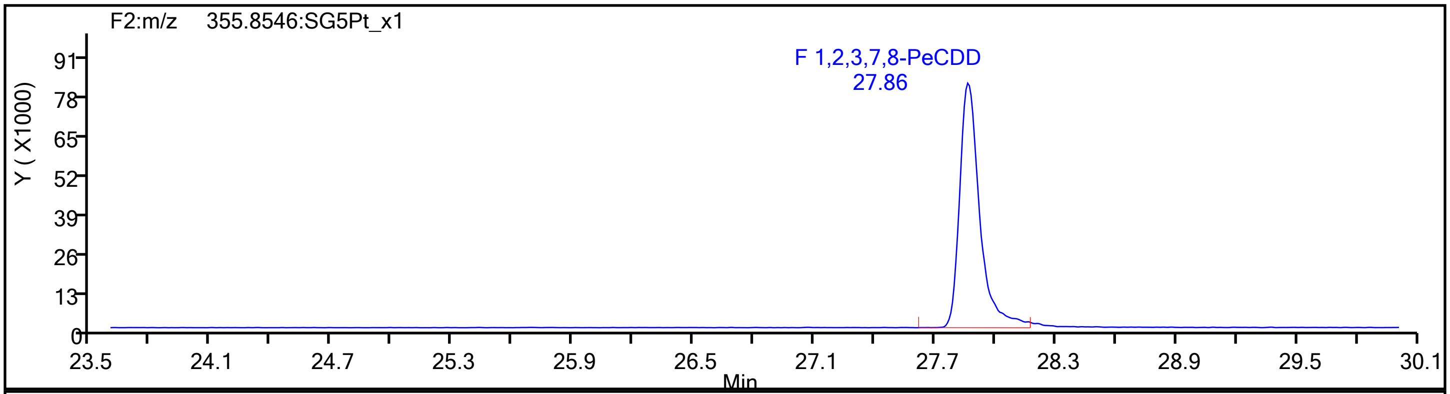

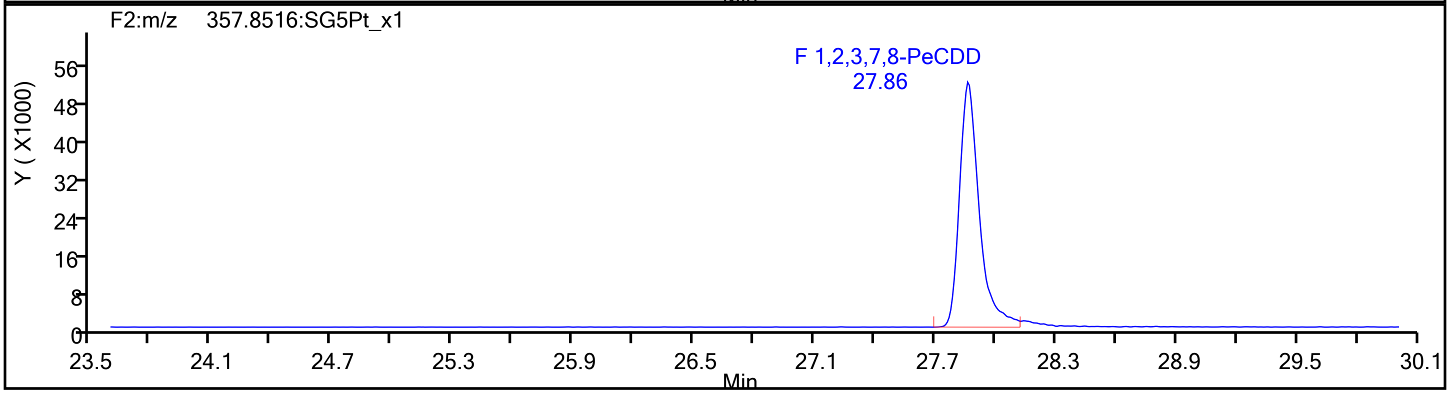

PeCDD Standards

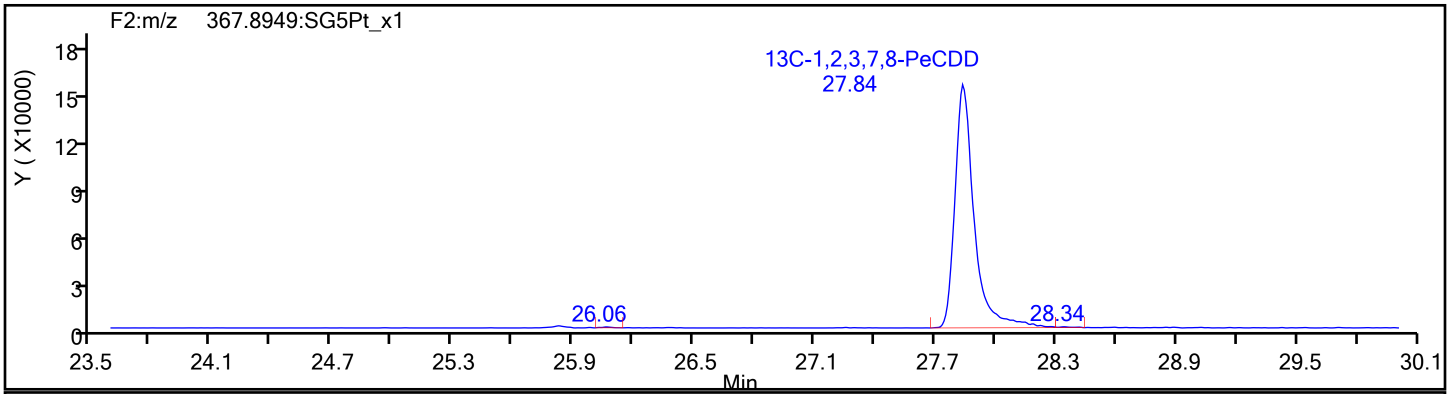

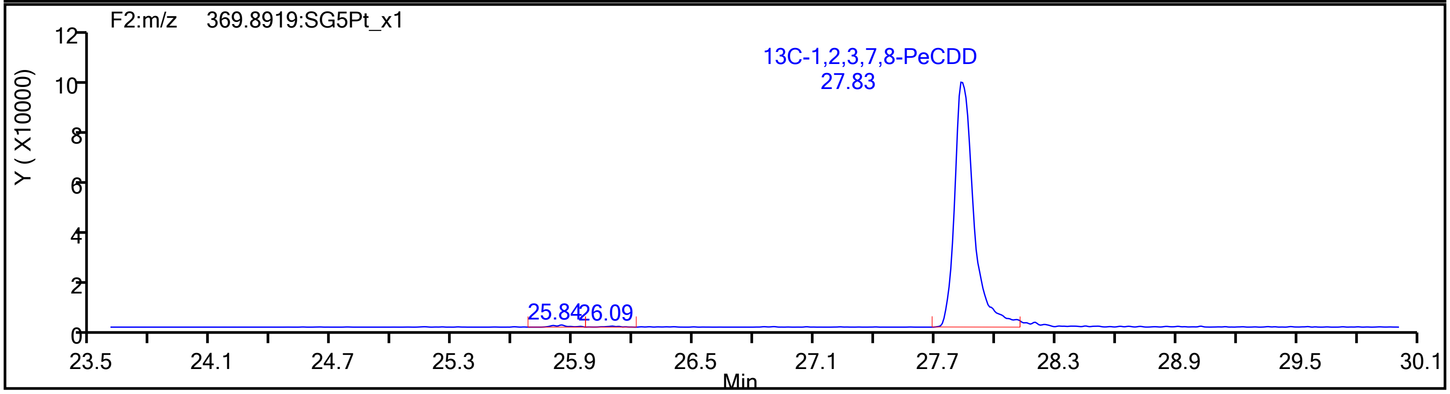

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d
Injection Date: 10-Mar-2021 08:50:00 Injection Vol: 2.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

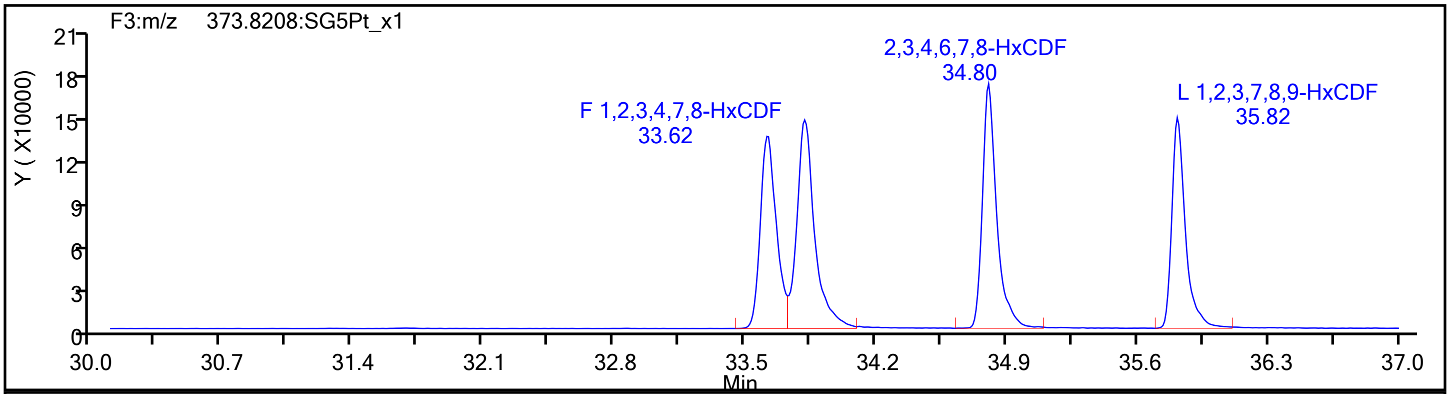

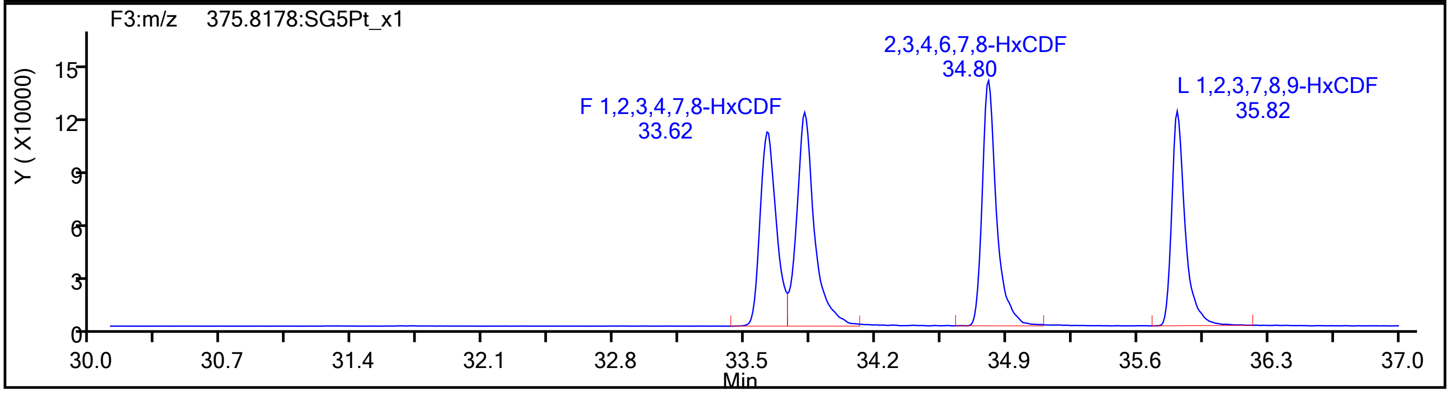

HxCDF Standards

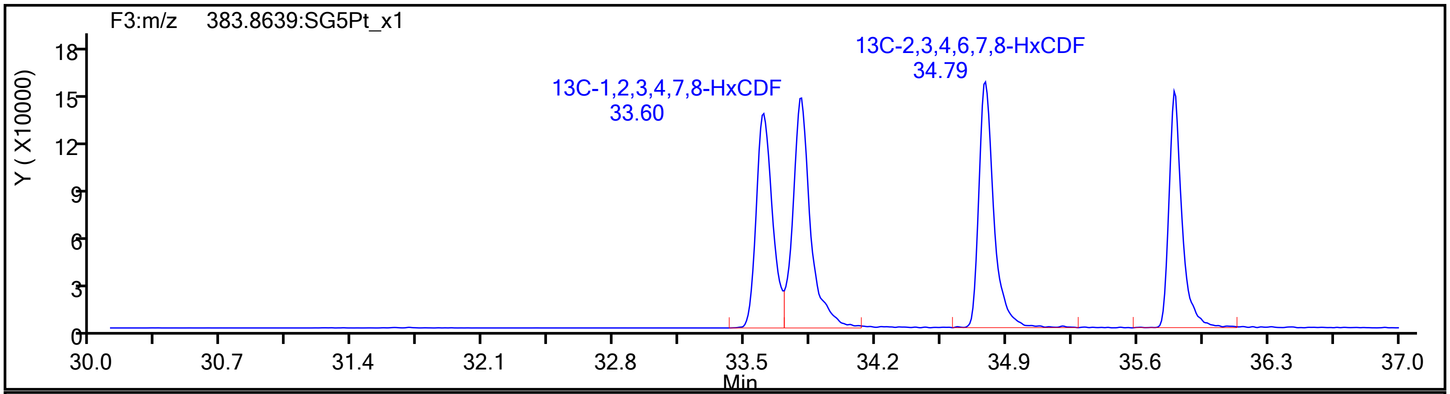

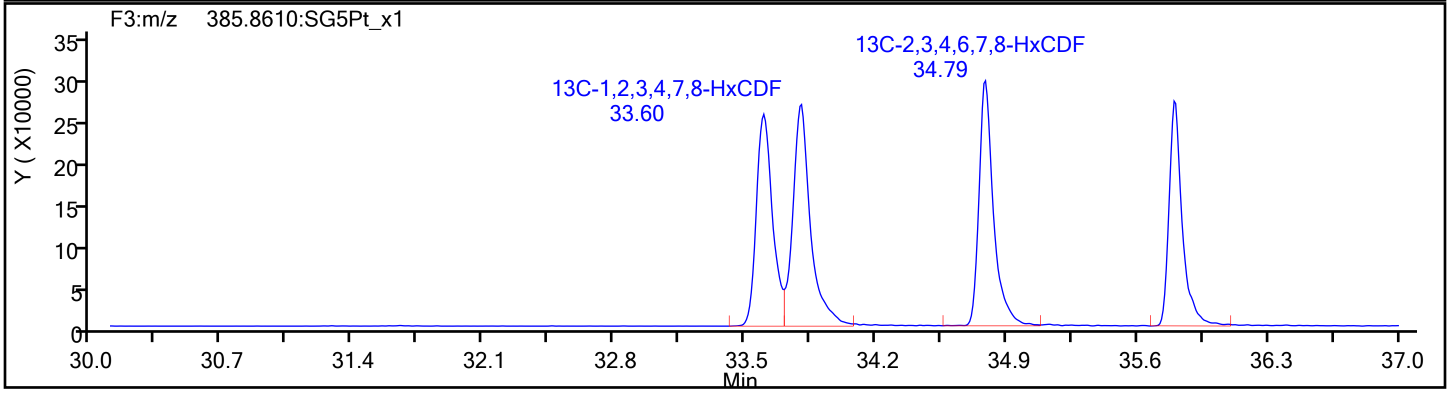

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

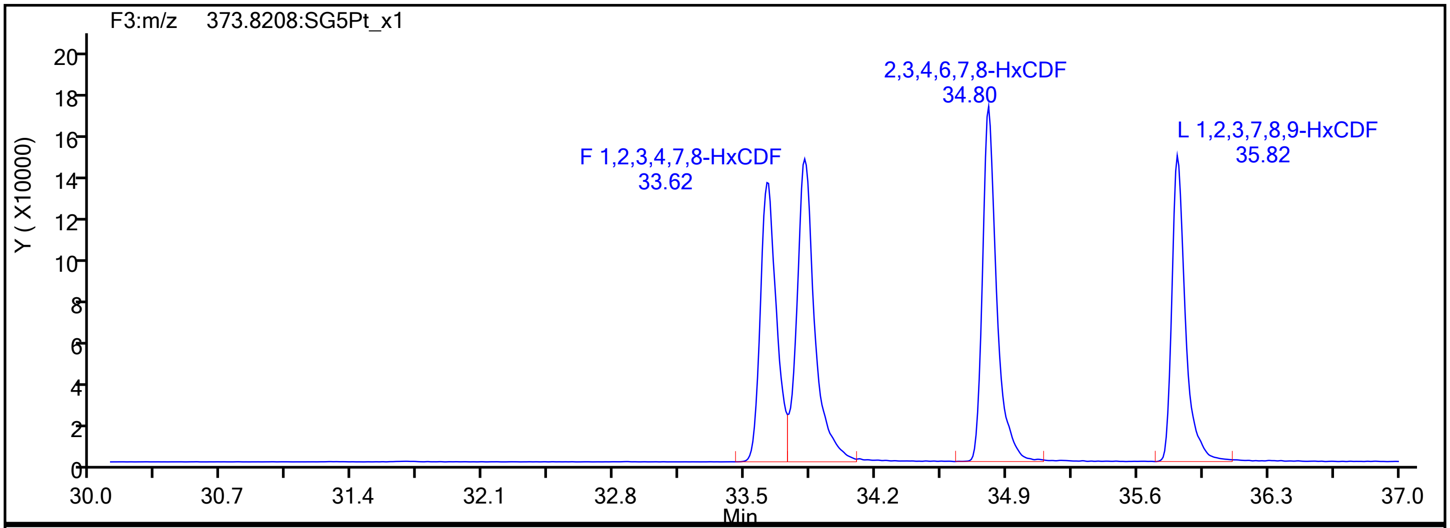

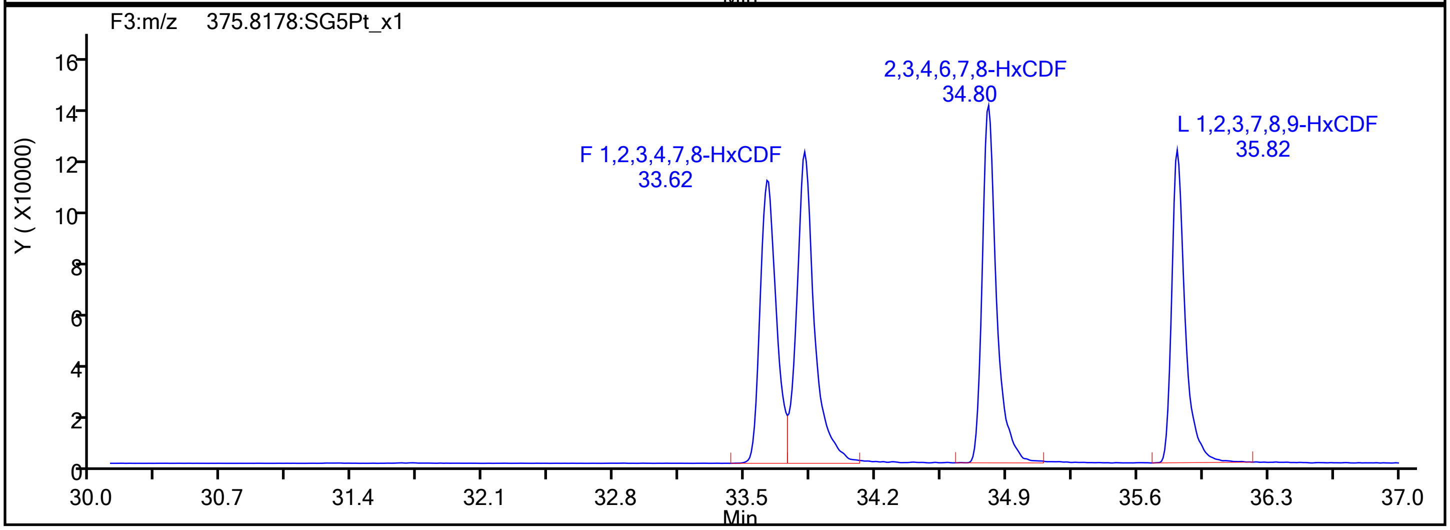

HxCDF Interference Mass

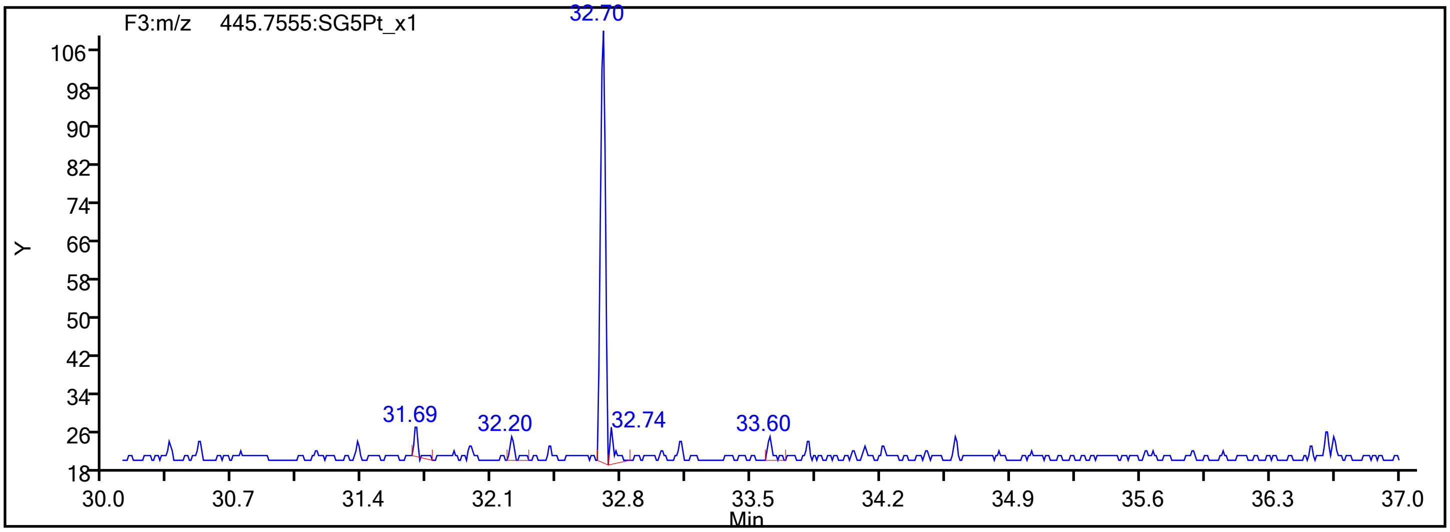

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

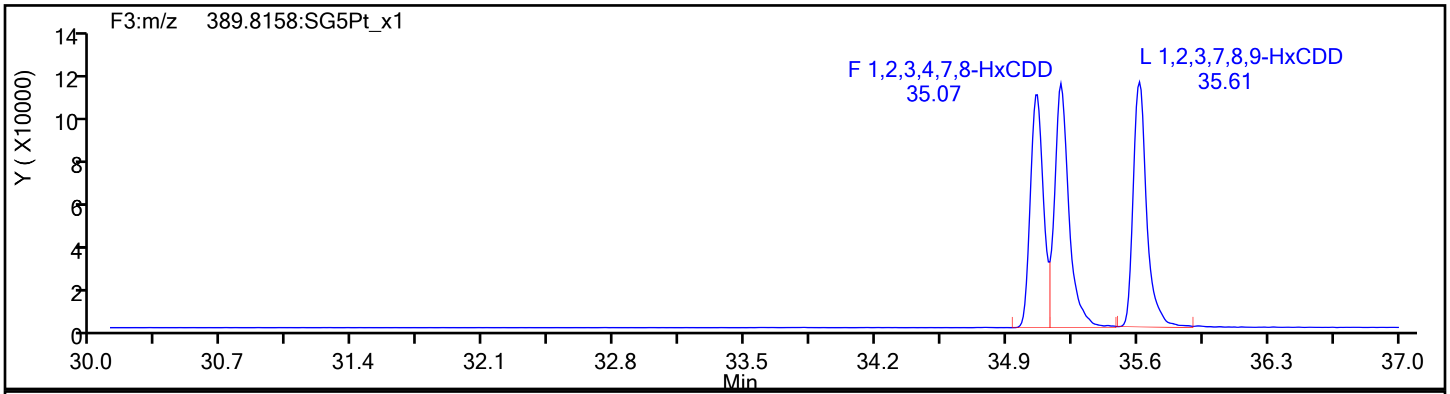

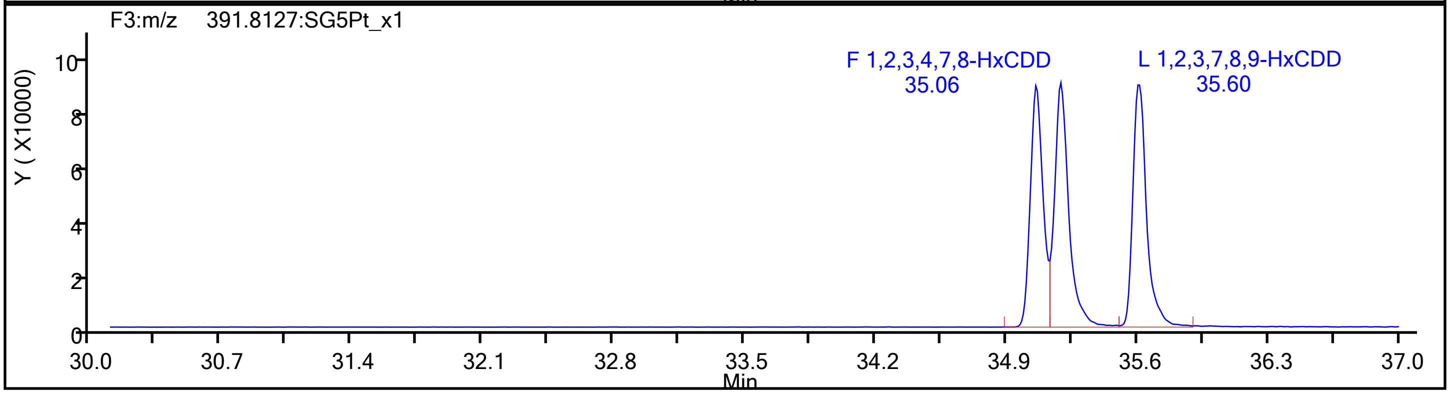

HxCDD Standards

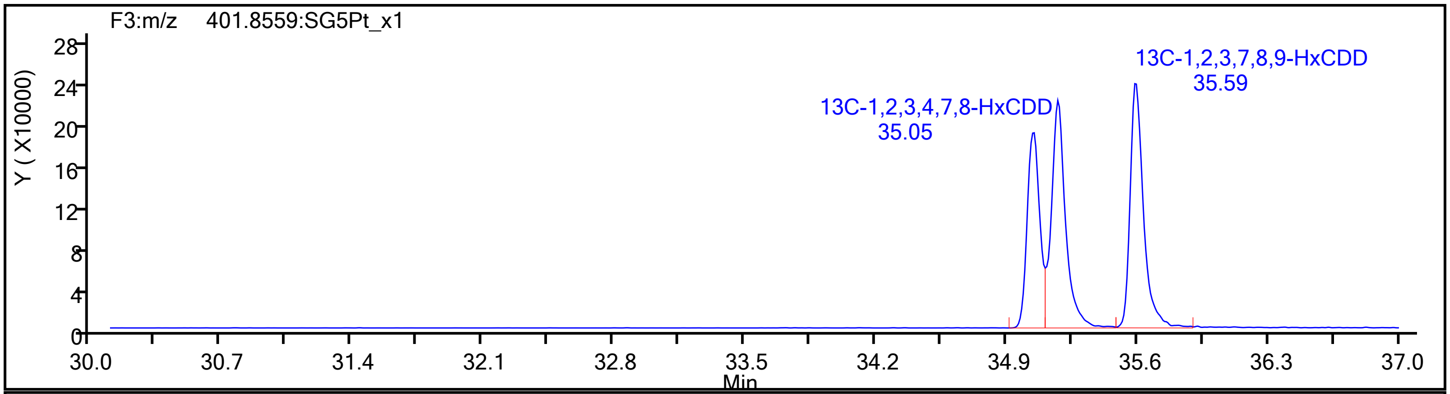

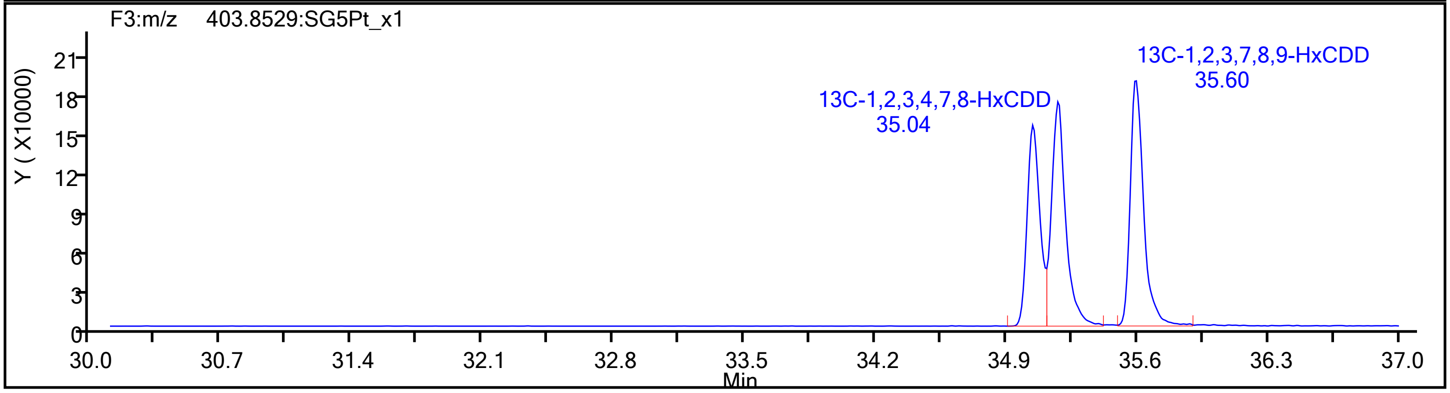

Report Date: 11-Mar-2021 12:52:21　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d

Injection Date: 10-Mar-2021 08:50:00　Injection Vol: 2.0 ul

Instrument ID: DFS 1　Operator ID: Xcalibur_System

Method: Dioxin_DFS1　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973　Sample Line#: 1

Column Type: DB-5　Column Dia: 0.32 mm

HpCDF

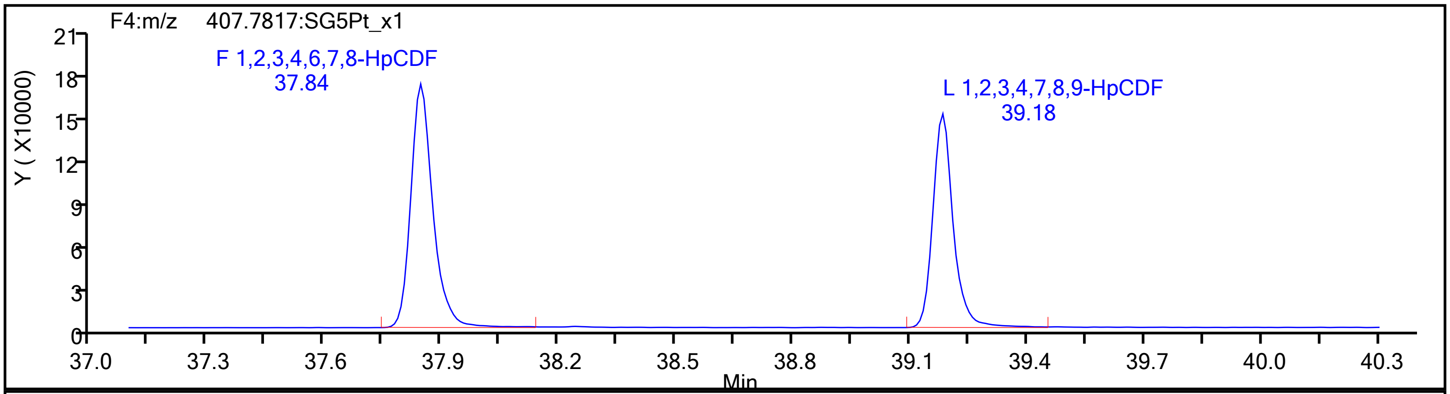

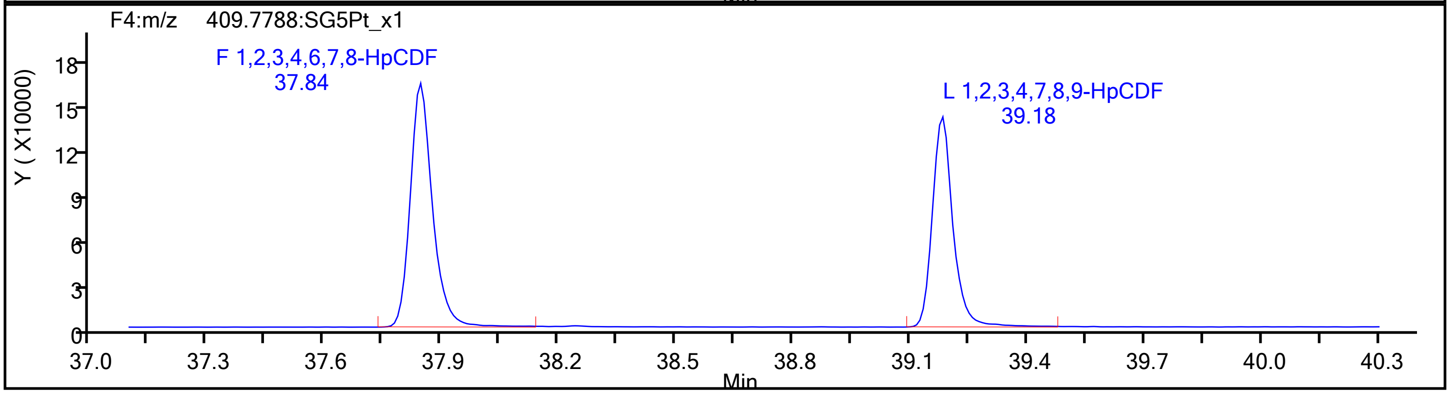

HpCDF Standards

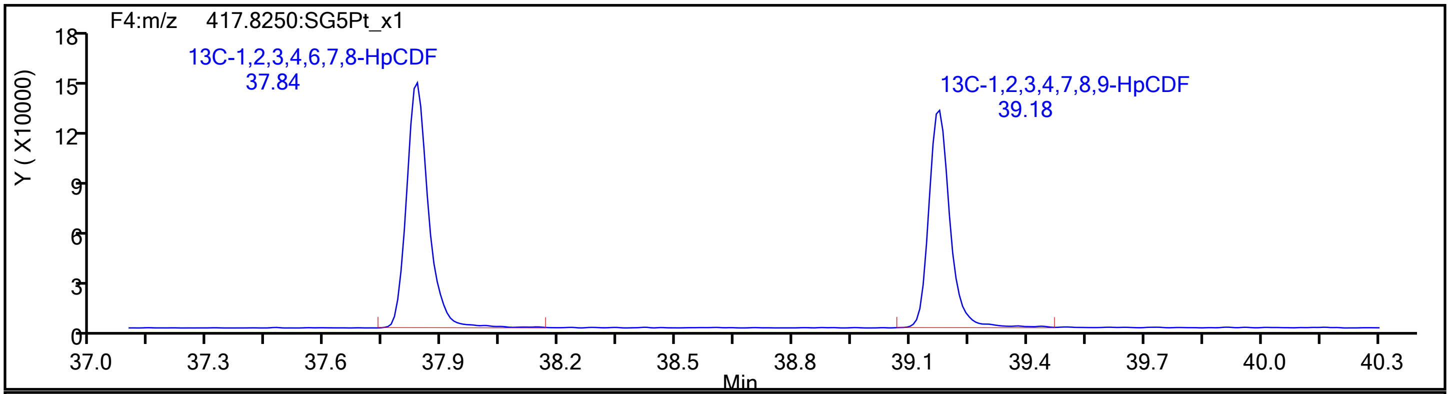

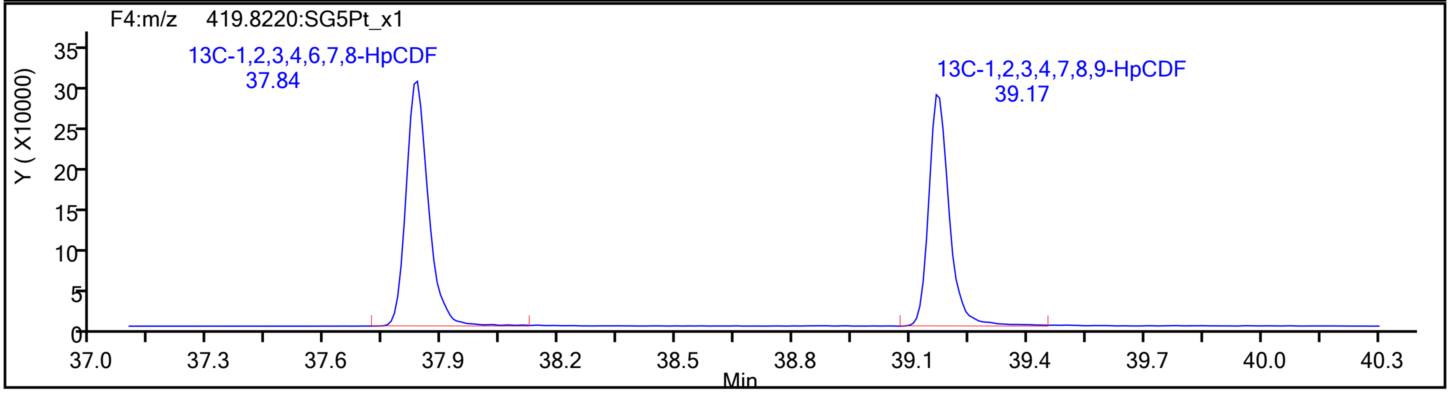

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

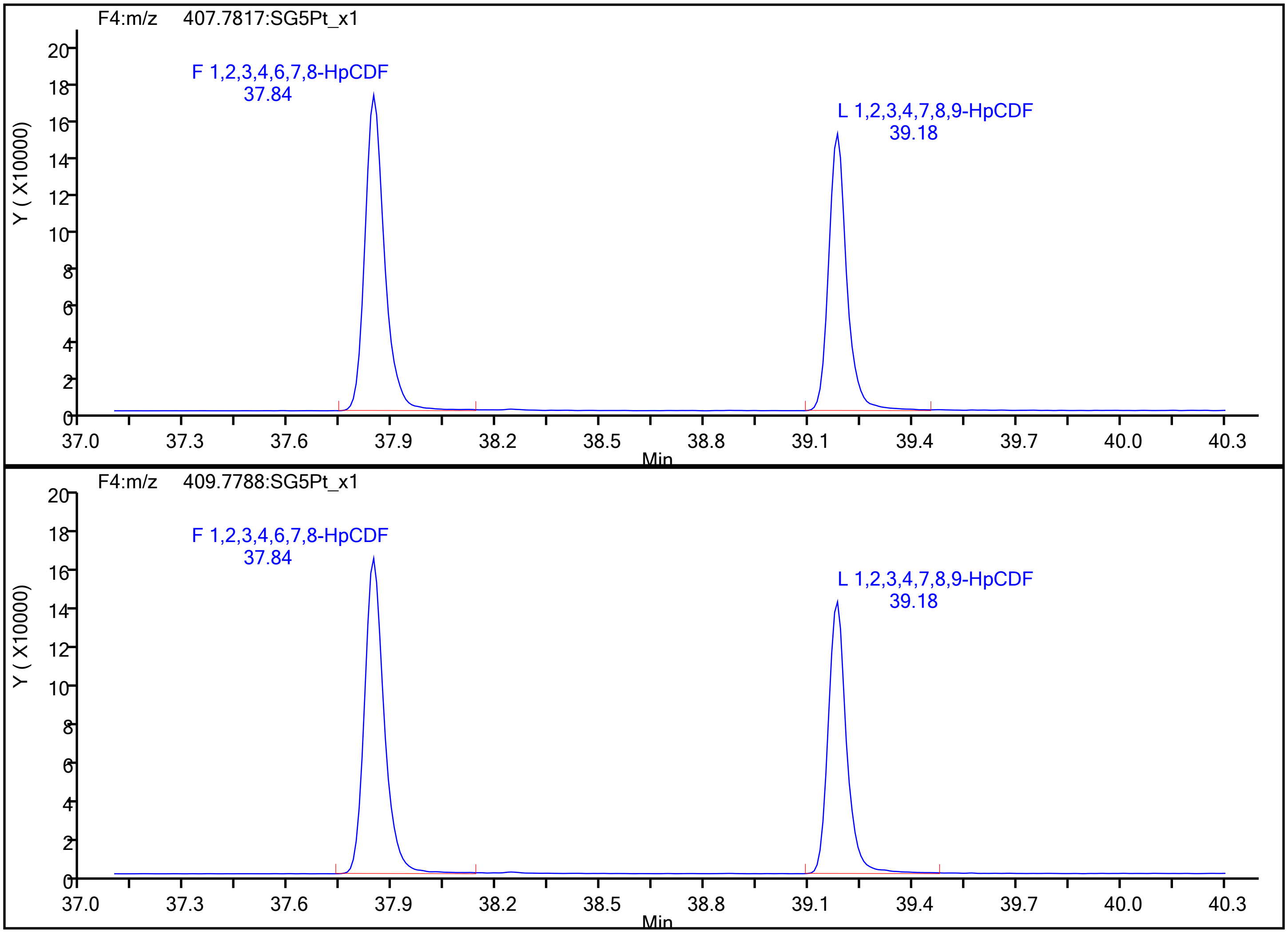

HpCDF Interference Mass

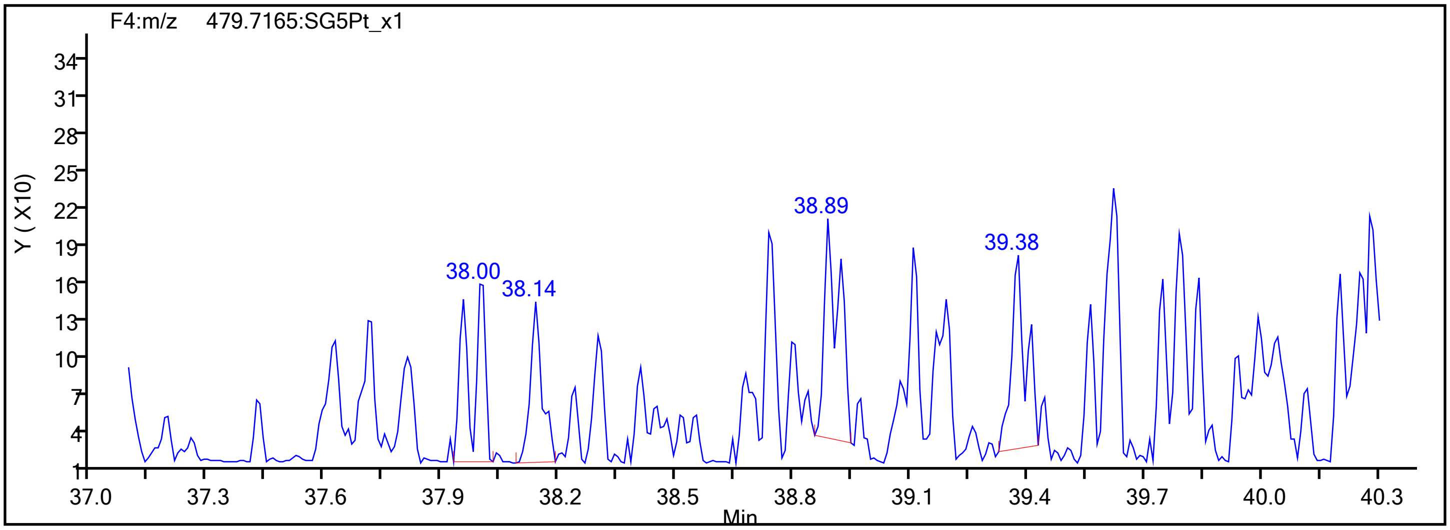

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d
Injection Date: 10-Mar-2021 08:50:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

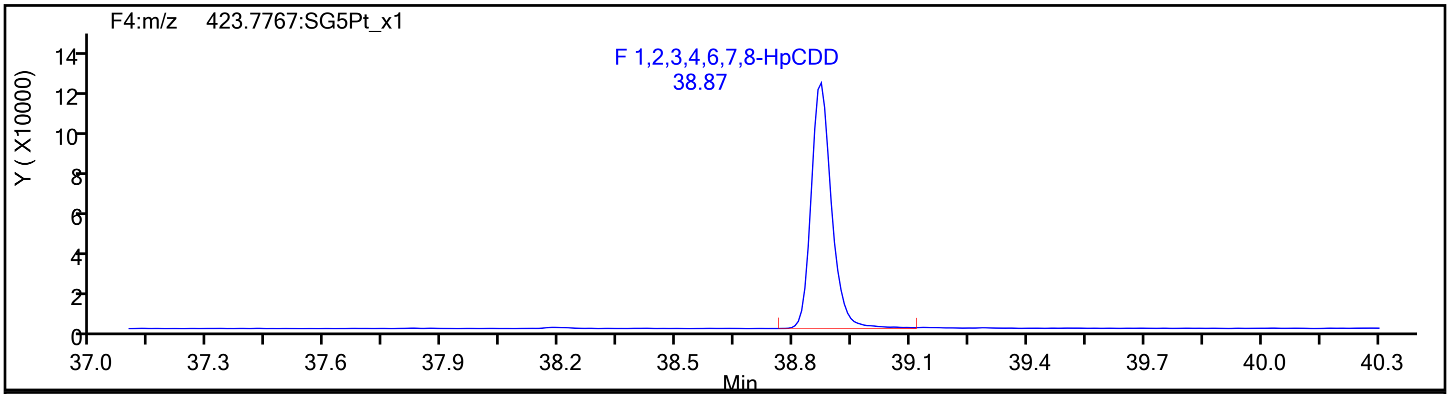

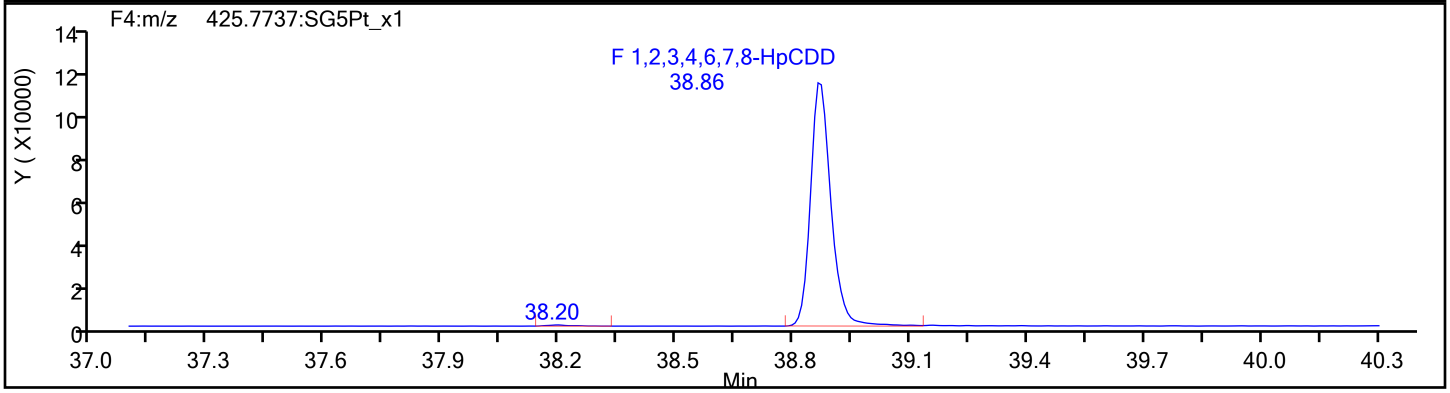

HpCDD Standards

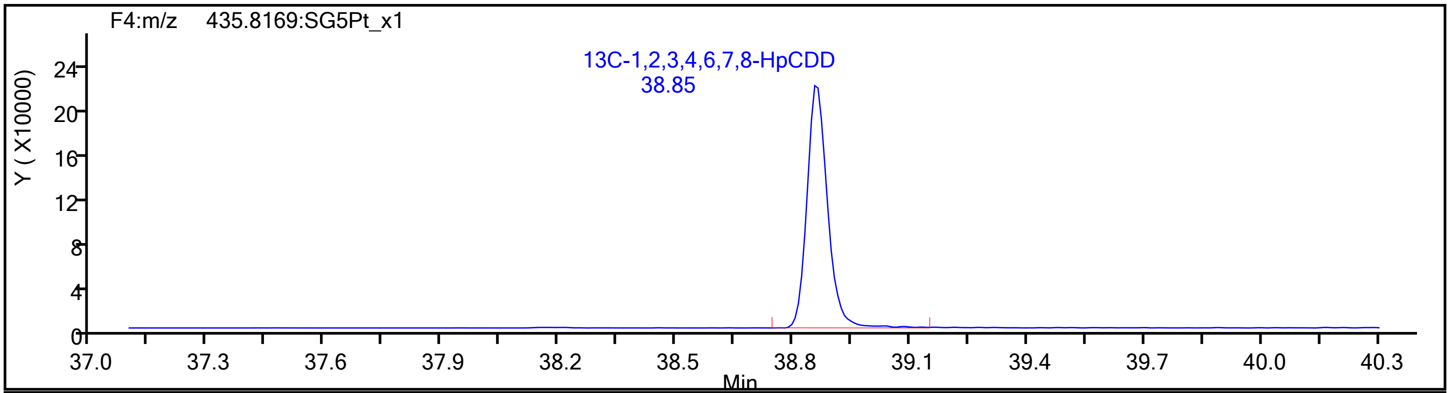

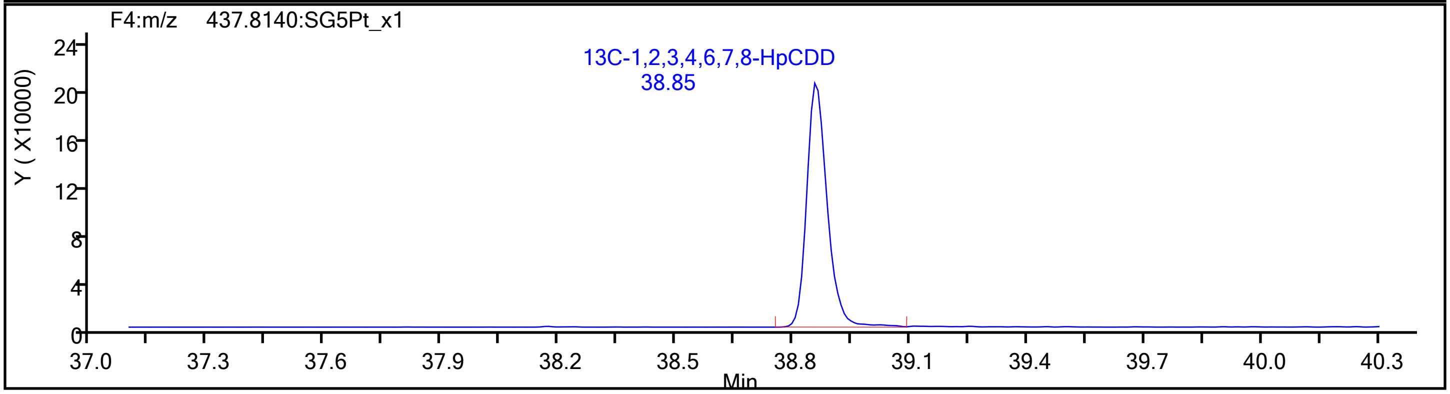

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

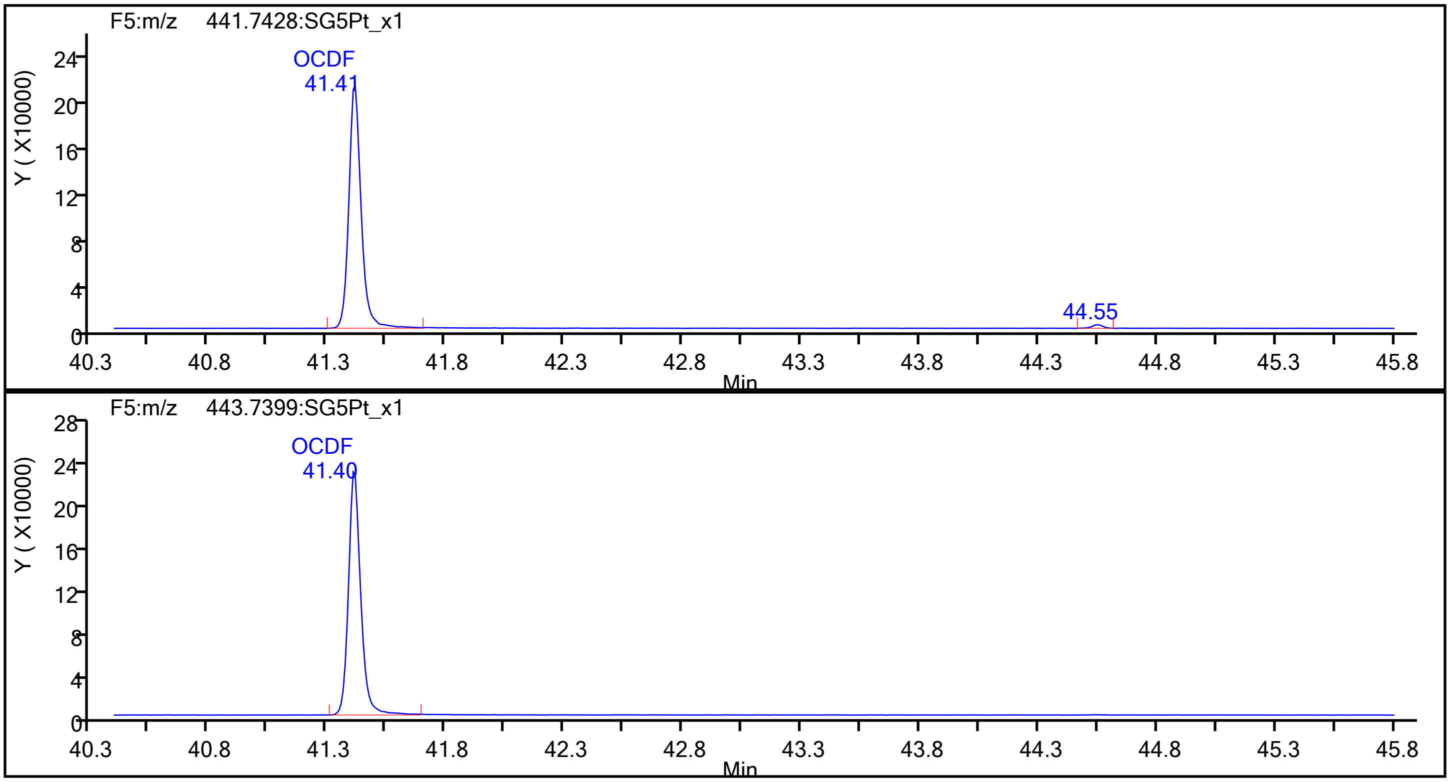

OCDF Standards

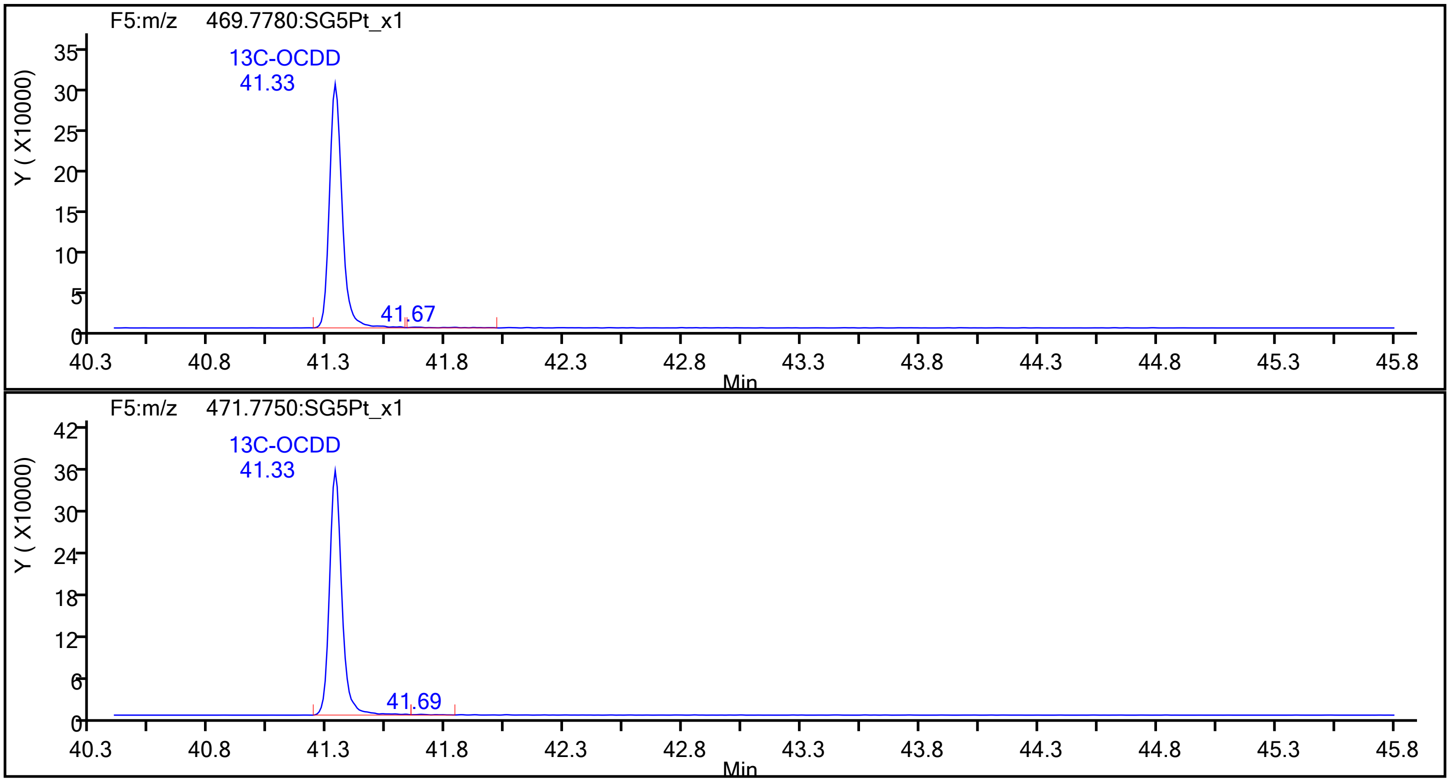

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

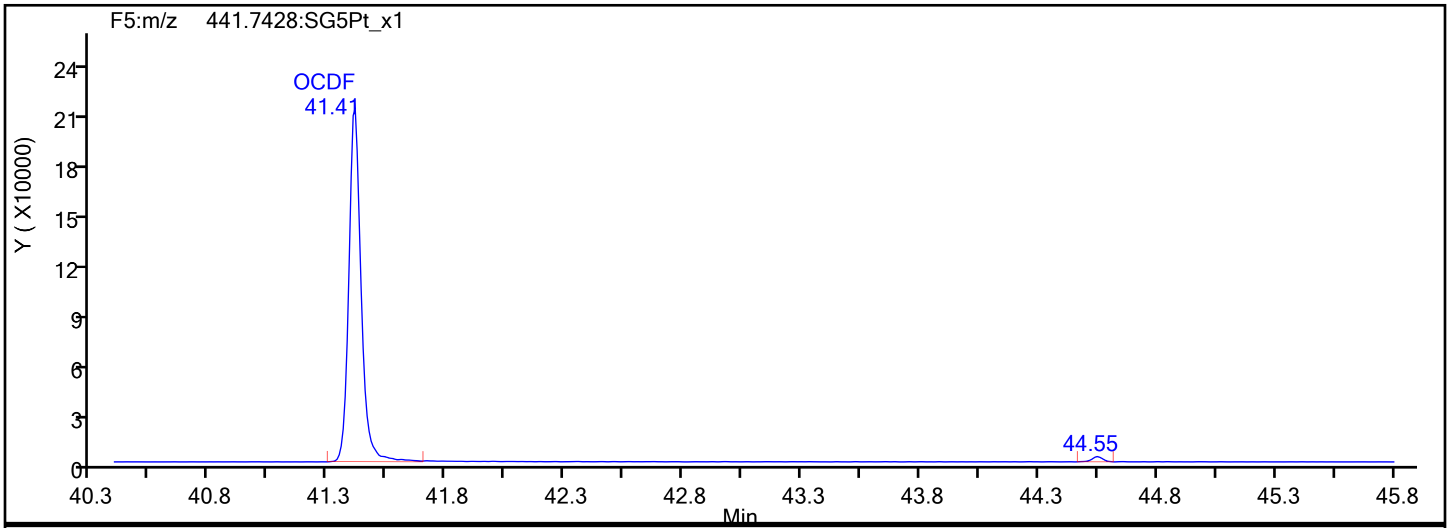

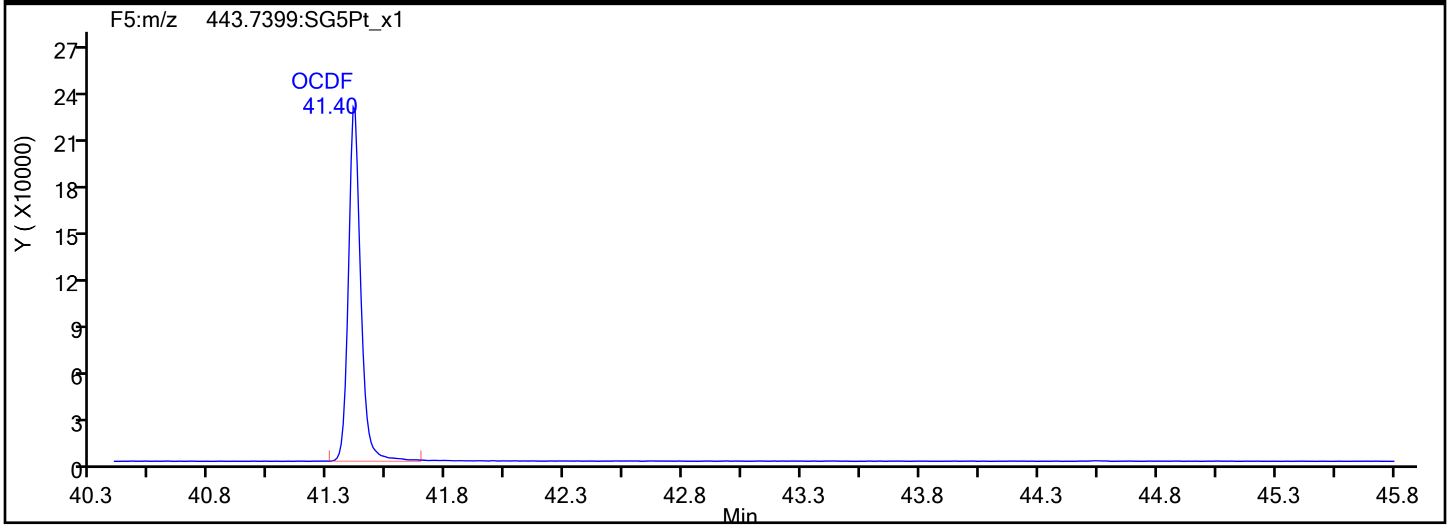

OCDF Interference Mass

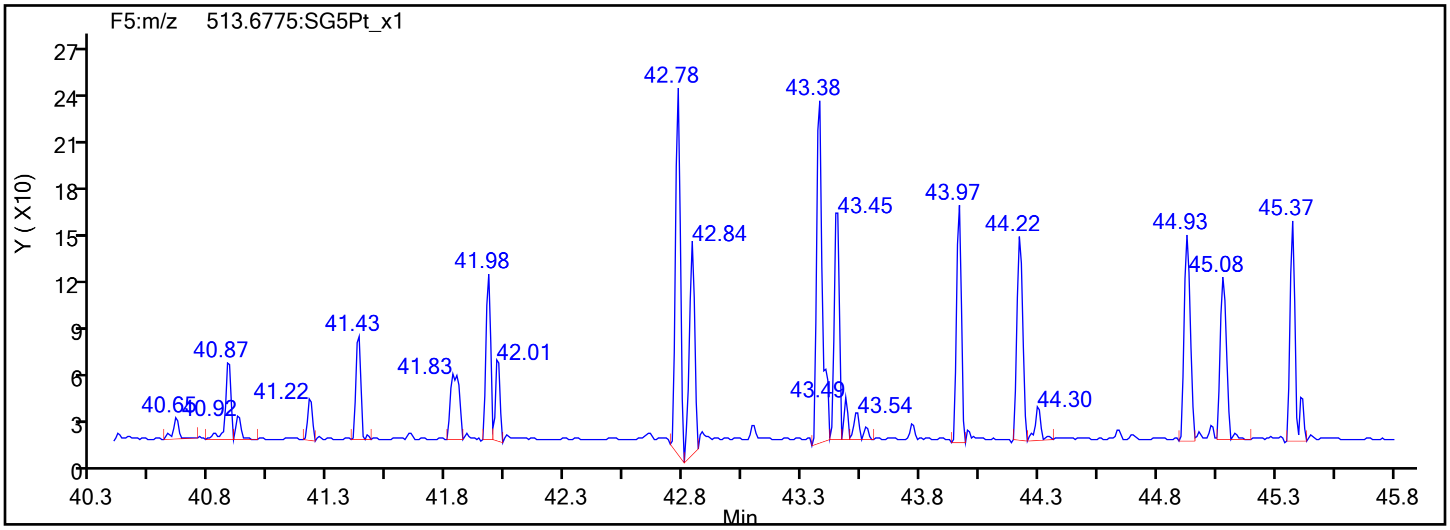

Report Date: 11-Mar-2021 12:52:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

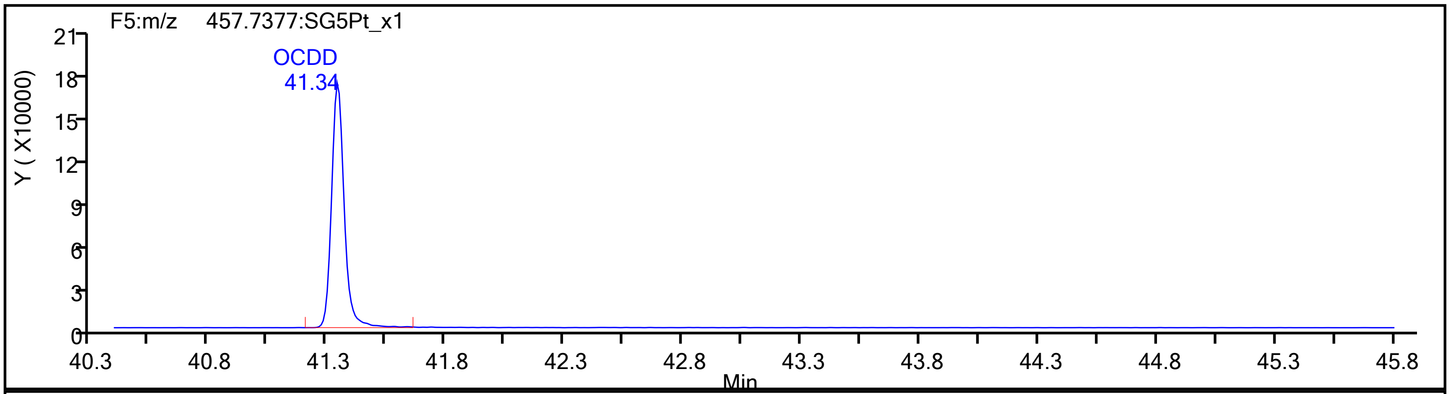

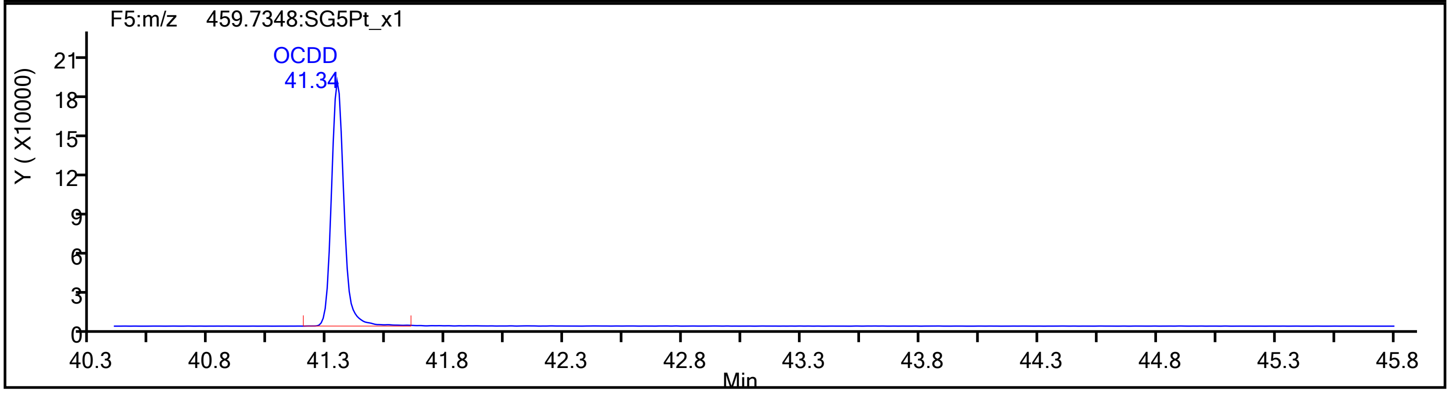

OCDD Standards

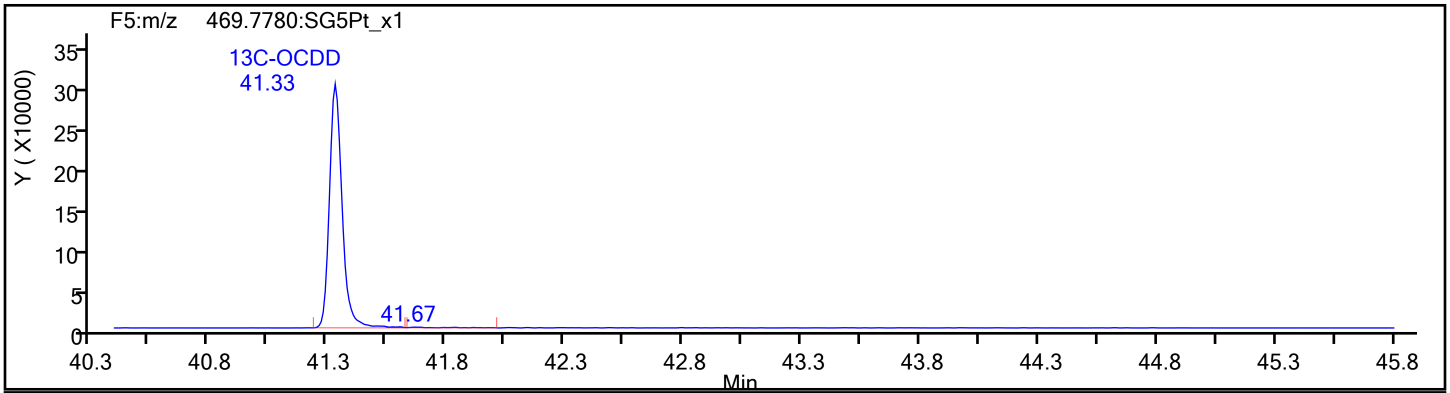

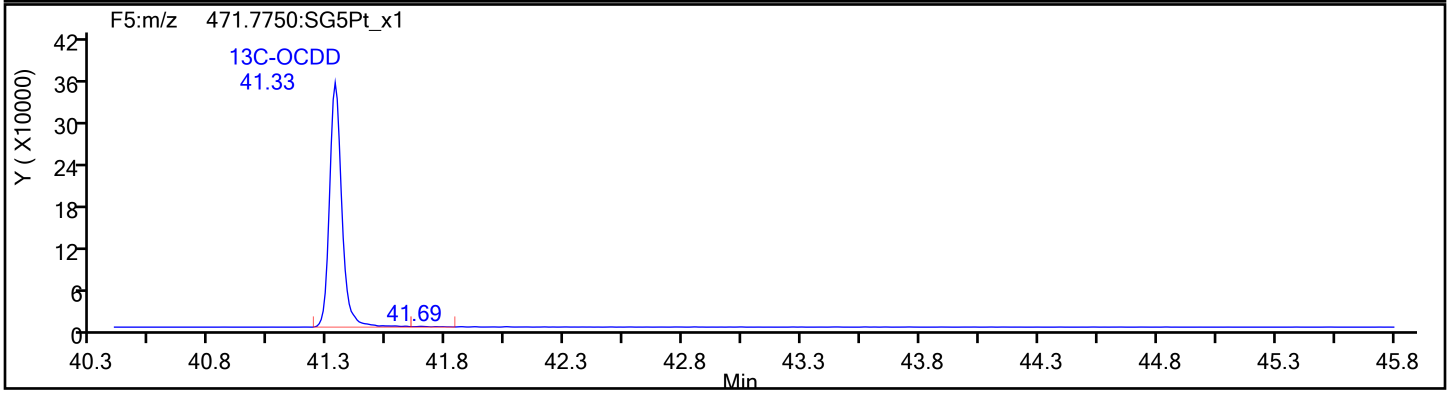

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_2.d

Injection Date: 10-Mar-2021 08:50:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

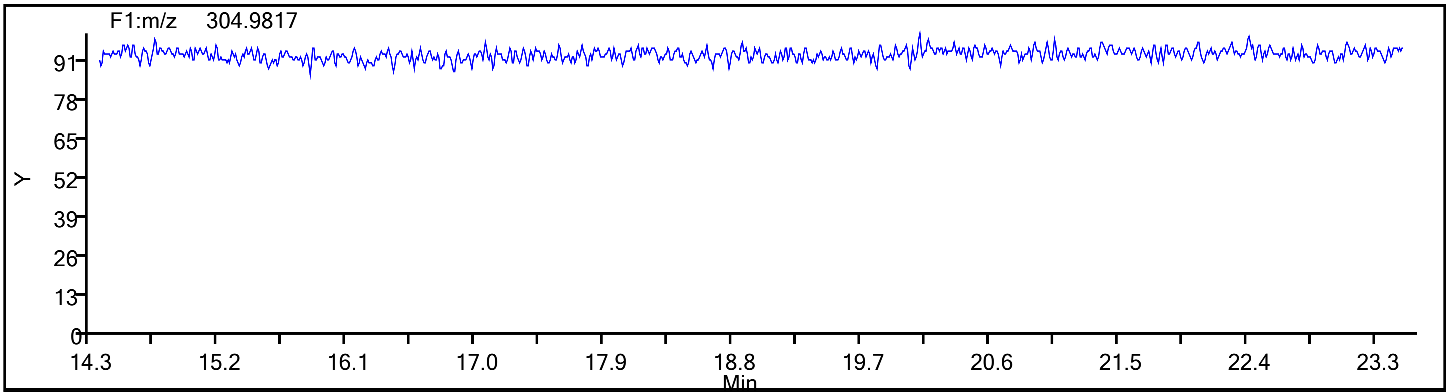

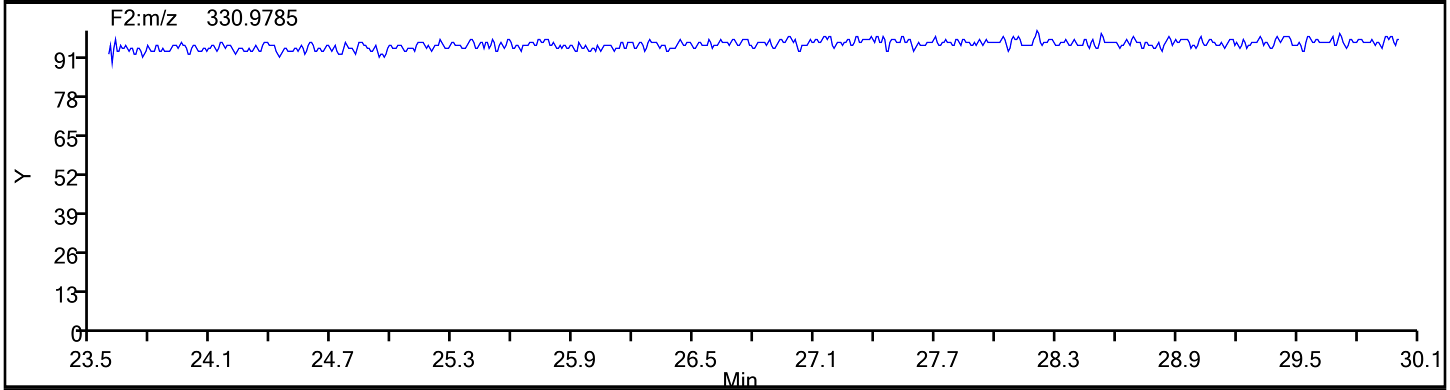

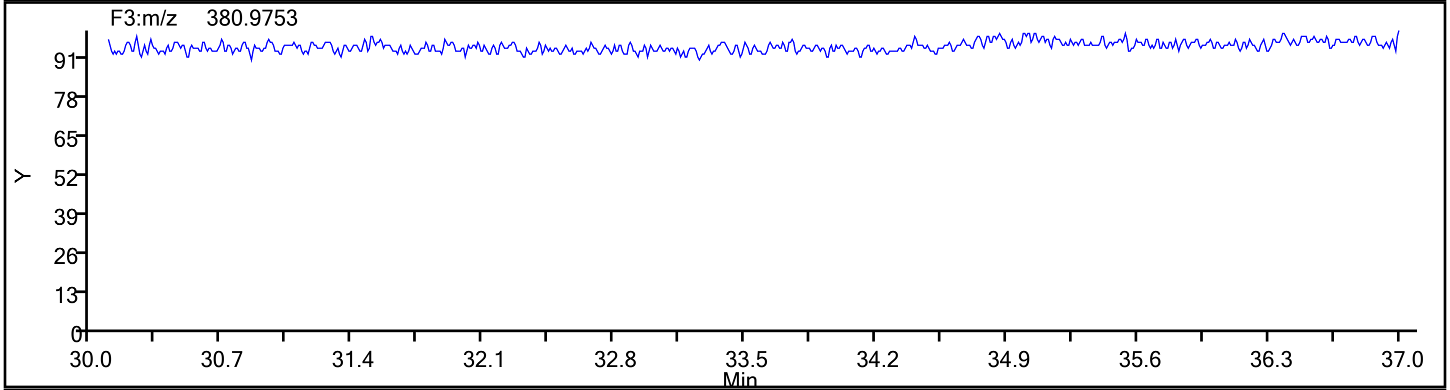

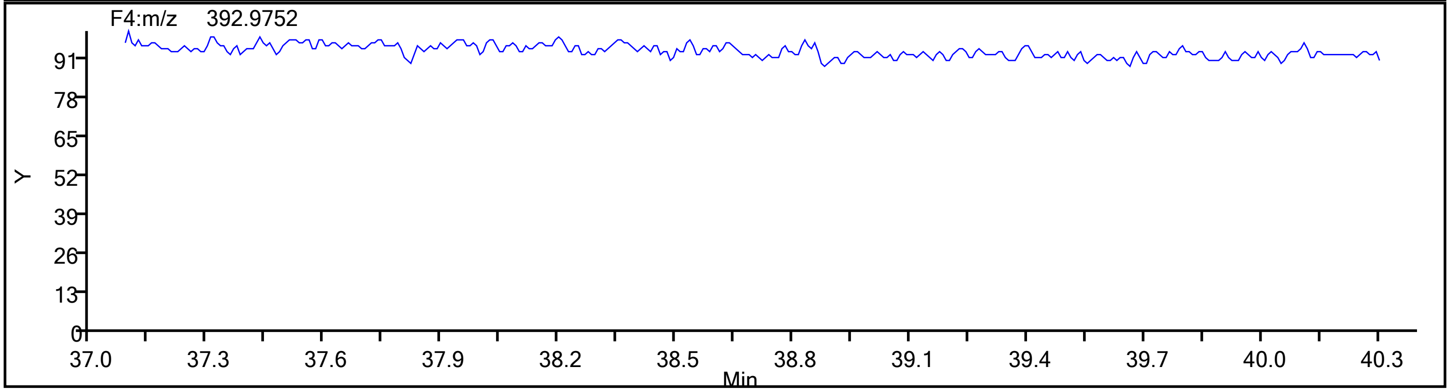

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

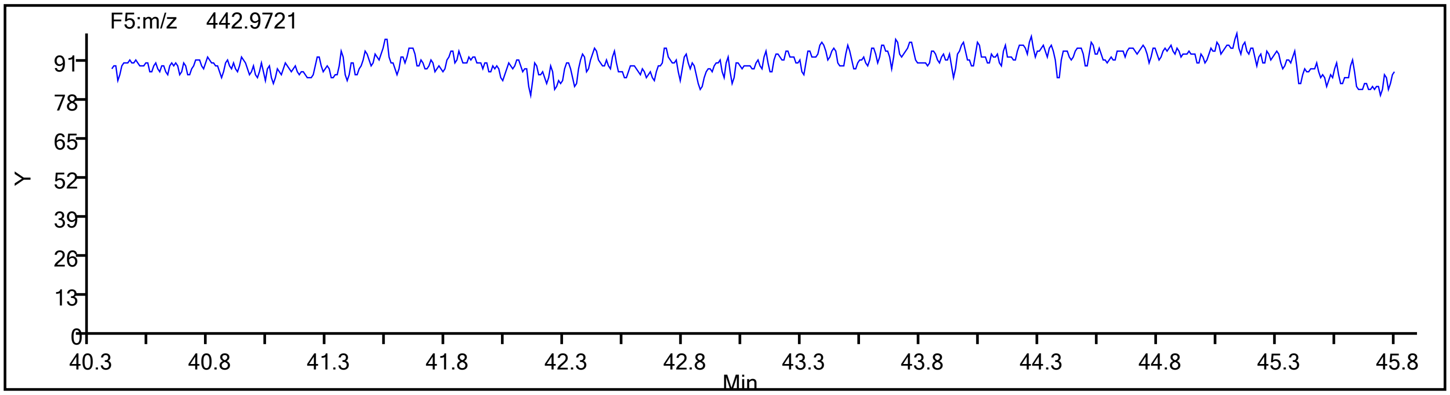

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Lab Sample ID: CCV 320-469779/1 Calibration Date: 03/12/2021 10:33

Instrument ID: DFS 1 Calib Start Date: 02/02/2021 21:46

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 02/03/2021 00:57

Lab File ID: 12mr21adfs1_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.126	1.105		9.82	10.0	98	84-120
2,3,7,8-TCDD	AveID	1.190	1.103		9.27	10.0	93	78-129
1,2,3,7,8-PeCDF	AveID	1.116	1.111		49.8	50.0	100	82-120
2,3,4,7,8-PeCDF	AveID	1.058	1.088		51.4	50.0	103	82-122
1,2,3,7,8-PeCDD	AveID	1.137	1.099		48.3	50.0	97	78-130
1,2,3,4,7,8-HxCDF	AveID	1.183	1.230		52.0	50.0	104	90-112
1,2,3,6,7,8-HxCDF	AveID	1.248	1.306		52.3	50.0	105	88-114
2,3,4,6,7,8-HxCDF	AveID	1.275	1.327		52.1	50.0	104	88-114
1,2,3,4,7,8-HxCDD	AveID	1.095	1.126		51.4	50.0	103	78-128
1,2,3,6,7,8-HxCDD	AveID	1.020	1.052		51.5	50.0	103	78-128
1,2,3,7,8,9-HxCDD	AveID	1.155	1.173		50.8	50.0	102	82-122
1,2,3,7,8,9-HxCDF	AveID	1.295	1.312		50.6	50.0	101	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.486	1.528		51.4	50.0	103	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.149	1.071		46.6	50.0	93	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.405	1.384		49.3	50.0	99	86-116
OCDD	AveID	1.171	1.140		97.4	100	97	79-126
OCDF	AveID	1.578	1.542		97.7	100	98	63-159
13C-2,3,7,8-TCDF	Ave	1.544	1.393		90.3	100	90	71-140
13C-2,3,7,8-TCDD	Ave	0.9687	0.9387		96.9	100	97	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.312	1.123		85.6	100	86	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.335	1.068		80.0	100	80	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.7716	0.6437		83.4	100	83	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.093	1.086		99.4	100	99	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.128	1.158		103	100	103	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	1.055	1.093		104	100	104	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.7895	0.7255		91.9	100	92	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8495	0.8615		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.9938	0.9547		96.1	100	96	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7854	0.8029		102	100	102	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6413	0.6855		107	100	107	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7230	0.7204		99.6	100	100	77-129
13C-OCDD	Ave	0.5141	0.5458		212	200	106	48-208
37Cl4-2,3,7,8-TCDD	Ave	1.084	0.996		9.18	10.0	92	79-127

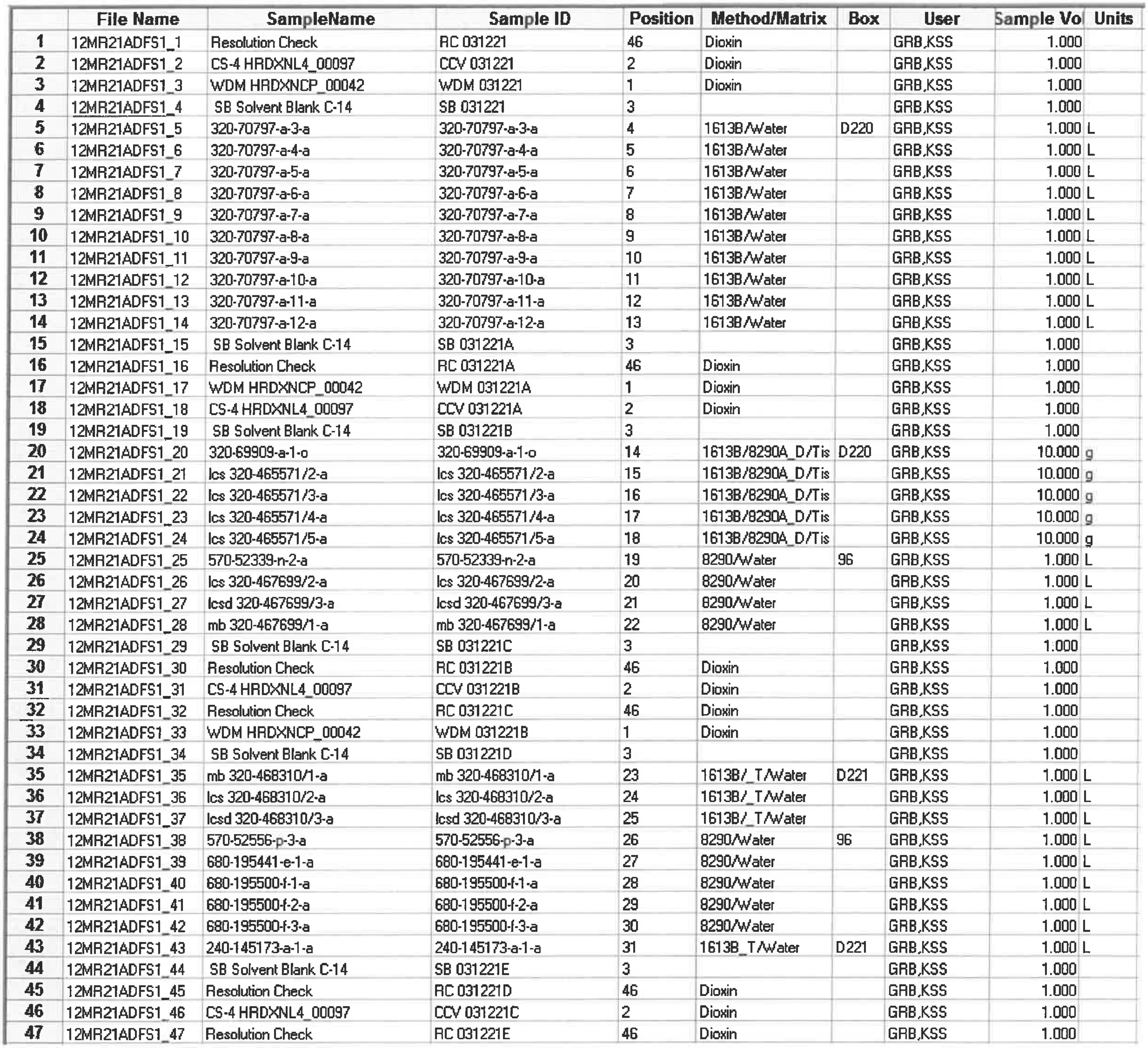

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	12MR21ADFS1_1	Resolution Check	RC 031221	46	Dioxin		GRB,KSS	1.000	
2	12MR21ADFS1_2	CS-4 HRDXNL4_00097	CCV 031221	2	Dioxin		GRB,KSS	1.000	
3	12MR21ADFS1_3	WDM HRDXNCP_00042	WDM 031221	1	Dioxin		GRB,KSS	1.000	
4	12MR21ADFS1_4	SB Solvent Blank C-14	SB 031221	3			GRB,KSS	1.000	
5	12MR21ADFS1_5	320-70797-a-3-a	320-70797-a-3-a	4	1613B/Water	D220	GRB,KSS	1.000	L
6	12MR21ADFS1_6	320-70797-a-4-a	320-70797-a-4-a	5	1613B/Water		GRB,KSS	1.000	L
7	12MR21ADFS1_7	320-70797-a-5-a	320-70797-a-5-a	6	1613B/Water		GRB,KSS	1.000	L
8	12MR21ADFS1_8	320-70797-a-6-a	320-70797-a-6-a	7	1613B/Water		GRB,KSS	1.000	L
9	12MR21ADFS1_9	320-70797-a-7-a	320-70797-a-7-a	8	1613B/Water		GRB,KSS	1.000	L
10	12MR21ADFS1_10	320-70797-a-8-a	320-70797-a-8-a	9	1613B/Water		GRB,KSS	1.000	L
11	12MR21ADFS1_11	320-70797-a-9-a	320-70797-a-9-a	10	1613B/Water		GRB,KSS	1.000	L
12	12MR21ADFS1_12	320-70797-a-10-a	320-70797-a-10-a	11	1613B/Water		GRB,KSS	1.000	L
13	12MR21ADFS1_13	320-70797-a-11-a	320-70797-a-11-a	12	1613B/Water		GRB,KSS	1.000	L
14	12MR21ADFS1_14	320-70797-a-12-a	320-70797-a-12-a	13	1613B/Water		GRB,KSS	1.000	L
15	12MR21ADFS1_15	SB Solvent Blank C-14	SB 031221A	3			GRB,KSS	1.000	
16	12MR21ADFS1_16	Resolution Check	RC 031221A	46	Dioxin		GRB,KSS	1.000	
17	12MR21ADFS1_17	WDM HRDXNCP_00042	WDM 031221A	1	Dioxin		GRB,KSS	1.000	
18	12MR21ADFS1_18	CS-4 HRDXNL4_00097	CCV 031221A	2	Dioxin		GRB,KSS	1.000	
19	12MR21ADFS1_19	SB Solvent Blank C-14	SB 031221B	3			GRB,KSS	1.000	
20	12MR21ADFS1_20	320-69909-a-1-o	320-69909-a-1-o	14	1613B/8290A_D/Tis	D220	GRB,KSS	10.000	g
21	12MR21ADFS1_21	lcs 320-465571/2-a	lcs 320-465571/2-a	15	1613B/8290A_D/Tis		GRB,KSS	10.000	g
22	12MR21ADFS1_22	lcs 320-465571/3-a	lcs 320-465571/3-a	16	1613B/8290A_D/Tis		GRB,KSS	10.000	g
23	12MR21ADFS1_23	lcs 320-465571/4-a	lcs 320-465571/4-a	17	1613B/8290A_D/Tis		GRB,KSS	10.000	g
24	12MR21ADFS1_24	lcs 320-465571/5-a	lcs 320-465571/5-a	18	1613B/8290A_D/Tis		GRB,KSS	10.000	g
25	12MR21ADFS1_25	570-52339-n-2-a	570-52339-n-2-a	19	8290/Water	96	GRB,KSS	1.000	L
26	12MR21ADFS1_26	lcs 320-467699/2-a	lcs 320-467699/2-a	20	8290/Water		GRB,KSS	1.000	L
27	12MR21ADFS1_27	lcsd 320-467699/3-a	lcsd 320-467699/3-a	21	8290/Water		GRB,KSS	1.000	L
28	12MR21ADFS1_28	mb 320-467699/1-a	mb 320-467699/1-a	22	8290/Water		GRB,KSS	1.000	L
29	12MR21ADFS1_29	SB Solvent Blank C-14	SB 031221C	3			GRB,KSS	1.000	
30	12MR21ADFS1_30	Resolution Check	RC 031221B	46	Dioxin		GRB,KSS	1.000	
31	12MR21ADFS1_31	CS-4 HRDXNL4_00097	CCV 031221B	2	Dioxin		GRB,KSS	1.000	
32	12MR21ADFS1_32	Resolution Check	RC 031221C	46	Dioxin		GRB,KSS	1.000	
33	12MR21ADFS1_33	WDM HRDXNCP_00042	WDM 031221B	1	Dioxin		GRB,KSS	1.000	
34	12MR21ADFS1_34	SB Solvent Blank C-14	SB 031221D	3			GRB,KSS	1.000	
35	12MR21ADFS1_35	mb 320-468310/1-a	mb 320-468310/1-a	23	1613B/_T/Water	D221	GRB,KSS	1.000	L
36	12MR21ADFS1_36	lcs 320-468310/2-a	lcs 320-468310/2-a	24	1613B/_T/Water		GRB,KSS	1.000	L
37	12MR21ADFS1_37	lcsd 320-468310/3-a	lcsd 320-468310/3-a	25	1613B/_T/Water		GRB,KSS	1.000	L
38	12MR21ADFS1_38	570-52556-p-3-a	570-52556-p-3-a	26	8290/Water	96	GRB,KSS	1.000	L
39	12MR21ADFS1_39	680-195441-e-1-a	680-195441-e-1-a	27	8290/Water		GRB,KSS	1.000	L
40	12MR21ADFS1_40	680-195500-f-1-a	680-195500-f-1-a	28	8290/Water		GRB,KSS	1.000	L
41	12MR21ADFS1_41	680-195500-f-2-a	680-195500-f-2-a	29	8290/Water		GRB,KSS	1.000	L
42	12MR21ADFS1_42	680-195500-f-3-a	680-195500-f-3-a	30	8290/Water		GRB,KSS	1.000	L
43	12MR21ADFS1_43	240-145173-a-1-a	240-145173-a-1-a	31	1613B_T/Water	D221	GRB,KSS	1.000	L
44	12MR21ADFS1_44	SB Solvent Blank C-14	SB 031221E	3			GRB,KSS	1.000	
45	12MR21ADFS1_45	Resolution Check	RC 031221D	46	Dioxin		GRB,KSS	1.000	
46	12MR21ADFS1_46	CS-4 HRDXNL4_00097	CCV 031221C	2	Dioxin		GRB,KSS	1.000	
47	12MR21ADFS1_47	Resolution Check	RC 031221E	46	Dioxin		GRB,KSS	1.000	

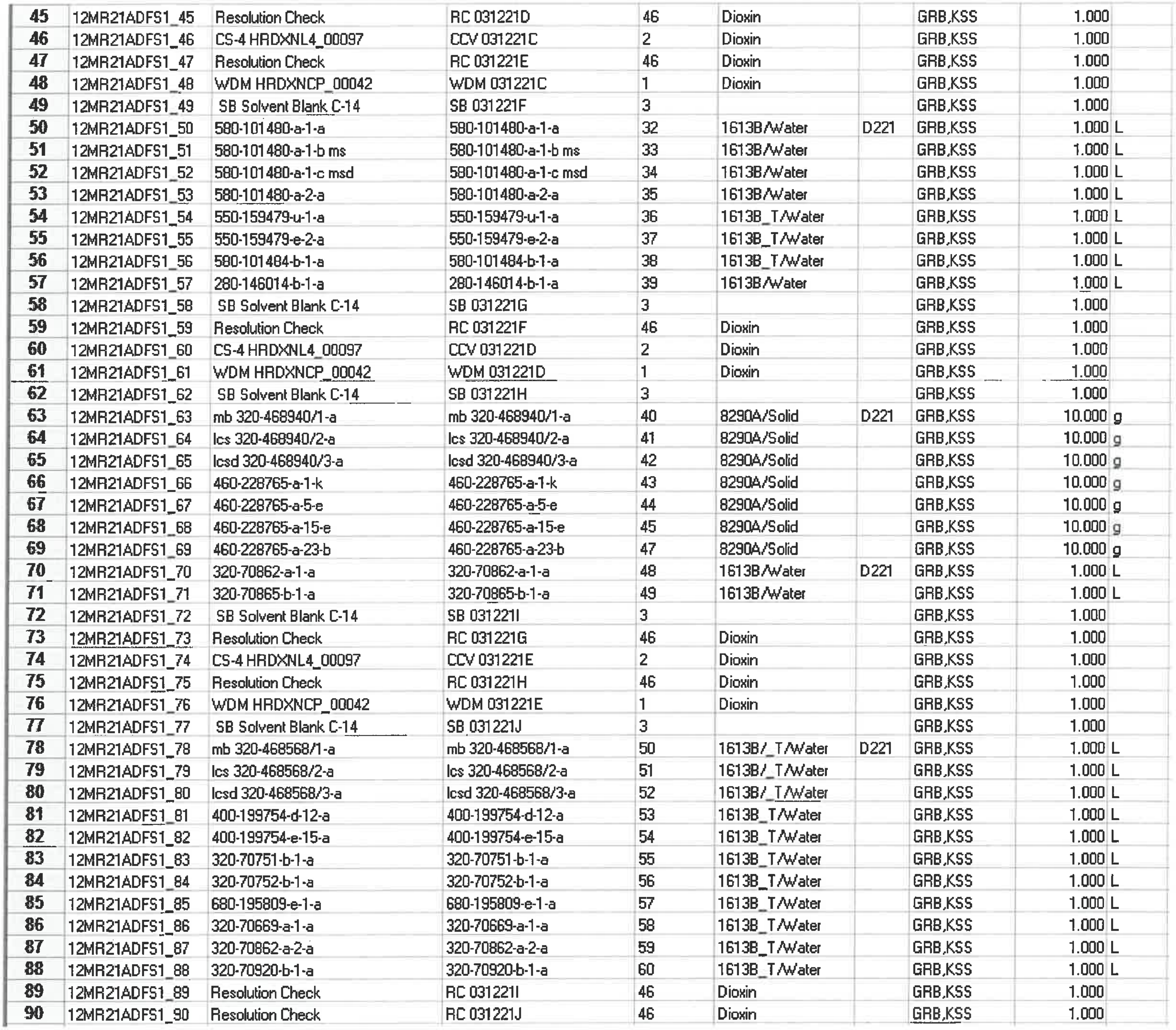

45	12MR21ADFS1_45	Resolution Check	RC 031221D	46	Dioxin		GRB,KSS	1.000	
46	12MR21ADFS1_46	CS-4 HRDXNL4_00097	CCV 031221C	2	Dioxin		GRB,KSS	1.000	
47	12MR21ADFS1_47	Resolution Check	RC 031221E	46	Dioxin		GRB,KSS	1.000	
48	12MR21ADFS1_48	WDM HRDXNCP_00042	WDM 031221C	1	Dioxin		GRB,KSS	1.000	
49	12MR21ADFS1_49	SB Solvent Blank C-14	SB 031221F	3			GRB,KSS	1.000	
50	12MR21ADFS1_50	580-101480-a-1-a	580-101480-a-1-a	32	1613B/Water	D221	GRB,KSS	1.000	L
51	12MR21ADFS1_51	580-101480-a-1-b ms	580-101480-a-1-b ms	33	1613B/Water		GRB,KSS	1.000	L
52	12MR21ADFS1_52	580-101480-a-1-c msd	580-101480-a-1-c msd	34	1613B/Water		GRB,KSS	1.000	L
53	12MR21ADFS1_53	580-101480-a-2-a	580-101480-a-2-a	35	1613B/Water		GRB,KSS	1.000	L
54	12MR21ADFS1_54	550-159479-u-1-a	550-159479-u-1-a	36	1613B_T/Water		GRB,KSS	1.000	L
55	12MR21ADFS1_55	550-159479-e-2-a	550-159479-e-2-a	37	1613B_T/Water		GRB,KSS	1.000	L
56	12MR21ADFS1_56	580-101484-b-1-a	580-101484-b-1-a	38	1613B_T/Water		GRB,KSS	1.000	L
57	12MR21ADFS1_57	280-146014-b-1-a	280-146014-b-1-a	39	1613B/Water		GRB,KSS	1.000	L
58	12MR21ADFS1_58	SB Solvent Blank C-14	SB 031221G	3			GRB,KSS	1.000	
59	12MR21ADFS1_59	Resolution Check	RC 031221F	46	Dioxin		GRB,KSS	1.000	
60	12MR21ADFS1_60	CS-4 HRDXNL4_00097	CCV 031221D	2	Dioxin		GRB,KSS	1.000	
61	12MR21ADFS1_61	WDM HRDXNCP_00042	WDM 031221D	1	Dioxin		GRB,KSS	1.000	
62	12MR21ADFS1_62	SB Solvent Blank C-14	SB 031221H	3			GRB,KSS	1.000	
63	12MR21ADFS1_63	mb 320-468940/1-a	mb 320-468940/1-a	40	8290A/Solid	D221	GRB,KSS	10.000	g
64	12MR21ADFS1_64	lcs 320-468940/2-a	lcs 320-468940/2-a	41	8290A/Solid		GRB,KSS	10.000	g
65	12MR21ADFS1_65	lcsd 320-468940/3-a	lcsd 320-468940/3-a	42	8290A/Solid		GRB,KSS	10.000	g
66	12MR21ADFS1_66	460-228765-a-1-k	460-228765-a-1-k	43	8290A/Solid		GRB,KSS	10.000	g
67	12MR21ADFS1_67	460-228765-a-5-e	460-228765-a-5-e	44	8290A/Solid		GRB,KSS	10.000	g
68	12MR21ADFS1_68	460-228765-a-15-e	460-228765-a-15-e	45	8290A/Solid		GRB,KSS	10.000	g
69	12MR21ADFS1_69	460-228765-a-23-b	460-228765-a-23-b	47	8290A/Solid		GRB,KSS	10.000	g
70	12MR21ADFS1_70	320-70862-a-1-a	320-70862-a-1-a	48	1613B/Water	D221	GRB,KSS	1.000	L
71	12MR21ADFS1_71	320-70865-b-1-a	320-70865-b-1-a	49	1613B/Water		GRB,KSS	1.000	L
72	12MR21ADFS1_72	SB Solvent Blank C-14	SB 031221I	3			GRB,KSS	1.000	
73	12MR21ADFS1_73	Resolution Check	RC 031221G	46	Dioxin		GRB,KSS	1.000	
74	12MR21ADFS1_74	CS-4 HRDXNL4_00097	CCV 031221E	2	Dioxin		GRB,KSS	1.000	
75	12MR21ADFS1_75	Resolution Check	RC 031221H	46	Dioxin		GRB,KSS	1.000	
76	12MR21ADFS1_76	WDM HRDXNCP_00042	WDM 031221E	1	Dioxin		GRB,KSS	1.000	
77	12MR21ADFS1_77	SB Solvent Blank C-14	SB 031221J	3			GRB,KSS	1.000	
78	12MR21ADFS1_78	mb 320-468568/1-a	mb 320-468568/1-a	50	1613B/_T/Water	D221	GRB,KSS	1.000	L
79	12MR21ADFS1_79	lcs 320-468568/2-a	lcs 320-468568/2-a	51	1613B/_T/Water		GRB,KSS	1.000	L
80	12MR21ADFS1_80	lcsd 320-468568/3-a	lcsd 320-468568/3-a	52	1613B/_T/Water		GRB,KSS	1.000	L
81	12MR21ADFS1_81	400-199754-d-12-a	400-199754-d-12-a	53	1613B_T/Water		GRB,KSS	1.000	L
82	12MR21ADFS1_82	400-199754-e-15-a	400-199754-e-15-a	54	1613B_T/Water		GRB,KSS	1.000	L
83	12MR21ADFS1_83	320-70751-b-1-a	320-70751-b-1-a	55	1613B_T/Water		GRB,KSS	1.000	L
84	12MR21ADFS1_84	320-70752-b-1-a	320-70752-b-1-a	56	1613B_T/Water		GRB,KSS	1.000	L
85	12MR21ADFS1_85	680-195809-e-1-a	680-195809-e-1-a	57	1613B_T/Water		GRB,KSS	1.000	L
86	12MR21ADFS1_86	320-70669-a-1-a	320-70669-a-1-a	58	1613B_T/Water		GRB,KSS	1.000	L
87	12MR21ADFS1_87	320-70862-a-2-a	320-70862-a-2-a	59	1613B_T/Water		GRB,KSS	1.000	L
88	12MR21ADFS1_88	320-70920-b-1-a	320-70920-b-1-a	60	1613B_T/Water		GRB,KSS	1.000	L
89	12MR21ADFS1_89	Resolution Check	RC 031221I	46	Dioxin		GRB,KSS	1.000	
90	12MR21ADFS1_90	Resolution Check	RC 031221J	46	Dioxin		GRB,KSS	1.000	

LOG FILE √'d
03/15/2021
GRB

Resolution Check Report (DFS SN: 3487)

Date:	12 Mar 2021 10:13
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12255 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 10974 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12116 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11742 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11737 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11469 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10379 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 10749 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 10214 [5%height]

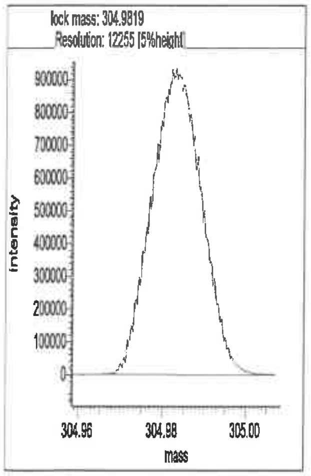

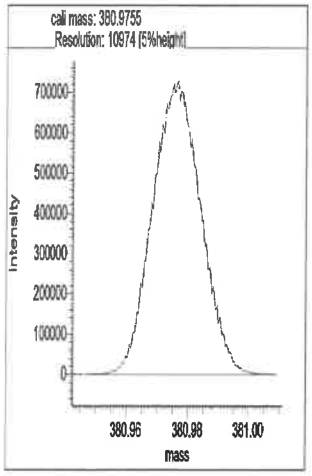

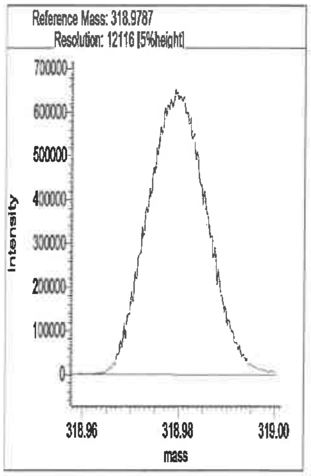

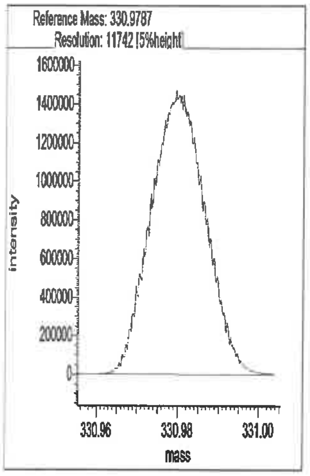

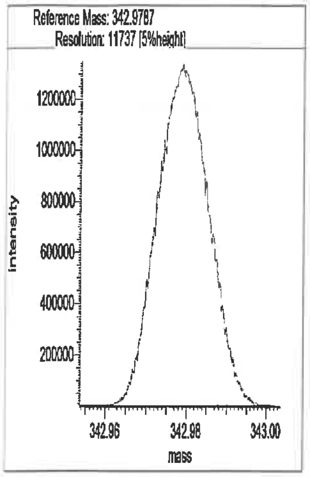

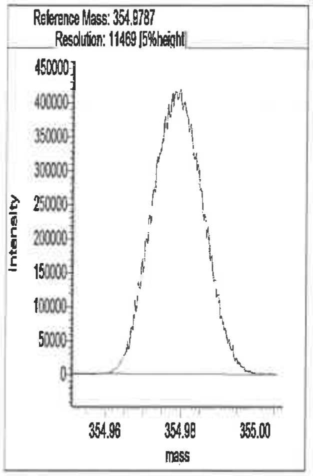

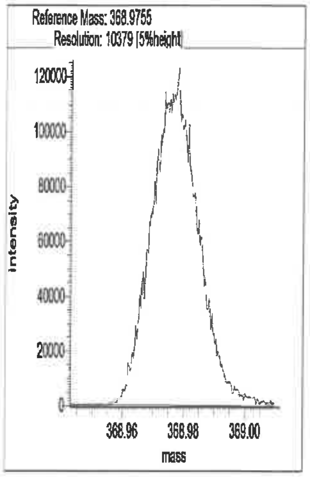

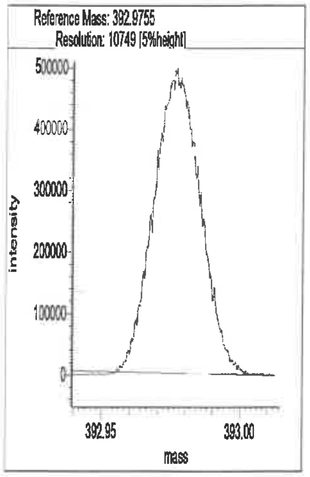

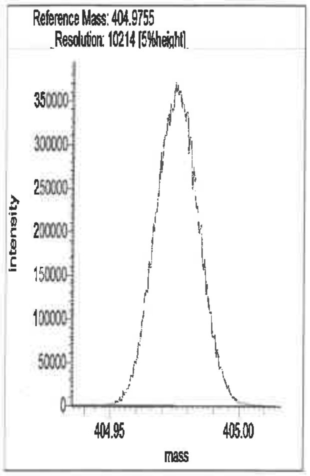

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12385 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11512 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12093 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12285 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10714 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11491 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11257 [5%height]

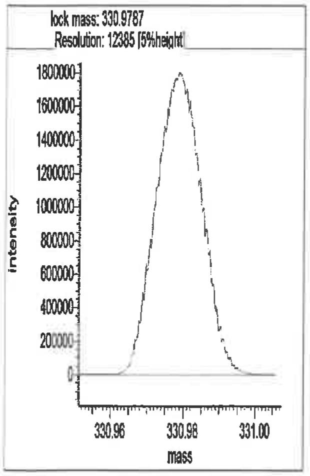

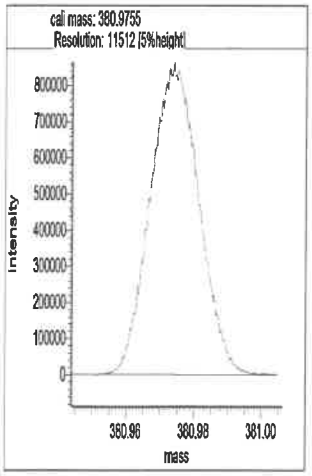

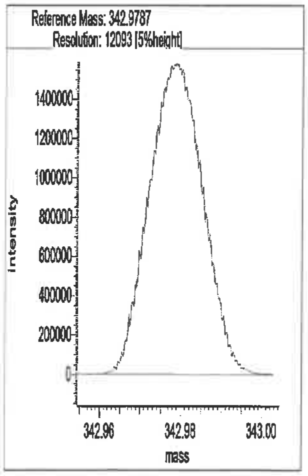

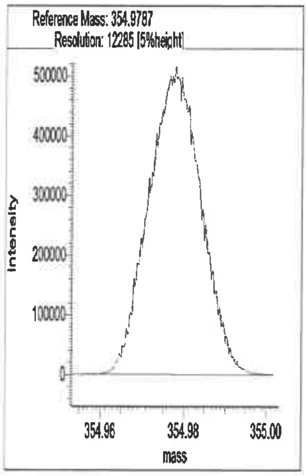

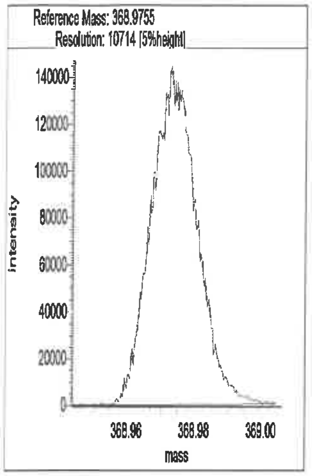

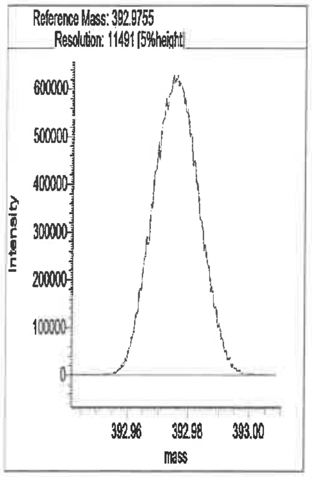

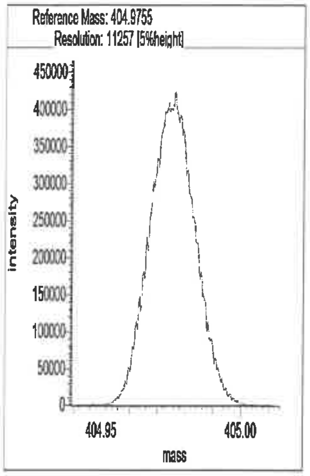

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11996 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11386 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12300 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11892 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11696 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11135 [5%height]

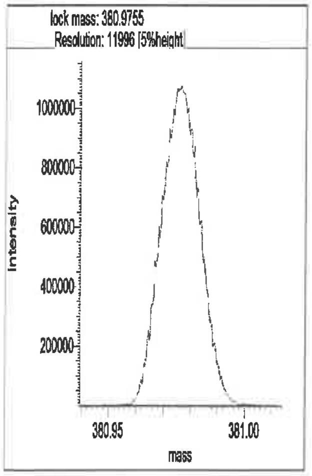

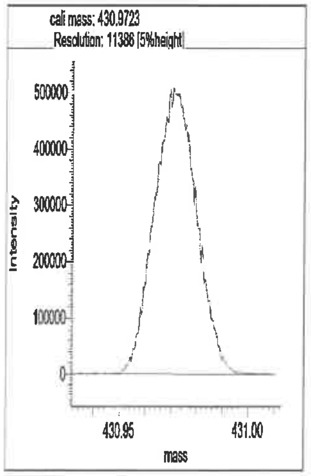

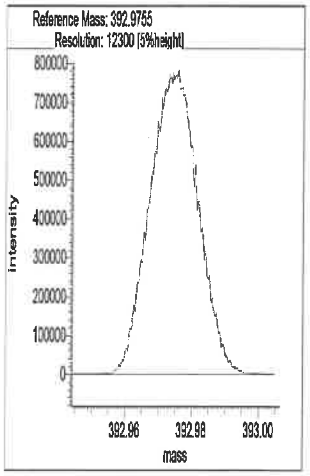

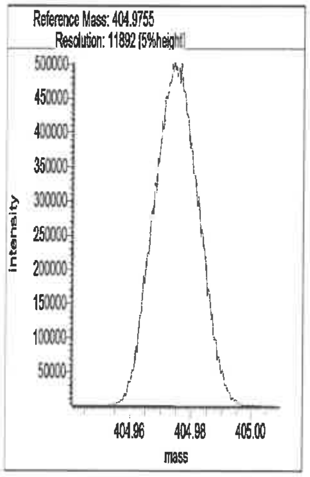

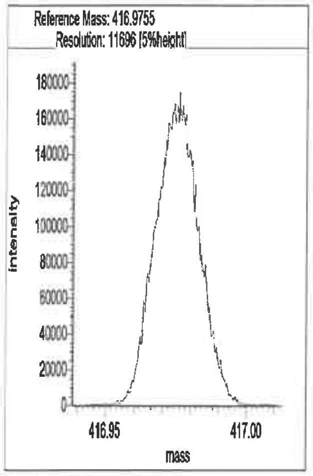

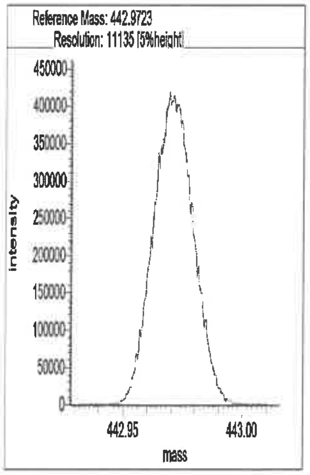

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12215 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11136 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11960 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12071 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11707 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11839 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11488 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11563 [5%height]

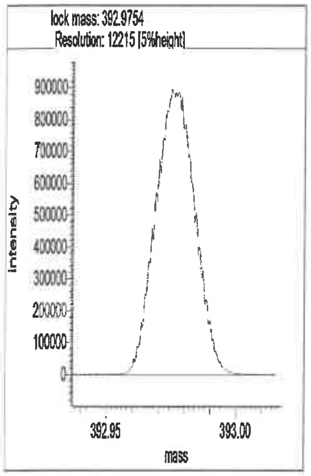

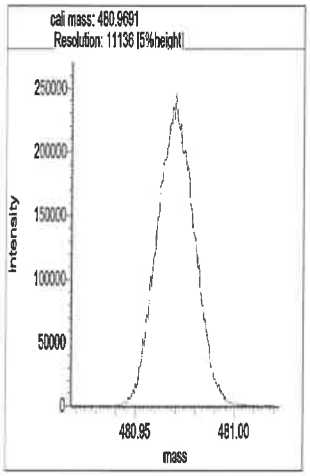

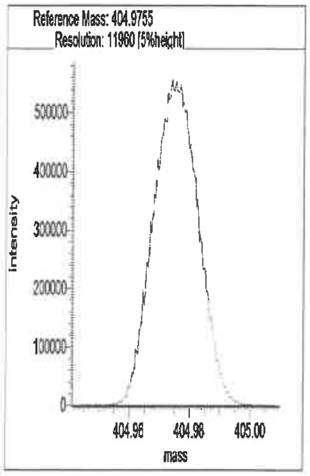

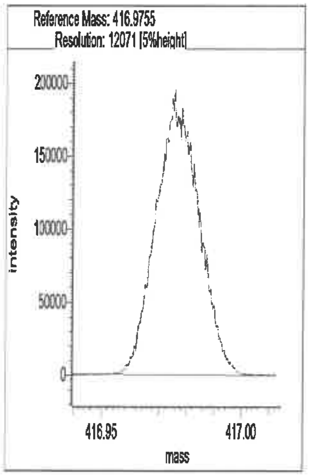

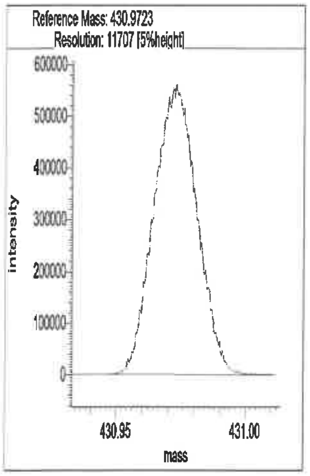

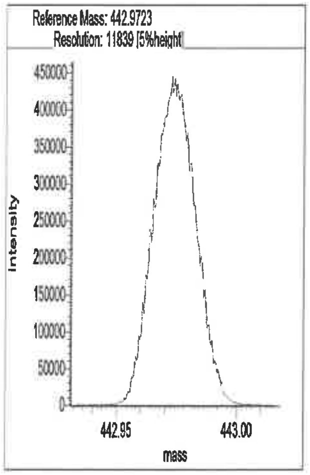

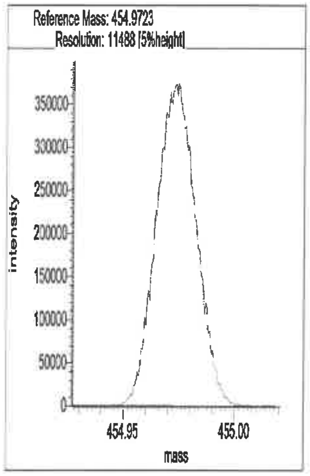

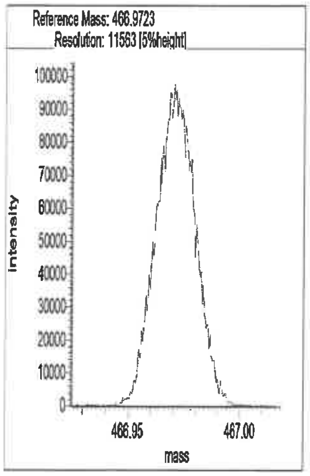

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12244 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11463 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11910 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12086 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12044 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11575 [5%height]

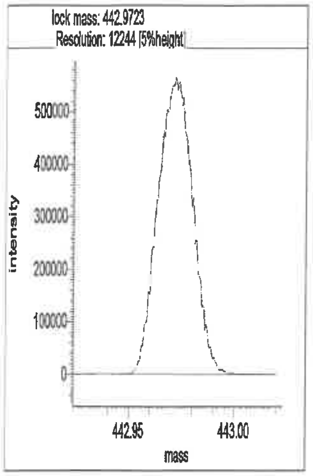
lock mass: 442.9723
Resolution: 12244 [5%height]

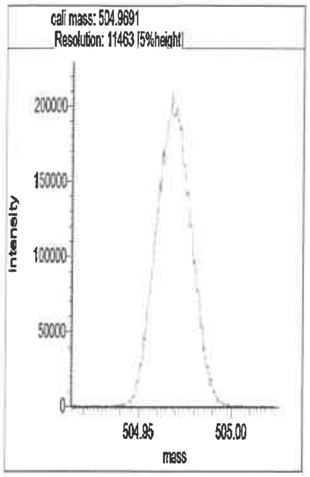
cali mass: 504.9691
Resolution: 11463 [5%height]

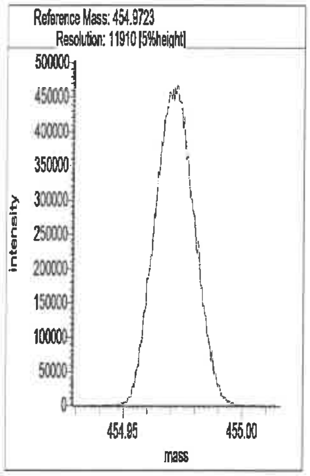
Reference Mass: 454.9723
Resolution: 11910 [5%height]

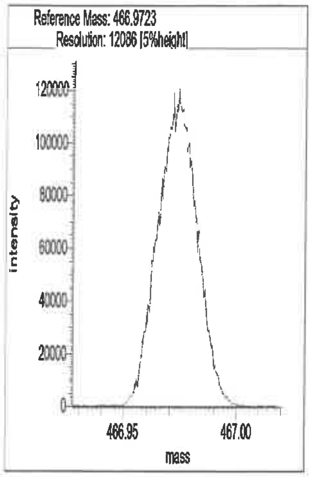
Reference Mass: 466.9723
Resolution: 12086 [5%height]

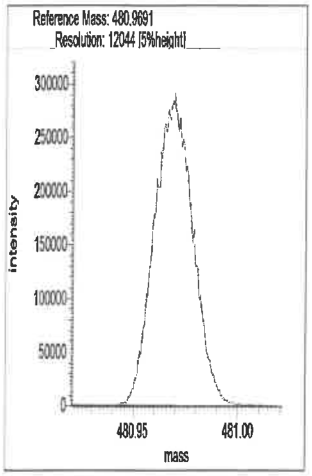
Reference Mass: 480.9691
Resolution: 12044 [5%height]

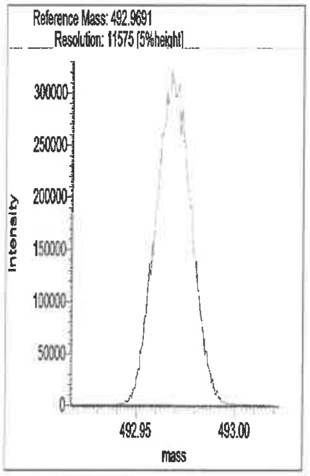
Reference Mass: 492.9691
Resolution: 11575 [5%height]

Resolution Check Report (DFS SN: 3487)

Date:	12 Mar 2021 21:44
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12496 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 10419 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11936 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 12125 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11693 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11658 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10364 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 10251 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 9825 [5%height]

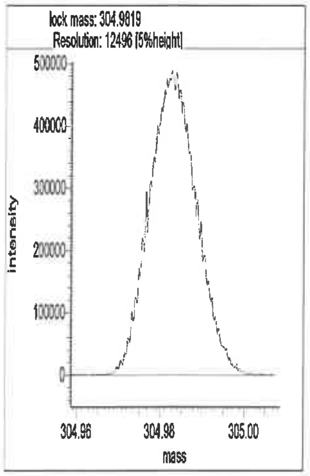

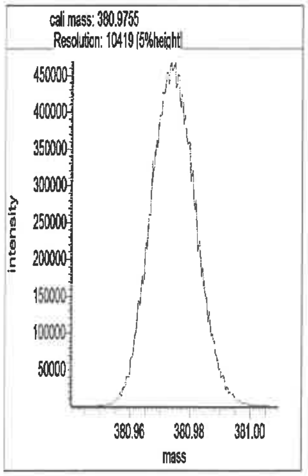

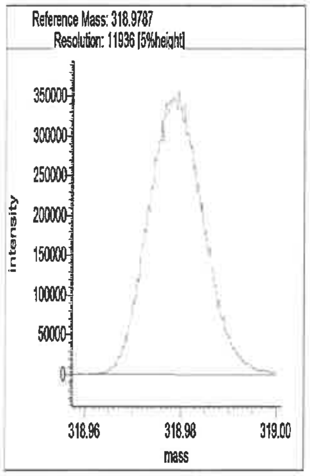

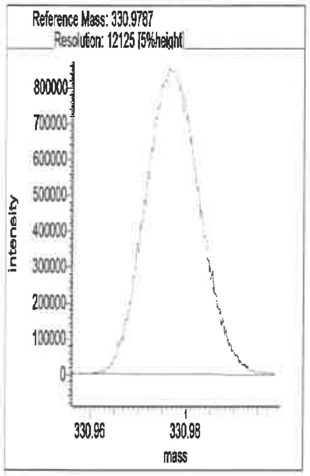

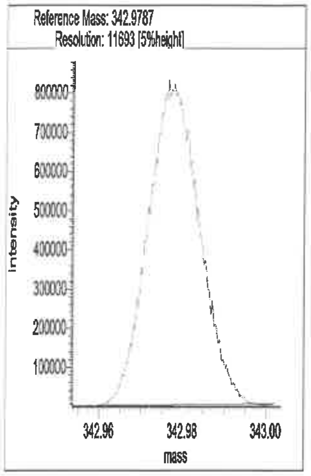

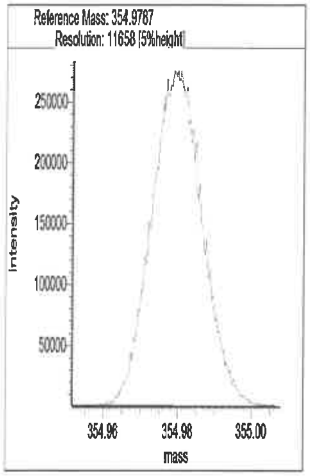

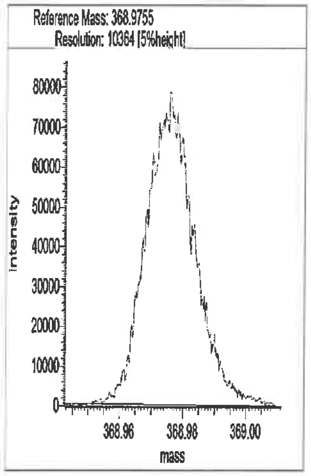

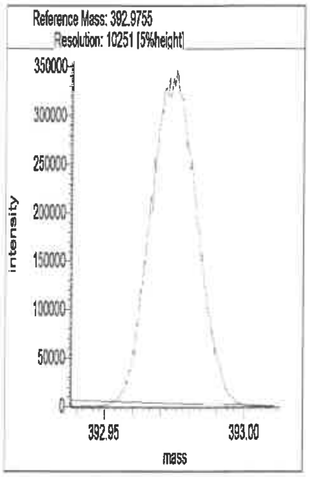

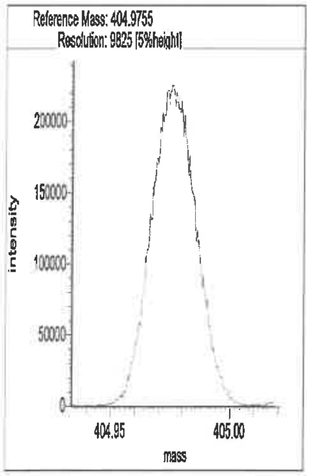

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12573 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11860 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12132 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12365 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11042 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11065 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10905 [5%height]

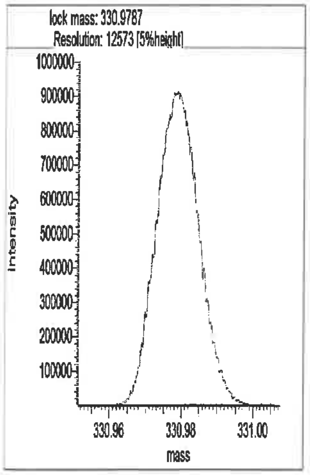

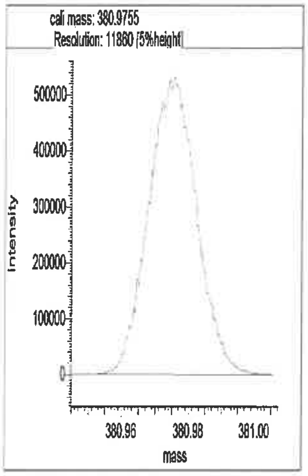

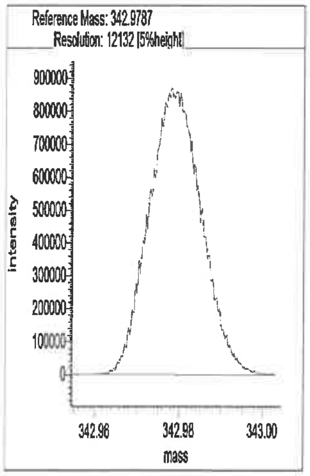

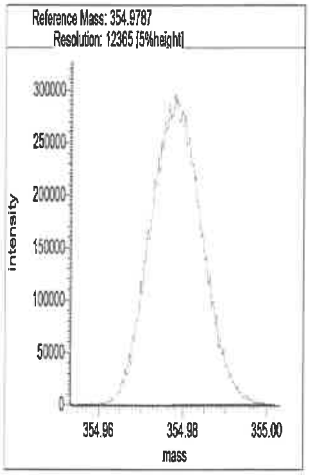

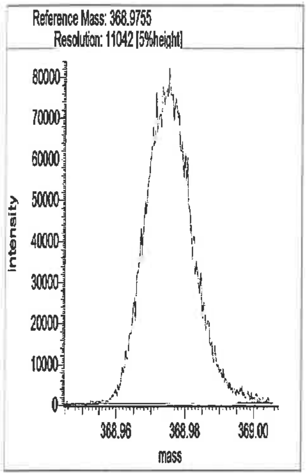

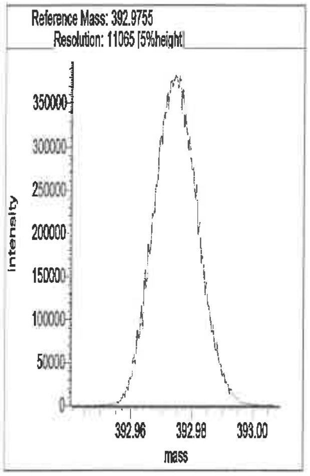

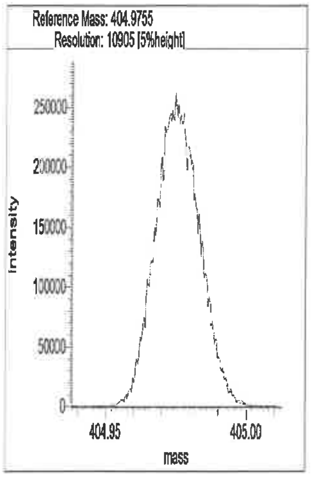

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12506 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11616 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12492 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12160 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11798 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11620 [5%height]

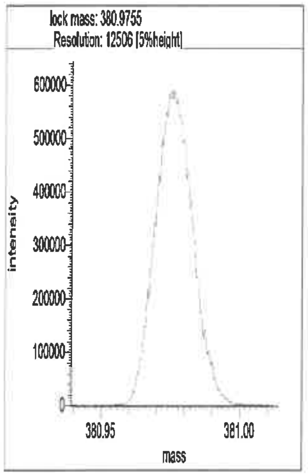

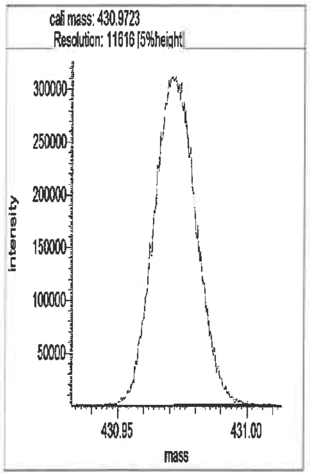

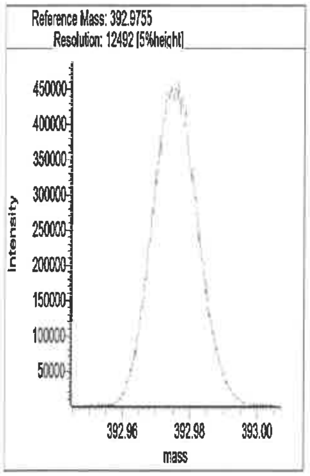

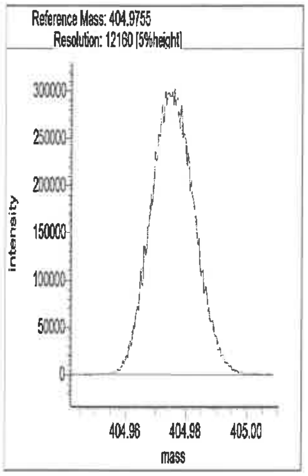

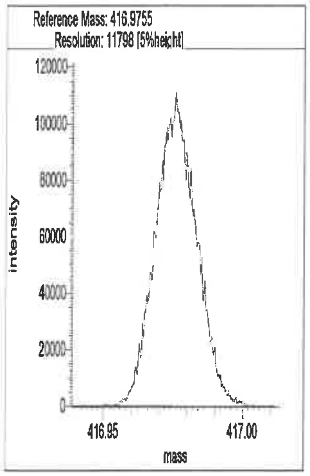

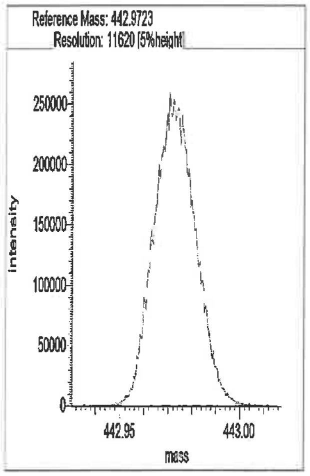

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12385 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 10849 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12219 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12993 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12139 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11878 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11450 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11188 [5%height]

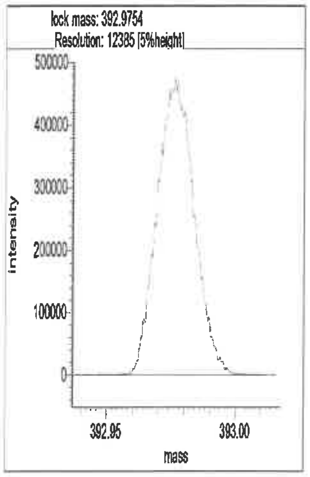

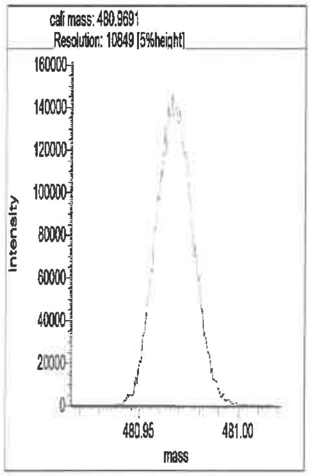

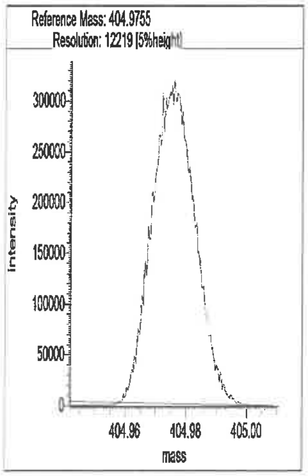

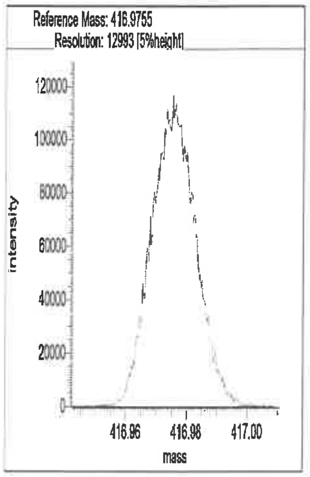

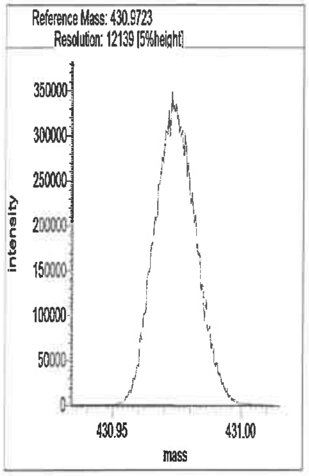

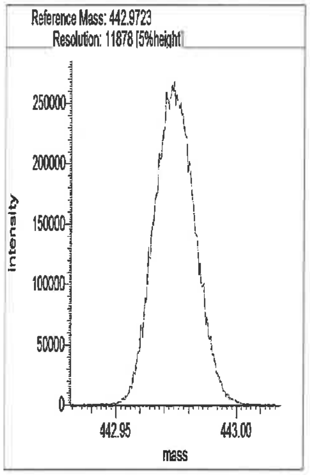

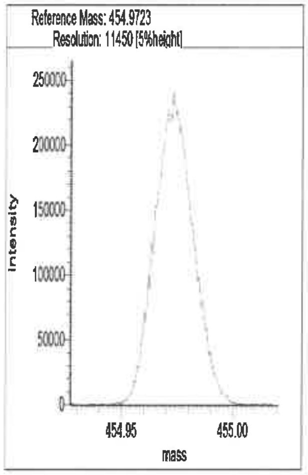

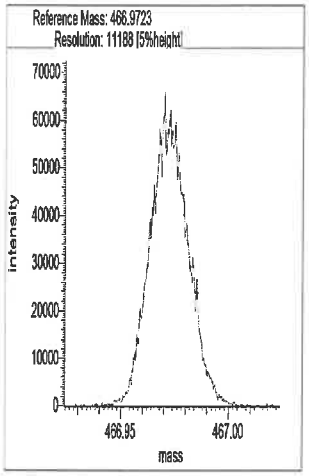

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12598 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11563 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12586 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12326 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12209 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12403 [5%height]

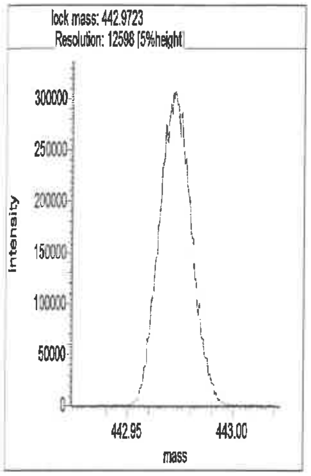
lock mass: 442.9723
Resolution: 12598 [5%height]
intensity
300000
250000
200000
150000
100000
50000
0
442.95
443.00
mass

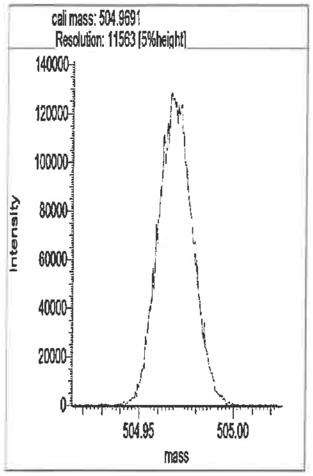
cali mass: 504.9691
Resolution: 11563 [5%height]
intensity
140000
120000
100000
80000
60000
40000
20000
0
504.95
505.00
mass

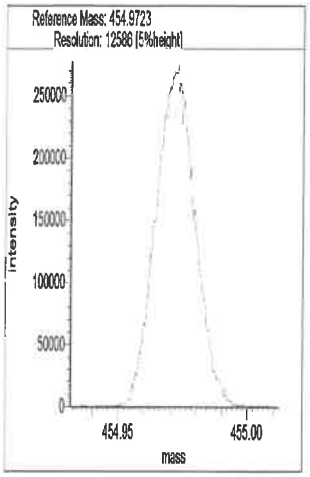
Reference Mass: 454.9723
Resolution: 12586 [5%height]
intensity
250000
200000
150000
100000
50000
0
454.95
455.00
mass

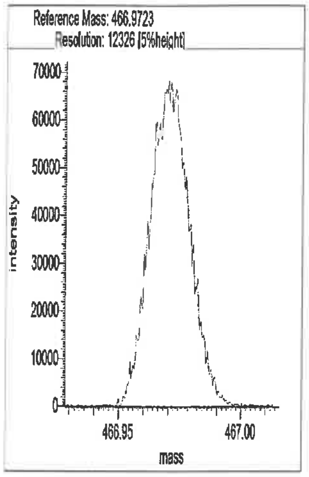
Reference Mass: 466.9723
Resolution: 12326 [5%height]
intensity
70000
60000
50000
40000
30000
20000
10000
0
466.95
467.00
mass

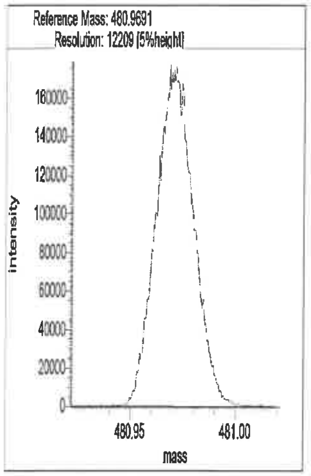
Reference Mass: 480.9691
Resolution: 12209 [5%height]
intensity
160000
140000
120000
100000
80000
60000
40000
20000
0
480.95
481.00
mass

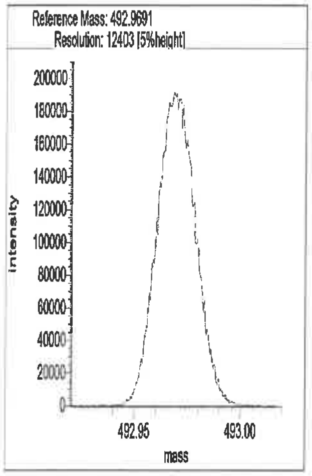
Reference Mass: 492.9691
Resolution: 12403 [5%height]
intensity
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

eurofins Environment Testing TestAmerica

Date: 13 Mar 2021 08:27
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13070 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12343 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 13169 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 13040 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13498 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 13139 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11868 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12013 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11950 [5%height]

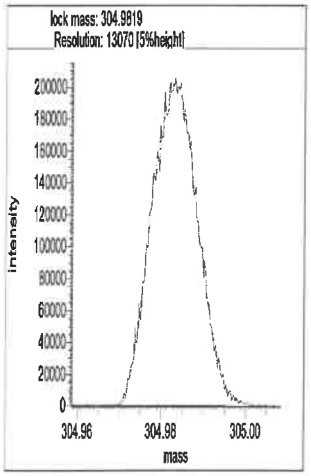

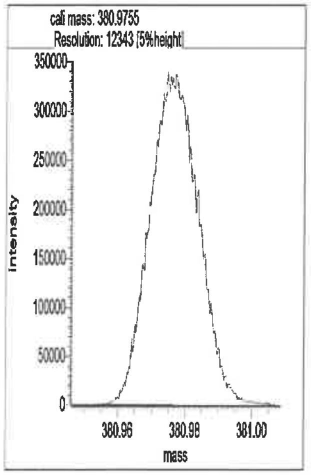

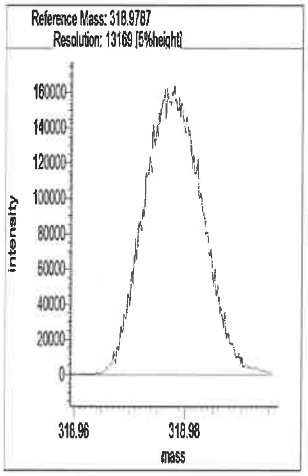

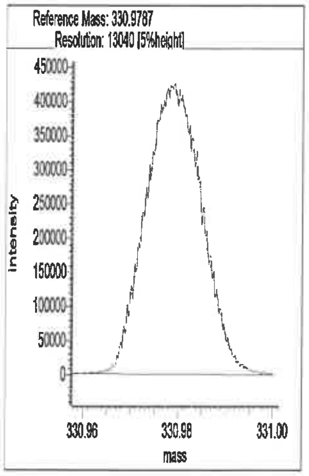

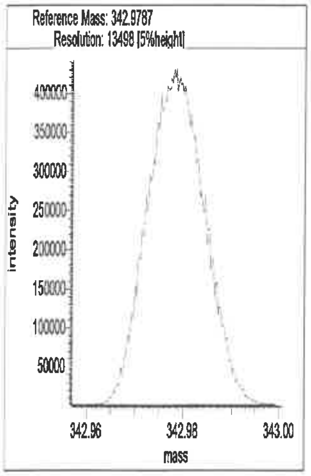

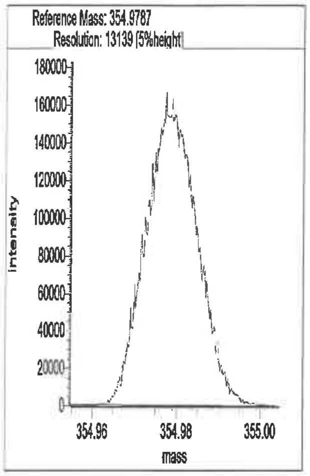

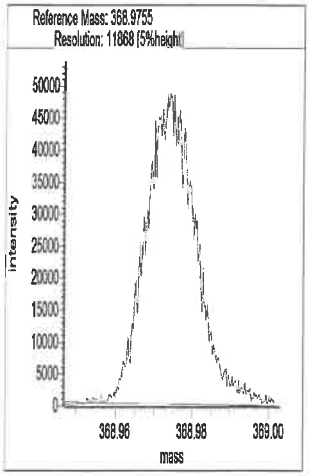

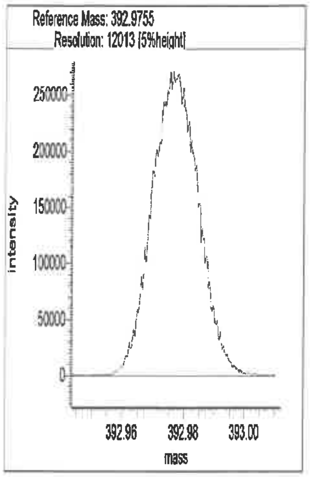

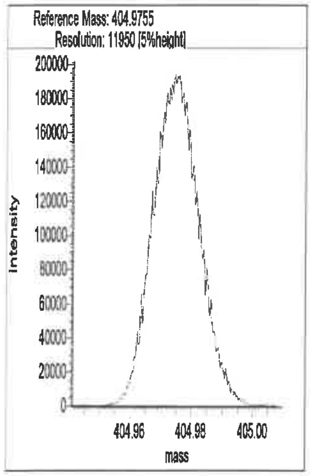

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13033 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12865 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 13718 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12976 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11100 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12811 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12590 [5%height]

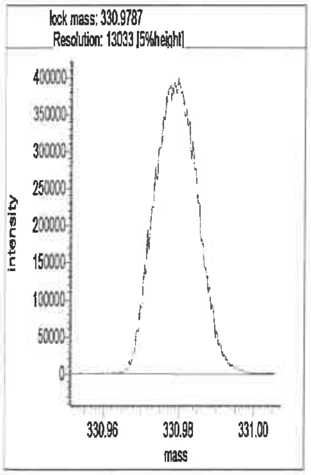

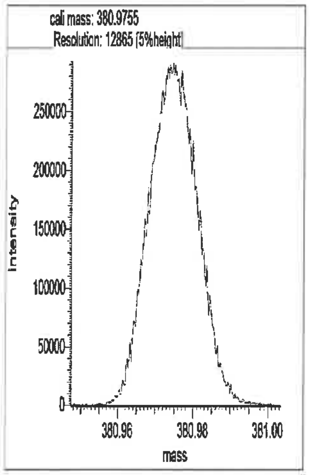

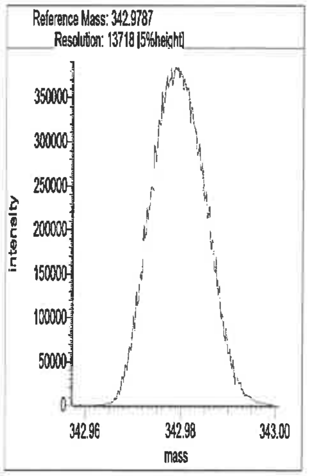

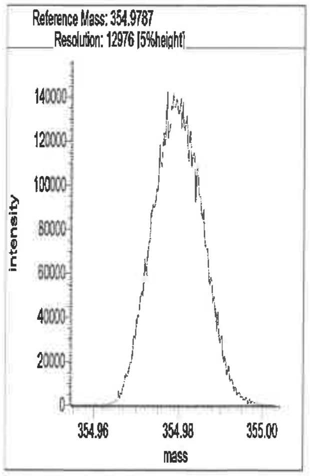

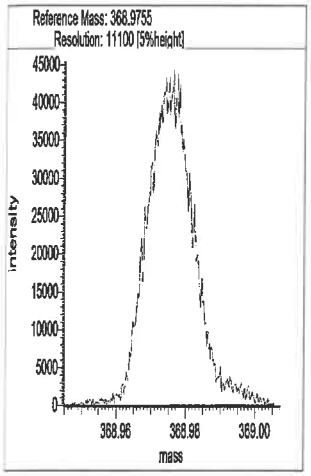

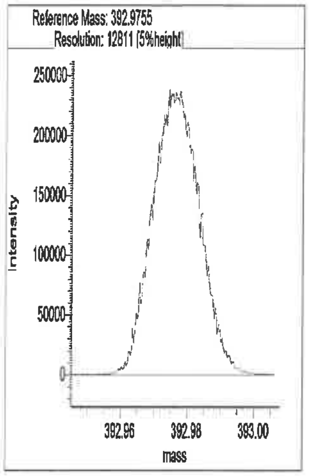

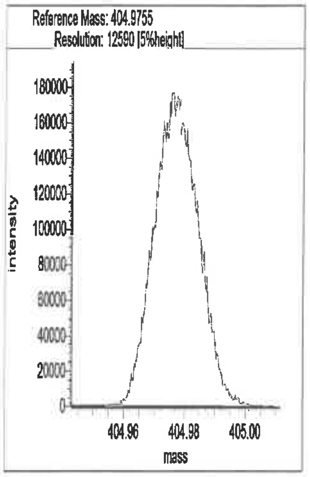

Segment 3

Lock mass 380.9755 [m/z] Resolution: 13225 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12751 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 13132 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13235 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 13940 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12836 [5%height]

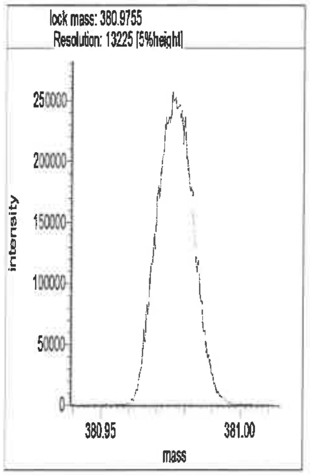

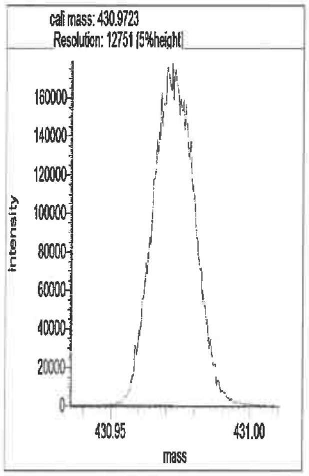

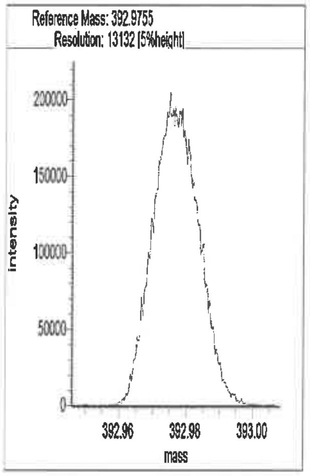

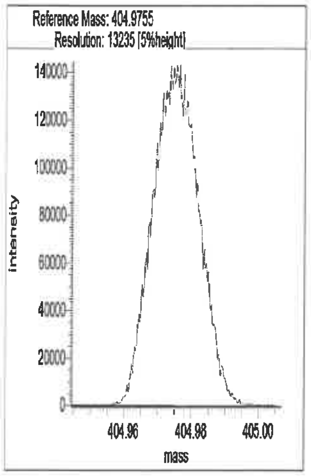

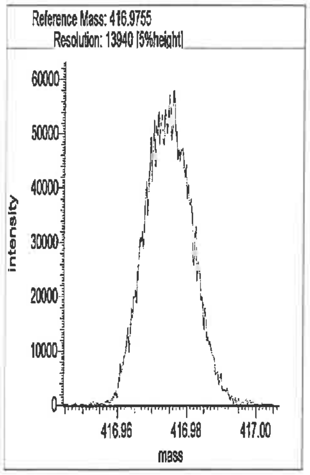

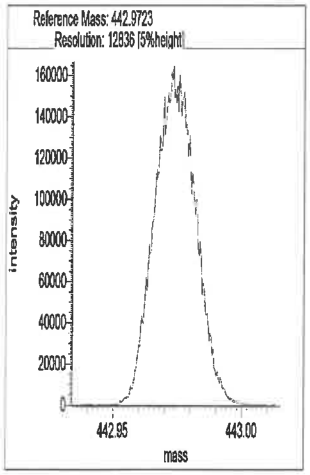

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13180 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12261 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13284 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 13546 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 13105 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 13448 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13182 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13125 [5%height]

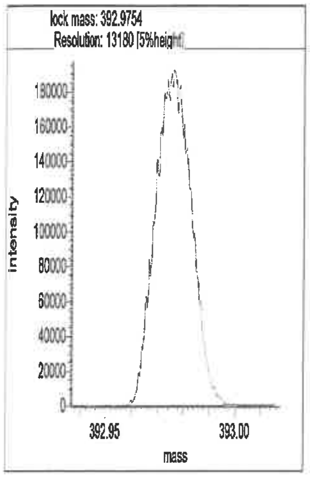

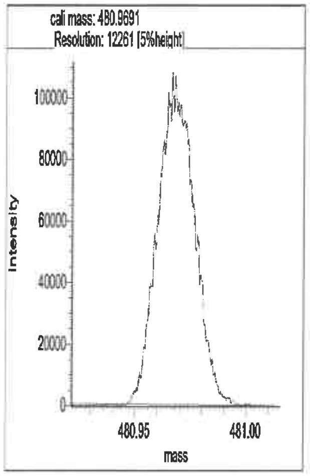

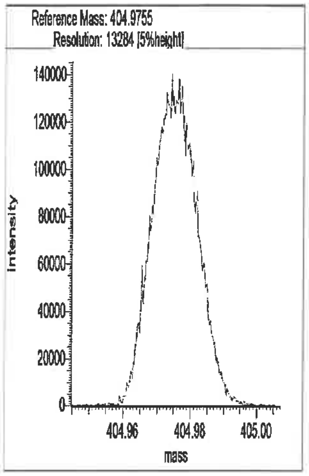

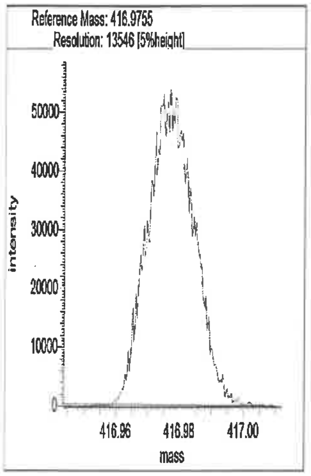

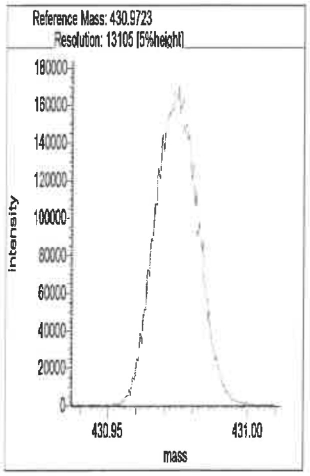

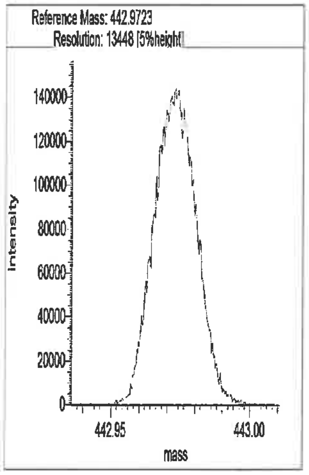

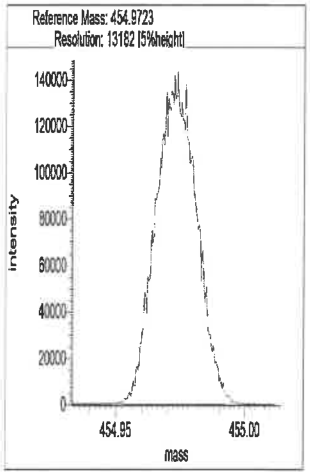

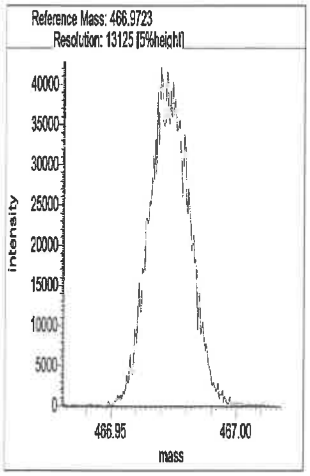

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13363 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 13398 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13726 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13531 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 13253 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 13794 [5%height]

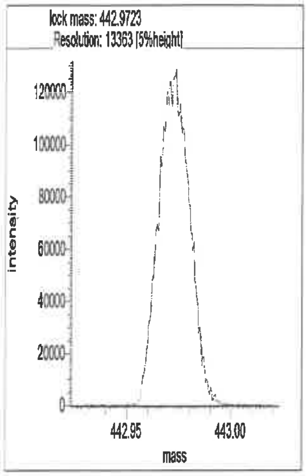
lock mass: 442.9723
Resolution: 13363 [5%height]
intensity
120000
100000
80000
60000
40000
20000
0
442.95
443.00
mass

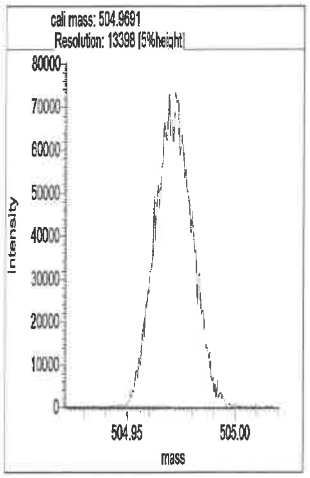
cali mass: 504.9691
Resolution: 13398 [5%height]
intensity
80000
70000
60000
50000
40000
30000
20000
10000
0
504.95
505.00
mass

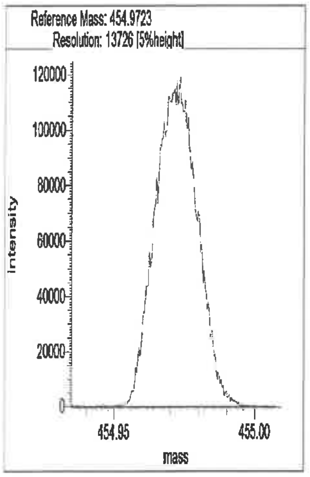
Reference Mass: 454.9723
Resolution: 13726 [5%height]
intensity
120000
100000
80000
60000
40000
20000
0
454.95
455.00
mass

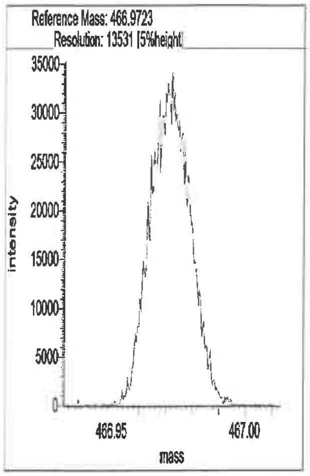
Reference Mass: 466.9723
Resolution: 13531 [5%height]
intensity
35000
30000
25000
20000
15000
10000
5000
0
466.95
467.00
mass

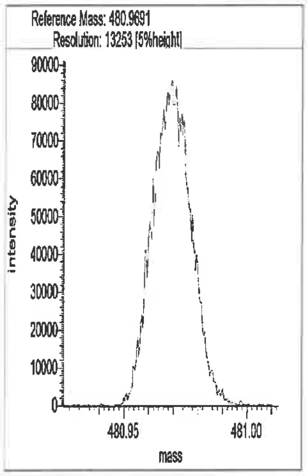
Reference Mass: 480.9691
Resolution: 13253 [5%height]
intensity
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
480.95
481.00
mass

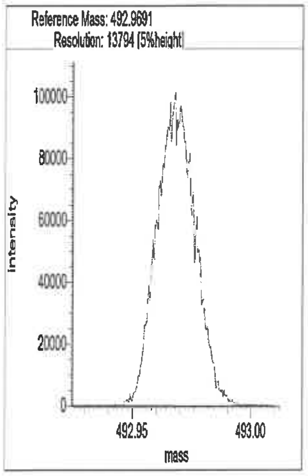
Reference Mass: 492.9691
Resolution: 13794 [5%height]
intensity
100000
80000
60000
40000
20000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date: 13 Mar 2021 09:35
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13883 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12065 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 13147 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 13211 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13291 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12916 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 12337 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12087 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11923 [5%height]

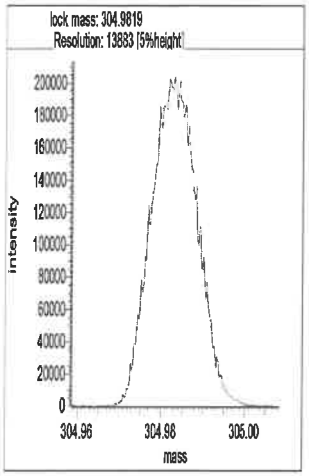

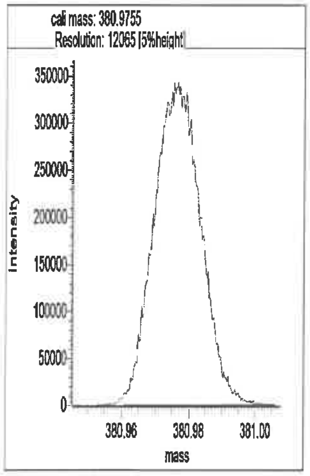

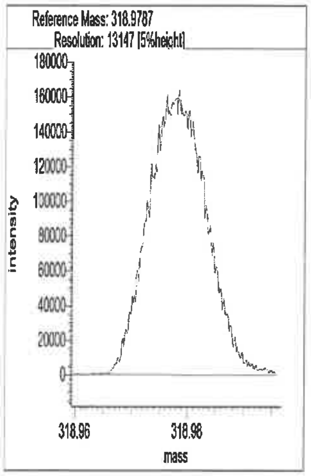

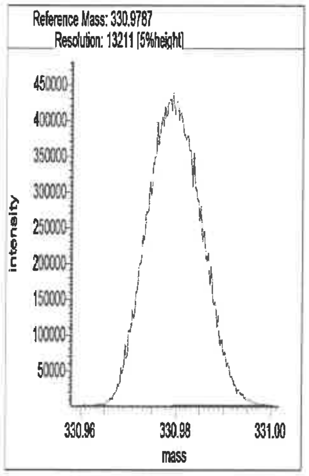

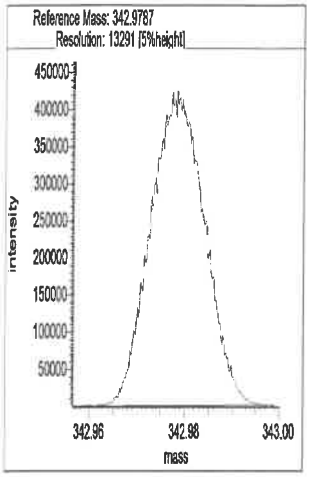

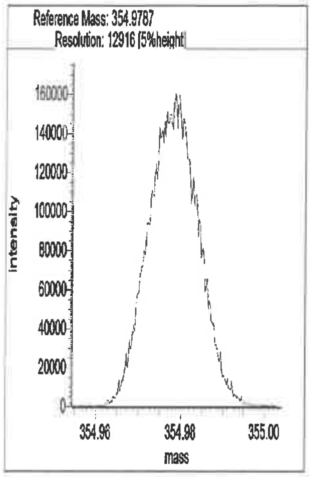

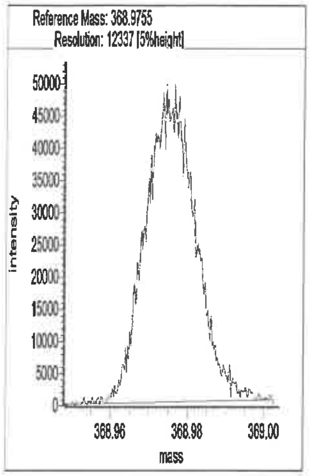

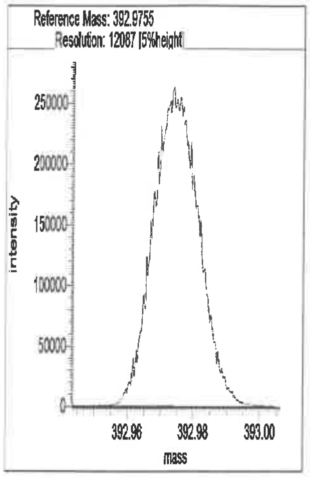

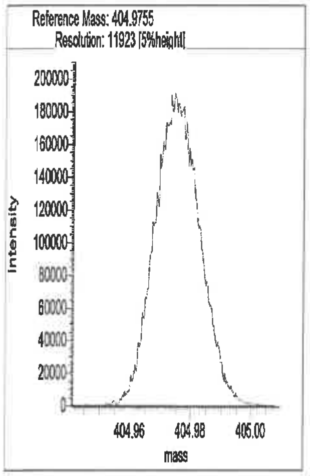

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13251 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 13112 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 13777 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 13857 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12392 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12717 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12697 [5%height]

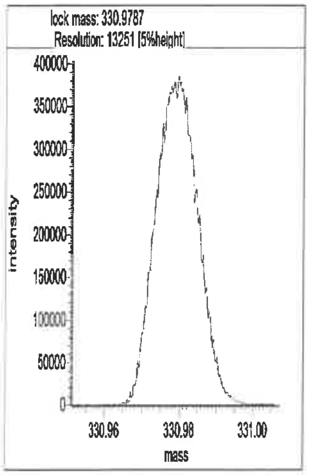

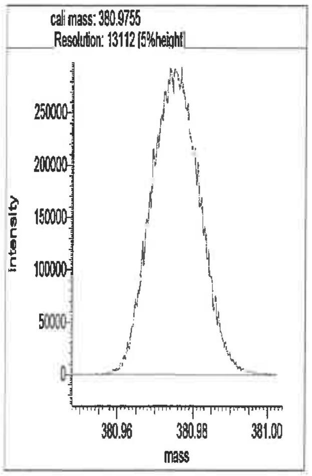

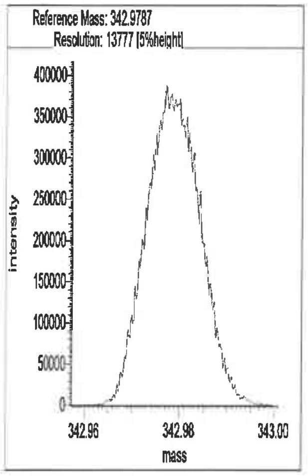

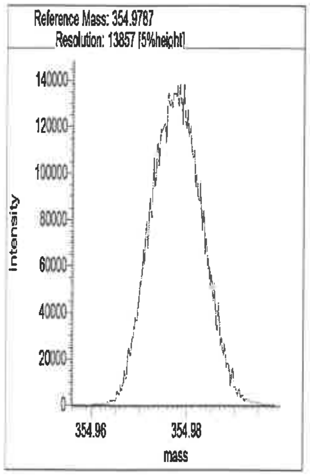

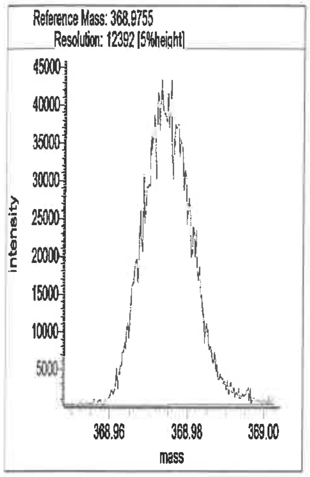

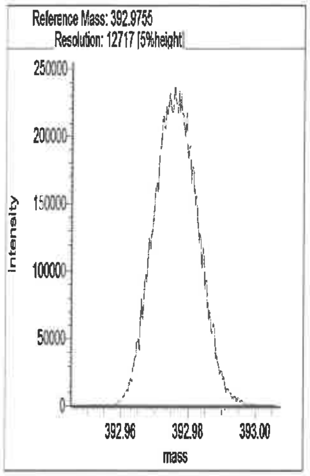

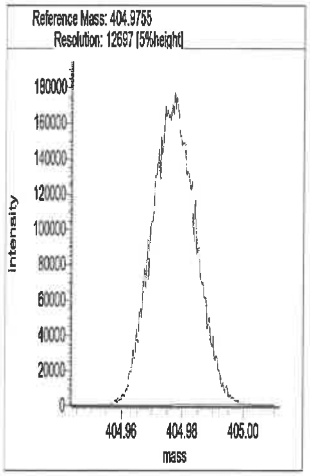

Segment 3

Lock mass 380.9755 [m/z] Resolution: 13853 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 13180 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 13976 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13033 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13260 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12931 [5%height]

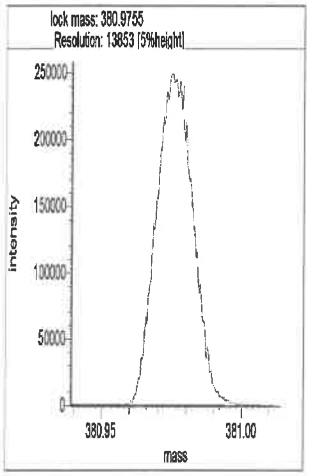

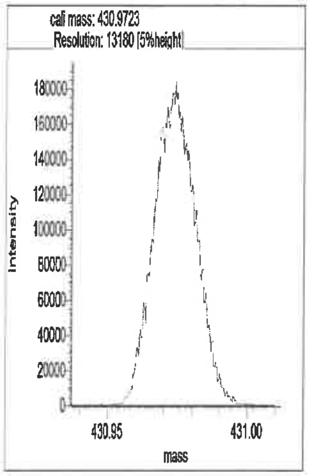

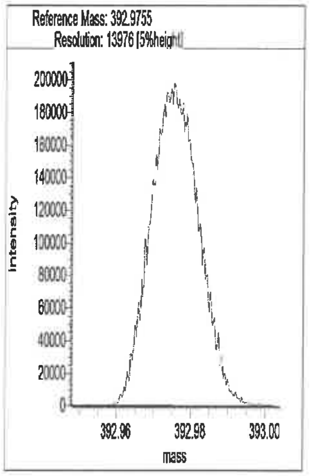

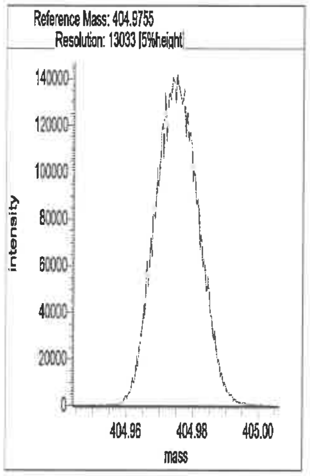

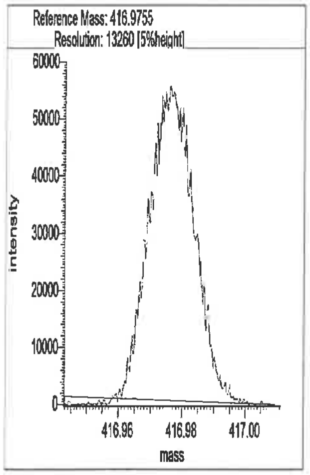

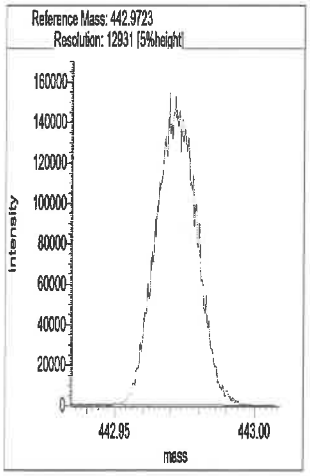

Segment 4

Lock mass 392.9754 [m/z] Resolution: 14017 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 12317 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 13791 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 13728 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 13135 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 13182 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13179 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13600 [5%height]

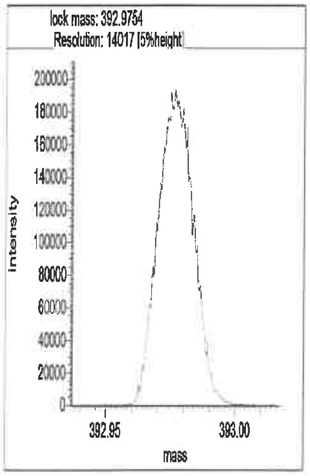

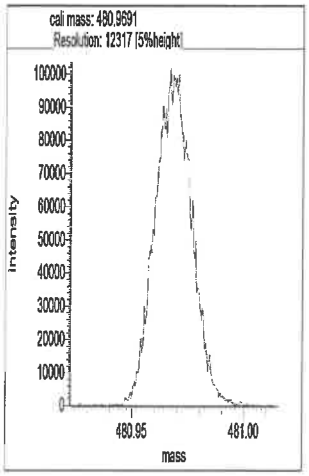

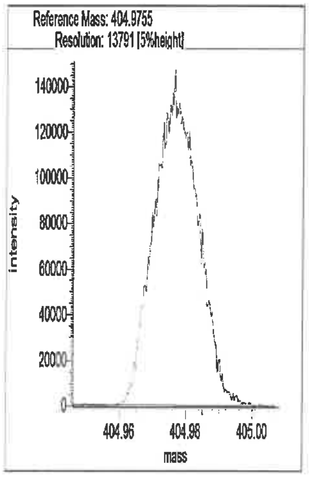

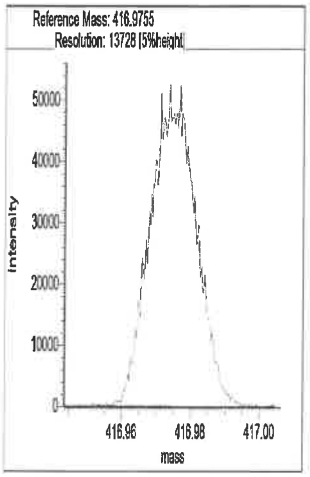

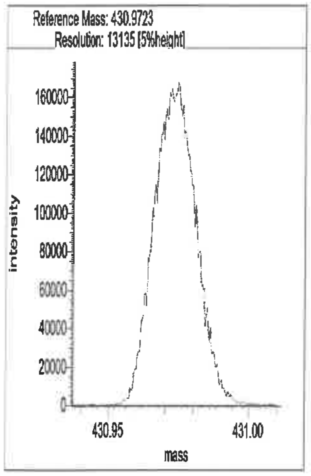

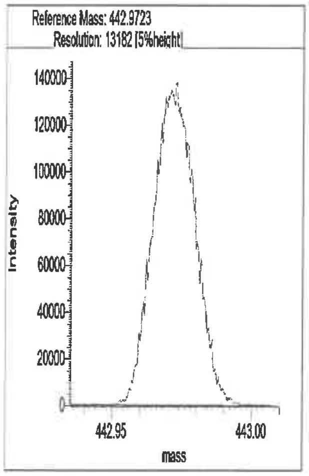

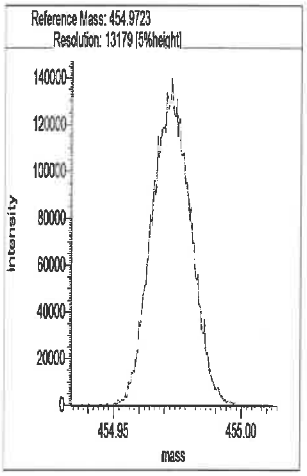

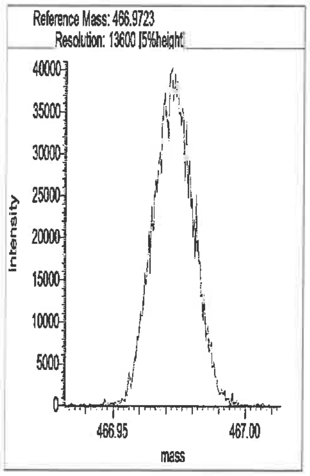

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13909 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 13310 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 13726 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 13745 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 13067 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 13592 [5%height]

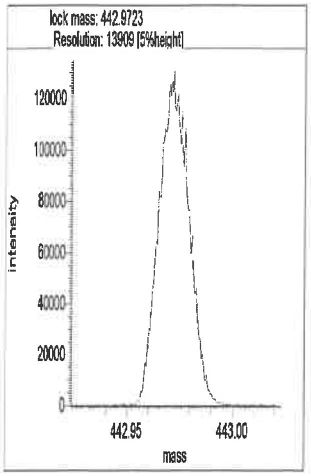
lock mass: 442.9723
Resolution: 13909 [5%height]

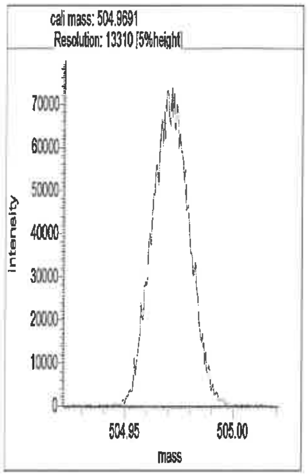
cali mass: 504.9691
Resolution: 13310 [5%height]

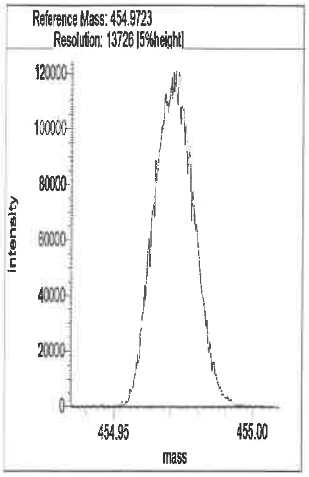
Reference Mass: 454.9723
Resolution: 13726 [5%height]

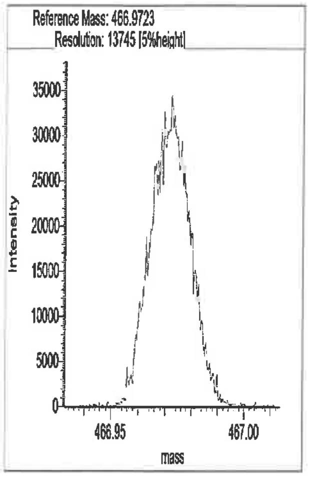
Reference Mass: 466.9723
Resolution: 13745 [5%height]

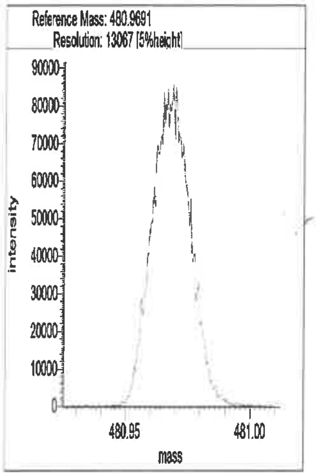
Reference Mass: 480.9691
Resolution: 13067 [5%height]

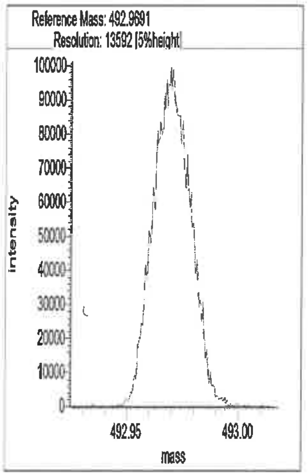
Reference Mass: 492.9691
Resolution: 13592 [5%height]

Resolution Check Report (DFS SN: 3487)

Eurofins Environment Testing TestAmerica

Date: 13 Mar 2021 19:30
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13761 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11676 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 13747 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 13280 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13211 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12648 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11051 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11657 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 10946 [5%height]

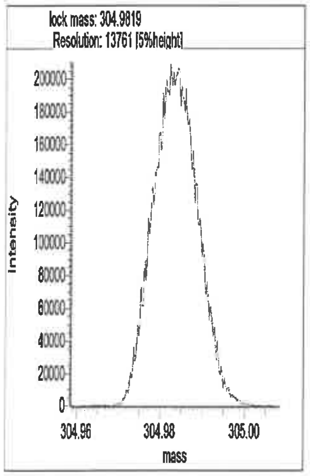

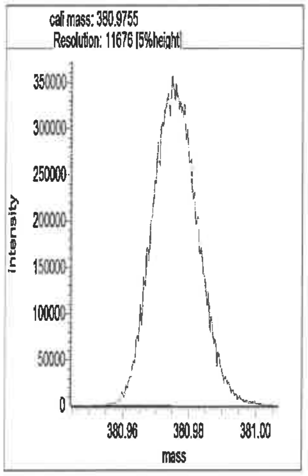

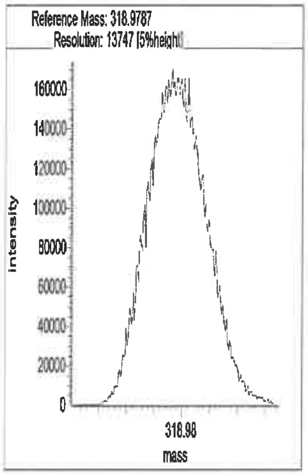

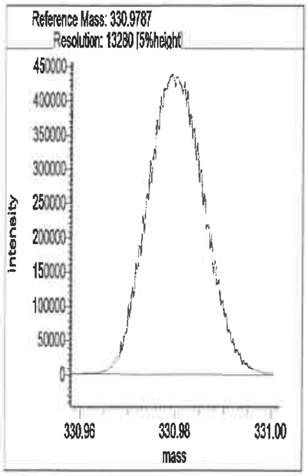

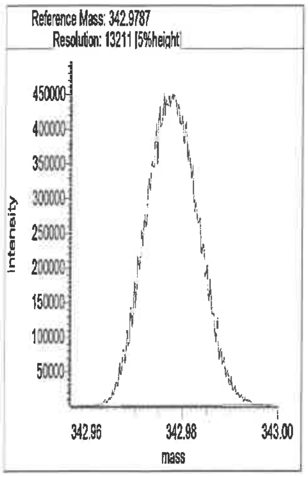

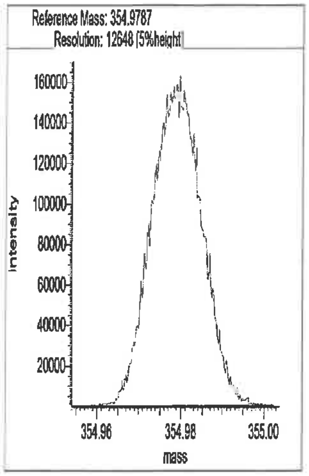

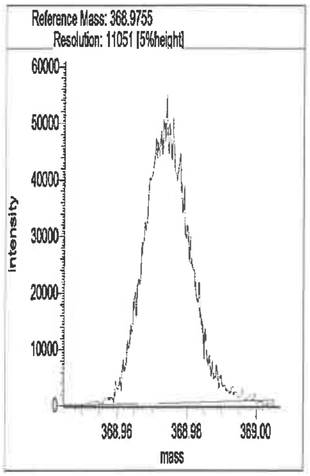

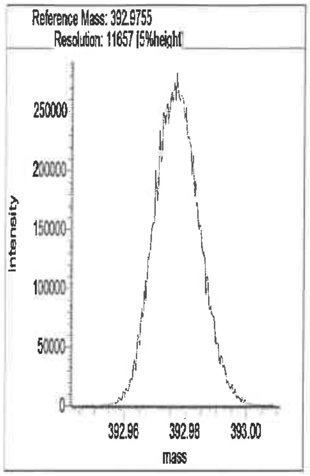

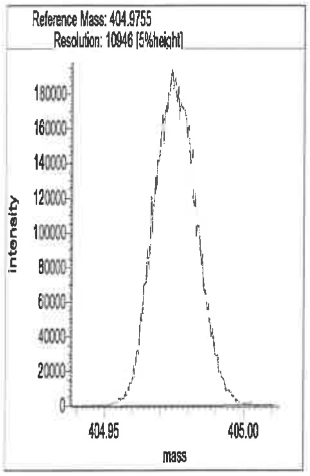

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13907 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 12852 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 13693 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 13546 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 12211 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12609 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12074 [5%height]

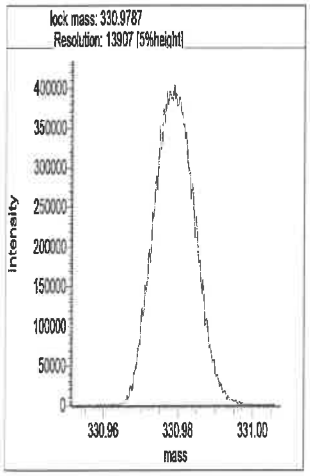

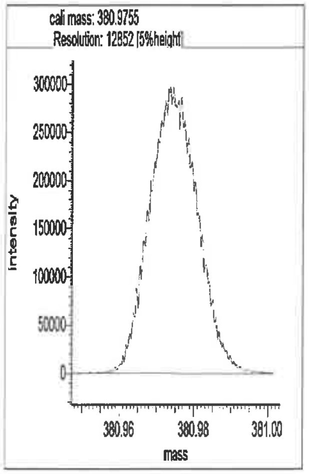

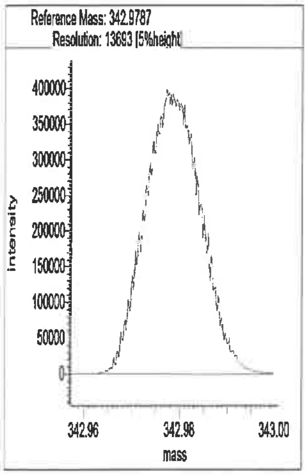

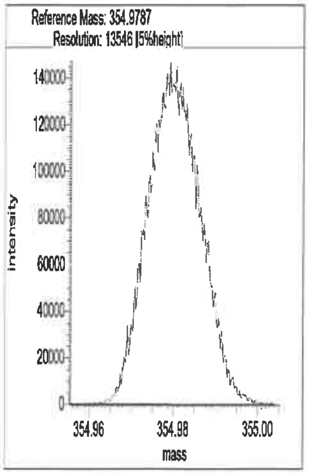

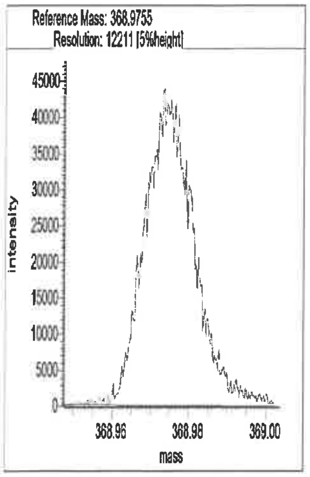

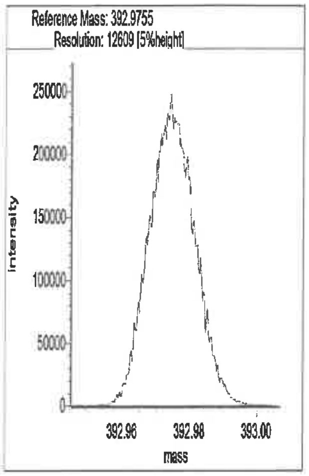

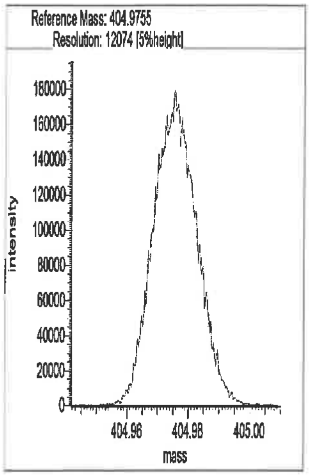

Segment 3

Lock mass 380.9755 [m/z] Resolution: 13100 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 13017 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 13715 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12788 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13366 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12253 [5%height]

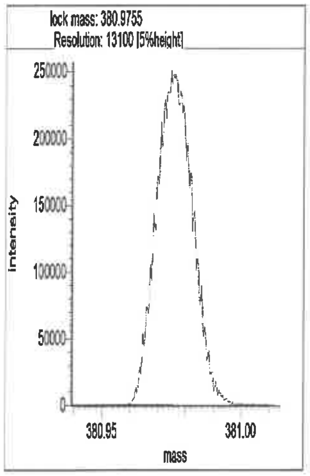

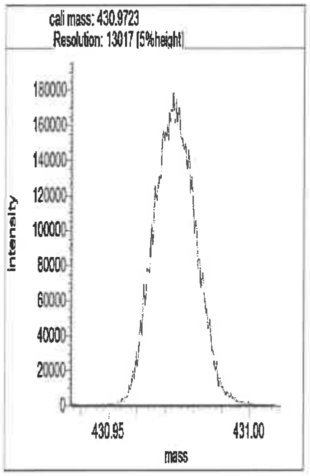

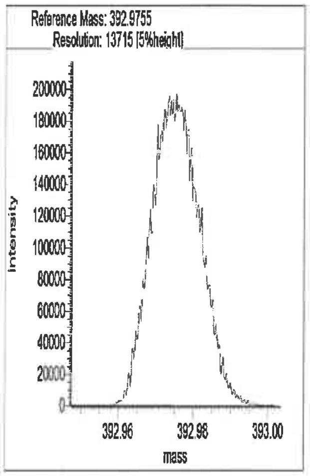

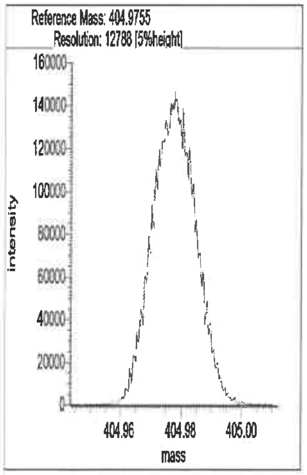

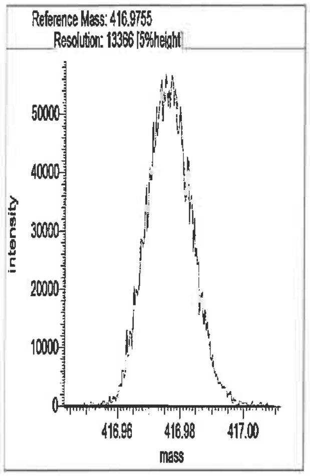

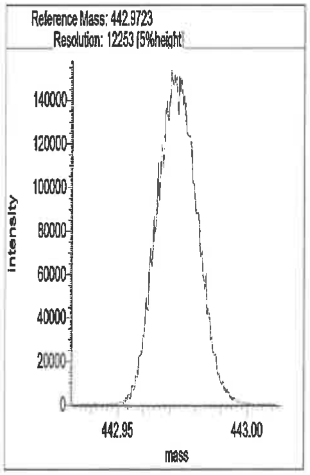

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13791 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 12404 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13186 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 13098 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 13133 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 13163 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12863 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12462 [5%height]

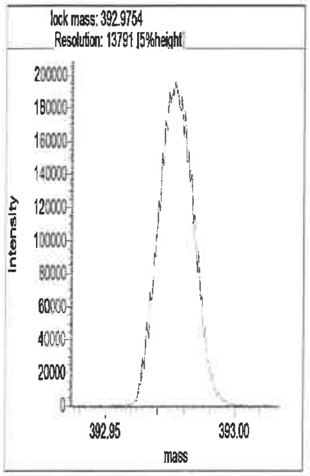

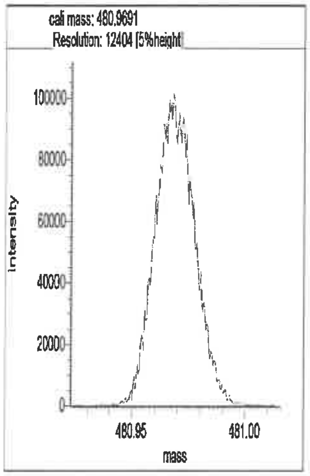

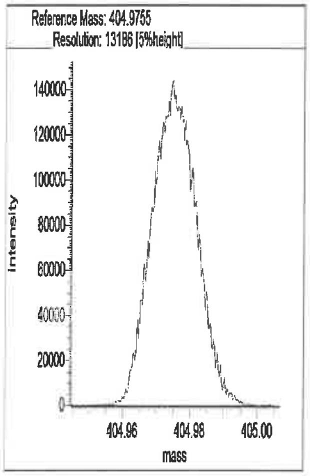

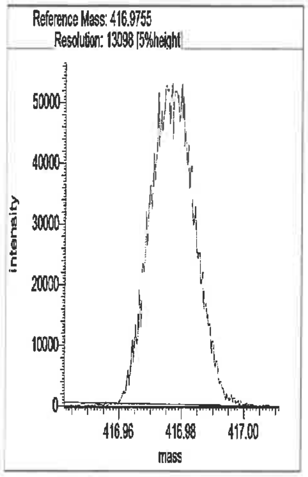

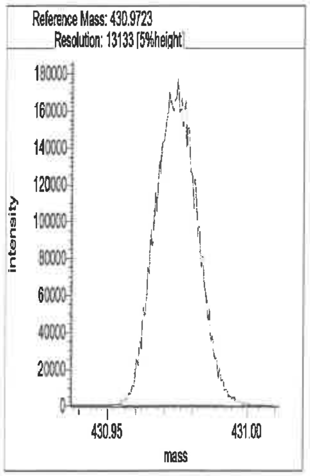

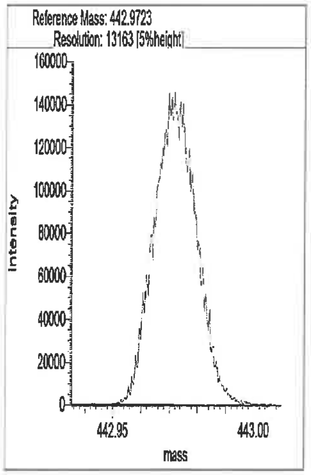

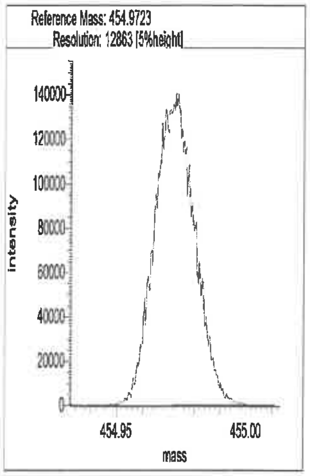

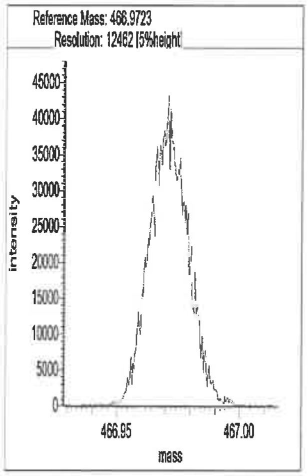

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13616 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12778 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 13647 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 13294 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12782 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12756 [5%height]

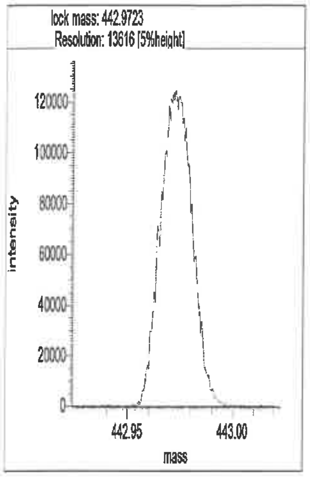
lock mass: 442.9723
Resolution: 13616 [5%height]
intensity
120000
100000
80000
60000
40000
20000
0
442.95
443.00
mass

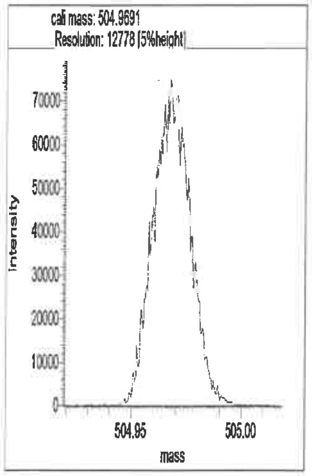
cali mass: 504.9691
Resolution: 12778 [5%height]
intensity
70000
60000
50000
40000
30000
20000
10000
0
504.95
505.00
mass

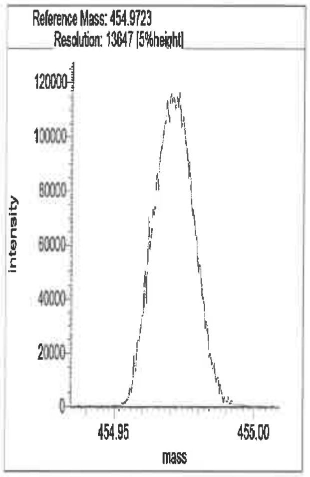
Reference Mass: 454.9723
Resolution: 13647 [5%height]
intensity
120000
100000
80000
60000
40000
20000
0
454.95
455.00
mass

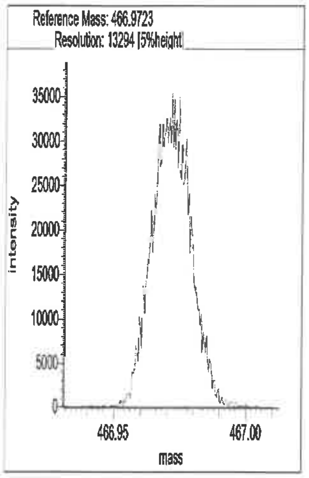
Reference Mass: 466.9723
Resolution: 13294 [5%height]
intensity
35000
30000
25000
20000
15000
10000
5000
0
466.95
467.00
mass

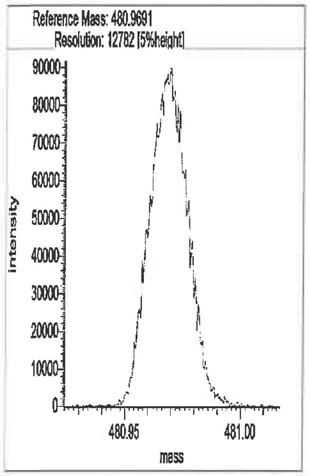
Reference Mass: 480.9691
Resolution: 12782 [5%height]
intensity
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
480.95
481.00
mass

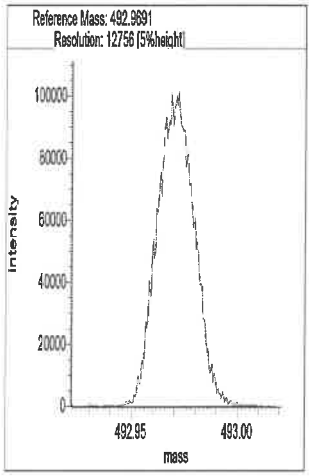
Reference Mass: 492.9691
Resolution: 12756 [5%height]
intensity
100000
80000
60000
40000
20000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	13 Mar 2021 20:38
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 13818 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11857 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 12749 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 13030 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12926 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12528 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11218 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11175 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 10749 [5%height]

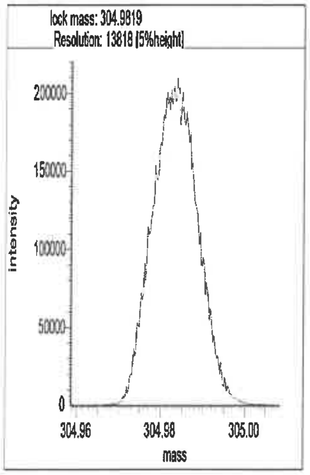

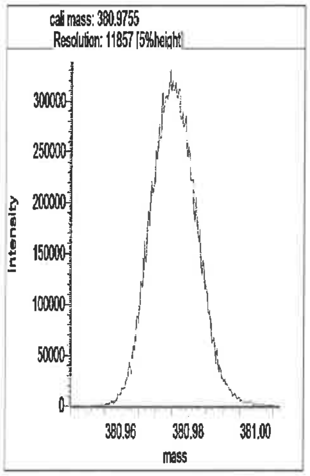

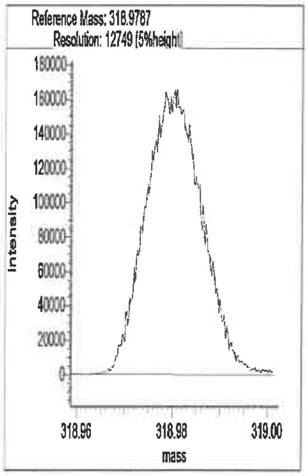

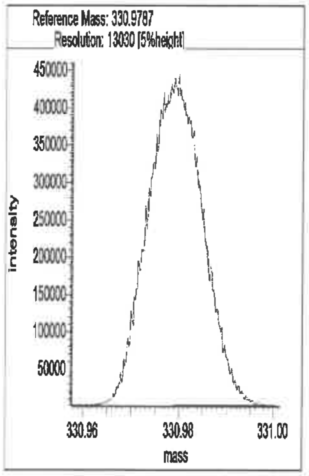

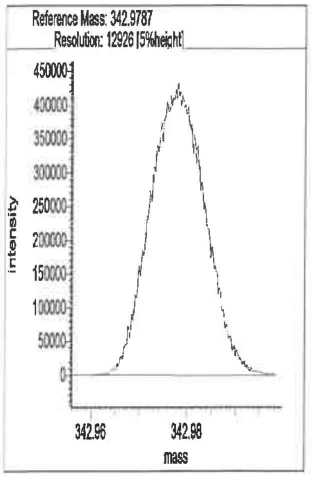

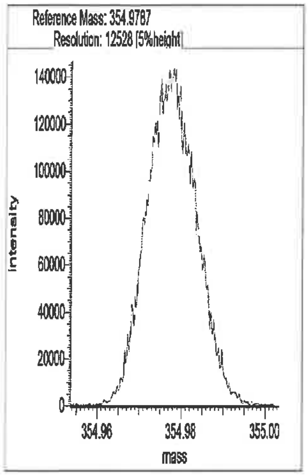

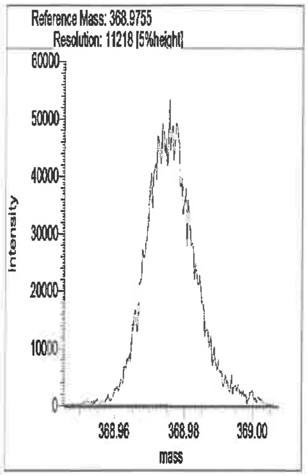

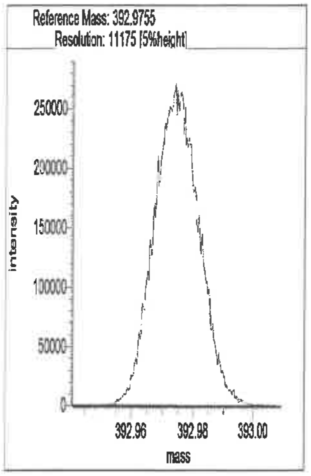

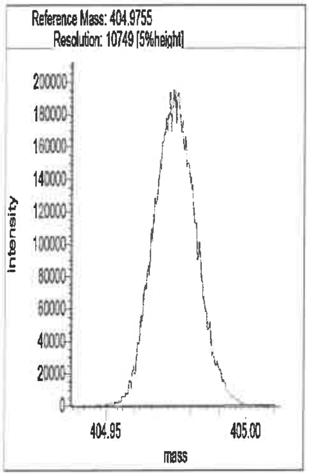

Segment 2

Lock mass 330.9787 [m/z] Resolution: 13137 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12641 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 13659 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 13216 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11129 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12374 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11416 [5%height]

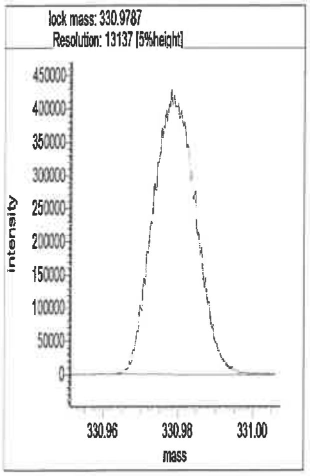

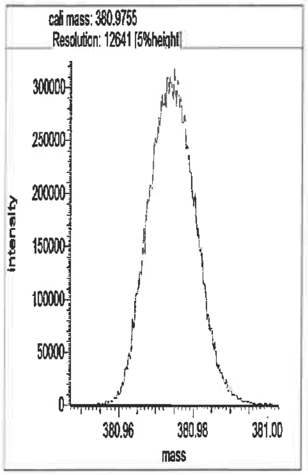

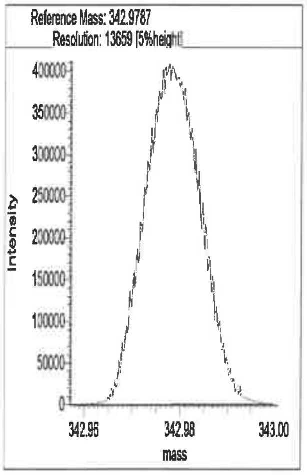

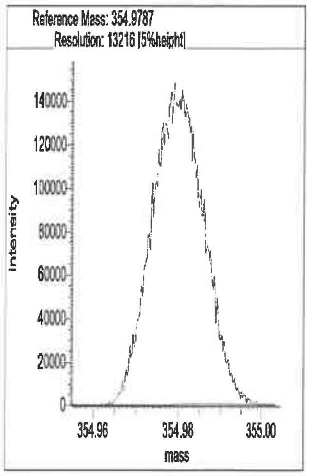

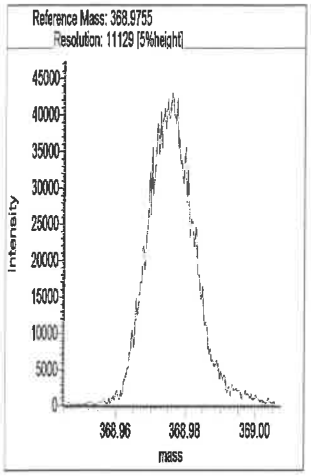

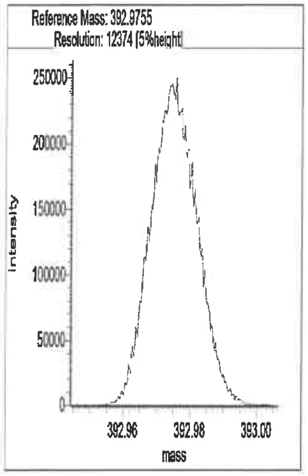

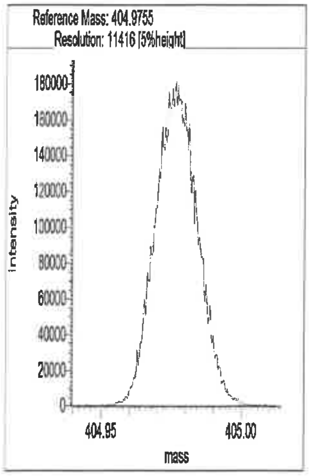

Segment 3

Lock mass 380.9755 [m/z] Resolution: 13060 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 12579 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 13481 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12948 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12889 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12155 [5%height]

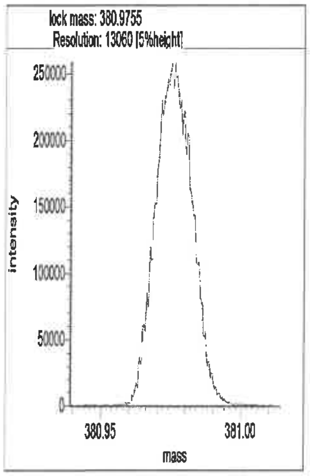

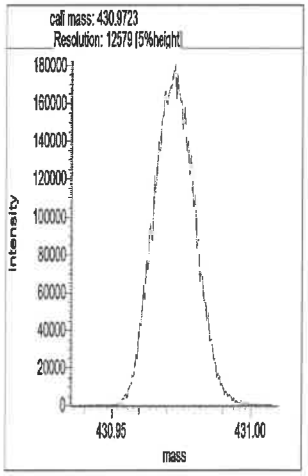

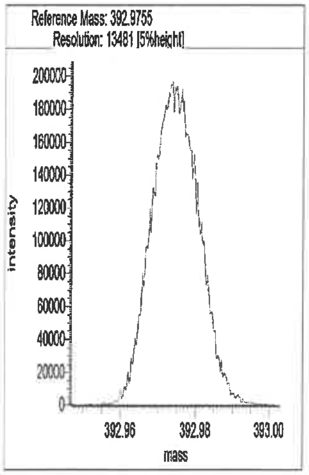

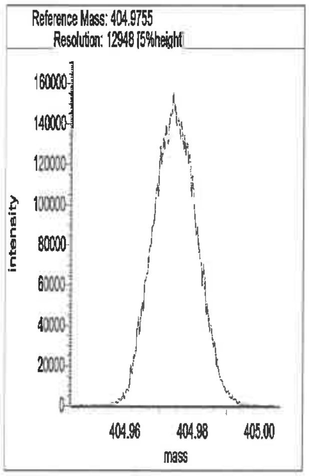

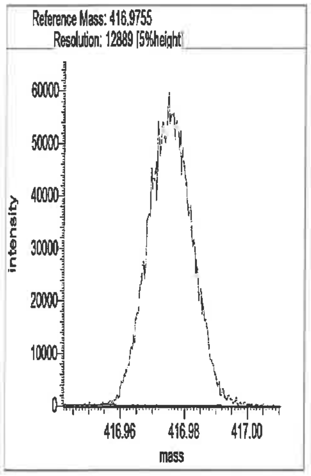

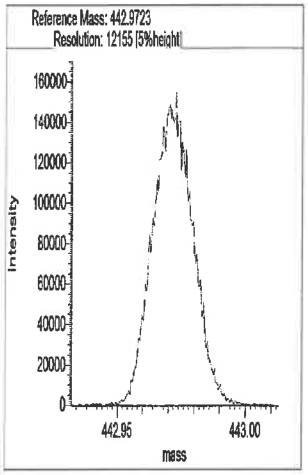

Segment 4

Lock mass 392.9754 [m/z] Resolution: 13074 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11845 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 13699 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12776 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 13226 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12833 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12880 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12586 [5%height]

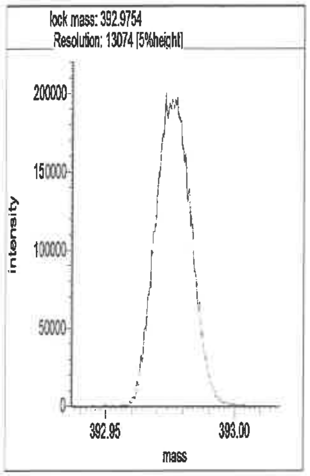

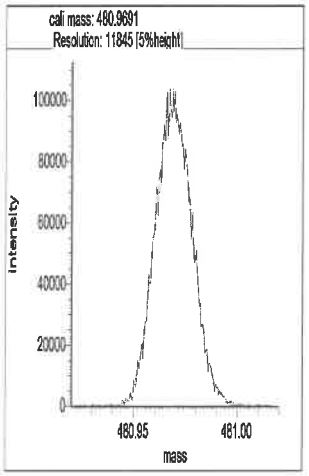

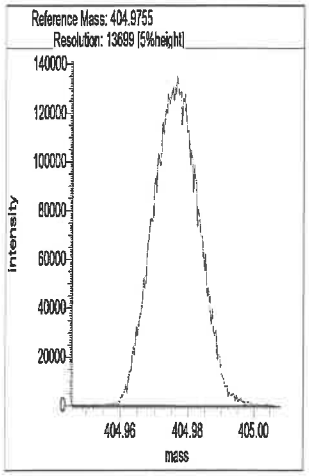

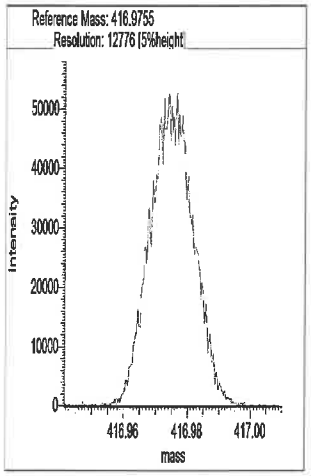

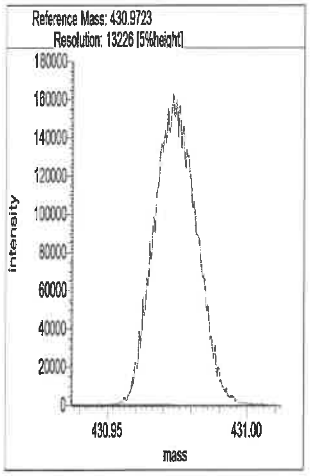

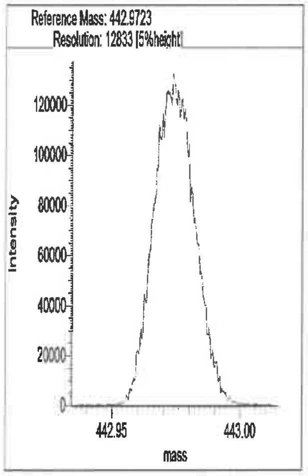

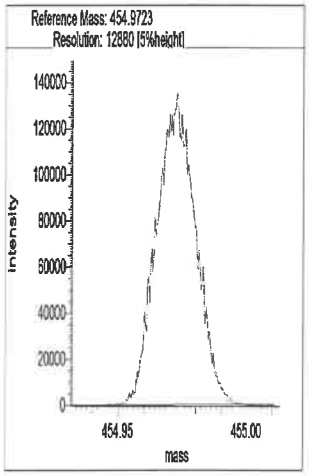

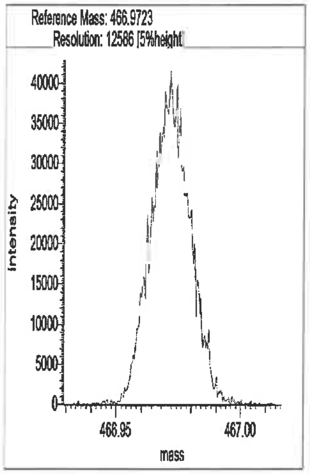

Segment 5

Lock mass 442.9723 [m/z] Resolution: 13794 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12989 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 13752 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 14175 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12812 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 13282 [5%height]

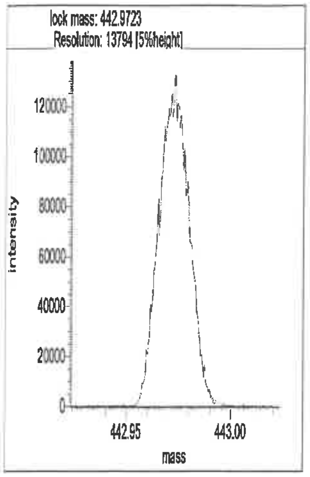
lock mass: 442.9723
Resolution: 13794 [5%height]

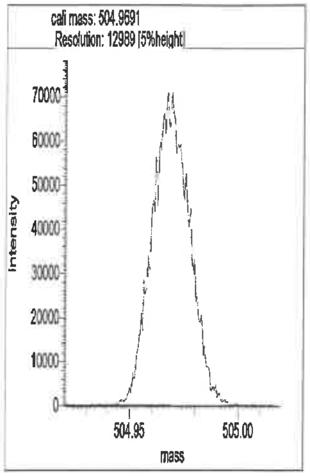
cali mass: 504.9691
Resolution: 12989 [5%height]

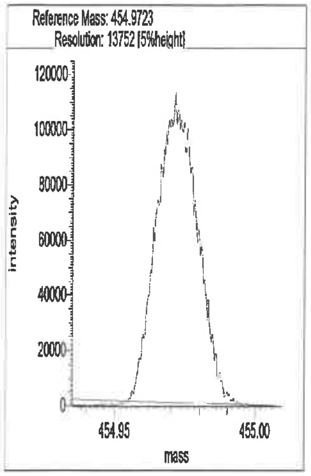
Reference Mass: 454.9723
Resolution: 13752 [5%height]

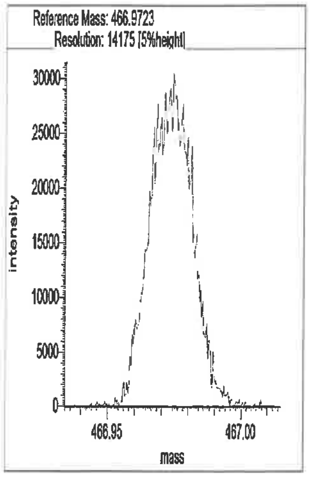
Reference Mass: 466.9723
Resolution: 14175 [5%height]

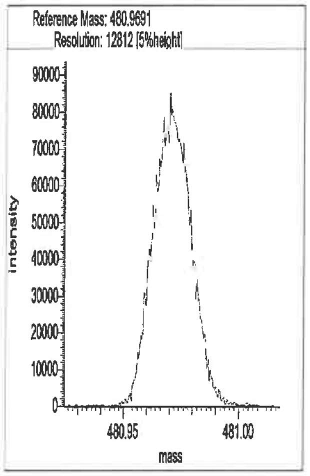
Reference Mass: 480.9691
Resolution: 12812 [5%height]

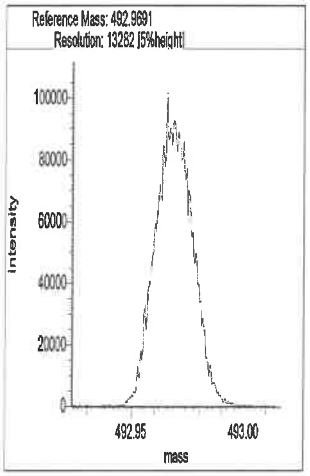
Reference Mass: 492.9691
Resolution: 13282 [5%height]

Report Date: 15-Mar-2021 11:40:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Mar-2021 10:33:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00097
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Mar-2021 11:40:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1647

First Level Reviewer: stephensk Date: 12-Mar-2021 12:14:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.456	1857203	0.81	1E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.589	2587742	0.78	1.5437	90.3	90.3	0.3245	0.3245	90.26	
2,3,7,8-TCDF	18.615	286057	0.75	1.1258	9.819	9.819	0.0426	0.0426	98.19	
A Non-2,3,7,8-sub-TCDF	18.131						0.0426	0.0426		
S Total TCDF					9.819	9.819	0.0426	0.0426		
D 13C-2,3,7,8-TCDD	19.791	1743310	0.81	0.9687	96.9	96.9	0.2625	0.2625	96.90	
2,3,7,8-TCDD	19.826	192302	0.82	1.1904	9.267	9.267	0.0608	0.0608	92.67	
$ 37Cl4-2,3,7,8-TCDD	19.826	184902		1.0841	9.184	9.184	0.0146	0.0146	91.84	
A Non-2,3,7,8-sub-TCDD	18.892						0.0608	0.0608		
S Total TCDD					9.267	9.267	0.0608	0.0608		
D 13C-1,2,3,7,8-PeCDF	25.634	2085861	1.59	1.3124	85.6	85.6	0.4625	0.4625	85.58	
1,2,3,7,8-PeCDF	25.659	1159043	1.57	1.1163	49.8	49.8	0.2497	0.2497	99.56	
D 13C-2,3,4,7,8-PeCDF	27.015	1983501	1.61	1.3352	80.0	80.0	0.4547	0.4547	79.99	a
2,3,4,7,8-PeCDF	27.040	1078834	1.57	1.0579	51.4	51.4	0.3090	0.3090	103	
A F1 PeCDFs	22.807						0.0148	0.0148		
A Non-2,3,7,8-sub-PeCDF	26.240						0.2768	0.2768		n
S Total PeCDF					101.2	101.2	0.2793	0.2793		
D 13C-1,2,3,7,8-PeCDD	27.765	1195467	1.60	0.7716	83.4	83.4	0.2104	0.2104	83.43	
1,2,3,7,8-PeCDD	27.790	656915	1.60	1.1372	48.3	48.3	0.1004	0.1004	96.64	
A Non-2,3,7,8-sub-PeCDD	26.620						0.1004	0.1004		
S Total PeCDD					48.3	48.3	0.1004	0.1004		
D 13C-1,2,3,4,7,8-HxCDF	33.532	1615120	0.53	1.0931	99.4	99.4	0.4871	0.4871	99.39	a
1,2,3,4,7,8-HxCDF	33.548	993452	1.24	1.1831	52.0	52.0	0.2211	0.2211	104	
D 13C-1,2,3,6,7,8-HxCDF	33.734	1721459	0.53	1.1278	102.7	102.7	0.4721	0.4721	103	
1,2,3,6,7,8-HxCDF	33.750	1124435	1.24	1.2484	52.3	52.3	0.1997	0.1997	105	
D 13C-2,3,4,6,7,8-HxCDF	34.728	1625286	0.54	1.0552	103.6	103.6	0.5046	0.5046	104	
2,3,4,6,7,8-HxCDF	34.744	1078608	1.24	1.2750	52.1	52.1	0.1755	0.1755	104	
D 13C-1,2,3,7,8,9-HxCDF	35.747	1419212	0.53	0.9938	96.1	96.1	0.5358	0.5358	96.06	
1,2,3,7,8,9-HxCDF	35.764	930983	1.28	1.2953	50.6	50.6	0.1844	0.1844	101	
A Non-2,3,7,8-sub-HxCDF	33.508						0.1940	0.1940		
S Total HxCDF					207.0	207.0	0.1952	0.1952		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.536	1486596	1.28	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	34.989	1078503	1.26	0.7895	91.9	91.9	0.2485	0.2485	91.89	a
1,2,3,4,7,8-HxCDD	35.006	607316	1.27	1.0950	51.4	51.4	0.1336	0.1336	103	
D 13C-1,2,3,6,7,8-HxCDD	35.115	1280666	1.27	0.8495	101.4	101.4	0.2310	0.2310	101	
1,2,3,6,7,8-HxCDD	35.140	673370	1.26	1.0201	51.5	51.5	0.1322	0.1322	103	
1,2,3,7,8,9-HxCDD	35.553	691791	1.27	1.1549	50.8	50.8	0.1215	0.1215	102	
A Non-2,3,7,8-sub-HxCDD	34.055						0.1287	0.1287		
S Total HxCDD					153.8	153.8	0.1291	0.1291		
D 13C-1,2,3,4,6,7,8-HpCDF	37.788	1193535	0.47	0.7854	102.2	102.2	0.5082	0.5082	102	
1,2,3,4,6,7,8-HpCDF	37.796	911942	1.06	1.4859	51.4	51.4	0.2554	0.2554	103	
D 13C-1,2,3,4,7,8,9-HpCDF	39.135	1070908	0.46	0.7230	99.6	99.6	0.5521	0.5521	99.64	a
1,2,3,4,7,8,9-HpCDF	39.144	741113	1.05	1.4048	49.3	49.3	0.2909	0.2909	98.53	
A Non-2,3,7,8-sub-HpCDF	38.467						0.2723	0.2723		
S Total HpCDF					100.7	100.7	0.2731	0.2731		
D 13C-1,2,3,4,6,7,8-HpCDD	38.823	1019118	1.10	0.6413	106.9	106.9	0.3537	0.3537	107	
1,2,3,4,6,7,8-HpCDD	38.832	545765	1.04	1.1489	46.6	46.6	0.1478	0.1478	93.22	
A Non-2,3,7,8-sub-HpCDD	39.230						0.1478	0.1478		
S Total HpCDD					46.6	46.6	0.1478	0.1478		
D 13C-OCDD	41.295	1622759	0.90	0.5141	212.3	212.3	0.2546	0.2546	106	
OCDF	41.370	1250973	0.91	1.5776	97.7	97.7	0.1304	0.1304	97.73	
OCDD	41.303	925346	0.90	1.1706	97.4	97.4	0.0996	0.0996	97.43	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 12-Mar-2021 10:33:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00097
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Mar-2021 11:40:18 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1647

First Level Reviewer: stephensk Date: 12-Mar-2021 12:14:54

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.456	19.456	0		832480	134019	229	572	585		a
333.9338	19.465	19.456	1		1024723	162831	73	182	2231	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.589	18.589	0	0.955	1136277	179725	416	1040	432		
317.9389	18.589	18.589	0	0.955	1451465	231477	179	447	1293	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.615	18.615	0	1.001	122468	19591	23	57	852		
305.8987	18.623	18.615	1	1.002	163589	25678	56	140	459	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.131						23	57			
305.8987	18.131						56	140			
13C-2,3,7,8-TCDD											
331.9368	19.791	19.791	0	1.017	779688	114444	229	572	500		
333.9338	19.800	19.791	1	1.018	963622	143853	73	182	1971	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.826	19.826	0	1.002	86480	12810	54	135	237		
321.8936	19.834	19.826	1	1.002	105822	16397	21	52	781	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.826	19.826	0	1.019	184902	27372	19	47	1441		
A Non-2,3,7,8-sub-TCDD											
319.8965	18.892						54	135			
321.8936	18.892						21	52			
13C-1,2,3,7,8-PeCDF											
351.9000	25.634	25.634	0	1.318	1280461	228024	423	1057	539		
353.8970	25.634	25.634	0	1.318	805400	141496	298	745	475	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.659	25.659	0	1.001	707965	124255	239	597	520		
341.8567	25.659	25.659	0	1.001	451078	79785	173	432	461	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											a
351.9000	27.015	27.015	0	1.388	1223846	196391	423	1057	464		a
353.8970	27.015	27.015	0	1.388	759655	118730	298	745	398	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.040	27.040	0	1.001	658849	103391	239	597	433		
341.8567	27.040	27.040	0	1.001	419985	67228	173	432	389	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	22.807						1	2			
341.8567	22.807						21	52			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.215	26.235	-1	1.023	8070	1148	239	597	5		
341.8567	26.223	26.235	-1	1.023	4602	691	173	432	4	1.75(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	27.765	27.765	0	1.427	735721	116273	127	317	916		
369.8919	27.773	27.765	1	1.427	459746	73823	66	165	1119	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.790	27.790	0	1.001	404620	61754	63	157	980		
357.8516	27.798	27.790	1	1.001	252295	38949	24	60	1623	1.60(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.620						63	157			
357.8516	26.620						24	60			
13C-1,2,3,4,7,8-HxCDF											a
383.8639	33.532	33.532	0	0.944	561389	98192	195	487	504		a
385.8610	33.523	33.532	-1	0.943	1053731	182738	500	1250	365	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.548	33.548	0	1.001	549192	94467	160	400	590		
375.8178	33.548	33.548	0	1.001	444260	77453	134	335	578	1.24(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.734	33.734	0	0.949	594871	102570	195	487	526		
385.8610	33.734	33.734	0	0.949	1126588	192218	500	1250	384	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.750	33.750	0	1.000	622965	104984	160	400	656		
375.8178	33.750	33.750	0	1.000	501470	84781	134	335	633	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.728	34.728	0	0.977	569312	112135	195	487	575		
385.8610	34.728	34.728	0	0.977	1055974	216270	500	1250	433	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.744	34.744	0	1.000	597841	117633	160	400	735		
375.8178	34.744	34.744	0	1.000	480767	95039	134	335	709	1.24(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.747	35.747	0	1.006	492329	104897	195	487	538		
385.8610	35.747	35.747	0	1.006	926883	202801	500	1250	406	0.53(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.764	35.764	0	1.000	522737	106985	160	400	669		
375.8178	35.756	35.764	-1	1.000	408246	84020	134	335	627	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.508						160	400			
375.8178	33.508						134	335			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.536	35.536	0		835690	182095	141	352	1291		
403.8529	35.545	35.536	1		650906	144125	115	287	1253	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											a
401.8559	34.989	34.989	0	0.985	602320	138486	141	352	982		a
403.8529	34.989	34.989	0	0.985	476183	107649	115	287	936	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.006	35.006	0	1.000	339389	75785	78	195	972		
391.8127	34.997	35.006	-1	1.000	267927	59442	66	165	901	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.115	35.115	0	0.988	715834	150038	141	352	1064		
403.8529	35.124	35.115	1	0.988	564832	116968	115	287	1017	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.140	35.140	0	1.001	375703	76196	78	195	977		
391.8127	35.132	35.140	-1	1.000	297667	59984	66	165	909	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.553	35.553	0	1.016	387264	86243	78	195	1106		
391.8127	35.553	35.553	0	1.016	304527	67479	66	165	1022	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.055						78	195			
391.8127	34.055						66	165			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.788	37.788	0	1.063	379796	101722	189	472	538		
419.8220	37.788	37.788	0	1.063	813739	215819	332	830	650	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.796	37.796	0	1.000	468626	119434	252	630	474		
409.7788	37.796	37.796	0	1.000	443316	115909	230	575	504	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											a
417.8250	39.135	39.135	0	1.101	336349	92731	189	472	491		a
419.8220	39.135	39.135	0	1.101	734559	202137	332	830	609	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.144	39.144	0	1.000	380229	103149	252	630	409		
409.7788	39.144	39.144	0	1.000	360884	99054	230	575	431	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.467						252	630			
409.7788	38.467						230	575			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.823	38.823	0	1.093	533945	152660	137	342	1114		
437.8140	38.823	38.823	0	1.093	485173	133039	159	397	837	1.10(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.832	38.832	0	1.000	277995	77725	106	265	733		
425.7737	38.832	38.832	0	1.000	267770	75159	88	220	854	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.230						106	265			
425.7737	39.230						88	220			
13C-OCDD											
469.7780	41.295	41.295	0	1.162	769125	198950	104	260	1913		
471.7750	41.295	41.295	0	1.162	853634	221188	67	167	3301	0.90(0.76-1.02)	
OCDF											
441.7428	41.370	41.370	0	1.002	595156	155257	75	187	2070		
443.7399	41.370	41.370	0	1.002	655817	170157	98	245	1736	0.91(0.76-1.02)	
OCDD											
457.7377	41.303	41.303	0	1.000	438052	112406	42	105	2676		
459.7348	41.303	41.303	0	1.000	487294	124358	56	140	2221	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00097 Amount Added: 2.00 Units: uL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d				
Injection Date:	12-Mar-2021 10:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 19.46

Processing Integration Results

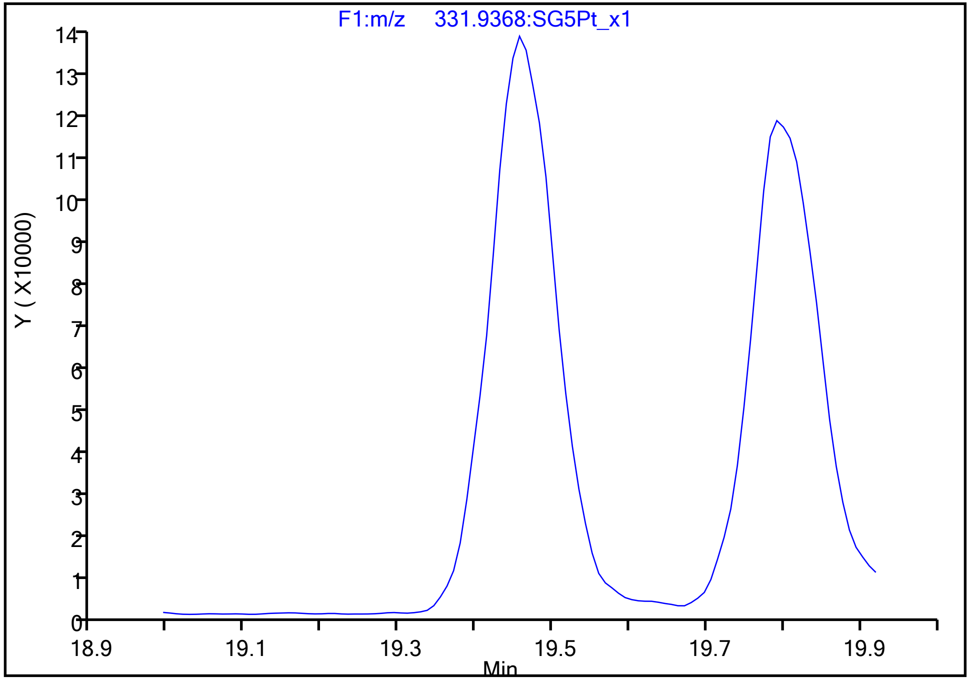

RT: 19.46

Area: 832480

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

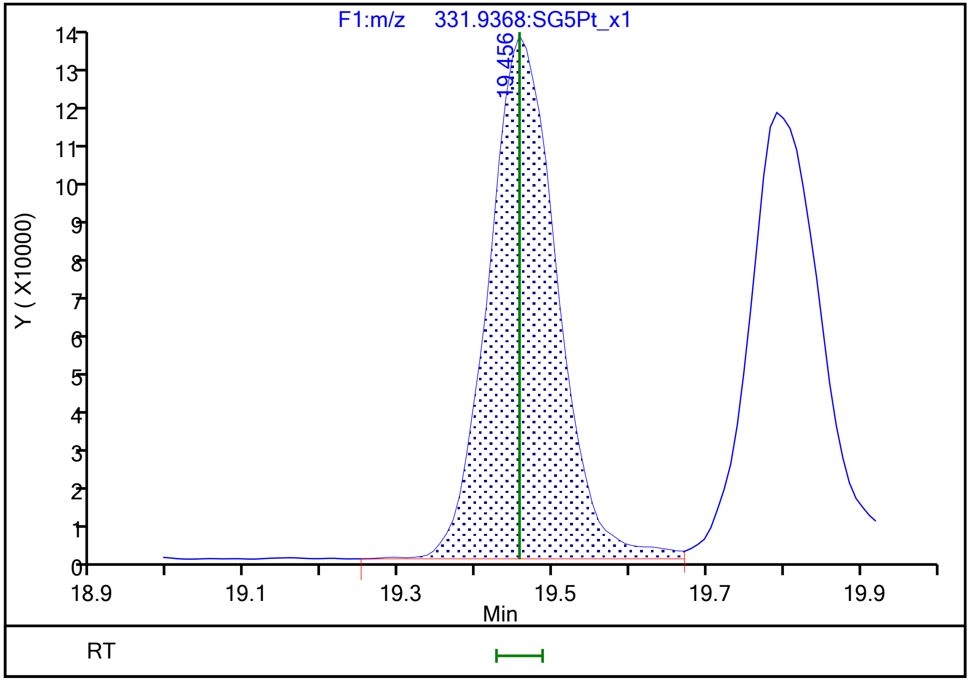

Reviewer: bilottag, 15-Mar-2021 09:02:05

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d				
Injection Date:	12-Mar-2021 10:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

13C-2,3,4,7,8-PeCDF, CAS: 116843-02-8

Signal: 1

Not Detected

Expected RT: 27.01

Processing Integration Results

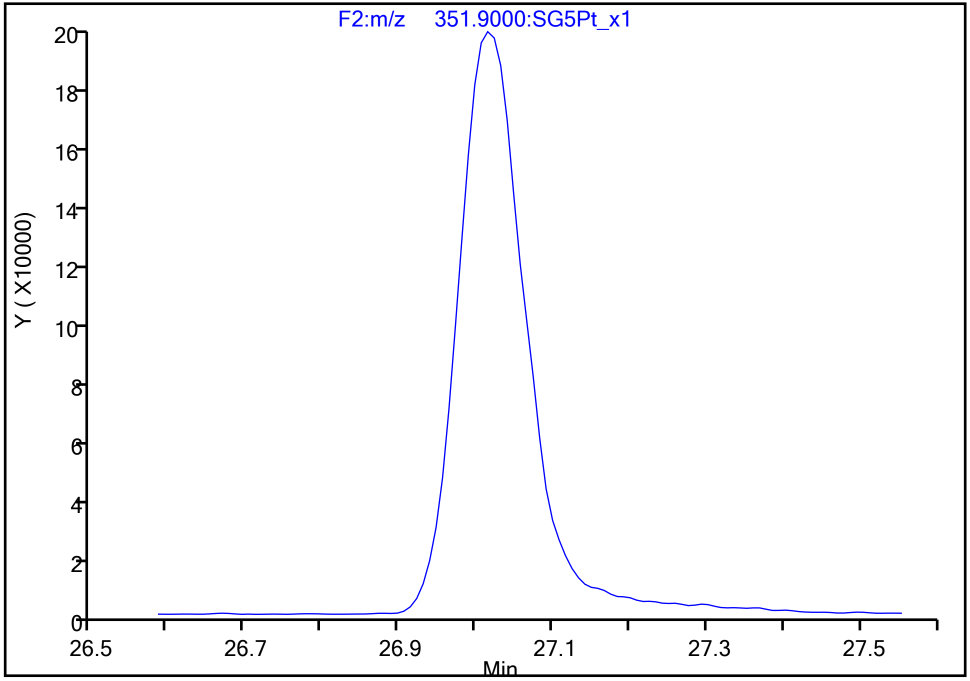

RT: 27.01

Area: 1223846

Amount: 79.991309

Amount Units: pg/ul

Manual Integration Results

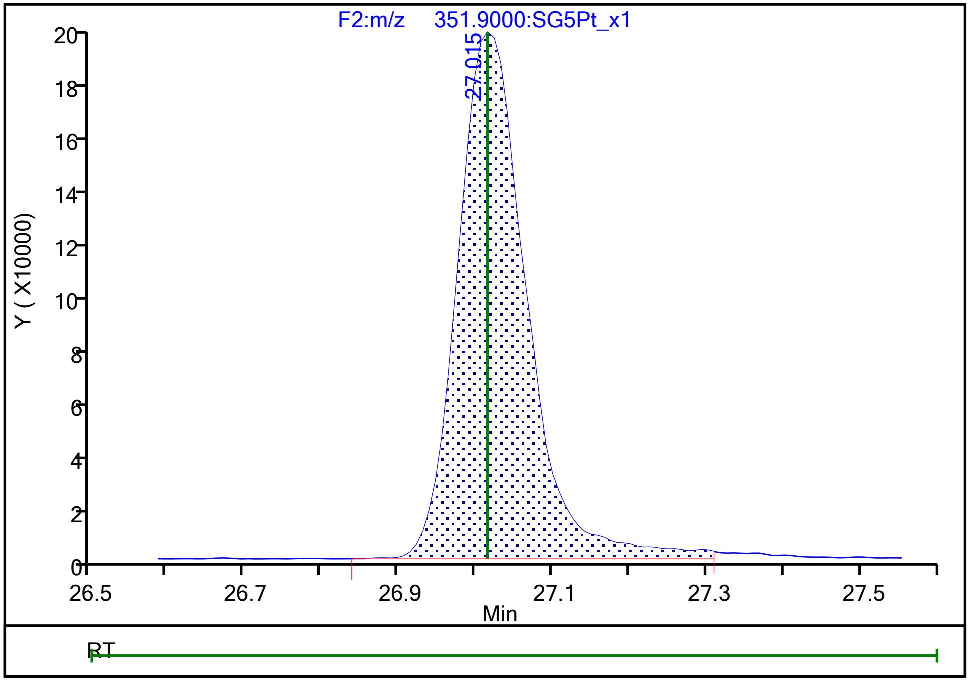

Reviewer: bilottag, 15-Mar-2021 09:02:23

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d				
Injection Date:	12-Mar-2021 10:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDF, CAS: 114423-98-2

Signal: 1

Not Detected

Expected RT: 33.53

Processing Integration Results

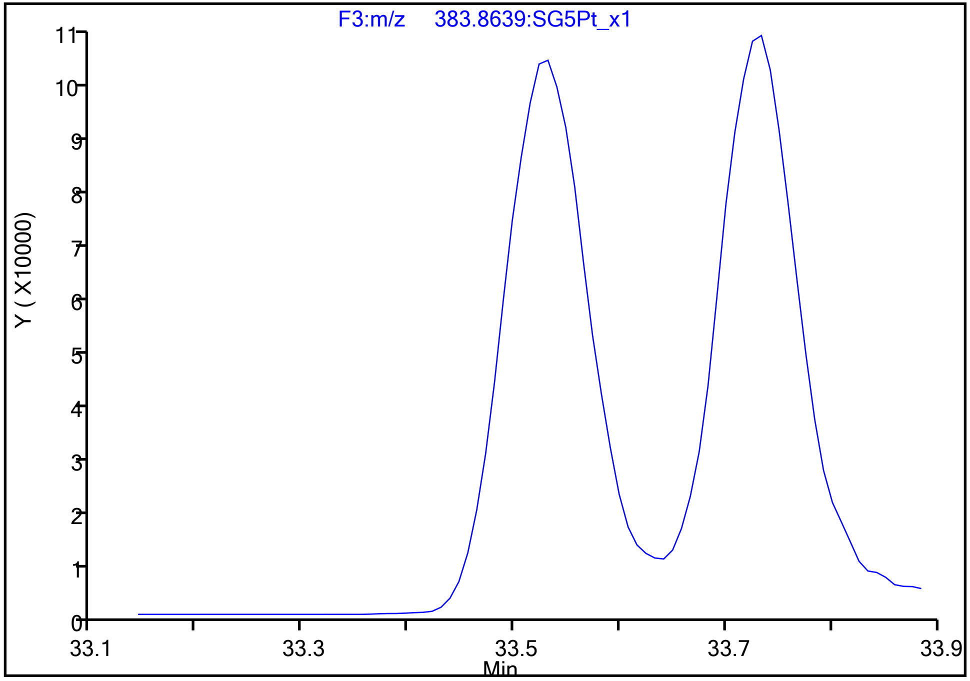

RT: 33.53

Area: 561389

Amount: 99.387727

Amount Units: pg/ul

Manual Integration Results

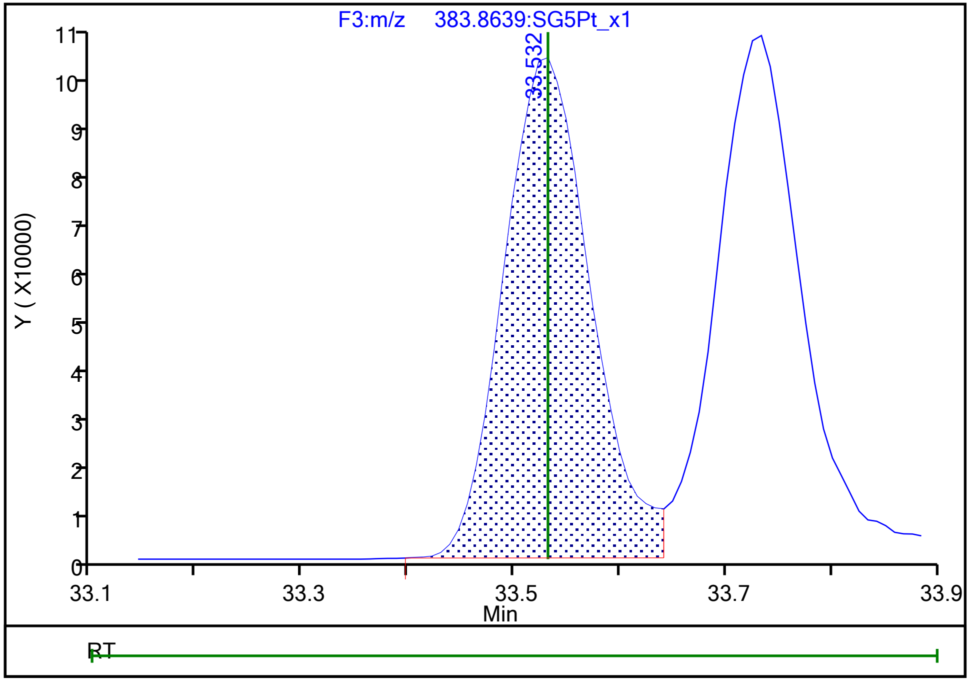

Reviewer: bilottag, 15-Mar-2021 09:02:32

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Report Date: 15-Mar-2021 11:40:18 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d				
Injection Date:	12-Mar-2021 10:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,4,7,8-HxCDD, CAS: 109719-80-4

Signal: 1

Not Detected
Expected RT: 34.99

Processing Integration Results

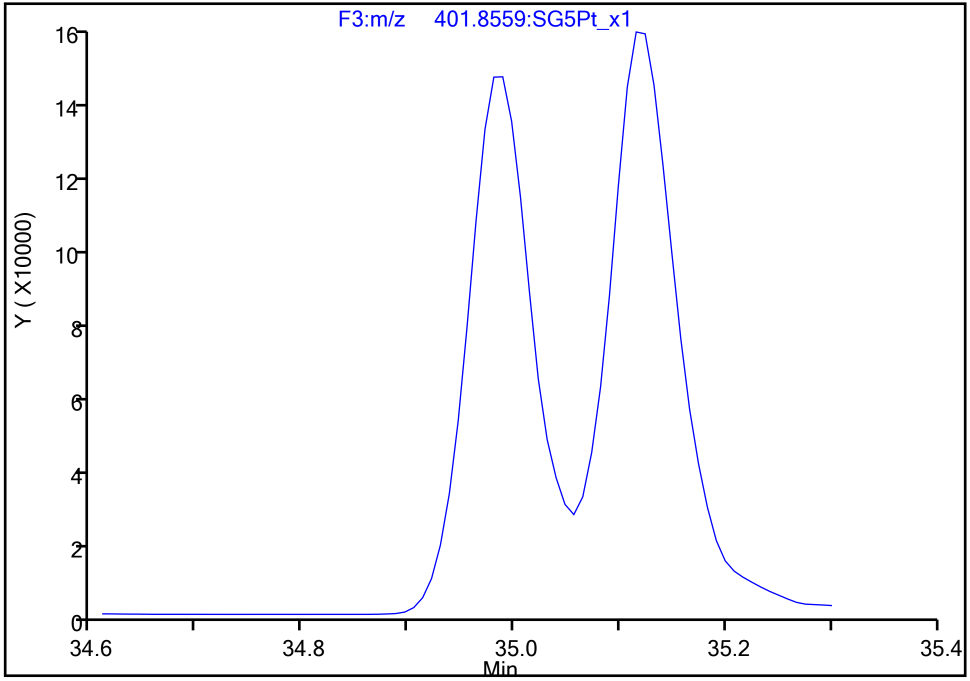

RT:	34.99
Area:	602320
Amount:	91.888772
Amount Units:	pg/ul

Manual Integration Results

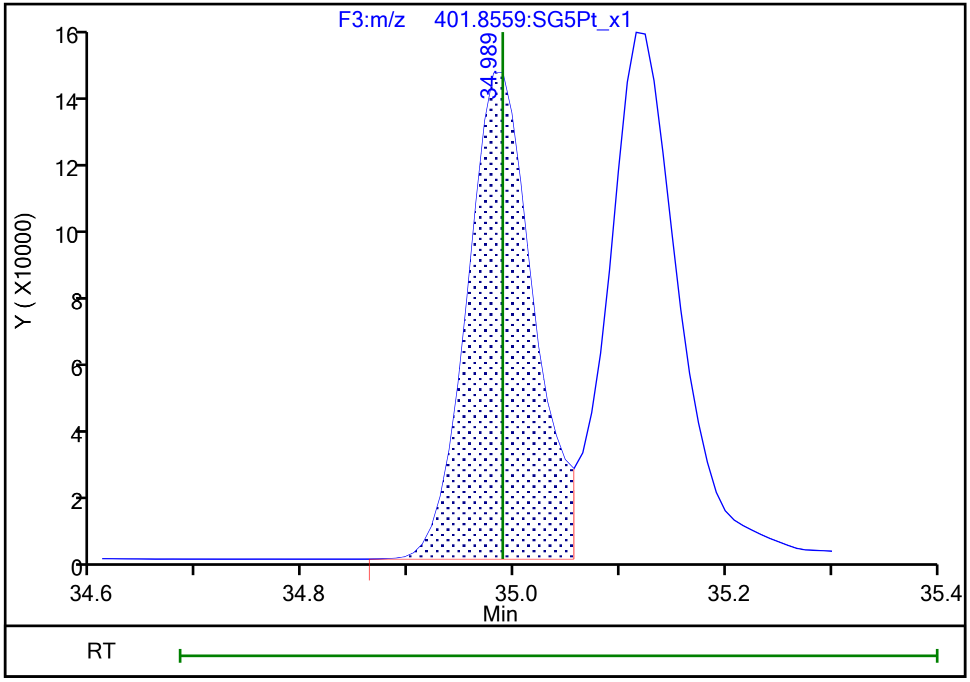

Reviewer: bilottag, 15-Mar-2021 09:02:42
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d				
Injection Date:	12-Mar-2021 10:33:00	Instrument ID:	DFS 1		
Lims ID:	CCV				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

13C-1,2,3,4,7,8,9-HpCDF, CAS: 109719-94-0

Signal: 1

Processing Integration Results

Not Detected
Expected RT: 39.14

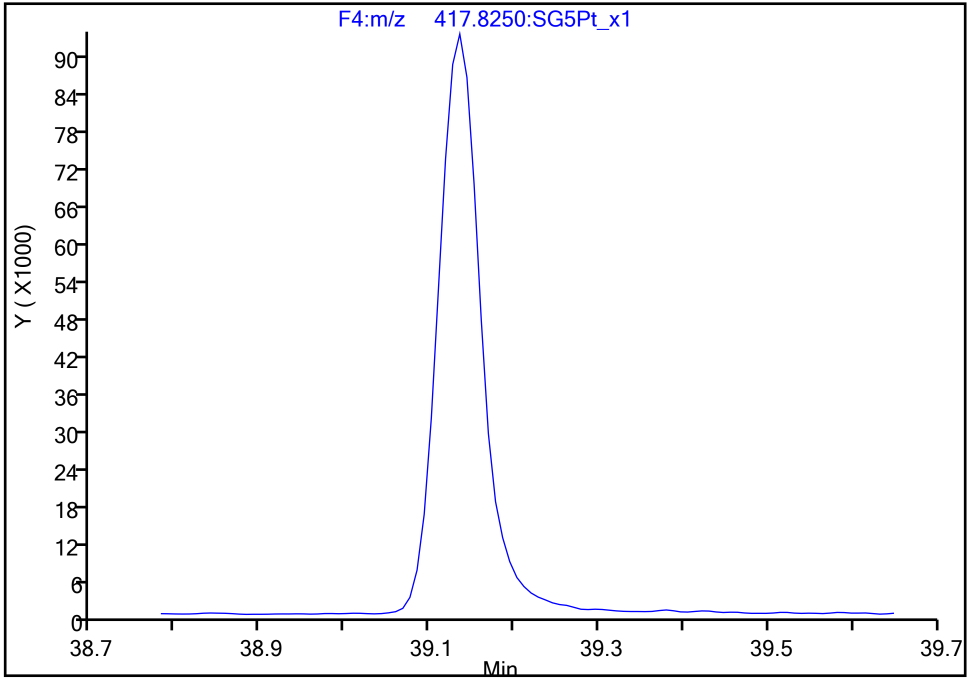

Manual Integration Results

RT: 39.14
Area: 336349
Amount: 99.642899
Amount Units: pg/ul

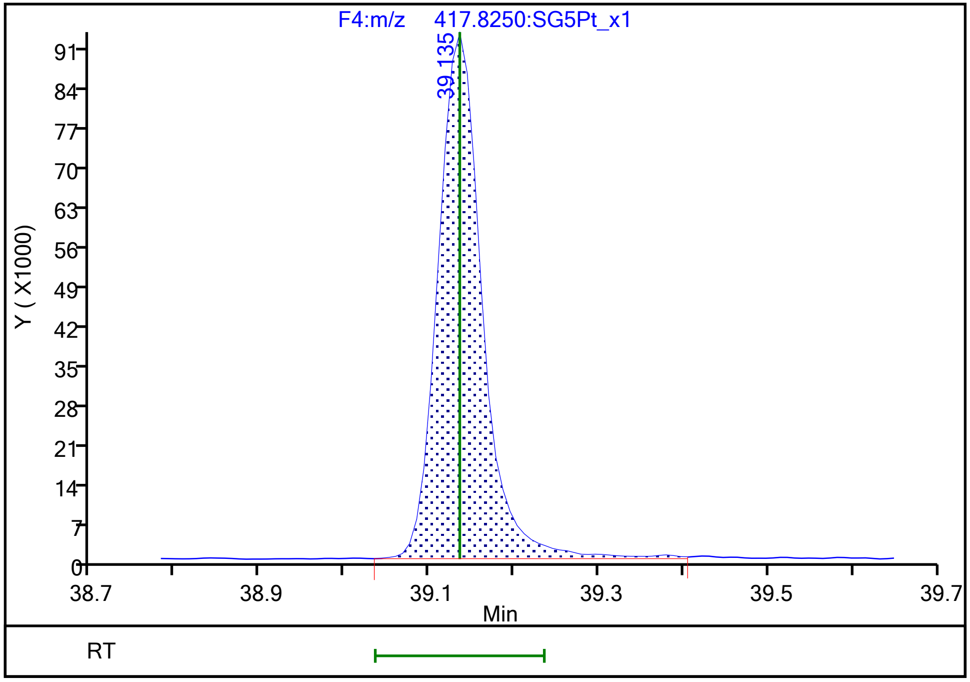

Reviewer: bilottag, 15-Mar-2021 09:02:51
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 15-Mar-2021 11:40:18
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

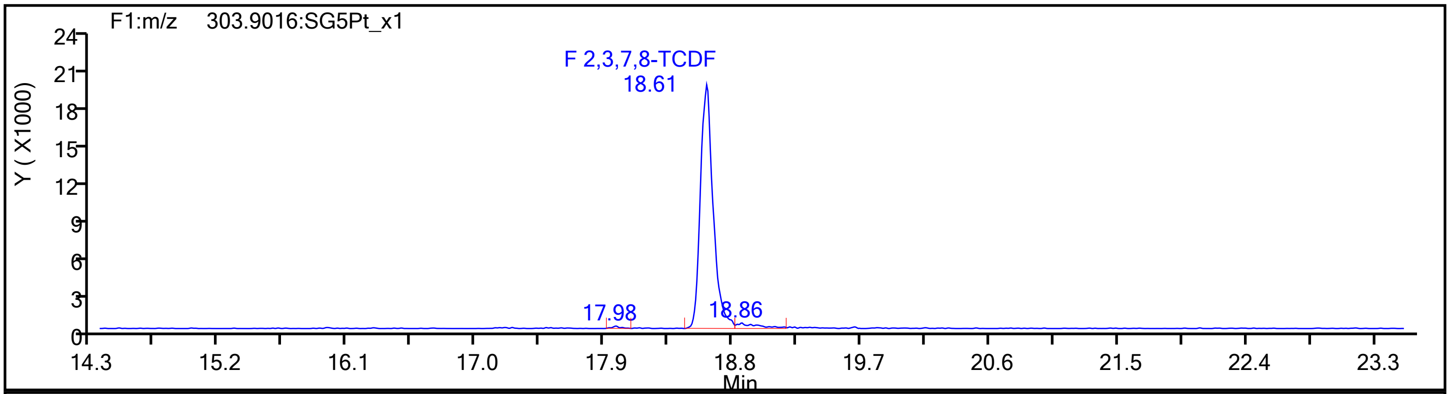

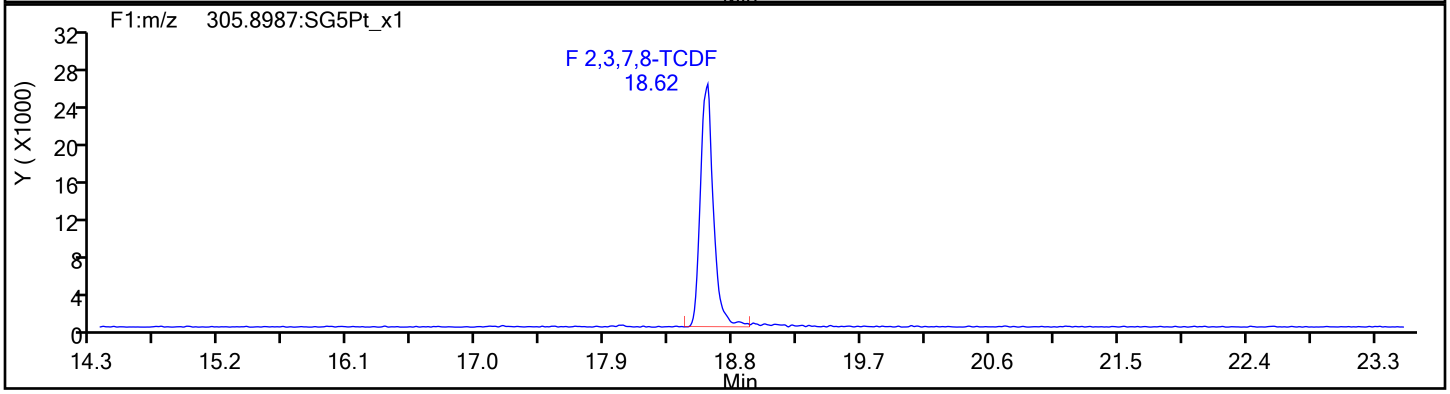

TCDF Standards

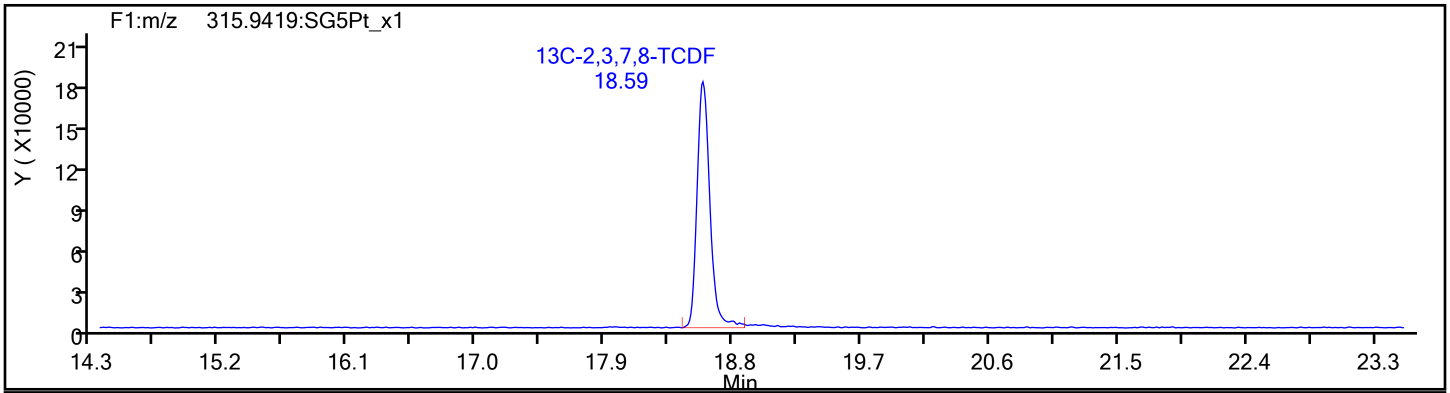

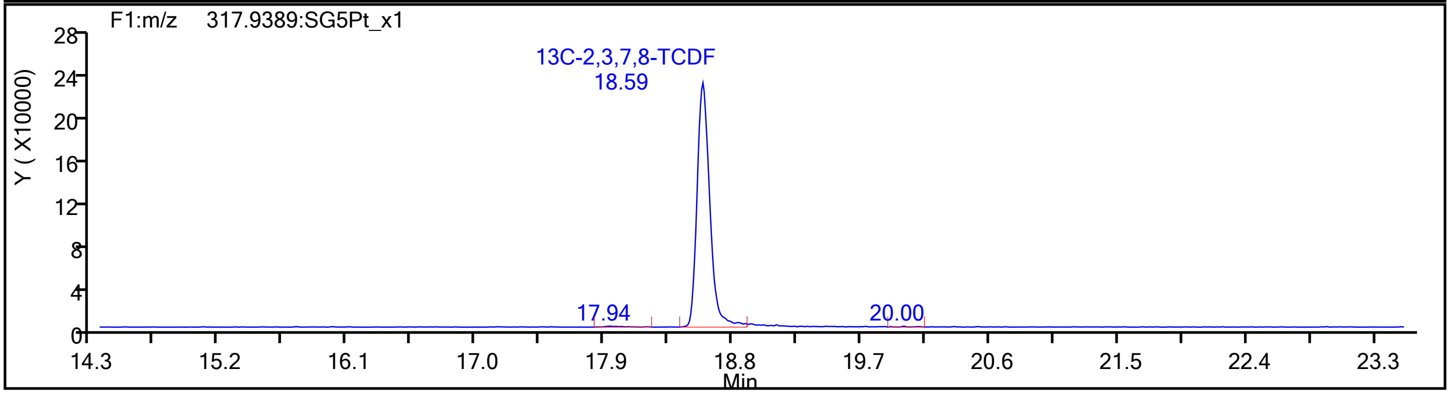

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

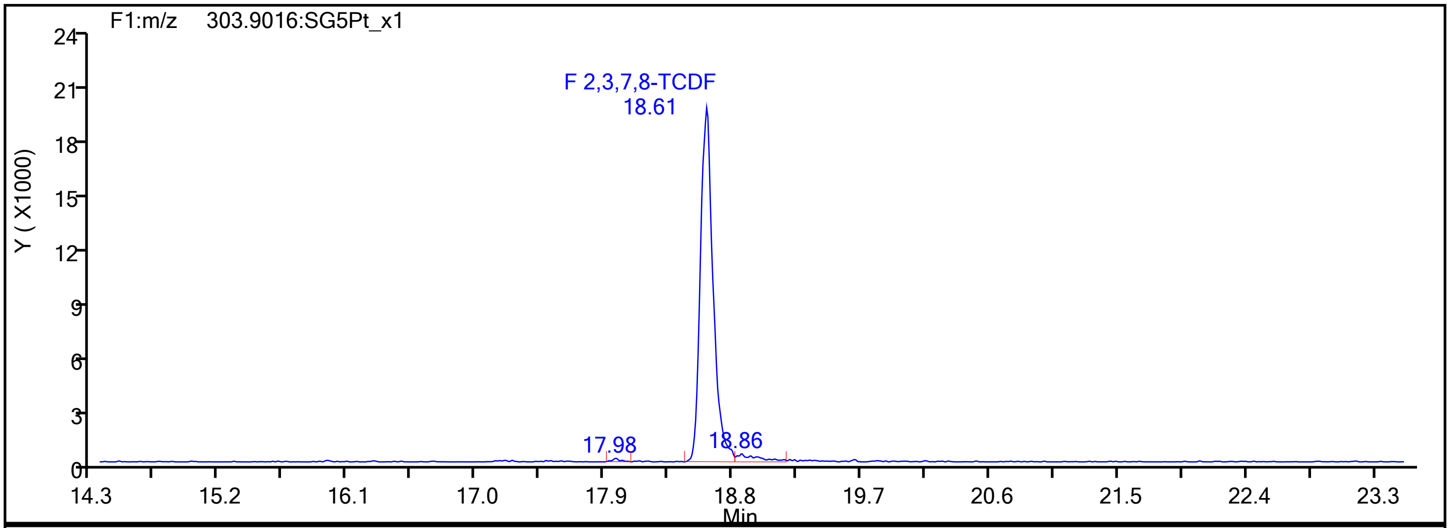

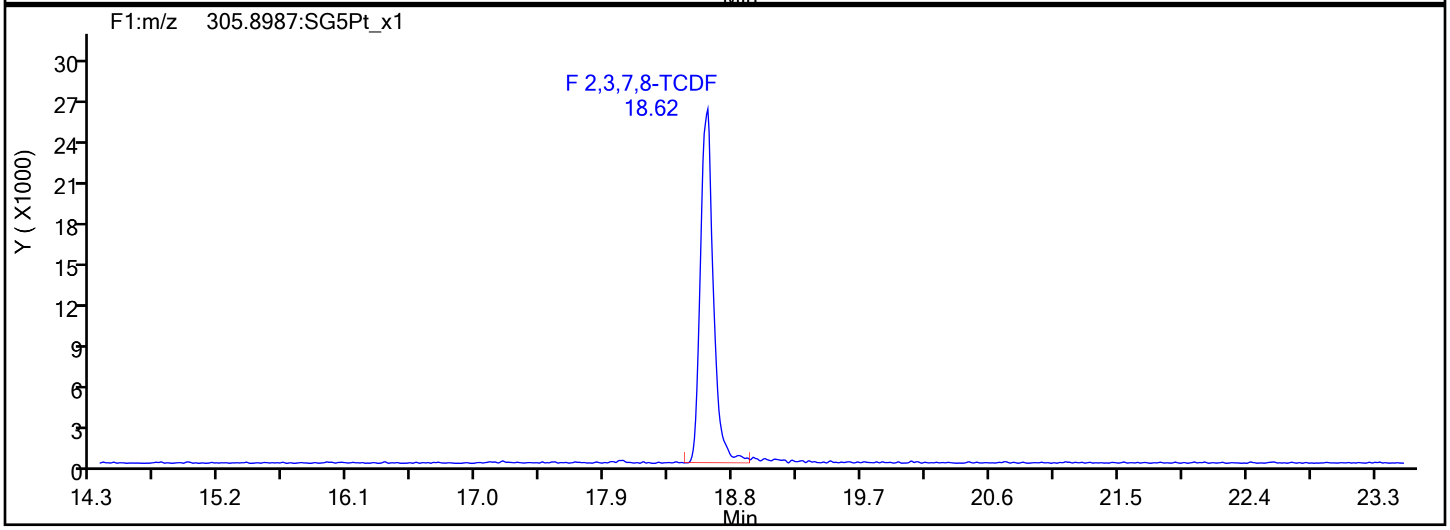

TCDF Interference Mass

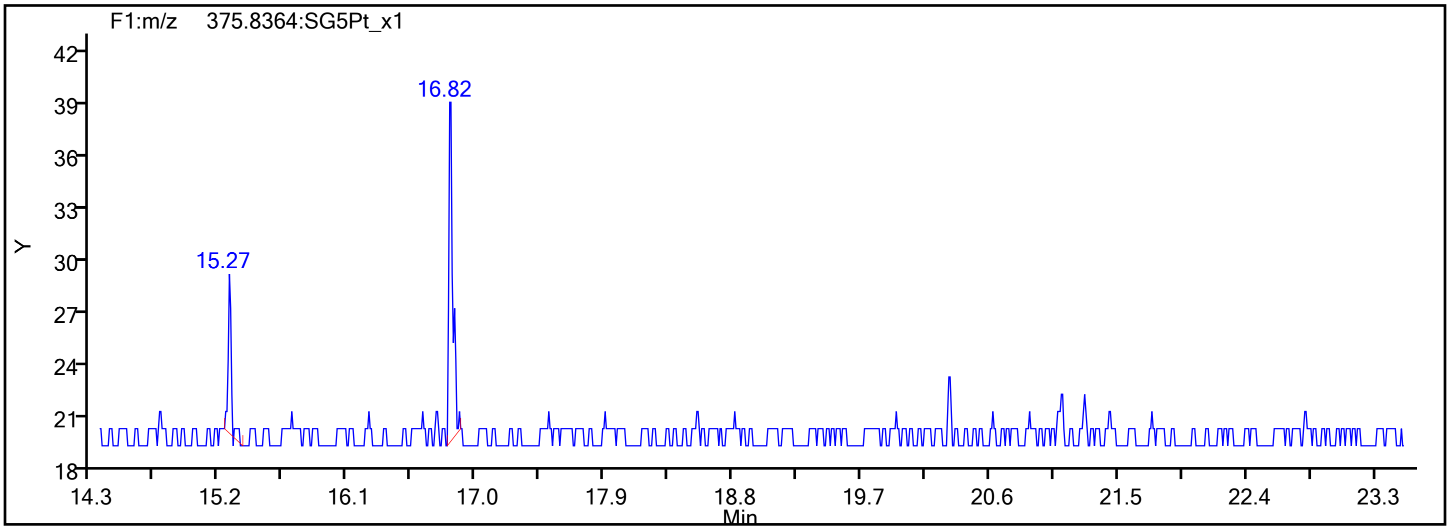

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d
Injection Date: 12-Mar-2021 10:33:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

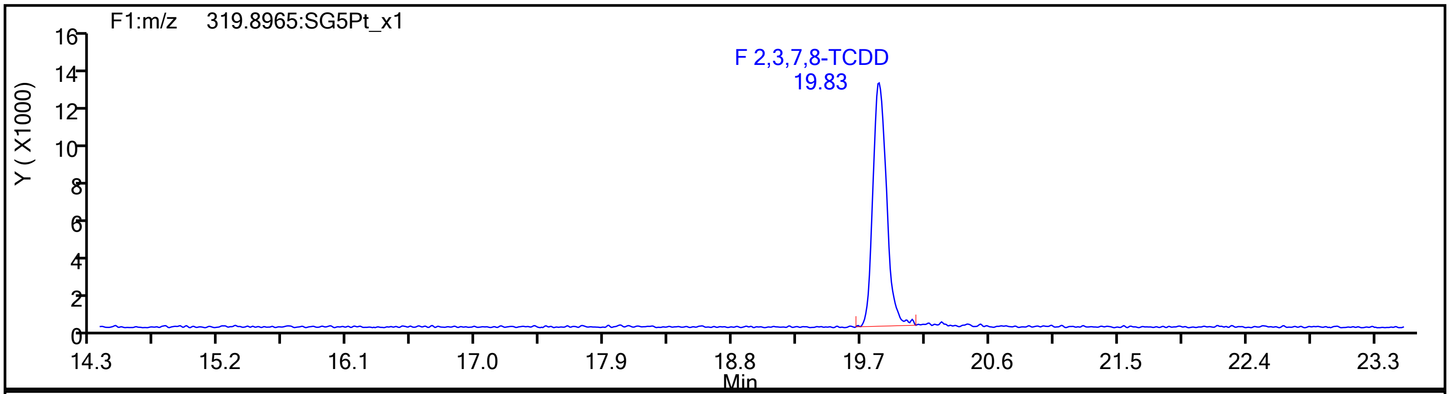

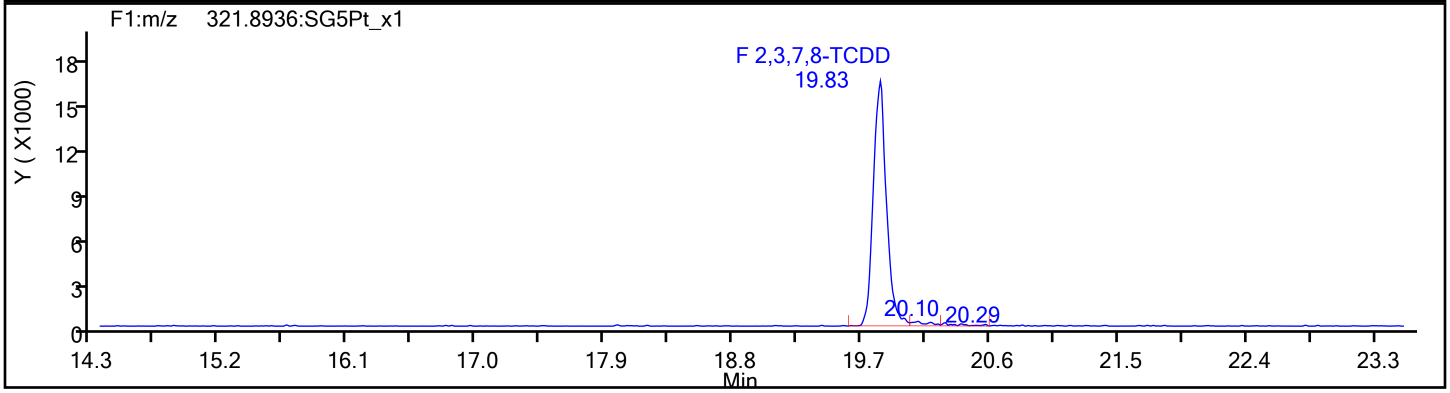

TCDD Standards

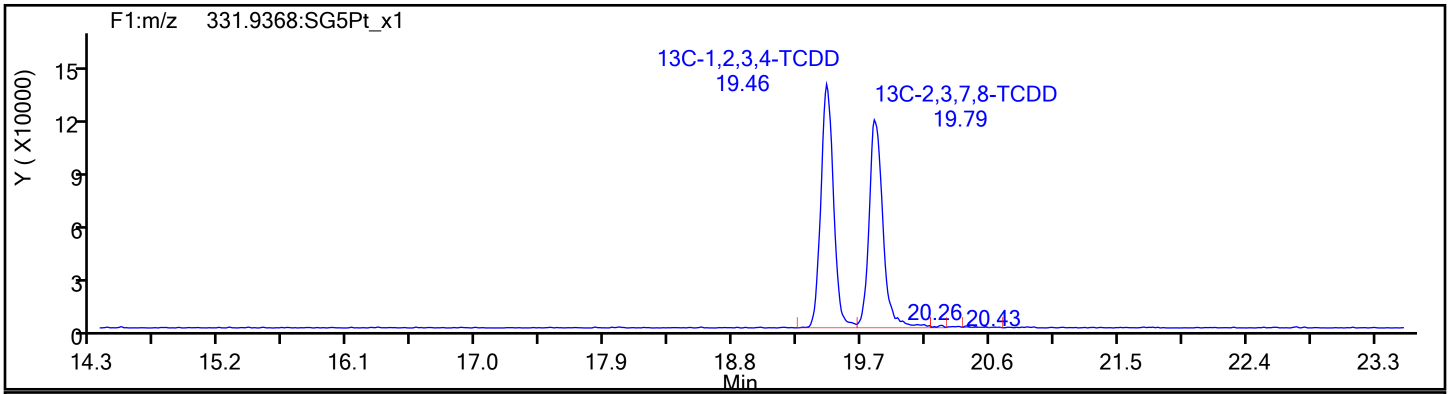

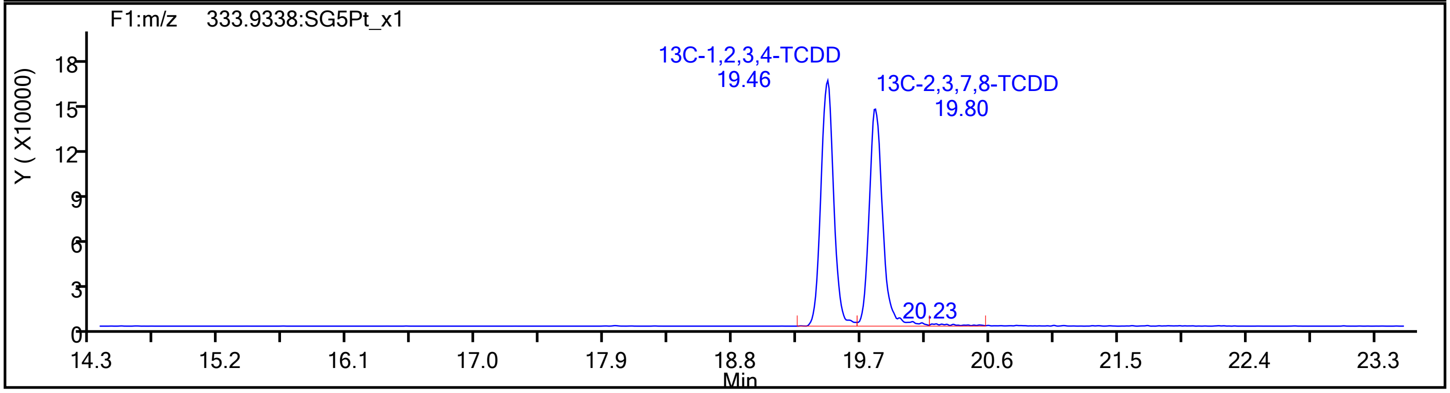

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

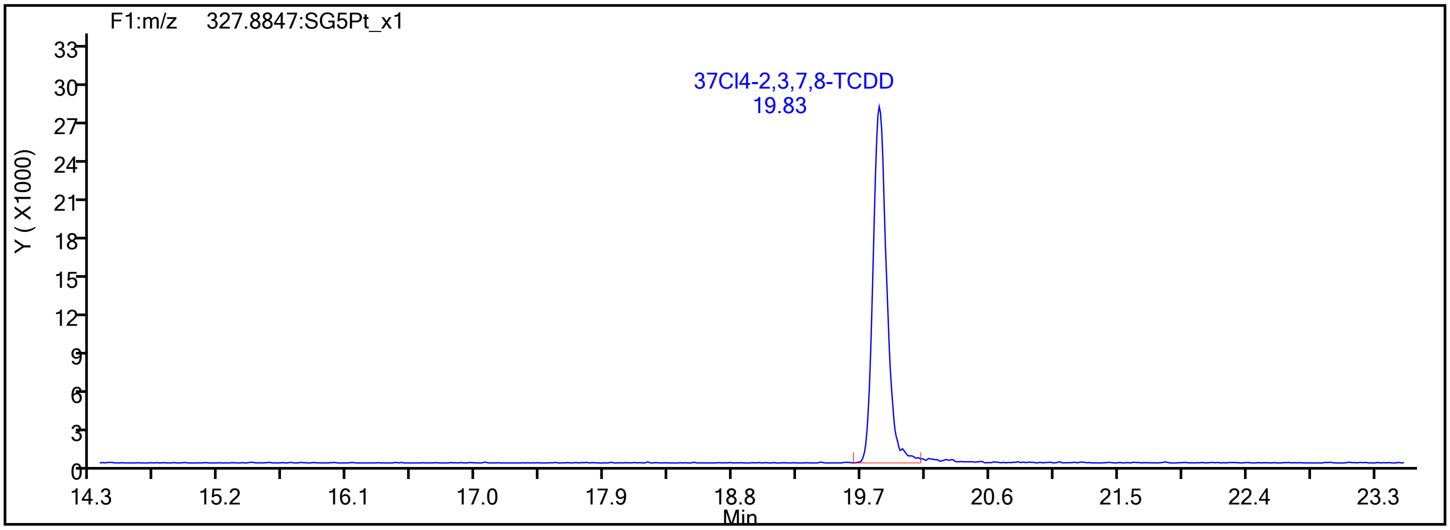

37Cl4-TCDD Standards

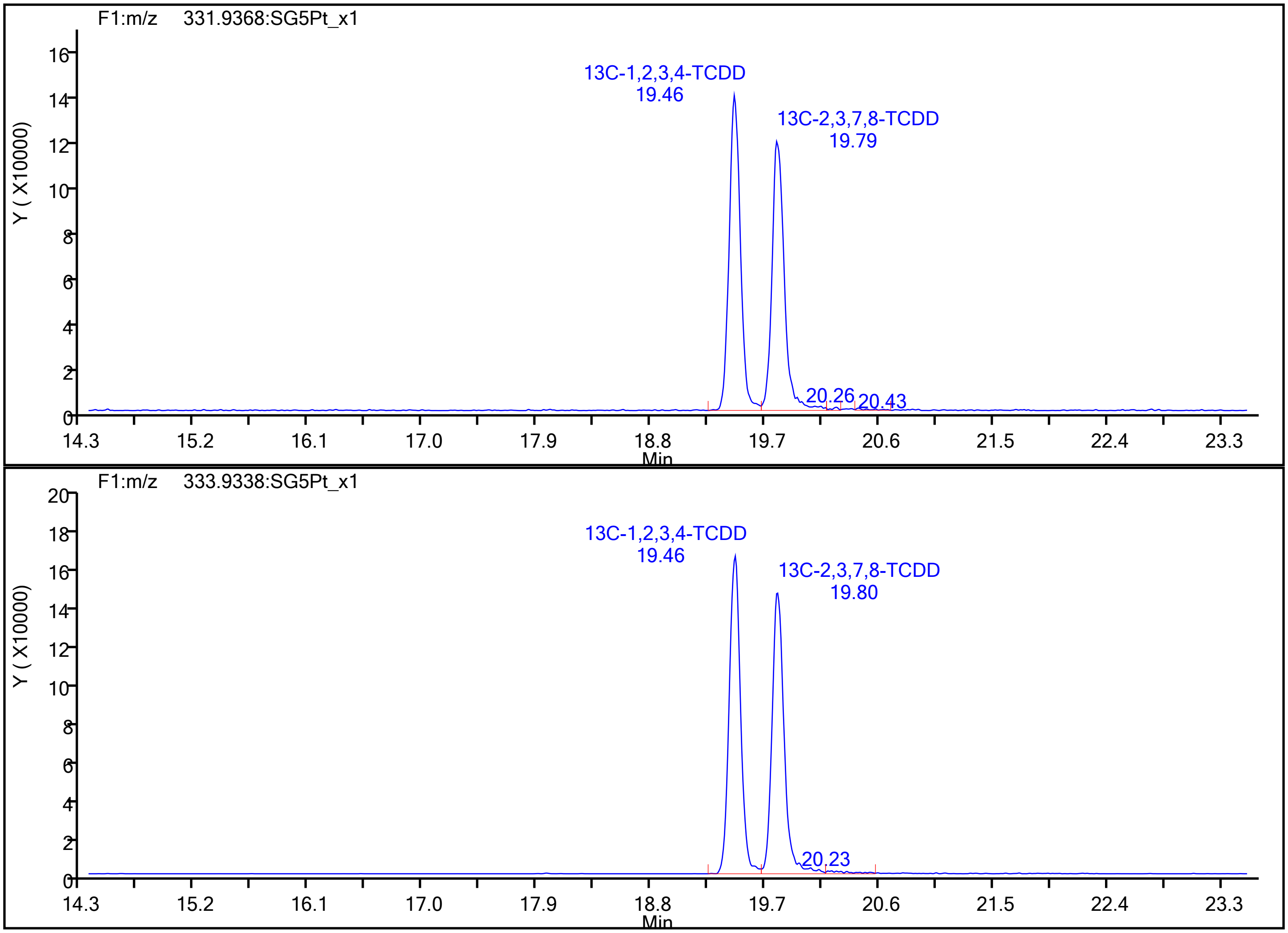

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

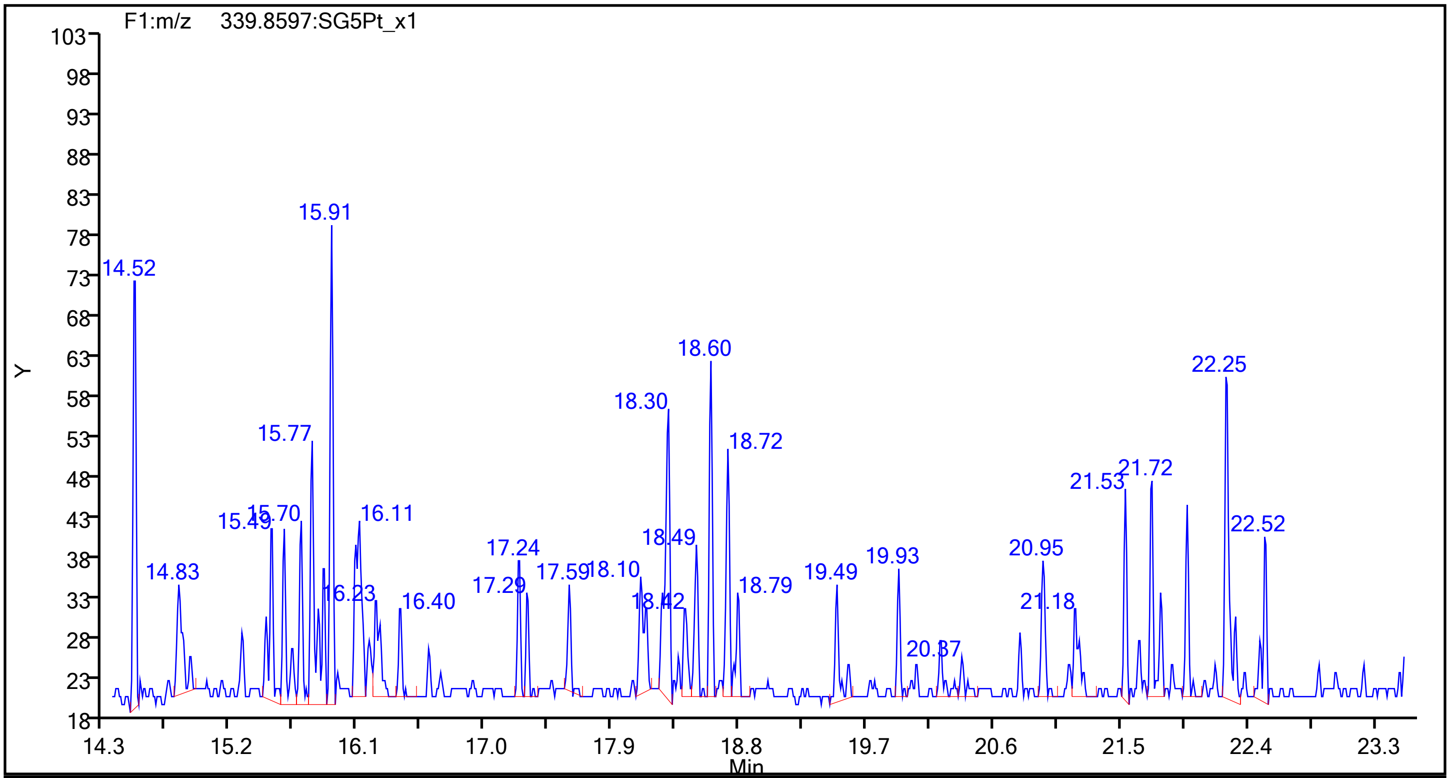

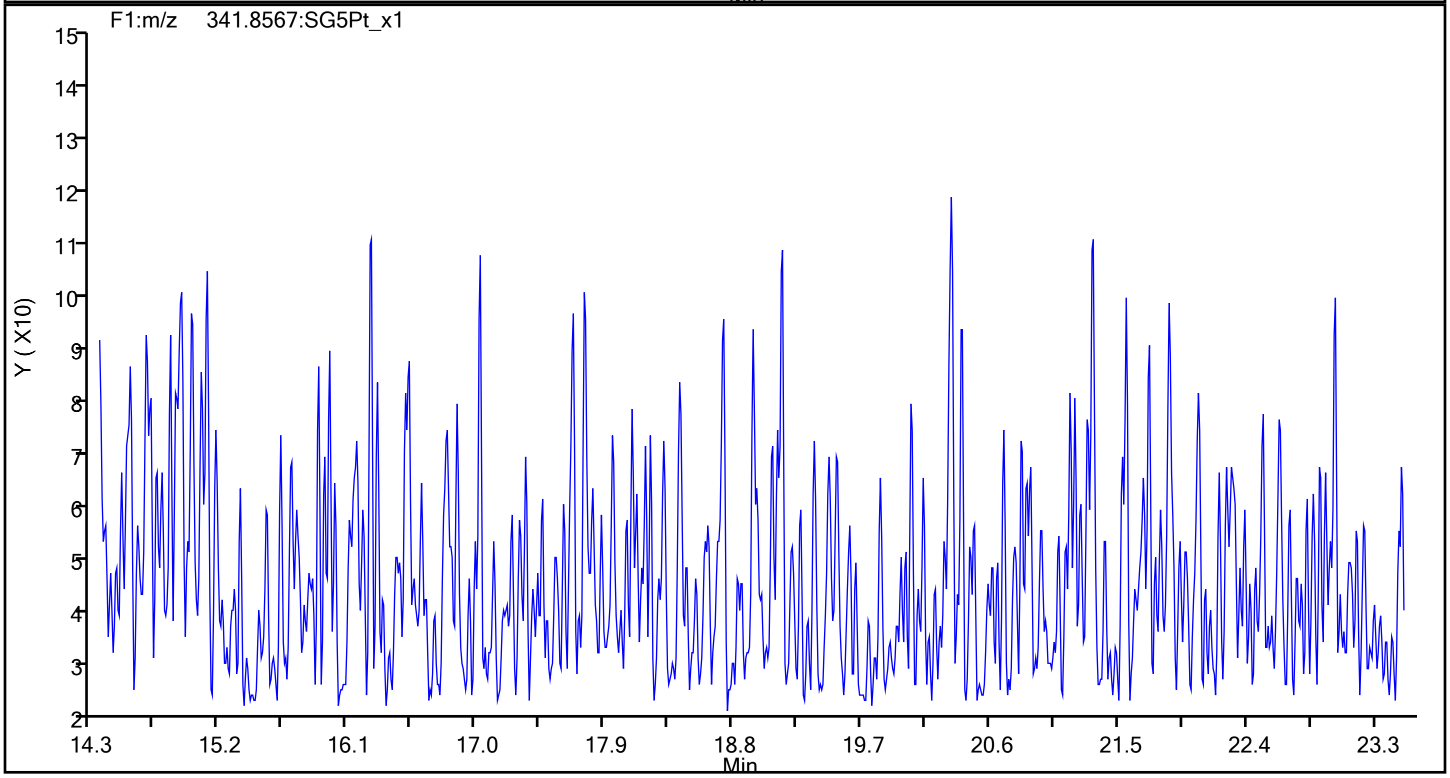

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

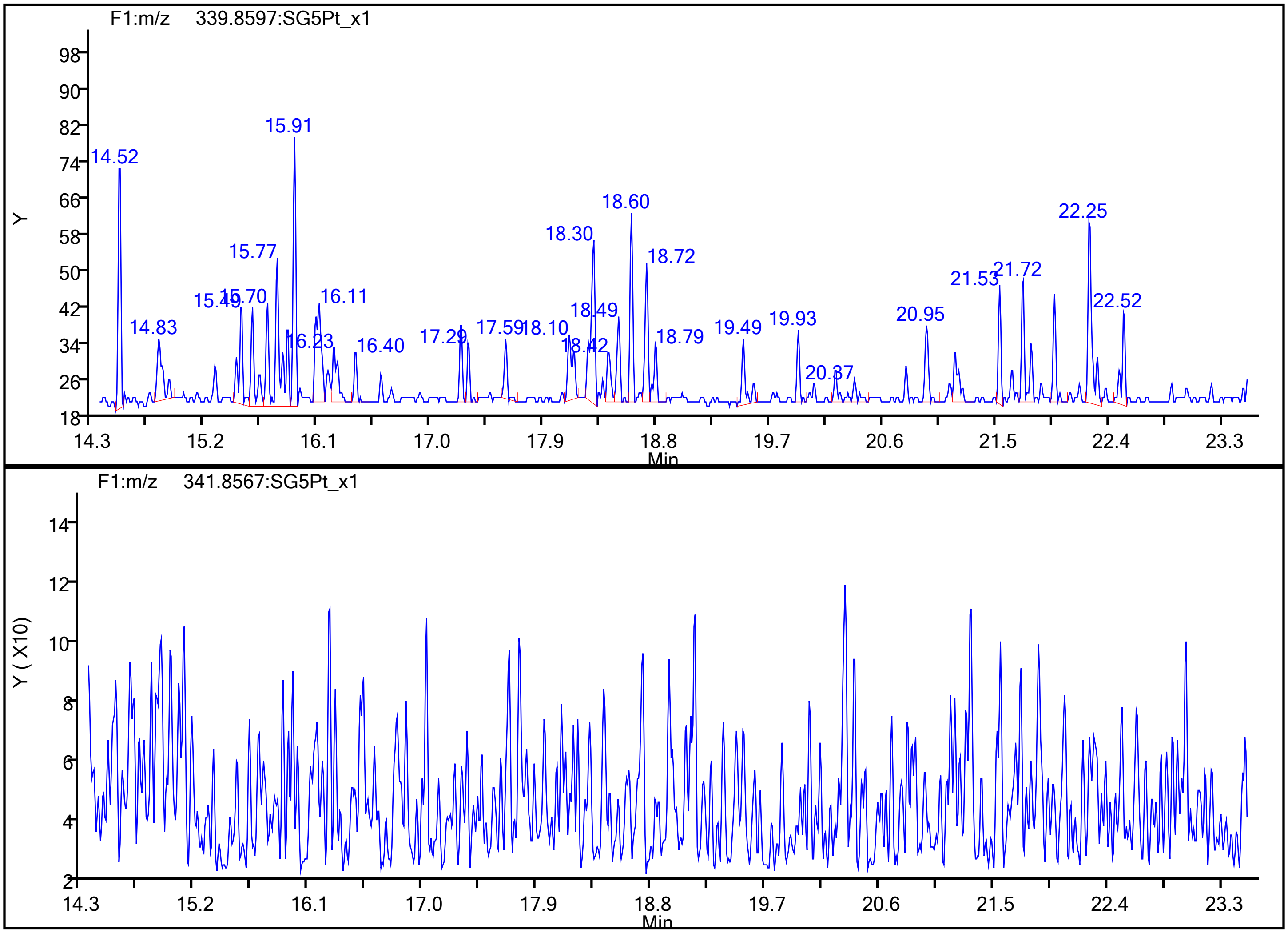

F1 PeCDFs Interference Mass

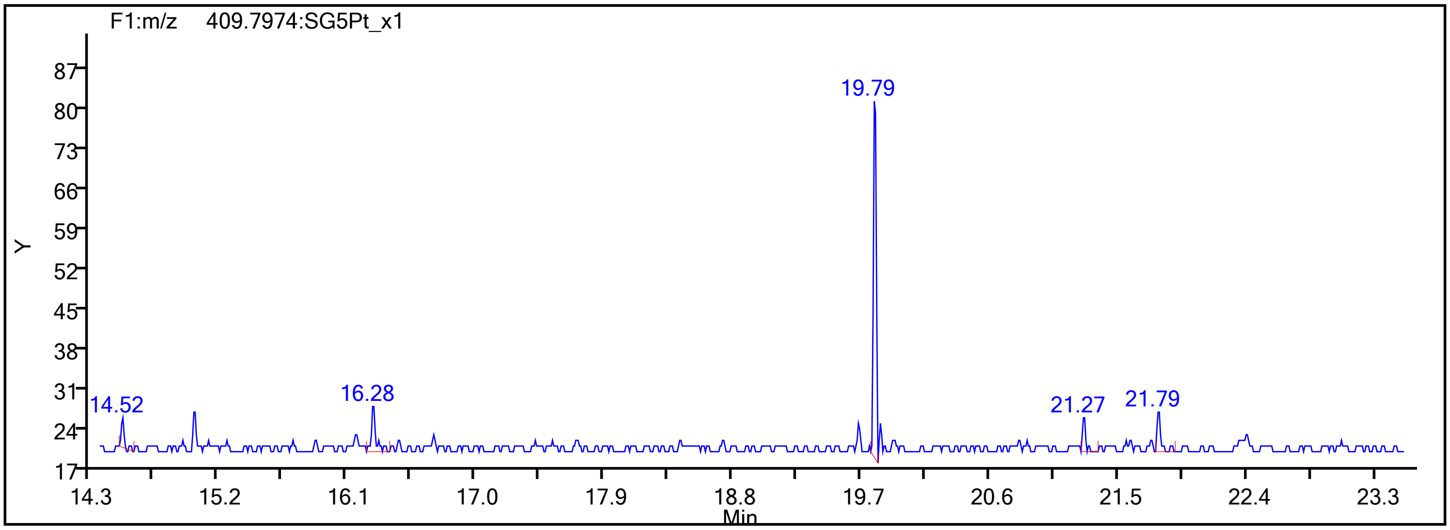

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

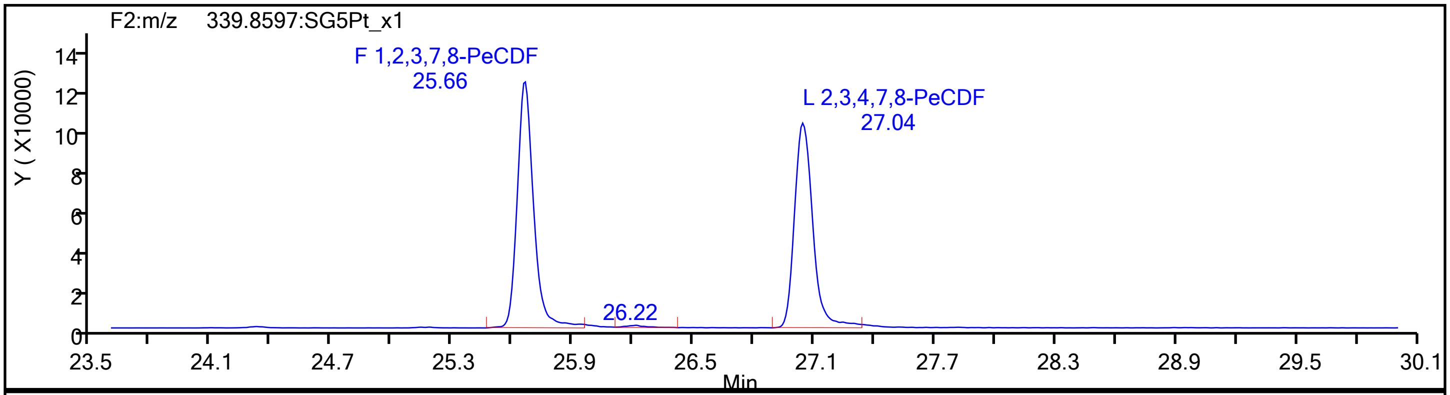

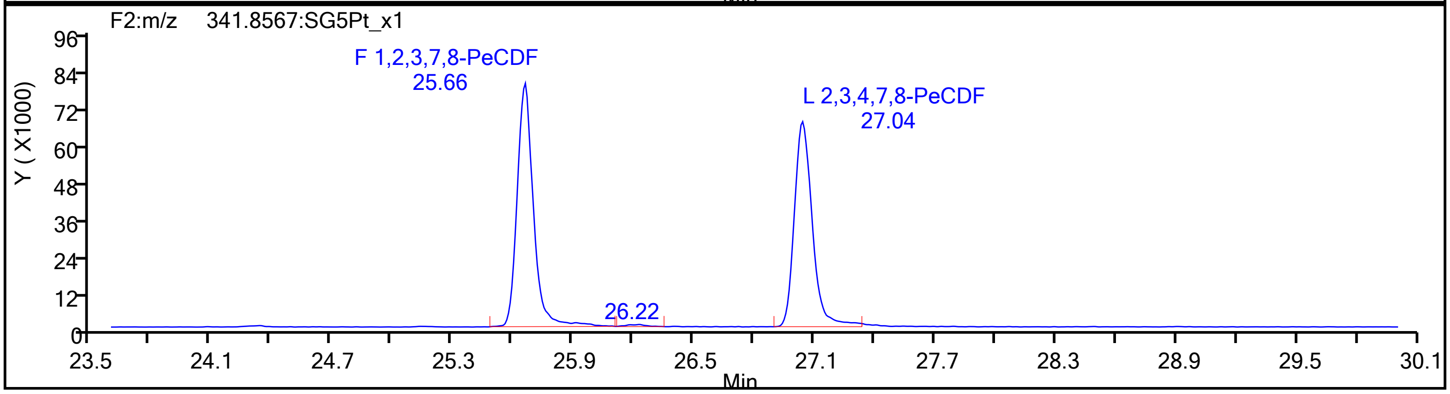

PeCDF Standards

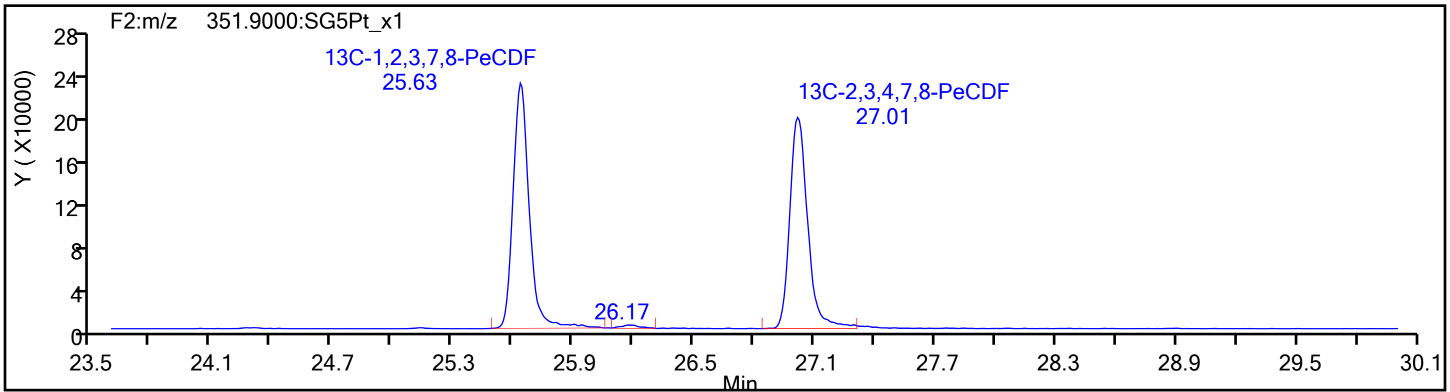

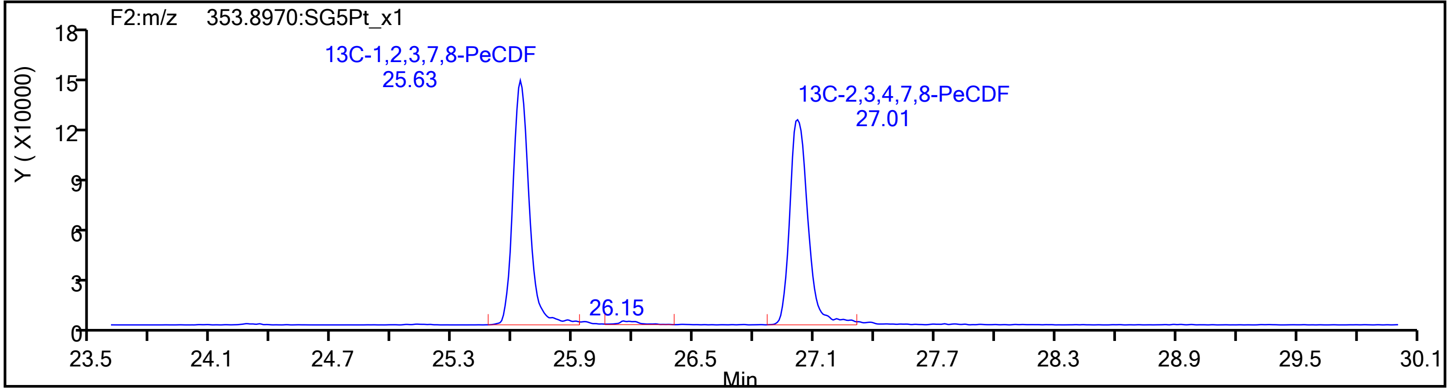

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d
Injection Date: 12-Mar-2021 10:33:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

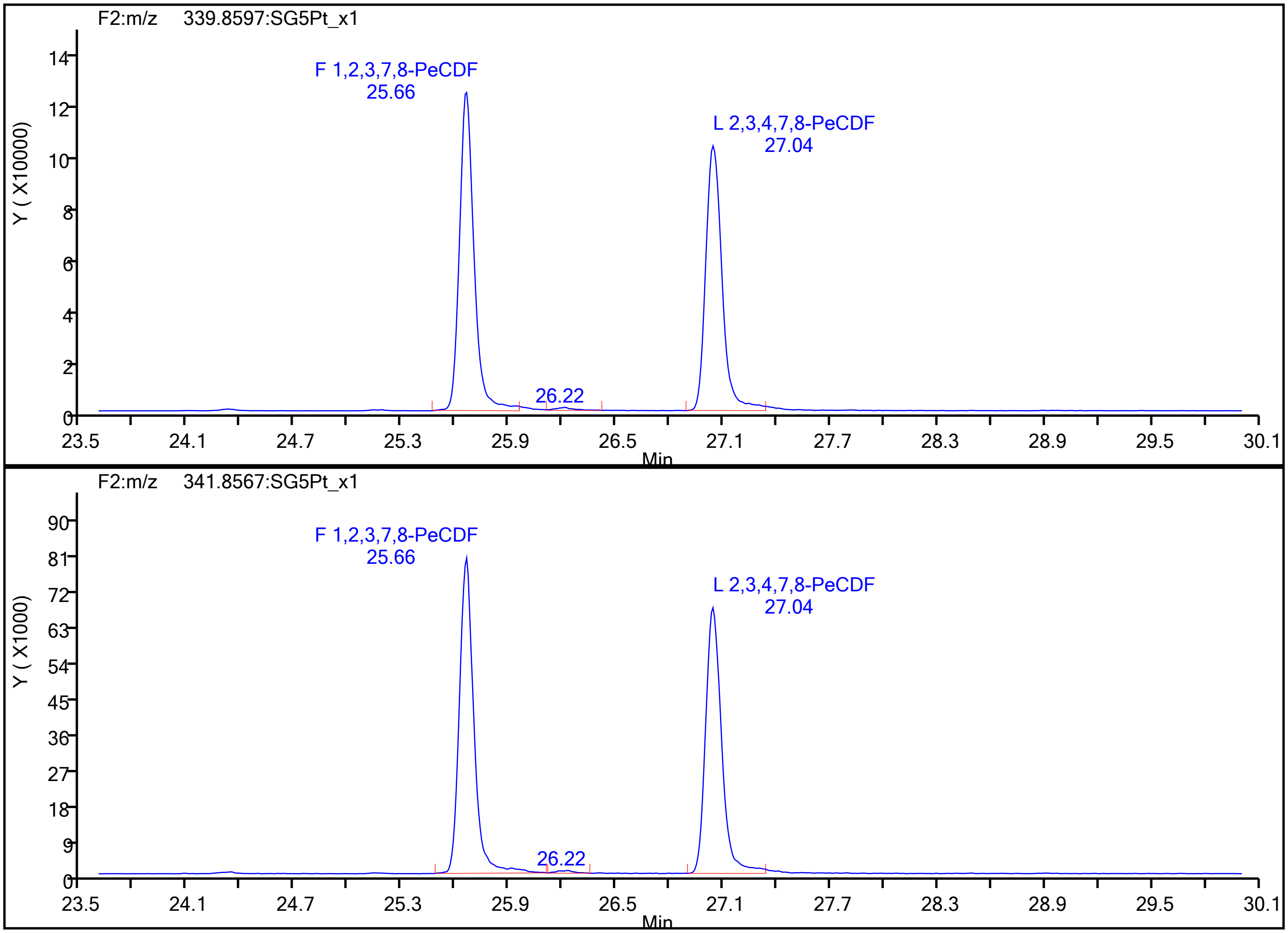

PeCDF Interference Mass

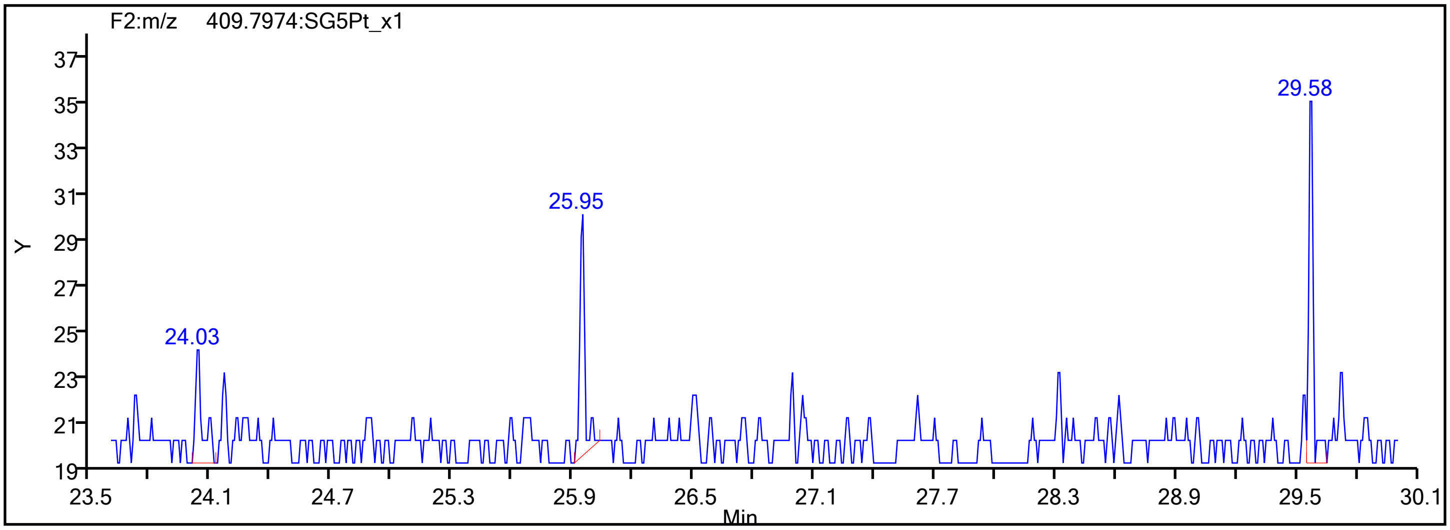

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d

Injection Date: 12-Mar-2021 10:33:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

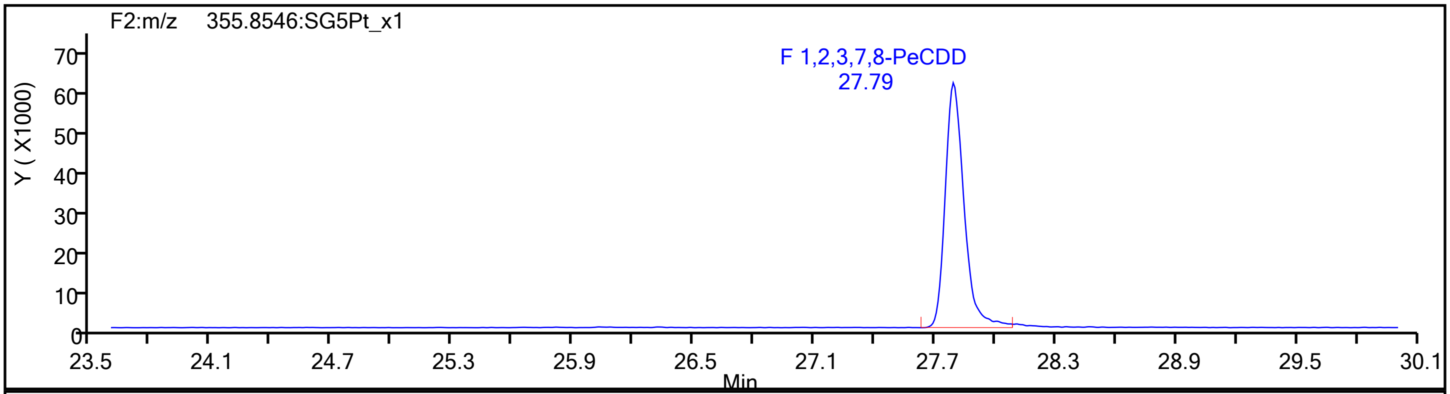

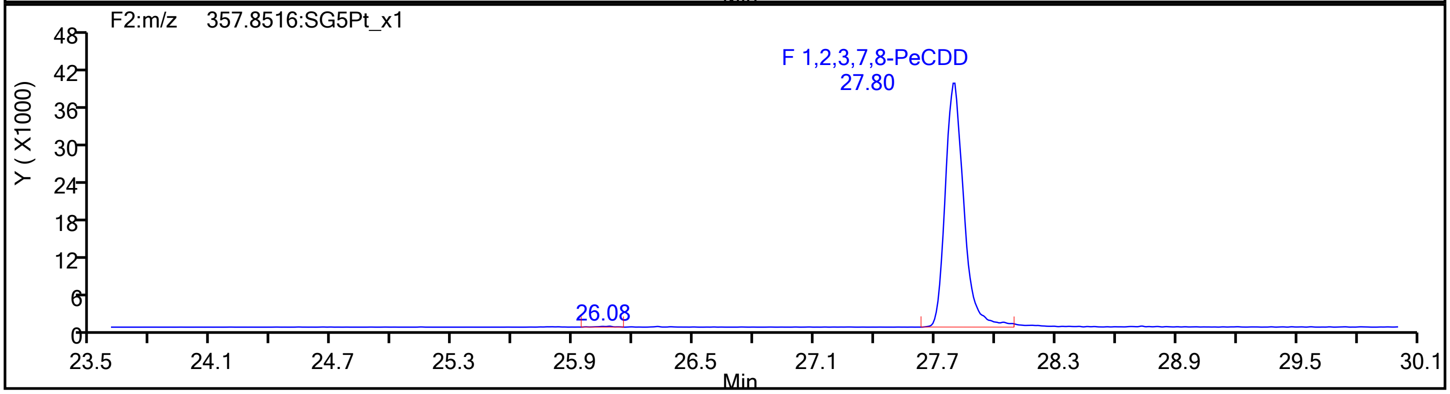

PeCDD Standards

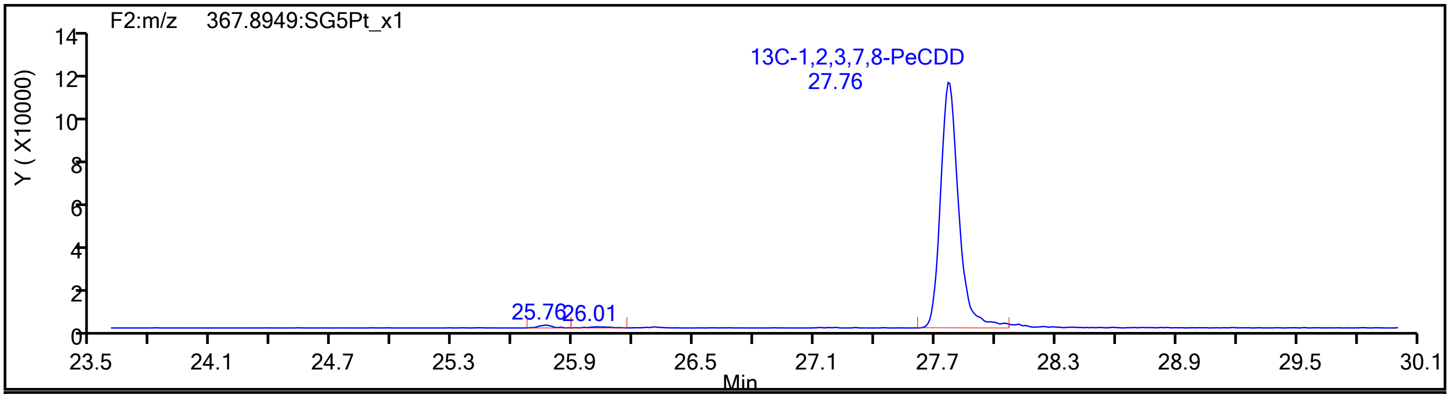

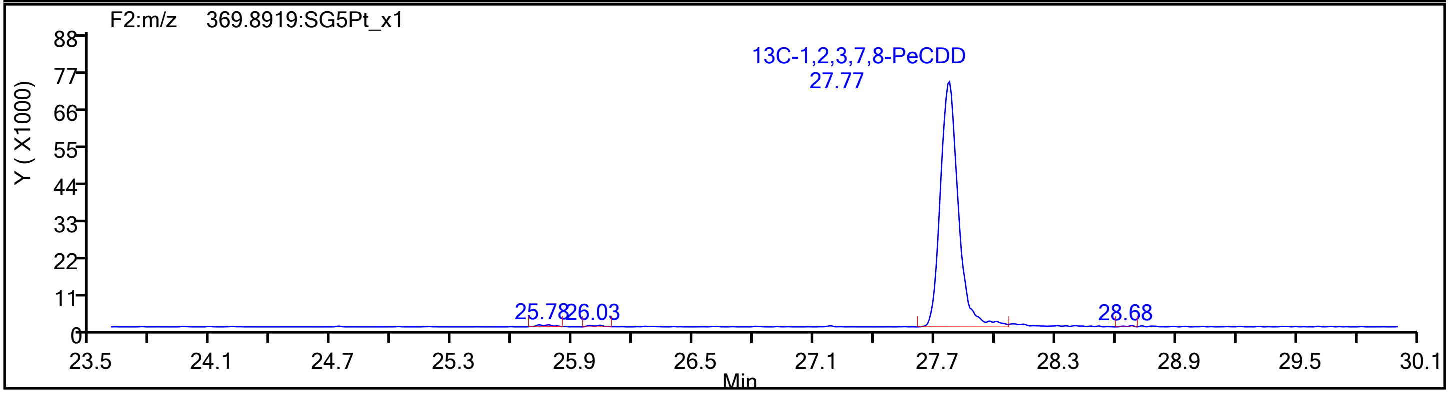

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d

Injection Date: 12-Mar-2021 10:33:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779
Sample Line#: 1

Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

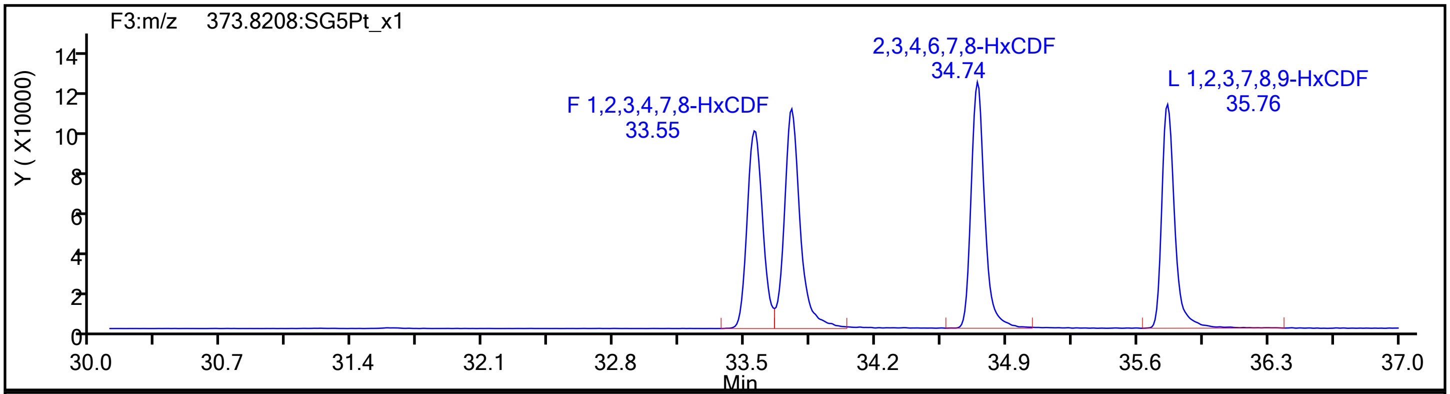

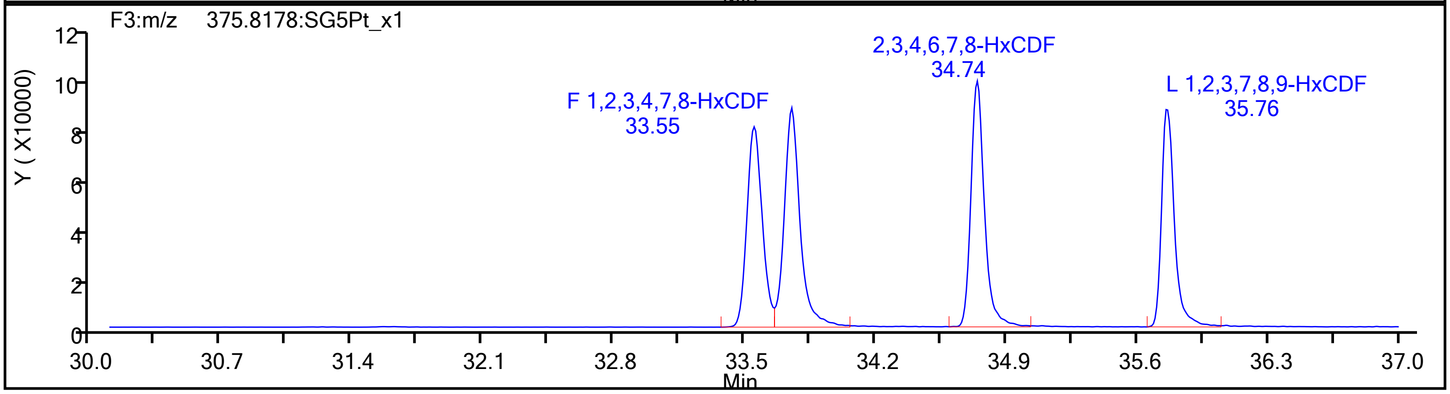

HxCDF Standards

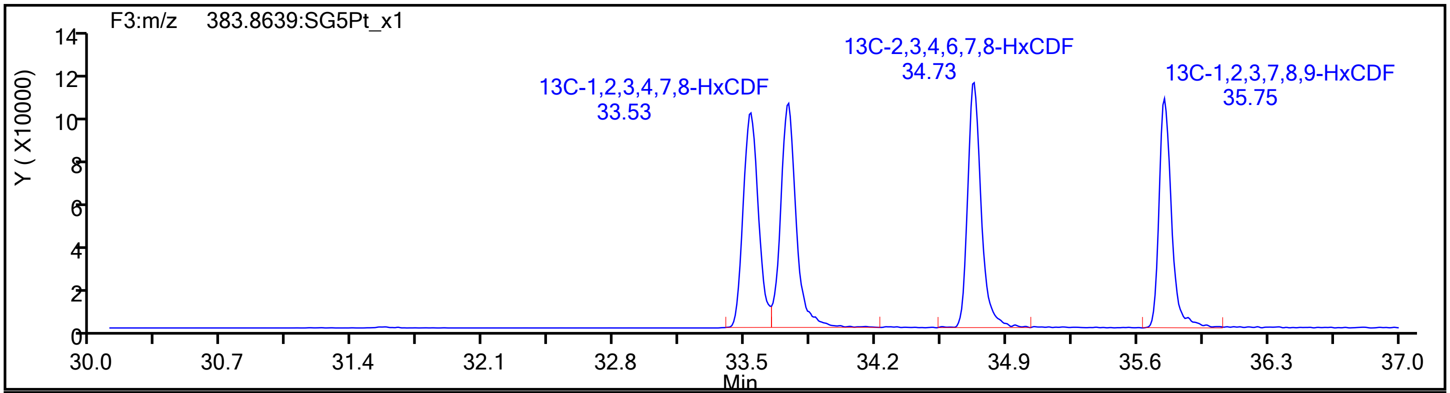

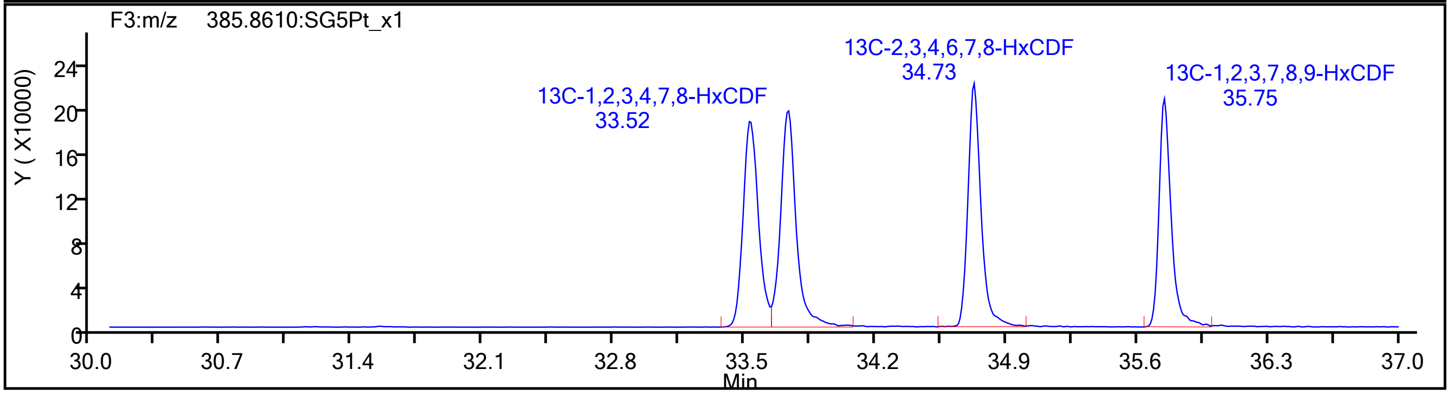

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

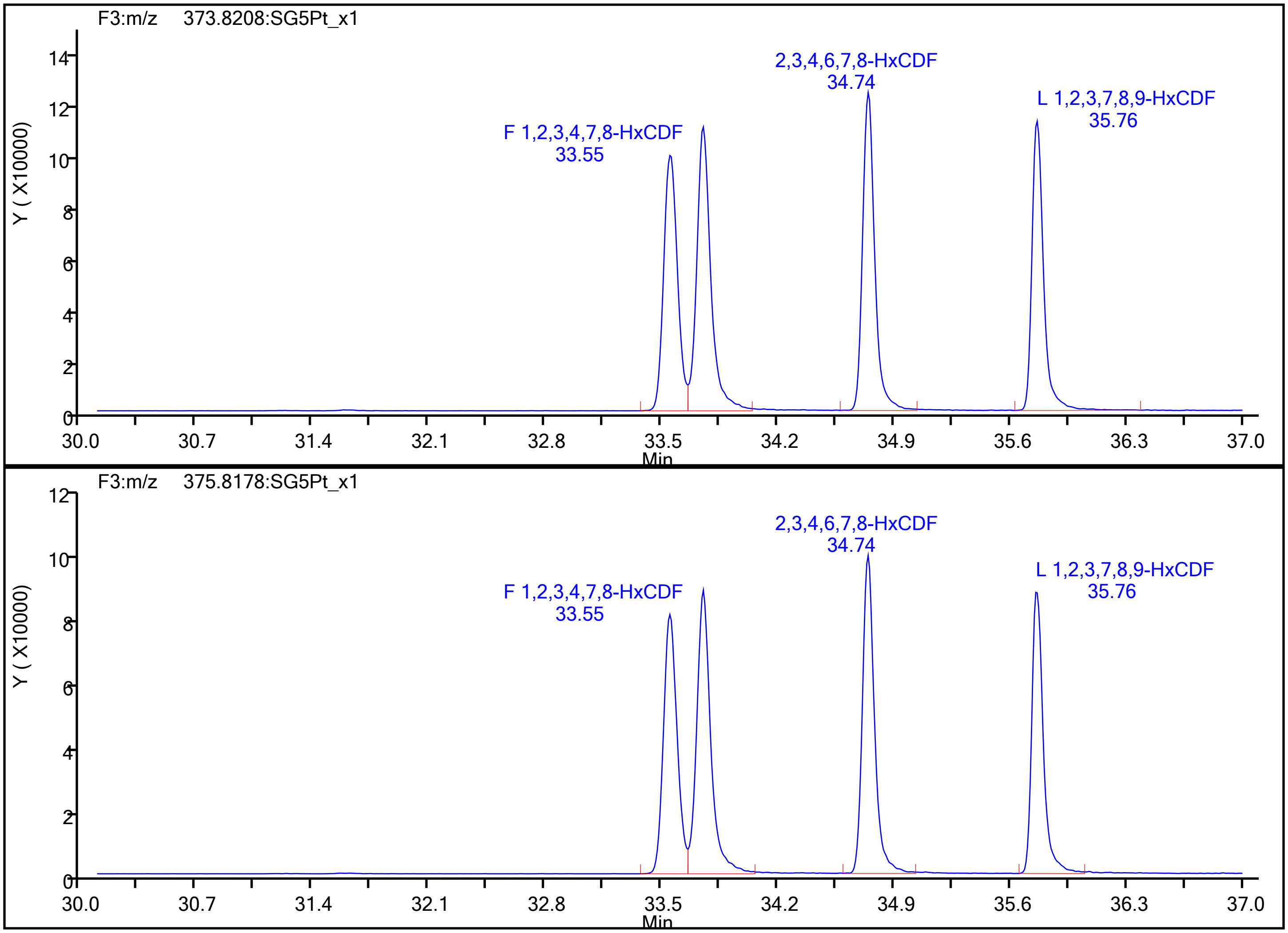

HxCDF Interference Mass

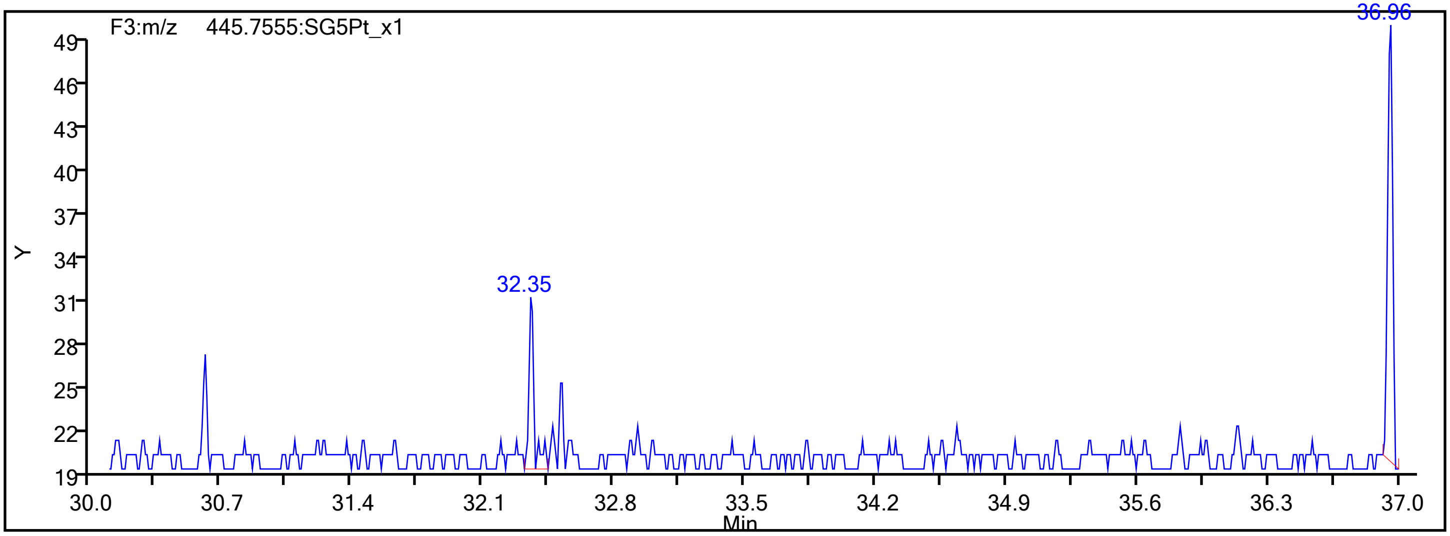

Report Date: 15-Mar-2021 11:40:19		Chrom Revision: 2.3 05-Feb-2021 00:13:28	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

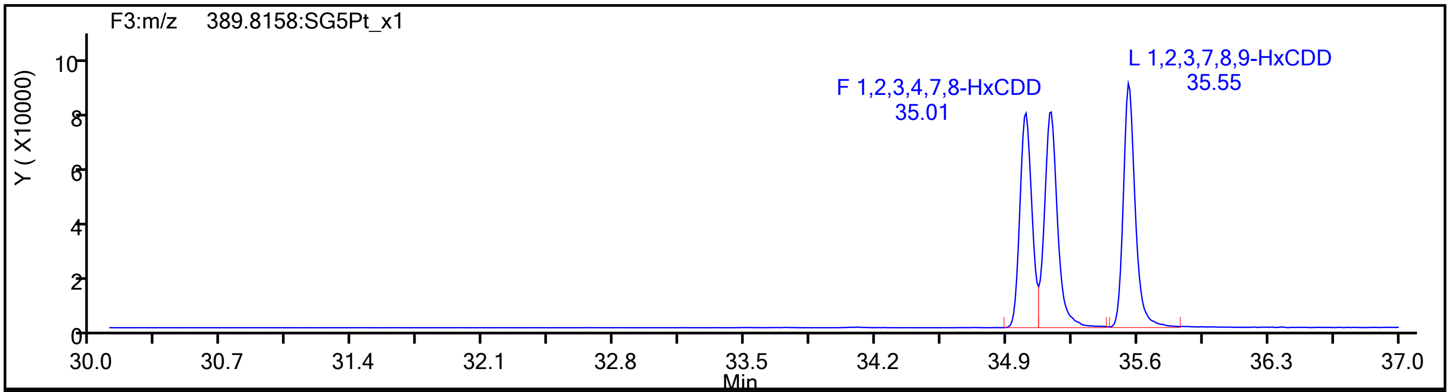

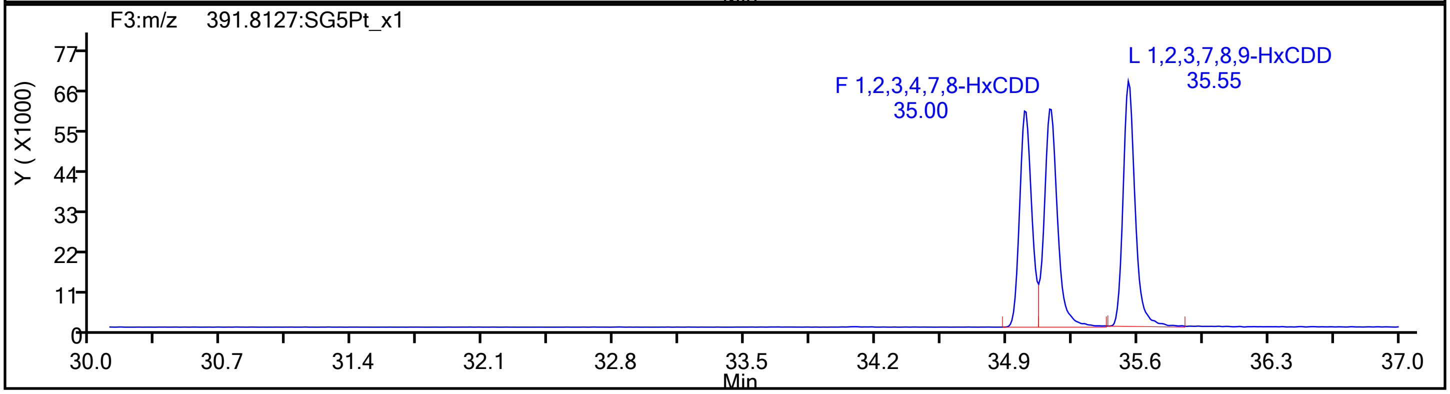

HxCDD Standards

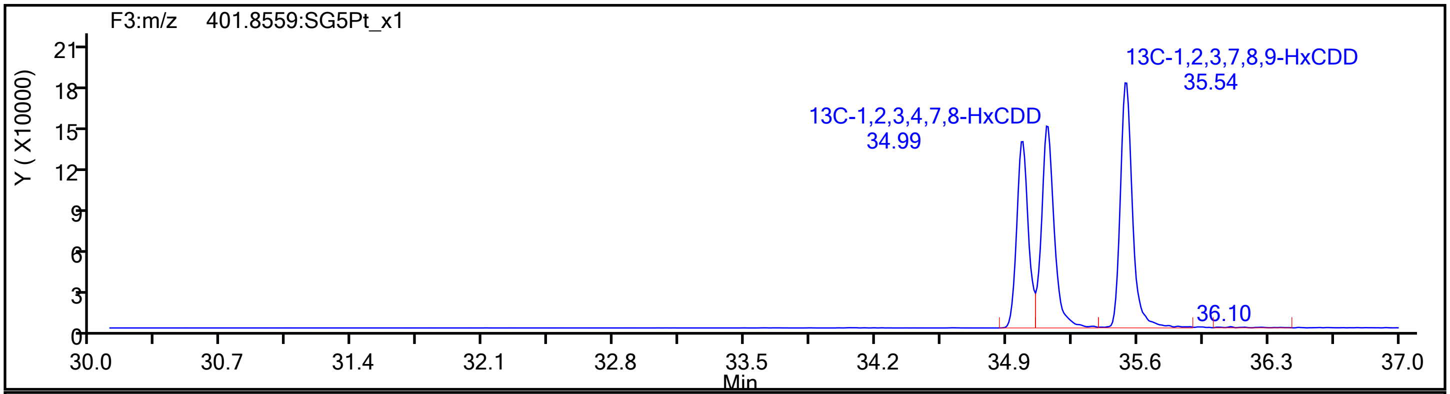

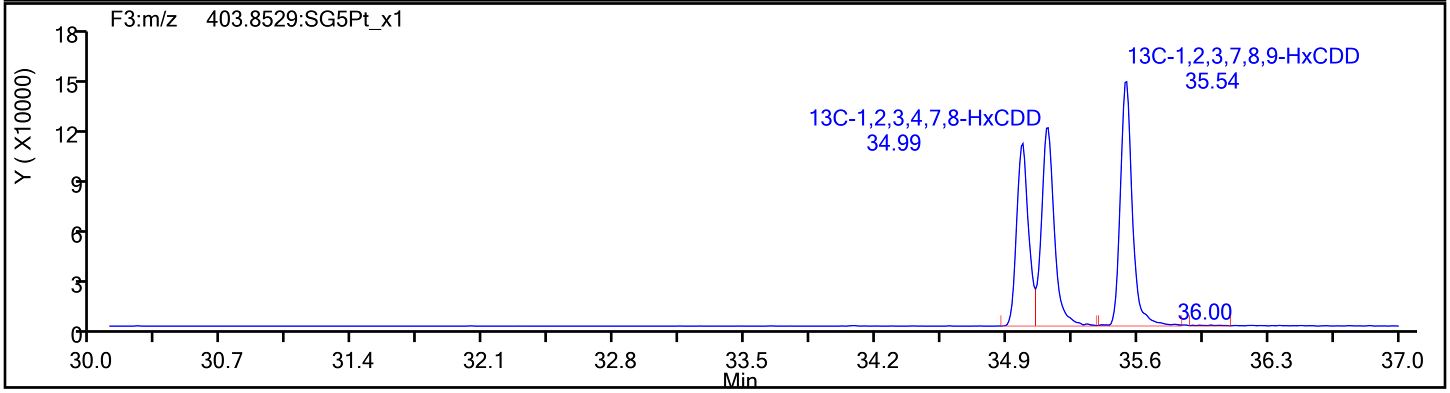

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d
Injection Date: 12-Mar-2021 10:33:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

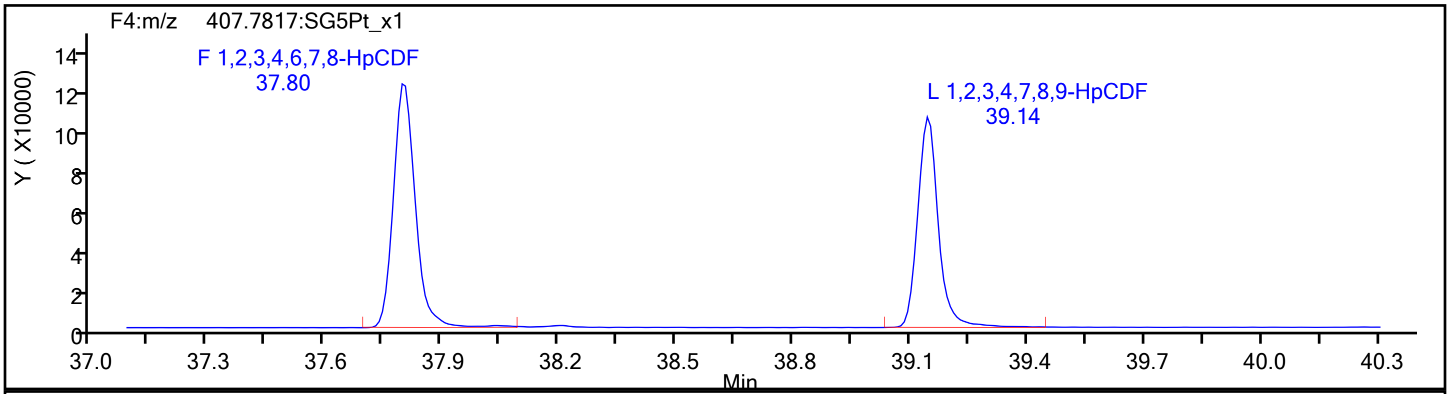

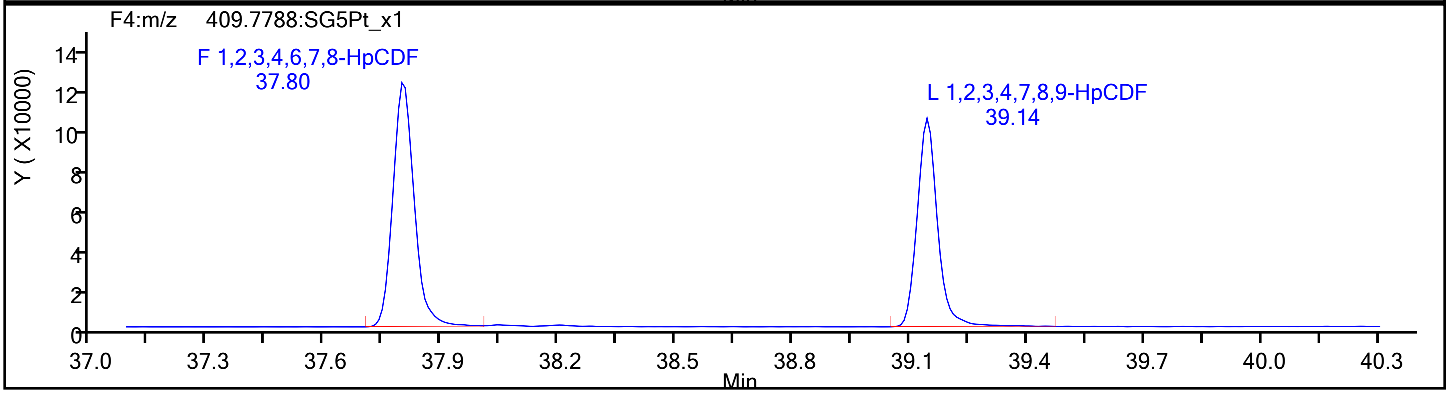

HpCDF Standards

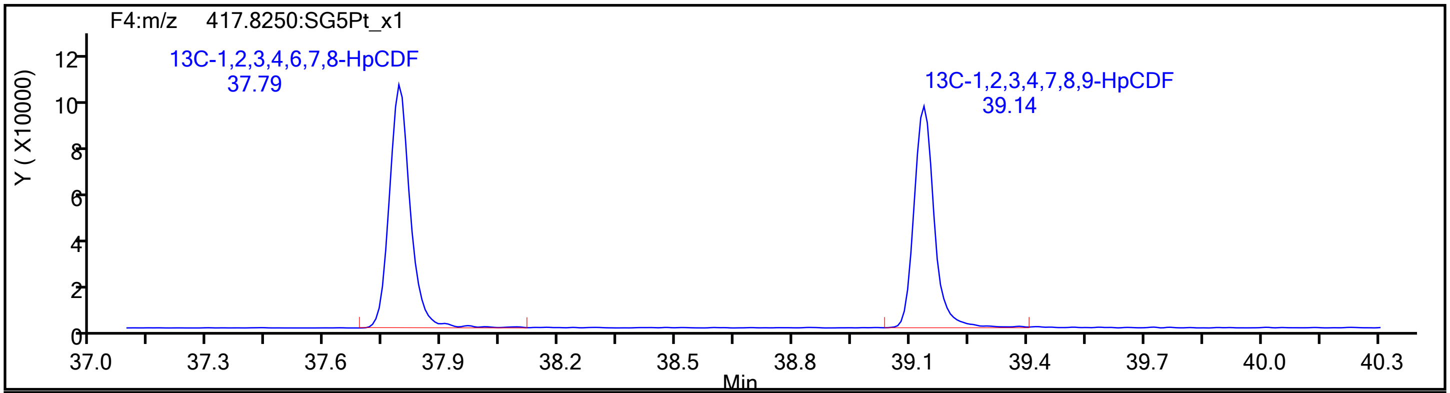

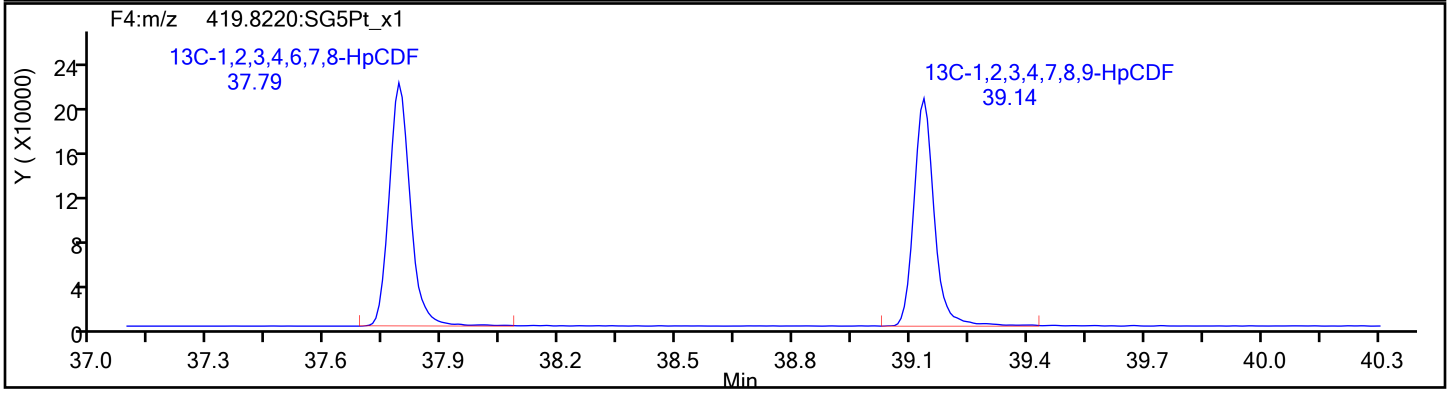

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

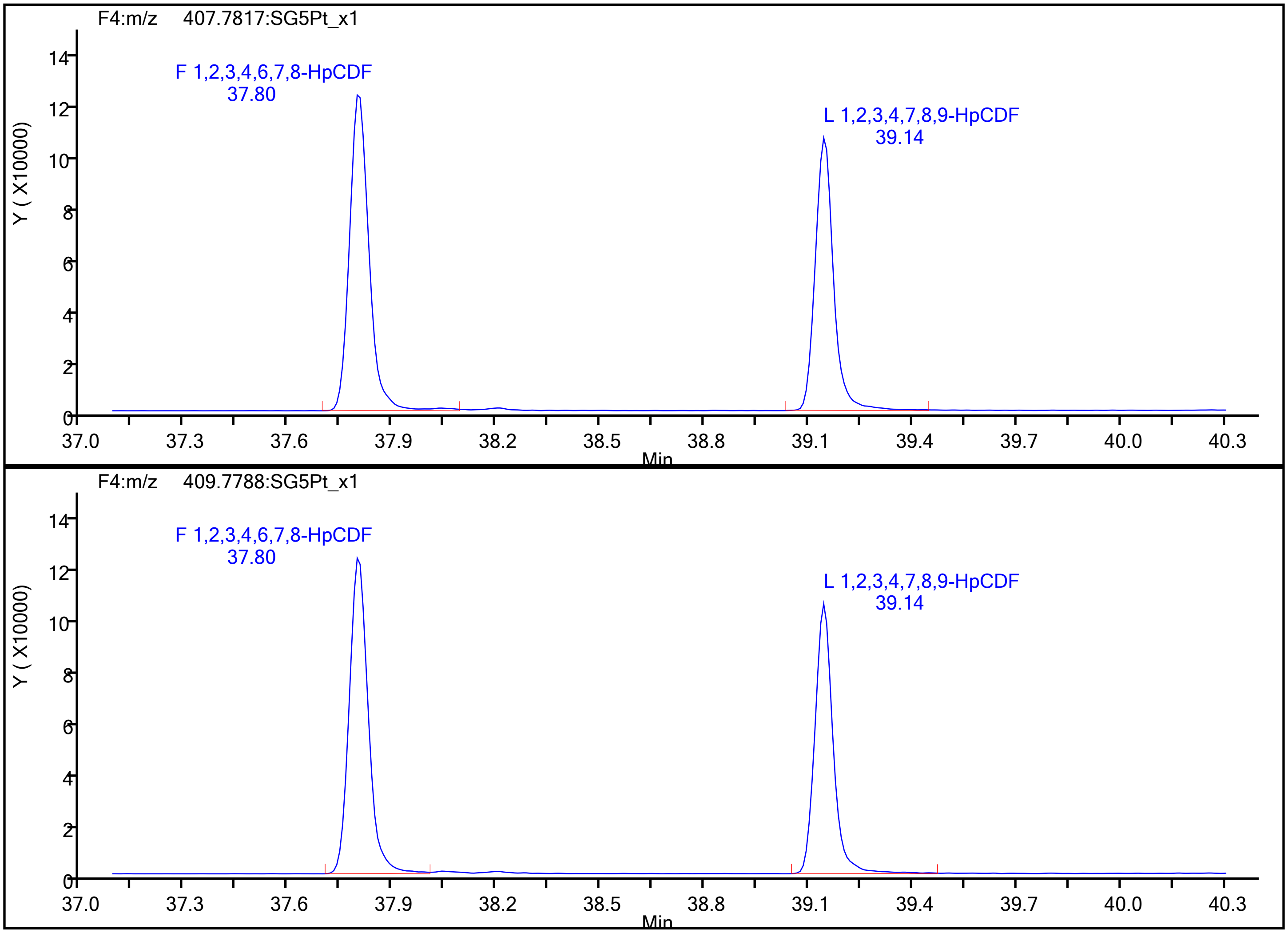

HpCDF Interference Mass

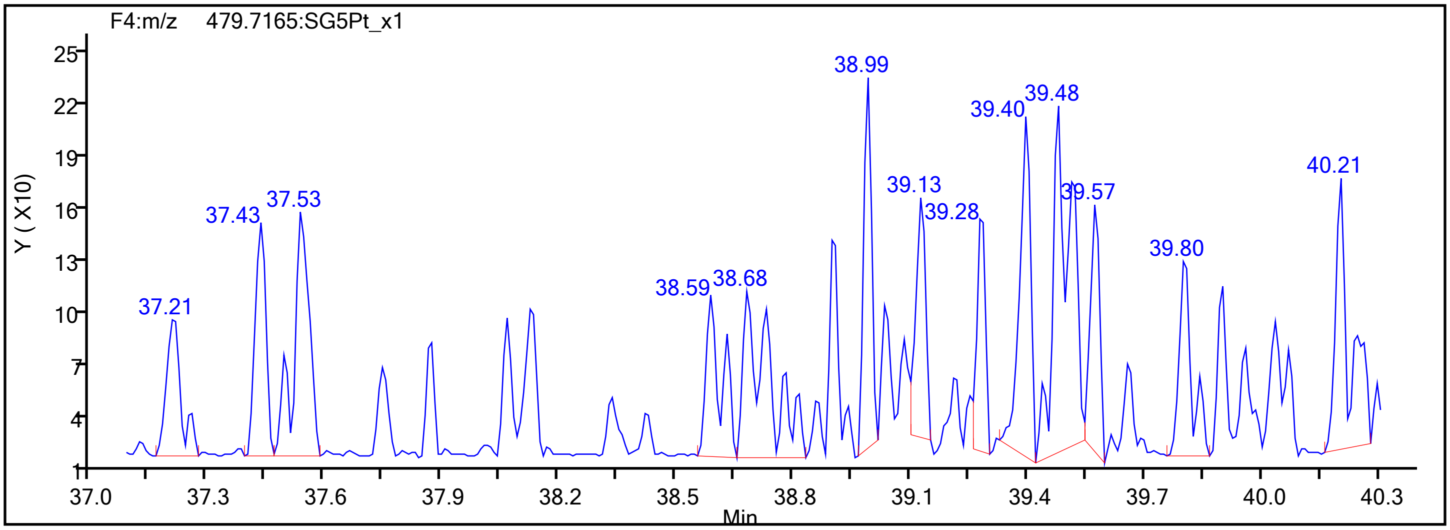

Report Date: 15-Mar-2021 11:40:19 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

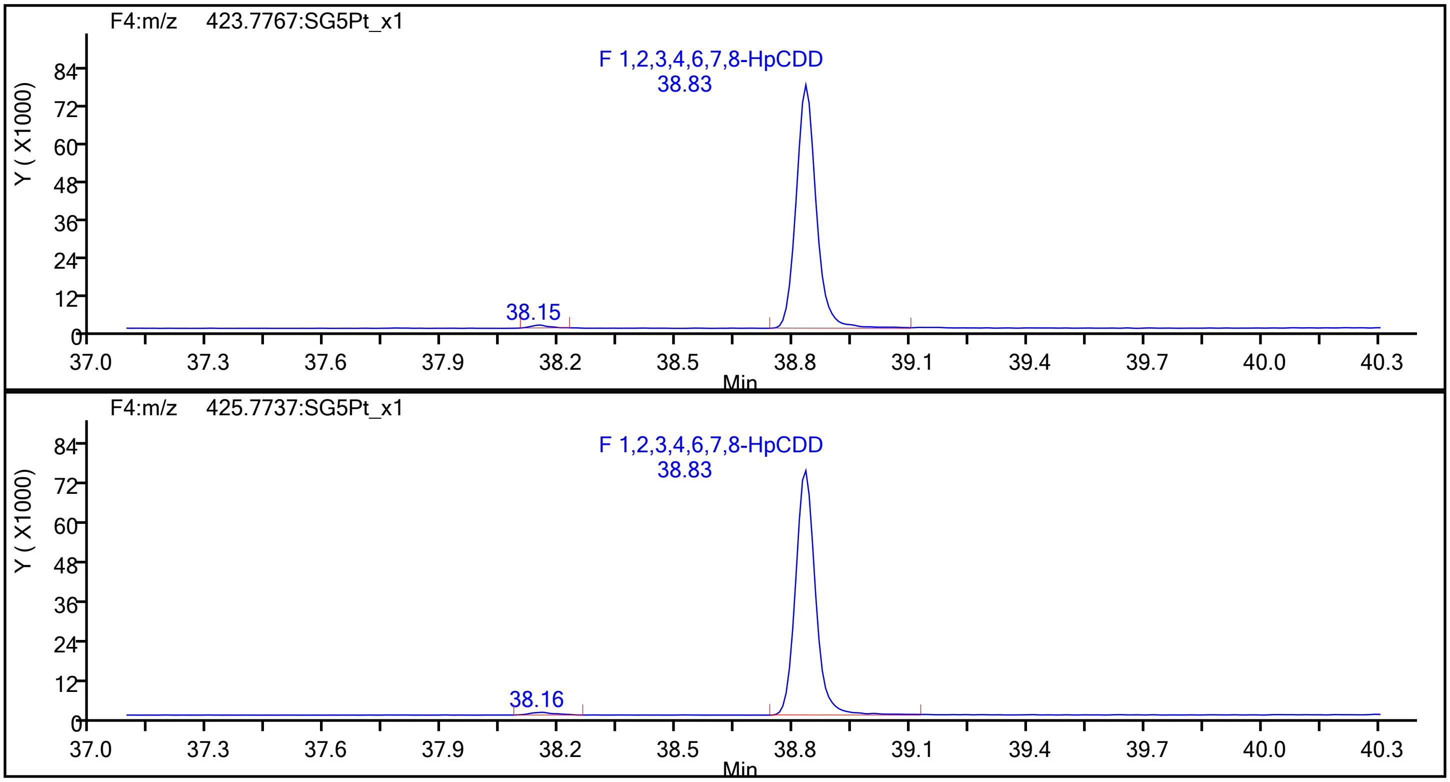

HpCDD Standards

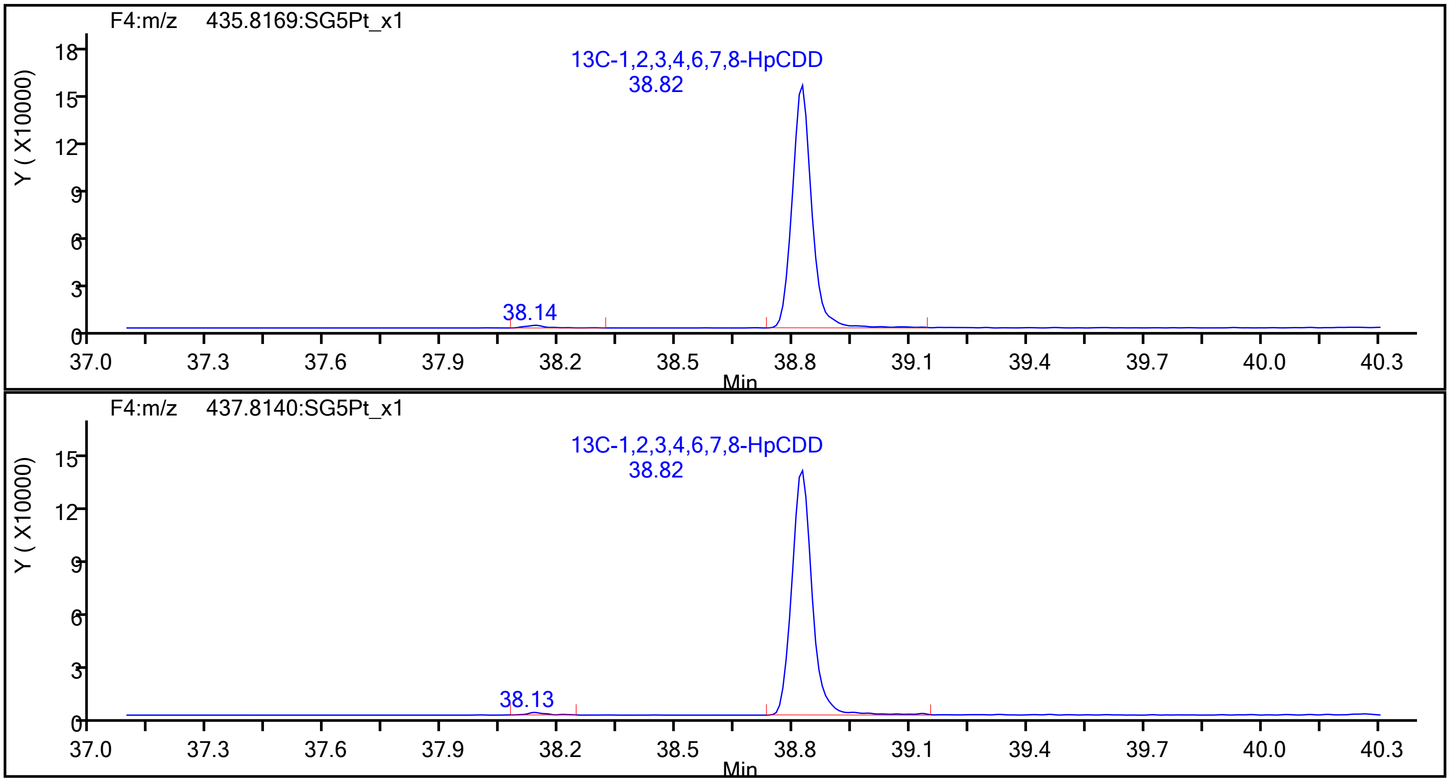

Report Date: 15-Mar-2021 11:40:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 12-Mar-2021 10:33:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

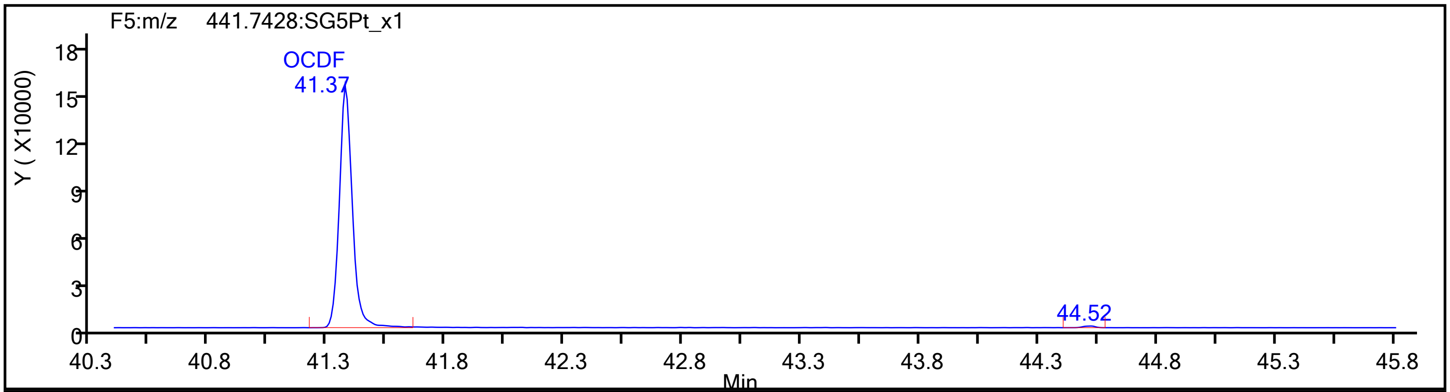

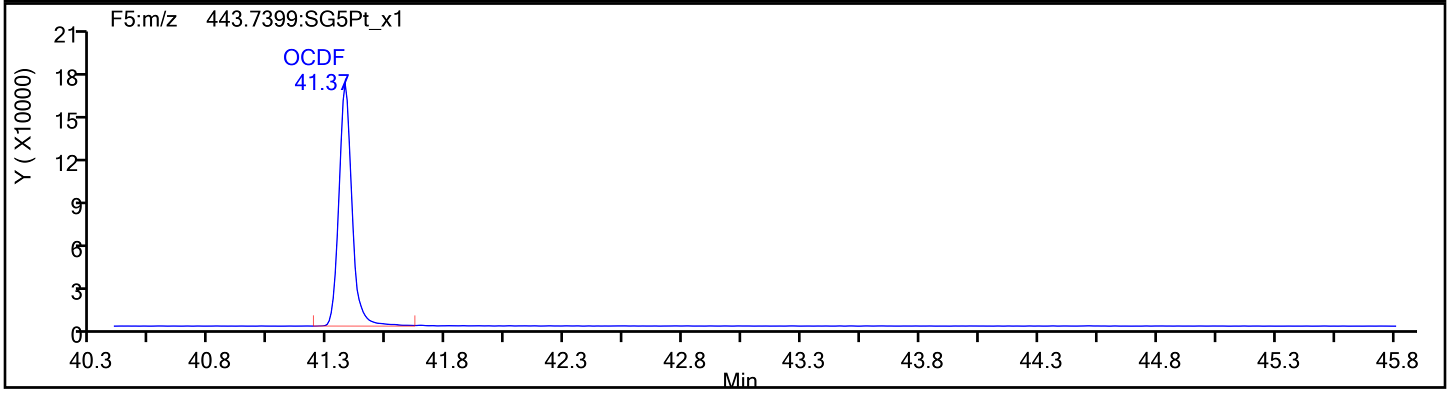

OCDF Standards

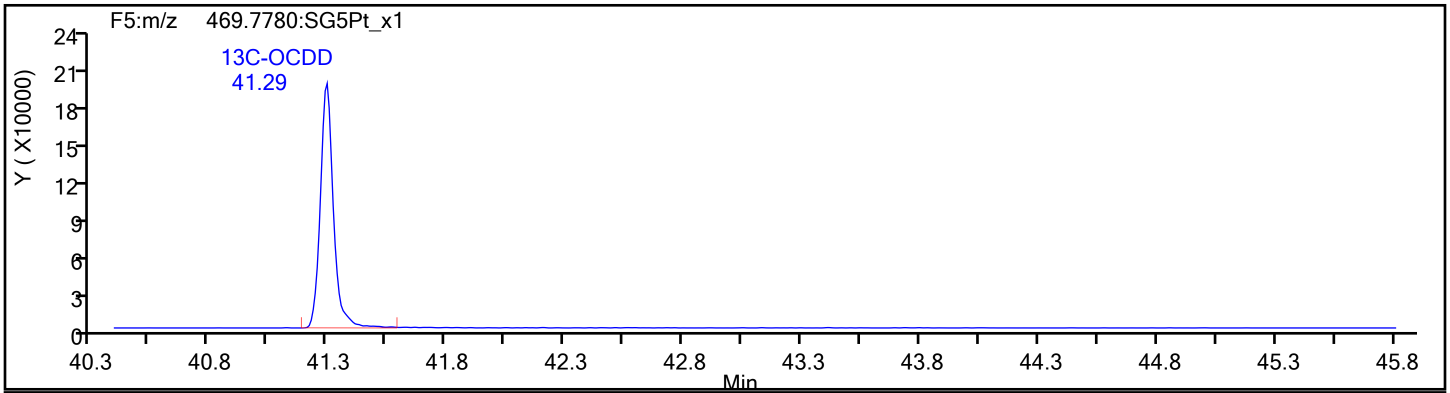

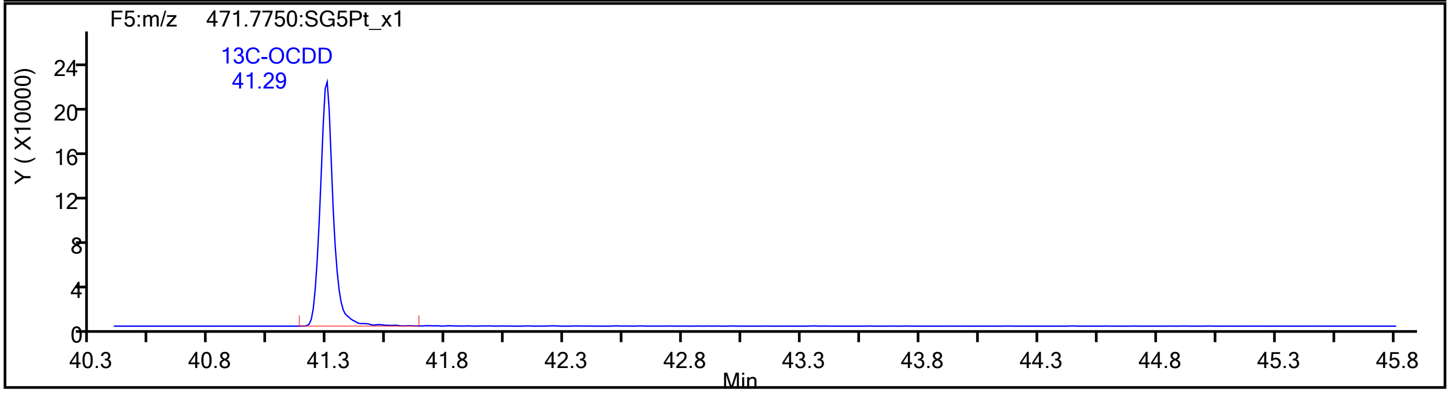

Report Date: 15-Mar-2021 11:40:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

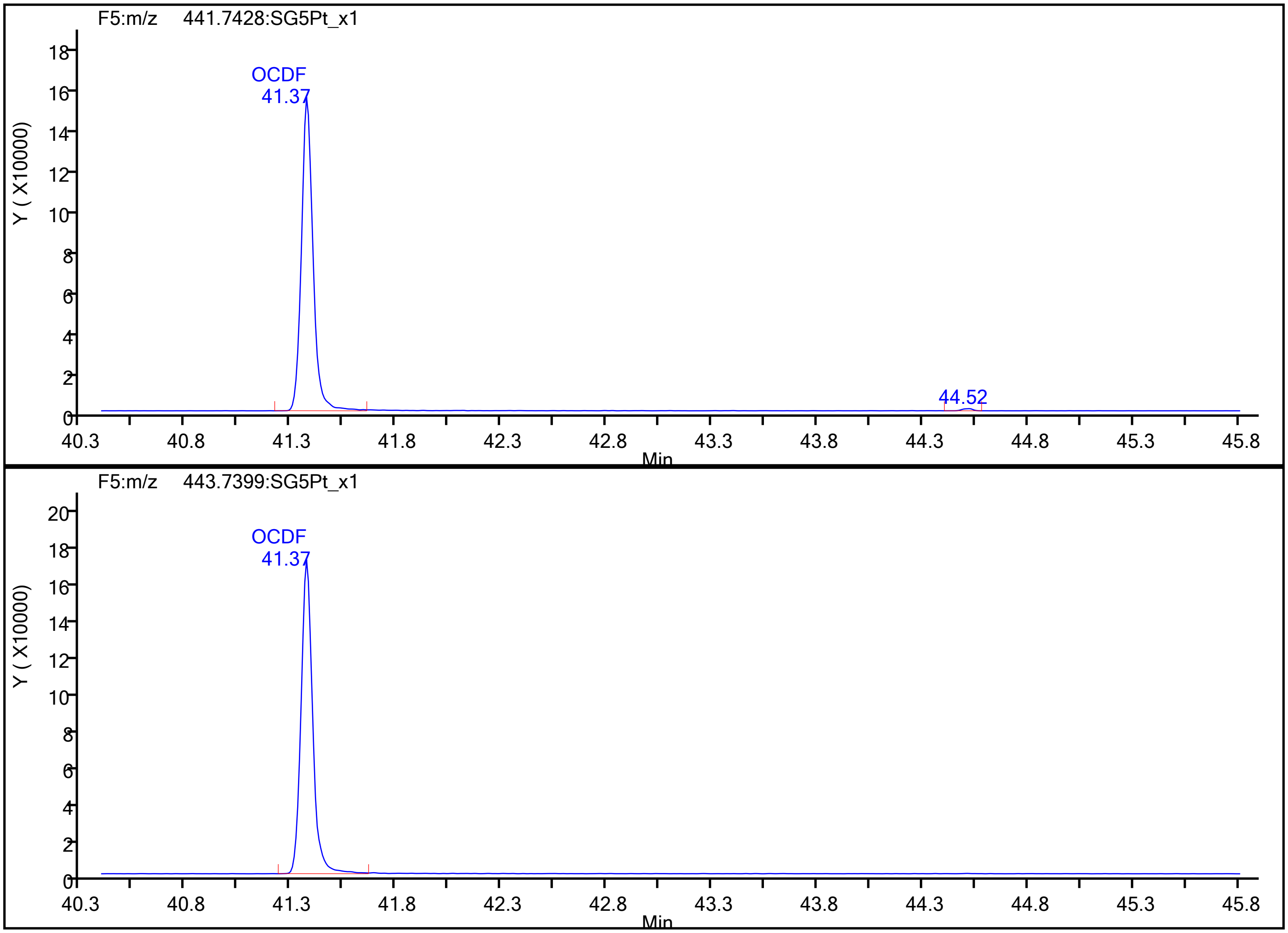

OCDF Interference Mass

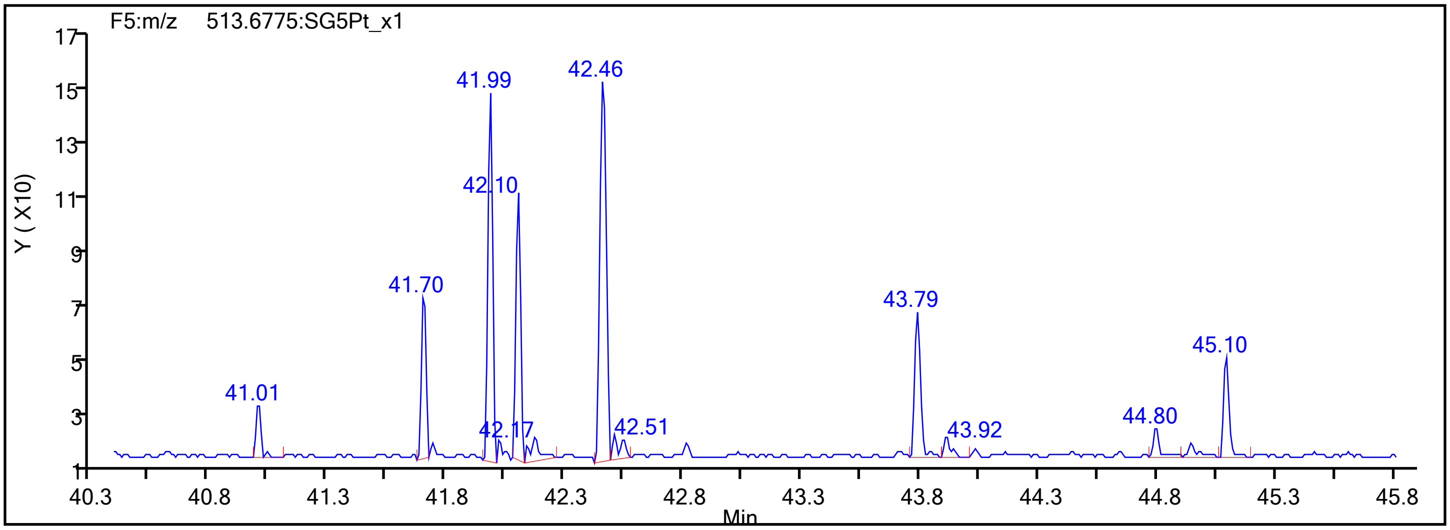

Report Date: 15-Mar-2021 11:40:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

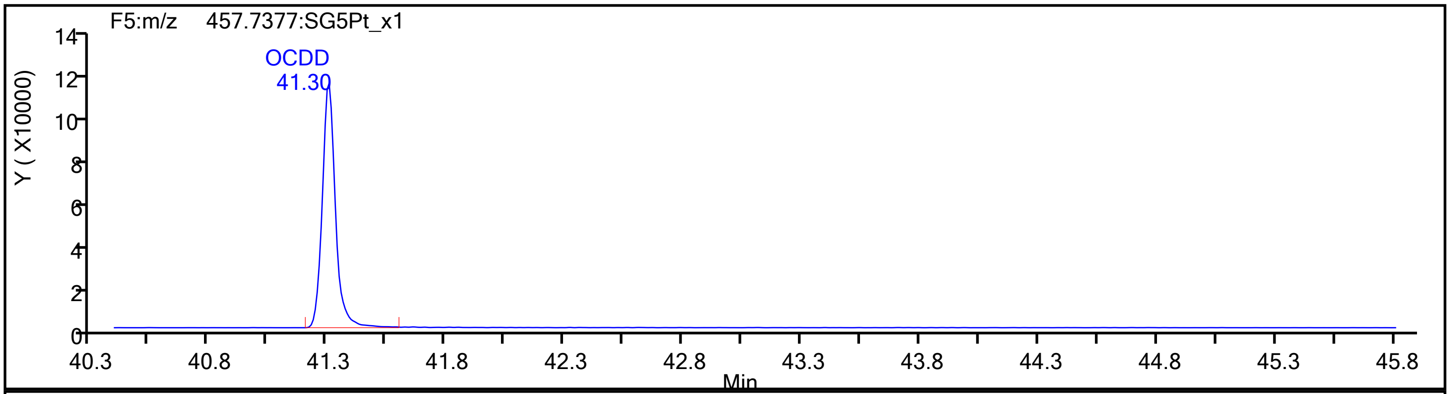

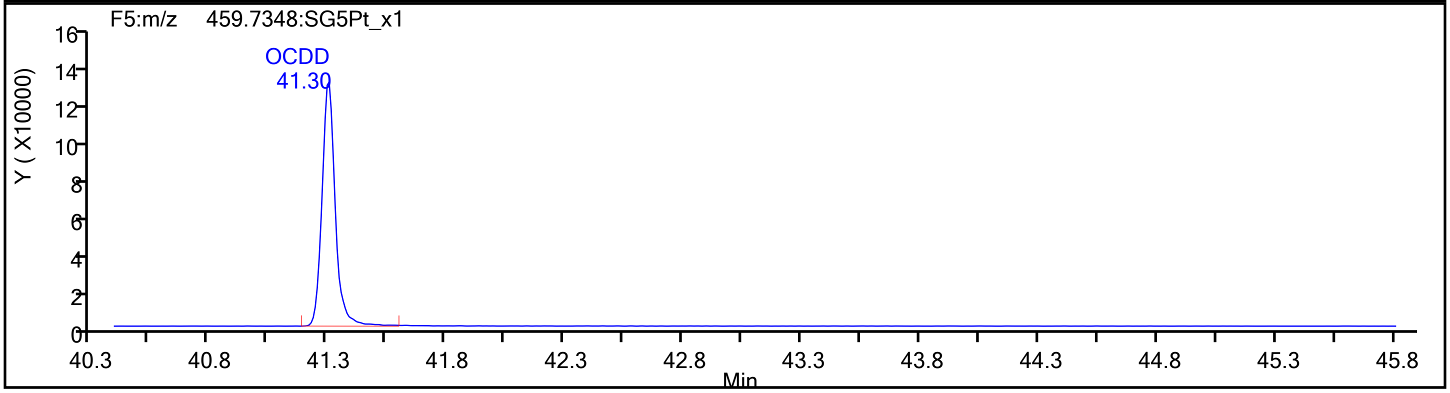

OCDD Standards

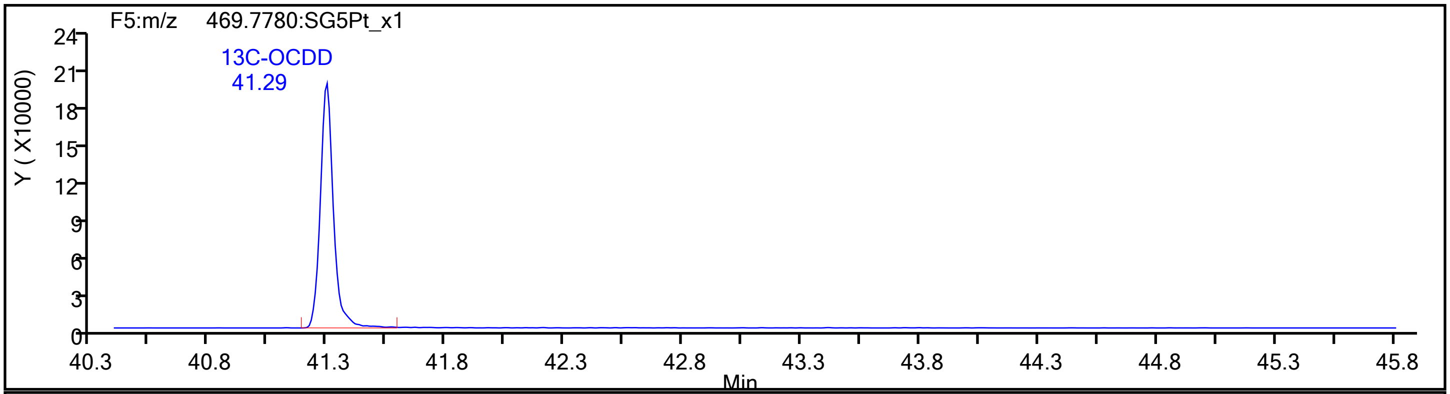

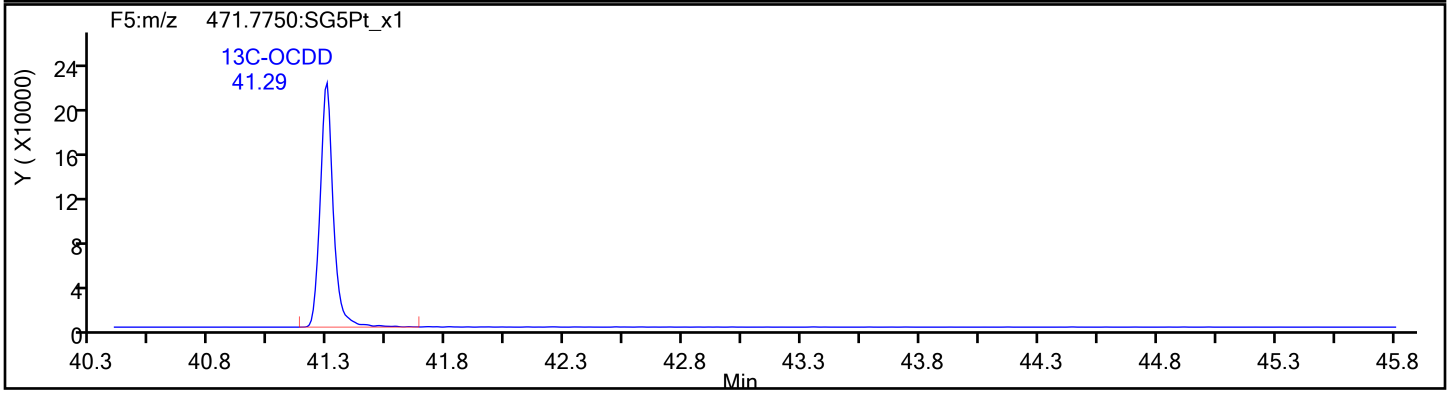

Report Date: 15-Mar-2021 11:40:20 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d

Injection Date: 12-Mar-2021 10:33:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

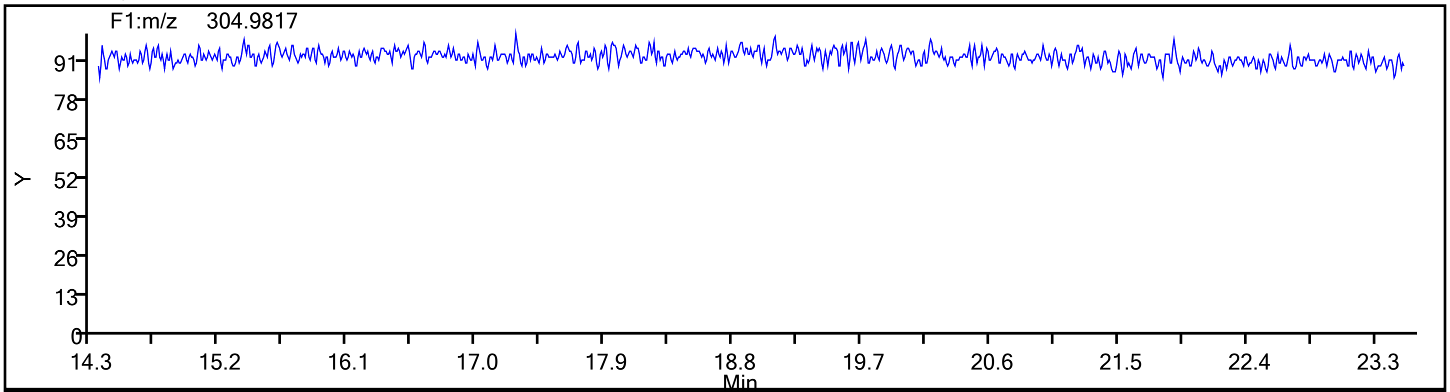

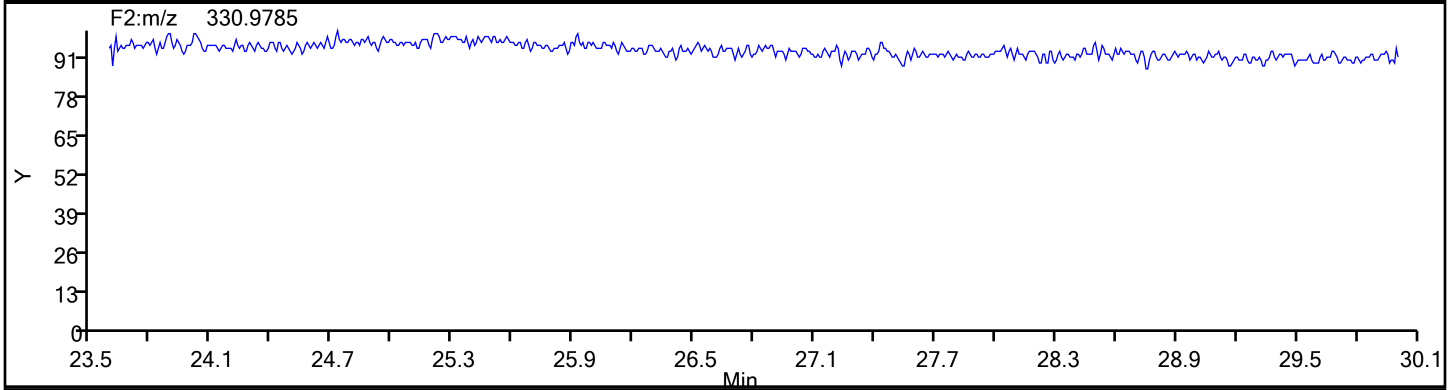

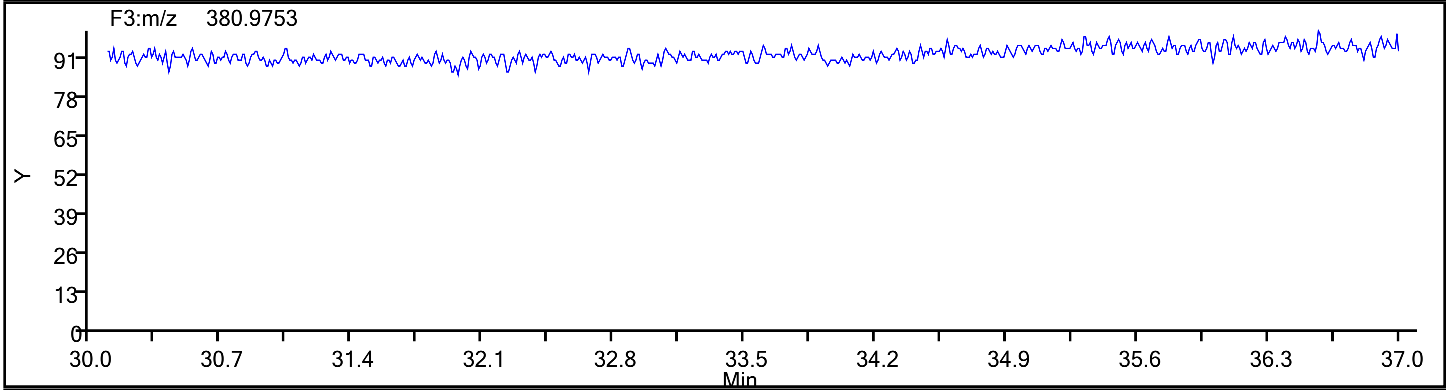

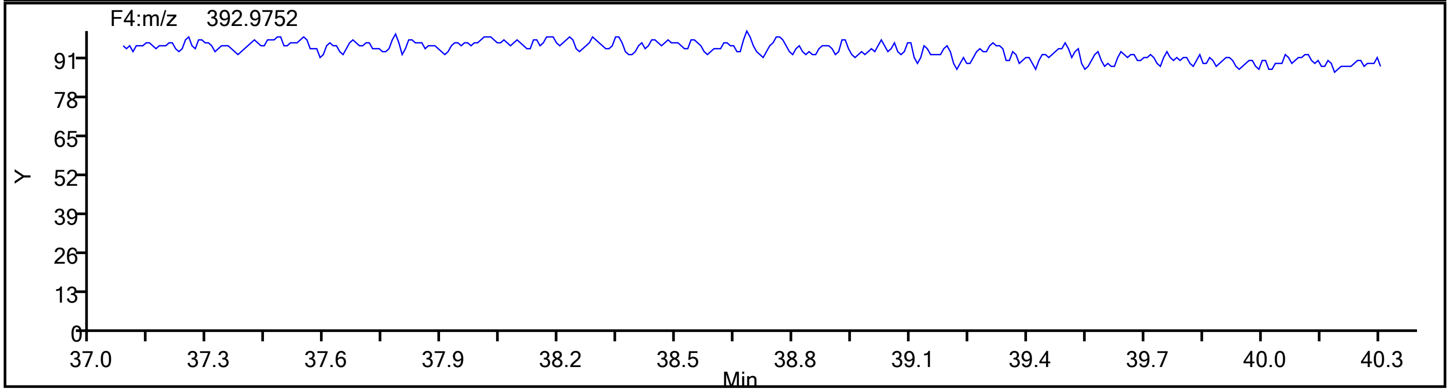

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_2.d		
Injection Date:	12-Mar-2021 10:33:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

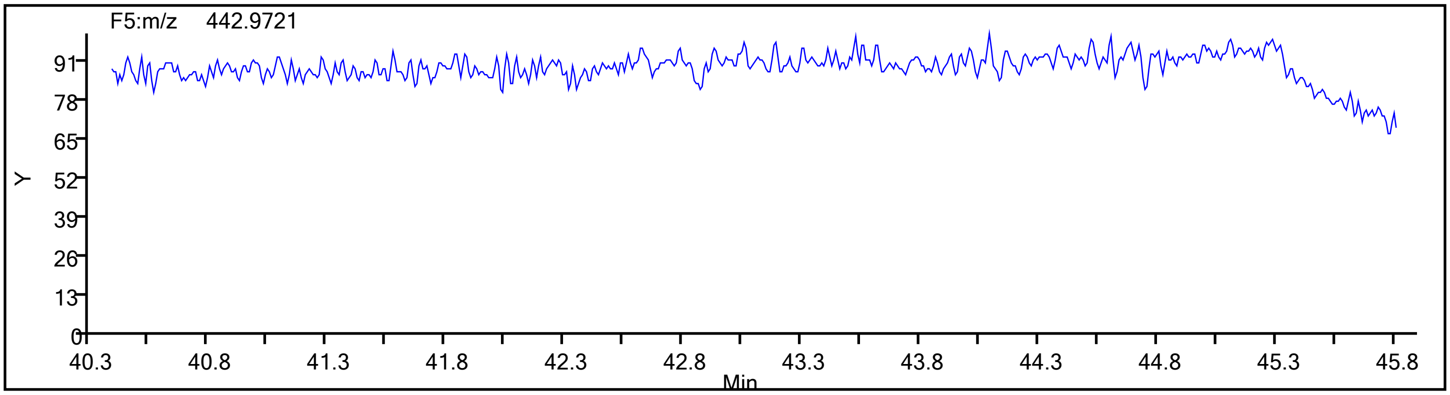

Report Date: 17-Mar-2021 13:40:59   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 16-Mar-2021 23:40:35   ALS Bottle#: 1   Worklist Smp#: 1
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: WDM 031621B WDM HRDXNCP_00042
Misc. Info.: 16MR21B10D5
Operator ID: ALM   Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:40:55   Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: stephensk   Date: 17-Mar-2021 10:54:27

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.007	32821094	0.79	1.3554					0.00	
2,3,7,8-TCDF	17.037	69448999	0.77	0.9903	85.5	85.5	0.2648	0.2648		
A Non-2,3,7,8-sub-TCDF	16.735						0.2648	0.2648		
S Total TCDF					85.5	85.5	0.2648	0.2648		
D 13C-2,3,7,8-TCDD	17.702	20682228	0.69	0.9209					0.00	
2,3,7,8-TCDD	17.718	24461145	0.77	1.0991	43.0	43.0	0.2121	0.2121		
A Non-2,3,7,8-sub-TCDD	17.181						0.2121	0.2121		
S Total TCDD					43.0	43.0	0.2121	0.2121		
A F1 PeCDFs	19.524						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.600	506086	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	22.878						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.795						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.440	176818	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	33.592	22797404	1.06	1.4017						
1,2,3,4,7,8,9-HpCDF	34.661	18204005	1.07	1.2995						
A Non-2,3,7,8-sub-HpCDF	34.127						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.382	15345461	1.05	1.0339						
A Non-2,3,7,8-sub-HpCDD	34.460						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.663	38648616	0.76							
1,3,6,8-TCDD	15.555	24789950	0.77							
2,3,4,7-TCDF	17.037	69621624	0.77							
1,2,3,7-TCDD	17.612	22574865	0.77							
1,2,3,9-TCDD	17.884	25306961	0.78							
1,2,3,9-TCDF	17.884	30069780	0.77							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	18.806	10135708								
1,2,8,9-TCDF	18.806	30872327	0.78							
1,3,4,6,8-PeCDF	19.078	30564362	1.60							
1,2,4,7,9-PeCDD	20.819	20439718	1.59							
1,2,3,8,9-PeCDD	24.937	19704818	1.58							
1,2,3,8,9-PeCDF	25.155	24628797	1.60							
1,2,3,4,6,8-HxCDF	27.392	25176184	1.23							
1,2,4,6,7,9-HxCDD	28.936	19514711	1.26							
1,2,3,4,6,7-HxCDD	31.878	19463364	1.24							
1,2,3,4,8,9-HxCDF	32.197	23684531	1.23							
1,2,3,4,6,7,9-HpCDD	33.835	17500785	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 16-Mar-2021 23:40:35 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 031621B WDM HRDXNCP_00042
Misc. Info.: 16MR21B10D5
Operator ID: ALM Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 13:40:55 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1668

First Level Reviewer: stephensk Date: 17-Mar-2021 10:54:27

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.007	17.007	0	1.000	14525102	3605800	7834	19585	460		
317.9389	17.007	17.007	0	1.000	18295992	4580888	3654	9135	1254	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.043	0	1.002	30150391	7142762	9271	23177	770		
305.8987	17.037	17.043	0	1.002	39298608	9249273	12197	30492	758	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.735						9271	23177			
305.8987	16.735						12197	30492			
13C-2,3,7,8-TCDD											
331.9368	17.702	17.702	0	1.000	8427909	2038969	3325	8312	613		
333.9339	17.702	17.702	0	1.000	12254319	2989635	1815	4537	1647	0.69(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.718	17.733	-1	1.001	10657708	2594171	4881	12202	531		
321.8936	17.718	17.733	-1	1.001	13803437	3403799	6843	17107	497	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.181						4881	12202			
321.8936	17.181						6843	17107			
A F1 PeCDFs											
339.8597	19.524						678	1695			
341.8567	19.524						1030	2575			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	20.560	22.600	-122	1.000	51708	9071	2099	5247	4		
341.8567	20.573	22.600	-121	1.000	29945	5685	1499	3747	4	1.73(1.32-1.78)	
339.8597	21.392	22.600	-72	1.000	59413	9659	2099	5247	5		
341.8567	21.392	22.600	-72	1.000	50412	9339	1499	3747	6	1.18(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	21.923	22.600	-40	1.000	101416	16026	2099	5247	8		
341.8567	21.964	22.600	-38	1.000	73944	9312	1499	3747	6	1.37(1.32-1.78)	
339.8597	22.496	22.600	-6	1.000	94568	13474	2099	5247	6		
341.8567	22.496	22.600	-6	1.000	56762	8770	1499	3747	6	1.67(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.878						2085	5212			
357.8516	22.878						1224	3060			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.795						2868	7170			
375.8178	29.795						2223	5557			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8157	30.613	30.440	10	1.000	115527	21932	2182	5455	10		
391.8127	30.626	30.440	11	1.000	78937	15749	1966	4915	8	1.46(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.600	0	1.000	11727394	4130319	10932	27330	378		
409.7789	33.592	33.600	0	1.000	11070010	3865661	10150	25375	381	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.661	34.669	0	1.000	9406805	2896995	10932	27330	265		
409.7789	34.661	34.669	0	1.000	8797200	2740710	10150	25375	270	1.07(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.127						10932	27330			
409.7789	34.127						10150	25375			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.387	0	1.000	7860625	2583979	9062	22655	285		
425.7737	34.382	34.387	0	1.000	7484836	2422365	7940	19850	305	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.460						9062	22655			
425.7737	34.460						7940	19850			
1,3,6,8-TCDF											
303.9016	14.663	14.663	0		16729360	5228586	9271	23177	564		
305.8987	14.663	14.663	0		21919256	6747981	12197	30492	553	0.76(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.555	15.555	0		10791737	3221996	4881	12202	660		
321.8936	15.555	15.555	0		13998213	4159302	6843	17107	608	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.037	17.037	0		30221738	7147544	9271	23177	771		
305.8987	17.037	17.037	0		39399886	9256062	12197	30492	759	0.77(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.612	17.612	0		9799653	2432454	4881	12202	498		
321.8936	17.612	17.612	0		12775212	3132171	6843	17107	458	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	17.884	17.884	0		11078774	2659475	4881	12202	545		
321.8936	17.884	17.884	0		14228187	3409638	6843	17107	498	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	17.884	17.884	0		13109206	3117336	9271	23177	336		
305.8987	17.884	17.884	0		16960574	4026669	12197	30492	330	0.77(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	18.806	18.806	0		10135708	2265733	4881	12202	464		
1,2,8,9-TCDF											
303.9016	18.806	18.806	0		13530130	3056594	9271	23177	330		
305.8987	18.806	18.806	0		17342197	3934964	12197	30492	323	0.78(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.078	19.078	0		18811136	4098404	678	1695	6045		
341.8567	19.078	19.078	0		11753226	2609108	1030	2575	2533	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	20.819	20.819	0		12555588	2229060	2085	5212	1069		
357.8516	20.819	20.819	0		7884130	1419110	1224	3060	1159	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	24.937	24.937	0		12063456	1805399	2085	5212	866		
357.8516	24.937	24.937	0		7641362	1141529	1224	3060	933	1.58(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.155	25.155	0		15161001	2190011	2099	5247	1043		
341.8567	25.155	25.155	0		9467796	1356512	1499	3747	905	1.60(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.392	27.392	0		13895495	1814100	2868	7170	633		
375.8178	27.392	27.392	0		11280689	1475936	2223	5557	664	1.23(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	28.936	28.936	0		10887697	1336566	2182	5455	613		
391.8127	28.936	28.936	0		8627014	1089672	1966	4915	554	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.878	31.878	0		10764820	2928975	2182	5455	1342		
391.8127	31.878	31.878	0		8698544	2308160	1966	4915	1174	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.197	32.197	0		13080505	3699236	2868	7170	1290		
375.8178	32.197	32.197	0		10604026	3055575	2223	5557	1375	1.23(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.835	33.835	0		8904753	3059360	9062	22655	338		
425.7737	33.835	33.835	0		8596032	2944003	7940	19850	371	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 16-Mar-2021 23:40:35 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 470907 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 22.600

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021				
2,3,4,7,8-PeCDF	0.979				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.560	51708	9071	29945	5685		1.73	
21.392	59413	9659	50412	9339		1.18	R
21.923	101416	16026	73944	9312		1.37	
22.496	94568	13474	56762	8770		1.67	
Signal Totals:							
	307105	48230	211063	33106			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	518168	81336				1.46	RQ
	506086	78228					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (518168 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (506086 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 16-Mar-2021 23:40:35 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: ALM
Lims Batch ID: 470907 Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 30.440

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.036				
1,2,3,6,7,8-HxCDD	0.966				
1,2,3,7,8,9-HxCDD	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.613	115527	21932	78937	15749		1.46	R
Signal Totals:							
	115527	21932	78937	15749			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	194464	37681				1.46	RQ
	176818	35277					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (194464 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (176818 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d
Injection Date: 16-Mar-2021 23:40:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

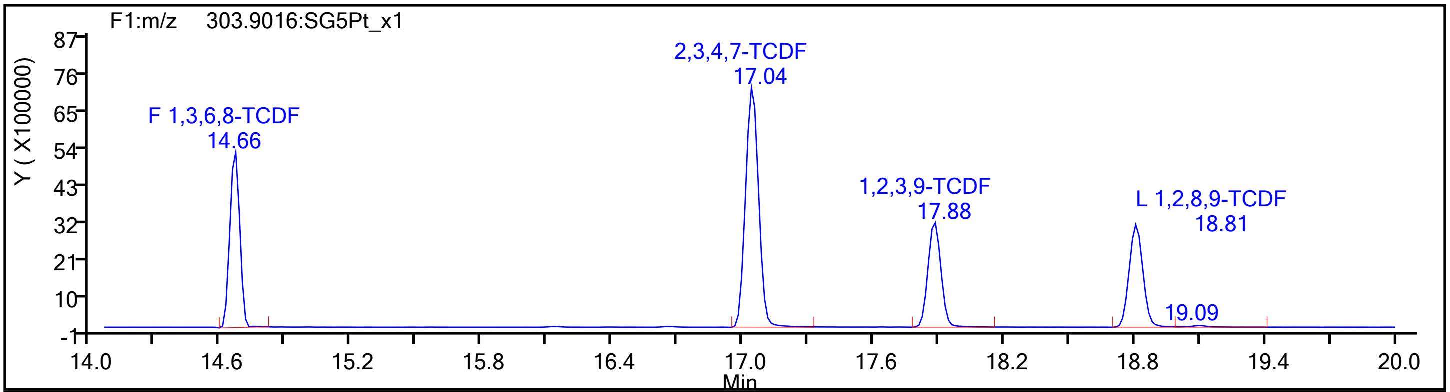

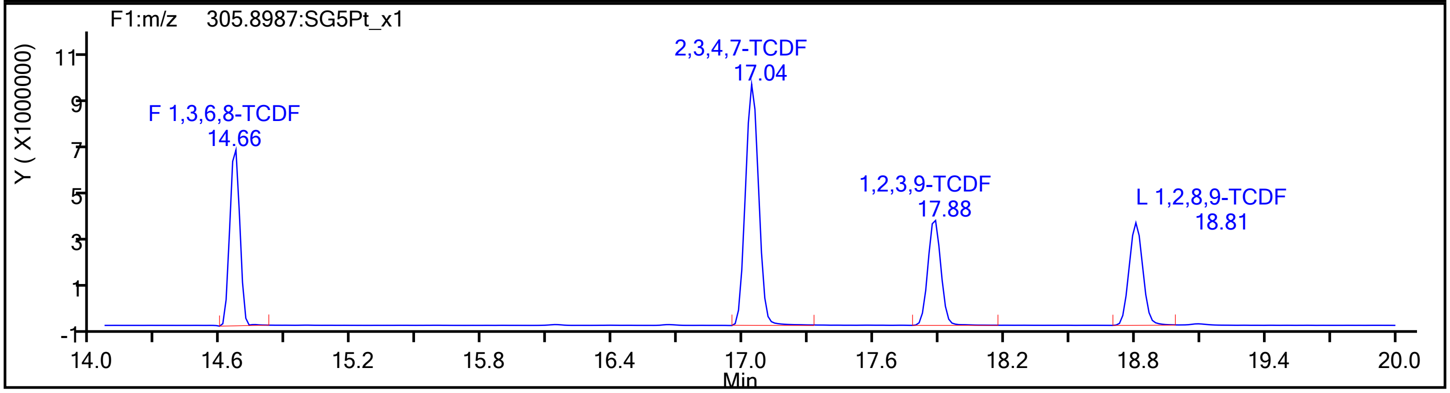

TCDF Standards

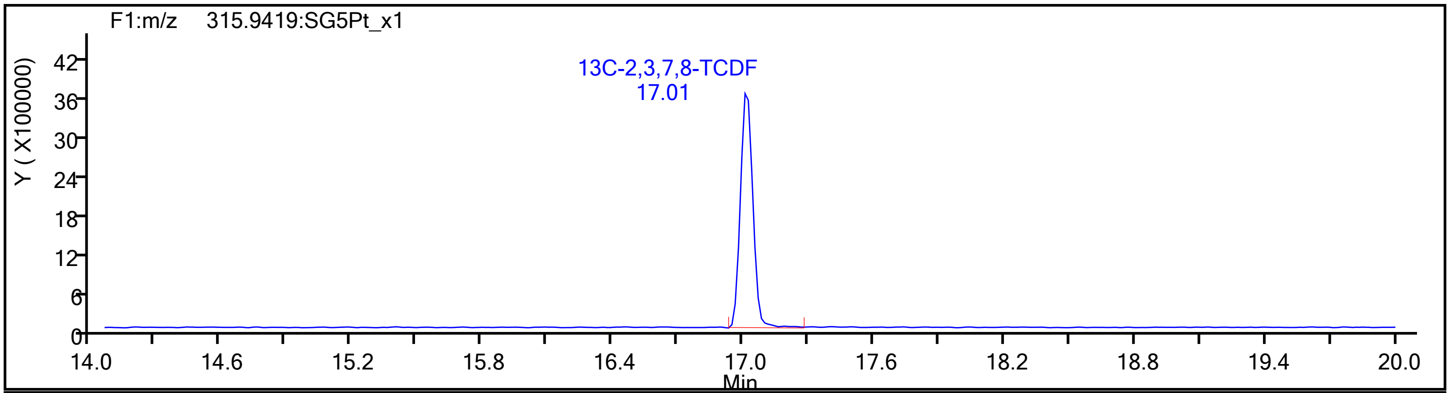

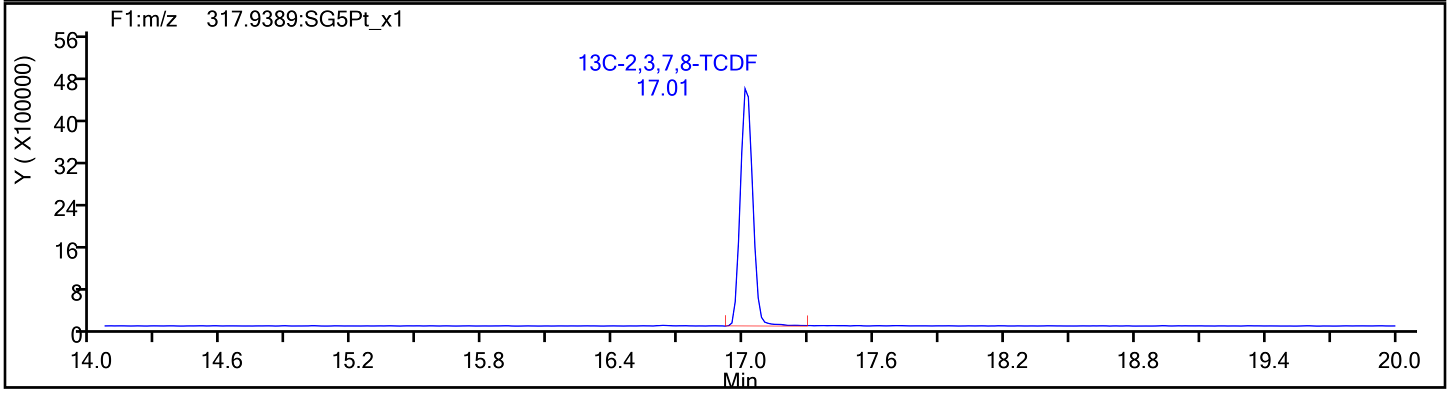

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d

Injection Date: 16-Mar-2021 23:40:35
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: ALM
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470907
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

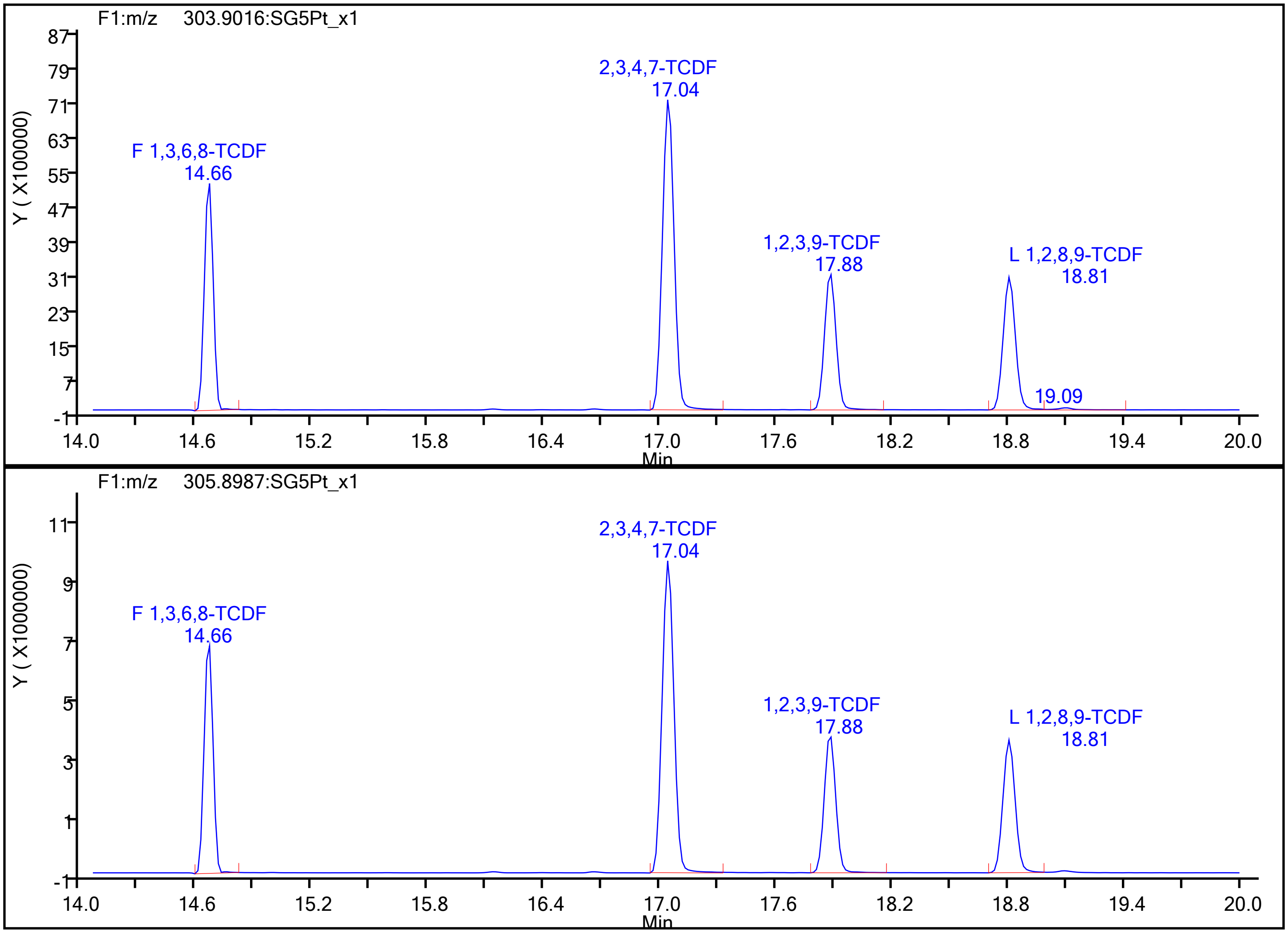

TCDF Interference Mass

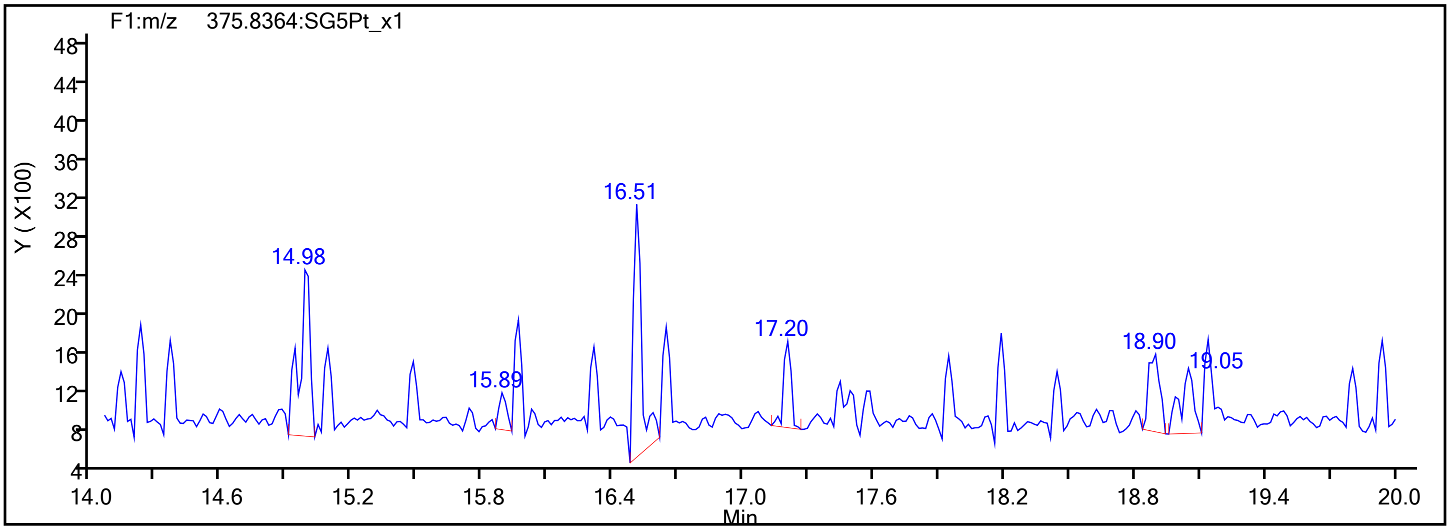

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d

Injection Date: 16-Mar-2021 23:40:35

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: ALM

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

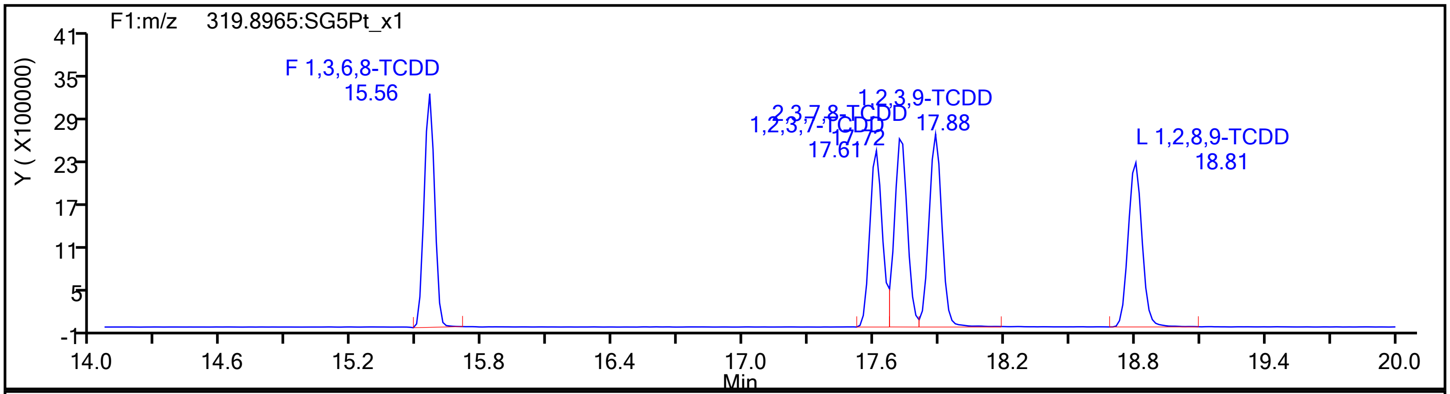

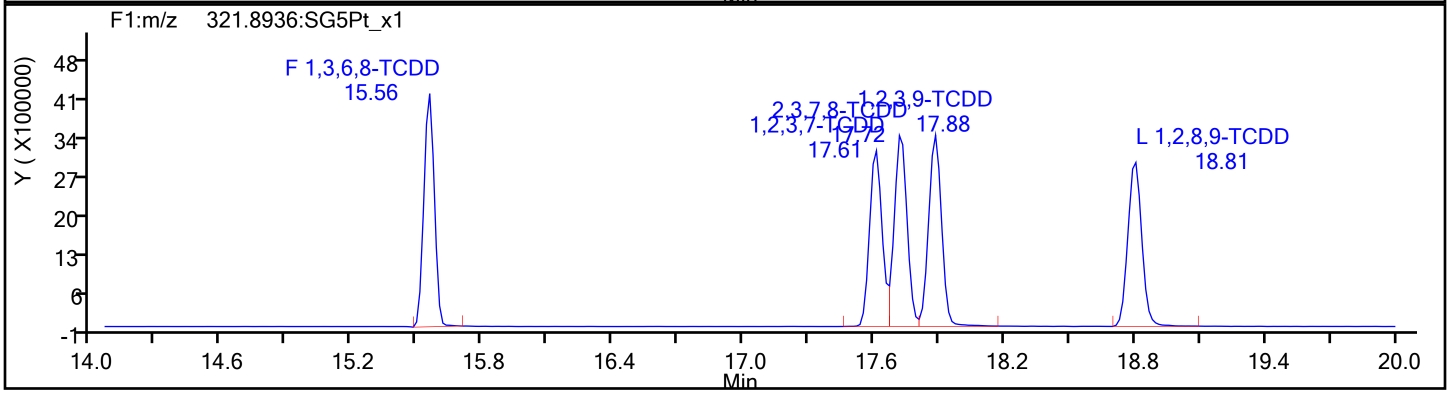

TCDD Standards

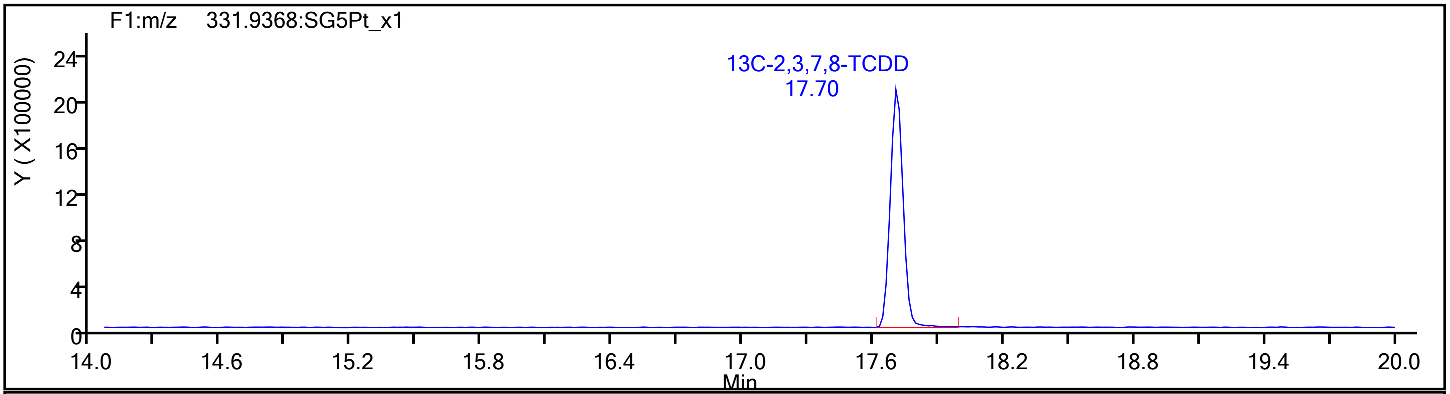

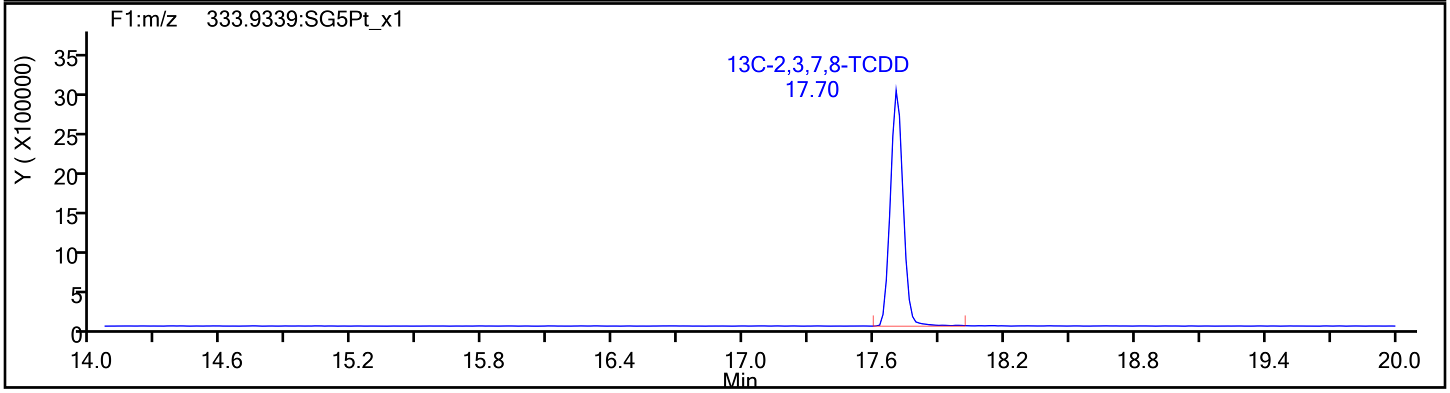

Report Date: 17-Mar-2021 13:40:59   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d

Injection Date:	16-Mar-2021 23:40:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

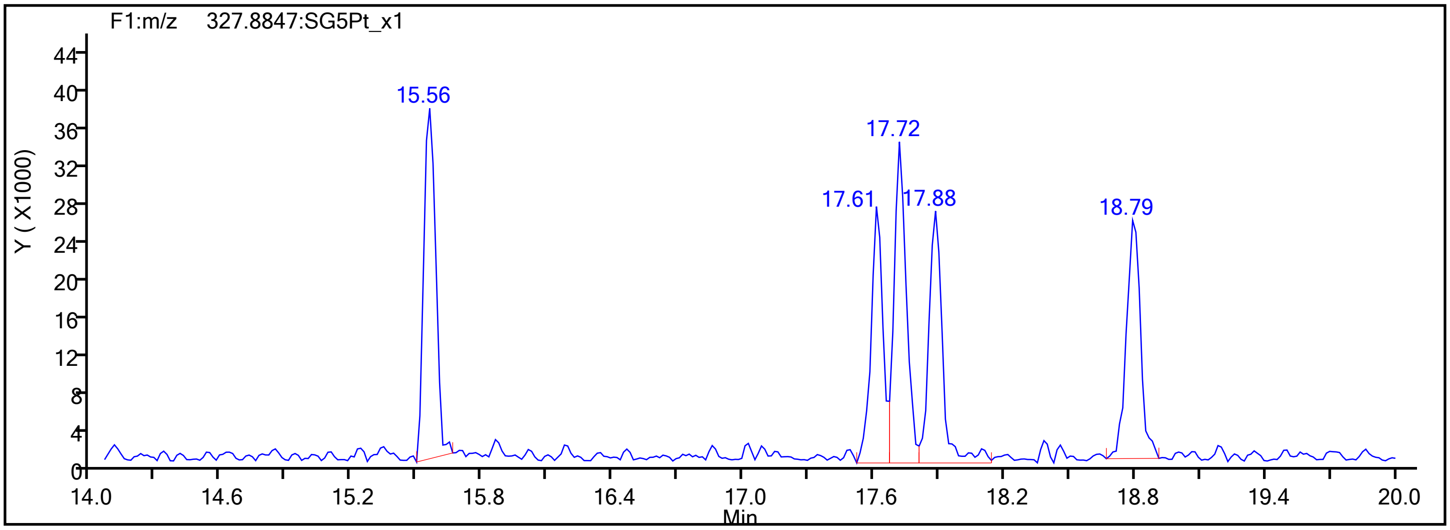

37Cl4-TCDD Standards

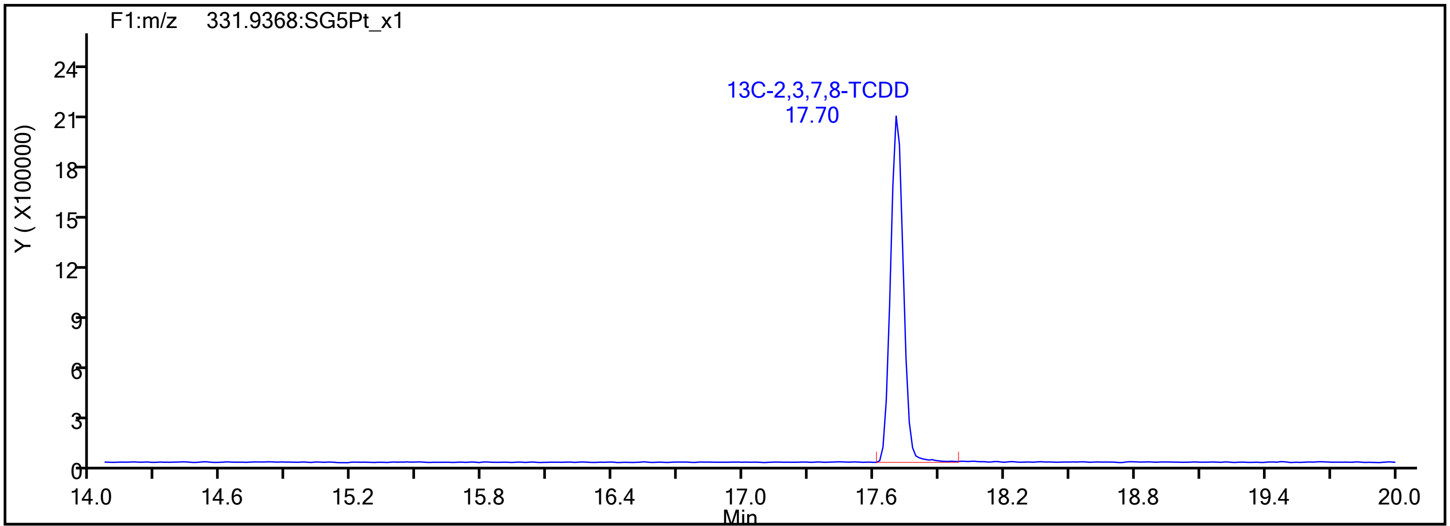

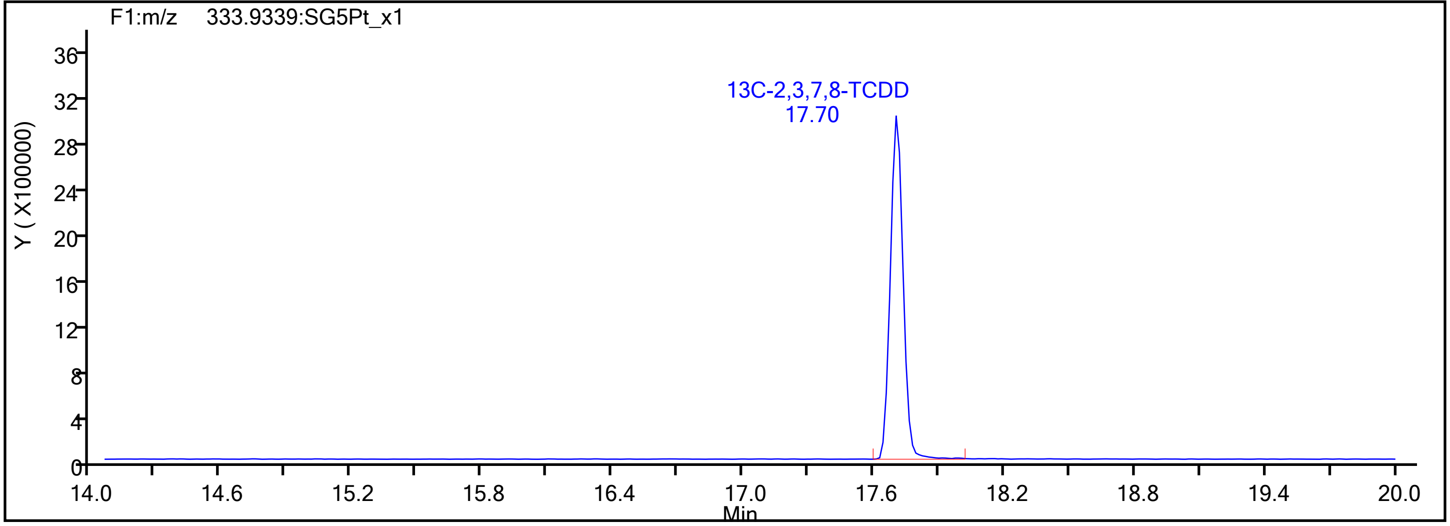

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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F1 PeCDFs

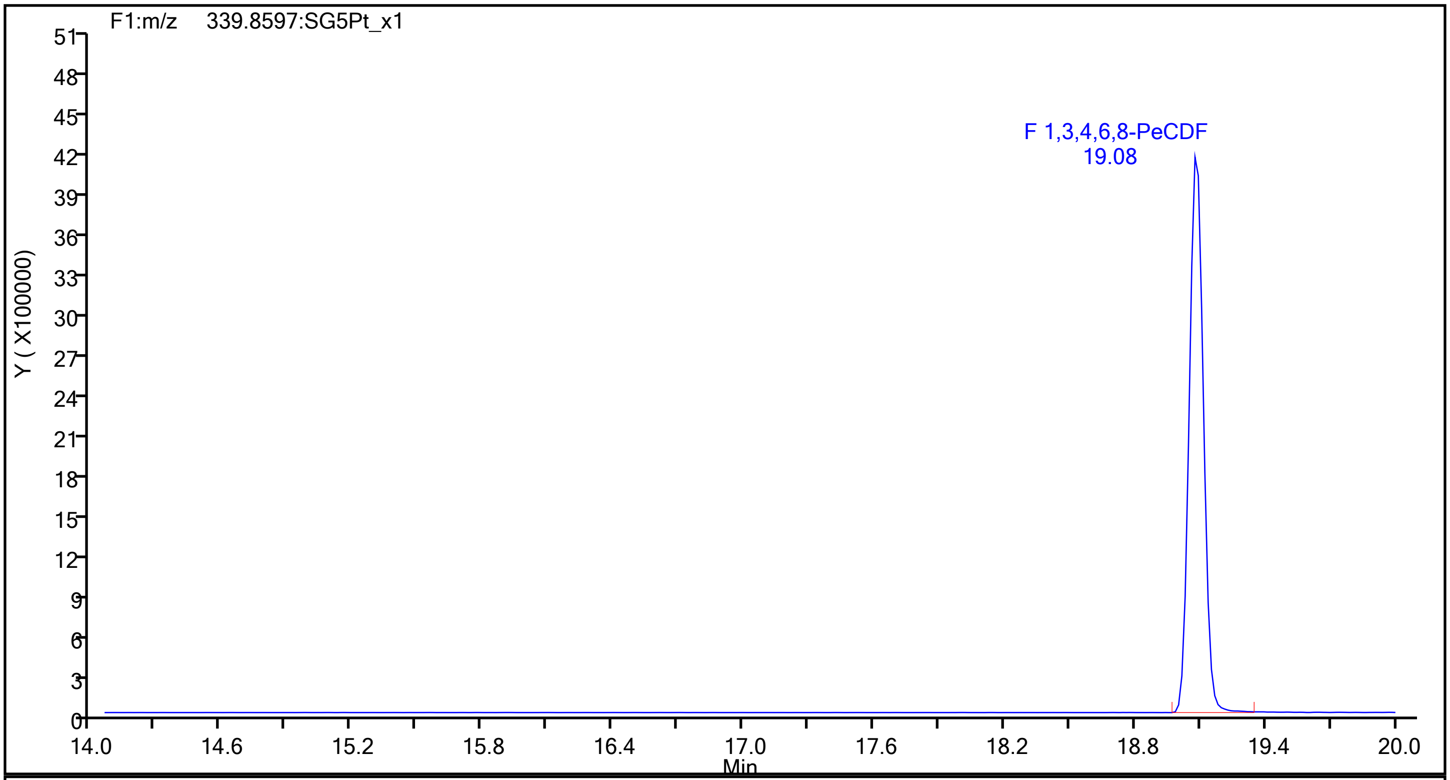

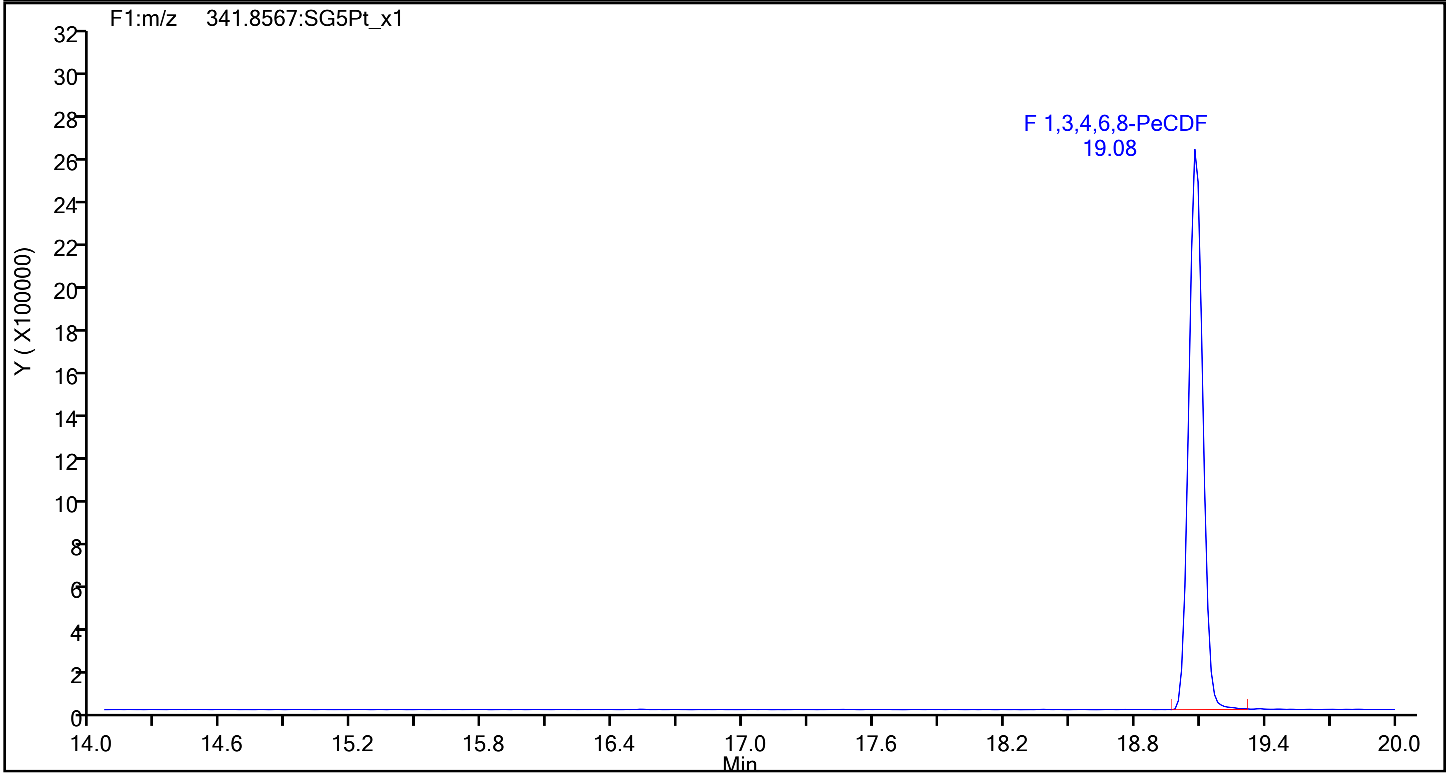

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

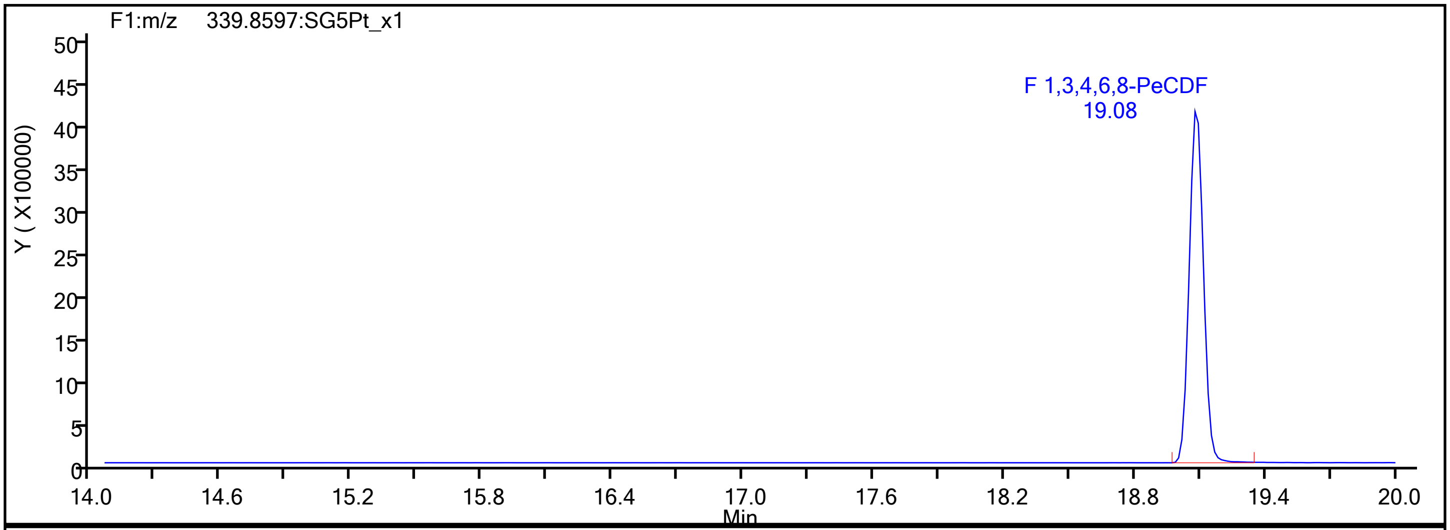

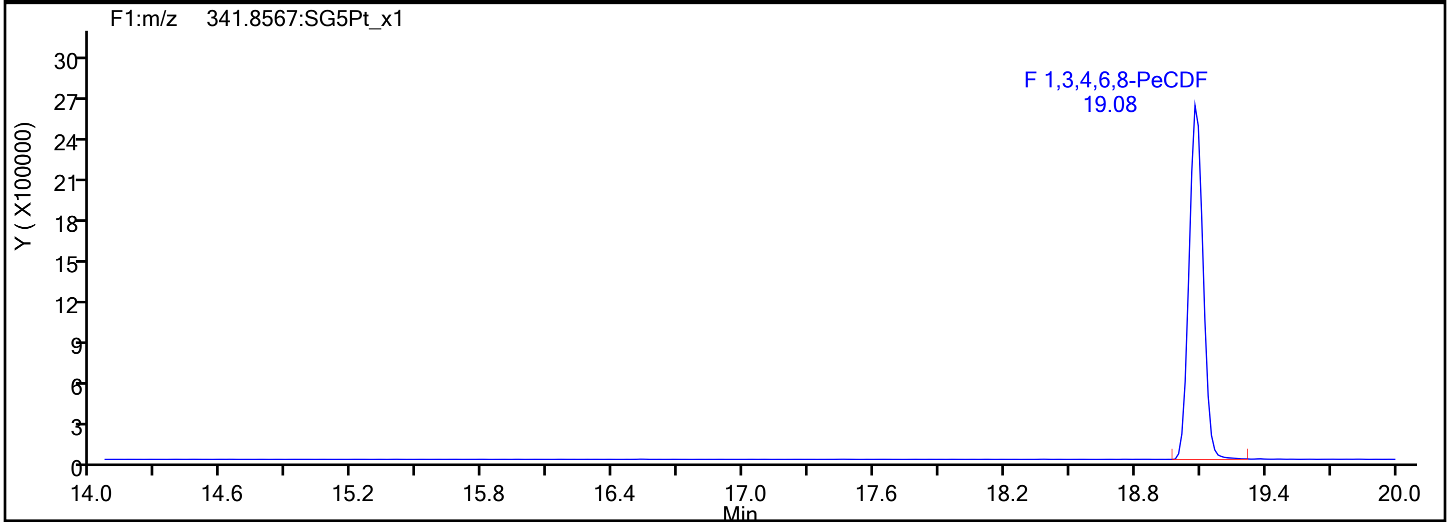

F1 PeCDFs Interference Mass

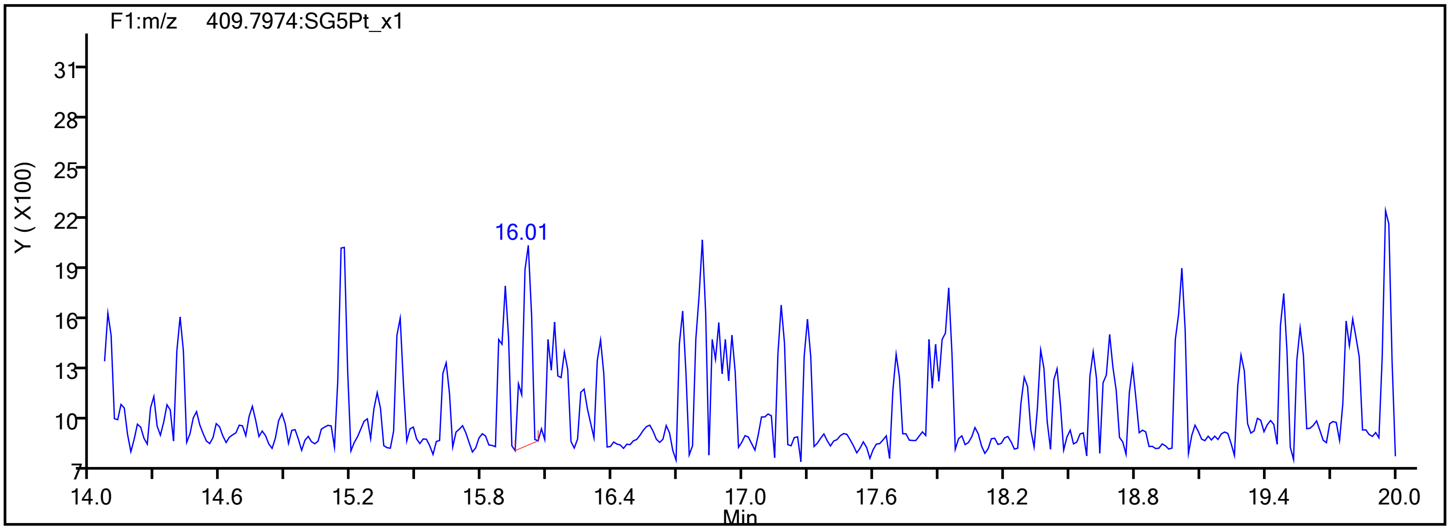

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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PeCDF

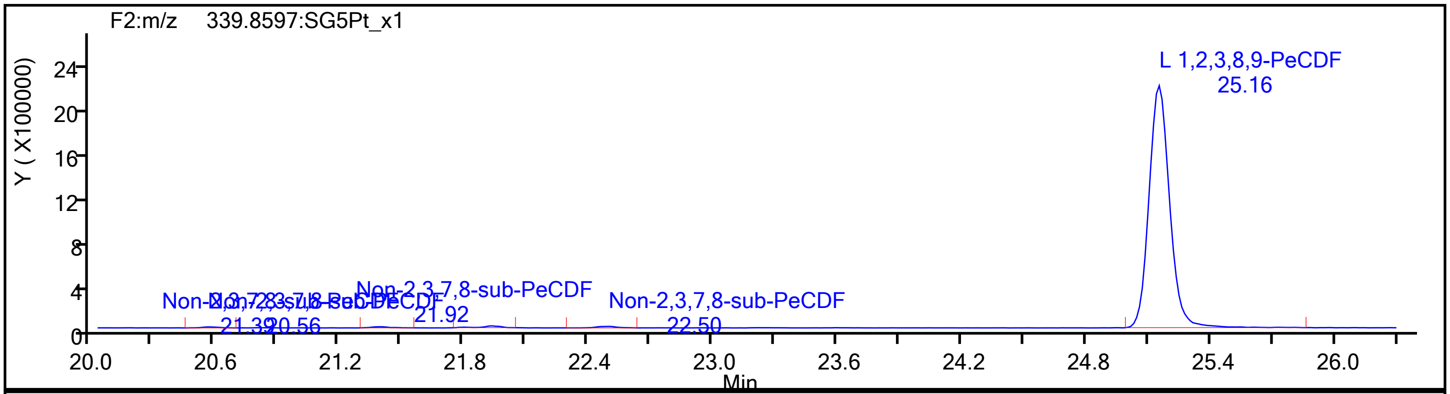

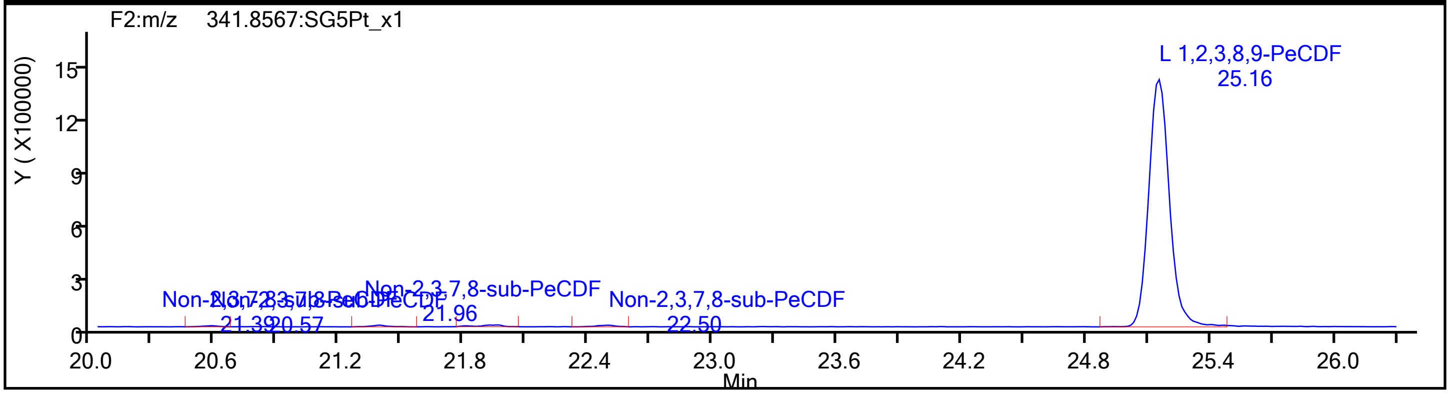

PeCDF Standards

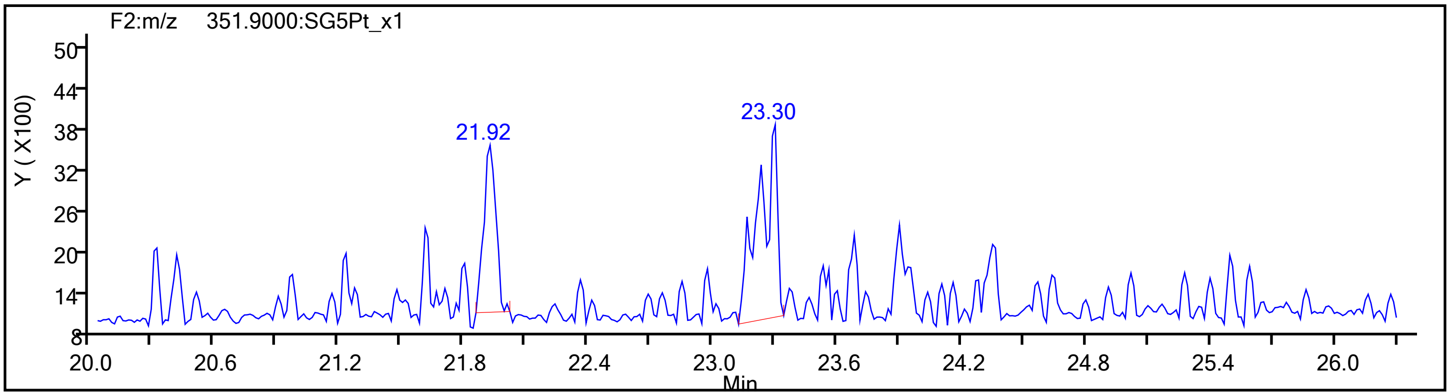

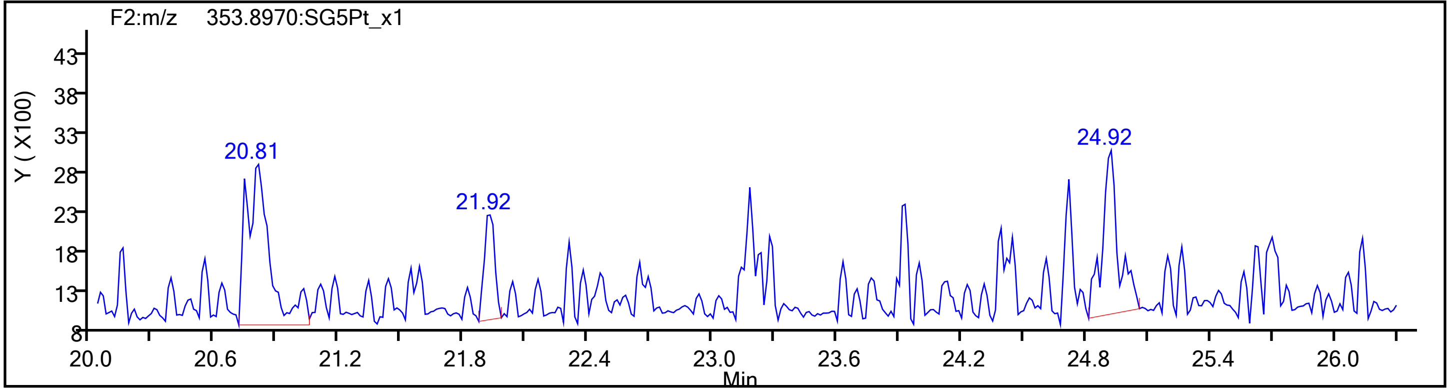

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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PeCDF

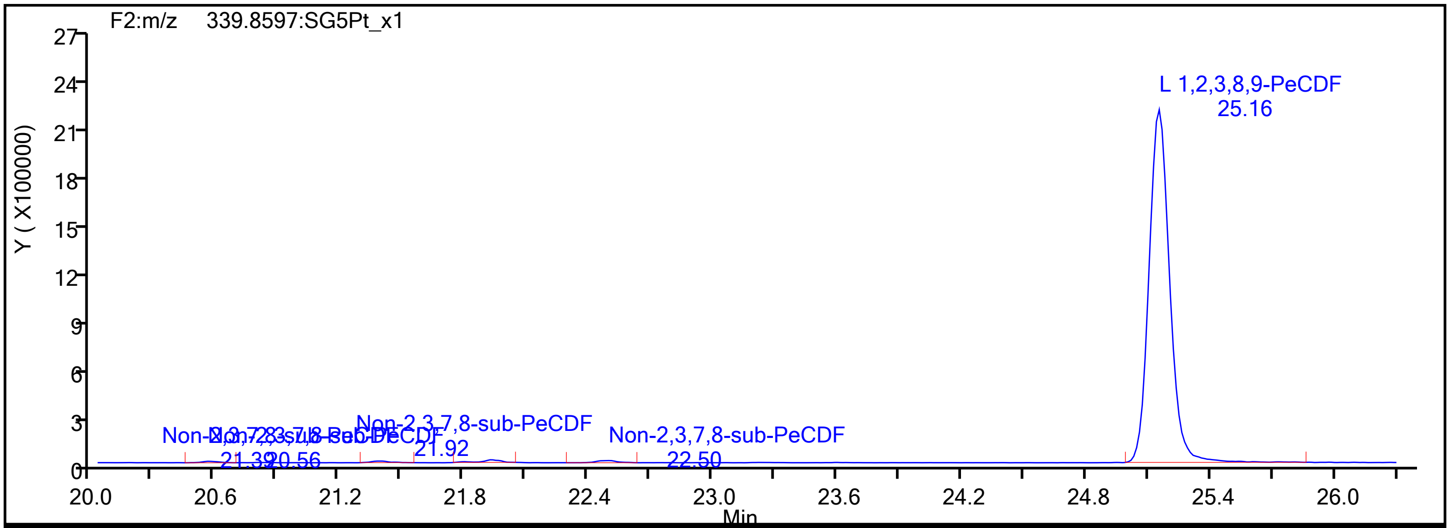

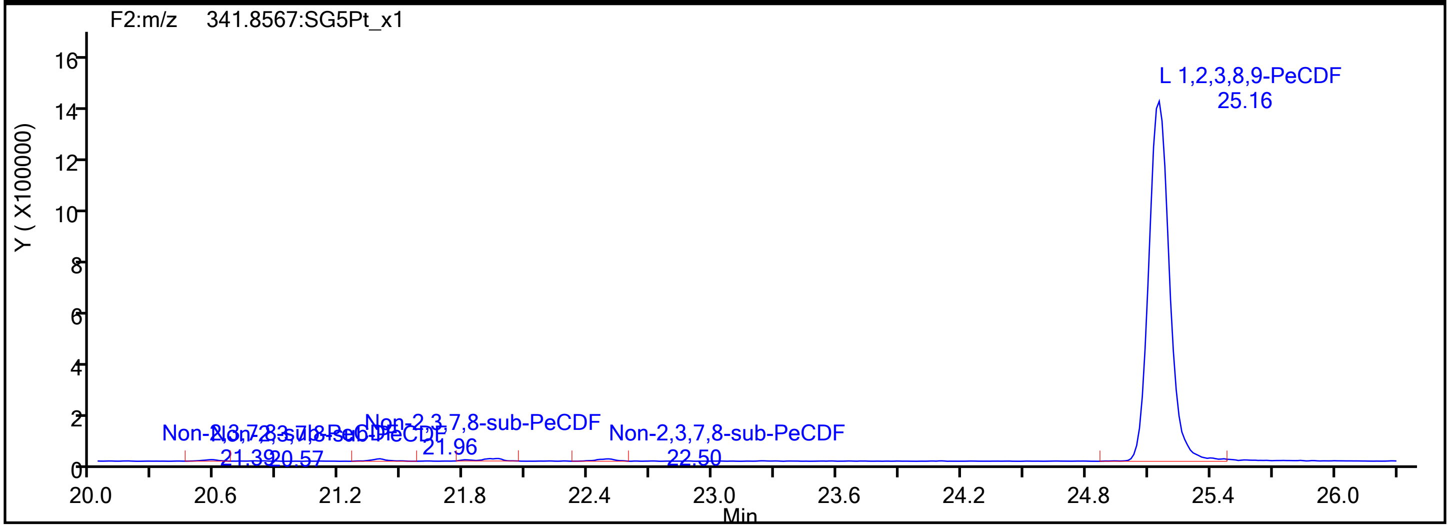

PeCDF Interference Mass

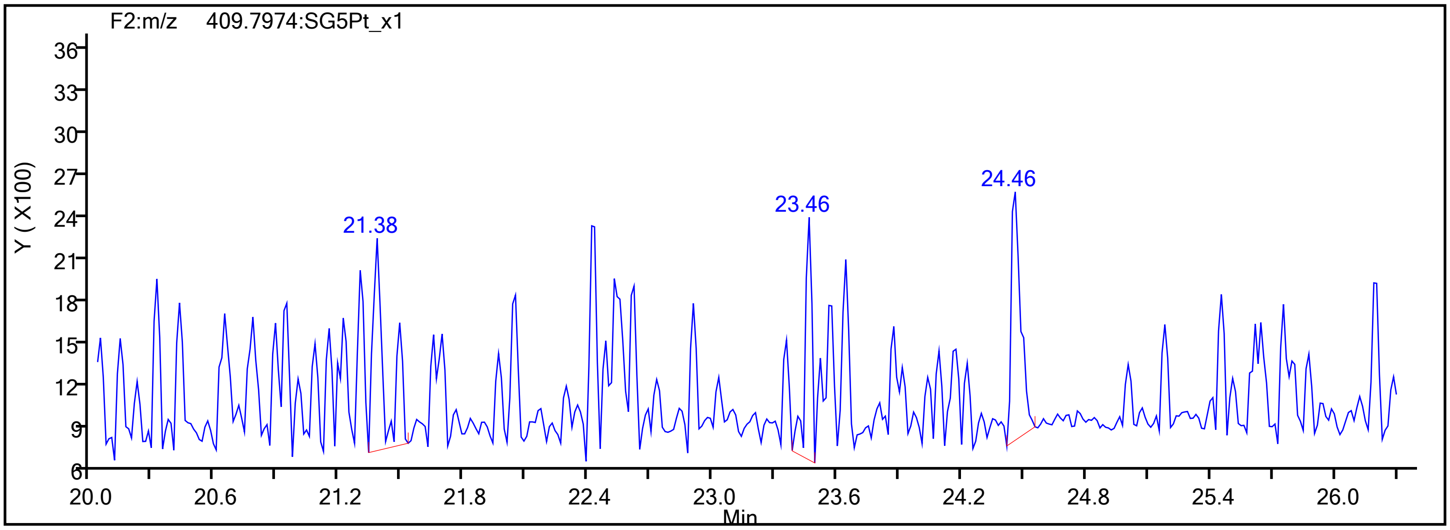

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

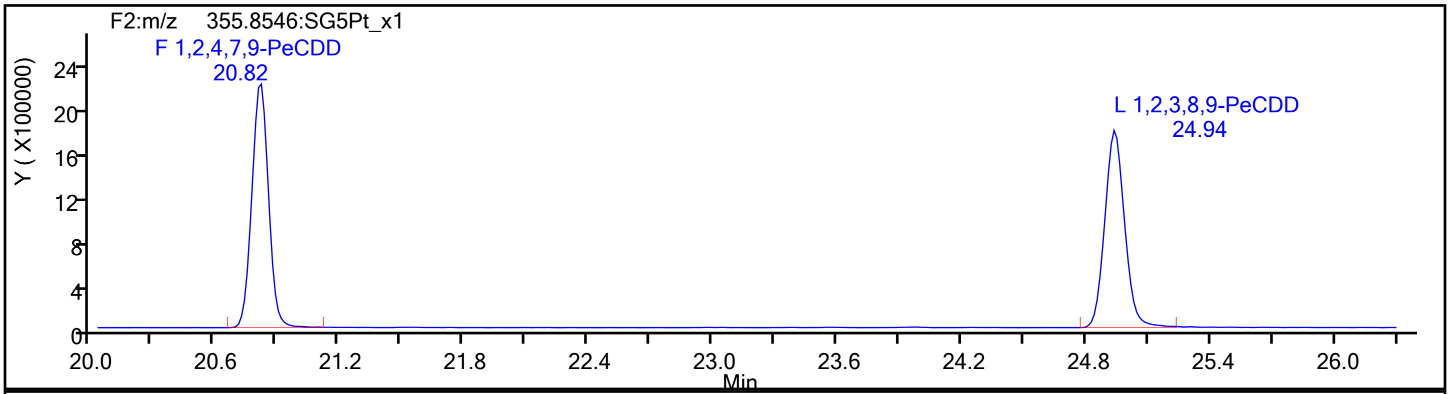

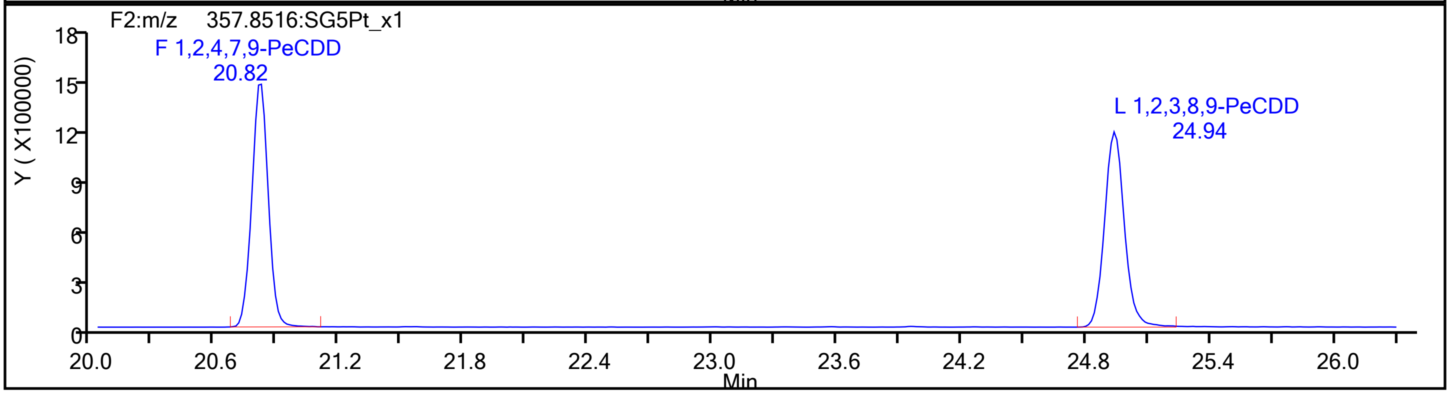

PeCDD Standards

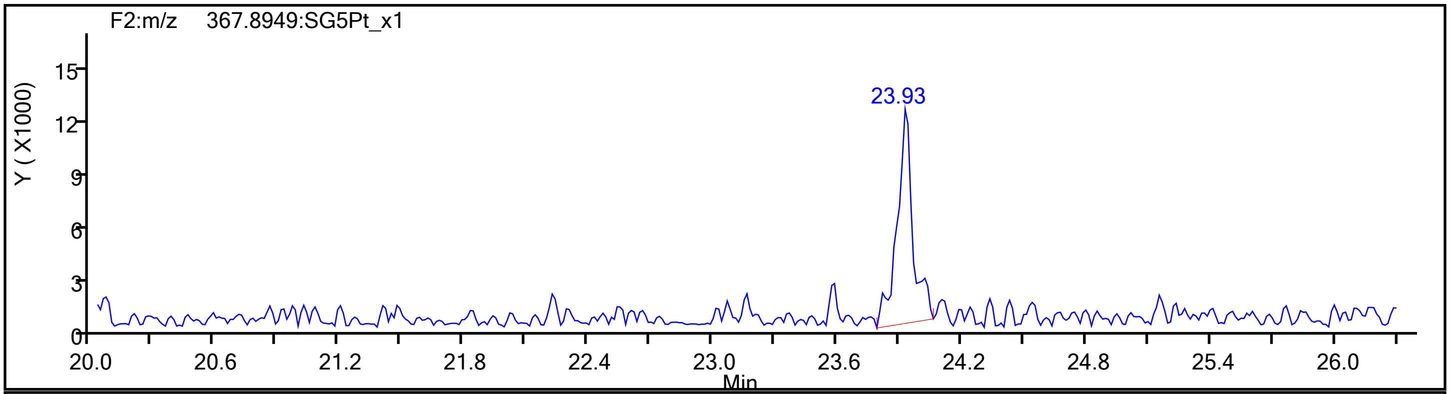

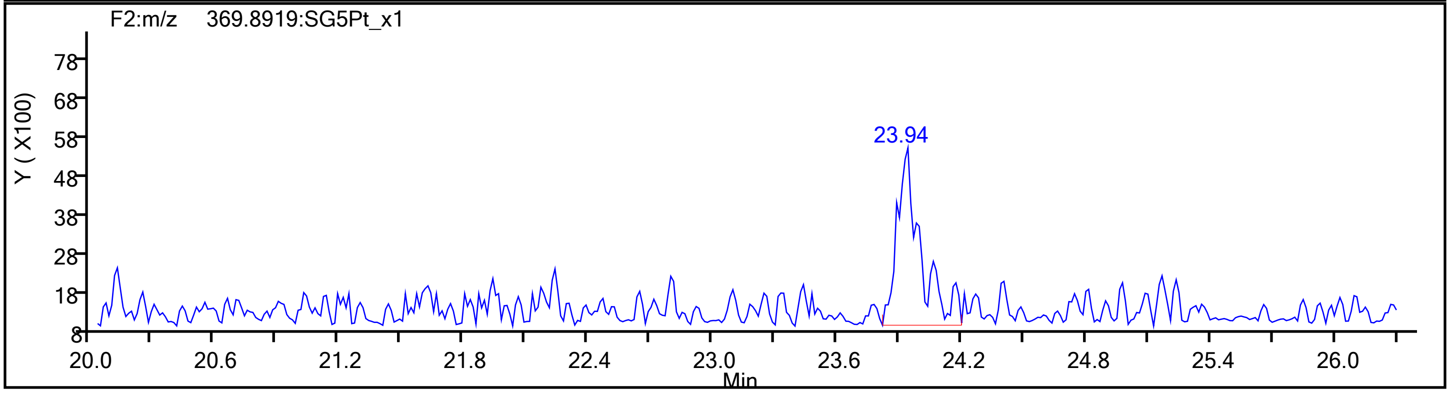

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 16-Mar-2021 23:40:35 Injection Vol: 2.0 ul
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Client ID:
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HxCDF

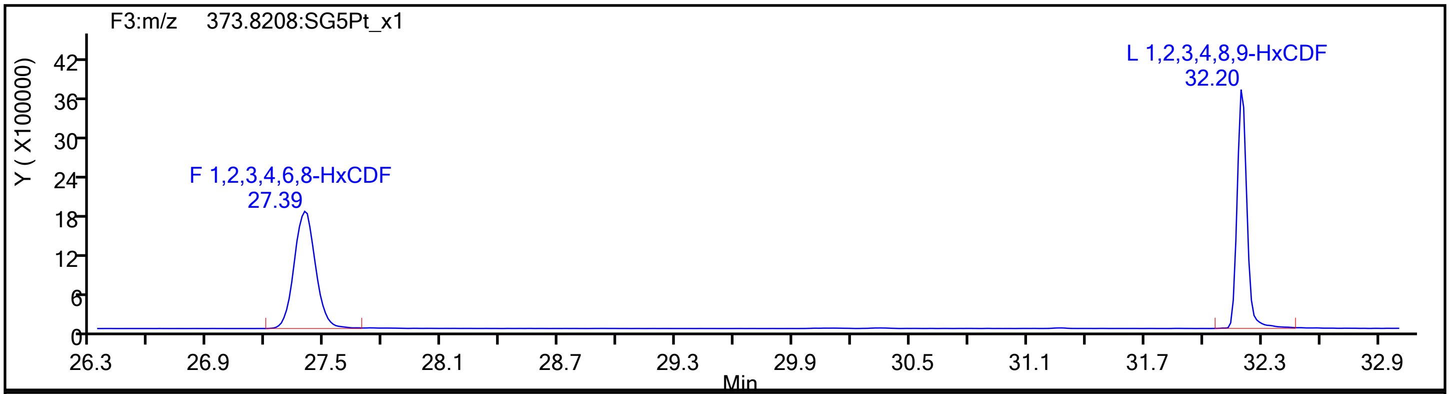

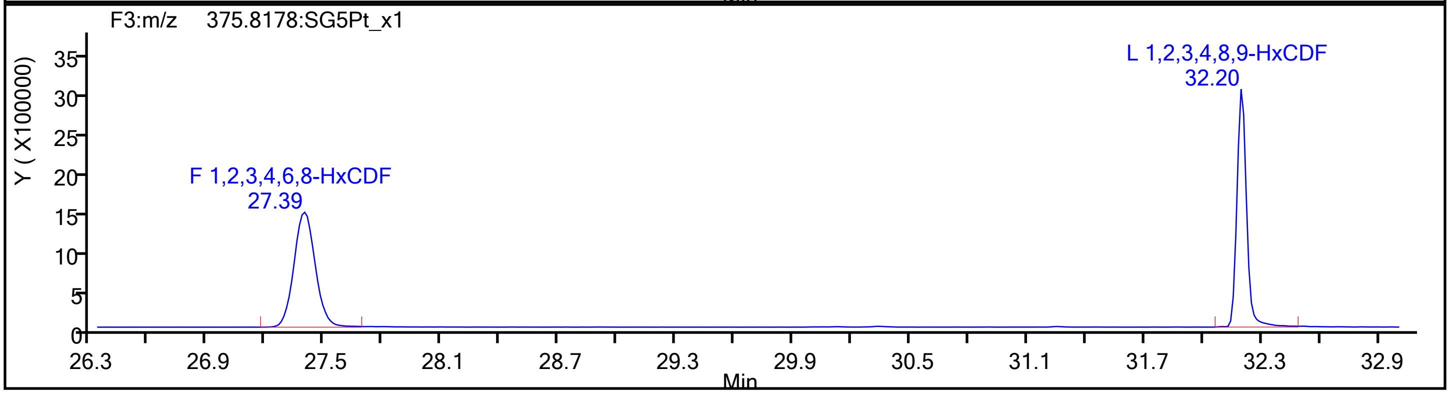

HxCDF Standards

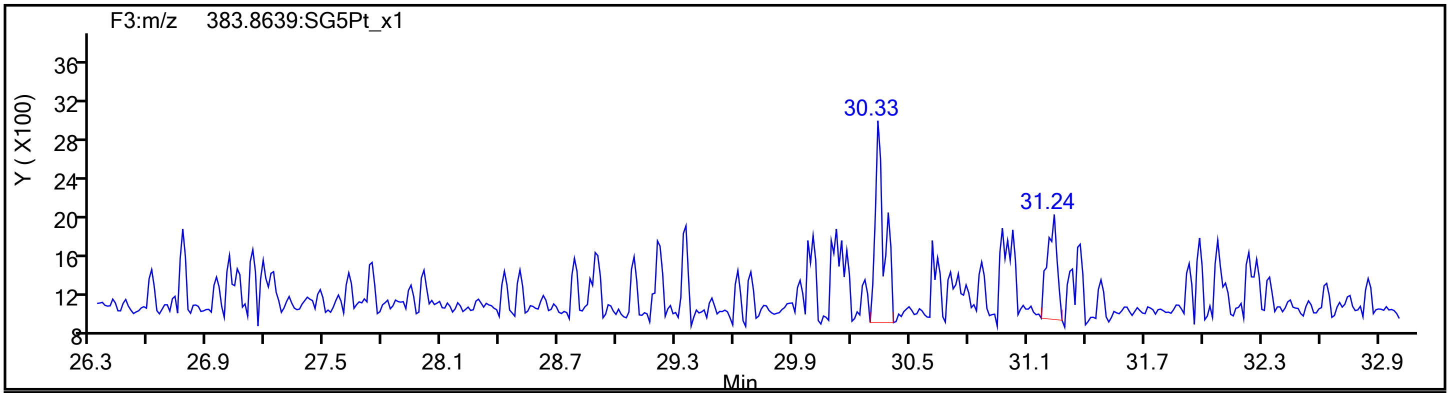

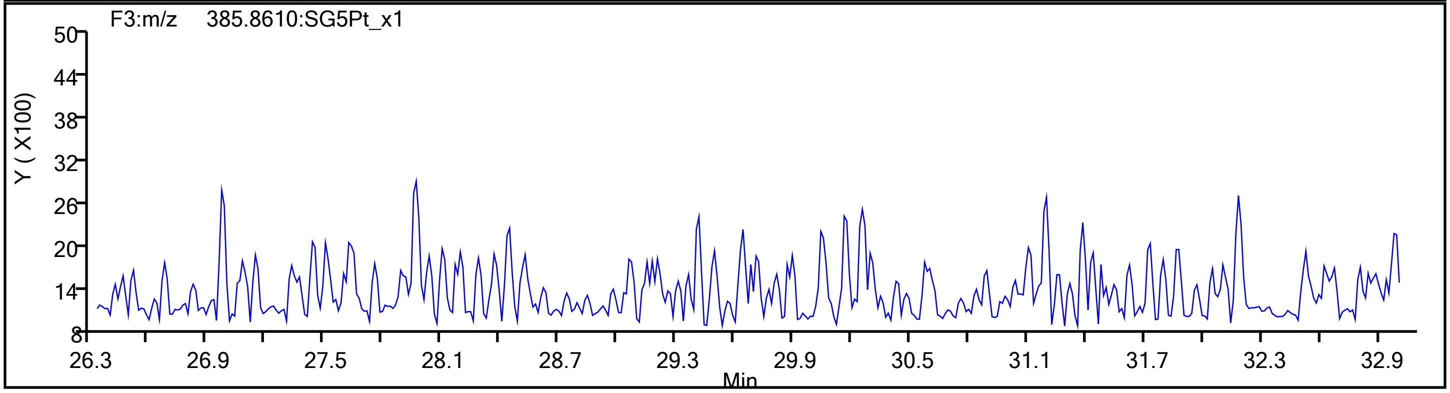

Report Date: 17-Mar-2021 13:40:59　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	16-Mar-2021 23:40:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	1
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HxCDF

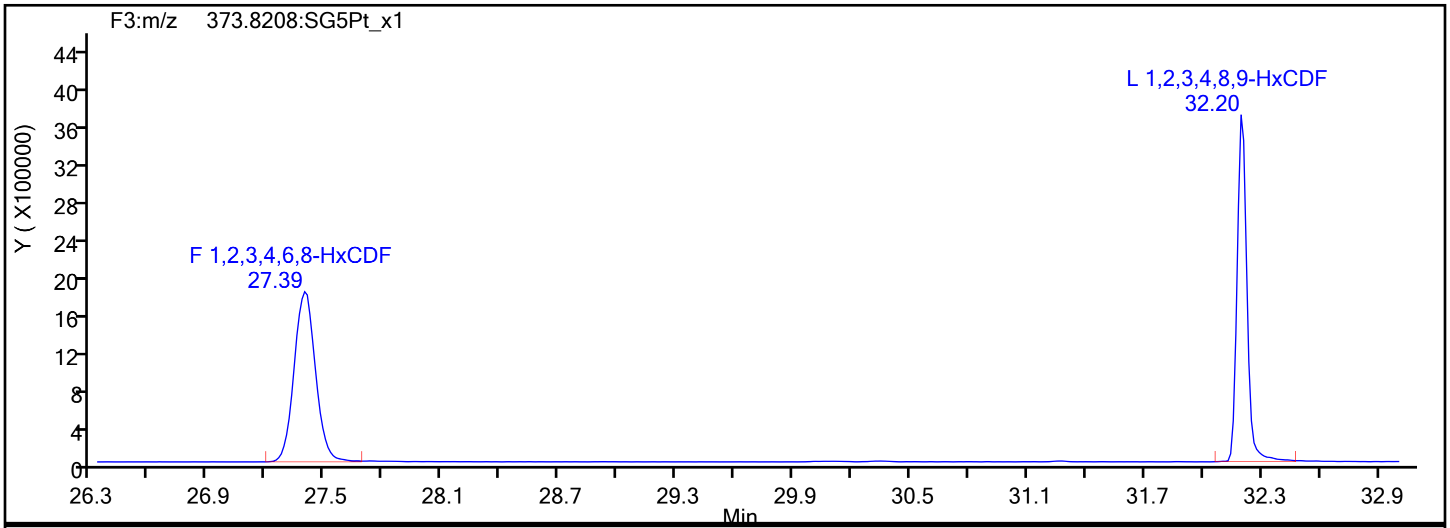

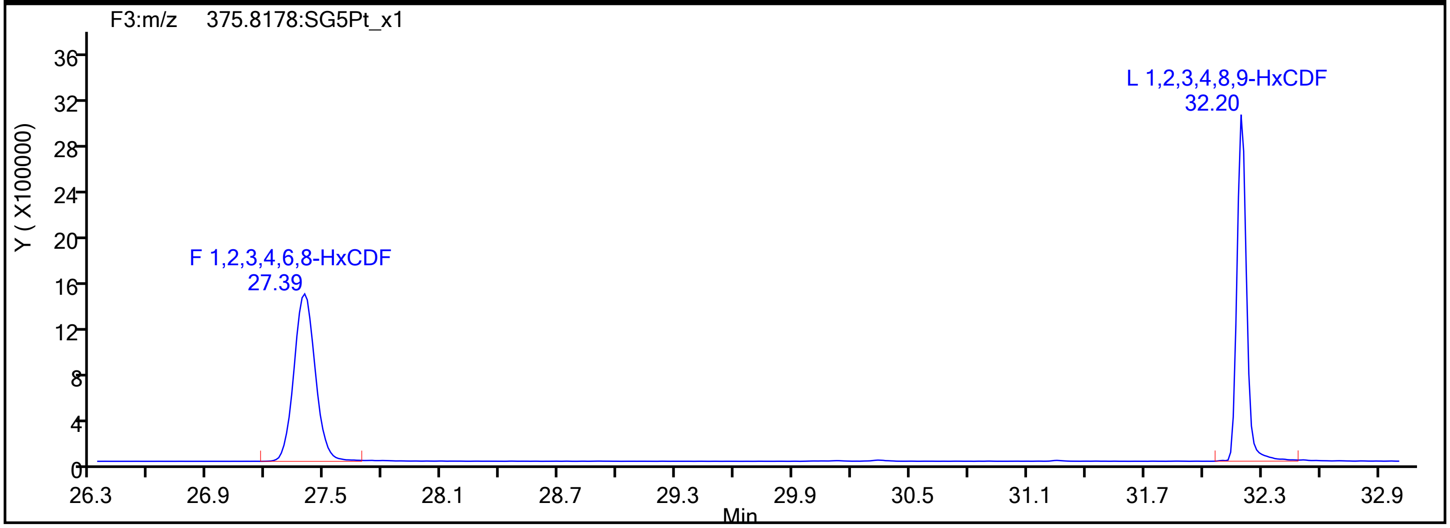

HxCDF Interference Mass

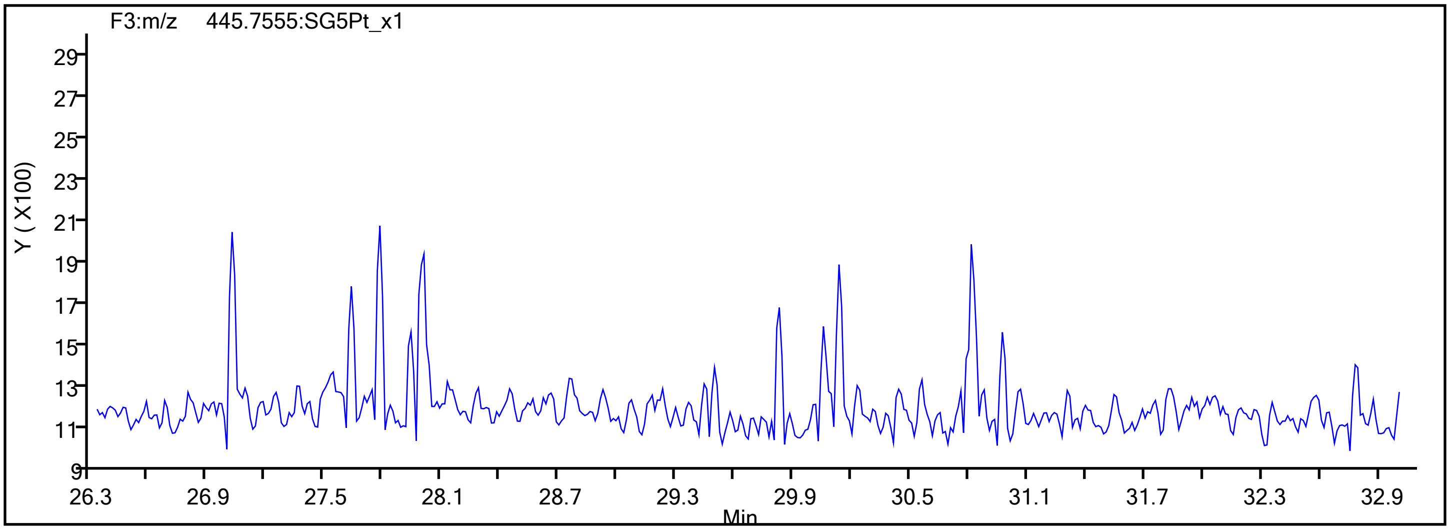

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date:	16-Mar-2021 23:40:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

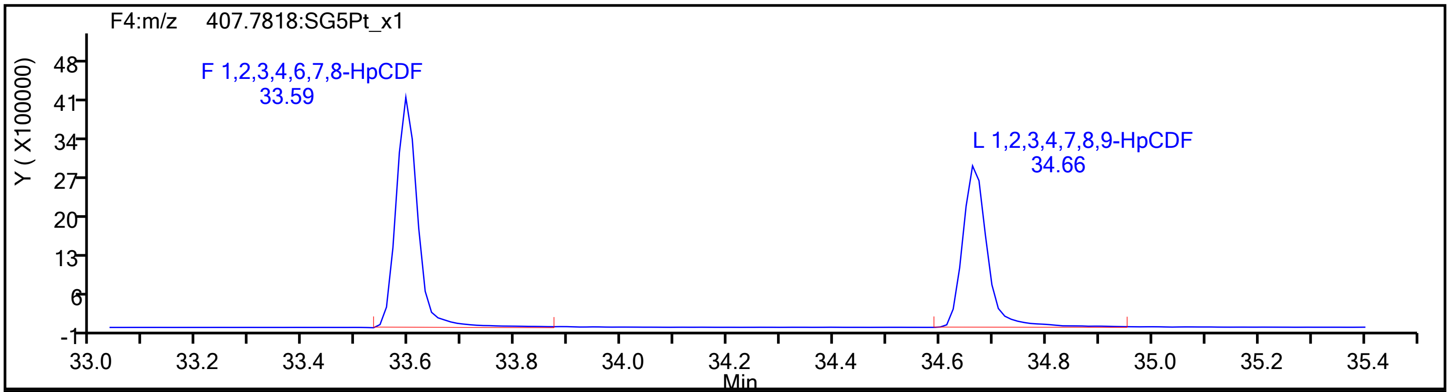

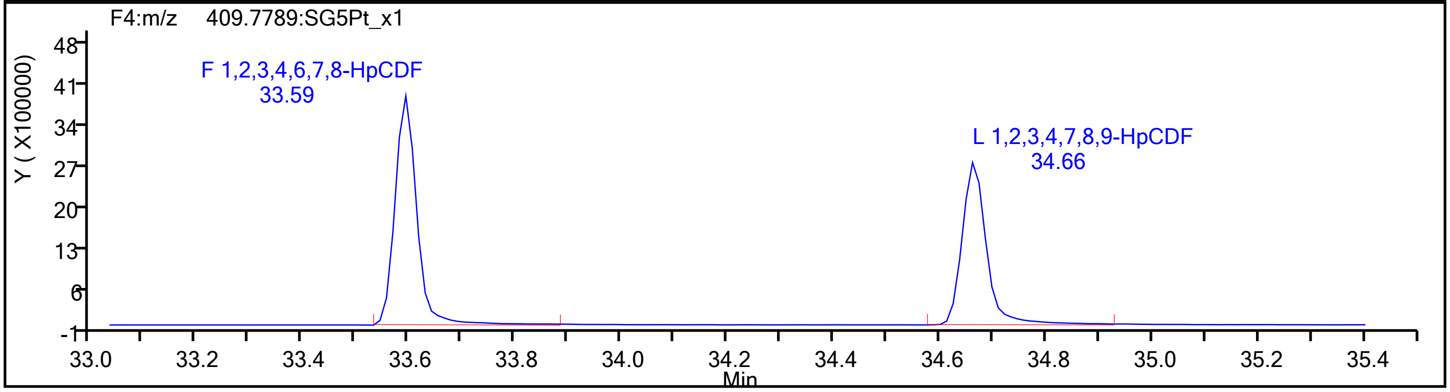

HpCDF Standards

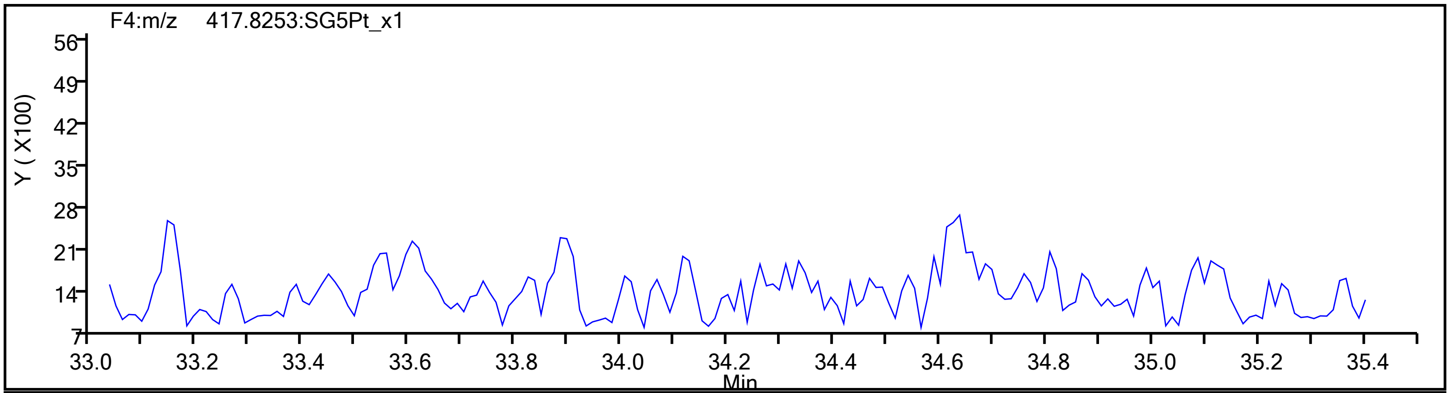

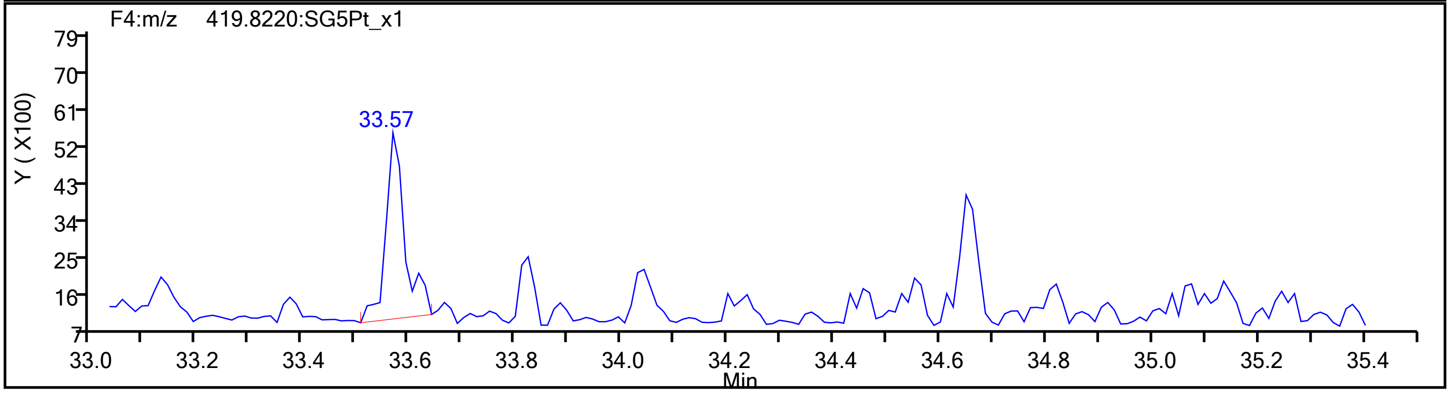

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

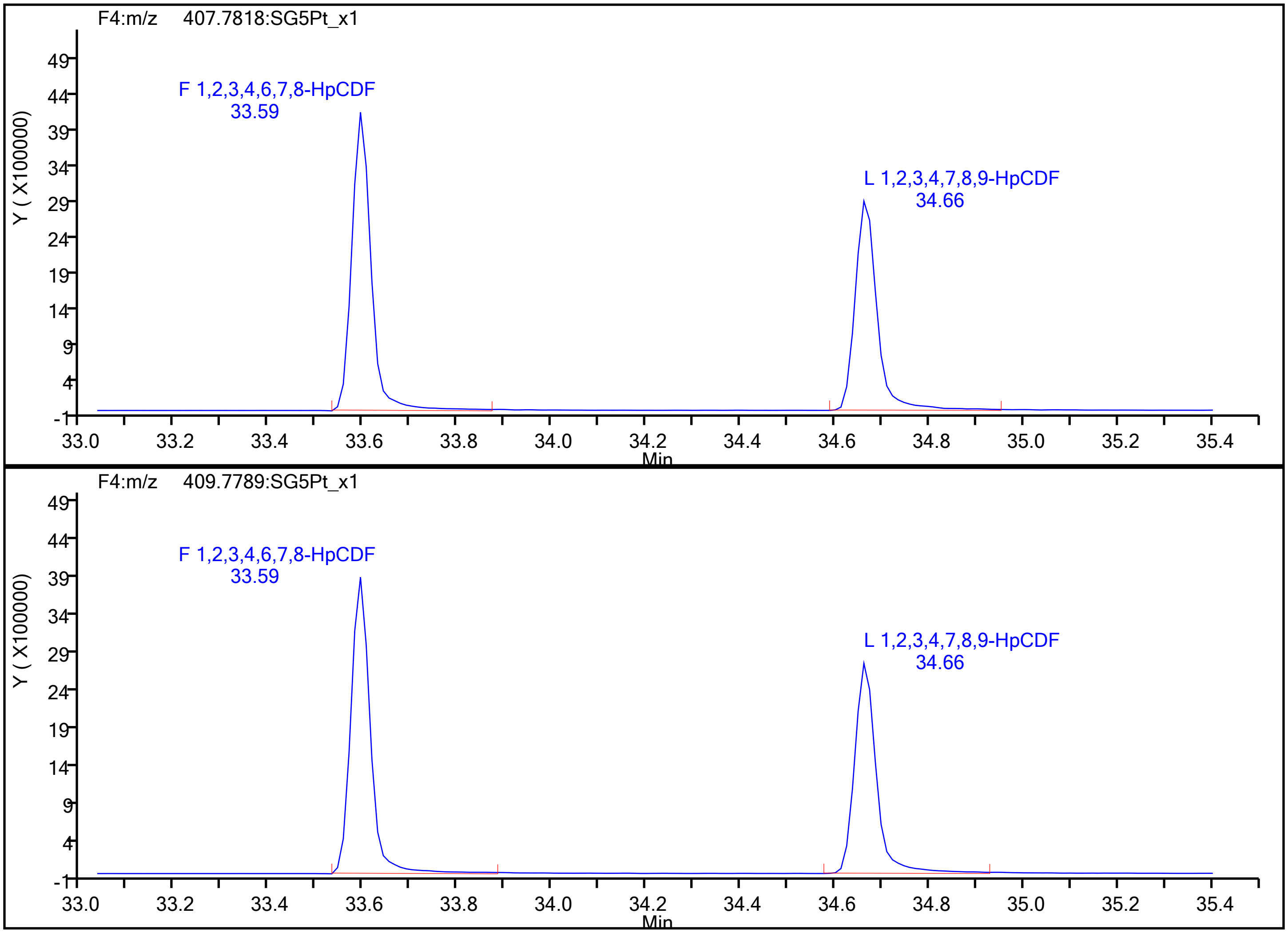

HpCDF Interference Mass

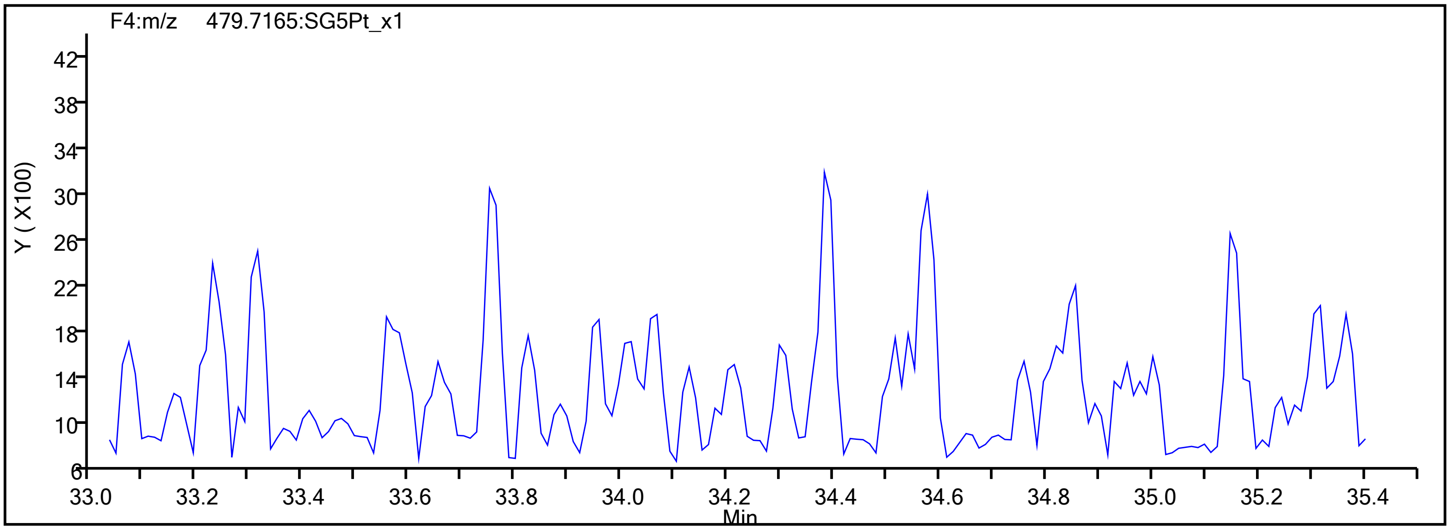

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDD

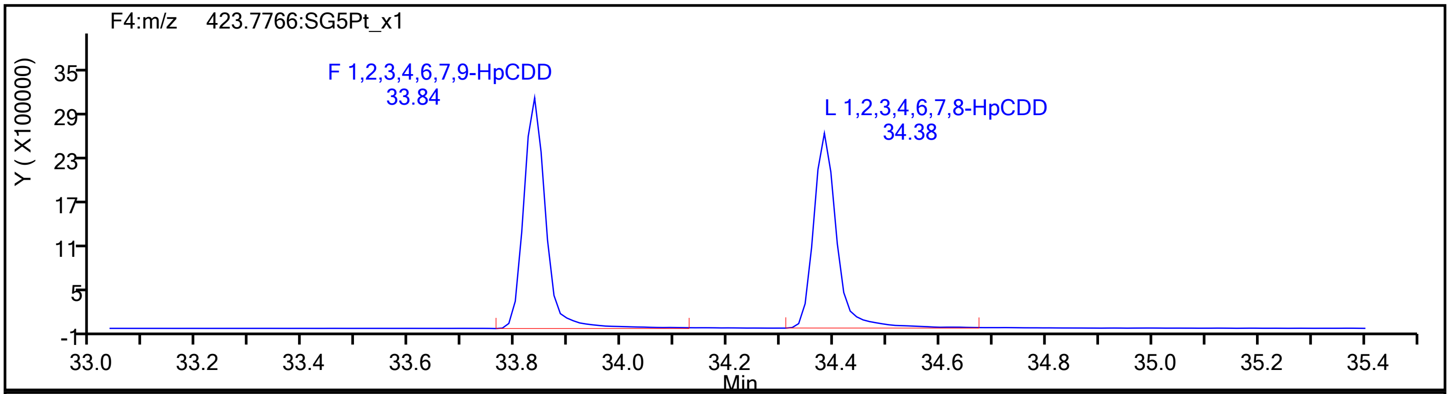

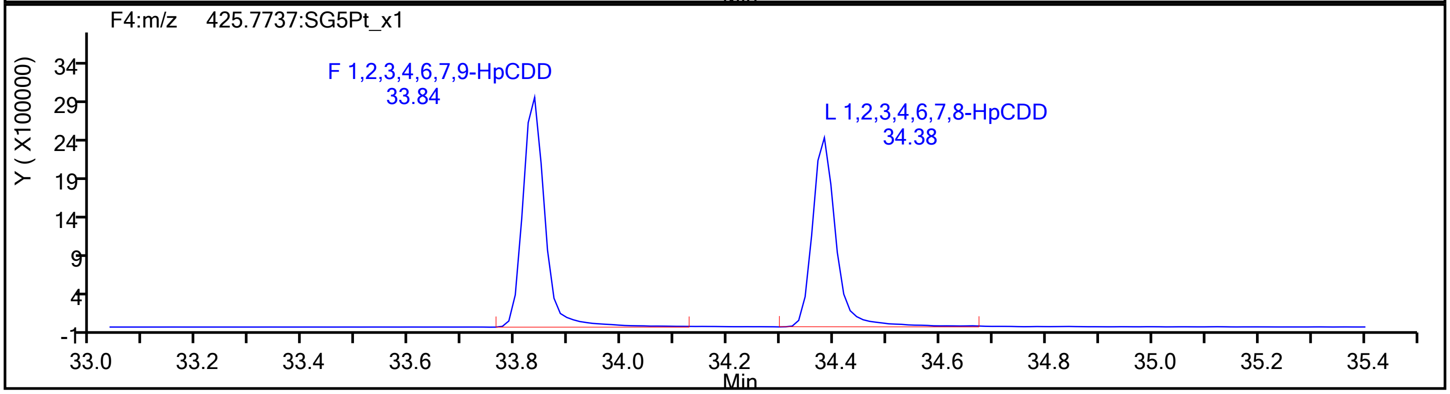

HpCDD Standards

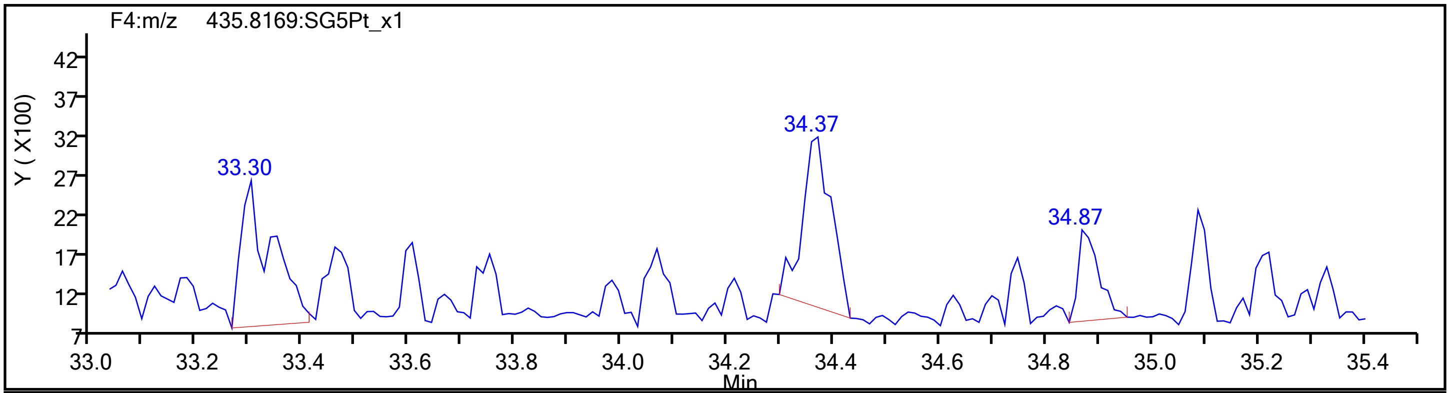

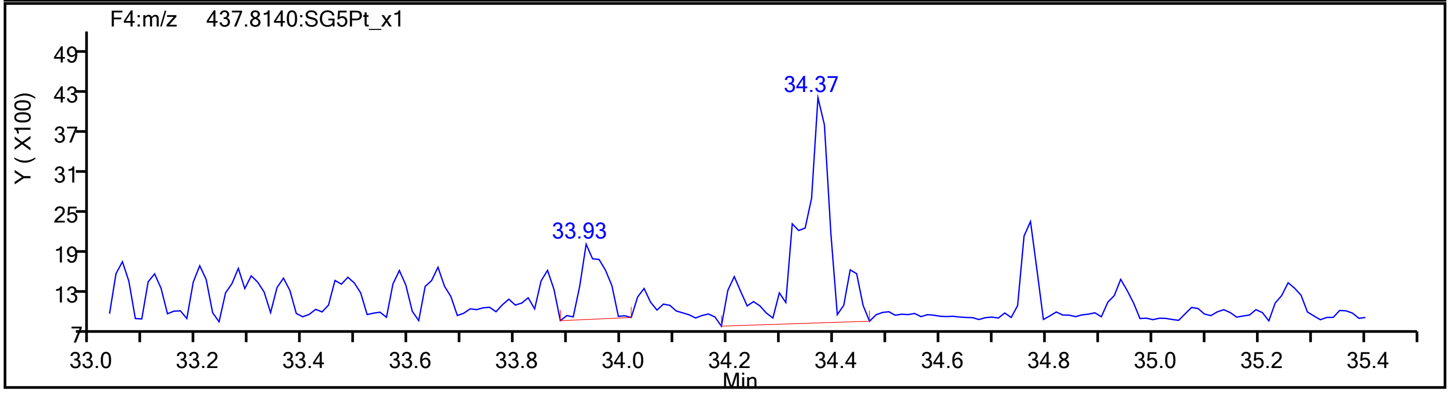

Report Date: 17-Mar-2021 13:40:59 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Date: 16-Mar-2021 23:40:35
Injection Vol: 2.0 ul

Instrument ID: 10D5
Operator ID: ALM

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470907
Sample Line#: 1

Column Type: DB-5
Column Dia: 0.32 mm

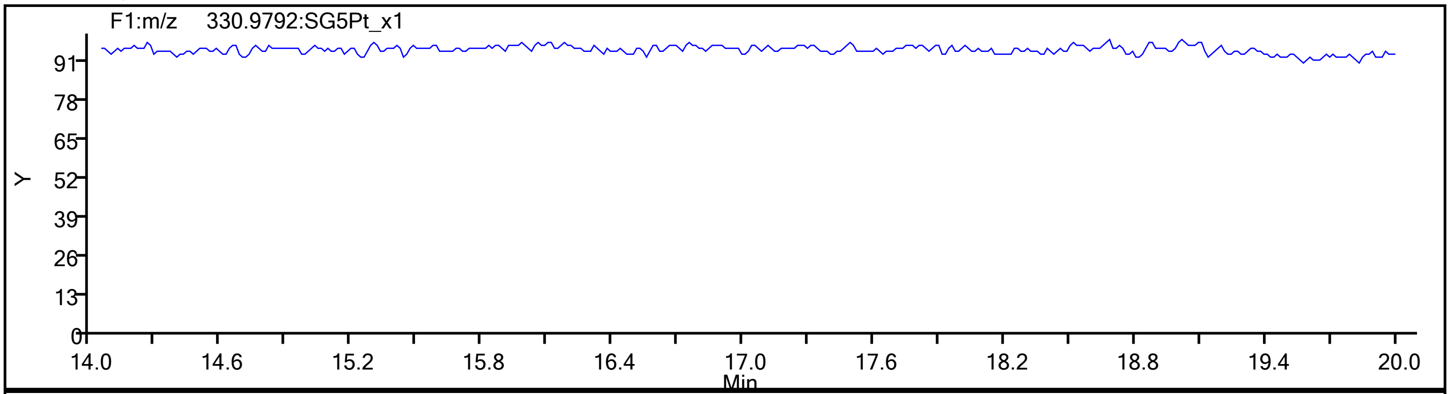

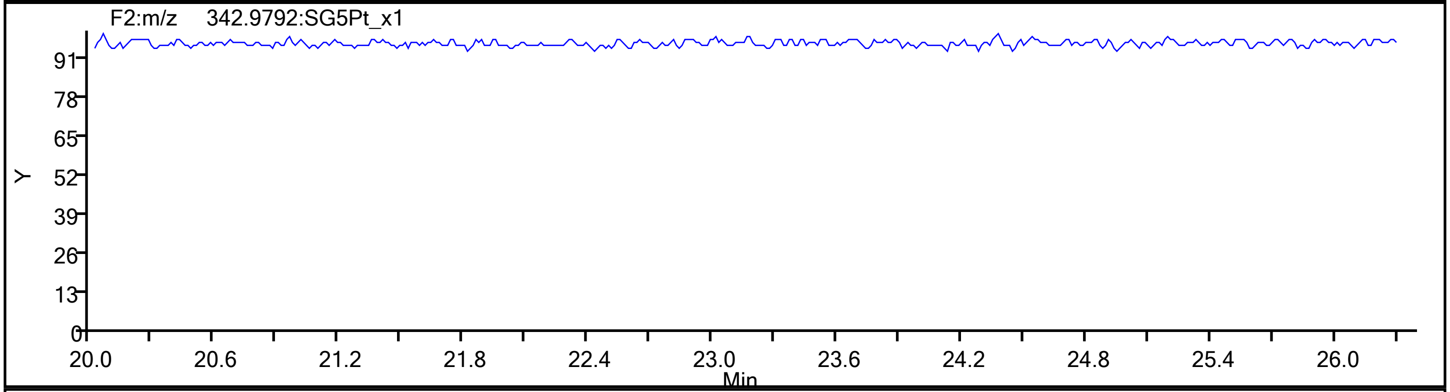

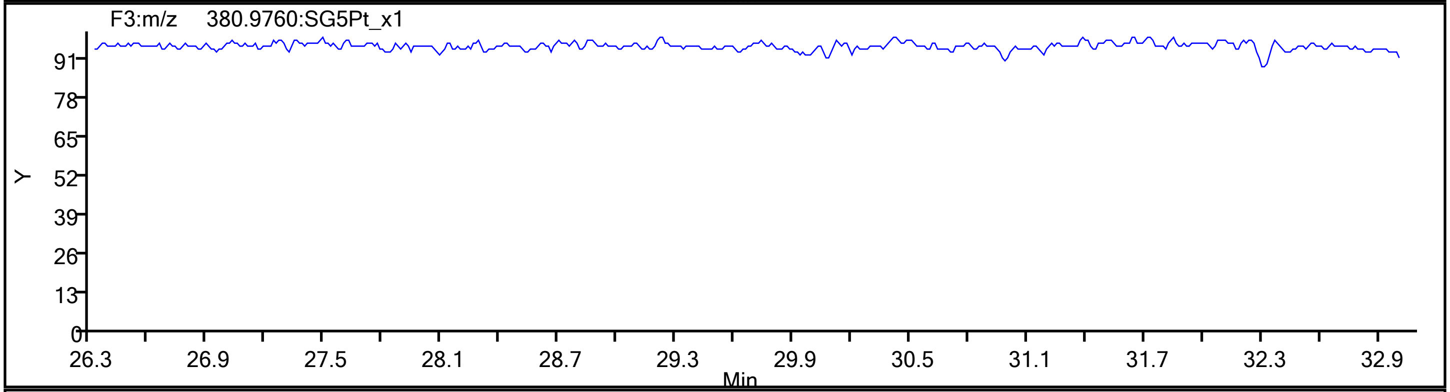

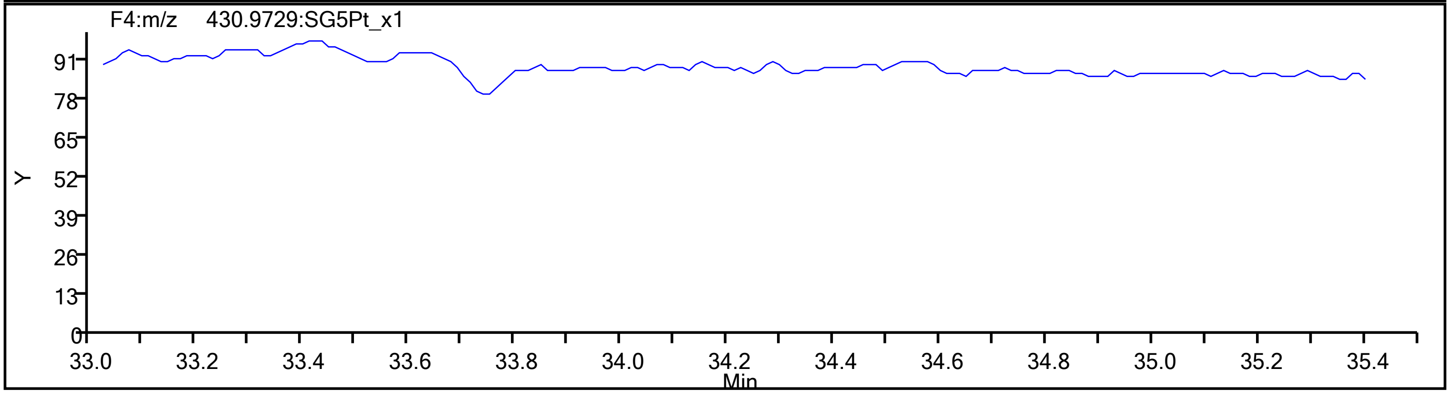

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_1.d

Injection Date:	16-Mar-2021 23:40:35	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	ALM
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470907	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

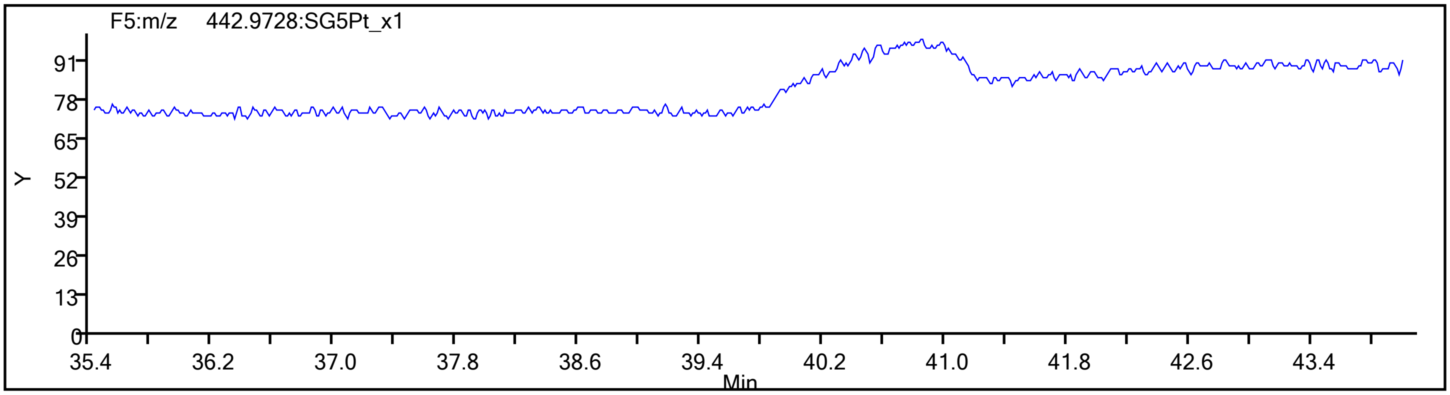

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	17-Mar-2021 12:43:54	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM 031721 WDM HRDXNCP_00042				
Misc. Info.:	17MR2110D5				
Operator ID:	KSS	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	17-Mar-2021 23:05:30	Calib Date:	17-Mar-2021 04:10:31		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1613				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.007	20284164	0.77	1.3554					0.00	
2,3,7,8-TCDF	17.037	43636221	0.76	0.9903	86.9	86.9	0.3787	0.3787		
A Non-2,3,7,8-sub-TCDF	16.719						0.3787	0.3787		
S Total TCDF					86.9	86.9	0.3787	0.3787		
D 13C-2,3,7,8-TCDD	17.687	13207882	0.71	0.9209					0.00	
2,3,7,8-TCDD	17.717	15953160	0.78	1.0991	44.0	44.0	0.1426	0.1426		
A Non-2,3,7,8-sub-TCDD	17.165						0.1426	0.1426		
S Total TCDD					44.0	44.0	0.1426	0.1426		
A F1 PeCDFs	19.524						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.586	168570	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	22.857						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.781						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.433	116213	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	33.592	14956862	1.06	1.4017						
1,2,3,4,7,8,9-HpCDF	34.661	12208049	1.03	1.2995						
A Non-2,3,7,8-sub-HpCDF	34.127						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.382	10095813	1.02	1.0339						
A Non-2,3,7,8-sub-HpCDD	34.460						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.648	23807494	0.78							
1,3,6,8-TCDD	15.540	15065485	0.76							
2,3,4,7-TCDF	17.037	43636221	0.76							
1,2,3,7-TCDD	17.596	13978668	0.78							
1,2,3,9-TCDF	17.868	19501605	0.77							
1,2,3,9-TCDD	17.868	16416943	0.78							
1,2,8,9-TCDD	18.791	6556876								
1,2,8,9-TCDF	18.791	19889998	0.76							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,3,4,6,8-PeCDF	19.078	19210263	1.60							
1,2,4,7,9-PeCDD	20.805	13311072	1.60							
1,2,3,8,9-PeCDD	24.910	12756724	1.59							
1,2,3,8,9-PeCDF	25.128	15852280	1.58							
1,2,3,4,6,8-HxCDF	27.365	16893573	1.23							
1,2,4,6,7,9-HxCDD	28.910	12668029	1.27							
1,2,3,4,6,7-HxCDD	31.864	12604867	1.25							
1,2,3,4,8,9-HxCDF	32.197	15828661	1.23							
1,2,3,4,6,7,9-HpCDD	33.835	11440376	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 17-Mar-2021 12:43:54 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 031721 WDM HRDXNCP_00042
Misc. Info.: 17MR2110D5
Operator ID: KSS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 23:05:30 Calib Date: 17-Mar-2021 04:10:31
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\10D5\20210317-115169.b\16MR21C10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1613

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.007	17.007	0	1.000	8839885	2261607	6904	17260	328		
317.9389	17.007	17.007	0	1.000	11444279	2939323	3512	8780	837	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.037	17.037	0	1.002	18898060	4358676	4946	12365	881		
305.8987	17.022	17.037	-1	1.001	24738161	5710598	14556	36390	392	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.719						4946	12365			
305.8987	16.719						14556	36390			
13C-2,3,7,8-TCDD											
331.9368	17.687	17.687	0	1.000	5465245	1285763	3126	7815	411		
333.9339	17.687	17.687	0	1.000	7742637	1831967	1745	4362	1050	0.71(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.717	17.717	0	1.002	6974272	1683577	2434	6085	692		
321.8936	17.717	17.717	0	1.002	8978888	2191204	2454	6135	893	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.165						2434	6085			
321.8936	17.165						2454	6135			
A F1 PeCDFs											
339.8597	19.524						605	1512			
341.8567	19.524						847	2117			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	21.923	22.586	-40	1.000	45622	10078	1525	3812	7		
341.8567	21.923	22.586	-40	1.000	36765	7282	1371	3427	5	1.24(1.32-1.78)	
339.8597	22.496	22.586	-5	1.000	56042	8938	1525	3812	6		
341.8567	22.455	22.586	-8	1.000	37473	6017	1371	3427	4	1.50(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.857						1814	4535			
357.8516	22.857						1037	2592			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.781						2477	6192			
375.8178	29.781						2002	5005			
A Non-2,3,7,8-sub-HxCDD											RQ
389.8157	30.613	30.433	11	1.000	86420	13934	2842	7105	5		
391.8127	30.600	30.433	10	1.000	51881	8979	2023	5057	4	1.67(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.592	33.592	0	1.000	7689728	2553470	10629	26572	240		
409.7789	33.592	33.592	0	1.000	7267134	2371515	12301	30752	193	1.06(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.661	34.661	0	1.000	6198850	1898741	10629	26572	179		
409.7789	34.661	34.661	0	1.000	6009199	1853350	12301	30752	151	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.127						10629	26572			
409.7789	34.127						12301	30752			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.382	34.382	0	1.000	5104139	1557249	7152	17880	218		
425.7737	34.382	34.382	0	1.000	4991674	1534556	7280	18200	211	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.460						7152	17880			
425.7737	34.460						7280	18200			
1,3,6,8-TCDF											
303.9016	14.648	14.648	0		10446907	3342728	4946	12365	676		
305.8987	14.648	14.648	0		13360587	4293279	14556	36390	295	0.78(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.540	15.540	0		6515138	1900169	2434	6085	781		
321.8936	15.540	15.540	0		8550347	2502461	2454	6135	1020	0.76(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.037	17.037	0		18898060	4358676	4946	12365	881		
305.8987	17.022	17.037	-1		24738161	5710598	14556	36390	392	0.76(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.596	17.596	0		6136259	1533370	2434	6085	630		
321.8936	17.596	17.596	0		7842409	1950119	2454	6135	795	0.78(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	17.868	17.868	0		8474854	2041644	4946	12365	413		
305.8987	17.868	17.868	0		11026751	2675035	14556	36390	184	0.77(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	17.868	17.868	0		7171172	1649207	2434	6085	678		
321.8936	17.868	17.868	0		9245771	2155061	2454	6135	878	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.791	18.791	0		6556876	1461550	2434	6085	600		
1,2,8,9-TCDF											
303.9016	18.791	18.791	0		8613347	1958628	4946	12365	396		
305.8987	18.791	18.791	0		11276651	2491152	14556	36390	171	0.76(0.65-0.89)	

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,3,4,6,8-PeCDF											
339.8597	19.078	19.078	0		11813820	2606527	605	1512	4308		
341.8567	19.078	19.078	0		7396443	1604027	847	2117	1894	1.60(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	20.805	20.805	0		8188540	1448177	1814	4535	798		
357.8516	20.805	20.805	0		5122532	915588	1037	2592	883	1.60(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	24.910	24.910	0		7837951	1130705	1814	4535	623		
357.8516	24.923	24.910	1		4918773	716103	1037	2592	691	1.59(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.128	25.128	0		9714414	1374394	1525	3812	901		
341.8567	25.128	25.128	0		6137866	878921	1371	3427	641	1.58(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.365	27.365	0		9329309	1227320	2477	6192	495		
375.8178	27.365	27.365	0		7564264	991449	2002	5005	495	1.23(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	28.910	28.910	0		7082699	879104	2842	7105	309		
391.8127	28.910	28.910	0		5585330	672298	2023	5057	332	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.864	31.864	0		6992591	1807201	2842	7105	636		
391.8127	31.864	31.864	0		5612276	1470255	2023	5057	727	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.197	32.197	0		8720536	2403533	2477	6192	970		
375.8178	32.197	32.197	0		7108125	1935376	2002	5005	967	1.23(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.835	33.835	0		5837664	1887241	7152	17880	264		
425.7737	33.835	33.835	0		5602712	1776887	7280	18200	244	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	17-Mar-2021 12:43:54	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	KSS
Lims Batch ID:	471421	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDF, RT: 22.586

Initial Calibration RRF　　IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.021				
2,3,4,7,8-PeCDF	0.979				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
21.923	45622	10078	36765	7282		1.24	R
22.496	56042	8938	37473	6017		1.50	
Signal Totals:							
	101664	19016	74238	13299			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	175902	32315				1.37	RQ
	168570	31534					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (175902 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (168570 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Lims ID: WDM
Client ID:
Inject. Date: 17-Mar-2021 12:43:54
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5
Operator: KSS
Lims Batch ID: 471421
Lims Sample ID: 4

Non-2,3,7,8-sub-HxCDD, RT: 30.433

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.036				
1,2,3,6,7,8-HxCDD	0.966				
1,2,3,7,8,9-HxCDD	1.073				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.613	86420	13934	51881	8979		1.67	R
Signal Totals:							
	86420	13934	51881	8979			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	138301	22913				1.67	RQ
	116213	20112					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (138301 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (116213 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

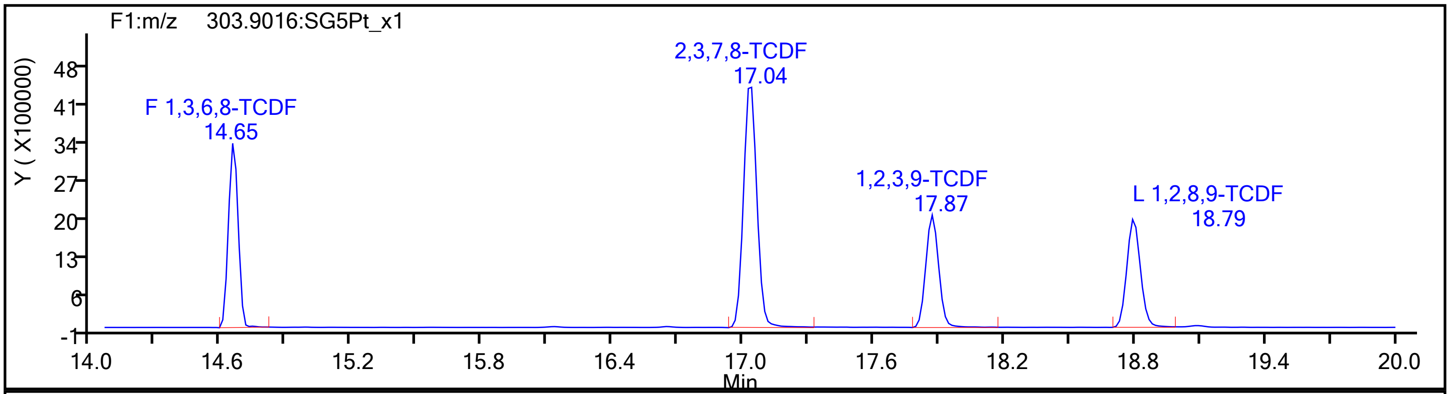

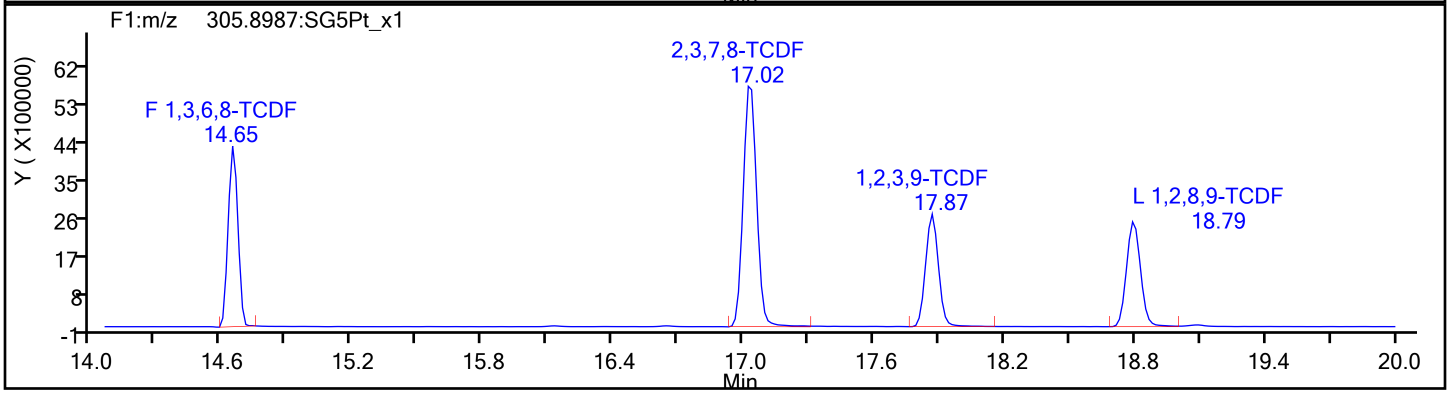

TCDF Standards

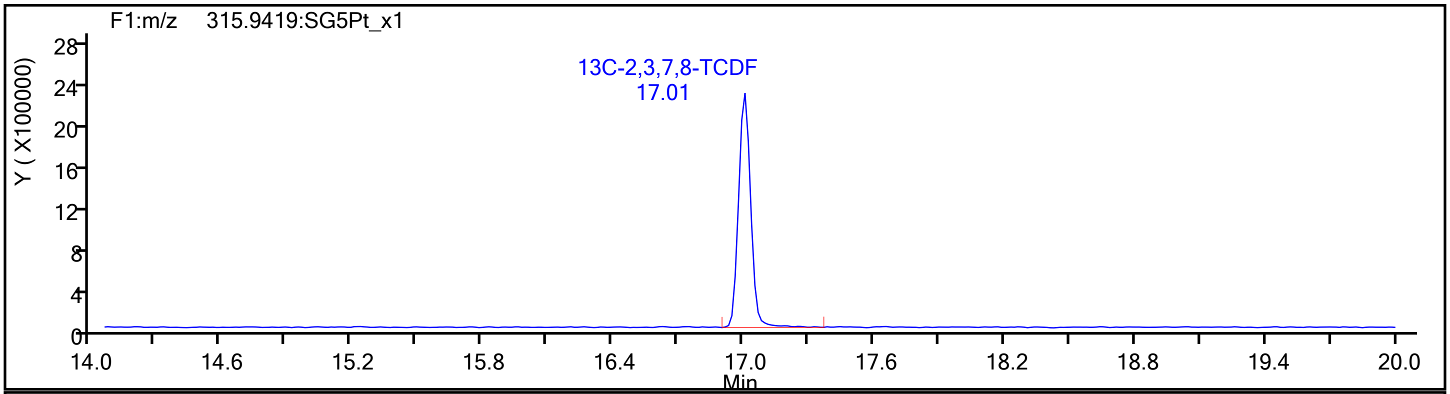

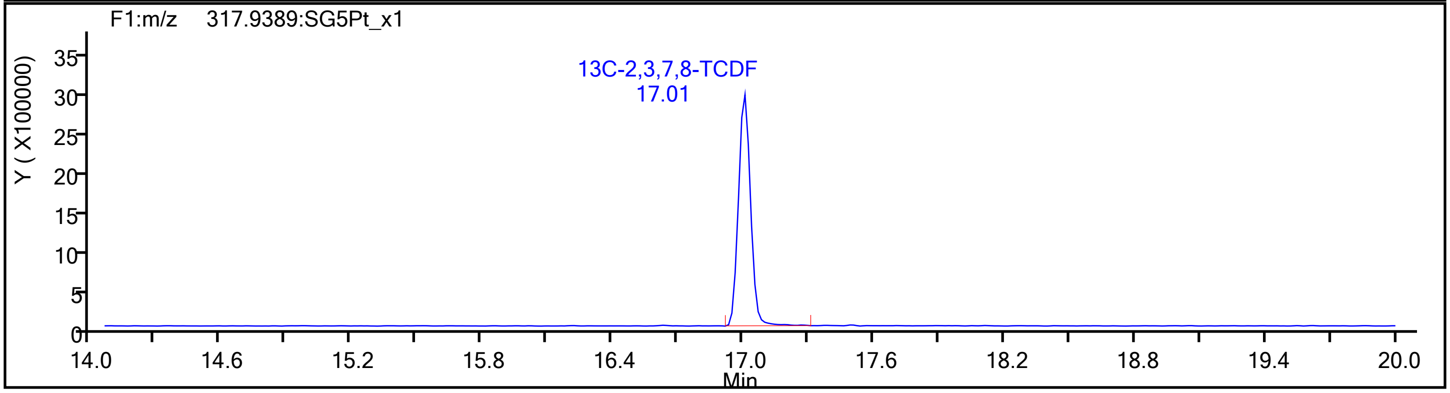

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

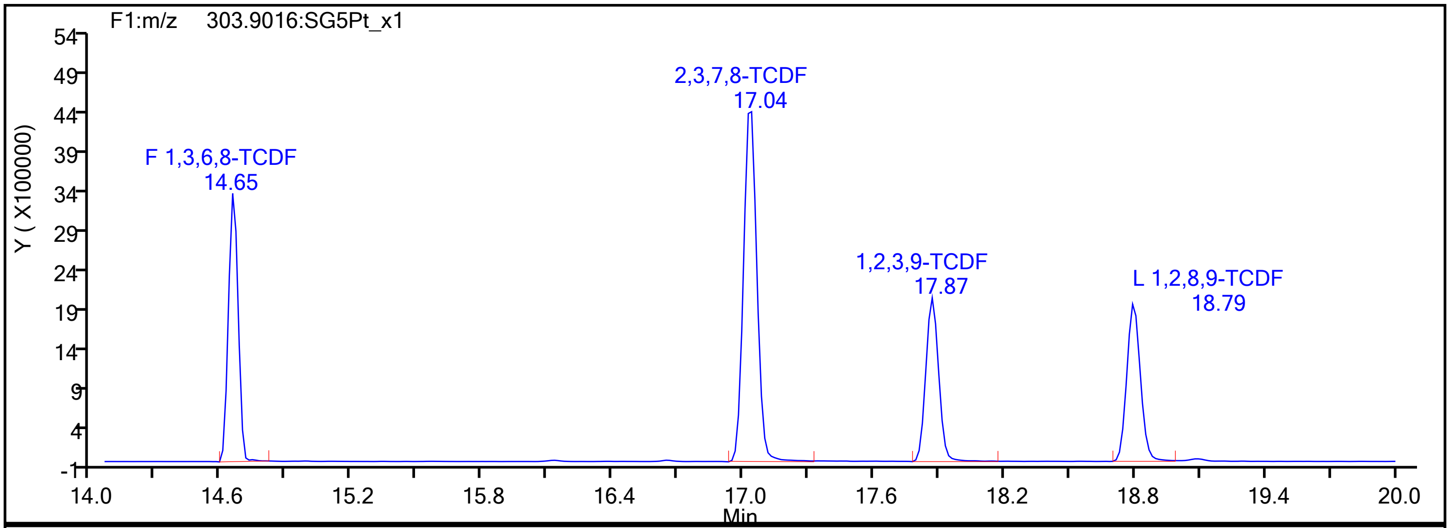

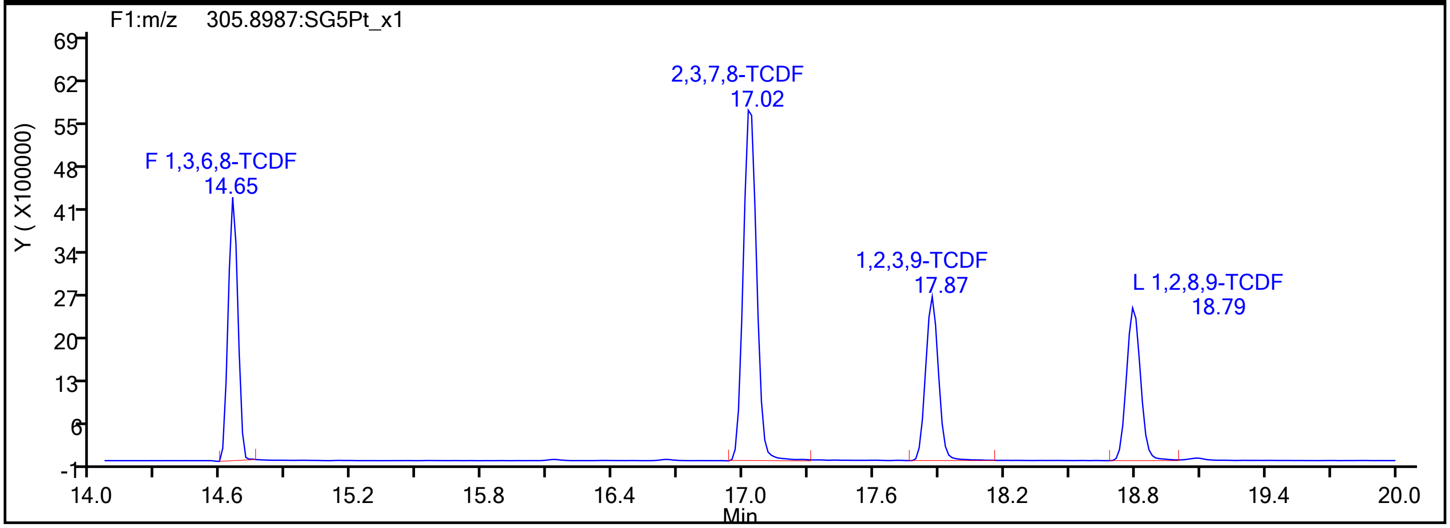

TCDF Interference Mass

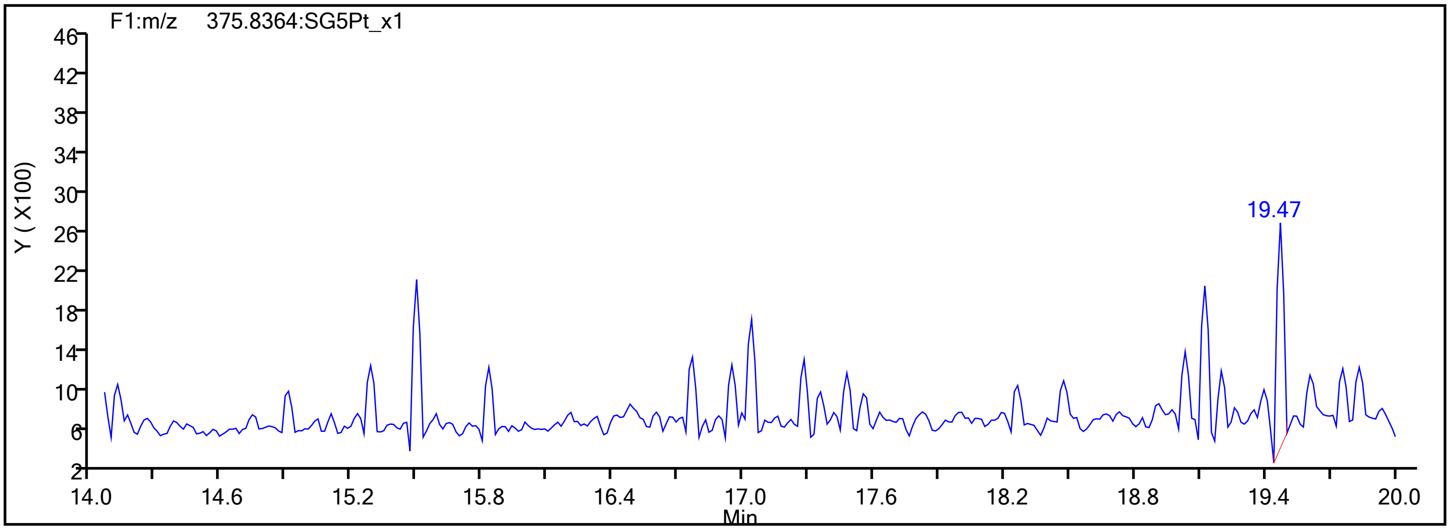

Report Date: 17-Mar-2021 23:05:31
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 471421
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

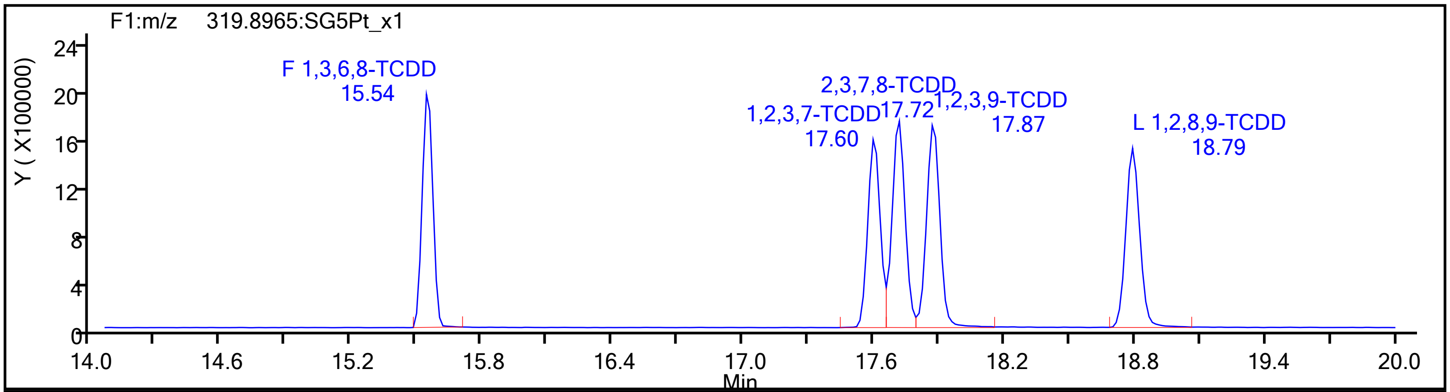

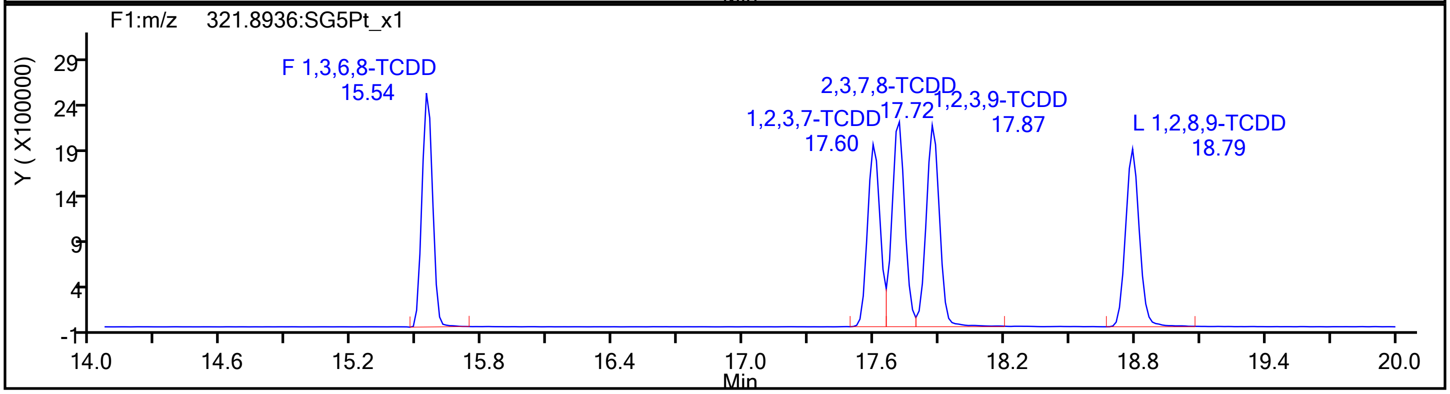

TCDD Standards

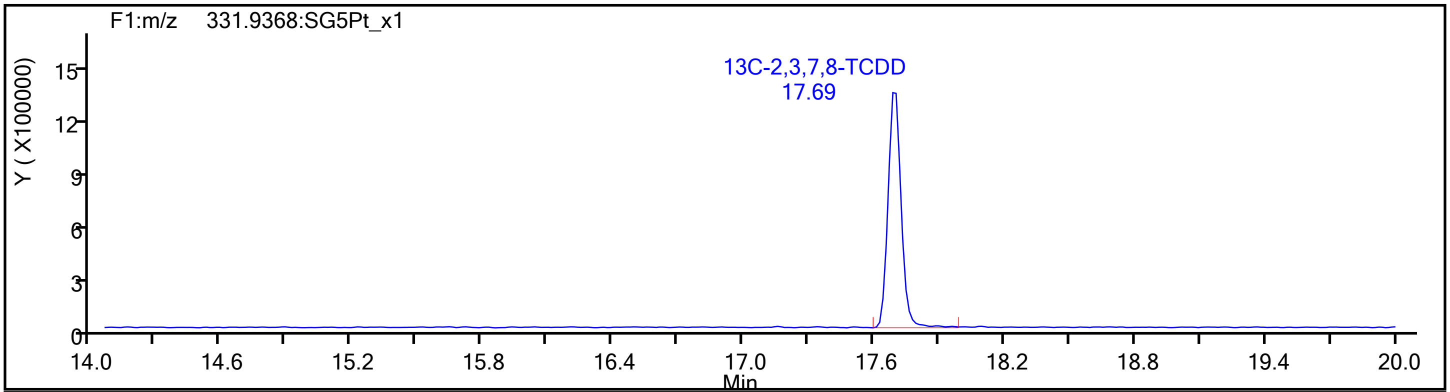

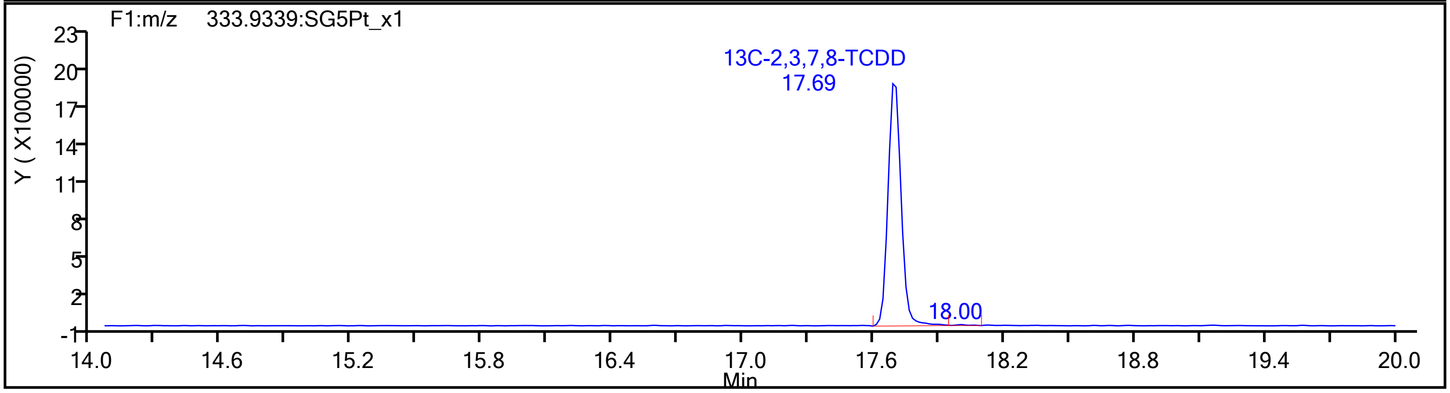

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: KSS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 471421 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

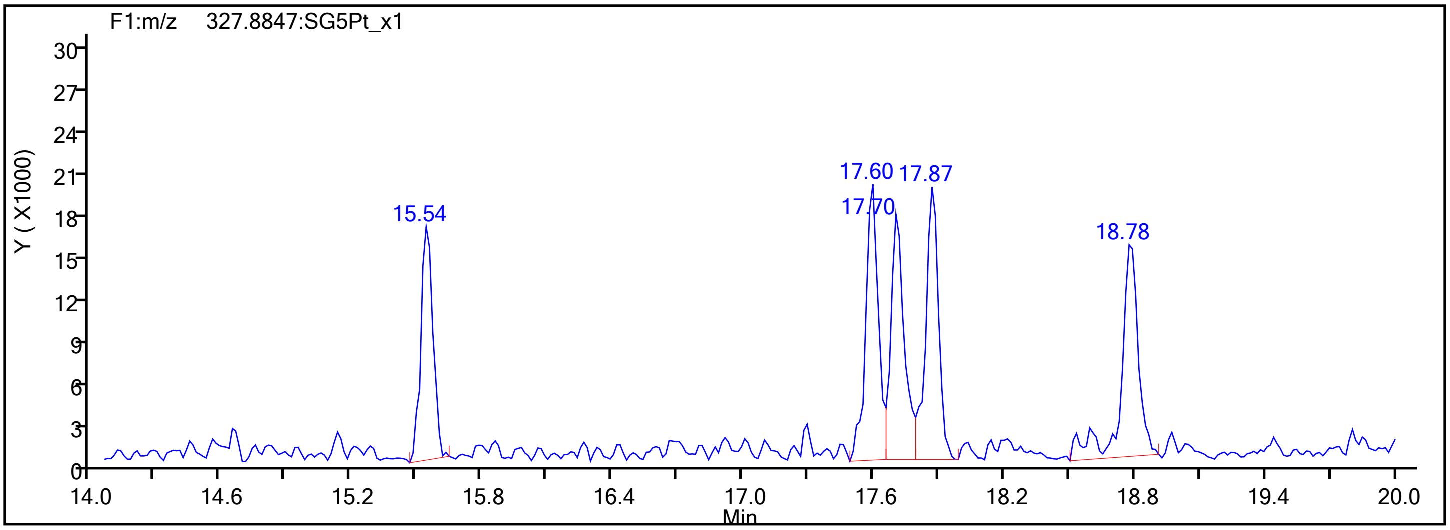

37Cl4-TCDD Standards

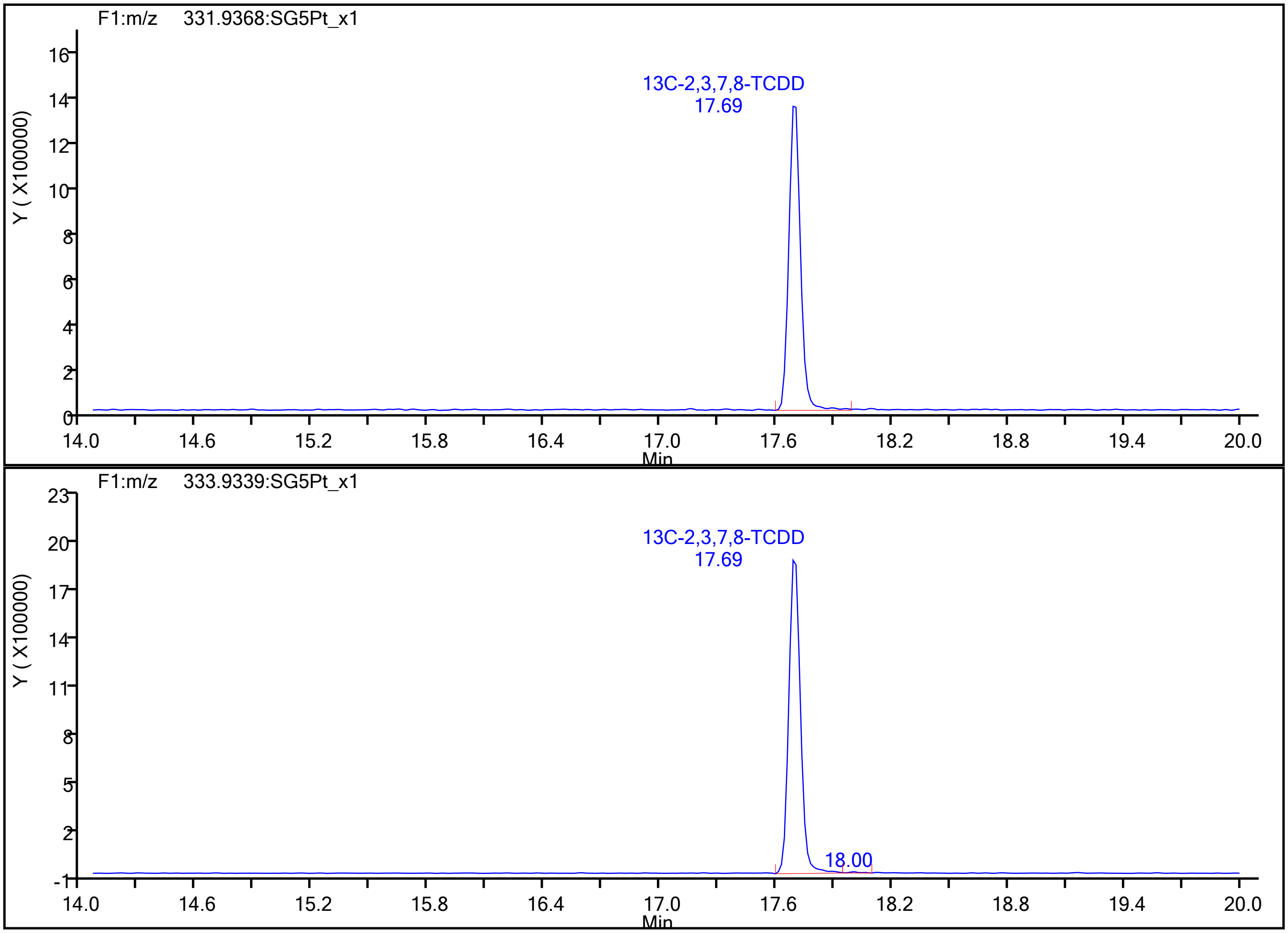

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

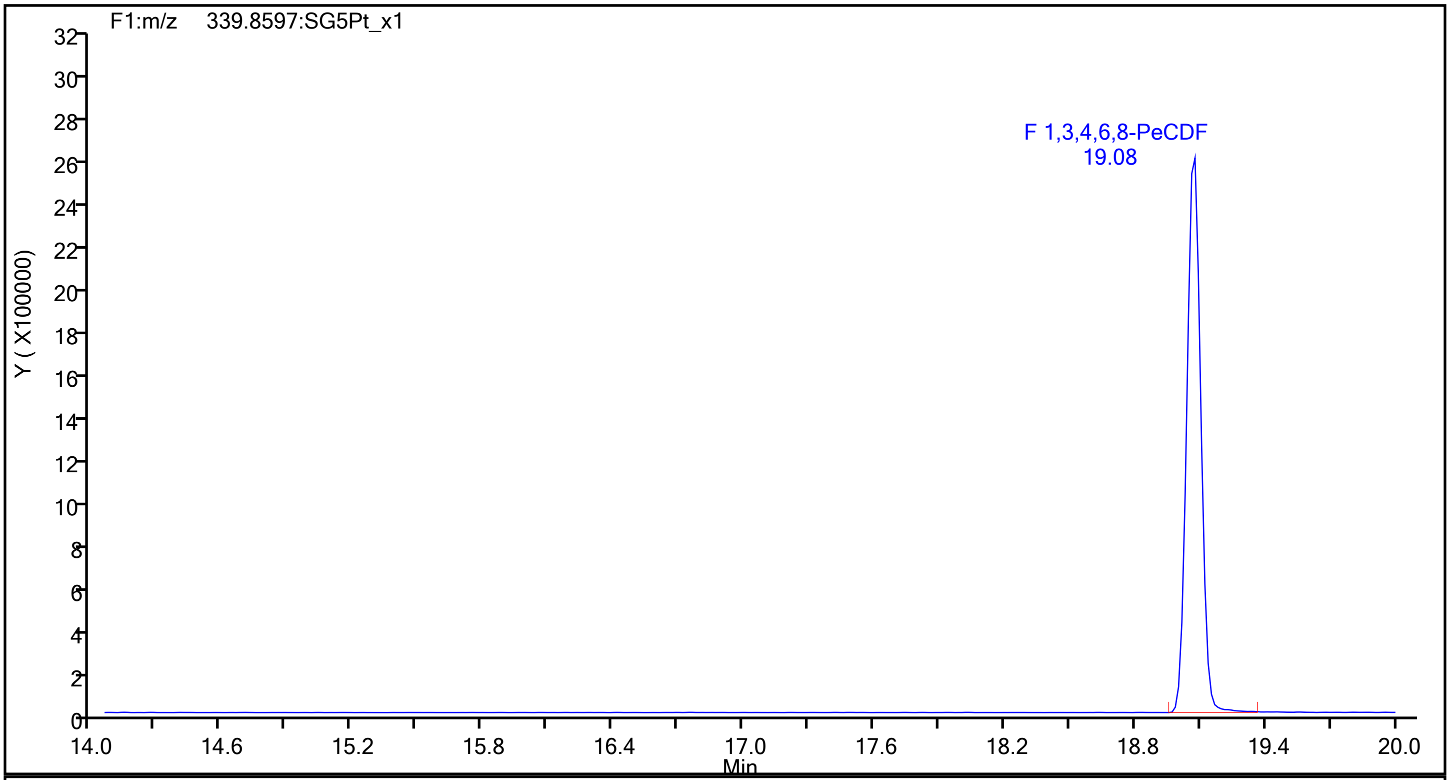

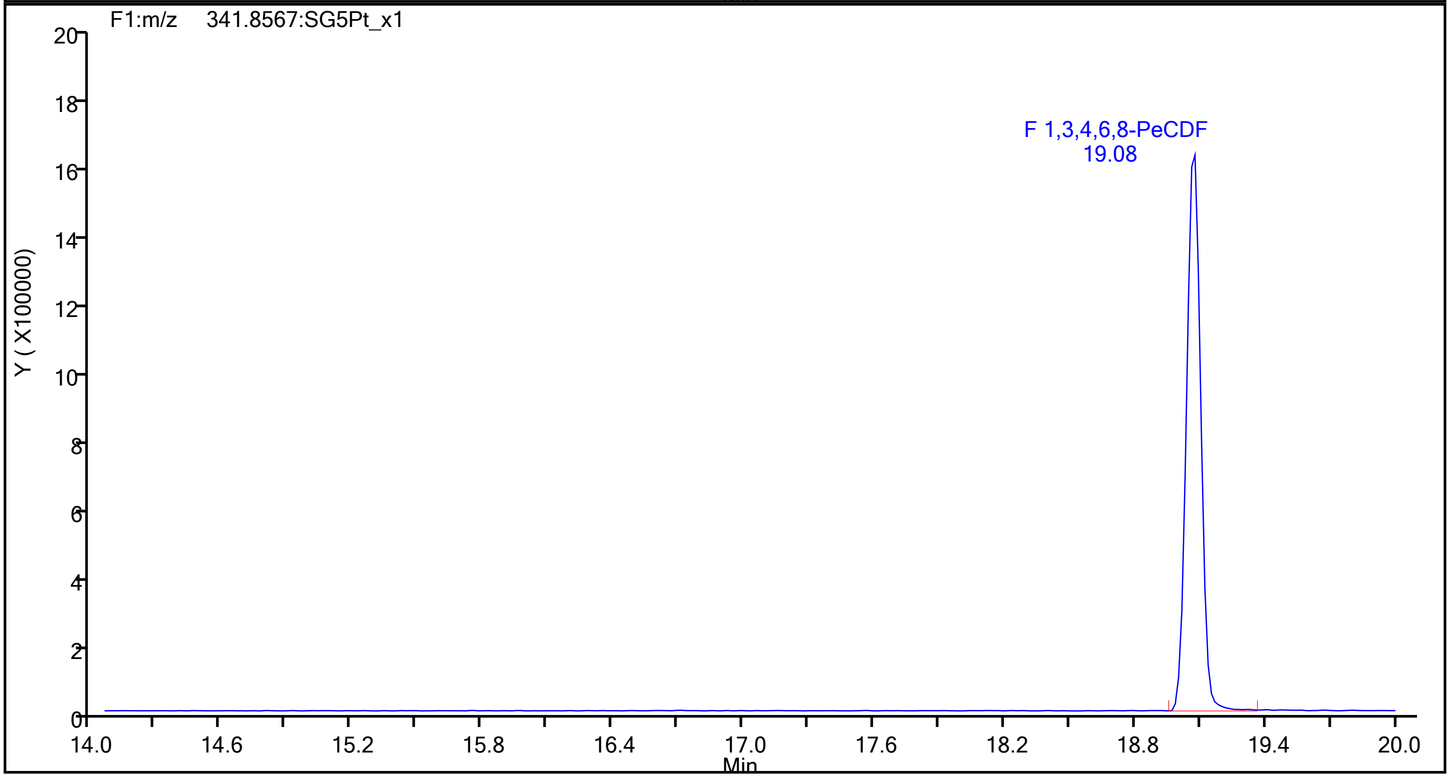

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 471421
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

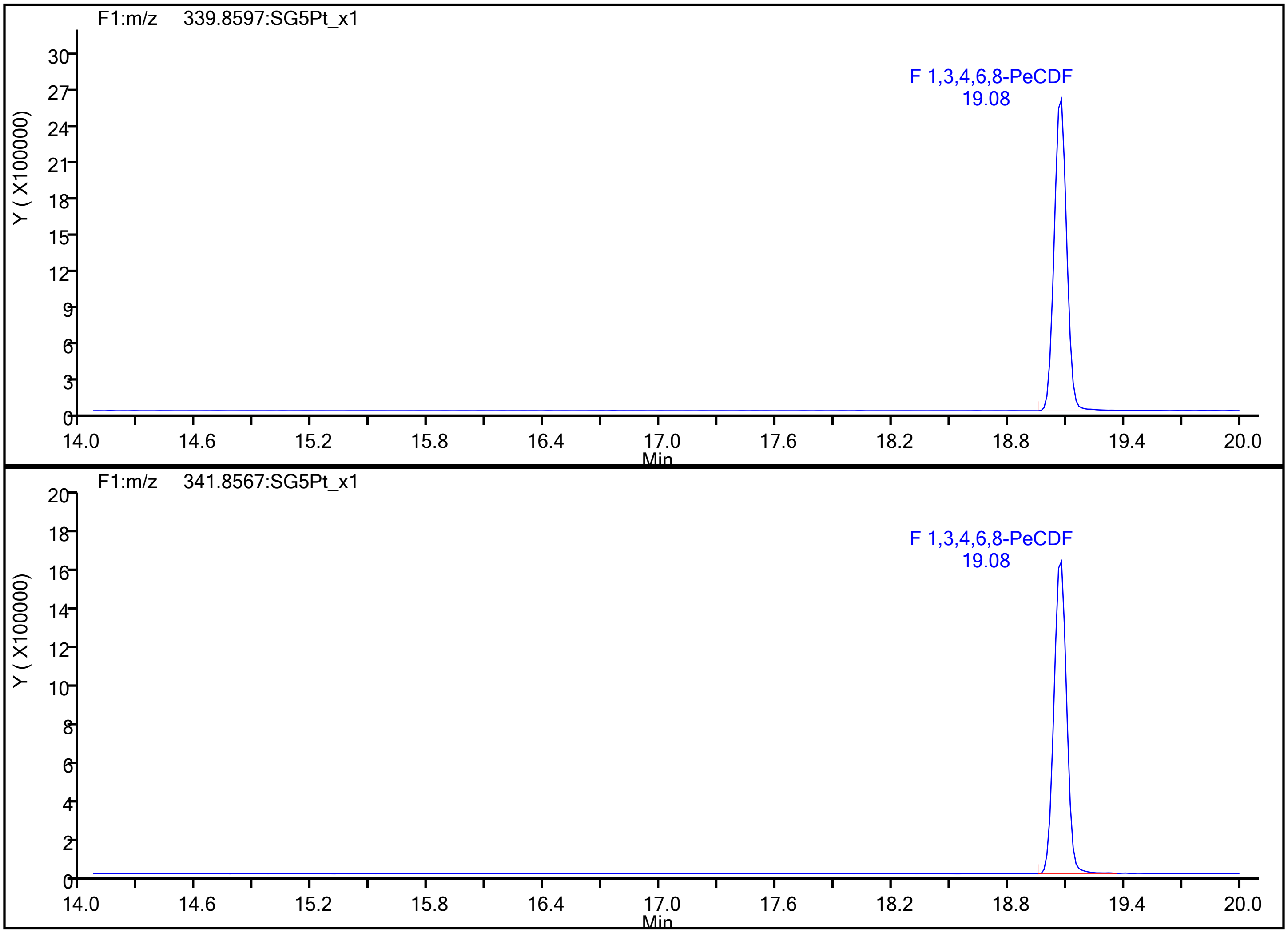

F1 PeCDFs Interference Mass

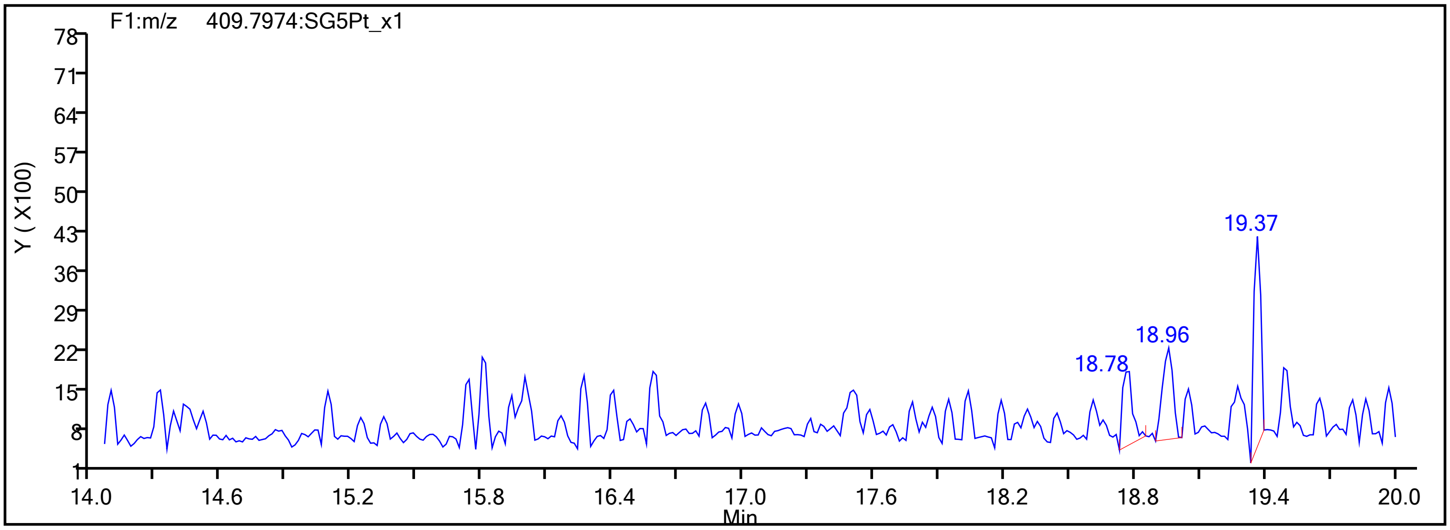

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: KSS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 471421 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

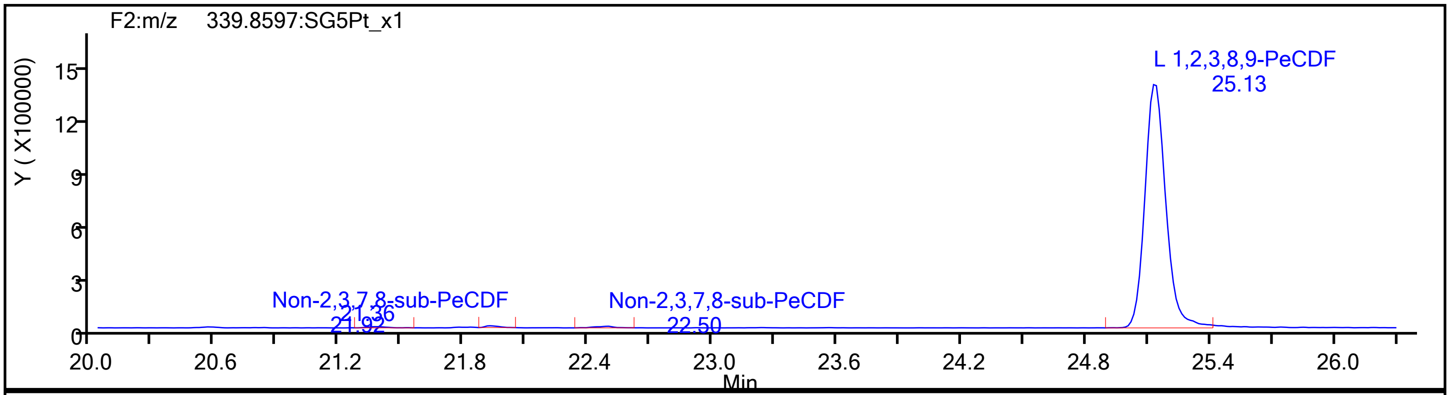

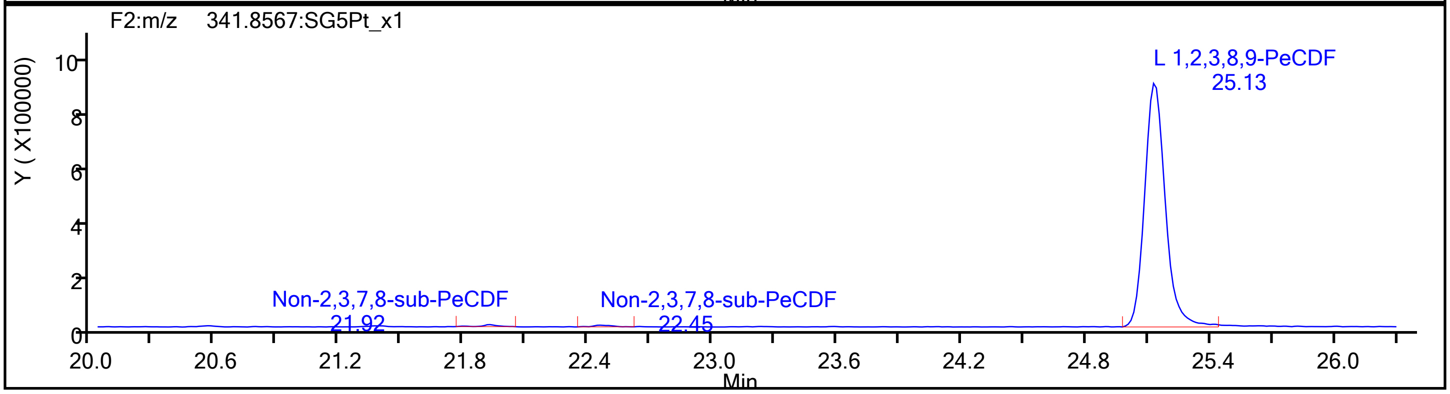

PeCDF Standards

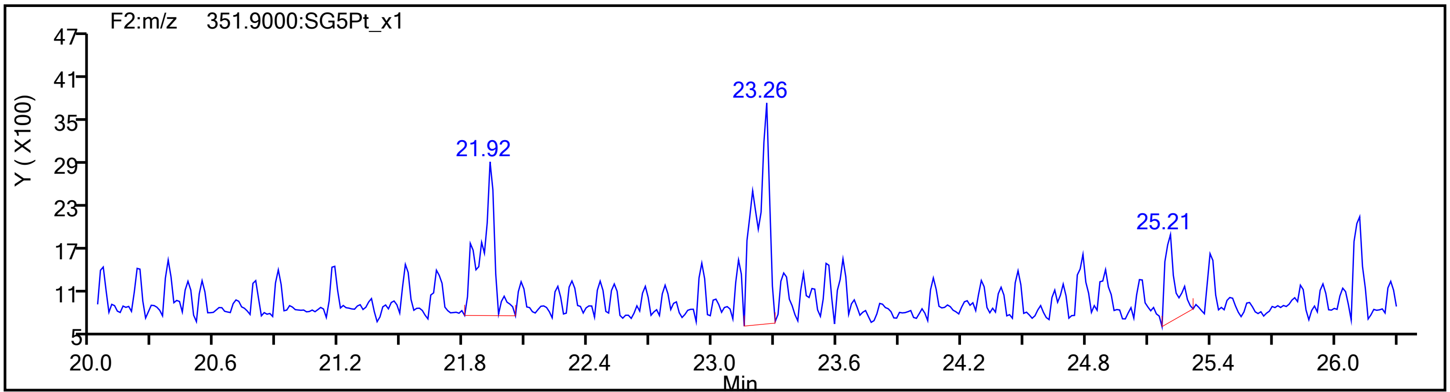

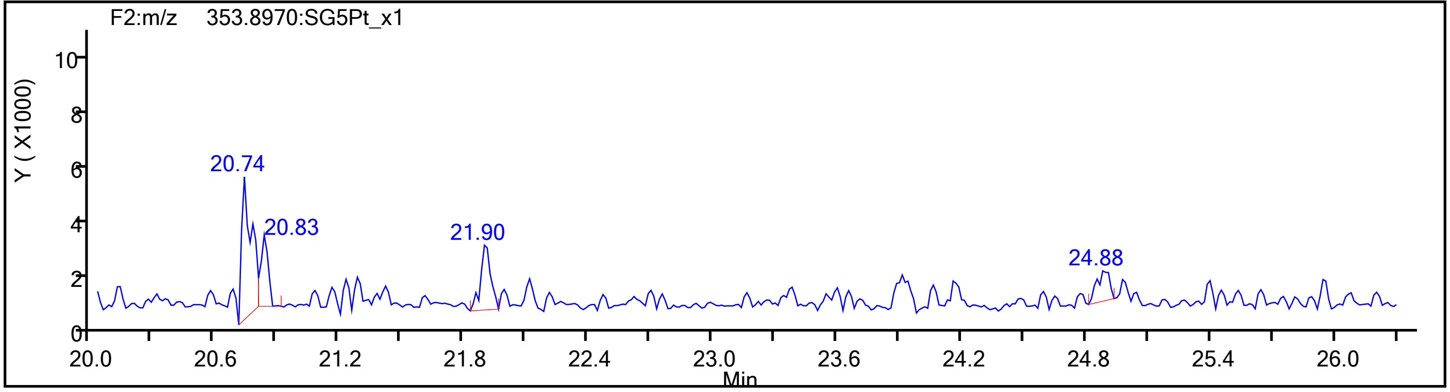

Report Date: 17-Mar-2021 23:05:31 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

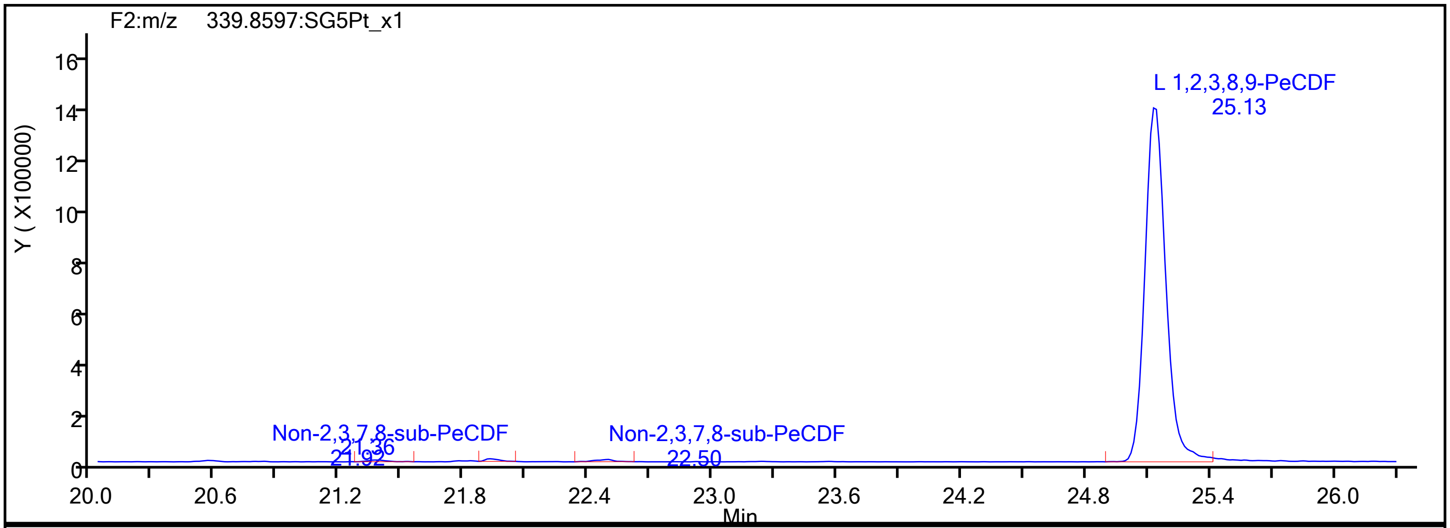

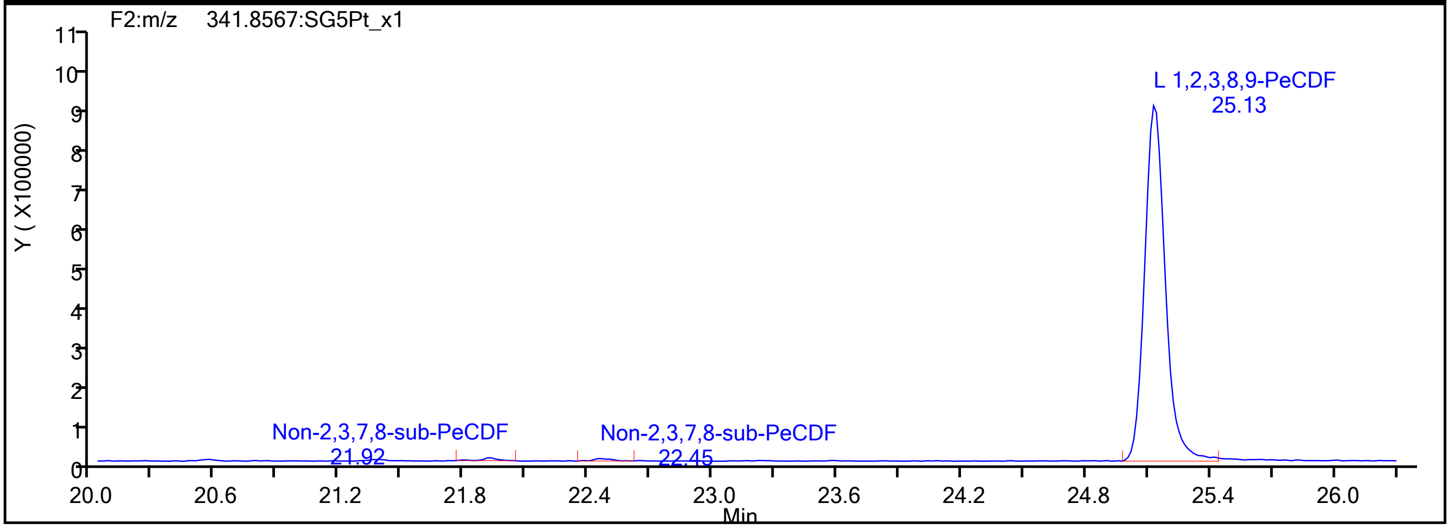

PeCDF Interference Mass

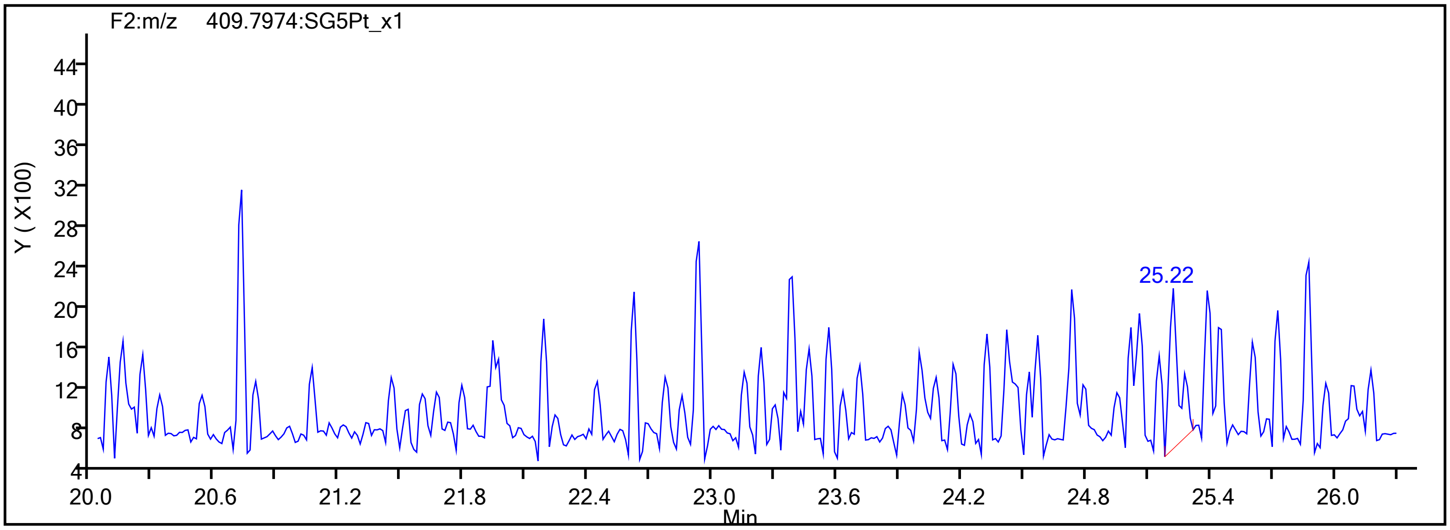

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Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

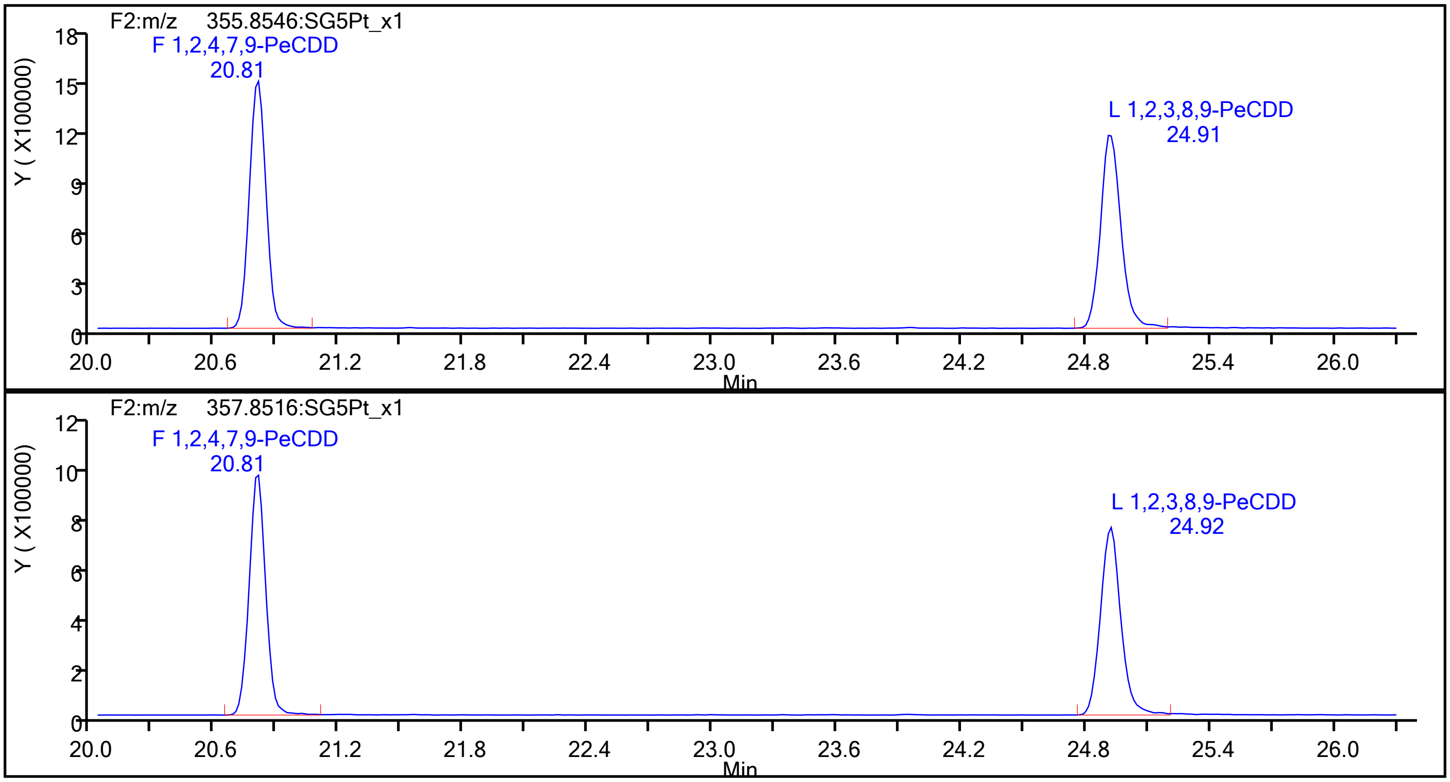

PeCDD Standards

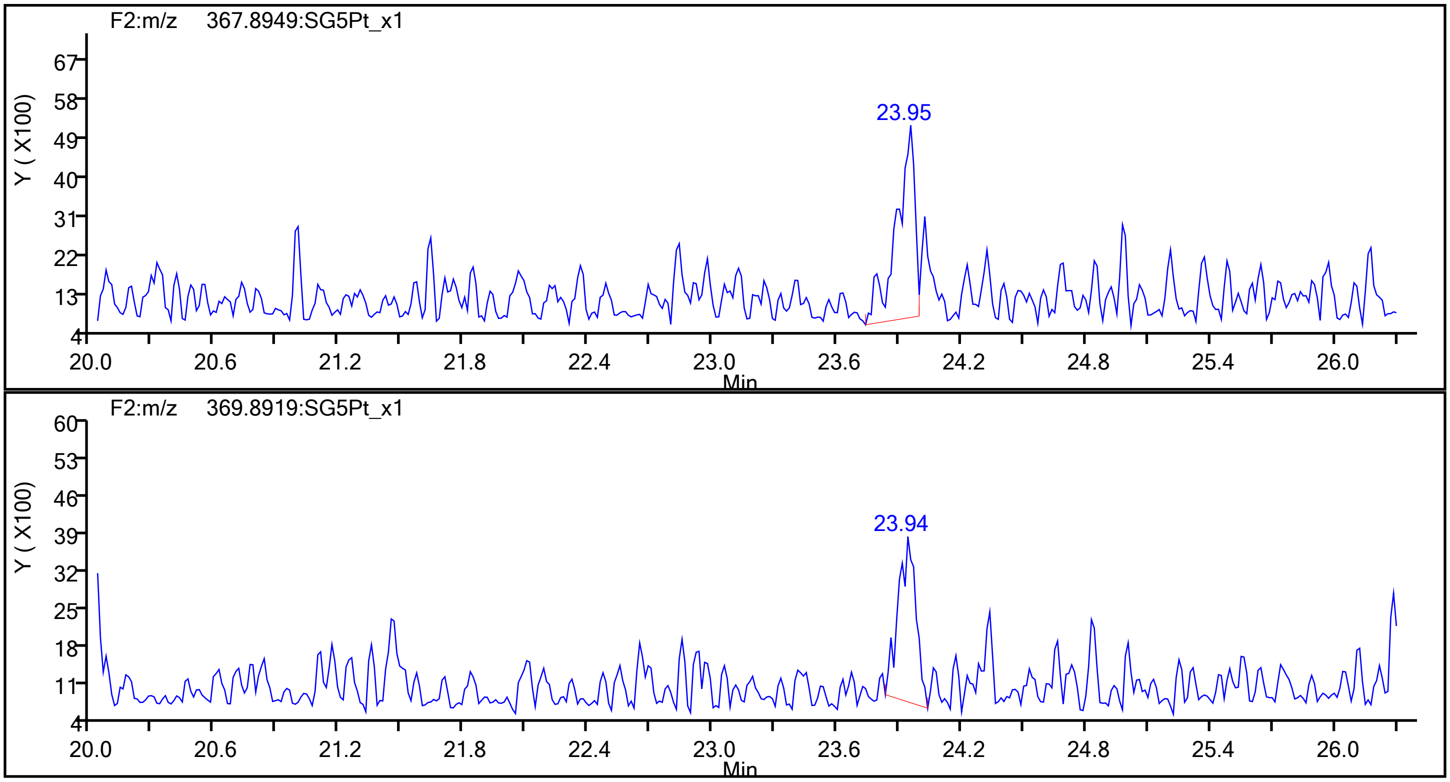

Report Date: 17-Mar-2021 23:05:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

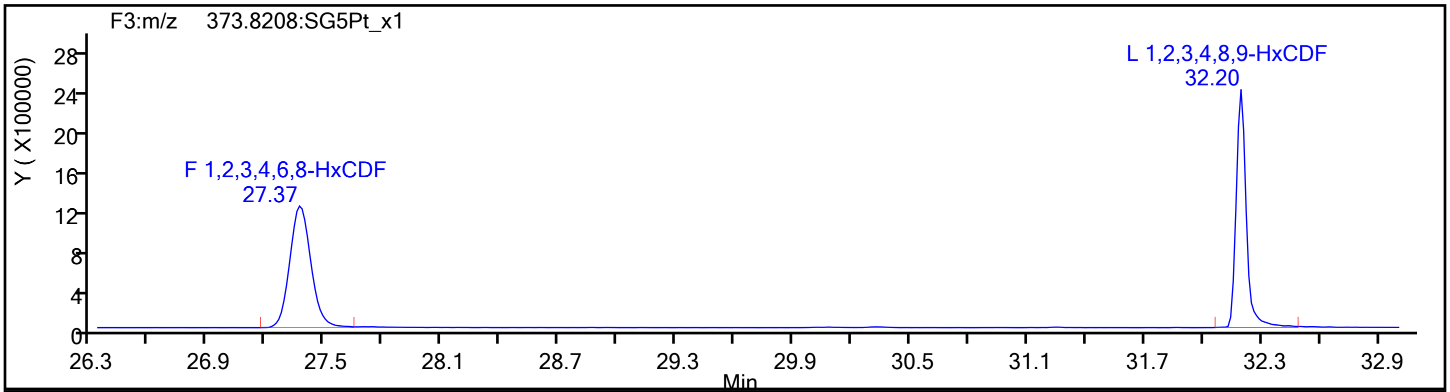

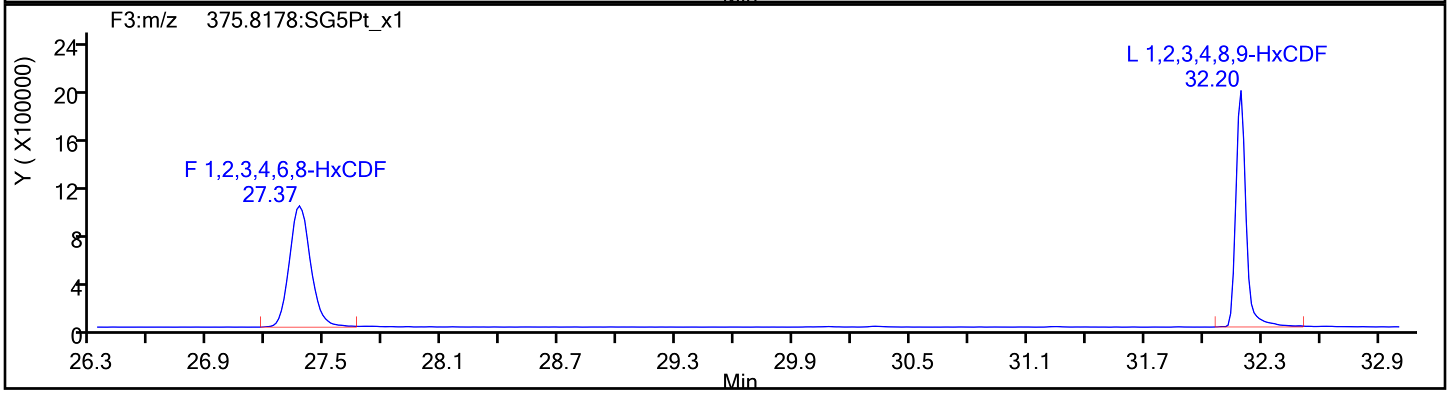

HxCDF Standards

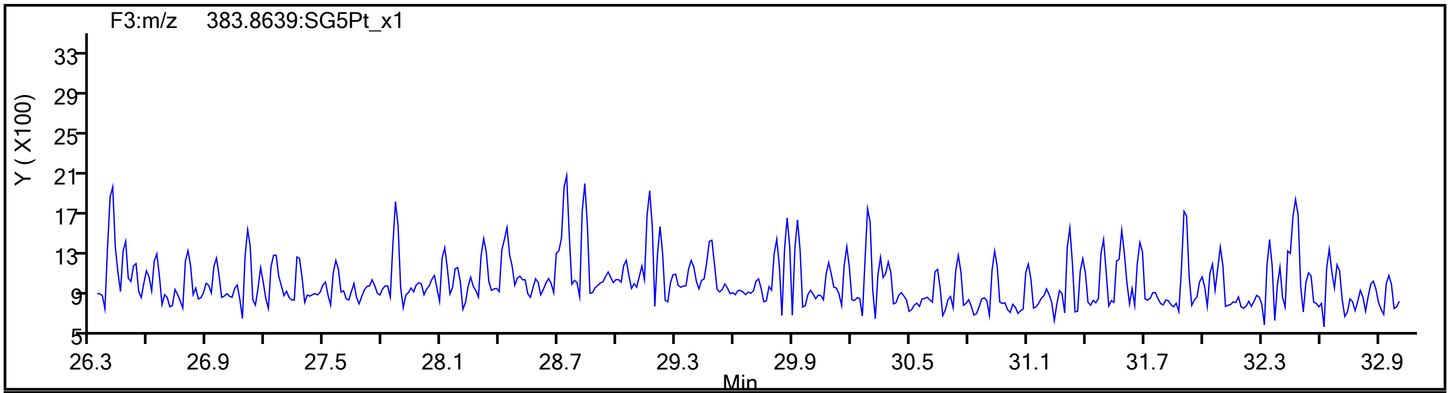

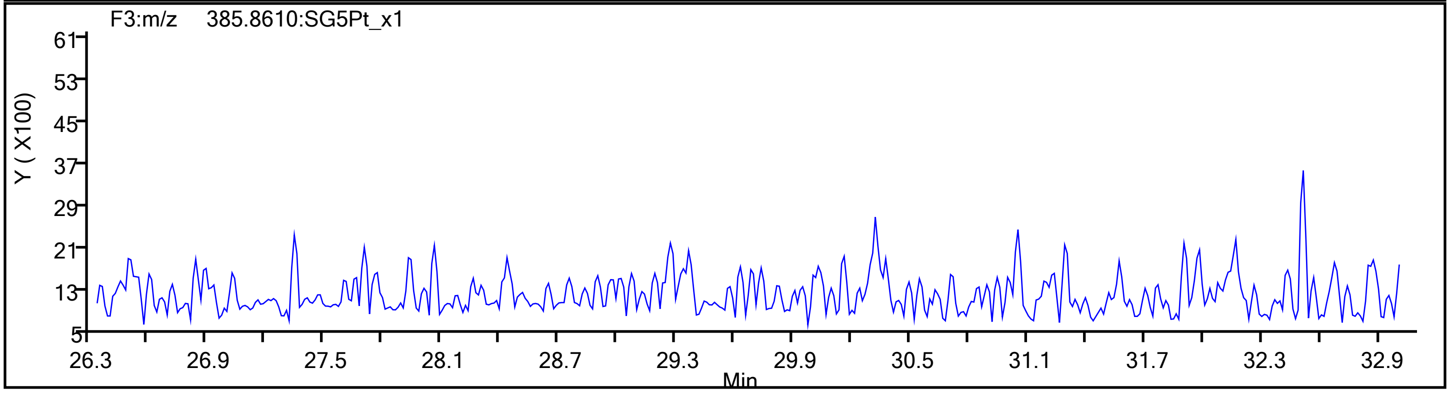

Report Date: 17-Mar-2021 23:05:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d

Injection Date: 17-Mar-2021 12:43:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
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Client ID:
Worklist#: 471421
Sample Line#: 4
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Column Dia: 0.32 mm

HxCDF

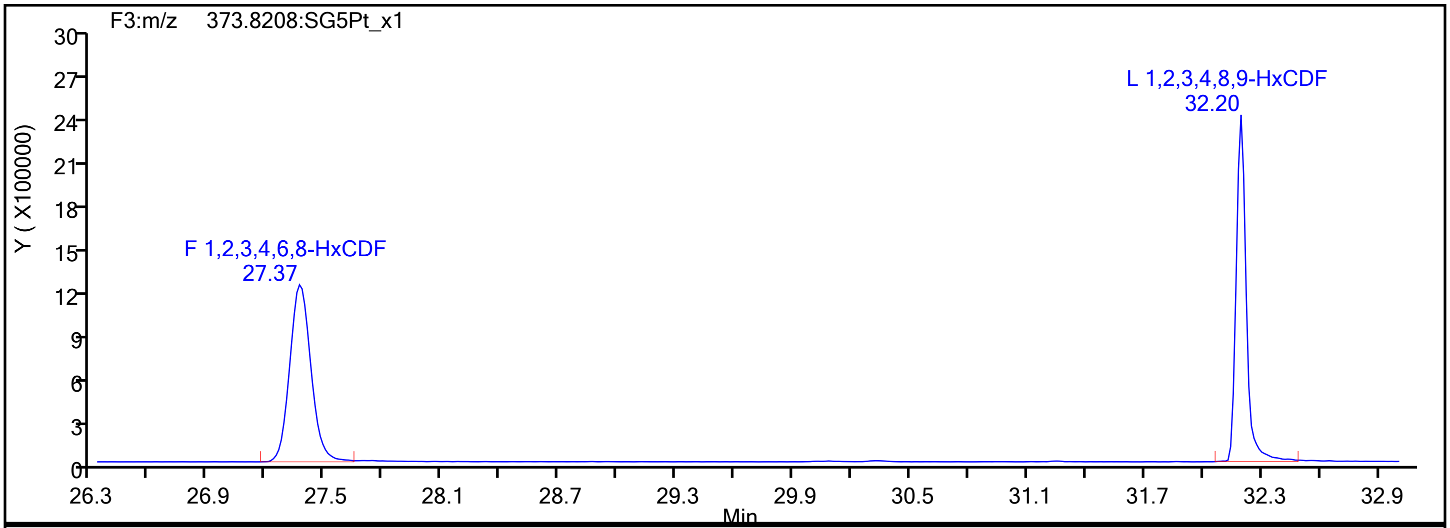

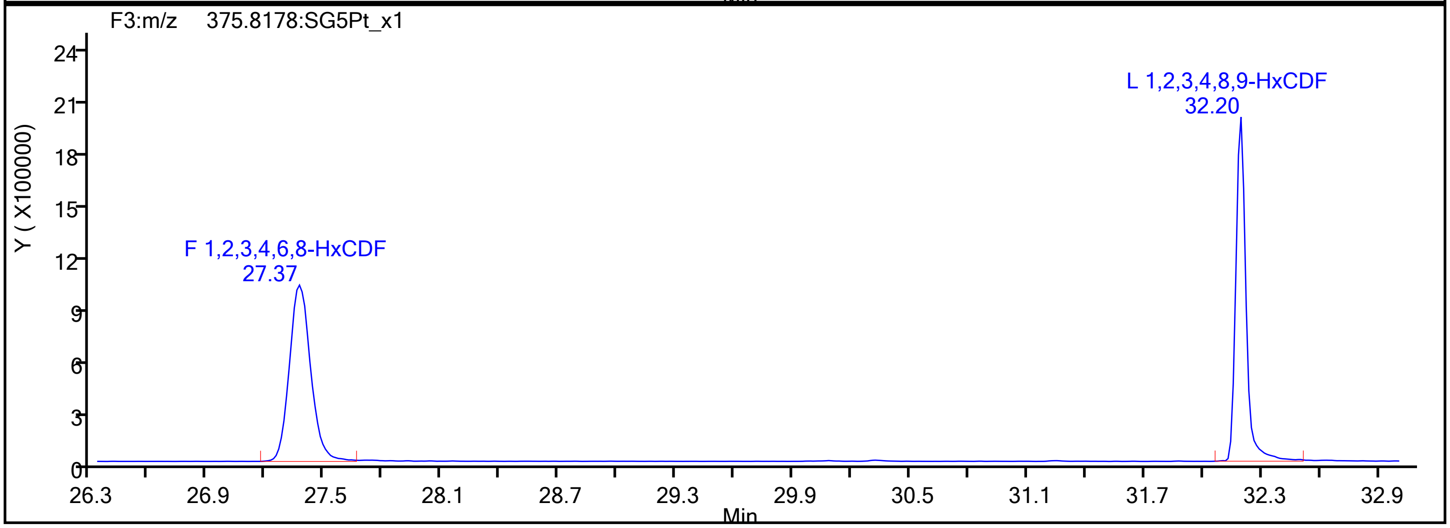

HxCDF Interference Mass

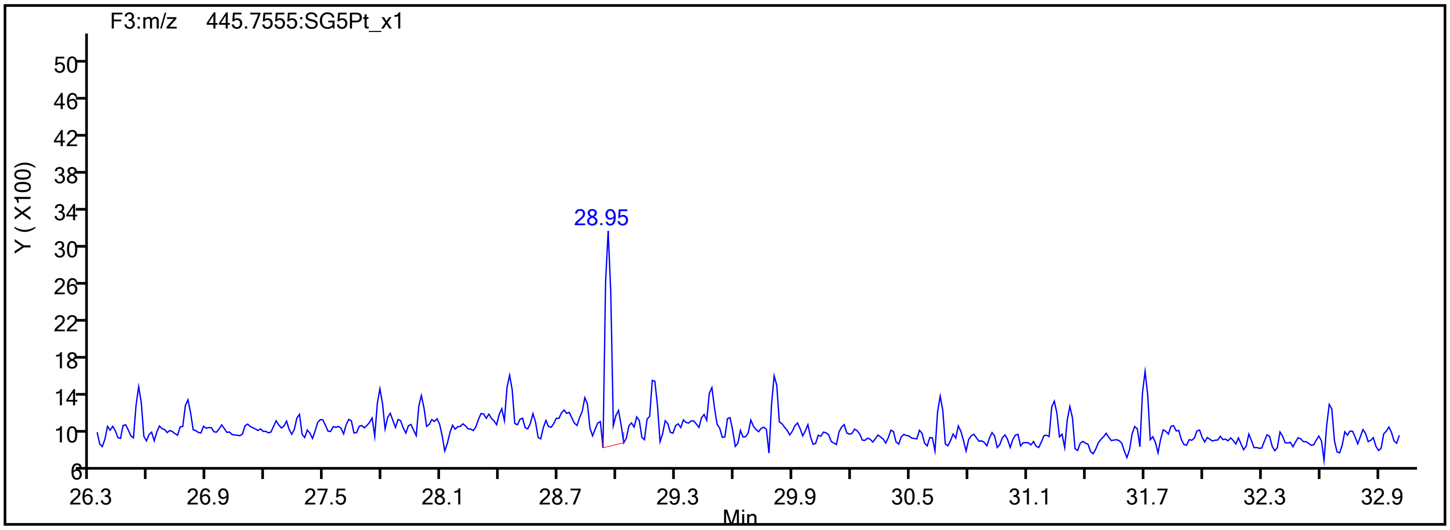

Report Date: 17-Mar-2021 23:05:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

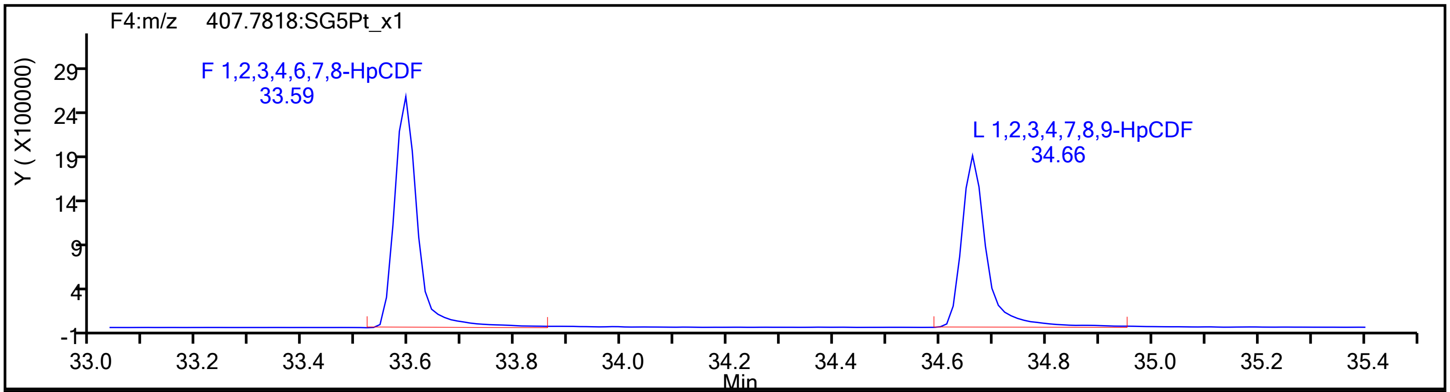

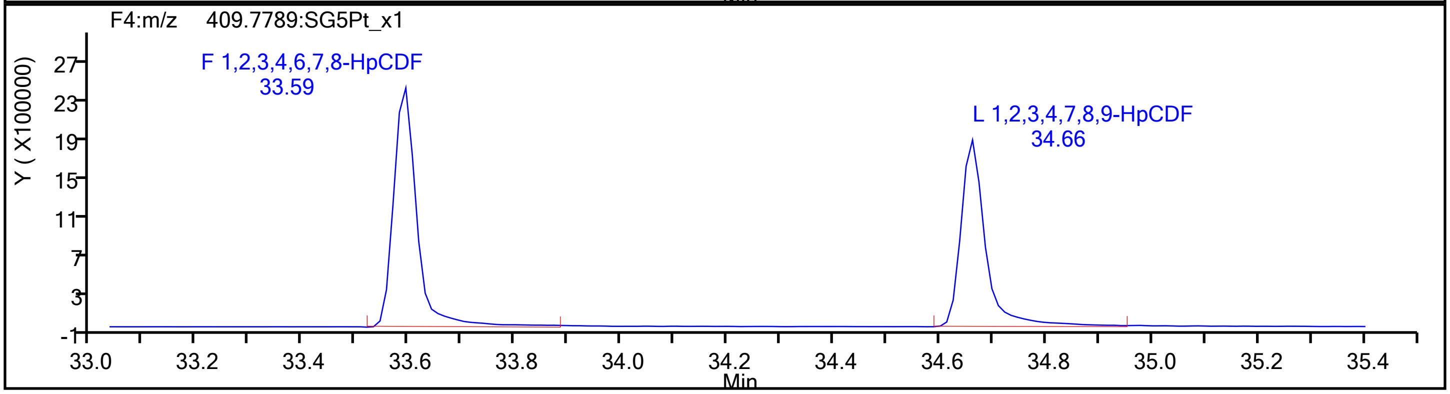

HpCDF Standards

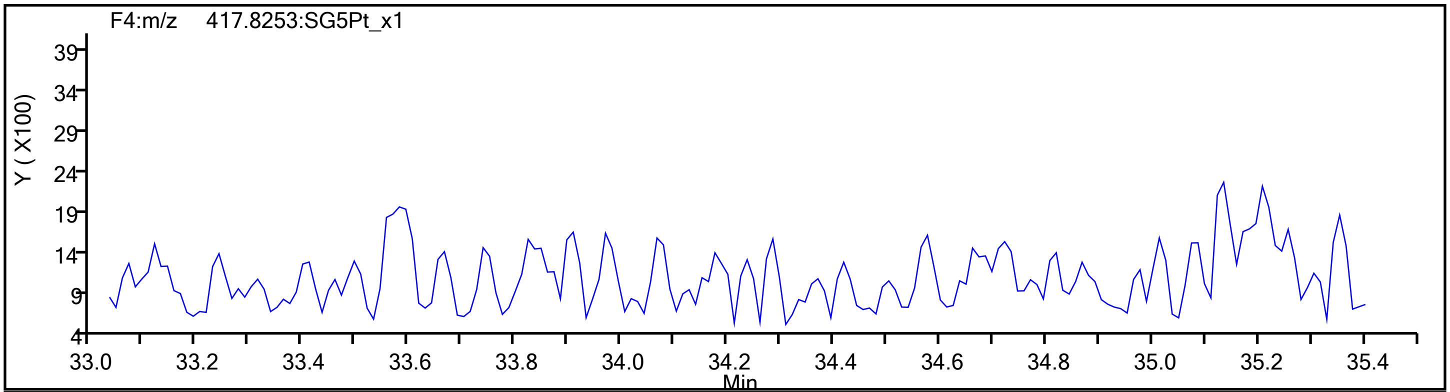

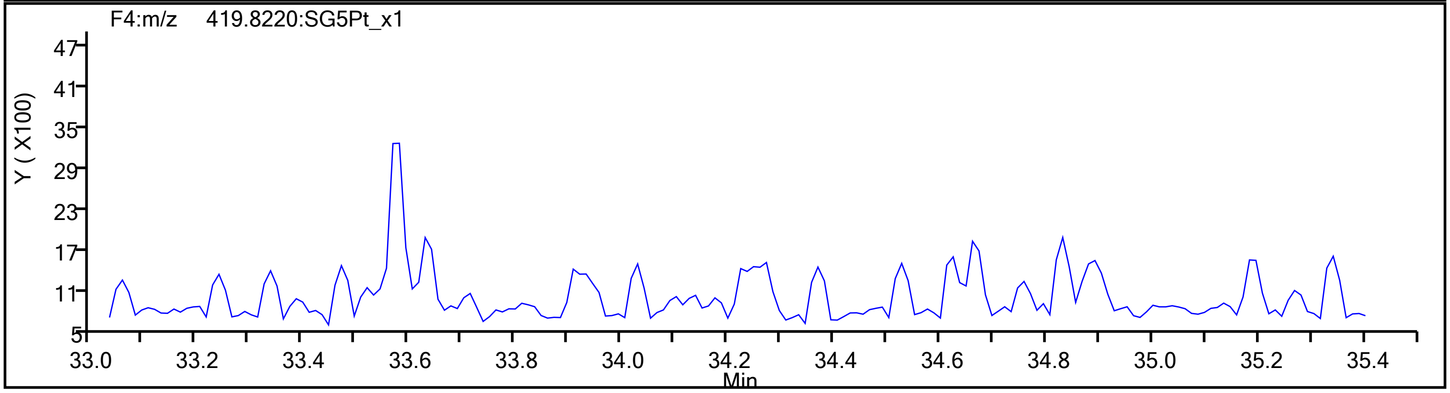

Report Date: 17-Mar-2021 23:05:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

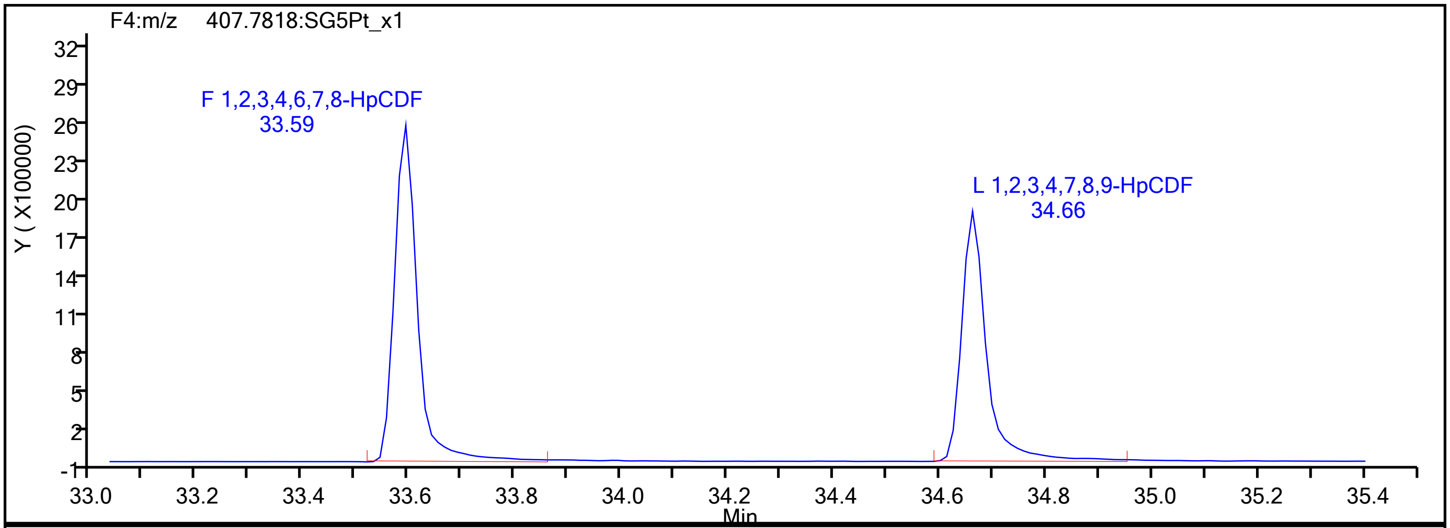

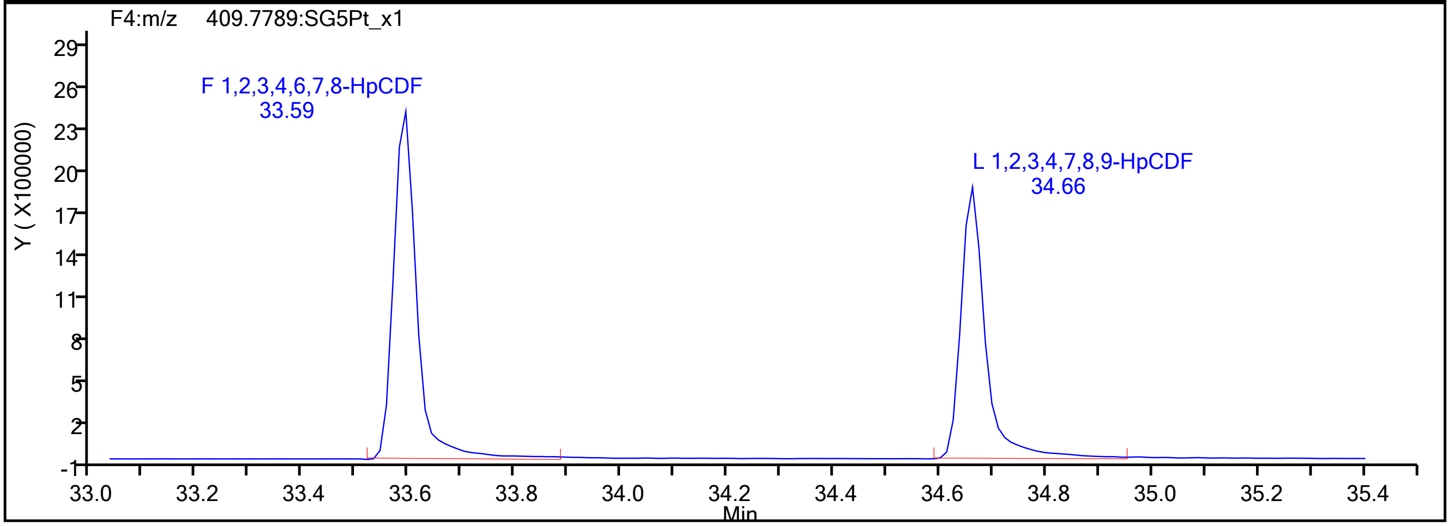

HpCDF Interference Mass

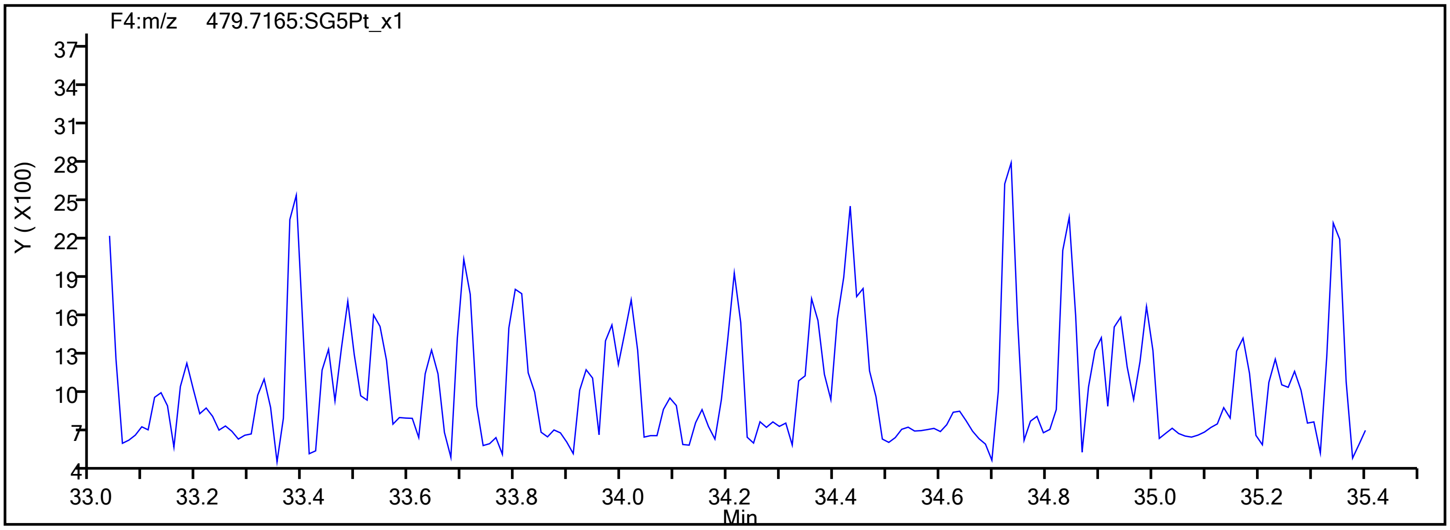

Report Date: 17-Mar-2021 23:05:32
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 471421
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

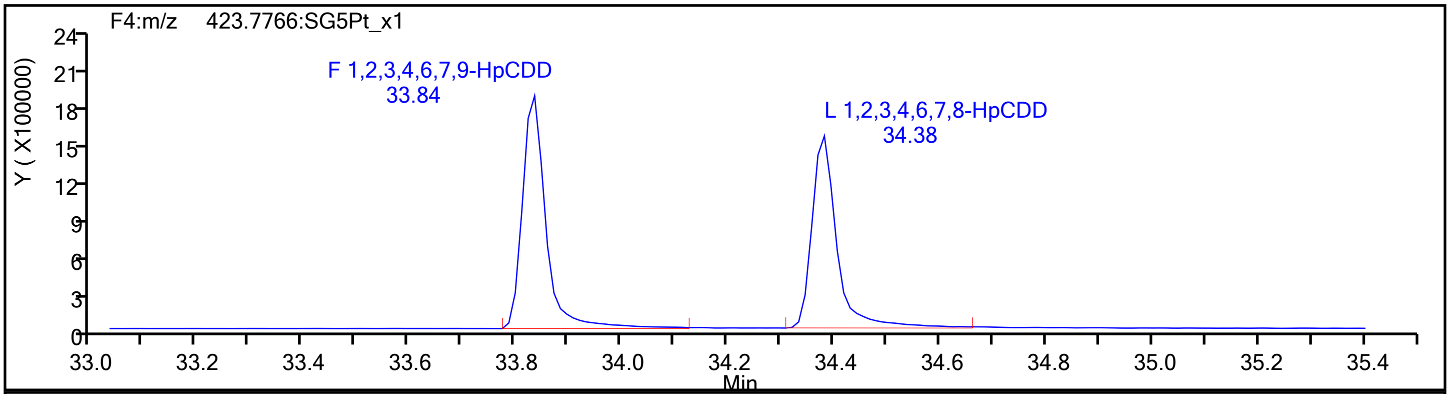

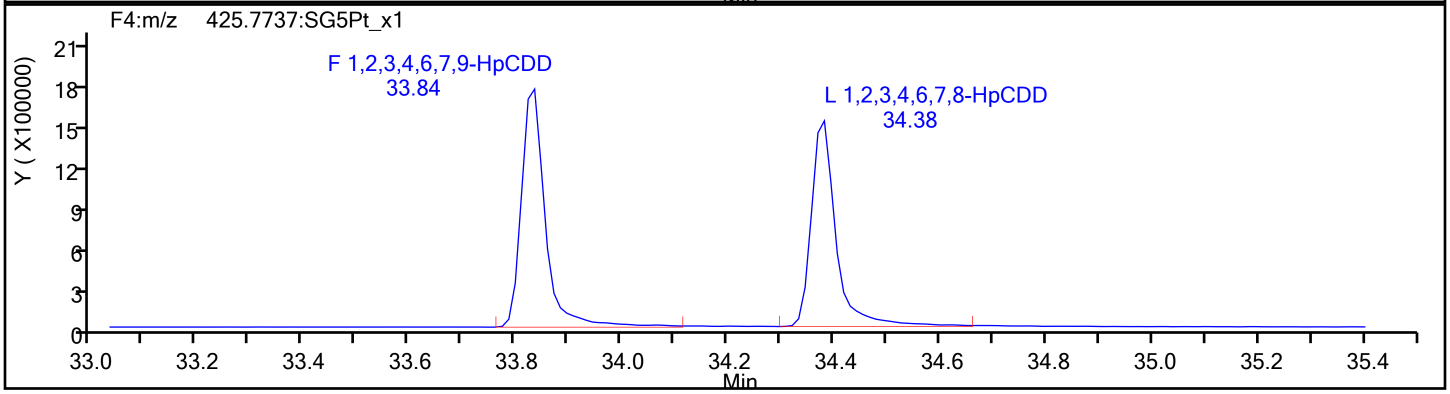

HpCDD Standards

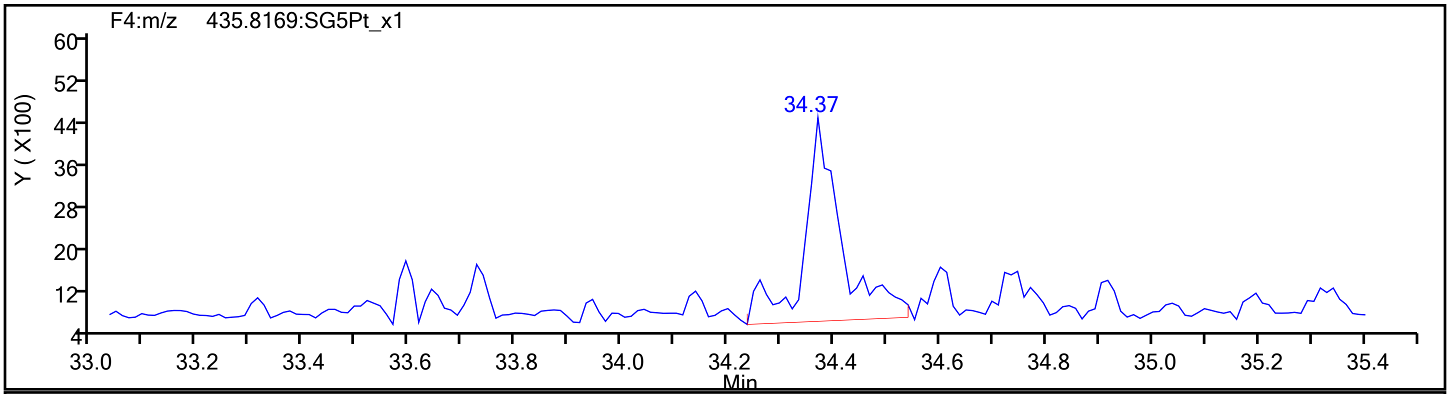

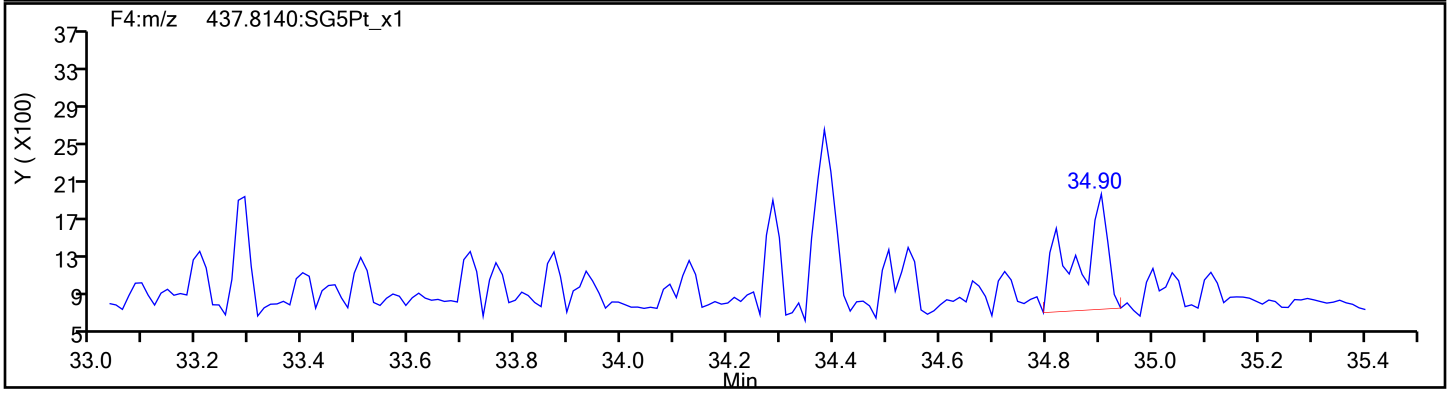

Report Date: 17-Mar-2021 23:05:32 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d
Injection Date: 17-Mar-2021 12:43:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: KSS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 471421
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

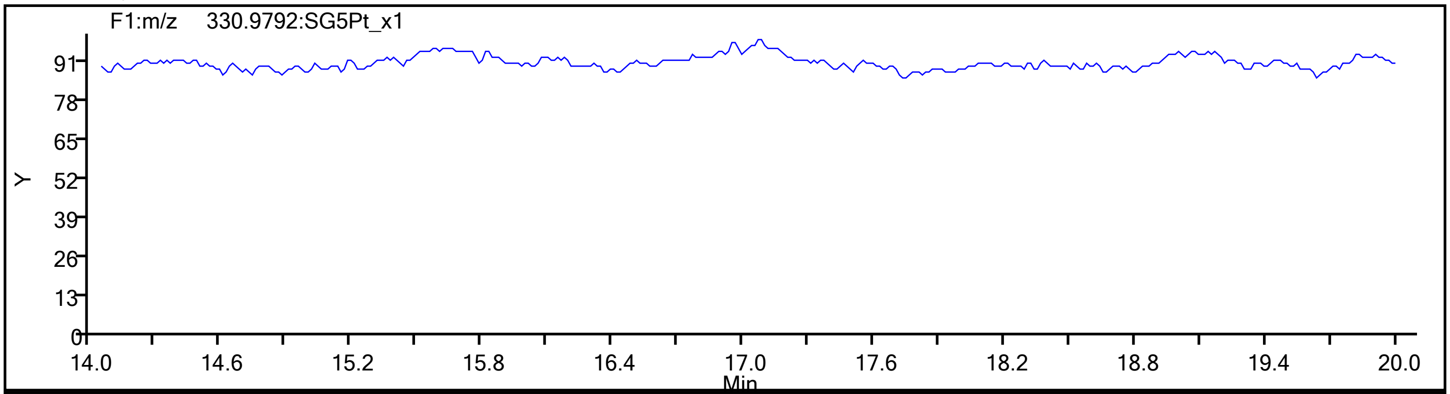

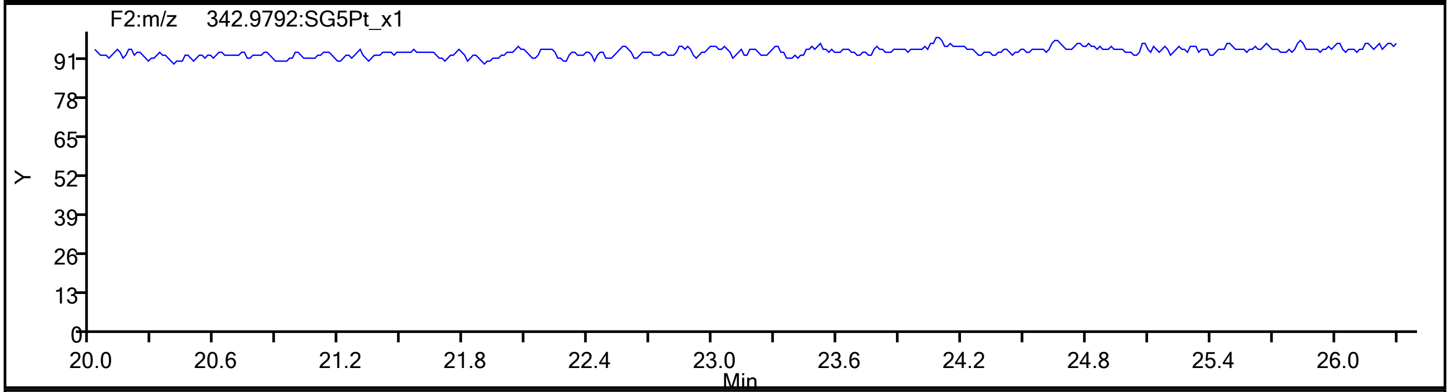

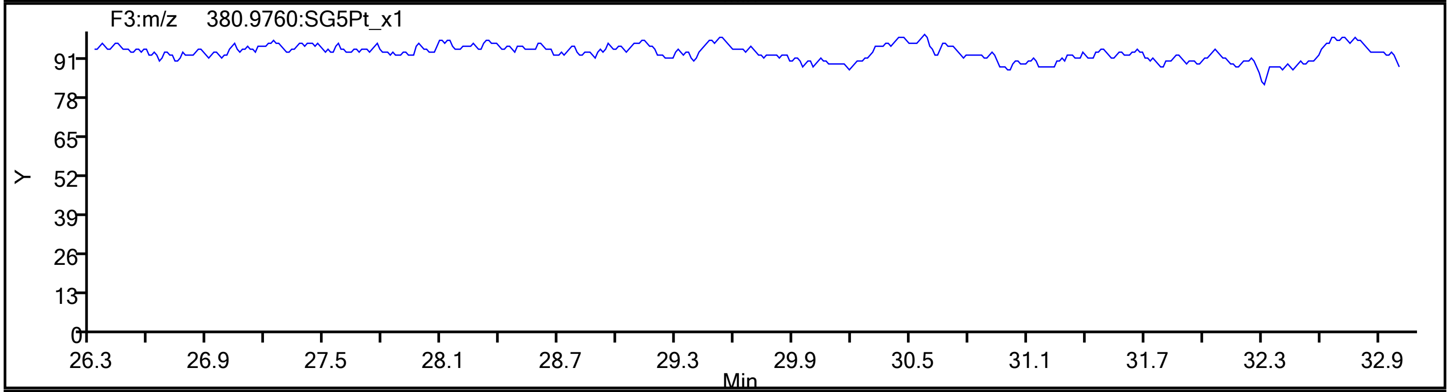

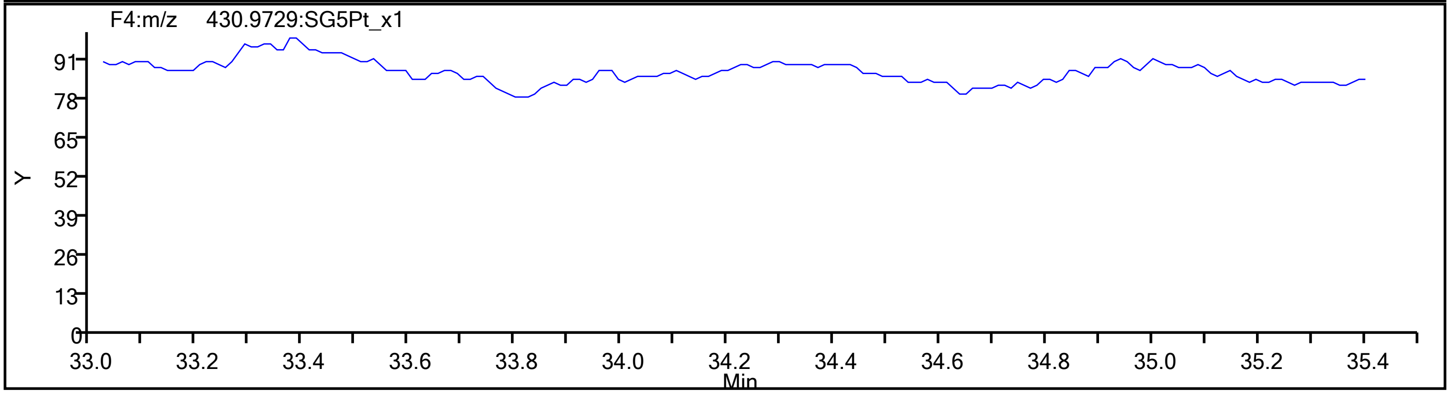

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20210317-115265.b\17MR2110D5_4.d		
Injection Date:	17-Mar-2021 12:43:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	KSS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	471421	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

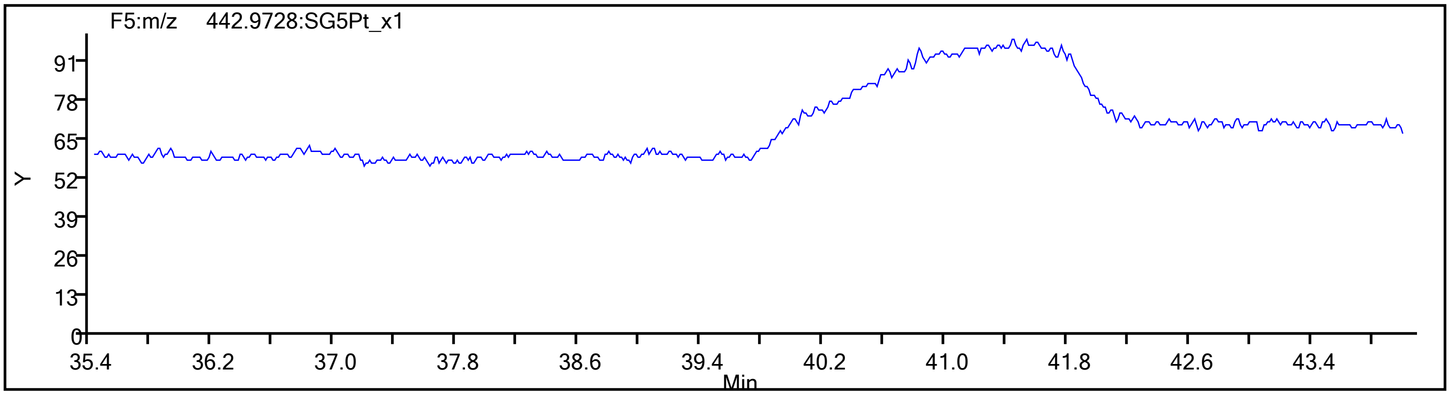

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	03-Feb-2021 12:45:12	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	04-Feb-2021 15:44:45	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1681				

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:49:45

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.282	127501262	0.79	1.3057					0.00	
2,3,7,8-TCDF	16.296	130136116	0.78	0.9242	44.2	44.2	0.0877	0.0877		
D 13C-2,3,7,8-TCDD	14.883	82803278	0.76	0.8971					0.00	
2,3,7,8-TCDD	14.897	89086570	0.79	0.9989	43.1	43.1	0.0762	0.0762		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 03-Feb-2021 12:45:12 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 04-Feb-2021 15:44:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1681

First Level Reviewer: arghestanis Date: 04-Feb-2021 14:49:45

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.282	16.282	0	1.000	56191910	12363808	13614	34035	908		
317.9389	16.282	16.282	0	1.000	71309352	16074564	14594	36485	1101	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.296	16.302	0	1.001	57204324	13097360	9332	23330	1403		
305.8987	16.296	16.302	0	1.001	72931792	16399719	13704	34260	1197	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.883	14.883	0	1.000	35796876	8618702	8849	22122	974		
333.9339	14.883	14.883	0	1.000	47006402	11652558	5367	13417	2171	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.897	14.906	-1	1.001	39310592	9589423	7200	18000	1332		
321.8936	14.897	14.906	-1	1.001	49775978	12292360	8229	20572	1494	0.79(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 04-Feb-2021 15:44:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d
Injection Date: 03-Feb-2021 12:45:12 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

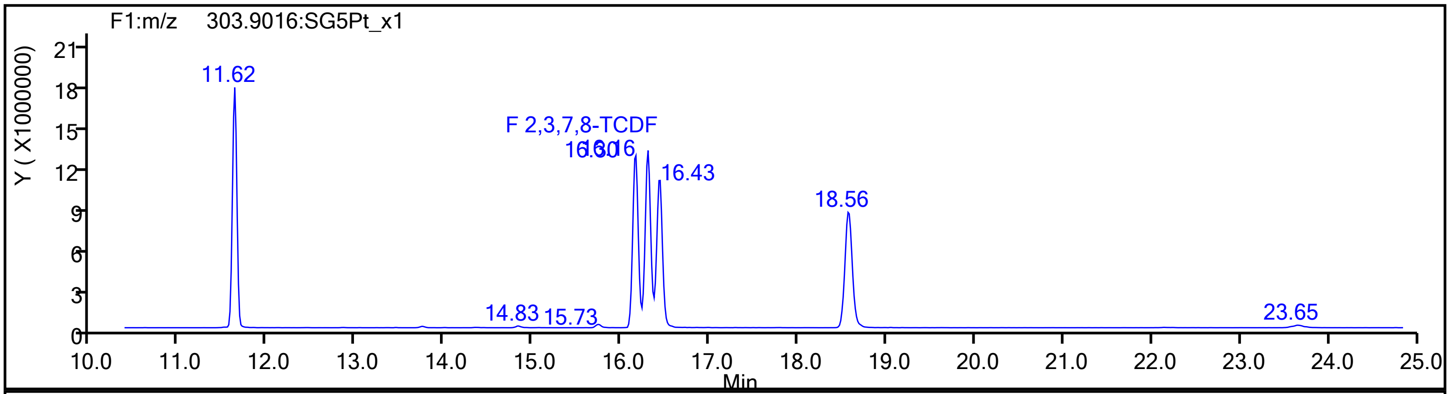

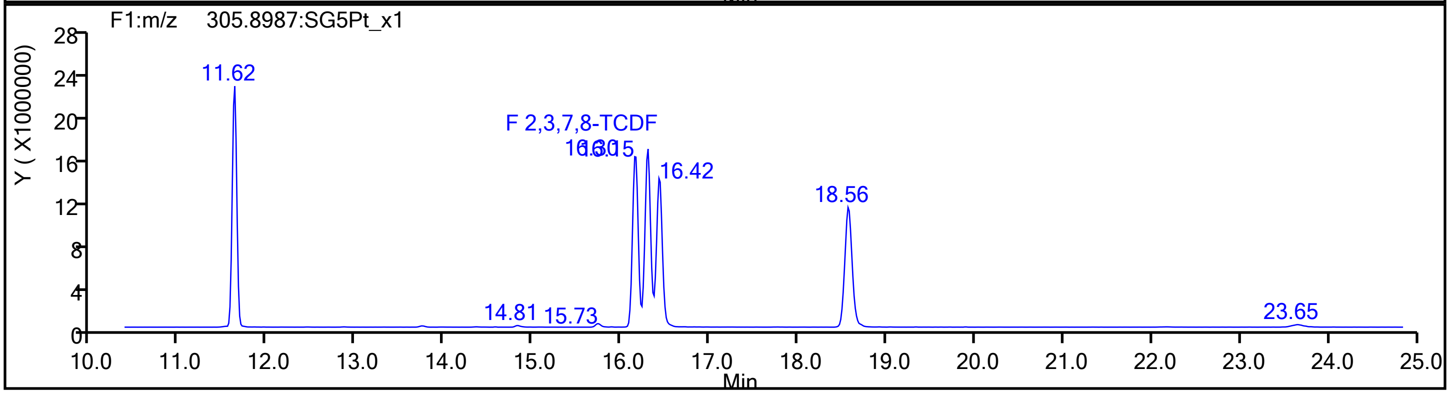

TCDF Standards

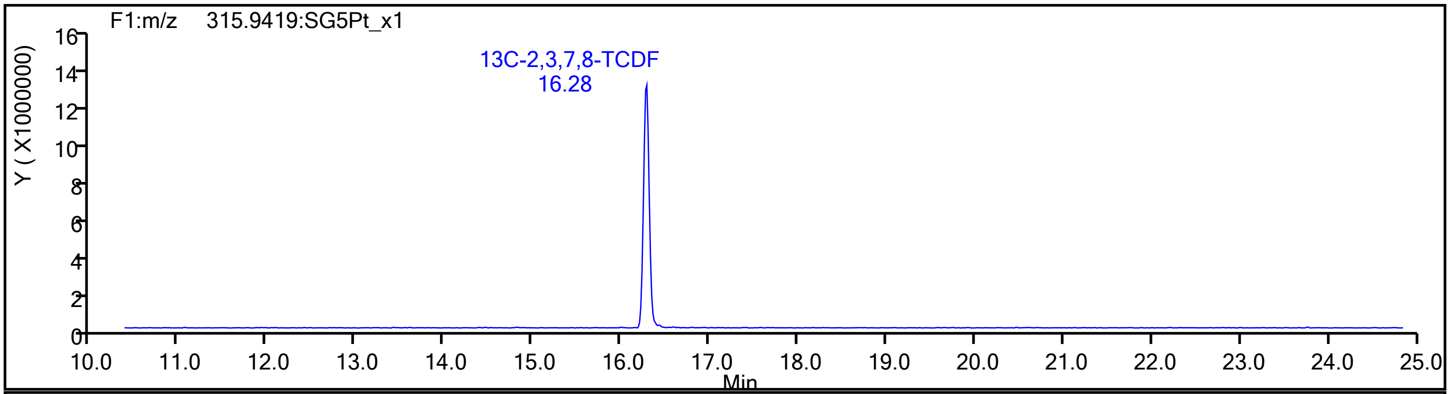

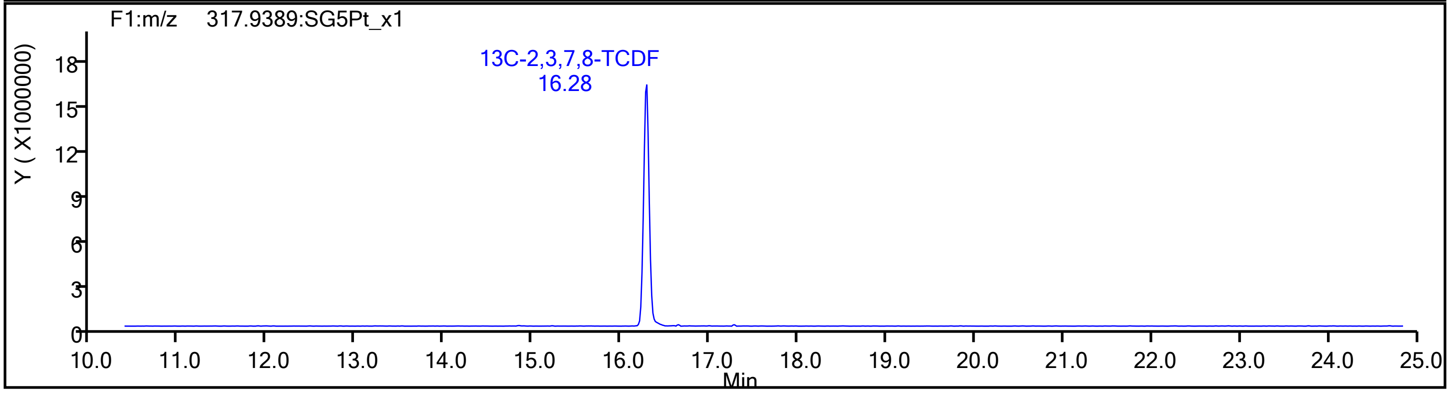

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d		
Injection Date:	03-Feb-2021 12:45:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

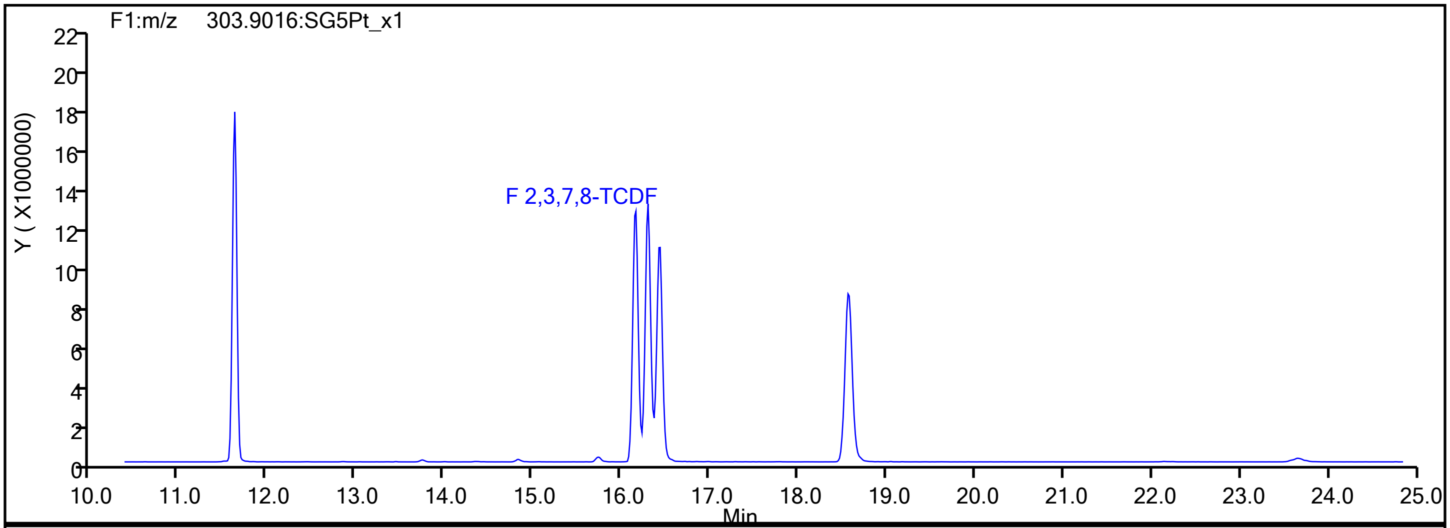

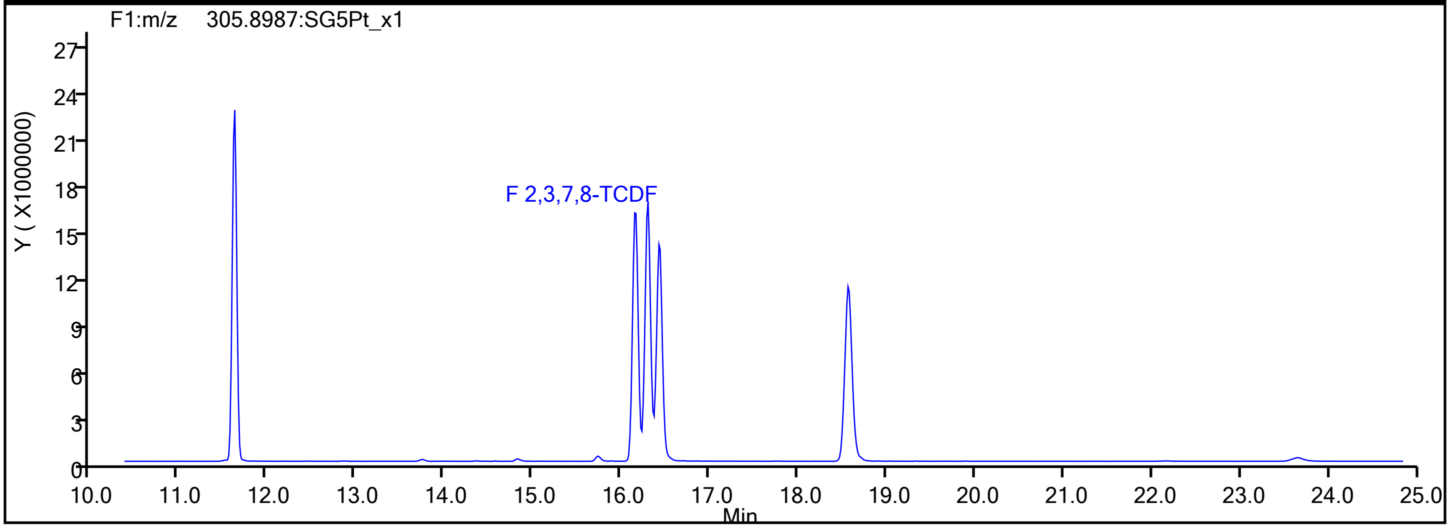

TCDF Interference Mass

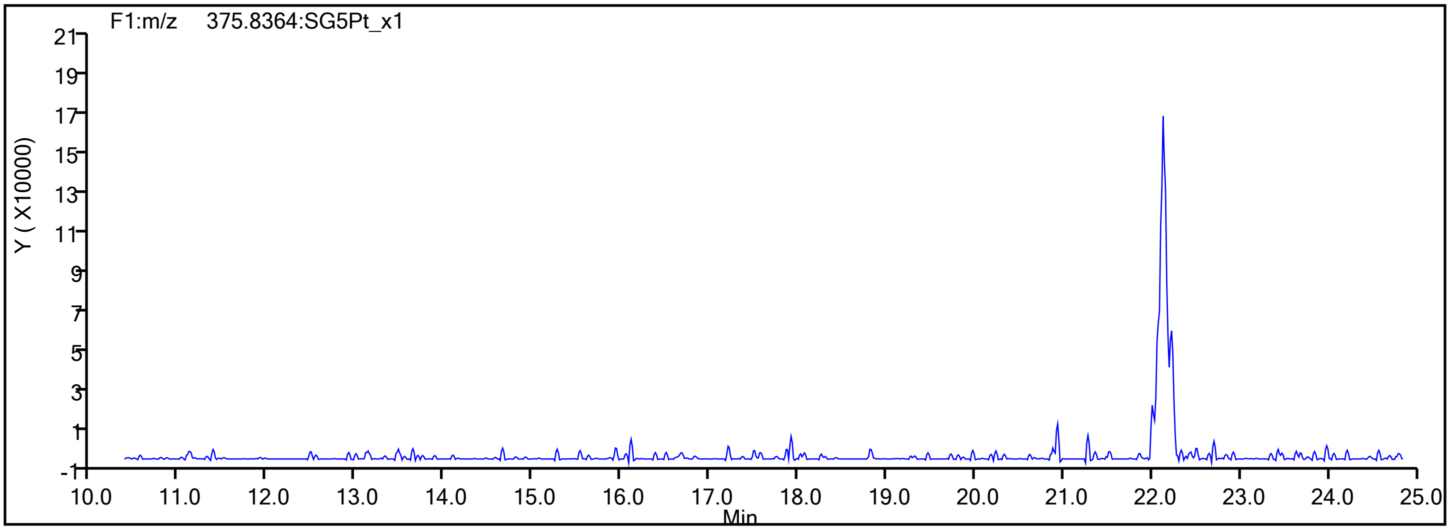

Report Date: 04-Feb-2021 15:44:47 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d
Injection Date: 03-Feb-2021 12:45:12
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458526
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

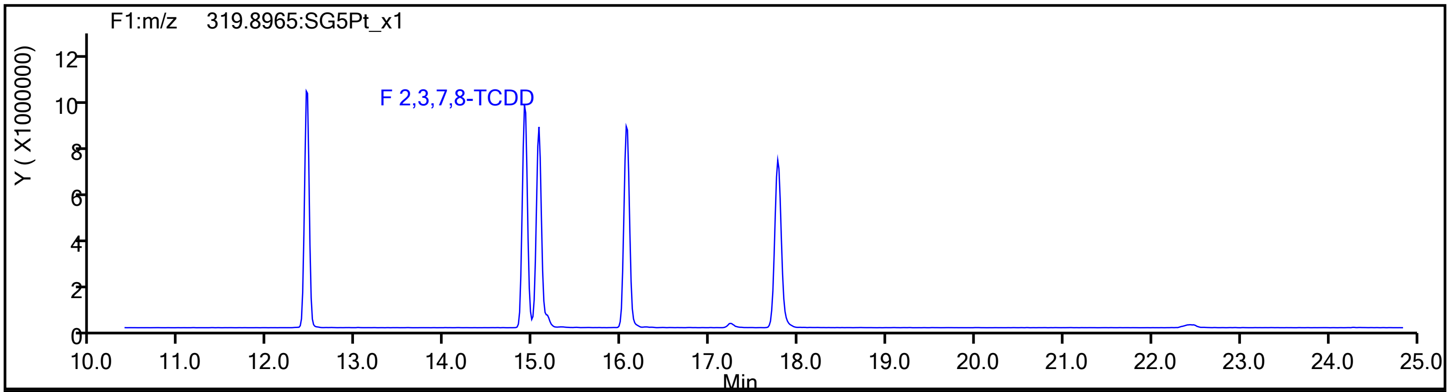

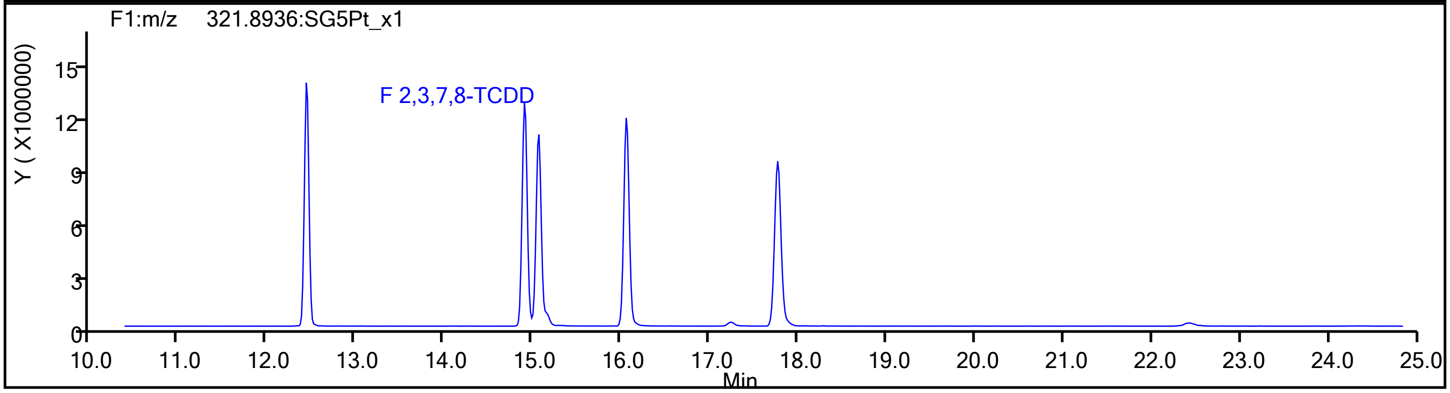

TCDD Standards

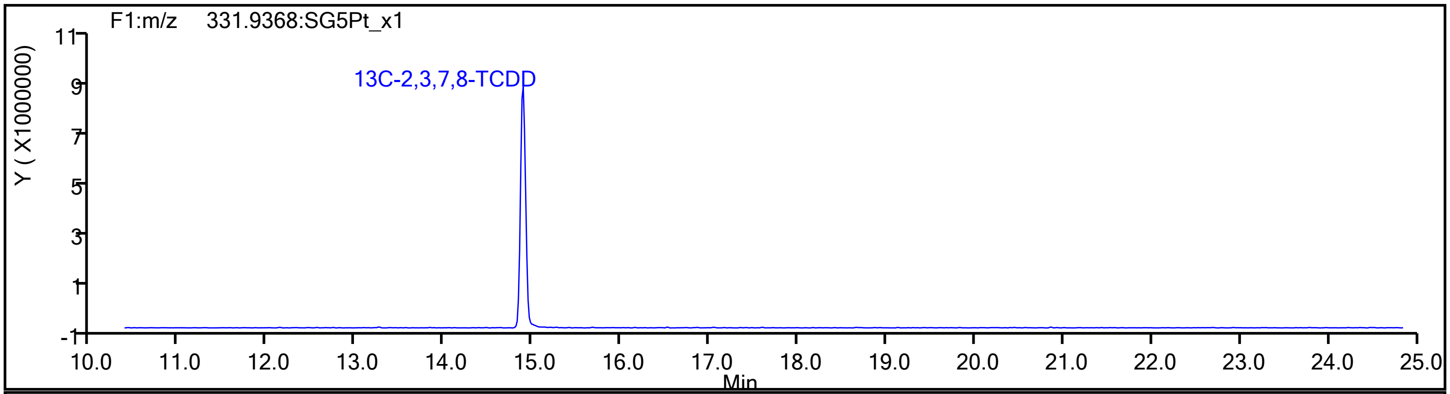

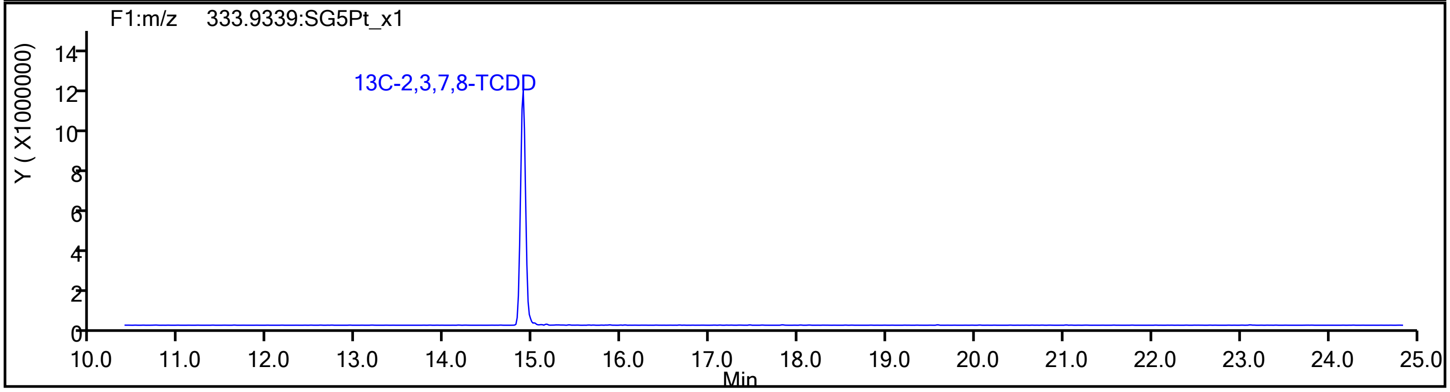

Report Date: 04-Feb-2021 15:44:48 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d		
Injection Date:	03-Feb-2021 12:45:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

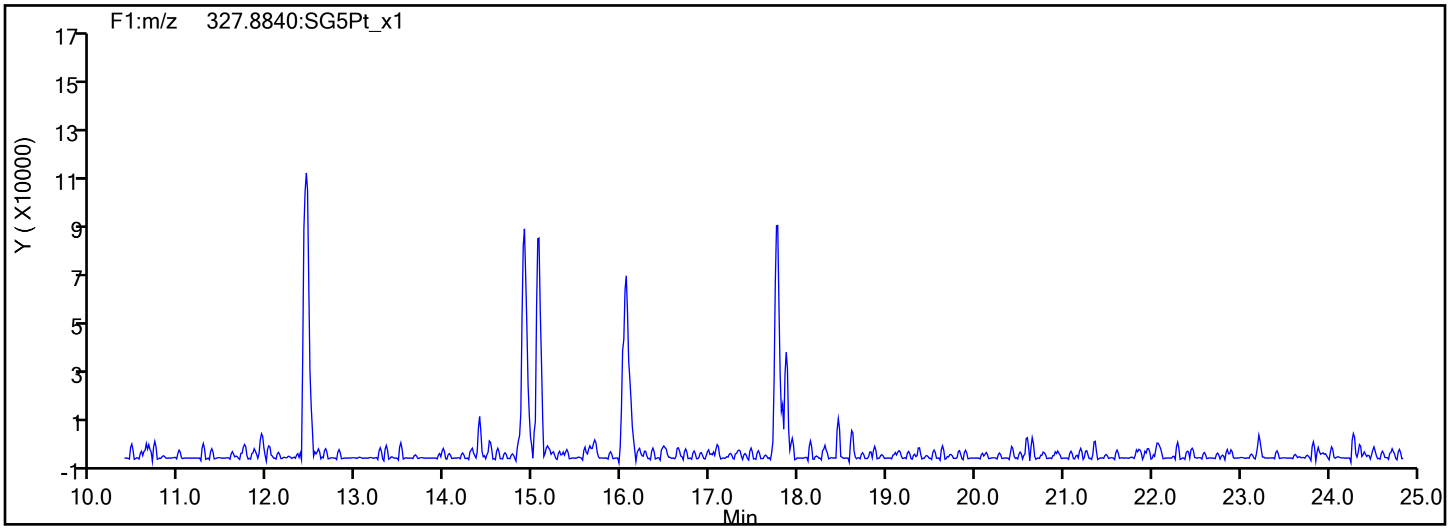

37Cl4-TCDD Standards

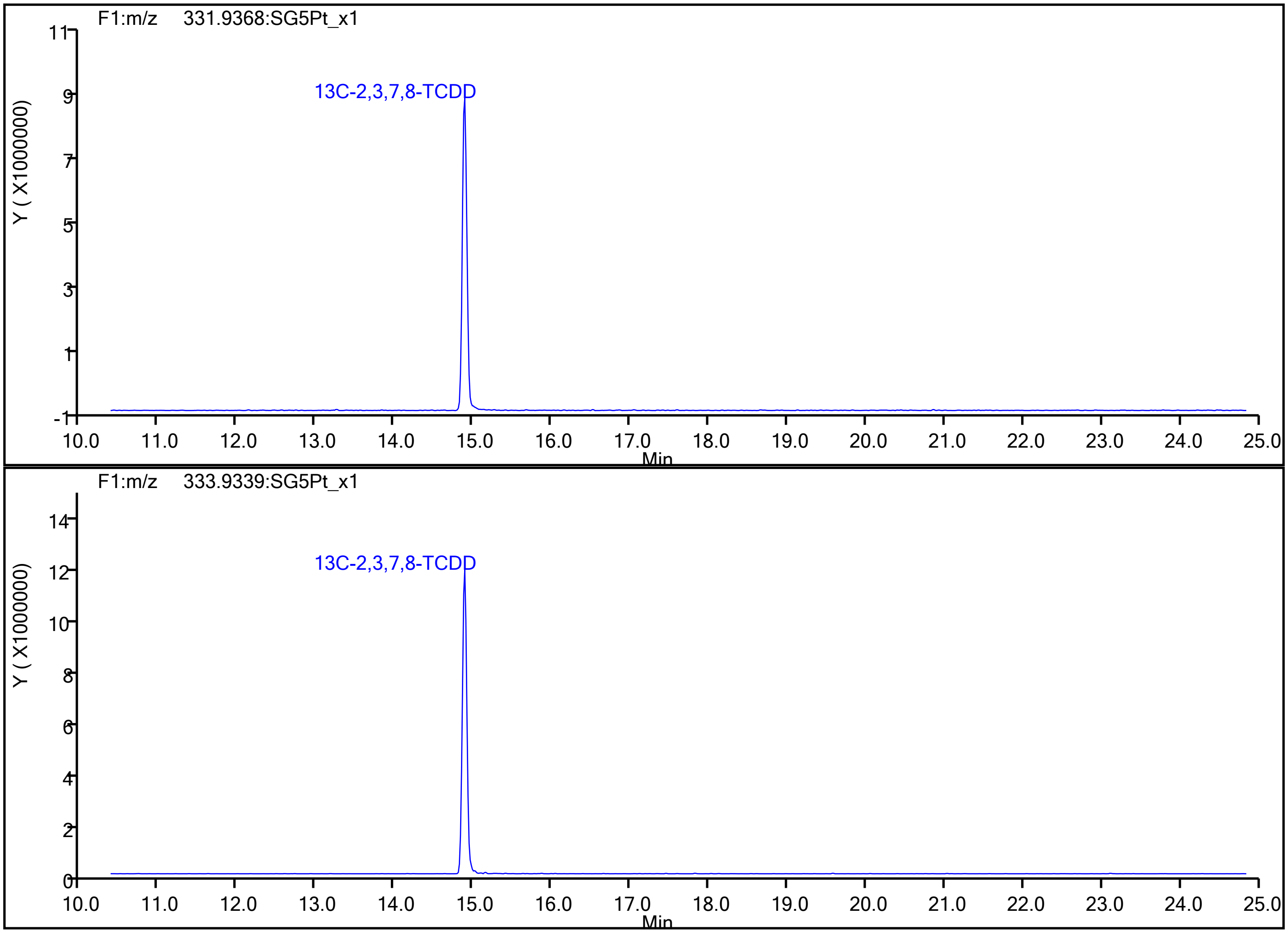

Report Date: 04-Feb-2021 15:44:48 Chrom Revision: 2.3 09-Dec-2020 16:22:14

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_001.d		
Injection Date:	03-Feb-2021 12:45:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458526	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

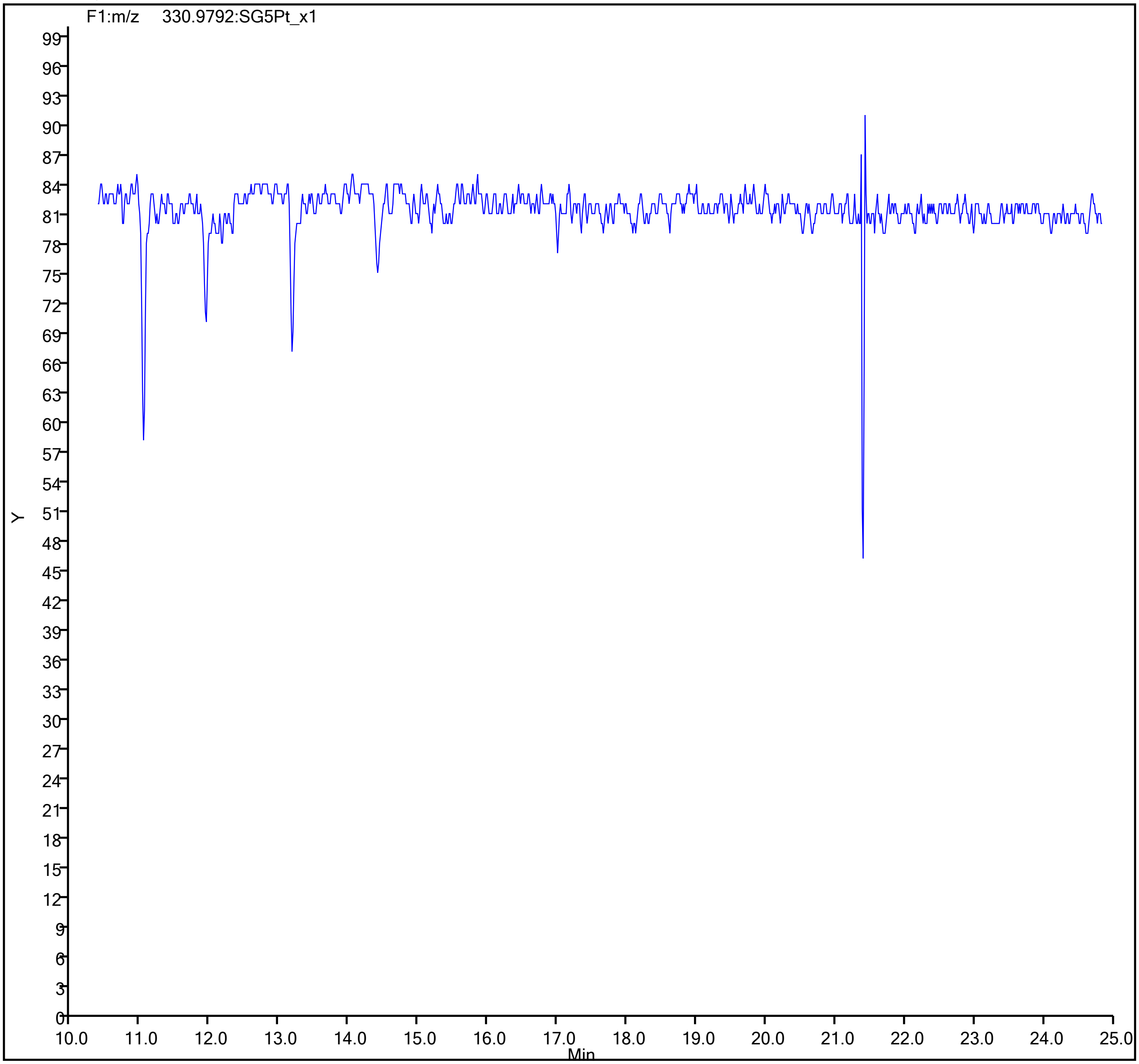

Report Date: 12-Mar-2021 11:08:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	11-Mar-2021 13:50:56	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 11:08:25	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				

First Level Reviewer: bilottag Date: 12-Mar-2021 10:59:39

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.150	143275492	0.80	1.3057					0.00	
2,3,7,8-TCDF	16.163	151337074	0.77	0.9242	45.7	45.7	0.0953	0.0953		
D 13C-2,3,7,8-TCDD	14.778	79807967	0.80	0.8971					0.00	
2,3,7,8-TCDD	14.792	93677908	0.80	0.9989	47.0	47.0	0.0999	0.0999		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 12-Mar-2021 11:08:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	11-Mar-2021 13:50:56	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 11:08:25	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				
First Level Reviewer: bilottag		Date:	12-Mar-2021 10:59:39		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.150	16.150	0	1.000	63489027	14576150	13863	34657	1051		
317.9389	16.150	16.150	0	1.000	79786465	18082245	8520	21300	2122	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.163	16.163	0	1.001	66021273	14710006	11856	29640	1241		
305.8987	16.163	16.163	0	1.001	85315801	18999625	16895	42237	1125	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.778	14.778	0	1.000	35519050	8365933	6695	16737	1250		
333.9339	14.764	14.778	-1	1.000	44288917	10674617	10191	25477	1047	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.792	14.792	0	1.001	41698380	10418534	8987	22467	1159		
321.8936	14.792	14.792	0	1.001	51979528	12724138	10022	25055	1270	0.80(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 12-Mar-2021 11:08:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d

Injection Date: 11-Mar-2021 13:50:56 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469703 Sample Line#: 1

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

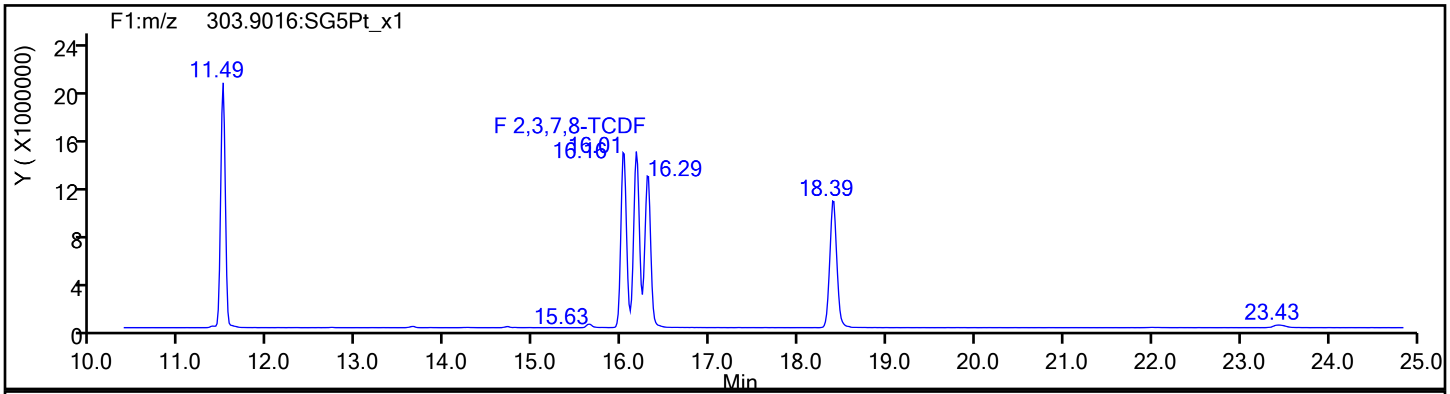

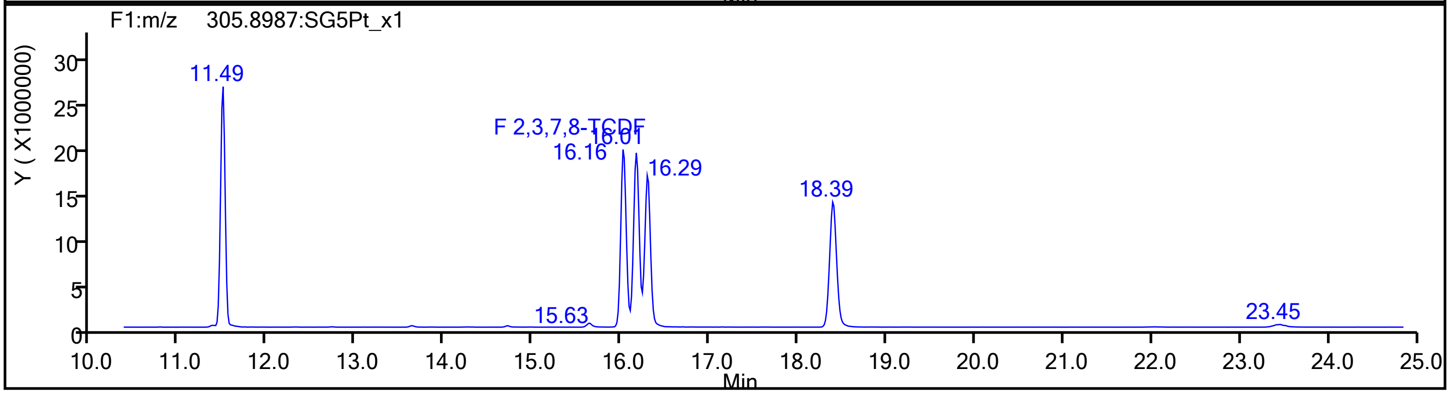

TCDF Standards

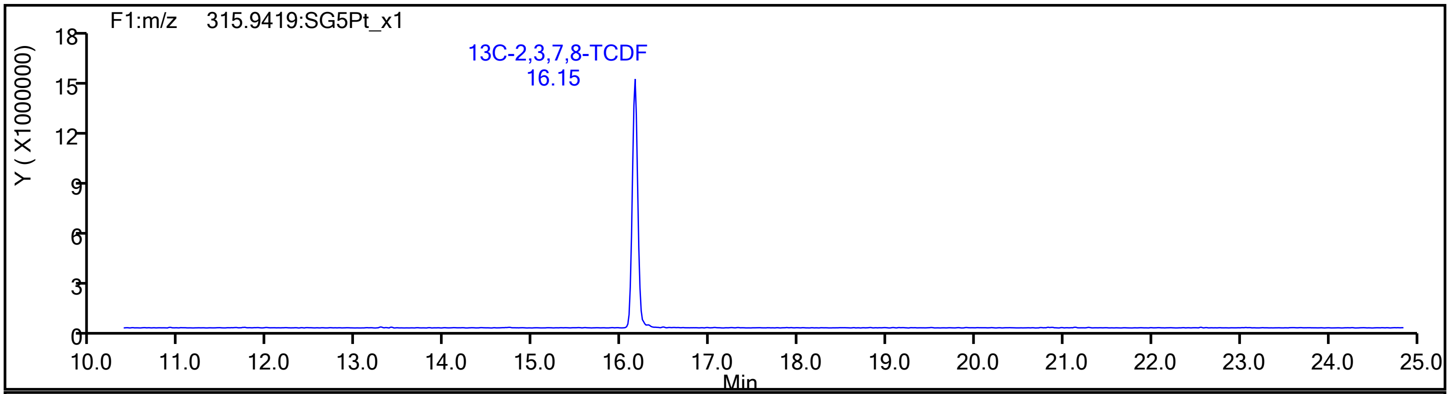

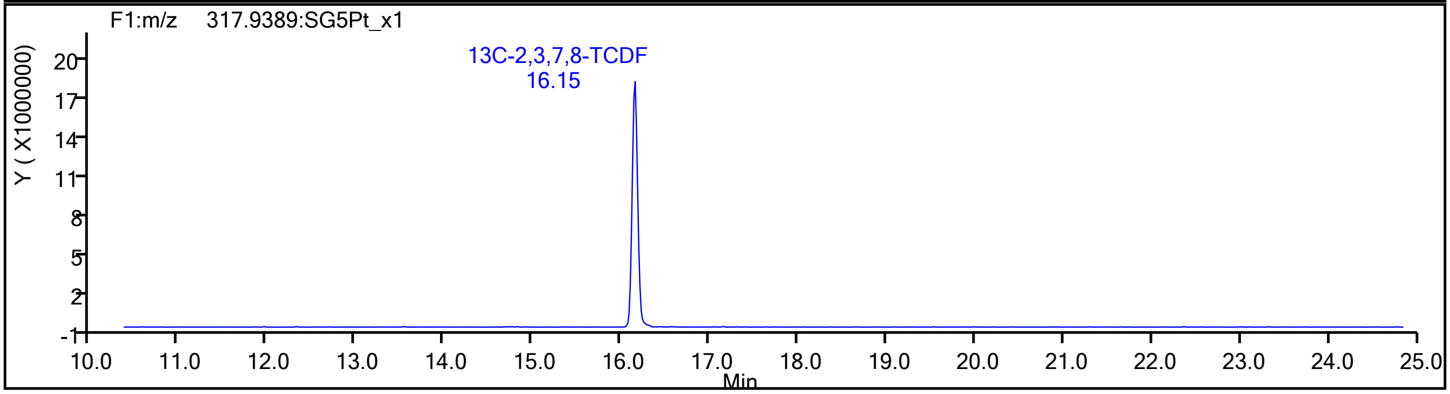

Report Date: 12-Mar-2021 11:08:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d		
Injection Date:	11-Mar-2021 13:50:56	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

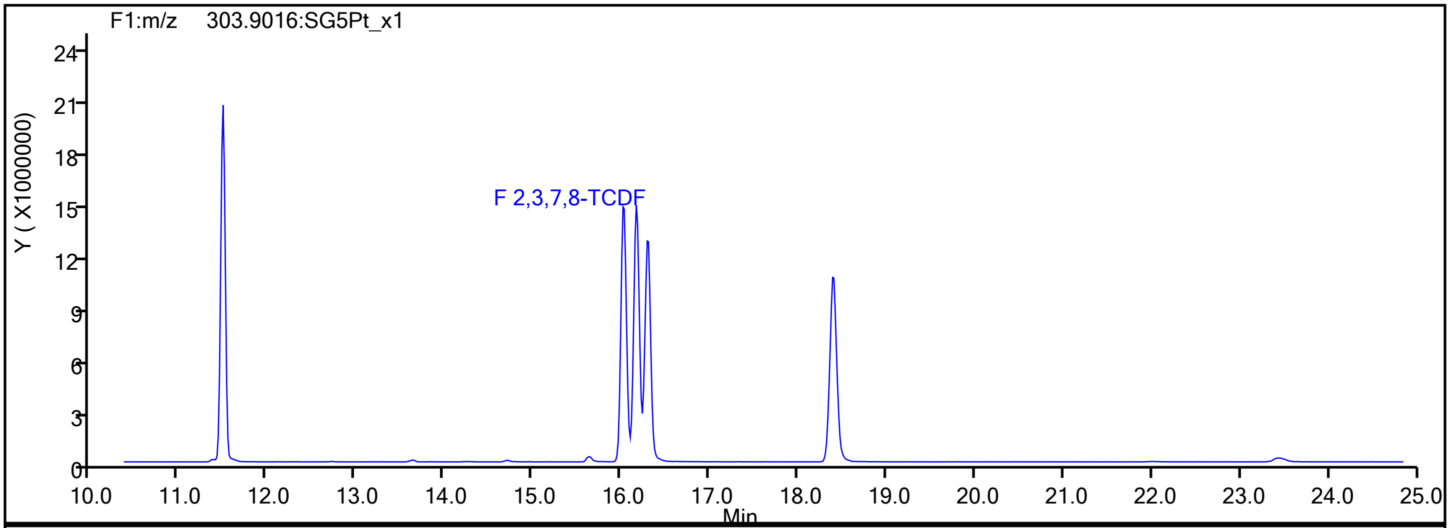

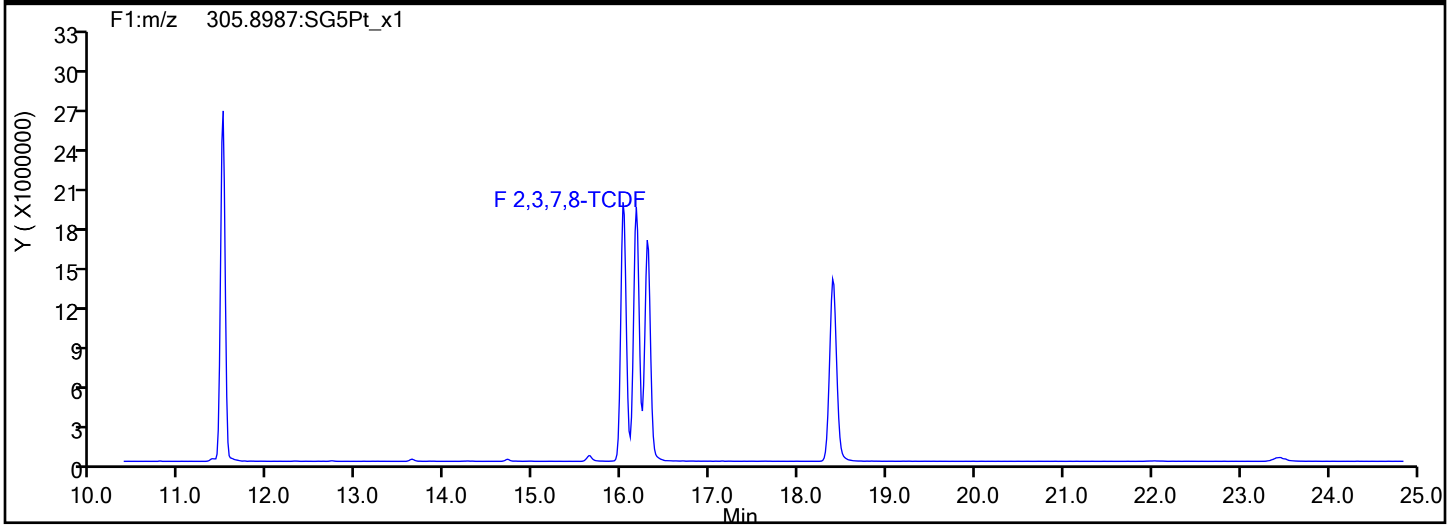

TCDF Interference Mass

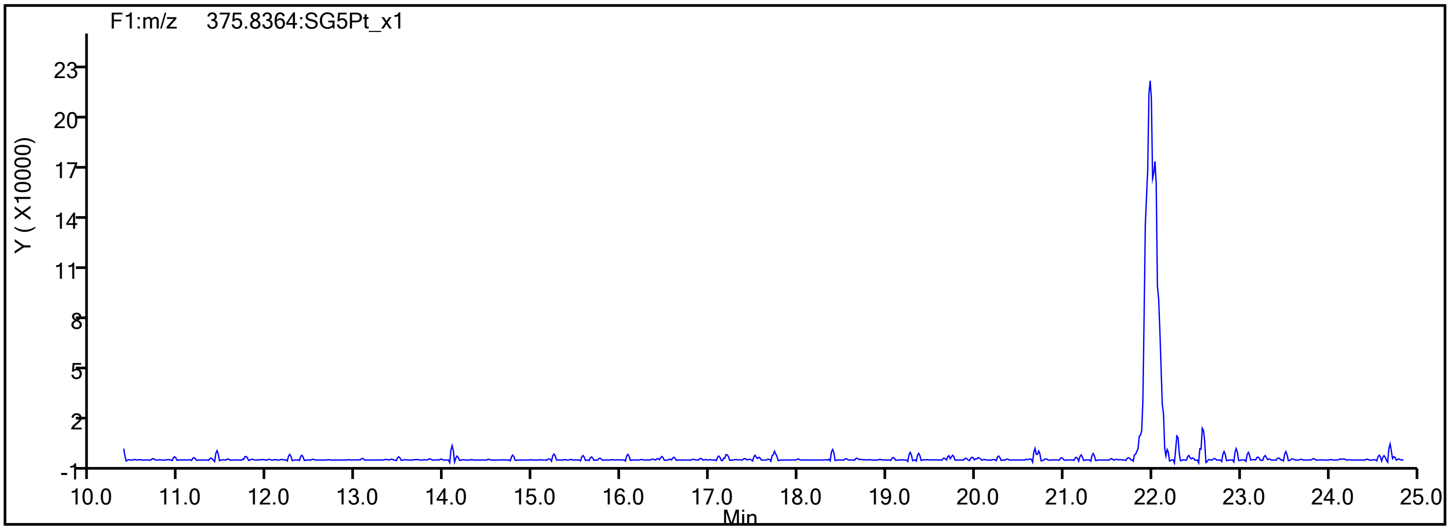

Report Date: 12-Mar-2021 11:08:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d
Injection Date: 11-Mar-2021 13:50:56 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469703 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

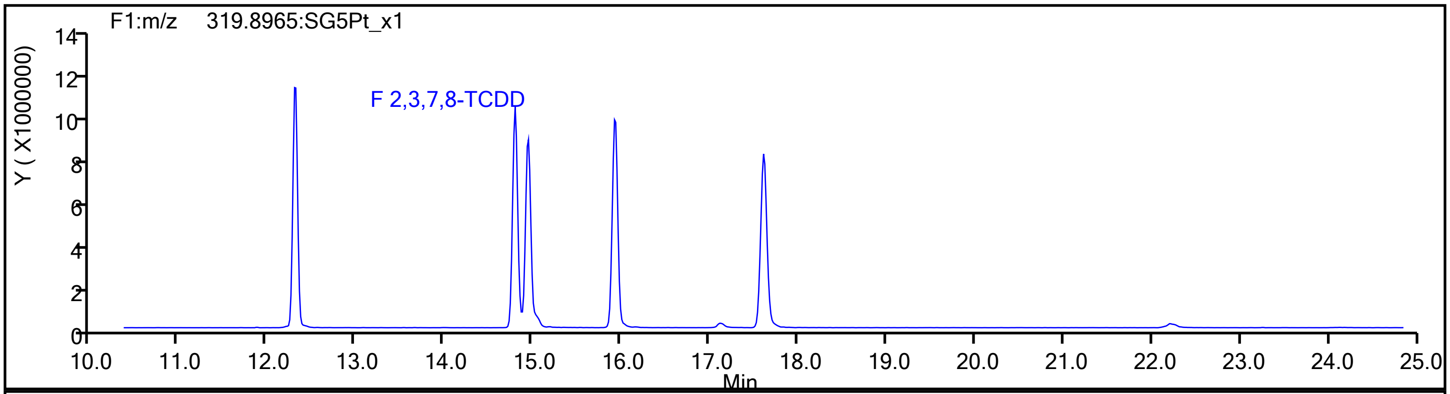

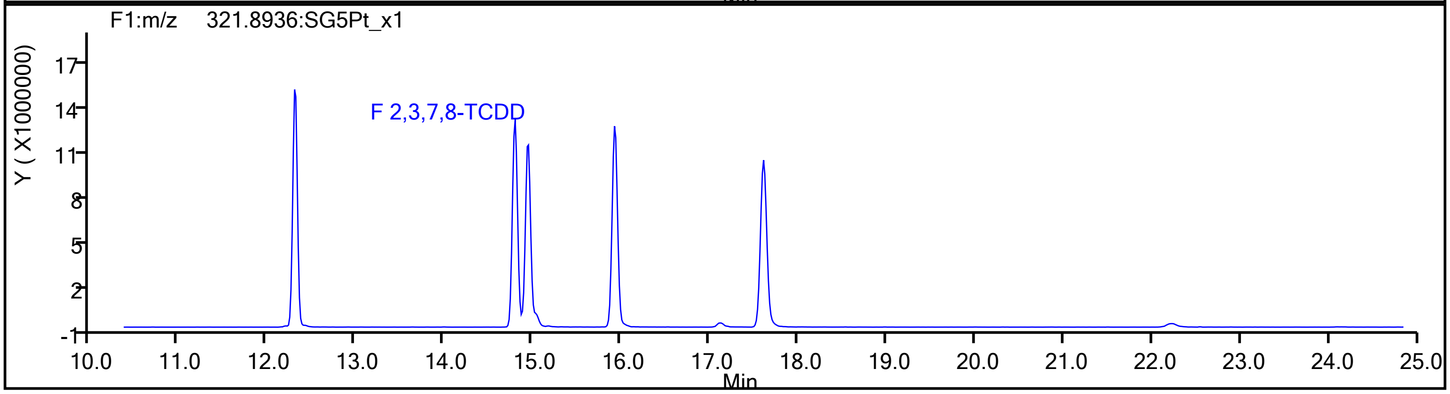

TCDD Standards

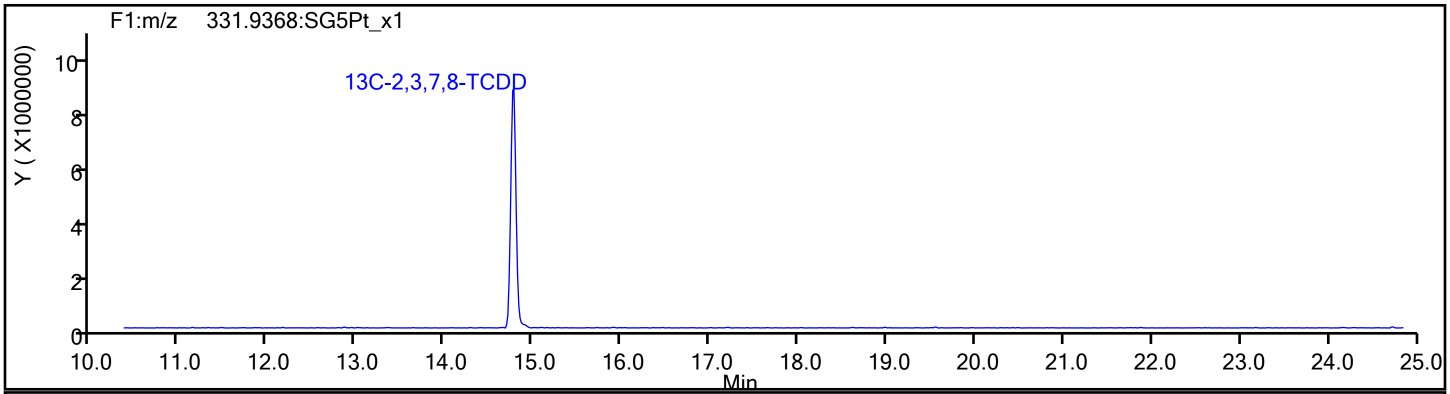

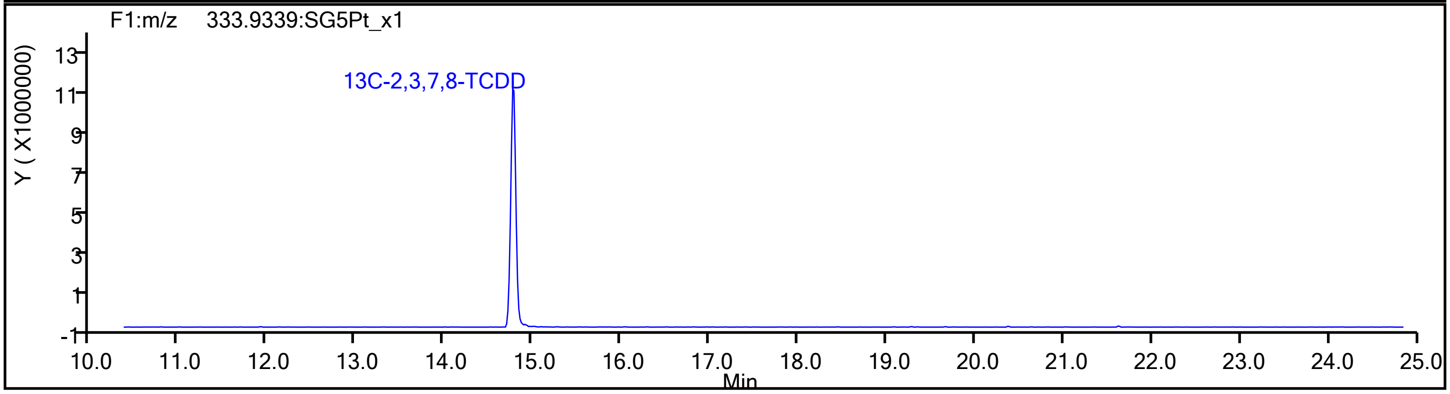

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d		
Injection Date:	11-Mar-2021 13:50:56	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

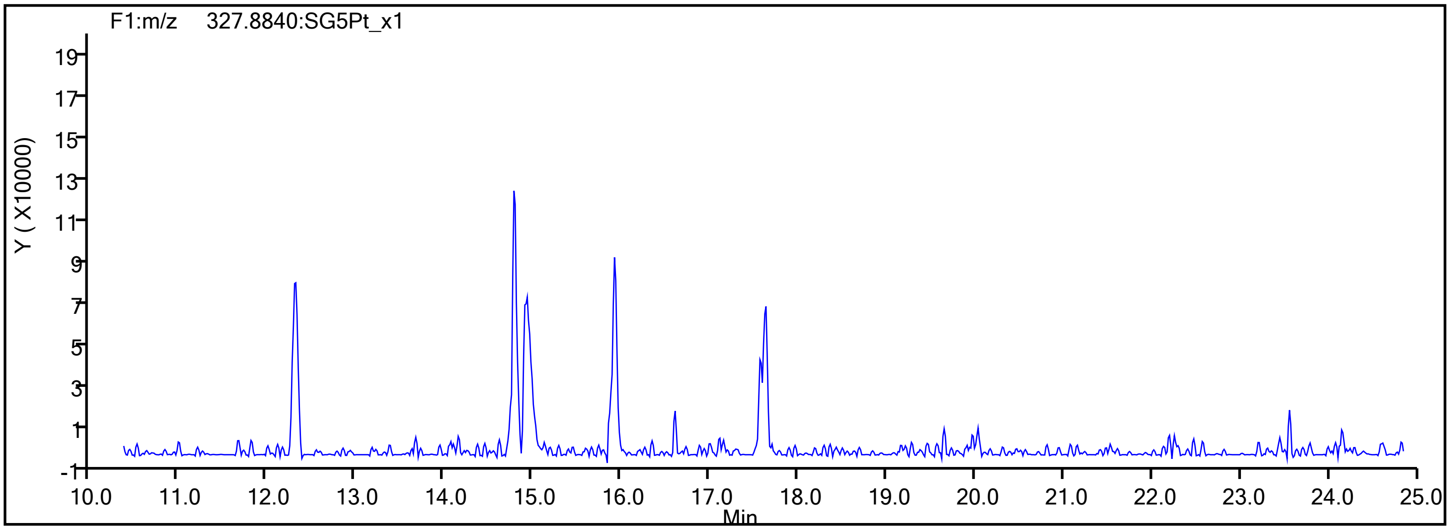

37Cl4-TCDD Standards

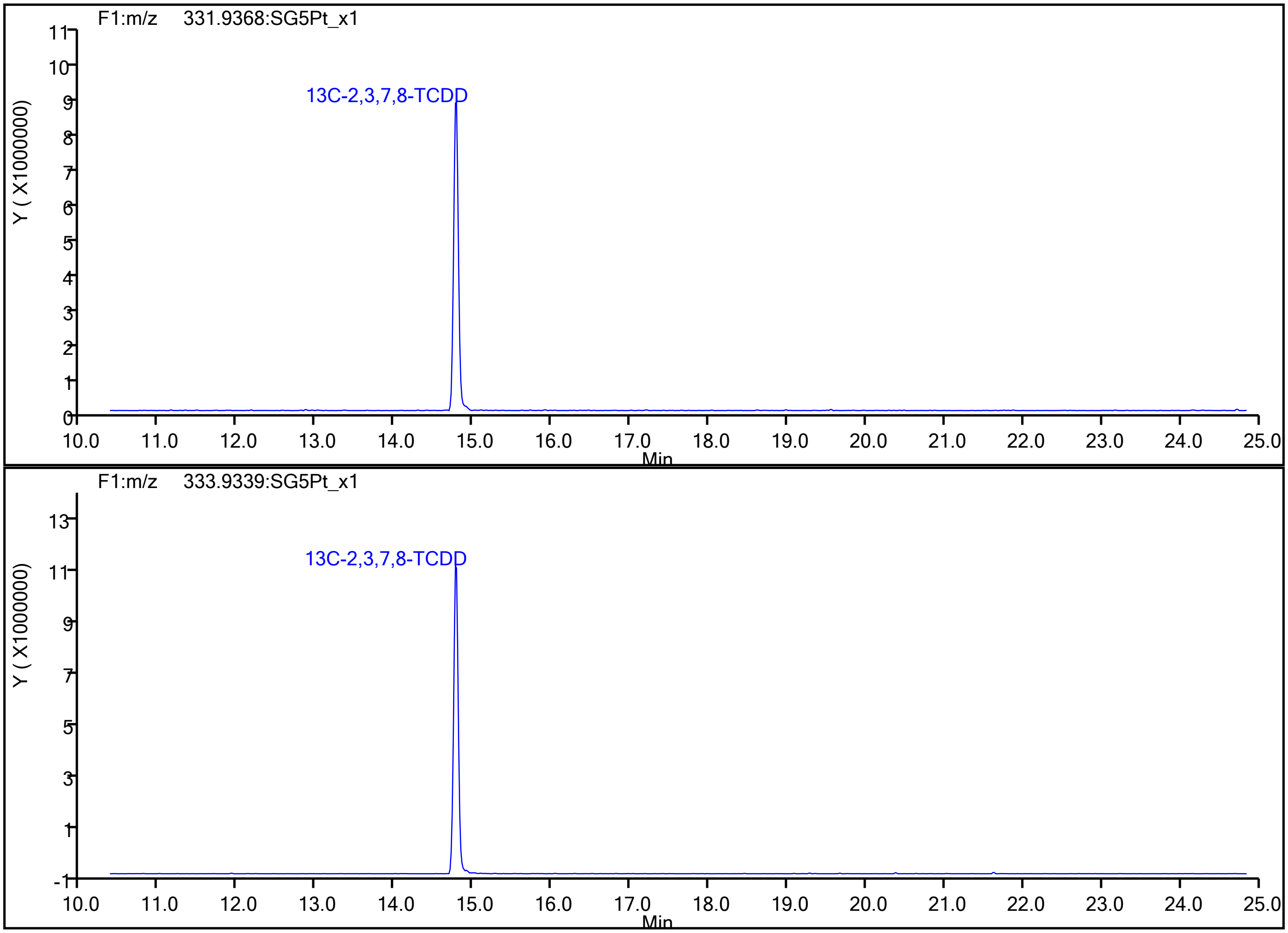

Report Date: 12-Mar-2021 11:08:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210312-114901.b\11MR2111D2_001.d		
Injection Date:	11-Mar-2021 13:50:56	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469703	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

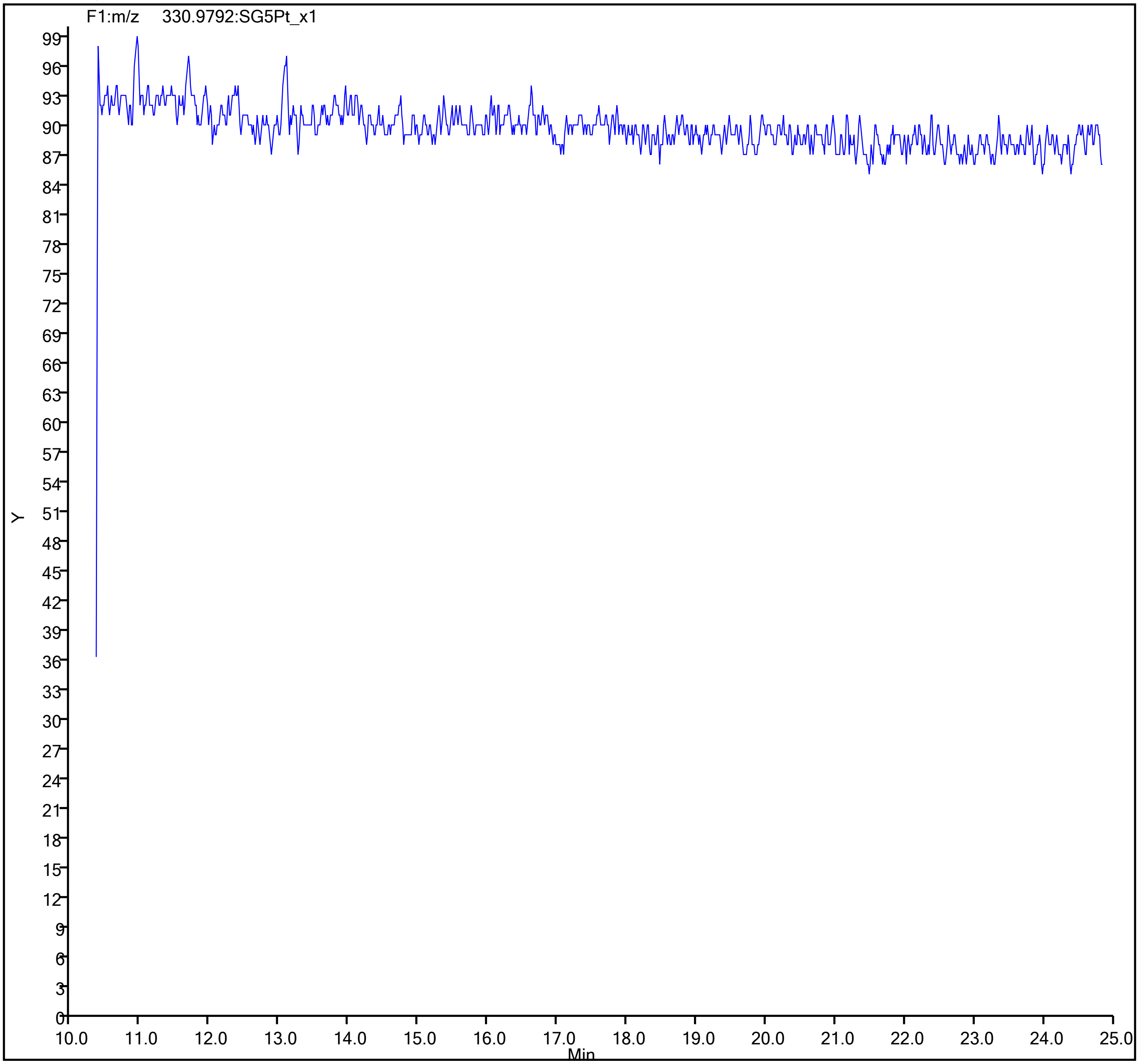

Report Date: 17-Mar-2021 08:12:45 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	16-Mar-2021 20:53:10	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	17-Mar-2021 08:12:45	Calib Date:	03-Feb-2021 17:13:46		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1655				

First Level Reviewer: bilottag Date: 17-Mar-2021 08:09:23

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.136	114040198	0.81	1.3057					0.00	
2,3,7,8-TCDF	16.150	116275308	0.77	0.9242	44.1	44.1	0.1016	0.1016		
D 13C-2,3,7,8-TCDD	14.764	68524912	0.79	0.8971					0.00	
2,3,7,8-TCDD	14.791	78008240	0.79	0.9989	45.6	45.6	0.1110	0.1110		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 08:12:45 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 16-Mar-2021 20:53:10 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 17-Mar-2021 08:12:45 Calib Date: 03-Feb-2021 17:13:46
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20210204-112653.b\03FE2111D2_008.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1655

First Level Reviewer: bilottag Date: 17-Mar-2021 08:09:23

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.136	16.136	0	1.000	50970685	11864911	15510	38775	765		
317.9389	16.136	16.136	0	1.000	63069513	14583045	13298	33245	1097	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.150	16.150	0	1.001	50694185	11803296	12273	30682	962		
305.8987	16.150	16.150	0	1.001	65581123	15146069	12572	31430	1205	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	14.764	14.764	0	1.000	30180829	7442371	11993	29982	621		
333.9339	14.764	14.764	0	1.000	38344083	9553859	10598	26495	901	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	14.791	14.791	0	1.002	34379598	8430433	9398	23495	897		
321.8936	14.778	14.791	-1	1.001	43628642	10925798	9450	23625	1156	0.79(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 17-Mar-2021 08:12:45 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d

Injection Date: 16-Mar-2021 20:53:10 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 470865 Sample Line#: 1

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

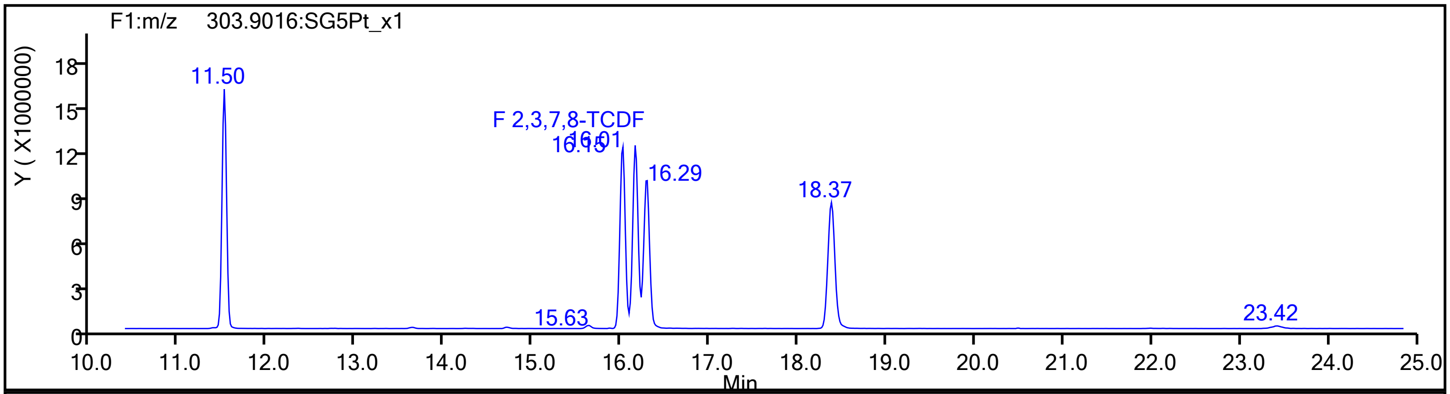

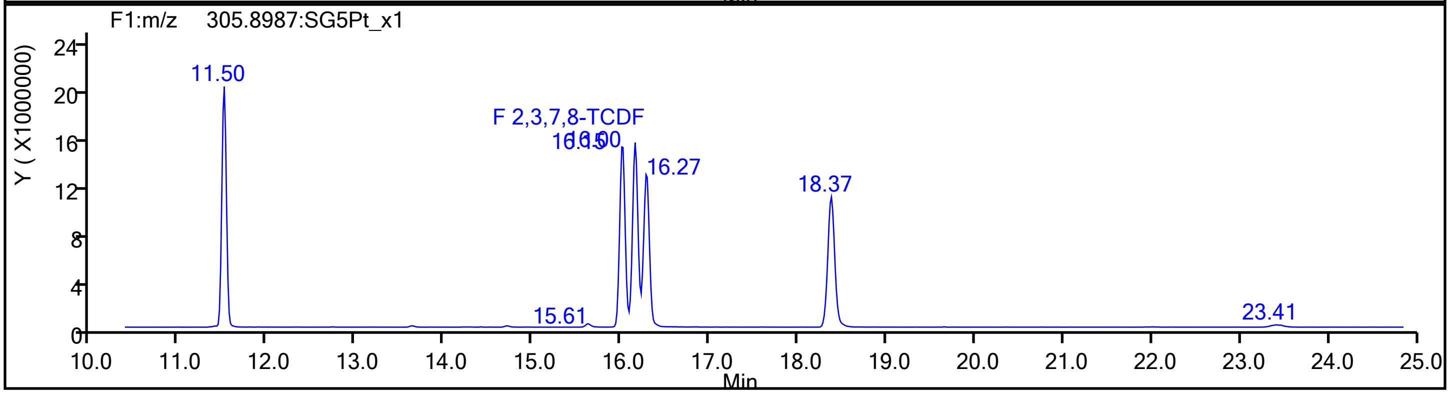

TCDF Standards

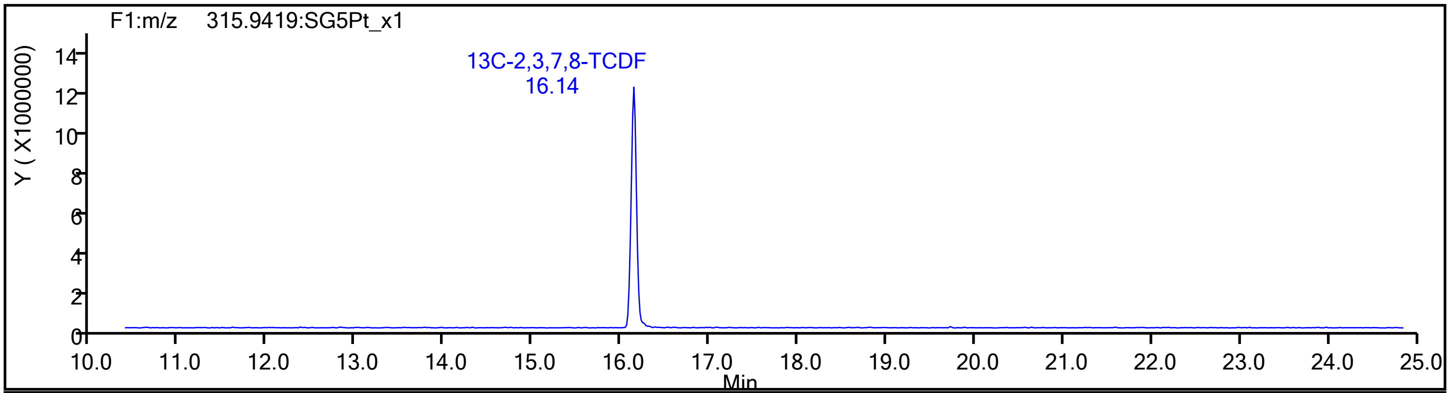

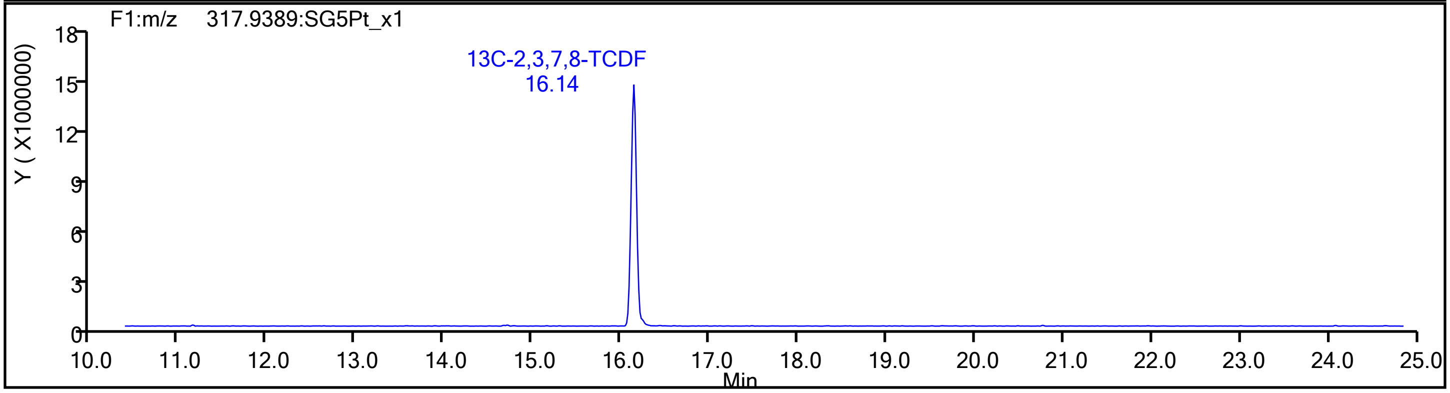

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d
Injection Date: 16-Mar-2021 20:53:10
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 470865
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

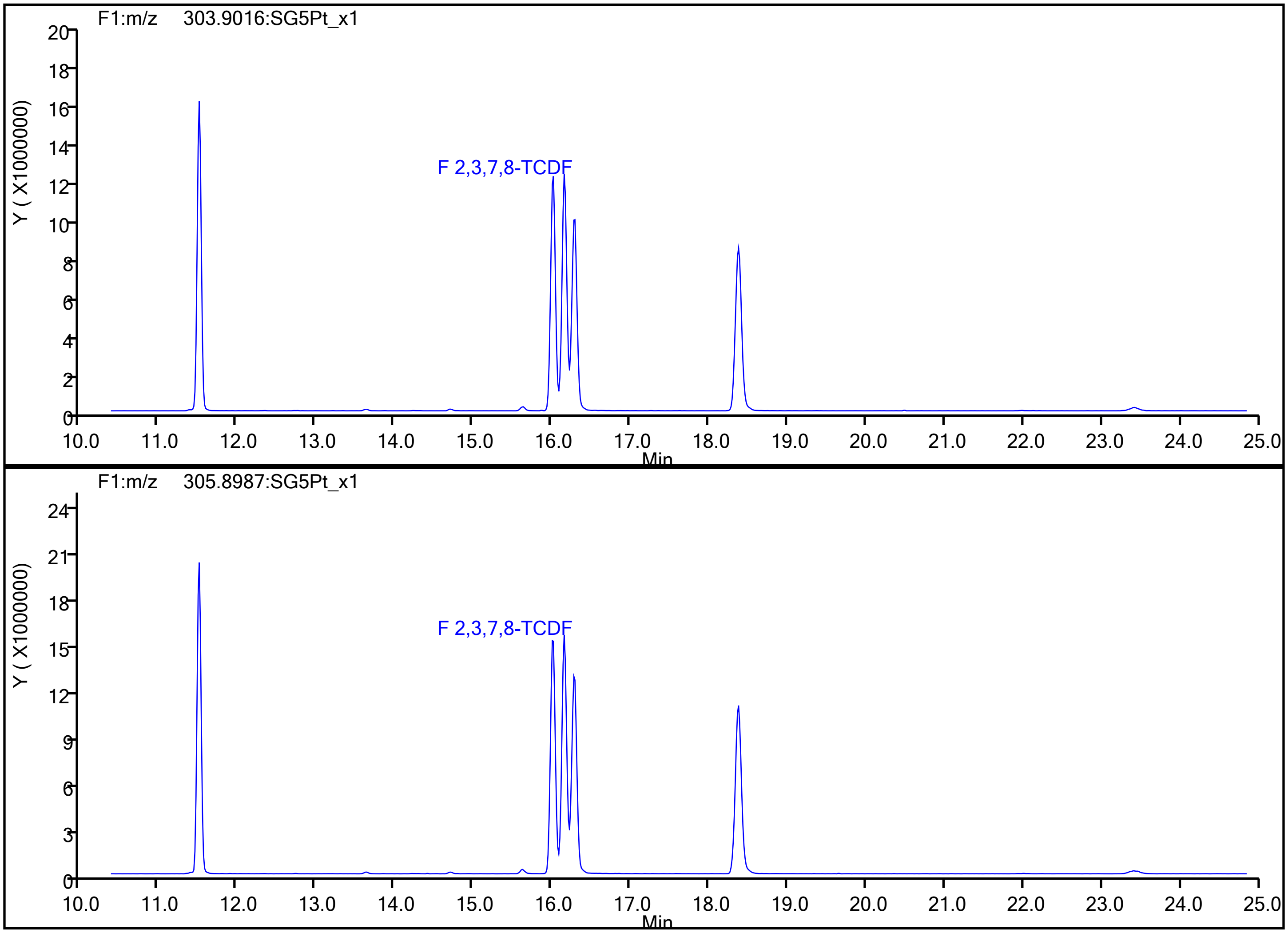

TCDF Interference Mass

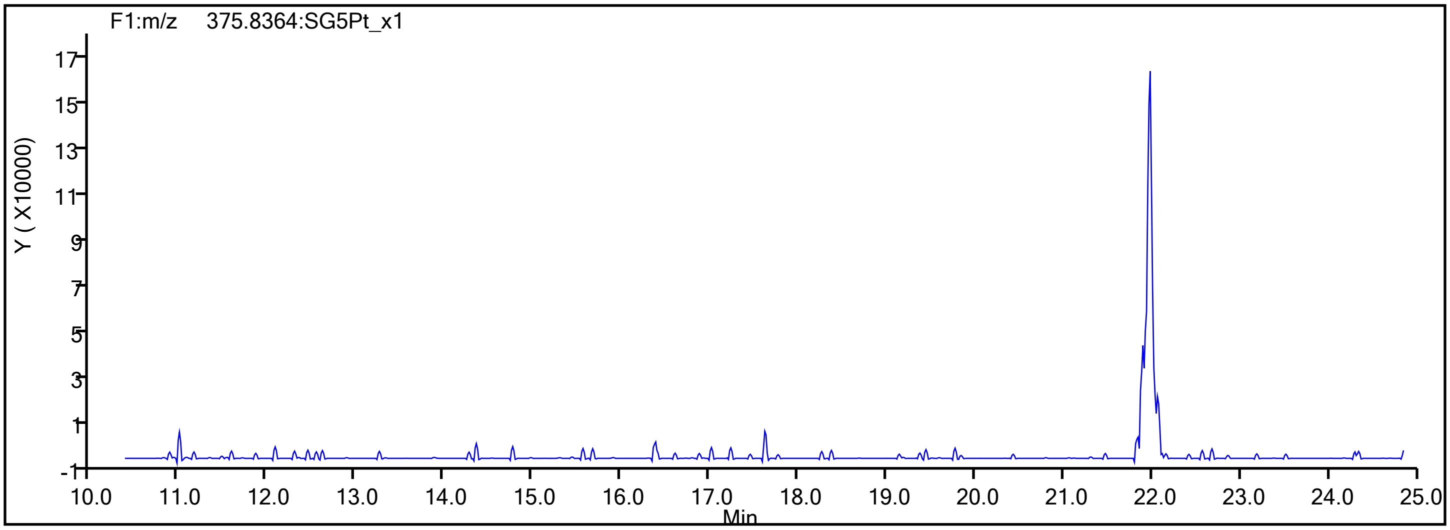

Report Date: 17-Mar-2021 08:12:45 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d		
Injection Date:	16-Mar-2021 20:53:10	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

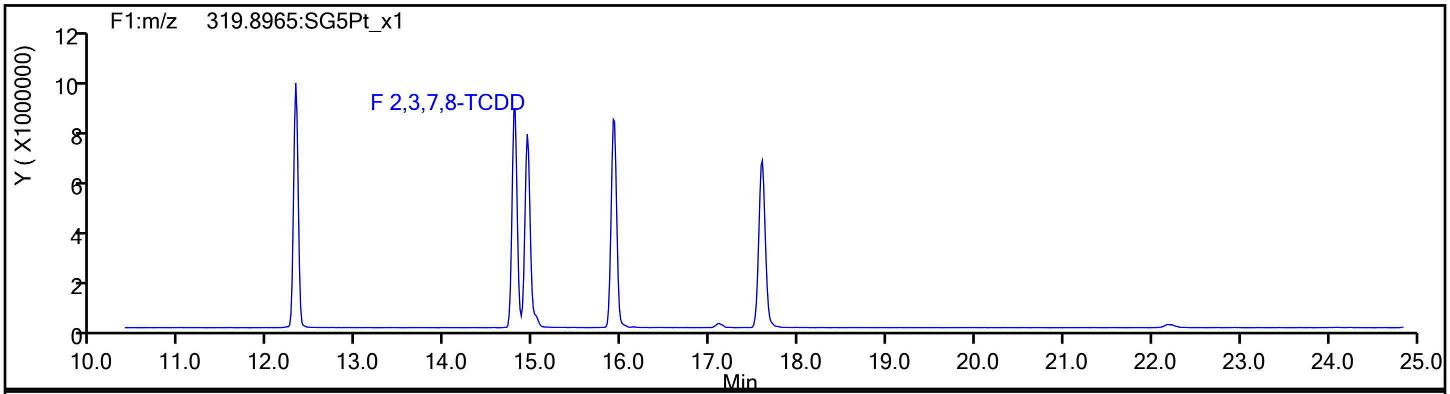

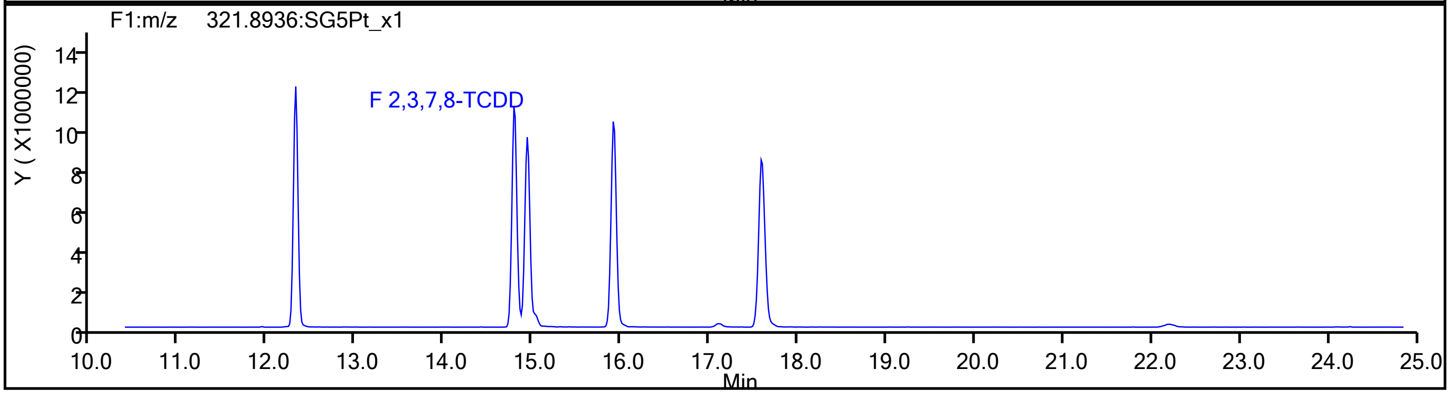

TCDD Standards

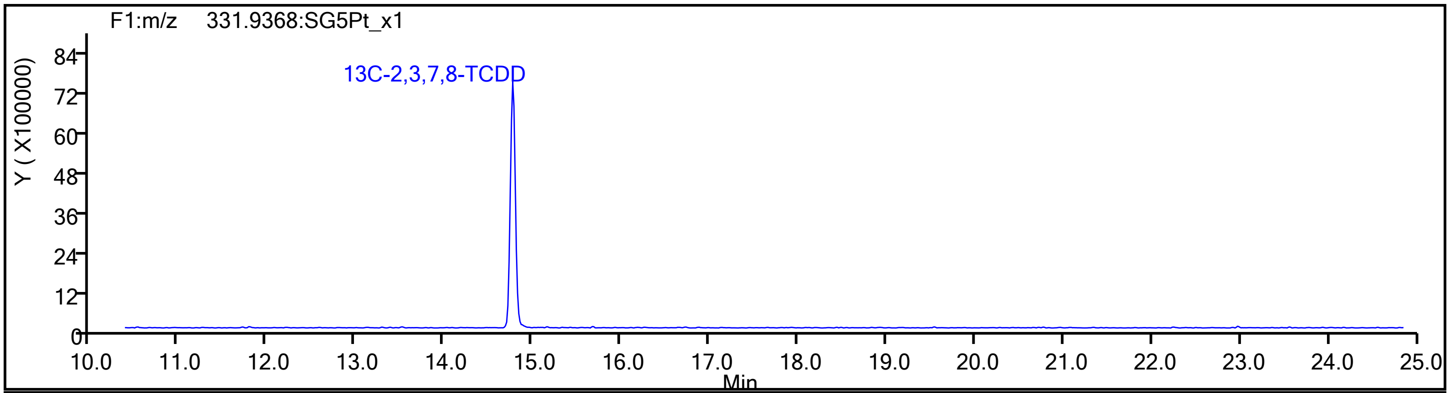

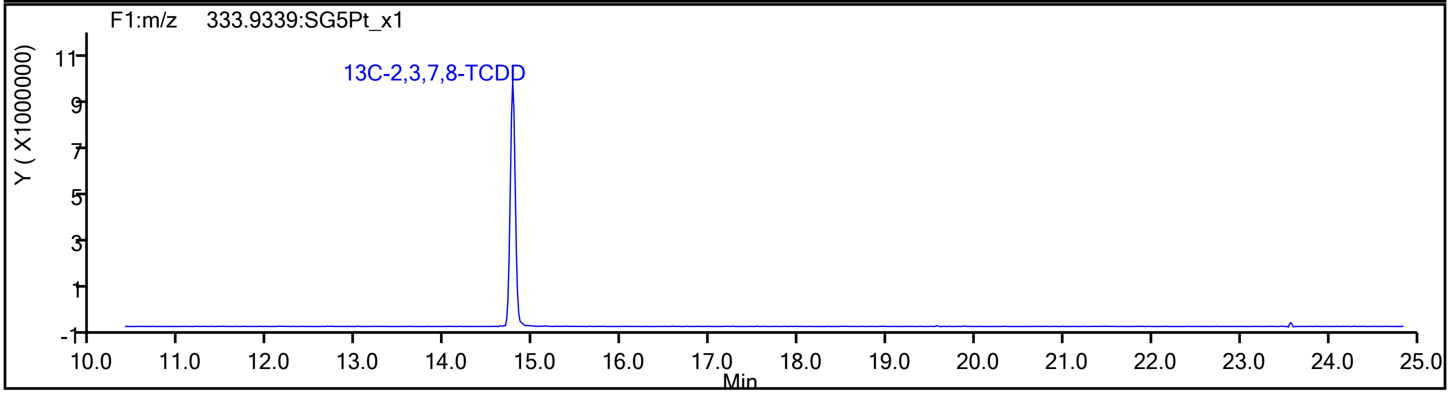

Report Date: 17-Mar-2021 08:12:45 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d

Injection Date:	16-Mar-2021 20:53:10	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

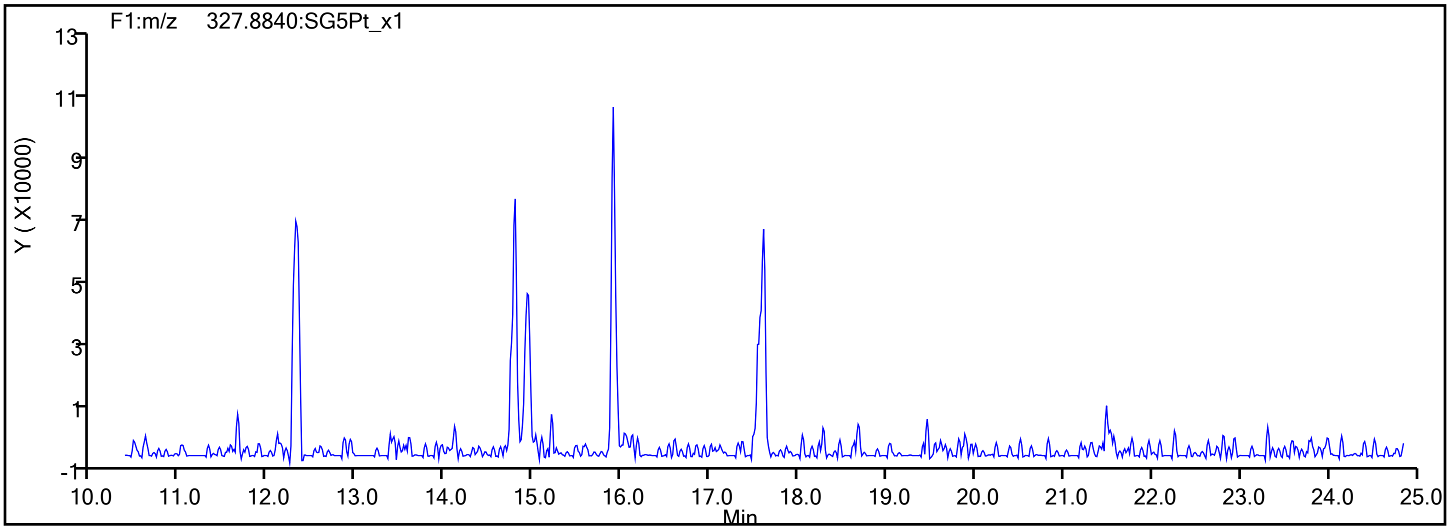

37Cl4-TCDD Standards

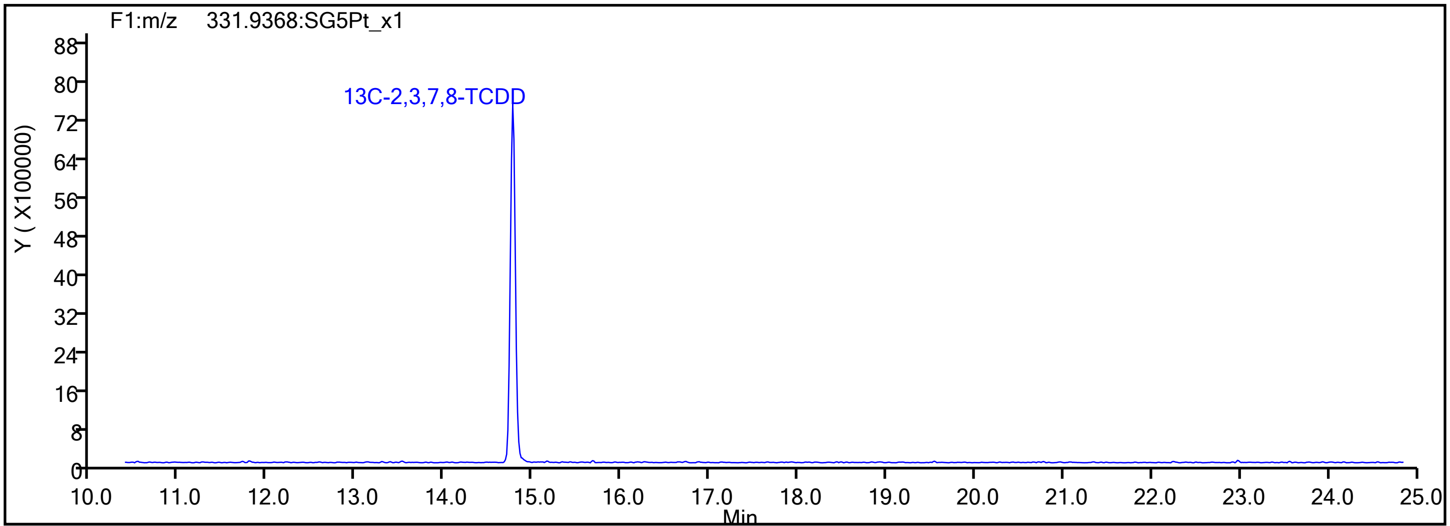

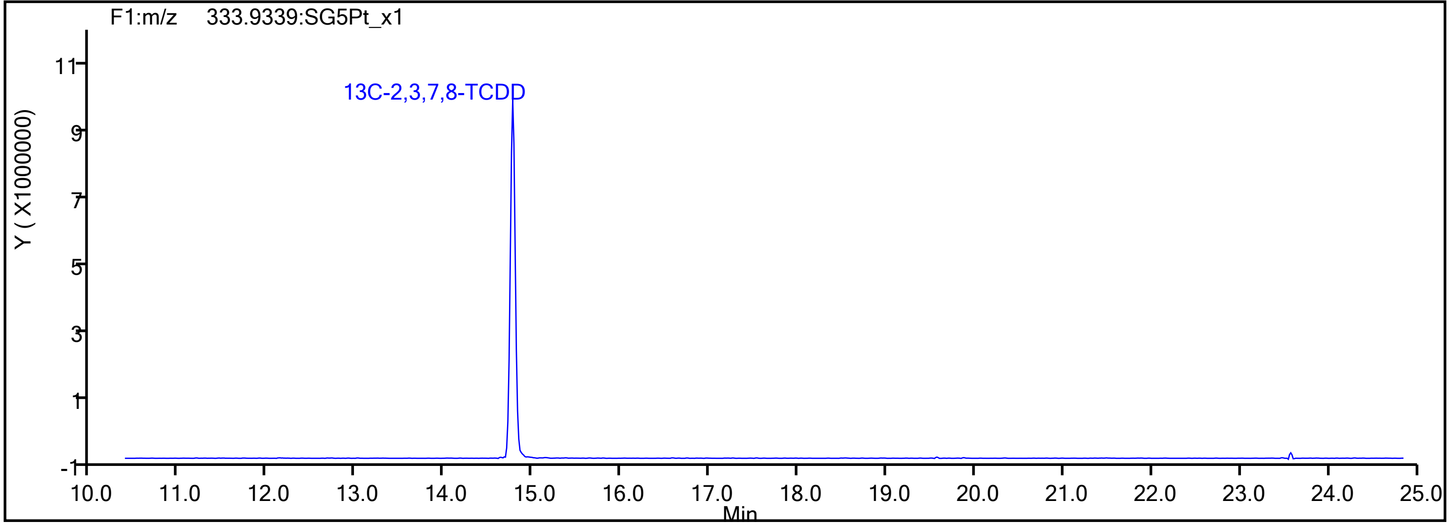

Data File: \\chromfs\Sacramento\ChromData\11D2\20210316-115161.b\16MR2111D2_001.d

Injection Date:	16-Mar-2021 20:53:10	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	470865	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

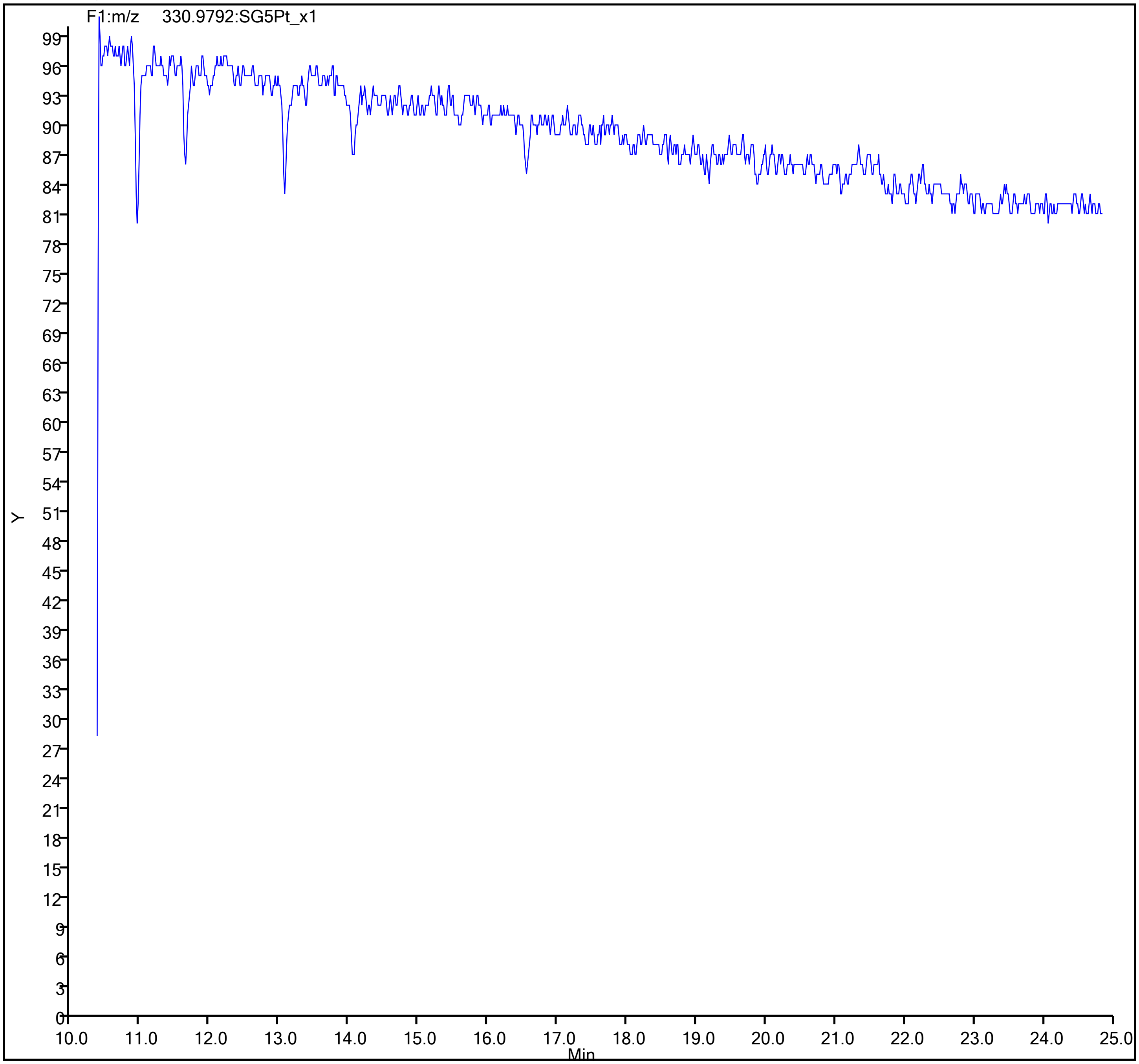

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 02-Feb-2021 20:03:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 03-Feb-2021 14:49:20 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1619

First Level Reviewer: stephensk Date: 03-Feb-2021 14:42:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	20.018	10973868	0.80	1.1258	78.0	78.0	0.1673	0.1673		
D 13C-2,3,7,8-TCDF	19.975	4997512	0.80	1.5437					0.00	
A Non-2,3,7,8-sub-TCDF	19.530	96906	0.77	1.1258	0.7220	0.6890	0.1673	0.4569		RQ
S Total TCDF					78.7	78.7	0.1673	0.1673		RQ
2,3,7,8-TCDD	21.325	3788321	0.79	1.1904	40.2	40.2	0.1100	0.1100		
D 13C-2,3,7,8-TCDD	21.299	3162971	0.80	0.9687					0.00	
A Non-2,3,7,8-sub-TCDD	20.354						0.1100	0.1100		
S Total TCDD					40.2	40.2	0.1100	0.1100		
A F1 PeCDFs	24.346						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	27.769	4366100	1.58	0.0000						
S Total PeCDF										
A Non-2,3,7,8-sub-PeCDD	28.002	3106550	1.58	0.0000						
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	34.733						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.125	41356	1.18	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.423	4294850	1.04	1.4859						
1,2,3,4,7,8,9-HpCDF	39.694	3691564	1.05	1.4048						
A Non-2,3,7,8-sub-HpCDF	39.059						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.383	2739286	1.05	1.1489						
A Non-2,3,7,8-sub-HpCDD	39.339						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.808	6180841	0.80							
1,3,6,8-TCDD	17.380	3552648	0.79							
2,3,4,7-TCDF	20.018	10973868	0.80							
1,2,3,7-TCDD	21.119	3248533	0.79							
1,2,3,9-TCDF	21.523	5003342	0.80							
1,2,3,9-TCDD	21.609	3795359	0.79							
1,2,8,9-TCDF	23.251	5299759	0.80							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	23.329	1625354								
1,3,4,6,8-PeCDF	23.725	4194814	1.61							
1,2,4,7,9-PeCDD	25.742	3282352	1.60							
1,2,3,8,9-PeCDD	30.261	3106550	1.58							a
1,2,3,8,9-PeCDF	30.430	4245281	1.58							a
1,2,3,4,6,8-HxCDF	32.773	4856724	1.26							
1,2,4,6,7,9-HxCDD	33.917	3461593	1.27							
1,2,3,4,6,7-HxCDD	36.332	3347575	1.24							
1,2,3,4,8,9-HxCDF	36.694	4557857	1.26							
1,2,3,4,6,7,9-HpCDD	38.735	2964469	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	02-Feb-2021 20:03:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00042				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	03-Feb-2021 14:49:20	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1619				

First Level Reviewer: stephensk Date: 03-Feb-2021 14:42:37

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	20.018	19.937	5	1.002	4890682	703562	654	1635	1076		
305.8987	20.010	19.937	4	1.002	6083186	868283	818	2045	1061	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.975	19.975	0	1.000	2215094	351713	661	1652	532		
317.9389	19.975	19.975	0	1.000	2782418	429641	214	535	2008	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	18.351	19.530	-71	0.919	18853	3119	654	1635	5		
	Empc Correction				14201	2674	654	1635	4		
305.8987	18.342	19.530	-71	0.918	18444	3474	818	2045	4	1.02(0.65-0.89)	
303.9016	23.725	19.530	251	1.188	28527	4576	654	1635	7		
305.8987	23.725	19.530	251	1.188	35734	6881	818	2045	8	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.325	21.262	4	1.001	1674255	245679	312	780	787		
321.8936	21.325	21.262	4	1.001	2114066	312100	318	795	981	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.299	21.299	0	1.000	1405219	213534	371	927	576		
333.9338	21.291	21.299	-1	1.000	1757752	267694	124	310	2159	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.354						312	780			
321.8936	20.354						318	795			
A F1 PeCDFs											
339.8597	24.346						49	122			
341.8567	24.346						126	315			
A Non-2,3,7,8-sub-PeCDF											
339.8597	25.423	27.769	-140	1.000	10240	2133	326	815	7		
341.8567	25.423	27.769	-140	1.000	7785	1385	293	732	5	1.32(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.365	27.769	-84	1.000	15503	2703	326	815	8		
341.8567	26.365	27.769	-84	1.000	8967	1625	293	732	6	1.73(1.32-1.78)	
339.8597	26.794	27.769	-58	1.000	7911	1559	326	815	5		
341.8567	26.811	27.769	-57	1.000	5397	1084	293	732	4	1.47(1.32-1.78)	
339.8597	26.912	27.769	-51	1.000	22471	3355	326	815	10		
341.8567	26.920	27.769	-51	1.000	14830	2602	293	732	9	1.52(1.32-1.78)	
339.8597	27.543	27.769	-14	1.000	16536	2483	326	815	8		
341.8567	27.510	27.769	-16	1.000	11179	1866	293	732	6	1.48(1.32-1.78)	
339.8597	30.430	27.769	159	1.000	2598844	383135	326	815	1175		
341.8567	30.430	27.769	159	1.000	1646437	242321	293	732	827	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	30.261	28.002	135	1.000	1903861	280600	367	917	765		
357.8516	30.261	28.002	135	1.000	1202689	177940	201	502	885	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.733						704	1760			
375.8178	34.733						556	1390			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.096	35.125	-2	1.000	22420	4409	481	1202	9		
391.8127	35.096	35.125	-2	1.000	18936	4114	386	965	11	1.18(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.423	38.422	0	1.000	2191371	701029	751	1877	933		
409.7788	38.423	38.422	0	1.000	2103479	678174	641	1602	1058	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.694	39.686	0	1.000	1890021	671579	751	1877	894		
409.7788	39.686	39.686	0	1.000	1801543	635245	641	1602	991	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.059						751	1877			
409.7788	39.059						641	1602			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.383	39.381	0	1.000	1403521	492618	436	1090	1130		
425.7737	39.383	39.381	0	1.000	1335765	473184	394	985	1201	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.339						436	1090			
425.7737	39.339						394	985			
1,3,6,8-TCDF											
303.9016	15.808	15.808	0		2752677	582318	654	1635	890		
305.8987	15.808	15.808	0		3428164	725325	818	2045	887	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.380	17.380	0		1570816	287760	312	780	922		
321.8936	17.389	17.380	1		1981832	362509	318	795	1140	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.018	20.018	0		4890682	703562	654	1635	1076		
305.8987	20.010	20.018	-1		6083186	868283	818	2045	1061	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.119	21.119	0		1434829	218506	312	780	700		
321.8936	21.119	21.119	0		1813704	277695	318	795	873	0.79(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,9-TCDF											
303.9016	21.523	21.523	0		2225831	331063	654	1635	506		
305.8987	21.523	21.523	0		2777511	413958	818	2045	506	0.80(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	21.609	21.609	0		1677523	235850	312	780	756		
321.8936	21.609	21.609	0		2117836	296390	318	795	932	0.79(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.251	23.251	0		2349751	374796	654	1635	573		
305.8987	23.260	23.251	1		2950008	466972	818	2045	571	0.80(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.329	23.329	0		1625354	265863	312	780	852		
1,3,4,6,8-PeCDF											
339.8597	23.725	23.725	0		2587451	515670	49	122	10524		
341.8567	23.725	23.725	0		1607363	321429	126	315	2551	1.61(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	25.742	25.742	0		2018513	348706	367	917	950		
357.8516	25.734	25.742	-1		1263839	218133	201	502	1085	1.60(1.32-1.78)	
1,2,3,8,9-PeCDD											a
355.8546	30.261	30.261	0		1903861	280600	367	917	765		a
357.8516	30.261	30.261	0		1202689	177940	201	502	885	1.58(1.32-1.78)	
1,2,3,8,9-PeCDF											a
339.8597	30.430	30.430	0		2598844	383135	326	815	1175		a
341.8567	30.430	30.430	0		1646437	242321	293	732	827	1.58(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.773	32.773	0		2708669	433535	704	1760	616		
375.8178	32.773	32.773	0		2148055	346377	556	1390	623	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.917	33.917	0		1933920	388114	481	1202	807		
391.8127	33.917	33.917	0		1527673	310611	386	965	805	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.332	36.332	0		1855721	484243	481	1202	1007		
391.8127	36.332	36.332	0		1491854	392744	386	965	1017	1.24(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.694	36.694	0		2543500	709582	704	1760	1008		
375.8178	36.694	36.694	0		2014357	558914	556	1390	1005	1.26(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.735	38.735	0		1509805	510198	436	1090	1170		
425.7737	38.735	38.735	0		1454664	497534	394	985	1263	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Review Flags

a - User Assigned ID

Reagents:

HRDXNCP_00042 Amount Added: 1.00 Units: mL

Report Date: 03-Feb-2021 14:49:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 02-Feb-2021 20:03:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 458037 Lims Sample ID: 1

Non-2,3,7,8-sub-TCDF, RT: 19.530

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	40.000	4997512	781354

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		40.000	4997512	781354

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.351	18853	3119	18444	3474	0.2652	1.02	RQ
18.351	14201	2674	18444	3474	0.2321		Empc Correction
23.725	28527	4576	35734	6881	0.4569	0.80	
Signal Totals:							
	42728	7250	54178	10355			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	101558	18050				0.87	RQ
	96906	17605					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7220 = (101558 * 40.000) / (4997512 * 1.126)
Empc Amount: 0.6890 = (96906 * 40.000) / (4997512 * 1.126)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 02-Feb-2021 20:03:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 458037 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 27.769

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116				
2,3,4,7,8-PeCDF	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.423	10240	2133	7785	1385		1.32	
26.365	15503	2703	8967	1625		1.73	
26.794	7911	1559	5397	1084		1.47	
26.912	22471	3355	14830	2602		1.52	
27.543	16536	2483	11179	1866		1.48	
30.430	2598844	383135	1646437	242321		1.58	
Signal Totals:							
	2671505	395368	1694595	250883			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4366100	646251				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (4366100 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 02-Feb-2021 20:03:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 458037 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDD, RT: 28.002

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.261	1903861	280600	1202689	177940		1.58	
Signal Totals:							
	1903861	280600	1202689	177940			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3106550	458540				1.58	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (3106550 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	02-Feb-2021 20:03:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	458037	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 35.125

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095				
1,2,3,6,7,8-HxCDD	1.020				
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.096	22420	4409	18936	4114		1.18	
Signal Totals:							
	22420	4409	18936	4114			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41356	8523				1.18	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (41356 * 0.0) / (0 * 0.000)

Report Date: 03-Feb-2021 14:49:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Injection Date: 02-Feb-2021 20:03:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

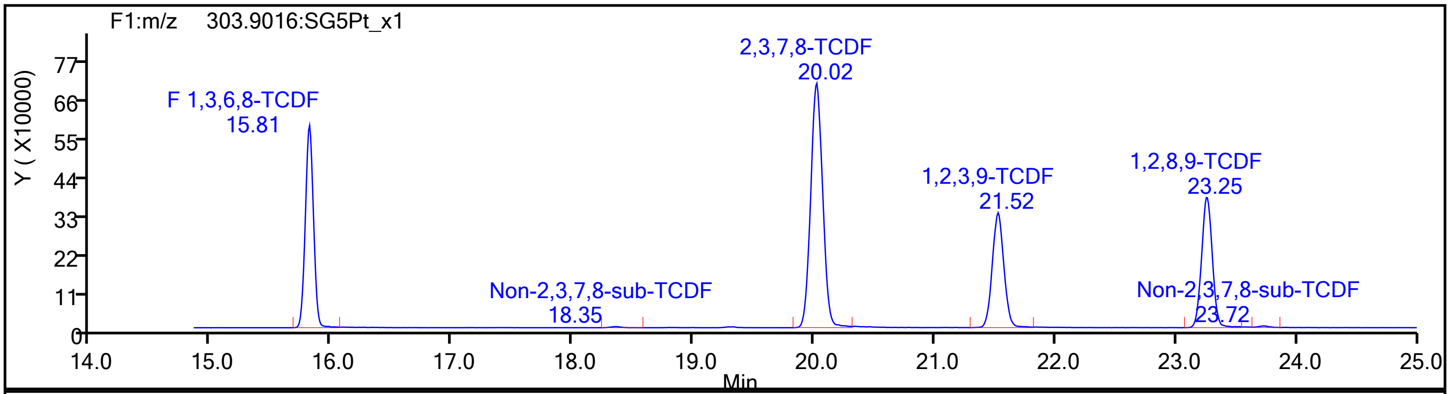

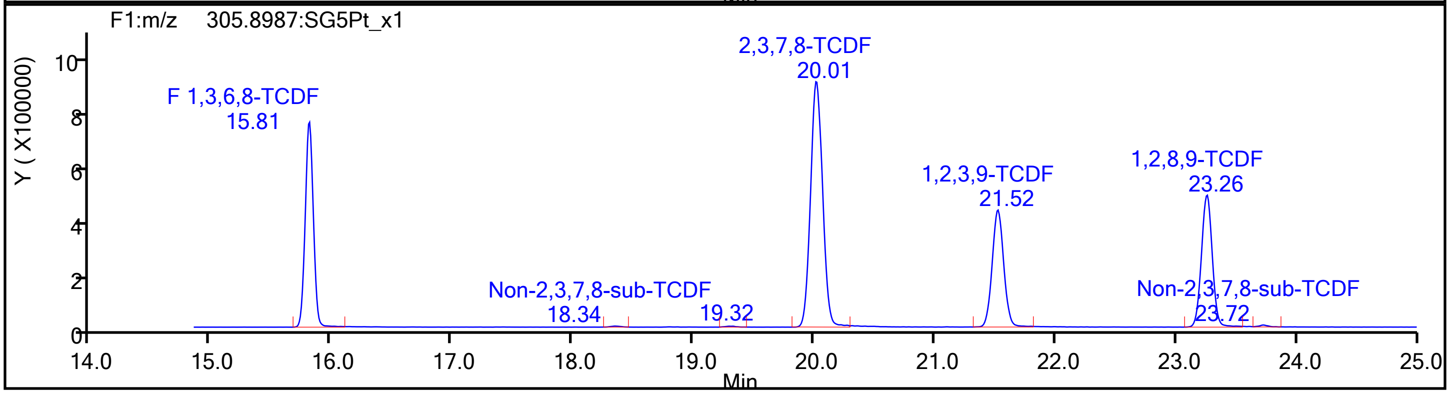

TCDF Standards

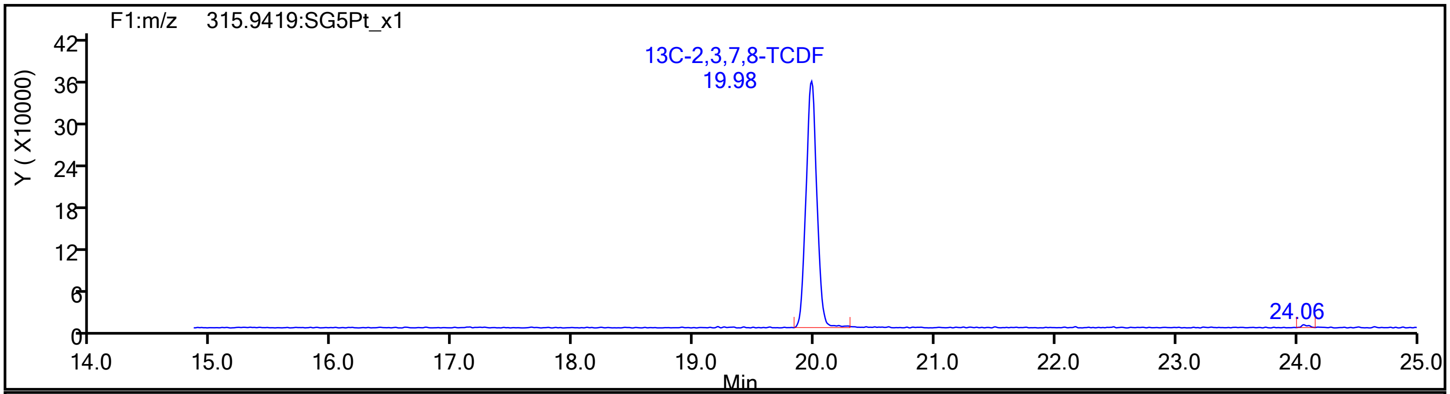

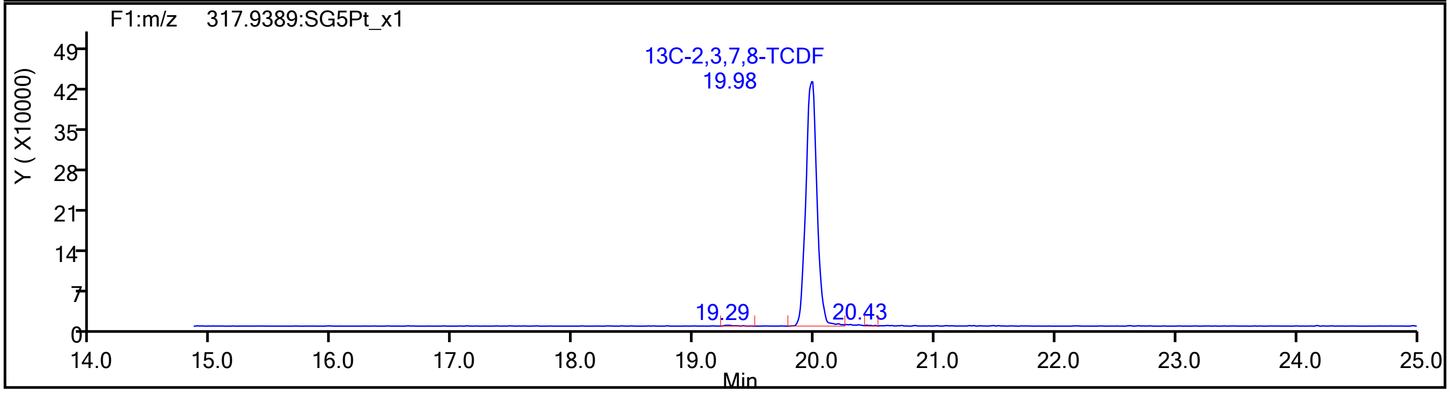

Report Date: 03-Feb-2021 14:49:30 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

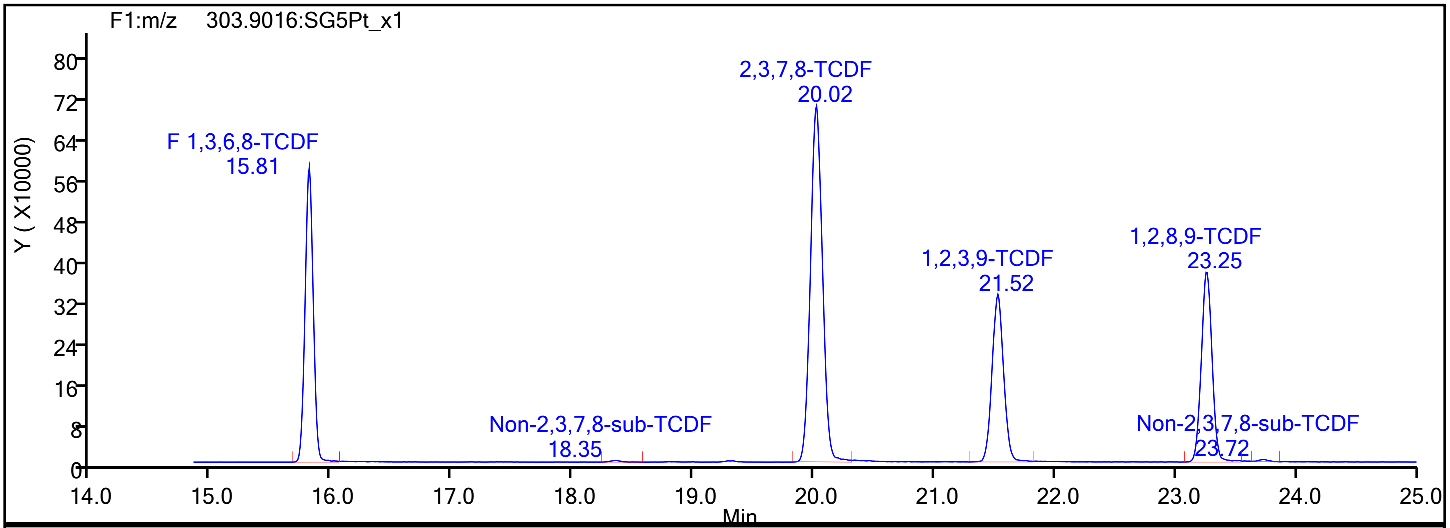

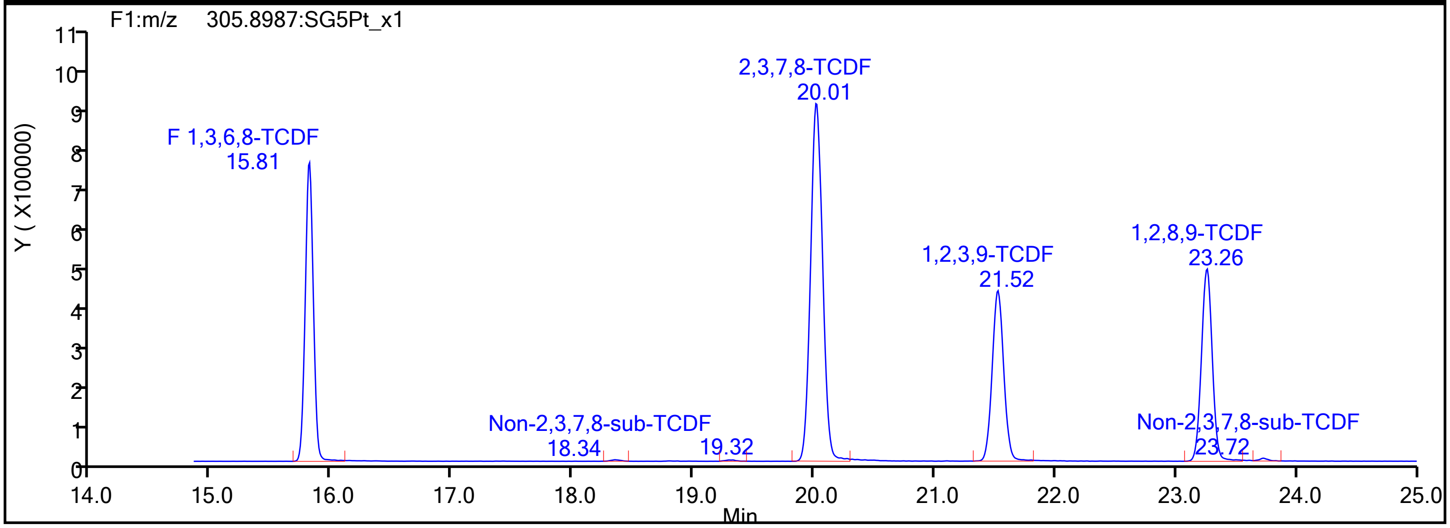

TCDF Interference Mass

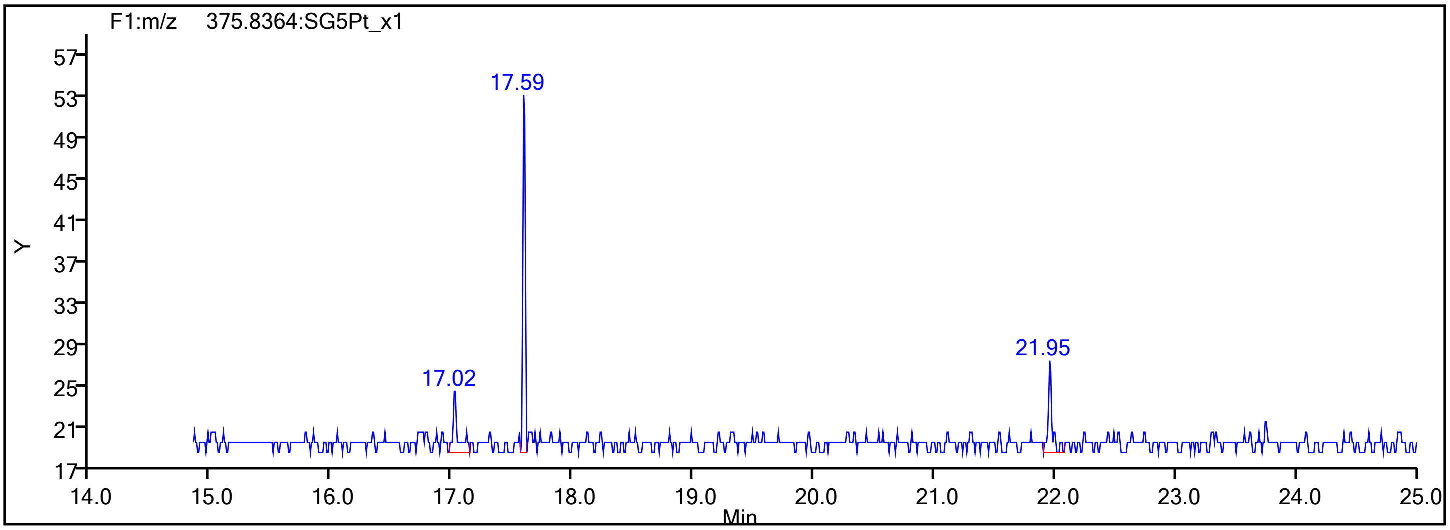

Report Date: 03-Feb-2021 14:49:30
Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Injection Date: 02-Feb-2021 20:03:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

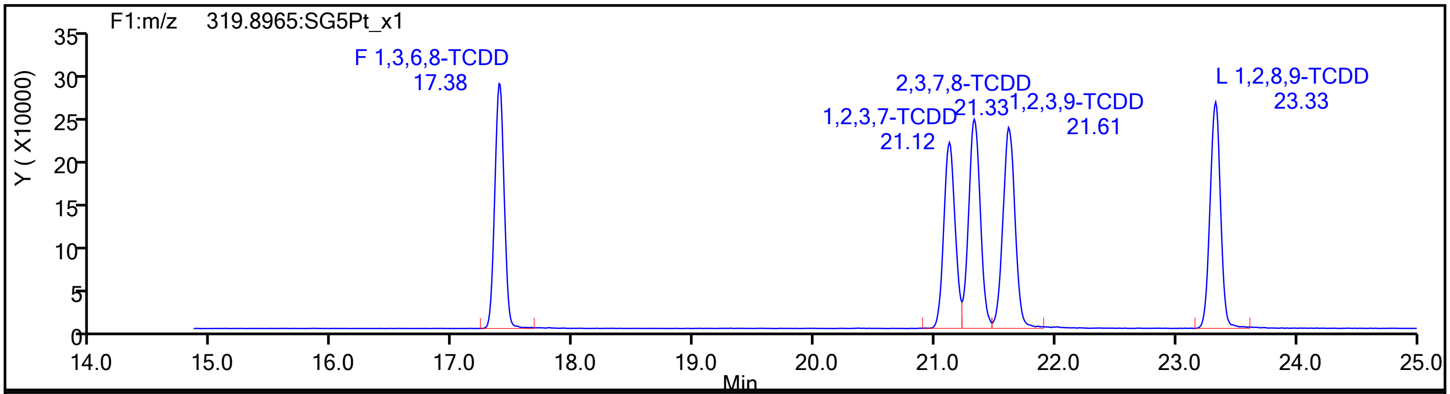

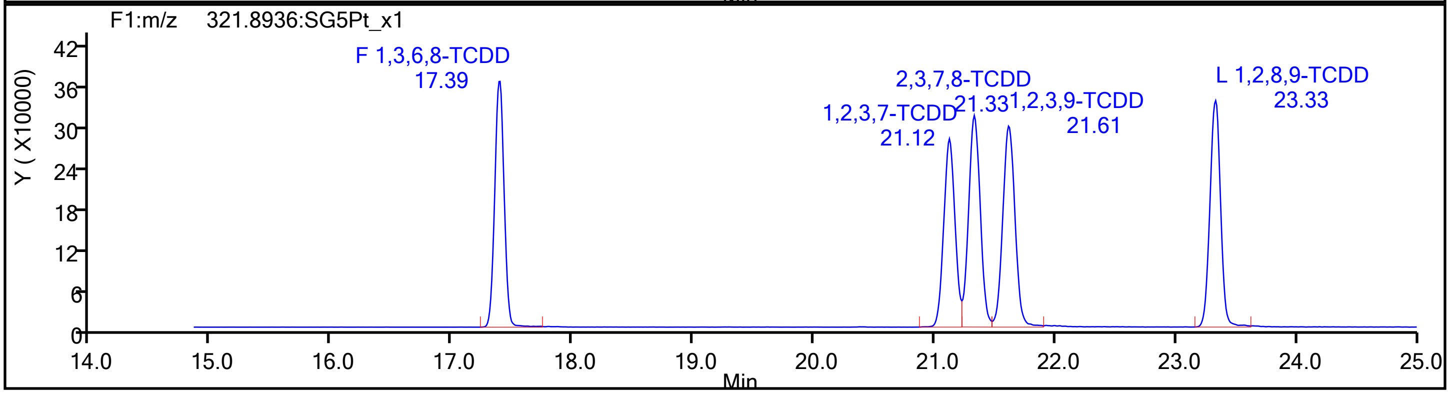

TCDD Standards

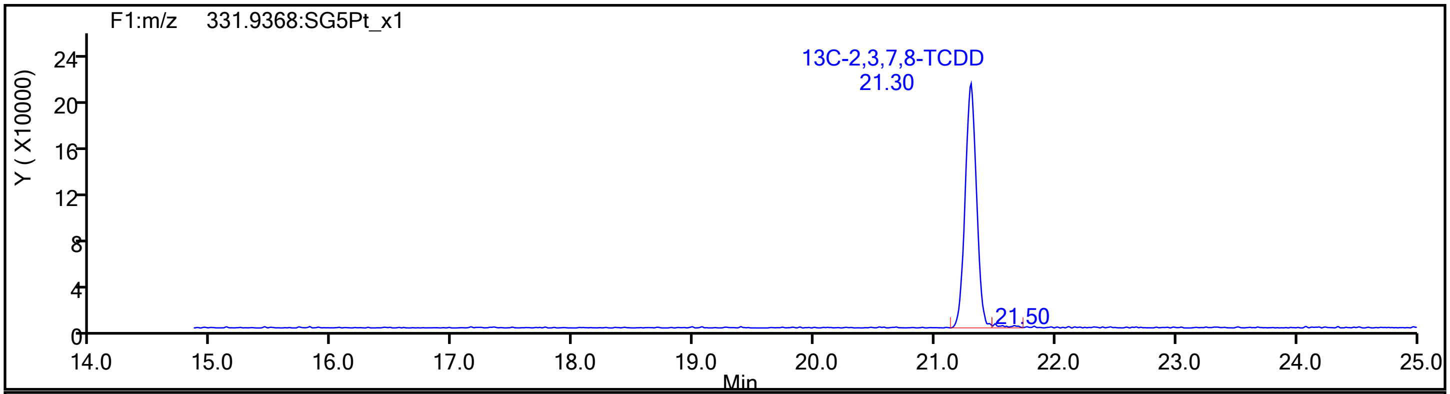

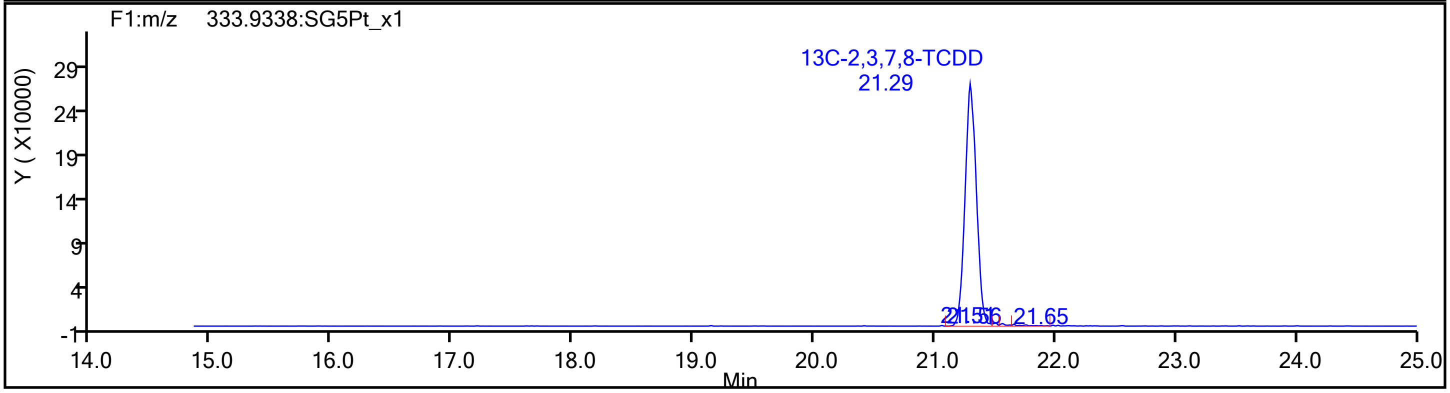

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d

Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

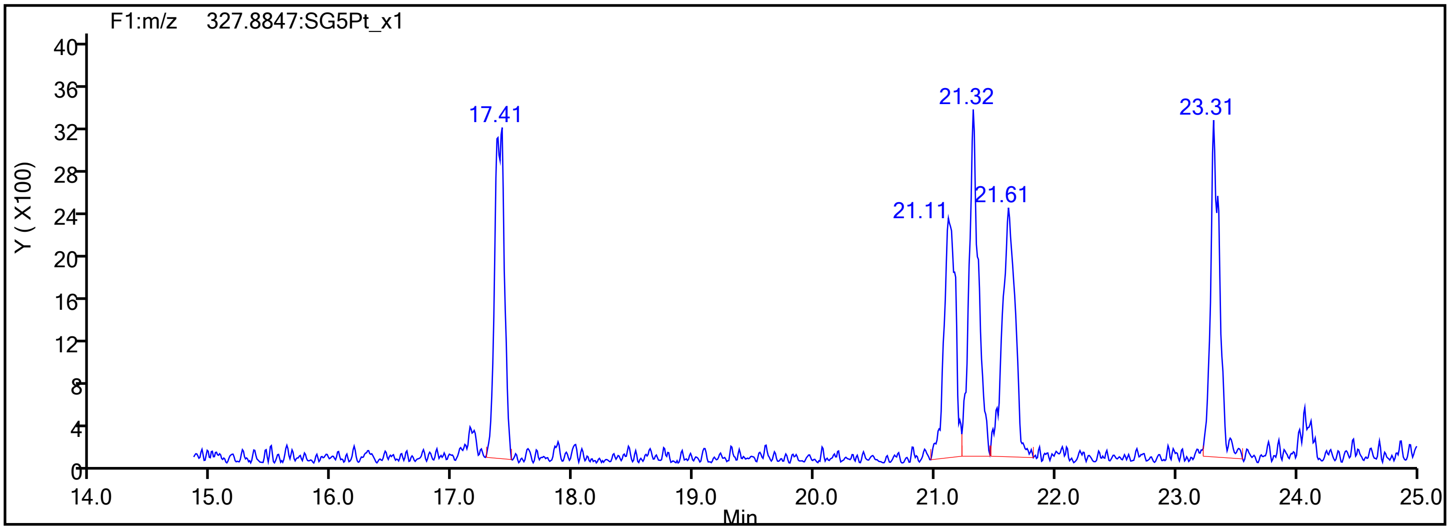

37Cl4-TCDD Standards

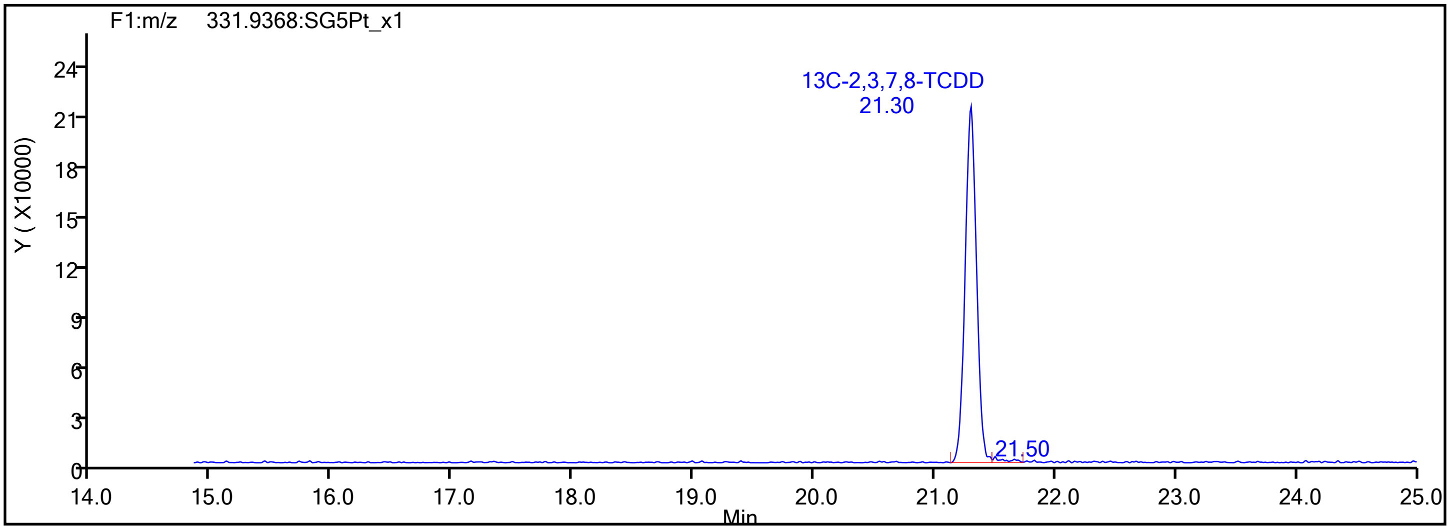

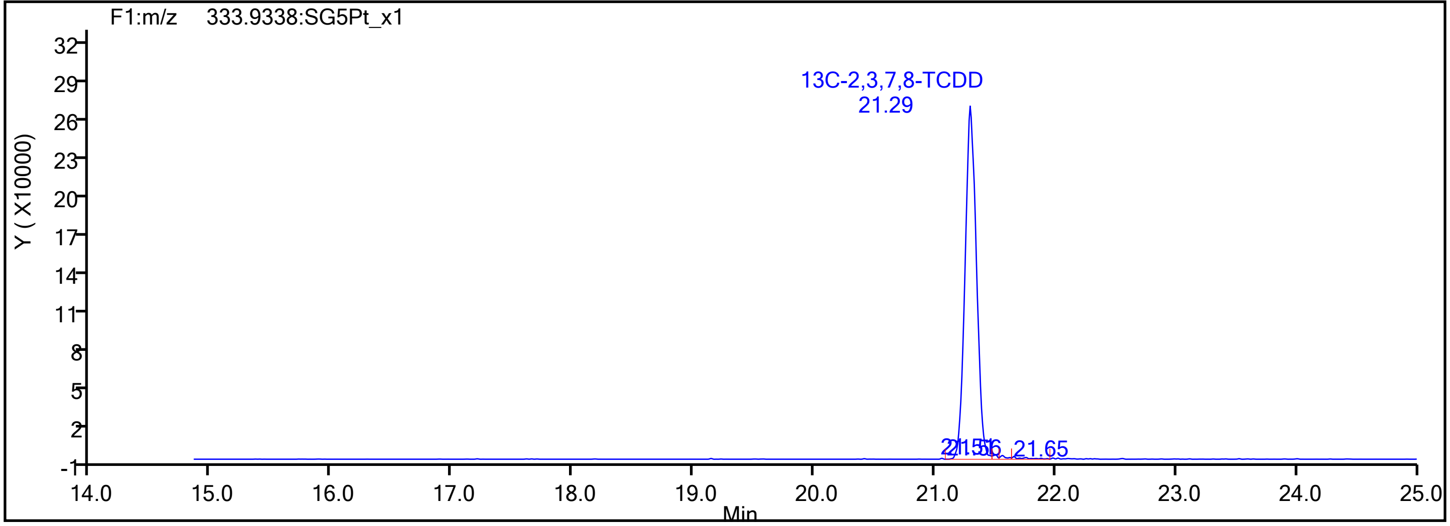

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

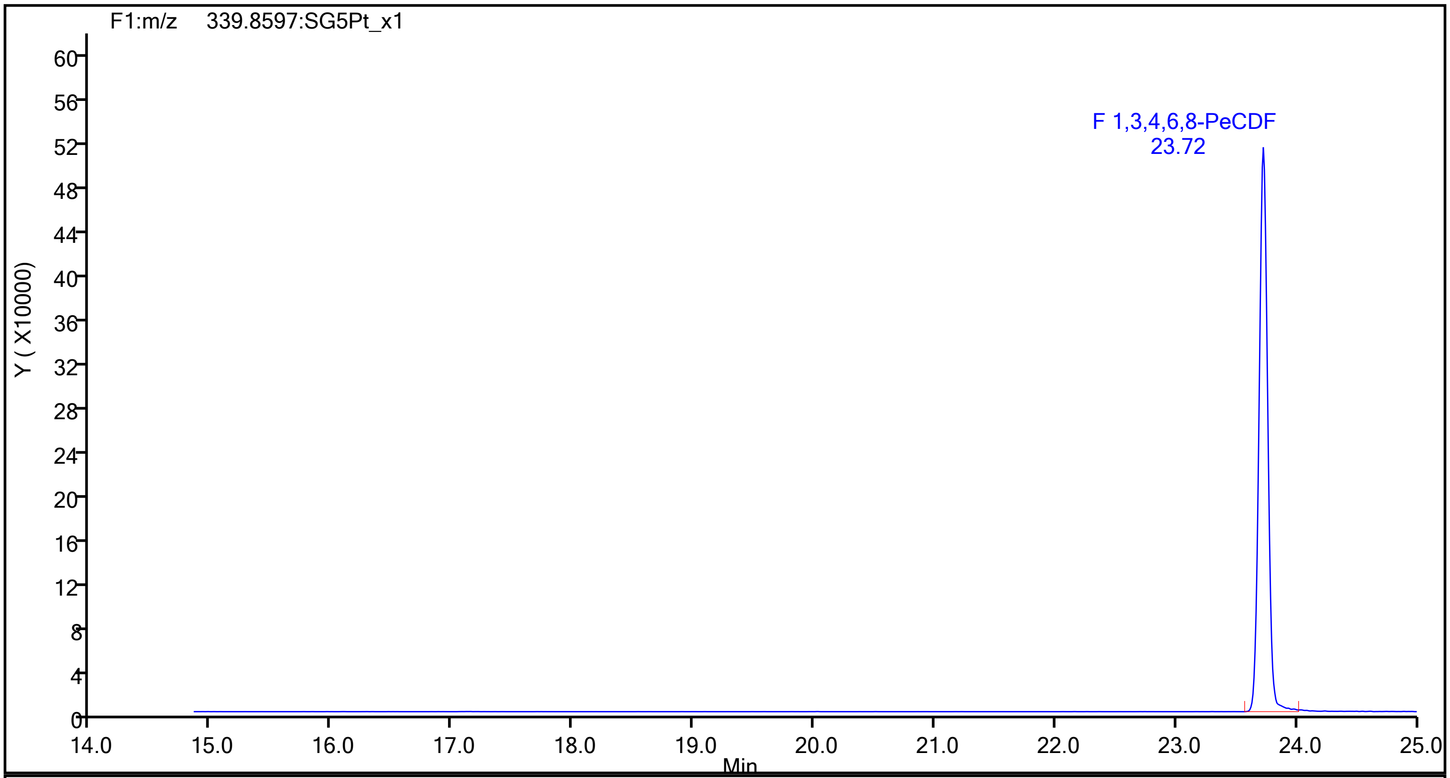

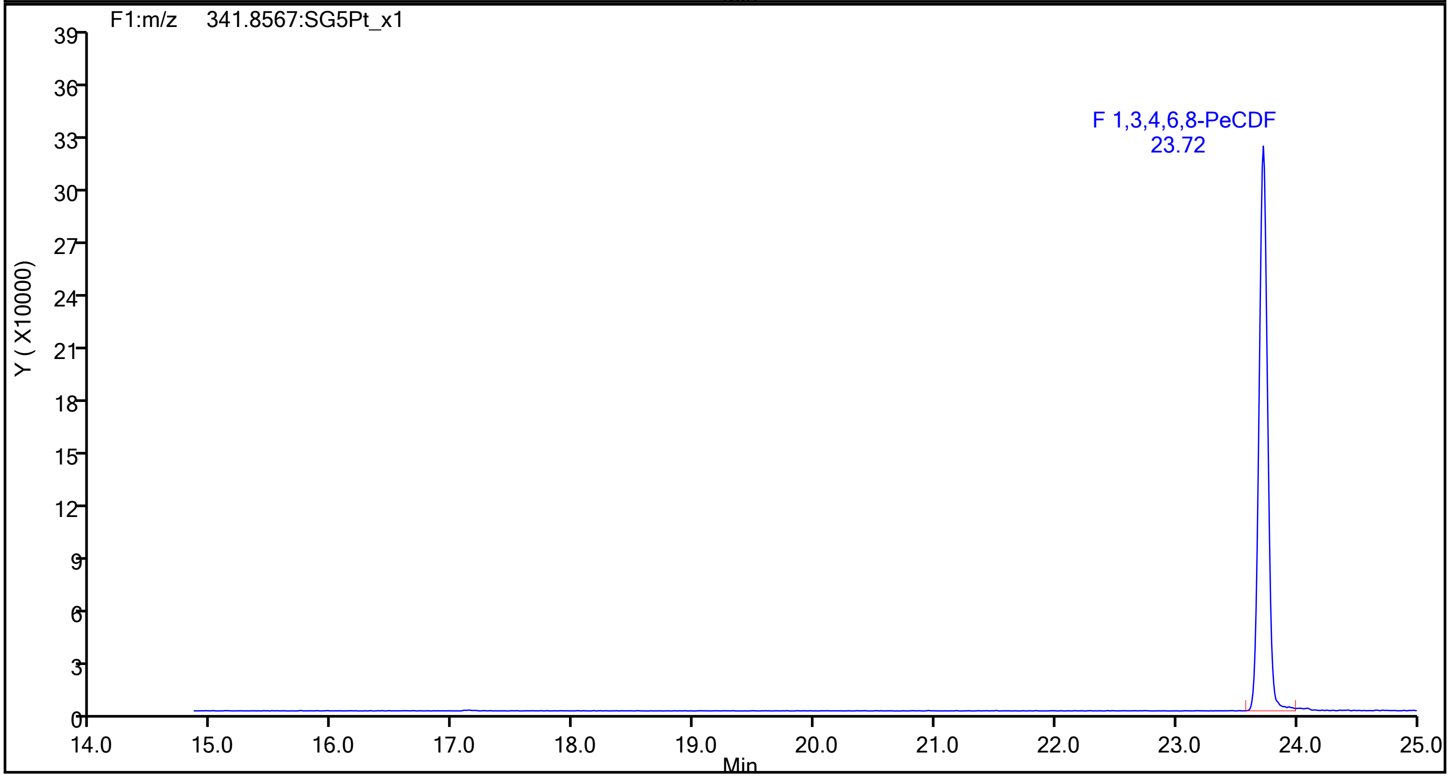

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d

Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

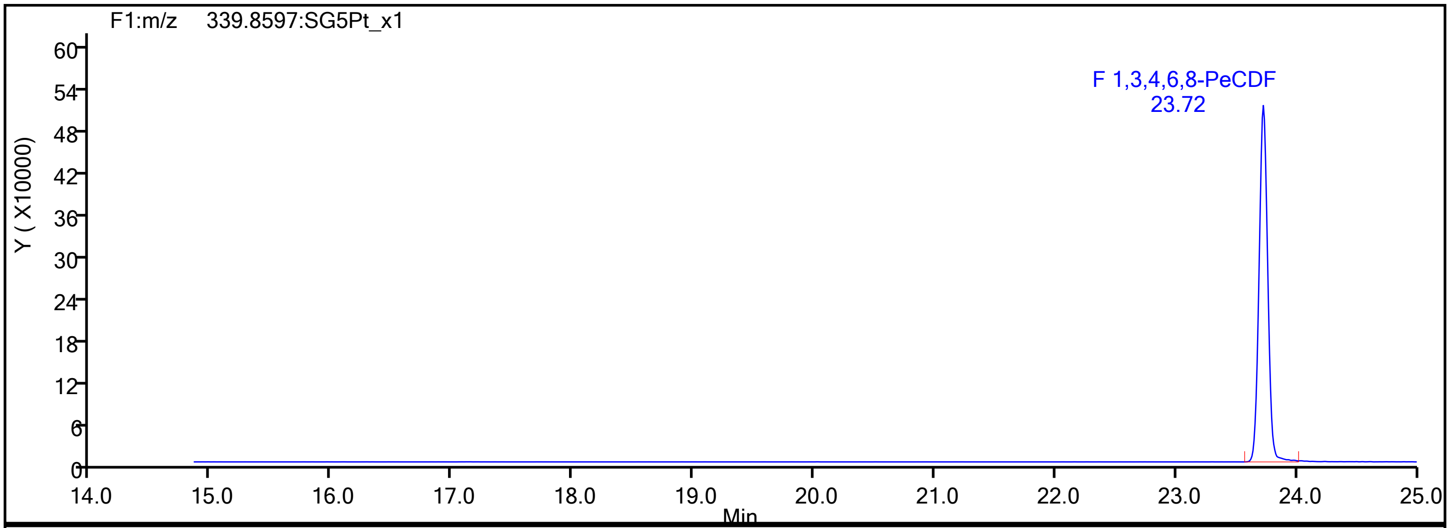

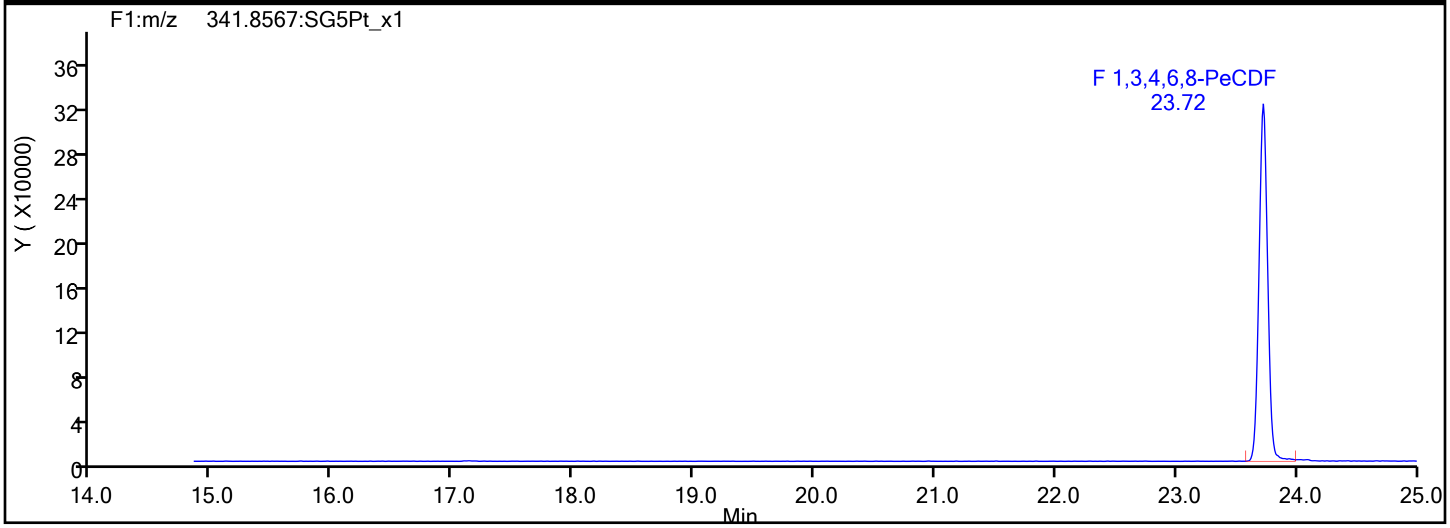

F1 PeCDFs Interference Mass

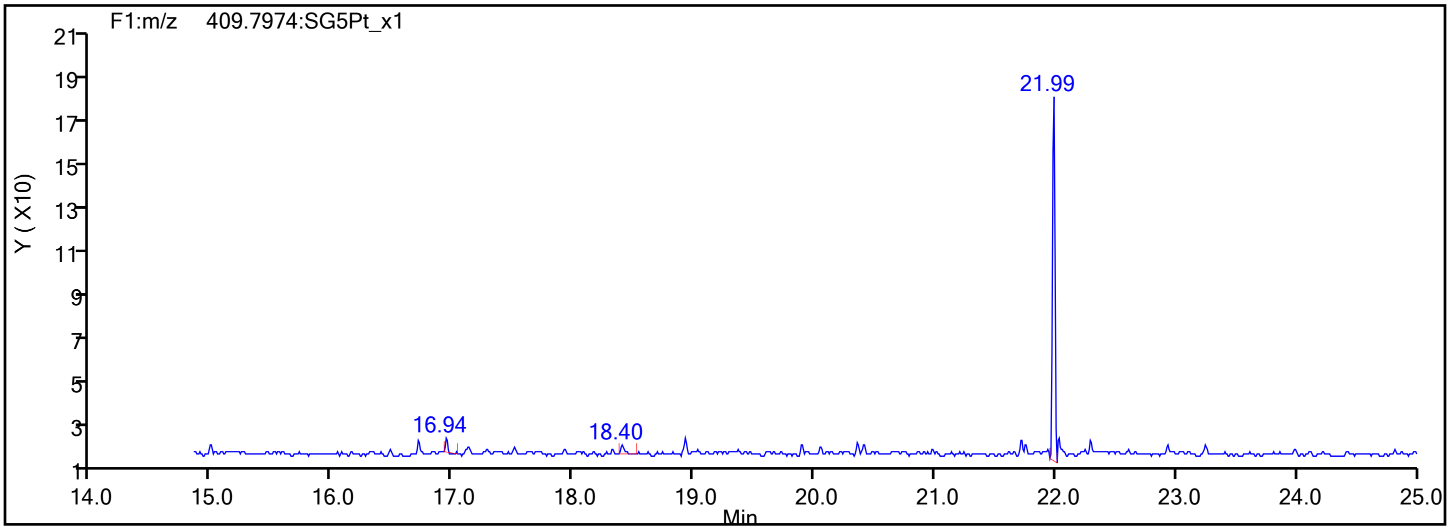

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

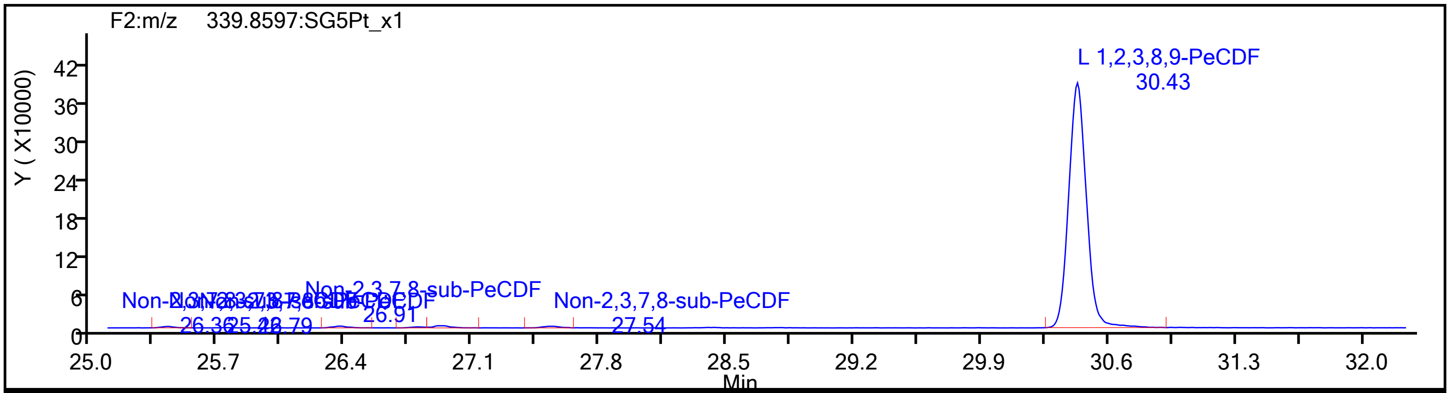

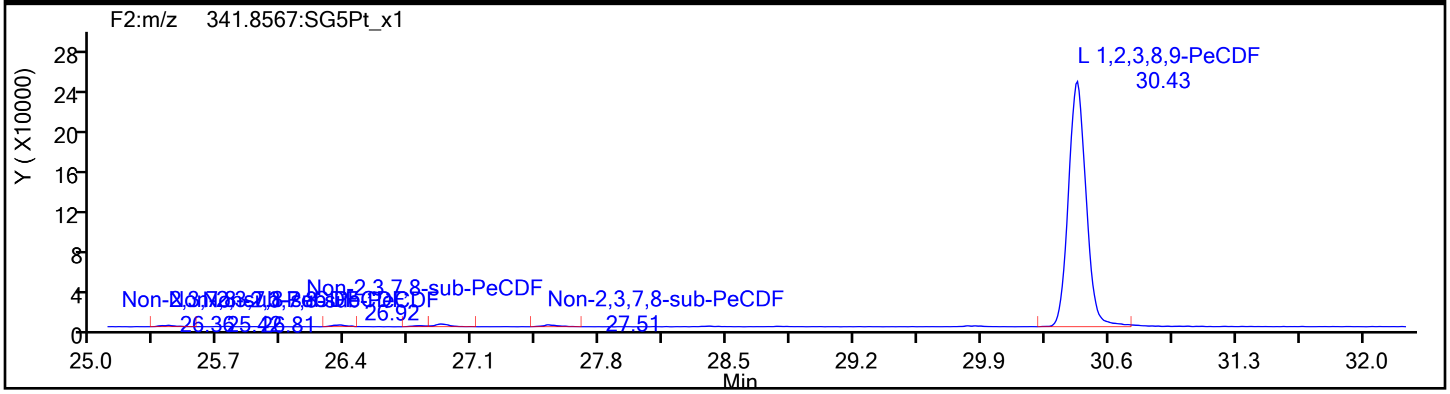

PeCDF Standards

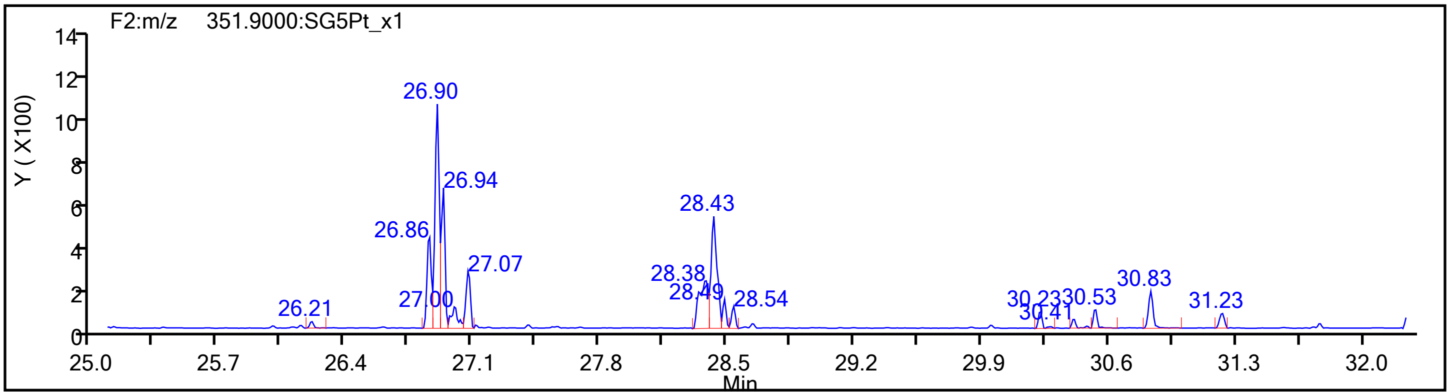

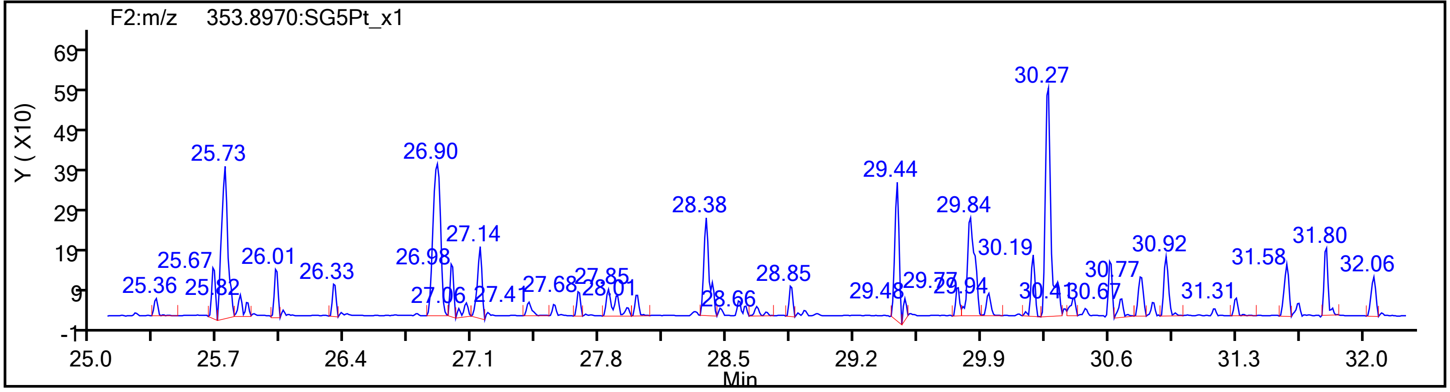

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Injection Date: 02-Feb-2021 20:03:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

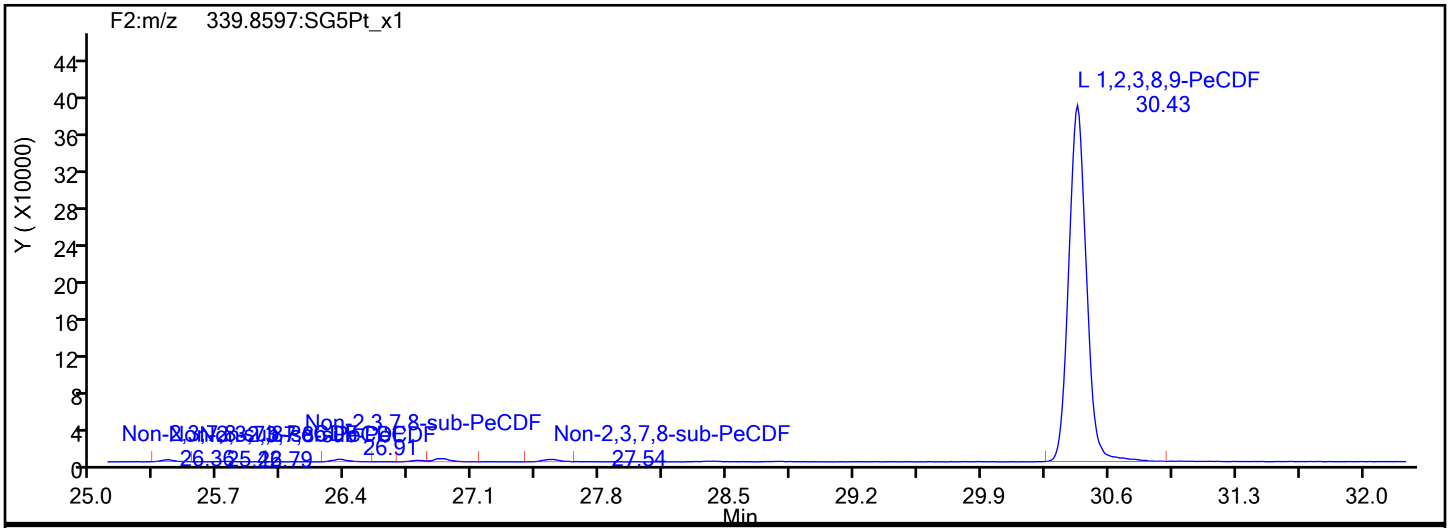

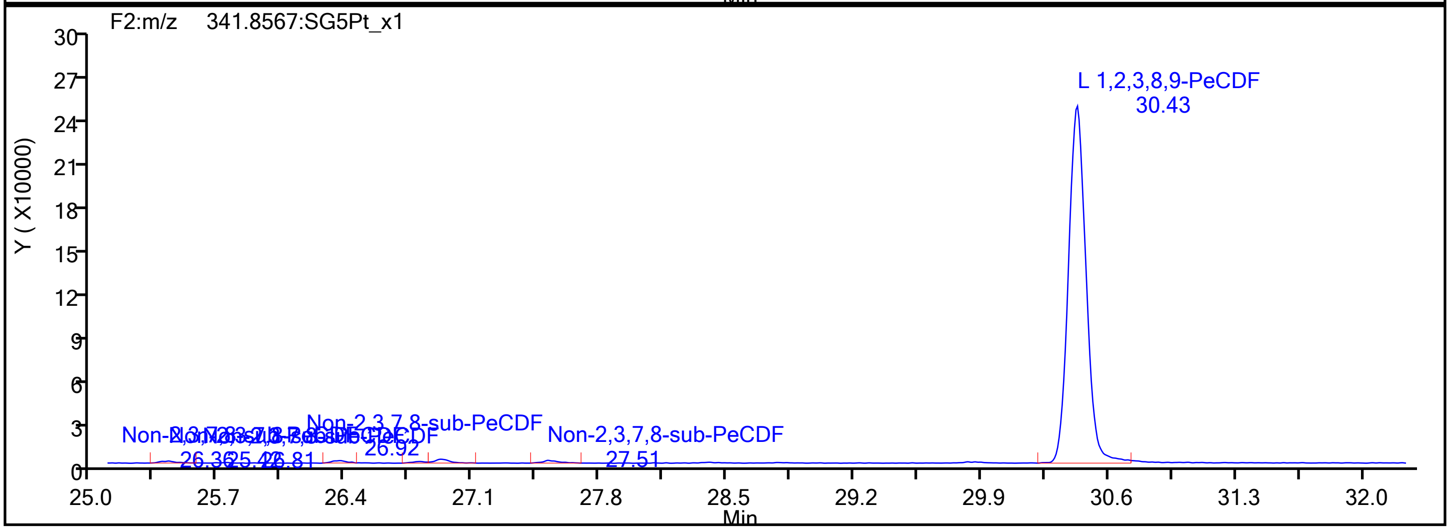

PeCDF Interference Mass

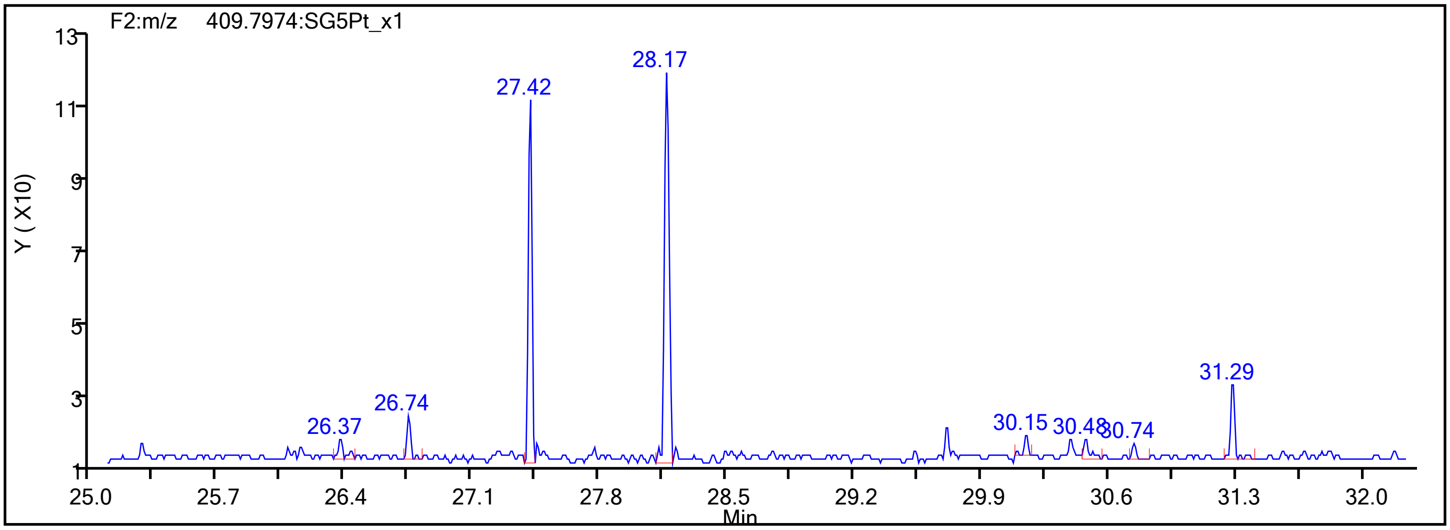

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

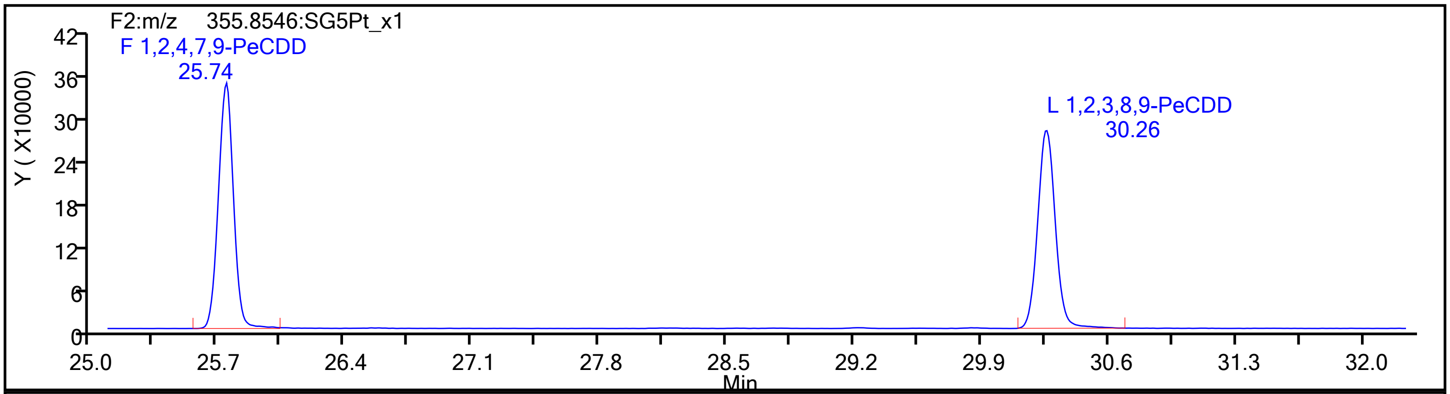

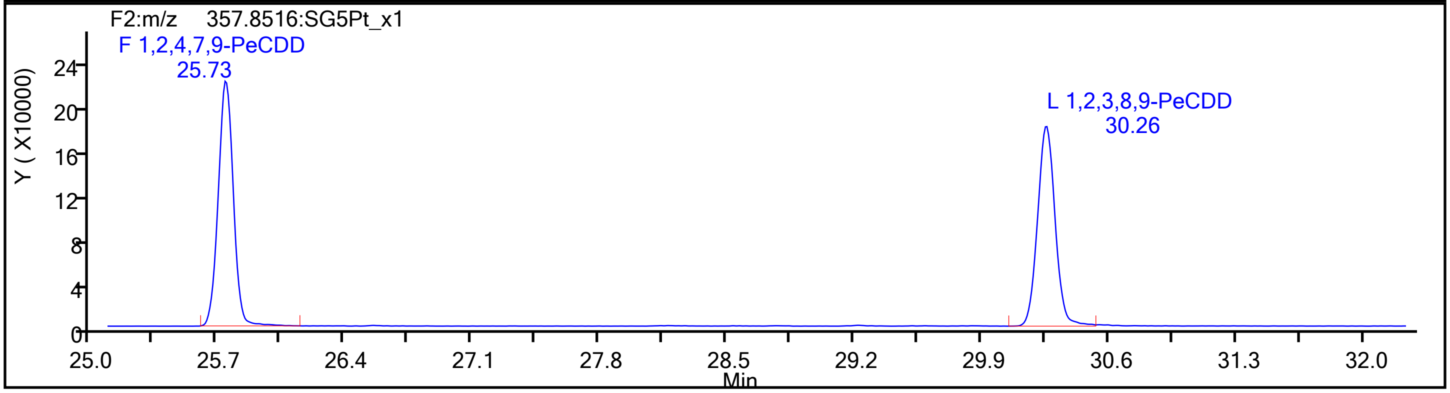

PeCDD Standards

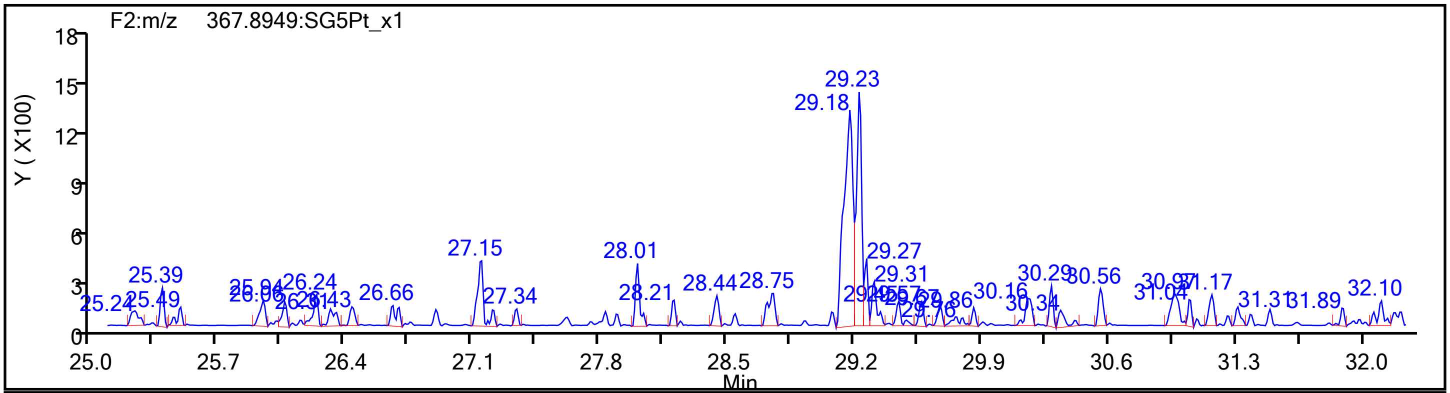

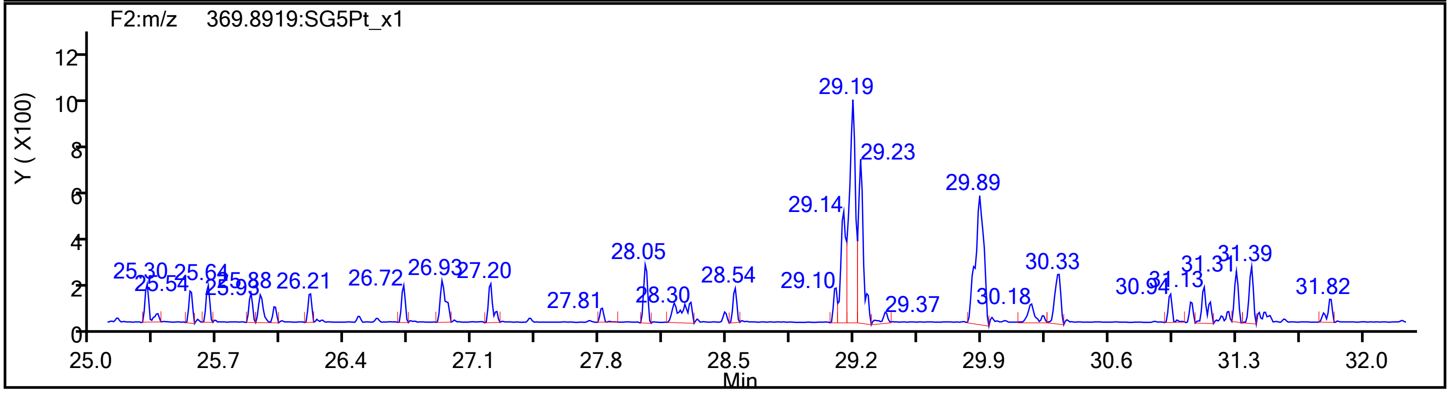

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d

Injection Date: 02-Feb-2021 20:03:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HxCDF

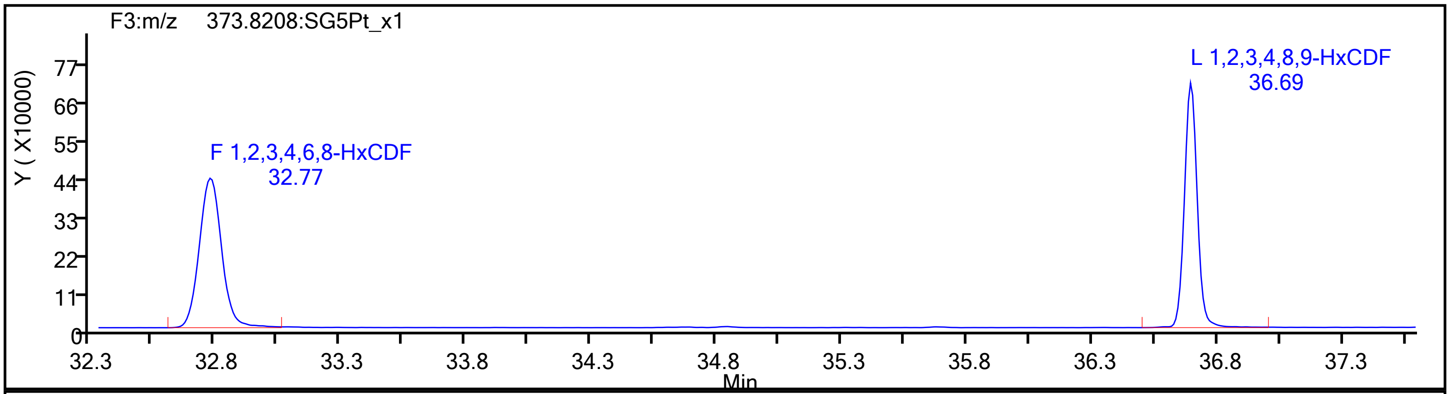

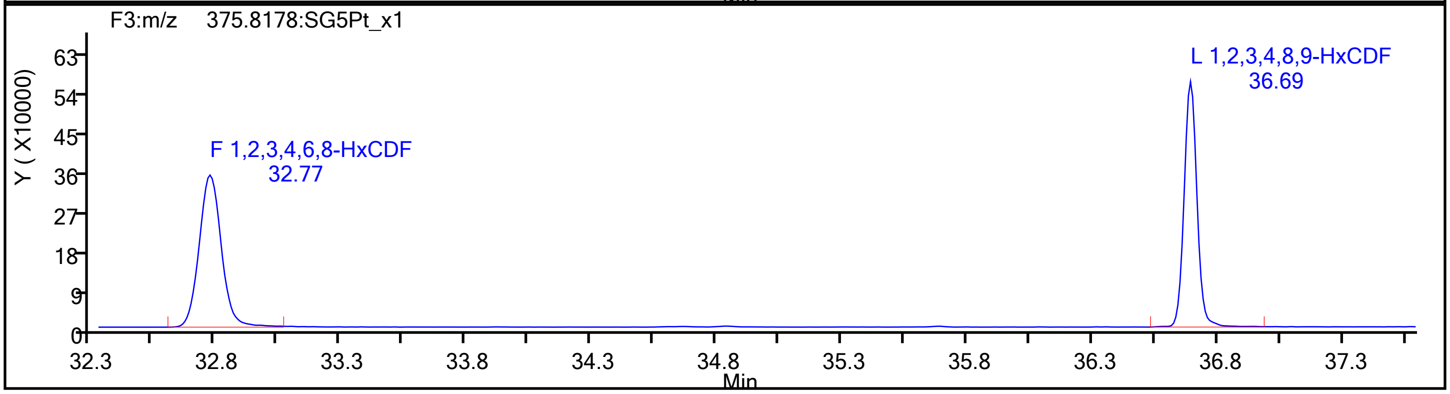

HxCDF Standards

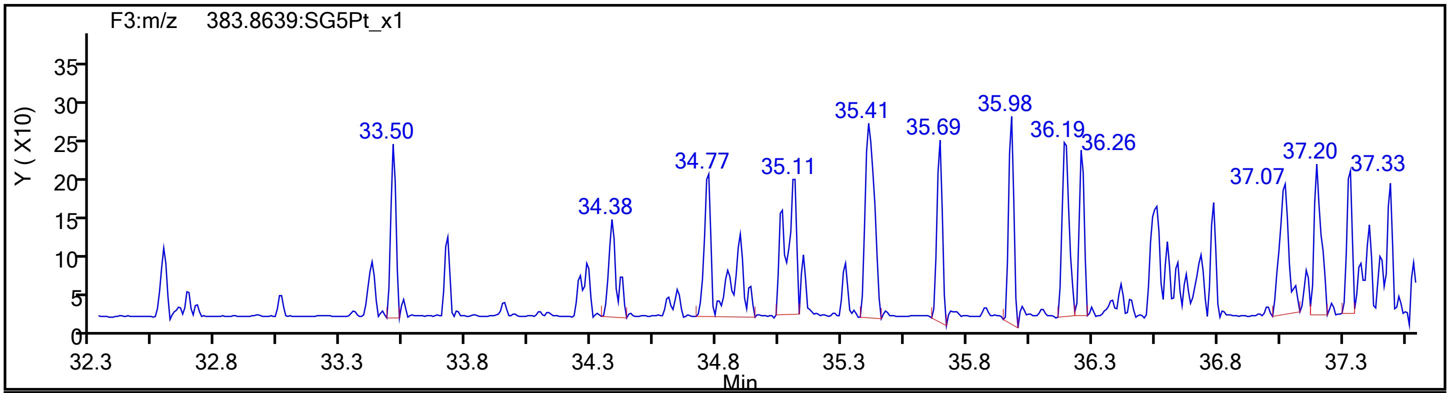

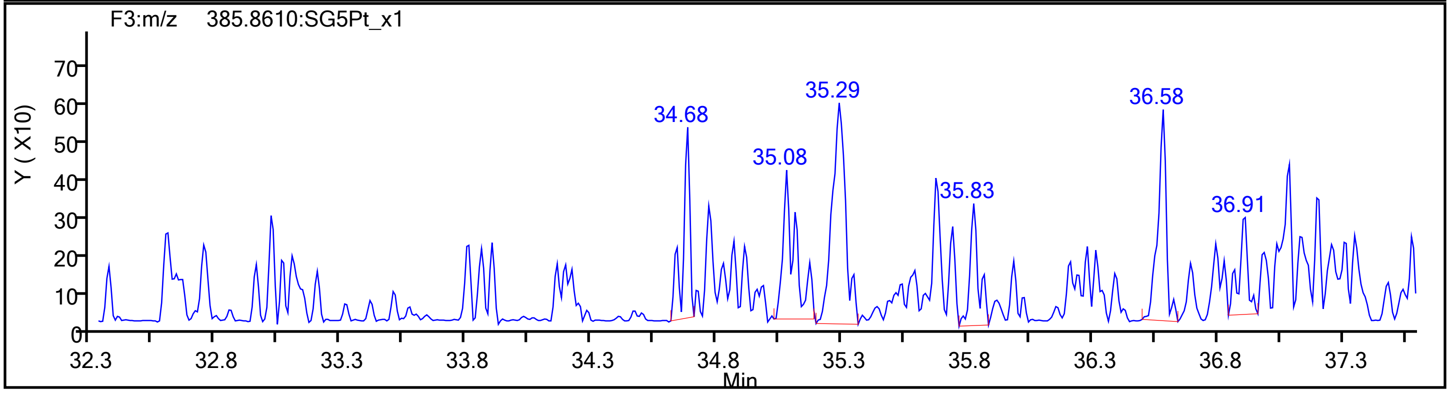

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

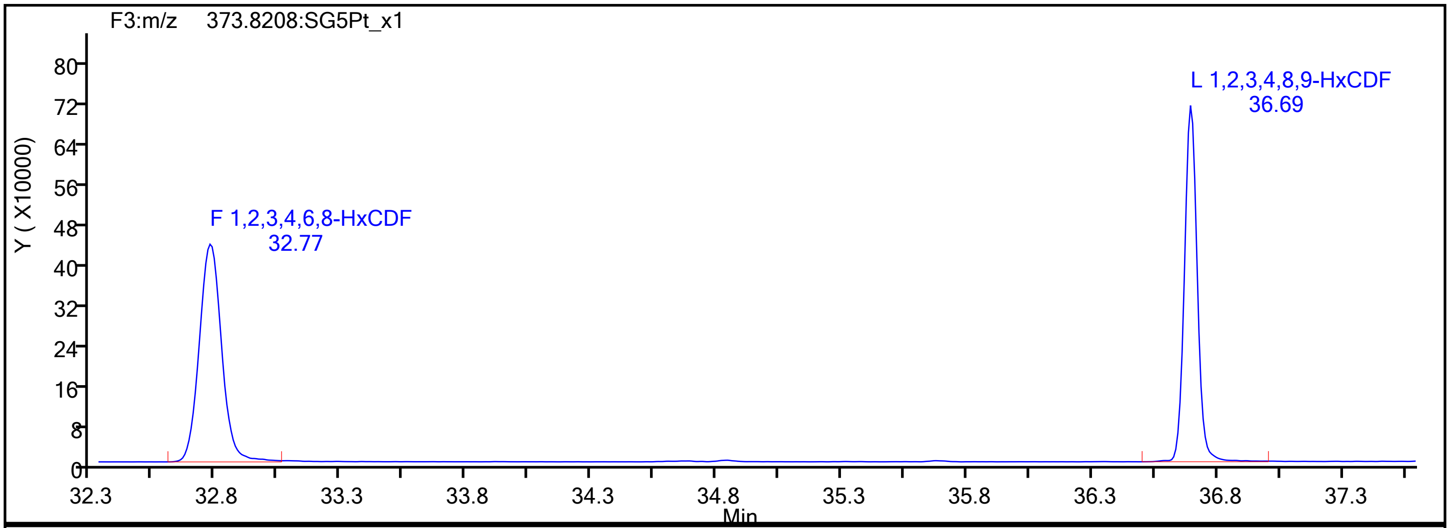

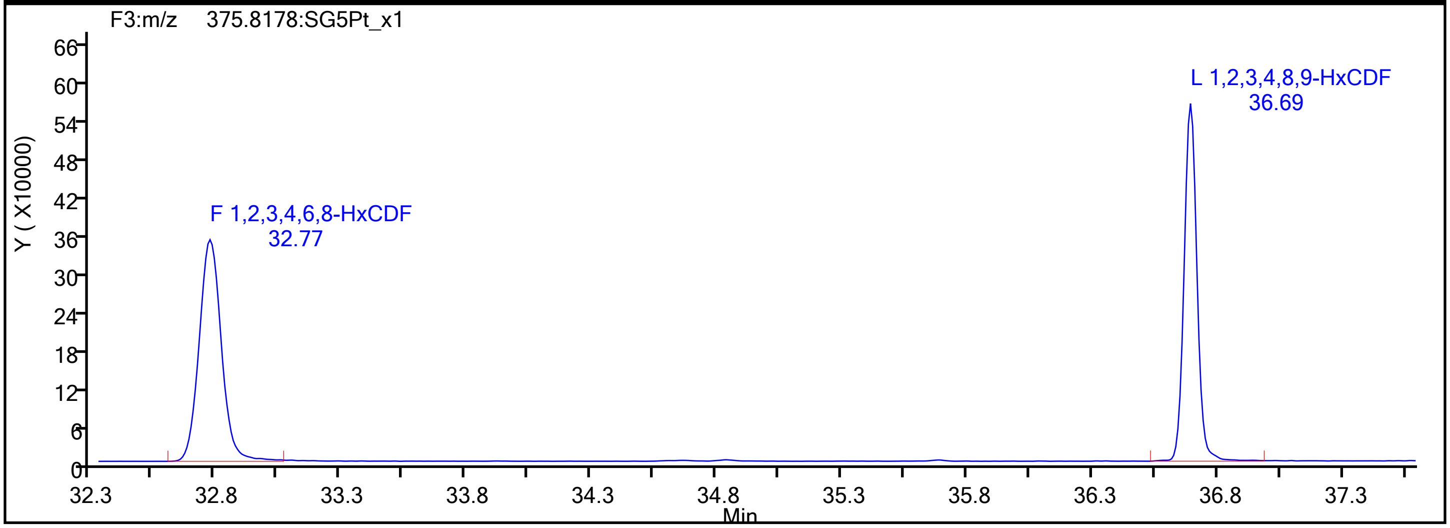

HxCDF Interference Mass

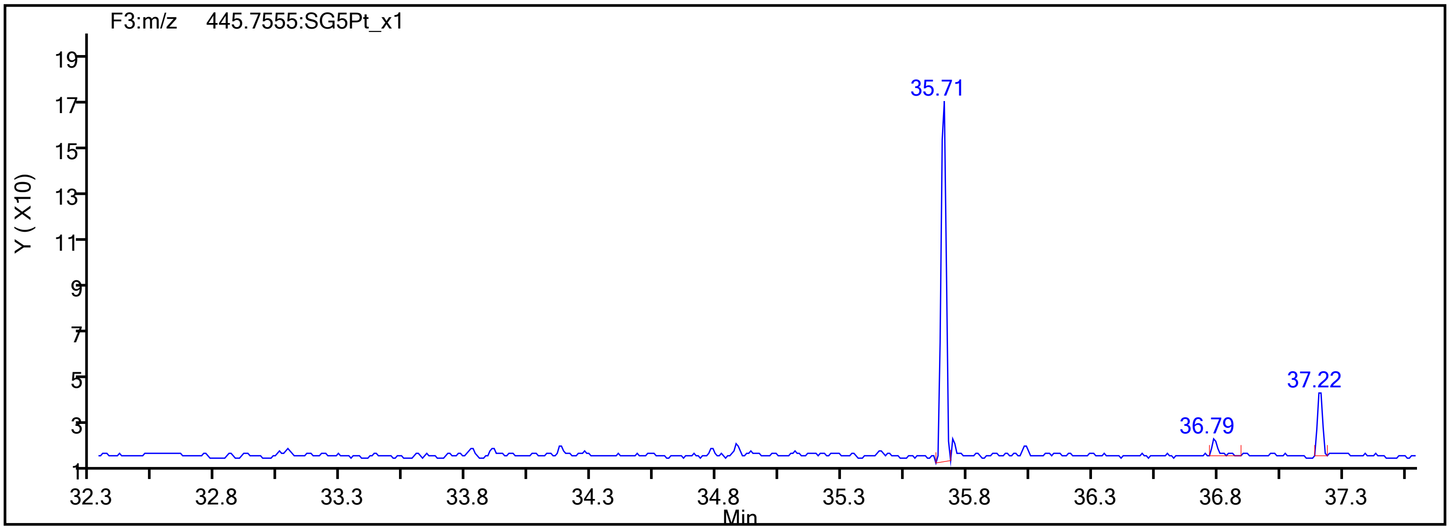

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d

Injection Date: 02-Feb-2021 20:03:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 458037
Sample Line#: 1

Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

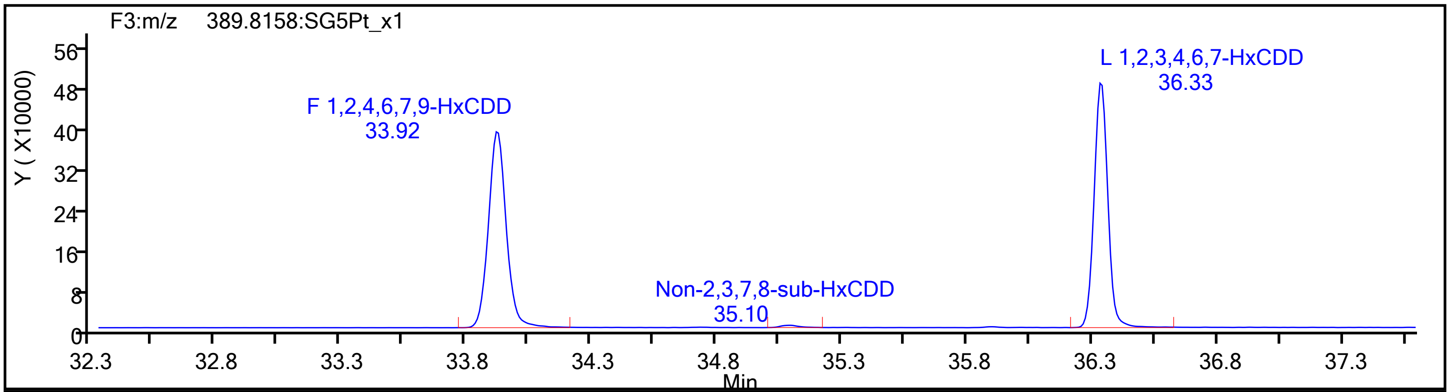

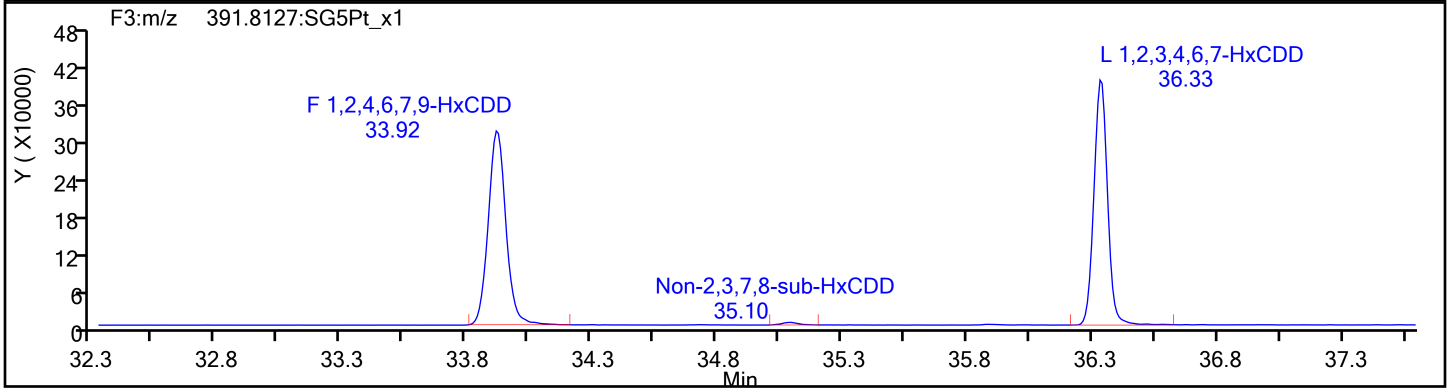

HxCDD Standards

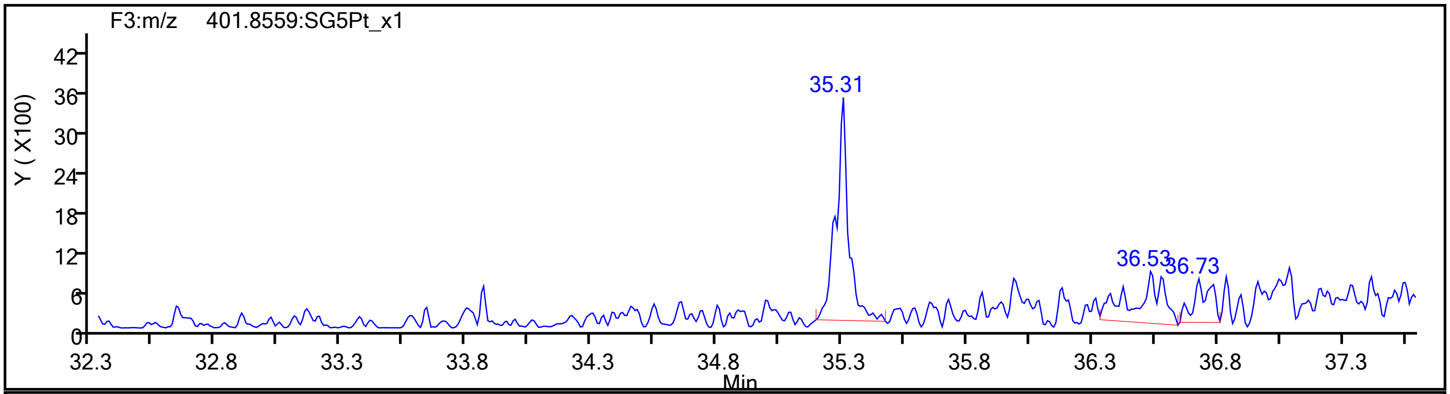

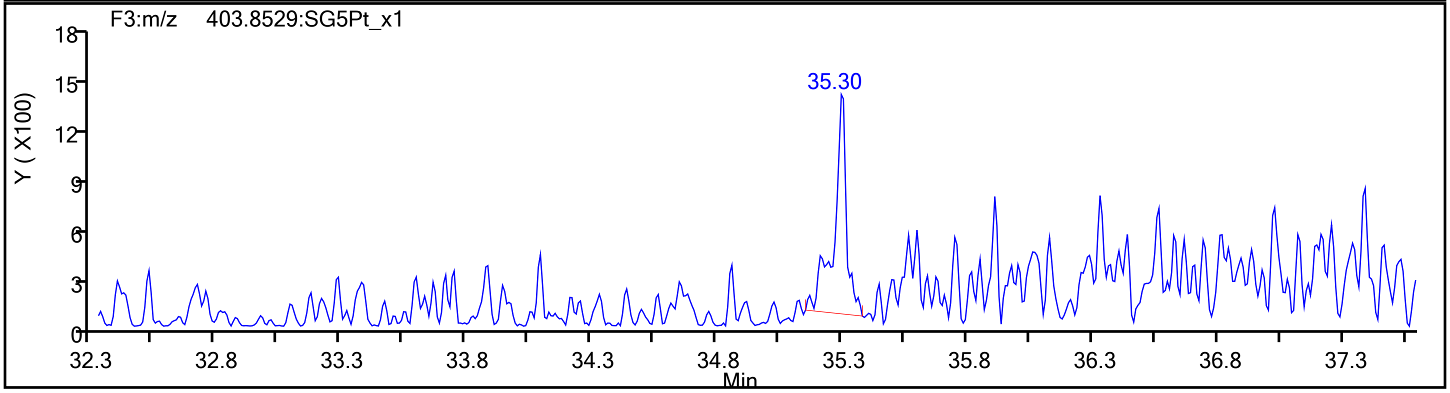

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d
Injection Date: 02-Feb-2021 20:03:00 Injection Vol: 2.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

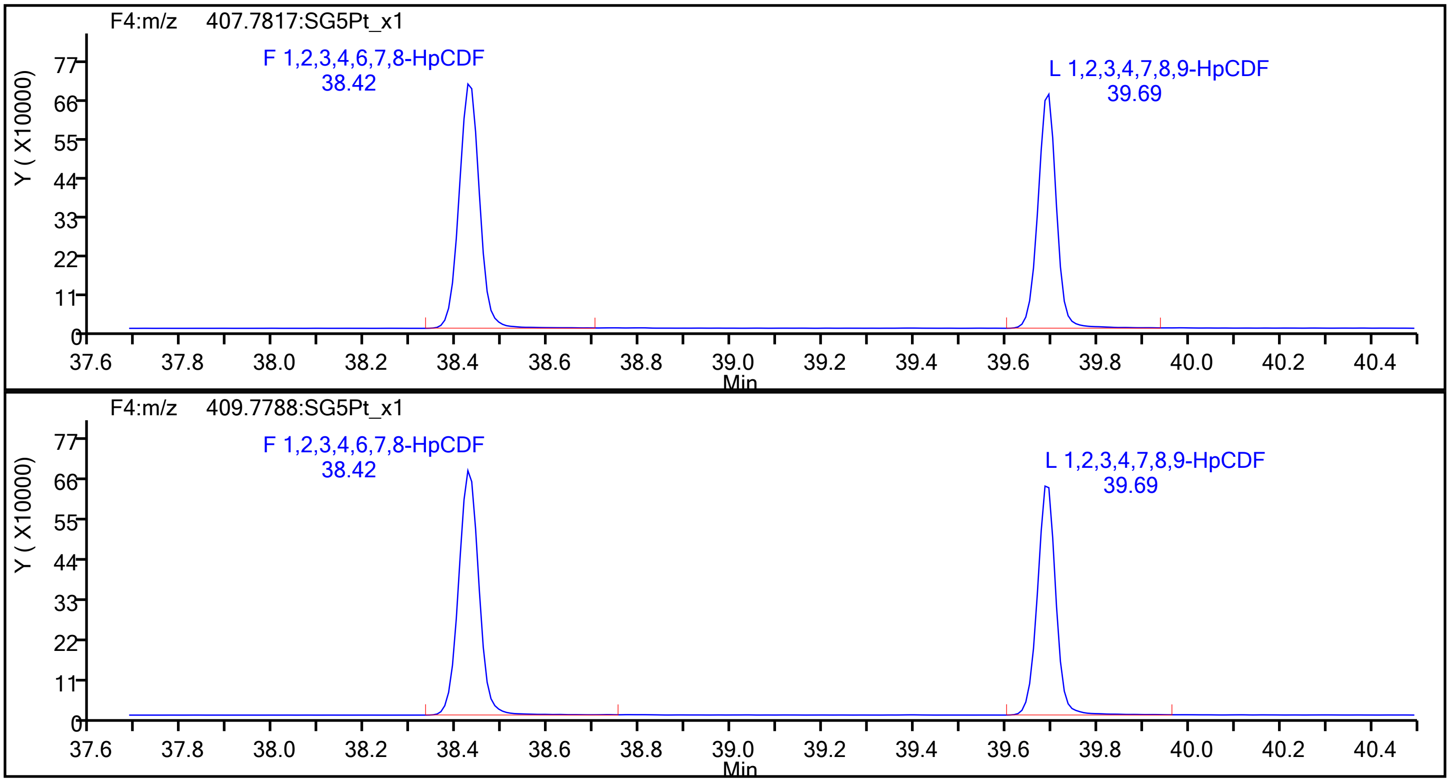

HpCDF Standards

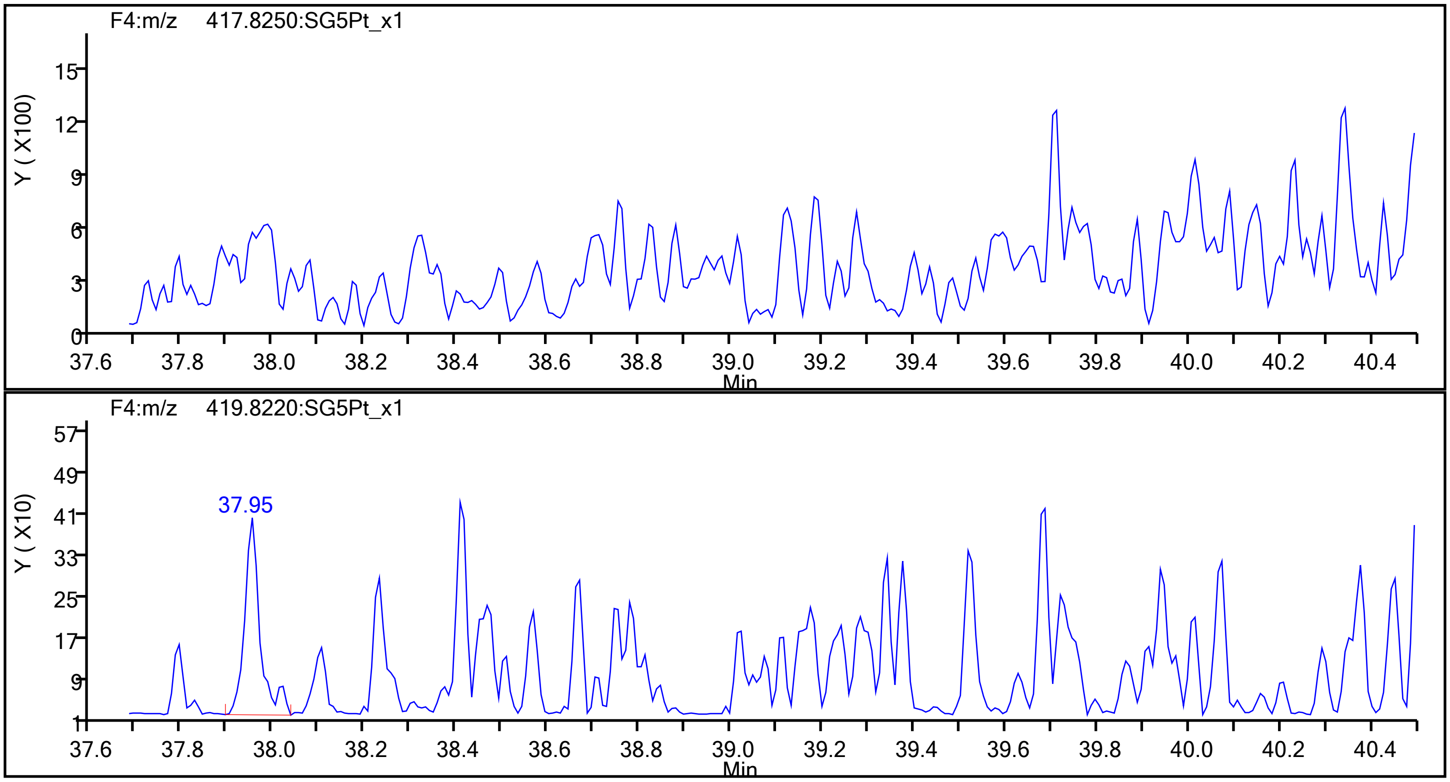

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d

Injection Date: 02-Feb-2021 20:03:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 458037
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

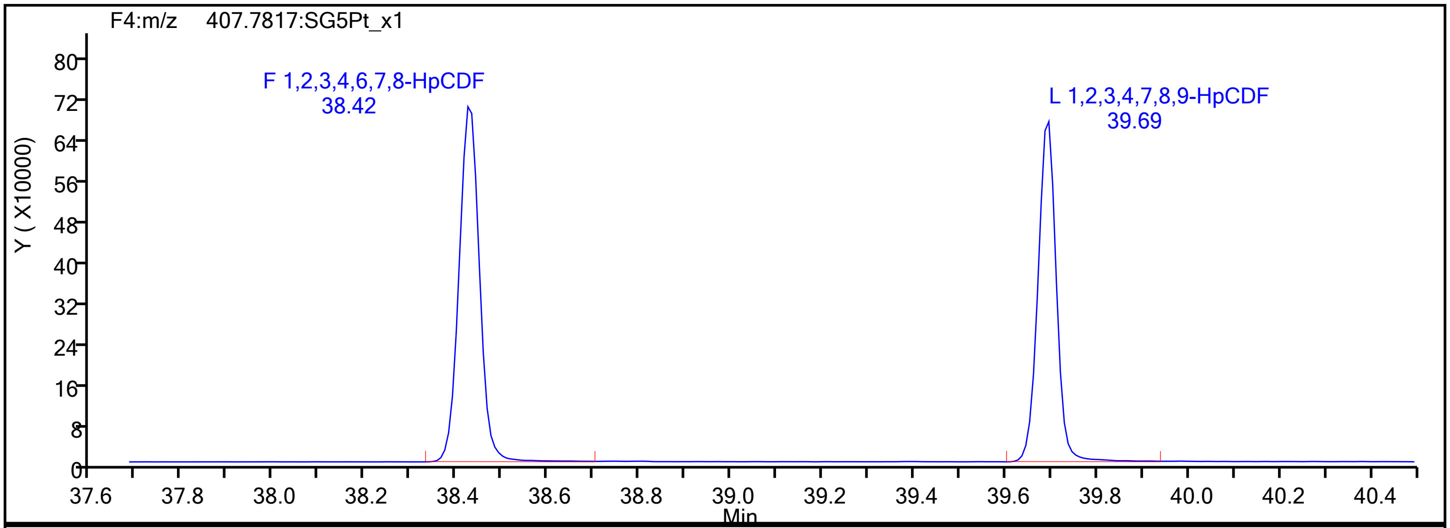

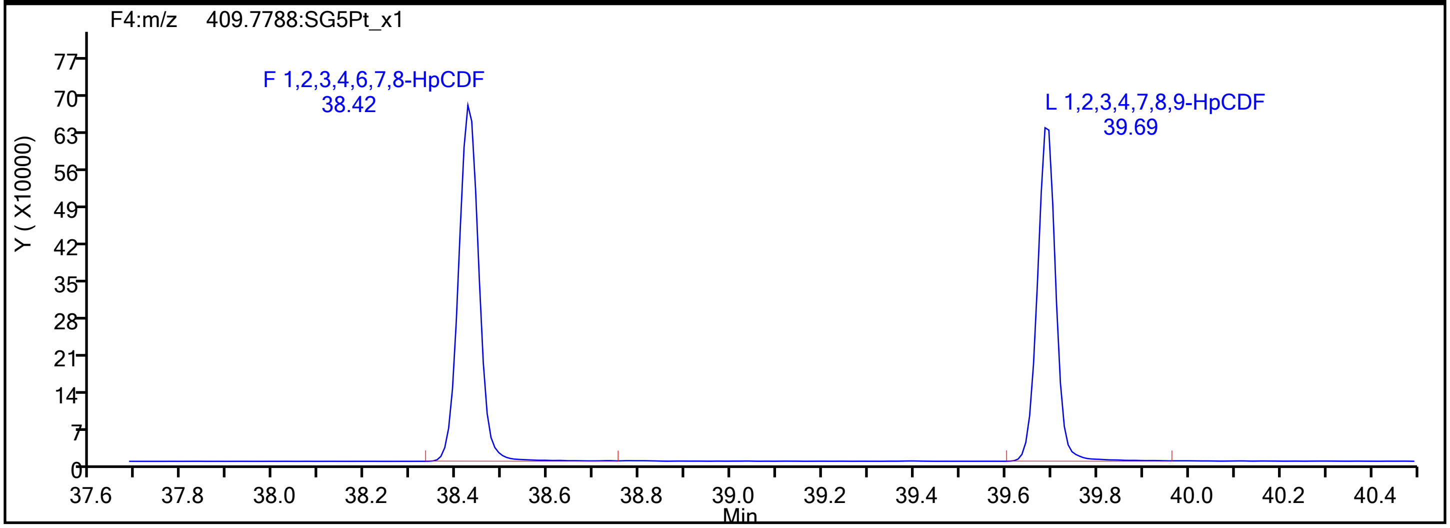

HpCDF Interference Mass

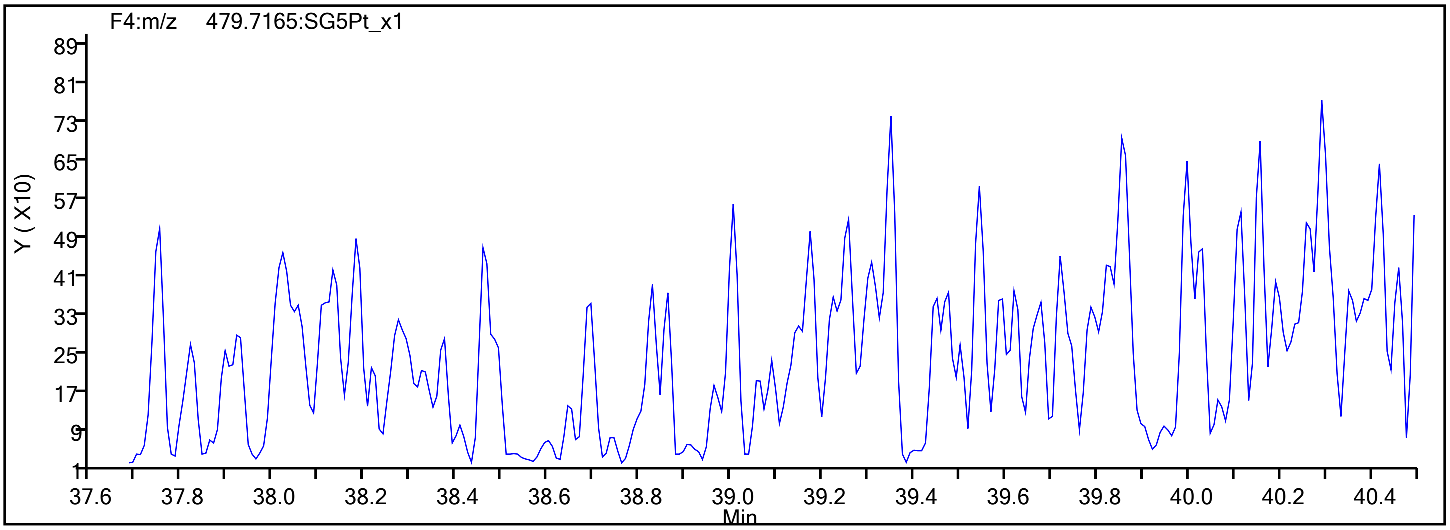

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

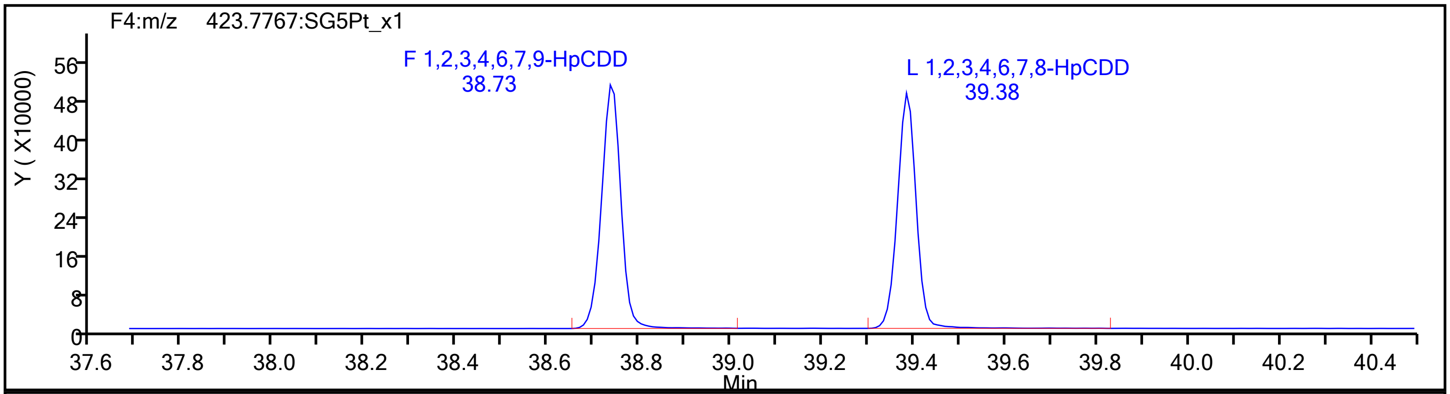

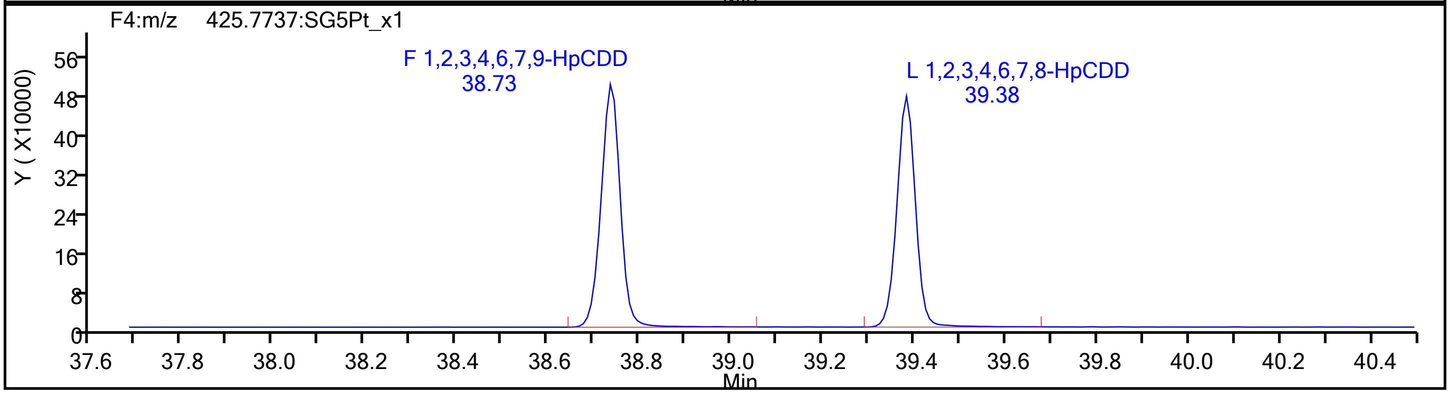

HpCDD Standards

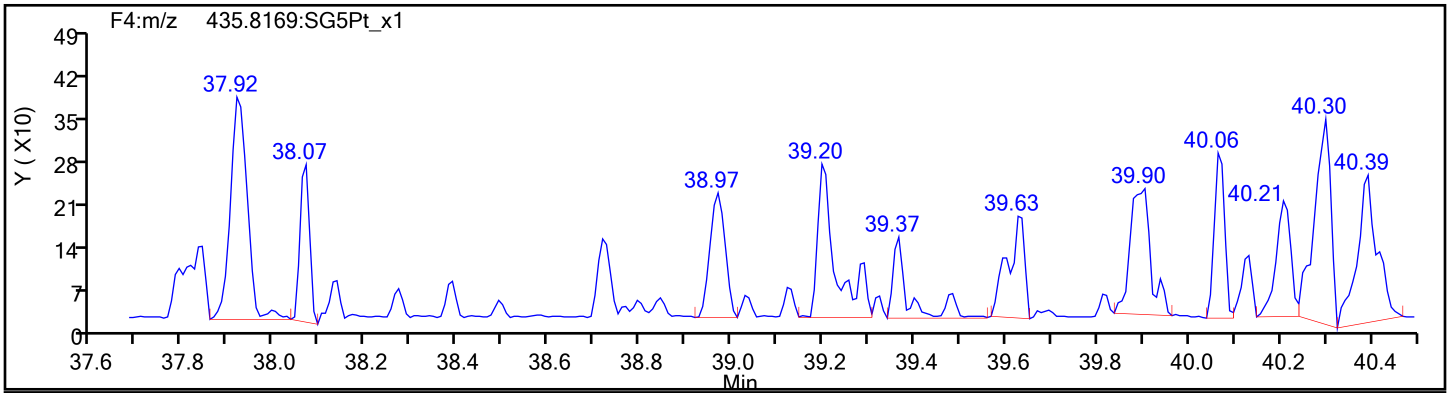

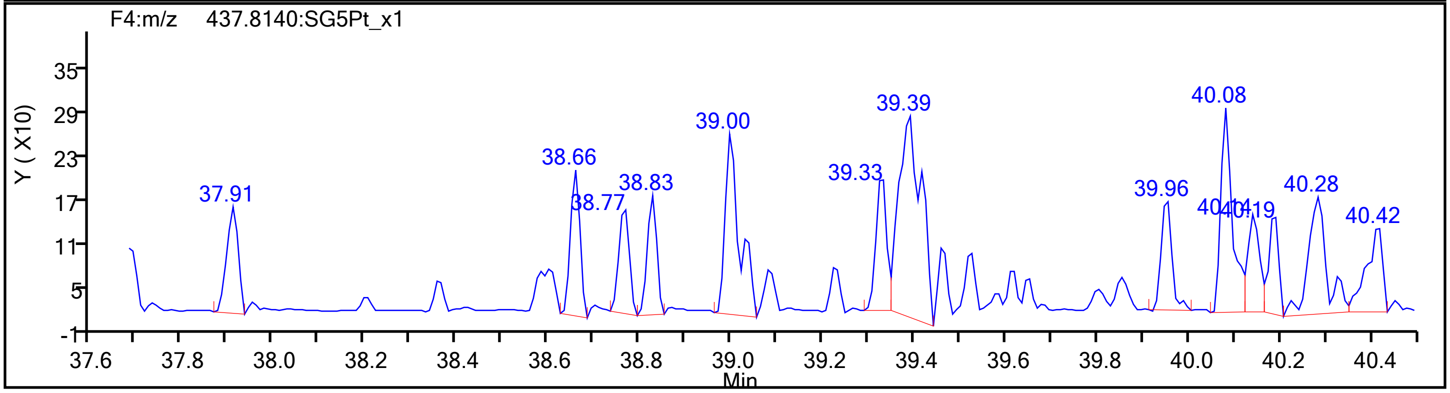

Report Date: 03-Feb-2021 14:49:31 Chrom Revision: 2.3 18-Dec-2020 13:34:10

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

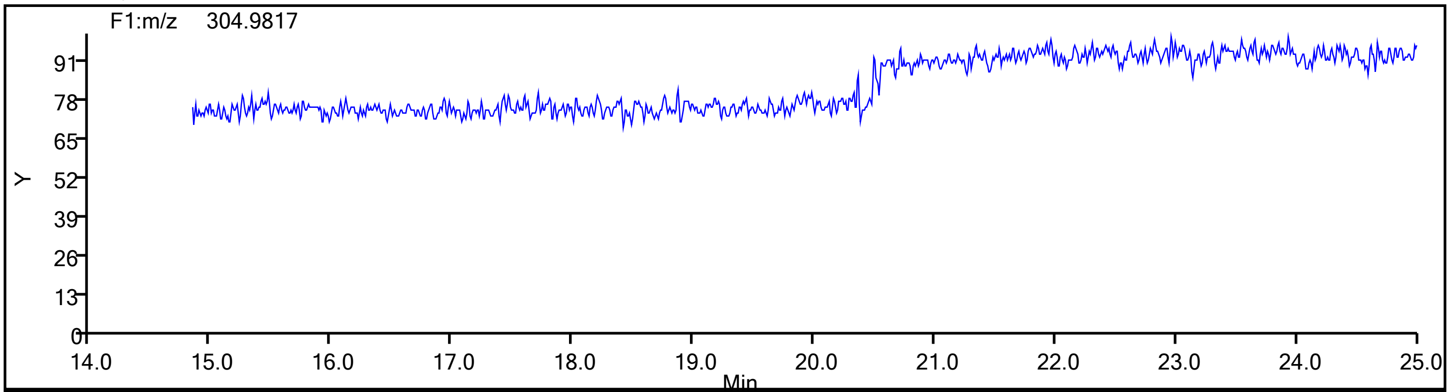

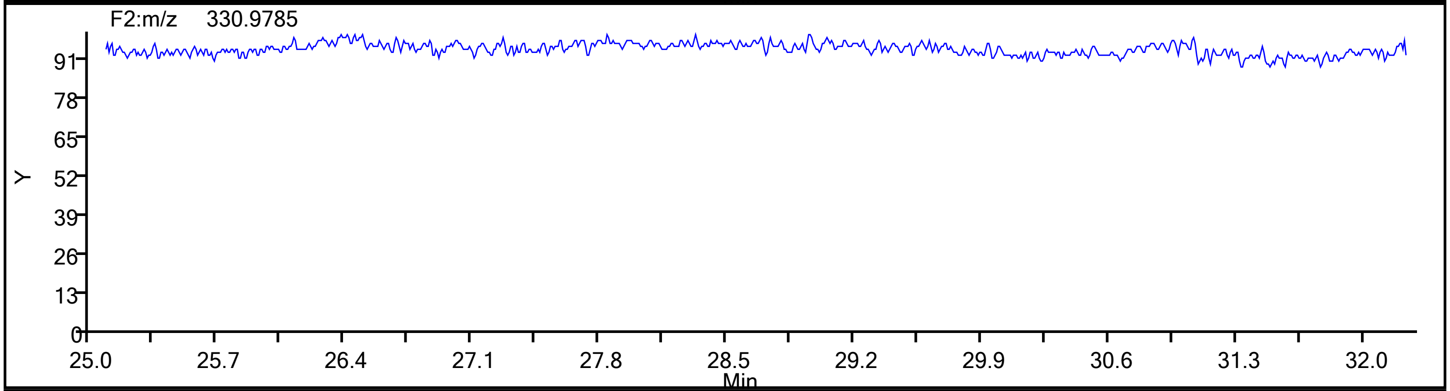

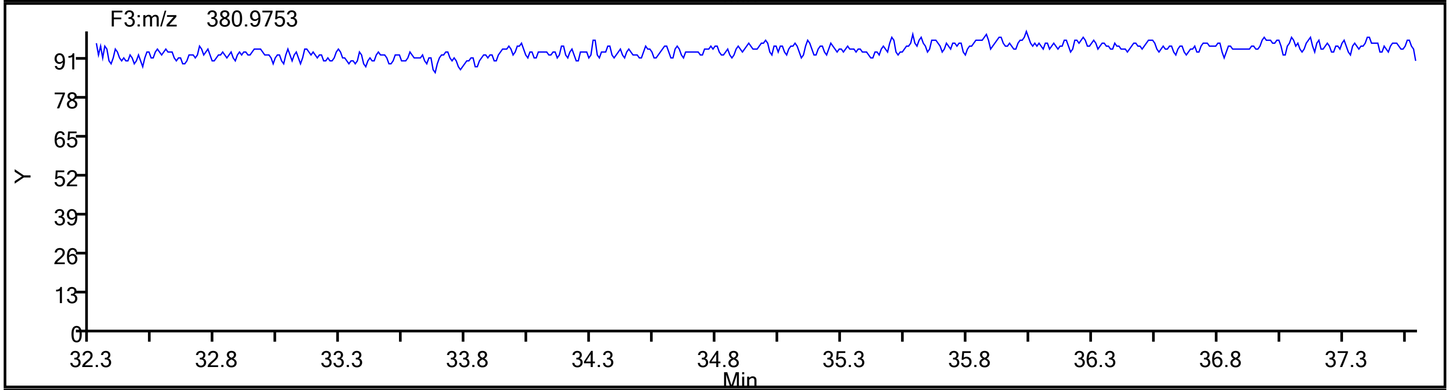

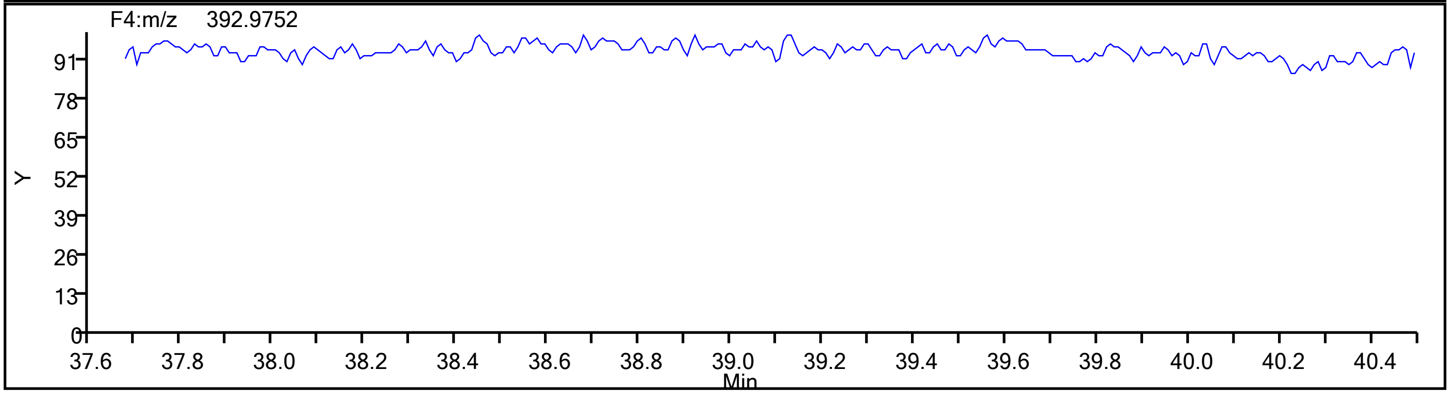

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_2.d		
Injection Date:	02-Feb-2021 20:03:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	458037	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

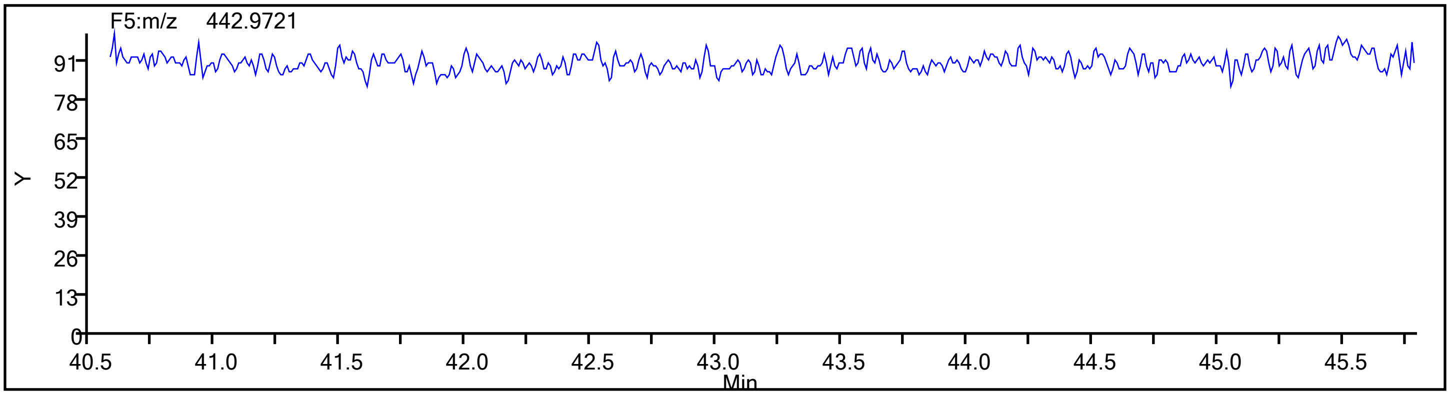

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 10-Mar-2021 09:38:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Mar-2021 12:52:22 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1604

First Level Reviewer: bilottag Date: 10-Mar-2021 10:41:27

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	18.585	2770287	0.77	1.5437					0.00	
2,3,7,8-TCDF	18.620	5789458	0.77	1.1258	74.3	74.3	0.3443	0.3443		
A Non-2,3,7,8-sub-TCDF	18.182						0.3443	0.3443		
S Total TCDF					74.3	74.3	0.3443	0.3443		
D 13C-2,3,7,8-TCDD	19.796	1629092	0.83	0.9687					0.00	
2,3,7,8-TCDD	19.822	1958747	0.80	1.1904	40.4	40.4	0.2416	0.2416		
A Non-2,3,7,8-sub-TCDD	18.946						0.2416	0.2416		
S Total TCDD					40.4	40.4	0.2416	0.2416		
A F1 PeCDFs	22.838						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	26.271	32791	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	26.681						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	33.585	11872	1.42	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.125	14855	1.24	0.0000						RQ
S Total HxCDD										RQ
1,2,3,4,6,7,8-HpCDF	37.838	1967439	1.04	1.4859						
1,2,3,4,7,8,9-HpCDF	39.185	1498564	1.03	1.4048						
A Non-2,3,7,8-sub-HpCDF	38.512						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	38.874	1158456	1.06	1.1489						
A Non-2,3,7,8-sub-HpCDD	38.524						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.781	3405498	0.76							
1,3,6,8-TCDD	16.224	2006135	0.79							
2,3,4,7-TCDF	18.620	5789458	0.77							
1,2,3,7-TCDD	19.633	1591271	0.79							
1,2,3,9-TCDF	19.985	2527898	0.76							
1,2,3,9-TCDD	20.071	2072324	0.80							
1,2,8,9-TCDF	21.583	2530370	0.76							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	21.668	758557								
1,3,4,6,8-PeCDF	22.209	2090036	1.58							
1,2,4,7,9-PeCDD	24.580	1487515	1.57							
1,2,3,8,9-PeCDD	28.783	1421651	1.60							
1,2,3,8,9-PeCDF	28.935	1885524	1.58							
1,2,3,4,6,8-HxCDF	31.248	2291986	1.25							
1,2,4,6,7,9-HxCDD	32.714	1523268	1.27							
1,2,3,4,6,7-HxCDD	35.535	1450569	1.26							
1,2,3,4,8,9-HxCDF	35.923	1895926	1.24							
1,2,3,4,6,7,9-HpCDD	38.175	1274306	1.07							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 10-Mar-2021 09:38:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 11-Mar-2021 12:52:22 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1604

First Level Reviewer: bilottag Date: 10-Mar-2021 10:41:27

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	18.585	18.585	0	1.000	1207392	195932	586	1465	334		
317.9389	18.585	18.585	0	1.000	1562895	257324	254	635	1013	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.620	18.620	0	1.002	2516948	375535	759	1897	495		
305.8987	18.620	18.620	0	1.002	3272510	488996	998	2495	490	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.182						759	1897			
305.8987	18.182						998	2495			
13C-2,3,7,8-TCDD											
331.9368	19.796	19.796	0	1.000	736838	112881	354	885	319		
333.9338	19.796	19.796	0	1.000	892254	142623	114	285	1251	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.822	19.822	0	1.001	870428	129452	353	882	367		
321.8936	19.822	19.822	0	1.001	1088319	163395	382	955	428	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	18.946						353	882			
321.8936	18.946						382	955			
A F1 PeCDFs											
339.8597	22.838						39	97			
341.8567	22.838						66	165			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.178	26.271	-65	1.000	6242	1025	206	515	5		
341.8567	25.170	26.271	-66	1.000	3158	659	175	437	4	1.98(1.32-1.78)	
339.8597	25.708	26.271	-34	1.000	8808	1288	206	515	6		
341.8567	25.700	26.271	-34	1.000	6443	899	175	437	5	1.37(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.247	26.271	-1	1.000	7330	1017	206	515	5		
341.8567	26.256	26.271	-1	1.000	3721	652	175	437	4	1.97(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.681						270	675			
357.8516	26.681						133	332			
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.826	33.585	14	1.000	6958	1144	262	655	4		
375.8178	33.809	33.585	13	1.000	4914	867	199	497	4	1.42(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											RQ
389.8158	34.129	34.125	0	1.000	9602	1325	176	440	8		
391.8127	34.129	34.125	0	1.000	6632	1108	149	372	7	1.45(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.838	37.838	0	1.000	1005349	242684	552	1380	440		
409.7788	37.838	37.838	0	1.000	962090	234188	506	1265	463	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.185	39.185	0	1.000	759720	183110	552	1380	332		
409.7788	39.185	39.185	0	1.000	738844	176553	506	1265	349	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.512						552	1380			
409.7788	38.512						506	1265			
1,2,3,4,6,7,8-HpCDD											
423.7767	38.874	38.874	0	1.000	596039	150690	339	847	445		
425.7737	38.865	38.874	-1	1.000	562417	144268	317	792	455	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.524						339	847			
425.7737	38.524						317	792			
1,3,6,8-TCDF											
303.9016	14.781	14.781	0		1470166	312267	759	1897	411		
305.8987	14.781	14.781	0		1935332	416605	998	2495	417	0.76(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.224	16.224	0		887583	169279	353	882	480		
321.8936	16.224	16.224	0		1118552	212439	382	955	556	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	18.620	18.620	0		2516948	375535	759	1897	495		
305.8987	18.620	18.620	0		3272510	488996	998	2495	490	0.77(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	19.633	19.633	0		702834	111981	353	882	317		
321.8936	19.633	19.633	0		888437	139969	382	955	366	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	19.985	19.985	0		1092272	162969	759	1897	215		
305.8987	19.985	19.985	0		1435626	217512	998	2495	218	0.76(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.071	20.071	0		920073	126665	353	882	359		
321.8936	20.071	20.071	0		1152251	163557	382	955	428	0.80(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	21.583	21.583	0		1095180	147993	759	1897	195		
305.8987	21.583	21.583	0		1435190	196073	998	2495	196	0.76(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDD											
319.8965	21.668	21.668	0		758557	99251	353	882	281		
1,3,4,6,8-PeCDF											
339.8597	22.209	22.209	0		1280355	165513	39	97	4244		
341.8567	22.209	22.209	0		809681	101934	66	165	1544	1.58(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	24.580	24.580	0		909545	148571	270	675	550		
357.8516	24.580	24.580	0		577970	93376	133	332	702	1.57(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	28.783	28.783	0		875727	122259	270	675	453		
357.8516	28.783	28.783	0		545924	77559	133	332	583	1.60(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	28.935	28.935	0		1153603	149849	206	515	727		
341.8567	28.935	28.935	0		731921	95005	175	437	543	1.58(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	31.248	31.248	0		1274348	140595	262	655	537		
375.8178	31.248	31.248	0		1017638	114991	199	497	578	1.25(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	32.714	32.714	0		851148	107113	176	440	609		
391.8127	32.714	32.714	0		672120	86205	149	372	579	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.535	35.535	0		809563	162652	176	440	924		
391.8127	35.535	35.535	0		641006	128852	149	372	865	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	35.923	35.923	0		1047998	205974	262	655	786		
375.8178	35.923	35.923	0		847928	167788	199	497	843	1.24(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.175	38.175	0		657652	161222	339	847	476		
425.7737	38.175	38.175	0		616654	151942	317	792	479	1.07(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Lims ID: WDM
Client ID:
Inject. Date: 10-Mar-2021 09:38:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 2

Non-2,3,7,8-sub-PeCDF, RT: 26.271

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116				
2,3,4,7,8-PeCDF	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.178	6242	1025	3158	659		1.98	R
25.708	8808	1288	6443	899		1.37	
26.247	7330	1017	3721	652		1.97	R
Signal Totals:							
	22380	3330	13322	2210			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	35702	5540				1.68	RQ
	32791	5529					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (35702 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (32791 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Lims ID: WDM
Client ID:
Inject. Date: 10-Mar-2021 09:38:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 468973
Lims Sample ID: 2

Non-2,3,7,8-sub-HxCDF, RT: 33.585

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183				
1,2,3,6,7,8-HxCDF	1.248				
2,3,4,6,7,8-HxCDF	1.275				
1,2,3,7,8,9-HxCDF	1.295				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.826	6958	1144	4914	867		1.42	
Signal Totals:							
	6958	1144	4914	867			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	11872	2011				1.42	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (11872 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Lims ID: WDM
Client ID:
Inject. Date: 10-Mar-2021 09:38:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 468973
Lims Sample ID: 2

Non-2,3,7,8-sub-HxCDD, RT: 34.125

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095				
1,2,3,6,7,8-HxCDD	1.020				
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.129	9602	1325	6632	1108		1.45	R
Signal Totals:							
	9602	1325	6632	1108			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16234	2433				1.45	RQ
	14855	2481					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (16234 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (14855 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Injection Date: 10-Mar-2021 09:38:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

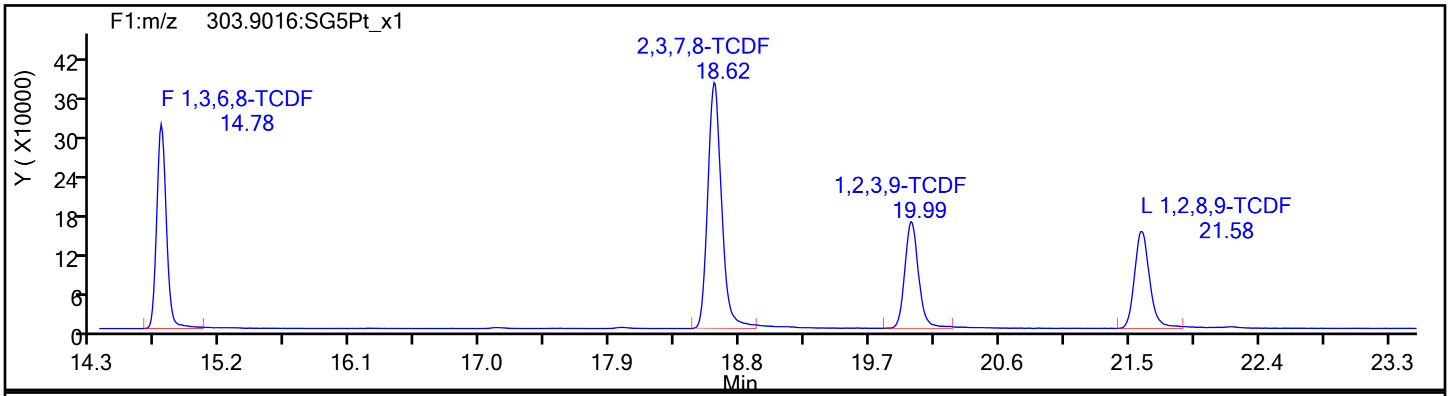

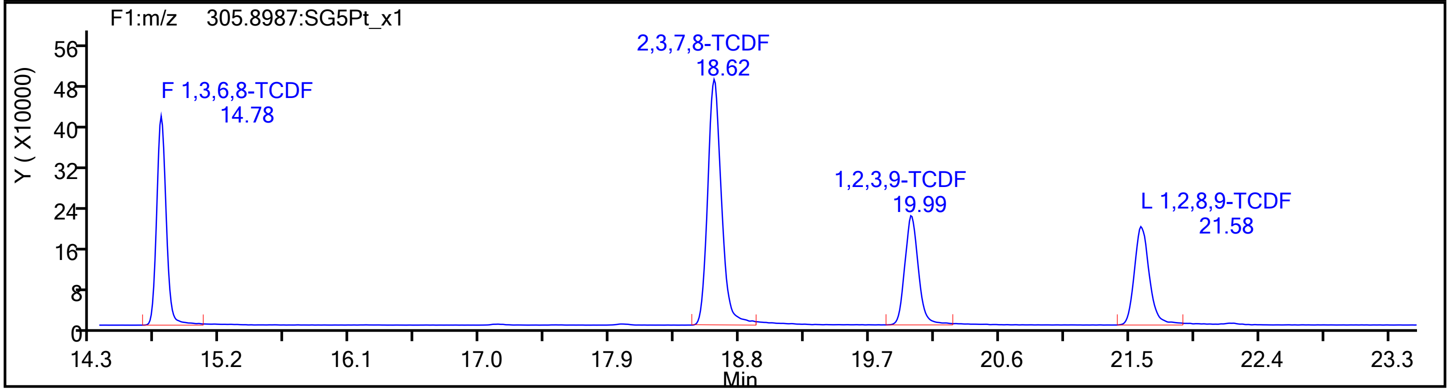

TCDF Standards

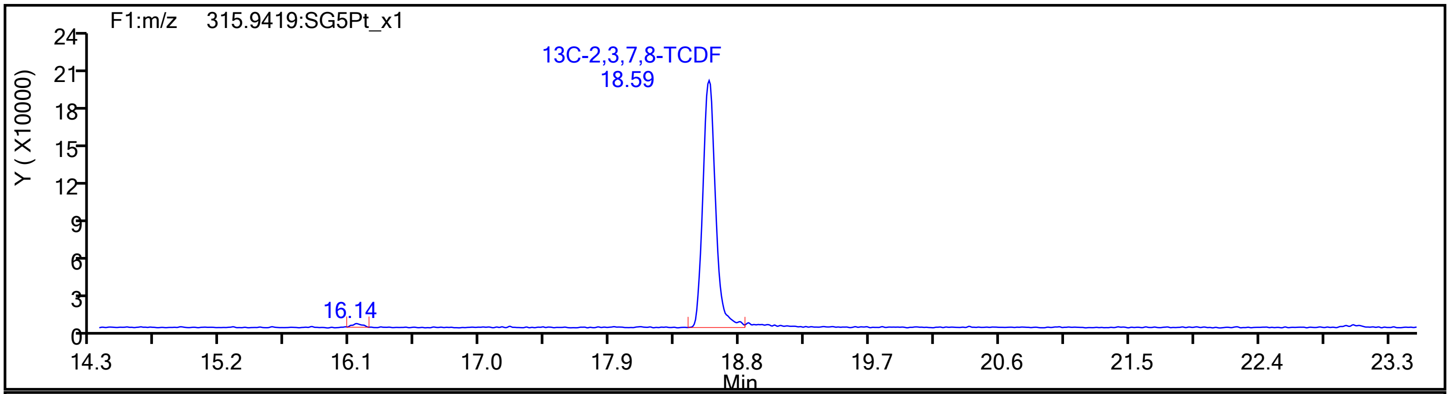

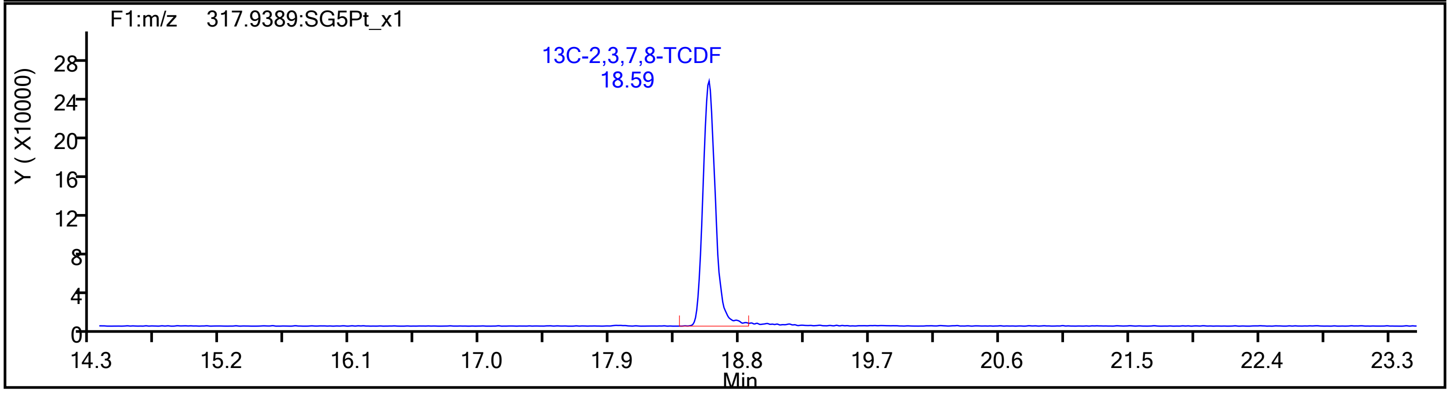

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

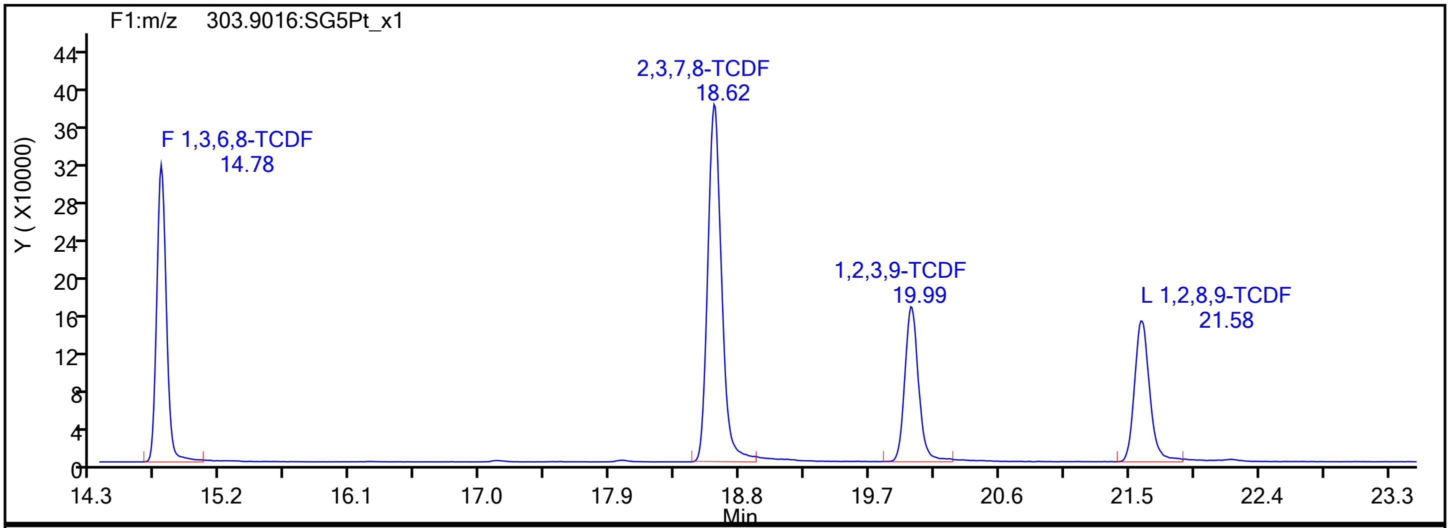

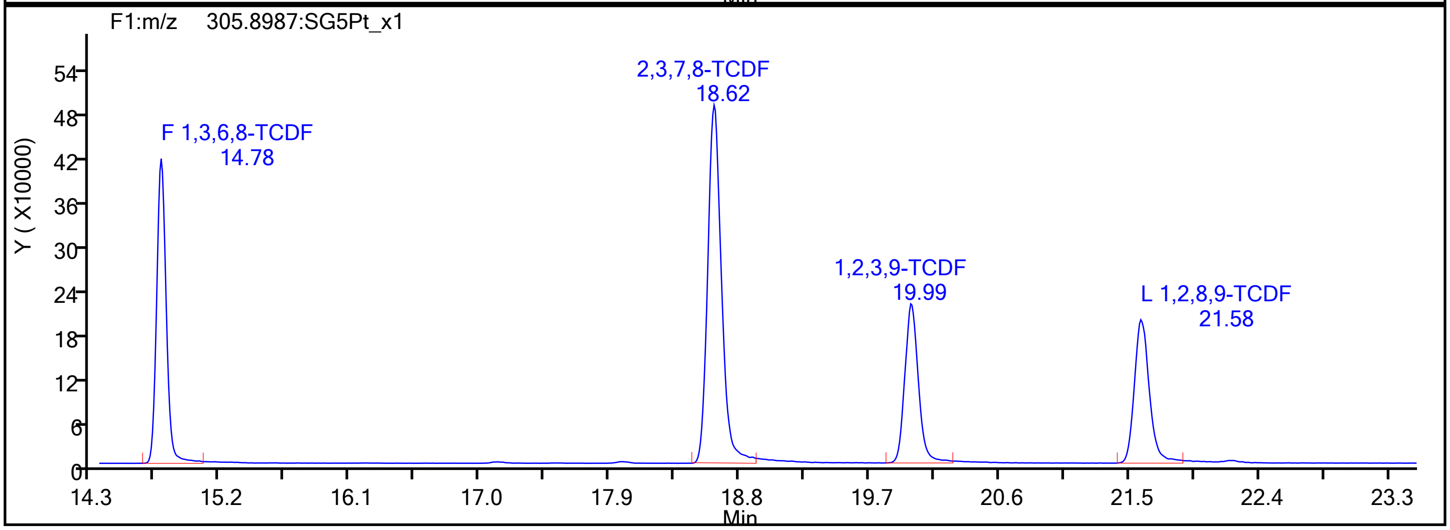

TCDF Interference Mass

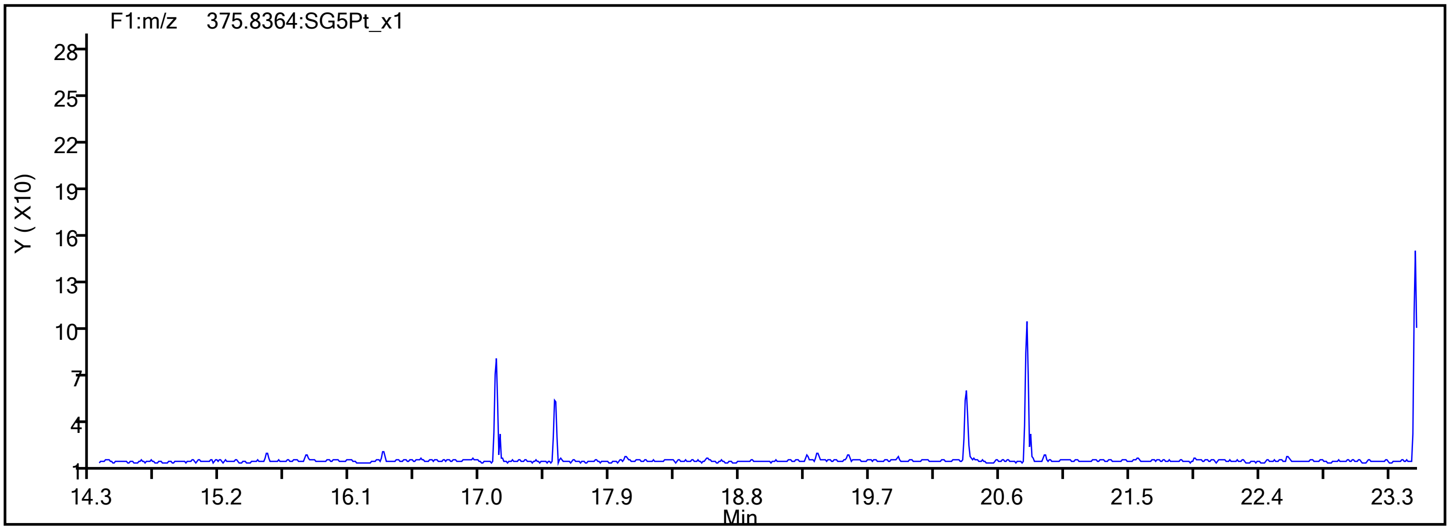

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Injection Date: 10-Mar-2021 09:38:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

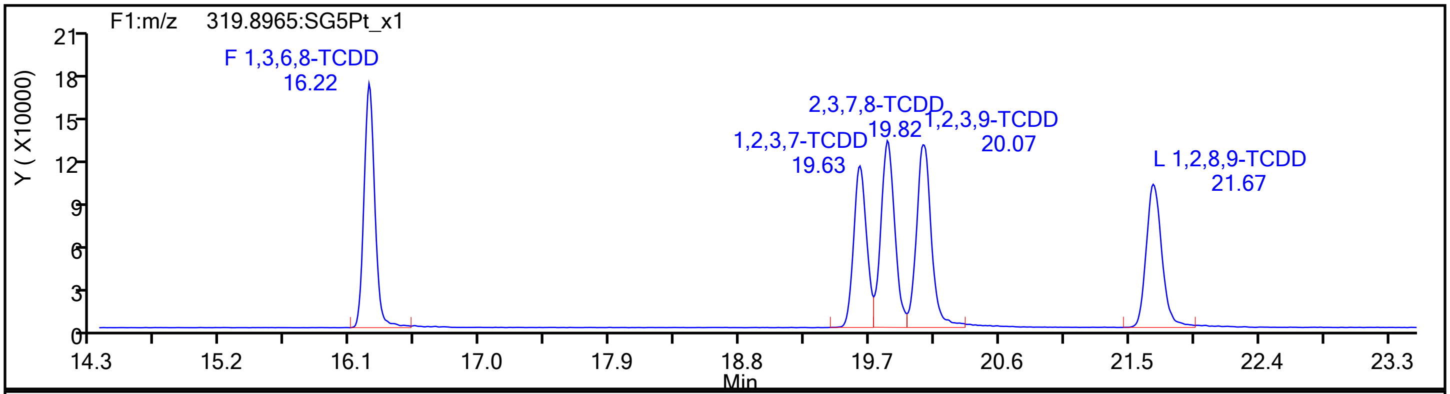

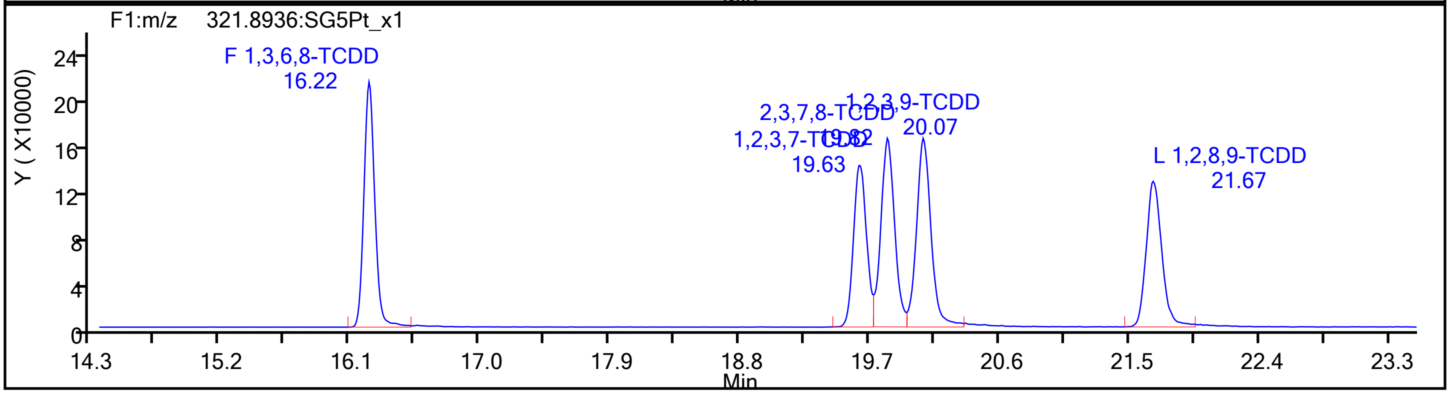

TCDD Standards

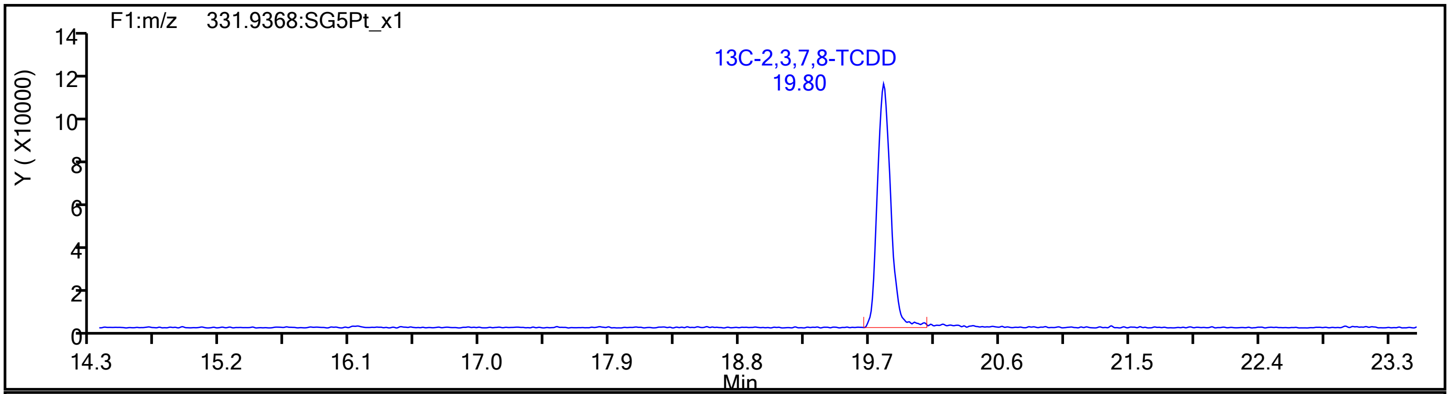

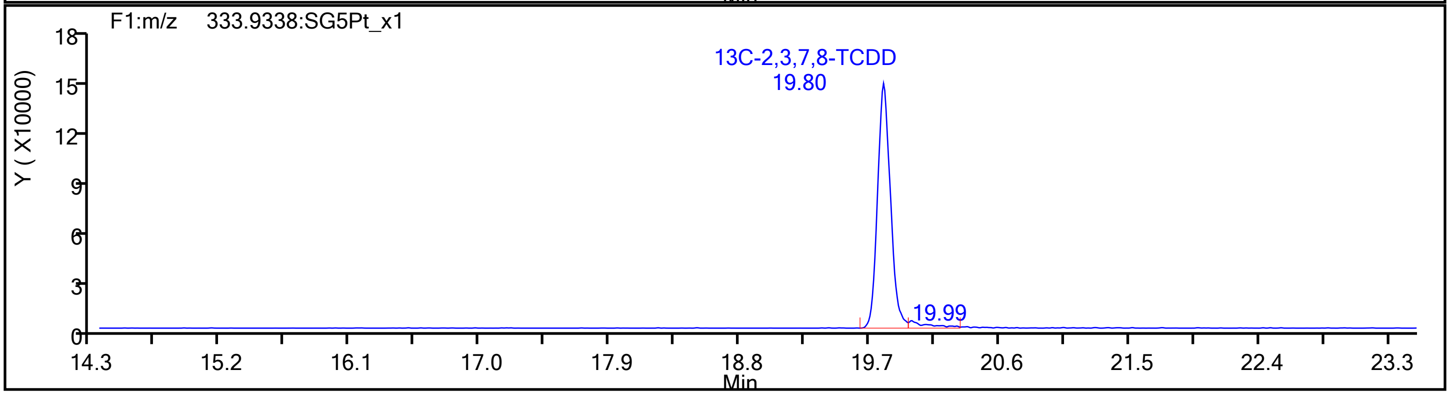

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

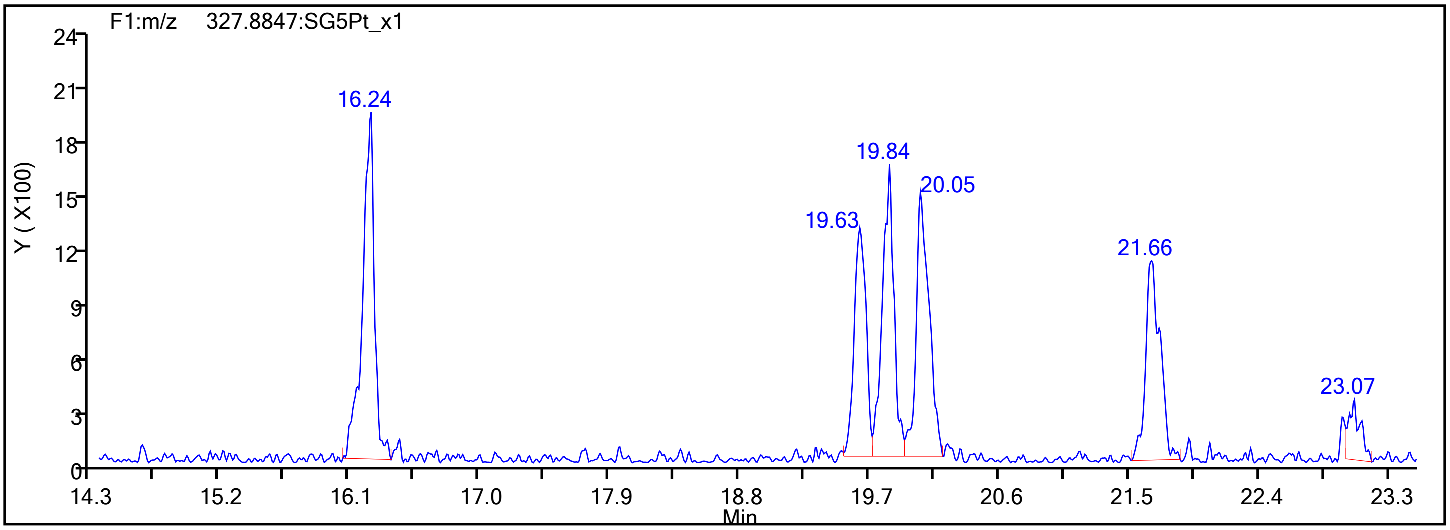

37Cl4-TCDD Standards

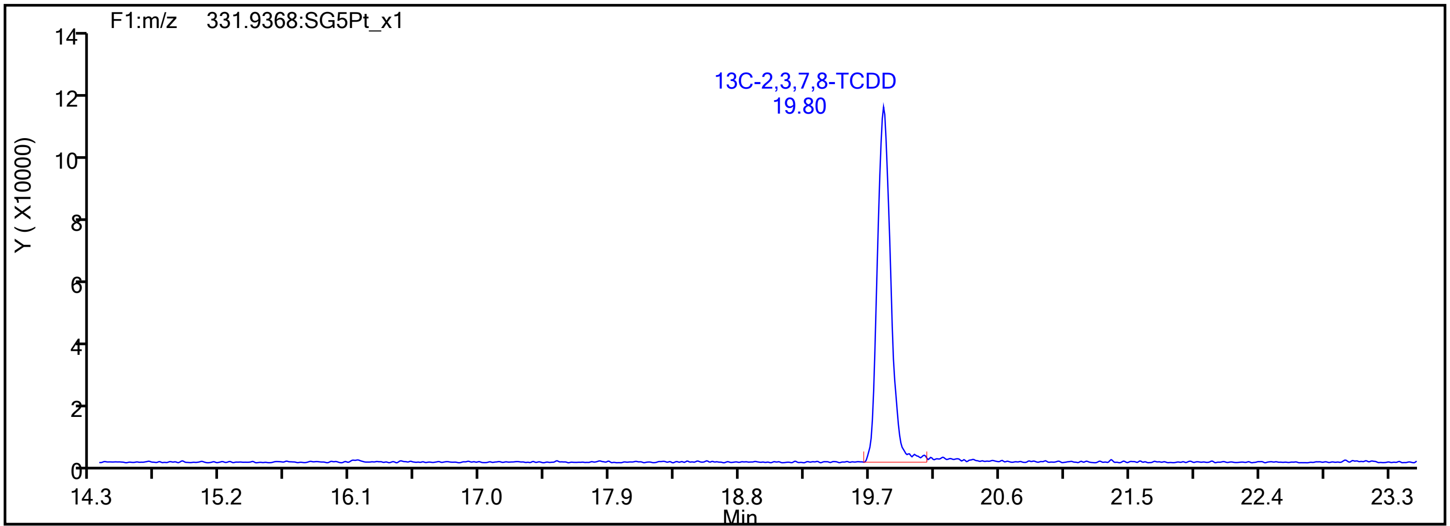

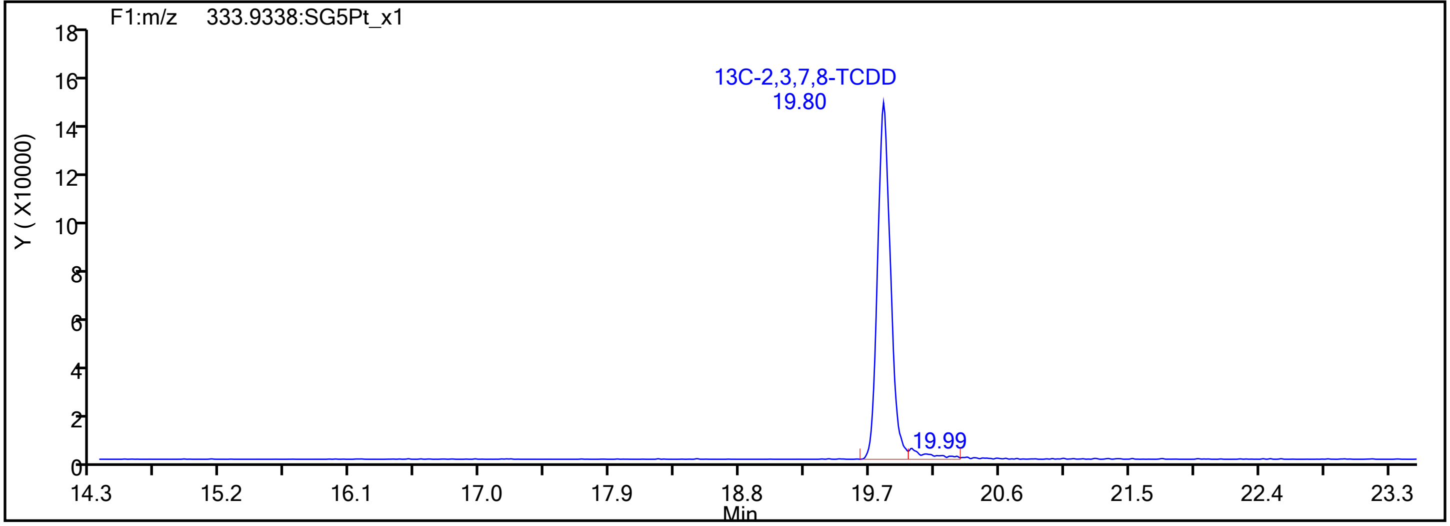

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d
Injection Date: 10-Mar-2021 09:38:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

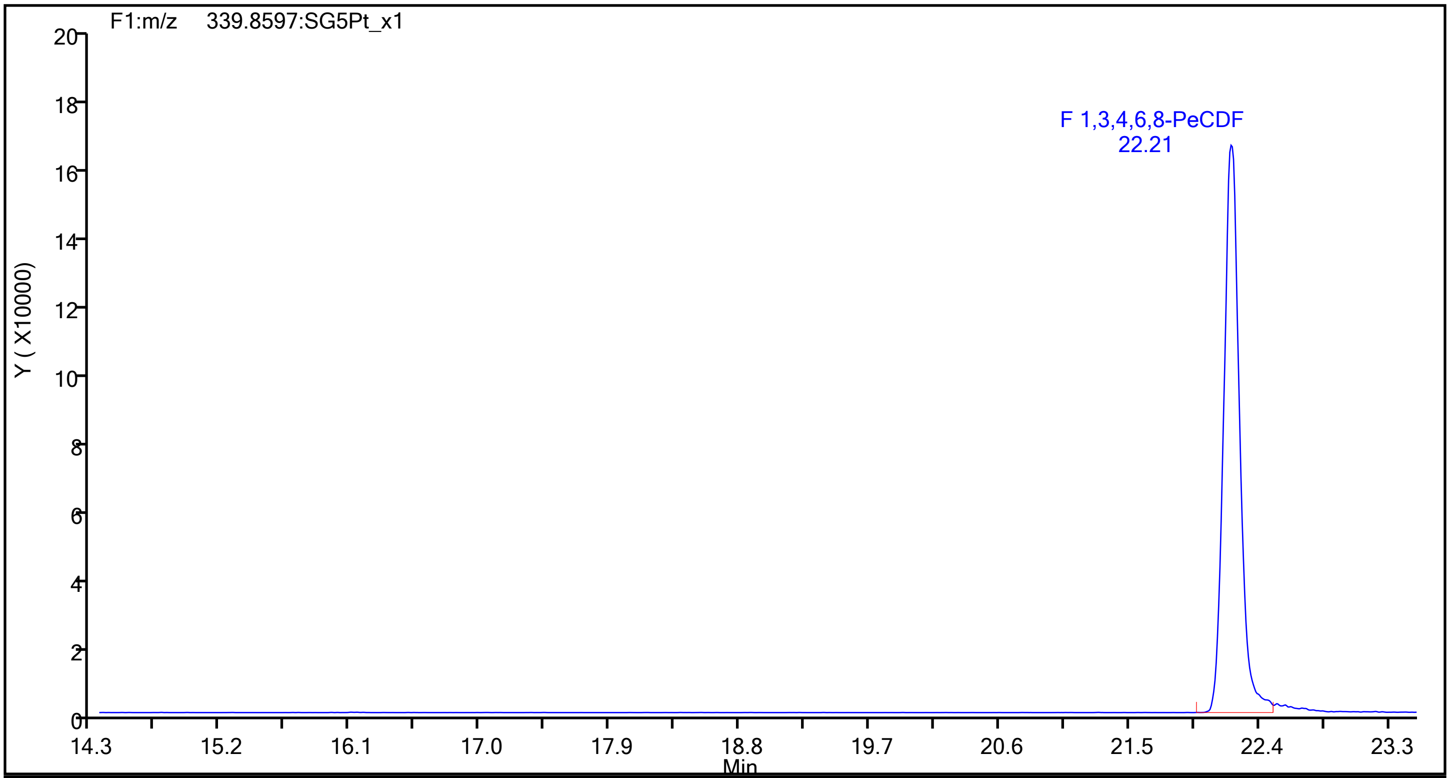

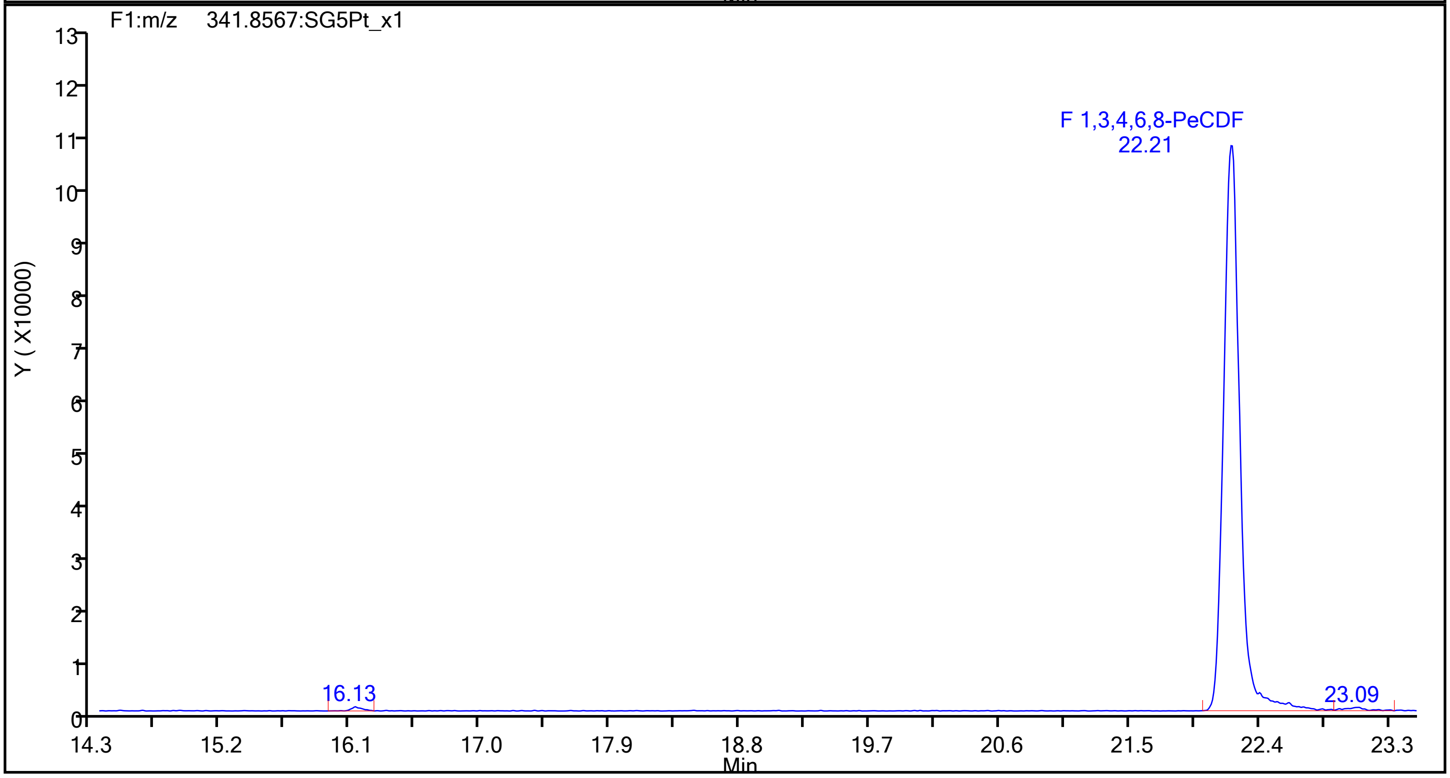

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

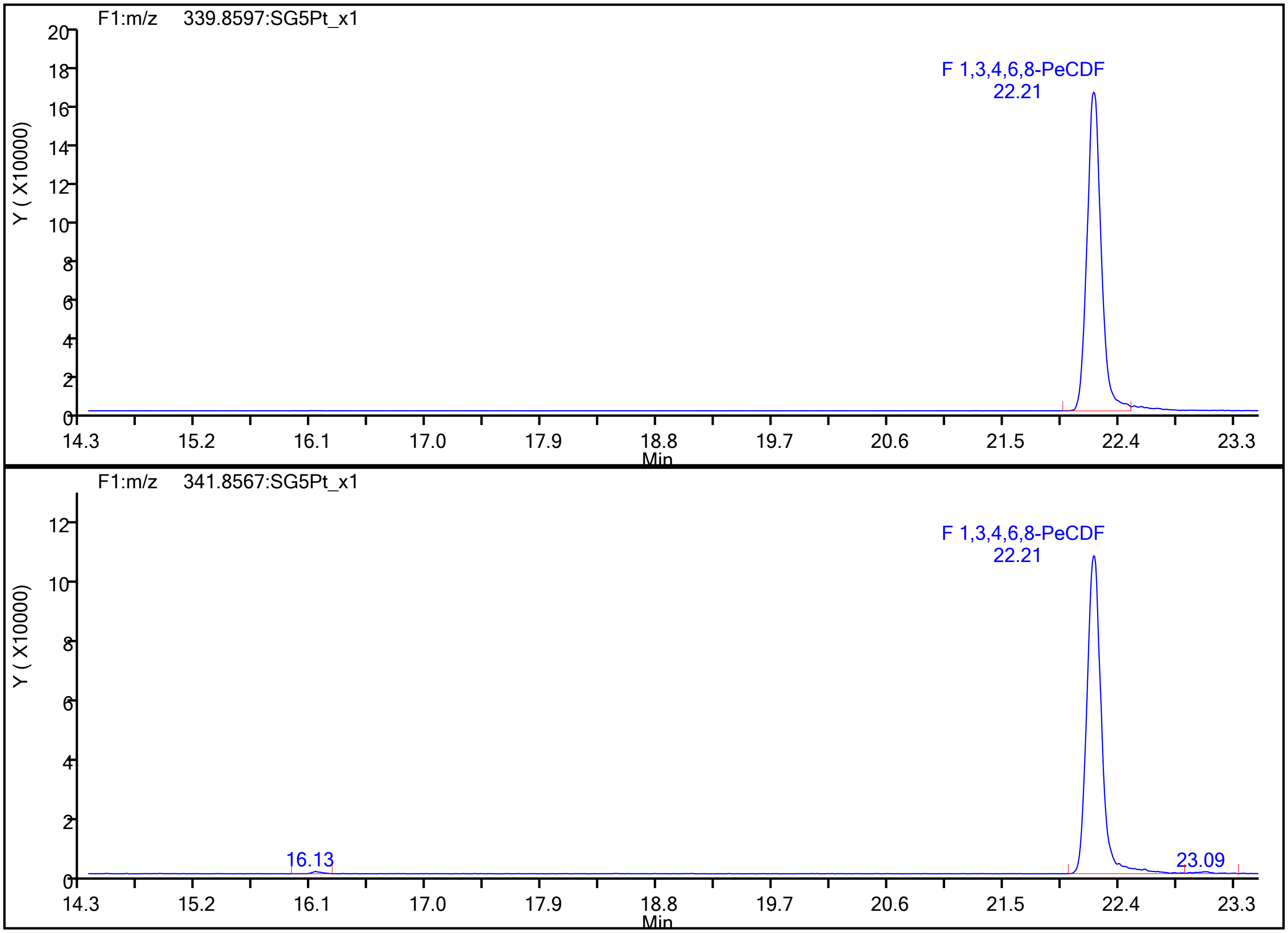

F1 PeCDFs Interference Mass

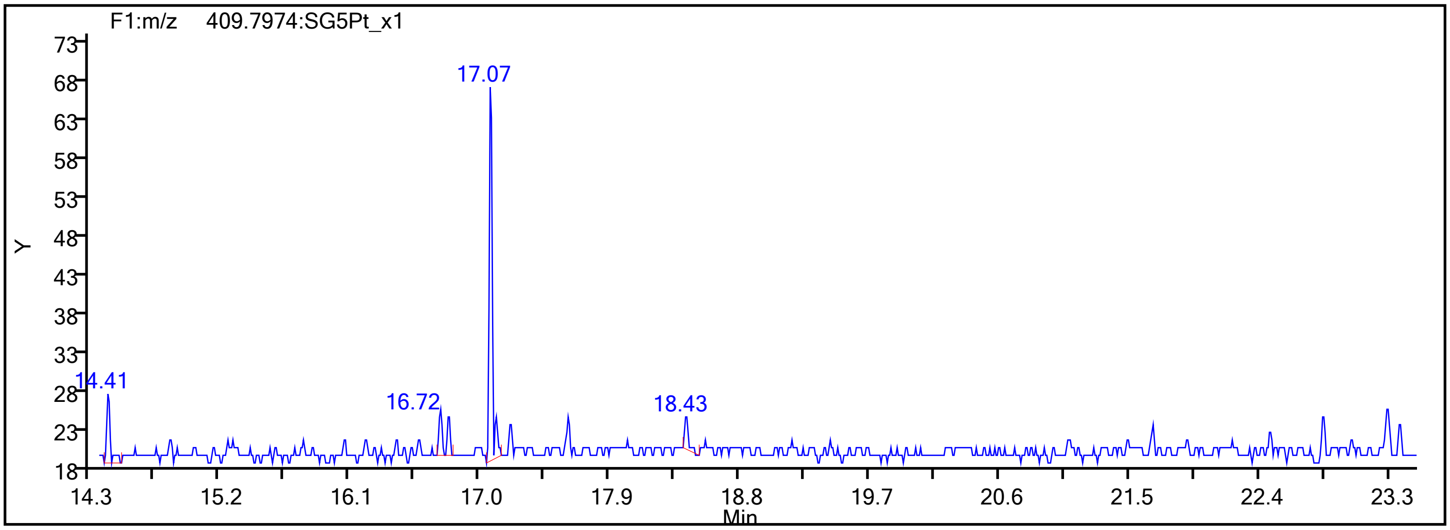

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

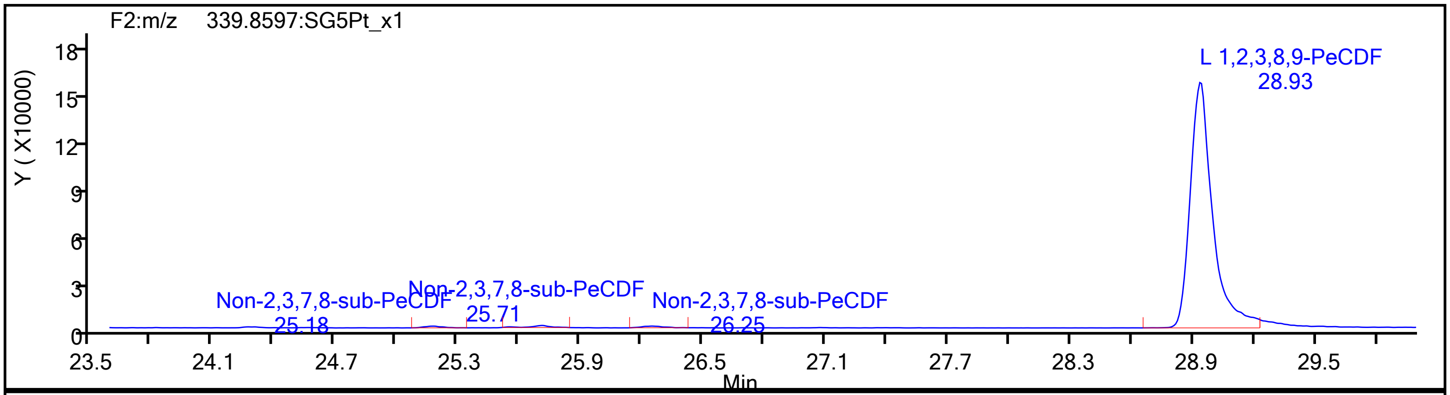

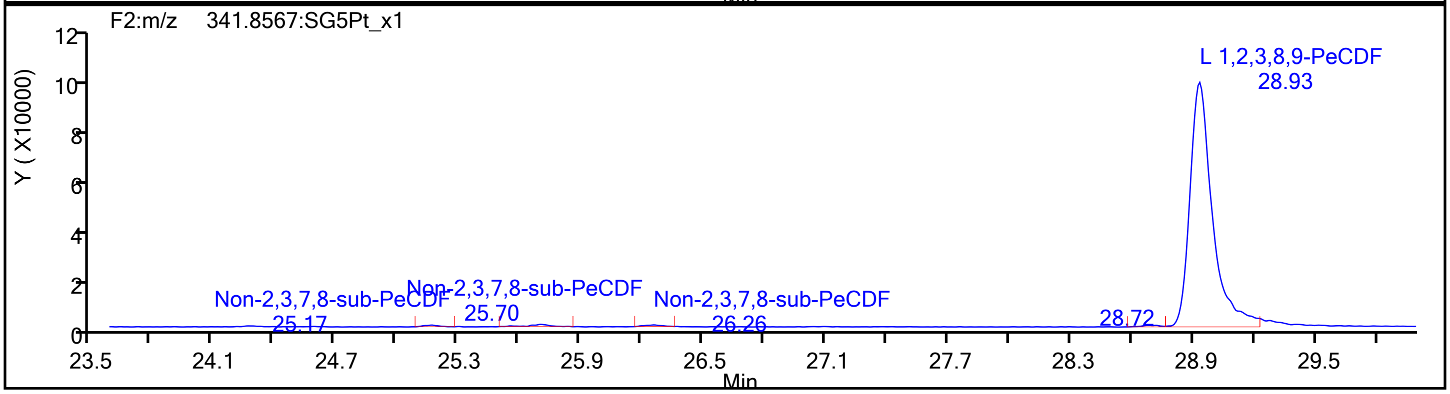

PeCDF Standards

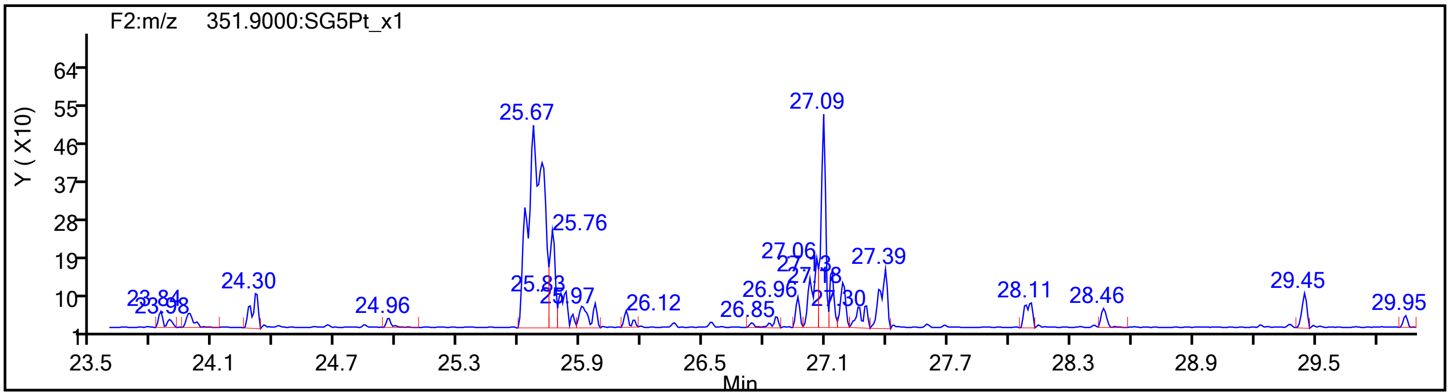

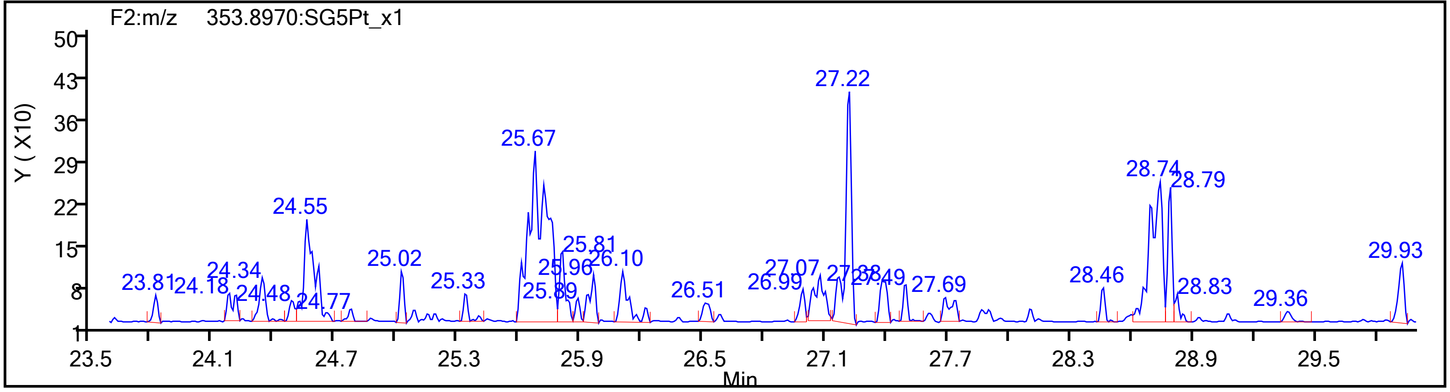

Report Date: 11-Mar-2021 12:52:24 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

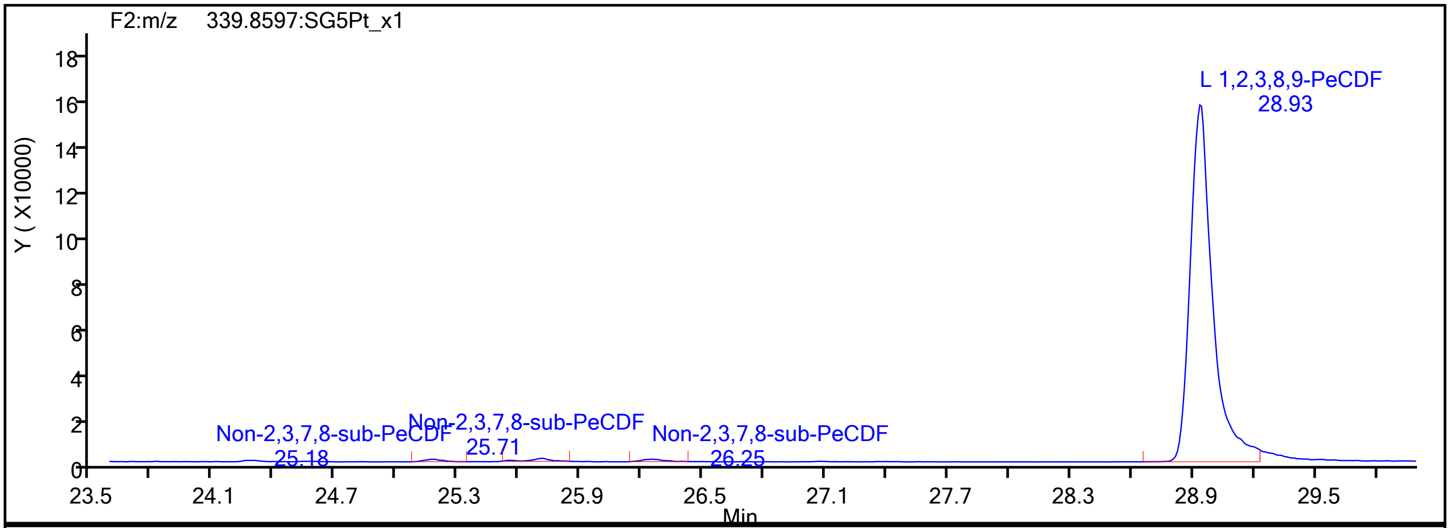

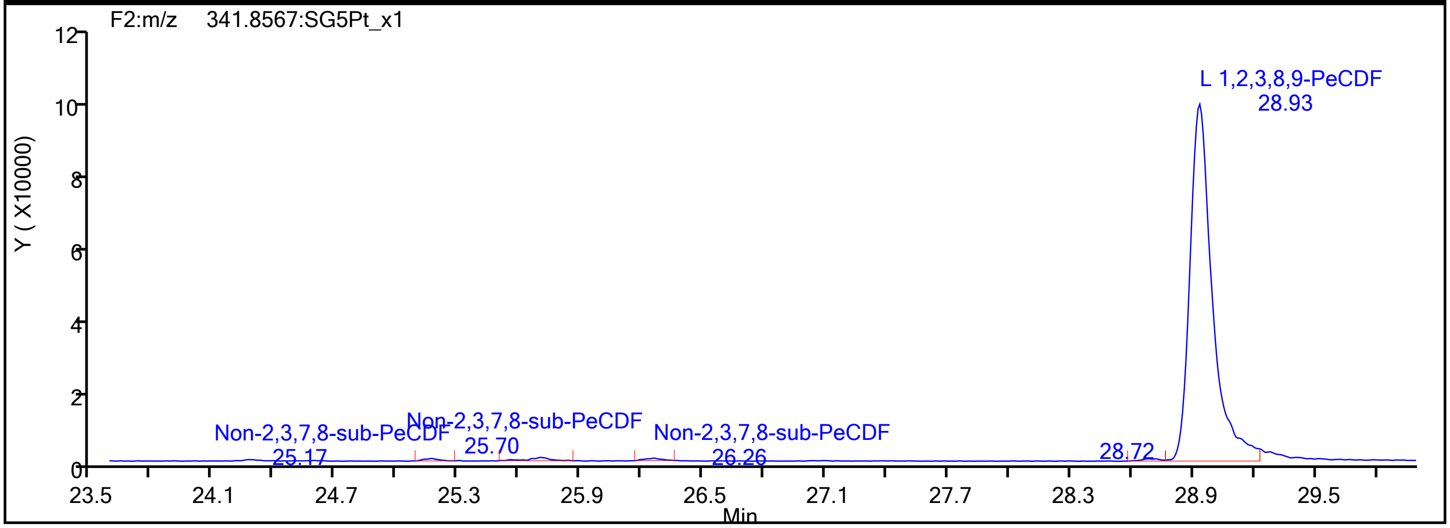

PeCDF Interference Mass

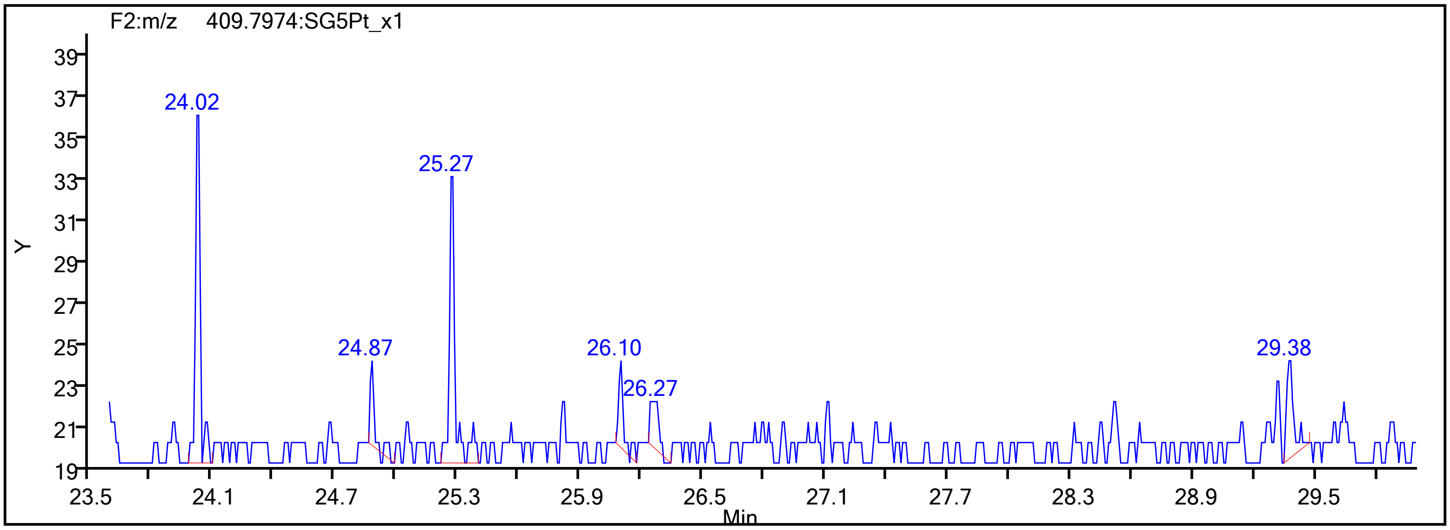

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

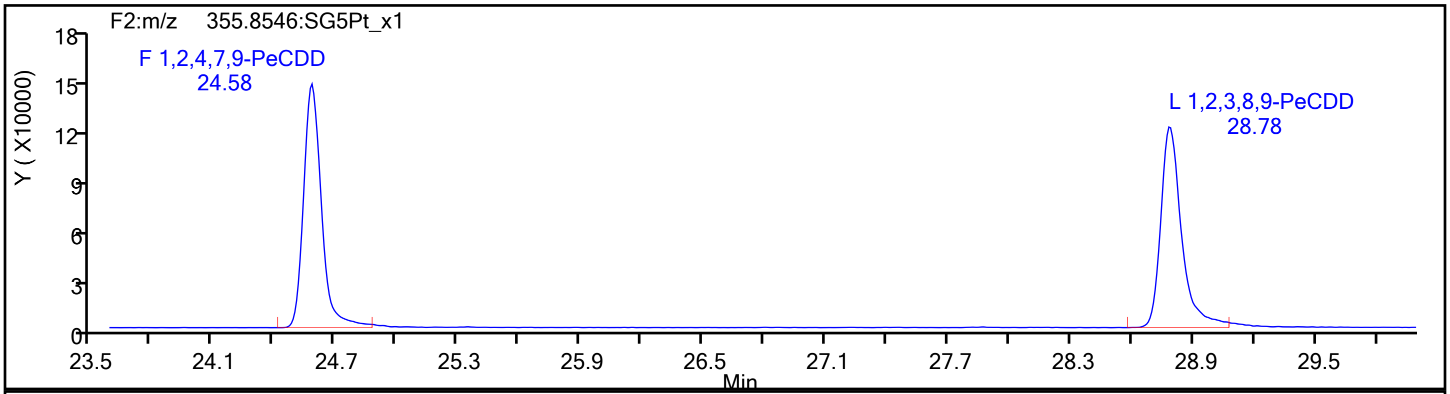

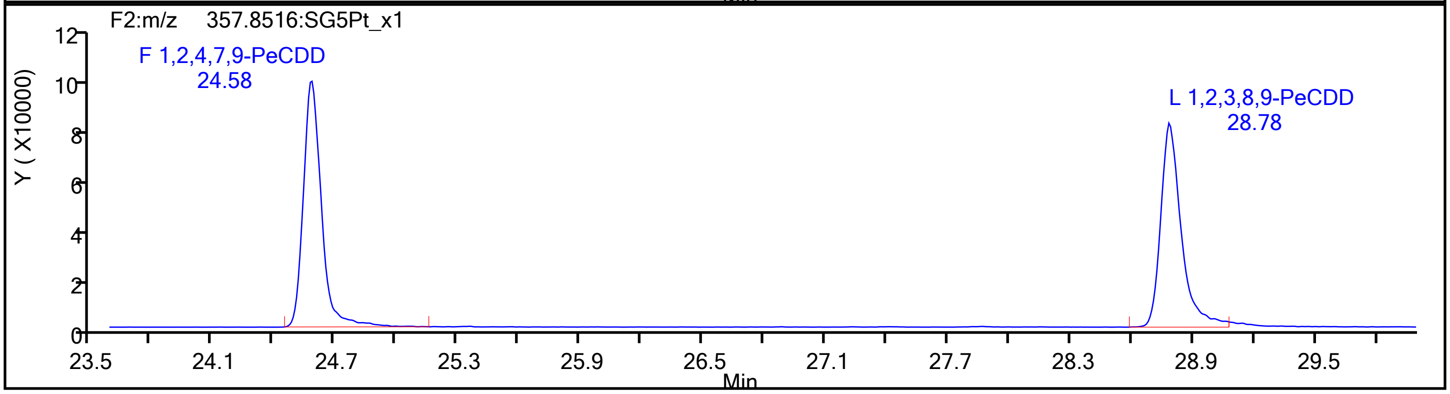

PeCDD Standards

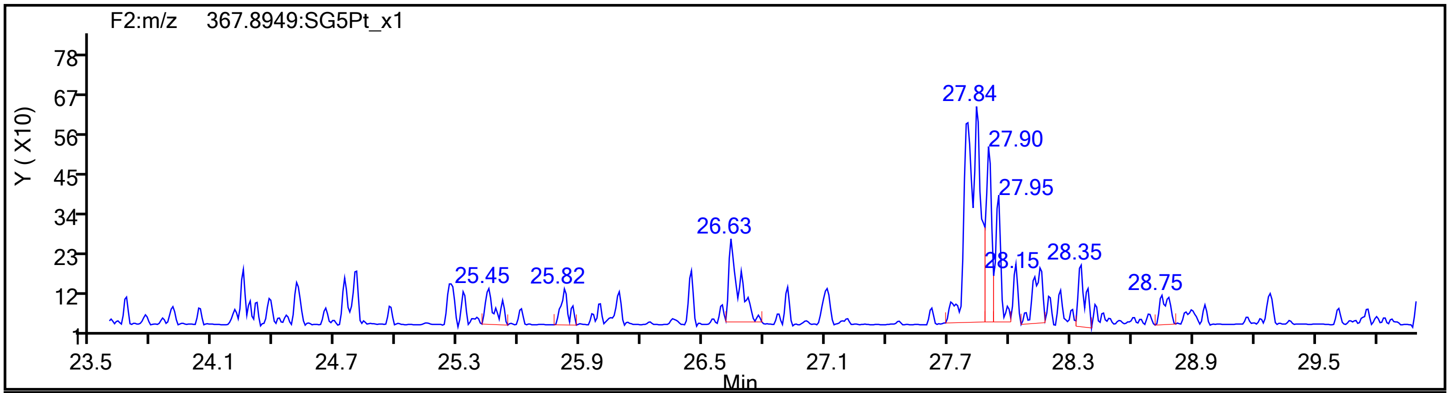

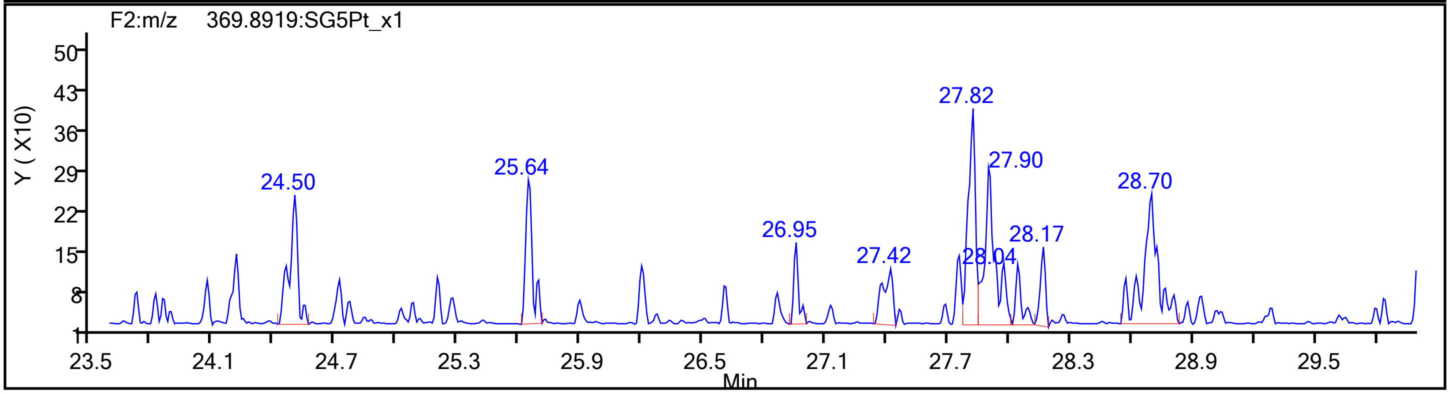

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d

Injection Date: 10-Mar-2021 09:38:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

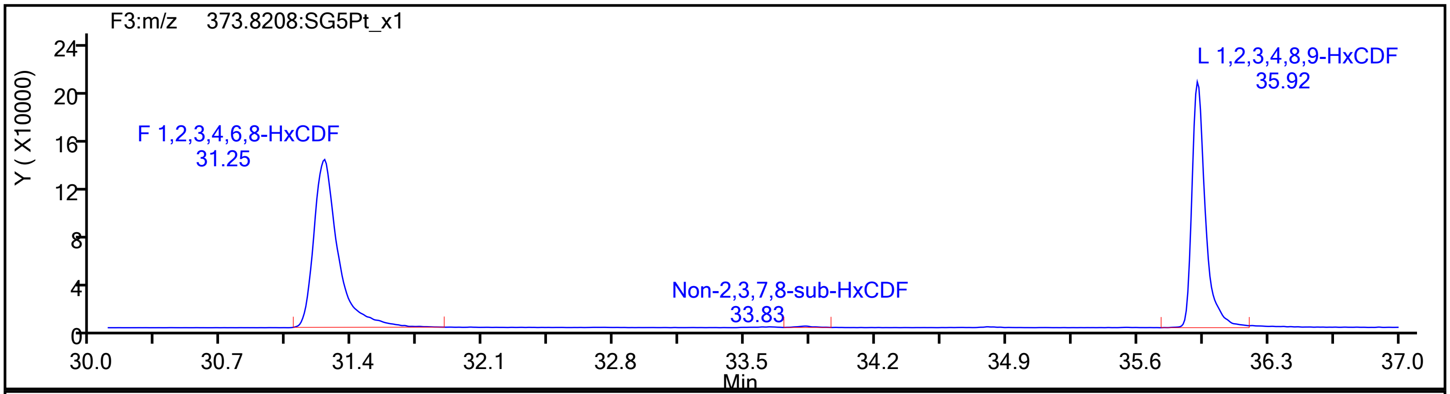

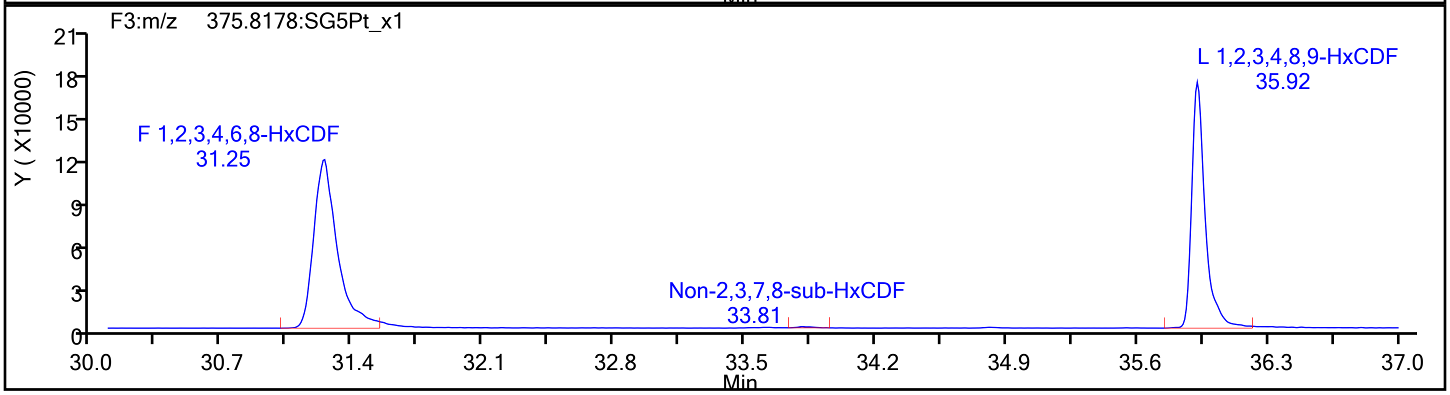

HxCDF Standards

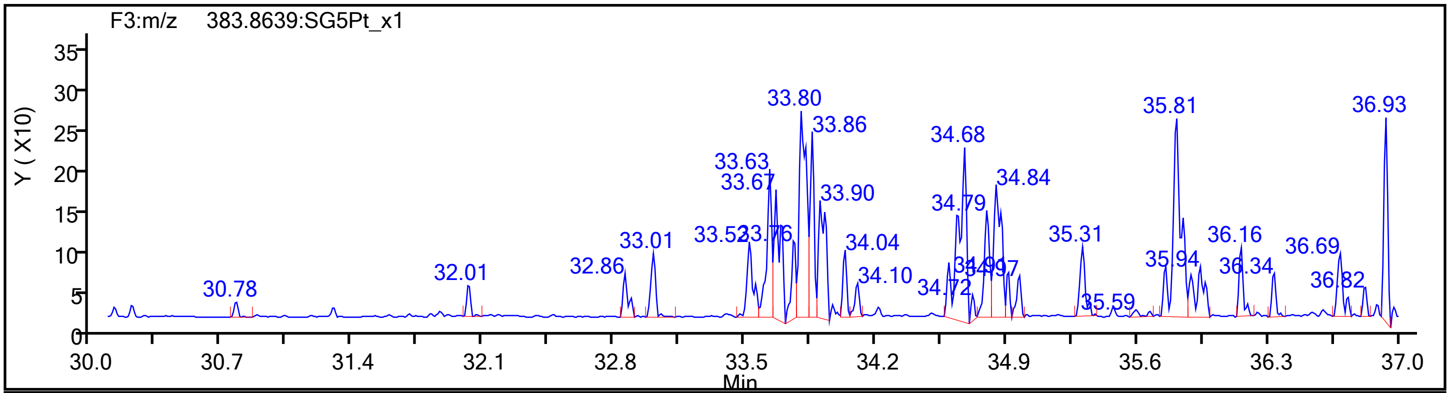

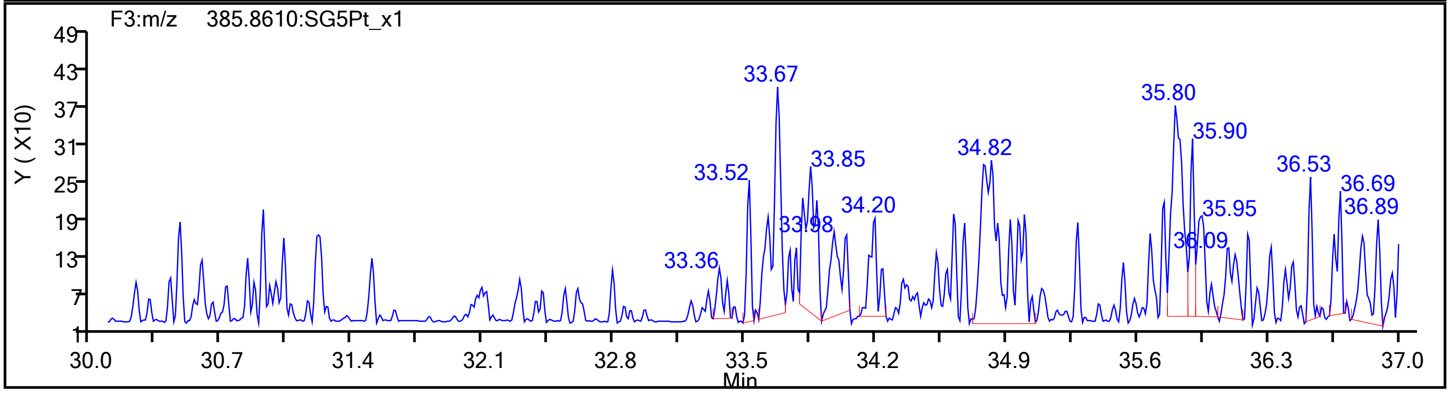

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

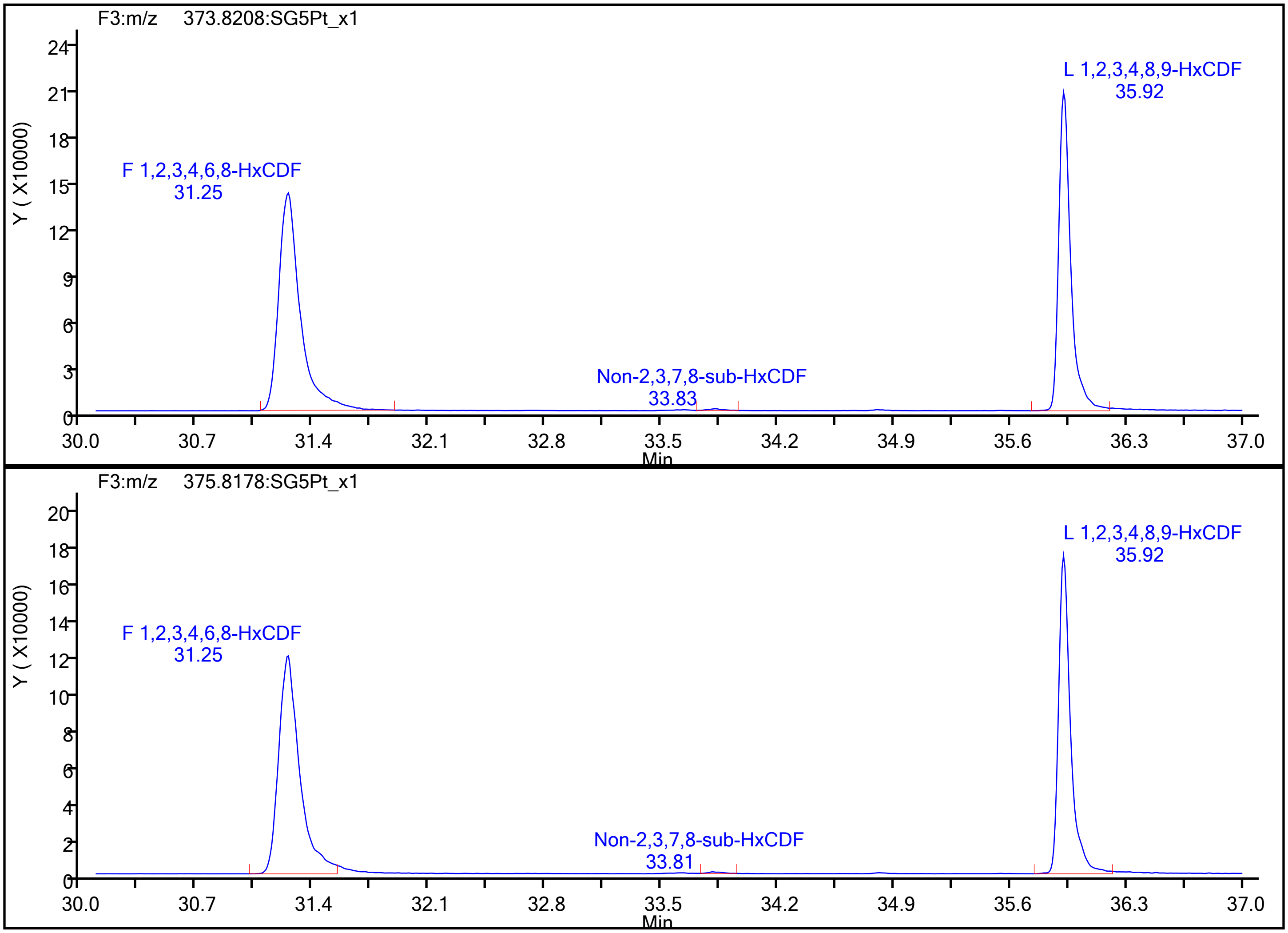

HxCDF Interference Mass

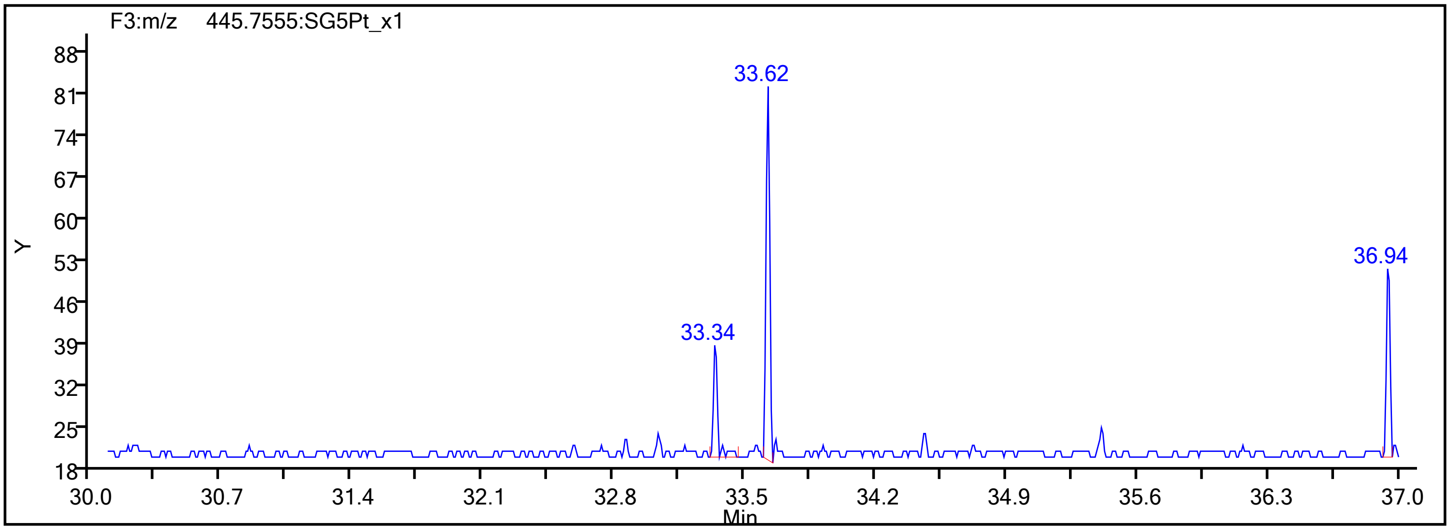

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d

Injection Date: 10-Mar-2021 09:38:00
Injection Vol: 2.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973
Sample Line#: 2

Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

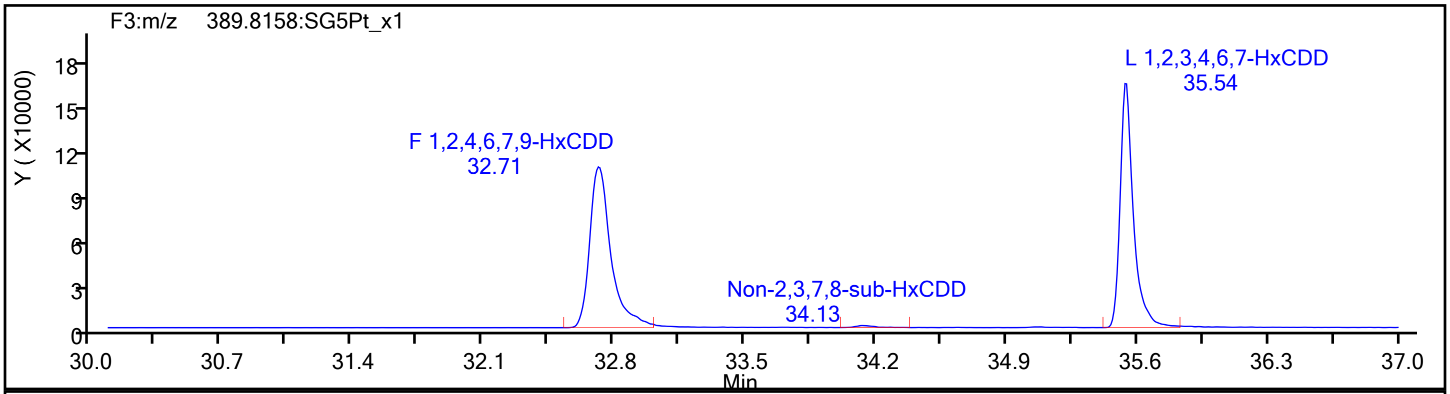

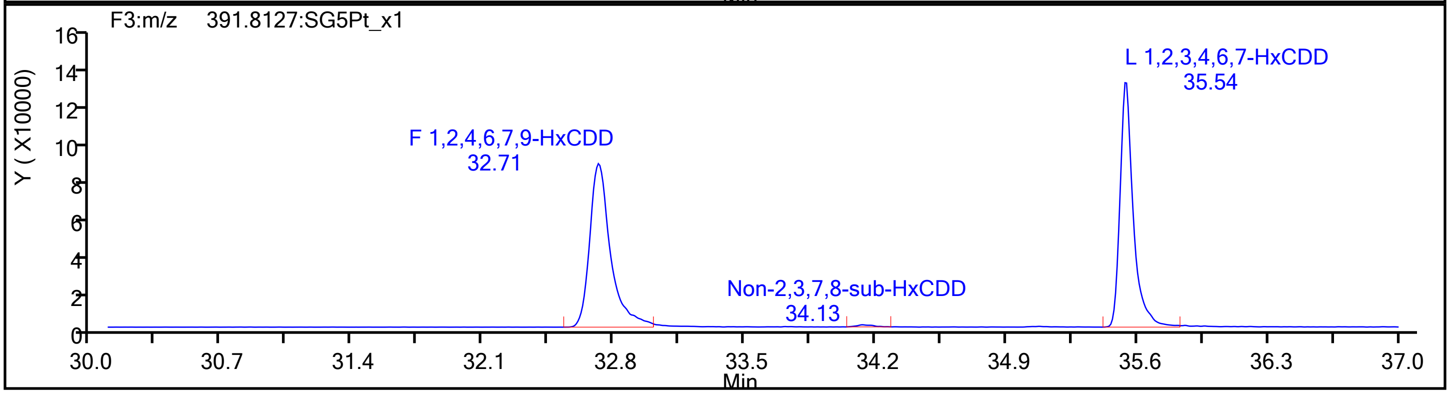

HxCDD Standards

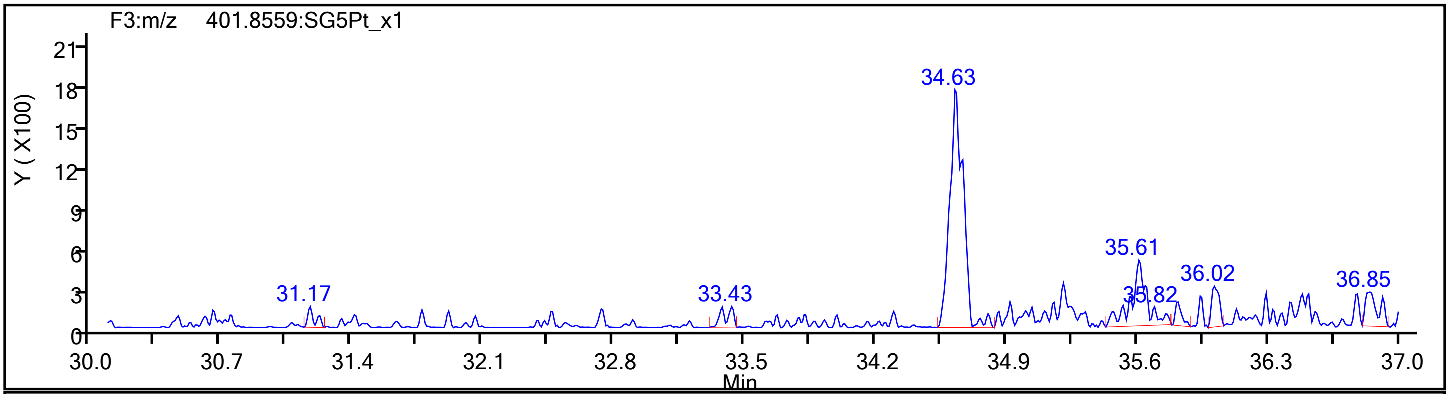

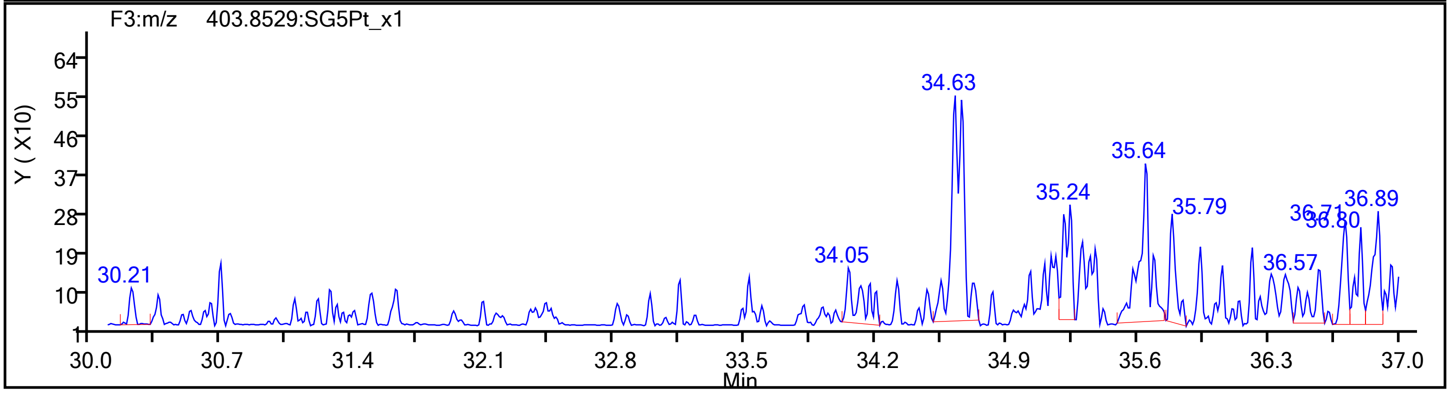

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

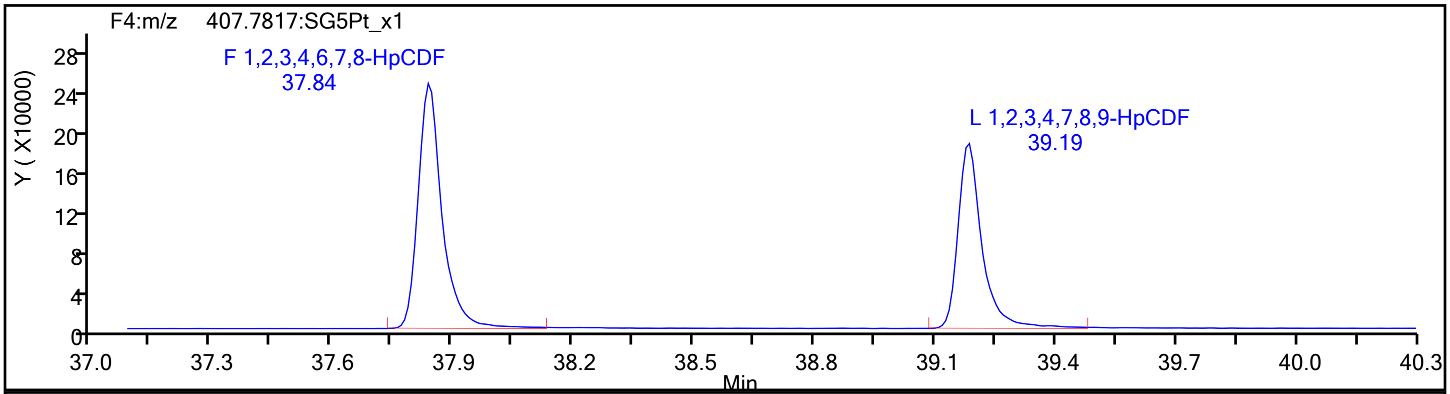

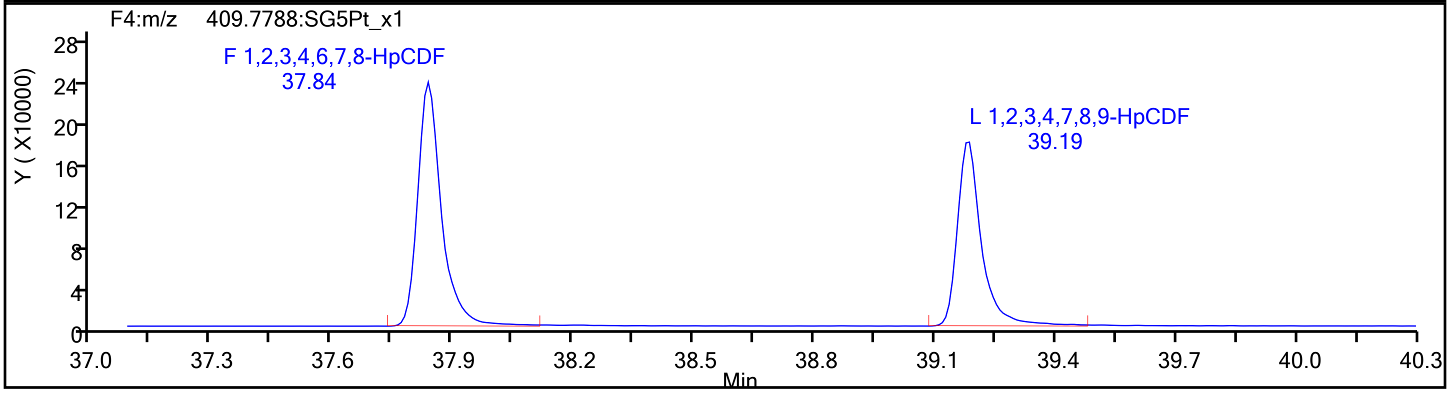

HpCDF Standards

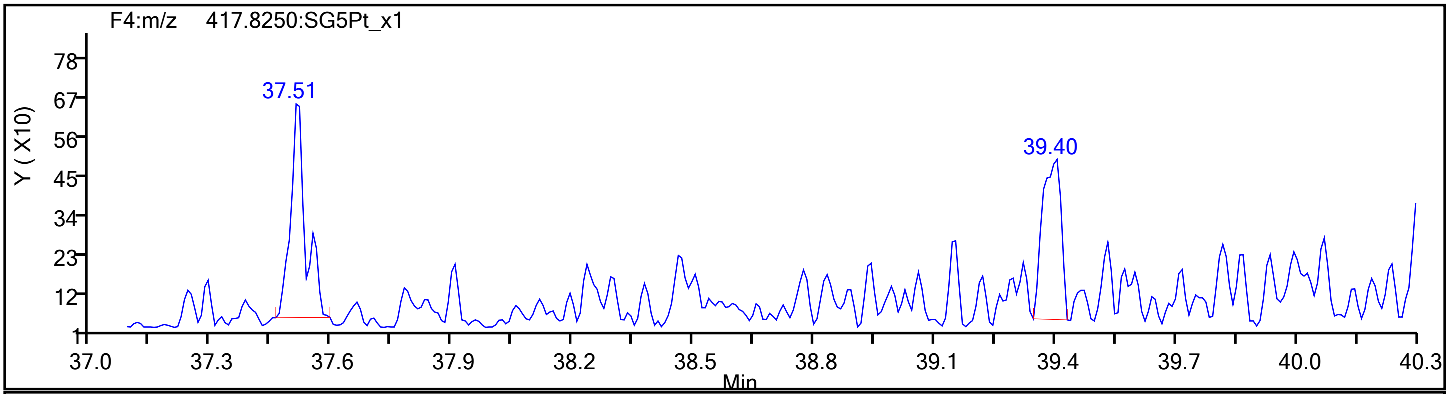

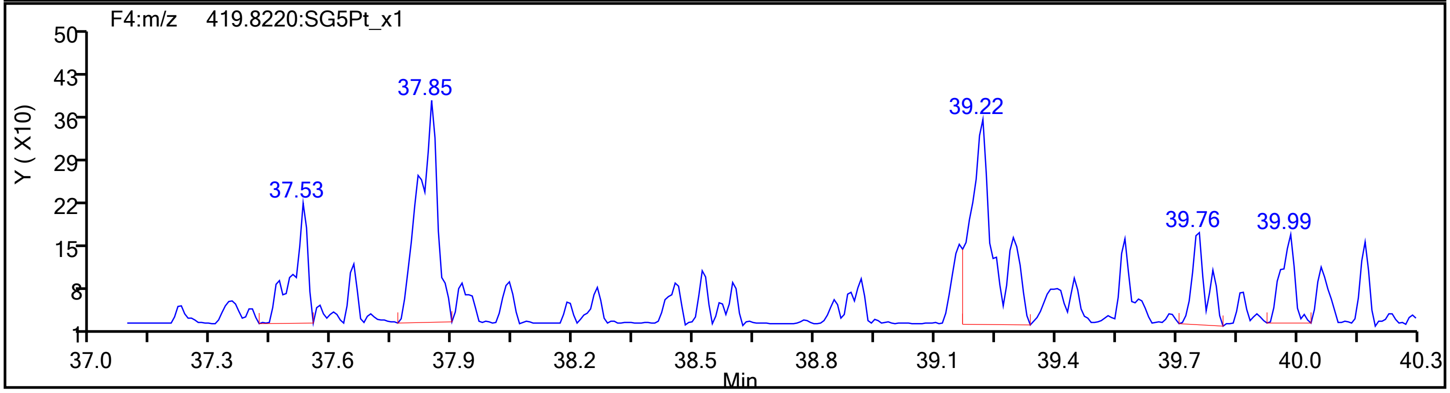

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

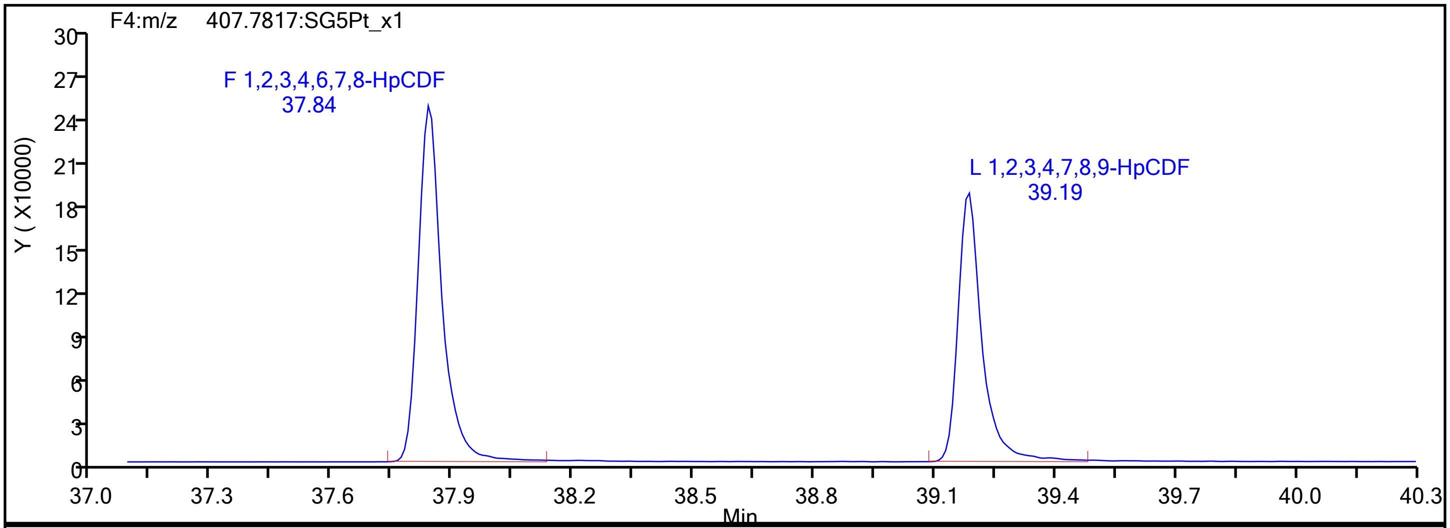

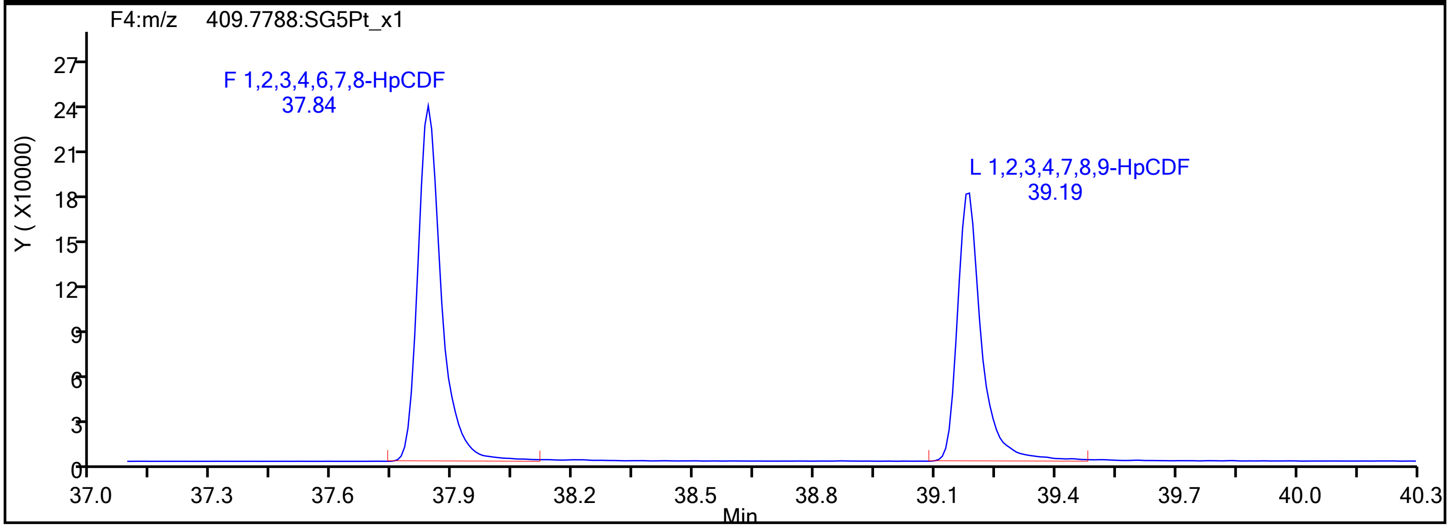

HpCDF Interference Mass

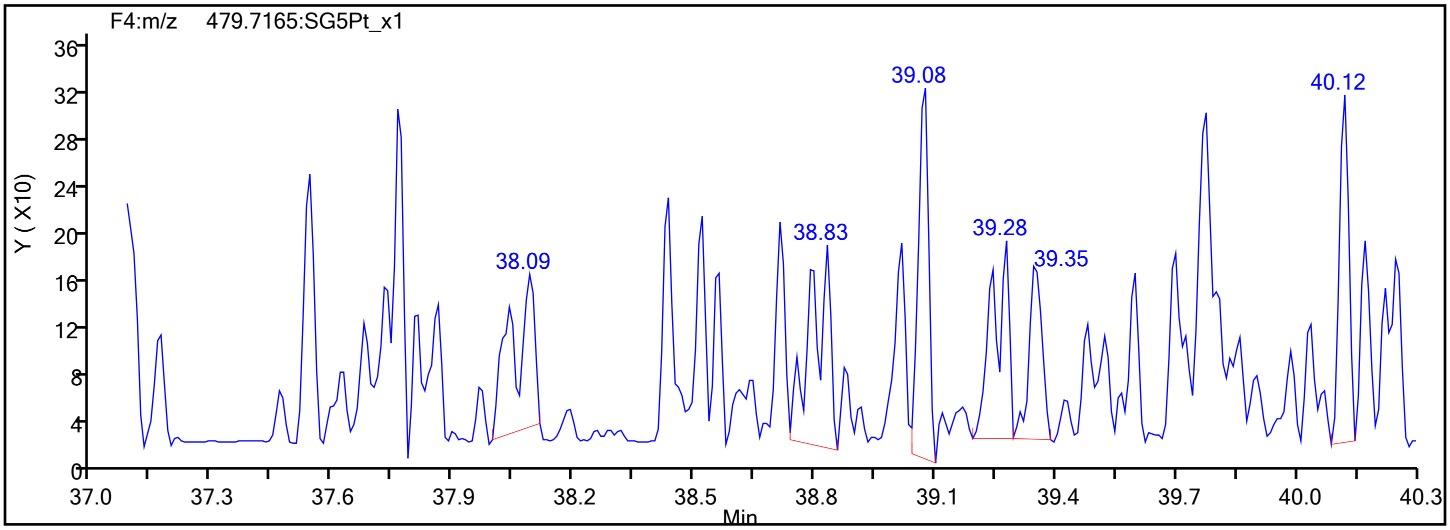

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d

Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

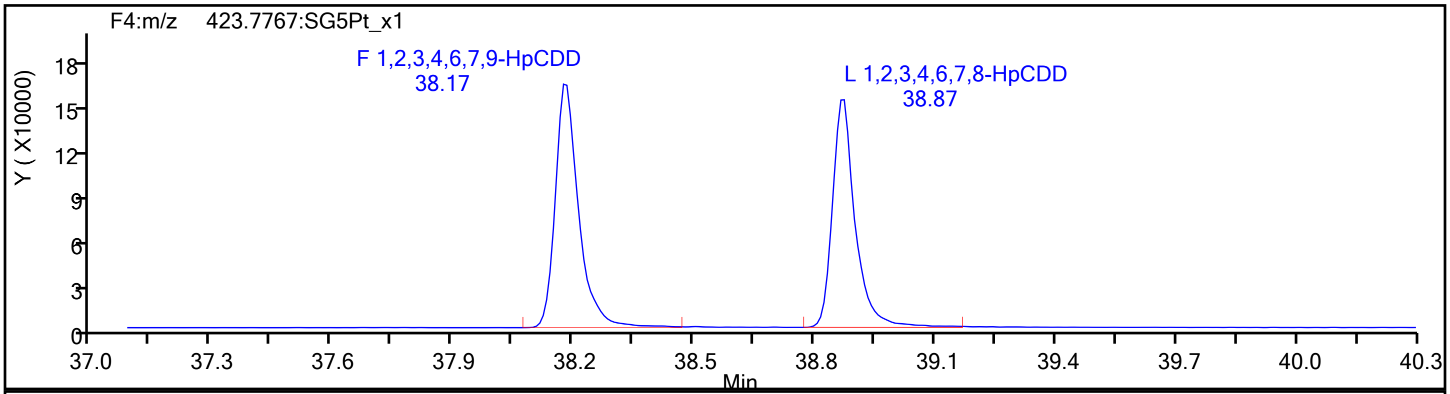

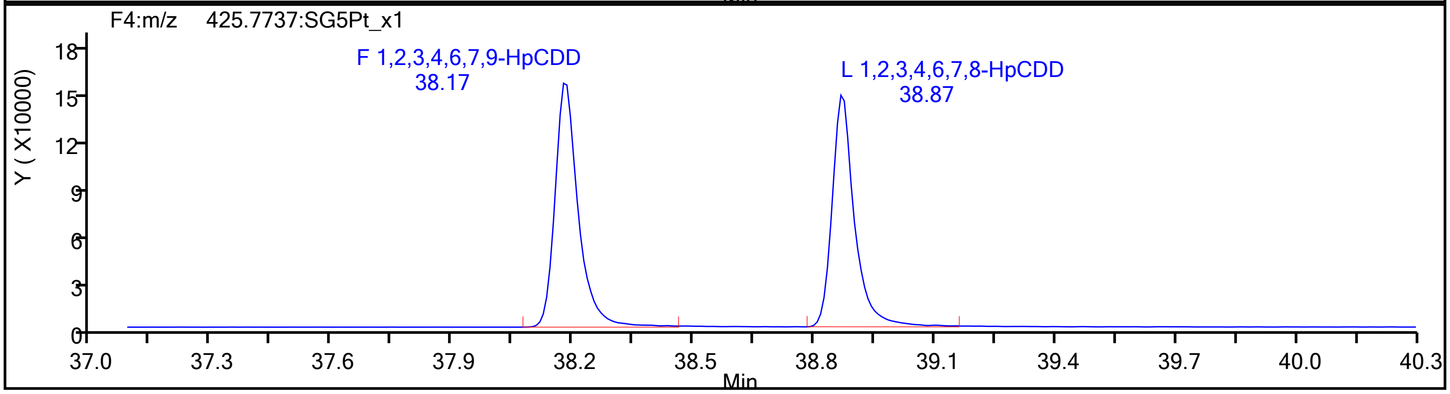

HpCDD Standards

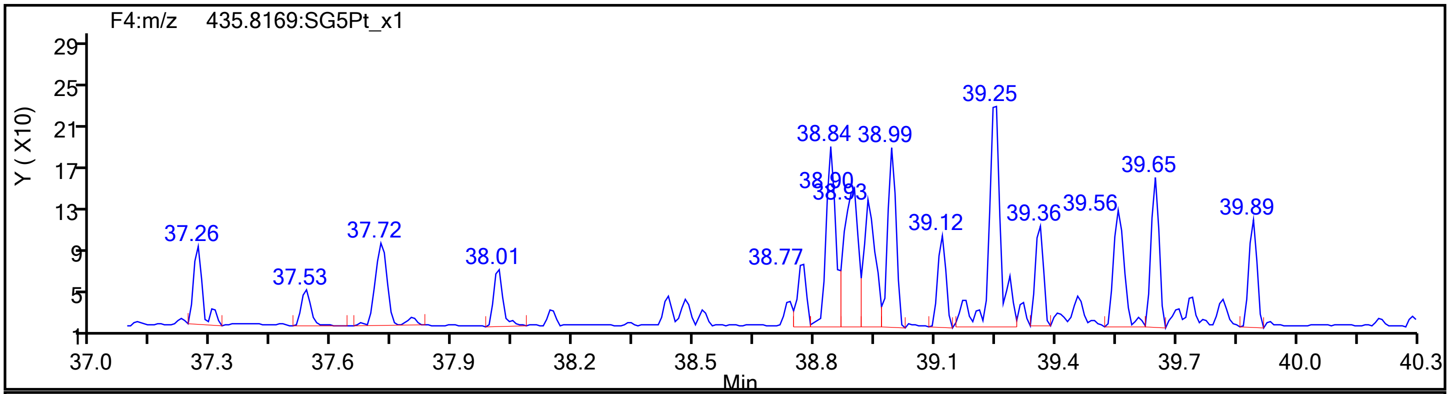

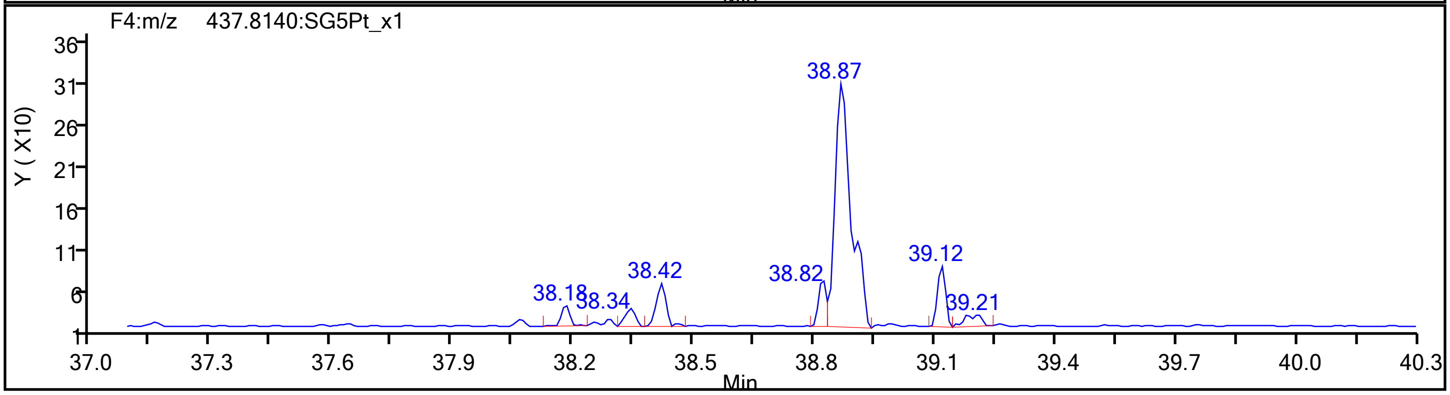

Report Date: 11-Mar-2021 12:52:25 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d		
Injection Date:	10-Mar-2021 09:38:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

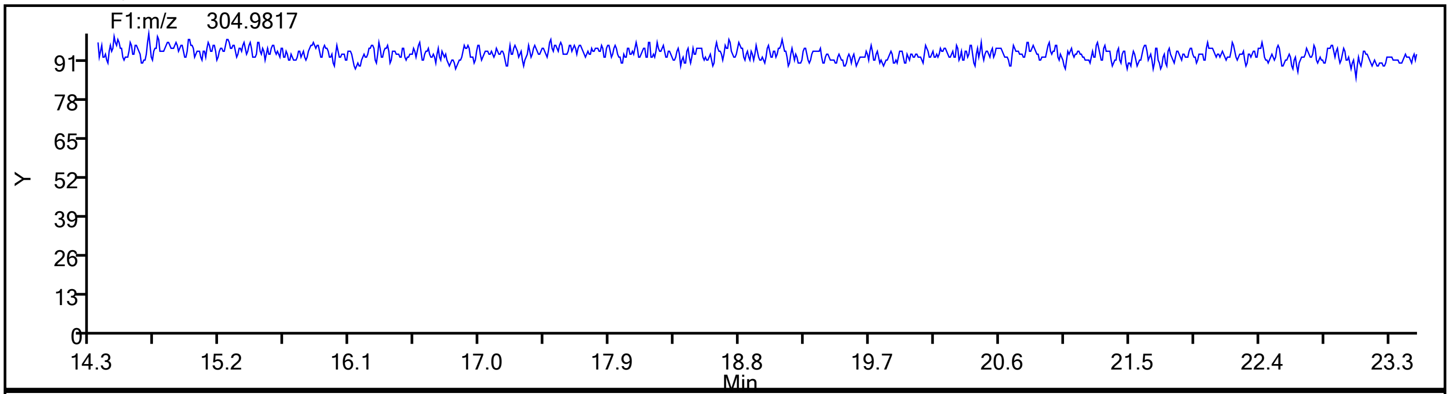

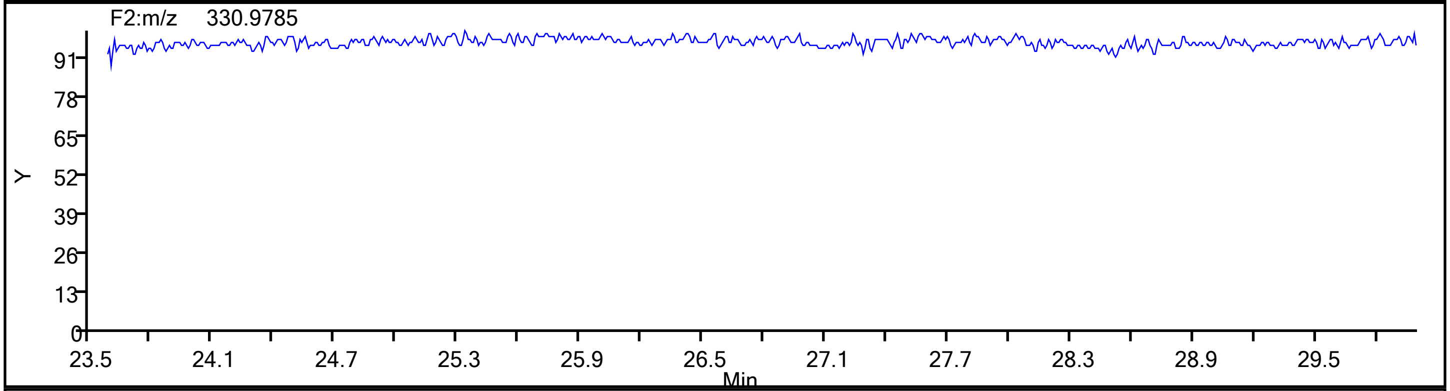

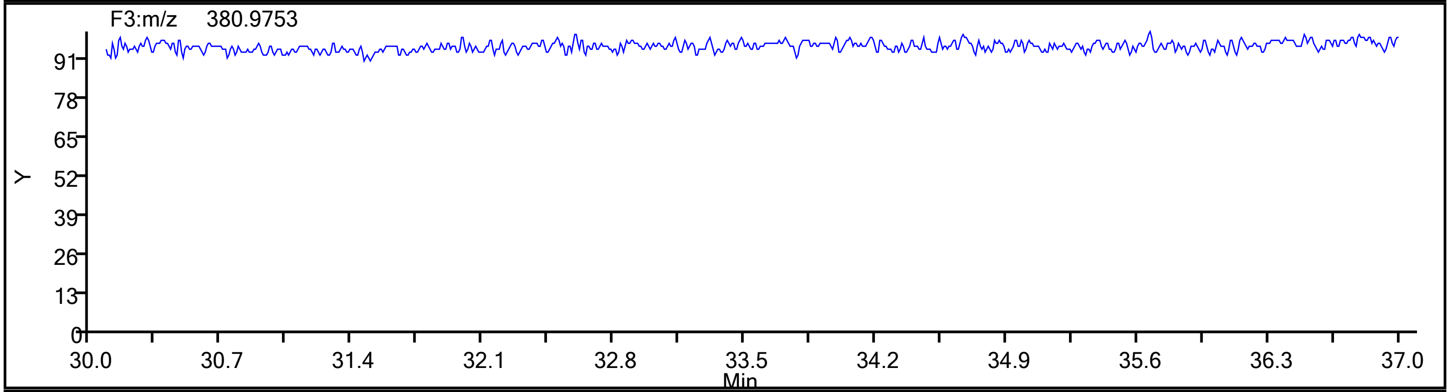

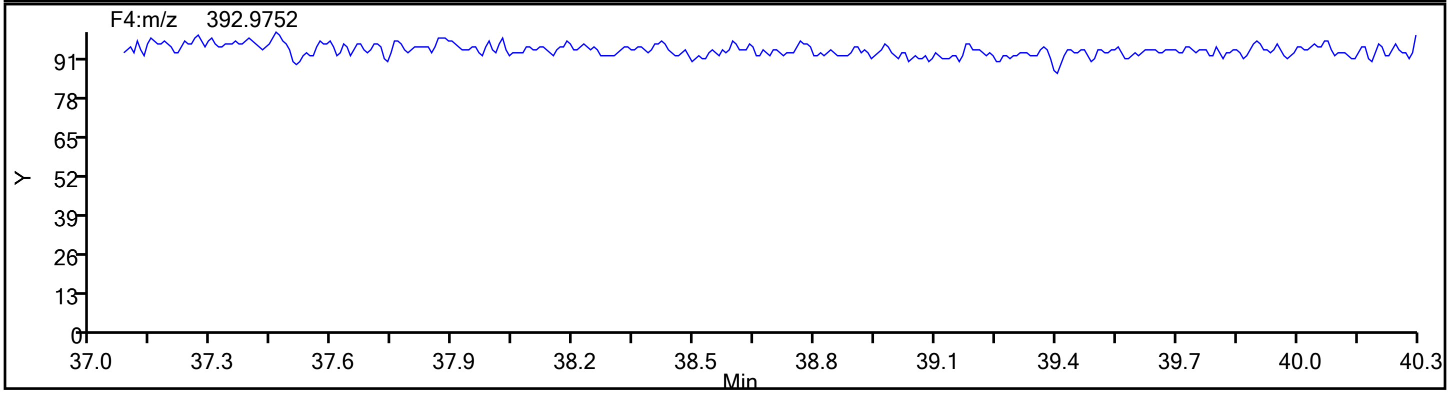

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_3.d

Injection Date: 10-Mar-2021 09:38:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

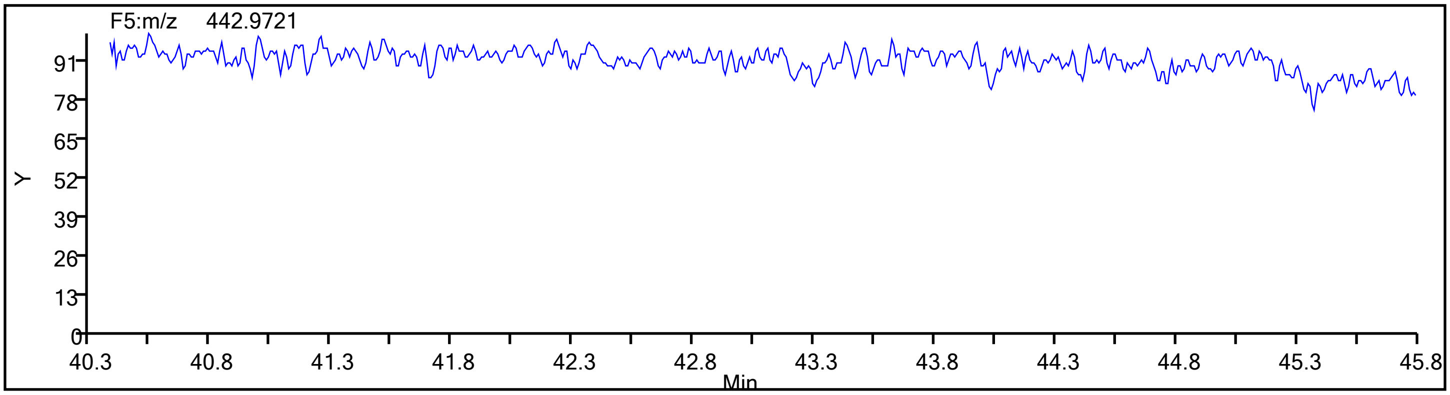

Report Date: 15-Mar-2021 11:40:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 12-Mar-2021 11:21:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Mar-2021 11:40:21 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1647

First Level Reviewer: stephensk Date: 12-Mar-2021 12:24:31

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	18.538	2178165	0.81	1.5437					0.00	
2,3,7,8-TCDF	18.572	4871100	0.76	1.1258	79.5	79.5	0.3586	0.3586		
A Non-2,3,7,8-sub-TCDF	18.141						0.3586	0.3586		
S Total TCDF					79.5	79.5	0.3586	0.3586		
D 13C-2,3,7,8-TCDD	19.741	1382697	0.81	0.9687					0.00	
2,3,7,8-TCDD	19.775	1590106	0.78	1.1904	38.6	38.6	0.2316	0.2316		
A Non-2,3,7,8-sub-TCDD	18.898						0.2316	0.2316		
S Total TCDD					38.6	38.6	0.2316	0.2316		
A F1 PeCDFs	22.811						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	26.244	44218	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	26.642						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	33.532	13398	1.12	0.0000						
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	34.080	18659	1.17	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	37.805	1853565	1.05	1.4859						
1,2,3,4,7,8,9-HpCDF	39.152	1458707	1.05	1.4048						
A Non-2,3,7,8-sub-HpCDF	38.478						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	38.840	1078929	1.05	1.1489						
A Non-2,3,7,8-sub-HpCDD	39.230						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.744	2808219	0.76							
1,3,6,8-TCDD	16.181	1622552	0.80							
2,3,4,7-TCDF	18.572	4871100	0.76							
1,2,3,7-TCDD	19.578	1341798	0.80							
1,2,3,9-TCDF	19.938	2143751	0.78							
1,2,3,9-TCDD	20.024	1695317	0.81							
1,2,8,9-TCDF	21.537	2224485	0.78							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	21.615	672731								
1,3,4,6,8-PeCDF	22.156	1871176	1.56							
1,2,4,7,9-PeCDD	24.546	1393381	1.57							
1,2,3,8,9-PeCDD	28.739	1242273	1.58							
1,2,3,8,9-PeCDF	28.882	1753657	1.59							
1,2,3,4,6,8-HxCDF	31.183	2156706	1.26							
1,2,4,6,7,9-HxCDD	32.657	1407626	1.26							
1,2,3,4,6,7-HxCDD	35.503	1366722	1.25							
1,2,3,4,8,9-HxCDF	35.882	1880639	1.25							
1,2,3,4,6,7,9-HpCDD	38.150	1218965	1.06							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 12-Mar-2021 11:21:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00042
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 15-Mar-2021 11:40:21 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1647

First Level Reviewer: stephensk Date: 12-Mar-2021 12:24:31

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	18.538	18.538	0	1.000	975294	156108	376	940	415		
317.9389	18.529	18.538	-1	1.000	1202871	202771	220	550	922	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.572	18.615	-3	1.002	2108621	317860	626	1565	508		
305.8987	18.572	18.615	-3	1.002	2762479	416467	823	2057	506	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	18.141						626	1565			
305.8987	18.141						823	2057			
13C-2,3,7,8-TCDD											
331.9368	19.741	19.741	0	1.000	619613	90180	175	437	515		
333.9338	19.750	19.741	1	1.000	763084	121985	52	130	2346	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.775	19.826	-3	1.002	698649	102851	276	690	373		
321.8936	19.775	19.826	-3	1.002	891457	132113	309	772	428	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	18.898						276	690			
321.8936	18.898						309	772			
A F1 PeCDFs											
339.8597	22.811						23	57			
341.8567	22.811						55	137			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	24.242	26.244	-120	1.000	4266	708	180	450	4		
341.8567	24.251	26.244	-119	1.000	2983	569	150	375	4	1.43(1.32-1.78)	
339.8597	25.143	26.244	-66	1.000	5613	983	180	450	5		
341.8567	25.135	26.244	-66	1.000	4279	728	150	375	5	1.31(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	25.648	26.244	-36	1.000	8590	1418	180	450	8		
341.8567	25.674	26.244	-34	1.000	8158	830	150	375	6	1.05(1.32-1.78)	
339.8597	26.212	26.244	-2	1.000	8452	1100	180	450	6		
341.8567	26.229	26.244	-1	1.000	5152	774	150	375	5	1.64(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.642						264	660			
357.8516	26.642						159	397			
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.776	33.532	15	1.000	7070	1230	352	880	3		
375.8178	33.768	33.532	14	1.000	6328	1118	266	665	4	1.12(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.113	34.080	2	1.000	10056	1586	201	502	8		
391.8127	34.088	34.080	0	1.000	8603	1397	163	407	9	1.17(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.805	37.805	0	1.000	947444	243435	526	1315	463		
409.7788	37.805	37.805	0	1.000	906121	232303	506	1265	459	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.152	39.152	0	1.000	745886	176662	526	1315	336		
409.7788	39.152	39.152	0	1.000	712821	170296	506	1265	337	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.478						526	1315			
409.7788	38.478						506	1265			
1,2,3,4,6,7,8-HpCDD											
423.7767	38.840	38.840	0	1.000	553660	141430	314	785	450		
425.7737	38.832	38.840	-1	1.000	525269	133783	319	797	419	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.230						314	785			
425.7737	39.230						319	797			
1,3,6,8-TCDF											
303.9016	14.744	14.744	0		1212627	256197	626	1565	409		
305.8987	14.744	14.744	0		1595592	339255	823	2057	412	0.76(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	16.181	16.181	0		722315	135913	276	690	492		
321.8936	16.181	16.181	0		900237	167927	309	772	543	0.80(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	18.572	18.572	0		2108621	317860	626	1565	508		
305.8987	18.572	18.572	0		2762479	416467	823	2057	506	0.76(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	19.578	19.578	0		596166	95376	276	690	346		
321.8936	19.586	19.578	1		745632	119933	309	772	388	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	19.938	19.938	0		936133	139772	626	1565	223		
305.8987	19.938	19.938	0		1207618	180543	823	2057	219	0.78(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	20.024	20.024	0		758627	106459	276	690	386		
321.8936	20.024	20.024	0		936690	132649	309	772	429	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	21.537	21.537	0		971355	131857	626	1565	211		
305.8987	21.529	21.537	-1		1253130	166947	823	2057	203	0.78(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	21.615	21.615	0		672731	88532	276	690	321		
1,3,4,6,8-PeCDF											
339.8597	22.156	22.156	0		1140937	150040	23	57	6523		
341.8567	22.147	22.156	-1		730239	95275	55	137	1732	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	24.546	24.546	0		851664	141309	264	660	535		
357.8516	24.546	24.546	0		541717	90235	159	397	568	1.57(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	28.739	28.739	0		760343	112300	264	660	425		
357.8516	28.739	28.739	0		481930	71091	159	397	447	1.58(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	28.882	28.882	0		1076784	147145	180	450	817		
341.8567	28.890	28.882	1		676873	93013	150	375	620	1.59(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	31.183	31.183	0		1200981	152939	352	880	434		
375.8178	31.183	31.183	0		955725	121280	266	665	456	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	32.657	32.657	0		786045	109189	201	502	543		
391.8127	32.657	32.657	0		621581	87623	163	407	538	1.26(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	35.503	35.503	0		759350	164427	201	502	818		
391.8127	35.503	35.503	0		607372	131516	163	407	807	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	35.882	35.882	0		1045543	224778	352	880	639		
375.8178	35.882	35.882	0		835096	178073	266	665	669	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.150	38.150	0		627852	165122	314	785	526		
425.7737	38.150	38.150	0		591113	152966	319	797	480	1.06(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00042 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Mar-2021 11:21:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	2

Non-2,3,7,8-sub-PeCDF, RT: 26.244

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116				
2,3,4,7,8-PeCDF	1.058				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.242	4266	708	2983	569		1.43	
25.143	5613	983	4279	728		1.31	R
25.648	8590	1418	8158	830		1.05	R
26.212	8452	1100	5152	774		1.64	
Signal Totals:							
	26921	4209	20572	2901			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	47493	7110				1.31	RQ
	44218	7100					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (47493 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (44218 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Mar-2021 11:21:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	2

Non-2,3,7,8-sub-HxCDF, RT: 33.532

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183				
1,2,3,6,7,8-HxCDF	1.248				
2,3,4,6,7,8-HxCDF	1.275				
1,2,3,7,8,9-HxCDF	1.295				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.776	7070	1230	6328	1118		1.12	
Signal Totals:							
	7070	1230	6328	1118			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13398	2348				1.12	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (13398 * 0.0) / (0 * 0.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	12-Mar-2021 11:21:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	469779	Lims Sample ID:	2

Non-2,3,7,8-sub-HxCDD, RT: 34.080

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095				
1,2,3,6,7,8-HxCDD	1.020				
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.113	10056	1586	8603	1397		1.17	
Signal Totals:							
	10056	1586	8603	1397			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	18659	2983				1.17	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (18659 * 0.0) / (0 * 0.000)

Report Date: 15-Mar-2021 11:40:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d
Injection Date: 12-Mar-2021 11:21:00 Injection Vol: 2.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779 Sample Line#: 2
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

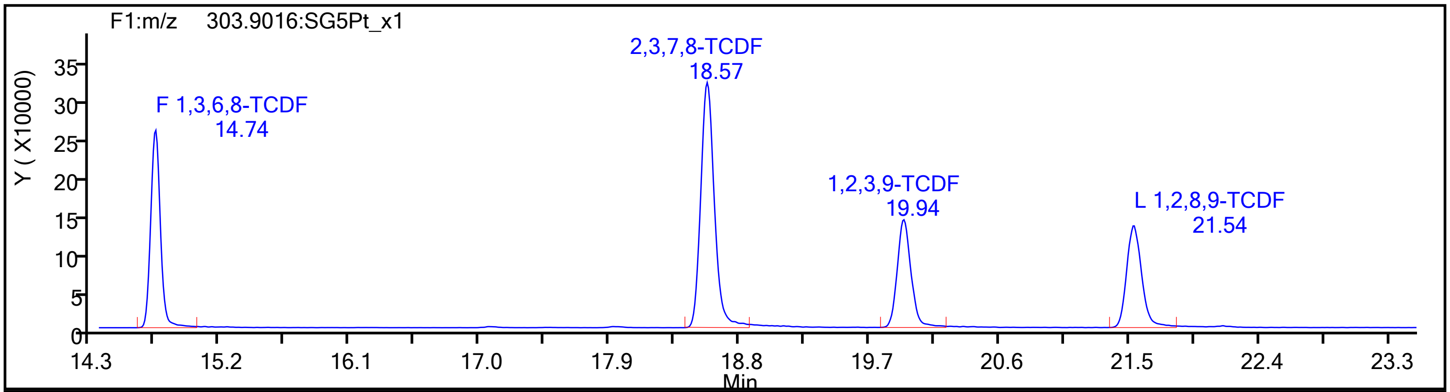

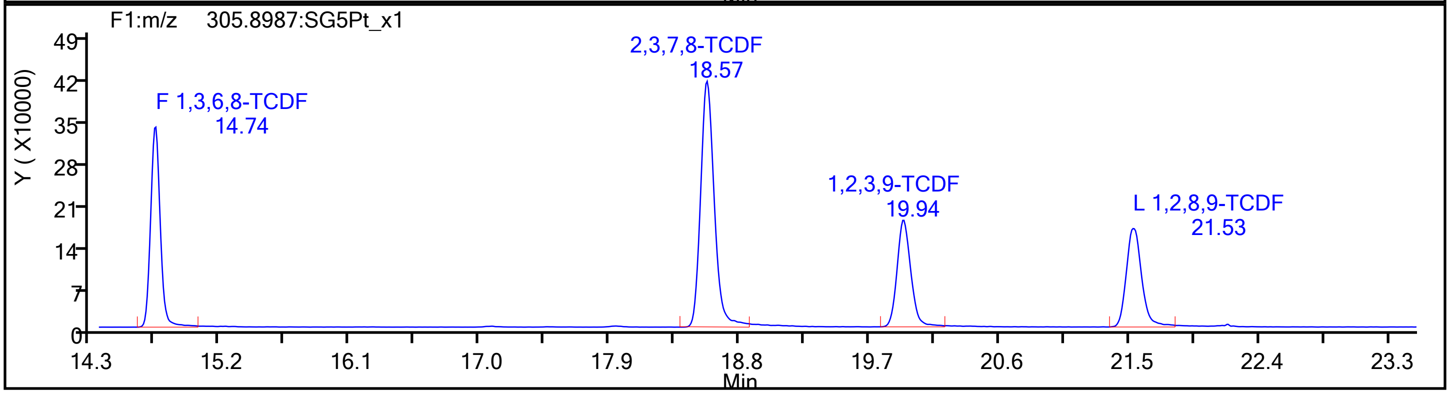

TCDF Standards

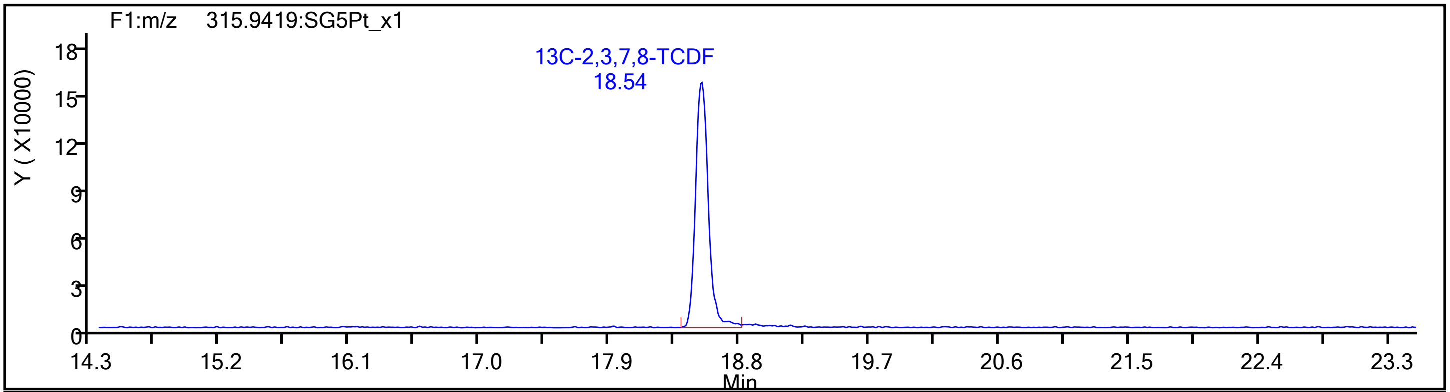

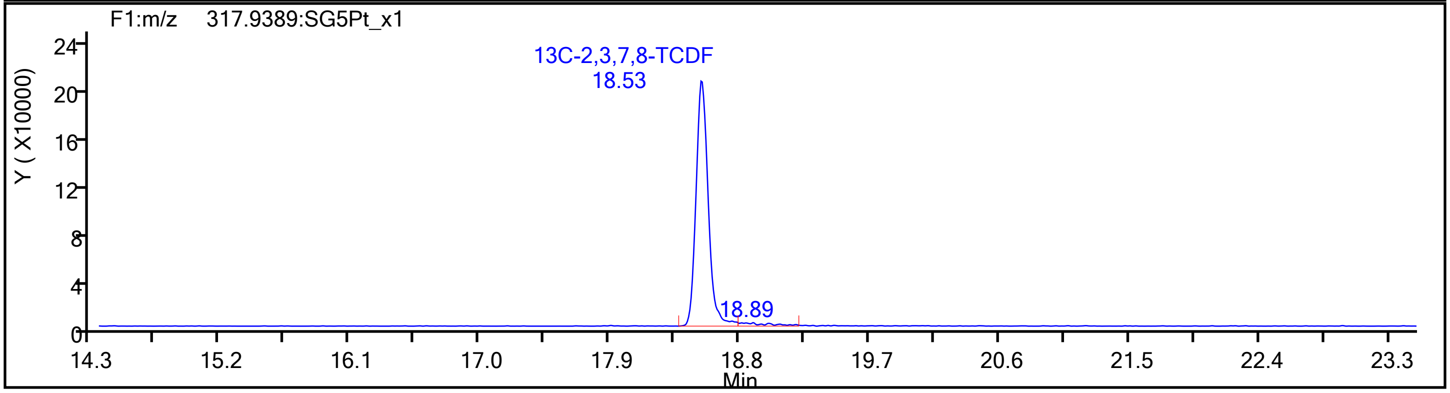

Report Date: 15-Mar-2021 11:40:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d
Injection Date: 12-Mar-2021 11:21:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

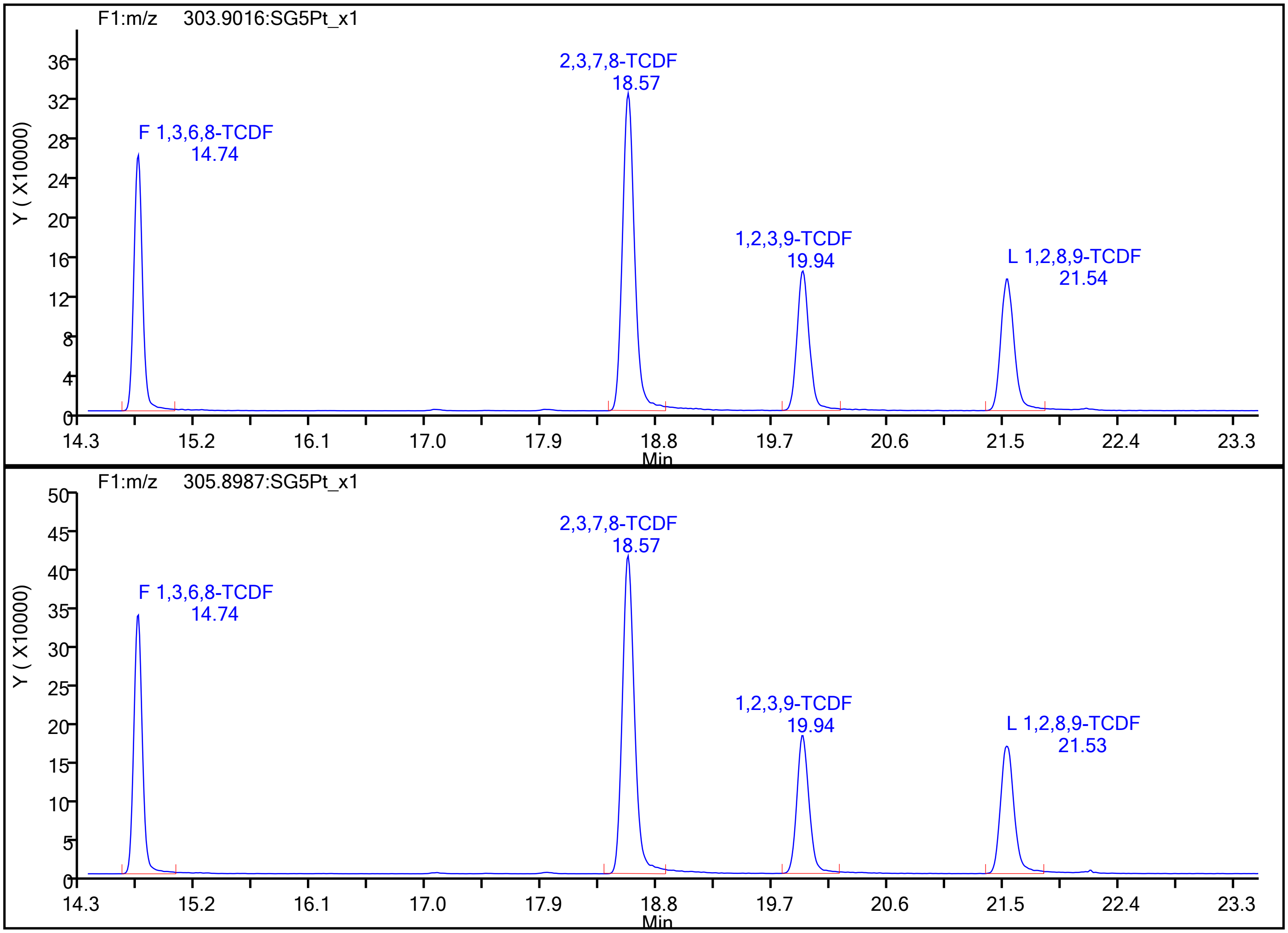

TCDF Interference Mass

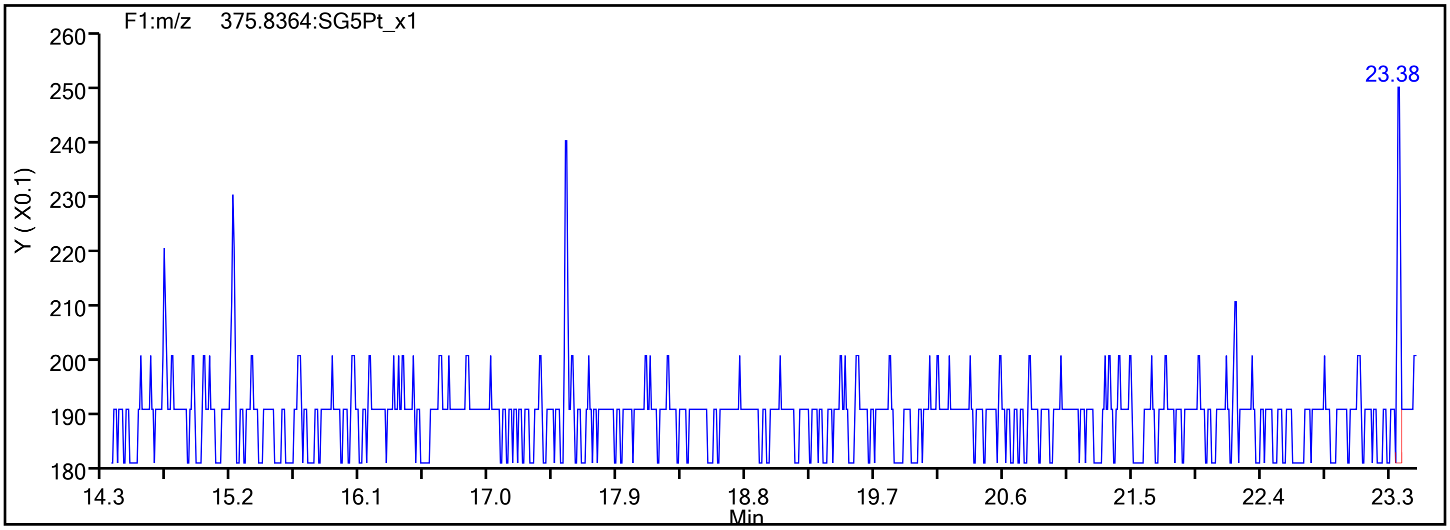

Report Date: 15-Mar-2021 11:40:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d
Injection Date: 12-Mar-2021 11:21:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

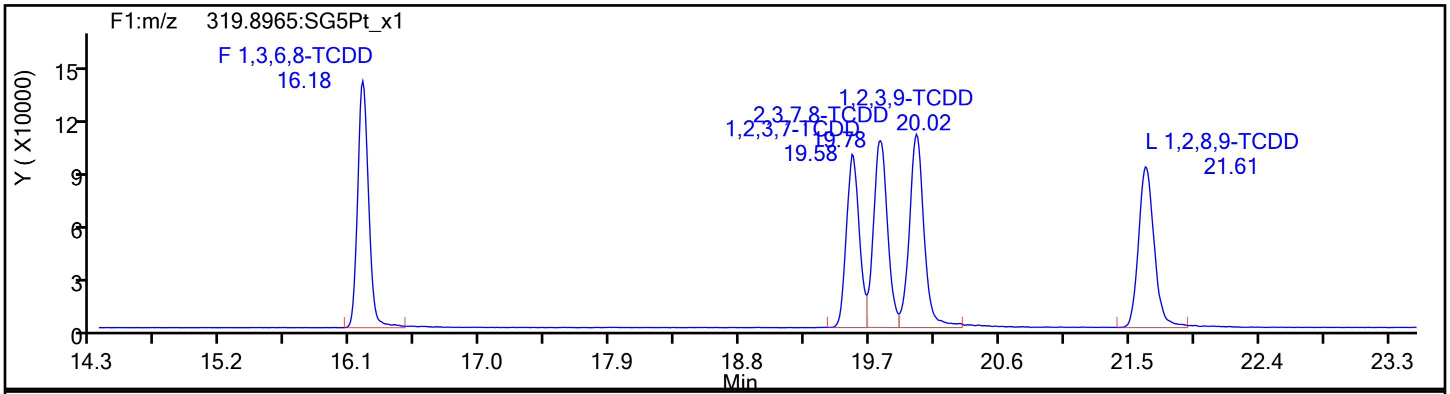

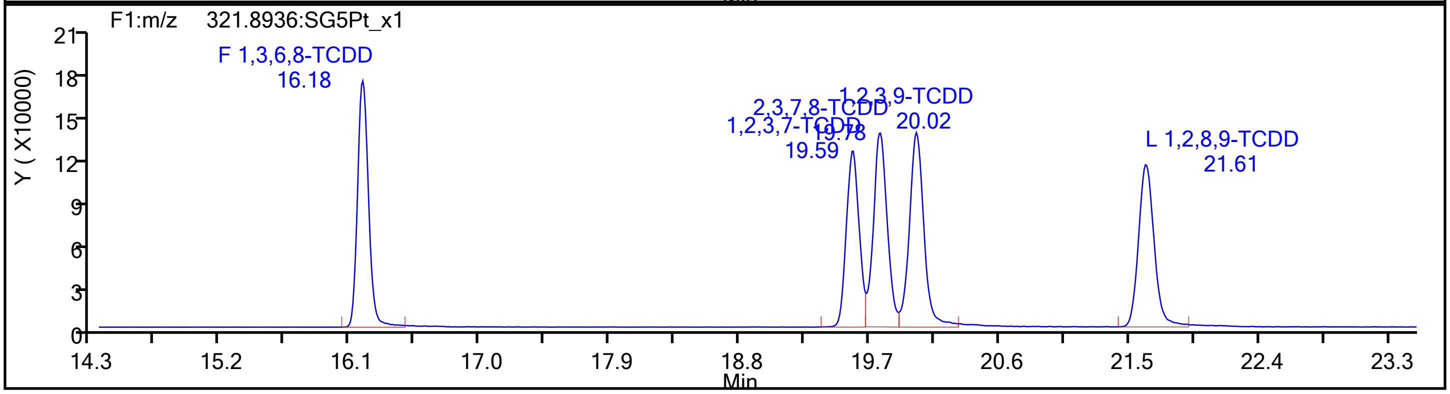

TCDD Standards

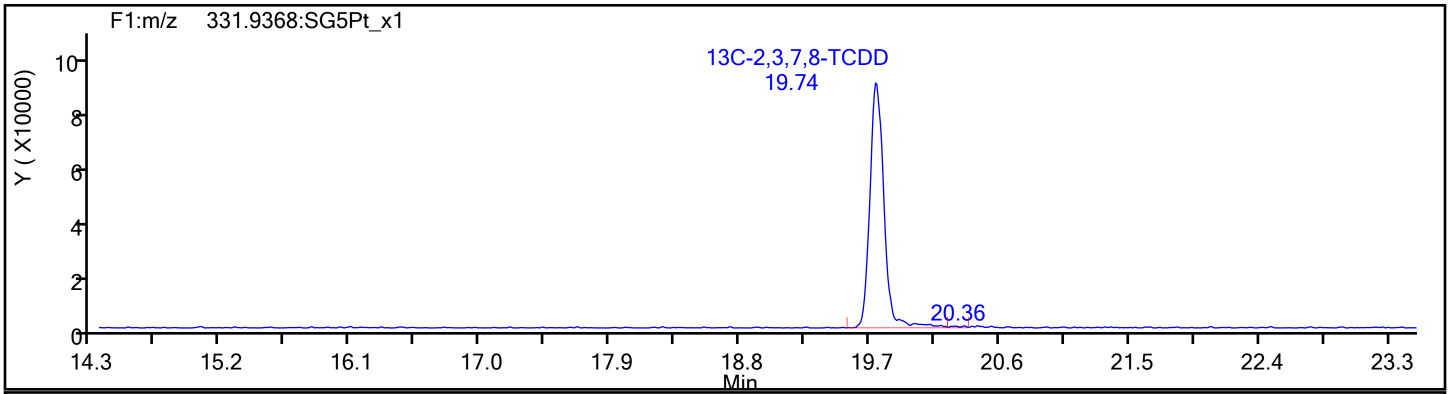

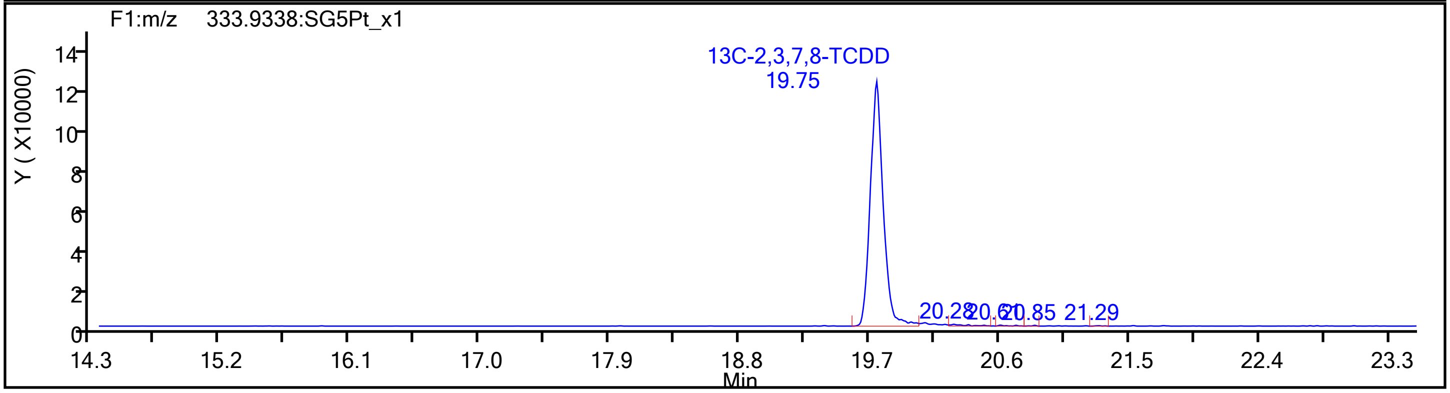

Report Date: 15-Mar-2021 11:40:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

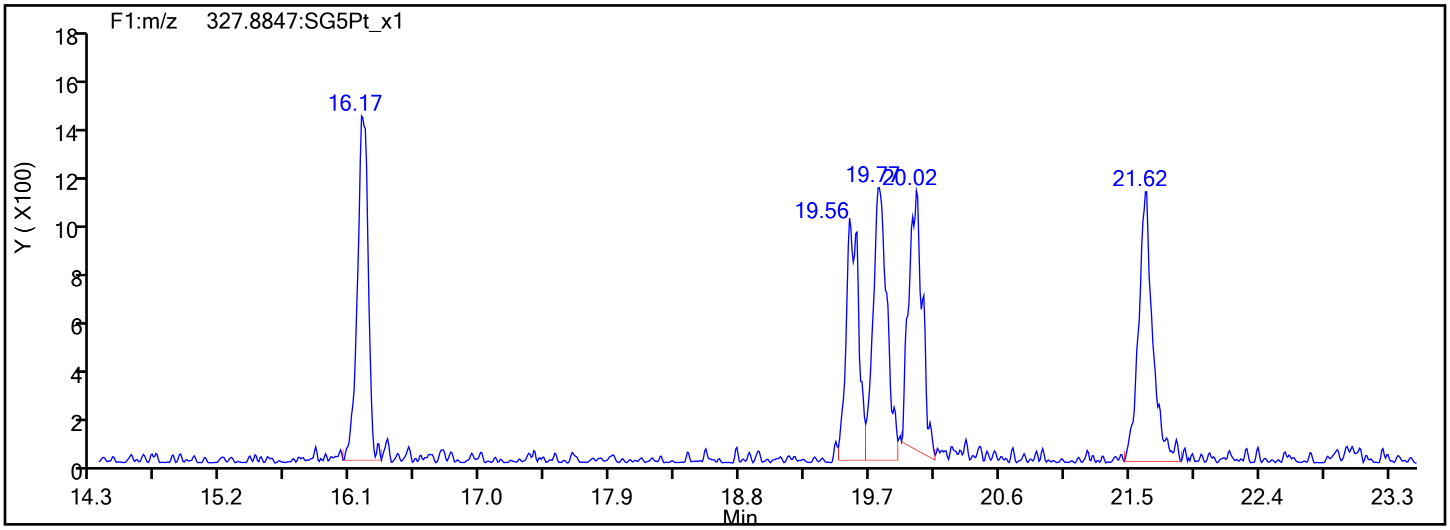

37Cl4-TCDD Standards

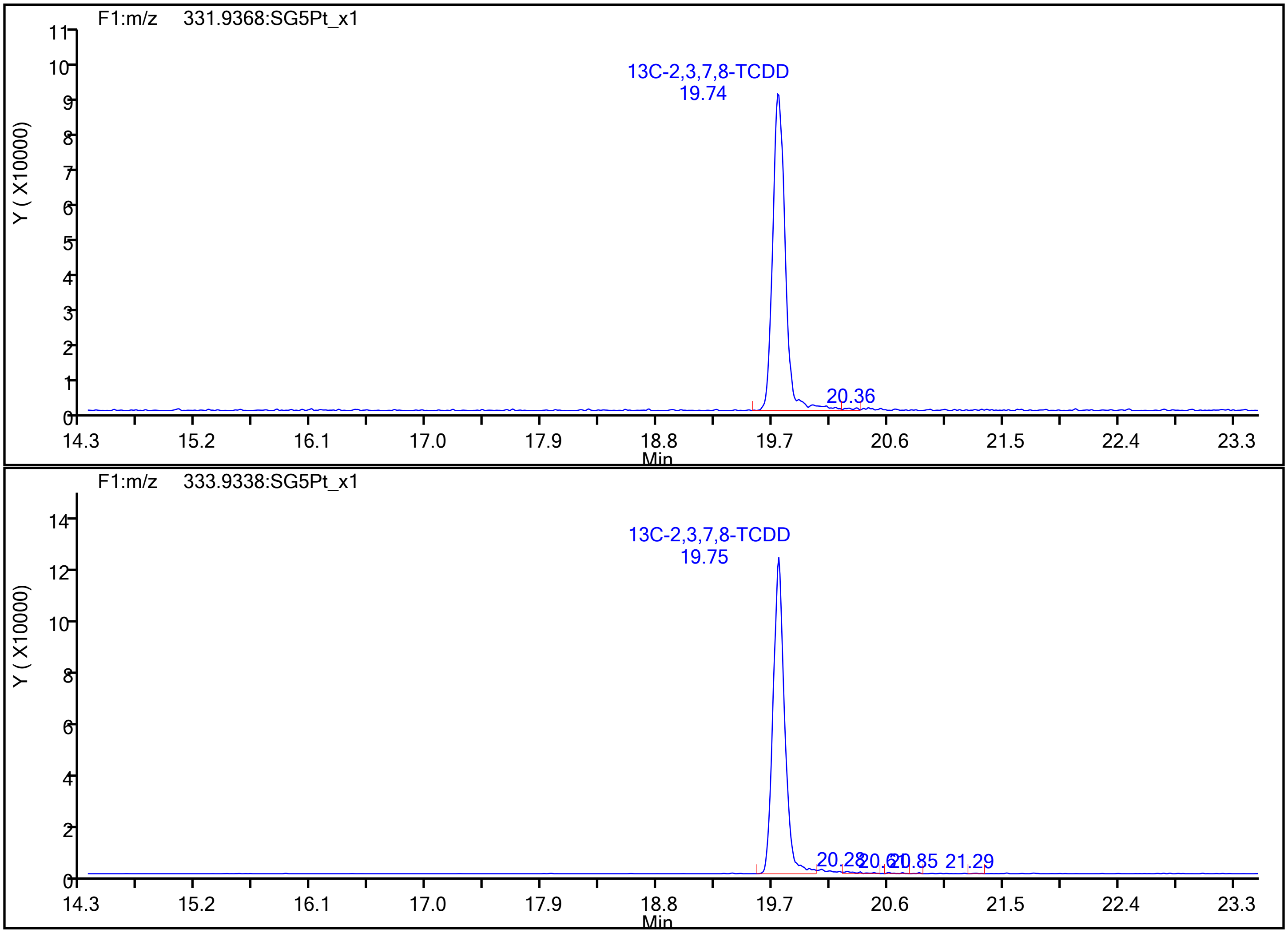

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

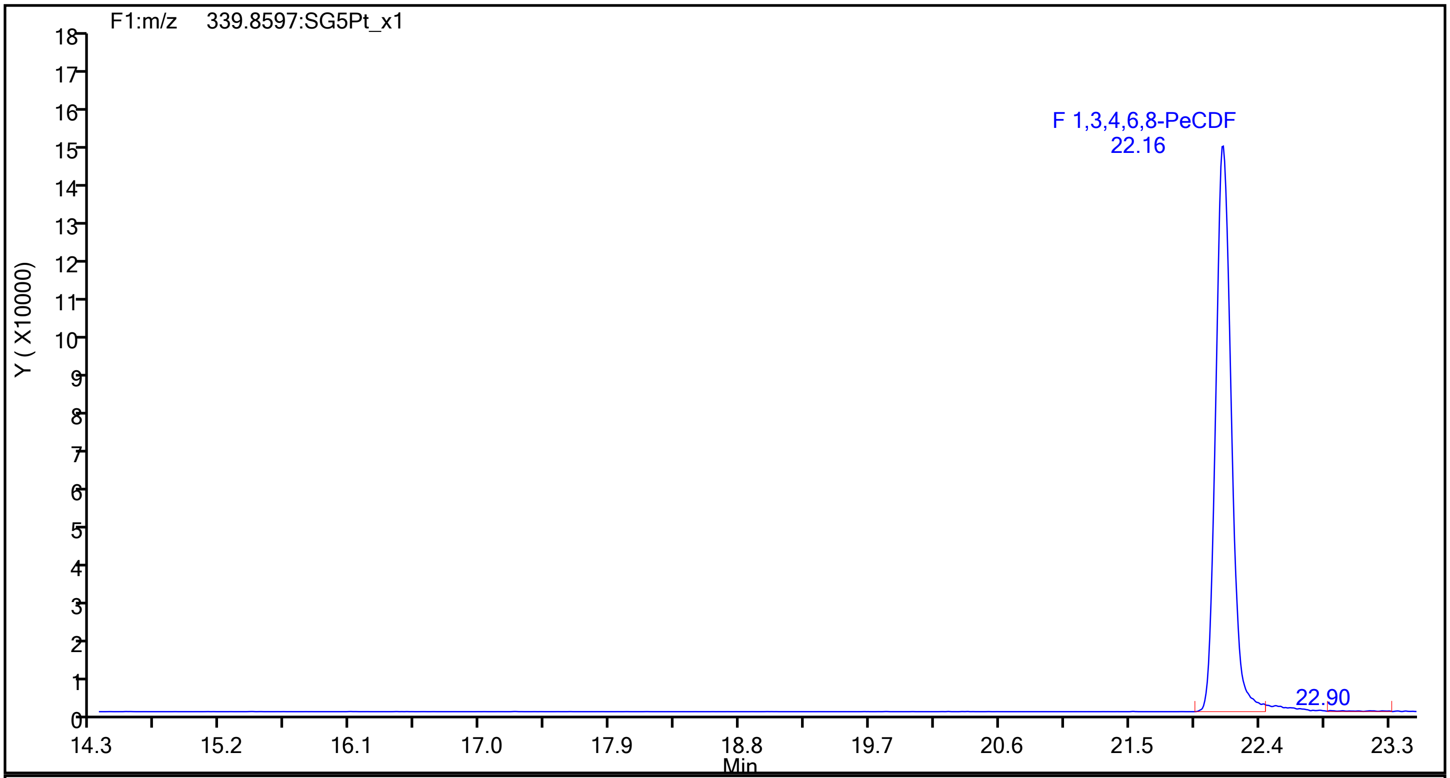

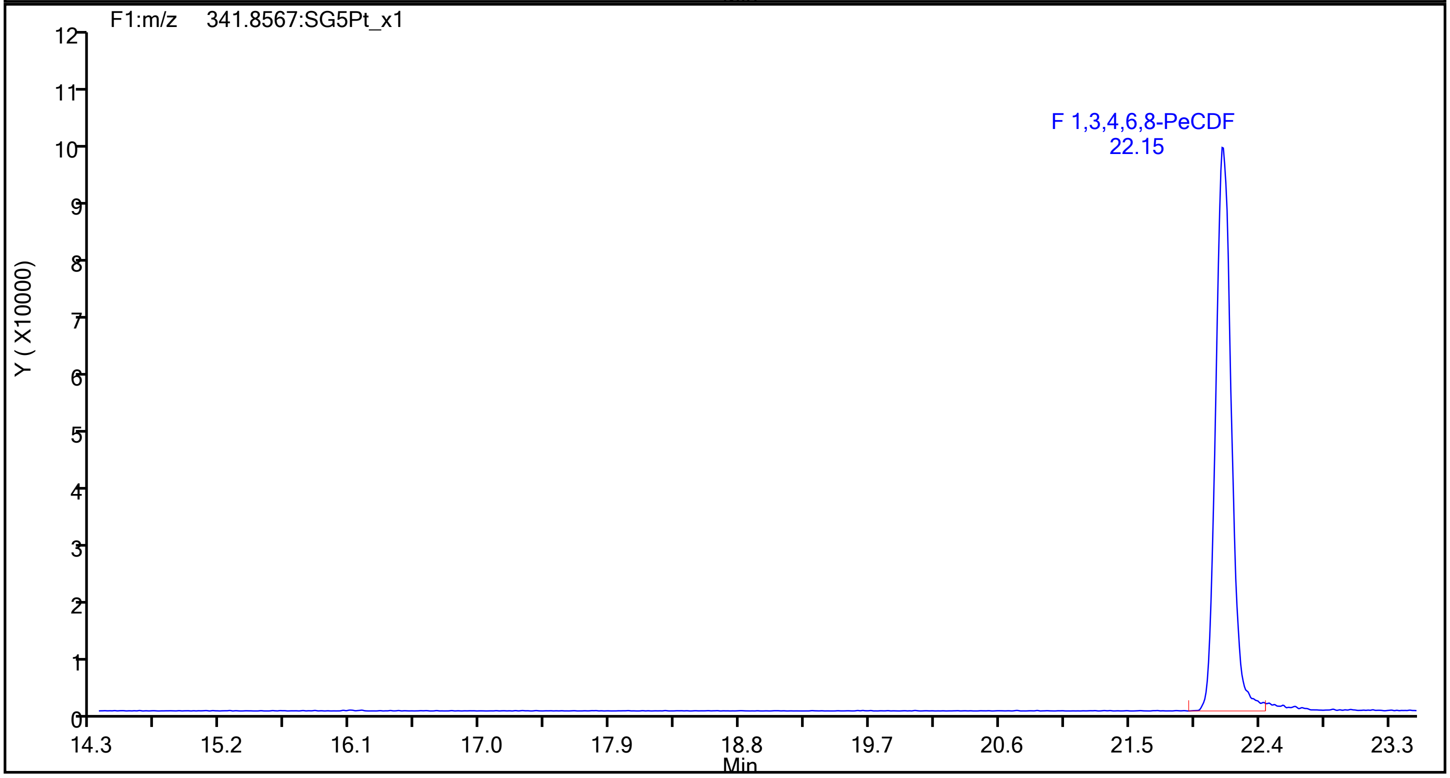

Report Date: 15-Mar-2021 11:40:21   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

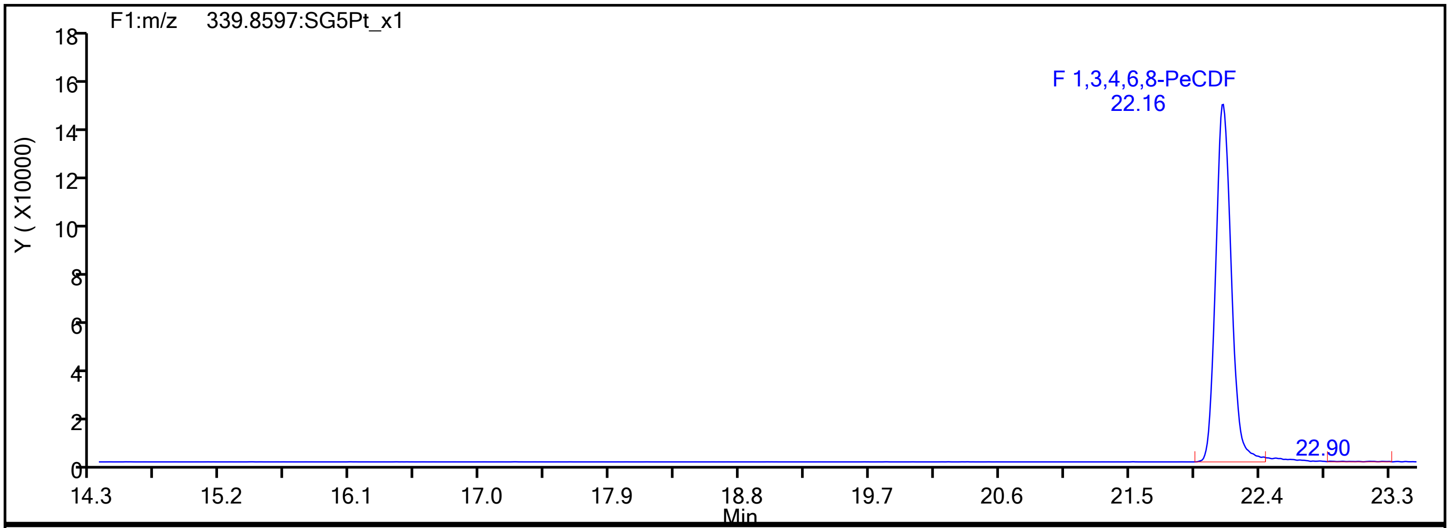

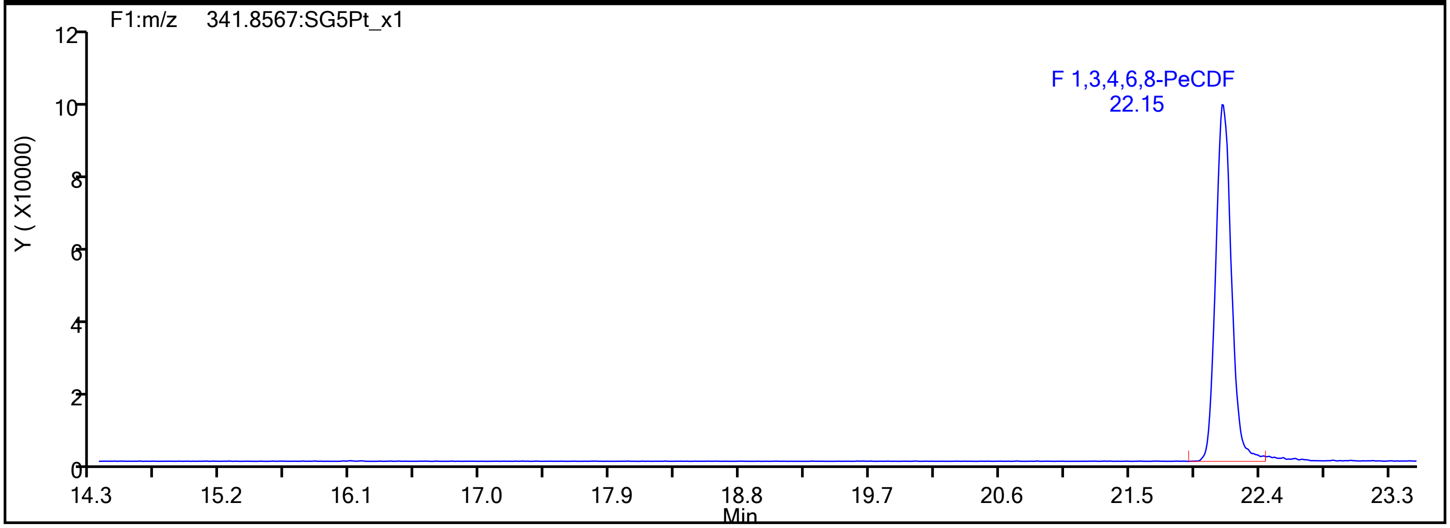

F1 PeCDFs Interference Mass

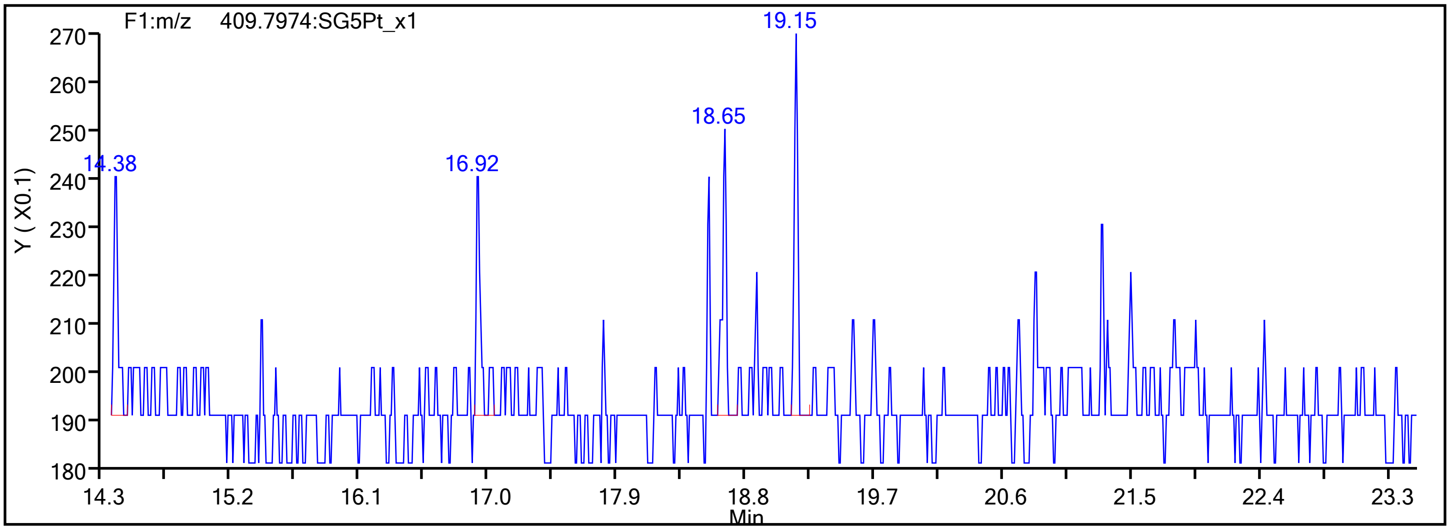

Report Date: 15-Mar-2021 11:40:21 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d

Injection Date: 12-Mar-2021 11:21:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

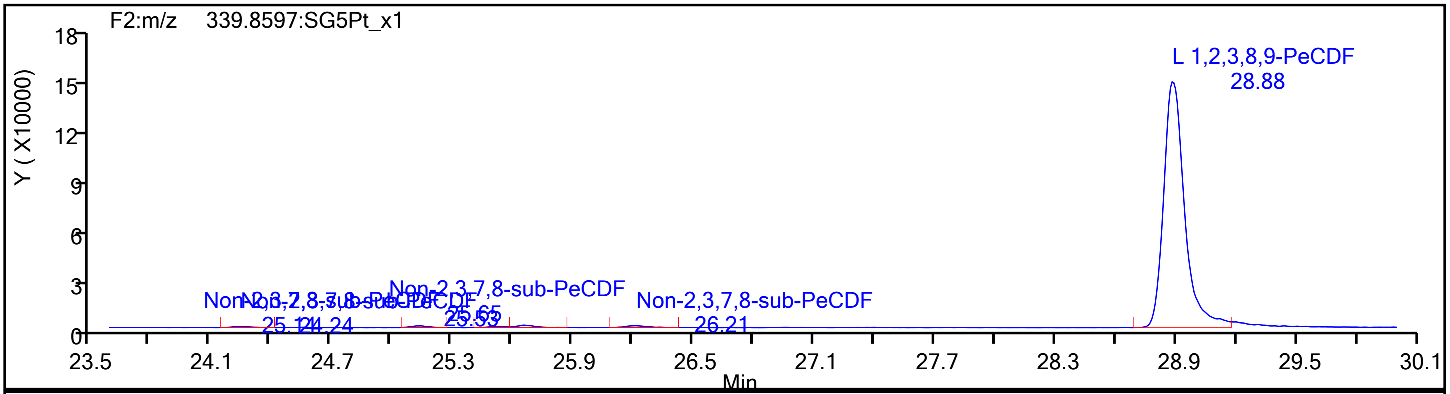

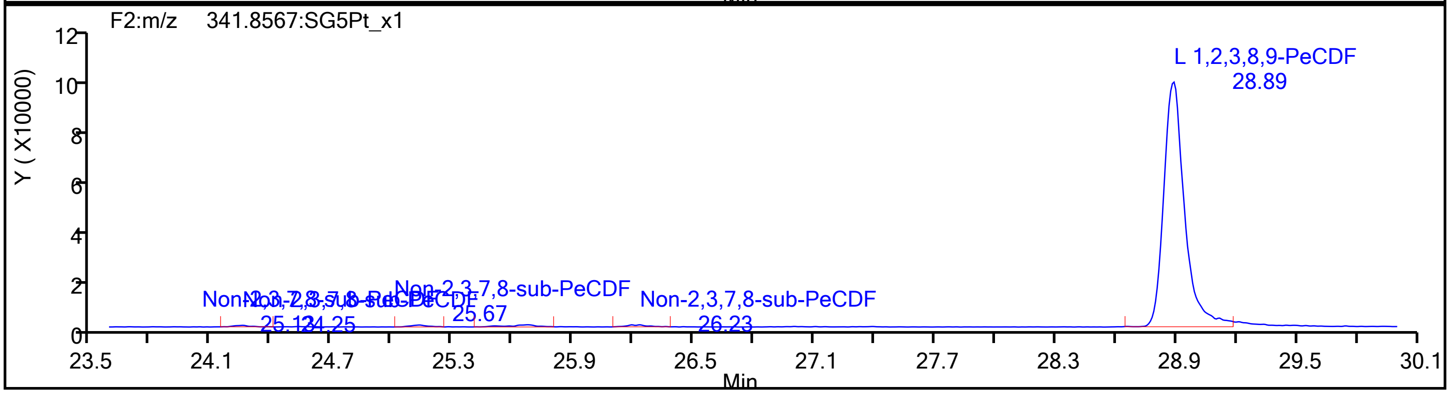

PeCDF Standards

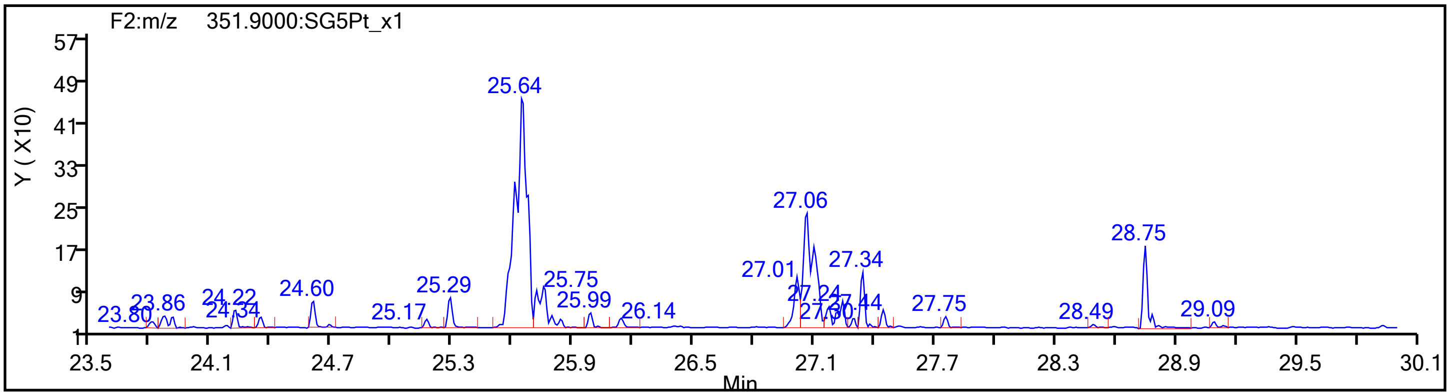

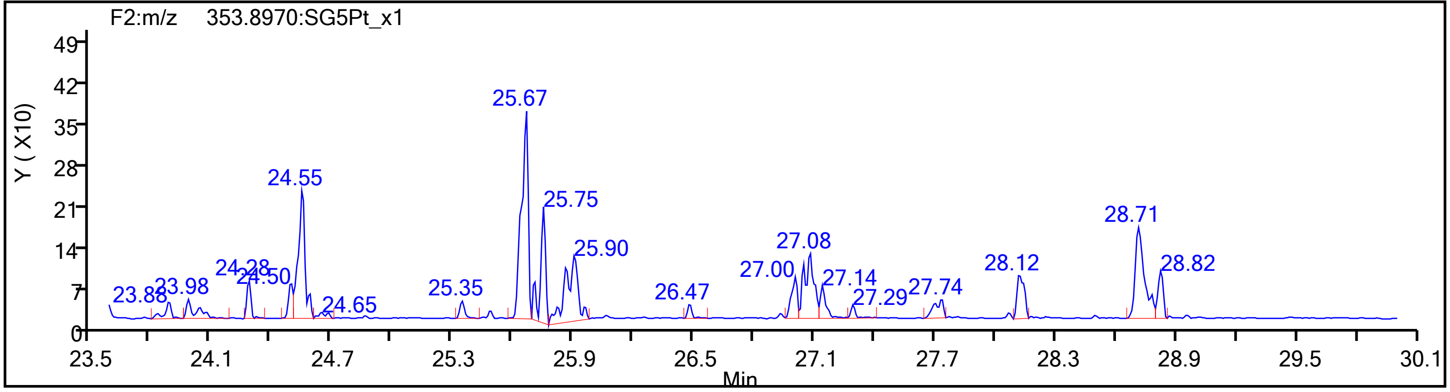

Report Date: 15-Mar-2021 11:40:21		Chrom Revision: 2.3 05-Feb-2021 00:13:28	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

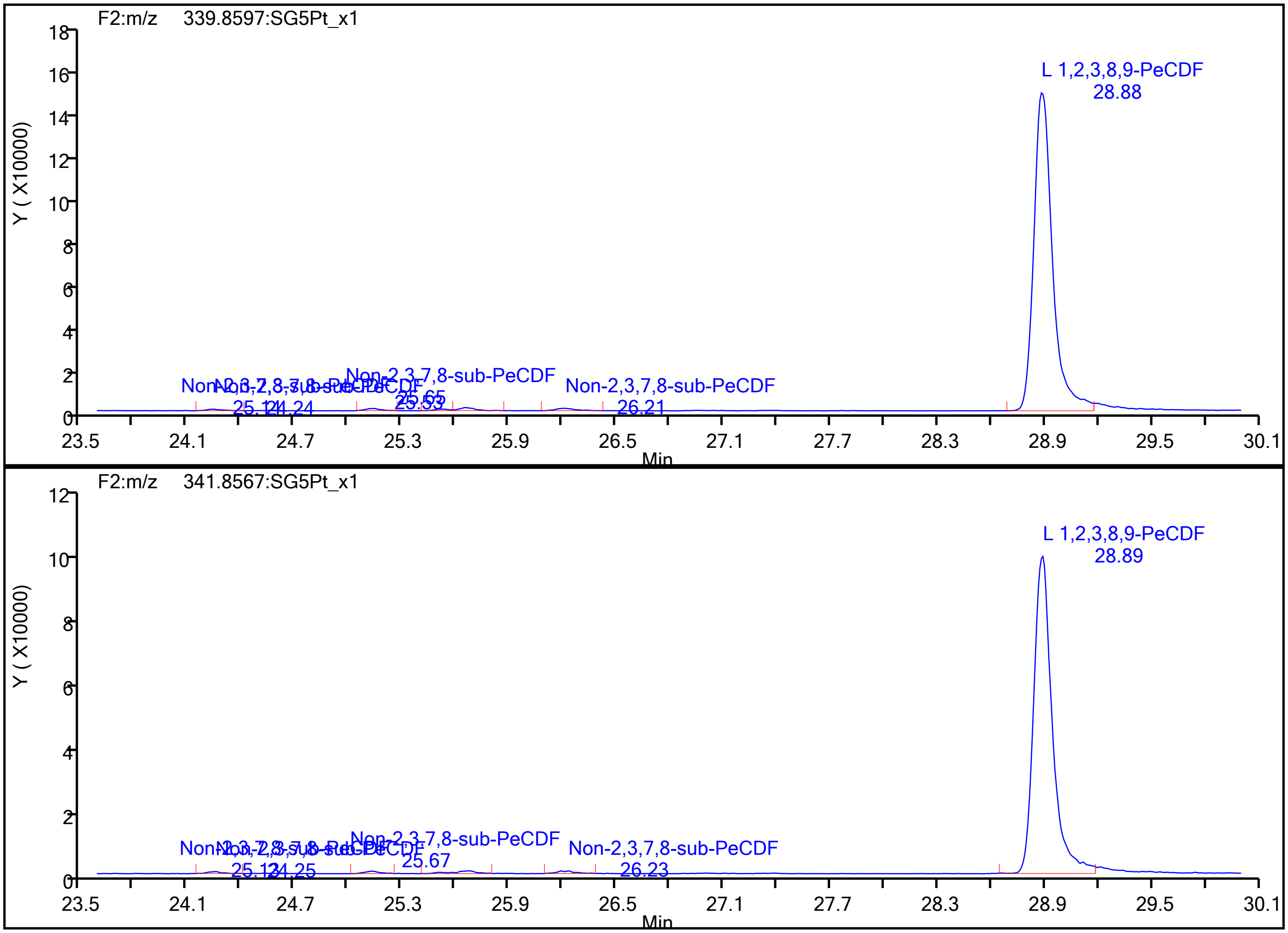

PeCDF Interference Mass

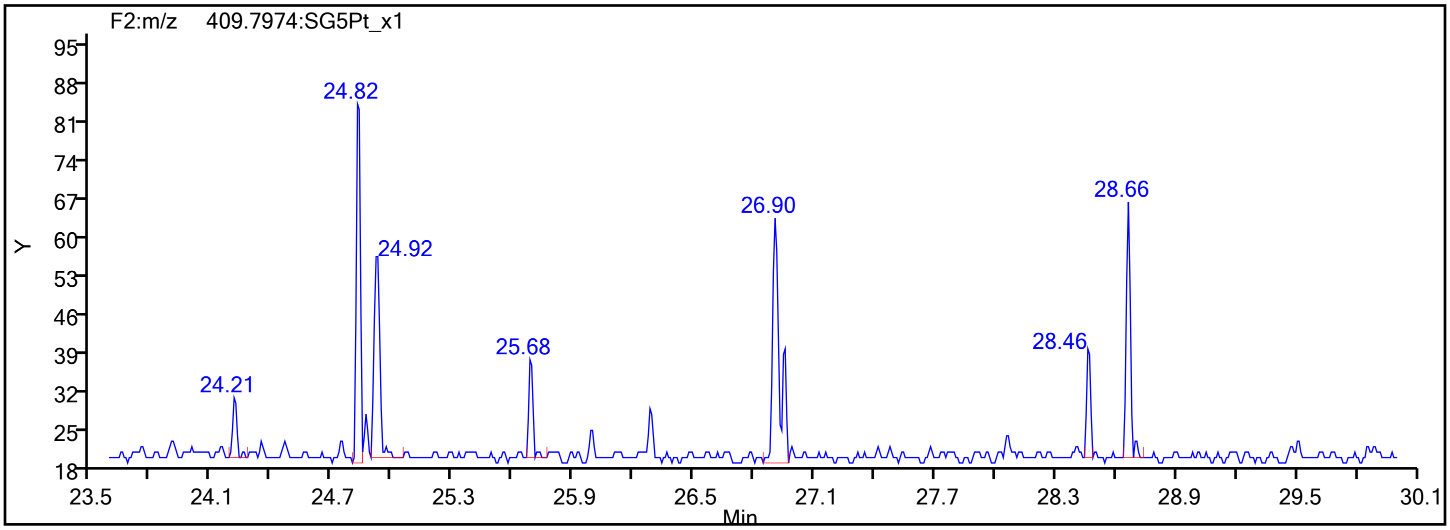

Report Date: 15-Mar-2021 11:40:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d

Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

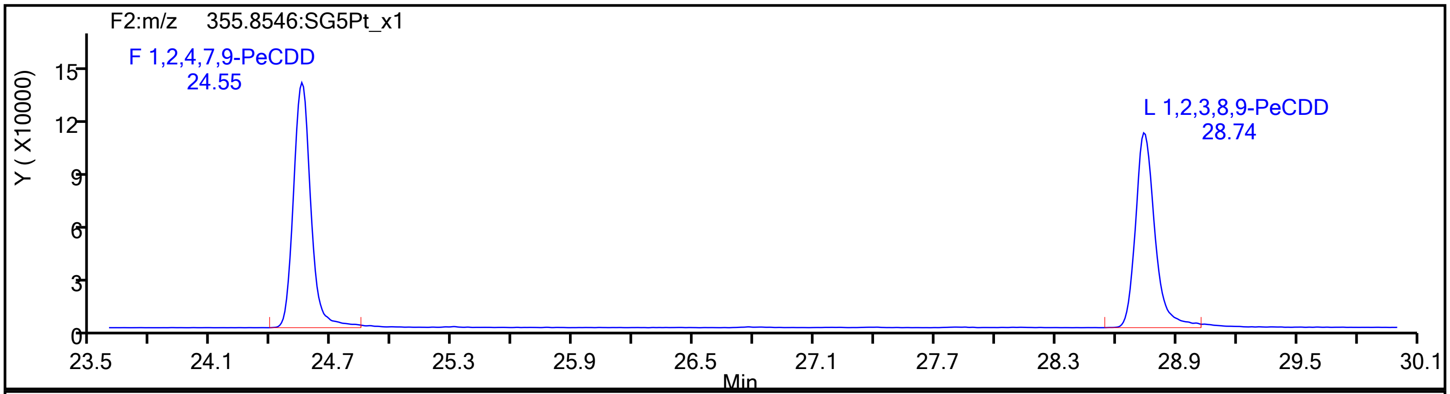

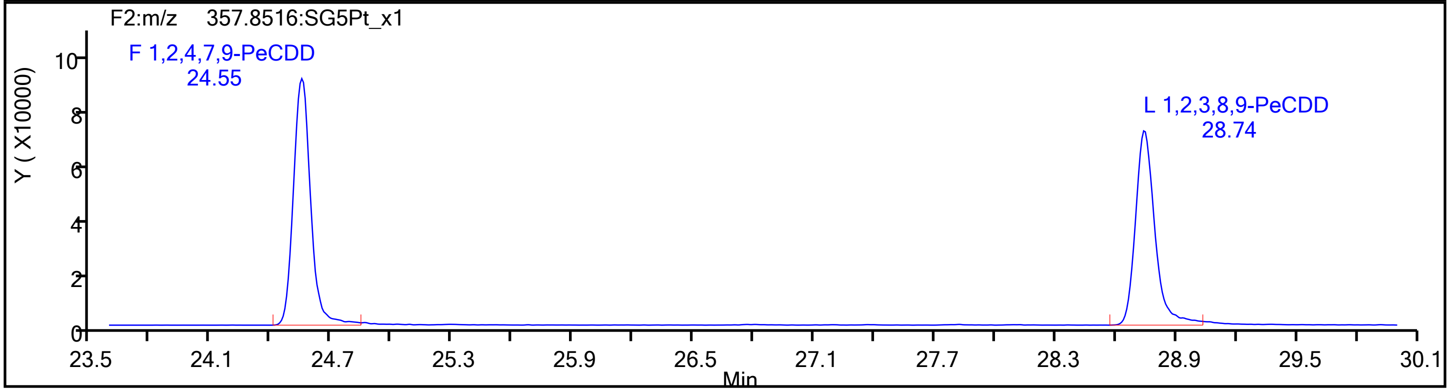

PeCDD Standards

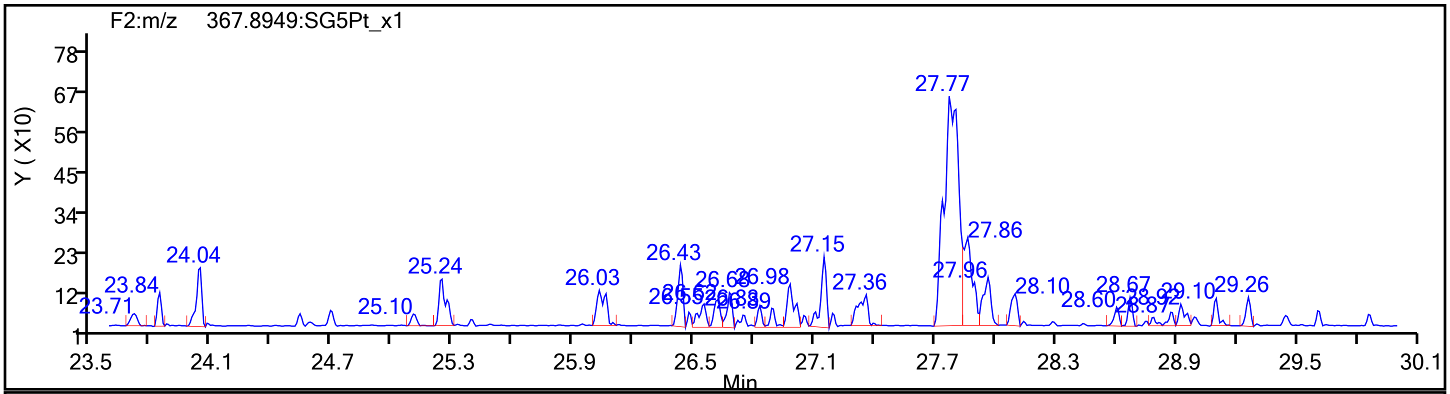

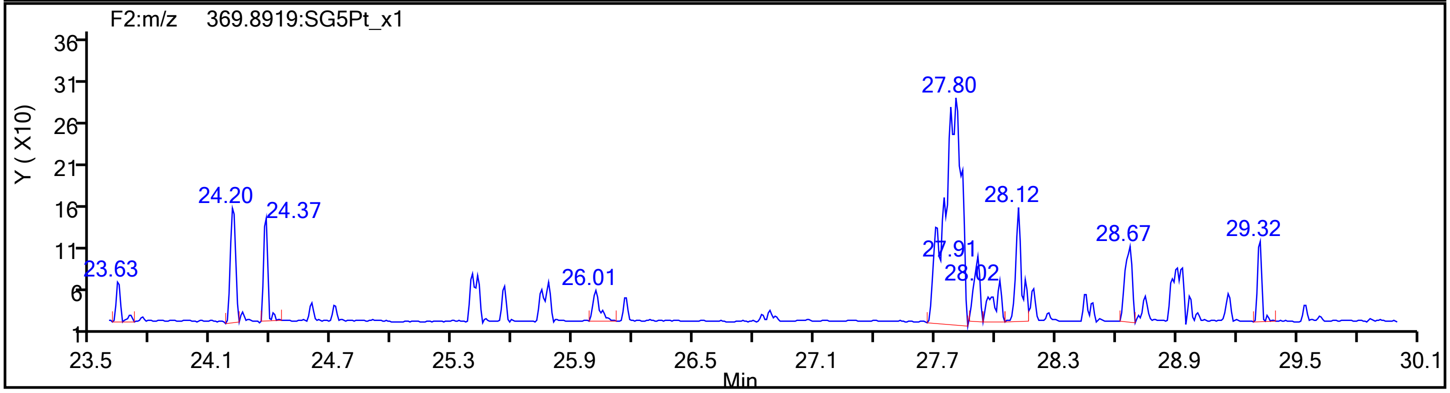

Report Date: 15-Mar-2021 11:40:22　　Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d
Injection Date: 12-Mar-2021 11:21:00　　Injection Vol: 2.0 ul
Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 469779　　Sample Line#: 2
Column Type: DB-5　　Column Dia: 0.32 mm

HxCDF

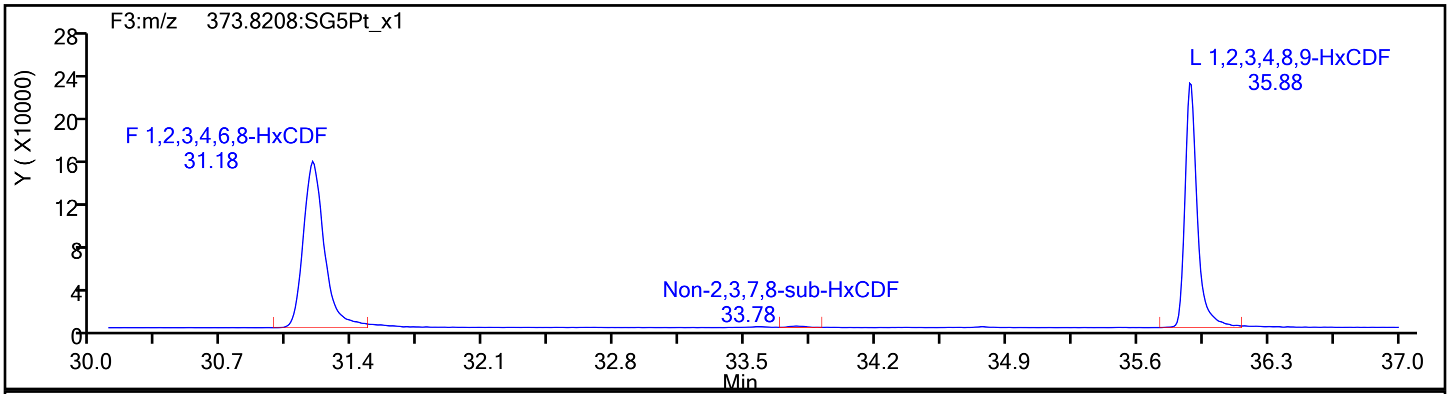

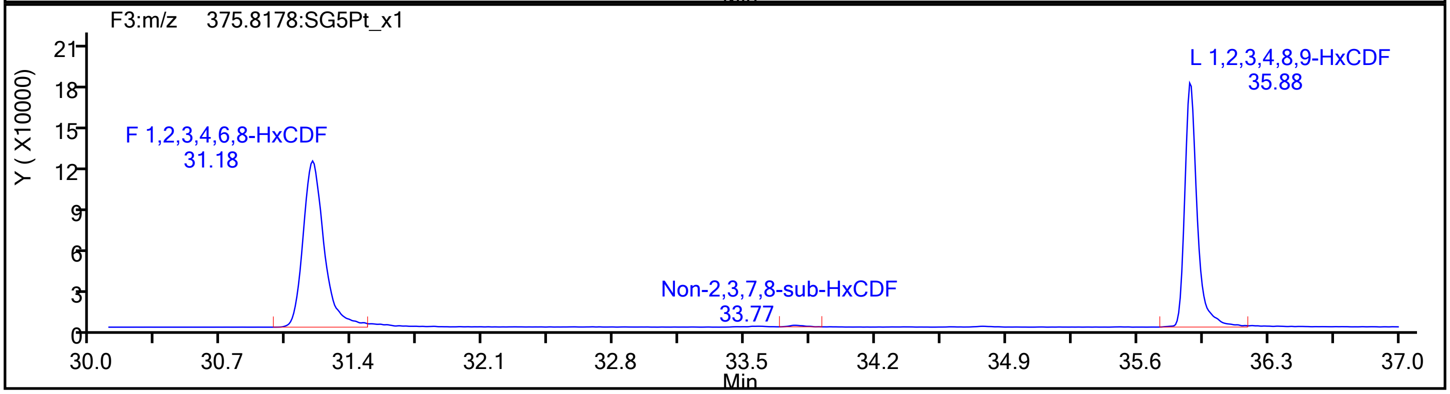

HxCDF Standards

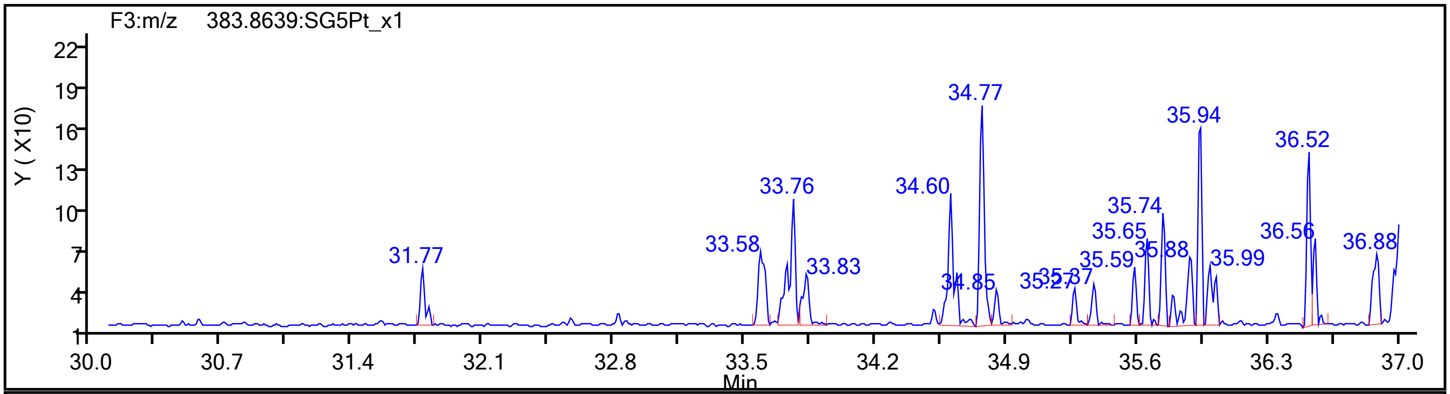

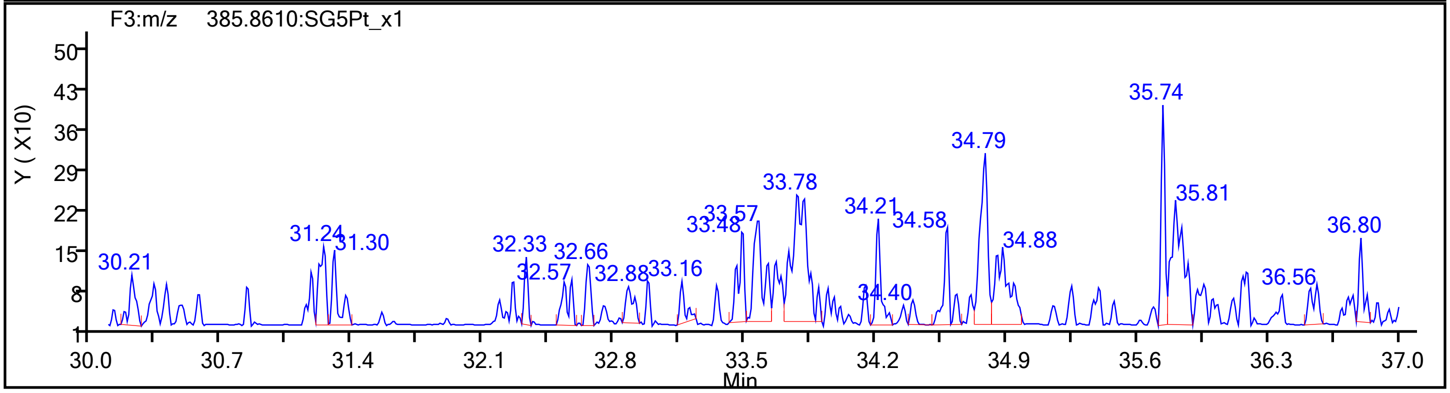

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

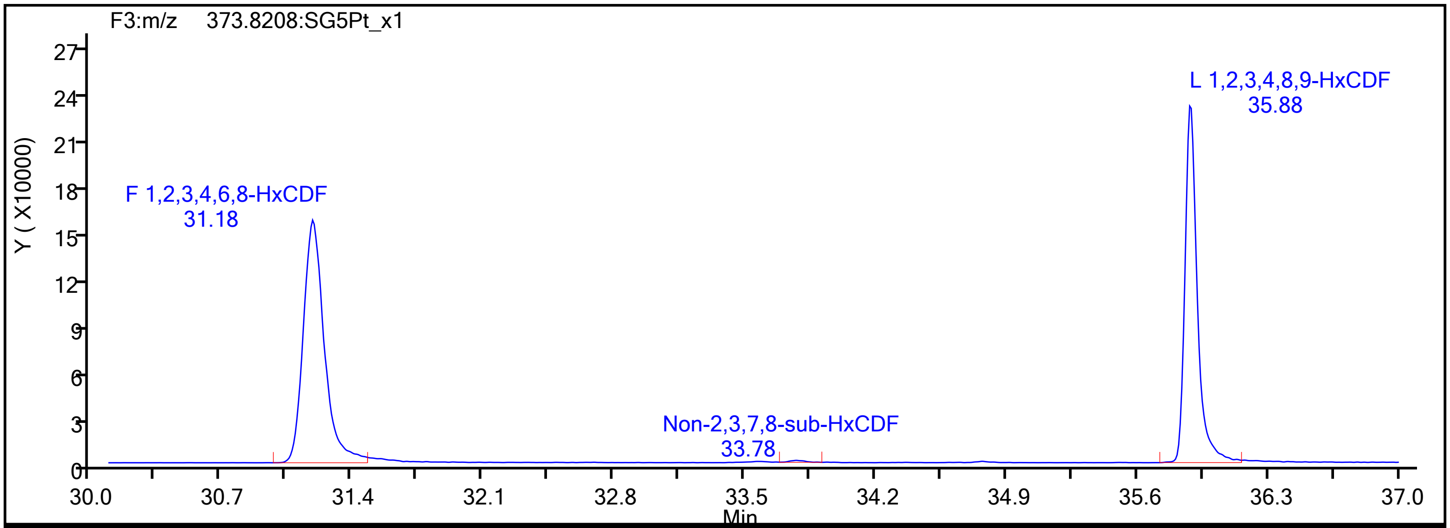

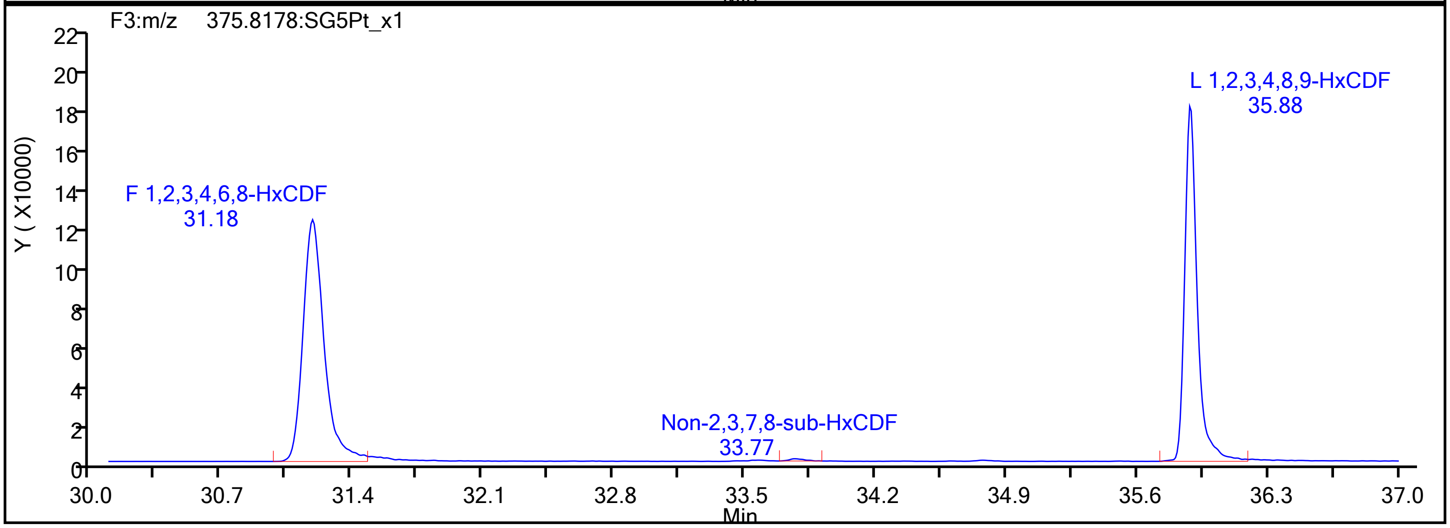

HxCDF Interference Mass

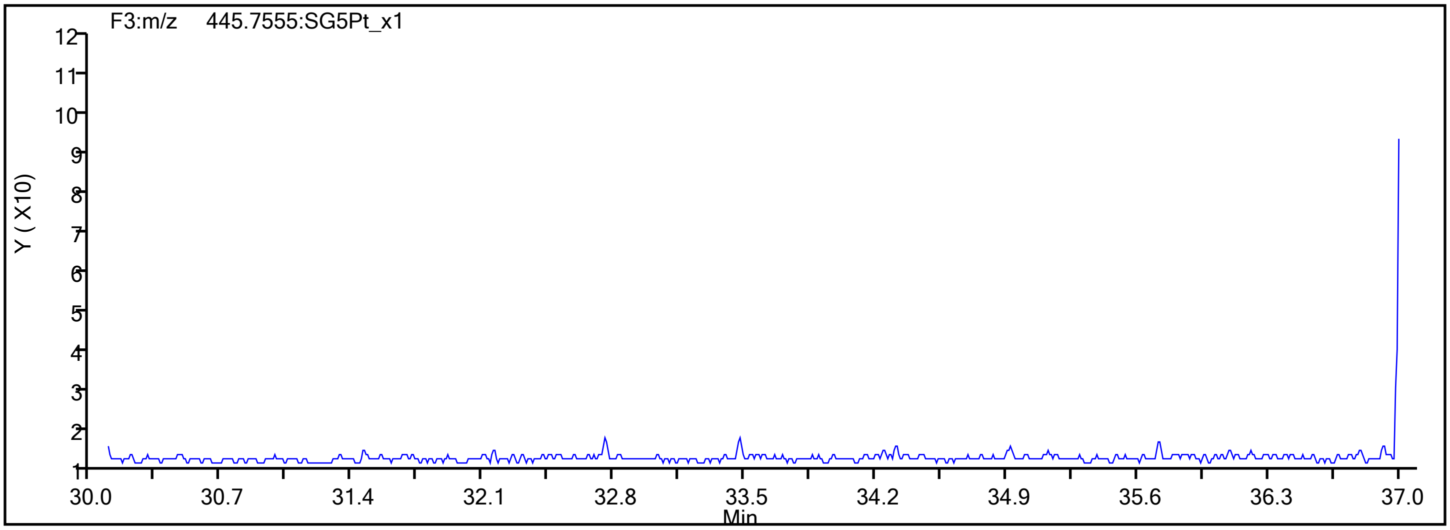

Report Date: 15-Mar-2021 11:40:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d

Injection Date: 12-Mar-2021 11:21:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

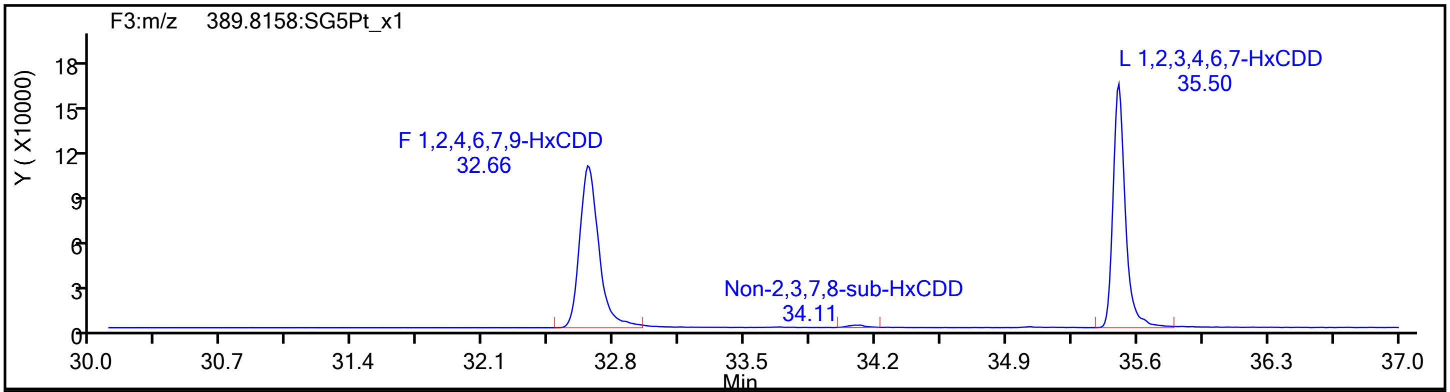

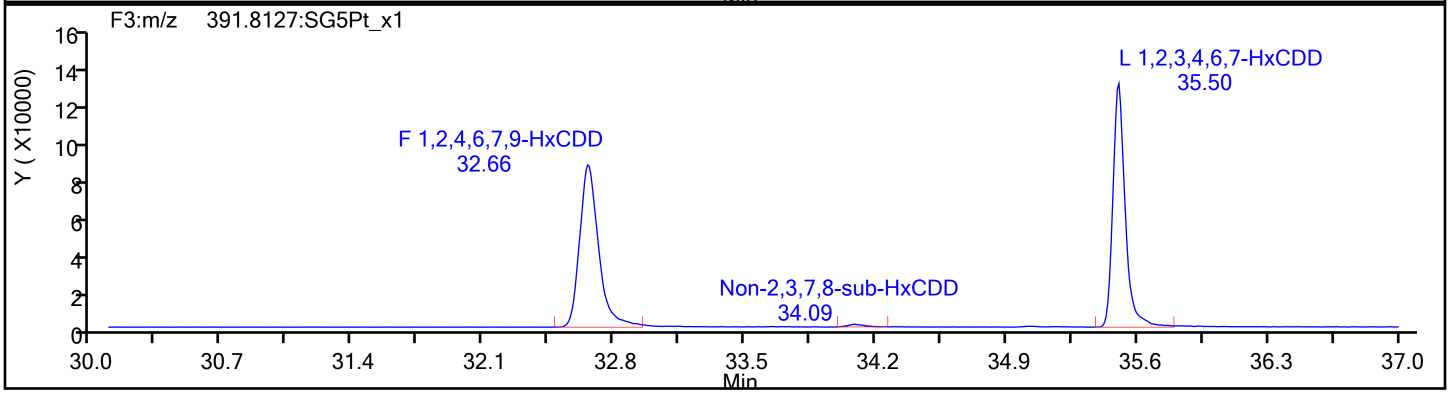

HxCDD Standards

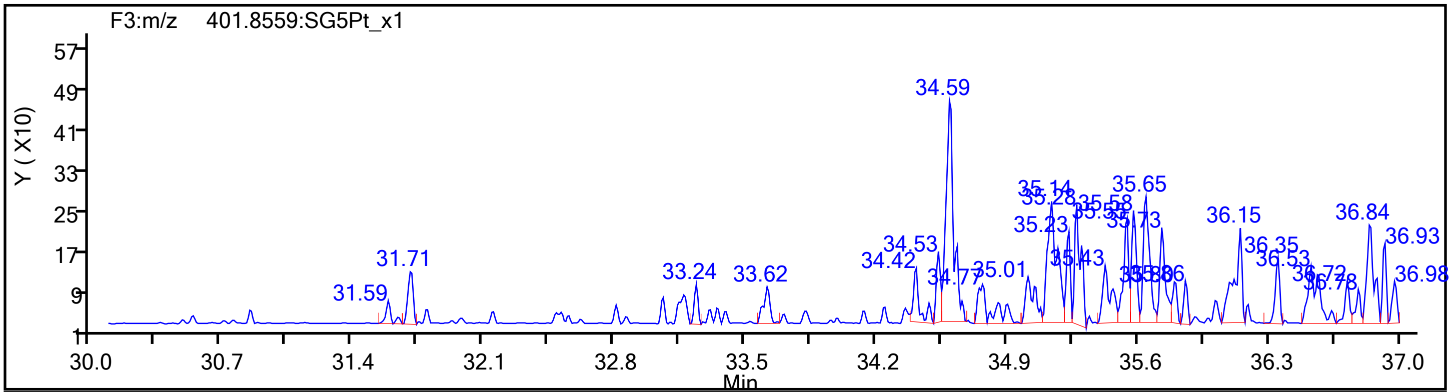

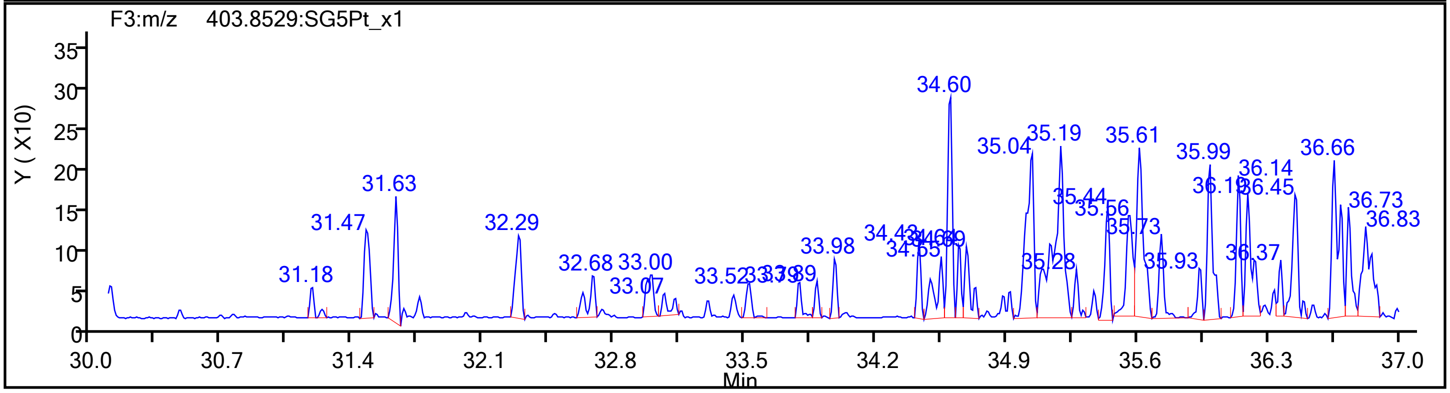

Report Date: 15-Mar-2021 11:40:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

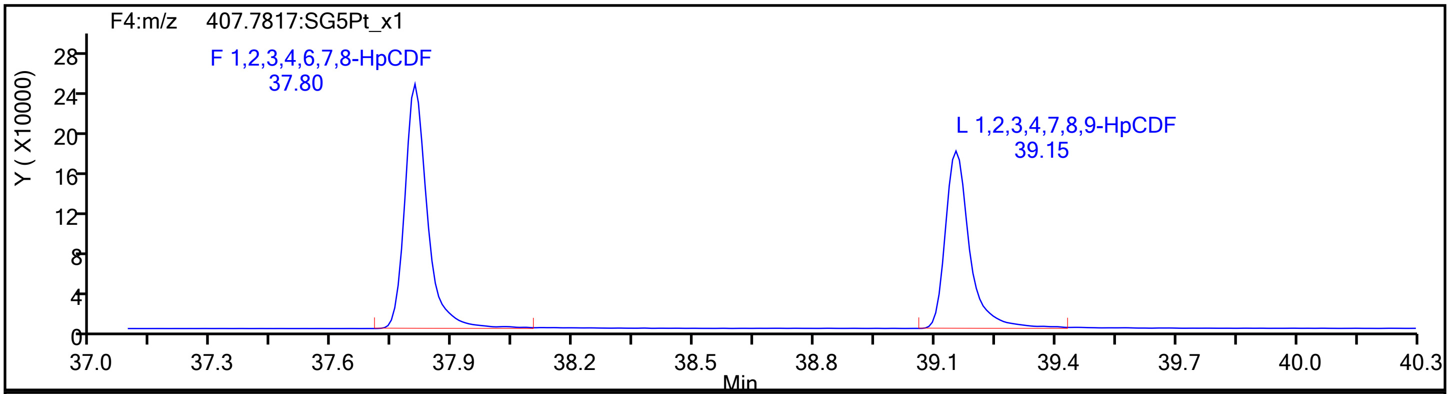

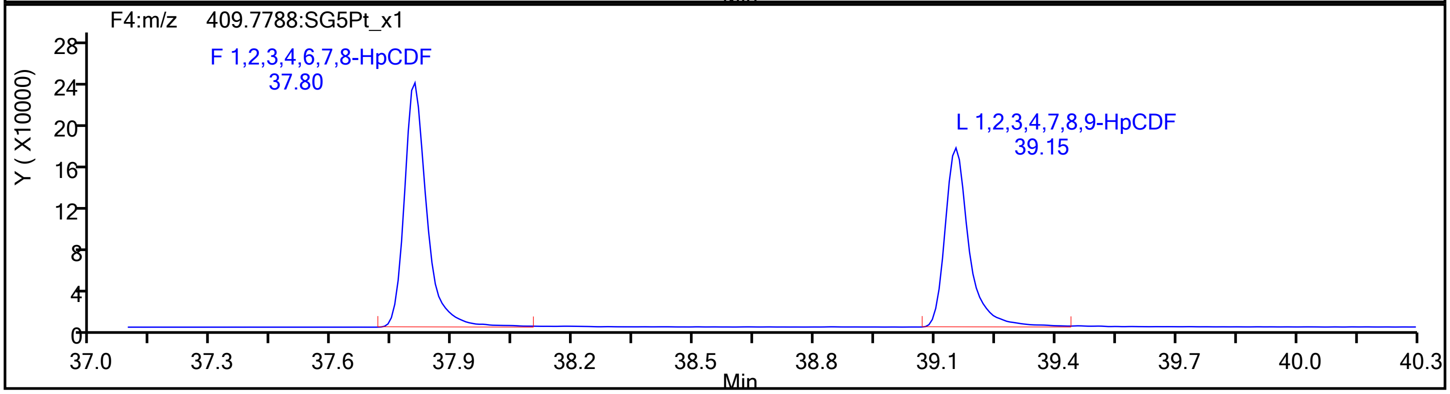

HpCDF Standards

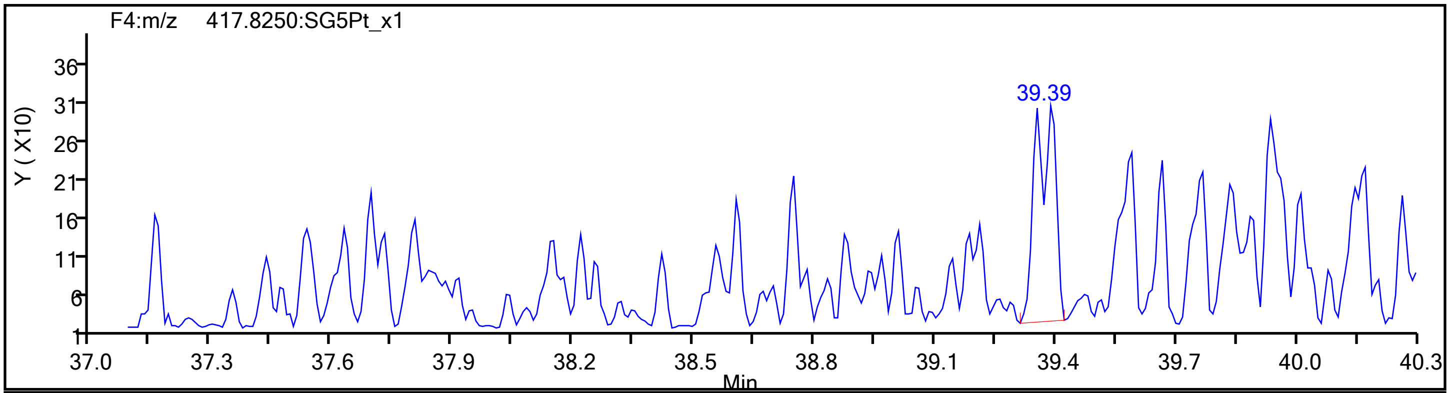

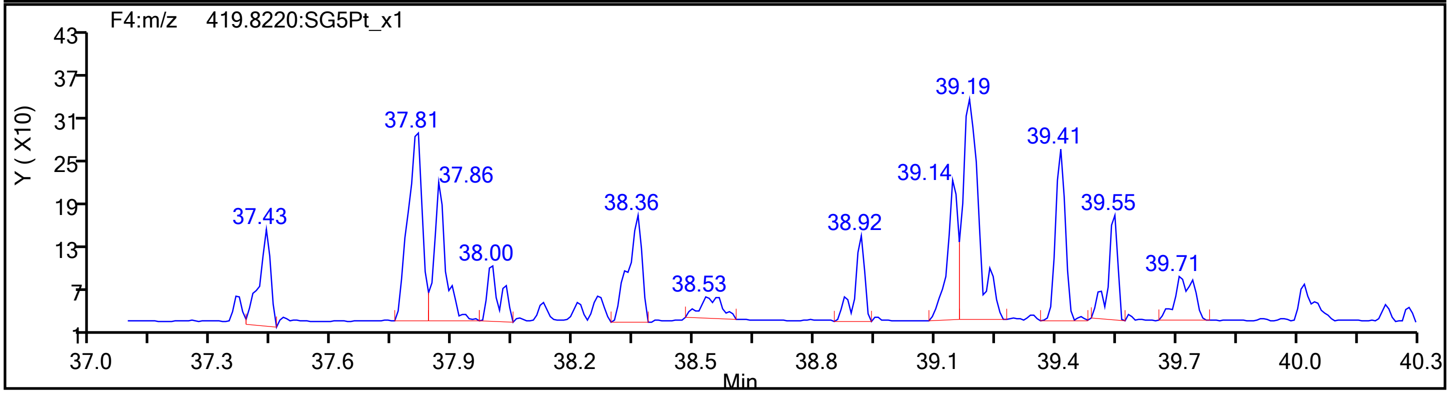

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

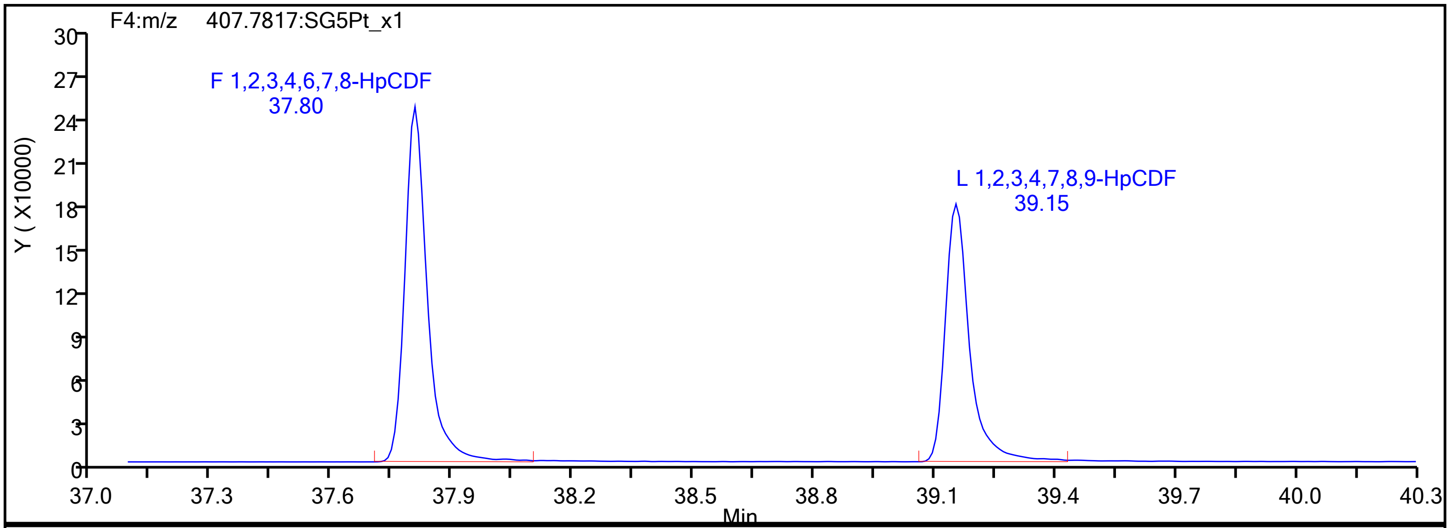

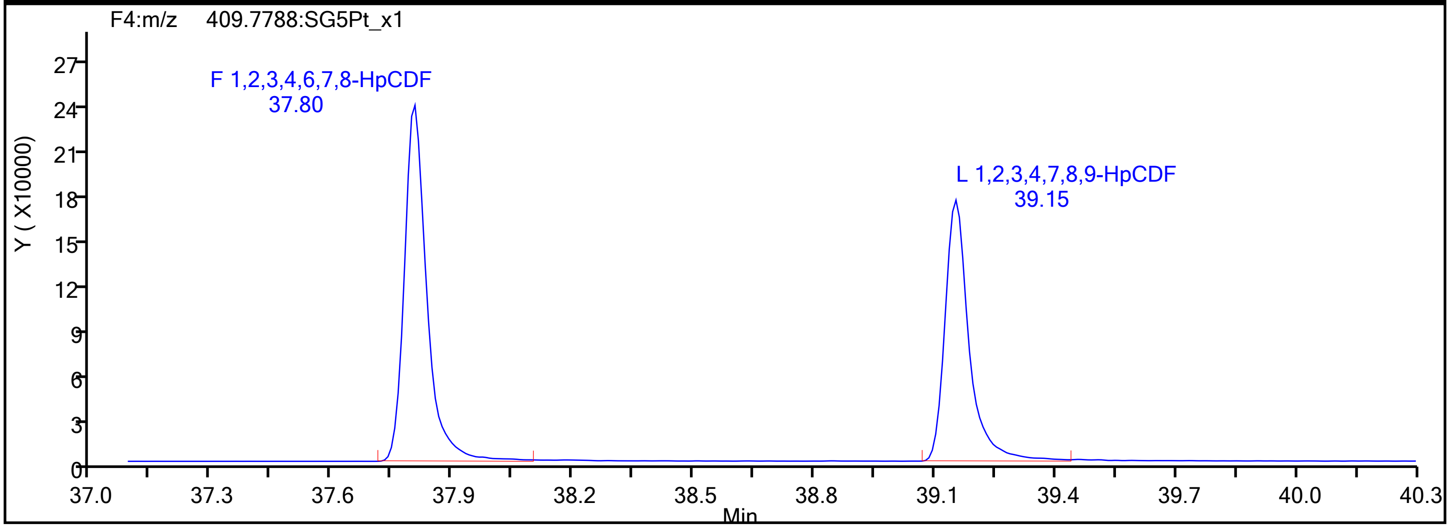

HpCDF Interference Mass

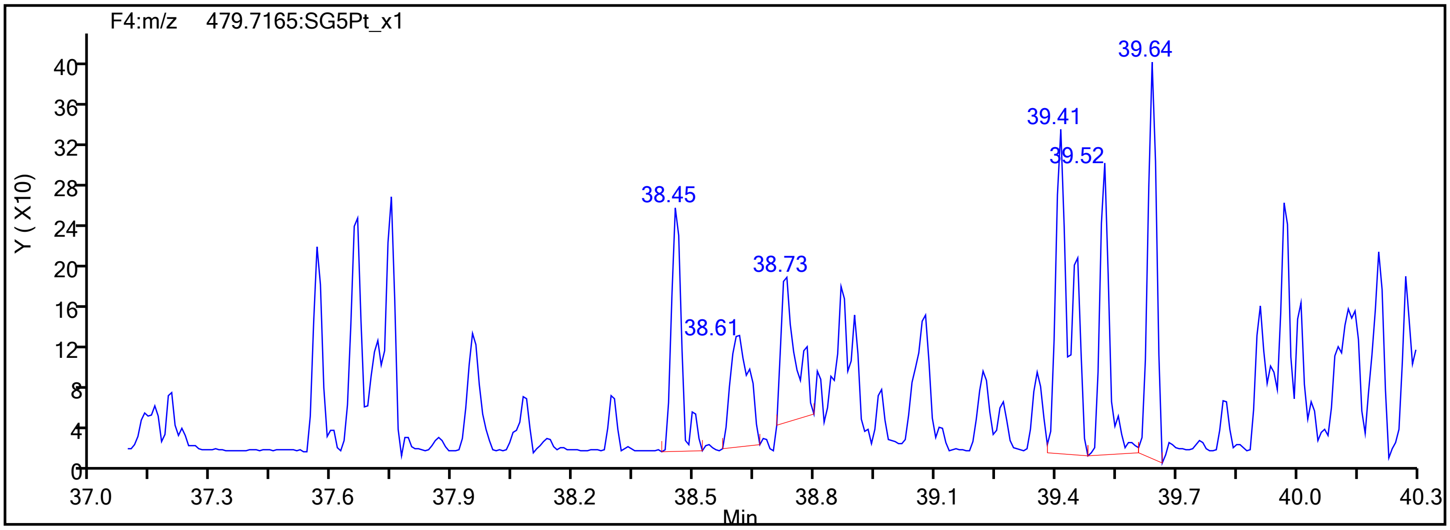

Report Date: 15-Mar-2021 11:40:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d

Injection Date: 12-Mar-2021 11:21:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779

Sample Line#: 2

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

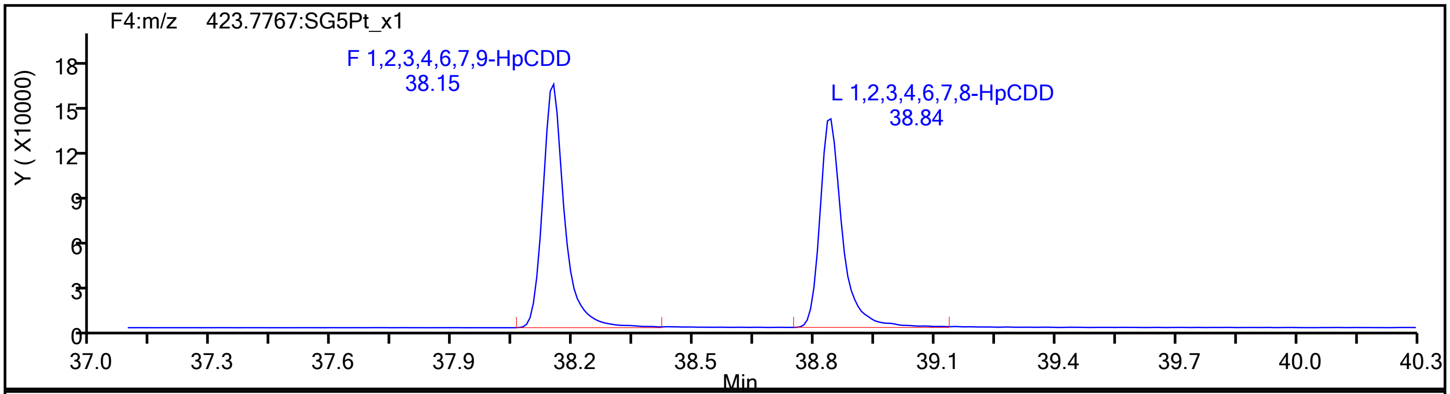

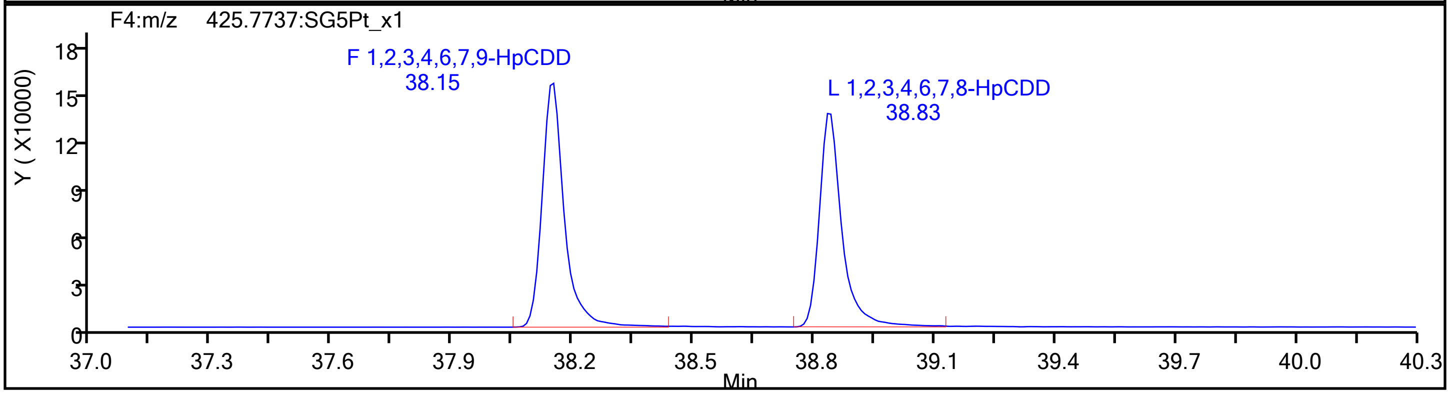

HpCDD Standards

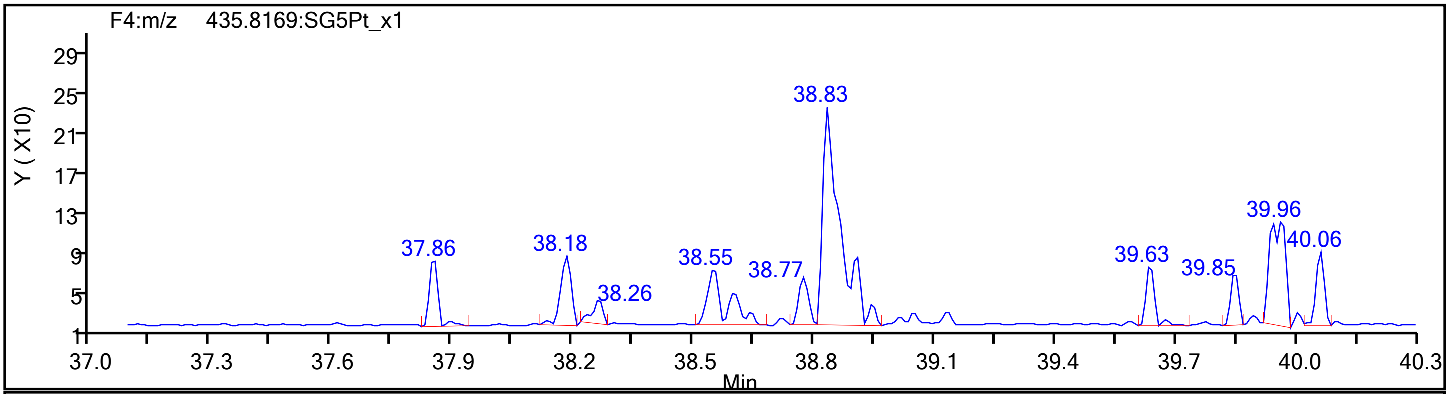

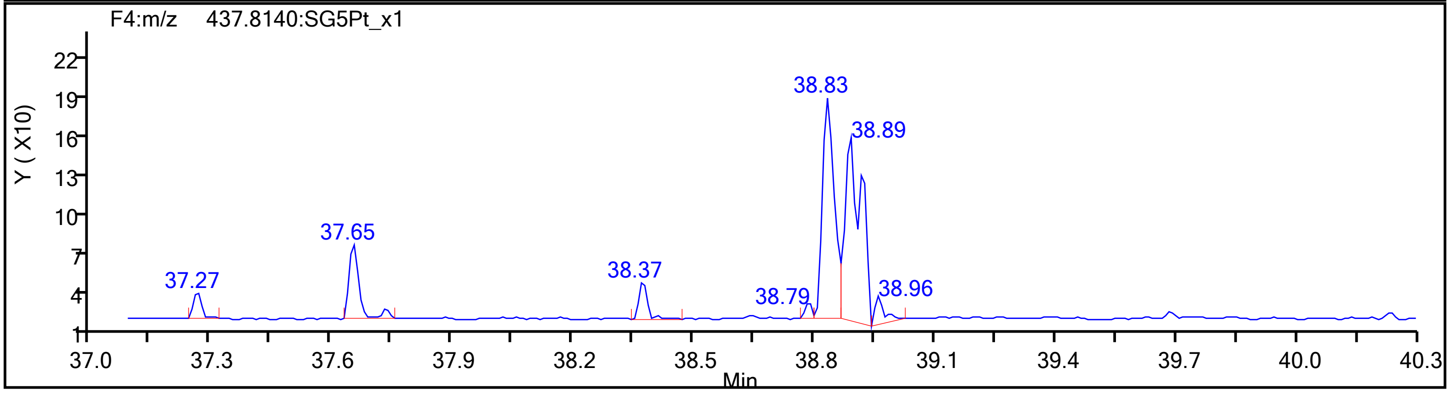

Report Date: 15-Mar-2021 11:40:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d

Injection Date: 12-Mar-2021 11:21:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 469779 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

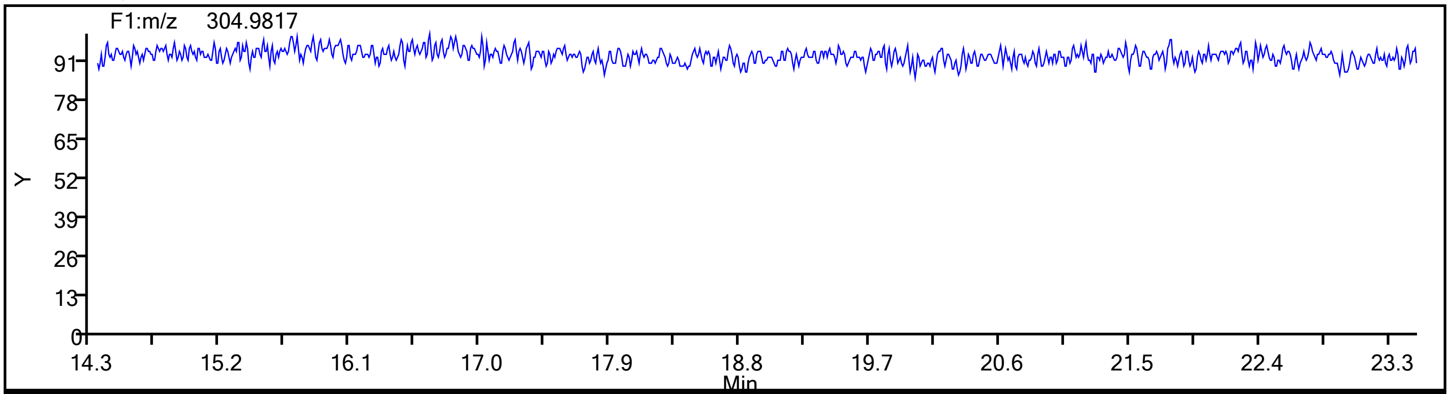

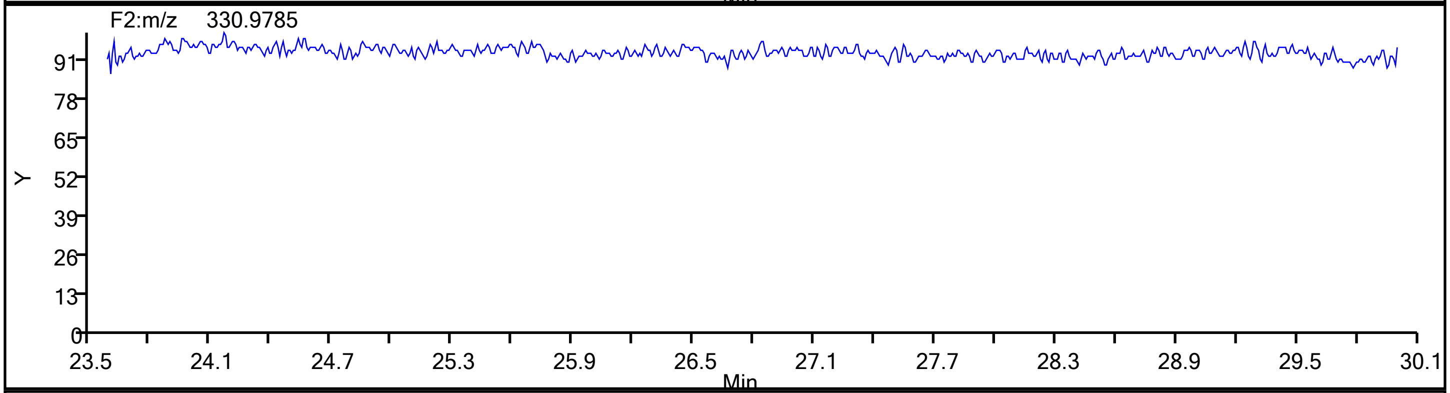

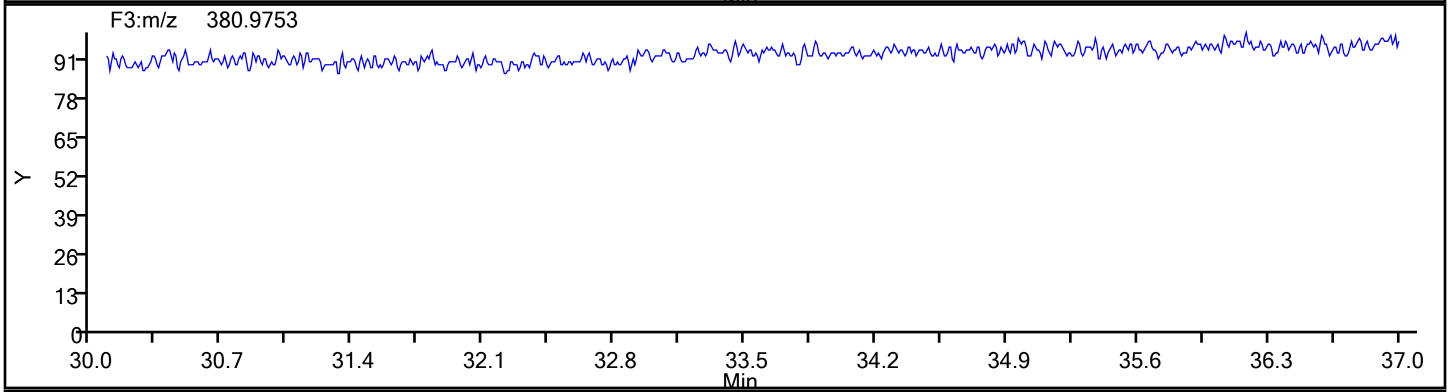

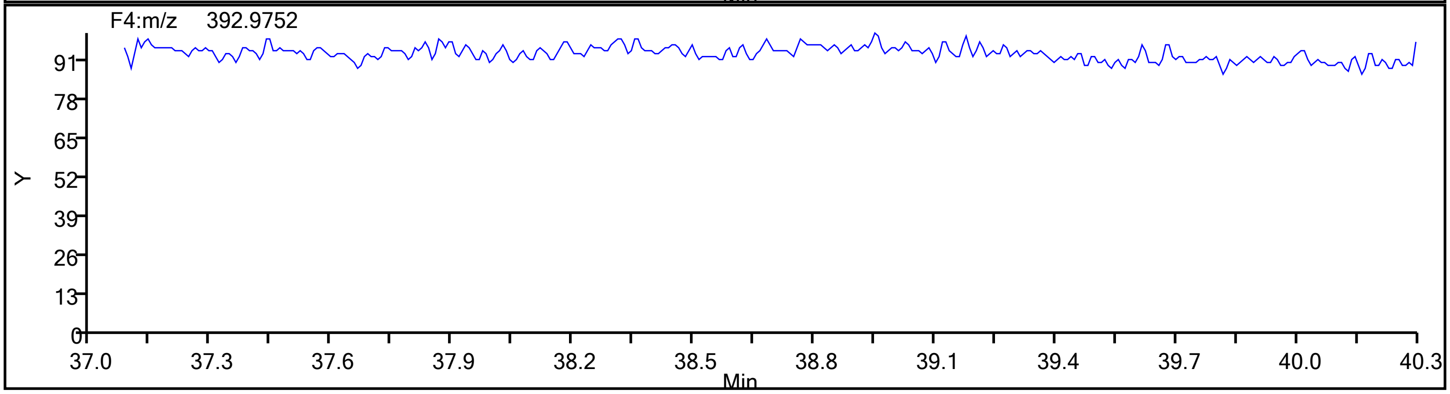

Report Date: 15-Mar-2021 11:40:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210312-114921.b\12mr21adfs1_3.d		
Injection Date:	12-Mar-2021 11:21:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	469779	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

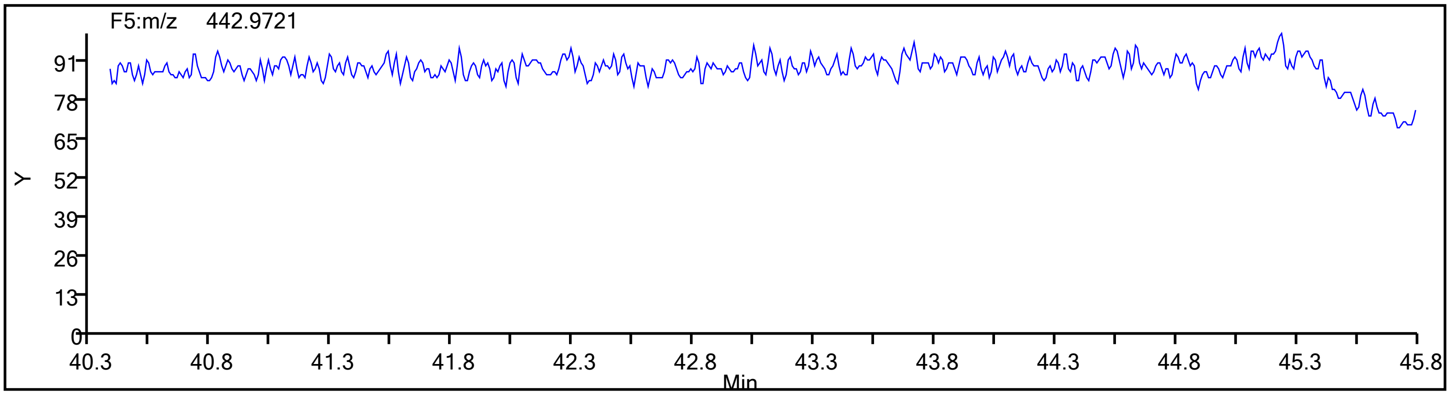

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-467785/1-A
Matrix: Water	Lab File ID: 10mr21dfs1_13.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1000(mL)	Date Analyzed: 03/10/2021 17:37
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.73
51207-31-9	2,3,7,8-TCDF	1.24	J	10	0.33
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.73
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.47
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.50
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.55
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.52
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.49
70648-26-9	1,2,3,4,7,8-HxCDF	1.77	J	50	0.55
57117-44-9	1,2,3,6,7,8-HxCDF	1.22	J	50	0.52
72918-21-9	1,2,3,7,8,9-HxCDF	1.61	J	50	0.45
60851-34-5	2,3,4,6,7,8-HxCDF	1.83	J	50	0.40
35822-46-9	1,2,3,4,6,7,8-HpCDD	5.95	J	50	0.44
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.29	J	50	0.43
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.98	J	50	0.49
3268-87-9	OCDD	15.6	J	100	0.73
39001-02-0	OCDF	4.48	J	100	1.1
41903-57-5	Total TCDD	5.33	J	10	0.73
30402-14-3	Total TCDF	1.24	J	10	0.33
36088-22-9	Total PeCDD	ND		50	0.73
30402-15-4	Total PeCDF	ND		50	0.50
34465-46-8	Total HxCDD	ND		50	1.0
55684-94-1	Total HxCDF	6.43	J	50	0.48
37871-00-4	Total HpCDD	9.54	J	50	0.44
38998-75-3	Total HpCDF	5.27	J	50	0.46

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-467785/1-A

Matrix: Water   Lab File ID: 10mr21dfs1_13.d

Analysis Method: 1613B   Date Collected:

Extract. Method: 1613B   Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1000(mL)   Date Analyzed: 03/10/2021 17:37

Con. Extract Vol.: 20(uL)   Dilution Factor: 1

Injection Volume: 2(uL)   Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 468973   Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		25-164
89059-46-1	13C-2,3,7,8-TCDF	68		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	59		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	59		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	62		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	52		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	63		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	59		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	67		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	59		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	56		26-138
114423-97-1	13C-OCDD	53		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	94		35-197

Report Date: 12-Mar-2021 09:23:06 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Lims ID: MB 320-467785/1-A
Client ID:
Sample Type: MB
Inject. Date: 10-Mar-2021 17:37:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-467785/1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 09:23:06 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1686

First Level Reviewer: bilottag Date: 11-Mar-2021 13:30:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.481	3091303	0.80	1E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.605	3261755	0.81	1.5437	68.4	68.4	0.2101	0.2101	68.35	
2,3,7,8-TCDF	18.613	2276	0.77	1.1258	0.0687	0.0620	0.0166	0.0166		RQM
A Non-2,3,7,8-sub-TCDF	18.182						0.0166	0.0166		U
S Total TCDF					0.0687	0.0620	0.0166	0.0166		RQ
D 13C-2,3,7,8-TCDD	19.816	1962200	0.80	0.9687	65.5	65.5	0.2226	0.2226	65.52	
2,3,7,8-TCDD	19.908						0.0363	0.0363		
$ 37Cl4-2,3,7,8-TCDD	19.850	1264880		1.0841	37.7	37.7	0.0457	0.0457	94.36	
A Non-2,3,7,8-sub-TCDD	18.946	6221	0.77	1.1904	0.2891	0.2663	0.0363	0.1394		RQ
S Total TCDD					0.2891	0.2663	0.0363	0.0363		RQ
D 13C-1,2,3,7,8-PeCDF	25.659	2373922	1.61	1.3124	58.5	58.5	0.3241	0.3241	58.51	
1,2,3,7,8-PeCDF	25.714						0.0236	0.0236		
D 13C-2,3,4,7,8-PeCDF	27.041	2564470	1.62	1.3352	62.1	62.1	0.3186	0.3186	62.13	
2,3,4,7,8-PeCDF	27.112						0.0252	0.0252		
A F1 PeCDFs	22.838						0.0141	0.0141		
A Non-2,3,7,8-sub-PeCDF	26.271						0.0244	0.0244		
S Total PeCDF							0.0252	0.0252		
D 13C-1,2,3,7,8-PeCDD	27.799	1408728	1.63	0.7716	59.1	59.1	0.1079	0.1079	59.06	
1,2,3,7,8-PeCDD	27.883						0.0365	0.0365		
A Non-2,3,7,8-sub-PeCDD	26.681						0.0365	0.0365		
S Total PeCDD							0.0365	0.0365		
D 13C-1,2,3,4,7,8-HxCDF	33.571	1722834	0.53	1.0931	56.7	56.7	0.2060	0.2060	56.69	
1,2,3,4,7,8-HxCDF	33.647	1807	1.24	1.1831	0.1033	0.0887	0.0274	0.0274		RQM
D 13C-1,2,3,6,7,8-HxCDF	33.765	1967264	0.52	1.1278	62.7	62.7	0.1997	0.1997	62.74	
1,2,3,6,7,8-HxCDF	33.858	1498	1.24	1.2484	0.0694	0.0610	0.0259	0.0259		RQMa
D 13C-2,3,4,6,7,8-HxCDF	34.767	1953871	0.53	1.0552	66.6	66.6	0.2134	0.2134	66.60	
2,3,4,6,7,8-HxCDF	34.809	2274	1.21	1.2750	0.0913	0.0913	0.0202	0.0202		M
D 13C-1,2,3,7,8,9-HxCDF	35.787	1621445	0.54	0.9938	58.7	58.7	0.2266	0.2266	58.68	
1,2,3,7,8,9-HxCDF	35.820	1694	1.24	1.2953	0.0897	0.0807	0.0225	0.0225		RQM
A Non-2,3,7,8-sub-HxCDF	33.585						0.0237	0.0237		U
S Total HxCDF					0.3536	0.3216	0.0240	0.0240		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	35.576	2780202	1.28	1.1E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.028	1146602	1.37	0.7895	52.2	52.2	0.1637	0.1637	52.24	
1,2,3,4,7,8-HxCDD	35.086						0.0276	0.0276		
D 13C-1,2,3,6,7,8-HxCDD	35.163	1504101	1.22	0.8495	63.7	63.7	0.1521	0.1521	63.69	
1,2,3,6,7,8-HxCDD	35.212						0.0258	0.0258		
1,2,3,7,8,9-HxCDD	35.633						0.0244	0.0244		
A Non-2,3,7,8-sub-HxCDD	34.125						0.0258	0.0513		RQU
S Total HxCDD							0.0513	0.0513		
D 13C-1,2,3,4,6,7,8-HpCDF	37.828	1277561	0.45	0.7854	58.5	58.5	0.3561	0.3561	58.51	
1,2,3,4,6,7,8-HpCDF	37.854	3119	1.04	1.4859	0.1946	0.1643	0.0216	0.0216		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	39.168	1133792	0.46	0.7230	56.4	56.4	0.3868	0.3868	56.41	
1,2,3,4,7,8,9-HpCDF	39.210	1576	1.04	1.4048	0.1119	0.0989	0.0245	0.0245		RQ
A Non-2,3,7,8-sub-HpCDF	38.512						0.0230	0.0230		
S Total HpCDF					0.3065	0.2633	0.0230	0.0230		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	38.856	1074308	1.04	0.6413	60.3	60.3	0.2049	0.2049	60.25	
1,2,3,4,6,7,8-HpCDD	38.864	3675	0.95	1.1489	0.2977	0.2977	0.0219	0.0219		M
A Non-2,3,7,8-sub-HpCDD	38.524	2215	1.03	1.1489	0.1795	0.1795	0.0219	0.1795		M
S Total HpCDD					0.4772	0.4772	0.0219	0.0219		
D 13C-OCDD	41.335	1512936	0.92	0.5141	105.9	105.9	0.2280	0.2280	52.93	
OCDF	41.427	2676	0.93	1.5776	0.2242	0.2242	0.0544	0.0544		M
OCDD	41.343	6908	0.83	1.1706	0.7801	0.7801	0.0366	0.0366		M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 12-Mar-2021 09:23:06   Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Lims ID: MB 320-467785/1-A
Client ID:
Sample Type: MB
Inject. Date: 10-Mar-2021 17:37:00   ALS Bottle#: 0   Worklist Smp#: 12
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: mb 320-467785/1-a
Operator ID: Xcalibur_System   Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 09:23:06   Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1686

First Level Reviewer: bilottag   Date: 11-Mar-2021 13:30:26

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.481	19.547	-4		1376900	215431	271	677	795		a
333.9338	19.481	19.547	-4		1714403	279385	156	390	1791	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.605	18.671	-4	0.955	1458109	231106	448	1120	516		
317.9389	18.613	18.671	-3	0.955	1803646	289311	194	485	1491	0.81(0.65-0.89)	
2,3,7,8-TCDF											RQM
303.9016	18.613	18.706	-6	1.000	1237	227	9	22	25		M
	Empc Correction				990	159	9	22	18		
305.8987	18.588	18.706	-7	0.999	1286	207	30	75	7	0.96(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.182						9	22			
305.8987	18.182						30	75			
13C-2,3,7,8-TCDD											
331.9368	19.816	19.882	-4	1.017	870579	128126	271	677	473		
333.9338	19.816	19.882	-4	1.017	1091621	160928	156	390	1032	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.908						39	97			
321.8936	19.908						11	27			
37Cl4-2,3,7,8-TCDD											
327.8847	19.850	19.917	-4	1.019	1264880	188888	98	245	1927		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	16.277	18.946	-160	0.821	1452	243	39	97	6		
321.8936	16.242	18.946	-162	0.820	1805	351	11	27	32	0.80(0.65-0.89)	
319.8965	16.706	18.946	-134	0.843	1820	357	39	97	9		
	Empc Correction				1289	238	39	97	6		
321.8936	16.706	18.946	-134	0.843	1675	310	11	27	28	1.09(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	25.659	25.717	-3	1.317	1464637	250151	543	1357	461		
353.8970	25.659	25.717	-3	1.317	909285	156770	299	747	524	1.61(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	25.734						10	25			
341.8567	25.734						33	82			
13C-2,3,4,7,8-PeCDF											
351.9000	27.041	27.107	-4	1.388	1584910	249586	543	1357	460		
353.8970	27.049	27.107	-3	1.388	979560	151863	299	747	508	1.62(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.124						10	25			
341.8567	27.124						33	82			
A F1 PeCDFs											
339.8597	22.838						3	7			
341.8567	22.838						22	55			
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.271						10	25			
341.8567	26.271						33	82			
13C-1,2,3,7,8-PeCDD											
367.8949	27.799	27.857	-4	1.427	873130	128127	118	295	1086		
369.8919	27.790	27.857	-4	1.427	535598	76865	47	117	1635	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.883						28	70			
357.8516	27.883						6	15			
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.681						28	70			
357.8516	26.681						6	15			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.571	33.620	-3	0.944	599054	95110	159	397	598		
385.8610	33.571	33.620	-3	0.944	1123780	182264	329	822	554	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											RQM
373.8208	33.647	33.646	0	1.002	1298	227	21	52	11		M
	Empc Correction				1000	140	21	52	7		
375.8178	33.605	33.646	-2	1.001	807	113	15	37	8	1.61(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.765	33.822	-3	0.949	677115	97881	159	397	616		
385.8610	33.773	33.822	-3	0.949	1290149	180740	329	822	549	0.52(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQMa
373.8208	33.858	33.839	1	1.003	1035	132	21	52	6		M
	Empc Correction				829	161	21	52	8		
375.8178	33.807	33.839	-2	1.001	669	130	15	37	9	1.55(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.767	34.808	-2	0.977	678553	117438	159	397	739		
385.8610	34.767	34.808	-2	0.977	1275318	231327	329	822	703	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	34.809	34.825	-1	1.001	1244	252	21	52	12		M
375.8178	34.851	34.825	2	1.002	1030	134	15	37	9	1.21(1.05-1.43)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.787	35.827	-2	1.006	568733	106842	159	397	672		
385.8610	35.787	35.827	-2	1.006	1052712	202340	329	822	615	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQM
373.8208	35.820	35.836	-1	1.001	938	207	21	52	10		M
375.8178	35.804	35.836	-2	1.000	945	132	15	37	9	0.99(1.05-1.43)	
	Empc Correction				756	166	15	37	11		
A Non-2,3,7,8-sub-HxCDF											U
373.8208	33.585						21	52			
375.8178	33.585						15	37			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.576	35.617	-2		1558548	307431	164	410	1875		
403.8529	35.584	35.617	-2		1221654	234325	116	290	2020	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.028	35.061	-2	0.985	661997	135728	164	410	828		
403.8529	35.028	35.061	-2	0.985	484605	102392	116	290	883	1.37(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.086						12	30			
391.8127	35.086						17	42			
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.163	35.195	-2	0.988	826037	149592	164	410	912		
403.8529	35.163	35.195	-2	0.988	678064	124025	116	290	1069	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.212						12	30			
391.8127	35.212						17	42			
1,2,3,7,8,9-HxCDD											
389.8158	35.633						12	30			
391.8127	35.633						17	42			
A Non-2,3,7,8-sub-HxCDD											U
389.8158	34.125	34.125	0	0.970	700	110	12	30			
	Empc Correction				410	95	12	30	0		
391.8127	34.125	34.125	0	0.970	331	77	17	42		2.11(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.828	37.860	-2	1.063	396180	96873	242	605	400		
419.8220	37.828	37.860	-2	1.063	881381	215219	364	910	591	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7817	37.854	37.869	-1	1.001	2165	481	29	72	17		
	Empc Correction				1590	307	29	72	11		
409.7788	37.854	37.869	-1	1.001	1529	296	11	27	27	1.42(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.168	39.199	-2	1.101	356734	91328	242	605	377		
419.8220	39.176	39.199	-1	1.101	777058	199230	364	910	547	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQ
407.7817	39.210	39.208	0	1.001	1010	223	29	72	8		
	Empc Correction				803	170	29	72	6		
409.7788	39.210	39.208	0	1.001	773	164	11	27	15	1.31(0.88-1.20)	

Report Date: 12-Mar-2021 09:23:06 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.512						29	72			
409.7788	38.512						11	27			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.856	38.888	-2	1.092	548026	146961	146	365	1007		
437.8140	38.856	38.888	-2	1.092	526282	138821	139	347	999	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	38.864	38.896	-2	1.000	1787	382	18	45	21		M
425.7737	38.881	38.896	-1	1.001	1888	473	11	27	43	0.95(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											M
423.7767	38.190	38.524	-20	0.983	1124	233	18	45	13		M
425.7737	38.174	38.524	-21	0.982	1091	271	11	27	25	1.03(0.88-1.20)	
13C-OCDD											
469.7780	41.335	41.358	-1	1.162	724461	176369	105	262	1680		
471.7750	41.335	41.358	-1	1.162	788475	196633	149	372	1320	0.92(0.76-1.02)	
OCDF											M
441.7428	41.427	41.434	0	1.002	1292	373	18	45	21		M
443.7399	41.427	41.434	0	1.002	1384	393	46	115	9	0.93(0.76-1.02)	M
OCDD											M
457.7377	41.343	41.367	-1	1.000	3137	708	13	32	54		M
459.7348	41.343	41.367	-1	1.000	3771	1053	19	47	55	0.83(0.76-1.02)	M

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
Lims ID:	MB 320-467785/1-A		
Client ID:			
Inject. Date:	10-Mar-2021 17:37:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 18.182

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3261755	520417

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3261755	520417

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags

Compound is Marked ND

Report Date: 12-Mar-2021 09:23:06 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
Lims ID:	MB 320-467785/1-A		
Client ID:			
Inject. Date:	10-Mar-2021 17:37:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDD, RT: 18.946

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	1962200	289054

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	1962200	289054

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.277	1452	243	1805	351	0.1394	0.80	
16.706	1820	357	1675	310	0.1496	1.09	RQ
16.706	1289	238	1675	310	0.1269		Empc Correction
Signal Totals:							
	2741	481	3480	661			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6752	1261				0.94	RQ
	6221	1142					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.2891 = (6752 * 100.000) / (1962200 * 1.190)

Empc Amount: 0.2663 = (6221 * 100.000) / (1962200 * 1.190)

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
Lims ID:	MB 320-467785/1-A		
Client ID:			
Inject. Date:	10-Mar-2021 17:37:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDF, RT: 33.585

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	1.183	D 13C-1,2,3,4,7,8-HxCDF	100.000	1722834	277374
1,2,3,6,7,8-HxCDF	1.248	D 13C-1,2,3,6,7,8-HxCDF	100.000	1967264	278621
2,3,4,6,7,8-HxCDF	1.275	D 13C-2,3,4,6,7,8-HxCDF	100.000	1953871	348765
1,2,3,7,8,9-HxCDF	1.295	D 13C-1,2,3,7,8,9-HxCDF	100.000	1621445	309182

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.250		100.000	1816353	303485

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
Lims ID:	MB 320-467785/1-A		
Client ID:			
Inject. Date:	10-Mar-2021 17:37:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDD, RT: 34.125

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	1.095	D 13C-1,2,3,4,7,8-HxCDD	100.000	1146602	238120
1,2,3,6,7,8-HxCDD	1.020	D 13C-1,2,3,6,7,8-HxCDD	100.000	1504101	273617
1,2,3,7,8,9-HxCDD	1.155				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.090		100.000	1325351	255868

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
34.136	700	110	331	77	0.0714	2.11	RQ
34.136	410	95	331	77	0.0513		Empc Correction

Compound is Marked ND

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
Lims ID:	MB 320-467785/1-A		
Client ID:			
Inject. Date:	10-Mar-2021 17:37:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 38.524

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.149	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	1074308	285782

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.149		100.000	1074308	285782

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.190	1124	233	1091	271	0.1795	1.03	M
Signal Totals:							
	1124	233	1091	271			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	2215	504				1.03	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.1795 = (2215 * 100.000) / (1074308 * 1.149)

QC Flag Legend

Review Flags

M - Manually Integrated

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	18.61
Area:	1519
Amount:	0.089295
Amount Units:	pg/ul

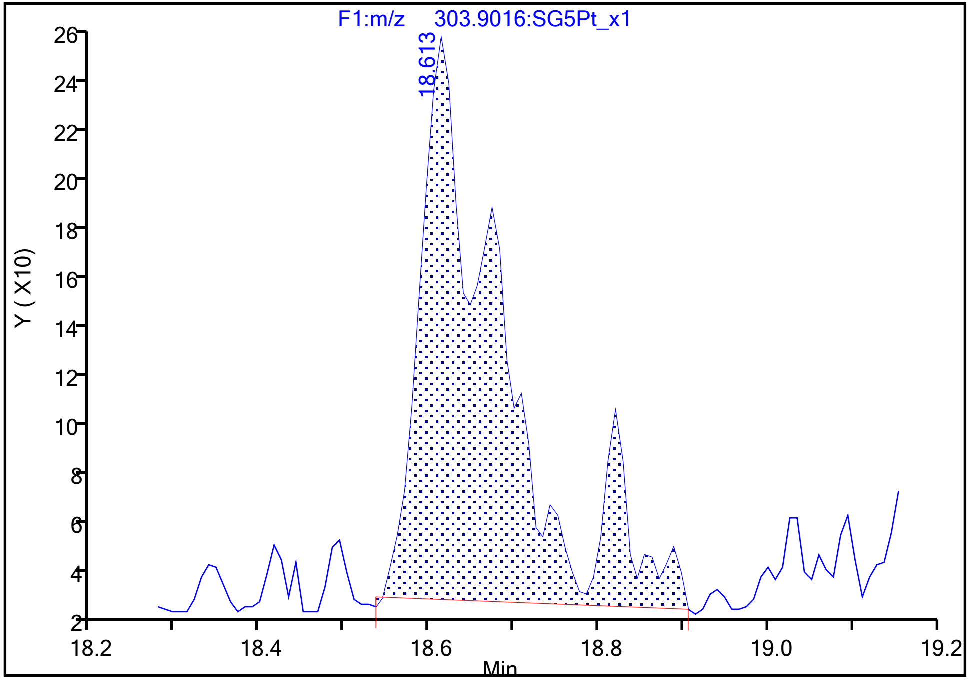

Manual Integration Results

RT:	18.61
Area:	1237
Amount:	0.068707
Amount Units:	pg/ul

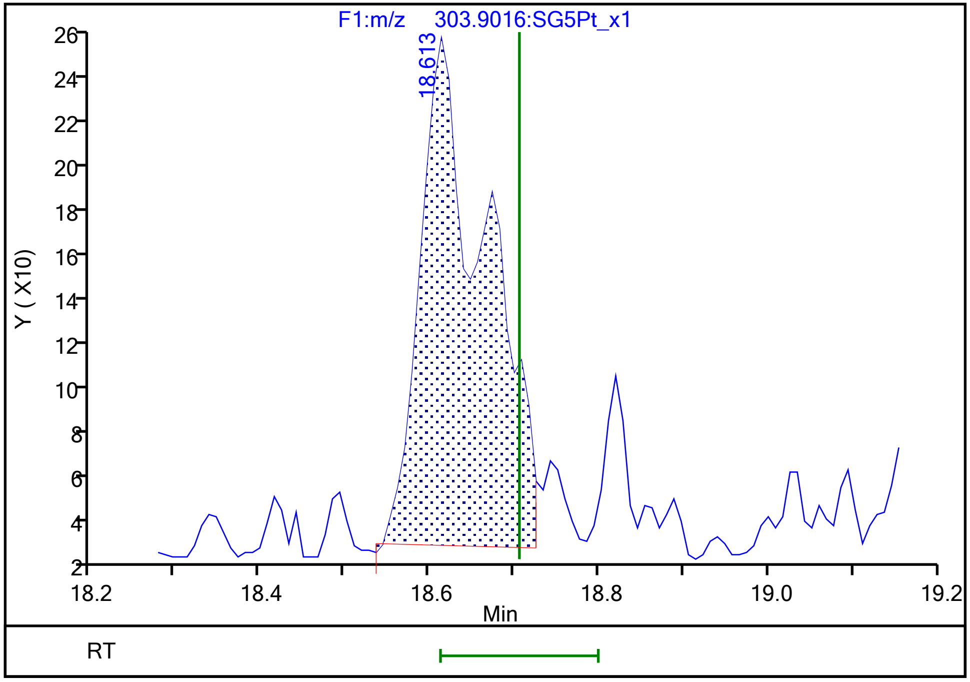

Reviewer: dadunj, 12-Mar-2021 09:19:48

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 18.59
Area: 1760
Amount: 0.089295
Amount Units: pg/ul

Processing Integration Results

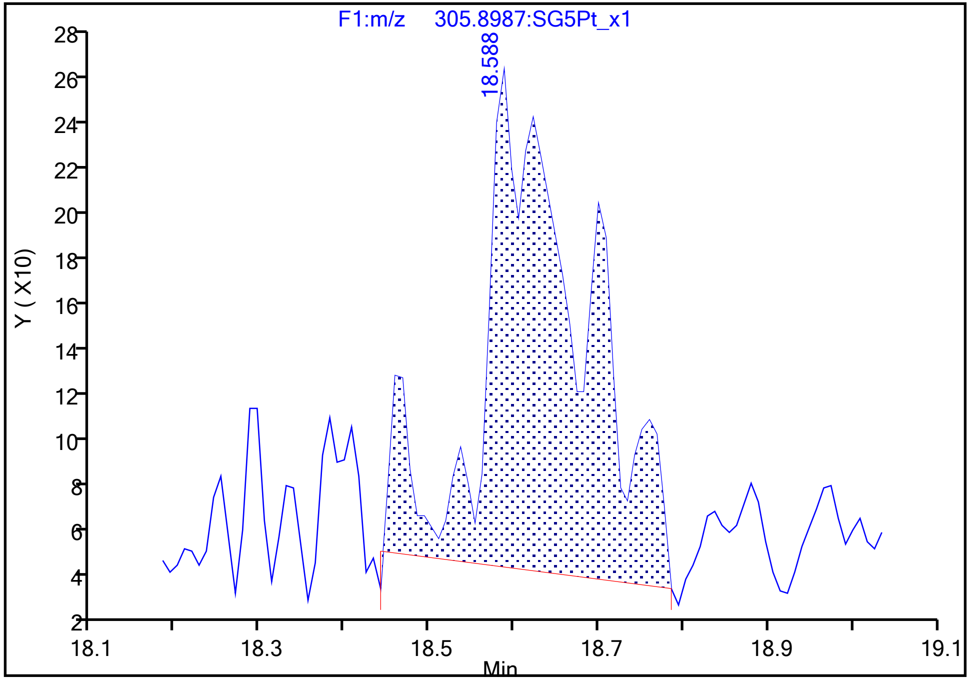

RT: 18.59
Area: 1286
Amount: 0.068707
Amount Units: pg/ul

Manual Integration Results

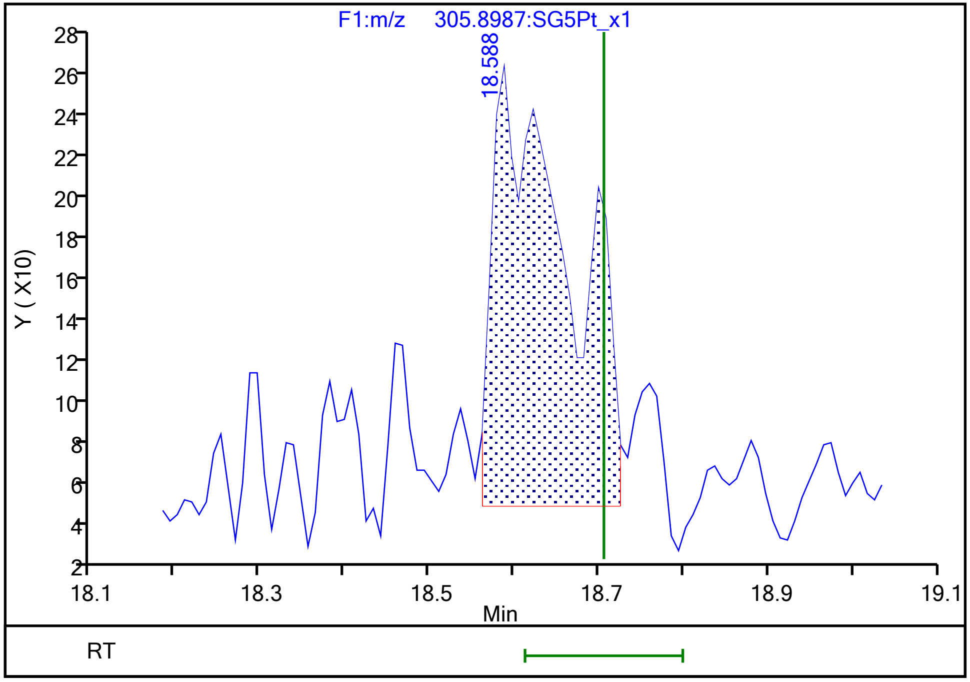

Reviewer: dadunj, 12-Mar-2021 09:19:50
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

RT:	33.65
Area:	2333
Amount:	0.154046
Amount Units:	pg/ul

Processing Integration Results

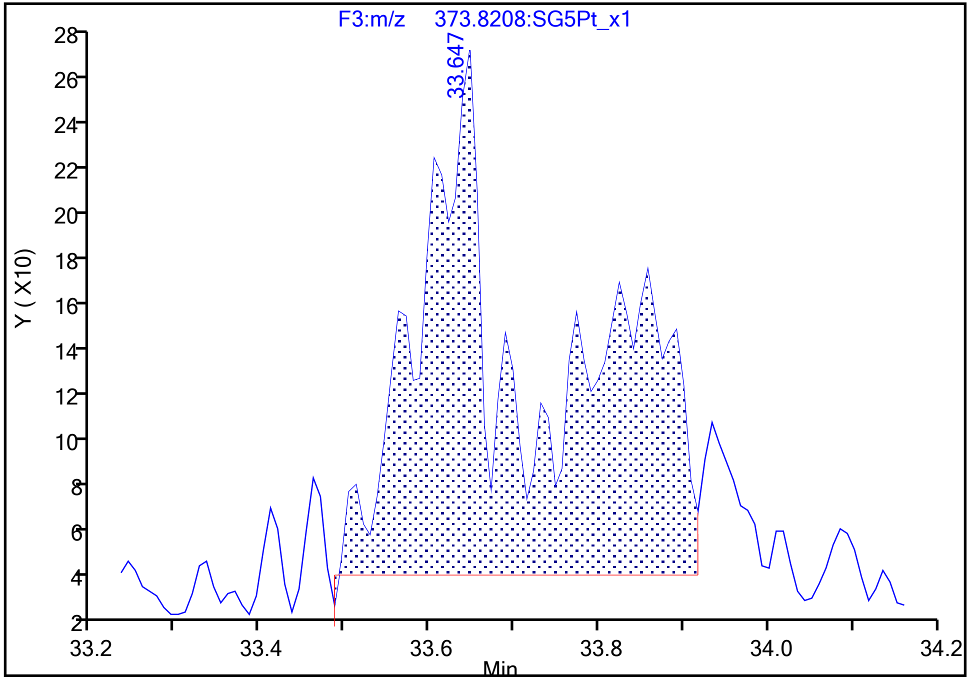

RT:	33.65
Area:	1298
Amount:	0.103270
Amount Units:	pg/ul

Manual Integration Results

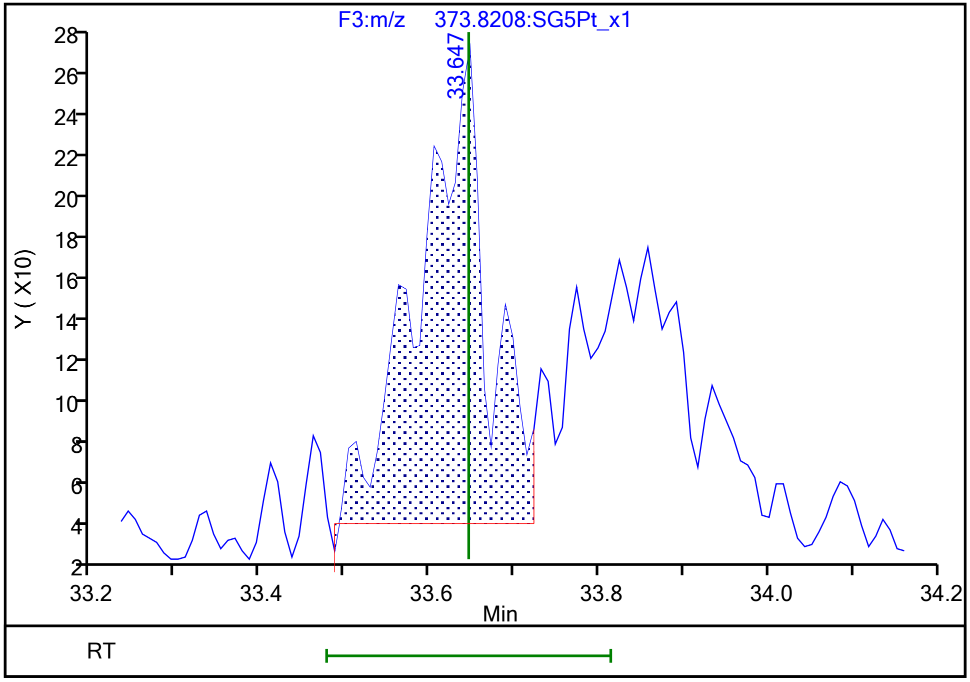

Reviewer: dadunj, 12-Mar-2021 09:20:24

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Not Detected

Expected RT: 33.84

Processing Integration Results

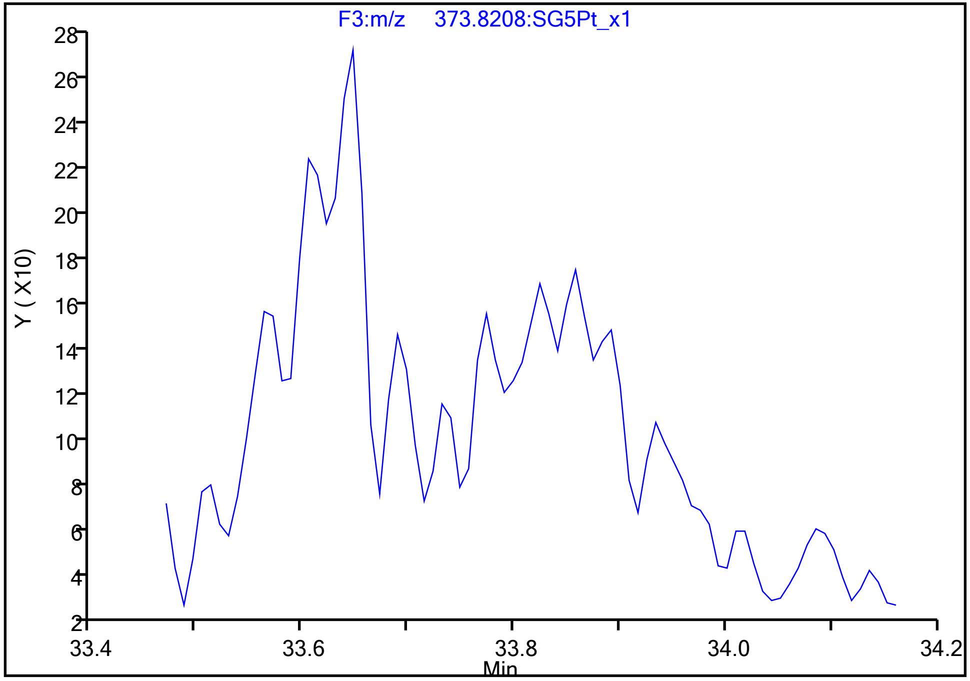

RT: 33.86

Area: 1035

Amount: 0.069384

Amount Units: pg/ul

Manual Integration Results

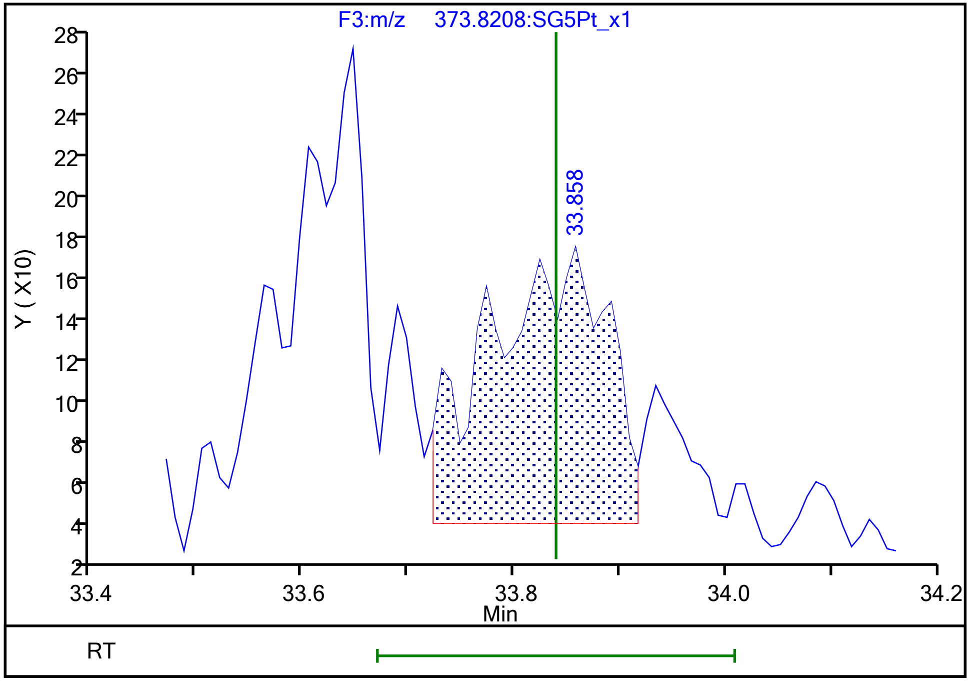

Reviewer: dadunj, 12-Mar-2021 09:20:30

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Injection Date: 10-Mar-2021 17:37:00 Instrument ID: DFS 1
Lims ID: MB 320-467785/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Not Detected
Expected RT: 33.84

Processing Integration Results

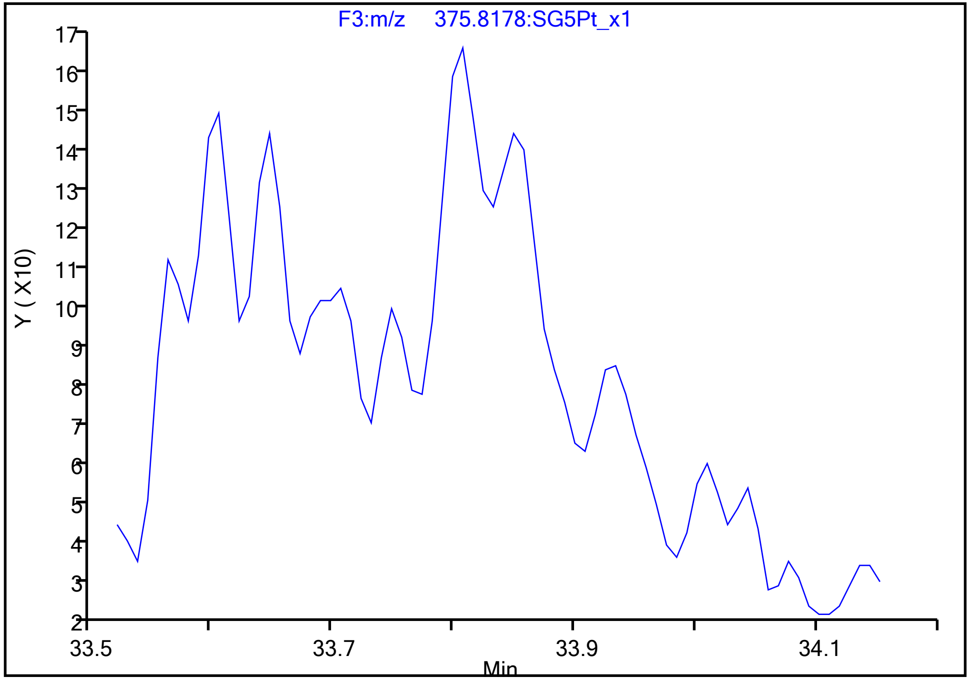

Manual Integration Results

RT: 33.81
Area: 669
Amount: 0.069384
Amount Units: pg/ul

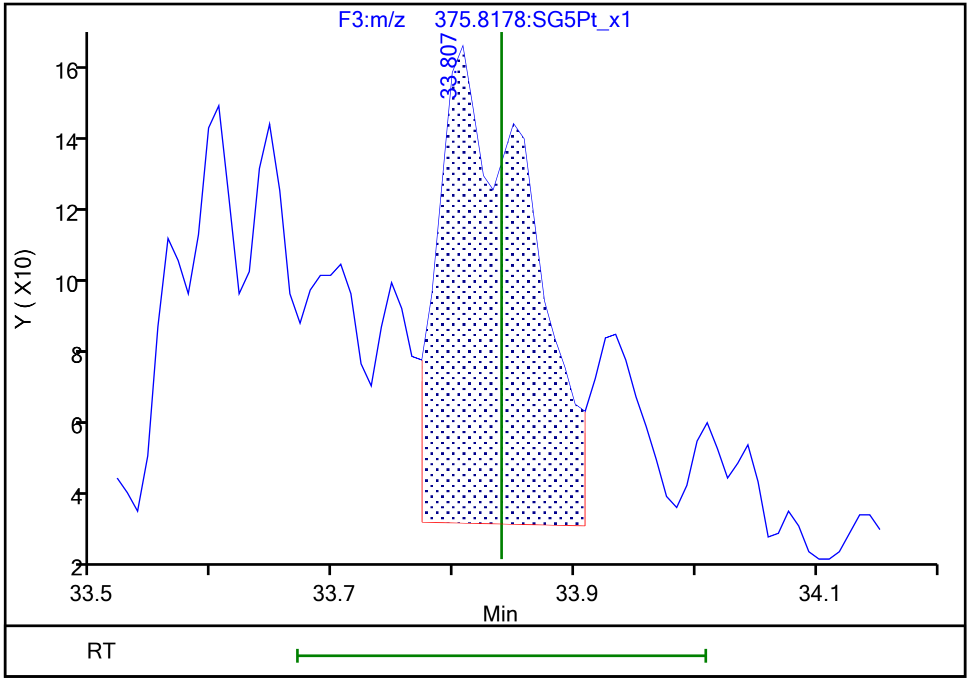

Reviewer: dadunj, 12-Mar-2021 09:20:33
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 09:23:07
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Injection Date: 10-Mar-2021 17:37:00
Instrument ID: DFS 1
Lims ID: MB 320-467785/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 12
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT: 34.85
Area: 1077
Amount: 0.060132
Amount Units: pg/ul

Processing Integration Results

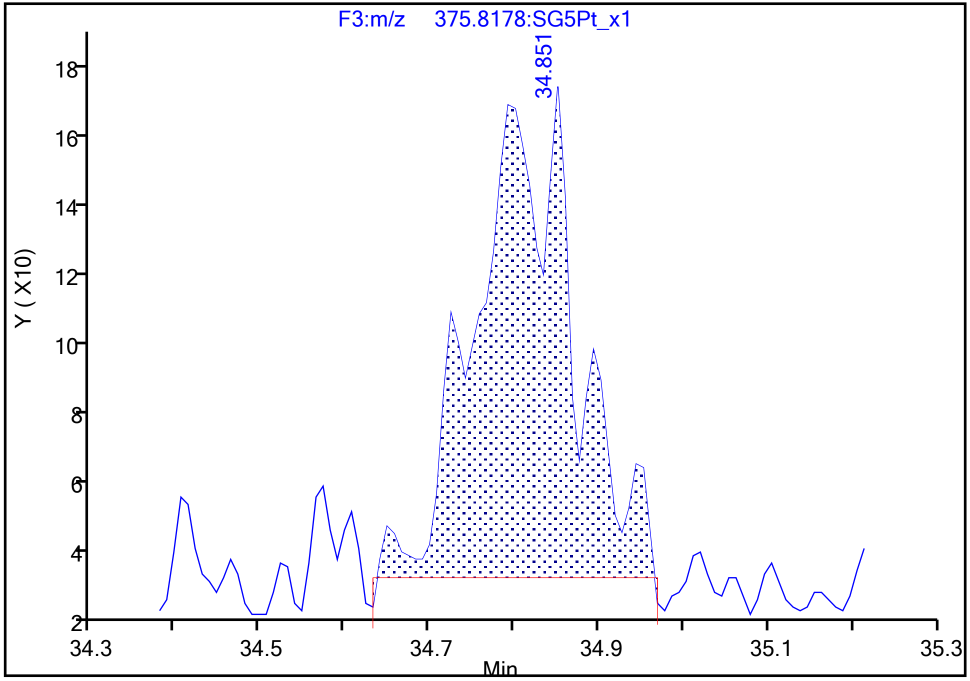

RT: 34.85
Area: 1030
Amount: 0.091281
Amount Units: pg/ul

Manual Integration Results

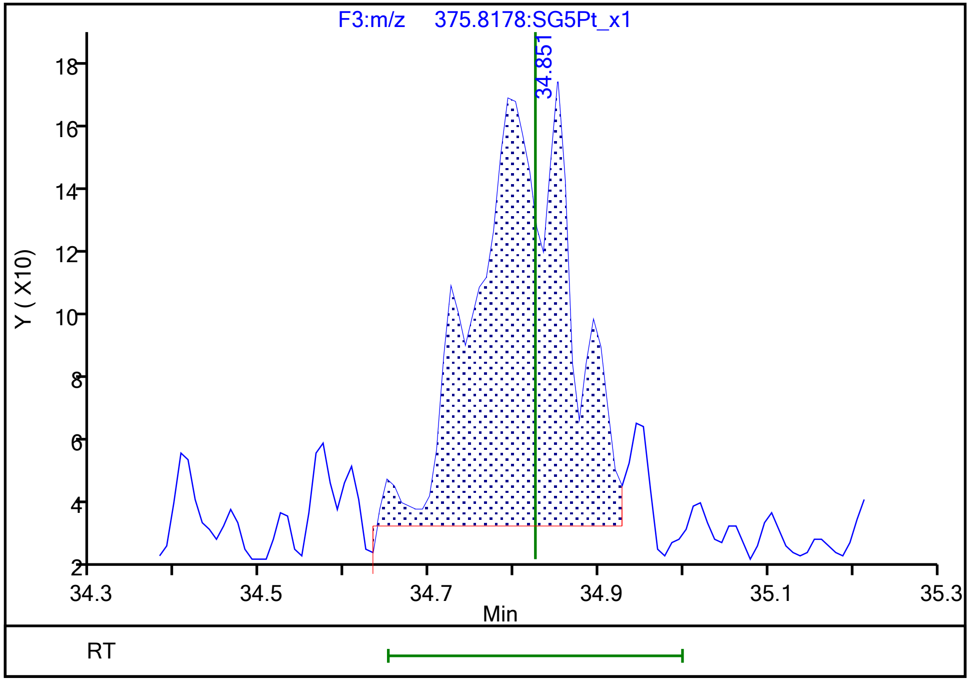

Reviewer: dadunj, 12-Mar-2021 09:20:48
Audit Action: Split an Integrated Peak
Audit Reason: Split Peak

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT: 34.81
Area: 421
Amount: 0.060132
Amount Units: pg/ul

Processing Integration Results

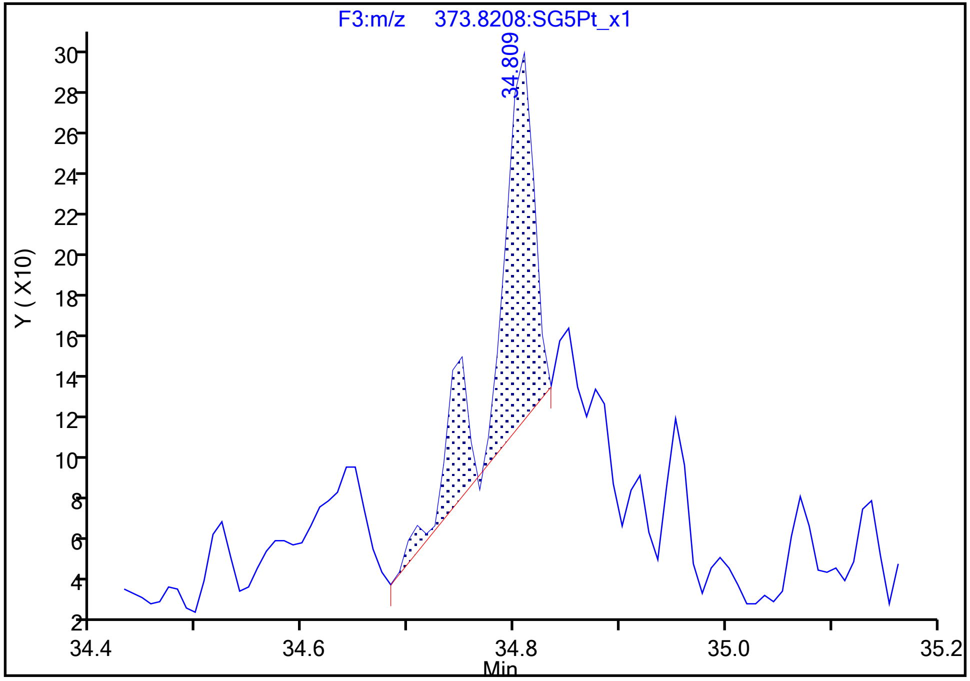

RT: 34.81
Area: 1244
Amount: 0.091281
Amount Units: pg/ul

Manual Integration Results

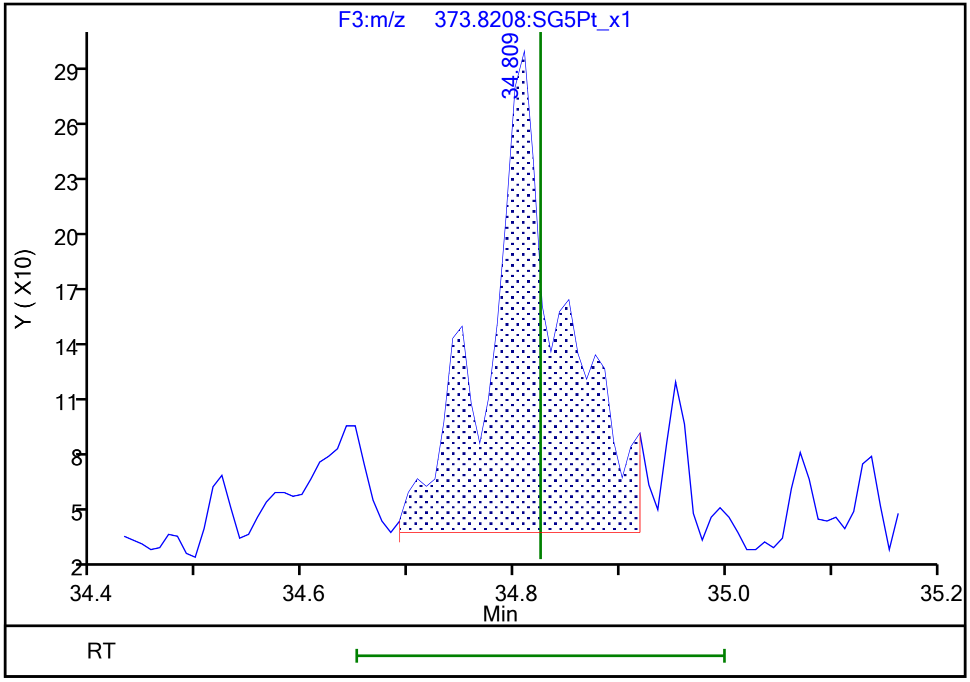

Reviewer: dadunj, 12-Mar-2021 09:20:49

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Injection Date: 10-Mar-2021 17:37:00 Instrument ID: DFS 1
Lims ID: MB 320-467785/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT: 35.82
Area: 970
Amount: 0.091179
Amount Units: pg/ul

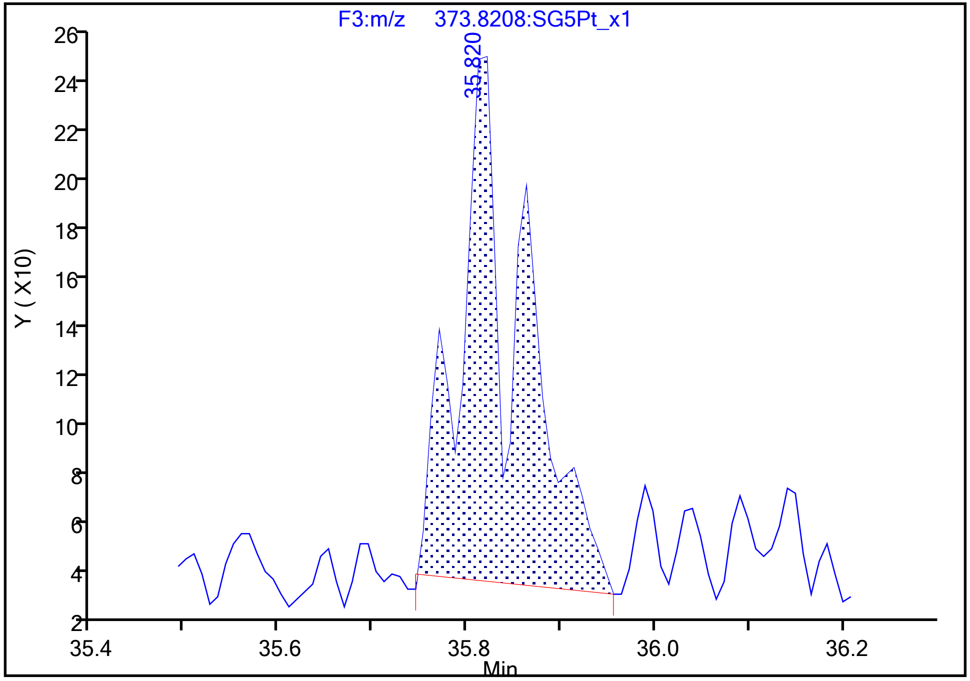

Manual Integration Results

RT: 35.82
Area: 938
Amount: 0.089656
Amount Units: pg/ul

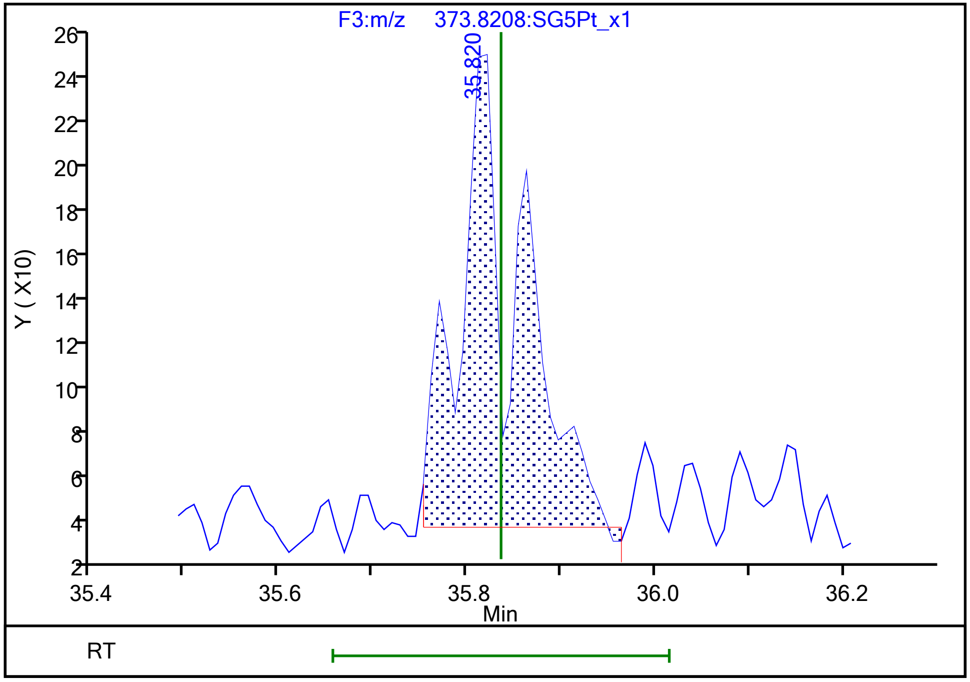

Reviewer: dadunj, 12-Mar-2021 09:21:02
Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 12-Mar-2021 09:23:07

Chrom Revision: 2.3 05-Feb-2021 00:13:28
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 37.85
Area: 1594
Amount: 0.198021
Amount Units: pg/ul

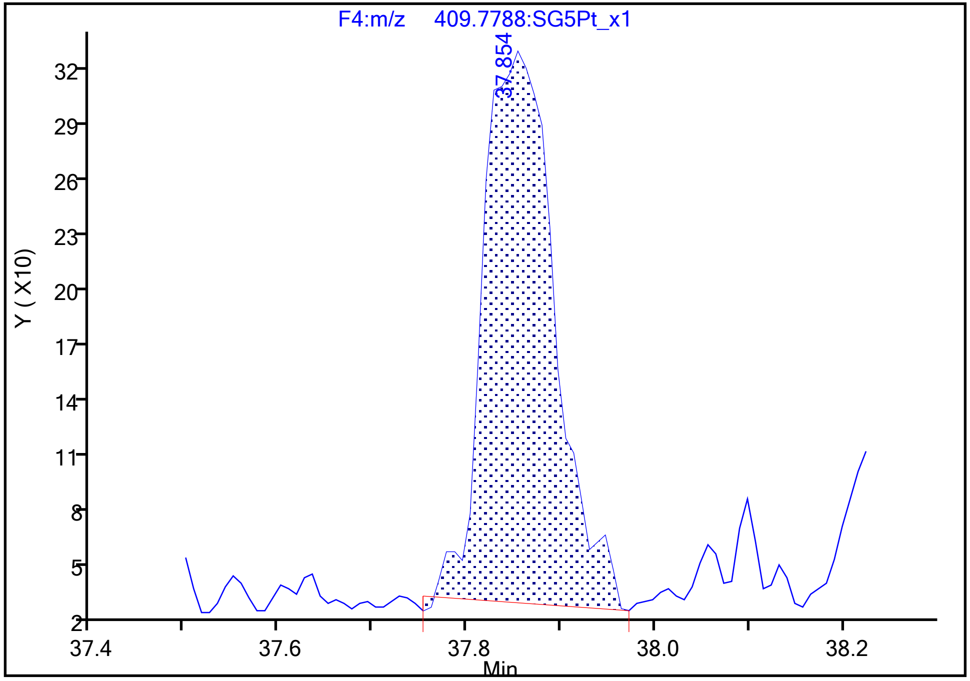

Manual Integration Results

RT: 37.85
Area: 1529
Amount: 0.194597
Amount Units: pg/ul

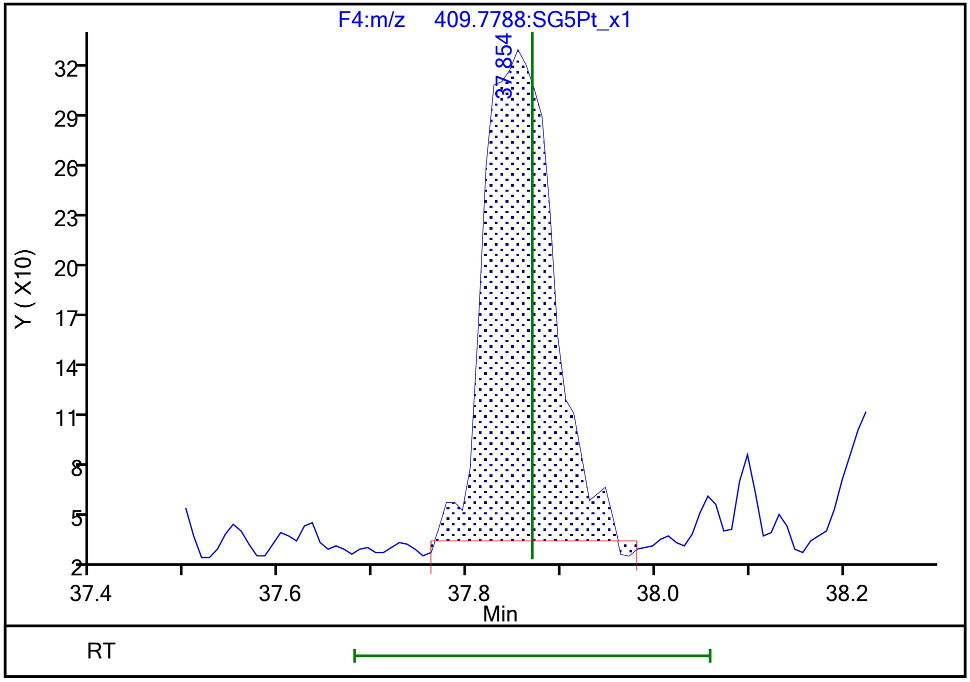

Reviewer: dadunj, 12-Mar-2021 09:21:24

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	38.86
Area:	1918
Amount:	0.313048
Amount Units:	pg/ul

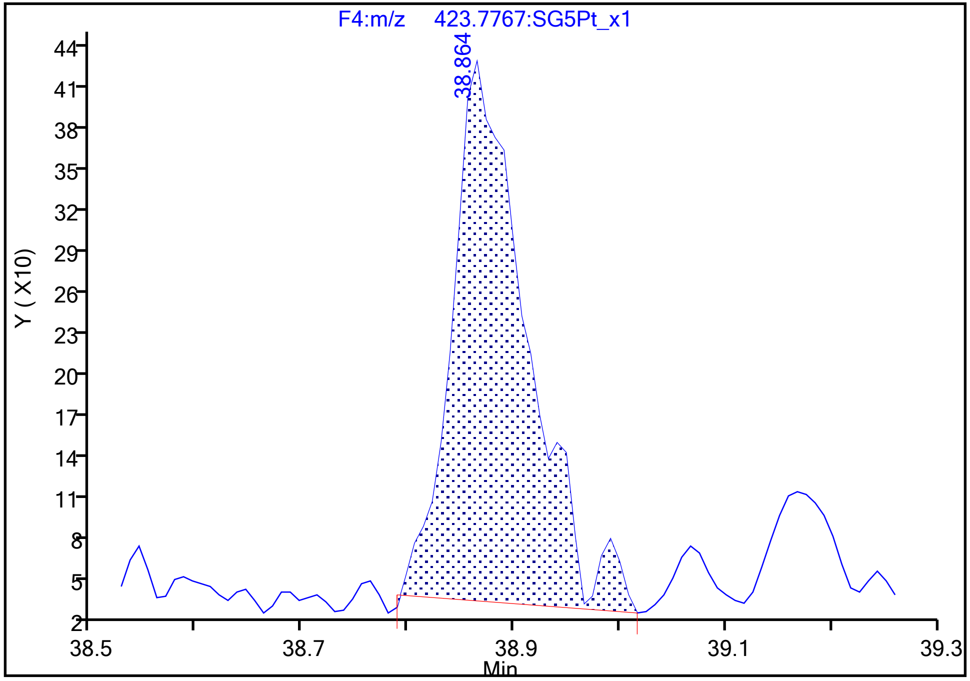

Manual Integration Results

RT:	38.86
Area:	1787
Amount:	0.297736
Amount Units:	pg/ul

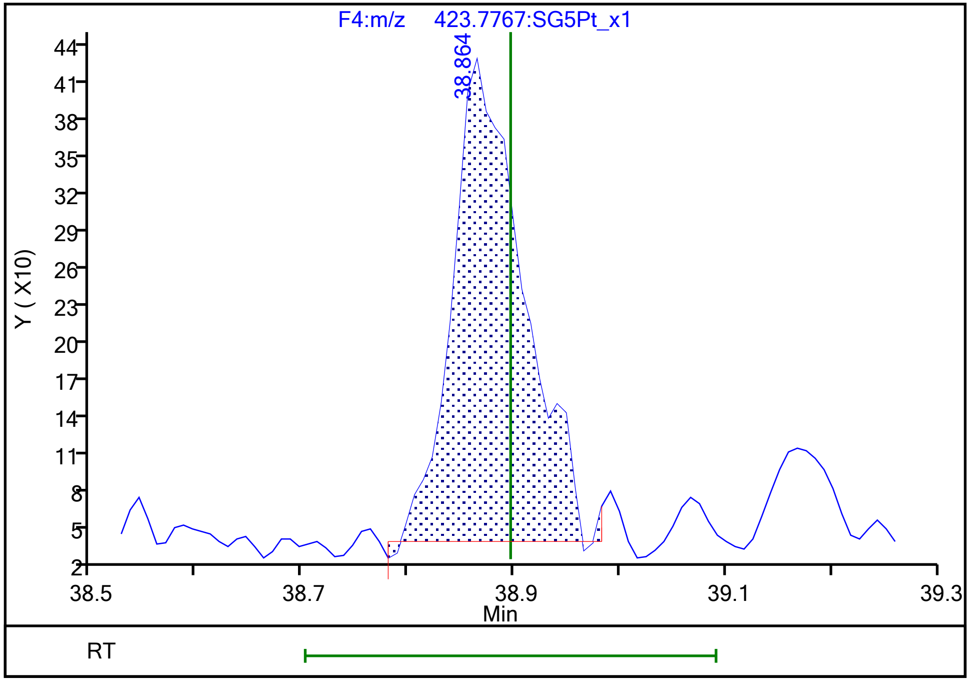

Reviewer: dadunj, 12-Mar-2021 09:21:36

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT:	38.88
Area:	1946
Amount:	0.313048
Amount Units:	pg/ul

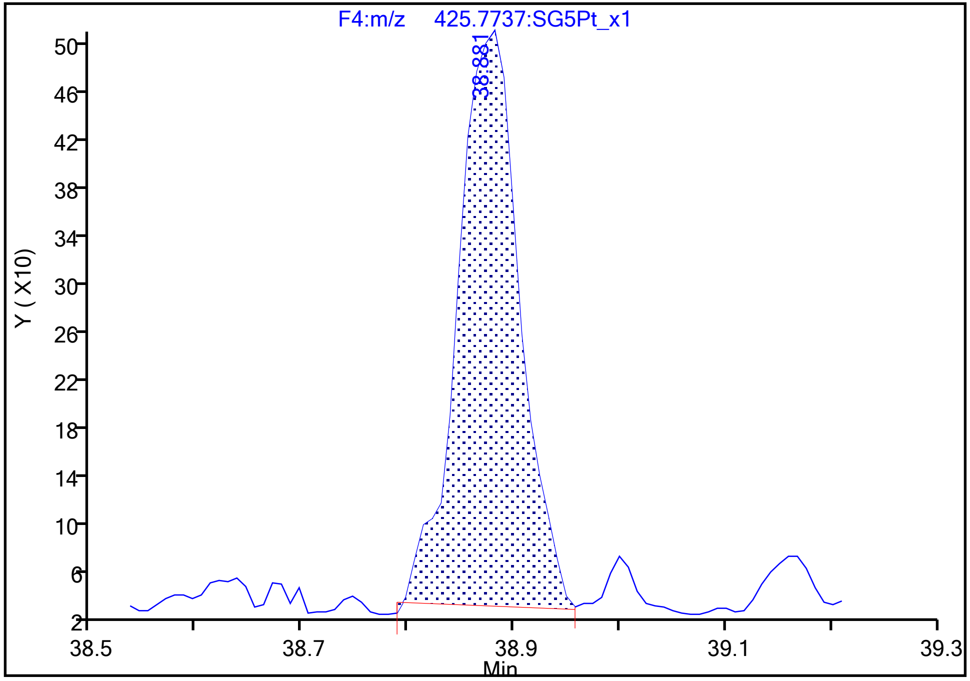

Manual Integration Results

RT:	38.88
Area:	1888
Amount:	0.297736
Amount Units:	pg/ul

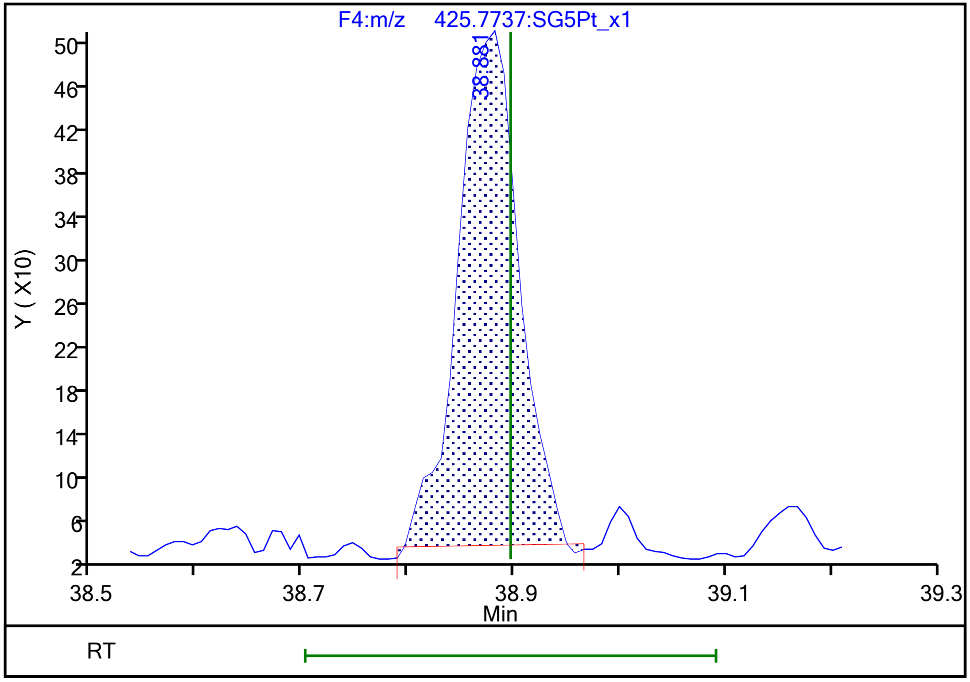

Reviewer: dadunj, 12-Mar-2021 09:21:41

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.14- 38.90)

Signal: 1

Processing Integration Results

RT = 38.190 Area = 1180

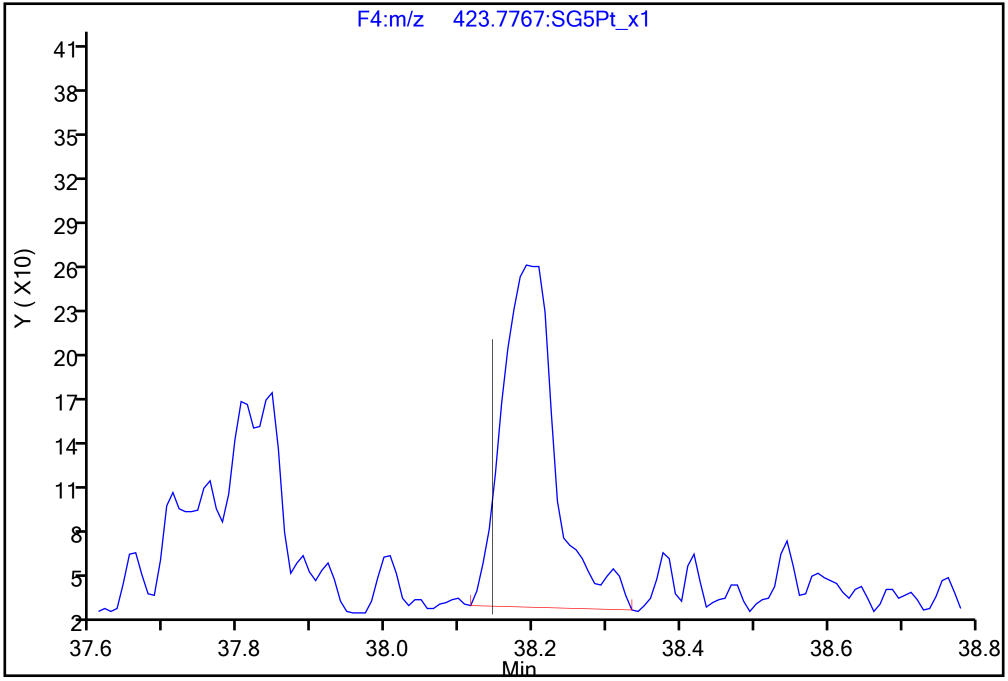

Manual Integration Results

RT = 38.190 Area = 1124 M

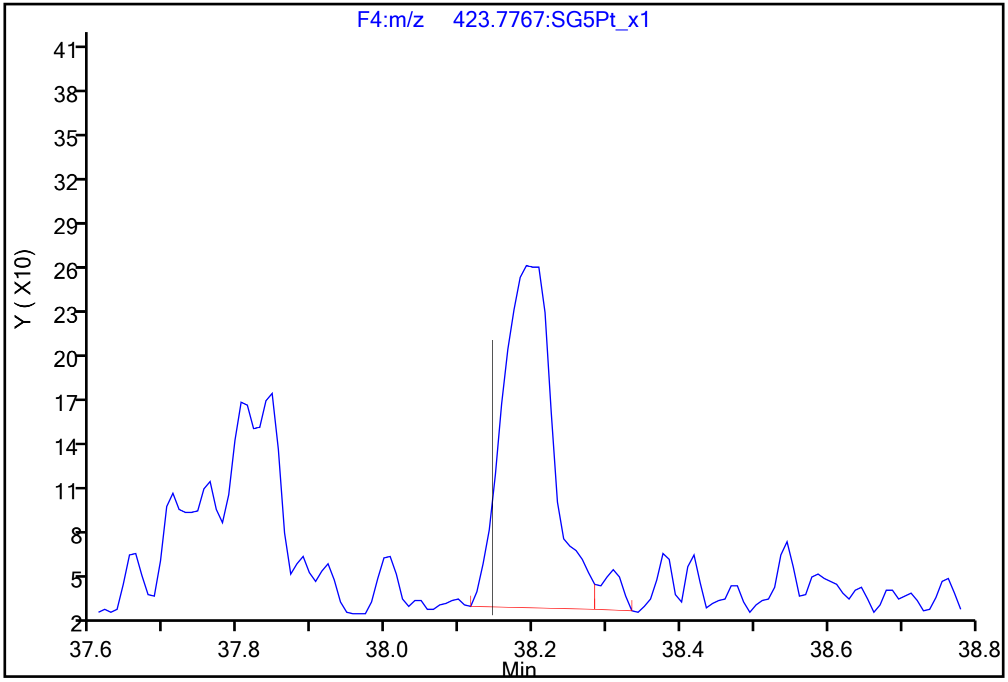

Reviewer: dadunj, 12-Mar-2021 09:21:49

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

RT:	41.43
Area:	1636
Amount:	0.290925
Amount Units:	pg/ul

Processing Integration Results

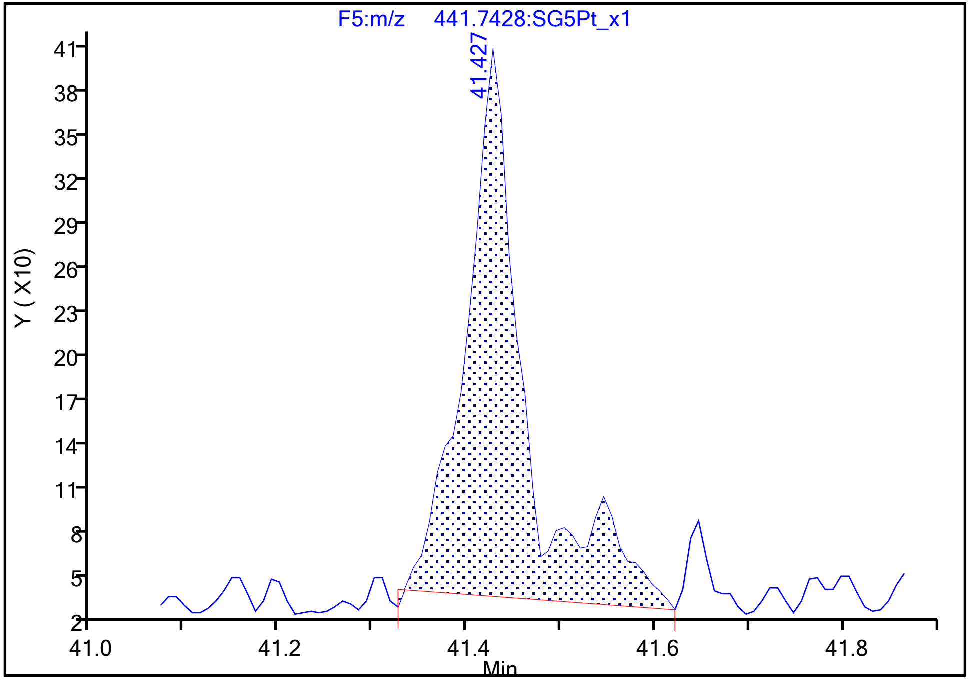

RT:	41.43
Area:	1292
Amount:	0.224227
Amount Units:	pg/ul

Manual Integration Results

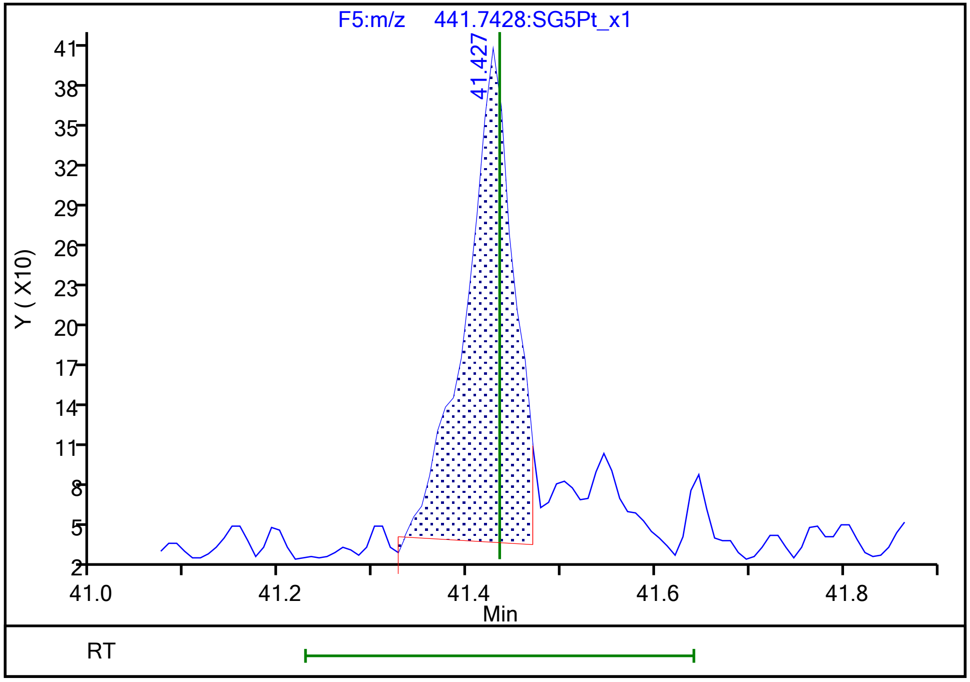

Reviewer: dadunj, 12-Mar-2021 09:22:02

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Injection Date: 10-Mar-2021 17:37:00 Instrument ID: DFS 1
Lims ID: MB 320-467785/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F5(41.08 :46.00)

OCDF, CAS: 39001-02-0

Signal: 2

RT:	41.43
Area:	1836
Amount:	0.290925
Amount Units:	pg/ul

Processing Integration Results

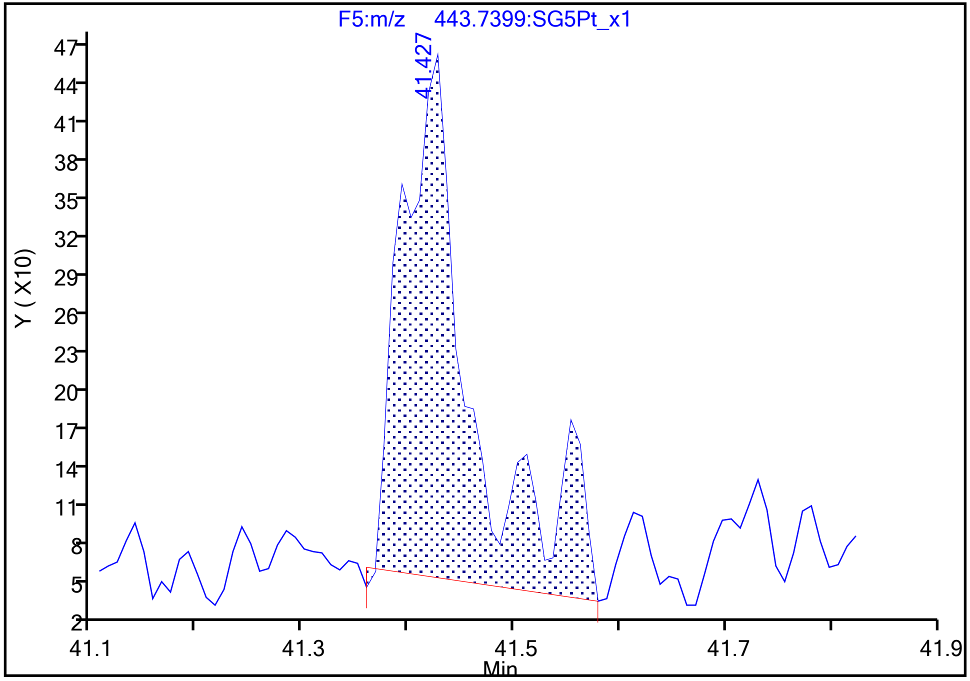

RT:	41.43
Area:	1384
Amount:	0.224227
Amount Units:	pg/ul

Manual Integration Results

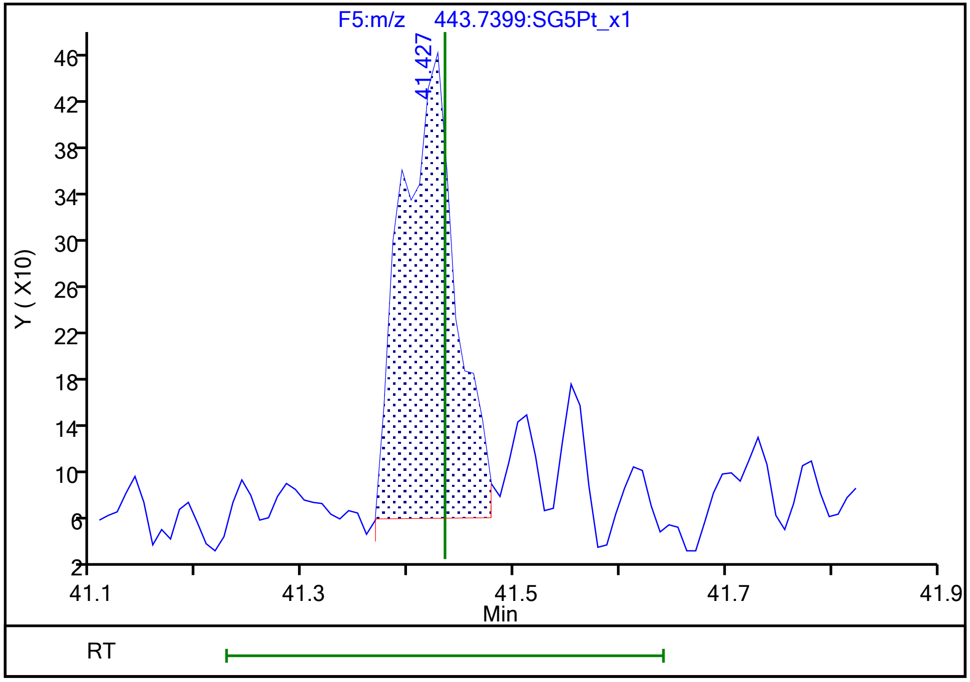

Reviewer: dadunj, 12-Mar-2021 09:22:04
Audit Action: Split an Integrated Peak Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 1

RT:	41.34
Area:	3256
Amount:	0.817395
Amount Units:	pg/ul

Processing Integration Results

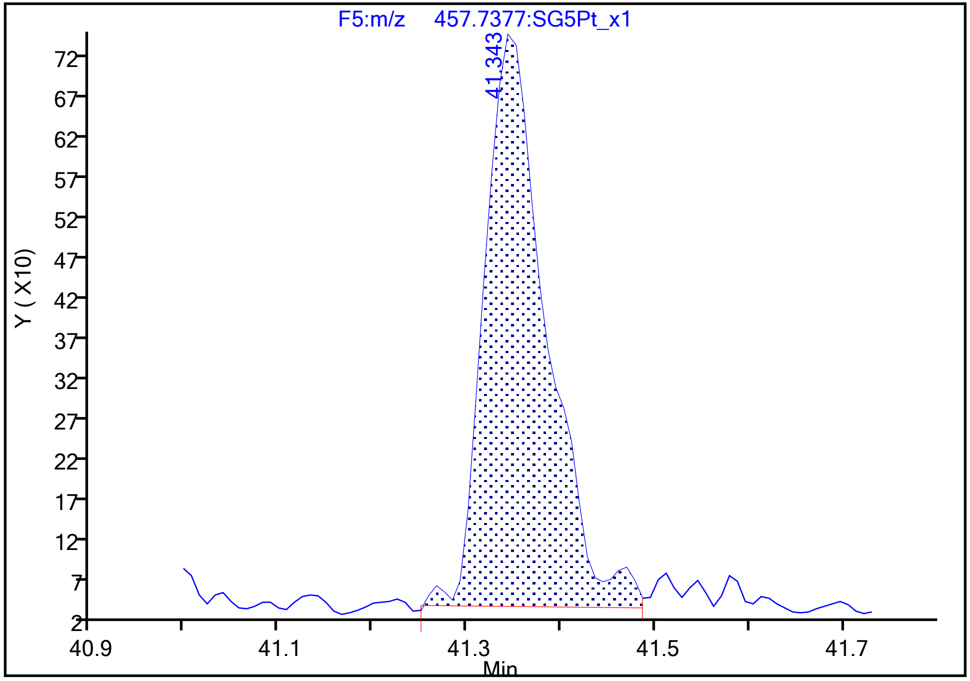

RT:	41.34
Area:	3137
Amount:	0.780128
Amount Units:	pg/ul

Manual Integration Results

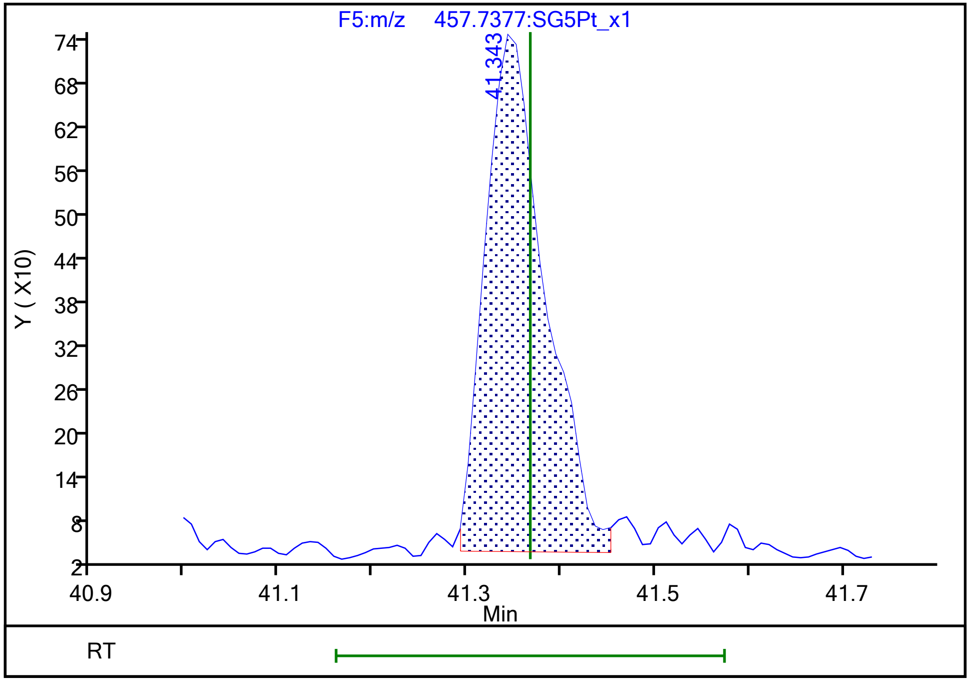

Reviewer: dadunj, 12-Mar-2021 09:22:16

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d				
Injection Date:	10-Mar-2021 17:37:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-467785/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

Processing Integration Results

RT: 41.34
Area: 3982
Amount: 0.817395
Amount Units: pg/ul

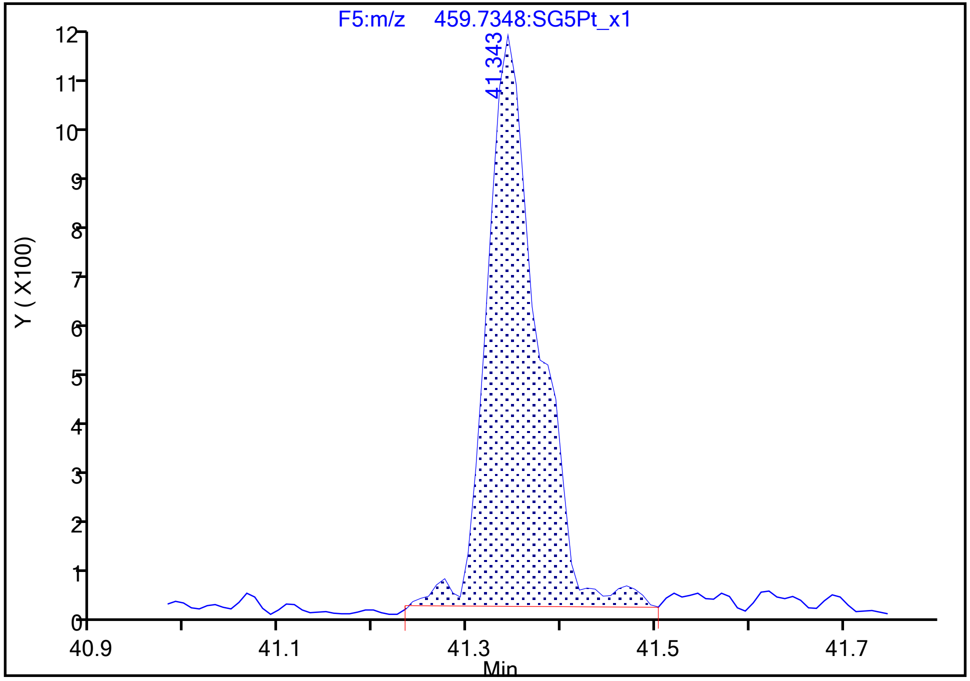

Manual Integration Results

RT: 41.34
Area: 3771
Amount: 0.780128
Amount Units: pg/ul

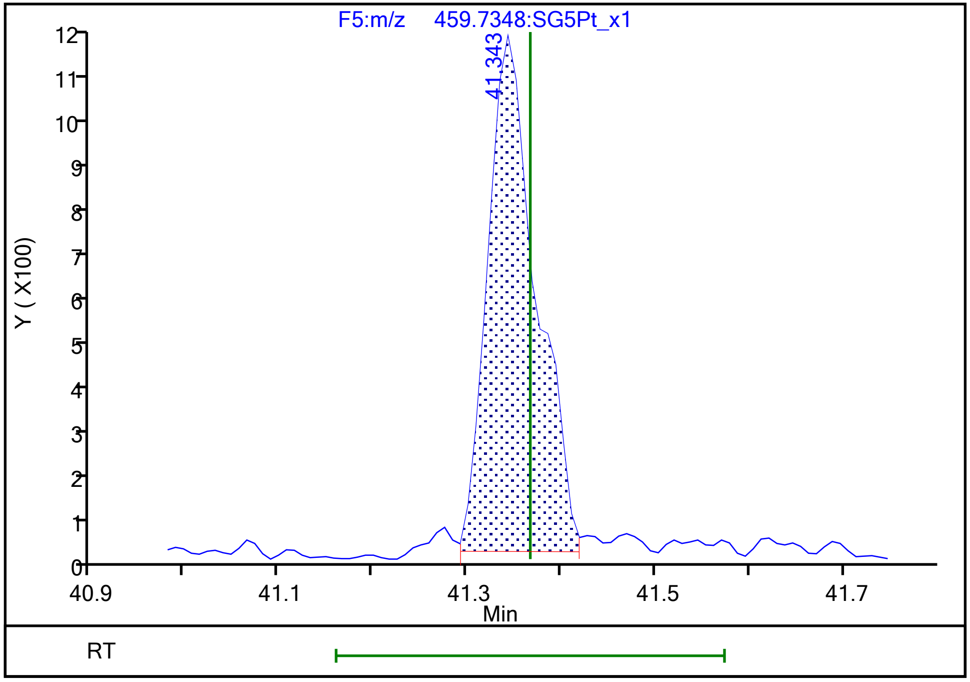

Reviewer: dadunj, 12-Mar-2021 09:22:17

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Injection Date: 10-Mar-2021 17:37:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

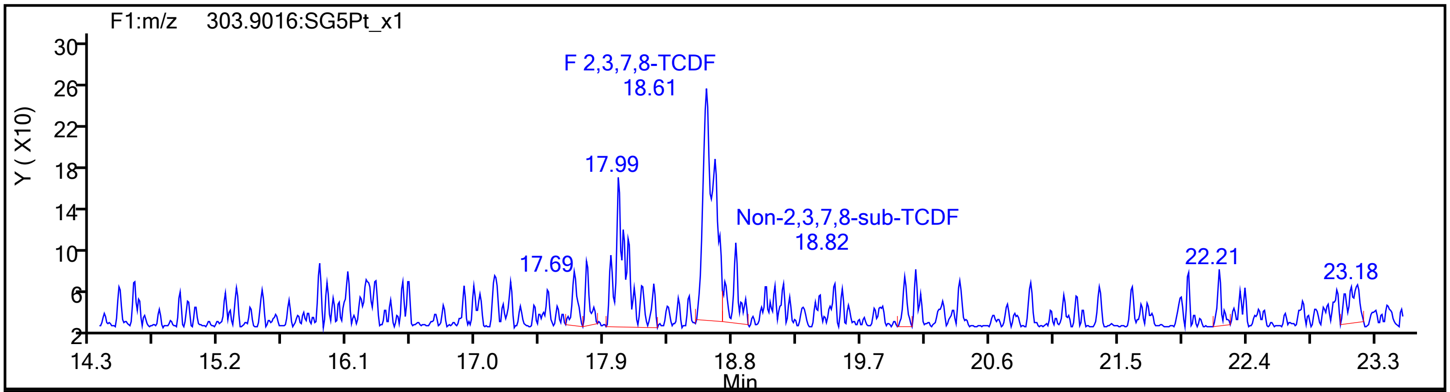

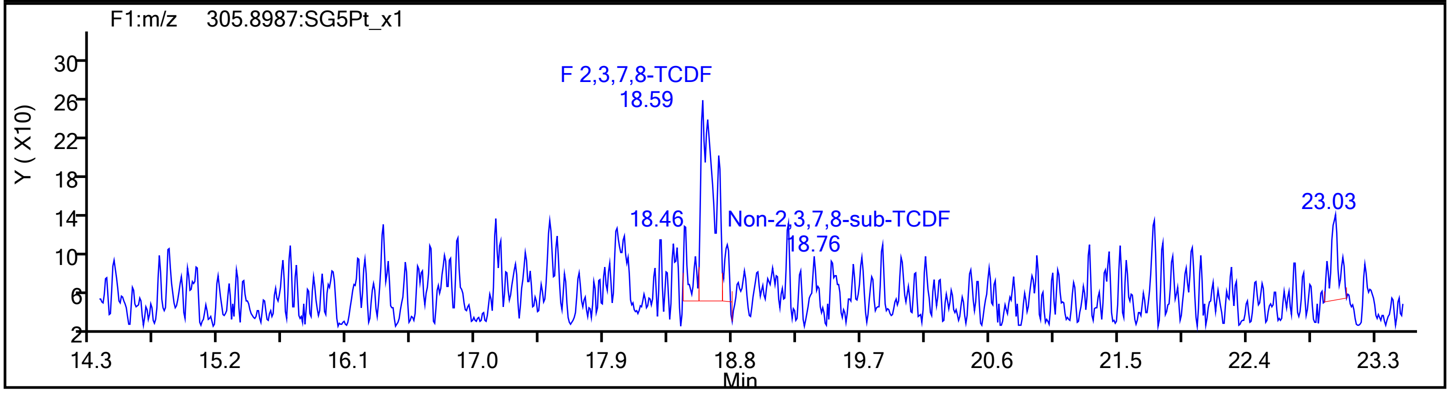

TCDF Standards

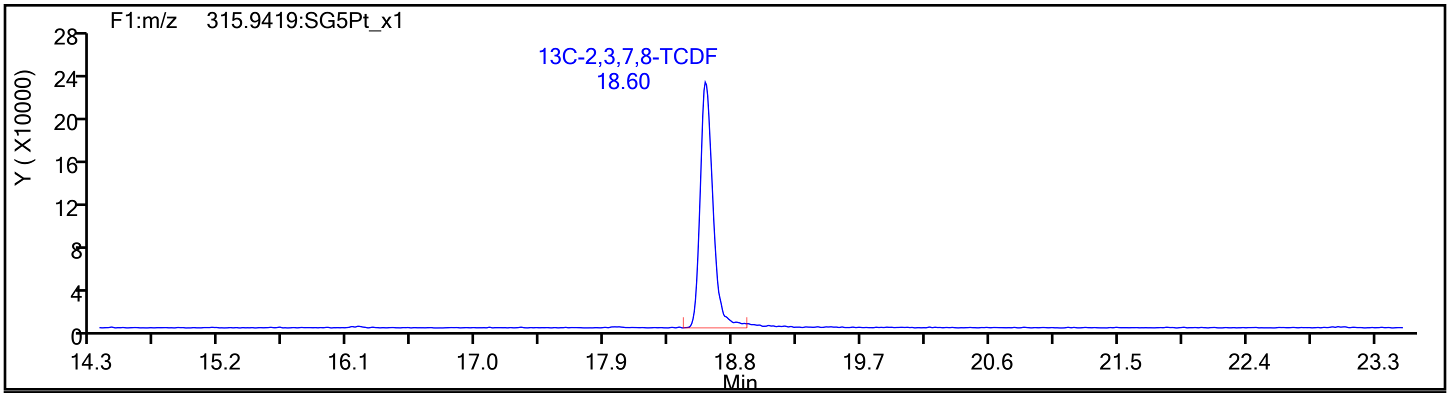

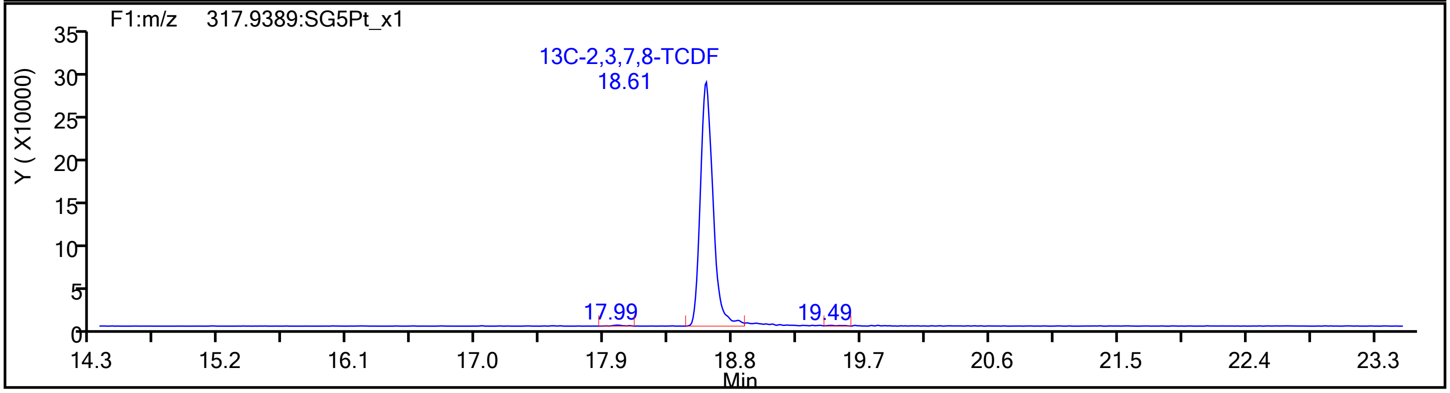

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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TCDF

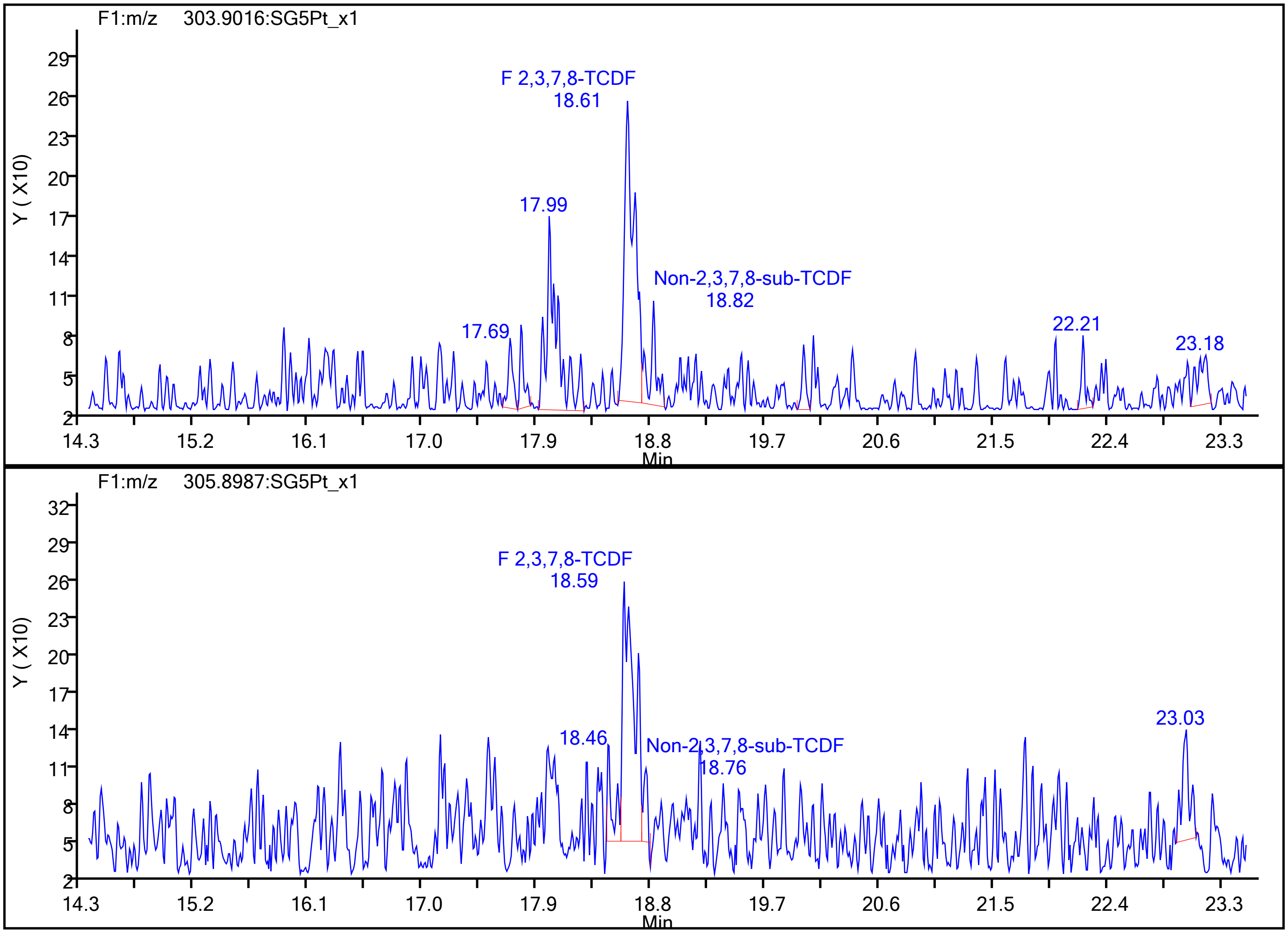

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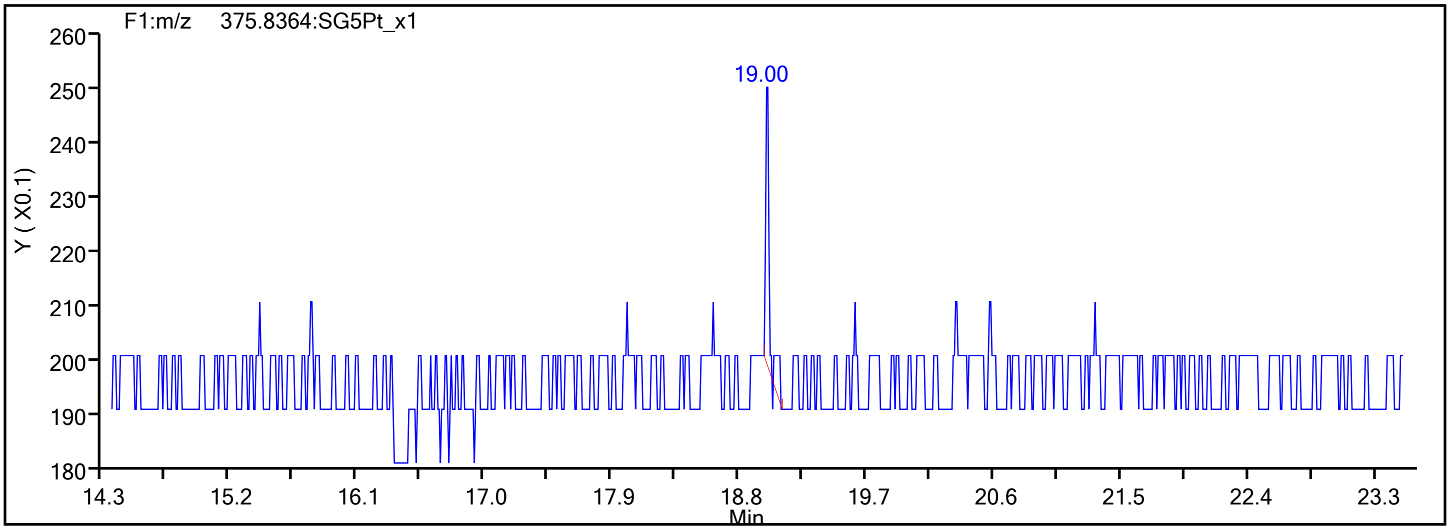

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Eurofins TestAmerica, Sacramento

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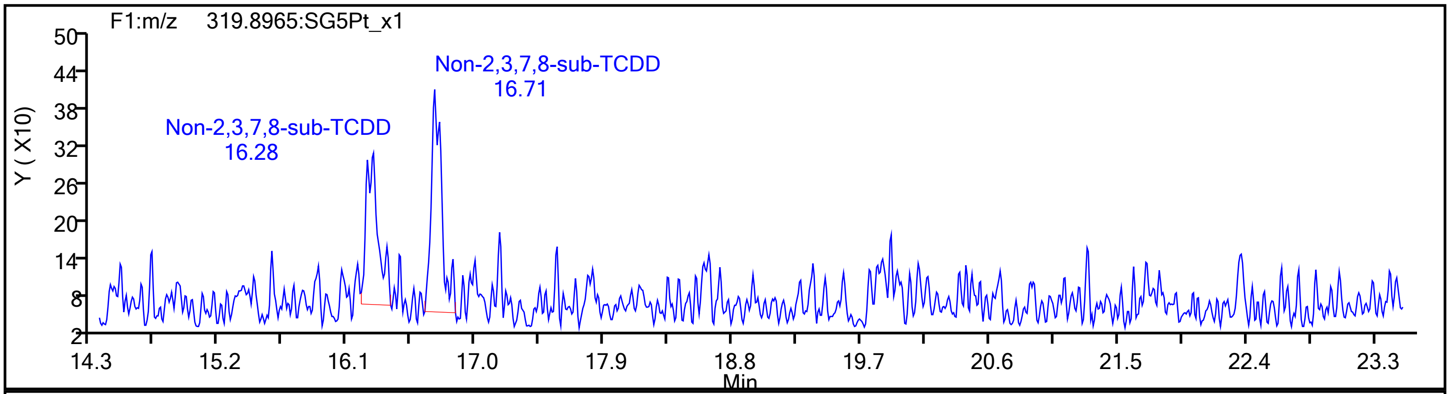

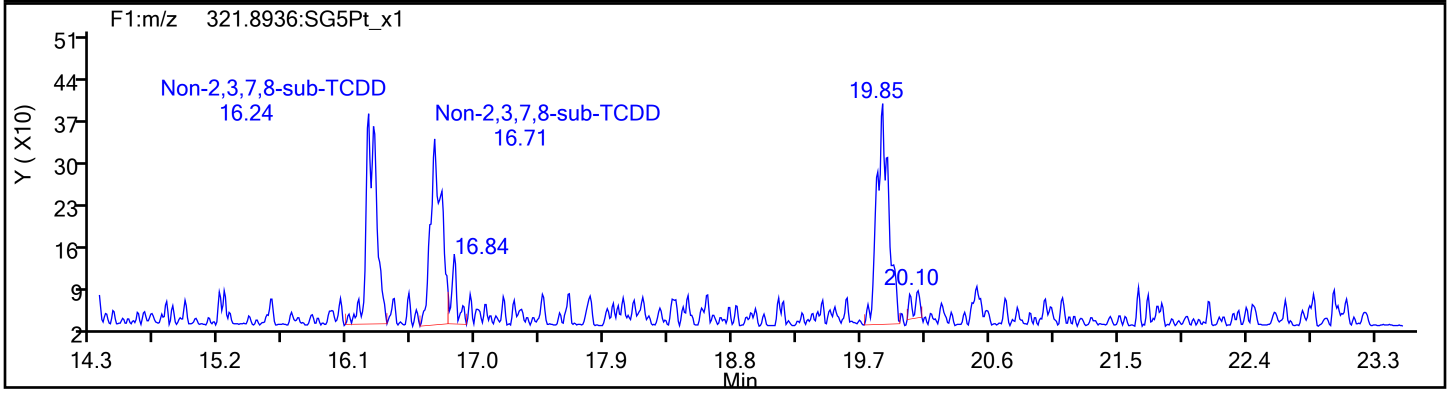

TCDD Standards

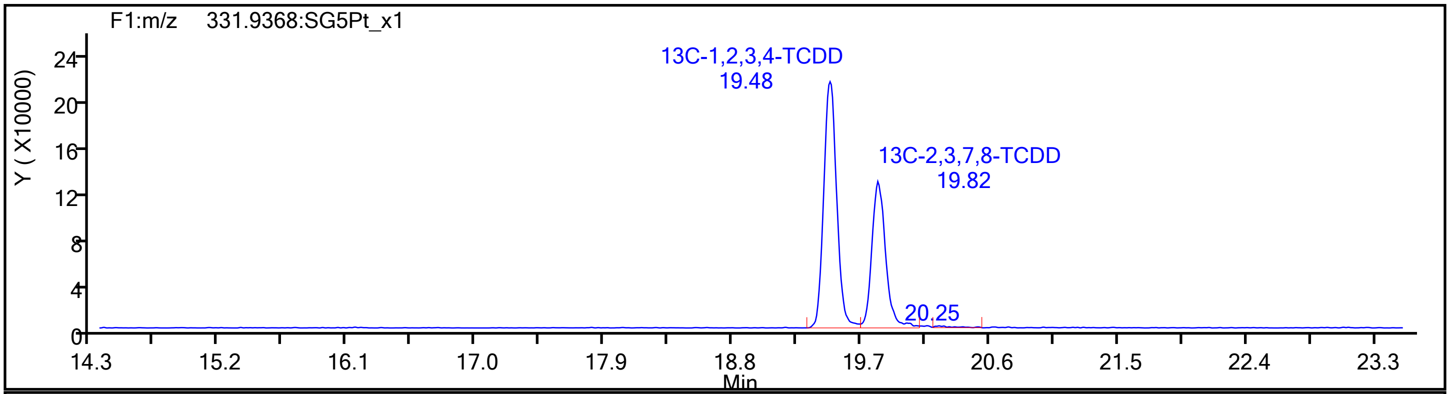

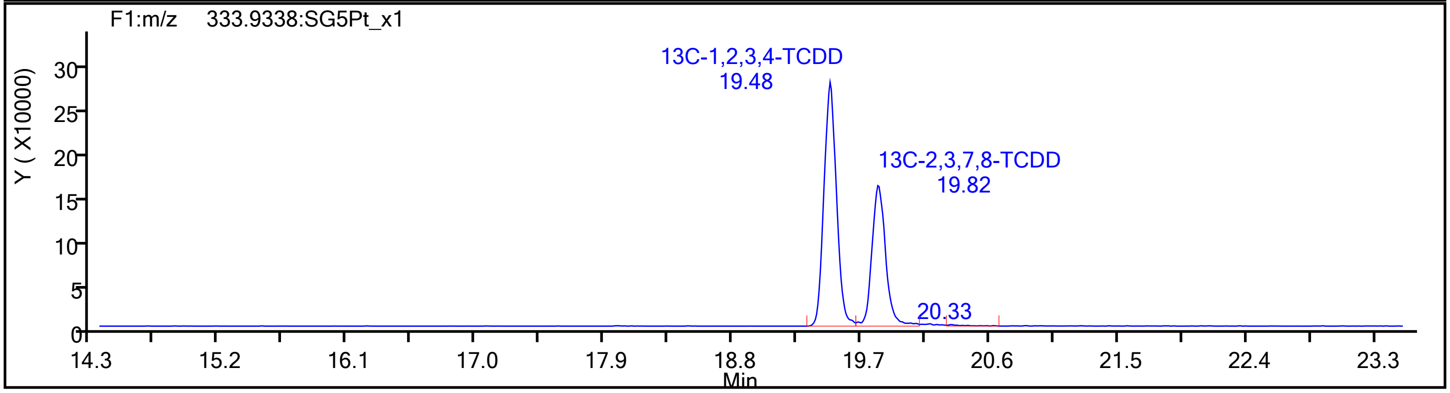

Report Date: 12-Mar-2021 09:23:07 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

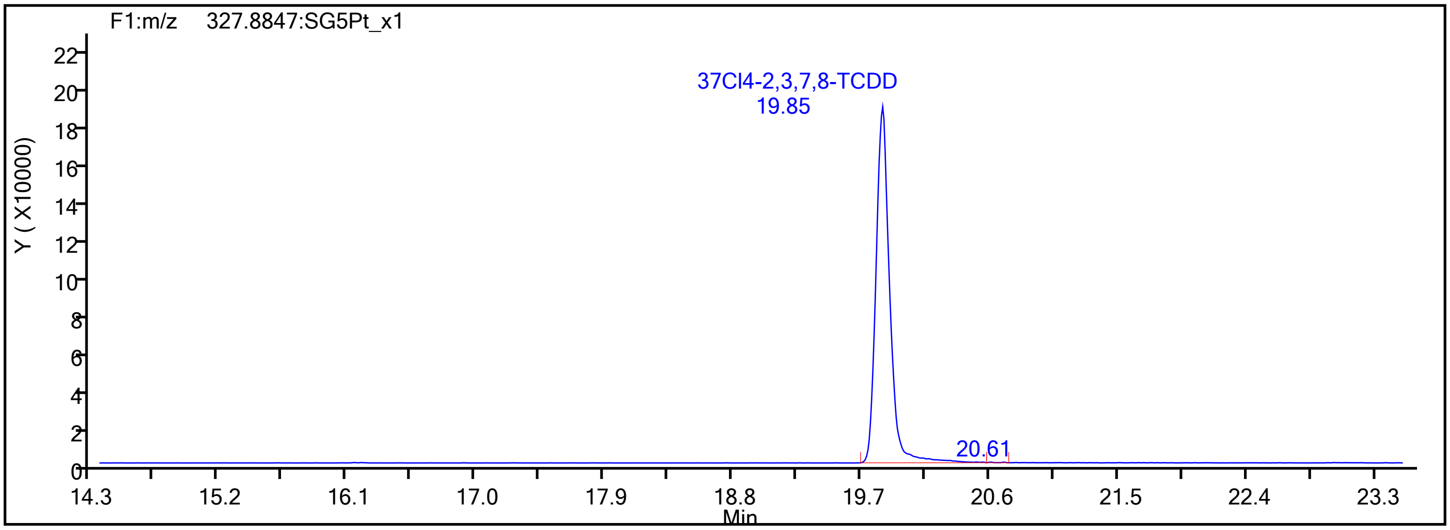

37Cl4-TCDD Standards

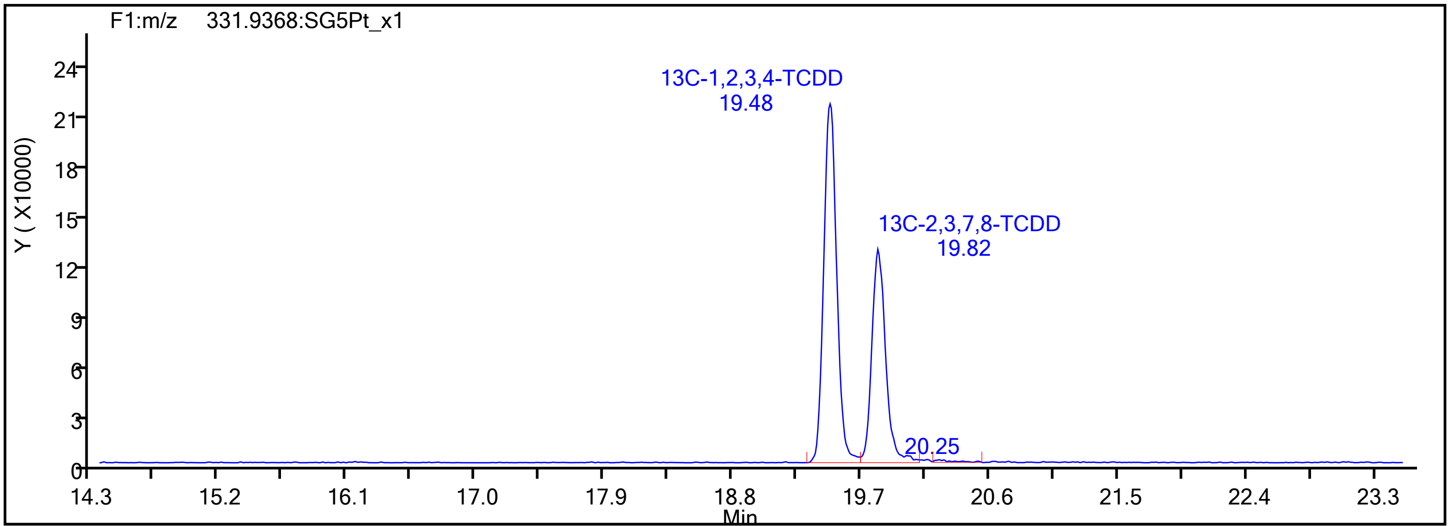

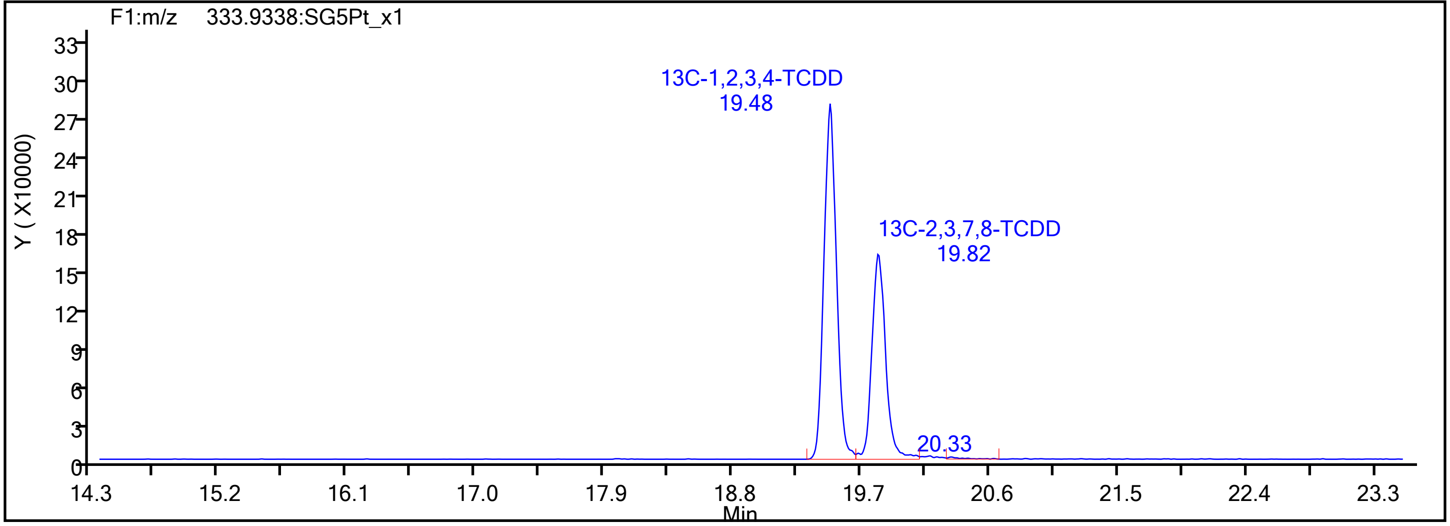

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F1 PeCDFs

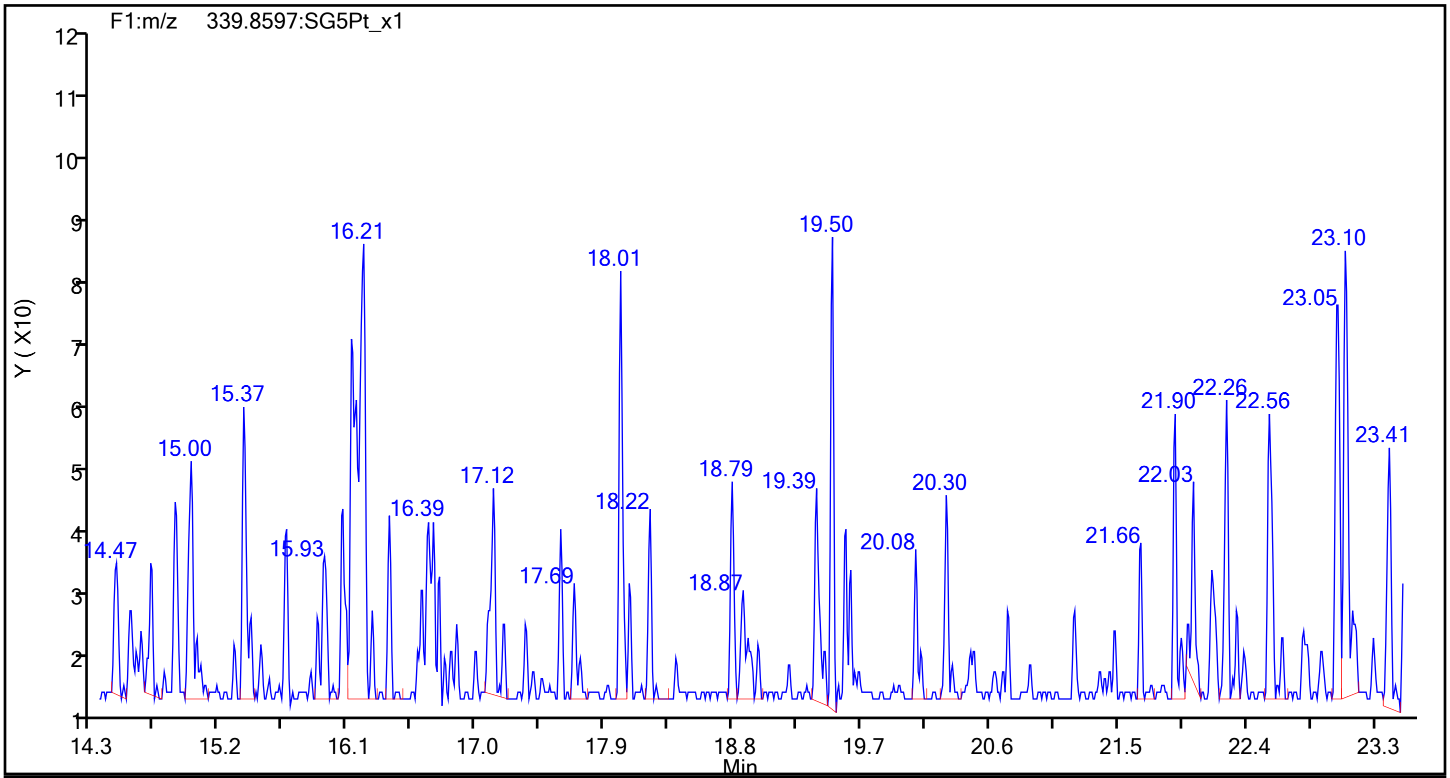

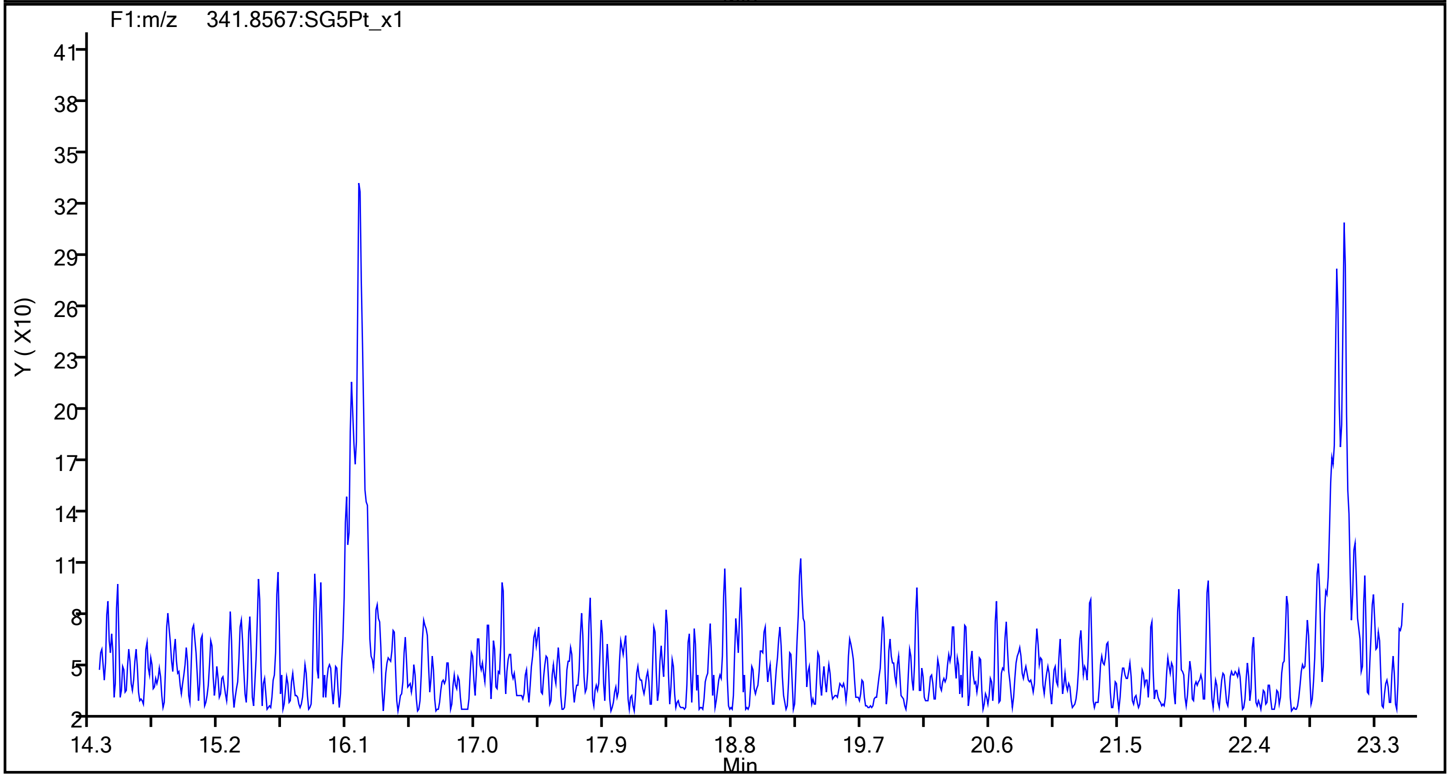

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

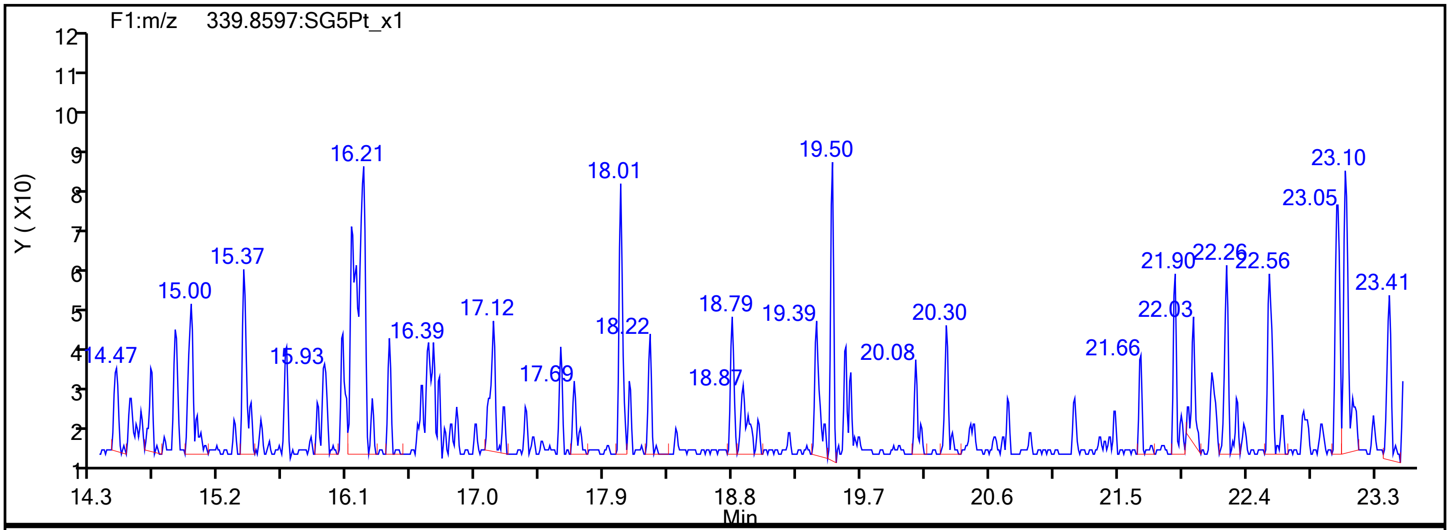

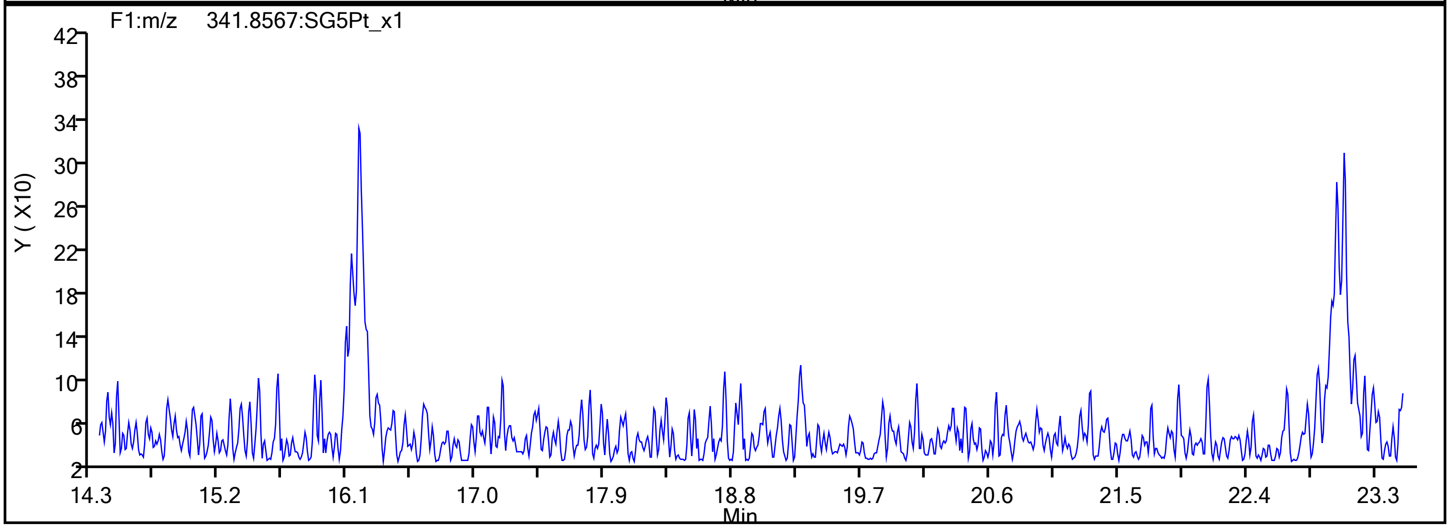

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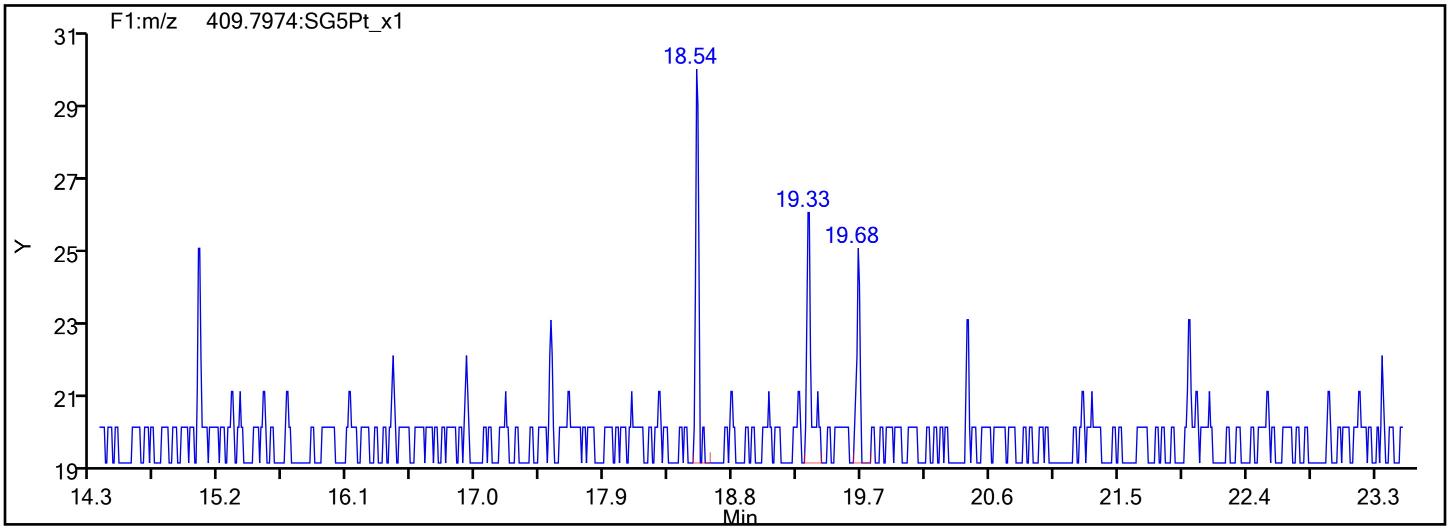

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Eurofins TestAmerica, Sacramento

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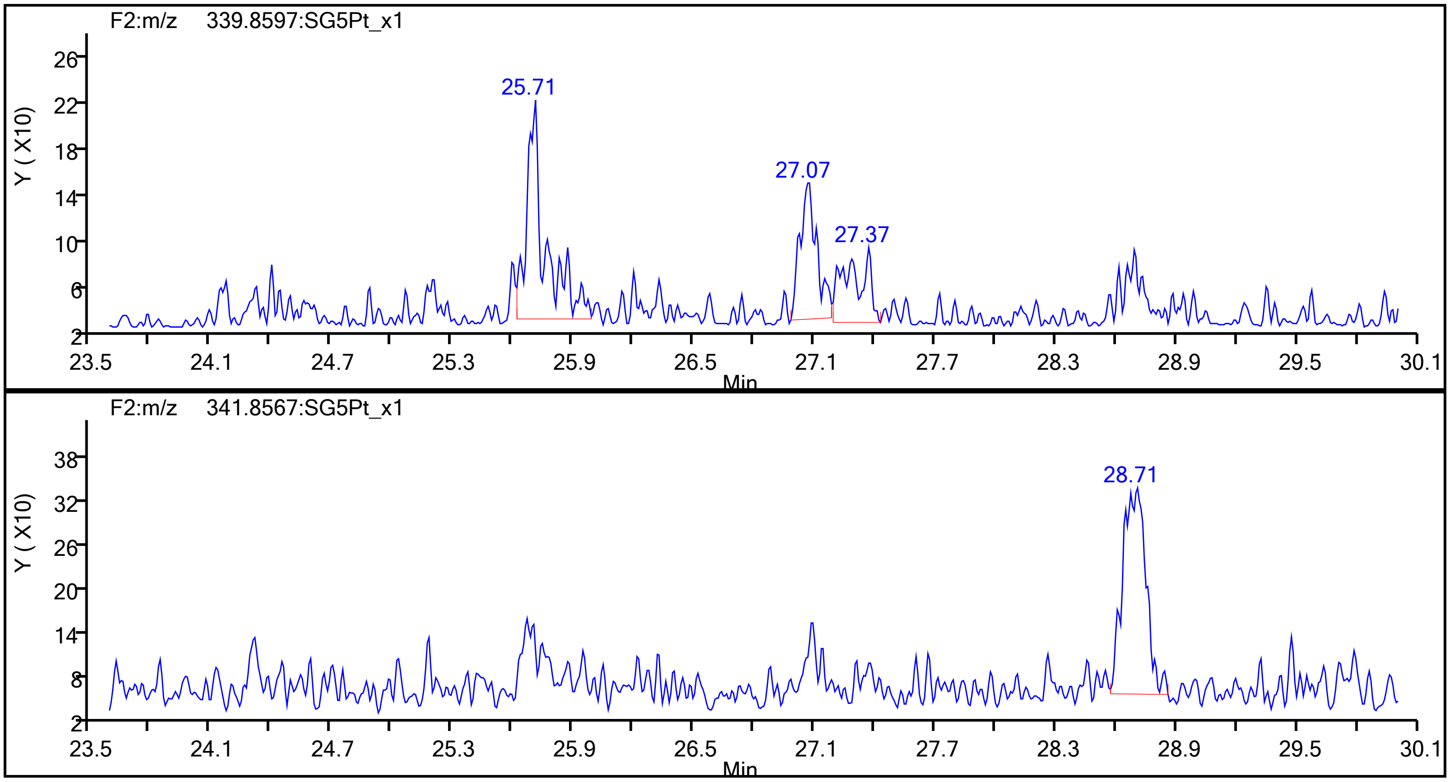

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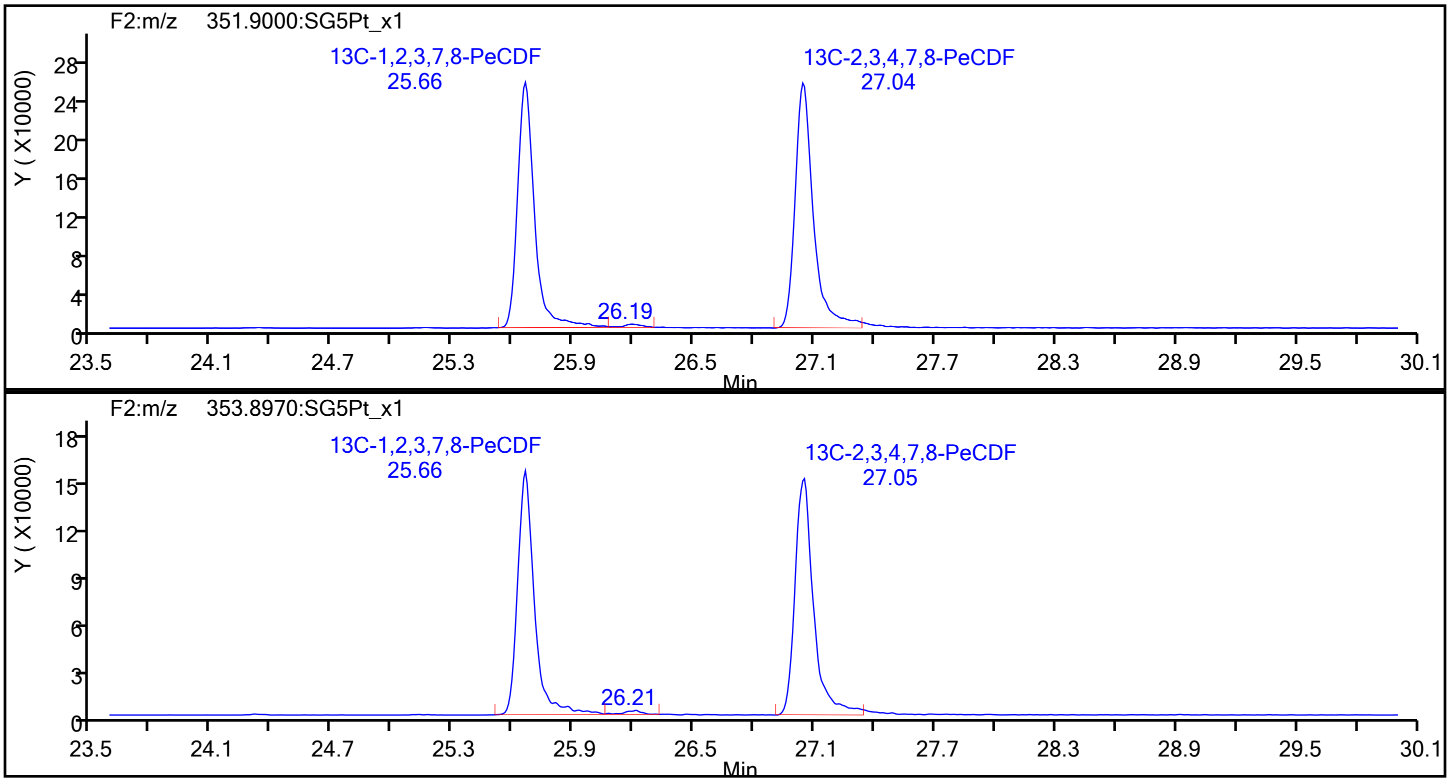

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Eurofins TestAmerica, Sacramento

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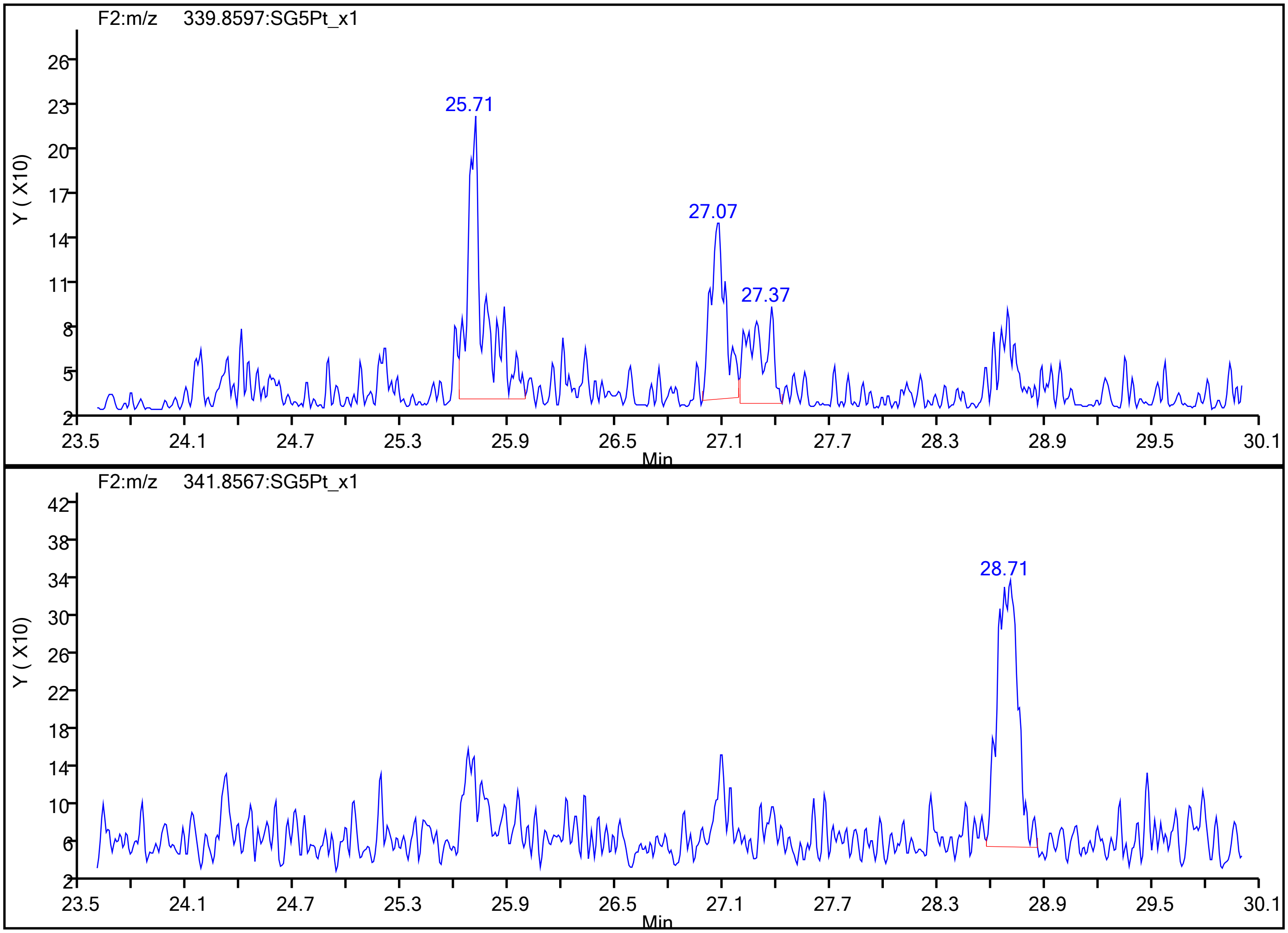

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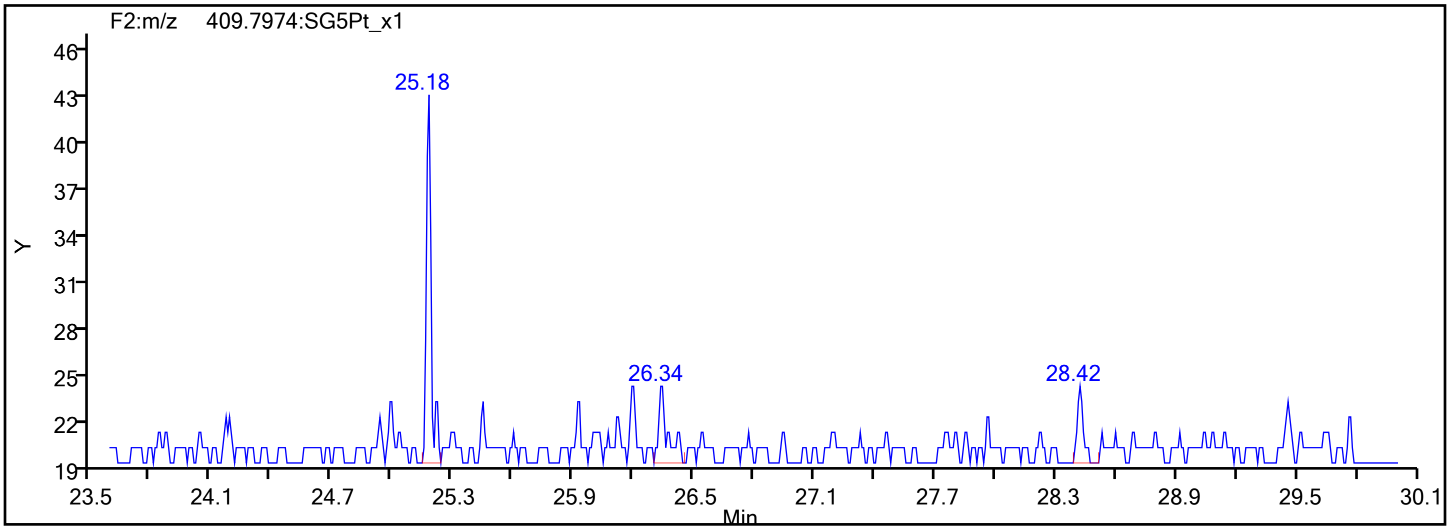

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Eurofins TestAmerica, Sacramento

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PeCDD

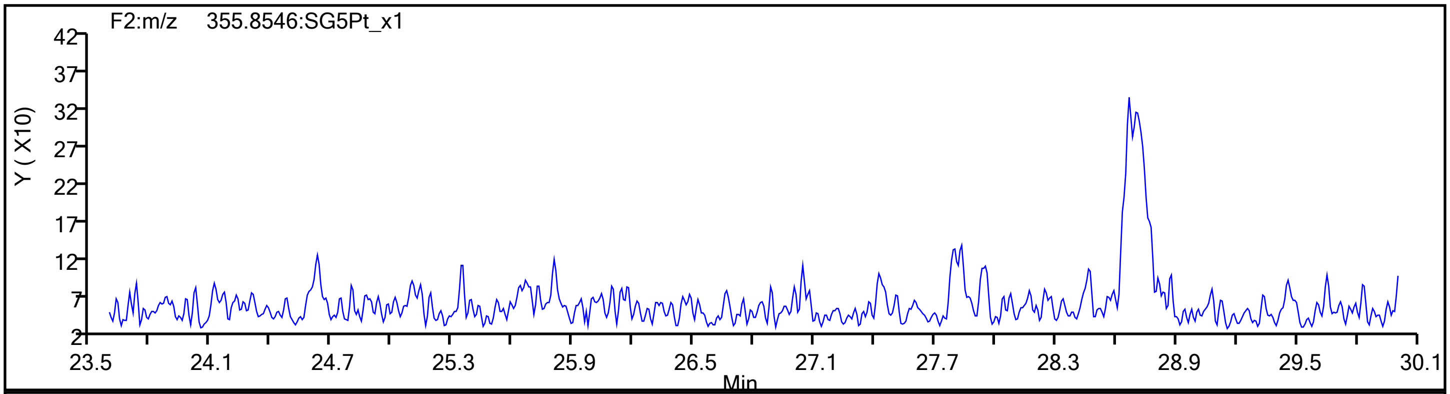

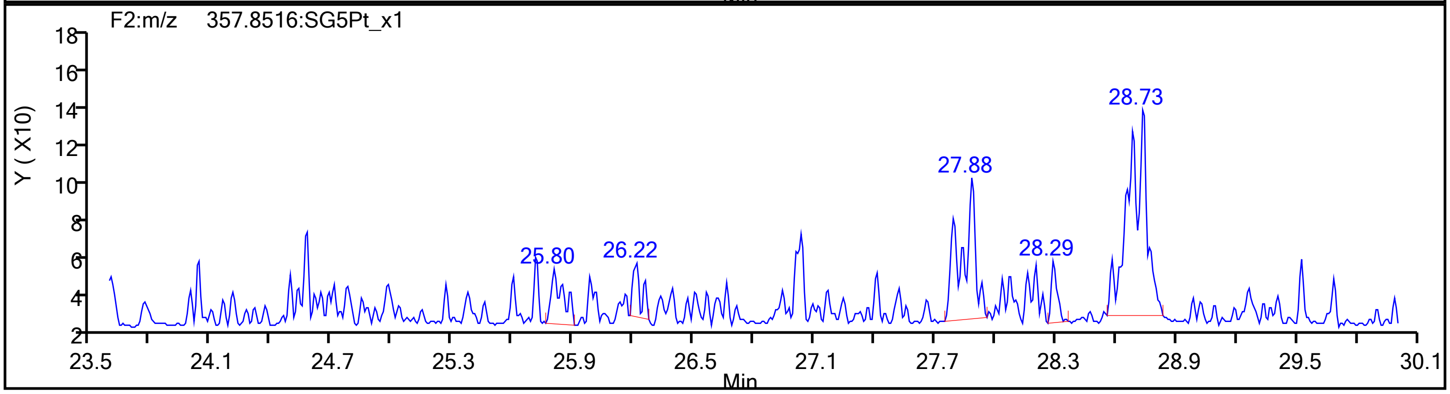

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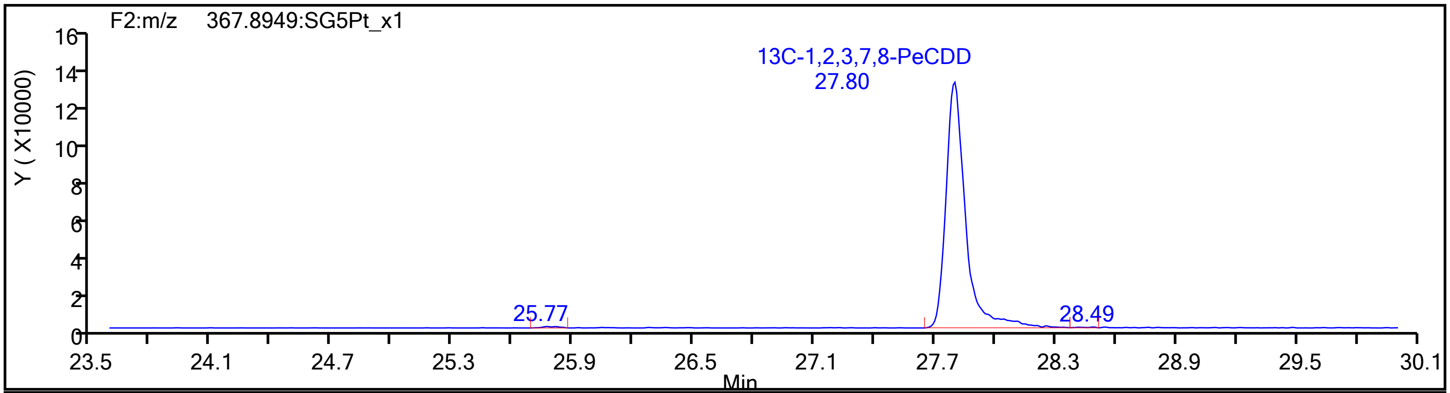

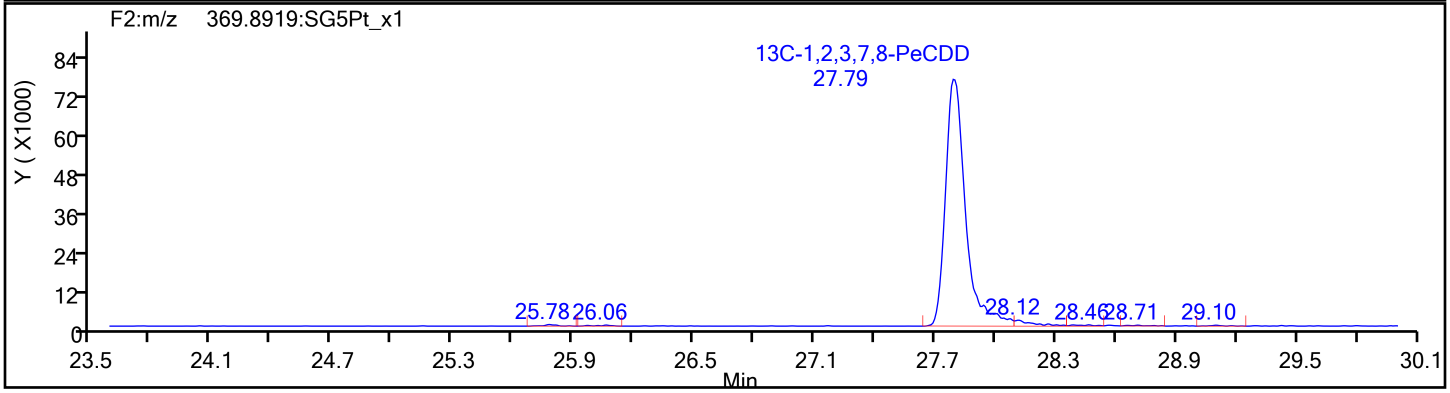

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Eurofins TestAmerica, Sacramento

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Injection Date: 10-Mar-2021 17:37:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973

Sample Line#: 12

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Column Dia: 0.32 mm

HxCDF

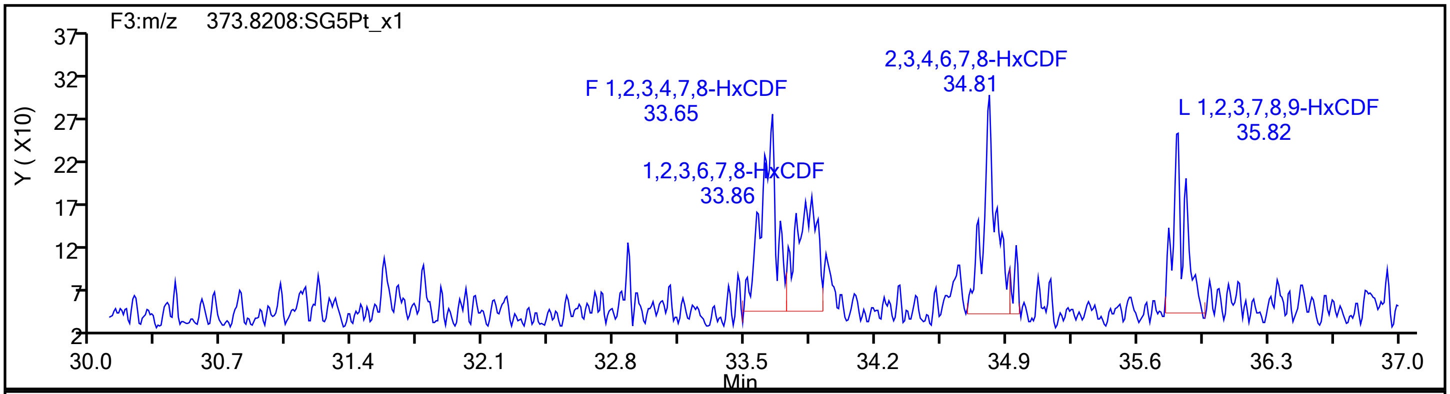

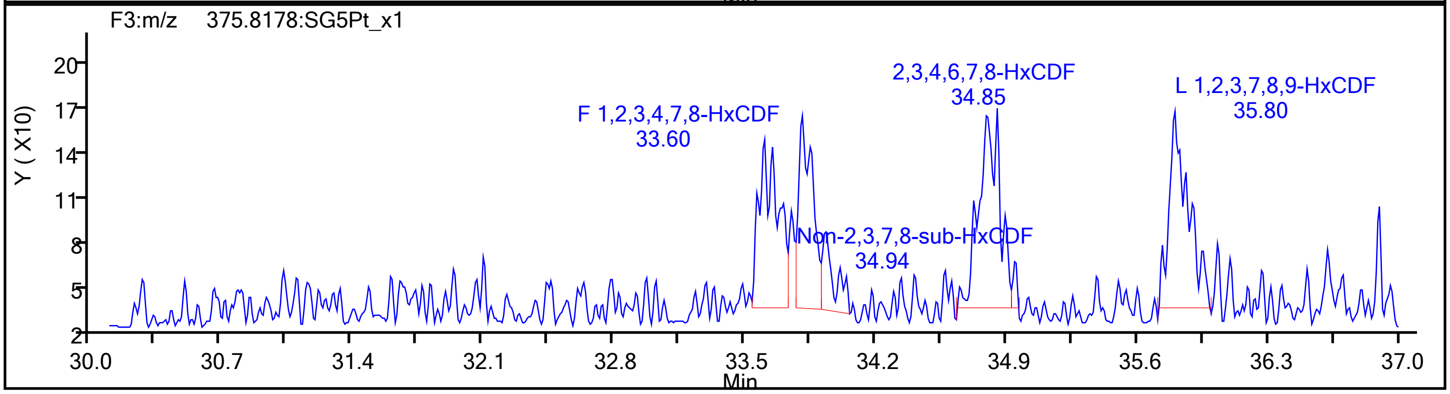

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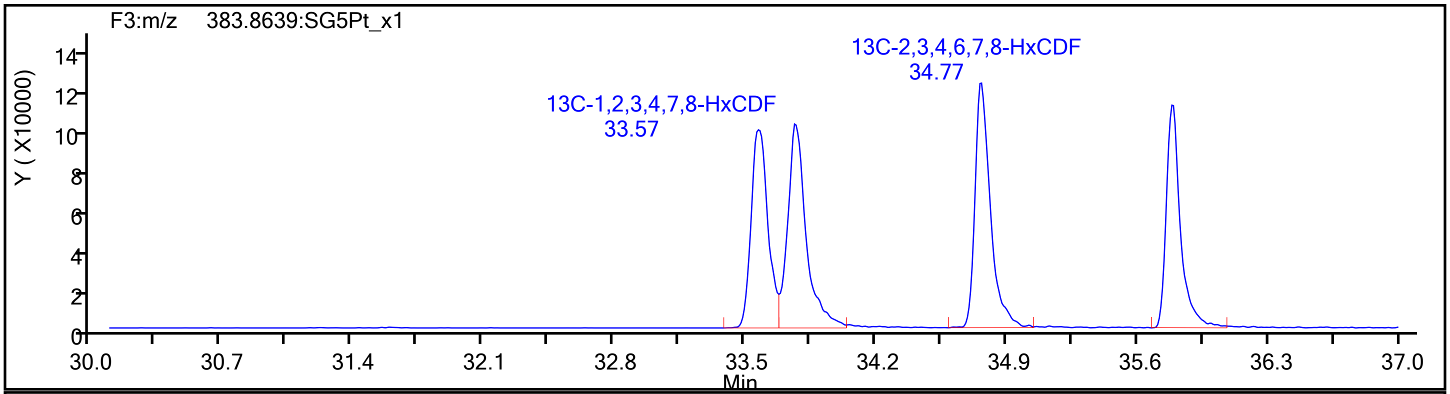

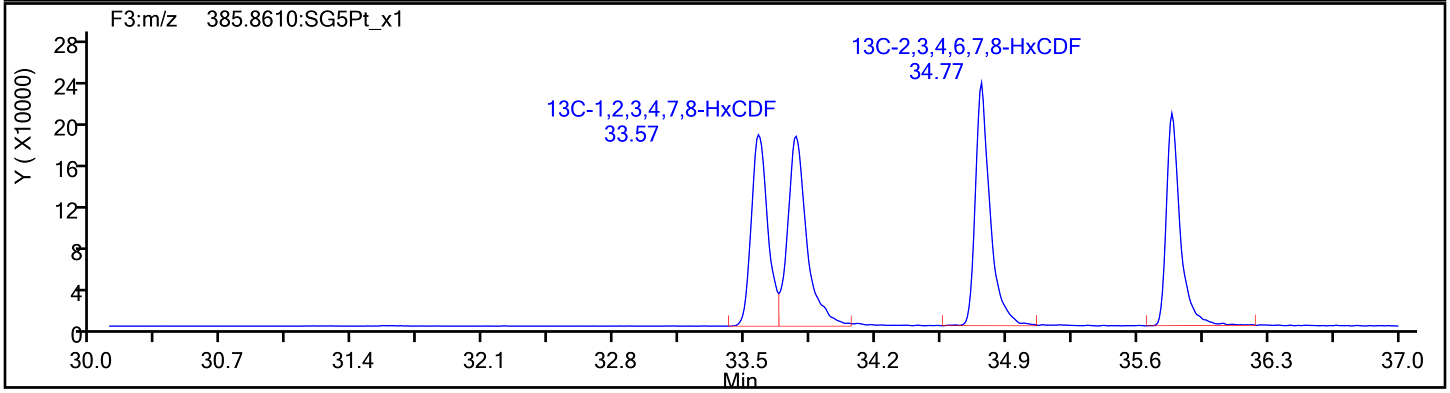

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Eurofins TestAmerica, Sacramento

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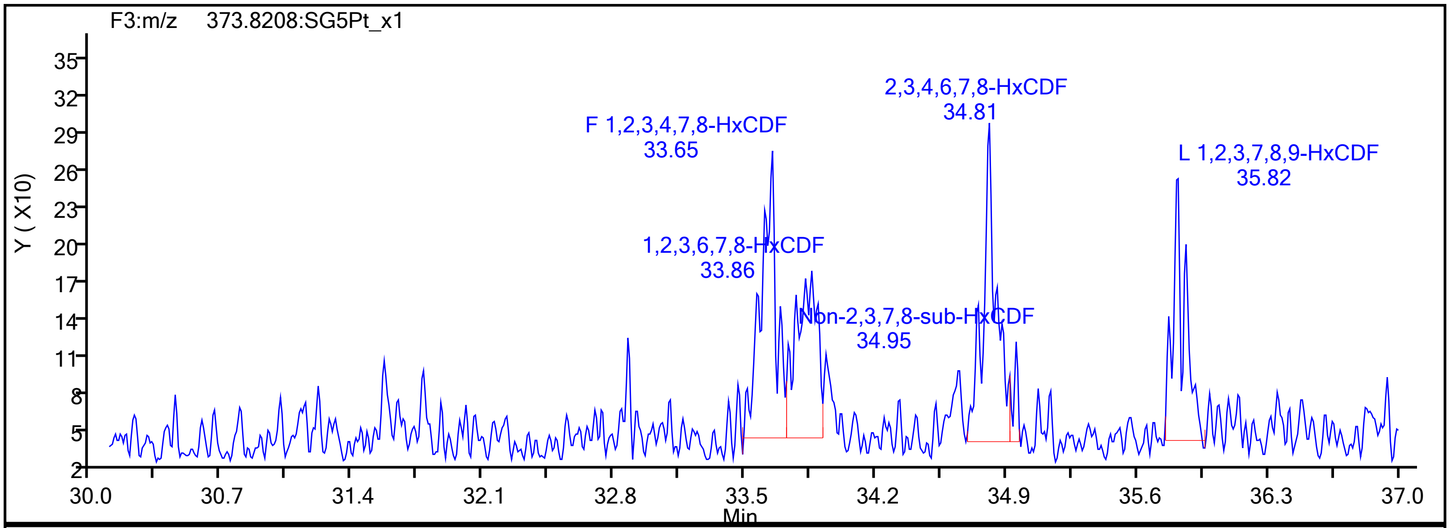

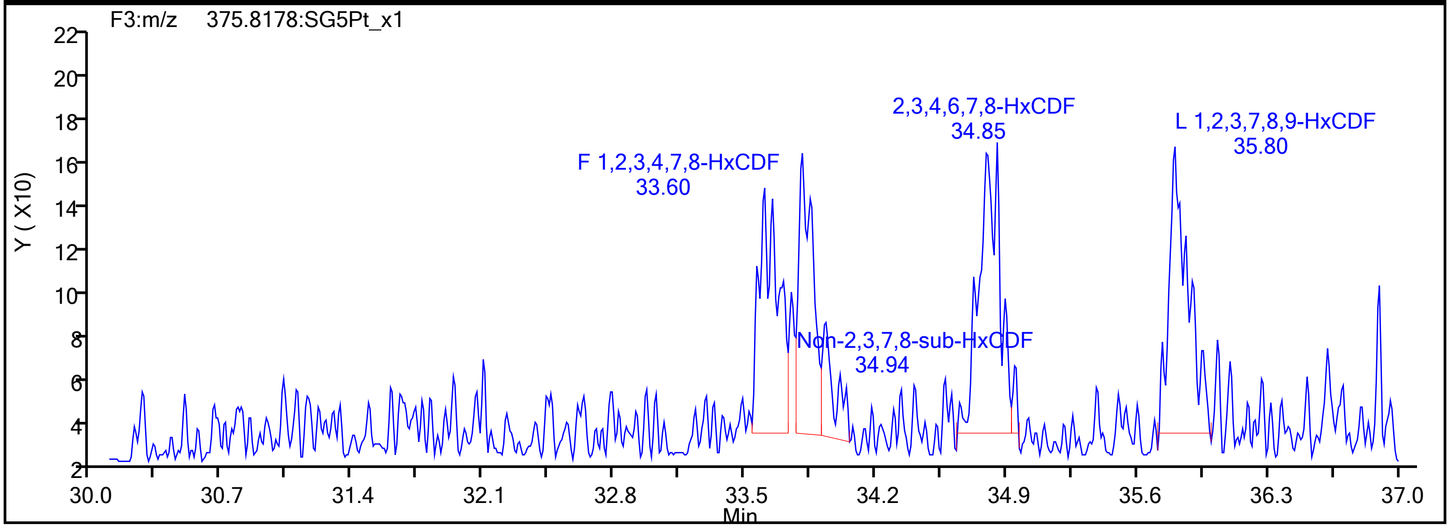

HxCDF Interference Mass

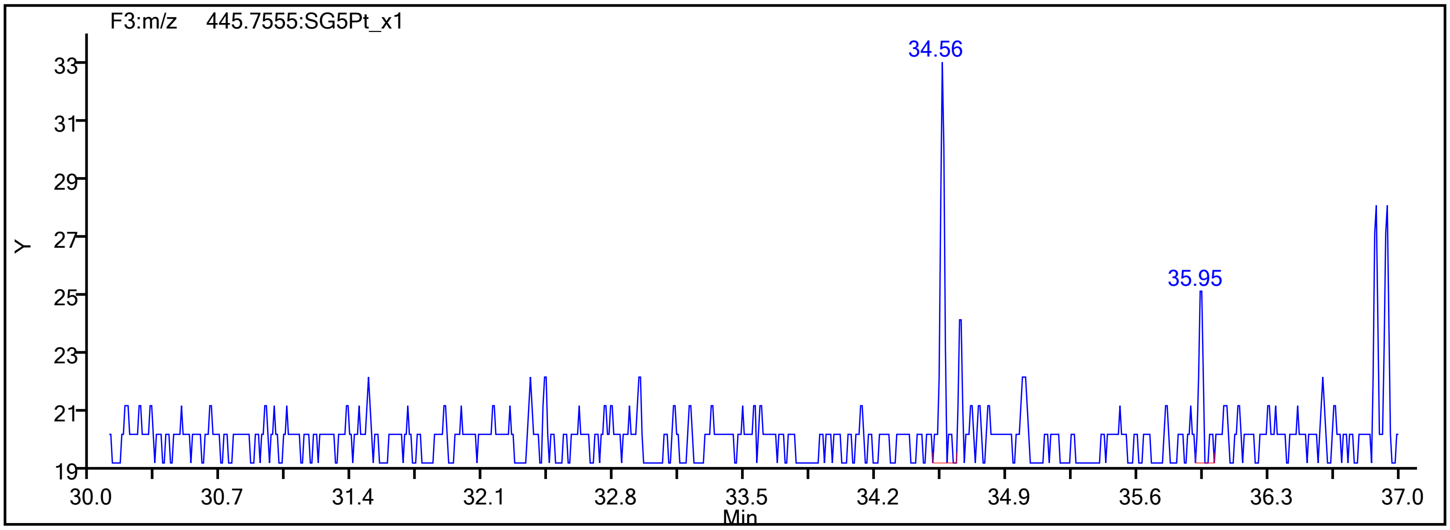

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Eurofins TestAmerica, Sacramento

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HxCDD

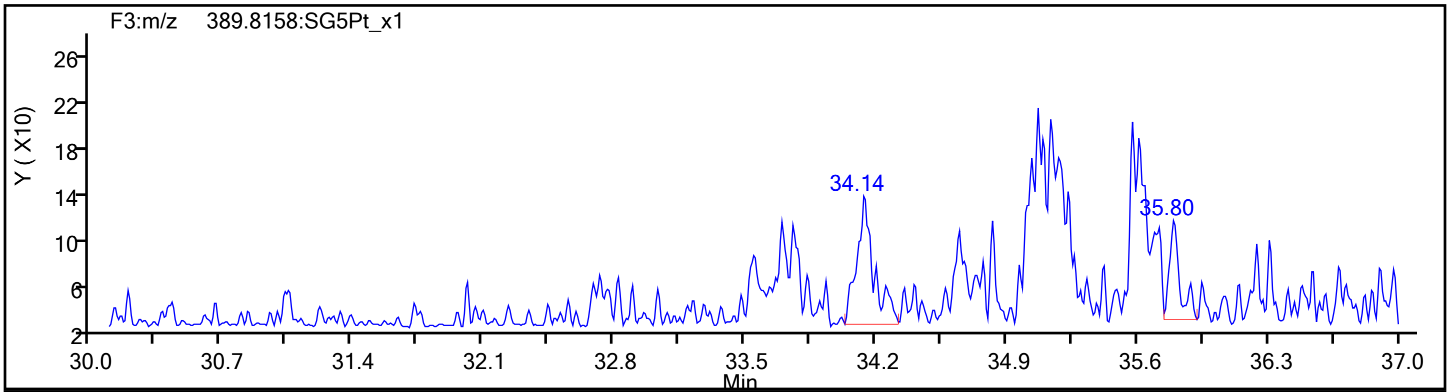

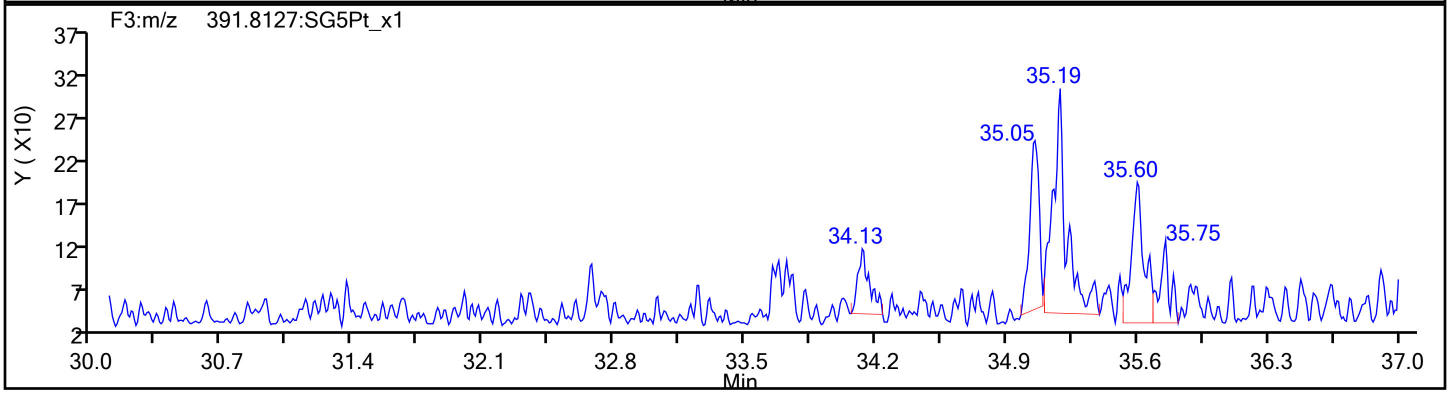

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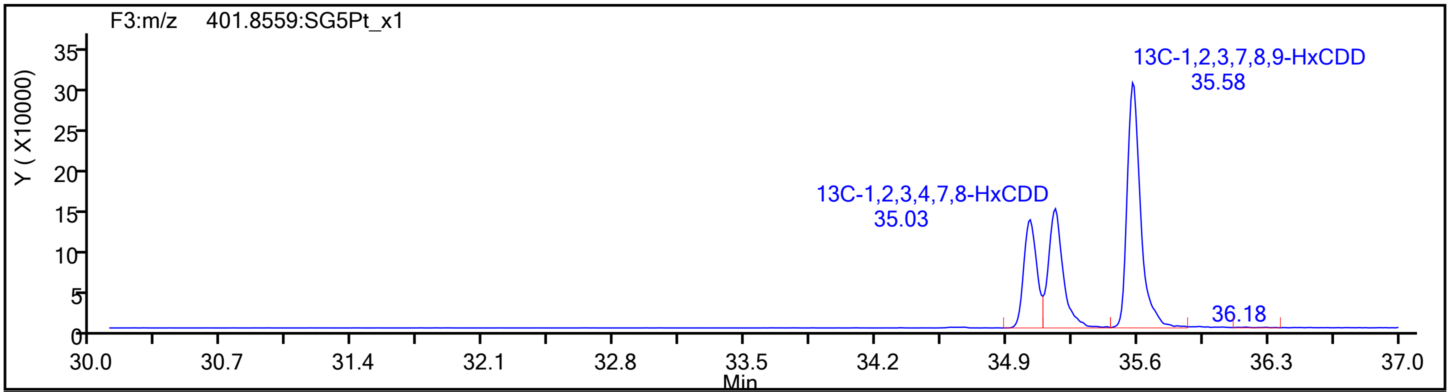

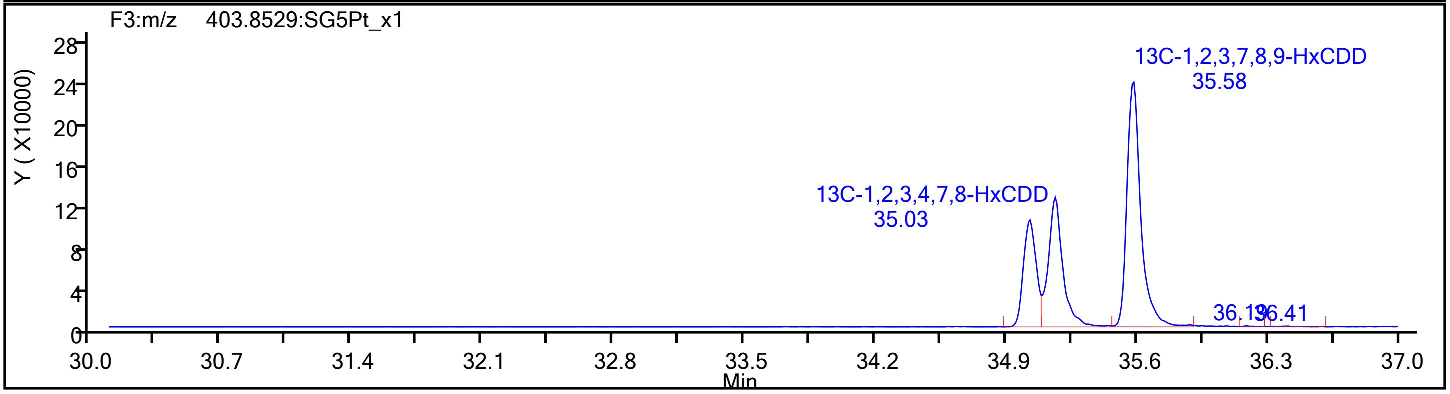

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Eurofins TestAmerica, Sacramento
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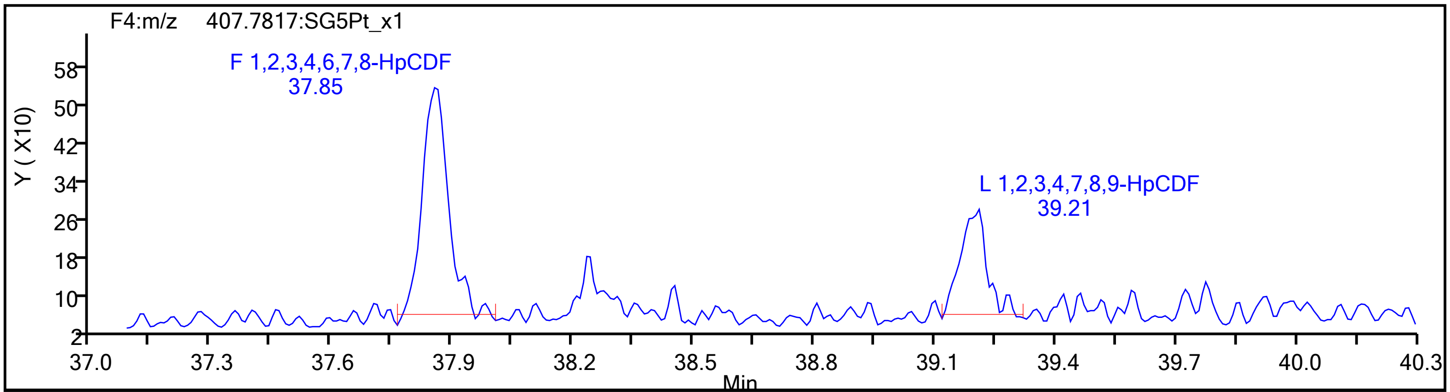

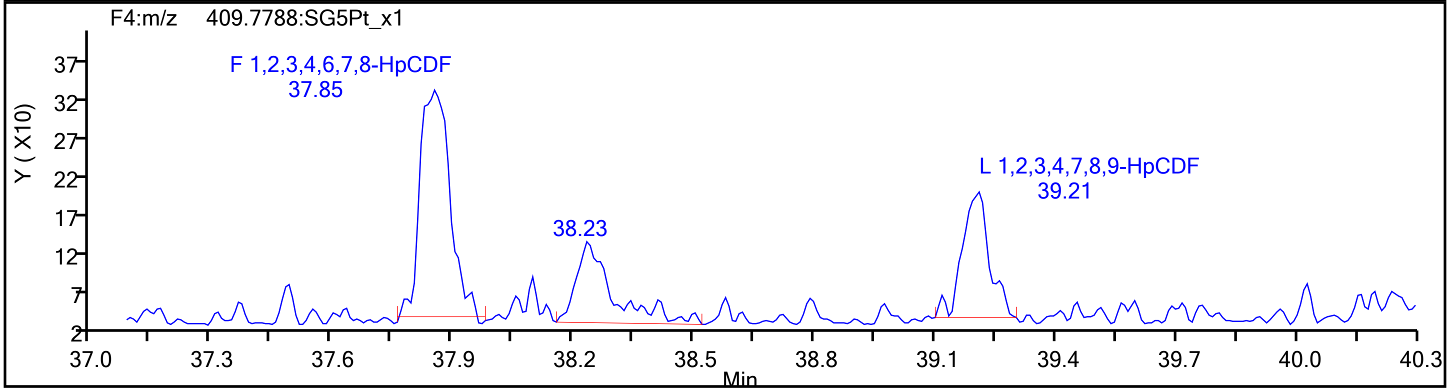

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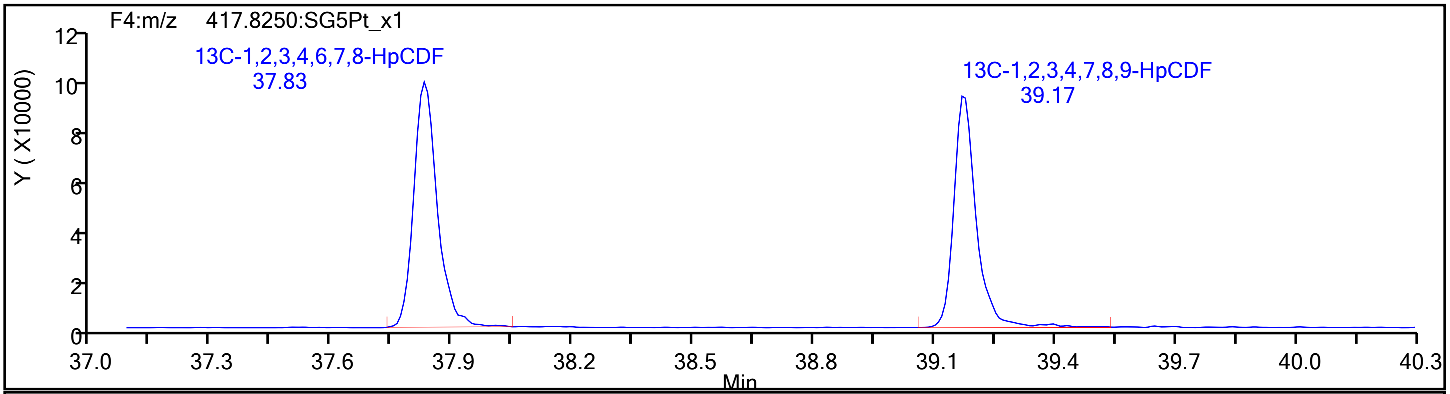

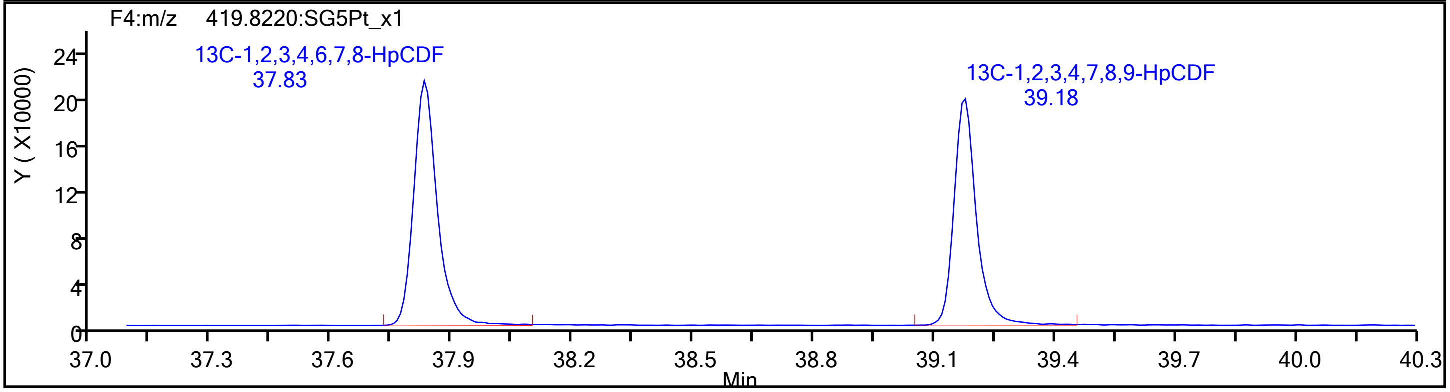

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Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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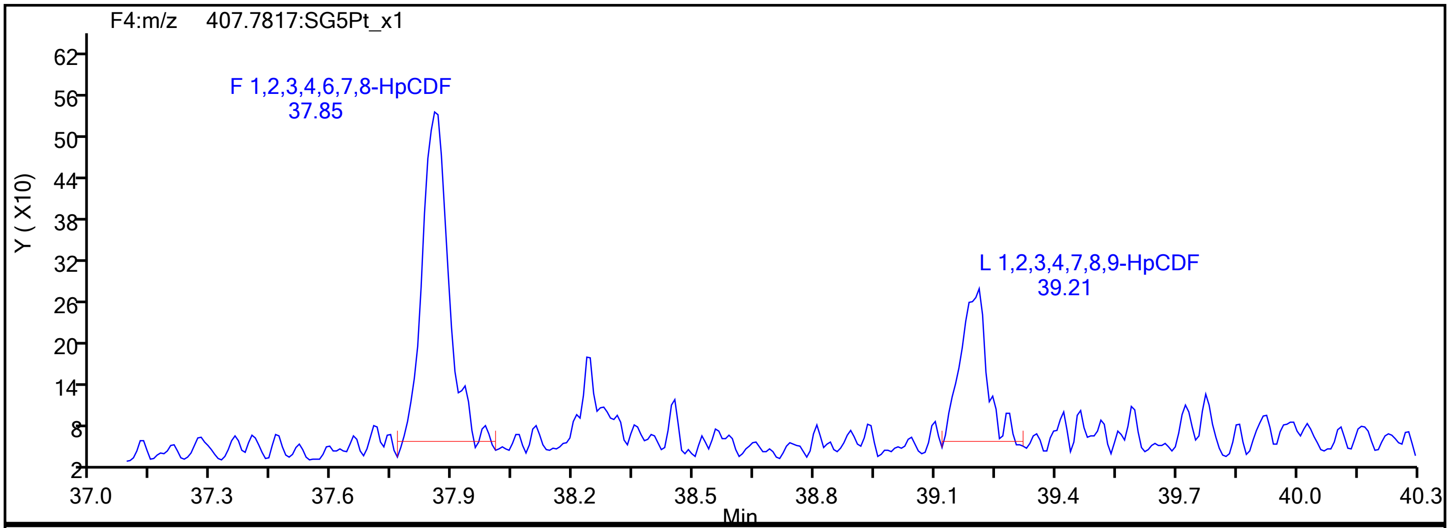

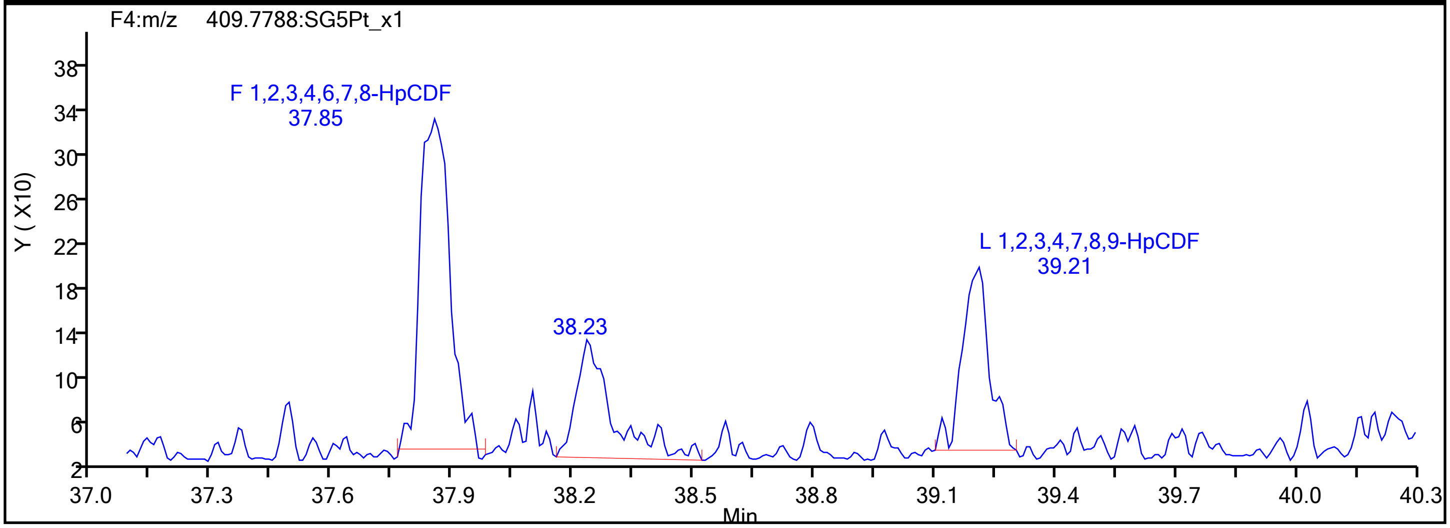

HpCDF Interference Mass

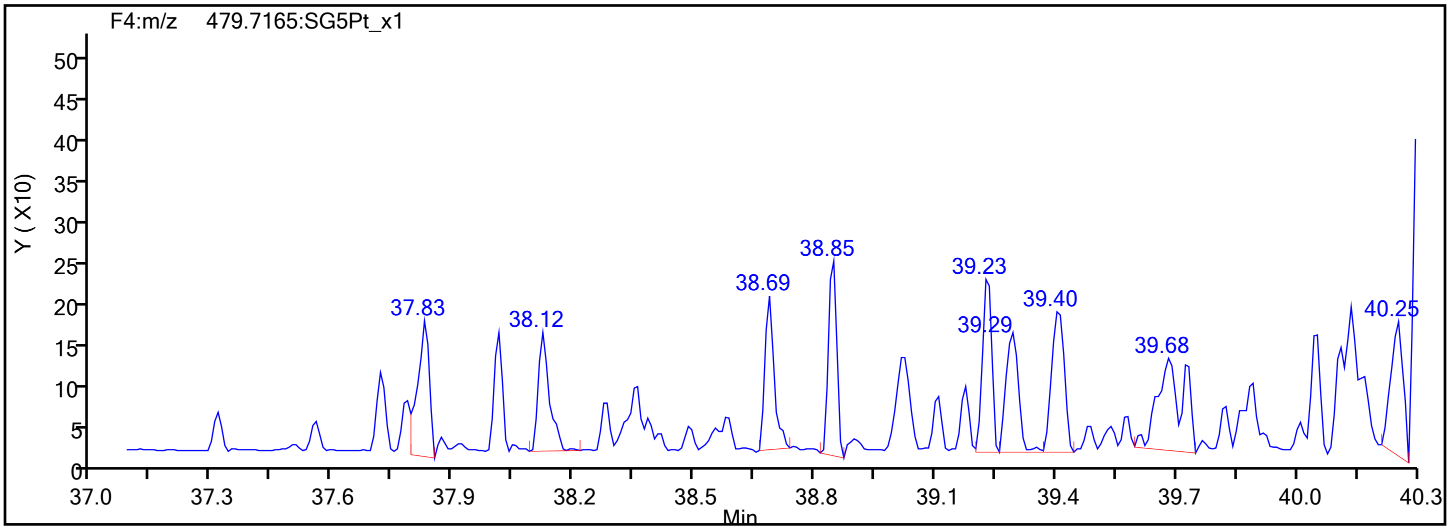

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Eurofins TestAmerica, Sacramento

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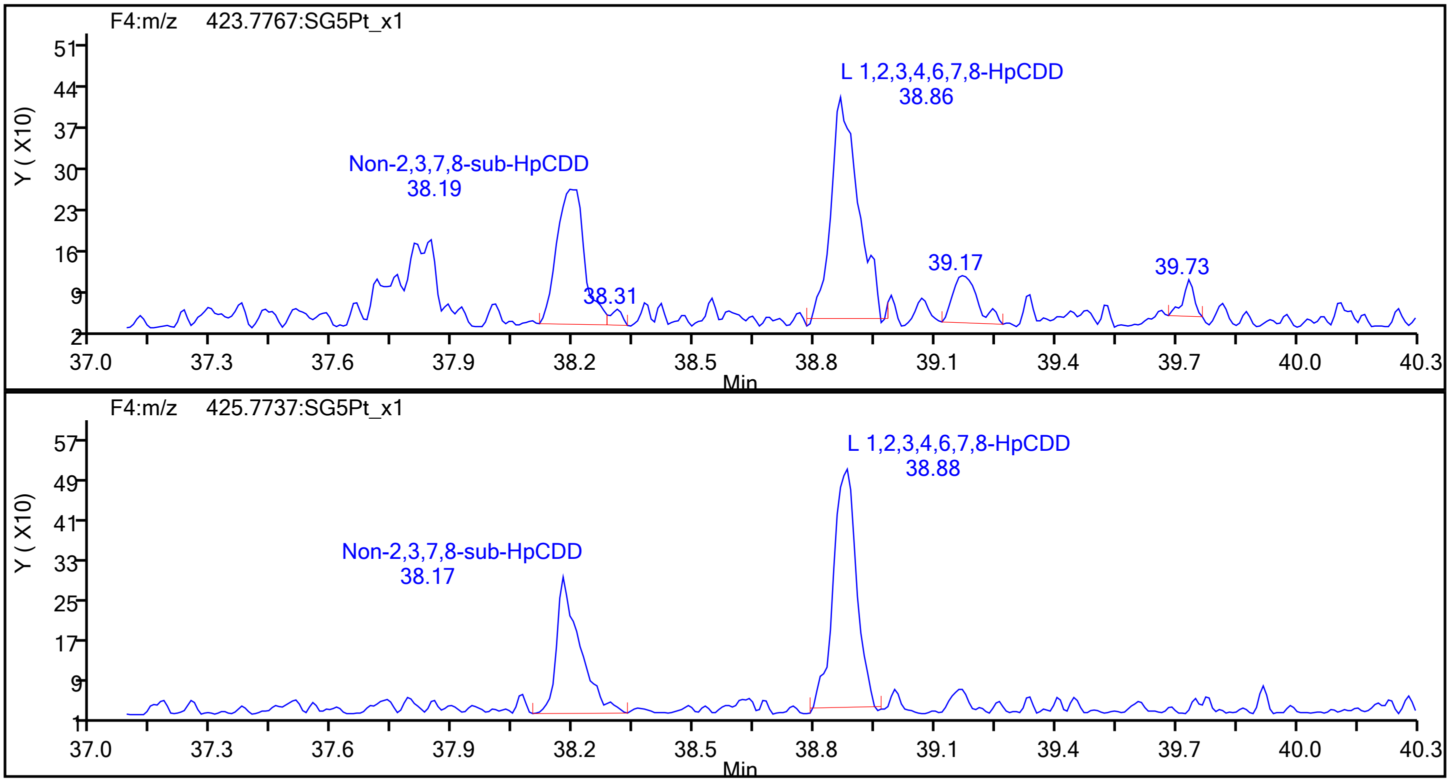

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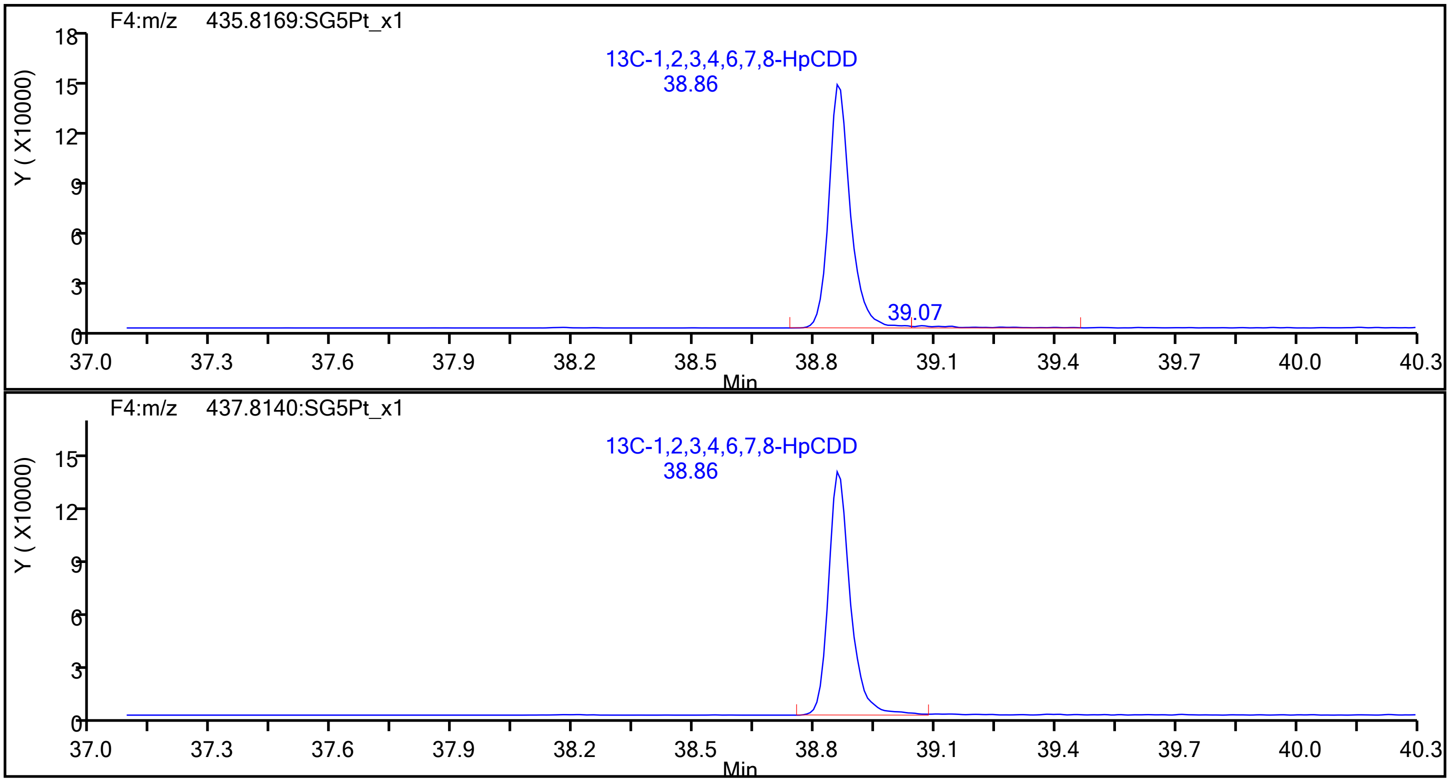

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Eurofins TestAmerica, Sacramento

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OCDF

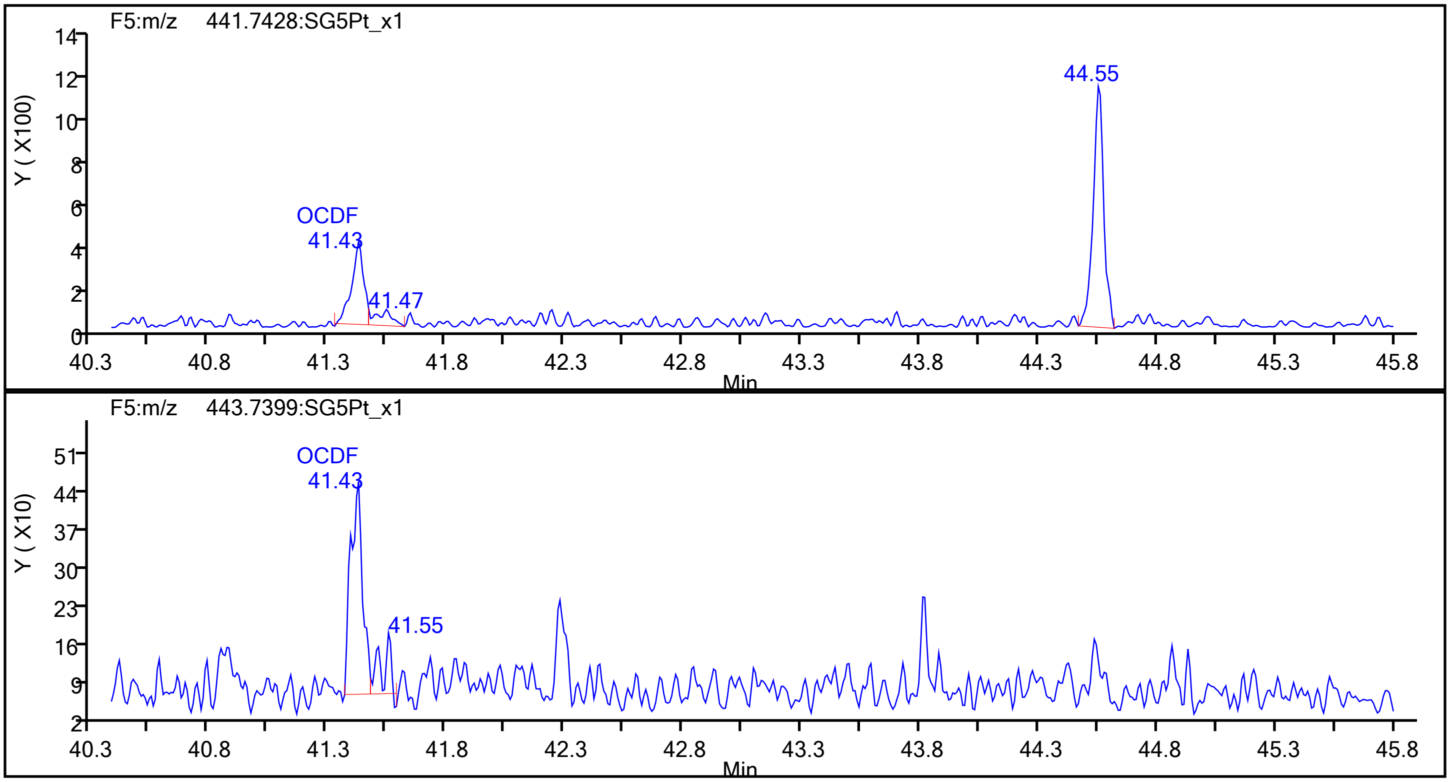

OCDF Standards

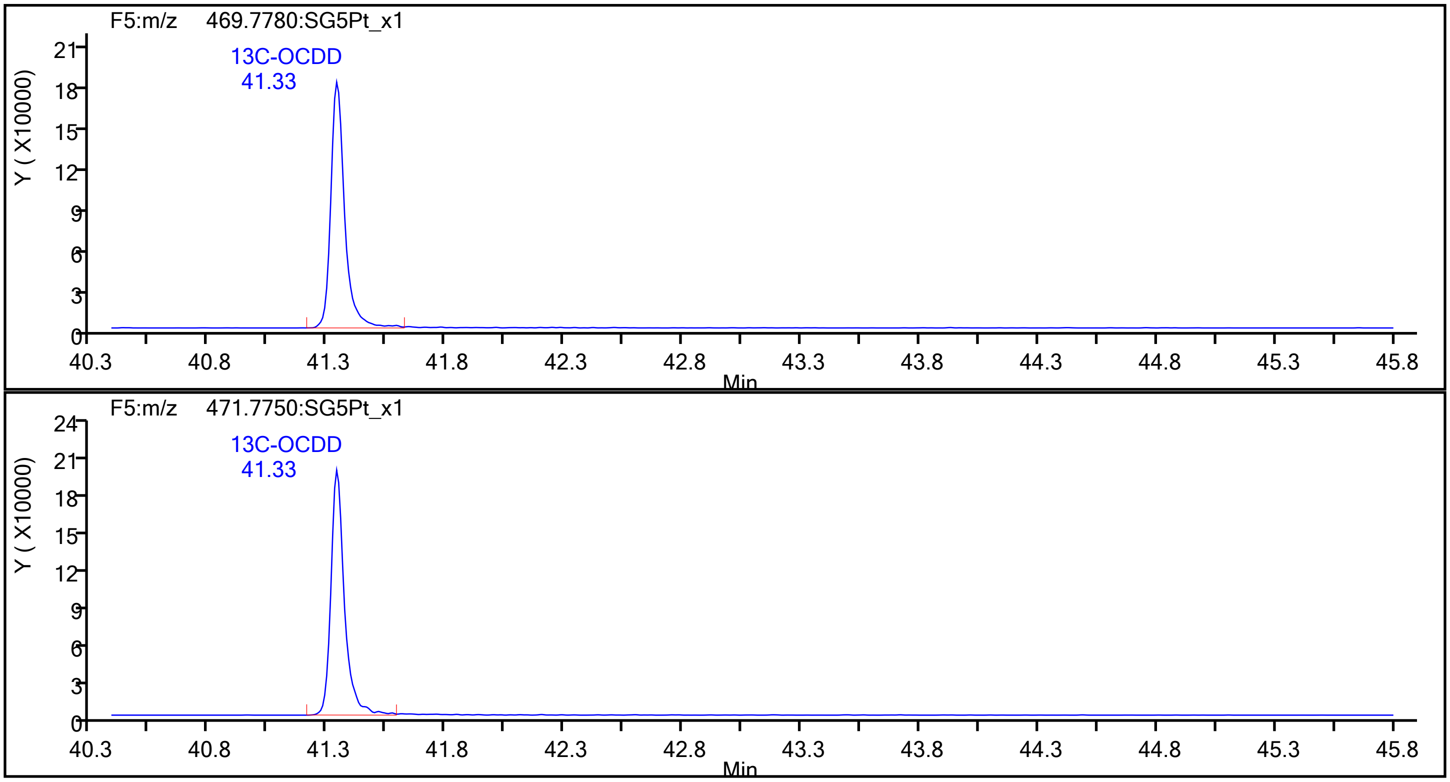

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

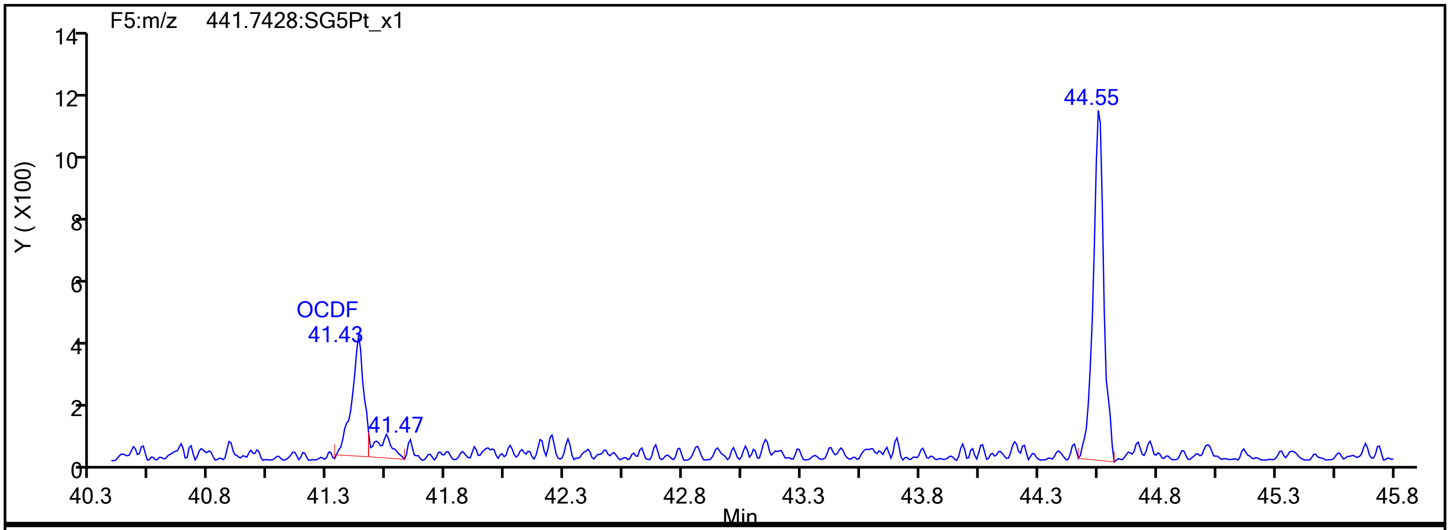

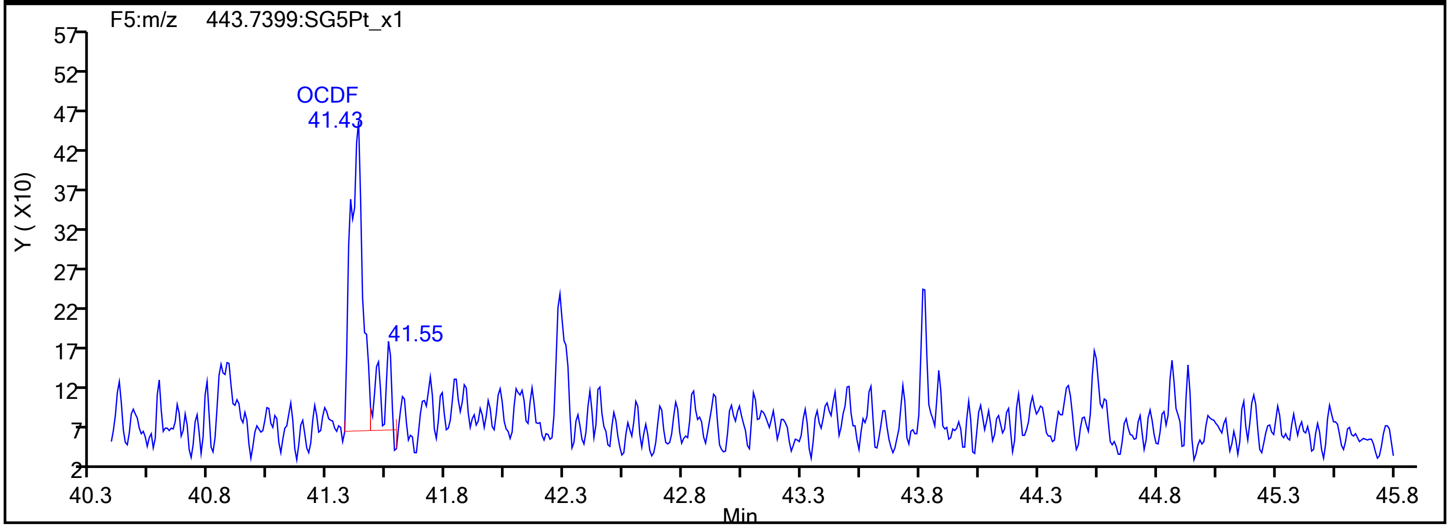

OCDF Interference Mass

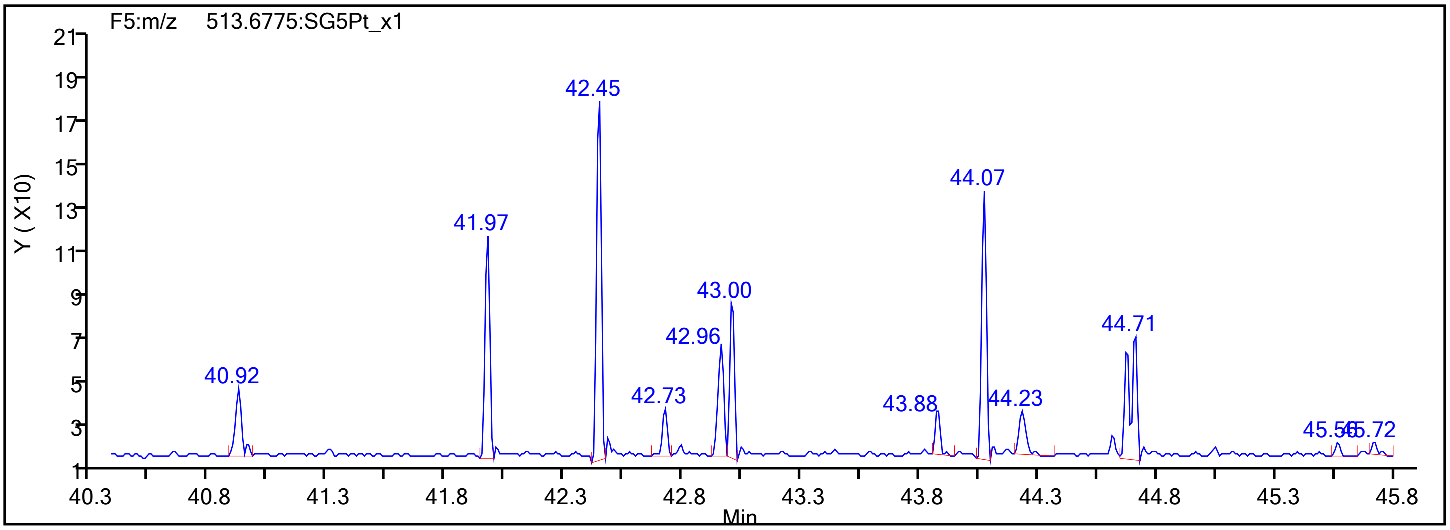

Report Date: 12-Mar-2021 09:23:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d
Injection Date: 10-Mar-2021 17:37:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

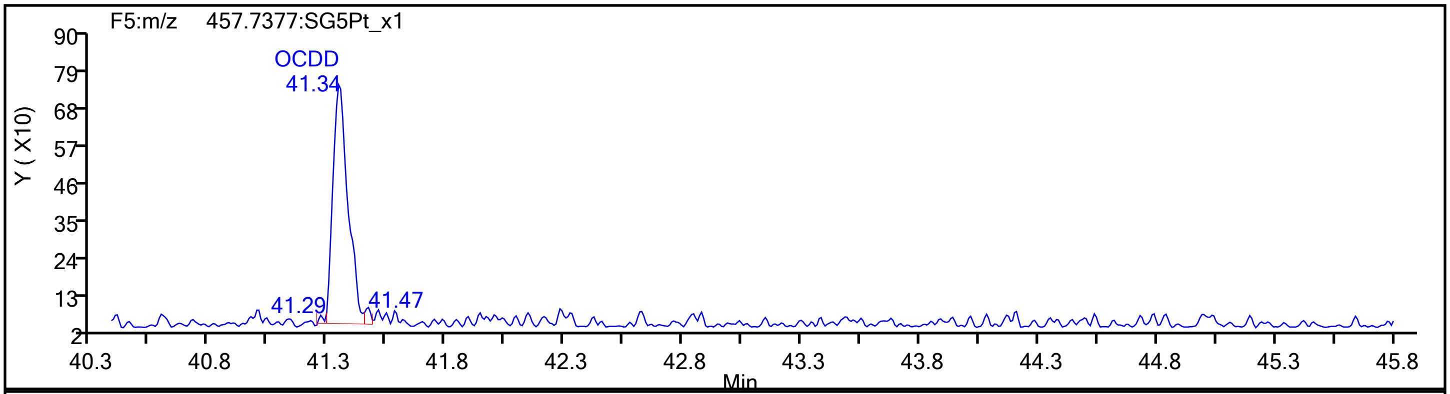

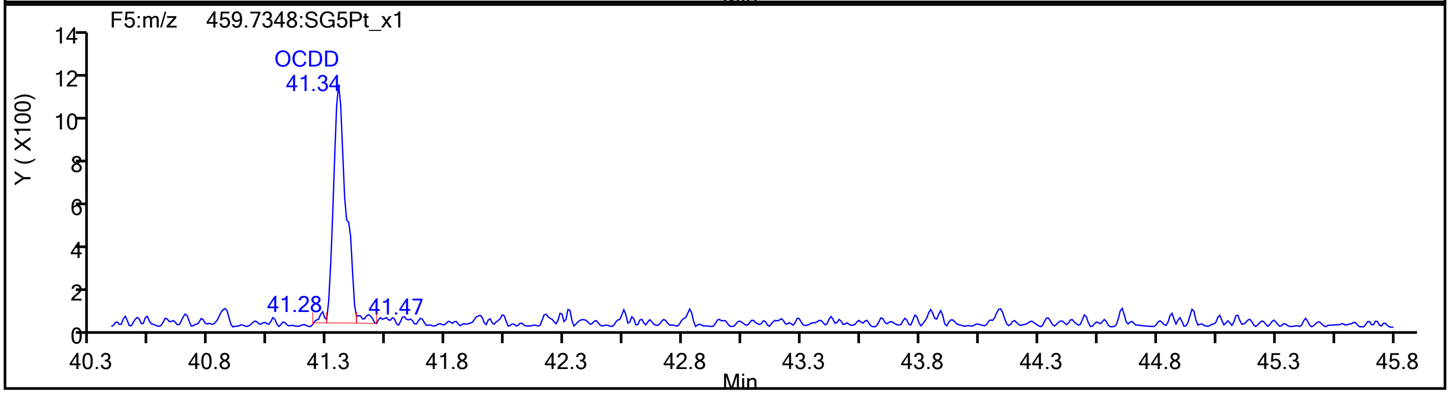

OCDD Standards

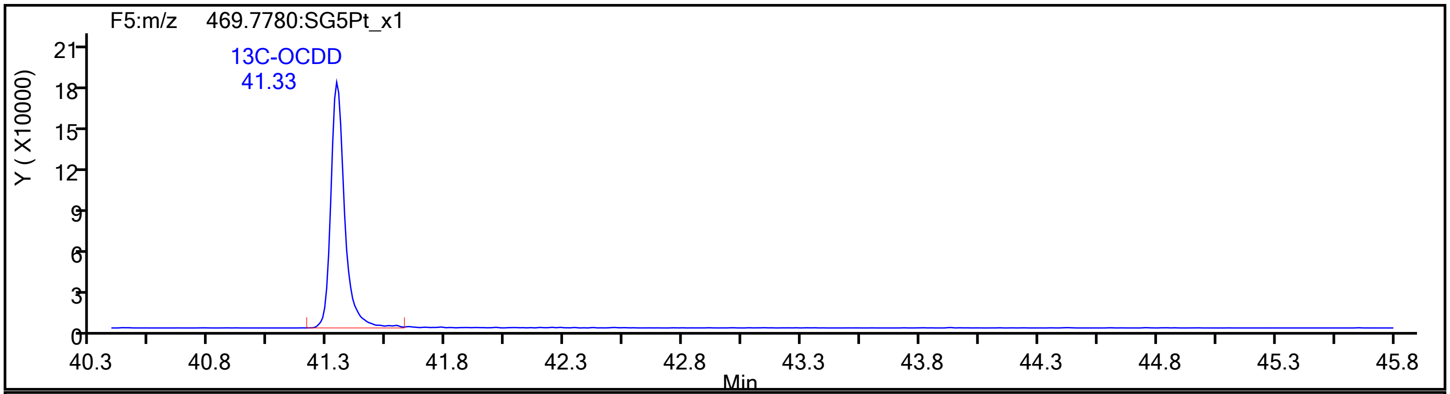

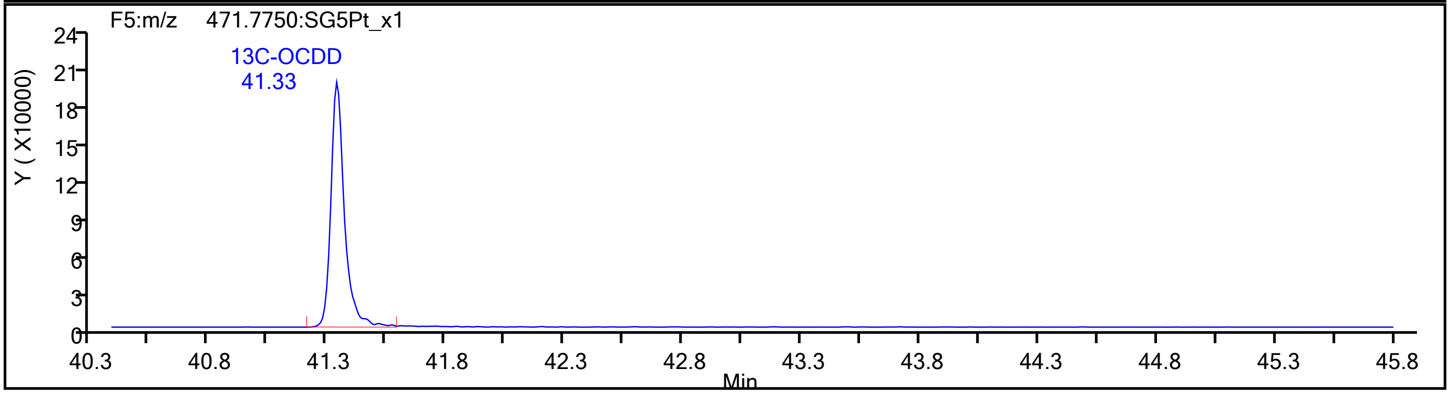

Report Date: 12-Mar-2021 09:23:08 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d

Injection Date: 10-Mar-2021 17:37:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

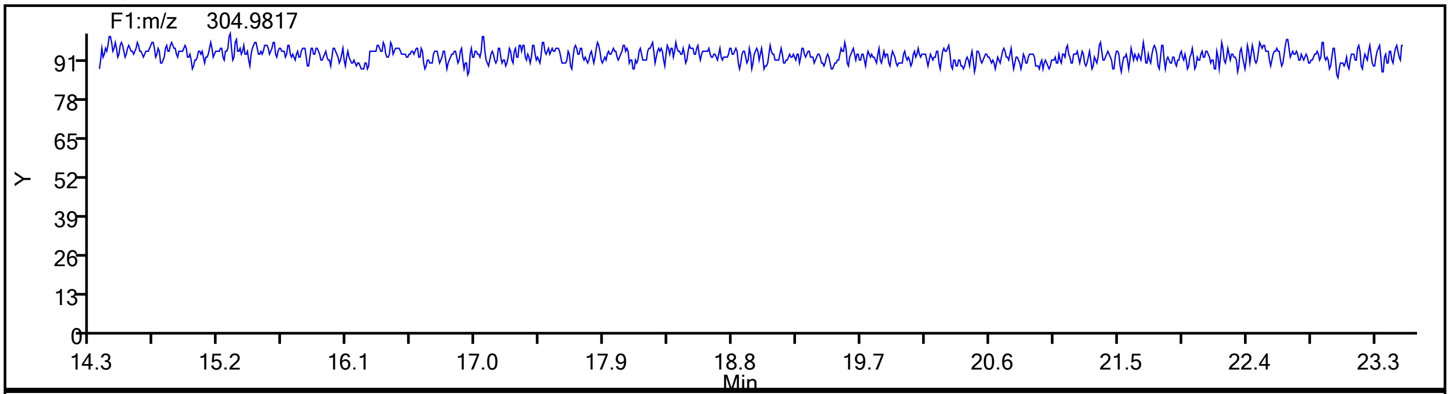

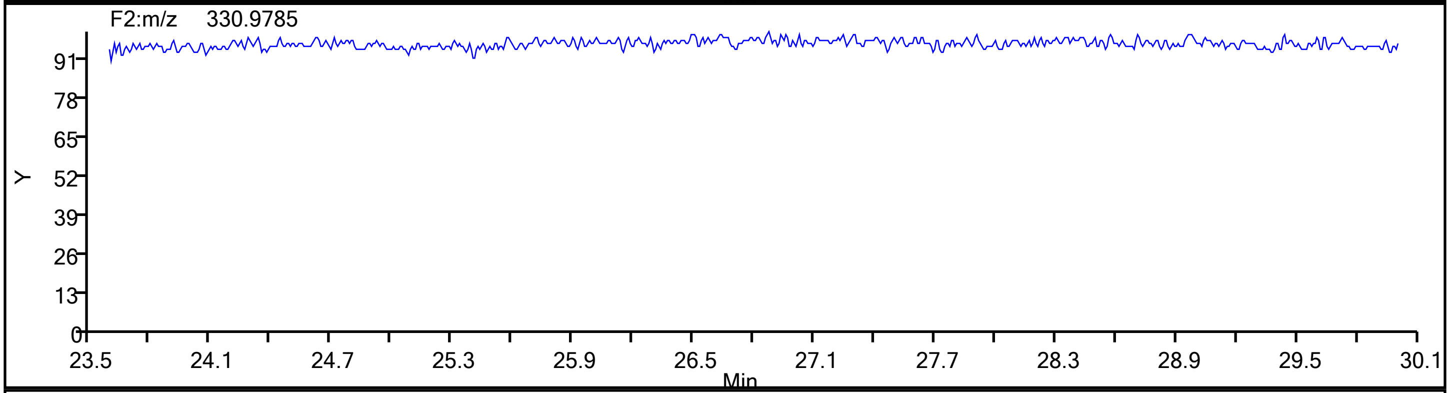

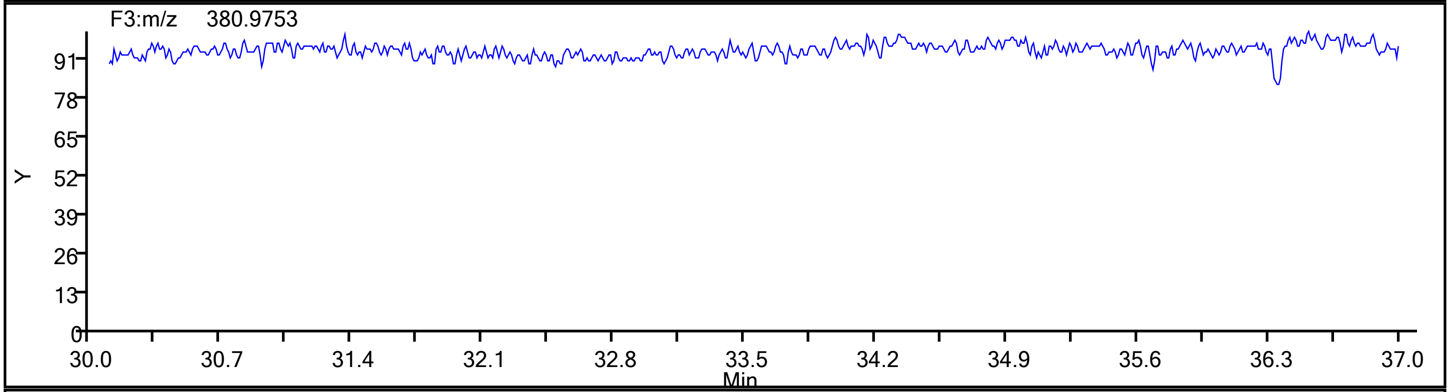

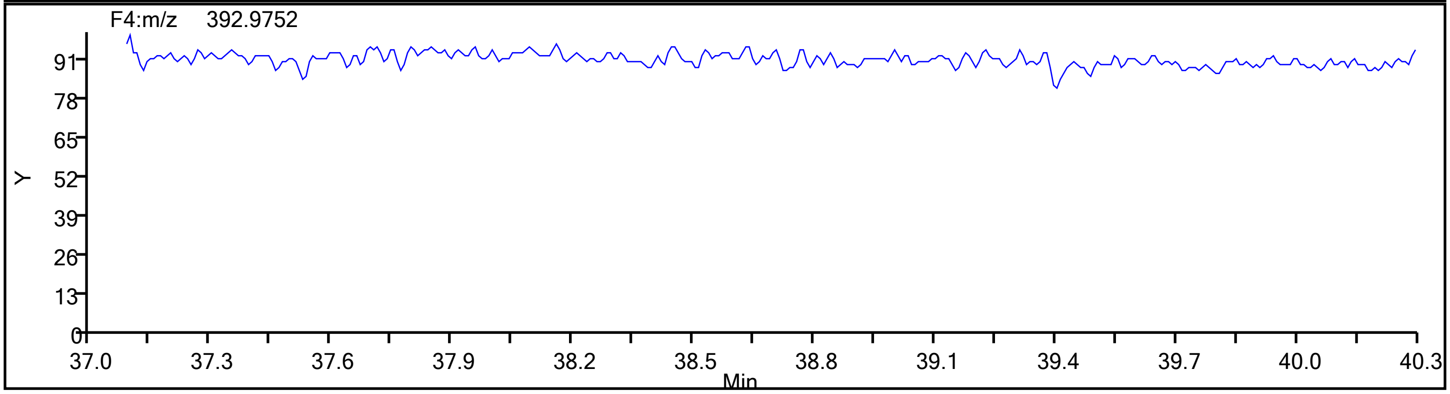

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_13.d		
Injection Date:	10-Mar-2021 17:37:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

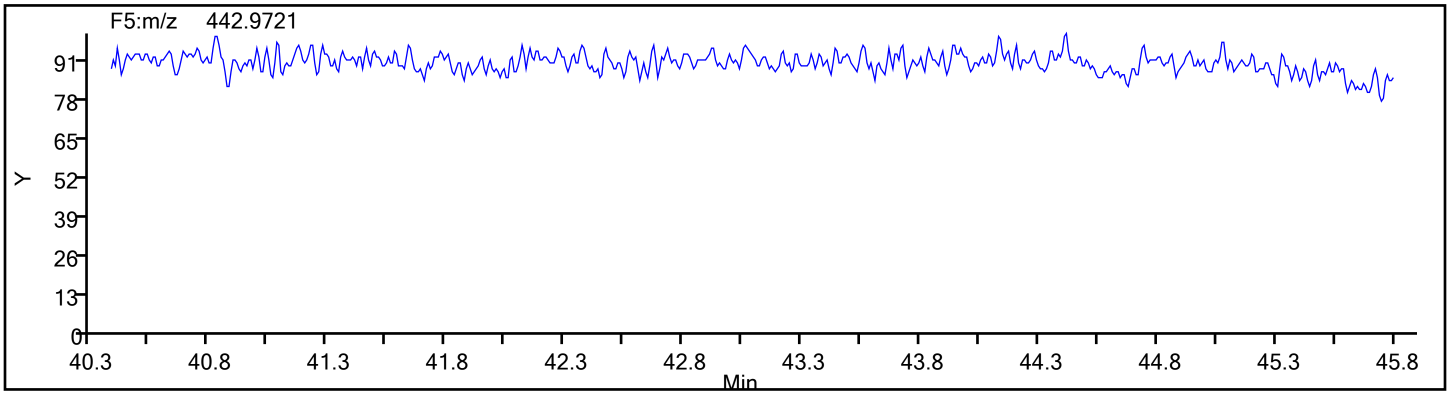

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-467785/2-A
Matrix: Water	Lab File ID: 10mr21dfs1_11.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1000(mL)	Date Analyzed: 03/10/2021 16:01
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	200		10	0.95
51207-31-9	2,3,7,8-TCDF	207		10	0.73
40321-76-4	1,2,3,7,8-PeCDD	1010		50	1.4
57117-41-6	1,2,3,7,8-PeCDF	1020		50	4.8
57117-31-4	2,3,4,7,8-PeCDF	1040		50	5.6
39227-28-6	1,2,3,4,7,8-HxCDD	1110		50	2.1
57653-85-7	1,2,3,6,7,8-HxCDD	1130		50	2.1
19408-74-3	1,2,3,7,8,9-HxCDD	1070		50	1.9
70648-26-9	1,2,3,4,7,8-HxCDF	1060		50	4.0
57117-44-9	1,2,3,6,7,8-HxCDF	1070		50	3.8
72918-21-9	1,2,3,7,8,9-HxCDF	1110		50	3.2
60851-34-5	2,3,4,6,7,8-HxCDF	1090		50	3.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	1060		50	2.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	1100		50	4.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	1070		50	4.6
3268-87-9	OCDD	2000		100	1.9
39001-02-0	OCDF	1830		100	2.2
41903-57-5	Total TCDD	200		10	0.95
30402-14-3	Total TCDF	207		10	0.73
36088-22-9	Total PeCDD	1010		50	1.4
30402-15-4	Total PeCDF	2050		50	5.2
34465-46-8	Total HxCDD	3310		50	2.0
55684-94-1	Total HxCDF	4330		50	3.5
37871-00-4	Total HpCDD	1060		50	2.3
38998-75-3	Total HpCDF	2160		50	4.4

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-467785/2-A

Matrix: Water Lab File ID: 10mr21dfs1_11.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 03/05/2021 09:52

Sample wt/vol: 1000(mL) Date Analyzed: 03/10/2021 16:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 468973 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		20-175
89059-46-1	13C-2,3,7,8-TCDF	62		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	65		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	60		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	60		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	60		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	66		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	61		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	67		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	68		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	61		20-186
114423-97-1	13C-OCDD	60		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		31-191

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d
Lims ID: LCS 320-467785/2-A
Client ID:
Sample Type: LCS
Inject. Date: 10-Mar-2021 16:01:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-467785/2-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 09:18:38 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1686

First Level Reviewer: bilottag Date: 11-Mar-2021 07:57:05

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.494	3956115	0.80	1E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.617	3771260	0.80	1.5437	61.8	61.8	0.1667	0.1667	61.75	
2,3,7,8-TCDF	18.643	438922	0.75	1.1258	10.3	10.3	0.0364	0.0364	103	
A Non-2,3,7,8-sub-TCDF	18.182						0.0364	0.1197		U
S Total TCDF					10.3	10.3	0.0364	0.0364		
D 13C-2,3,7,8-TCDD	19.837	2673623	0.80	0.9687	69.8	69.8	0.2229	0.2229	69.76	
2,3,7,8-TCDD	19.872	317956	0.80	1.1904	10.0	10.0	0.0477	0.0477	99.90	
$ 37Cl4-2,3,7,8-TCDD	19.863	1631338		1.0841	38.0	38.0	0.0222	0.0222	95.09	
A Non-2,3,7,8-sub-TCDD	18.946						0.0477	0.1500		U
S Total TCDD					10.0	10.0	0.0477	0.0477		
D 13C-1,2,3,7,8-PeCDF	25.666	3117287	1.57	1.3124	60.0	60.0	0.2642	0.2642	60.04	
1,2,3,7,8-PeCDF	25.683	1771234	1.57	1.1163	50.9	50.9	0.2400	0.2400	102	
D 13C-2,3,4,7,8-PeCDF	27.048	3182279	1.58	1.3352	60.2	60.2	0.2597	0.2597	60.25	
2,3,4,7,8-PeCDF	27.073	1743191	1.57	1.0579	51.8	51.8	0.2786	0.2786	104	
A F1 PeCDFs	22.838						0.0099	0.0099		RQU
A Non-2,3,7,8-sub-PeCDF	26.271						0.2582	0.2582		
S Total PeCDF					102.7	102.7	0.2593	0.2593		
D 13C-1,2,3,7,8-PeCDD	27.806	1994300	1.59	0.7716	65.3	65.3	0.0978	0.0978	65.34	
1,2,3,7,8-PeCDD	27.832	1147750	1.58	1.1372	50.6	50.6	0.0677	0.0677	101	
A Non-2,3,7,8-sub-PeCDD	26.681						0.0677	0.1930		RQU
S Total PeCDD					50.6	50.6	0.0677	0.0677		
D 13C-1,2,3,4,7,8-HxCDF	33.579	2183619	0.52	1.0931	59.6	59.6	0.1786	0.1786	59.65	
1,2,3,4,7,8-HxCDF	33.595	1369406	1.22	1.1831	53.0	53.0	0.2009	0.2009	106	
D 13C-1,2,3,6,7,8-HxCDF	33.781	2487122	0.53	1.1278	65.9	65.9	0.1731	0.1731	65.85	
1,2,3,6,7,8-HxCDF	33.806	1658970	1.22	1.2484	53.4	53.4	0.1923	0.1923	107	
D 13C-2,3,4,6,7,8-HxCDF	34.766	2380122	0.53	1.0552	67.4	67.4	0.1850	0.1850	67.35	
2,3,4,6,7,8-HxCDF	34.791	1655734	1.22	1.2750	54.6	54.6	0.1510	0.1510	109	
D 13C-1,2,3,7,8,9-HxCDF	35.785	2042376	0.54	0.9938	61.4	61.4	0.1964	0.1964	61.36	
1,2,3,7,8,9-HxCDF	35.802	1470364	1.23	1.2953	55.6	55.6	0.1608	0.1608	111	
A Non-2,3,7,8-sub-HxCDF	33.585						0.1741	0.1741		
S Total HxCDF					216.6	216.6	0.1762	0.1762		
* 13C-1,2,3,7,8,9-HxCDD	35.583	3348988	1.28	1.1E+05	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.027	1587382	1.28	0.7895	60.0	60.0	0.1728	0.1728	60.03	
1,2,3,4,7,8-HxCDD	35.044	961481	1.29	1.0950	55.3	55.3	0.1060	0.1060	111	
D 13C-1,2,3,6,7,8-HxCDD	35.162	1977009	1.24	0.8495	69.5	69.5	0.1606	0.1606	69.49	
1,2,3,6,7,8-HxCDD	35.179	1141078	1.22	1.0201	56.6	56.6	0.1032	0.1032	113	
1,2,3,7,8,9-HxCDD	35.600	1098804	1.27	1.1549	53.4	53.4	0.0956	0.0956	107	
A Non-2,3,7,8-sub-HxCDD	34.125						0.1013	0.1013		
S Total HxCDD					165.3	165.3	0.1016	0.1016		
D 13C-1,2,3,4,6,7,8-HpCDF	37.826	1680015	0.46	0.7854	63.9	63.9	0.3031	0.3031	63.87	
1,2,3,4,6,7,8-HpCDF	37.835	1366887	1.03	1.4859	54.8	54.8	0.2054	0.2054	110	
D 13C-1,2,3,4,7,8,9-HpCDF	39.166	1466083	0.44	0.7230	60.6	60.6	0.3292	0.3292	60.55	
1,2,3,4,7,8,9-HpCDF	39.183	1099783	1.03	1.4048	53.4	53.4	0.2310	0.2310	107	
A Non-2,3,7,8-sub-HpCDF	38.512						0.2176	0.2176		
S Total HpCDF					108.2	108.2	0.2182	0.2182		
D 13C-1,2,3,4,6,7,8-HpCDD	38.854	1467382	1.06	0.6413	68.3	68.3	0.1751	0.1751	68.32	
1,2,3,4,6,7,8-HpCDD	38.871	895055	1.04	1.1489	53.1	53.1	0.1170	0.1170	106	
A Non-2,3,7,8-sub-HpCDD	38.524						0.1170	0.1170		
S Total HpCDD					53.1	53.1	0.1170	0.1170		
D 13C-OCDD	41.326	2051258	0.91	0.5141	119.1	119.1	0.1337	0.1337	59.57	
OCDF	41.410	1483882	0.90	1.5776	91.7	91.7	0.1086	0.1086	91.71	
OCDD	41.342	1199273	0.89	1.1706	99.9	99.9	0.0952	0.0952	99.89	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d				
Lims ID:	LCS 320-467785/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	10-Mar-2021 16:01:00	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	lcs 320-467785/2-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	12-Mar-2021 09:18:38	Calib Date:	03-Feb-2021 00:57:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1686				

First Level Reviewer: bilottag Date: 11-Mar-2021 07:57:05

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.494	19.547	-3		1752790	280939	291	727	965		a
333.9338	19.494	19.547	-3		2203325	351310	255	637	1378	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.617	18.671	-3	0.955	1676511	270489	396	990	683		
317.9389	18.626	18.671	-3	0.955	2094749	339953	255	637	1333	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.643	18.706	-4	1.001	187571	30753	36	90	854		
305.8987	18.643	18.706	-4	1.001	251351	40362	64	160	631	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.008	18.182	-10	0.967	2367	329	36	90	9		
305.8987	18.016	18.182	-10	0.968	2717	509	64	160	8	0.87(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.837	19.882	-3	1.018	1191606	178054	291	727	612		
333.9338	19.837	19.882	-3	1.018	1482017	221945	255	637	870	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.872	19.908	-2	1.002	140938	20891	61	152	342		
321.8936	19.863	19.908	-3	1.001	177018	26608	30	75	887	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.863	19.917	-3	1.019	1631338	244303	61	152	4005		
A Non-2,3,7,8-sub-TCDD											U
319.8965	16.273	18.946	-160	0.820	2075	429	61	152	7		
321.8936	16.290	18.946	-159	0.821	2699	519	30	75	17	0.77(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.666	25.717	-3	1.317	1902628	342145	551	1377	621		
353.8970	25.666	25.717	-3	1.317	1214659	210325	326	815	645	1.57(1.32-1.78)	

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.683	25.734	-3	1.001	1081306	184140	343	857	537		
341.8567	25.683	25.734	-3	1.001	689928	118613	249	622	476	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.048	27.107	-4	1.388	1948421	307235	551	1377	558		
353.8970	27.048	27.107	-4	1.388	1233858	194989	326	815	598	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.073	27.124	-3	1.001	1063972	163841	343	857	478		
341.8567	27.073	27.124	-3	1.001	679219	104181	249	622	418	1.57(1.32-1.78)	
A F1 PeCDFs											U
339.8597	22.838	22.838	0	0.890	60	33	2	5			
341.8567	22.838	22.838	0	0.890	1202	183	21	52		0.05(1.32-1.78)	
	Empc Correction				38	21	21	52	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.271						343	857			
341.8567	26.271						249	622			
13C-1,2,3,7,8-PeCDD											
367.8949	27.806	27.857	-3	1.426	1223603	183204	116	290	1579		
369.8919	27.798	27.857	-4	1.426	770697	111811	75	187	1491	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.832	27.883	-3	1.001	703158	99581	61	152	1632		
357.8516	27.832	27.883	-3	1.001	444592	63112	30	75	2104	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											U
355.8546	26.681	26.681	0	0.960	3837	340	61	152			
	Empc Correction				2661	258	61	152	0		
357.8516	26.681	26.681	0	0.960	1717	167	30	75		2.23(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.579	33.620	-3	0.944	749917	123855	179	447	692		
385.8610	33.579	33.620	-3	0.944	1433702	235896	346	865	682	0.52(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.595	33.646	-3	1.001	752952	122180	192	480	636		
375.8178	33.595	33.646	-3	1.001	616454	101691	150	375	678	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.781	33.822	-2	0.949	866106	125516	179	447	701		
385.8610	33.781	33.822	-2	0.949	1621016	230617	346	865	667	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.806	33.839	-2	1.001	911341	136569	192	480	711		
375.8178	33.806	33.839	-2	1.001	747629	110764	150	375	738	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.766	34.808	-2	0.977	820788	153728	179	447	859		
385.8610	34.766	34.808	-2	0.977	1559334	290480	346	865	840	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.791	34.825	-2	1.001	911320	169239	192	480	881		
375.8178	34.783	34.825	-2	1.000	744414	136537	150	375	910	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.785	35.827	-3	1.006	715306	142999	179	447	799		
385.8610	35.785	35.827	-3	1.006	1327070	267500	346	865	773	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.802	35.836	-2	1.000	812229	161330	192	480	840		
375.8178	35.802	35.836	-2	1.000	658135	127884	150	375	853	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.585						192	480			
375.8178	33.585						150	375			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.583	35.617	-2		1883212	382646	209	522	1831		
403.8529	35.583	35.617	-2		1465776	289541	158	395	1833	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.027	35.061	-2	0.984	890493	191923	209	522	918		
403.8529	35.027	35.061	-2	0.984	696889	150043	158	395	950	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.044	35.086	-2	1.000	541266	112973	87	217	1299		
391.8127	35.044	35.086	-2	1.000	420215	89035	72	180	1237	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.162	35.195	-2	0.988	1094274	208405	209	522	997		
403.8529	35.162	35.195	-2	0.988	882735	168681	158	395	1068	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.179	35.212	-2	1.000	628223	120531	87	217	1385		
391.8127	35.179	35.212	-2	1.000	512855	95989	72	180	1333	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.600	35.633	-2	1.016	614735	123345	87	217	1418		
391.8127	35.600	35.633	-2	1.016	484069	96901	72	180	1346	1.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.125						87	217			
391.8127	34.125						72	180			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.826	37.860	-2	1.063	527205	134489	239	597	563		
419.8220	37.826	37.860	-2	1.063	1152810	298780	401	1002	745	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.835	37.869	-2	1.000	691971	172304	276	690	624		
409.7788	37.835	37.869	-2	1.000	674916	170562	253	632	674	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.166	39.199	-2	1.101	450507	122145	239	597	511		
419.8220	39.166	39.199	-2	1.101	1015576	285174	401	1002	711	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.183	39.208	-2	1.000	558696	151587	276	690	549		
409.7788	39.174	39.208	-2	1.000	541087	146663	253	632	580	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.512						276	690			
409.7788	38.512						253	632			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.854	38.888	-2	1.092	755129	208794	138	345	1513		
437.8140	38.854	38.888	-2	1.092	712253	194313	164	410	1185	1.06(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.871	38.896	-2	1.000	456288	124623	117	292	1065		
425.7737	38.862	38.896	-2	1.000	438767	121135	100	250	1211	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.524						117	292			
425.7737	38.524						100	250			
13C-OCDD											
469.7780	41.326	41.358	-2	1.161	977006	272903	95	237	2873		
471.7750	41.334	41.358	-1	1.162	1074252	301522	90	225	3350	0.91(0.76-1.02)	
OCDF											
441.7428	41.410	41.434	-1	1.002	701629	195333	96	240	2035		
443.7399	41.410	41.434	-1	1.002	782253	220034	101	252	2179	0.90(0.76-1.02)	
OCDD											
457.7377	41.342	41.367	-1	1.000	564784	152625	62	155	2462		
459.7348	41.334	41.367	-2	1.000	634489	173605	66	165	2630	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d
Lims ID:	LCS 320-467785/2-A
Client ID:	
Inject. Date:	10-Mar-2021 16:01:00
Dil. Factor:	1.0000
Sample Type:	LCS, Lab Control Sample
Instrument ID:	DFS 1
Operator:	Xcalibur_System
Lims Batch ID:	468973
Lims Sample ID:	10

Non-2,3,7,8-sub-TCDF, RT: 18.182

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3771260	610442

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3771260	610442

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.008	2367	329	2717	509	0.1197	0.87	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d
Lims ID: LCS 320-467785/2-A
Client ID:
Inject. Date: 10-Mar-2021 16:01:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 10

Non-2,3,7,8-sub-TCDD, RT: 18.946

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2673623	399999

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2673623	399999

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.273	2075	429	2699	519	0.1500	0.77	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d
Lims ID: LCS 320-467785/2-A
Client ID:
Inject. Date: 10-Mar-2021 16:01:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 10

F1 PeCDFs, RT: 22.838

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3117287	552470
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3182279	502224

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3149783	527347

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.042	60	33	1202	183	0.0369	0.05	RQ
23.042	60	33	38	21	0.002862		Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d
Lims ID: LCS 320-467785/2-A
Client ID:
Inject. Date: 10-Mar-2021 16:01:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 10

Non-2,3,7,8-sub-PeCDD, RT: 26.681

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.137	D 13C-1,2,3,7,8-PeCDD	100.000	1994300	295015

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.137		100.000	1994300	295015

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
28.716	3837	340	1717	167	0.2449	2.23	RQ
28.716	2661	258	1717	167	0.1930		Empc Correction

Compound is Marked ND

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d		
Injection Date:	10-Mar-2021 16:01:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

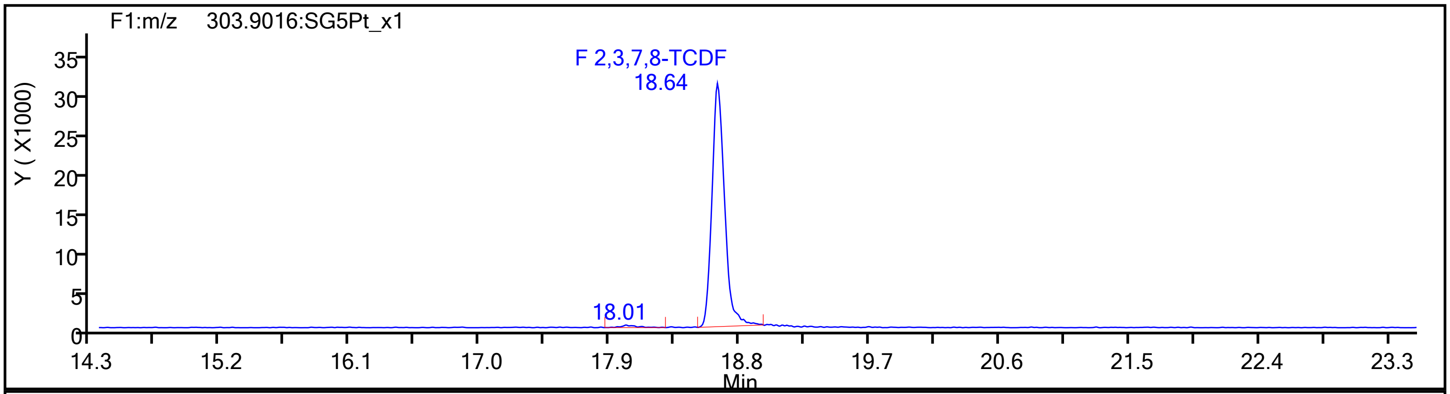

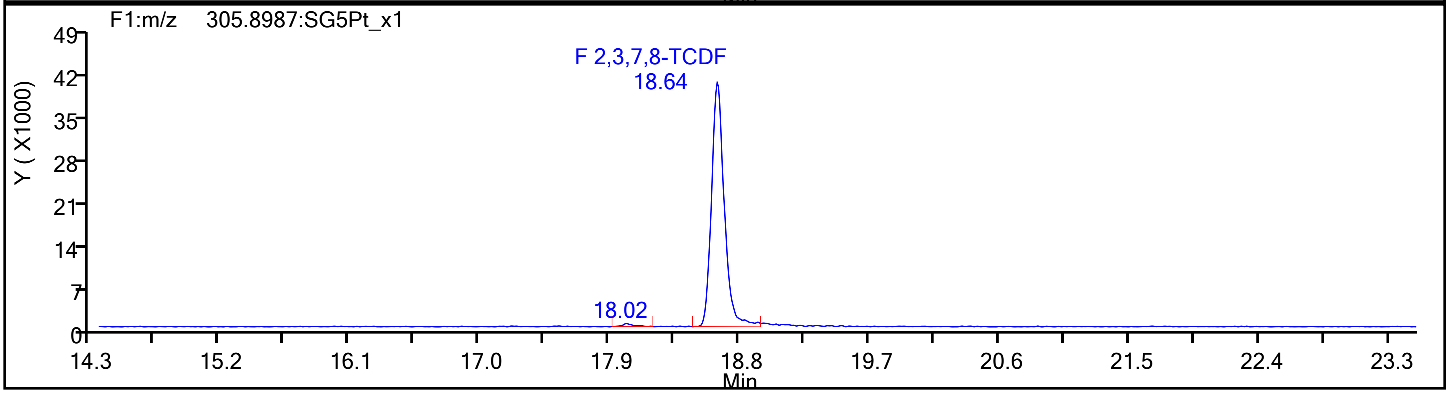

TCDF Standards

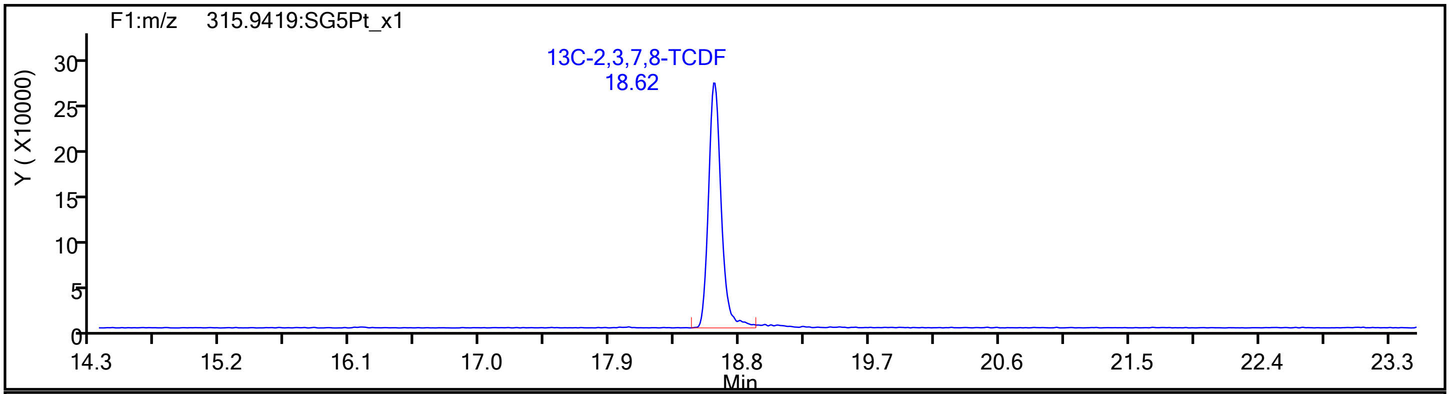

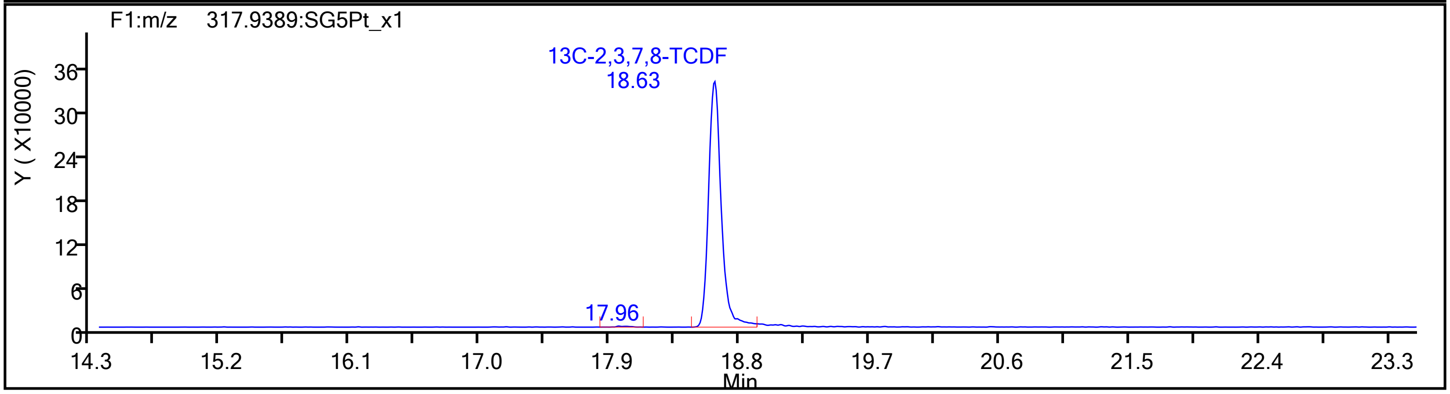

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d		
Injection Date:	10-Mar-2021 16:01:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

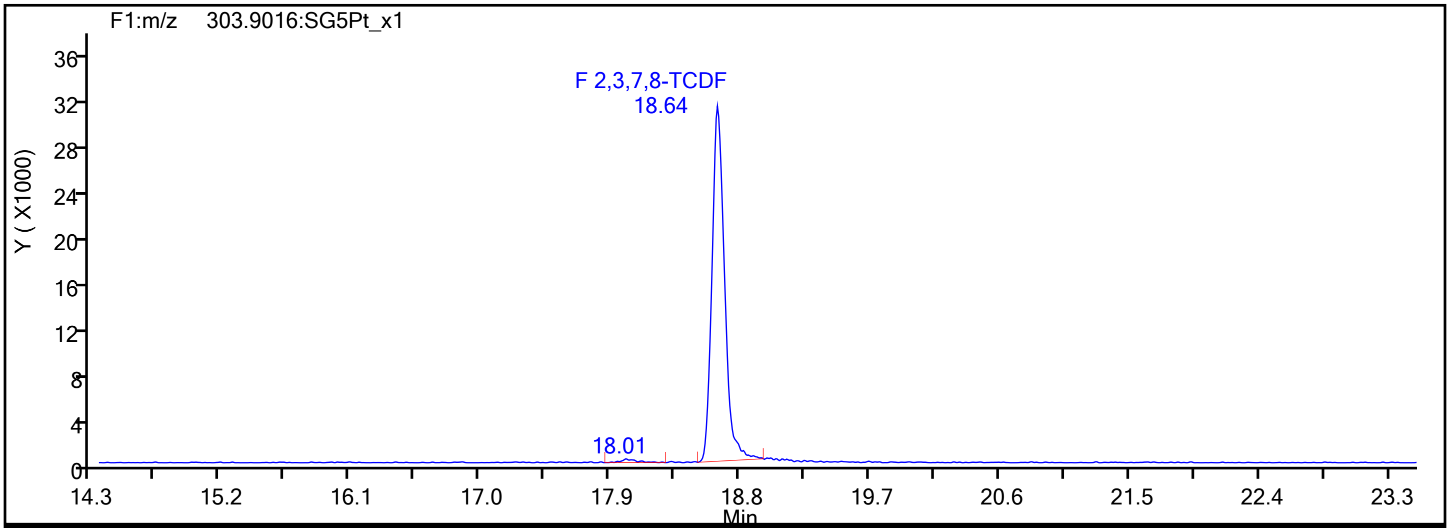

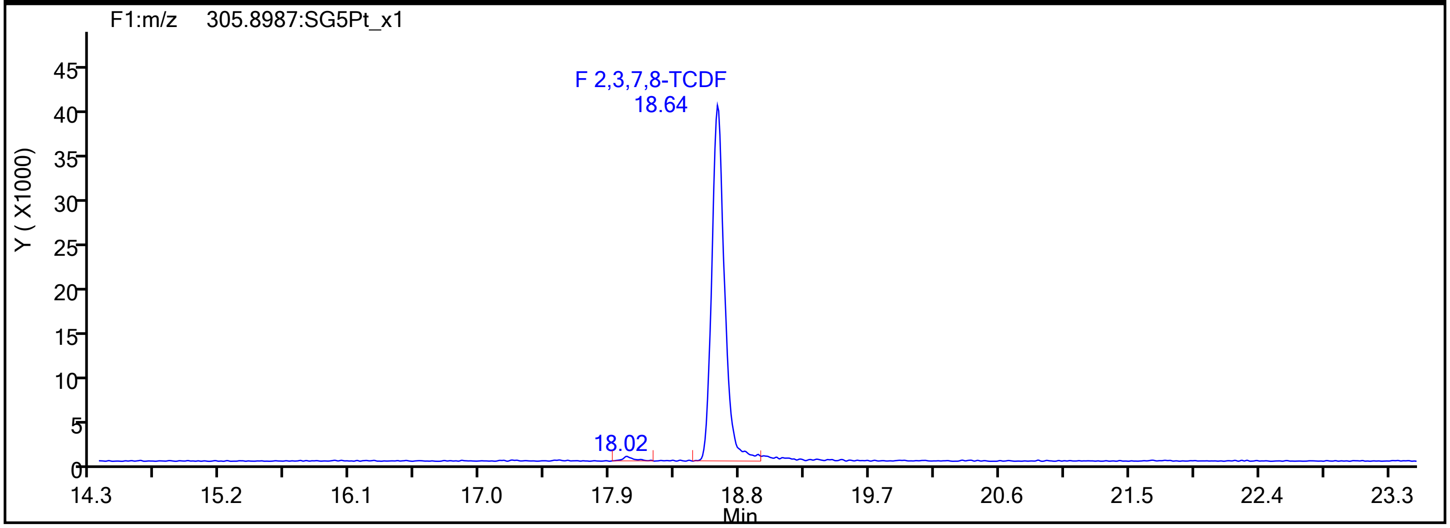

TCDF Interference Mass

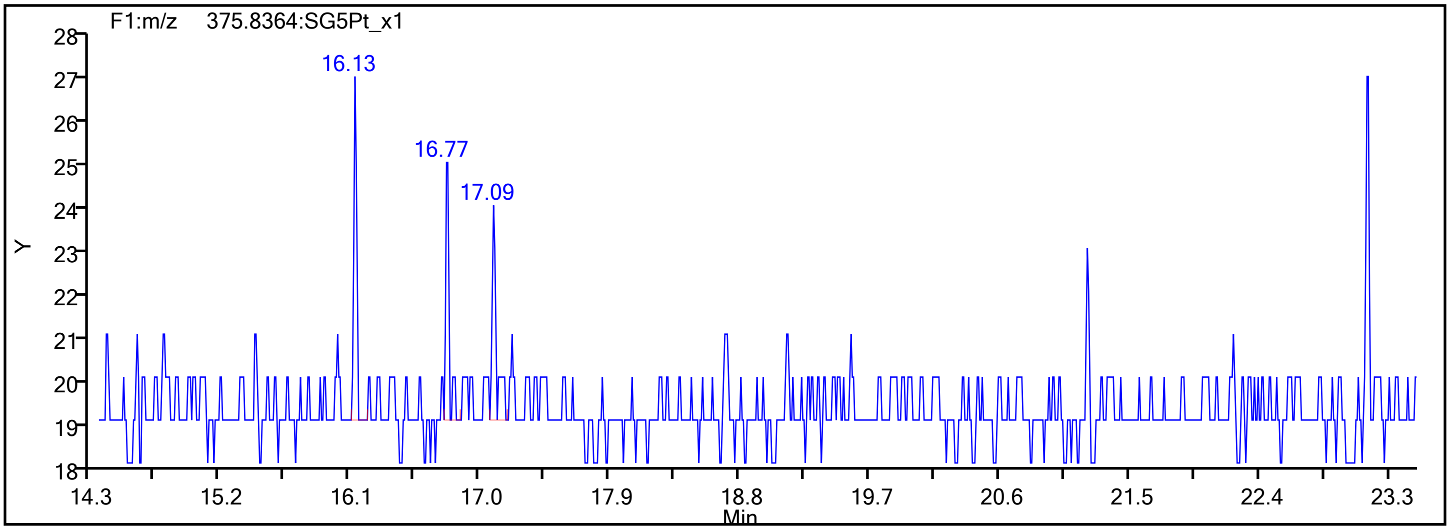

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d		
Injection Date:	10-Mar-2021 16:01:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

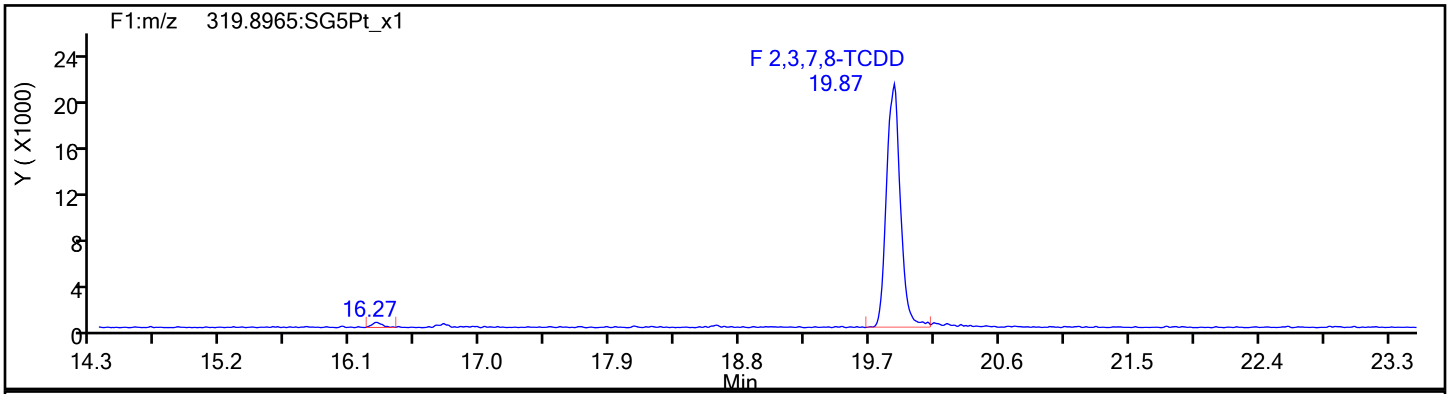

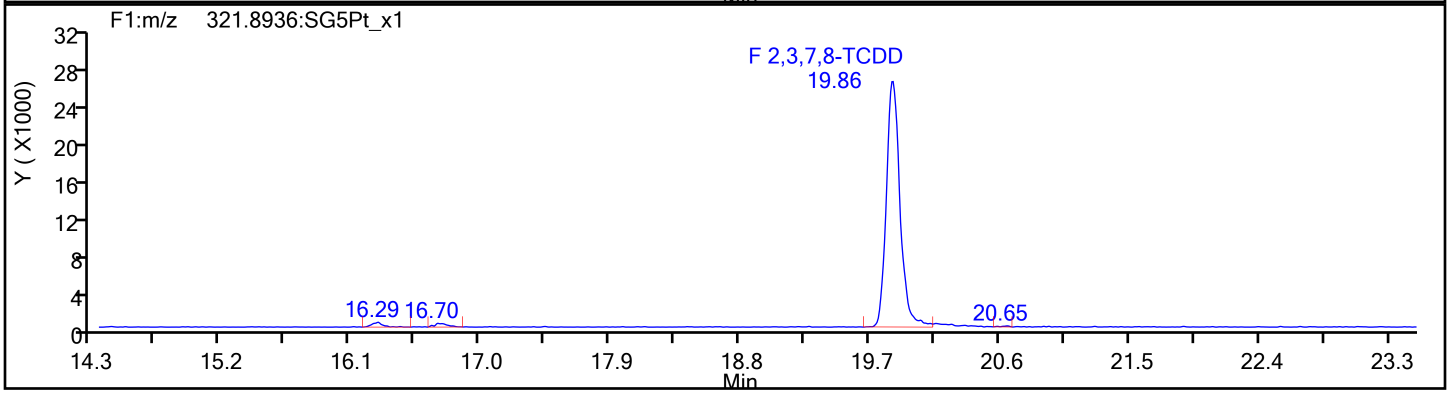

TCDD Standards

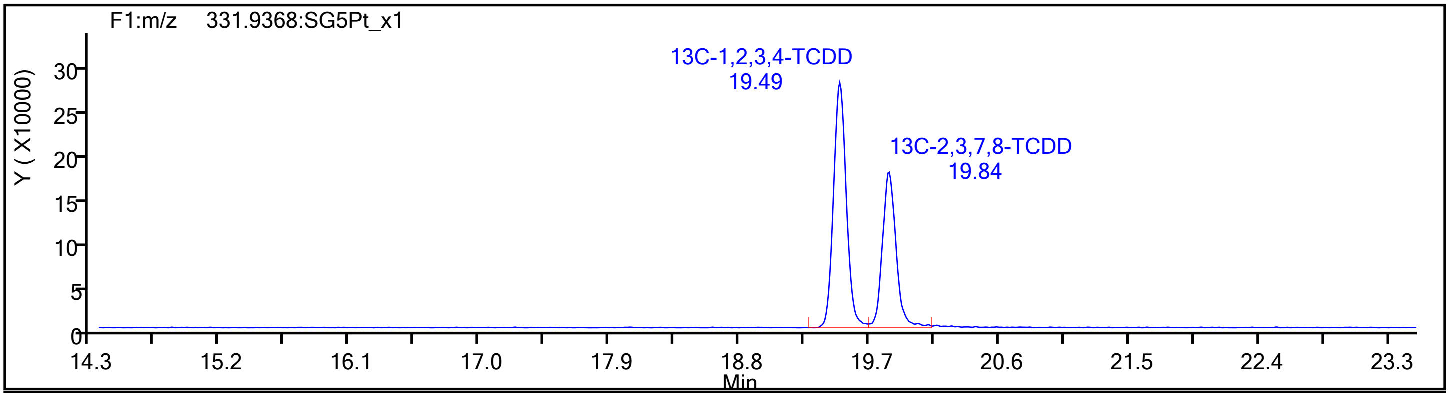

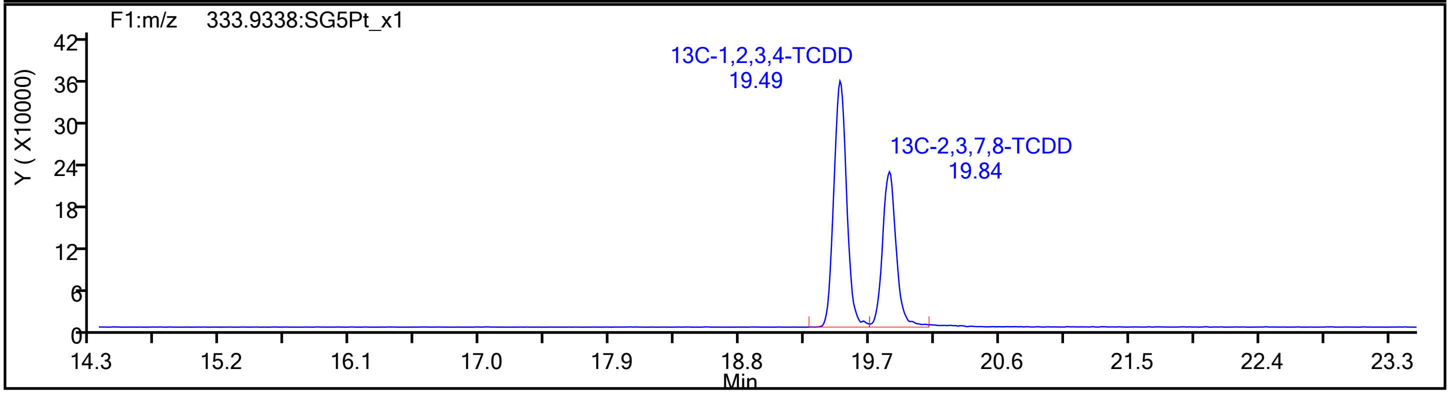

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d

Injection Date:	10-Mar-2021 16:01:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

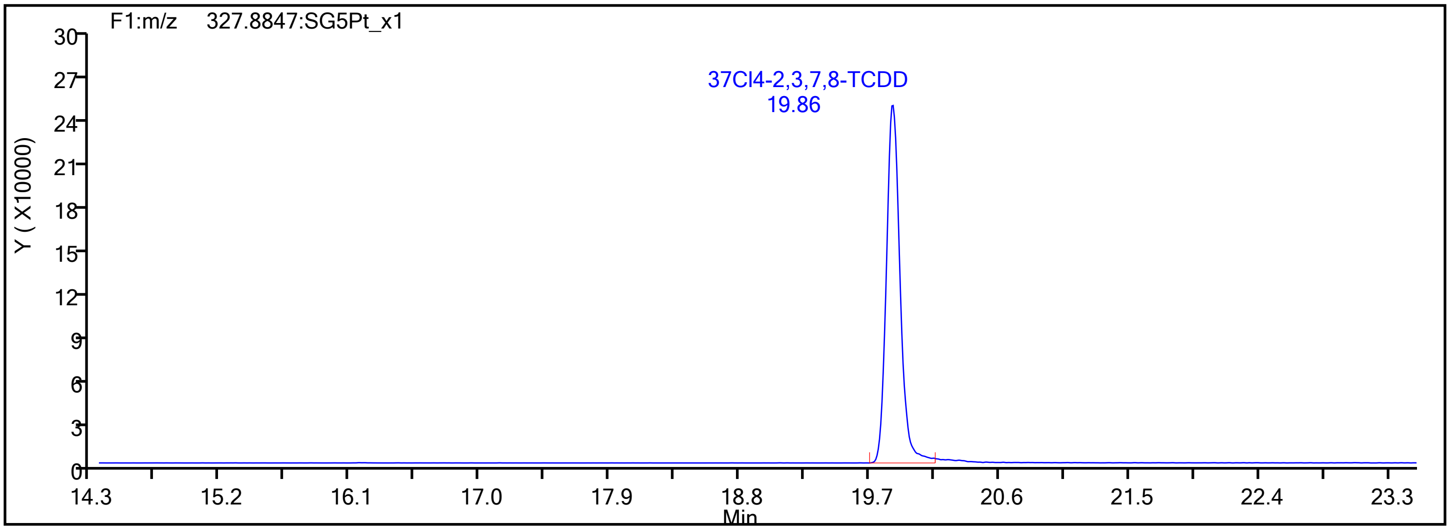

37Cl4-TCDD Standards

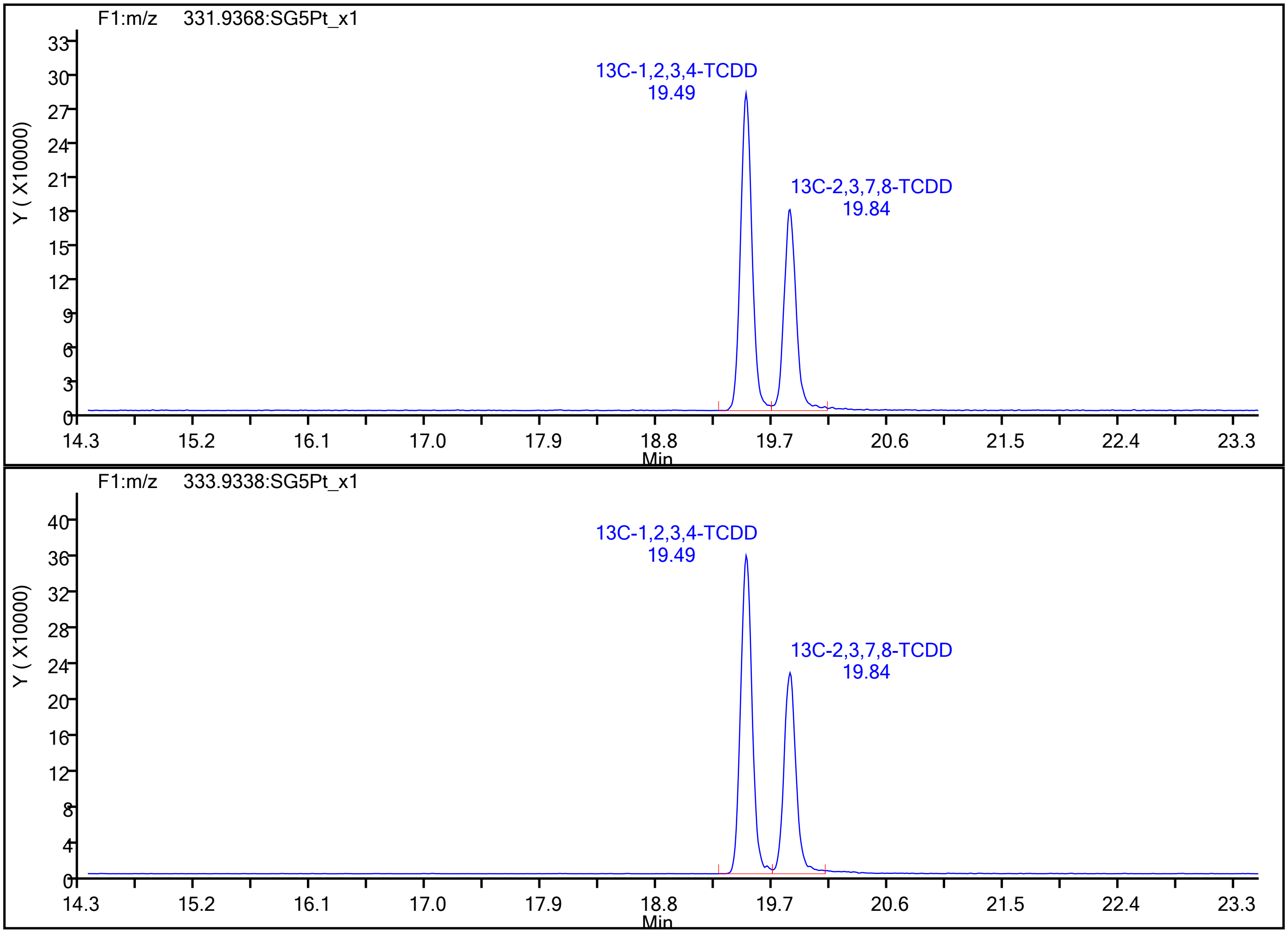

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d
Injection Date: 10-Mar-2021 16:01:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

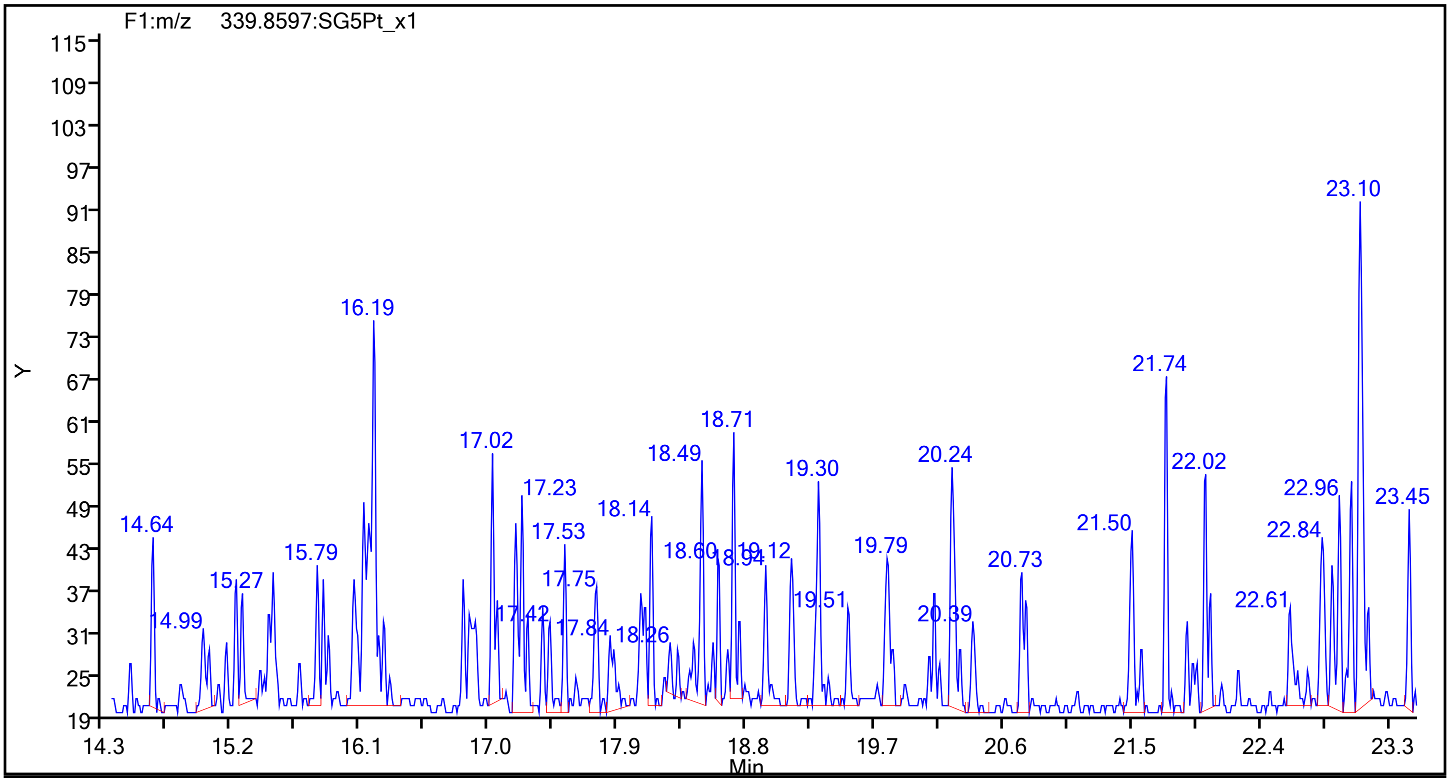

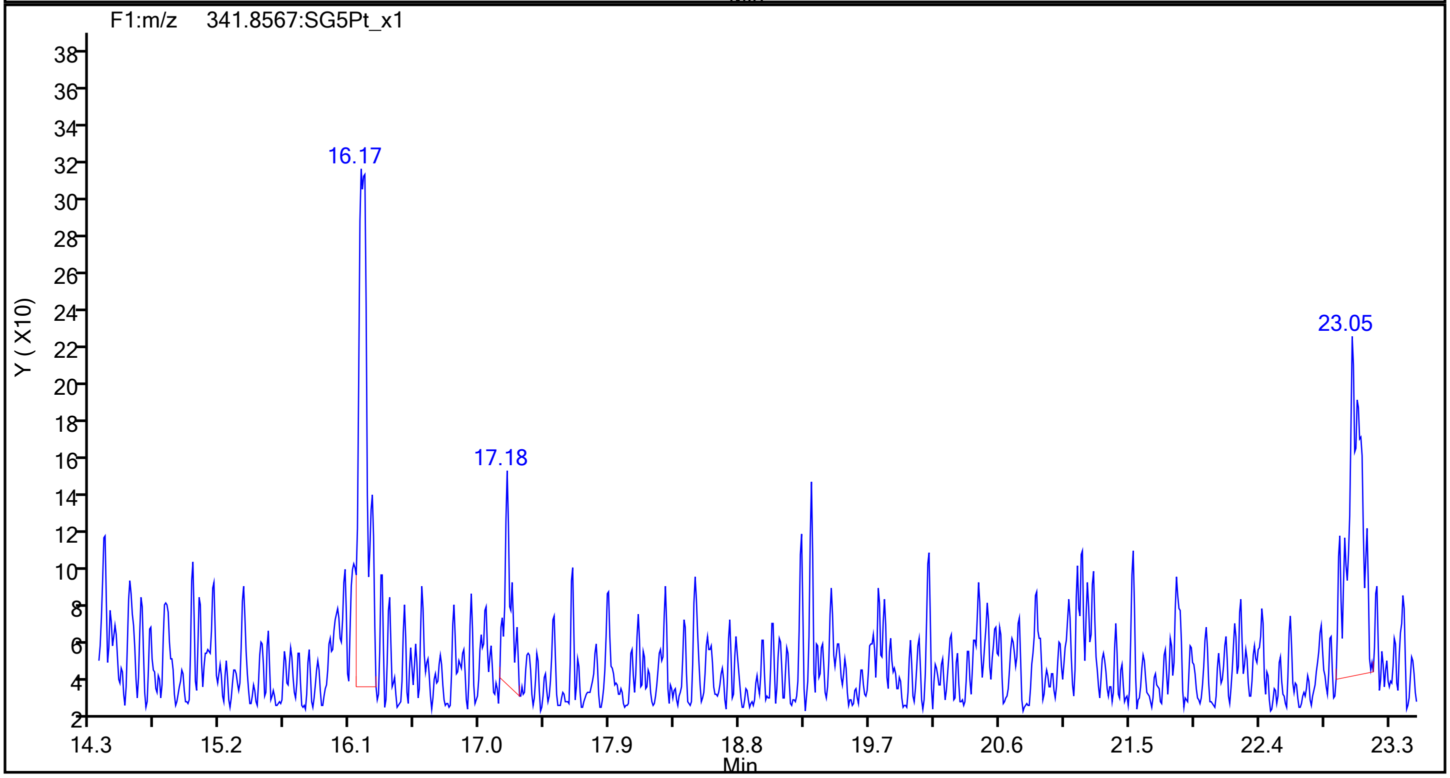

Report Date: 12-Mar-2021 09:18:39 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_11.d		
Injection Date:	10-Mar-2021 16:01:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

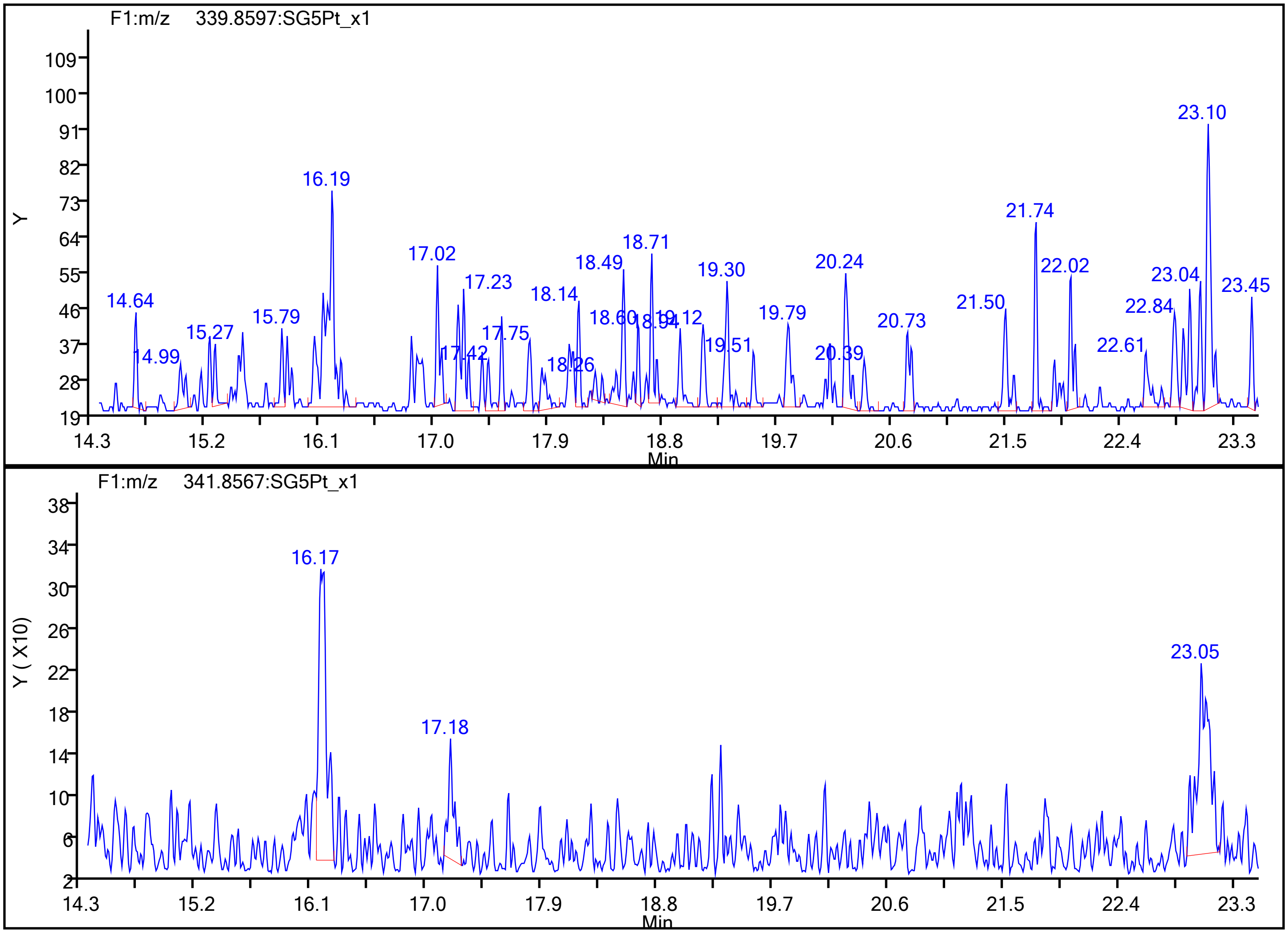

F1 PeCDFs Interference Mass

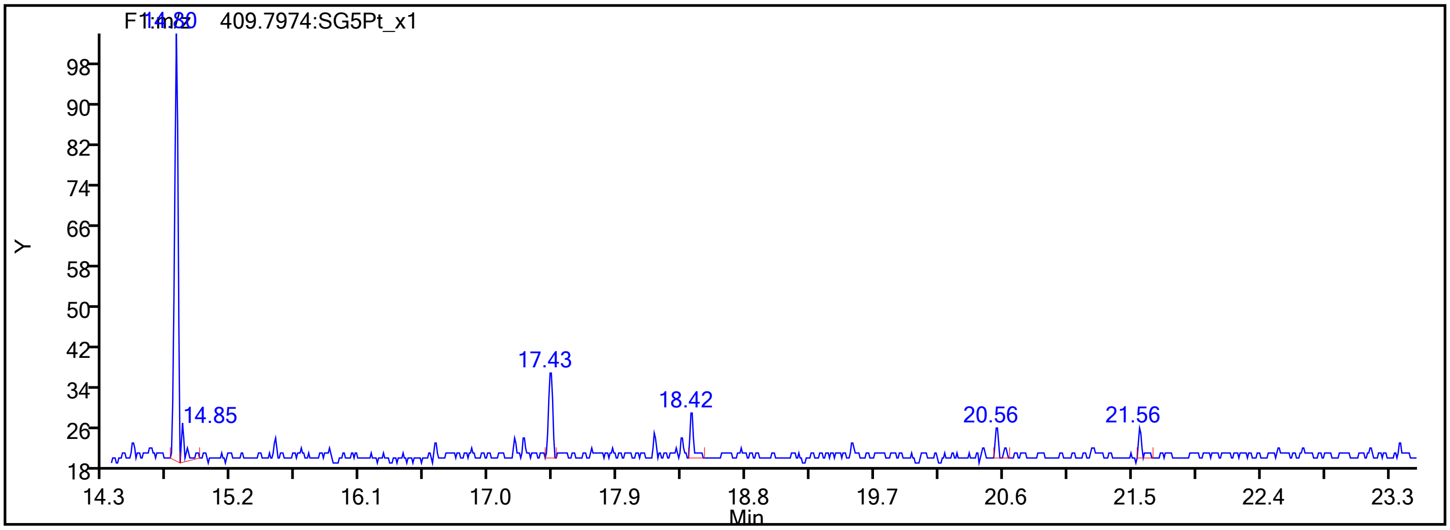

Report Date: 12-Mar-2021 09:18:39
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

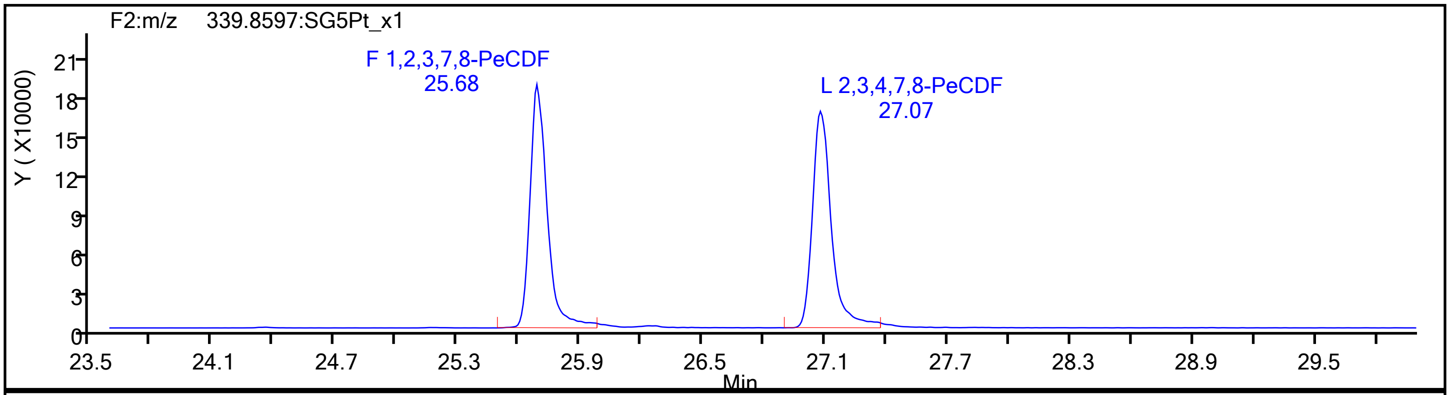

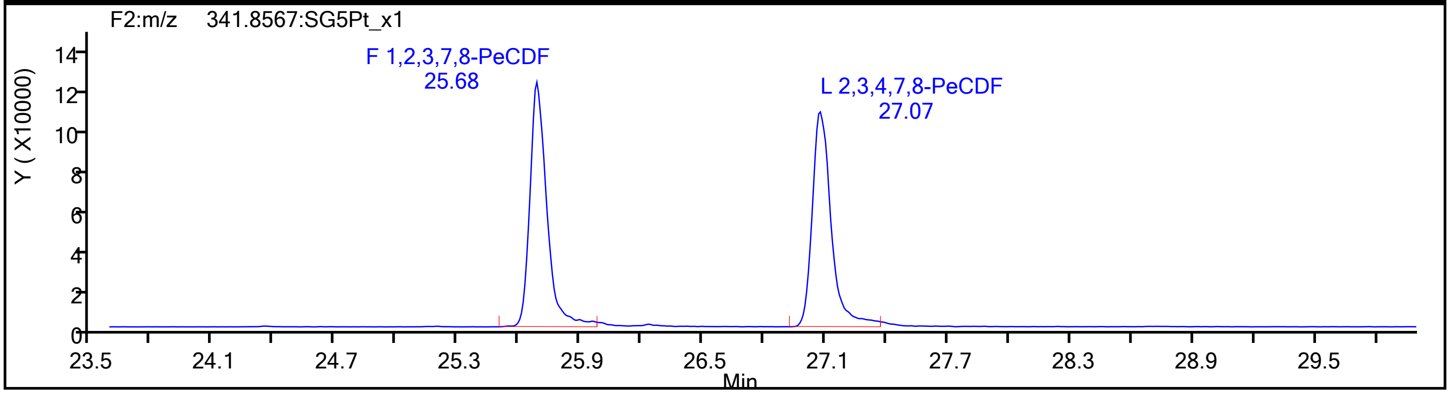

PeCDF Standards

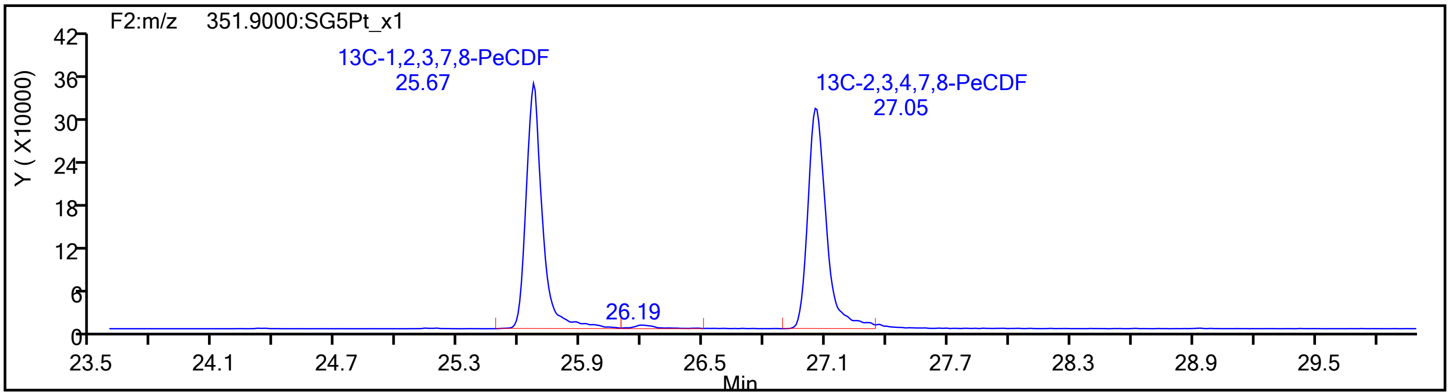

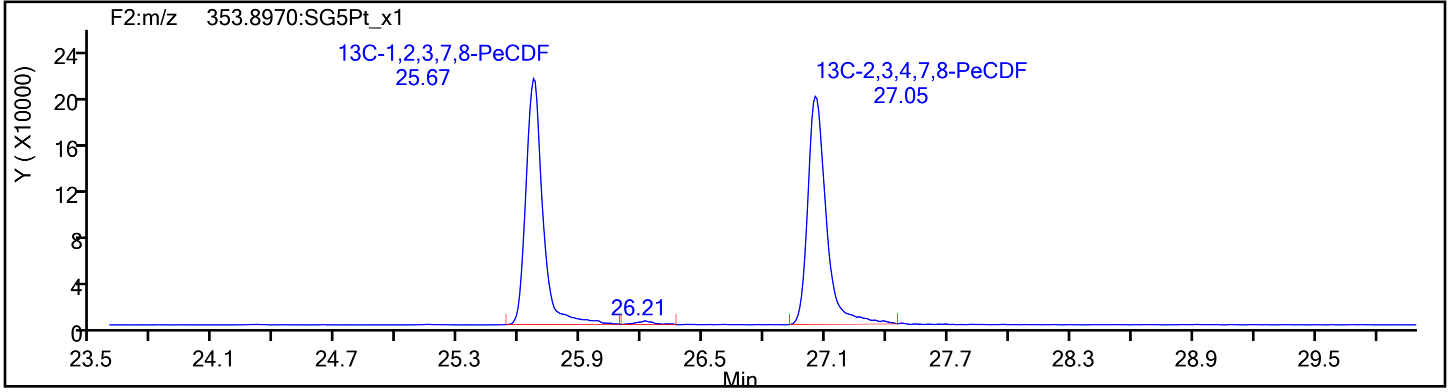

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Eurofins TestAmerica, Sacramento

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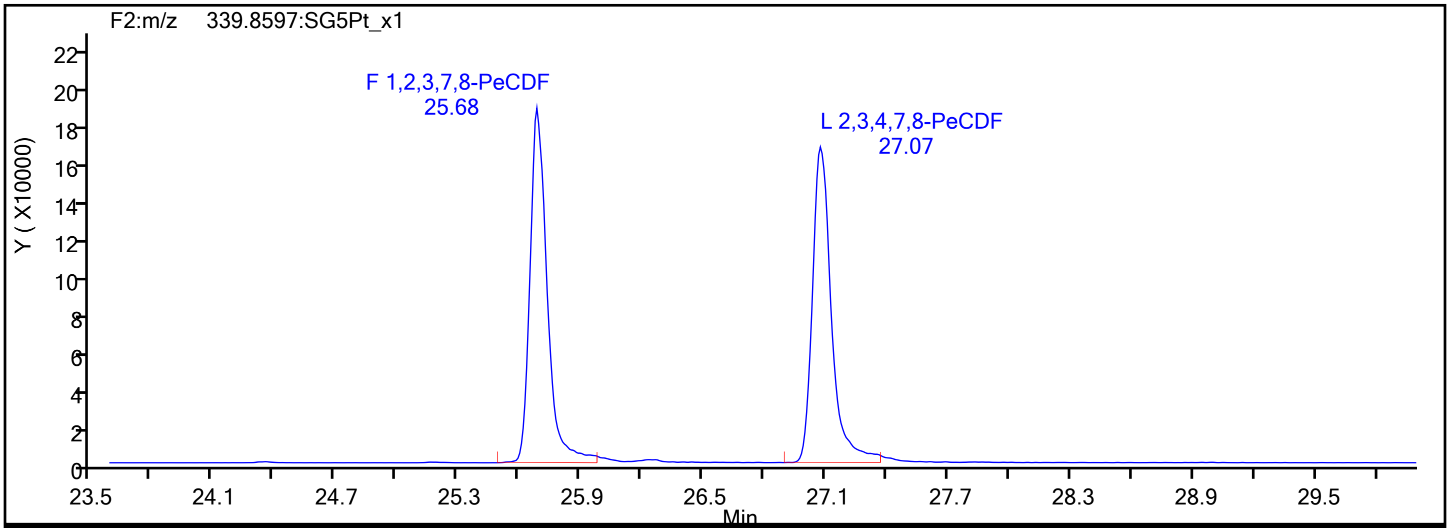

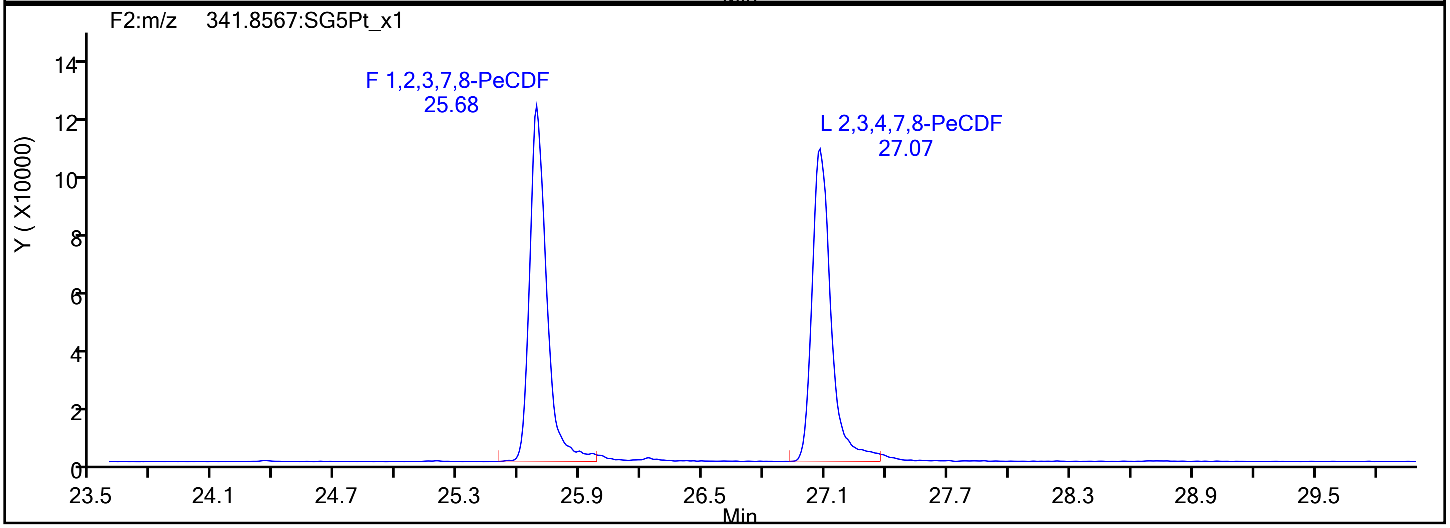

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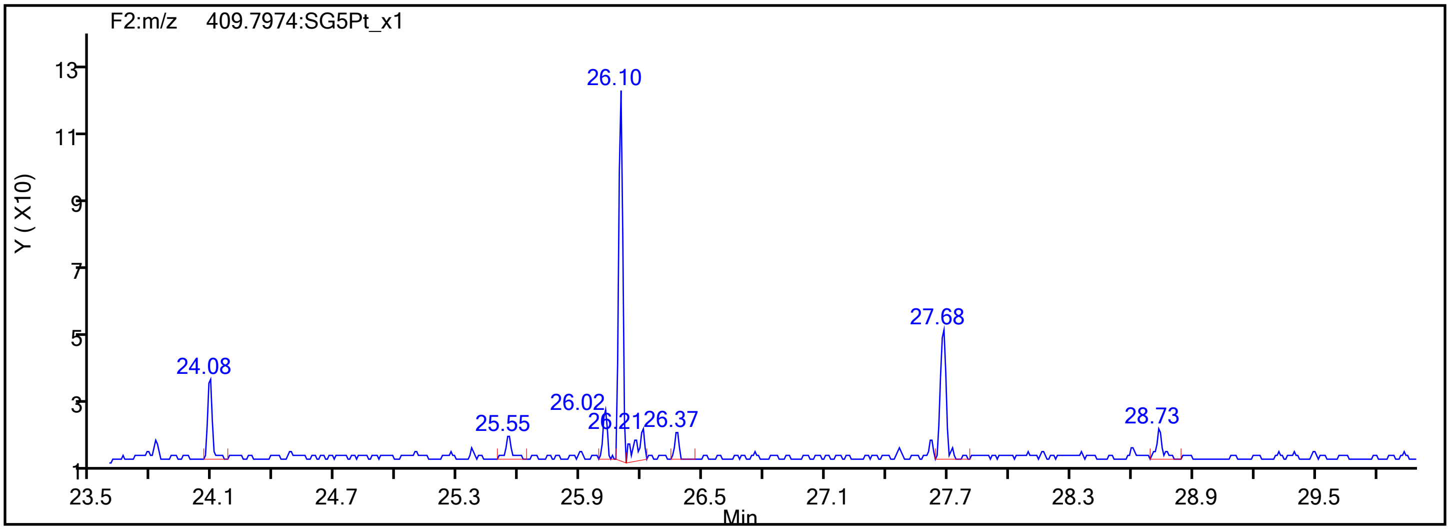

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Eurofins TestAmerica, Sacramento

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Client ID:

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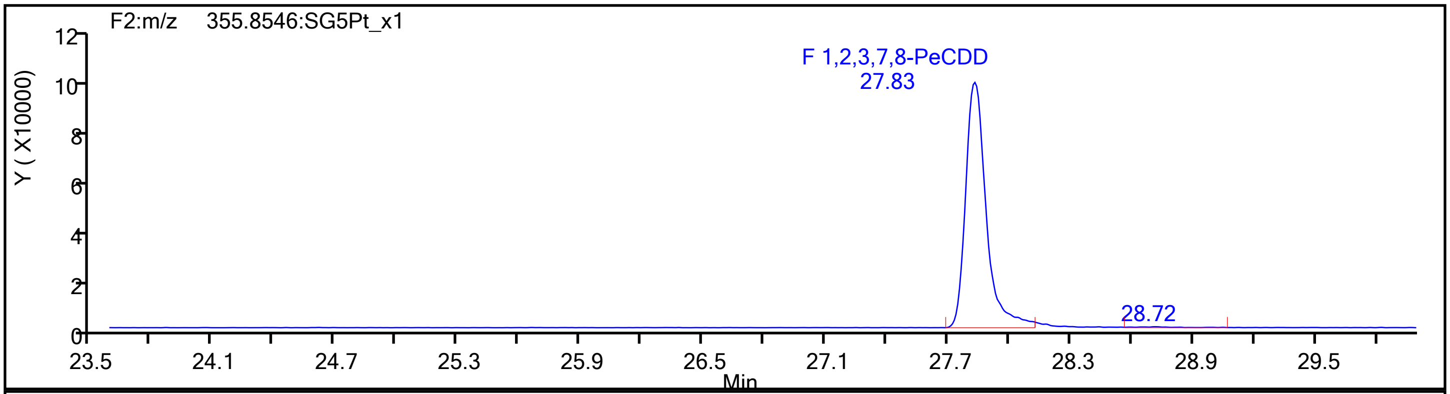

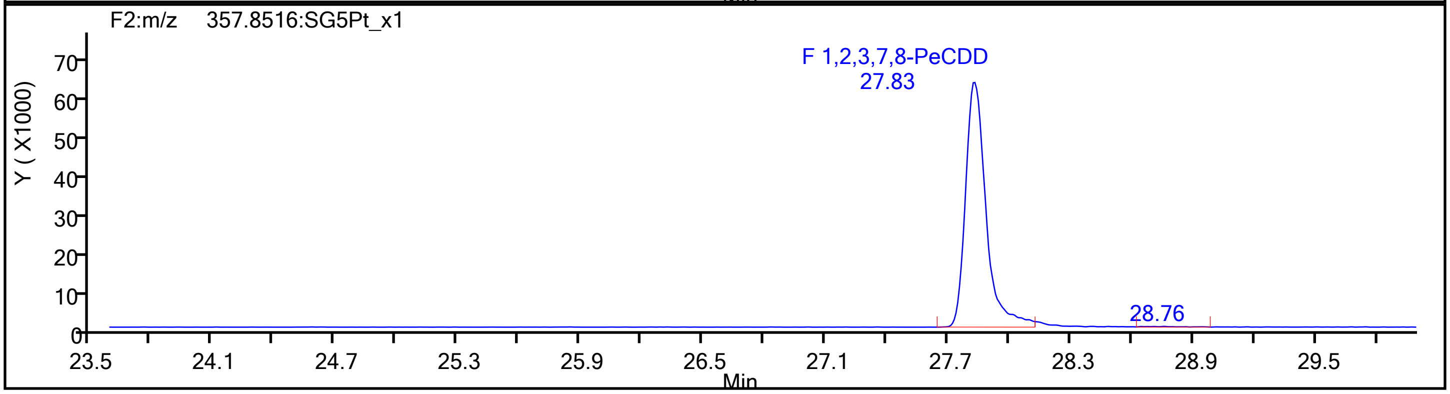

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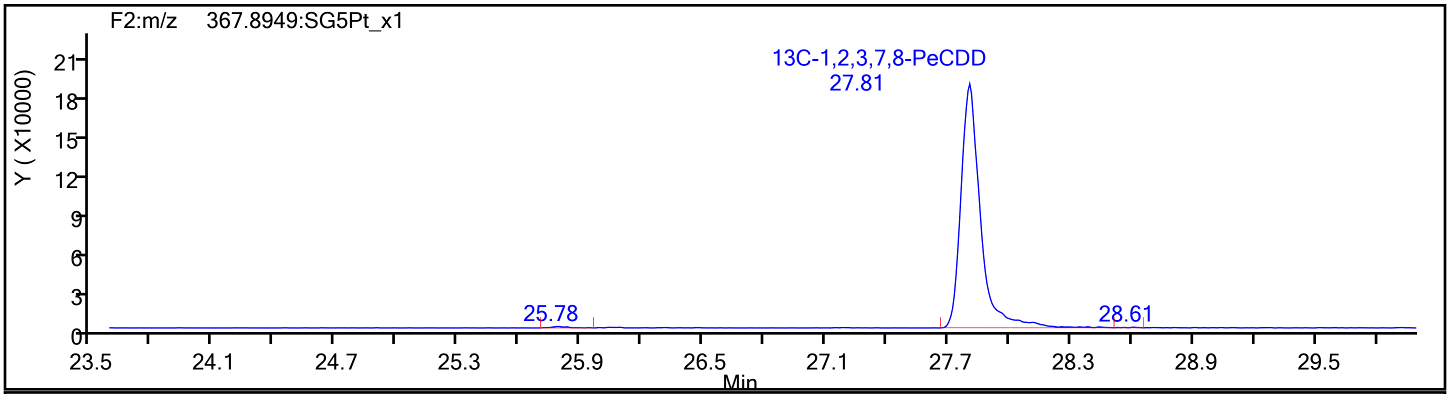

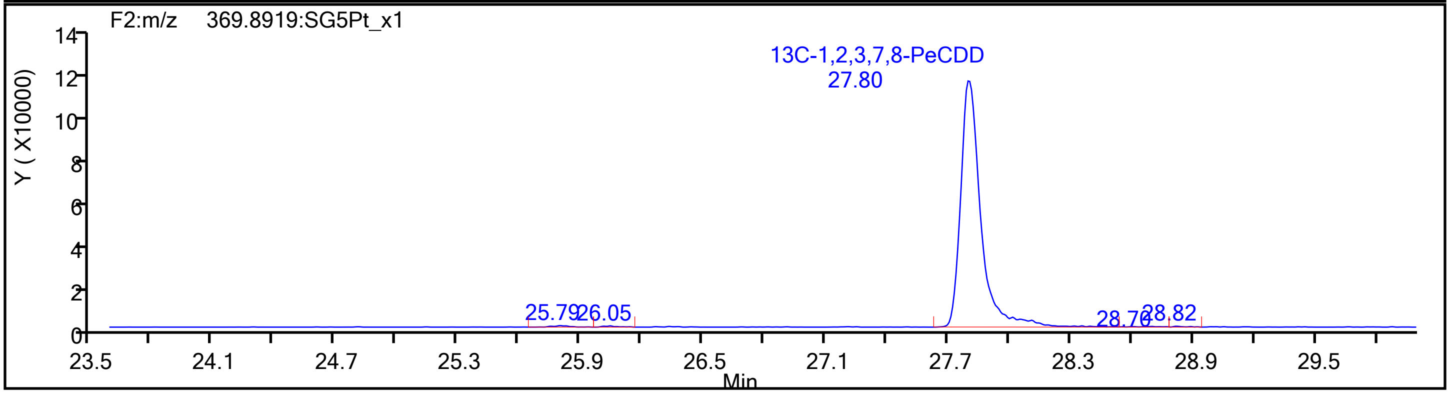

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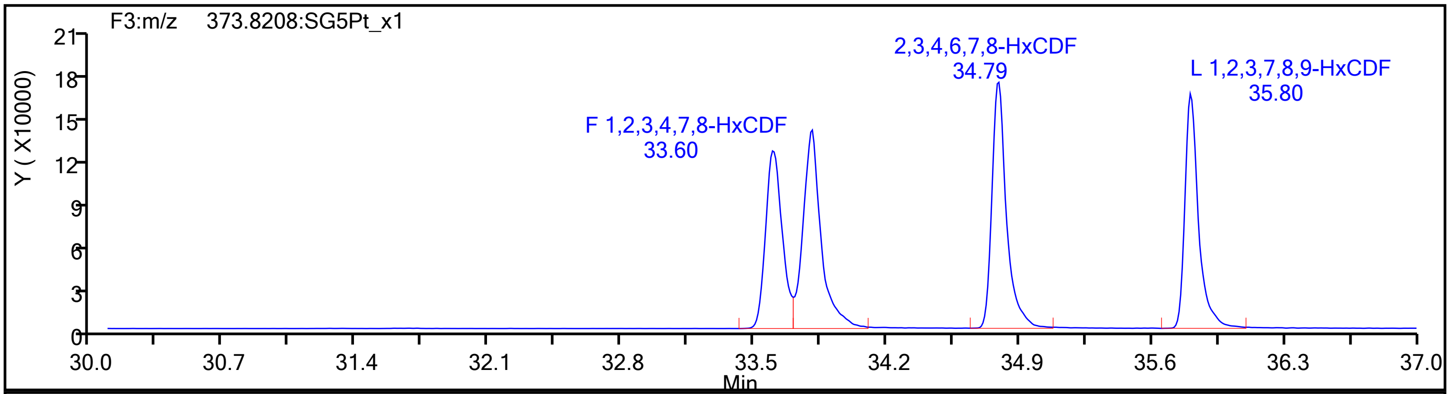

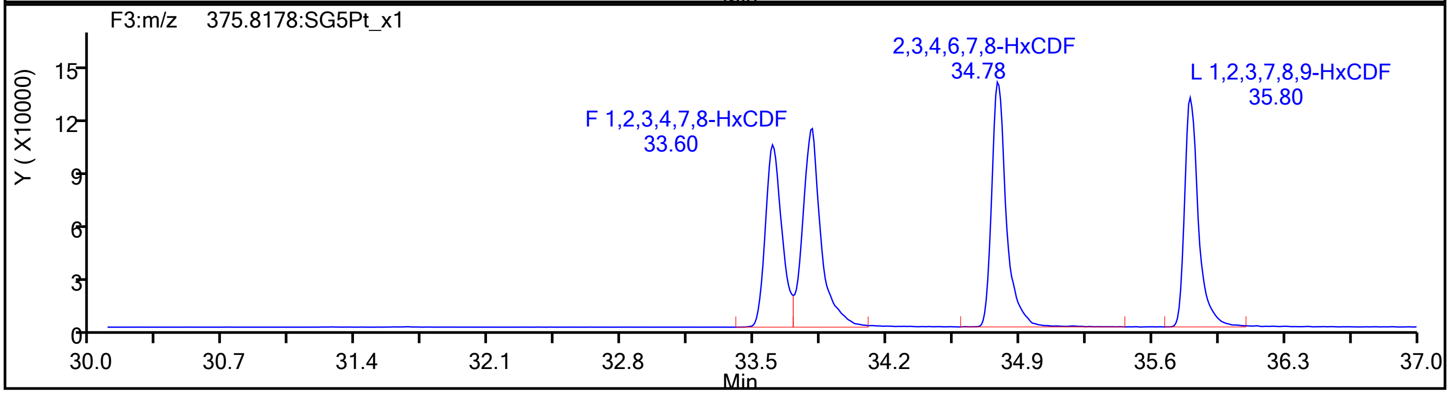

HxCDF Standards

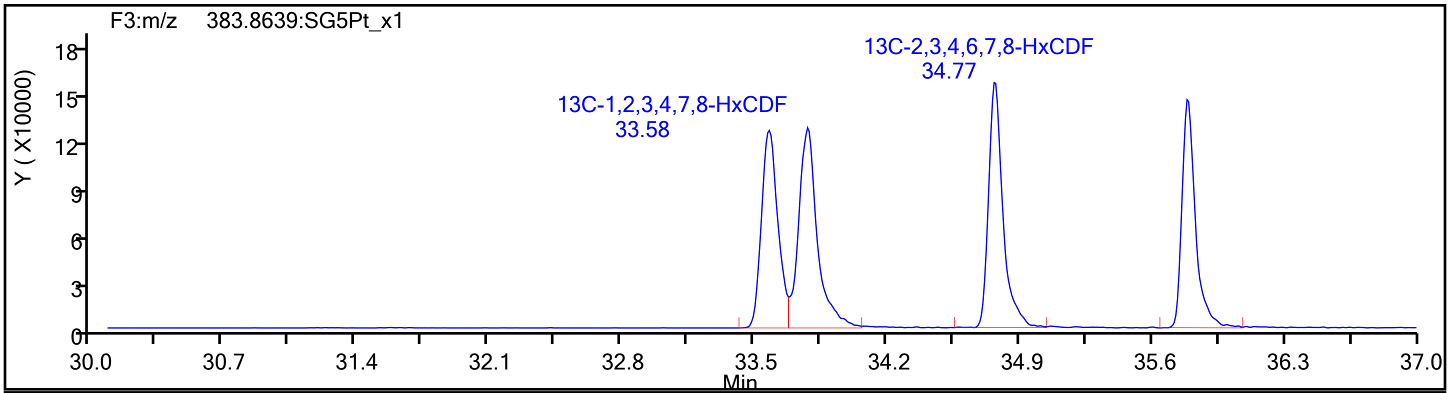

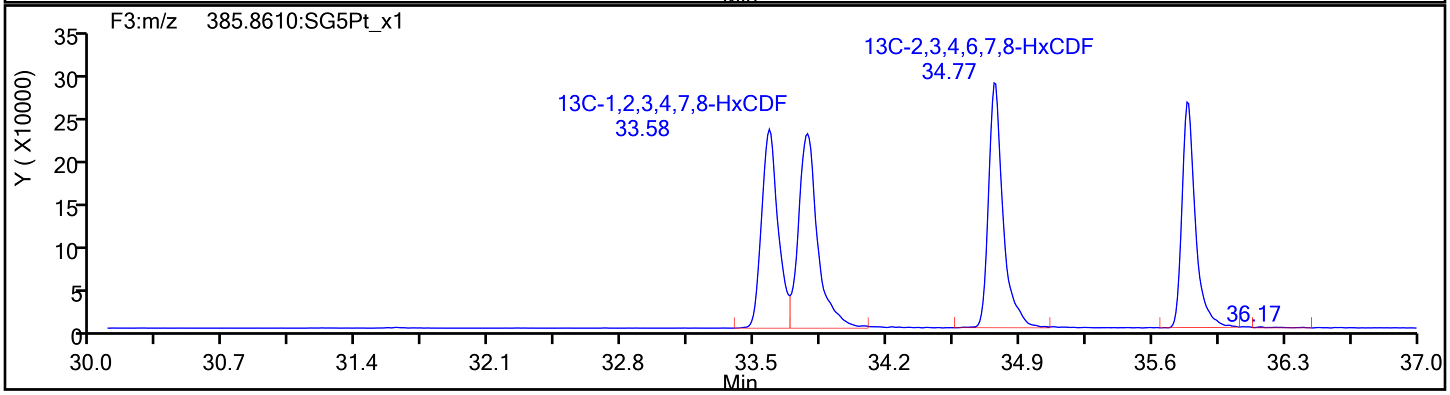

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Eurofins TestAmerica, Sacramento

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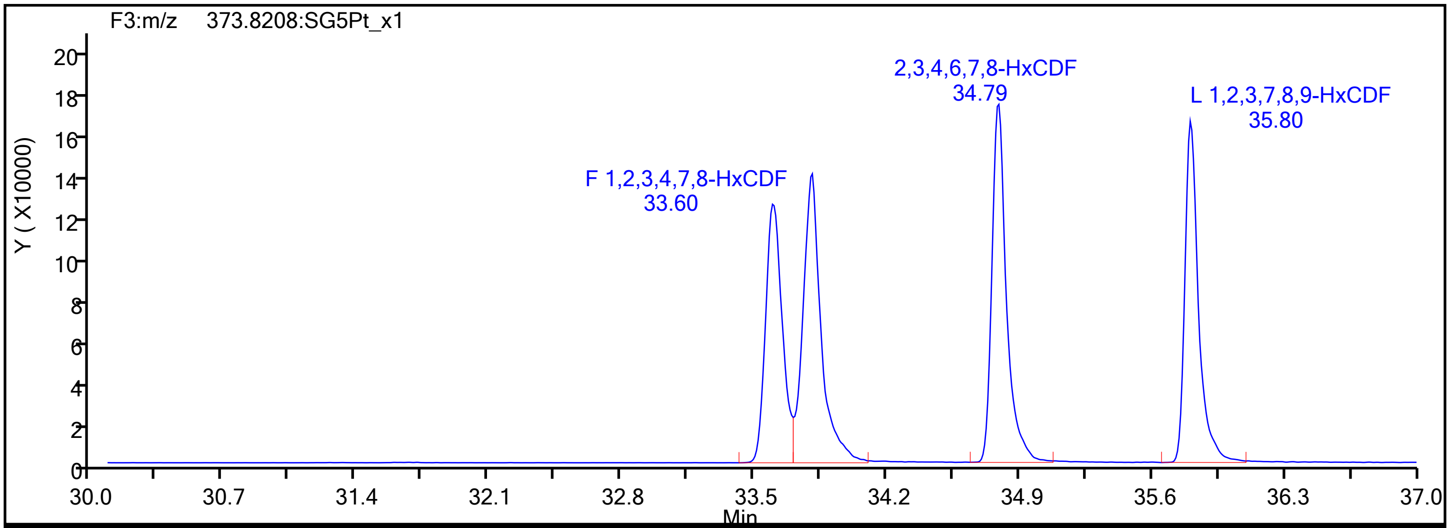

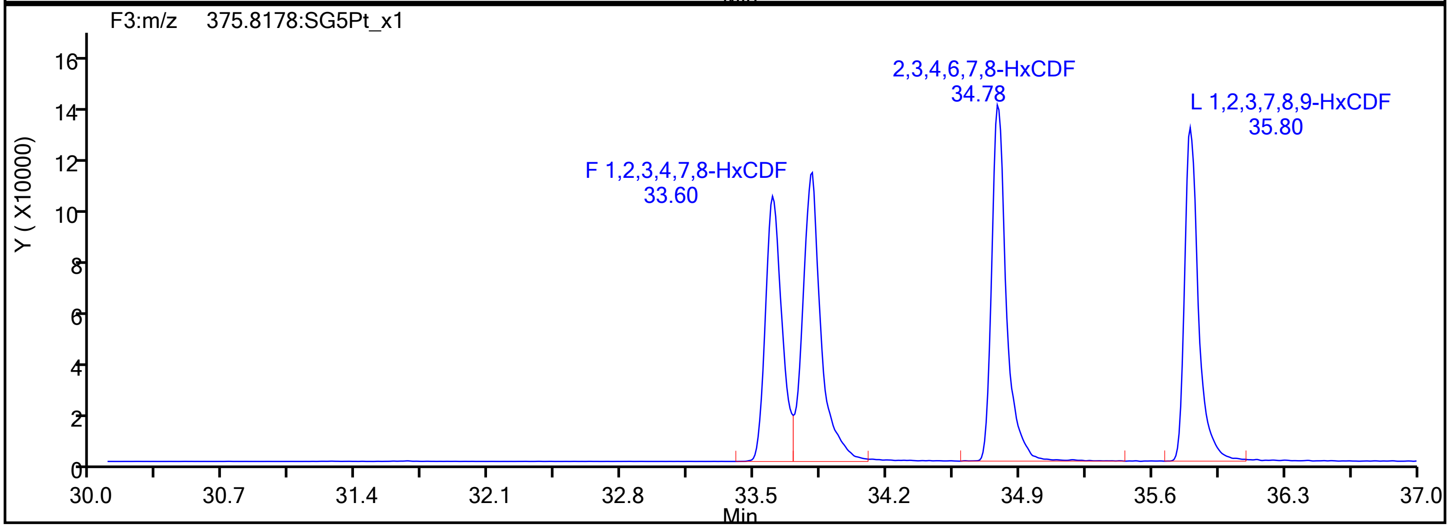

HxCDF Interference Mass

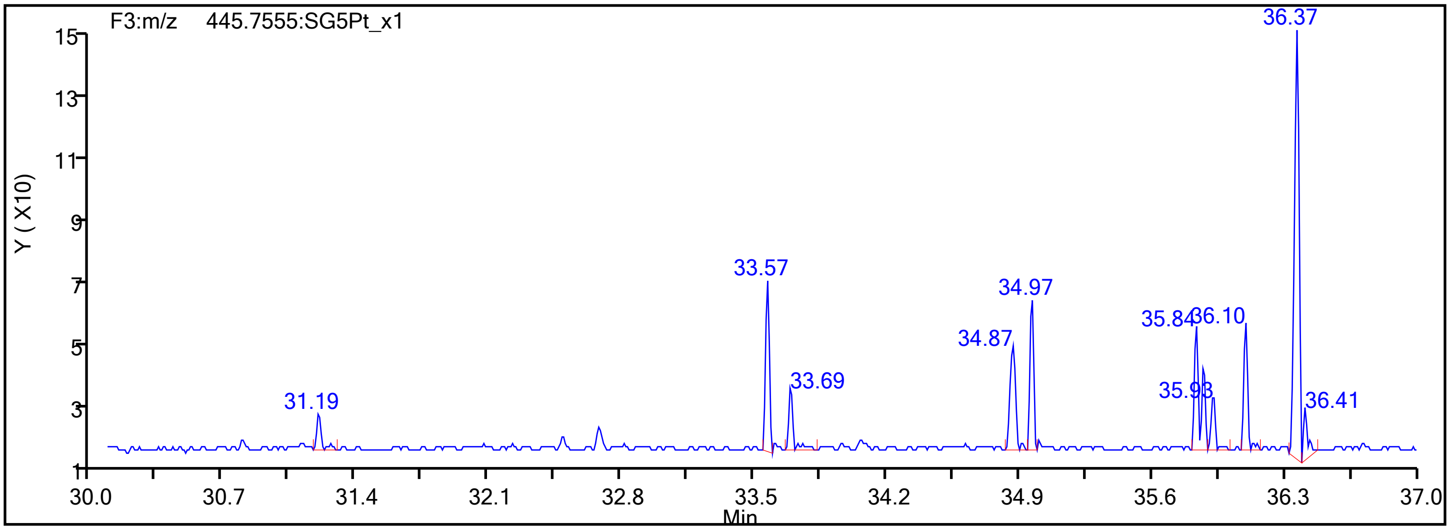

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Eurofins TestAmerica, Sacramento

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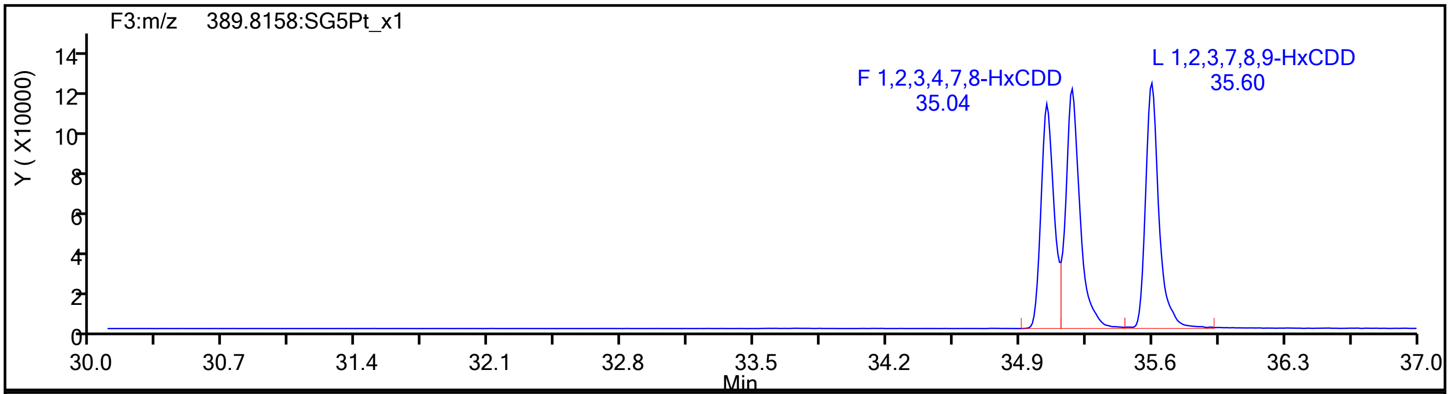

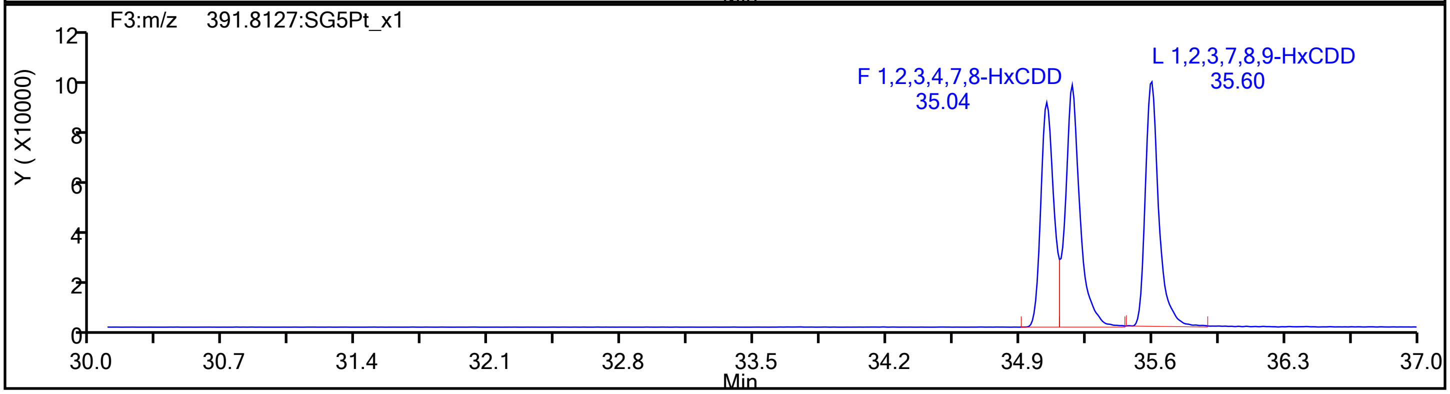

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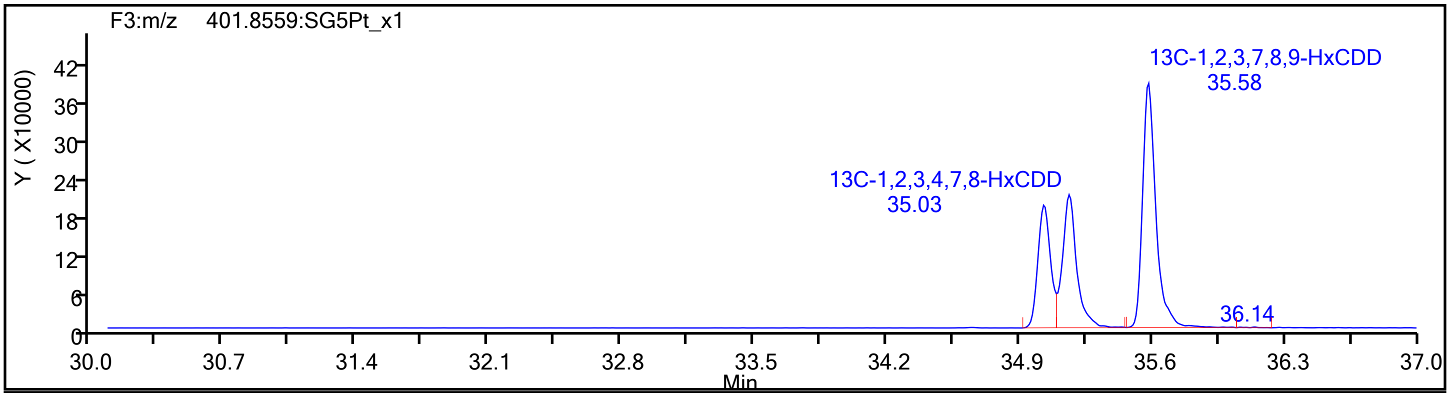

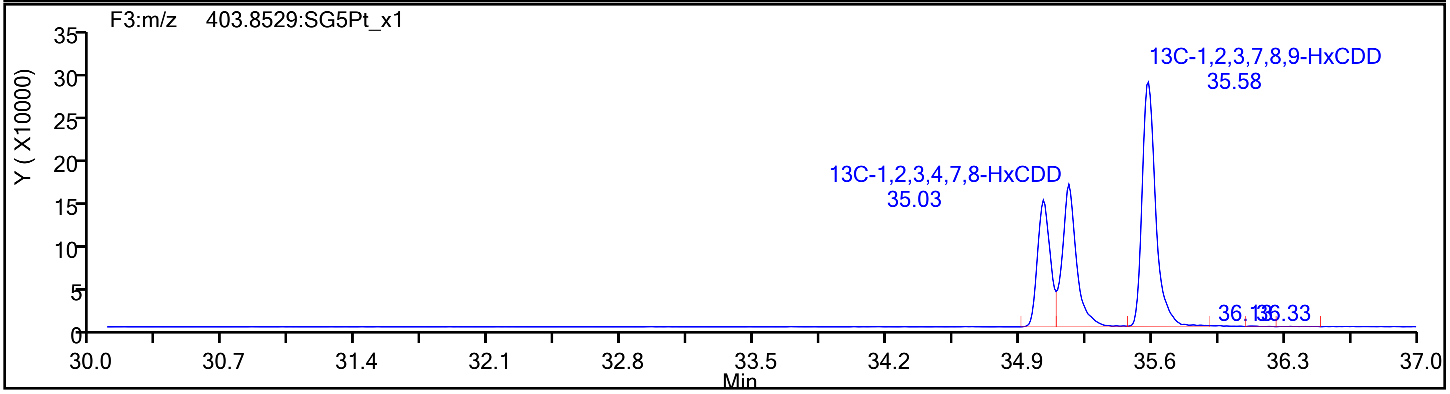

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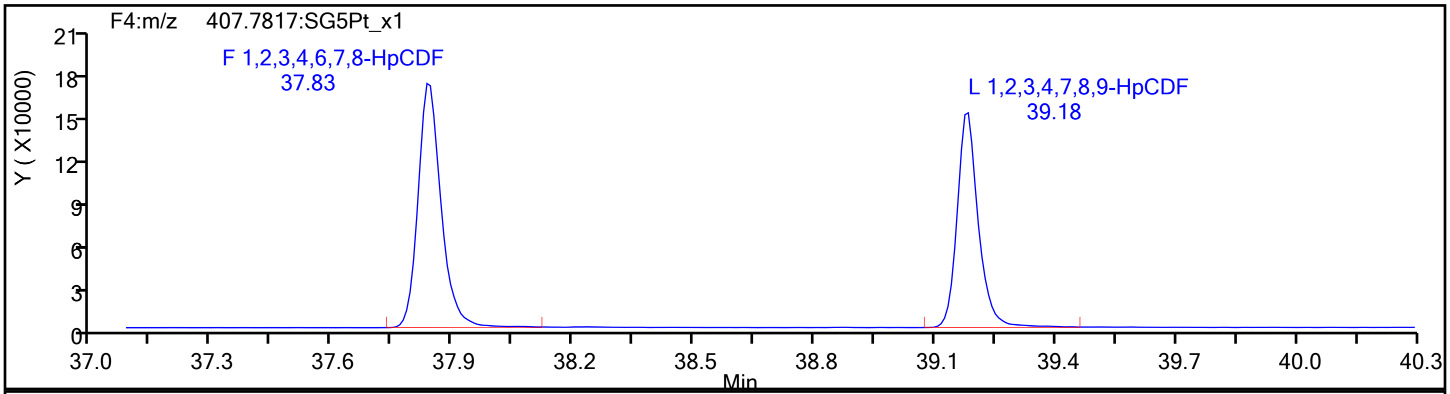

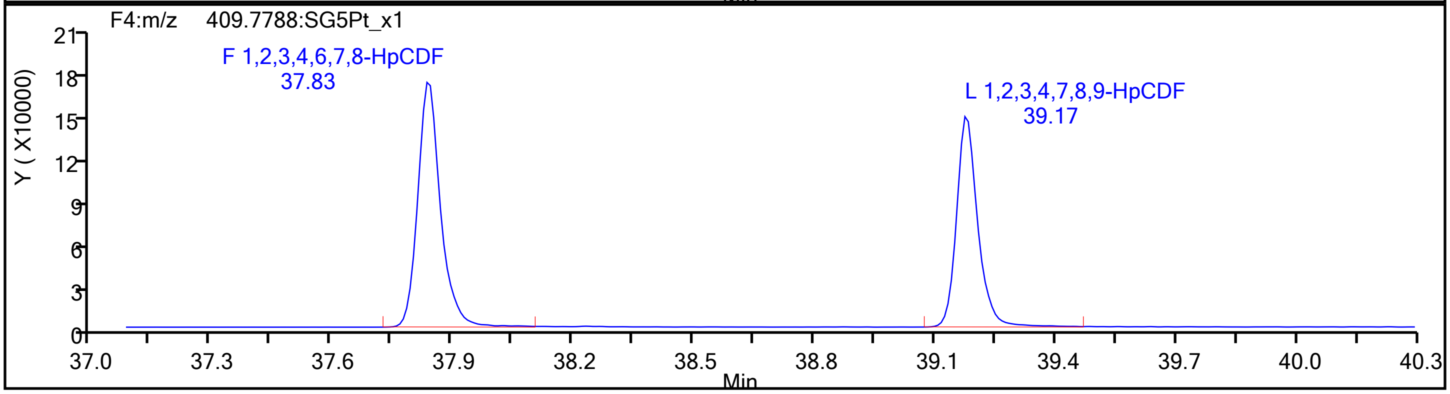

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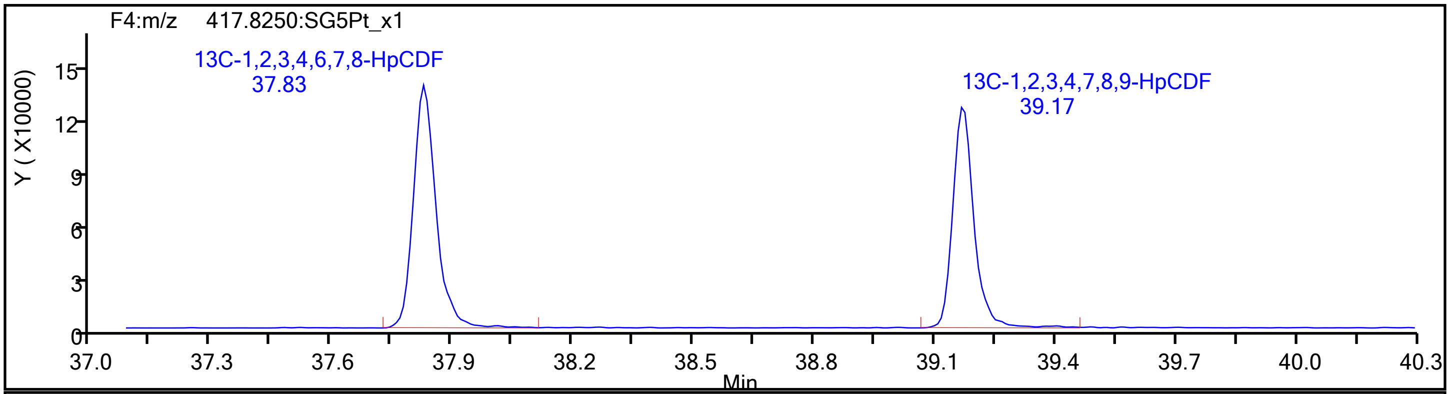

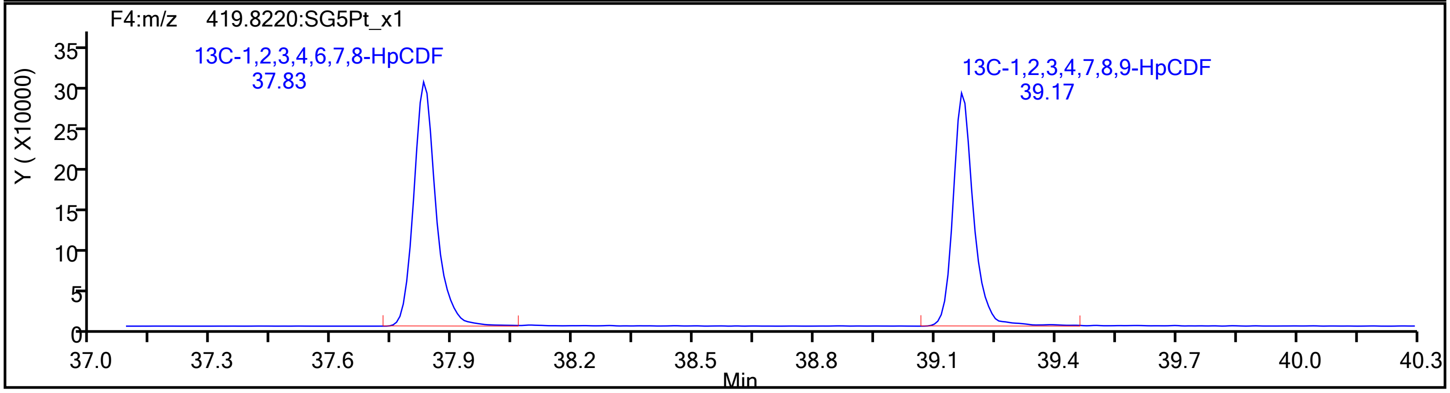

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Eurofins TestAmerica, Sacramento

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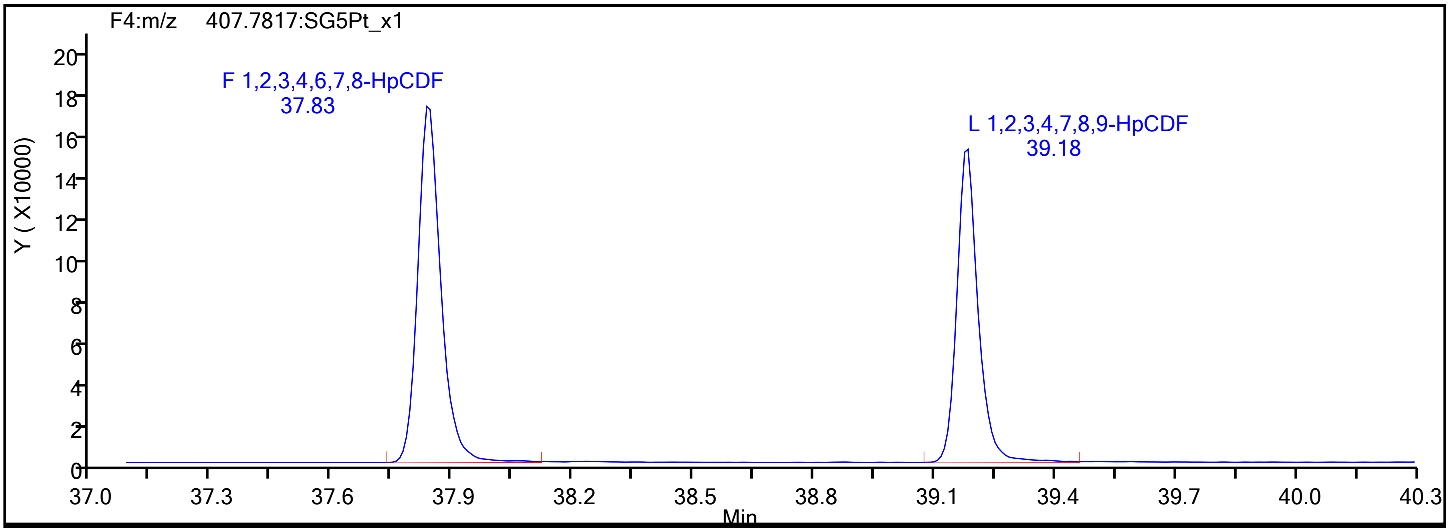

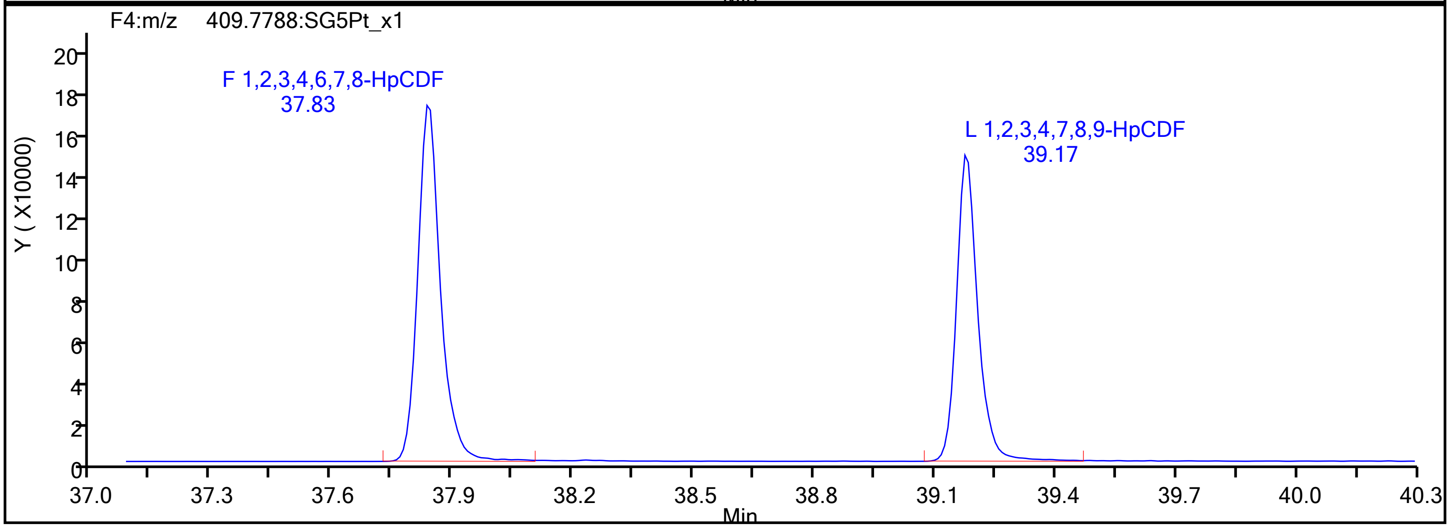

HpCDF Interference Mass

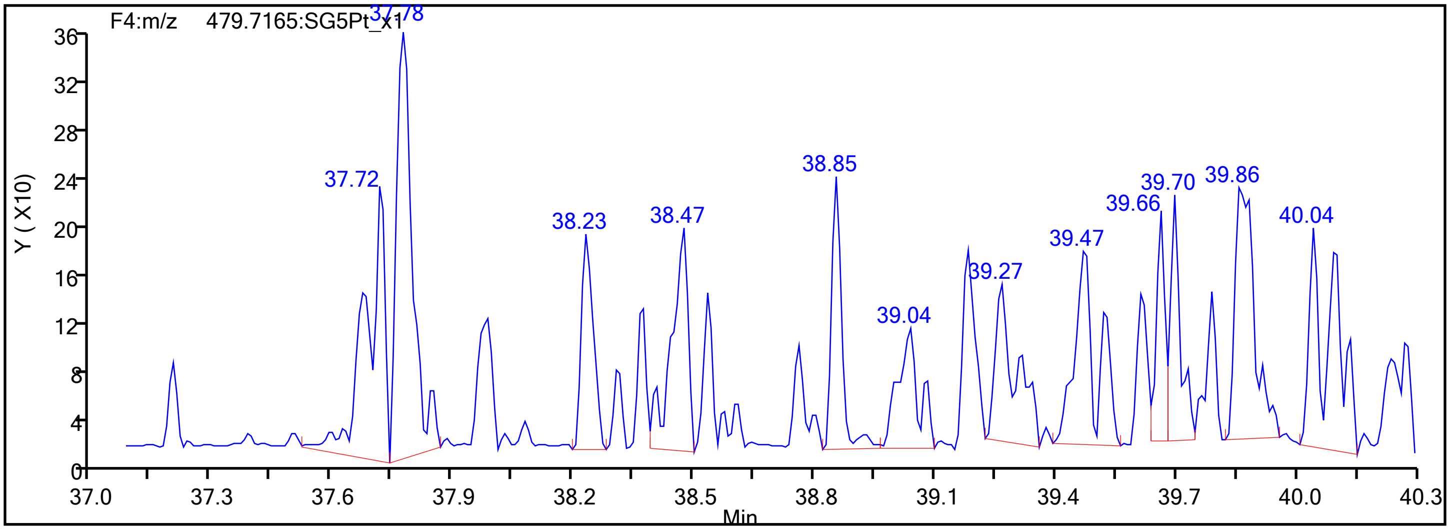

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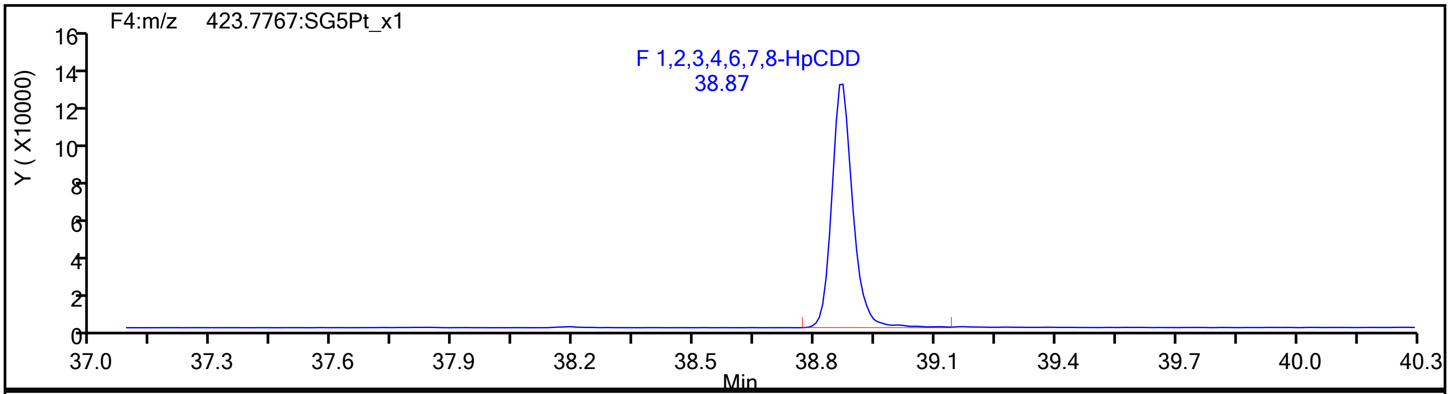

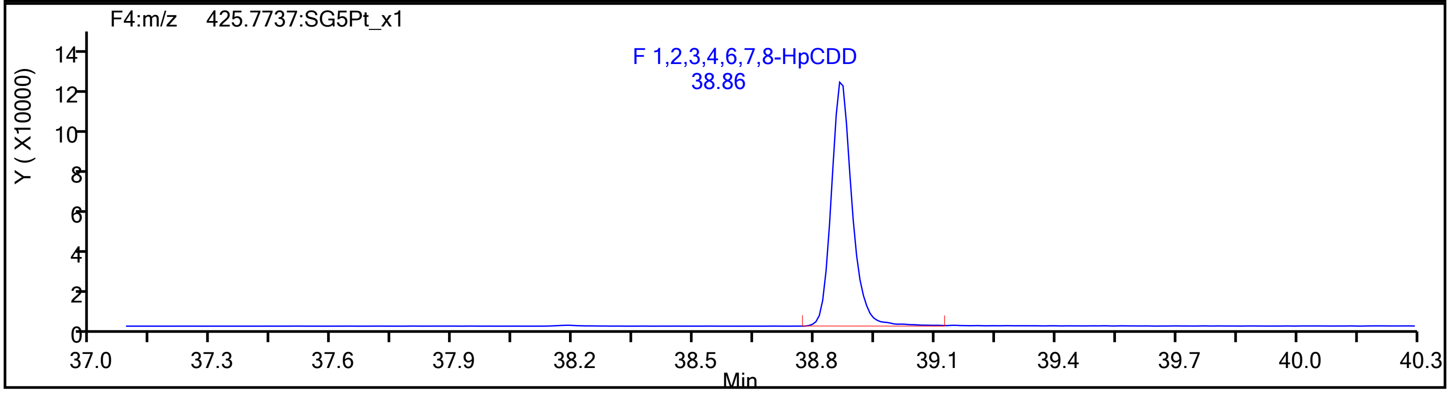

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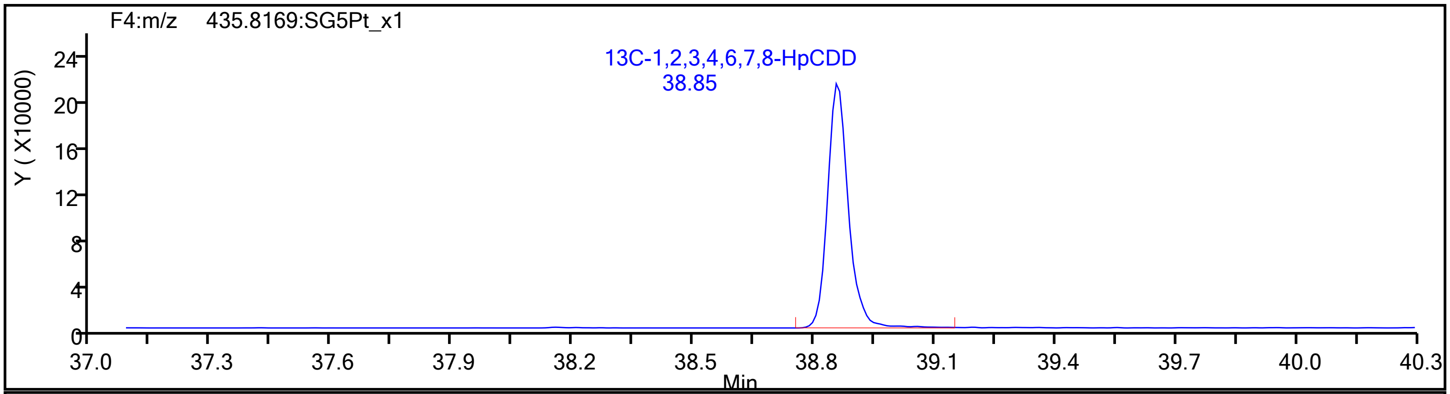

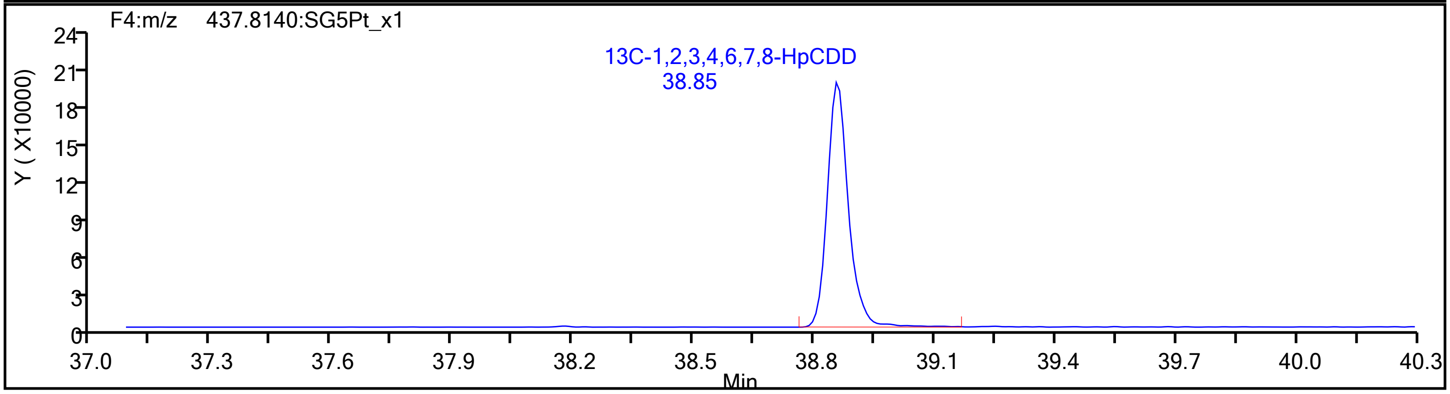

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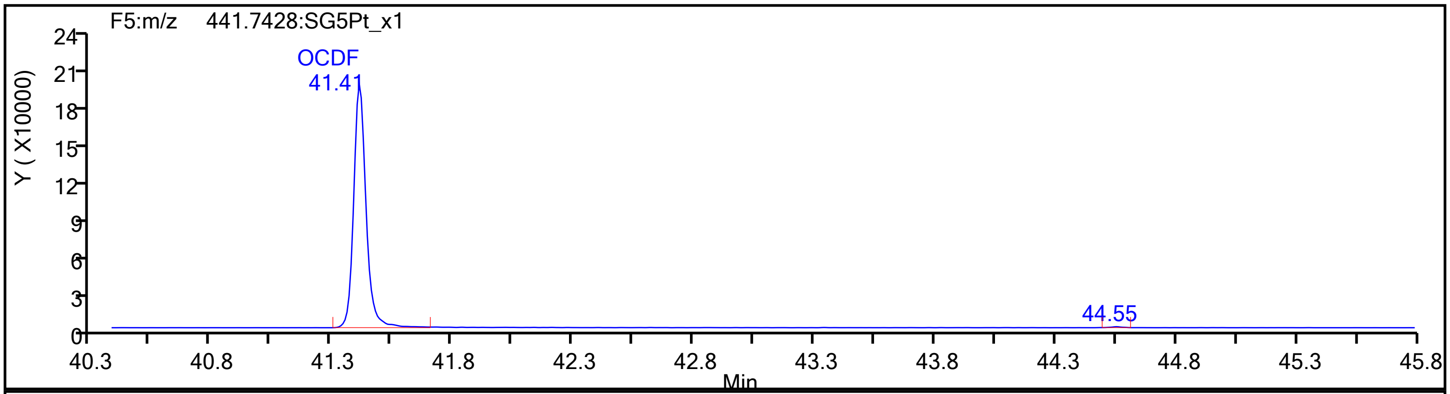

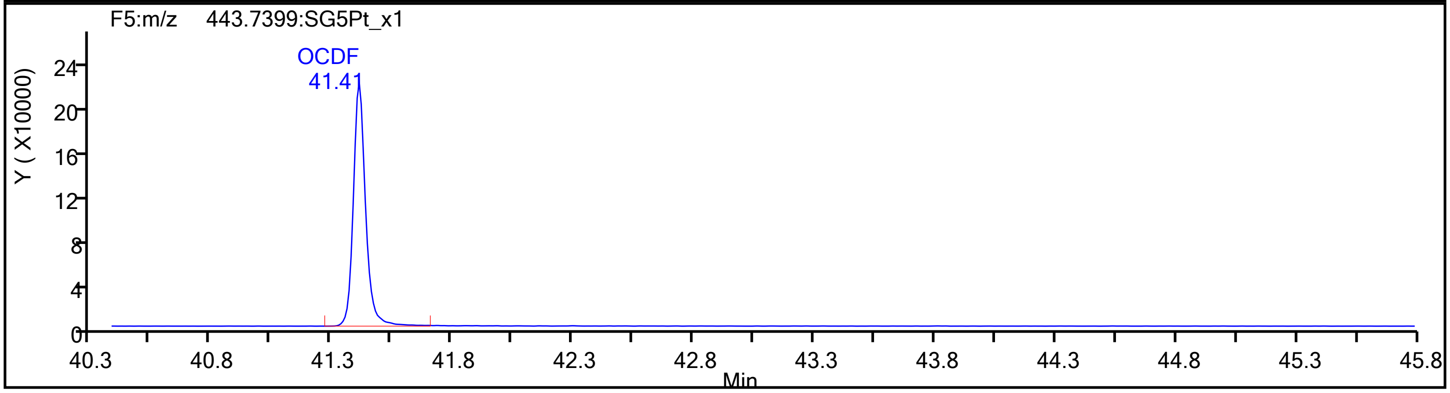

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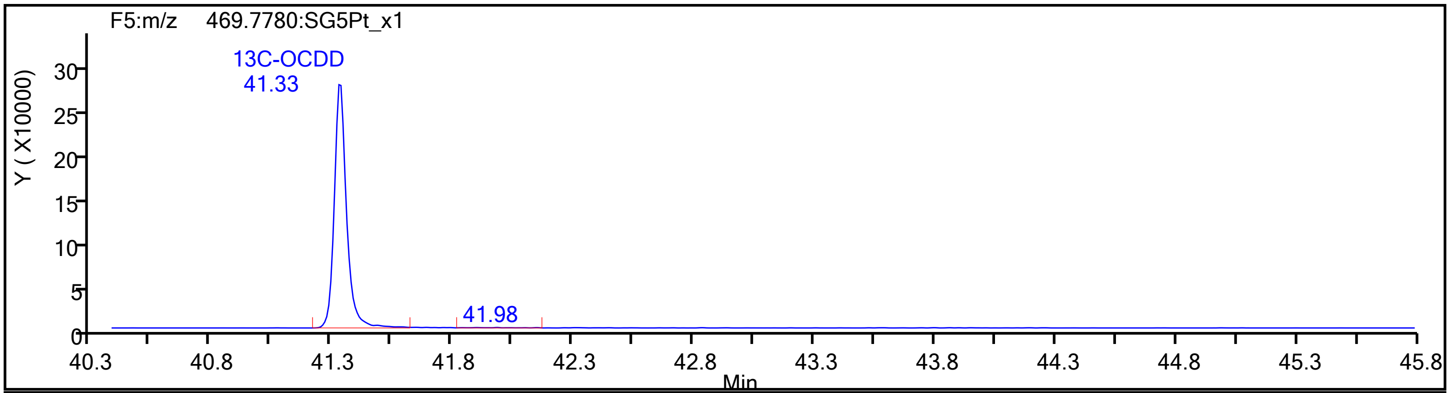

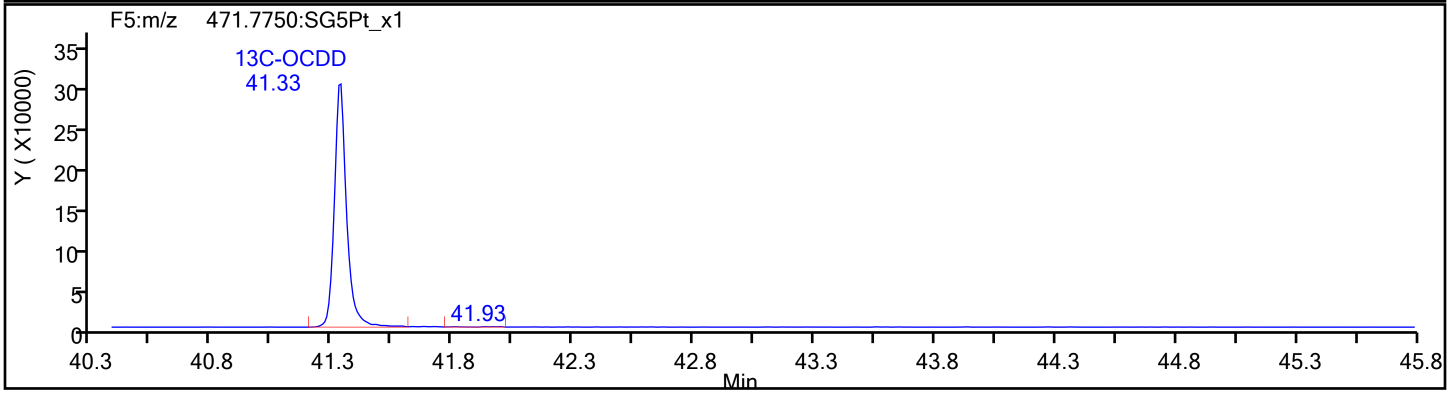

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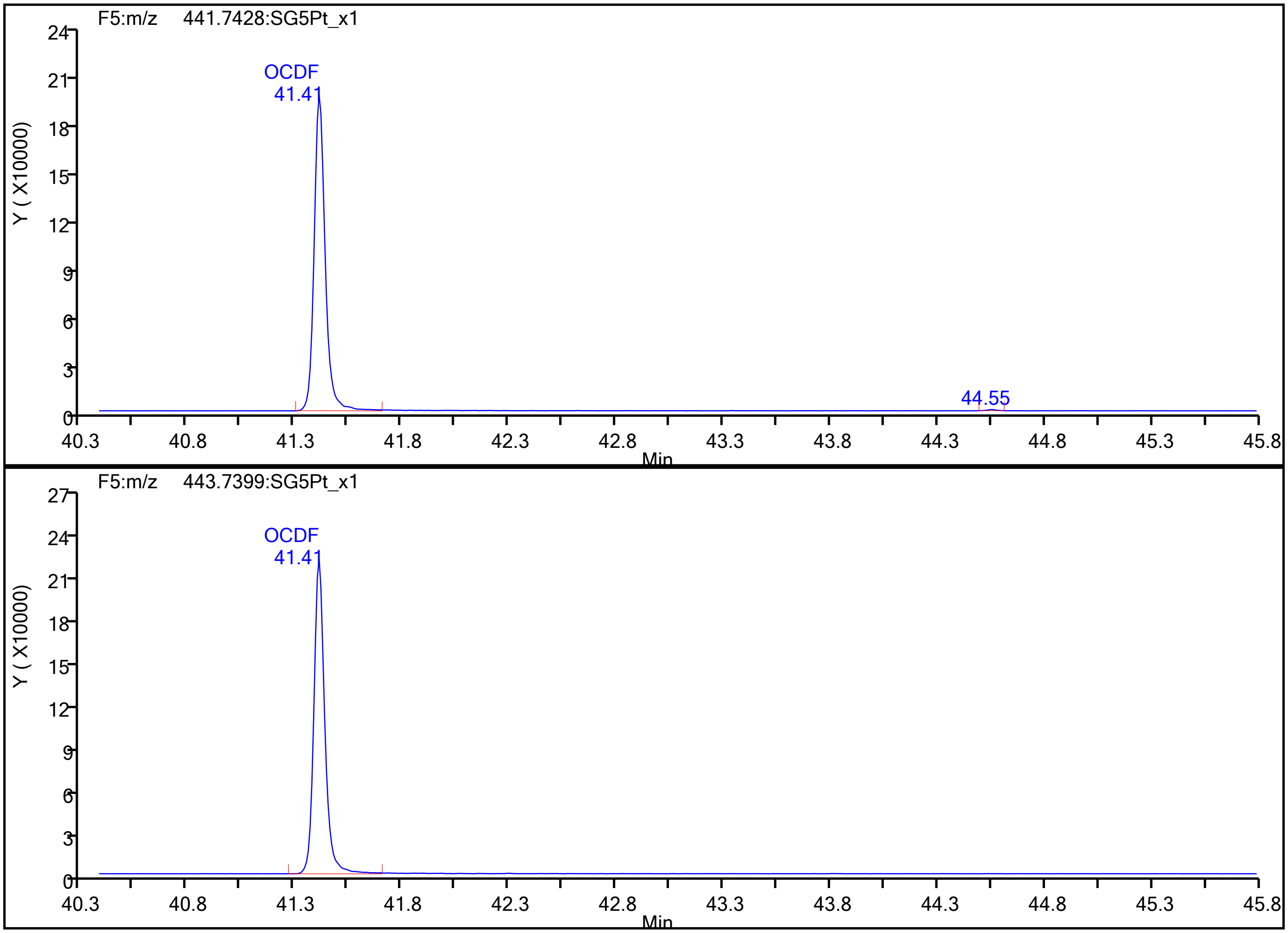

OCDF Interference Mass

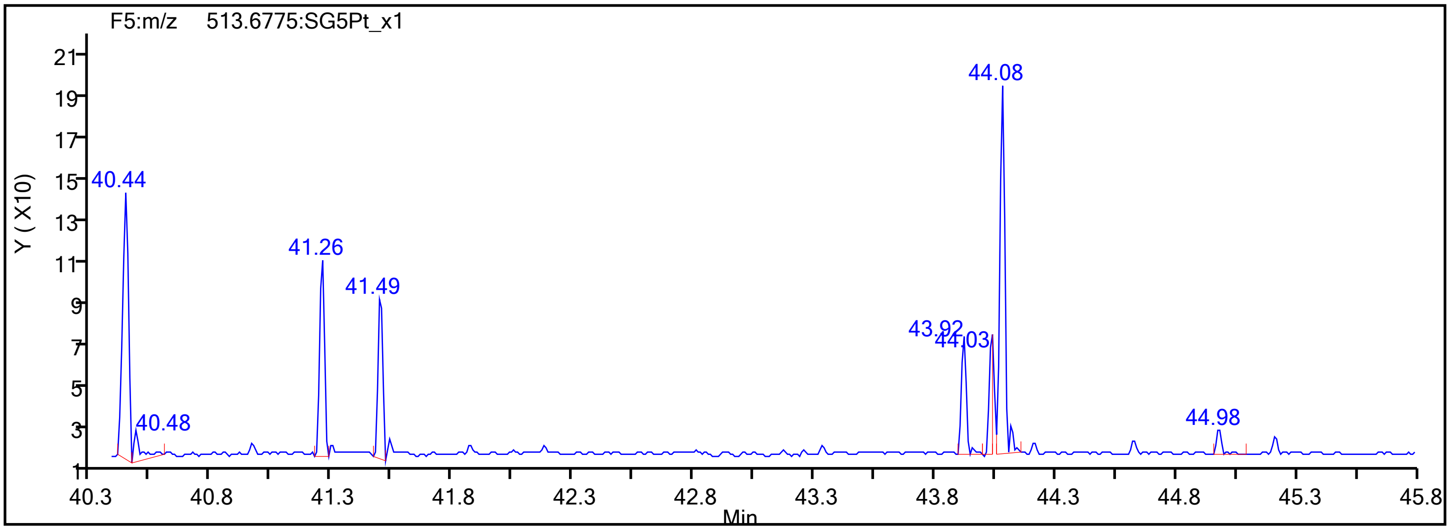

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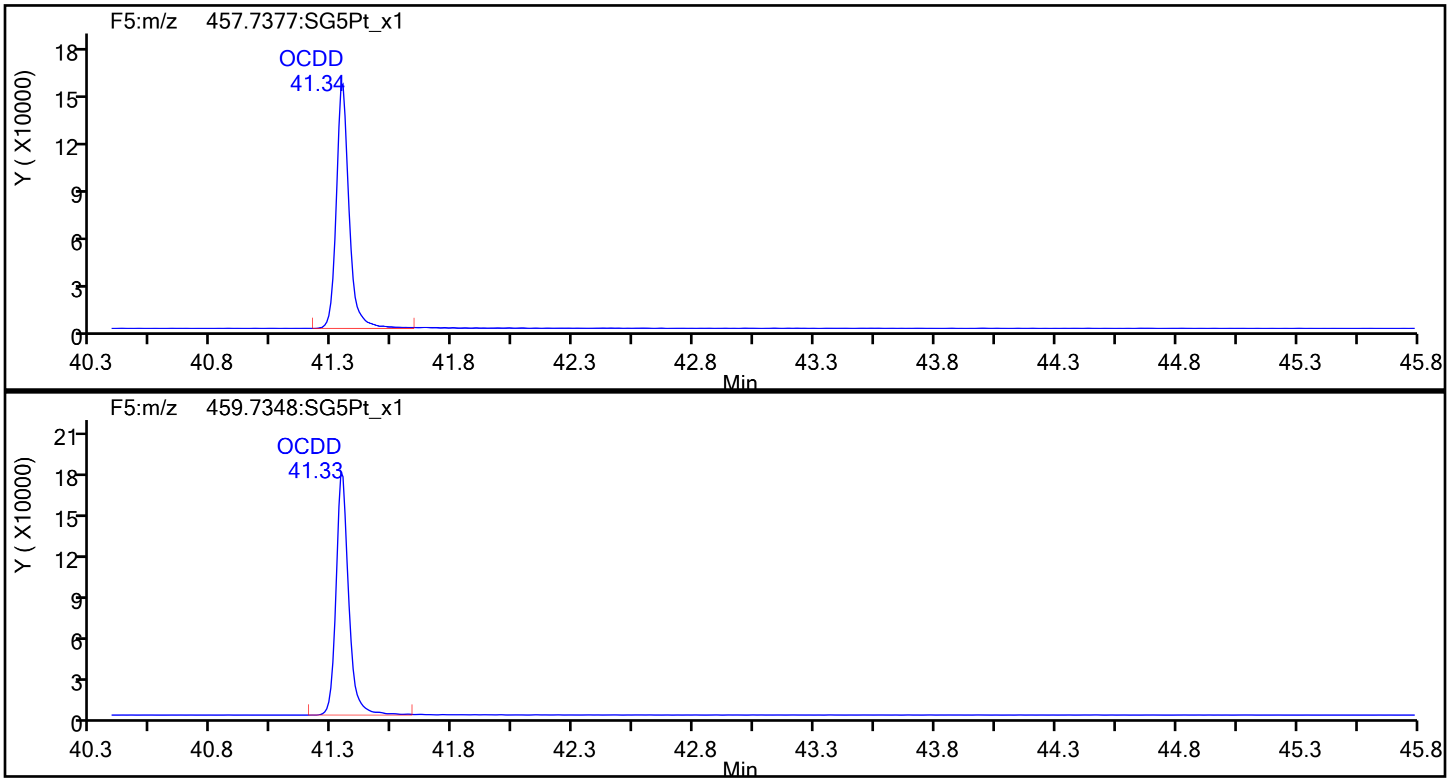

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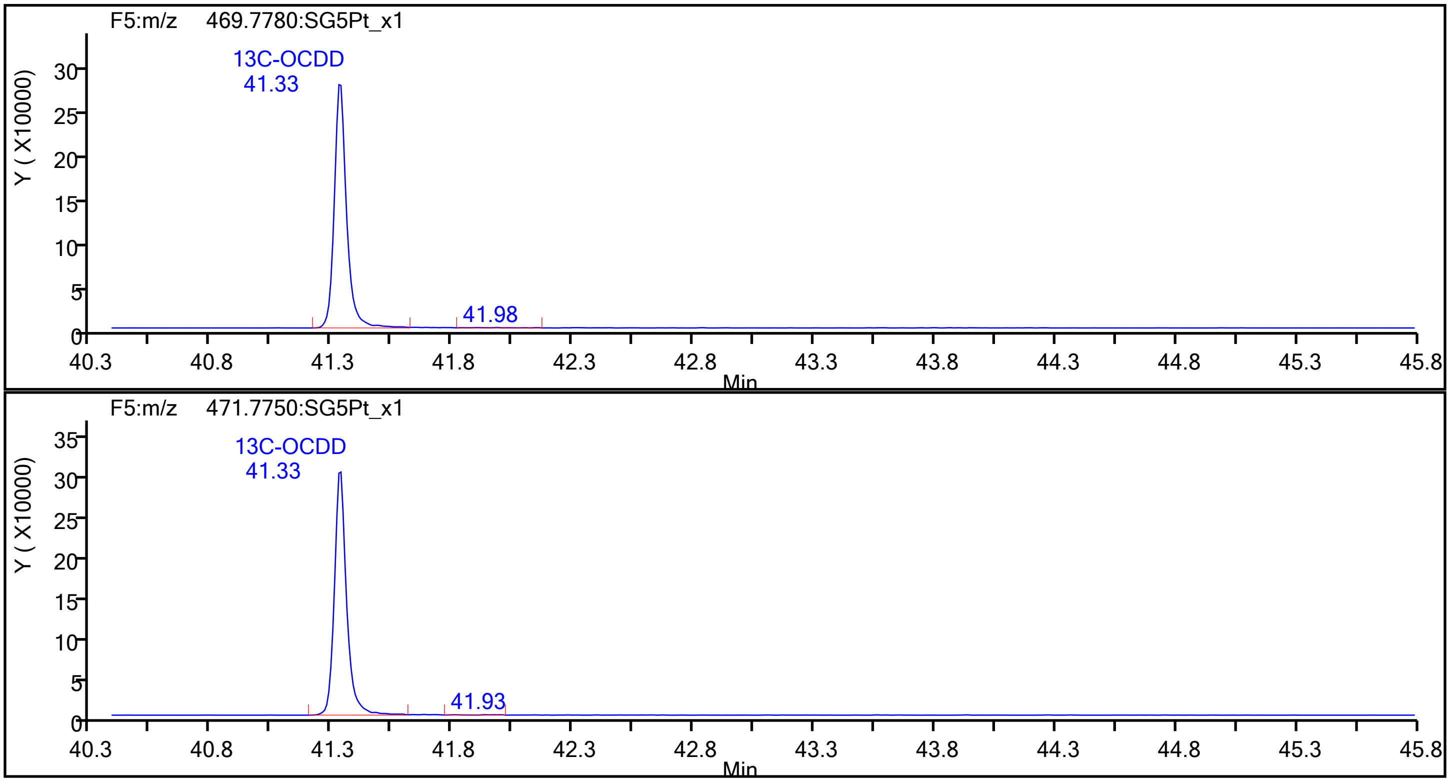

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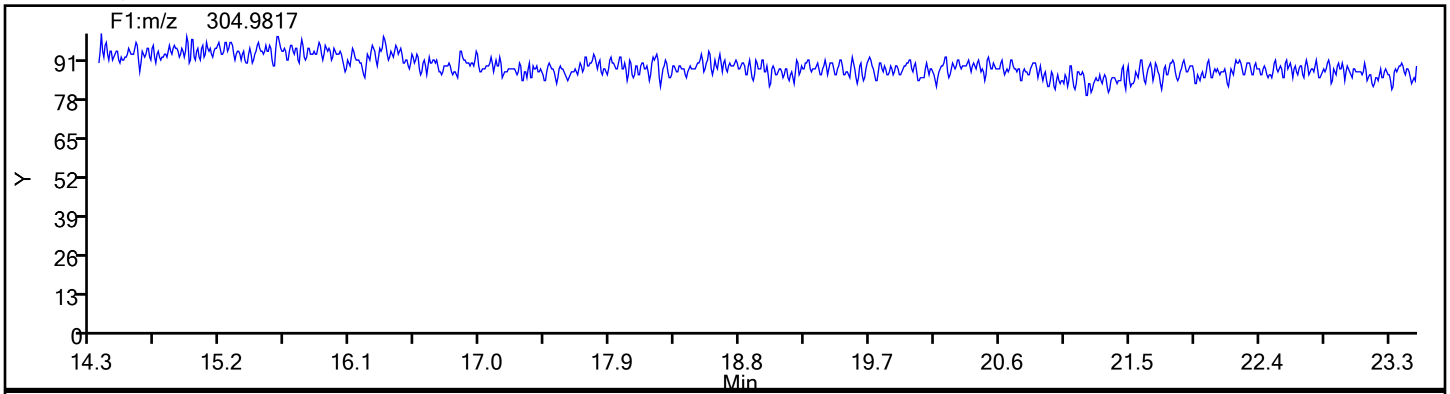

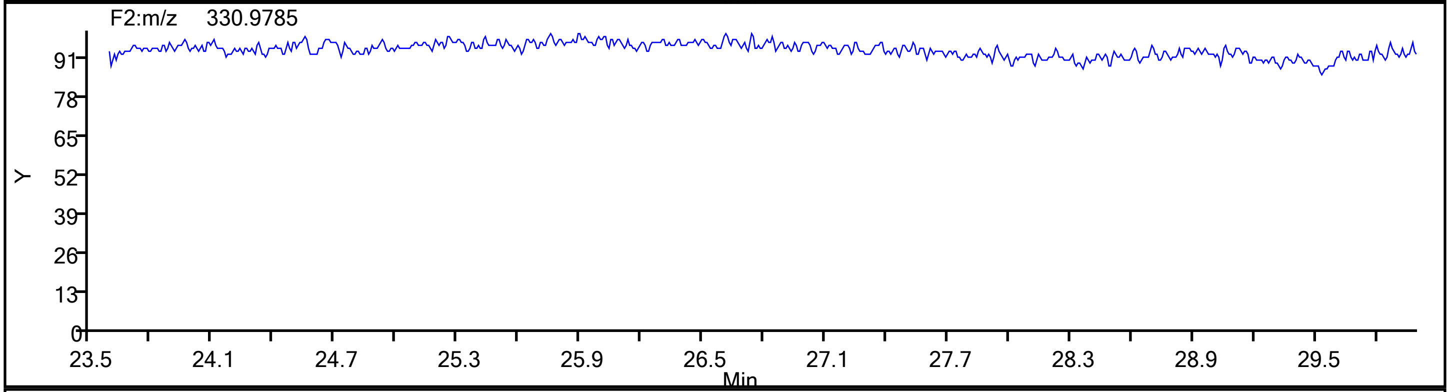

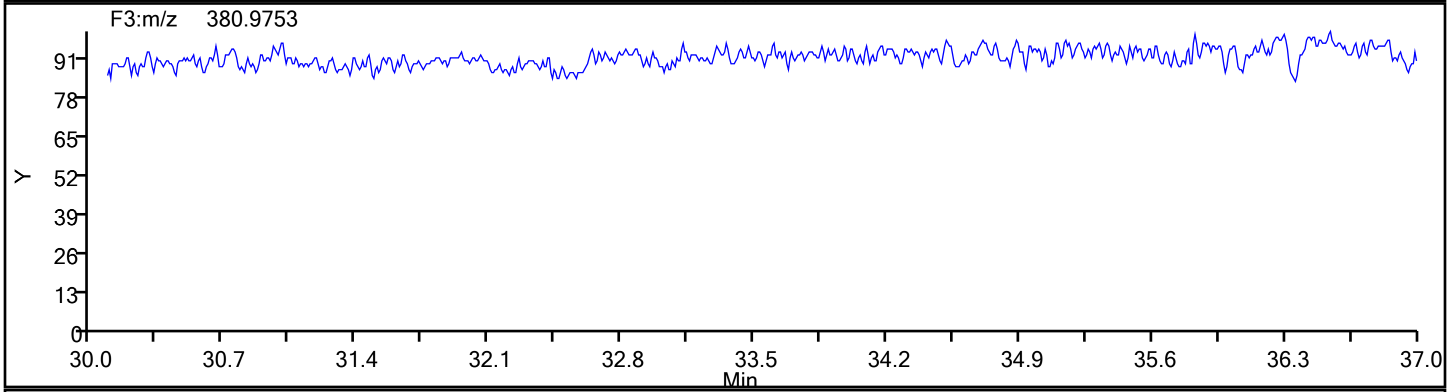

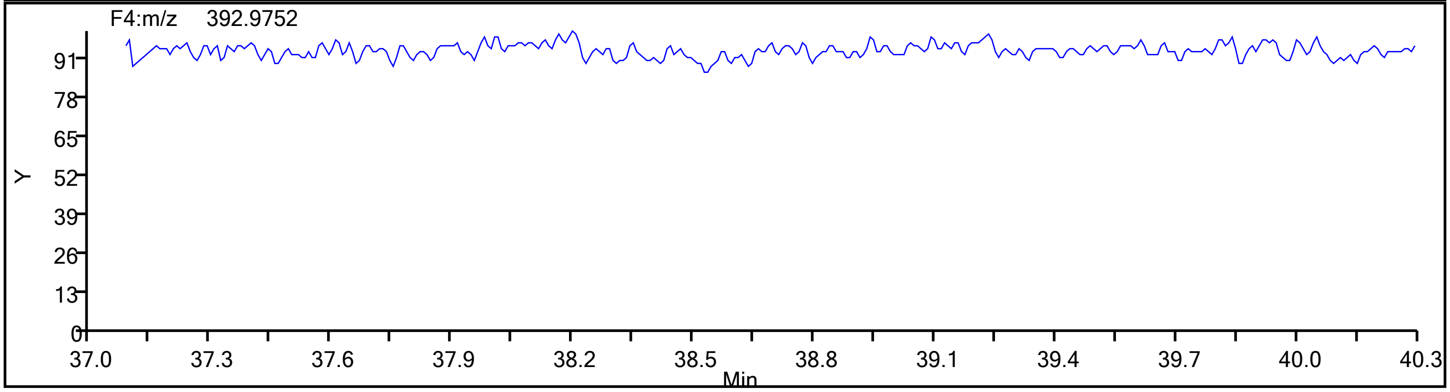

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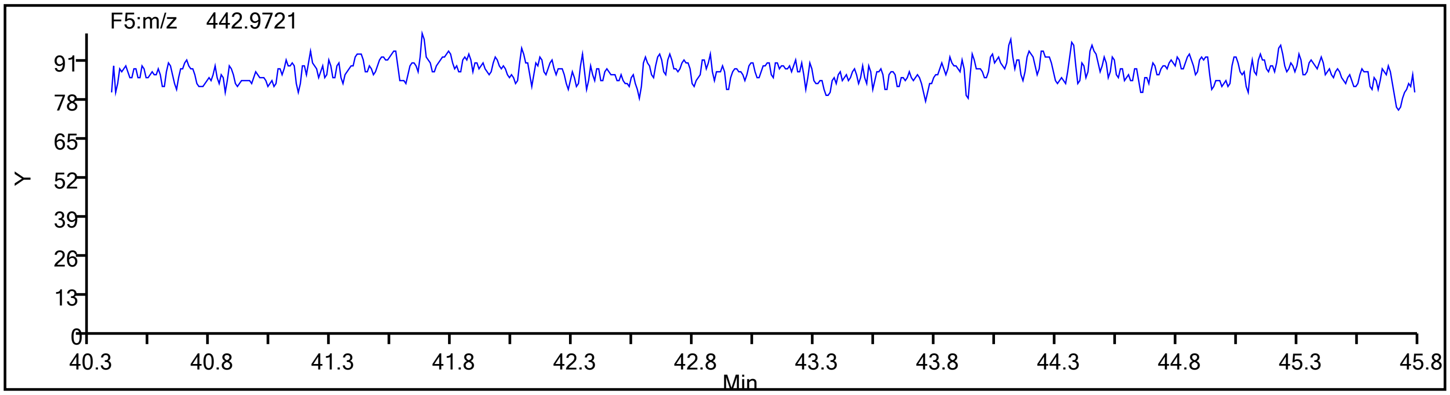

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-467785/3-A
Matrix: Water	Lab File ID: 10mr21dfs1_12.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1000(mL)	Date Analyzed: 03/10/2021 16:49
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	199		10	0.86
51207-31-9	2,3,7,8-TCDF	206		10	0.68
40321-76-4	1,2,3,7,8-PeCDD	1020		50	1.3
57117-41-6	1,2,3,7,8-PeCDF	1040		50	4.9
57117-31-4	2,3,4,7,8-PeCDF	1030		50	5.4
39227-28-6	1,2,3,4,7,8-HxCDD	1070		50	1.8
57653-85-7	1,2,3,6,7,8-HxCDD	1110		50	1.7
19408-74-3	1,2,3,7,8,9-HxCDD	1070		50	1.6
70648-26-9	1,2,3,4,7,8-HxCDF	1060		50	3.8
57117-44-9	1,2,3,6,7,8-HxCDF	1090		50	3.6
72918-21-9	1,2,3,7,8,9-HxCDF	1060		50	3.0
60851-34-5	2,3,4,6,7,8-HxCDF	1090		50	3.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	1030		50	2.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	1070		50	3.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	1040		50	4.3
3268-87-9	OCDD	1970		100	1.9
39001-02-0	OCDF	1860		100	2.0
41903-57-5	Total TCDD	199		10	0.86
30402-14-3	Total TCDF	206		10	0.68
36088-22-9	Total PeCDD	1020		50	1.3
30402-15-4	Total PeCDF	2080		50	5.1
34465-46-8	Total HxCDD	3240		50	1.7
55684-94-1	Total HxCDF	4300		50	3.4
37871-00-4	Total HpCDD	1030		50	2.0
38998-75-3	Total HpCDF	2110		50	4.1

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-70797-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-467785/3-A
Matrix: Water	Lab File ID: 10mr21dfs1_12.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 03/05/2021 09:52
Sample wt/vol: 1000(mL)	Date Analyzed: 03/10/2021 16:49
Con. Extract Vol.: 20(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 468973	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	75		20-175
89059-46-1	13C-2,3,7,8-TCDF	73		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	74		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	69		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	71		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	70		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	79		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	80		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	81		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	80		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	82		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	78		20-186
114423-97-1	13C-OCDD	77		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	93		31-191

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Lims ID: LCSD 320-467785/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 10-Mar-2021 16:49:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-467785/3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 09:19:21 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1686

First Level Reviewer: bilottag Date: 11-Mar-2021 07:42:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	19.487	3526093	0.82	1E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	18.611	3946505	0.80	1.5437	72.5	72.5	0.1827	0.1827	72.50	
2,3,7,8-TCDF	18.637	458371	0.76	1.1258	10.3	10.3	0.0342	0.0342	103	
A Non-2,3,7,8-sub-TCDF	18.182						0.0342	0.0651		RQU
S Total TCDF					10.3	10.3	0.0342	0.0342		
D 13C-2,3,7,8-TCDD	19.822	2566435	0.81	0.9687	75.1	75.1	0.1948	0.1948	75.13	
2,3,7,8-TCDD	19.848	304723	0.76	1.1904	9.974	9.974	0.0429	0.0429	99.74	
$ 37Cl4-2,3,7,8-TCDD	19.848	1425868		1.0841	37.3	37.3	0.0300	0.0300	93.25	
A Non-2,3,7,8-sub-TCDD	18.946						0.0429	0.2023		U
S Total TCDD					9.974	9.974	0.0429	0.0429		
D 13C-1,2,3,7,8-PeCDF	25.658	3183457	1.59	1.3124	68.8	68.8	0.3303	0.3303	68.79	
1,2,3,7,8-PeCDF	25.683	1856141	1.58	1.1163	52.2	52.2	0.2437	0.2437	104	
D 13C-2,3,4,7,8-PeCDF	27.047	3344002	1.59	1.3352	71.0	71.0	0.3246	0.3246	71.03	
2,3,4,7,8-PeCDF	27.073	1824760	1.58	1.0579	51.6	51.6	0.2707	0.2707	103	
A F1 PeCDFs	22.838						0.009412	0.009412		RQU
A Non-2,3,7,8-sub-PeCDF	26.271						0.2567	0.2567		
S Total PeCDF					103.8	103.8	0.2572	0.2572		
D 13C-1,2,3,7,8-PeCDD	27.805	2004559	1.60	0.7716	73.7	73.7	0.1004	0.1004	73.68	
1,2,3,7,8-PeCDD	27.830	1158943	1.58	1.1372	50.8	50.8	0.0665	0.0665	102	
A Non-2,3,7,8-sub-PeCDD	26.681						0.0665	0.0665		
S Total PeCDD					50.8	50.8	0.0665	0.0665		
D 13C-1,2,3,4,7,8-HxCDF	33.570	2509021	0.53	1.0931	73.6	73.6	0.2055	0.2055	73.62	
1,2,3,4,7,8-HxCDF	33.595	1576101	1.23	1.1831	53.1	53.1	0.1918	0.1918	106	
D 13C-1,2,3,6,7,8-HxCDF	33.772	2785285	0.54	1.1278	79.2	79.2	0.1992	0.1992	79.22	
1,2,3,6,7,8-HxCDF	33.789	1896932	1.25	1.2484	54.6	54.6	0.1823	0.1823	109	
D 13C-2,3,4,6,7,8-HxCDF	34.758	2666280	0.53	1.0552	81.0	81.0	0.2129	0.2129	81.05	
2,3,4,6,7,8-HxCDF	34.783	1856621	1.22	1.2750	54.6	54.6	0.1562	0.1562	109	
D 13C-1,2,3,7,8,9-HxCDF	35.777	2473292	0.53	0.9938	79.8	79.8	0.2260	0.2260	79.82	
1,2,3,7,8,9-HxCDF	35.794	1694366	1.24	1.2953	52.9	52.9	0.1513	0.1513	106	
A Non-2,3,7,8-sub-HxCDF	33.585						0.1690	0.1690		
S Total HxCDF					215.2	215.2	0.1704	0.1704		
* 13C-1,2,3,7,8,9-HxCDD	35.567	3117602	1.27	1.1E+05	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.019	1732412	1.29	0.7895	70.4	70.4	0.1440	0.1440	70.38	
1,2,3,4,7,8-HxCDD	35.045	1014127	1.28	1.0950	53.5	53.5	0.0895	0.0895	107	
D 13C-1,2,3,6,7,8-HxCDD	35.154	2144542	1.29	0.8495	81.0	81.0	0.1339	0.1339	80.98	
1,2,3,6,7,8-HxCDD	35.171	1211216	1.26	1.0201	55.4	55.4	0.0863	0.0863	111	
1,2,3,7,8,9-HxCDD	35.592	1193421	1.26	1.1549	53.3	53.3	0.0803	0.0803	107	
A Non-2,3,7,8-sub-HxCDD	34.125						0.0851	0.0851		
S Total HxCDD					162.1	162.1	0.0854	0.0854		
D 13C-1,2,3,4,6,7,8-HpCDF	37.821	2000889	0.46	0.7854	81.7	81.7	0.3555	0.3555	81.72	
1,2,3,4,6,7,8-HpCDF	37.829	1594383	1.04	1.4859	53.6	53.6	0.1974	0.1974	107	
D 13C-1,2,3,4,7,8,9-HpCDF	39.160	1748771	0.44	0.7230	77.6	77.6	0.3862	0.3862	77.59	
1,2,3,4,7,8,9-HpCDF	39.168	1273238	1.05	1.4048	51.8	51.8	0.2174	0.2174	104	
A Non-2,3,7,8-sub-HpCDF	38.512						0.2070	0.2070		
S Total HpCDF					105.5	105.5	0.2074	0.2074		
D 13C-1,2,3,4,6,7,8-HpCDD	38.848	1595888	1.08	0.6413	79.8	79.8	0.2200	0.2200	79.82	
1,2,3,4,6,7,8-HpCDD	38.857	944536	1.05	1.1489	51.5	51.5	0.0998	0.0998	103	
A Non-2,3,7,8-sub-HpCDD	38.524						0.0998	0.0998		
S Total HpCDD					51.5	51.5	0.0998	0.0998		
D 13C-OCDD	41.320	2466595	0.91	0.5141	153.9	153.9	0.1917	0.1917	76.95	
OCDF	41.404	1813395	0.90	1.5776	93.2	93.2	0.1004	0.1004	93.20	
OCDD	41.329	1424873	0.90	1.1706	98.7	98.7	0.0940	0.0940	98.70	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Lims ID: LCSD 320-467785/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 10-Mar-2021 16:49:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-467785/3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 12-Mar-2021 09:19:21 Calib Date: 03-Feb-2021 00:57:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210202-112553.b\02fe21dfs1_8.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1686

First Level Reviewer: bilottag Date: 11-Mar-2021 07:42:28

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	19.487	19.547	-4		1587185	256551	273	682	940		a
333.9338	19.487	19.547	-4		1938908	311442	156	390	1996	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	18.611	18.671	-4	0.955	1757111	280988	386	965	728		
317.9389	18.611	18.671	-4	0.955	2189394	342201	255	637	1342	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	18.637	18.706	-4	1.001	198471	29906	40	100	748		
305.8987	18.637	18.706	-4	1.001	259900	40076	56	140	716	0.76(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.010	18.182	-10	0.968	1610	347	40	100	9		
	Empc Correction				1258	247	40	100	6		
305.8987	18.019	18.182	-10	0.968	1634	322	56	140	6	0.99(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	19.822	19.882	-4	1.017	1144783	168834	273	682	618		
333.9338	19.822	19.882	-4	1.017	1421652	207233	156	390	1328	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	19.848	19.908	-4	1.001	131766	19088	54	135	353		
321.8936	19.848	19.908	-4	1.001	172957	26066	23	57	1133	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	19.848	19.917	-4	1.019	1425868	206745	74	185	2794		
A Non-2,3,7,8-sub-TCDD											U
319.8965	16.275	18.946	-160	0.821	2797	588	54	135	11		
321.8936	16.258	18.946	-161	0.820	3382	586	23	57	25	0.83(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	25.658	25.717	-4	1.317	1954049	340183	637	1592	534		
353.8970	25.658	25.717	-4	1.317	1229408	211196	348	870	607	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	25.683	25.734	-3	1.001	1135336	186405	340	850	548		
341.8567	25.683	25.734	-3	1.001	720805	116956	260	650	450	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	27.047	27.107	-4	1.388	2051539	320574	637	1592	503		
353.8970	27.047	27.107	-4	1.388	1292463	203127	348	870	584	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	27.073	27.124	-3	1.001	1116799	171487	340	850	504		
341.8567	27.073	27.124	-3	1.001	707961	108772	260	650	418	1.58(1.32-1.78)	
A F1 PeCDFs											U
339.8597	22.838	22.838	0	0.890	112	28	3	7			
341.8567	22.838	22.838	0	0.890	445	132	19	47		0.25(1.32-1.78)	
	Empc Correction				72	18	19	47	0		
A Non-2,3,7,8-sub-PeCDF											
339.8597	26.271						340	850			
341.8567	26.271						260	650			
13C-1,2,3,7,8-PeCDD											
367.8949	27.805	27.857	-3	1.427	1233476	178964	103	257	1738		
369.8919	27.805	27.857	-3	1.427	771083	114396	73	182	1567	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	27.830	27.883	-3	1.001	708878	100831	56	140	1801		
357.8516	27.822	27.883	-4	1.001	450065	64747	33	82	1962	1.58(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	26.681						56	140			
357.8516	26.681						33	82			
13C-1,2,3,4,7,8-HxCDF											
383.8639	33.570	33.620	-3	0.944	873402	148217	208	520	713		
385.8610	33.570	33.620	-3	0.944	1635619	271401	373	932	728	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	33.595	33.646	-3	1.001	869878	144393	212	530	681		
375.8178	33.587	33.646	-4	1.001	706223	117392	169	422	695	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	33.772	33.822	-3	0.950	971289	148138	208	520	712		
385.8610	33.772	33.822	-3	0.950	1813996	270087	373	932	724	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	33.789	33.839	-3	1.000	1053374	159445	212	530	752		
375.8178	33.789	33.839	-3	1.000	843558	127666	169	422	755	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	34.758	34.808	-3	0.977	920948	164368	208	520	790		
385.8610	34.758	34.808	-3	0.977	1745332	313522	373	932	841	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	34.783	34.825	-2	1.001	1020598	188327	212	530	888		
375.8178	34.783	34.825	-2	1.001	836023	152634	169	422	903	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	35.777	35.827	-3	1.006	860913	170131	208	520	818		
385.8610	35.777	35.827	-3	1.006	1612379	315727	373	932	846	0.53(0.43-0.59)	

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	35.794	35.836	-2	1.000	936373	189592	212	530	894		
375.8178	35.794	35.836	-2	1.000	757993	151876	169	422	899	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	33.585						212	530			
375.8178	33.585						169	422			
13C-1,2,3,7,8,9-HxCDD											
401.8559	35.567	35.617	-3		1742449	364172	155	387	2349		
403.8529	35.567	35.617	-3		1375153	282224	139	347	2030	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.019	35.061	-2	0.985	975812	201057	155	387	1297		
403.8529	35.019	35.061	-2	0.985	756600	156013	139	347	1122	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.045	35.086	-2	1.001	568882	120023	74	185	1622		
391.8127	35.045	35.086	-2	1.001	445245	93201	66	165	1412	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.154	35.195	-2	0.988	1208089	220214	155	387	1421		
403.8529	35.154	35.195	-2	0.988	936453	177234	139	347	1275	1.29(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.171	35.212	-2	1.000	676021	127842	74	185	1728		
391.8127	35.171	35.212	-2	1.000	535195	101647	66	165	1540	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	35.592	35.633	-2	1.016	665370	131622	74	185	1779		
391.8127	35.584	35.633	-3	1.016	528051	104946	66	165	1590	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	34.125						74	185			
391.8127	34.125						66	165			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	37.821	37.860	-2	1.063	631890	159131	250	625	637		
419.8220	37.821	37.860	-2	1.063	1368999	341999	472	1180	725	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	37.829	37.869	-2	1.000	812380	210669	311	777	677		
409.7788	37.829	37.869	-2	1.000	782003	204435	277	692	738	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.160	39.199	-2	1.101	537387	149989	250	625	600		
419.8220	39.160	39.199	-2	1.101	1211384	331389	472	1180	702	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.168	39.208	-2	1.000	653157	181648	311	777	584		
409.7788	39.168	39.208	-2	1.000	620081	171189	277	692	618	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.512						311	777			
409.7788	38.512						277	692			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	38.848	38.888	-2	1.092	827526	233757	176	440	1328		
437.8140	38.848	38.888	-2	1.092	768362	224287	189	472	1187	1.08(0.88-1.20)	

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	38.857	38.896	-2	1.000	484234	139787	117	292	1195		
425.7737	38.857	38.896	-2	1.000	460302	132363	93	232	1423	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.524						117	292			
425.7737	38.524						93	232			
13C-OCDD											
469.7780	41.320	41.358	-2	1.162	1172921	332877	126	315	2642		
471.7750	41.320	41.358	-2	1.162	1293674	370577	129	322	2873	0.91(0.76-1.02)	
OCDF											
441.7428	41.404	41.434	-2	1.002	859309	243151	103	257	2361		
443.7399	41.396	41.434	-2	1.002	954086	271449	120	300	2262	0.90(0.76-1.02)	
OCDD											
457.7377	41.329	41.367	-2	1.000	673943	192579	65	162	2963		
459.7348	41.329	41.367	-2	1.000	750930	213290	90	225	2370	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Review Flags

U - Marked Undetected

a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Lims ID:	LCSD 320-467785/3-A
Client ID:	

Inject. Date:	10-Mar-2021 16:49:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	468973	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 18.182

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.126	D 13C-2,3,7,8-TCDF	100.000	3946505	623189

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.126		100.000	3946505	623189

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.010	1610	347	1634	322	0.0730	0.99	RQ
18.010	1258	247	1634	322	0.0651		Empc Correction

Compound is Marked ND

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Lims ID: LCSD 320-467785/3-A
Client ID:
Inject. Date: 10-Mar-2021 16:49:00 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 11

Non-2,3,7,8-sub-TCDD, RT: 18.946

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.190	D 13C-2,3,7,8-TCDD	100.000	2566435	376067

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.190		100.000	2566435	376067

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
16.275	2797	588	3382	586	0.2023	0.83	
16.713	1932	397	2570	532	0.1474	0.75	

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Lims ID: LCSD 320-467785/3-A
Client ID:
Inject. Date: 10-Mar-2021 16:49:00 Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 468973 Lims Sample ID: 11

F1 PeCDFs, RT: 22.838

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.116	D 13C-1,2,3,7,8-PeCDF	100.000	3183457	551379
2,3,4,7,8-PeCDF	1.058	D 13C-2,3,4,7,8-PeCDF	100.000	3344002	523701

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.087		100.000	3263729	537540

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.138	112	28	445	132	0.0157	0.25	RQ
23.138	112	28	72	18	0.005186		Empc Correction

Compound is Marked ND

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
Injection Date:	10-Mar-2021 16:49:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

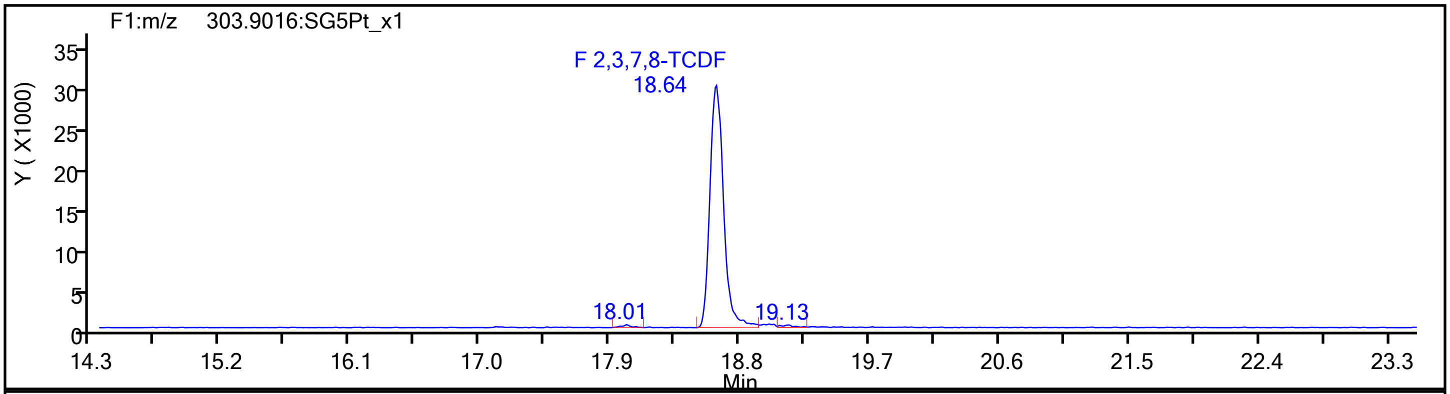

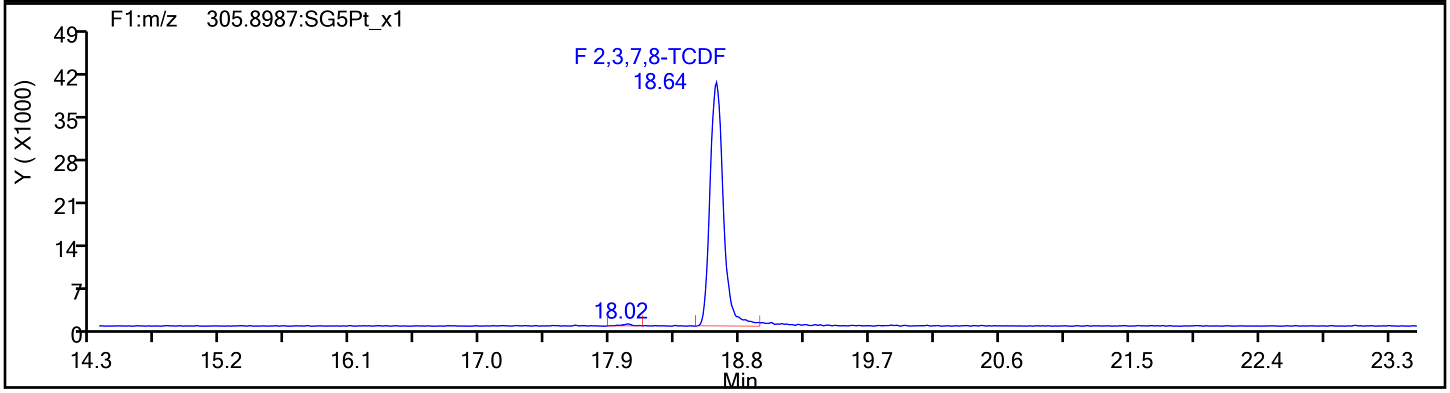

TCDF Standards

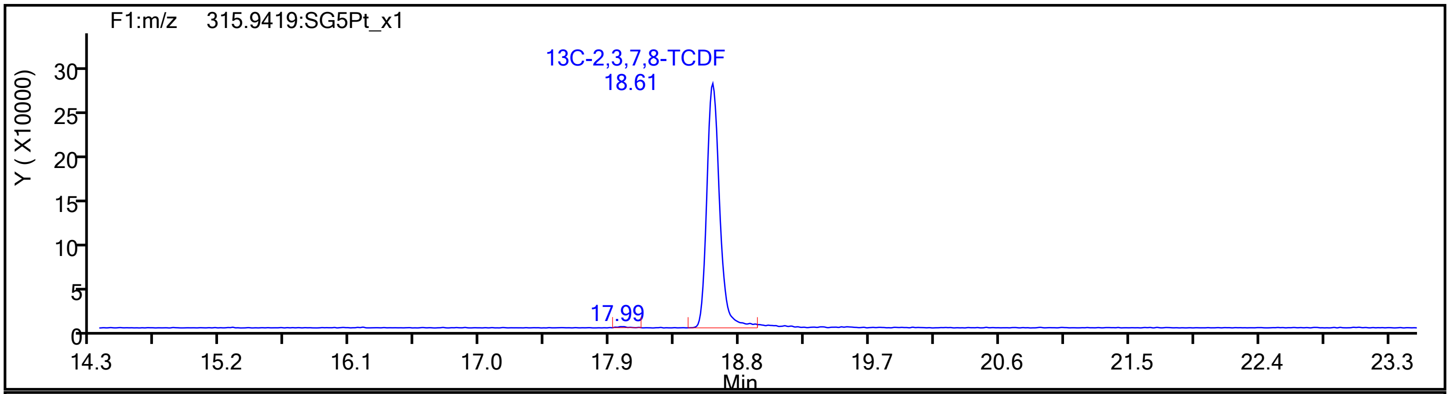

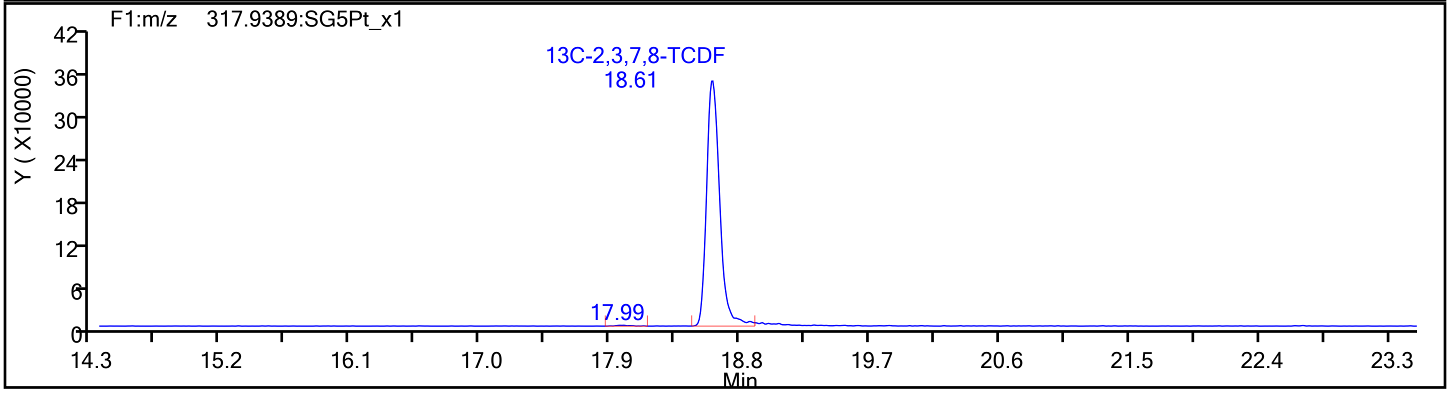

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
Injection Date:	10-Mar-2021 16:49:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

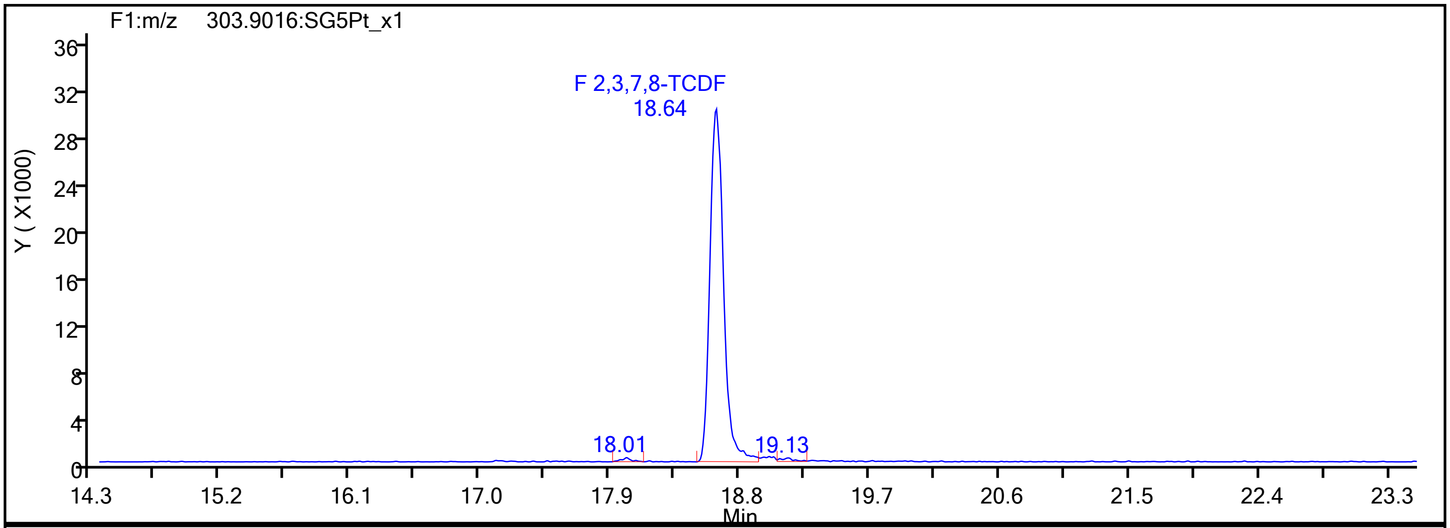

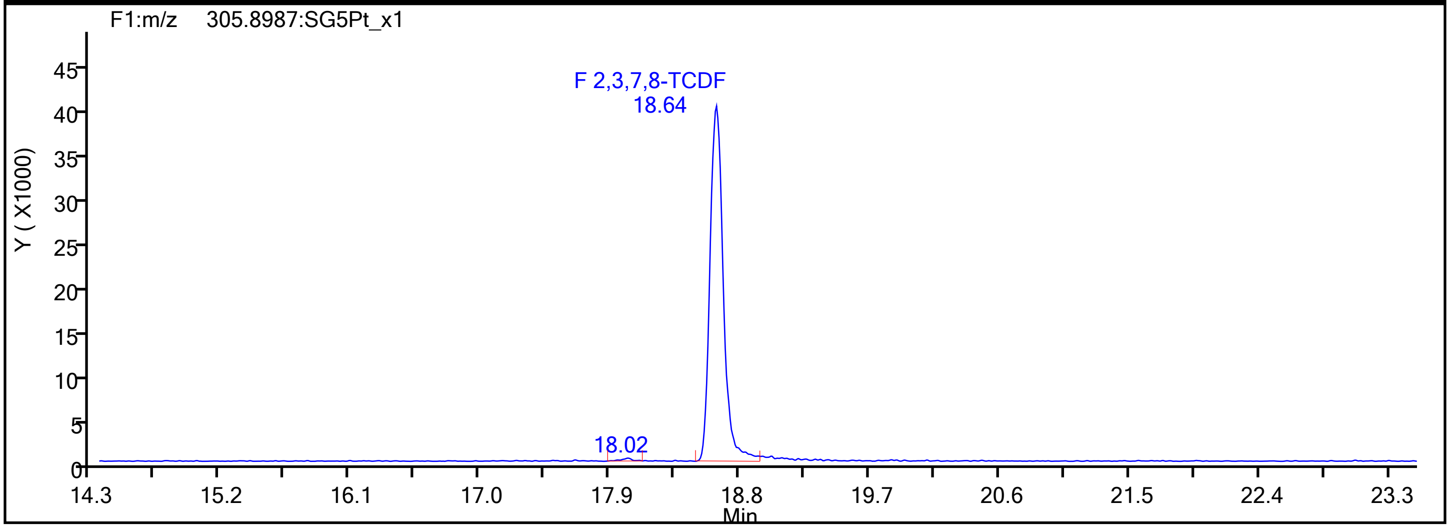

TCDF Interference Mass

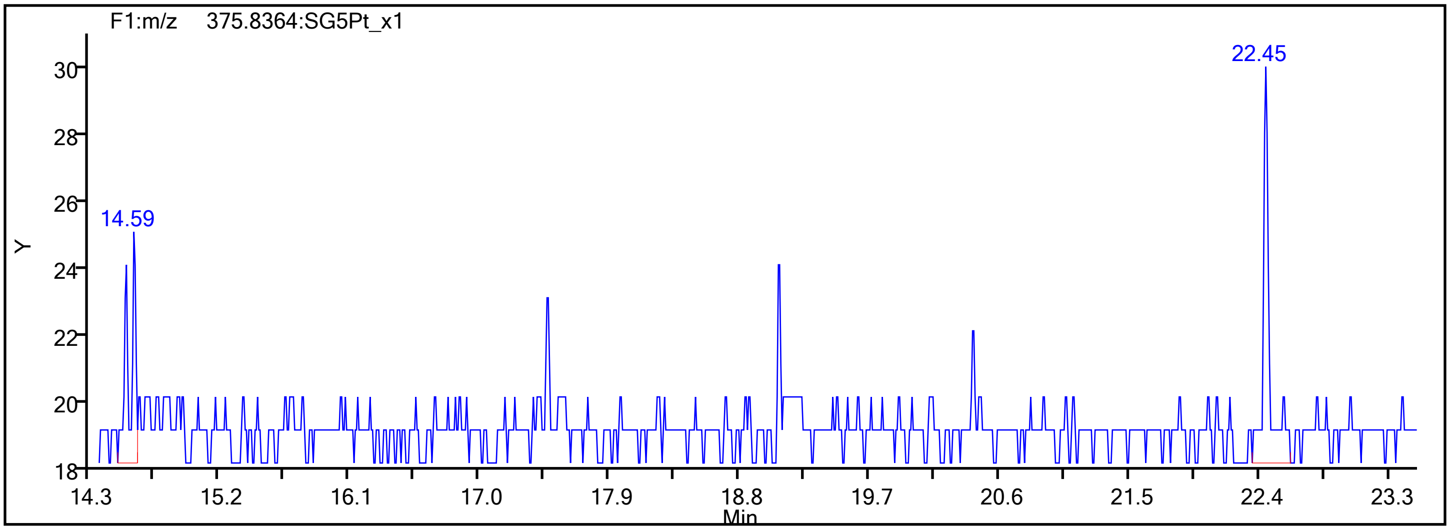

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d

Injection Date: 10-Mar-2021 16:49:00

Injection Vol: 2.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

TCDD

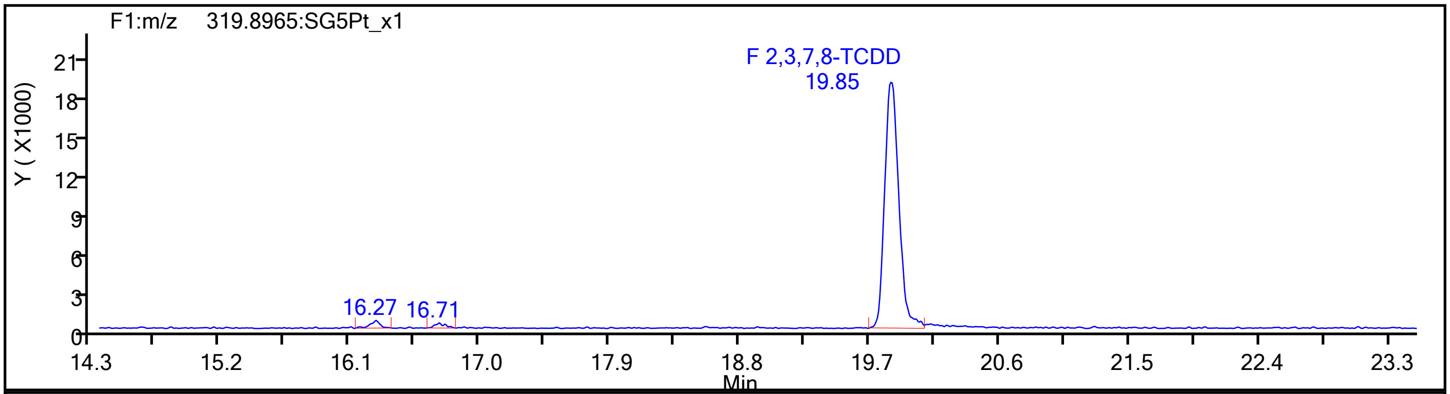

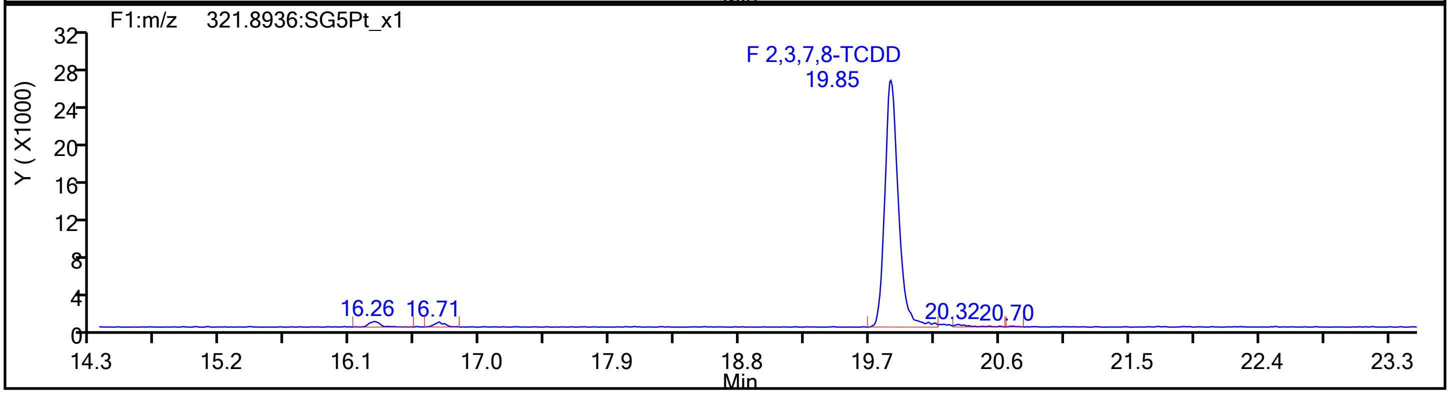

TCDD Standards

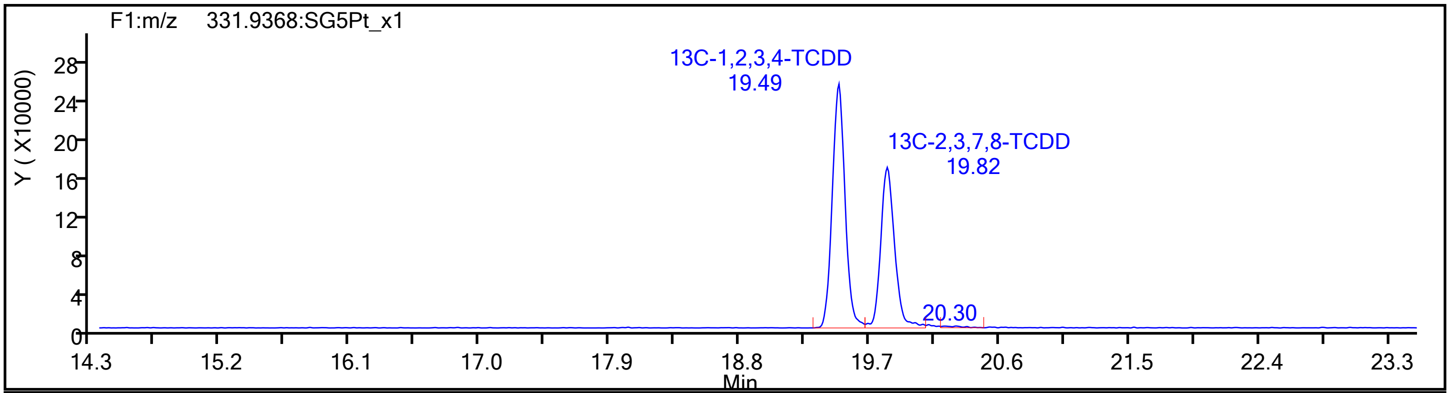

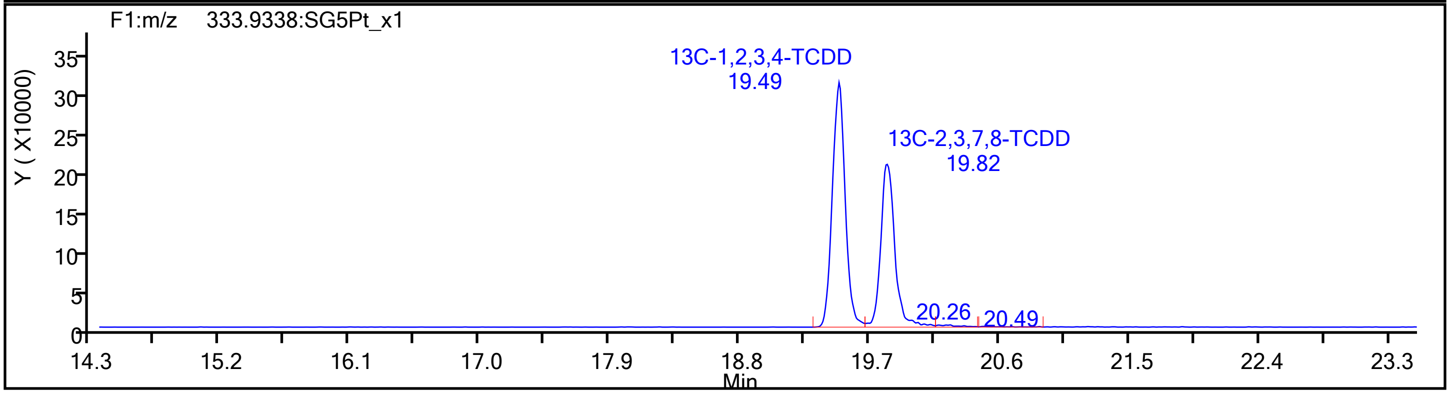

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Injection Date: 10-Mar-2021 16:49:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

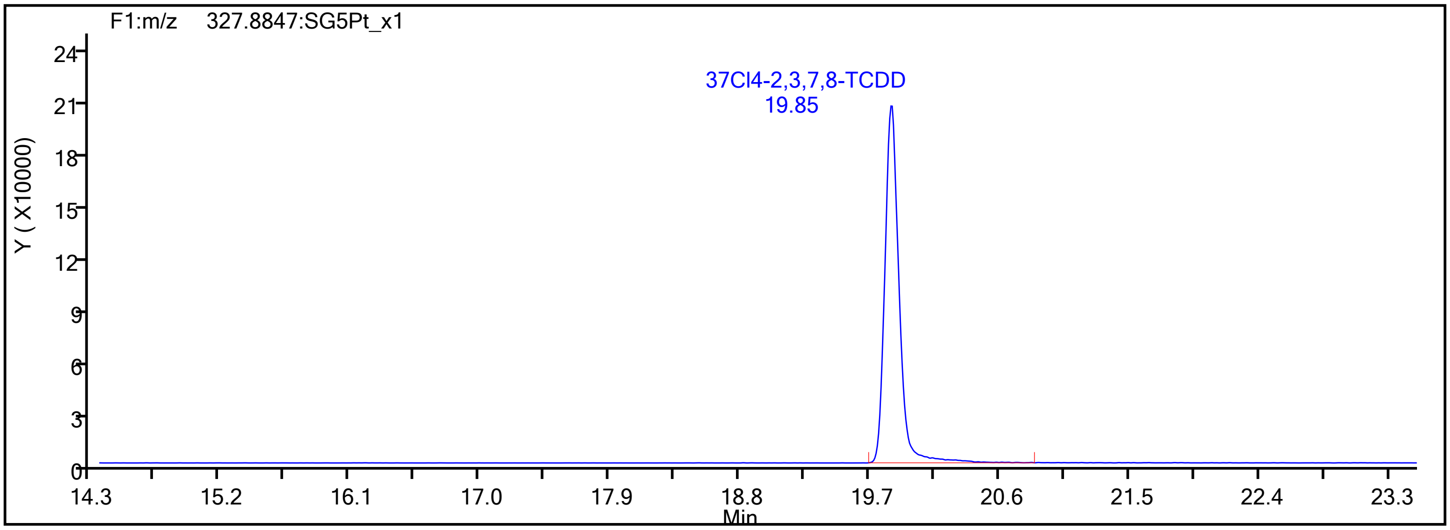

37Cl4-TCDD Standards

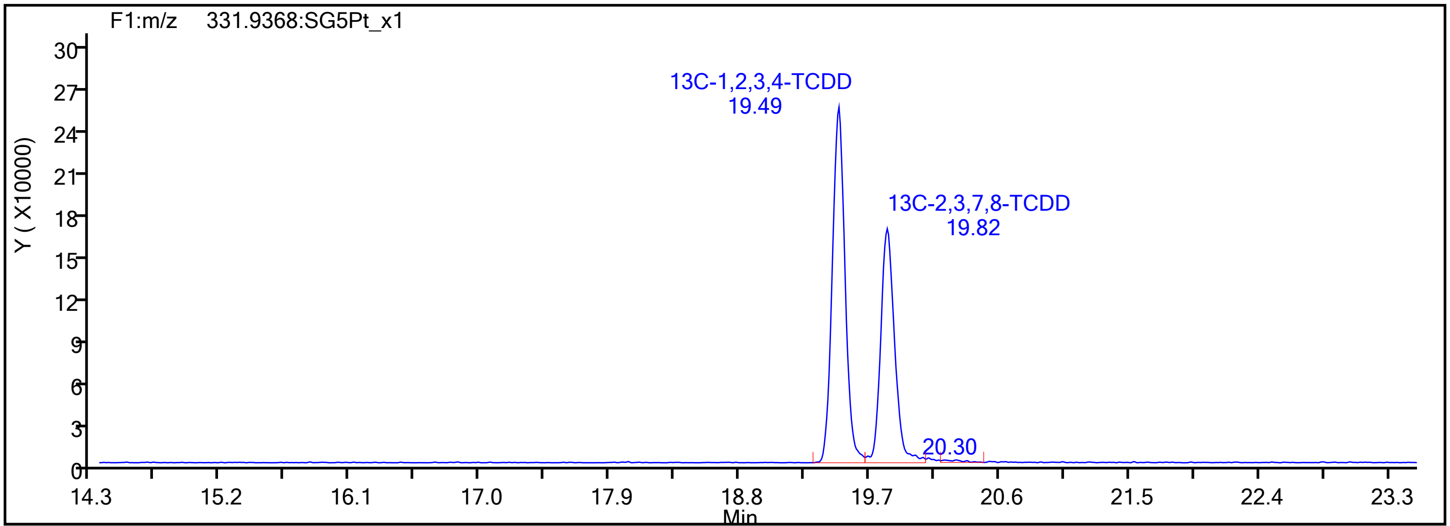

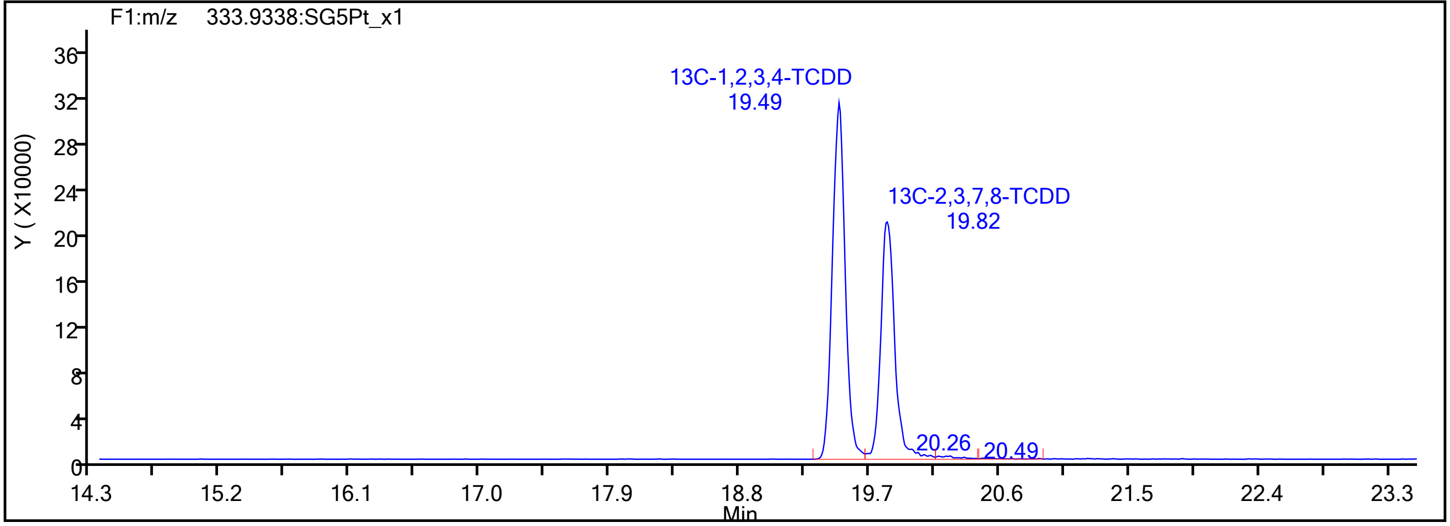

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Injection Date:	10-Mar-2021 16:49:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

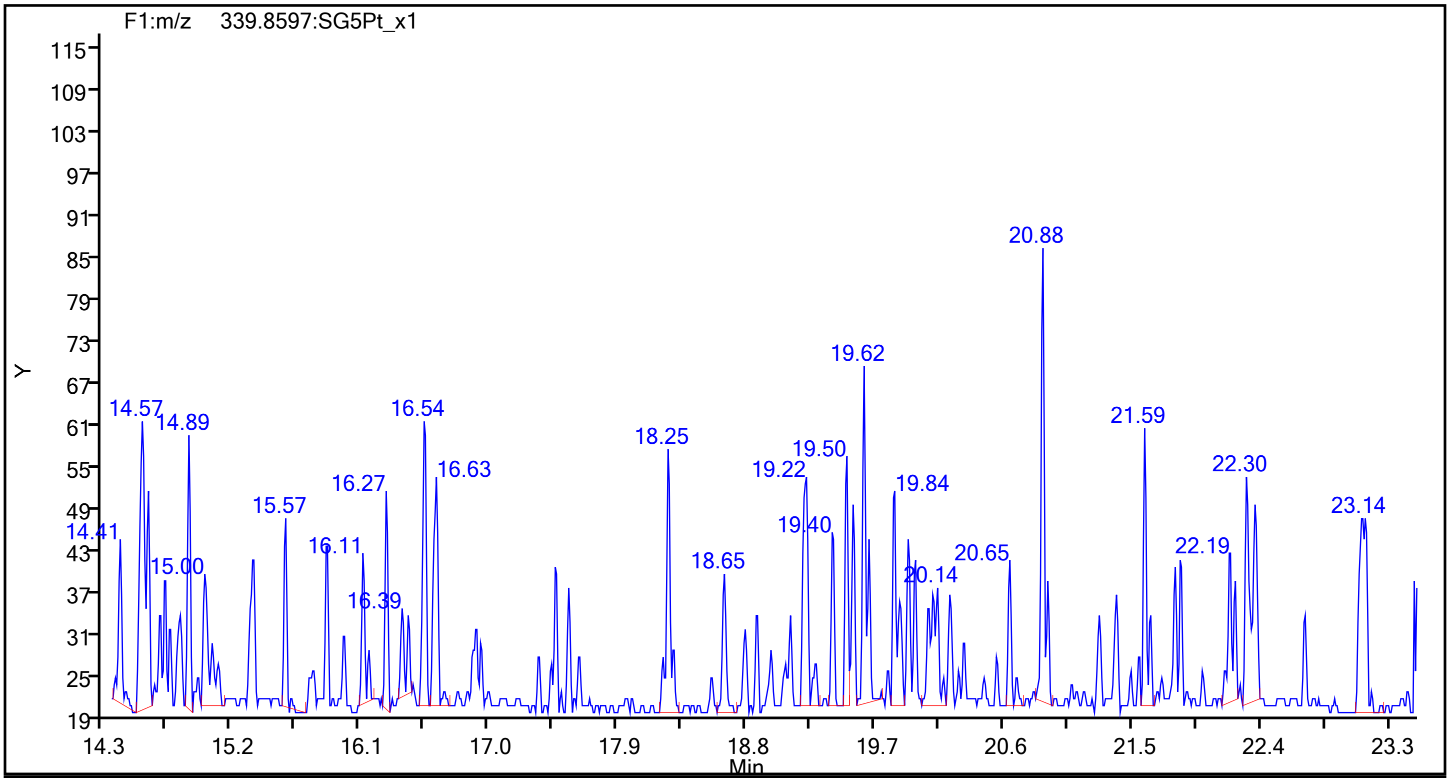

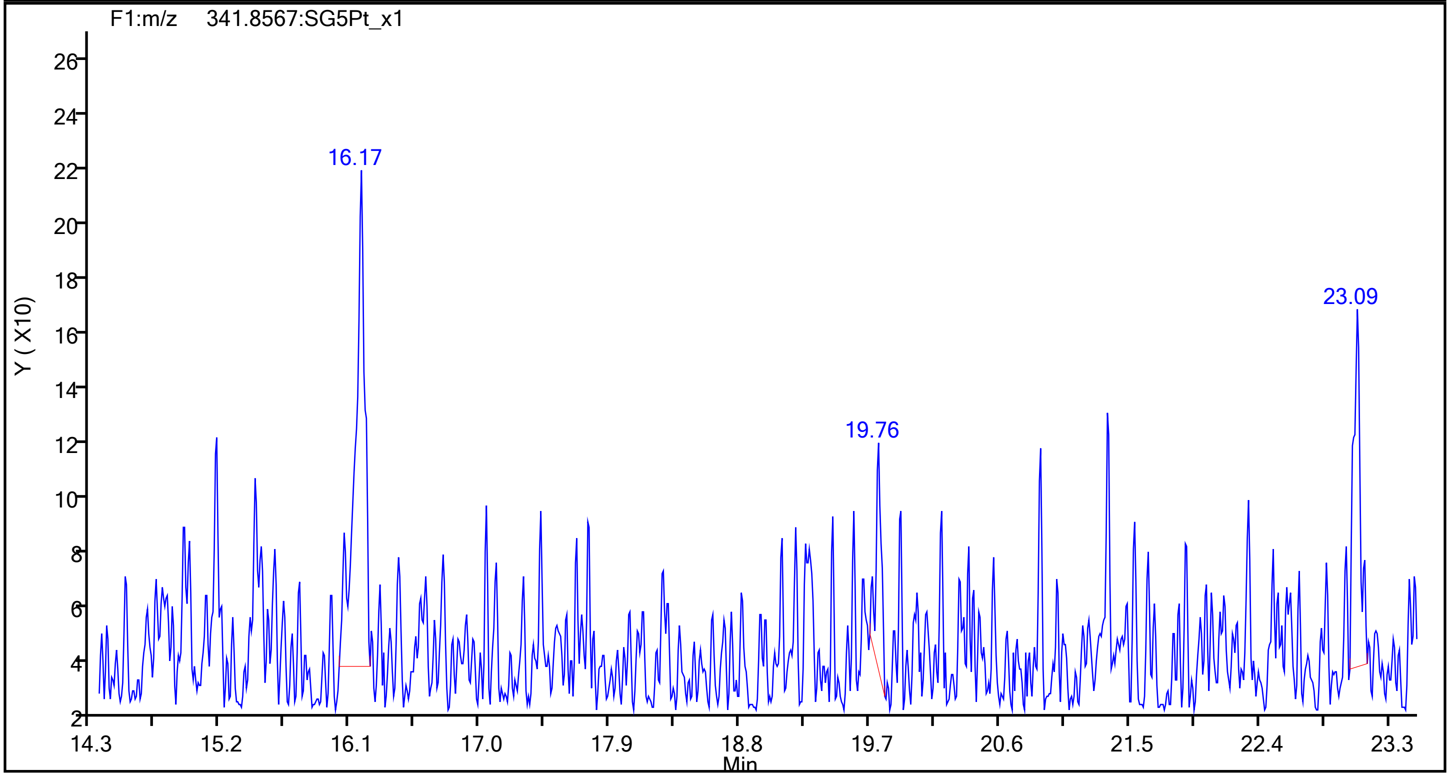

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
Injection Date:	10-Mar-2021 16:49:00	Injection Vol:	2.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

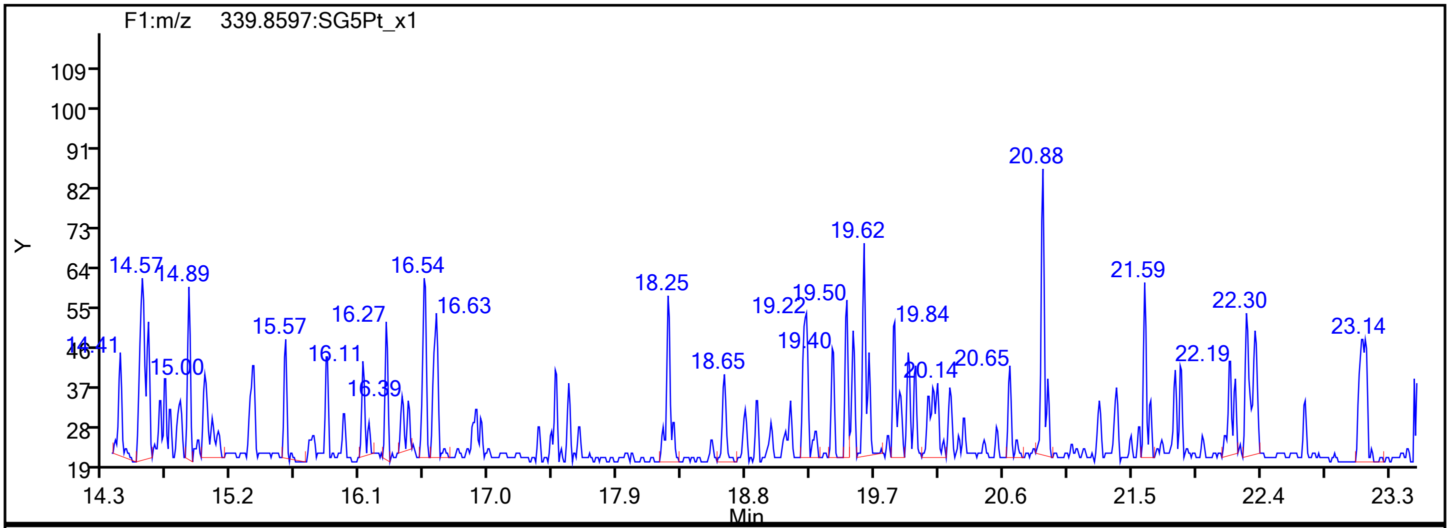

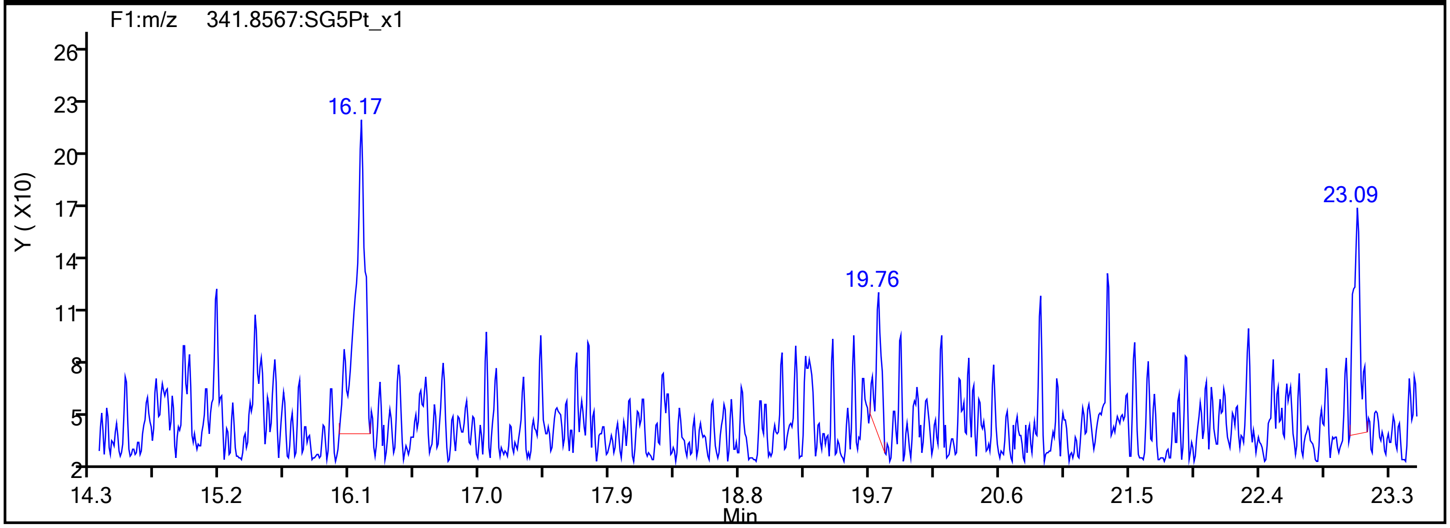

F1 PeCDFs Interference Mass

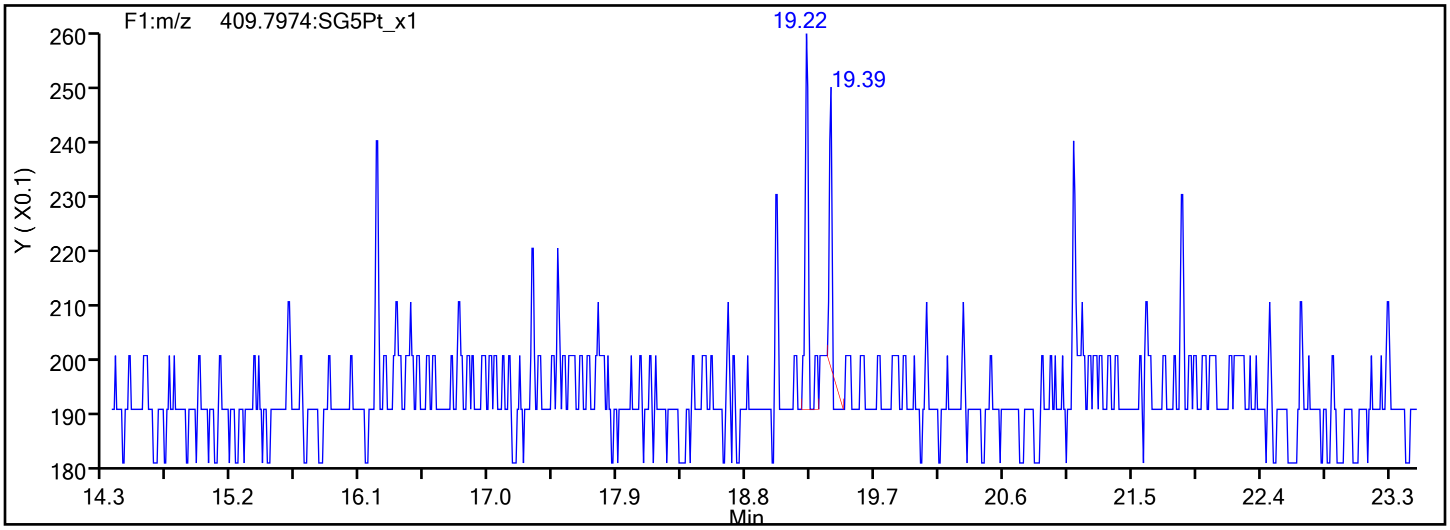

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Injection Date: 10-Mar-2021 16:49:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

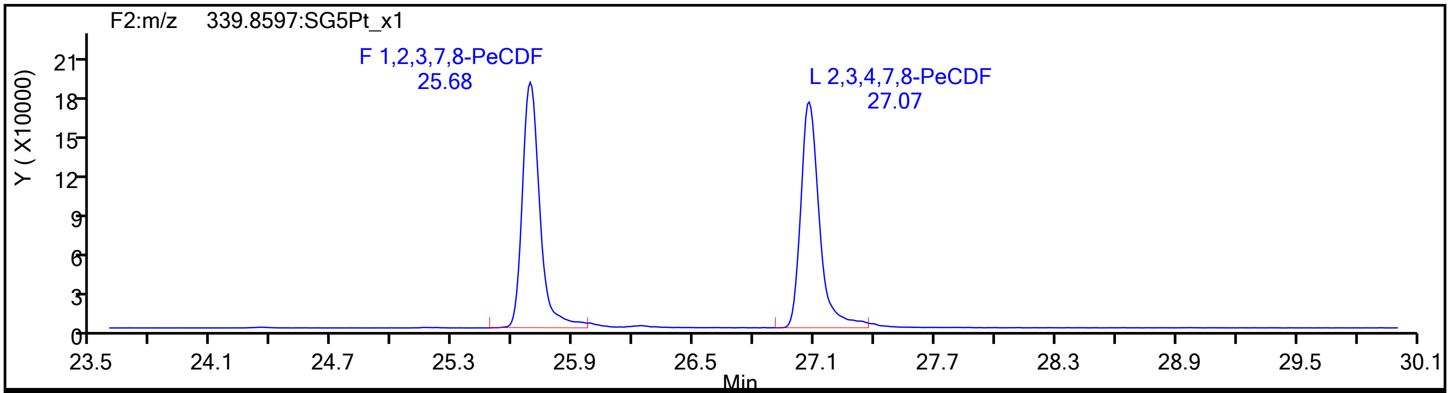

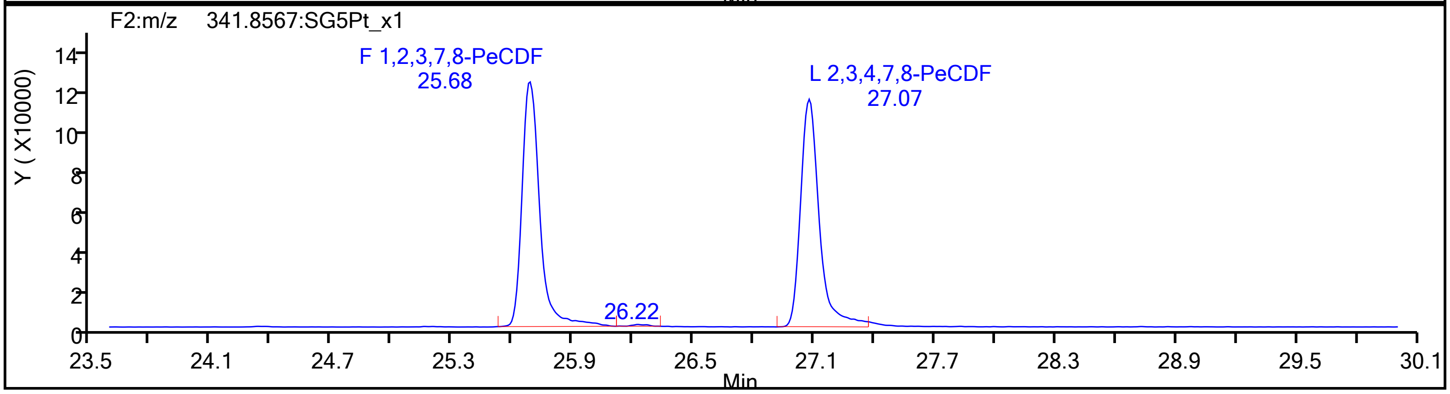

PeCDF Standards

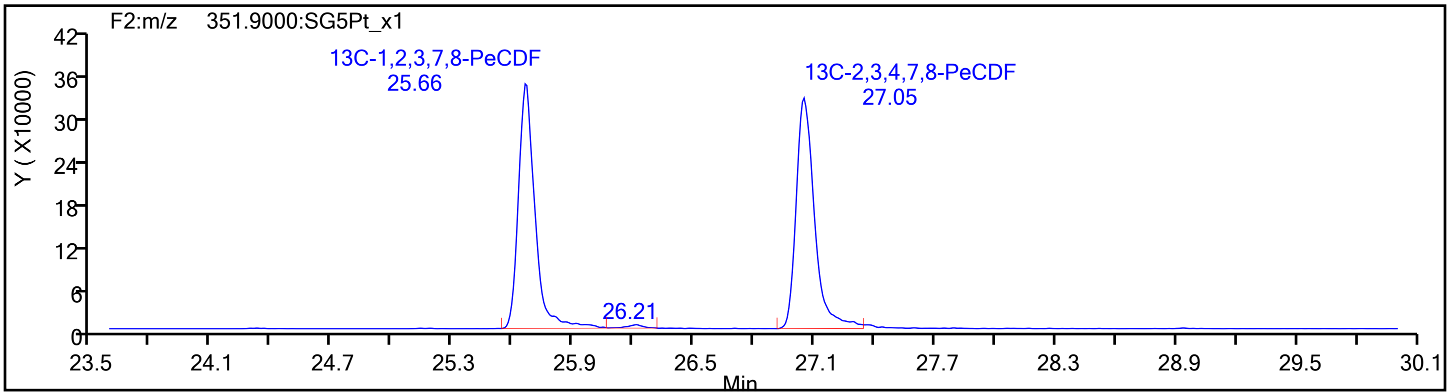

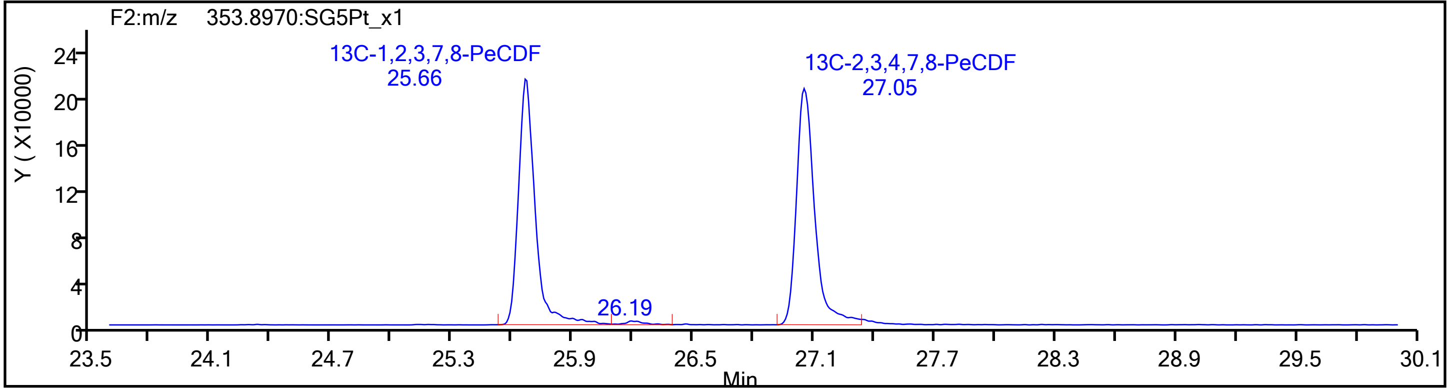

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Injection Date: 10-Mar-2021 16:49:00 Injection Vol: 2.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973 Sample Line#: 11
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

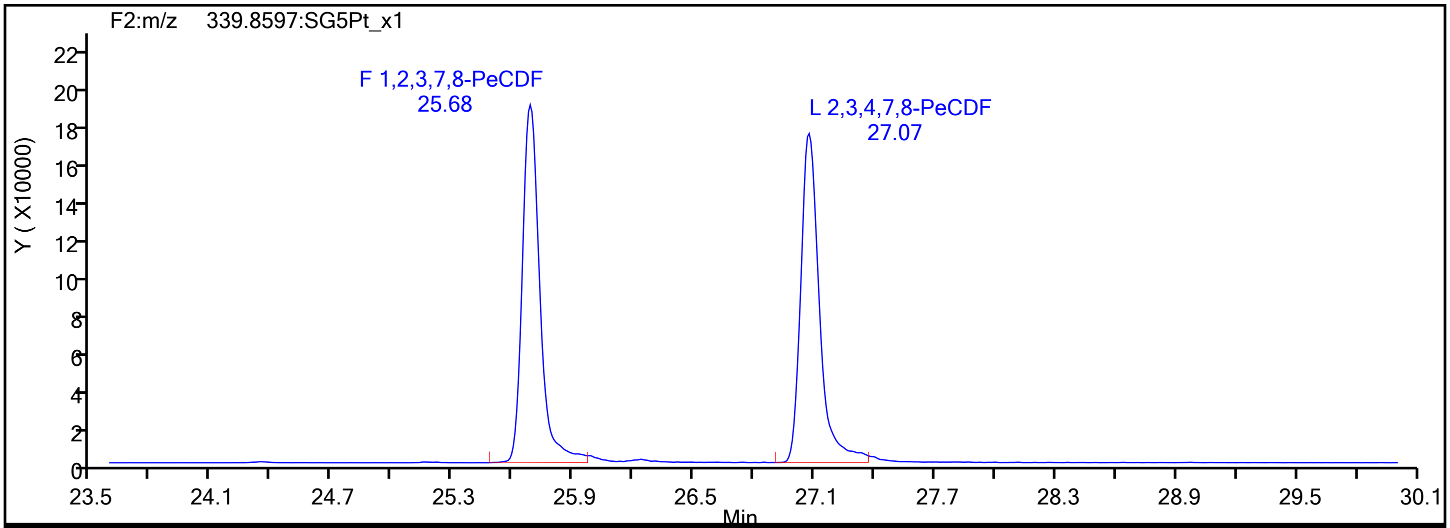

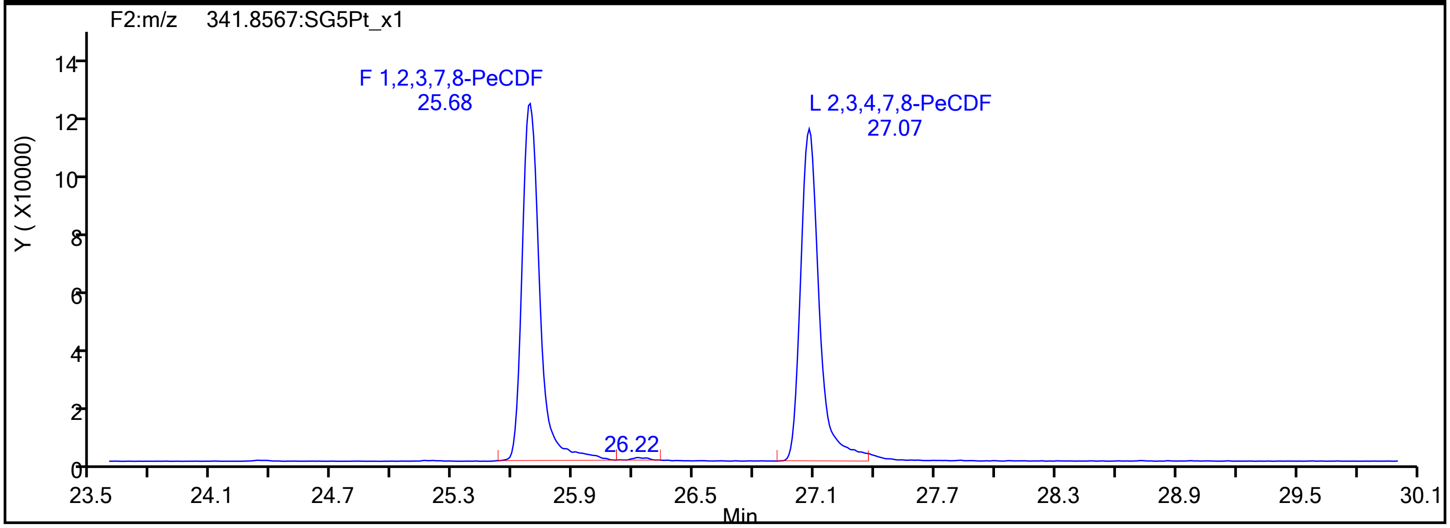

PeCDF Interference Mass

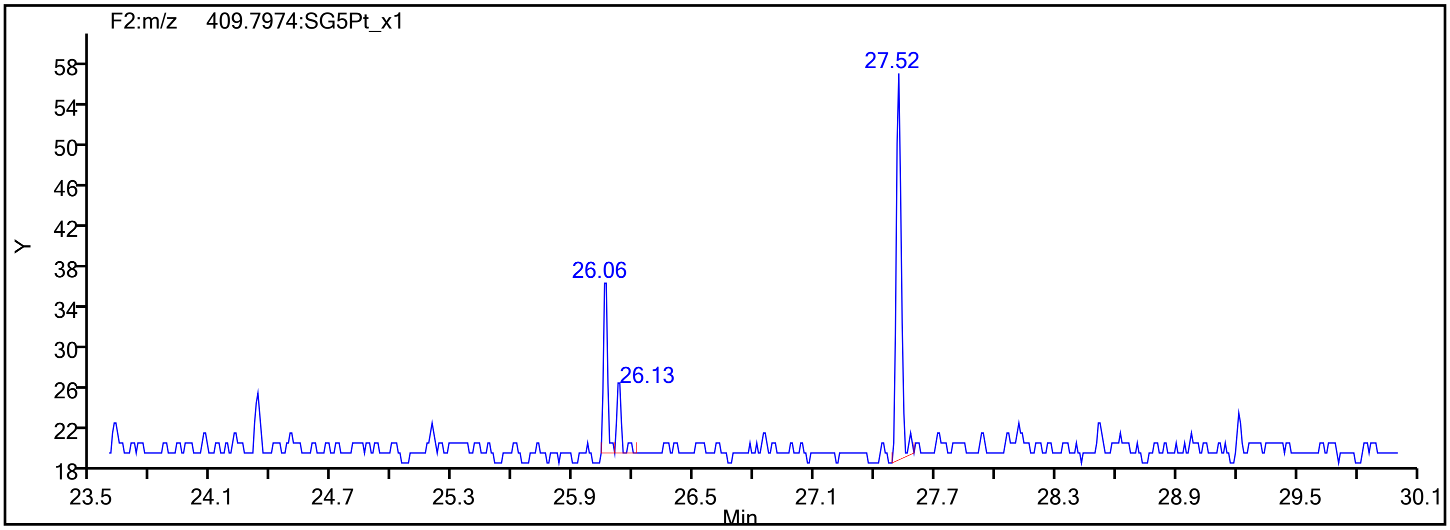

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d

Injection Date: 10-Mar-2021 16:49:00 Injection Vol: 2.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 468973 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

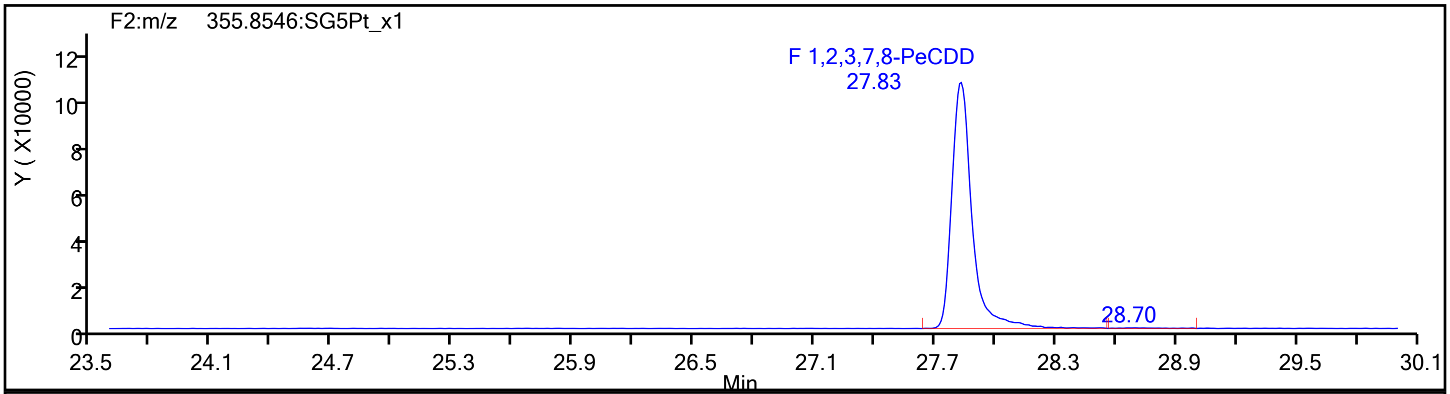

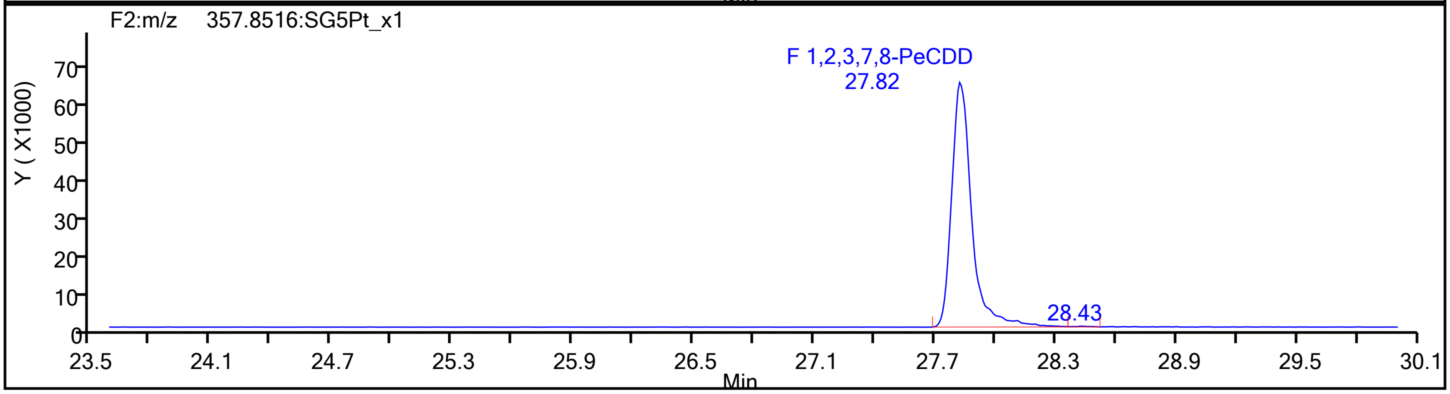

PeCDD Standards

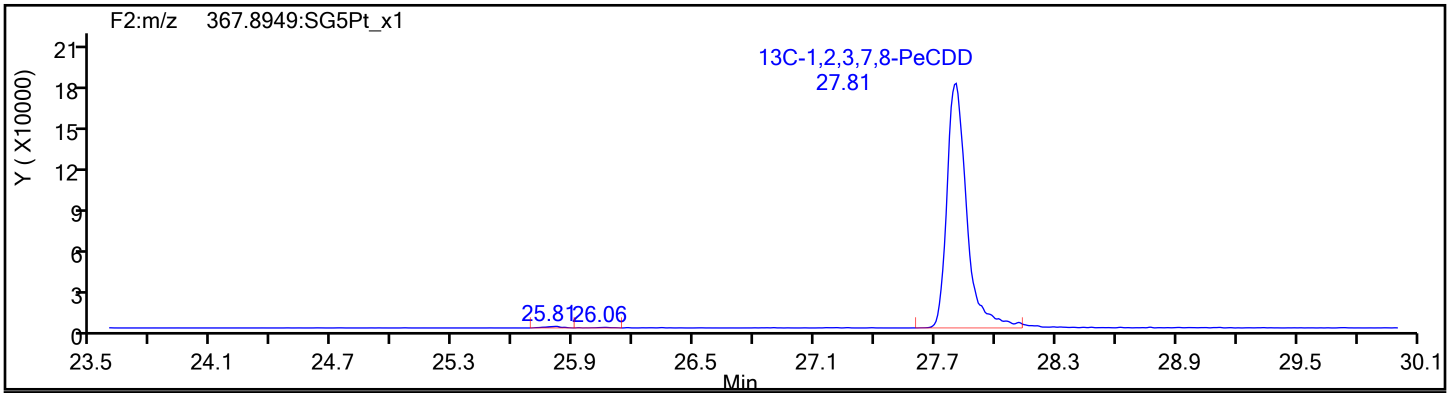

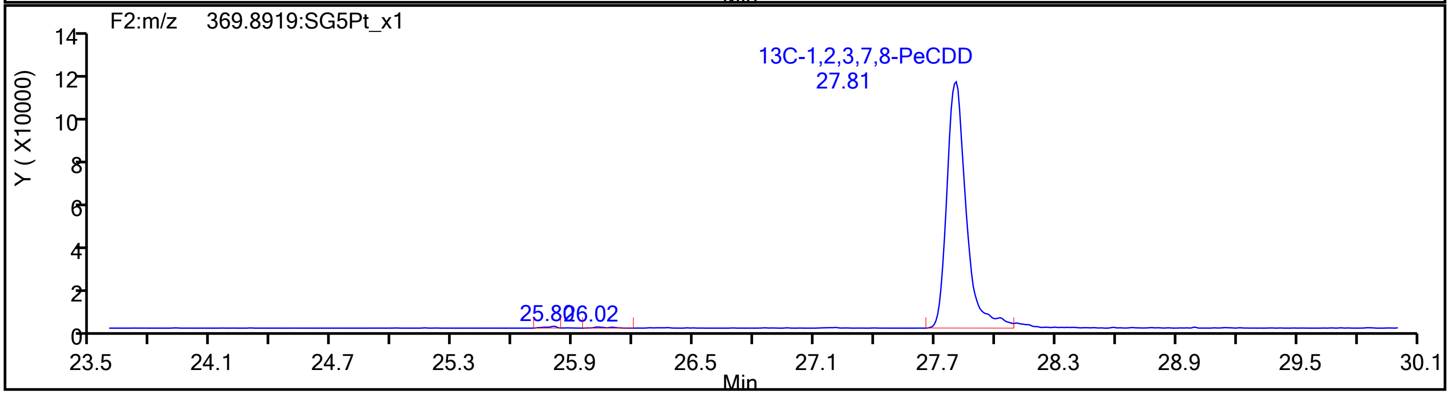

Report Date: 12-Mar-2021 09:19:22
Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Injection Date: 10-Mar-2021 16:49:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 468973
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

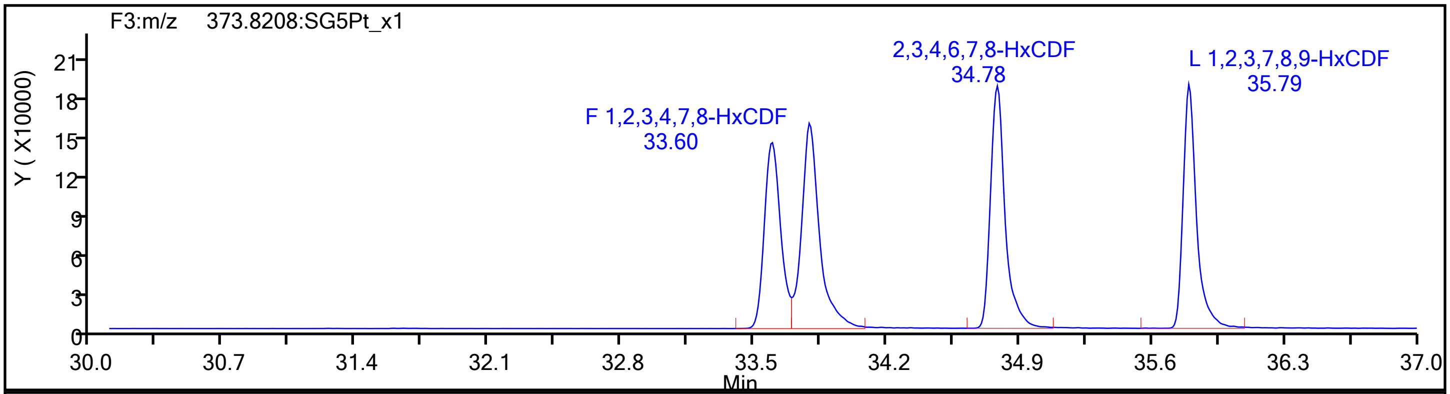

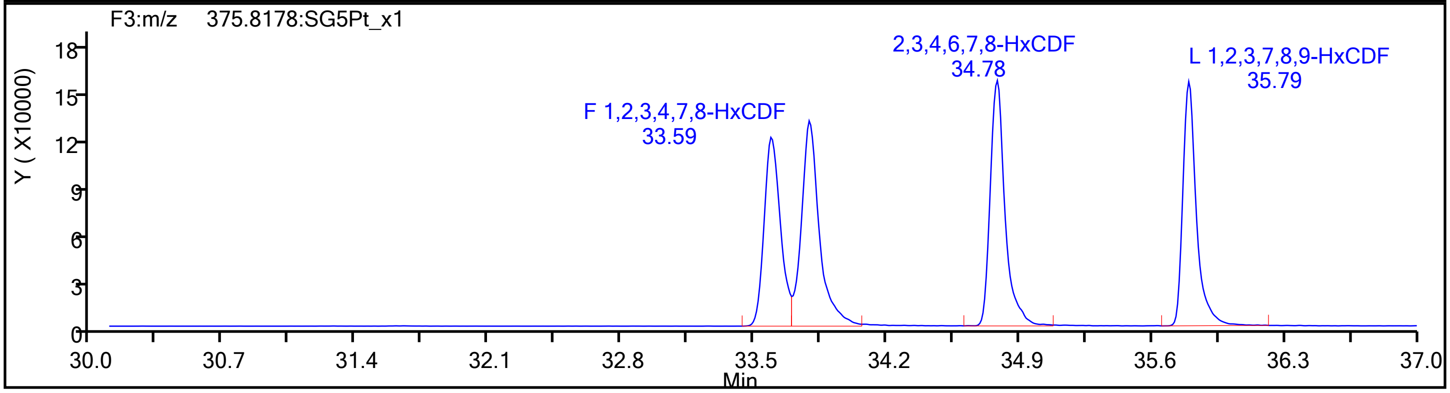

HxCDF Standards

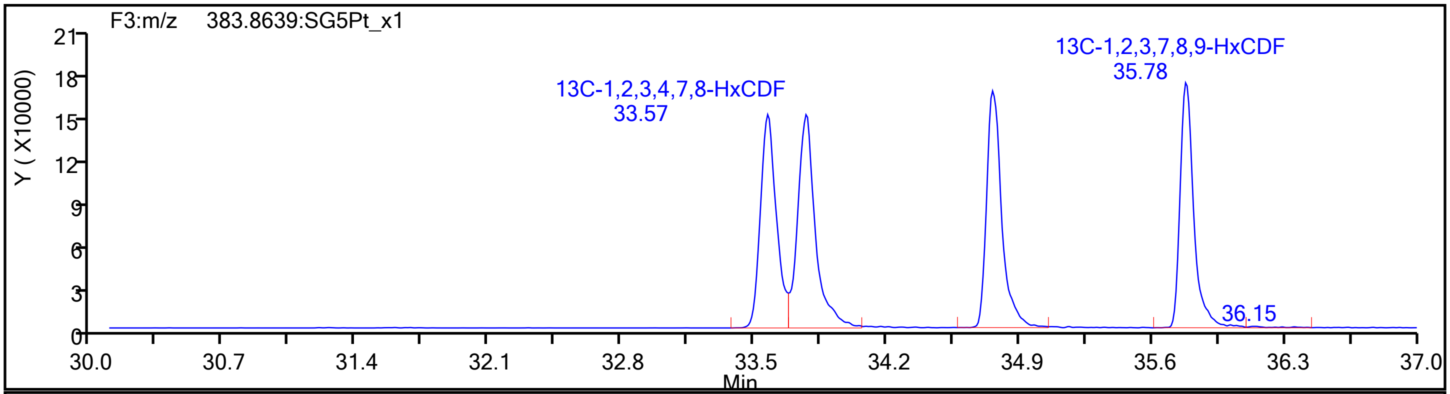

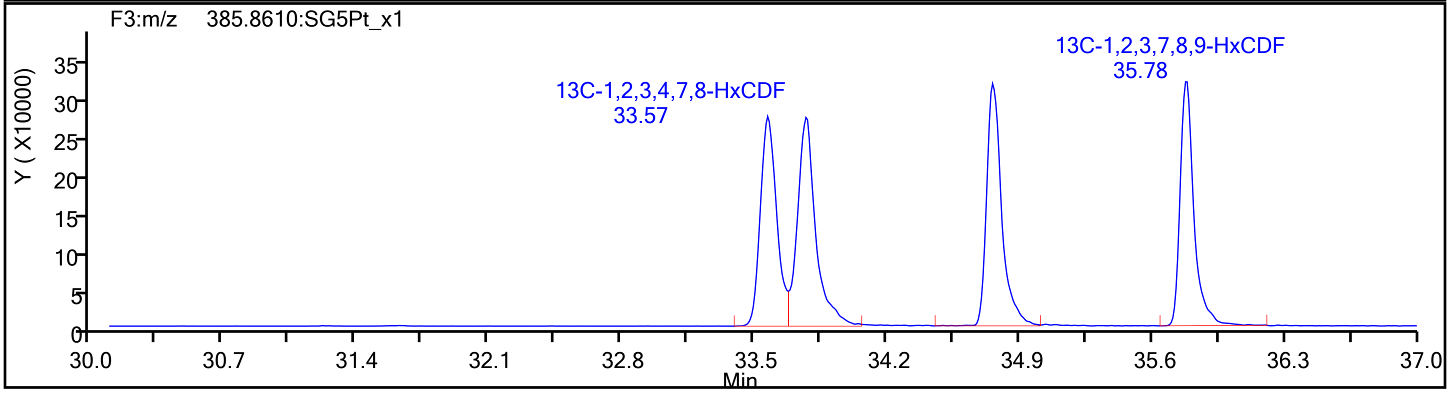

Report Date: 12-Mar-2021 09:19:22 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

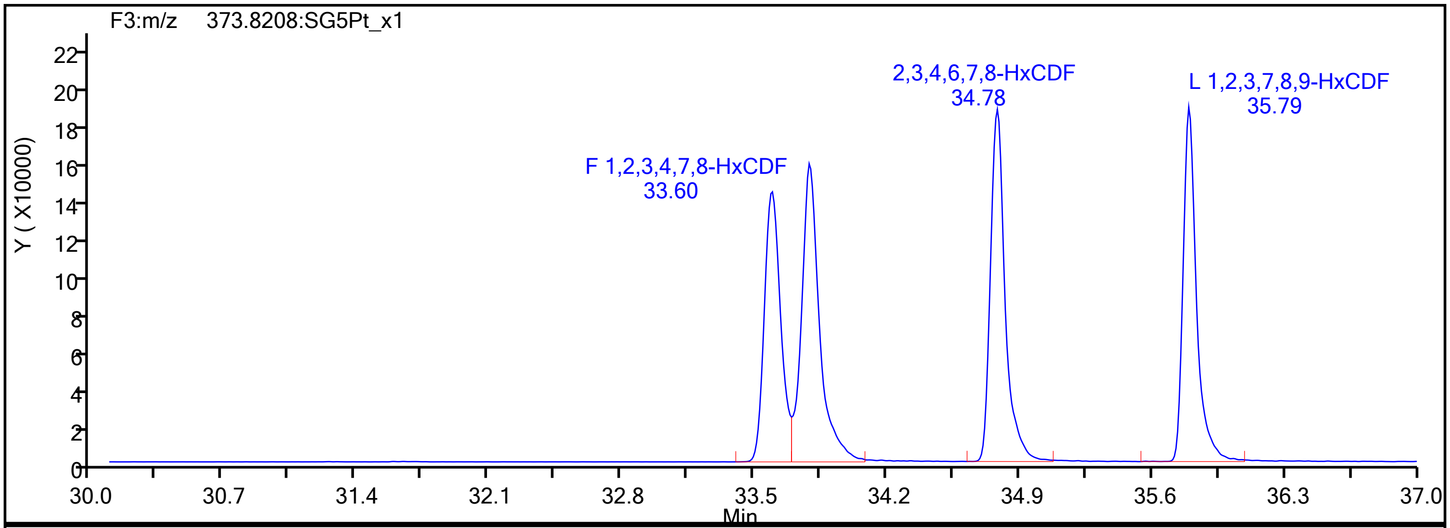

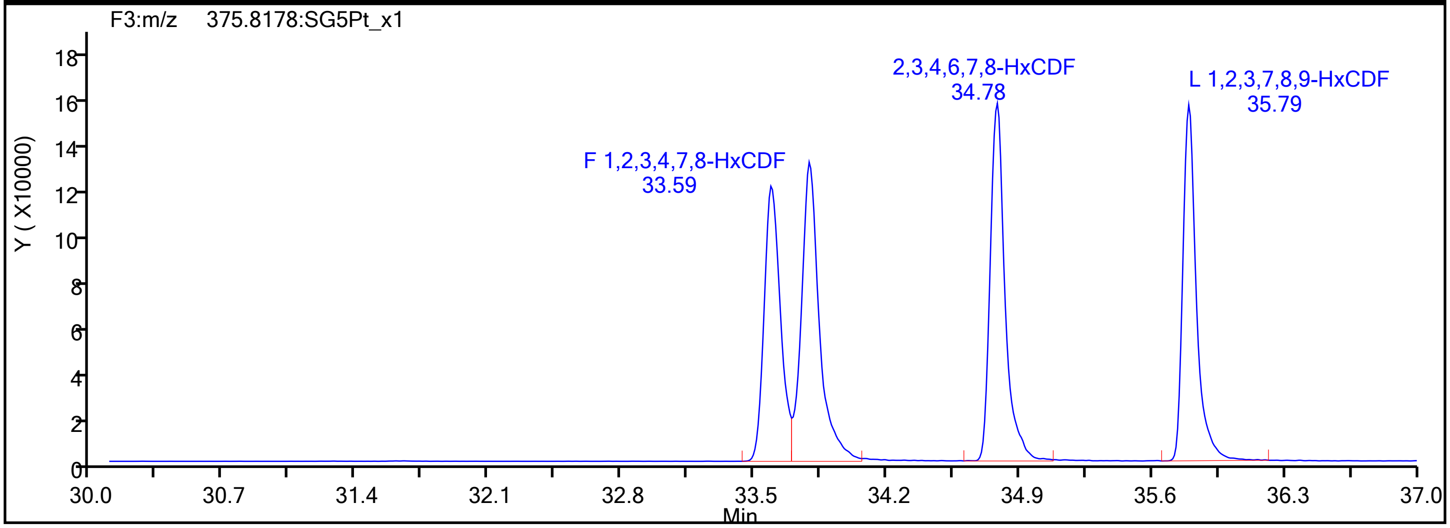

HxCDF Interference Mass

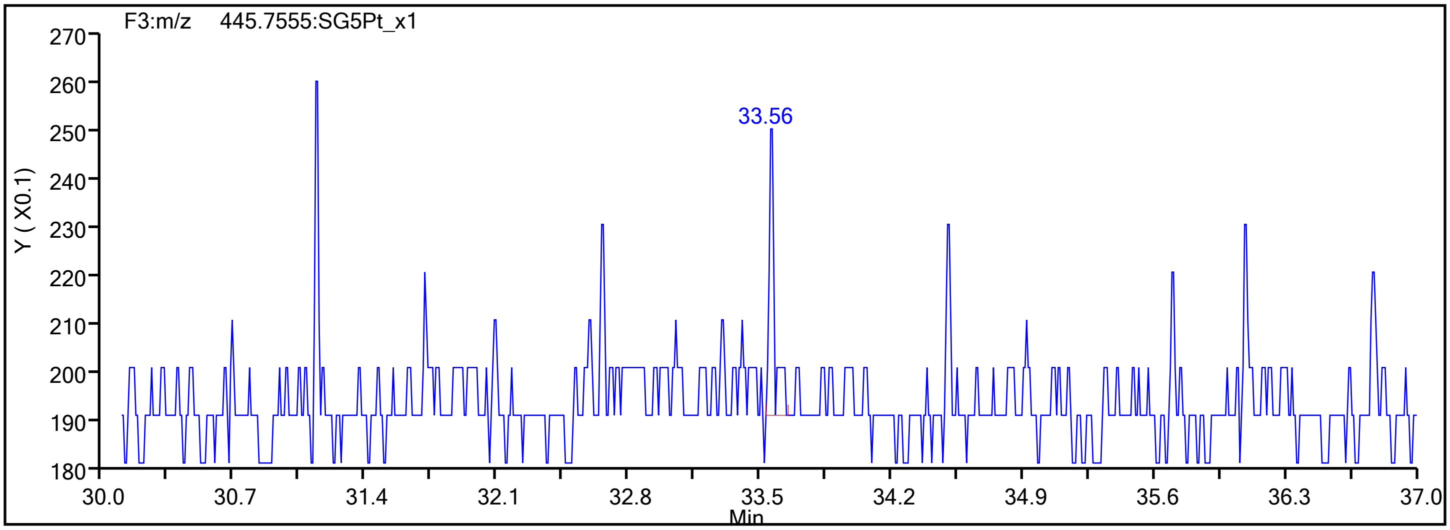

Report Date: 12-Mar-2021 09:19:22		Chrom Revision: 2.3 05-Feb-2021 00:13:28	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HxCDD

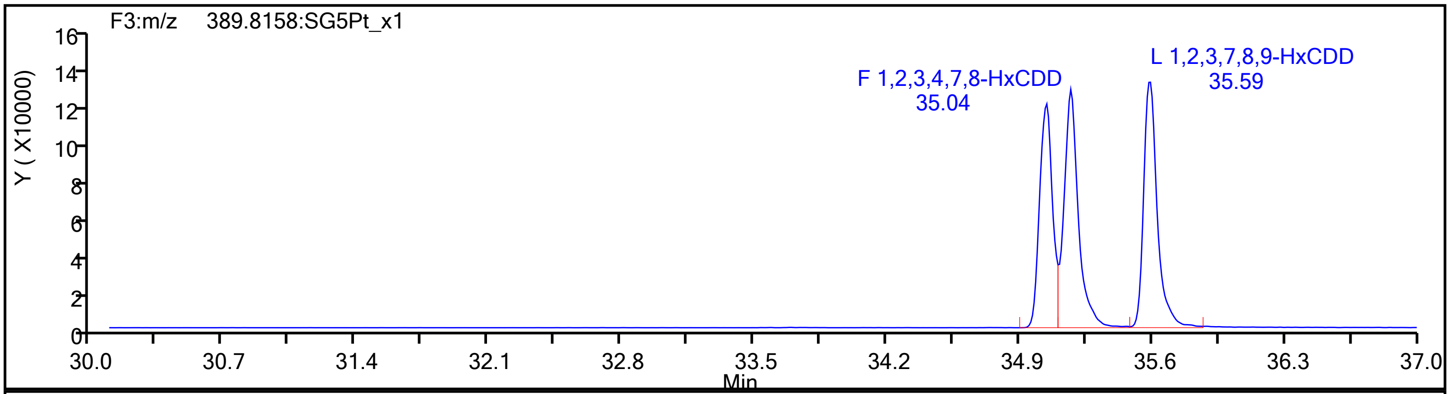

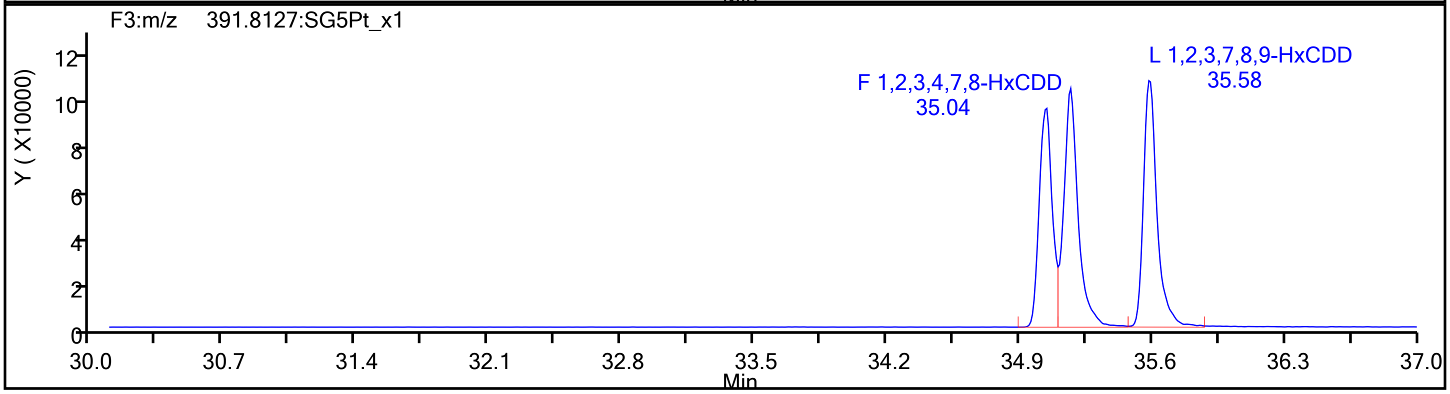

HxCDD Standards

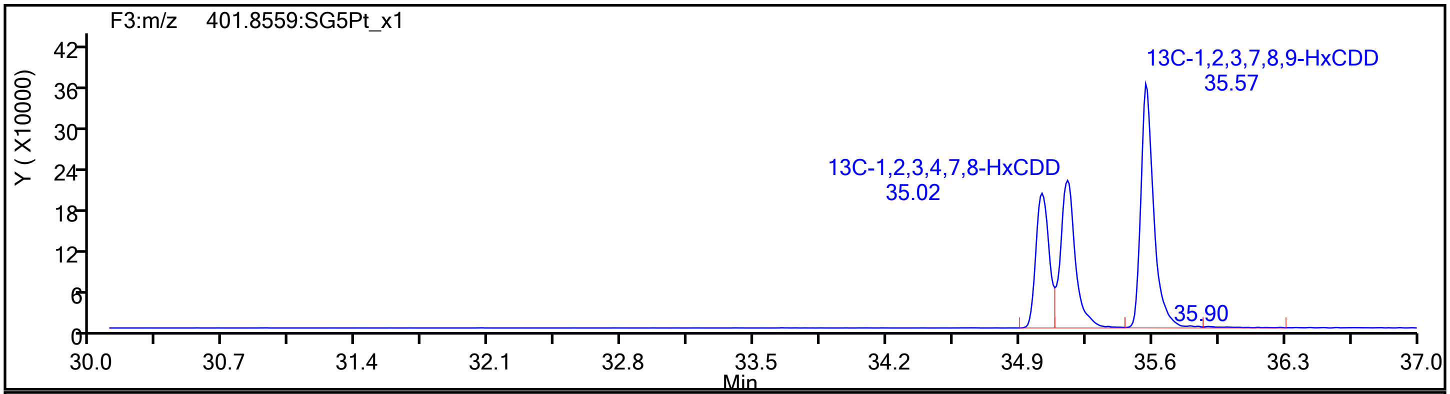

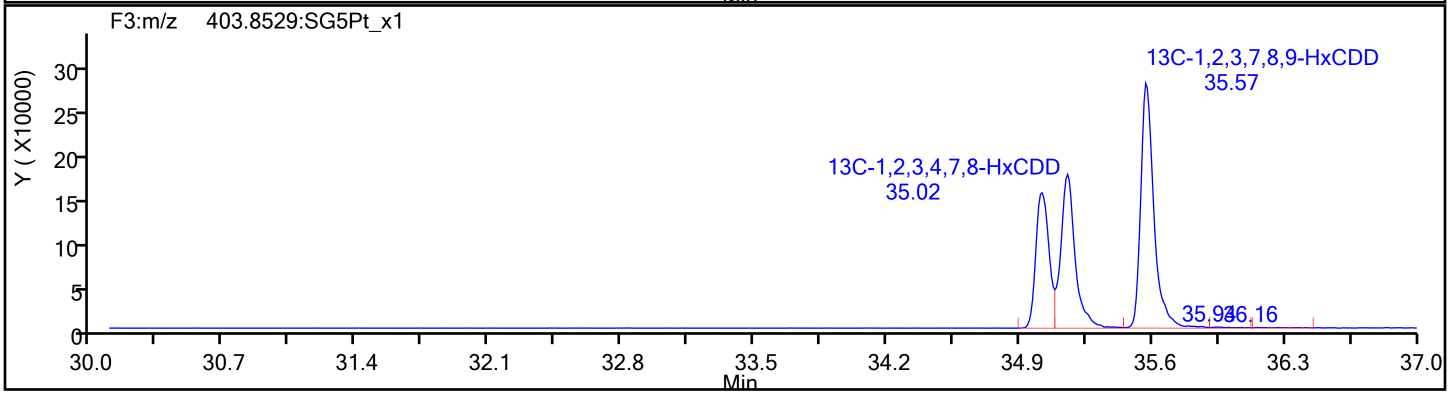

Report Date: 12-Mar-2021 09:19:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

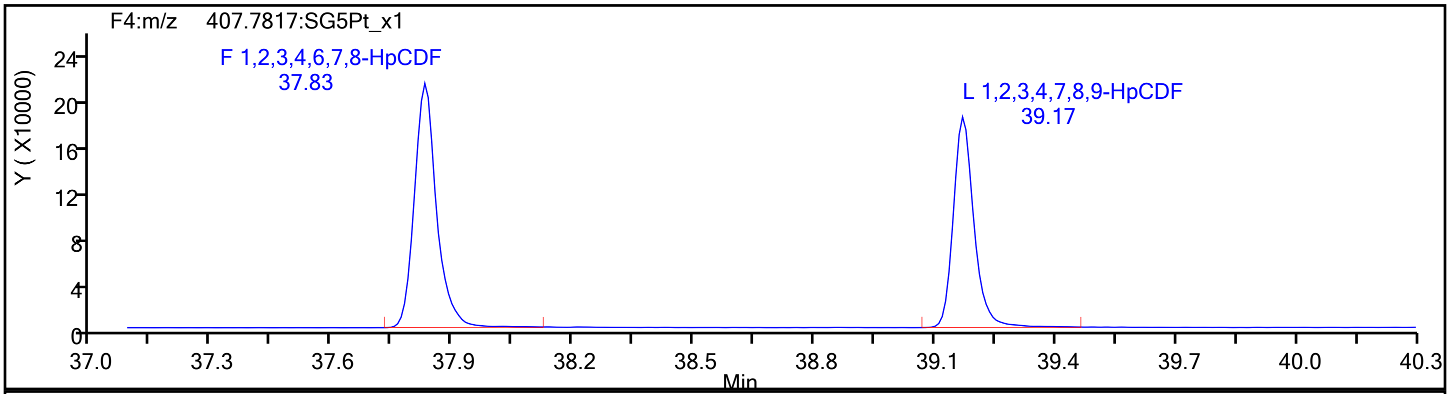

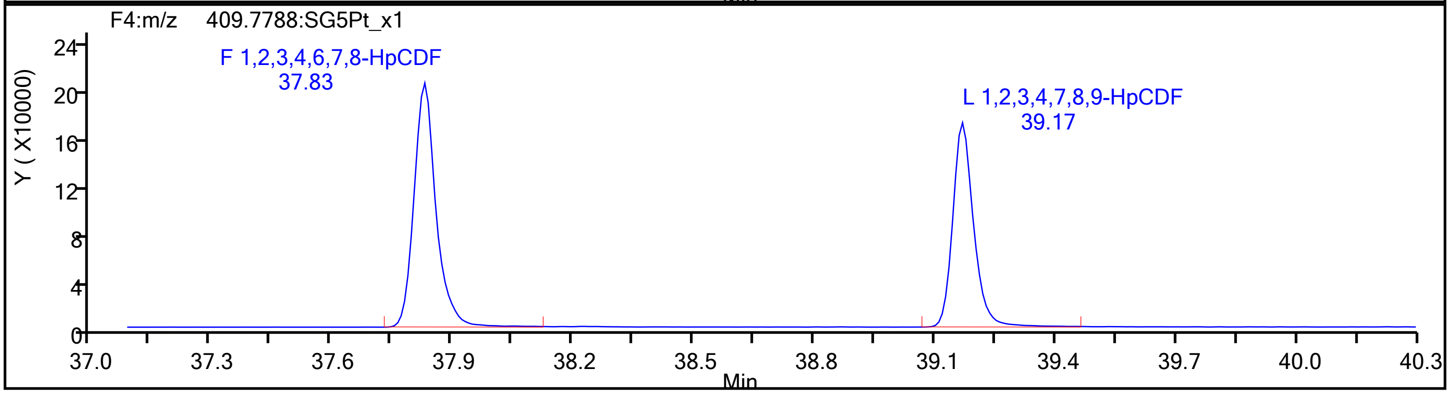

HpCDF Standards

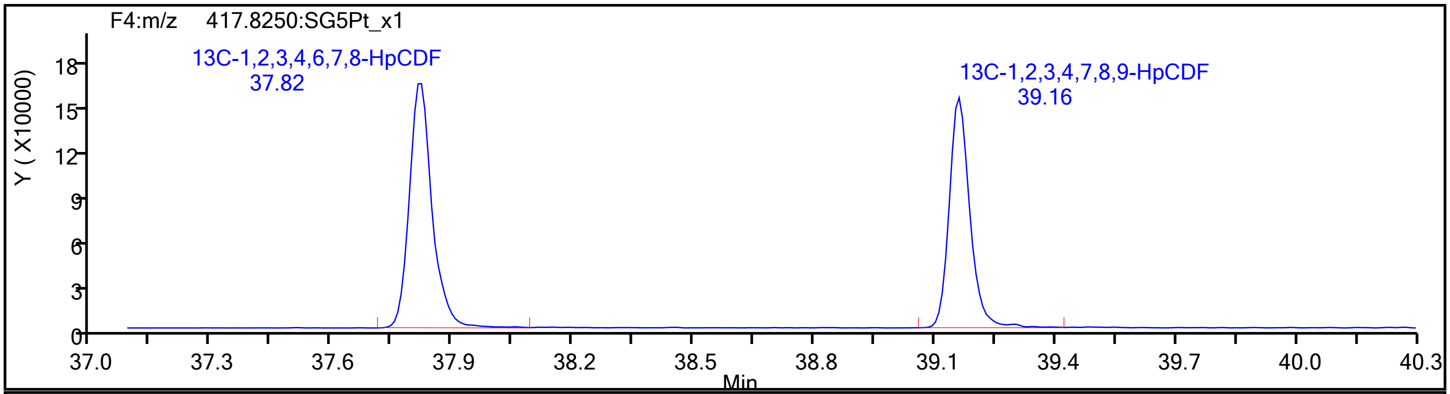

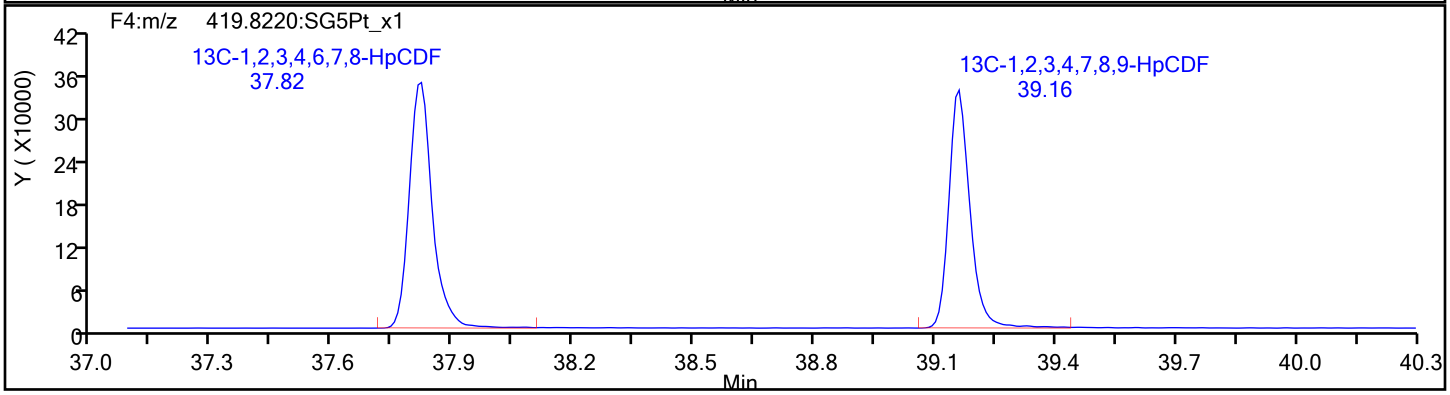

Report Date: 12-Mar-2021 09:19:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

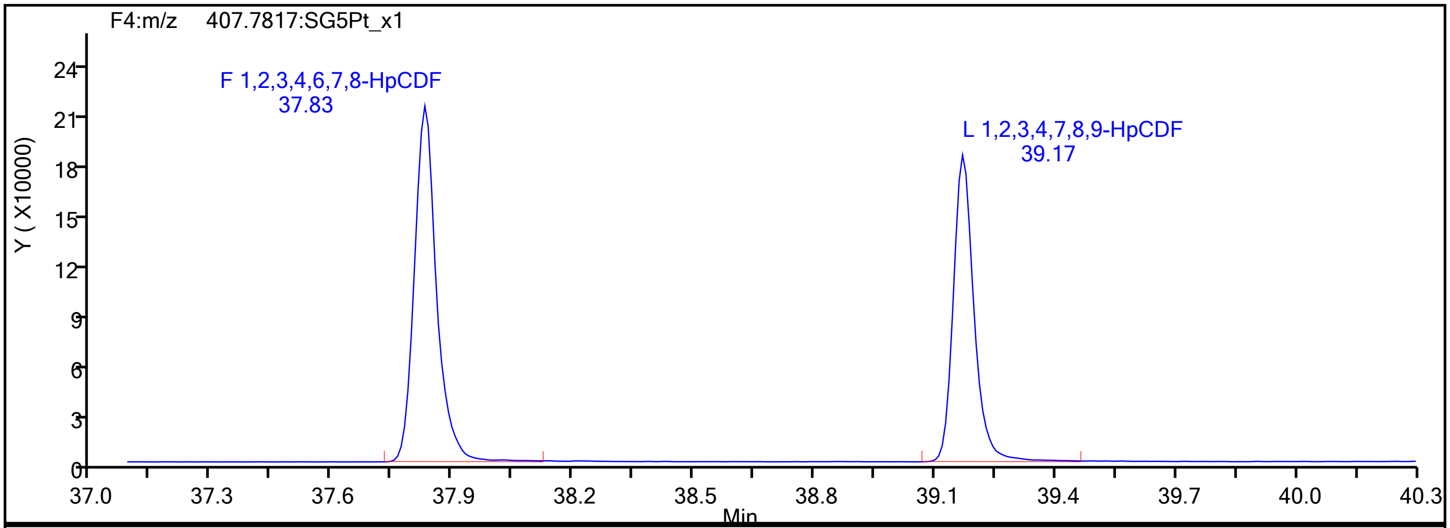

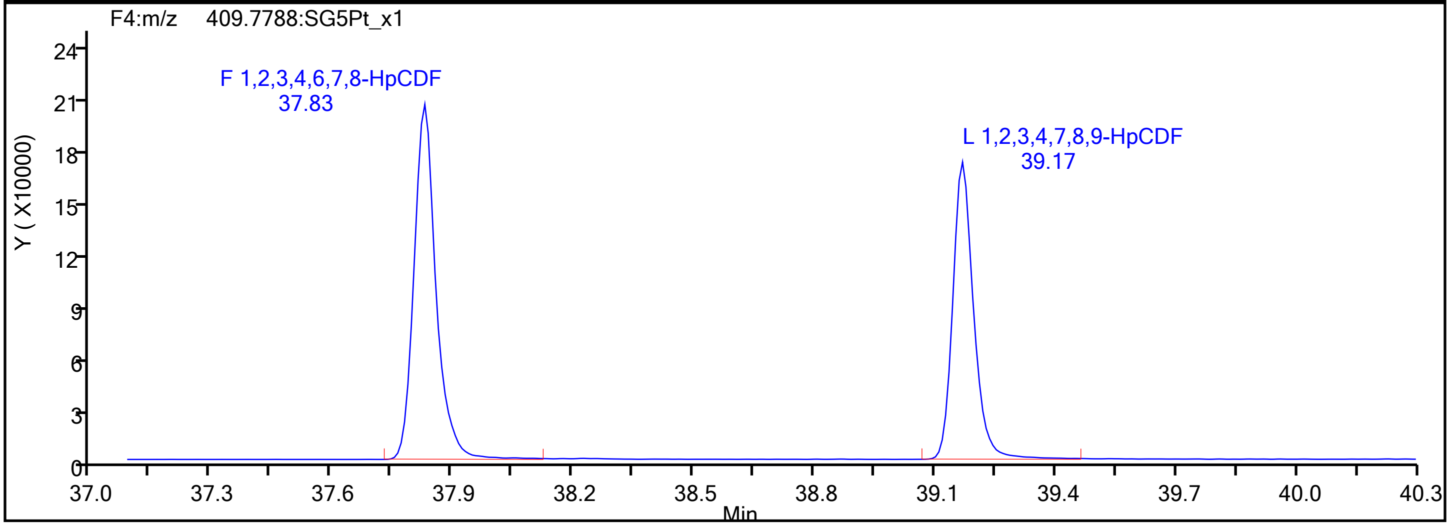

HpCDF Interference Mass

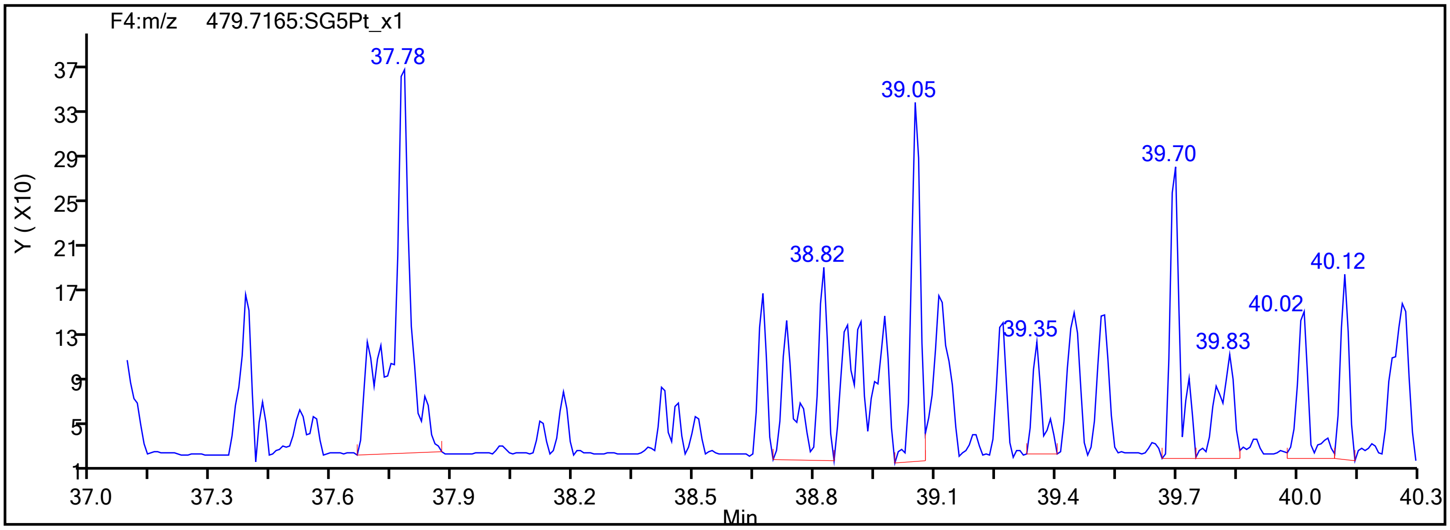

Report Date: 12-Mar-2021 09:19:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HpCDD

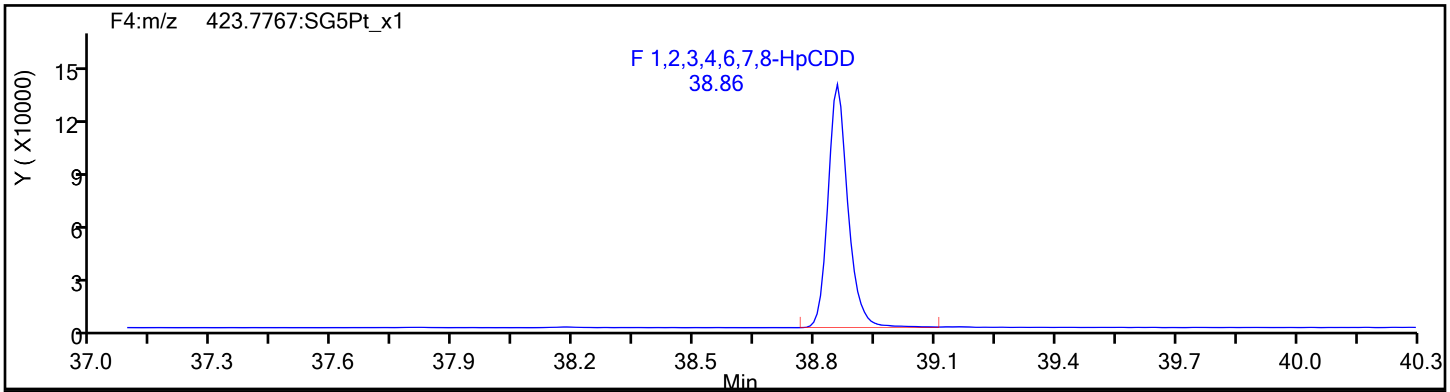

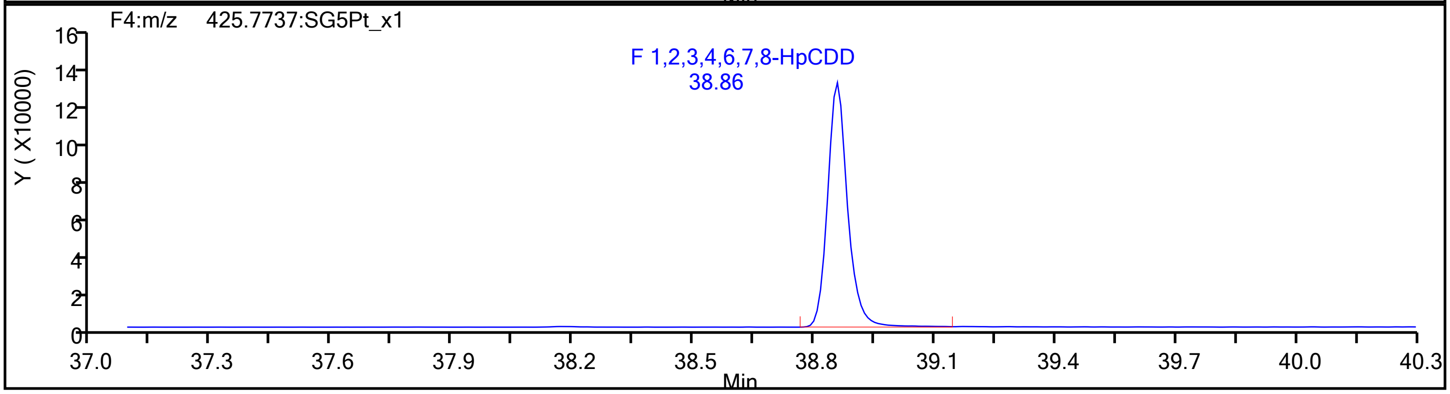

HpCDD Standards

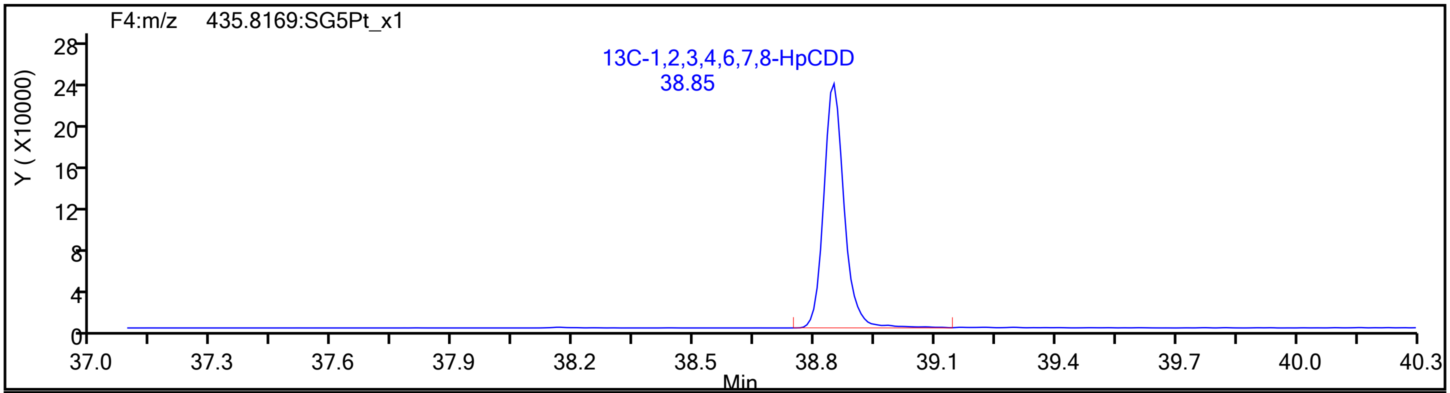

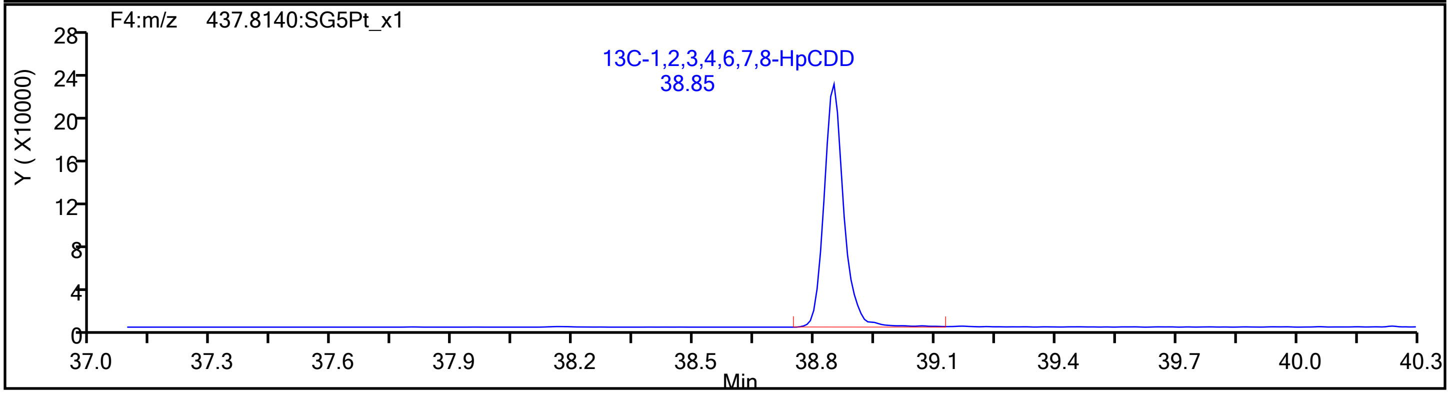

Report Date: 12-Mar-2021 09:19:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	468973	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

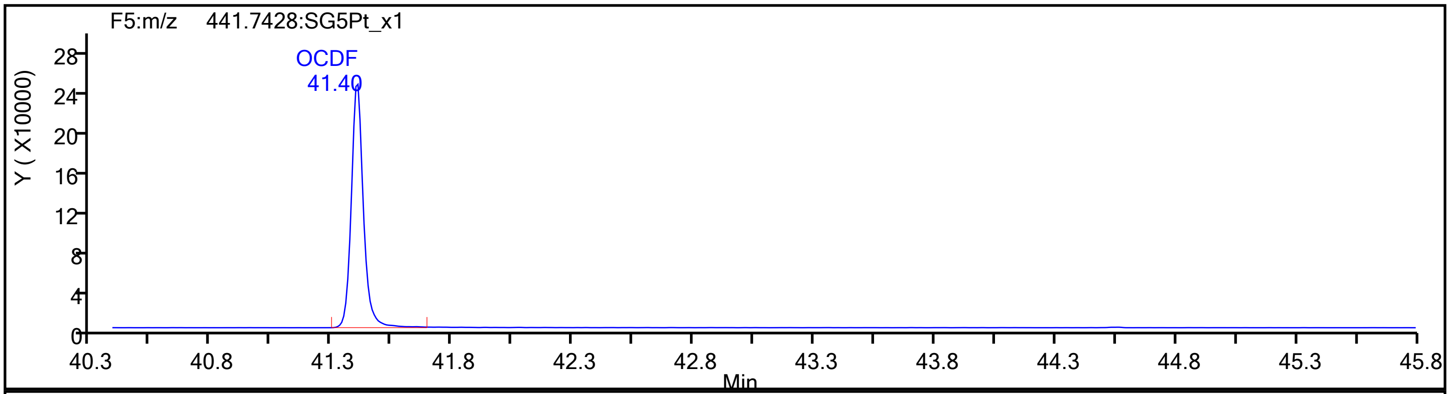

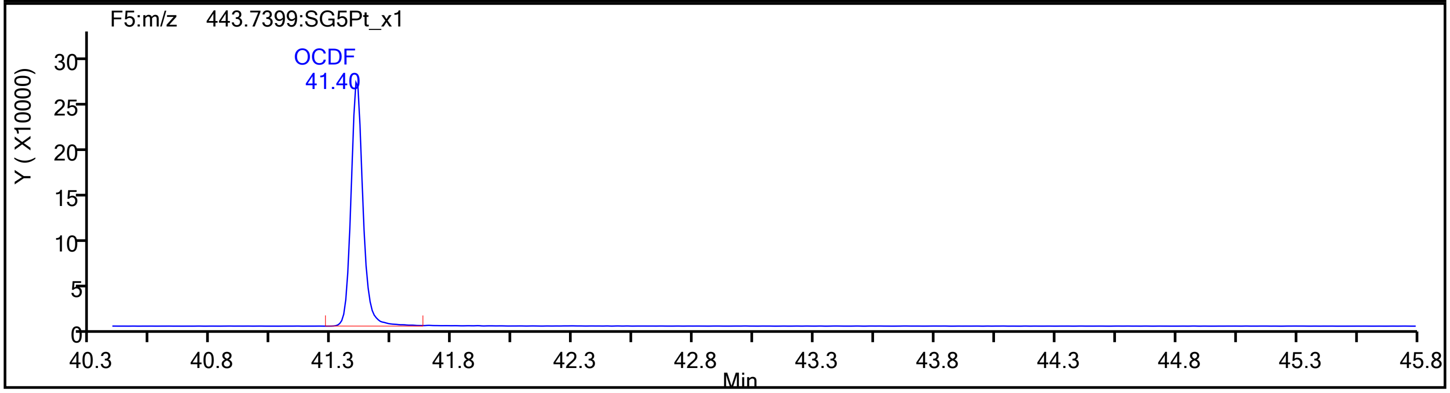

OCDF Standards

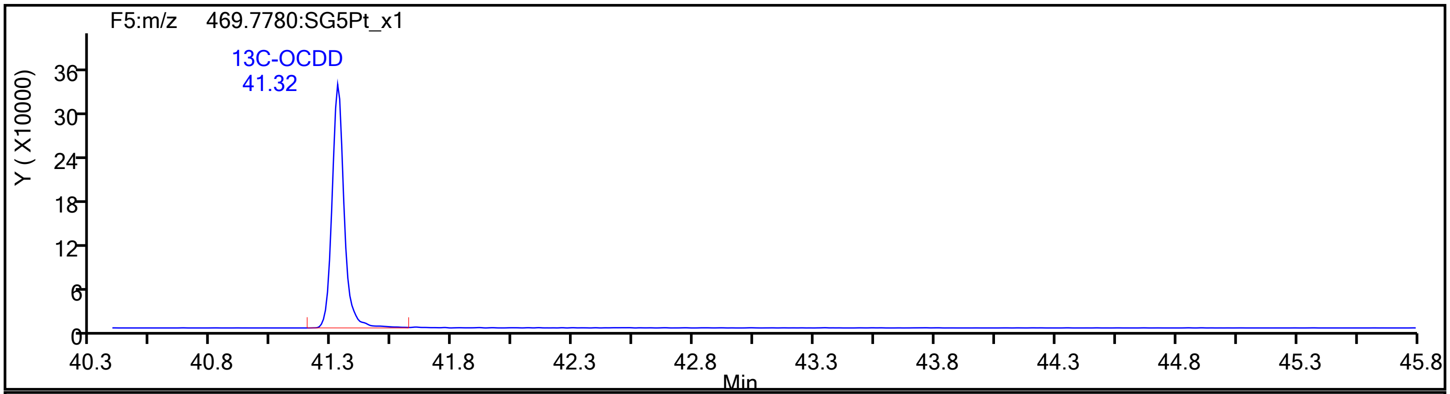

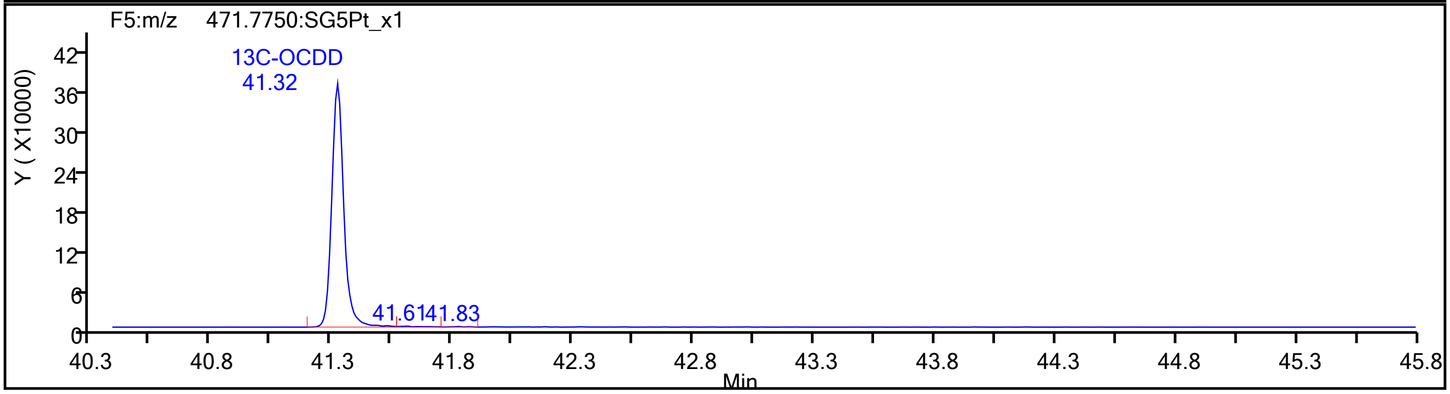

Report Date: 12-Mar-2021 09:19:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d
Injection Date: 10-Mar-2021 16:49:00
Injection Vol: 2.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

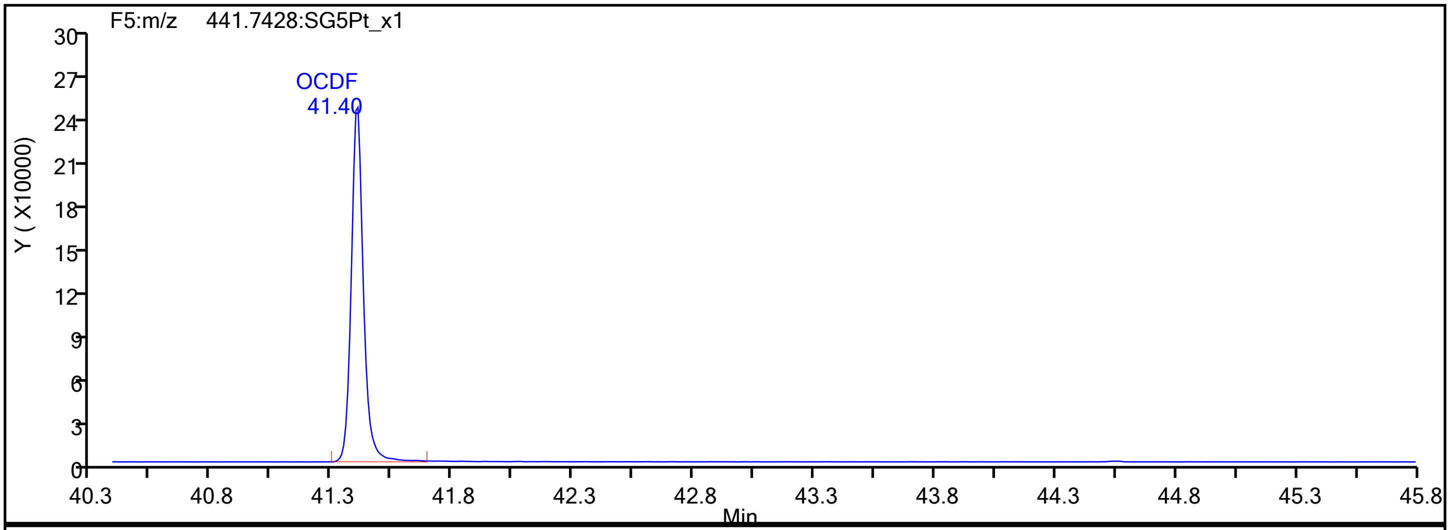

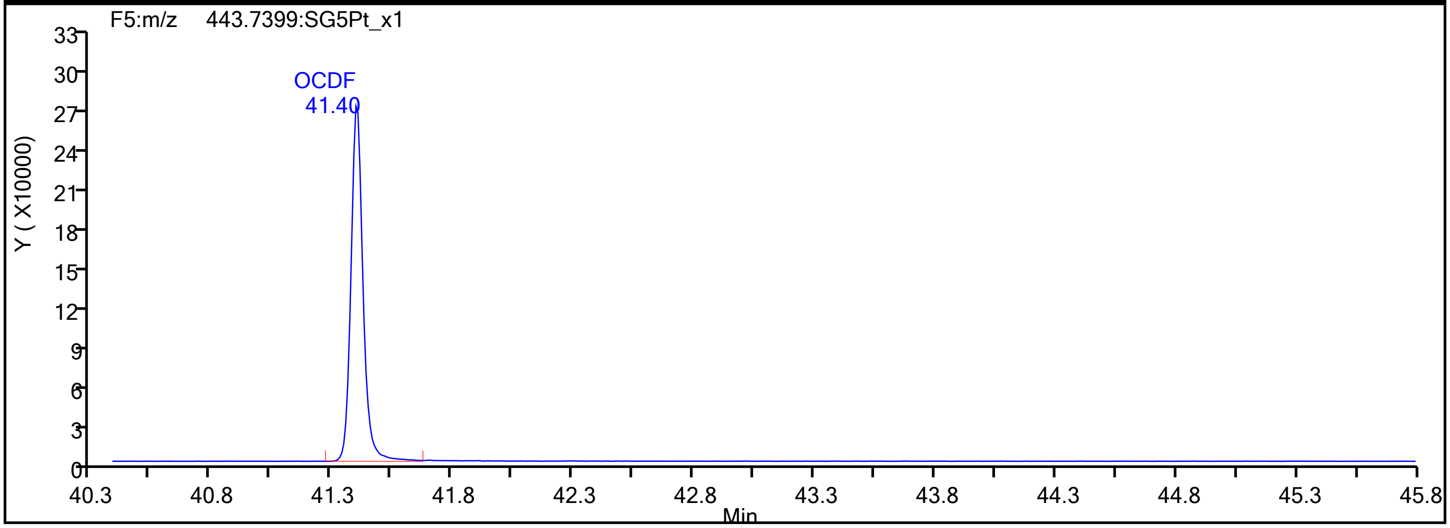

OCDF Interference Mass

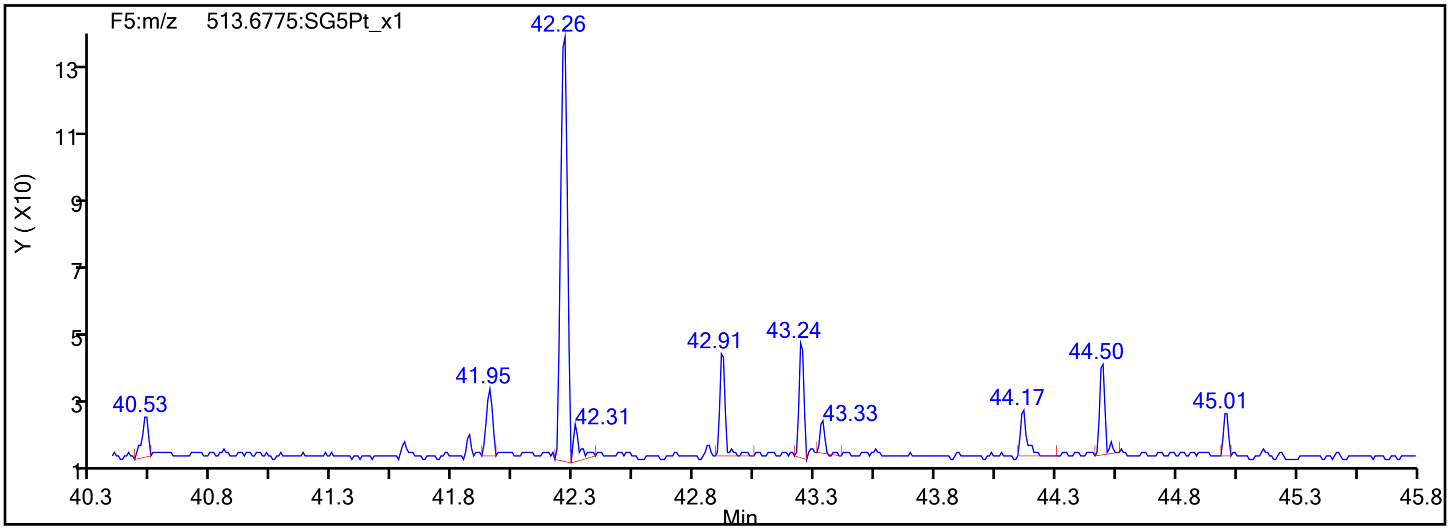

Report Date: 12-Mar-2021 09:19:23 Chrom Revision: 2.3 05-Feb-2021 00:13:28

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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OCDD

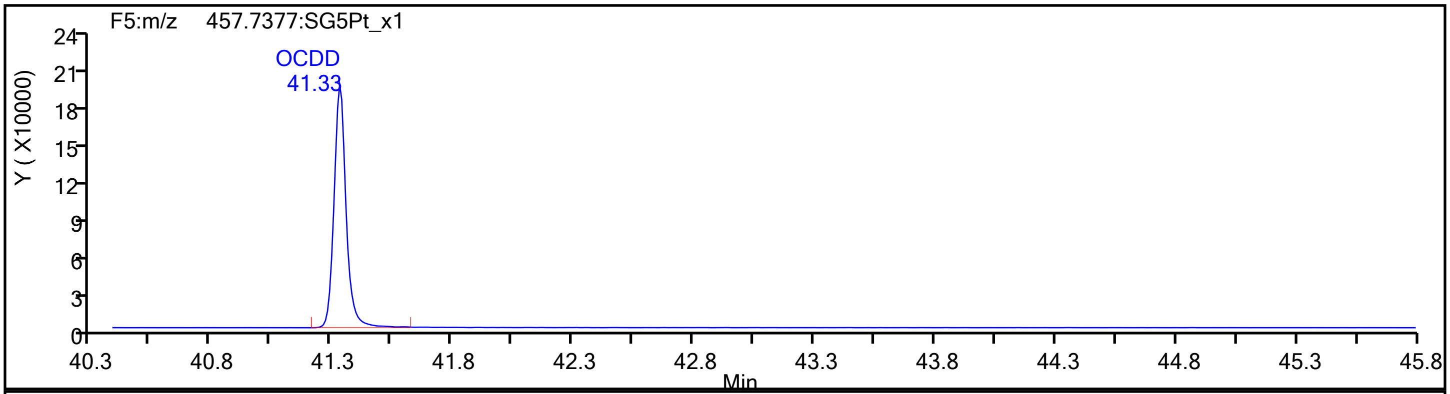

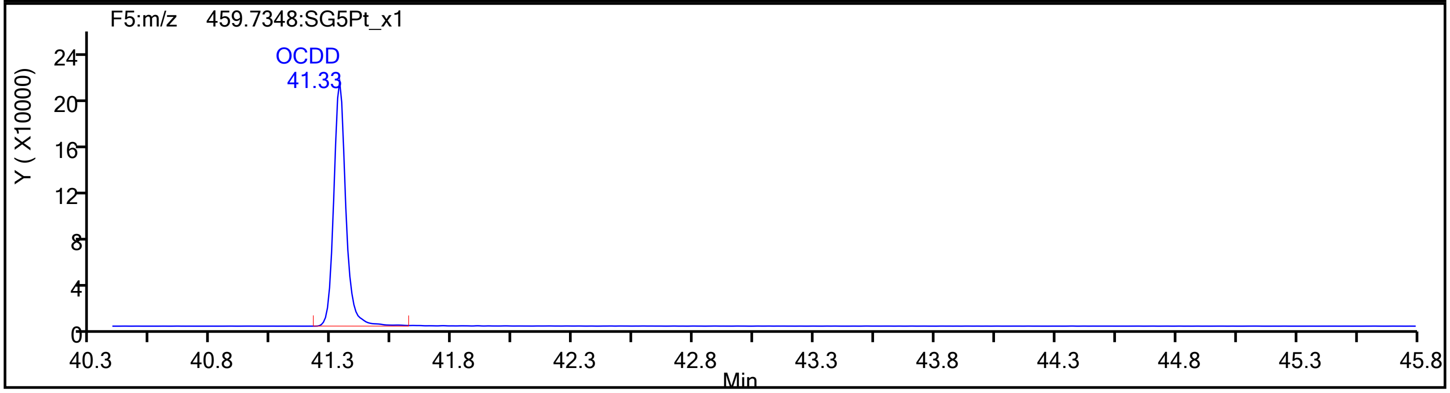

OCDD Standards

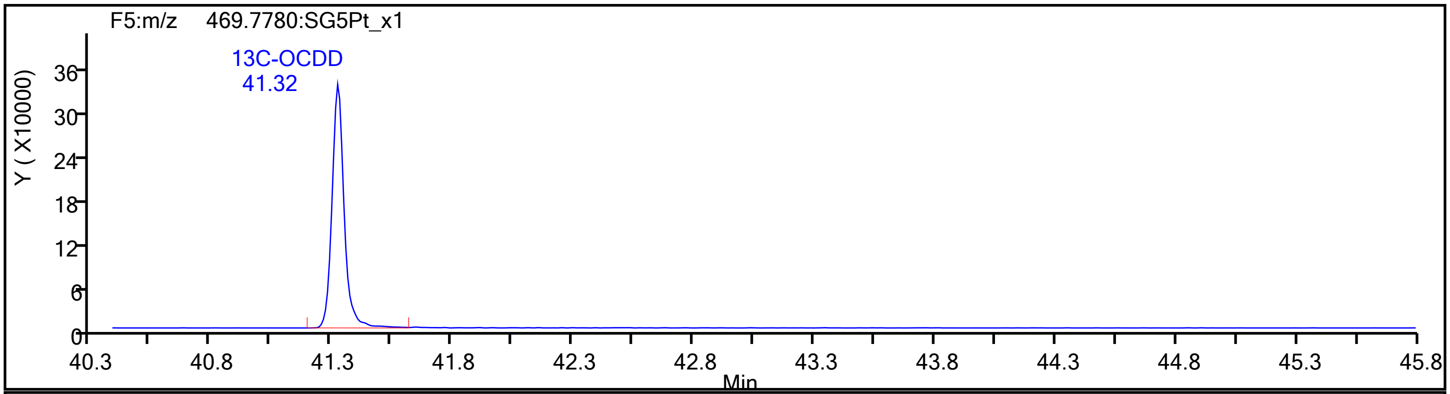

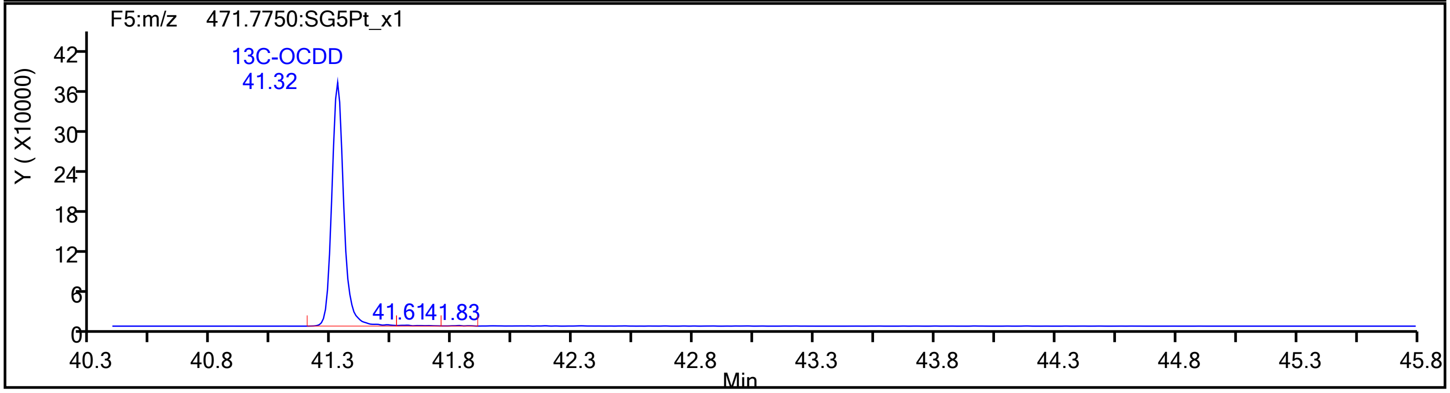

Report Date: 12-Mar-2021 09:19:23
Chrom Revision: 2.3 05-Feb-2021 00:13:28
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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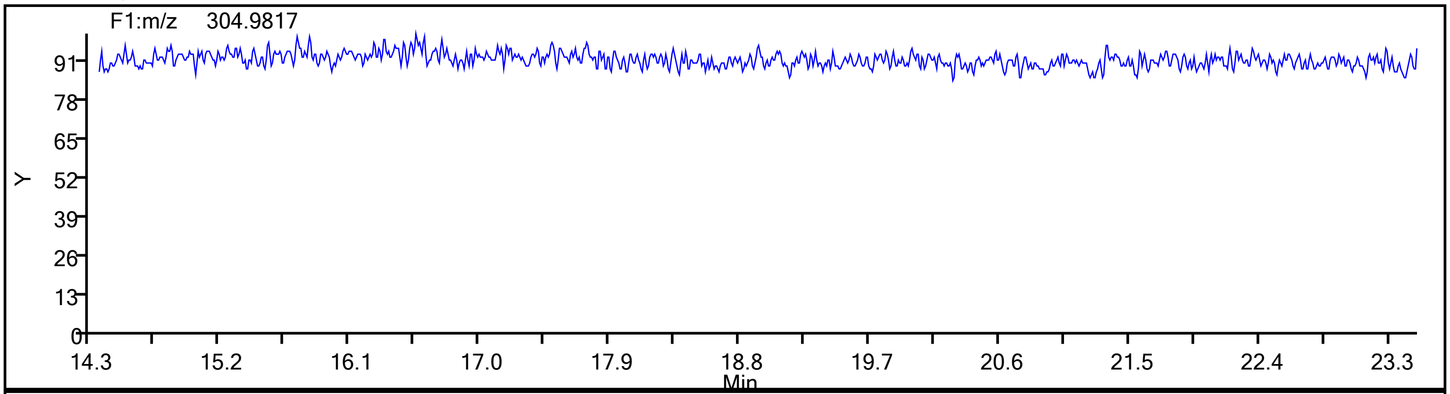

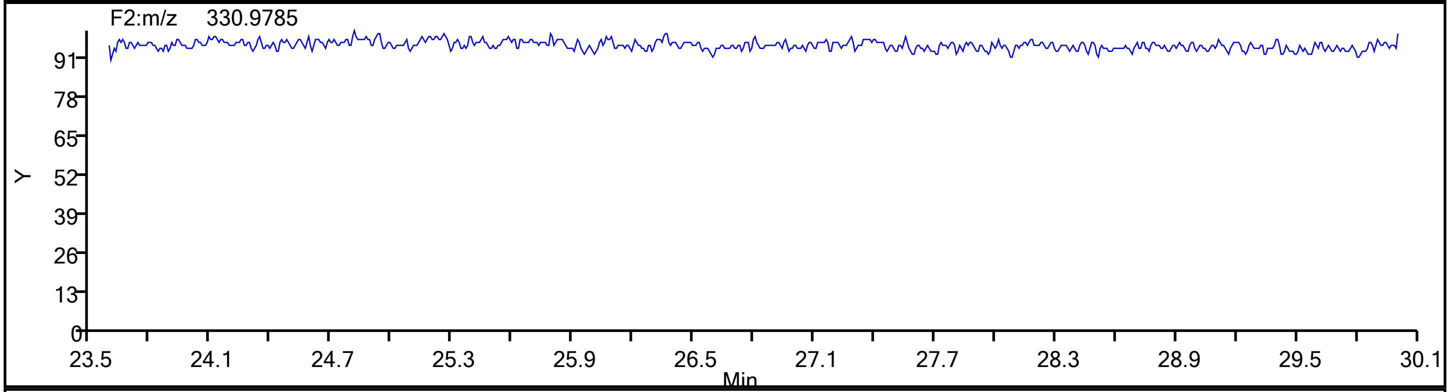

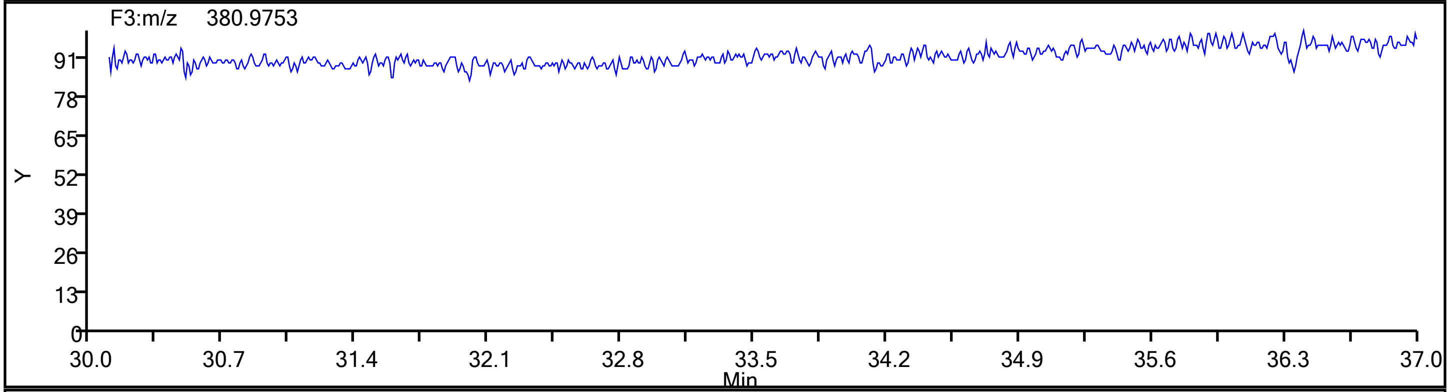

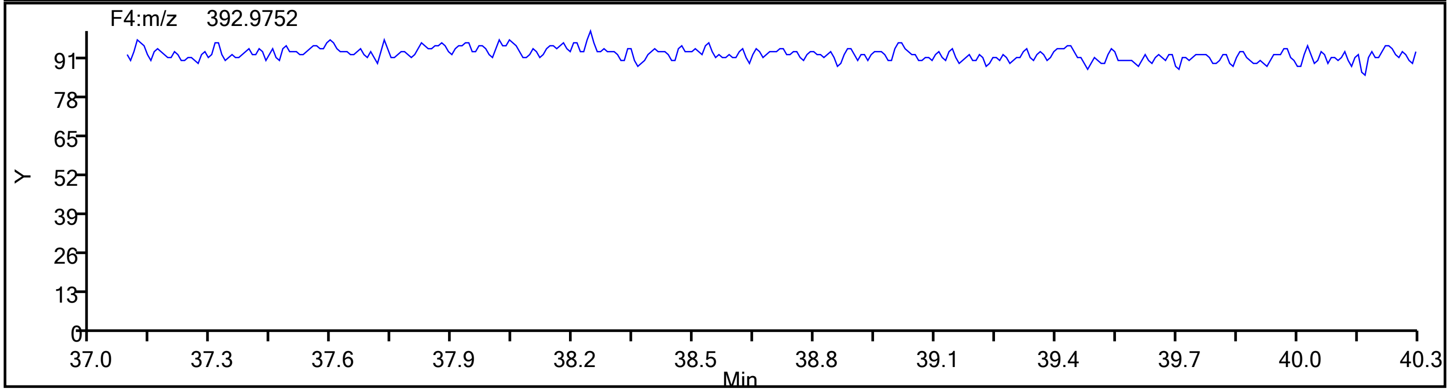

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210310-114751.b\10mr21dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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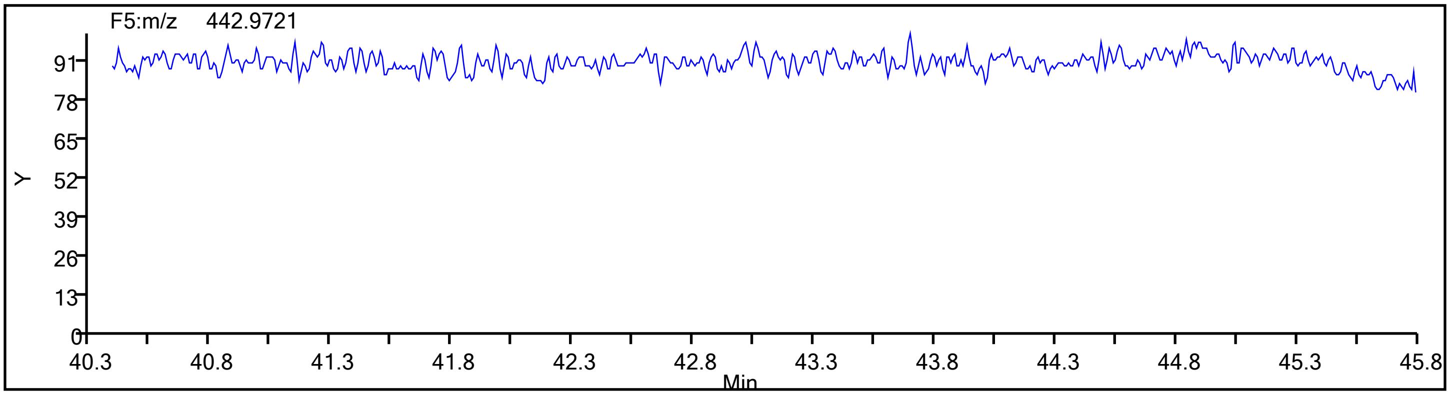

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Start Date: 02/02/2021 20:03

Analysis Batch Number: 458037 End Date: 02/03/2021 02:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-458037/1		02/02/2021 20:03	1	02fe21dfs1_2.d	DB-5 0.32(mm)
IC 320-458037/3		02/02/2021 21:46	1	02fe21dfs1_4.d	DB-5 0.32(mm)
IC 320-458037/4		02/02/2021 22:34	1	02fe21dfs1_5.d	DB-5 0.32(mm)
IC 320-458037/5		02/02/2021 23:22	1	02fe21dfs1_6.d	DB-5 0.32(mm)
IC 320-458037/6		02/03/2021 00:10	1	02fe21dfs1_7.d	DB-5 0.32(mm)
IC 320-458037/7		02/03/2021 00:57	1	02fe21dfs1_8.d	DB-5 0.32(mm)
ICV 320-458037/9		02/03/2021 02:53	1	02fe21dfs1_11.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-70797-1

SDG No.:

Instrument ID: 11D2   Start Date: 02/03/2021 12:45

Analysis Batch Number: 458526   End Date: 02/03/2021 18:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-458526/1		02/03/2021 12:45	1	03FE2111D2_001.d	DB-225 0.32(mm)
IC 320-458526/4		02/03/2021 14:40	1	03FE2111D2_004.d	DB-225 0.32(mm)
IC 320-458526/5		02/03/2021 15:18	1	03FE2111D2_005.d	DB-225 0.32(mm)
IC 320-458526/6		02/03/2021 15:57	1	03FE2111D2_006.d	DB-225 0.32(mm)
IC 320-458526/7		02/03/2021 16:35	1	03FE2111D2_007.d	DB-225 0.32(mm)
IC 320-458526/8		02/03/2021 17:13	1	03FE2111D2_008.d	DB-225 0.32(mm)
ICV 320-458526/10		02/03/2021 18:30	1	03FE2111D2_010.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1

Start Date: 03/10/2021 08:50

Analysis Batch Number: 468973

End Date: 03/10/2021 19:33

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-468973/1		03/10/2021 08:50	1	10mr21dfs1_2.d	DB-5 0.32(mm)
WDM 320-468973/2		03/10/2021 09:38	1	10mr21dfs1_3.d	DB-5 0.32(mm)
320-70797-1	11215702-Tank1-100mm	03/10/2021 14:25	1	10mr21dfs1_9.d	DB-5 0.32(mm)
320-70797-2	11215702-Tank1-41mm	03/10/2021 15:13	1	10mr21dfs1_10.d	DB-5 0.32(mm)
LCS 320-467785/2-A		03/10/2021 16:01	1	10mr21dfs1_11.d	DB-5 0.32(mm)
LCSD 320-467785/3-A		03/10/2021 16:49	1	10mr21dfs1_12.d	DB-5 0.32(mm)
MB 320-467785/1-A		03/10/2021 17:37	1	10mr21dfs1_13.d	DB-5 0.32(mm)
ZZZZZ		03/10/2021 19:33	1		DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Instrument ID: 11D2 Start Date: 03/11/2021 13:50

Analysis Batch Number: 469703 End Date: 03/11/2021 22:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-469703/1		03/11/2021 13:50	1	11MR2111D2_001.d	DB-225 0.32(mm)
CCV 320-469703/2		03/11/2021 14:29	1	11MR2111D2_002.d	DB-225 0.32(mm)
ZZZZZ		03/11/2021 15:07	1		DB-225 0.32(mm)
320-70797-11 RA	11215702-Tank2-0.45mm RA	03/11/2021 15:45	1	11MR2111D2_004.d	DB-225 0.32(mm)
320-70797-5 RA	11215702-Tank1-0.45mm RA	03/11/2021 16:24	1	11MR2111D2_005.d	DB-225 0.32(mm)
320-70797-6 RA	11215702-Tank1-0.1mm RA	03/11/2021 17:02	1	11MR2111D2_006.d	DB-225 0.32(mm)
320-70797-4 RA	11215702-Tank1-1mm RA	03/11/2021 17:40	1	11MR2111D2_007.d	DB-225 0.32(mm)
320-70797-12 RA	11215702-Tank2-0.1mm RA	03/11/2021 18:19	1	11MR2111D2_008.d	DB-225 0.32(mm)
320-70797-3 RA	11215702-Tank1-10mm RA	03/11/2021 18:57	1	11MR2111D2_009.d	DB-225 0.32(mm)
320-70797-9 RA	11215702-Tank2-10mm RA	03/11/2021 19:35	1	11MR2111D2_010.d	DB-225 0.32(mm)
320-70797-10 RA	11215702-Tank2-1mm RA	03/11/2021 20:13	1	11MR2111D2_011.d	DB-225 0.32(mm)
ZZZZZ		03/11/2021 20:52	1		DB-225 0.32(mm)
ZZZZZ		03/11/2021 21:30	1		DB-225 0.32(mm)
ZZZZZ		03/11/2021 22:08	1		DB-225 0.32(mm)
ZZZZZ		03/11/2021 22:47	1		DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Instrument ID: DFS 1 Start Date: 03/12/2021 10:33

Analysis Batch Number: 469779 End Date: 03/12/2021 20:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-469779/1		03/12/2021 10:33	1	12mr21adfs1_2.d	DB-5 0.32(mm)
WDM 320-469779/2		03/12/2021 11:21	1	12mr21adfs1_3.d	DB-5 0.32(mm)
ZZZZZ		03/12/2021 12:09	1		DB-5 0.32(mm)
320-70797-3	11215702-Tank1-10mm	03/12/2021 12:57	1	12mr21adfs1_5.d	DB-5 0.32(mm)
320-70797-4	11215702-Tank1-1mm	03/12/2021 13:45	1	12mr21adfs1_6.d	DB-5 0.32(mm)
320-70797-5	11215702-Tank1-0.45mm	03/12/2021 14:33	1	12mr21adfs1_7.d	DB-5 0.32(mm)
320-70797-6	11215702-Tank1-0.1mm	03/12/2021 15:21	1	12mr21adfs1_8.d	DB-5 0.32(mm)
320-70797-7	11215702-Tank2-100mm	03/12/2021 16:09	1	12mr21adfs1_9.d	DB-5 0.32(mm)
320-70797-8	11215702-Tank2-41mm	03/12/2021 16:56	1	12mr21adfs1_10.d	DB-5 0.32(mm)
320-70797-9	11215702-Tank2-10mm	03/12/2021 17:44	1	12mr21adfs1_11.d	DB-5 0.32(mm)
320-70797-10	11215702-Tank2-1mm	03/12/2021 18:32	1	12mr21adfs1_12.d	DB-5 0.32(mm)
320-70797-11	11215702-Tank2-0.45mm	03/12/2021 19:20	1	12mr21adfs1_13.d	DB-5 0.32(mm)
320-70797-12	11215702-Tank2-0.1mm	03/12/2021 20:08	1	12mr21adfs1_14.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Instrument ID: 11D2 Start Date: 03/16/2021 20:53

Analysis Batch Number: 470865 End Date: 03/17/2021 00:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-470865/1		03/16/2021 20:53	1	16MR2111D2_001.d	DB-225 0.32(mm)
CCV 320-470865/2		03/16/2021 21:31	1	16MR2111D2_002.d	DB-225 0.32(mm)
ZZZZZ		03/16/2021 22:09	1		DB-225 0.32(mm)
320-70797-1 RADL	11215702-Tank1-100mm RADL	03/16/2021 22:48	20	16MR2111D2_004.d	DB-225 0.32(mm)
320-70797-2 RADL	11215702-Tank1-41mm RADL	03/16/2021 23:26	10	16MR2111D2_005.d	DB-225 0.32(mm)
320-70797-7 RADL	11215702-Tank2-100mm RADL	03/17/2021 00:05	10	16MR2111D2_006.d	DB-225 0.32(mm)
320-70797-8 RADL	11215702-Tank2-41mm RADL	03/17/2021 00:43	20	16MR2111D2_007.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-70797-1

SDG No.:

Instrument ID: 10D5 Start Date: 03/16/2021 23:40

Analysis Batch Number: 470907 End Date: 03/17/2021 11:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-470907/1		03/16/2021 23:40	1	16MR21C10D5_1.d	DB-5 0.32(mm)
IC 320-470907/3		03/17/2021 01:10	1	16MR21C10D5_3.d	DB-5 0.32(mm)
IC 320-470907/4		03/17/2021 01:55	1	16MR21C10D5_4.d	DB-5 0.32(mm)
IC 320-470907/5		03/17/2021 02:40	1	16MR21C10D5_5.d	DB-5 0.32(mm)
IC 320-470907/6		03/17/2021 03:25	1	16MR21C10D5_6.d	DB-5 0.32(mm)
IC 320-470907/7		03/17/2021 04:10	1	16MR21C10D5_7.d	DB-5 0.32(mm)
ICV 320-470907/9		03/17/2021 11:03	1	17MR2110D5_2.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-70797-1

SDG No.:

Instrument ID: 10D5

Start Date: 03/17/2021 11:58

Analysis Batch Number: 471421

End Date: 03/17/2021 19:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-471421/3		03/17/2021 11:58	1	17MR2110D5_3.d	DB-5 0.32(mm)
WDM 320-471421/4		03/17/2021 12:43	1	17MR2110D5_4.d	DB-5 0.32(mm)
320-70797-2 DL	11215702-Tank1-41mm DL	03/17/2021 17:13	10	17MR2110D5_10.d	DB-5 0.32(mm)
320-70797-7 DL	11215702-Tank2-100mm DL	03/17/2021 17:59	10	17MR2110D5_11.d	DB-5 0.32(mm)
320-70797-1 DL	11215702-Tank1-100mm DL	03/17/2021 18:44	20	17MR2110D5_12.d	DB-5 0.32(mm)
320-70797-8 DL	11215702-Tank2-41mm DL	03/17/2021 19:29	20	17MR2110D5_13.d	DB-5 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-70797-1

SDG No.:

Batch Number: 467785 Batch Start Date: 03/05/21 09:50 Batch Analyst: Chang, Fue

Batch Method: 1613B Batch End Date: 03/09/21 14:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	RotoVapID	HRDXNIDA 00468
MB 320-467785/1		1613B, 1613B				1000 mL	20 uL	4	1 mL
LCS 320-467785/2		1613B, 1613B				1000 mL	20 uL	6	1 mL
LCSD 320-467785/3		1613B, 1613B				1000 mL	20 uL	8	1 mL
320-70797-A-1	11215702-Tank1-100mm	1613B, 1613B	T	1537.4 g	521.28 g	1016.1 mL	20 uL	8	1 mL
320-70797-A-2	11215702-Tank1-41mm	1613B, 1613B	T	1554.6 g	518.30 g	1036.3 mL	20 uL	4	1 mL
320-70797-A-3	11215702-Tank1-10mm	1613B, 1613B	T	1546.9 g	513.76 g	1033.1 mL	20 uL	6	1 mL
320-70797-A-4	11215702-Tank1-1mm	1613B, 1613B	T	1552.1 g	514.40 g	1037.7 mL	20 uL	8	1 mL
320-70797-A-5	11215702-Tank1-0.45mm	1613B, 1613B	T	1551.1 g	513.96 g	1037.1 mL	20 uL	4	1 mL
320-70797-A-6	11215702-Tank1-0.1mm	1613B, 1613B	T	1546.5 g	514.34 g	1032.2 mL	20 uL	6	1 mL
320-70797-A-7	11215702-Tank2-100mm	1613B, 1613B	T	1556.2 g	518.44 g	1037.8 mL	20 uL	8	1 mL
320-70797-A-8	11215702-Tank2-41mm	1613B, 1613B	T	1539.3 g	514.85 g	1024.5 mL	20 uL	4	1 mL
320-70797-A-9	11215702-Tank2-10mm	1613B, 1613B	T	1540.9 g	514.58 g	1026.3 mL	20 uL	6	1 mL
320-70797-A-10	11215702-Tank2-1mm	1613B, 1613B	T	1537.1 g	513.74 g	1023.4 mL	20 uL	8	1 mL
320-70797-A-11	11215702-Tank2-0.45mm	1613B, 1613B	T	1536.4 g	513.10 g	1023.3 mL	20 uL	4	1 mL
320-70797-A-12	11215702-Tank2-0.1mm	1613B, 1613B	T	1535.3 g	513.19 g	1022.1 mL	20 uL	6	1 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIS 00133	HRDXNSU 00247	HRDXNTA 00128			
MB 320-467785/1		1613B, 1613B		20 uL	1 mL				
LCS 320-467785/2		1613B, 1613B		20 uL	1 mL	50 uL			
LCSD 320-467785/3		1613B, 1613B		20 uL	1 mL	50 uL			
320-70797-A-1	11215702-Tank1-100mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-2	11215702-Tank1-41mm	1613B, 1613B	T	20 uL	1 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-70797-1

SDG No.:

Batch Number: 467785 Batch Start Date: 03/05/21 09:50 Batch Analyst: Chang, Fue

Batch Method: 1613B Batch End Date: 03/09/21 14:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIS 00133	HRDXNSU 00247	HRDXNTA 00128			
320-70797-A-3	11215702-Tank1-10mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-4	11215702-Tank1-1mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-5	11215702-Tank1-0.45mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-6	11215702-Tank1-0.1mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-7	11215702-Tank2-100mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-8	11215702-Tank2-41mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-9	11215702-Tank2-10mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-10	11215702-Tank2-1mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-11	11215702-Tank2-0.45mm	1613B, 1613B	T	20 uL	1 mL				
320-70797-A-12	11215702-Tank2-0.1mm	1613B, 1613B	T	20 uL	1 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-70797-1

SDG No.:

Batch Number: 467785 Batch Start Date: 03/05/21 09:50 Batch Analyst: Chang, Fue

Batch Method: 1613B Batch End Date: 03/09/21 14:00

Batch Notes	
20% DCM:Hexane ID	DH28_00184 mL
65% DCM:Hexane ID	DH6535_00517 mL
Acid Silica Gel ID	SA5644_00689
Acid Alumina ID	Acid_Alumina_00012
Balance ID	QA - 070
C14 ID	Tetradecane_00014
Hexane ID	Hexane_00263 mL
IFB Clean Up	TGL 03/09/21
MeCL2 ID	DCM_00366 mL
Na2SO4 ID	Na2SO4_00127
Analyst ID - IDA Reagent Drop	FC 3/5/21 HD05018 HRDXNIDA_00468 B-4/4 1mL
Analyst ID - IDA Reagent Drop Witness	SKV 03/05/21
Analyst ID - IS Reagent Drop	TGL 03/09/21 DB15270 HRDXNIS_00133 B 2/4 20.0 uL
Analyst ID - IS Reagent Drop Witness	SR 03/09/21
Analyst ID - SU Reagent Drop	TGL 03/09/21 HD05018 HRDXNSU_00247 B 4/4 1.0 mL
Analyst ID - SU Reagent Drop Witness	GLB 03/09/21
Analyst ID - TA Reagent Drop	FC 3/5/21 DB15270 HRDXNTA_00128 B-9/10 50uL
Analyst ID - TA Reagent Drop Witness	SKV 03/05/21
Silica Gel ID	SilicaGel_00359
Soxhlet/Soxtherm End	3/5/21 14:15
Soxhlet/Soxtherm Start	3/5/21 11:15
Storage Box ID	DXN-220
Toluene ID	Toluene_00091 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

GHD

CHAIN OF CUSTODY RECORD

Address: 2055 Niagara Falls Blvd
Phone: 716-205-1972
Fax:

COC NO.: 59881
PAGE ___ OF ___

Project No/ Phase/Task Code: 11215702-N10411
Project Name: San Jacinto
Project Location:
GHD Chemistry Contact: Don Pope
Sampler(s): Jennifer Wasielewski

Laboratory Name: Eurofins/TestAmerica
Lab Contact: Carrie Gamber/Beth Hitt
Lab Location: Sacramento
SSOW ID:
Cooler No:
Carrier:
Airbill No:
Total # of Containers:

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	SAMPLE TYPE: Matrix Code (see back of COC)	SAMPLE TYPE: Grab (G) or Comp (C)	SAMPLE TYPE: Filtered (Y/N)	ANALYSIS REQUESTED (See Back of COC for Definitions): Dioxins/Furans												Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)																				
	11215702-Tank1-100mm	03/03/21	1500			Y	X														Attn to: Carrie Gamber
	11215702-Tank1-41mm						X														412-963-2428
	11215702-Tank1-10mm						X														
	11215702-Tank1-1mm						X														* Standard TAT
	11215702-Tank1-0.45mm						X														
6	11215702-Tank1-0.1mm						X														
7	11215702-Tank2-100mm						X														
8	11215702-Tank2-41mm						X														
9	11215702-Tank2-10mm						X														
10	11215702-Tank2-1mm						X														
11	11215702-Tank2-0.45mm						X														
12	11215702-Tank2-0.1mm						X														

320-70797 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☐2Week Other:

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1.	Jennifer Wasielewski	GHD	3/3/21	1500	1.	ETASac	3/4/21	1010
2.					2.			
3.					3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

8.3°

CRA Form: COC-10B (20110804)

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TestAmerica

Sacramento
Sample Receiving Notes

320-70797 Field Sheet

Job: ______

Tracking # : 9379 3045 6530

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other ______

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: L02 Corr. Factor: (+ / -) N/A °C

Ice ✓ Wet ✓ Gel ______ Other ______

Cooler Custody Seal: –

Cooler ID: –

Temp Observed: 8.3 °C Corrected: 8.3 °C

From: Temp Blank ☐ Sample ☒

Opening/Processing The Shipment	**Yes**	**No**	**NA**
Cooler compromised/tampered with?	☐	☒	☐
Cooler Temperature is acceptable?	☐	☒	☐
Frozen samples show signs of thaw?	☐	☐	☒

Initials: SO Date: 3/4/21

Unpacking/Labeling The Samples	**Yes**	**No**	**NA**
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☑	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: JG Date: 3/4/21

Notes:

No temp blank provided.
2 bags of Ice medium large Ziploc
bags not completely filled w/ Ice
On top of samples. Samples were
heavily bubbled wrapped SO 3/4/21

18020062

Trizma Lot #(s): ______

Login Completion	**Yes**	**No**	**NA**
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☑	☐	☐
Log Release checked in TALS?	☑	☐	☐

Initials: JG Date: 3/4/21

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-70797-1

Login Number: 70797
List Number: 1
Creator: Nelson, Kym D

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Job Number: 320-79918-1

Job Description: SJRWP Supplemental Design Investigation

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Karen Dahl

Approved for release.
Karen Dahl
Senior Project Manager
10/26/2021 3:46 PM

Karen Dahl, Senior Project Manager
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4384
Karen.Dahl@Eurofinset.com
10/26/2021

Eurofins TestAmerica, Sacramento
880 Riverside Parkway, West Sacramento, CA 95605
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com

Table of Contents

Table of Contents

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: SJRWP Supplemental Design Investigation

Job ID: 320-79918-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
320-79918-1

Comments
No additional comments.

Receipt
The samples were received on 10/6/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0º C.

Dioxin
Method 1613B: The method specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: 11215702-Pretreatment (320-79918-1), 11215702-T=1hr-Settle (320-79918-2), 11215702-5Mm (320-79918-3), 11215702-1Mm (320-79918-4), (CCV 320-534320/2), (LCS 320-532854/2-A), (LCSD 320-532854/3-A), (MB 320-532854/1-A) and (WDM 320-534320/1). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client Sample ID: 11215702-Pretreatment

Lab Sample ID: 320-79918-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	600		9.5	1.9	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	6.3	J	48	0.86	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	70		48	0.98	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	44	J	48	1.2	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	2.9	J B	48	0.77	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	2.3	J	48	0.75	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.9	J	48	0.71	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	160	B	48	1.1	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	37	J B	48	0.99	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	3.0	J B	48	0.83	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	4.8	J	48	0.80	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	55	B	48	1.8	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	52	B	48	1.4	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	22	J	48	1.4	pg/L	1		1613B	Total/NA
OCDD	1000	B	95	1.5	pg/L	1		1613B	Total/NA
OCDF	30	J B	95	0.86	pg/L	1		1613B	Total/NA
Total TCDD	650	q	9.5	1.9	pg/L	1		1613B	Total/NA
Total TCDF	2900		9.5	7.3	pg/L	1		1613B	Total/NA
Total PeCDD	7.4	J q B	48	0.86	pg/L	1		1613B	Total/NA
Total PeCDF	180		48	1.1	pg/L	1		1613B	Total/NA
Total HxCDD	19	J B	48	0.74	pg/L	1		1613B	Total/NA
Total HxCDF	230	B	48	0.92	pg/L	1		1613B	Total/NA
Total HpCDD	120	B	48	1.8	pg/L	1		1613B	Total/NA
Total HpCDF	91	B	48	1.4	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	1600		9.5	4.6	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-T=1hr-Settle

Lab Sample ID: 320-79918-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	19		9.5	1.0	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	1.8	J	48	0.88	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	2.8	J	48	0.43	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	2.6	J	48	0.49	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.2	J B q	48	0.76	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	1.4	J q	48	0.74	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	1.4	J q	48	0.71	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	4.4	J B q	48	0.57	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	2.0	J B	48	0.51	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	2.1	J B	48	0.46	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1.6	J	48	0.44	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	5.0	J B	48	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	3.1	J B	48	1.4	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	2.8	J q	48	1.5	pg/L	1		1613B	Total/NA
OCDD	36	J B	95	0.90	pg/L	1		1613B	Total/NA
OCDF	3.8	J B	95	0.89	pg/L	1		1613B	Total/NA
Total TCDD	19		9.5	1.0	pg/L	1		1613B	Total/NA
Total TCDF	99	q	9.5	0.83	pg/L	1		1613B	Total/NA
Total PeCDD	1.8	J B	48	0.88	pg/L	1		1613B	Total/NA
Total PeCDF	6.3	J q	48	0.46	pg/L	1		1613B	Total/NA
Total HxCDD	6.1	J B q	48	0.74	pg/L	1		1613B	Total/NA
Total HxCDF	10	J B q	48	0.50	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-T=1hr-Settle (Continued) Lab Sample ID: 320-79918-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HpCDD	9.5	J B	48	1.1	pg/L	1		1613B	Total/NA
Total HpCDF	5.9	J B q	48	1.4	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	56		9.5	1.2	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-5Mm Lab Sample ID: 320-79918-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	2.5	J	9.5	0.45	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	1.1	J q	48	0.52	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	3.6	J B	48	0.97	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	2.0	J	48	0.90	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	1.3	J B q	48	0.47	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	1.3	J B	48	0.42	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	1.2	J B	48	0.37	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1.3	J	48	0.36	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	3.6	J B q	48	0.65	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.4	J B q	48	0.69	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	1.6	J q	48	0.75	pg/L	1		1613B	Total/NA
OCDD	16	J B	95	0.91	pg/L	1		1613B	Total/NA
OCDF	2.7	J B	95	0.75	pg/L	1		1613B	Total/NA
Total TCDF	2.5	J	9.5	0.45	pg/L	1		1613B	Total/NA
Total PeCDF	1.1	J q	48	0.56	pg/L	1		1613B	Total/NA
Total HxCDD	5.6	J B	48	0.94	pg/L	1		1613B	Total/NA
Total HxCDF	5.0	J B q	48	0.41	pg/L	1		1613B	Total/NA
Total HpCDD	6.8	J B q	48	0.65	pg/L	1		1613B	Total/NA
Total HpCDF	3.0	J B q	48	0.72	pg/L	1		1613B	Total/NA

Client Sample ID: 11215702-1Mm Lab Sample ID: 320-79918-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	2.4	J	9.5	0.54	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.9	J q B	48	0.82	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	2.6	J q B	48	0.50	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.7	J B	48	0.62	pg/L	1		1613B	Total/NA
OCDD	19	J B	95	1.2	pg/L	1		1613B	Total/NA
OCDF	1.9	J q B	95	0.80	pg/L	1		1613B	Total/NA
Total TCDF	2.4	J	9.5	0.54	pg/L	1		1613B	Total/NA
Total HxCDD	1.9	J q B	48	0.77	pg/L	1		1613B	Total/NA
Total HpCDD	5.7	J q B	48	0.50	pg/L	1		1613B	Total/NA
Total HpCDF	1.7	J B	48	0.66	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 11215702-Pretreatment Lab Sample ID: 320-79918-1

Date Collected: 10/05/21 15:00 **Matrix: Water**
Date Received: 10/06/21 10:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	600		9.5	1.9	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,7,8-PeCDD	6.3	J	48	0.86	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,7,8-PeCDF	70		48	0.98	pg/L		10/11/21 08:36	10/15/21 17:27	1
2,3,4,7,8-PeCDF	44	J	48	1.2	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,4,7,8-HxCDD	2.9	J B	48	0.77	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,6,7,8-HxCDD	2.3	J	48	0.75	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,7,8,9-HxCDD	1.9	J	48	0.71	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,4,7,8-HxCDF	160	B	48	1.1	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,6,7,8-HxCDF	37	J B	48	0.99	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,7,8,9-HxCDF	3.0	J B	48	0.83	pg/L		10/11/21 08:36	10/15/21 17:27	1
2,3,4,6,7,8-HxCDF	4.8	J	48	0.80	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,4,6,7,8-HpCDD	55	B	48	1.8	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,4,6,7,8-HpCDF	52	B	48	1.4	pg/L		10/11/21 08:36	10/15/21 17:27	1
1,2,3,4,7,8,9-HpCDF	22	J	48	1.4	pg/L		10/11/21 08:36	10/15/21 17:27	1
OCDD	1000	B	95	1.5	pg/L		10/11/21 08:36	10/15/21 17:27	1
OCDF	30	J B	95	0.86	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total TCDD	650	q	9.5	1.9	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total TCDF	2900		9.5	7.3	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total PeCDD	7.4	J q B	48	0.86	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total PeCDF	180		48	1.1	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total HxCDD	19	J B	48	0.74	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total HxCDF	230	B	48	0.92	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total HpCDD	120	B	48	1.8	pg/L		10/11/21 08:36	10/15/21 17:27	1
Total HpCDF	91	B	48	1.4	pg/L		10/11/21 08:36	10/15/21 17:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*25 - 164*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-2,3,7,8-TCDF	*83*		*24 - 169*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*24 - 185*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-2,3,4,7,8-PeCDF	*76*		*21 - 178*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,4,7,8-HxCDD	*80*		*32 - 141*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*28 - 130*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,4,7,8-HxCDF	*83*		*26 - 152*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*26 - 123*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,7,8,9-HxCDF	*90*		*29 - 147*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-2,3,4,6,7,8-HxCDF	*90*		*28 - 136*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*102*		*23 - 140*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*90*		*28 - 143*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*105*		*26 - 138*	*10/11/21 08:36*	*10/15/21 17:27*	*1*
13C-OCDD	*113*		*17 - 157*	*10/11/21 08:36*	*10/15/21 17:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*95*		*35 - 197*	*10/11/21 08:36*	*10/15/21 17:27*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	1600		9.5	4.6	pg/L		10/11/21 08:36	10/18/21 16:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*95*		*24 - 169*	*10/11/21 08:36*	*10/18/21 16:53*	*1*

Client Sample ID: 11215702-Pretreatment

Lab Sample ID: 320-79918-1

Date Collected: 10/05/21 15:00

Matrix: Water

Date Received: 10/06/21 10:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*10/11/21 08:36*	*10/18/21 16:53*	*1*

Client Sample ID: 11215702-T=1hr-Settle

Lab Sample ID: 320-79918-2

Date Collected: 10/05/21 15:00

Matrix: Water

Date Received: 10/06/21 10:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**19**		9.5	1.0	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,7,8-PeCDD	**1.8**	**J**	48	0.88	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,7,8-PeCDF	**2.8**	**J**	48	0.43	pg/L		10/11/21 08:36	10/15/21 18:15	1
2,3,4,7,8-PeCDF	**2.6**	**J**	48	0.49	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,4,7,8-HxCDD	**3.2**	**J B q**	48	0.76	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,6,7,8-HxCDD	**1.4**	**J q**	48	0.74	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,7,8,9-HxCDD	**1.4**	**J q**	48	0.71	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,4,7,8-HxCDF	**4.4**	**J B q**	48	0.57	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,6,7,8-HxCDF	**2.0**	**J B**	48	0.51	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,7,8,9-HxCDF	**2.1**	**J B**	48	0.46	pg/L		10/11/21 08:36	10/15/21 18:15	1
2,3,4,6,7,8-HxCDF	**1.6**	**J**	48	0.44	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,4,6,7,8-HpCDD	**5.0**	**J B**	48	1.1	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,4,6,7,8-HpCDF	**3.1**	**J B**	48	1.4	pg/L		10/11/21 08:36	10/15/21 18:15	1
1,2,3,4,7,8,9-HpCDF	**2.8**	**J q**	48	1.5	pg/L		10/11/21 08:36	10/15/21 18:15	1
OCDD	**36**	**J B**	95	0.90	pg/L		10/11/21 08:36	10/15/21 18:15	1
OCDF	**3.8**	**J B**	95	0.89	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total TCDD	**19**		9.5	1.0	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total TCDF	**99**	**q**	9.5	0.83	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total PeCDD	**1.8**	**J B**	48	0.88	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total PeCDF	**6.3**	**J q**	48	0.46	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total HxCDD	**6.1**	**J B q**	48	0.74	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total HxCDF	**10**	**J B q**	48	0.50	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total HpCDD	**9.5**	**J B**	48	1.1	pg/L		10/11/21 08:36	10/15/21 18:15	1
Total HpCDF	**5.9**	**J B q**	48	1.4	pg/L		10/11/21 08:36	10/15/21 18:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*90*		*25 - 164*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-2,3,7,8-TCDF	*95*		*24 - 169*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,7,8-PeCDD	*93*		*25 - 181*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,7,8-PeCDF	*98*		*24 - 185*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-2,3,4,7,8-PeCDF	*92*		*21 - 178*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,4,7,8-HxCDD	*88*		*32 - 141*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,6,7,8-HxCDD	*94*		*28 - 130*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,4,7,8-HxCDF	*96*		*26 - 152*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,6,7,8-HxCDF	*94*		*26 - 123*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,7,8,9-HxCDF	*99*		*29 - 147*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-2,3,4,6,7,8-HxCDF	*103*		*28 - 136*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*113*		*23 - 140*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*106*		*28 - 143*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*114*		*26 - 138*	*10/11/21 08:36*	*10/15/21 18:15*	*1*
13C-OCDD	*123*		*17 - 157*	*10/11/21 08:36*	*10/15/21 18:15*	*1*

Client Sample Results

Client Sample ID: 11215702-T=1hr-Settle

Lab Sample ID: 320-79918-2

Date Collected: 10/05/21 15:00
Matrix: Water
Date Received: 10/06/21 10:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*96*		*35 - 197*	*10/11/21 08:36*	*10/15/21 18:15*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**56**		9.5	1.2	pg/L		10/11/21 08:36	10/18/21 16:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*143*		*24 - 169*	*10/11/21 08:36*	*10/18/21 16:15*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*92*		*35 - 197*	*10/11/21 08:36*	*10/18/21 16:15*	*1*

Client Sample ID: 11215702-5Mm

Lab Sample ID: 320-79918-3

Date Collected: 10/05/21 15:00
Matrix: Water
Date Received: 10/06/21 10:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.5	1.1	pg/L		10/11/21 08:36	10/15/21 19:03	1
2,3,7,8-TCDF	**2.5**	**J**	9.5	0.45	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,7,8-PeCDD	ND		48	1.1	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,7,8-PeCDF	**1.1**	**J q**	48	0.52	pg/L		10/11/21 08:36	10/15/21 19:03	1
2,3,4,7,8-PeCDF	ND		48	0.59	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,4,7,8-HxCDD	**3.6**	**J B**	48	0.97	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,6,7,8-HxCDD	ND		48	0.95	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,7,8,9-HxCDD	**2.0**	**J**	48	0.90	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,4,7,8-HxCDF	**1.3**	**J B q**	48	0.47	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,6,7,8-HxCDF	**1.3**	**J B**	48	0.42	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,7,8,9-HxCDF	**1.2**	**J B**	48	0.37	pg/L		10/11/21 08:36	10/15/21 19:03	1
2,3,4,6,7,8-HxCDF	**1.3**	**J**	48	0.36	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,4,6,7,8-HpCDD	**3.6**	**J B q**	48	0.65	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,4,6,7,8-HpCDF	**1.4**	**J B q**	48	0.69	pg/L		10/11/21 08:36	10/15/21 19:03	1
1,2,3,4,7,8,9-HpCDF	**1.6**	**J q**	48	0.75	pg/L		10/11/21 08:36	10/15/21 19:03	1
OCDD	**16**	**J B**	95	0.91	pg/L		10/11/21 08:36	10/15/21 19:03	1
OCDF	**2.7**	**J B**	95	0.75	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total TCDD	ND		9.5	1.1	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total TCDF	**2.5**	**J**	9.5	0.45	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total PeCDD	ND		48	1.1	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total PeCDF	**1.1**	**J q**	48	0.56	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total HxCDD	**5.6**	**J B**	48	0.94	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total HxCDF	**5.0**	**J B q**	48	0.41	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total HpCDD	**6.8**	**J B q**	48	0.65	pg/L		10/11/21 08:36	10/15/21 19:03	1
Total HpCDF	**3.0**	**J B q**	48	0.72	pg/L		10/11/21 08:36	10/15/21 19:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*25 - 164*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-2,3,7,8-TCDF	*92*		*24 - 169*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,7,8-PeCDD	*84*		*25 - 181*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,7,8-PeCDF	*90*		*24 - 185*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-2,3,4,7,8-PeCDF	*86*		*21 - 178*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*76*		*32 - 141*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,6,7,8-HxCDD	*80*		*28 - 130*	*10/11/21 08:36*	*10/15/21 19:03*	*1*

Client Sample ID: 11215702-5Mm

Lab Sample ID: 320-79918-3

Date Collected: 10/05/21 15:00

Matrix: Water

Date Received: 10/06/21 10:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDF	*82*		*26 - 152*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,6,7,8-HxCDF	*81*		*26 - 123*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*89*		*29 - 147*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*88*		*28 - 136*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*97*		*23 - 140*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*90*		*28 - 143*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*98*		*26 - 138*	*10/11/21 08:36*	*10/15/21 19:03*	*1*
13C-OCDD	*104*		*17 - 157*	*10/11/21 08:36*	*10/15/21 19:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*91*		*35 - 197*	*10/11/21 08:36*	*10/15/21 19:03*	*1*

Client Sample ID: 11215702-1Mm

Lab Sample ID: 320-79918-4

Date Collected: 10/05/21 15:00

Matrix: Water

Date Received: 10/06/21 10:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.5	0.96	pg/L		10/11/21 08:36	10/15/21 19:51	1
2,3,7,8-TCDF	**2.4**	**J**	9.5	0.54	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,7,8-PeCDD	ND		48	1.0	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,7,8-PeCDF	ND		48	0.52	pg/L		10/11/21 08:36	10/15/21 19:51	1
2,3,4,7,8-PeCDF	ND		48	0.62	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,4,7,8-HxCDD	**1.9**	**J q B**	48	0.82	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,6,7,8-HxCDD	ND		48	0.76	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,7,8,9-HxCDD	ND		48	0.74	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,4,7,8-HxCDF	ND		48	0.43	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,6,7,8-HxCDF	ND		48	0.39	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,7,8,9-HxCDF	ND		48	0.38	pg/L		10/11/21 08:36	10/15/21 19:51	1
2,3,4,6,7,8-HxCDF	ND		48	0.33	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,4,6,7,8-HpCDD	**2.6**	**J q B**	48	0.50	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,4,6,7,8-HpCDF	**1.7**	**J B**	48	0.62	pg/L		10/11/21 08:36	10/15/21 19:51	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.70	pg/L		10/11/21 08:36	10/15/21 19:51	1
OCDD	**19**	**J B**	95	1.2	pg/L		10/11/21 08:36	10/15/21 19:51	1
OCDF	**1.9**	**J q B**	95	0.80	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total TCDD	ND		9.5	0.96	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total TCDF	**2.4**	**J**	9.5	0.54	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total PeCDD	ND		48	1.0	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total PeCDF	ND		48	0.62	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total HxCDD	**1.9**	**J q B**	48	0.77	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total HxCDF	ND		48	0.43	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total HpCDD	**5.7**	**J q B**	48	0.50	pg/L		10/11/21 08:36	10/15/21 19:51	1
Total HpCDF	**1.7**	**J B**	48	0.66	pg/L		10/11/21 08:36	10/15/21 19:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*88*		*25 - 164*	*10/11/21 08:36*	*10/15/21 19:51*	*1*
13C-2,3,7,8-TCDF	*88*		*24 - 169*	*10/11/21 08:36*	*10/15/21 19:51*	*1*
13C-1,2,3,7,8-PeCDD	*84*		*25 - 181*	*10/11/21 08:36*	*10/15/21 19:51*	*1*
13C-1,2,3,7,8-PeCDF	*90*		*24 - 185*	*10/11/21 08:36*	*10/15/21 19:51*	*1*
13C-2,3,4,7,8-PeCDF	*86*		*21 - 178*	*10/11/21 08:36*	*10/15/21 19:51*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*10/11/21 08:36*	*10/15/21 19:51*	*1*

Client Sample ID: 11215702-1Mm Lab Sample ID: 320-79918-4

Date Collected: 10/05/21 15:00 **Matrix: Water**
Date Received: 10/06/21 10:30

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDD	92		28 - 130	10/11/21 08:36	10/15/21 19:51	1
13C-1,2,3,4,7,8-HxCDF	91		26 - 152	10/11/21 08:36	10/15/21 19:51	1
13C-1,2,3,6,7,8-HxCDF	92		26 - 123	10/11/21 08:36	10/15/21 19:51	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 147	10/11/21 08:36	10/15/21 19:51	1
13C-2,3,4,6,7,8-HxCDF	100		28 - 136	10/11/21 08:36	10/15/21 19:51	1
13C-1,2,3,4,6,7,8-HpCDD	104		23 - 140	10/11/21 08:36	10/15/21 19:51	1
13C-1,2,3,4,6,7,8-HpCDF	97		28 - 143	10/11/21 08:36	10/15/21 19:51	1
13C-1,2,3,4,7,8,9-HpCDF	104		26 - 138	10/11/21 08:36	10/15/21 19:51	1
13C-OCDD	112		17 - 157	10/11/21 08:36	10/15/21 19:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	100		35 - 197	10/11/21 08:36	10/15/21 19:51	1

Client Sample ID: 11215702-Pretreatment Lab Sample ID: 320-79918-1

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**600**		9.5	1.9	pg/L	1	**600**	1613B
1,2,3,7,8-PeCDD	**6.3**	**J**	48	0.86	pg/L	1	**6.3**	1613B
1,2,3,7,8-PeCDF	**70**		48	0.98	pg/L	0.03	**2.1**	1613B
2,3,4,7,8-PeCDF	**44**	**J**	48	1.2	pg/L	0.3	**13**	1613B
1,2,3,4,7,8-HxCDD	**2.9**	**J B**	48	0.77	pg/L	0.1	**0.29**	1613B
1,2,3,6,7,8-HxCDD	**2.3**	**J**	48	0.75	pg/L	0.1	**0.23**	1613B
1,2,3,7,8,9-HxCDD	**1.9**	**J**	48	0.71	pg/L	0.1	**0.19**	1613B
1,2,3,4,7,8-HxCDF	**160**	**B**	48	1.1	pg/L	0.1	**16**	1613B
1,2,3,6,7,8-HxCDF	**37**	**J B**	48	0.99	pg/L	0.1	**3.7**	1613B
1,2,3,7,8,9-HxCDF	**3.0**	**J B**	48	0.83	pg/L	0.1	**0.30**	1613B
2,3,4,6,7,8-HxCDF	**4.8**	**J**	48	0.80	pg/L	0.1	**0.48**	1613B
1,2,3,4,6,7,8-HpCDD	**55**	**B**	48	1.8	pg/L	0.01	**0.55**	1613B
1,2,3,4,6,7,8-HpCDF	**52**	**B**	48	1.4	pg/L	0.01	**0.52**	1613B
1,2,3,4,7,8,9-HpCDF	**22**	**J**	48	1.4	pg/L	0.01	**0.22**	1613B
OCDD	**1000**	**B**	95	1.5	pg/L	0.0003	**0.30**	1613B
OCDF	**30**	**J B**	95	0.86	pg/L	0.0003	**0.0090**	1613B
2,3,7,8-TCDF - RA	**1600**		9.5	4.6	pg/L	0.1	**160**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		800	TEQ

Client Sample ID: 11215702-T=1hr-Settle Lab Sample ID: 320-79918-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	**19**		9.5	1.0	pg/L	1	**19**	1613B
1,2,3,7,8-PeCDD	**1.8**	**J**	48	0.88	pg/L	1	**1.8**	1613B
1,2,3,7,8-PeCDF	**2.8**	**J**	48	0.43	pg/L	0.03	**0.084**	1613B
2,3,4,7,8-PeCDF	**2.6**	**J**	48	0.49	pg/L	0.3	**0.78**	1613B
1,2,3,4,7,8-HxCDD	**3.2**	**J B q**	48	0.76	pg/L	0.1	**0.32**	1613B
1,2,3,6,7,8-HxCDD	**1.4**	**J q**	48	0.74	pg/L	0.1	**0.14**	1613B
1,2,3,7,8,9-HxCDD	**1.4**	**J q**	48	0.71	pg/L	0.1	**0.14**	1613B
1,2,3,4,7,8-HxCDF	**4.4**	**J B q**	48	0.57	pg/L	0.1	**0.44**	1613B
1,2,3,6,7,8-HxCDF	**2.0**	**J B**	48	0.51	pg/L	0.1	**0.20**	1613B
1,2,3,7,8,9-HxCDF	**2.1**	**J B**	48	0.46	pg/L	0.1	**0.21**	1613B
2,3,4,6,7,8-HxCDF	**1.6**	**J**	48	0.44	pg/L	0.1	**0.16**	1613B
1,2,3,4,6,7,8-HpCDD	**5.0**	**J B**	48	1.1	pg/L	0.01	**0.050**	1613B
1,2,3,4,6,7,8-HpCDF	**3.1**	**J B**	48	1.4	pg/L	0.01	**0.031**	1613B
1,2,3,4,7,8,9-HpCDF	**2.8**	**J q**	48	1.5	pg/L	0.01	**0.028**	1613B
OCDD	**36**	**J B**	95	0.90	pg/L	0.0003	**0.011**	1613B
OCDF	**3.8**	**J B**	95	0.89	pg/L	0.0003	**0.0011**	1613B
2,3,7,8-TCDF - RA	**56**		9.5	1.2	pg/L	0.1	**5.6**	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-T=1hr-Settle (Continued) Lab Sample ID: 320-79918-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		29	TEQ

Client Sample ID: 11215702-5Mm Lab Sample ID: 320-79918-3

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		9.5	1.1	pg/L	1	0.55	1613B
2,3,7,8-TCDF	**2.5**	**J**	9.5	0.45	pg/L	0.1	**0.25**	1613B
1,2,3,7,8-PeCDD	ND		48	1.1	pg/L	1	0.55	1613B
1,2,3,7,8-PeCDF	**1.1**	**J q**	48	0.52	pg/L	0.03	**0.033**	1613B
2,3,4,7,8-PeCDF	ND		48	0.59	pg/L	0.3	0.089	1613B
1,2,3,4,7,8-HxCDD	**3.6**	**J B**	48	0.97	pg/L	0.1	**0.36**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.95	pg/L	0.1	0.048	1613B
1,2,3,7,8,9-HxCDD	**2.0**	**J**	48	0.90	pg/L	0.1	**0.20**	1613B
1,2,3,4,7,8-HxCDF	**1.3**	**J B q**	48	0.47	pg/L	0.1	**0.13**	1613B
1,2,3,6,7,8-HxCDF	**1.3**	**J B**	48	0.42	pg/L	0.1	**0.13**	1613B
1,2,3,7,8,9-HxCDF	**1.2**	**J B**	48	0.37	pg/L	0.1	**0.12**	1613B
2,3,4,6,7,8-HxCDF	**1.3**	**J**	48	0.36	pg/L	0.1	**0.13**	1613B
1,2,3,4,6,7,8-HpCDD	**3.6**	**J B q**	48	0.65	pg/L	0.01	**0.036**	1613B
1,2,3,4,6,7,8-HpCDF	**1.4**	**J B q**	48	0.69	pg/L	0.01	**0.014**	1613B
1,2,3,4,7,8,9-HpCDF	**1.6**	**J q**	48	0.75	pg/L	0.01	**0.016**	1613B
OCDD	**16**	**J B**	95	0.91	pg/L	0.0003	**0.0048**	1613B
OCDF	**2.7**	**J B**	95	0.75	pg/L	0.0003	**0.00081**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		2.7	TEQ

Client Sample ID: 11215702-1Mm Lab Sample ID: 320-79918-4

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		9.5	0.96	pg/L	1	0.48	1613B
2,3,7,8-TCDF	**2.4**	**J**	9.5	0.54	pg/L	0.1	**0.24**	1613B
1,2,3,7,8-PeCDD	ND		48	1.0	pg/L	1	0.50	1613B
1,2,3,7,8-PeCDF	ND		48	0.52	pg/L	0.03	0.0078	1613B
2,3,4,7,8-PeCDF	ND		48	0.62	pg/L	0.3	0.093	1613B
1,2,3,4,7,8-HxCDD	**1.9**	**J q B**	48	0.82	pg/L	0.1	**0.19**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.76	pg/L	0.1	0.038	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.74	pg/L	0.1	0.037	1613B
1,2,3,4,7,8-HxCDF	ND		48	0.43	pg/L	0.1	0.022	1613B
1,2,3,6,7,8-HxCDF	ND		48	0.39	pg/L	0.1	0.020	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.38	pg/L	0.1	0.019	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.33	pg/L	0.1	0.017	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: 11215702-1Mm (Continued) Lab Sample ID: 320-79918-4

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
1,2,3,4,6,7,8-HpCDD	**2.6**	**J q B**	48	0.50	pg/L	0.01	**0.026**	1613B
1,2,3,4,6,7,8-HpCDF	**1.7**	**J B**	48	0.62	pg/L	0.01	**0.017**	1613B
1,2,3,4,7,8,9-HpCDF	ND		48	0.70	pg/L	0.01	0.0035	1613B
OCDD	**19**	**J B**	95	1.2	pg/L	0.0003	**0.0057**	1613B
OCDF	**1.9**	**J q B**	95	0.80	pg/L	0.0003	**0.00057**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1.7	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Surrogate Summary

Client: GHD Services Inc. Job ID: 320-79918-1
Project/Site: SJRWP Supplemental Design Investigation

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
320-79918-1	11215702-Pretreatment	95
320-79918-1 - RA	11215702-Pretreatment	97
320-79918-2	11215702-T=1hr-Settle	96
320-79918-2 - RA	11215702-T=1hr-Settle	92
320-79918-3	11215702-5Mm	91
320-79918-4	11215702-1Mm	100
MB 320-532854/1-A	Method Blank	99

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-532854/2-A	Lab Control Sample	95
LCSD 320-532854/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
320-79918-1	11215702-Pretreatment	81	83	76	81	76	80	81	83
320-79918-1 - RA	11215702-Pretreatment		95						
320-79918-2	11215702-T=1hr-Settle	90	95	93	98	92	88	94	96
320-79918-2 - RA	11215702-T=1hr-Settle		143						
320-79918-3	11215702-5Mm	83	92	84	90	86	76	80	82
320-79918-4	11215702-1Mm	88	88	84	90	86	84	92	91
MB 320-532854/1-A	Method Blank	82	87	80	83	80	77	81	83

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
320-79918-1	11215702-Pretreatment	79	90	90	102	90	105	113
320-79918-1 - RA	11215702-Pretreatment							
320-79918-2	11215702-T=1hr-Settle	94	99	103	113	106	114	123
320-79918-2 - RA	11215702-T=1hr-Settle							
320-79918-3	11215702-5Mm	81	89	88	97	90	98	104
320-79918-4	11215702-1Mm	92	92	100	104	97	104	112
MB 320-532854/1-A	Method Blank	84	95	92	99	90	100	108

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-532854/2-A	Lab Control Sample	78	85	89	90	87	77	82	79
LCSD 320-532854/3-A	Lab Control Sample Dup	77	87	76	82	78	79	84	84

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-532854/2-A	Lab Control Sample	77	88	88	89	87	93	103
LCSD 320-532854/3-A	Lab Control Sample Dup	83	92	92	102	92	104	112

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-532854/1-A
Matrix: Water
Analysis Batch: 534320

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 532854

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.78	pg/L		10/11/21 08:36	10/15/21 12:39	1
2,3,7,8-TCDF	ND		10	0.32	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,7,8-PeCDD	ND		50	0.61	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,7,8-PeCDF	ND		50	0.30	pg/L		10/11/21 08:36	10/15/21 12:39	1
2,3,4,7,8-PeCDF	ND		50	0.34	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,4,7,8-HxCDD	2.13	J	50	0.36	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,6,7,8-HxCDD	ND		50	0.35	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,7,8,9-HxCDD	ND		50	0.33	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,4,7,8-HxCDF	0.395	J q	50	0.28	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,6,7,8-HxCDF	0.336	J q	50	0.23	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,7,8,9-HxCDF	0.642	J	50	0.20	pg/L		10/11/21 08:36	10/15/21 12:39	1
2,3,4,6,7,8-HxCDF	ND		50	0.20	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,4,6,7,8-HpCDD	0.919	J q	50	0.15	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,4,6,7,8-HpCDF	0.917	J q	50	0.46	pg/L		10/11/21 08:36	10/15/21 12:39	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.49	pg/L		10/11/21 08:36	10/15/21 12:39	1
OCDD	3.66	J	100	0.63	pg/L		10/11/21 08:36	10/15/21 12:39	1
OCDF	1.61	J q	100	0.54	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total TCDD	ND		10	0.78	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total TCDF	ND		10	0.32	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total PeCDD	1.37	J q	50	0.61	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total PeCDF	ND		50	0.32	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total HxCDD	2.13	J	50	0.35	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total HxCDF	1.37	J q	50	0.23	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total HpCDD	2.67	J q	50	0.15	pg/L		10/11/21 08:36	10/15/21 12:39	1
Total HpCDF	0.917	J q	50	0.47	pg/L		10/11/21 08:36	10/15/21 12:39	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*25 - 164*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-2,3,7,8-TCDF	*87*		*24 - 169*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*24 - 185*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*21 - 178*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*28 - 130*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,4,7,8-HxCDF	*83*		*26 - 152*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,6,7,8-HxCDF	*84*		*26 - 123*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,7,8,9-HxCDF	*95*		*29 - 147*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-2,3,4,6,7,8-HxCDF	*92*		*28 - 136*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*99*		*23 - 140*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*90*		*28 - 143*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*100*		*26 - 138*	*10/11/21 08:36*	*10/15/21 12:39*	*1*
13C-OCDD	*108*		*17 - 157*	*10/11/21 08:36*	*10/15/21 12:39*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*	*10/11/21 08:36*	*10/15/21 12:39*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-532854/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 534320
Prep Batch: 532854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	197		pg/L		99	67 - 158
2,3,7,8-TCDF	200	198		pg/L		99	75 - 158
1,2,3,7,8-PeCDD	1000	925		pg/L		92	70 - 142
1,2,3,7,8-PeCDF	1000	916		pg/L		92	80 - 134
2,3,4,7,8-PeCDF	1000	981		pg/L		98	68 - 160
1,2,3,4,7,8-HxCDD	1000	939		pg/L		94	70 - 164
1,2,3,6,7,8-HxCDD	1000	914		pg/L		91	76 - 134
1,2,3,7,8,9-HxCDD	1000	942		pg/L		94	64 - 162
1,2,3,4,7,8-HxCDF	1000	934		pg/L		93	72 - 134
1,2,3,6,7,8-HxCDF	1000	907		pg/L		91	84 - 130
1,2,3,7,8,9-HxCDF	1000	875		pg/L		87	78 - 130
2,3,4,6,7,8-HxCDF	1000	894		pg/L		89	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	889		pg/L		89	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	889		pg/L		89	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	937		pg/L		94	78 - 138
OCDD	2000	1810		pg/L		91	78 - 144
OCDF	2000	1800		pg/L		90	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*78*		*20 - 175*
13C-2,3,7,8-TCDF	*85*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*89*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*90*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*87*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*77*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*82*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*79*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*77*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*88*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*88*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*87*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*93*		*20 - 186*
13C-OCDD	*103*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*95*		*31 - 191*

Lab Sample ID: LCSD 320-532854/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 534320
Prep Batch: 532854

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	190		pg/L		95	67 - 158	4	50
2,3,7,8-TCDF	200	191		pg/L		95	75 - 158	4	50
1,2,3,7,8-PeCDD	1000	911		pg/L		91	70 - 142	2	50
1,2,3,7,8-PeCDF	1000	909		pg/L		91	80 - 134	1	50
2,3,4,7,8-PeCDF	1000	977		pg/L		98	68 - 160	0	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-532854/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 534320
Prep Batch: 532854

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD	1000	943		pg/L		94	70 - 164	0	50
1,2,3,6,7,8-HxCDD	1000	908		pg/L		91	76 - 134	1	50
1,2,3,7,8,9-HxCDD	1000	934		pg/L		93	64 - 162	1	50
1,2,3,4,7,8-HxCDF	1000	933		pg/L		93	72 - 134	0	50
1,2,3,6,7,8-HxCDF	1000	893		pg/L		89	84 - 130	2	50
1,2,3,7,8,9-HxCDF	1000	888		pg/L		89	78 - 130	2	50
2,3,4,6,7,8-HxCDF	1000	892		pg/L		89	70 - 156	0	50
1,2,3,4,6,7,8-HpCDD	1000	861		pg/L		86	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF	1000	872		pg/L		87	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF	1000	906		pg/L		91	78 - 138	3	50
OCDD	2000	1760		pg/L		88	78 - 144	3	50
OCDF	2000	1750		pg/L		88	63 - 170	3	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*77*		*20 - 175*
13C-2,3,7,8-TCDF	*87*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*76*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*82*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*78*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*79*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*84*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*84*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*83*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*92*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*92*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*102*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*92*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*104*		*20 - 186*
13C-OCDD	*112*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*92*		*31 - 191*

Specialty Organics

Prep Batch: 532854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-79918-1 - RA	11215702-Pretreatment	Total/NA	Water	1613B	
320-79918-1	11215702-Pretreatment	Total/NA	Water	1613B	
320-79918-2 - RA	11215702-T=1hr-Settle	Total/NA	Water	1613B	
320-79918-2	11215702-T=1hr-Settle	Total/NA	Water	1613B	
320-79918-3	11215702-5Mm	Total/NA	Water	1613B	
320-79918-4	11215702-1Mm	Total/NA	Water	1613B	
MB 320-532854/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-532854/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-532854/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 534320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-79918-1	11215702-Pretreatment	Total/NA	Water	1613B	532854
320-79918-2	11215702-T=1hr-Settle	Total/NA	Water	1613B	532854
320-79918-3	11215702-5Mm	Total/NA	Water	1613B	532854
320-79918-4	11215702-1Mm	Total/NA	Water	1613B	532854
MB 320-532854/1-A	Method Blank	Total/NA	Water	1613B	532854
LCS 320-532854/2-A	Lab Control Sample	Total/NA	Water	1613B	532854
LCSD 320-532854/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	532854

Analysis Batch: 535163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-79918-1 - RA	11215702-Pretreatment	Total/NA	Water	1613B	532854
320-79918-2 - RA	11215702-T=1hr-Settle	Total/NA	Water	1613B	532854

Lab Chronicle

Client: GHD Services Inc. Job ID: 320-79918-1
Project/Site: SJRWP Supplemental Design Investigation

Client Sample ID: 11215702-Pretreatment Lab Sample ID: 320-79918-1

Date Collected: 10/05/21 15:00 **Matrix: Water**
Date Received: 10/06/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		532854	10/11/21 08:36	CB	TAL SAC
Total/NA	Analysis	1613B	RA	1	535163	10/18/21 16:53	DB	TAL SAC
Total/NA	Prep	1613B			532854	10/11/21 08:36	CB	TAL SAC
Total/NA	Analysis	1613B		1	534320	10/15/21 17:27	DB	TAL SAC

Client Sample ID: 11215702-T=1hr-Settle Lab Sample ID: 320-79918-2

Date Collected: 10/05/21 15:00 **Matrix: Water**
Date Received: 10/06/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		532854	10/11/21 08:36	CB	TAL SAC
Total/NA	Analysis	1613B	RA	1	535163	10/18/21 16:15	DB	TAL SAC
Total/NA	Prep	1613B			532854	10/11/21 08:36	CB	TAL SAC
Total/NA	Analysis	1613B		1	534320	10/15/21 18:15	DB	TAL SAC

Client Sample ID: 11215702-5Mm Lab Sample ID: 320-79918-3

Date Collected: 10/05/21 15:00 **Matrix: Water**
Date Received: 10/06/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			532854	10/11/21 08:36	CB	TAL SAC
Total/NA	Analysis	1613B		1	534320	10/15/21 19:03	DB	TAL SAC

Client Sample ID: 11215702-1Mm Lab Sample ID: 320-79918-4

Date Collected: 10/05/21 15:00 **Matrix: Water**
Date Received: 10/06/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			532854	10/11/21 08:36	CB	TAL SAC
Total/NA	Analysis	1613B		1	534320	10/15/21 19:51	DB	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	**Program**	**Identification Number**	**Expiration Date**
Texas	NELAP	T104704399-19-13	05-31-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc. Job ID: 320-79918-1
Project/Site: SJRWP Supplemental Design Investigation

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 320-79918-1
Project/Site: SJRWP Supplemental Design Investigation

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-79918-1	11215702-Pretreatment	Water	10/05/21 15:00	10/06/21 10:30
320-79918-2	11215702-T=1hr-Settle	Water	10/05/21 15:00	10/06/21 10:30
320-79918-3	11215702-5Mm	Water	10/05/21 15:00	10/06/21 10:30
320-79918-4	11215702-1Mm	Water	10/05/21 15:00	10/06/21 10:30

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-79918-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 531494

Lab Sample ID: IC 320-531494/3 Client Sample ID:

Date Analyzed: 10/06/21 11:01 Lab File ID: 06OC2111D2_003.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	15.99	Baseline	bennettd	10/06/21 16:02
2,3,7,8-TCDF	17.51	Baseline	bennettd	10/06/21 16:01

Lab Sample ID: IC 320-531494/4 Client Sample ID:

Date Analyzed: 10/06/21 11:39 Lab File ID: 06OC2111D2_004.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	15.98	Peak Tail	bennettd	10/06/21 16:02

Lab Sample ID: IC 320-531494/5 Client Sample ID:

Date Analyzed: 10/06/21 12:17 Lab File ID: 06OC2111D2_005.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	15.98	Peak Tail	bennettd	10/06/21 16:03
2,3,7,8-TCDF	17.52	Peak Tail	bennettd	10/06/21 16:03

Lab Sample ID: ICV 320-531494/9 Client Sample ID:

Date Analyzed: 10/06/21 14:51 Lab File ID: 06OC2111D2_009.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDD	15.99	Peak Tail	bennettd	10/06/21 16:04

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-79918-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 535163

Lab Sample ID: 320-79918-2 RA Client Sample ID: 11215702-T=1hr-Settle RA

Date Analyzed: 10/18/21 16:15 Lab File ID: 18OC2111D2_008.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	17.47	Peak Tail	bennettd	10/19/21 09:27

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-79918-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 534320

Lab Sample ID: MB 320-532854/1-A Client Sample ID:

Date Analyzed: 10/15/21 12:39 Lab File ID: 15oc21dfs1_5.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	stephensk	10/15/21 14:45
1,2,3,4,7,8-HxCDF	34.66	Missed Peak	bennettd	10/18/21 12:44
1,2,3,6,7,8-HxCDF	34.81	Missed Peak	bennettd	10/18/21 12:43
1,2,3,4,7,8-HxCDD	35.89	Poor chromatography	stephensk	10/18/21 08:32
13C-1,2,3,6,7,8-HxCDD	36.00	Invalid Compound ID	stephensk	10/15/21 14:45
1,2,3,7,8,9-HxCDF	36.56	Missed Peak	bennettd	10/18/21 12:43
1,2,3,4,6,7,8-HpCDF	38.45	Missed Peak	bennettd	10/18/21 12:44
OCDD	41.90	Missed Peak	stephensk	10/15/21 14:46
OCDF	41.97	Missed Peak	bennettd	10/18/21 12:45

Lab Sample ID: 320-79918-1 Client Sample ID: 11215702-Pretreatment

Date Analyzed: 10/15/21 17:27 Lab File ID: 15oc21dfs1_11.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	26.85	Peak Tail	bennettd	10/18/21 13:18
2,3,4,6,7,8-HxCDF	35.65	Missed Peak	bennettd	10/18/21 13:20
1,2,3,4,7,8-HxCDD	35.89	Incomplete Integration	bennettd	10/18/21 13:21
1,2,3,6,7,8-HxCDD	36.01	Incomplete Integration	bennettd	10/18/21 13:21
1,2,3,7,8,9-HxCDD	36.38	Missed Peak	bennettd	10/18/21 13:22
1,2,3,7,8,9-HxCDF	36.56	Wrong peak	bennettd	10/18/21 13:19
OCDF	41.97	Poor chromatography	bennettd	10/18/21 13:23

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-79918-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 534320

Lab Sample ID: 320-79918-2 Client Sample ID: 11215702-T=1hr-Settle

Date Analyzed: 10/15/21 18:15 Lab File ID: 15oc21dfs1_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8-PeCDF	26.83	Poor chromatography	bennettd	10/18/21 13:24
1,2,3,7,8-PeCDD	29.15	Missed Peak	bennettd	10/18/21 13:25
1,2,3,6,7,8-HxCDF	34.81	Peak Tail	bennettd	10/18/21 13:25
2,3,4,6,7,8-HxCDF	35.65	Peak Tail	bennettd	10/18/21 13:25
1,2,3,4,7,8-HxCDD	35.89	Poor chromatography	bennettd	10/18/21 13:26
1,2,3,6,7,8-HxCDD	36.03	Poor chromatography	bennettd	10/18/21 13:27
1,2,3,7,8,9-HxCDD	36.36	Missed Peak	bennettd	10/18/21 13:28
1,2,3,7,8,9-HxCDF	36.57	Peak Tail	bennettd	10/18/21 13:26
1,2,3,4,6,7,8-HpCDF	38.43	Incomplete Integration	bennettd	10/18/21 13:29
1,2,3,4,6,7,8-HpCDD	39.40	Missed Peak	bennettd	10/18/21 13:29
1,2,3,4,7,8,9-HpCDF	39.70	Missed Peak	bennettd	10/18/21 13:29
OCDF	41.96	Poor chromatography	bennettd	10/18/21 13:30

Lab Sample ID: 320-79918-3 Client Sample ID: 11215702-5Mm

Date Analyzed: 10/15/21 19:03 Lab File ID: 15oc21dfs1_13.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	bennettd	10/18/21 13:35
2,3,7,8-TCDF	19.81	Incomplete Integration	bennettd	10/18/21 13:31
1,2,3,7,8-PeCDF	26.84	Missed Peak	bennettd	10/18/21 13:31
2,3,4,6,7,8-HxCDF	35.64	Incomplete Integration	bennettd	10/18/21 13:32
1,2,3,4,7,8-HxCDD	35.88	Poor chromatography	bennettd	10/18/21 13:35
1,2,3,7,8,9-HxCDD	36.36	Missed Peak	bennettd	10/18/21 13:35
1,2,3,7,8,9-HxCDF	36.55	Incomplete Integration	bennettd	10/18/21 13:35
1,2,3,4,6,7,8-HpCDF	38.43	Missed Peak	bennettd	10/18/21 13:36
1,2,3,4,6,7,8-HpCDD	39.41	Incomplete Integration	bennettd	10/18/21 13:37
1,2,3,4,7,8,9-HpCDF	39.69	Missed Peak	bennettd	10/18/21 13:36
OCDF	41.98	Incomplete Integration	bennettd	10/18/21 13:38

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 320-79918-1

SDG No.:

Instrument ID: DFS 1 Analysis Batch Number: 534320

Lab Sample ID: 320-79918-4 Client Sample ID: 11215702-1Mm

Date Analyzed: 10/15/21 19:51 Lab File ID: 15oc21dfs1_14.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Invalid Compound ID	bennettd	10/18/21 13:40
1,2,3,7,8,9-HxCDF		Invalid Compound ID	bennettd	10/18/21 13:39
2,3,7,8-TCDF	19.85	Poor chromatography	bennettd	10/18/21 13:38
1,2,3,4,7,8-HxCDD	35.89	Poor chromatography	bennettd	10/18/21 13:39
1,2,3,4,6,7,8-HpCDD	39.42	Incomplete Integration	bennettd	10/18/21 13:40
OCDF	41.99	Poor chromatography	bennettd	10/18/21 13:40

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00044	05/12/22	05/12/21	C14, Lot STBJ7343	6 mL	HRDXNCP_00043	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00043	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00048	08/02/22	09/10/21	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00465	250 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIDA_00486	250 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
					HRDXNSU_00258	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00124	500 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNIDA_00486	10/27/24	09/09/21	Isooctane, Lot B00S6184	25 mL	HRDXNIDA_00483	2.5 mL	13C-OCDD	0.4 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
..HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
...HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
...HRDXNIDA_00475	10/31/30	CIL, Lot ER10152004			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00476	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00477	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00478	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
.HRDXNSU_00258	08/01/24	09/09/21	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00233	0.8 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00124	10/17/26	Wellington Labs, Lot 13PAR1019			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIDA_00485	08/23/22	08/23/21	Acetone, Lot 0000204742	1000 mL	HRDXNIDA_00435	5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
					HRDXNIDA_00465	10 mL	13C-1,2,3,6,7,8-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
					HRDXNIDA_00483	1 mL	13C-OCDD	4 pg/uL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00475	10/31/30		CIL, Lot ER10152004		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00476	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00477	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00478	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
HRDXNIS_00137	08/02/22	08/02/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00033	08/02/22	09/10/21	C14, Lot STBJ3715	1 mL	HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00465	500 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIDA_00486	500 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
					HRDXNIS_00137	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00257	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00138	125 uL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIDA_00486	10/27/24	09/09/21	Isooctane, Lot B00S6184	25 mL	HRDXNIDA_00483	2.5 mL	13C-OCDD	0.4 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
..HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
...HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
...HRDXNIDA_00475	10/31/30		CIL, Lot ER10152004		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00476	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00477	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00478	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
.HRDXNIS_00137	08/02/22	08/02/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00257	09/08/22	09/08/21	Isooctane, Lot R24F725	500 mL	HRDXNSU_00233	0.08 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00138	09/02/22	09/02/21	Acetone, Lot 00000274597	25 mL	HRDXNTA_00132	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00132	08/31/30		CIL, Lot ER09031903		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2000 ng/mL
							1,2,3,4,6,7,8-HpCDF	2000 ng/mL
							1,2,3,4,7,8,9-HpCDF	2000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,4,7,8-HxCDD	2000 ng/mL
							1,2,3,4,7,8-HxCDF	2000 ng/mL
							1,2,3,6,7,8-HxCDD	2000 ng/mL
							1,2,3,6,7,8-HxCDF	2000 ng/mL
							1,2,3,7,8,9-HxCDD	2000 ng/mL
							1,2,3,7,8,9-HxCDF	2000 ng/mL
							1,2,3,7,8-PeCDD	2000 ng/mL
							1,2,3,7,8-PeCDF	2000 ng/mL
							2,3,4,6,7,8-HxCDF	2000 ng/mL
							2,3,4,7,8-PeCDF	2000 ng/mL
							2,3,7,8-TCDD	400 ng/mL
							2,3,7,8-TCDF	400 ng/mL
							OCDD	4000 ng/mL
							OCDF	4000 ng/mL
HRDXNL3_00030	08/02/22	09/10/21	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00435	125 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00465	250 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIDA_00486	250 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
					HRDXNIS_00137	500 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00257	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00138	250 uL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIDA_00486	10/27/24	09/09/21	Isooctane, Lot B00S6184	25 mL	HRDXNIDA_00483	2.5 mL	13C-OCDD	0.4 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
..HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
...HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
...HRDXNIDA_00475	10/31/30		CIL, Lot ER10152004		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00476	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00477	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00478	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
.HRDXNIS_00137	08/02/22	08/02/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00257	09/08/22	09/08/21	Isooctane, Lot R24F725	500 mL	HRDXNSU_00233	0.08 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNTA_00138	09/02/22	09/02/21	Acetone, Lot 00000274597	25 mL	HRDXNTA_00132	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00132	08/31/30	CIL, Lot ER09031903			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2000 ng/mL
							1,2,3,4,6,7,8-HpCDF	2000 ng/mL
							1,2,3,4,7,8,9-HpCDF	2000 ng/mL
							1,2,3,4,7,8-HxCDD	2000 ng/mL
							1,2,3,4,7,8-HxCDF	2000 ng/mL
							1,2,3,6,7,8-HxCDD	2000 ng/mL
							1,2,3,6,7,8-HxCDF	2000 ng/mL
							1,2,3,7,8,9-HxCDD	2000 ng/mL
							1,2,3,7,8,9-HxCDF	2000 ng/mL
							1,2,3,7,8-PeCDD	2000 ng/mL
							1,2,3,7,8-PeCDF	2000 ng/mL
							2,3,4,6,7,8-HxCDF	2000 ng/mL
							2,3,4,7,8-PeCDF	2000 ng/mL
							2,3,7,8-TCDD	400 ng/mL
							2,3,7,8-TCDF	400 ng/mL
							OCDD	4000 ng/mL
							OCDF	4000 ng/mL
HRDXNL4_00102	08/02/22	09/10/21	C14, Lot STBJ3715	1 mL	HRDXNIDA_00435	250 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00465	500 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIDA_00486	500 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
					HRDXNIS_00137	1000 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00258	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00132	25 uL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIDA_00486	10/27/24	09/09/21	Isooctane, Lot B00S6184	25 mL	HRDXNIDA_00483	2.5 mL	13C-OCDD	0.4 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
..HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
...HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
...HRDXNIDA_00475	10/31/30		CIL, Lot ER10152004		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00476	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00477	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00478	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
.HRDXNIS_00137	08/02/22	08/02/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00258	08/01/24	09/09/21	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00233	0.8 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00132	08/31/30		CIL, Lot ER09031903		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2000 ng/mL
							1,2,3,4,6,7,8-HpCDF	2000 ng/mL
							1,2,3,4,7,8,9-HpCDF	2000 ng/mL
							1,2,3,4,7,8-HxCDD	2000 ng/mL
							1,2,3,4,7,8-HxCDF	2000 ng/mL
							1,2,3,6,7,8-HxCDD	2000 ng/mL
							1,2,3,6,7,8-HxCDF	2000 ng/mL
							1,2,3,7,8,9-HxCDD	2000 ng/mL
							1,2,3,7,8,9-HxCDF	2000 ng/mL
							1,2,3,7,8-PeCDD	2000 ng/mL
							1,2,3,7,8-PeCDF	2000 ng/mL
							2,3,4,6,7,8-HxCDF	2000 ng/mL
							2,3,4,7,8-PeCDF	2000 ng/mL
							2,3,7,8-TCDD	400 ng/mL
							2,3,7,8-TCDF	400 ng/mL
							OCDD	4000 ng/mL
							OCDF	4000 ng/mL
HRDXNL5_00033	08/02/22	09/10/21	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00465	100 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00486	100 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
					HRDXNIS_00137	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00258	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00132	20 uL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
.HRDXNIDA_00486	10/27/24	09/09/21	Isooctane, Lot B00S6184	25 mL	HRDXNIDA_00483	2.5 mL	13C-OCDD	0.4 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
..HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
...HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
...HRDXNIDA_00475	10/31/30		CIL, Lot ER10152004		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00476	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00477	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00478	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
.HRDXNIS_00137	08/02/22	08/02/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00258	08/01/24	09/09/21	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00233	0.8 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00132	08/31/30		CIL, Lot ER09031903		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2000 ng/mL
							1,2,3,4,6,7,8-HpCDF	2000 ng/mL
							1,2,3,4,7,8,9-HpCDF	2000 ng/mL
							1,2,3,4,7,8-HxCDD	2000 ng/mL
							1,2,3,4,7,8-HxCDF	2000 ng/mL
							1,2,3,6,7,8-HxCDD	2000 ng/mL
							1,2,3,6,7,8-HxCDF	2000 ng/mL
							1,2,3,7,8,9-HxCDD	2000 ng/mL
							1,2,3,7,8,9-HxCDF	2000 ng/mL
							1,2,3,7,8-PeCDD	2000 ng/mL
							1,2,3,7,8-PeCDF	2000 ng/mL
							2,3,4,6,7,8-HxCDF	2000 ng/mL
							2,3,4,7,8-PeCDF	2000 ng/mL
							2,3,7,8-TCDD	400 ng/mL
							2,3,7,8-TCDF	400 ng/mL
							OCDD	4000 ng/mL
							OCDF	4000 ng/mL
HRDXNL6_00030	08/02/22	09/10/21	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00435	50 uL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
					HRDXNIDA_00465	100 uL	13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
					HRDXNIDA_00486	100 uL	13C-OCDD	200 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
					HRDXNIS_00137	200 uL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00258	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00132	100 uL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00435	05/31/26	08/25/20	Isooctane, Lot B00S6184	100 mL	HRDXNIDA_00417	800 uL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00418	800 uL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00419	800 uL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
					HRDXNIDA_00420	800 uL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
..HRDXNIDA_00417	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00418	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00419	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00420	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
.HRDXNIDA_00465	08/31/24	01/19/21	Isooctane, Lot B00S6184	250 mL	HRDXNIDA_00457	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00458	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00459	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00460	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00461	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00462	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
..HRDXNIDA_00457	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00458	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00459	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00460	01/31/29		CIL, Lot ER102111904		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00461	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00462	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.HRDXNIDA_00486	10/27/24	09/09/21	Isooctane, Lot B00S6184	25 mL	HRDXNIDA_00483	2.5 mL	13C-OCDD	0.4 ug/mL
							13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
							13C-2,3,7,8-TCDF	0.2 ug/mL
							13C-2,3,7,8-TCDD	0.2 ug/mL
							13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
..HRDXNIDA_00483	11/30/24	08/21/21	Acetone, Lot 0000274597	25 mL	HRDXNIDA_00398	10 mL	13C-OCDD	4 ug/mL
					HRDXNIDA_00475	1 mL	13C-1,2,3,6,7,8-HxCDD	2 ug/mL
					HRDXNIDA_00476	1 mL	13C-2,3,7,8-TCDF	2 ug/mL
					HRDXNIDA_00477	1 mL	13C-2,3,7,8-TCDD	2 ug/mL
					HRDXNIDA_00478	1 mL	13C-1,2,3,4,6,7,8-HpCDF	2 ug/mL
...HRDXNIDA_00398	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
...HRDXNIDA_00475	10/31/30	CIL, Lot ER10152004			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
...HRDXNIDA_00476	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
...HRDXNIDA_00477	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
...HRDXNIDA_00478	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
.HRDXNIS_00137	08/02/22	08/02/21	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00126	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00126	09/30/26	CIL, Lot ER08221601			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00258	08/01/24	09/09/21	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00233	0.8 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00132	08/31/30	CIL, Lot ER09031903			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2000 ng/mL
							1,2,3,4,6,7,8-HpCDF	2000 ng/mL
							1,2,3,4,7,8,9-HpCDF	2000 ng/mL
							1,2,3,4,7,8-HxCDD	2000 ng/mL
							1,2,3,4,7,8-HxCDF	2000 ng/mL
							1,2,3,6,7,8-HxCDD	2000 ng/mL
							1,2,3,6,7,8-HxCDF	2000 ng/mL
							1,2,3,7,8,9-HxCDD	2000 ng/mL
							1,2,3,7,8,9-HxCDF	2000 ng/mL
							1,2,3,7,8-PeCDD	2000 ng/mL
							1,2,3,7,8-PeCDF	2000 ng/mL
							2,3,4,6,7,8-HxCDF	2000 ng/mL
							2,3,4,7,8-PeCDF	2000 ng/mL
							2,3,7,8-TCDD	400 ng/mL
							2,3,7,8-TCDF	400 ng/mL
							OCDD	4000 ng/mL
							OCDF	4000 ng/mL

HRDXNSU_00257	09/08/22	09/08/21	Isooctane, Lot R24F725	500 mL	HRDXNSU_00233	0.08 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
..HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNTA_00138	09/02/22	09/02/21	Acetone, Lot 00000274597	25 mL	HRDXNTA_00132	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00132	08/31/30	CIL, Lot ER09031903			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2000 ng/mL
							1,2,3,4,6,7,8-HpCDF	2000 ng/mL
							1,2,3,4,7,8,9-HpCDF	2000 ng/mL
							1,2,3,4,7,8-HxCDD	2000 ng/mL
							1,2,3,4,7,8-HxCDF	2000 ng/mL
							1,2,3,6,7,8-HxCDD	2000 ng/mL
							1,2,3,6,7,8-HxCDF	2000 ng/mL
							1,2,3,7,8,9-HxCDD	2000 ng/mL
							1,2,3,7,8,9-HxCDF	2000 ng/mL
							1,2,3,7,8-PeCDD	2000 ng/mL
							1,2,3,7,8-PeCDF	2000 ng/mL
							2,3,4,6,7,8-HxCDF	2000 ng/mL
							2,3,4,7,8-PeCDF	2000 ng/mL
							2,3,7,8-TCDD	400 ng/mL
							2,3,7,8-TCDF	400 ng/mL
							OCDD	4000 ng/mL
							OCDF	4000 ng/mL

Reagent

HRDXNCP_00043

n 5/6/2021
SKN

Cerilliant
Analytical Reference Standards
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Revision 0
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Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method: GC/MS
Column: DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 140°C to 200°C at 40°C/min
200°C to 300°C at 4°C/min
Injector Temp: Cool-on-Column
Detector Temp: 280°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

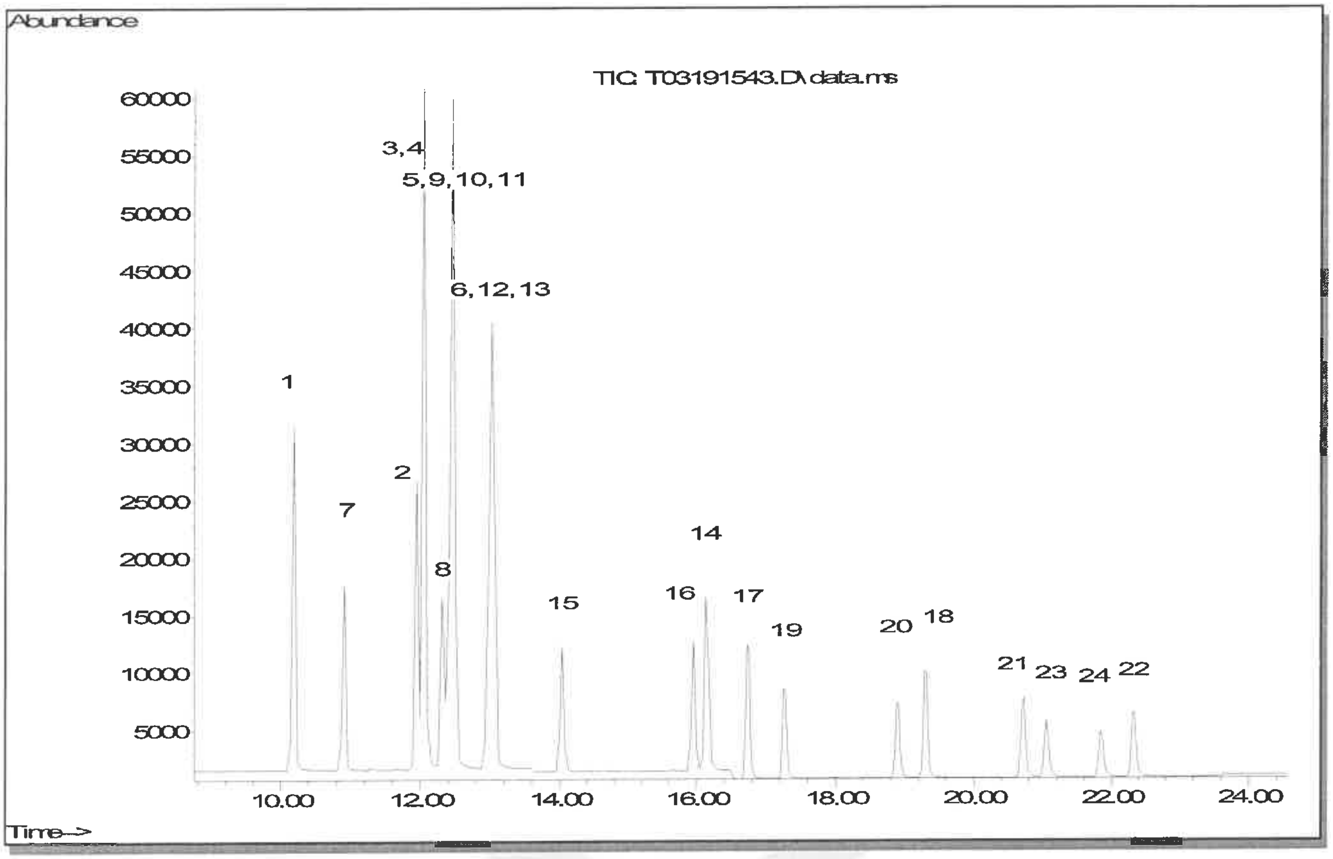

1 1,3,6,8-Tetrachlorodibenzofuran
2 2,3,4,7-Tetrachlorodibenzofuran
3 2,3,7,8-Tetrachlorodibenzofuran
4 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
5 1,2,3,9-Tetrachlorodibenzofuran
6 1,2,8,9-Tetrachlorodibenzofuran
7 1,3,6,8-Tetrachlorodibenzo-p-dioxin
8 1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin
9 1,2,3,9-Tetrachlorodibenzo-p-dioxin
10 2,3,7,8-Tetrachlorodibenzo-p-dioxin
11 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
12 1,2,8,9-Tetrachlorodibenzo-p-dioxin
13 1,3,4,6,8-Pentachlorodibenzofuran
14 1,2,3,8,9-Pentachlorodibenzofuran
15 1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
16 1,2,3,8,9-Pentachlorodibenzo-p-dioxin
17 1,2,3,4,6,8-Hexachlorodibenzofuran
18 1,2,3,4,8,9-Hexachlorodibenzofuran
19 1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
20 1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
21 1,2,3,4,6,7,8-Heptachlorodibenzofuran
22 1,2,3,4,7,8,9-Heptachlorodibenzofuran
23 1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
24 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	Date	Reason for Revision
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00398

9280 I#24
Received 11-16-19
GWS

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Revision 00
Page 1 of 4

Certificate of Analysis

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

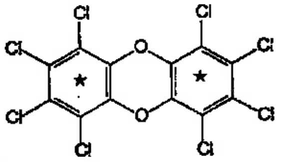

Catalog Number: ED-981-1.2
Solution Lot: ER04051701
Expiration Date: April 2027
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

[illegible]

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	70°C to 200°C at 40°C/min 200°C to 280°C at 10°C/min hold 15 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	3
Linearity (r):	0.997

Neat Material Data

Compound Name:	Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER04041601

Chemical Formula:	$^{13}C_{12}Cl_8O_2$
CAS Number:	114423-97-1
Molecular Weight:	471.66

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

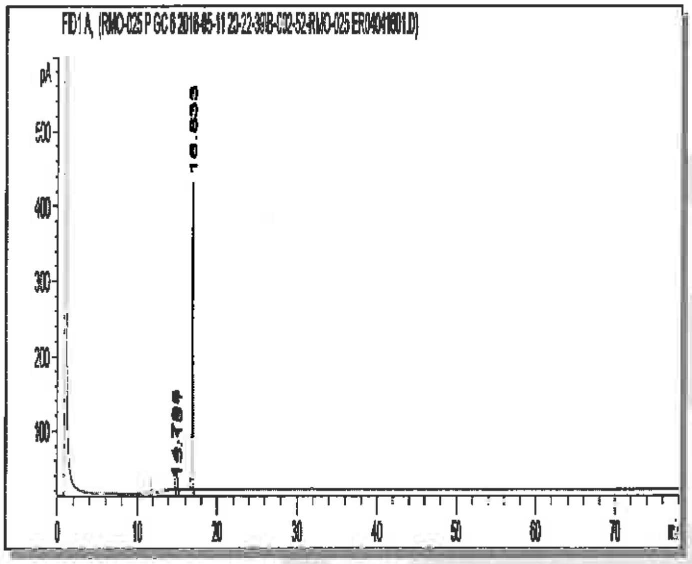

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14 80	12 12	3.62	0.61
2	15 15	4 72	1.32	0.24
3	16 83	1980 56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

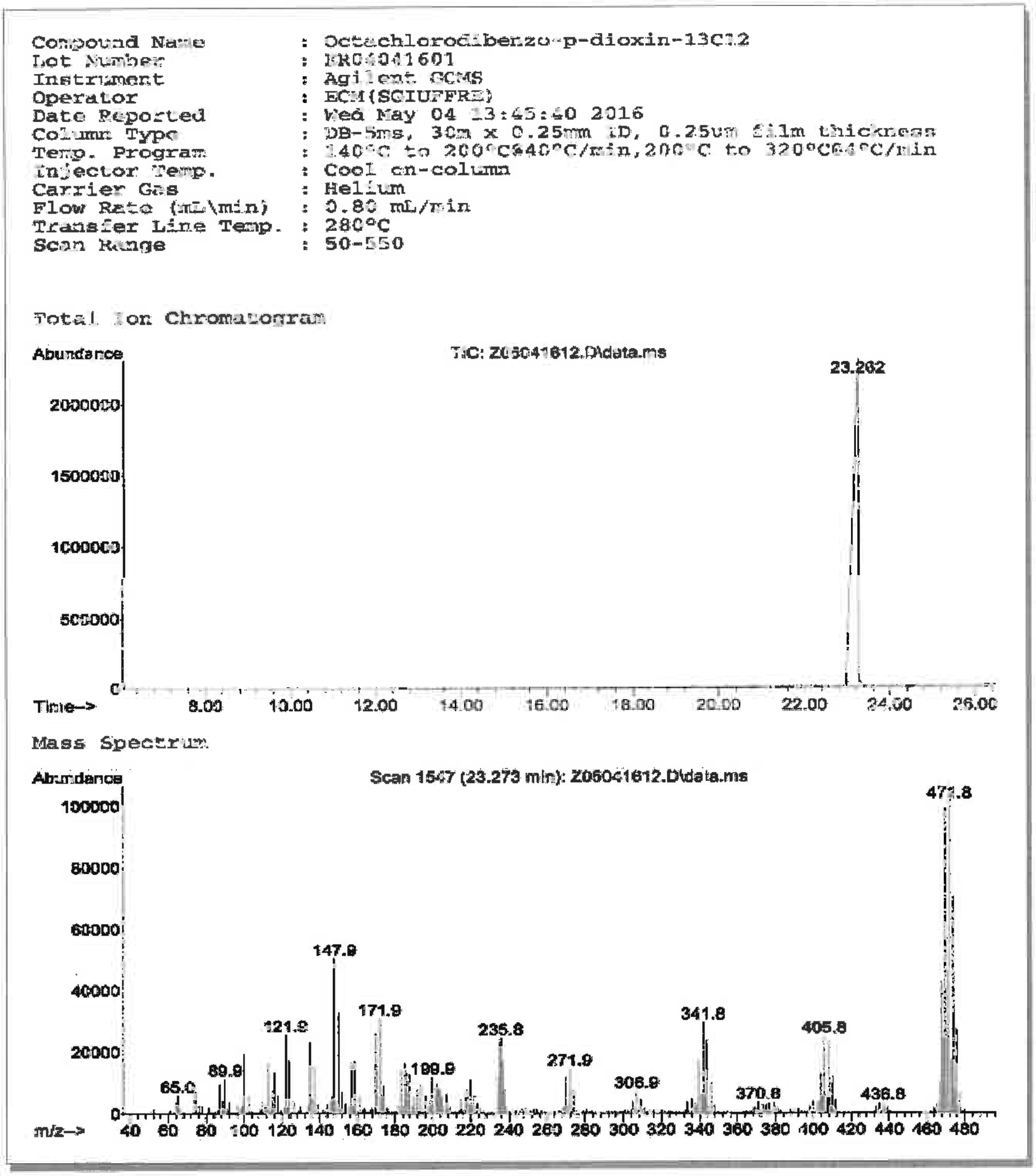

```
Compound Name          : Octachlorodibenzo-p-dioxin-13C12
Lot Number             : ER04041601
Instrument             : Agilent GCMS
Operator               : ECM(SCIUFFRE)
Date Reported          : Wed May 04 13:45:40 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00417

r. 3130120

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Certificate of Analysis

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

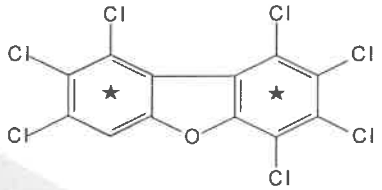

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER04041602

Chemical Formula: $^{13}C_{12}HCl_7O$
CAS Number: 109719-94-0
Molecular Weight: 421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

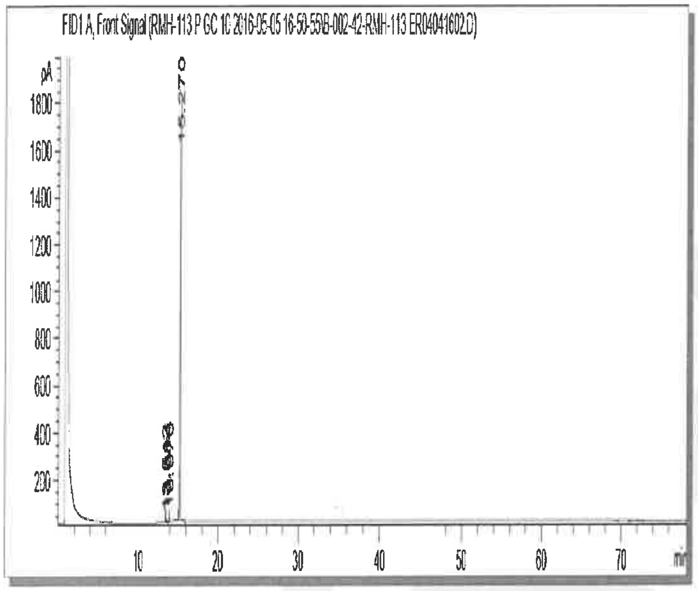

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

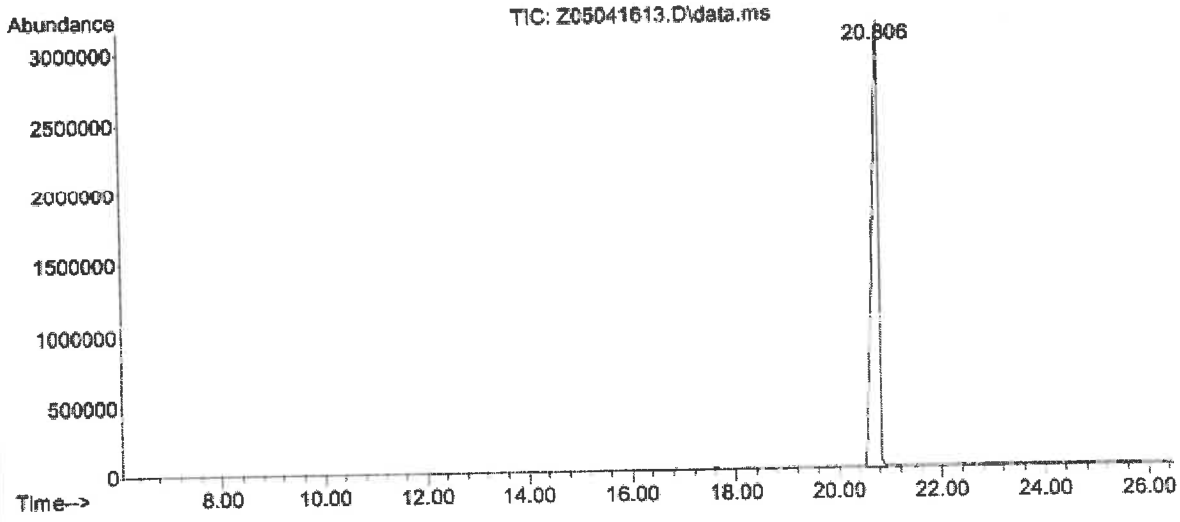

Mass Spectrum

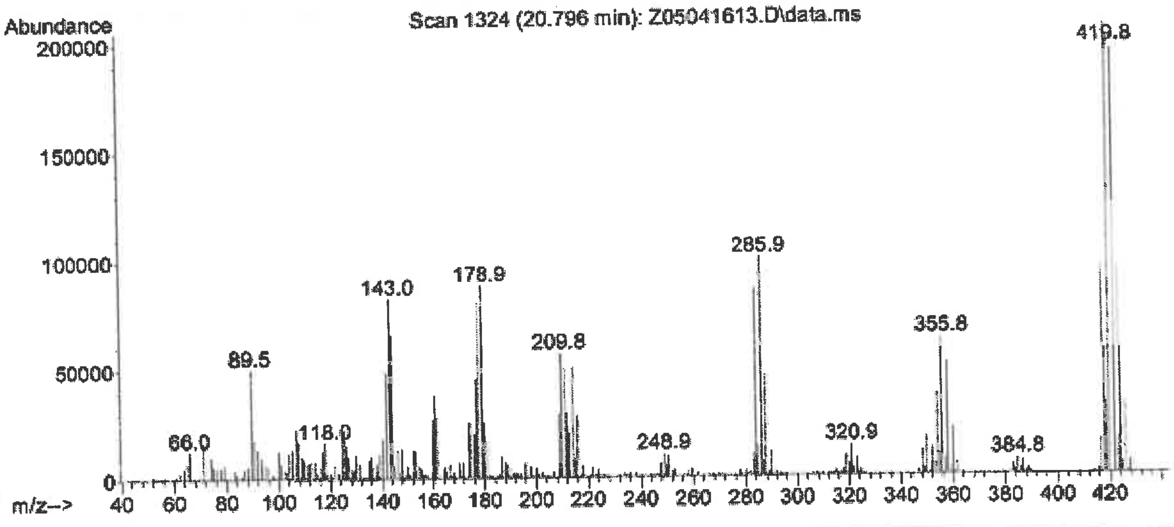

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00418

r: 3/30/20 SAD

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

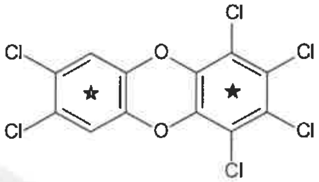

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

August 11, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER011008-01

Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-80-4
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

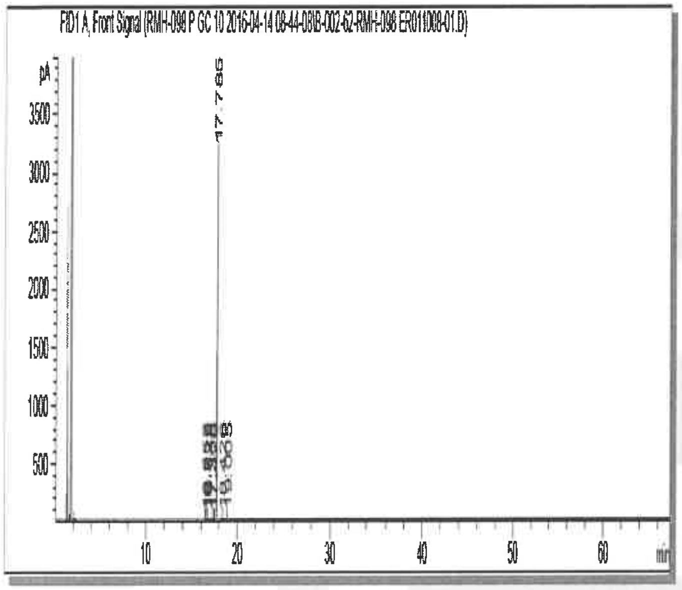

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

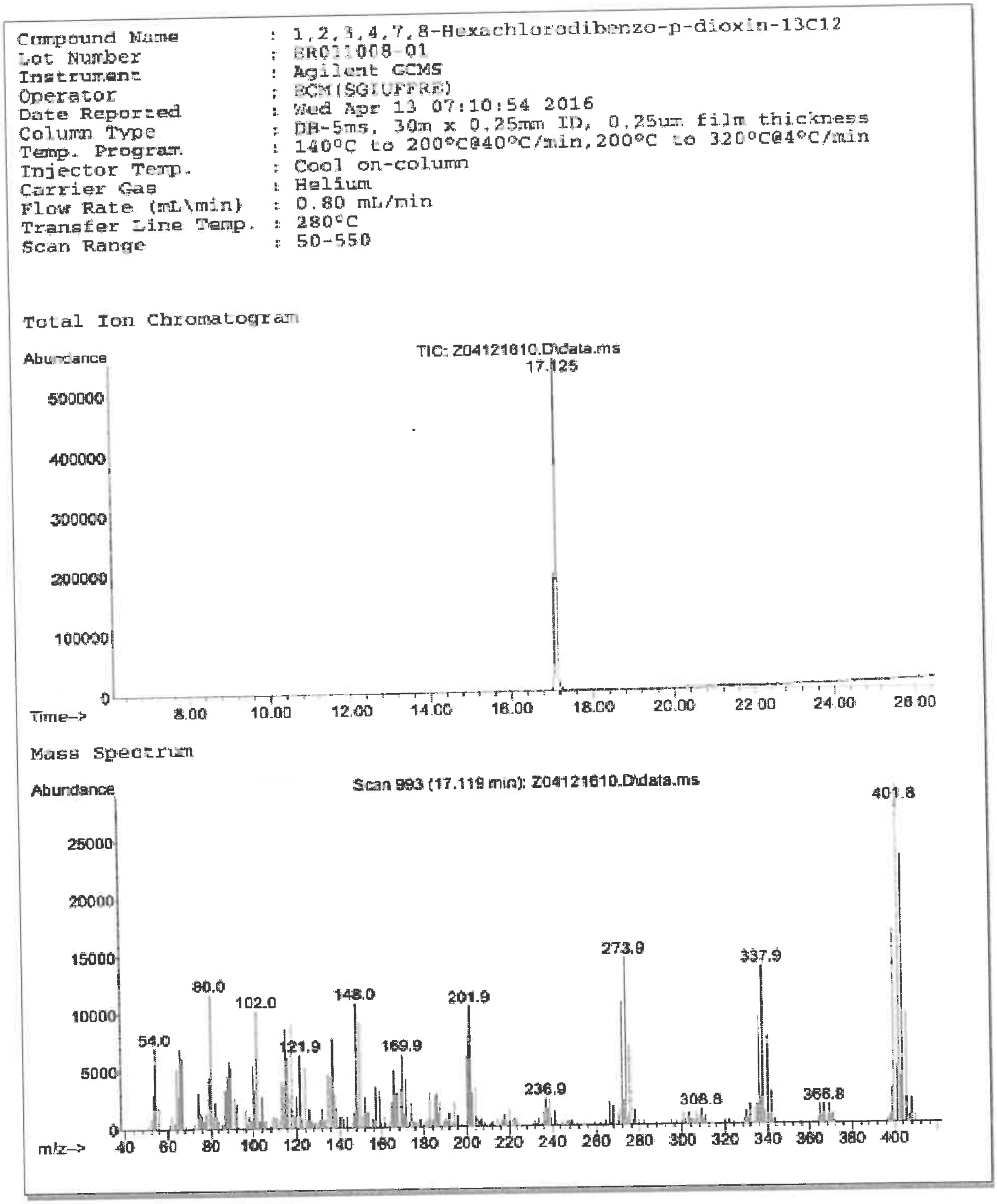

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Compound Name              : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number                 : ER011008-01
Instrument                 : Agilent GCMS
Operator                   : RCM(SGIUFFRE)
Date Reported              : Wed Apr 13 07:10:54 2016
Column Type                : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program              : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.             : Cool on-column
Carrier Gas                : Helium
Flow Rate (mL\min)         : 0.80 mL/min
Transfer Line Temp.        : 280°C
Scan Range                 : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00419

r: 3/30/20 SK✓

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

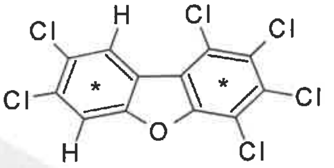

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11281601
Chemical Formula:	$^{13}C_{12}Cl_6H_2O$
CAS Number:	114423-98-2
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

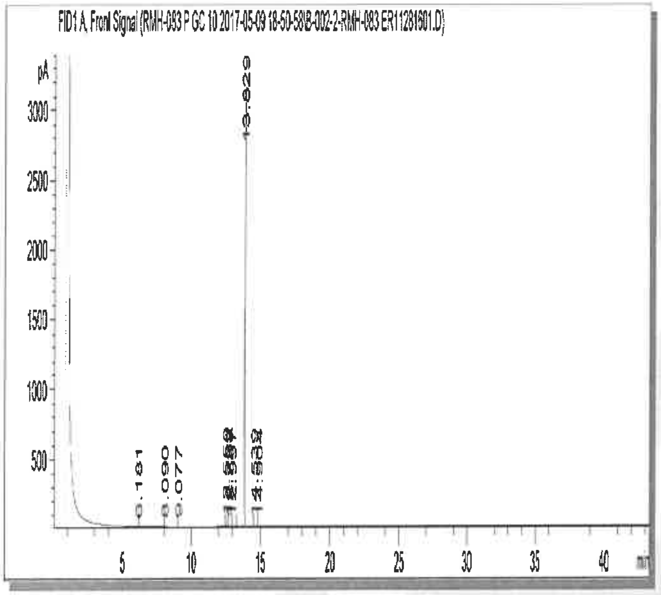

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

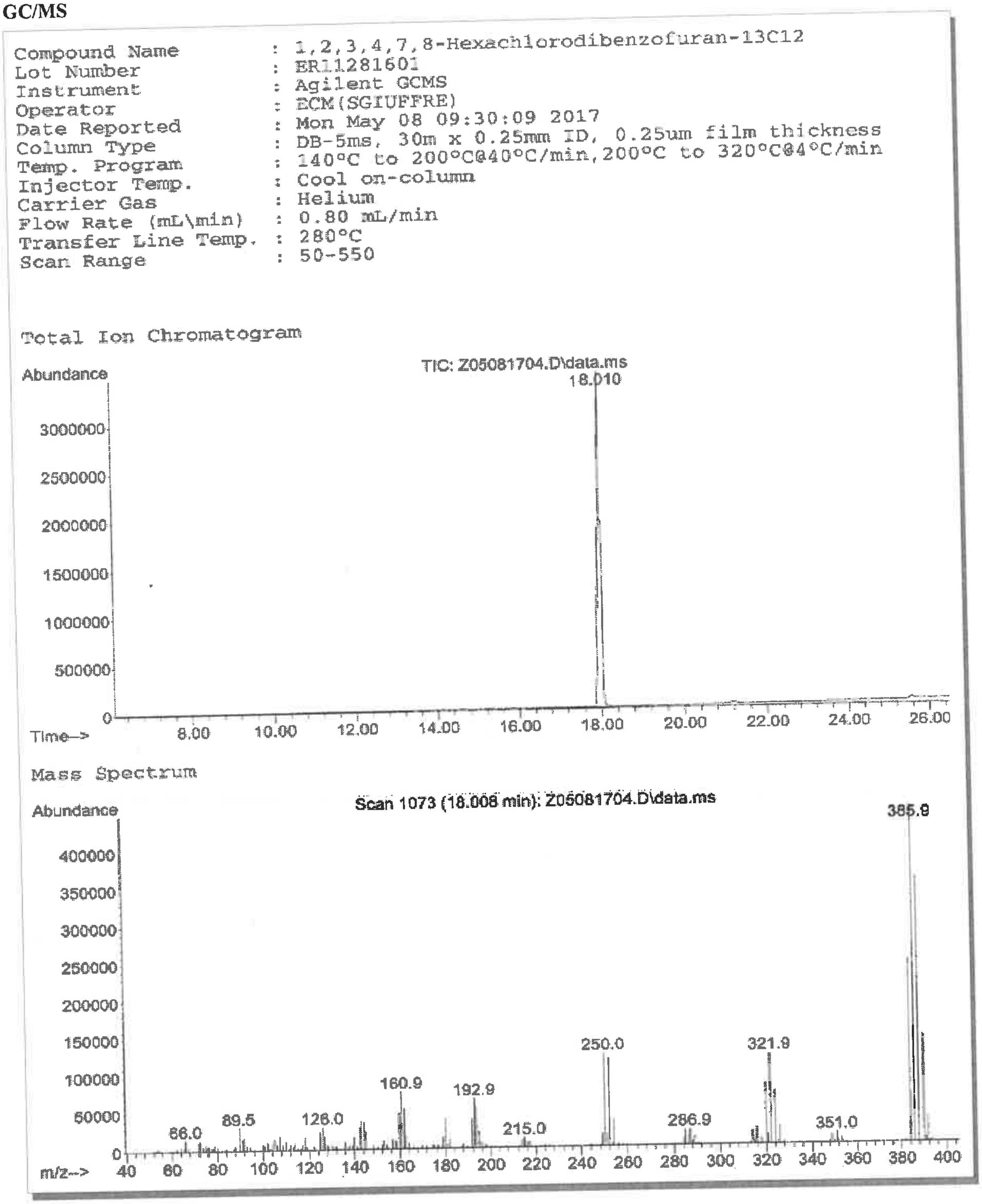

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : ER11281601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon May 08 09:30:09 2017
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00420

r: 3/20/20 SKV

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

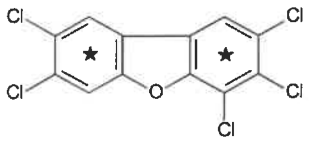

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER11101601

Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	116843-02-8
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

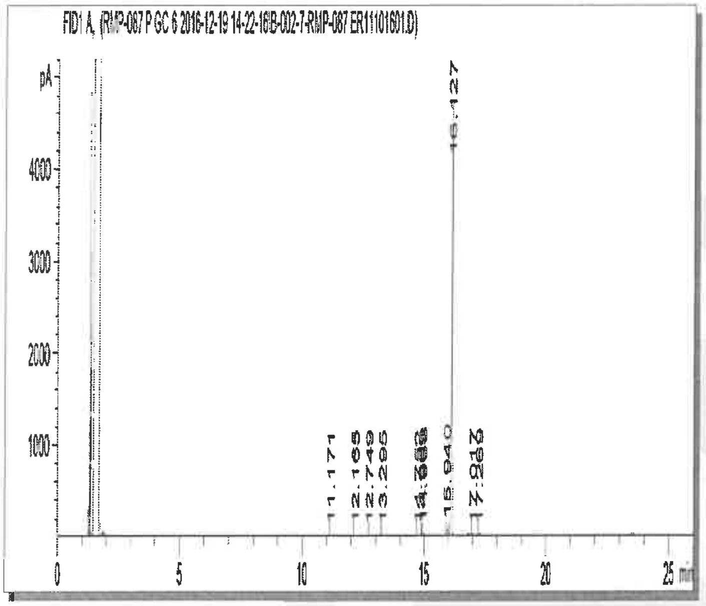

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument:	GC#6
Sample Name:	ER11101601
Acquired:	December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11.17	0.94	0.40	0.01
2	12.17	1.30	0.39	0.01
3	12.75	0.47	0.20	0.00
4	13.30	0.90	0.35	0.01
5	14.75	1.70	0.87	0.02
6	14.91	1.09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124.38	64.36	1.13
9	16.13	10866.60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6.76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

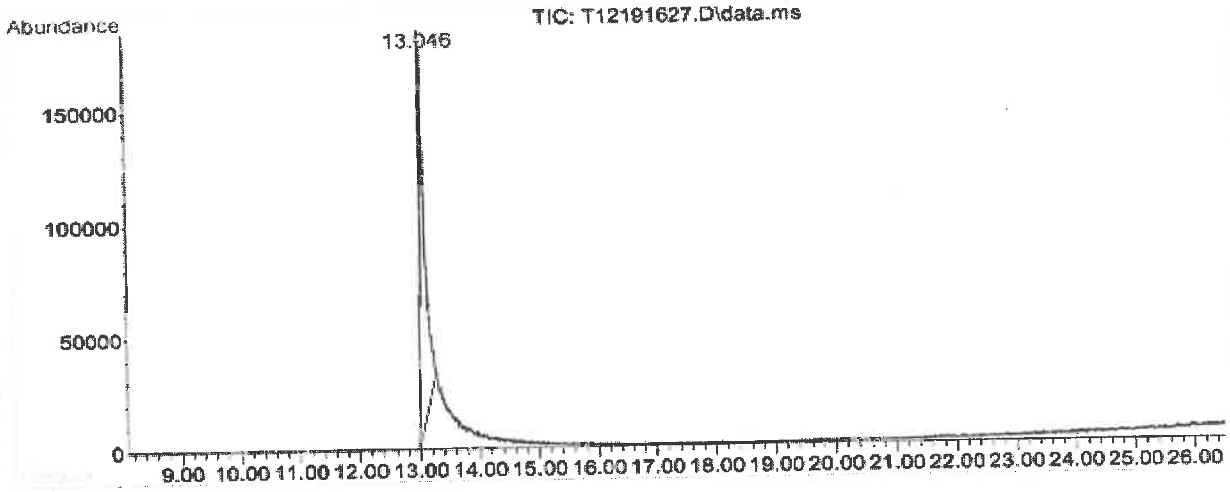

Mass Spectrum

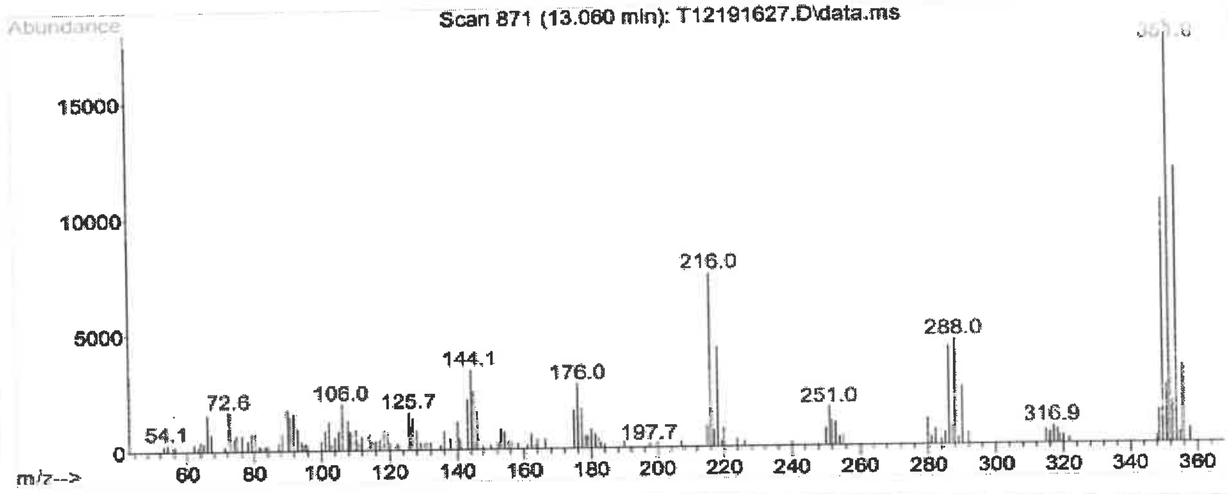

Reagent

HRDXNIDA_00457

r: 1/18/21 StW

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

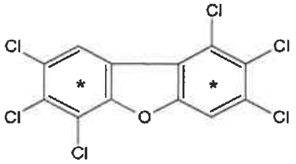

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

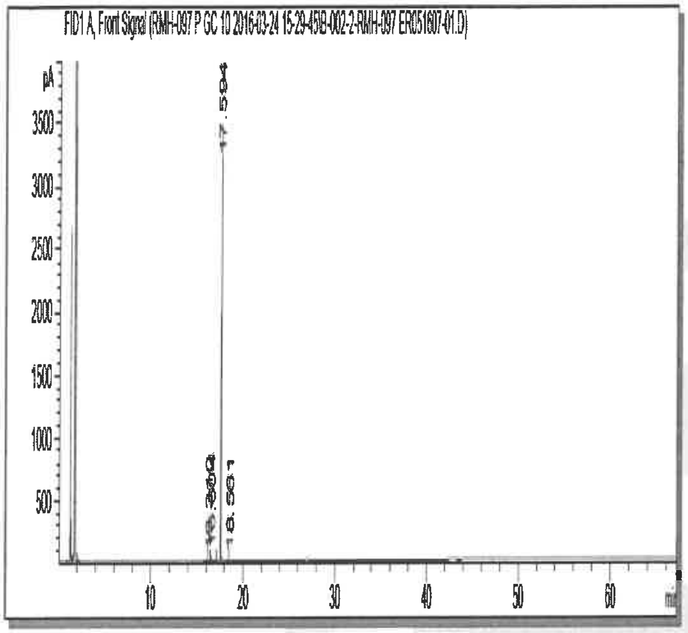

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

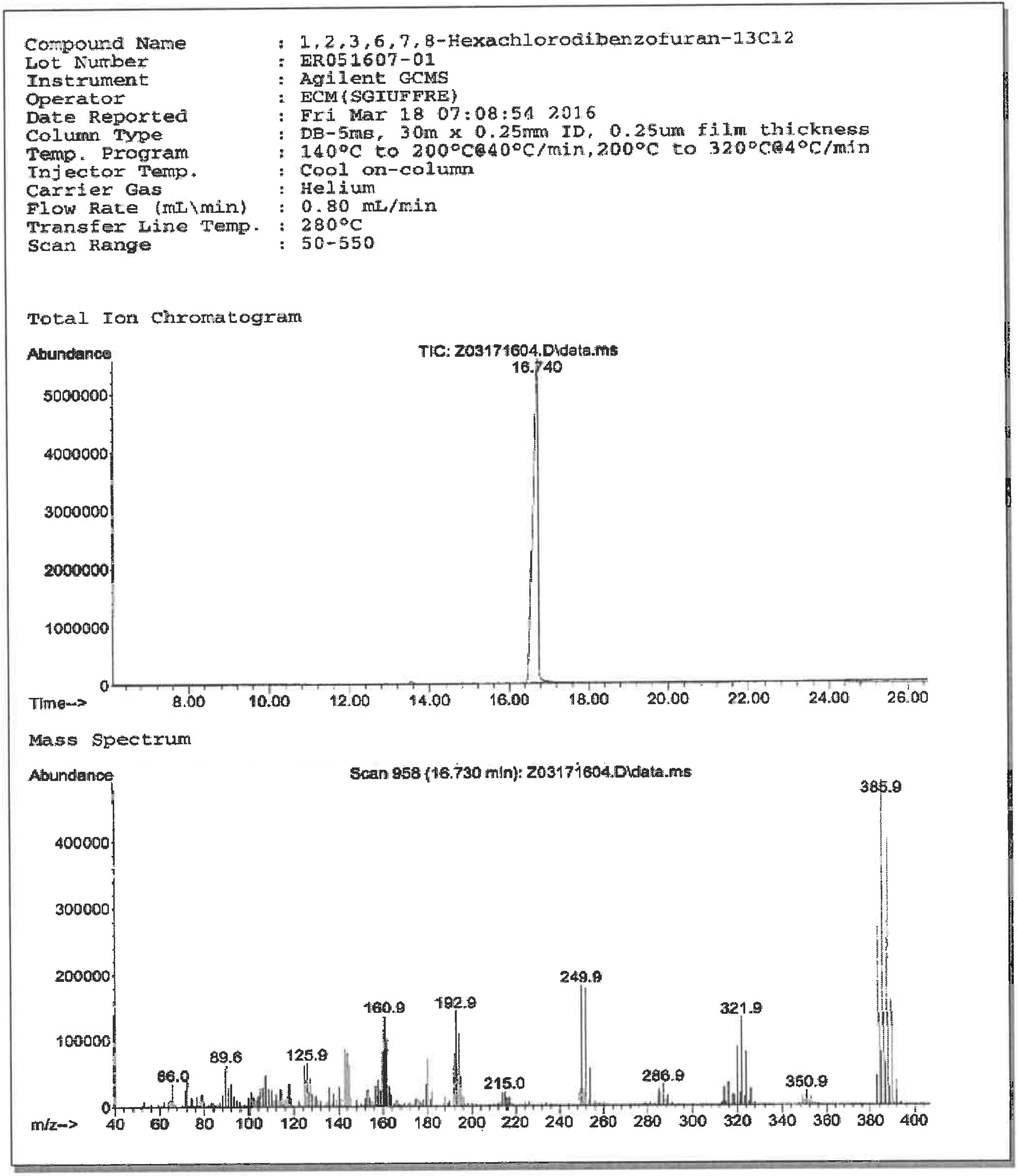

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER051607-01
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Mar 18 07:08:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIDA_00458

r: 1/18/21 StW

Cerilliant
Analytical Reference Standards
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CIL

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

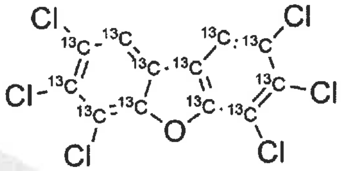

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of $k = 2$ and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER09051801

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-05-1
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

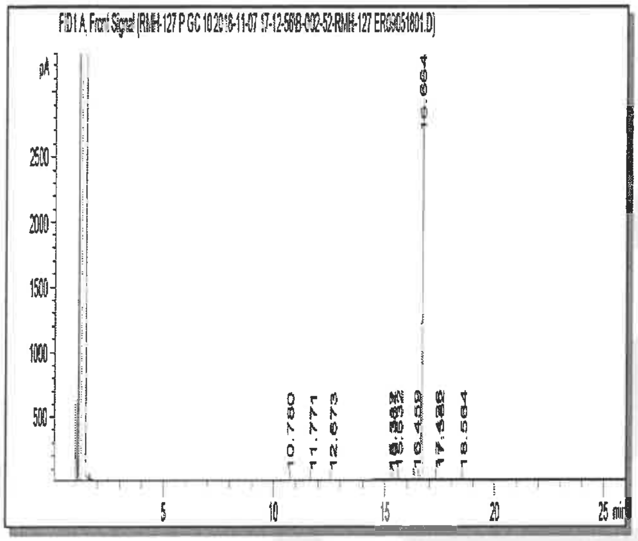

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER09051801
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

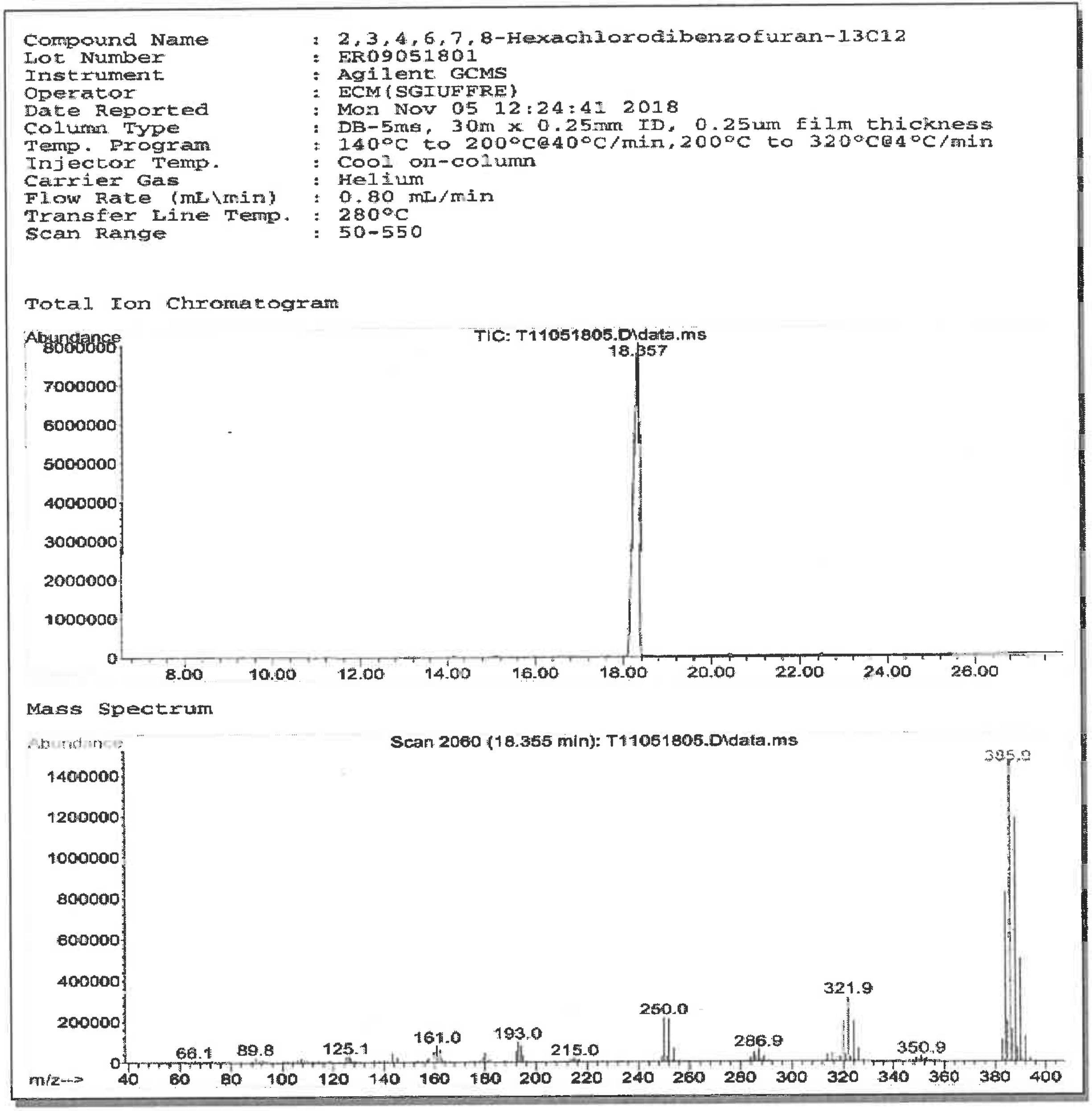

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Compound Name          : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER09051801
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Mon Nov 05 12:24:41 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00459

r: 1/18/21 SKJ

Cerilliant®
Analytical Reference Standards
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CIL

Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

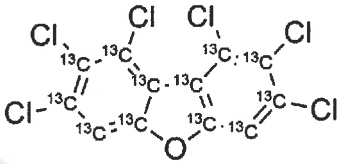

Catalog Number: EF-986
Solution Lot: ER01062016
Expiration Date: January 2030
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER080108-03

Chemical Formula:	$^{13}C_{12}H_2OCl_6$
CAS Number:	116843-04-0
Molecular Weight:	386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

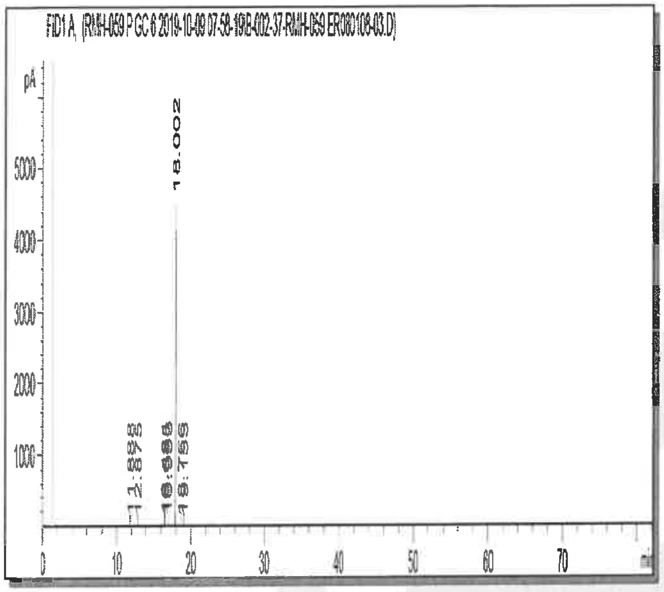

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER080108-03
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

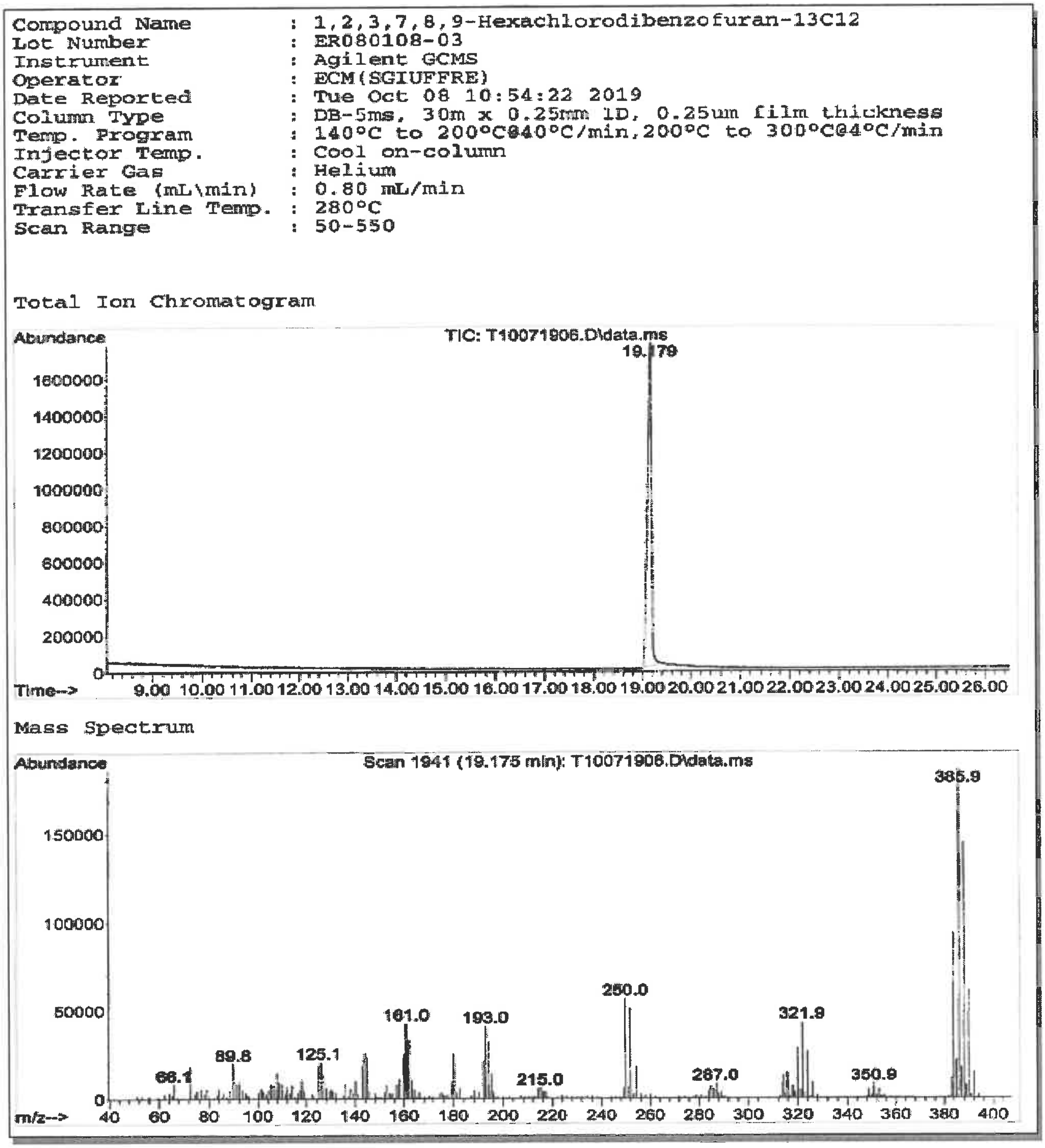

```
Compound Name          : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number             : ER080108-03
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Tue Oct 08 10:54:22 2019
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00460

r: 1/18/21 SKN

Cerilliant
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Revision 0
Page 1 of 5

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

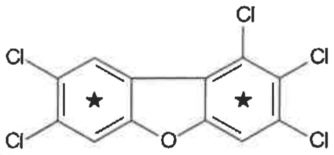

Catalog Number:	EF-952
Solution Lot:	ER10211904
Expiration Date:	December 2029
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of $k = 2$ and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER10211904	49.25	± 5%	0.2	≤ 3%
Previous Lot	ER012111-01	48.12	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 07, 2020
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER090110-01
Chemical Formula:	$^{13}C_{12}H_3Cl_5O$
CAS Number:	109719-77-9
Molecular Weight:	352.32

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	98.6%
Identity by GC/MS Analysis	AM1029	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	AM1029	0.00% $^{13}C_0$ vs $^{13}C_6$ 0.01% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	AM1029	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		98.59%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

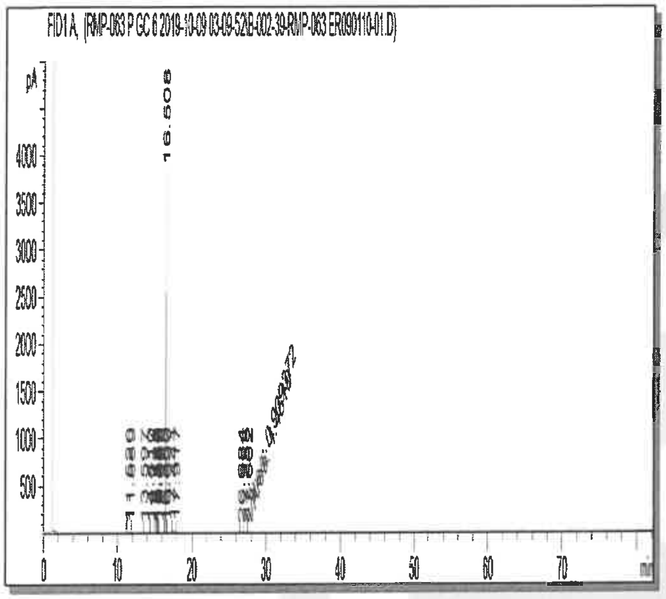

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	40°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER090110-01
Acquired:	October 09, 2019

Peak #	Ret Time	Area %
1	11.52	0.24
2	11.89	0.02
3	13.60	0.26
4	14.41	0.01
5	14.52	0.01
6	15.12	0.01
7	15.34	0.01
8	15.39	0.03
9	15.46	0.13
10	15.56	0.15
11	15.69	0.01
12	16.38	0.00
13	16.51	98.61
14	16.63	0.02
15	16.69	0.01
16	17.44	0.21
17	17.92	0.21
18	26.68	0.04
19	27.26	0.01
20	27.66	0.02

Spectral and Physical Data (cont.)

GC/MS

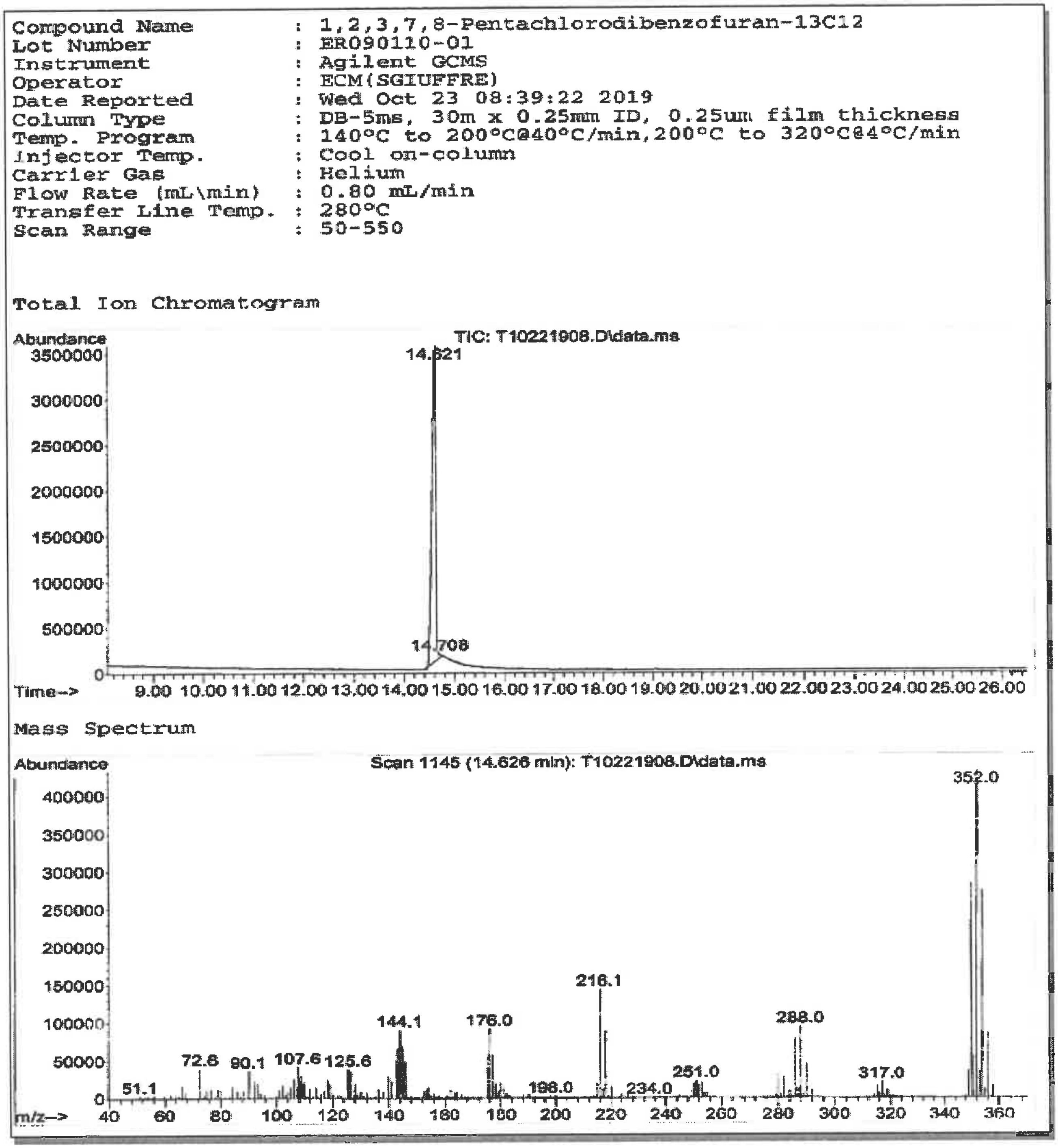

Compound Name : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER090110-01
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed Oct 23 08:39:22 2019
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 07, 2020	Initial version

Reagent

HRDXNIDA_00461

r: 1/18/21 SKW

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Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

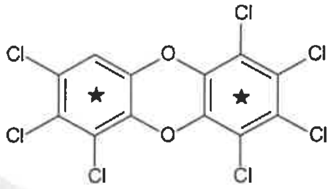

Catalog Number:	ED-972
Solution Lot:	ER09271601
Expiration Date:	October 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	0.999

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER100110-01
Chemical Formula:	$^{13}C_{12}HCl_7O_2$
CAS Number:	109719-83-7
Molecular Weight:	437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

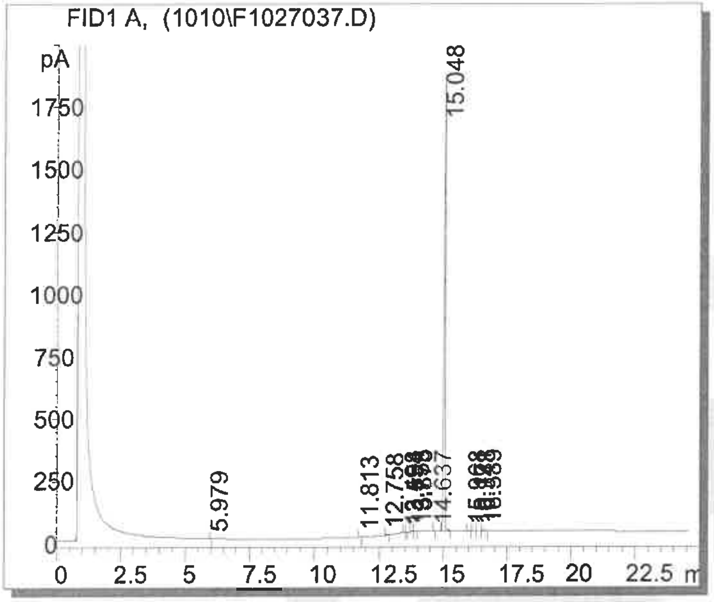

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name        : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number           : ER100110-01
Instrument           : Agilent 5973N MSD/6890N GC
Operator-Inst ID     : RPC - C10106
Date Reported        : Wed Oct 27 15:05:05 2010
Column Type          : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program        : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.       : Cool on-column
Carrier Gas          : Helium
Flow Rate (mL\min)   : 0.80 mL/min
Transfer Line Temp.  : 280°C

Scan Range           : 50-550
```

Total Ion Chromatogram

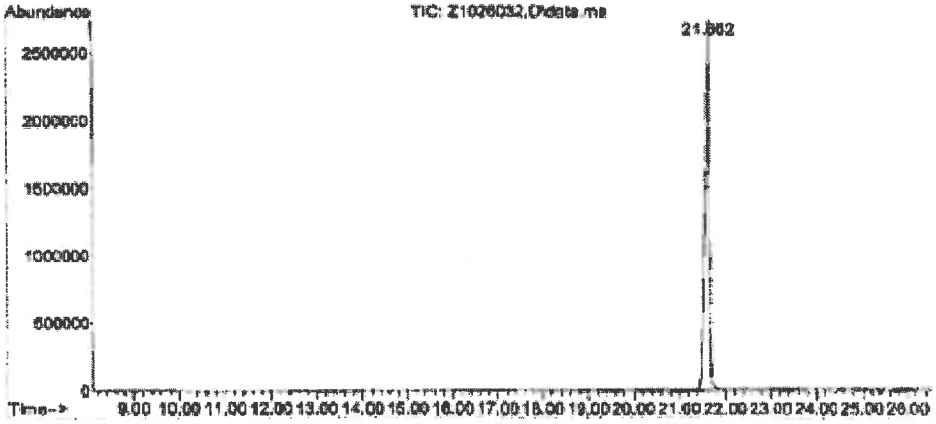

Mass Spectrum

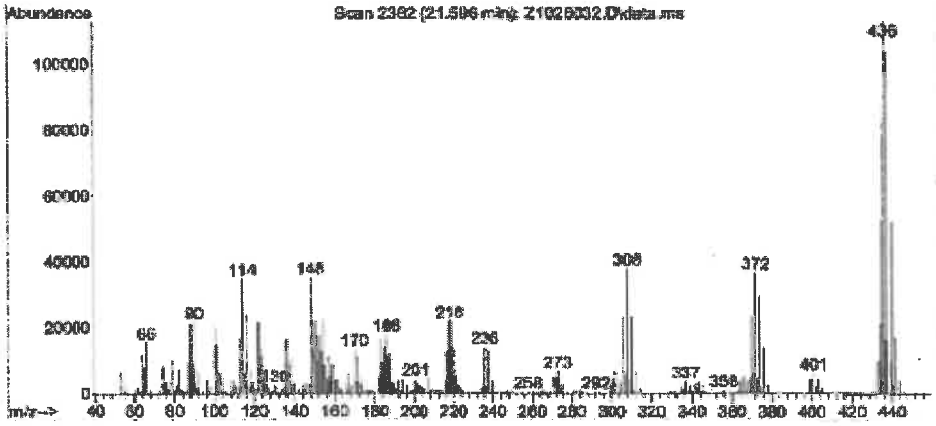

Reagent

HRDXNIDA_00462

r: 1/18/21 skv

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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

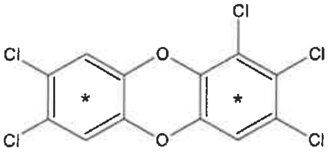

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER06241403

Chemical Formula: $^{13}C_{12}H_3Cl_5O_2$
CAS Number: 109719-79-1
Molecular Weight: 368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

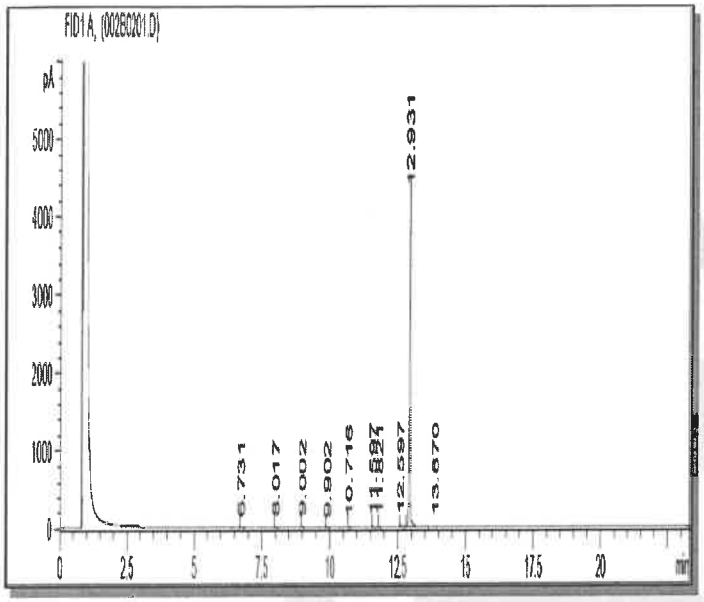

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

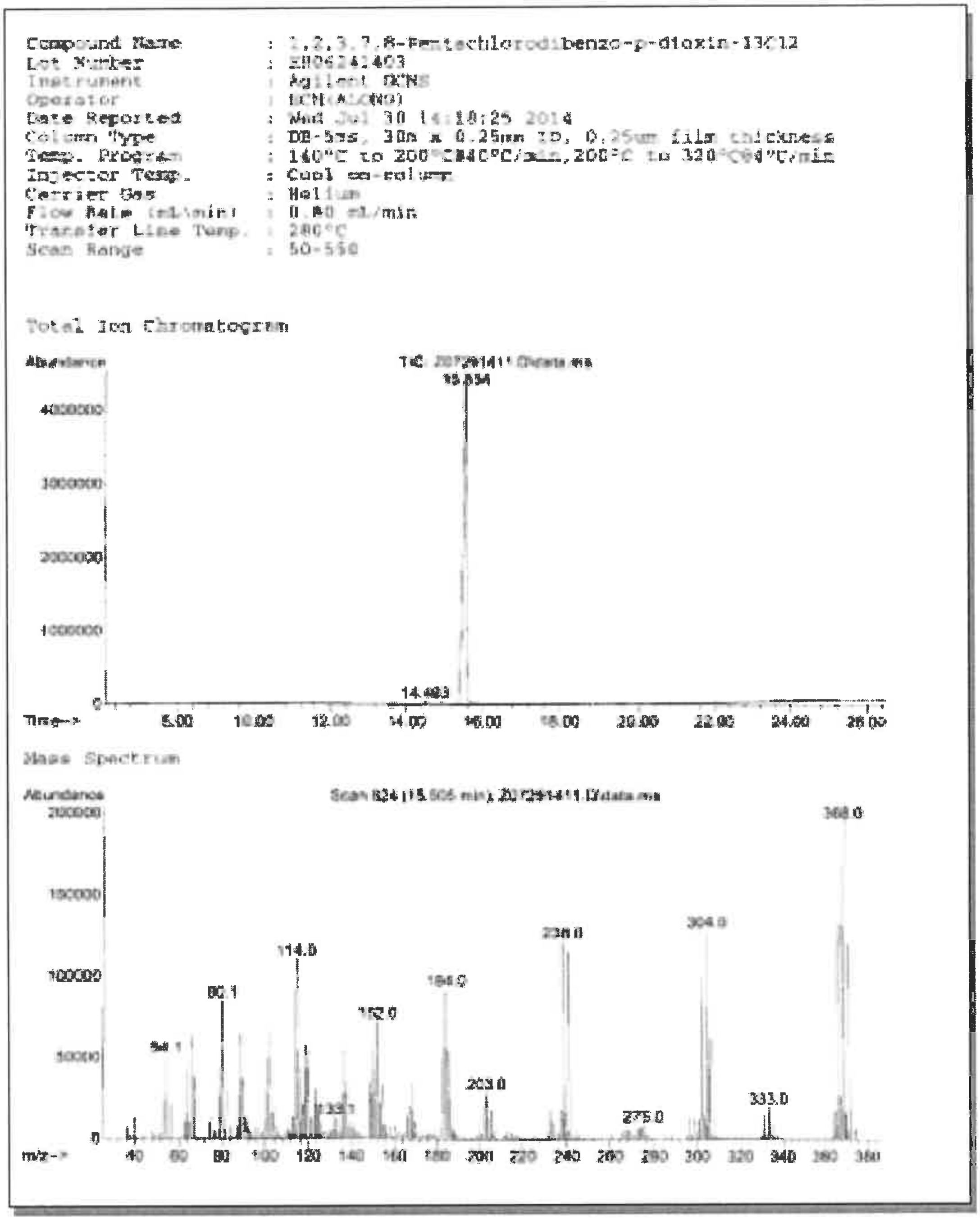

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number             : ER06241403
Instrument             : Agilent GCMS
Operator               : DCM(ALONSO)
Date Reported          : Wed Jul 30 14:18:25 2014
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00475

r: 6/28/21

2566265
ID: HRDXNIDA_00475
Exp: 10/31/30 Prpd: SKV
13C-1,2,3,6,7,8-HxCDD [50

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Revision 0
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 14001
ISO 9001

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

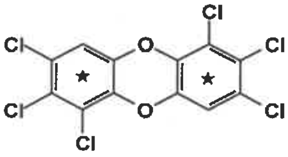

Catalog Number:	ED-966
Solution Lot:	ER10152004
Expiration Date:	October 2030
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.1%	50.1 ± 0.3 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER10152004	51.9	± 5%	0.2	≤ 3%
Previous Lot	ER03151801	50.2	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening. This material is a product of the USA.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 09, 2021
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

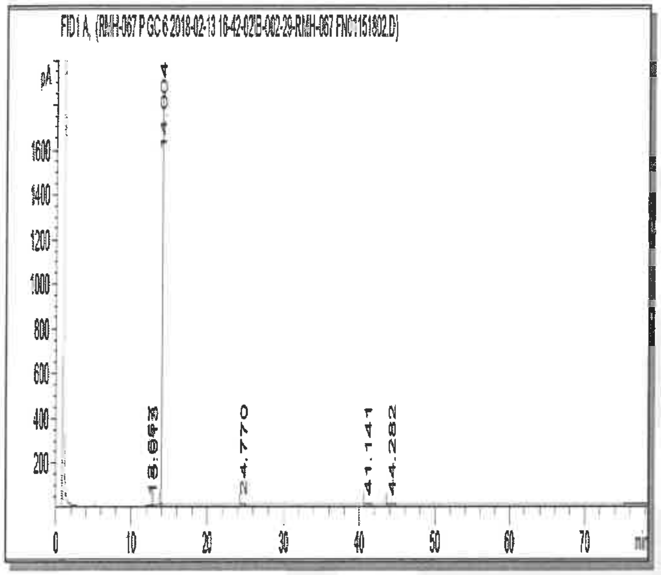

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

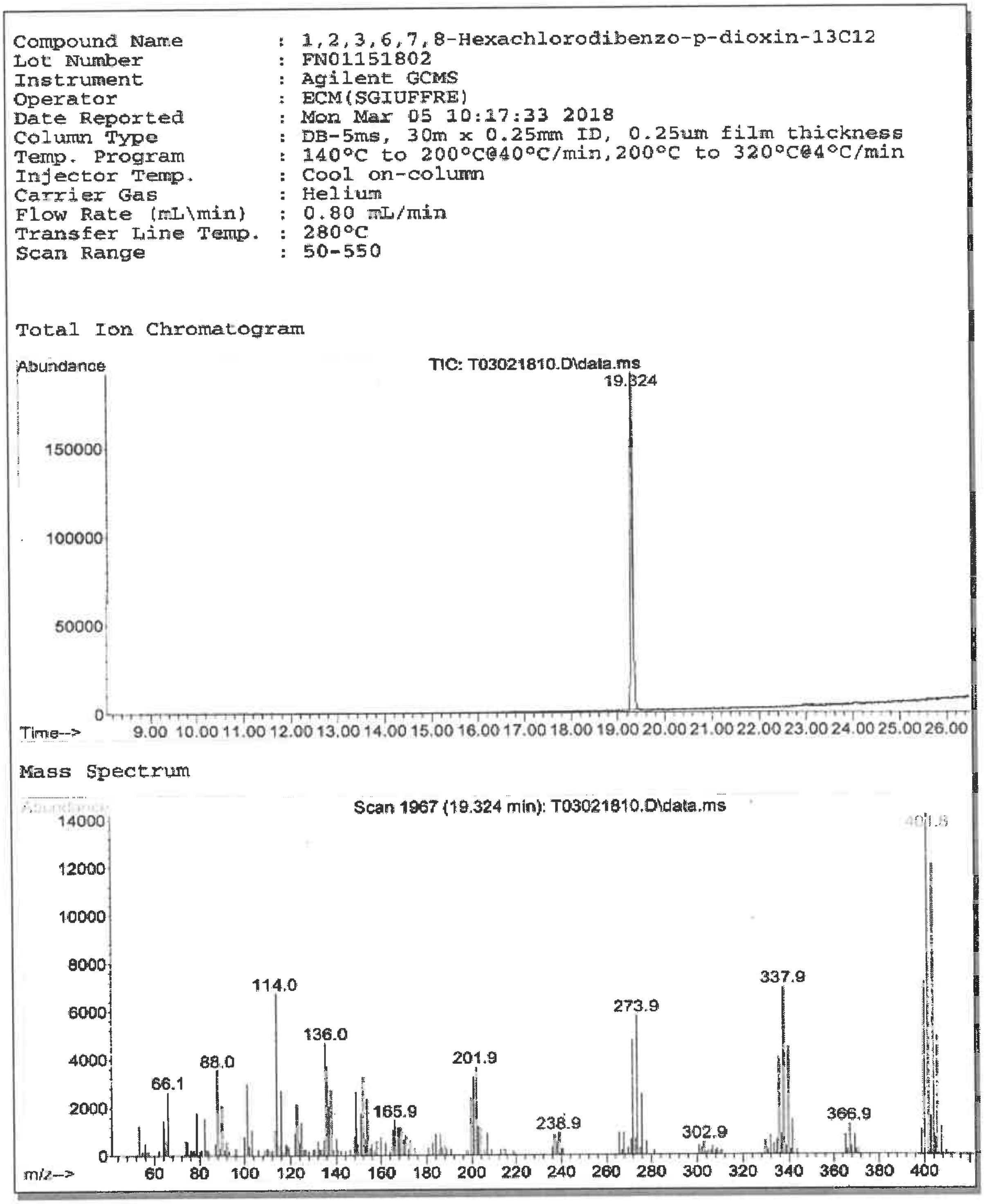

Compound Name : 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : FN01151802
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Mon Mar 05 10:17:33 2018
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	March 09, 2021	Initial version

Reagent

HRDXNIDA_00476

r: 6/28/21 SKN

2566270
ID: HRDXNIDA_00476
Exp: 09/30/26 Prpd: SKV
13C-2,3,7,8-TCDF [50ug/ml

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Revision 00
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

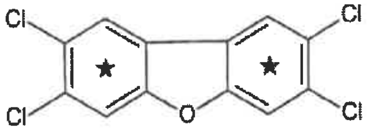

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

November 02, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401
Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF $\geq$ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data (cont.)

GC/FID

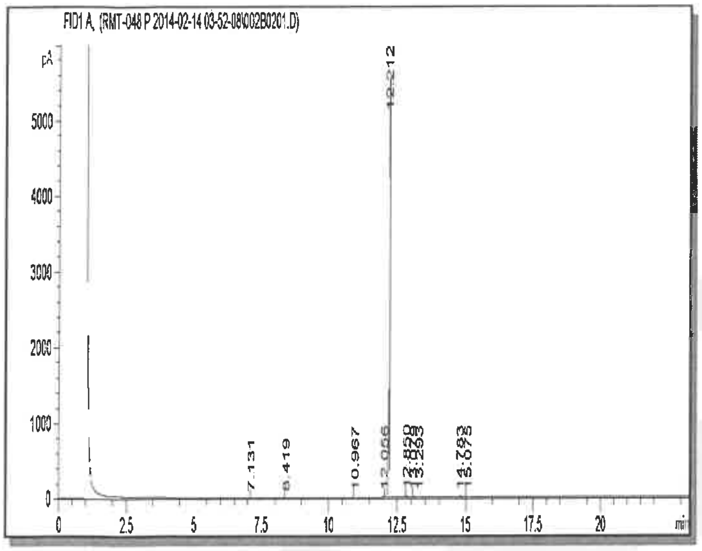

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

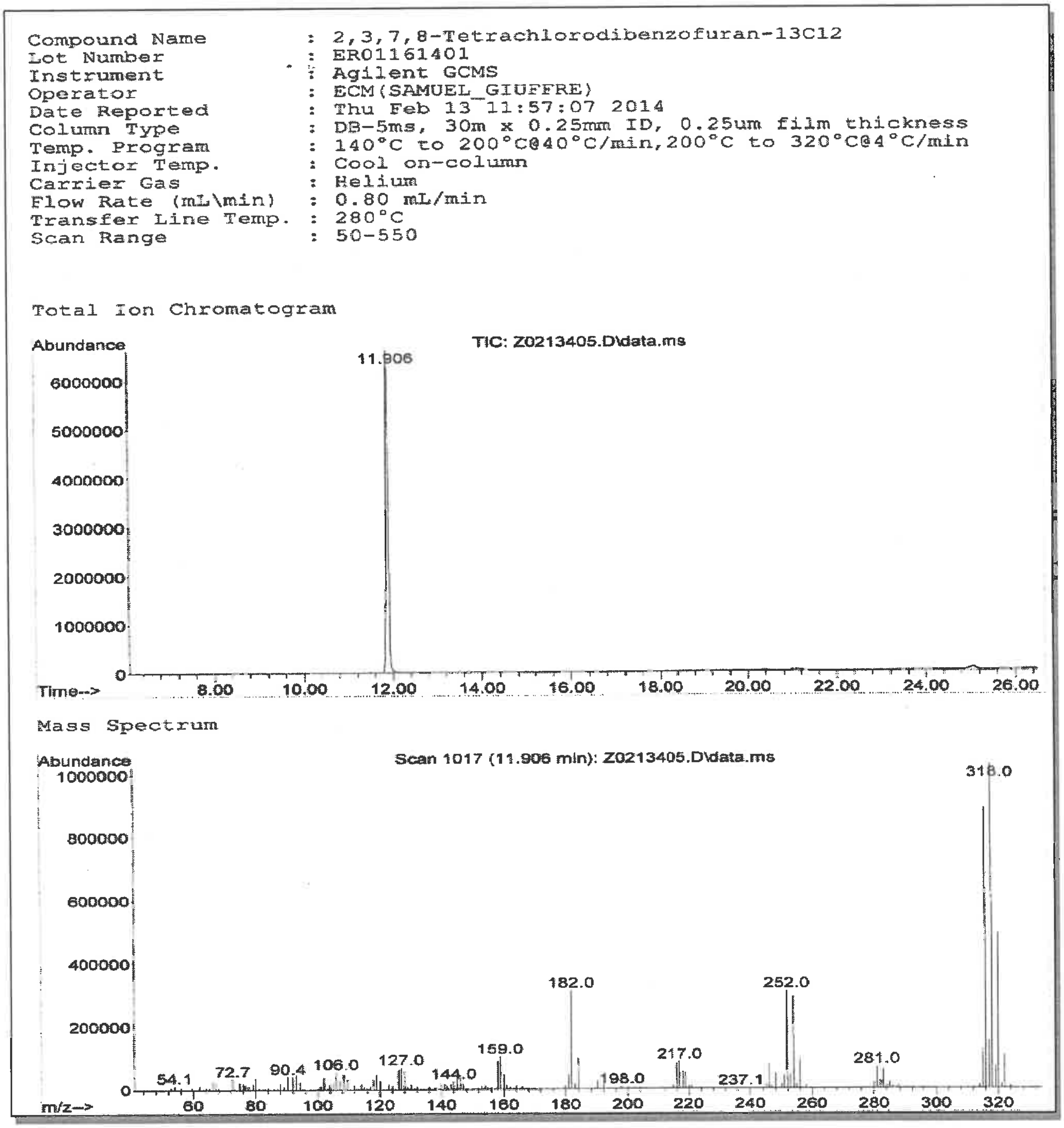

```
Compound Name          : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number             : ER01161401
Instrument             : Agilent GCMS
Operator               : ECM(SAMUEL_GIUFFRE)
Date Reported          : Thu Feb 13 11:57:07 2014
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00477

r: 6/28/21 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

2566271
ID: HRDXNIDA_00477
Exp: 03/31/26 Prpd: SKV
13C-2,3,7,8-TCDD [50ug/ml

CIL

Revision 0
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Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

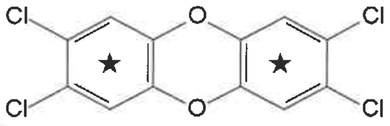

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER01201405

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 76523-40-5
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

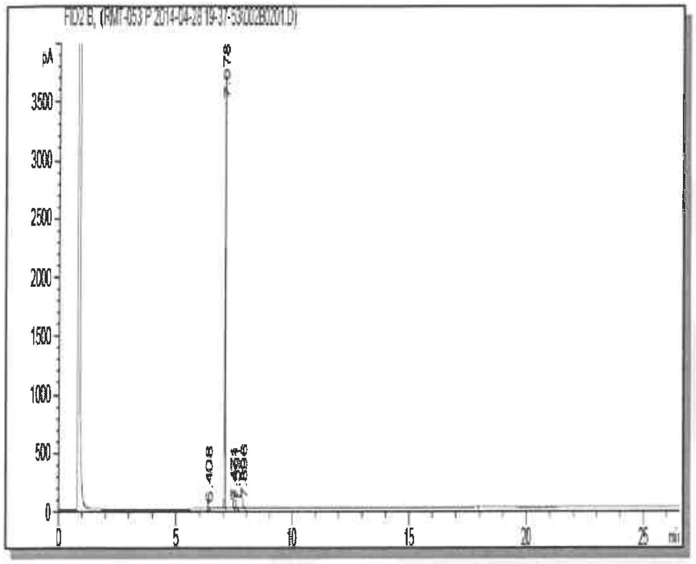

Column:	DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Data File Name:	RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument:	GC#6
Sample Name:	ER01201405
Acquired:	April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

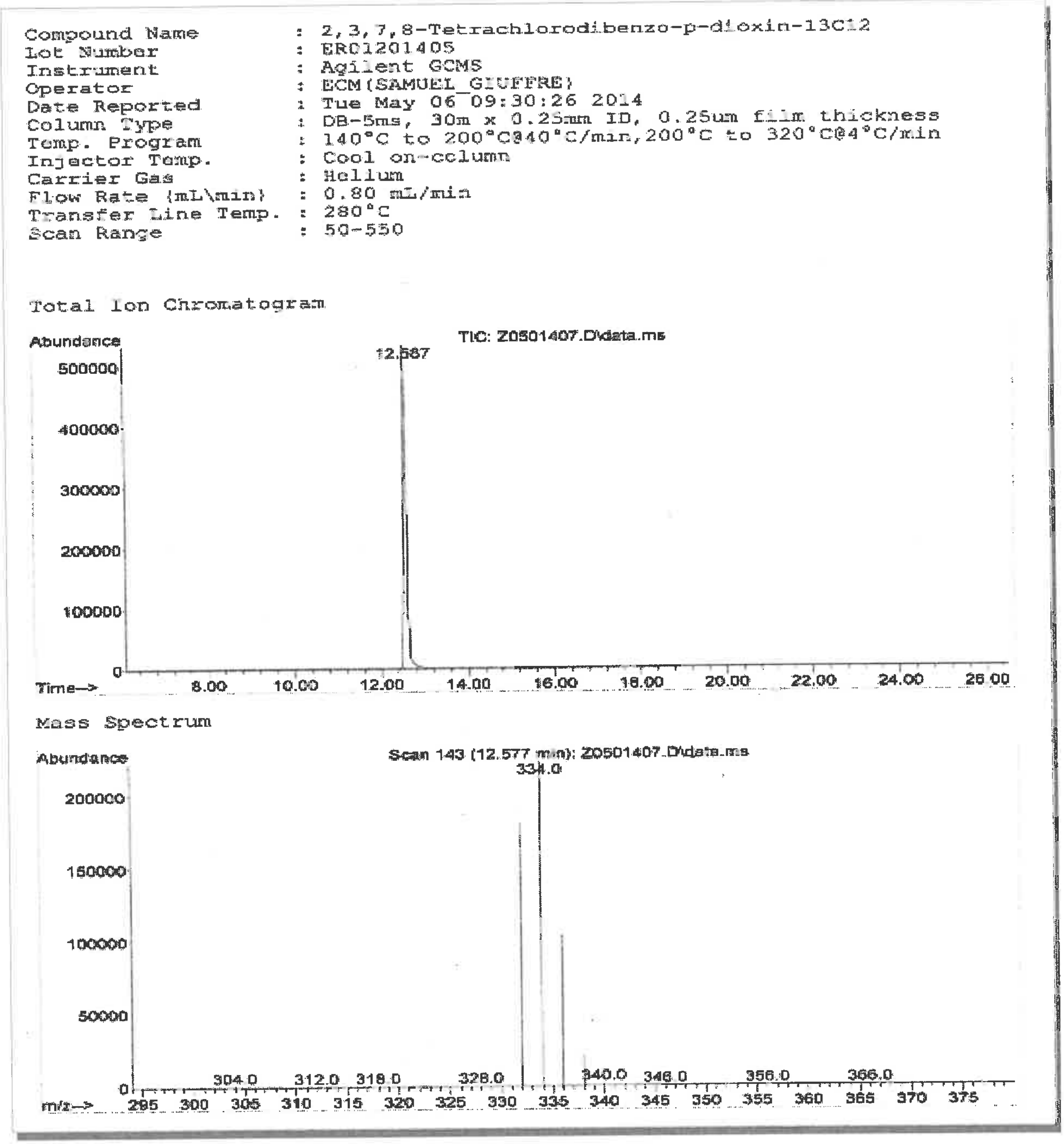

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : ER01201405
Instrument : Agilent GCMS
Operator : ECM(SAMUEL_GIUFFRE)
Date Reported : Tue May 06 09:30:26 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00478

r: 6/28/21 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

2566272
ID: HRDXNIDA_00478
Exp: 11/30/24 Prpd: SKV
13C-1,2,3,4,6,7,8-HpCDF [

CIL

Revision 01
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

Catalog Number:	EF-974
Solution Lot:	ER08101404
Expiration Date:	November 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

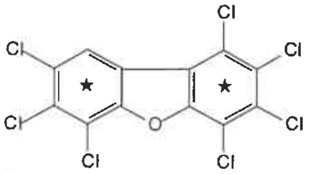

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02

Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	98.7%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		98.69%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

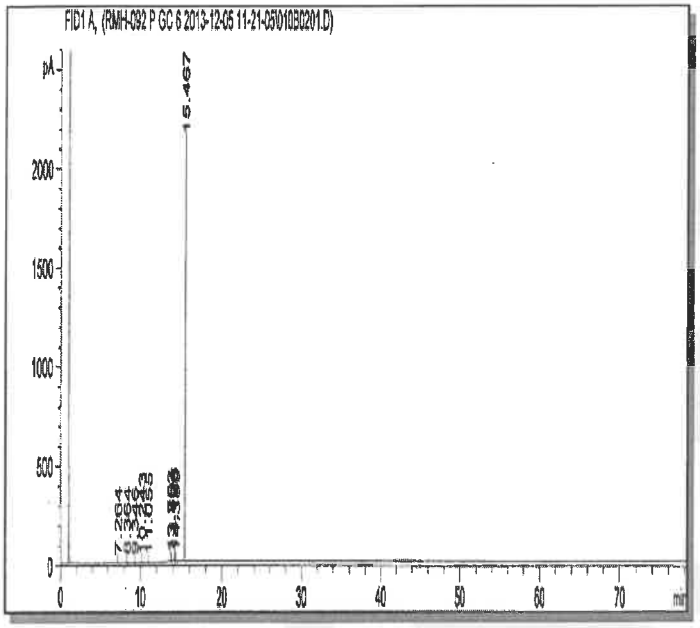

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

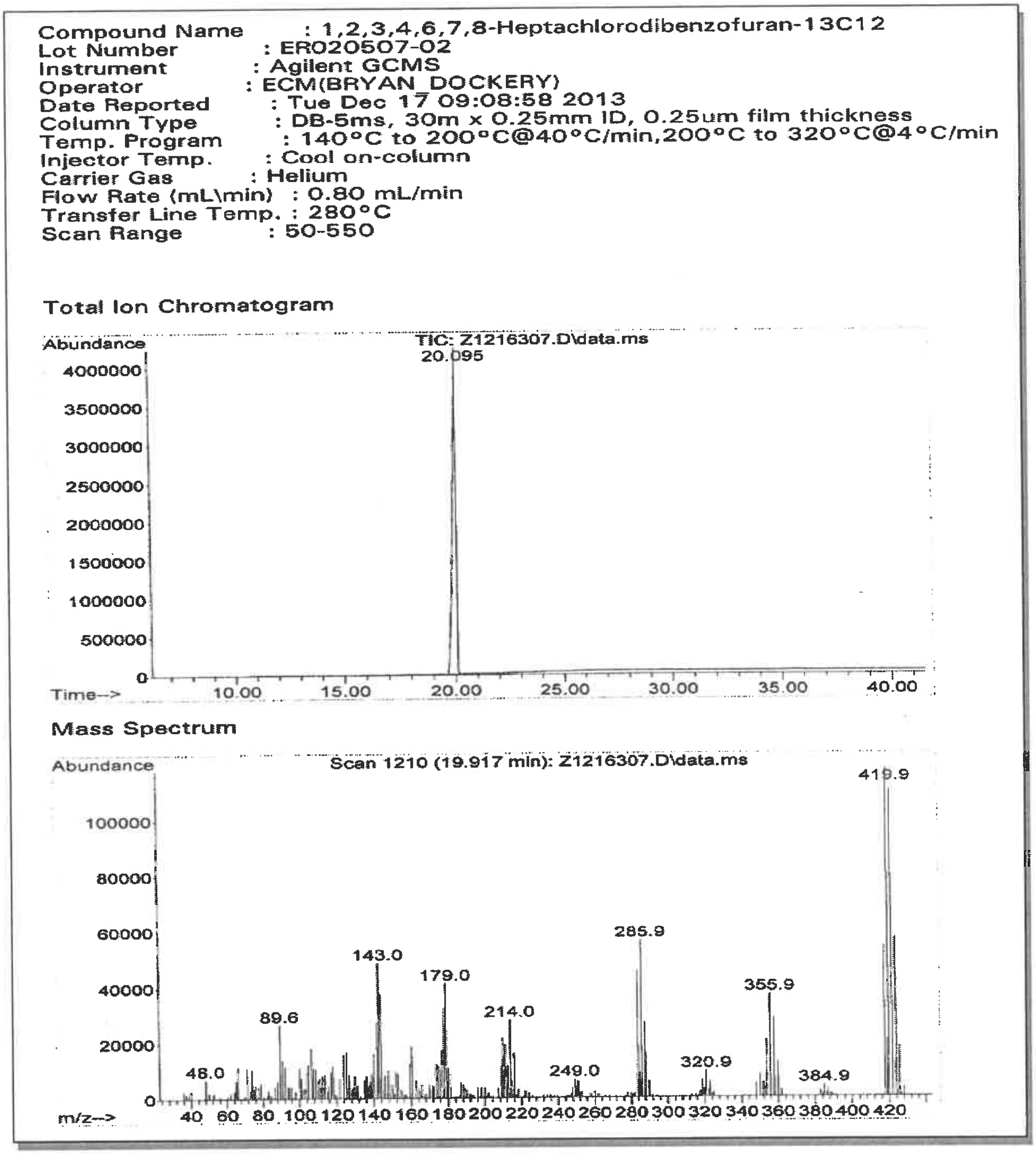

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIS_00126

Rec'. 3/26/20 SW

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Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

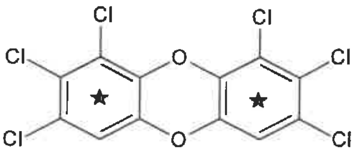

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane:Toluene (80:20)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021313-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 16, 2019
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER110510-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-82-6
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$ 0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

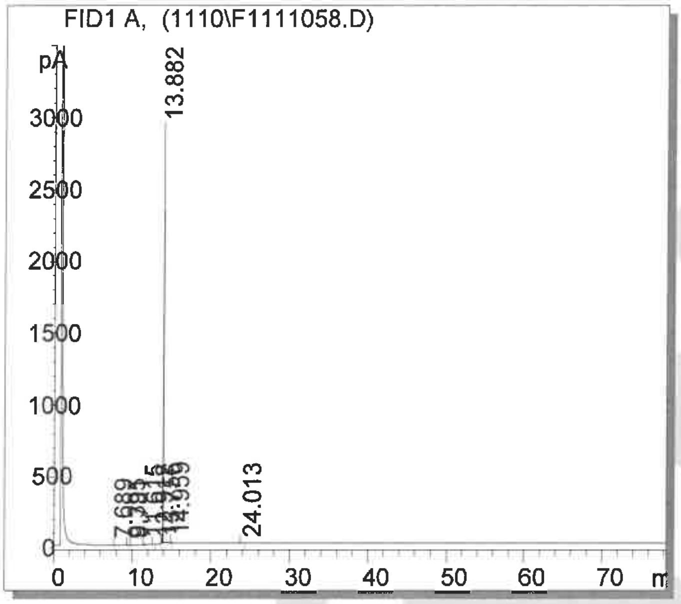

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

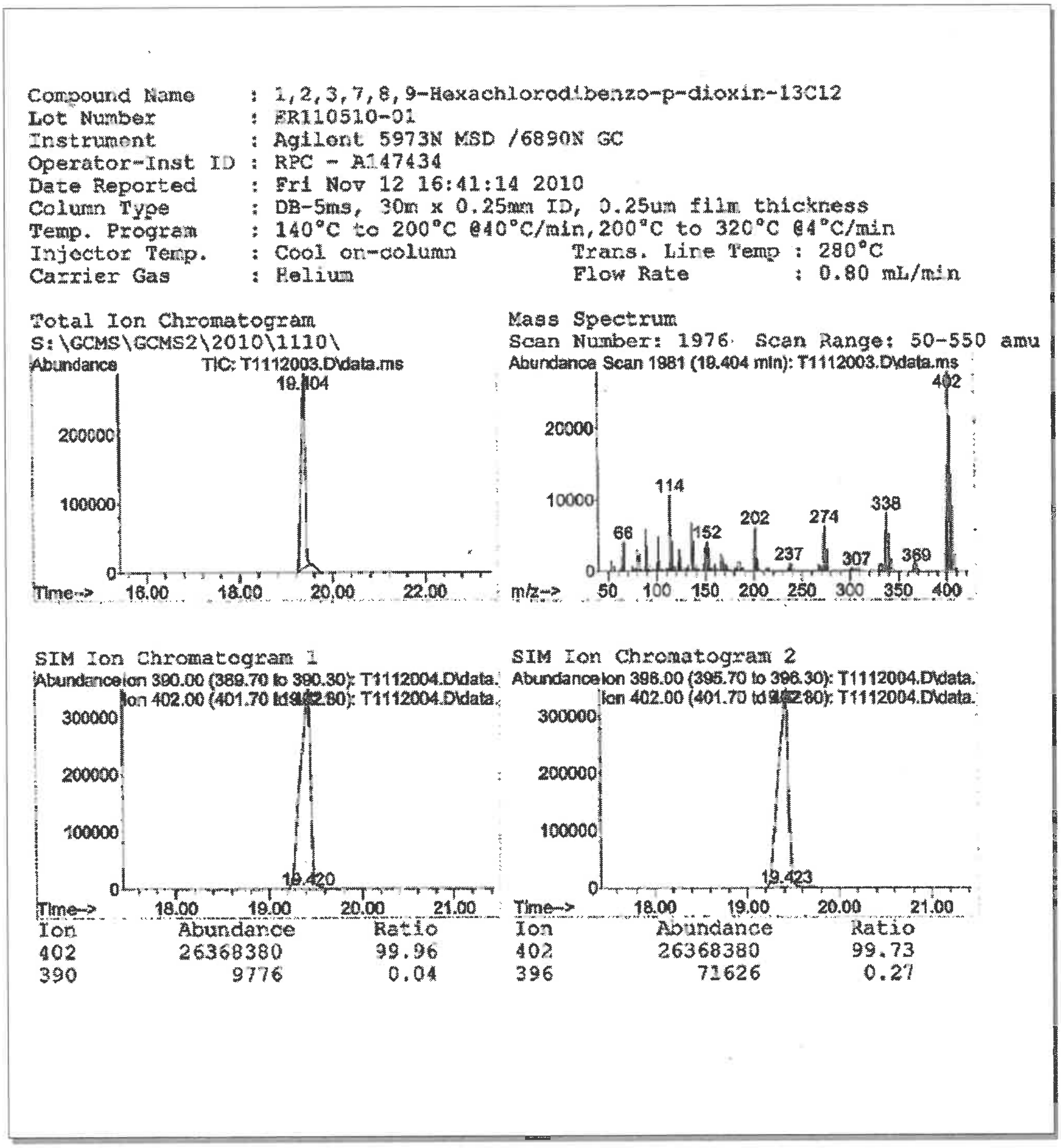

```
Compound Name       : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number          : FR110510-01
Instrument          : Agilent 5973N MSD /6890N GC
Operator-Inst ID    : RPC - A147434
Date Reported       : Fri Nov 12 16:41:14 2010
Column Type         : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program       : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.      : Cool on-column          Trans. Line Temp : 280°C
Carrier Gas         : Helium                  Flow Rate        : 0.80 mL/min
```

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

SIM Ion Chromatogram 2

```
Ion    Abundance    Ratio          Ion    Abundance    Ratio
402    26368380     99.96          402    26368380     99.73
390        9776      0.04          396       71626      0.27
```

COA Revision History

Revision No.	Date	Reason for Revision
00	September 28, 2016	Initial version
01	August 16, 2019	Corrected Solvent from n-Nonane to n-Nonane:Toluene (80:20)
		Added Structure

Reagent

HRDXNIS_00127

r: 3/26/20 SKV

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Revision 00
Page 1 of 4

Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

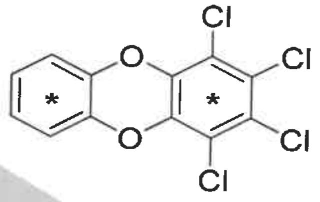

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	**Solution Purity**	**Certified Concentration**
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	**Lot Number**	**Verified Concentration (µg/mL)**		**%RSD - Homogeneity**	
		Actual Results	**Acceptance Criteria**	**Actual Results**	**Acceptance Criteria**
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

January 23, 2017

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER02021602
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	114423-99-3
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$ 0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

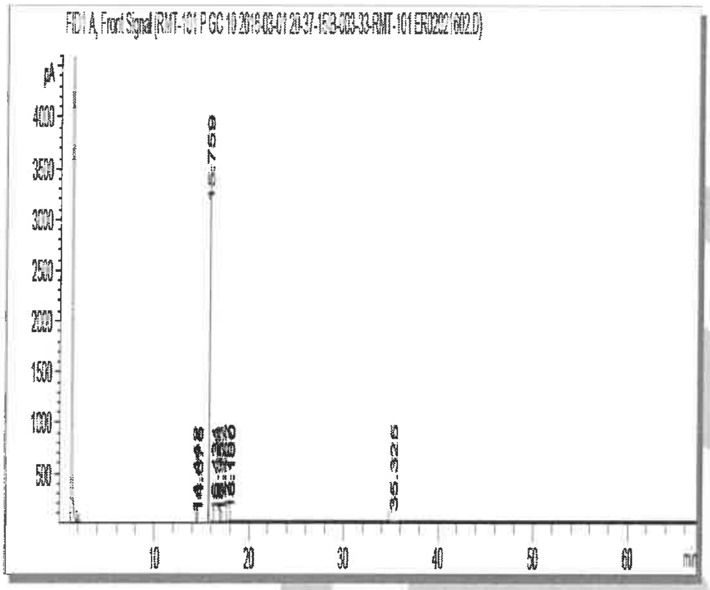

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

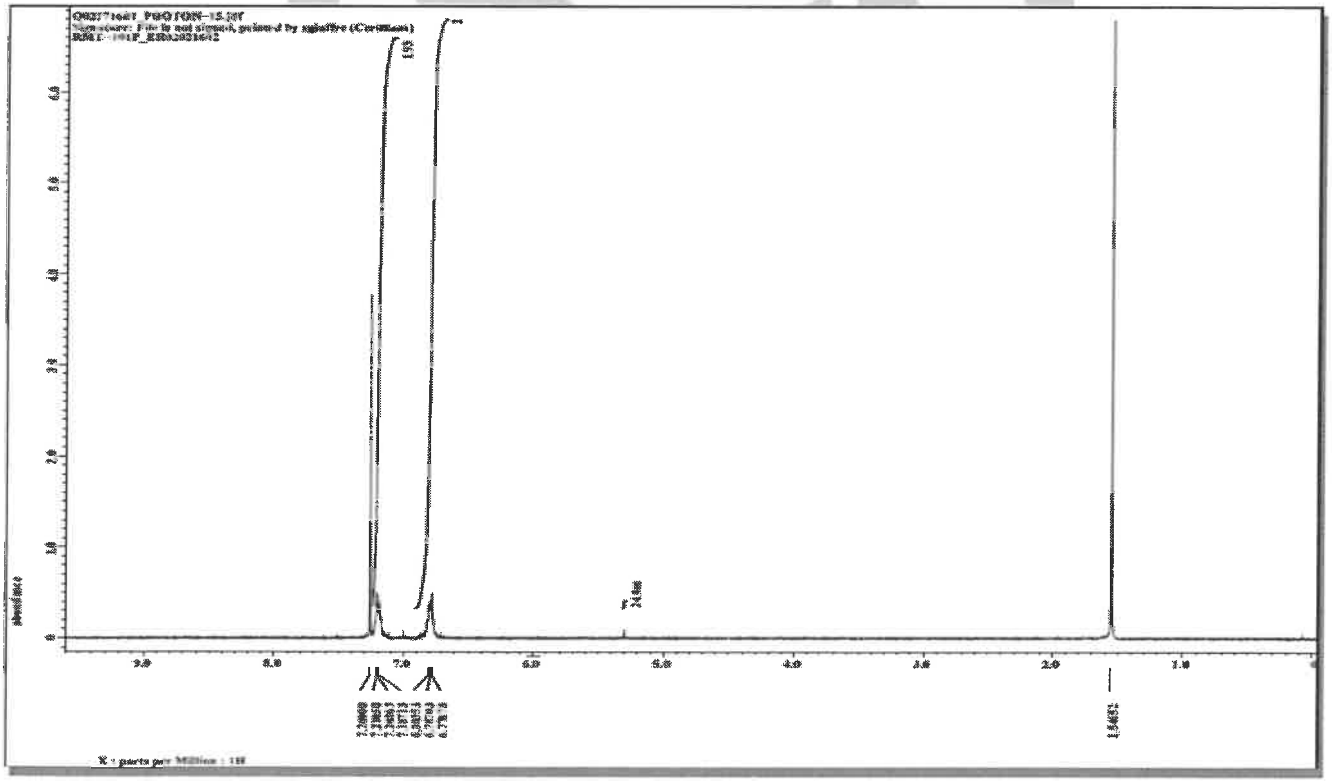

Spectral and Physical Data (cont.)

GC/MS

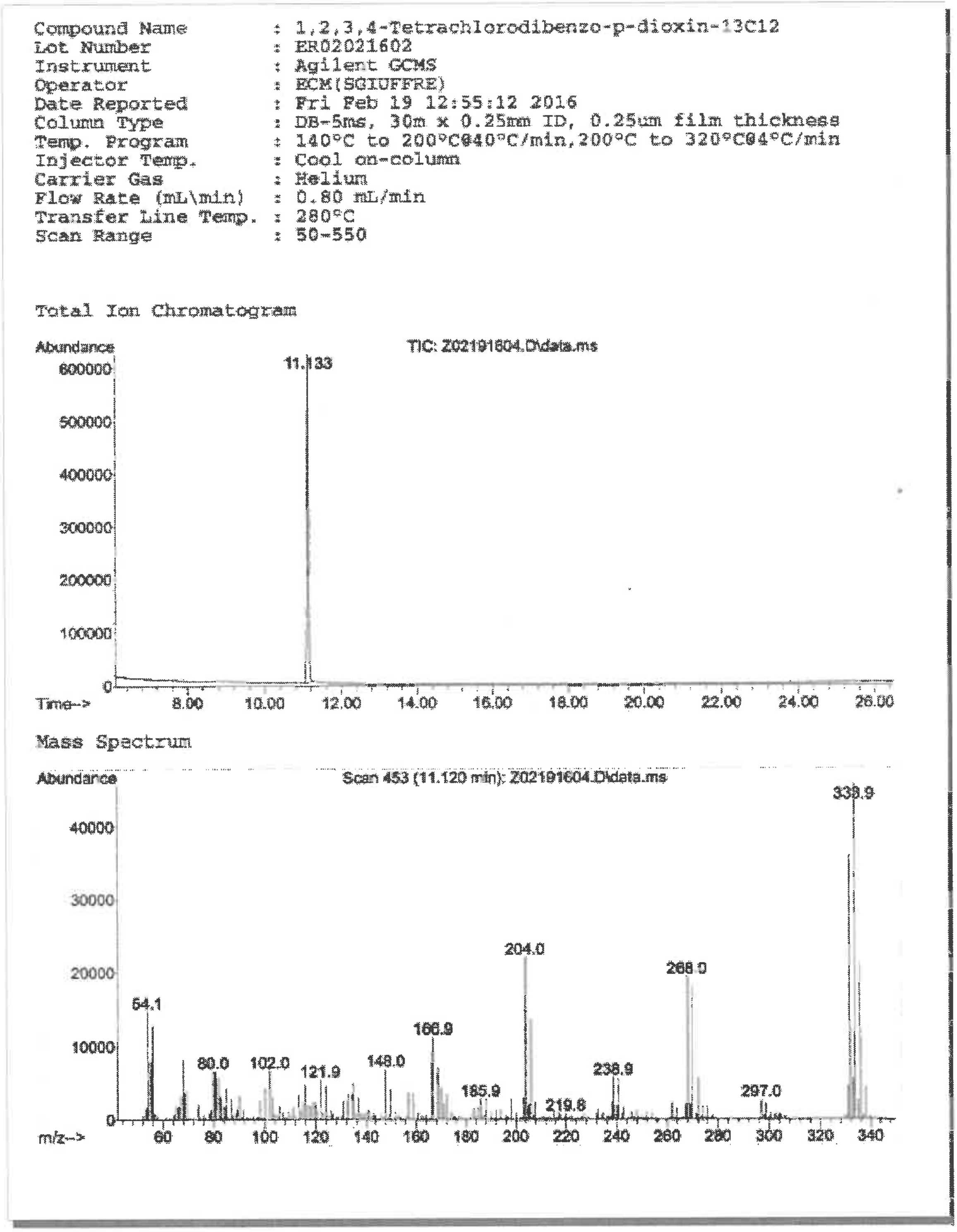

```
Compound Name         : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number            : ER02021602
Instrument            : Agilent GCMS
Operator              : ECM(SGIUFFRE)
Date Reported         : Fri Feb 19 12:55:12 2016
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00124

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR1019
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/16/2019
LAST TESTED: (mm/dd/yyyy)	10/17/2019
EXPIRY DATE: (mm/dd/yyyy)	10/17/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1, x_2,...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA
Testing
Accreditation No. A1226

ANAB
ACCREDITED
ISO 17034
REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

Component	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________ **Date:** 11/07/2019
B.G. Chittim, General Manager (mm/dd/yyyy)

Figure 1: EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)

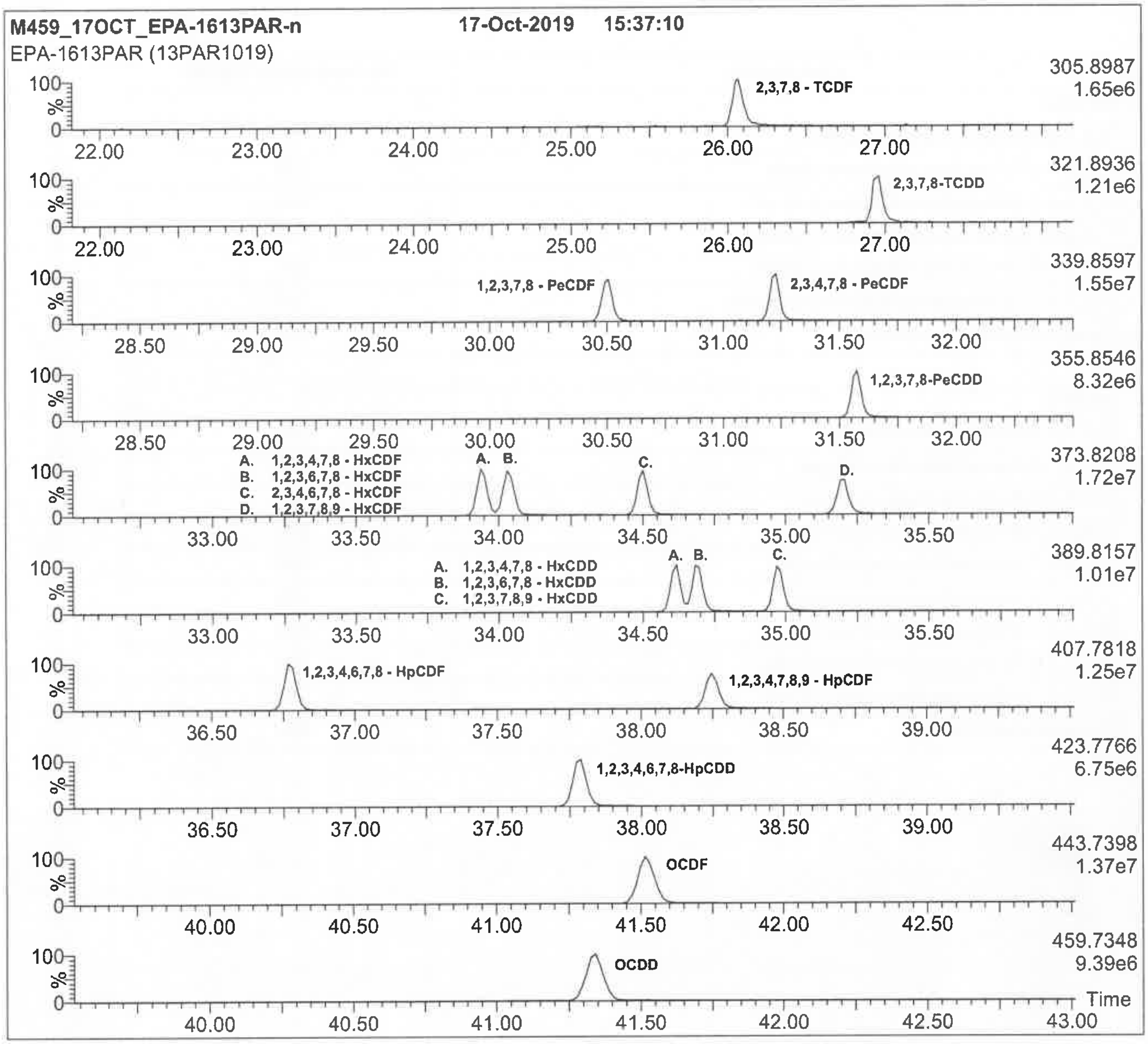

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W		
Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

Reagent

HRDXNTA_00132

r: 5/10/21 skv

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Revision 00
Page 1 of 3
Product of USA

Certificate of Analysis

Method 1613 PAR Stock Solution

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 14001
ISO 9001

Catalog Number:	EDF-7999-10X
Solution Lot:	ER09031903
Expiration Date:	August 2030
Solvent:	n-Nonane
Volume per Ampoule:	Not less than 1.2 mL
Storage:	Room Temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER12161901	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.1%	400.6 ± 4.2 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.4 ± 4.2 ng/mL
1,2,3,7,8-PeCDD	ER07091901	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.1%	2002 ± 21 ng/mL
1,2,3,7,8-PeCDF	ER11081603	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.7%	1992 ± 21 ng/mL
2,3,4,7,8-PeCDF	ER03211901	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	2011 ± 21 ng/mL
1,2,3,4,7,8-HxCDD	ER05012008	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2004 ± 21 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2013 ± 21 ng/mL
1,2,3,7,8,9-HxCDD	ER01142001	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2017 ± 21 ng/mL
1,2,3,4,7,8-HxCDF	ER03022008	70648-26-9	$C_{12}H_2Cl_6O$	374.86	98.3%	2004 ± 21 ng/mL
1,2,3,6,7,8-HxCDF	ER06231602	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.1%	2005 ± 21 ng/mL
1,2,3,7,8,9-HxCDF	ER10281601	72918-21-9	$C_{12}H_2Cl_6O$	374.86	99.7%	2005 ± 21 ng/mL
2,3,4,6,7,8-HxCDF	ER070131801	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2004 ± 21 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	2002 ± 21 ng/mL
1,2,3,4,6,7,8-HpCDF	ER12261901	67562-39-4	$C_{12}HCl_7O$	409.31	98.7%	2005 ± 21 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01261701	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	2003 ± 21 ng/mL
OCDD	ER09191601	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3975 ± 42 ng/mL
OCDF	ER03031701	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4002 ± 42 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

September 16, 2020
Date

Traceability

- This standard has been gravimetrically prepared using balances that have been fully qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/MS
Column:	DB-5ms 30 m x 0.25 mm ID, 0.25 μm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 292°C at 4°C/min
Injector Temp:	Cool-on-Column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
2,3,7,8-TeCDD	407.4	± 10%	0.9	≤ 10%
2,3,7,8-TeCDF	402.5	± 10%	0.8	≤ 10%
1,2,3,7,8-PeCDD	2014	± 10%	0.6	≤ 10%
1,2,3,7,8-PeCDF	2008	± 10%	2.7	≤ 10%
2,3,4,7,8-PeCDF	2033	± 10%	1.1	≤ 10%
1,2,3,4,7,8-HxCDD	2000	± 10%	3.4	≤ 10%
1,2,3,6,7,8-HxCDD	1903	± 10%	4.0	≤ 10%
1,2,3,7,8,9-HxCDD	2025	± 10%	1.6	≤ 10%
1,2,3,4,7,8-HxCDF	2010	± 10%	1.4	≤ 10%
1,2,3,6,7,8-HxCDF	2024	± 10%	1.3	≤ 10%
1,2,3,7,8,9-HxCDF	2024	± 10%	1.2	≤ 10%
2,3,4,6,7,8-HxCDF	1995	± 10%	1.0	≤ 10%
1,2,3,4,6,7,8-HpCDD	1993	± 10%	1.1	≤ 10%
1,2,3,4,6,7,8-HpCDF	2007	± 10%	1.5	≤ 10%
1,2,3,4,7,8,9-HpCDF	2038	± 10%	2.0	≤ 10%
OCDD	3964	± 10%	1.6	≤ 10%
OCDF	4081	± 10%	3.5	≤ 10%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration curve.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

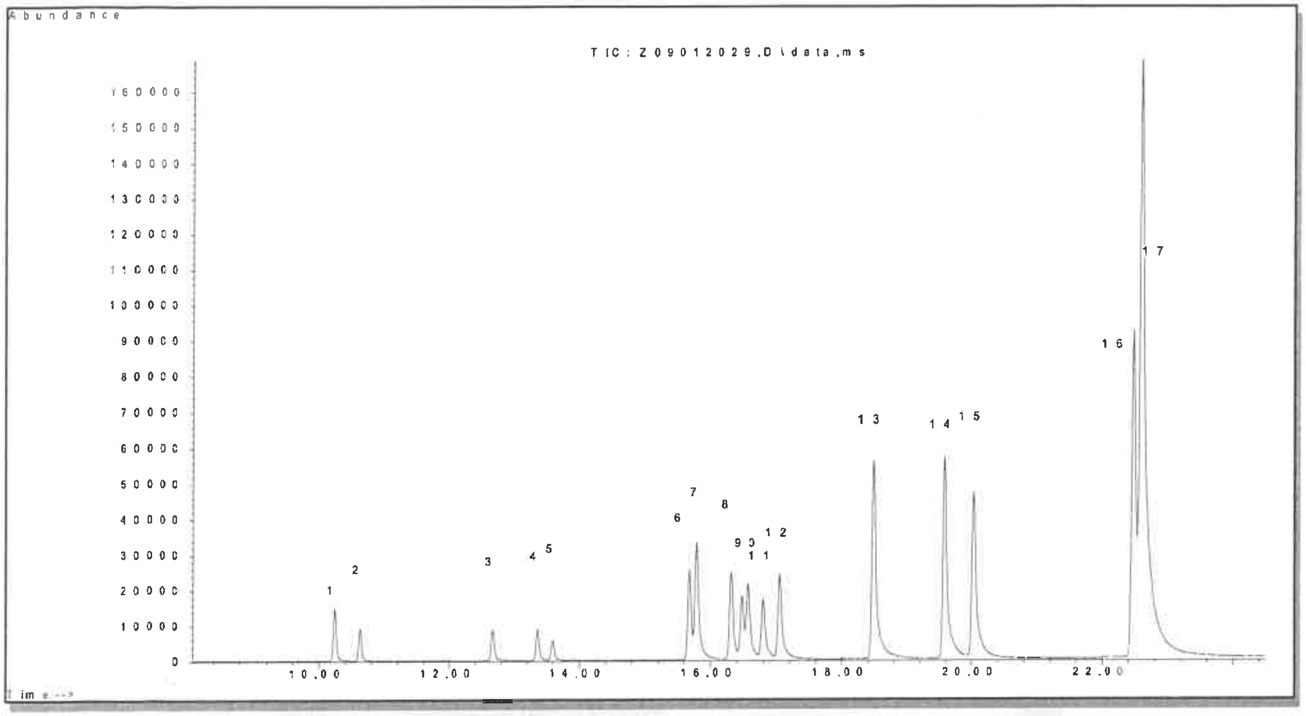

1. 2,3,7,8-Tetrachlorodibenzofuran
2. 2,3,7,8-Tetrachlorodibenzo-p-dioxin
3. 1,2,3,7,8-Pentachlorodibenzofuran
4. 2,3,4,7,8-Pentachlorodibenzofuran
5. 1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6. 1,2,3,4,7,8-Hexachlorodibenzofuran
7. 1,2,3,6,7,8-Hexachlorodibenzofuran
8. 2,3,4,6,7,8-Hexachlorodibenzofuran
9. 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10. 1,2,3,6,7,8,-Hexachlorodibenzo-p-dioxin
11. 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12. 1,2,3,7,8,9-Hexachlorodibenzofuran
13. 1,2,3,4,6,7,8-Heptachlorodibenzofuran
14. 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15. 1,2,3,4,7,8,9-Heptachlorodibenzofuran
16. Octachlorodibenzo-p-dioxin
17. Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	September 16, 2020	Initial version

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-79918-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-532854/2-A	85	78	95	90	87	89	79	77
	LCSD 320-532854/3-A	87	77	92	82	78	76	84	83

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-532854/2-A	88	77	82	88	87	89	93	103
	LCSD 320-532854/3-A	92	79	84	92	92	102	104	112

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
11215702-Pretreatment RA	320-79918-1 RA	95	97
11215702-T=1hr-Settle RA	320-79918-2 RA	143	92

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-79918-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
11215702-Pretreatment	320-79918-1	83	81	95	81	76	76	83	79
11215702-T=1hr-Settle	320-79918-2	95	90	96	98	92	93	96	94
11215702-5Mm	320-79918-3	92	83	91	90	86	84	82	81
11215702-1Mm	320-79918-4	88	88	100	90	86	84	91	92
	MB 320-532854/1-A	87	82	99	83	80	80	83	84

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-79918-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
11215702-Pretreatment	320-79918-1	90	80	81	90	90	102	105	113
11215702-T=1hr-Settle	320-79918-2	103	88	94	99	106	113	114	123
11215702-5Mm	320-79918-3	88	76	80	89	90	97	98	104
11215702-1Mm	320-79918-4	100	84	92	92	97	104	104	112
	MB 320-532854/1-A	92	77	81	95	90	99	100	108

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM II 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 15oc21dfs1_6.d

Lab ID: LCS 320-532854/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	197	99	67-158	
2,3,7,8-TCDF	200	198	99	75-158	
1,2,3,7,8-PeCDD	1000	925	92	70-142	
1,2,3,7,8-PeCDF	1000	916	92	80-134	
2,3,4,7,8-PeCDF	1000	981	98	68-160	
1,2,3,4,7,8-HxCDD	1000	939	94	70-164	
1,2,3,6,7,8-HxCDD	1000	914	91	76-134	
1,2,3,7,8,9-HxCDD	1000	942	94	64-162	
1,2,3,4,7,8-HxCDF	1000	934	93	72-134	
1,2,3,6,7,8-HxCDF	1000	907	91	84-130	
1,2,3,7,8,9-HxCDF	1000	875	87	78-130	
2,3,4,6,7,8-HxCDF	1000	894	89	70-156	
1,2,3,4,6,7,8-HpCDD	1000	889	89	70-140	
1,2,3,4,6,7,8-HpCDF	1000	889	89	82-122	
1,2,3,4,7,8,9-HpCDF	1000	937	94	78-138	
OCDD	2000	1810	91	78-144	
OCDF	2000	1800	90	63-170	
13C-2,3,7,8-TCDD	2000	1560	78	20-175	
13C-2,3,7,8-TCDF	2000	1700	85	22-152	
13C-1,2,3,7,8-PeCDD	2000	1780	89	21-227	
13C-1,2,3,7,8-PeCDF	2000	1800	90	21-192	
13C-2,3,4,7,8-PeCDF	2000	1740	87	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1550	77	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1640	82	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1580	79	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1550	77	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1760	88	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1770	88	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1770	89	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1730	87	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1860	93	20-186	
13C-OCDD	4000	4100	103	13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 15oc21dfs1_7.d

Lab ID: LCSD 320-532854/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	190	95	4	50	67-158	
2,3,7,8-TCDF	200	191	95	4	50	75-158	
1,2,3,7,8-PeCDD	1000	911	91	2	50	70-142	
1,2,3,7,8-PeCDF	1000	909	91	1	50	80-134	
2,3,4,7,8-PeCDF	1000	977	98	0	50	68-160	
1,2,3,4,7,8-HxCDD	1000	943	94	0	50	70-164	
1,2,3,6,7,8-HxCDD	1000	908	91	1	50	76-134	
1,2,3,7,8,9-HxCDD	1000	934	93	1	50	64-162	
1,2,3,4,7,8-HxCDF	1000	933	93	0	50	72-134	
1,2,3,6,7,8-HxCDF	1000	893	89	2	50	84-130	
1,2,3,7,8,9-HxCDF	1000	888	89	2	50	78-130	
2,3,4,6,7,8-HxCDF	1000	892	89	0	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	861	86	3	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	872	87	2	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	906	91	3	50	78-138	
OCDD	2000	1760	88	3	50	78-144	
OCDF	2000	1750	88	3	50	63-170	
13C-2,3,7,8-TCDD	2000	1530	77			20-175	
13C-2,3,7,8-TCDF	2000	1740	87			22-152	
13C-1,2,3,7,8-PeCDD	2000	1520	76			21-227	
13C-1,2,3,7,8-PeCDF	2000	1650	82			21-192	
13C-2,3,4,7,8-PeCDF	2000	1570	78			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1580	79			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1680	84			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1680	84			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1650	83			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	1840	92			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	1850	92			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	2050	102			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1830	92			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	2080	104			20-186	
13C-OCDD	4000	4480	112			13-199	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento　Job No.: 320-79918-1

SDG No.:

Lab File ID: 15oc21dfs1_5.d　Lab Sample ID: MB 320-532854/1-A

Matrix: Water　Date Extracted: 10/11/2021 08:36

Instrument ID: DFS 1　Date Analyzed: 10/15/2021 12:39

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-532854/2-A	15oc21dfs1_6.d	10/15/2021 13:27
	LCSD 320-532854/3-A	15oc21dfs1_7.d	10/15/2021 14:15
11215702-Pretreatment	320-79918-1	15oc21dfs1_11.d	10/15/2021 17:27
11215702-T=1hr-Settle	320-79918-2	15oc21dfs1_12.d	10/15/2021 18:15
11215702-5Mm	320-79918-3	15oc21dfs1_13.d	10/15/2021 19:03
11215702-1Mm	320-79918-4	15oc21dfs1_14.d	10/15/2021 19:51
11215702-T=1hr-Settle RA	320-79918-2 RA	18OC2111D2_008.d	10/18/2021 16:15
11215702-Pretreatment RA	320-79918-1 RA	18OC2111D2_009.d	10/18/2021 16:53

FORM IV 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID: 11215702-Pretreatment	Lab Sample ID: 320-79918-1
Matrix: Water	Lab File ID: 15oc21dfs1_11.d
Analysis Method: 1613B	Date Collected: 10/05/2021 15:00
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1050.2(mL)	Date Analyzed: 10/15/2021 17:27
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	600		9.5	1.9
40321-76-4	1,2,3,7,8-PeCDD	6.3	J	48	0.86
57117-41-6	1,2,3,7,8-PeCDF	70		48	0.98
57117-31-4	2,3,4,7,8-PeCDF	44	J	48	1.2
39227-28-6	1,2,3,4,7,8-HxCDD	2.9	J B	48	0.77
57653-85-7	1,2,3,6,7,8-HxCDD	2.3	J	48	0.75
19408-74-3	1,2,3,7,8,9-HxCDD	1.9	J	48	0.71
70648-26-9	1,2,3,4,7,8-HxCDF	160	B	48	1.1
57117-44-9	1,2,3,6,7,8-HxCDF	37	J B	48	0.99
72918-21-9	1,2,3,7,8,9-HxCDF	3.0	J B	48	0.83
60851-34-5	2,3,4,6,7,8-HxCDF	4.8	J	48	0.80
35822-46-9	1,2,3,4,6,7,8-HpCDD	55	B	48	1.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	52	B	48	1.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	22	J	48	1.4
3268-87-9	OCDD	1000	B	95	1.5
39001-02-0	OCDF	30	J B	95	0.86
41903-57-5	Total TCDD	650	q	9.5	1.9
30402-14-3	Total TCDF	2900		9.5	7.3
36088-22-9	Total PeCDD	7.4	J q B	48	0.86
30402-15-4	Total PeCDF	180		48	1.1
34465-46-8	Total HxCDD	19	J B	48	0.74
55684-94-1	Total HxCDF	230	B	48	0.92
37871-00-4	Total HpCDD	120	B	48	1.8
38998-75-3	Total HpCDF	91	B	48	1.4

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Client Sample ID: 11215702-Pretreatment Lab Sample ID: 320-79918-1

Matrix: Water Lab File ID: 15oc21dfs1_11.d

Analysis Method: 1613B Date Collected: 10/05/2021 15:00

Extract. Method: 1613B Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1050.2(mL) Date Analyzed: 10/15/2021 17:27

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		25-164
89059-46-1	13C-2,3,7,8-TCDF	83		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	76		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	81		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	76		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	80		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	79		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	90		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	90		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	102		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	105		26-138
114423-97-1	13C-OCDD	113		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		35-197

FORM I 1613B

Report Date: 20-Oct-2021 07:44:32   Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Sample Type: Client
Inject. Date: 15-Oct-2021 17:27:00   ALS Bottle#: 0   Worklist Smp#: 10
Injection Vol: 1.0 ul   Dil. Factor: 1.0000
Sample Info: 320-79918-a-1-a
Operator ID: Xcalibur_System   Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Oct-2021 07:44:31   Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm)   Det: F1(14.80 :26.00)
Process Host: CTX1623

First Level Reviewer: krenns   Date: 20-Oct-2021 07:44:31

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.790	10371232	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.817	10514699	0.81	1.2244	82.8	82.8	0.2768	0.2768	82.80	
2,3,7,8-TCDF	19.843	10128908	0.80	1.1194	86.1	86.1	0.3828	0.3828		
A Non-2,3,7,8-sub-TCDF	19.372	7690515	0.80	1.1194	65.3	65.3	0.3828	36.1		M
S Total TCDF					151.4	151.4	0.3828	0.3828		
D 13C-2,3,7,8-TCDD	21.151	6870165	0.81	0.8210	80.7	80.7	0.2249	0.2249	80.69	
2,3,7,8-TCDD	21.185	2349582	0.80	1.0943	31.3	31.3	0.1015	0.1015		
$ 37Cl4-2,3,7,8-TCDD	21.185	3412753		0.8658	38.0	38.0	0.0531	0.0531	95.02	
A Non-2,3,7,8-sub-TCDD	20.213	198215	0.77	1.0943	2.677	2.637	0.1015	2.368		RQ
S Total TCDD					33.9	33.9	0.1015	0.1015		RQ
D 13C-1,2,3,7,8-PeCDF	26.832	9272465	1.59	1.1026	81.1	81.1	0.2920	0.2920	81.08	
1,2,3,7,8-PeCDF	26.848	369583	1.58	1.0920	3.650	3.650	0.0516	0.0516		M
D 13C-2,3,4,7,8-PeCDF	28.322	10545291	1.58	1.3454	75.6	75.6	0.2393	0.2393	75.58	
2,3,4,7,8-PeCDF	28.347	214408	1.60	0.8752	2.323	2.323	0.0627	0.0627		
A F1 PeCDFs	24.221						0.0103	0.0103		
A Non-2,3,7,8-sub-PeCDF	27.645	346427	1.51	0.9836	3.554	3.554	0.0565	1.663		
S Total PeCDF					9.528	9.528	0.0571	0.0571		
D 13C-1,2,3,7,8-PeCDD	29.139	5482579	1.63	0.6987	75.7	75.7	0.1514	0.1514	75.66	
1,2,3,7,8-PeCDD	29.173	19342	1.36	1.0594	0.3330	0.3330	0.0452	0.0452		
A Non-2,3,7,8-sub-PeCDD	28.034	3366	1.55	1.0594	0.1395	0.0580	0.0452	0.0580		RQM
S Total PeCDD					0.4725	0.3909	0.0452	0.0452		RQ
D 13C-1,2,3,4,7,8-HxCDF	34.617	9331828	0.54	1.1295	82.7	82.7	0.2373	0.2373	82.66	
1,2,3,4,7,8-HxCDF	34.634	748810	1.25	0.9737	8.241	8.241	0.0554	0.0554		
D 13C-1,2,3,6,7,8-HxCDF	34.785	8411659	0.54	1.0613	79.3	79.3	0.2525	0.2525	79.29	
1,2,3,6,7,8-HxCDF	34.802	201387	1.26	1.2201	1.962	1.962	0.0522	0.0522		
D 13C-2,3,4,6,7,8-HxCDF	35.644	8544883	0.54	0.9480	90.2	90.2	0.2827	0.2827	90.17	
2,3,4,6,7,8-HxCDF	35.653	26701	1.12	1.2435	0.2513	0.2513	0.0423	0.0423		Ma
D 13C-1,2,3,7,8,9-HxCDF	36.554	7667460	0.54	0.8526	90.0	90.0	0.3143	0.3143	89.96	
1,2,3,7,8,9-HxCDF	36.562	15040	1.41	1.2454	0.1575	0.1575	0.0435	0.0435		M
A Non-2,3,7,8-sub-HxCDF	34.703	131267	1.18	1.1707	1.321	1.321	0.0476	0.5215		Ma
S Total HxCDF					11.9	11.9	0.0483	0.0483		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.360	9996013	1.29	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.872	6619465	1.29	0.8312	79.7	79.7	0.1616	0.1616	79.67	
1,2,3,4,7,8-HxCDD	35.889	9044	1.14	0.9085	0.1504	0.1504	0.0405	0.0405		M
D 13C-1,2,3,6,7,8-HxCDD	35.990	6134896	1.26	0.7550	81.3	81.3	0.1779	0.1779	81.29	
1,2,3,6,7,8-HxCDD	36.006	7720	1.09	1.0279	0.1224	0.1224	0.0393	0.0393		Ma
1,2,3,7,8,9-HxCDD	36.377	6688	1.20	1.0268	0.1021	0.1021	0.0375	0.0375		M
A Non-2,3,7,8-sub-HxCDD	35.108	40194	1.18	0.9877	0.6381	0.6381	0.0390	0.3915		Ma
S Total HxCDD					1.013	1.013	0.0391	0.0391		
D 13C-1,2,3,4,6,7,8-HpCDF	38.426	5567078	0.47	0.6190	90.0	90.0	0.5014	0.5014	89.97	
1,2,3,4,6,7,8-HpCDF	38.443	238794	1.06	1.5851	2.706	2.706	0.0731	0.0731		
D 13C-1,2,3,4,7,8,9-HpCDF	39.698	6834238	0.47	0.6516	104.9	104.9	0.4763	0.4763	105	
1,2,3,4,7,8,9-HpCDF	39.706	90188	1.12	1.1597	1.138	1.138	0.0747	0.0747		
A Non-2,3,7,8-sub-HpCDF	39.072	78265	1.01	1.3724	0.9197	0.9197	0.0722	0.9197		
S Total HpCDF					4.764	4.764	0.0739	0.0739		
D 13C-1,2,3,4,6,7,8-HpCDD	39.395	5489384	1.03	0.5362	102.4	102.4	0.3052	0.3052	102	
1,2,3,4,6,7,8-HpCDD	39.403	171114	1.04	1.0819	2.881	2.881	0.0969	0.0969		
A Non-2,3,7,8-sub-HpCDD	39.202	198737	1.05	1.0819	3.346	3.346	0.0969	3.346		
S Total HpCDD					6.227	6.227	0.0969	0.0969		
D 13C-OCDD	41.873	8581745	0.91	0.3802	225.8	225.8	0.2720	0.2720	113	
OCDF	41.966	103537	0.90	1.5094	1.599	1.599	0.0453	0.0453		M
OCDD	41.882	2614225	0.91	1.1344	53.7	53.7	0.0778	0.0778		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Sample Type: Client
Inject. Date: 15-Oct-2021 17:27:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-a-1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Oct-2021 07:44:31 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1623

First Level Reviewer: krenns Date: 20-Oct-2021 07:44:31

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.790	20.777	1		4628595	703728	794	1985	886		
333.9338	20.790	20.777	1		5742637	889620	383	957	2323	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.817	19.806	1	0.953	4704382	732555	1408	3520	520		
317.9389	19.817	19.806	1	0.953	5810317	937477	752	1880	1247	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.843	19.832	1	1.001	4498538	661428	1291	3227	512		
305.8987	19.843	19.832	1	1.001	5630370	818478	1572	3930	521	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											M
303.9016	16.903	19.372	-148	0.853	29166	5503	1291	3227	4		M
305.8987	16.903	19.372	-148	0.853	37944	7467	1572	3930	5	0.77(0.65-0.89)	M
303.9016	17.358	19.372	-121	0.876	151670	27798	1291	3227	22		
305.8987	17.349	19.372	-121	0.875	188377	34663	1572	3930	22	0.81(0.65-0.89)	
303.9016	17.839	19.372	-92	0.900	231329	31929	1291	3227	25		
305.8987	17.839	19.372	-92	0.900	281344	39836	1572	3930	25	0.82(0.65-0.89)	
303.9016	18.269	19.372	-66	0.922	159433	22677	1291	3227	18		
305.8987	18.269	19.372	-66	0.922	198905	29121	1572	3930	19	0.80(0.65-0.89)	
303.9016	18.648	19.372	-43	0.941	209246	29811	1291	3227	23		M
305.8987	18.648	19.372	-43	0.941	263733	36265	1572	3930	23	0.79(0.65-0.89)	M
303.9016	19.138	19.372	-14	0.966	1894837	311810	1291	3227	242		
305.8987	19.138	19.372	-14	0.966	2349468	383110	1572	3930	244	0.81(0.65-0.89)	
303.9016	19.525	19.372	9	0.985	98746	15334	1291	3227	12		
305.8987	19.533	19.372	10	0.986	123980	19619	1572	3930	12	0.80(0.65-0.89)	
303.9016	20.618	19.372	75	1.040	300005	45811	1291	3227	35		
305.8987	20.609	19.372	74	1.040	368732	56837	1572	3930	36	0.81(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	21.039	19.372	100	1.062	62201	9285	1291	3227	7		
305.8987	21.022	19.372	99	1.061	82934	12855	1572	3930	8	0.75(0.65-0.89)	
303.9016	23.087	19.372	222	1.165	285528	41468	1291	3227	32		
305.8987	23.095	19.372	223	1.165	372937	57185	1572	3930	36	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.151	21.138	1	1.017	3071564	438612	794	1985	552		
333.9338	21.160	21.138	1	1.018	3798601	555933	383	957	1452	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.185	21.163	1	1.002	1047874	149925	278	695	539		
321.8936	21.177	21.163	1	1.001	1301708	187236	164	410	1142	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.185	21.163	1	1.019	3412753	500136	293	732	1707		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	20.988	20.213	46	0.992	8784	1993	278	695	7		
321.8936	21.005	20.213	47	0.993	14455	2759	164	410	17	0.61(0.65-0.89)	
	Empc Correction				11407	2588	164	410	16		
319.8965	21.856	20.213	98	1.033	78033	10341	278	695	37		
321.8936	21.873	20.213	99	1.034	99991	14882	164	410	91	0.78(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.832	26.799	2	1.291	5694133	995575	1271	3177	783		
353.8970	26.832	26.799	2	1.291	3578332	623005	781	1952	798	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	26.848	26.833	1	1.001	226098	40081	172	430	233		M
341.8567	26.848	26.833	1	1.001	143485	24510	193	482	127	1.58(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	28.322	28.300	1	1.362	6464478	1024394	1271	3177	806		
353.8970	28.322	28.300	1	1.362	4080813	638366	781	1952	817	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.347	28.325	1	1.001	132049	21779	172	430	127		
341.8567	28.347	28.325	1	1.001	82359	13595	193	482	70	1.60(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.221						3	7			
341.8567	24.221						64	160			
A Non-2,3,7,8-sub-PeCDF											
339.8597	25.400	27.645	-134	0.947	97156	17467	172	430	102		
341.8567	25.400	27.645	-134	0.947	64917	12032	193	482	62	1.50(1.32-1.78)	
339.8597	26.730	27.645	-55	0.996	17349	4277	172	430	25		
341.8567	26.730	27.645	-55	0.996	11991	2677	193	482	14	1.45(1.32-1.78)	
339.8597	27.438	27.645	-12	1.023	62193	10148	172	430	59		
341.8567	27.438	27.645	-12	1.023	39467	6457	193	482	33	1.58(1.32-1.78)	
339.8597	28.676	27.645	62	1.069	31974	4755	172	430	28		
341.8567	28.684	27.645	62	1.069	21380	3403	193	482	18	1.50(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.139	29.108	2	1.402	3399020	532520	308	770	1729		
369.8919	29.139	29.108	2	1.402	2083559	327955	366	915	896	1.63(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDD											
355.8546	29.173	29.133	2	1.001	11153	1681	125	312	13		
357.8516	29.156	29.133	1	1.001	8189	1400	40	100	35	1.36(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											RQM
355.8546	25.678	28.034	-141	0.881	2046	602	125	312	5		
357.8516	25.754	28.034	-137	0.884	6056	1241	40	100	31	0.34(1.32-1.78)	M
	Empc Correction				1320	388	40	100	10		
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.617	34.597	1	0.952	3265661	734819	975	2437	754		
385.8610	34.617	34.597	1	0.952	6066167	1362605	1938	4845	703	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.634	34.613	1	1.000	415758	95251	255	637	374		
375.8178	34.634	34.613	1	1.000	333052	74134	198	495	374	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.785	34.773	1	0.957	2957803	630840	975	2437	647		
385.8610	34.785	34.773	1	0.957	5453856	1146227	1938	4845	591	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.802	34.790	1	1.000	112233	24221	255	637	95		
375.8178	34.802	34.790	1	1.000	89154	17706	198	495	89	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.644	35.625	1	0.980	2981822	752460	975	2437	772		
385.8610	35.644	35.625	1	0.980	5563061	1401764	1938	4845	723	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											Ma
373.8208	35.653	35.641	1	1.000	14127	3680	255	637	14		M
375.8178	35.661	35.641	1	1.000	12574	3362	198	495	17	1.12(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.554	36.551	0	1.005	2690308	737250	975	2437	756		
385.8610	36.554	36.551	0	1.005	4977152	1353534	1938	4845	698	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	36.562	36.560	0	1.000	8800	2378	255	637	9		M
375.8178	36.562	36.560	0	1.000	6240	2057	198	495	10	1.41(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											Ma
373.8208	33.067	34.703	-98	0.955	28466	4941	255	637	19		
375.8178	33.051	34.703	-99	0.955	23364	4217	198	495	21	1.22(1.05-1.43)	
373.8208	33.969	34.703	-44	0.981	11887	3088	255	637	12		
375.8178	33.969	34.703	-44	0.981	10857	2829	198	495	14	1.09(1.05-1.43)	
373.8208	35.535	34.703	50	1.027	7711	1677	255	637	7		M
375.8178	35.527	34.703	49	1.026	5643	1553	198	495	8	1.37(1.05-1.43)	M
373.8208	36.689	34.703	119	1.060	23107	6227	255	637	24		M
375.8178	36.680	34.703	118	1.060	20232	5627	198	495	28	1.14(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.360	36.358	0		5630485	1527462	830	2075	1840		
403.8529	36.360	36.358	0		4365528	1189987	630	1575	1889	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.872	35.861	1	0.987	3722840	992424	830	2075	1196		
403.8529	35.872	35.861	1	0.987	2896625	785773	630	1575	1247	1.29(1.05-1.43)	

Report Date: 20-Oct-2021 07:44:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDD											M
389.8158	35.889	35.869	1	1.000	4816	1414	141	352	10		
391.8127	35.889	35.869	1	1.000	4228	1106	121	302	9	1.14(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.990	35.979	1	0.990	3417247	903865	830	2075	1089		
403.8529	35.990	35.979	1	0.990	2717649	719477	630	1575	1142	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											Ma
389.8158	36.006	35.995	1	1.000	4030	970	141	352	7		M
391.8127	36.006	35.995	1	1.000	3690	879	121	302	7	1.09(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											M
389.8158	36.377	36.366	1	1.014	3647	843	141	352	6		M
391.8127	36.360	36.366	0	1.014	3041	657	121	302	5	1.20(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											Ma
389.8158	33.893	35.108	-73	0.942	13623	2729	141	352	19		M
391.8127	33.893	35.108	-73	0.942	11040	2189	121	302	18	1.23(1.05-1.43)	
389.8158	35.080	35.108	-2	0.975	8148	1733	141	352	12		M
391.8127	35.063	35.108	-3	0.974	7383	1273	121	302	11	1.10(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.426	38.425	0	1.057	1792015	602184	1507	3767	400		
419.8220	38.426	38.425	0	1.057	3775063	1272306	1867	4667	681	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.443	38.434	1	1.000	122820	39981	586	1465	68		
409.7788	38.435	38.434	0	1.000	115974	38333	283	707	135	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.698	39.698	0	1.092	2173318	797933	1507	3767	529		
419.8220	39.698	39.698	0	1.092	4660920	1709808	1867	4667	916	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.706	39.706	0	1.000	47570	15872	586	1465	27		
409.7788	39.706	39.706	0	1.000	42618	14628	283	707	52	1.12(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	38.814	39.072	-15	1.010	39260	12723	586	1465	22		
409.7788	38.805	39.072	-16	1.010	39005	12575	283	707	44	1.01(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.395	39.394	0	1.083	2786982	1035053	983	2457	1053		
437.8140	39.395	39.394	0	1.083	2702402	1009929	796	1990	1269	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.403	39.403	0	1.000	87105	30936	457	1142	68		
425.7737	39.403	39.403	0	1.000	84009	31391	401	1002	78	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.755	39.202	-27	0.984	102021	34730	457	1142	76		
425.7737	38.755	39.202	-27	0.984	96716	33513	401	1002	84	1.05(0.88-1.20)	
13C-OCDD											
469.7780	41.873	41.875	0	1.152	4099953	1415900	624	1560	2269		
471.7750	41.873	41.875	0	1.152	4481792	1540203	500	1250	3080	0.91(0.76-1.02)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
OCDF											M
441.7428	41.966	41.959	0	1.002	49090	16981	168	420	101		M
443.7399	41.958	41.959	0	1.002	54447	18157	236	590	77	0.90(0.76-1.02)	M
OCDD											
457.7377	41.882	41.883	0	1.000	1242616	425489	247	617	1723		
459.7348	41.882	41.883	0	1.000	1371609	466717	275	687	1697	0.91(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Lims ID:	320-79918-A-1-A		
Client ID:	11215702-Pretreatment		
Inject. Date:	15-Oct-2021 17:27:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	10

Non-2,3,7,8-sub-TCDF, RT: 19.372

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.119	D 13C-2,3,7,8-TCDF	100.000	10514699	1670032

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	10514699	1670032

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.903	29166	5503	37944	7467	0.5702	0.77	M
17.358	151670	27798	188377	34663	2.89	0.81	
17.839	231329	31929	281344	39836	4.36	0.82	
18.269	159433	22677	198905	29121	3.04	0.80	
18.648	209246	29811	263733	36265	4.02	0.79	M
19.138	1894837	311810	2349468	383110	36.1	0.81	
19.525	98746	15334	123980	19619	1.89	0.80	
20.618	300005	45811	368732	56837	5.68	0.81	
21.039	62201	9285	82934	12855	1.23	0.75	
23.087	285528	41468	372937	57185	5.59	0.77	
Signal Totals:							
	3422161	541426	4268354	676958			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7690515	1218384				0.80	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 65.337 = (7690515 * 100.000) / (10514699 * 1.119)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Inject. Date: 15-Oct-2021 17:27:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 534320 Lims Sample ID: 10

Non-2,3,7,8-sub-TCDD, RT: 20.213

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.094	D 13C-2,3,7,8-TCDD	100.000	6870165	994545

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.094		100.000	6870165	994545

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
20.988	8784	1993	14455	2759	0.3091	0.61	RQ
20.988	8784	1993	11407	2588	0.2686		Empc Correction
21.856	78033	10341	99991	14882	2.37	0.78	
Signal Totals:							
	86817	12334	111398	17470			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	201263	29975				0.76	RQ
	198215	29804					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.677 = (201263 * 100.000) / (6870165 * 1.094)
Empc Amount: 2.637 = (198215 * 100.000) / (6870165 * 1.094)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 20-Oct-2021 07:44:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Lims ID:	320-79918-A-1-A		
Client ID:	11215702-Pretreatment		
Inject. Date:	15-Oct-2021 17:27:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	10

Non-2,3,7,8-sub-PeCDF, RT: 27.645

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	9272465	1618580
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	10545291	1662760

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	9908878	1640670

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.400	97156	17467	64917	12032	1.66	1.50	
26.730	17349	4277	11991	2677	0.3010	1.45	
27.438	62193	10148	39467	6457	1.04	1.58	
28.676	31974	4755	21380	3403	0.5474	1.50	
Signal Totals:							
	208672	36647	137755	24569			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	346427	61216				1.51	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.554 = (346427 * 100.000) / (9908878 * 0.984)

Report Date: 20-Oct-2021 07:44:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Inject. Date: 15-Oct-2021 17:27:00 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 534320 Lims Sample ID: 10

Non-2,3,7,8-sub-PeCDD, RT: 28.034

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.059	D 13C-1,2,3,7,8-PeCDD	100.000	5482579	860475

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.059		100.000	5482579	860475

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
25.678	2046	602	6056	1241	0.1395	0.34	RQM
25.678	2046	602	1320	388	0.0580		Empc Correction
Signal Totals:							
	2046	602	1320	388			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	8102	1843				0.34	RQM
	3366	990					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1395 = (8102 * 100.000) / (5482579 * 1.059)
Empc Amount: 0.0580 = (3366 * 100.000) / (5482579 * 1.059)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Lims ID:	320-79918-A-1-A		
Client ID:	11215702-Pretreatment		
Inject. Date:	15-Oct-2021 17:27:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDF, RT: 34.703

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	0.974	D 13C-1,2,3,4,7,8-HxCDF	100.000	9331828	2097424
1,2,3,6,7,8-HxCDF	1.220	D 13C-1,2,3,6,7,8-HxCDF	100.000	8411659	1777067
2,3,4,6,7,8-HxCDF	1.244	D 13C-2,3,4,6,7,8-HxCDF	100.000	8544883	2154224
1,2,3,7,8,9-HxCDF	1.245	D 13C-1,2,3,7,8,9-HxCDF	100.000	7667460	2090784

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.171		100.000	8488957	2029874

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags
33.067	28466	4941	23364	4217	0.5215	1.22	
33.969	11887	3088	10857	2829	0.2289	1.09	
35.535	7711	1677	5643	1553	0.1344	1.37	M
36.689	23107	6227	20232	5627	0.4361	1.14	M
Signal Totals:							
	71171	15933	60096	14226			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	131267	30159				1.18	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.321 = (131267 * 100.000) / (8488957 * 1.171)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Lims ID:	320-79918-A-1-A		
Client ID:	11215702-Pretreatment		
Inject. Date:	15-Oct-2021 17:27:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	10

Non-2,3,7,8-sub-HxCDD, RT: 35.108

Initial Calibration RRF   IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.909	D 13C-1,2,3,4,7,8-HxCDD	100.000	6619465	1778197
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	6134896	1623342
1,2,3,7,8,9-HxCDD	1.027				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.988		100.000	6377180	1700769

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
33.893	13623	2729	11040	2189	0.3915	1.23	Ma
35.080	8148	1733	7383	1273	0.2466	1.10	Ma
Signal Totals:							
	21771	4462	18423	3462			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	40194	7924				1.18	Ma

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6381 = (40194 * 100.000) / (6377180 * 0.988)

QC Flag Legend

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Lims ID:	320-79918-A-1-A		
Client ID:	11215702-Pretreatment		
Inject. Date:	15-Oct-2021 17:27:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	10

Non-2,3,7,8-sub-HpCDF, RT: 39.072

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.585	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	5567078	1874490
1,2,3,4,7,8,9-HpCDF	1.160	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	6834238	2507741

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.372		100.000	6200658	2191115

Sum the Uncalibrated Results

RT	407.7817 Area	407.7817 Height	409.7788 Area	409.7788 Height	Amount	Ratio	Flags
38.814	39260	12723	39005	12575	0.9197	1.01	
Signal Totals:							
	39260	12723	39005	12575			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	78265	25298				1.01	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.9197 = (78265 * 100.000) / (6200658 * 1.372)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Inject. Date: 15-Oct-2021 17:27:00
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 534320
Lims Sample ID: 10

Non-2,3,7,8-sub-HpCDD, RT: 39.202

Initial Calibration RRF | IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.082	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	5489384	2044982

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.082		100.000	5489384	2044982

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.755	102021	34730	96716	33513	3.35	1.05	
Signal Totals:							
	102021	34730	96716	33513			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	198737	68243				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 3.346 = (198737 * 100.000) / (5489384 * 1.082)

Report Date: 20-Oct-2021 07:44:32

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.63- 23.11)

Signal: 1

Processing Integration Results

Not Detected

RT: 15.63- 23.11

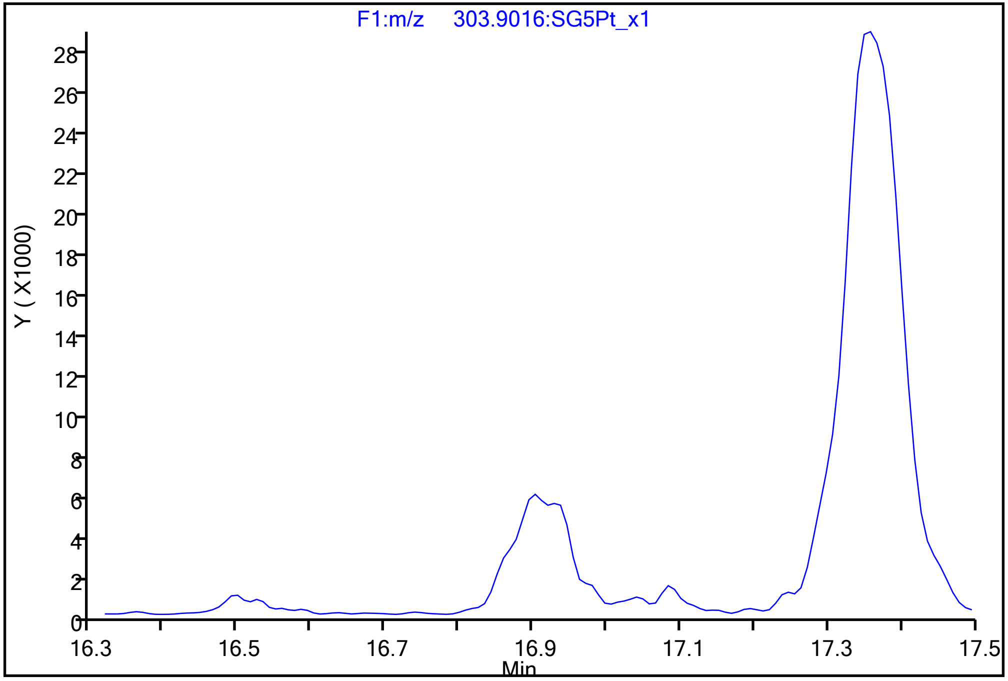

Manual Integration Results

RT = 16.903 Area = 29166 M

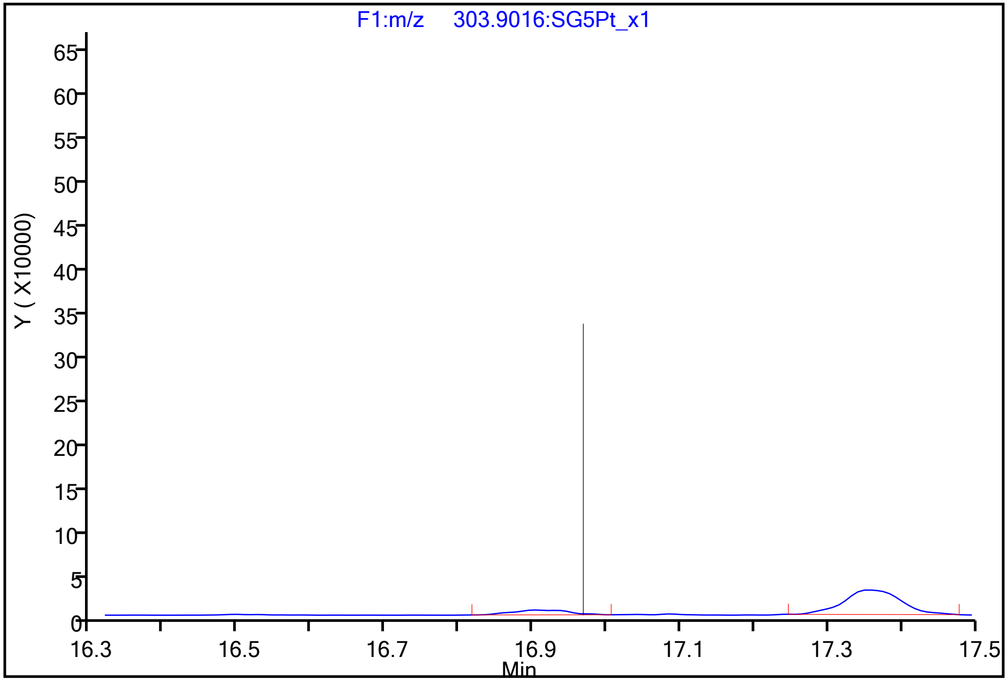

Reviewer: bennettd, 18-Oct-2021 13:17:41

Audit Action: Manually Integrated

Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1
Client ID:	11215702-Pretreatment		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (15.63- 23.11)

Signal: 2

Processing Integration Results

Not Detected
RT: 15.63- 23.11

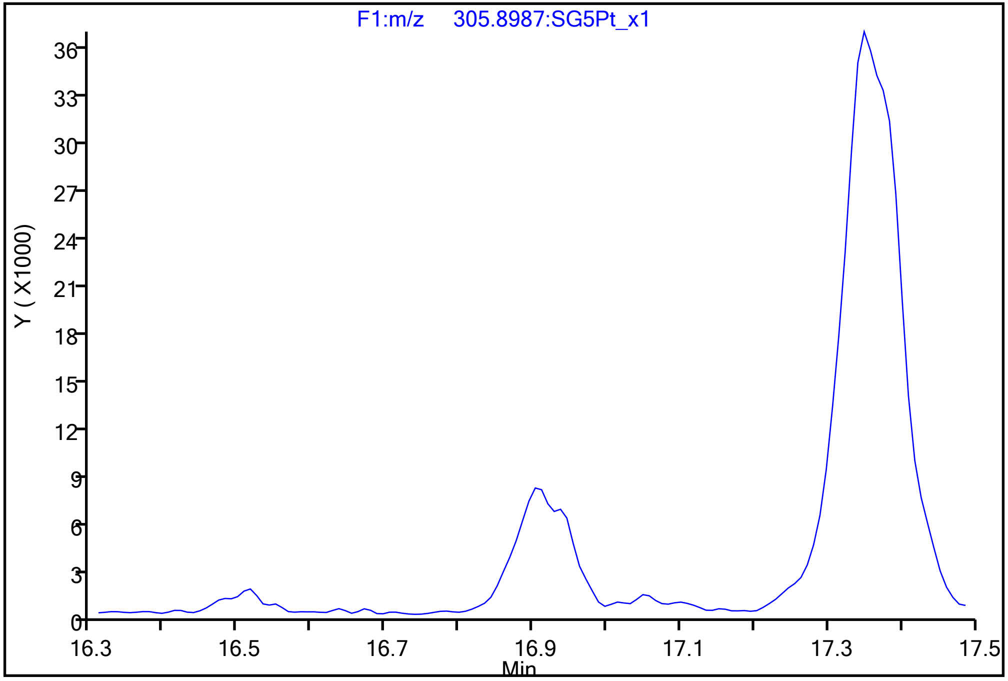

Manual Integration Results

RT = 16.903 Area = 37944 M

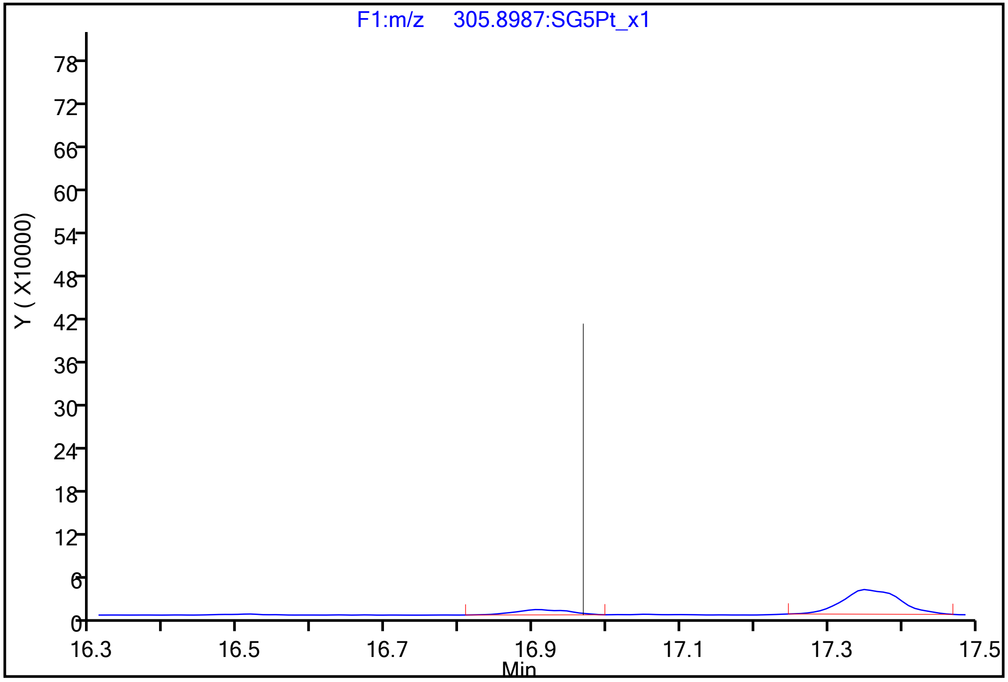

Reviewer: bennettd, 18-Oct-2021 13:17:50

Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.63- 23.11)

Signal: 1

Processing Integration Results

RT = 18.648 Area = 223061

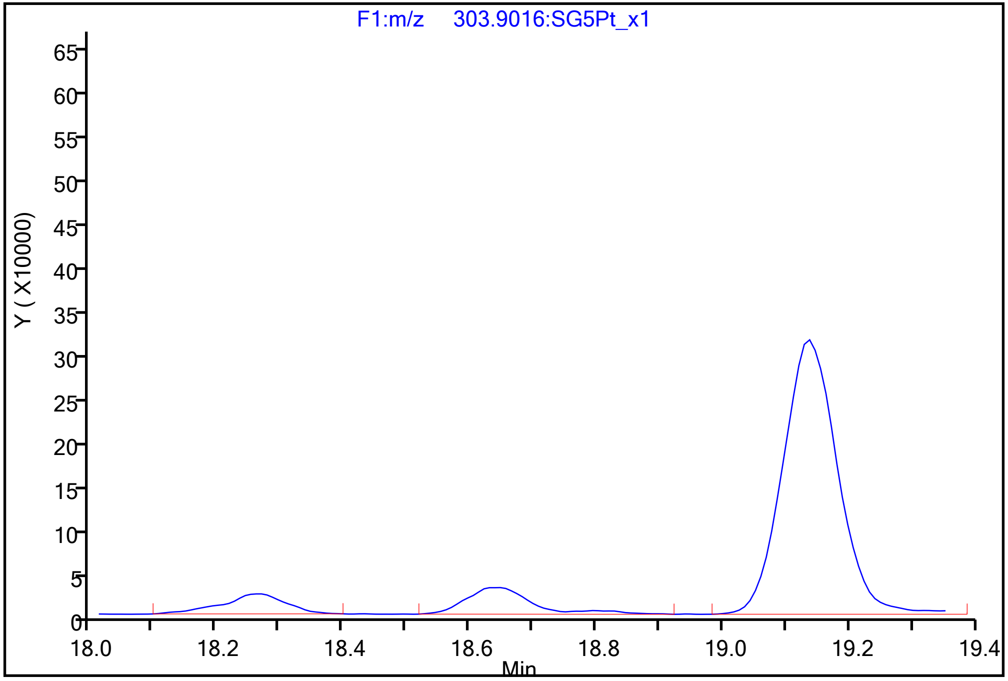

Manual Integration Results

RT = 18.648 Area = 209246 M

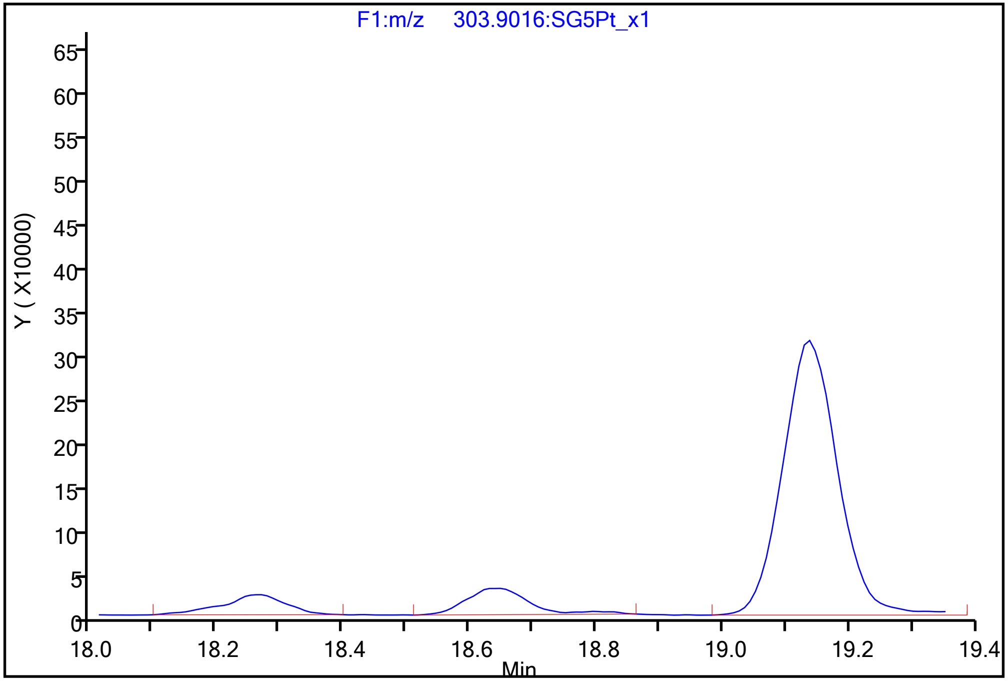

Reviewer: bennettd, 18-Oct-2021 13:17:41

Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Injection Date: 15-Oct-2021 17:27:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-1-A
Lab Sample ID: 320-79918-1
Client ID: 11215702-Pretreatment
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 10
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (15.63- 23.11)

Signal: 2

Processing Integration Results

Not Detected
RT: 15.63- 23.11

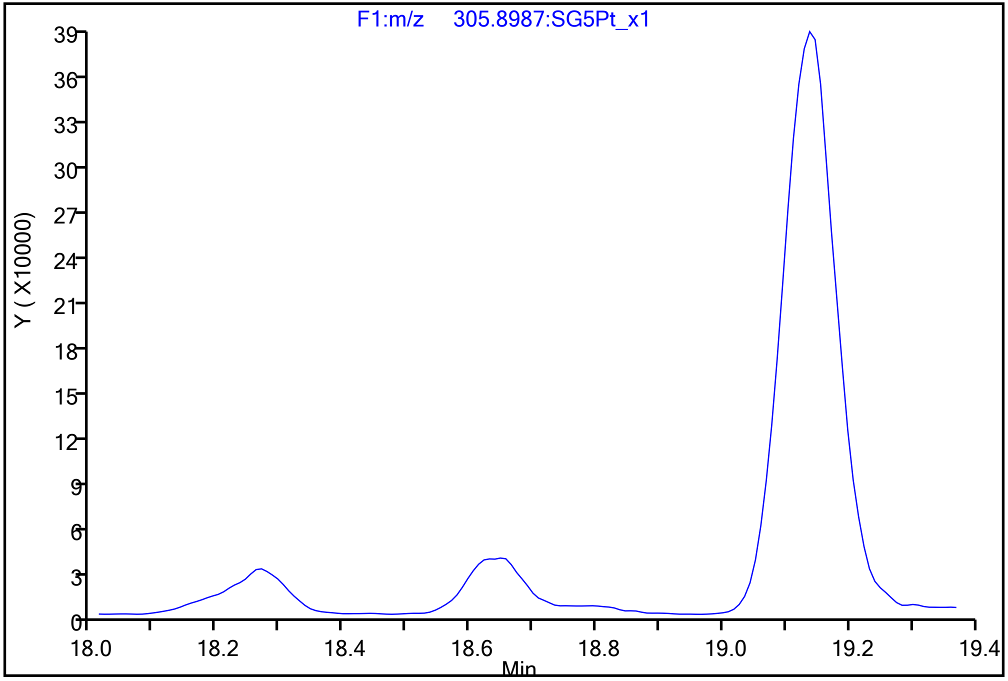

Manual Integration Results

RT = 18.648 Area = 263733 M

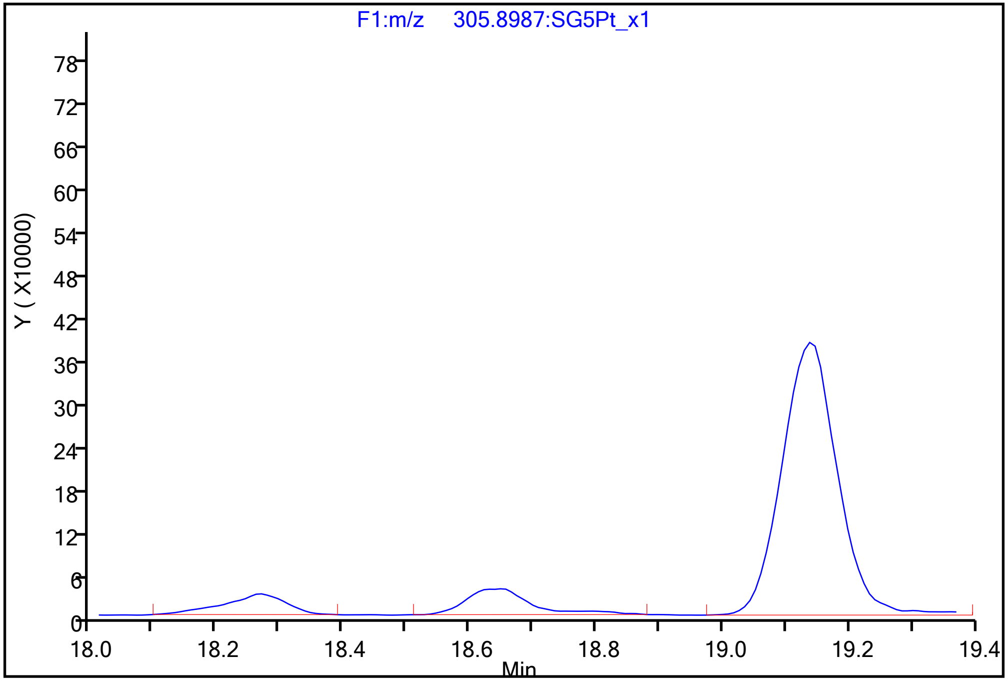

Reviewer: bennettd, 18-Oct-2021 13:17:50
Audit Action: Manually Integrated
Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	26.85
Area:	230887
Amount:	3.732134
Amount Units:	pg/ul

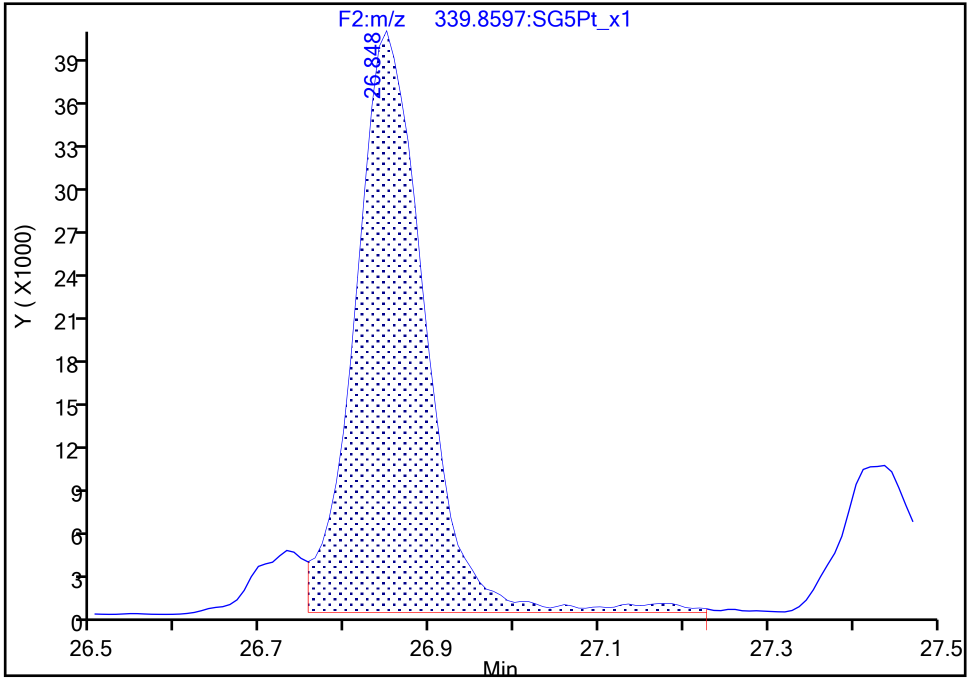

Manual Integration Results

RT:	26.85
Area:	226098
Amount:	3.650140
Amount Units:	pg/ul

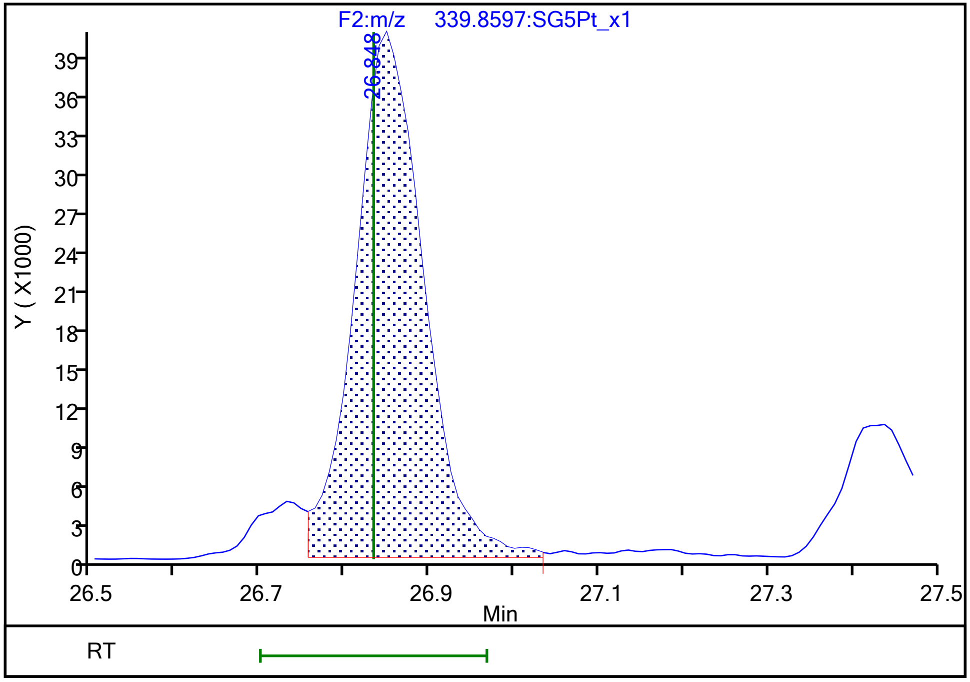

Reviewer: bennettd, 18-Oct-2021 13:18:13

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1
Client ID:	11215702-Pretreatment		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT:	26.85
Area:	146998
Amount:	3.732134
Amount Units:	pg/ul

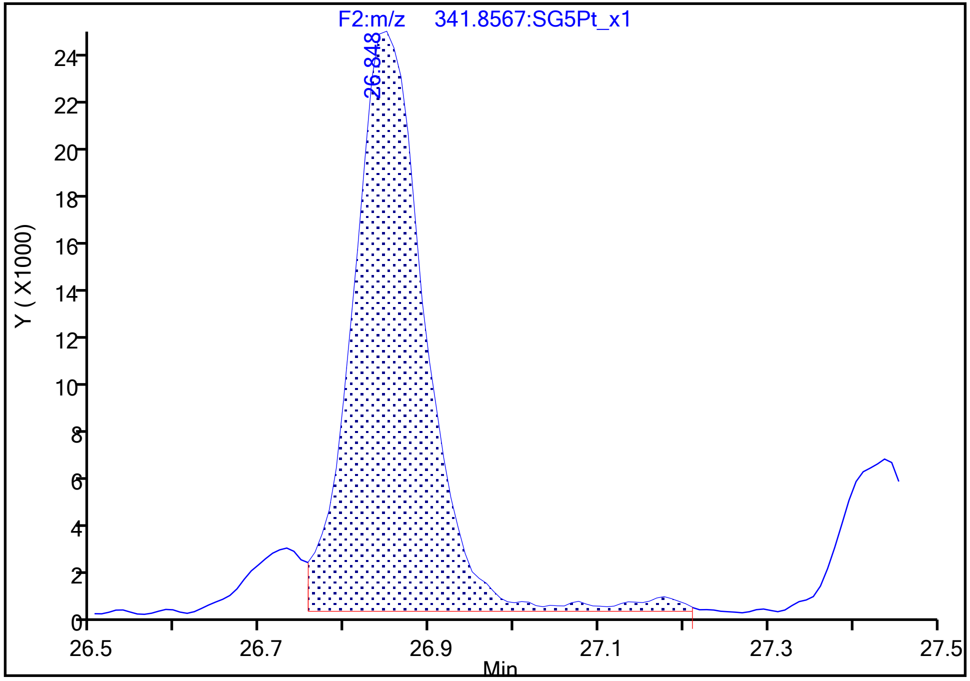

Manual Integration Results

RT:	26.85
Area:	143485
Amount:	3.650140
Amount Units:	pg/ul

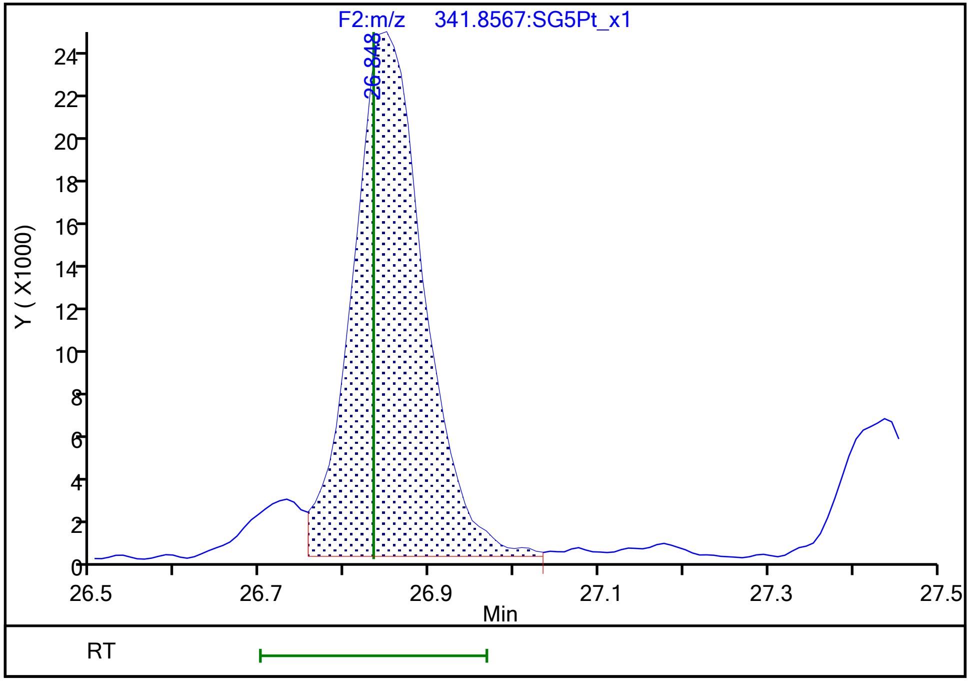

Reviewer: bennettd, 18-Oct-2021 13:18:16

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDD, Signal: 2, m/z: 357.8516, RT: (25.54- 30.53)

Signal: 2

Processing Integration Results

RT = 25.754 Area = 5368

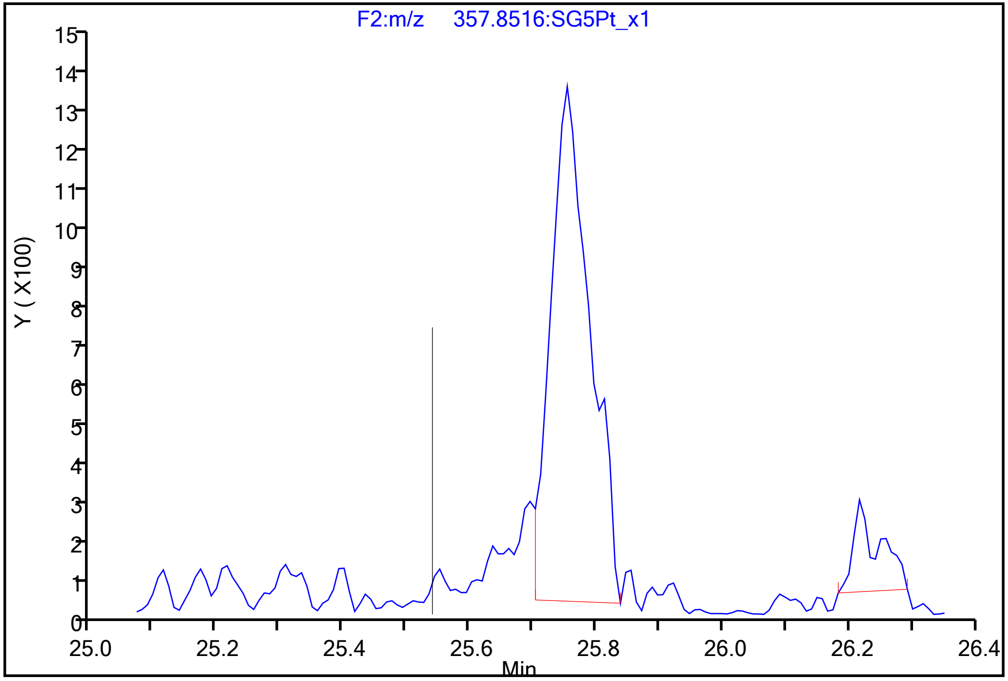

Manual Integration Results

RT = 25.754 Area = 6056 M

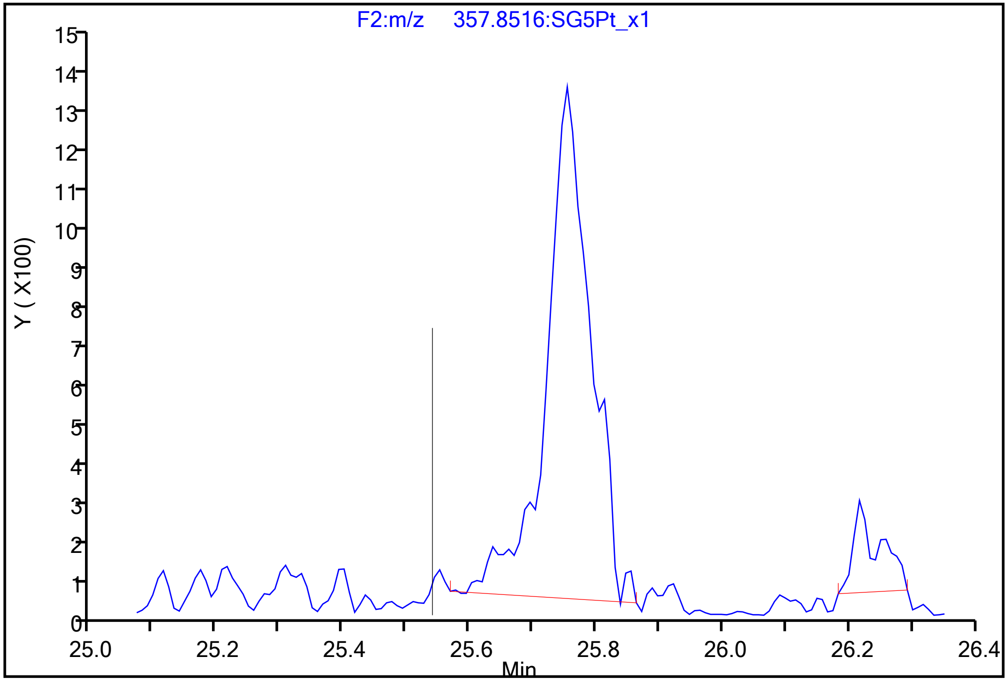

Reviewer: bennettd, 18-Oct-2021 13:18:45

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

Processing Integration Results

RT: 35.66
Area: 14068
Amount: 0.340338
Amount Units: pg/ul

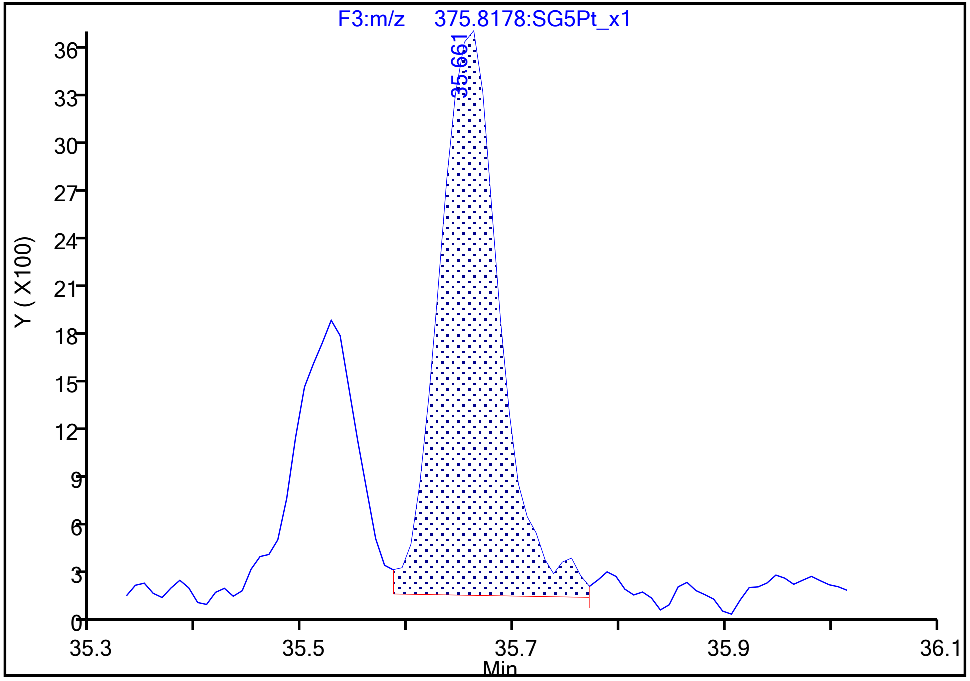

Manual Integration Results

RT: 35.66
Area: 12574
Amount: 0.251282
Amount Units: pg/ul

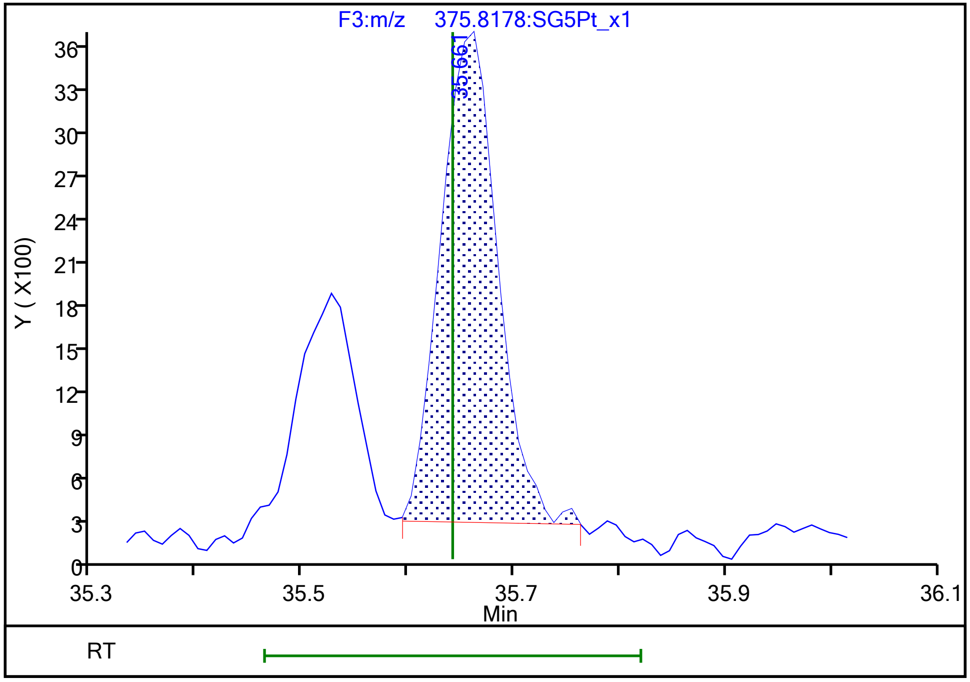

Reviewer: bennettd, 18-Oct-2021 13:20:00

Audit Action: Manually Integrated Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

RT:	35.65
Area:	22096
Amount:	0.340338
Amount Units:	pg/ul

Processing Integration Results

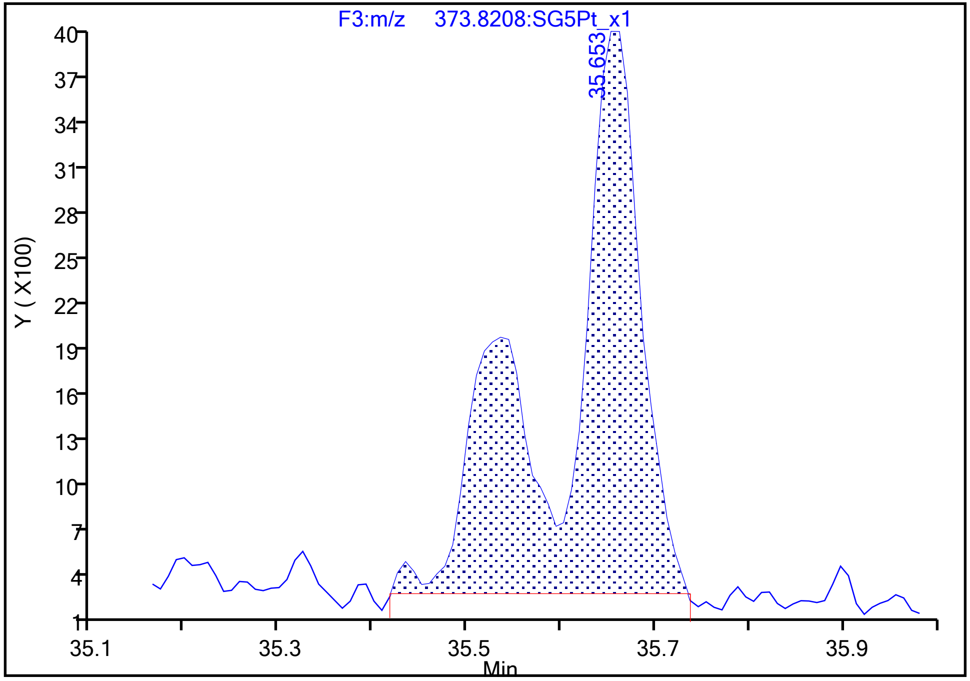

RT:	35.65
Area:	14127
Amount:	0.251282
Amount Units:	pg/ul

Manual Integration Results

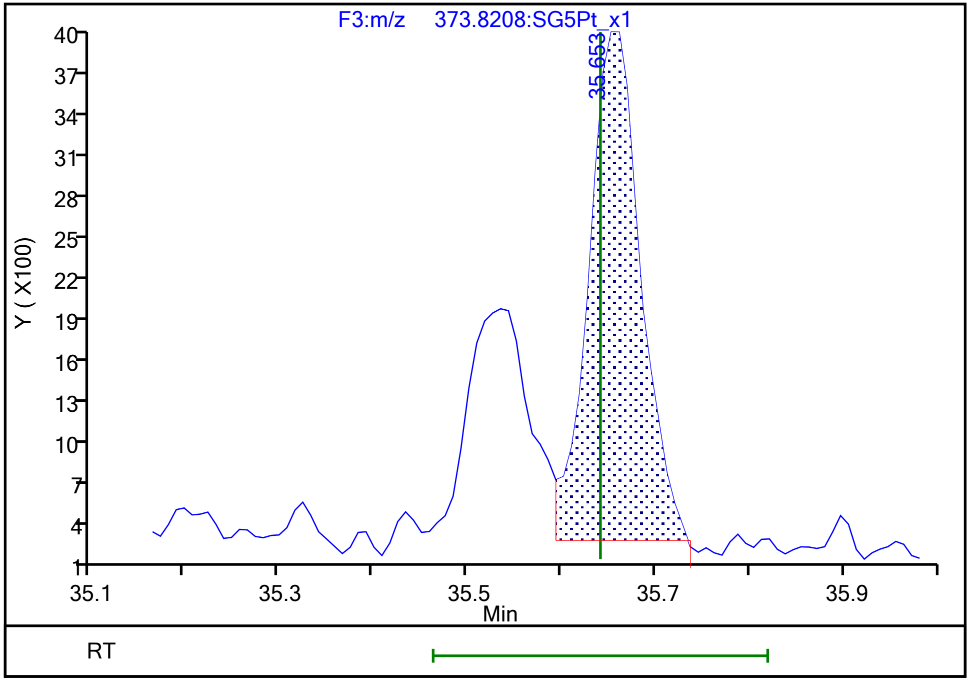

Reviewer: bennettd, 18-Oct-2021 13:20:46

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Injection Date: 15-Oct-2021 17:27:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-1-A
Lab Sample ID: 320-79918-1
Client ID: 11215702-Pretreatment
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 10
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT: 36.69
Area: 32384
Amount: 0.555779
Amount Units: pg/ul

Processing Integration Results

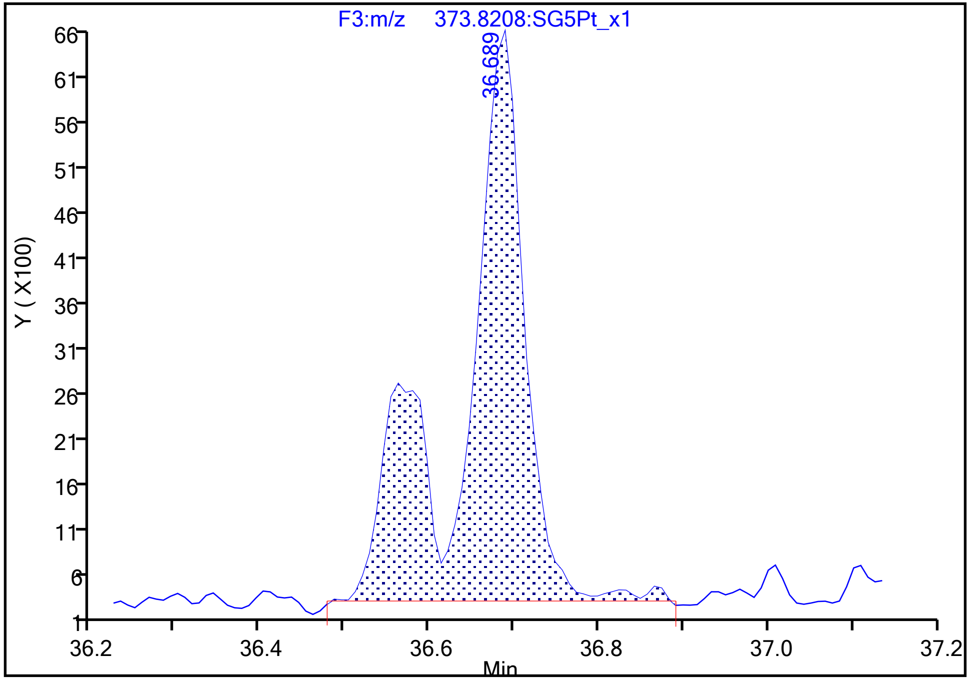

RT: 36.56
Area: 8800
Amount: 0.157501
Amount Units: pg/ul

Manual Integration Results

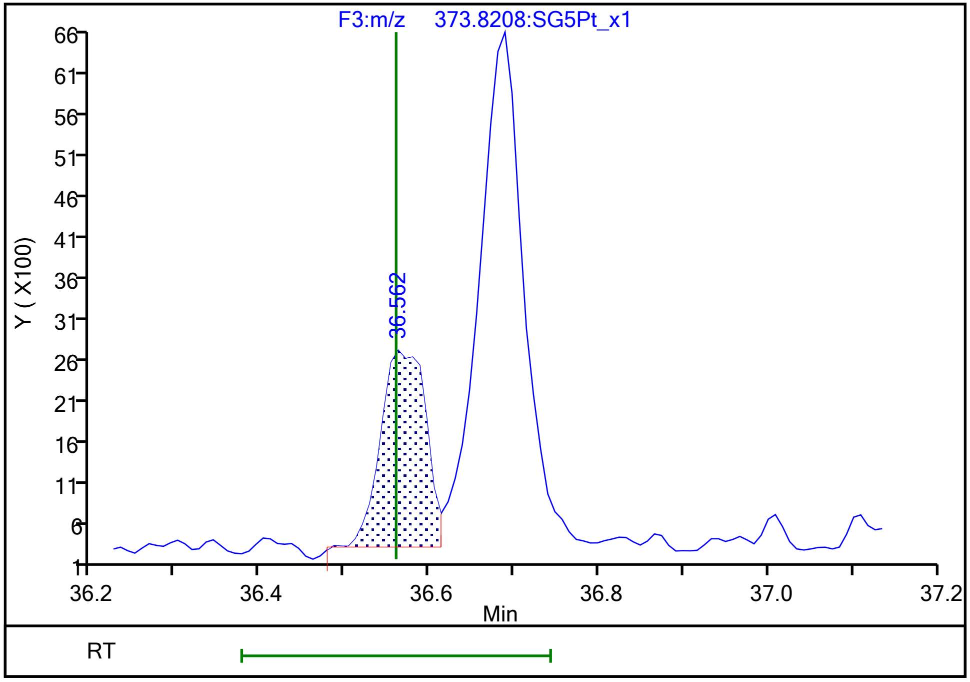

Reviewer: bennettd, 18-Oct-2021 13:19:21
Audit Action: Split an Integrated Peak
Audit Reason: Wrong peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT:	36.68
Area:	20688
Amount:	0.555779
Amount Units:	pg/ul

Processing Integration Results

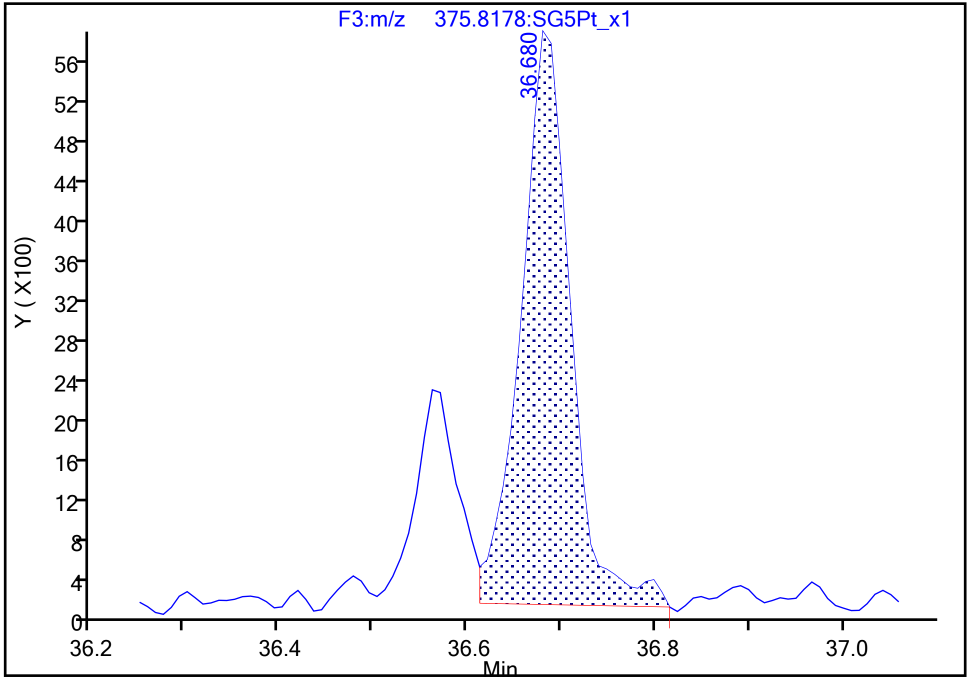

RT:	36.56
Area:	6240
Amount:	0.157501
Amount Units:	pg/ul

Manual Integration Results

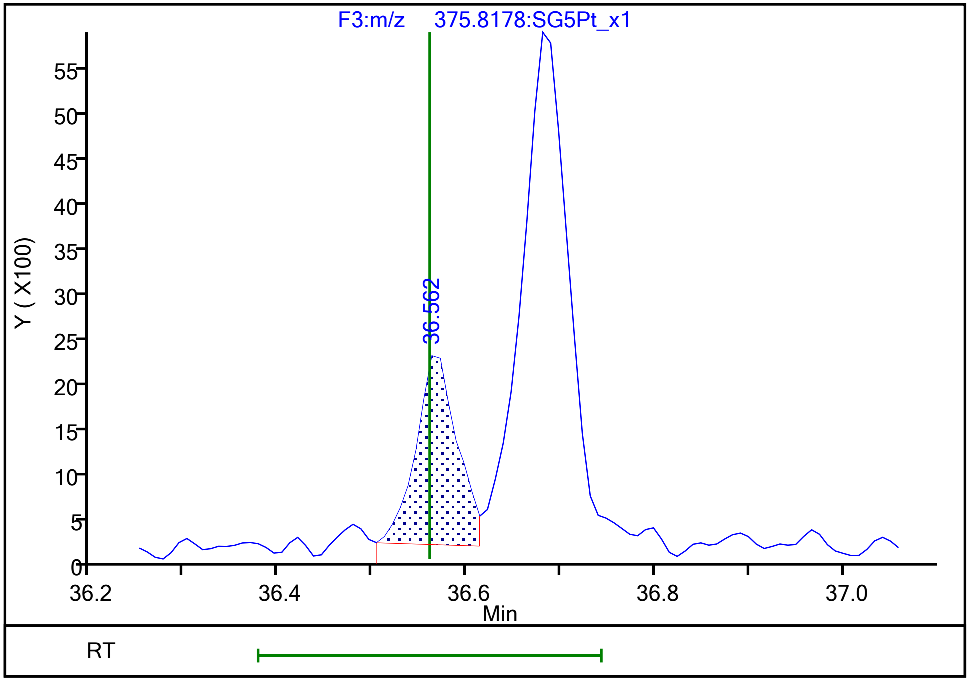

Reviewer: bennettd, 18-Oct-2021 13:19:25

Audit Action: Split an Integrated Peak Audit Reason: Wrong peak

Report Date: 20-Oct-2021 07:44:32
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Injection Date: 15-Oct-2021 17:27:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-1-A
Lab Sample ID: 320-79918-1
Client ID: 11215702-Pretreatment
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 10
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (32.70- 36.71)

Signal: 1

Processing Integration Results

Not Detected
RT: 32.70- 36.71

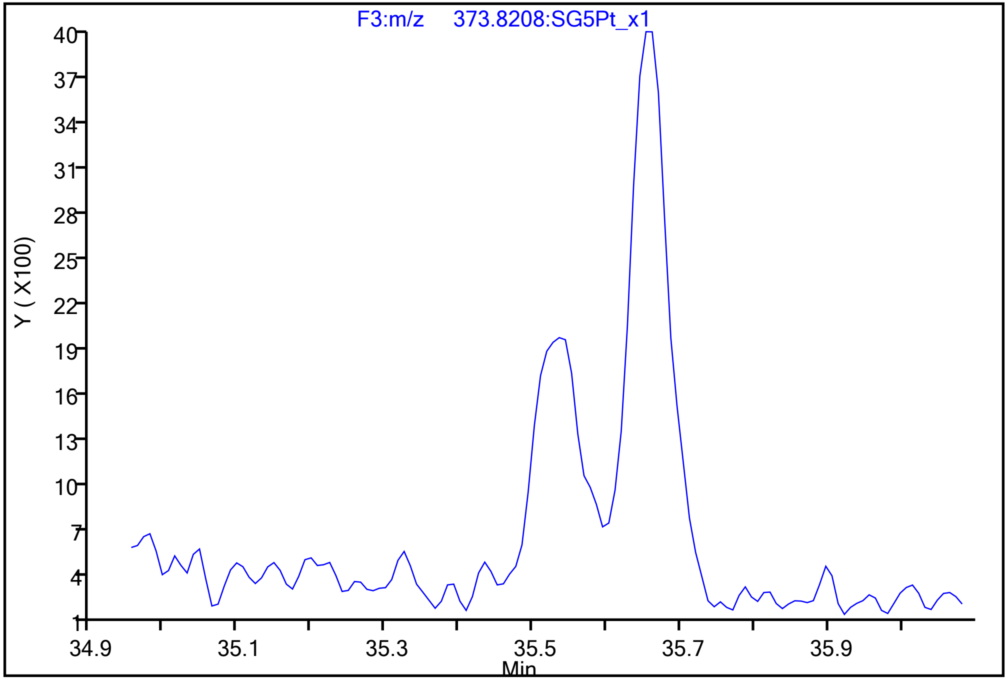

Manual Integration Results

RT = 35.535 Area = 7711 M

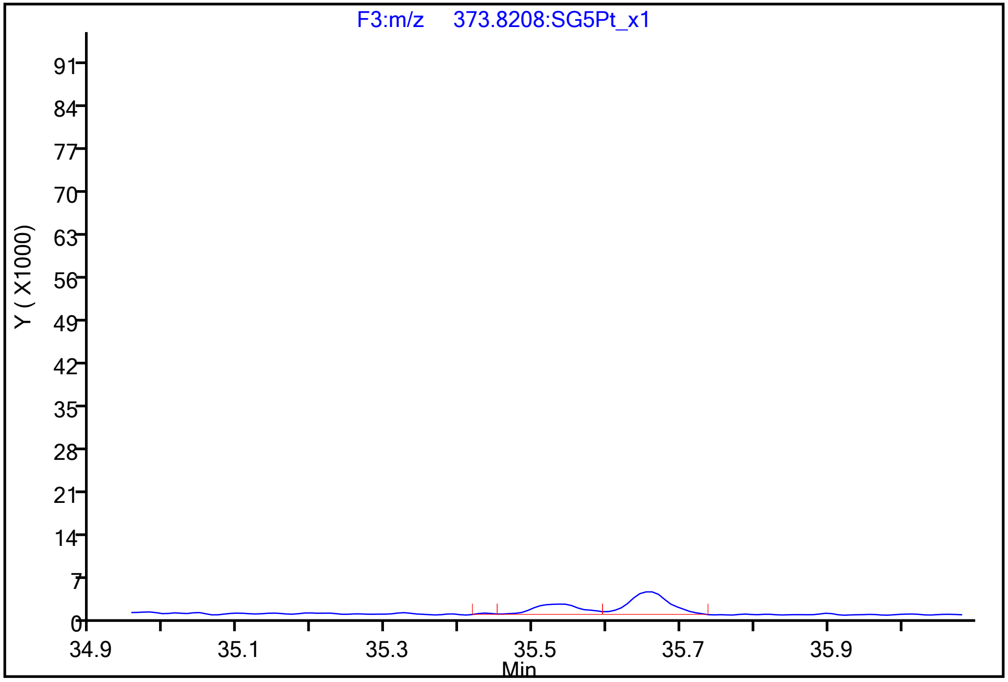

Reviewer: bennettd, 18-Oct-2021 13:20:30
Audit Action: Split an Integrated Peak
Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d

Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 2, m/z: 375.8178, RT: (32.70- 36.71)

Signal: 2

Processing Integration Results

RT = 35.527 Area = 7034

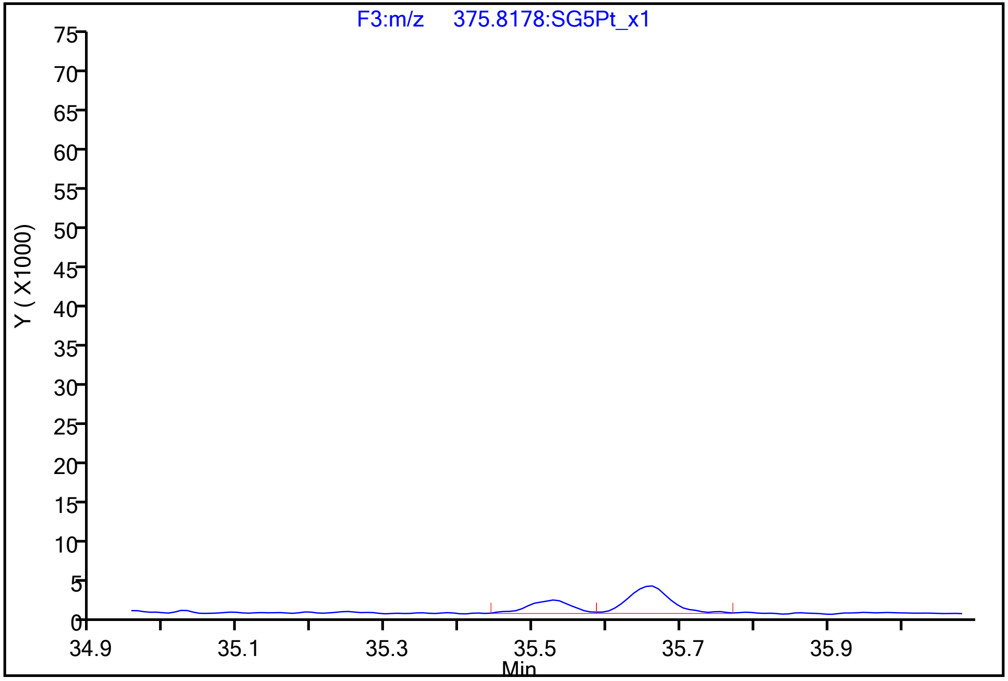

Manual Integration Results

RT = 35.527 Area = 5643 M

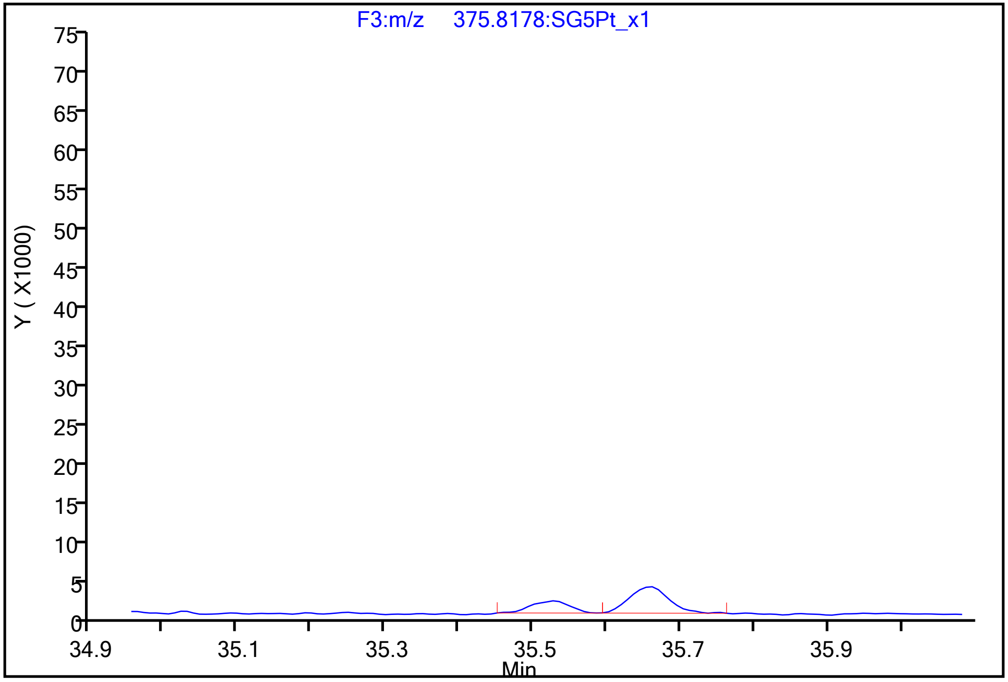

Reviewer: bennettd, 18-Oct-2021 13:20:35

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 1, m/z: 373.8208, RT: (32.70- 36.71)

Signal: 1

Processing Integration Results

RT = 36.689 Area = 32384

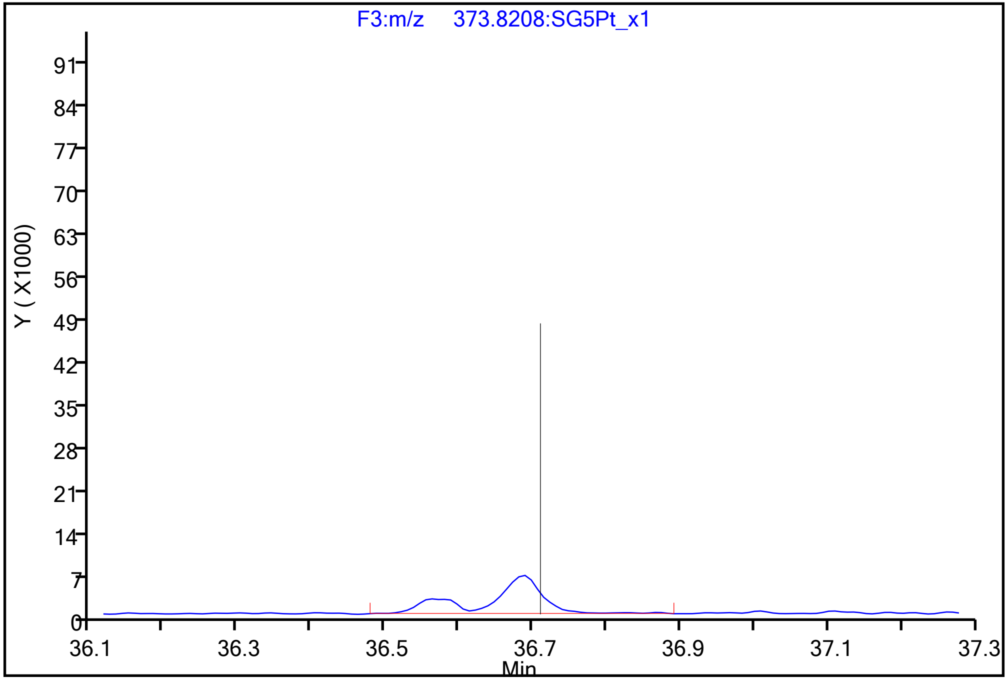

Manual Integration Results

RT = 36.689 Area = 23107 M

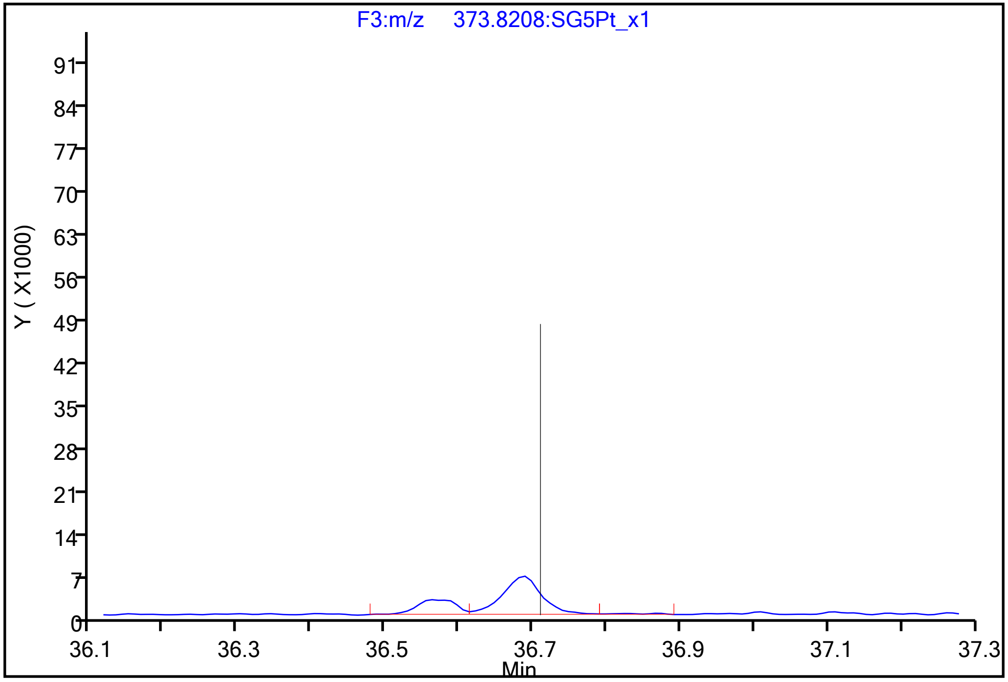

Reviewer: bennettd, 18-Oct-2021 13:20:30

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Report Date: 20-Oct-2021 07:44:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDF, Signal: 2, m/z: 375.8178, RT: (32.70- 36.71)

Signal: 2

Processing Integration Results

RT = 36.680 Area = 20688

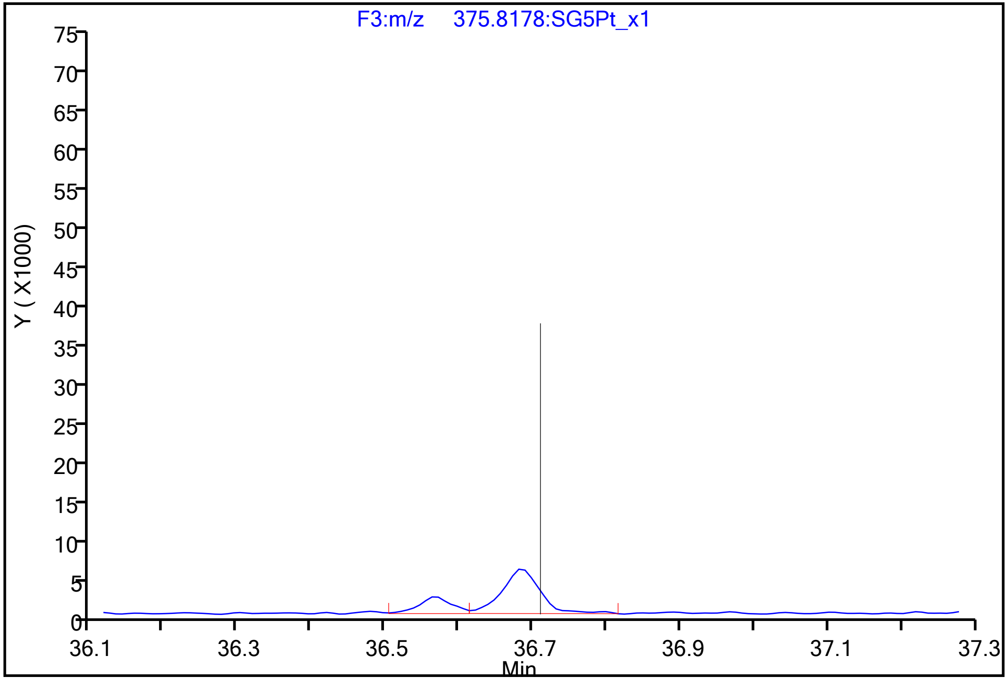

Manual Integration Results

RT = 36.680 Area = 20232 M

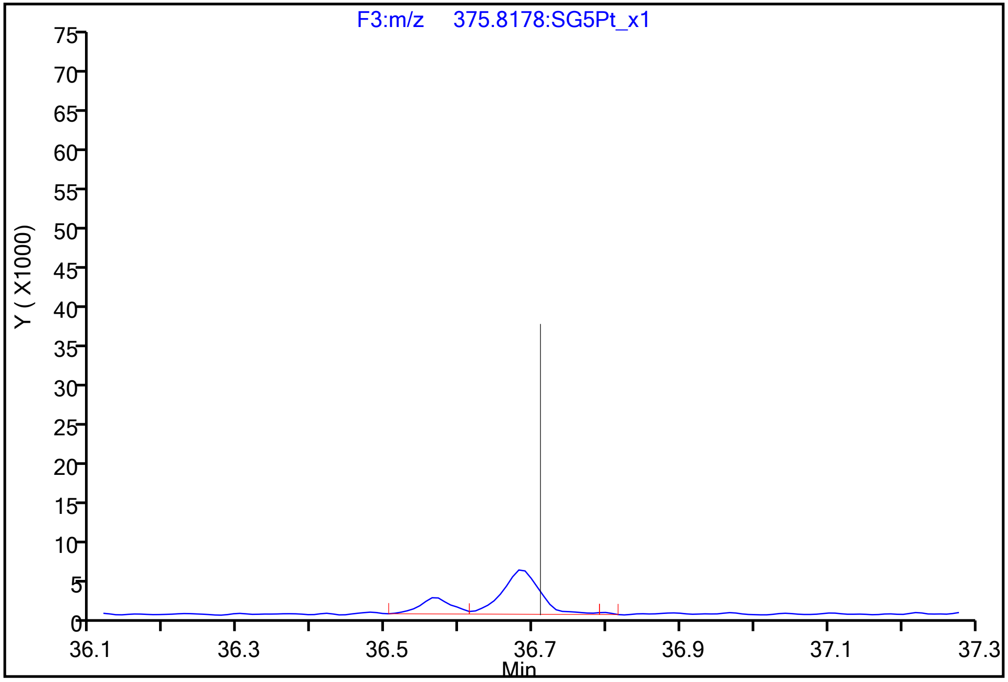

Reviewer: bennettd, 18-Oct-2021 13:20:35

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Report Date: 20-Oct-2021 07:44:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	35.89
Area:	3544
Amount:	0.139010
Amount Units:	pg/ul

Processing Integration Results

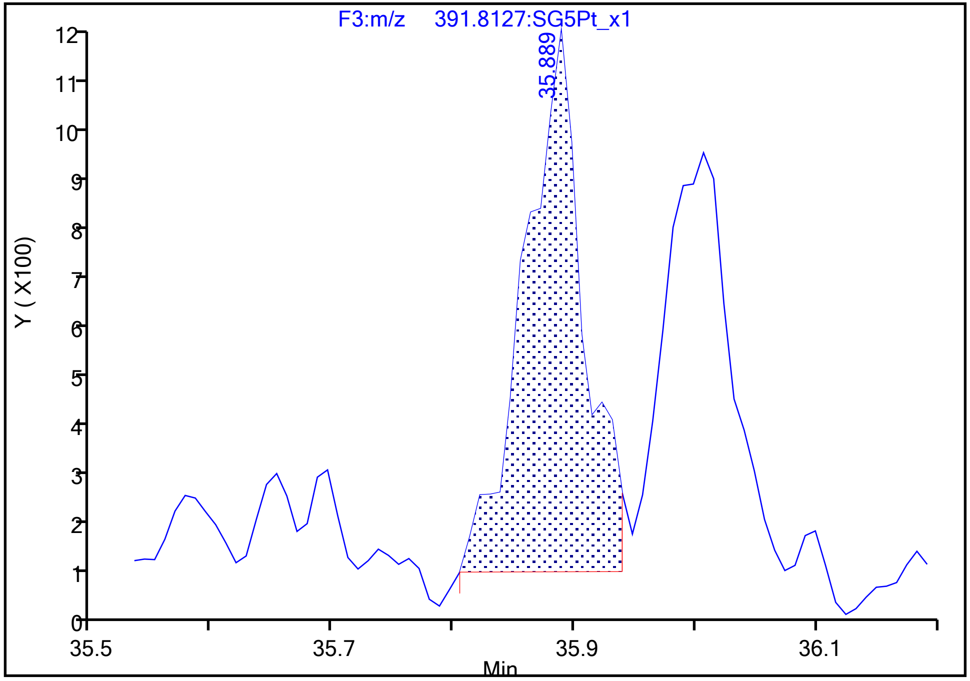

RT:	35.89
Area:	4228
Amount:	0.150384
Amount Units:	pg/ul

Manual Integration Results

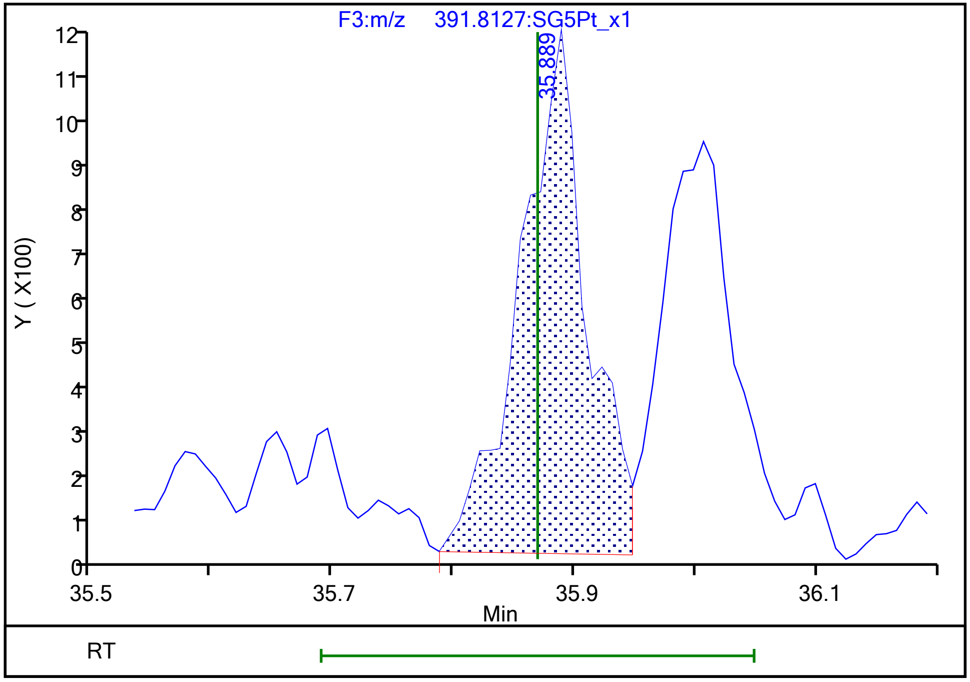

Reviewer: bennettd, 18-Oct-2021 13:21:20

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT: 36.01
Area: 4814
Amount: 0.125822
Amount Units: pg/ul

Processing Integration Results

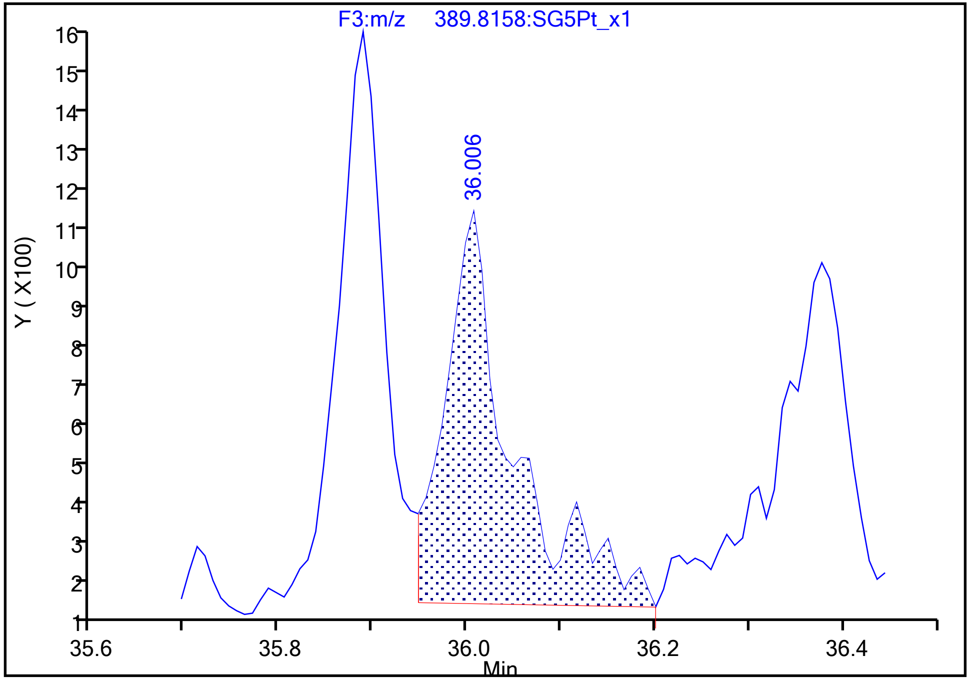

RT: 36.01
Area: 4030
Amount: 0.122428
Amount Units: pg/ul

Manual Integration Results

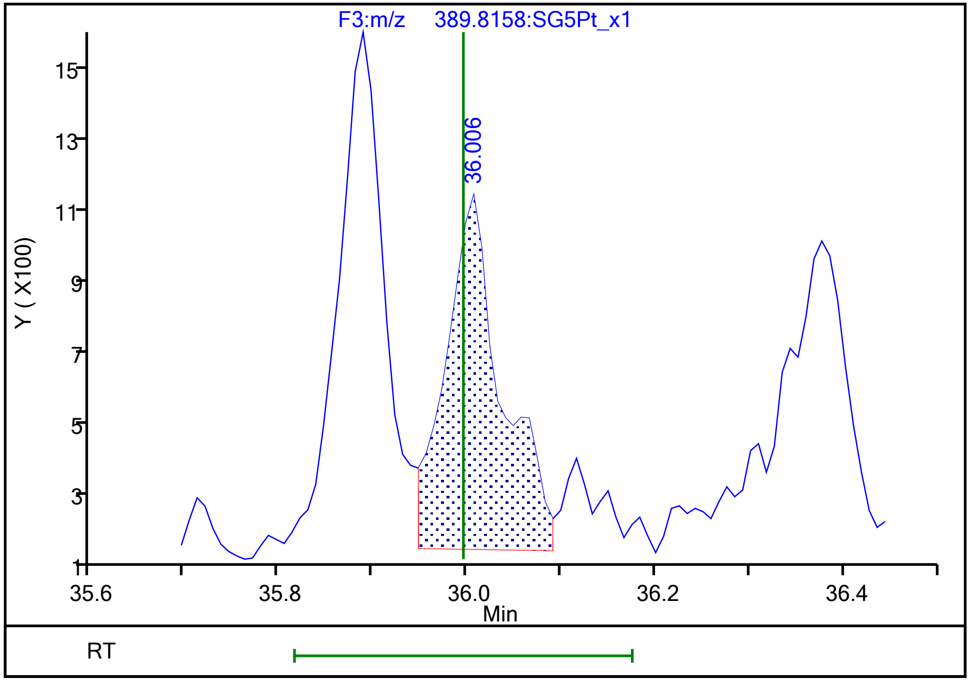

Reviewer: bennettd, 18-Oct-2021 13:21:39

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d

Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	36.01
Area:	3120
Amount:	0.125822
Amount Units:	pg/ul

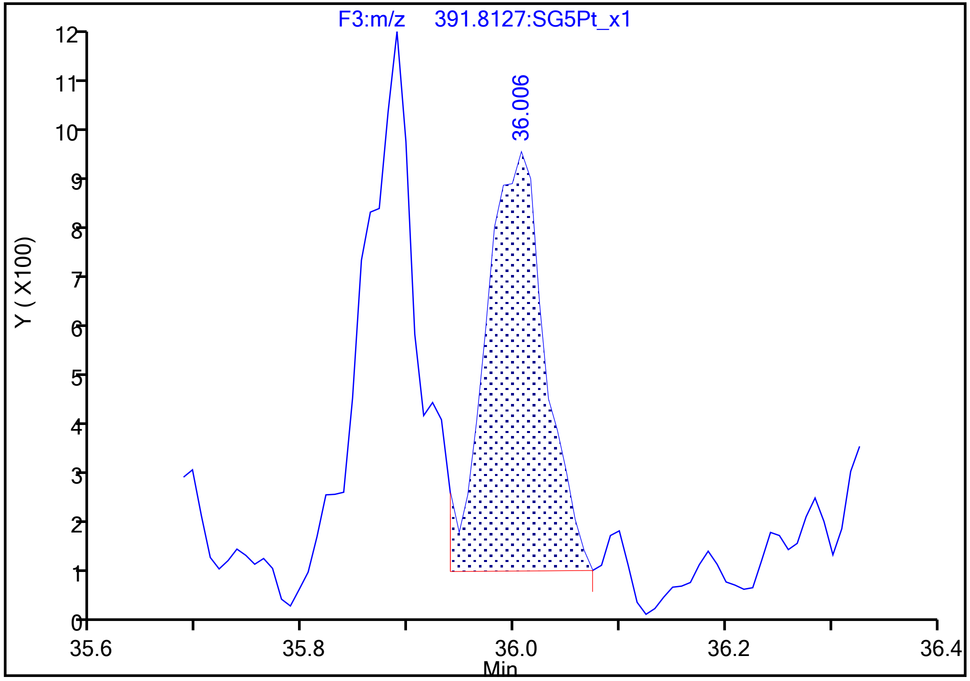

Manual Integration Results

RT:	36.01
Area:	3690
Amount:	0.122428
Amount Units:	pg/ul

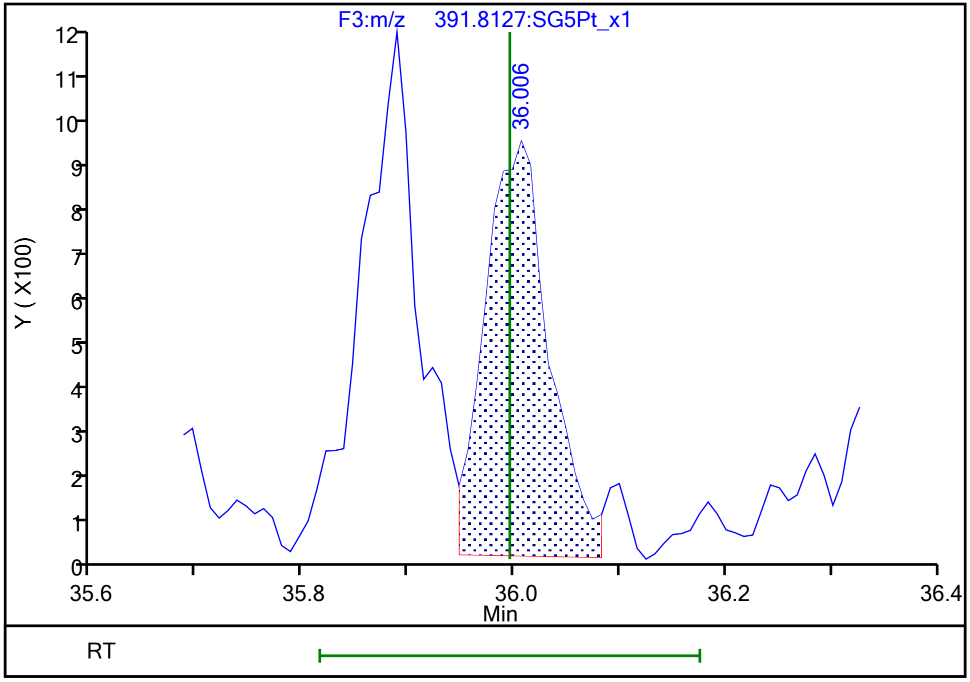

Reviewer: bennettd, 18-Oct-2021 13:21:42

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Report Date: 20-Oct-2021 07:44:33
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Not Detected
Expected RT: 36.37

Processing Integration Results

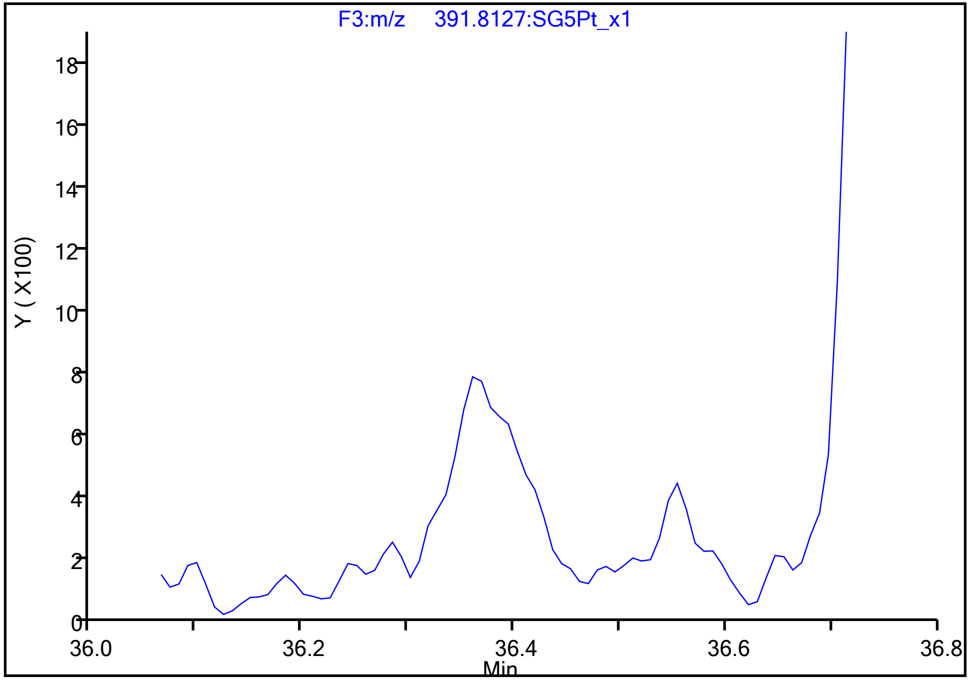

RT: 36.36
Area: 3041
Amount: 0.102137
Amount Units: pg/ul

Manual Integration Results

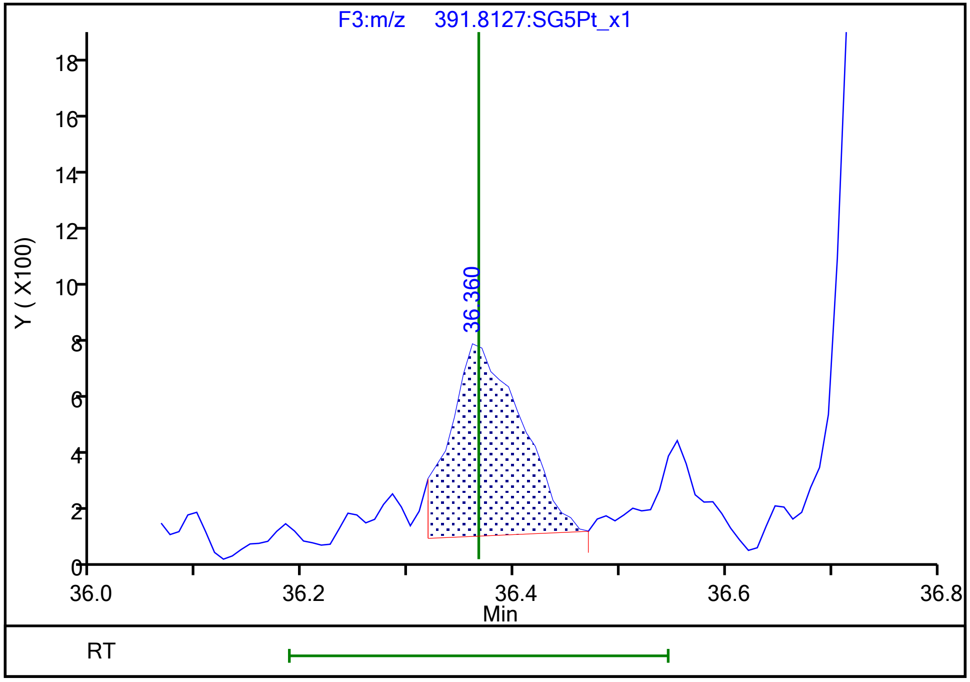

Reviewer: bennettd, 18-Oct-2021 13:22:08
Audit Action: Split an Integrated Peak
Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Not Detected
Expected RT: 36.37

Processing Integration Results

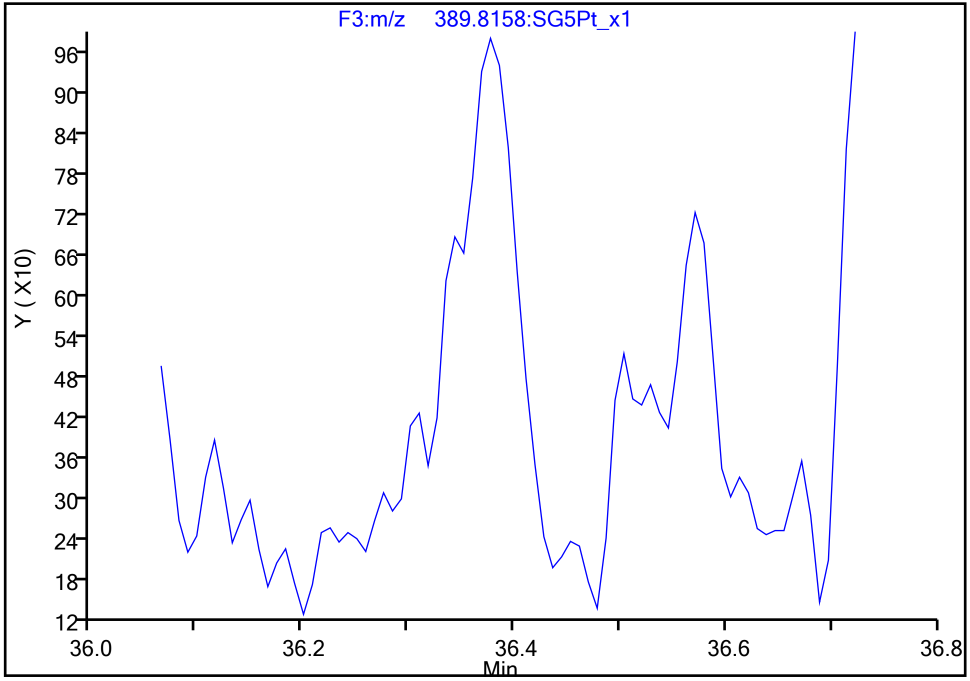

RT: 36.38
Area: 3647
Amount: 0.102137
Amount Units: pg/ul

Manual Integration Results

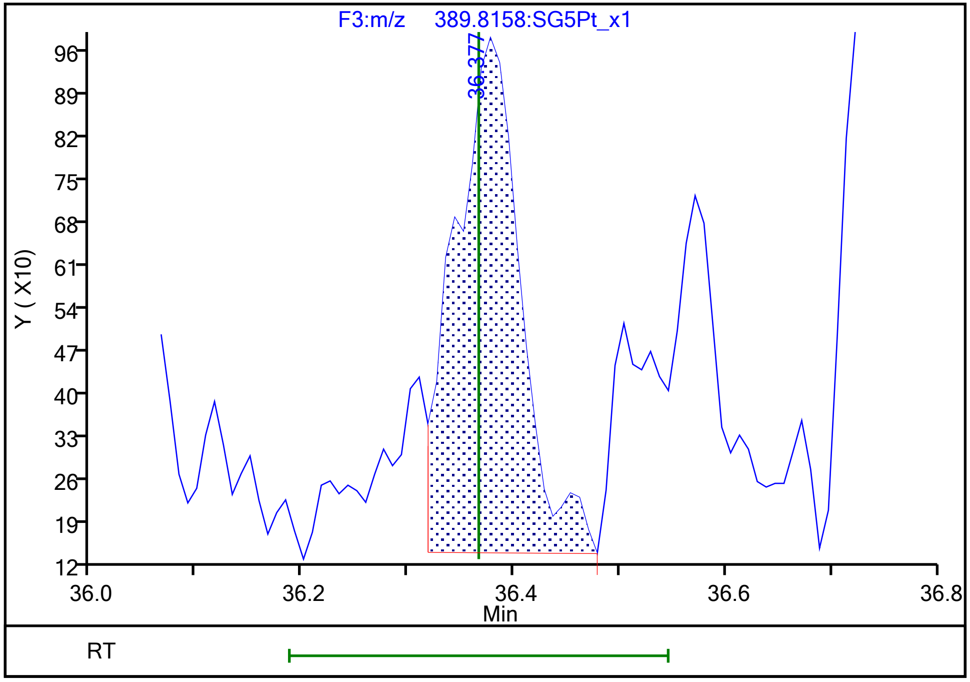

Reviewer: bennettd, 18-Oct-2021 13:22:11
Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (33.86- 36.36)

Signal: 1

Processing Integration Results

RT = 33.893 Area = 11694

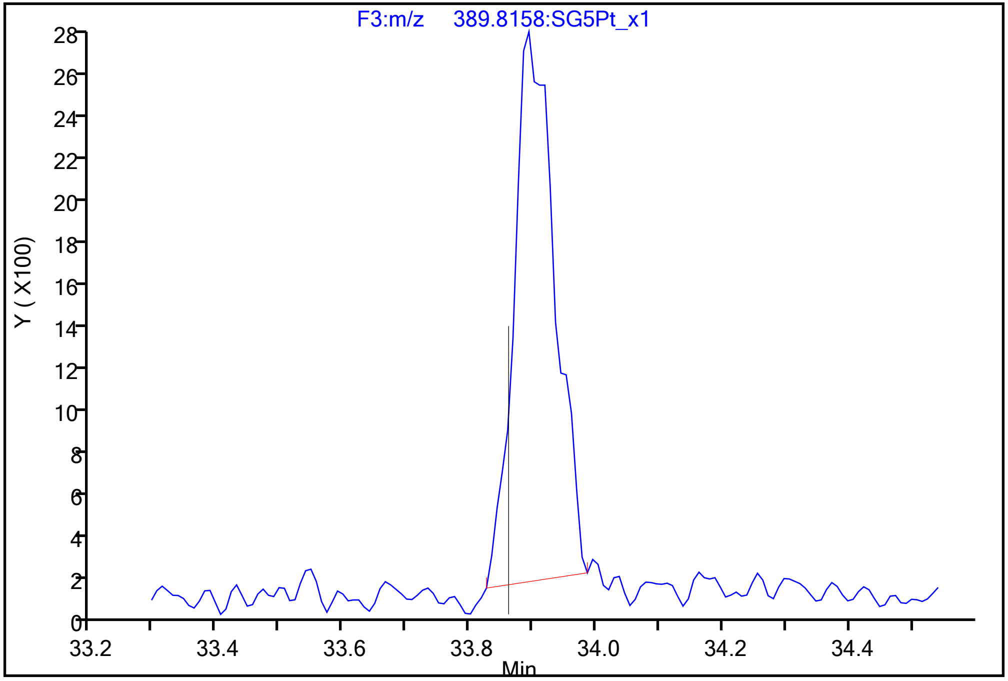

Manual Integration Results

RT = 33.893 Area = 13623 M

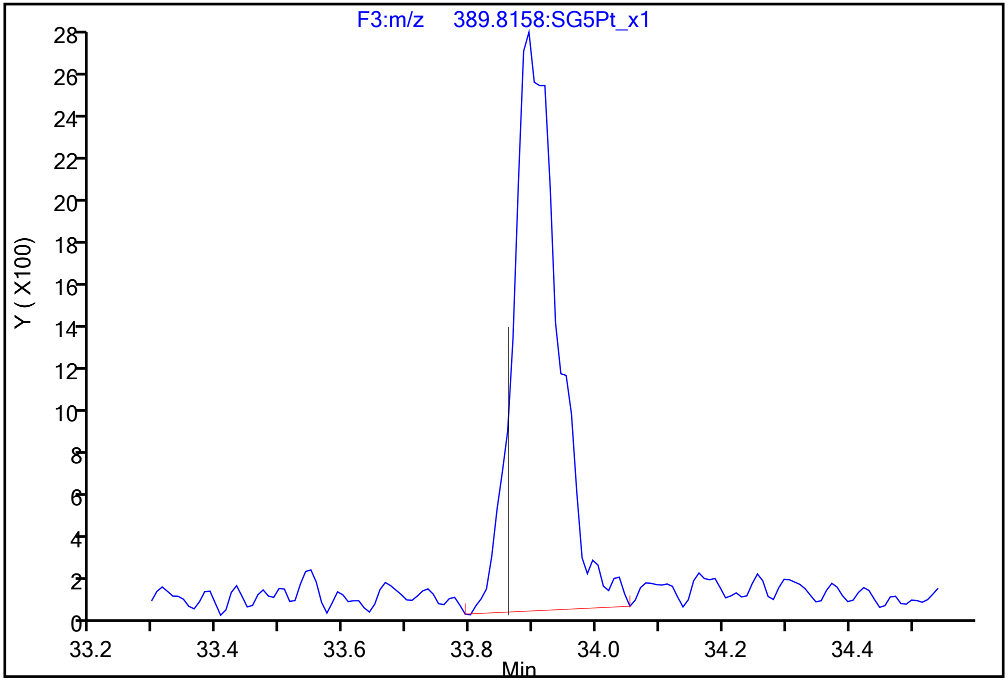

Reviewer: krenns, 20-Oct-2021 07:44:18

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1
Client ID:	11215702-Pretreatment		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

Non-2,3,7,8-sub-HxCDD, Signal: 1, m/z: 389.8158, RT: (33.86- 36.36)

Signal: 1

Processing Integration Results

RT = 35.080 Area = 8148

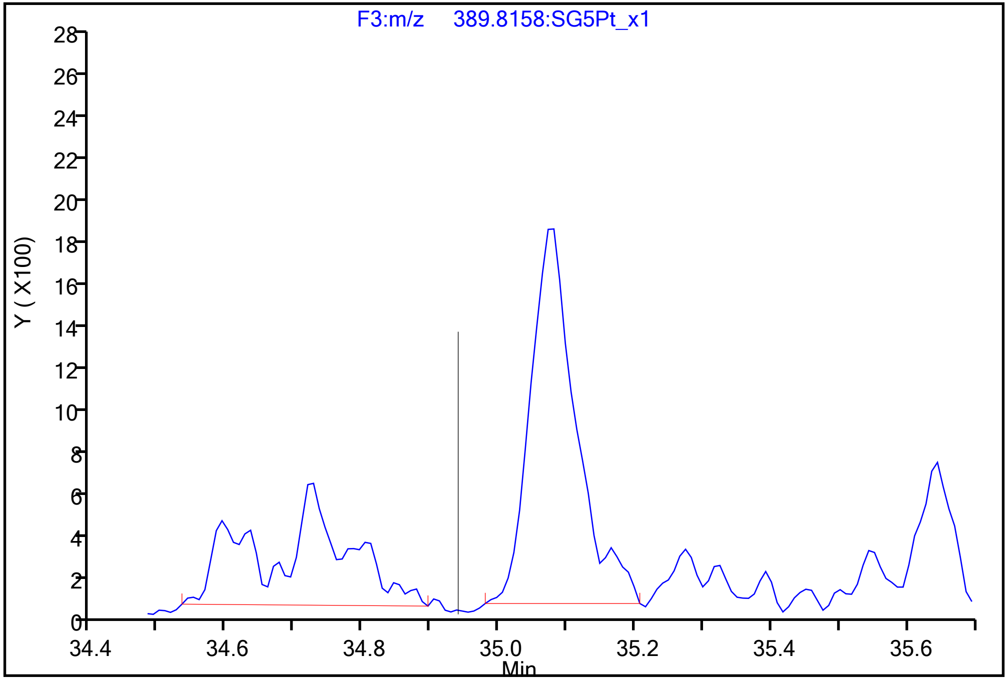

Manual Integration Results

RT = 35.080 Area = 8148

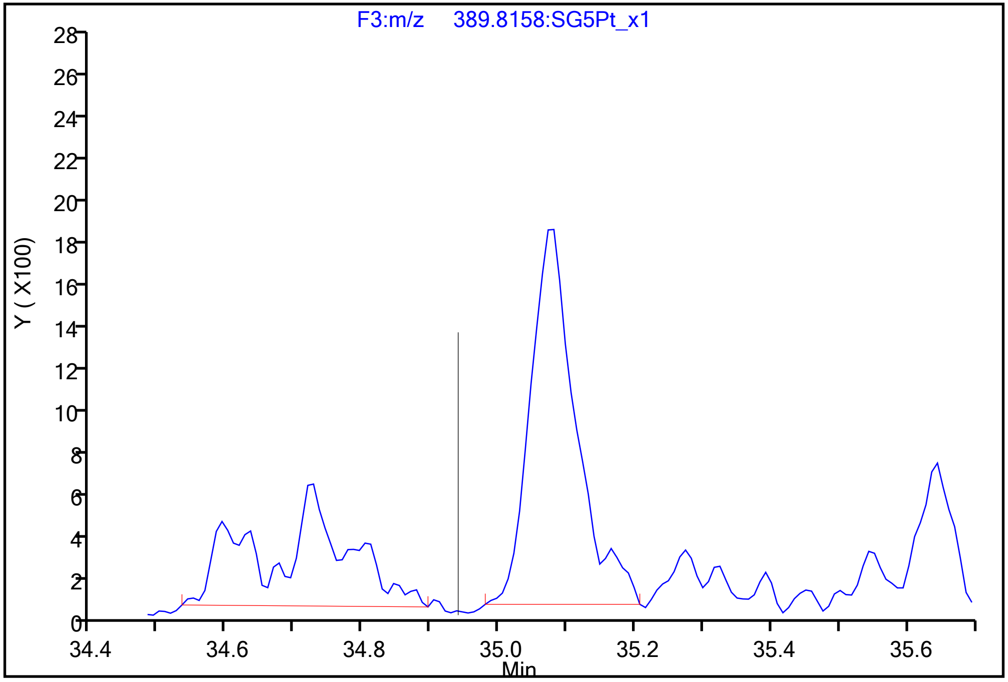

Reviewer: krenns, 20-Oct-2021 07:44:18

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

Processing Integration Results

RT:	41.97
Area:	50253
Amount:	1.650761
Amount Units:	pg/ul

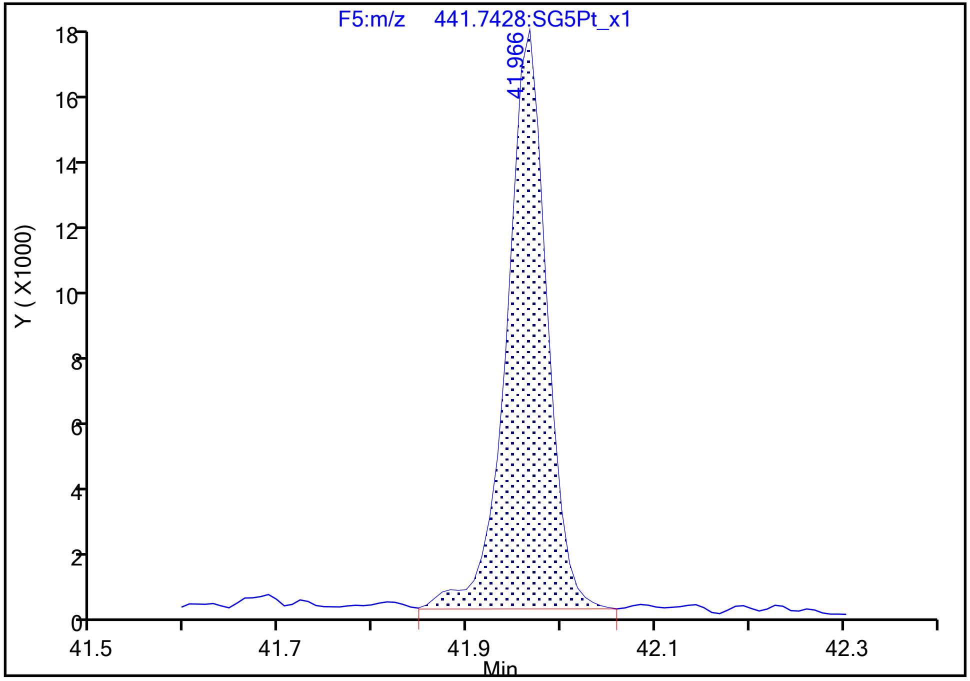

Manual Integration Results

RT:	41.97
Area:	49090
Amount:	1.598590
Amount Units:	pg/ul

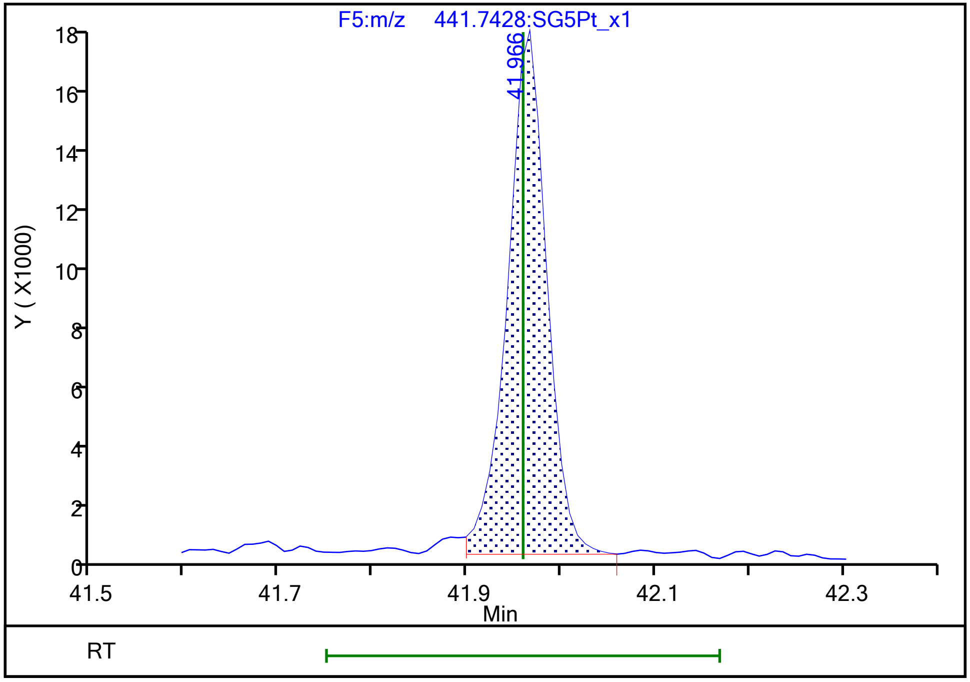

Reviewer: bennettd, 18-Oct-2021 13:23:25

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d				
Injection Date:	15-Oct-2021 17:27:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-1-A	Lab Sample ID:	320-79918-1		
Client ID:	11215702-Pretreatment				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT:	41.96
Area:	56663
Amount:	1.650761
Amount Units:	pg/ul

Processing Integration Results

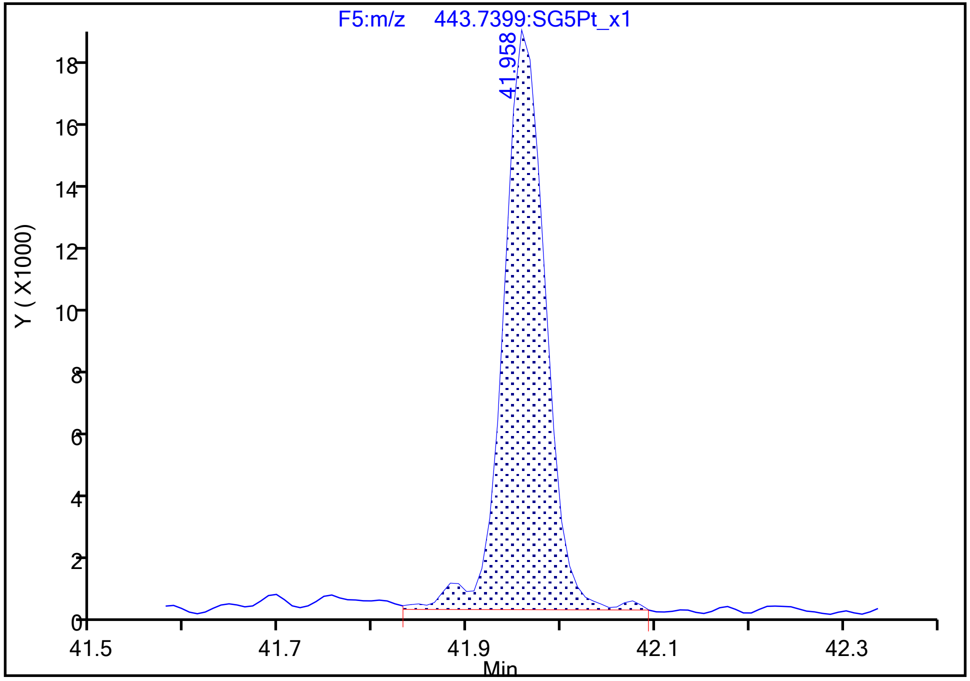

RT:	41.96
Area:	54447
Amount:	1.598590
Amount Units:	pg/ul

Manual Integration Results

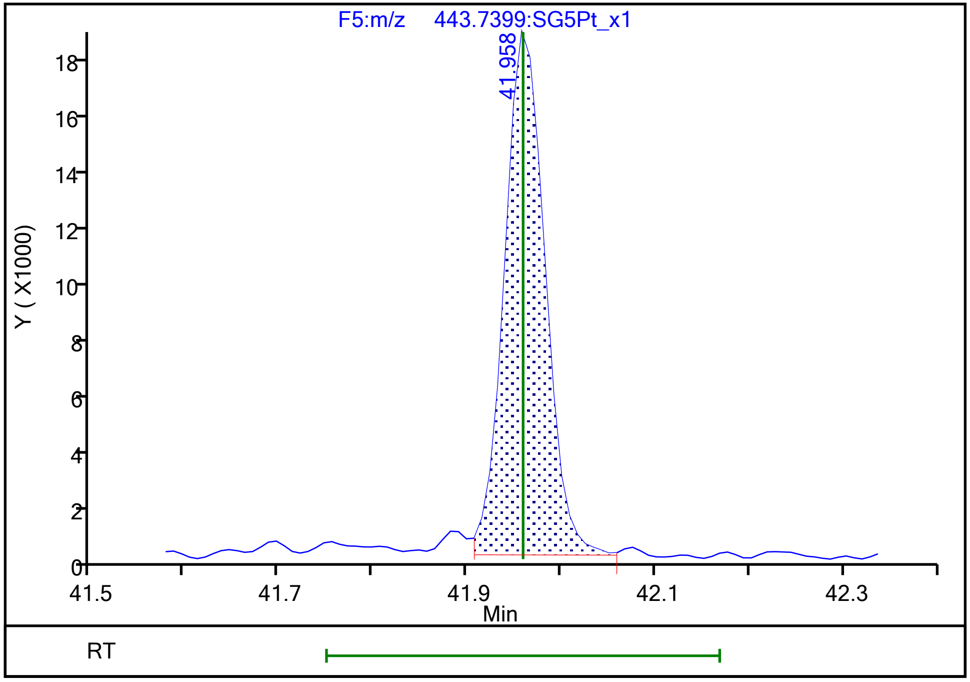

Reviewer: bennettd, 18-Oct-2021 13:23:28

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 20-Oct-2021 07:44:33 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Injection Date:	15-Oct-2021 17:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Pretreatment		
Worklist#:	534320	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

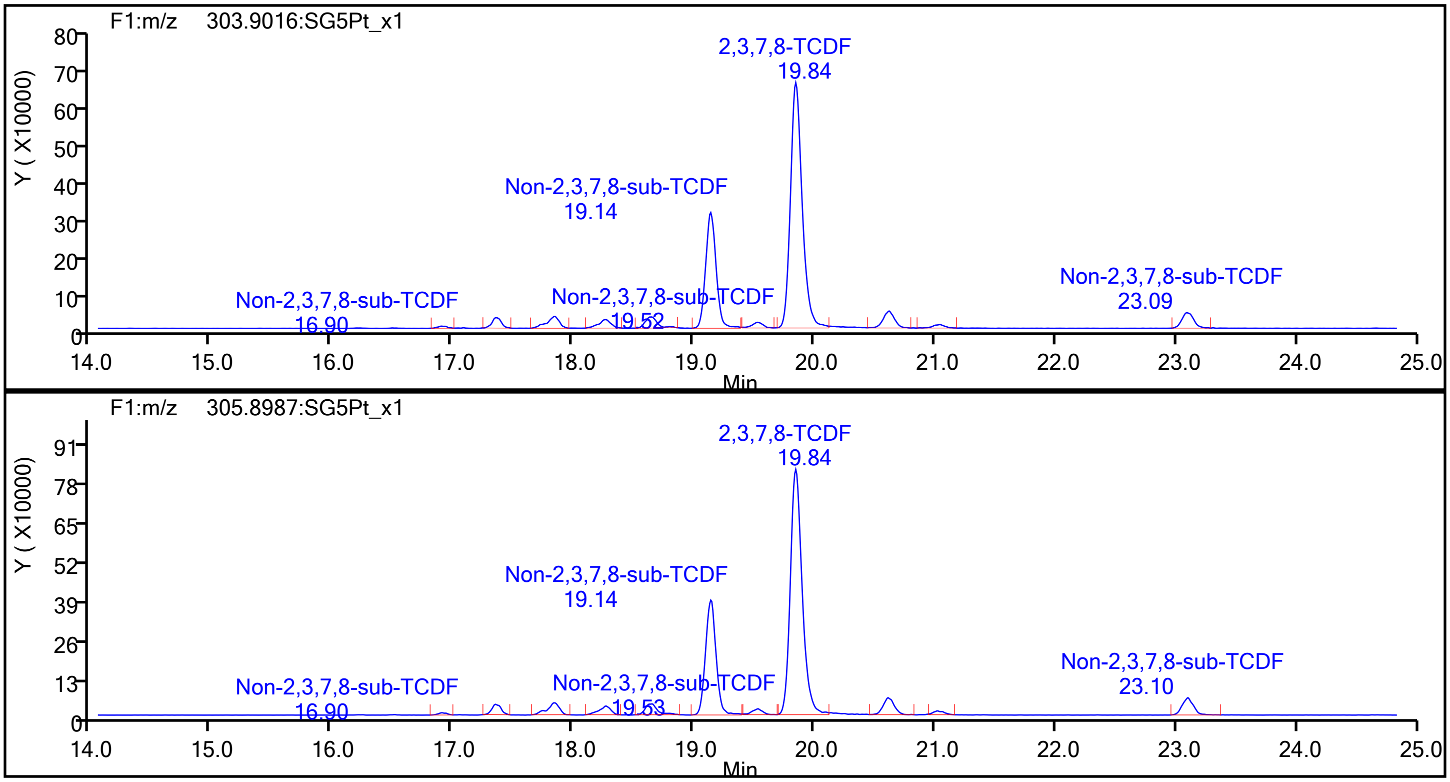

TCDF Standards

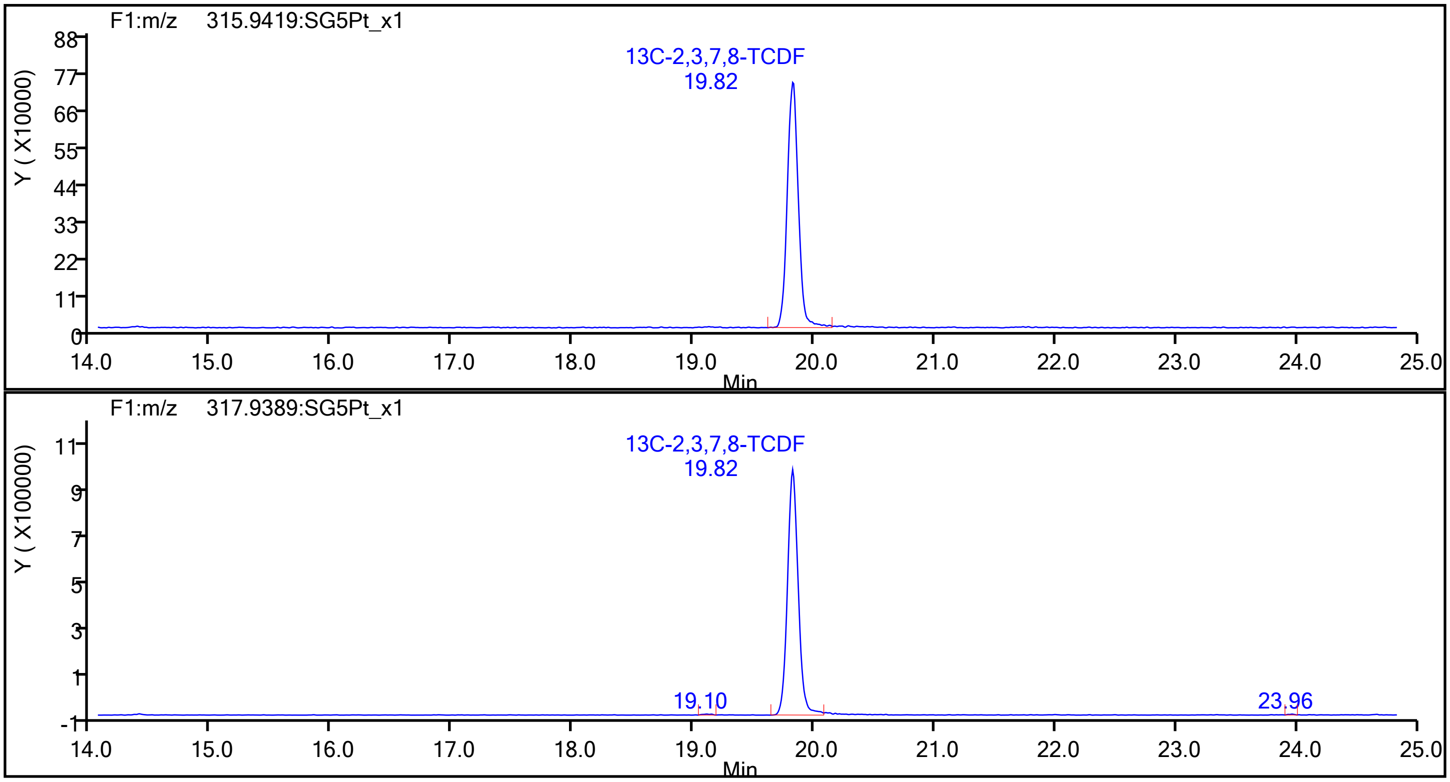

Report Date: 20-Oct-2021 07:44:33 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d
Injection Date: 15-Oct-2021 17:27:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Pretreatment
Worklist#: 534320
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

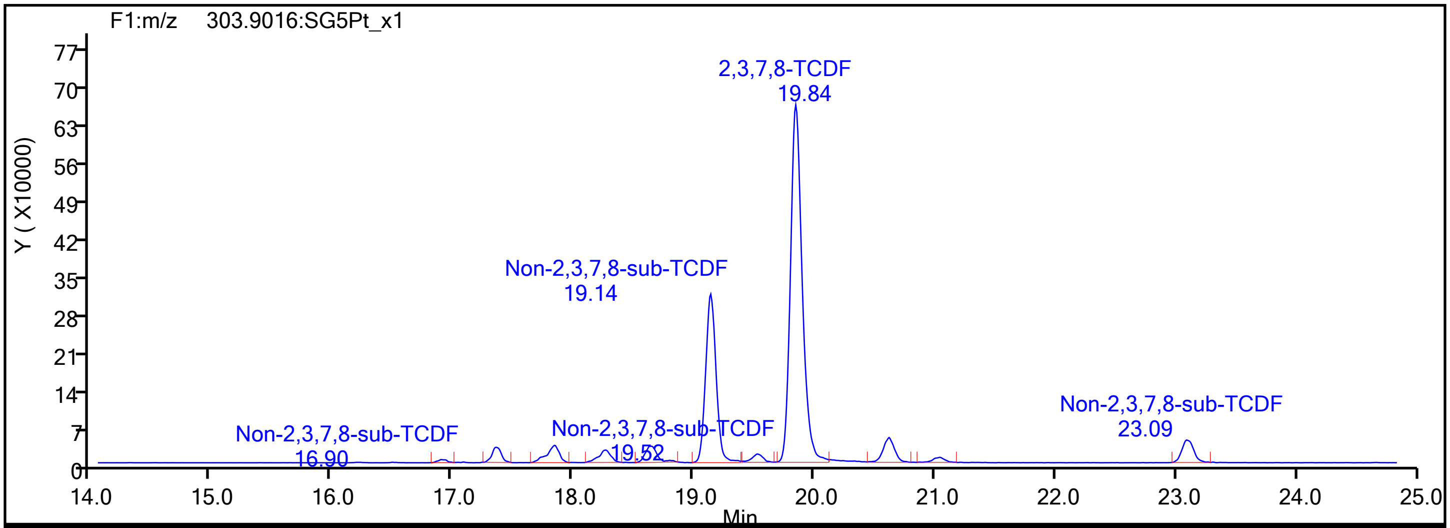

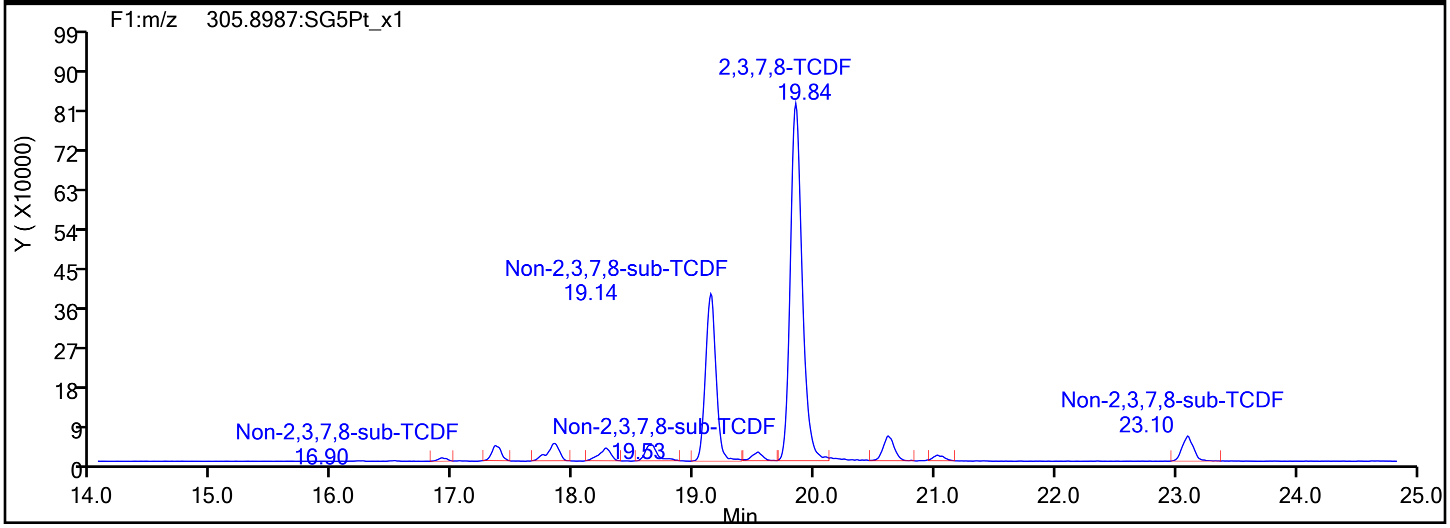

TCDF Interference Mass

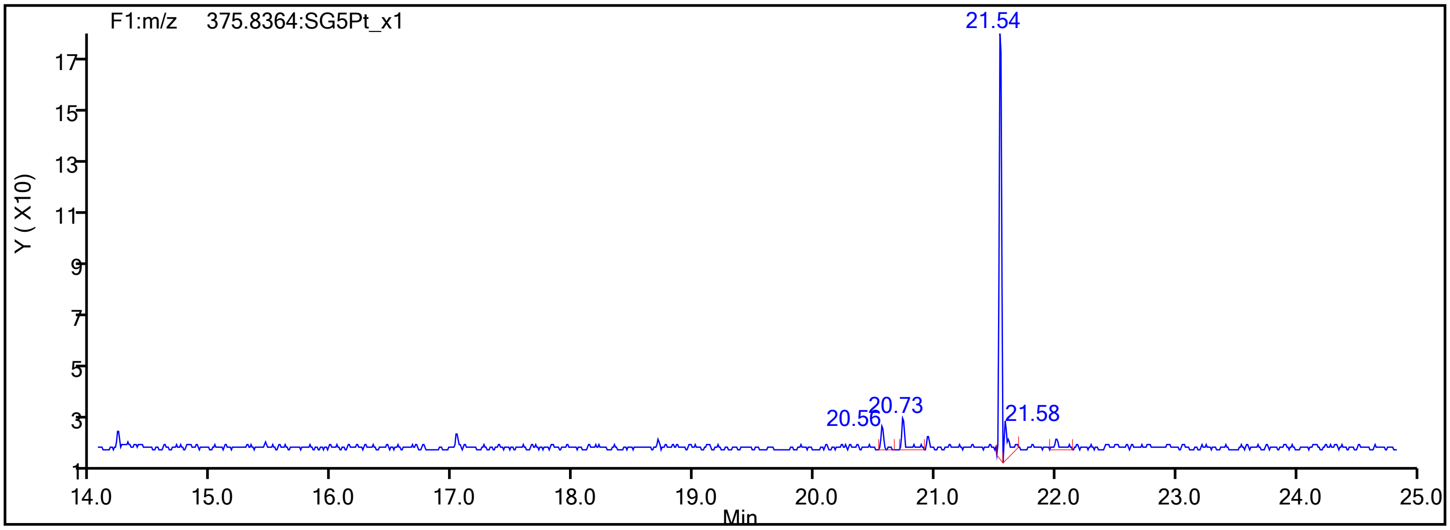

Report Date: 20-Oct-2021 07:44:33 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d		
Injection Date:	15-Oct-2021 17:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Pretreatment		
Worklist#:	534320	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

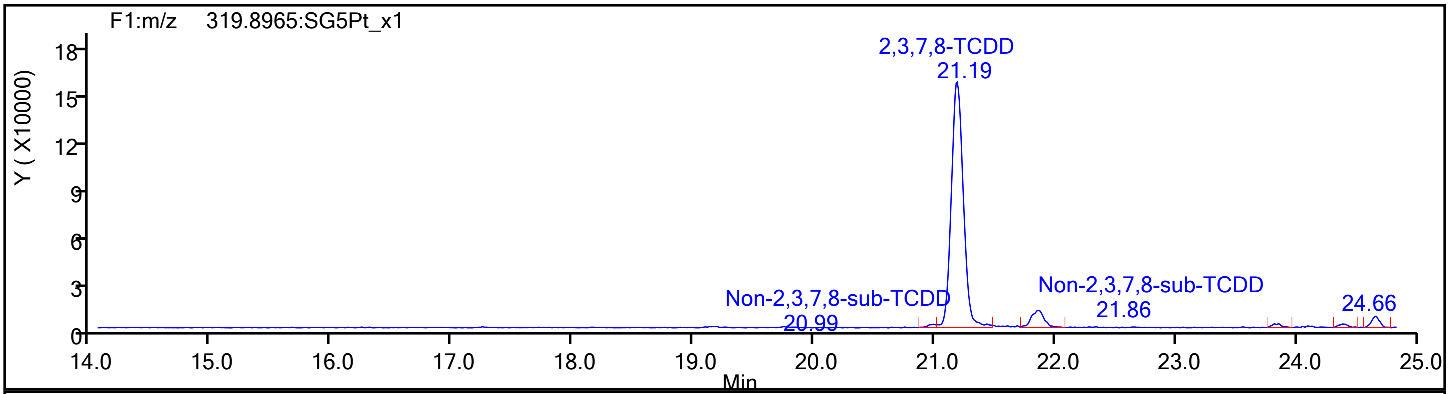

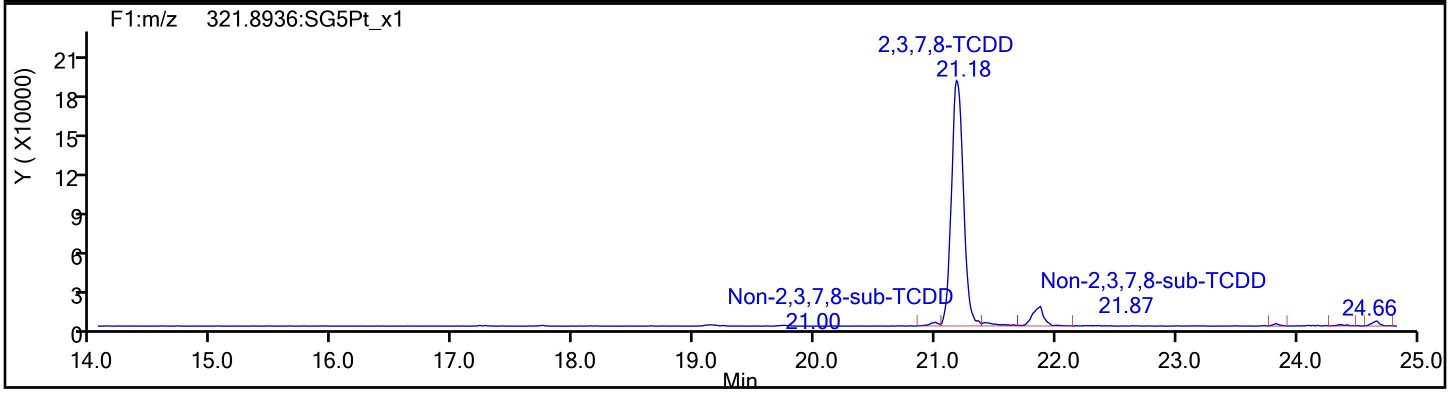

TCDD Standards

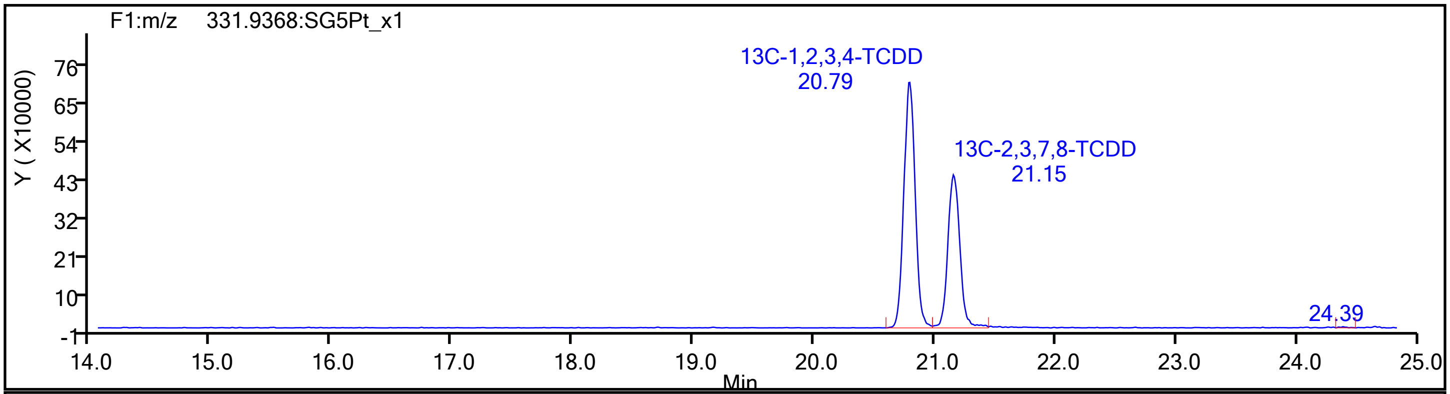

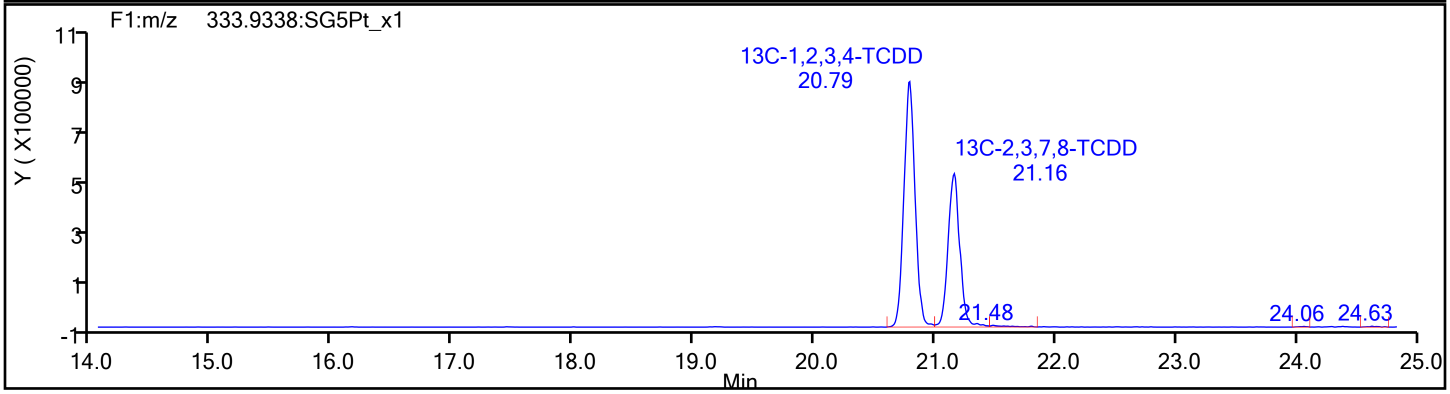

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d

Injection Date:	15-Oct-2021 17:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Pretreatment		
Worklist#:	534320	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

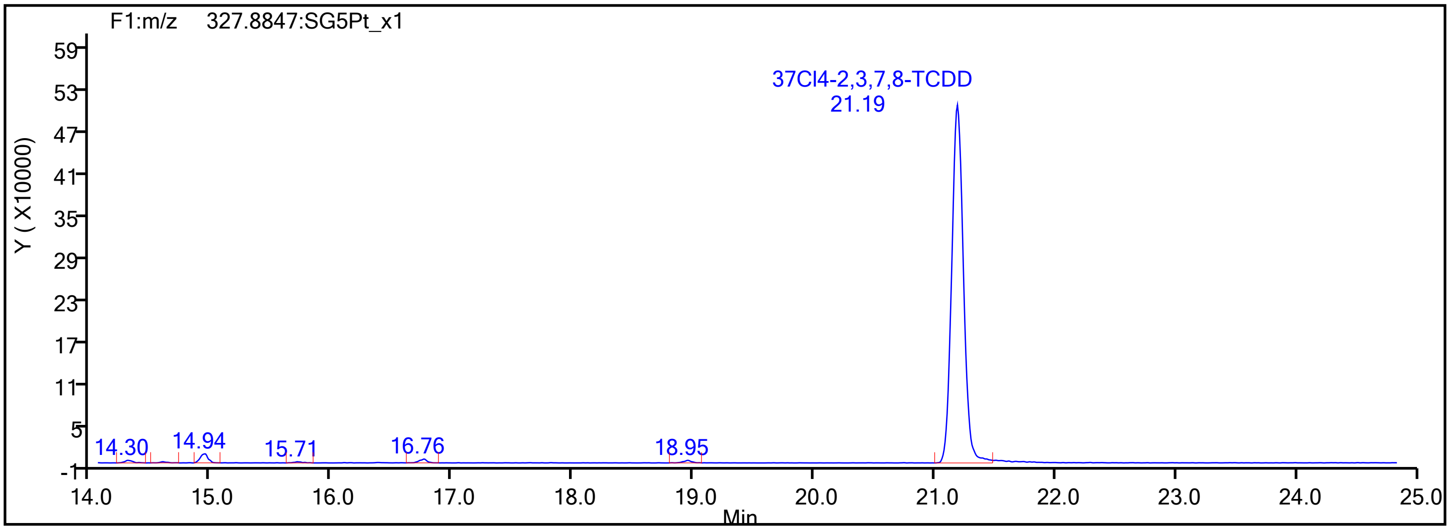

37Cl4-TCDD Standards

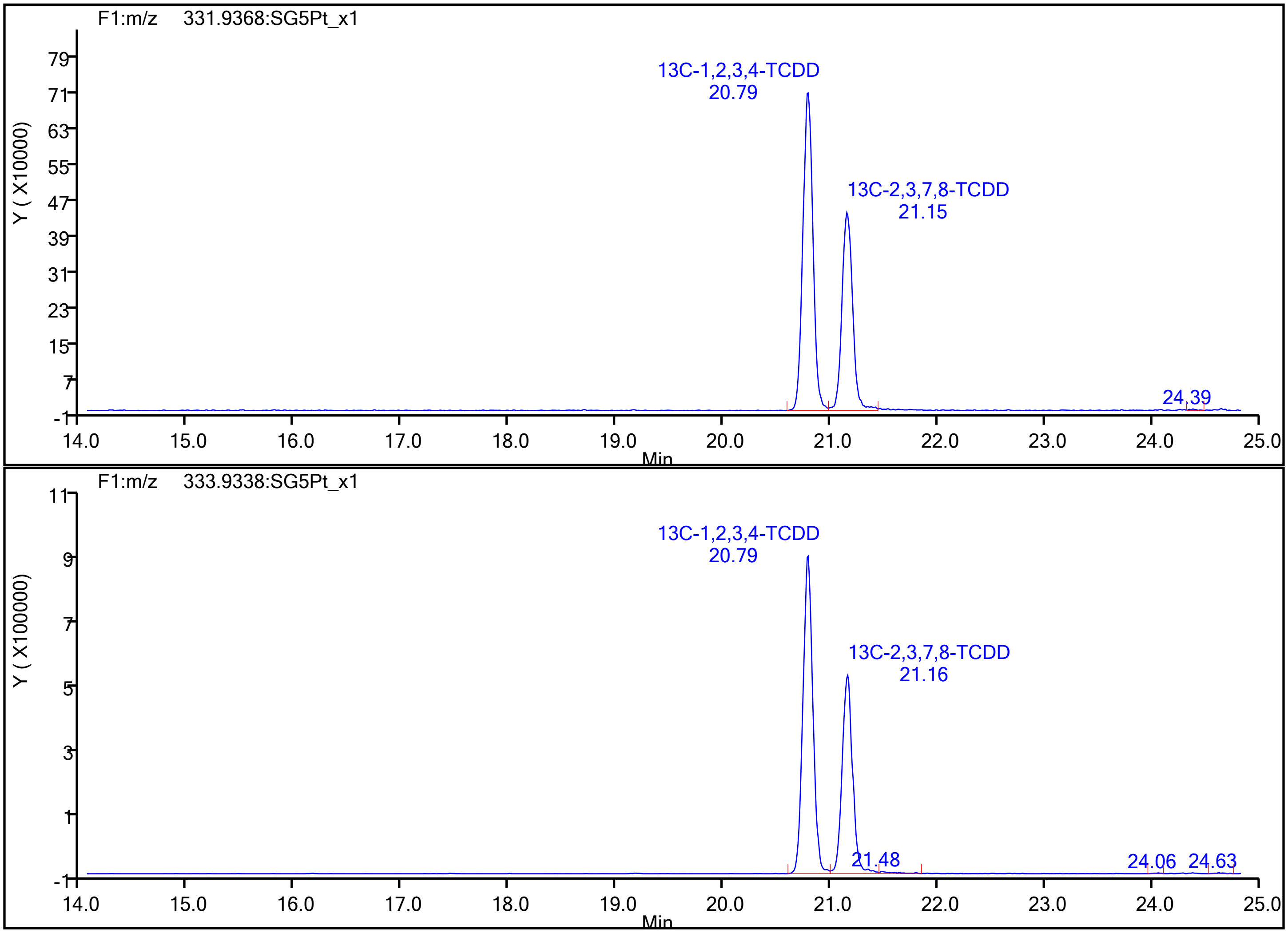

Report Date: 20-Oct-2021 07:44:33 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_11.d

Injection Date: 15-Oct-2021 17:27:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Pretreatment

Worklist#: 534320 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

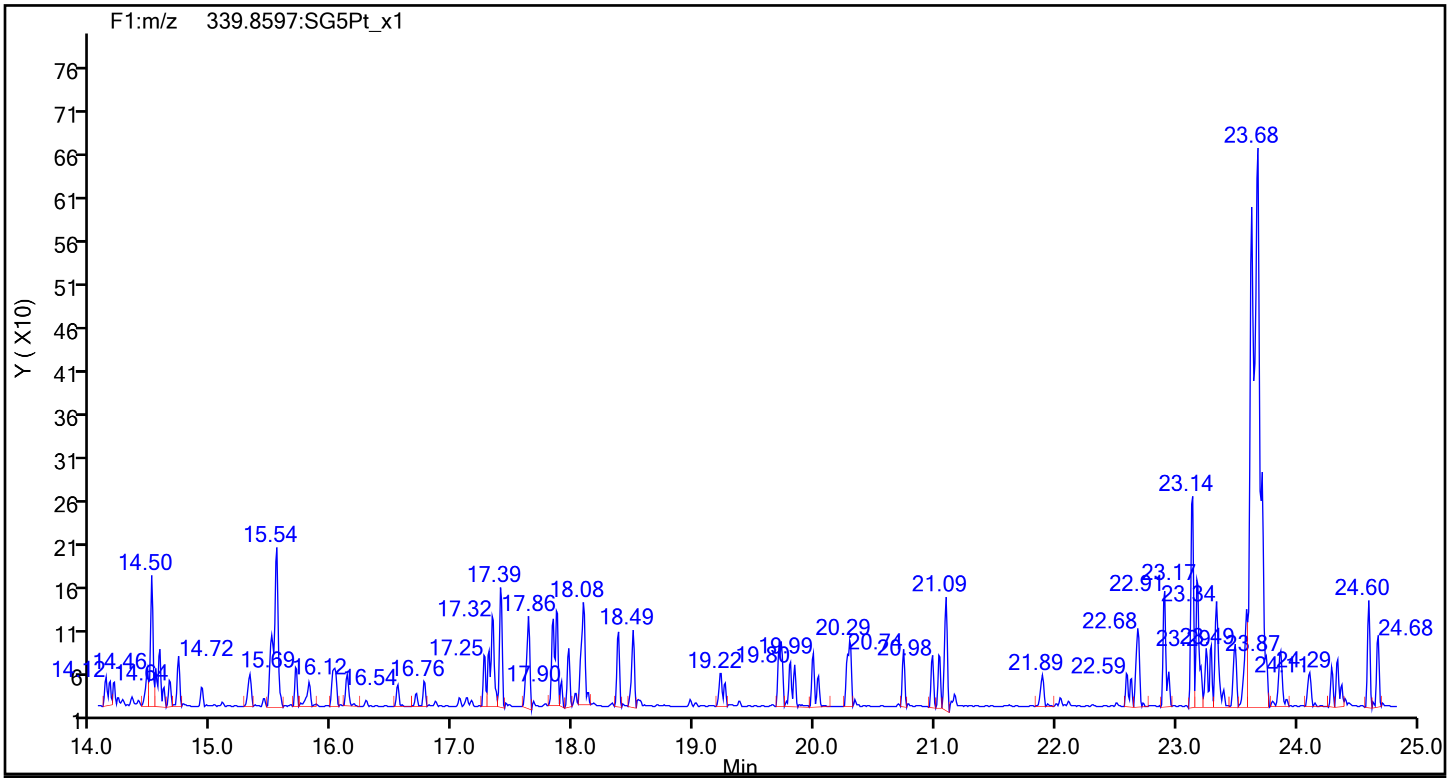

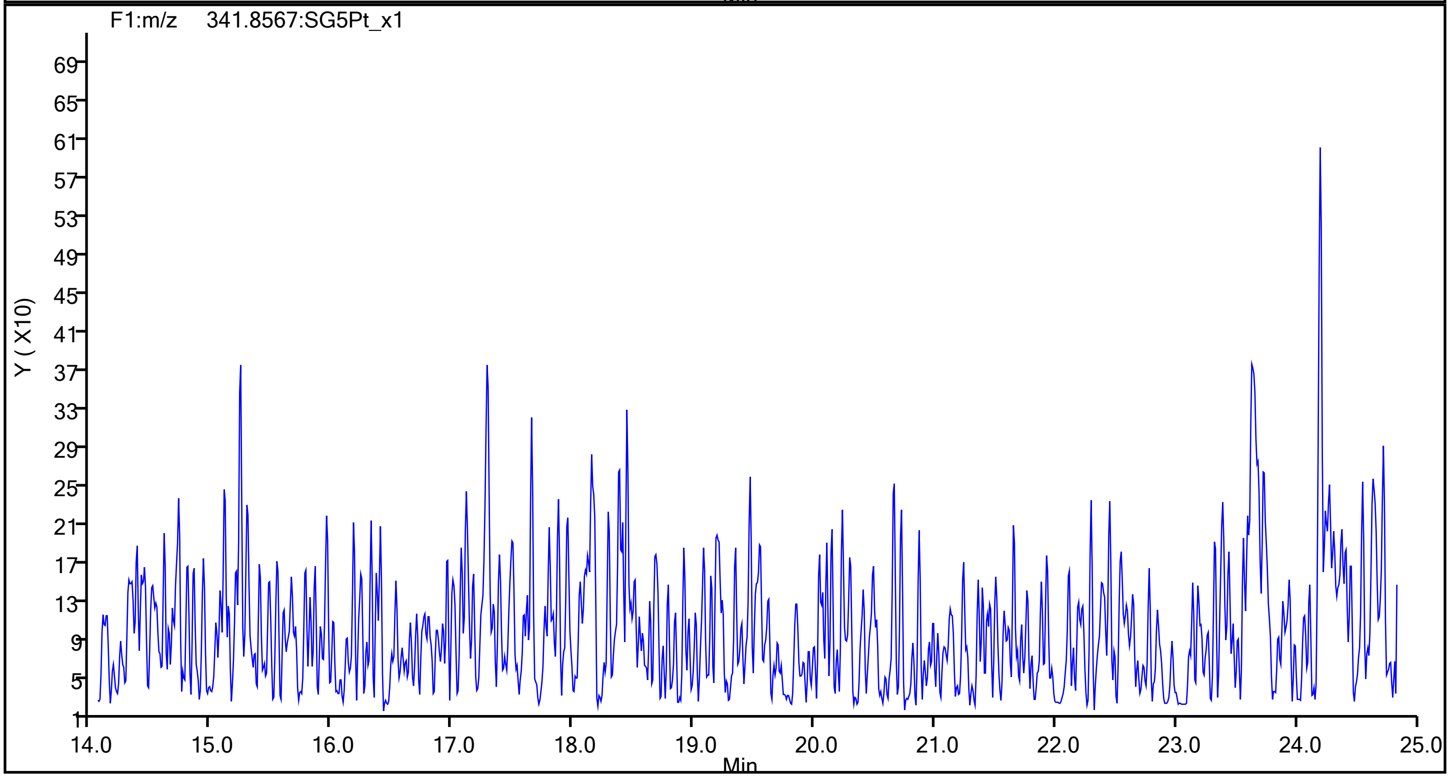

Report Date: 20-Oct-2021 07:44:33 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Client ID: 11215702-Pretreatment
Worklist#: 534320
Sample Line#: 10
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Column Dia: 0.32 mm

F1 PeCDFs

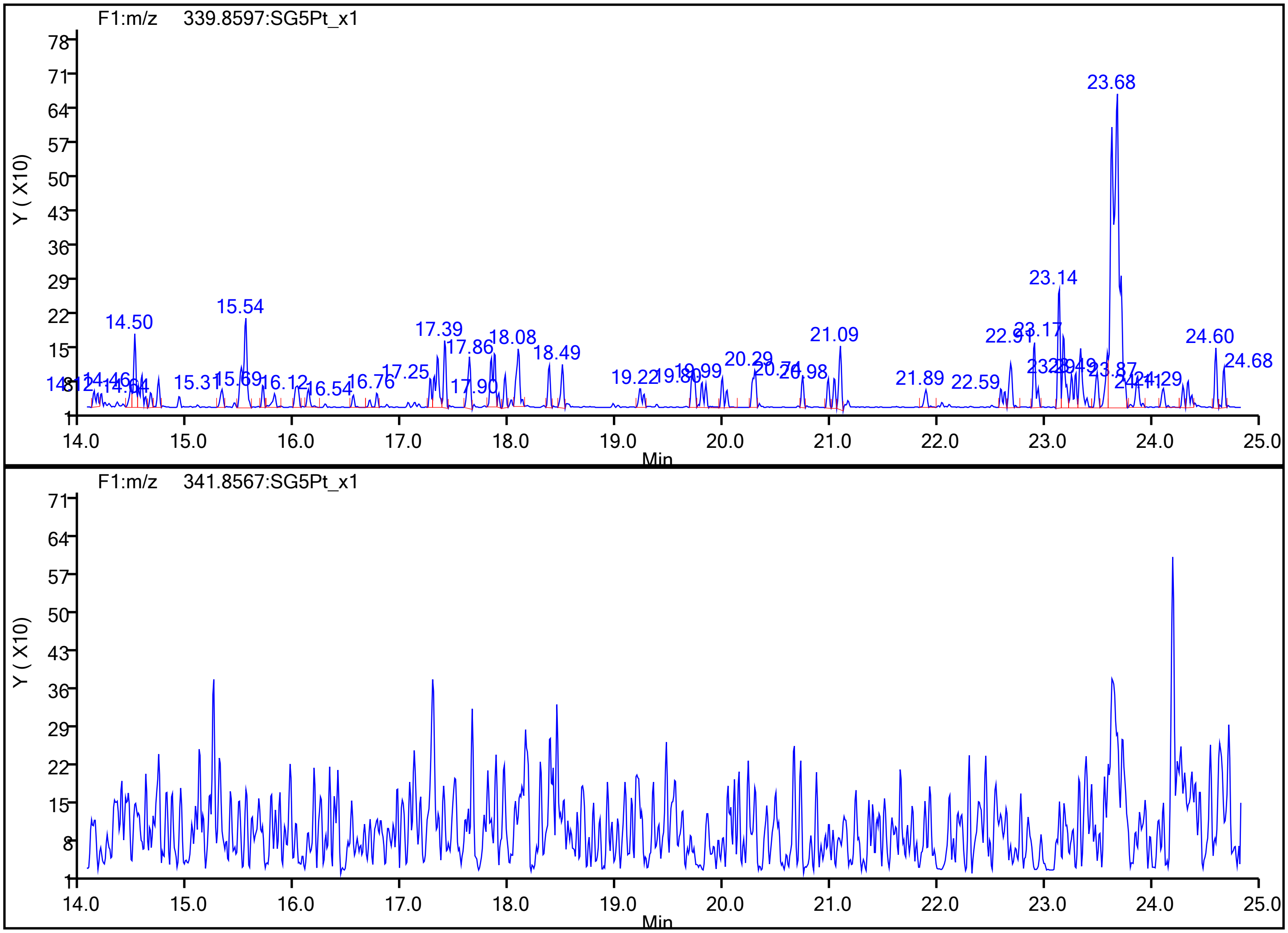

F1 PeCDFs Interference Mass

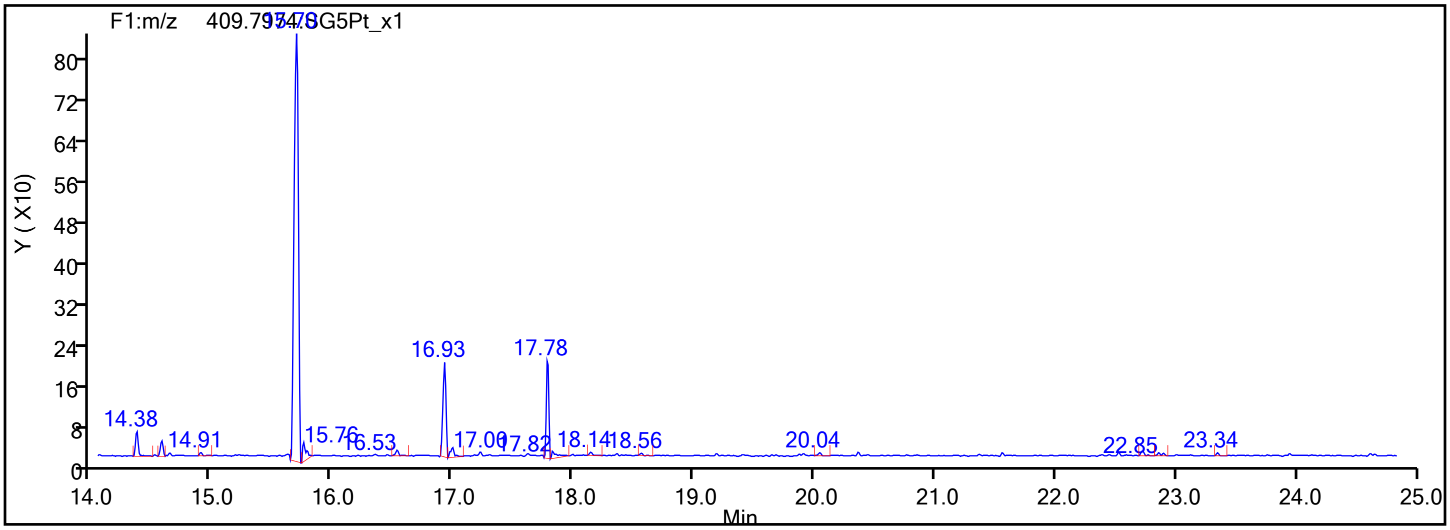

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Column Dia: 0.32 mm

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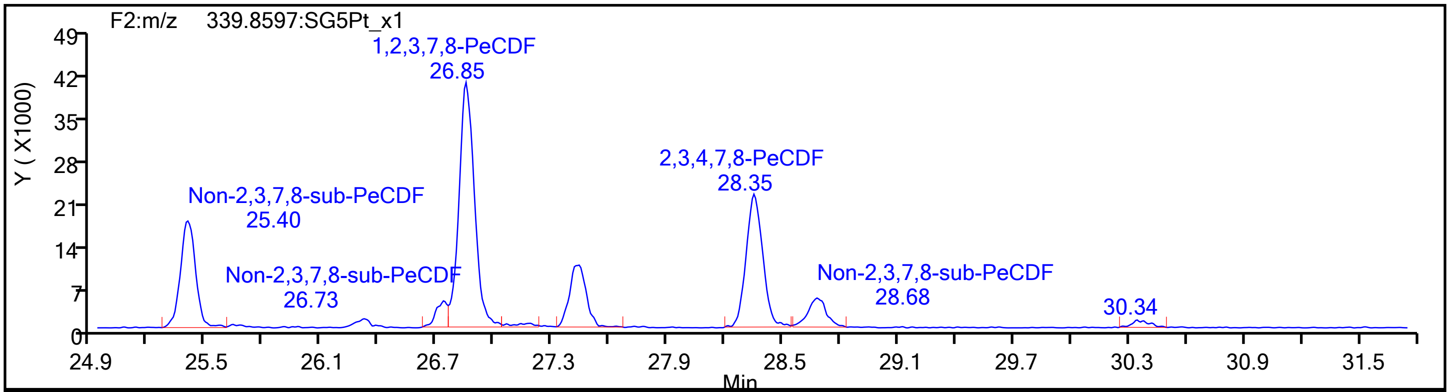

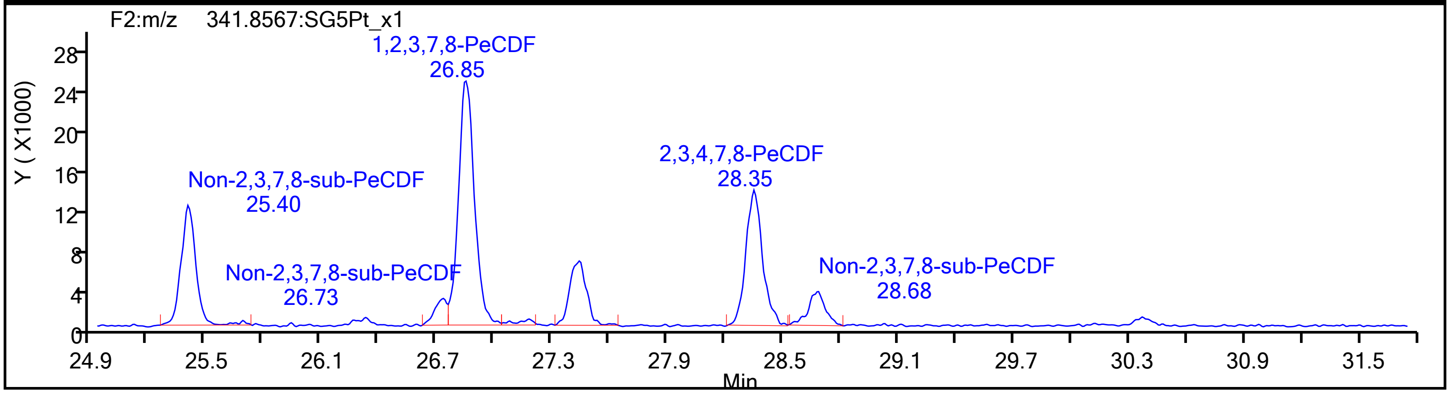

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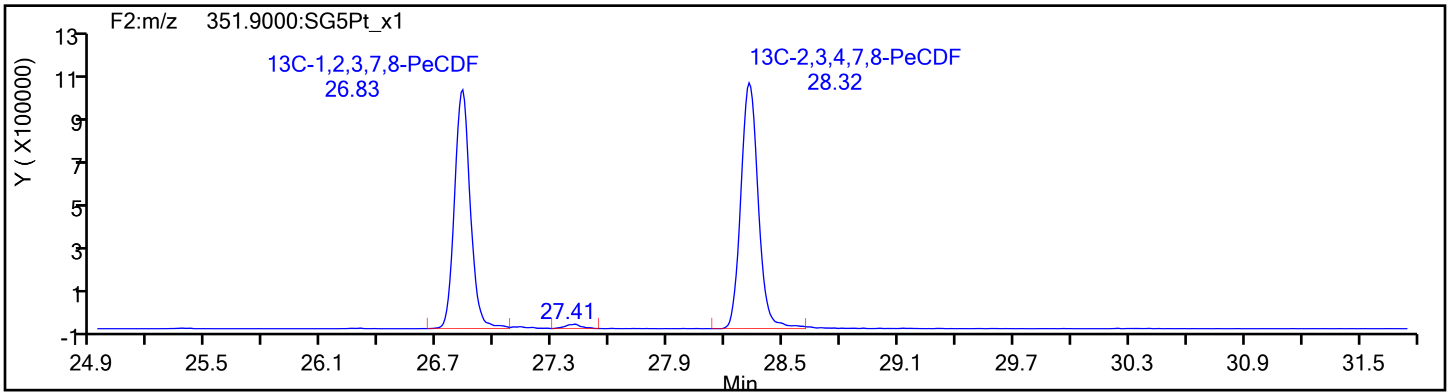

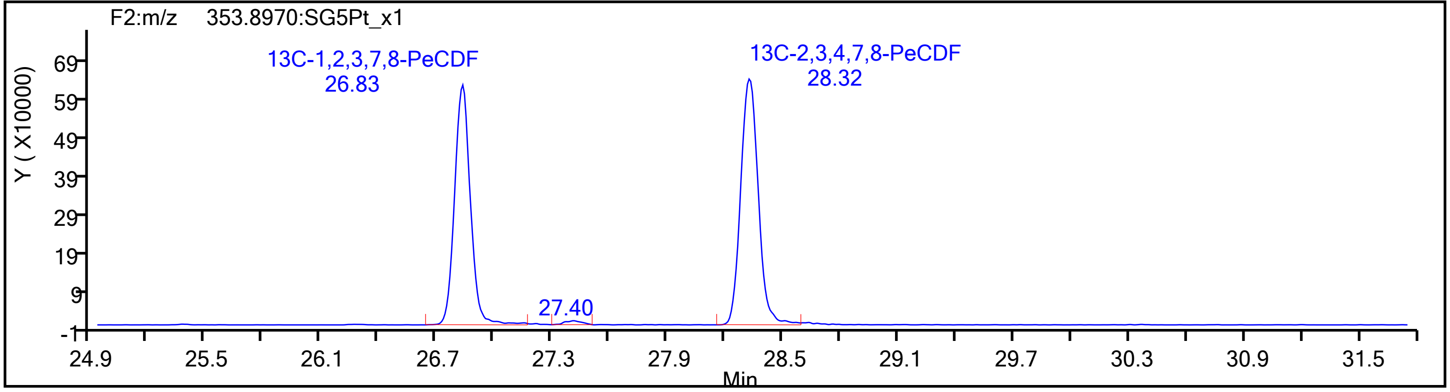

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Eurofins TestAmerica, Sacramento

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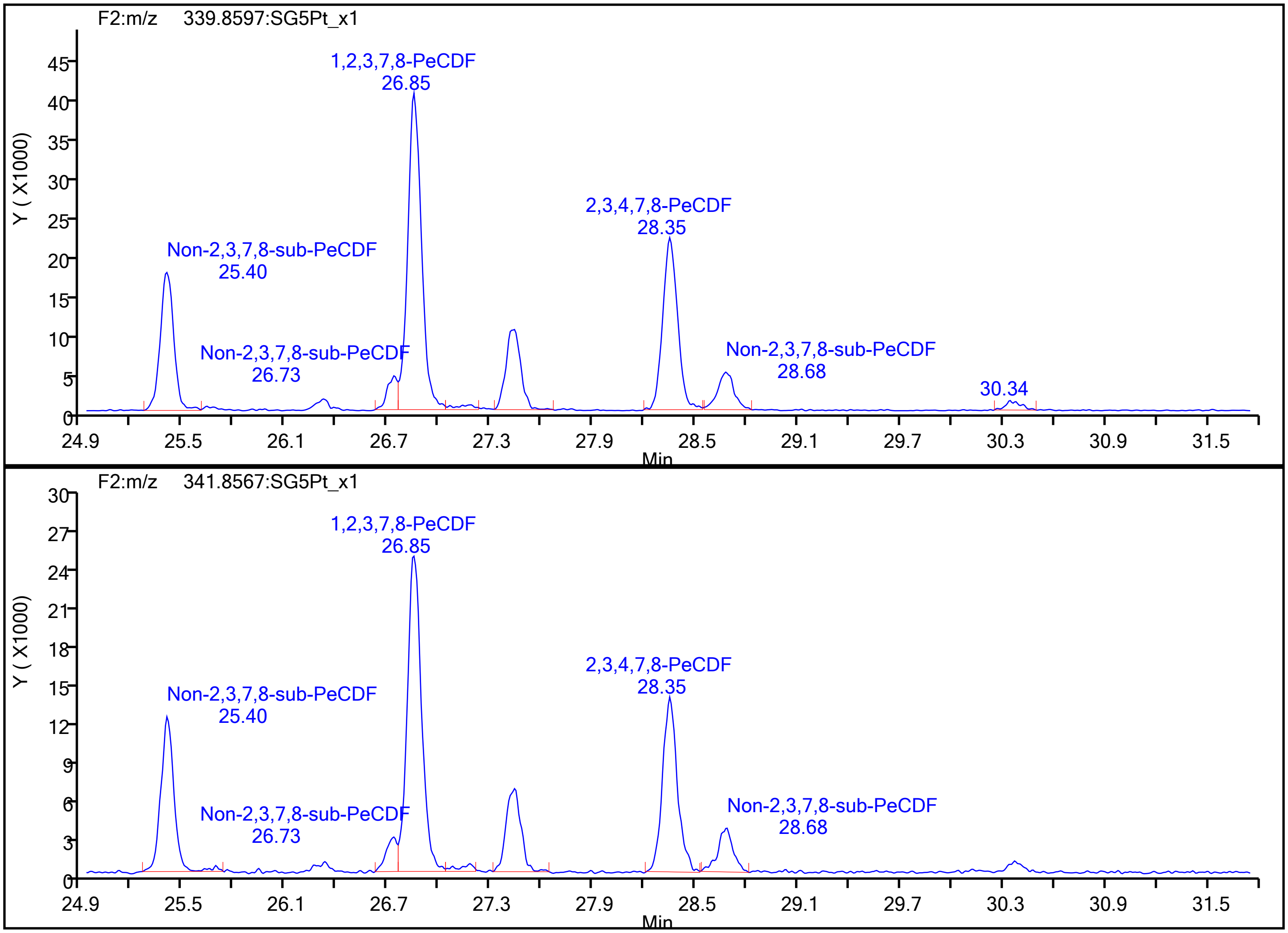

PeCDF Interference Mass

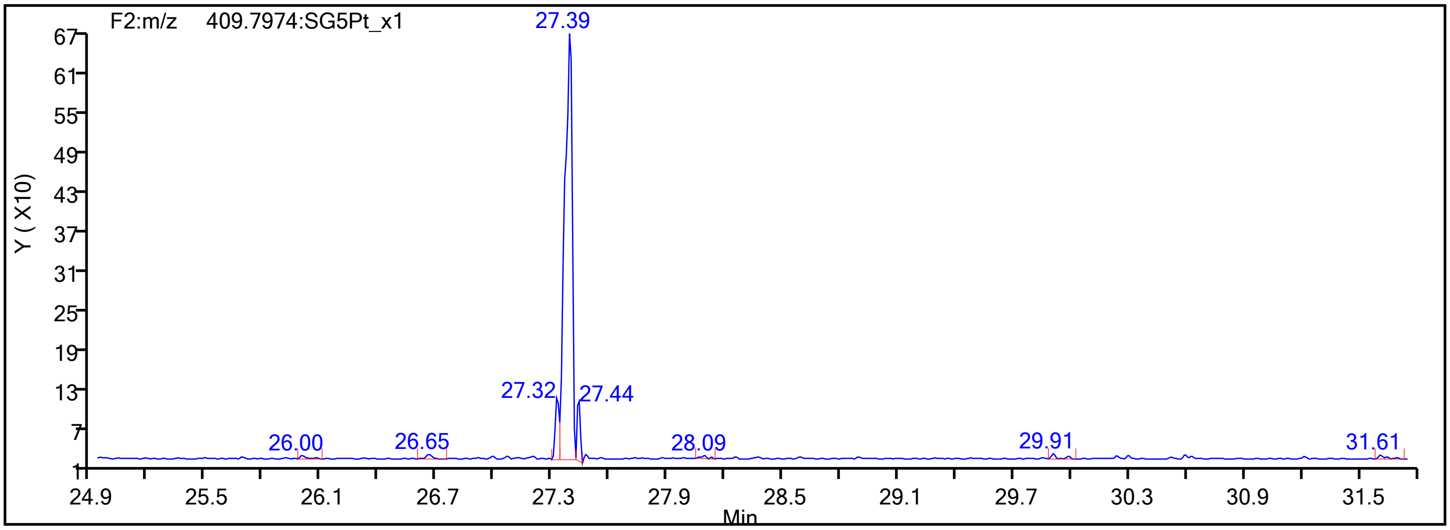

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Eurofins TestAmerica, Sacramento

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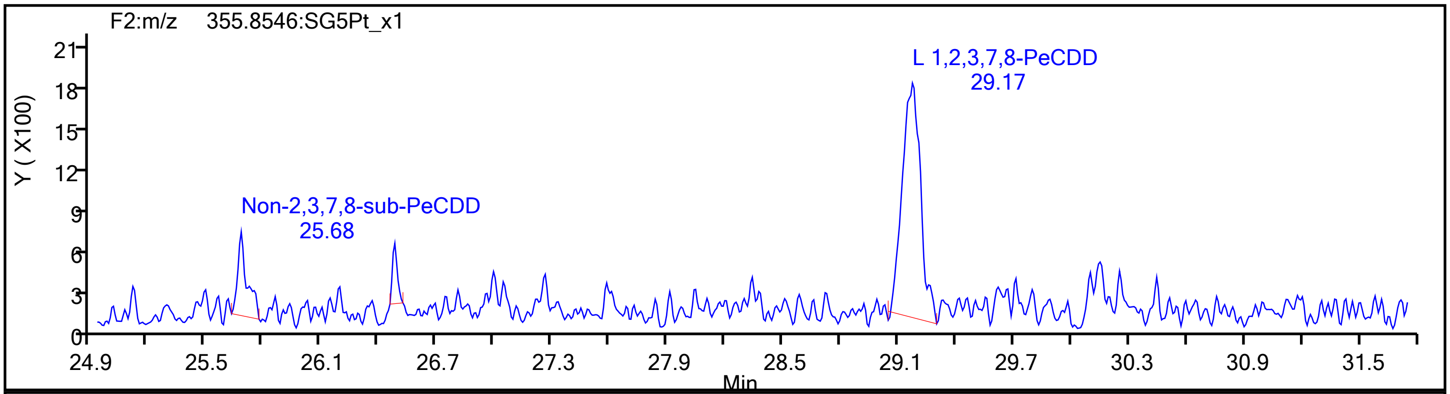

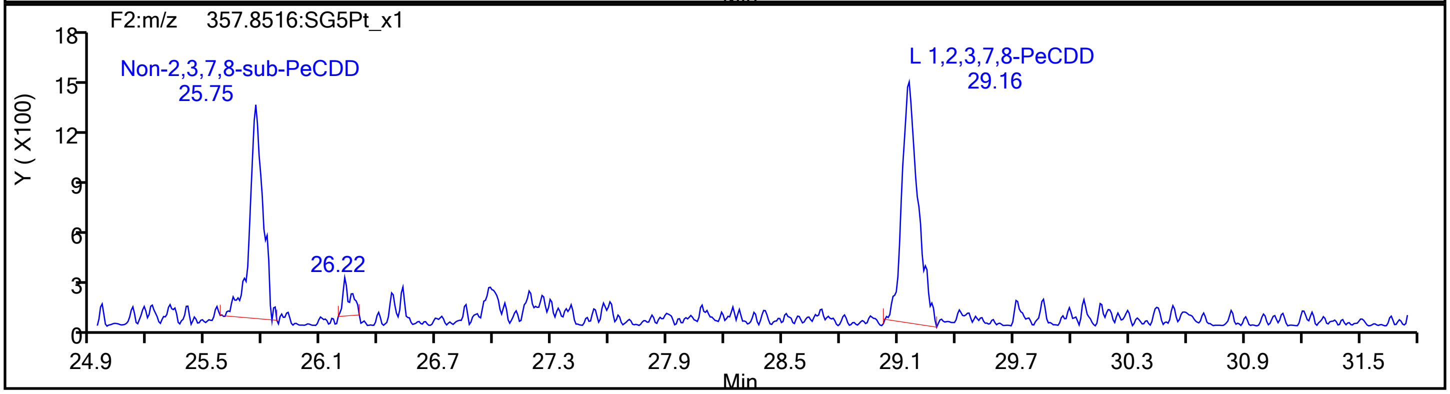

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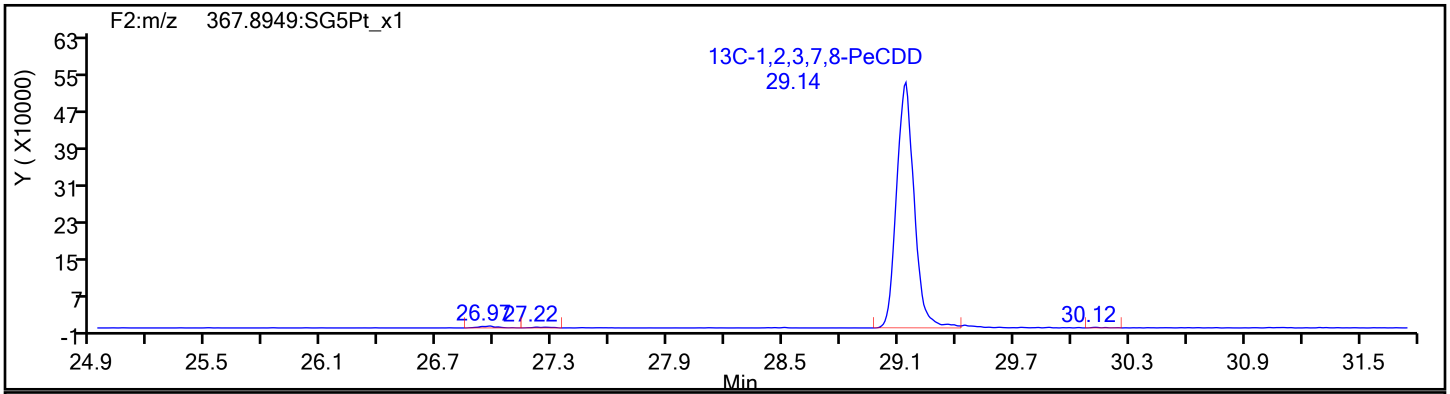

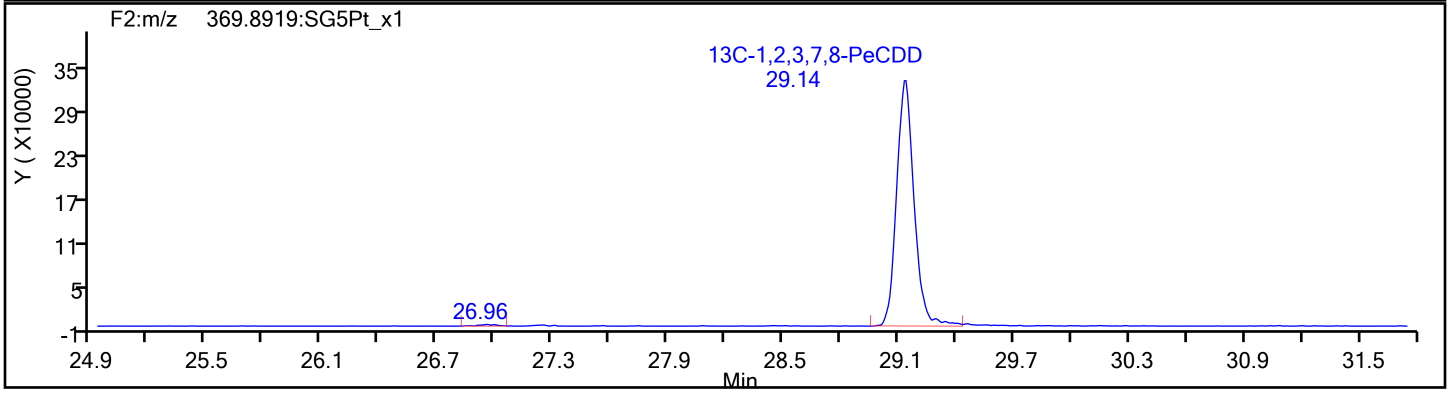

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Eurofins TestAmerica, Sacramento

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HxCDF

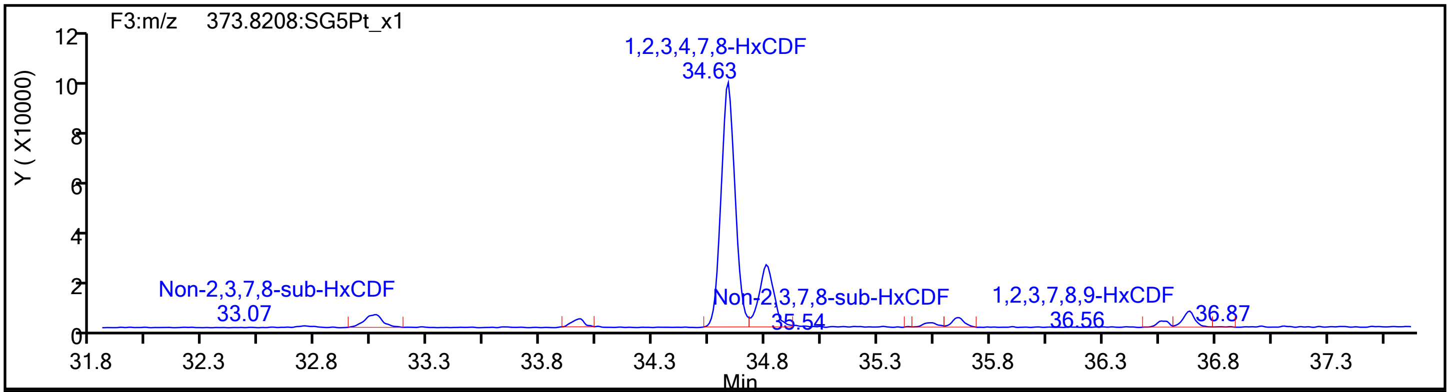

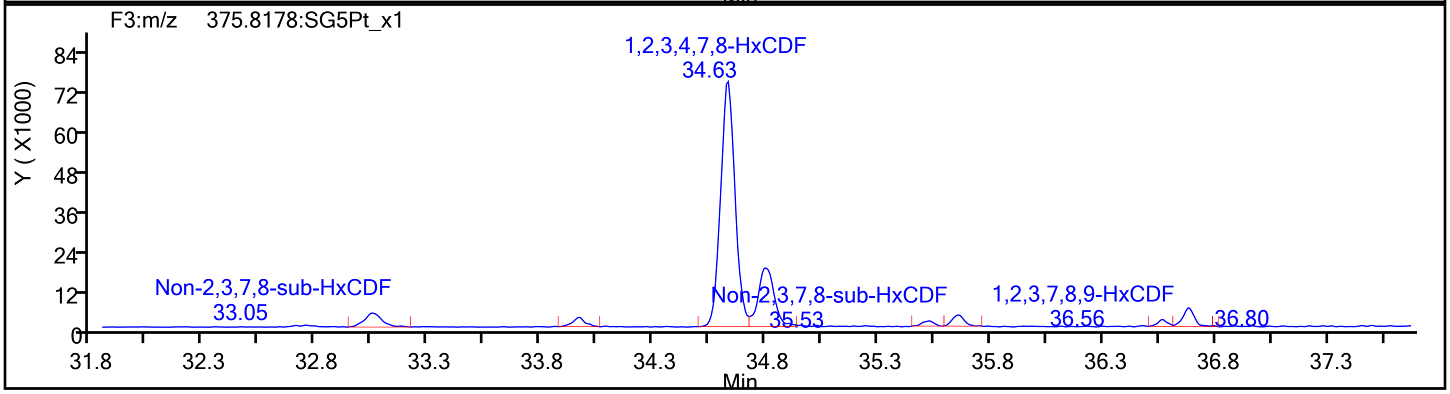

HxCDF Standards

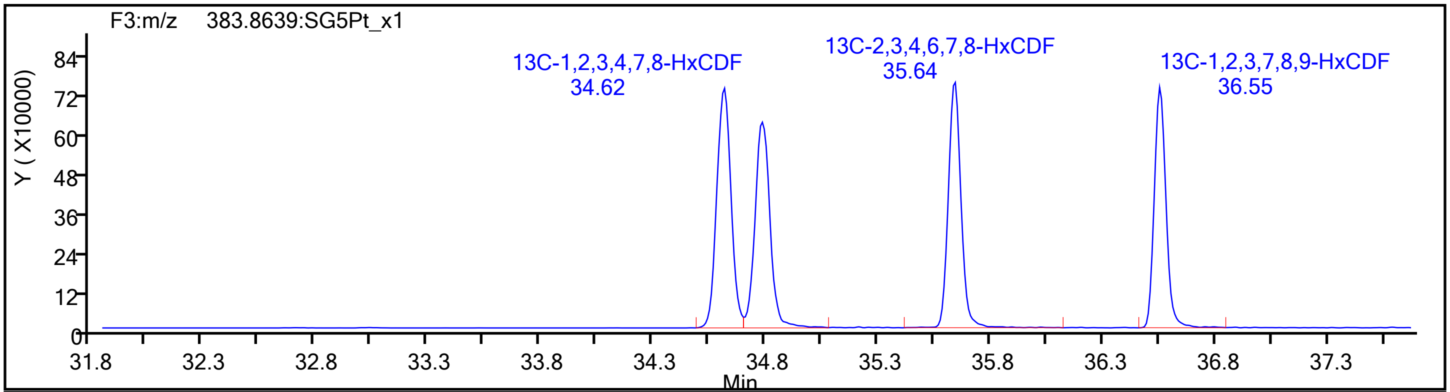

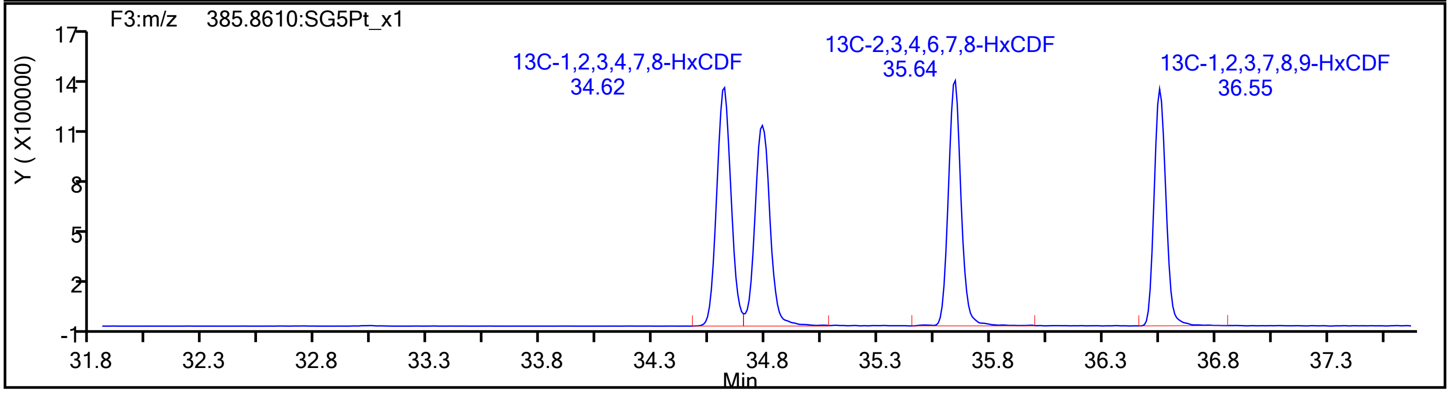

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Eurofins TestAmerica, Sacramento

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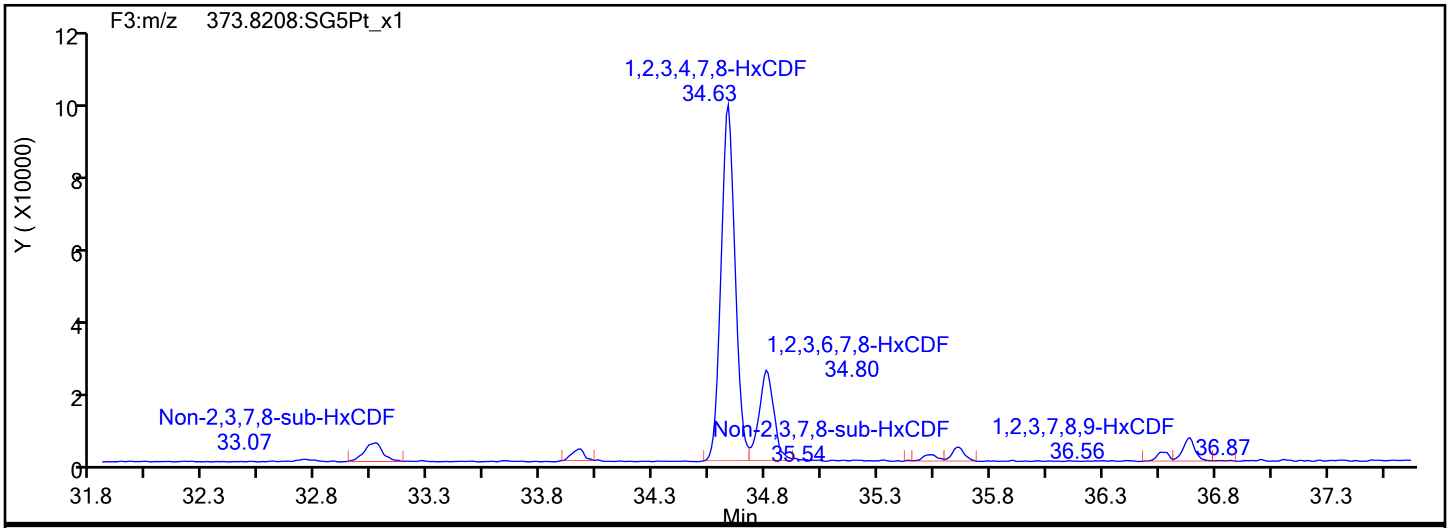

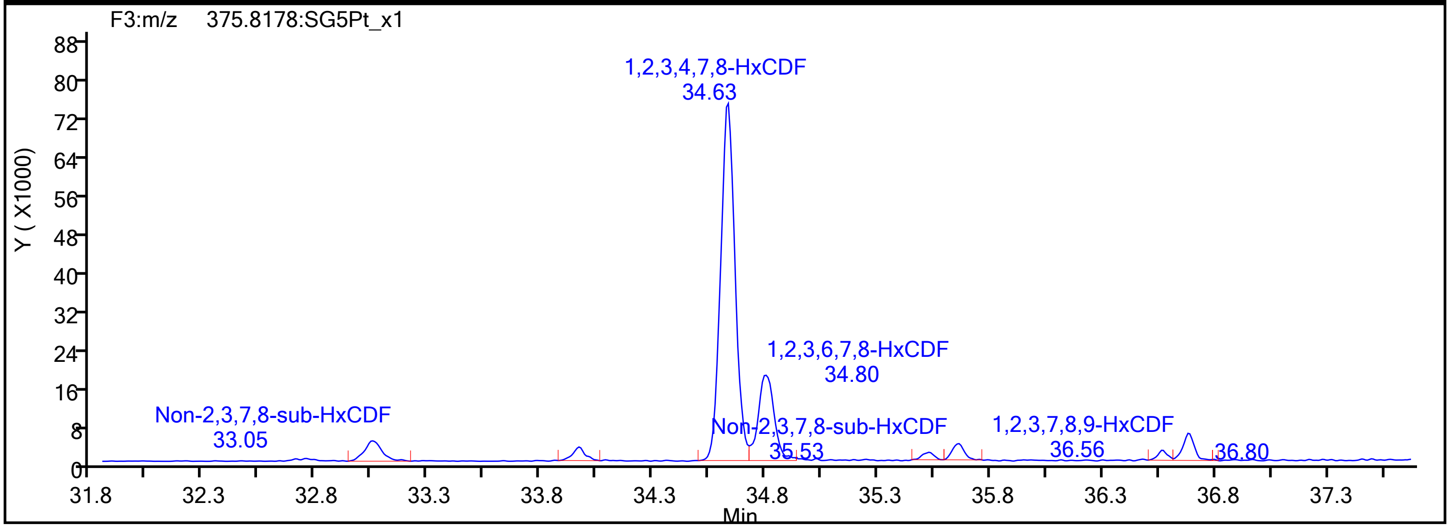

HxCDF Interference Mass

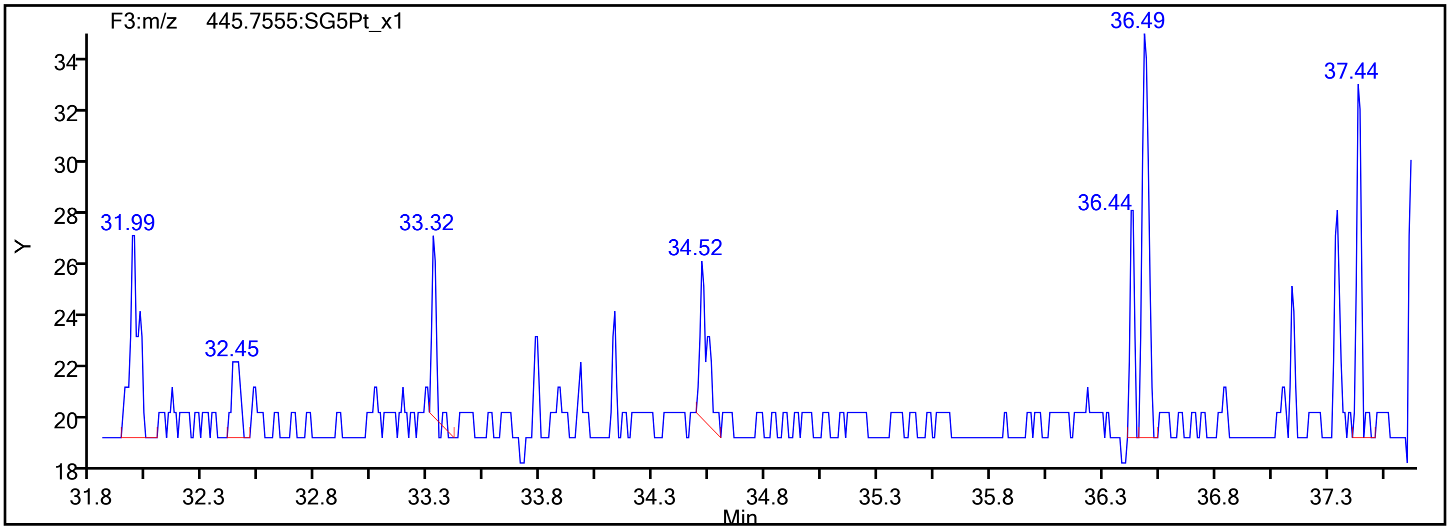

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HxCDD

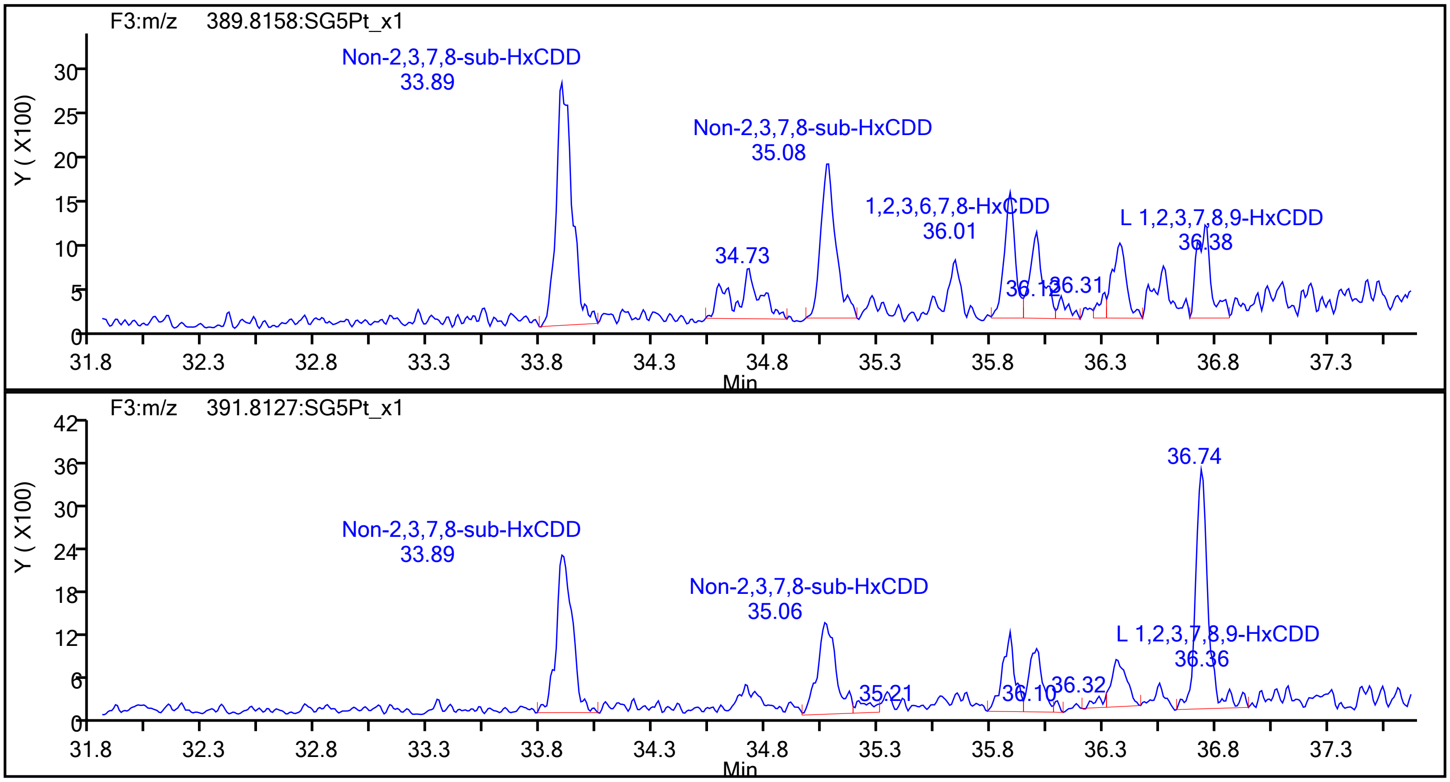

HxCDD Standards

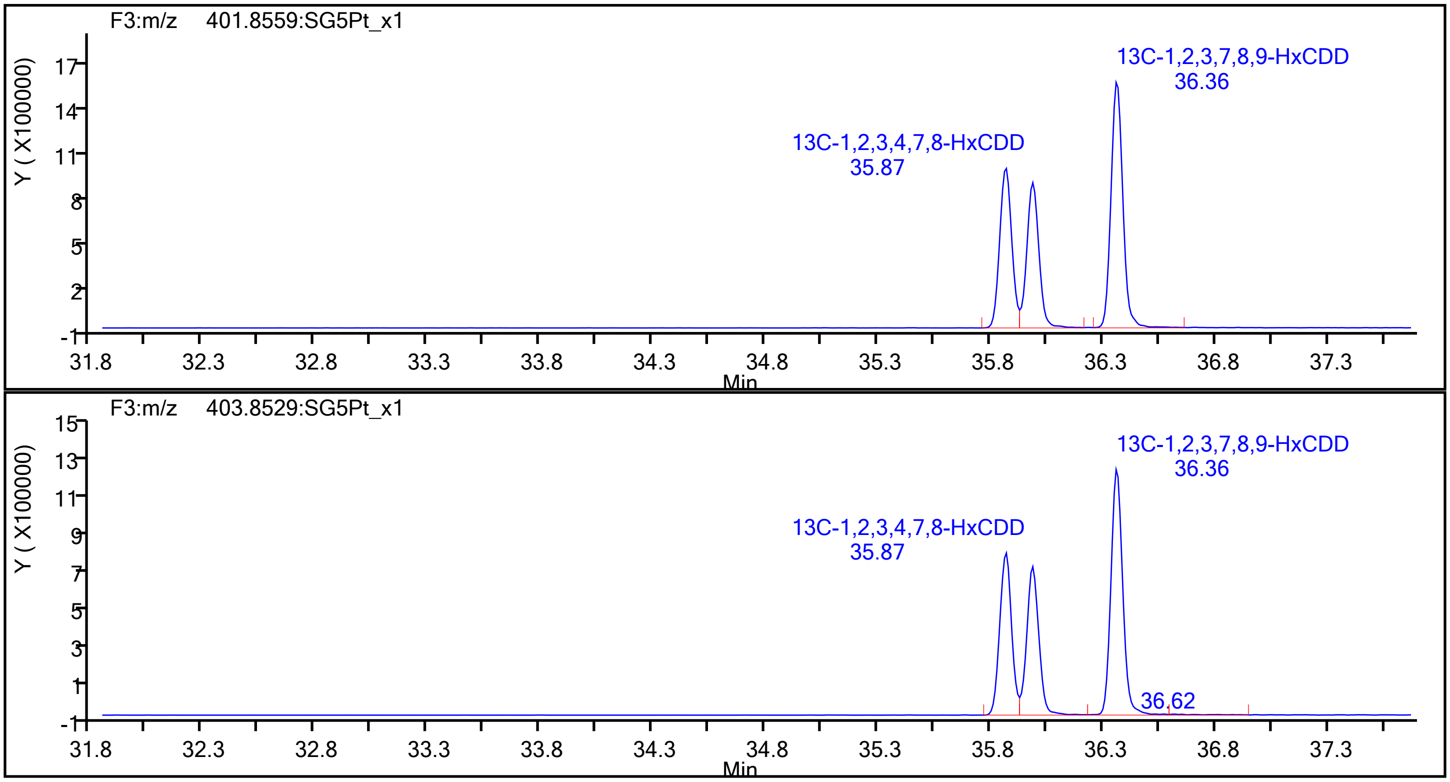

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Eurofins TestAmerica, Sacramento

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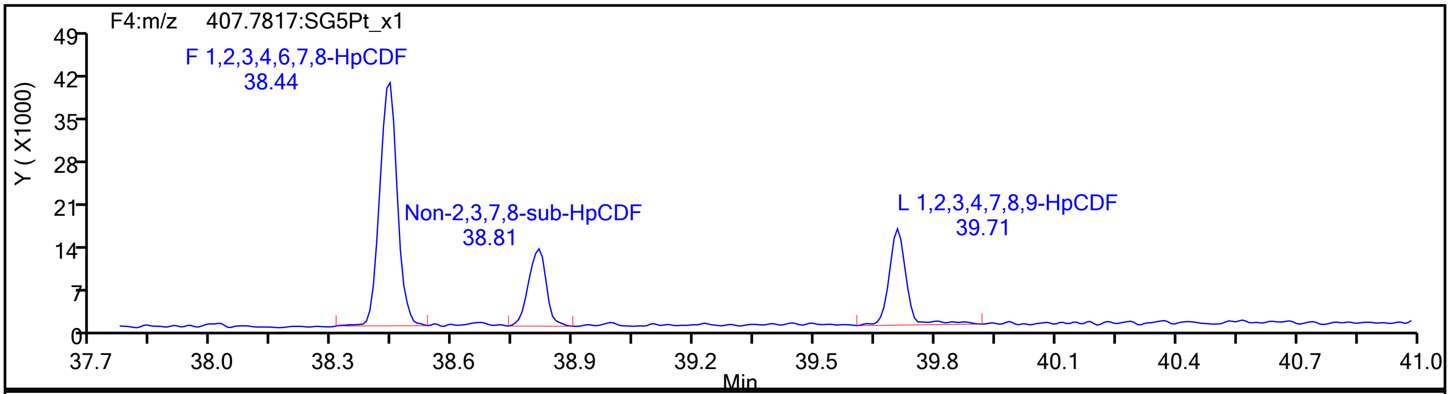

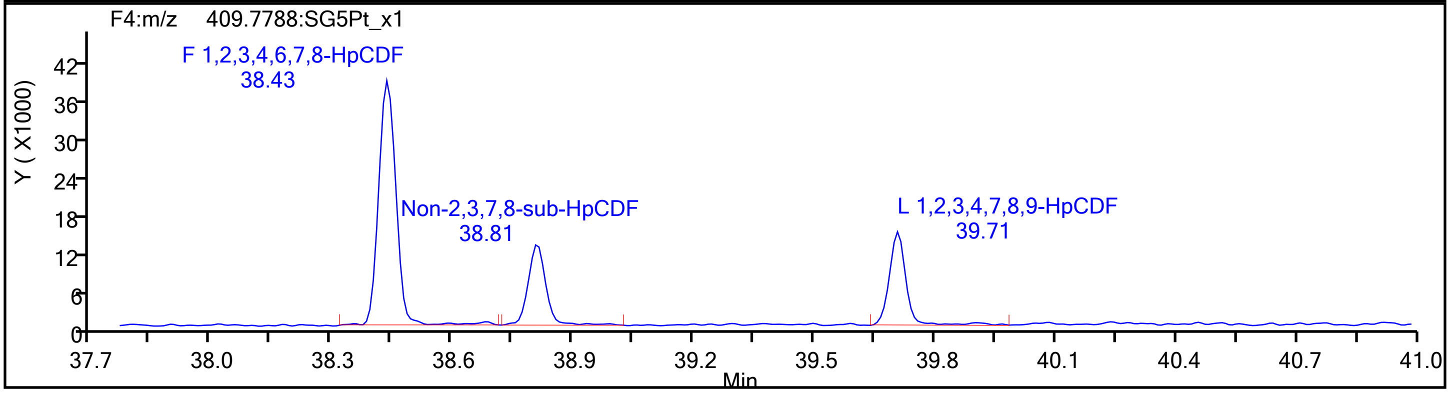

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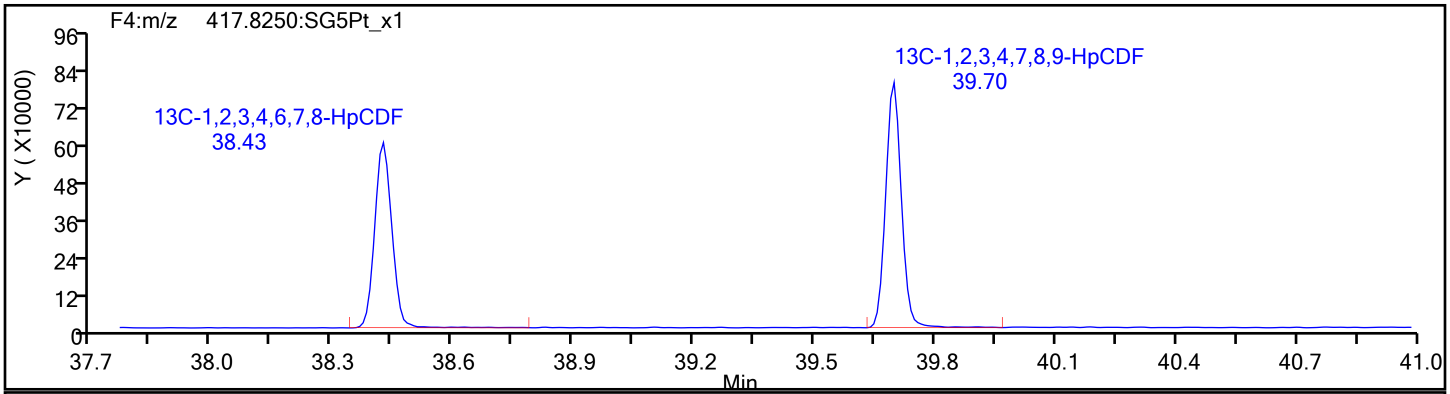

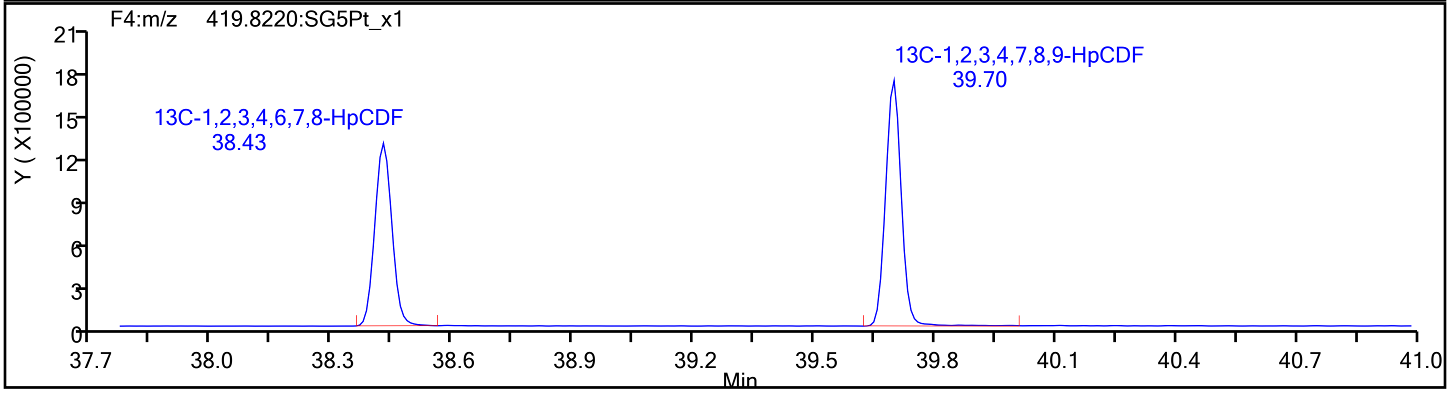

Eurofins TestAmerica, Sacramento

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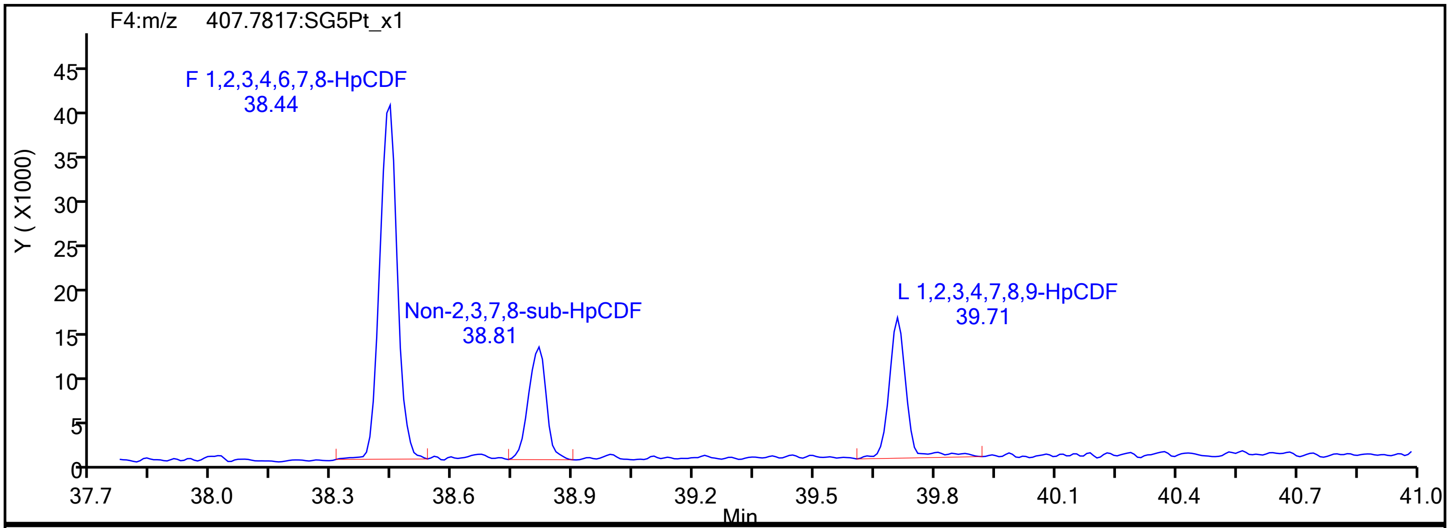

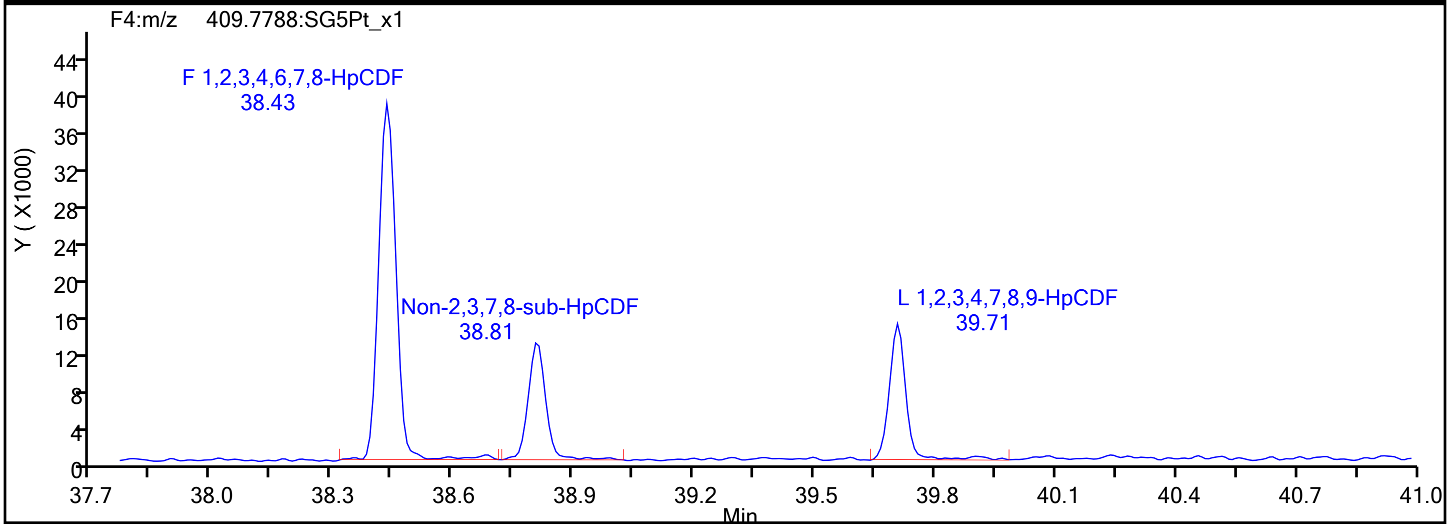

HpCDF Interference Mass

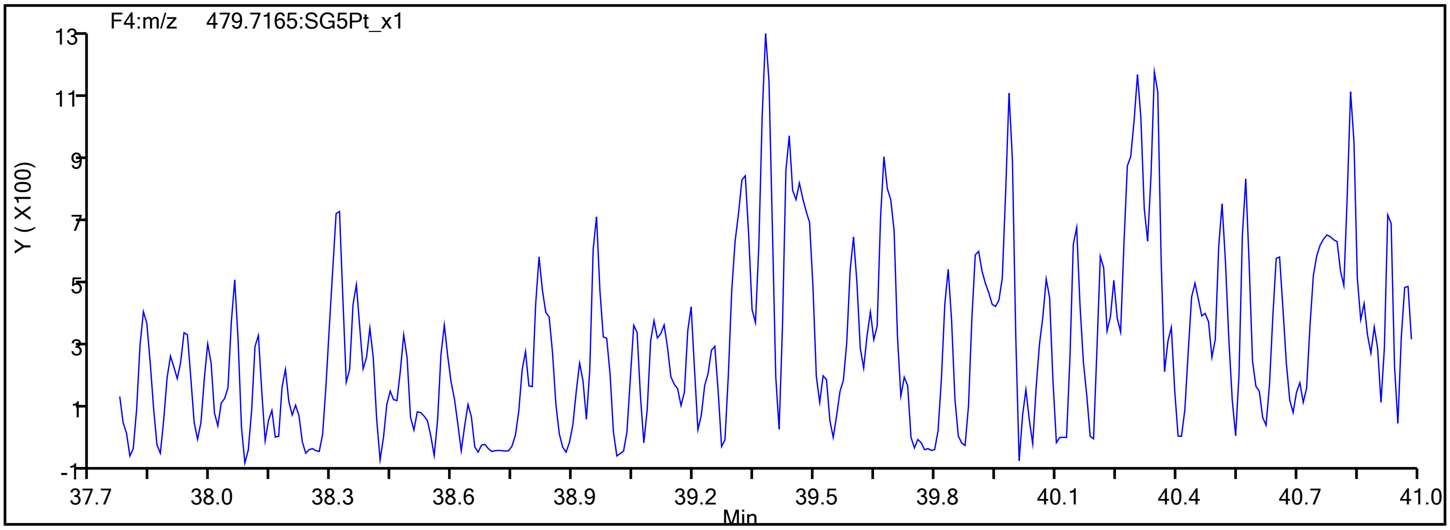

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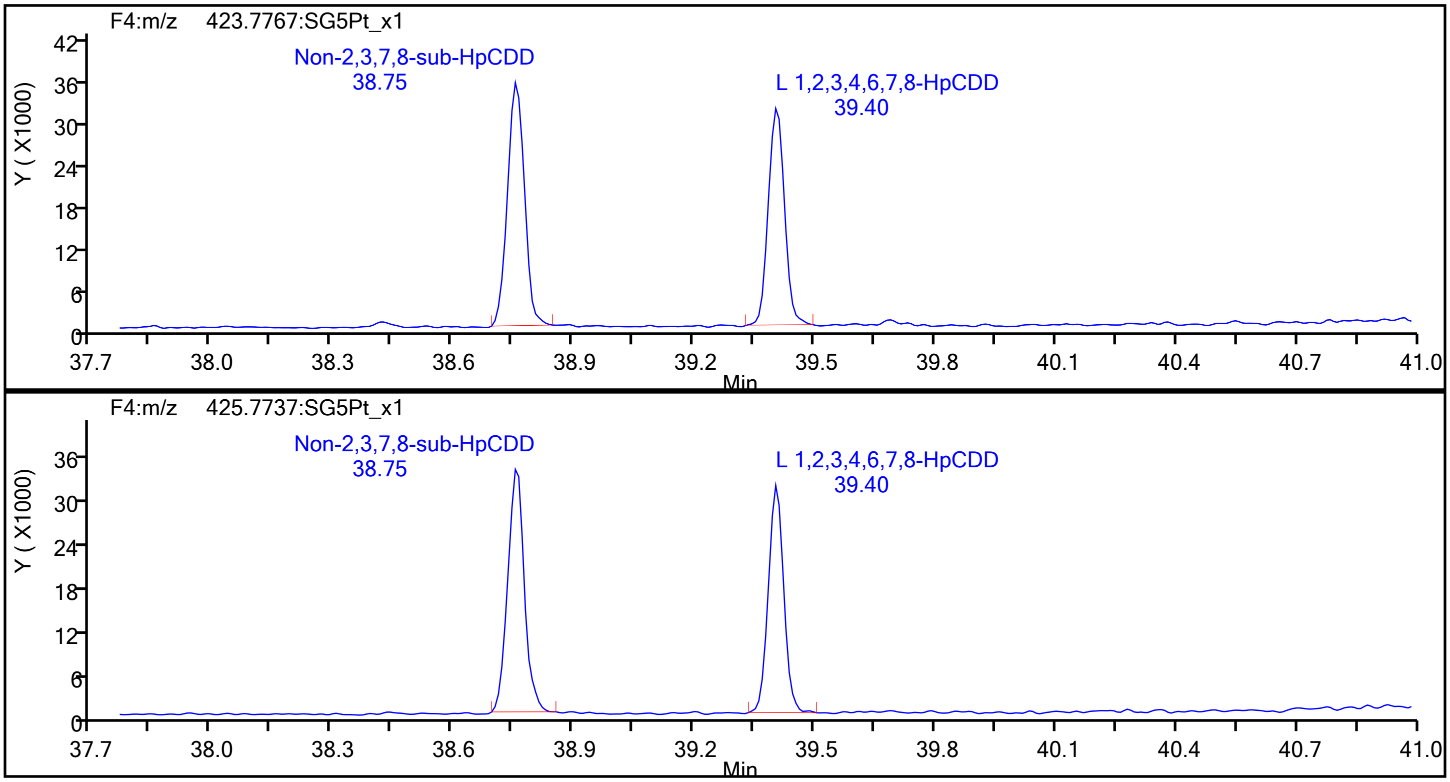

HpCDD Standards

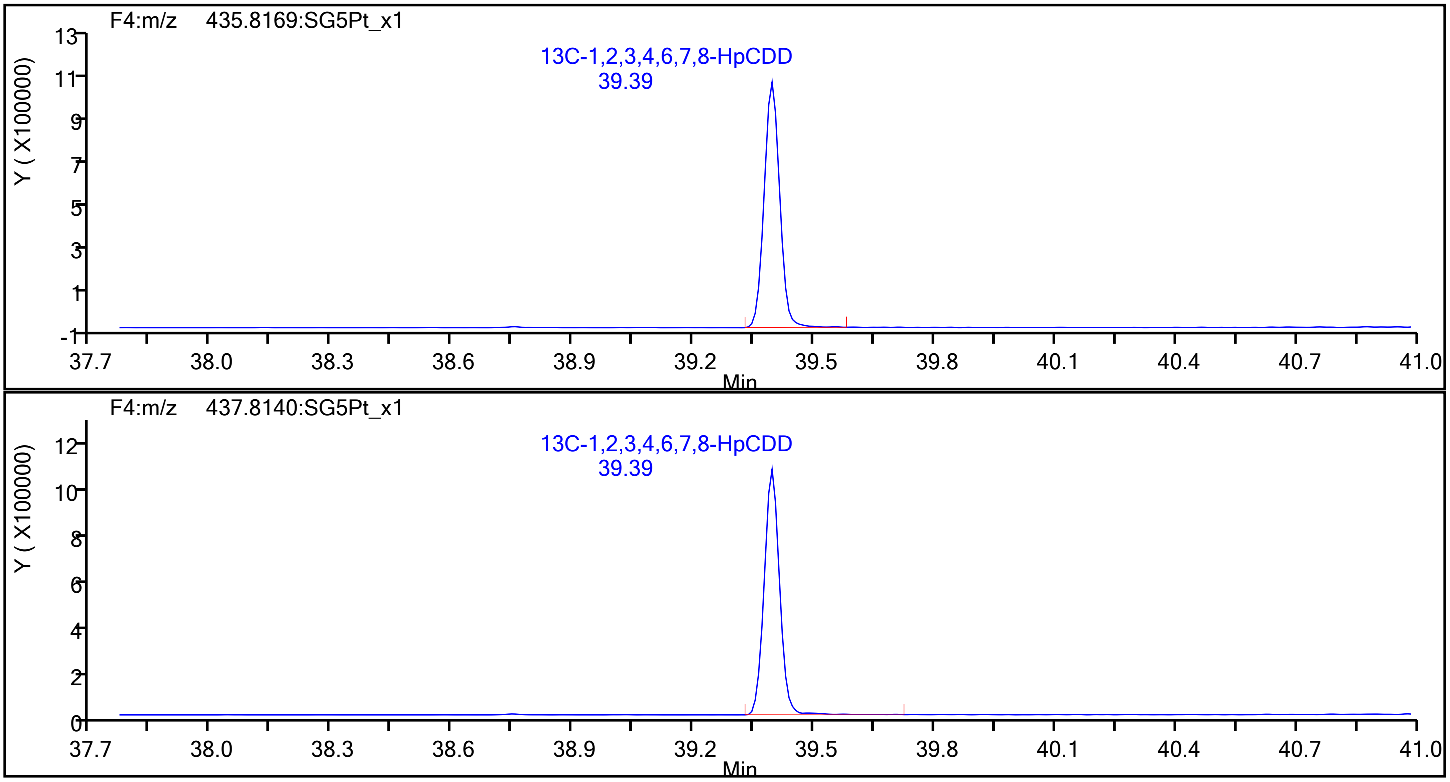

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OCDF

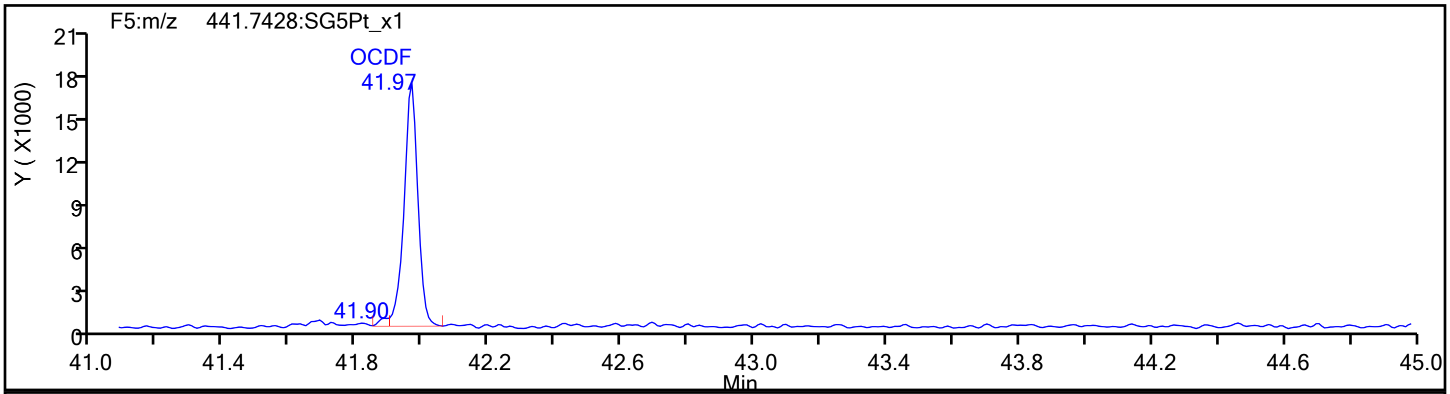

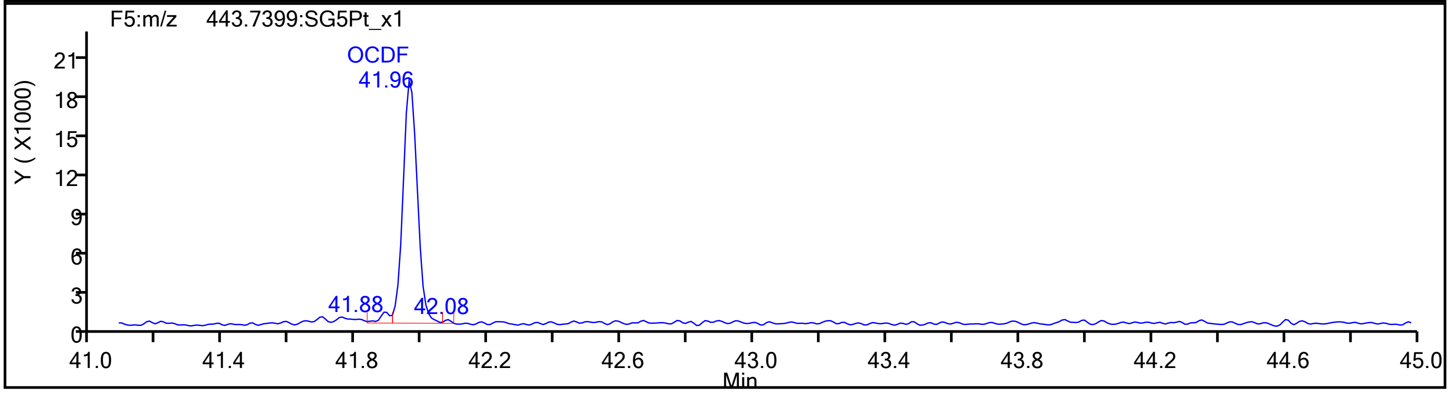

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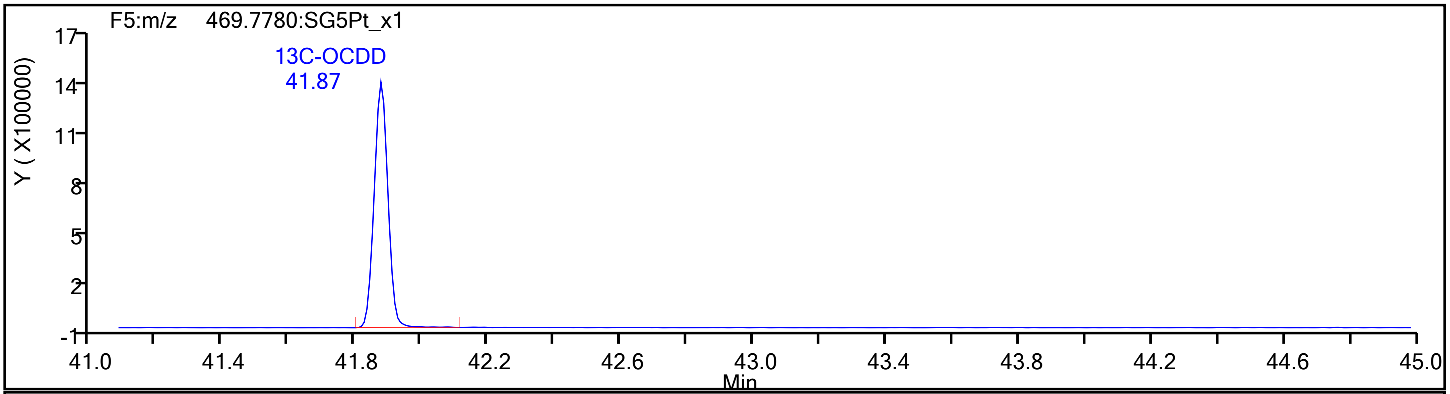

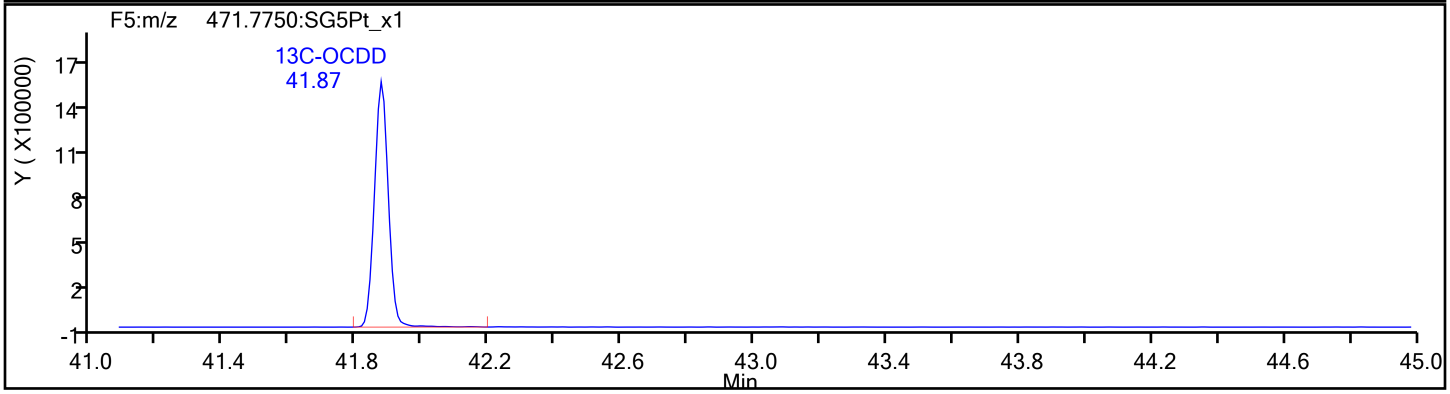

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Eurofins TestAmerica, Sacramento

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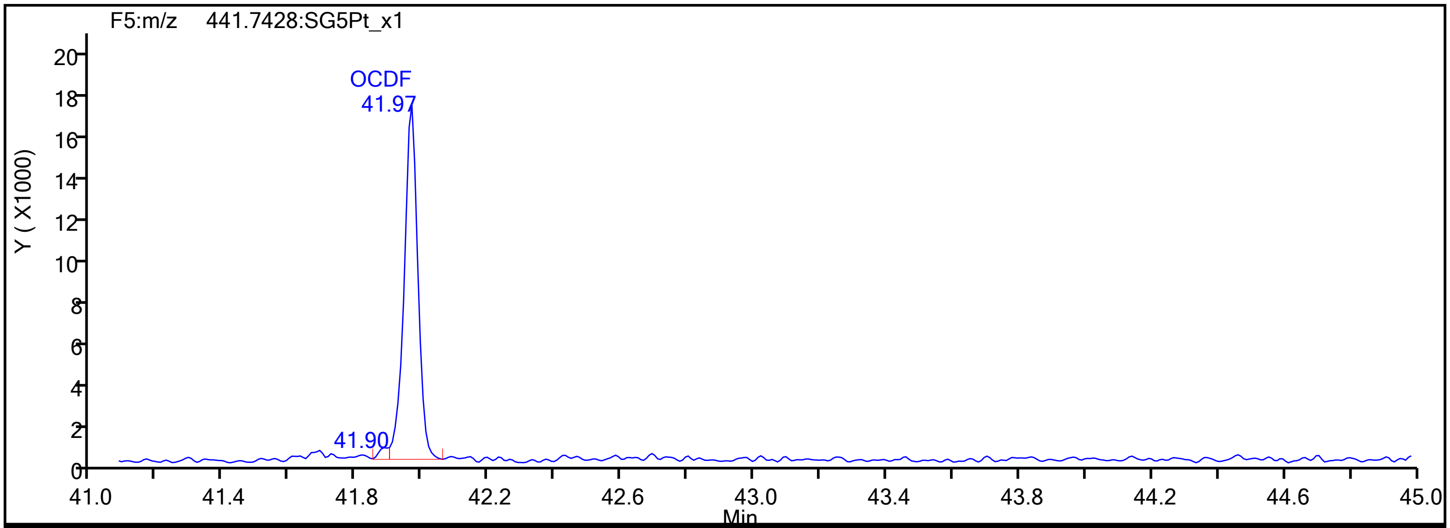

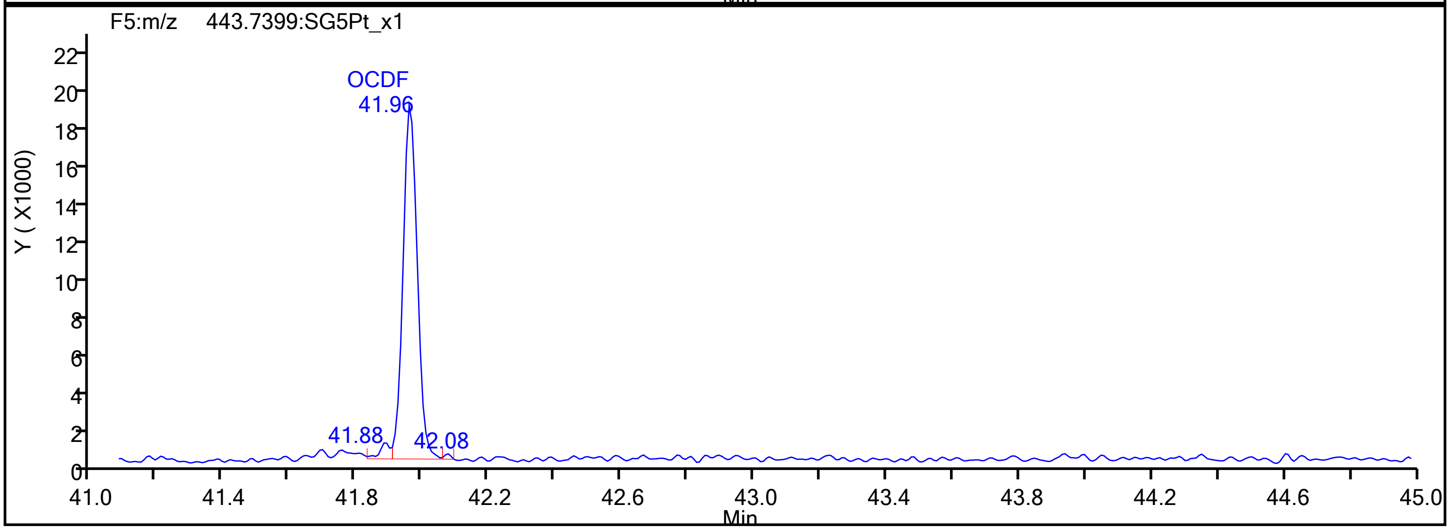

OCDF Interference Mass

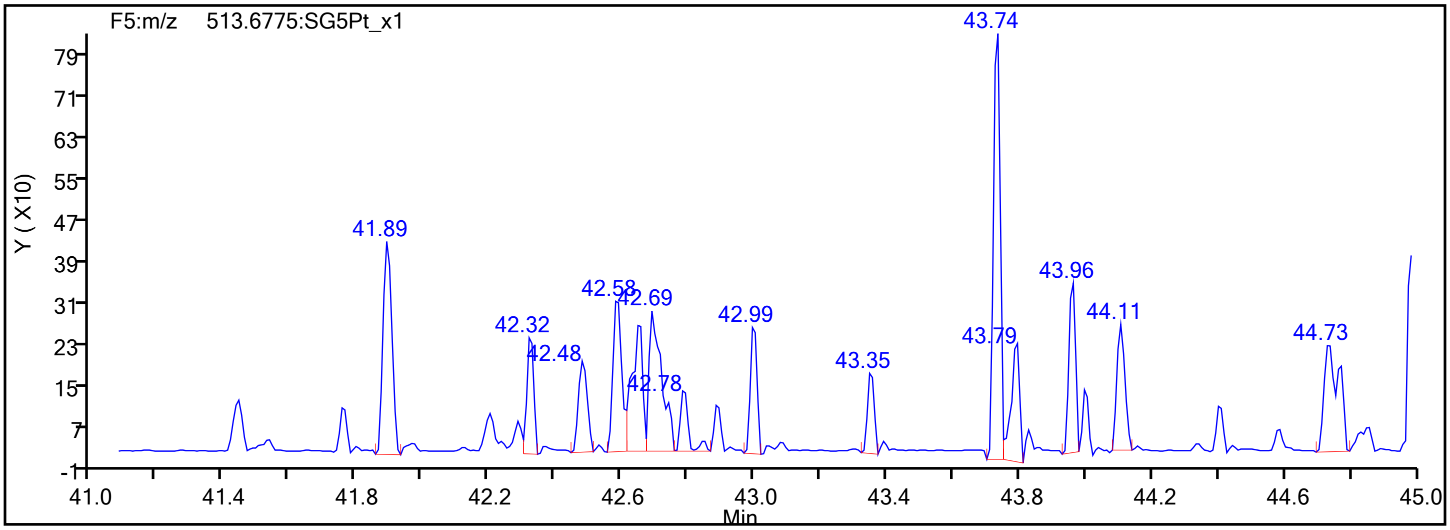

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Eurofins TestAmerica, Sacramento

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Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Pretreatment

Worklist#: 534320 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

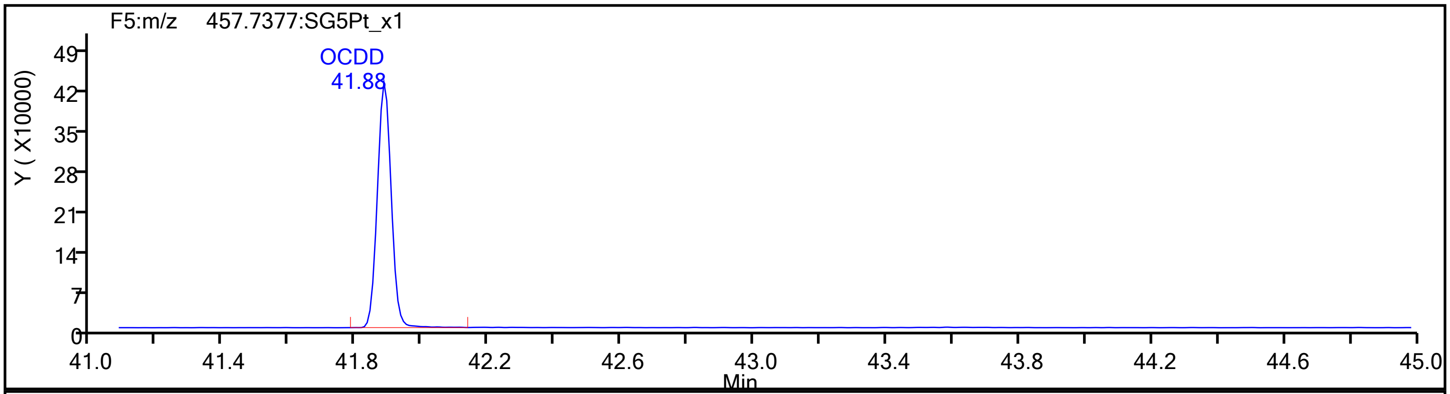

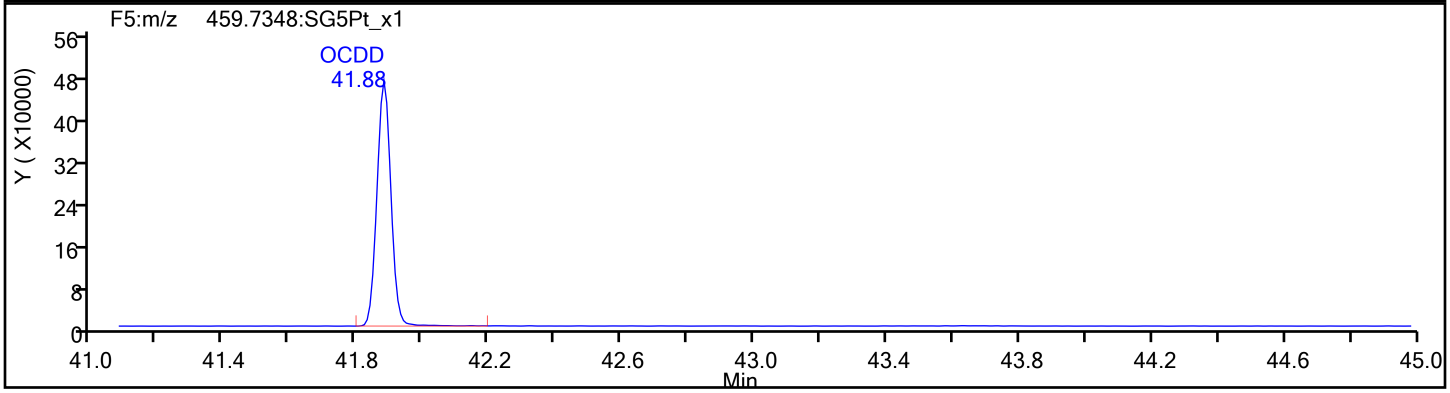

OCDD Standards

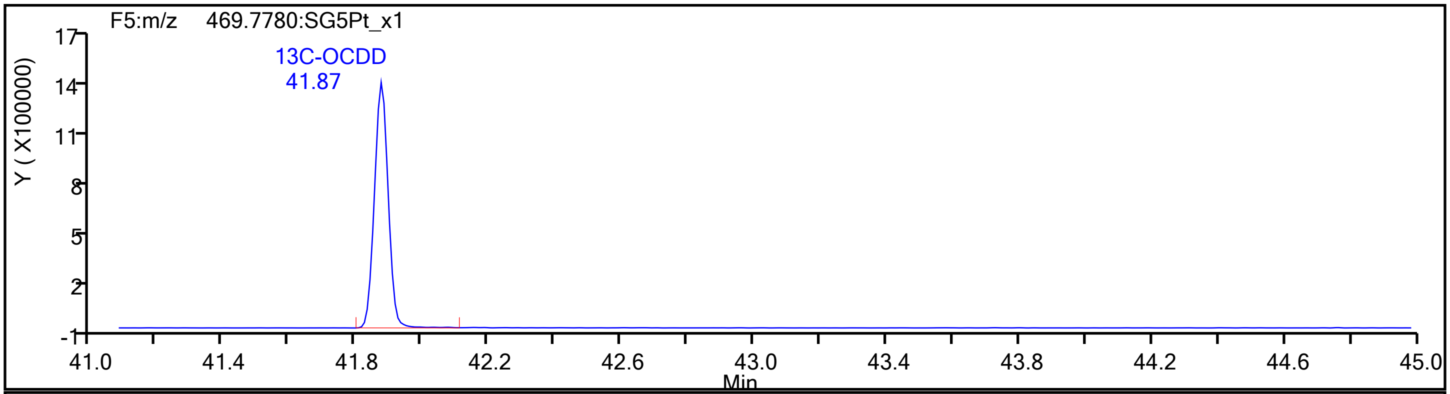

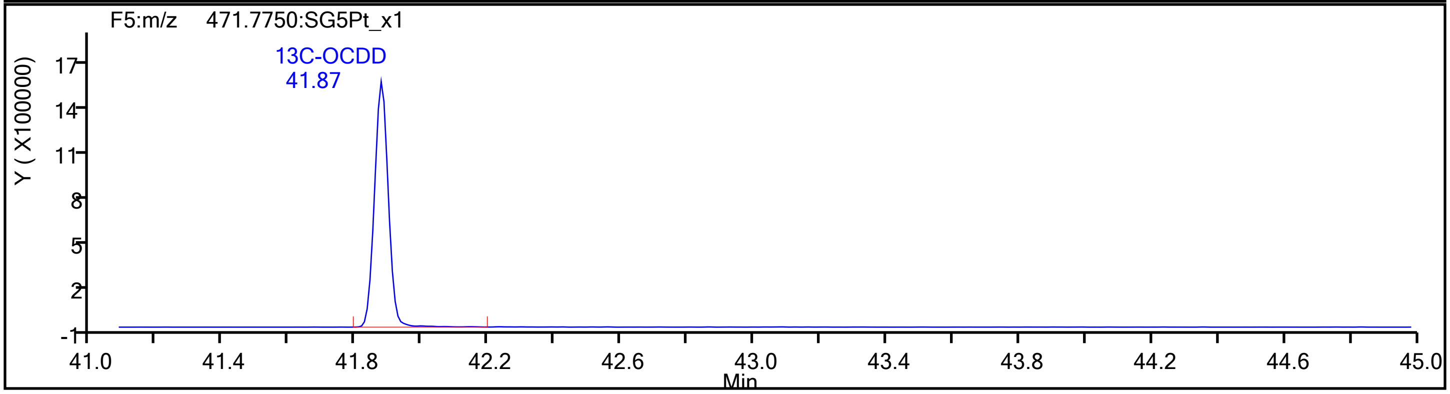

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 534320
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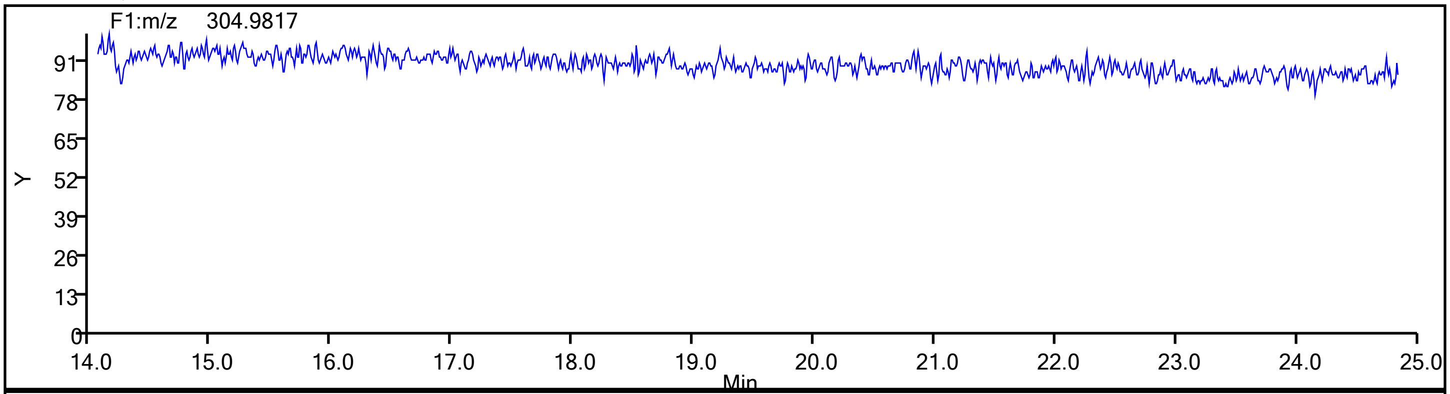

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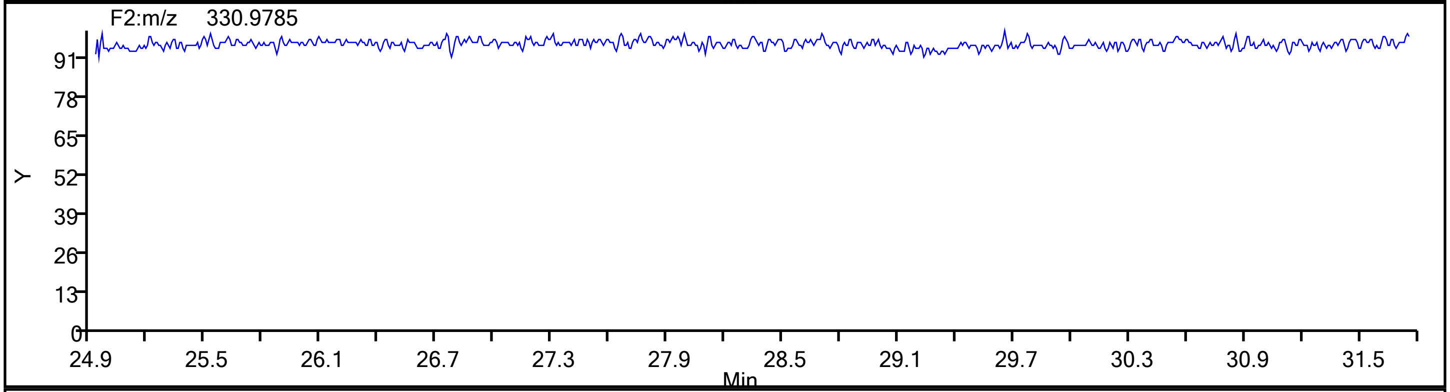

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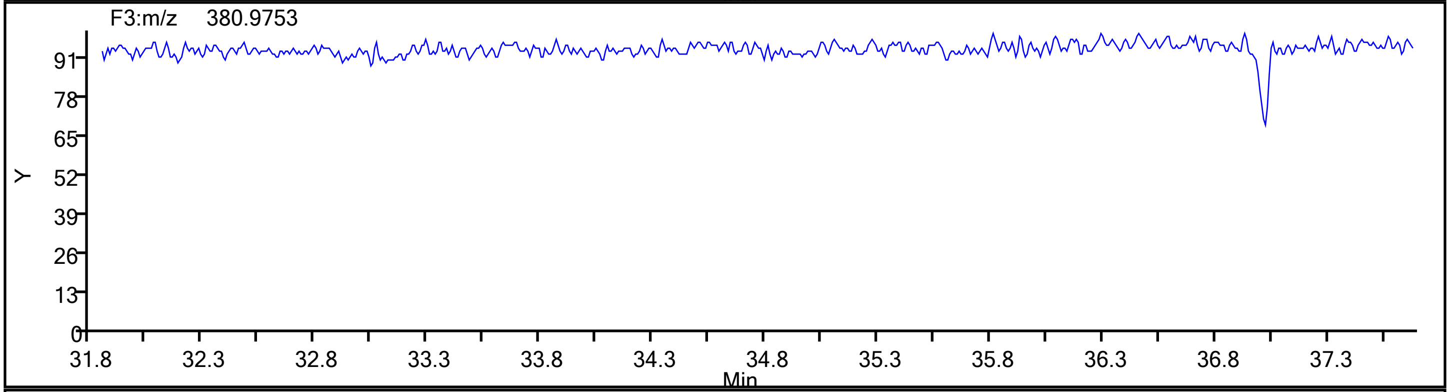

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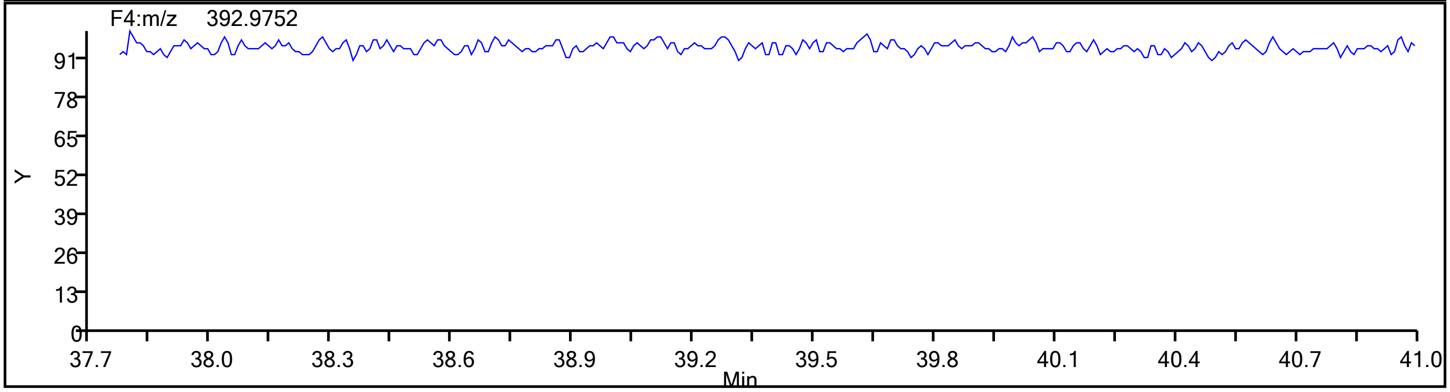

Eurofins TestAmerica, Sacramento

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Client ID: 11215702-Pretreatment
Worklist#: 534320
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

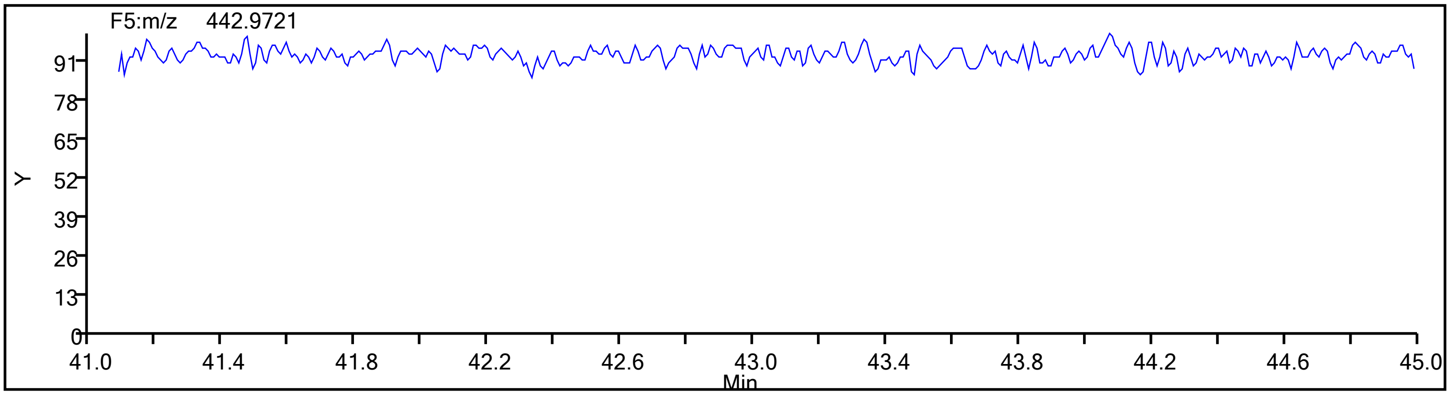

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID: 11215702-Pretreatment RA	Lab Sample ID: 320-79918-1 RA
Matrix: Water	Lab File ID: 18OC2111D2_009.d
Analysis Method: 1613B	Date Collected: 10/05/2021 15:00
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1050.2(mL)	Date Analyzed: 10/18/2021 16:53
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 535163	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1600		9.5	4.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	95		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	97		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_009.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Sample Type: Client
Inject. Date: 18-Oct-2021 16:53:58 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-A-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2021 09:28:02 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bennettd Date: 19-Oct-2021 09:27:52

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.120	83556239	0.76	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.423	77944566	0.79	0.9820	95.0	95.0	0.3668	0.3668	94.99	
2,3,7,8-TCDF	17.436	62220648	0.79	0.9474	84.3	84.3	0.2426	0.2426		
D 13C-2,3,7,8-TCDD	15.914	49308050	0.78	0.7189	82.1	82.1	2.986	2.986	82.08	
2,3,7,8-TCDD	15.928	16696505	0.75	0.9807	34.5	34.5	0.3869	0.3869		
$ 37Cl4-2,3,7,8-TCDD	15.928	23880644		0.7344	38.9	38.9	0.0969	0.0969	97.29	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend
Processing Flags

Report Date: 19-Oct-2021 09:28:21　　Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_009.d
Lims ID: 320-79918-A-1-A
Client ID: 11215702-Pretreatment
Sample Type: Client
Inject. Date: 18-Oct-2021 16:53:58　ALS Bottle#: 0　Worklist Smp#: 9
Injection Vol: 2.0 ul　Dil. Factor: 1.0000
Sample Info: 320-79918-A-1-A
Misc. Info.: DB225RES
Operator ID:　Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2021 09:28:02　Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution　Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm)　Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bennettd　Date: 19-Oct-2021 09:27:52

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.120	16.120	0		36049848	8026077	82077	205192	98		
333.9339	16.120	16.120	0		47506391	10256688	74927	187317	137	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.423	17.423	0	1.081	34467507	6456909	12523	31307	516		
317.9389	17.423	17.423	0	1.081	43477059	8068791	13820	34550	584	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.436	17.451	-1	1.001	27378115	5123912	5777	14442	887		
305.8987	17.436	17.451	-1	1.001	34842533	6582148	7575	18937	869	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.914	15.914	0	0.987	21656774	4977038	82077	205192	61		
333.9339	15.900	15.914	-1	0.986	27651276	6420878	74927	187317	86	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.928	15.928	0	1.001	7130450	1607505	9121	22802	176		
321.8936	15.928	15.928	0	1.001	9566055	2108689	8178	20445	258	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.928	15.928	0	0.988	23880644	5442943	5205	13012	1046		

QC Flag Legend
Processing Flags

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_009.d
Injection Date: 18-Oct-2021 16:53:58 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Pretreatment
Worklist#: 535163 Sample Line#: 9
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

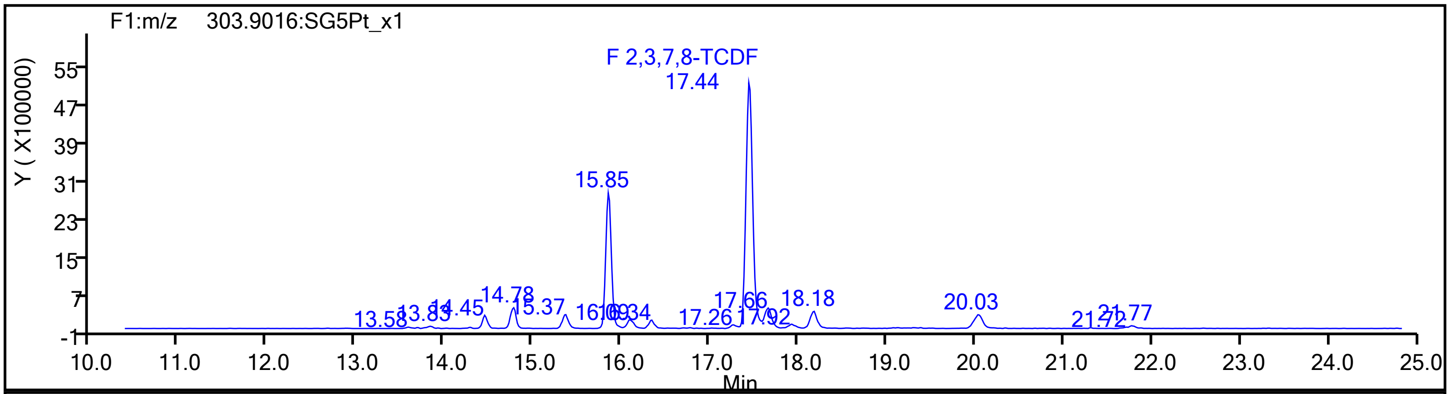

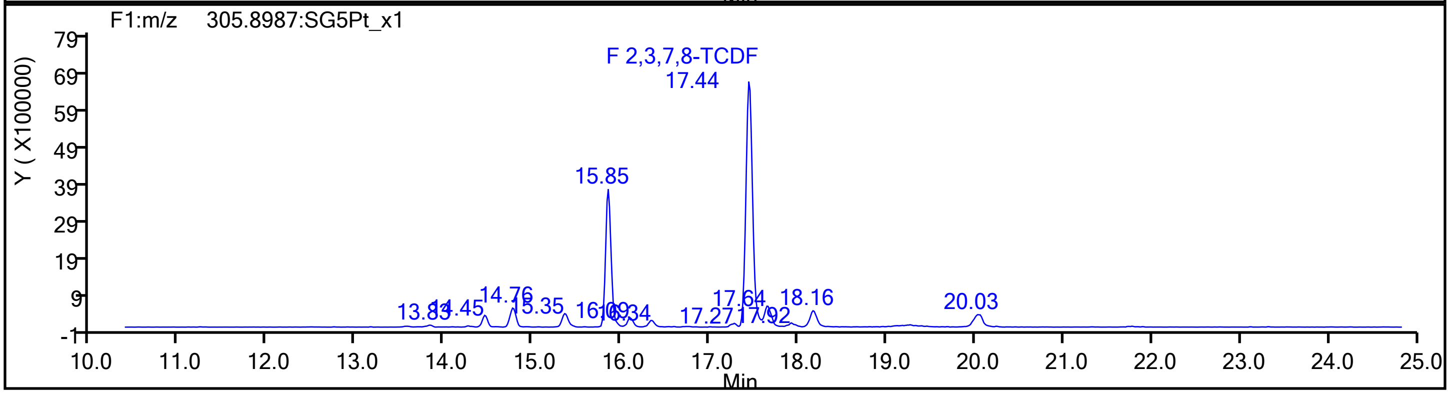

TCDF Standards

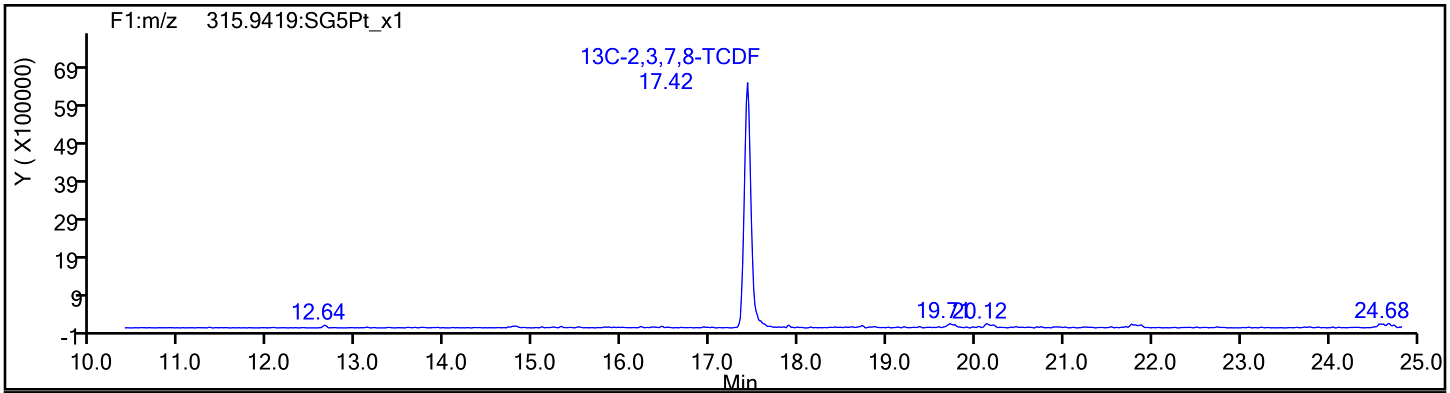

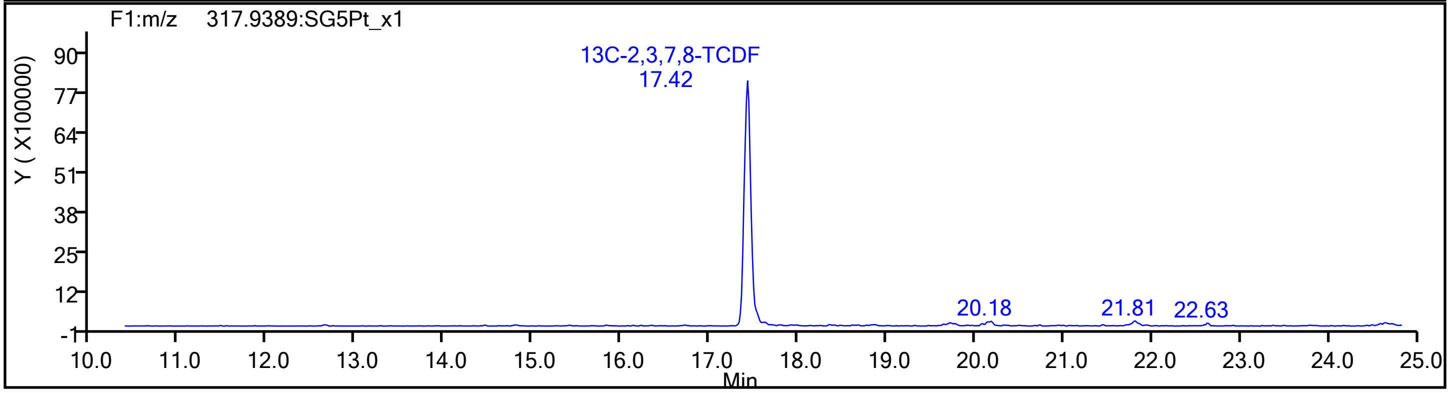

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_009.d

Injection Date: 18-Oct-2021 16:53:58

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-Pretreatment

Worklist#: 535163

Sample Line#: 9

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

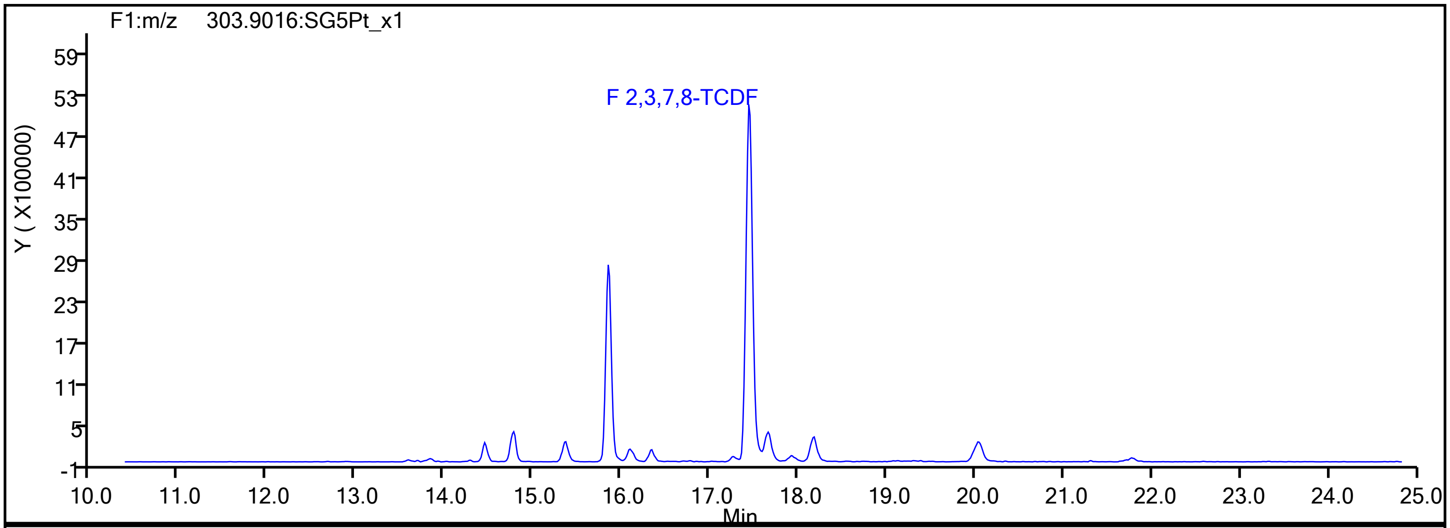

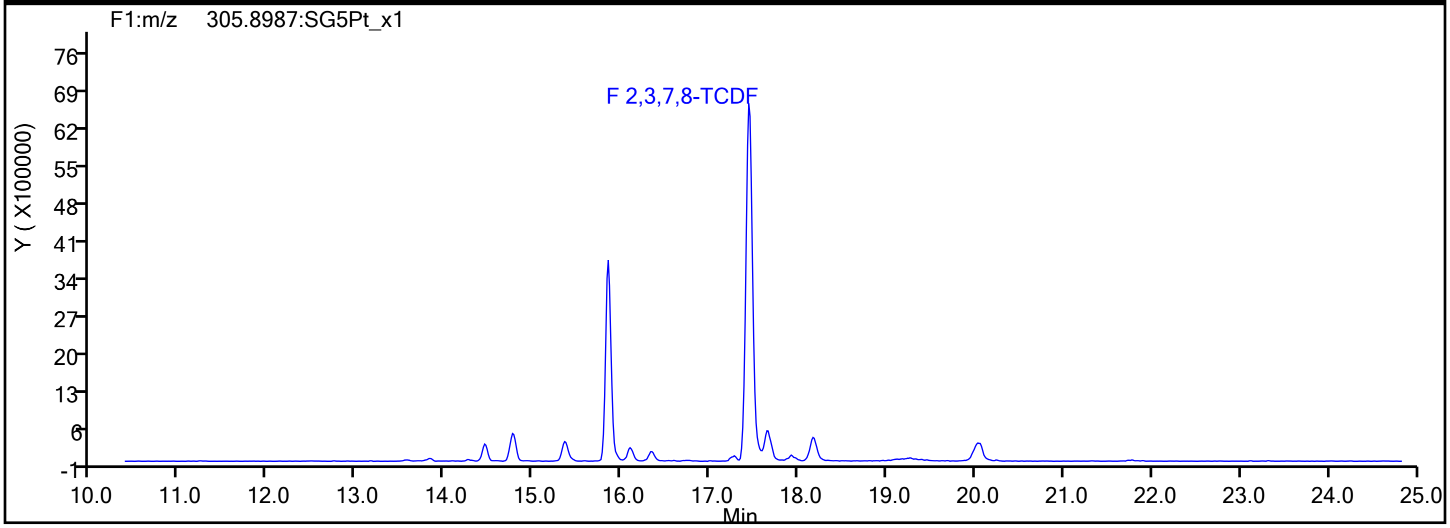

TCDF Interference Mass

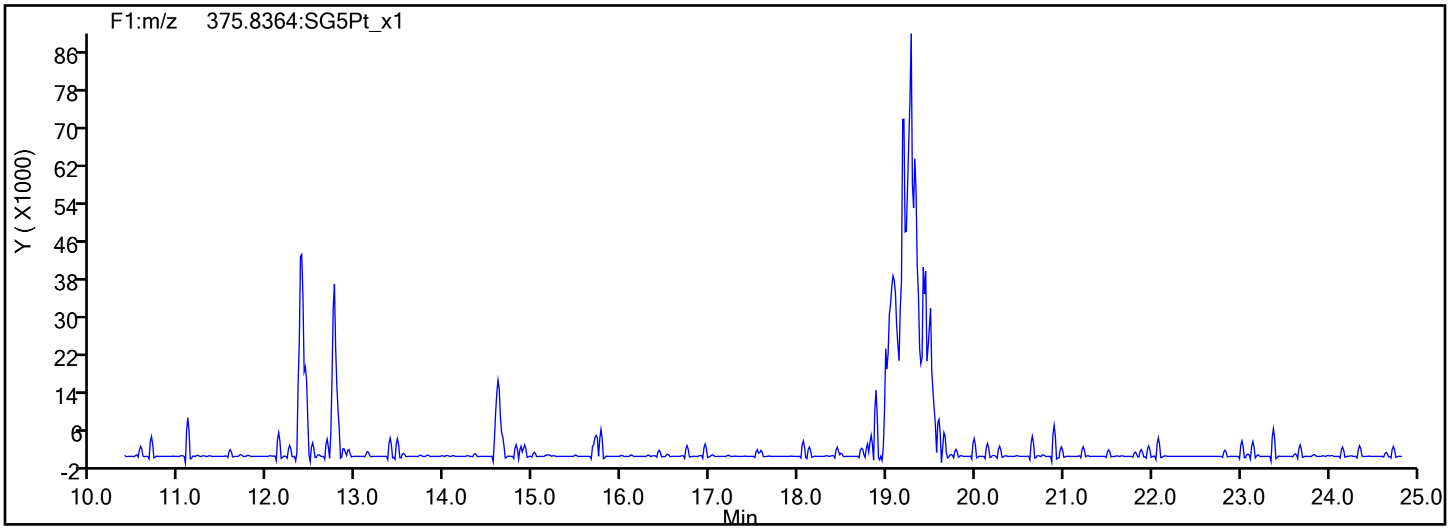

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_009.d

Injection Date: 18-Oct-2021 16:53:58
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-Pretreatment
Worklist#: 535163
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

37Cl4-TCDD

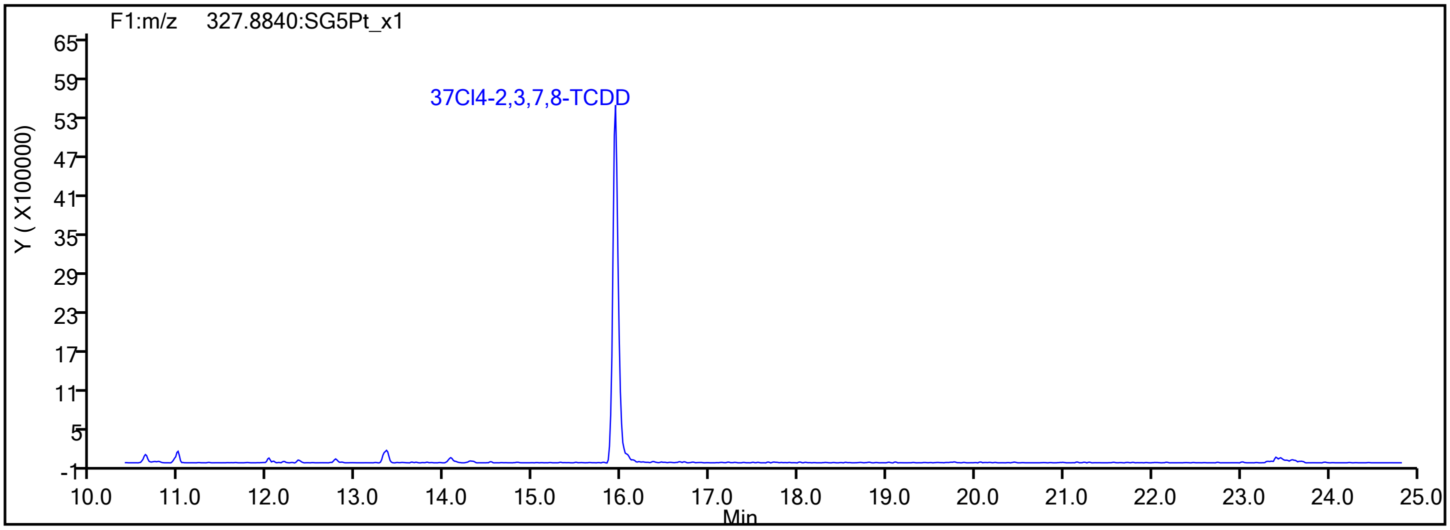

37Cl4-TCDD Standards

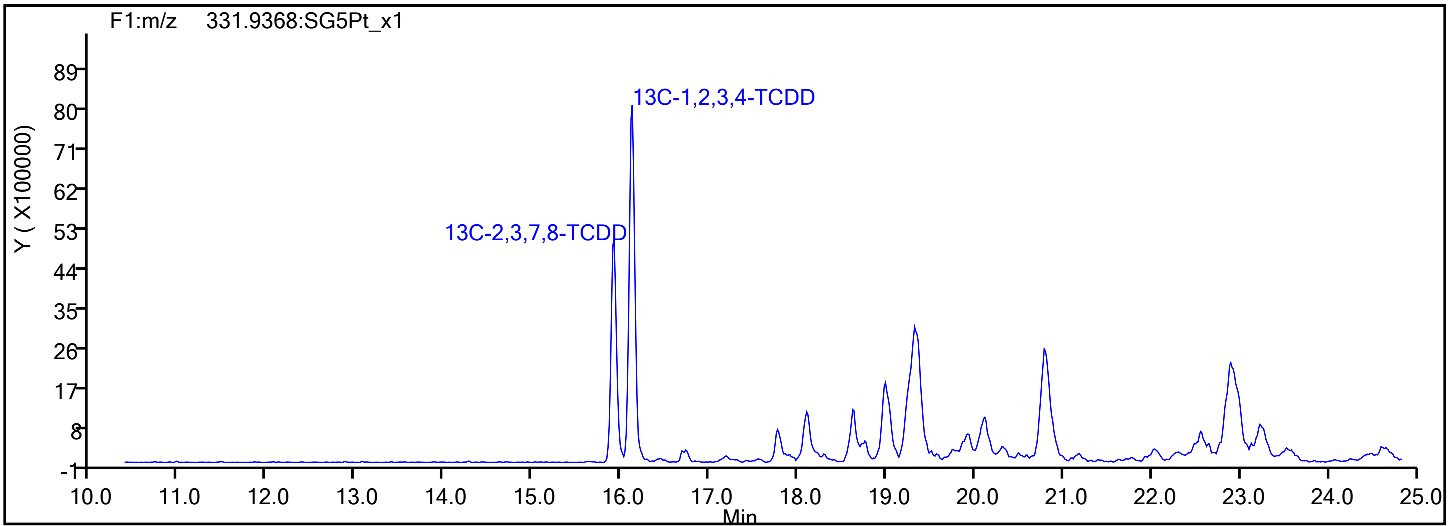

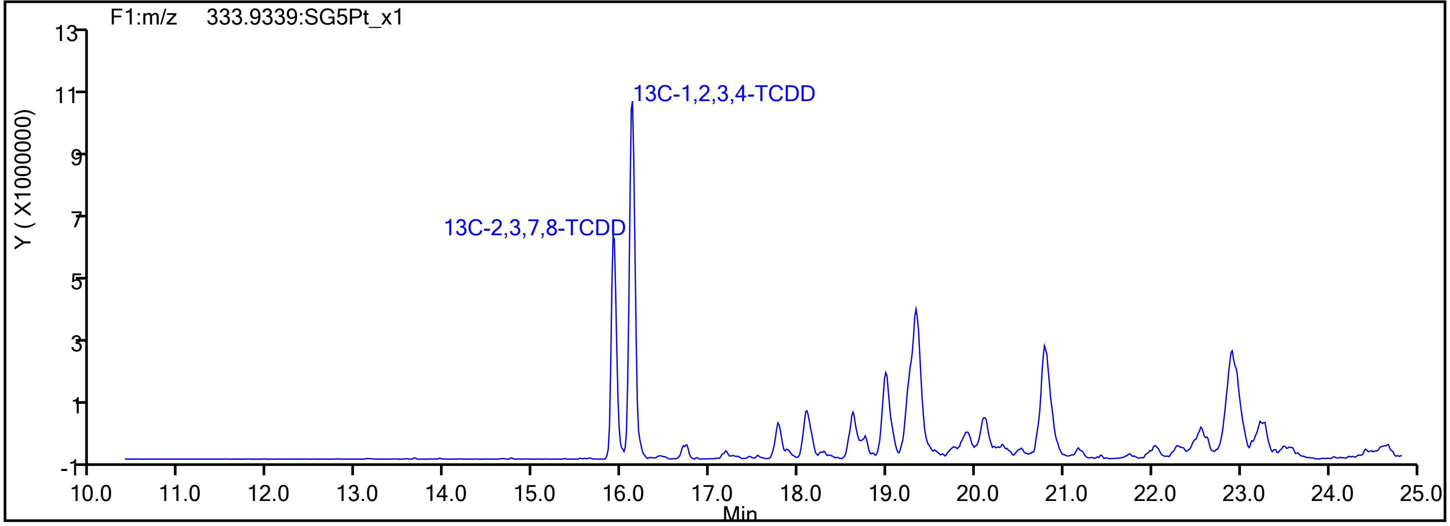

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_009.d		
Injection Date:	18-Oct-2021 16:53:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-Pretreatment		
Worklist#:	535163	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

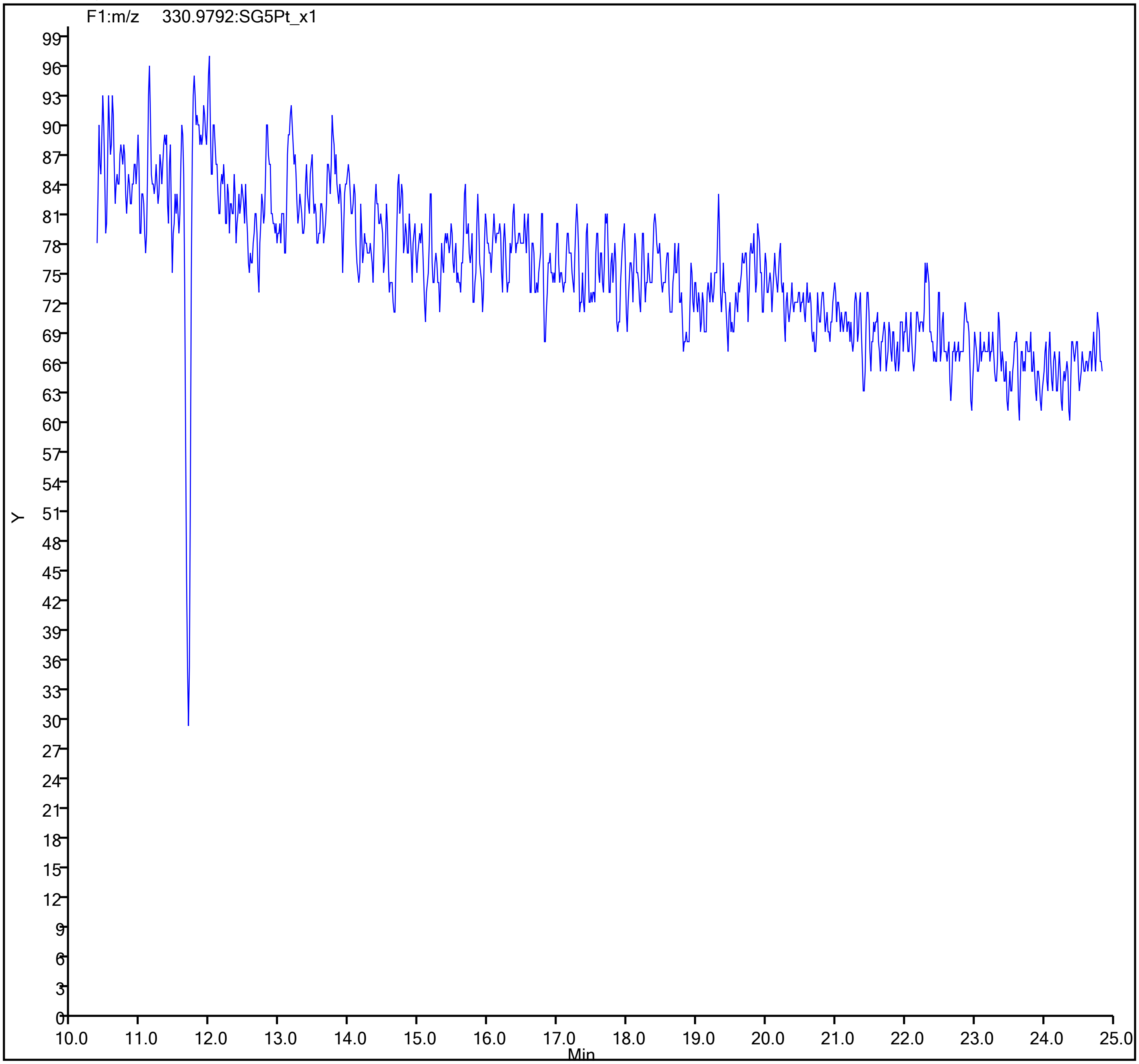

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Client Sample ID: 11215702-T=1hr-Settle Lab Sample ID: 320-79918-2

Matrix: Water Lab File ID: 15oc21dfs1_12.d

Analysis Method: 1613B Date Collected: 10/05/2021 15:00

Extract. Method: 1613B Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1050.9(mL) Date Analyzed: 10/15/2021 18:15

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	19		9.5	1.0
40321-76-4	1,2,3,7,8-PeCDD	1.8	J	48	0.88
57117-41-6	1,2,3,7,8-PeCDF	2.8	J	48	0.43
57117-31-4	2,3,4,7,8-PeCDF	2.6	J	48	0.49
39227-28-6	1,2,3,4,7,8-HxCDD	3.2	J B q	48	0.76
57653-85-7	1,2,3,6,7,8-HxCDD	1.4	J q	48	0.74
19408-74-3	1,2,3,7,8,9-HxCDD	1.4	J q	48	0.71
70648-26-9	1,2,3,4,7,8-HxCDF	4.4	J B q	48	0.57
57117-44-9	1,2,3,6,7,8-HxCDF	2.0	J B	48	0.51
72918-21-9	1,2,3,7,8,9-HxCDF	2.1	J B	48	0.46
60851-34-5	2,3,4,6,7,8-HxCDF	1.6	J	48	0.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	5.0	J B	48	1.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.1	J B	48	1.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.8	J q	48	1.5
3268-87-9	OCDD	36	J B	95	0.90
39001-02-0	OCDF	3.8	J B	95	0.89
41903-57-5	Total TCDD	19		9.5	1.0
30402-14-3	Total TCDF	99	q	9.5	0.83
36088-22-9	Total PeCDD	1.8	J B	48	0.88
30402-15-4	Total PeCDF	6.3	J q	48	0.46
34465-46-8	Total HxCDD	6.1	J B q	48	0.74
55684-94-1	Total HxCDF	10	J B q	48	0.50
37871-00-4	Total HpCDD	9.5	J B	48	1.1
38998-75-3	Total HpCDF	5.9	J B q	48	1.4

FORM I 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Client Sample ID: 11215702-T=1hr-Settle Lab Sample ID: 320-79918-2

Matrix: Water Lab File ID: 15oc21dfs1_12.d

Analysis Method: 1613B Date Collected: 10/05/2021 15:00

Extract. Method: 1613B Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1050.9(mL) Date Analyzed: 10/15/2021 18:15

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	90		25-164
89059-46-1	13C-2,3,7,8-TCDF	95		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	93		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	98		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	92		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	88		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	94		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	96		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	94		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	99		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	103		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	113		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	106		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	114		26-138
114423-97-1	13C-OCDD	123		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	96		35-197

Report Date: 18-Oct-2021 13:41:56 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Lims ID:	320-79918-A-2-A				
Client ID:	11215702-T=1hr-Settle				
Sample Type:	Client				
Inject. Date:	15-Oct-2021 18:15:00	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-79918-a-2-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Oct-2021 13:41:26	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1621				

First Level Reviewer: bennettd Date: 18-Oct-2021 13:30:41

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.771	8411807	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.799	9743270	0.81	1.2244	94.6	94.6	0.3943	0.3943	94.60	
2,3,7,8-TCDF	19.833	317198	0.82	1.1194	2.908	2.908	0.0437	0.0437		
A Non-2,3,7,8-sub-TCDF	19.372	252435	0.77	1.1194	2.394	2.314	0.0437	1.344		RQMa
S Total TCDF					5.302	5.223	0.0437	0.0437		RQ
D 13C-2,3,7,8-TCDD	21.140	6247748	0.77	0.8210	90.5	90.5	0.2409	0.2409	90.47	
2,3,7,8-TCDD	21.166	67149	0.68	1.0943	0.9822	0.9822	0.0534	0.0534		
$ 37Cl4-2,3,7,8-TCDD	21.166	2805982		0.8658	38.5	38.5	0.0459	0.0459	96.32	
A Non-2,3,7,8-sub-TCDD	20.213						0.0534	0.0534		
S Total TCDD					0.9822	0.9822	0.0534	0.0534		
D 13C-1,2,3,7,8-PeCDF	26.813	9095269	1.58	1.1026	98.1	98.1	0.4669	0.4669	98.06	
1,2,3,7,8-PeCDF	26.830	14503	1.64	1.0920	0.1460	0.1460	0.0229	0.0229		M
D 13C-2,3,4,7,8-PeCDF	28.312	10408940	1.60	1.3454	92.0	92.0	0.3826	0.3826	91.97	
2,3,4,7,8-PeCDF	28.328	12460	1.45	0.8752	0.1368	0.1368	0.0257	0.0257		
A F1 PeCDFs	24.221						0.0121	0.0121		
A Non-2,3,7,8-sub-PeCDF	27.645	4535	1.55	0.9836	0.0656	0.0473	0.0241	0.0473		RQ
S Total PeCDF					0.3484	0.3301	0.0243	0.0243		RQ
D 13C-1,2,3,7,8-PeCDD	29.120	5464292	1.57	0.6987	93.0	93.0	0.1906	0.1906	92.97	
1,2,3,7,8-PeCDD	29.154	5523	1.35	1.0594	0.0954	0.0954	0.0460	0.0460		M
A Non-2,3,7,8-sub-PeCDD	28.034						0.0460	0.0460		
S Total PeCDD					0.0954	0.0954	0.0460	0.0460		
D 13C-1,2,3,4,7,8-HxCDF	34.605	9277402	0.55	1.1295	96.0	96.0	0.3117	0.3117	95.96	
1,2,3,4,7,8-HxCDF	34.622	20666	1.24	0.9737	0.2487	0.2288	0.0300	0.0300		RQ
D 13C-1,2,3,6,7,8-HxCDF	34.782	8562447	0.53	1.0613	94.3	94.3	0.3317	0.3317	94.25	
1,2,3,6,7,8-HxCDF	34.807	11207	1.13	1.2201	0.1073	0.1073	0.0269	0.0269		M
D 13C-2,3,4,6,7,8-HxCDF	35.632	8357311	0.54	0.9480	103.0	103.0	0.3713	0.3713	103	
2,3,4,6,7,8-HxCDF	35.649	8749	1.13	1.2435	0.0842	0.0842	0.0233	0.0233		M
D 13C-1,2,3,7,8,9-HxCDF	36.550	7240018	0.53	0.8526	99.2	99.2	0.4129	0.4129	99.20	
1,2,3,7,8,9-HxCDF	36.567	9879	1.15	1.2454	0.1096	0.1096	0.0242	0.0242		M
A Non-2,3,7,8-sub-HxCDF	34.703						0.0258	0.0258		U
S Total HxCDF					0.5497	0.5298	0.0261	0.0261		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.356	8559540	1.28	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.859	6268179	1.29	0.8312	88.1	88.1	0.1913	0.1913	88.10	
1,2,3,4,7,8-HxCDD	35.893	9717	1.24	0.9085	0.1865	0.1706	0.0401	0.0401		RQMa
D 13C-1,2,3,6,7,8-HxCDD	35.977	6089842	1.28	0.7550	94.2	94.2	0.2106	0.2106	94.24	
1,2,3,6,7,8-HxCDD	36.028	4764	1.24	1.0279	0.0908	0.0761	0.0390	0.0390		RQM
1,2,3,7,8,9-HxCDD	36.364	4585	1.24	1.0268	0.0987	0.0723	0.0372	0.0372		RQM
A Non-2,3,7,8-sub-HxCDD	35.108						0.0387	0.0387		
S Total HxCDD					0.3760	0.3190	0.0388	0.0388		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.423	5609624	0.46	0.6190	105.9	105.9	0.6059	0.6059	106	
1,2,3,4,6,7,8-HpCDF	38.432	14322	1.17	1.5851	0.1611	0.1611	0.0717	0.0717		M
D 13C-1,2,3,4,7,8,9-HpCDF	39.695	6356603	0.47	0.6516	114.0	114.0	0.5756	0.5756	114	
1,2,3,4,7,8,9-HpCDF	39.704	10837	1.04	1.1597	0.1616	0.1470	0.0804	0.0804		RQMa
A Non-2,3,7,8-sub-HpCDF	39.072						0.0746	0.0746		
S Total HpCDF					0.3227	0.3081	0.0760	0.0760		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	39.392	5208508	1.04	0.5362	113.5	113.5	0.3711	0.3711	113	
1,2,3,4,6,7,8-HpCDD	39.400	14902	1.01	1.0819	0.2644	0.2644	0.0594	0.0594		M
A Non-2,3,7,8-sub-HpCDD	39.202	13168	1.08	1.0819	0.2337	0.2337	0.0594	0.2337		M
S Total HpCDD					0.4981	0.4981	0.0594	0.0594		
D 13C-OCDD	41.870	8004818	0.93	0.3802	246.0	246.0	0.3277	0.3277	123	
OCDF	41.963	12096	0.87	1.5094	0.2002	0.2002	0.0470	0.0470		M
OCDD	41.879	85492	0.90	1.1344	1.883	1.883	0.0474	0.0474		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Oct-2021 13:41:56 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Lims ID: 320-79918-A-2-A
Client ID: 11215702-T=1hr-Settle
Sample Type: Client
Inject. Date: 15-Oct-2021 18:15:00 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-a-2-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: bennettd Date: 18-Oct-2021 13:30:41

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.771	20.777	0		3766238	537196	693	1732	775		
333.9338	20.762	20.777	-1		4645569	671448	263	657	2553	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.799	19.806	0	0.953	4353684	676957	1506	3765	450		
317.9389	19.799	19.806	0	0.953	5389586	836630	828	2070	1010	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.833	19.832	0	1.002	142676	20288	100	250	203		
305.8987	19.833	19.832	0	1.002	174522	24517	196	490	125	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQMa
303.9016	17.348	19.372	-121	0.876	7194	1370	100	250	14		
305.8987	17.366	19.372	-120	0.877	8585	1548	196	490	8	0.84(0.65-0.89)	
303.9016	17.838	19.372	-92	0.901	5181	837	100	250	8		
305.8987	17.813	19.372	-93	0.900	11106	1323	196	490	7	0.47(0.65-0.89)	
	Empc Correction				6728	1087	196	490	6		
303.9016	18.242	19.372	-68	0.921	5153	990	100	250	10		
305.8987	18.276	19.372	-66	0.923	7098	1260	196	490	6	0.73(0.65-0.89)	
303.9016	18.638	19.372	-44	0.941	6686	1380	100	250	14		M
305.8987	18.621	19.372	-45	0.940	10454	1976	196	490	10	0.64(0.65-0.89)	M
	Empc Correction				8683	1792	196	490	9		
303.9016	19.119	19.372	-15	0.966	64448	10063	100	250	101		
305.8987	19.128	19.372	-15	0.966	82090	12352	196	490	63	0.79(0.65-0.89)	
303.9016	20.537	19.372	70	0.000			100	250			
305.8987	20.616	19.372	75	0.000	11030	1901	196	490		0.00(0.65-0.89)	M
303.9016	20.607	19.372	74	1.041	10986	1744	100	250	17		M
	Empc Correction				8493	1463	100	250	15		
305.8987	20.616	19.372	75	1.041	11030	1901	196	490	10	1.00(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
303.9016	23.094	19.372	223	1.166	8229	1414	100	250	14		
305.8987	23.103	19.372	223	1.167	11807	1688	196	490	9	0.70(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.140	21.138	0	1.018	2723188	385175	693	1732	556		
333.9338	21.140	21.138	0	1.018	3524560	483024	263	657	1837	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.166	21.163	0	1.001	27196	3657	151	377	24		
321.8936	21.166	21.163	0	1.001	39953	6637	52	130	128	0.68(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.166	21.163	0	1.019	2805982	402828	192	480	2098		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						151	377			
321.8936	20.213						52	130			
13C-1,2,3,7,8-PeCDF											
351.9000	26.813	26.799	1	1.291	5575821	924034	1531	3827	604		
353.8970	26.813	26.799	1	1.291	3519448	586675	958	2395	612	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											M
339.8597	26.830	26.833	0	1.001	9007	1663	30	75	55		M
341.8567	26.839	26.833	0	1.001	5496	1108	121	302	9	1.64(1.32-1.78)	M
13C-2,3,4,7,8-PeCDF											
351.9000	28.312	28.300	1	1.363	6412673	1026636	1531	3827	671		
353.8970	28.303	28.300	0	1.363	3996267	647378	958	2395	676	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.328	28.325	0	1.001	7366	1324	30	75	44		
341.8567	28.337	28.325	1	1.001	5094	760	121	302	6	1.45(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.221						2	5			
341.8567	24.221						74	185			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.424	27.645	-133	0.948	2757	488	30	75	16		
341.8567	25.348	27.645	-138	0.945	3533	689	121	302	6	0.78(1.32-1.78)	
	Empc Correction				1778	314	121	302	3		
13C-1,2,3,7,8-PeCDD											
367.8949	29.120	29.108	1	1.402	3336173	507086	354	885	1432		
369.8919	29.120	29.108	1	1.402	2128119	338632	290	725	1168	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											M
355.8546	29.154	29.133	1	1.001	3173	494	129	322	4		M
357.8516	29.120	29.133	-1	1.000	2350	446	36	90	12	1.35(1.32-1.78)	M
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						129	322			
357.8516	28.034						36	90			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.605	34.597	0	0.952	3291122	715269	1151	2877	621		
385.8610	34.605	34.597	0	0.952	5986280	1308163	2087	5217	627	0.55(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8-HxCDF											RQ
373.8208	34.622	34.613	0	1.000	13240	3020	134	335	23		
	Empc Correction				11440	2347	134	335	18		
375.8178	34.630	34.613	1	1.001	9226	1893	103	257	18	1.44(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.782	34.773	0	0.957	2961467	633234	1151	2877	550		
385.8610	34.782	34.773	0	0.957	5600980	1169267	2087	5217	560	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											M
373.8208	34.807	34.790	1	1.001	5942	1191	134	335	9		M
375.8178	34.782	34.790	-1	1.000	5265	1276	103	257	12	1.13(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.632	35.625	0	0.980	2917633	714047	1151	2877	620		
385.8610	35.632	35.625	0	0.980	5439678	1332541	2087	5217	638	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	35.649	35.641	0	1.000	4636	1316	134	335	10		M
375.8178	35.649	35.641	0	1.000	4113	1091	103	257	11	1.13(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.550	36.551	0	1.005	2520260	692308	1151	2877	601		
385.8610	36.550	36.551	0	1.005	4719758	1273325	2087	5217	610	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											M
373.8208	36.567	36.560	0	1.000	5274	1290	134	335	10		M
375.8178	36.567	36.560	0	1.000	4605	1355	103	257	13	1.15(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											U
373.8208	34.703						134	335			
375.8178	34.703						103	257			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.356	36.358	0		4801141	1287775	895	2237	1439		
403.8529	36.356	36.358	0		3758399	1011790	568	1420	1781	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.859	35.861	0	0.986	3526901	952940	895	2237	1065		
403.8529	35.859	35.861	0	0.986	2741278	741174	568	1420	1305	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQMa
389.8158	35.893	35.869	1	1.001	6283	1493	135	337	11		M
	Empc Correction				5379	1489	135	337	11		
391.8127	35.876	35.869	0	1.000	4338	1201	112	280	11	1.45(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.977	35.979	0	0.990	3413140	861136	895	2237	962		
403.8529	35.977	35.979	0	0.990	2676702	677009	568	1420	1192	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8158	36.028	35.995	2	1.001	3557	807	135	337	6		M
	Empc Correction				2637	696	135	337	5		
391.8127	35.985	35.995	-1	1.000	2127	562	112	280	5	1.67(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											RQM
389.8158	36.364	36.366	0	1.014	4217	813	135	337	6		M
	Empc Correction				2538	567	135	337	4		
391.8127	36.356	36.366	-1	1.014	2047	458	112	280	4	2.06(1.05-1.43)	M

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						135	337			
391.8127	35.108						112	280			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.423	38.425	0	1.057	1779848	579908	1630	4075	356		
419.8220	38.423	38.425	0	1.057	3829776	1244005	1820	4550	684	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7817	38.432	38.434	0	1.000	7712	2481	514	1285	5		M
409.7788	38.432	38.434	0	1.000	6610	2501	315	787	8	1.17(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.695	39.698	0	1.092	2030960	711527	1630	4075	437		
419.8220	39.687	39.698	-1	1.092	4325643	1511400	1820	4550	830	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQMa
407.7817	39.704	39.706	0	1.000	5525	1437	514	1285	3		M
409.7788	39.695	39.706	-1	1.000	6387	1436	315	787	5	0.87(0.88-1.20)	M
	Empc Correction				5312	1381	315	787	4		
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						514	1285			
409.7788	39.072						315	787			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.392	39.394	0	1.084	2658554	925770	963	2407	961		
437.8140	39.383	39.394	-1	1.083	2549954	879095	867	2167	1014	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7767	39.400	39.403	0	1.000	7470	2216	251	627	9		M
425.7737	39.392	39.403	-1	1.000	7432	2340	213	532	11	1.01(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											M
423.7767	38.743	39.202	-27	0.984	6850	2049	251	627	8		M
425.7737	38.752	39.202	-27	0.984	6318	2052	213	532	10	1.08(0.88-1.20)	M
13C-OCDD											
469.7780	41.870	41.875	0	1.152	3865382	1257047	692	1730	1817		
471.7750	41.862	41.875	-1	1.151	4139436	1336667	454	1135	2944	0.93(0.76-1.02)	
OCDF											M
441.7428	41.963	41.959	0	1.002	5629	1432	151	377	9		
443.7399	41.954	41.959	0	1.002	6467	1520	217	542	7	0.87(0.76-1.02)	M
OCDD											
457.7377	41.879	41.883	0	1.000	40389	12118	138	345	88		
459.7348	41.879	41.883	0	1.000	45103	14077	141	352	100	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Lims ID:	320-79918-A-2-A		
Client ID:	11215702-T=1hr-Settle		
Inject. Date:	15-Oct-2021 18:15:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 19.372

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.119	D 13C-2,3,7,8-TCDF	100.000	9743270	1513587

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	9743270	1513587

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
17.348	7194	1370	8585	1548	0.1447	0.84	
17.838	5181	837	11106	1323	0.1493	0.47	RQ
17.838	5181	837	6728	1087	0.1092		Empc Correction
18.242	5153	990	7098	1260	0.1123	0.73	
18.638	6686	1380	10454	1976	0.1571	0.64	RQM
18.638	6686	1380	8683	1792	0.1409		Empc Correction
19.119	64448	10063	82090	12352	1.34	0.79	
20.537	0	0	11030	1901	0.1011	0.00	M
20.607	10986	1744	11030	1901	0.2019	1.00	RQMa
20.607	8493	1463	11030	1901	0.1790		Empc Correction
23.094	8229	1414	11807	1688	0.1837	0.70	
Signal Totals:							
	105384	17517	147051	23529			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	261077	41747				0.70	RQMa
	252435	41046					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 2.394 = (261077 * 100.000) / (9743270 * 1.119)
Empc Amount: 2.314 = (252435 * 100.000) / (9743270 * 1.119)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Lims ID:	320-79918-A-2-A		
Client ID:	11215702-T=1hr-Settle		
Inject. Date:	15-Oct-2021 18:15:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	11

Non-2,3,7,8-sub-PeCDF, RT: 27.645

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	9095269	1510709
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	10408940	1674014

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	9752104	1592361

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.424	2757	488	3533	689	0.0656	0.78	RQ
25.424	2757	488	1778	314	0.0473		Empc Correction
Signal Totals:							
	2757	488	1778	314			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6290	1177				0.78	RQ
	4535	802					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0656 = (6290 * 100.000) / (9752104 * 0.984)
Empc Amount: 0.0473 = (4535 * 100.000) / (9752104 * 0.984)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Lims ID:	320-79918-A-2-A		
Client ID:	11215702-T=1hr-Settle		
Inject. Date:	15-Oct-2021 18:15:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	11

Non-2,3,7,8-sub-HxCDF, RT: 34.703

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	0.974	D 13C-1,2,3,4,7,8-HxCDF	100.000	9277402	2023432
1,2,3,6,7,8-HxCDF	1.220	D 13C-1,2,3,6,7,8-HxCDF	100.000	8562447	1802501
2,3,4,6,7,8-HxCDF	1.244	D 13C-2,3,4,6,7,8-HxCDF	100.000	8357311	2046588
1,2,3,7,8,9-HxCDF	1.245	D 13C-1,2,3,7,8,9-HxCDF	100.000	7240018	1965633

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.171		100.000	8359294	1959538

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Lims ID:	320-79918-A-2-A		
Client ID:	11215702-T=1hr-Settle		
Inject. Date:	15-Oct-2021 18:15:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	11

Non-2,3,7,8-sub-HpCDD, RT: 39.202

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.082	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	5208508	1804865

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.082		100.000	5208508	1804865

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.743	6850	2049	6318	2052	0.2337	1.08	M
Signal Totals:							
	6850	2049	6318	2052			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	13168	4101				1.08	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2337 = (13168 * 100.000) / (5208508 * 1.082)

QC Flag Legend

Review Flags
M - Manually Integrated

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.63- 23.11)

Signal: 1

Processing Integration Results

Not Detected
RT: 15.63- 23.11

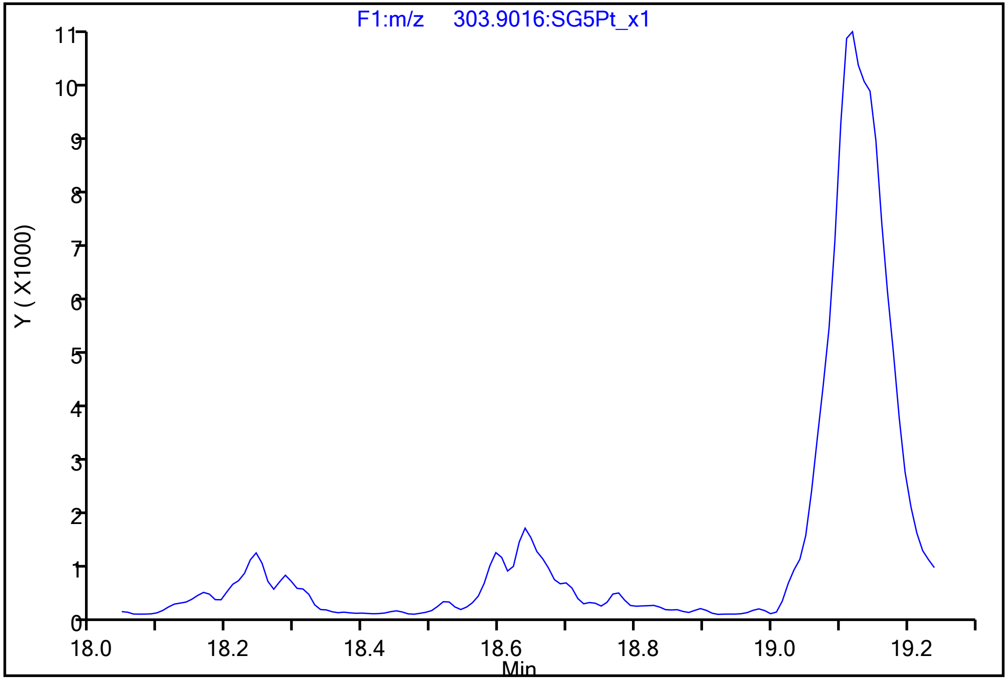

Manual Integration Results

RT = 18.638 Area = 6686 M

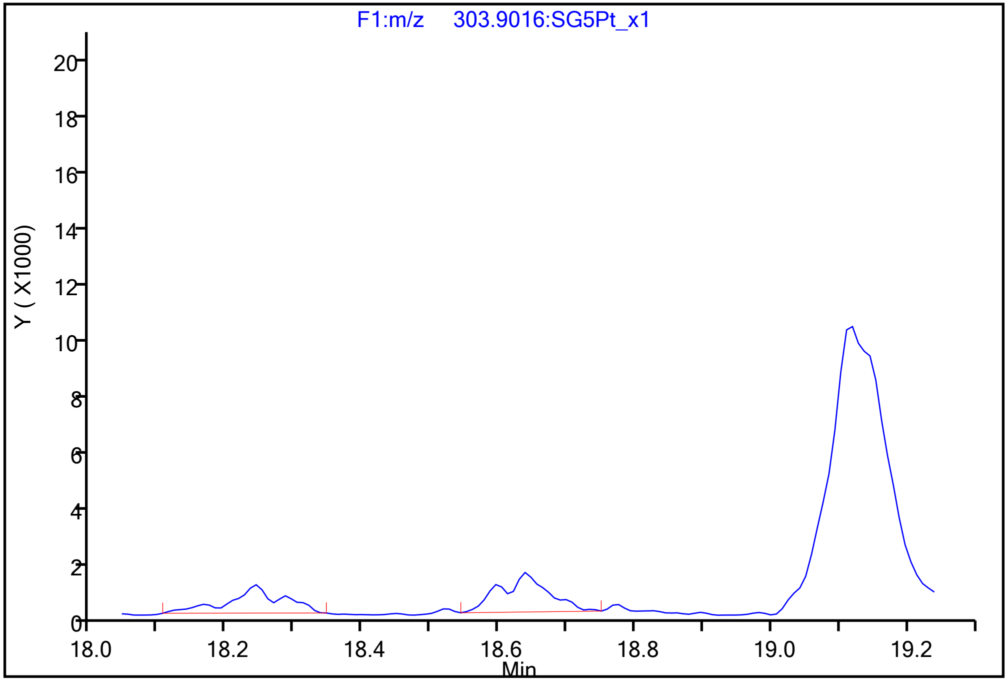

Reviewer: bennettd, 18-Oct-2021 13:24:25

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2
Client ID:	11215702-T=1hr-Settle		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (15.63- 23.11)

Signal: 2

Processing Integration Results

Not Detected
RT: 15.63- 23.11

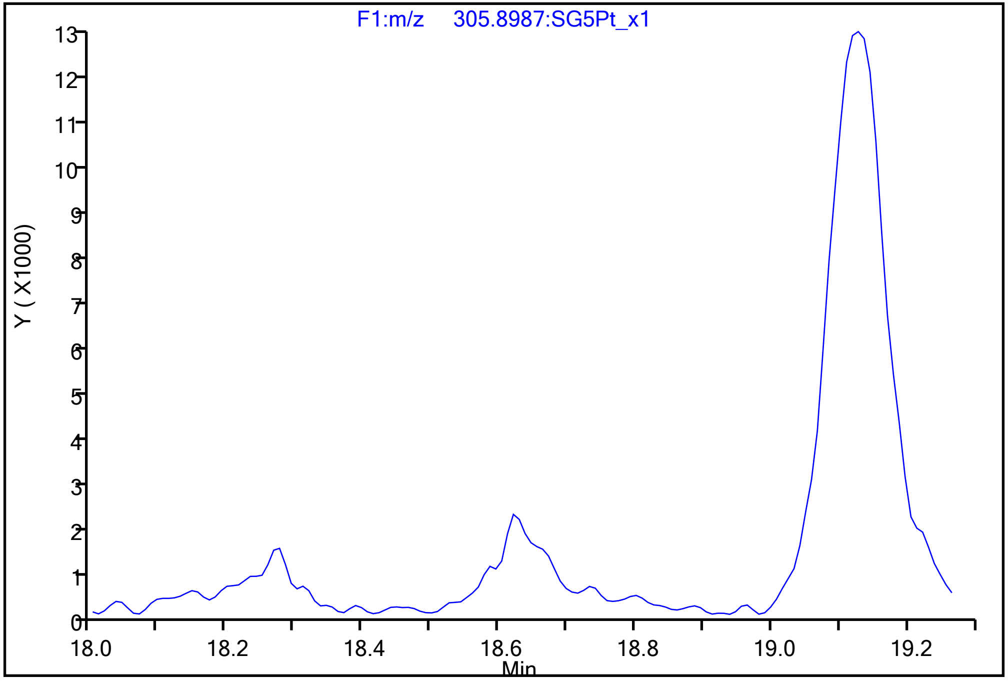

Manual Integration Results

RT = 18.621 Area = 10454 M

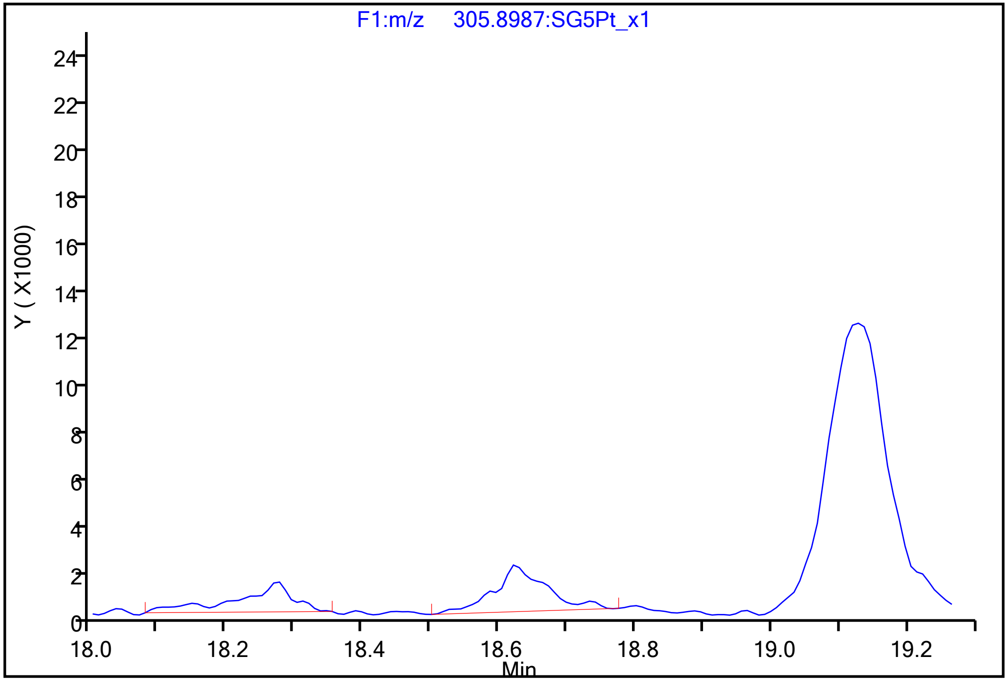

Reviewer: bennettd, 18-Oct-2021 13:24:20
Audit Action: Manually Integrated

Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 2, m/z: 305.8987, RT: (15.63- 23.11)

Signal: 2

Processing Integration Results

Not Detected

RT: 15.63- 23.11

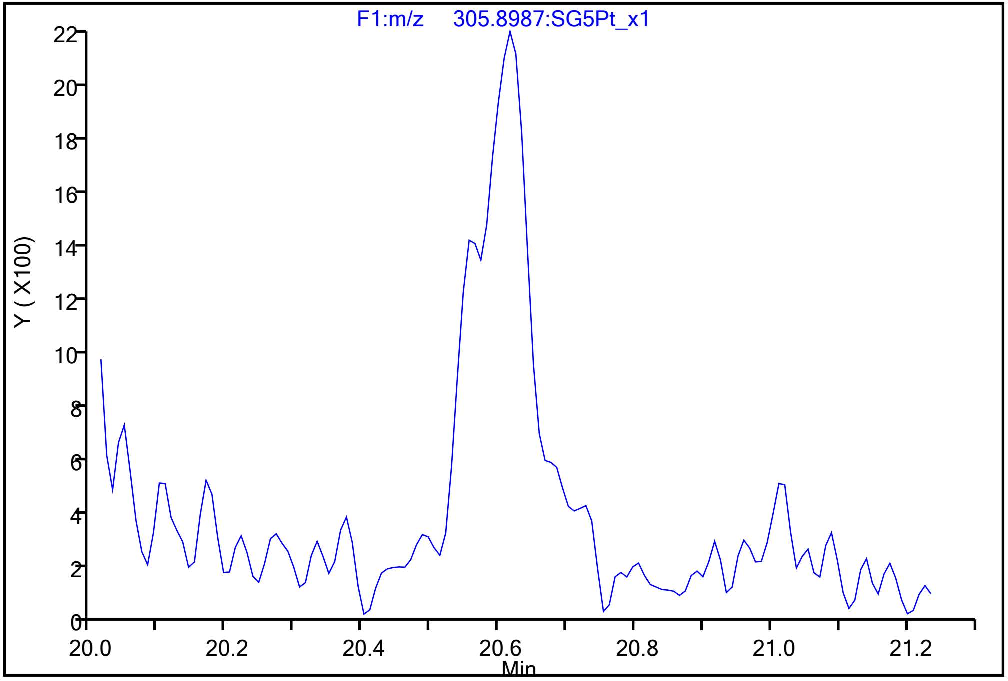

Manual Integration Results

RT = 20.616 Area = 11030 M

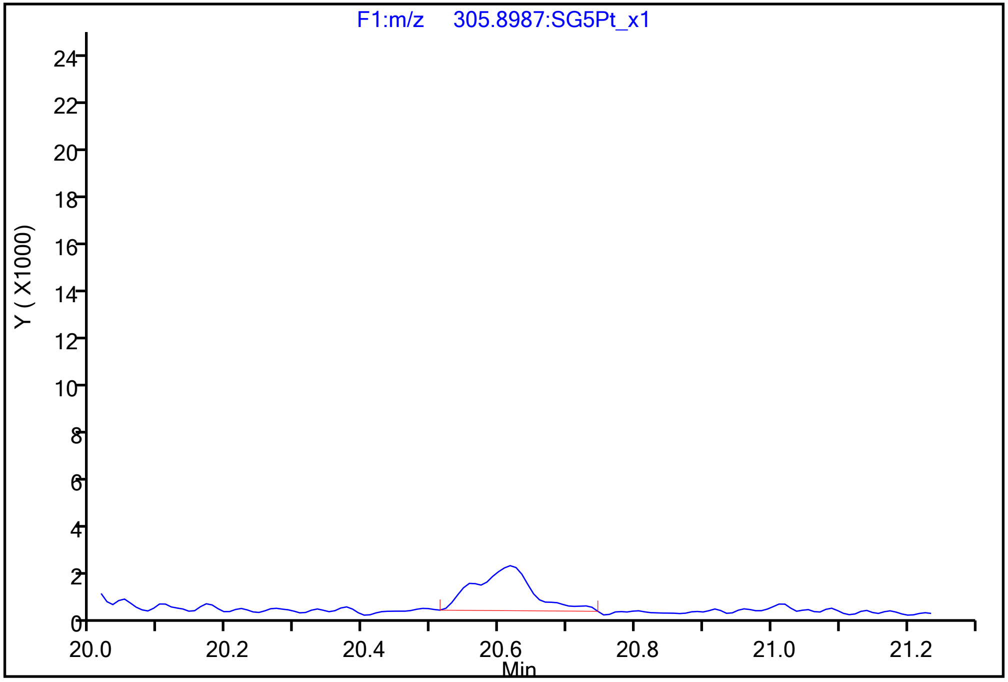

Reviewer: bennettd, 18-Oct-2021 13:24:20

Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

Non-2,3,7,8-sub-TCDF, Signal: 1, m/z: 303.9016, RT: (15.63- 23.11)

Signal: 1

Processing Integration Results

RT = 20.607 Area = 10986

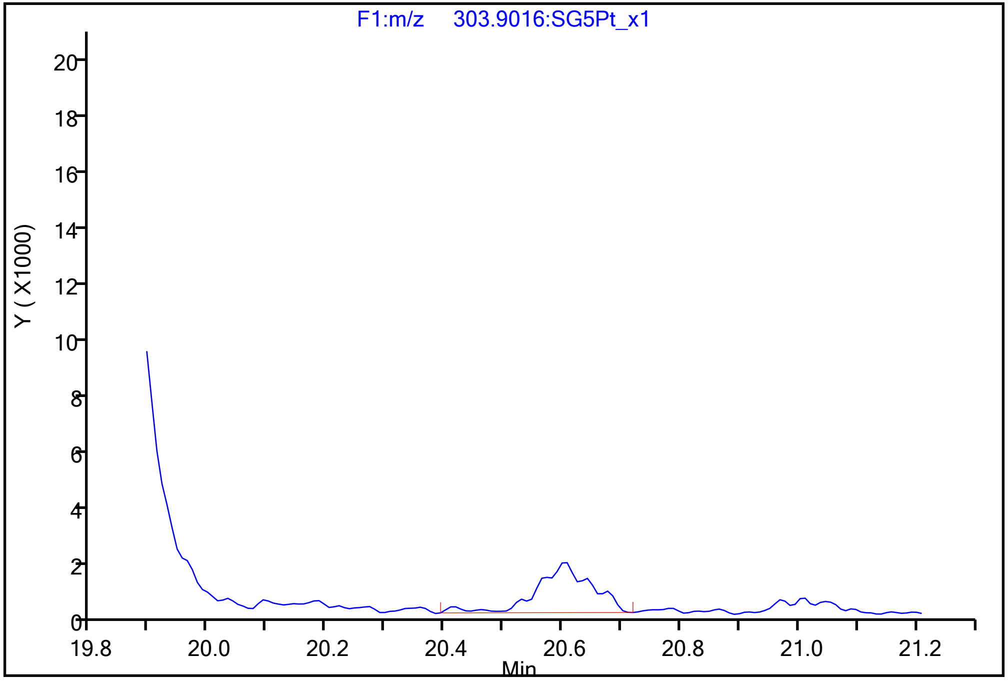

Manual Integration Results

RT = 20.607 Area = 10986

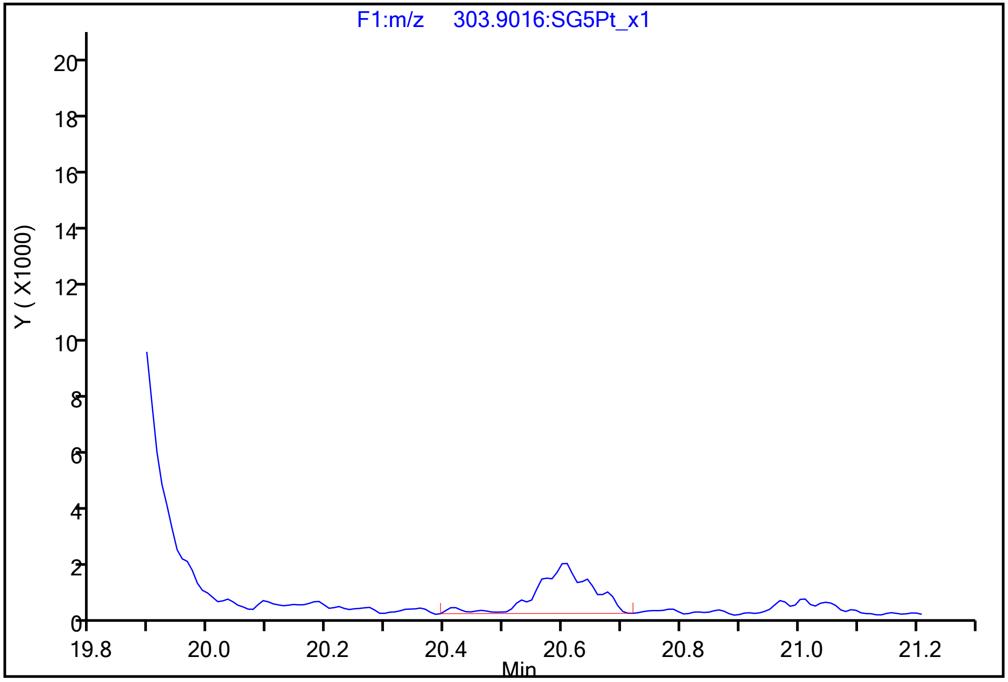

Reviewer: bennettd, 18-Oct-2021 13:24:25

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57　　Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-2-A
Lab Sample ID: 320-79918-2
Client ID: 11215702-T=1hr-Settle
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 11
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F2(26.07 :33.00)

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Processing Integration Results

RT: 26.84
Area: 6602
Amount: 0.166155
Amount Units: pg/ul

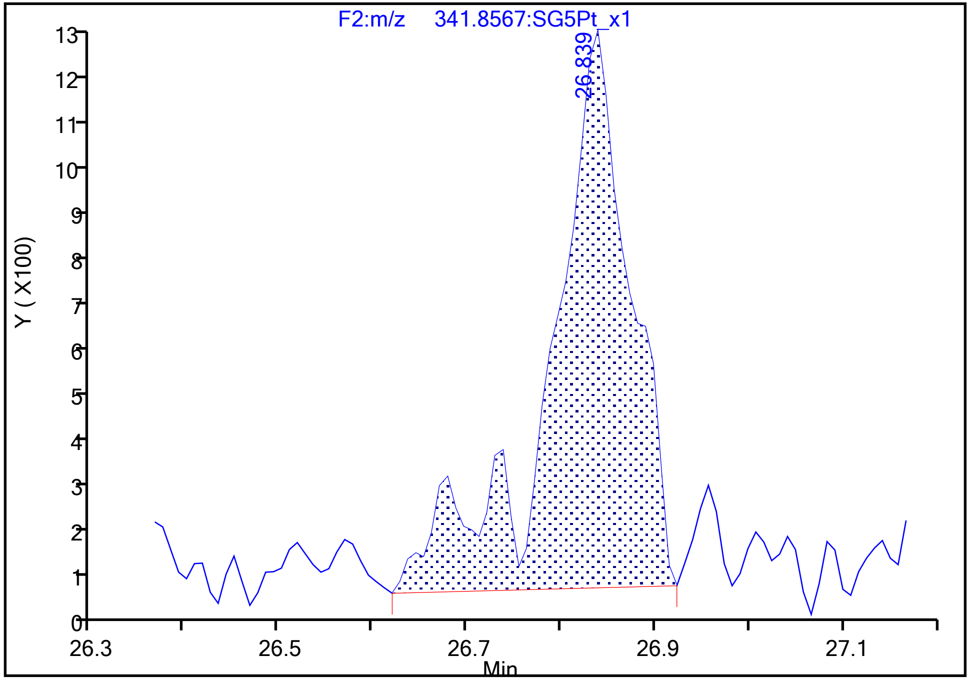

Manual Integration Results

RT: 26.84
Area: 5496
Amount: 0.146028
Amount Units: pg/ul

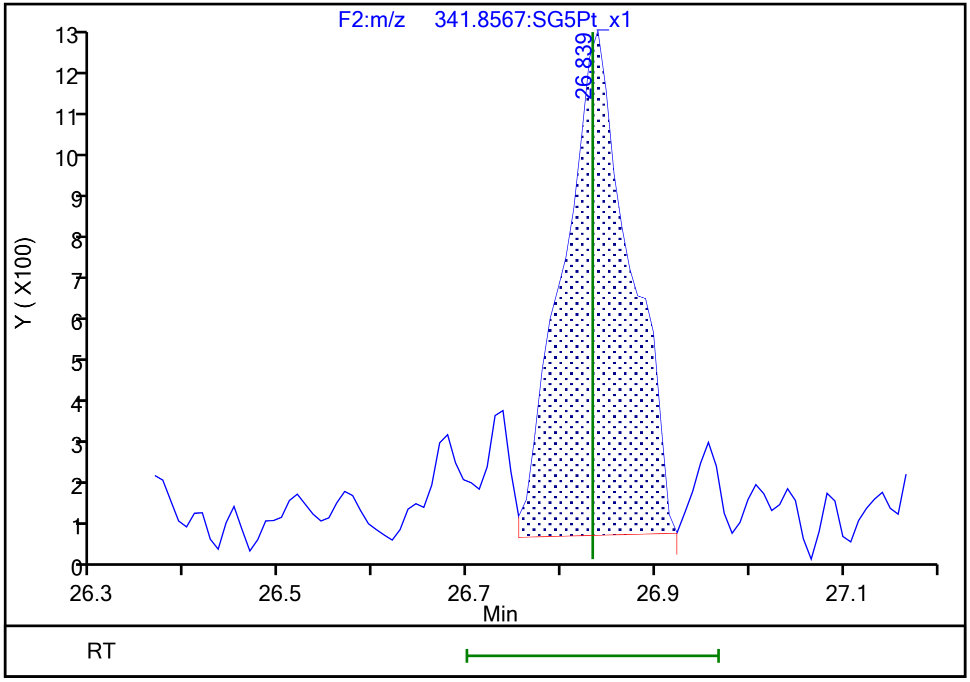

Reviewer: bennettd, 18-Oct-2021 13:24:53

Audit Action: Split an Integrated Peak　　Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Processing Integration Results

RT:	26.83
Area:	9900
Amount:	0.166155
Amount Units:	pg/ul

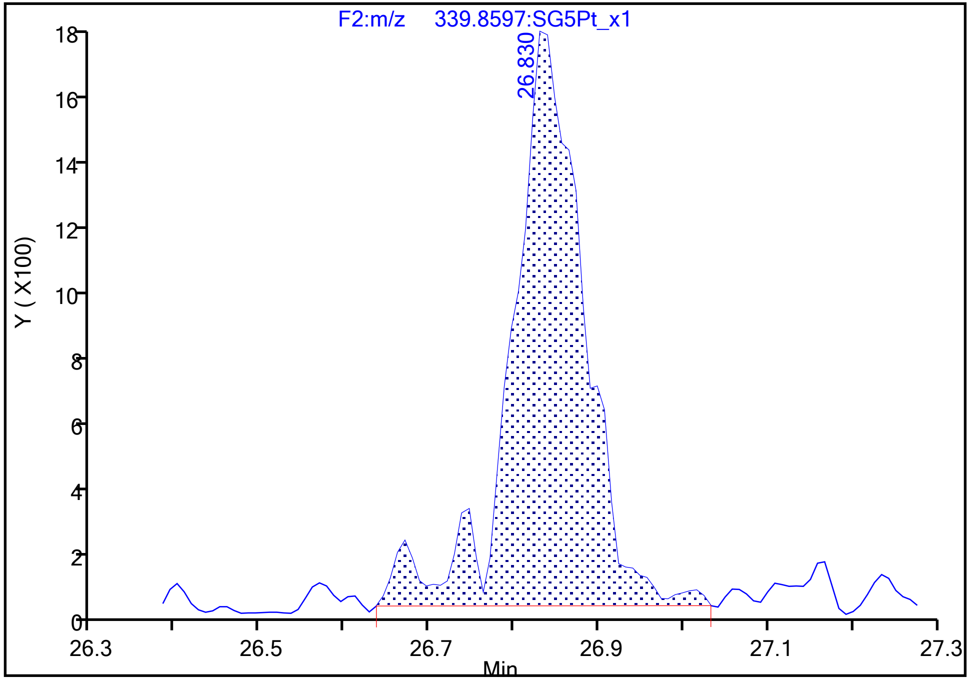

Manual Integration Results

RT:	26.83
Area:	9007
Amount:	0.146028
Amount Units:	pg/ul

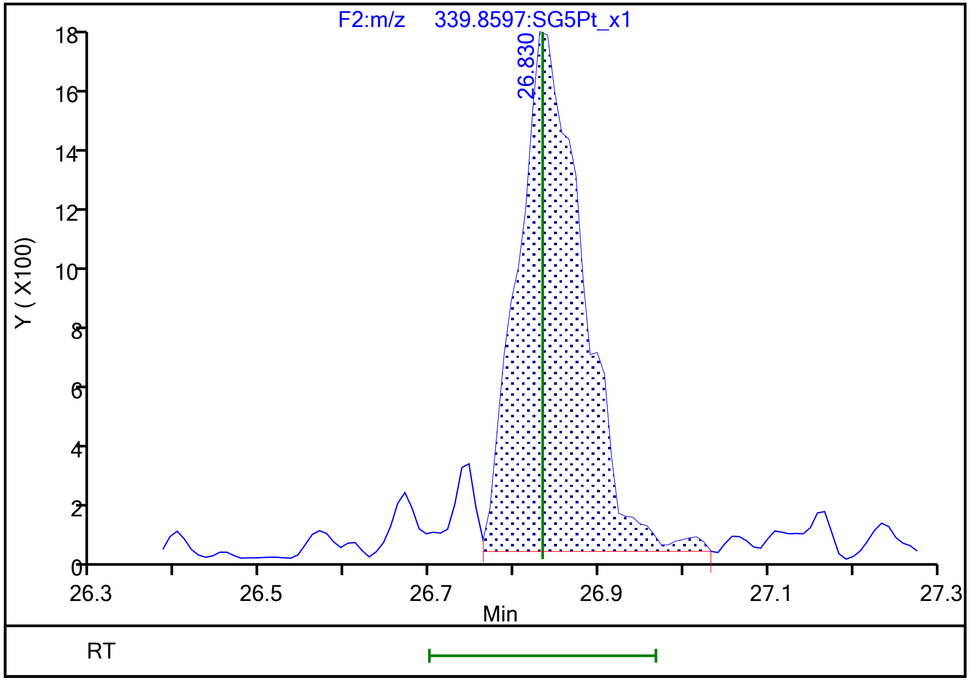

Reviewer: bennettd, 18-Oct-2021 13:24:56

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 1

Not Detected

Expected RT: 29.13

Processing Integration Results

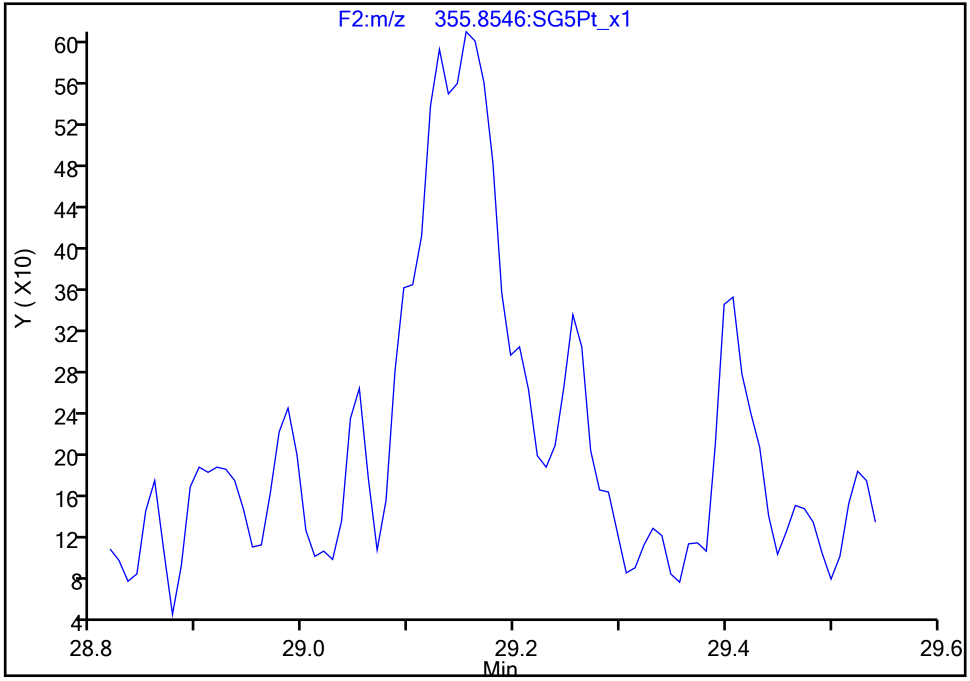

RT: 29.15

Area: 3173

Amount: 0.095404

Amount Units: pg/ul

Manual Integration Results

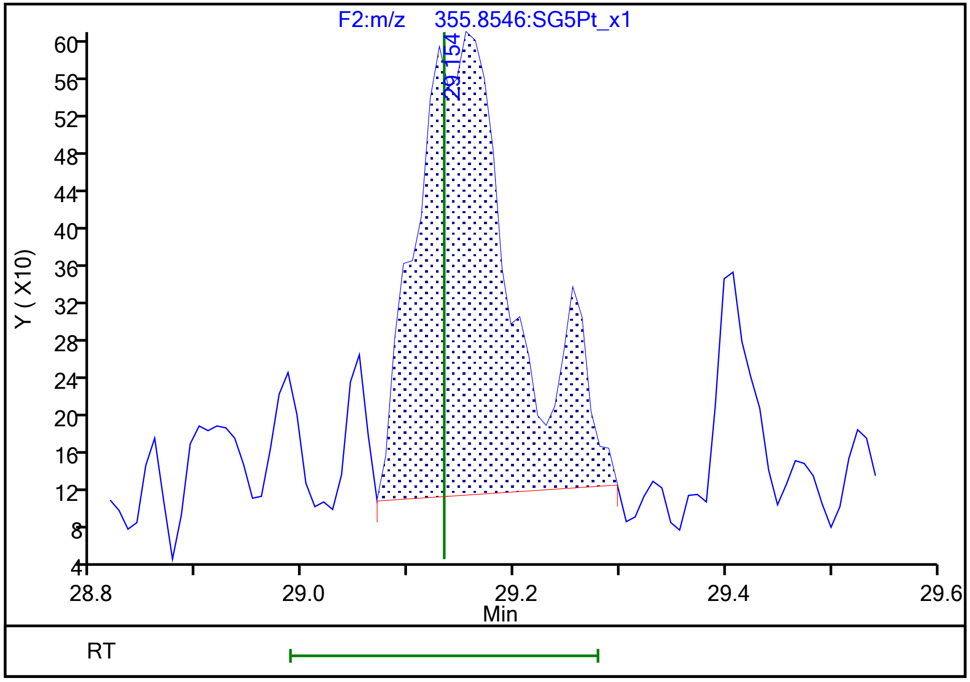

Reviewer: bennettd, 18-Oct-2021 13:25:21

Audit Action: Manually Integrated

Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDD, CAS: 40321-76-4

Signal: 2

Not Detected

Expected RT: 29.13

Processing Integration Results

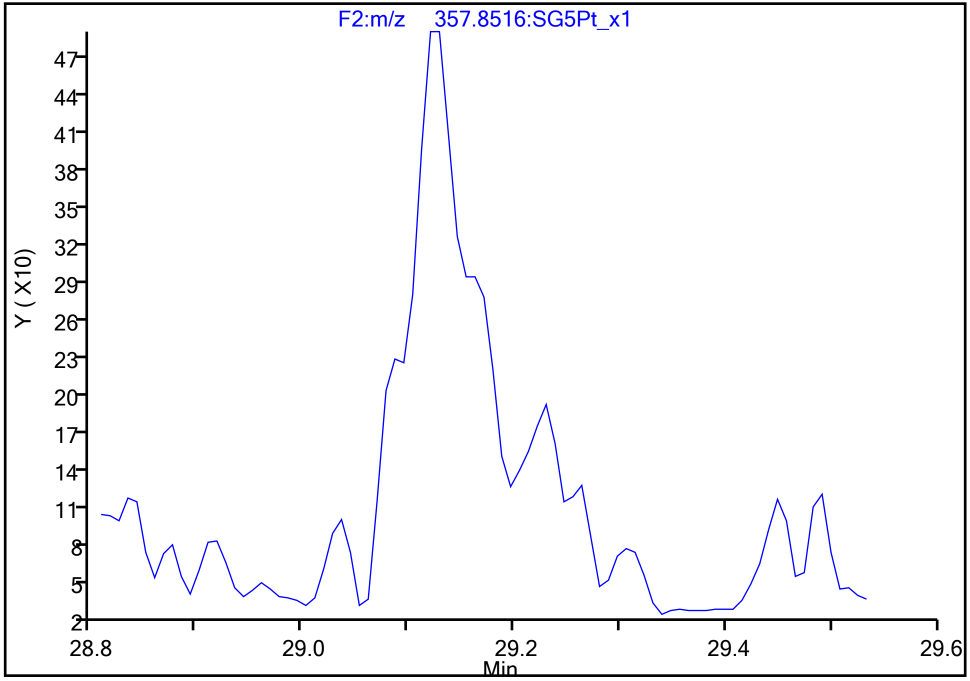

Manual Integration Results

RT: 29.12

Area: 2350

Amount: 0.095404

Amount Units: pg/ul

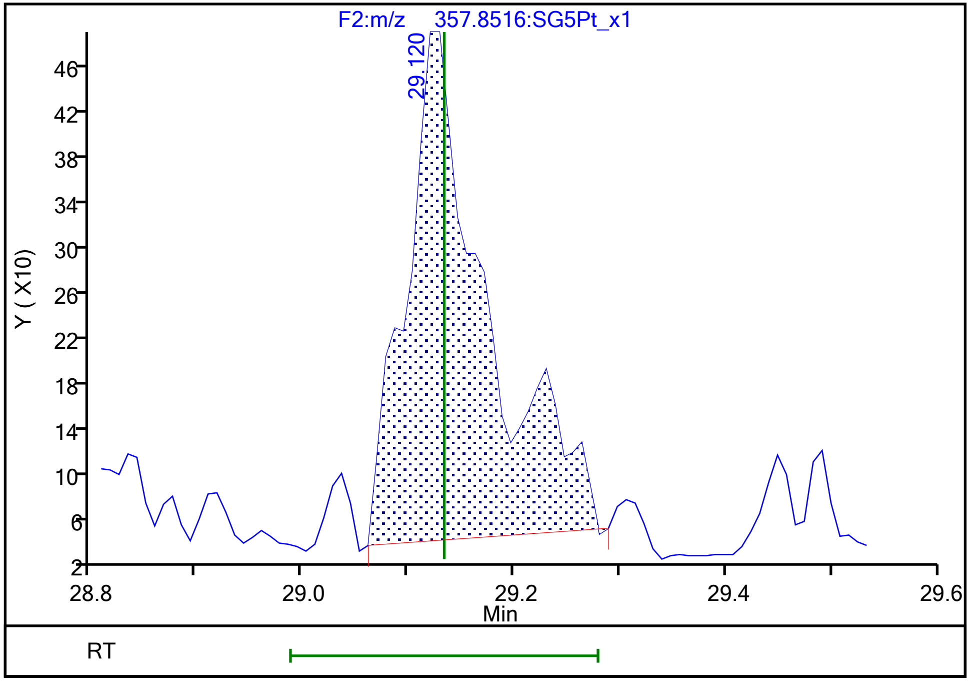

Reviewer: bennettd, 18-Oct-2021 13:25:25

Audit Action: Manually Integrated Audit Reason: Missed Peak

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Processing Integration Results

RT: 34.78
Area: 6176
Amount: 0.117607
Amount Units: pg/ul

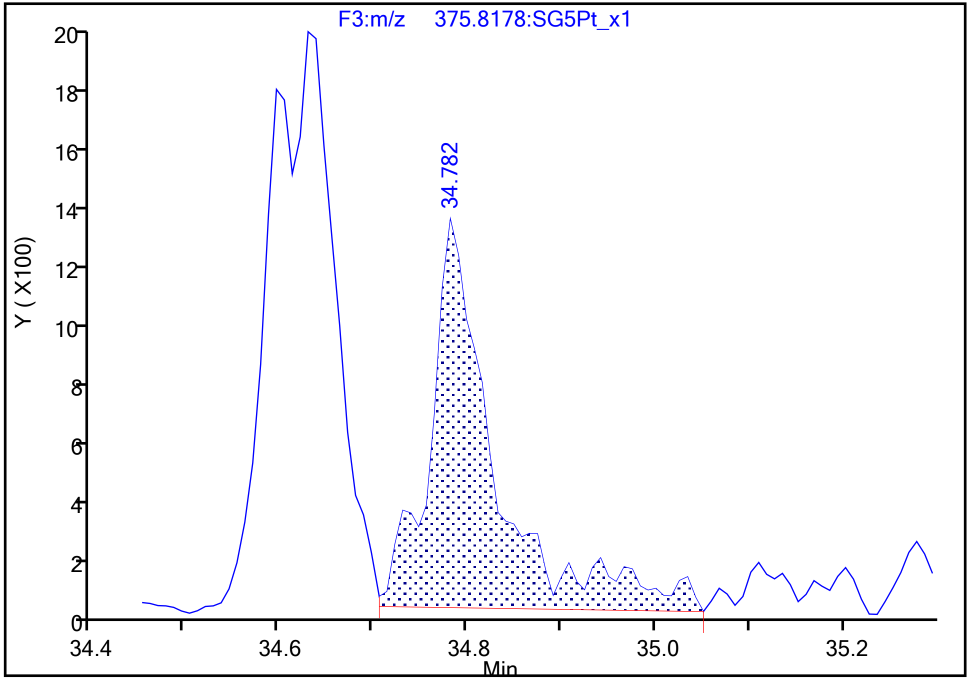

Manual Integration Results

RT: 34.78
Area: 5265
Amount: 0.107279
Amount Units: pg/ul

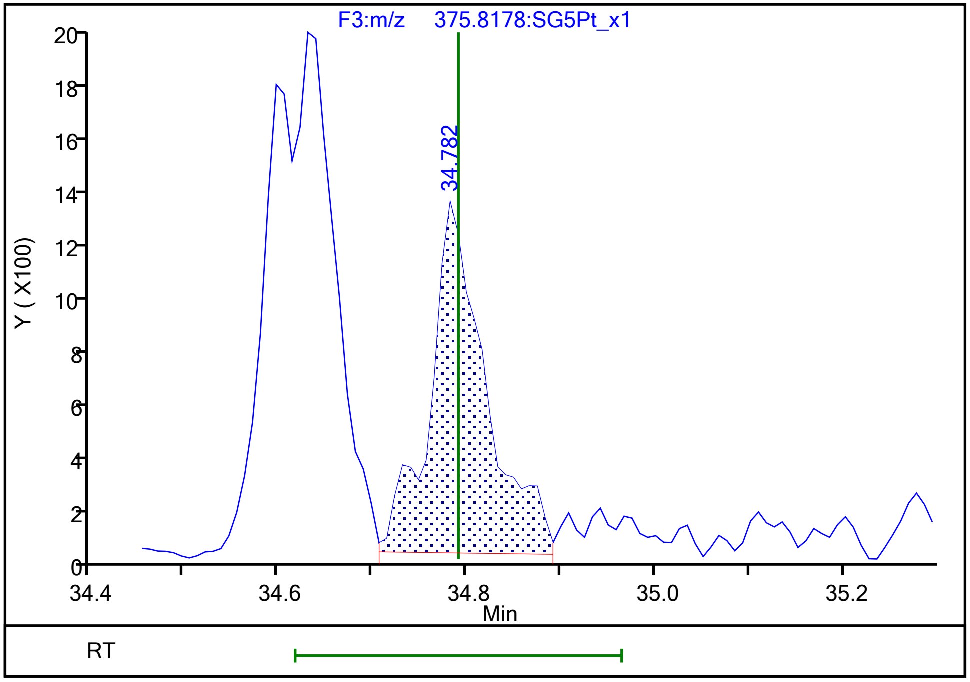

Reviewer: bennettd, 18-Oct-2021 13:25:40

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2
Client ID:	11215702-T=1hr-Settle		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT:	34.81
Area:	6110
Amount:	0.117607
Amount Units:	pg/ul

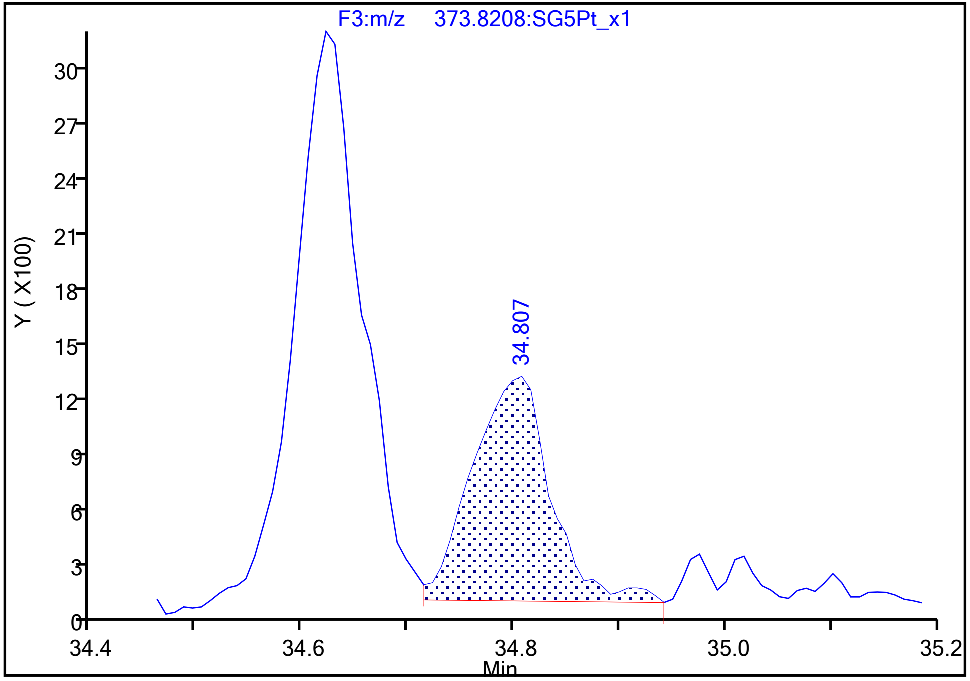

Manual Integration Results

RT:	34.81
Area:	5942
Amount:	0.107279
Amount Units:	pg/ul

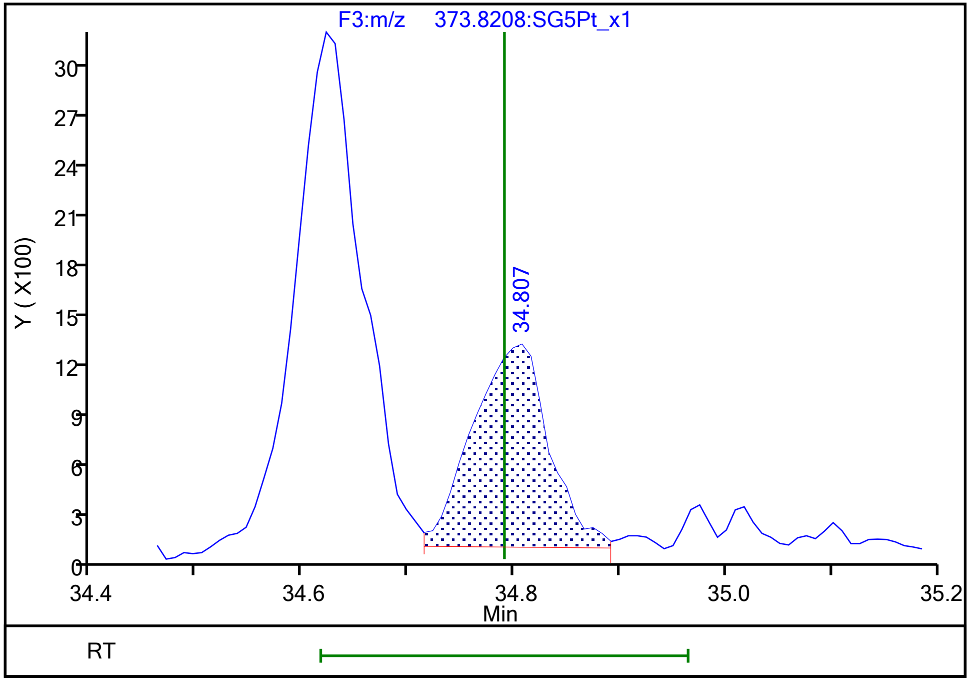

Reviewer: bennettd, 18-Oct-2021 13:25:43

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 18-Oct-2021 13:41:57 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 1

Processing Integration Results

RT:	35.65
Area:	5795
Amount:	0.095337
Amount Units:	pg/ul

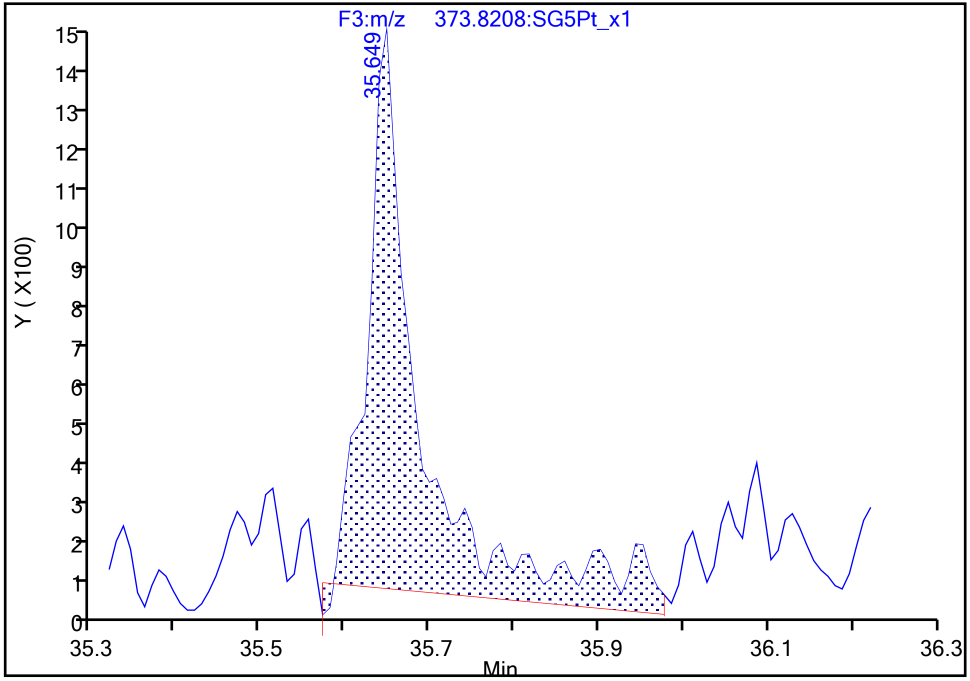

Manual Integration Results

RT:	35.65
Area:	4636
Amount:	0.084184
Amount Units:	pg/ul

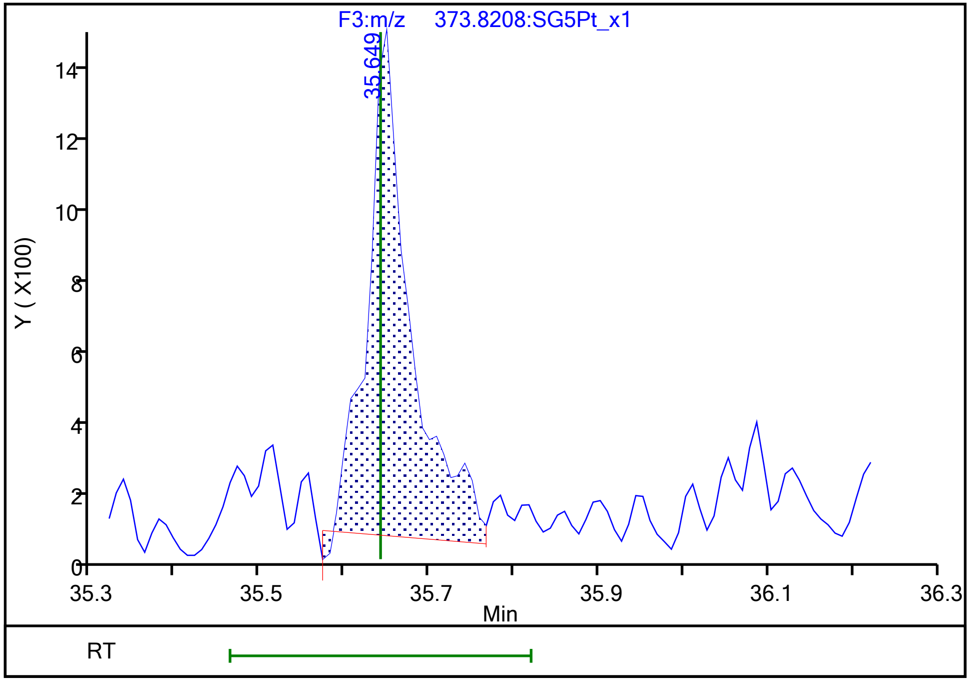

Reviewer: bennettd, 18-Oct-2021 13:25:50

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 18-Oct-2021 13:41:57

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

RT: 36.57
Area: 7185
Amount: 0.151285
Amount Units: pg/ul

Processing Integration Results

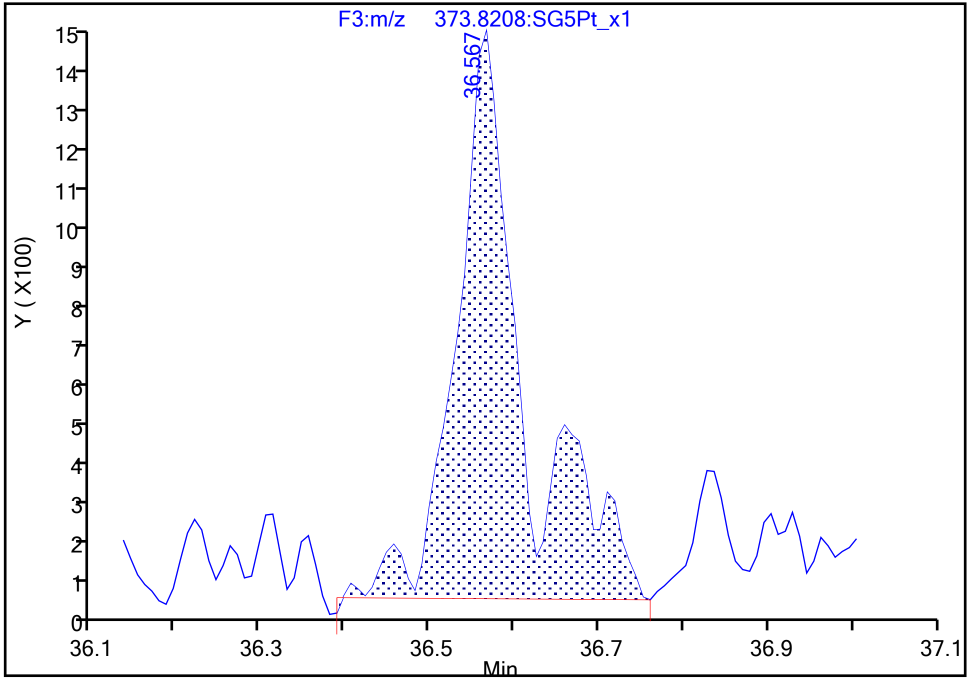

RT: 36.57
Area: 5274
Amount: 0.109562
Amount Units: pg/ul

Manual Integration Results

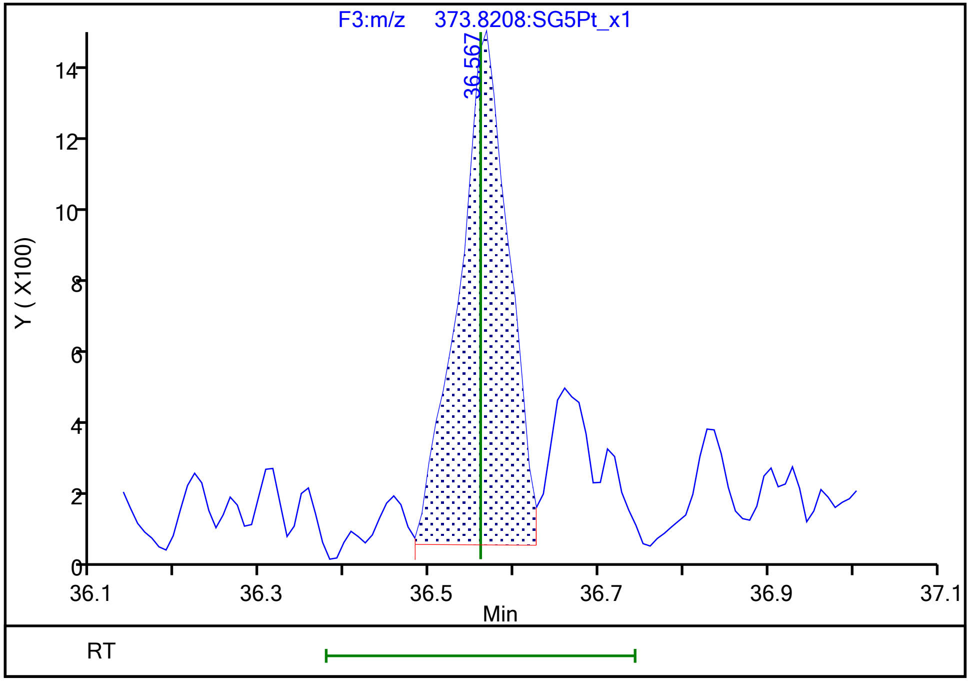

Reviewer: bennettd, 18-Oct-2021 13:26:05

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2
Client ID:	11215702-T=1hr-Settle		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT:	36.57
Area:	6456
Amount:	0.151285
Amount Units:	pg/ul

Processing Integration Results

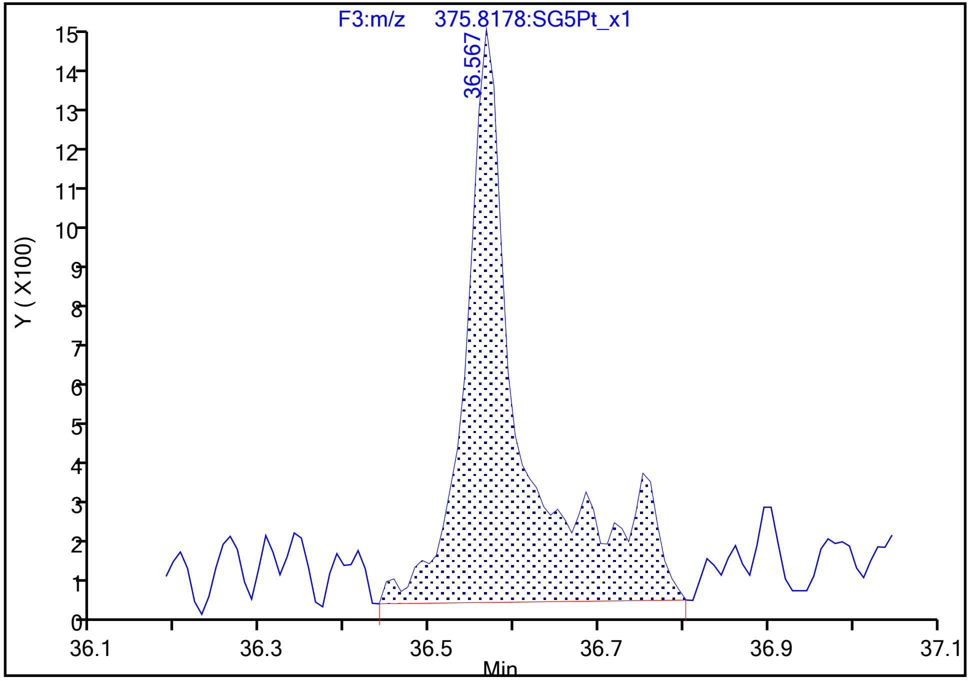

RT:	36.57
Area:	4605
Amount:	0.109562
Amount Units:	pg/ul

Manual Integration Results

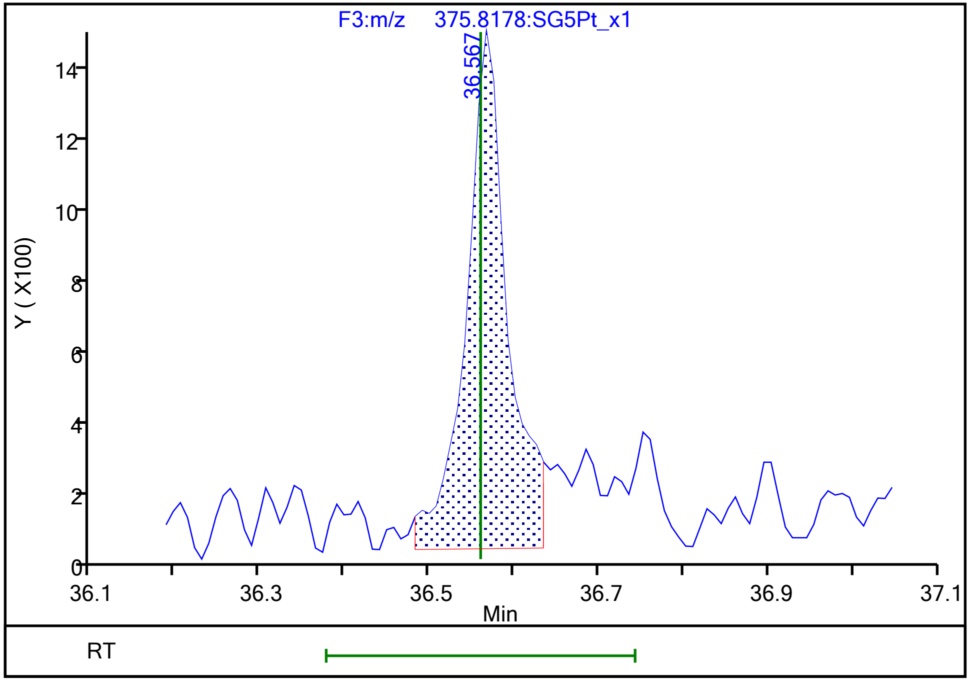

Reviewer: bennettd, 18-Oct-2021 13:26:09

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Report Date: 18-Oct-2021 13:41:57

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

Processing Integration Results

RT:	35.88
Area:	7345
Amount:	0.298430
Amount Units:	pg/ul

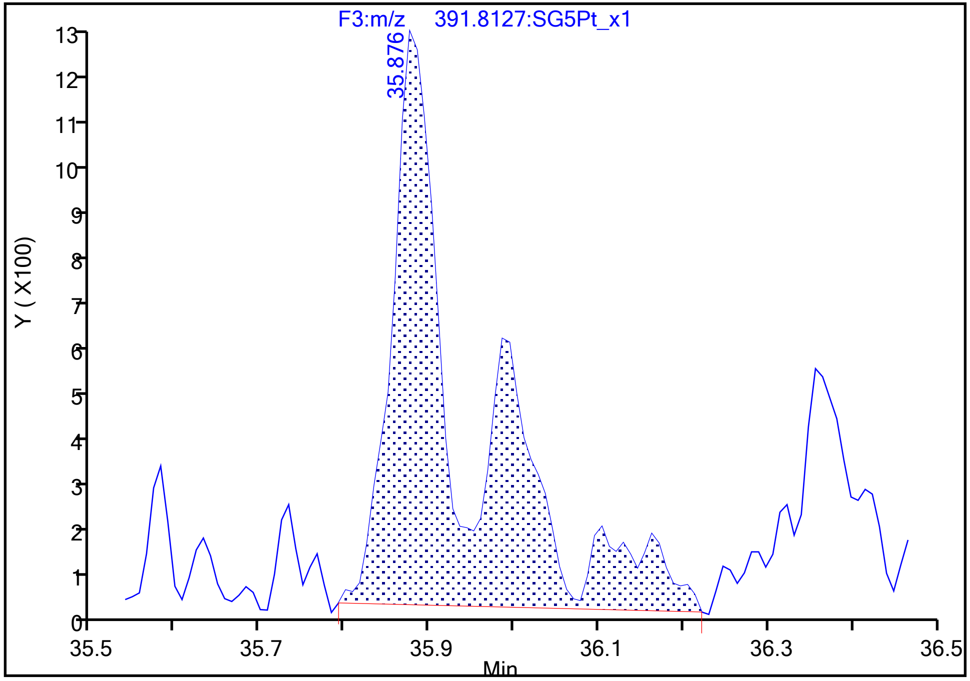

Manual Integration Results

RT:	35.88
Area:	4338
Amount:	0.186504
Amount Units:	pg/ul

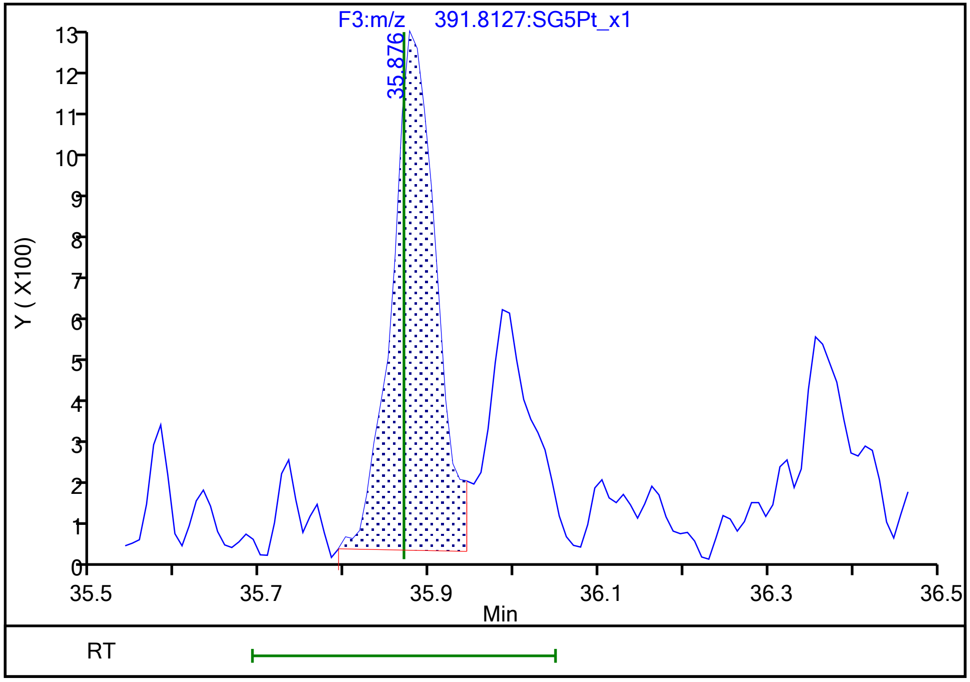

Reviewer: bennettd, 18-Oct-2021 13:26:45

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2
Client ID:	11215702-T=1hr-Settle		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 35.89
Area: 9650
Amount: 0.298430
Amount Units: pg/ul

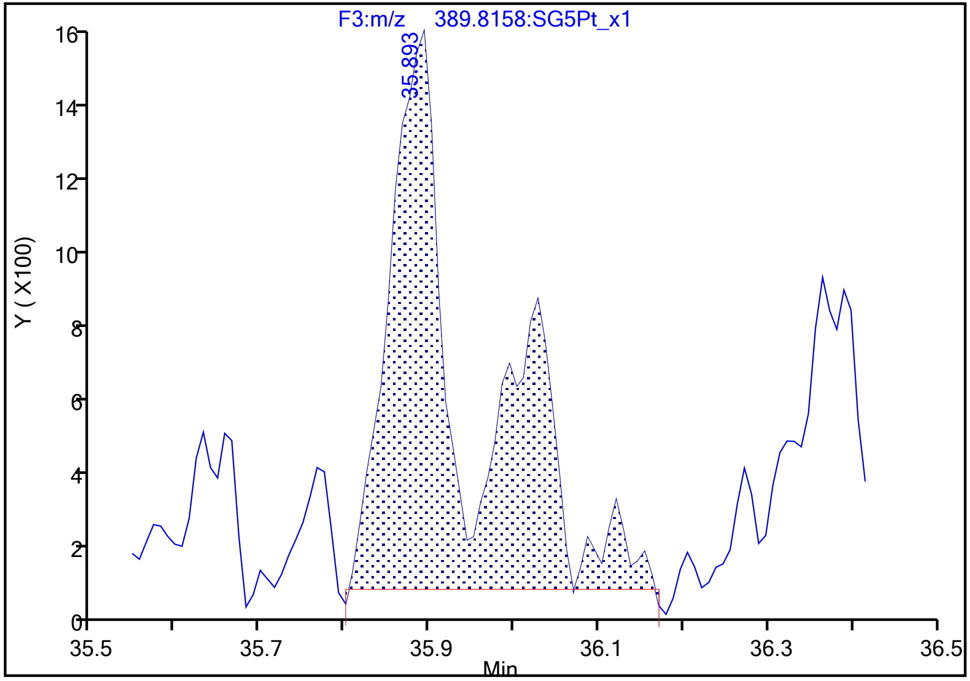

Manual Integration Results

RT: 35.89
Area: 6283
Amount: 0.186504
Amount Units: pg/ul

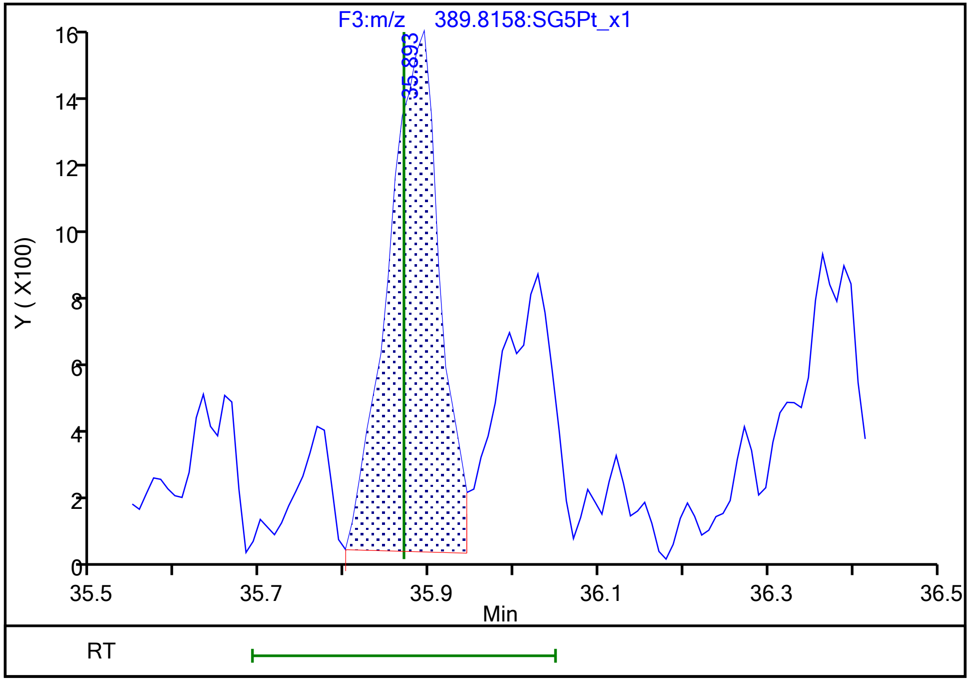

Reviewer: bennettd, 18-Oct-2021 13:27:42

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

RT:	35.89
Area:	9650
Amount:	0.271510
Amount Units:	pg/ul

Processing Integration Results

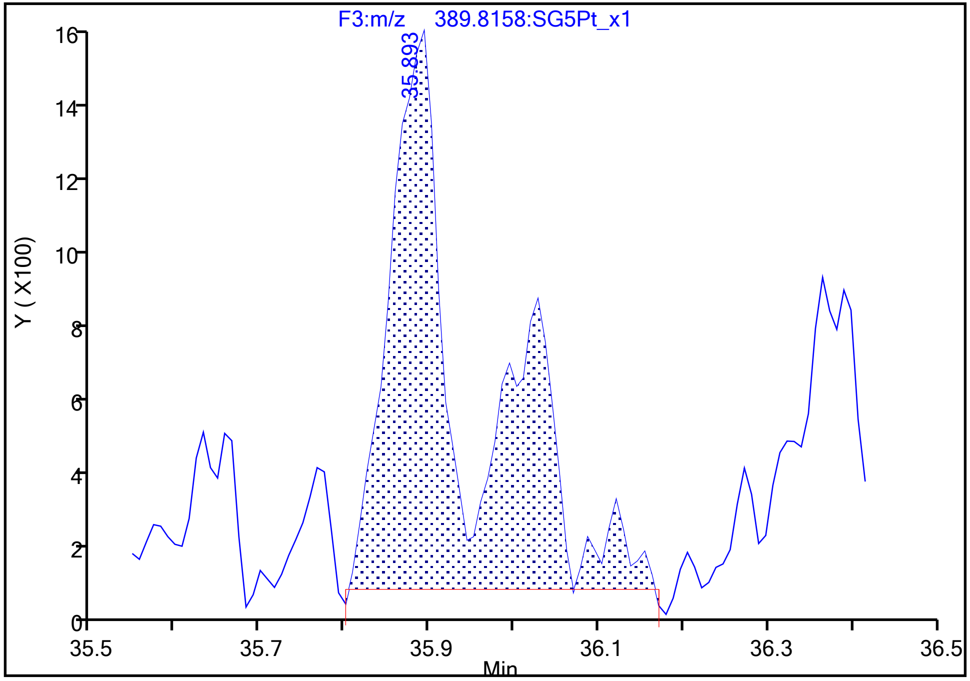

RT:	36.03
Area:	3557
Amount:	0.090807
Amount Units:	pg/ul

Manual Integration Results

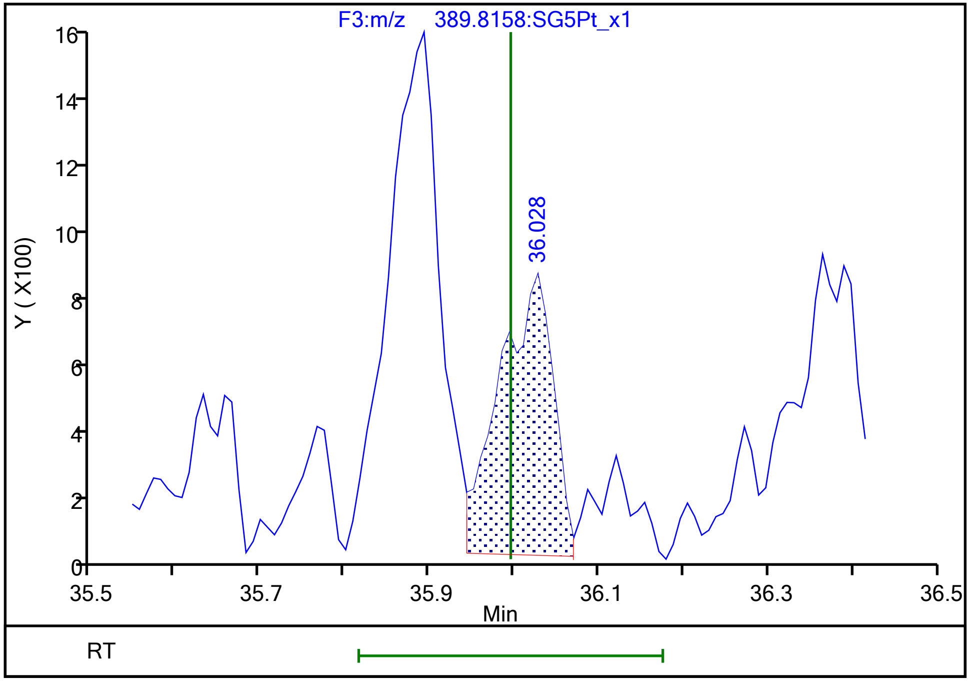

Reviewer: bennettd, 18-Oct-2021 13:27:31

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Processing Integration Results

RT:	35.88
Area:	7345
Amount:	0.271510
Amount Units:	pg/ul

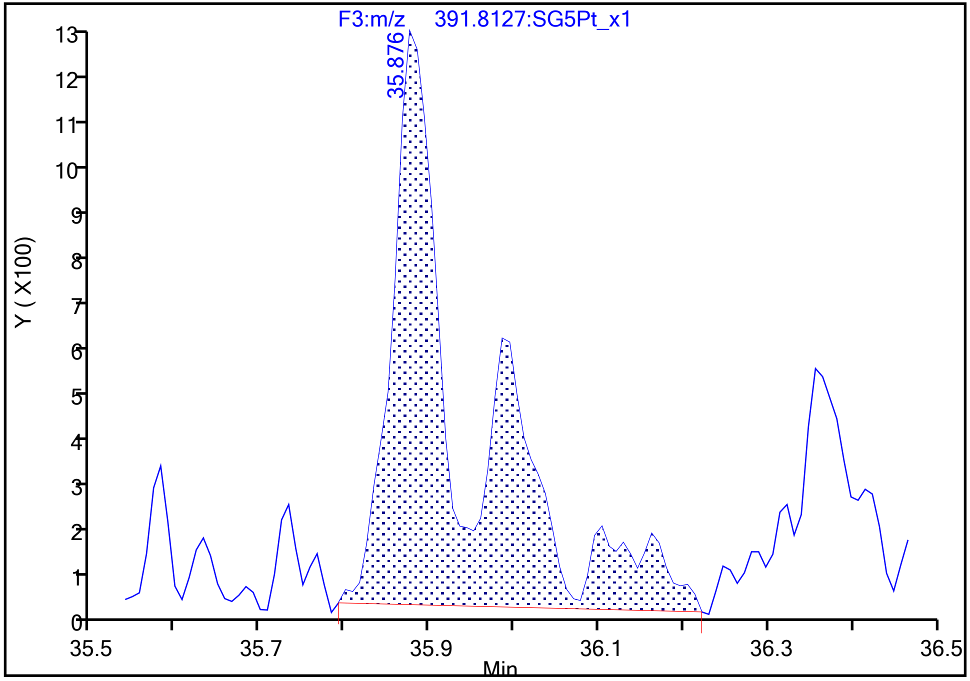

Manual Integration Results

RT:	35.99
Area:	2127
Amount:	0.090807
Amount Units:	pg/ul

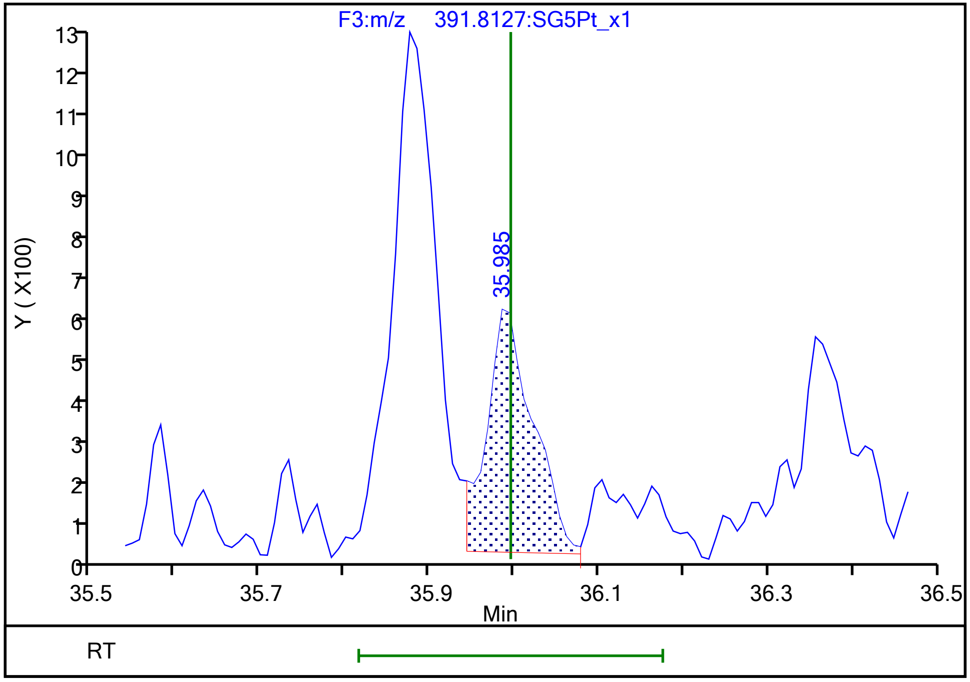

Reviewer: bennettd, 18-Oct-2021 13:27:33

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Not Detected
Expected RT: 36.37

Processing Integration Results

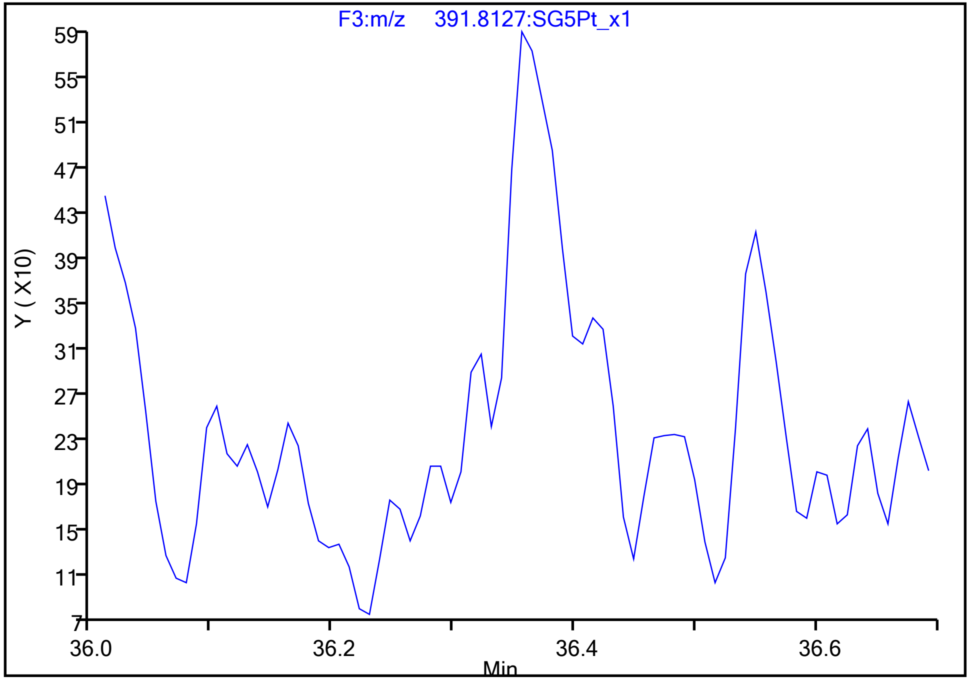

RT: 36.36
Area: 2047
Amount: 0.098730
Amount Units: pg/ul

Manual Integration Results

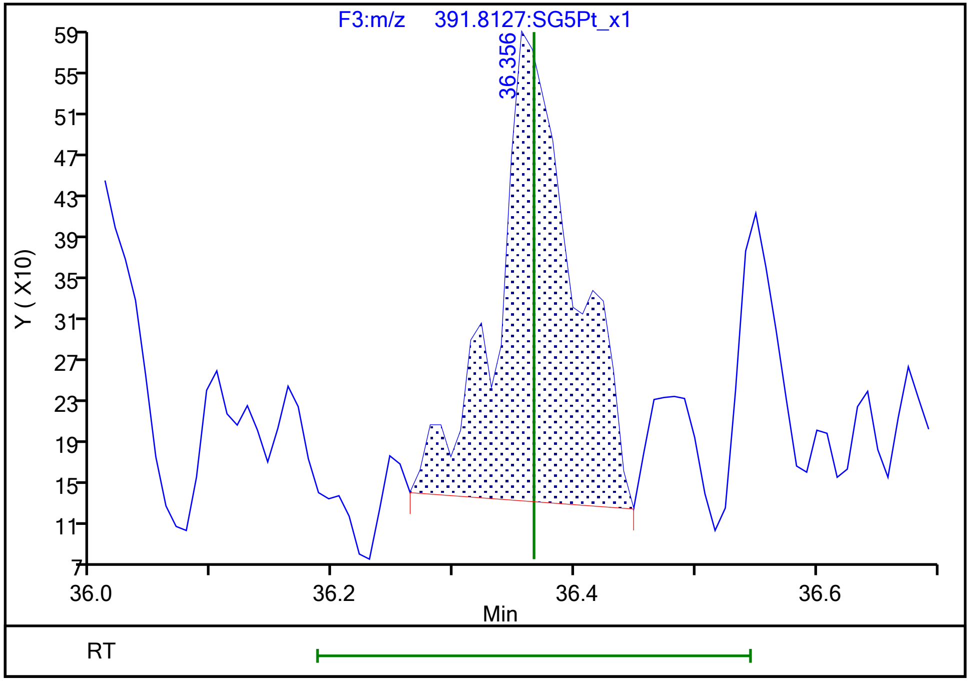

Reviewer: bennettd, 18-Oct-2021 13:28:03
Audit Action: Manually Integrated
Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Not Detected

Expected RT: 36.37

Processing Integration Results

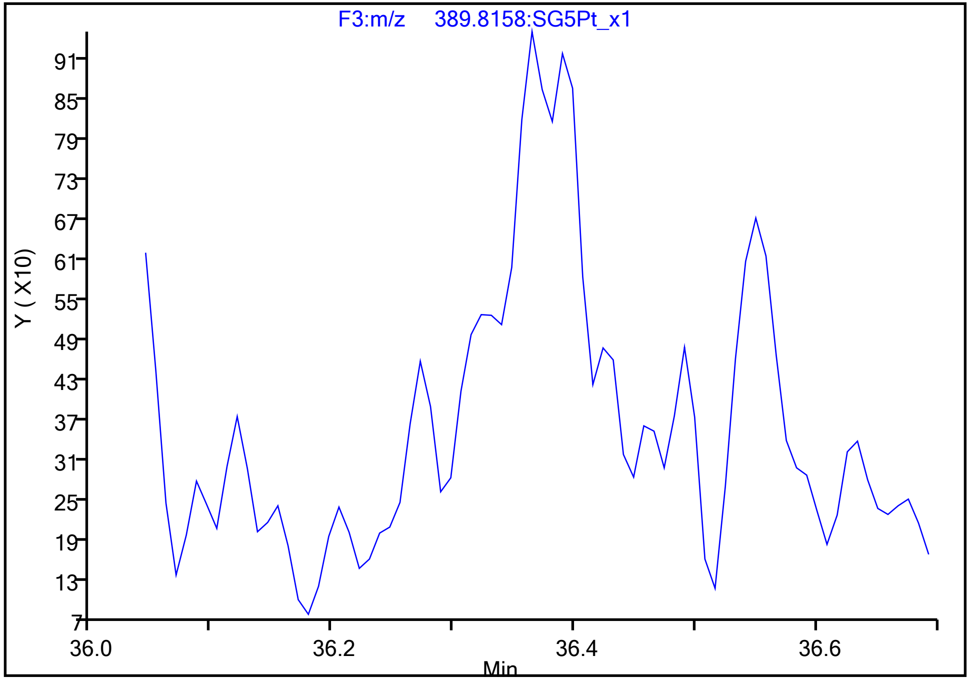

RT: 36.36

Area: 4217

Amount: 0.098730

Amount Units: pg/ul

Manual Integration Results

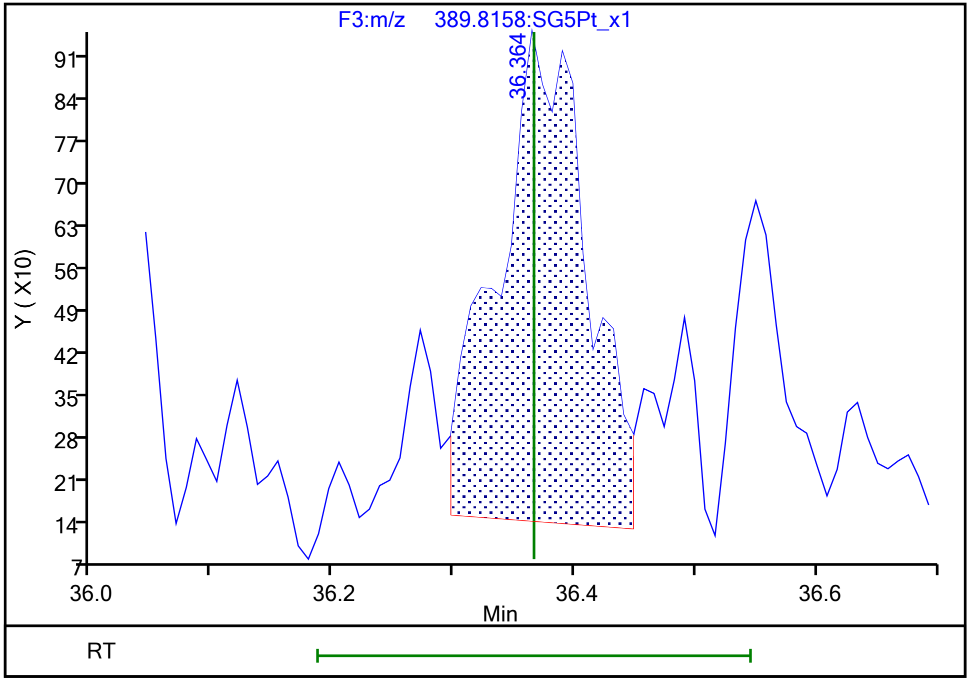

Reviewer: bennettd, 18-Oct-2021 13:28:12

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT:	38.43
Area:	7559
Amount:	0.159352
Amount Units:	pg/ul

Processing Integration Results

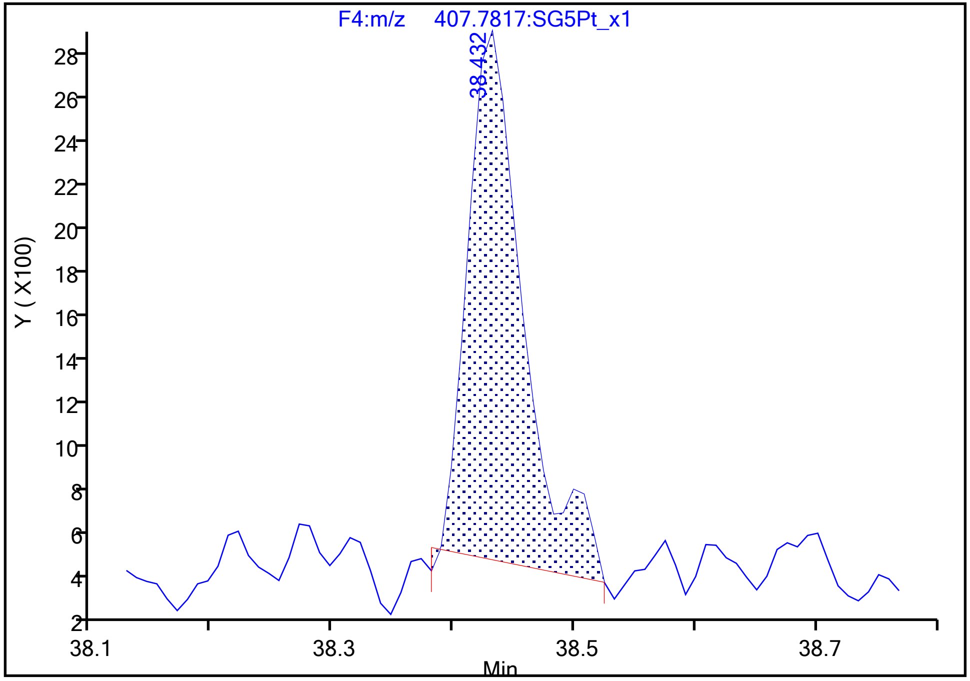

RT:	38.43
Area:	7712
Amount:	0.161073
Amount Units:	pg/ul

Manual Integration Results

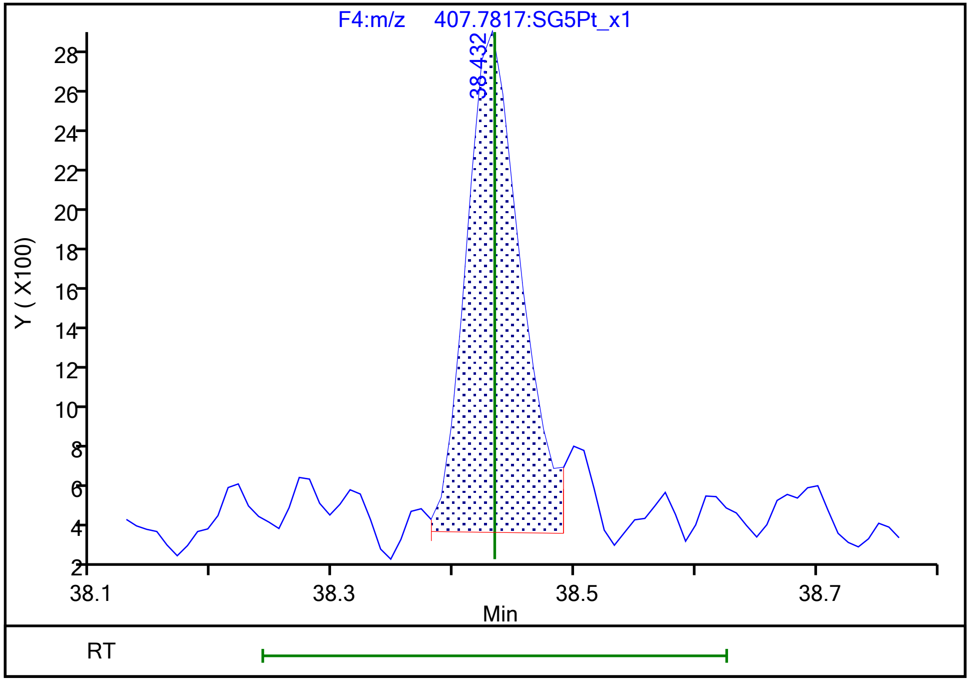

Reviewer: bennettd, 18-Oct-2021 13:29:10

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Report Date: 18-Oct-2021 13:41:57

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Processing Integration Results

Not Detected
Expected RT: 39.71

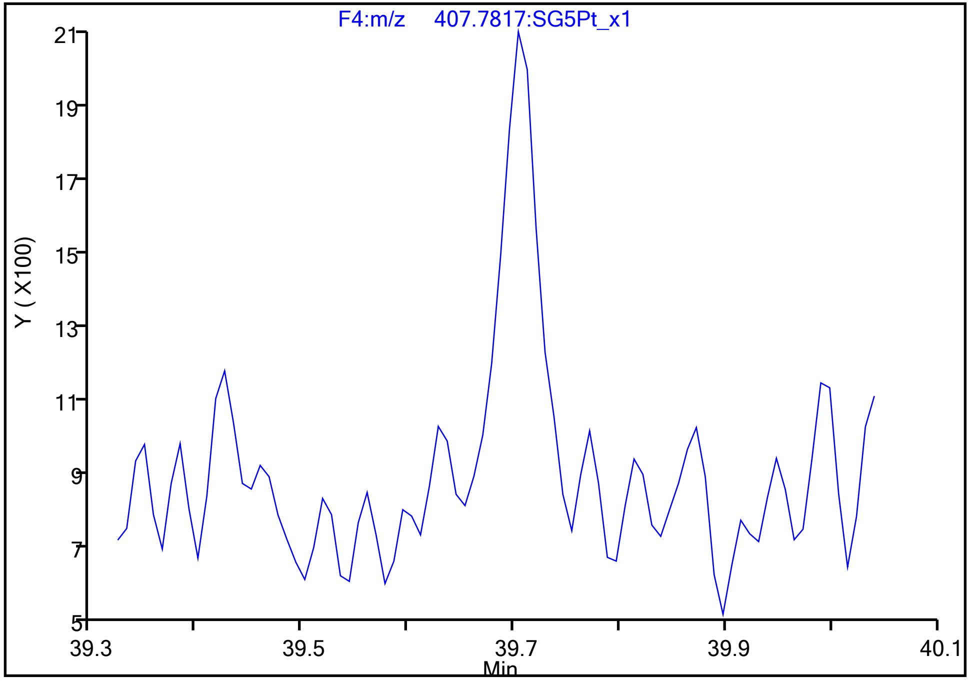

Manual Integration Results

RT: 39.70
Area: 5525
Amount: 0.161593
Amount Units: pg/ul

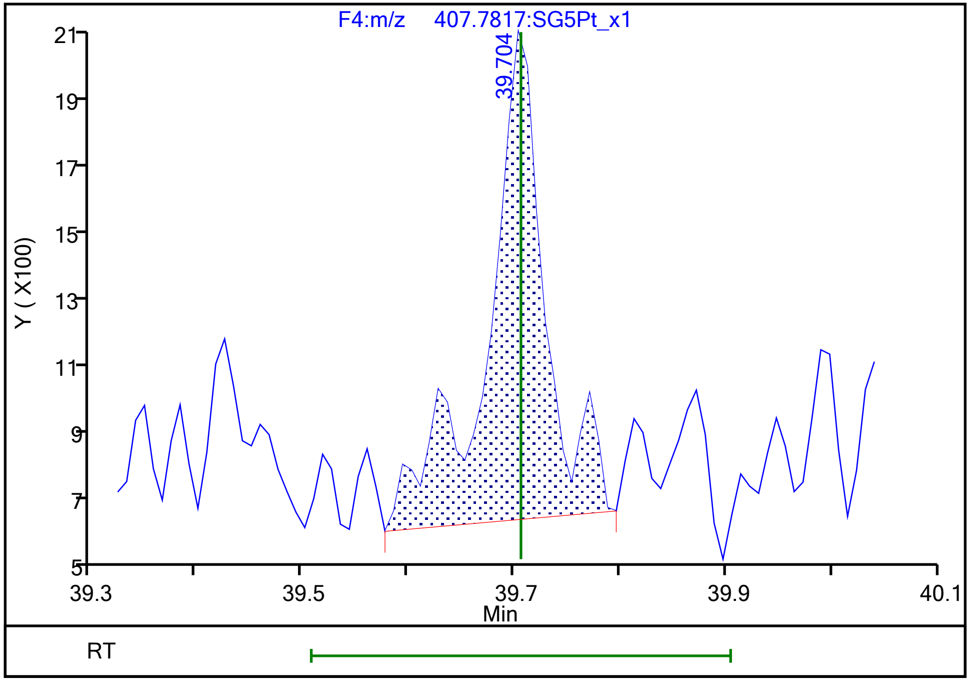

Reviewer: bennettd, 18-Oct-2021 13:29:25

Audit Action: Manually Integrated

Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-2-A
Lab Sample ID: 320-79918-2
Client ID: 11215702-T=1hr-Settle
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 11
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Not Detected
Expected RT: 39.71

Processing Integration Results

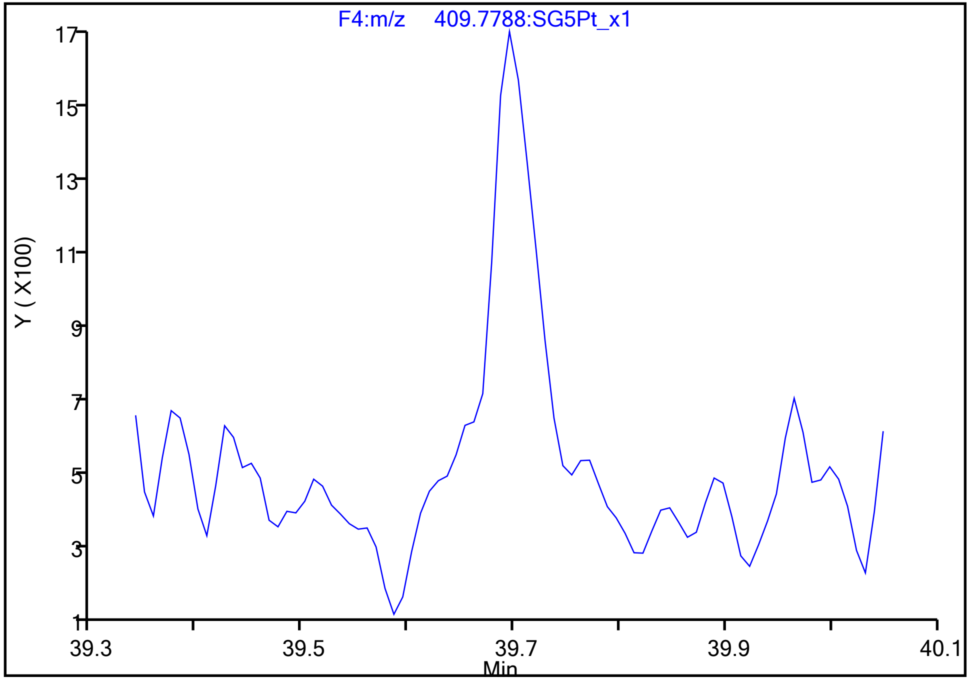

RT: 39.70
Area: 6387
Amount: 0.161593
Amount Units: pg/ul

Manual Integration Results

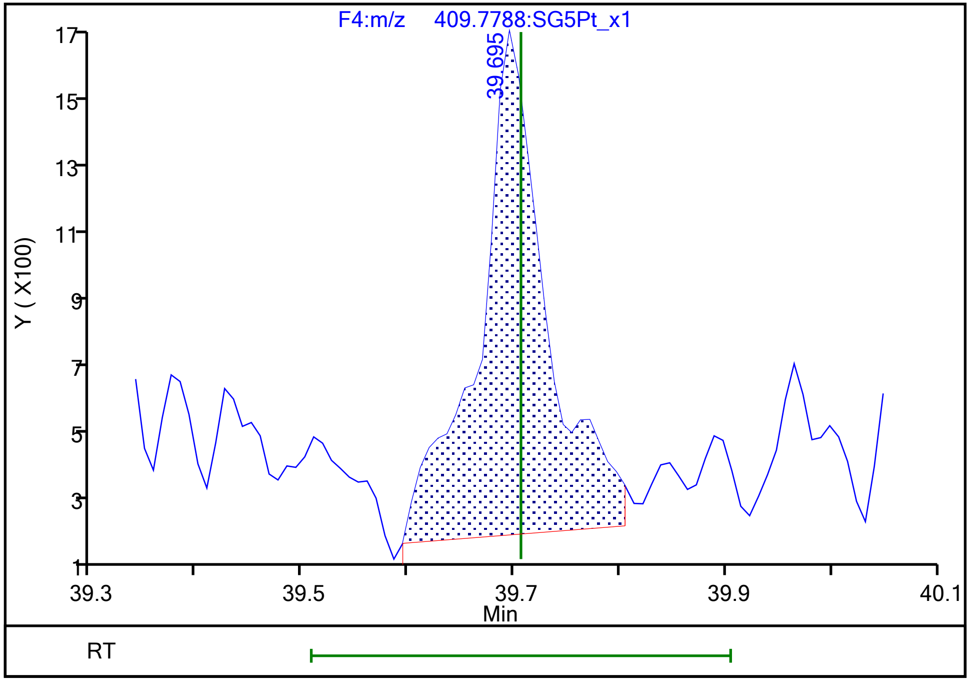

Reviewer: bennettd, 18-Oct-2021 13:29:30
Audit Action: Split an Integrated Peak
Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:57 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

RT: 39.40
Area: 7982
Amount: 0.290688
Amount Units: pg/ul

Processing Integration Results

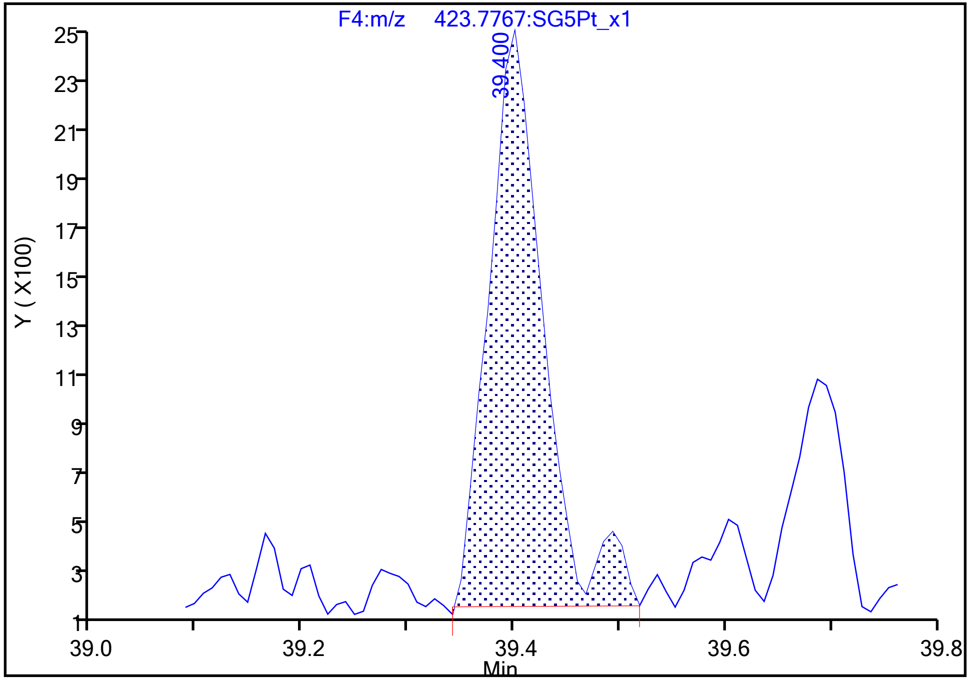

RT: 39.40
Area: 7470
Amount: 0.264443
Amount Units: pg/ul

Manual Integration Results

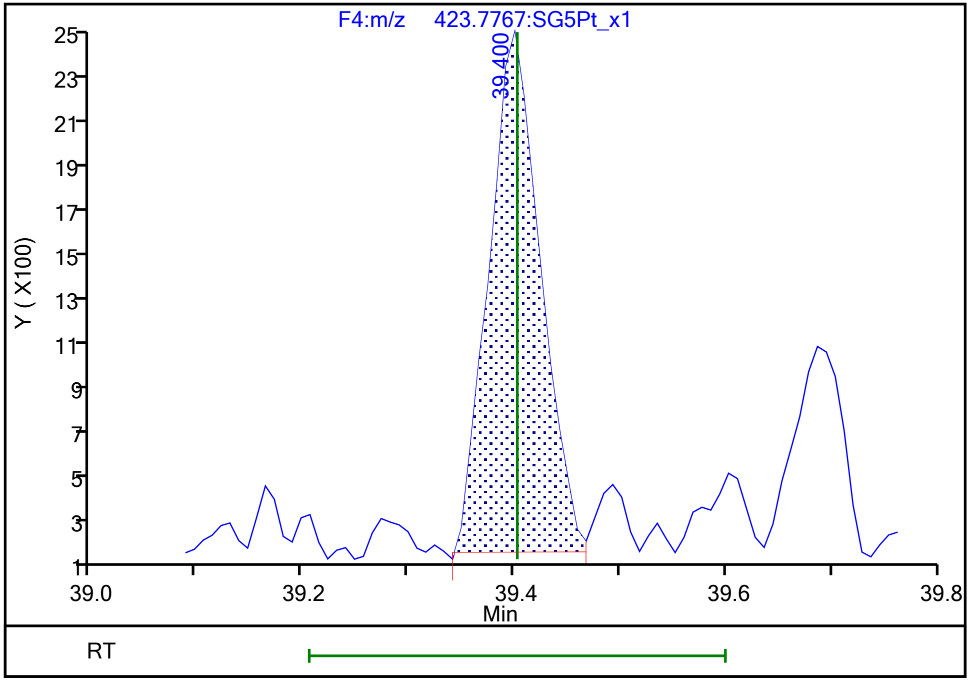

Reviewer: bennettd, 18-Oct-2021 13:29:43

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 39.39
Area: 8399
Amount: 0.290688
Amount Units: pg/ul

Processing Integration Results

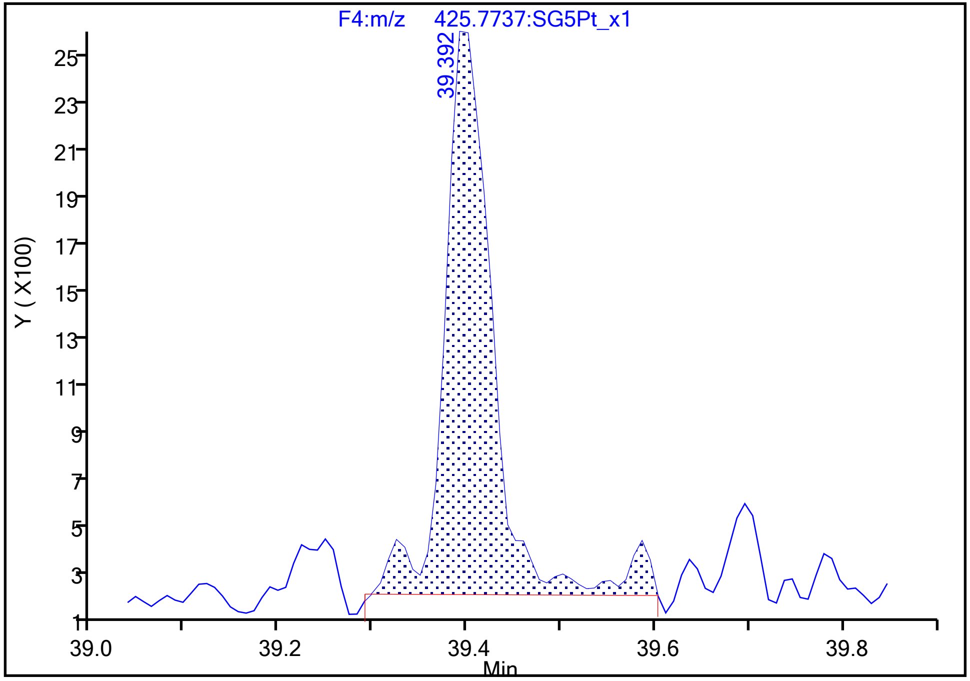

RT: 39.39
Area: 7432
Amount: 0.264443
Amount Units: pg/ul

Manual Integration Results

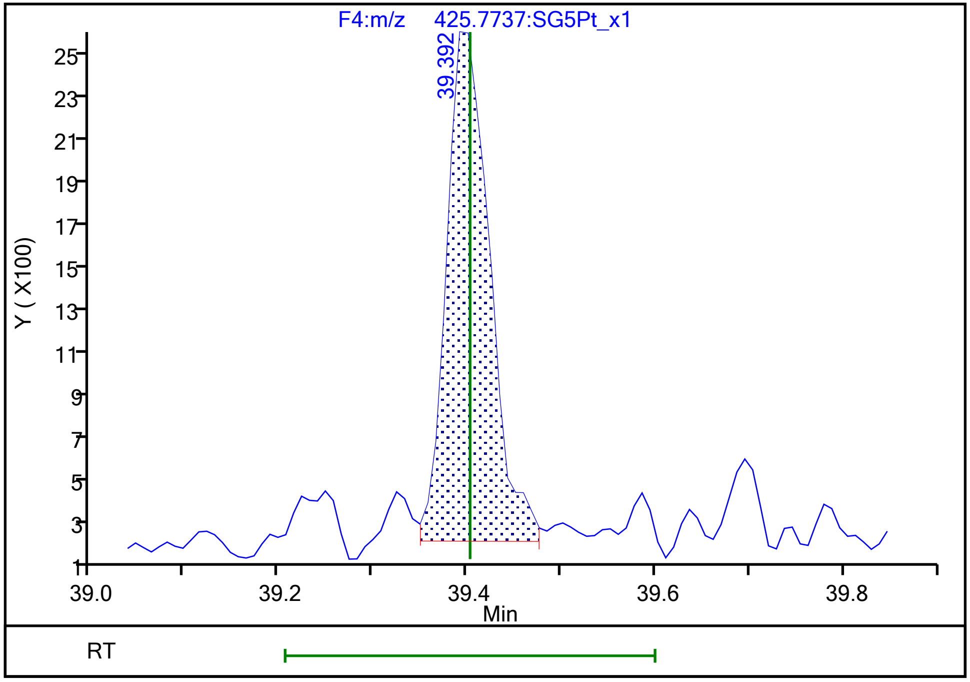

Reviewer: bennettd, 18-Oct-2021 13:29:46

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7767, RT: (38.68- 39.72)

Signal: 1

Processing Integration Results

RT = 38.743 Area = 6350

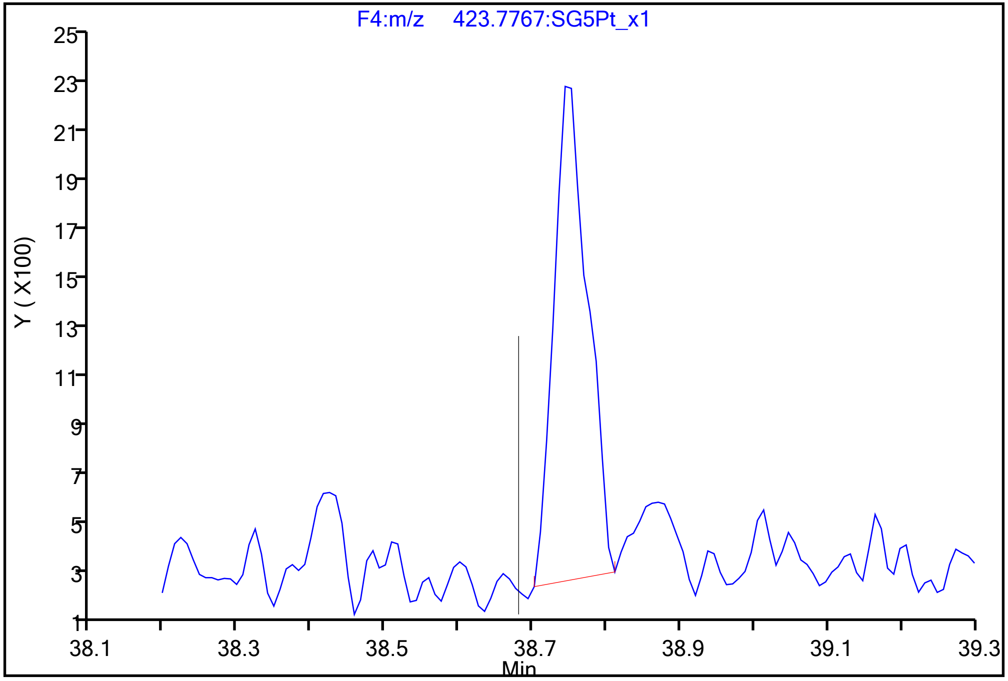

Manual Integration Results

RT = 38.743 Area = 6850 M

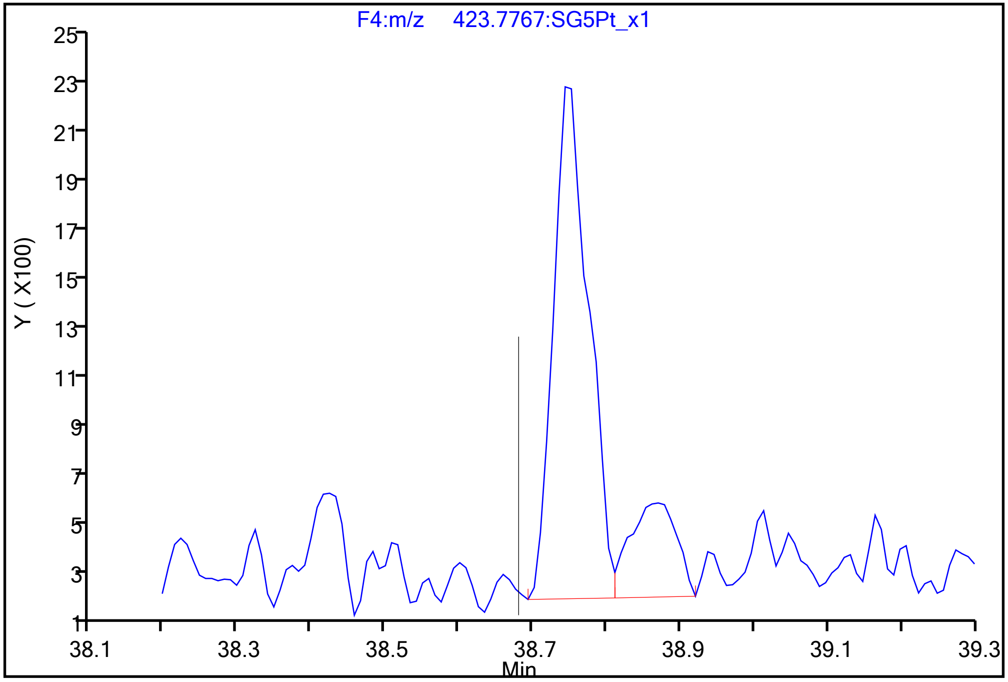

Reviewer: bennettd, 18-Oct-2021 13:30:20

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Report Date: 18-Oct-2021 13:41:57

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

Non-2,3,7,8-sub-HpCDD, Signal: 2, m/z: 425.7737, RT: (38.68- 39.72)

Signal: 2

Processing Integration Results

RT = 38.752 Area = 6546

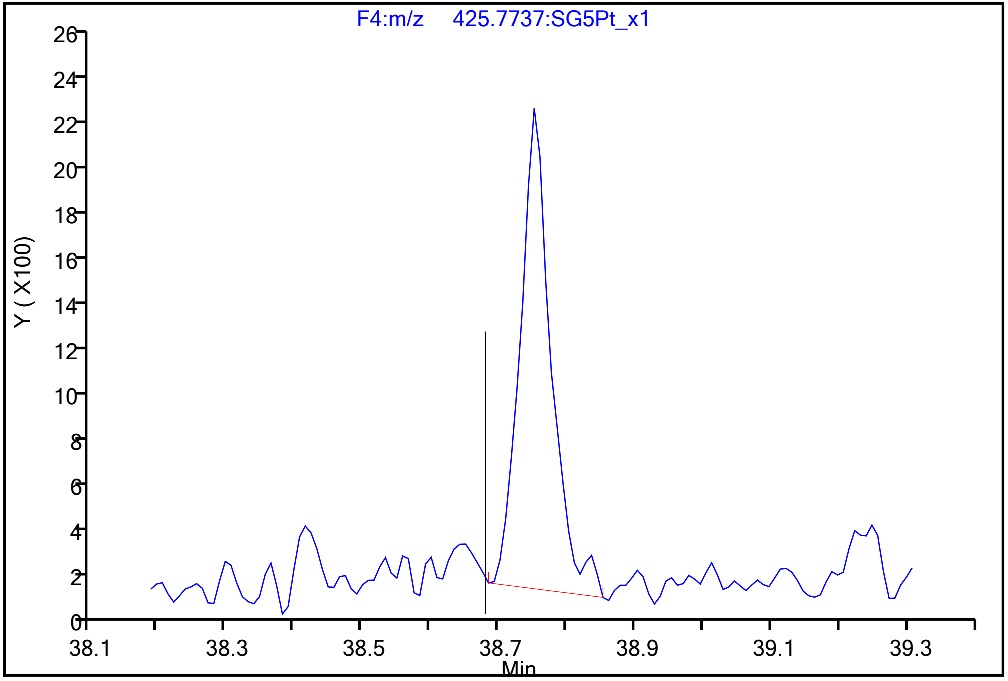

Manual Integration Results

RT = 38.752 Area = 6318 M

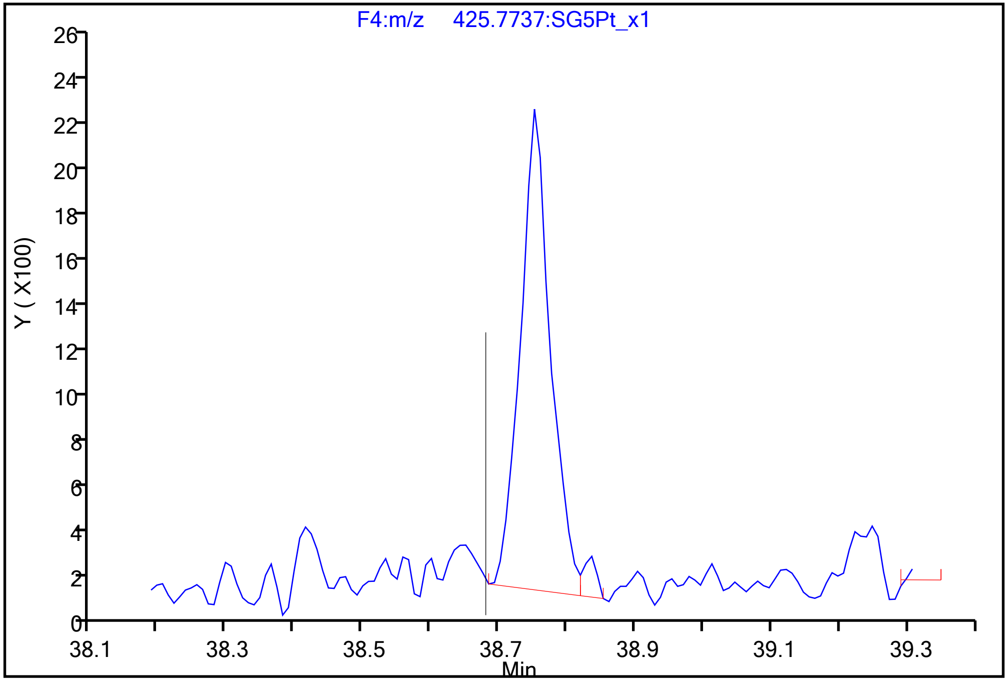

Reviewer: bennettd, 18-Oct-2021 13:29:54

Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:58

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d				
Injection Date:	15-Oct-2021 18:15:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT: 41.95
Area: 7283
Amount: 0.213727
Amount Units: pg/ul

Processing Integration Results

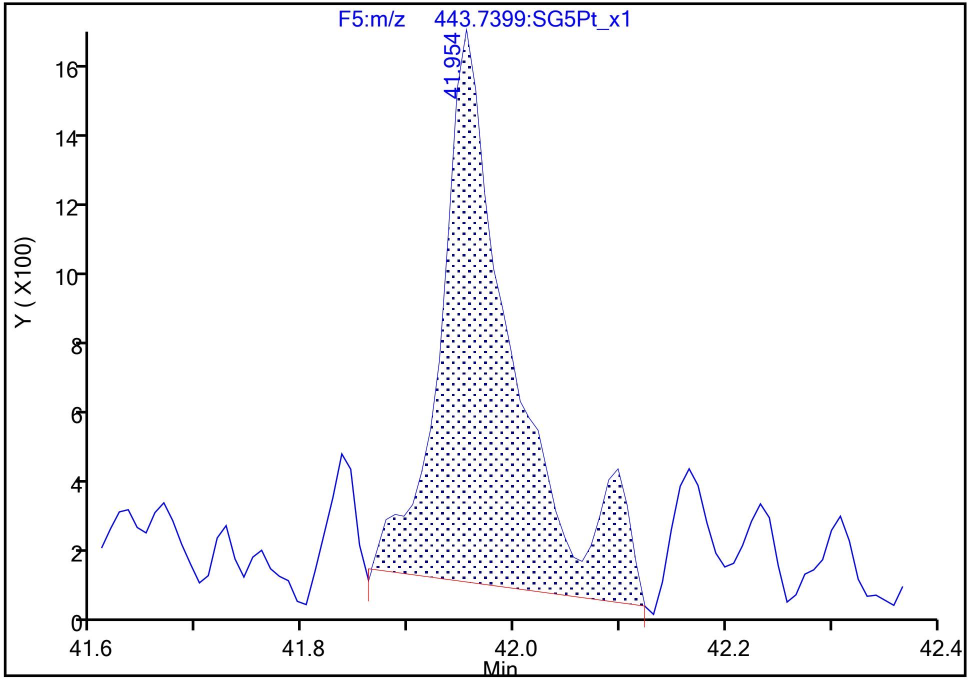

RT: 41.95
Area: 6467
Amount: 0.200220
Amount Units: pg/ul

Manual Integration Results

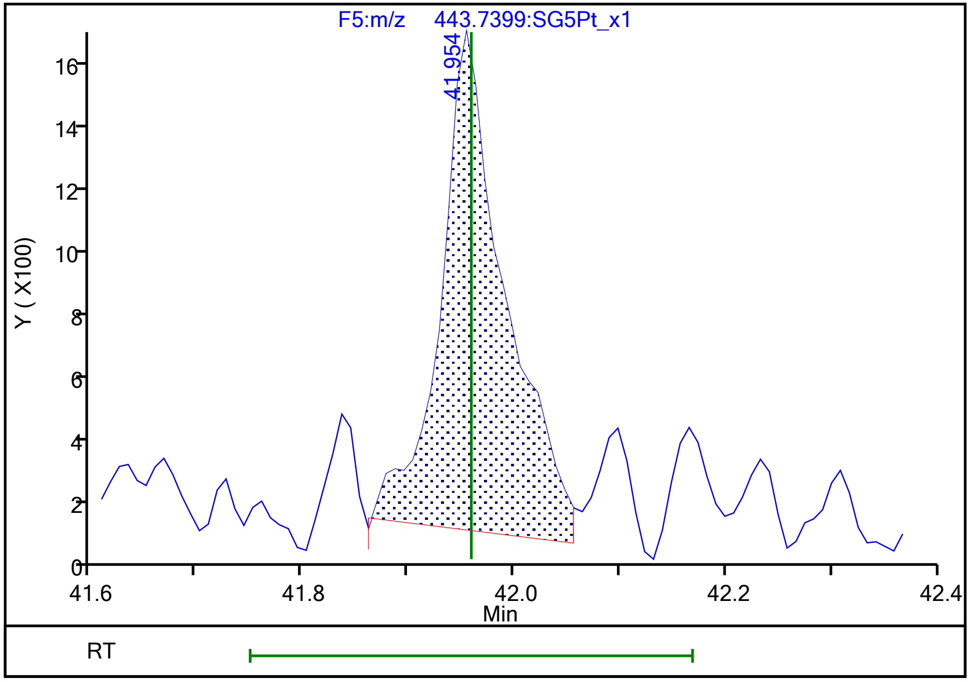

Reviewer: bennettd, 18-Oct-2021 13:30:31

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

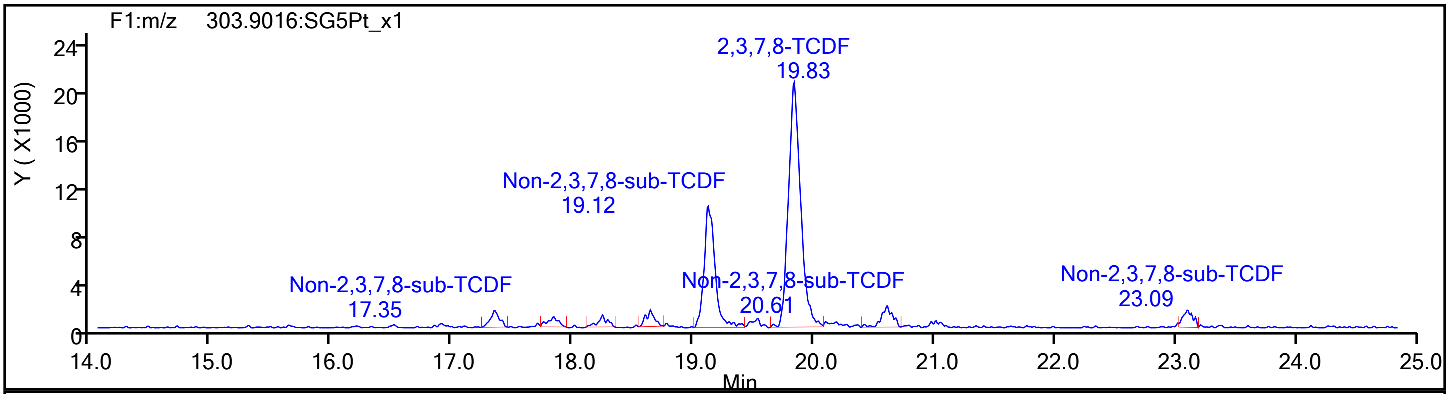

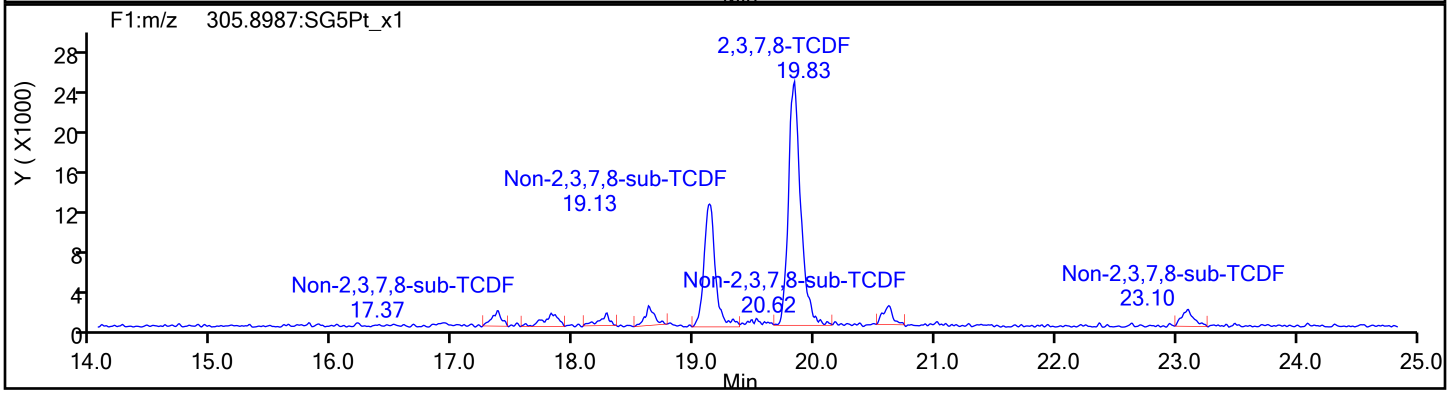

TCDF Standards

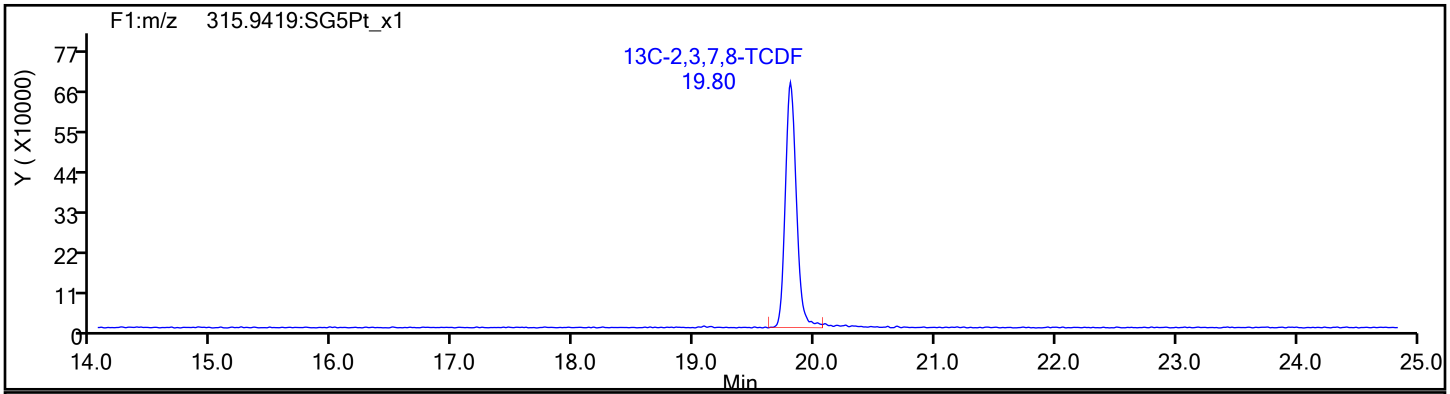

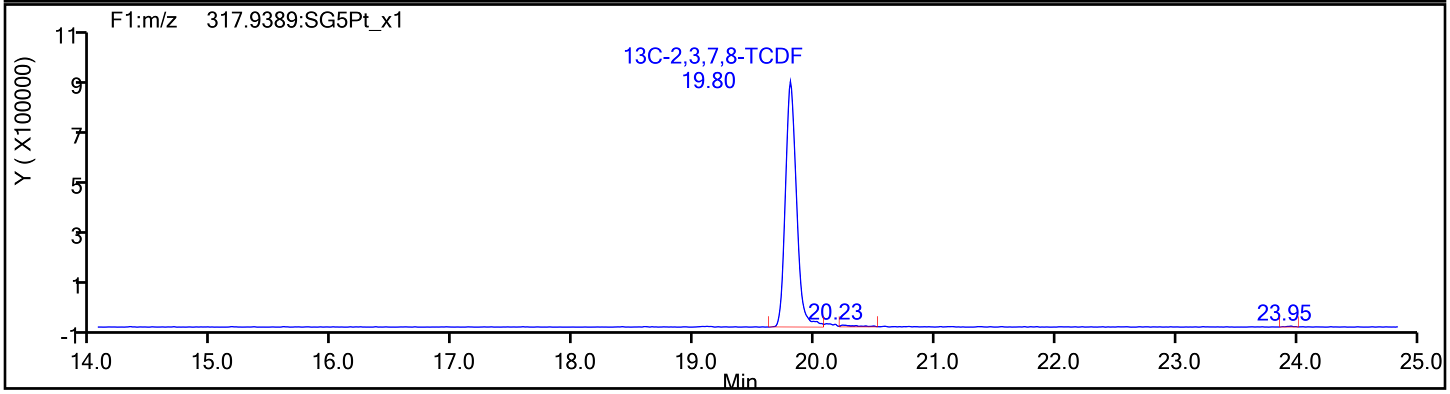

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-T=1hr-Settle
Worklist#: 534320
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

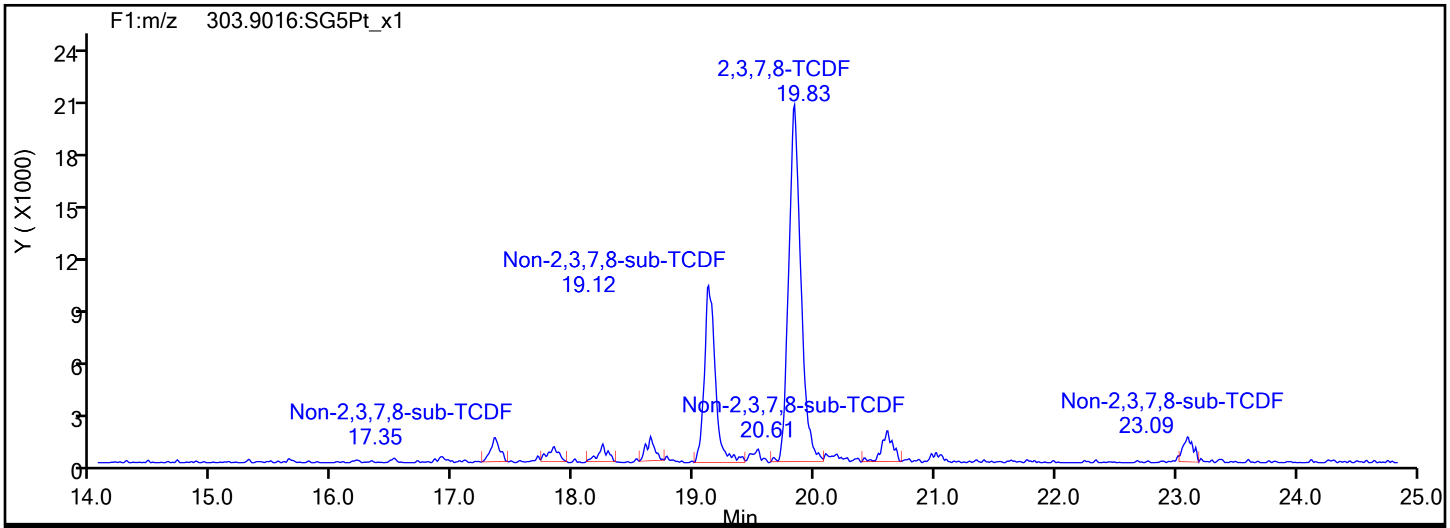

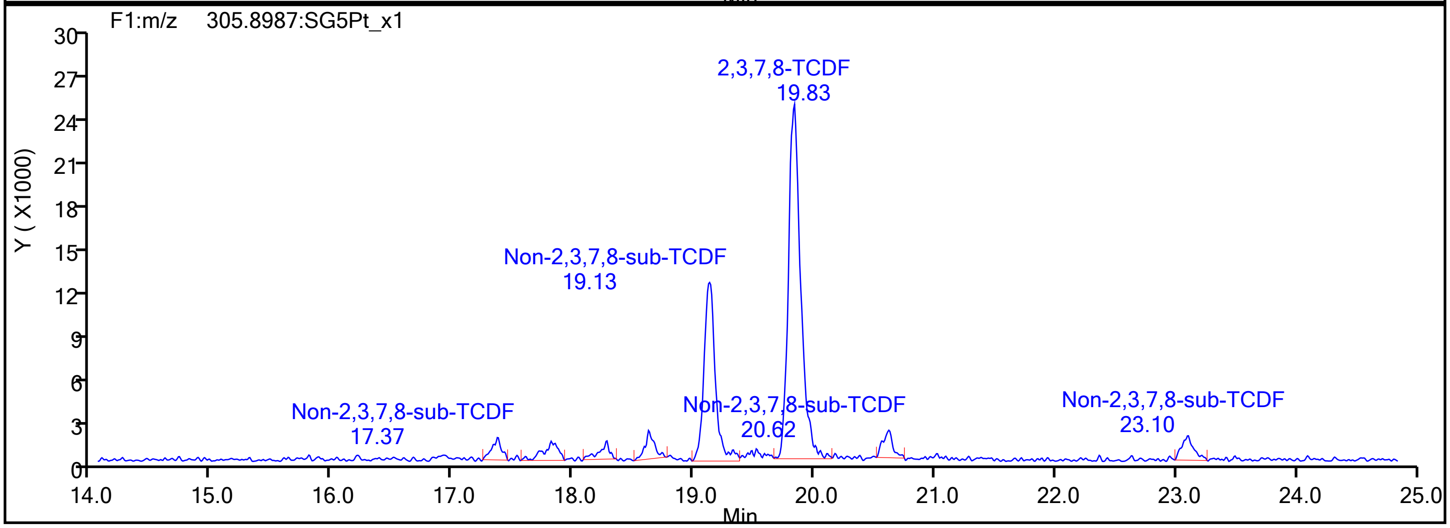

TCDF Interference Mass

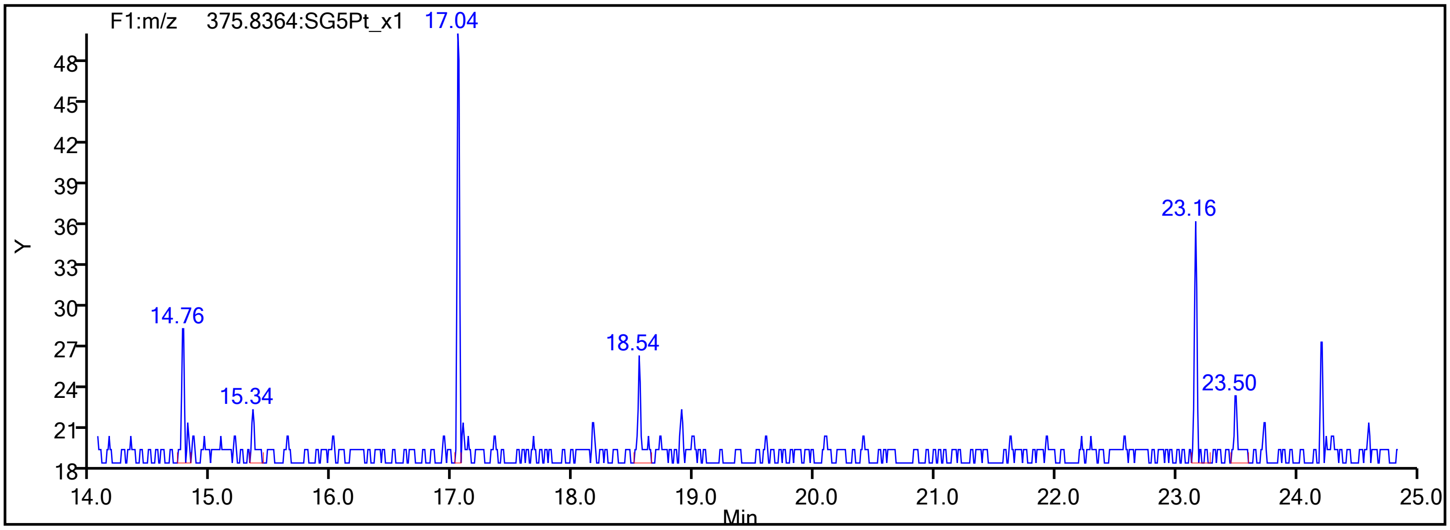

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

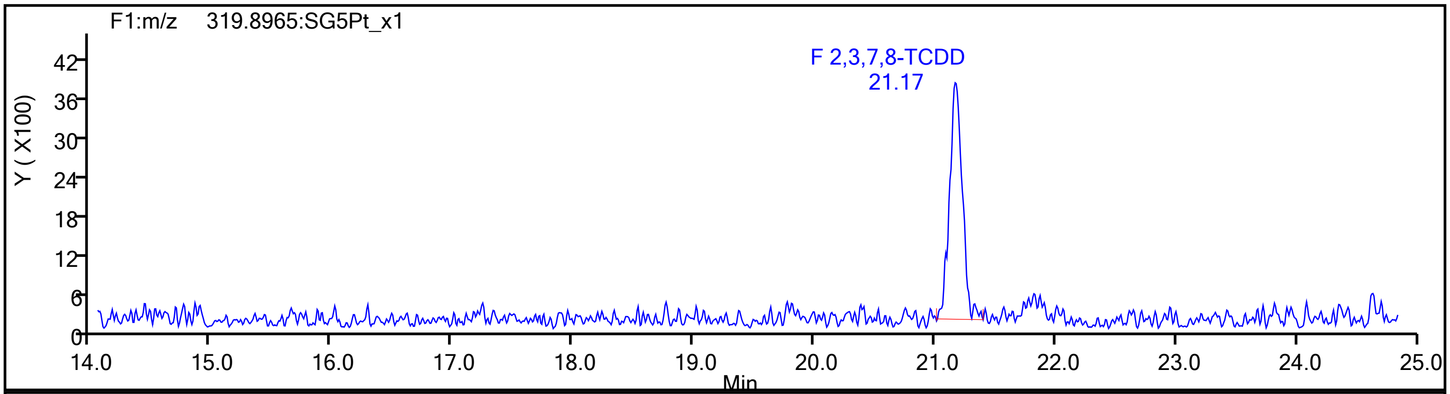

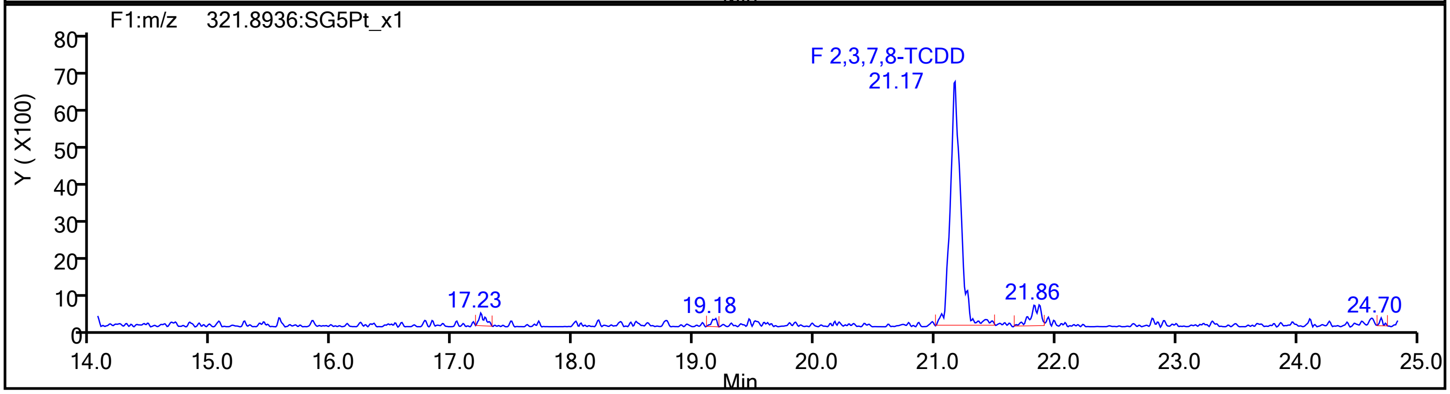

TCDD Standards

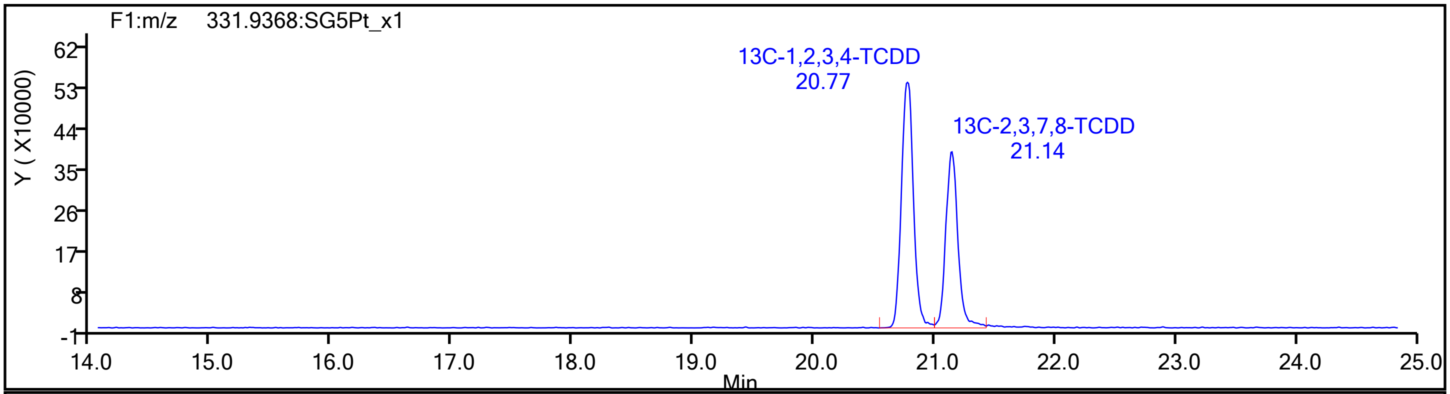

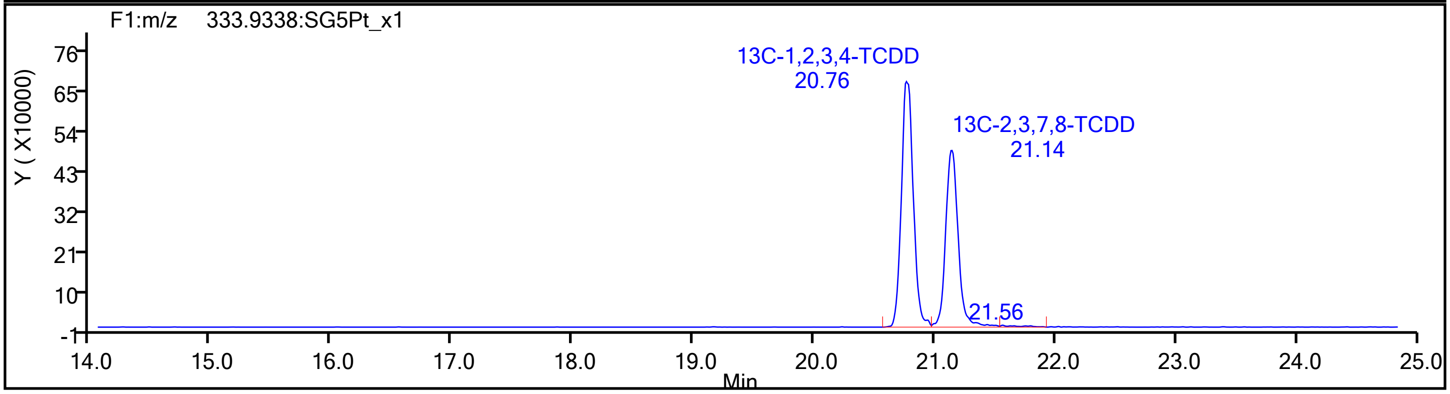

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

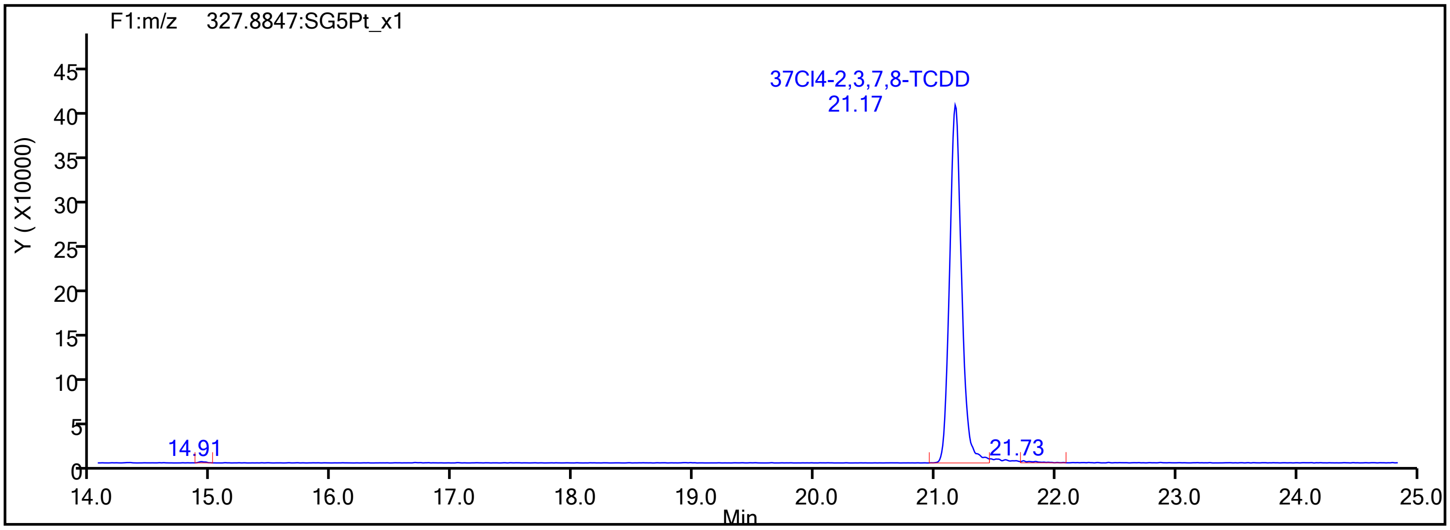

37Cl4-TCDD Standards

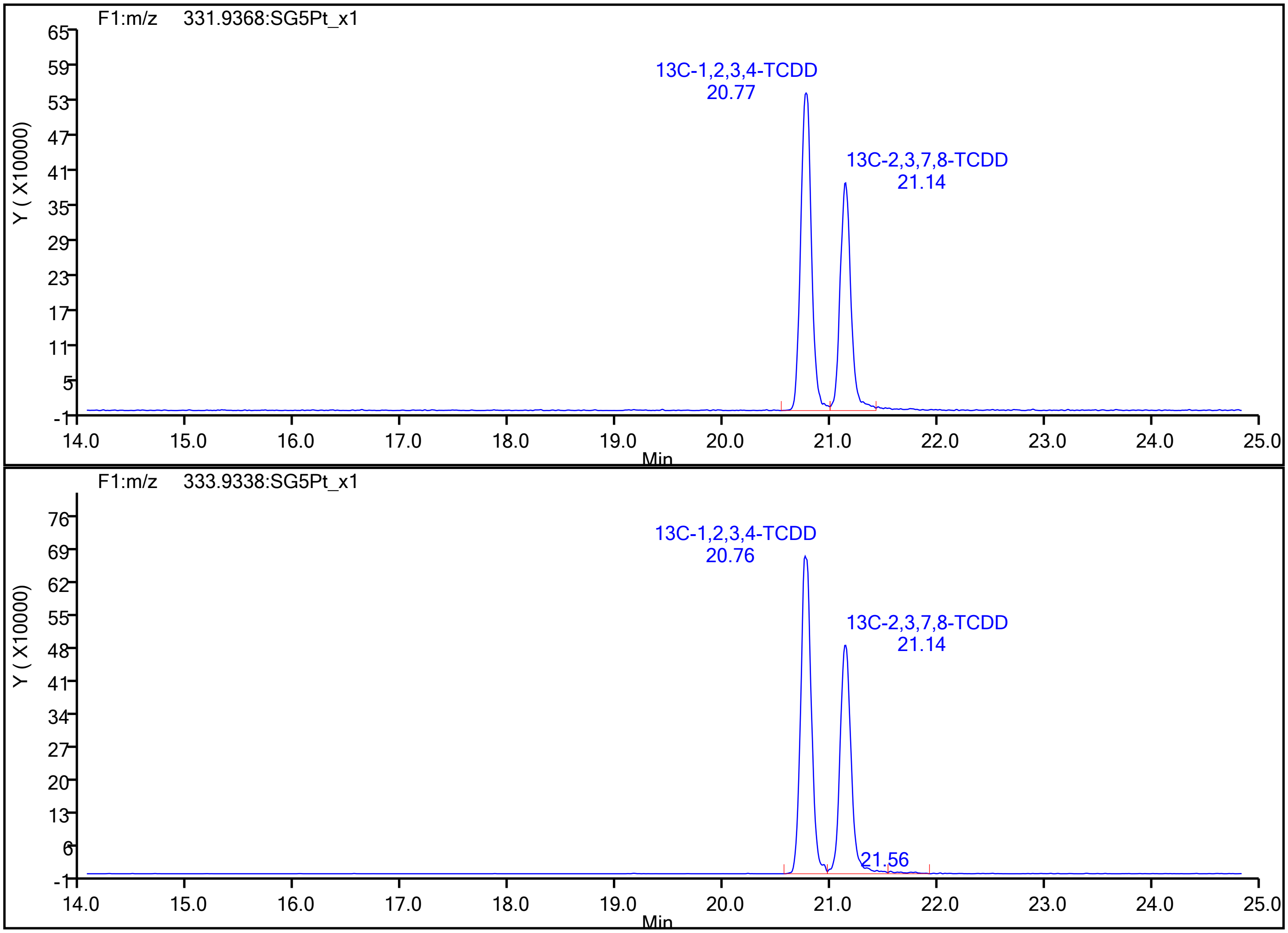

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

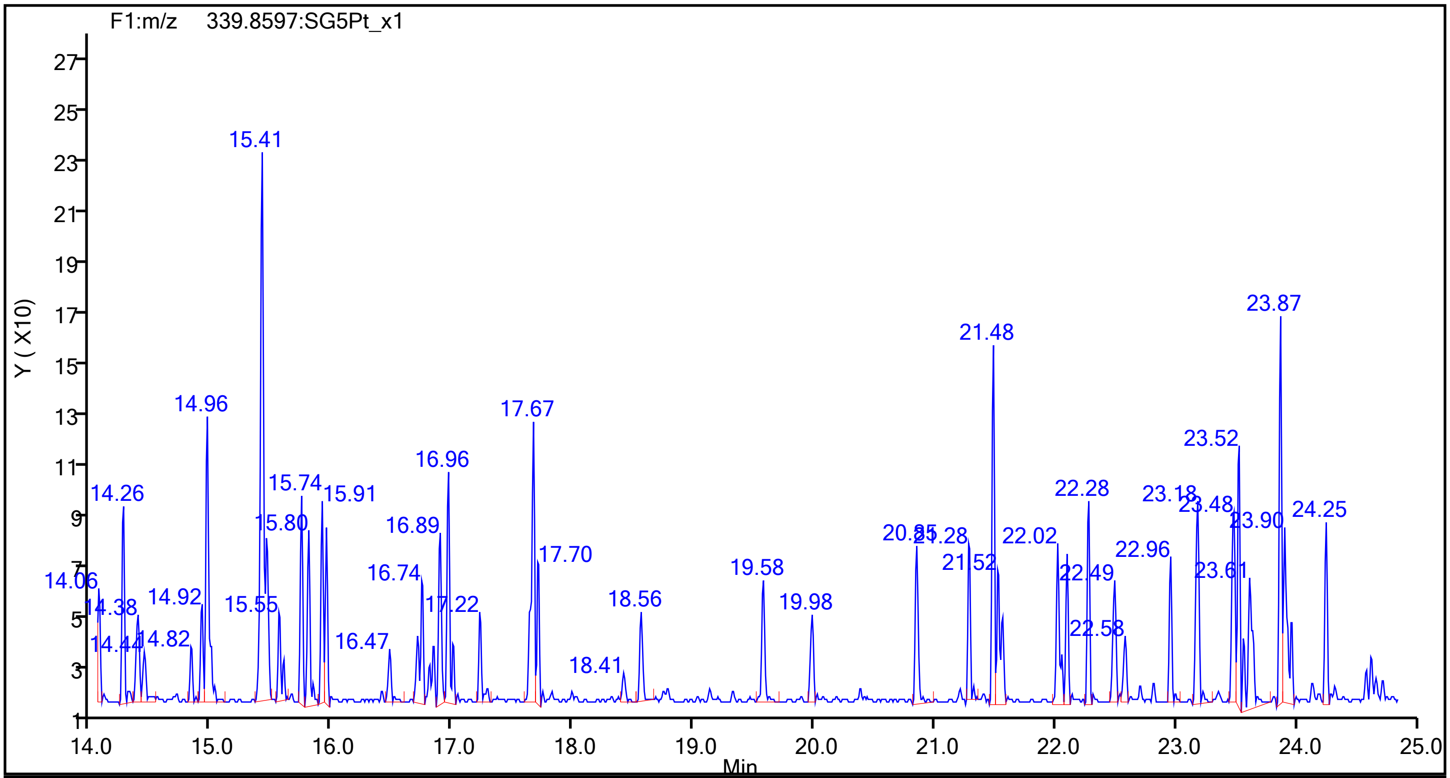

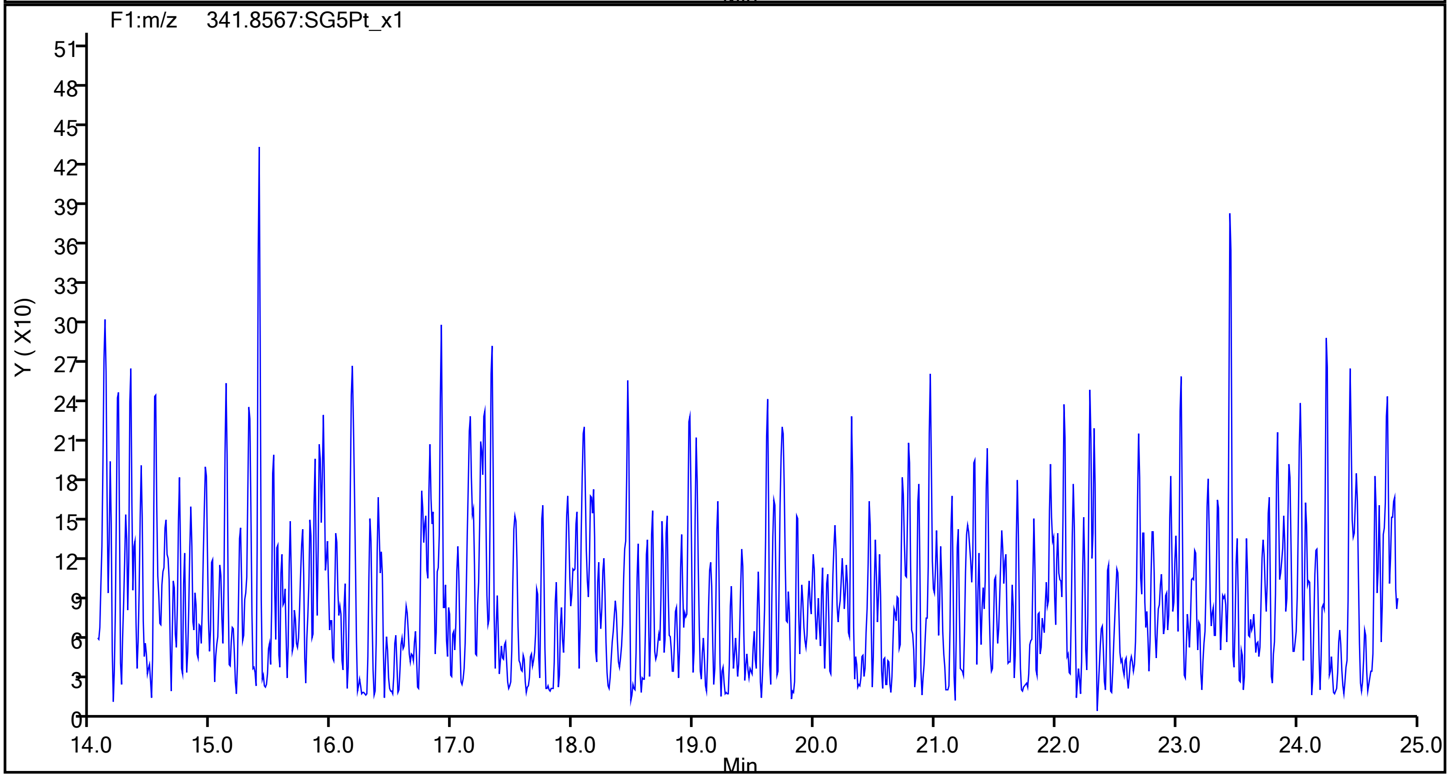

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-T=1hr-Settle
Worklist#: 534320 Sample Line#: 11
Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

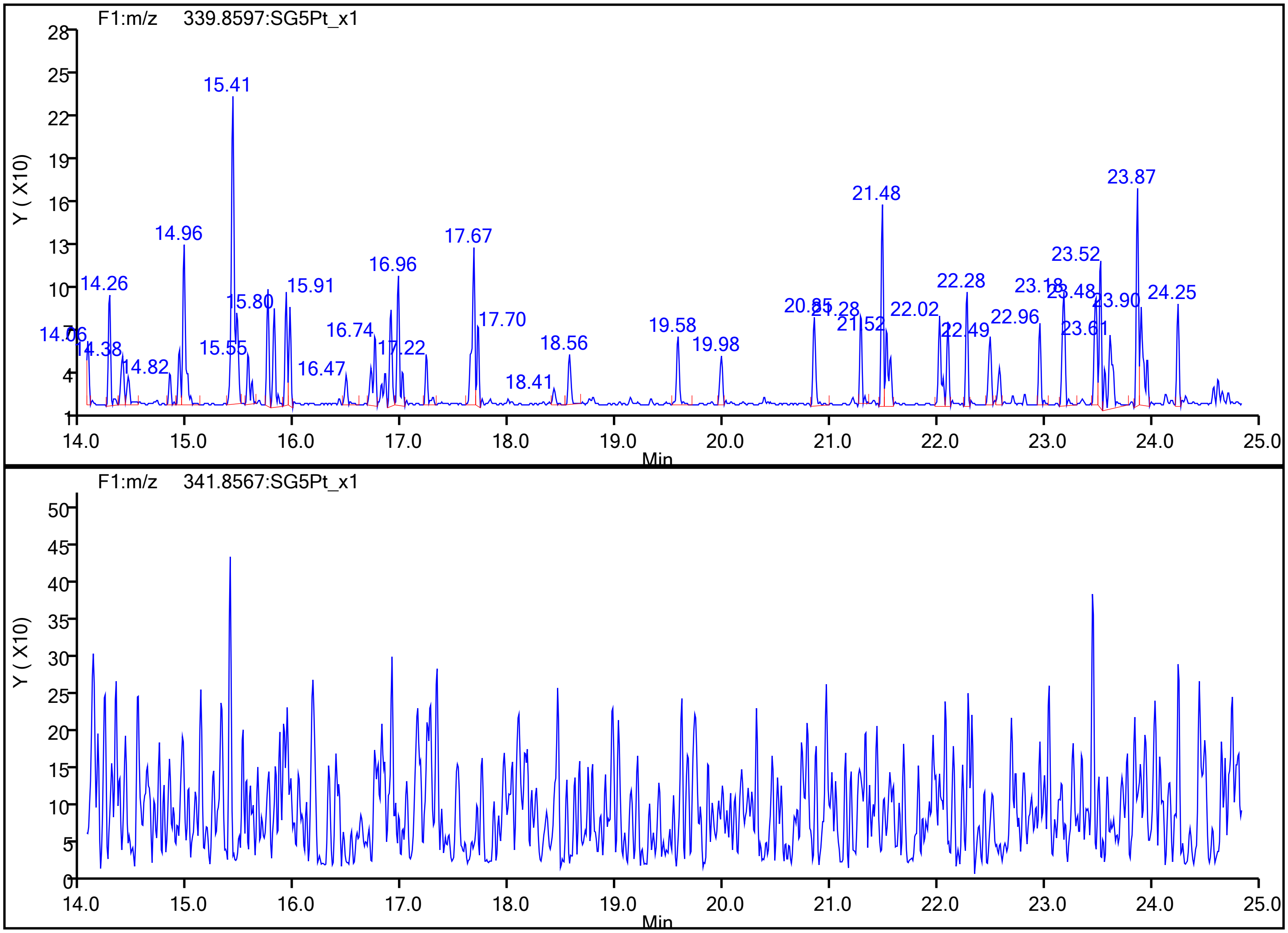

F1 PeCDFs Interference Mass

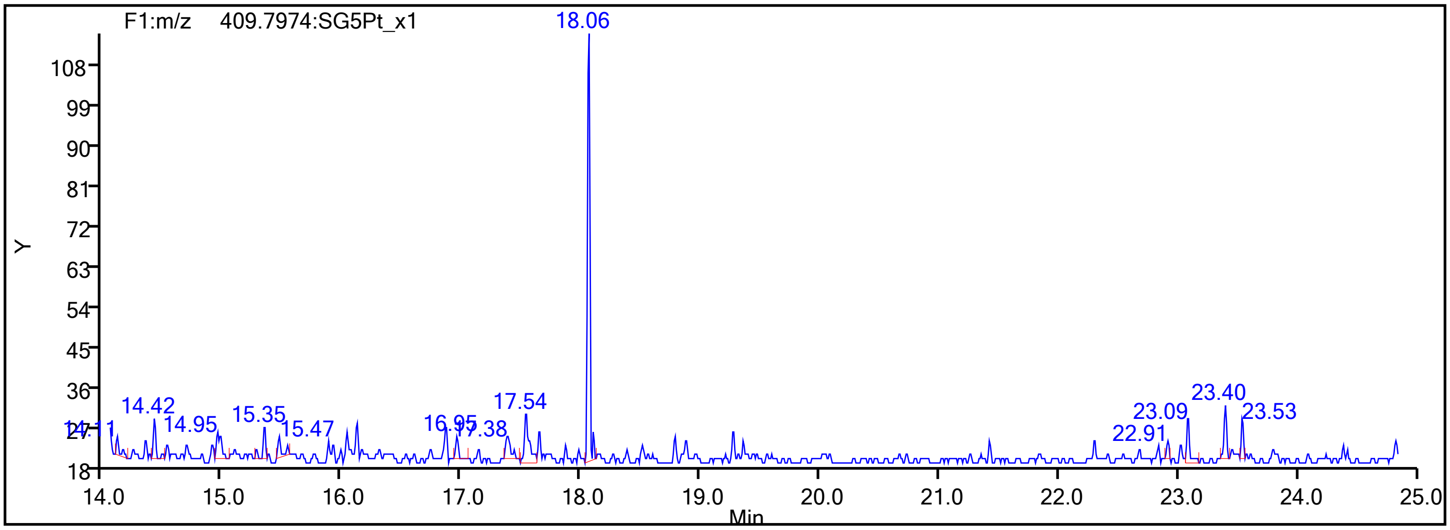

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
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Worklist#: 534320
Sample Line#: 11
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Column Dia: 0.32 mm

PeCDF

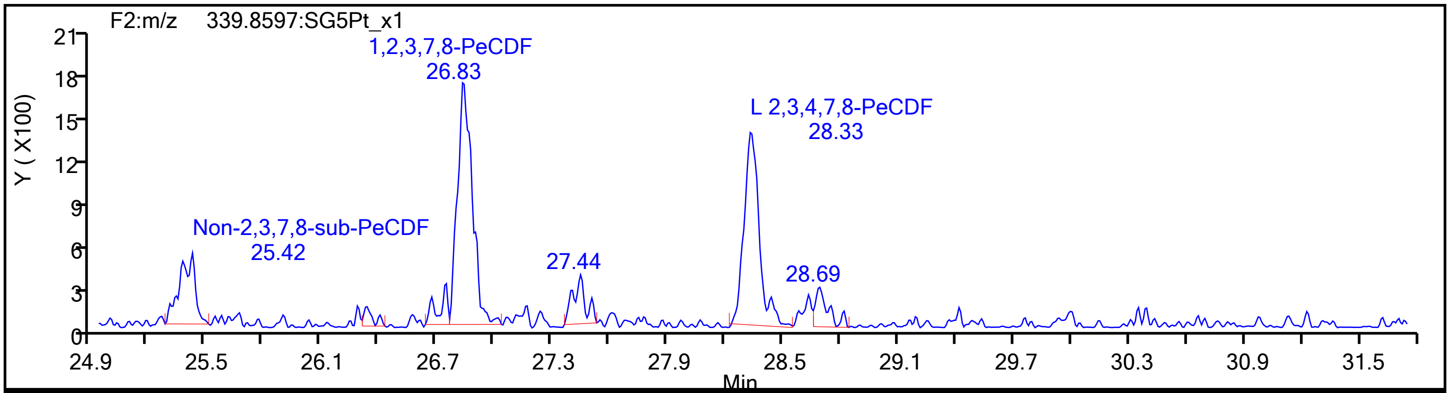

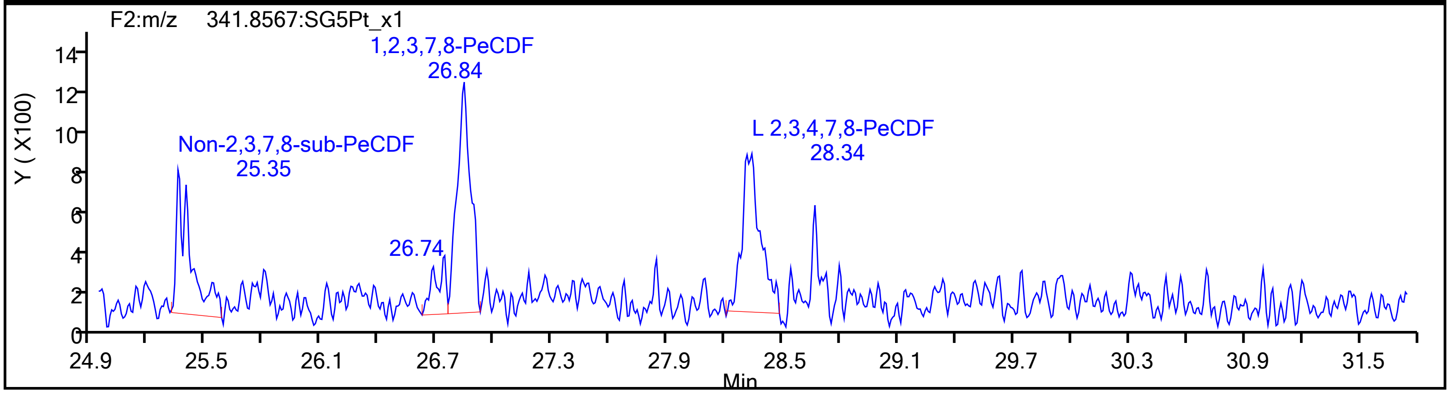

PeCDF Standards

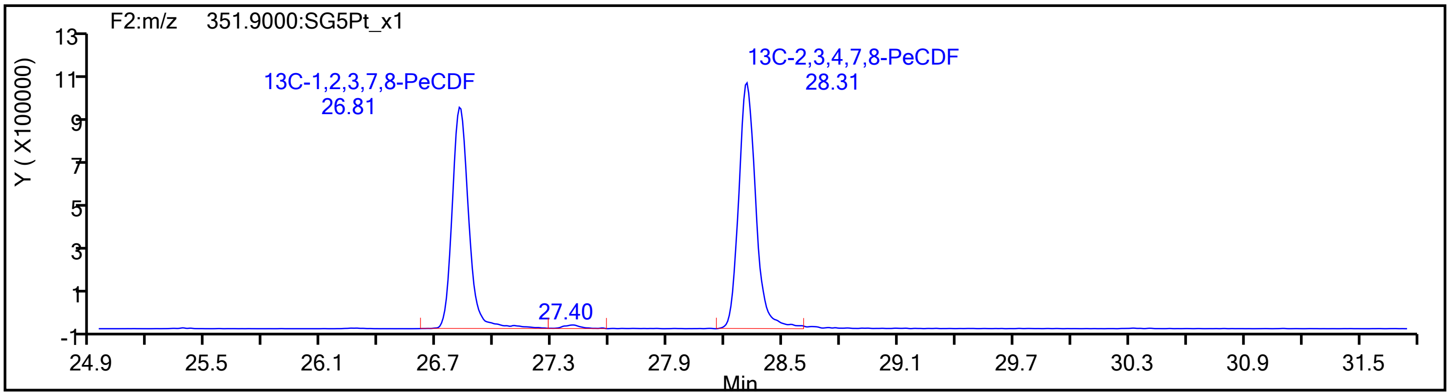

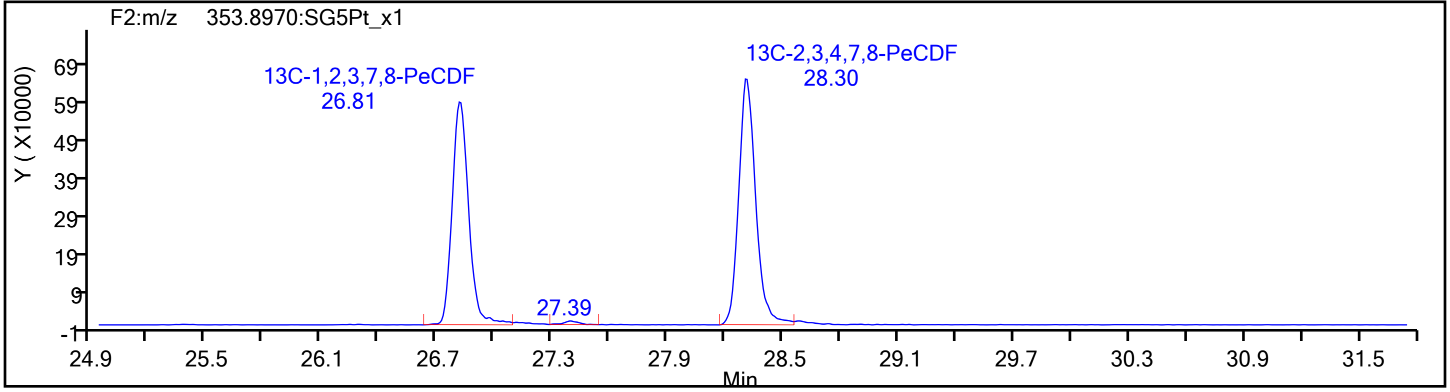

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

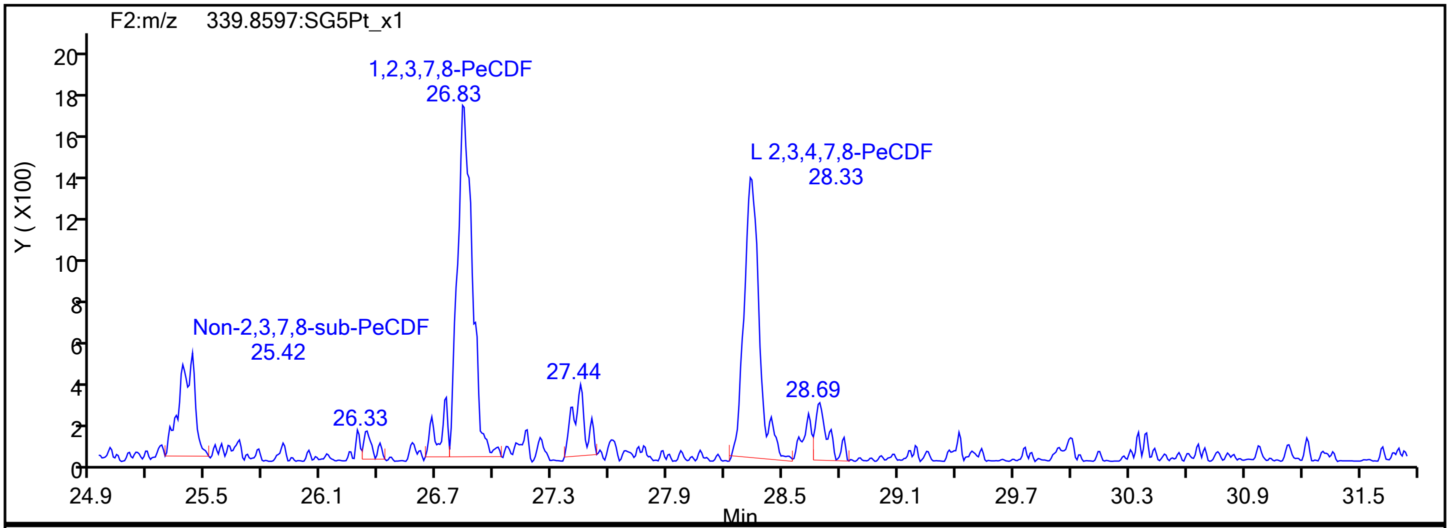

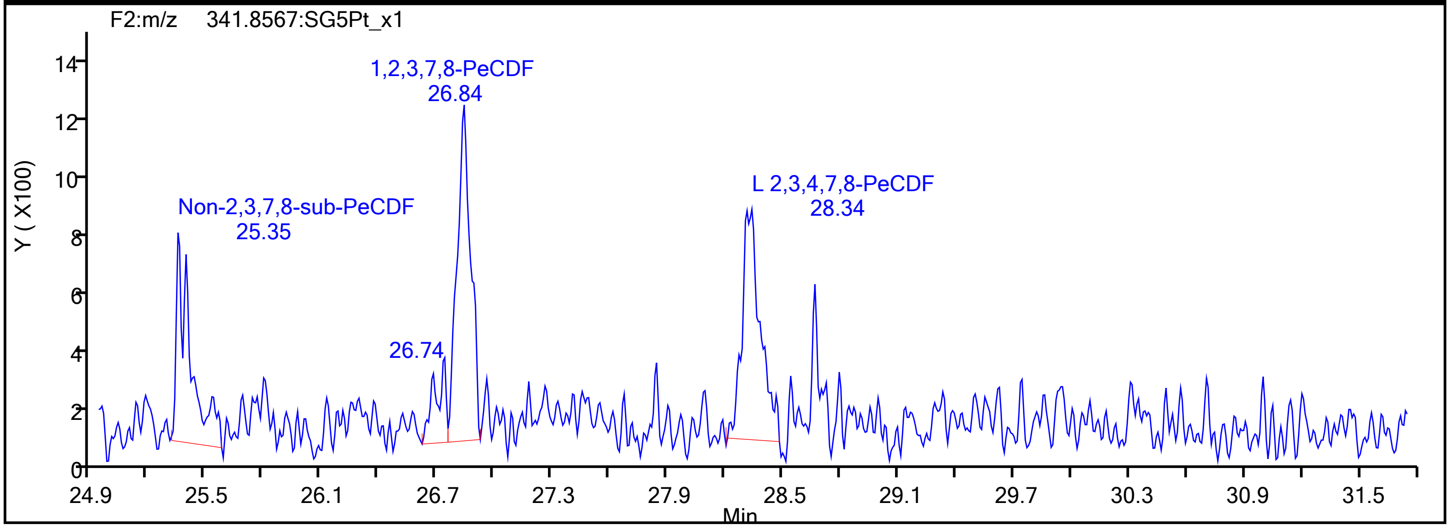

PeCDF Interference Mass

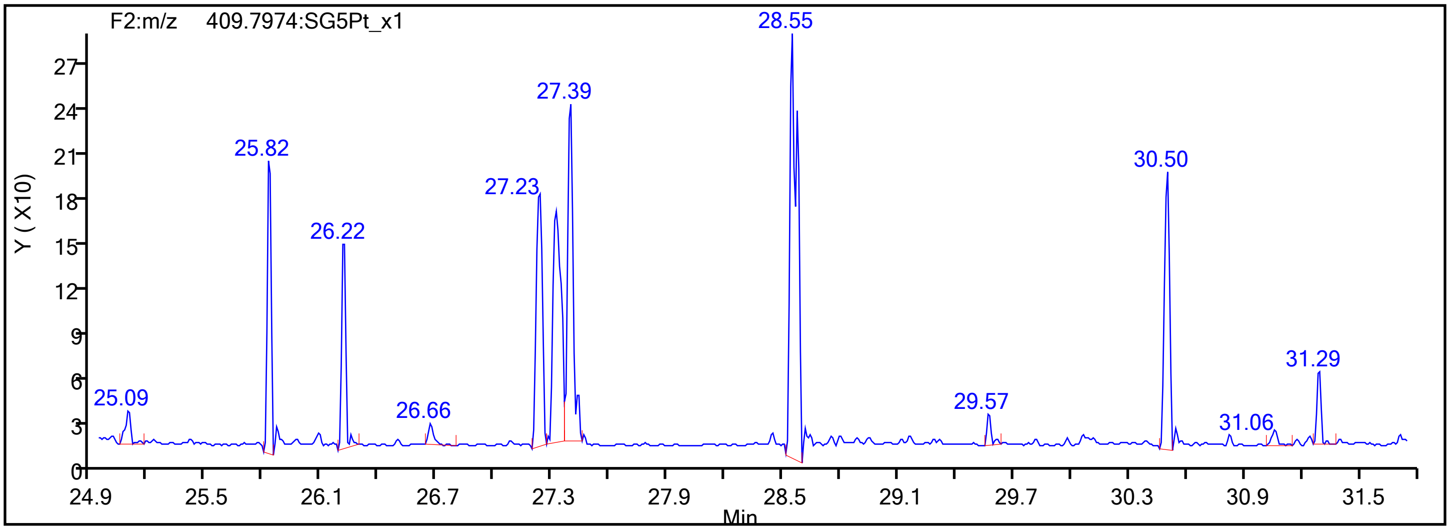

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date: 15-Oct-2021 18:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-T=1hr-Settle
Worklist#: 534320
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

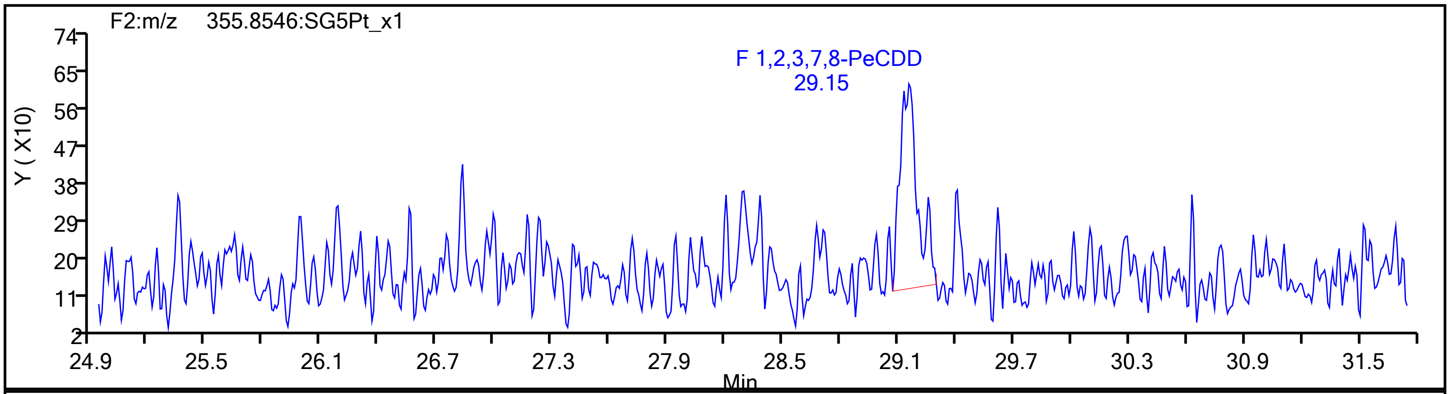

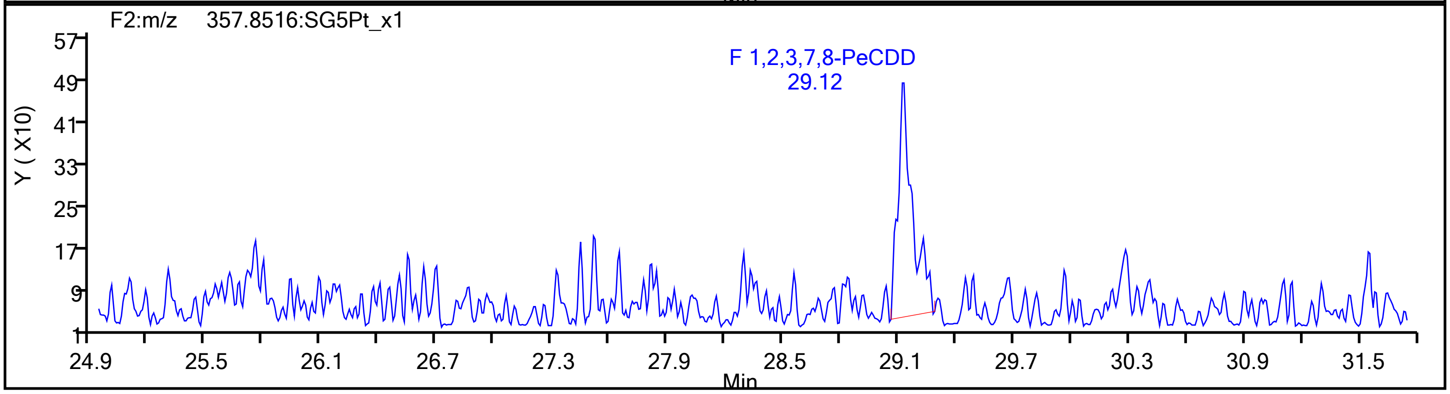

PeCDD Standards

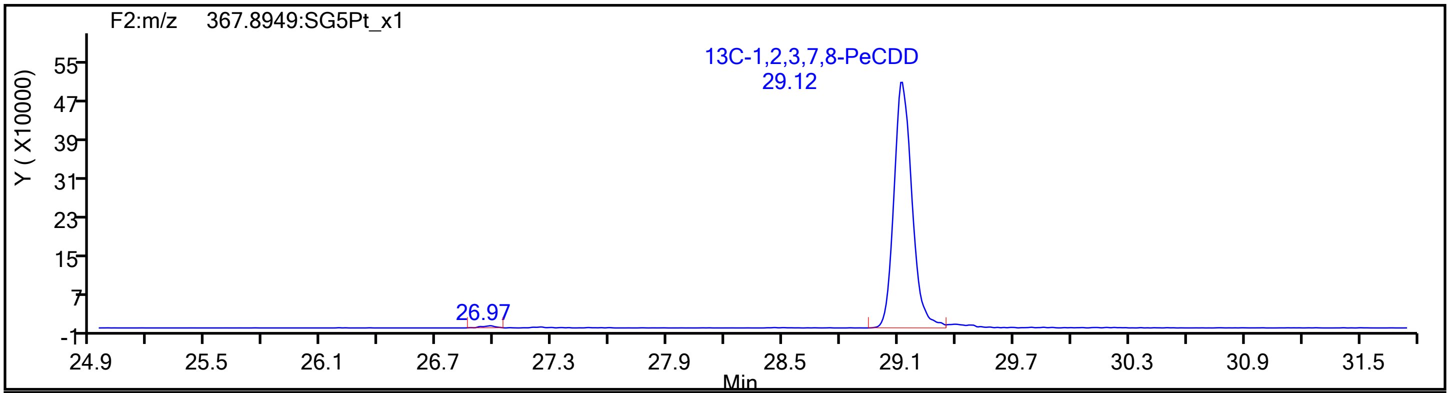

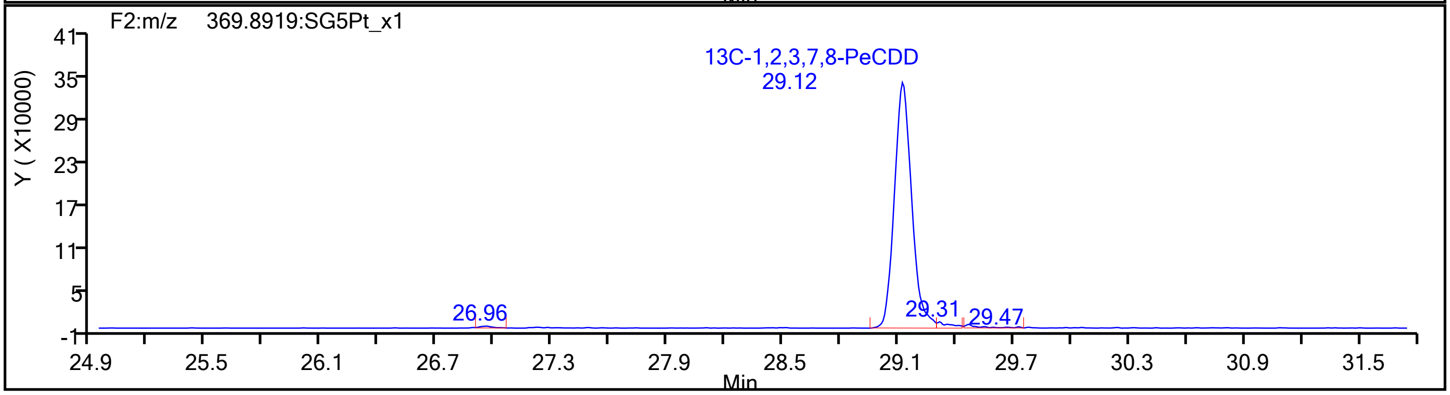

Report Date: 18-Oct-2021 13:41:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID: 11215702-T=1hr-Settle
Worklist#: 534320 Sample Line#: 11
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

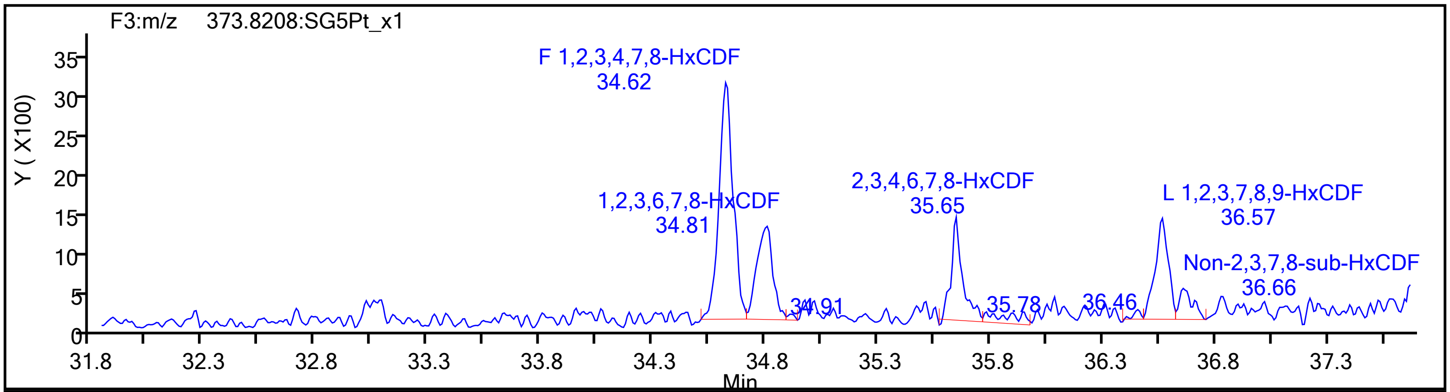

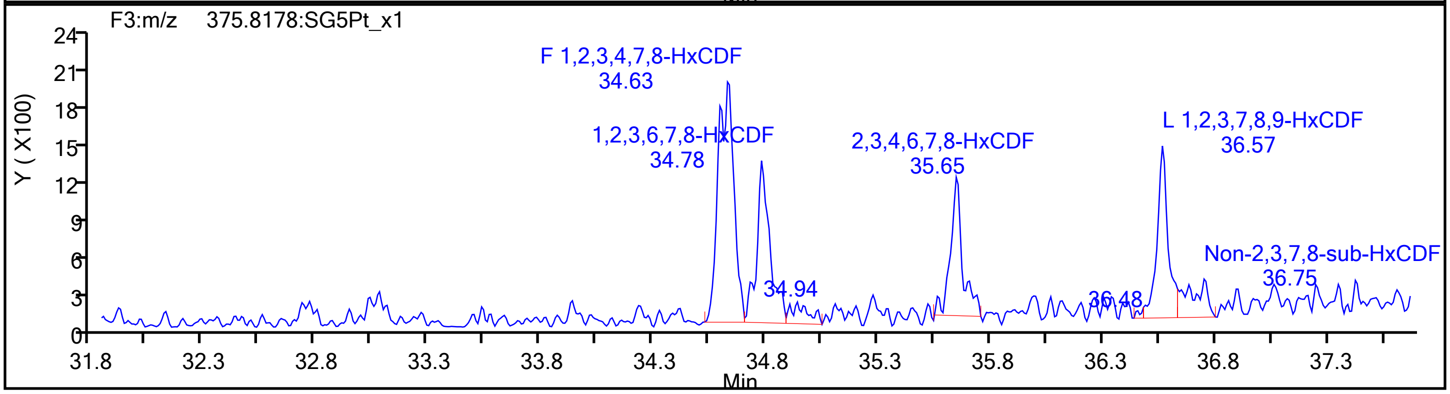

HxCDF Standards

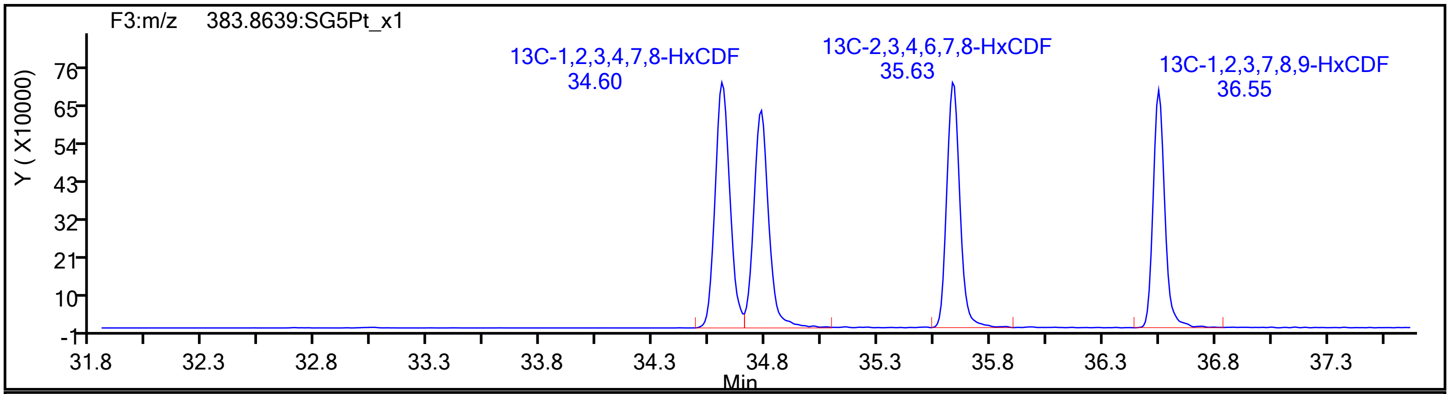

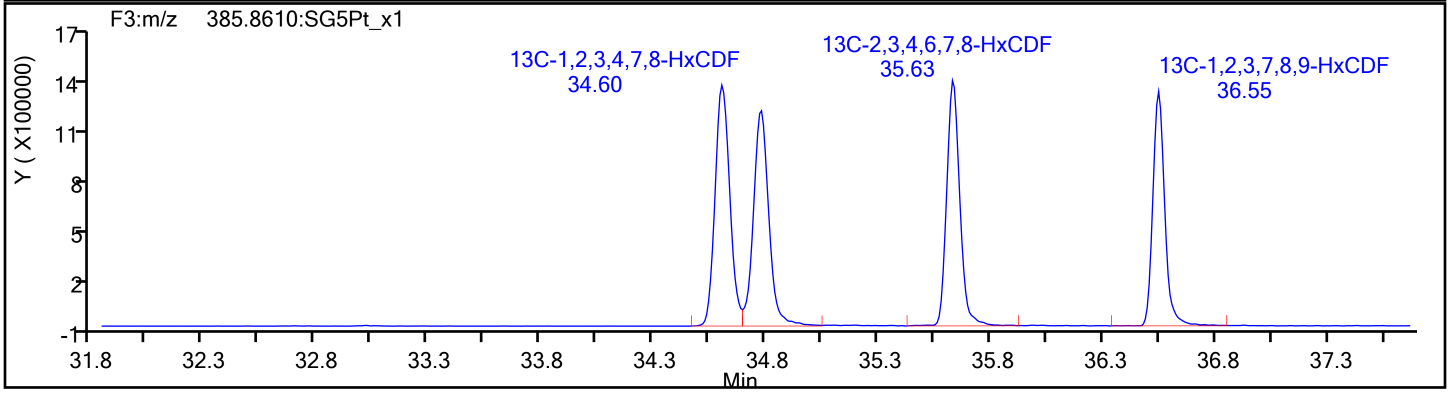

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

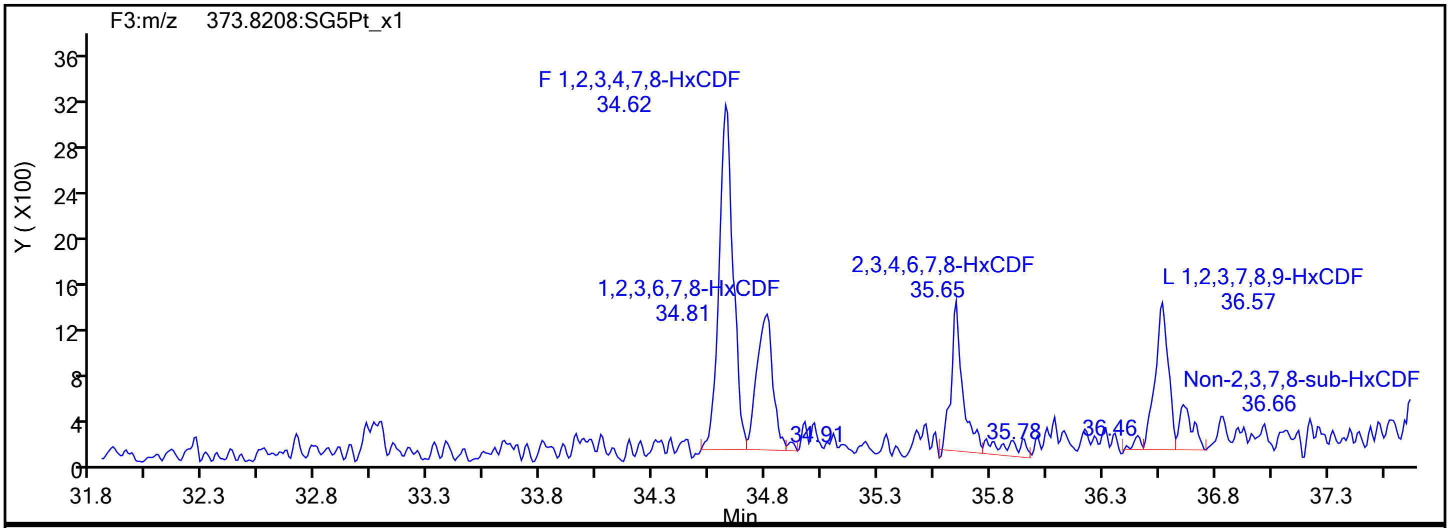

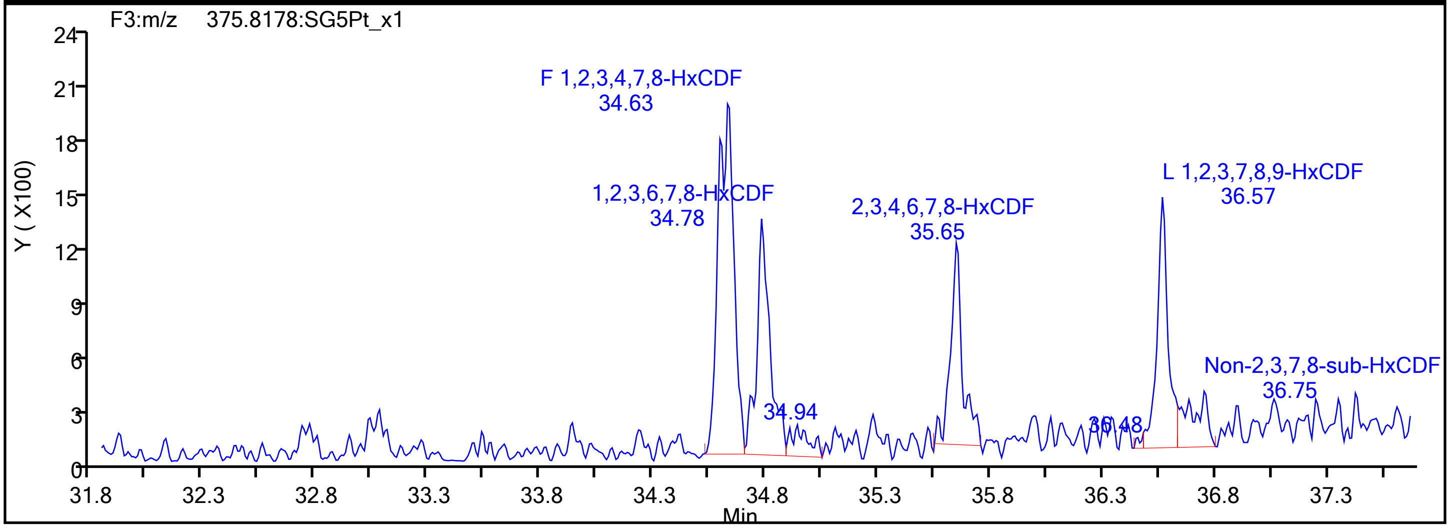

HxCDF Interference Mass

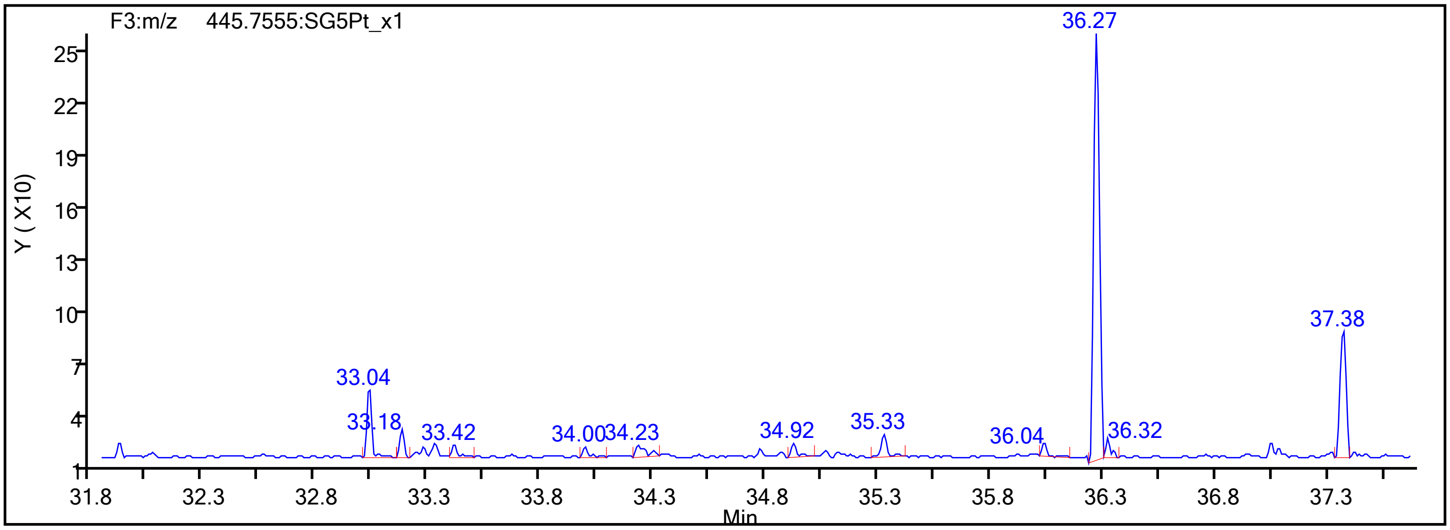

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date: 15-Oct-2021 18:15:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-T=1hr-Settle

Worklist#: 534320 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

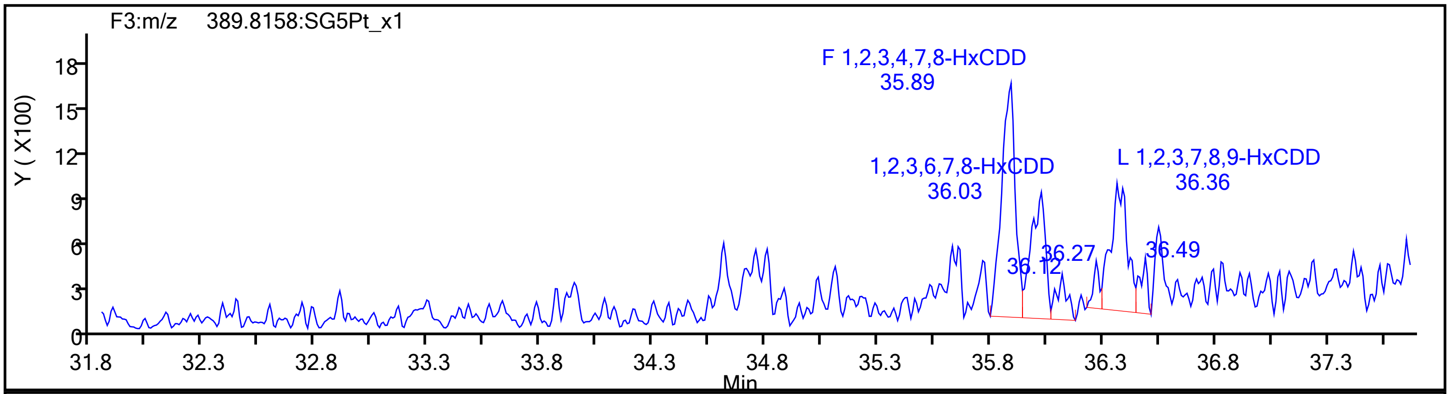

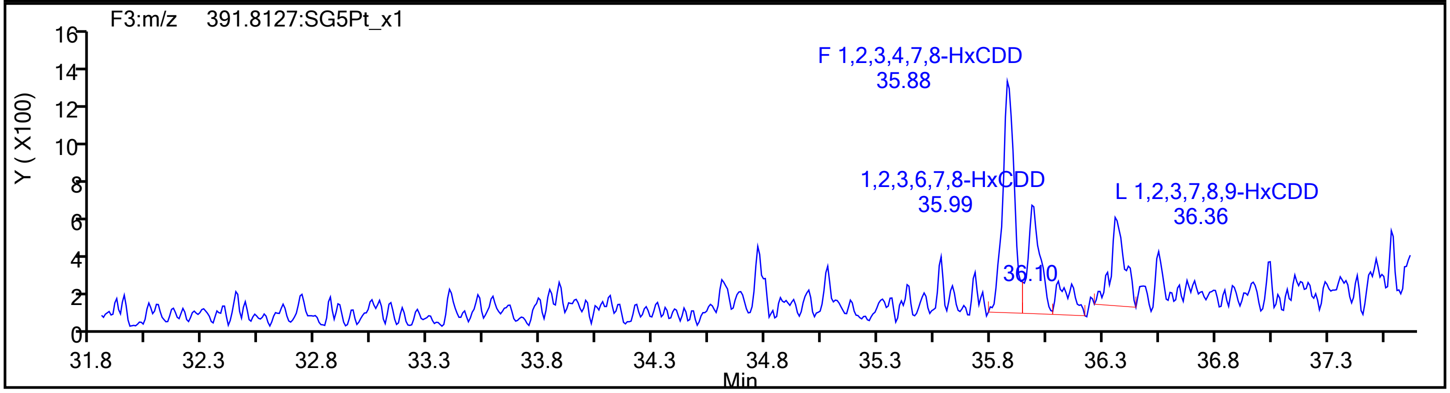

HxCDD Standards

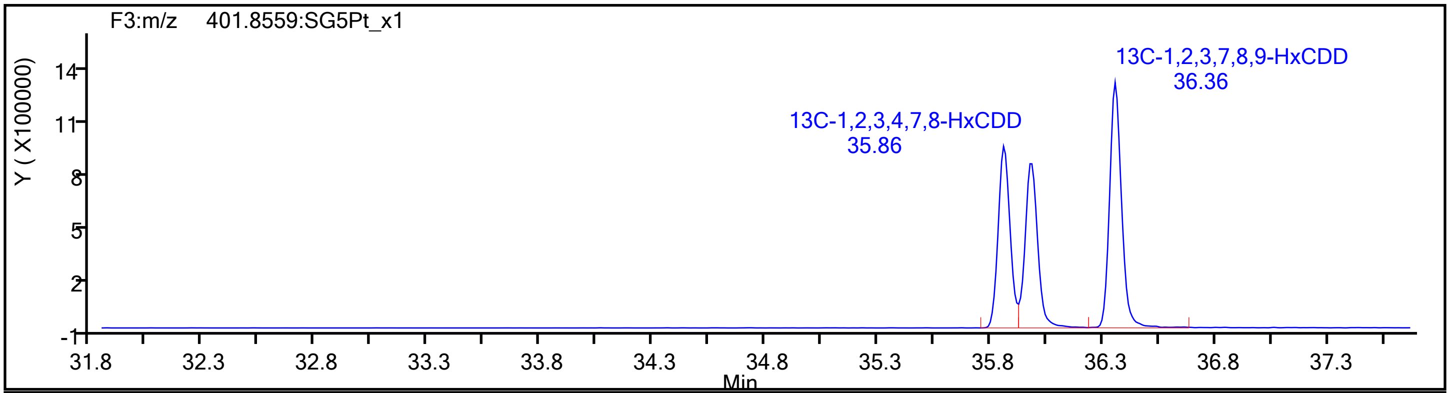

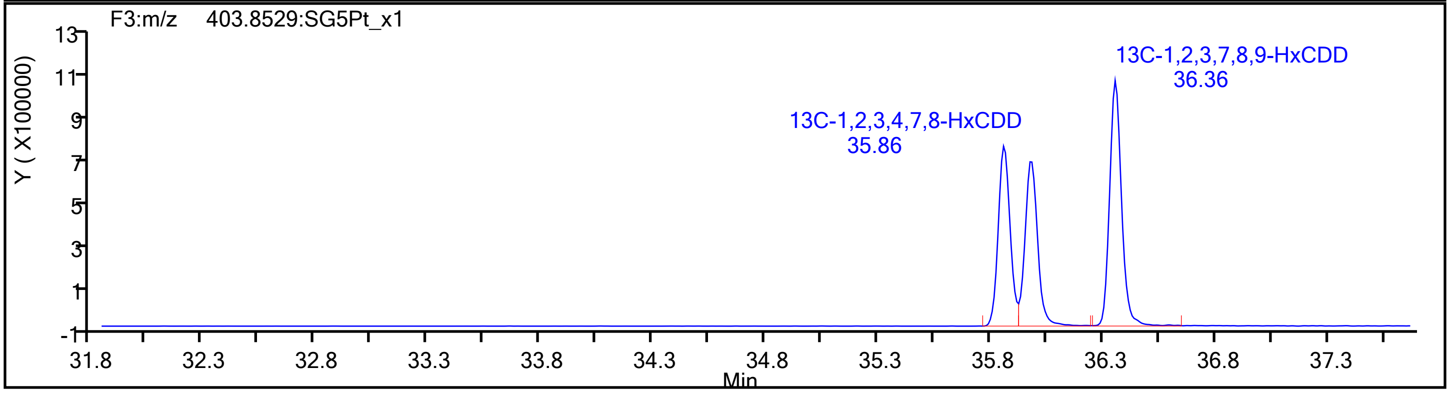

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

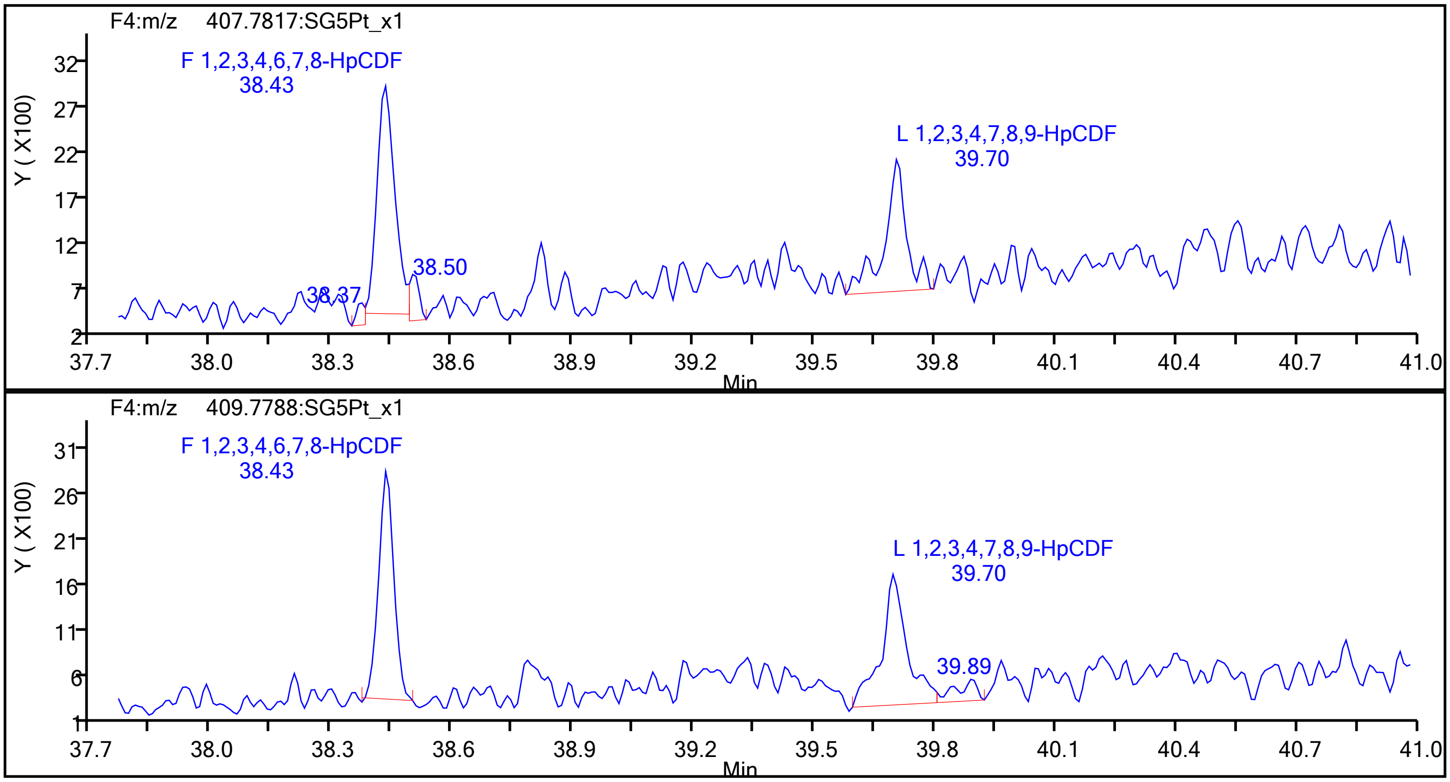

HpCDF Standards

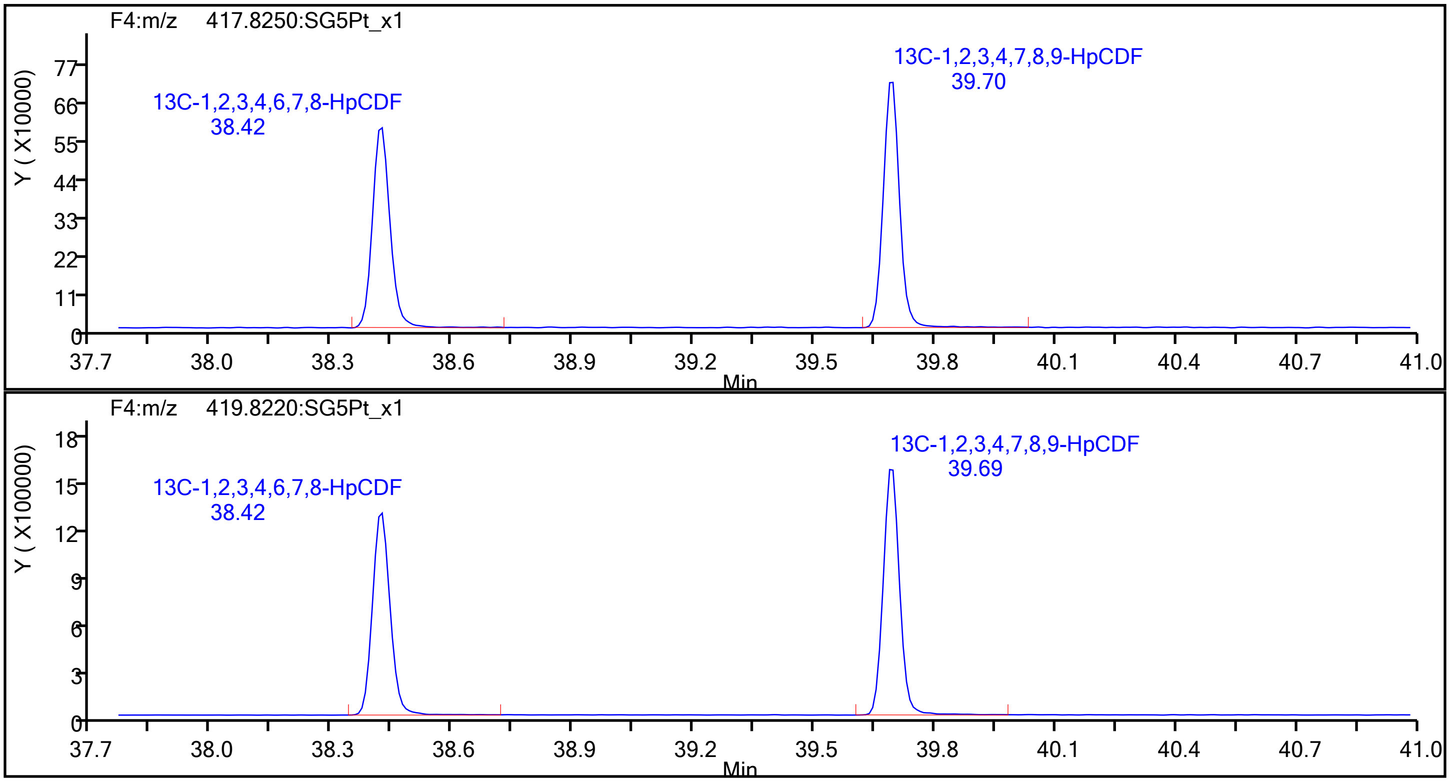

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date: 15-Oct-2021 18:15:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-T=1hr-Settle

Worklist#: 534320

Sample Line#: 11

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

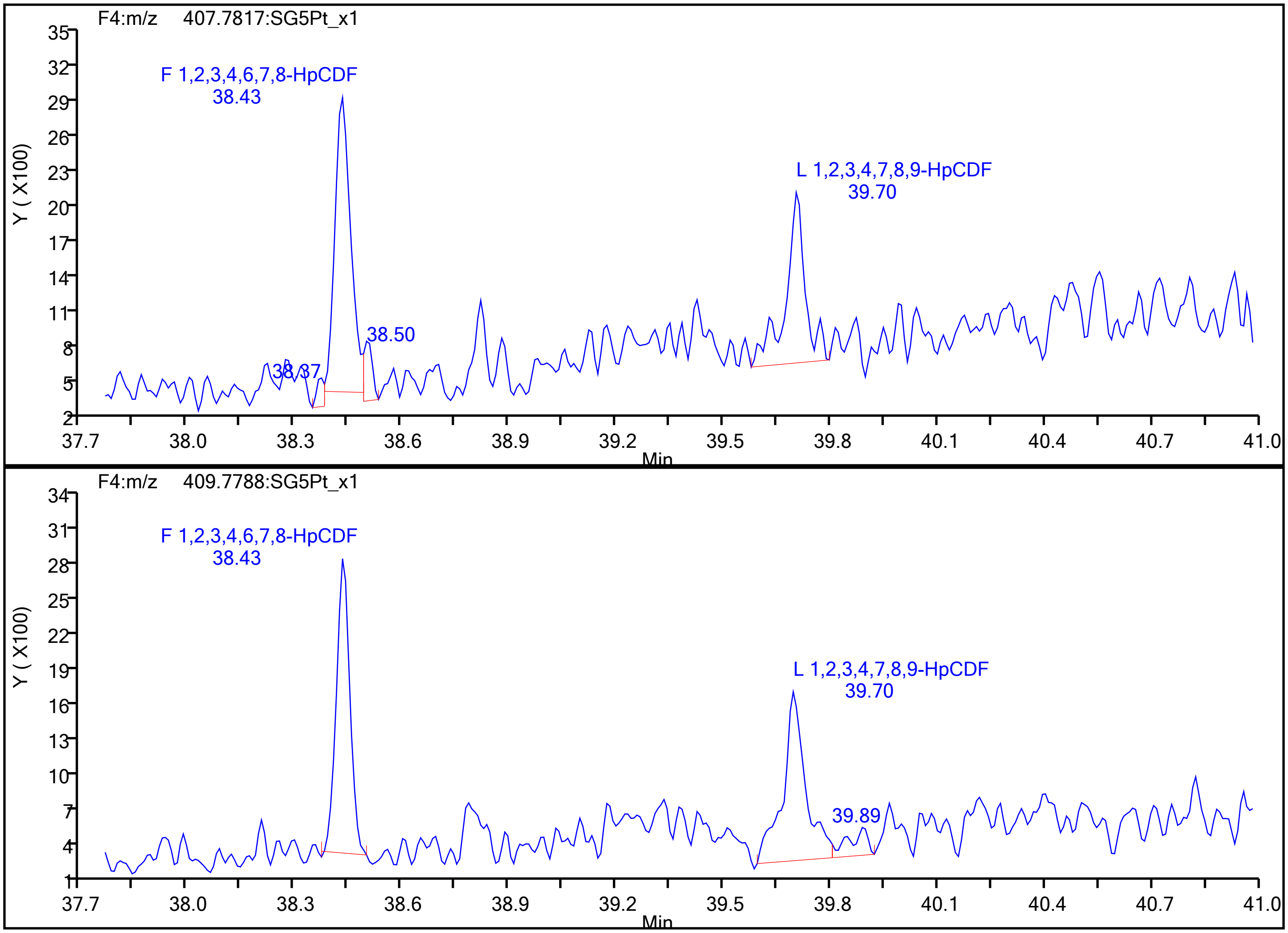

HpCDF Interference Mass

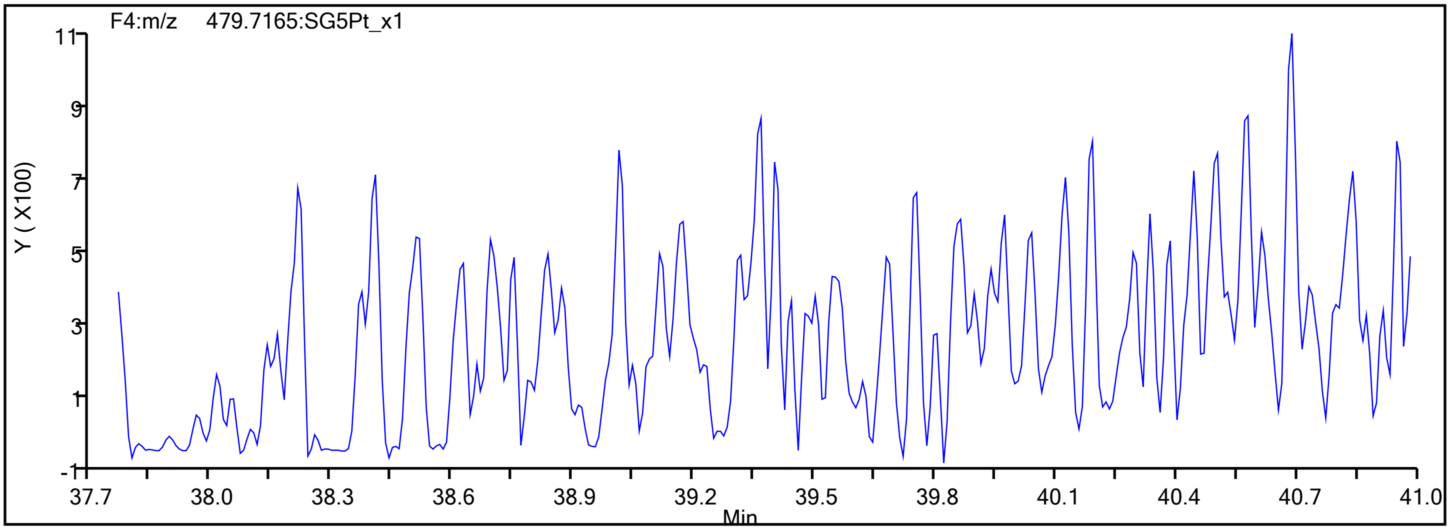

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d

Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

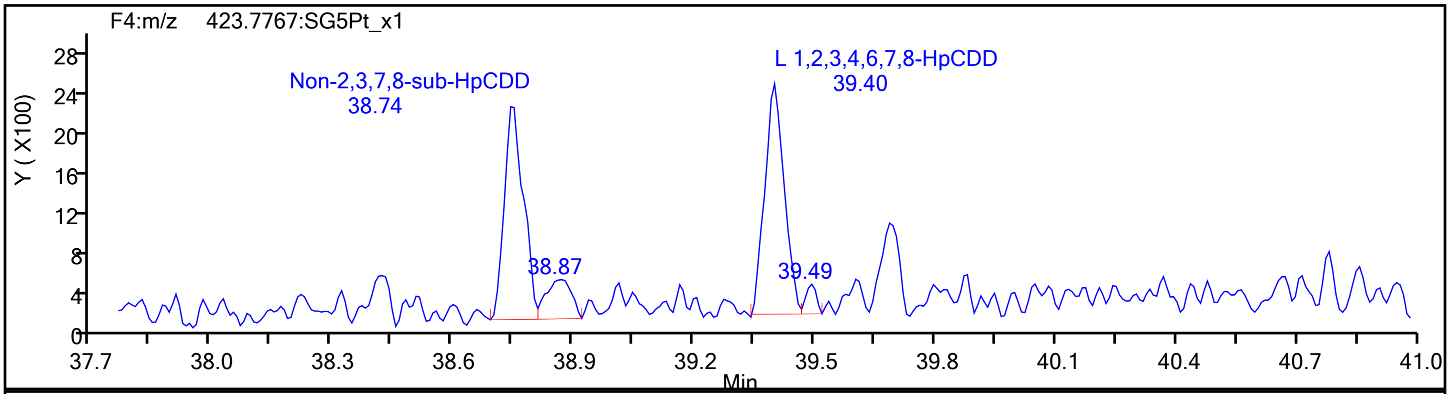

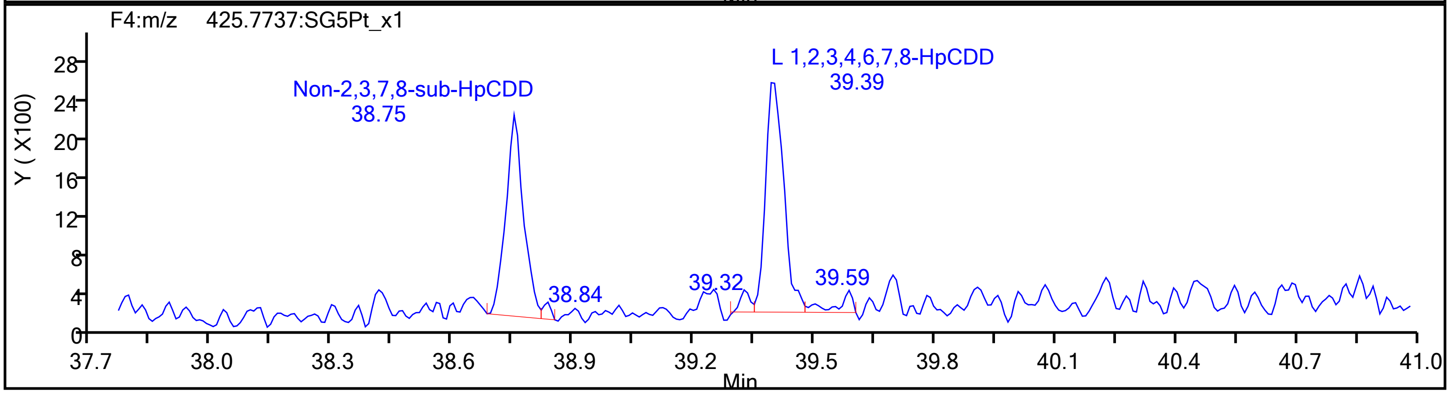

HpCDD Standards

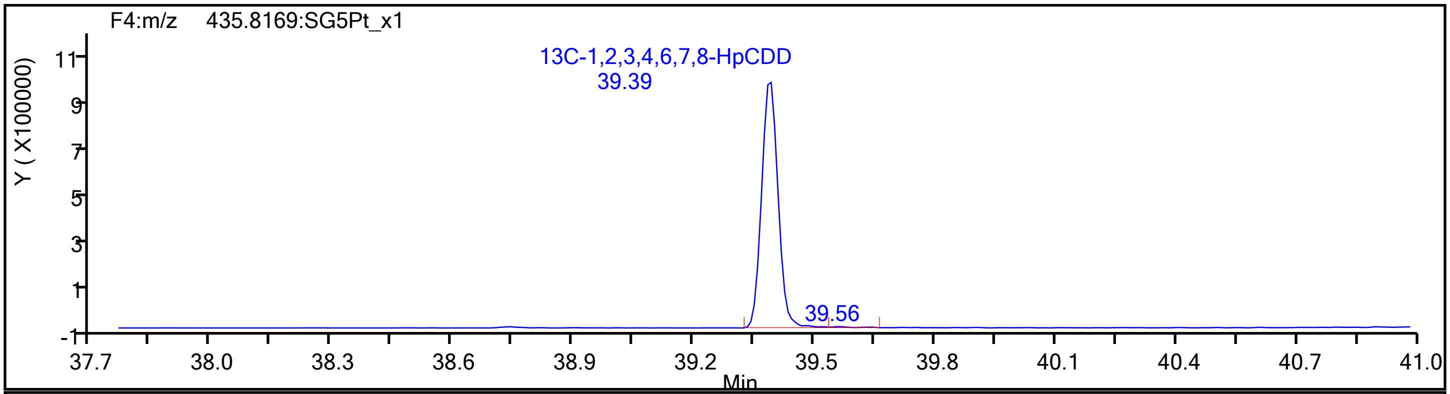

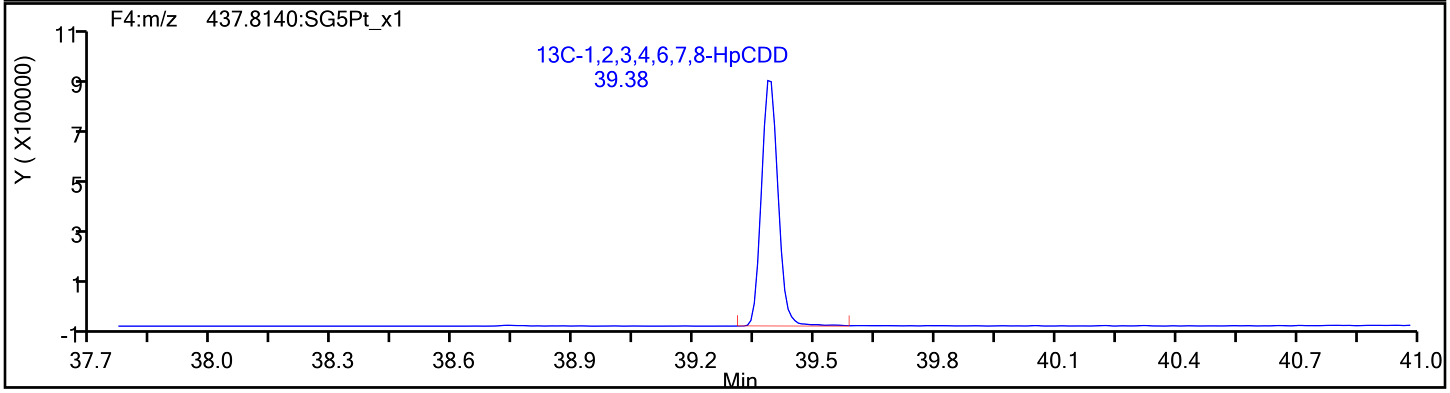

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

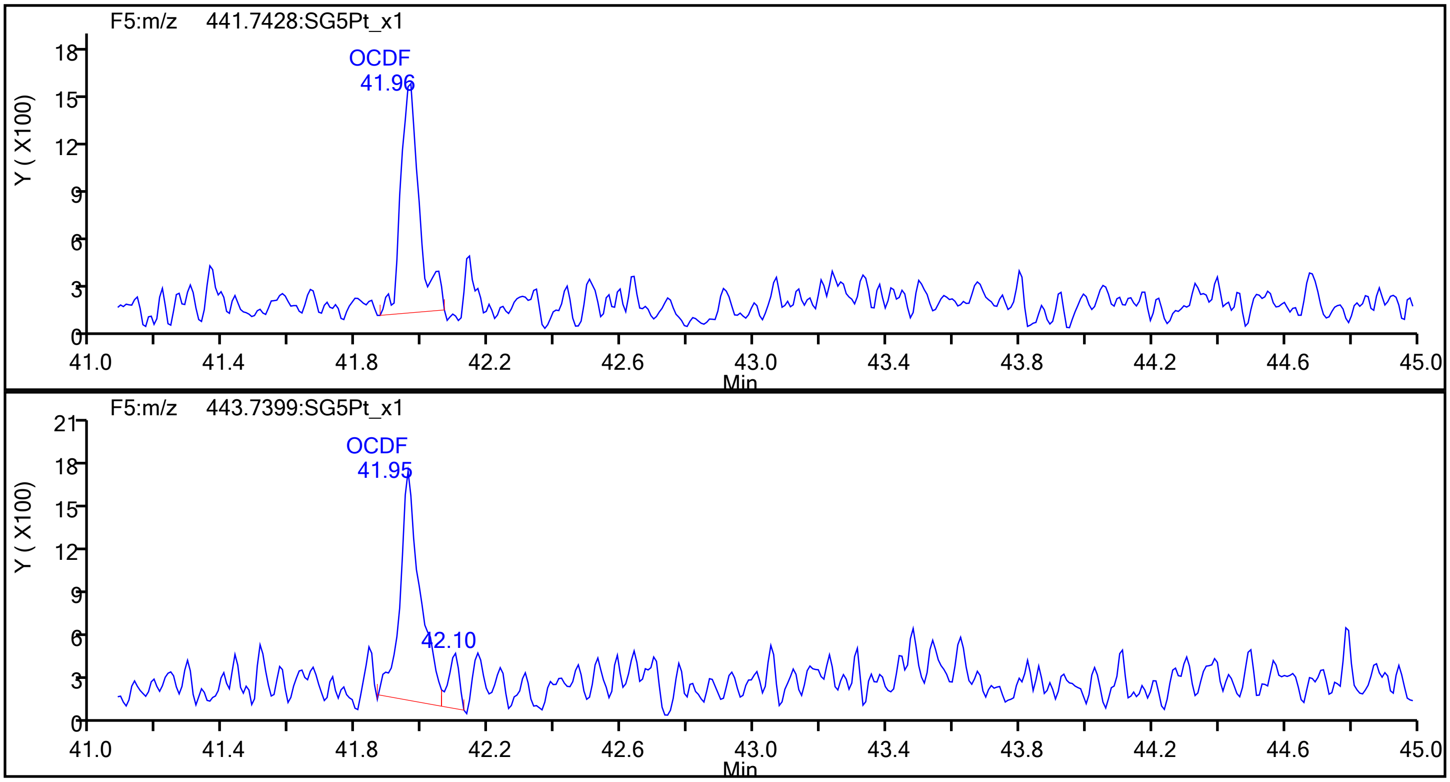

OCDF Standards

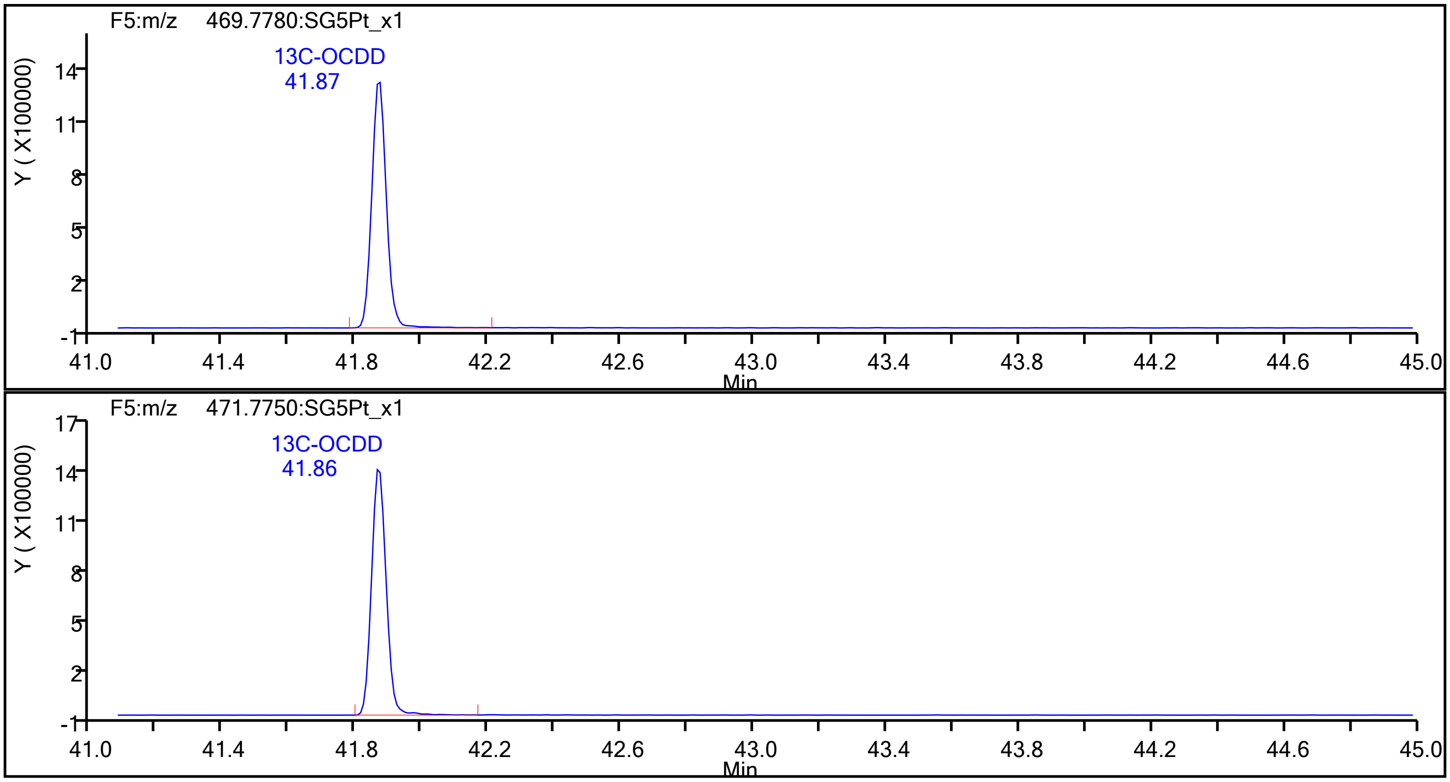

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

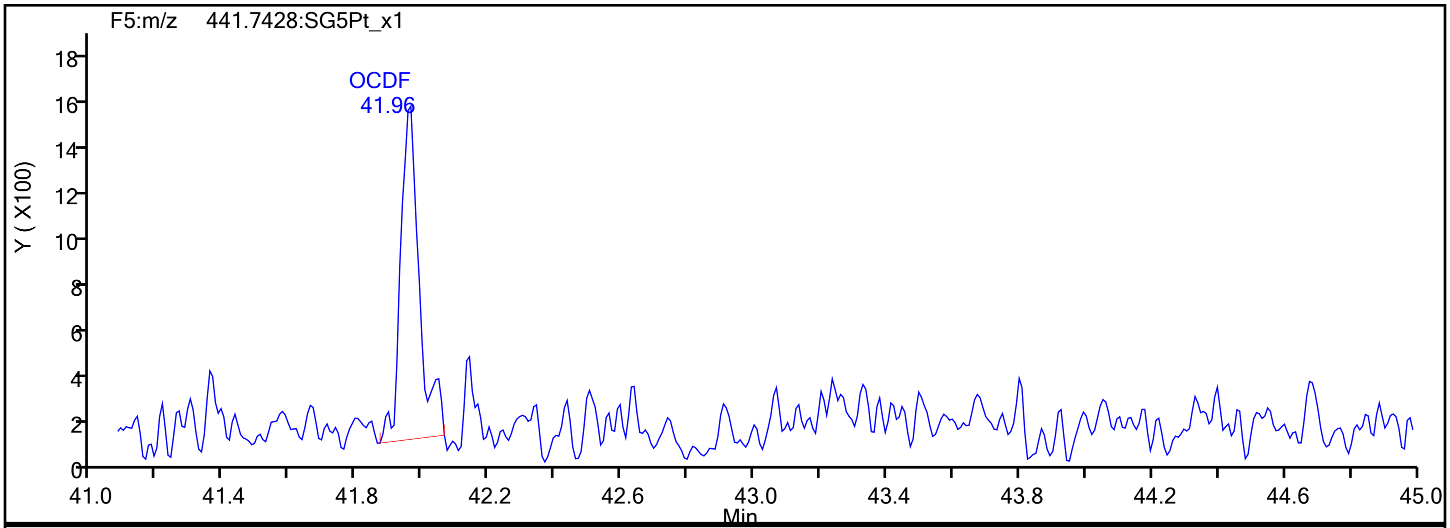

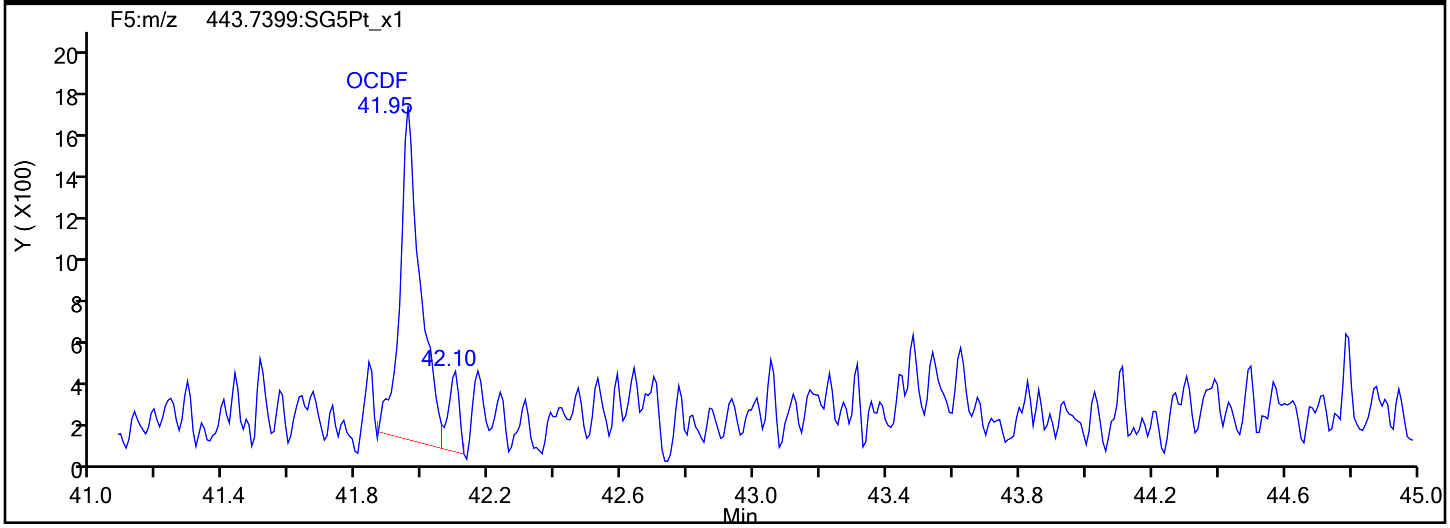

OCDF Interference Mass

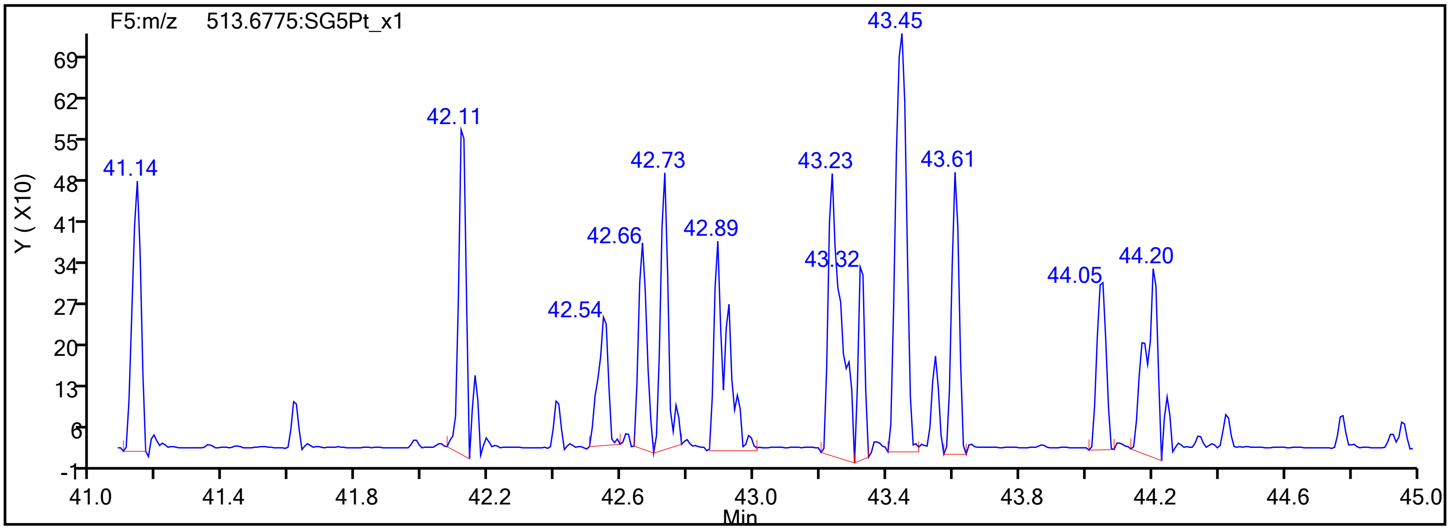

Report Date: 18-Oct-2021 13:41:59　Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d
Injection Date: 15-Oct-2021 18:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-T=1hr-Settle
Worklist#: 534320
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

OCDD

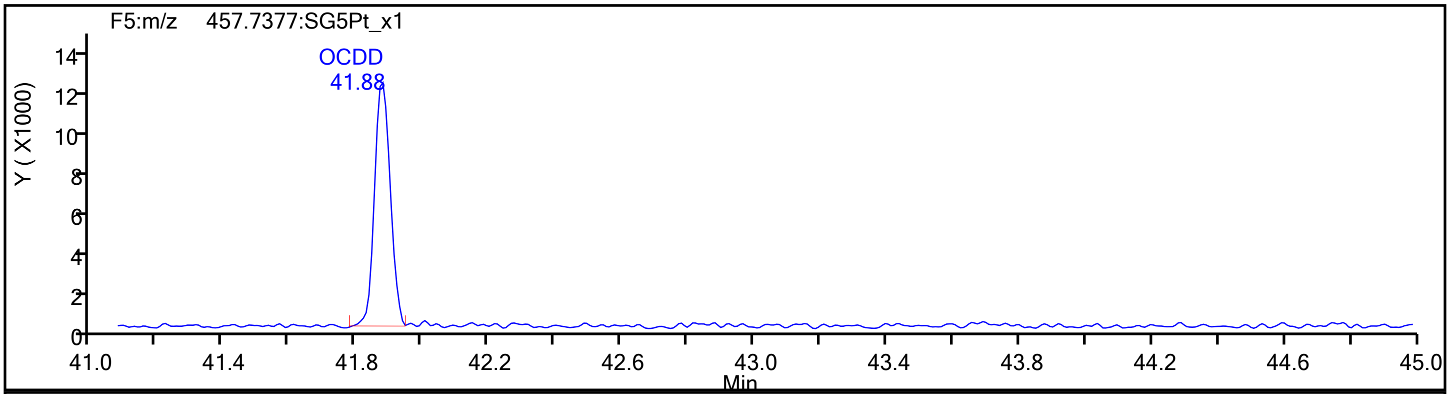

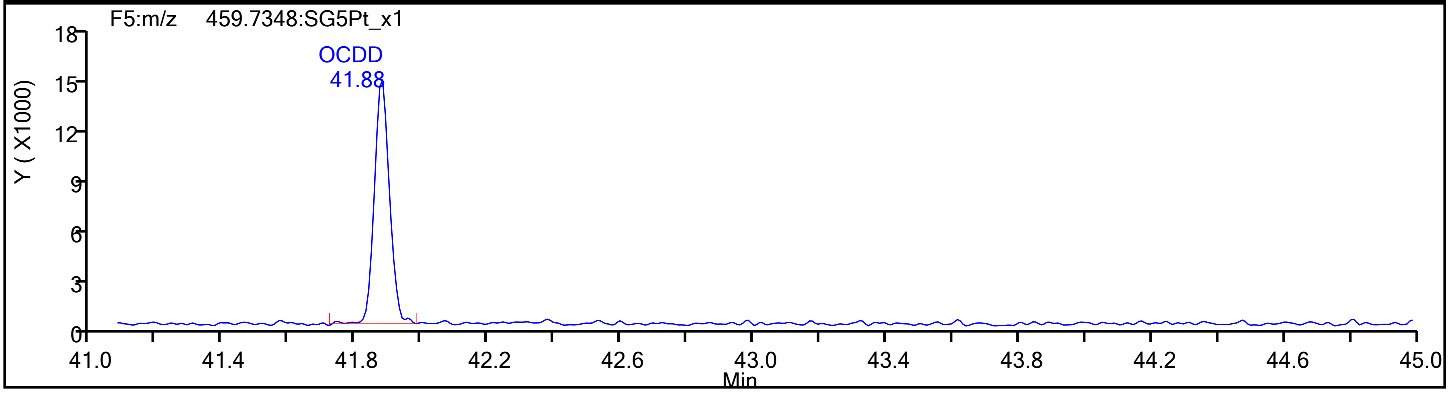

OCDD Standards

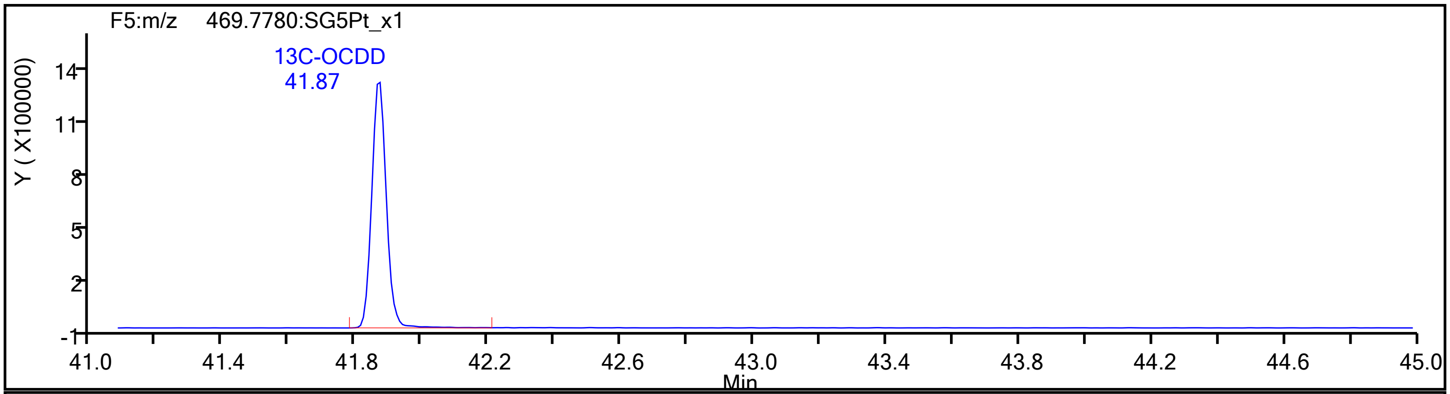

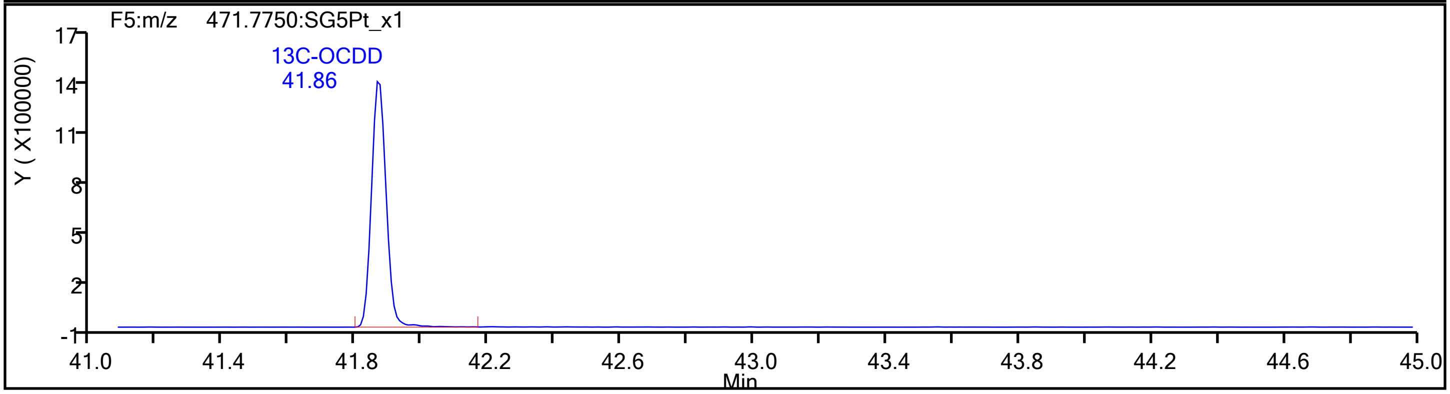

Report Date: 18-Oct-2021 13:41:59 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

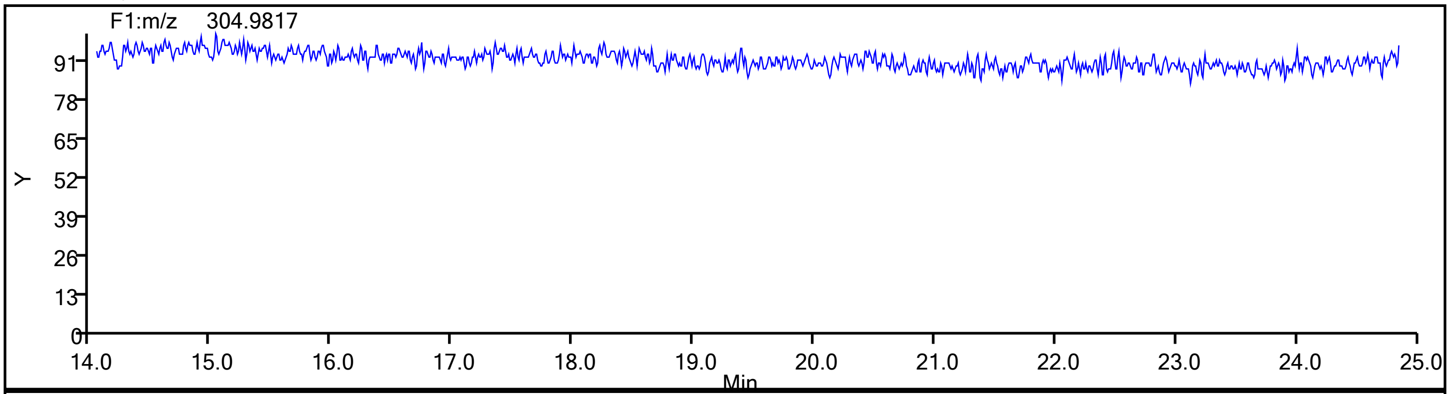

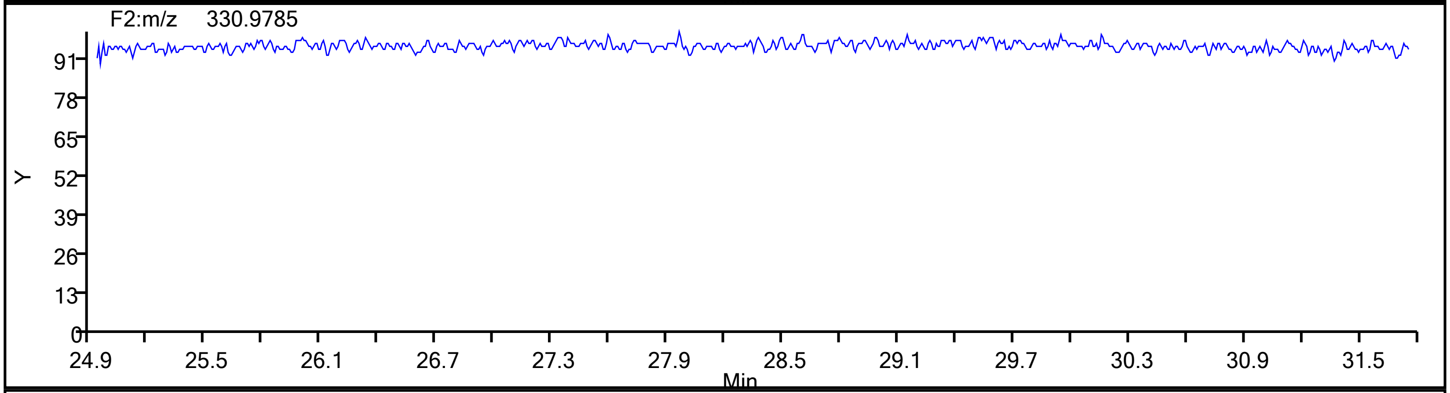

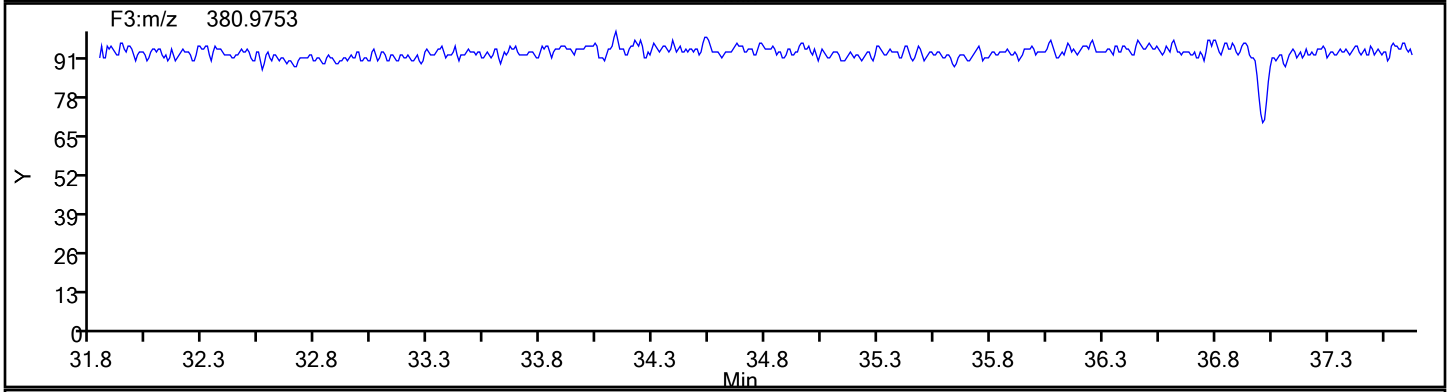

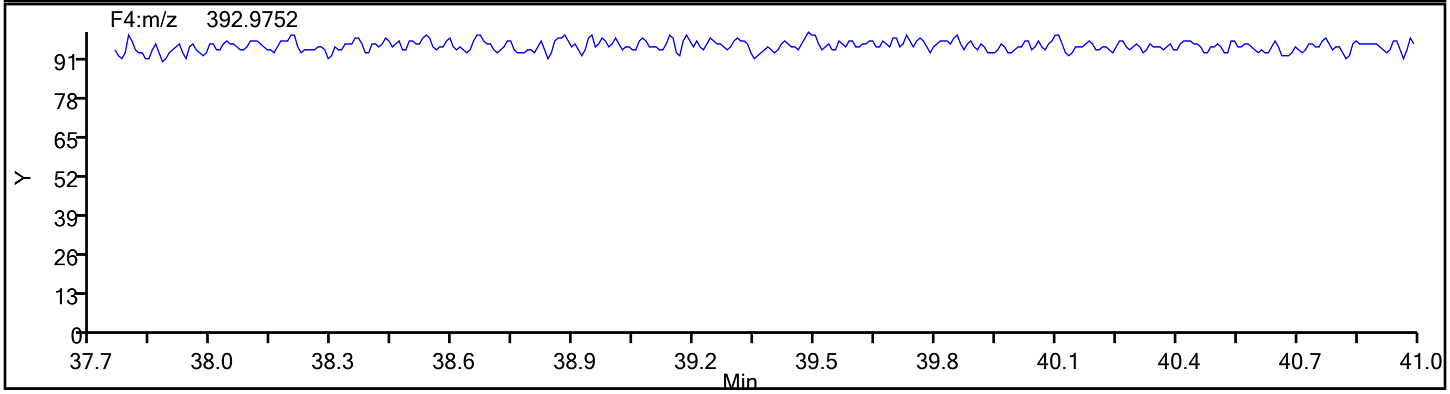

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_12.d		
Injection Date:	15-Oct-2021 18:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	534320	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

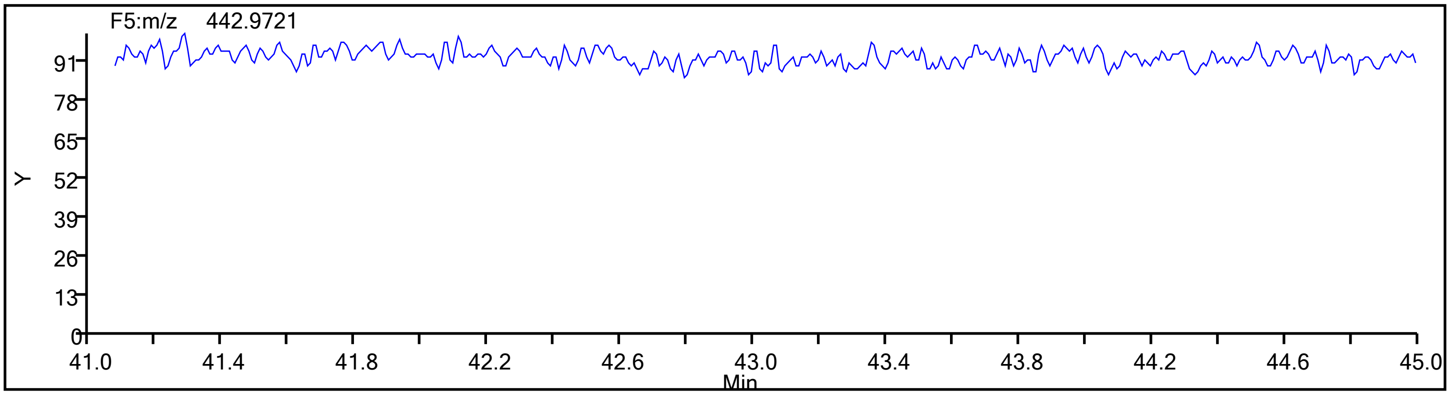

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-79918-1

SDG No.:

Client Sample ID: 11215702-T=1hr-Settle RA

Lab Sample ID: 320-79918-2 RA

Matrix: Water

Lab File ID: 18OC2111D2_008.d

Analysis Method: 1613B

Date Collected: 10/05/2021 15:00

Extract. Method: 1613B

Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1050.9(mL)

Date Analyzed: 10/18/2021 16:15

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 1

Injection Volume: 2(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 535163

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	56		9.5	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	143		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	92		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d				
Lims ID:	320-79918-A-2-A				
Client ID:	11215702-T=1hr-Settle				
Sample Type:	Client				
Inject. Date:	18-Oct-2021 16:15:40	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	320-79918-A-2-A				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Oct-2021 09:28:02	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				
First Level Reviewer: bennettd		Date:	19-Oct-2021 09:27:35		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.122	69603602	0.78	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.438	97497825	0.78	0.9820	142.6	142.6	0.3371	0.3371	143	
2,3,7,8-TCDF	17.466	2708966	0.75	0.9474	2.933	2.933	0.0611	0.0611		M
D 13C-2,3,7,8-TCDD	15.916	45982444	0.78	0.7189	91.9	91.9	0.6018	0.6018	91.89	
2,3,7,8-TCDD	15.957	482261	0.76	0.9807	1.069	1.069	0.1508	0.1508		
$ 37Cl4-2,3,7,8-TCDD	15.943	18830052		0.7344	36.8	36.8	0.0938	0.0938	92.09	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Report Date: 19-Oct-2021 09:28:20 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d
Lims ID: 320-79918-A-2-A
Client ID: 11215702-T=1hr-Settle
Sample Type: Client
Inject. Date: 18-Oct-2021 16:15:40 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-A-2-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2021 09:28:02 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bennettd Date: 19-Oct-2021 09:27:35

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.122	16.120	0		30508397	6407388	12631	31577	507		
333.9339	16.135	16.120	1		39095205	8227889	12695	31737	648	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.438	17.423	1	1.082	42724428	7880196	9323	23307	845		
317.9389	17.438	17.423	1	1.082	54773397	10109048	10059	25147	1005	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	17.466	17.451	1	1.002	1160536	207475	1501	3752	138		
305.8987	17.452	17.451	0	1.001	1548430	297765	2663	6657	112	0.75(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	15.916	15.914	0	0.987	20197845	4603082	12631	31577	364		
333.9339	15.930	15.914	1	0.988	25784599	5844643	12695	31737	460	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.957	15.928	2	1.003	208292	36074	2837	7092	13		
321.8936	15.943	15.928	1	1.002	273969	56449	3342	8355	17	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.943	15.928	1	0.989	18830052	4169963	4033	10082	1034		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d				
Injection Date:	18-Oct-2021 16:15:40	Instrument ID:	11D2		
Lims ID:	320-79918-A-2-A	Lab Sample ID:	320-79918-2		
Client ID:	11215702-T=1hr-Settle				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT:	17.45
Area:	1588961
Amount:	2.976782
Amount Units:	pg/ul

Processing Integration Results

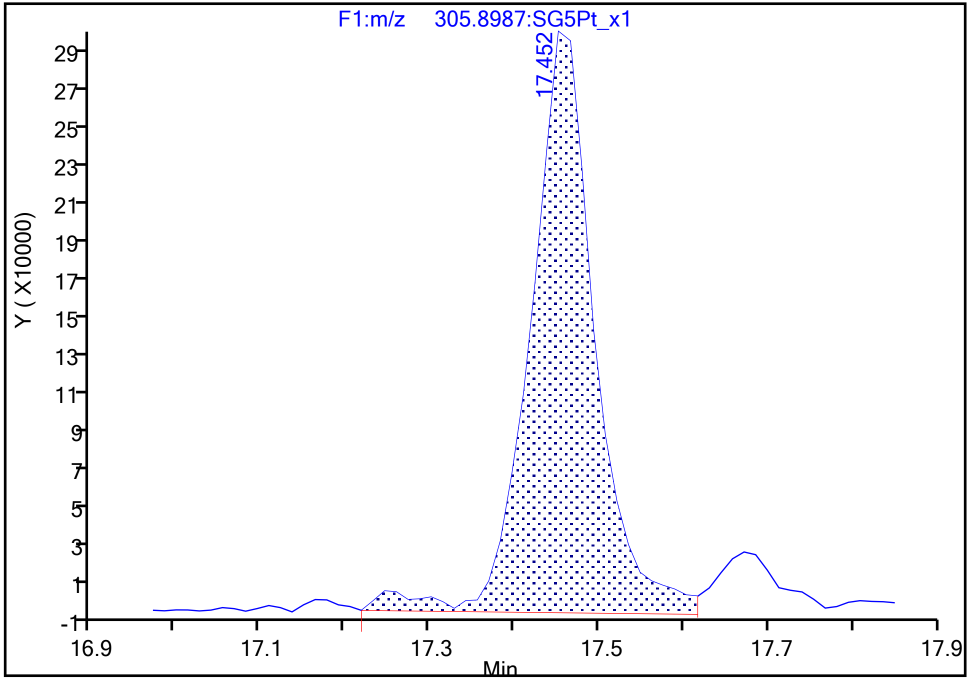

RT:	17.45
Area:	1548430
Amount:	2.932900
Amount Units:	pg/ul

Manual Integration Results

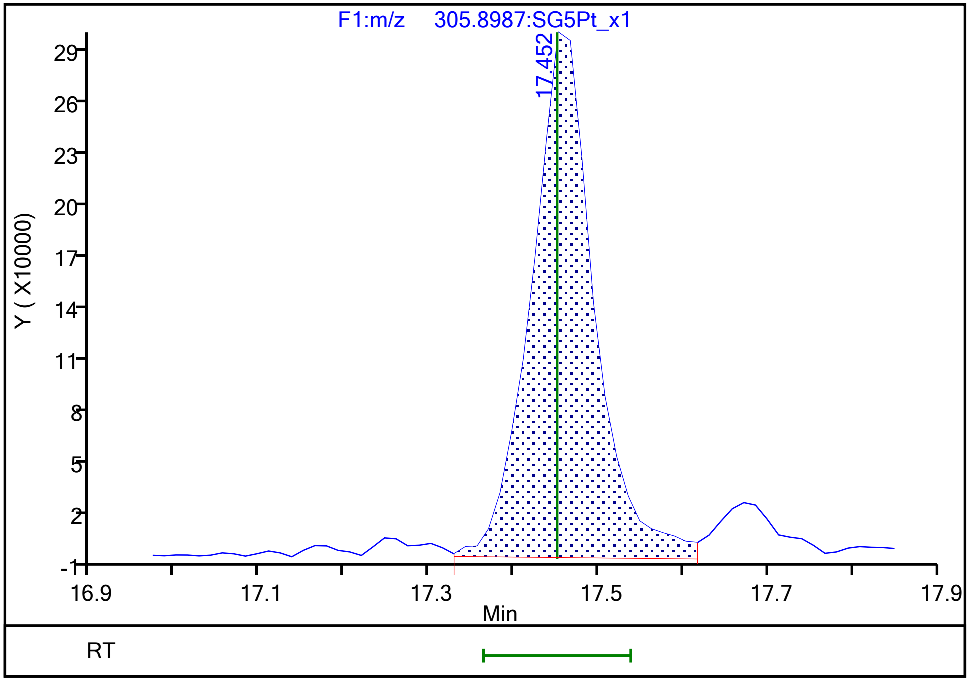

Reviewer: bennettd, 19-Oct-2021 09:27:25

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d		
Injection Date:	18-Oct-2021 16:15:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	535163	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

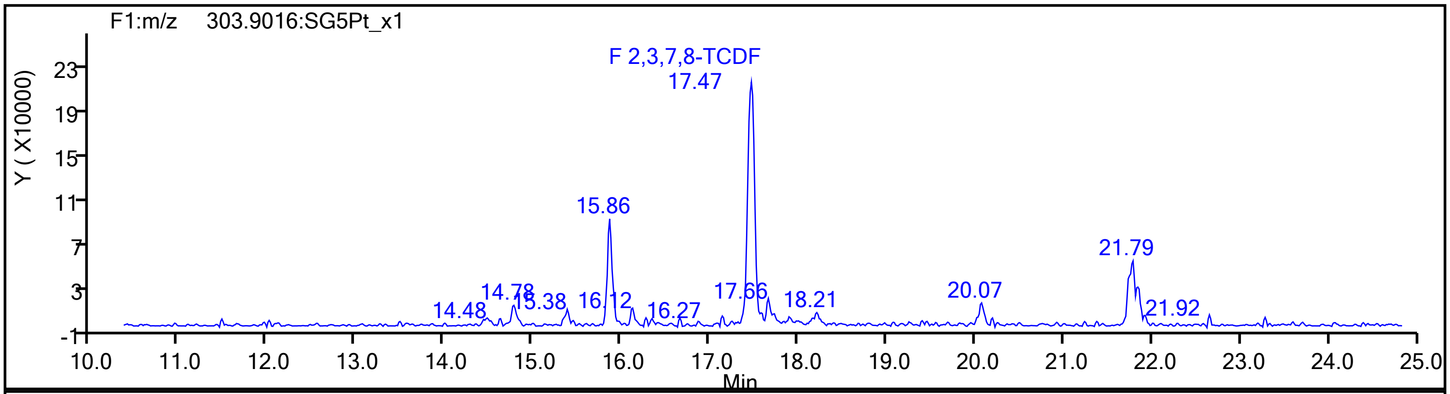

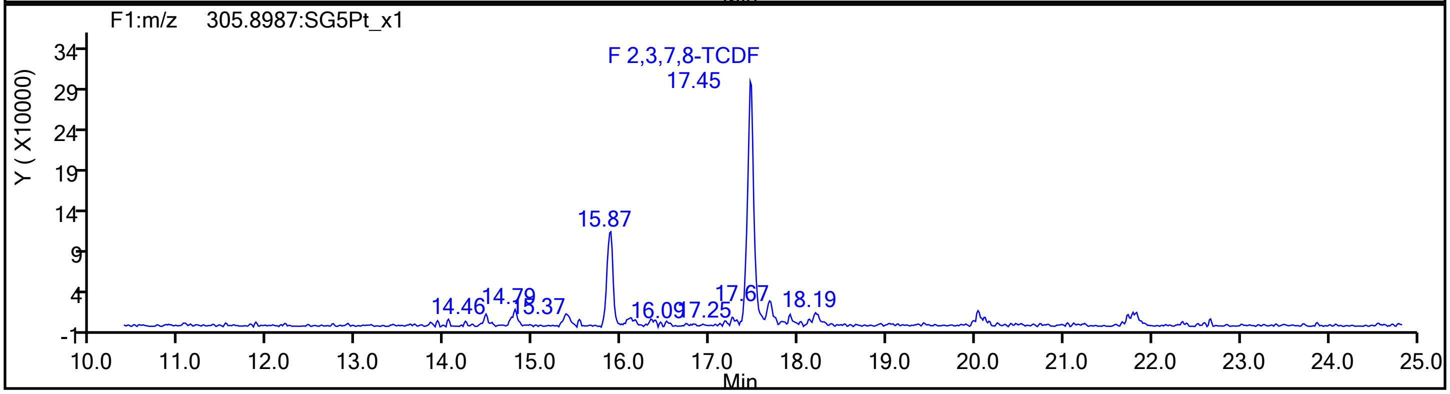

TCDF Standards

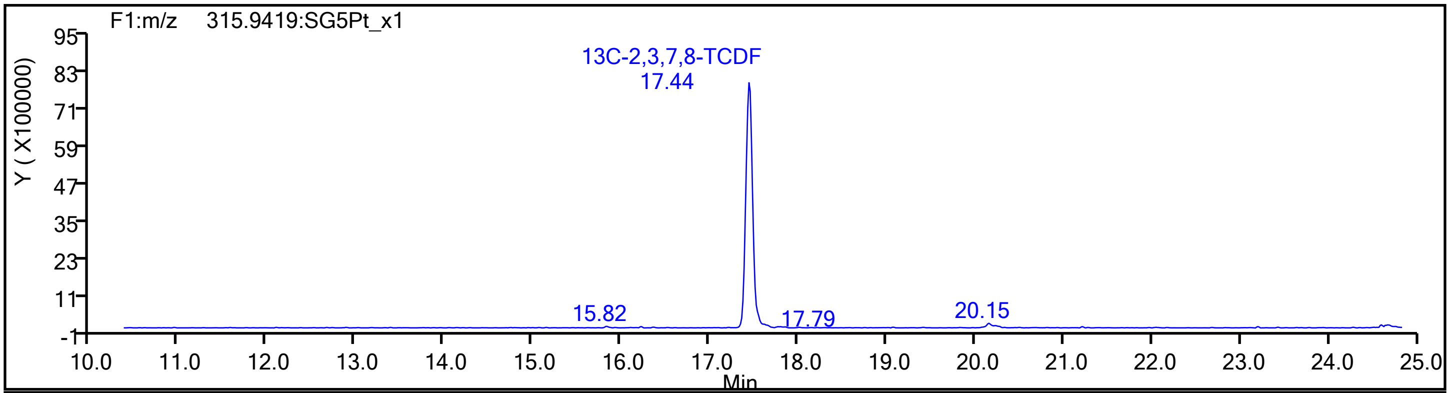

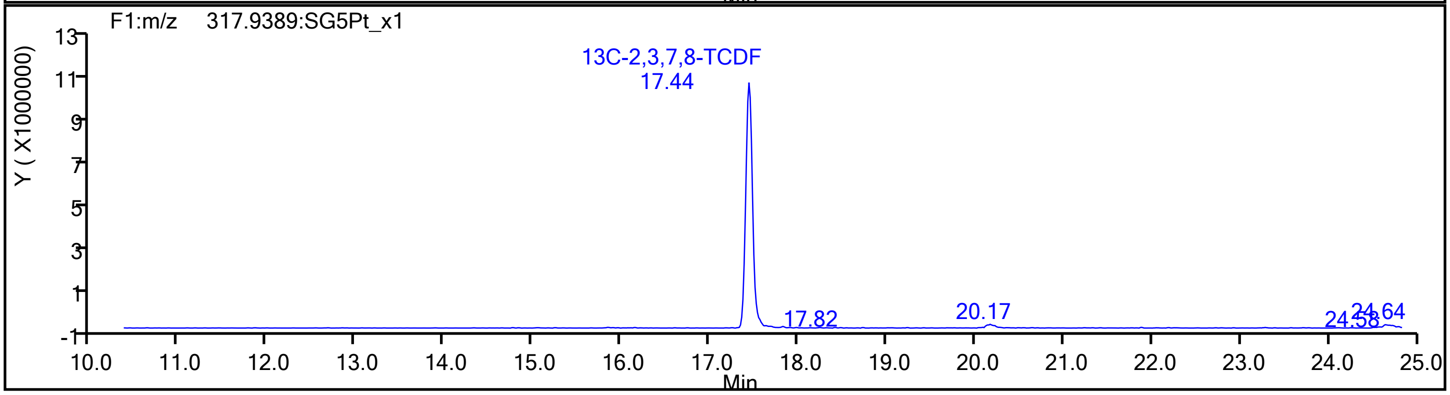

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d		
Injection Date:	18-Oct-2021 16:15:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	535163	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

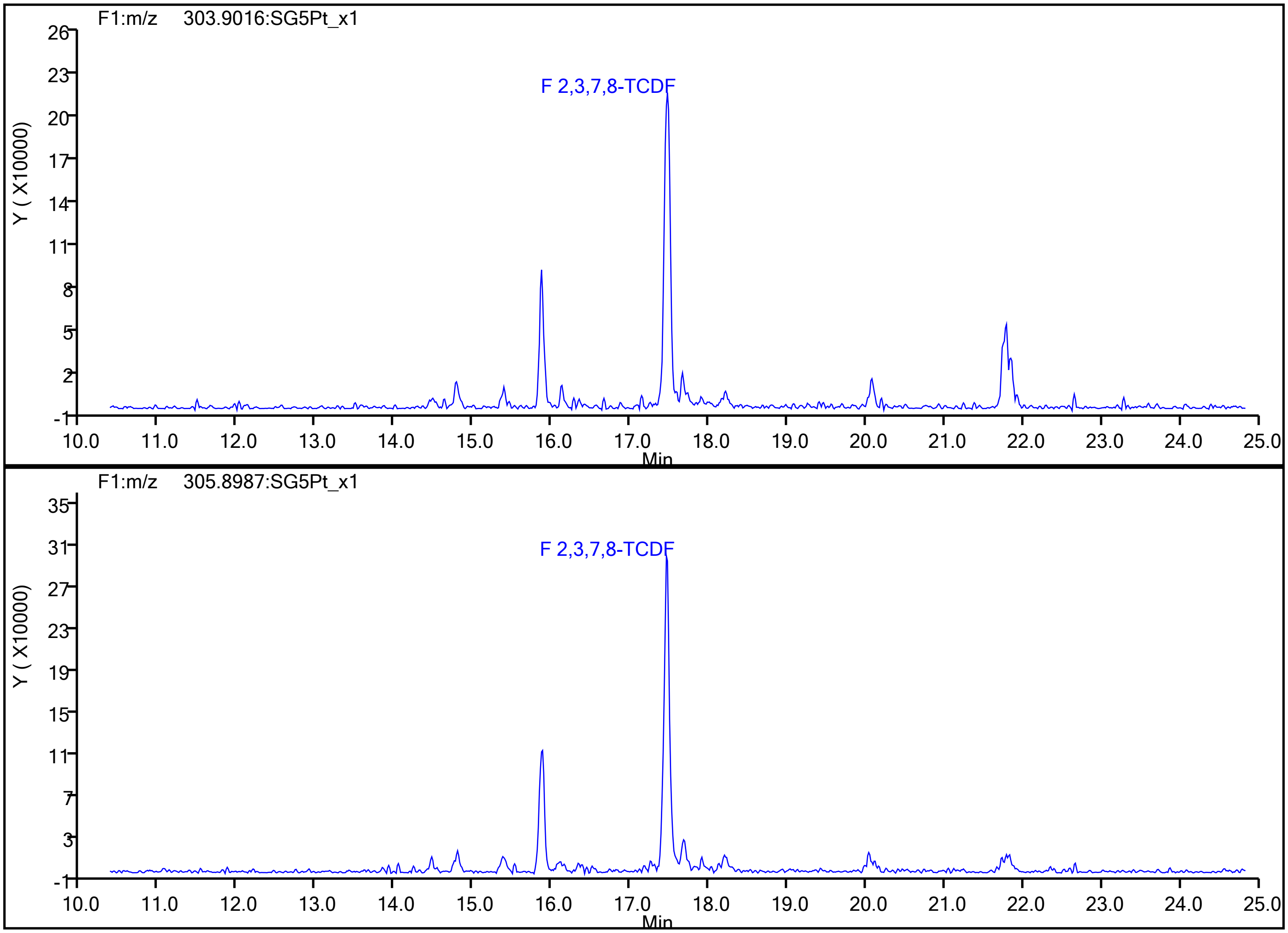

TCDF Interference Mass

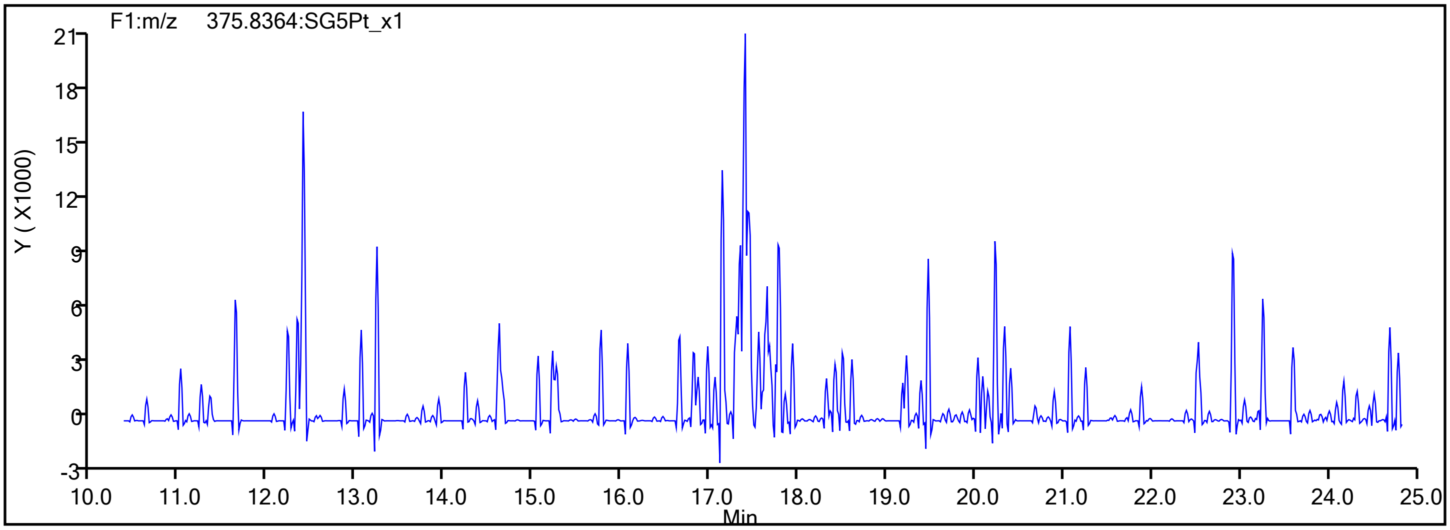

Report Date: 19-Oct-2021 09:28:21 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d

Injection Date:	18-Oct-2021 16:15:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	535163	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

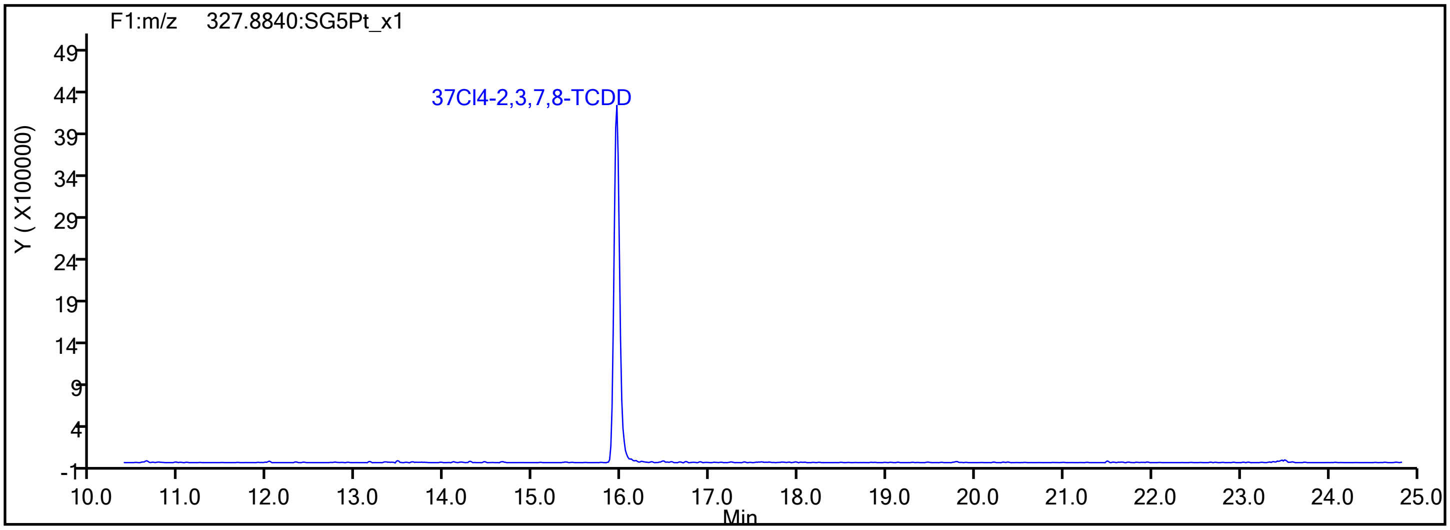

37Cl4-TCDD Standards

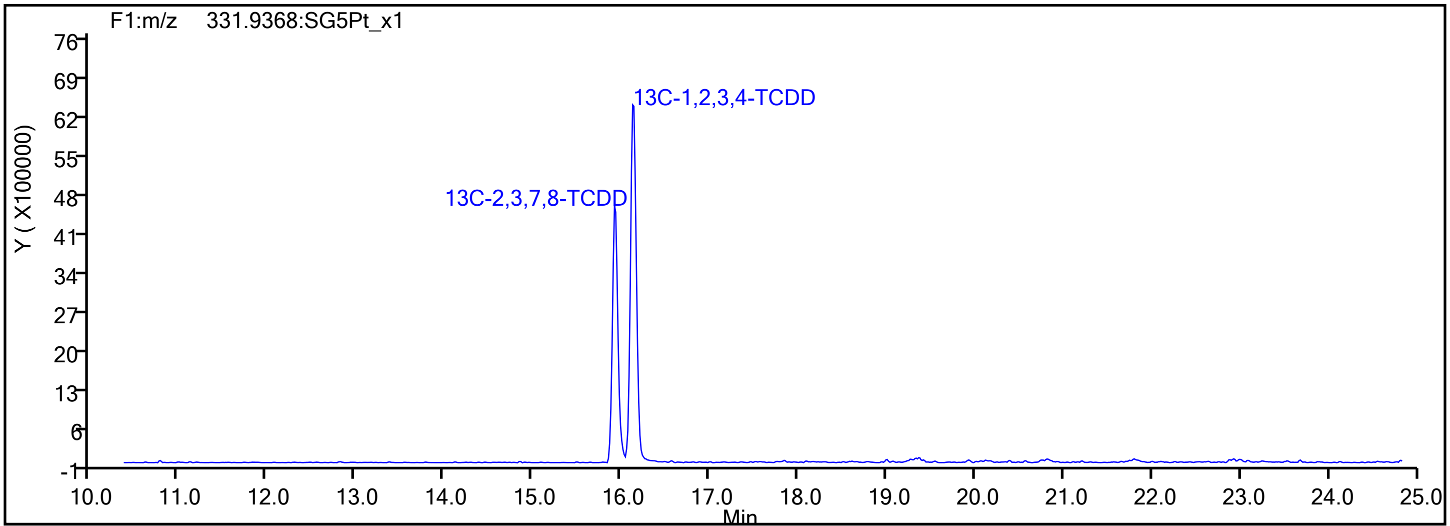

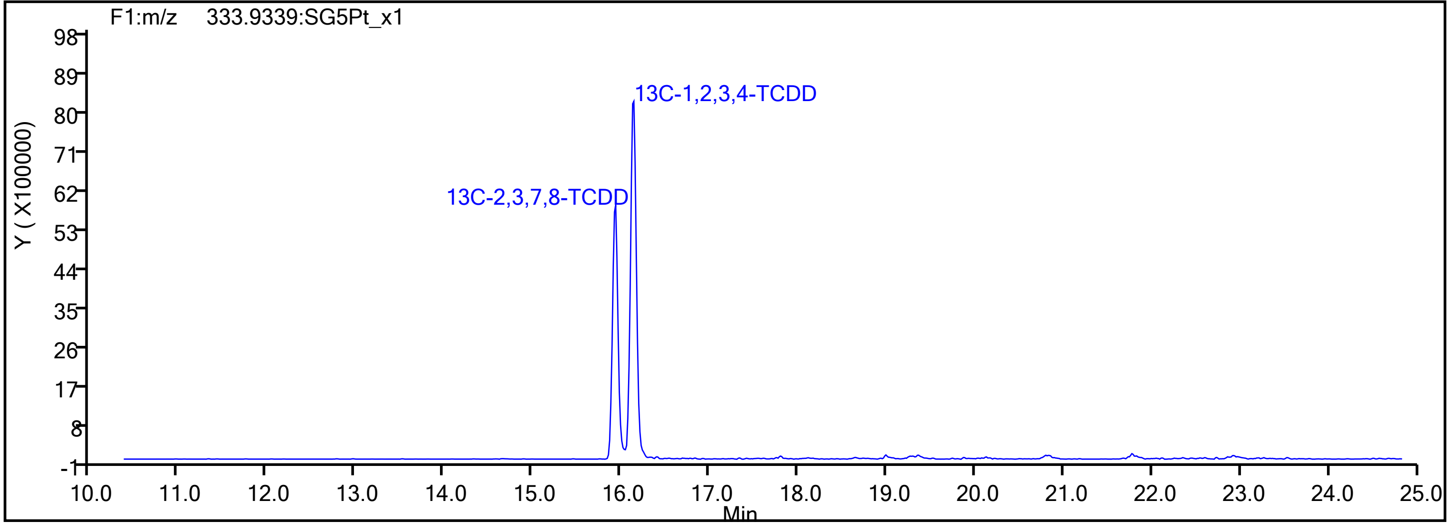

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_008.d

Injection Date:	18-Oct-2021 16:15:40	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-T=1hr-Settle		
Worklist#:	535163	Sample Line#:	8
Column Type:	DB-225	Column Dia:	0.32 mm

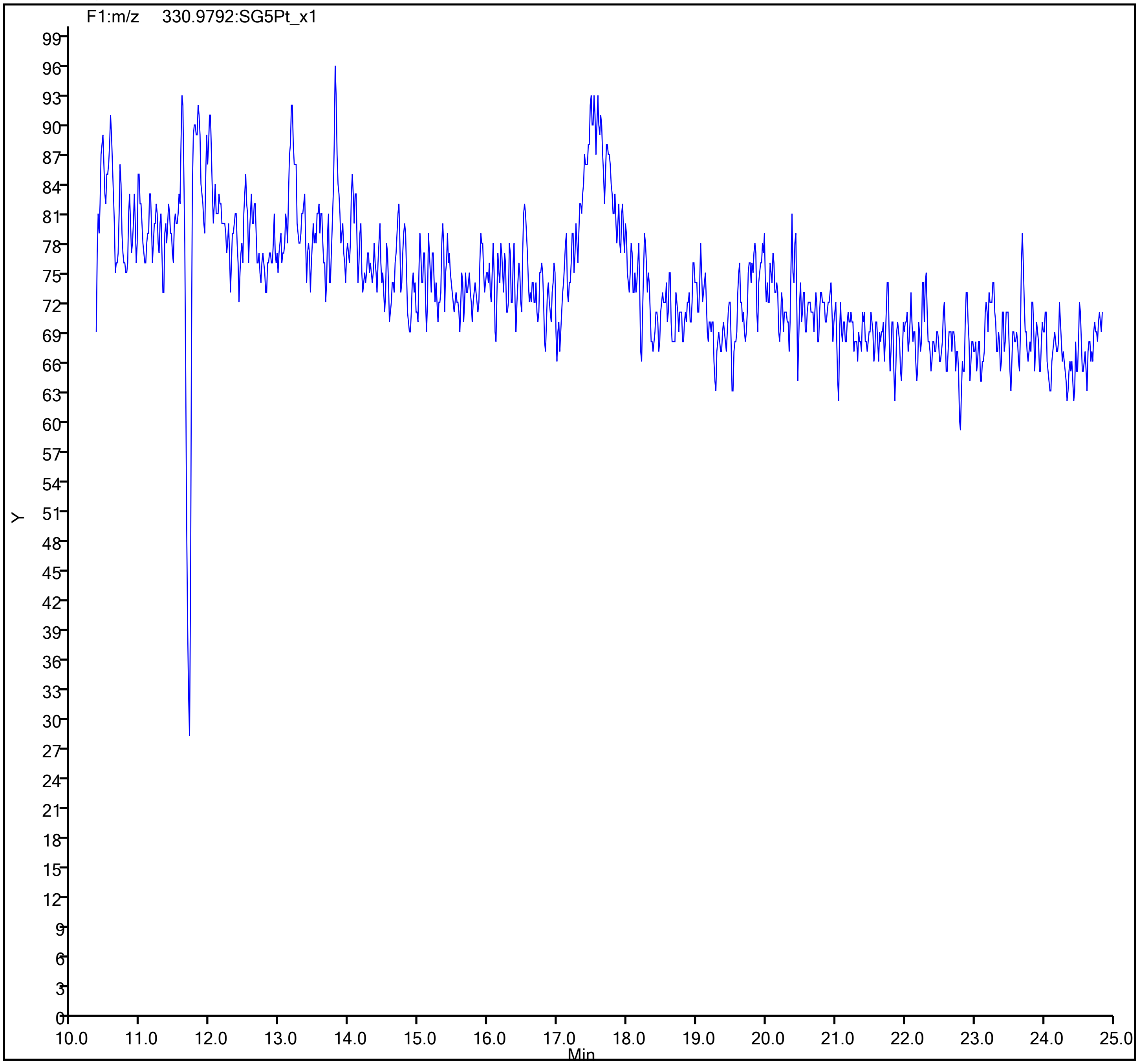

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 320-79918-1
SDG No.:
Client Sample ID: 11215702-5Mm
Lab Sample ID: 320-79918-3
Matrix: Water
Lab File ID: 15oc21dfs1_13.d
Analysis Method: 1613B
Date Collected: 10/05/2021 15:00
Extract. Method: 1613B
Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1051.2(mL)
Date Analyzed: 10/15/2021 19:03
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 1(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.5	1.1
51207-31-9	2,3,7,8-TCDF	2.5	J	9.5	0.45
40321-76-4	1,2,3,7,8-PeCDD	ND		48	1.1
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	48	0.52
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.59
39227-28-6	1,2,3,4,7,8-HxCDD	3.6	J B	48	0.97
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.95
19408-74-3	1,2,3,7,8,9-HxCDD	2.0	J	48	0.90
70648-26-9	1,2,3,4,7,8-HxCDF	1.3	J B q	48	0.47
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J B	48	0.42
72918-21-9	1,2,3,7,8,9-HxCDF	1.2	J B	48	0.37
60851-34-5	2,3,4,6,7,8-HxCDF	1.3	J	48	0.36
35822-46-9	1,2,3,4,6,7,8-HpCDD	3.6	J B q	48	0.65
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.4	J B q	48	0.69
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.6	J q	48	0.75
3268-87-9	OCDD	16	J B	95	0.91
39001-02-0	OCDF	2.7	J B	95	0.75
41903-57-5	Total TCDD	ND		9.5	1.1
30402-14-3	Total TCDF	2.5	J	9.5	0.45
36088-22-9	Total PeCDD	ND		48	1.1
30402-15-4	Total PeCDF	1.1	J q	48	0.56
34465-46-8	Total HxCDD	5.6	J B	48	0.94
55684-94-1	Total HxCDF	5.0	J B q	48	0.41
37871-00-4	Total HpCDD	6.8	J B q	48	0.65
38998-75-3	Total HpCDF	3.0	J B q	48	0.72

FORM I 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID: 11215702-5Mm	Lab Sample ID: 320-79918-3
Matrix: Water	Lab File ID: 15oc21dfs1_13.d
Analysis Method: 1613B	Date Collected: 10/05/2021 15:00
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1051.2(mL)	Date Analyzed: 10/15/2021 19:03
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		25-164
89059-46-1	13C-2,3,7,8-TCDF	92		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	84		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	90		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	86		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	76		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	80		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	81		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	89		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	88		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	97		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	98		26-138
114423-97-1	13C-OCDD	104		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	91		35-197

Report Date: 18-Oct-2021 13:42:00 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Lims ID: 320-79918-A-3-A
Client ID: 11215702-5Mm
Sample Type: Client
Inject. Date: 15-Oct-2021 19:03:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-a-3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: bennettd Date: 18-Oct-2021 13:38:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.764	6837413	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.792	7723915	0.79	1.2244	92.3	92.3	0.4350	0.4350	92.26	
2,3,7,8-TCDF	19.809	11334	0.88	1.1194	0.1311	0.1311	0.0237	0.0237		M
A Non-2,3,7,8-sub-TCDF	19.372						0.0237	0.0299		RQU
S Total TCDF					0.1311	0.1311	0.0237	0.0237		
D 13C-2,3,7,8-TCDD	21.126	4655807	0.80	0.8210	82.9	82.9	0.2520	0.2520	82.94	
2,3,7,8-TCDD	21.163						0.0553	0.0553		
$ 37Cl4-2,3,7,8-TCDD	21.160	2155085		0.8658	36.4	36.4	0.0406	0.0406	91.01	
A Non-2,3,7,8-sub-TCDD	20.213						0.0553	0.0553		
S Total TCDD							0.0553	0.0553		
D 13C-1,2,3,7,8-PeCDF	26.807	6757829	1.60	1.1026	89.6	89.6	0.4032	0.4032	89.64	
1,2,3,7,8-PeCDF	26.841	4265	1.55	1.0920	0.0677	0.0578	0.0276	0.0276		RQM
D 13C-2,3,4,7,8-PeCDF	28.306	7891702	1.60	1.3454	85.8	85.8	0.3305	0.3305	85.79	
2,3,4,7,8-PeCDF	28.325						0.0312	0.0312		
A F1 PeCDFs	24.221						0.0127	0.0127		
A Non-2,3,7,8-sub-PeCDF	27.645						0.0291	0.0291		
S Total PeCDF					0.0677	0.0578	0.0294	0.0294		RQ
D 13C-1,2,3,7,8-PeCDD	29.106	4012104	1.58	0.6987	84.0	84.0	0.1836	0.1836	83.98	
1,2,3,7,8-PeCDD	29.133						0.0562	0.0562		
A Non-2,3,7,8-sub-PeCDD	28.034						0.0562	0.0562		
S Total PeCDD							0.0562	0.0562		
D 13C-1,2,3,4,7,8-HxCDF	34.600	7053059	0.54	1.1295	82.2	82.2	0.2740	0.2740	82.19	
1,2,3,4,7,8-HxCDF	34.617	4525	1.24	0.9737	0.0758	0.0659	0.0247	0.0247		RQ
D 13C-1,2,3,6,7,8-HxCDF	34.769	6501287	0.53	1.0613	80.6	80.6	0.2916	0.2916	80.62	
1,2,3,6,7,8-HxCDF	34.777	5302	1.35	1.2201	0.0668	0.0668	0.0222	0.0222		
D 13C-2,3,4,6,7,8-HxCDF	35.628	6309744	0.54	0.9480	87.6	87.6	0.3264	0.3264	87.60	
2,3,4,6,7,8-HxCDF	35.636	5422	1.07	1.2435	0.0691	0.0691	0.0190	0.0190		M
D 13C-1,2,3,7,8,9-HxCDF	36.546	5769962	0.54	0.8526	89.1	89.1	0.3630	0.3630	89.06	
1,2,3,7,8,9-HxCDF	36.546	4484	1.41	1.2454	0.0624	0.0624	0.0196	0.0196		M
A Non-2,3,7,8-sub-HxCDF	34.703						0.0211	0.0211		U
S Total HxCDF					0.2742	0.2642	0.0214	0.0214		RQ
* 13C-1,2,3,7,8,9-HxCDD	36.352	7598043	1.28	1.8E+05	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.855	4776669	1.27	0.8312	75.6	75.6	0.1796	0.1796	75.63	
1,2,3,4,7,8-HxCDD	35.880	8118	1.28	0.9085	0.1871	0.1871	0.0512	0.0512		M
D 13C-1,2,3,6,7,8-HxCDD	35.973	4586962	1.26	0.7550	80.0	80.0	0.1978	0.1978	79.97	
1,2,3,6,7,8-HxCDD	35.880						0.0499	0.0499		QMU
1,2,3,7,8,9-HxCDD	36.360	5105	1.10	1.0268	0.1062	0.1062	0.0475	0.0475		M
A Non-2,3,7,8-sub-HxCDD	35.108						0.0494	0.0494		
S Total HxCDD					0.2933	0.2933	0.0495	0.0495		
D 13C-1,2,3,4,6,7,8-HpCDF	38.419	4220656	0.47	0.6190	89.7	89.7	0.4243	0.4243	89.74	
1,2,3,4,6,7,8-HpCDF	38.428	5085	1.04	1.5851	0.0940	0.0760	0.0364	0.0364		RQMa
D 13C-1,2,3,4,7,8,9-HpCDF	39.683	4866726	0.47	0.6516	98.3	98.3	0.4031	0.4031	98.29	
1,2,3,4,7,8,9-HpCDF	39.691	4618	1.04	1.1597	0.0902	0.0818	0.0393	0.0393		RQMa
A Non-2,3,7,8-sub-HpCDF	39.072						0.0371	0.0371		
S Total HpCDF					0.1842	0.1578	0.0378	0.0378		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	39.379	3940226	1.06	0.5362	96.7	96.7	0.2940	0.2940	96.72	
1,2,3,4,6,7,8-HpCDD	39.405	8078	1.04	1.0819	0.2169	0.1895	0.0344	0.0344		RQM
A Non-2,3,7,8-sub-HpCDD	39.202	7171	0.90	1.0819	0.1682	0.1682	0.0344	0.1682		
S Total HpCDD					0.3851	0.3577	0.0344	0.0344		RQ
D 13C-OCDD	41.867	6033585	0.92	0.3802	208.9	208.9	0.2755	0.2755	104	
OCDF	41.976	6475	0.89	1.5094	0.1422	0.1422	0.0392	0.0392		M
OCDD	41.883	29052	0.90	1.1344	0.8489	0.8489	0.0476	0.0476		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Lims ID: 320-79918-A-3-A
Client ID: 11215702-5Mm
Sample Type: Client
Inject. Date: 15-Oct-2021 19:03:00 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-a-3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: bennettd Date: 18-Oct-2021 13:38:17

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.764	20.777	-1		3059443	446668	633	1582	706		
333.9338	20.764	20.777	-1		3777970	564378	204	510	2767	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.792	19.806	-1	0.953	3405366	527239	1533	3832	344		
317.9389	19.792	19.806	-1	0.953	4318549	641150	621	1552	1032	0.79(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	19.809	19.832	-1	1.001	5315	904	19	47	48		M
305.8987	19.817	19.832	-1	1.001	6019	1105	105	262	11	0.88(0.65-0.89)	M
A Non-2,3,7,8-sub-TCDF											U
303.9016	18.613	19.372	-45	0.940	909	217	19	47	11		
305.8987	18.588	19.372	-47	0.939	1677	426	105	262	4	0.54(0.65-0.89)	
	Empc Correction				1180	281	105	262	0		
13C-2,3,7,8-TCDD											
331.9368	21.126	21.138	-1	1.017	2065936	287714	633	1582	455		
333.9338	21.134	21.138	0	1.018	2589871	364879	204	510	1789	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.163						142	355			
321.8936	21.163						16	40			
37Cl4-2,3,7,8-TCDD											
327.8847	21.160	21.163	0	1.019	2155085	306866	142	355	2161		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						142	355			
321.8936	20.213						16	40			
13C-1,2,3,7,8-PeCDF											
351.9000	26.807	26.799	0	1.291	4157113	689710	1183	2957	583		
353.8970	26.807	26.799	0	1.291	2600716	430380	615	1537	700	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											RQM
339.8597	26.841	26.833	0	1.001	2593	629	18	45	35		M
341.8567	26.824	26.833	-1	1.001	2400	428	117	292	4	1.08(1.32-1.78)	M
	Empc Correction				1672	405	117	292	3		
13C-2,3,4,7,8-PeCDF											
351.9000	28.306	28.300	0	1.363	4854102	758711	1183	2957	641		
353.8970	28.306	28.300	0	1.363	3037600	477203	615	1537	776	1.60(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.325						18	45			
341.8567	28.325						117	292			
A F1 PeCDFs											
339.8597	24.221						2	5			
341.8567	24.221						57	142			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.645						18	45			
341.8567	27.645						117	292			
13C-1,2,3,7,8-PeCDD											
367.8949	29.106	29.108	0	1.402	2455779	363251	286	715	1270		
369.8919	29.106	29.108	0	1.402	1556325	225050	233	582	966	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.133						112	280			
357.8516	29.133						28	70			
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						112	280			
357.8516	28.034						28	70			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.600	34.597	0	0.952	2461785	529395	903	2257	586		
385.8610	34.600	34.597	0	0.952	4591274	1017408	1576	3940	646	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											RQ
373.8208	34.617	34.613	0	1.000	2505	618	98	245	6		
375.8178	34.609	34.613	0	1.000	2703	759	51	127	15	0.93(1.05-1.43)	
	Empc Correction				2020	498	51	127	10		
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.769	34.773	0	0.956	2254541	473384	903	2257	524		
385.8610	34.769	34.773	0	0.956	4246746	900001	1576	3940	571	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.777	34.790	-1	1.000	3047	513	98	245	5		
375.8178	34.785	34.790	0	1.000	2255	479	51	127	9	1.35(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.628	35.625	0	0.980	2199291	560391	903	2257	621		
385.8610	35.628	35.625	0	0.980	4110453	1014191	1576	3940	644	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											M
373.8208	35.636	35.641	0	1.000	2798	781	98	245	8		
375.8178	35.628	35.641	-1	1.000	2624	518	51	127	10	1.07(1.05-1.43)	M
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.546	36.551	0	1.005	2012746	526514	903	2257	583		
385.8610	36.546	36.551	0	1.005	3757216	997712	1576	3940	633	0.54(0.43-0.59)	

Report Date: 18-Oct-2021 13:42:00 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											M
373.8208	36.546	36.560	-1	1.000	2625	830	98	245	8		M
375.8178	36.571	36.560	1	1.001	1859	533	51	127	10	1.41(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											U
373.8208	34.703						98	245			
375.8178	34.703						51	127			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.352	36.358	0		4261864	1118380	707	1767	1582		
403.8529	36.352	36.358	0		3336179	884076	489	1222	1808	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.855	35.861	0	0.986	2674412	710707	707	1767	1005		
403.8529	35.855	35.861	0	0.986	2102257	541295	489	1222	1107	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.880	35.869	1	1.001	4563	1037	118	295	9		M
391.8127	35.880	35.869	1	1.001	3555	969	115	287	8	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.973	35.979	0	0.990	2561698	629200	707	1767	890		
403.8529	35.973	35.979	0	0.990	2025264	506206	489	1222	1035	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											QMU
389.8158	35.995						118	295			
391.8127	35.995						115	287			
1,2,3,7,8,9-HxCDD											M
389.8158	36.360	36.366	0	1.014	2669	540	118	295	5		M
391.8127	36.377	36.366	1	1.015	2436	558	115	287	5	1.10(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						118	295			
391.8127	35.108						115	287			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.419	38.425	0	1.057	1343061	432489	817	2042	529		
419.8220	38.419	38.425	0	1.057	2877595	907142	1287	3217	705	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQMa
407.7817	38.428	38.434	0	1.000	3797	1193	218	545	5		M
	Empc Correction				2592	779	218	545	4		
409.7788	38.419	38.434	-1	1.000	2493	750	91	227	8	1.52(0.88-1.20)	a
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.683	39.698	-1	1.092	1547819	535472	817	2042	655		
419.8220	39.683	39.698	-1	1.092	3318907	1158186	1287	3217	900	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQMa
407.7817	39.691	39.706	-1	1.000	2825	853	218	545	4		M
	Empc Correction				2354	795	218	545	4		
409.7788	39.691	39.706	-1	1.000	2264	765	91	227	8	1.25(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						218	545			
409.7788	39.072						91	227			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.379	39.394	-1	1.083	2031718	702569	658	1645	1068		
437.8140	39.388	39.394	0	1.084	1908508	659067	605	1512	1089	1.06(0.88-1.20)	

Report Date: 18-Oct-2021 13:42:00 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											RQM
423.7767	39.405	39.403	0	1.001	5288	1223	112	280	11		M
	Empc Correction				4118	1114	112	280	10		
425.7737	39.396	39.403	0	1.000	3960	1072	91	227	12	1.34(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.739	39.202	-28	0.984	3402	997	112	280	9		
425.7737	38.756	39.202	-27	0.984	3769	928	91	227	10	0.90(0.88-1.20)	
13C-OCDD											
469.7780	41.867	41.875	0	1.152	2883685	916995	456	1140	2011		
471.7750	41.867	41.875	0	1.152	3149900	1033987	383	957	2700	0.92(0.76-1.02)	
OCDF											M
441.7428	41.976	41.959	1	1.003	3058	829	81	202	10		M
443.7399	41.959	41.959	0	1.002	3417	1135	150	375	8	0.89(0.76-1.02)	M
OCDD											
457.7377	41.883	41.883	0	1.000	13734	3842	90	225	43		
459.7348	41.875	41.883	0	1.000	15318	4602	121	302	38	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d		
Lims ID:	320-79918-A-3-A		
Client ID:	11215702-5Mm		
Inject. Date:	15-Oct-2021 19:03:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	12

Non-2,3,7,8-sub-TCDF, RT: 19.372

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.119	D 13C-2,3,7,8-TCDF	100.000	7723915	1168389

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	7723915	1168389

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.613	909	217	1677	426	0.0299	0.54	RQ
18.613	909	217	1180	281			Empc Correction

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d		
Lims ID:	320-79918-A-3-A		
Client ID:	11215702-5Mm		
Inject. Date:	15-Oct-2021 19:03:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	12

Non-2,3,7,8-sub-HxCDF, RT: 34.703

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	0.974	D 13C-1,2,3,4,7,8-HxCDF	100.000	7053059	1546803
1,2,3,6,7,8-HxCDF	1.220	D 13C-1,2,3,6,7,8-HxCDF	100.000	6501287	1373385
2,3,4,6,7,8-HxCDF	1.244	D 13C-2,3,4,6,7,8-HxCDF	100.000	6309744	1574582
1,2,3,7,8,9-HxCDF	1.245	D 13C-1,2,3,7,8,9-HxCDF	100.000	5769962	1524226

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.171		100.000	6408513	1504749

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d		
Lims ID:	320-79918-A-3-A		
Client ID:	11215702-5Mm		
Inject. Date:	15-Oct-2021 19:03:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	12

Non-2,3,7,8-sub-HpCDD, RT: 39.202

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.082	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	3940226	1361636

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.082		100.000	3940226	1361636

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.739	3402	997	3769	928	0.1682	0.90	
Signal Totals:							
	3402	997	3769	928			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	7171	1925				0.90	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.1682 = (7171 * 100.000) / (3940226 * 1.082)

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	19.81
Area:	4085
Amount:	0.112497
Amount Units:	pg/ul

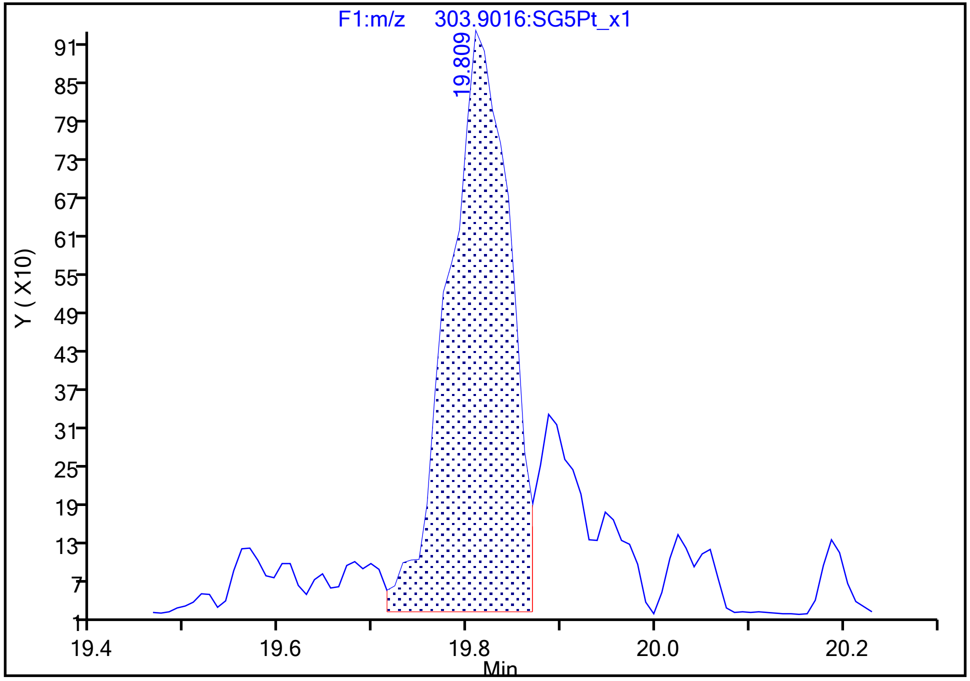

Manual Integration Results

RT:	19.81
Area:	5315
Amount:	0.131083
Amount Units:	pg/ul

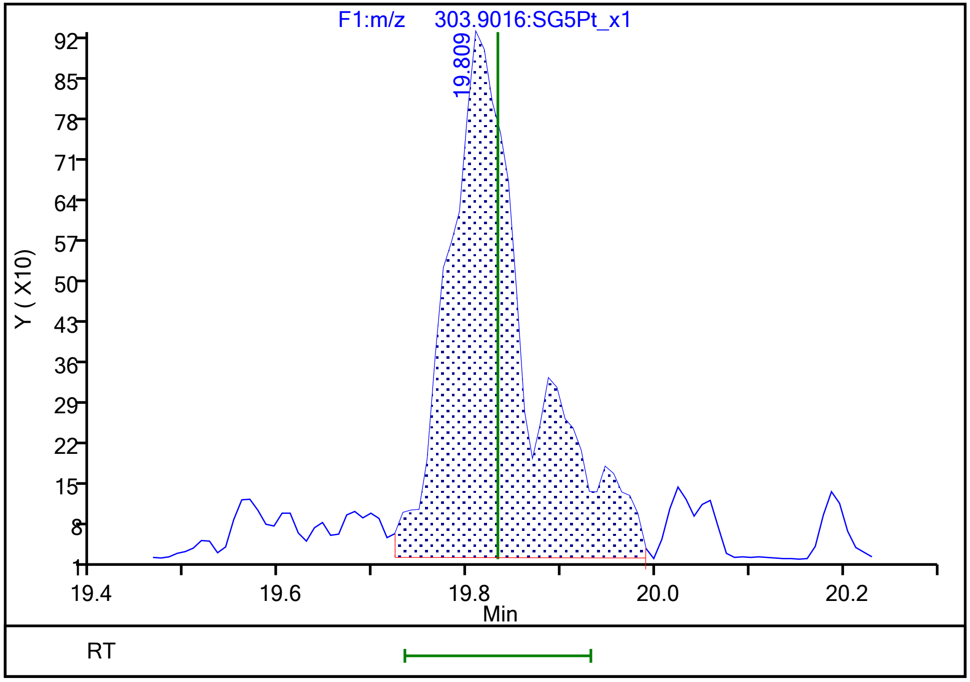

Reviewer: bennettd, 18-Oct-2021 13:31:12

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Report Date: 18-Oct-2021 13:42:00
Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3
Client ID:	11215702-5Mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT:	19.82
Area:	5642
Amount:	0.112497
Amount Units:	pg/ul

Processing Integration Results

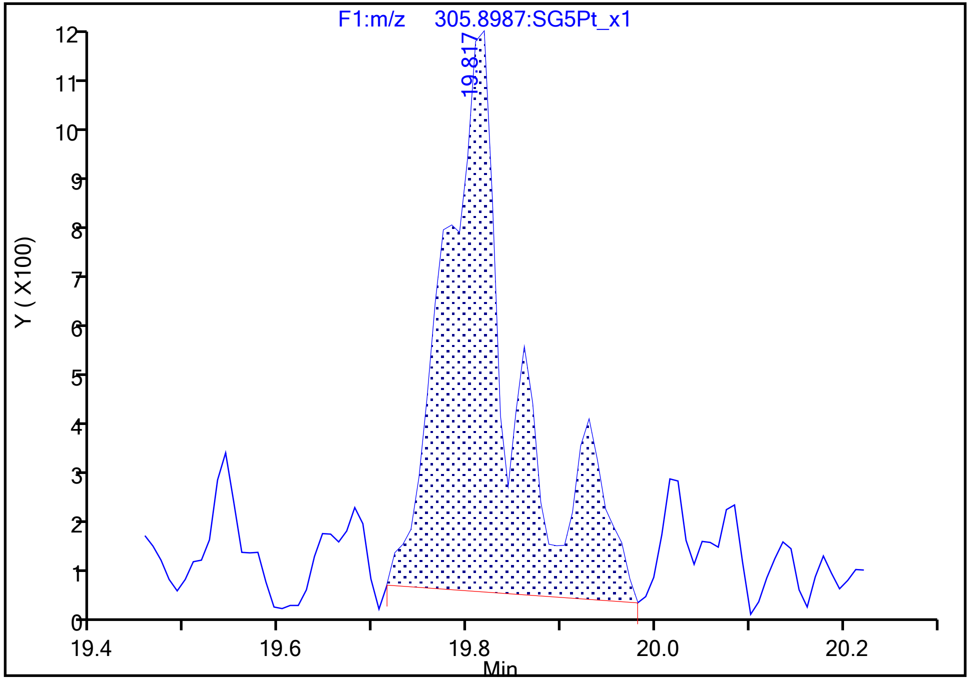

RT:	19.82
Area:	6019
Amount:	0.131083
Amount Units:	pg/ul

Manual Integration Results

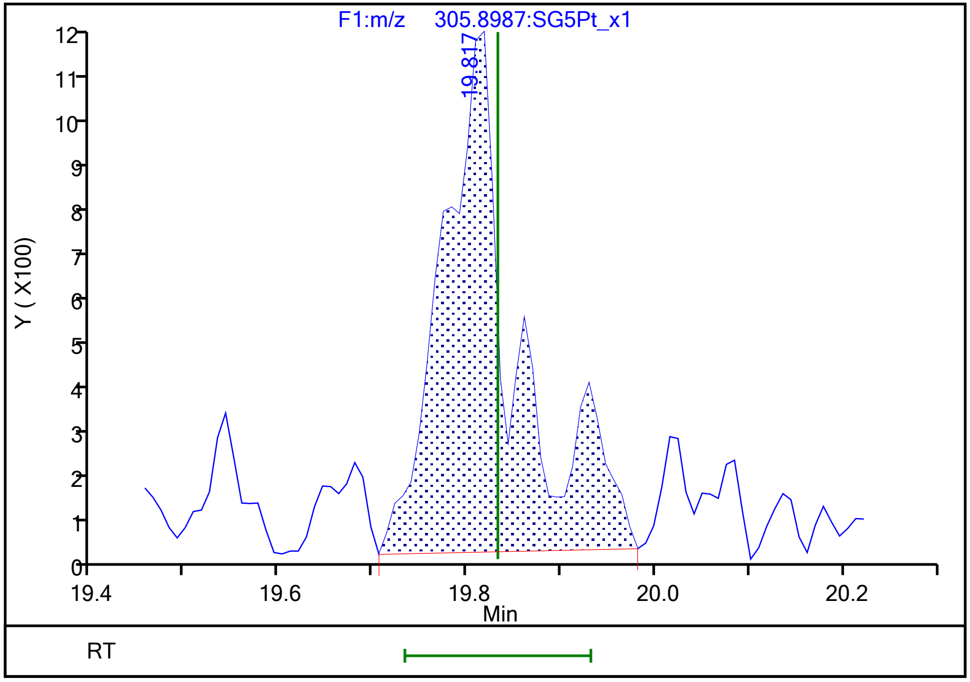

Reviewer: bennettd, 18-Oct-2021 13:31:27

Audit Action: Manually Integrated
Audit Reason: Incomplete Integration

Report Date: 18-Oct-2021 13:42:00 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 2

Not Detected

Expected RT: 26.83

Processing Integration Results

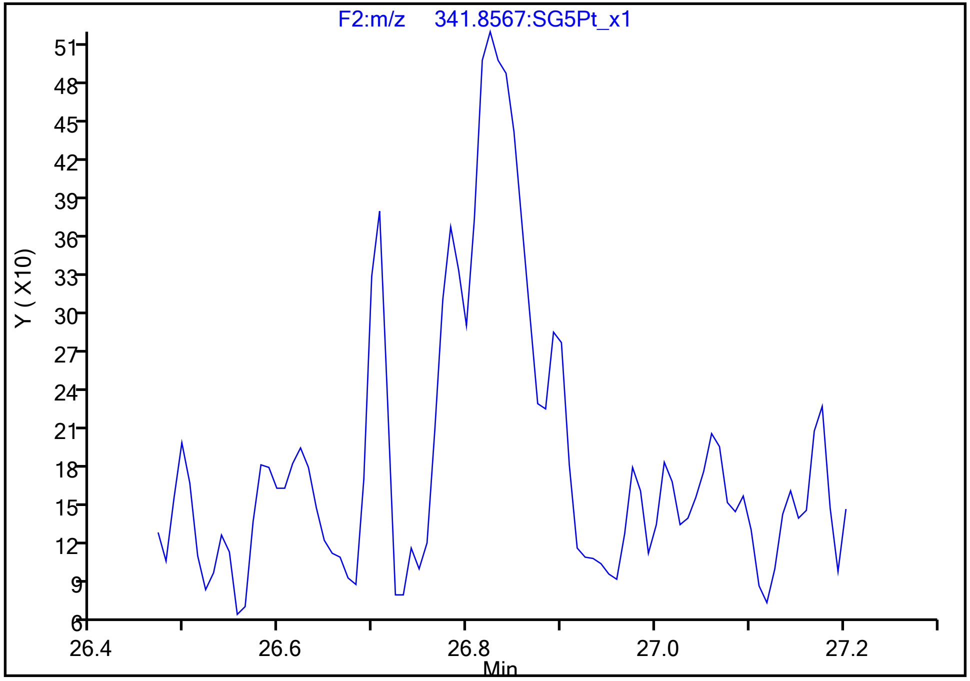

RT: 26.82

Area: 2400

Amount: 0.067662

Amount Units: pg/ul

Manual Integration Results

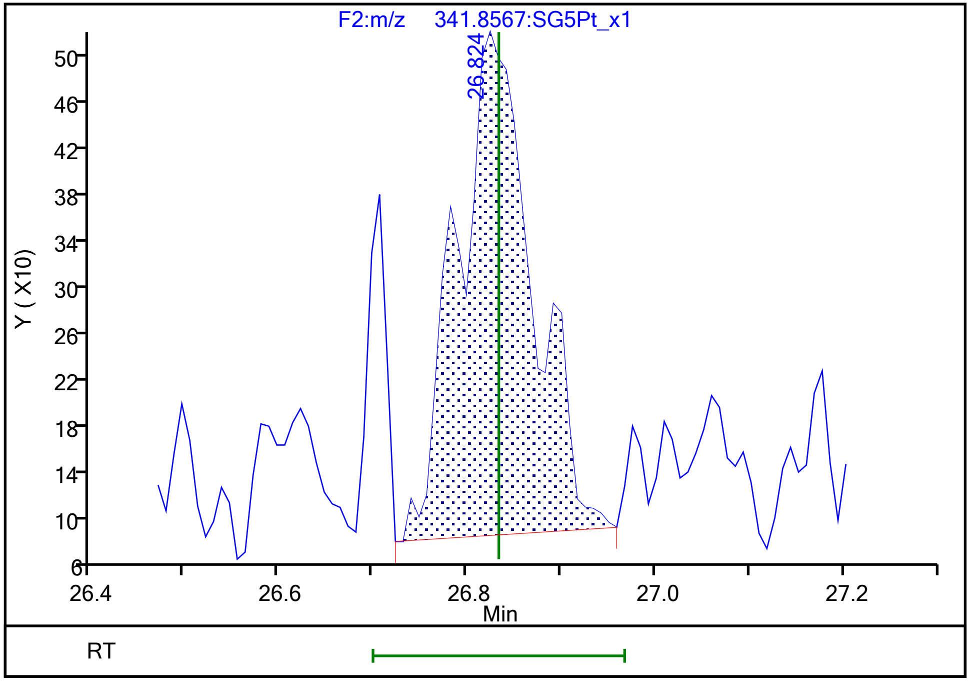

Reviewer: bennettd, 18-Oct-2021 13:31:53

Audit Action: Manually Integrated Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:42:00

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

1,2,3,7,8-PeCDF, CAS: 57117-41-6

Signal: 1

Not Detected

Expected RT: 26.83

Processing Integration Results

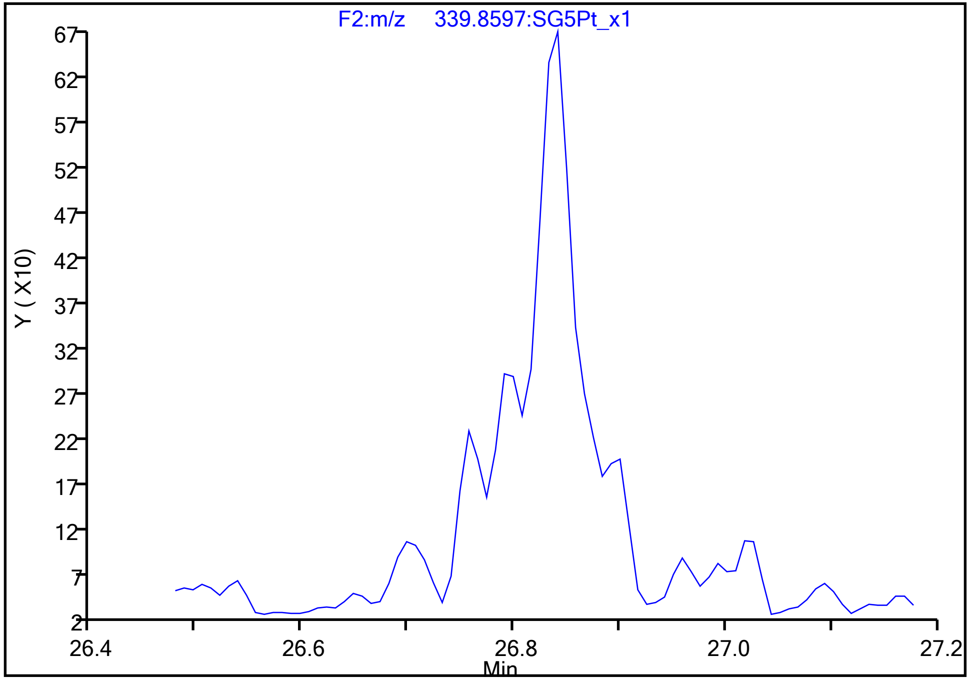

RT: 26.84

Area: 2593

Amount: 0.067662

Amount Units: pg/ul

Manual Integration Results

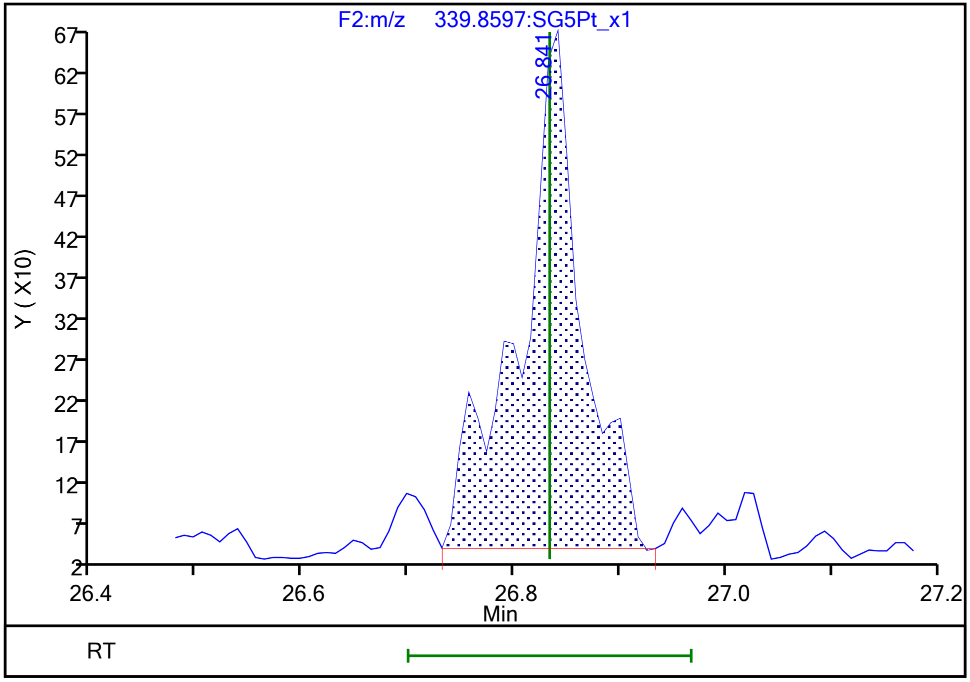

Reviewer: bennettd, 18-Oct-2021 13:31:58

Audit Action: Manually Integrated

Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Injection Date: 15-Oct-2021 19:03:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-3-A
Lab Sample ID: 320-79918-3
Client ID: 11215702-5Mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 12
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

2,3,4,6,7,8-HxCDF, CAS: 60851-34-5

Signal: 2

RT: 35.63
Area: 1890
Amount: 0.059747
Amount Units: pg/ul

Processing Integration Results

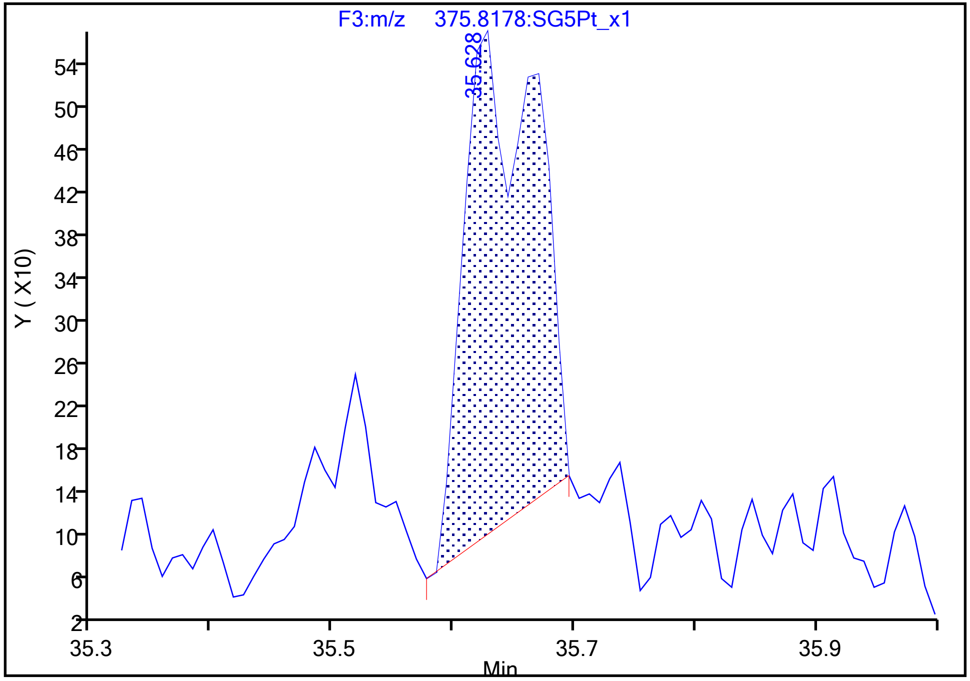

RT: 35.63
Area: 2624
Amount: 0.069102
Amount Units: pg/ul

Manual Integration Results

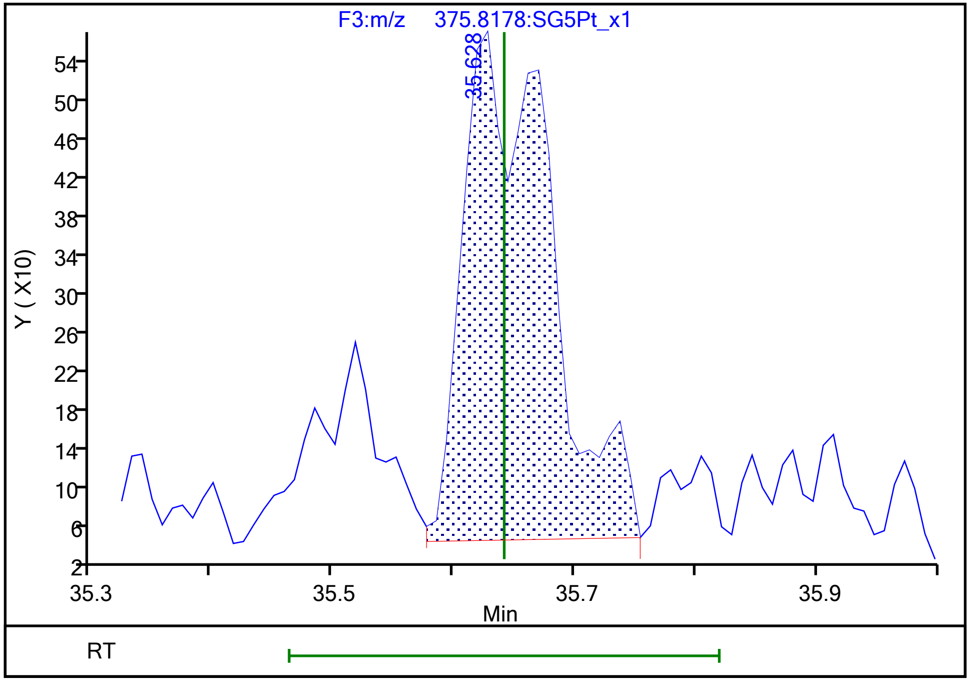

Reviewer: bennettd, 18-Oct-2021 13:32:33
Audit Action: Split an Integrated Peak
Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Processing Integration Results

RT:	36.55
Area:	2128
Amount:	0.062747
Amount Units:	pg/ul

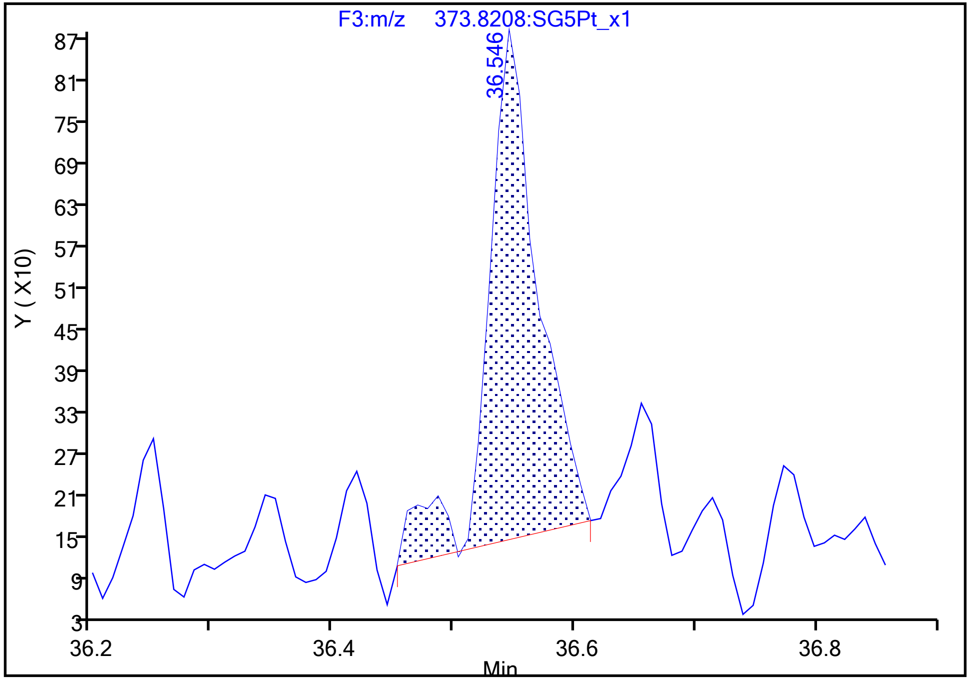

Manual Integration Results

RT:	36.55
Area:	2625
Amount:	0.062399
Amount Units:	pg/ul

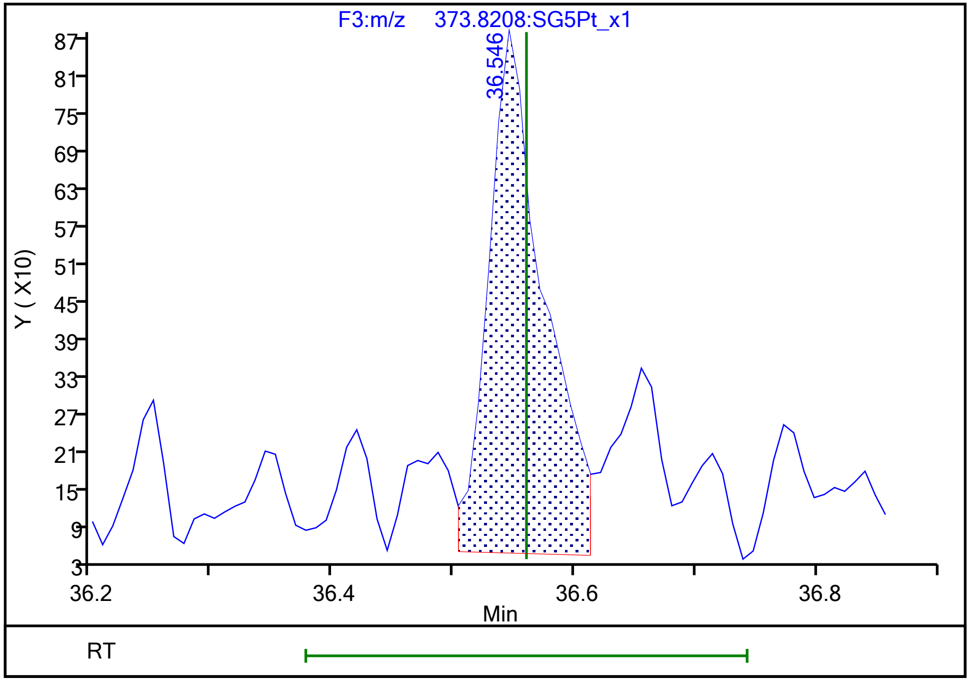

Reviewer: bennettd, 18-Oct-2021 13:35:04

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

RT: 36.57
Area: 2381
Amount: 0.062747
Amount Units: pg/ul

Processing Integration Results

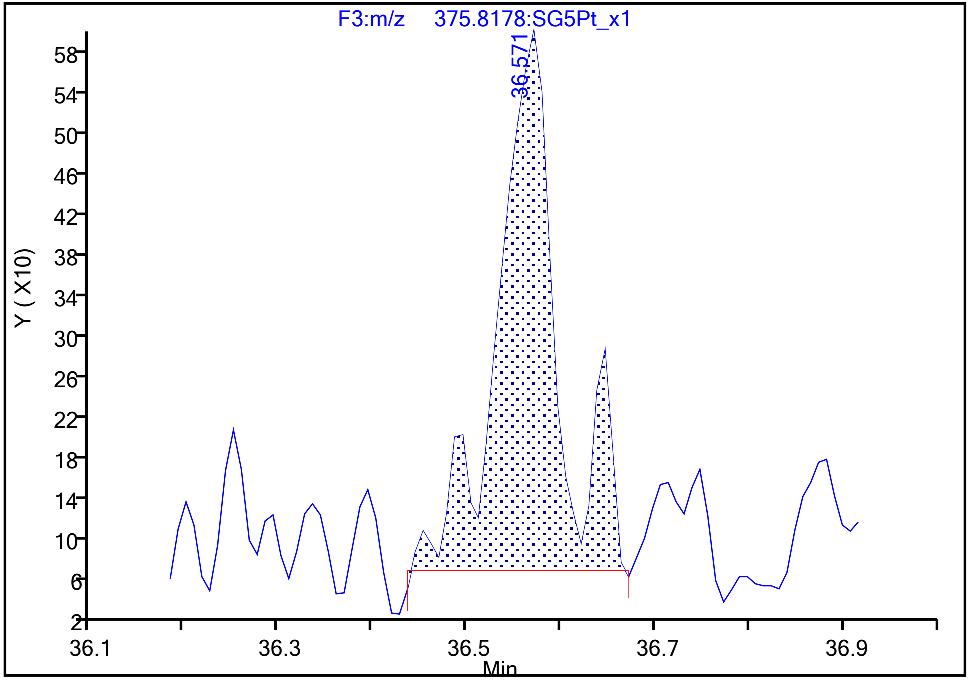

RT: 36.57
Area: 1859
Amount: 0.062399
Amount Units: pg/ul

Manual Integration Results

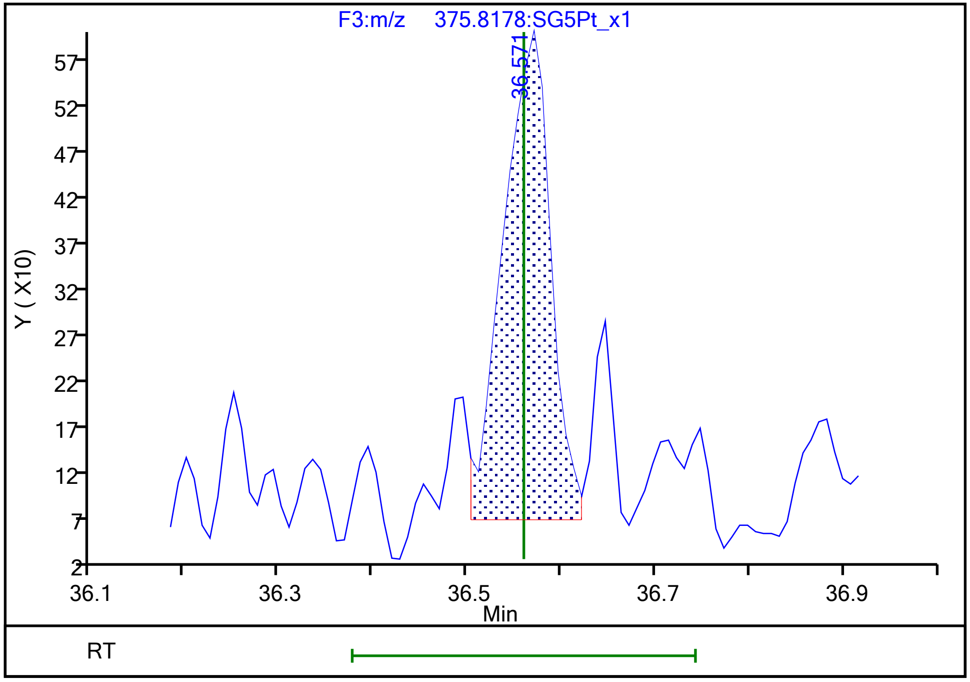

Reviewer: bennettd, 18-Oct-2021 13:35:08

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 35.88
Area: 8138
Amount: 0.269441
Amount Units: pg/ul

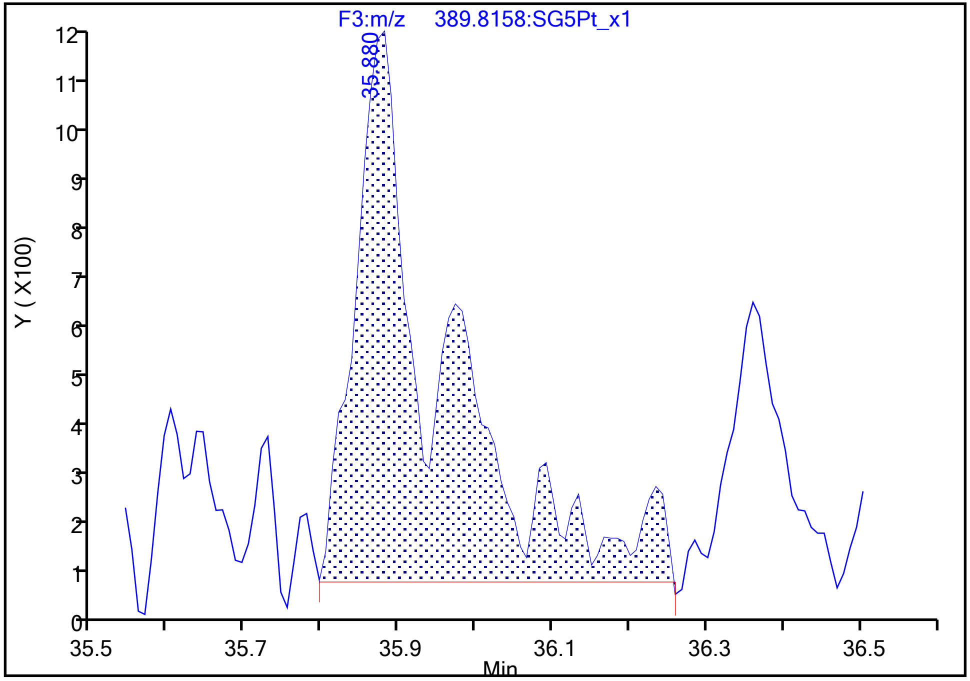

Manual Integration Results

RT: 35.88
Area: 4563
Amount: 0.187063
Amount Units: pg/ul

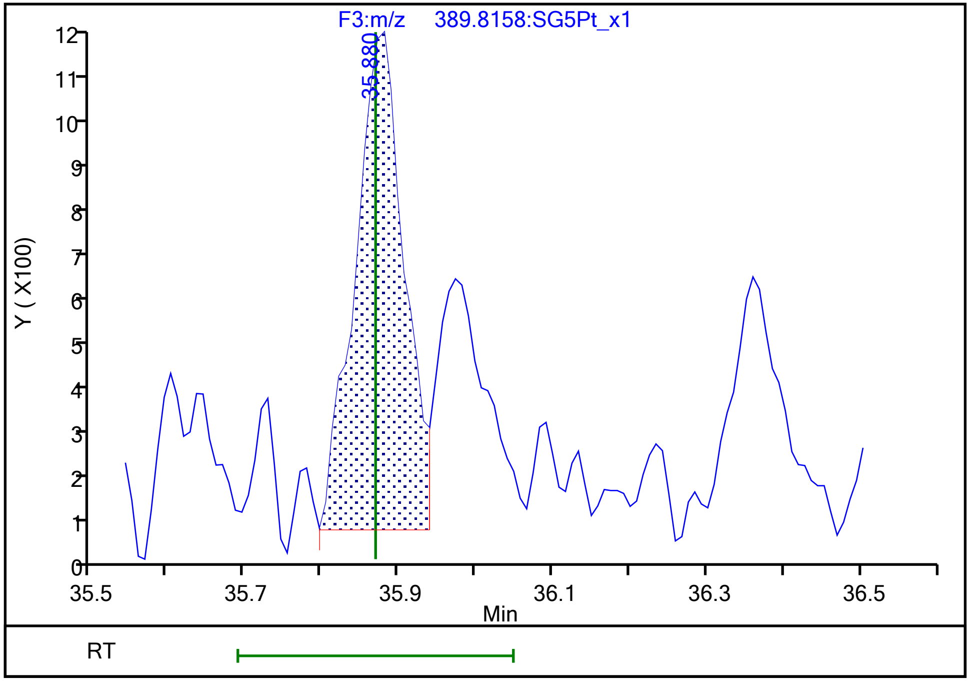

Reviewer: bennettd, 18-Oct-2021 13:35:35

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 18-Oct-2021 13:42:00

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Injection Date: 15-Oct-2021 19:03:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-3-A
Lab Sample ID: 320-79918-3
Client ID: 11215702-5Mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 12
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 1

Not Detected
Expected RT: 36.37

Processing Integration Results

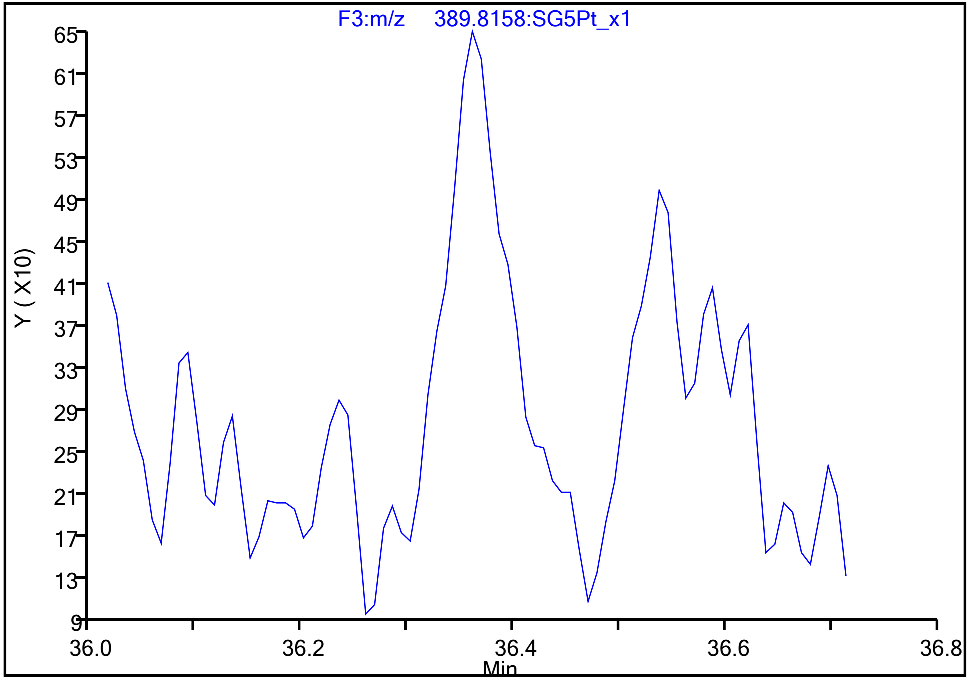

RT: 36.36
Area: 2669
Amount: 0.106193
Amount Units: pg/ul

Manual Integration Results

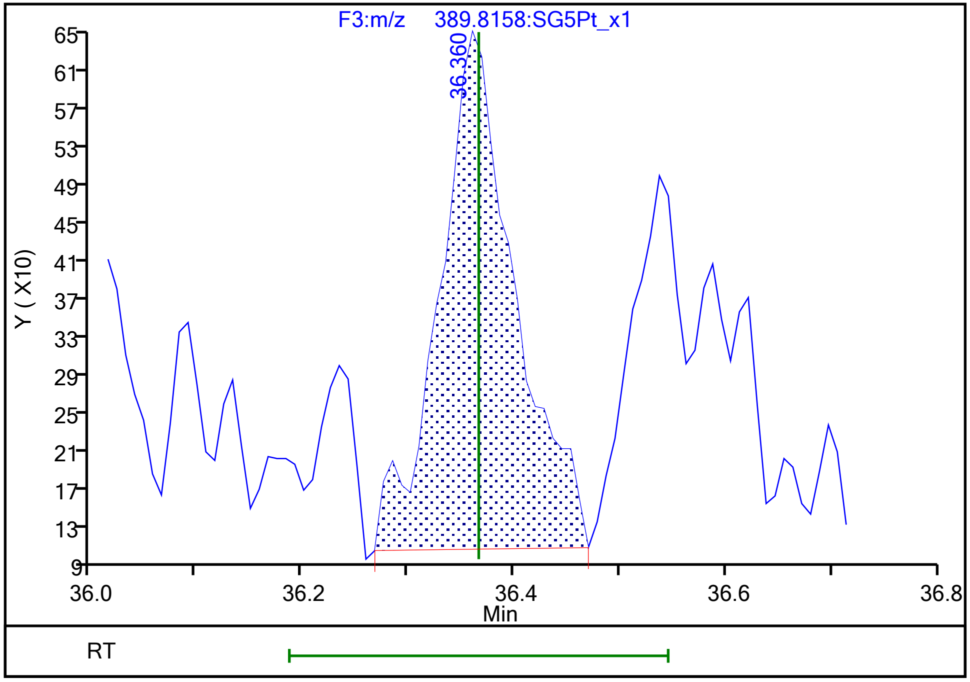

Reviewer: bennettd, 18-Oct-2021 13:35:57
Audit Action: Manually Integrated
Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:42:00

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDD, CAS: 19408-74-3

Signal: 2

Not Detected

Expected RT: 36.37

Processing Integration Results

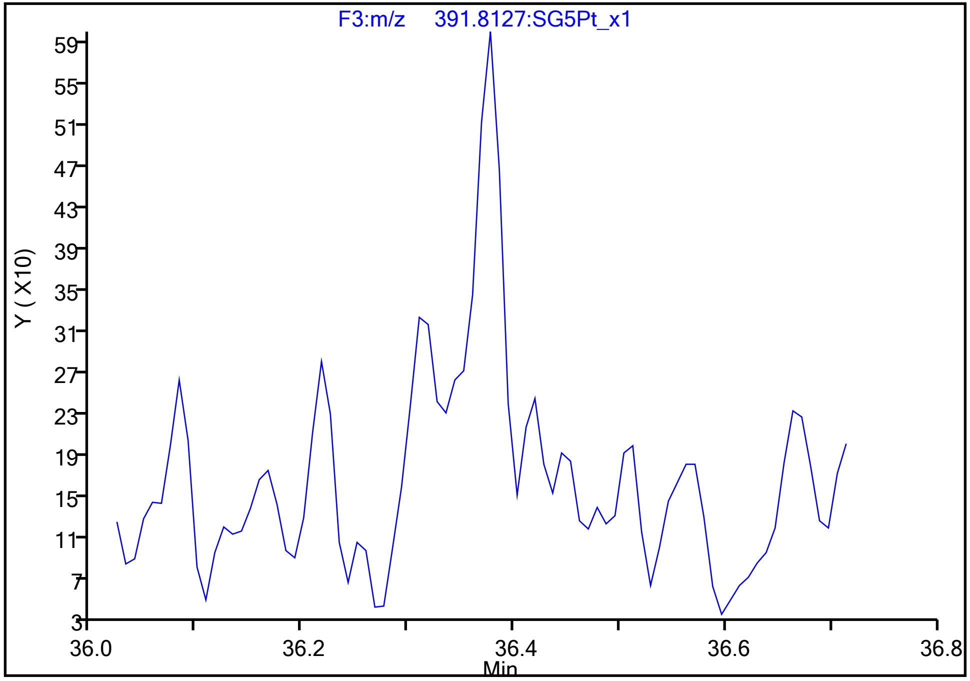

RT: 36.38

Area: 2436

Amount: 0.106193

Amount Units: pg/ul

Manual Integration Results

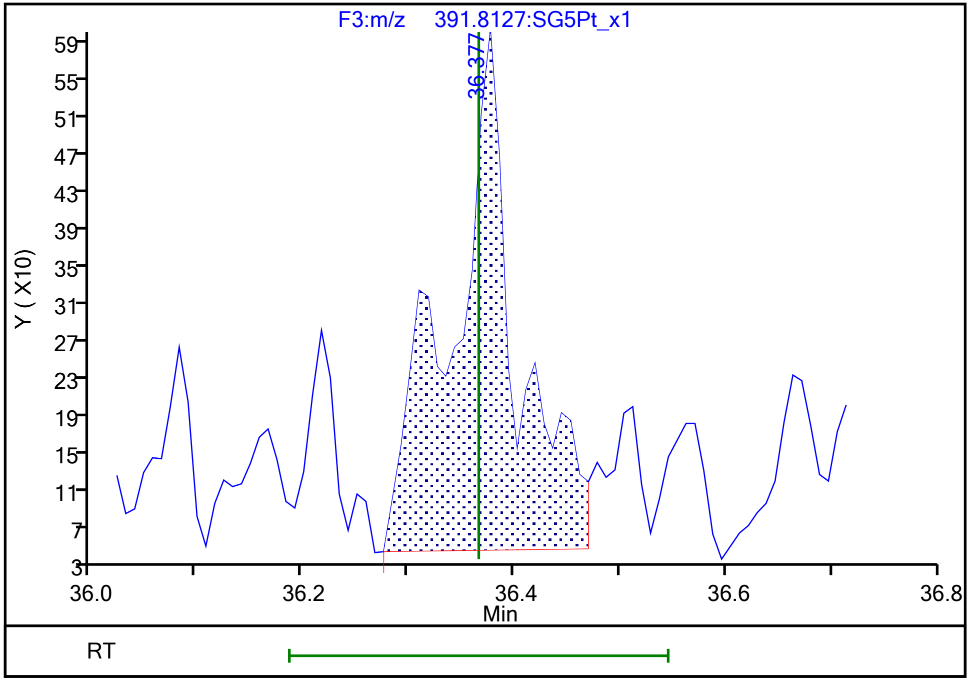

Reviewer: bennettd, 18-Oct-2021 13:36:13

Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:42:01
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Not Detected
Expected RT: 38.43

Processing Integration Results

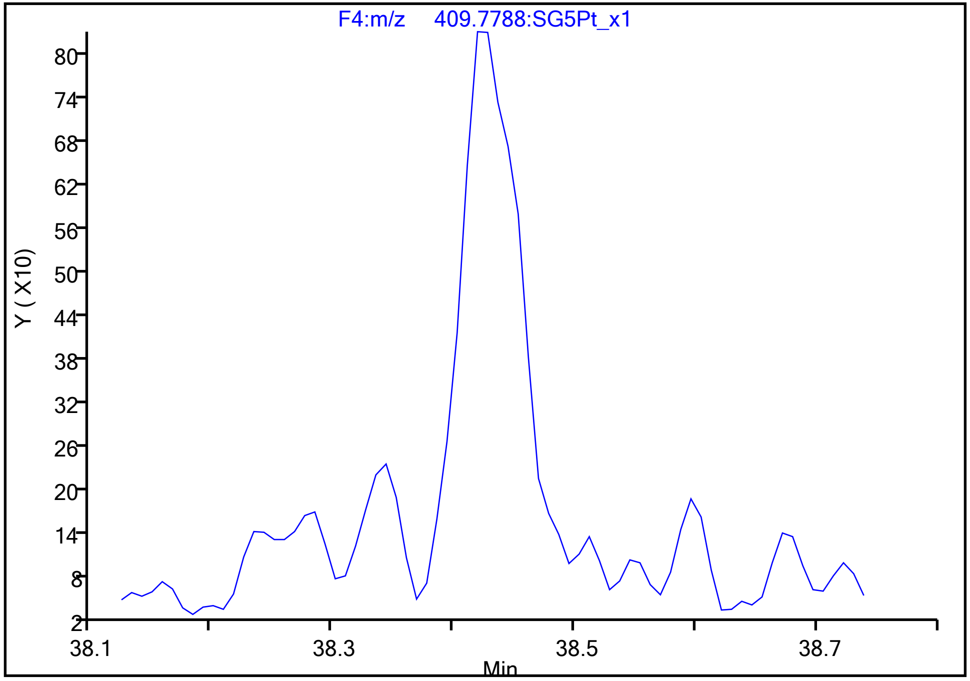

RT: 38.42
Area: 2493
Amount: 0.094020
Amount Units: pg/ul

Manual Integration Results

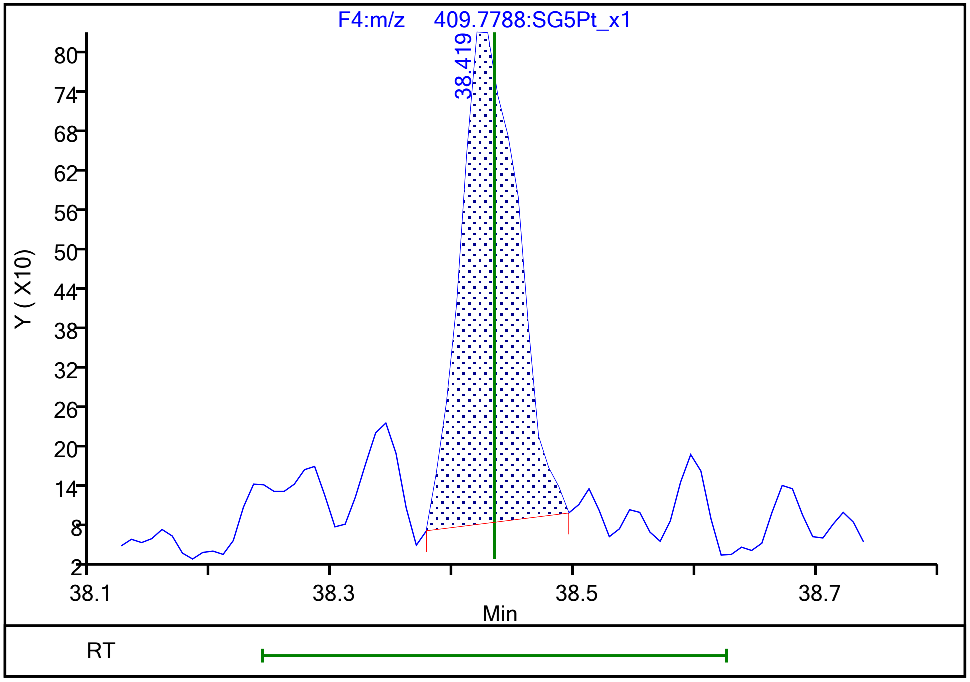

Reviewer: bennettd, 18-Oct-2021 13:36:27
Audit Action: Assigned Compound ID
Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Not Detected

Expected RT: 38.43

Processing Integration Results

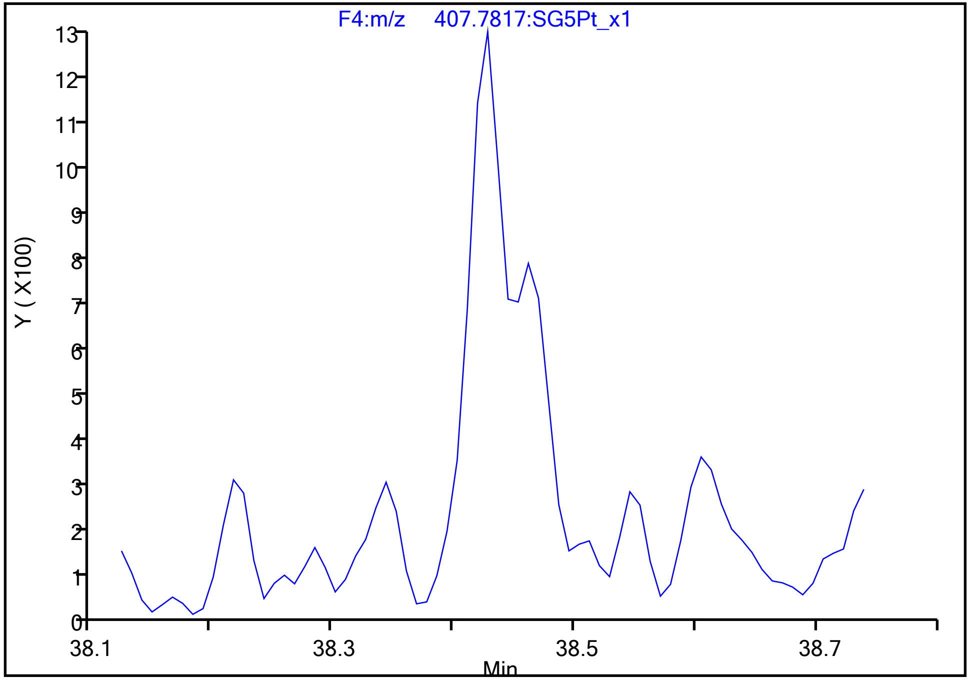

RT: 38.43

Area: 3797

Amount: 0.094020

Amount Units: pg/ul

Manual Integration Results

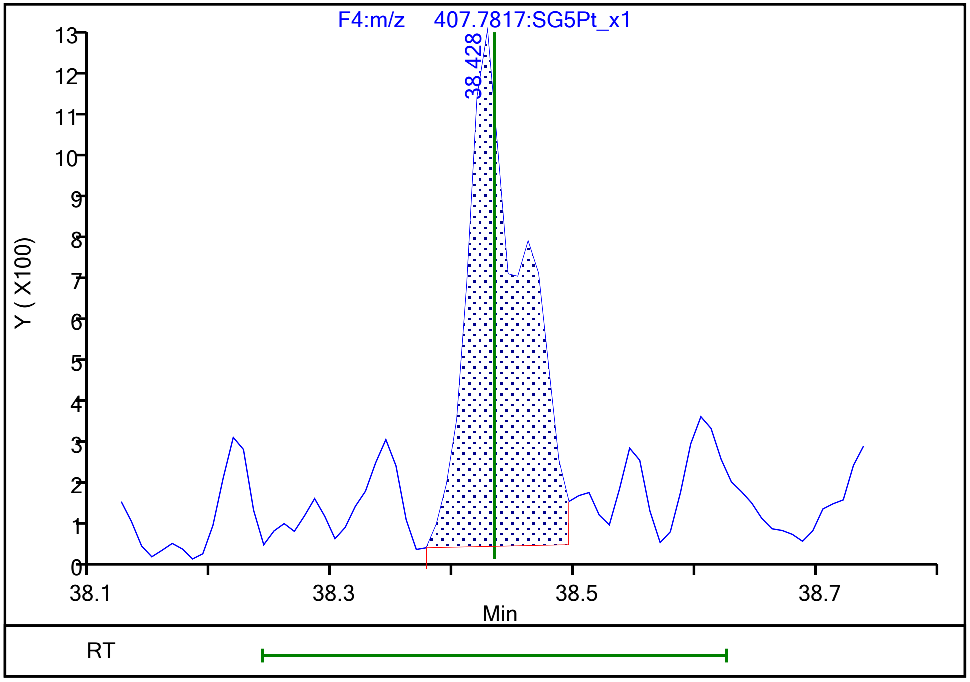

Reviewer: bennettd, 18-Oct-2021 13:36:32

Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

Not Detected
Expected RT: 39.71

Processing Integration Results

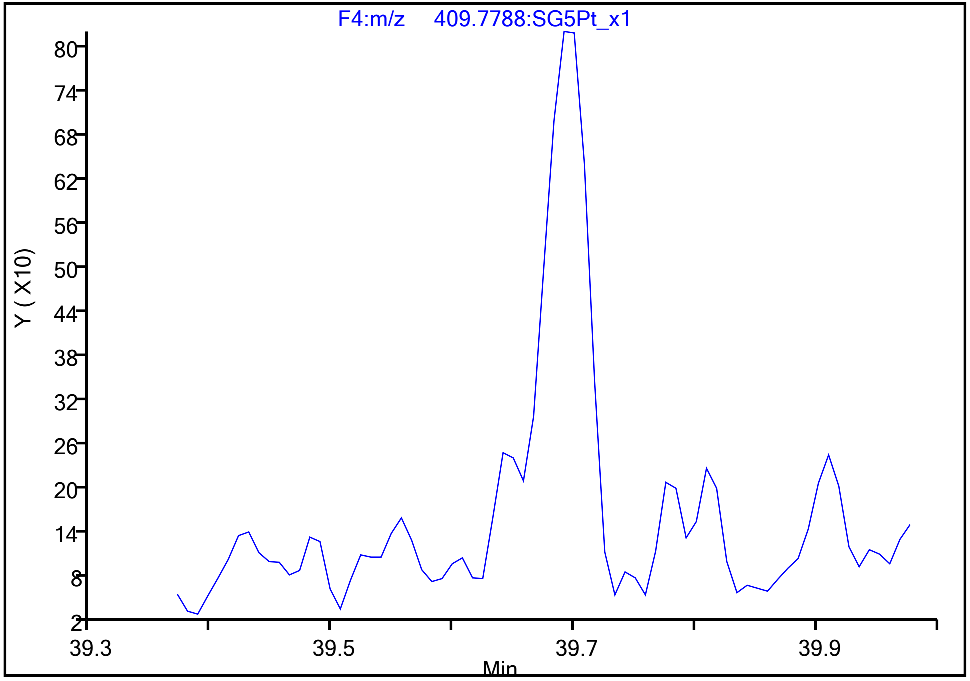

Manual Integration Results

RT: 39.69
Area: 2264
Amount: 0.090169
Amount Units: pg/ul

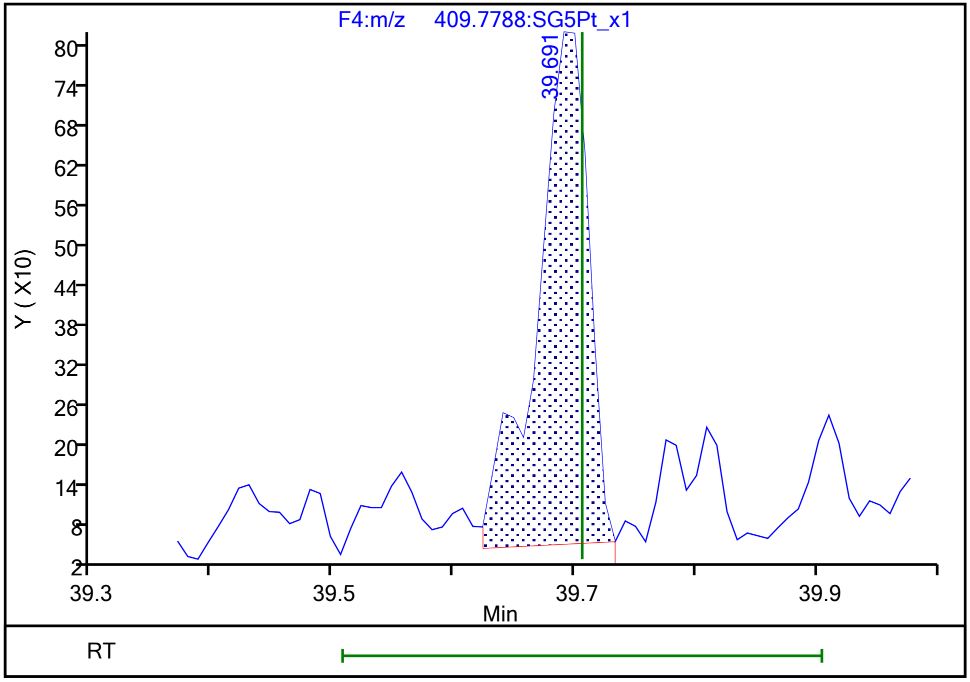

Reviewer: bennettd, 18-Oct-2021 13:36:48
Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:42:01

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

Not Detected

Expected RT: 39.71

Processing Integration Results

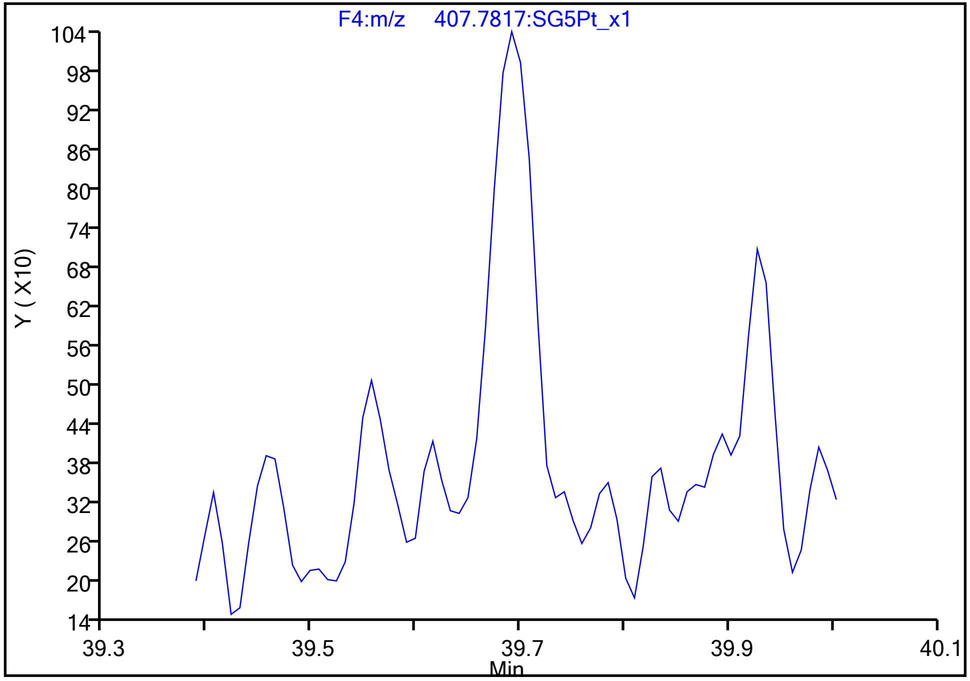

RT: 39.69

Area: 2825

Amount: 0.090169

Amount Units: pg/ul

Manual Integration Results

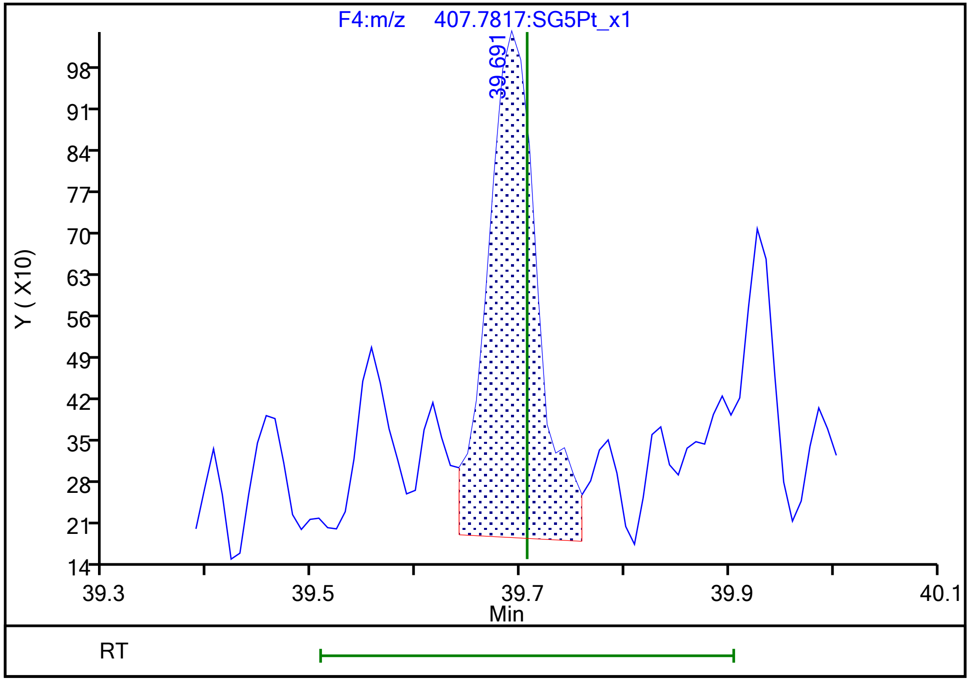

Reviewer: bennettd, 18-Oct-2021 13:36:53

Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:42:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	39.40
Area:	5009
Amount:	0.202155
Amount Units:	pg/ul

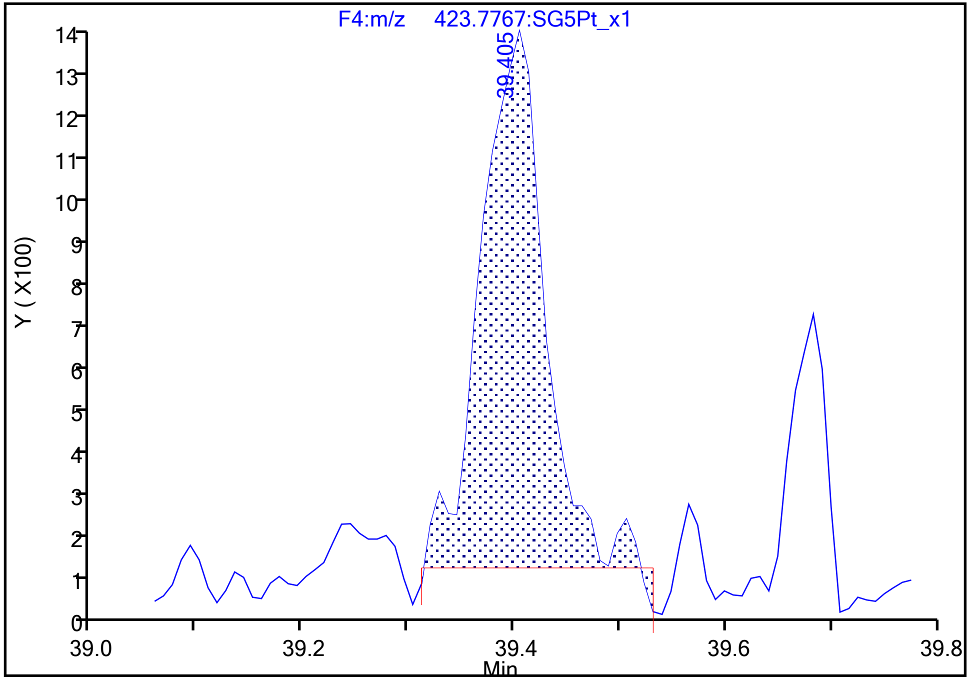

Manual Integration Results

RT:	39.40
Area:	5288
Amount:	0.216934
Amount Units:	pg/ul

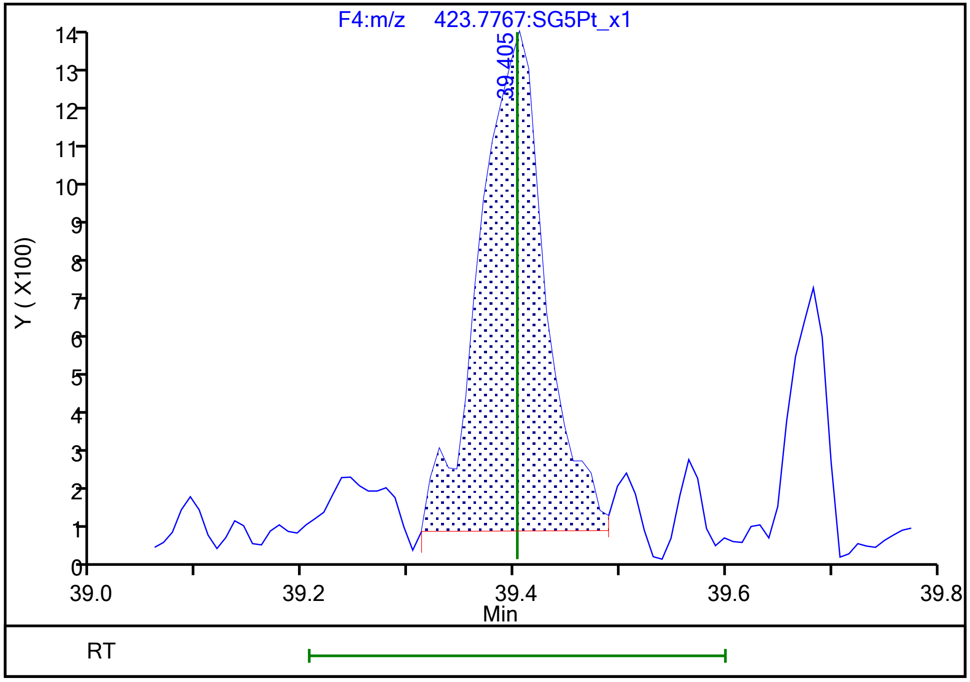

Reviewer: bennettd, 18-Oct-2021 13:37:26

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Report Date: 18-Oct-2021 13:42:01
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Injection Date: 15-Oct-2021 19:03:00
Instrument ID: DFS 1
Lims ID: 320-79918-A-3-A
Lab Sample ID: 320-79918-3
Client ID: 11215702-5Mm
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 12
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 39.40
Area: 3609
Amount: 0.202155
Amount Units: pg/ul

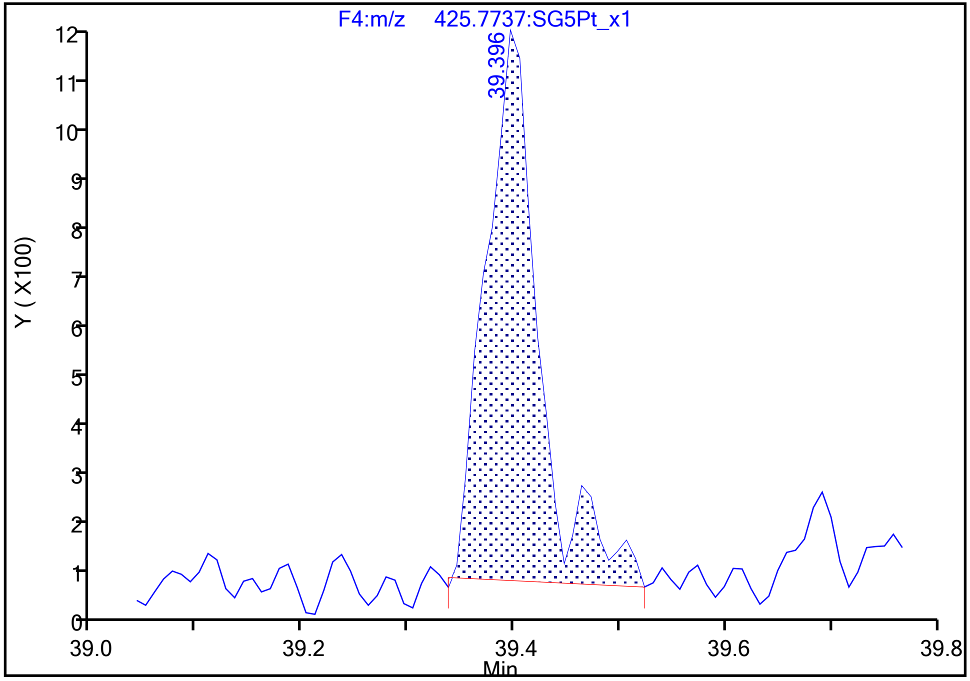

Manual Integration Results

RT: 39.40
Area: 3960
Amount: 0.216934
Amount Units: pg/ul

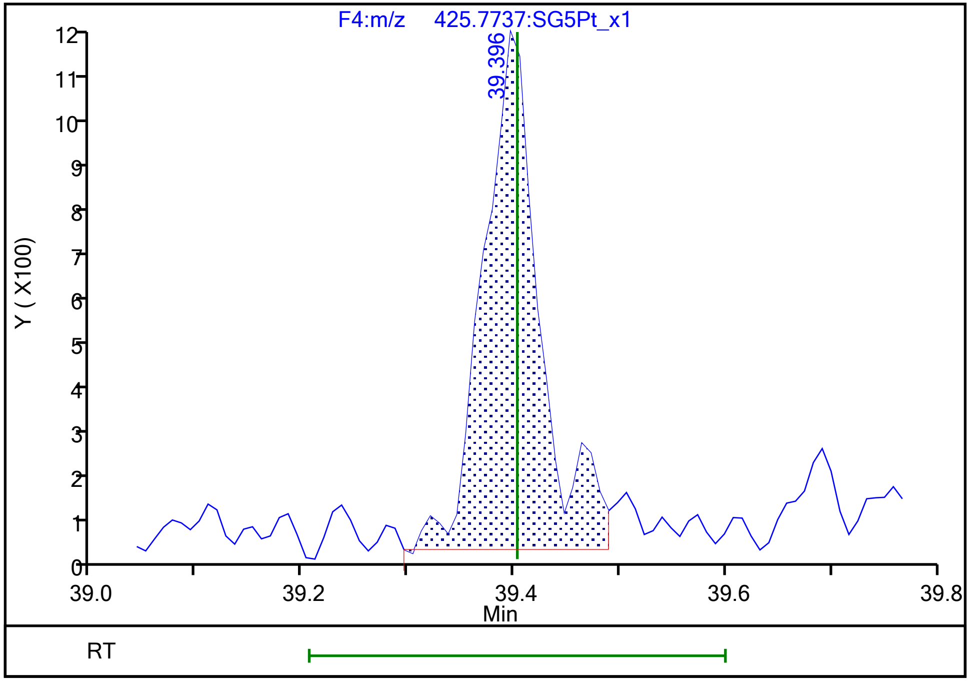

Reviewer: bennettd, 18-Oct-2021 13:37:28
Audit Action: Split an Integrated Peak
Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT:	41.96
Area:	2973
Amount:	0.130687
Amount Units:	pg/ul

Processing Integration Results

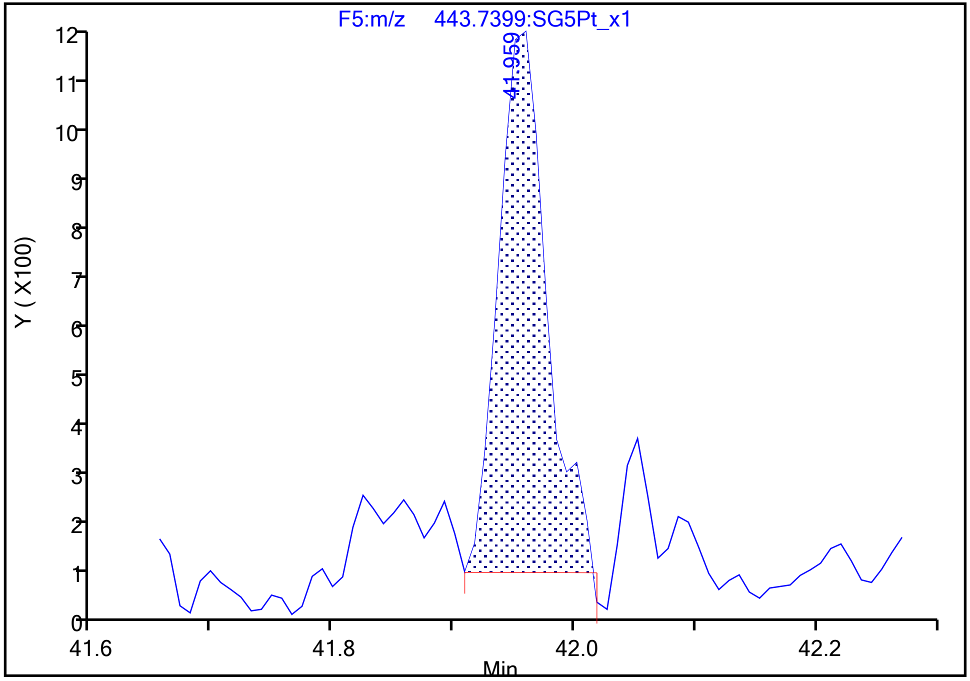

RT:	41.96
Area:	3417
Amount:	0.142194
Amount Units:	pg/ul

Manual Integration Results

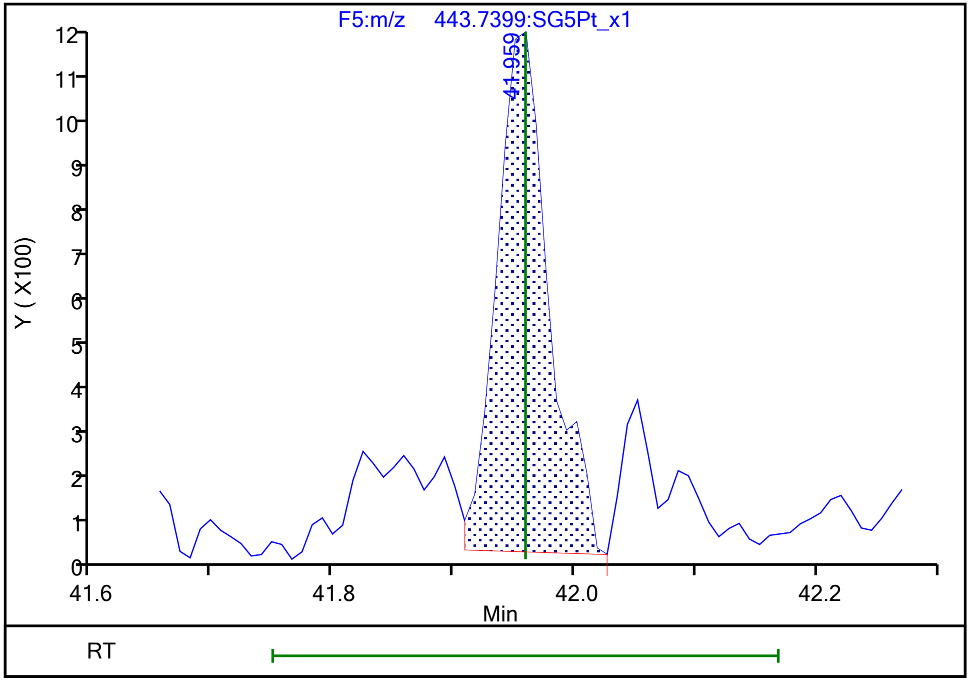

Reviewer: bennettd, 18-Oct-2021 13:38:03

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Report Date: 18-Oct-2021 13:42:01
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d				
Injection Date:	15-Oct-2021 19:03:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-3-A	Lab Sample ID:	320-79918-3		
Client ID:	11215702-5Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 1

RT: 41.98
Area: 2978
Amount: 0.130687
Amount Units: pg/ul

Processing Integration Results

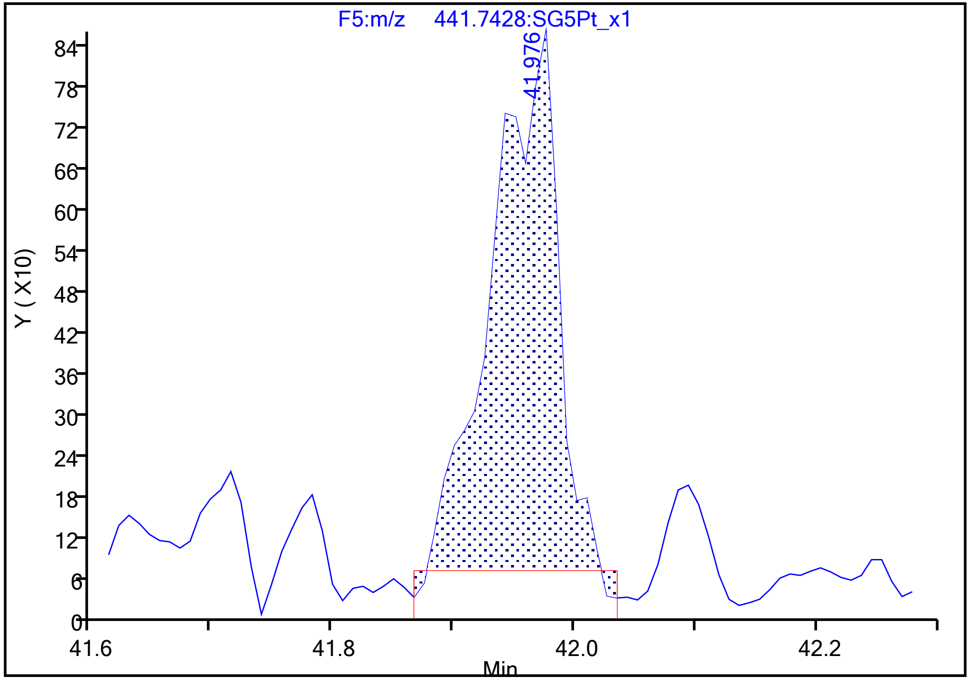

RT: 41.98
Area: 3058
Amount: 0.142194
Amount Units: pg/ul

Manual Integration Results

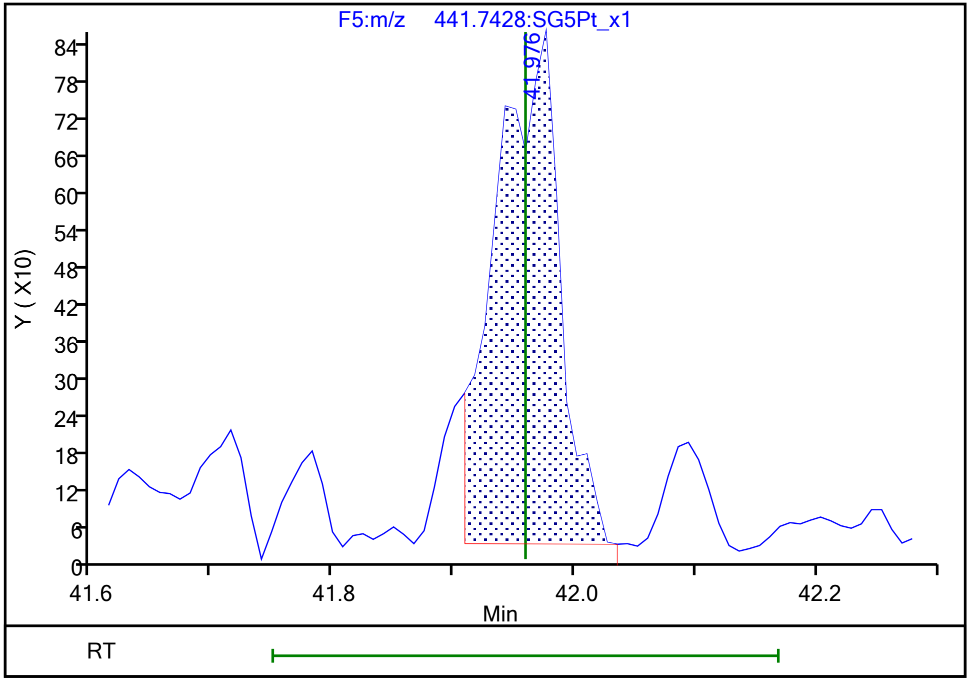

Reviewer: bennettd, 18-Oct-2021 13:38:07
Audit Action: Split an Integrated Peak
Audit Reason: Incomplete Integration

Report Date: 18-Oct-2021 13:42:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-5Mm

Worklist#: 534320

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

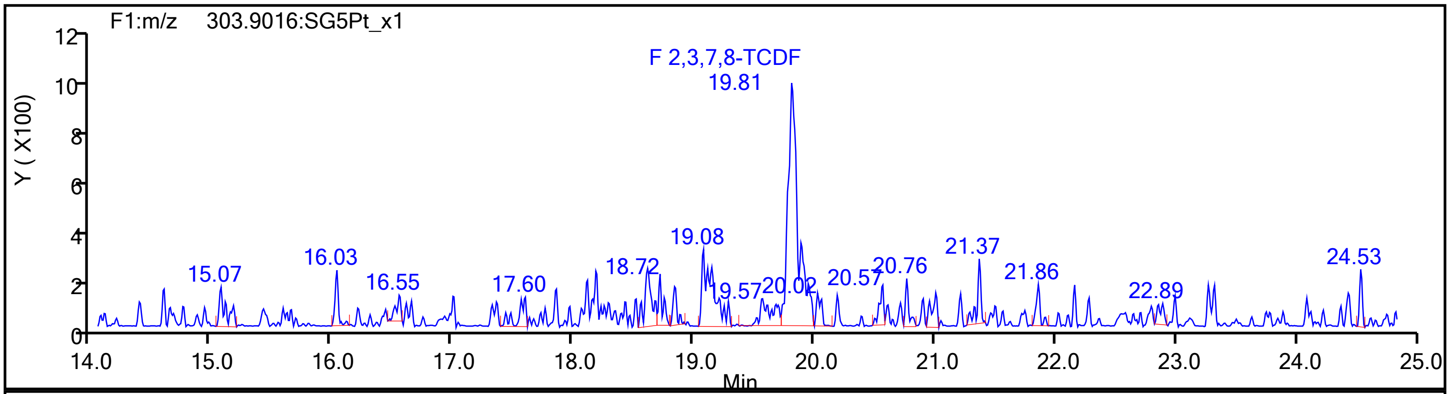

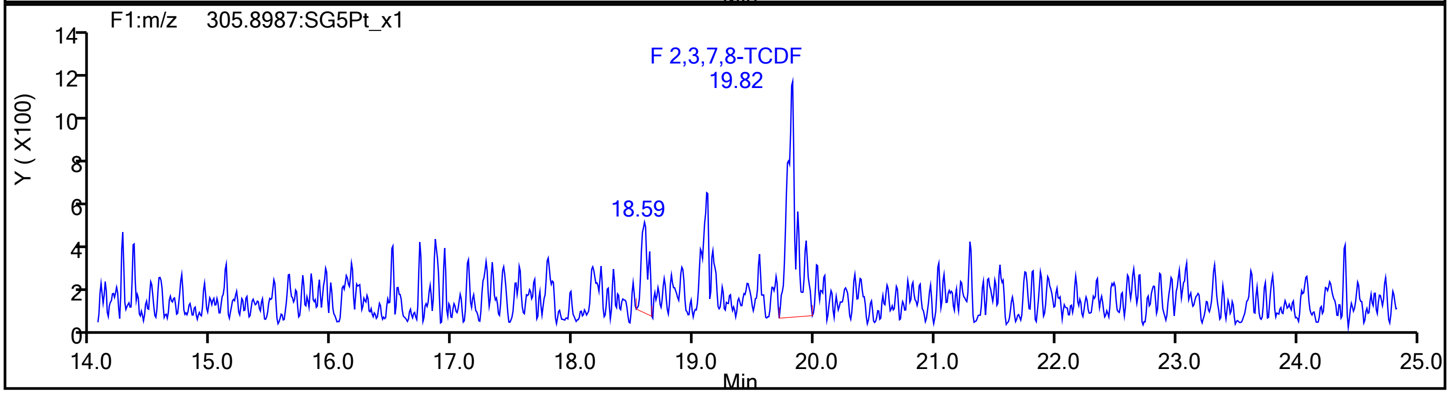

TCDF Standards

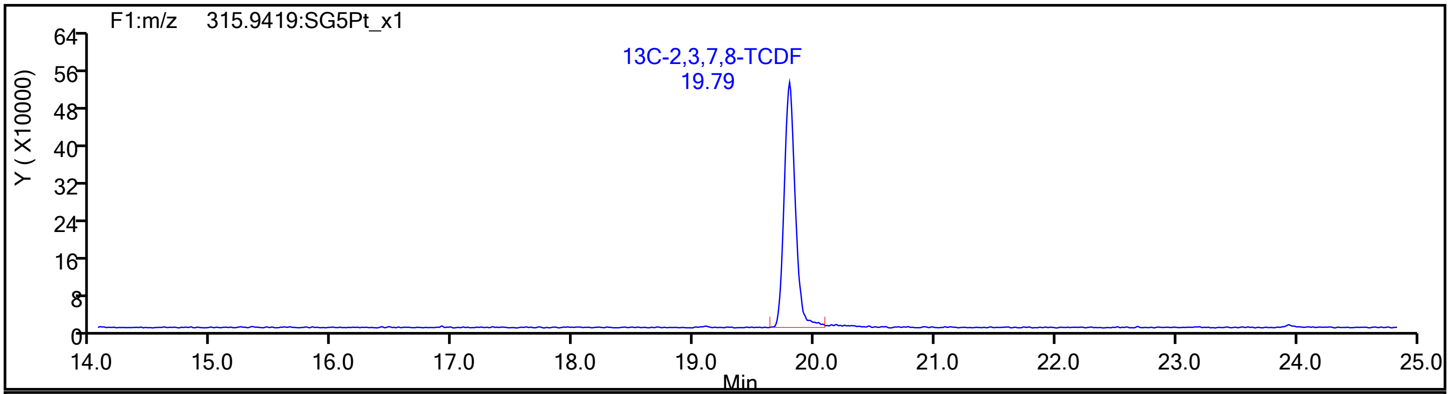

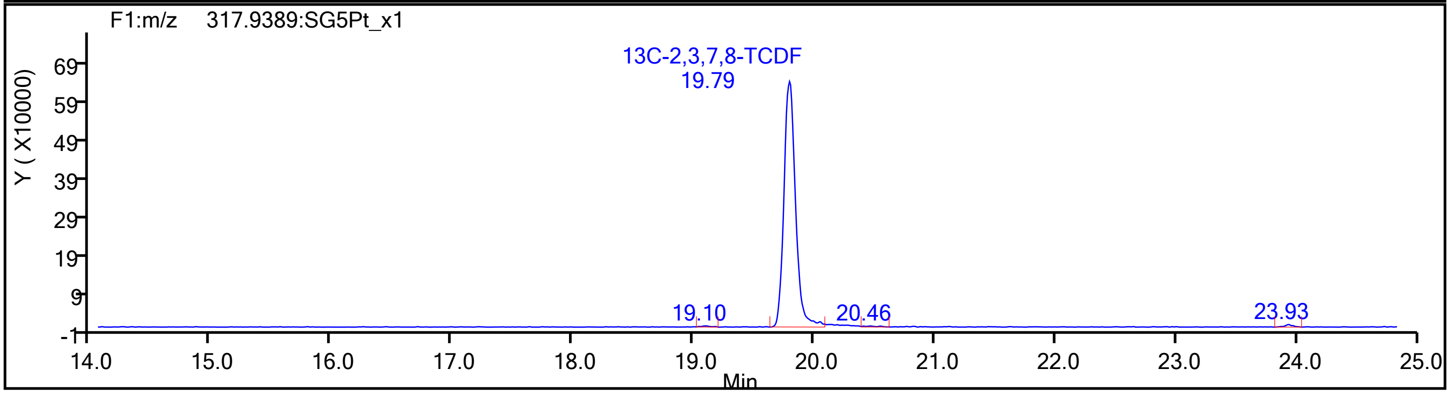

Report Date: 18-Oct-2021 13:42:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Injection Date: 15-Oct-2021 19:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-5Mm
Worklist#: 534320
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

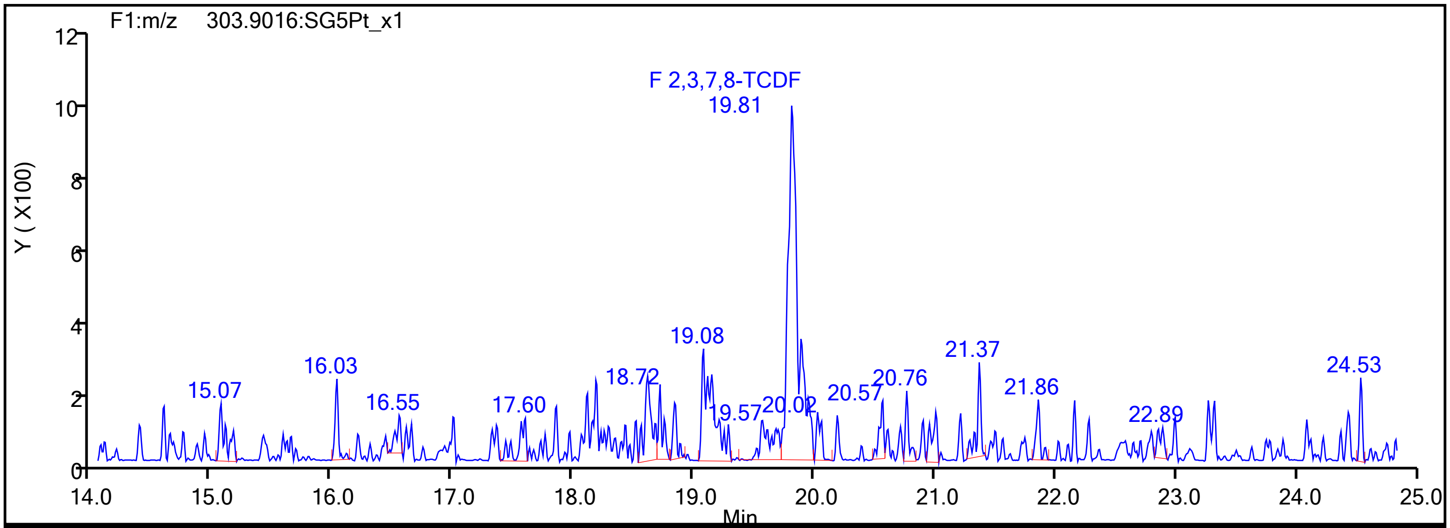

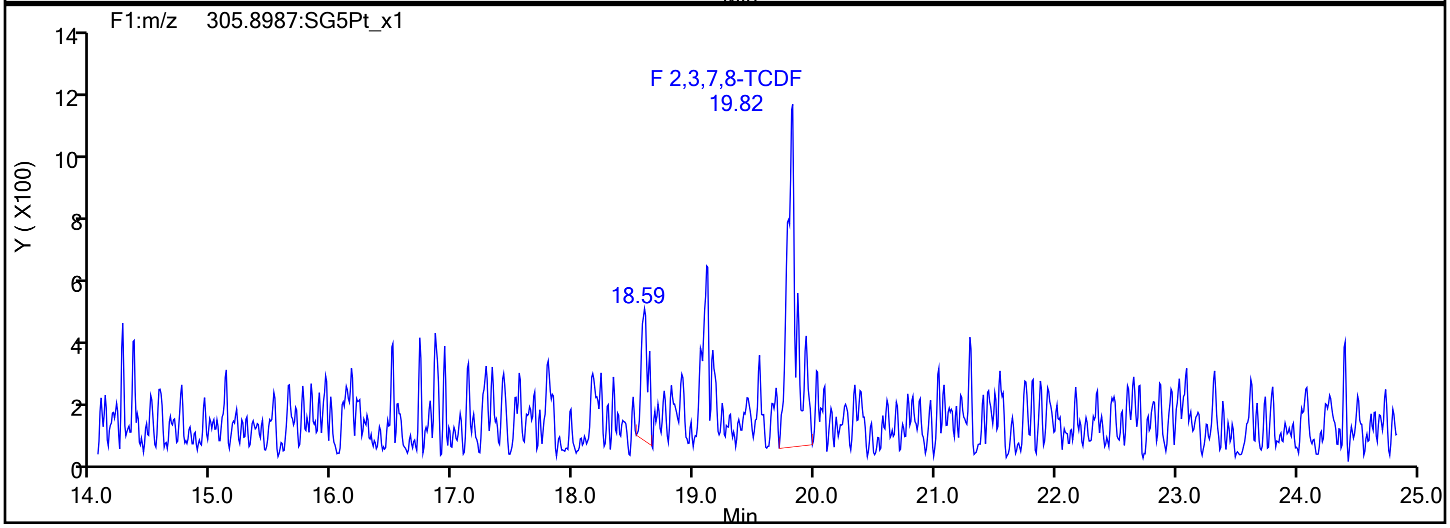

TCDF Interference Mass

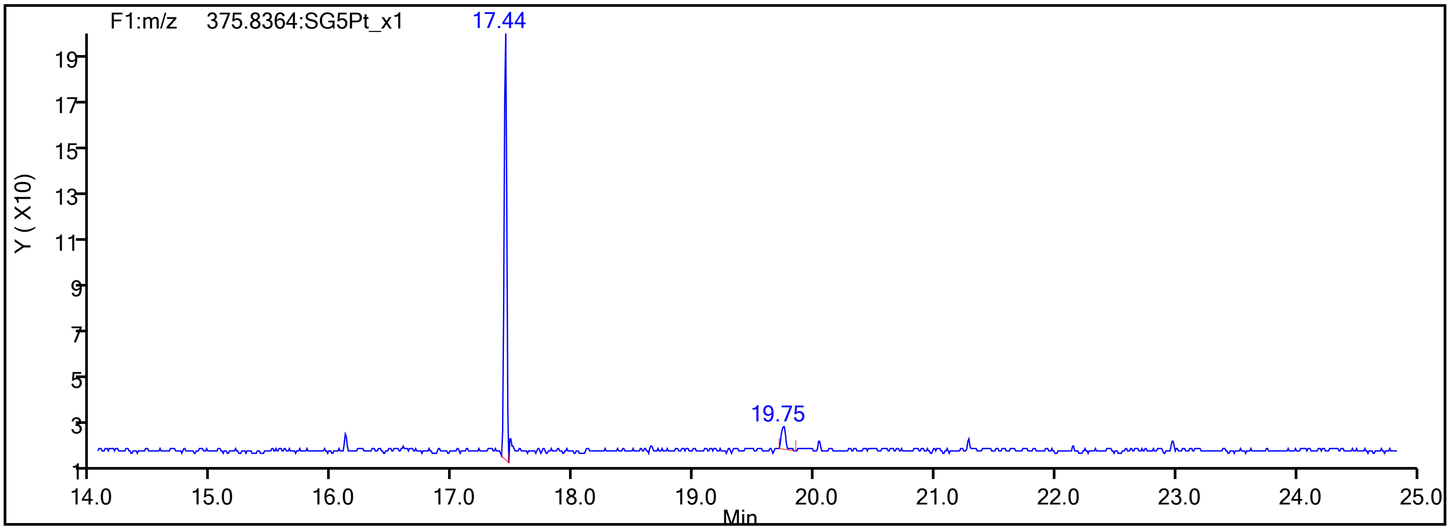

Report Date: 18-Oct-2021 13:42:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date:	15-Oct-2021 19:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-5Mm		
Worklist#:	534320	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

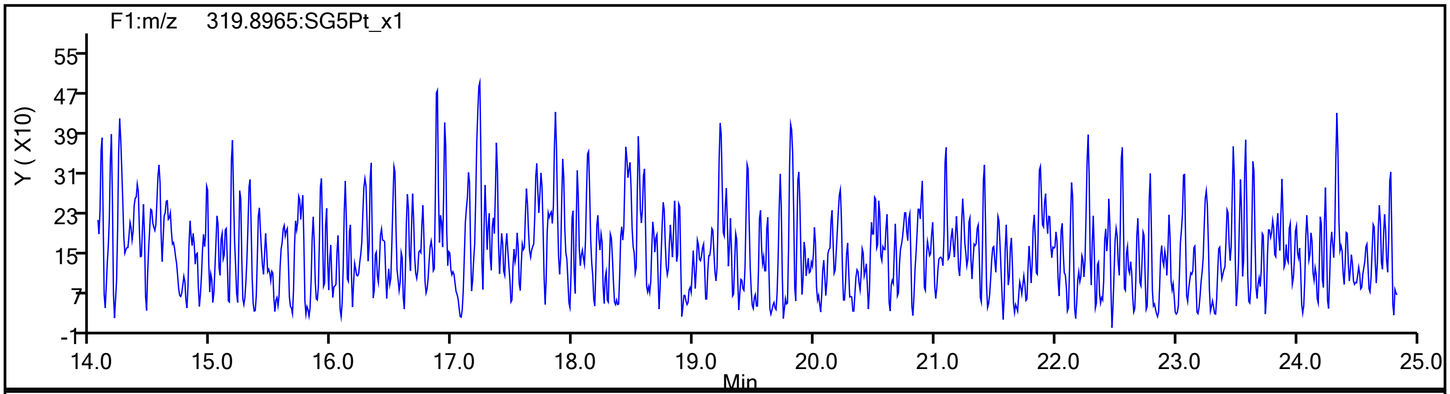

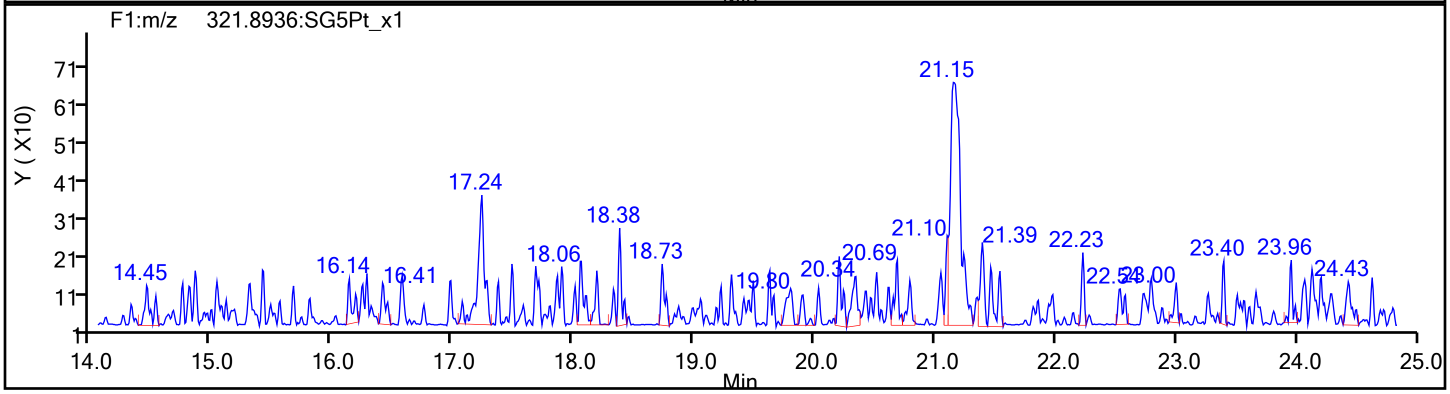

TCDD Standards

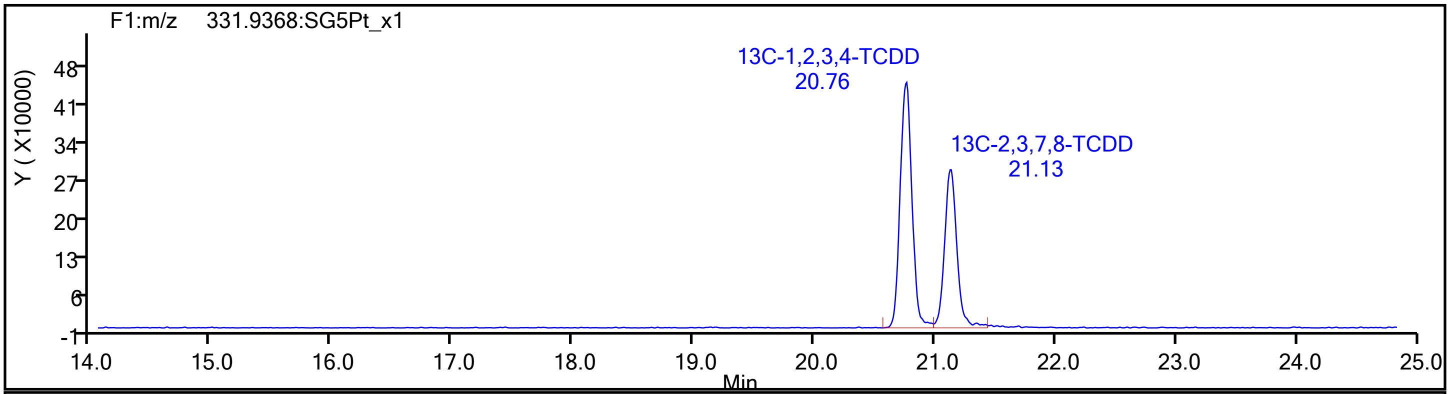

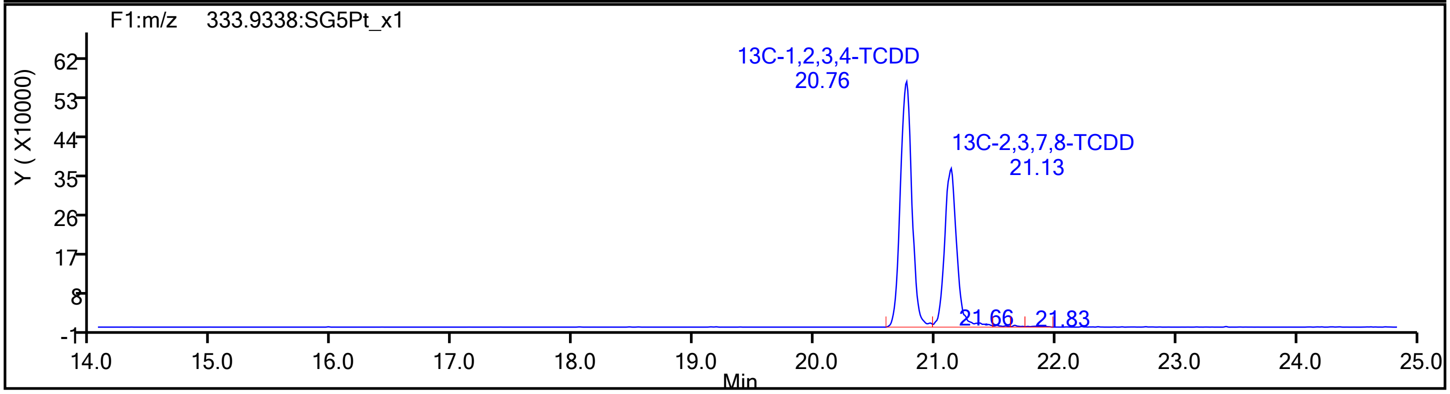

Report Date: 18-Oct-2021 13:42:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Injection Date:	15-Oct-2021 19:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-5Mm		
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37Cl4-TCDD

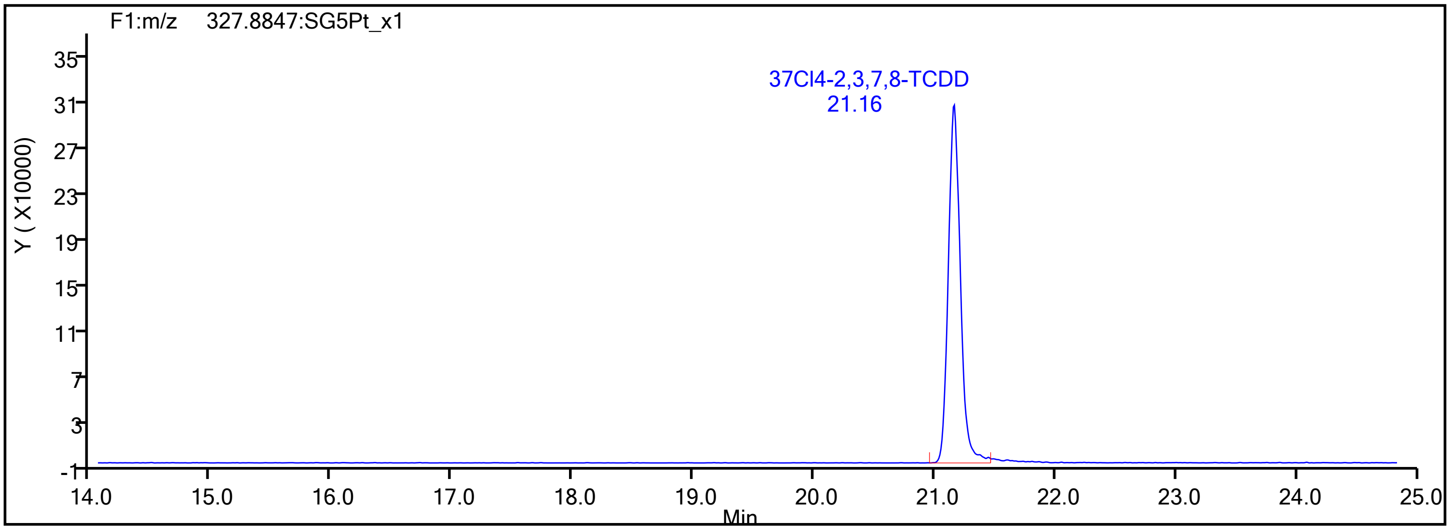

37Cl4-TCDD Standards

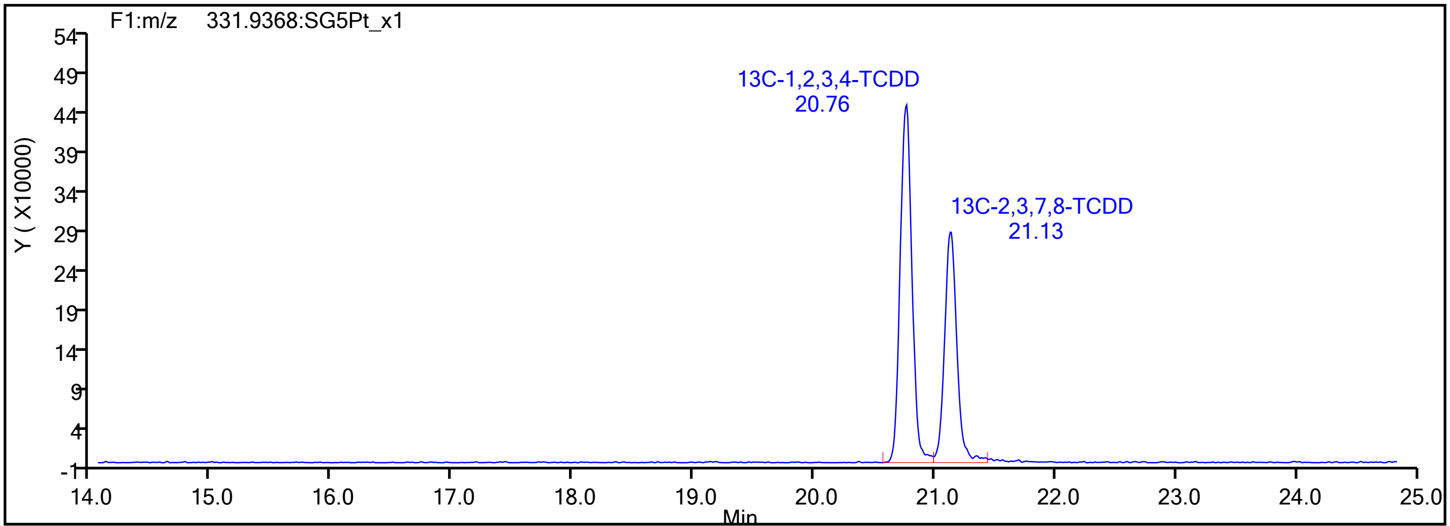

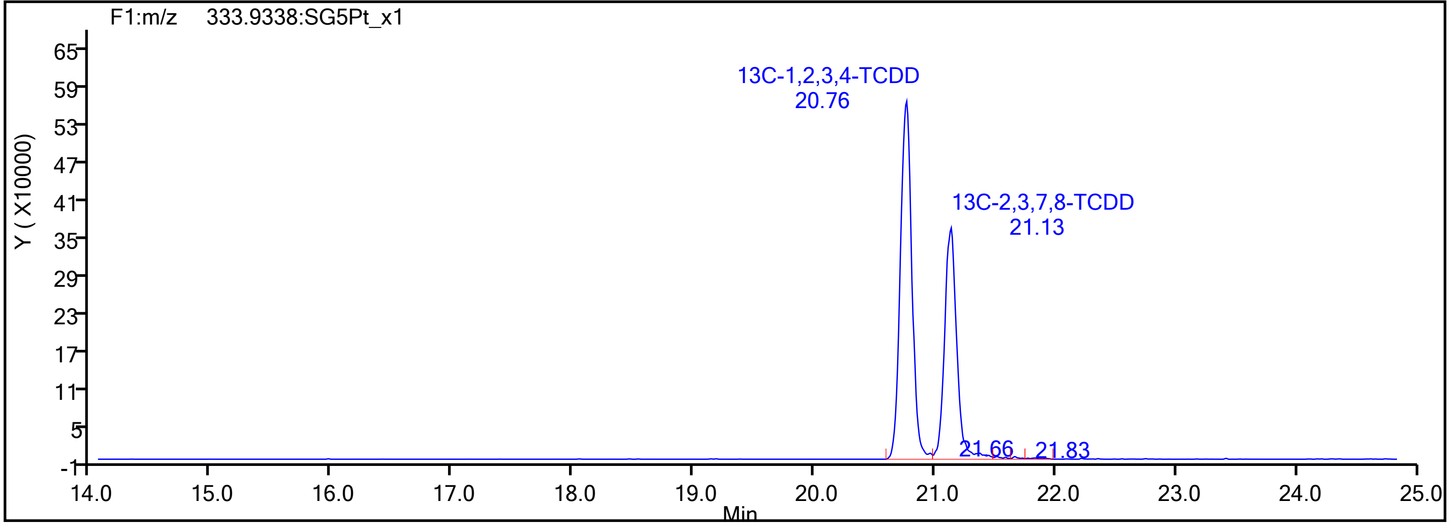

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

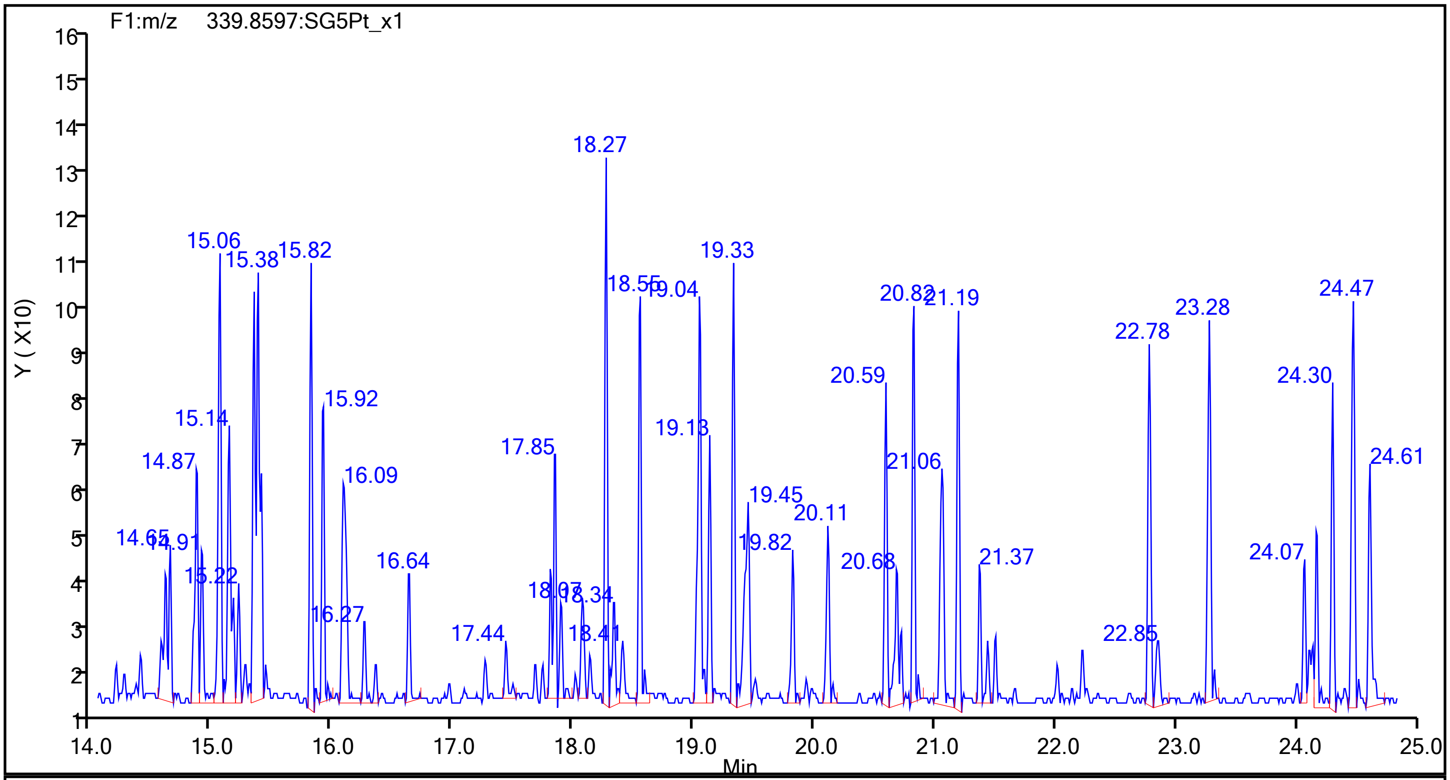

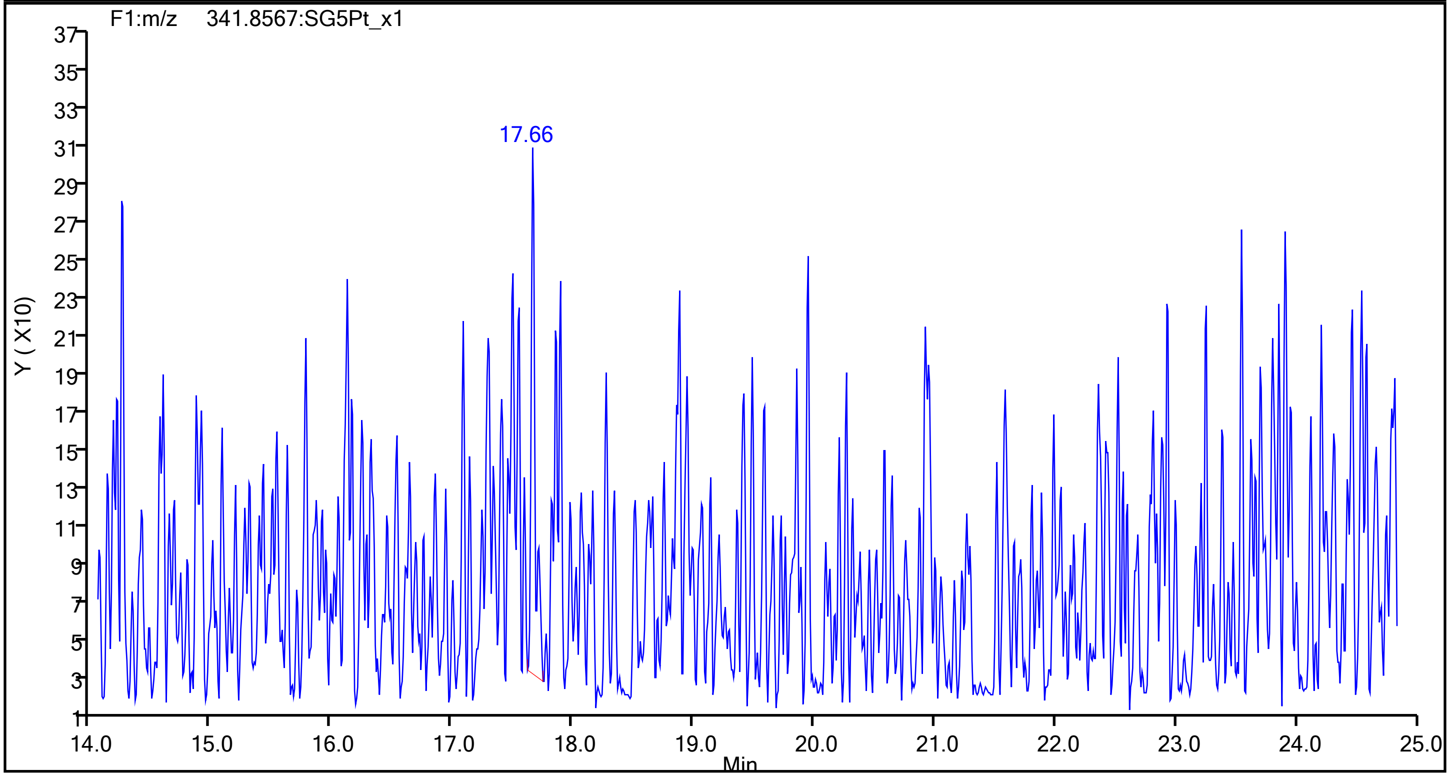

Report Date: 18-Oct-2021 13:42:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-5Mm		
Worklist#:	534320	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

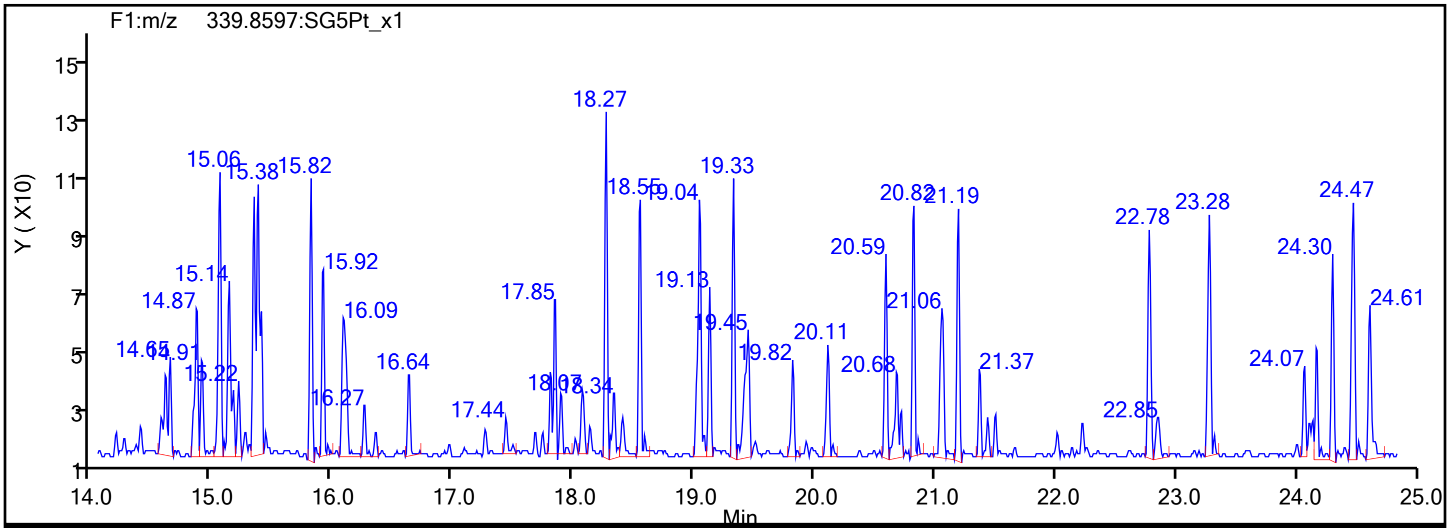

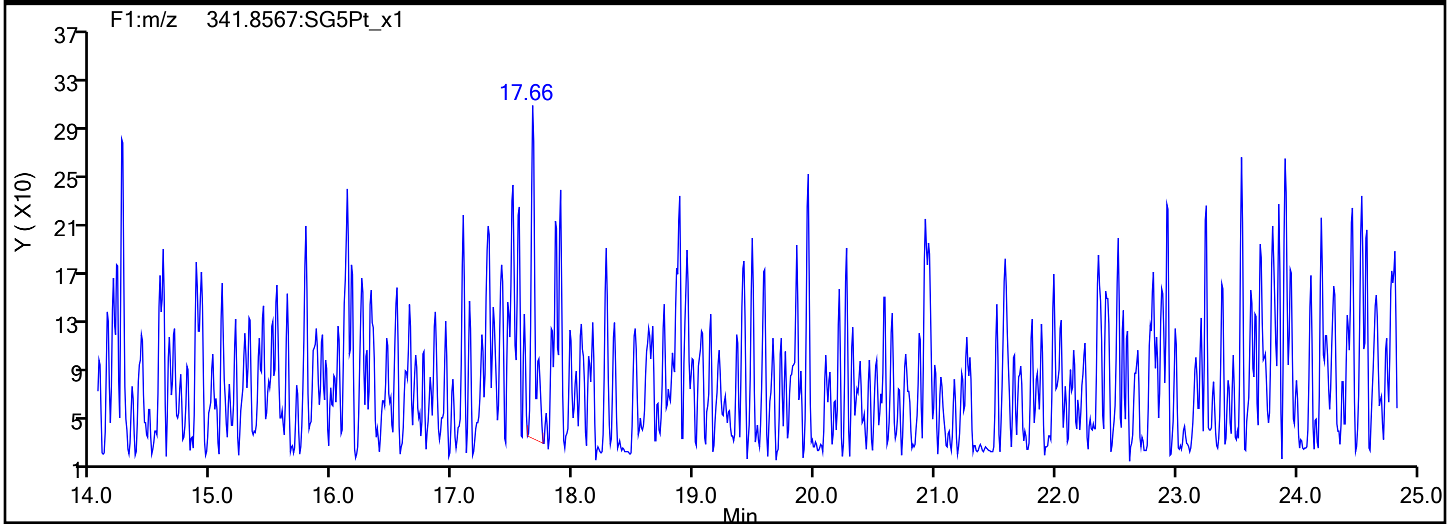

F1 PeCDFs Interference Mass

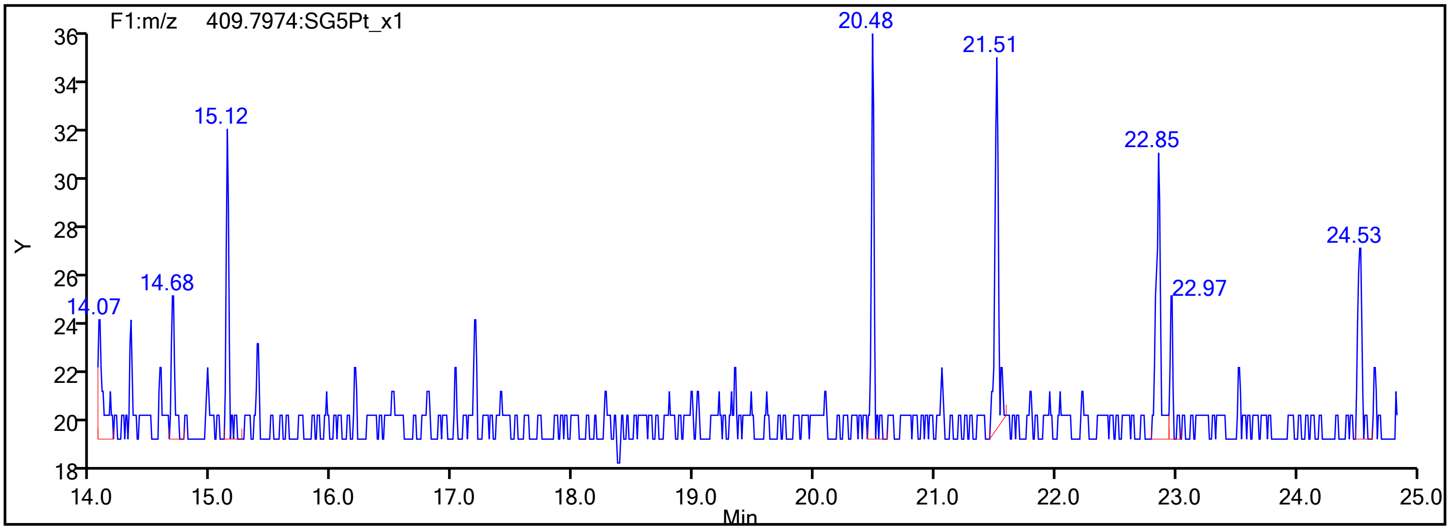

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Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 19:03:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Worklist#: 534320
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Column Dia: 0.32 mm

PeCDF

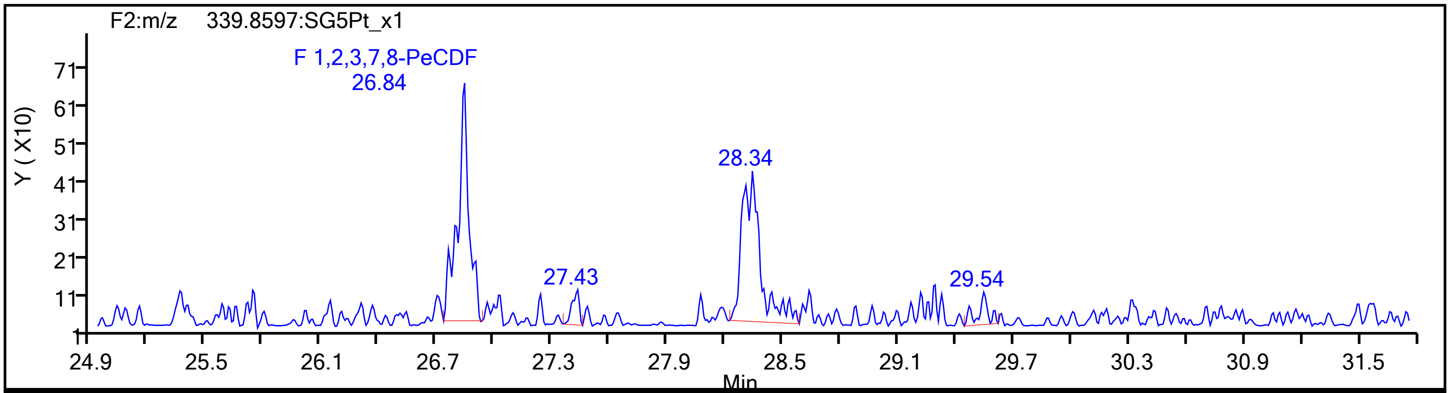

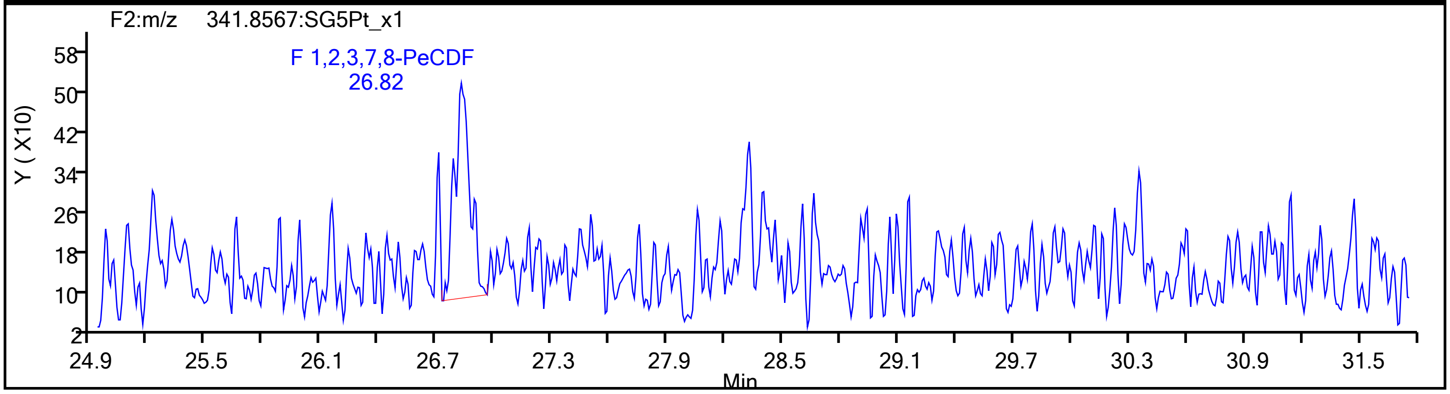

PeCDF Standards

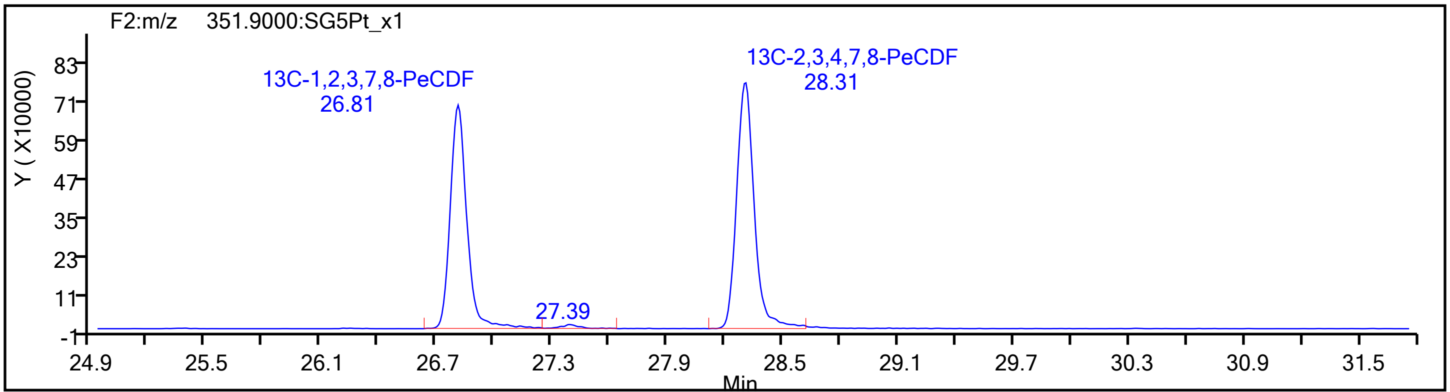

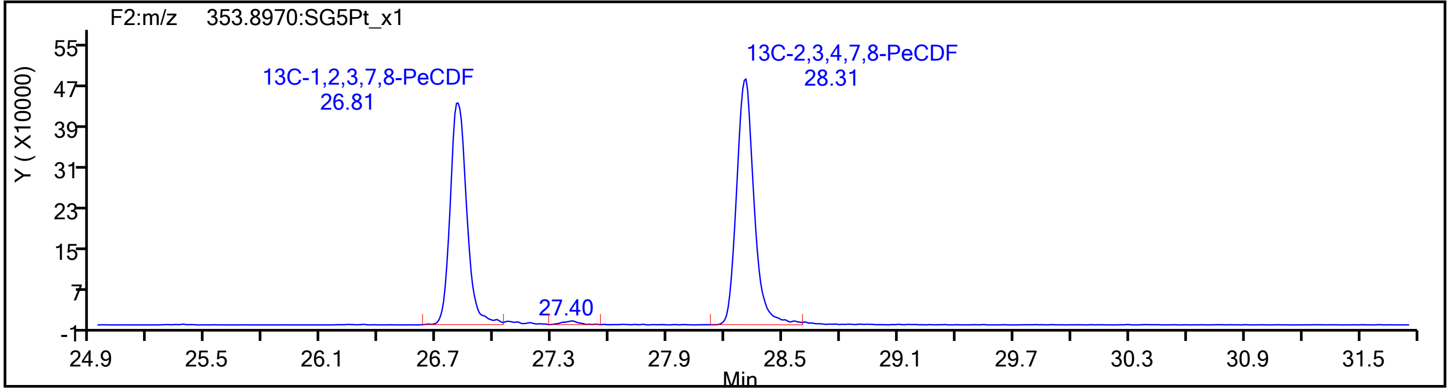

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Eurofins TestAmerica, Sacramento

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Worklist#:	534320	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

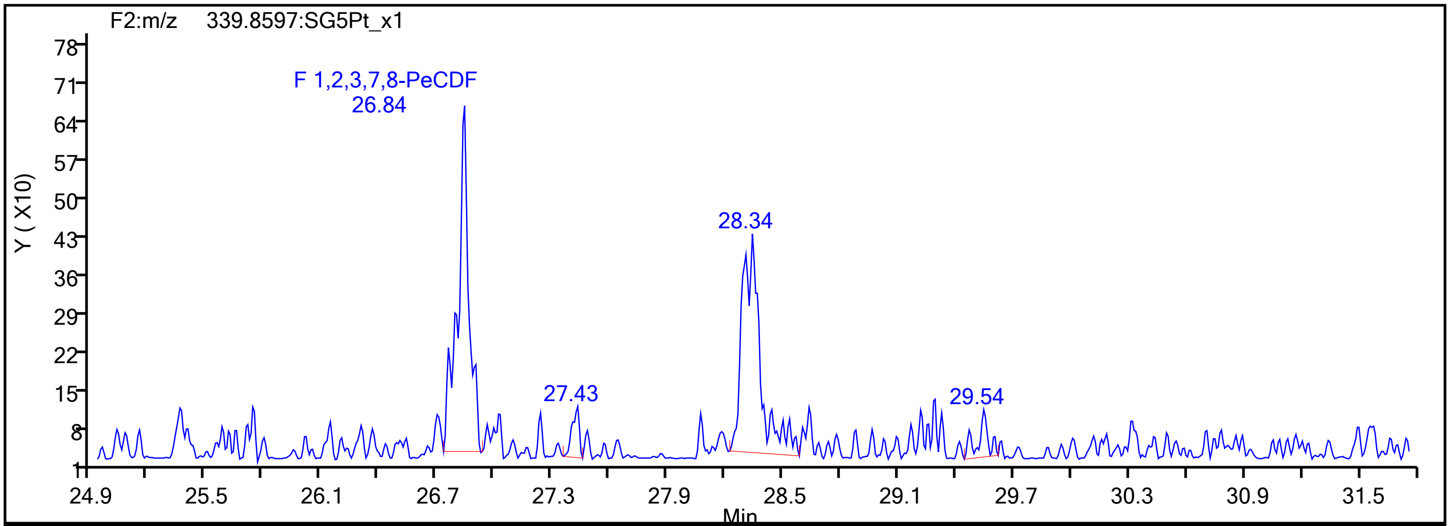

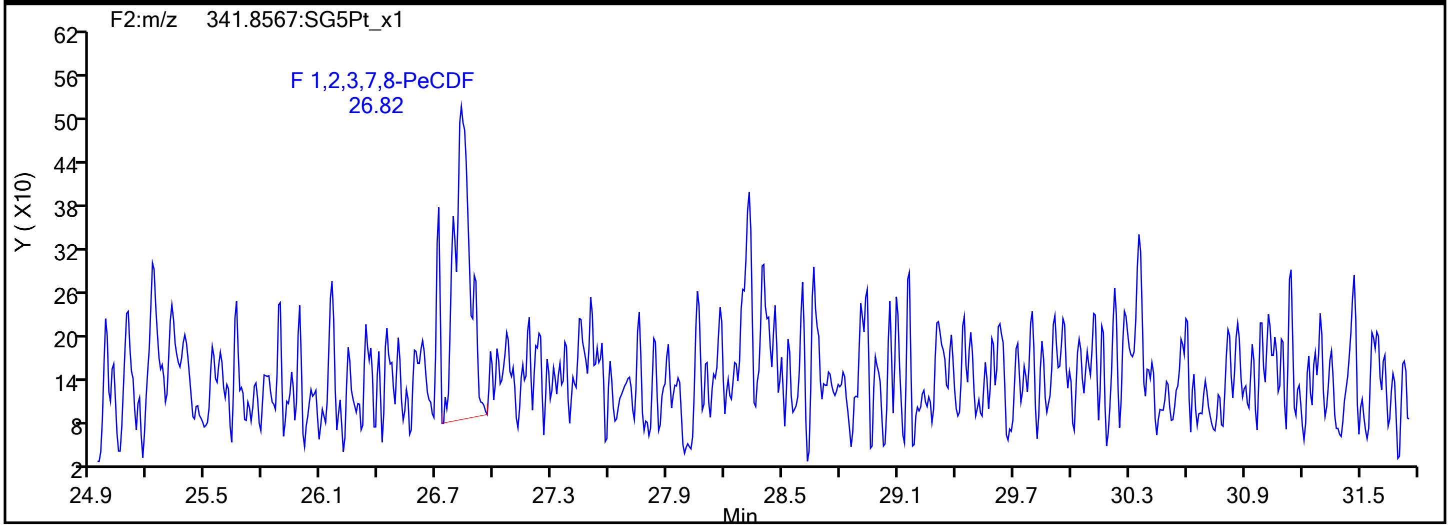

PeCDF Interference Mass

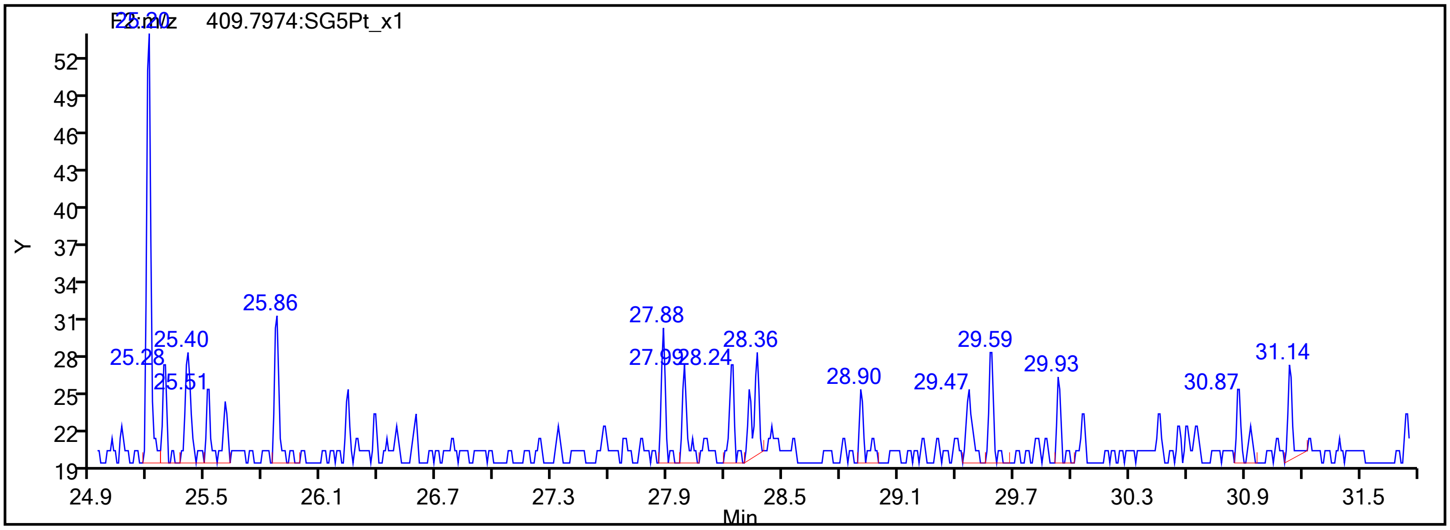

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00
Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID: 11215702-5Mm
Worklist#: 534320
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Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

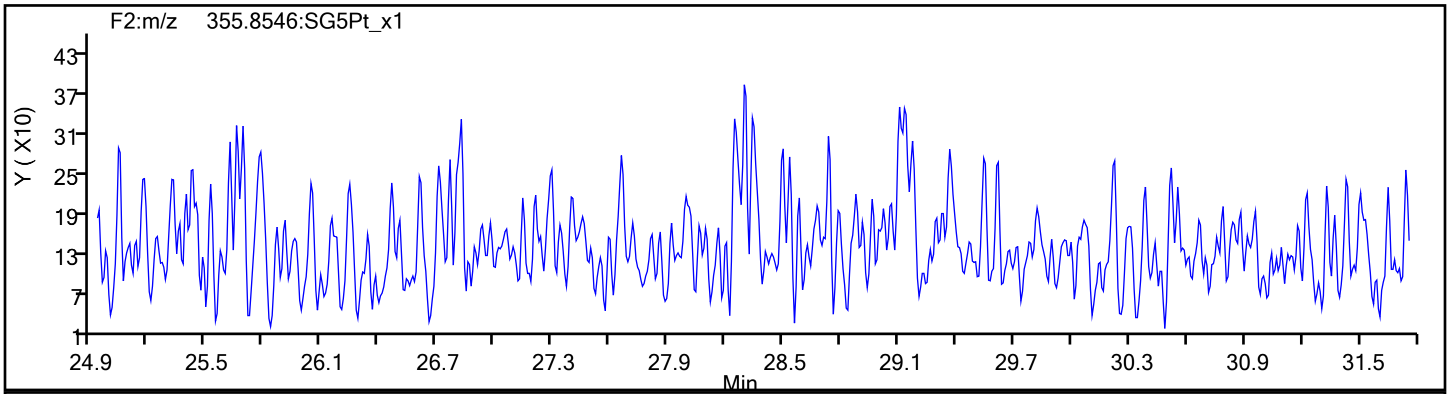

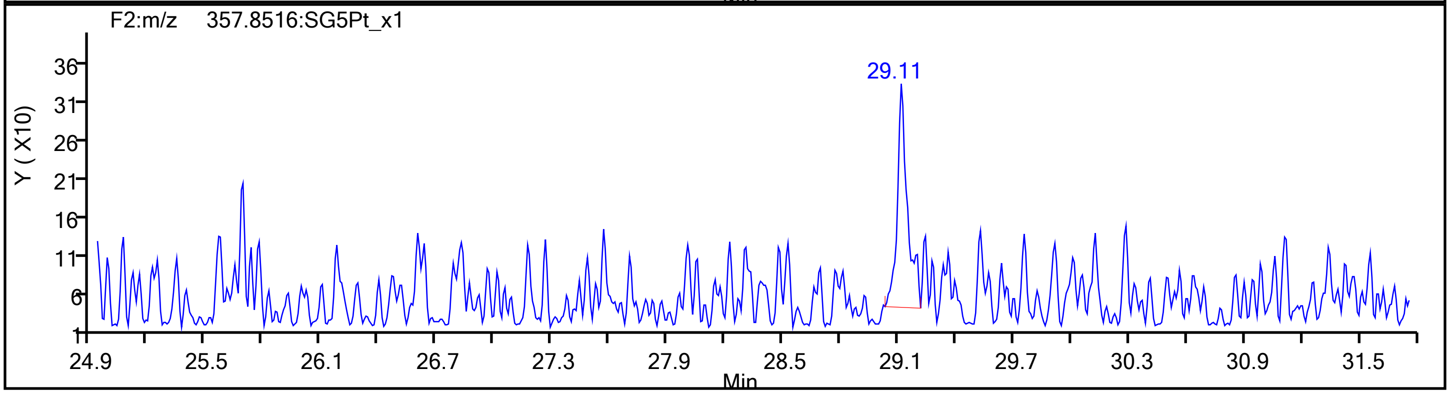

PeCDD Standards

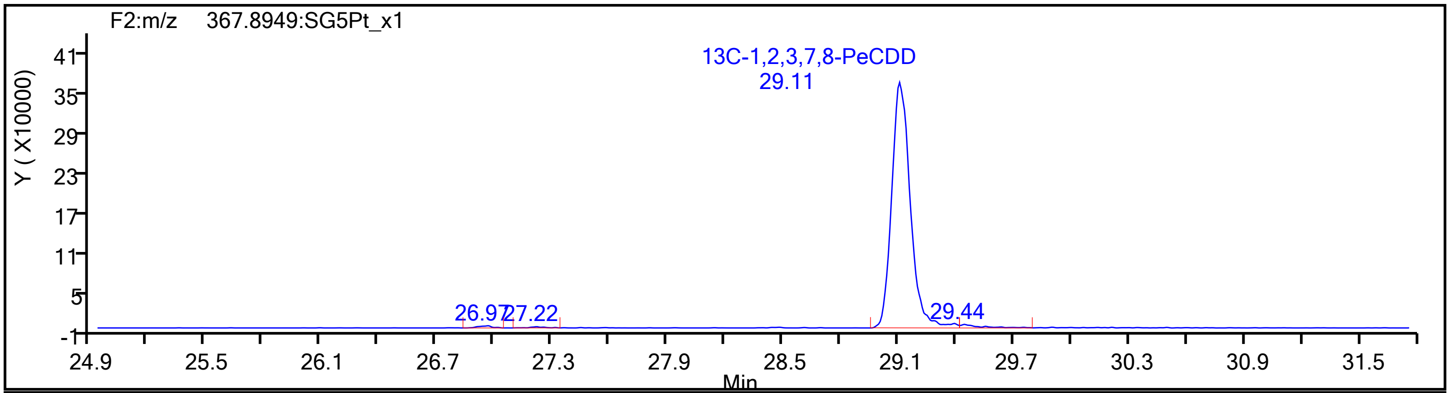

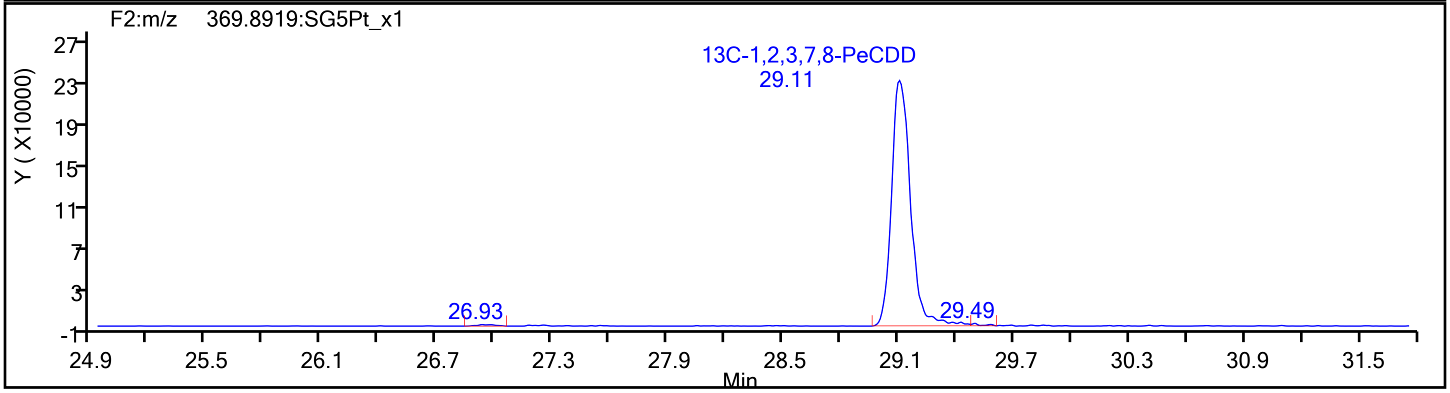

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-5Mm

Worklist#: 534320 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

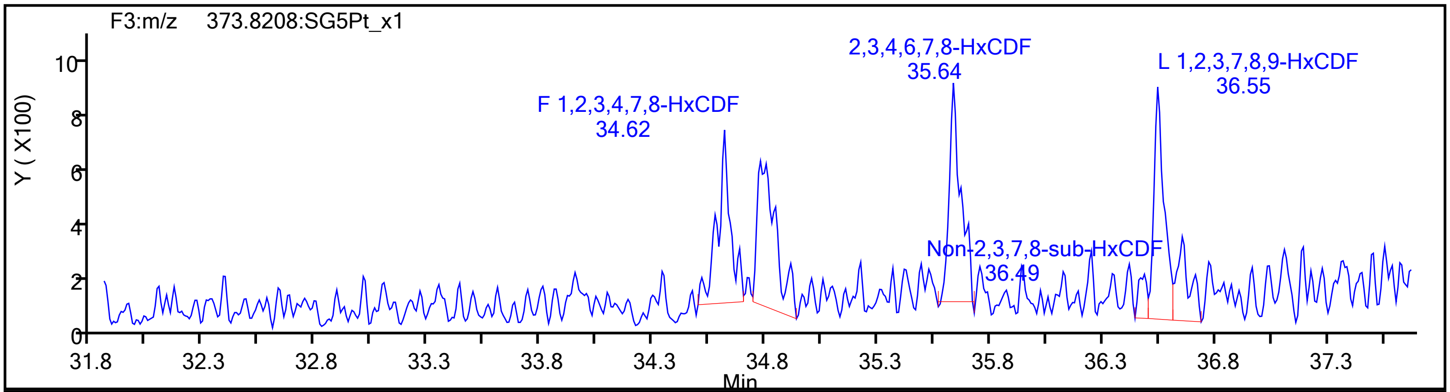

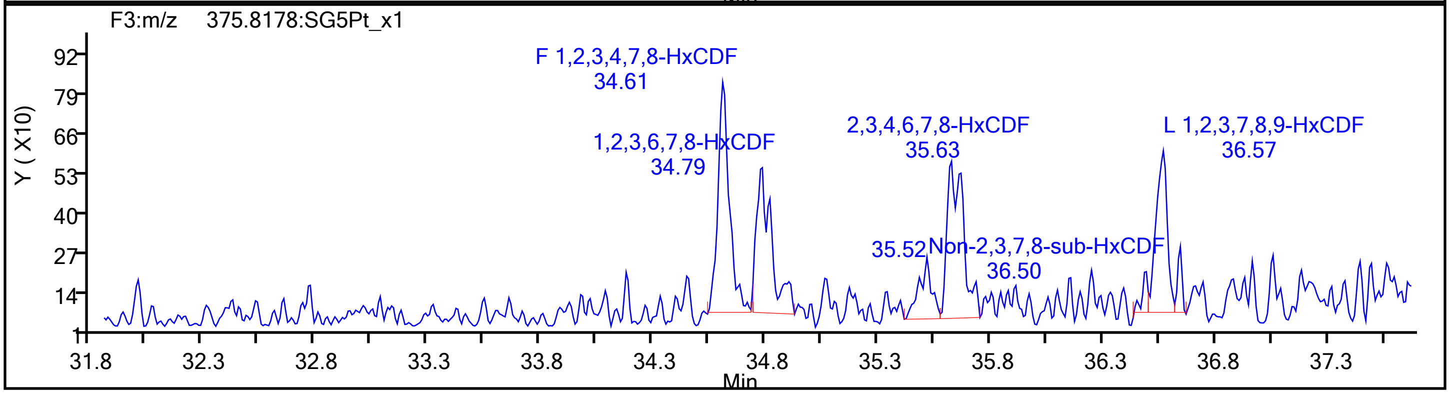

HxCDF Standards

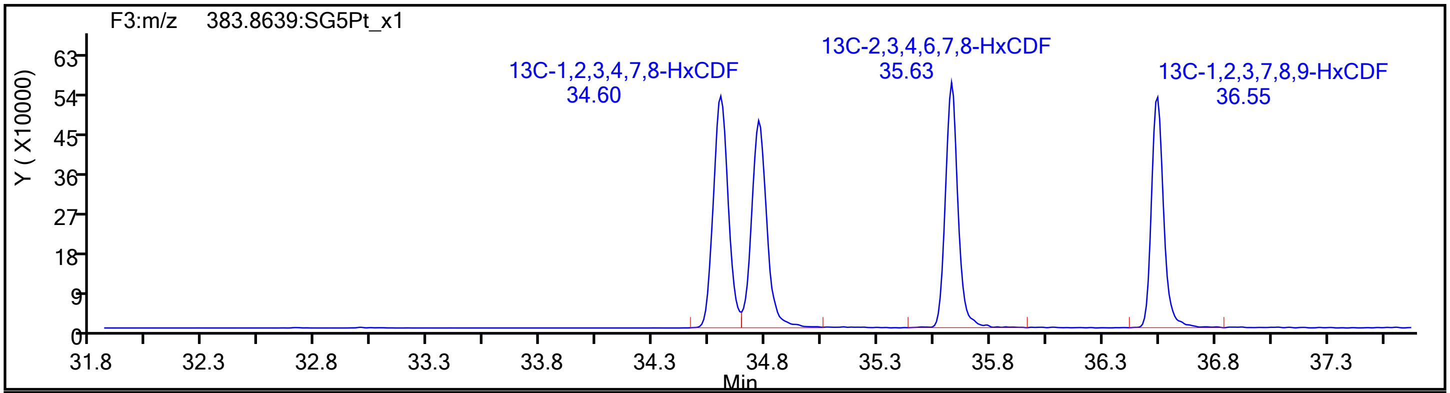

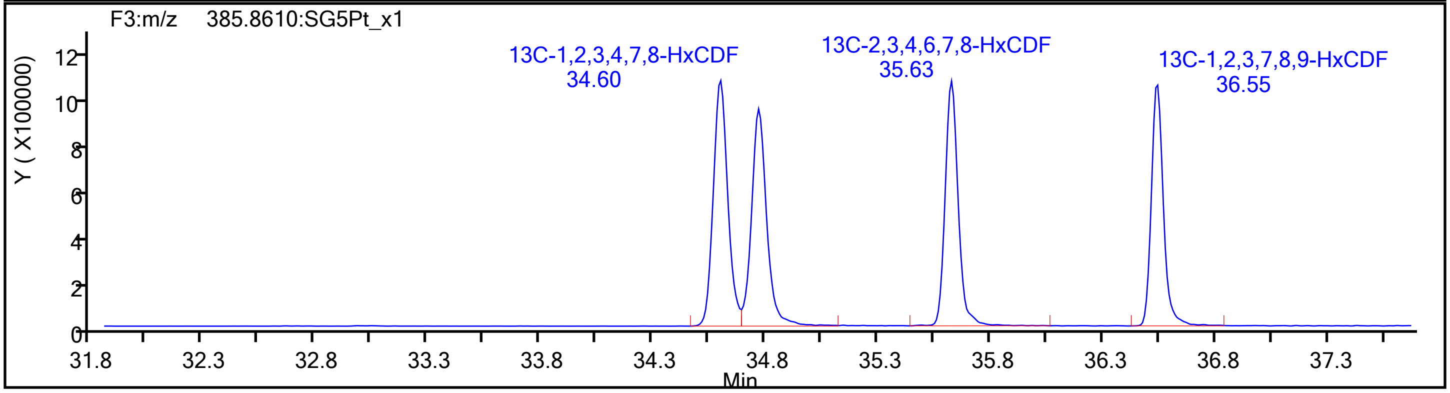

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
Injection Date: 15-Oct-2021 19:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-5Mm
Worklist#: 534320
Sample Line#: 12
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Column Dia: 0.32 mm

HxCDF

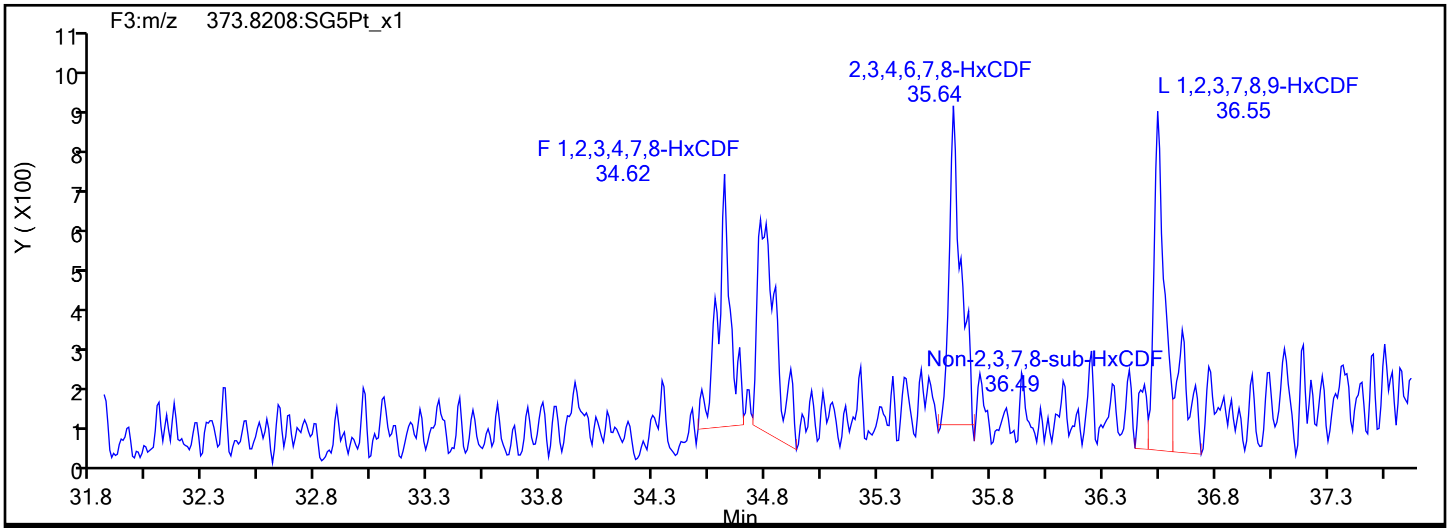

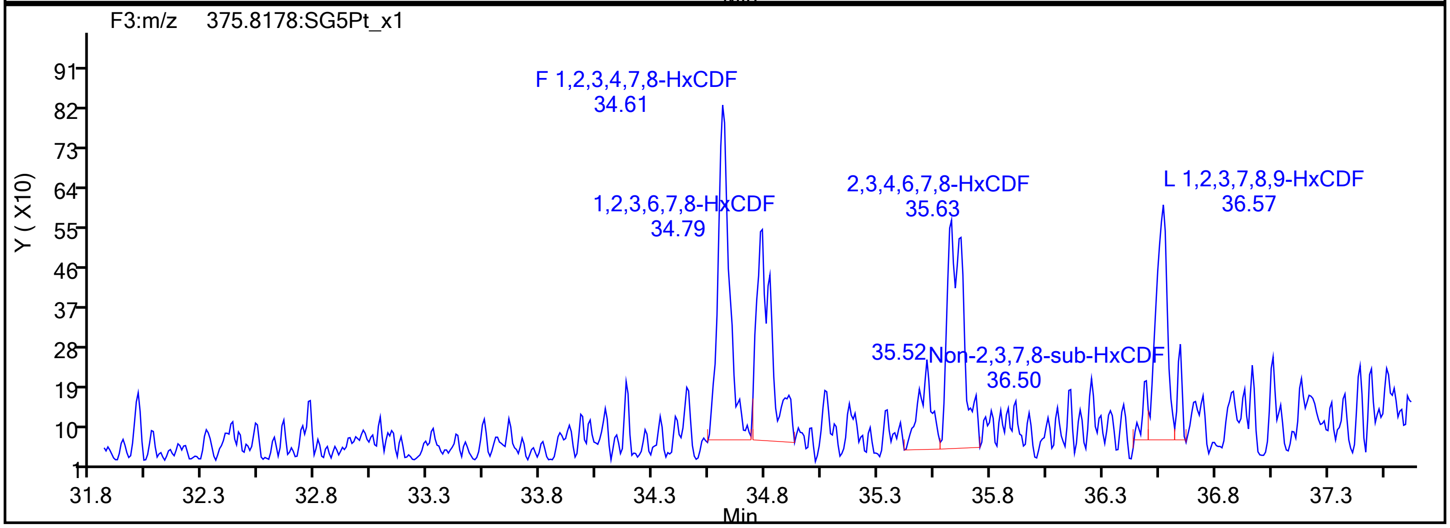

HxCDF Interference Mass

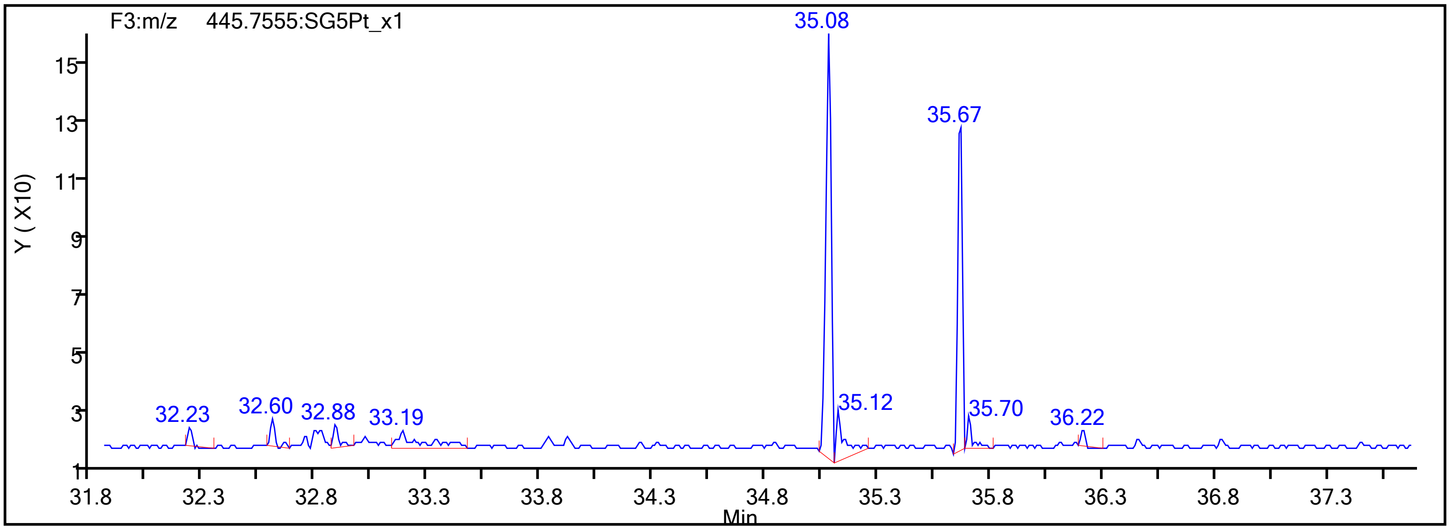

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-5Mm

Worklist#: 534320

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

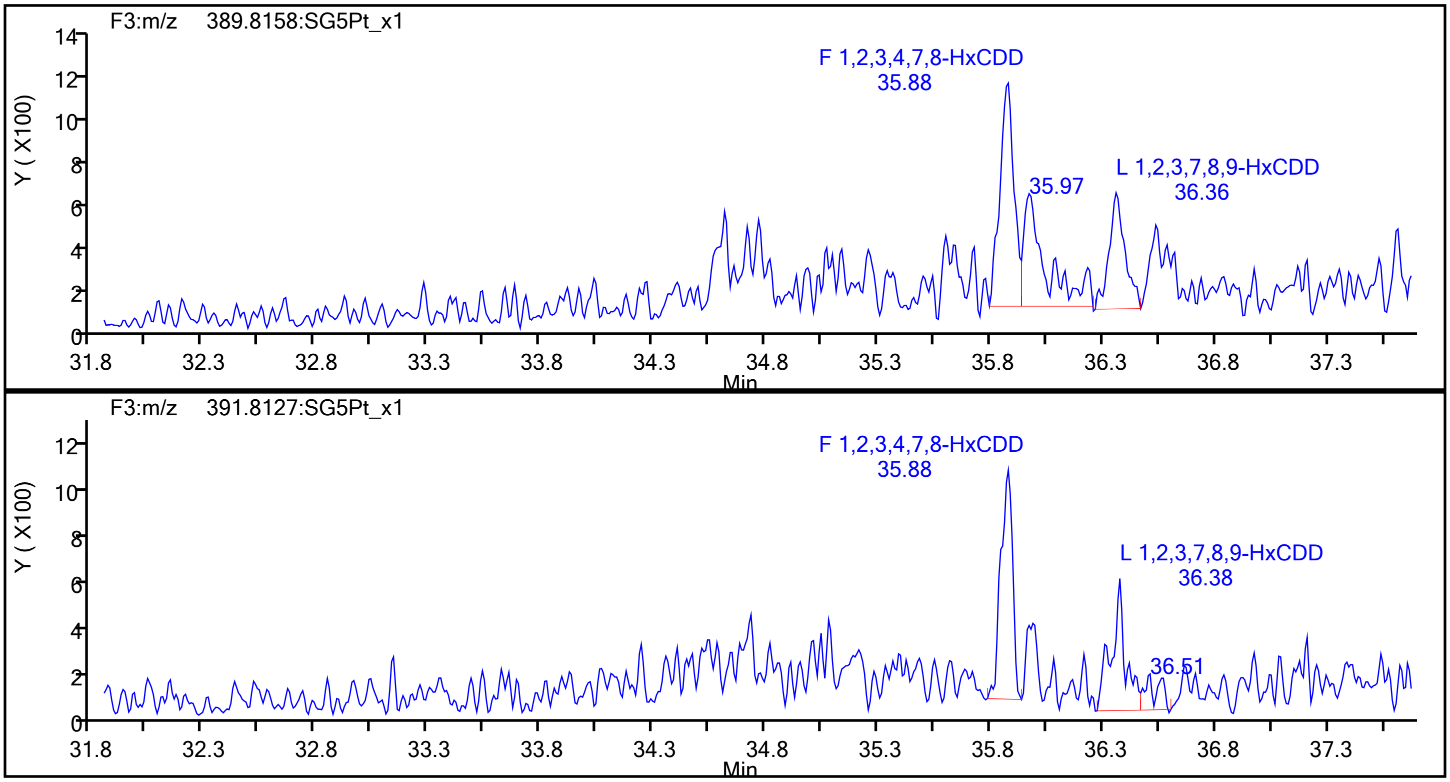

HxCDD Standards

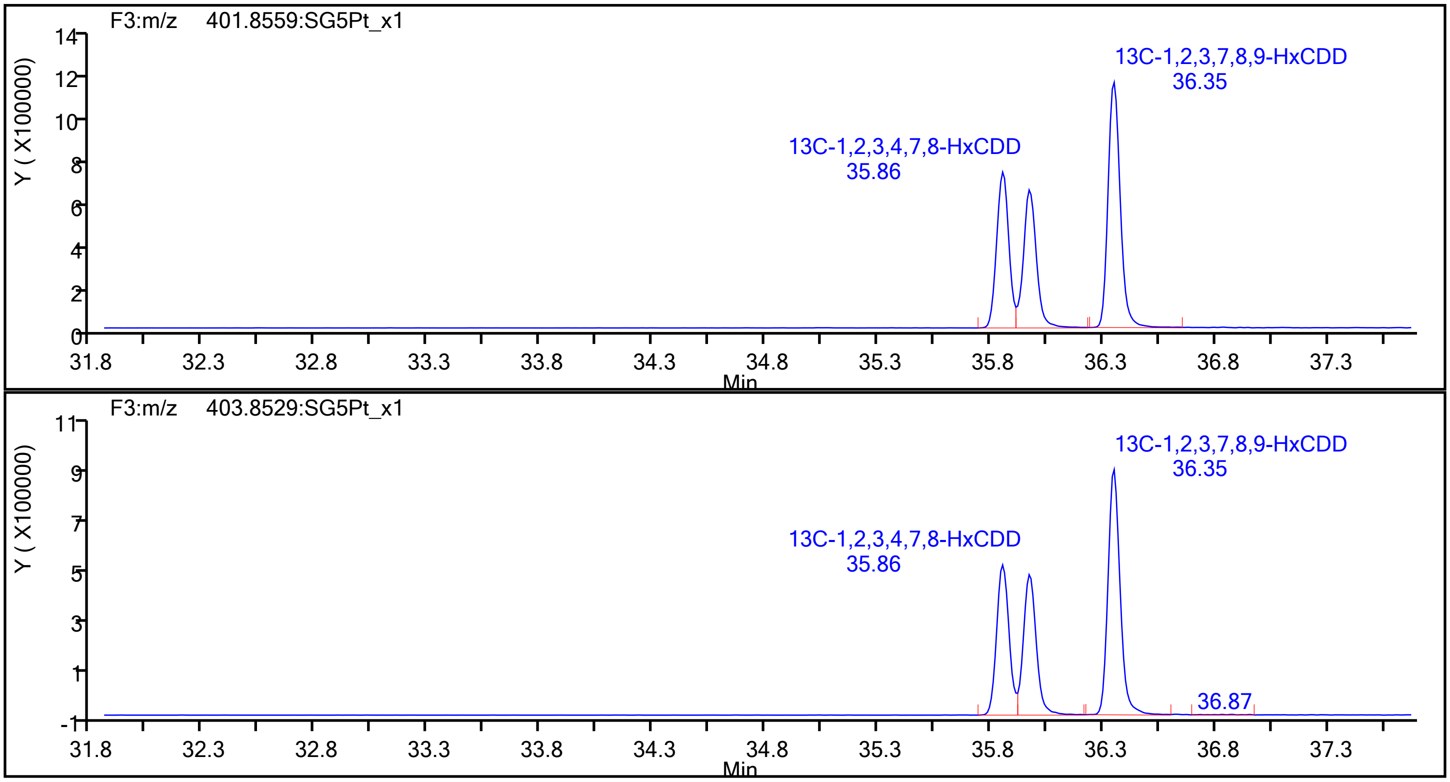

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d
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Worklist#: 534320
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

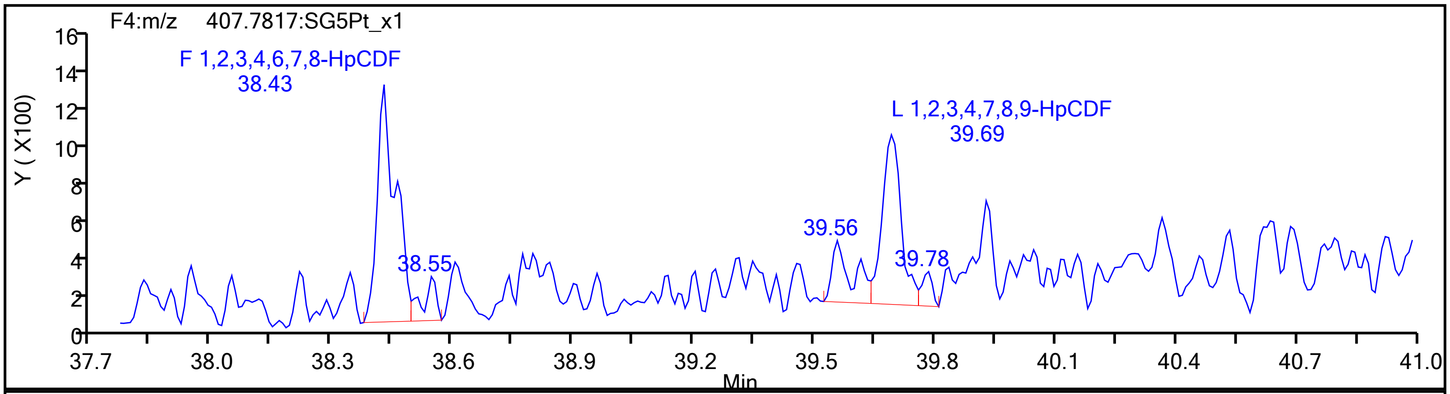

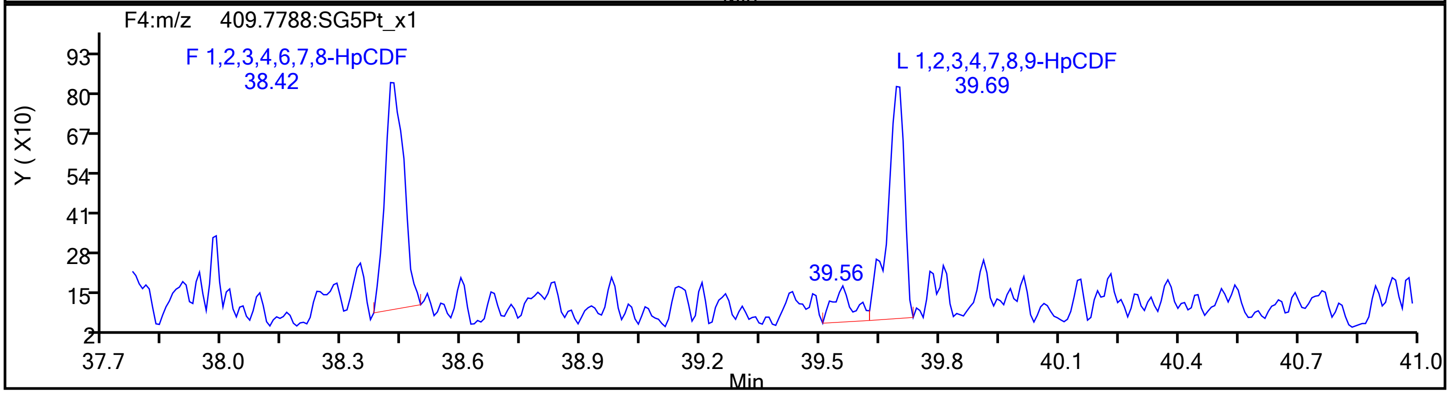

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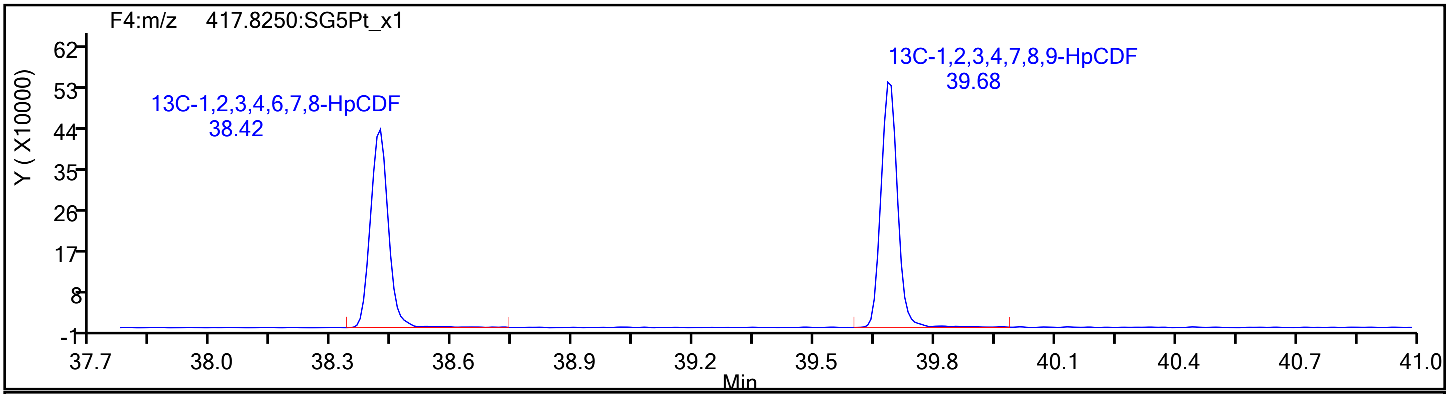

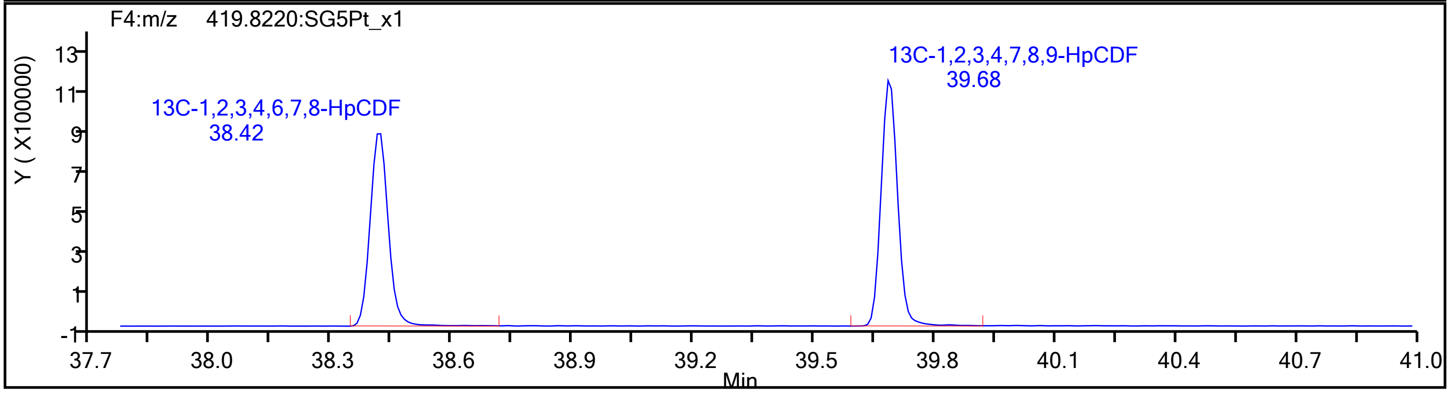

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	534320	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

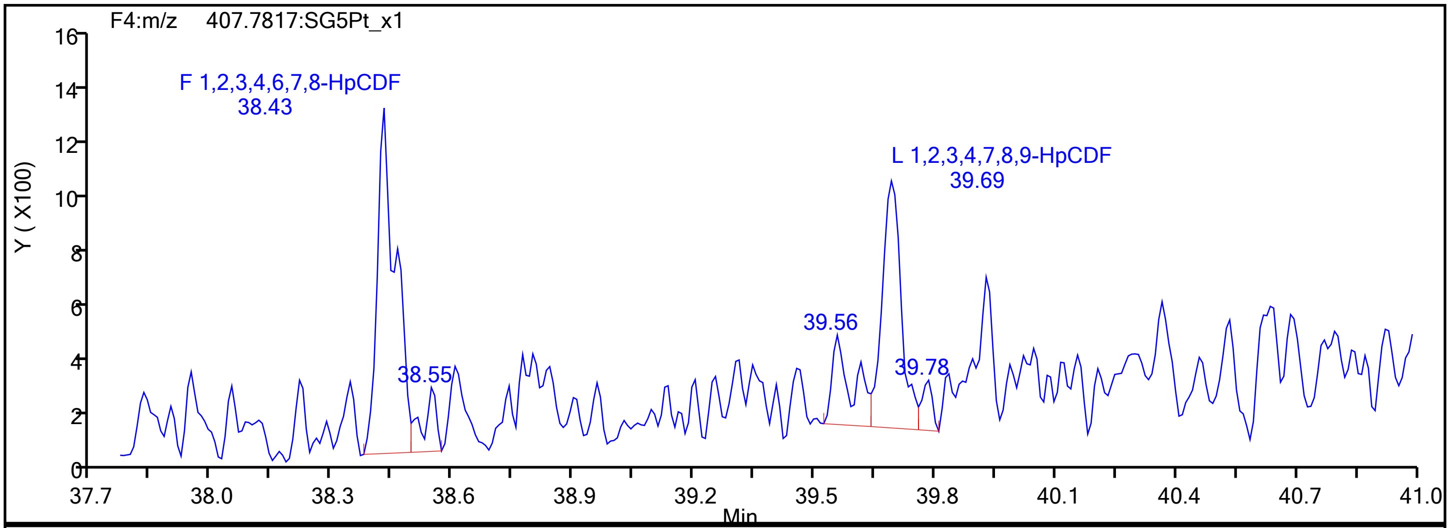

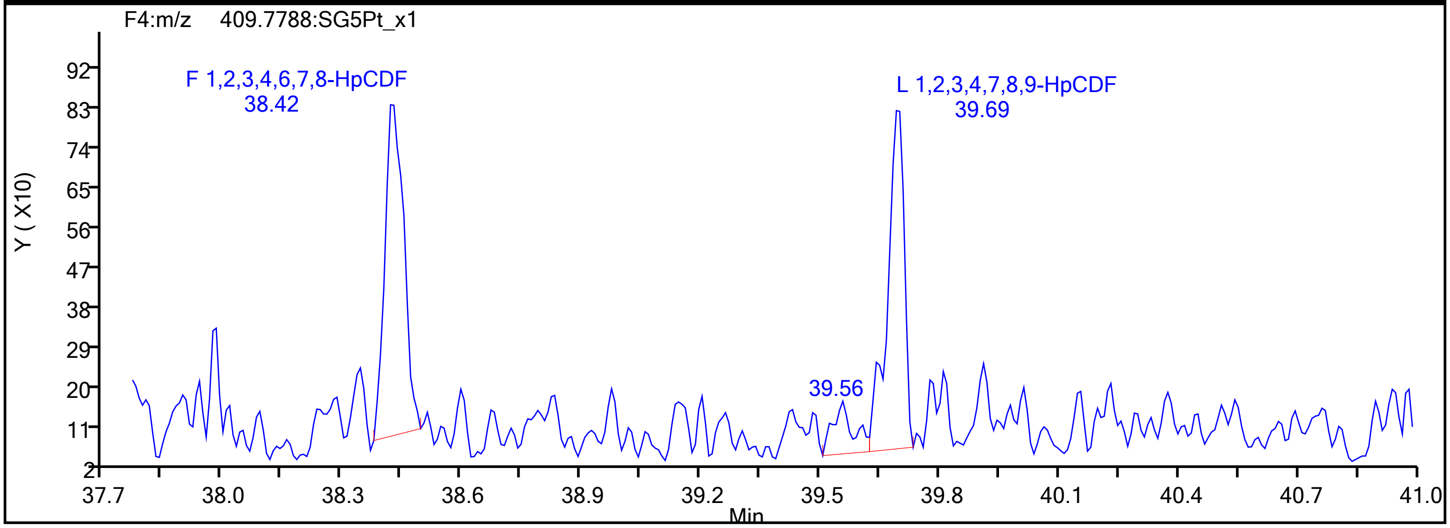

HpCDF Interference Mass

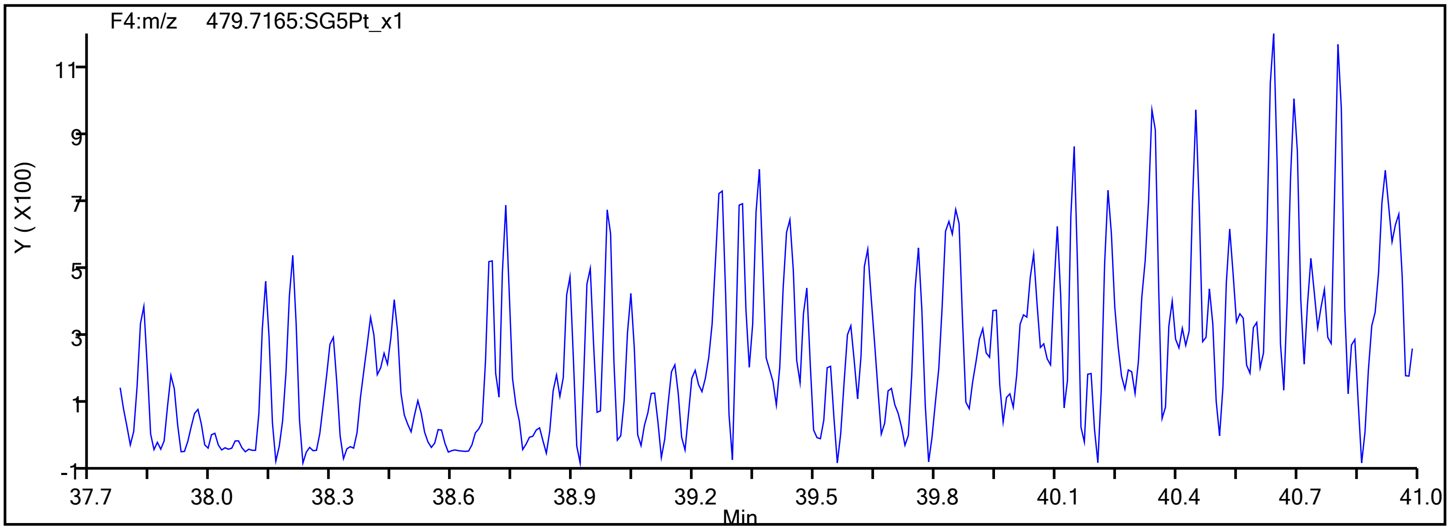

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-5Mm

Worklist#: 534320 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

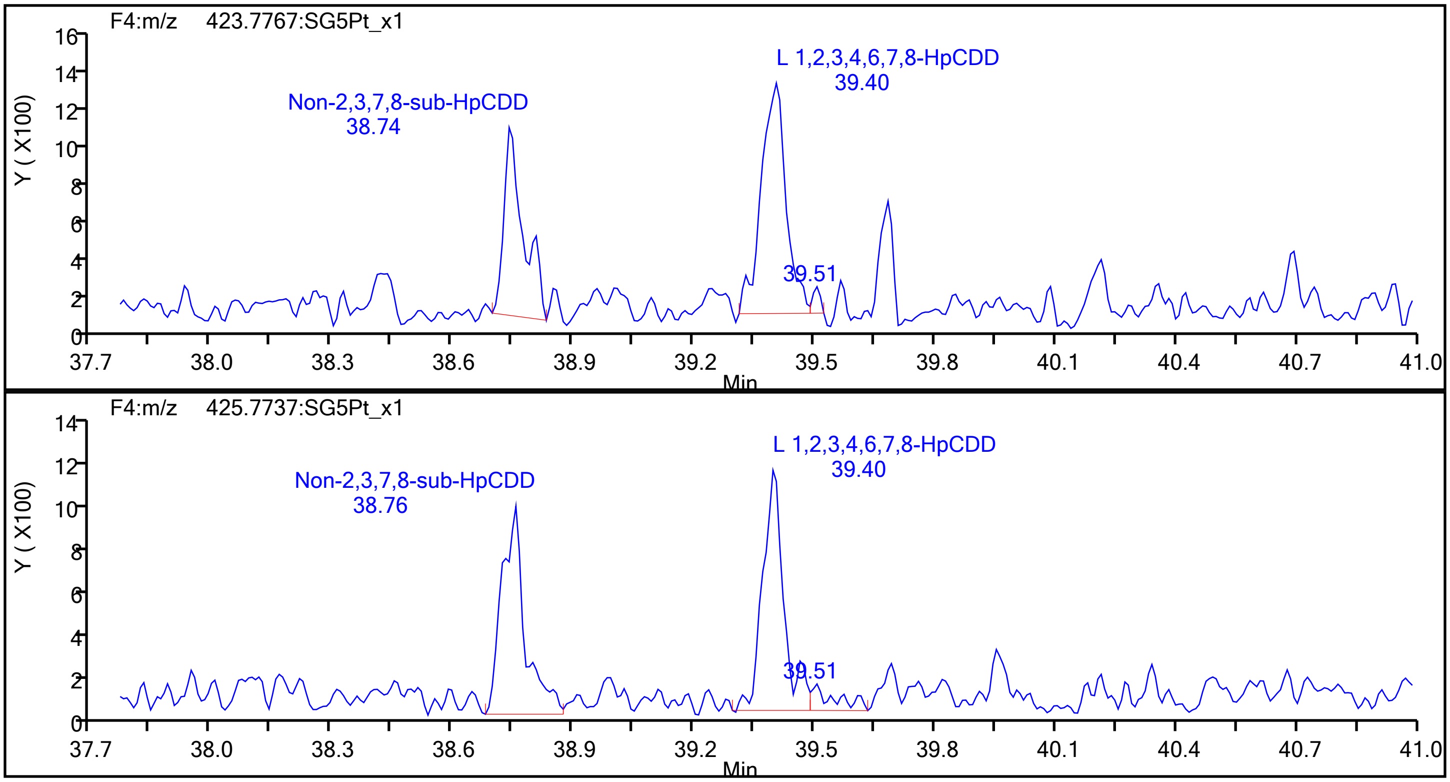

HpCDD Standards

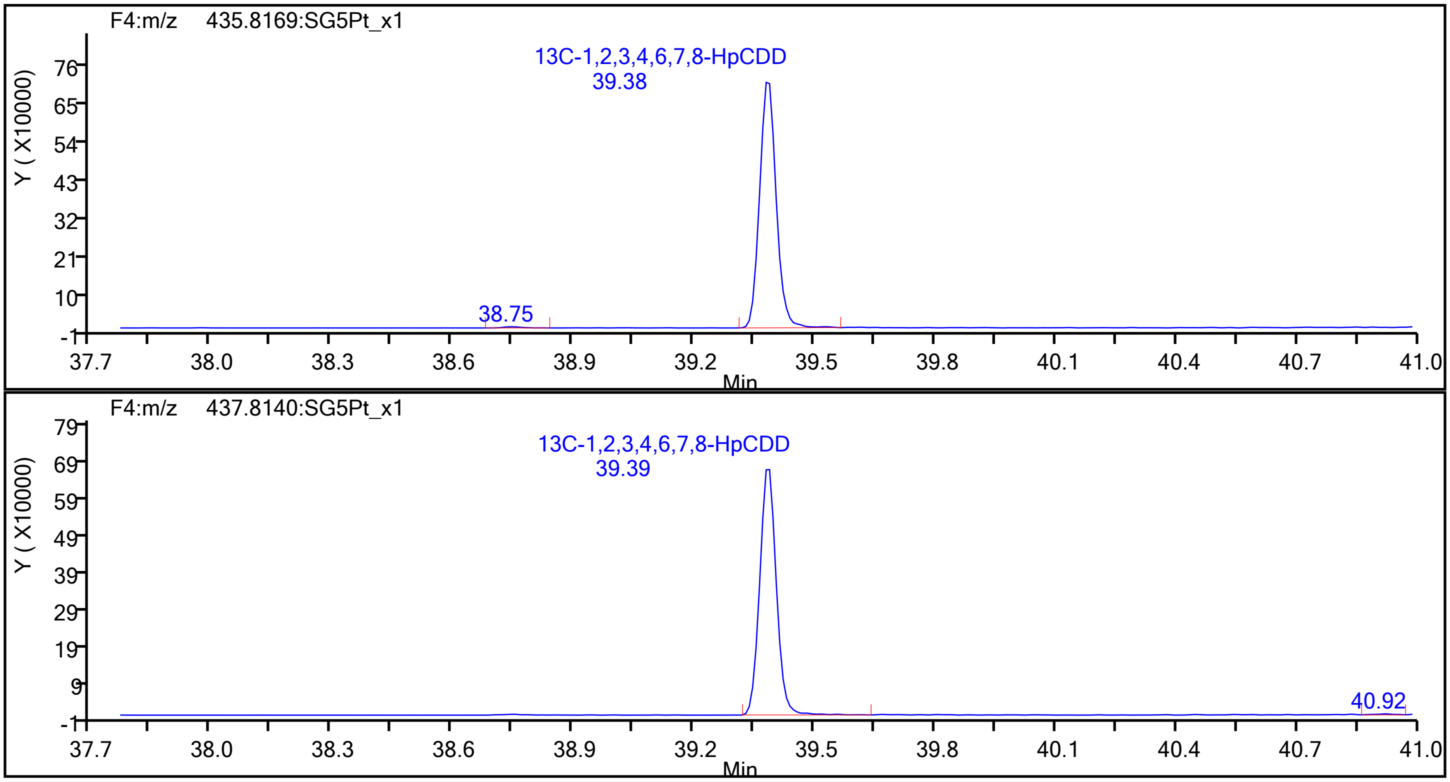

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	534320	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

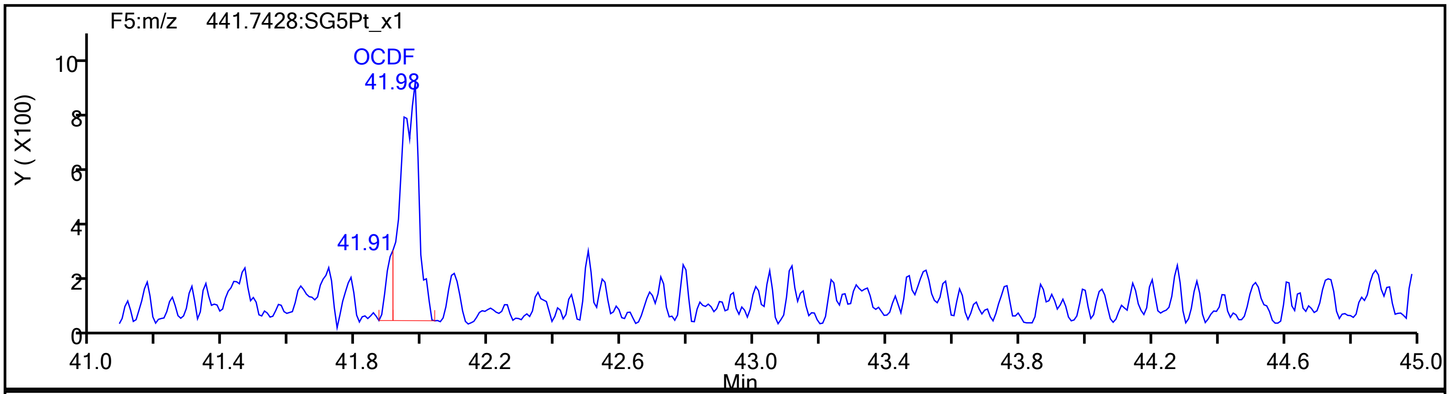

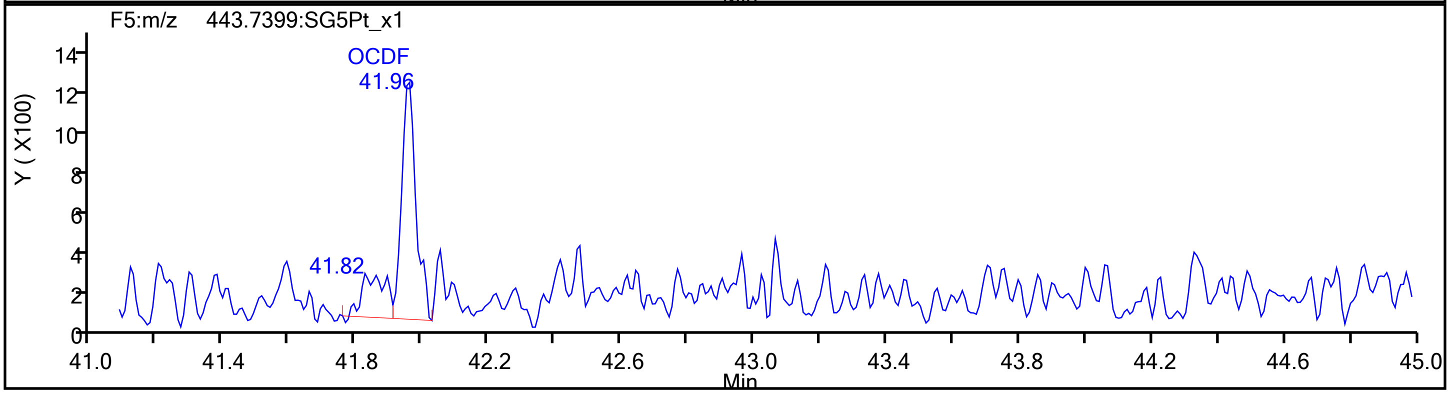

OCDF Standards

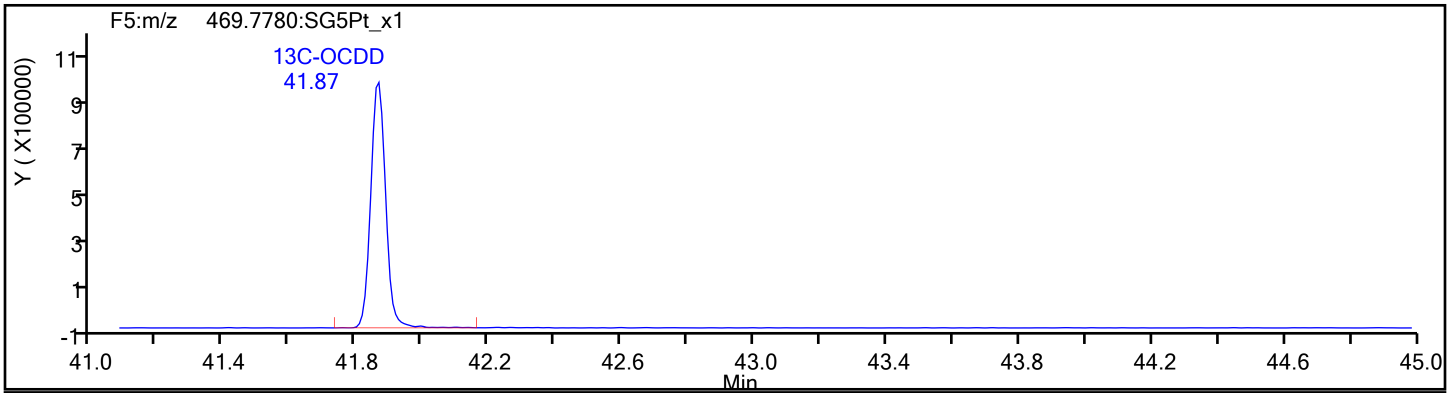

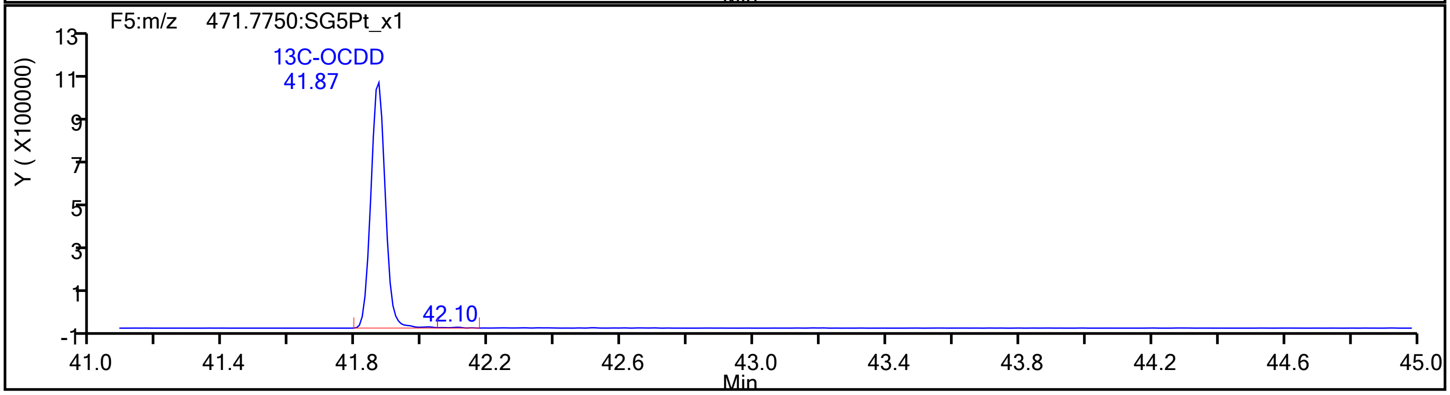

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date:	15-Oct-2021 19:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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OCDF

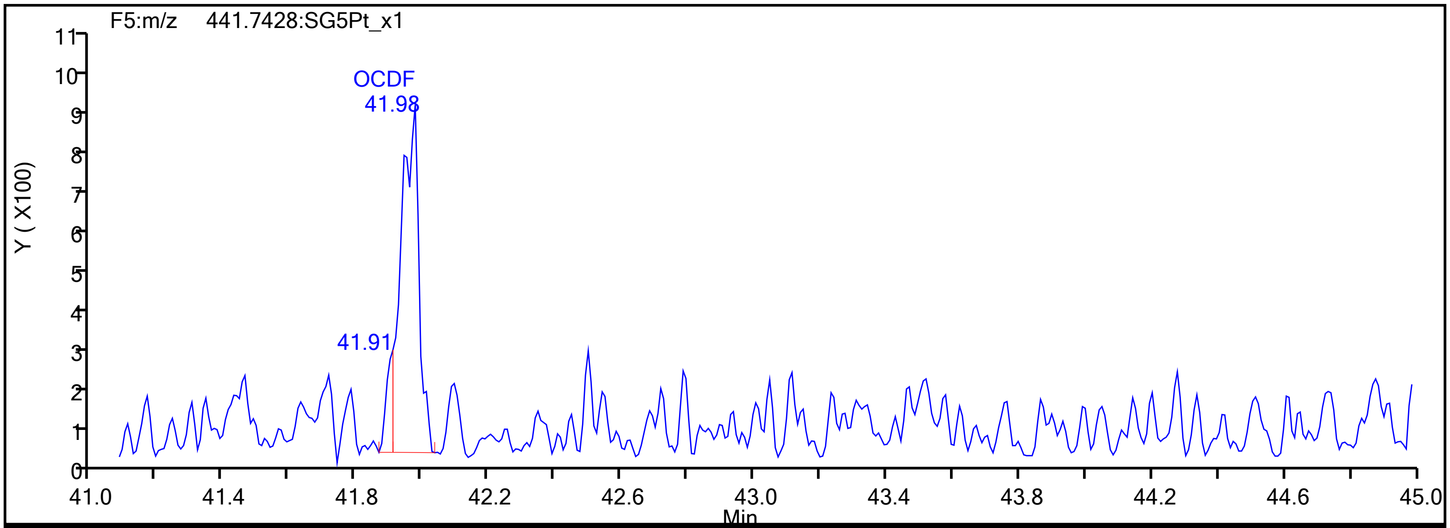

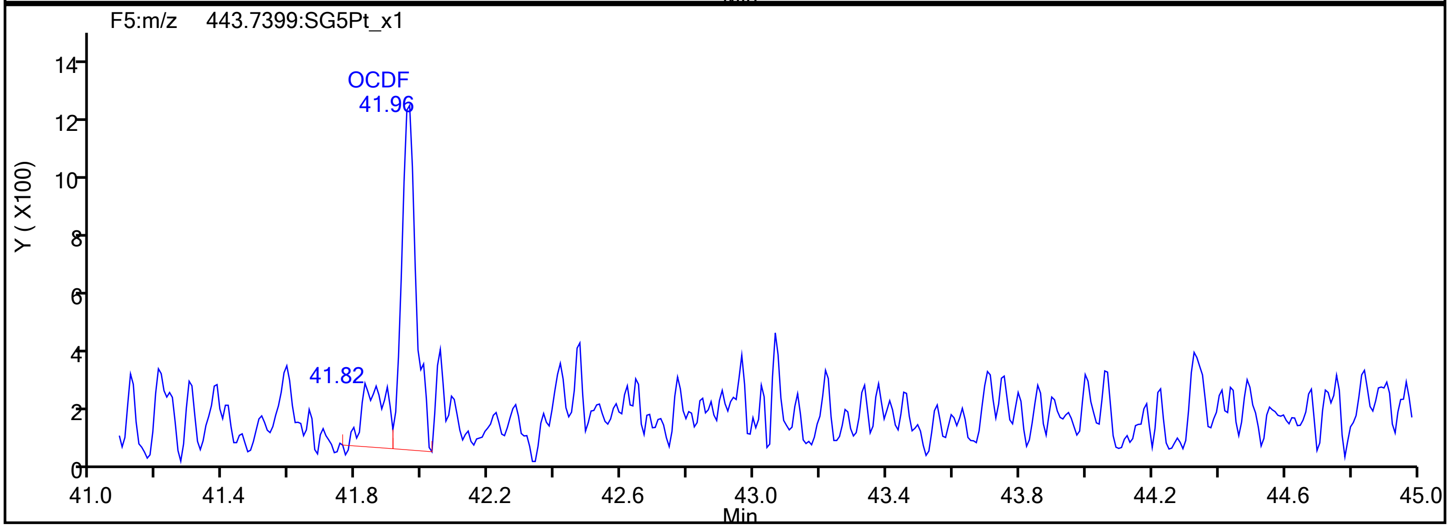

OCDF Interference Mass

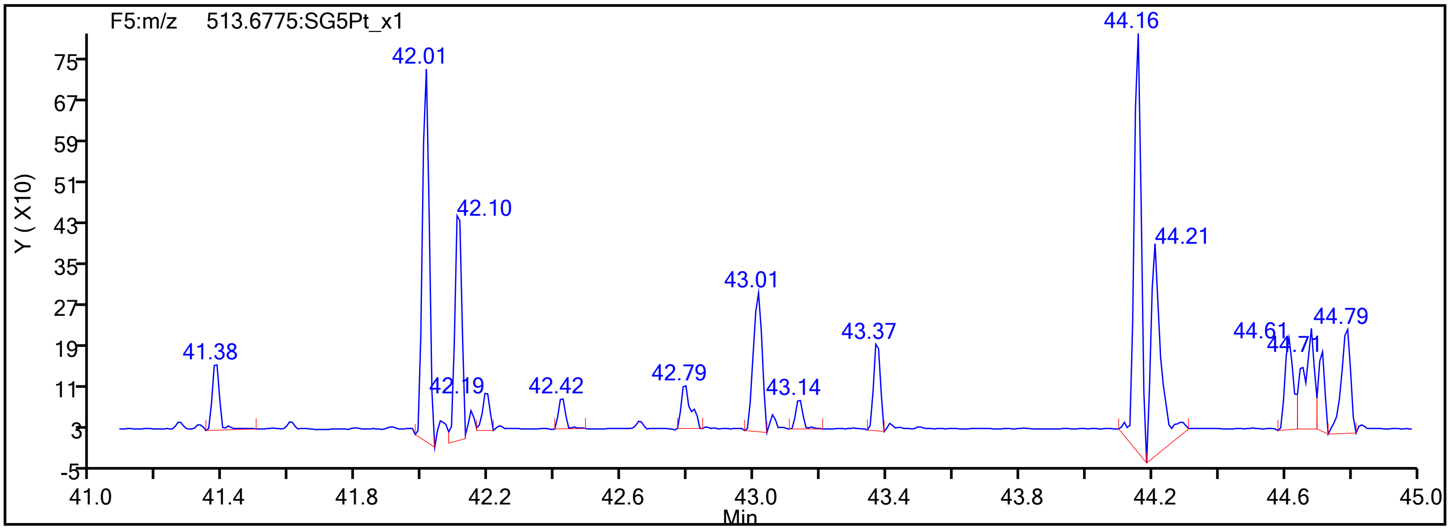

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-5Mm

Worklist#: 534320

Sample Line#: 12

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

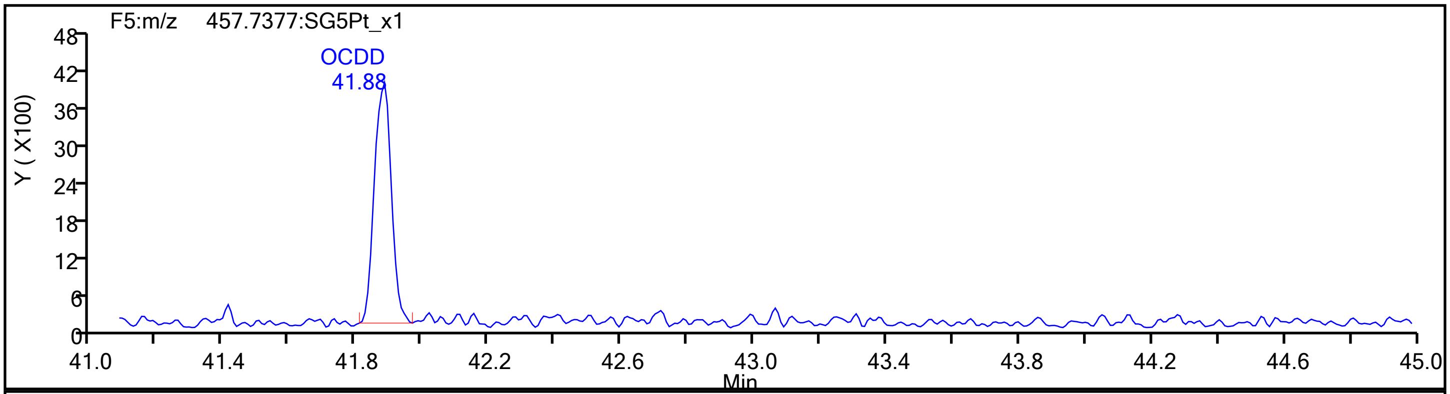

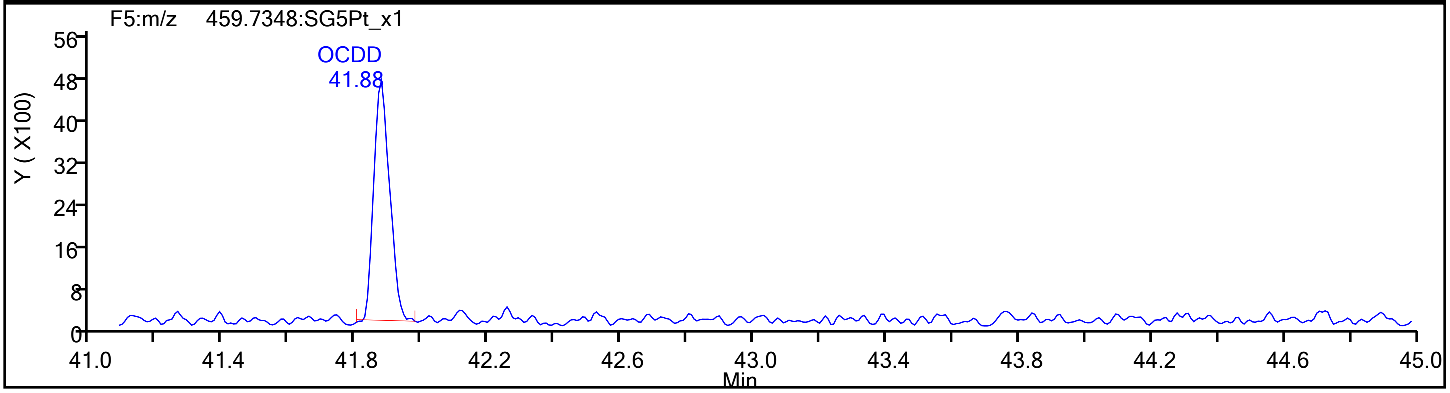

OCDD Standards

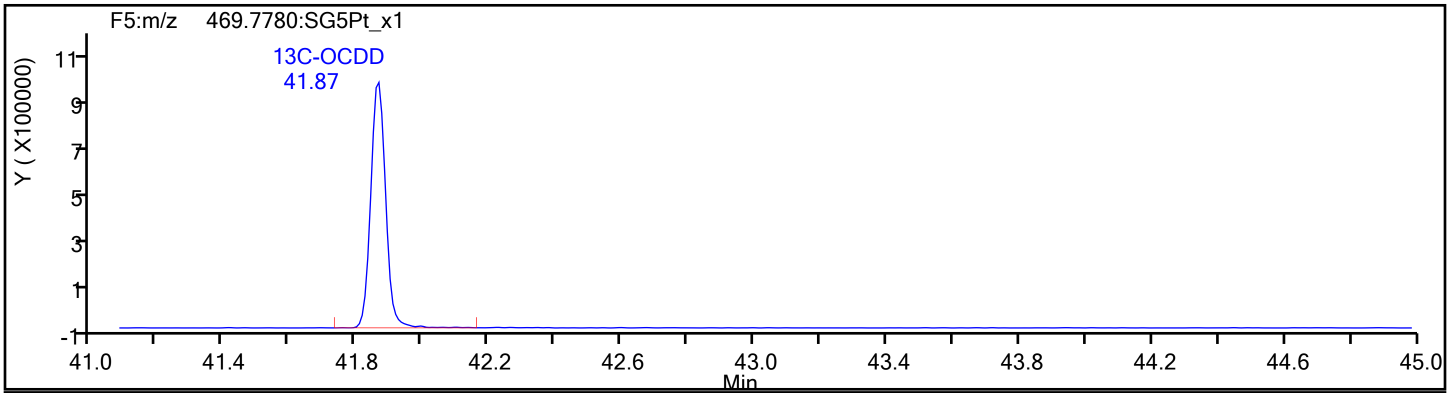

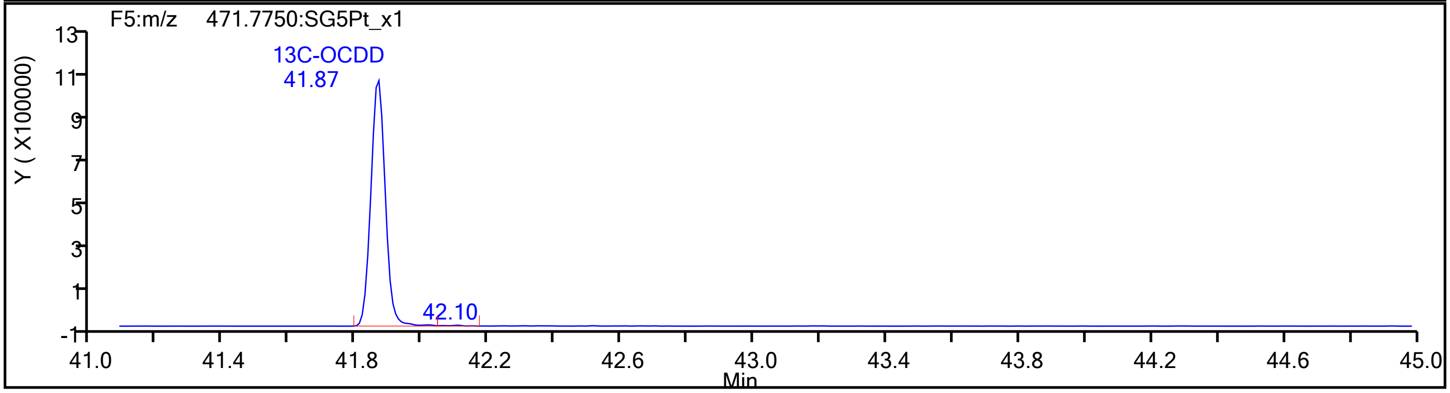

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d

Injection Date: 15-Oct-2021 19:03:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-5Mm

Worklist#: 534320 Sample Line#: 12

Column Type: DB-5 Column Dia: 0.32 mm

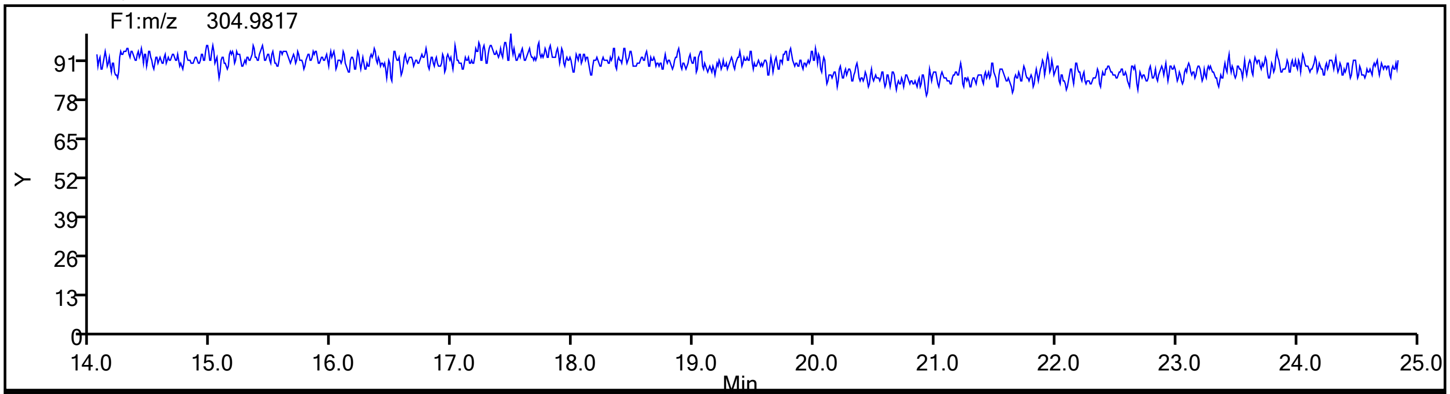
F1:m/z 304.9817

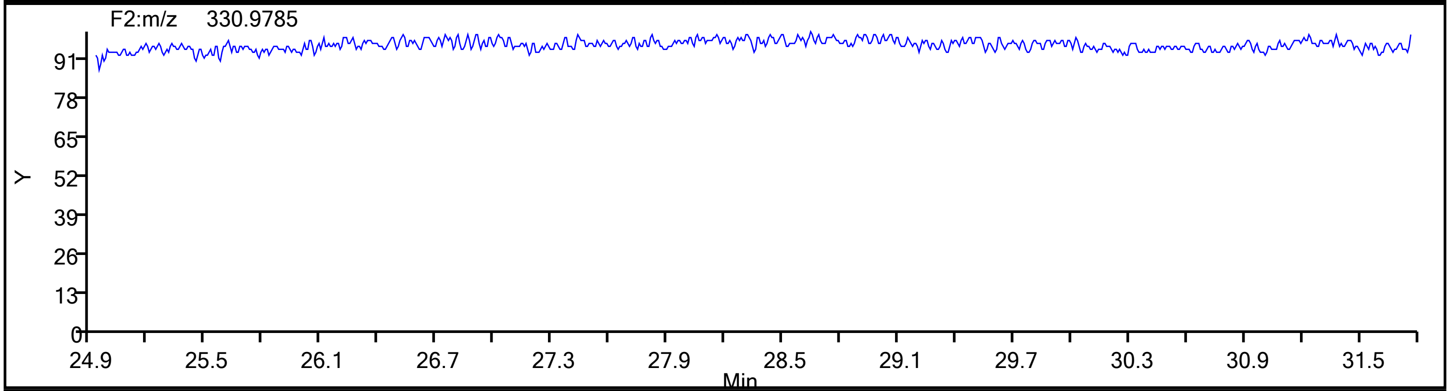
F2:m/z 330.9785

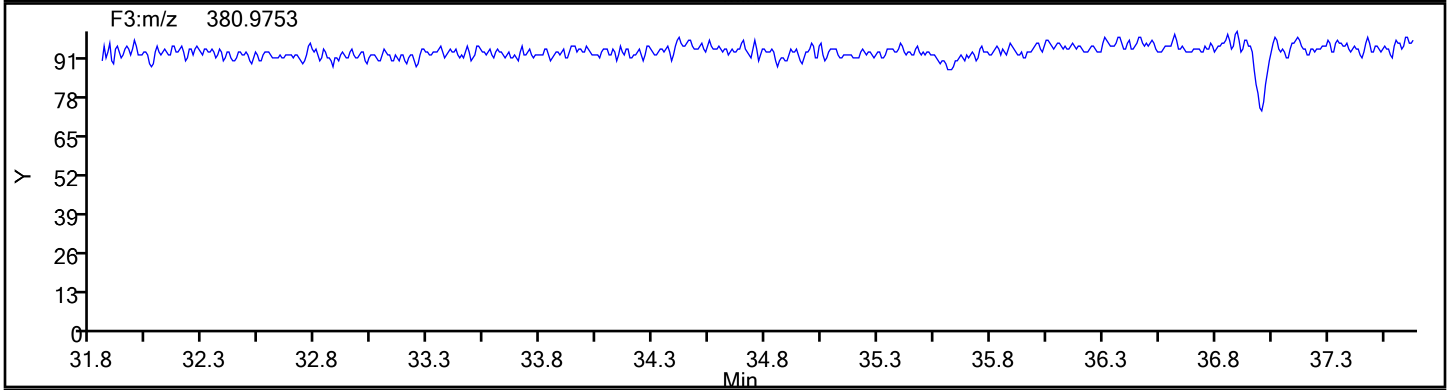
F3:m/z 380.9753

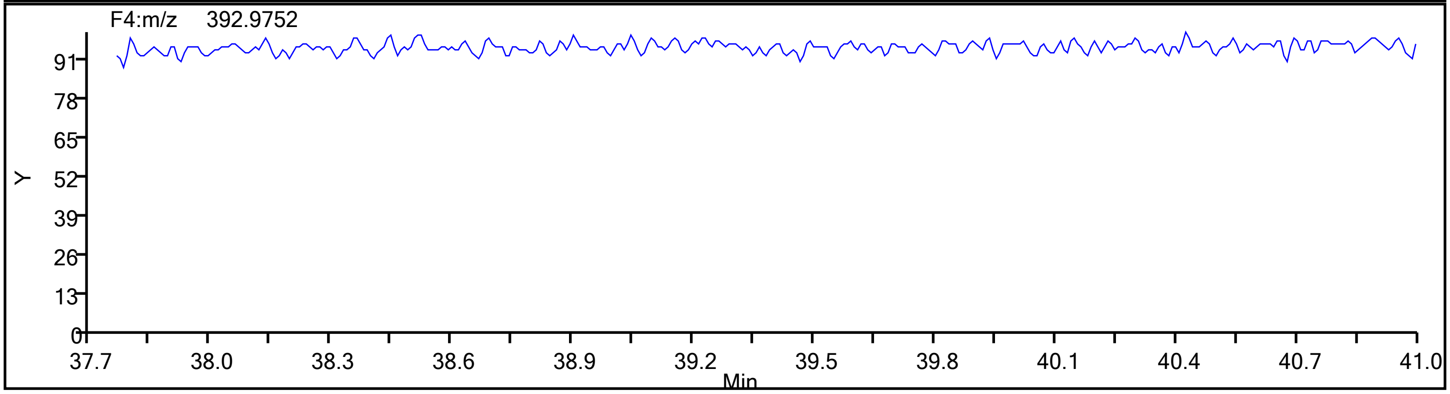
F4:m/z 392.9752

Report Date: 18-Oct-2021 13:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_13.d		
Injection Date:	15-Oct-2021 19:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-5Mm		
Worklist#:	534320	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

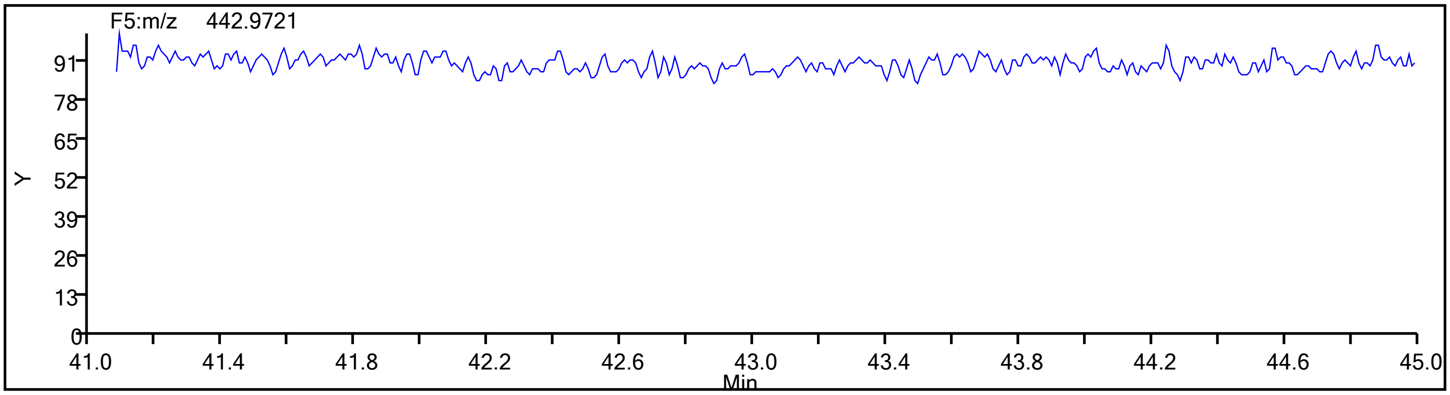

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID: 11215702-1Mm	Lab Sample ID: 320-79918-4
Matrix: Water	Lab File ID: 15oc21dfs1_14.d
Analysis Method: 1613B	Date Collected: 10/05/2021 15:00
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1049.2(mL)	Date Analyzed: 10/15/2021 19:51
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.5	0.96
51207-31-9	2,3,7,8-TCDF	2.4	J	9.5	0.54
40321-76-4	1,2,3,7,8-PeCDD	ND		48	1.0
57117-41-6	1,2,3,7,8-PeCDF	ND		48	0.52
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.62
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J q B	48	0.82
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.76
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.74
70648-26-9	1,2,3,4,7,8-HxCDF	ND		48	0.43
57117-44-9	1,2,3,6,7,8-HxCDF	ND		48	0.39
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.38
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.33
35822-46-9	1,2,3,4,6,7,8-HpCDD	2.6	J q B	48	0.50
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.7	J B	48	0.62
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.70
3268-87-9	OCDD	19	J B	95	1.2
39001-02-0	OCDF	1.9	J q B	95	0.80
41903-57-5	Total TCDD	ND		9.5	0.96
30402-14-3	Total TCDF	2.4	J	9.5	0.54
36088-22-9	Total PeCDD	ND		48	1.0
30402-15-4	Total PeCDF	ND		48	0.62
34465-46-8	Total HxCDD	1.9	J q B	48	0.77
55684-94-1	Total HxCDF	ND		48	0.43
37871-00-4	Total HpCDD	5.7	J q B	48	0.50
38998-75-3	Total HpCDF	1.7	J B	48	0.66

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Client Sample ID: 11215702-1Mm Lab Sample ID: 320-79918-4

Matrix: Water Lab File ID: 15oc21dfs1_14.d

Analysis Method: 1613B Date Collected: 10/05/2021 15:00

Extract. Method: 1613B Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1049.2(mL) Date Analyzed: 10/15/2021 19:51

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	88		25-164
89059-46-1	13C-2,3,7,8-TCDF	88		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	84		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	90		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	86		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	84		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	92		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	91		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	92		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	92		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	100		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	104		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	97		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	104		26-138
114423-97-1	13C-OCDD	112		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	100		35-197

FORM I 1613B

Report Date: 20-Oct-2021 07:50:18 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d
Lims ID: 320-79918-A-4-A
Client ID: 11215702-1Mm
Sample Type: Client
Inject. Date: 15-Oct-2021 19:51:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-a-4-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Oct-2021 07:44:31 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1623

First Level Reviewer: bennettd Date: 18-Oct-2021 13:41:13

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.769	6646595	0.83	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.814	7167973	0.81	1.2244	88.1	88.1	0.4217	0.4217	88.08	
2,3,7,8-TCDF	19.849	10143	0.85	1.1194	0.1264	0.1264	0.0283	0.0283		M
A Non-2,3,7,8-sub-TCDF	19.372						0.0283	0.0283		
S Total TCDF					0.1264	0.1264	0.0283	0.0283		
D 13C-2,3,7,8-TCDD	21.147	4828592	0.78	0.8210	88.5	88.5	0.3269	0.3269	88.49	
2,3,7,8-TCDD	21.163						0.0506	0.0506		
$ 37Cl4-2,3,7,8-TCDD	21.173	2305181		0.8658	40.1	40.1	0.0479	0.0479	100	
A Non-2,3,7,8-sub-TCDD	20.213						0.0506	0.0506		
S Total TCDD							0.0506	0.0506		
D 13C-1,2,3,7,8-PeCDF	26.820	6582241	1.53	1.1026	89.8	89.8	0.4307	0.4307	89.81	
1,2,3,7,8-PeCDF	26.833						0.0275	0.0275		
D 13C-2,3,4,7,8-PeCDF	28.319	7694252	1.55	1.3454	86.0	86.0	0.3530	0.3530	86.04	
2,3,4,7,8-PeCDF	28.325						0.0323	0.0323		
A F1 PeCDFs	24.221						0.0145	0.0145		
A Non-2,3,7,8-sub-PeCDF	27.645						0.0296	0.0296		
S Total PeCDF							0.0323	0.0323		
D 13C-1,2,3,7,8-PeCDD	29.136	3892806	1.56	0.6987	83.8	83.8	0.1765	0.1765	83.82	
1,2,3,7,8-PeCDD	29.133						0.0541	0.0541		
A Non-2,3,7,8-sub-PeCDD	28.034						0.0541	0.0541		
S Total PeCDD							0.0541	0.0541		
D 13C-1,2,3,4,7,8-HxCDF	34.621	6481887	0.53	1.1295	91.4	91.4	0.3152	0.3152	91.38	
1,2,3,4,7,8-HxCDF	34.613						0.0228	0.0228		
D 13C-1,2,3,6,7,8-HxCDF	34.798	6133537	0.53	1.0613	92.0	92.0	0.3354	0.3354	92.02	
1,2,3,6,7,8-HxCDF	34.790						0.0207	0.0207		
D 13C-2,3,4,6,7,8-HxCDF	35.657	5930567	0.54	0.9480	99.6	99.6	0.3755	0.3755	99.61	
2,3,4,6,7,8-HxCDF	35.641						0.0175	0.0175		
D 13C-1,2,3,7,8,9-HxCDF	36.566	4938022	0.53	0.8526	92.2	92.2	0.4175	0.4175	92.22	
1,2,3,7,8,9-HxCDF	36.583						0.0199	0.0199		RQU
A Non-2,3,7,8-sub-HxCDF	34.703						0.0200	0.0200		U
S Total HxCDF							0.0228	0.0228		
* 13C-1,2,3,7,8,9-HxCDD	36.373	6280044	1.29	1.8E+05	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.876	4392355	1.28	0.8312	84.1	84.1	0.2025	0.2025	84.14	
1,2,3,4,7,8-HxCDD	35.893	3888	1.24	0.9085	0.1316	0.0974	0.0430	0.0430		RQM
D 13C-1,2,3,6,7,8-HxCDD	36.002	4378211	1.26	0.7550	92.3	92.3	0.2230	0.2230	92.34	
1,2,3,6,7,8-HxCDD	35.893						0.0397	0.0397		RQMU
1,2,3,7,8,9-HxCDD	36.366						0.0389	0.0389		
A Non-2,3,7,8-sub-HxCDD	35.108						0.0404	0.0404		
S Total HxCDD					0.1316	0.0974	0.0405	0.0405		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	38.439	3759504	0.47	0.6190	96.7	96.7	0.4198	0.4198	96.71	
1,2,3,4,6,7,8-HpCDF	38.456	5271	1.00	1.5851	0.0885	0.0885	0.0328	0.0328		
D 13C-1,2,3,4,7,8,9-HpCDF	39.710	4235808	0.48	0.6516	103.5	103.5	0.3988	0.3988	104	
1,2,3,4,7,8,9-HpCDF	39.706						0.0368	0.0368		
A Non-2,3,7,8-sub-HpCDF	39.072						0.0341	0.0341		
S Total HpCDF					0.0885	0.0885	0.0348	0.0348		
D 13C-1,2,3,4,6,7,8-HpCDD	39.407	3508718	1.05	0.5362	104.2	104.2	0.2776	0.2776	104	
1,2,3,4,6,7,8-HpCDD	39.415	5189	1.04	1.0819	0.1595	0.1367	0.0264	0.0264		RQM
A Non-2,3,7,8-sub-HpCDD	39.202	6231	1.04	1.0819	0.1837	0.1641	0.0264	0.1641		RQ
S Total HpCDD					0.3432	0.3008	0.0264	0.0264		RQ
D 13C-OCDD	41.886	5331966	0.88	0.3802	223.3	223.3	0.3865	0.3865	112	
OCDF	41.988	3969	0.89	1.5094	0.1090	0.0986	0.0420	0.0420		RQM
OCDD	41.903	29603	0.95	1.1344	0.9788	0.9788	0.0603	0.0603		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d
Lims ID: 320-79918-A-4-A
Client ID: 11215702-1Mm
Sample Type: Client
Inject. Date: 15-Oct-2021 19:51:00 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 320-79918-a-4-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 20-Oct-2021 07:44:31 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1623

First Level Reviewer: bennettd Date: 18-Oct-2021 13:41:13

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.769	20.777	0		3014174	456648	692	1730	660		
333.9338	20.769	20.777	0		3632421	544621	383	957	1422	0.83(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.814	19.806	0	0.954	3207499	467310	1381	3452	338		
317.9389	19.806	19.806	0	0.954	3960474	588430	687	1717	857	0.81(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	19.849	19.832	1	1.002	4647	576	21	52	27		M
305.8987	19.814	19.832	-1	1.000	5496	982	113	282	9	0.85(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.372						21	52			
305.8987	19.372						113	282			
13C-2,3,7,8-TCDD											
331.9368	21.147	21.138	1	1.018	2120575	274178	692	1730	396		
333.9338	21.138	21.138	0	1.018	2708017	358463	383	957	936	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.163						121	302			
321.8936	21.163						19	47			
37Cl4-2,3,7,8-TCDD											
327.8847	21.173	21.163	1	1.019	2305181	300918	166	415	1813		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						121	302			
321.8936	20.213						19	47			
13C-1,2,3,7,8-PeCDF											
351.9000	26.820	26.799	1	1.291	3981890	643406	1264	3160	509		
353.8970	26.829	26.799	2	1.292	2600351	422190	638	1595	662	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.833						13	32			
341.8567	26.833						115	287			
13C-2,3,4,7,8-PeCDF											
351.9000	28.319	28.300	1	1.364	4673503	690727	1264	3160	546		
353.8970	28.319	28.300	1	1.364	3020749	442051	638	1595	693	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.325						13	32			
341.8567	28.325						115	287			
A F1 PeCDFs											
339.8597	24.221						2	5			
341.8567	24.221						61	152			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.645						13	32			
341.8567	27.645						115	287			
13C-1,2,3,7,8-PeCDD											
367.8949	29.136	29.108	2	1.403	2373950	333014	259	647	1286		
369.8919	29.127	29.108	1	1.402	1518856	216656	235	587	922	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.133						103	257			
357.8516	29.133						23	57			
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						103	257			
357.8516	28.034						23	57			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.621	34.597	1	0.952	2251856	489077	794	1985	616		
385.8610	34.629	34.597	2	0.952	4230031	909675	1456	3640	625	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.613						81	202			
375.8178	34.613						43	107			
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.798	34.773	1	0.957	2124762	425511	794	1985	536		
385.8610	34.798	34.773	1	0.957	4008775	802154	1456	3640	551	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.790						81	202			
375.8178	34.790						43	107			
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.657	35.625	2	0.980	2073109	501545	794	1985	632		
385.8610	35.648	35.625	1	0.980	3857458	919906	1456	3640	632	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.641						81	202			
375.8178	35.641						43	107			
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.566	36.551	1	1.005	1712103	431660	794	1985	544		
385.8610	36.566	36.551	1	1.005	3225919	818728	1456	3640	562	0.53(0.43-0.59)	

Report Date: 20-Oct-2021 07:50:18 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											RQU
373.8208	36.560						81	202			
375.8178	36.560						43	107			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	34.703						81	202			
375.8178	34.703						43	107			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.373	36.358	1		3542578	891032	616	1540	1446		
403.8529	36.373	36.358	1		2737466	689255	448	1120	1539	1.29(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.876	35.861	1	0.986	2463412	626393	616	1540	1017		
403.8529	35.884	35.861	1	0.987	1928943	486625	448	1120	1086	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											RQM
389.8158	35.893	35.869	1	1.000	3514	986	99	247	10		M
	Empc Correction				2152	543	99	247	5		
391.8127	35.901	35.869	2	1.001	1736	438	75	187	6	2.02(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.002	35.979	1	0.990	2437858	586451	616	1540	952		
403.8529	36.002	35.979	1	0.990	1940353	480832	448	1120	1073	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQMU
389.8158	35.995						99	247			
391.8127	35.995						75	187			
1,2,3,7,8,9-HxCDD											
389.8158	36.366						99	247			
391.8127	36.366						75	187			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						99	247			
391.8127	35.108						75	187			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.439	38.425	1	1.057	1194994	378774	671	1677	564		
419.8220	38.439	38.425	1	1.057	2564510	818544	972	2430	842	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.456	38.434	1	1.000	2637	795	198	495	4		
409.7788	38.456	38.434	1	1.000	2634	964	51	127	19	1.00(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.710	39.698	1	1.092	1367201	464097	671	1677	692		
419.8220	39.710	39.698	1	1.092	2868607	995090	972	2430	1024	0.48(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.706						198	495			
409.7788	39.706						51	127			
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						198	495			
409.7788	39.072						51	127			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.407	39.394	1	1.083	1797077	612854	535	1337	1146		
437.8140	39.407	39.394	1	1.083	1711641	584612	406	1015	1440	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											RQM
423.7767	39.415	39.403	1	1.000	3510	1141	77	192	15		M
	Empc Correction				2645	848	77	192	11		
425.7737	39.424	39.403	1	1.000	2544	816	60	150	14	1.38(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											RQ
423.7767	38.776	39.202	-26	0.984	3177	1118	77	192	15		
425.7737	38.767	39.202	-26	0.984	3798	1140	60	150	19	0.84(0.88-1.20)	
	Empc Correction				3054	1075	60	150	18		
13C-OCDD											
469.7780	41.886	41.875	1	1.152	2502308	802191	551	1377	1456		
471.7750	41.886	41.875	1	1.152	2829658	892285	378	945	2361	0.88(0.76-1.02)	
OCDF											RQM
441.7428	41.988	41.959	2	1.002	1869	733	64	160	11		
443.7399	41.971	41.959	1	1.002	2519	659	151	377	4	0.74(0.76-1.02)	M
	Empc Correction				2100	823	151	377	5		
OCDD											
457.7377	41.903	41.883	1	1.000	14409	4400	110	275	40		
459.7348	41.903	41.883	1	1.000	15194	4533	122	305	37	0.95(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Lims ID:	320-79918-A-4-A		
Client ID:	11215702-1Mm		
Inject. Date:	15-Oct-2021 19:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDF, RT: 34.703

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	0.974	D 13C-1,2,3,4,7,8-HxCDF	100.000	6481887	1398752
1,2,3,6,7,8-HxCDF	1.220	D 13C-1,2,3,6,7,8-HxCDF	100.000	6133537	1227665
2,3,4,6,7,8-HxCDF	1.244	D 13C-2,3,4,6,7,8-HxCDF	100.000	5930567	1421451
1,2,3,7,8,9-HxCDF	1.245	D 13C-1,2,3,7,8,9-HxCDF	100.000	4938022	1250388

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.171		100.000	5871003	1324564

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Lims ID:	320-79918-A-4-A		
Client ID:	11215702-1Mm		
Inject. Date:	15-Oct-2021 19:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	13

Non-2,3,7,8-sub-HxCDD, RT: 35.108

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.909	D 13C-1,2,3,4,7,8-HxCDD	100.000	4392355	1113018
1,2,3,6,7,8-HxCDD	1.028	D 13C-1,2,3,6,7,8-HxCDD	100.000	4378211	1067283
1,2,3,7,8,9-HxCDD	1.027				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
Signal Totals:							
	0	0	0	0			

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Lims ID:	320-79918-A-4-A		
Client ID:	11215702-1Mm		
Inject. Date:	15-Oct-2021 19:51:00	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	13

Non-2,3,7,8-sub-HpCDD, RT: 39.202

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.082	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	3508718	1197466

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.082		100.000	3508718	1197466

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.776	3177	1118	3798	1140	0.1837	0.84	RQ
38.776	3177	1118	3054	1075	0.1641		Empc Correction
Signal Totals:							
	3177	1118	3054	1075			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	6975	2258				0.84	RQ
	6231	2193					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1837 = (6975 * 100.000) / (3508718 * 1.082)
Empc Amount: 0.1641 = (6231 * 100.000) / (3508718 * 1.082)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d				
Injection Date:	15-Oct-2021 19:51:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-4-A	Lab Sample ID:	320-79918-4		
Client ID:	11215702-1Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	19.85
Area:	5323
Amount:	0.134832
Amount Units:	pg/ul

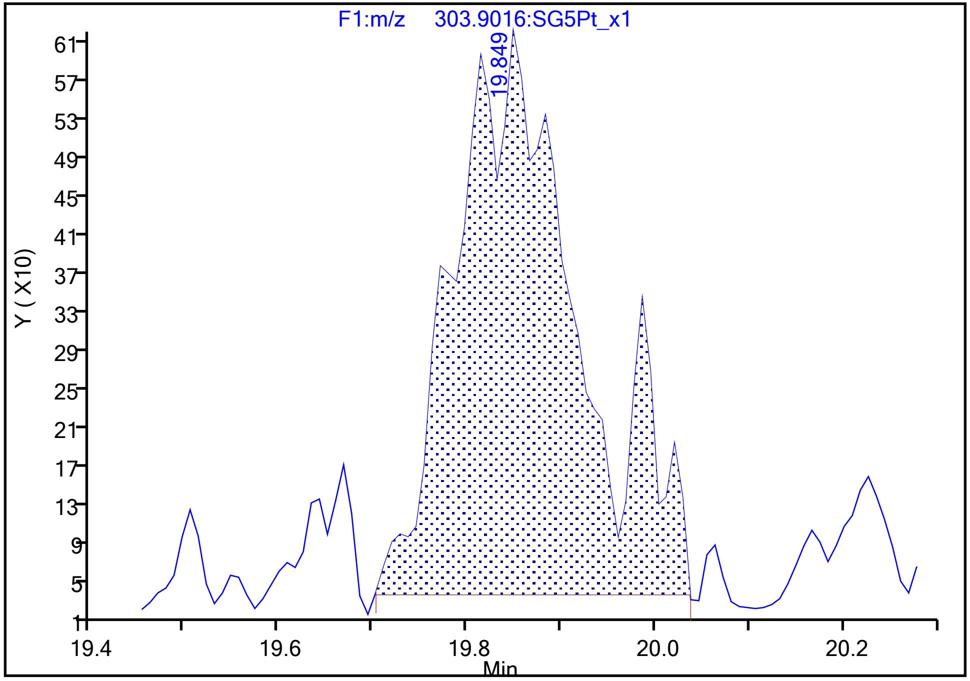

Manual Integration Results

RT:	19.85
Area:	4647
Amount:	0.126407
Amount Units:	pg/ul

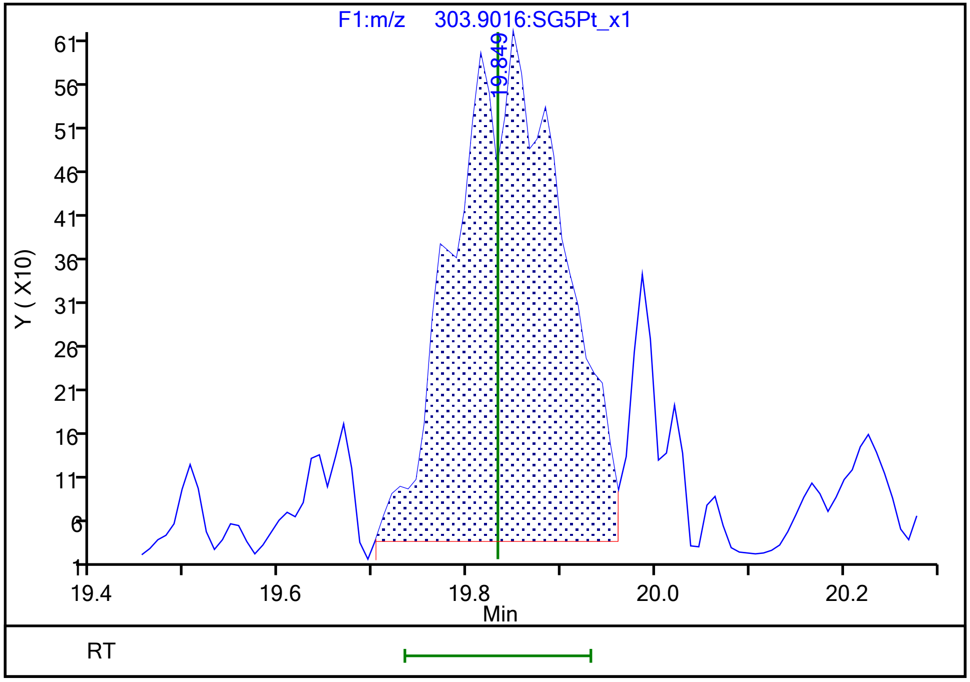

Reviewer: bennettd, 18-Oct-2021 13:38:48

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Injection Date:	15-Oct-2021 19:51:00	Instrument ID:	DFS 1
Lims ID:	320-79918-A-4-A	Lab Sample ID:	320-79918-4
Client ID:	11215702-1Mm		
Operator ID:	Xcalibur_System	ALS Bottle#:	0 Worklist Smp#: 13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	35.89
Area:	4801
Amount:	0.163811
Amount Units:	pg/ul

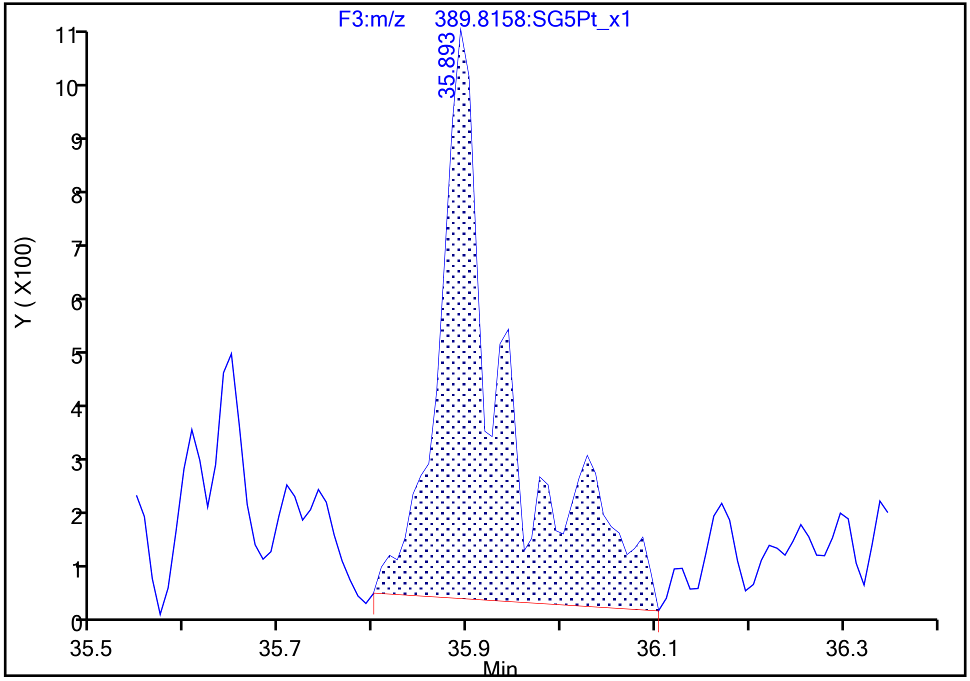

Manual Integration Results

RT:	35.89
Area:	3514
Amount:	0.131560
Amount Units:	pg/ul

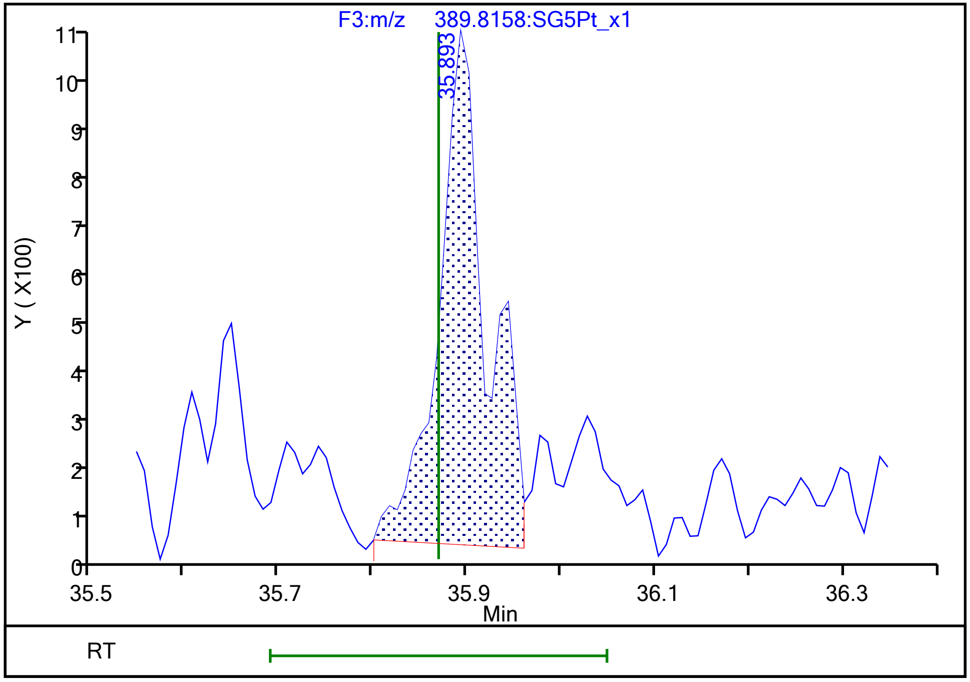

Reviewer: bennettd, 18-Oct-2021 13:39:56

Audit Action: Split an Integrated Peak

Audit Reason: Poor chromatography

Report Date: 20-Oct-2021 07:50:19
Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d				
Injection Date:	15-Oct-2021 19:51:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-4-A	Lab Sample ID:	320-79918-4		
Client ID:	11215702-1Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	39.42
Area:	3565
Amount:	0.151257
Amount Units:	pg/ul

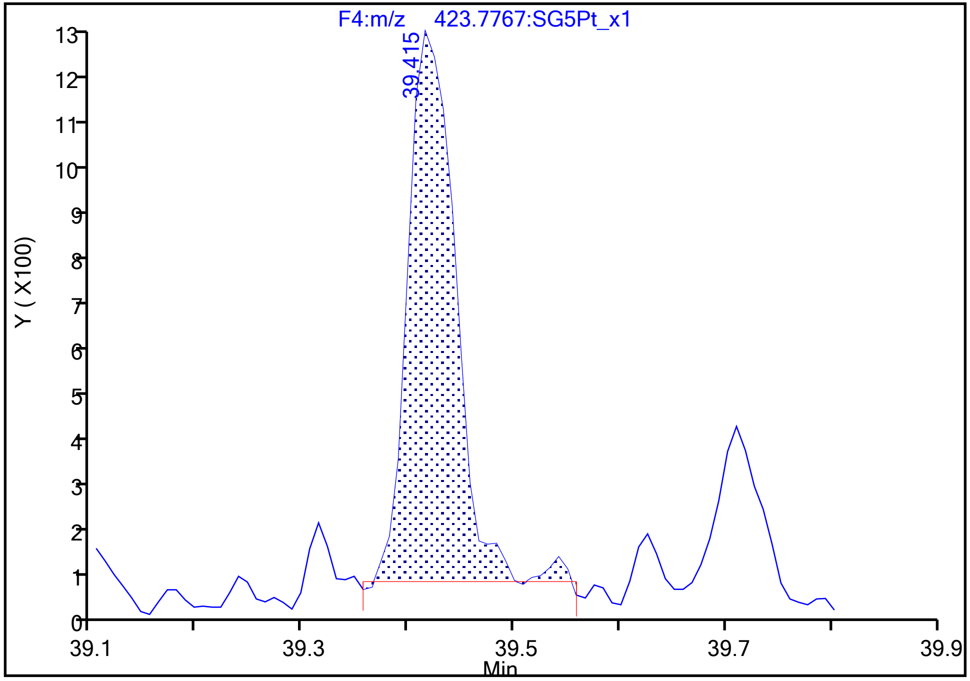

Manual Integration Results

RT:	39.42
Area:	3510
Amount:	0.159476
Amount Units:	pg/ul

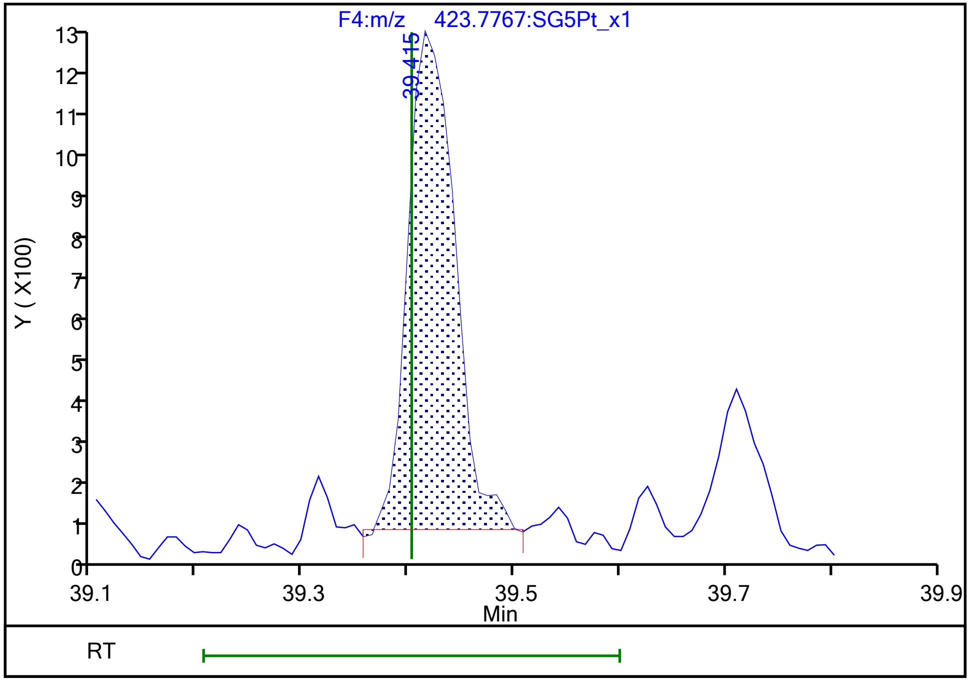

Reviewer: bennettd, 18-Oct-2021 13:40:34

Audit Action: Split an Integrated Peak
Audit Reason: Incomplete Integration

Report Date: 20-Oct-2021 07:50:19

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date: 15-Oct-2021 19:51:00

Instrument ID: DFS 1

Lims ID: 320-79918-A-4-A

Lab Sample ID: 320-79918-4

Client ID: 11215702-1Mm

Operator ID: Xcalibur_System

ALS Bottle#: 0

Worklist Smp#: 13

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F4(38.58 :41.00)

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT: 39.42

Area: 2177

Amount: 0.151257

Amount Units: pg/ul

Processing Integration Results

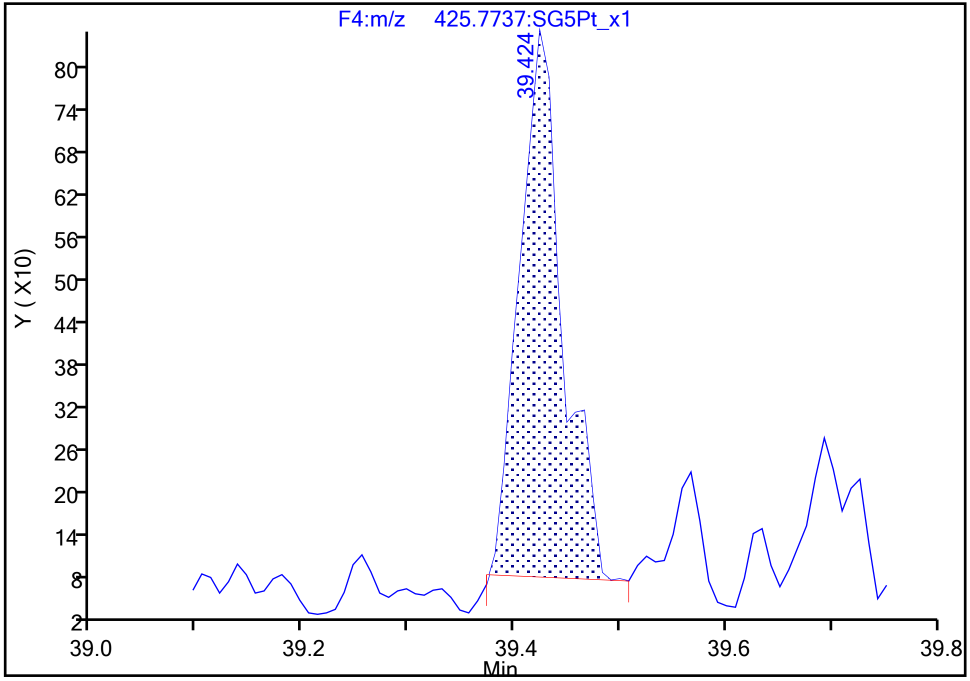

RT: 39.42

Area: 2544

Amount: 0.159476

Amount Units: pg/ul

Manual Integration Results

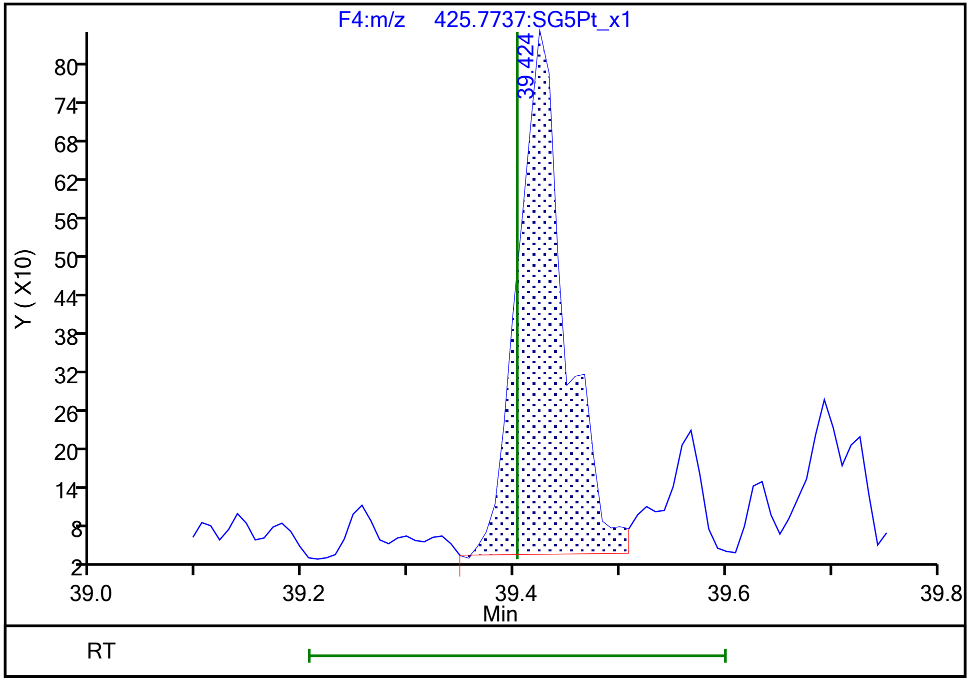

Reviewer: bennettd, 18-Oct-2021 13:40:37

Audit Action: Split an Integrated Peak

Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d				
Injection Date:	15-Oct-2021 19:51:00	Instrument ID:	DFS 1		
Lims ID:	320-79918-A-4-A	Lab Sample ID:	320-79918-4		
Client ID:	11215702-1Mm				
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

RT: 41.97
Area: 3109
Amount: 0.123704
Amount Units: pg/ul

Processing Integration Results

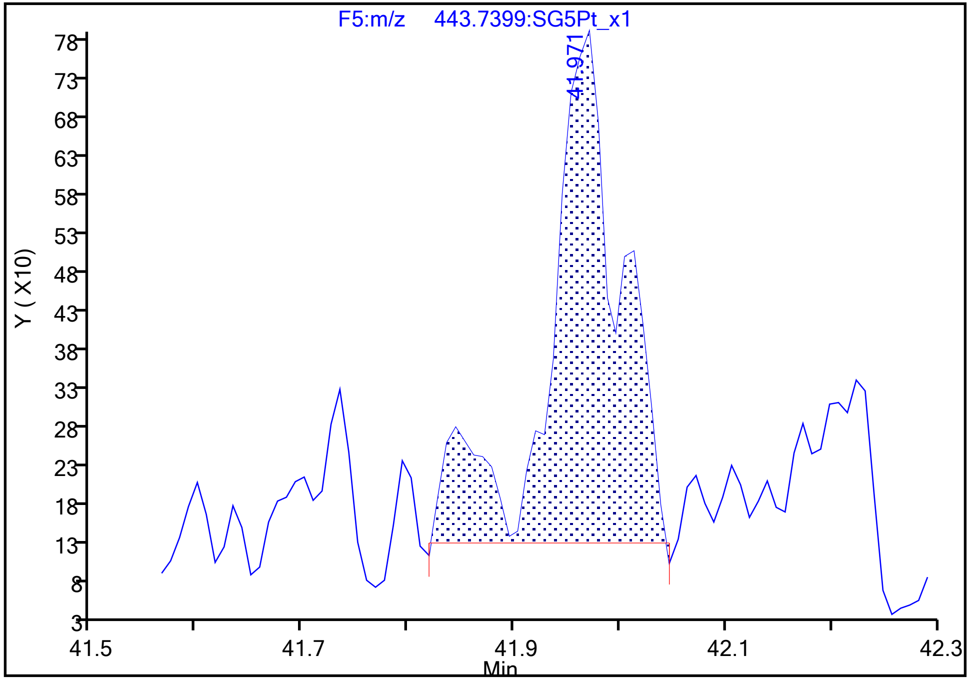

RT: 41.97
Area: 2519
Amount: 0.109043
Amount Units: pg/ul

Manual Integration Results

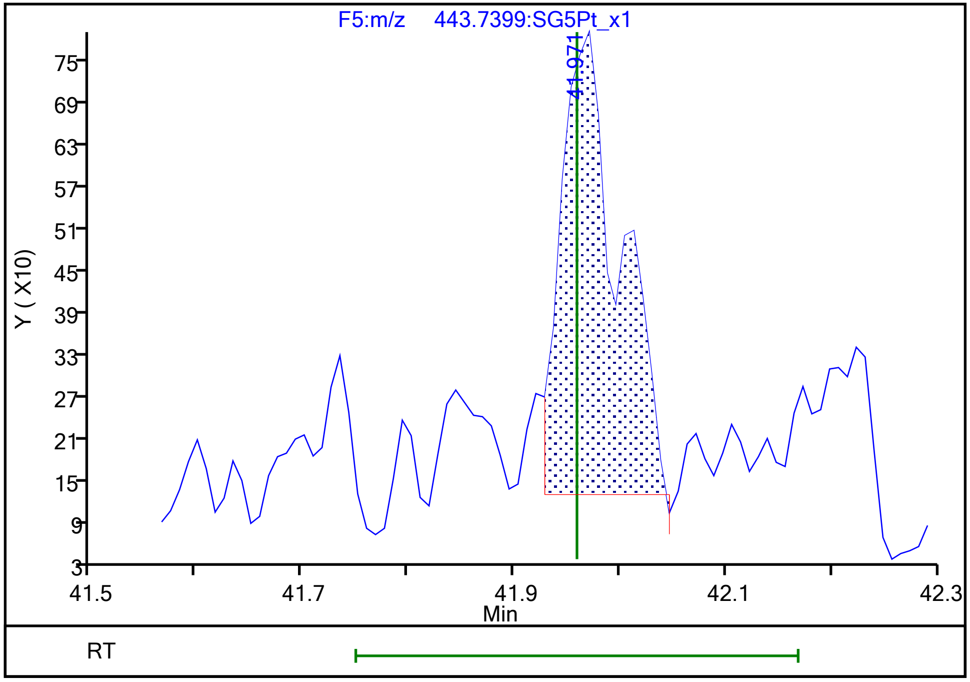

Reviewer: bennettd, 18-Oct-2021 13:40:52

Audit Action: Split an Integrated Peak
Audit Reason: Poor chromatography

Report Date: 20-Oct-2021 07:50:19 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

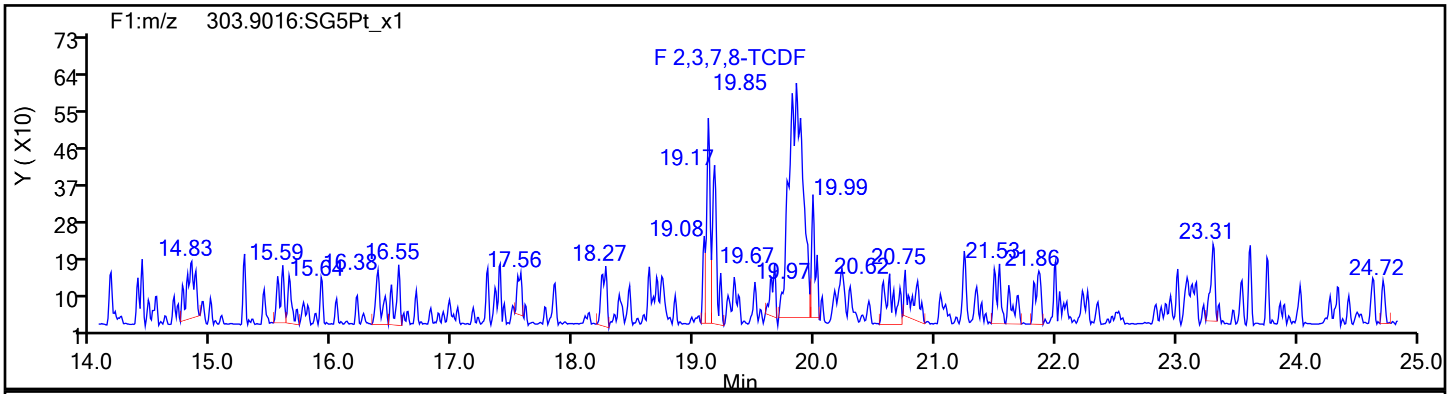

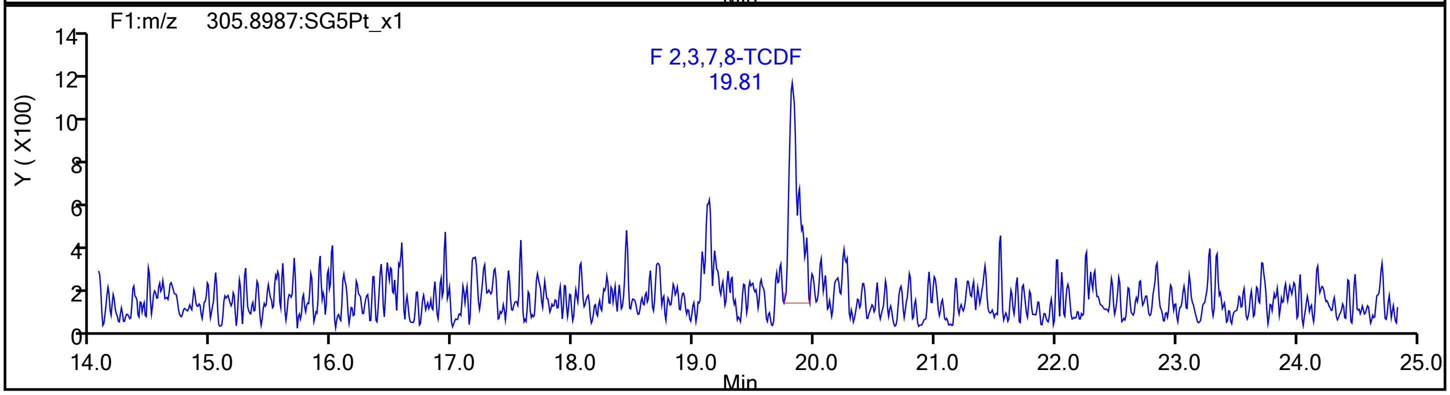

TCDF Standards

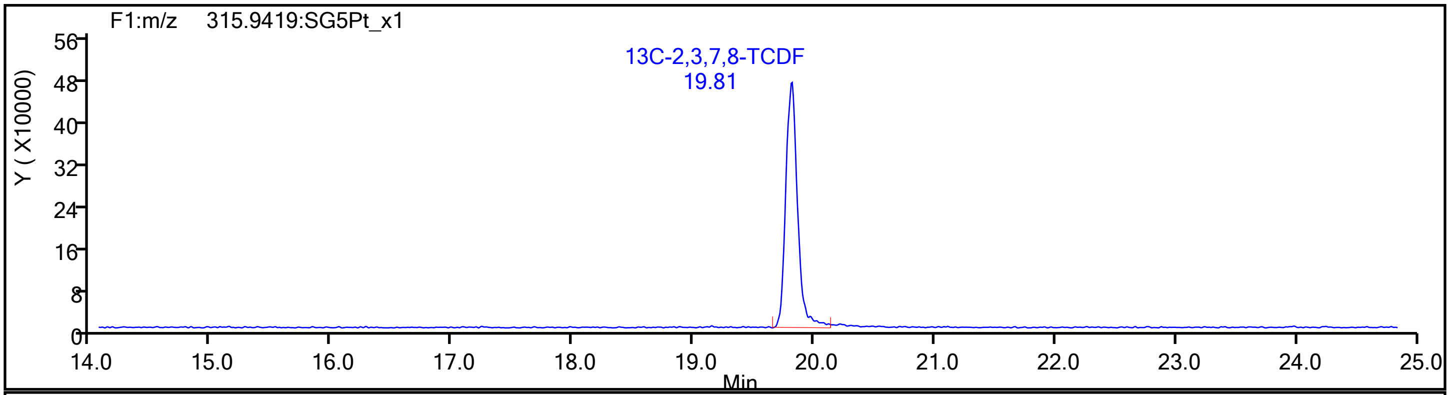

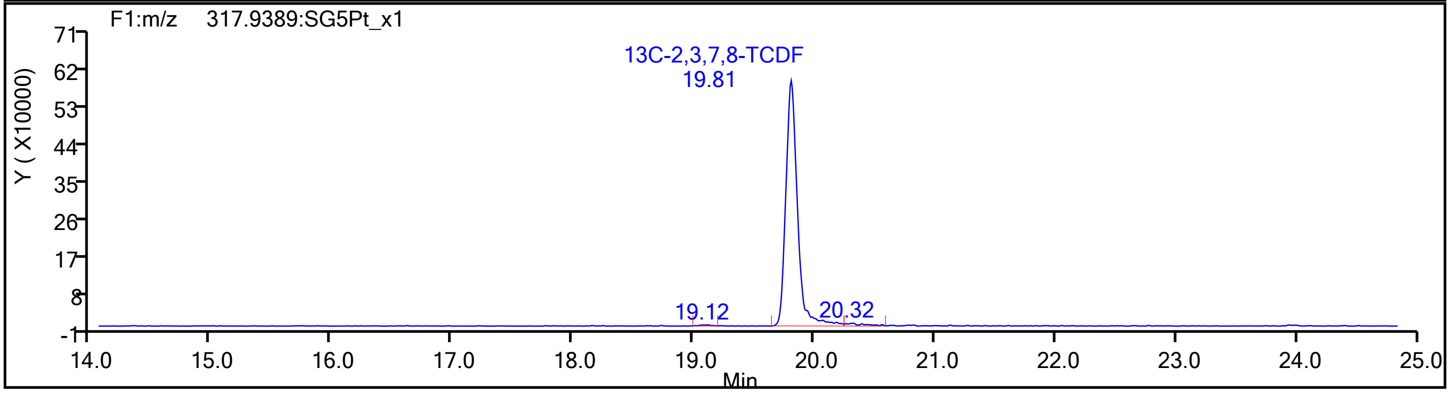

Report Date: 20-Oct-2021 07:50:19 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

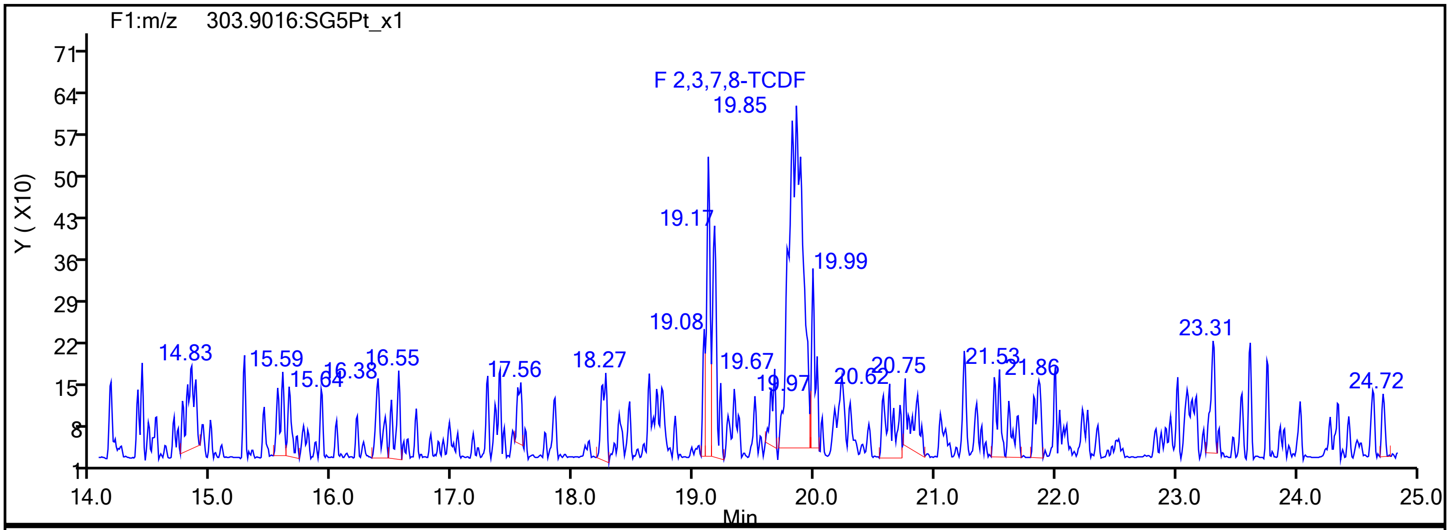

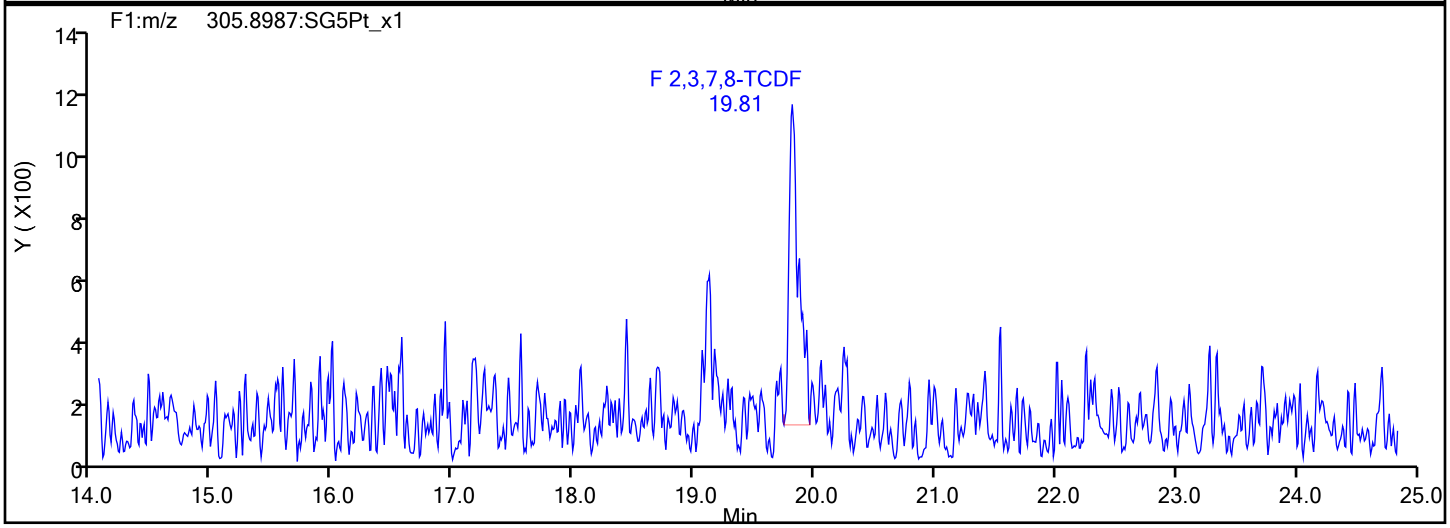

TCDF Interference Mass

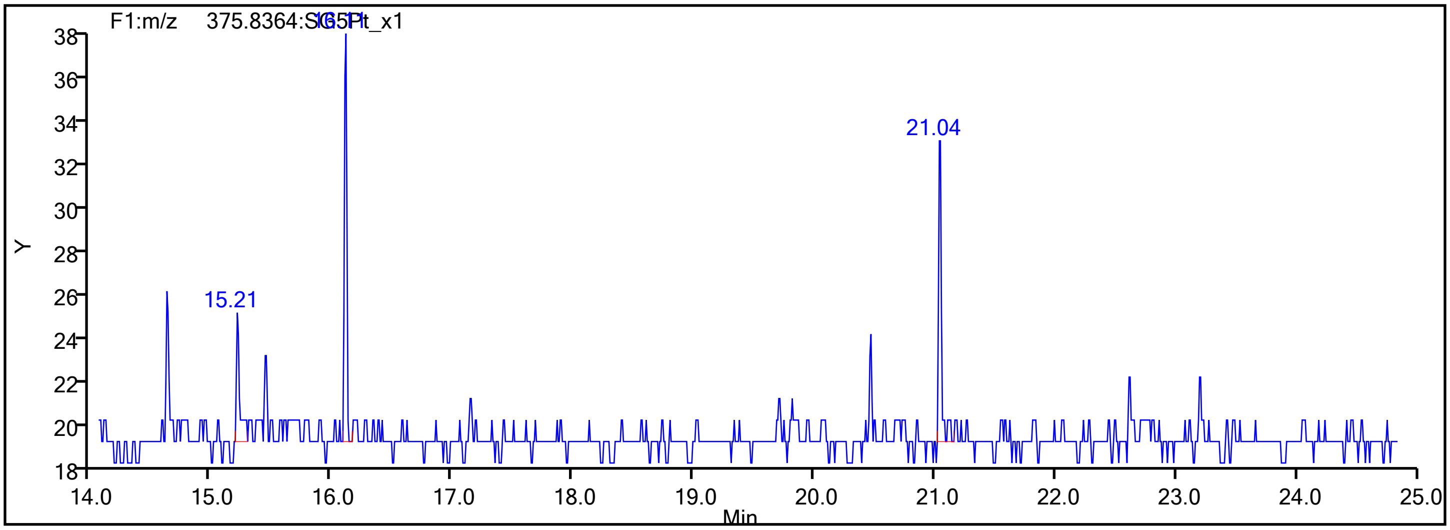

Report Date: 20-Oct-2021 07:50:19 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

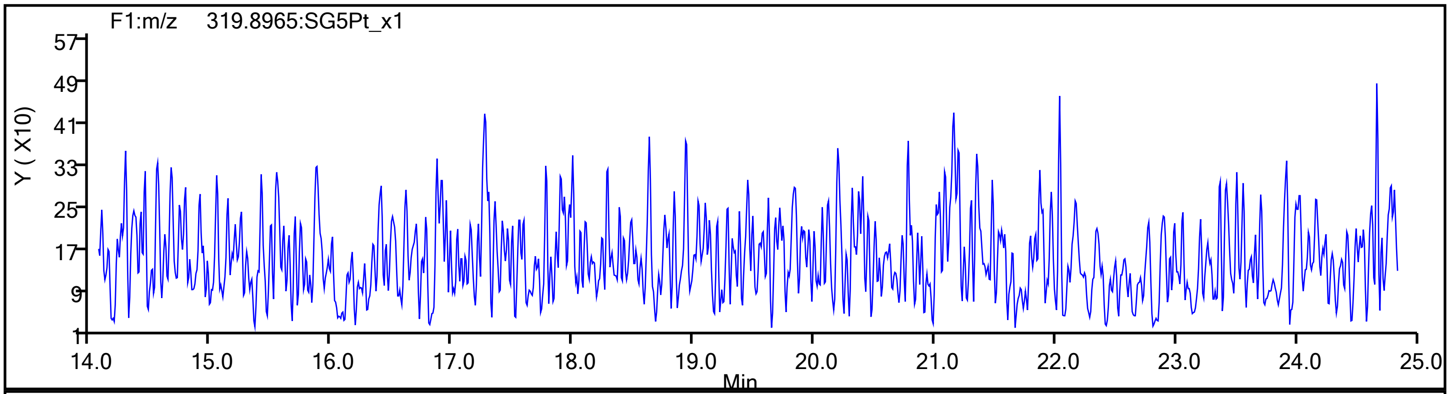

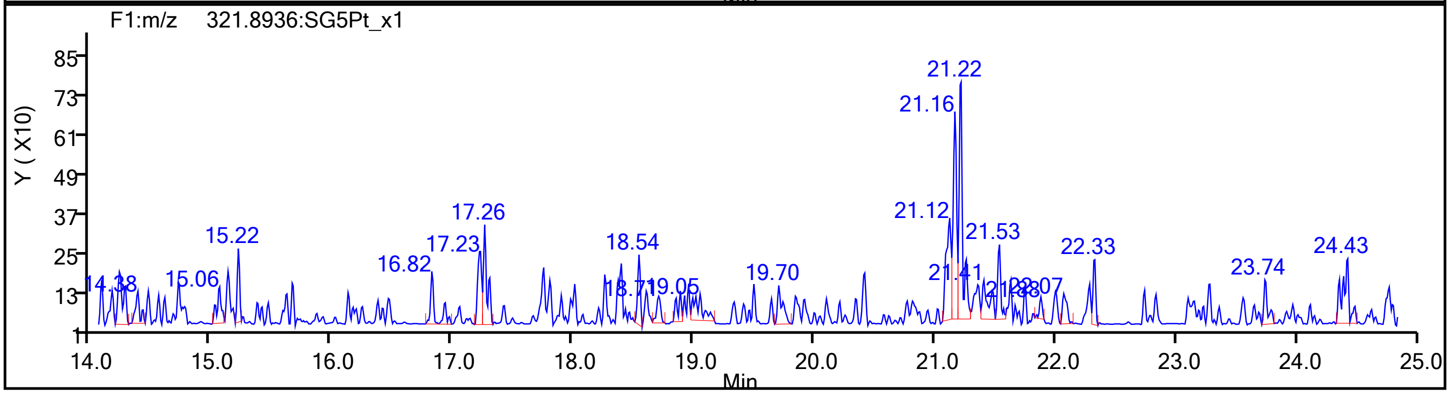

TCDD Standards

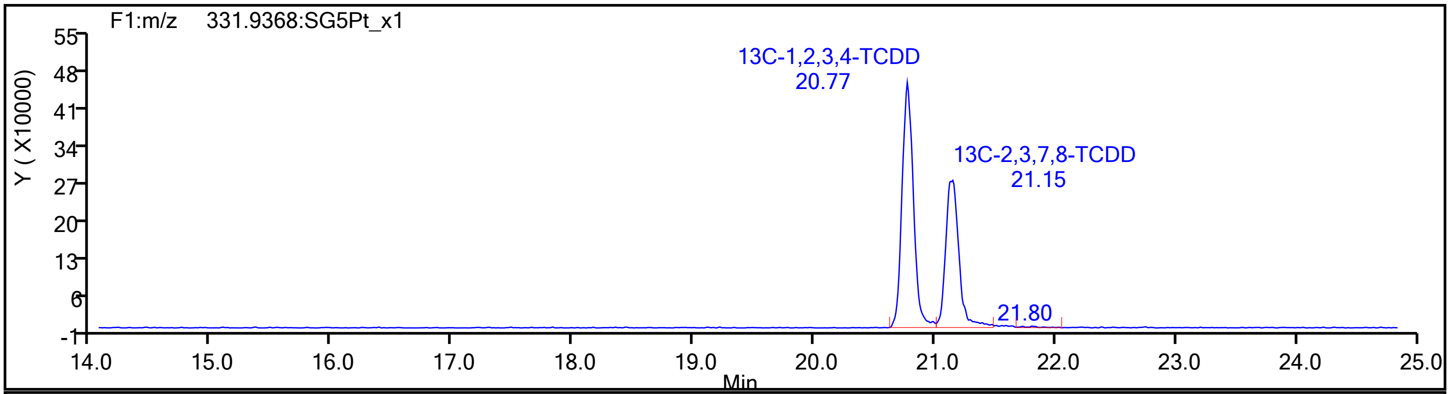

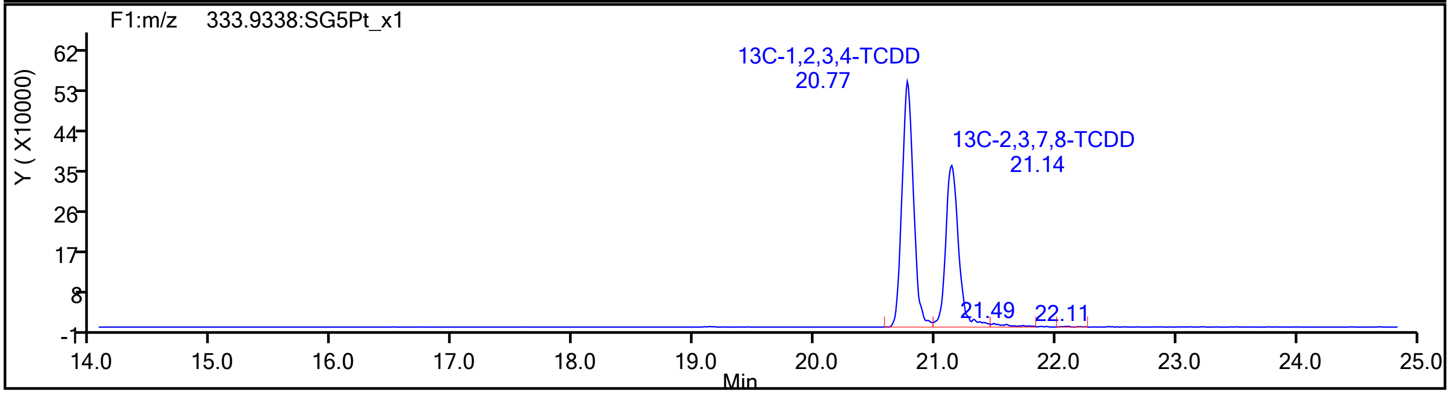

Report Date: 20-Oct-2021 07:50:19 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 19:51:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-1Mm

Worklist#: 534320

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

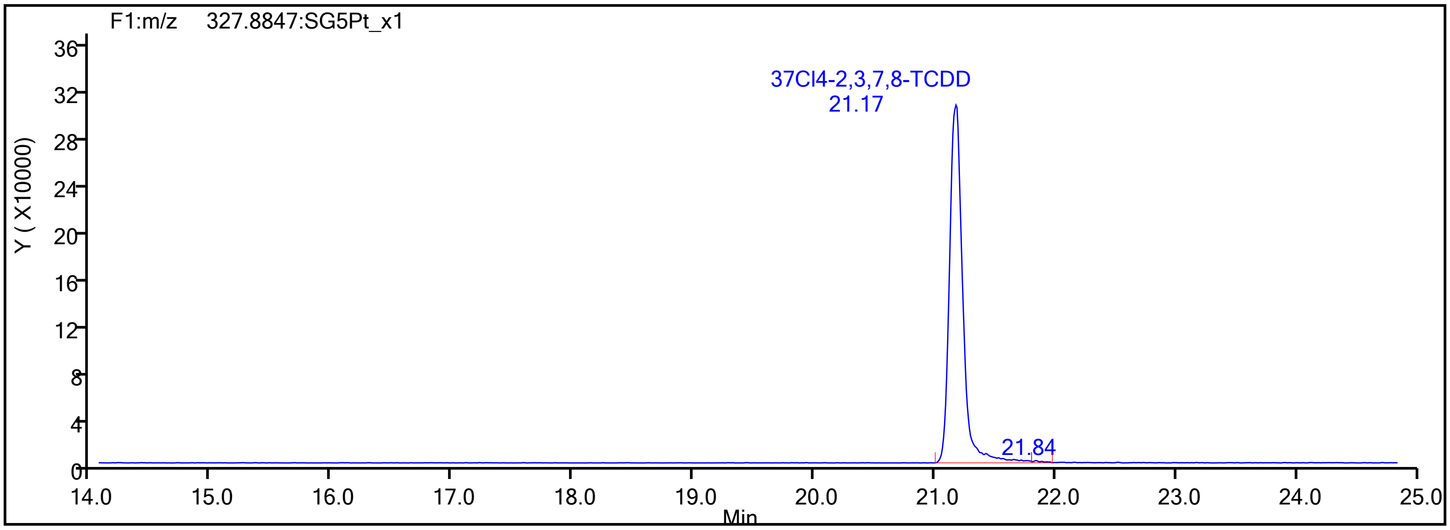

37Cl4-TCDD Standards

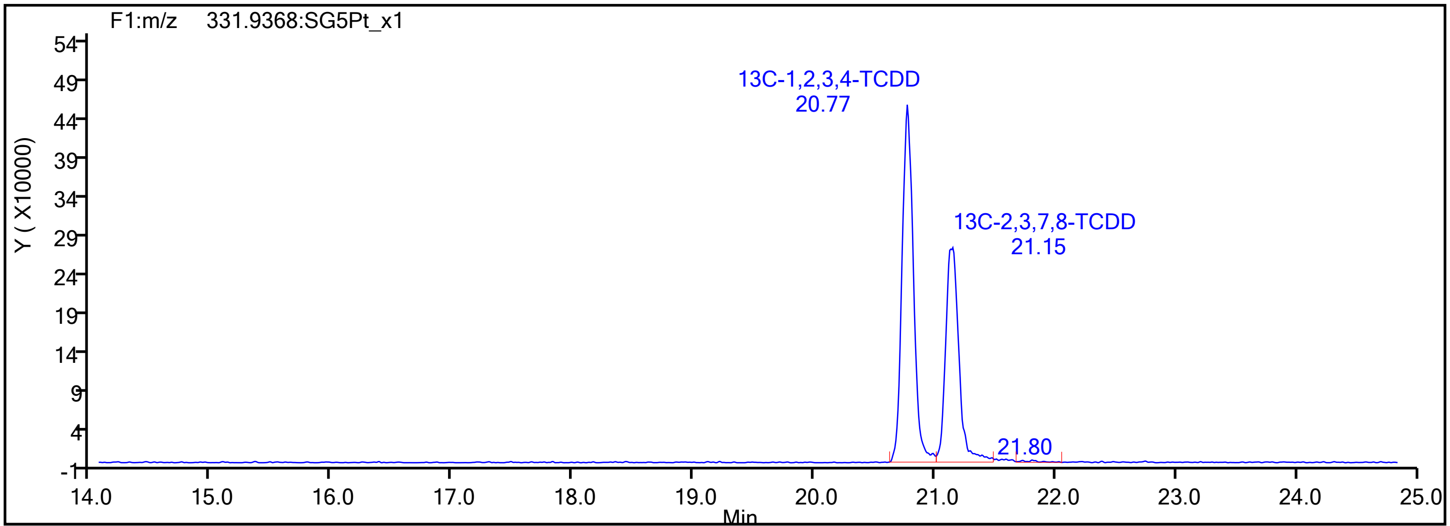

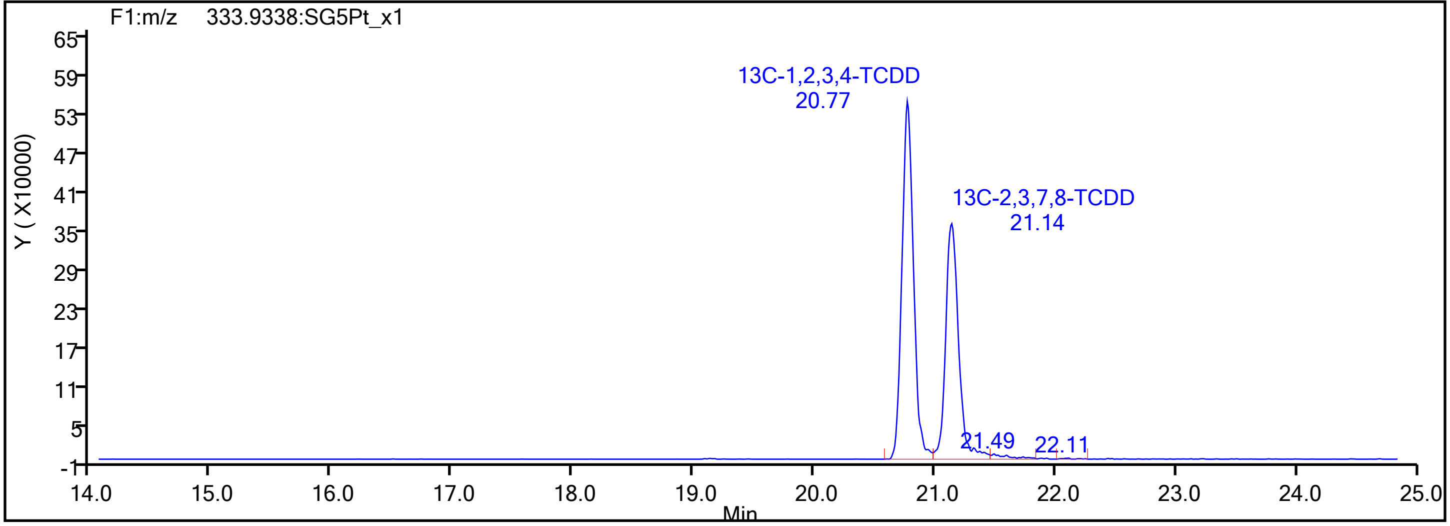

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Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 19:51:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-1Mm

Worklist#: 534320

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

F1 PeCDFs

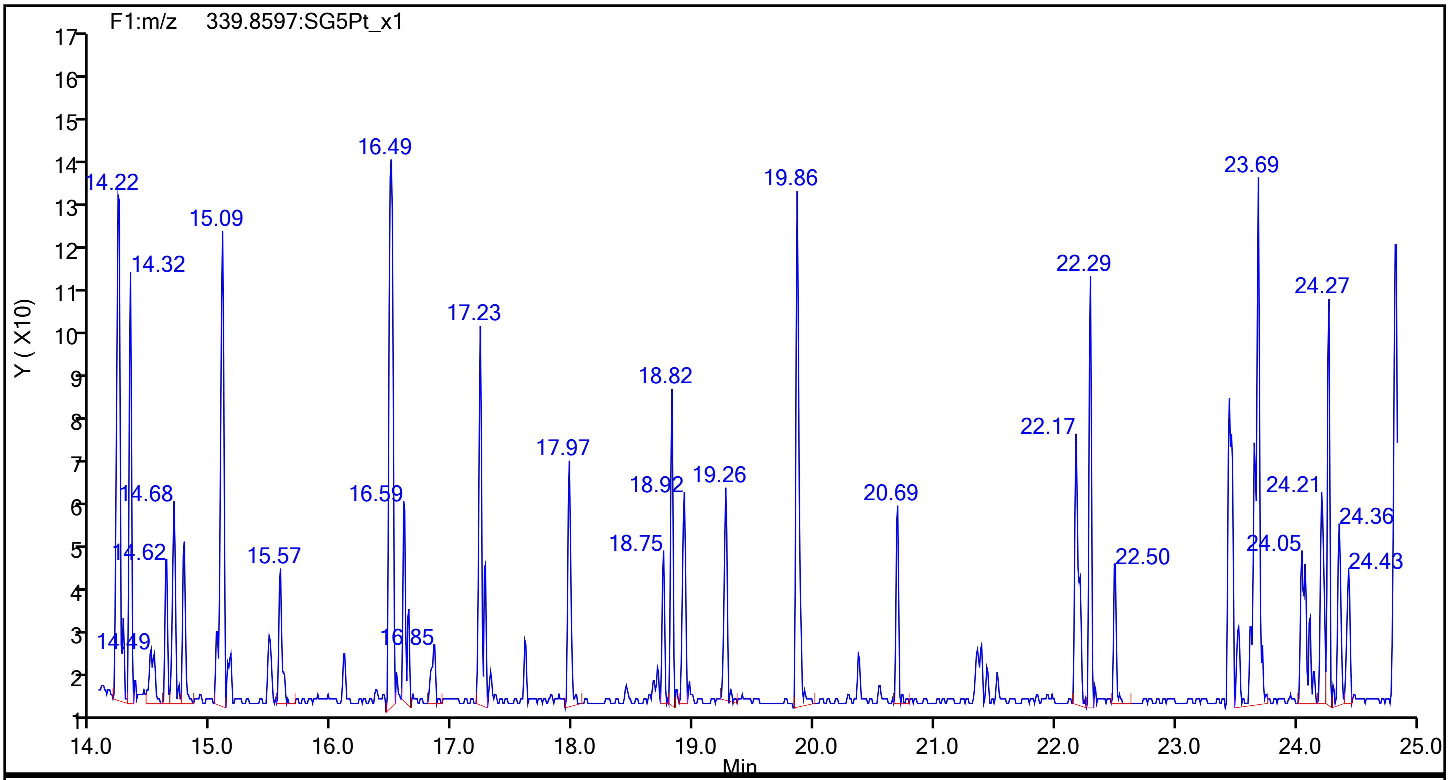

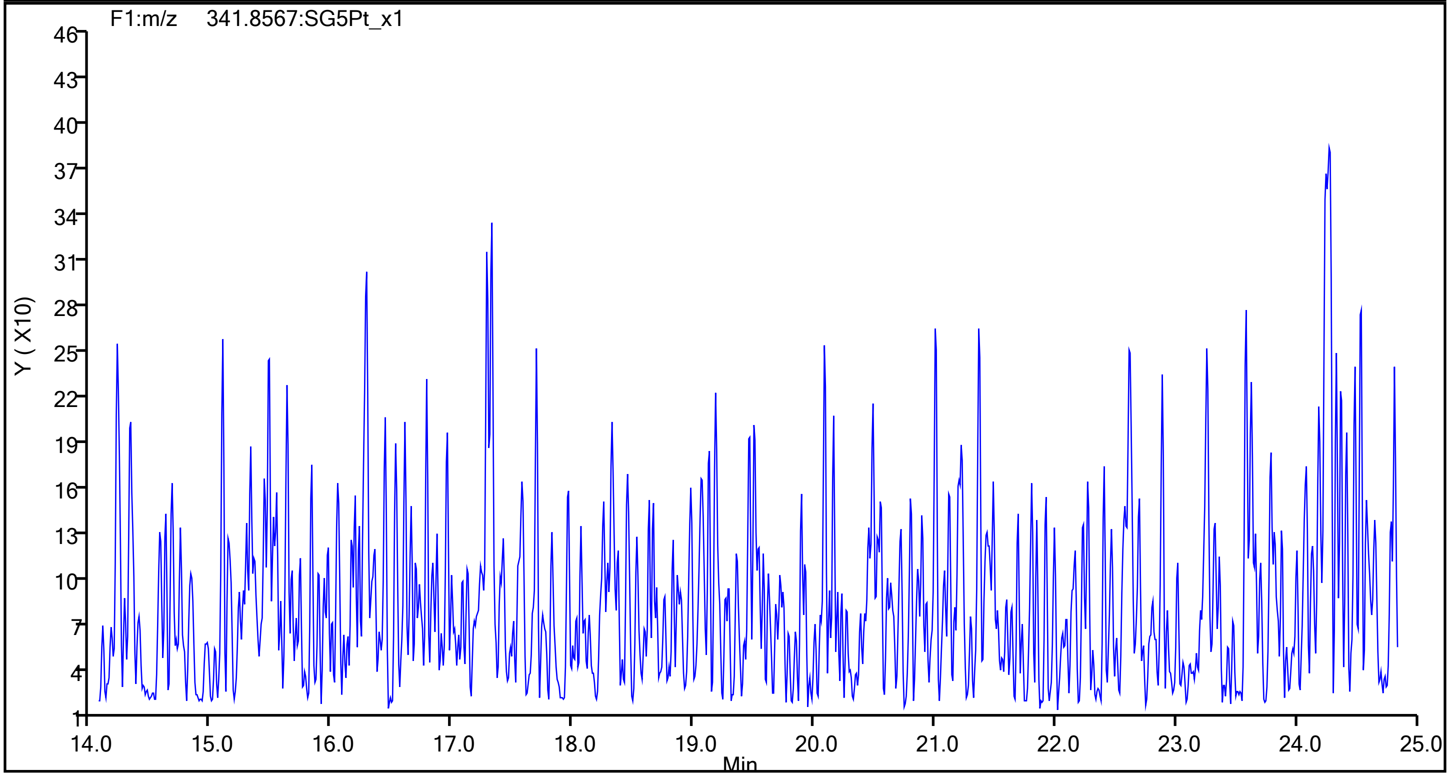

Report Date: 20-Oct-2021 07:50:19 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d
Injection Date: 15-Oct-2021 19:51:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-1Mm
Worklist#: 534320
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

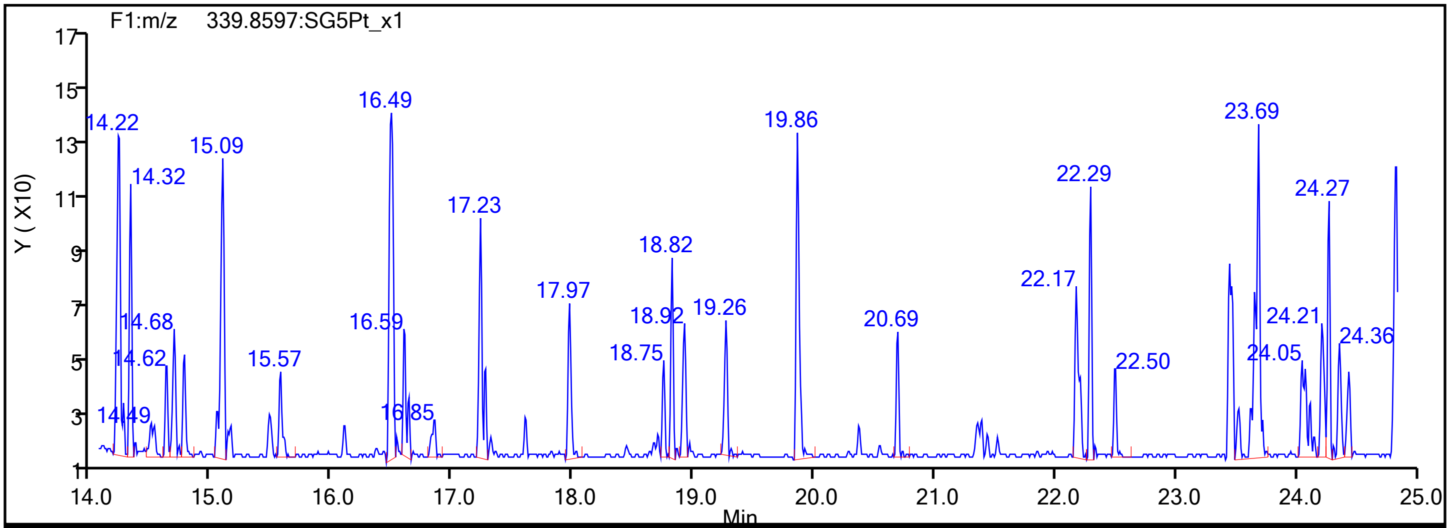

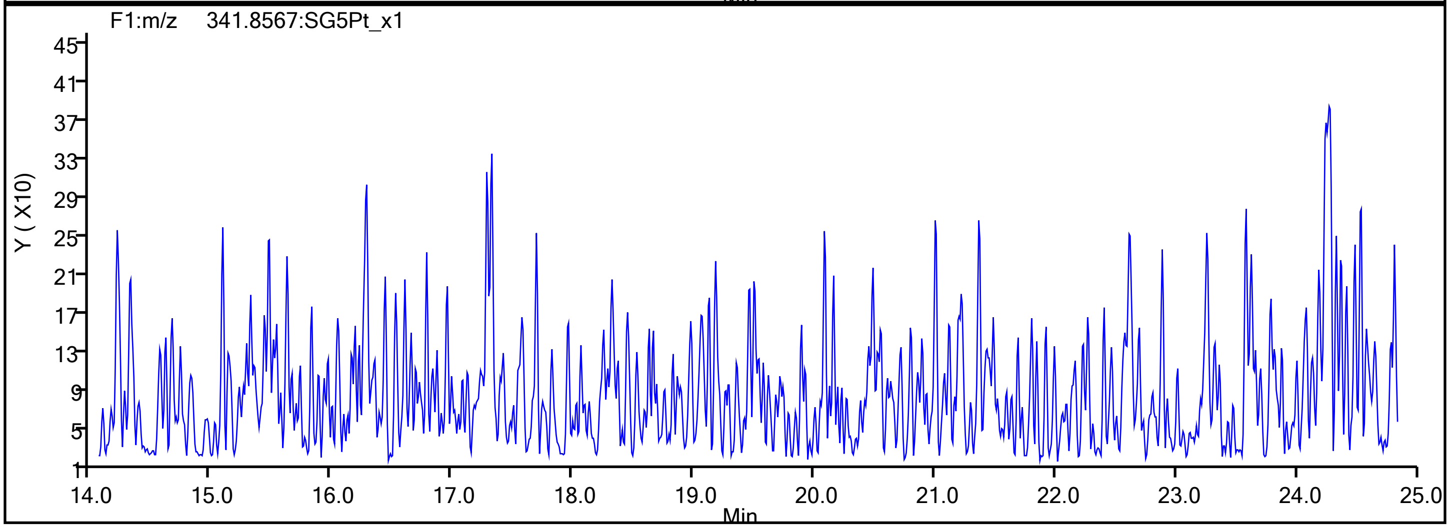

F1 PeCDFs Interference Mass

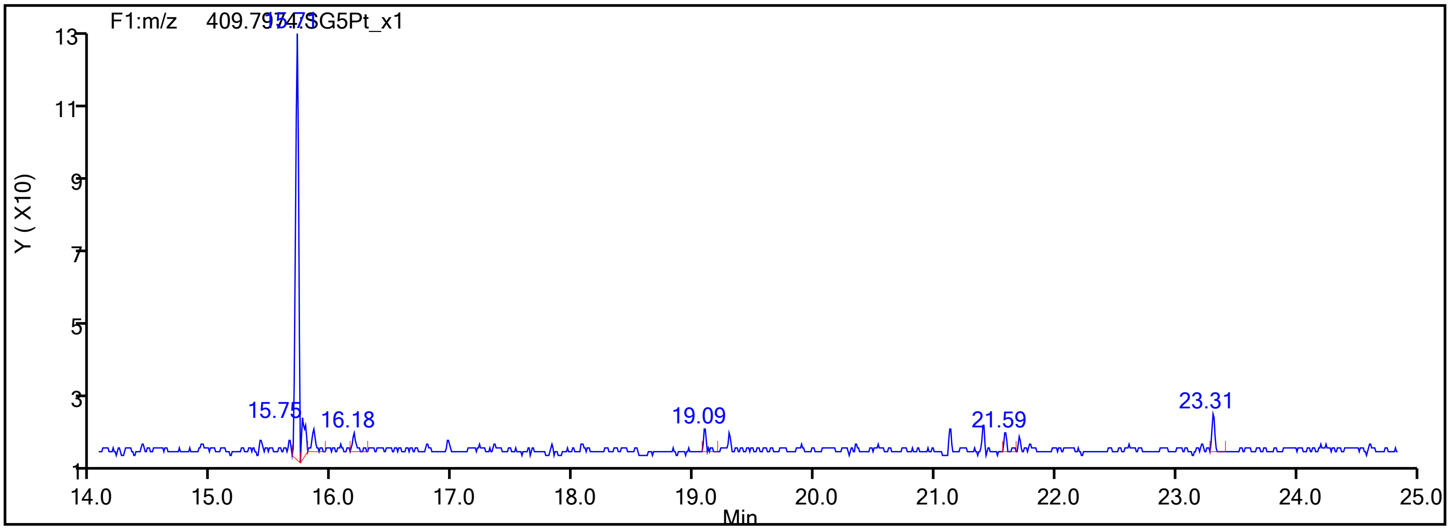

Report Date: 20-Oct-2021 07:50:20 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

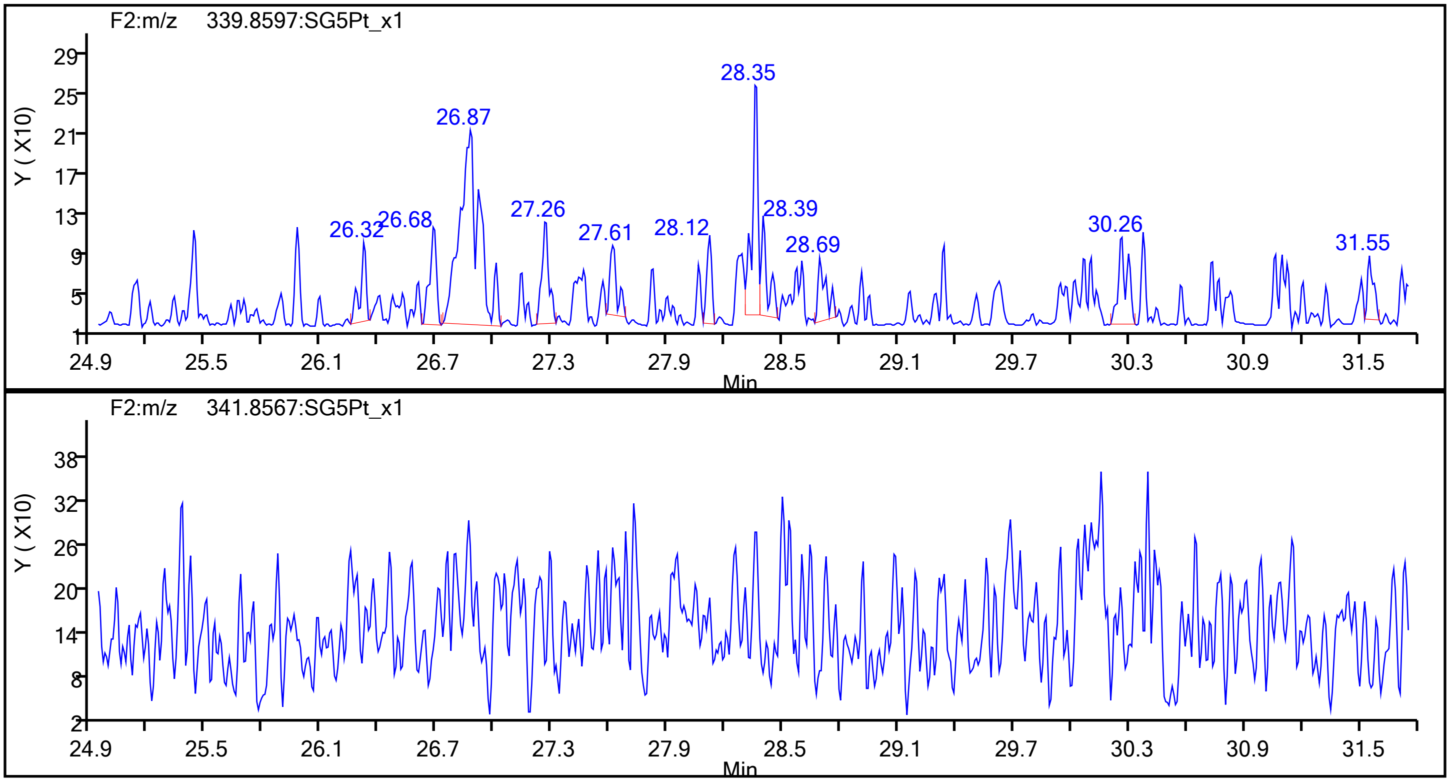

PeCDF Standards

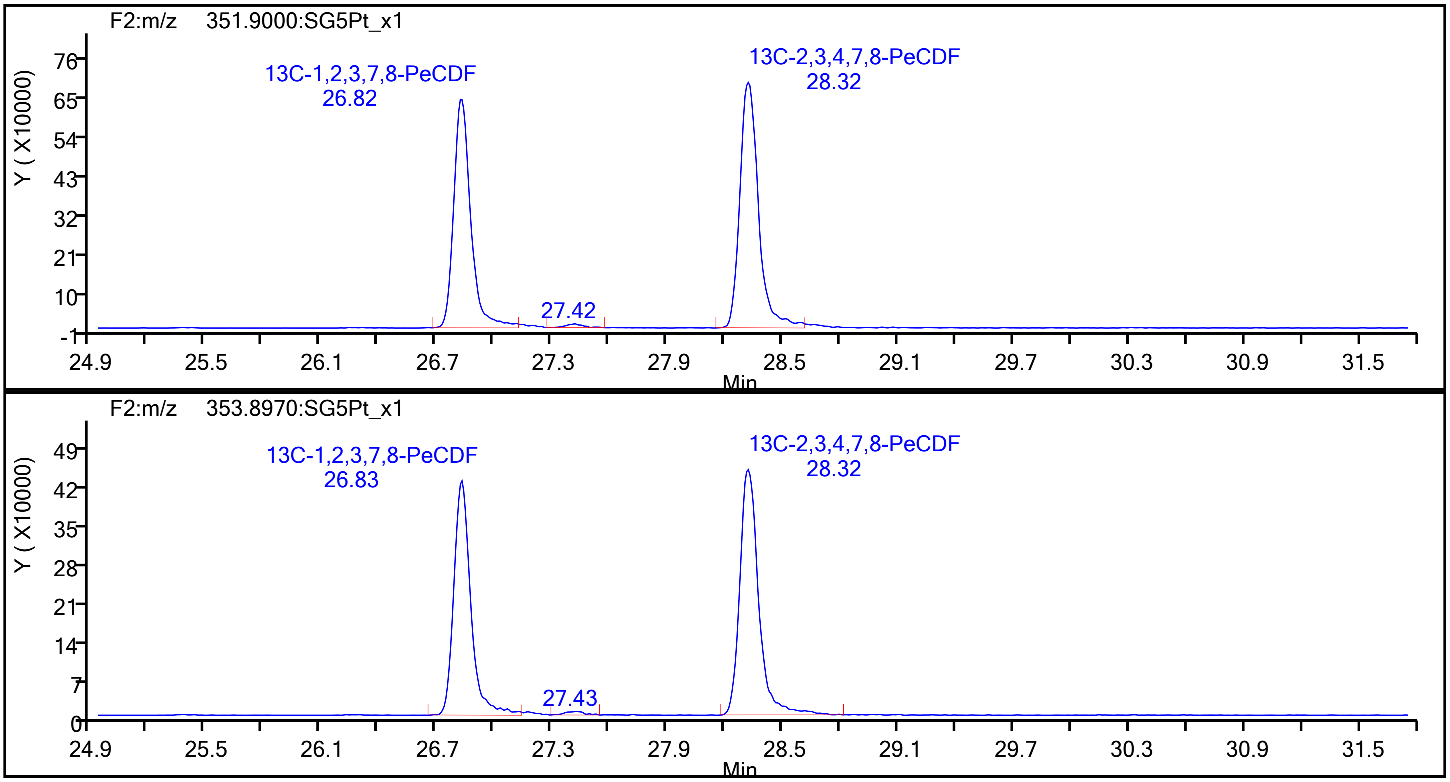

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

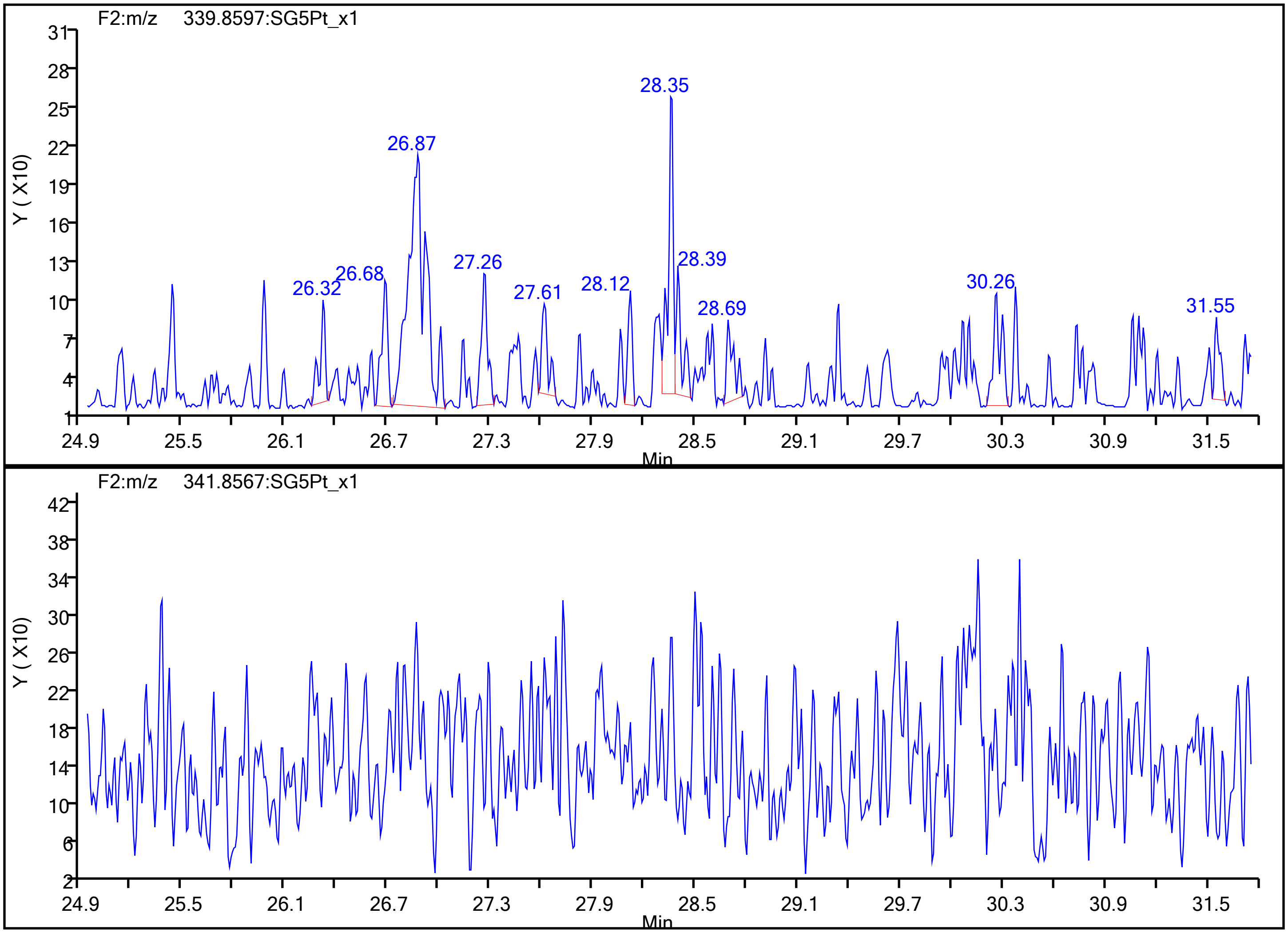

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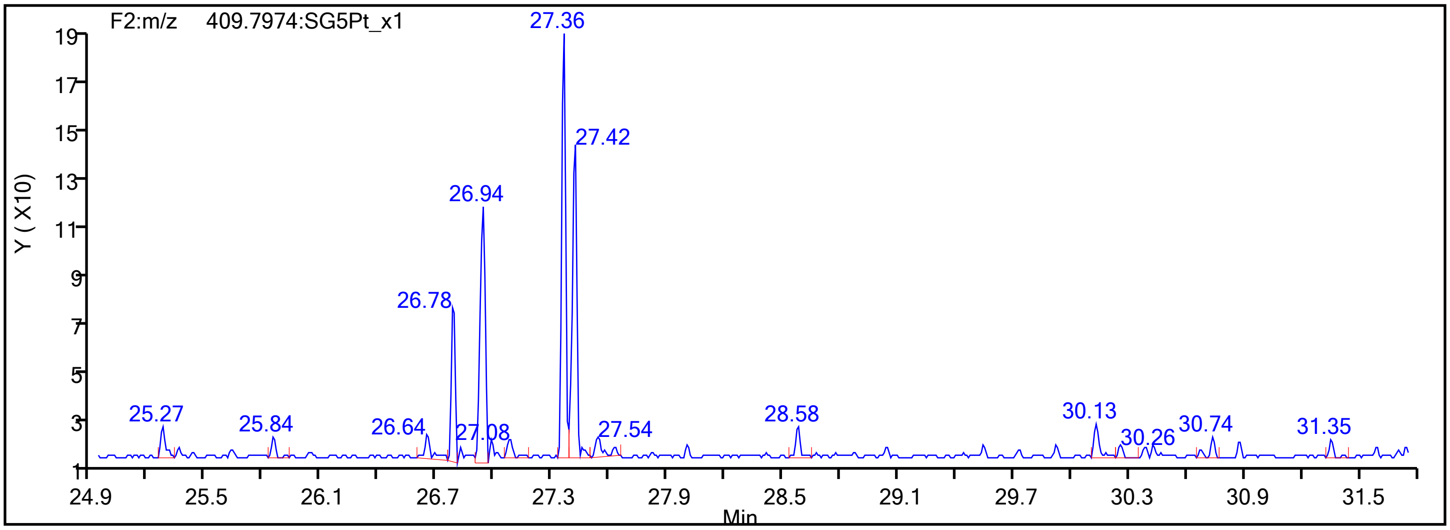

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

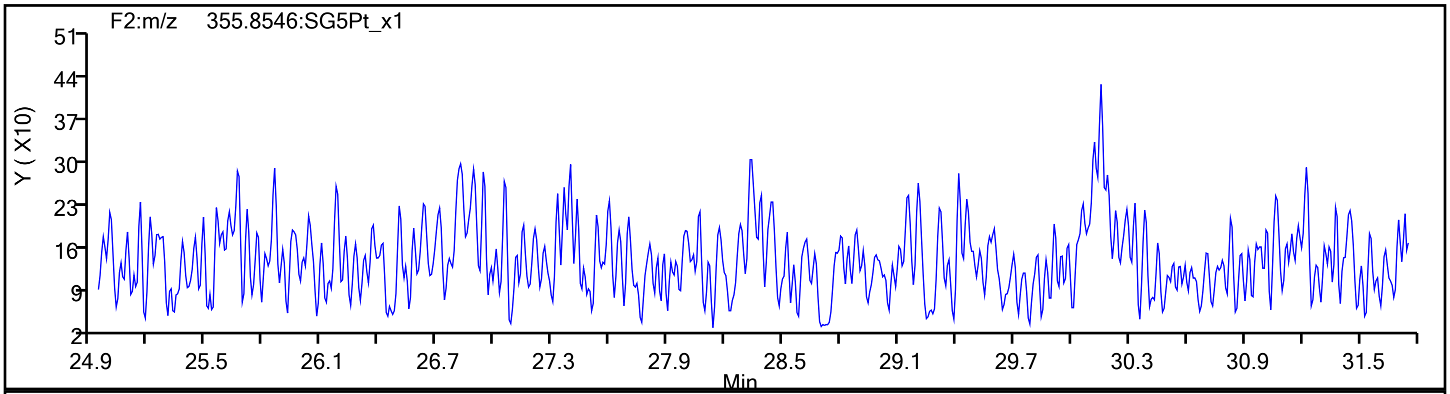

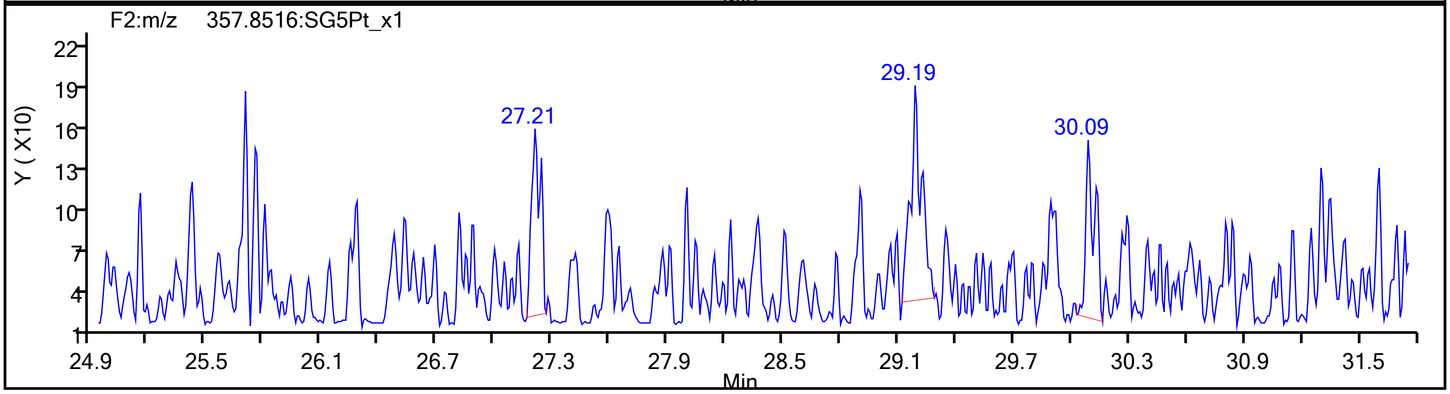

PeCDD Standards

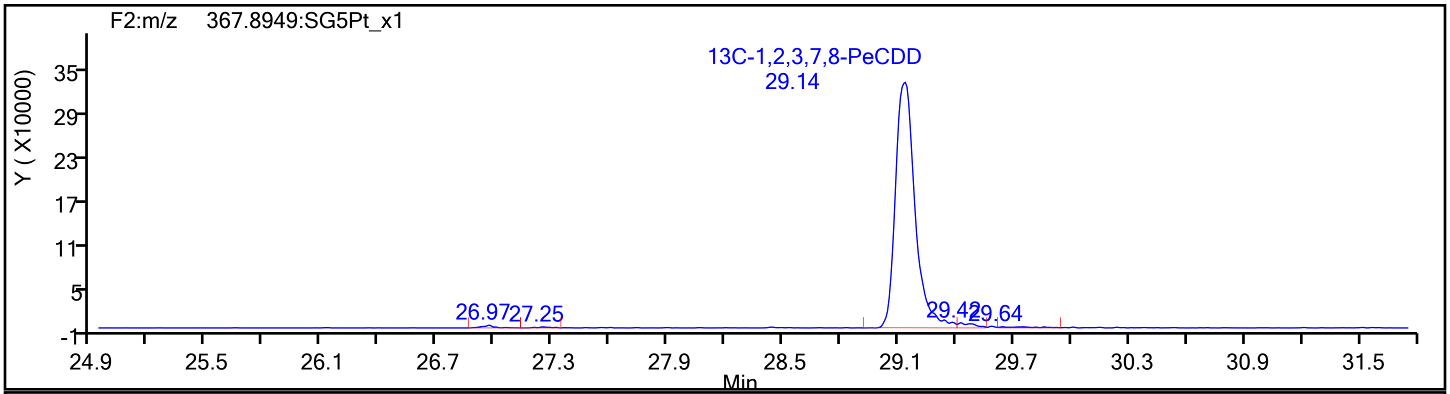

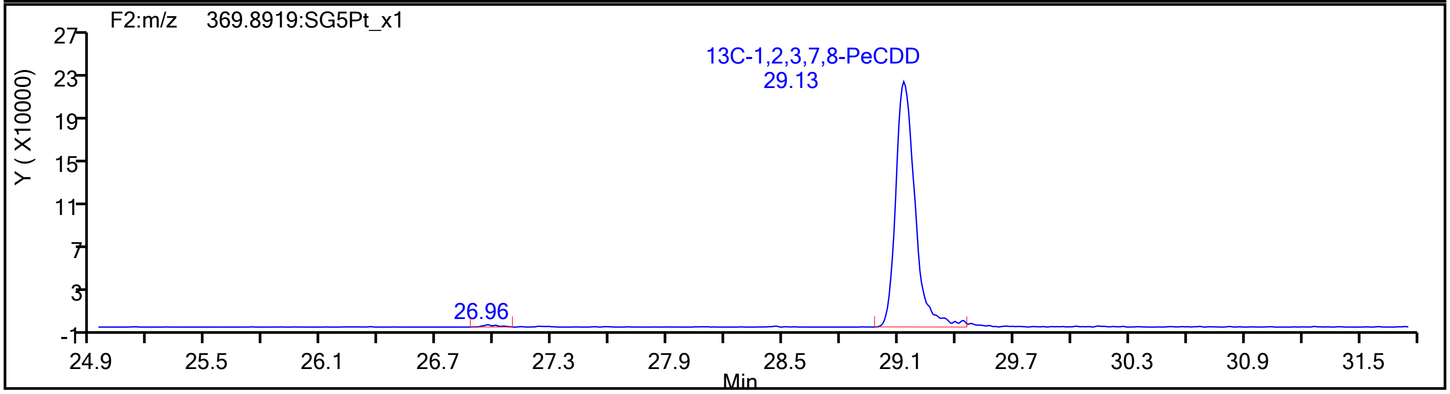

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date: 15-Oct-2021 19:51:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID: 11215702-1Mm

Worklist#: 534320 Sample Line#: 13

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

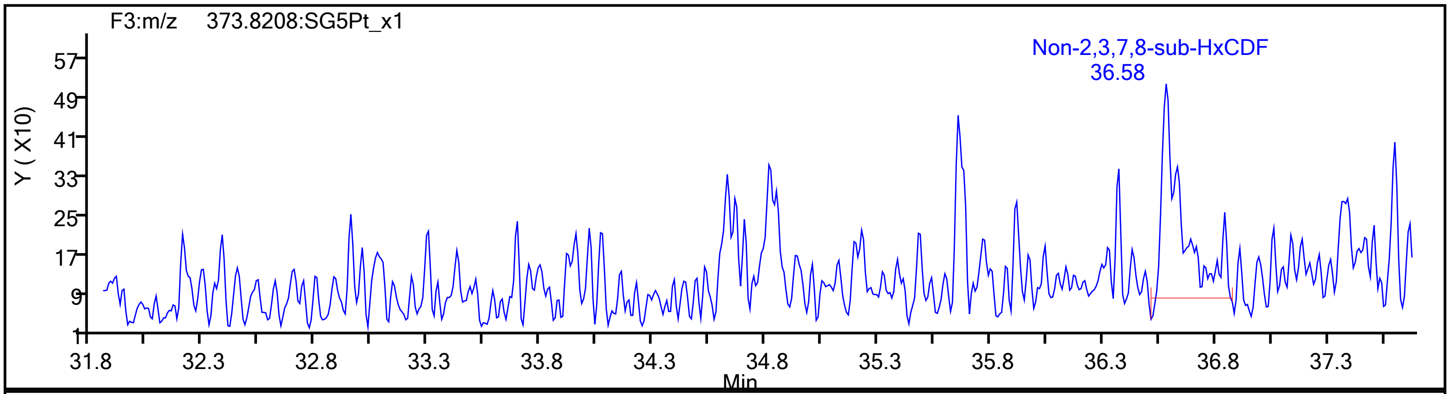

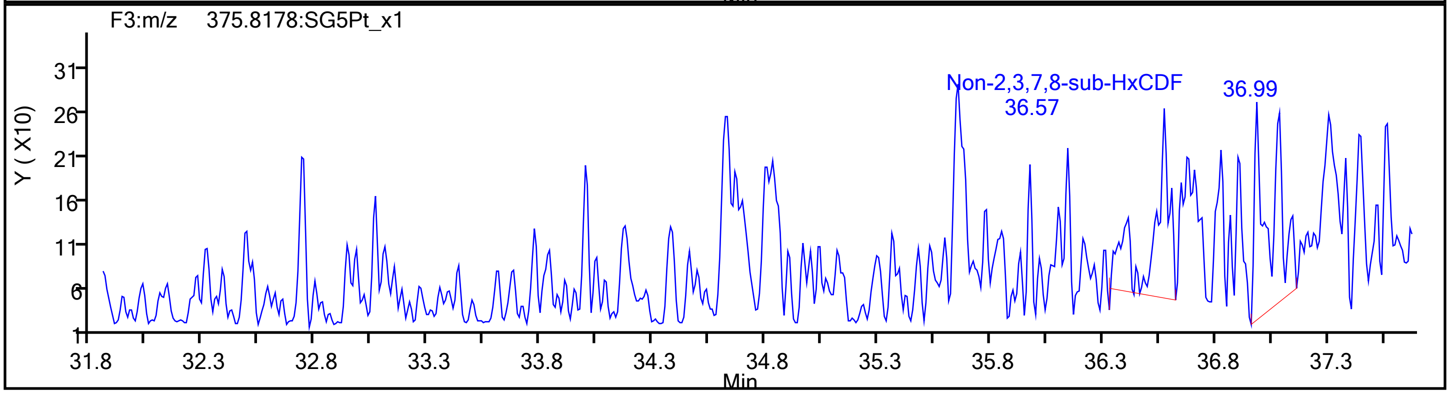

HxCDF Standards

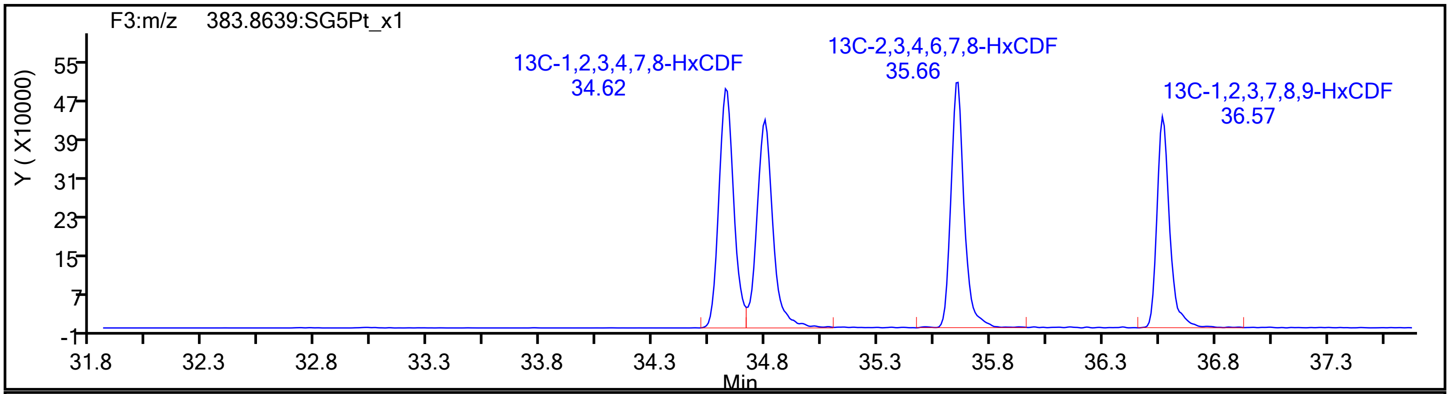

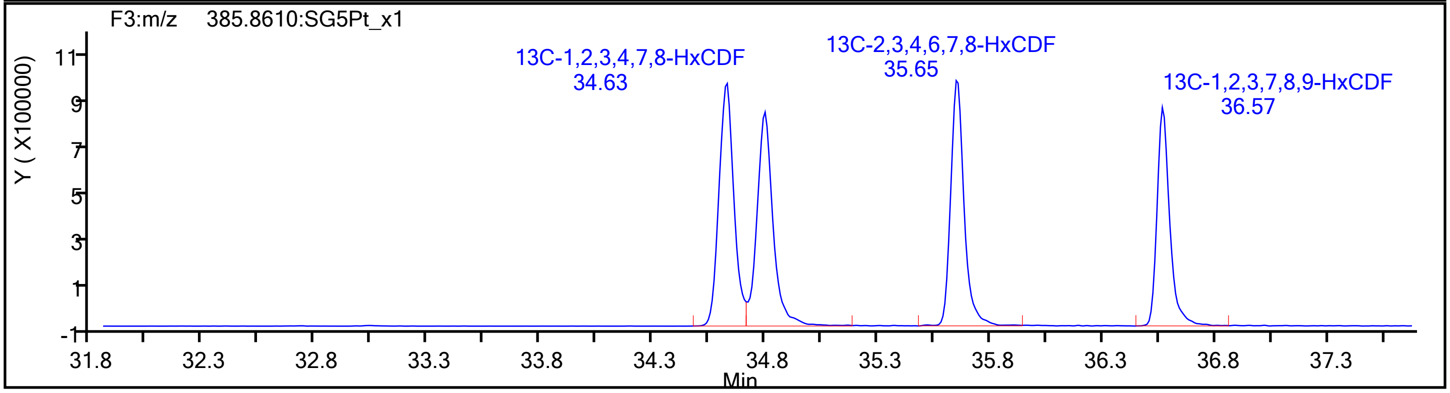

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Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date: 15-Oct-2021 19:51:00
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID: 11215702-1Mm
Worklist#: 534320
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

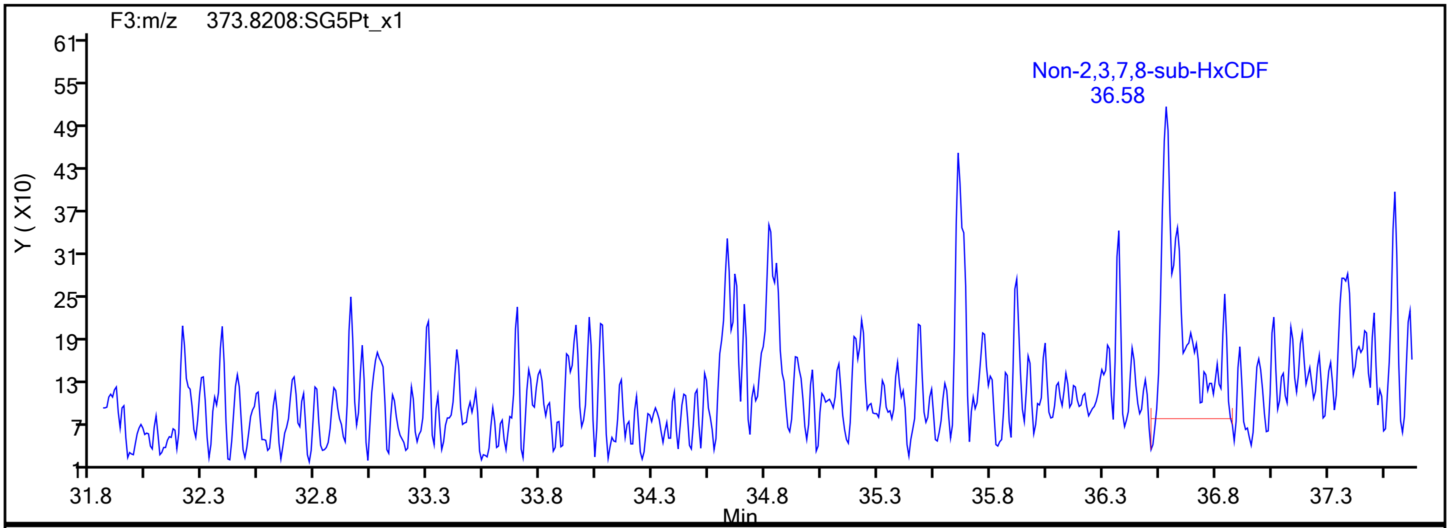

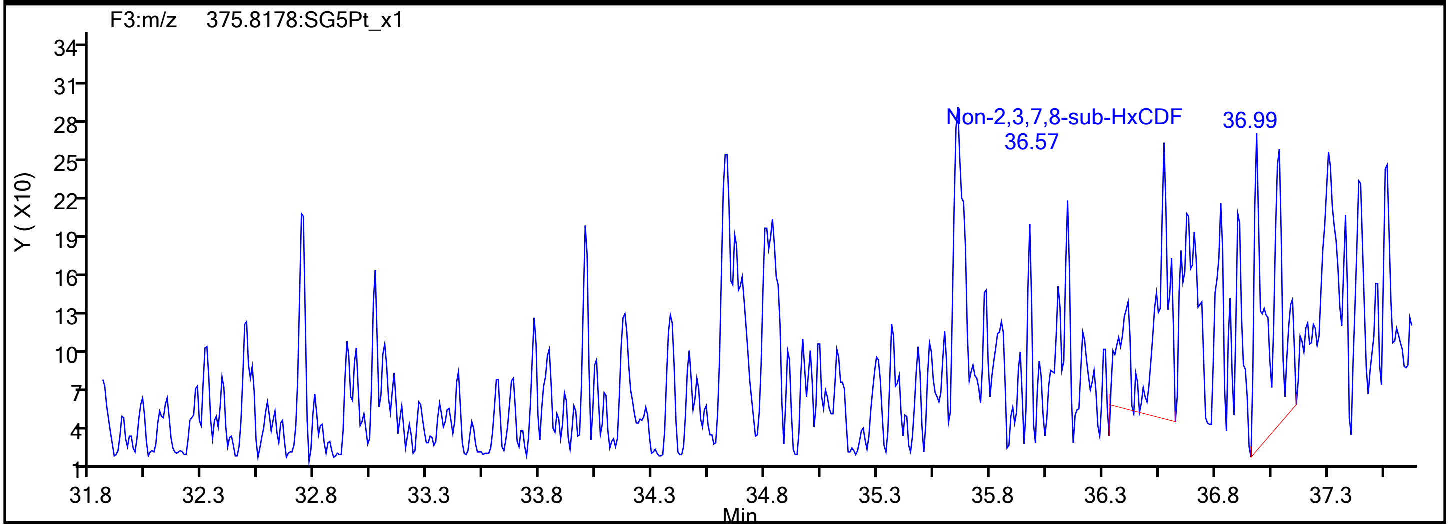

HxCDF Interference Mass

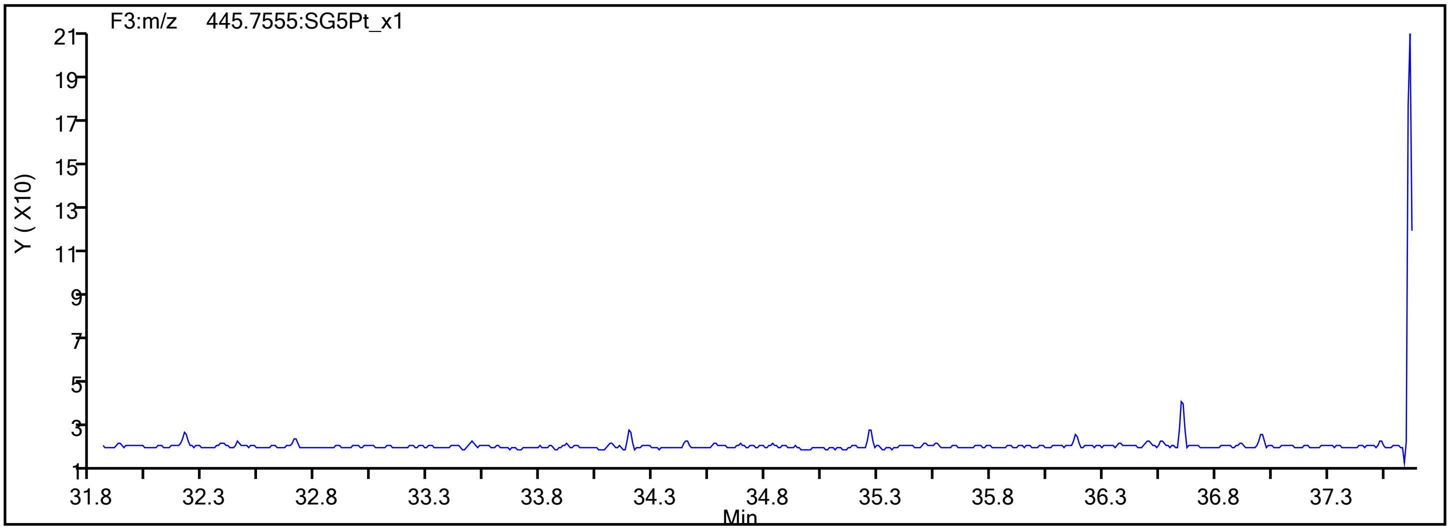

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Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 19:51:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-1Mm

Worklist#: 534320

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

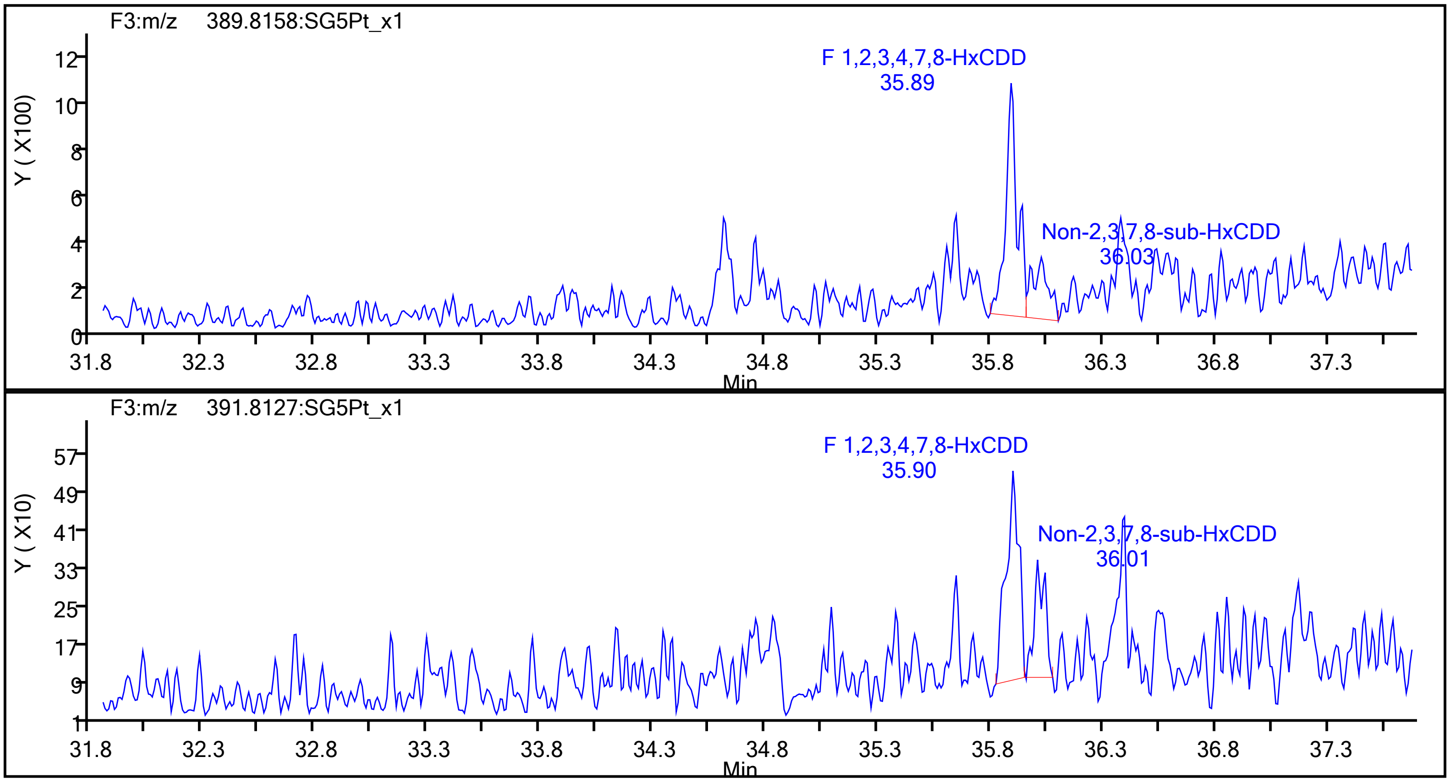

HxCDD Standards

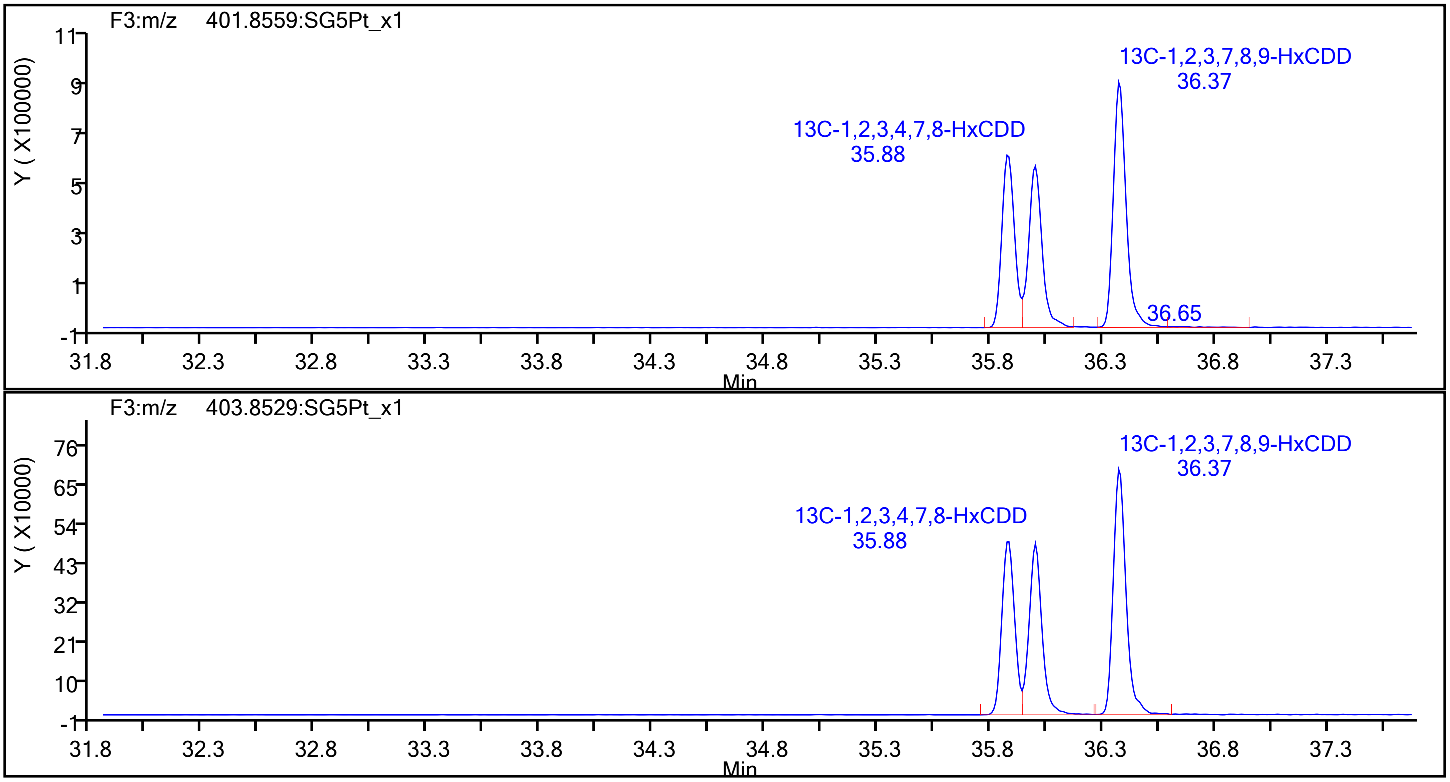

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

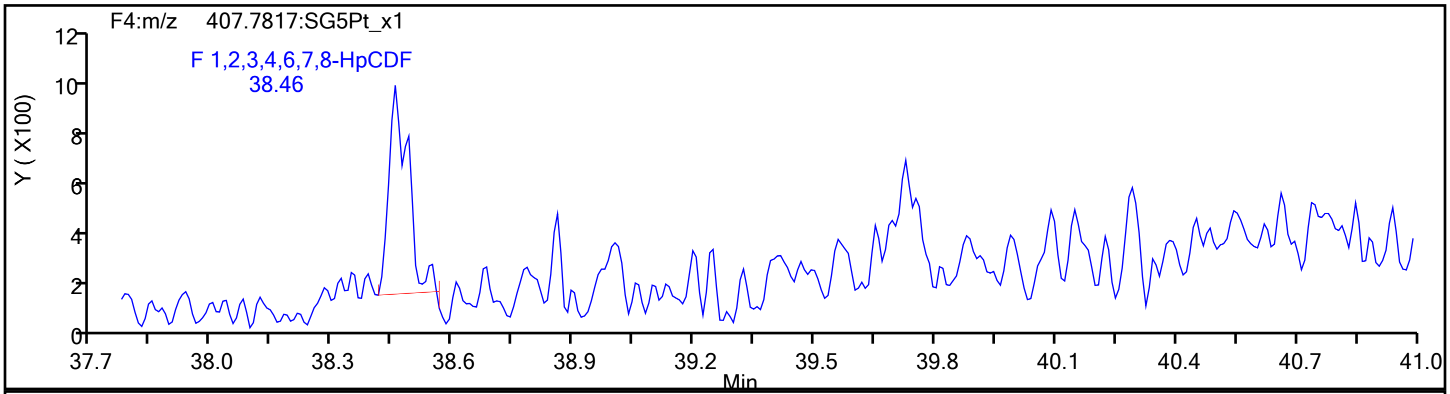

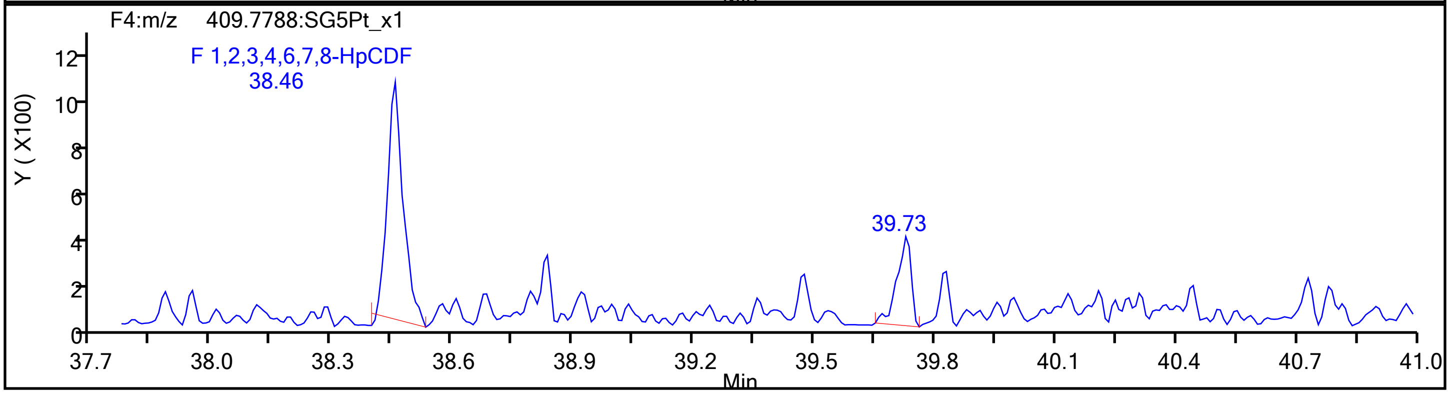

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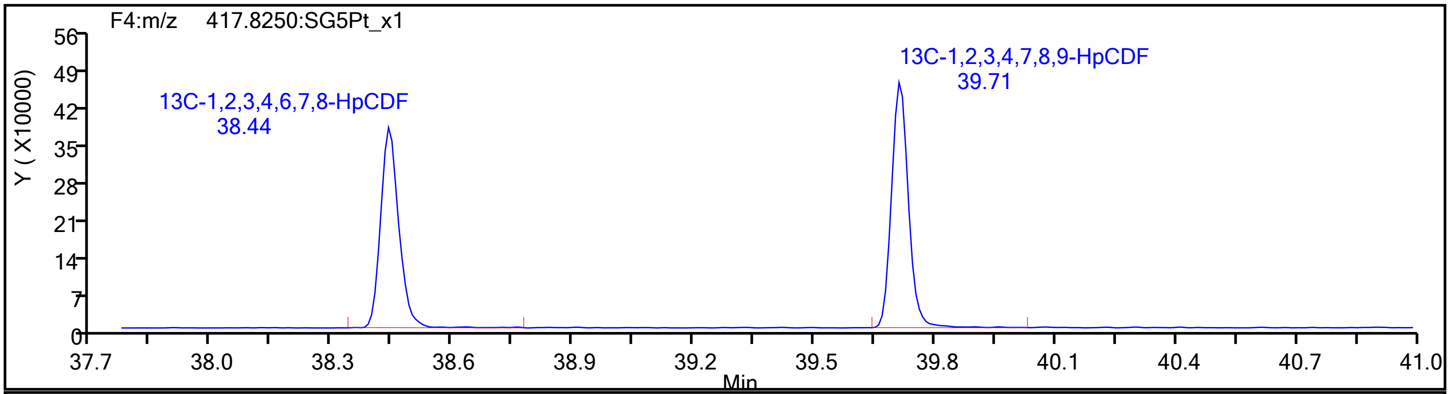

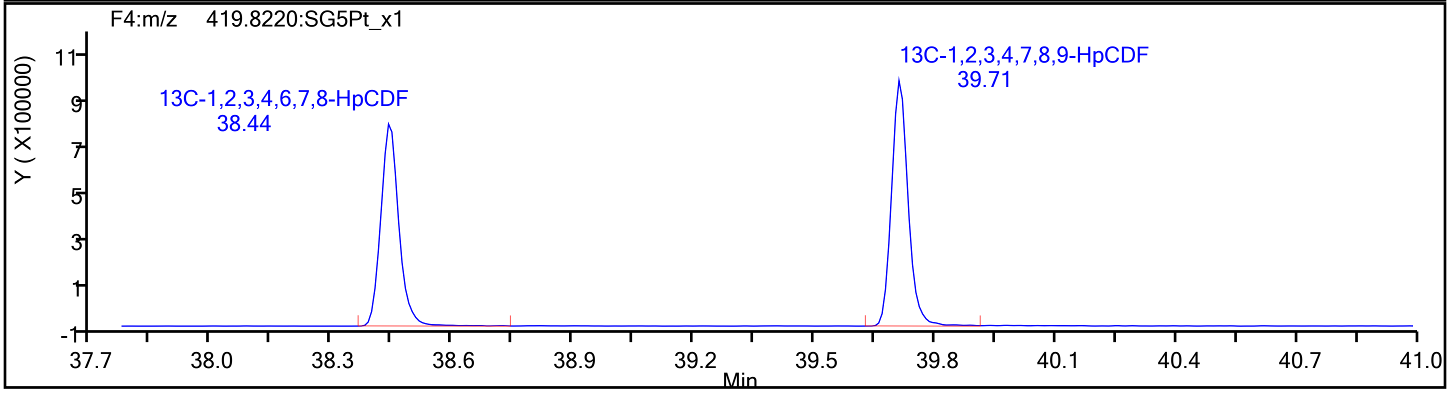

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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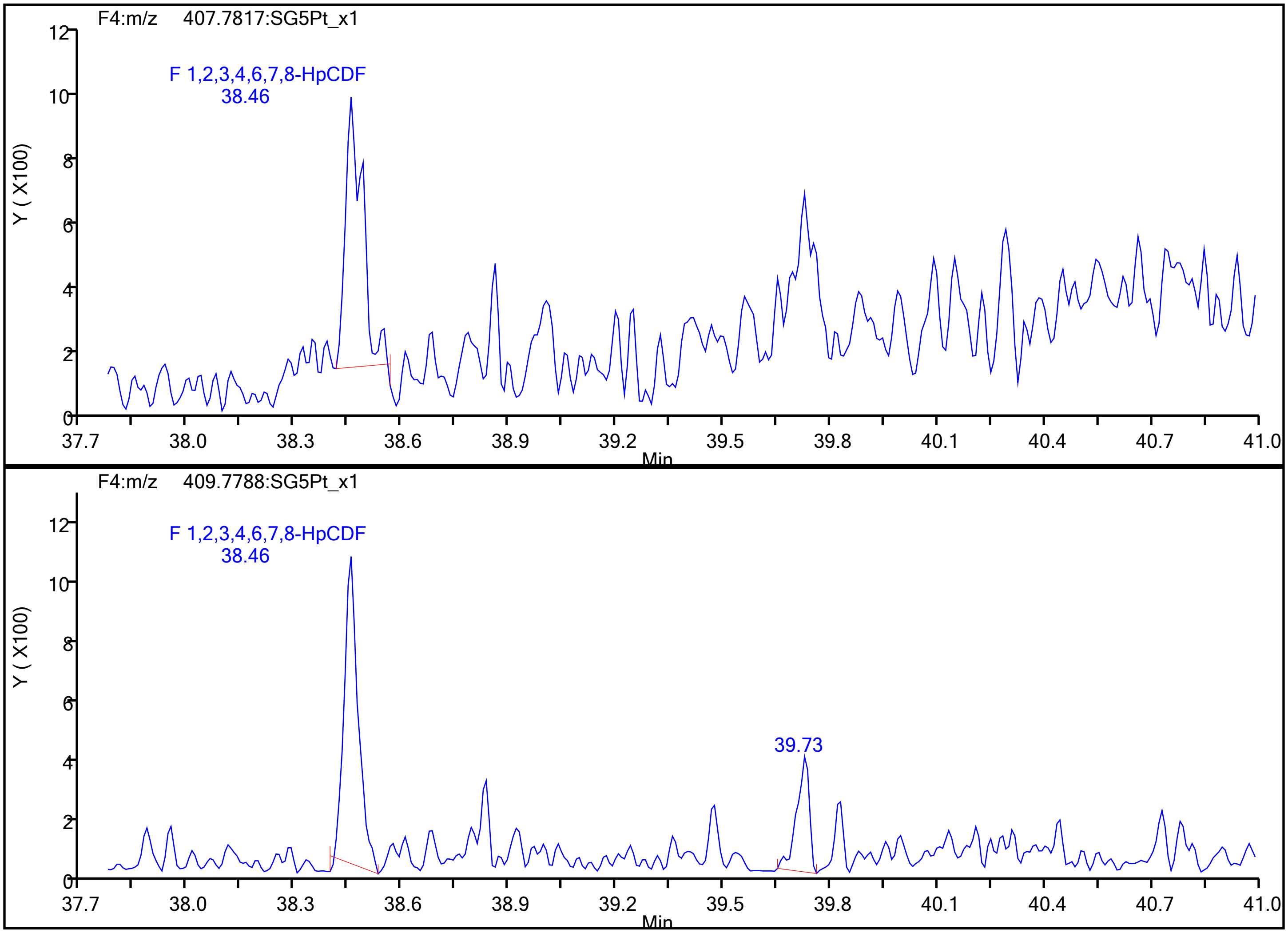

HpCDF Interference Mass

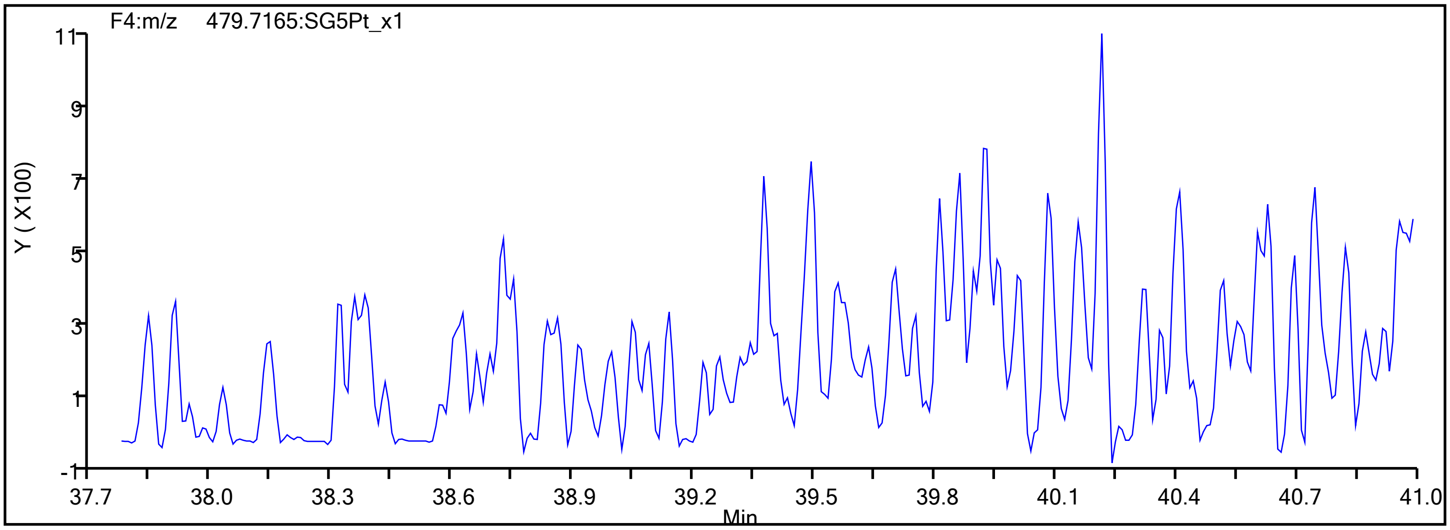

Report Date: 20-Oct-2021 07:50:20　　Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 19:51:00　　Injection Vol: 1.0 ul
Instrument ID: DFS 1　　Operator ID: Xcalibur_System
Method: Dioxin_DFS1　　Limit Group: HR - 1613B - ICAL
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HpCDD

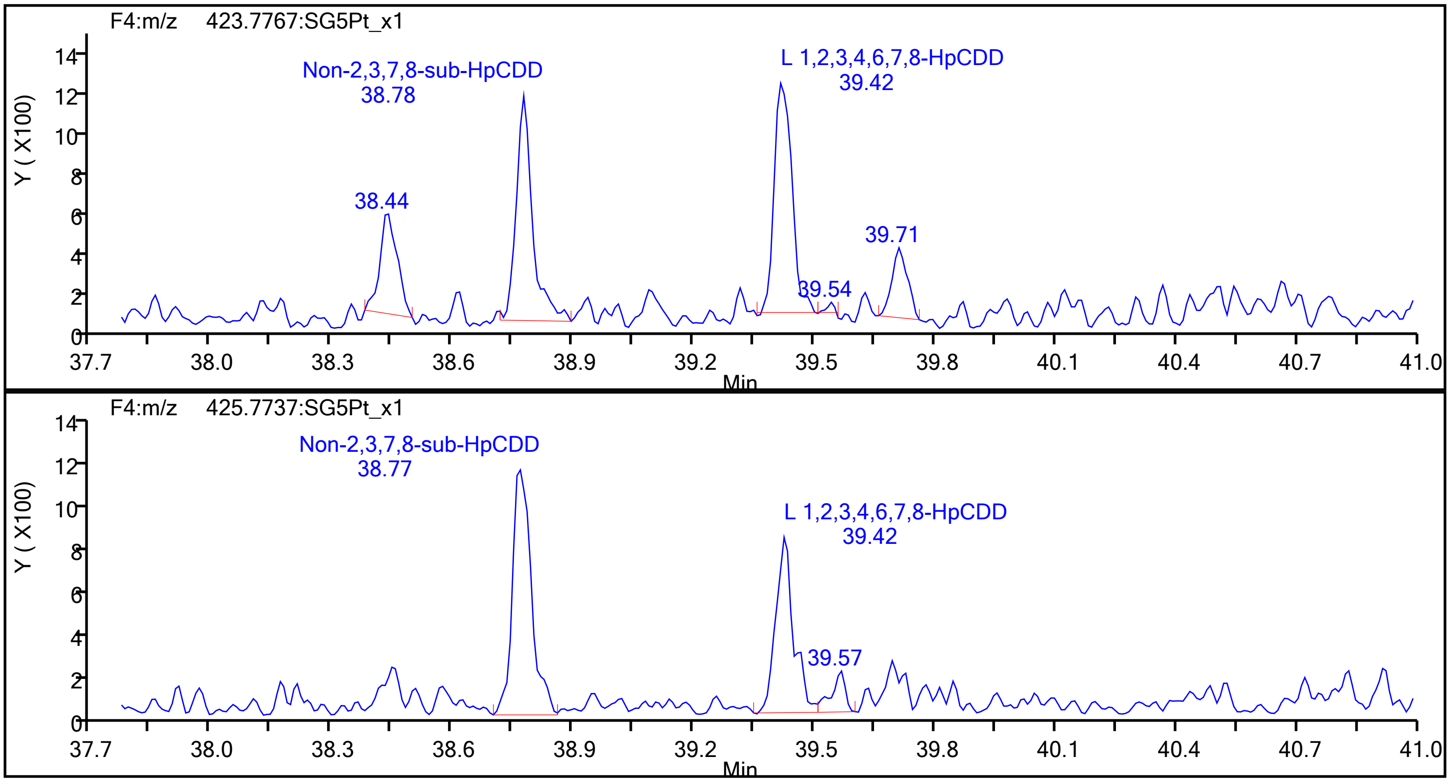

HpCDD Standards

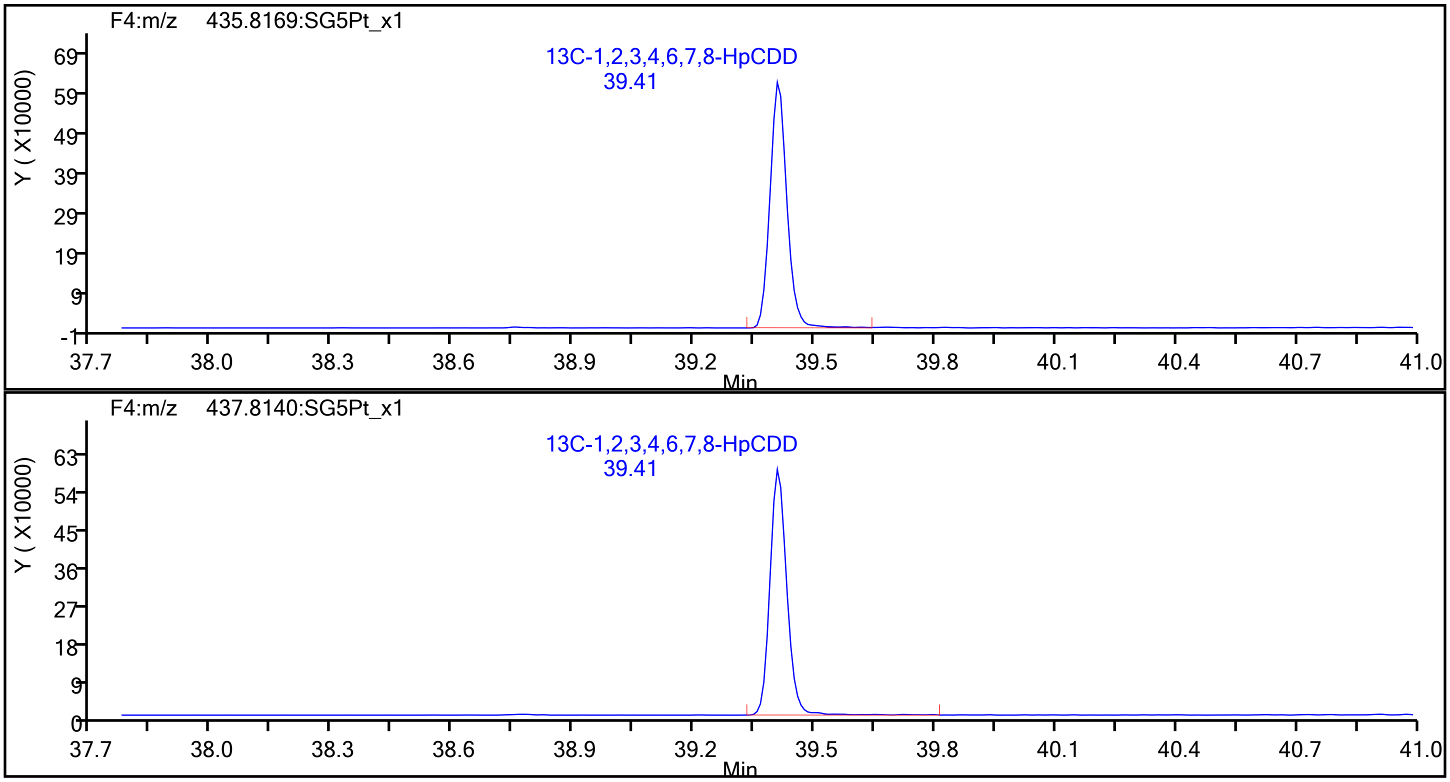

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Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 19:51:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID: 11215702-1Mm
Worklist#: 534320
Sample Line#: 13
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

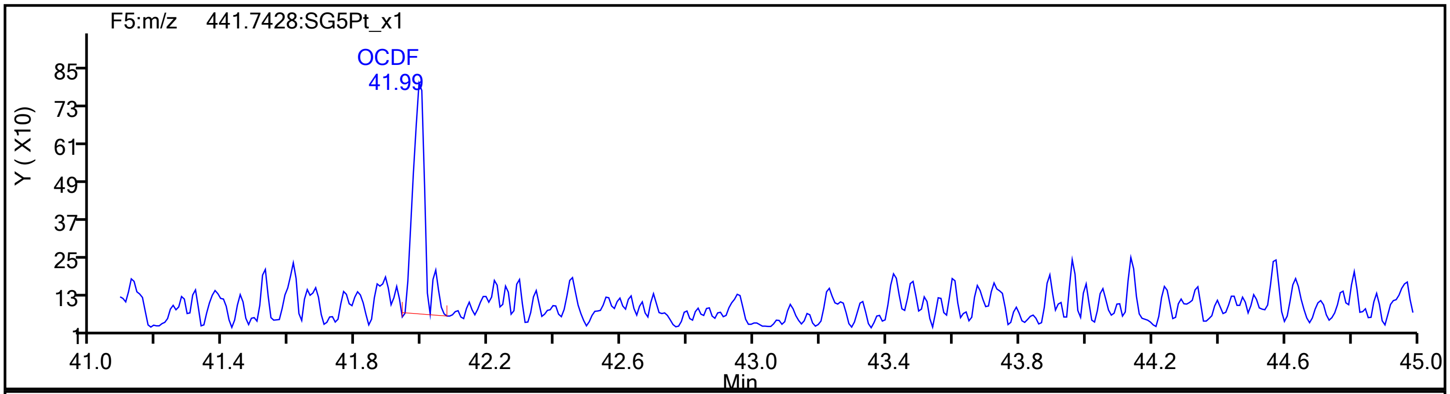

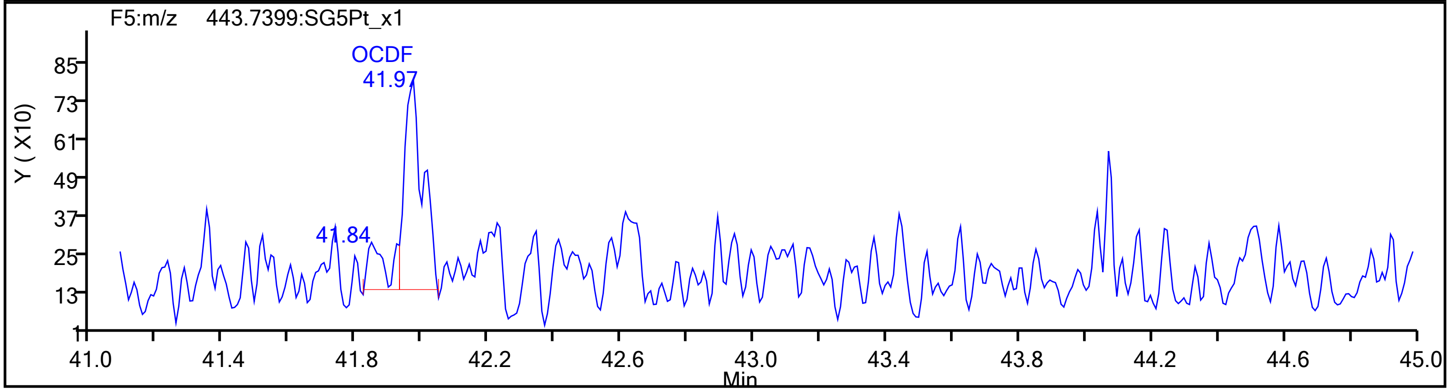

OCDF Standards

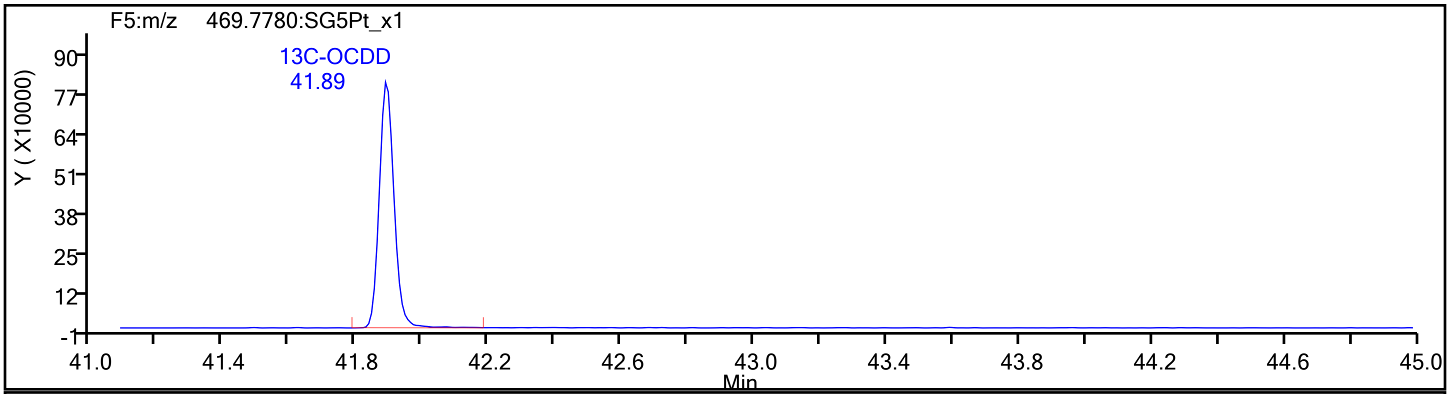

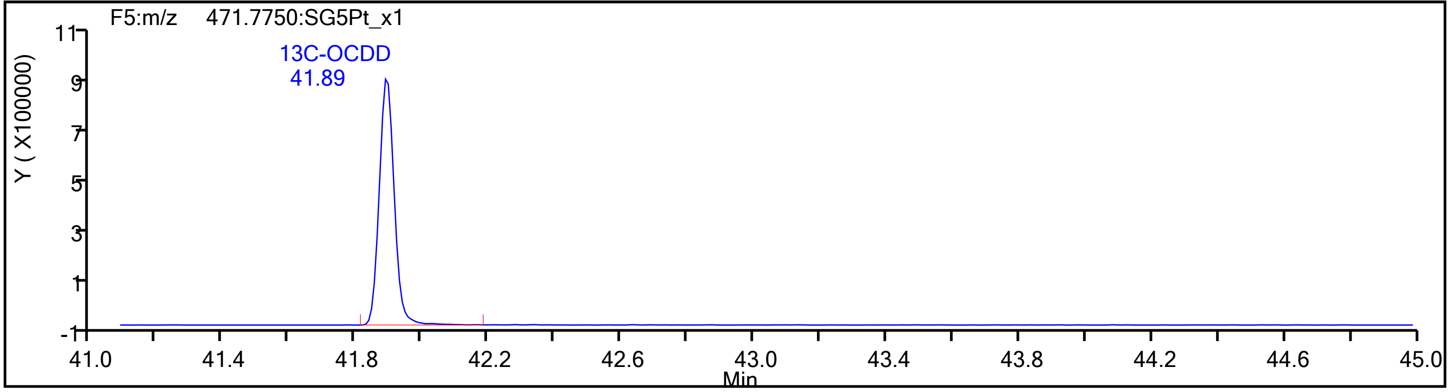

Report Date: 20-Oct-2021 07:50:20 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date: 15-Oct-2021 19:51:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-1Mm

Worklist#: 534320

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

OCDF

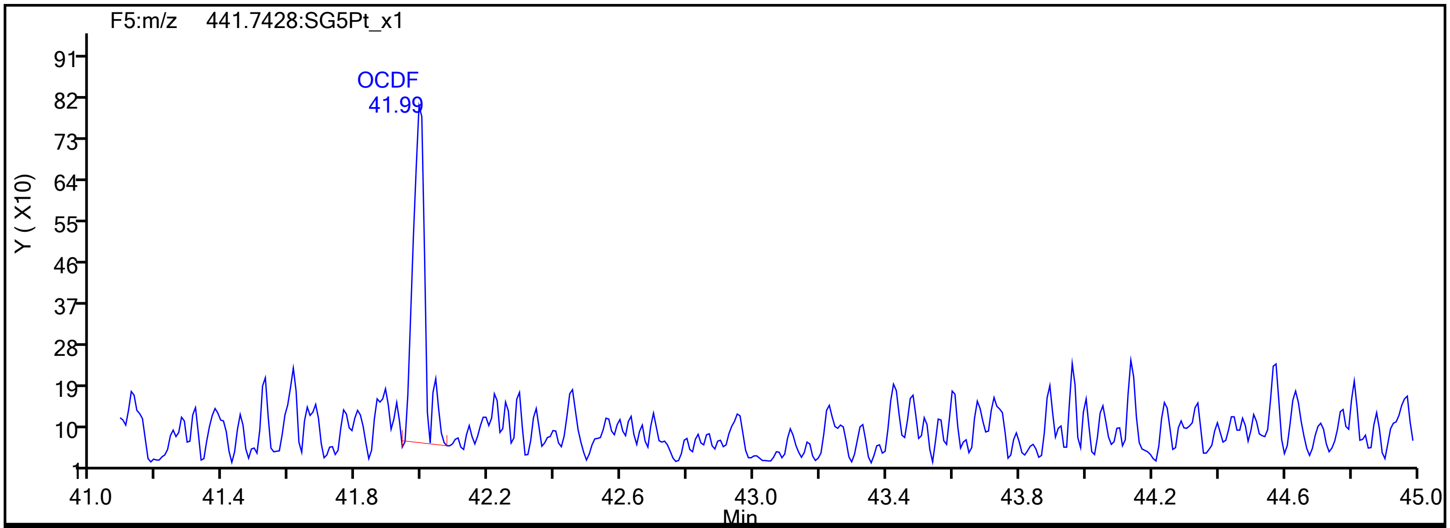

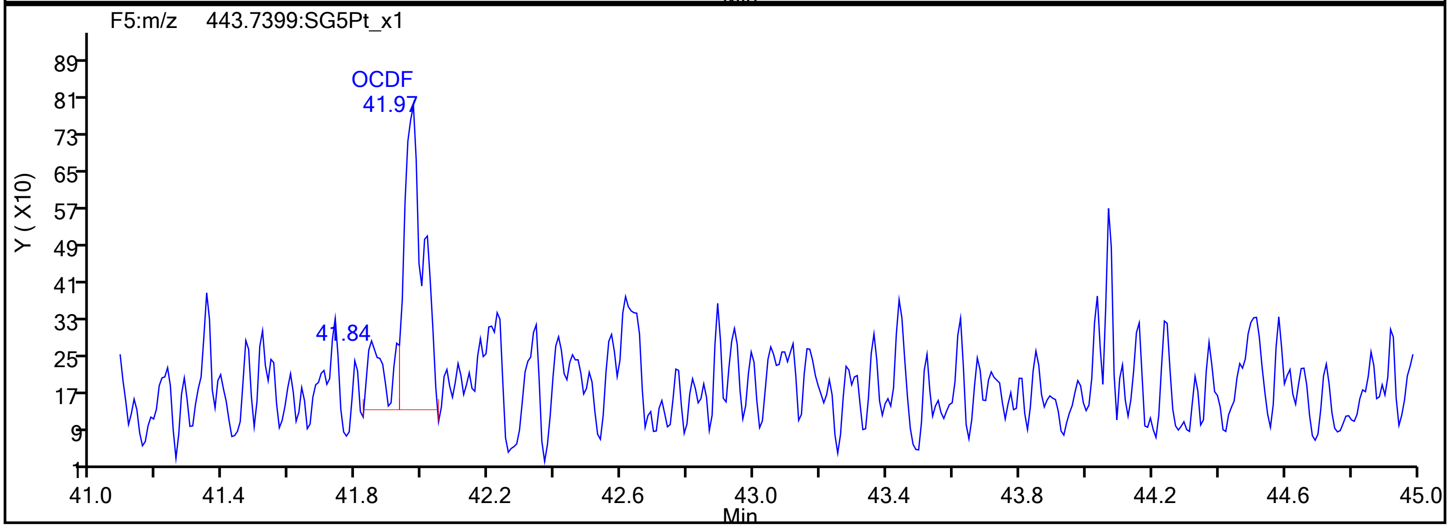

OCDF Interference Mass

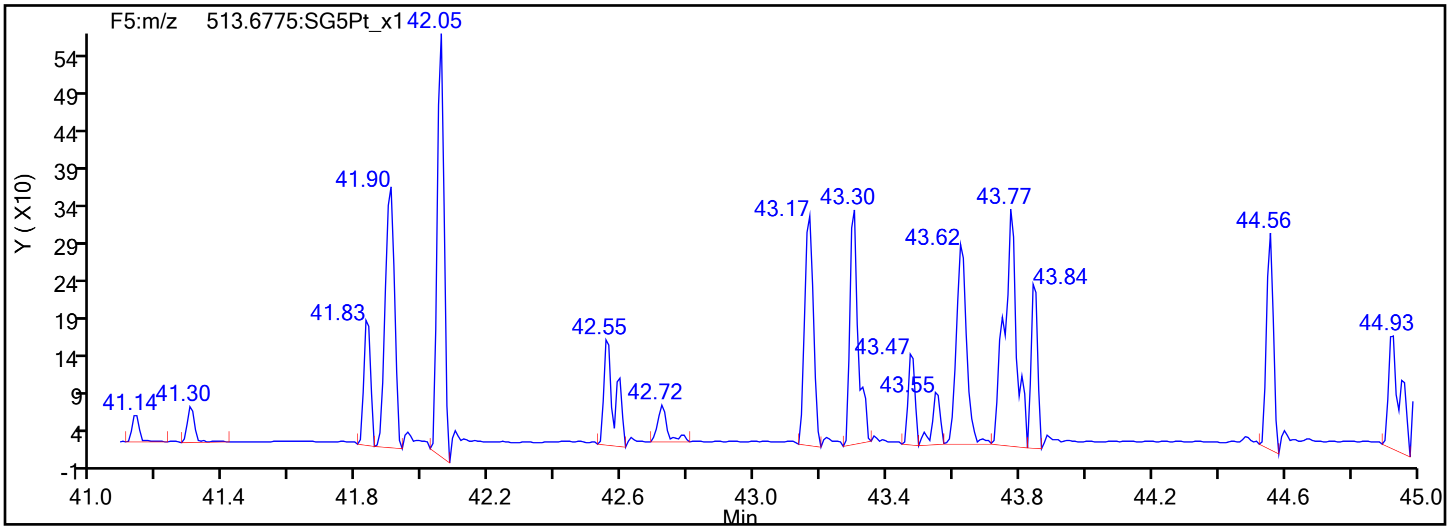

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Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

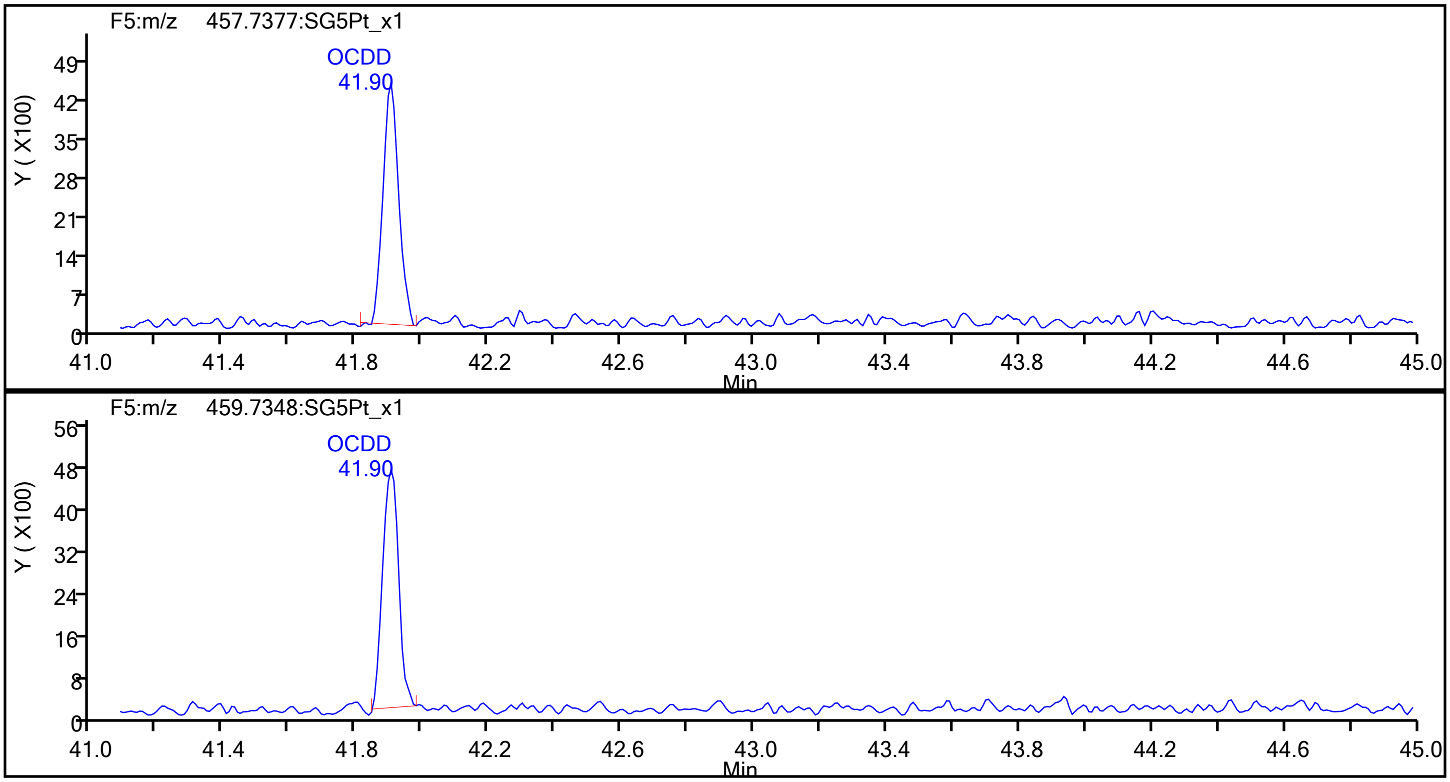

OCDD Standards

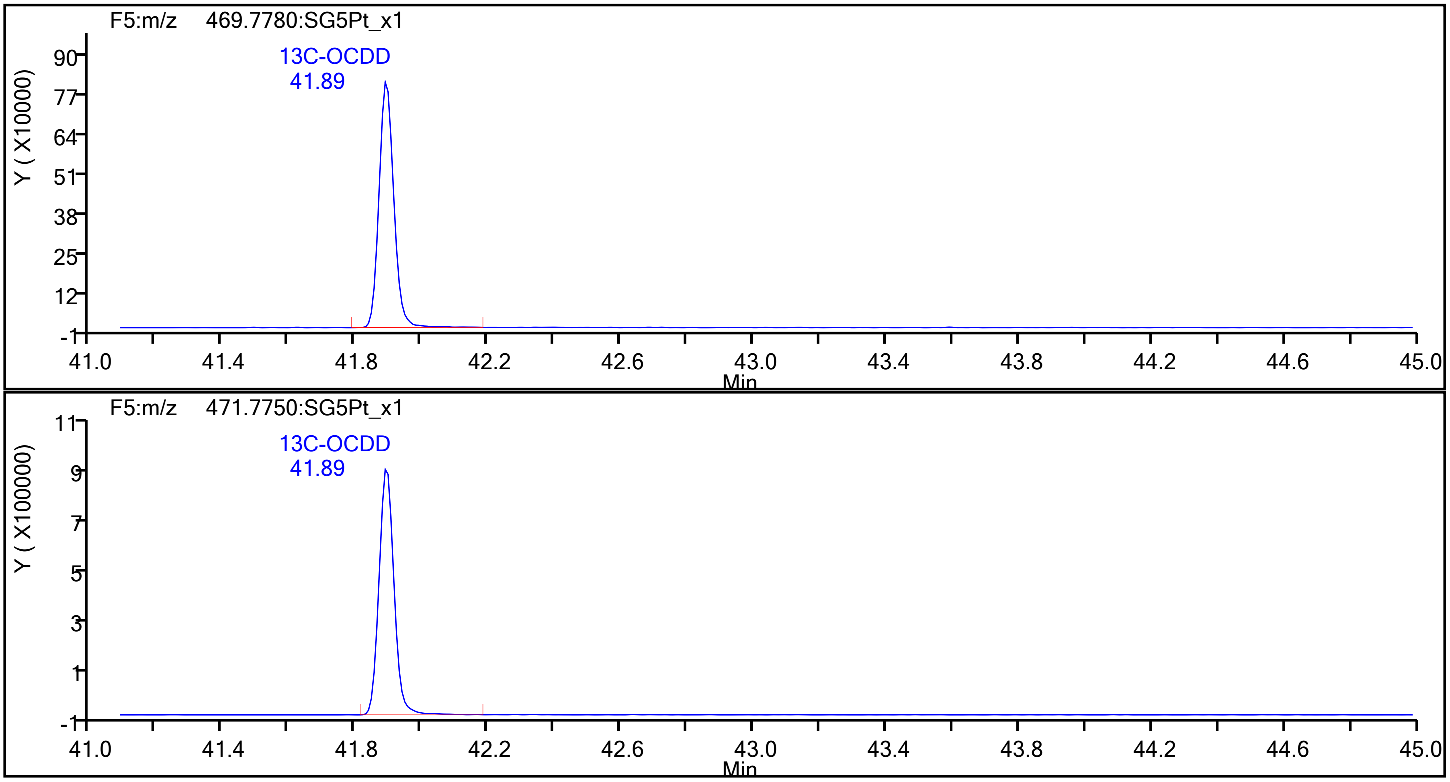

Report Date: 20-Oct-2021 07:50:20 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d		
Injection Date:	15-Oct-2021 19:51:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:	11215702-1Mm		
Worklist#:	534320	Sample Line#:	13
Column Type:	DB-5	Column Dia:	0.32 mm

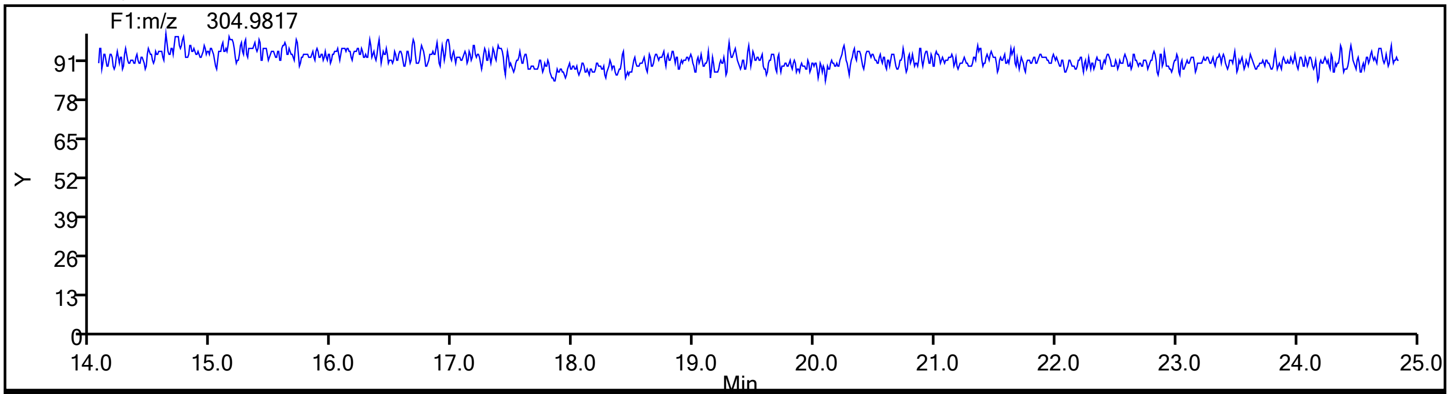

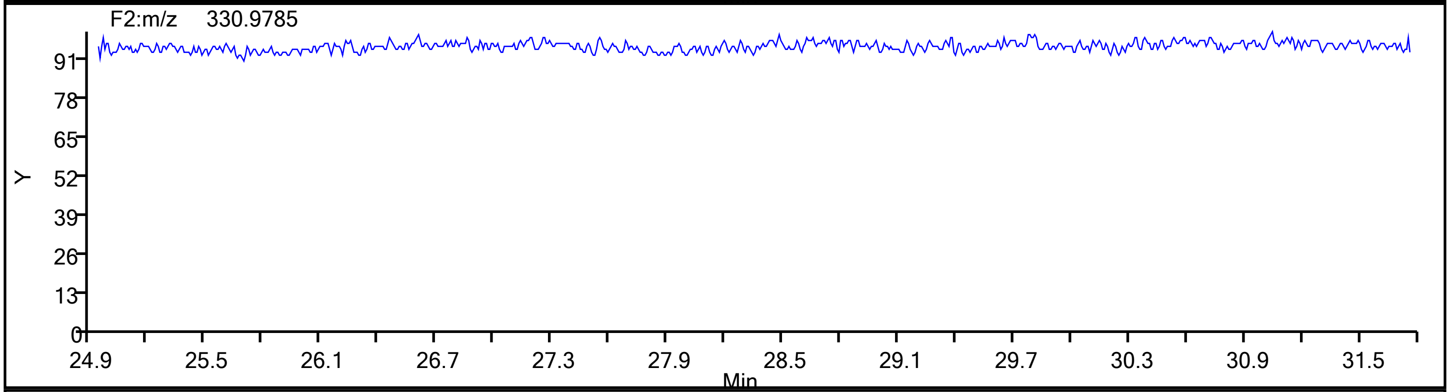

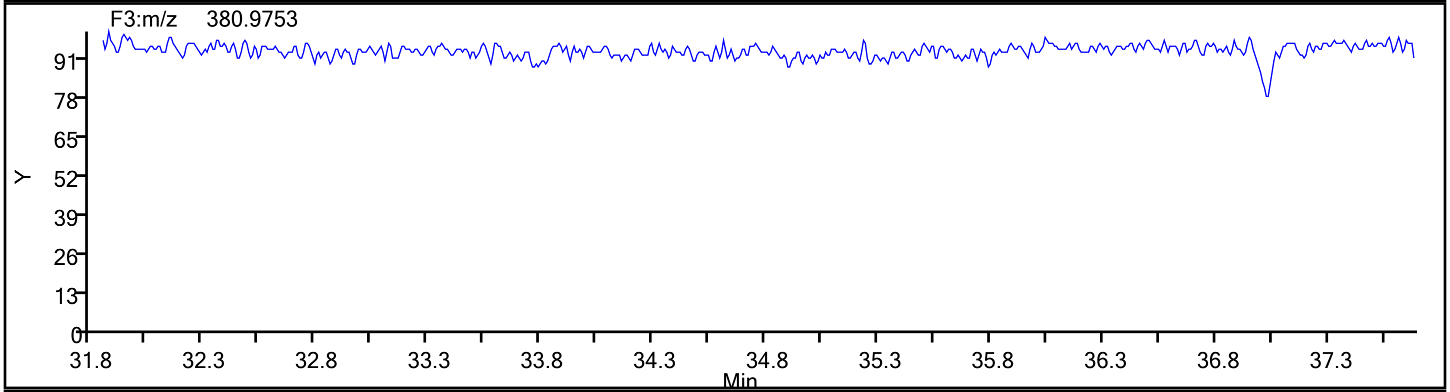

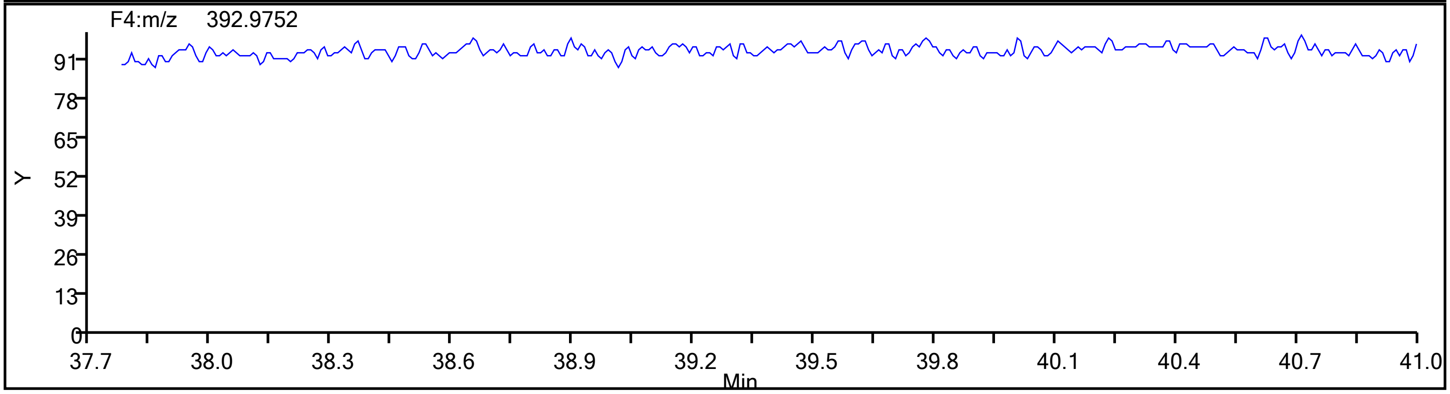

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_14.d

Injection Date: 15-Oct-2021 19:51:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID: 11215702-1Mm

Worklist#: 534320

Sample Line#: 13

Column Type: DB-5

Column Dia: 0.32 mm

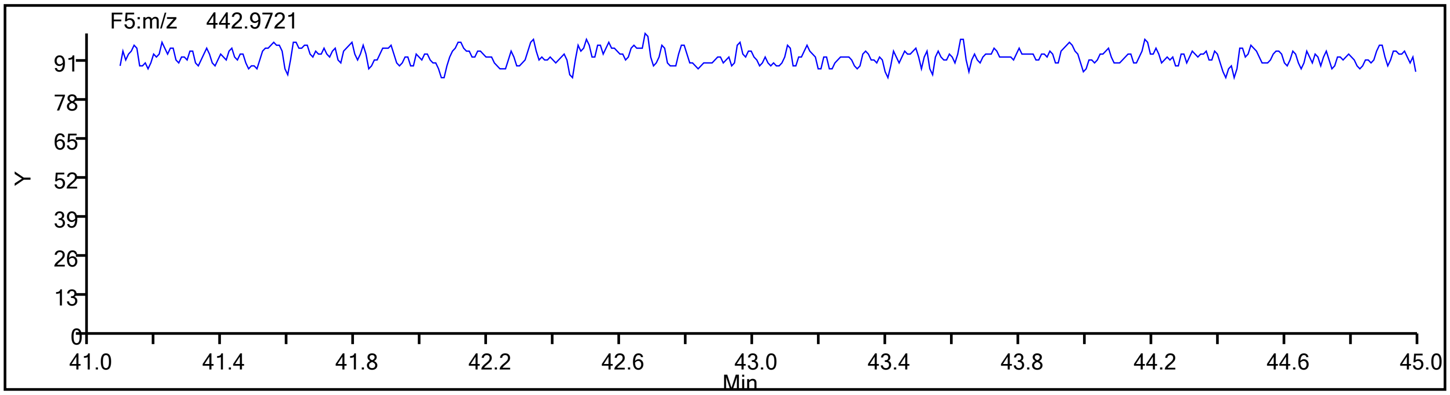

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 531494

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/06/2021 11:01 Calibration End Date: 10/06/2021 13:34 Calibration ID: 57431

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-531494/3	06OC2111D2_003.d
Level 2	IC 320-531494/4	06OC2111D2_004.d
Level 3	IC 320-531494/5	06OC2111D2_005.d
Level 4	IC 320-531494/6	06OC2111D2_006.d
Level 5	IC 320-531494/7	06OC2111D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.0571	0.9898	0.9204	0.9678	0.9683	AveID		0.9807				5.1		20.0			
2,3,7,8-TCDF	0.9973	0.9942	0.8597	0.9324	0.9531	AveID		0.9474				5.9		20.0			
13C-2,3,7,8-TCDD	0.7039	0.7270	0.7008	0.7163	0.7466	Ave		0.7189				2.6		35.0			
13C-2,3,7,8-TCDF	0.9881	0.9735	0.9561	0.9940	0.9984	Ave		0.9820				1.8		35.0			
37Cl4-2,3,7,8-TCDD	0.8277	0.6541	0.7798	0.6749	0.7357	Ave		0.7344				9.8					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 531494

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/06/2021 11:01 Calibration End Date: 10/06/2021 13:34 Calibration ID: 57431

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-531494/3	06OC2111D2_003.d
Level 2	IC 320-531494/4	06OC2111D2_004.d
Level 3	IC 320-531494/5	06OC2111D2_005.d
Level 4	IC 320-531494/6	06OC2111D2_006.d
Level 5	IC 320-531494/7	06OC2111D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	289898	1173917	2985402	22631504	120595407	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	383962	1578854	3804725	30255535	158754954	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCDD	Ave	54850042	59300855	32436104	58459323	62274355	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCDD	Ave	77001605	79404846	44254925	81120529	83279819	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCDD	Ave	322499	1066964	3609375	22032778	122729925	0.500	2.00	10.0	40.0	200

Curve Type Legend

Ave = Average ISTD
AveID = Average isotope dilution

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	06-Oct-2021 11:01:12	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC L2 HRDXNL2_00033				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:06:09	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				
First Level Reviewer: bennettd		Date:	06-Oct-2021 16:02:28		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.178	77926263	0.77	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.481	77001605	0.78	0.9820	100.6	100.6	0.3325	0.3325	101	
2,3,7,8-TCDF	17.509	383962	0.84	0.9474	0.5264	0.5264	0.0305	0.0305	105	M
D 13C-2,3,7,8-TCDD	15.959	54850042	0.76	0.7189	97.9	97.9	0.4681	0.4681	97.91	
2,3,7,8-TCDD	15.986	289898	0.79	0.9807	0.5389	0.5389	0.0520	0.0520	108	M
$ 37Cl4-2,3,7,8-TCDD	15.986	322499		0.7344	0.5635	0.5635	0.0187	0.0187	113	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00033	Amount Added: 2.00	Units: uL

Report Date: 06-Oct-2021 16:06:09 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 06-Oct-2021 11:01:12 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC L2 HRDXNL2_00033
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:06:09 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd Date: 06-Oct-2021 16:02:28

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.178	16.176	0		33995435	7024879	14507	36267	484		
333.9339	16.165	16.176	-1		43930828	8970837	7027	17567	1277	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.481	17.479	0	1.081	33761389	6429569	9055	22637	710		
317.9389	17.481	17.479	0	1.081	43240216	8180568	11840	29600	691	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	17.509	17.509	0	1.002	175316	27462	718	1795	38		M
305.8987	17.481	17.509	-2	1.000	208646	35759	971	2427	37	0.84(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	15.959	15.959	0	0.986	23743615	5149339	14507	36267	355		
333.9339	15.959	15.959	0	0.986	31106427	6841096	7027	17567	974	0.76(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	15.986	15.984	0	1.002	127597	26982	1209	3022	22		
321.8936	15.986	15.984	0	1.002	162301	30721	1236	3090	25	0.79(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8840	15.986	15.986	0	0.988	322499	60840	880	2200	69		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL2_00033 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:06:09 Chrom Revision: 2.3 13-May-2021 07:57:40

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d

Injection Date: 06-Oct-2021 11:01:12

Instrument ID: 11D2

Lims ID: IC

Client ID:

Operator ID:

ALS Bottle#: 0

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Column: DB-225 (0.32 mm)

Detector F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 17.48

Area: 210640

Amount: 0.499290

Amount Units: pg/ul

Processing Integration Results

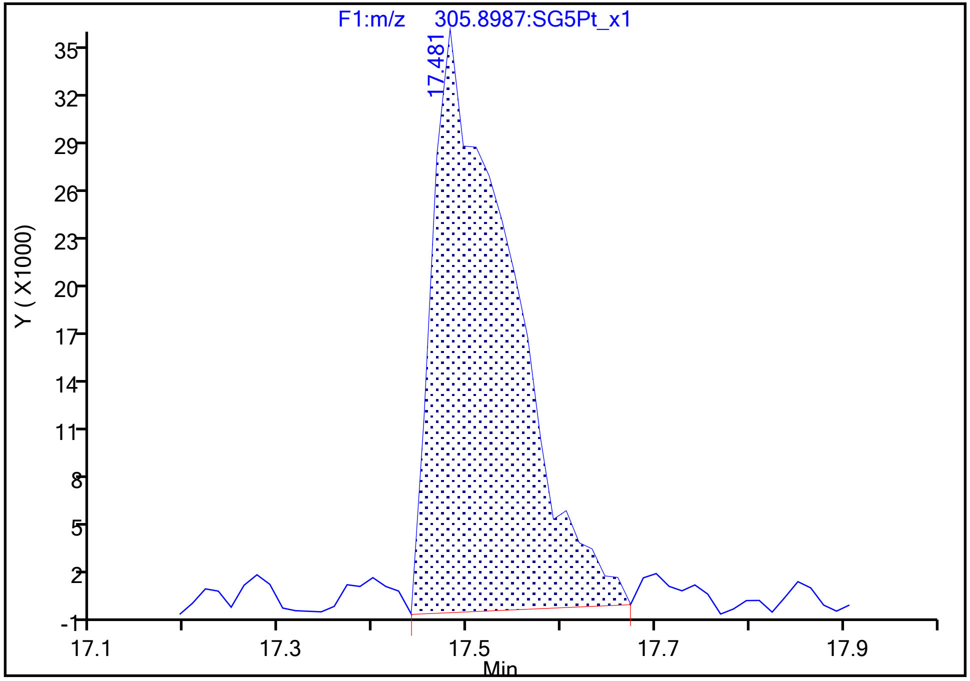

RT: 17.48

Area: 208646

Amount: 0.526353

Amount Units: pg/ul

Manual Integration Results

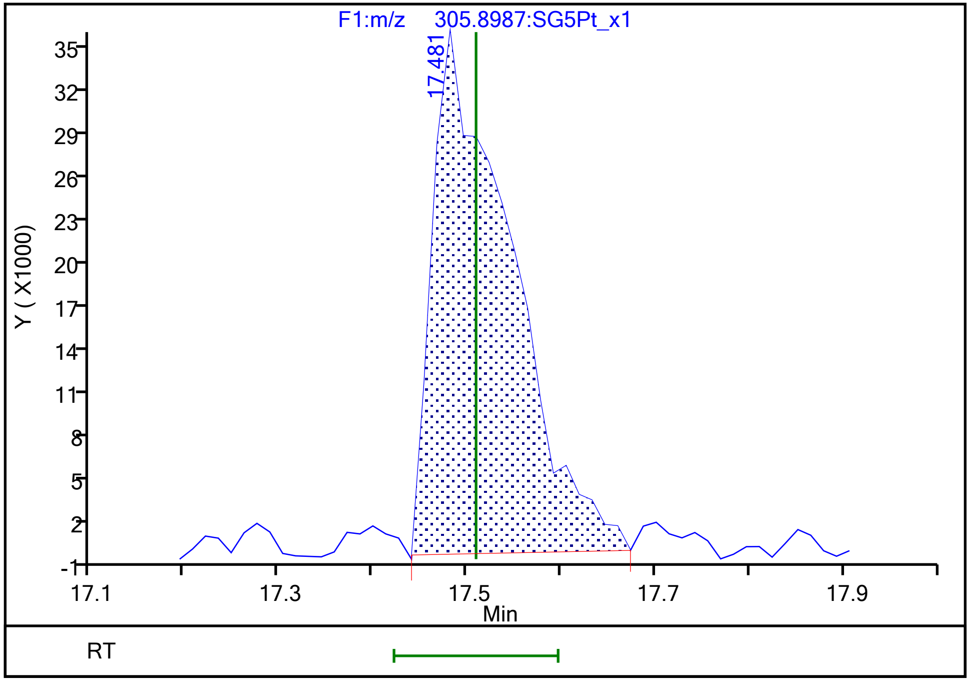

Reviewer: bennettd, 06-Oct-2021 16:01:48

Audit Action: Split an Integrated Peak

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d				
Injection Date:	06-Oct-2021 11:01:12	Instrument ID:	11D2		
Lims ID:	IC				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	17.51
Area:	149968
Amount:	0.499290
Amount Units:	pg/ul

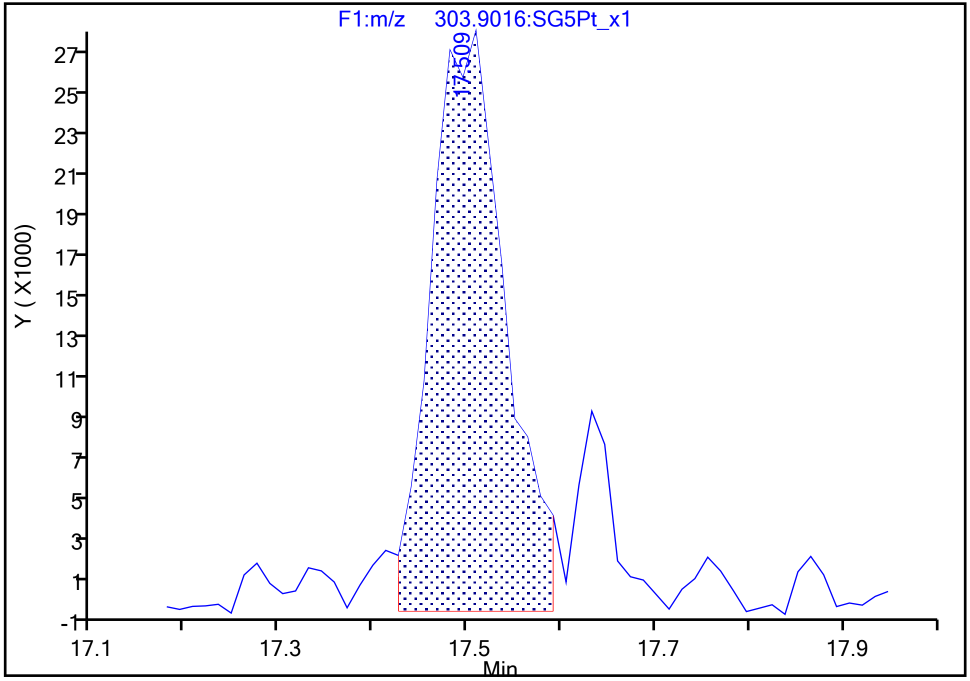

Manual Integration Results

RT:	17.51
Area:	175316
Amount:	0.526353
Amount Units:	pg/ul

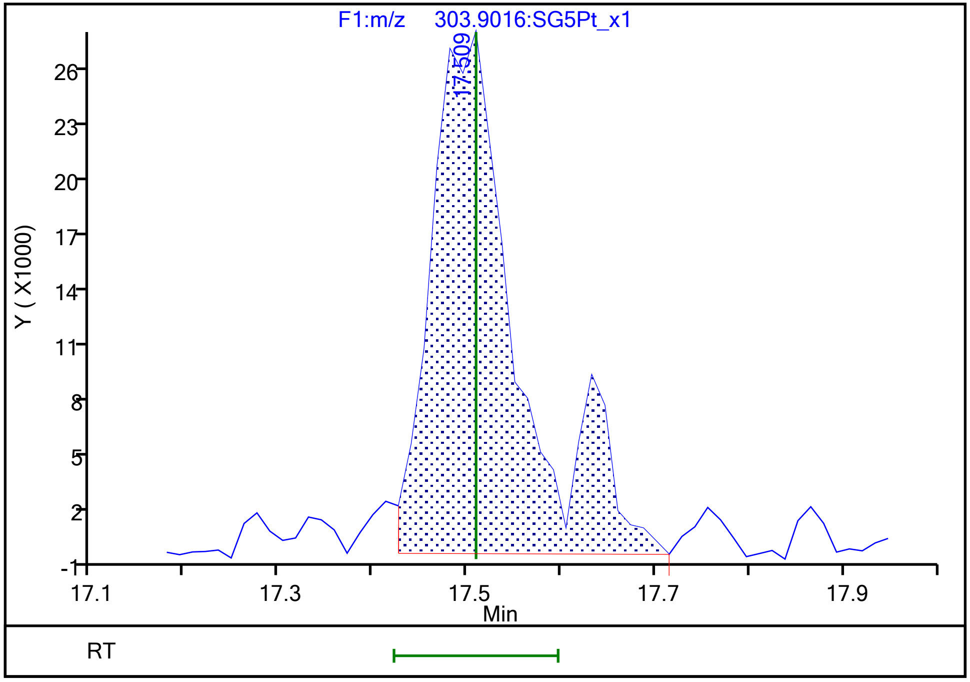

Reviewer: bennettd, 06-Oct-2021 16:01:52

Audit Action: Split an Integrated Peak Audit Reason: Baseline

Report Date: 06-Oct-2021 16:06:09

Chrom Revision: 2.3 13-May-2021 07:57:40
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d
Injection Date: 06-Oct-2021 11:01:12
Instrument ID: 11D2
Lims ID: IC
Client ID:
Operator ID:
ALS Bottle#: 0
Worklist Smp#: 3
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Column: DB-225 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 15.99
Area: 170372
Amount: 0.545911
Amount Units: pg/ul

Processing Integration Results

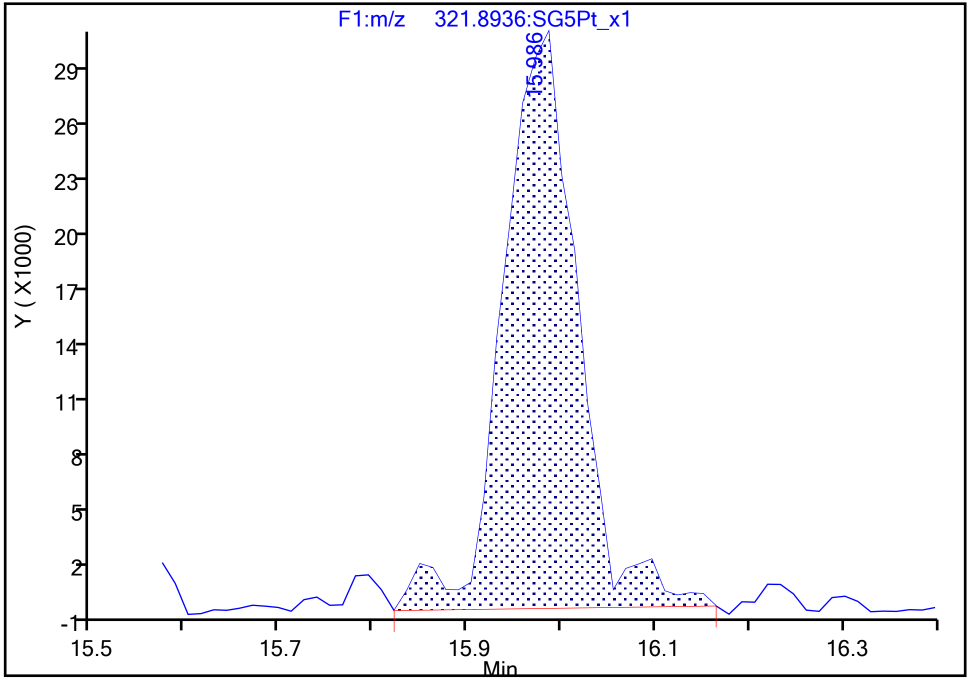

RT: 15.99
Area: 162301
Amount: 0.538947
Amount Units: pg/ul

Manual Integration Results

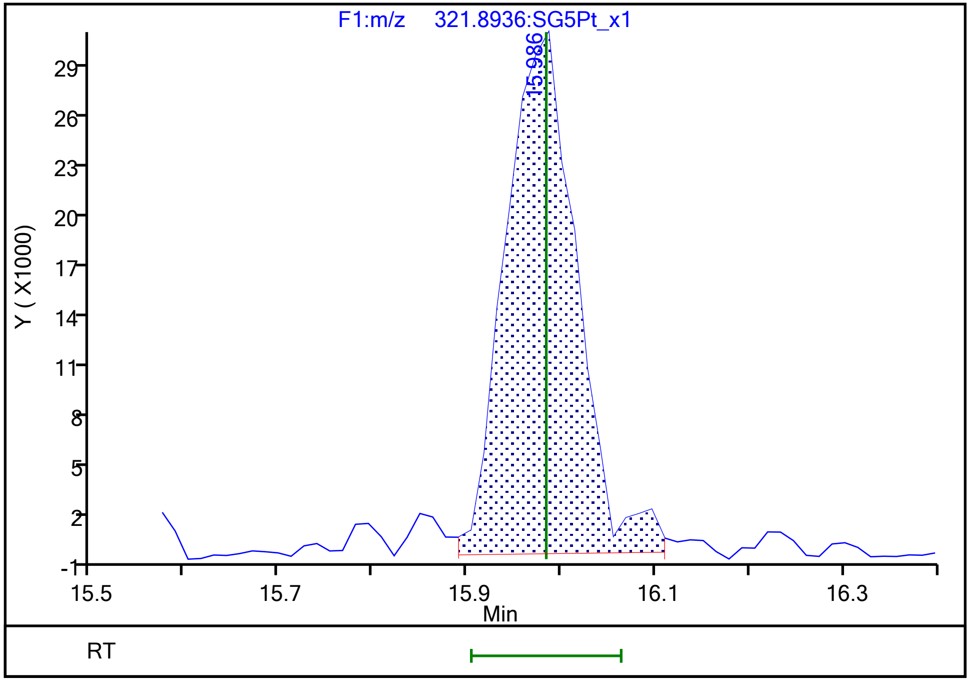

Reviewer: bennettd, 06-Oct-2021 16:02:10
Audit Action: Split an Integrated Peak
Audit Reason: Baseline

Report Date: 06-Oct-2021 16:06:09 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d
Injection Date: 06-Oct-2021 11:01:12 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494 Sample Line#: 3
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

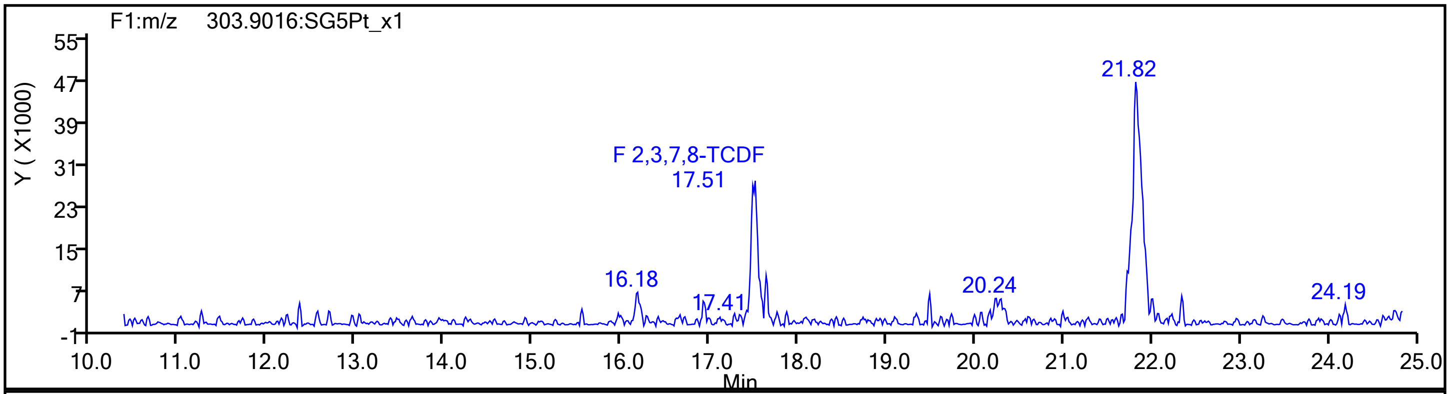

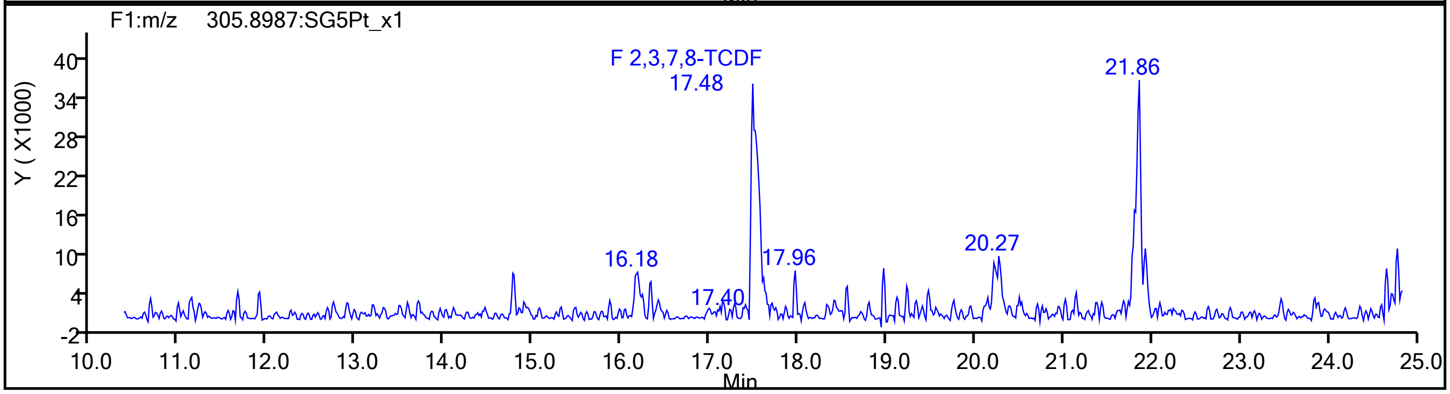

TCDF Standards

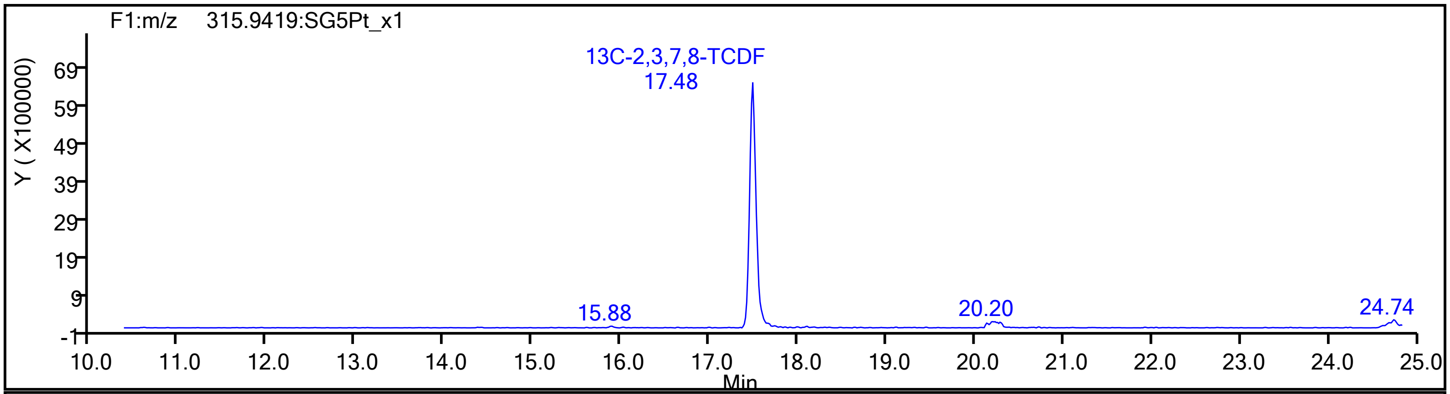

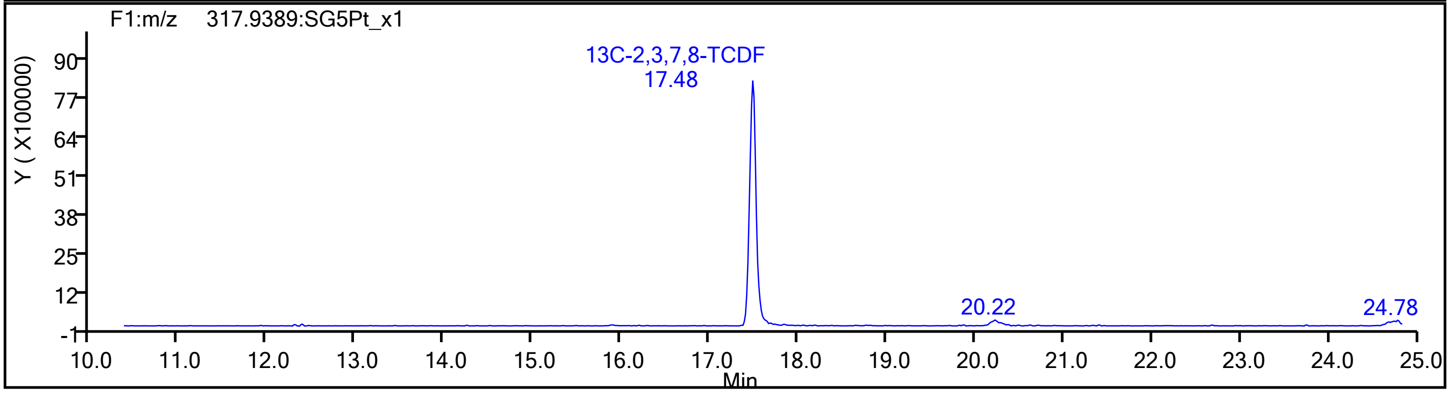

Report Date: 06-Oct-2021 16:06:09
Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d		
Injection Date:	06-Oct-2021 11:01:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

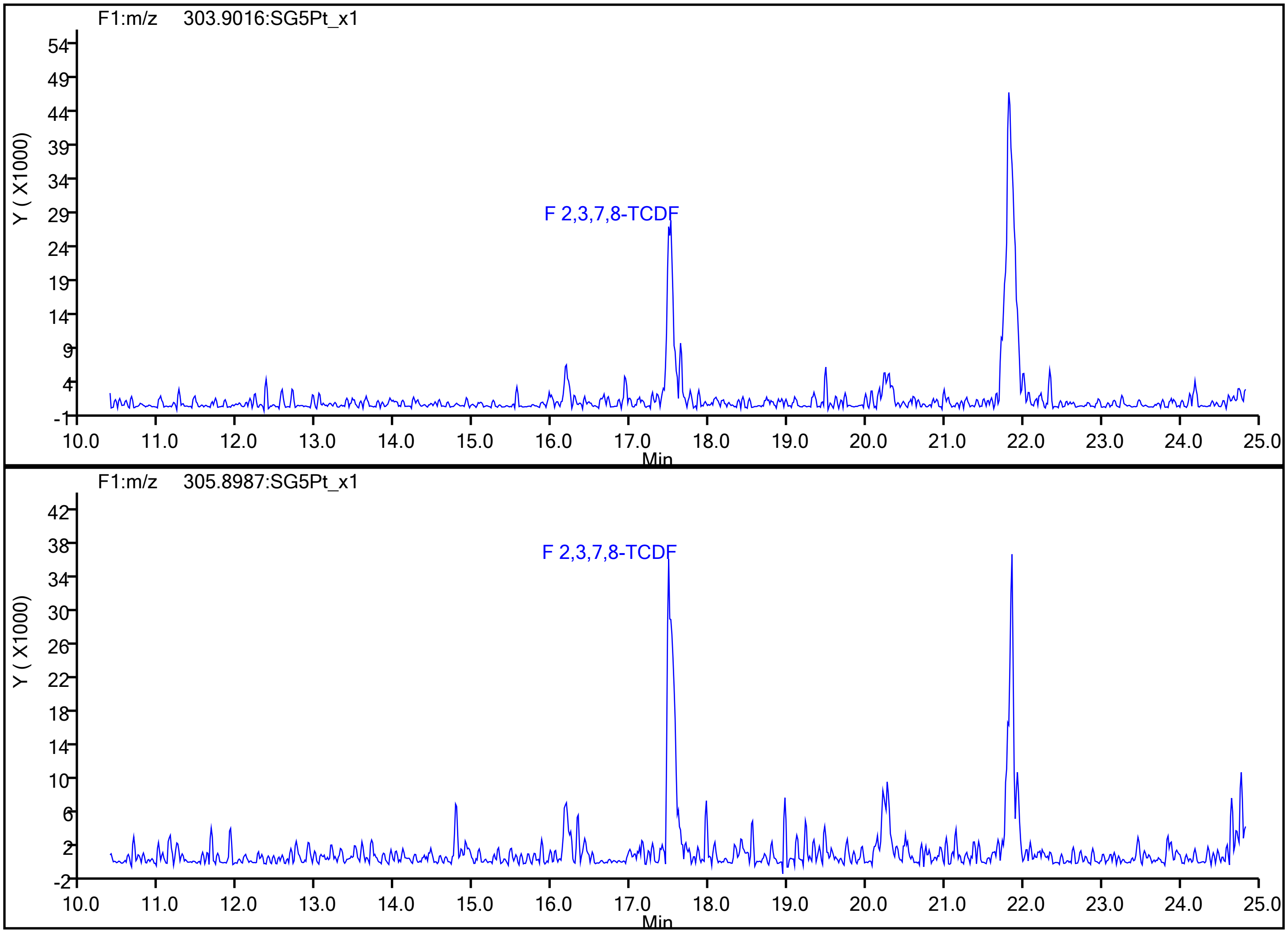

TCDF Interference Mass

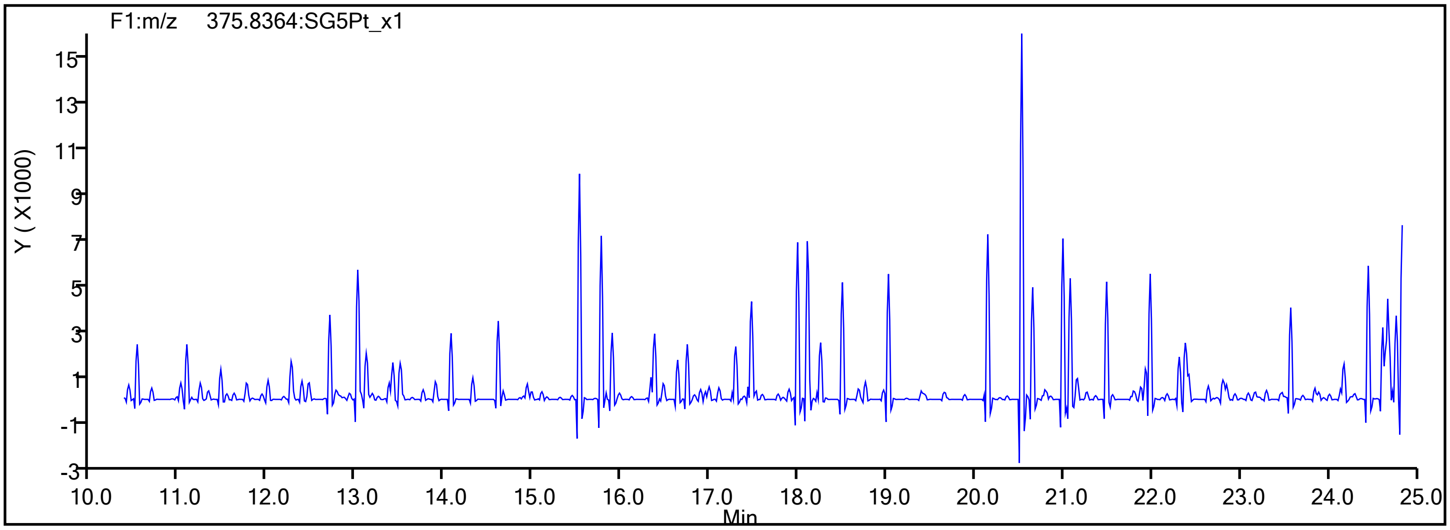

Report Date: 06-Oct-2021 16:06:09 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d

Injection Date: 06-Oct-2021 11:01:12

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 531494

Sample Line#: 3

Column Type: DB-225

Column Dia: 0.32 mm

TCDD

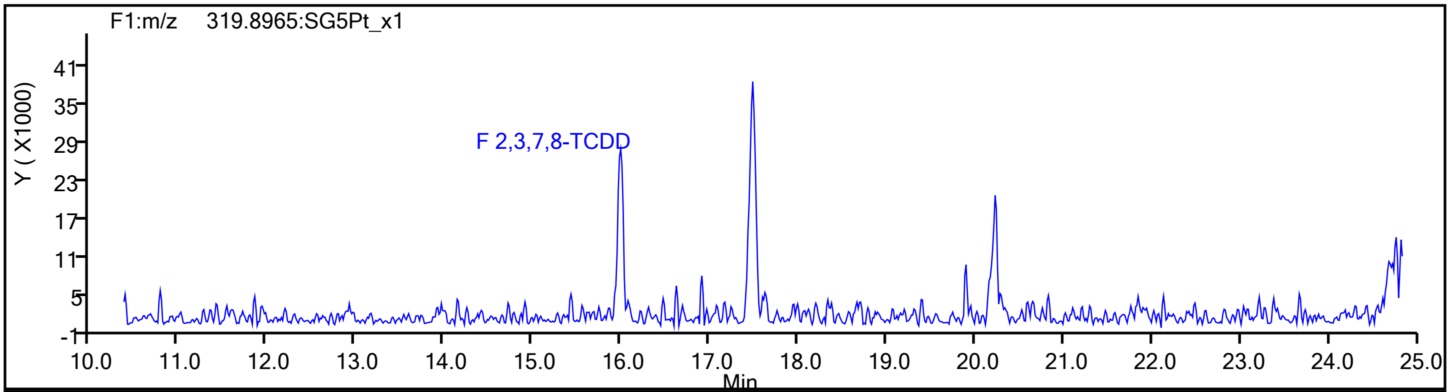

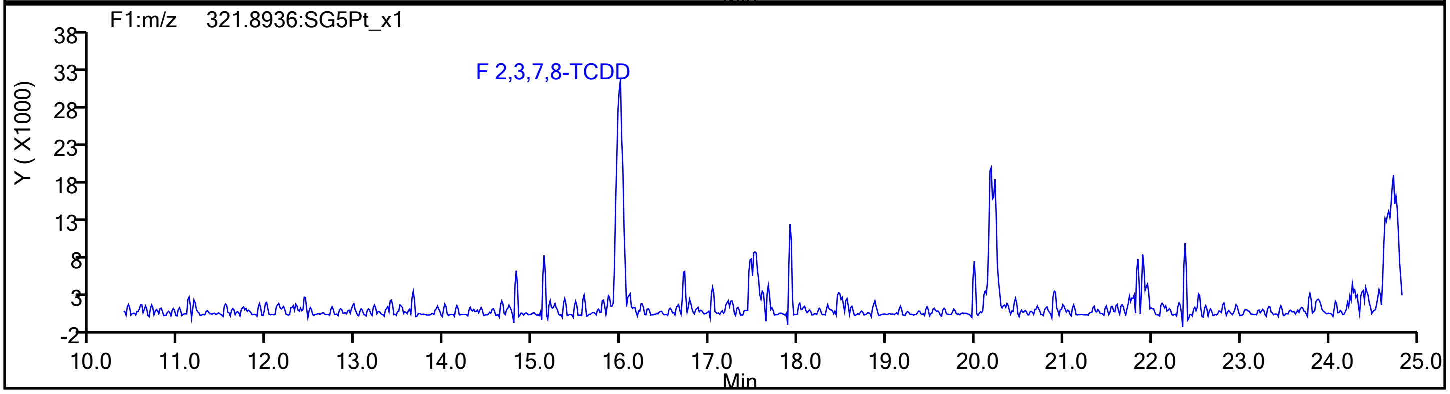

TCDD Standards

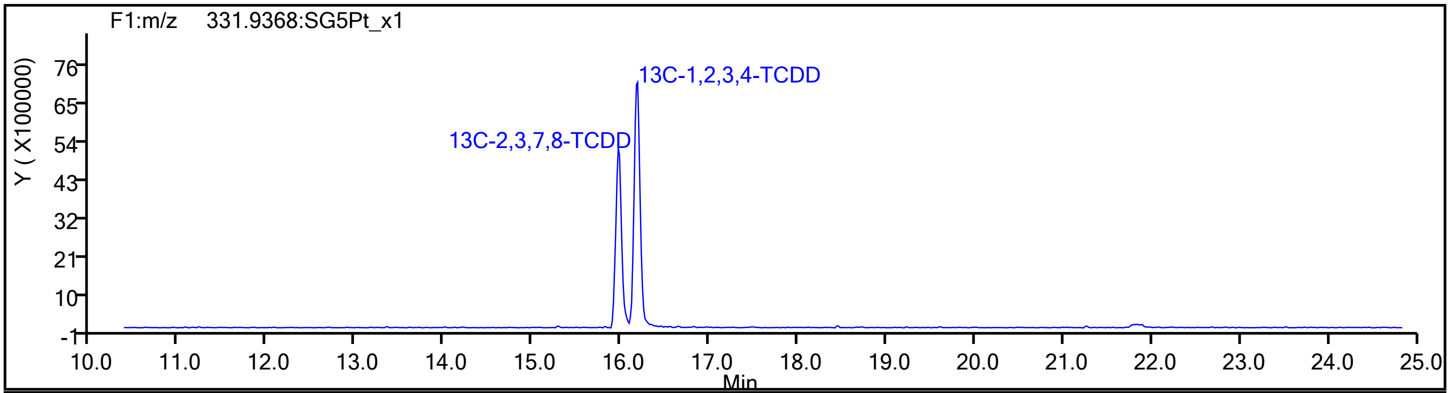

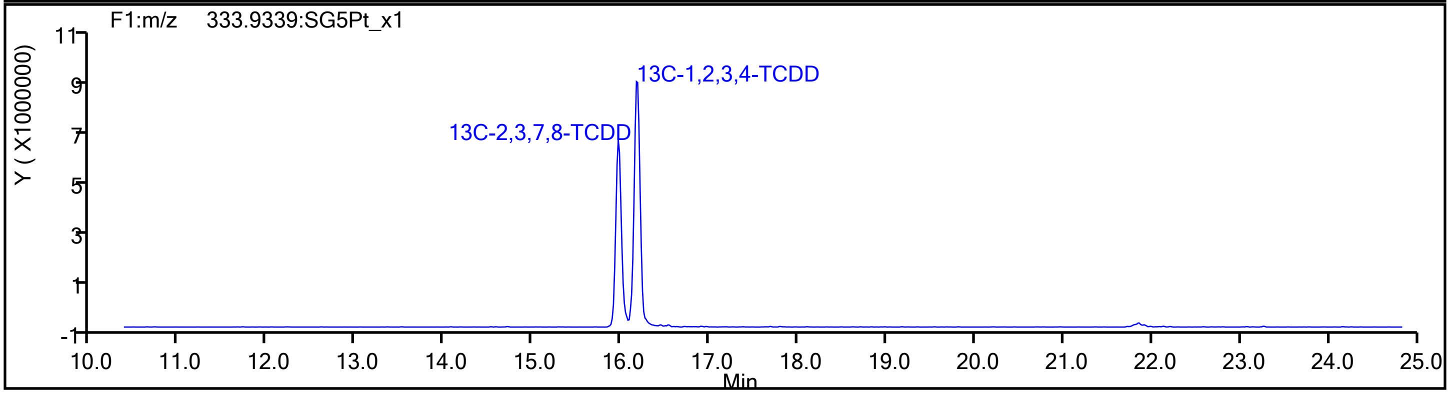

Report Date: 06-Oct-2021 16:06:09 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d		
Injection Date:	06-Oct-2021 11:01:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

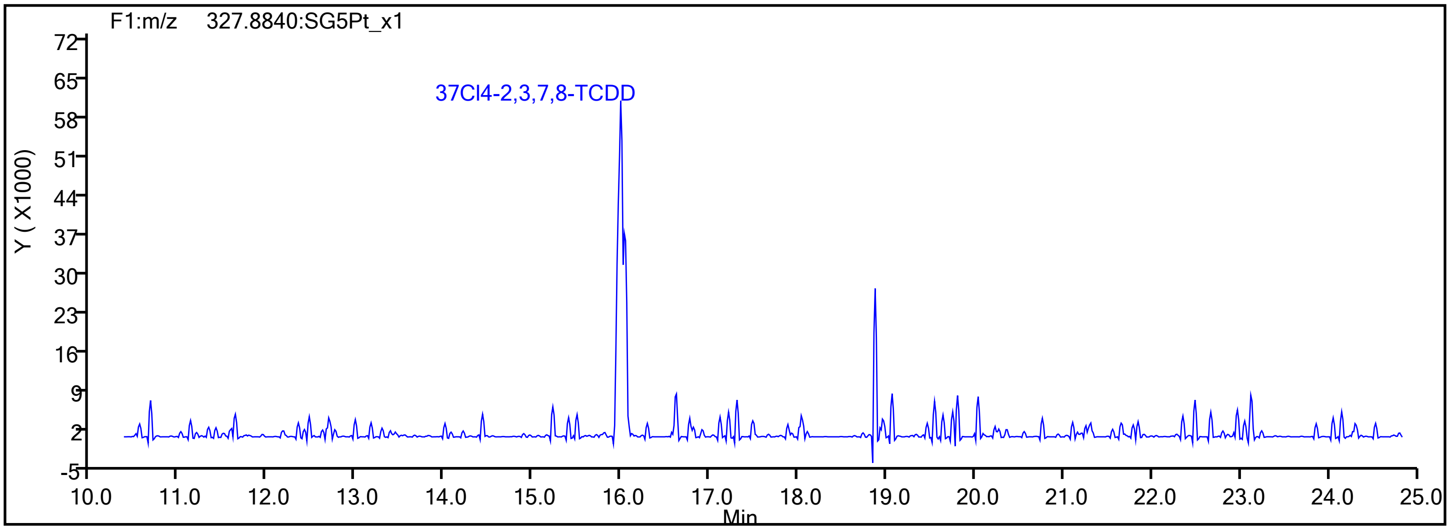

37Cl4-TCDD Standards

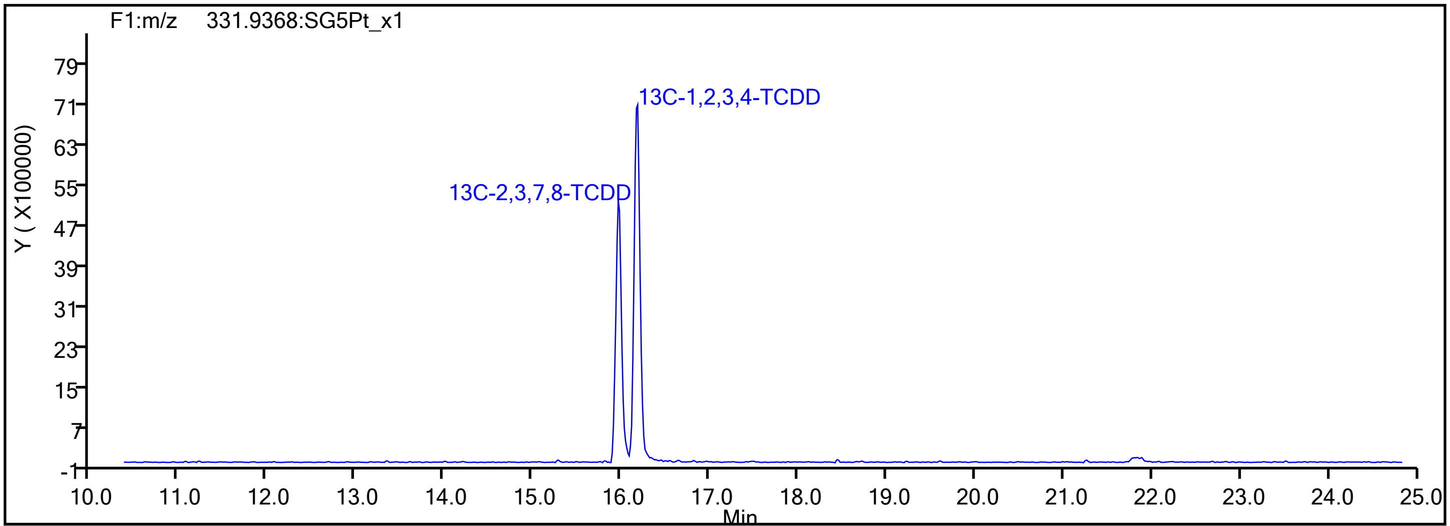

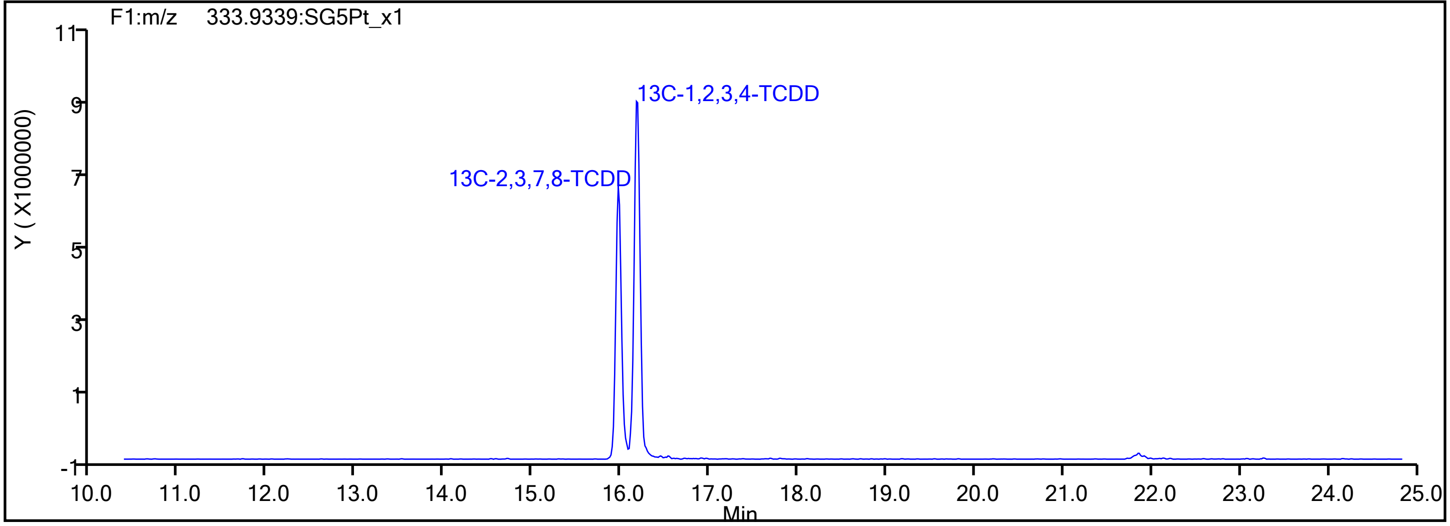

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_003.d		
Injection Date:	06-Oct-2021 11:01:12	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

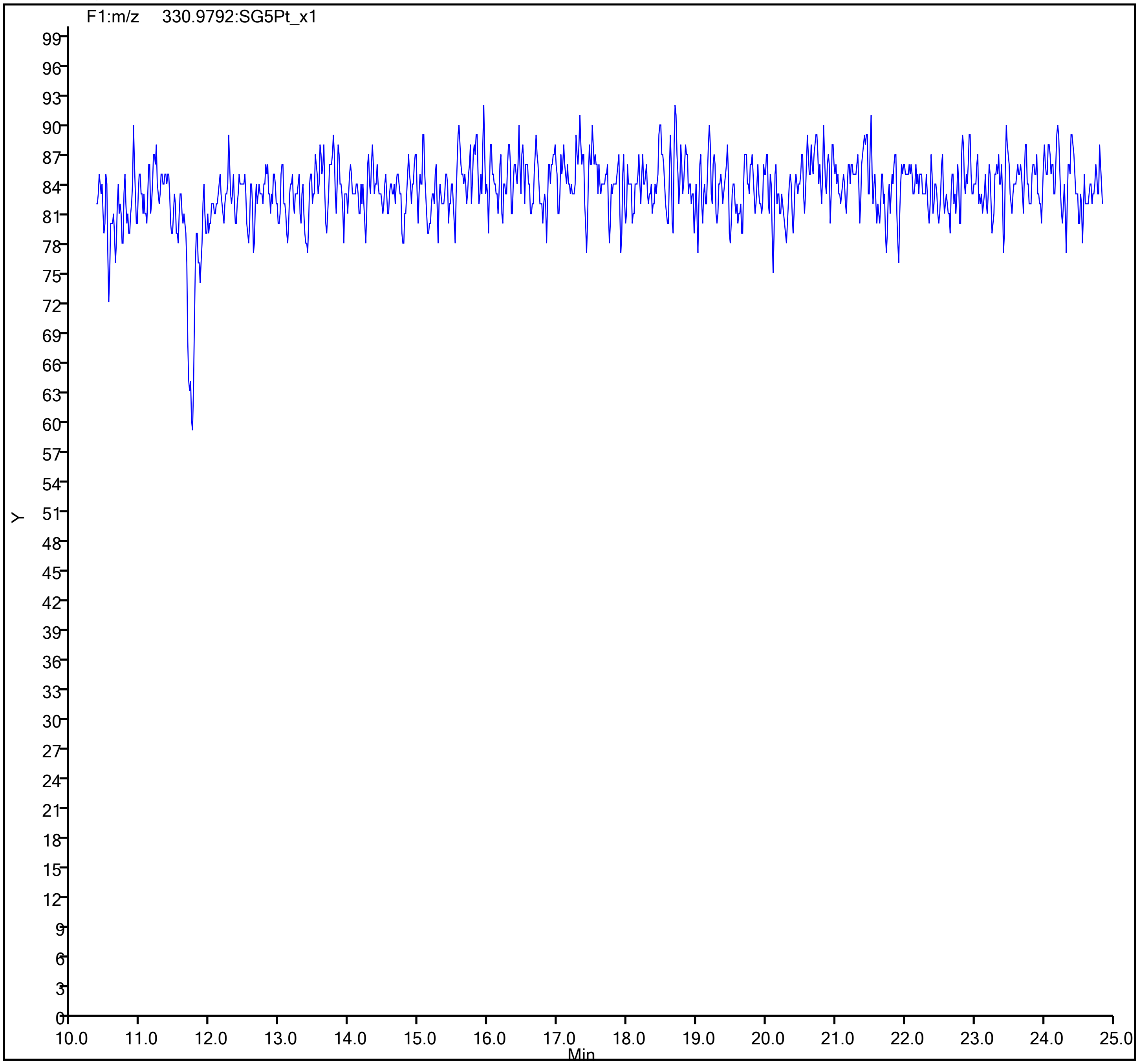

Data file	Smp	Work Order	Sample ID	Method/Matrix	Size	U
06OC2111D2	1	WDM 100621	WDM HRDXNCP_00044		1.00000	
06OC2111D2	2	SB 100621	Solvent Blank C-14		1.00000	
06OC2111D2	3	IC 100621	IC L2 HRDXNL2_00033		1.00000	
06OC2111D2	4	IC 100621A	IC L3 HRDXNL3_00030		1.00000	
06OC2111D2	5	IC 100621B	IC L4 HRDXNL4_00102		1.00000	
06OC2111D2	6	IC 100621C	IC L5 HRDXNL5_00033		1.00000	
06OC2111D2	7	IC 100621D	IC L6 HRDXNL6_00030		1.00000	
06OC2111D2	8	SB 100621A	Solvent Blank C-14		1.00000	
06OC2111D2	9	ICV 100621	ICV HRDXNIC_00048		1.00000	
06OC2111D2	10				1.00000	
06OC2111D2	11				1.00000	
06OC2111D2	12				1.00000	
06OC2111D2	13				1.00000	
06OC2111D2	14				1.00000	
06OC2111D2	15		DB 10-06-21		1.00000	
06OC2111D2	16				1.00000	

Log file checked
10/06/21 SMA

Peak Locate Examination: 6-OCT-2021:09:41 File:06OC2111D2
Experiment:DB225RES Function:1 Reference:PFK

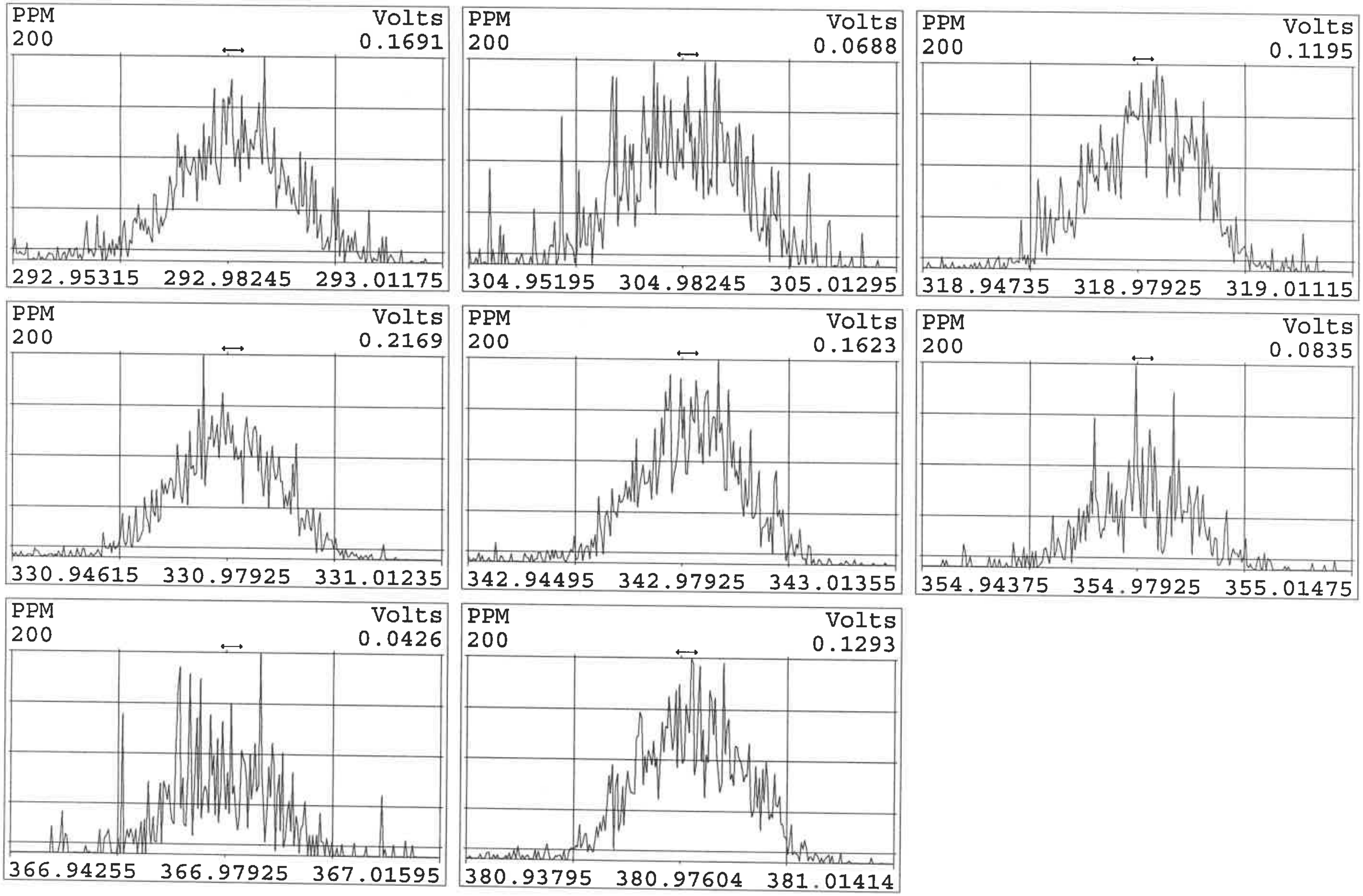

Peak Locate Examination: 6-OCT-2021:15:37 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

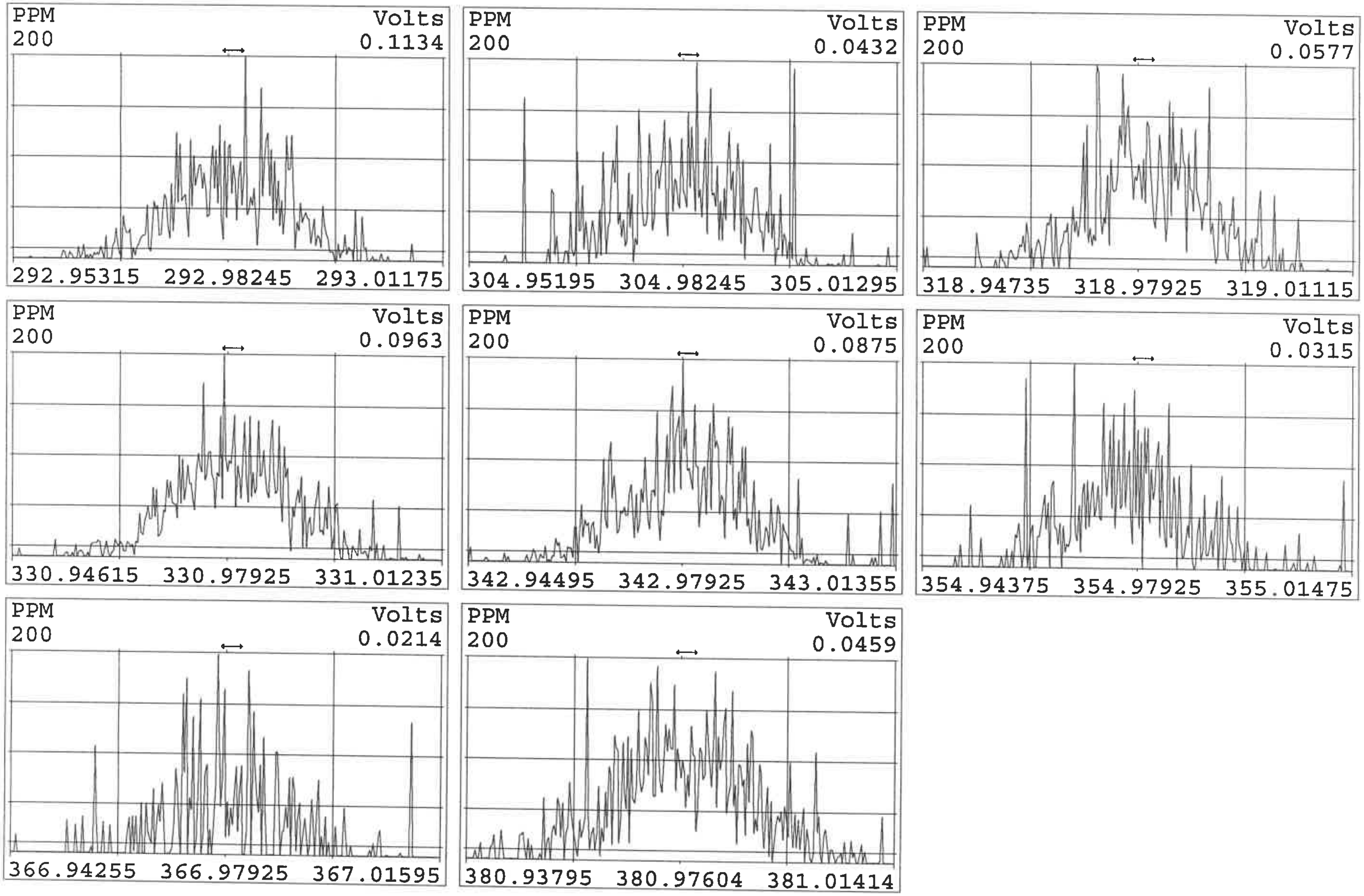

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	06-Oct-2021 11:39:30	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC L3 HRDXNL3_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:06:13	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				
First Level Reviewer: bennettd		Date:	06-Oct-2021 16:03:05		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.176	81565100	0.77	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.479	79404846	0.73	0.9820	99.1	99.1	0.3182	0.3182	99.13	
2,3,7,8-TCDF	17.506	1578854	0.85	0.9474	2.099	2.099	0.0443	0.0443	105	
D 13C-2,3,7,8-TCDD	15.956	59300855	0.75	0.7189	101.1	101.1	0.5185	0.5185	101	
2,3,7,8-TCDD	15.984	1173917	0.77	0.9807	2.019	2.019	0.0820	0.0820	101	M
$ 37Cl4-2,3,7,8-TCDD	15.984	1066964		0.7344	1.781	1.781	0.0239	0.0239	89.06	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL3_00030	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 06-Oct-2021 11:39:30 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC L3 HRDXNL3_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:06:13 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd Date: 06-Oct-2021 16:03:05

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.176	16.176	0		35506252	7529929	15782	39455	477		
333.9339	16.176	16.176	0		46058848	9777059	10022	25055	976	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.479	17.479	0	1.081	33605474	6130299	9360	23400	655		
317.9389	17.479	17.479	0	1.081	45799372	8497919	12275	30687	692	0.73(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.506	17.509	0	1.002	723168	152212	842	2105	181		
305.8987	17.506	17.509	0	1.002	855686	159685	1614	4035	99	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.956	15.959	0	0.986	25408318	5689791	15782	39455	361		
333.9339	15.956	15.959	0	0.986	33892537	7573216	10022	25055	756	0.75(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	15.984	15.984	0	1.002	511951	107757	2513	6282	43		M
321.8936	15.984	15.984	0	1.002	661966	142728	1751	4377	82	0.77(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8840	15.984	15.986	0	0.988	1066964	232072	1216	3040	191		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Reagents:

HRDXNL3_00030 Amount Added: 2.00 Units: uL

Chrom Revision: 2.3 13-May-2021 07:57:40
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d				
Injection Date:	06-Oct-2021 11:39:30	Instrument ID:	11D2		
Lims ID:	IC				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 15.98
Area: 519349
Amount: 2.033339
Amount Units: pg/ul

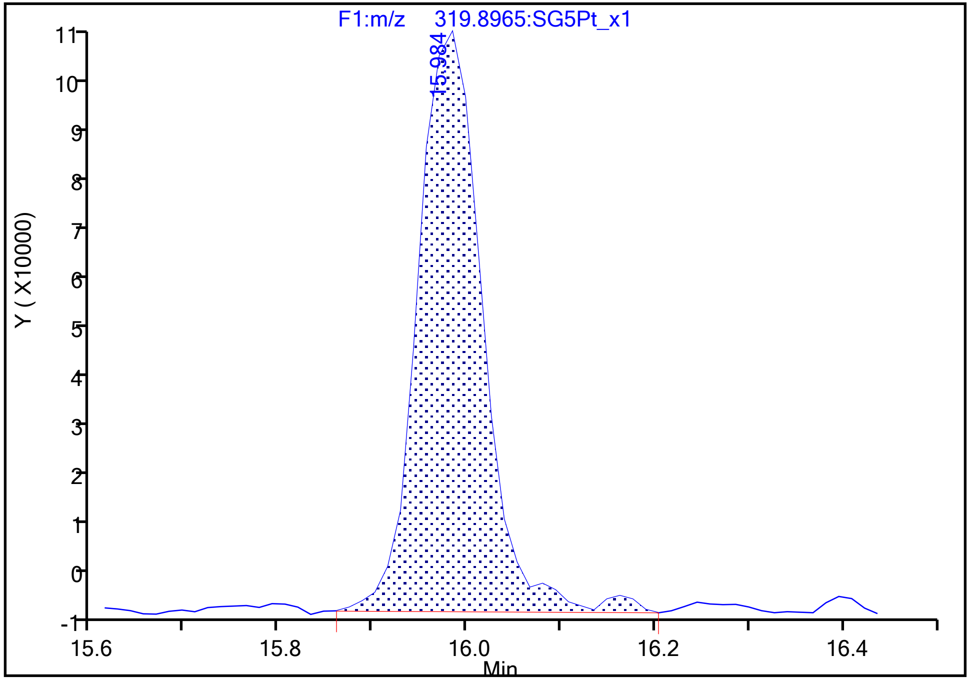

Manual Integration Results

RT: 15.98
Area: 511951
Amount: 2.018620
Amount Units: pg/ul

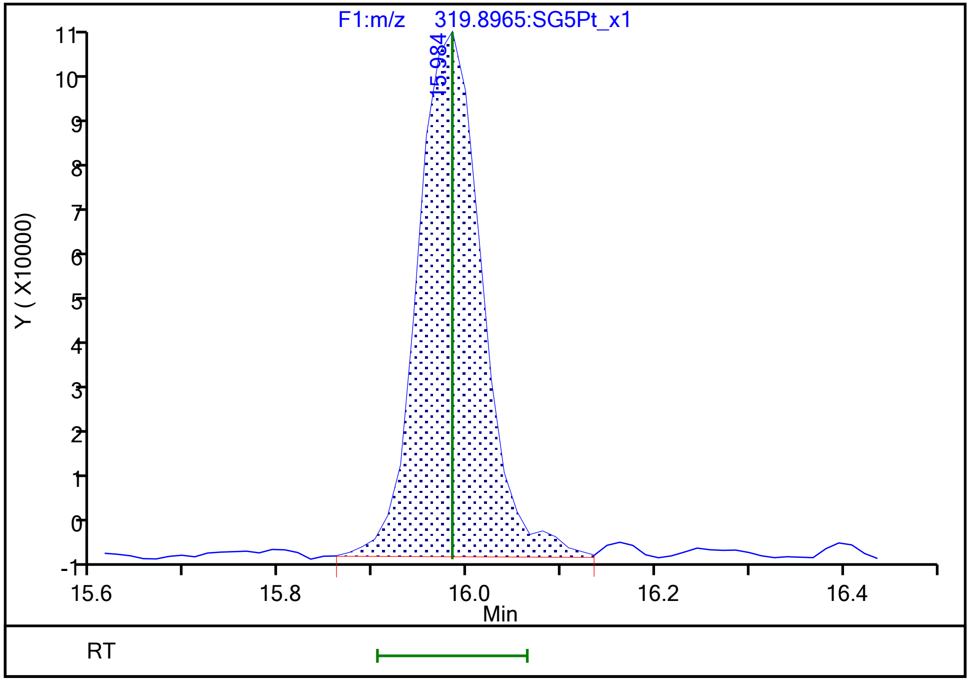

Reviewer: bennettd, 06-Oct-2021 16:02:51

Audit Action: Split an Integrated Peak   Audit Reason: Peak Tail

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d				
Injection Date:	06-Oct-2021 11:39:30	Instrument ID:	11D2		
Lims ID:	IC				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT:	15.98
Area:	673447
Amount:	2.033339
Amount Units:	pg/ul

Processing Integration Results

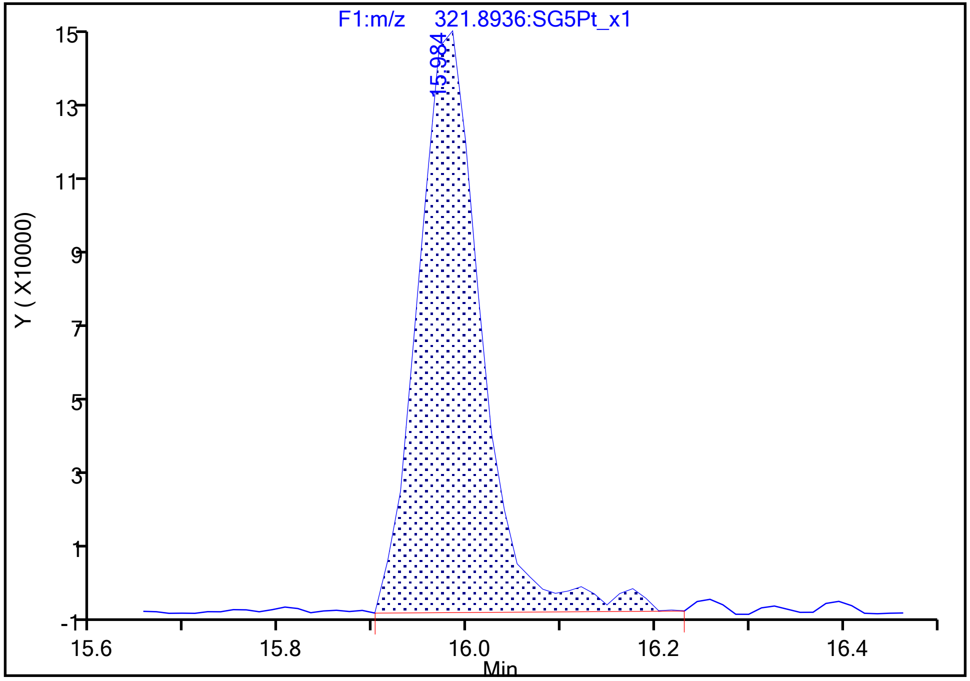

RT:	15.98
Area:	661966
Amount:	2.018620
Amount Units:	pg/ul

Manual Integration Results

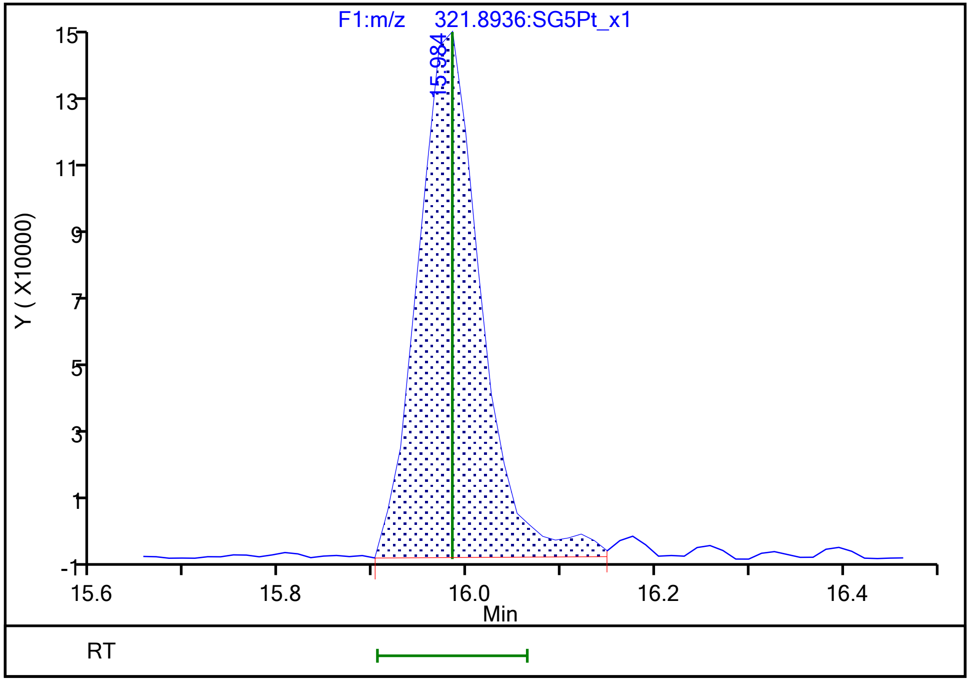

Reviewer: bennettd, 06-Oct-2021 16:02:54

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 06-Oct-2021 16:06:15 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d

Injection Date: 06-Oct-2021 11:39:30

Injection Vol: 2.0 ul

Instrument ID: 11D2

Operator ID:

Method: DXN_DB225_11D2

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 531494

Sample Line#: 4

Column Type: DB-225

Column Dia: 0.32 mm

TCDF

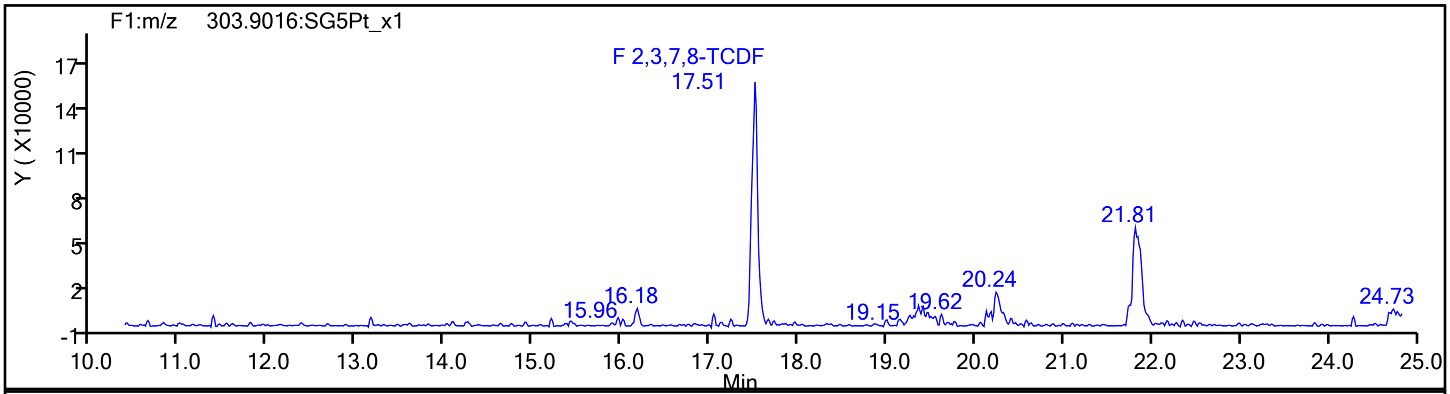

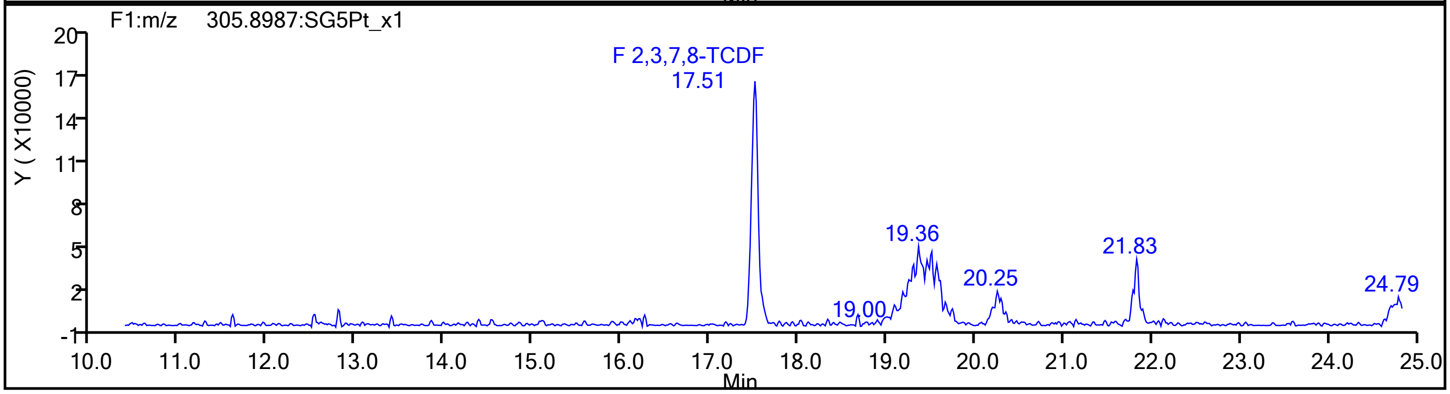

TCDF Standards

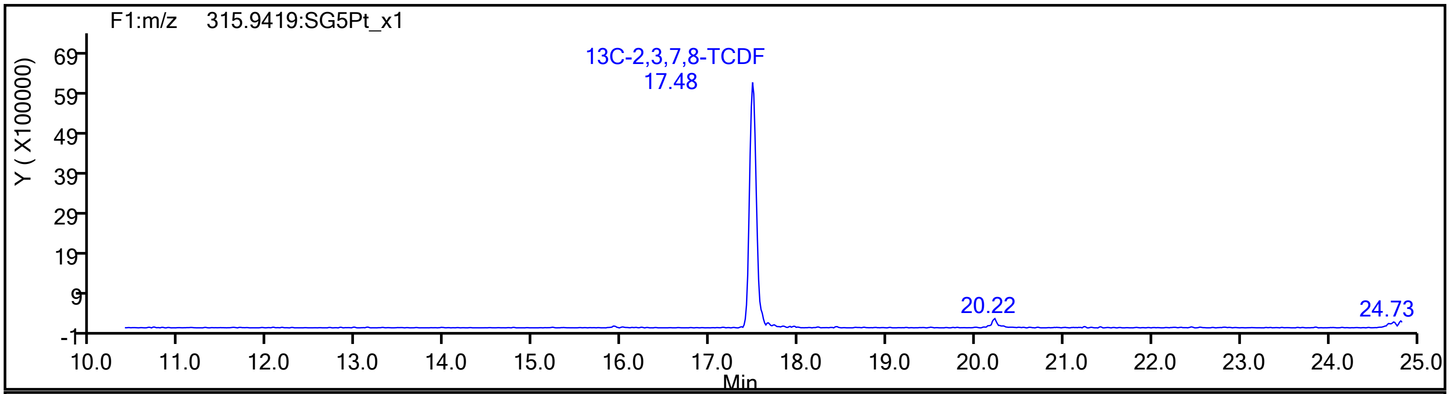

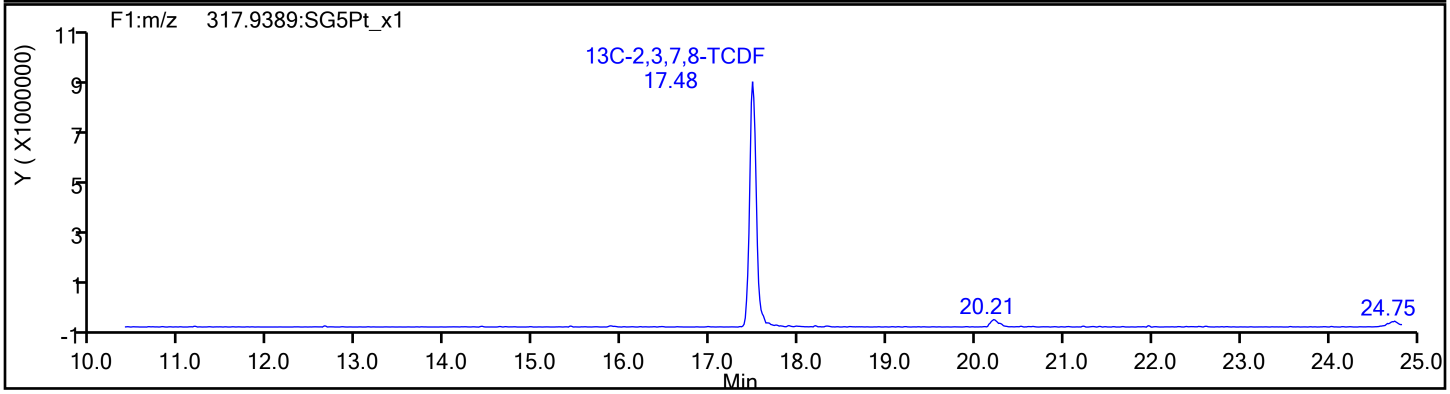

Report Date: 06-Oct-2021 16:06:15 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d		
Injection Date:	06-Oct-2021 11:39:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

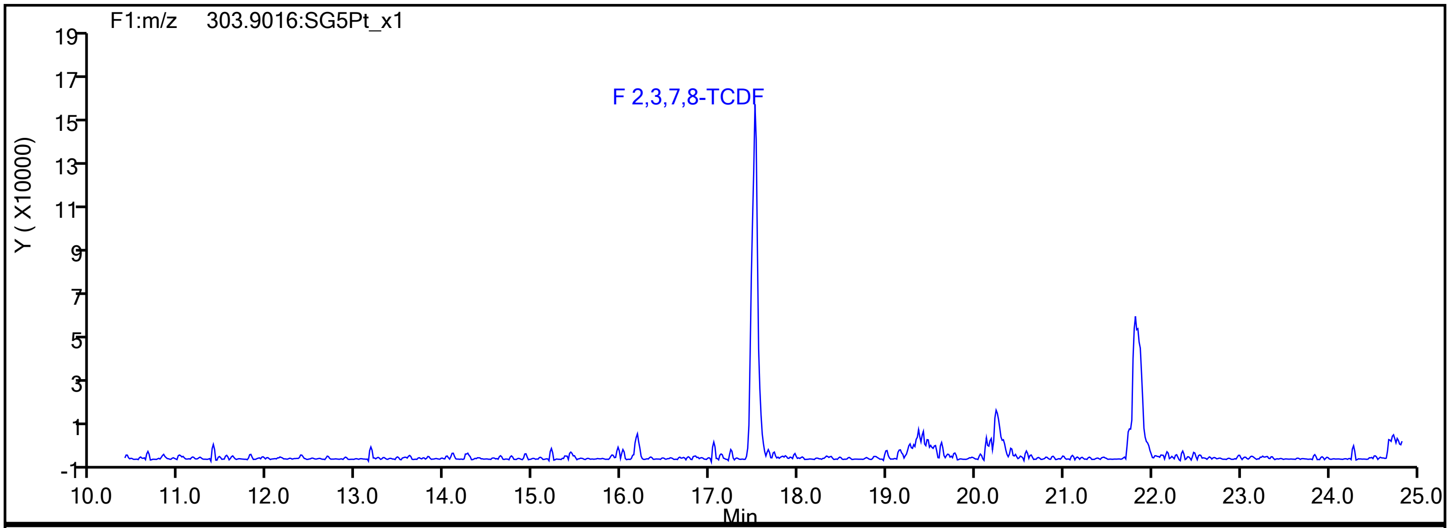

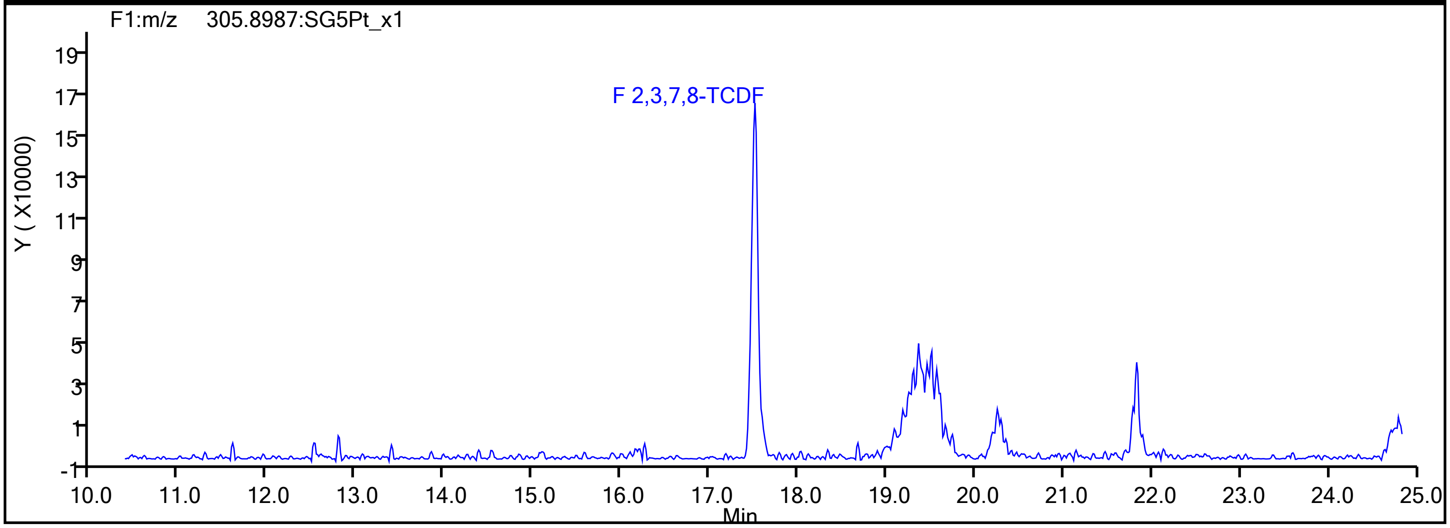

TCDF Interference Mass

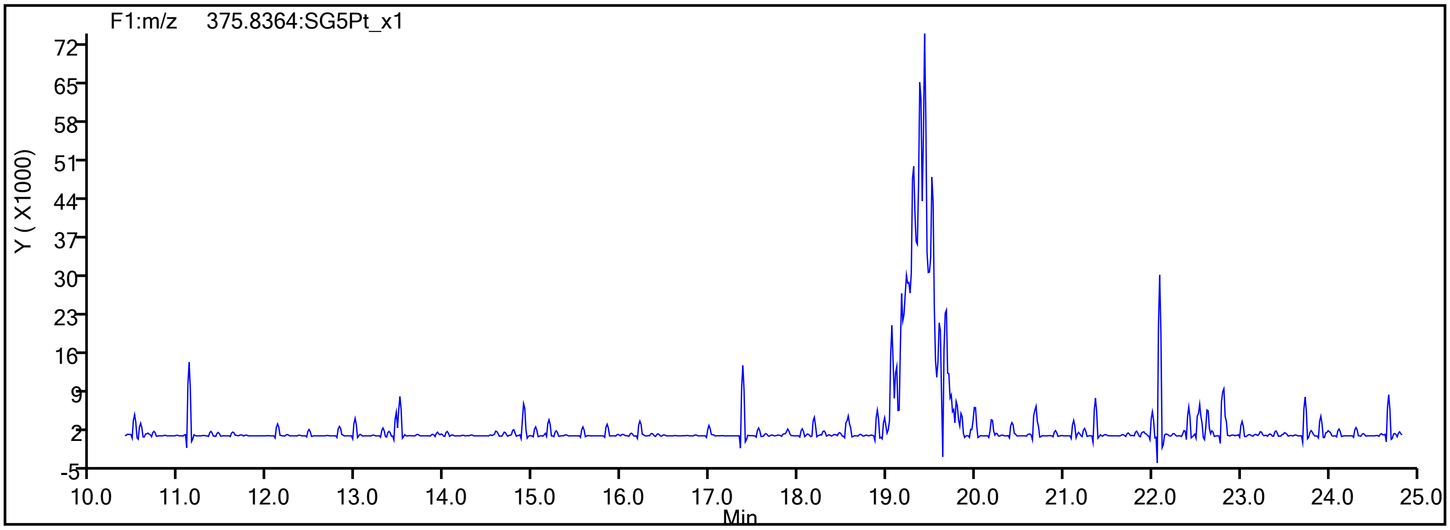

Report Date: 06-Oct-2021 16:06:15 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d
Injection Date: 06-Oct-2021 11:39:30 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494 Sample Line#: 4
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

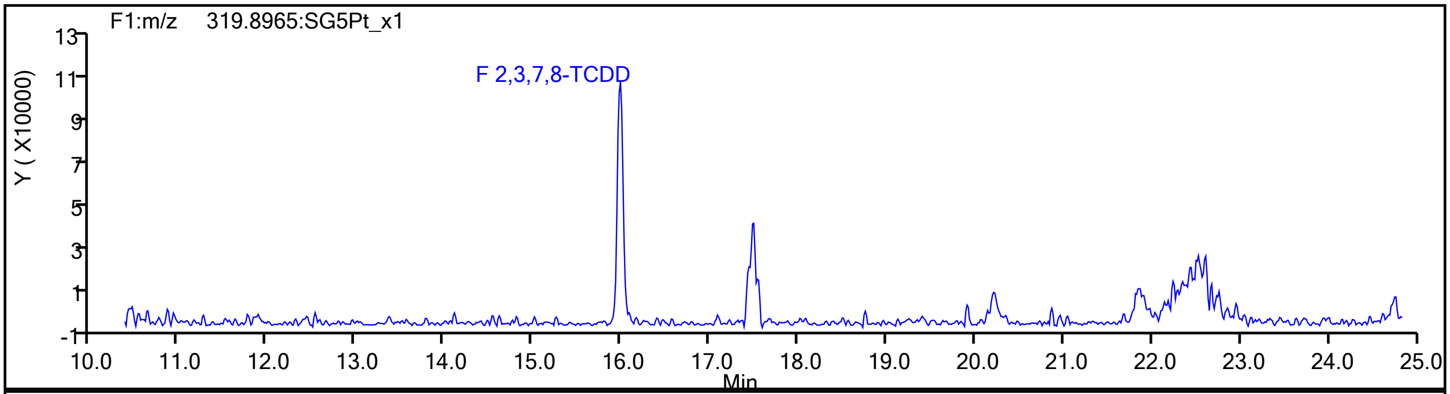

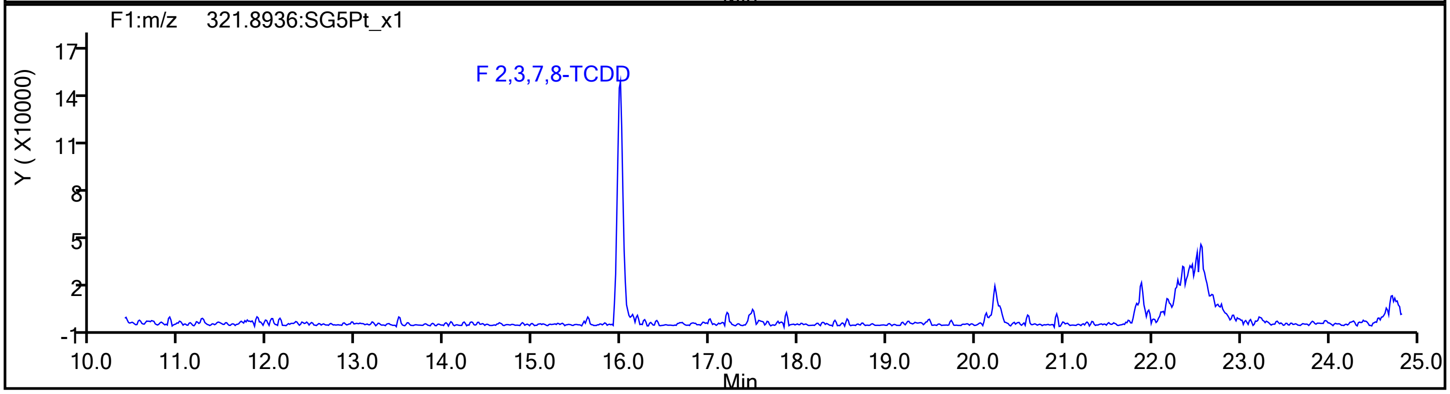

TCDD Standards

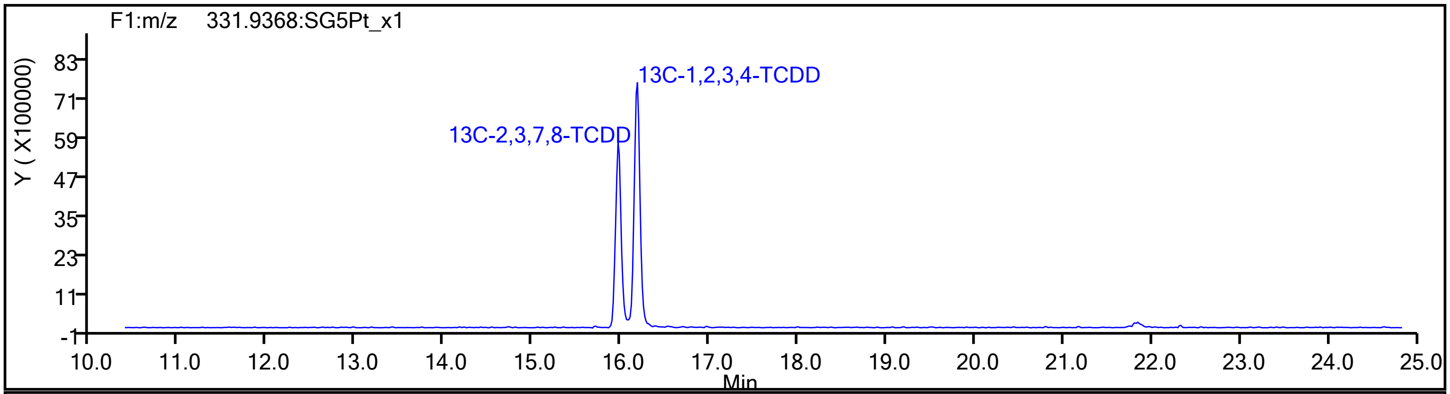

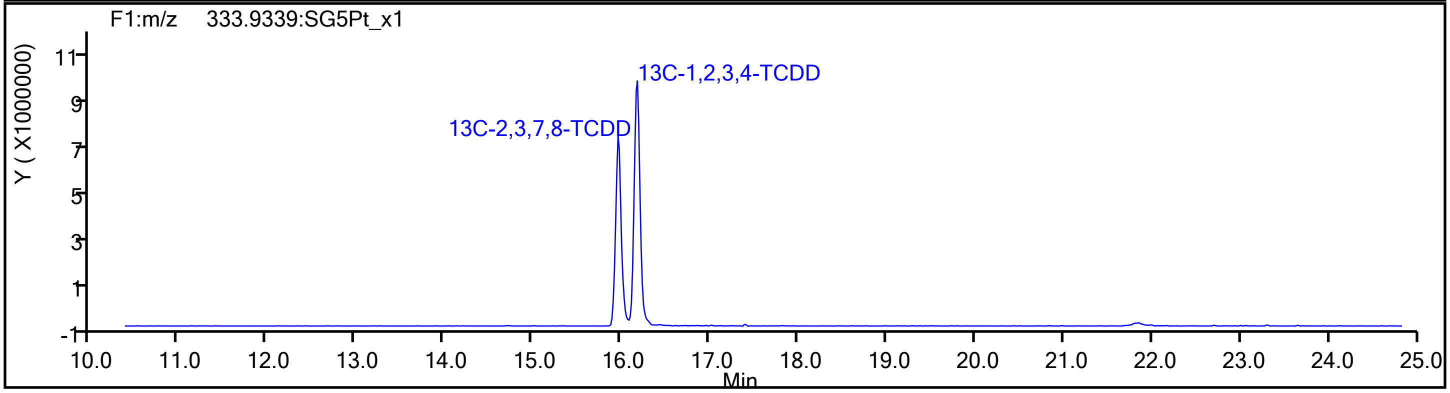

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d		
Injection Date:	06-Oct-2021 11:39:30	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

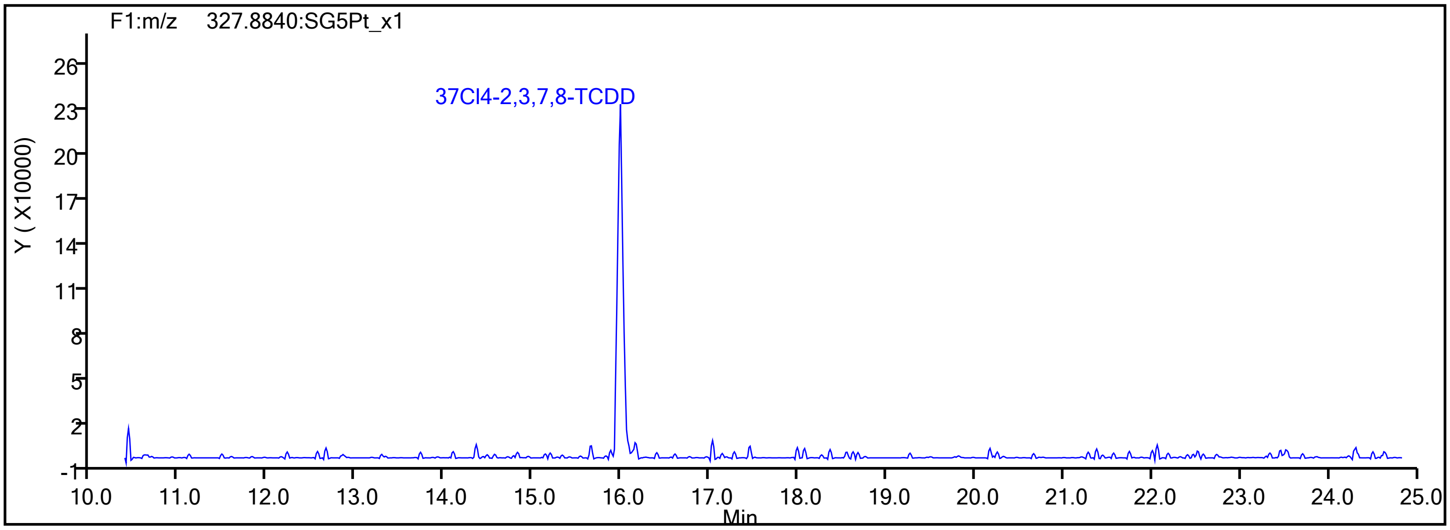

37Cl4-TCDD Standards

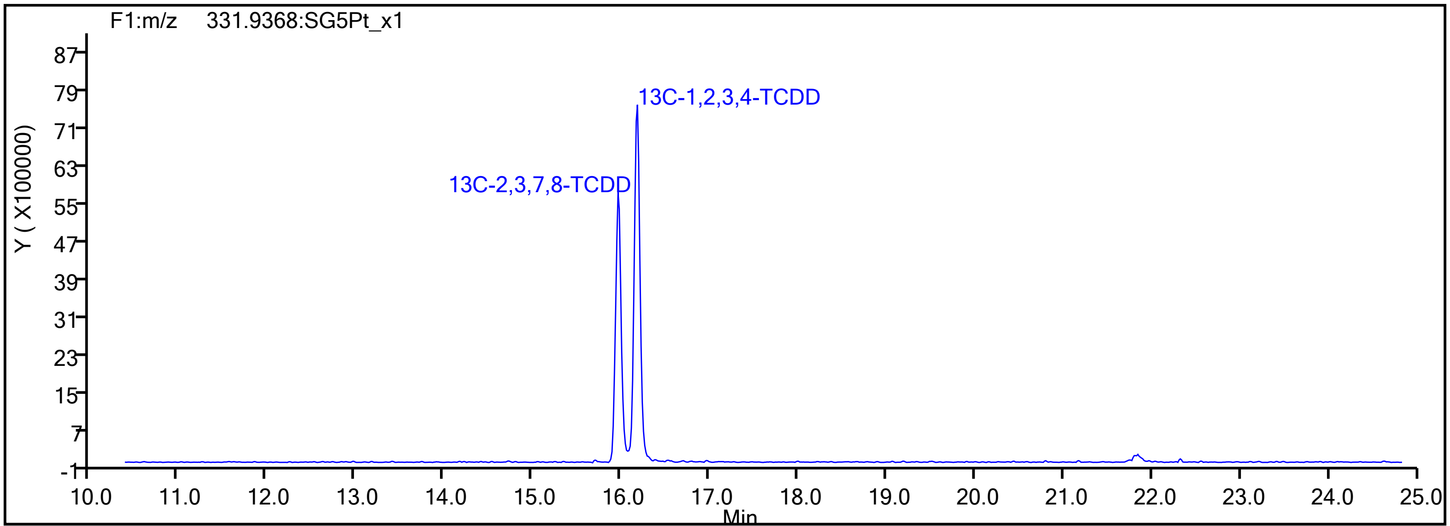

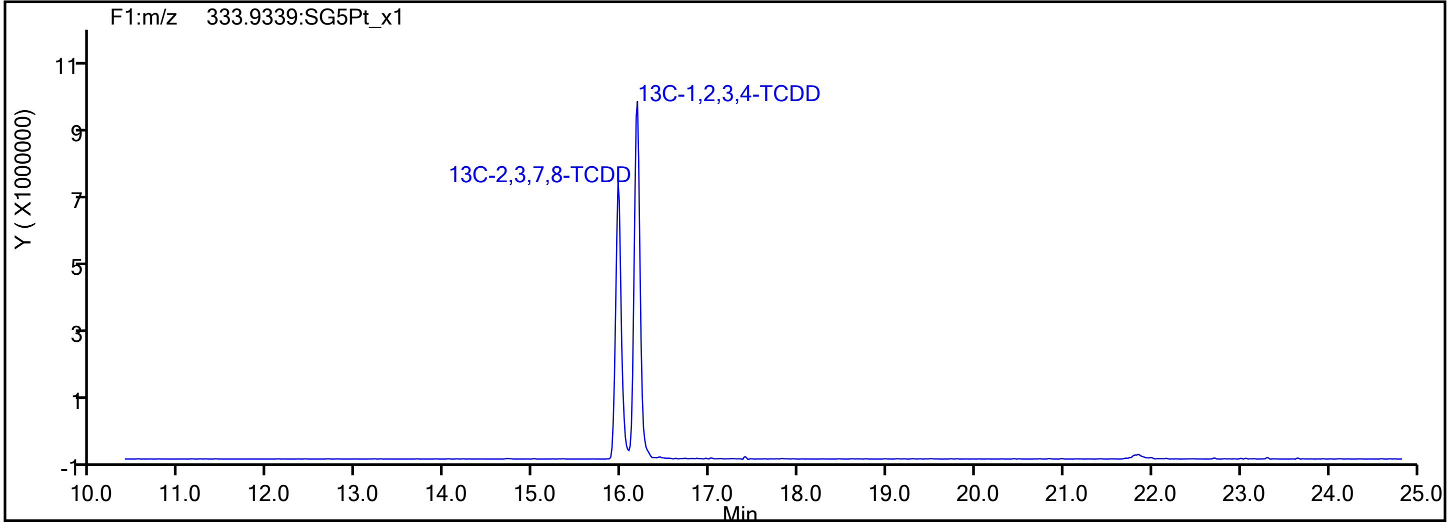

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_004.d
Injection Date: 06-Oct-2021 11:39:30
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

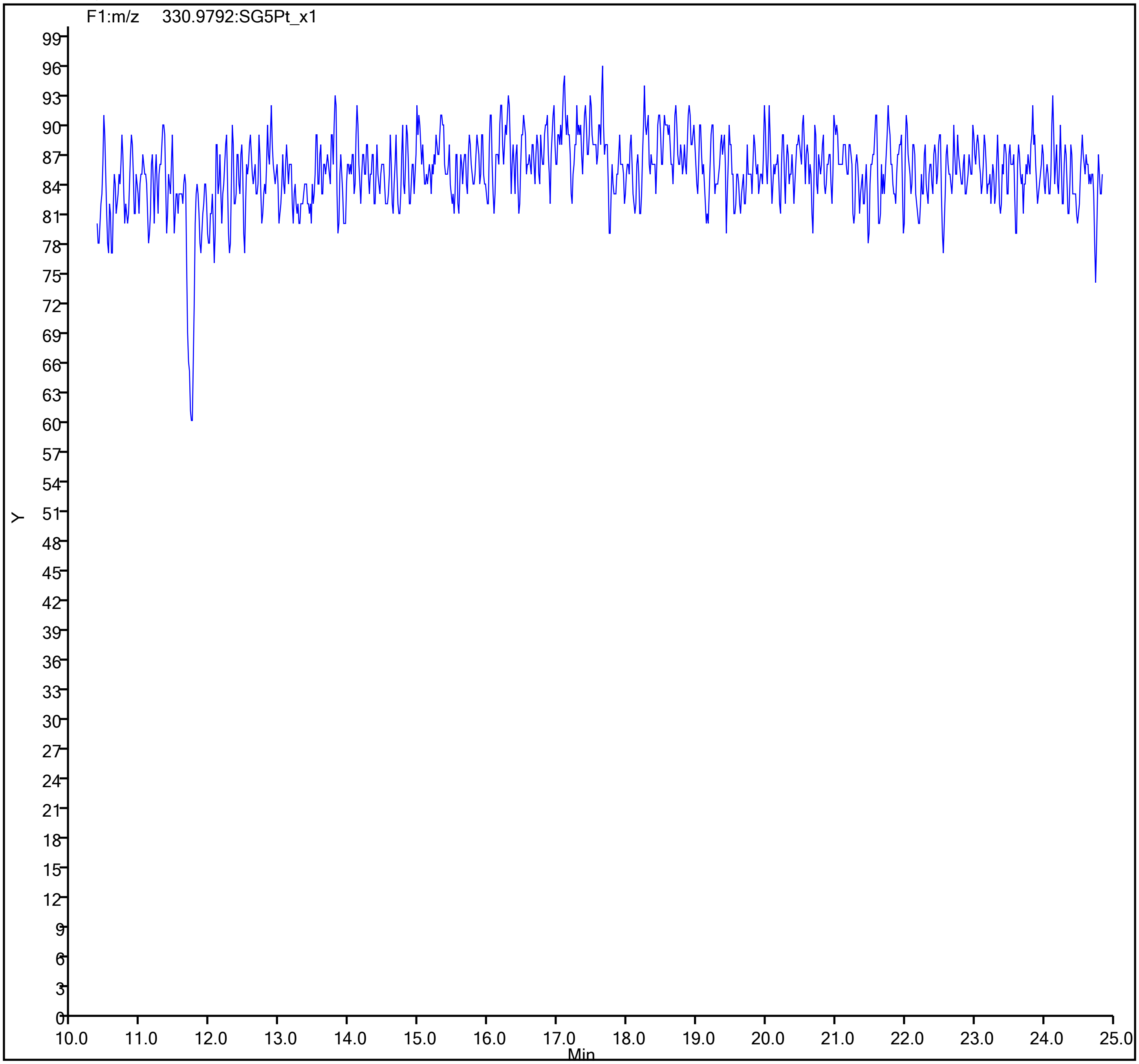

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	06-Oct-2021 12:17:48	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC L4 HRDXNL4_00102				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:06:18	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				
First Level Reviewer:	bennettd	Date:	06-Oct-2021 16:04:01		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.175	46287496	0.76	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.478	44254925	0.78	0.9820	97.4	97.4	0.4005	0.4005	97.36	
2,3,7,8-TCDF	17.519	3804725	0.79	0.9474	9.075	9.075	0.1187	0.1187	90.75	M
D 13C-2,3,7,8-TCDD	15.969	32436104	0.75	0.7189	97.5	97.5	0.6583	0.6583	97.47	
2,3,7,8-TCDD	15.983	2985402	0.79	0.9807	9.385	9.385	0.1362	0.1362	93.85	M
$ 37Cl4-2,3,7,8-TCDD	15.996	3609375		0.7344	10.6	10.6	0.0556	0.0556	106	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

HRDXNL4_00102 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:06:19 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 06-Oct-2021 12:17:48 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC L4 HRDXNL4_00102
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:06:18 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd Date: 06-Oct-2021 16:04:01

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.175	16.176	0		20044405	4397827	9651	24127	456		
333.9339	16.175	16.176	0		26243091	5444263	8982	22455	606	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.478	17.479	0	1.081	19384468	3537413	7998	19995	442		
317.9389	17.492	17.479	1	1.081	24870457	4442661	7484	18710	594	0.78(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	17.519	17.509	1	1.002	1683024	296579	1299	3247	228		M
305.8987	17.505	17.509	0	1.002	2121701	385768	2290	5725	168	0.79(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	15.969	15.959	1	0.987	13950980	3175875	9651	24127	329		
333.9339	15.969	15.959	1	0.987	18485124	3991763	8982	22455	444	0.75(0.65-0.89)	
2,3,7,8-TCDD											M
319.8965	15.983	15.984	0	1.001	1314653	271121	1906	4765	142		M
321.8936	15.983	15.984	0	1.001	1670749	339053	1924	4810	176	0.79(0.65-0.89)	M
37Cl4-2,3,7,8-TCDD											
327.8840	15.996	15.986	1	0.989	3609375	732961	1609	4022	456		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Reagents:

HRDXNL4_00102 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:06:19 Chrom Revision: 2.3 13-May-2021 07:57:40

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d				
Injection Date:	06-Oct-2021 12:17:48	Instrument ID:	11D2		
Lims ID:	IC				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 1

Processing Integration Results

RT:	17.52
Area:	1700922
Amount:	9.192976
Amount Units:	pg/ul

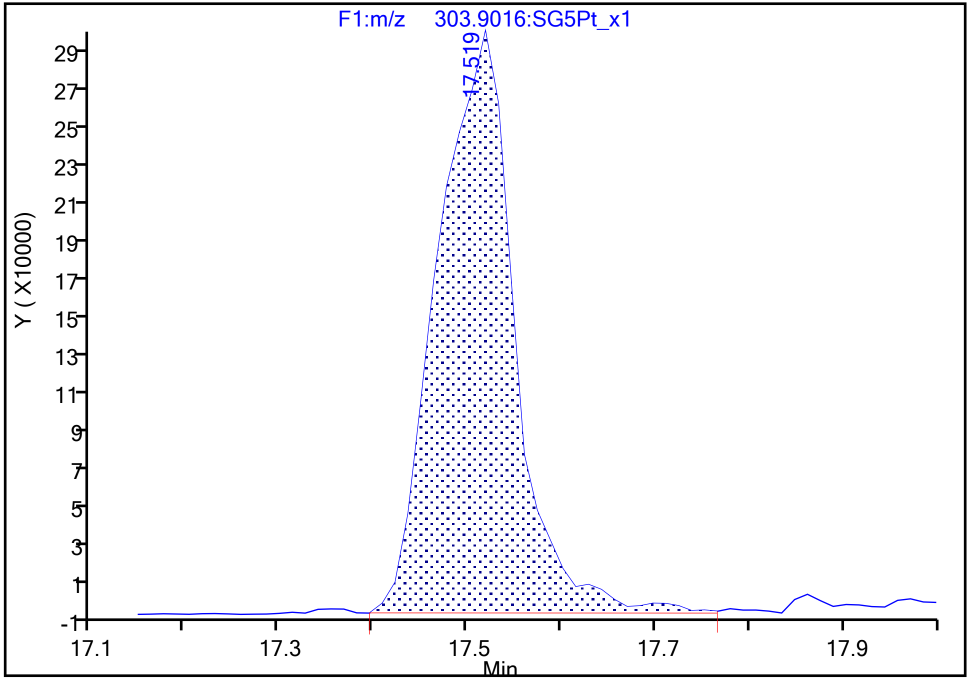

Manual Integration Results

RT:	17.52
Area:	1683024
Amount:	9.075078
Amount Units:	pg/ul

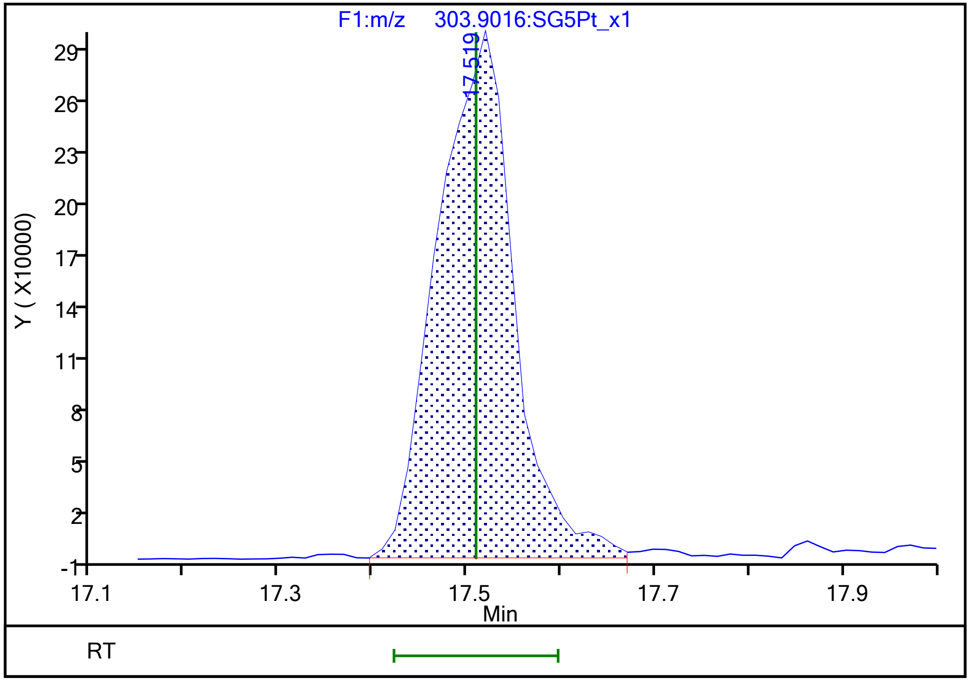

Reviewer: bennettd, 06-Oct-2021 16:03:25

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d				
Injection Date:	06-Oct-2021 12:17:48	Instrument ID:	11D2		
Lims ID:	IC				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 17.51
Area: 2164367
Amount: 9.192976
Amount Units: pg/ul

Processing Integration Results

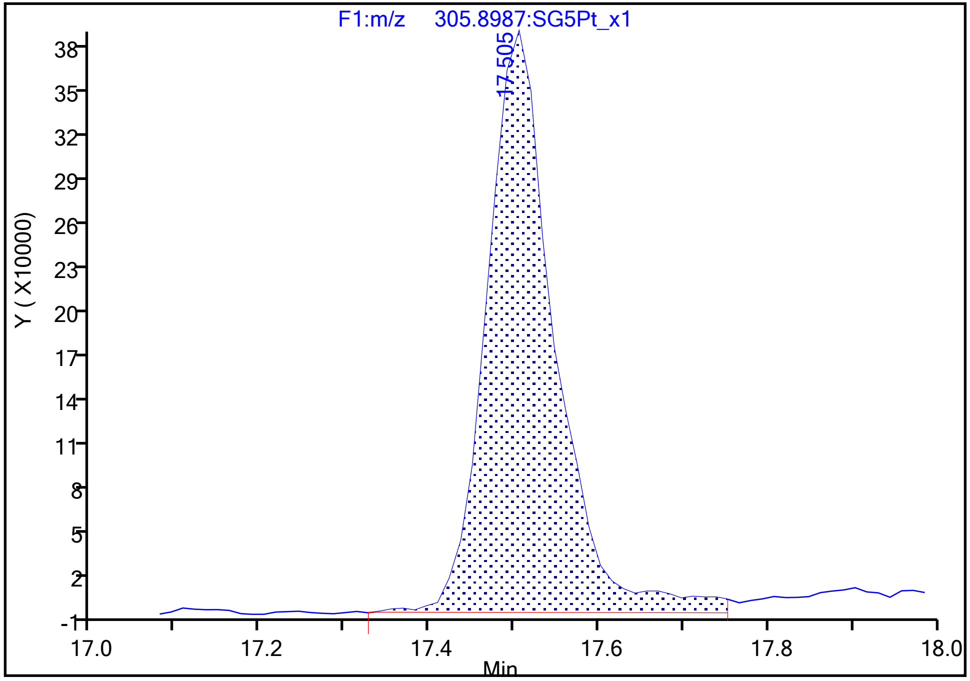

RT: 17.51
Area: 2121701
Amount: 9.075078
Amount Units: pg/ul

Manual Integration Results

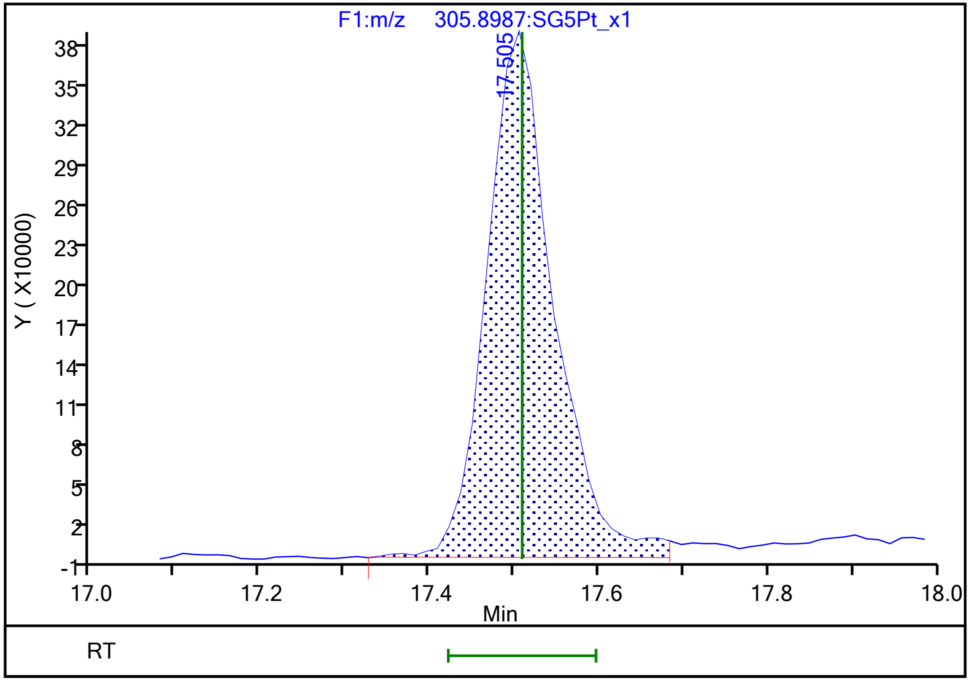

Reviewer: bennettd, 06-Oct-2021 16:03:29

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d
Injection Date: 06-Oct-2021 12:17:48
Instrument ID: 11D2
Lims ID: IC
Client ID:
Operator ID:
ALS Bottle#: 0
Worklist Smp#: 5
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Column: DB-225 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 15.98
Area: 1349901
Amount: 9.606760
Amount Units: pg/ul

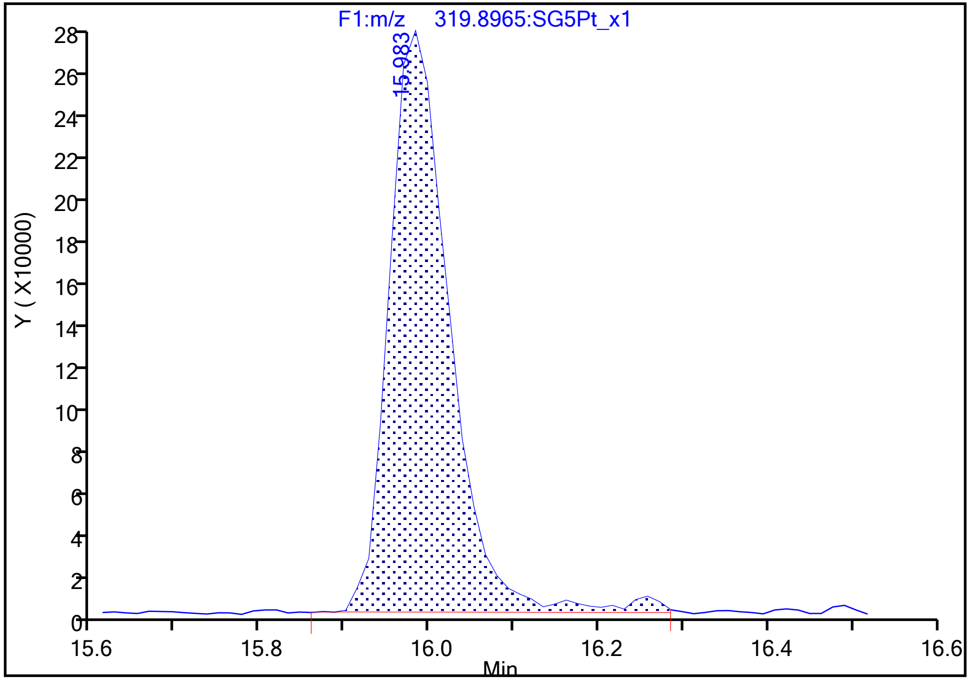

Manual Integration Results

RT: 15.98
Area: 1314653
Amount: 9.385387
Amount Units: pg/ul

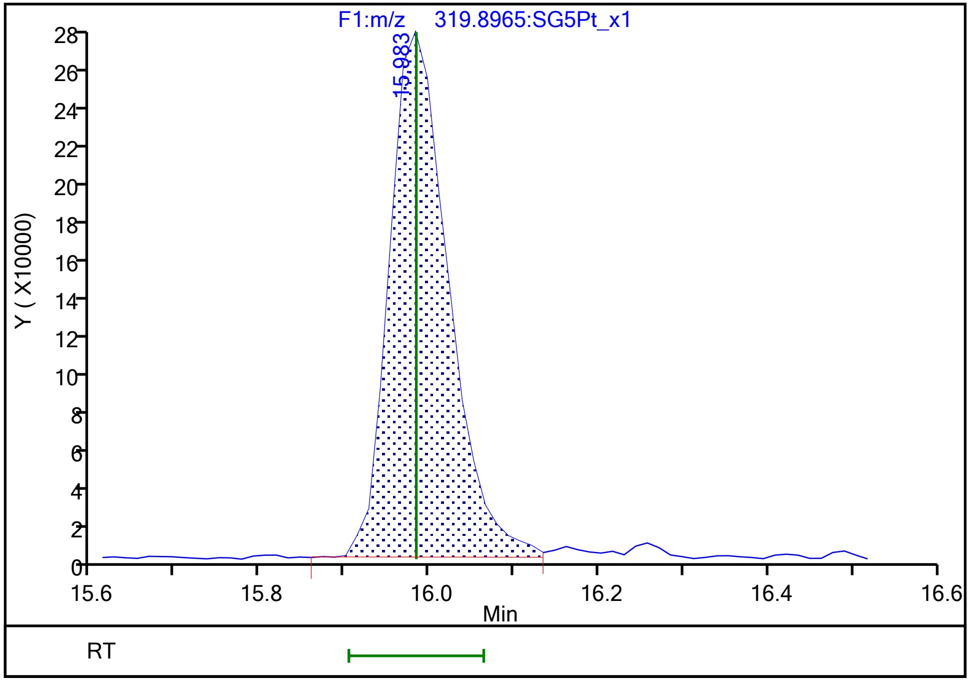

Reviewer: bennettd, 06-Oct-2021 16:03:46
Audit Action: Split an Integrated Peak
Audit Reason: Peak Tail

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d				
Injection Date:	06-Oct-2021 12:17:48	Instrument ID:	11D2		
Lims ID:	IC				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT:	15.98
Area:	1722665
Amount:	9.606760
Amount Units:	pg/ul

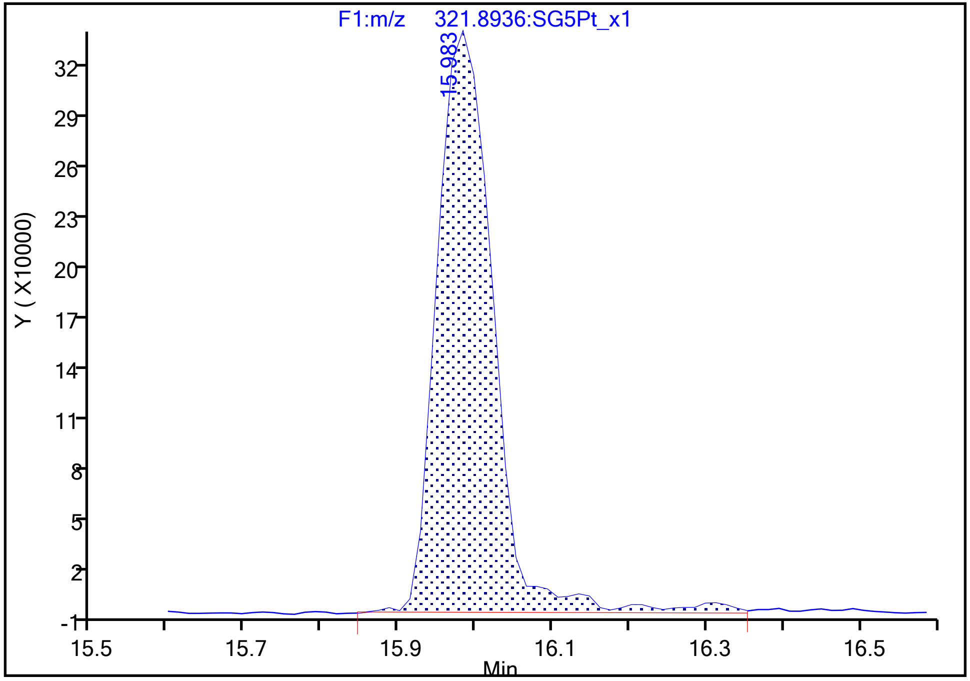

Manual Integration Results

RT:	15.98
Area:	1670749
Amount:	9.385387
Amount Units:	pg/ul

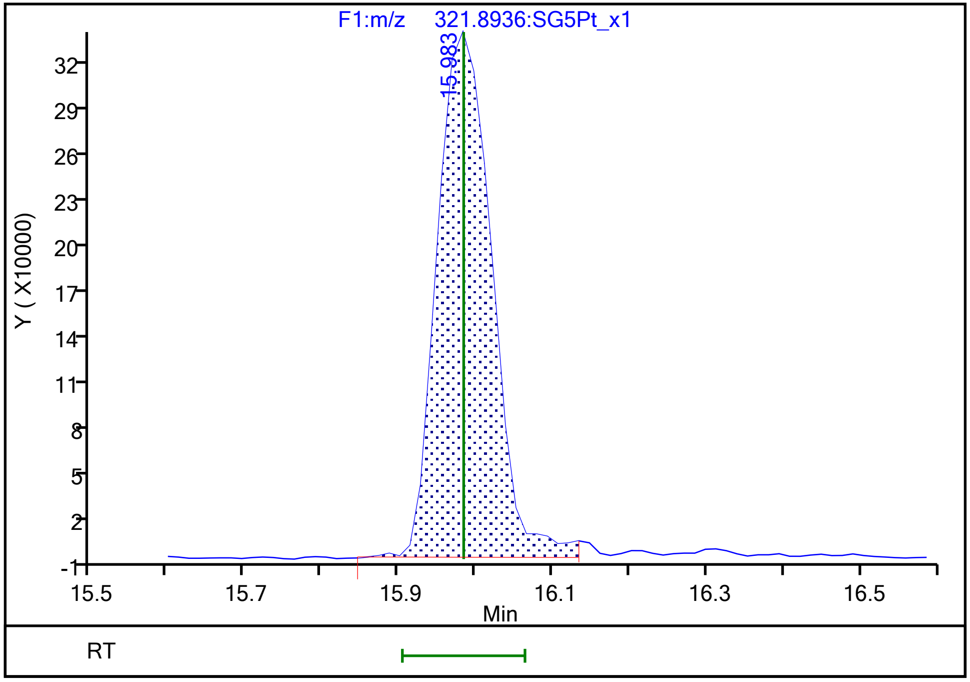

Reviewer: bennettd, 06-Oct-2021 16:03:49

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 06-Oct-2021 16:06:19 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d
Injection Date: 06-Oct-2021 12:17:48 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

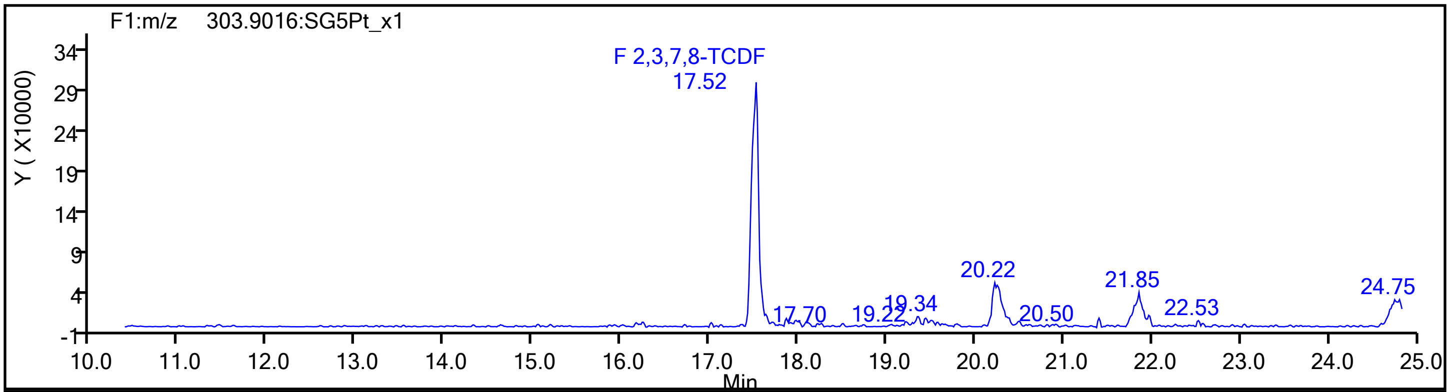

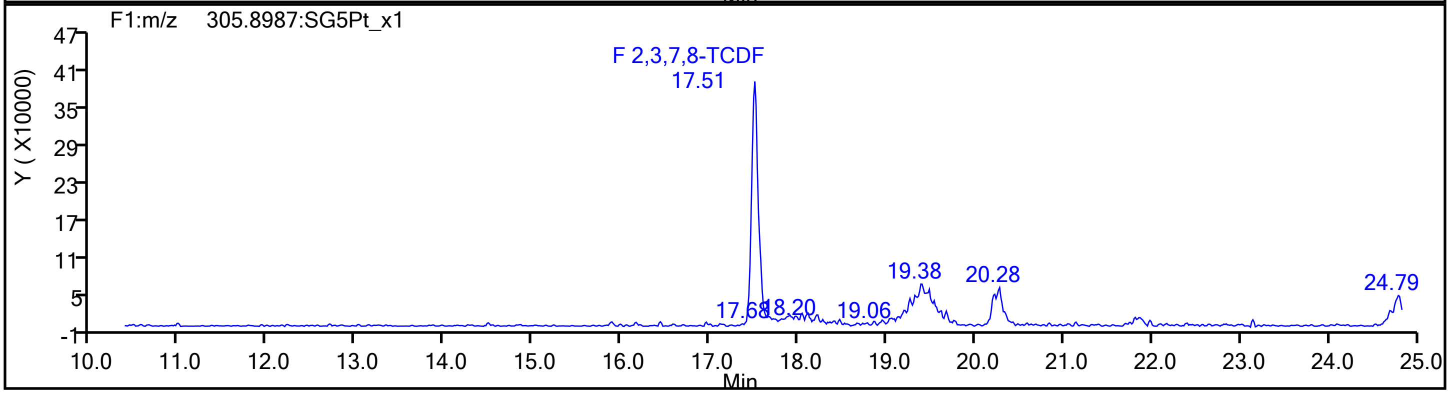

TCDF Standards

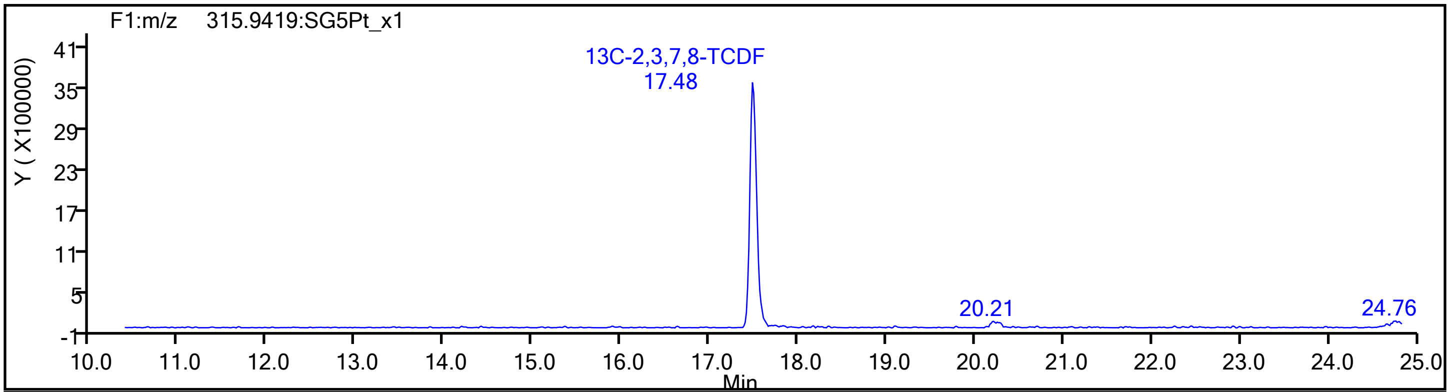

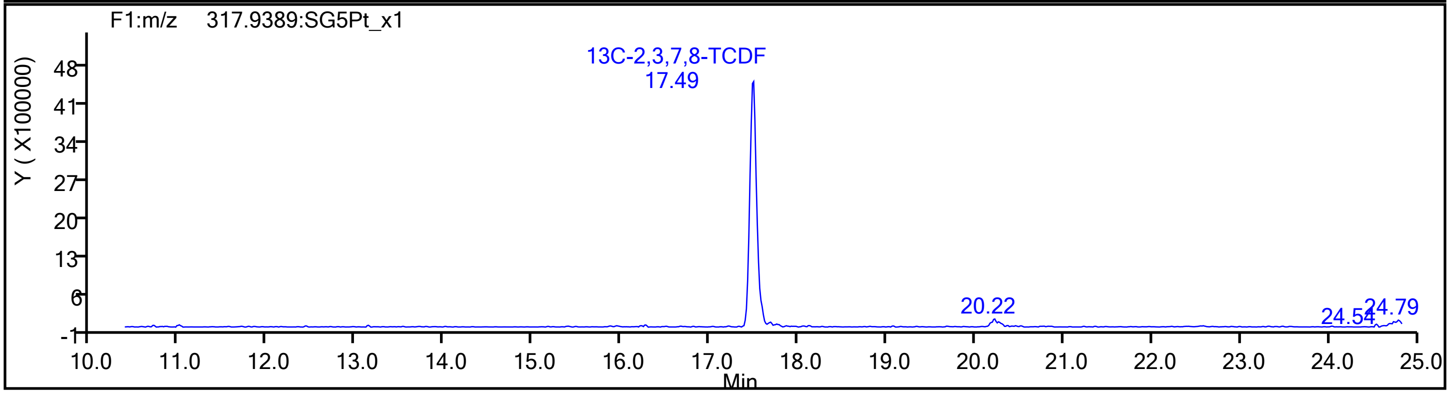

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d		
Injection Date:	06-Oct-2021 12:17:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

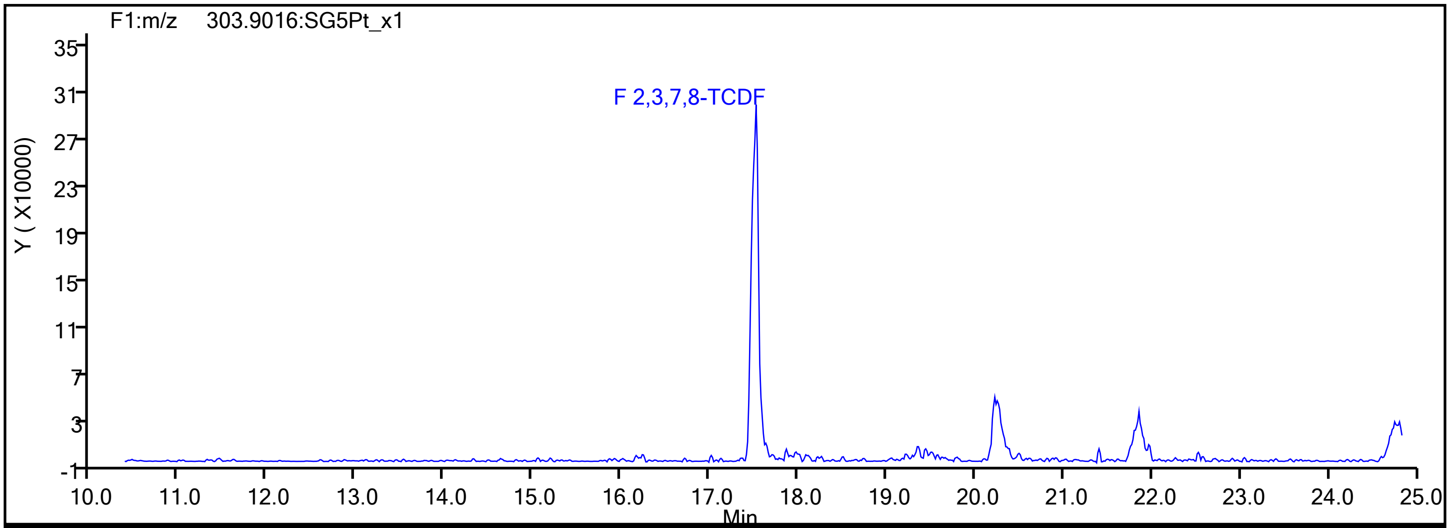

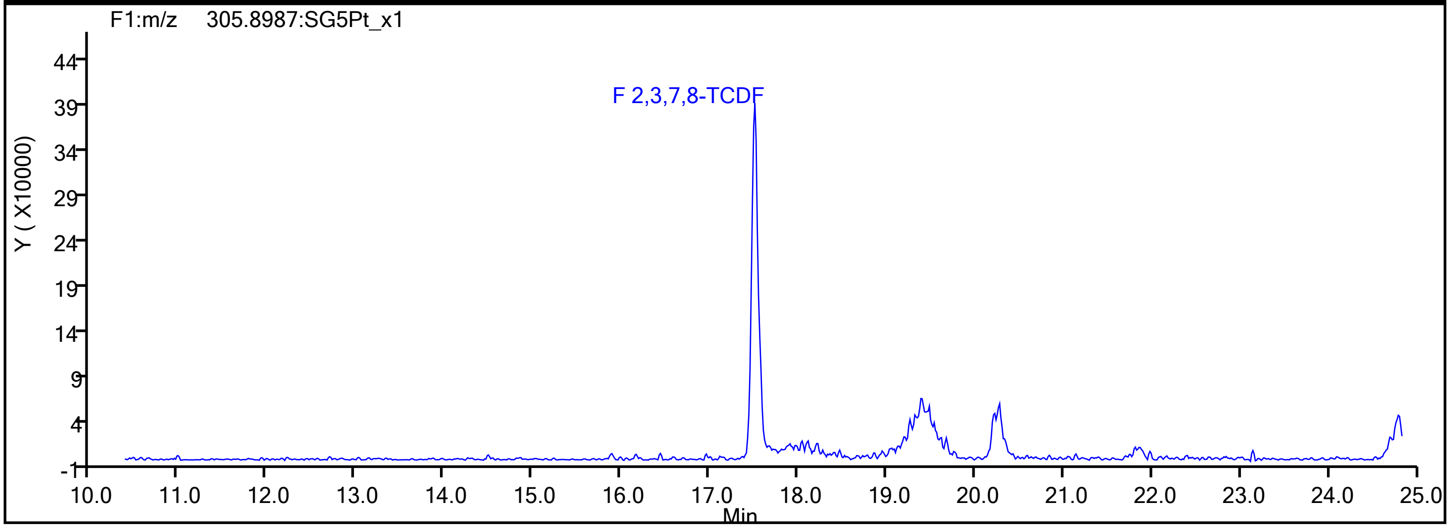

TCDF Interference Mass

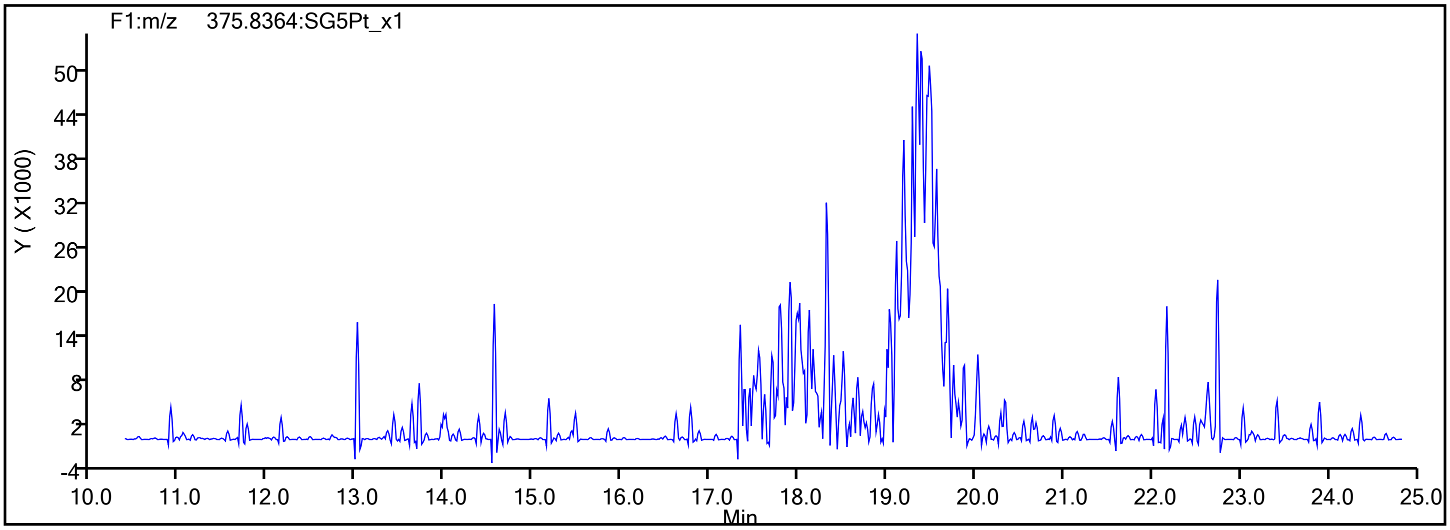

Report Date: 06-Oct-2021 16:06:20
Chrom Revision: 2.3 13-May-2021 07:57:40
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d
Injection Date: 06-Oct-2021 12:17:48
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494
Sample Line#: 5
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

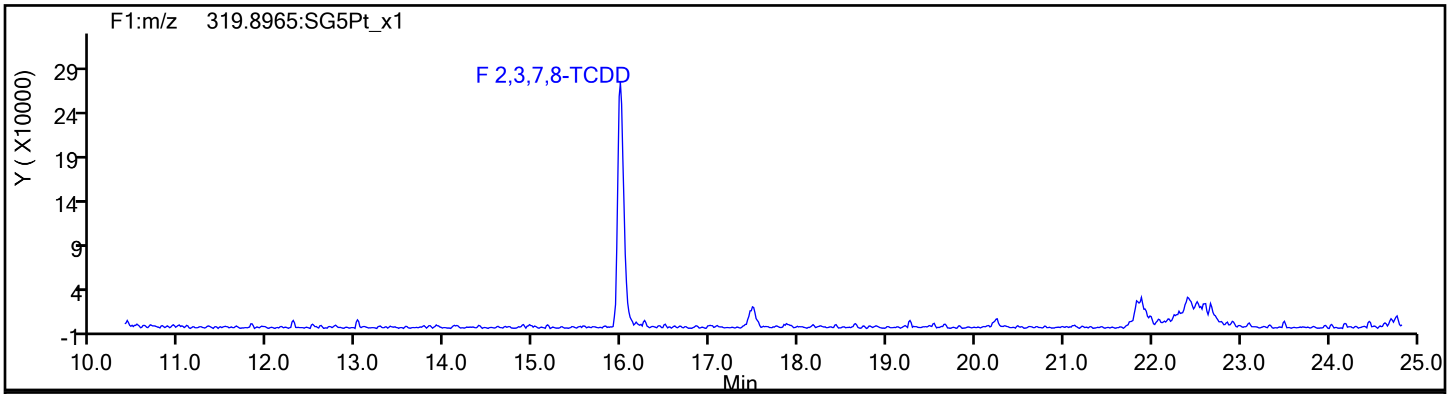

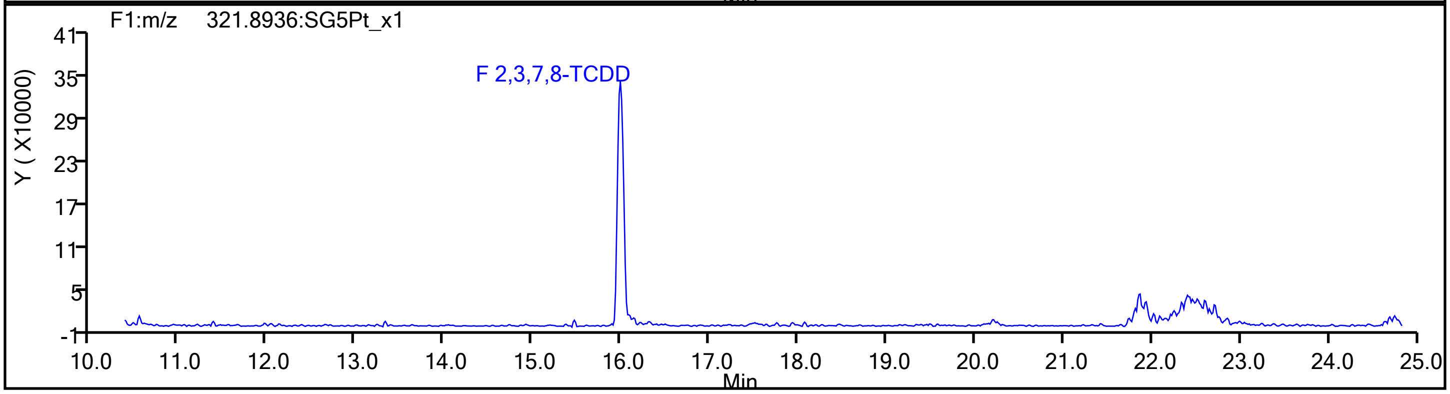

TCDD Standards

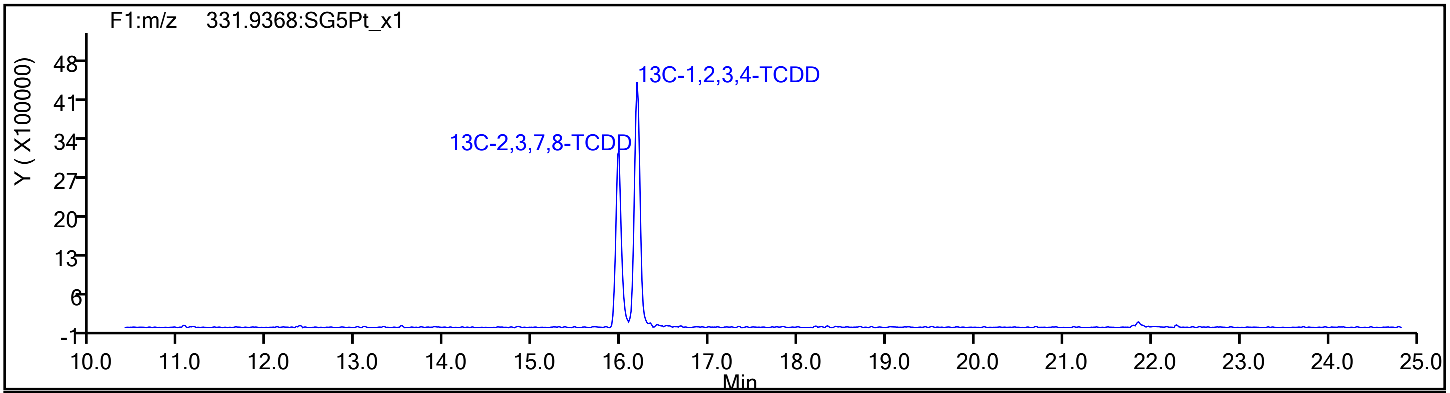

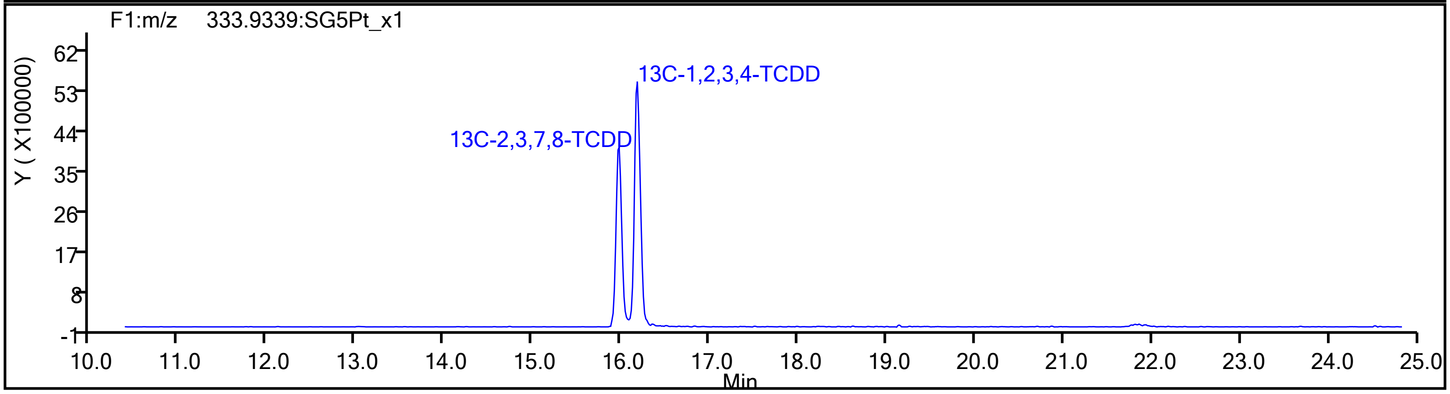

Report Date: 06-Oct-2021 16:06:20 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d

Injection Date:	06-Oct-2021 12:17:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

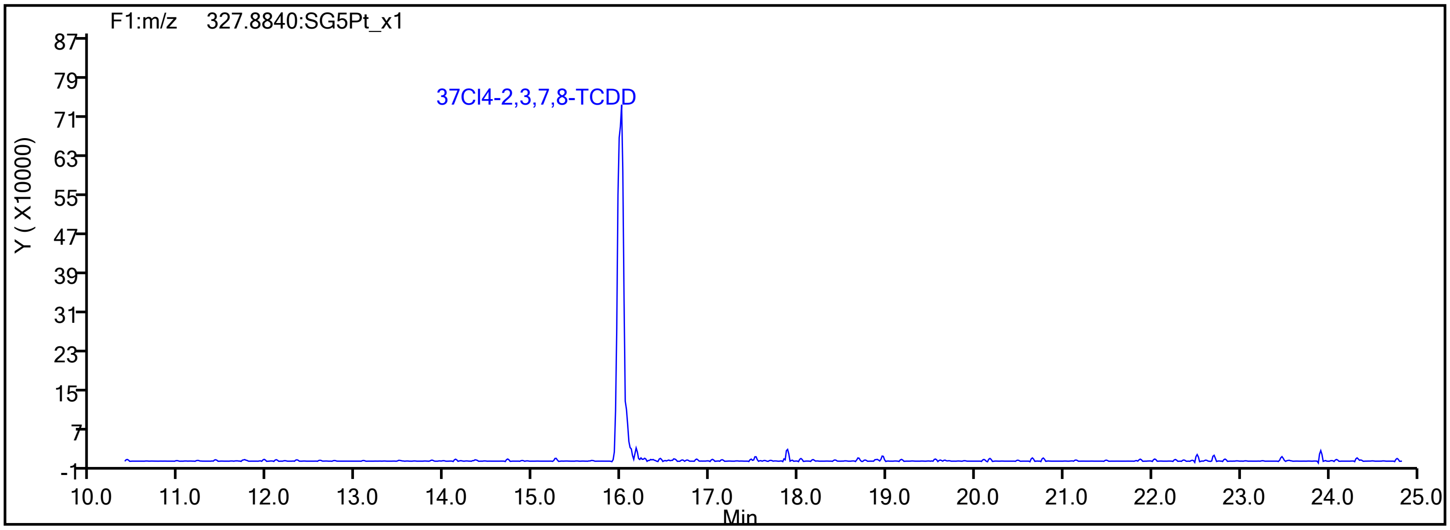

37Cl4-TCDD Standards

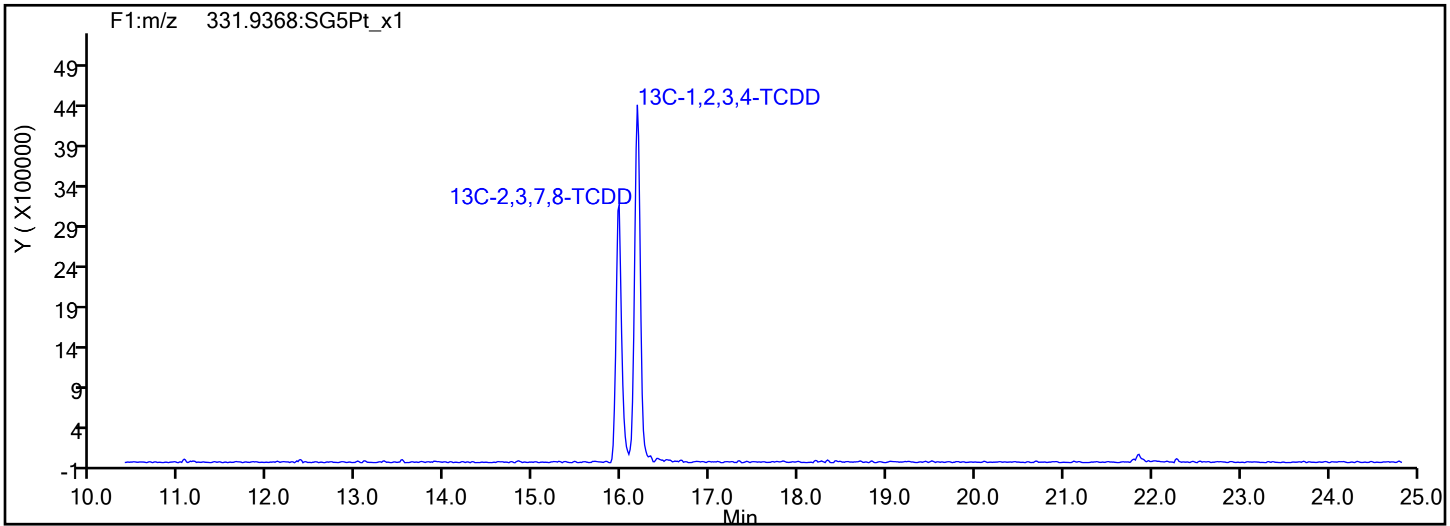

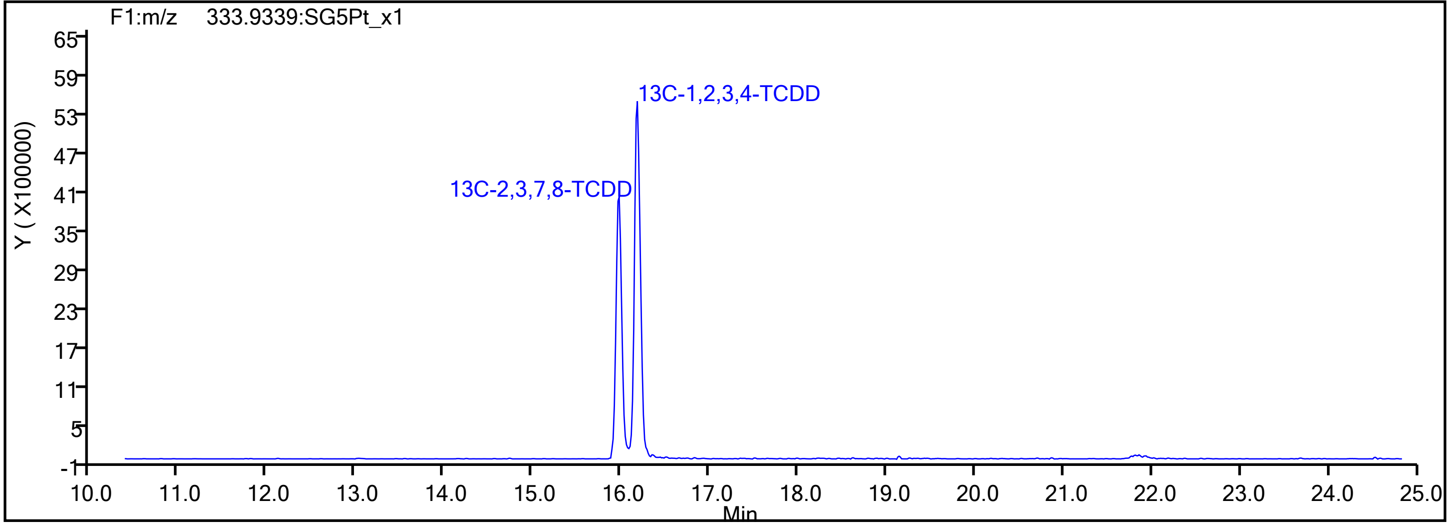

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_005.d		
Injection Date:	06-Oct-2021 12:17:48	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

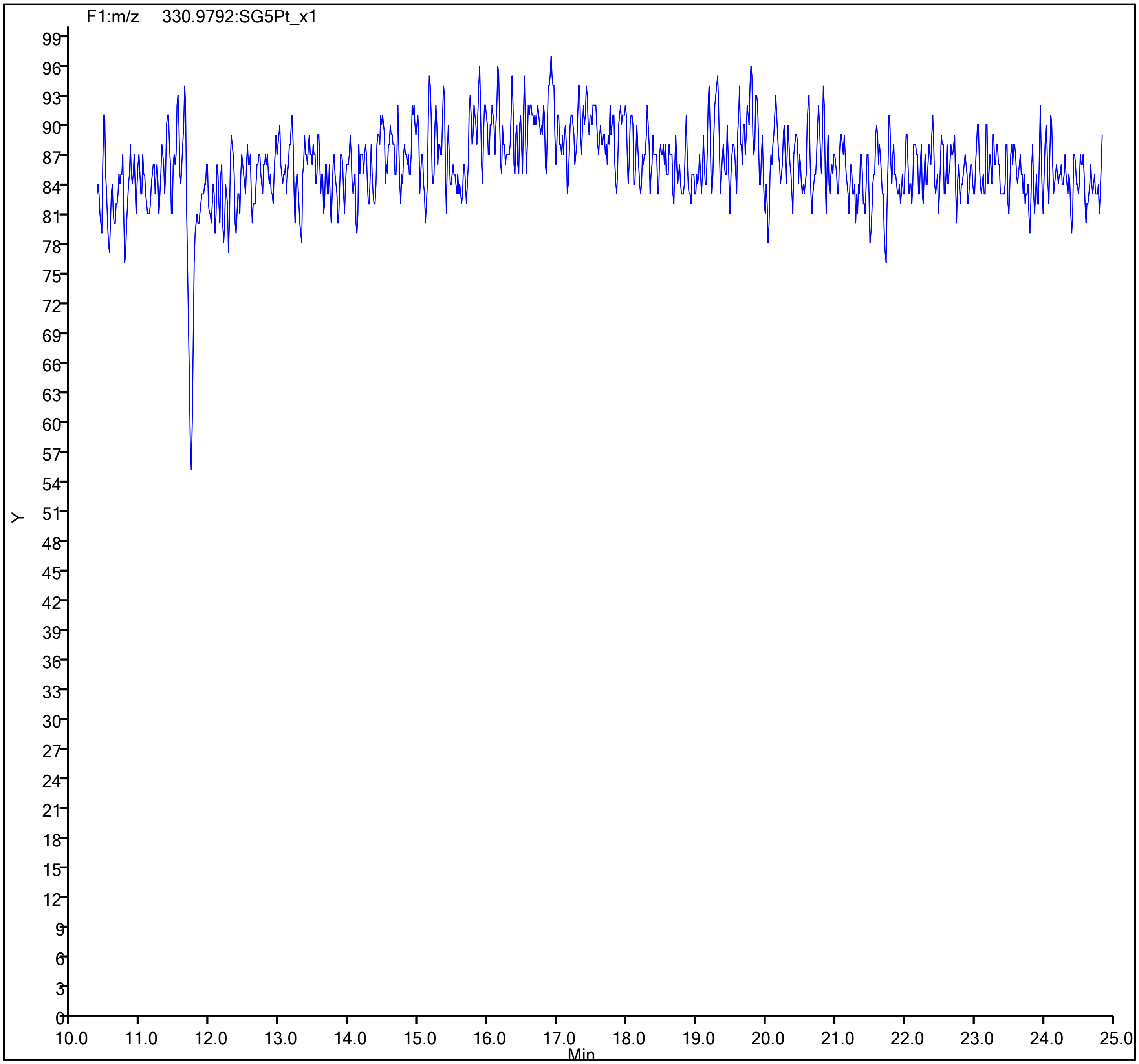

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	06-Oct-2021 12:56:10	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC L5 HRDXNL5_00033				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:06:23	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				

First Level Reviewer: bennettd Date: 06-Oct-2021 16:04:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.175	81610075	0.78	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.478	81120529	0.80	0.9820	101.2	101.2	0.4179	0.4179	101	
2,3,7,8-TCDF	17.505	30255535	0.79	0.9474	39.4	39.4	0.1358	0.1358	98.42	
D 13C-2,3,7,8-TCDD	15.956	58459323	0.77	0.7189	99.6	99.6	0.4524	0.4524	99.64	
2,3,7,8-TCDD	15.983	22631504	0.79	0.9807	39.5	39.5	0.1469	0.1469	98.69	
$ 37Cl4-2,3,7,8-TCDD	15.983	22032778		0.7344	36.8	36.8	0.1020	0.1020	91.90	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00033 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:06:24　　Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d
Lims ID: IC
Client ID:
Sample Type: IC　　Calib Level: 5
Inject. Date: 06-Oct-2021 12:56:10　　ALS Bottle#: 0　　Worklist Smp#: 6
Injection Vol: 2.0 ul　　Dil. Factor: 1.0000
Sample Info: IC L5 HRDXNL5_00033
Misc. Info.: DB225RES
Operator ID:　　Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:06:23　　Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution　　Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm)　　Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd　　Date: 06-Oct-2021 16:04:17

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.175	16.176	0		35803968	7462250	14334	35835	521		
333.9339	16.175	16.176	0		45806107	9605501	7872	19680	1220	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.478	17.479	0	1.081	36057150	6693944	10164	25410	659		
317.9389	17.478	17.479	0	1.081	45063379	8300475	17853	44632	465	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.505	17.509	0	1.002	13327317	2406472	2924	7310	823		
305.8987	17.505	17.509	0	1.002	16928218	3100573	4795	11987	647	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.956	15.959	0	0.986	25429582	5670044	14334	35835	396		
333.9339	15.956	15.959	0	0.986	33029741	7188445	7872	19680	913	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.983	15.984	0	1.002	9978692	2128534	3425	8562	621		
321.8936	15.983	15.984	0	1.002	12652812	2775506	3986	9965	696	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.983	15.986	0	0.988	22032778	4722371	5117	12792	923		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00033　　Amount Added: 2.00　　Units: uL

Report Date: 06-Oct-2021 16:06:24 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d		
Injection Date:	06-Oct-2021 12:56:10	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

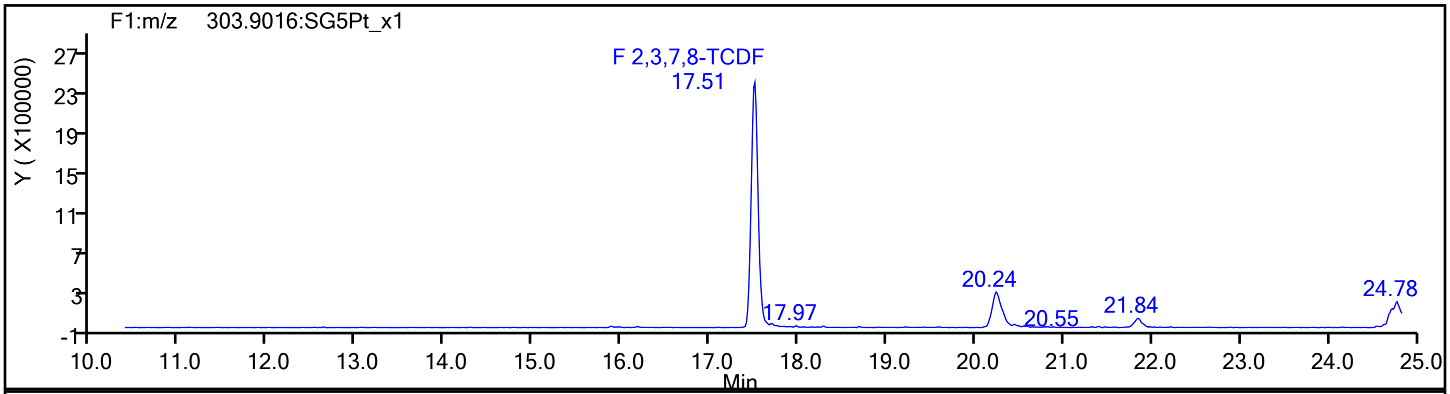

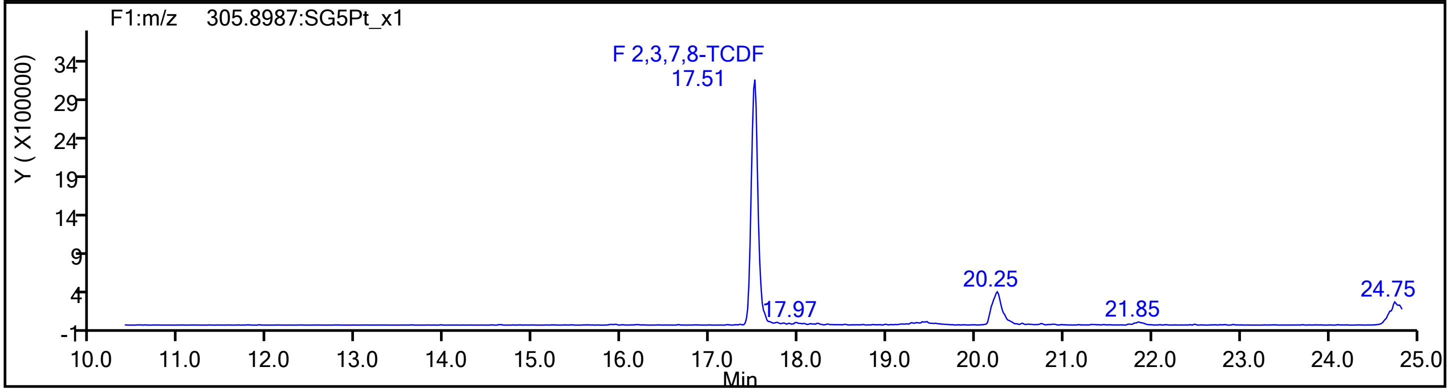

TCDF Standards

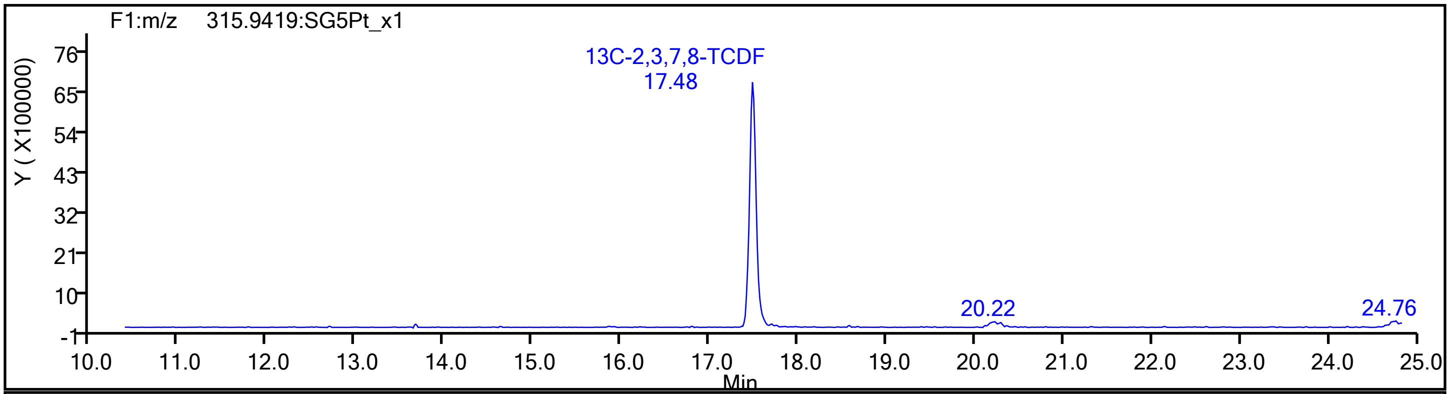

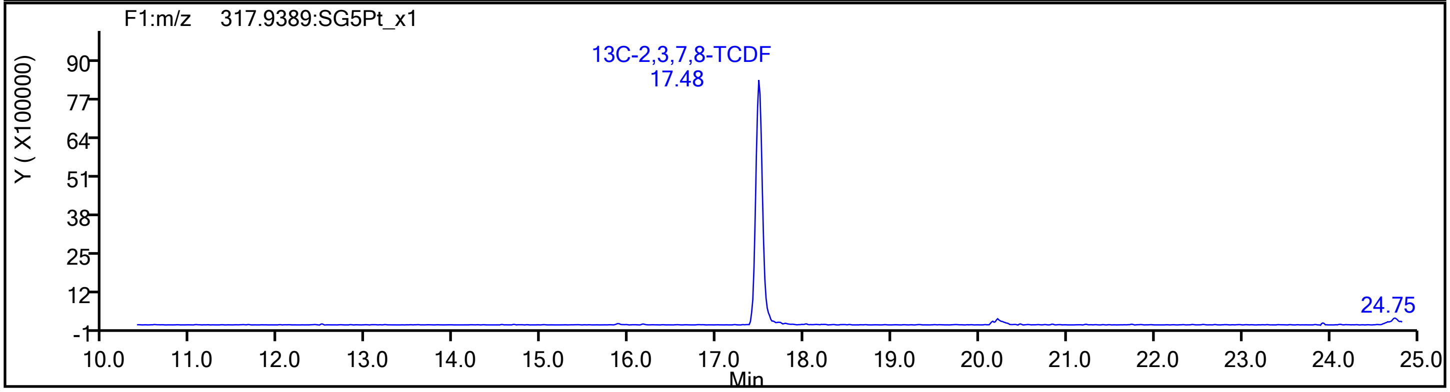

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d
Injection Date: 06-Oct-2021 12:56:10
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

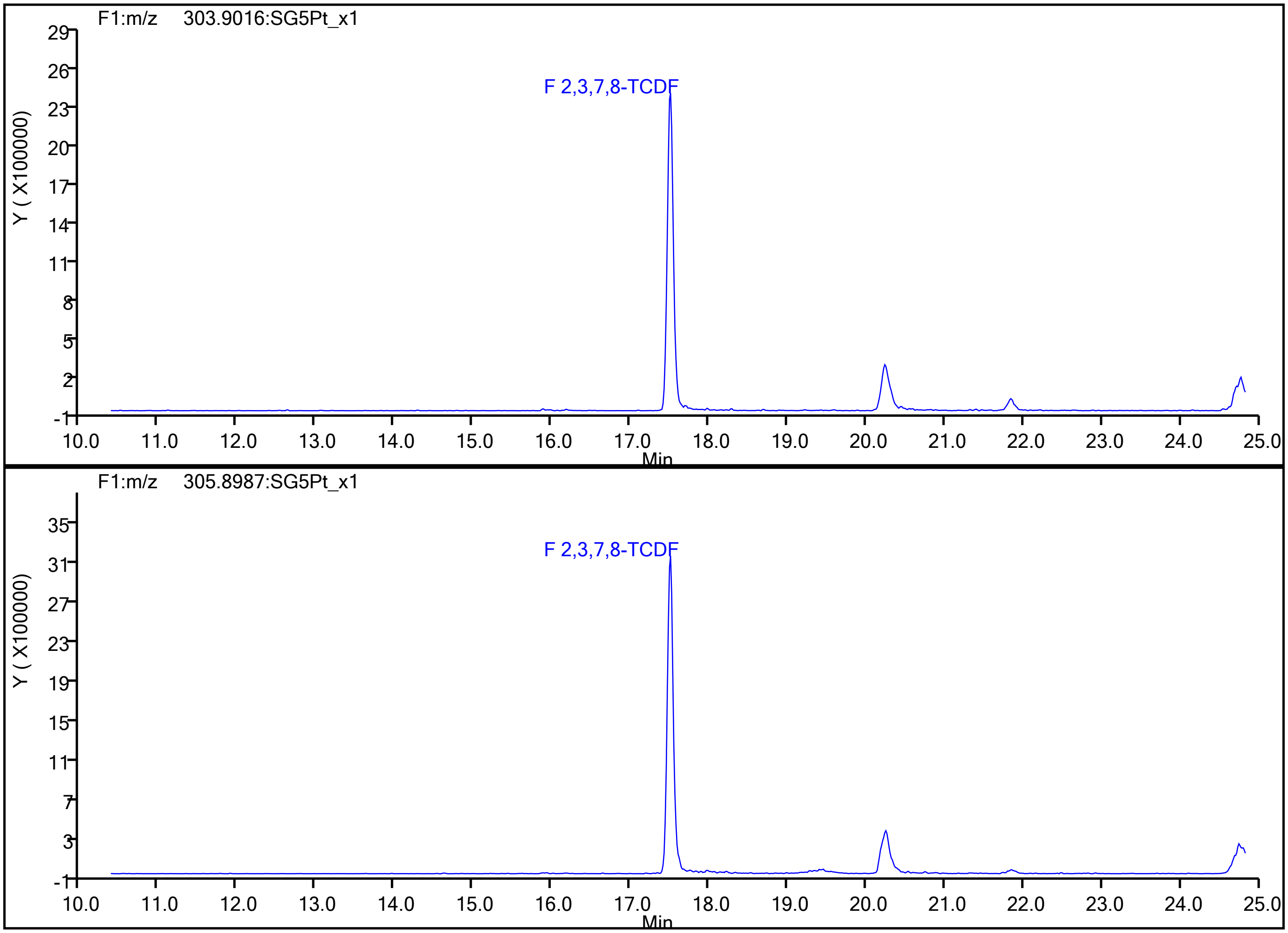

TCDF Interference Mass

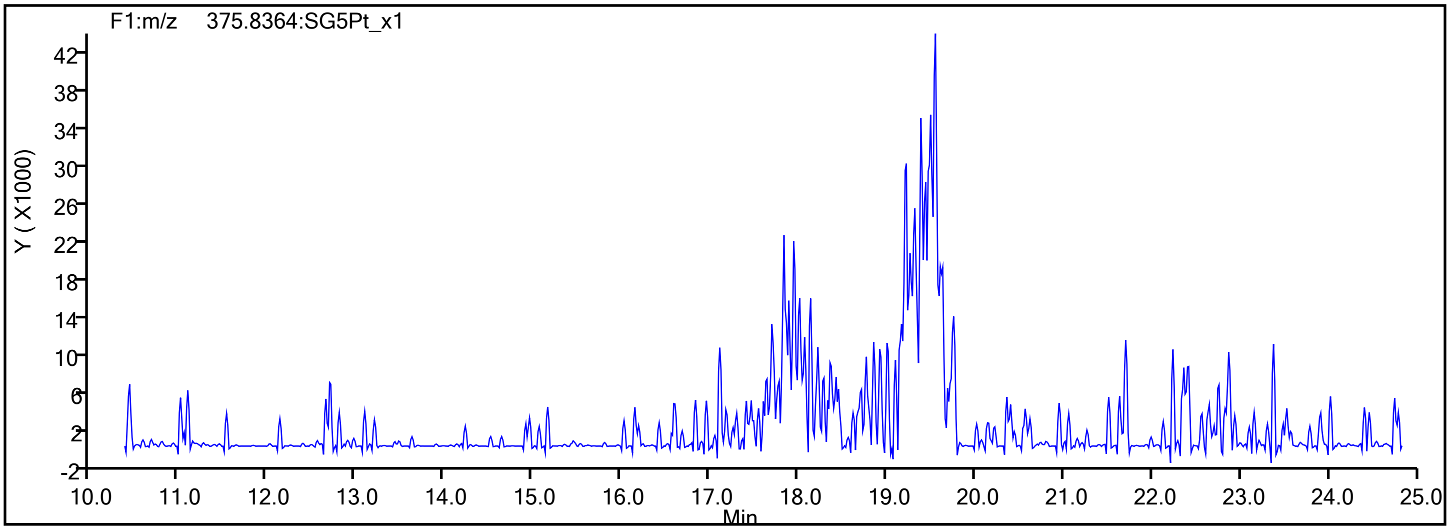

Report Date: 06-Oct-2021 16:06:24 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d
Injection Date: 06-Oct-2021 12:56:10
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494
Sample Line#: 6
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

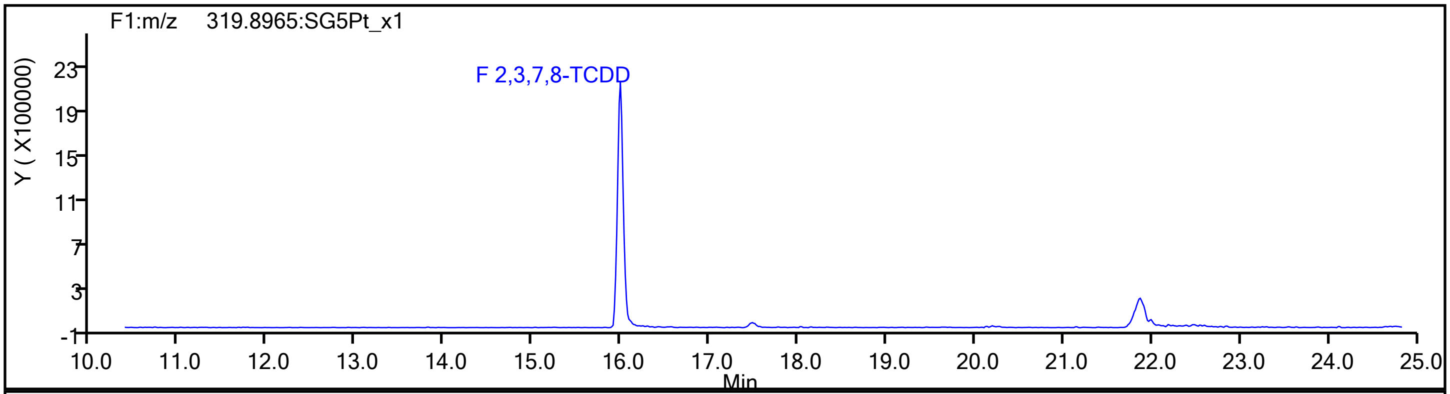

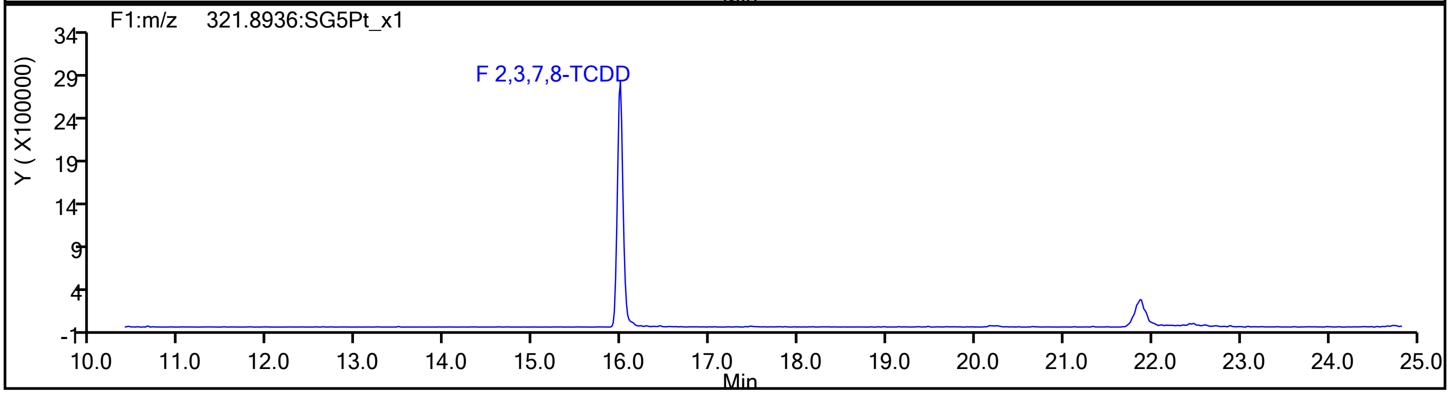

TCDD Standards

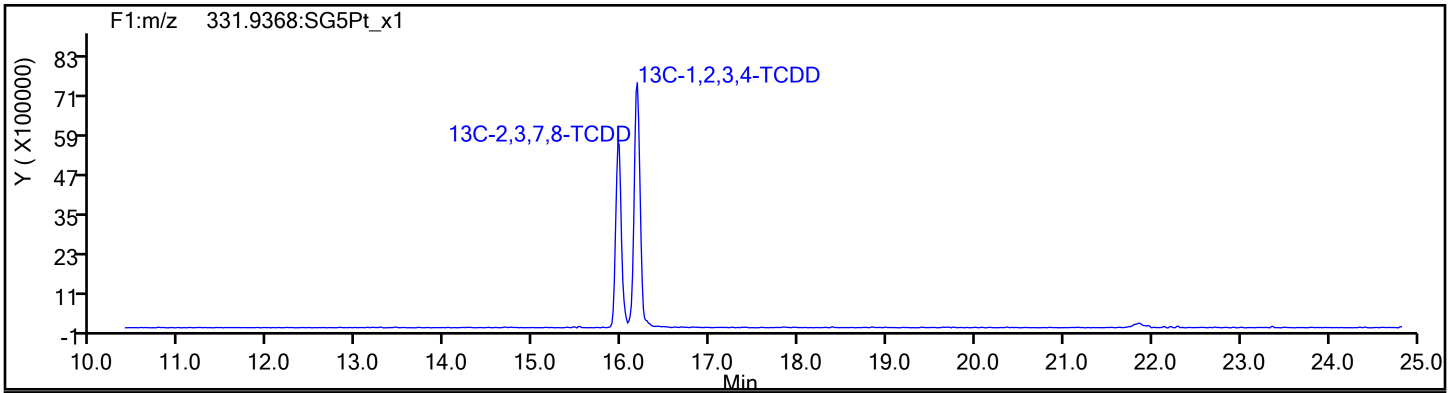

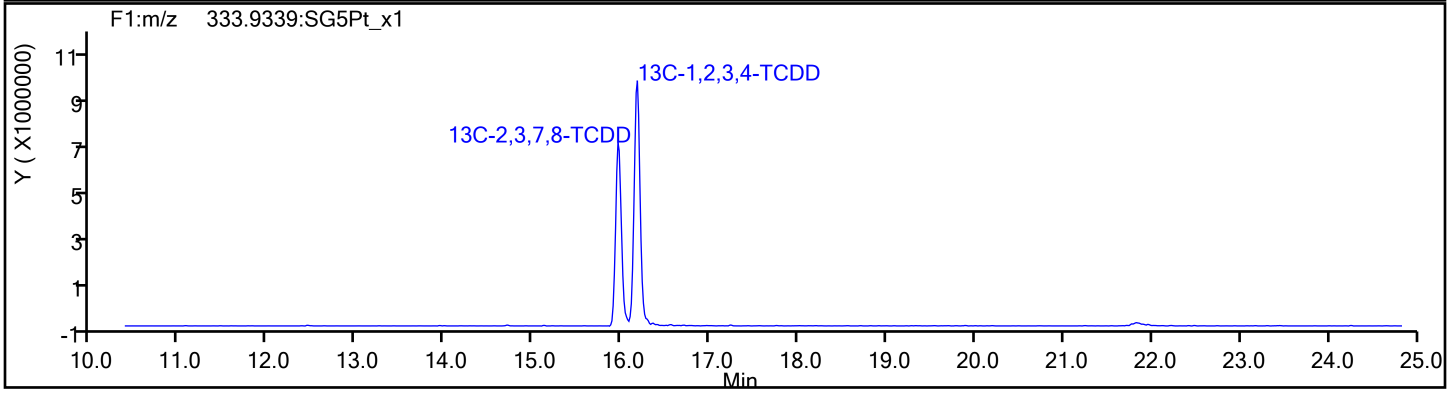

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d		
Injection Date:	06-Oct-2021 12:56:10	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

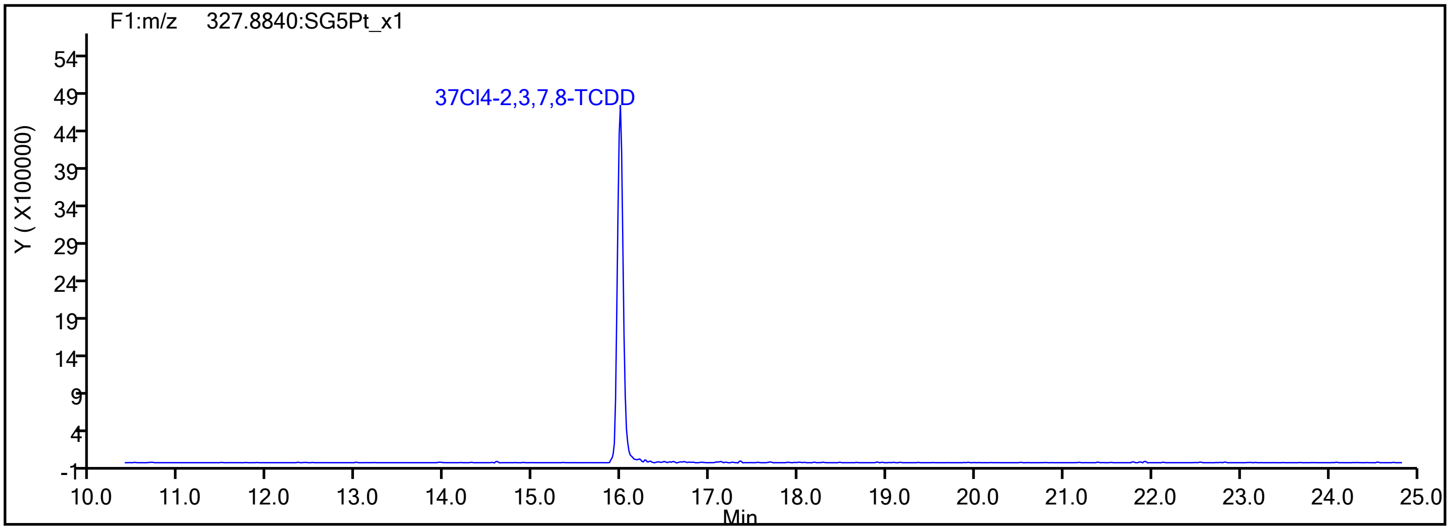

37Cl4-TCDD Standards

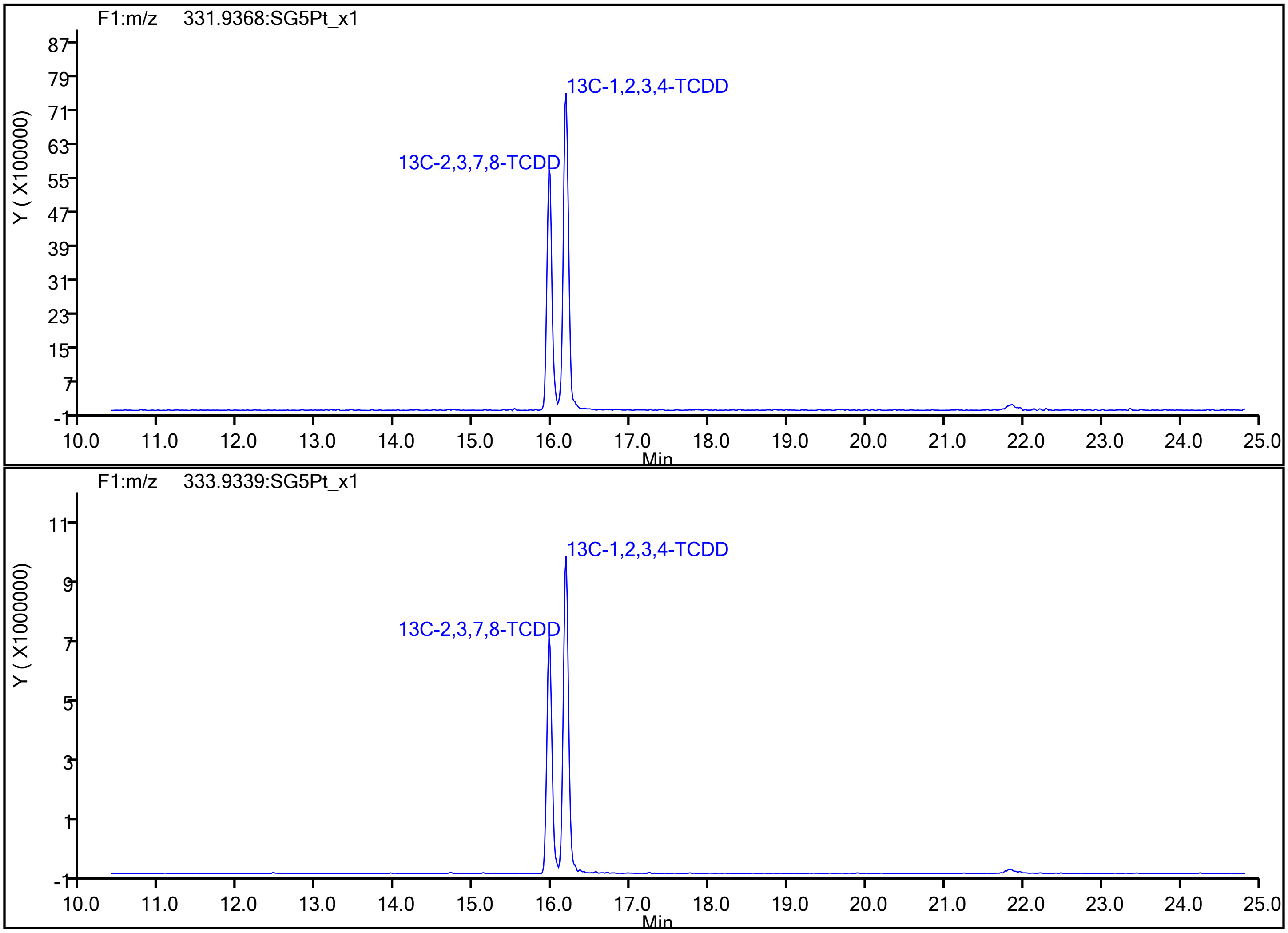

Report Date: 06-Oct-2021 16:06:24 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_006.d		
Injection Date:	06-Oct-2021 12:56:10	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

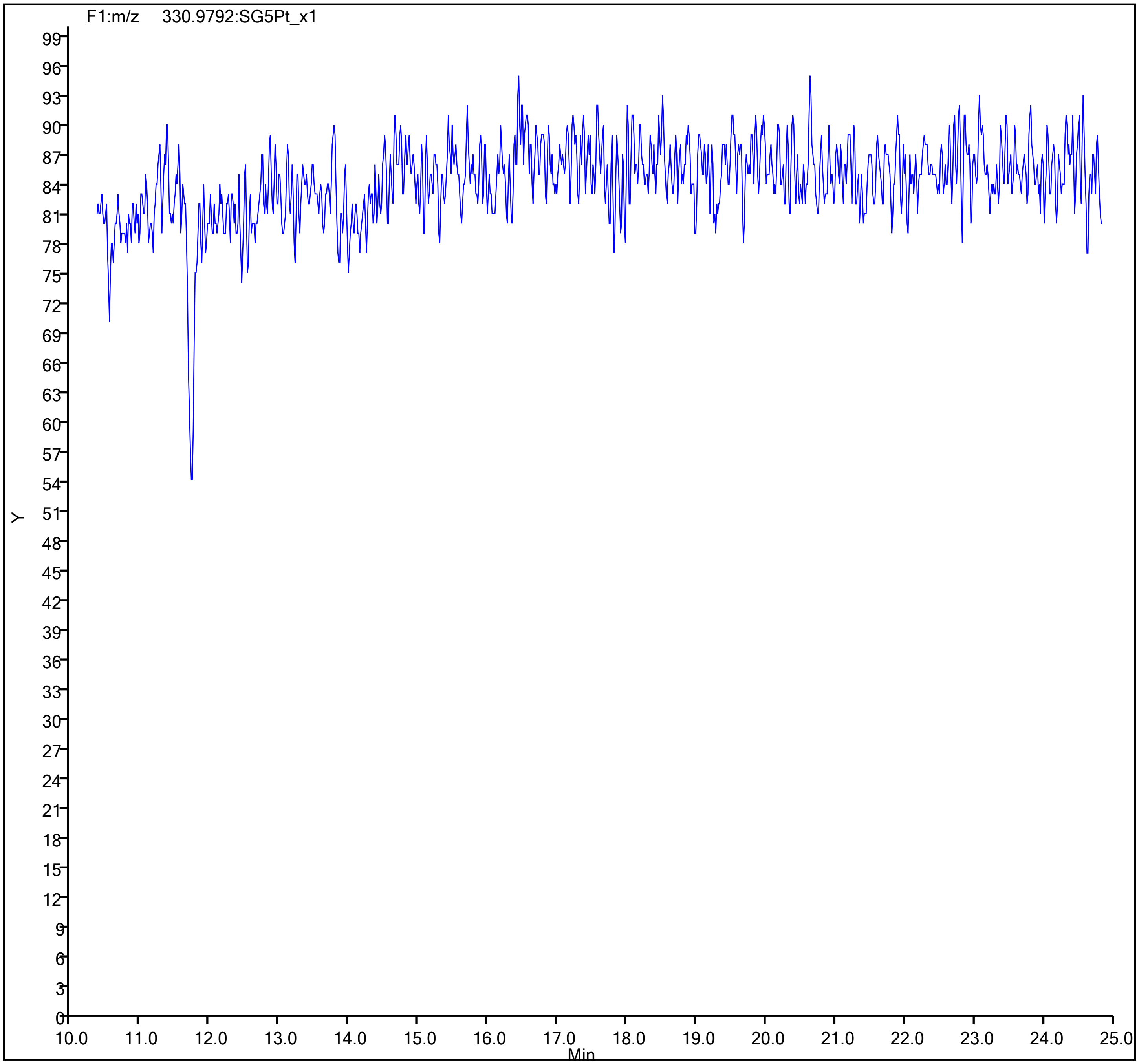

Report Date: 06-Oct-2021 16:06:27 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	06-Oct-2021 13:34:32	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC L6 HRDXNL6_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:06:27	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				

First Level Reviewer: bennettd Date: 06-Oct-2021 16:04:33

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.175	83411367	0.77	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.478	83279819	0.77	0.9820	101.7	101.7	0.3308	0.3308	102	
2,3,7,8-TCDF	17.505	158754954	0.79	0.9474	201.2	201.2	0.3804	0.3804	101	
D 13C-2,3,7,8-TCDD	15.955	62274355	0.74	0.7189	103.8	103.8	0.4777	0.4777	104	
2,3,7,8-TCDD	15.983	120595407	0.79	0.9807	197.5	197.5	0.3907	0.3907	98.73	
$ 37Cl4-2,3,7,8-TCDD	15.983	122729925		0.7344	200.3	200.3	0.1136	0.1136	100	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00030 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:06:27 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 06-Oct-2021 13:34:32 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC L6 HRDXNL6_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:06:27 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd Date: 06-Oct-2021 16:04:33

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.175	16.176	0		36373806	7789019	12843	32107	606		
333.9339	16.175	16.176	0		47037561	10002819	11598	28995	862	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.478	17.479	0	1.081	36257748	6505910	9790	24475	665		
317.9389	17.478	17.479	0	1.081	47022071	8413585	13332	33330	631	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.505	17.509	0	1.002	70126378	12658595	8793	21982	1440		
305.8987	17.505	17.509	0	1.002	88628576	16312218	12712	31780	1283	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.955	15.959	0	0.986	26423519	5948802	12843	32107	463		
333.9339	15.955	15.959	0	0.986	35850836	7971290	11598	28995	687	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.983	15.984	0	1.002	53237317	11347658	12838	32095	884		
321.8936	15.983	15.984	0	1.002	67358090	14252092	8495	21237	1678	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.983	15.986	0	0.988	122729925	26068700	5940	14850	4389		

QC Flag Legend
Processing Flags

Reagents:
HRDXNL6_00030 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:06:27 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d		
Injection Date:	06-Oct-2021 13:34:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

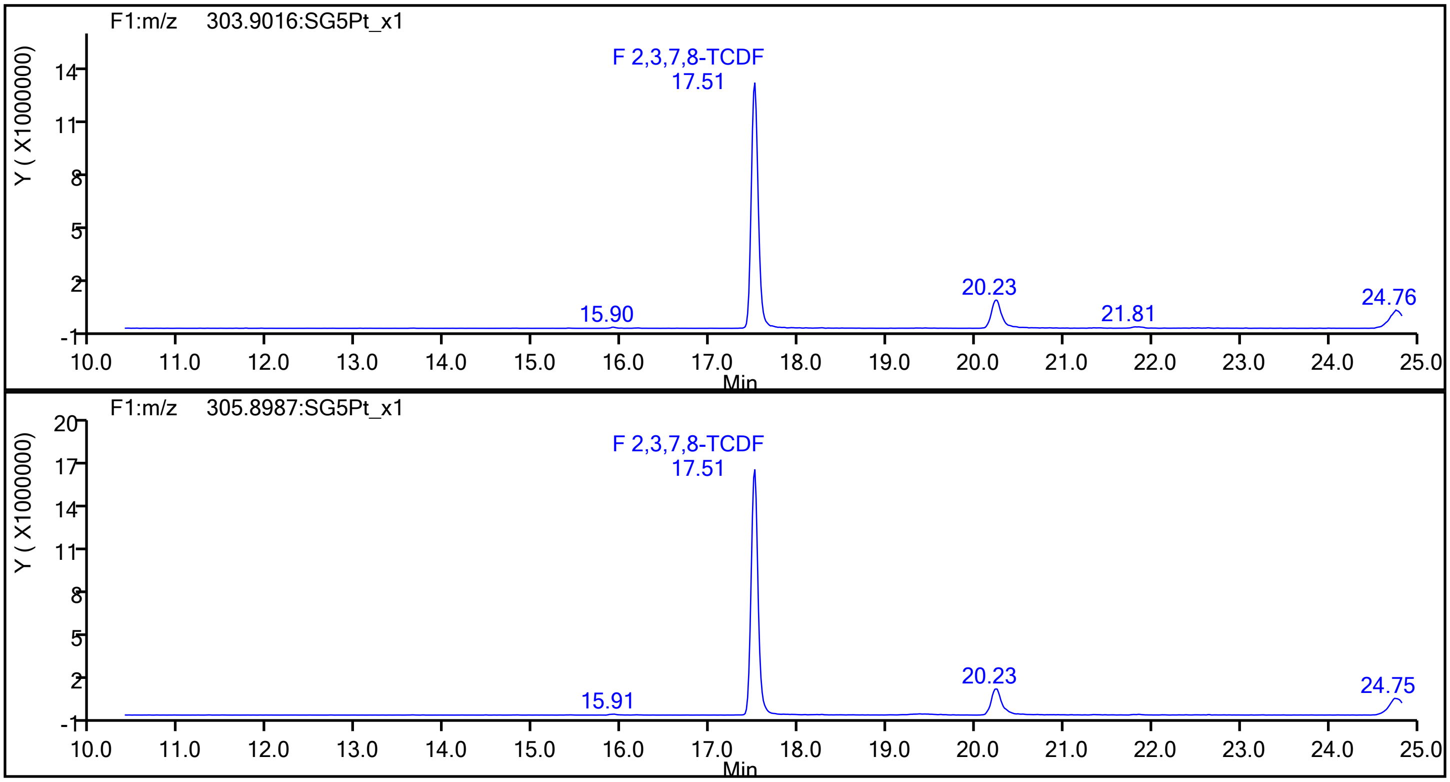

TCDF Standards

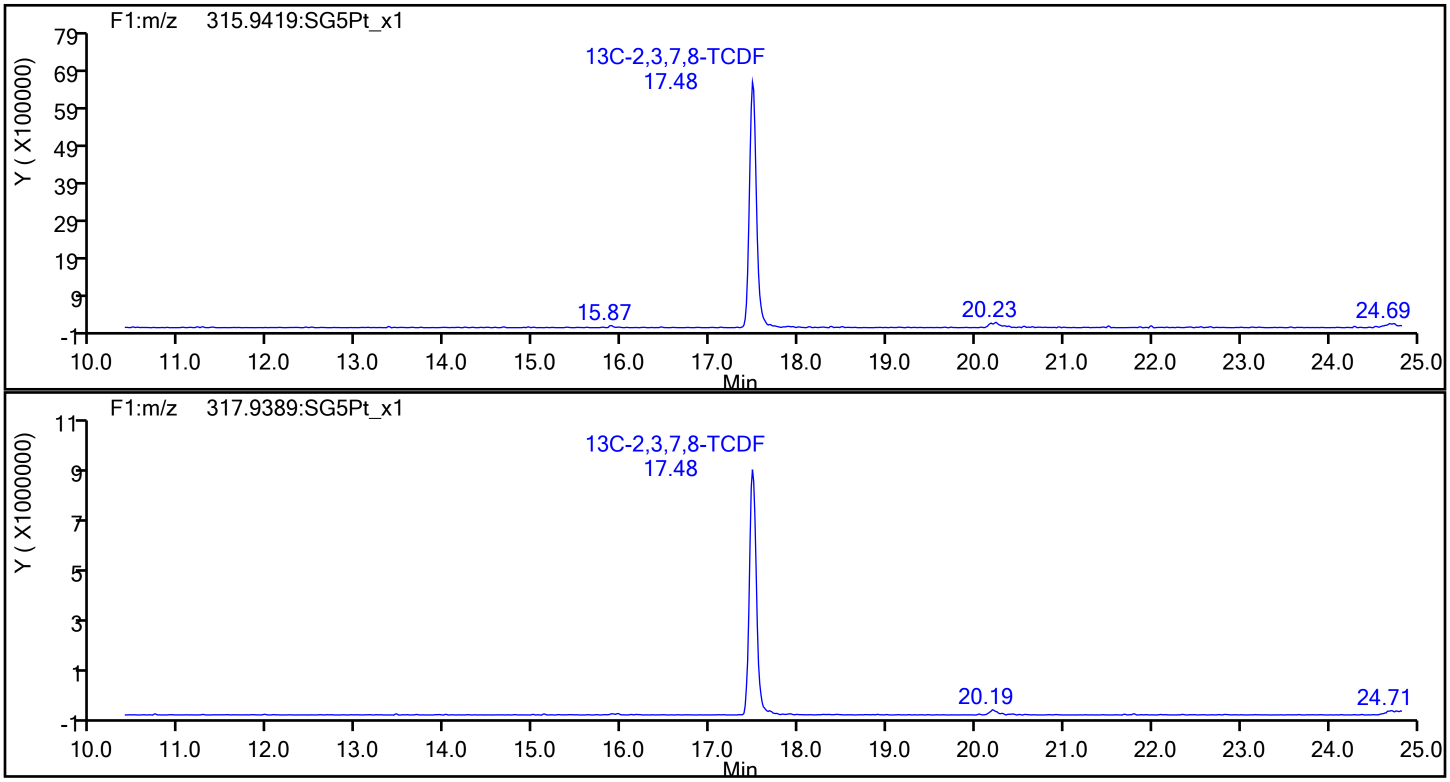

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d		
Injection Date:	06-Oct-2021 13:34:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

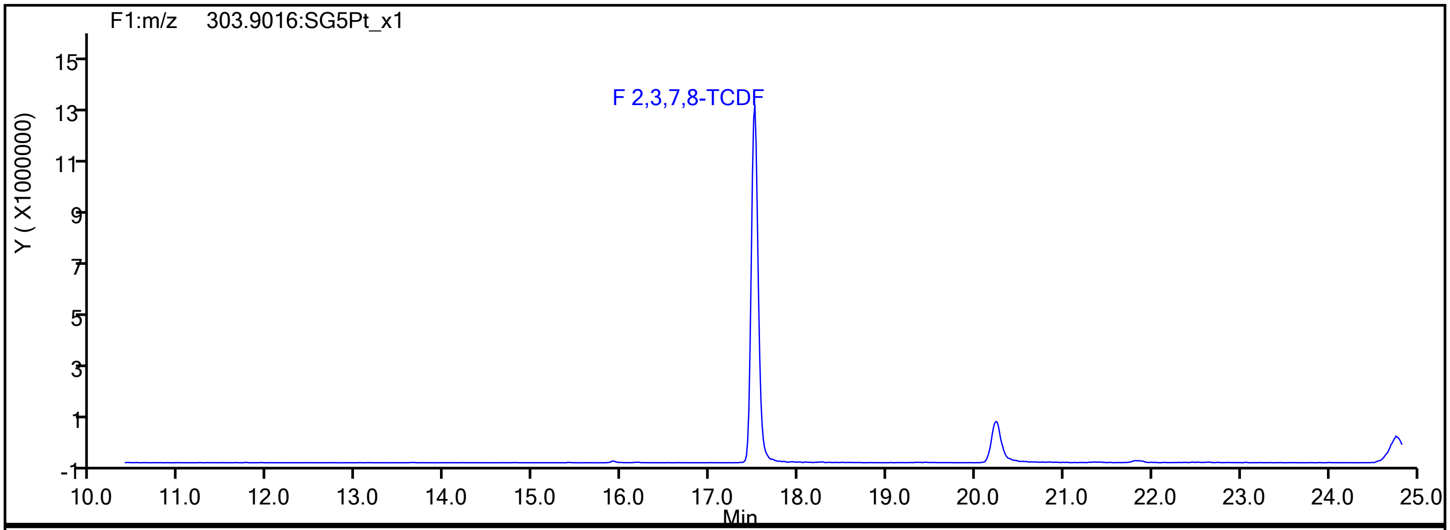

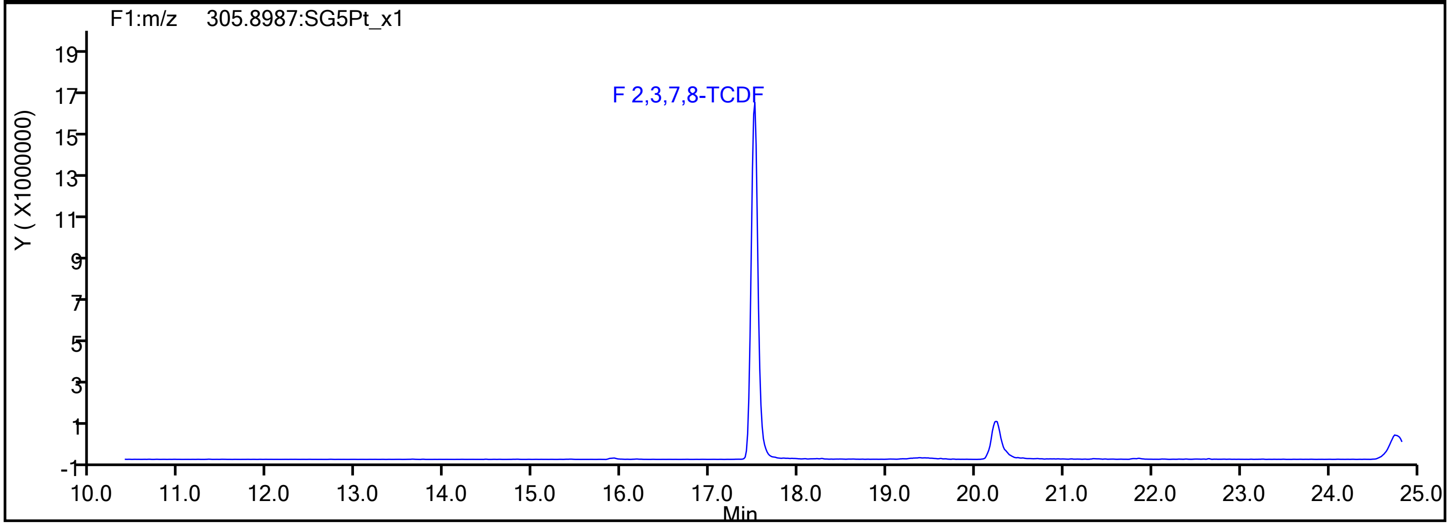

TCDF Interference Mass

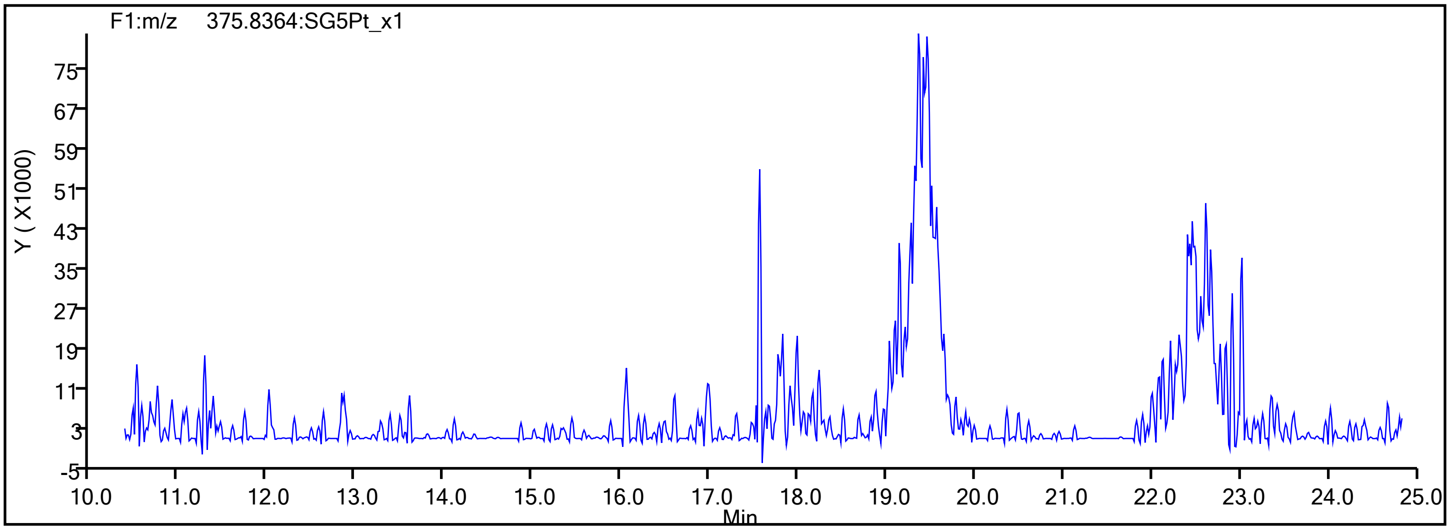

Report Date: 06-Oct-2021 16:06:27 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d		
Injection Date:	06-Oct-2021 13:34:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

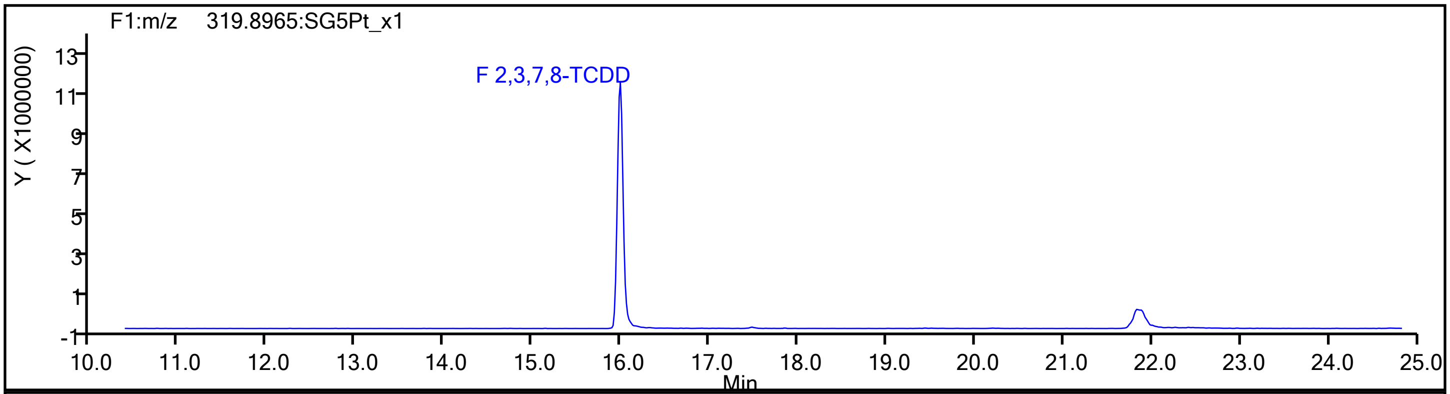

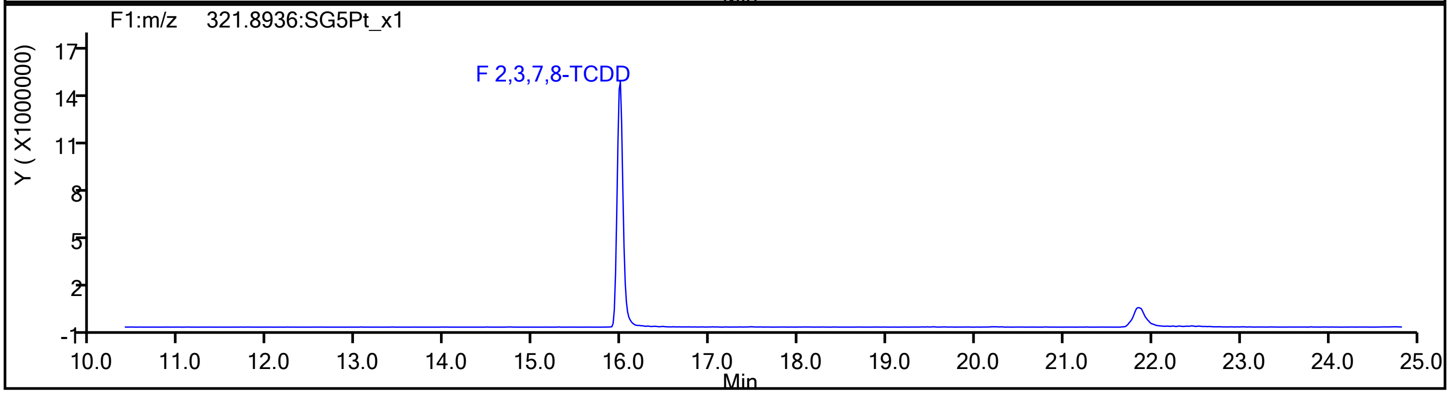

TCDD Standards

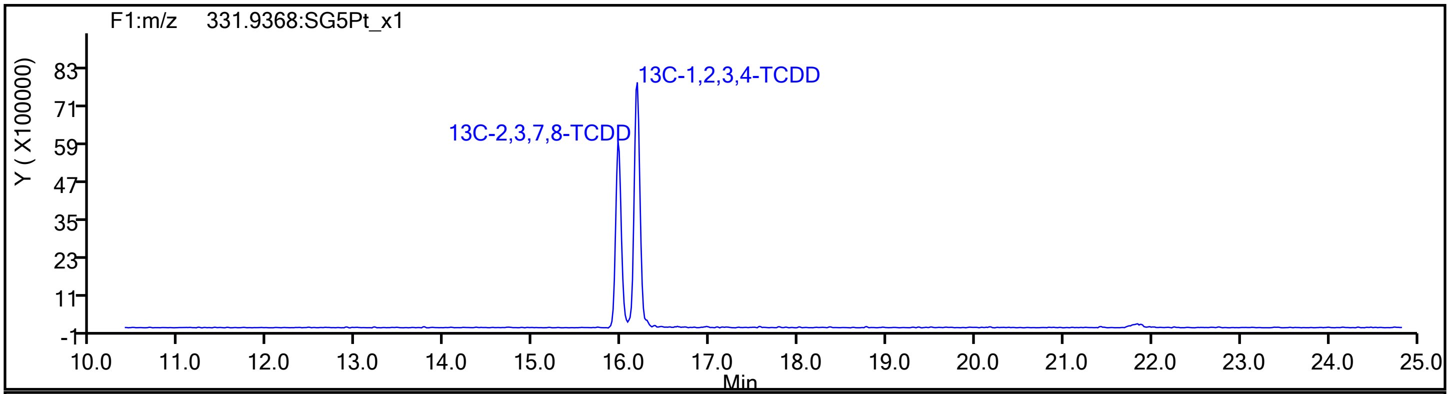

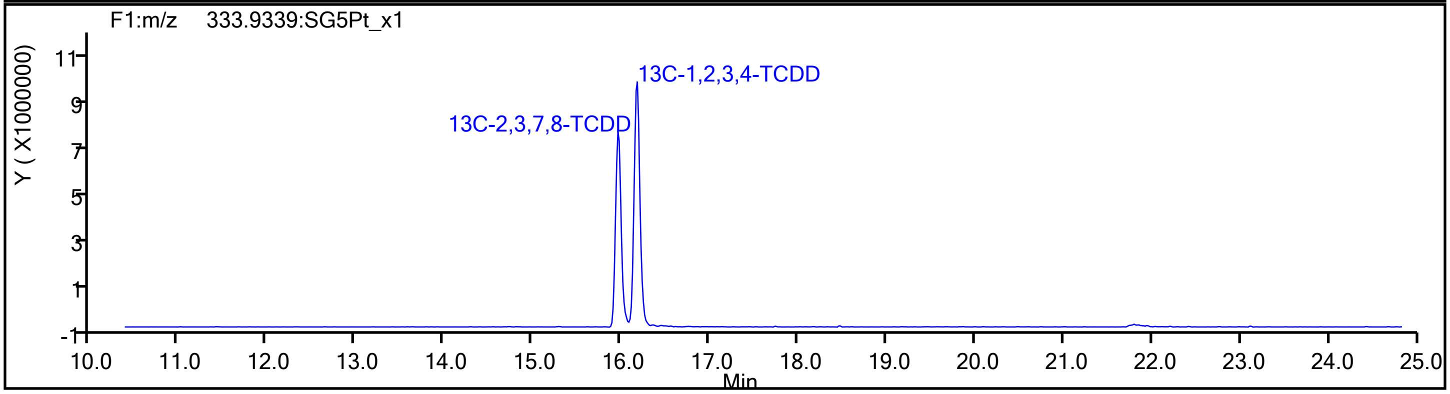

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Injection Date:	06-Oct-2021 13:34:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

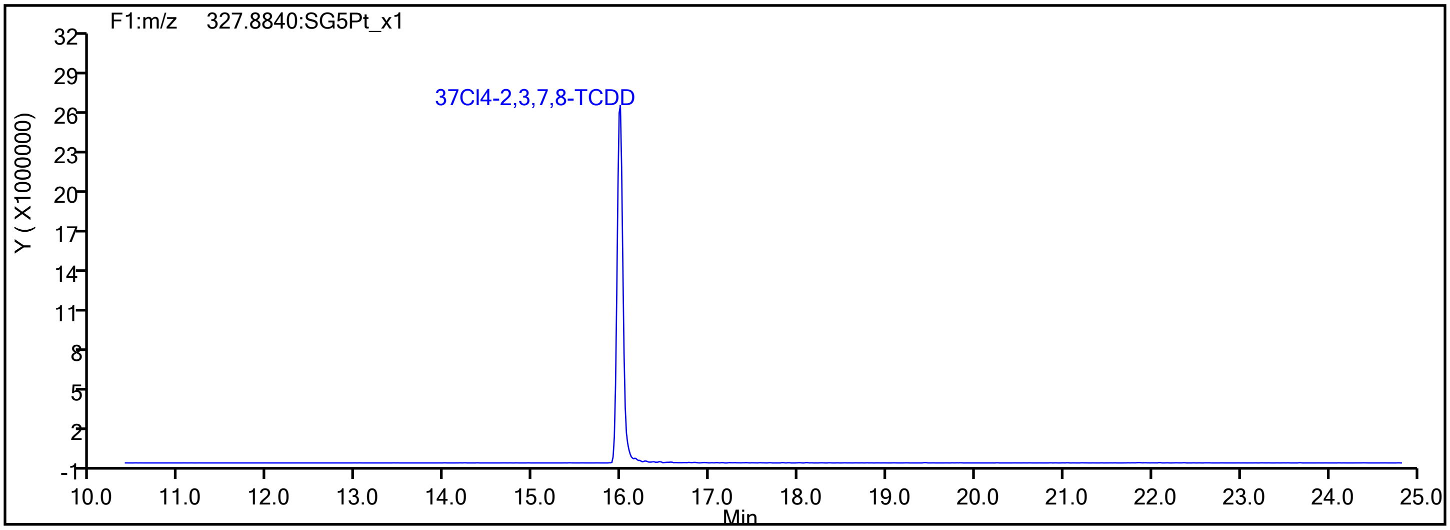

37Cl4-TCDD Standards

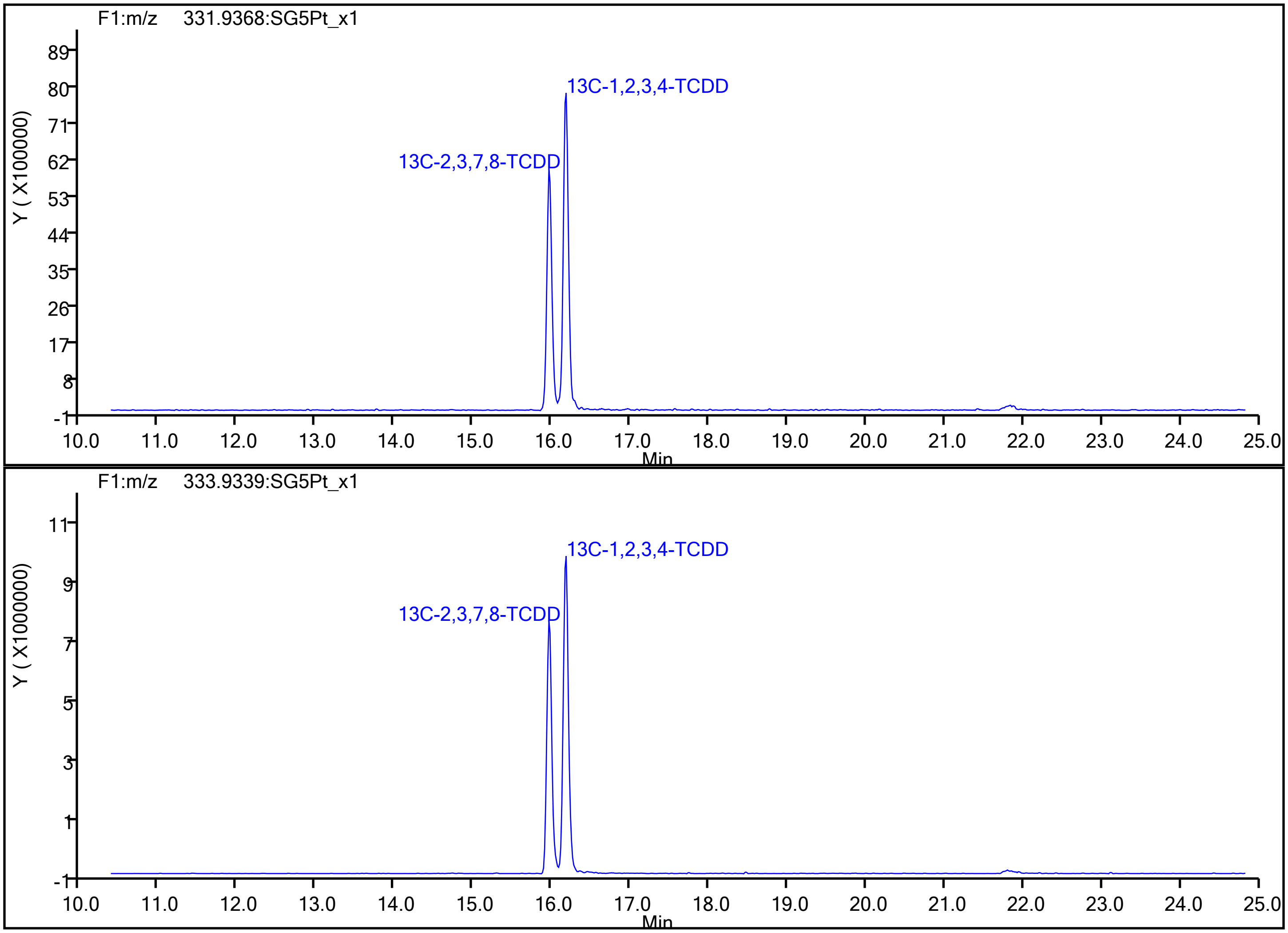

Report Date: 06-Oct-2021 16:06:27 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d		
Injection Date:	06-Oct-2021 13:34:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

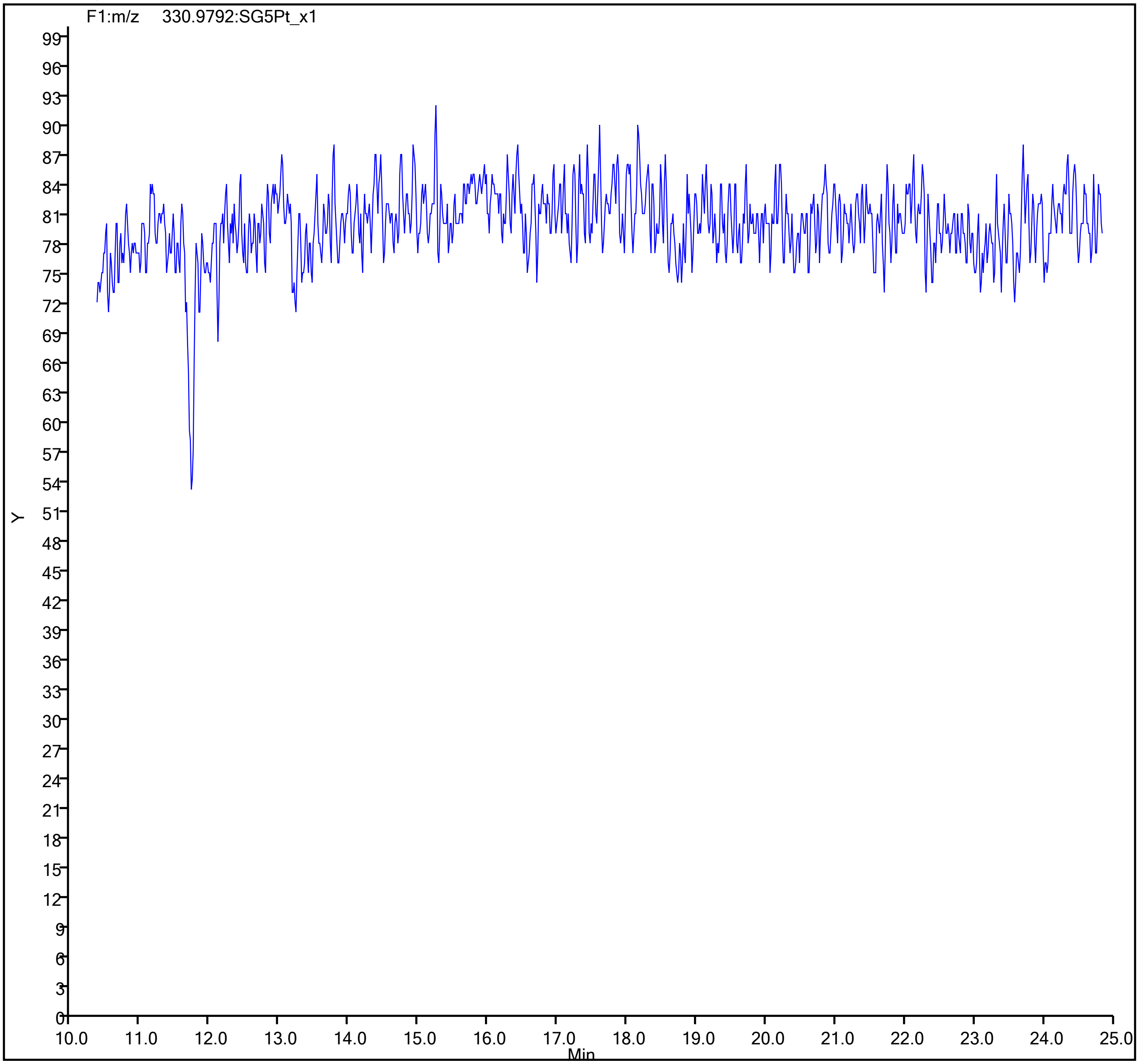

Curve Type: Average
Weighting: Conc_Sq
Origin: Force
Dependency: Response
Calib Mode: IsoDil
Response Base: AREA
RF Rounding: 0

Curve Coefficients

Intercept:	0
Slope:	0.9807

Error Coefficients

Standard Error:	61400000
Relative Standard Error:	5.1
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-531494/3	0.5	0.528528	100.0	54850042.0	1.057057	Y
2	IC 320-531494/4	2.0	1.979595	100.0	59300855.0	0.989798	Y
3	IC 320-531494/5	10.0	9.203948	100.0	32436104.0	0.920395	Y
4	IC 320-531494/6	40.0	38.71325	100.0	58459323.0	0.967831	Y
5	IC 320-531494/7	200.0	193.651796	100.0	62274355.0	0.968259	Y

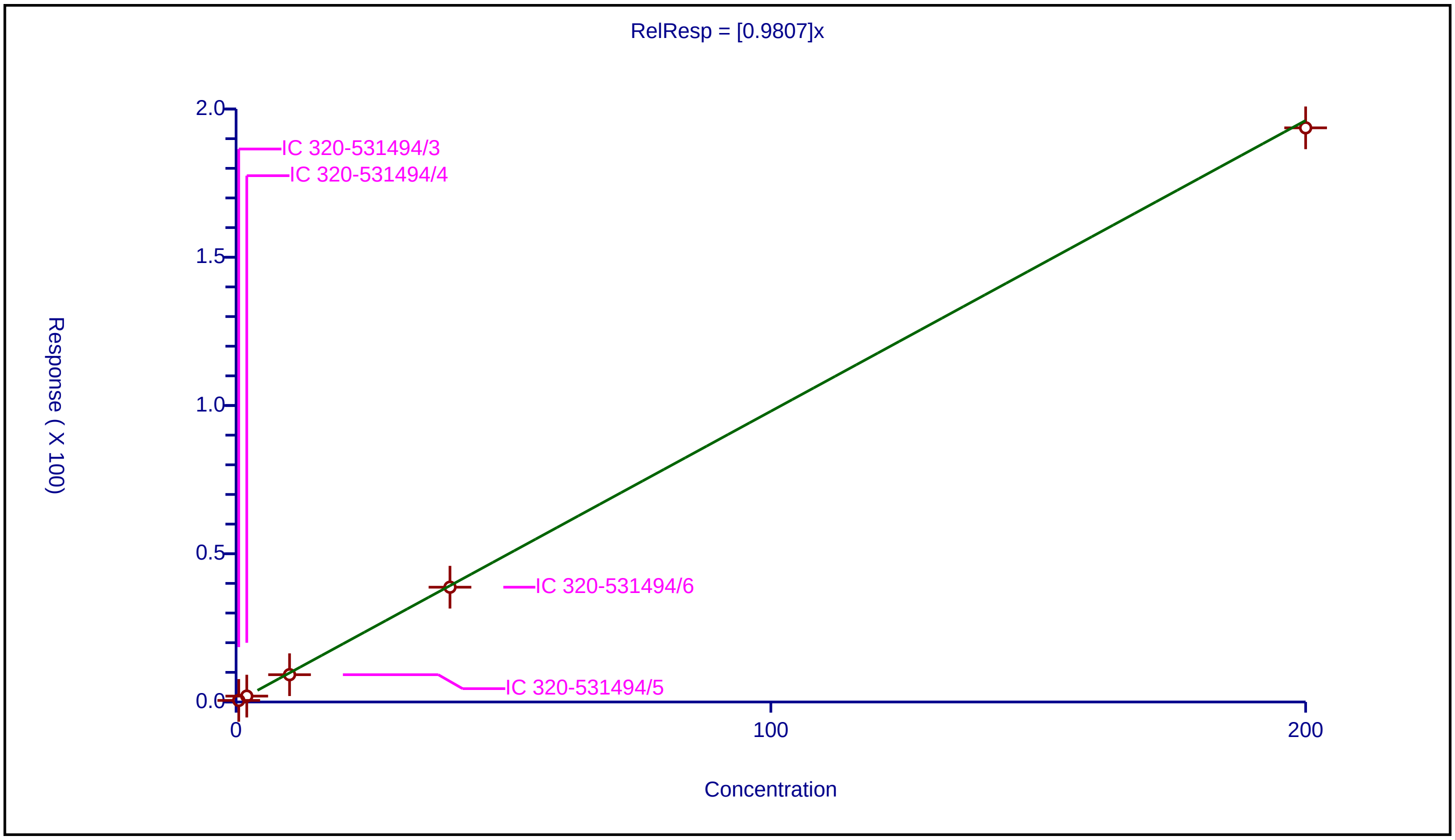

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9474

Error Coefficients

Standard Error:	80800000
Relative Standard Error:	5.9
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-531494/3	0.5	0.498642	100.0	77001605.0	0.997283	Y
2	IC 320-531494/4	2.0	1.98836	100.0	79404846.0	0.99418	Y
3	IC 320-531494/5	10.0	8.597292	100.0	44254925.0	0.859729	Y
4	IC 320-531494/6	40.0	37.297014	100.0	81120529.0	0.932425	Y
5	IC 320-531494/7	200.0	190.628361	100.0	83279819.0	0.953142	Y

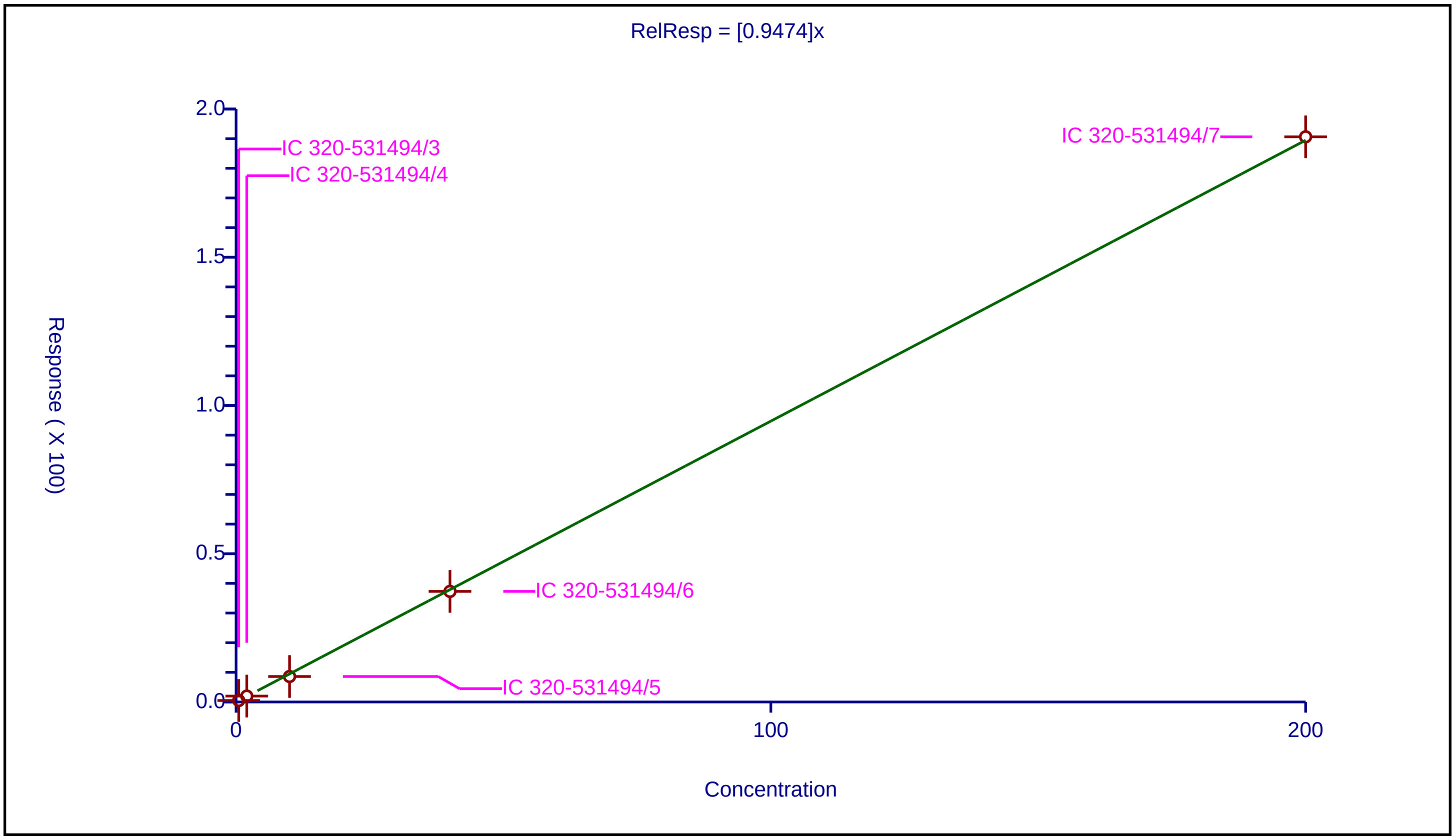

Calibration

/ 37Cl4-2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.7344

Error Coefficients

Standard Error:	62400000
Relative Standard Error:	9.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-531494/3	0.5	0.413851	100.0	77926263.0	0.827703	Y
2	IC 320-531494/4	2.0	1.308113	100.0	81565100.0	0.654057	Y
3	IC 320-531494/5	10.0	7.797732	100.0	46287496.0	0.779773	Y
4	IC 320-531494/6	40.0	26.99762	100.0	81610075.0	0.674941	Y
5	IC 320-531494/7	200.0	147.138129	100.0	83411367.0	0.735691	Y

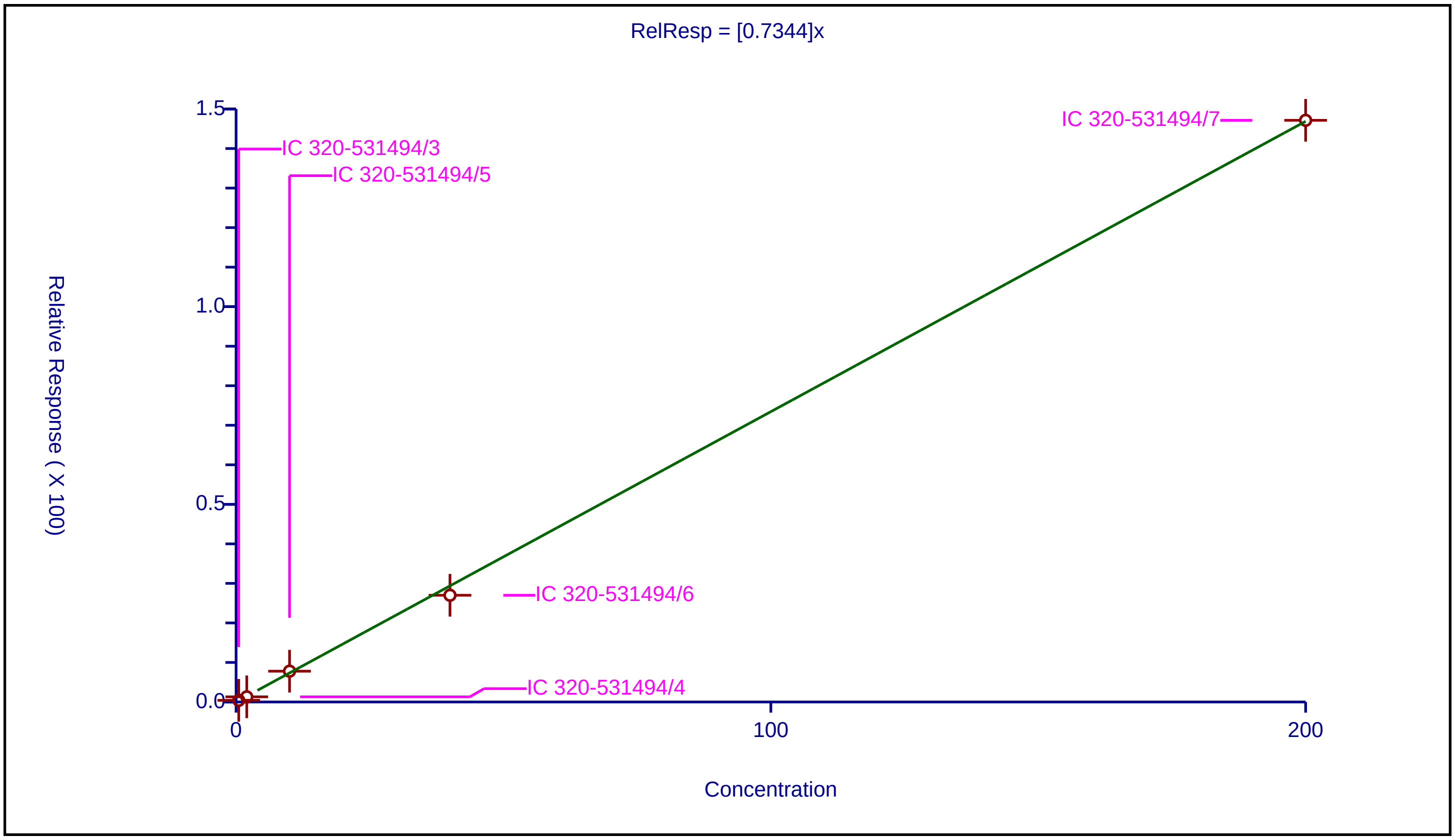

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 528108

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/24/2021 13:55 Calibration End Date: 09/24/2021 17:07 Calibration ID: 57229

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-528108/4	24se21dfs1_5.d
Level 2	IC 320-528108/5	24se21dfs1_6.d
Level 3	IC 320-528108/6	24se21dfs1_7.d
Level 4	IC 320-528108/7	24se21dfs1_8.d
Level 5	IC 320-528108/8	24se21dfs1_9.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.1844	1.1880	1.0371	1.1387	1.0490	AveID		1.1194				6.5		20.0			
2,3,7,8-TCDD	1.1542	1.1631	1.0139	1.1099	1.0303	AveID		1.0943				6.3		20.0			
1,2,3,7,8-PeCDF	1.1239	1.1703	1.0079	1.0531	1.1046	AveID		1.0920				5.8		20.0			
2,3,4,7,8-PeCDF	0.8953	0.9220	0.8091	0.8556	0.8940	AveID		0.8752				5.0		20.0			
1,2,3,7,8-PeCDD	1.0954	1.1335	0.9962	1.0407	1.0313	AveID		1.0594				5.2		20.0			
1,2,3,4,7,8-HxCDF	1.0024	1.0159	0.8791	0.9299	1.0411	AveID		0.9737				6.9		20.0			
1,2,3,6,7,8-HxCDF	1.2486	1.2723	1.1112	1.1688	1.2993	AveID		1.2201				6.4		20.0			
2,3,4,6,7,8-HxCDF	1.2707	1.2986	1.1335	1.1782	1.3367	AveID		1.2435				6.8		20.0			
1,2,3,4,7,8-HxCDD	0.9659	0.9254	0.8370	0.8797	0.9346	AveID		0.9085				5.6		20.0			
1,2,3,6,7,8-HxCDD	1.0647	1.1013	0.9466	0.9799	1.0467	AveID		1.0279				6.2		20.0			
1,2,3,7,8,9-HxCDD	1.0824	1.0540	0.9436	0.9754	1.0786	AveID		1.0268				6.2		20.0			
1,2,3,7,8,9-HxCDF	1.2857	1.2970	1.1250	1.1795	1.3398	AveID		1.2454				7.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.5915	1.7073	1.4080	1.5072	1.7114	AveID		1.5851				8.2		20.0			
1,2,3,4,6,7,8-HpCDD	1.1182	1.1532	0.9995	1.0333	1.1055	AveID		1.0819				5.9		20.0			
1,2,3,4,7,8,9-HpCDF	1.2043	1.1974	1.0496	1.1102	1.2368	AveID		1.1597				6.7		20.0			
OCDD	1.1626	1.1940	1.0214	1.0748	1.2191	AveID		1.1344				7.4		20.0			
OCDF	1.4781	1.5018	1.3379	1.4264	1.8031	AveID		1.5094				11.6		20.0			
13C-2,3,7,8-TCDF	1.1953	1.1848	1.2322	1.2387	1.2709	Ave		1.2244				2.8		35.0			
13C-2,3,7,8-TCDD	0.8029	0.8015	0.8217	0.8265	0.8521	Ave		0.8210				2.5		35.0			
13C-1,2,3,7,8-PeCDF	1.0625	1.0438	1.0980	1.1122	1.1967	Ave		1.1026				5.4		35.0			
13C-2,3,4,7,8-PeCDF	1.2860	1.2690	1.3513	1.3540	1.4667	Ave		1.3454				5.8		35.0			
13C-1,2,3,7,8-PeCDD	0.6741	0.6650	0.6918	0.7050	0.7575	Ave		0.6987				5.2		35.0			
13C-1,2,3,4,7,8-HxCDF	1.0824	1.1473	1.1022	1.1728	1.1425	Ave		1.1295				3.2		35.0			
13C-1,2,3,6,7,8-HxCDF	1.0354	1.1043	1.0270	1.0924	1.0476	Ave		1.0613				3.3		35.0			
13C-2,3,4,6,7,8-HxCDF	0.9342	0.9561	0.9280	0.9748	0.9471	Ave		0.9480				2.0		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8208	0.8563	0.8169	0.8404	0.8216	Ave		0.8312				2.0		35.0			
13C-1,2,3,6,7,8-HxCDD	0.7395	0.7704	0.7392	0.7776	0.7481	Ave		0.7550				2.4		35.0			
13C-1,2,3,7,8,9-HxCDF	0.8456	0.8040	0.8580	0.8598	0.8958	Ave		0.8526				3.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 528108

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/24/2021 13:55 Calibration End Date: 09/24/2021 17:07 Calibration ID: 57229

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C-1,2,3,4,6,7,8-HpCDF	0.6147	0.5980	0.6219	0.6263	0.6341	Ave		0.6190				2.2		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.5310	0.5106	0.5422	0.5397	0.5574	Ave		0.5362				3.2		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.6366	0.5885	0.6807	0.6488	0.7037	Ave		0.6516				6.8		35.0			
13C-OCDD	0.3708	0.3077	0.4078	0.3735	0.4411	Ave		0.3802				13.1		35.0			
37Cl4-2,3,7,8-TCDD	0.8237	0.8390	0.9201	0.8797	0.8663	Ave		0.8658				4.3					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 528108

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/24/2021 13:55 Calibration End Date: 09/24/2021 17:07 Calibration ID: 57229

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-528108/4	24se21dfs1_5.d
Level 2	IC 320-528108/5	24se21dfs1_6.d
Level 3	IC 320-528108/6	24se21dfs1_7.d
Level 4	IC 320-528108/7	24se21dfs1_8.d
Level 5	IC 320-528108/8	24se21dfs1_9.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	121968	485601	2228526	9410223	45301306	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	79840	321616	1452889	6119842	29833225	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	514397	2107235	9648424	39070203	224591956	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	495971	2018304	9532264	38643819	222789374	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	318120	1300307	6008461	24475212	132740314	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	460870	1816904	8890110	36673716	236854508	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	549117	2190191	10471010	42935544	271050866	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	504229	1935478	9649955	38623837	252099309	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	336760	1235343	6273171	24861298	152902170	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	334433	1322578	6419648	25626461	155916515	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	358667	1336333	6735651	26538127	168570347	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	461754	1625529	8856436	34105399	239003645	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	415539	1591688	8034061	31746298	216089136	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	252171	917963	4971728	18754590	122709391	2.50	10.0	50.0	200	1000

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 528108

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/24/2021 13:55 Calibration End Date: 09/24/2021 17:07 Calibration ID: 57229

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
1,2,3,4,7,8,9-HpCDF		AveID	325652	1098427	6554662	24224058	173303287	2.50	10.0	50.0	200	1000
OCDD		AveID	366195	1145552	7642737	26999258	214177640	5.00	20.0	100	400	2000
OCDF		AveID	465542	1440828	10010706	35831794	316765766	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCDD	Ave	20596575	20437364	21487623	20659561	21593614	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCDD	Ave	13835121	13826062	14329259	13784993	14477445	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCDD	Ave	18307019	18005950	19146052	18549570	20333017	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTCDD	Ave	22159006	21889488	23563927	22582343	24919348	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCDD	Ave	11616054	11471690	12063083	11758785	12870820	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHxCD	Ave	18390142	17885091	20225184	19719695	22750843	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHxCD	Ave	17590761	17214674	18845511	18367884	20861110	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHxCD	Ave	15872346	14904500	17027465	16390446	18859777	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHxCD	Ave	13945479	13348929	14990207	14130869	16359900	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHxCD	Ave	12564416	12008945	13563584	13075432	14896294	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHxCD	Ave	14365871	12533090	15744381	14457299	17838715	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHxCD	Ave	10444284	9322764	11412402	10531395	12626397	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHxCD	Ave	9020994	7960279	9948237	9074703	11100268	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHxCD	Ave	10816131	9173650	12489528	10909301	14011940	100	100	100	100	100
13C-OCDD	13CHxCD	Ave	12598776	9594270	14965098	12560439	17567983	200	200	200	200	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1 Analy Batch No.: 528108

SDG No.:

Instrument ID: DFS 1 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/24/2021 13:55 Calibration End Date: 09/24/2021 17:07 Calibration ID: 57229

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
37Cl4-2,3,7,8-TCDD	13CT CDD	Ave	70964	289464	1604465	5868610	29438147	0.500	2.00	10.0	40.0	200

Curve Type Legend

Ave = Average ISTD

AveID = Average isotope dilution

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	24SE21DFS1_1	Resolution Check	RC 092421	46			KSS	1.000	
2	24SE21DFS1_2	WDM HRDXNCP_00044	WDM 092421	1	Dioxin		KSS	1.000	
3	24SE21DFS1_3	QC CS-4 HRDXNL4_00102	QC CCV 092421	47	Dioxin		KSS	1.000	
4	24SE21DFS1_4	SB Solvent Blank C14	SB 092421	3	Dioxin		KSS	1.000	
5	24SE21DFS1_5	IC CS2_HRDXNL2_00033	IC CS2_HRDXNL2_00033	4	DXN/ICAL	ICAL	KSS	1.000	
6	24SE21DFS1_6	IC CS3_HRDXNL3_00030	IC CS3_HRDXNL3_00030	5	DXN/ICAL		KSS	1.000	
7	24SE21DFS1_7	IC CS4_HRDXNL4_00102	IC CS4_HRDXNL4_00102	2	DXN/ICAL		KSS	1.000	
8	24SE21DFS1_8	IC CS5_HRDXNL5_00033	IC CS5_HRDXNL5_00033	6	DXN/ICAL		KSS	1.000	
9	24SE21DFS1_9	IC CS6_HRDXNL6_00030	IC CS6_HRDXNL6_00030	7	DXN/ICAL		KSS	1.000	
10	24SE21DFS1_10	SB Solvent Blank C14	SB 092421A	3	Dioxin		KSS	1.000	
11	24SE21DFS1_11	Resolution Check	RC 092421A	46			KSS	1.000	
12	24SE21DFS1_12	ICV HRDXNIC_00048	ICV HRDXNIC_00048	8	DXN/ICAL		KSS	2.000	
13	24SE21DFS1_13	Resolution Check	RC 092421B	46			KSS	1.000	
14	24SE21DFS1_14	WDM HRDXNCP_00044	WDM 092421A	1	Dioxin		KSS	1.000	
15	24SE21DFS1_15	CCV CS-4 HRDXNL4_00102	CCV 092421A	2	Dioxin		KSS	1.000	
16	24SE21DFS1_16	SB Solvent Blank C14	SB 092421B	3	Dioxin		KSS	1.000	
17	24SE21DFS1_17	mb 320-509359/1-a	mb 320-509359/1-a	9	8290/Water	105	KSS	2.000	L
18	24SE21DFS1_18	320-75726-a-18-a mdlv (1)	320-75726-a-18-a mdlv	10	8290/Water		KSS	2.000	L
19	24SE21DFS1_19	320-75726-a-19-a mdlv (2)	320-75726-a-19-a mdlv	11	8290/Water		KSS	2.000	L
20	24SE21DFS1_20	320-75726-a-20-a mdlv (3)	320-75726-a-20-a mdlv	12	8290/Water		KSS	2.000	L
21	24SE21DFS1_21	320-75726-a-21-a mdlv (4)	320-75726-a-21-a mdlv	13	8290/Water		KSS	2.000	L
22	24SE21DFS1_22	320-75726-a-22-a loqv (5)	320-75726-a-22-a loqv	14	8290/Water		KSS	2.000	L
23	24SE21DFS1_23	320-75726-a-23-a loqv (6)	320-75726-a-23-a loqv	15	8290/Water		KSS	2.000	L
24	24SE21DFS1_24	SB Solvent Blank C14	SB 092421C	3	Dioxin		KSS	1.000	
25	24SE21DFS1_25	CCV CS-4 HRDXNL4_00102	CCV 092421B	2	Dioxin		KSS	1.000	
26	24SE21DFS1_26	Resolution Check	RC 092421C	46			KSS	1.000	
27	24SE21DFS1_27	WDM HRDXNCP_00044	WDM 092421B	1	Dioxin		KSS	1.000	
28	24SE21DFS1_28	CCV CS-4 HRDXNL4_00102	CCV 092421C	2	Dioxin		KSS	1.000	
29	24SE21DFS1_29	SB Solvent Blank C14	SB 092421D	3	Dioxin		KSS	1.000	
30	24SE21DFS1_30	mb 320-507902/1-a	mb 320-507902/1-a	16	8290/Solid	105	KSS	20.000	g
31	24SE21DFS1_31	320-75726-a-24-a mdlv (7)	320-75726-a-24-a mdlv	17	8290/Solid		KSS	20.000	g
32	24SE21DFS1_32	320-75726-a-25-a mdlv (8)	320-75726-a-25-a mdlv	18	8290/Solid		KSS	20.000	g
33	24SE21DFS1_33	320-75726-a-26-a mdlv (9)	320-75726-a-26-a mdlv	19	8290/Solid		KSS	20.000	g
34	24SE21DFS1_34	320-75726-a-27-a loqv (10)	320-75726-a-27-a loqv	20	8290/Solid		KSS	20.000	g
35	24SE21DFS1_35	SB Solvent Blank C14	SB 092421E	3	Dioxin		KSS	1.000	
36	24SE21DFS1_36	CCV CS-4 HRDXNL4_00102	CCV 092421D	2	Dioxin		KSS	1.000	
37	24SE21DFS1_37	Resolution Check	RC 092421D	46			KSS	1.000	

LOGFILE CHECKED
DB 9/24/21

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date:	24 Sep 2021 10:58
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11739 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11242 [5%height]

Ref. mass 318.9787 [m/z] Resolution: 11545 [5%height]

Ref. mass 330.9787 [m/z] Resolution: 11519 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11407 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11302 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11114 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11264 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11084 [5%height]

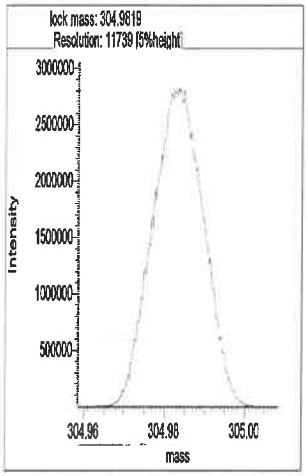

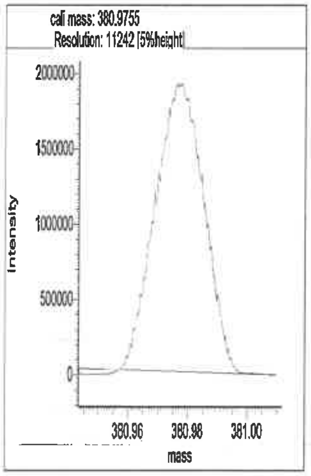

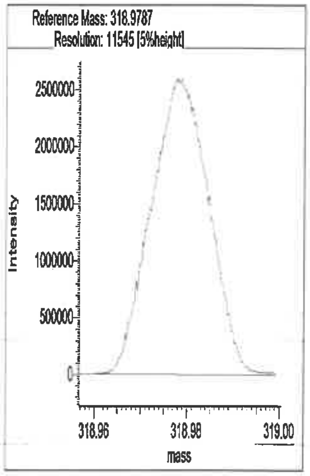

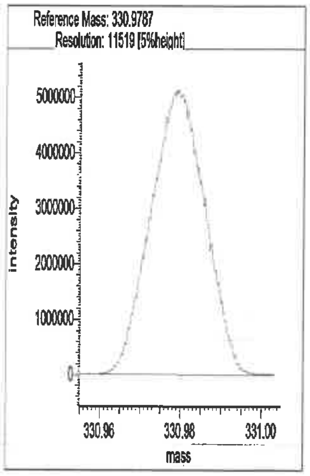

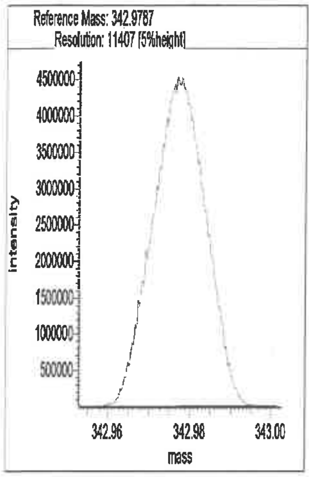

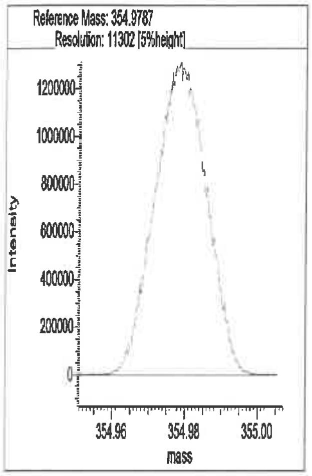

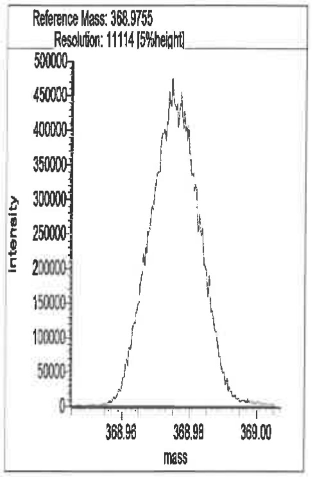

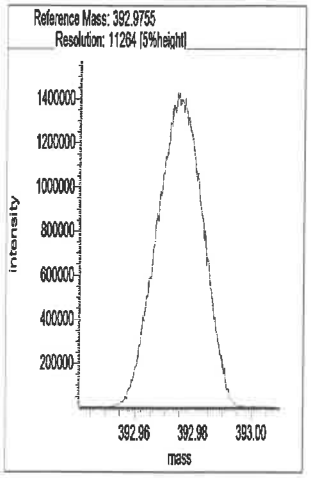

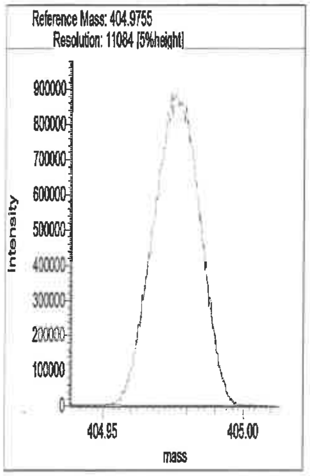

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11720 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11354 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11697 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11510 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11195 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11104 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11168 [5%height]

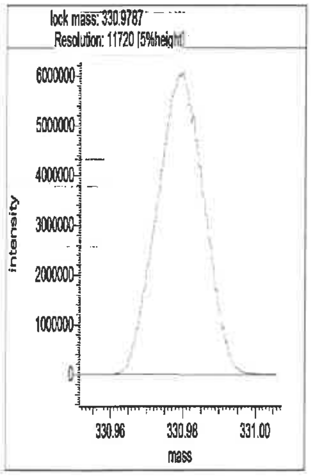

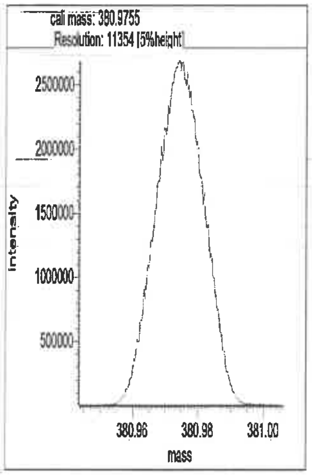

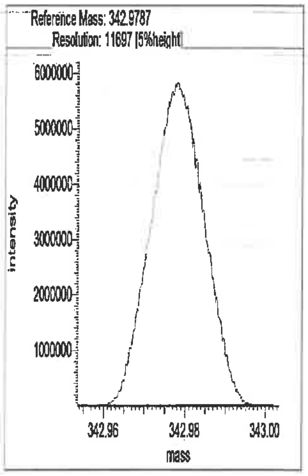

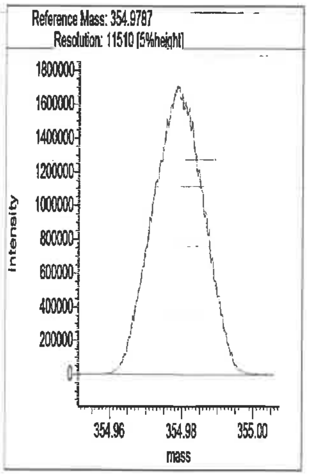

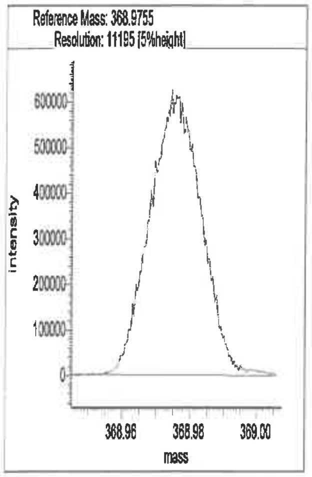

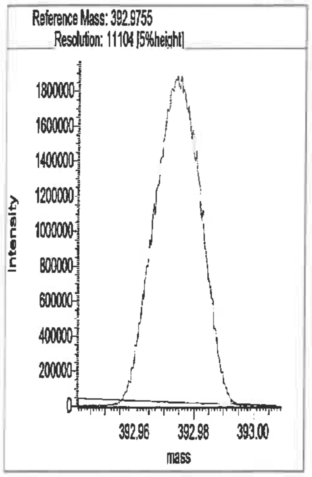

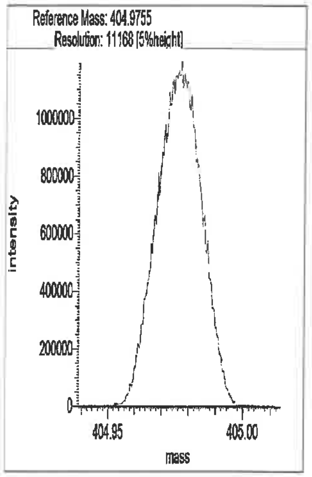

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11741 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11400 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11556 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11548 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11361 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11014 [5%height]

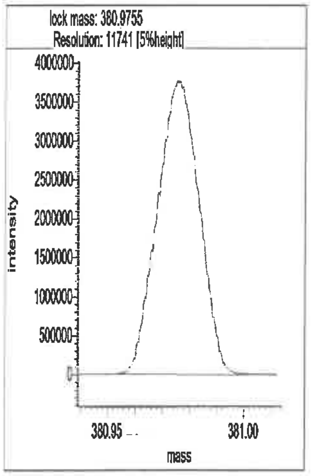

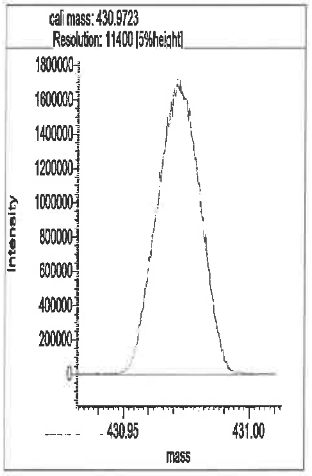

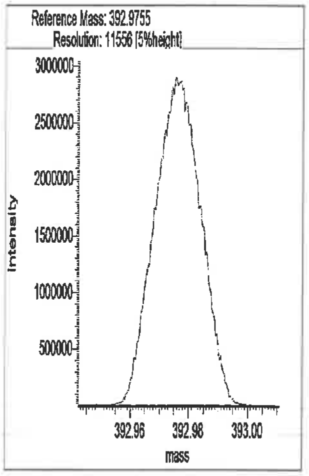

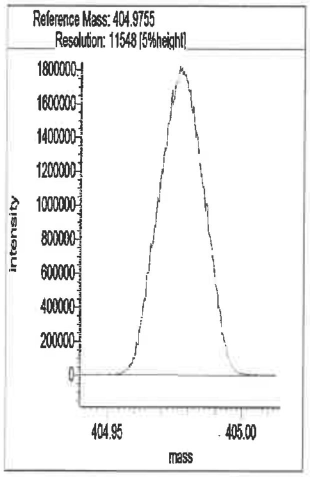

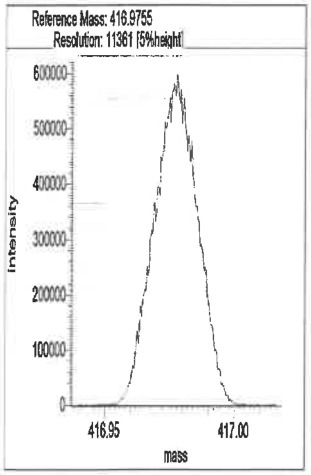

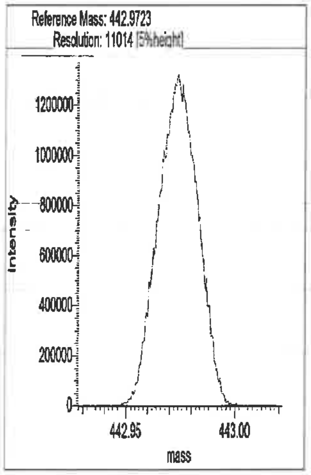

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11641 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11102 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11624 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11464 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11497 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11280 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11312 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11104 [5%height]

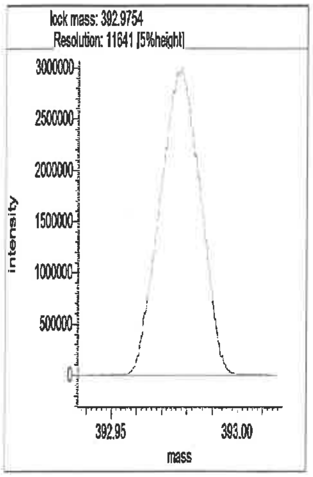

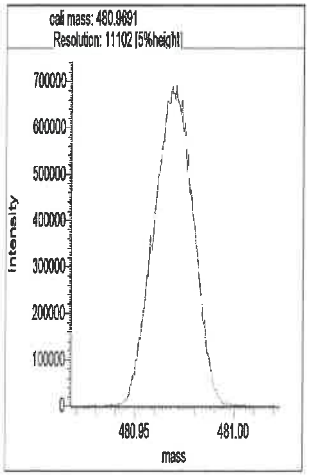

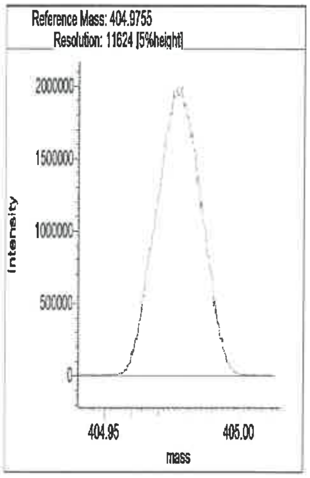

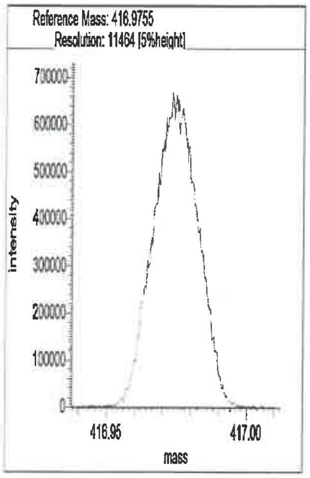

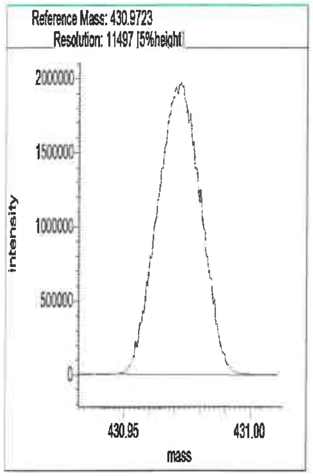

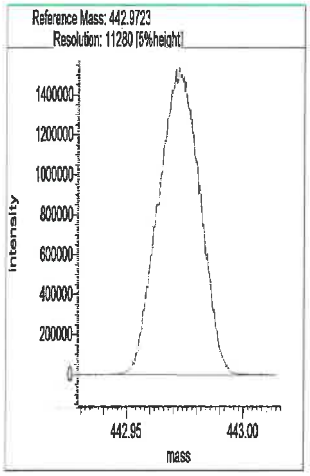

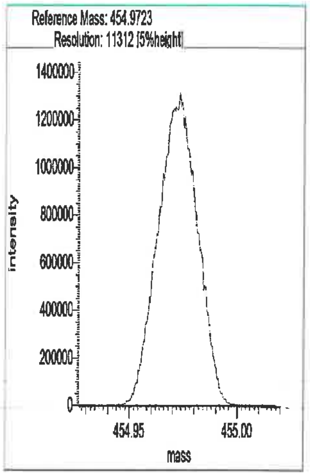

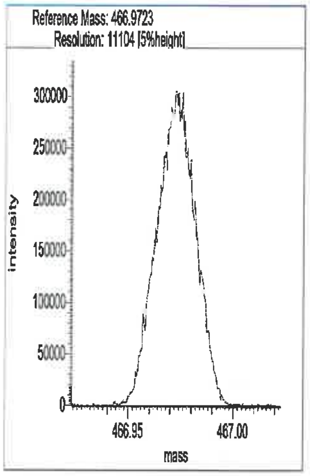

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11750 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11600 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11586 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11679 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11435 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11424 [5%height]

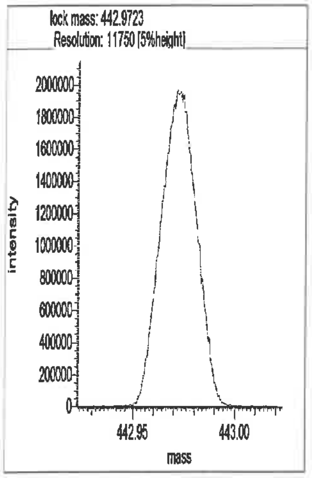
lock mass: 442.9723
Resolution: 11750 [5%height]
intensity
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

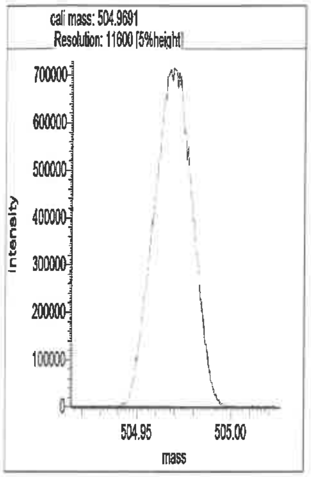
cali mass: 504.9691
Resolution: 11600 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
504.95
505.00
mass

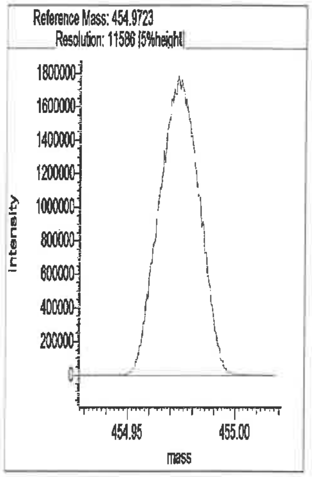
Reference Mass: 454.9723
Resolution: 11586 [5%height]
intensity
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

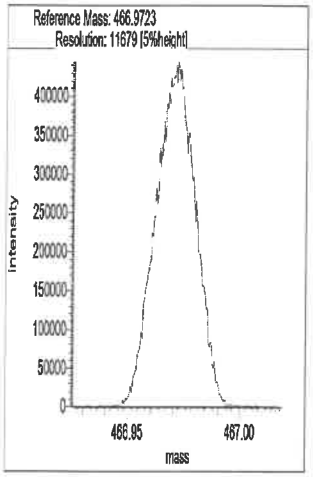
Reference Mass: 466.9723
Resolution: 11679 [5%height]
intensity
400000
350000
300000
250000
200000
150000
100000
50000
0
466.95
467.00
mass

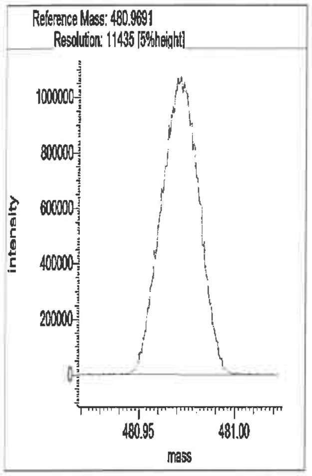
Reference Mass: 480.9691
Resolution: 11435 [5%height]
intensity
1000000
800000
600000
400000
200000
0
480.95
481.00
mass

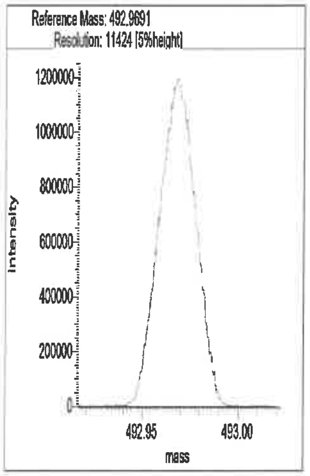
Reference Mass: 492.9691
Resolution: 11424 [5%height]
intensity
1200000
1000000
800000
600000
400000
200000
0
492.95
493.00
mass

From: Hrabak, Robert
Sent: Friday, September 24, 2021 8:01 AM
To: Sacramento - Dioxin Inst
Subject: 9/24 list
Attachments: _2021 HRMS injection priorities.xlsx

Please note the shuffle......

Thanks,
Robert

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date: 24 Sep 2021 18:43
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12448 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11575 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12047 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12229 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12089 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11846 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 9877 [5%height] ✓ OK 9/25/21 KSS
Ref. mass 392.9755 [m/z] Resolution: 11709 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11522 [5%height]

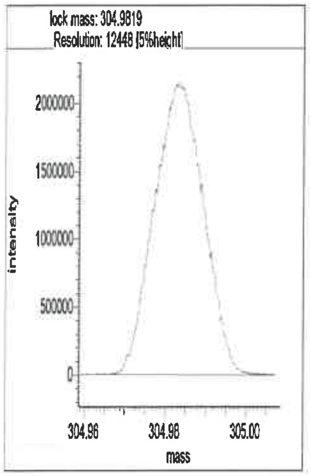

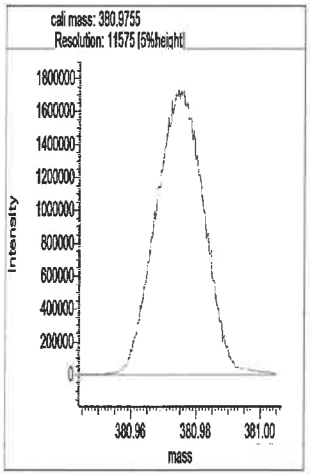

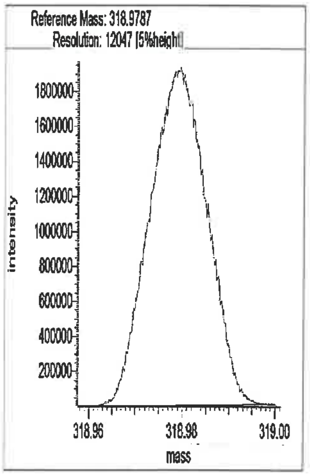

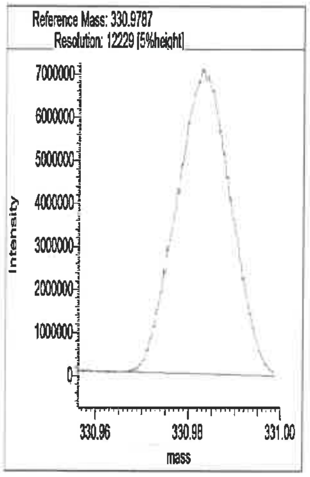

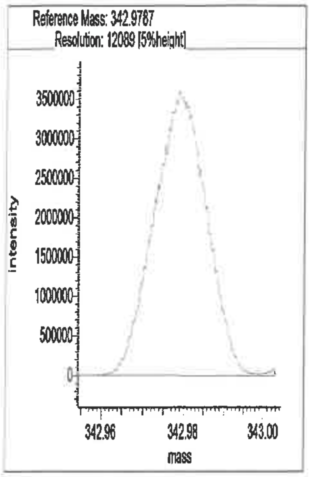

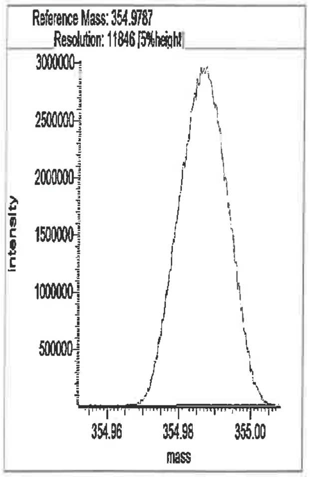

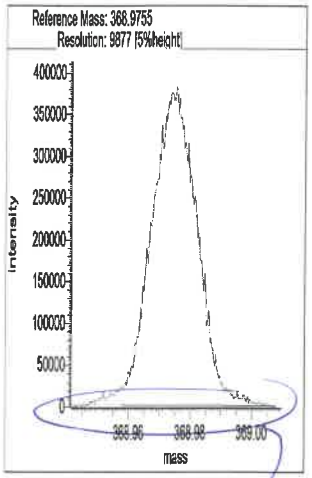

ok 9/25/21 KSS
column bleed

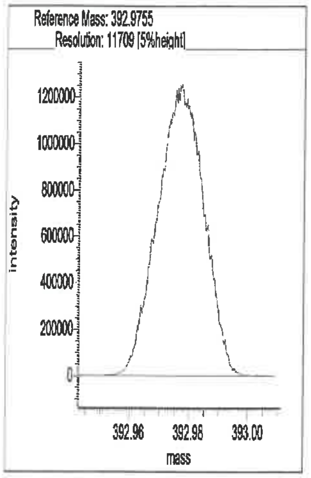

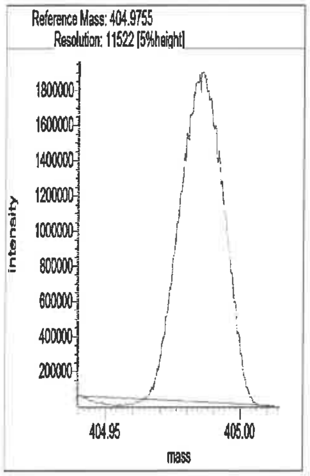

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12456 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11936 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12463 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12160 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 11137 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11860 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11771 [5%height]

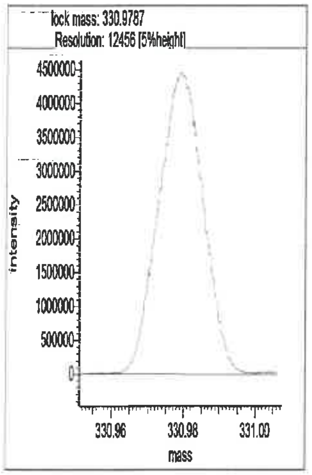

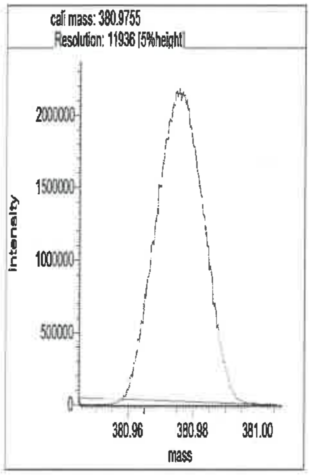

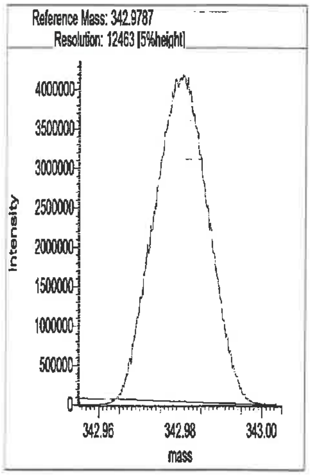

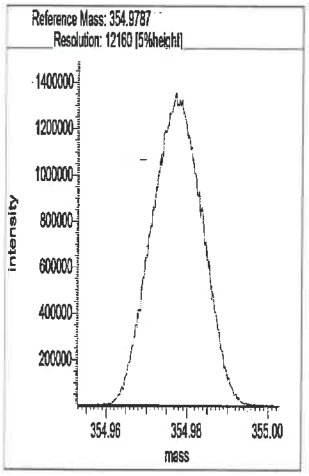

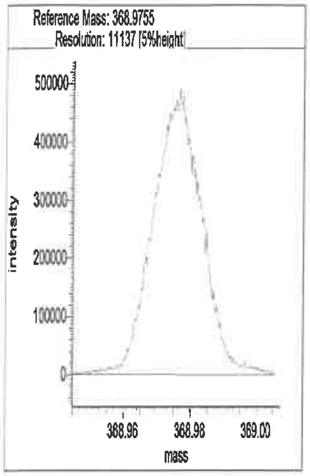

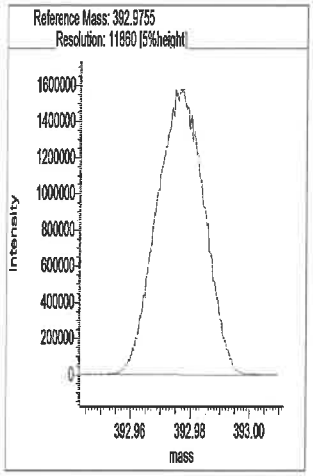

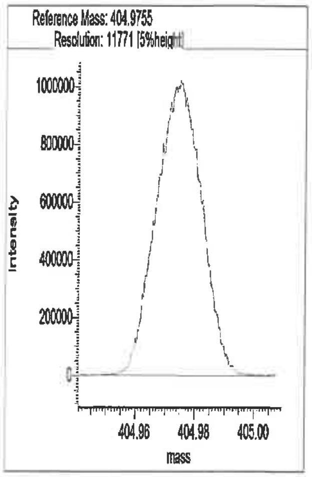

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12319 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11923 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12441 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12247 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12538 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12246 [5%height]

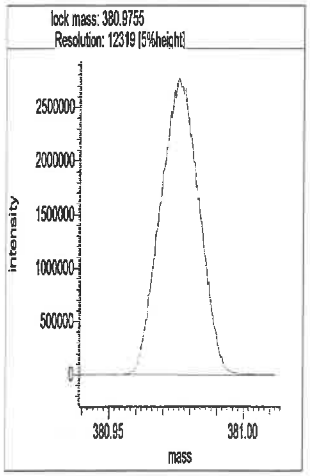

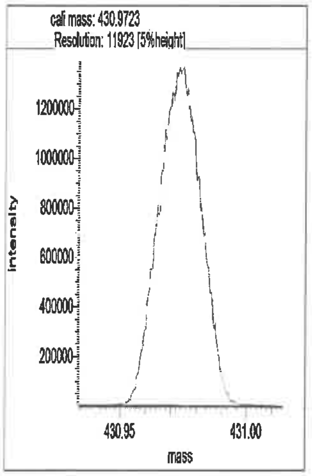

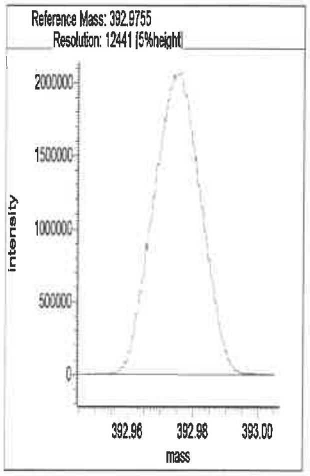

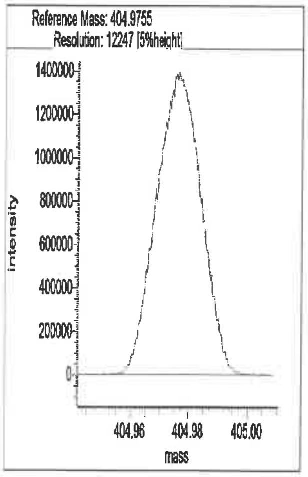

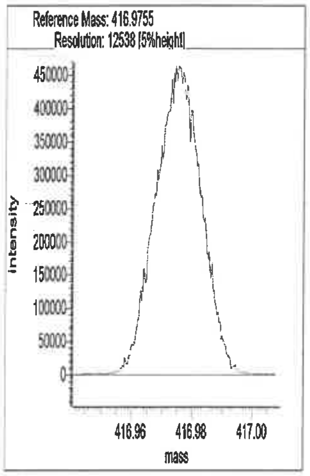

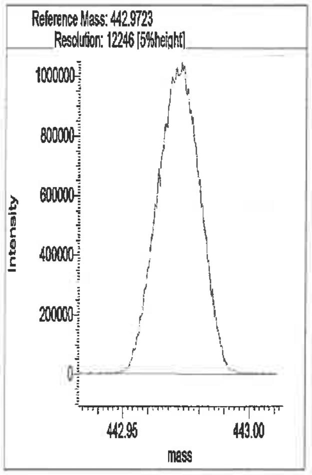

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12355 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11907 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12512 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12248 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12313 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12014 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11958 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11976 [5%height]

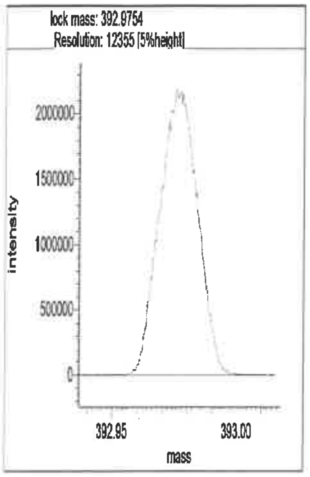

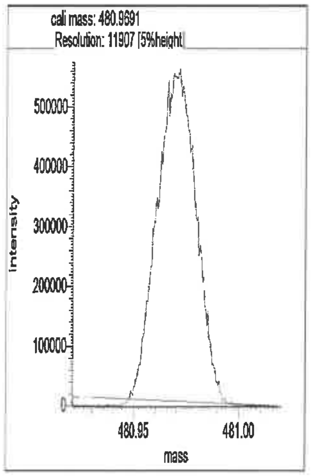

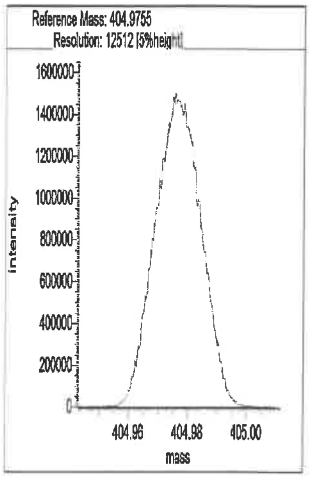

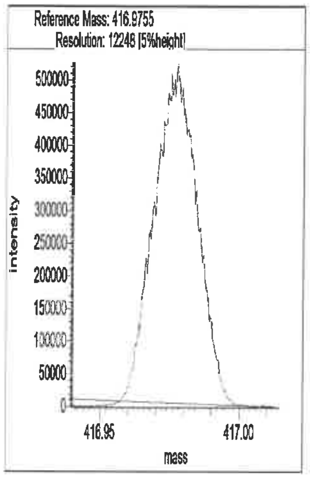

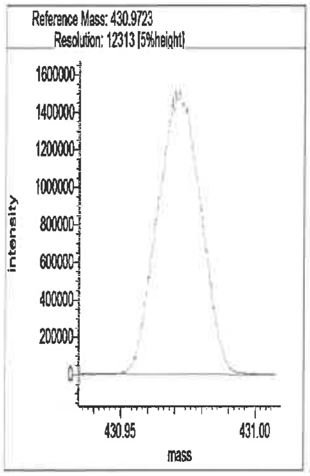

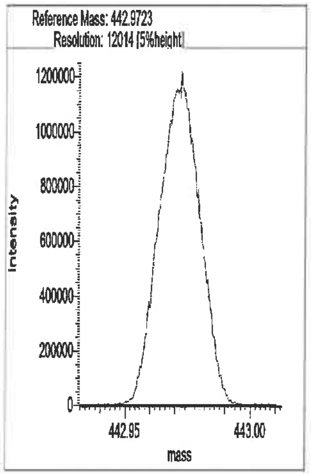

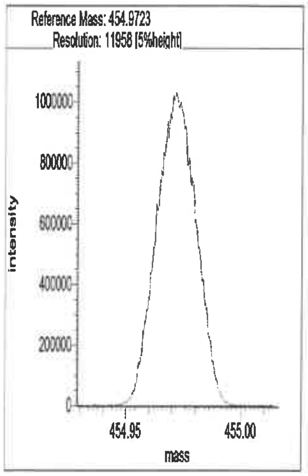

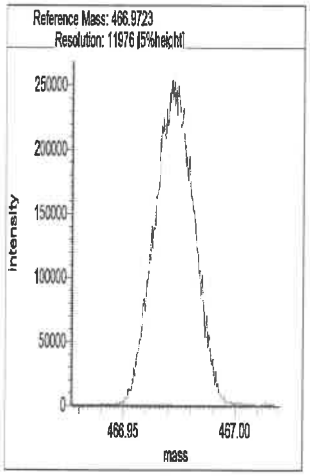

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12515 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12147 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12499 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12210 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12356 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12078 [5%height]

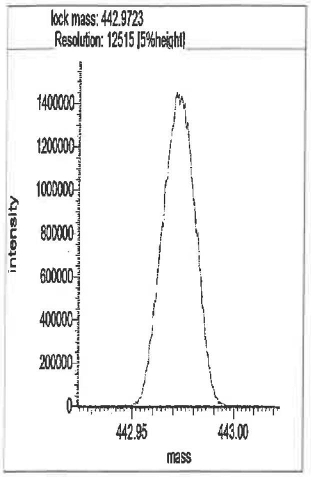
lock mass: 442.9723
Resolution: 12515 [5%height]
intensity
1400000
1200000
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

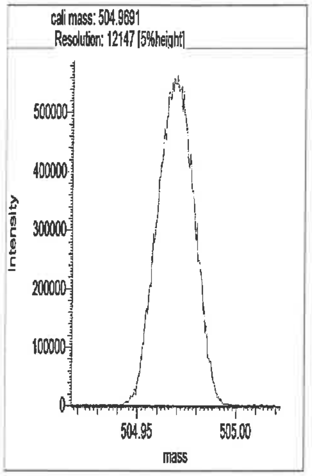
cali mass: 504.9691
Resolution: 12147 [5%height]
intensity
500000
400000
300000
200000
100000
0
504.95
505.00
mass

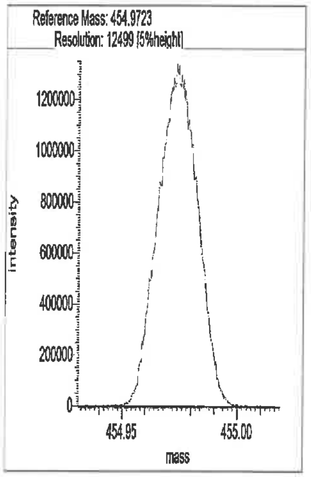
Reference Mass: 454.9723
Resolution: 12499 [5%height]
intensity
1200000
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

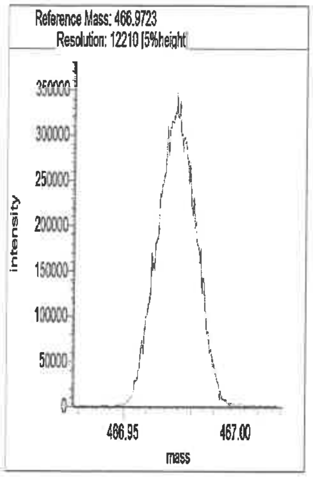
Reference Mass: 466.9723
Resolution: 12210 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
466.95
467.00
mass

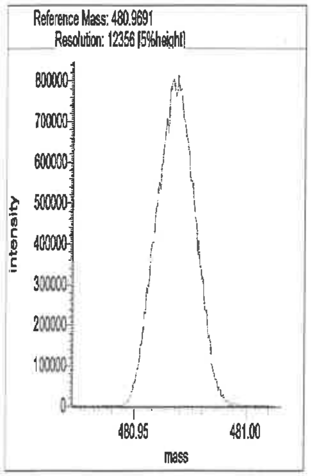
Reference Mass: 480.9691
Resolution: 12356 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

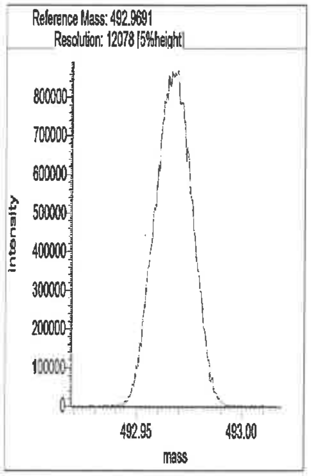
Reference Mass: 492.9691
Resolution: 12078 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

eurofins | Environment Testing TestAmerica

Date: 24 Sep 2021 19:49
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION WARNING

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12262 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11555 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12099 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 12180 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11985 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11895 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 8844 [5%height] ✓ OK 9/25/21 RSS
Ref. mass 392.9755 [m/z] Resolution: 11828 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11314 [5%height]

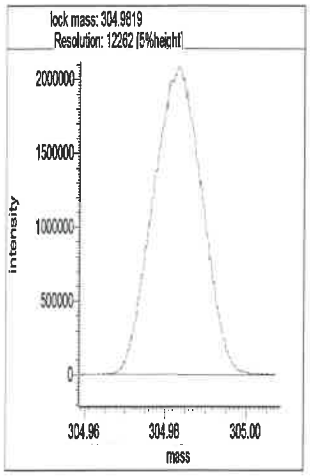

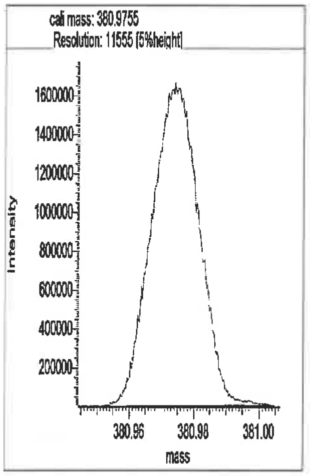

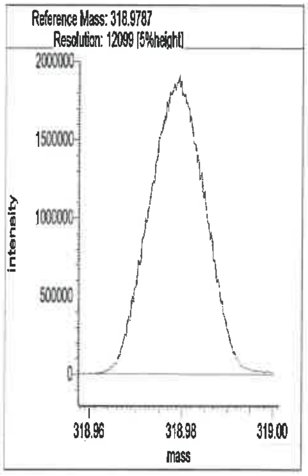

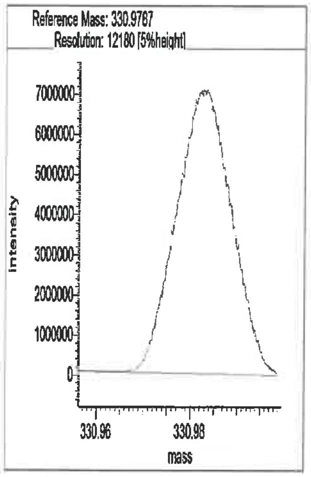

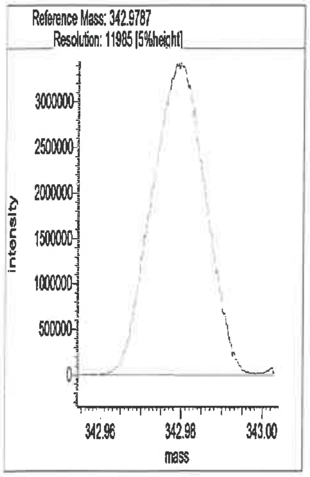

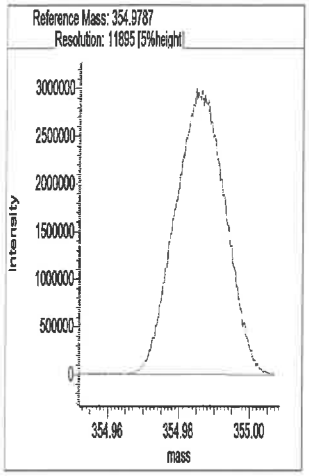

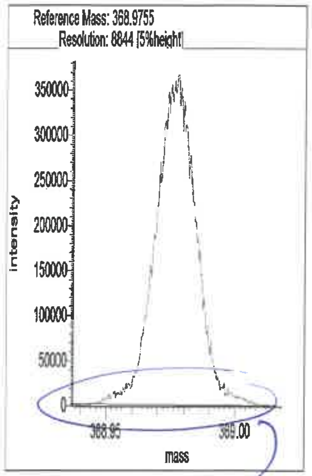

OK 9/25/21 KSS
column bleed

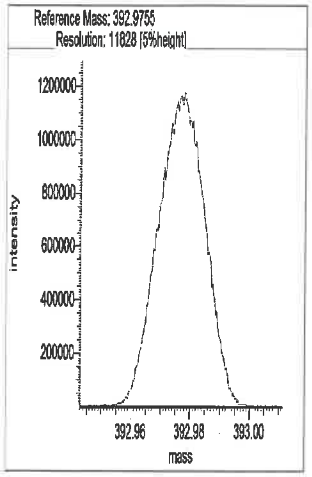

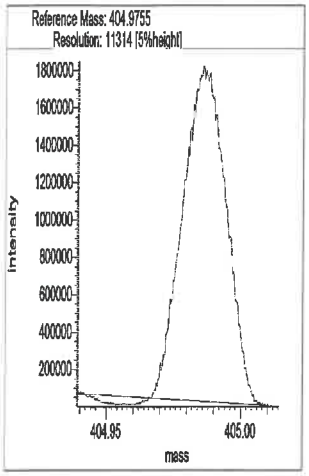

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12337 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11824 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 12181 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 12200 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10948 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11932 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11768 [5%height]

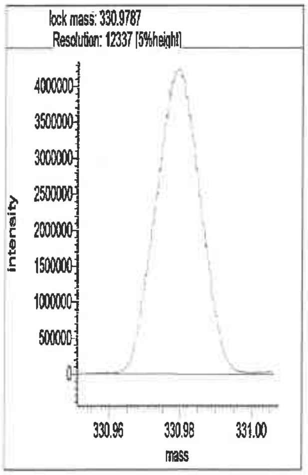

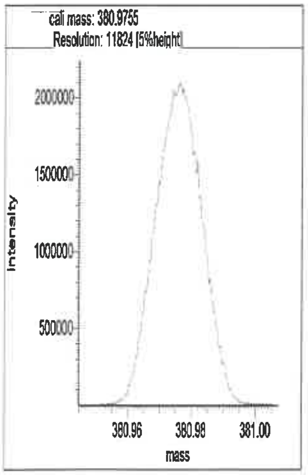

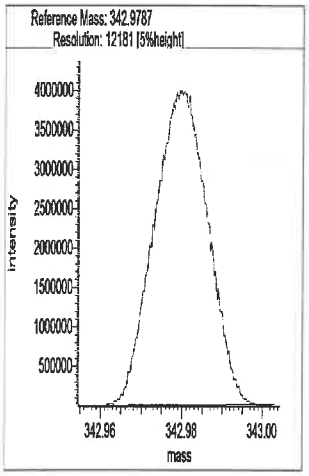

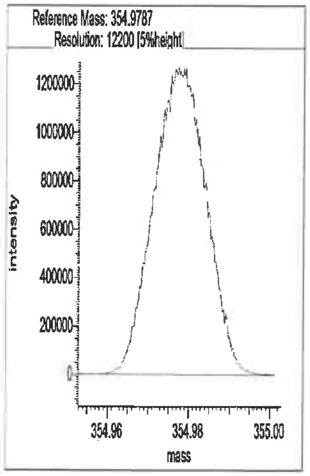

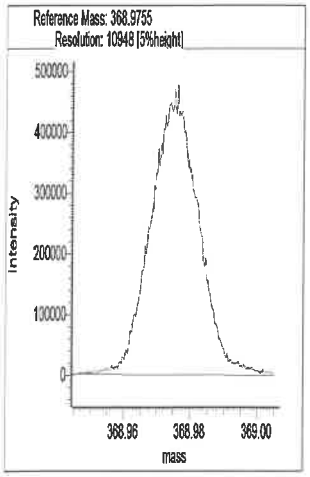

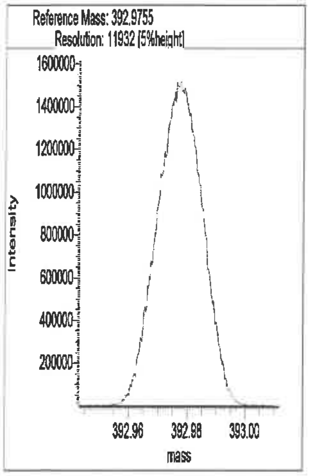

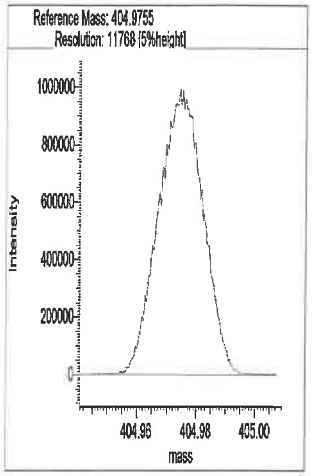

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12369 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 12108 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 12379 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12213 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12315 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 12138 [5%height]

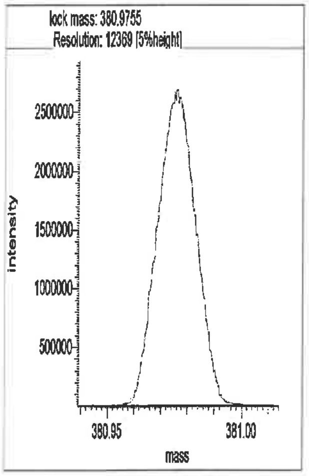

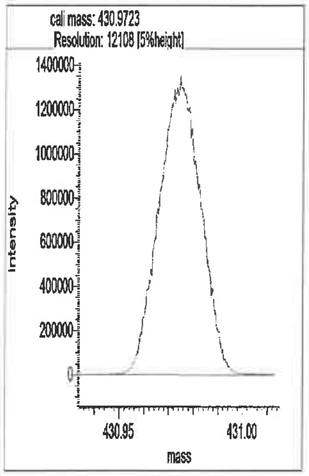

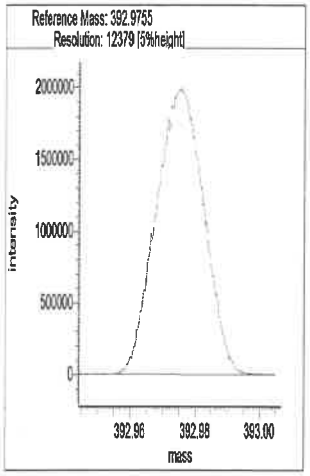

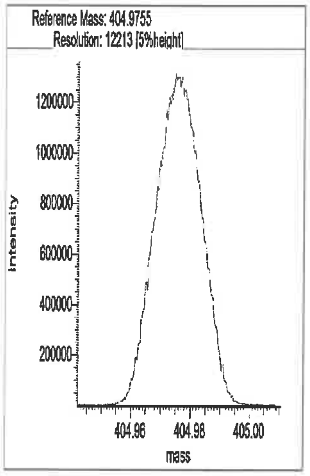

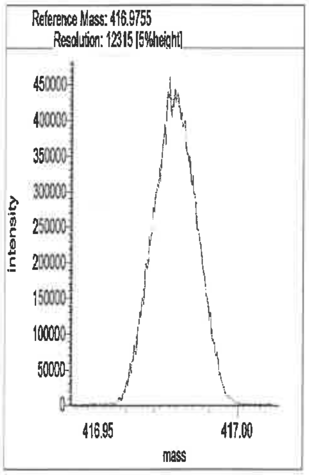

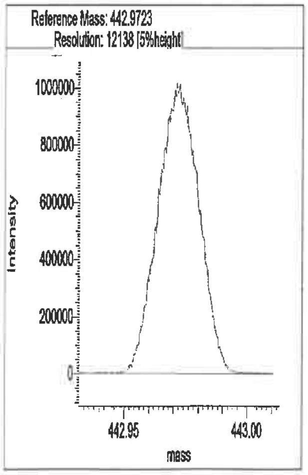

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12392 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11889 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 12031 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 12144 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 12338 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11912 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11943 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12009 [5%height]

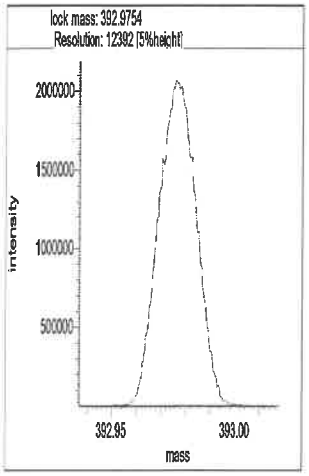

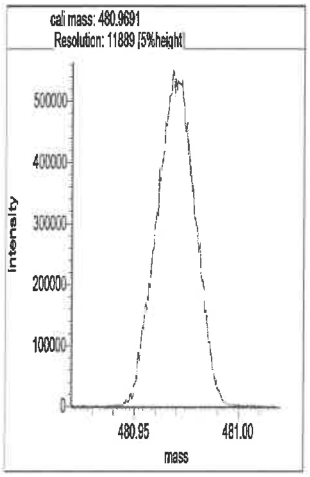

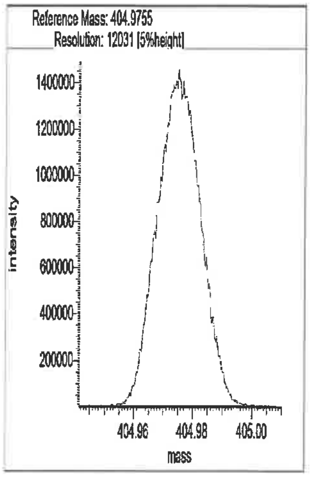

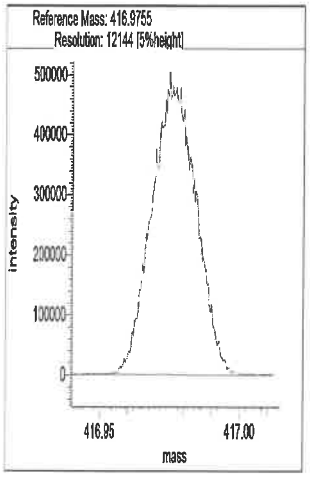

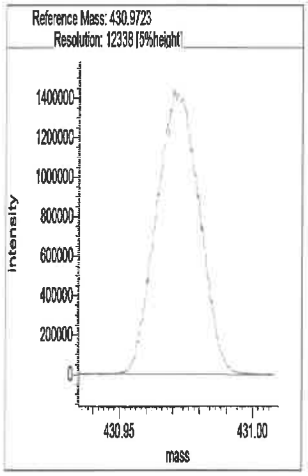

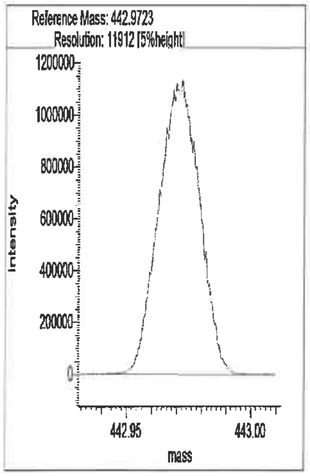

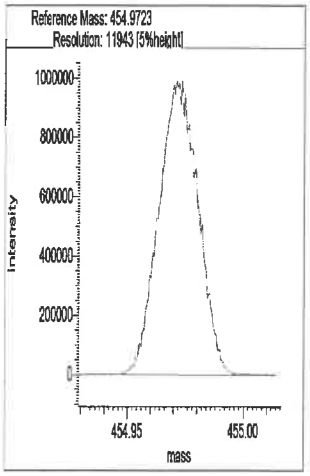

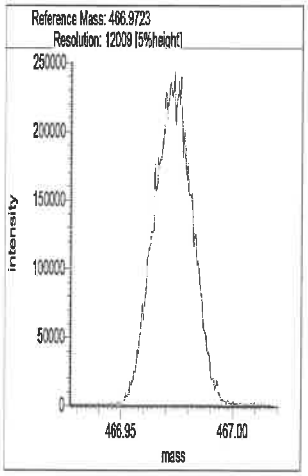

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12492 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 12260 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 12553 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 12347 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 12566 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 12168 [5%height]

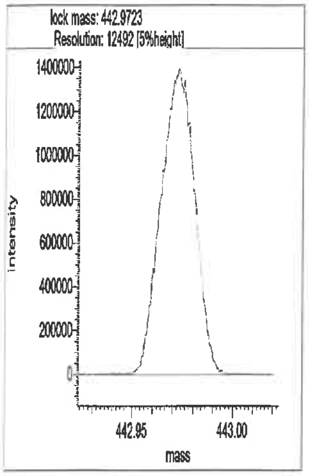
lock mass: 442.9723
Resolution: 12492 [5%height]
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

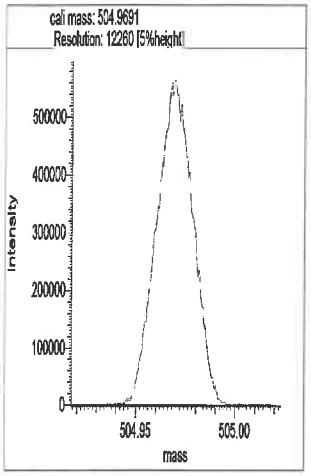
cali mass: 504.9691
Resolution: 12260 [5%height]
500000
400000
300000
200000
100000
0
intensity
504.95
505.00
mass

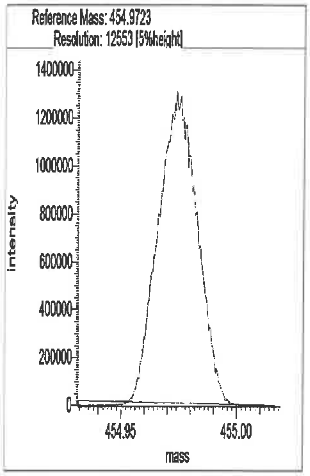
Reference Mass: 454.9723
Resolution: 12553 [5%height]
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
454.95
455.00
mass

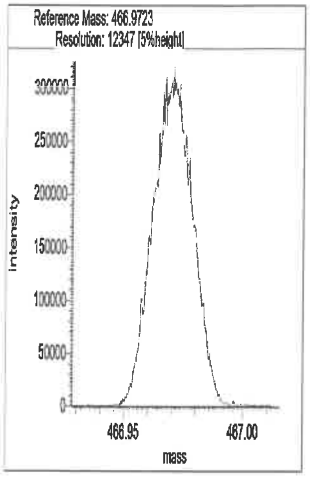
Reference Mass: 466.9723
Resolution: 12347 [5%height]
300000
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

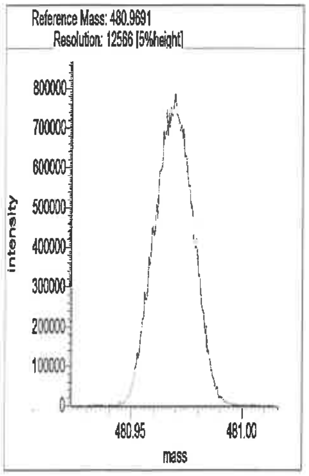
Reference Mass: 480.9691
Resolution: 12566 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

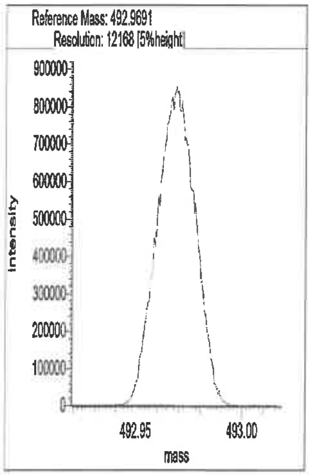
Reference Mass: 492.9691
Resolution: 12168 [5%height]
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Sep-2021 13:55:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS2_HRDXNL2_00033
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:16:39 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 14:58:08

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.578	17230704	0.82	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.573	20596575	0.81	1.2244	97.6	97.6	0.2651	0.2651	97.63	
2,3,7,8-TCDF	20.616	121968	0.82	1.1194	0.5290	0.5290	0.0147	0.0147	106	
S Total TCDF					0.5290	0.5290	0.0147	0.0147		
D 13C-2,3,7,8-TCDD	21.956	13835121	0.82	0.8210	97.8	97.8	0.2048	0.2048	97.80	
2,3,7,8-TCDD	21.964	79840	0.86	1.0943	0.5274	0.5274	0.0287	0.0287	105	
$ 37Cl4-2,3,7,8-TCDD	21.973	70964		0.8658	0.4757	0.4757	0.0294	0.0294	95.14	
S Total TCDD					0.5274	0.5274	0.0287	0.0287		
D 13C-1,2,3,7,8-PeCDF	27.459	18307019	1.58	1.1026	96.4	96.4	0.5023	0.5023	96.36	
1,2,3,7,8-PeCDF	27.484	514397	1.56	1.0920	2.573	2.573	0.0311	0.0311	103	
D 13C-2,3,4,7,8-PeCDF	29.000	22159006	1.57	1.3454	95.6	95.6	0.4117	0.4117	95.59	
2,3,4,7,8-PeCDF	29.026	495971	1.61	0.8752	2.557	2.557	0.0335	0.0335	102	
S Total PeCDF					5.131	5.131	0.0323	0.0323		
D 13C-1,2,3,7,8-PeCDD	29.834	11616054	1.59	0.6987	96.5	96.5	0.2038	0.2038	96.49	
1,2,3,7,8-PeCDD	29.859	318120	1.66	1.0594	2.585	2.585	0.0436	0.0436	103	
S Total PeCDD					2.585	2.585	0.0436	0.0436		
D 13C-1,2,3,4,7,8-HxCDF	35.086	18390142	0.54	1.1295	95.8	95.8	0.3586	0.3586	95.84	
1,2,3,4,7,8-HxCDF	35.103	460870	1.26	0.9737	2.574	2.574	0.0357	0.0357	103	
D 13C-1,2,3,6,7,8-HxCDF	35.246	17590761	0.54	1.0613	97.6	97.6	0.3816	0.3816	97.55	
1,2,3,6,7,8-HxCDF	35.263	549117	1.24	1.2201	2.559	2.559	0.0306	0.0306	102	
D 13C-2,3,4,6,7,8-HxCDF	36.055	15872346	0.53	0.9480	98.5	98.5	0.4272	0.4272	98.54	
2,3,4,6,7,8-HxCDF	36.072	504229	1.26	1.2435	2.555	2.555	0.0301	0.0301	102	
D 13C-1,2,3,7,8,9-HxCDF	36.931	14365871	0.54	0.8526	99.2	99.2	0.4750	0.4750	99.17	
1,2,3,7,8,9-HxCDF	36.947	461754	1.27	1.2454	2.581	2.581	0.0320	0.0320	103	
S Total HxCDF					10.3	10.3	0.0321	0.0321		
* 13C-1,2,3,7,8,9-HxCDD	36.737	16989688	1.27	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.265	13945479	1.27	0.8312	98.7	98.7	0.2434	0.2434	98.75	
1,2,3,4,7,8-HxCDD	36.274	336760	1.28	0.9085	2.658	2.658	0.0516	0.0516	106	
D 13C-1,2,3,6,7,8-HxCDD	36.383	12564416	1.27	0.7550	98.0	98.0	0.2680	0.2680	97.96	
1,2,3,6,7,8-HxCDD	36.392	334433	1.22	1.0279	2.590	2.590	0.0533	0.0533	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.745	358667	1.26	1.0268	2.635	2.635	0.0492	0.0492	105	
S Total HxCDD					7.883	7.883	0.0514	0.0514		
D 13C-1,2,3,4,6,7,8-HpCDF	38.728	10444284	0.47	0.6190	99.3	99.3	0.3057	0.3057	99.31	
1,2,3,4,6,7,8-HpCDF	38.736	415539	1.07	1.5851	2.510	2.510	0.0408	0.0408	100	
D 13C-1,2,3,4,7,8,9-HpCDF	39.965	10816131	0.47	0.6516	97.7	97.7	0.2904	0.2904	97.70	
1,2,3,4,7,8,9-HpCDF	39.974	325652	1.08	1.1597	2.596	2.596	0.0501	0.0501	104	
S Total HpCDF					5.106	5.106	0.0455	0.0455		
D 13C-1,2,3,4,6,7,8-HpCDD	39.662	9020994	1.06	0.5362	99.0	99.0	0.4062	0.4062	99.03	
1,2,3,4,6,7,8-HpCDD	39.670	252171	1.01	1.0819	2.584	2.584	0.0193	0.0193	103	
S Total HpCDD					2.584	2.584	0.0193	0.0193		
D 13C-OCDD	42.157	12598776	0.92	0.3802	195.1	195.1	0.3203	0.3203	97.53	
OCDF	42.258	465542	0.91	1.5094	4.896	4.896	0.0379	0.0379	97.92	
OCDD	42.166	366195	0.90	1.1344	5.125	5.125	0.0553	0.0553	102	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00033 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 24-Sep-2021 13:55:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS2_HRDXNL2_00033
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:16:39 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 14:58:08

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.578	21.567	1		7745588	1114448	1072	2680	1040		
333.9338	21.578	21.567	1		9485116	1361169	593	1482	2295	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.573	20.565	0	0.953	9198501	1425042	2285	5712	624		
317.9389	20.573	20.565	0	0.953	11398074	1710291	930	2325	1839	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.616	20.598	1	1.002	54895	8154	50	125	163		
305.8987	20.599	20.598	0	1.001	67073	10643	156	390	68	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.956	21.948	0	1.018	6228448	849807	1072	2680	793		
333.9338	21.956	21.948	0	1.018	7606673	1045519	593	1482	1763	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.964	21.977	-1	1.000	36971	5130	180	450	29		
321.8936	21.981	21.977	0	1.001	42869	6033	58	145	104	0.86(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.973	21.977	0	1.018	70964	10085	252	630	40		
13C-1,2,3,7,8-PeCDF											
351.9000	27.459	27.459	0	1.273	11197847	1850239	3293	8232	562		
353.8970	27.459	27.459	0	1.273	7109172	1188593	2192	5480	542	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.484	27.484	0	1.001	313297	51415	142	355	362		
341.8567	27.476	27.484	0	1.001	201100	33951	271	677	125	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.000	28.999	0	1.344	13523906	2148674	3293	8232	652		
353.8970	29.000	28.999	0	1.344	8635100	1371700	2192	5480	626	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.026	29.026	0	1.001	305663	46154	142	355	325		
341.8567	29.026	29.026	0	1.001	190308	28843	271	677	106	1.61(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.834	29.832	0	1.383	7133000	1045606	612	1530	1709		
369.8919	29.834	29.832	0	1.383	4483054	684654	798	1995	858	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.859	29.859	0	1.001	198332	28916	236	590	123		
357.8516	29.867	29.859	0	1.001	119788	17342	84	210	206	1.66(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.086	35.084	0	0.955	6478000	1455095	2440	6100	596		
385.8610	35.086	35.084	0	0.955	11912142	2676659	4571	11427	586	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.103	35.101	0	1.000	257270	57866	315	787	184		
375.8178	35.103	35.101	0	1.000	203600	45665	260	650	176	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.246	35.244	0	0.959	6167679	1352386	2440	6100	554		
385.8610	35.246	35.244	0	0.959	11423082	2497574	4571	11427	546	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.263	35.259	0	1.000	304260	67865	315	787	215		
375.8178	35.263	35.259	0	1.000	244857	55389	260	650	213	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.055	36.051	0	0.981	5521441	1332862	2440	6100	546		
385.8610	36.055	36.051	0	0.981	10350905	2500032	4571	11427	547	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.072	36.066	0	1.000	281108	67627	315	787	215		
375.8178	36.063	36.066	0	1.000	223121	53580	260	650	206	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.931	36.927	0	1.005	5058598	1289422	2440	6100	528		
385.8610	36.931	36.927	0	1.005	9307273	2320837	4571	11427	508	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.947	36.940	0	1.000	258010	64101	315	787	203		
375.8178	36.939	36.940	0	1.000	203744	51061	260	650	196	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.737	36.733	0		9496737	2422364	2084	5210	1162		
403.8529	36.737	36.733	0		7492951	1905509	1419	3547	1343	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.265	36.260	0	0.987	7808549	2031638	2084	5210	975		
403.8529	36.265	36.260	0	0.987	6136930	1578171	1419	3547	1112	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.274	36.273	0	1.000	189241	50027	432	1080	116		
391.8127	36.274	36.273	0	1.000	147519	39389	245	612	161	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.383	36.376	0	0.990	7031413	1719740	2084	5210	825		
403.8529	36.383	36.376	0	0.990	5533003	1367871	1419	3547	964	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.392	36.389	0	1.000	183987	46127	432	1080	107		
391.8127	36.392	36.389	0	1.000	150446	38710	245	612	158	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.745	36.745	0	1.013	199956	49044	432	1080	114		
391.8127	36.745	36.745	0	1.013	158711	40550	245	612	166	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.728	38.721	0	1.054	3321566	985522	1562	3905	631		
419.8220	38.728	38.721	0	1.054	7122718	2093662	1714	4285	1222	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.736	38.734	0	1.000	214893	63813	601	1502	106		
409.7788	38.736	38.734	0	1.000	200646	59743	196	490	305	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.965	39.962	0	1.088	3457996	1102886	1562	3905	706		
419.8220	39.965	39.962	0	1.088	7358135	2326205	1714	4285	1357	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.974	39.970	0	1.000	169405	52673	601	1502	88		
409.7788	39.974	39.970	0	1.000	156247	49439	196	490	252	1.08(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.662	39.661	0	1.080	4637145	1492554	1972	4930	757		
437.8140	39.662	39.661	0	1.080	4383849	1393169	1799	4497	774	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.670	39.671	0	1.000	126685	40576	127	317	319		
425.7737	39.670	39.671	0	1.000	125486	41522	114	285	364	1.01(0.88-1.20)	
13C-OCDD											
469.7780	42.157	42.159	0	1.148	6035837	1675825	1207	3017	1388		
471.7750	42.157	42.159	0	1.148	6562939	1838179	901	2252	2040	0.92(0.76-1.02)	
OCDF											
441.7428	42.258	42.255	0	1.002	222315	60940	141	352	432		
443.7399	42.250	42.255	0	1.002	243227	66039	261	652	253	0.91(0.76-1.02)	
OCDD											
457.7377	42.166	42.169	0	1.000	173467	48089	231	577	208		
459.7348	42.166	42.169	0	1.000	192728	54971	210	525	262	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL2_00033 Amount Added: 1.00 Units: uL

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d

Injection Date: 24-Sep-2021 13:55:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

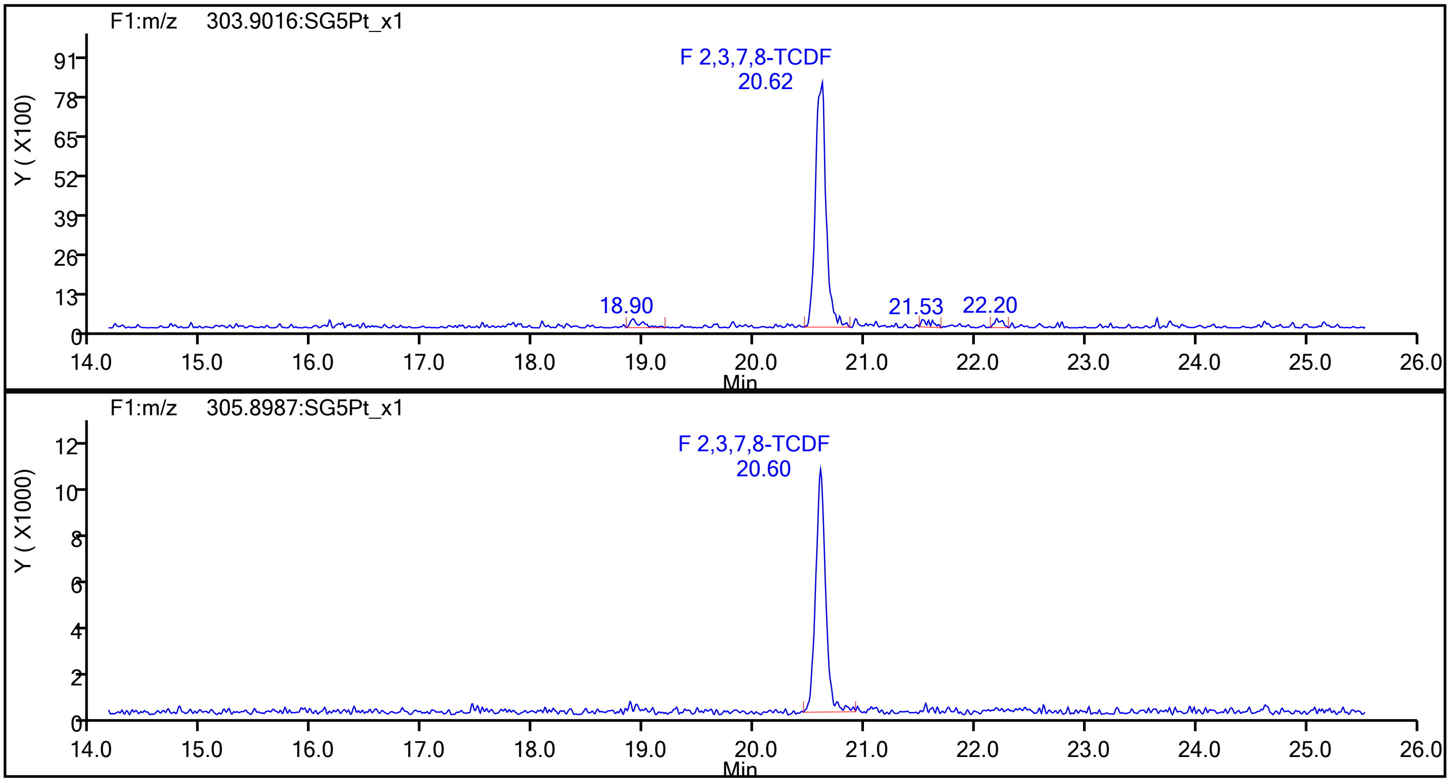

TCDF Standards

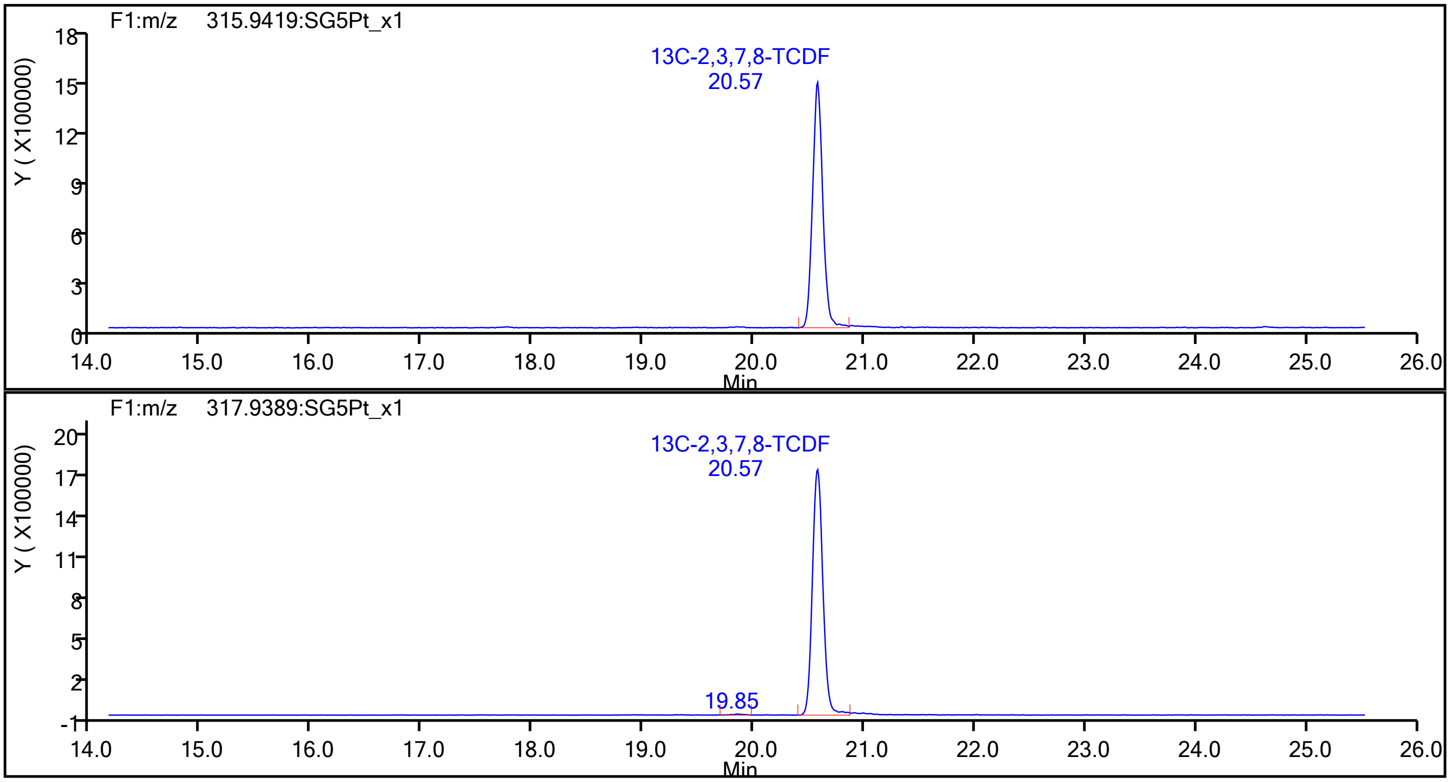

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
Injection Date:	24-Sep-2021 13:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

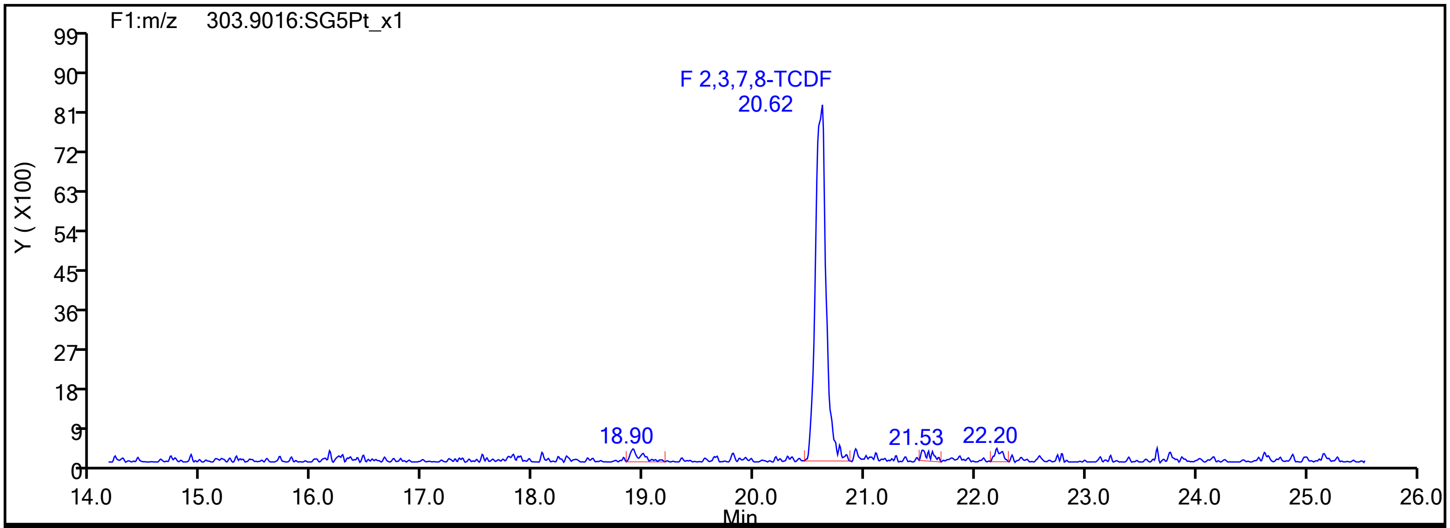

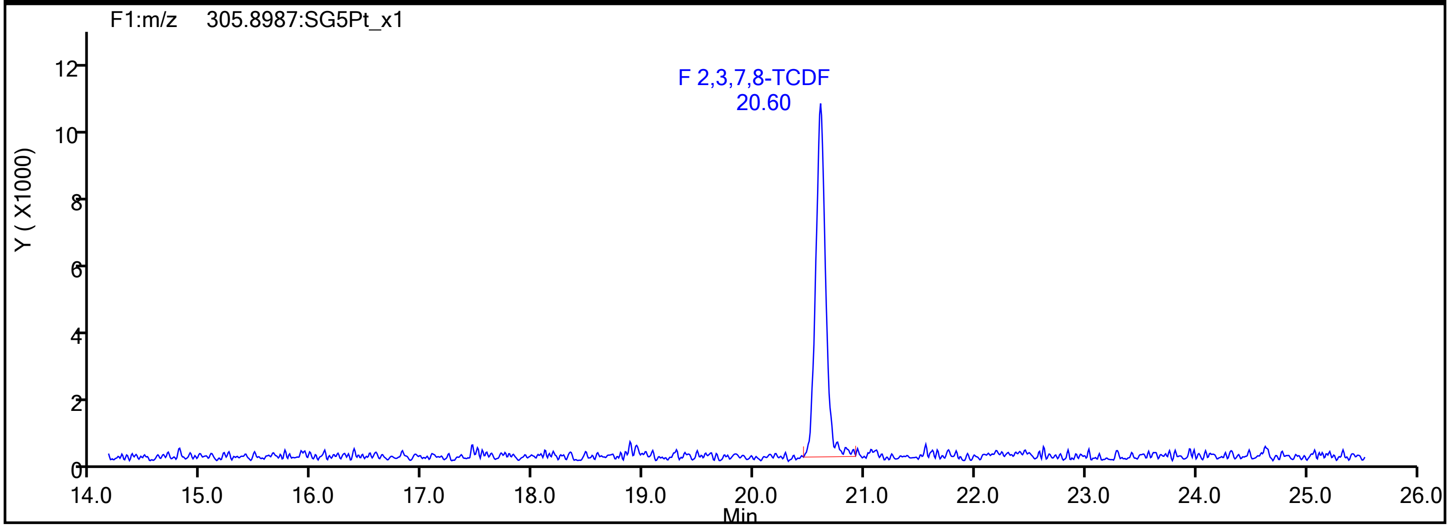

TCDF Interference Mass

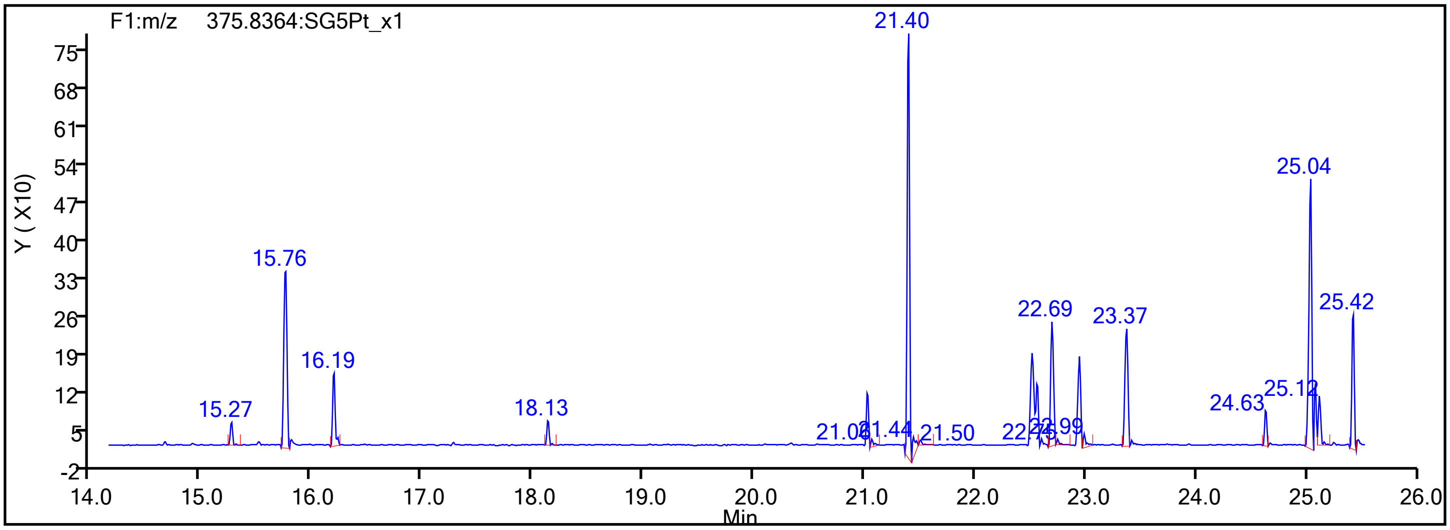

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
Injection Date:	24-Sep-2021 13:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

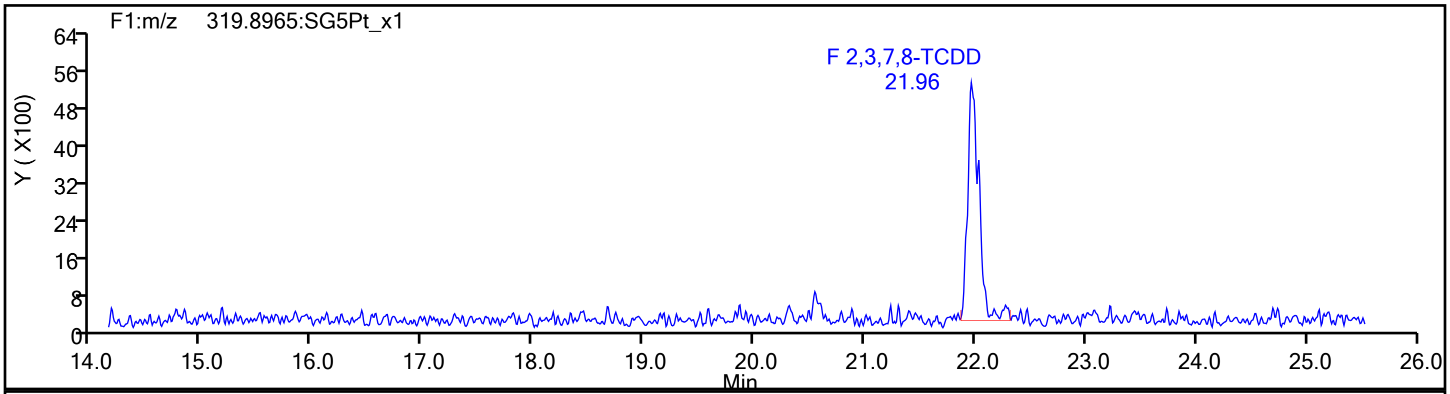

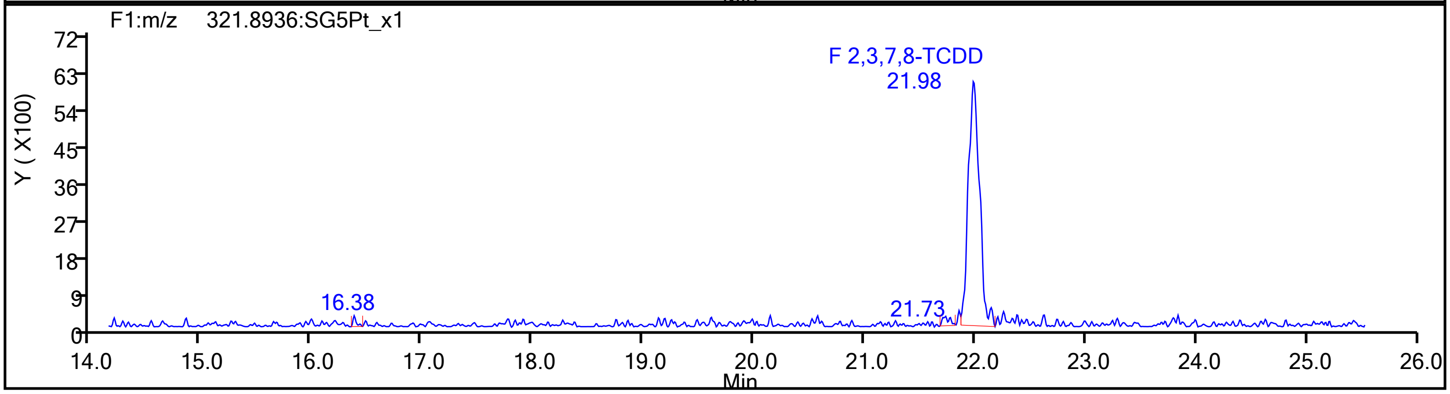

TCDD Standards

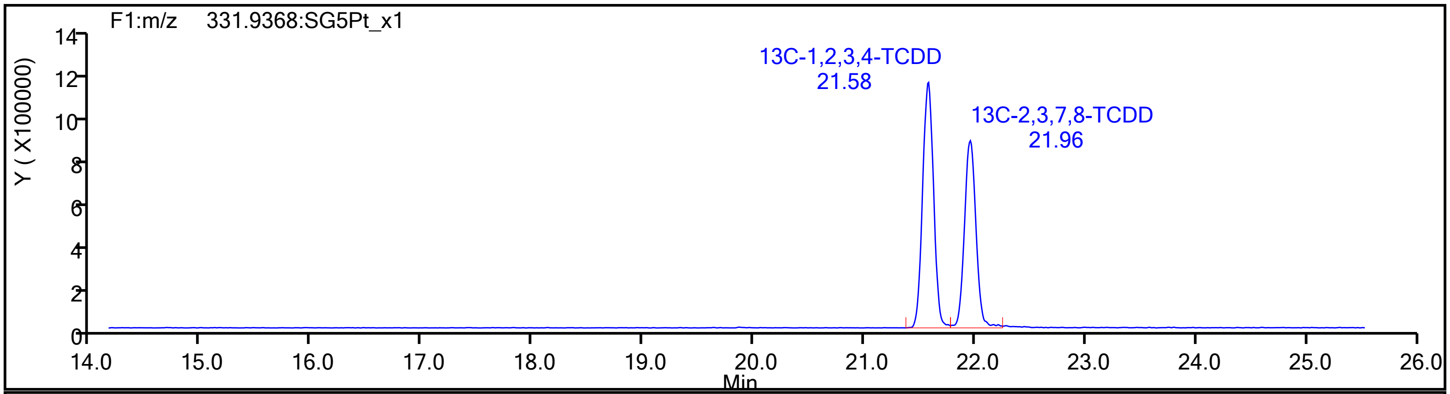

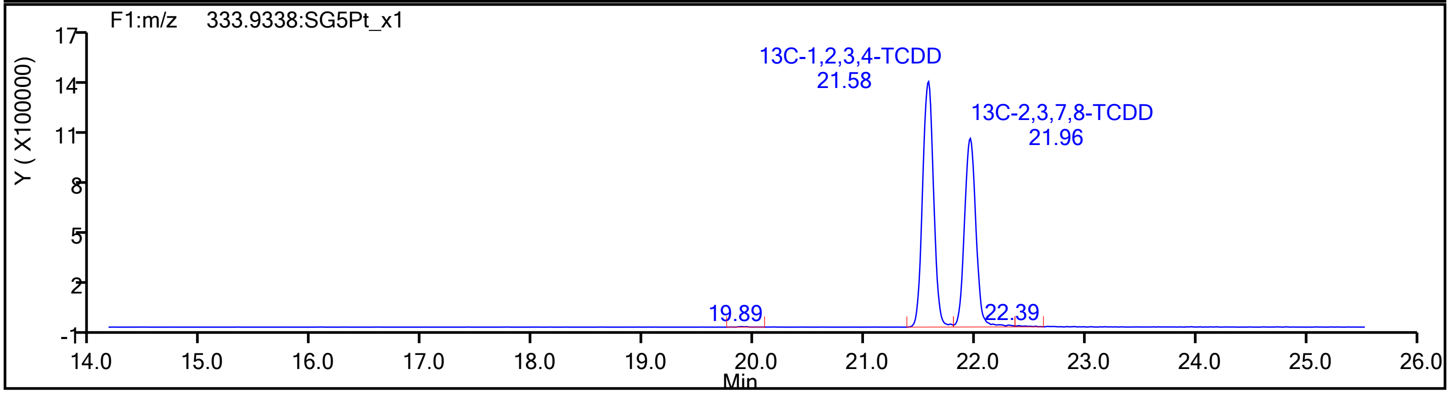

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Injection Date: 24-Sep-2021 13:55:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

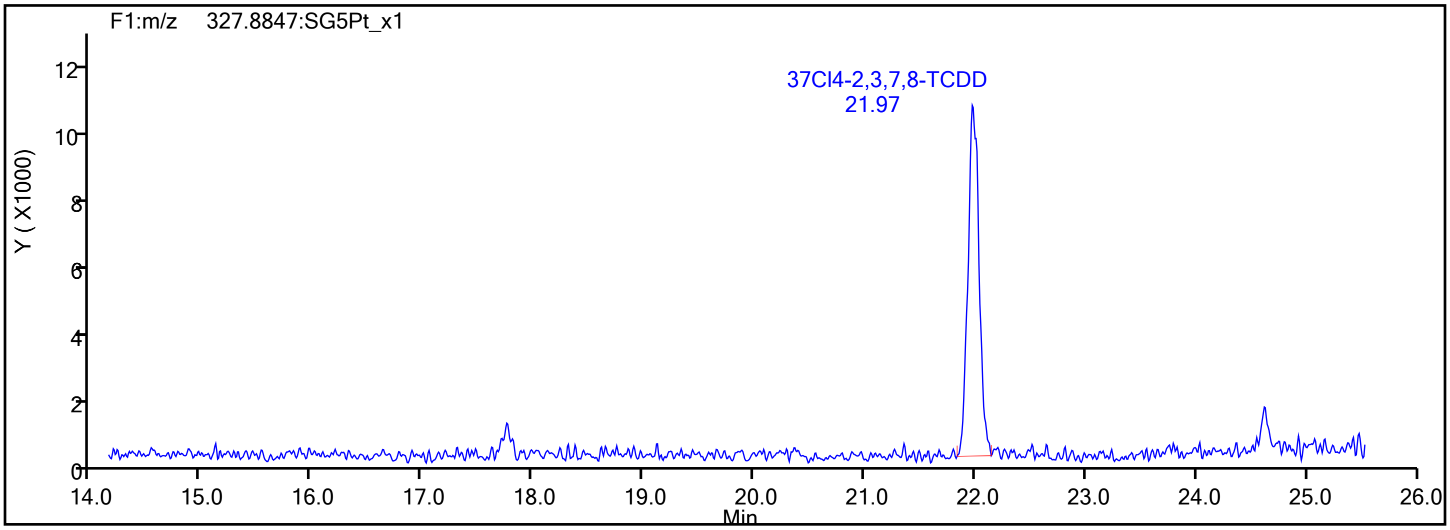

37Cl4-TCDD Standards

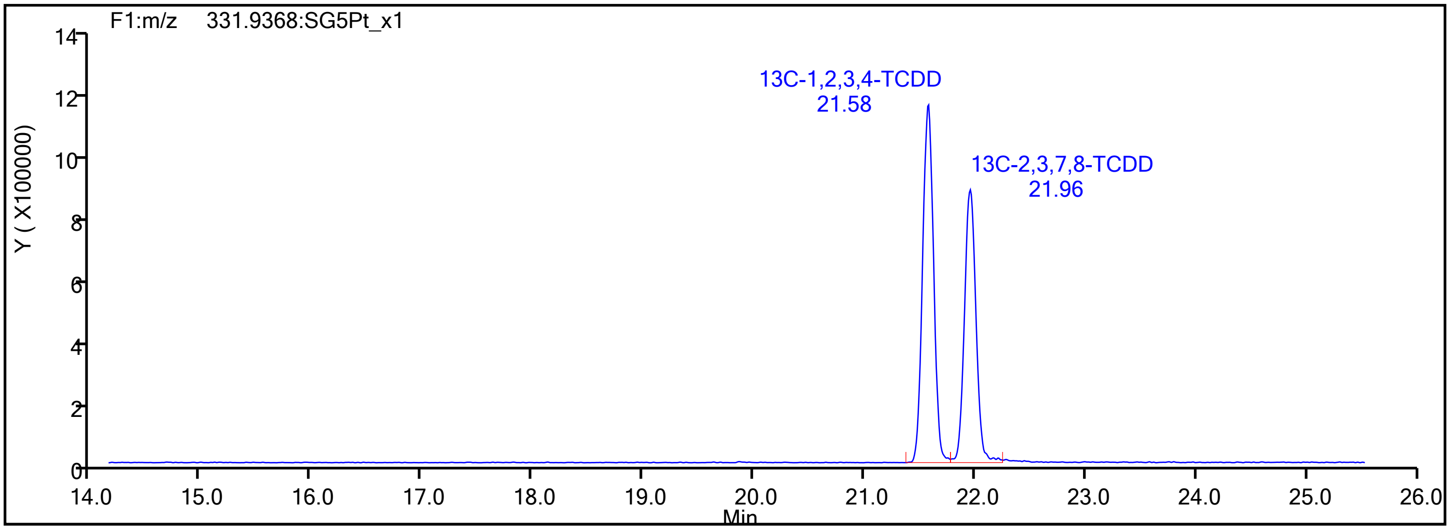

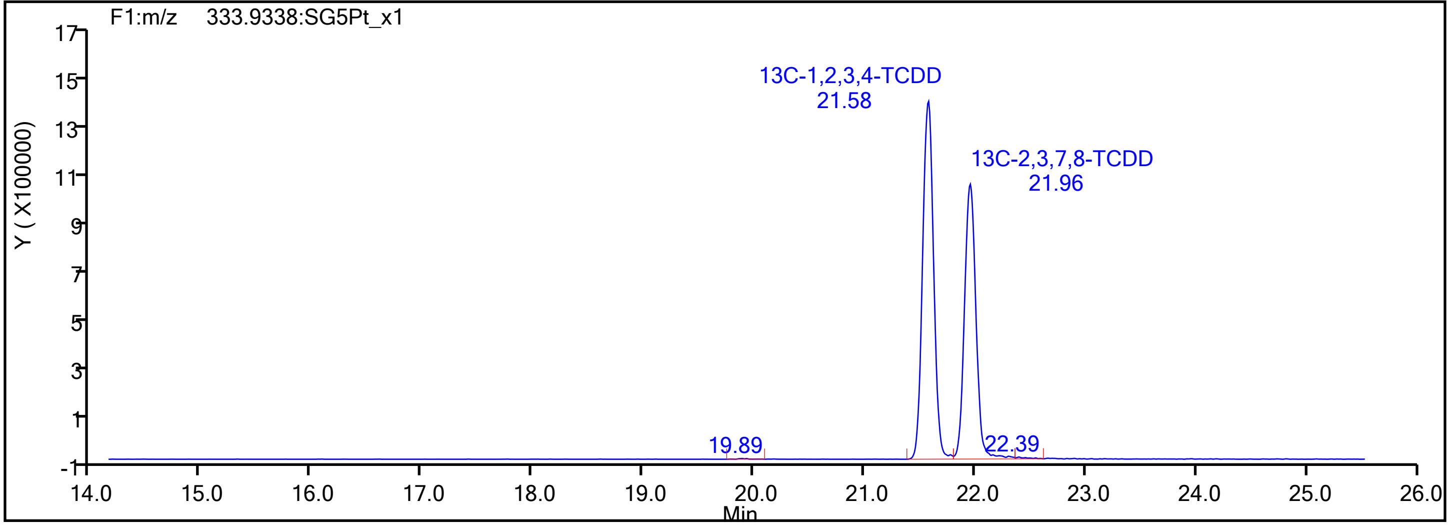

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Injection Date: 24-Sep-2021 13:55:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

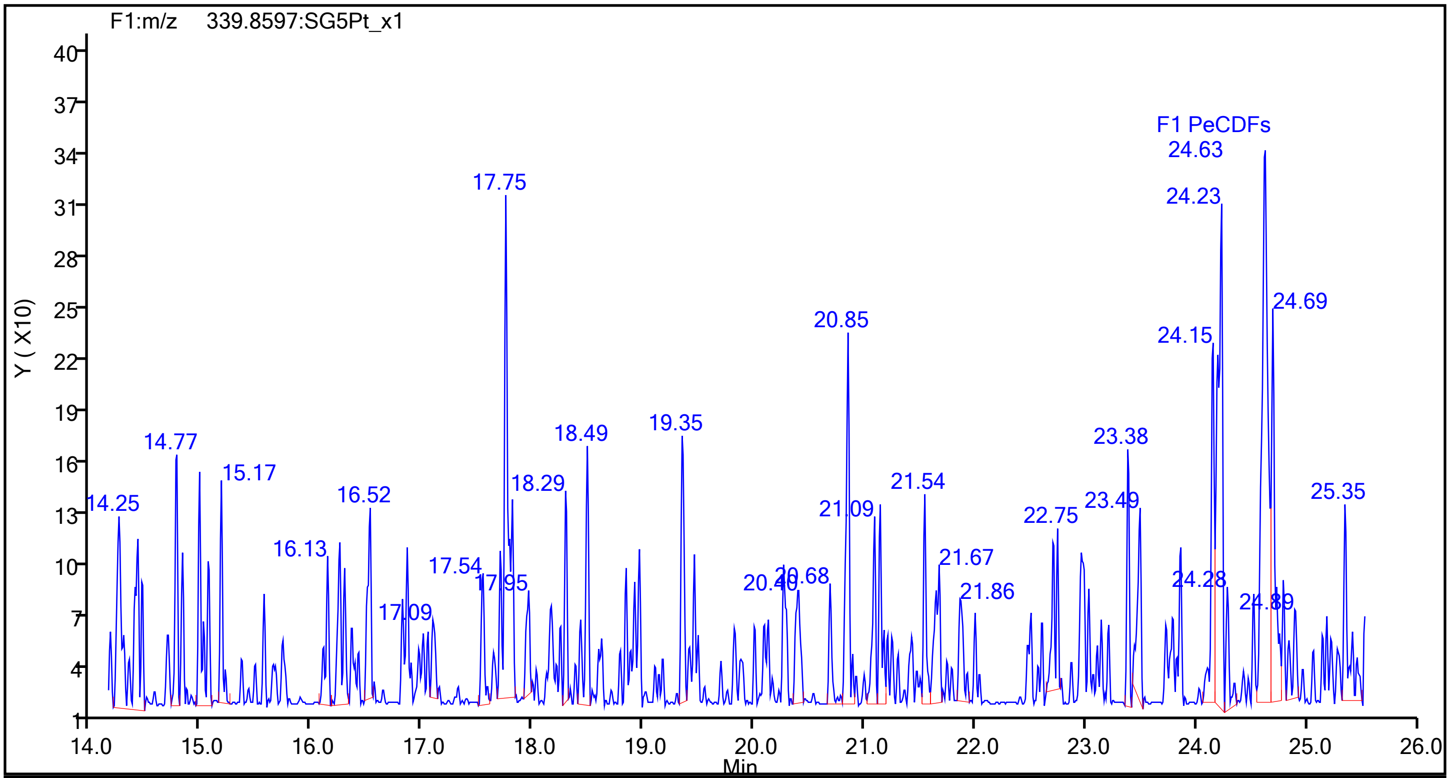

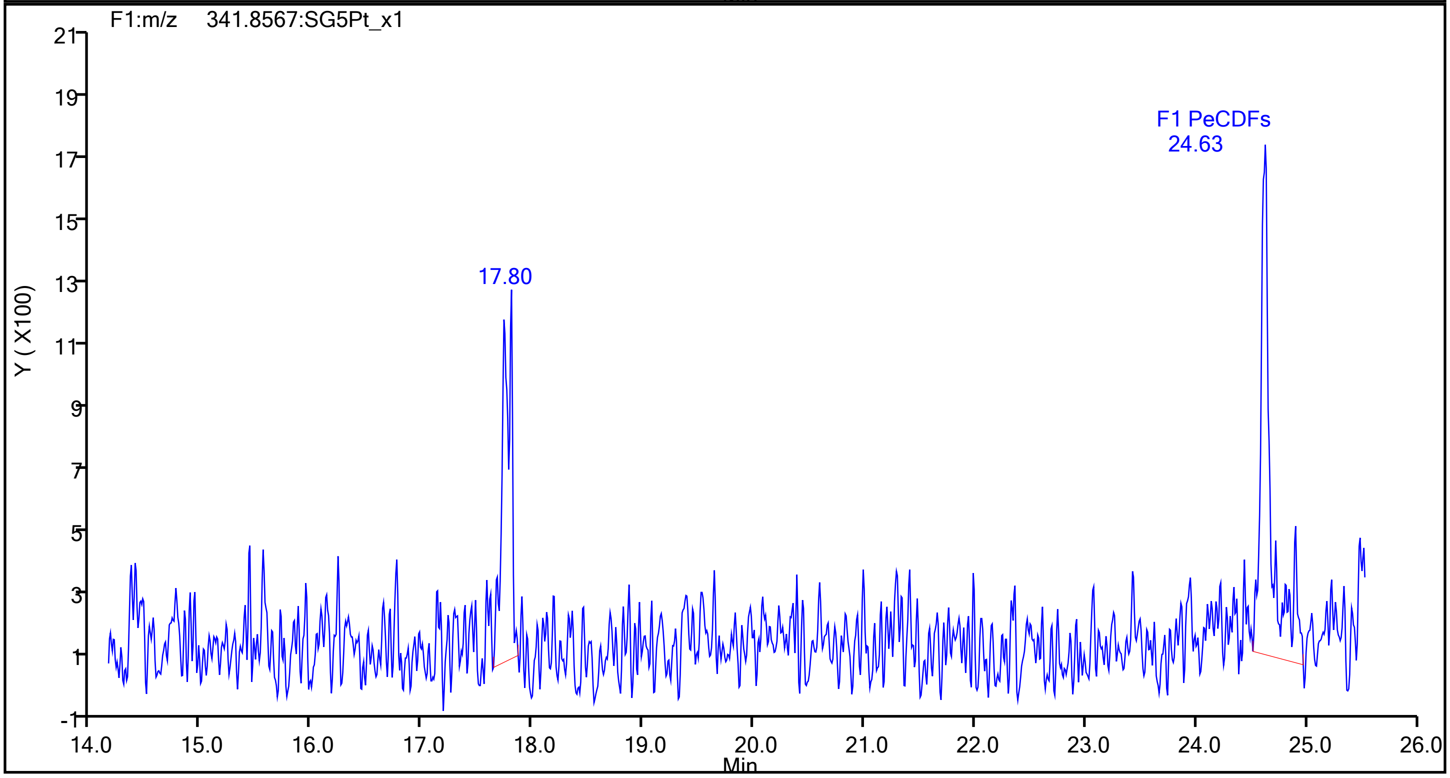

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Injection Date: 24-Sep-2021 13:55:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

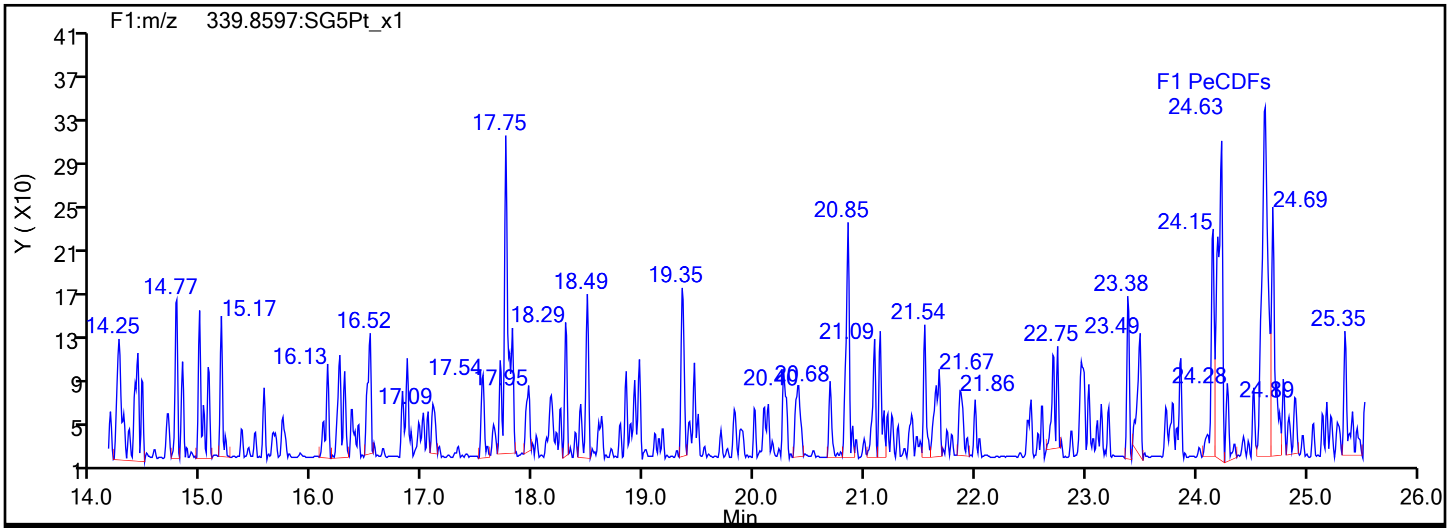

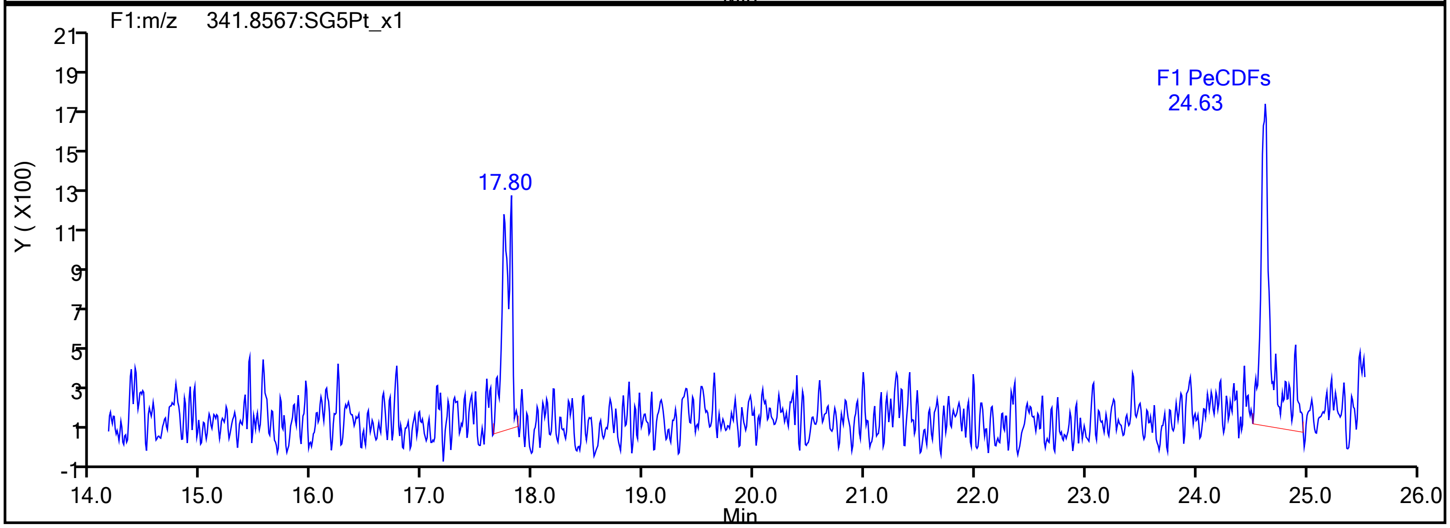

F1 PeCDFs Interference Mass

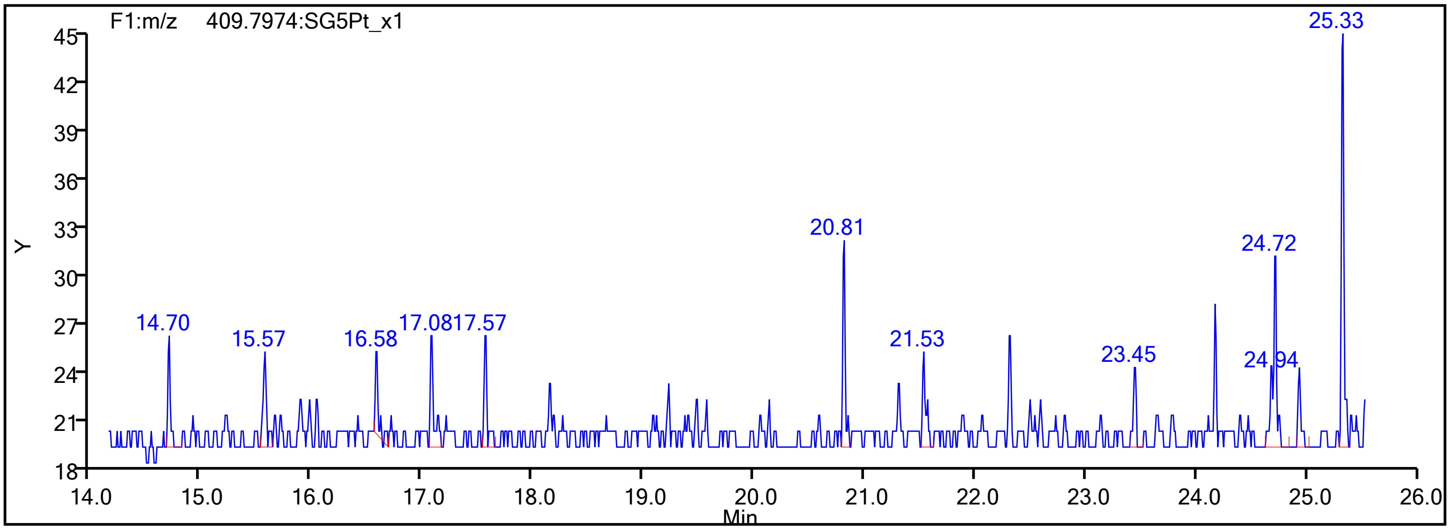

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Injection Date: 24-Sep-2021 13:55:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

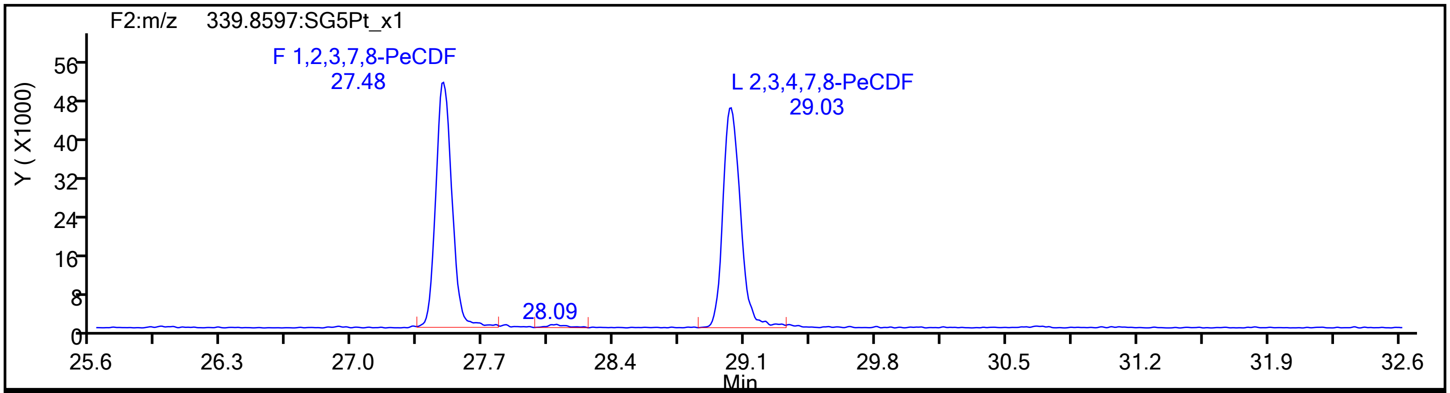

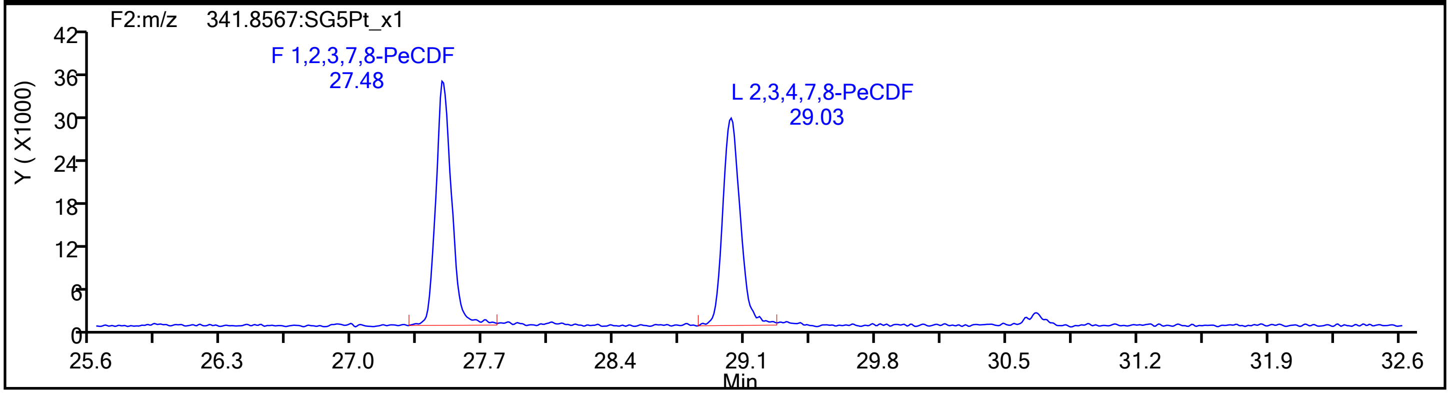

PeCDF Standards

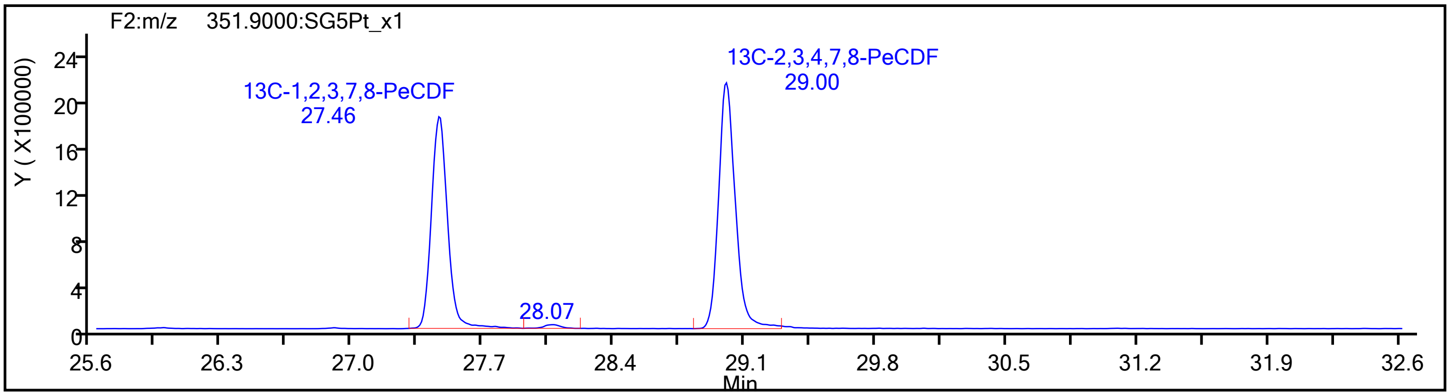

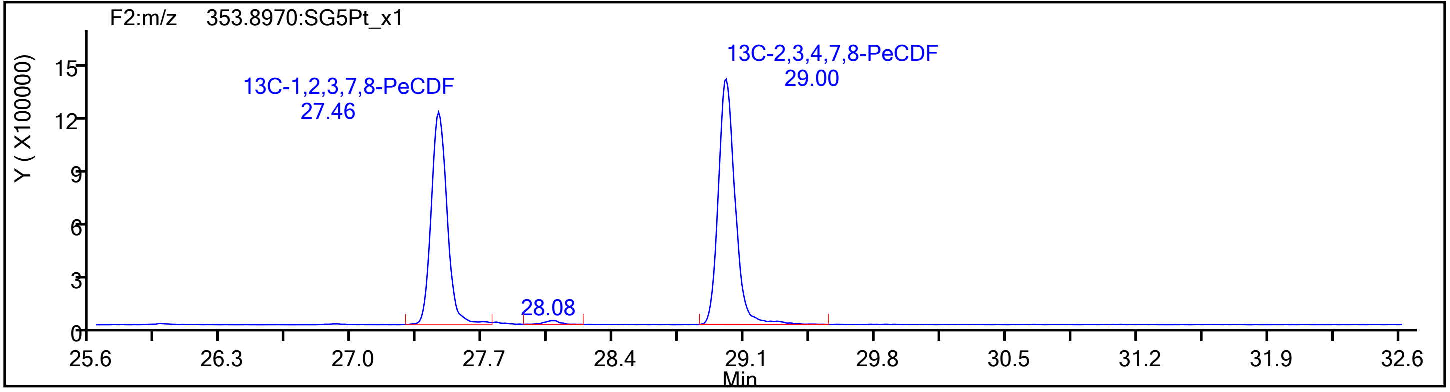

Report Date: 25-Sep-2021 14:16:42 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
Injection Date:	24-Sep-2021 13:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

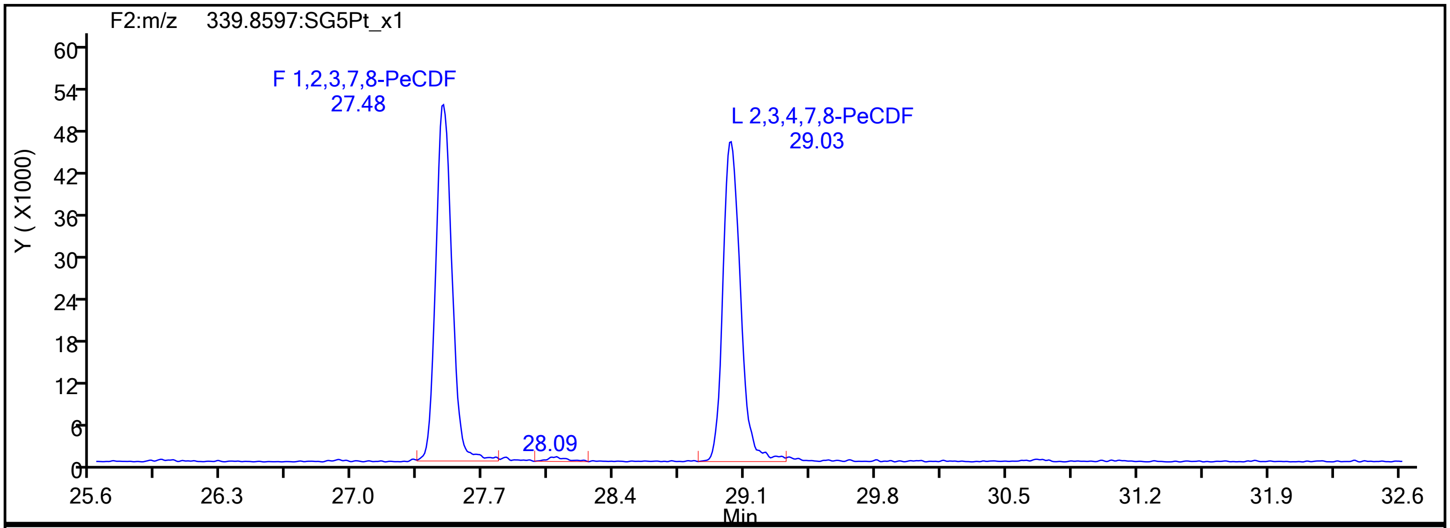

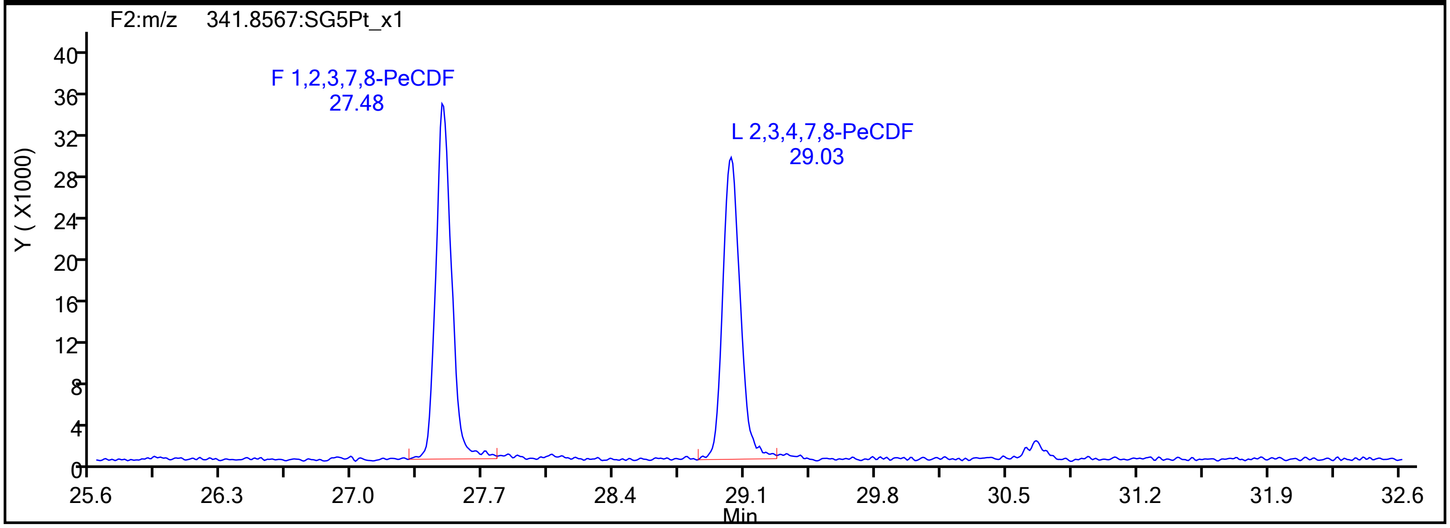

PeCDF Interference Mass

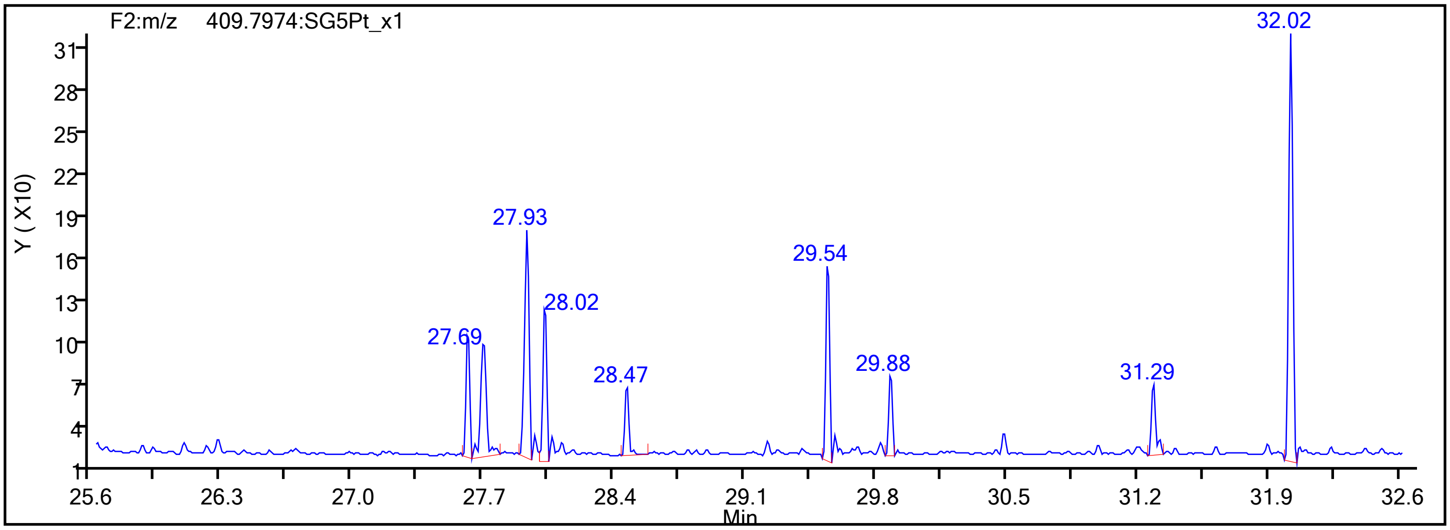

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
Injection Date:	24-Sep-2021 13:55:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

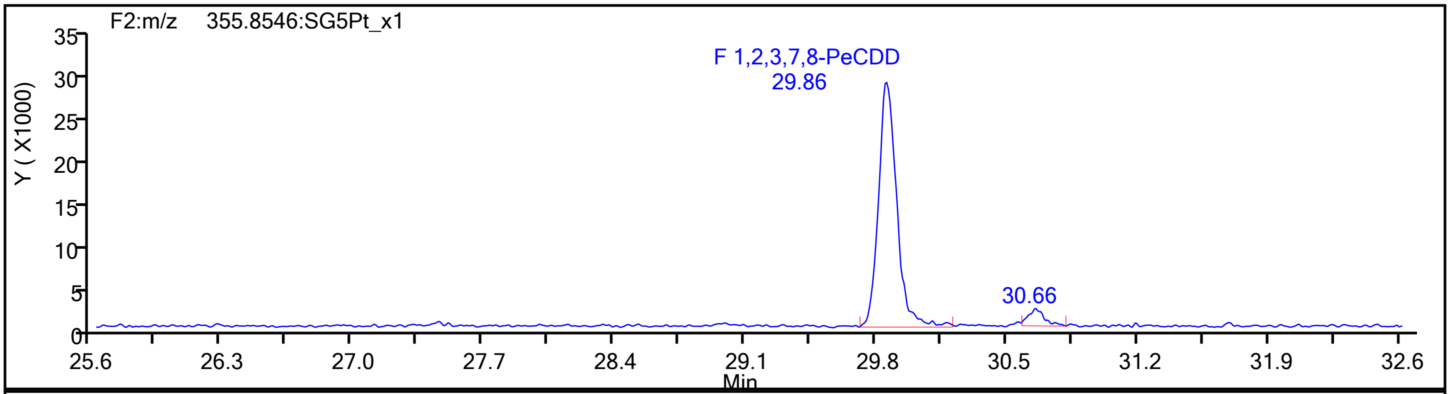

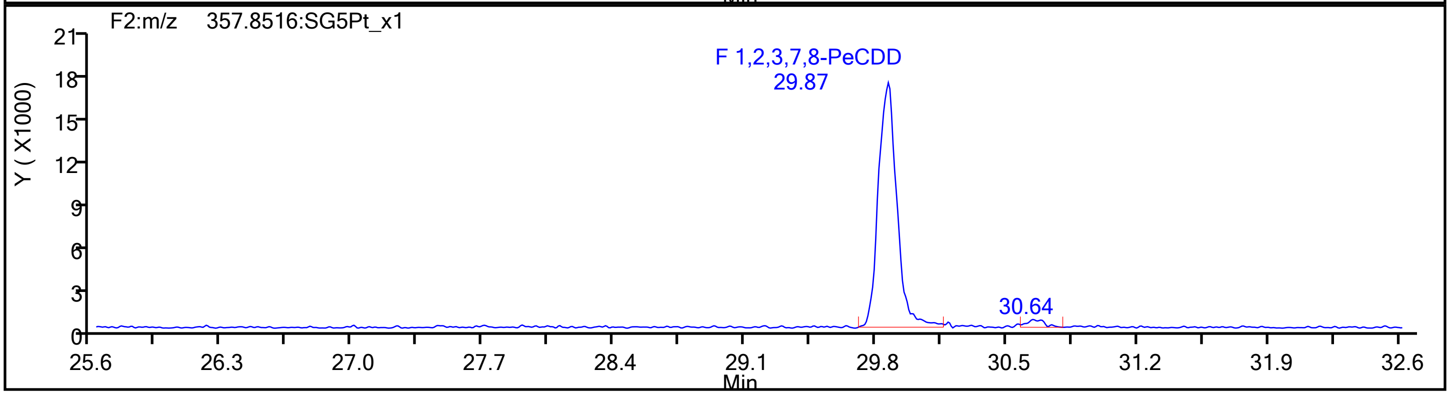

PeCDD Standards

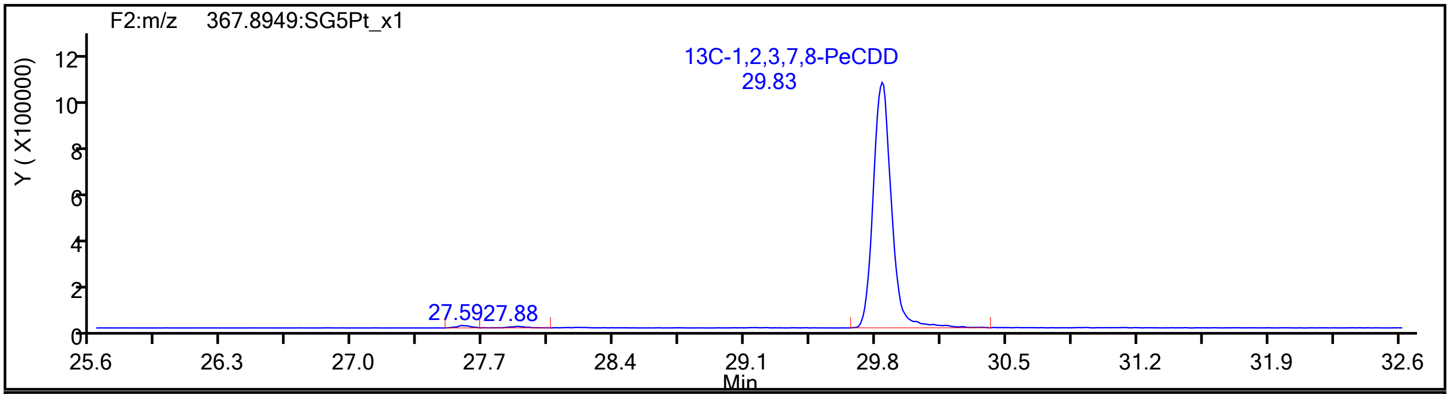

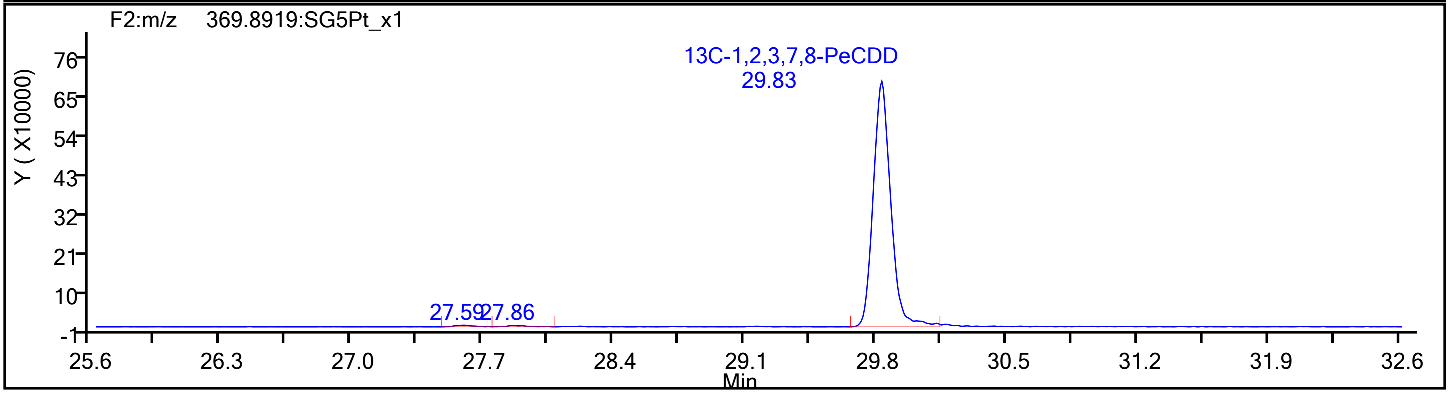

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d

Injection Date: 24-Sep-2021 13:55:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

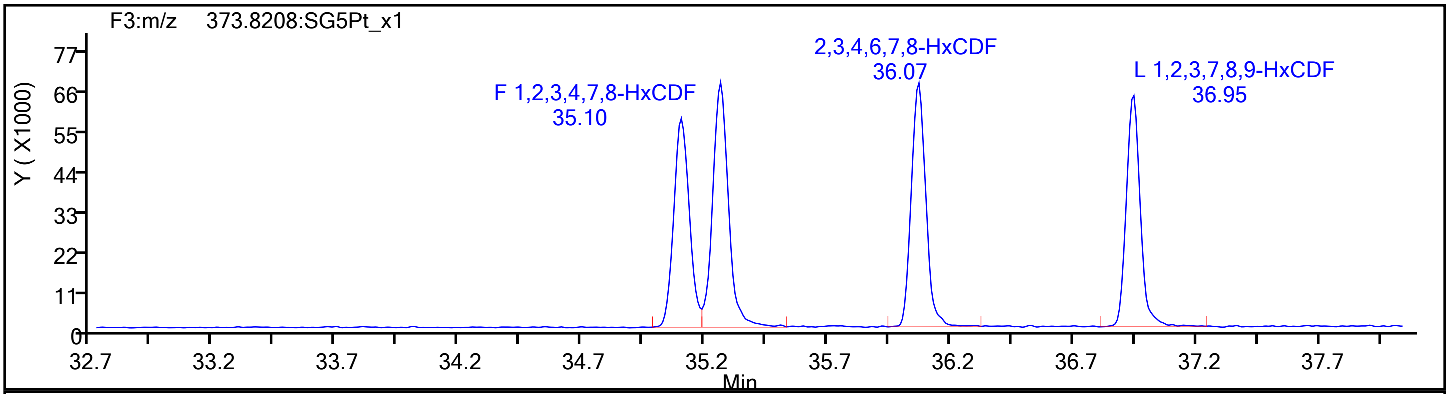

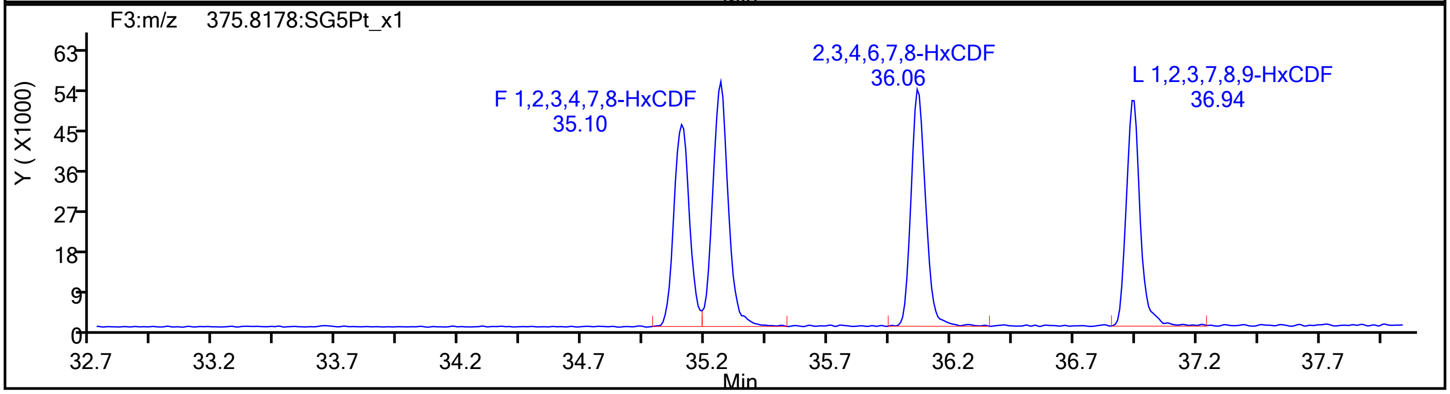

HxCDF Standards

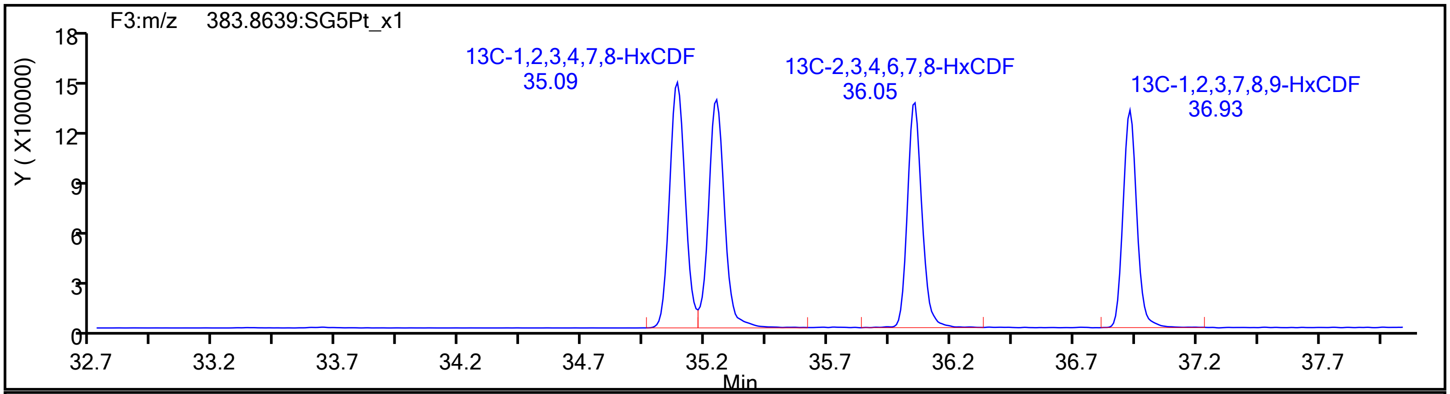

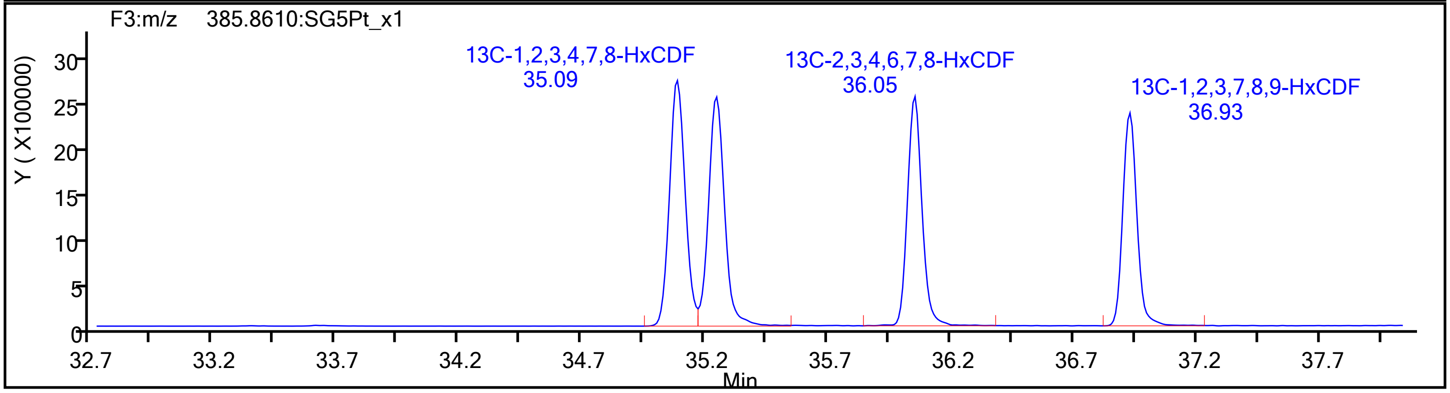

Report Date: 25-Sep-2021 14:16:43
Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Injection Date: 24-Sep-2021 13:55:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

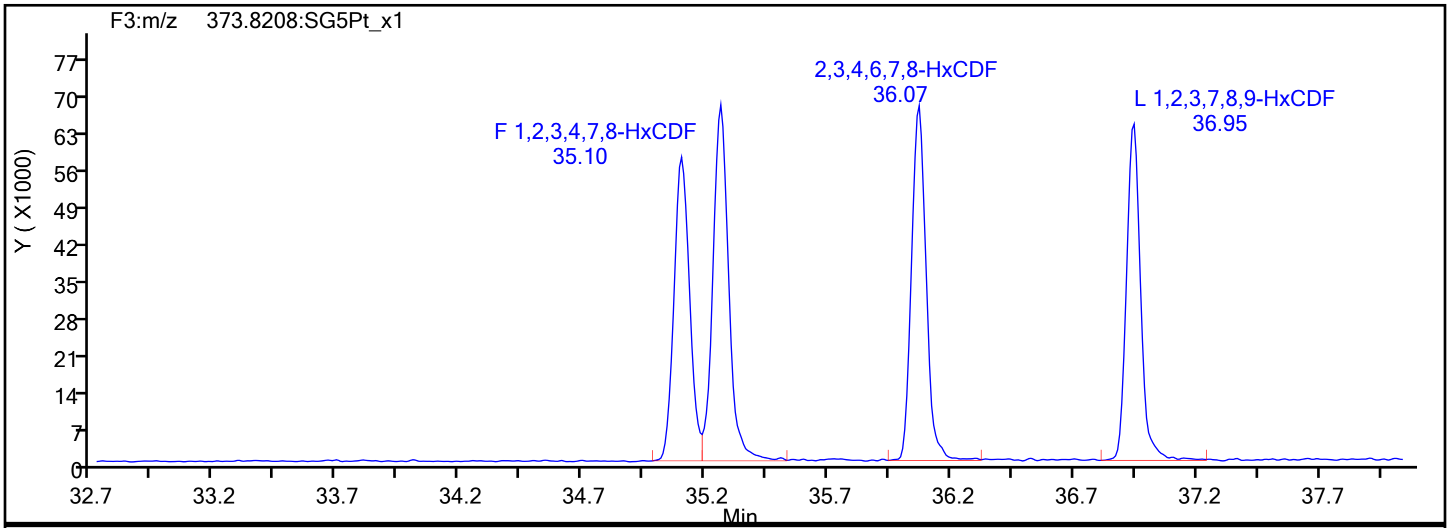

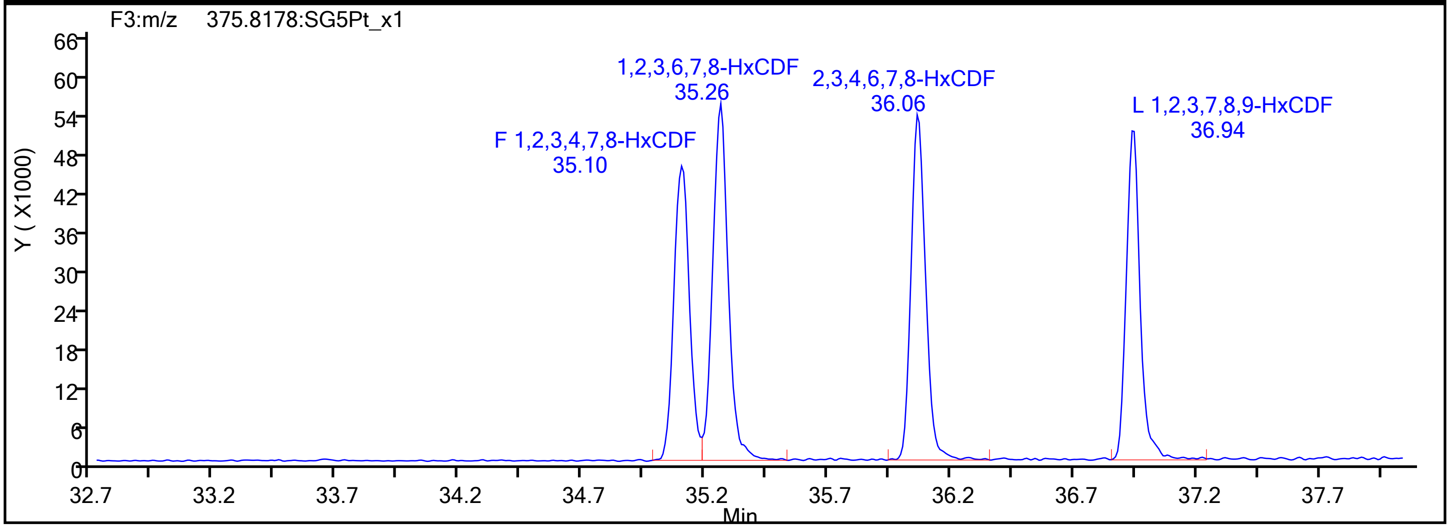

HxCDF Interference Mass

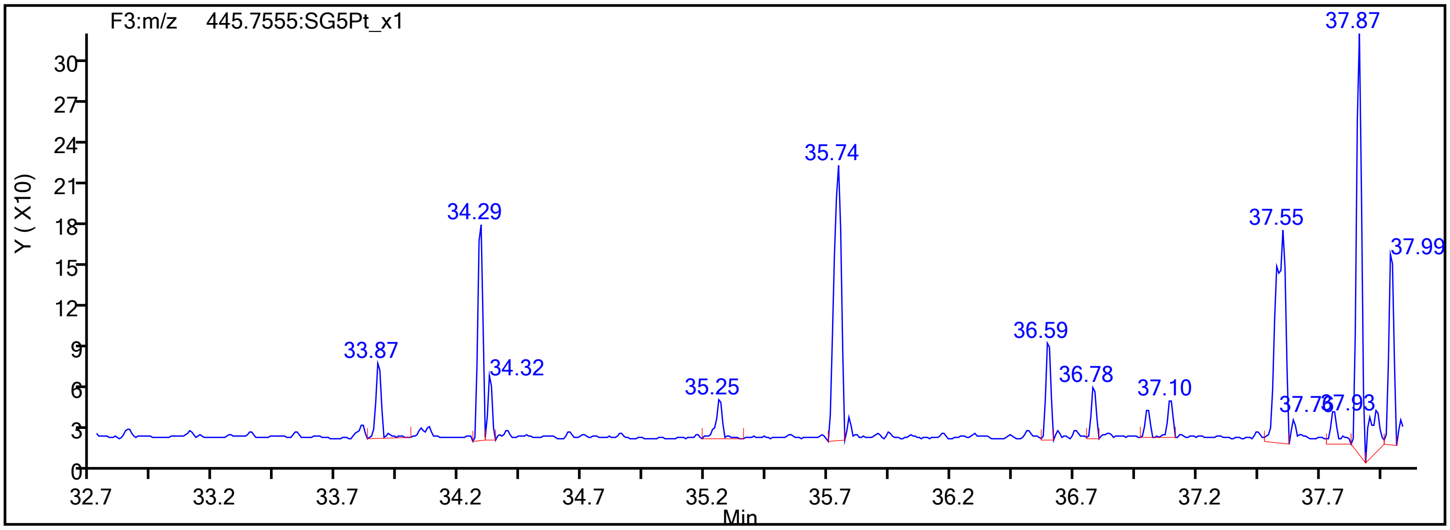

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

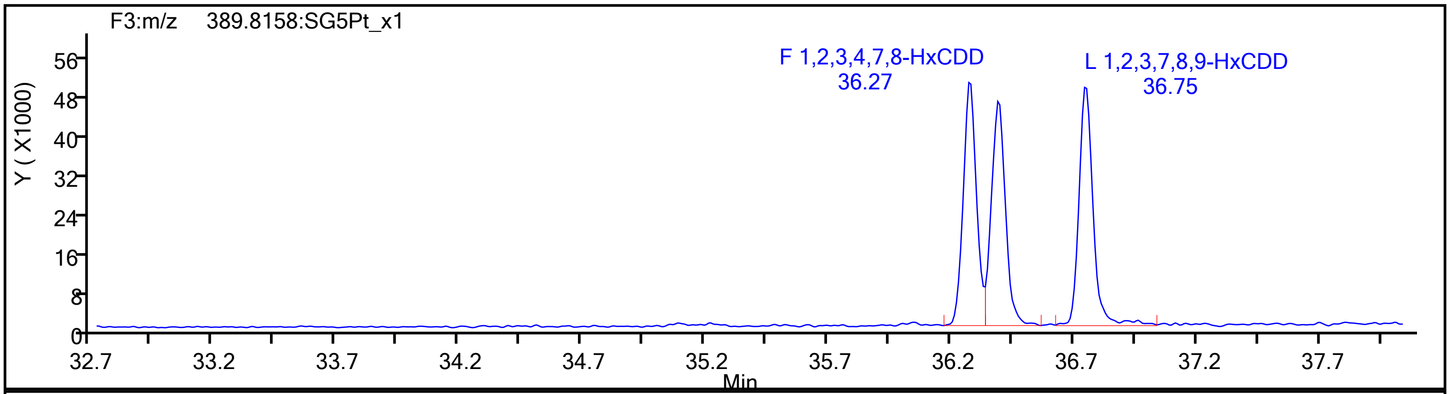

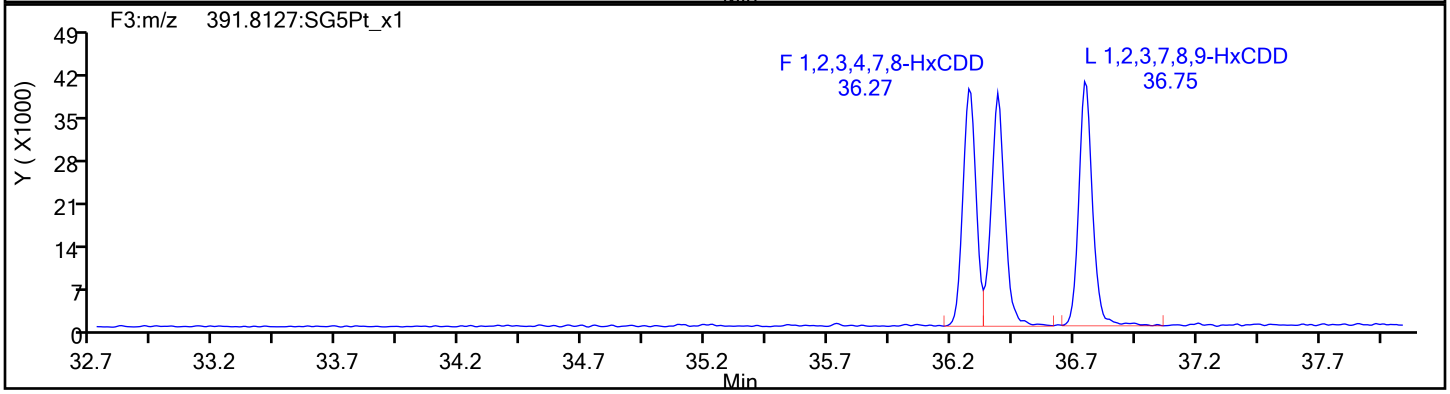

HxCDD Standards

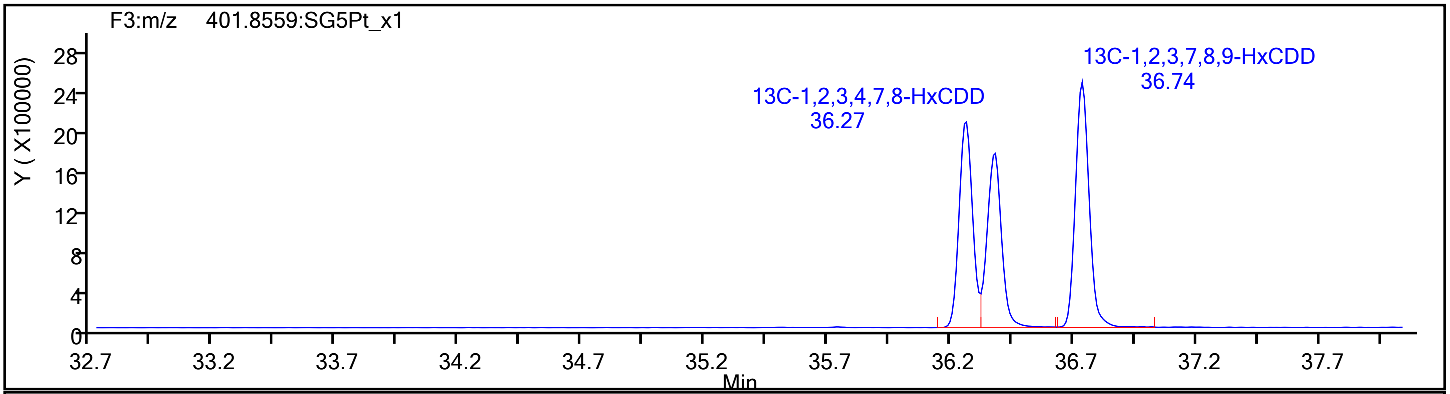

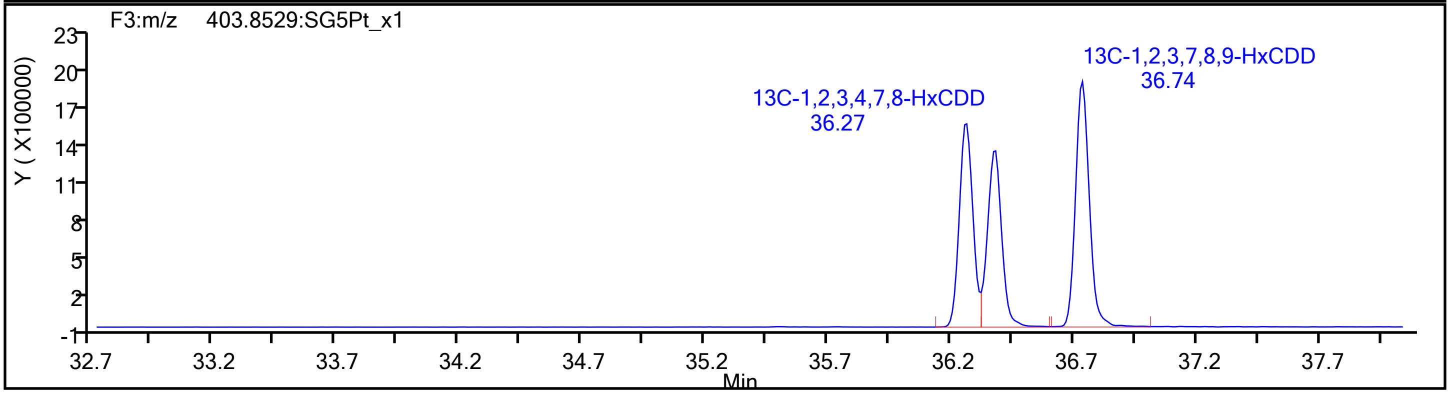

Report Date: 25-Sep-2021 14:16:43
Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d
Injection Date: 24-Sep-2021 13:55:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 4
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Column Dia: 0.32 mm

HpCDF

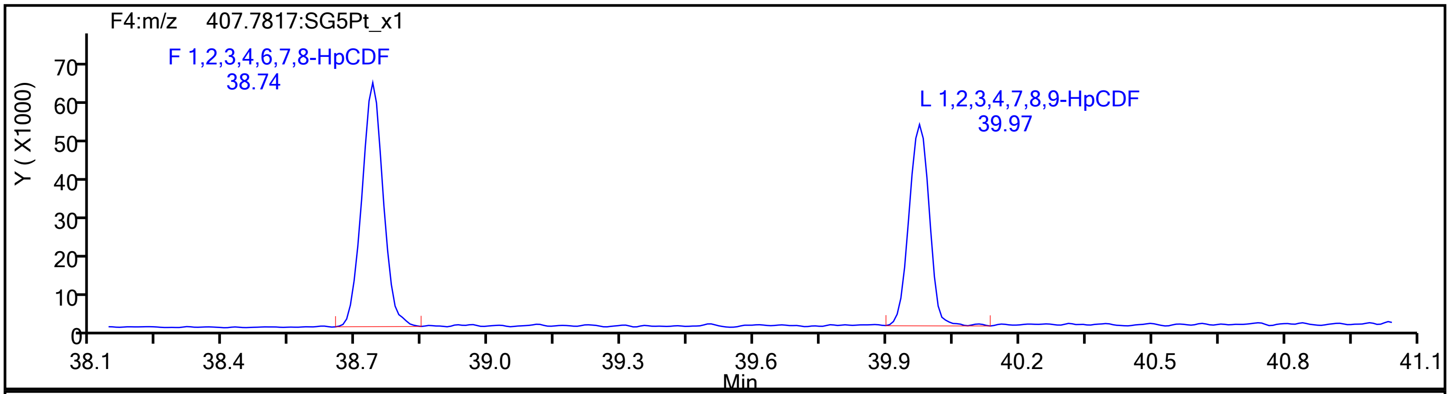

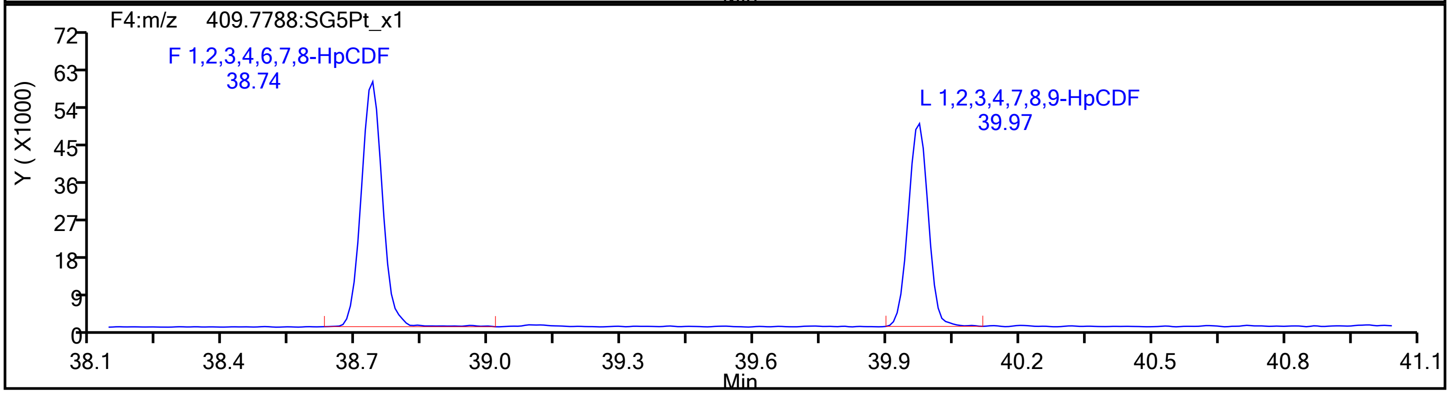

HpCDF Standards

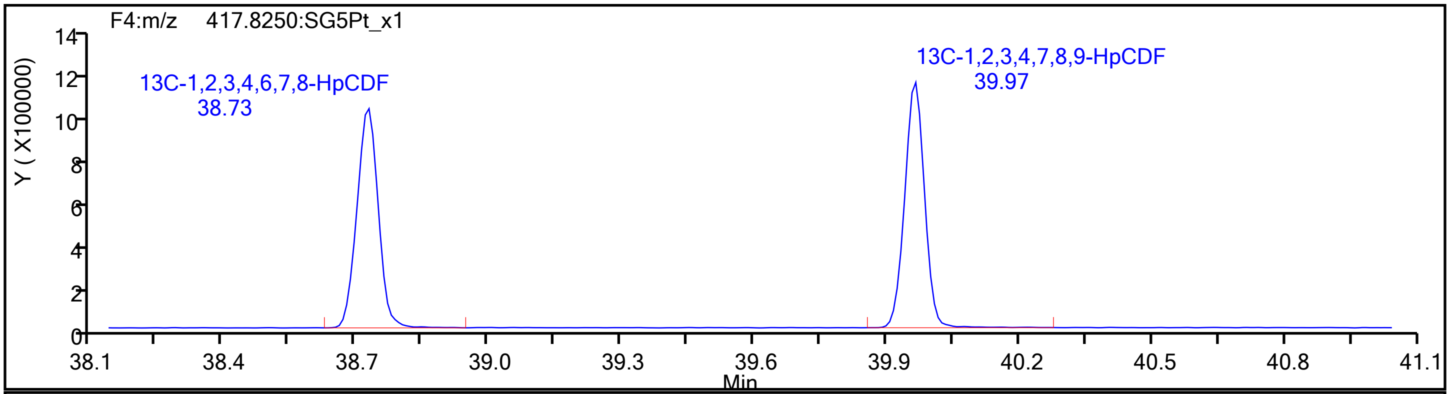

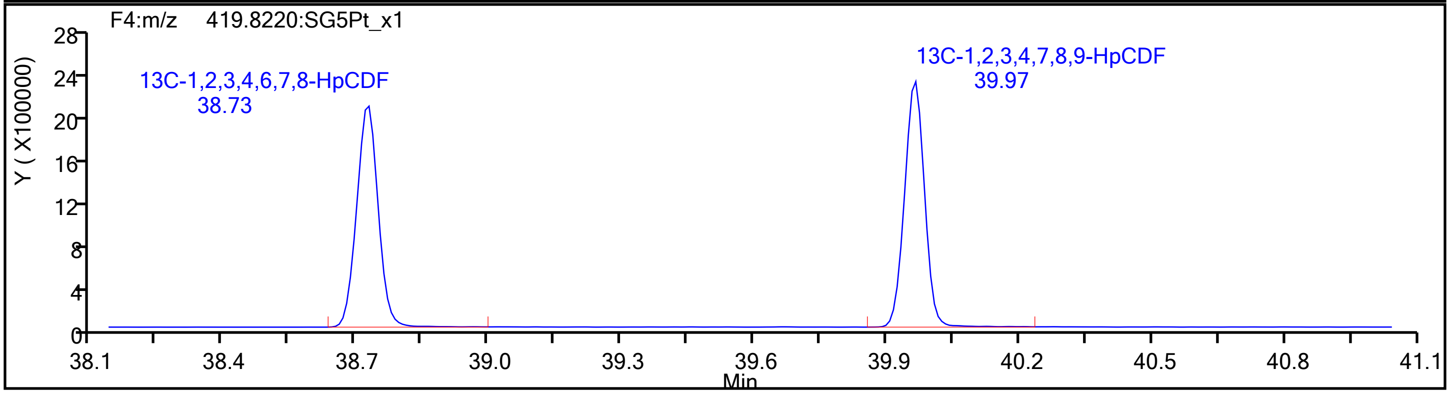

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

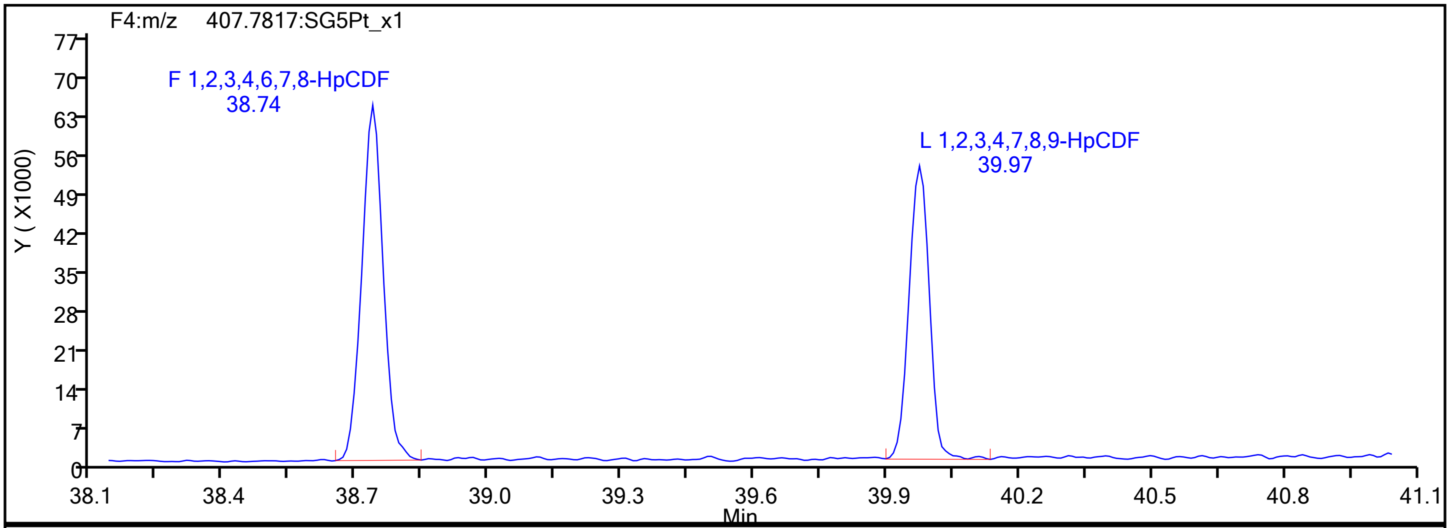

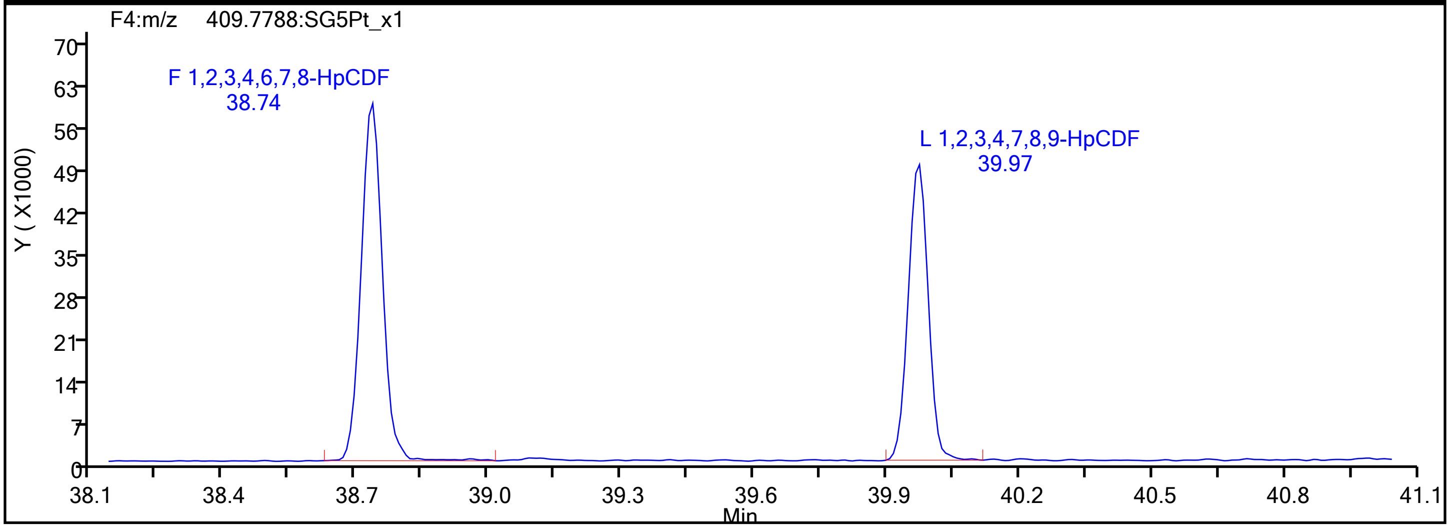

HpCDF Interference Mass

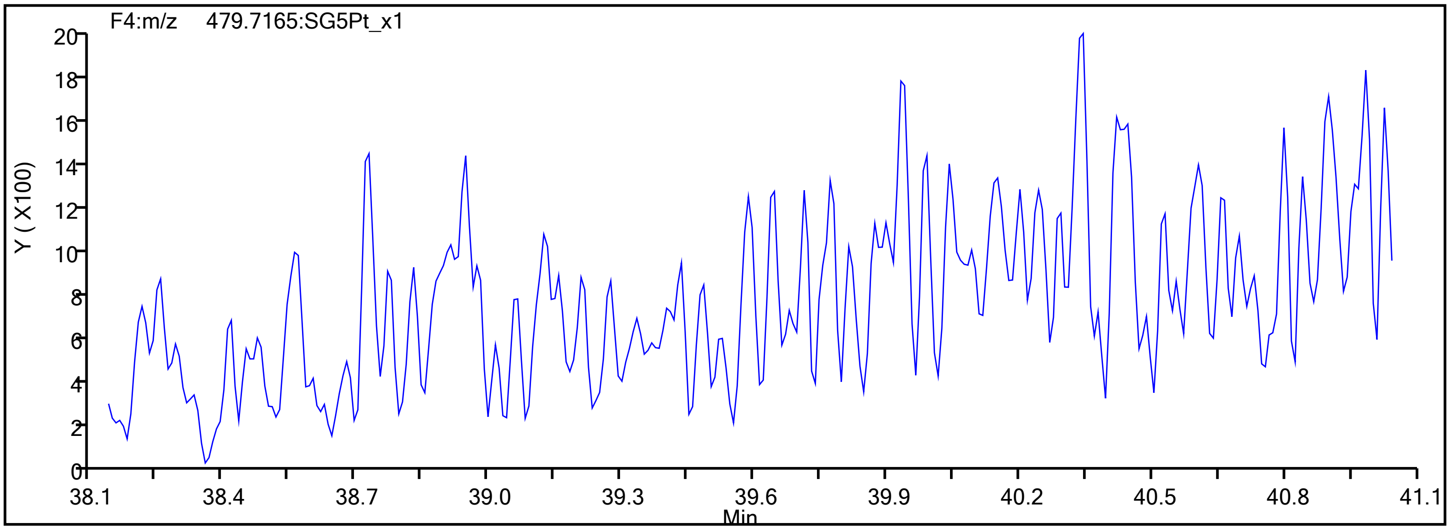

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

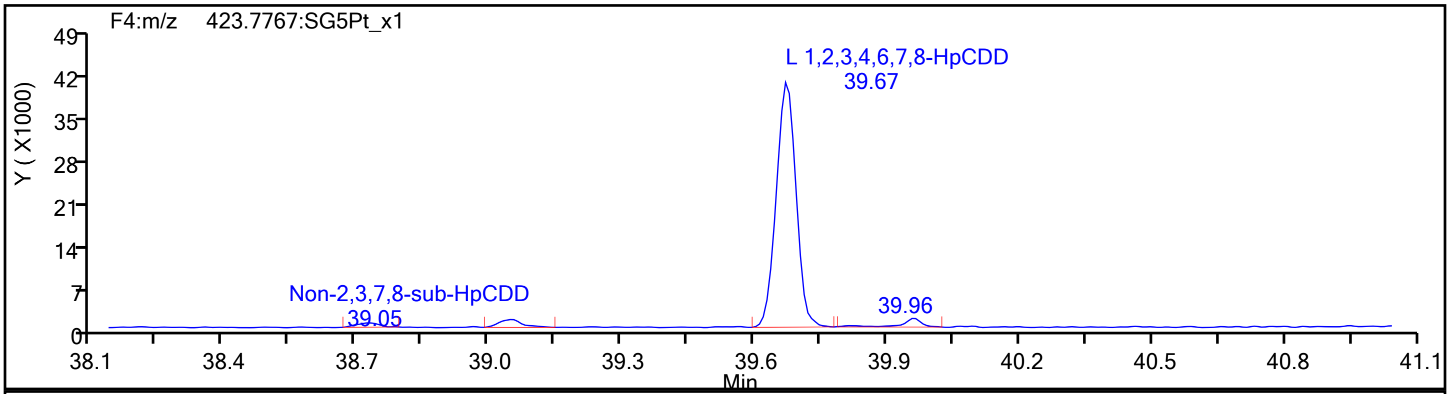

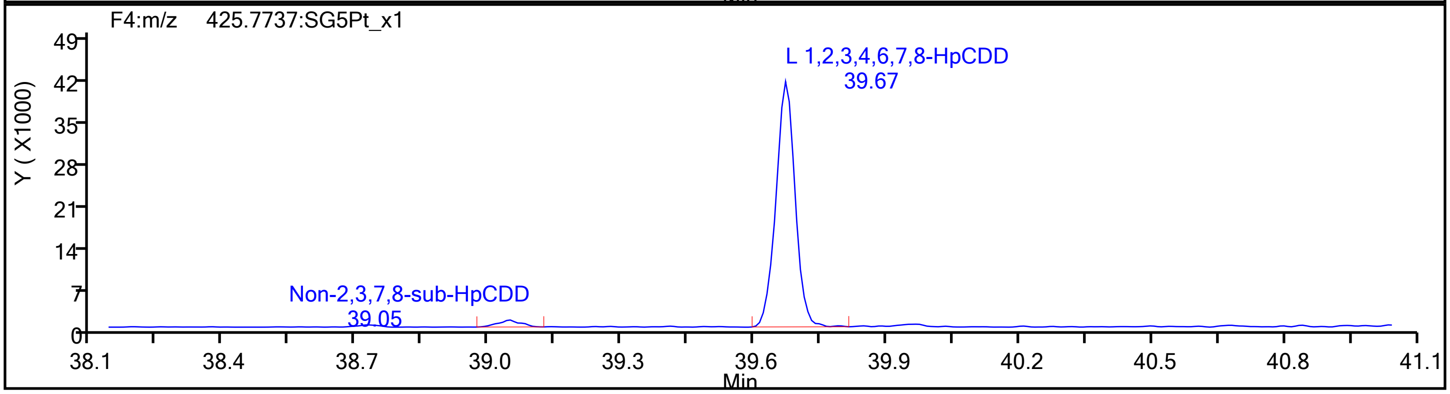

HpCDD Standards

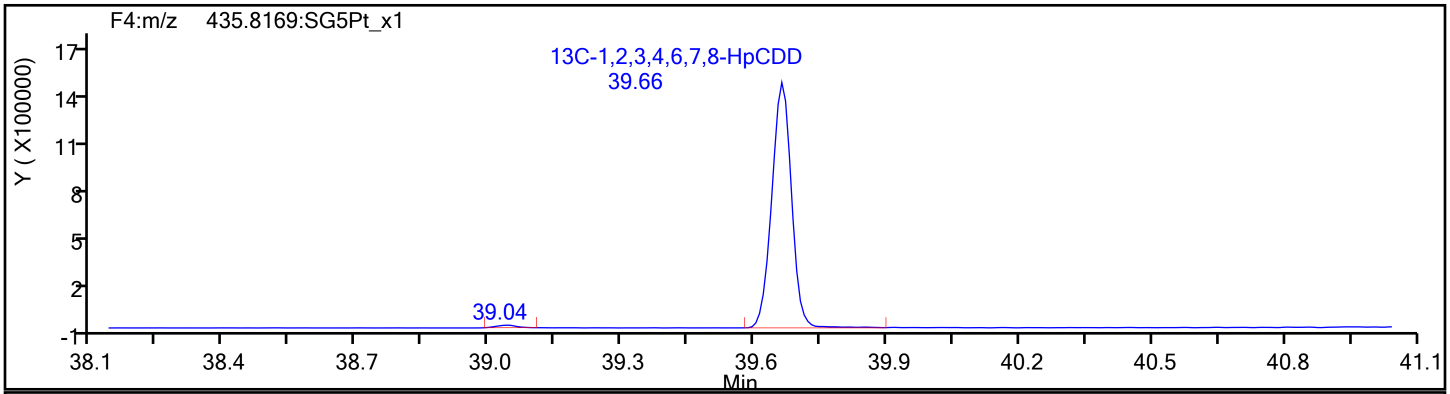

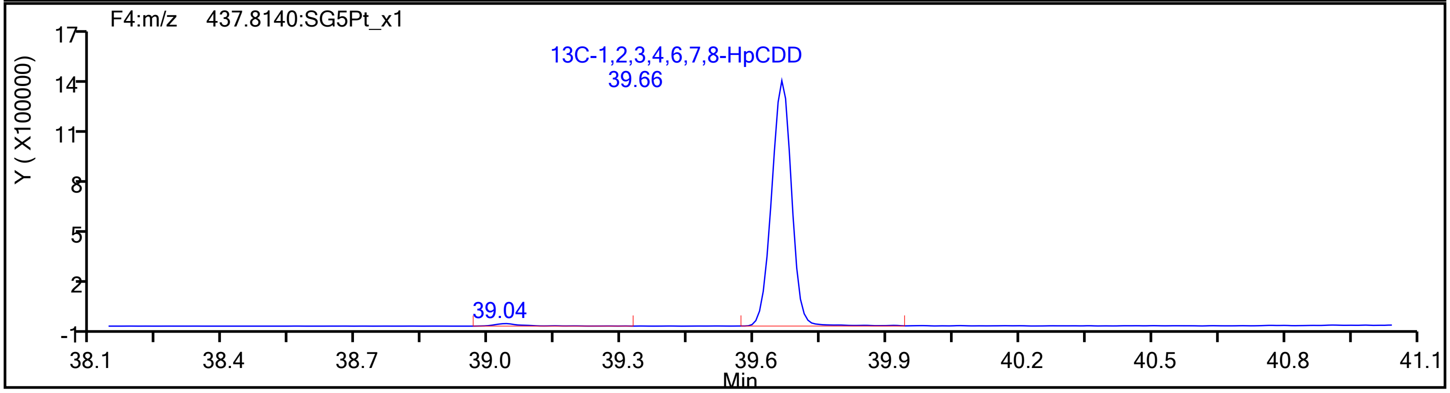

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Injection Date: 24-Sep-2021 13:55:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 4
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Column Dia: 0.32 mm

OCDF

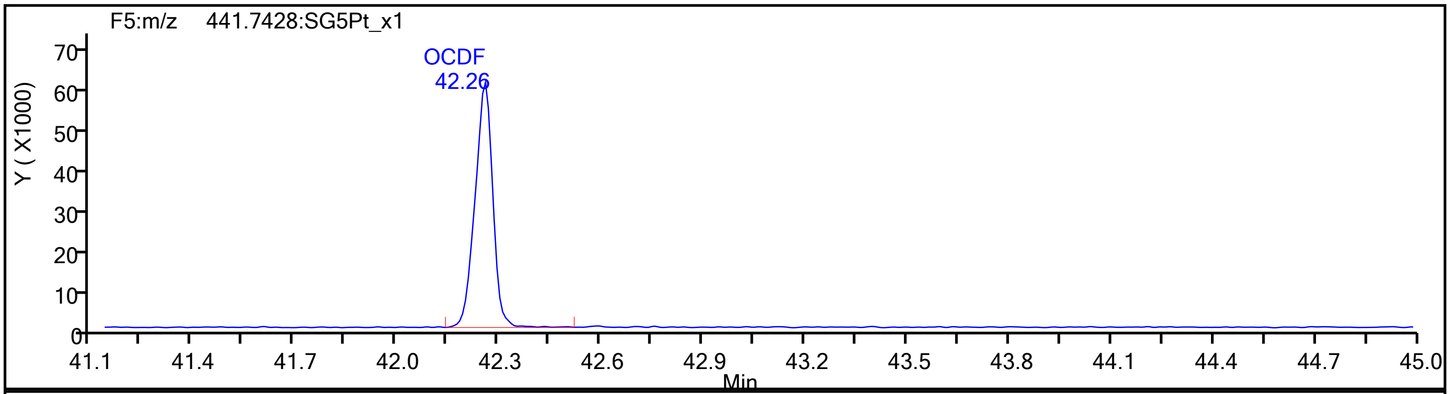

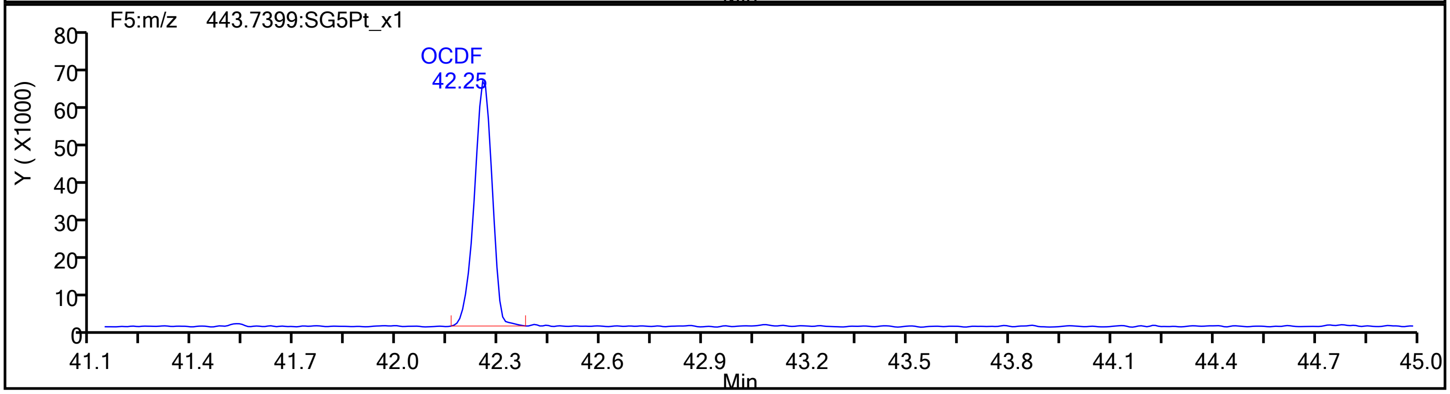

OCDF Standards

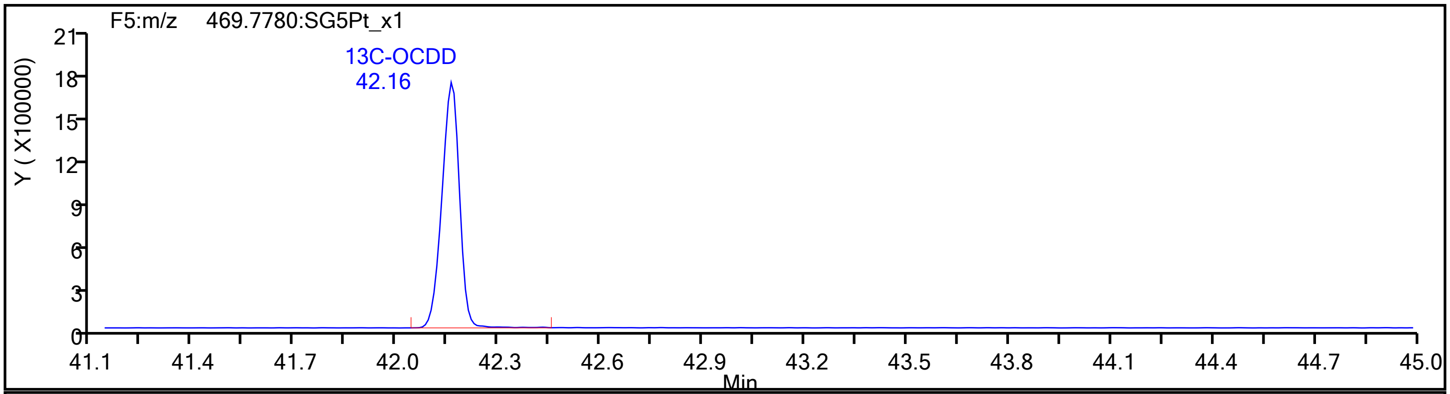

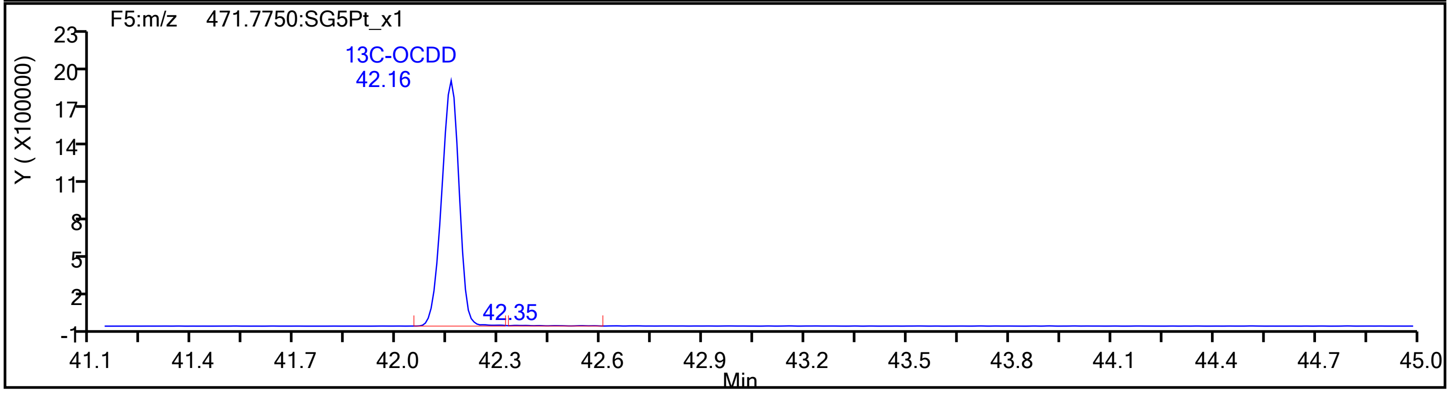

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

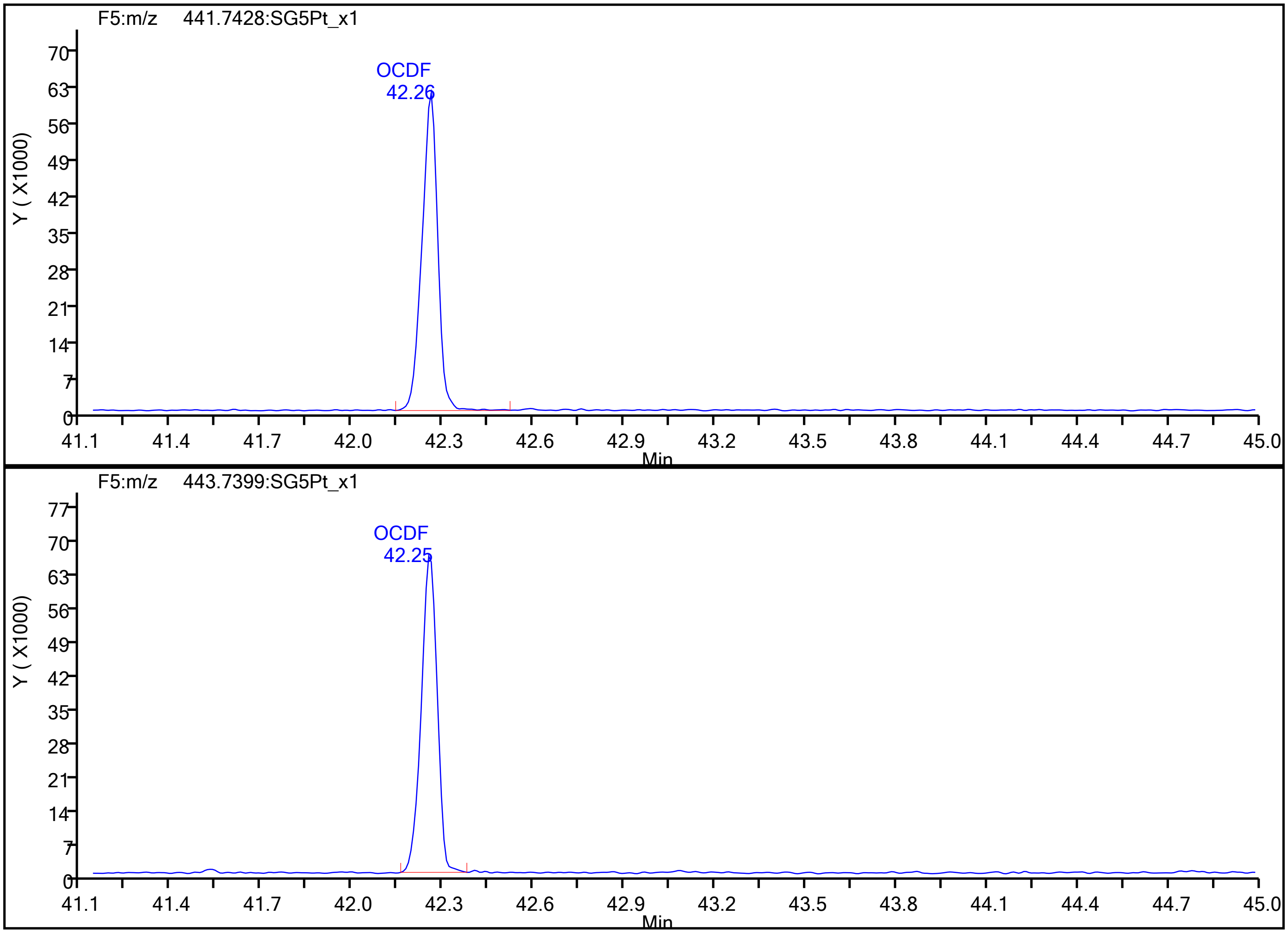

OCDF Interference Mass

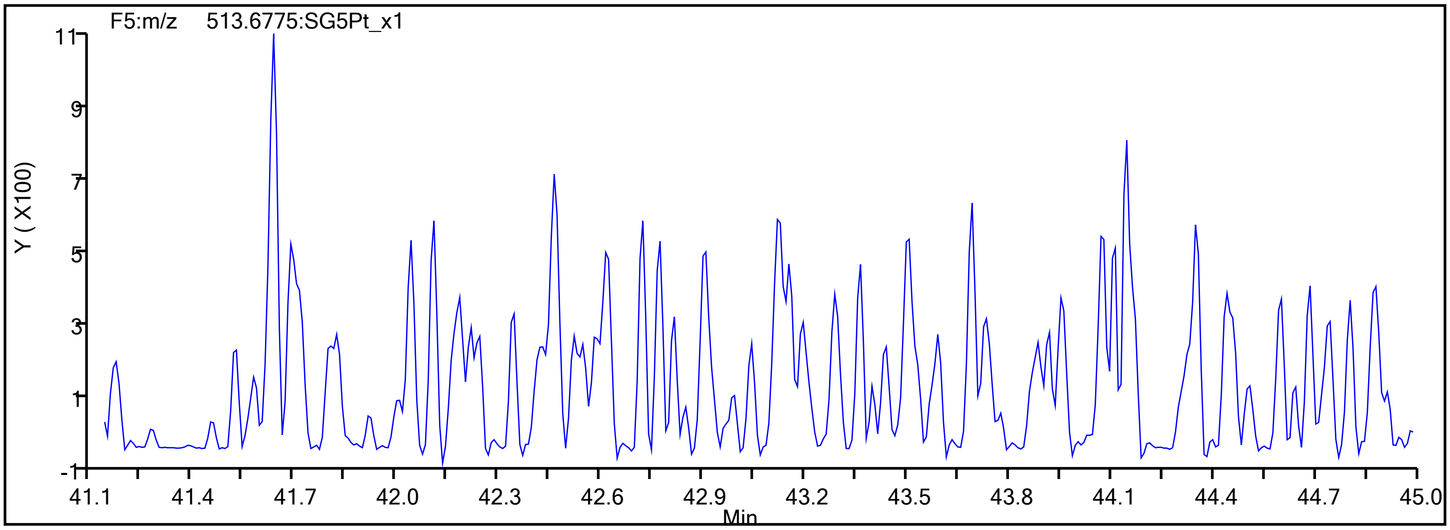

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

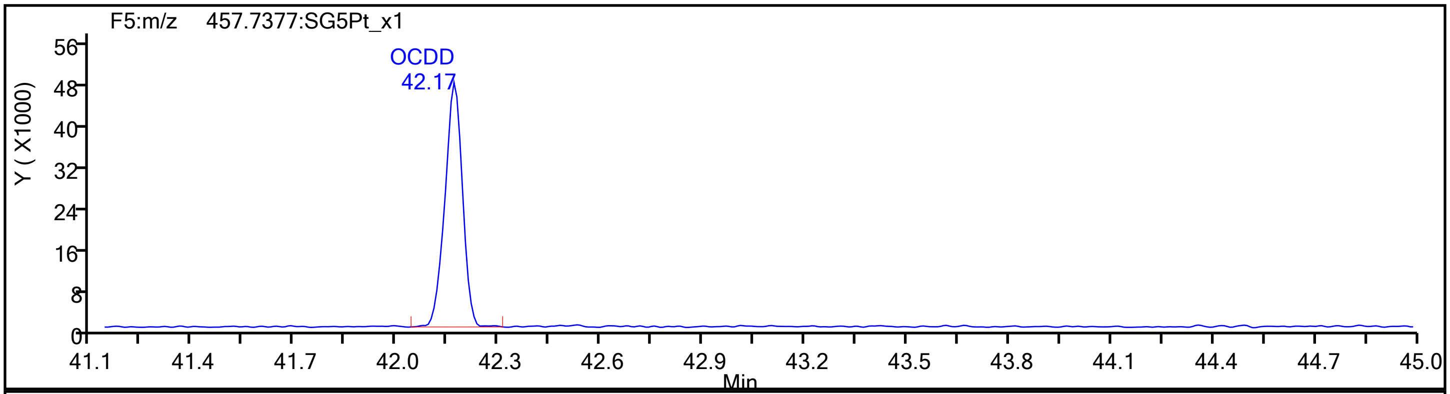

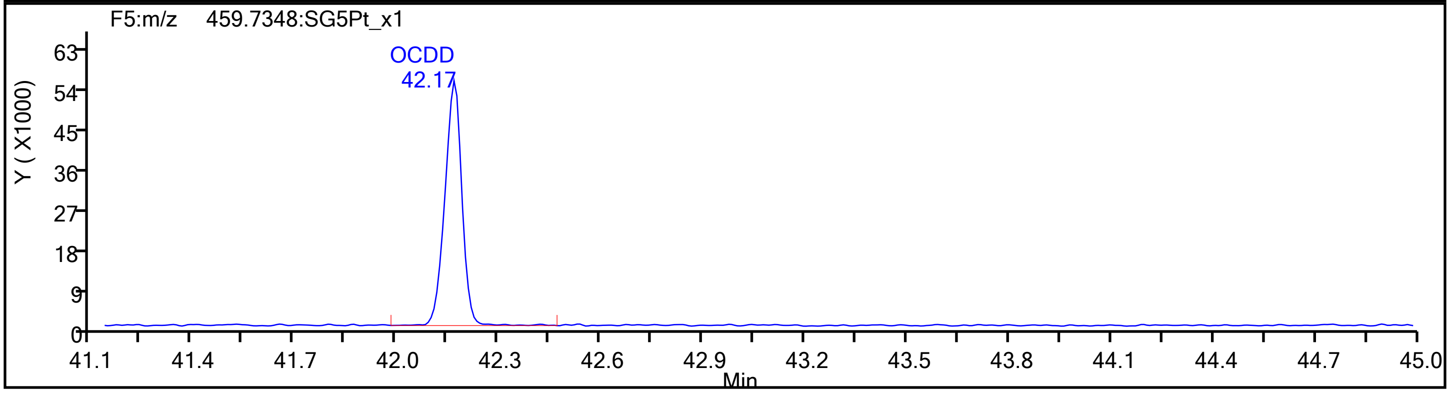

OCDD Standards

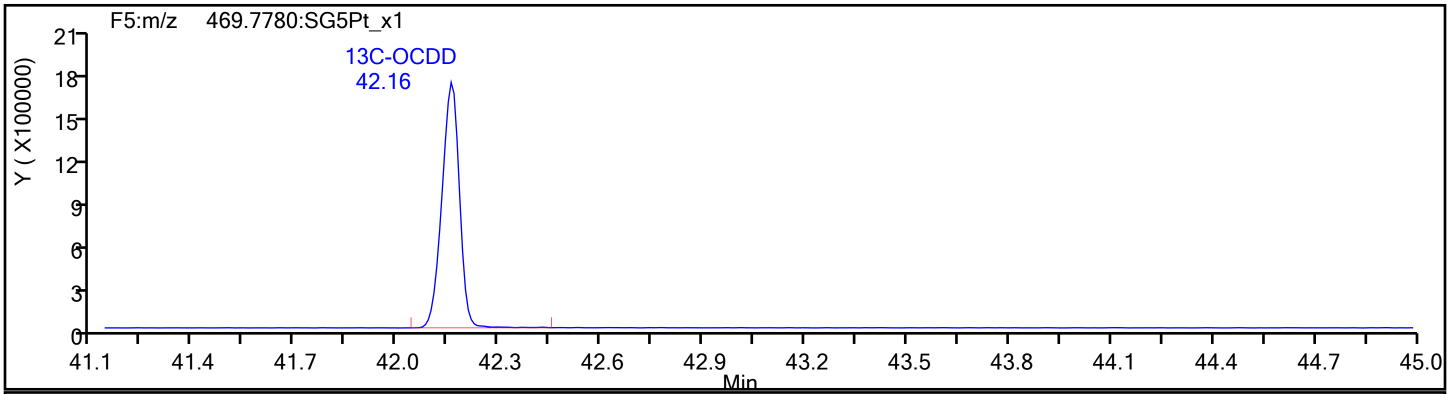

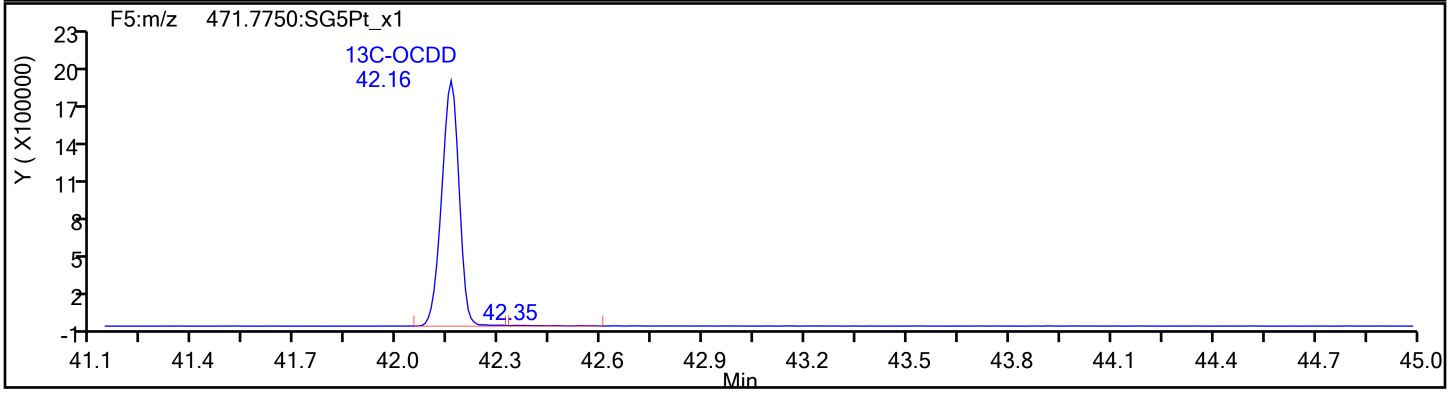

Report Date: 25-Sep-2021 14:16:43 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d

Injection Date: 24-Sep-2021 13:55:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

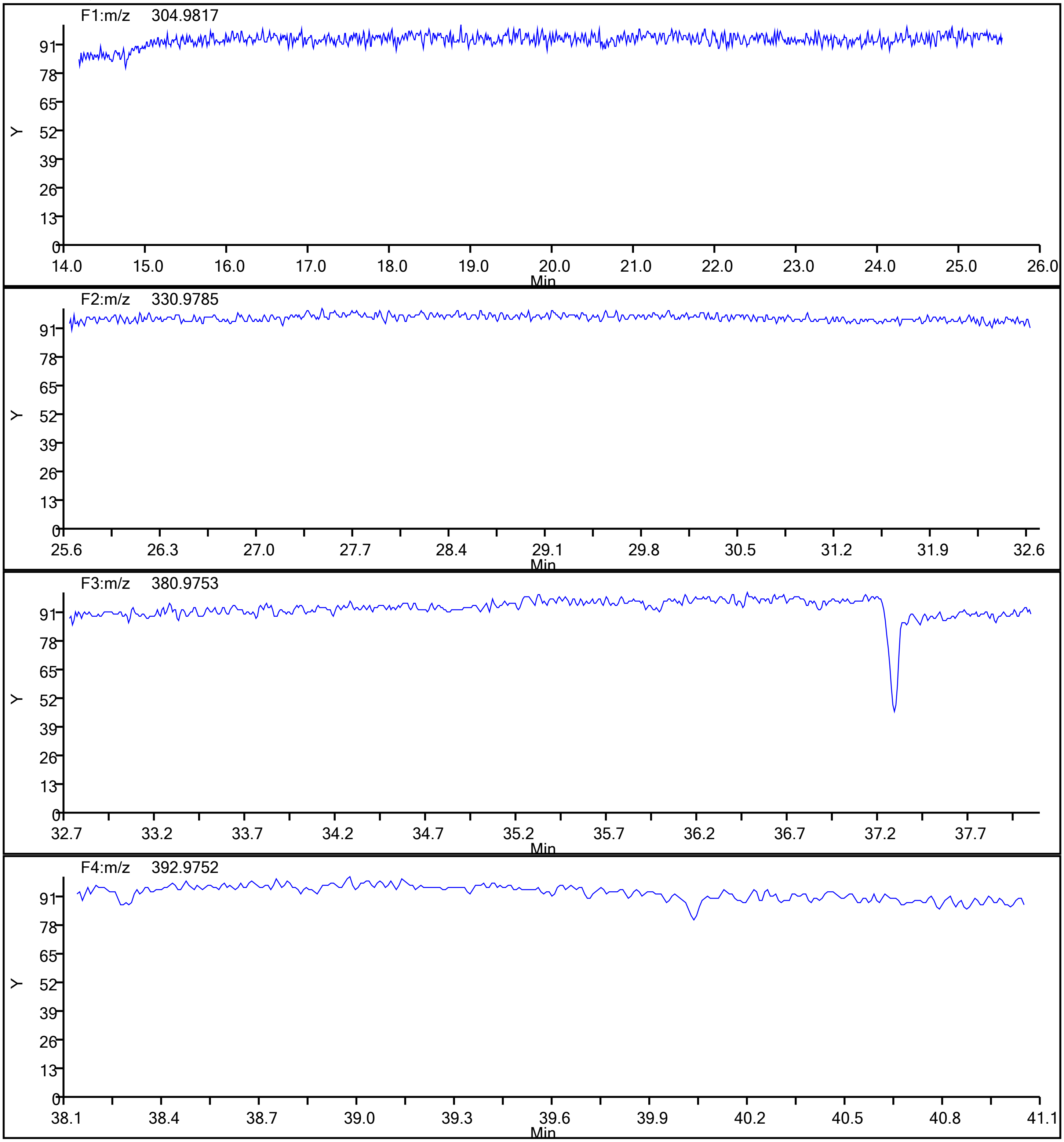

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

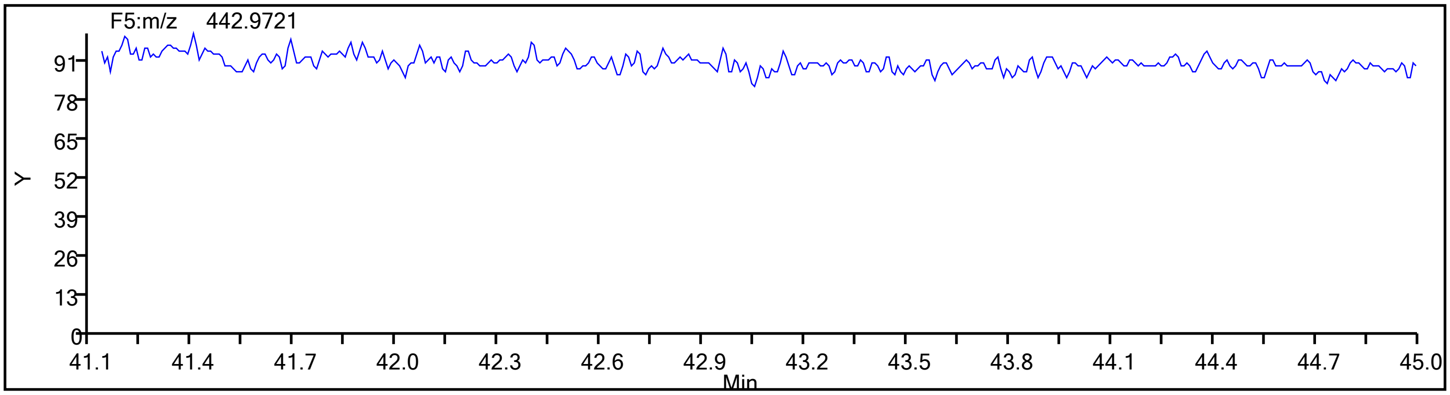

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	24-Sep-2021 14:43:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC CS3_HRDXNL3_00030				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Sep-2021 14:16:56	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1609				
First Level Reviewer: stephensk		Date:	24-Sep-2021 15:40:51		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.579	17249801	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.575	20437364	0.81	1.2244	96.8	96.8	0.3165	0.3165	96.76	
2,3,7,8-TCDF	20.600	485601	0.80	1.1194	2.123	2.123	0.0228	0.0228	106	
S Total TCDF					2.123	2.123	0.0228	0.0228		
D 13C-2,3,7,8-TCDD	21.957	13826062	0.81	0.8210	97.6	97.6	0.2636	0.2636	97.63	
2,3,7,8-TCDD	21.991	321616	0.78	1.0943	2.126	2.126	0.0329	0.0329	106	
$ 37Cl4-2,3,7,8-TCDD	21.991	289464		0.8658	1.938	1.938	0.0315	0.0315	96.91	
S Total TCDD					2.126	2.126	0.0329	0.0329		
D 13C-1,2,3,7,8-PeCDF	27.478	18005950	1.55	1.1026	94.7	94.7	0.6208	0.6208	94.67	
1,2,3,7,8-PeCDF	27.503	2107235	1.59	1.0920	10.7	10.7	0.0797	0.0797	107	
D 13C-2,3,4,7,8-PeCDF	29.019	21889488	1.58	1.3454	94.3	94.3	0.5088	0.5088	94.32	
2,3,4,7,8-PeCDF	29.044	2018304	1.57	0.8752	10.5	10.5	0.0869	0.0869	105	
S Total PeCDF					21.3	21.3	0.0833	0.0833		
D 13C-1,2,3,7,8-PeCDD	29.852	11471690	1.59	0.6987	95.2	95.2	0.2673	0.2673	95.18	
1,2,3,7,8-PeCDD	29.886	1300307	1.56	1.0594	10.7	10.7	0.0703	0.0703	107	
S Total PeCDD					10.7	10.7	0.0703	0.0703		
D 13C-1,2,3,4,7,8-HxCDF	35.093	17885091	0.54	1.1295	101.6	101.6	0.3713	0.3713	102	
1,2,3,4,7,8-HxCDF	35.110	1816904	1.27	0.9737	10.4	10.4	0.0791	0.0791	104	
D 13C-1,2,3,6,7,8-HxCDF	35.253	17214674	0.54	1.0613	104.0	104.0	0.3951	0.3951	104	
1,2,3,6,7,8-HxCDF	35.270	2190191	1.27	1.2201	10.4	10.4	0.0707	0.0707	104	
D 13C-2,3,4,6,7,8-HxCDF	36.061	14904500	0.54	0.9480	100.9	100.9	0.4424	0.4424	101	
2,3,4,6,7,8-HxCDF	36.078	1935478	1.26	1.2435	10.4	10.4	0.0702	0.0702	104	
D 13C-1,2,3,7,8,9-HxCDF	36.937	12533090	0.54	0.8526	94.3	94.3	0.4919	0.4919	94.29	
1,2,3,7,8,9-HxCDF	36.946	1625529	1.26	1.2454	10.4	10.4	0.0755	0.0755	104	
S Total HxCDF					41.7	41.7	0.0739	0.0739		
* 13C-1,2,3,7,8,9-HxCDD	36.743	15588621	1.28	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.272	13348929	1.26	0.8312	103.0	103.0	0.3014	0.3014	103	
1,2,3,4,7,8-HxCDD	36.280	1235343	1.26	0.9085	10.2	10.2	0.0672	0.0672	102	
D 13C-1,2,3,6,7,8-HxCDD	36.381	12008945	1.27	0.7550	102.0	102.0	0.3318	0.3318	102	
1,2,3,6,7,8-HxCDD	36.398	1322578	1.24	1.0279	10.7	10.7	0.0684	0.0684	107	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.752	1336333	1.25	1.0268	10.3	10.3	0.0637	0.0637	103	
S Total HxCDD					31.2	31.2	0.0664	0.0664		
D 13C-1,2,3,4,6,7,8-HpCDF	38.727	9322764	0.46	0.6190	96.6	96.6	0.3029	0.3029	96.61	
1,2,3,4,6,7,8-HpCDF	38.744	1591688	1.06	1.5851	10.8	10.8	0.0698	0.0698	108	
D 13C-1,2,3,4,7,8,9-HpCDF	39.964	9173650	0.47	0.6516	90.3	90.3	0.2877	0.2877	90.31	
1,2,3,4,7,8,9-HpCDF	39.973	1098427	1.05	1.1597	10.3	10.3	0.0859	0.0859	103	
S Total HpCDF					21.1	21.1	0.0779	0.0779		
D 13C-1,2,3,4,6,7,8-HpCDD	39.661	7960279	1.07	0.5362	95.2	95.2	0.2870	0.2870	95.24	
1,2,3,4,6,7,8-HpCDD	39.678	917963	1.09	1.0819	10.7	10.7	0.0327	0.0327	107	
S Total HpCDD					10.7	10.7	0.0327	0.0327		
D 13C-OCDD	42.166	9594270	0.92	0.3802	161.9	161.9	0.3075	0.3075	80.94	
OCDF	42.259	1440828	0.94	1.5094	19.9	19.9	0.0501	0.0501	99.49	
OCDD	42.175	1145552	0.90	1.1344	21.1	21.1	0.0758	0.0758	105	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00030 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 24-Sep-2021 14:43:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS3_HRDXNL3_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:16:56 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 15:40:51

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.579	21.567	1		7737296	1144080	1364	3410	839		
333.9338	21.579	21.567	1		9512505	1395350	834	2085	1673	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.575	20.565	1	0.953	9127713	1349340	2532	6330	533		
317.9389	20.575	20.565	1	0.953	11309651	1661300	1405	3512	1182	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.600	20.598	0	1.001	215881	32067	95	237	338		
305.8987	20.600	20.598	0	1.001	269720	38926	213	532	183	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.957	21.948	1	1.018	6182818	849440	1364	3410	623		
333.9338	21.966	21.948	1	1.018	7643244	1019504	834	2085	1222	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.991	21.977	1	1.002	140853	18638	195	487	96		
321.8936	21.974	21.977	0	1.001	180763	24263	74	185	328	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.991	21.977	1	1.019	289464	39456	277	692	142		
13C-1,2,3,7,8-PeCDF											
351.9000	27.478	27.459	1	1.273	10943892	1724245	4595	11487	375		
353.8970	27.478	27.459	1	1.273	7062058	1123850	2358	5895	477	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.503	27.484	1	1.001	1294444	196953	489	1222	403		
341.8567	27.503	27.484	1	1.001	812791	123609	503	1257	246	1.59(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	29.019	28.999	1	1.345	13415156	1981890	4595	11487	431		
353.8970	29.019	28.999	1	1.345	8474332	1277488	2358	5895	542	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.044	29.026	1	1.001	1234372	179465	489	1222	367		
341.8567	29.044	29.026	1	1.001	783932	113202	503	1257	225	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.852	29.832	1	1.383	7045431	990530	1065	2662	930		
369.8919	29.852	29.832	1	1.383	4426259	623865	832	2080	750	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.886	29.859	2	1.001	791922	113152	354	885	320		
357.8516	29.886	29.859	2	1.001	508385	70370	127	317	554	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.093	35.084	1	0.955	6279116	1394754	2270	5675	614		
385.8610	35.093	35.084	1	0.955	11605975	2570279	4396	10990	585	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.110	35.101	1	1.000	1017231	227480	685	1712	332		
375.8178	35.110	35.101	1	1.000	799673	181111	537	1342	337	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.253	35.244	1	0.959	6057322	1275504	2270	5675	562		
385.8610	35.253	35.244	1	0.959	11157352	2267487	4396	10990	516	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.270	35.259	1	1.000	1223244	256549	685	1712	375		
375.8178	35.270	35.259	1	1.000	966947	202311	537	1342	377	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.061	36.051	1	0.981	5241835	1238903	2270	5675	546		
385.8610	36.061	36.051	1	0.981	9662665	2261497	4396	10990	514	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.078	36.066	1	1.000	1079686	260863	685	1712	381		
375.8178	36.078	36.066	1	1.000	855792	202536	537	1342	377	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.937	36.927	1	1.005	4404225	1161884	2270	5675	512		
385.8610	36.937	36.927	1	1.005	8128865	2085941	4396	10990	475	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.946	36.940	0	1.000	907097	233895	685	1712	341		
375.8178	36.946	36.940	0	1.000	718432	187601	537	1342	349	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.743	36.733	1		8753717	2238665	2314	5785	967		
403.8529	36.743	36.733	1		6834904	1734985	1668	4170	1040	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.272	36.260	1	0.987	7442202	1933037	2314	5785	835		
403.8529	36.272	36.260	1	0.987	5906727	1543193	1668	4170	925	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.280	36.273	0	1.000	689029	187565	515	1287	364		
391.8127	36.280	36.273	0	1.000	546314	147880	334	835	443	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.381	36.376	0	0.990	6719945	1672458	2314	5785	723		
403.8529	36.381	36.376	0	0.990	5289000	1343970	1668	4170	806	1.27(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.398	36.389	1	1.000	732234	180167	515	1287	350		
391.8127	36.398	36.389	1	1.000	590344	143124	334	835	429	1.24(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.752	36.745	0	1.013	741869	185023	515	1287	359		
391.8127	36.752	36.745	0	1.013	594464	148881	334	835	446	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.727	38.721	0	1.054	2955476	943142	1471	3677	641		
419.8220	38.727	38.721	0	1.054	6367288	1982648	1509	3772	1314	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.744	38.734	1	1.000	819808	259187	830	2075	312		
409.7788	38.735	38.734	0	1.000	771880	242522	465	1162	522	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.964	39.962	0	1.088	2927446	1031484	1471	3677	701		
419.8220	39.964	39.962	0	1.088	6246204	2216882	1509	3772	1469	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.973	39.970	0	1.000	561480	200198	830	2075	241		
409.7788	39.973	39.970	0	1.000	536947	190552	465	1162	410	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.661	39.661	0	1.079	4109664	1395297	1269	3172	1100		
437.8140	39.661	39.661	0	1.079	3850615	1296044	1177	2942	1101	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.678	39.671	0	1.000	478887	160359	225	562	713		
425.7737	39.670	39.671	0	1.000	439076	150936	156	390	968	1.09(0.88-1.20)	
13C-OCDD											
469.7780	42.166	42.159	0	1.148	4601145	1430723	1080	2700	1325		
471.7750	42.166	42.159	0	1.148	4993125	1545184	778	1945	1986	0.92(0.76-1.02)	
OCDF											
441.7428	42.259	42.255	0	1.002	696711	214650	180	450	1193		
443.7399	42.259	42.255	0	1.002	744117	230547	270	675	854	0.94(0.76-1.02)	
OCDD											
457.7377	42.175	42.169	0	1.000	543227	168061	282	705	596		
459.7348	42.175	42.169	0	1.000	602325	186901	230	575	813	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL3_00030 Amount Added: 1.00 Units: uL

Report Date: 25-Sep-2021 14:16:58 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d

Injection Date: 24-Sep-2021 14:43:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

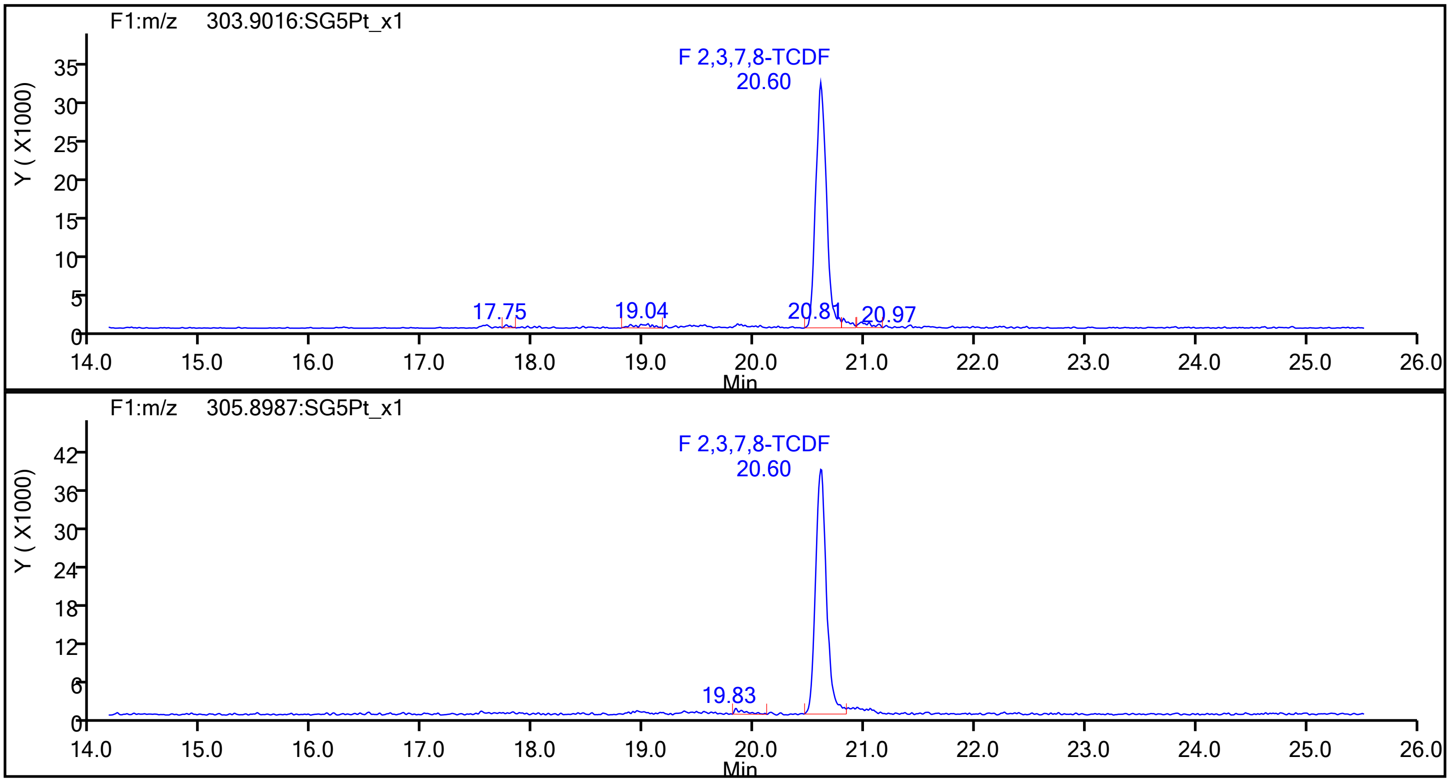

TCDF Standards

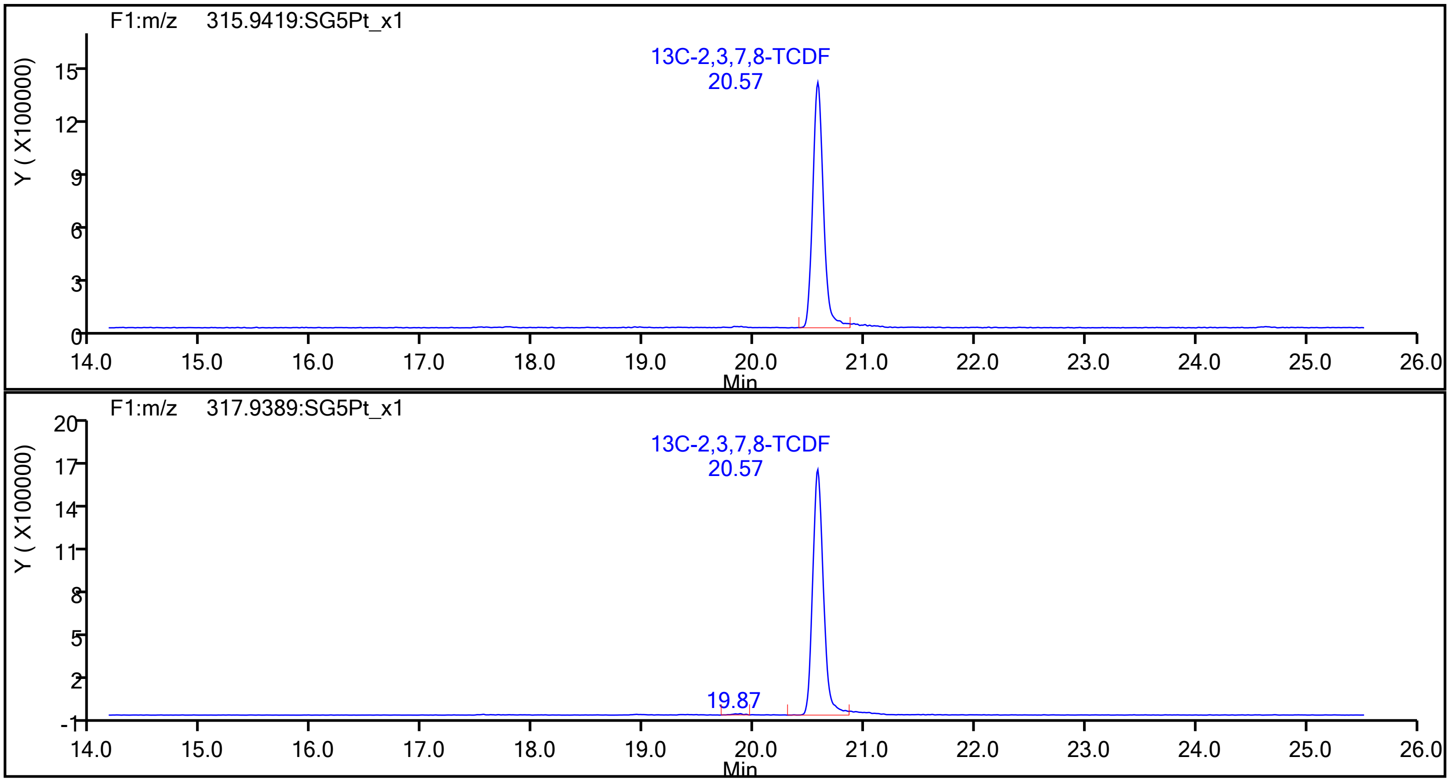

Report Date: 25-Sep-2021 14:16:59 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d		
Injection Date:	24-Sep-2021 14:43:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

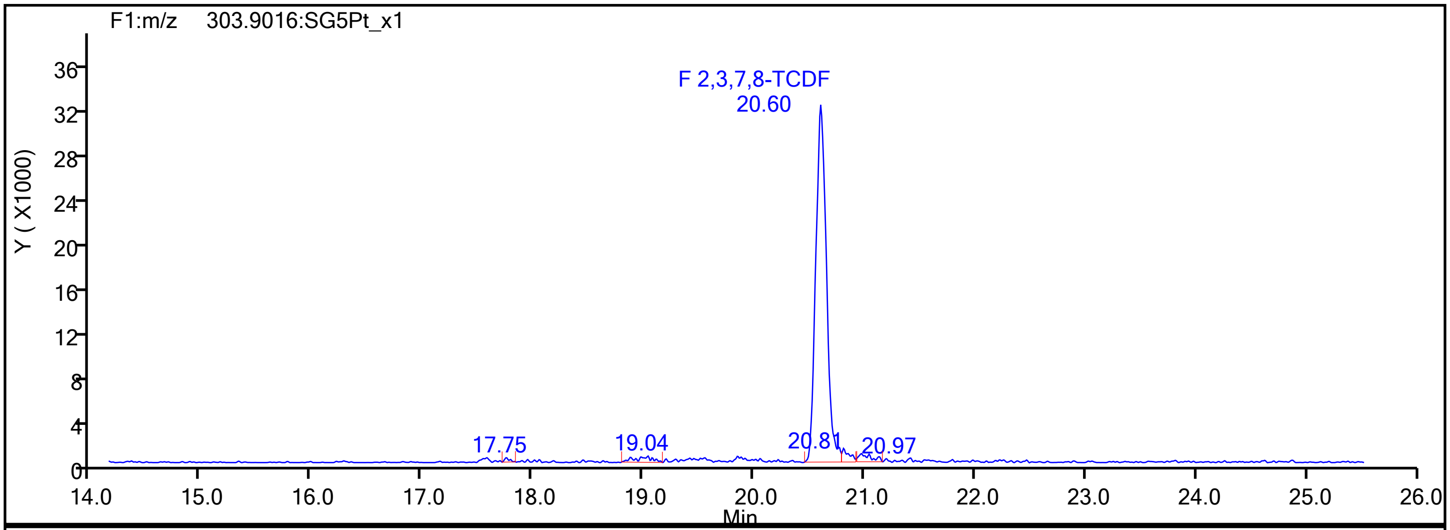

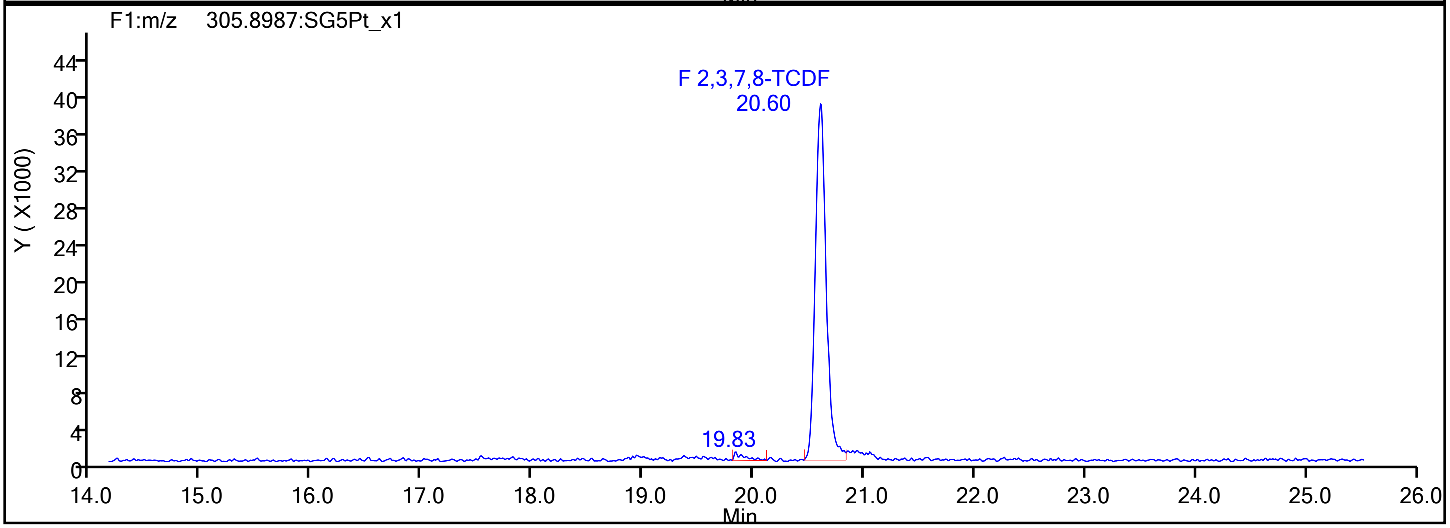

TCDF Interference Mass

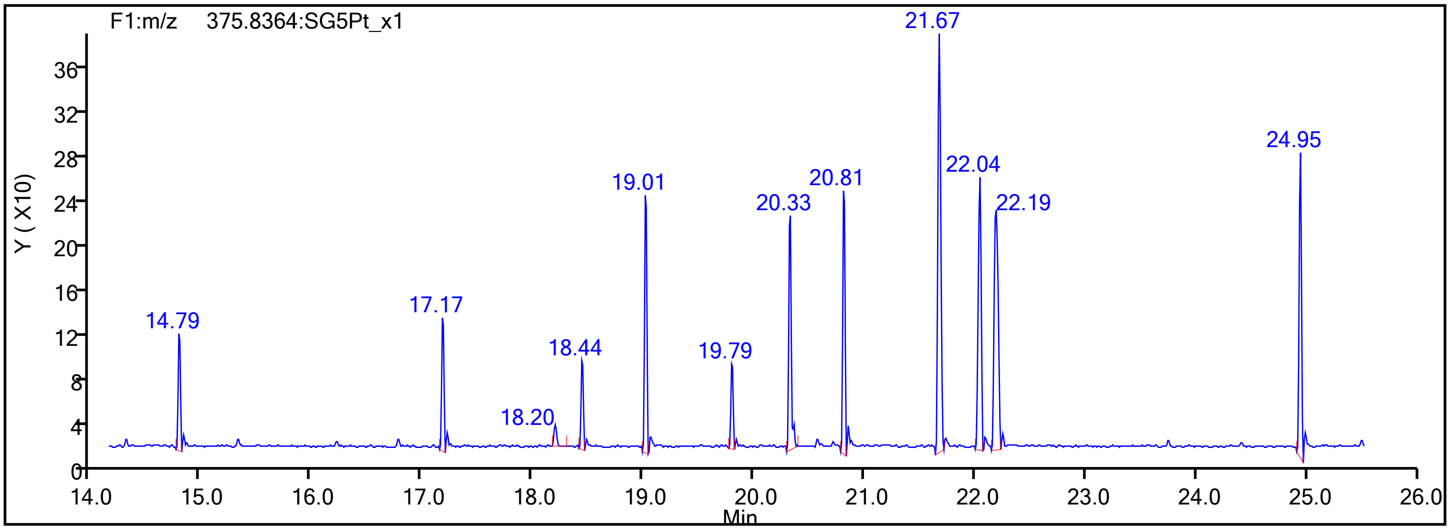

Report Date: 25-Sep-2021 14:16:59 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d
Injection Date: 24-Sep-2021 14:43:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

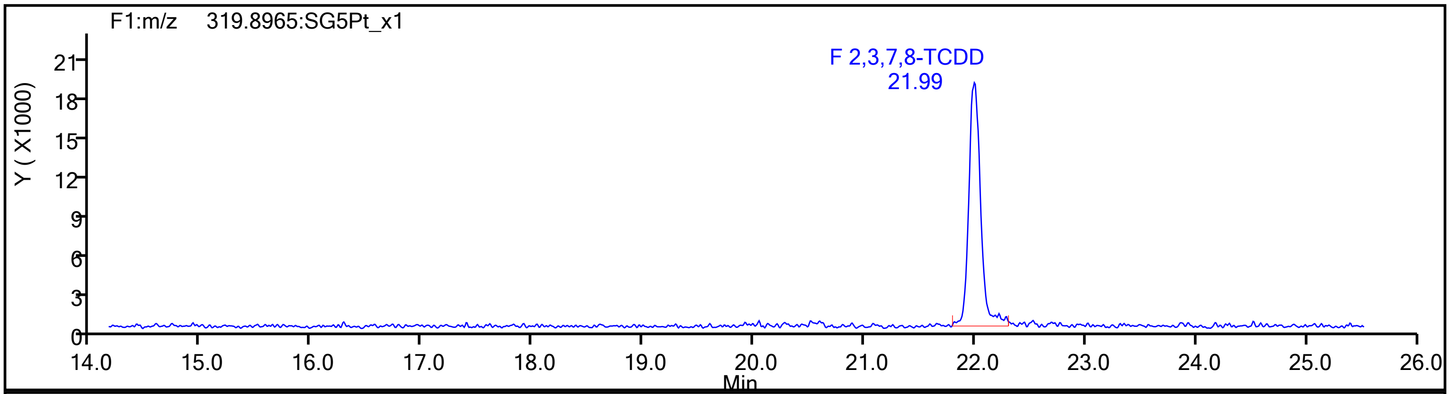

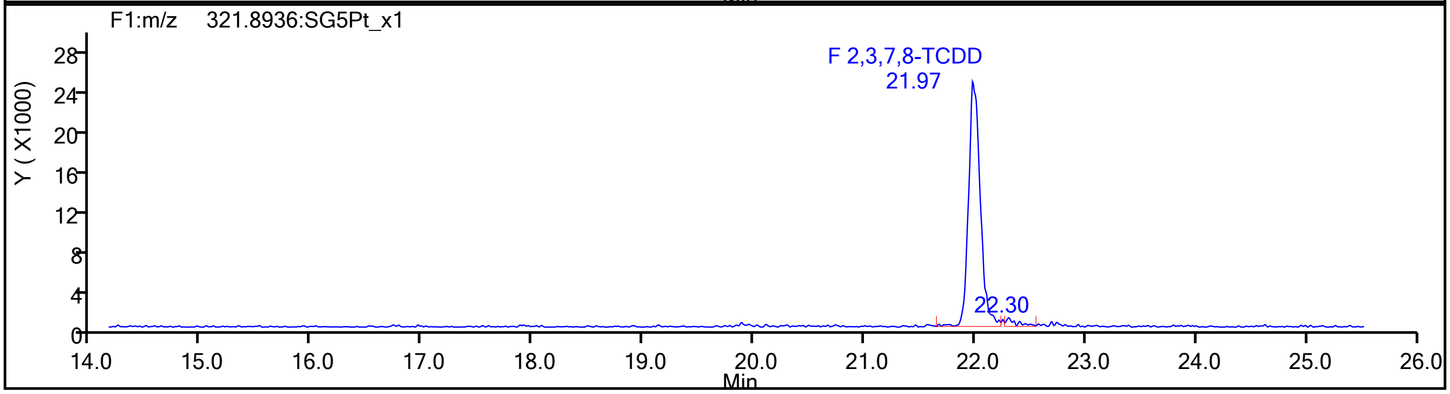

TCDD Standards

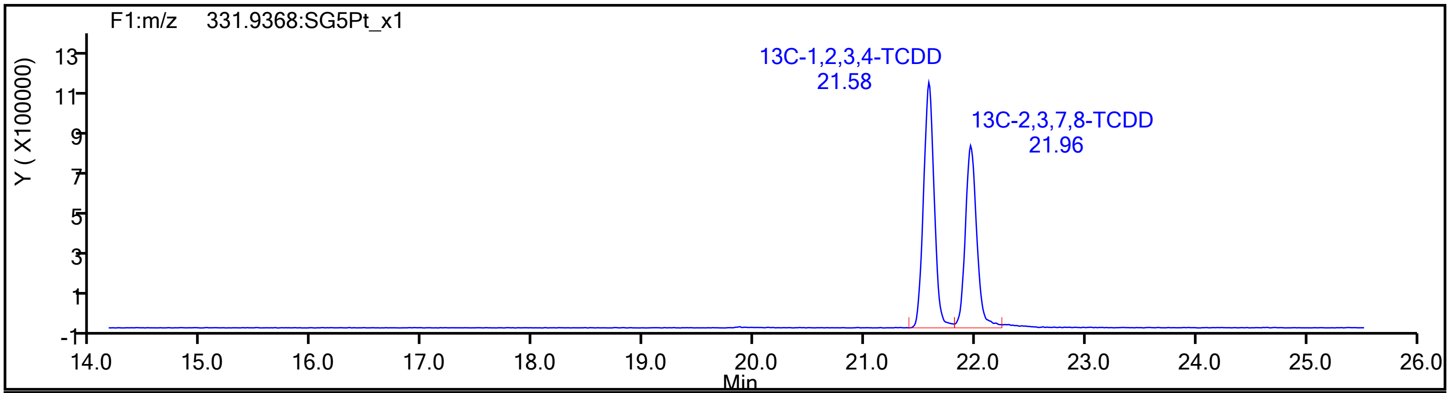

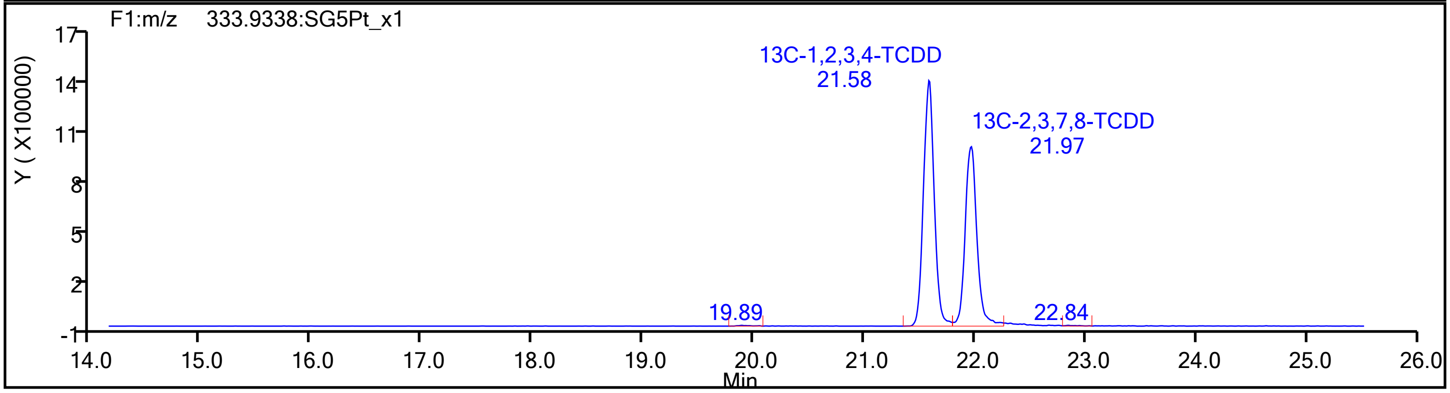

Report Date: 25-Sep-2021 14:16:59 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d
Injection Date: 24-Sep-2021 14:43:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

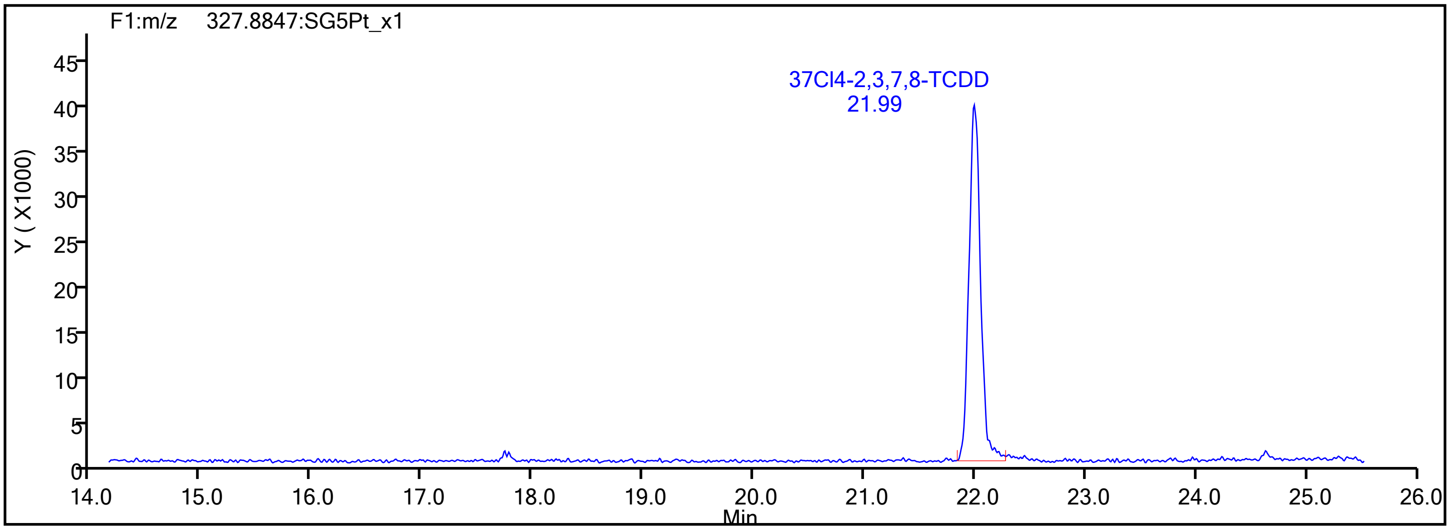

37Cl4-TCDD Standards

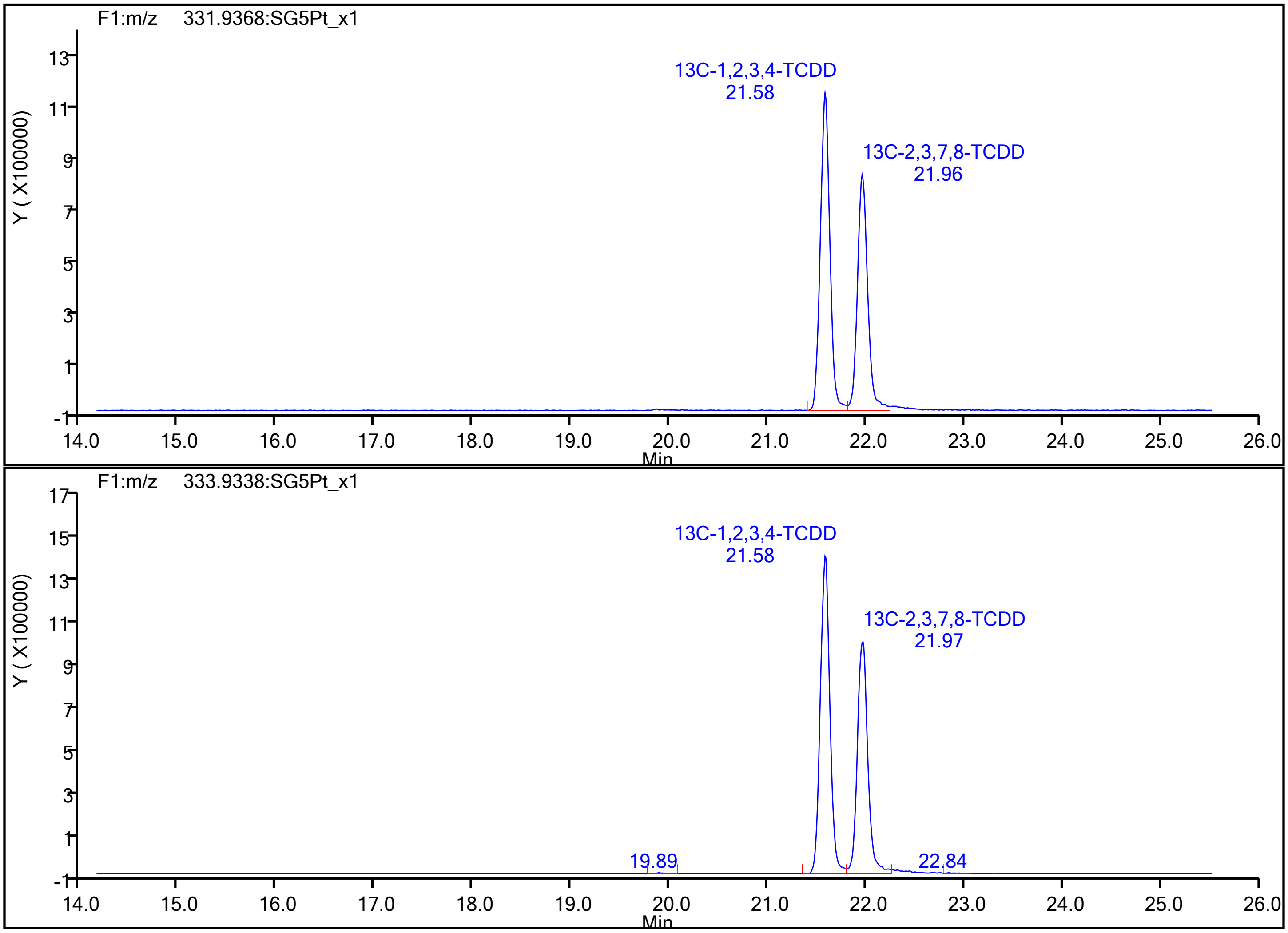

Report Date: 25-Sep-2021 14:16:59 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

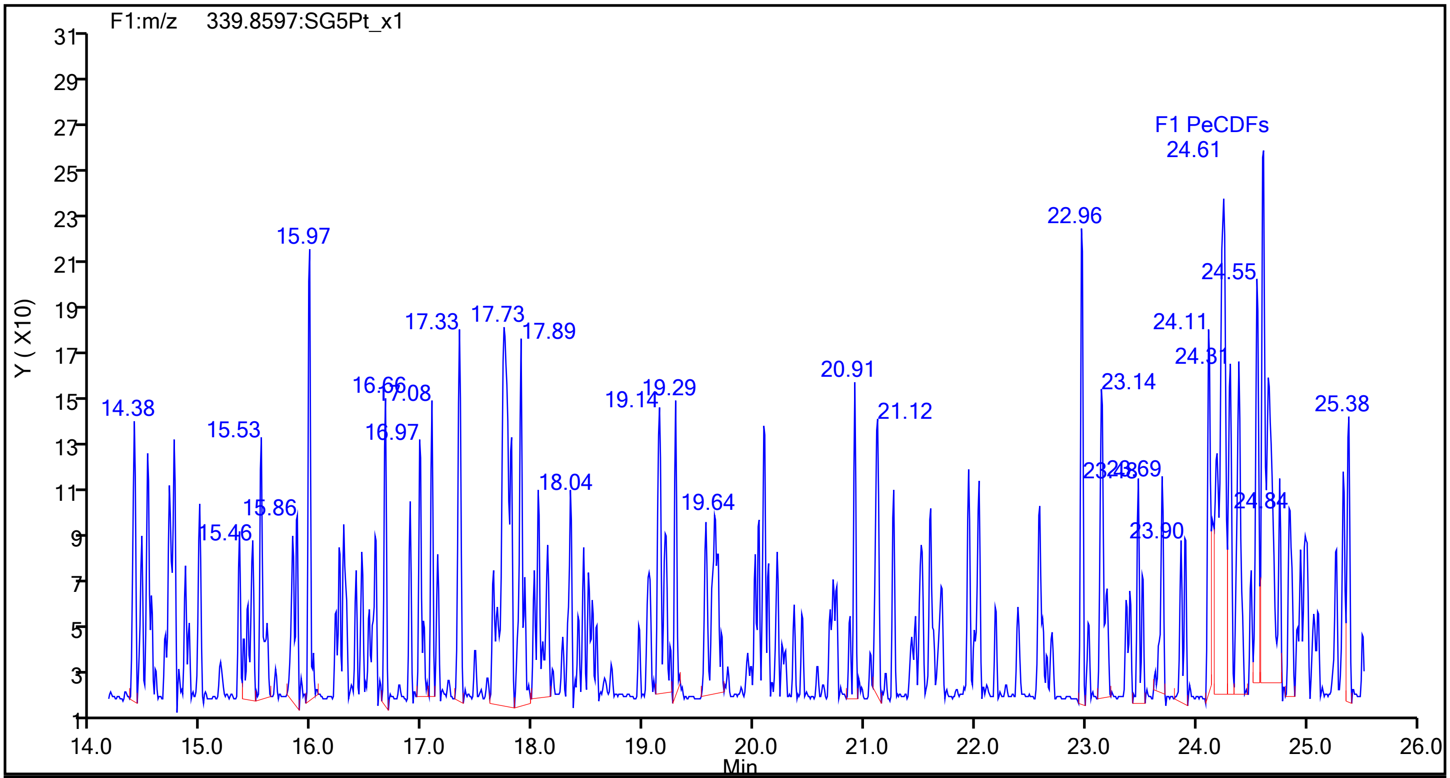

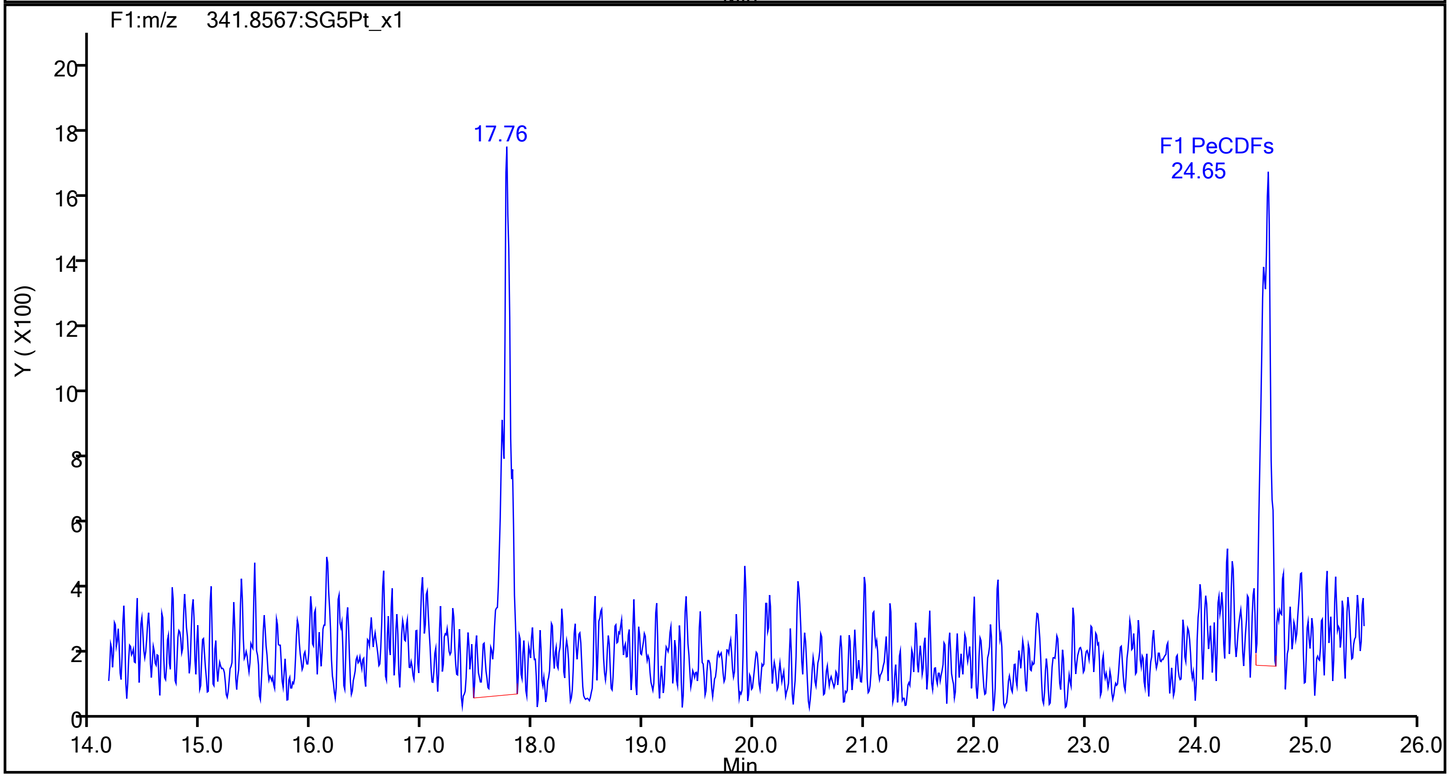

Report Date: 25-Sep-2021 14:16:59 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

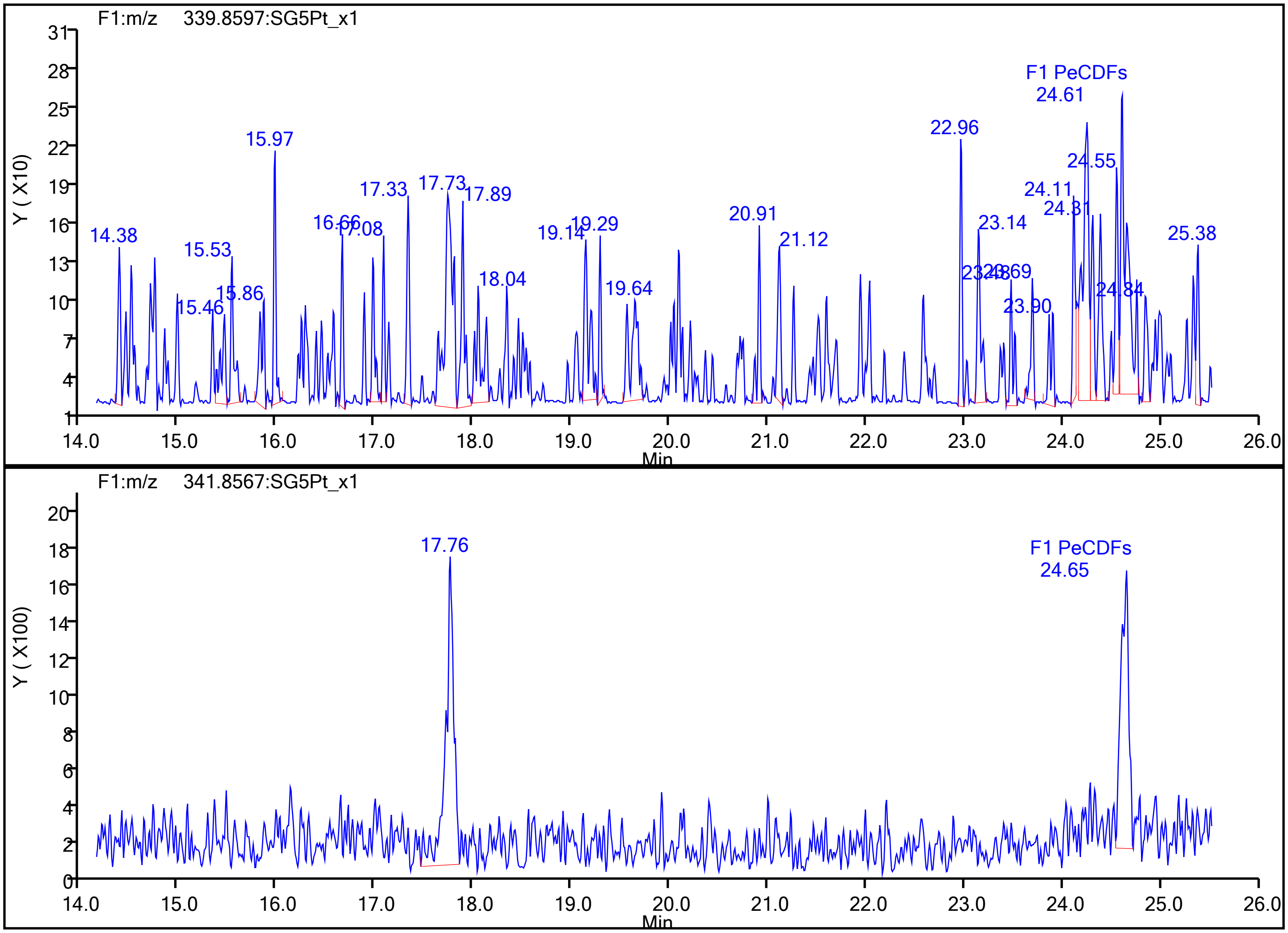

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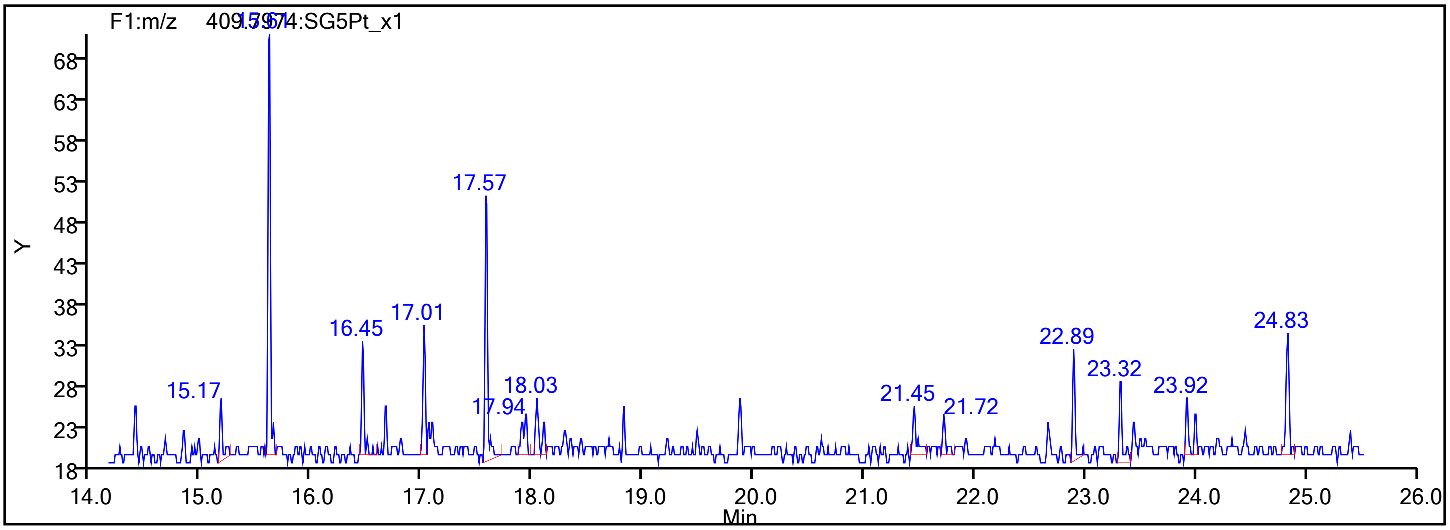

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Eurofins TestAmerica, Sacramento

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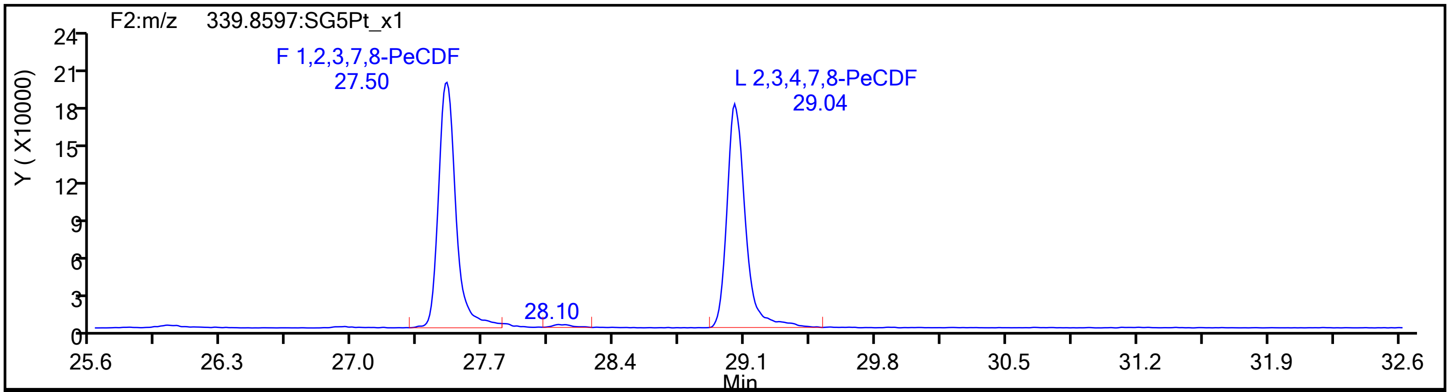

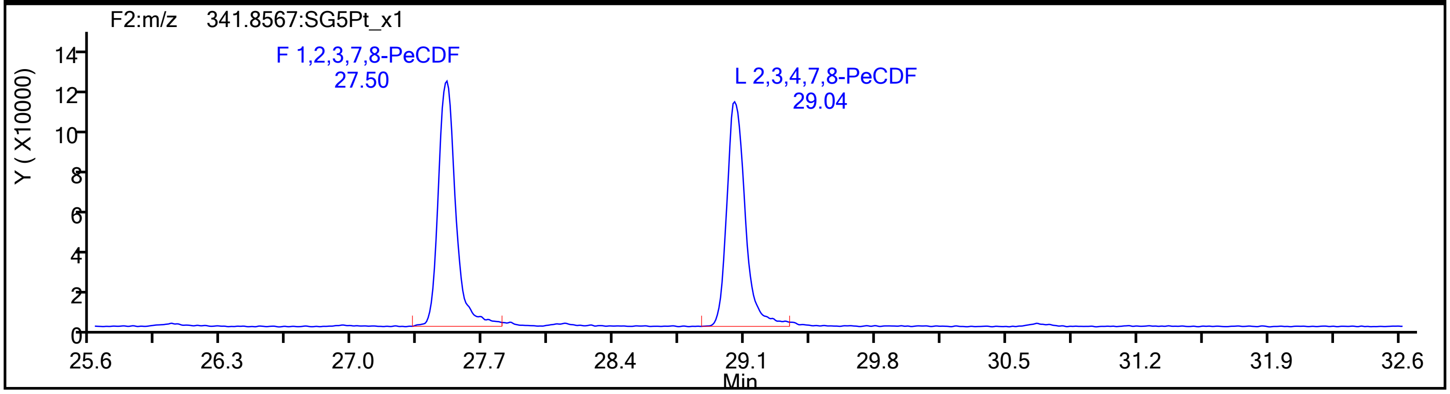

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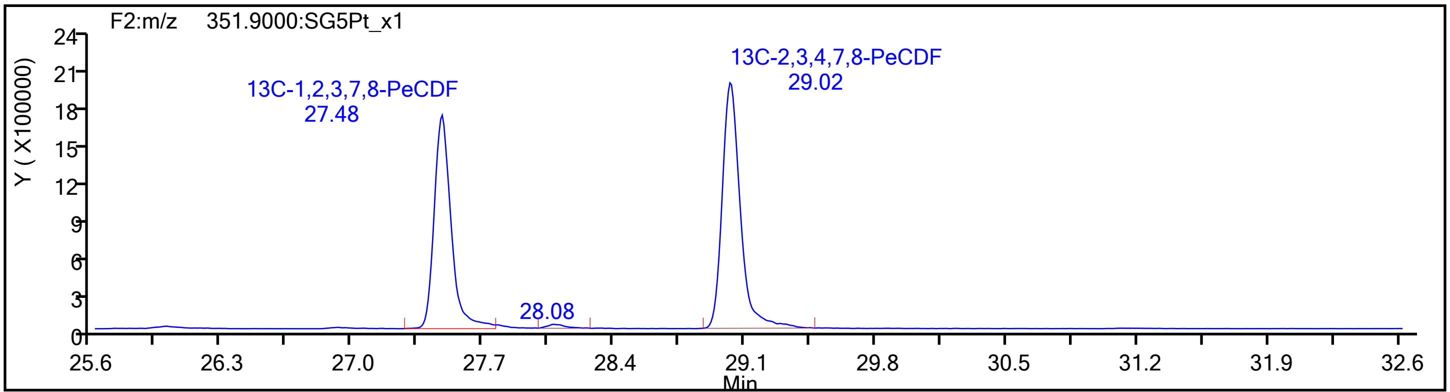

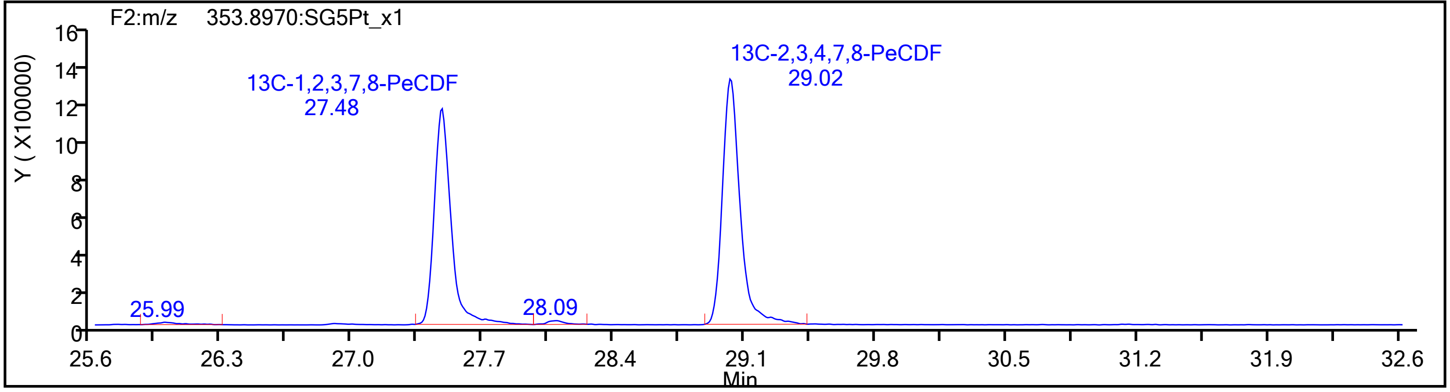

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Eurofins TestAmerica, Sacramento

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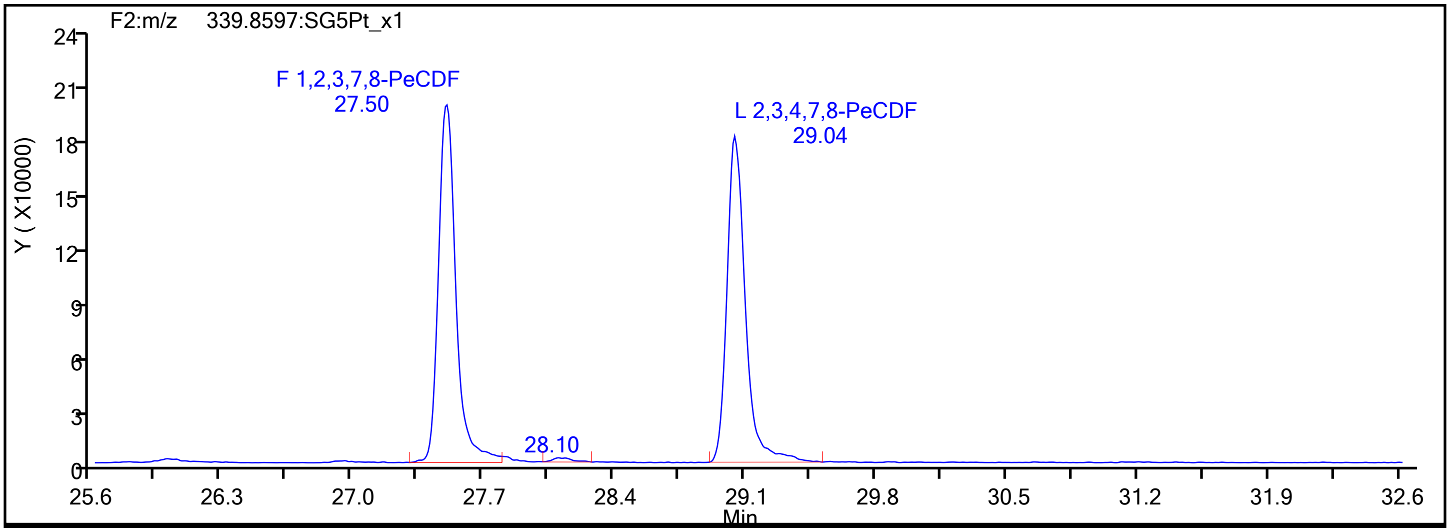

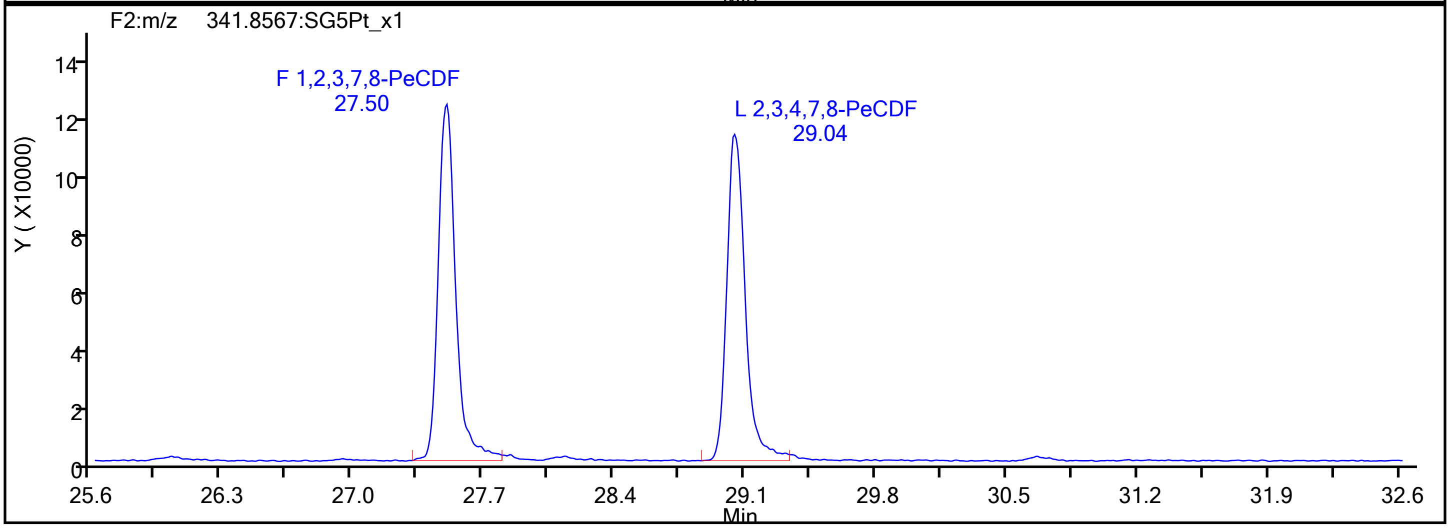

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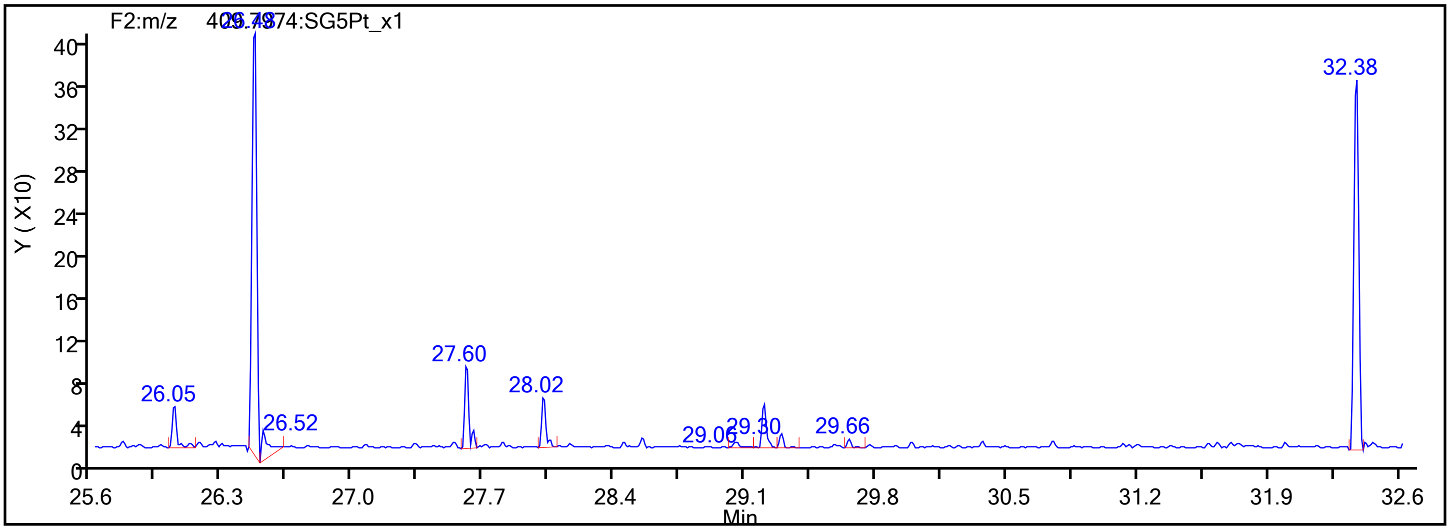

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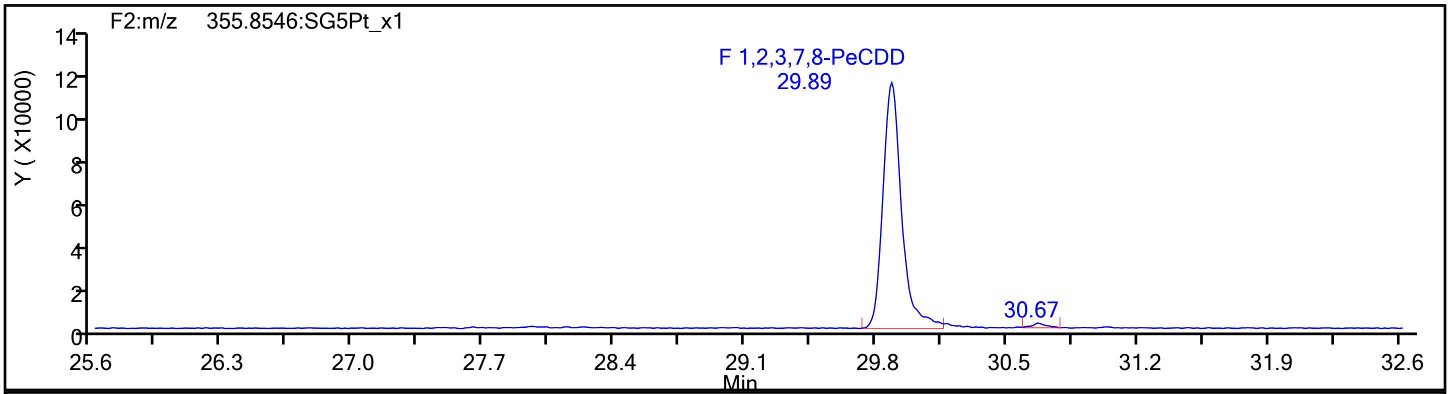

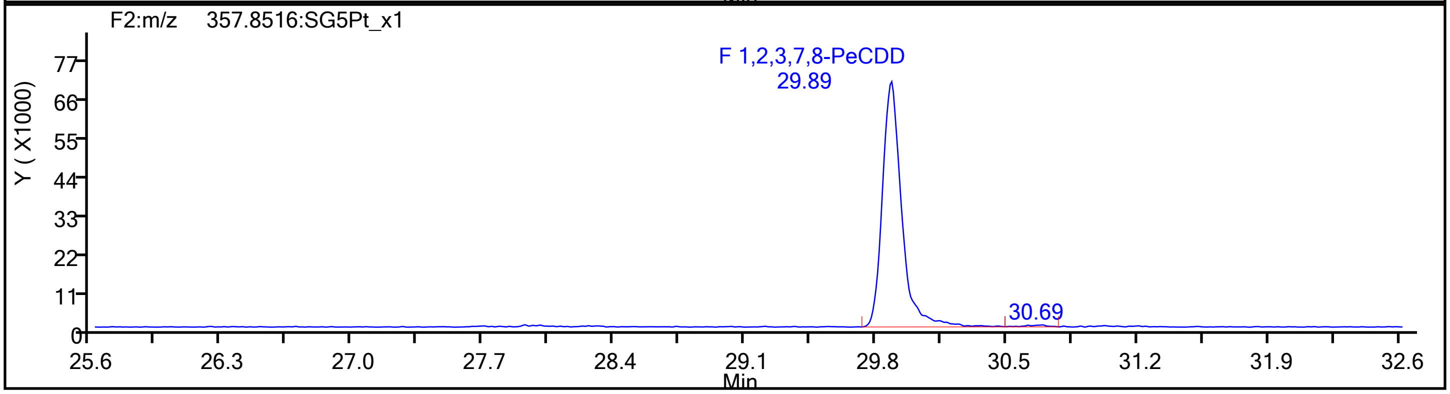

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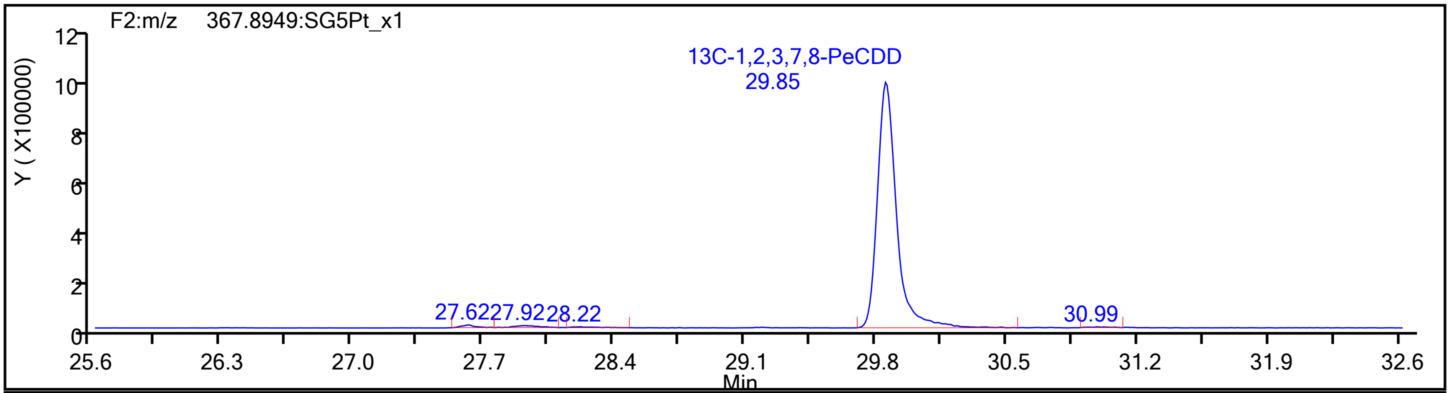

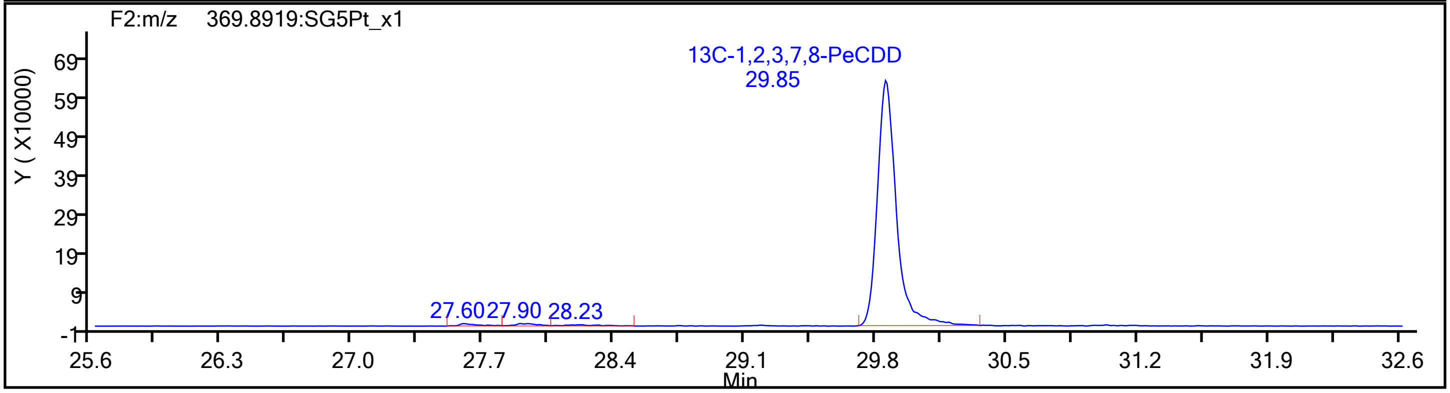

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Eurofins TestAmerica, Sacramento

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HxCDF

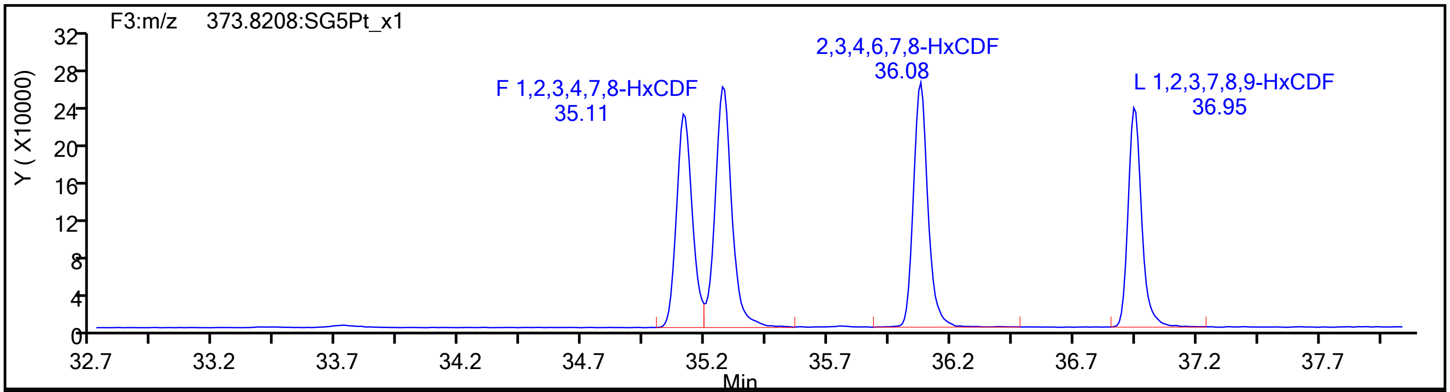

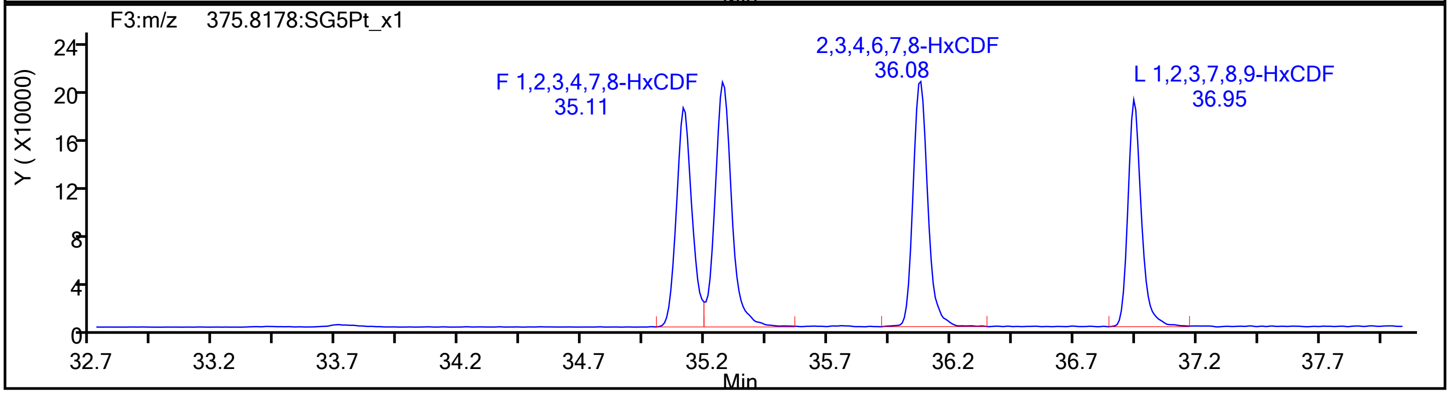

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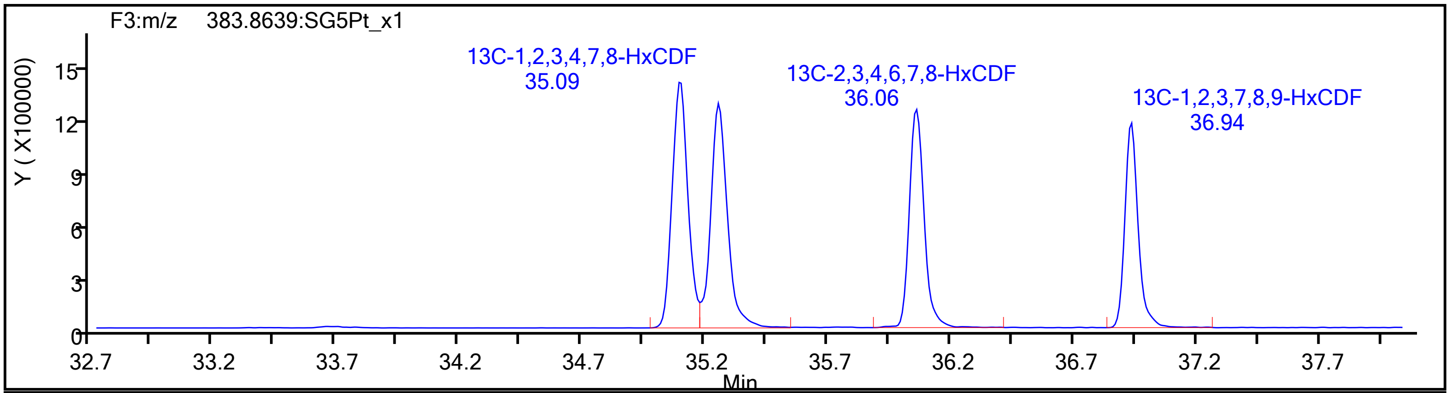

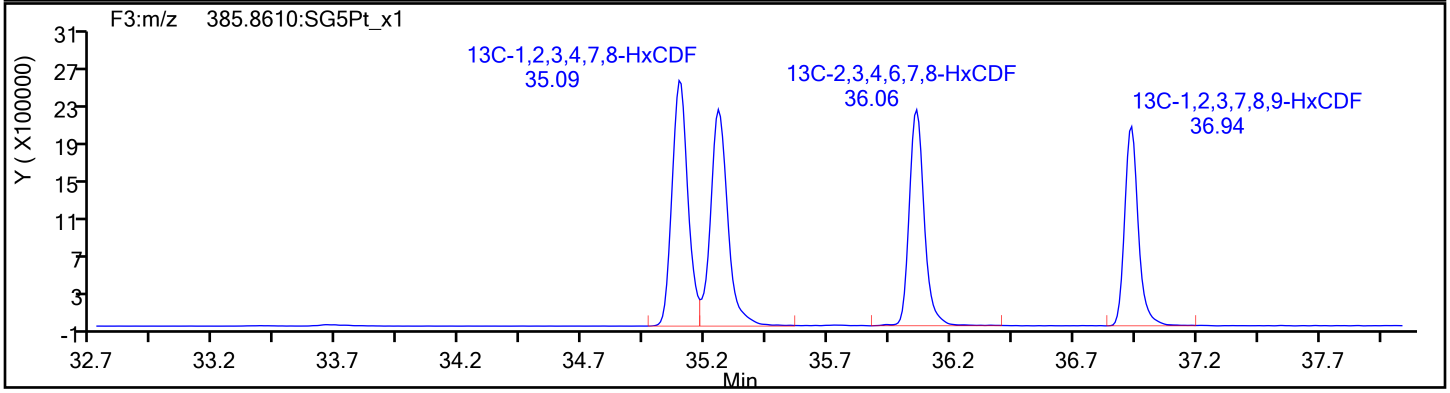

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Eurofins TestAmerica, Sacramento

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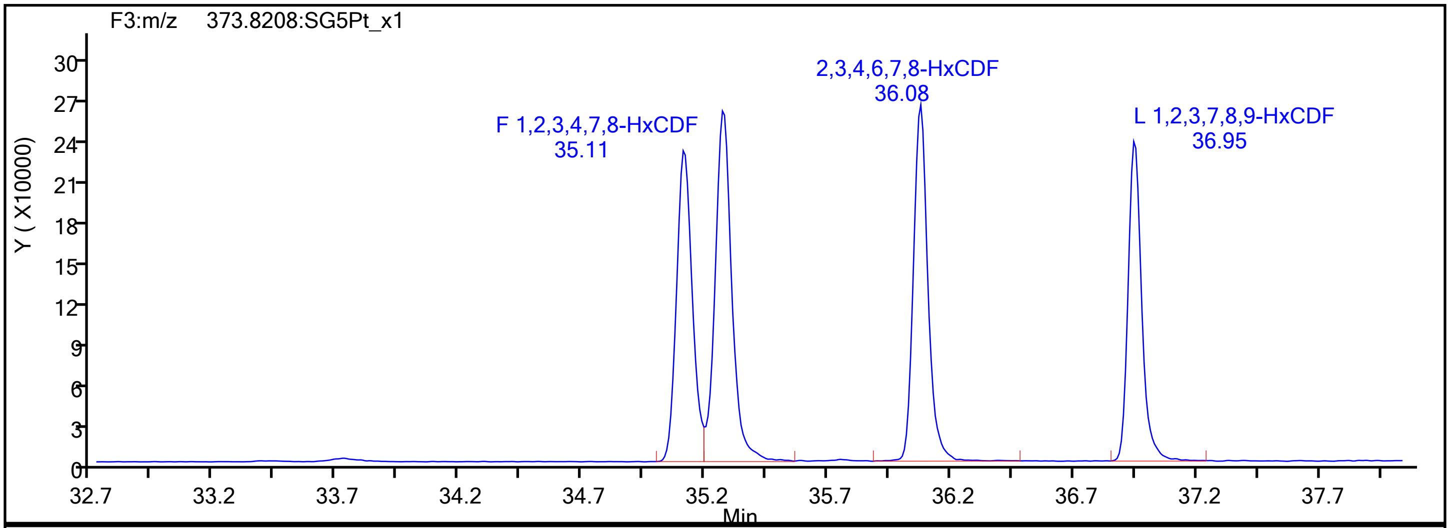

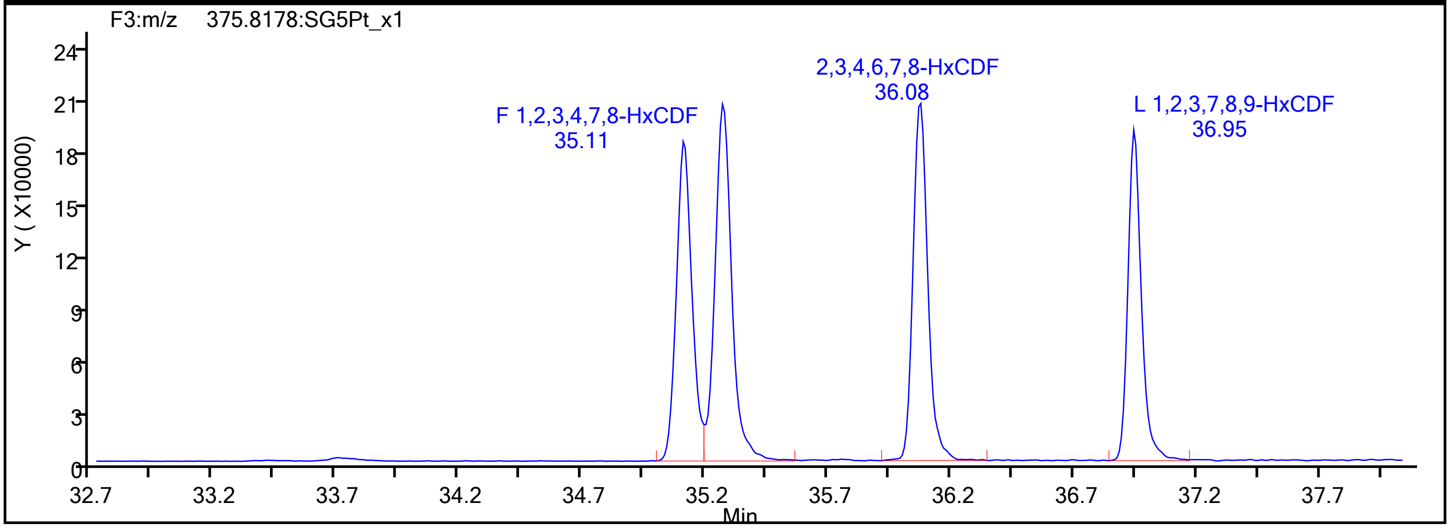

HxCDF Interference Mass

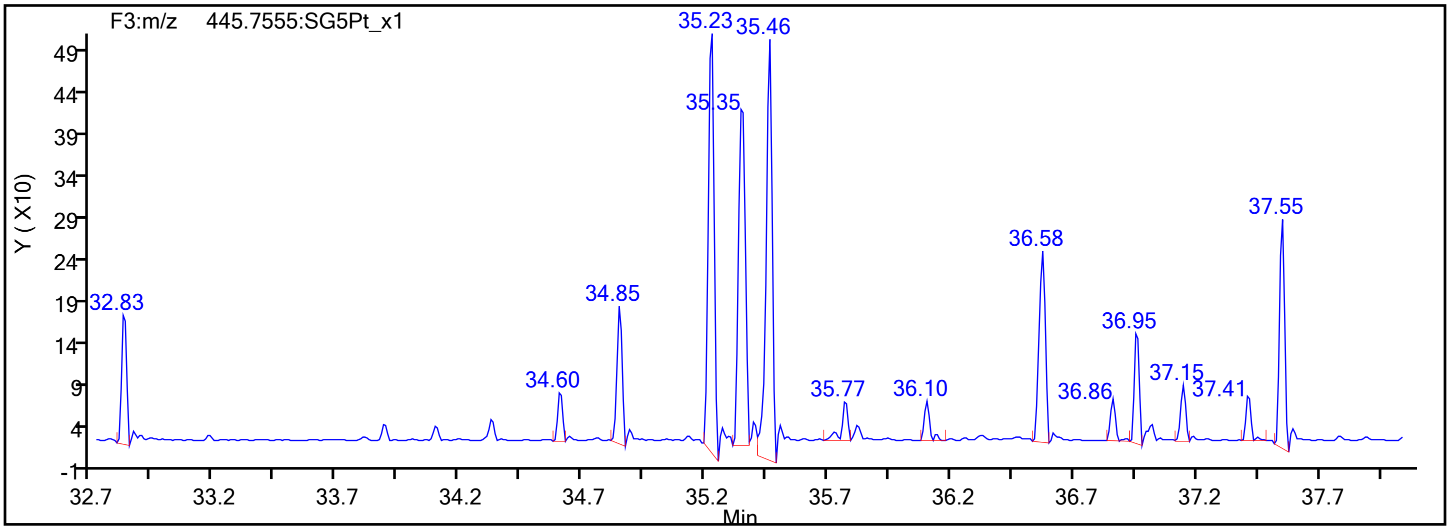

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Eurofins TestAmerica, Sacramento

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HxCDD

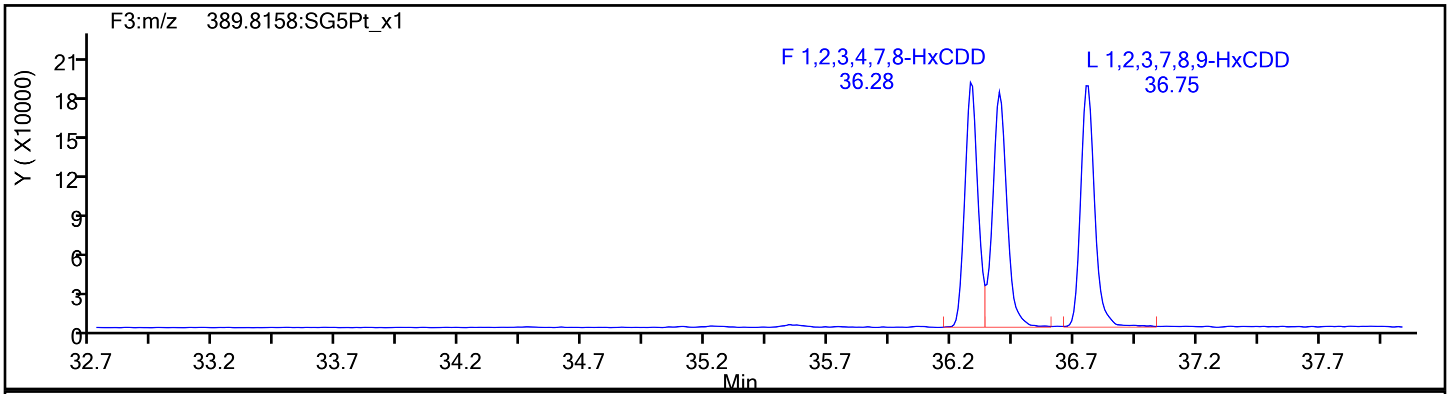

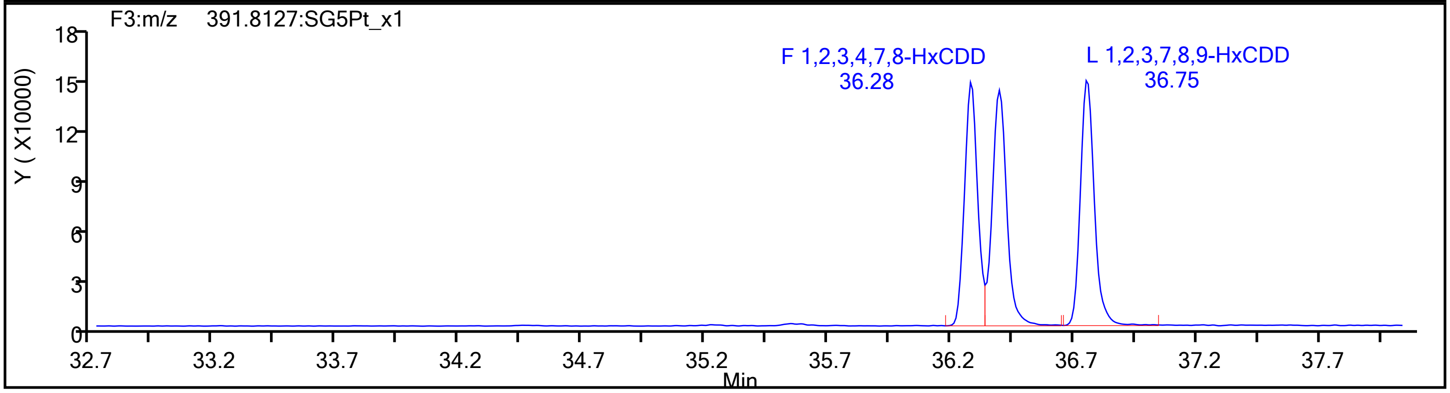

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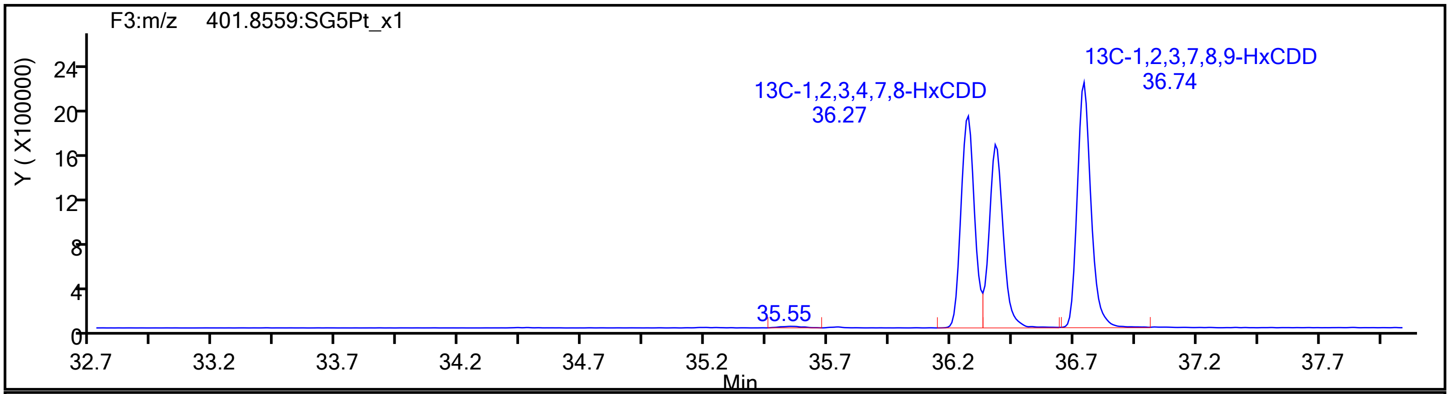

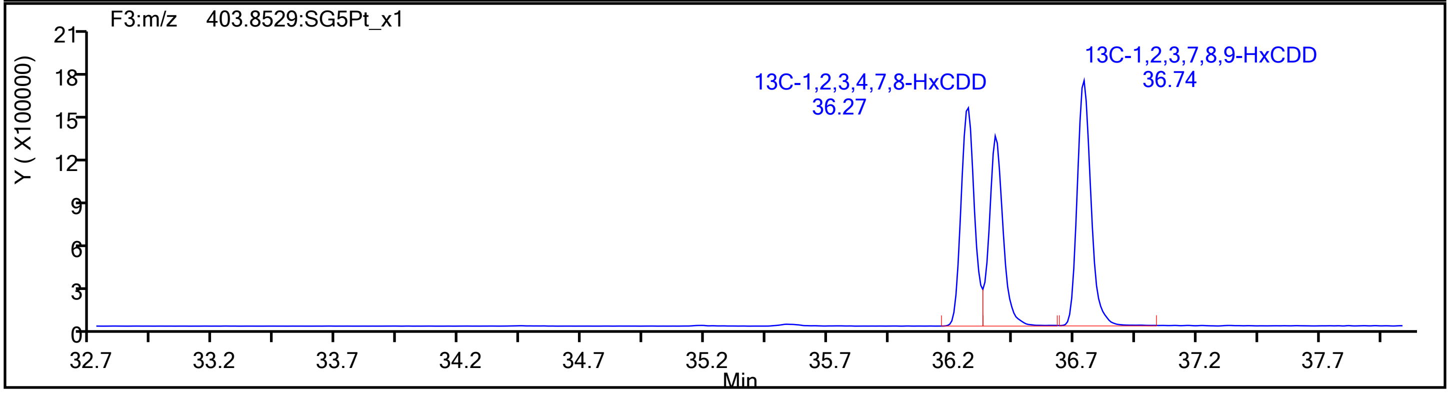

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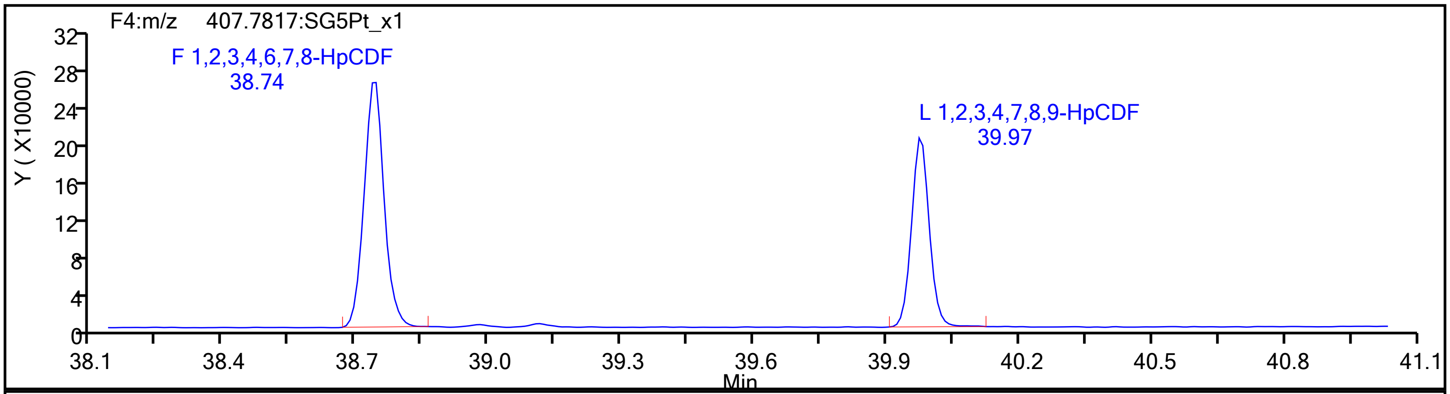

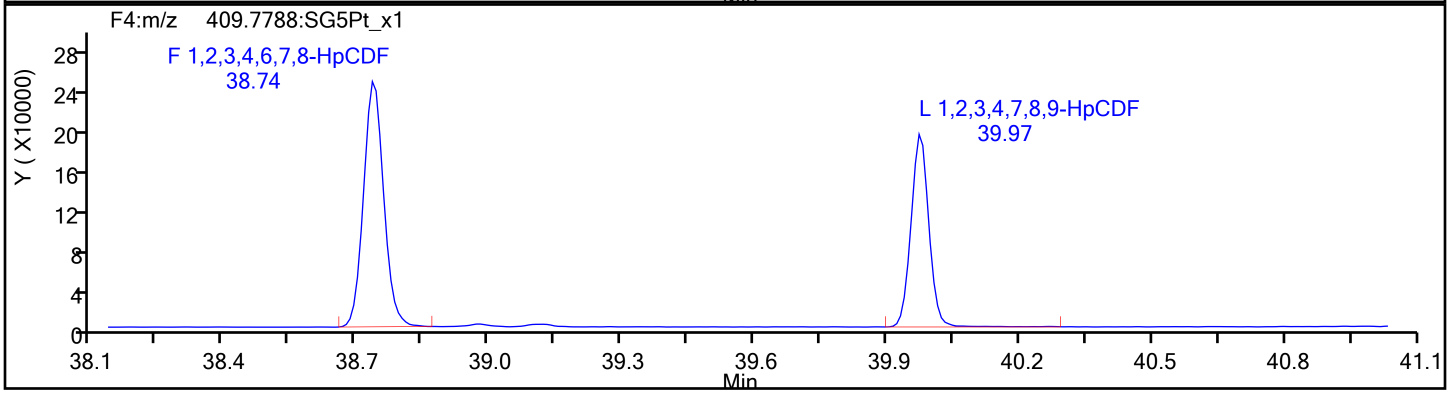

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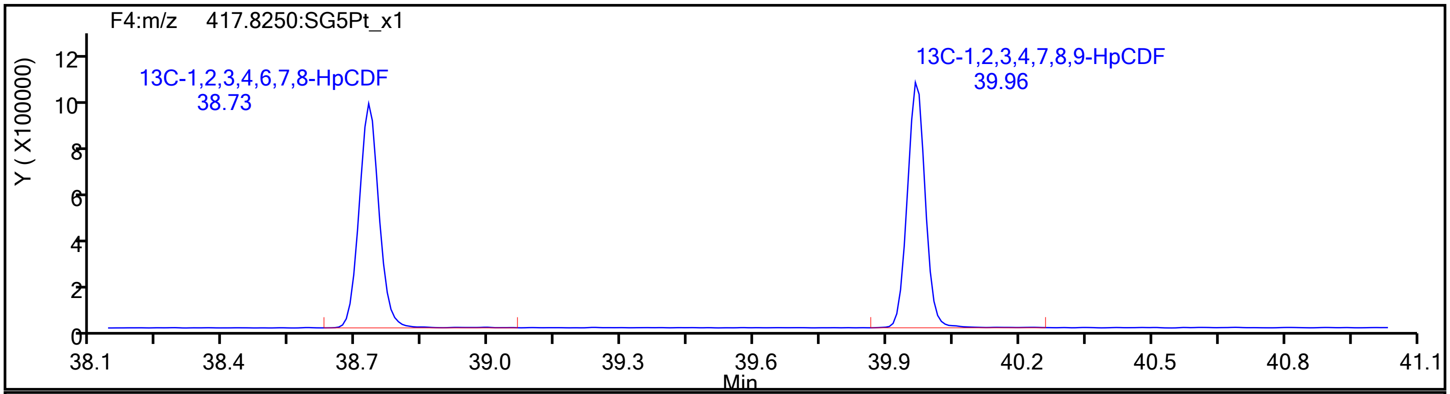

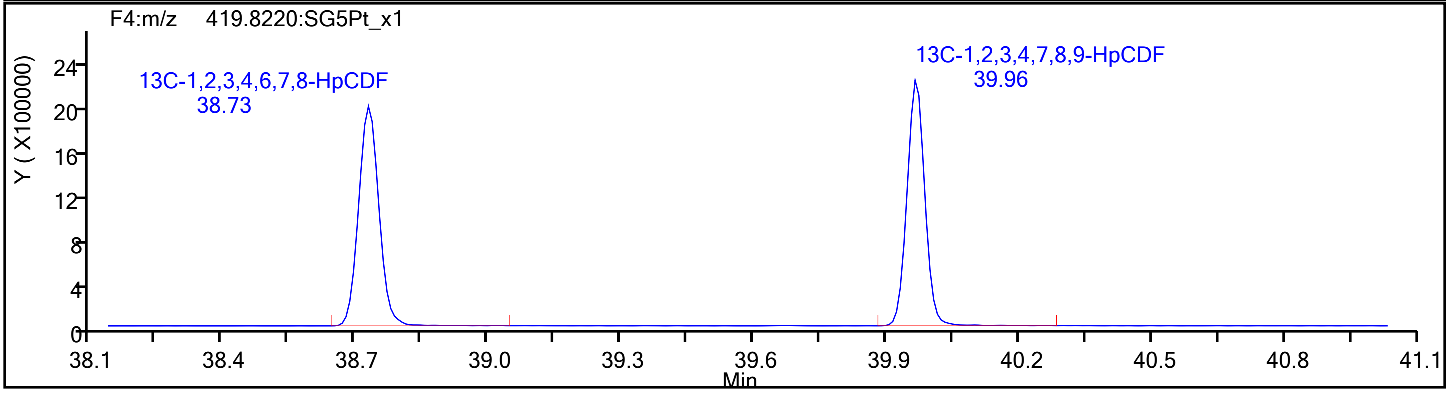

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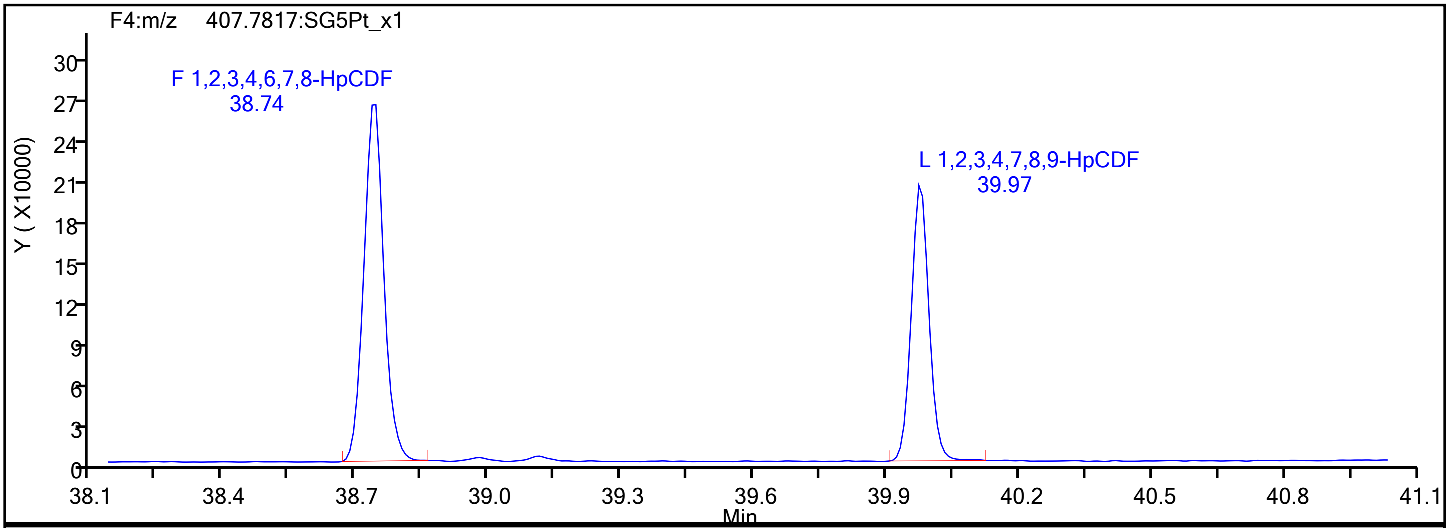

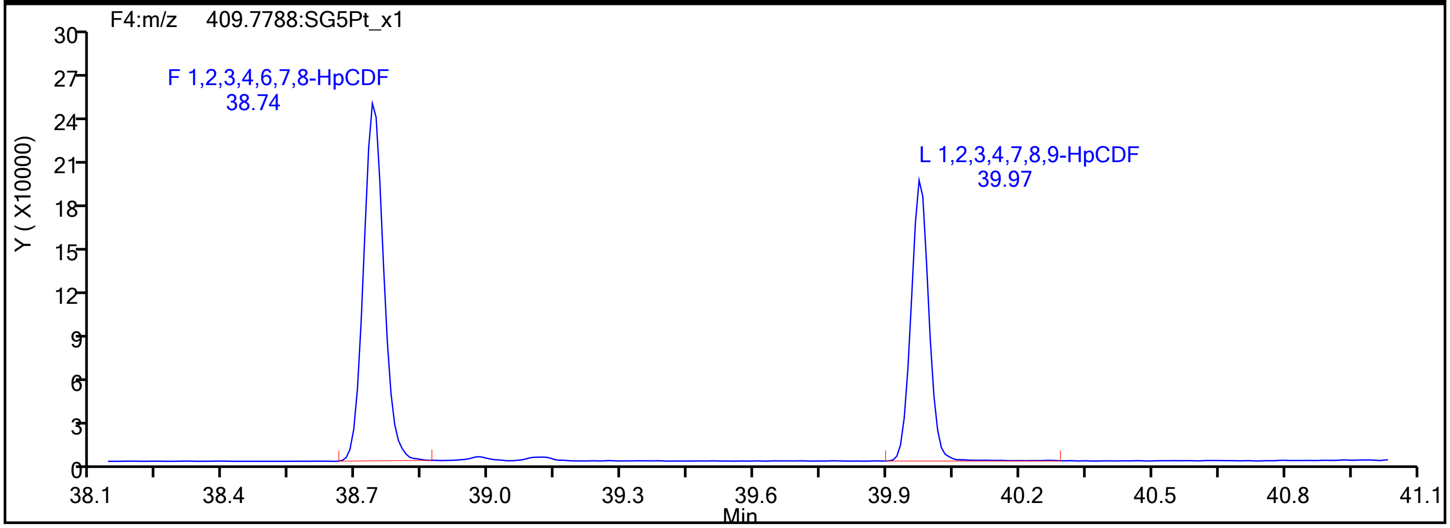

HpCDF Interference Mass

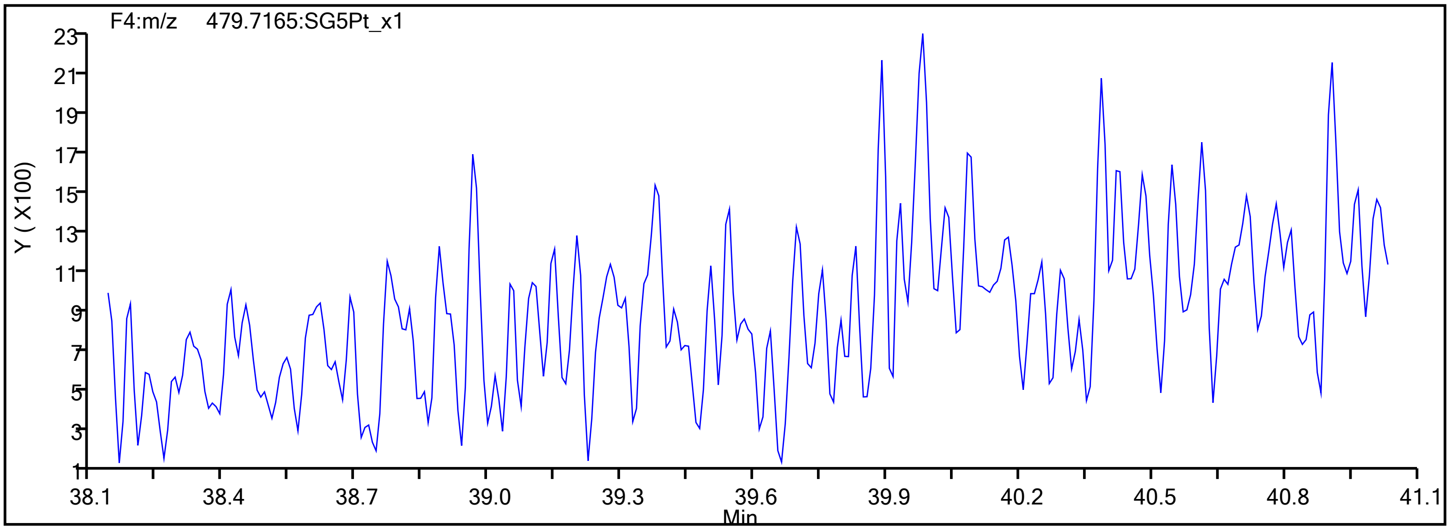

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

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Method: Dioxin_DFS1

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Client ID:

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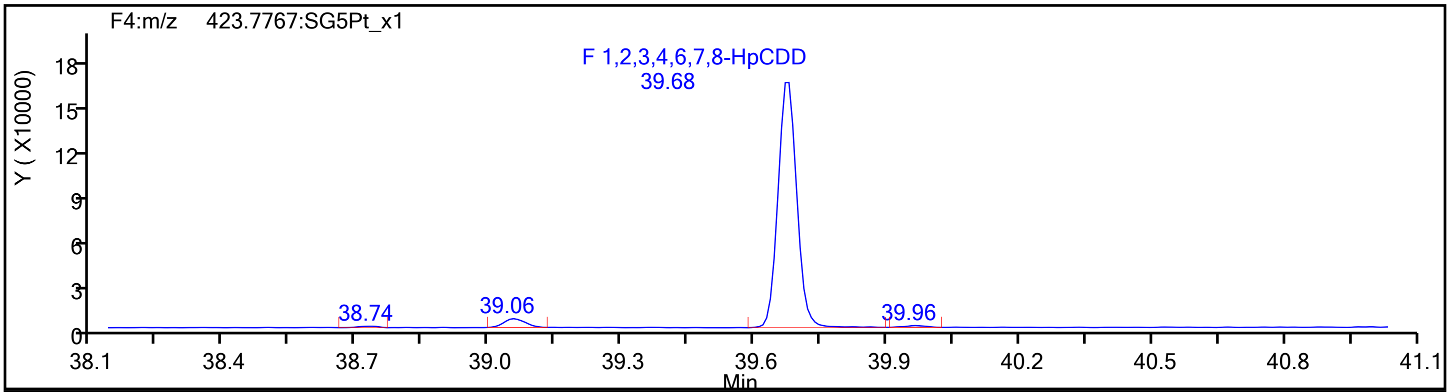

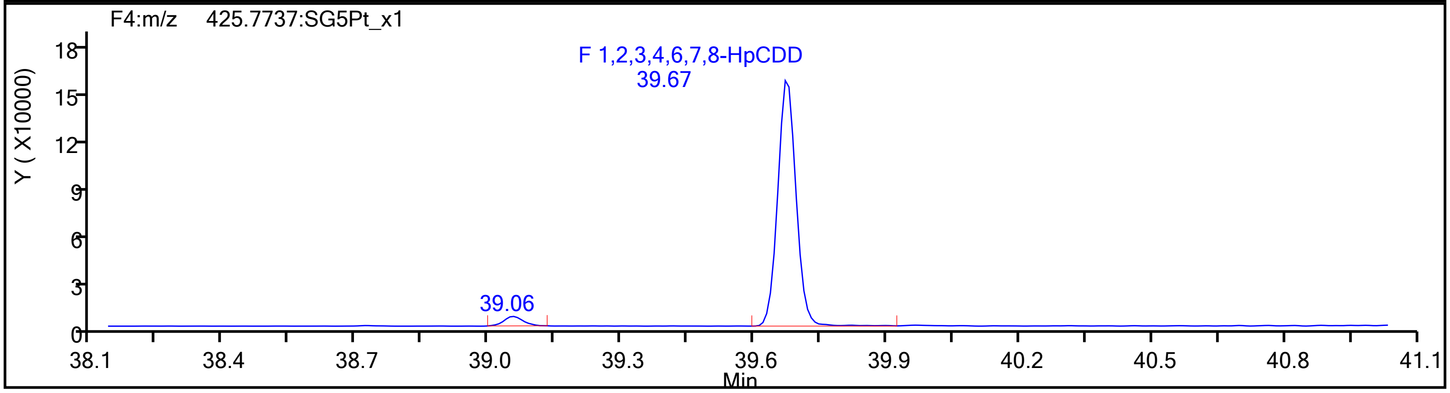

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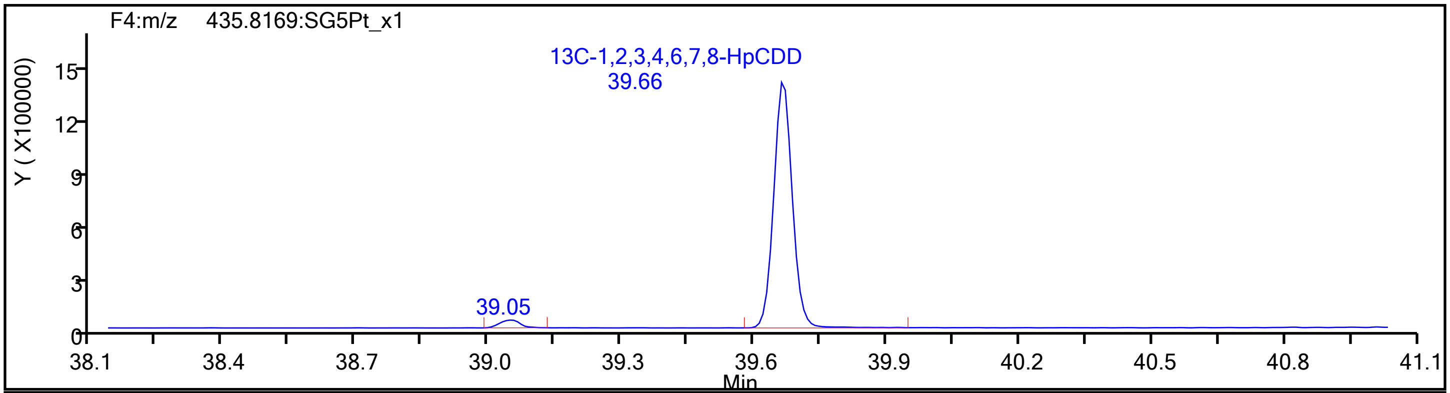

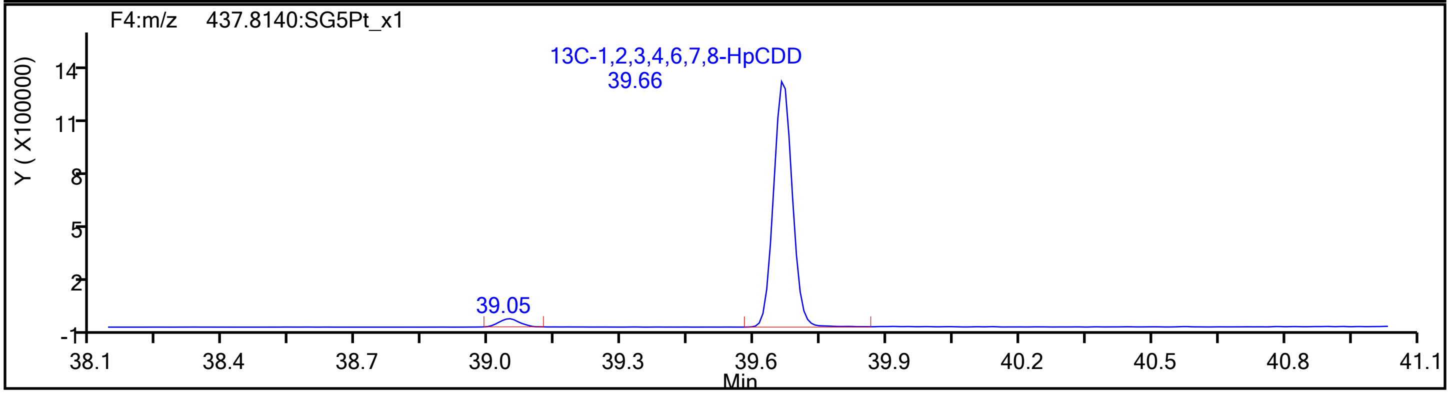

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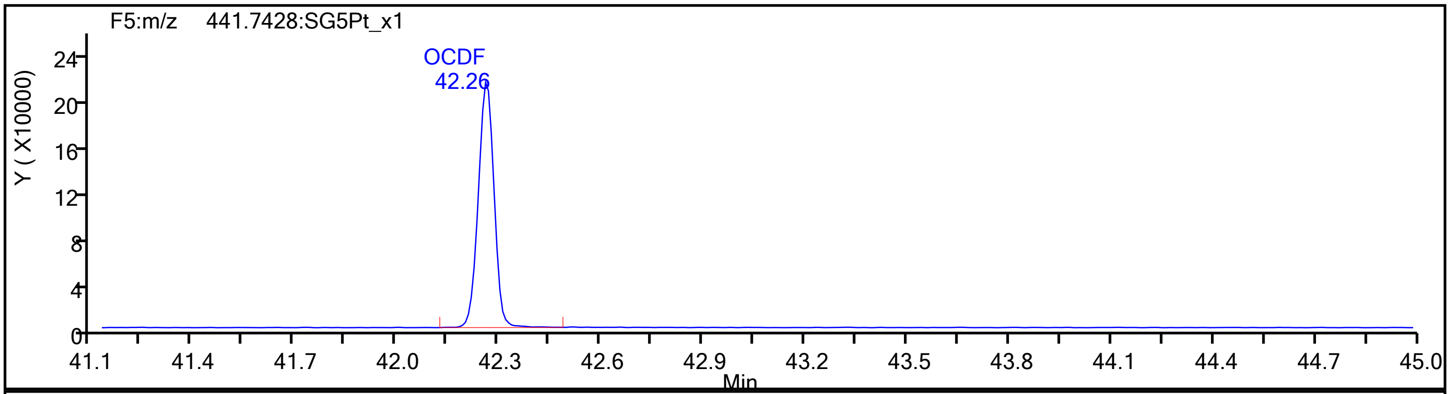

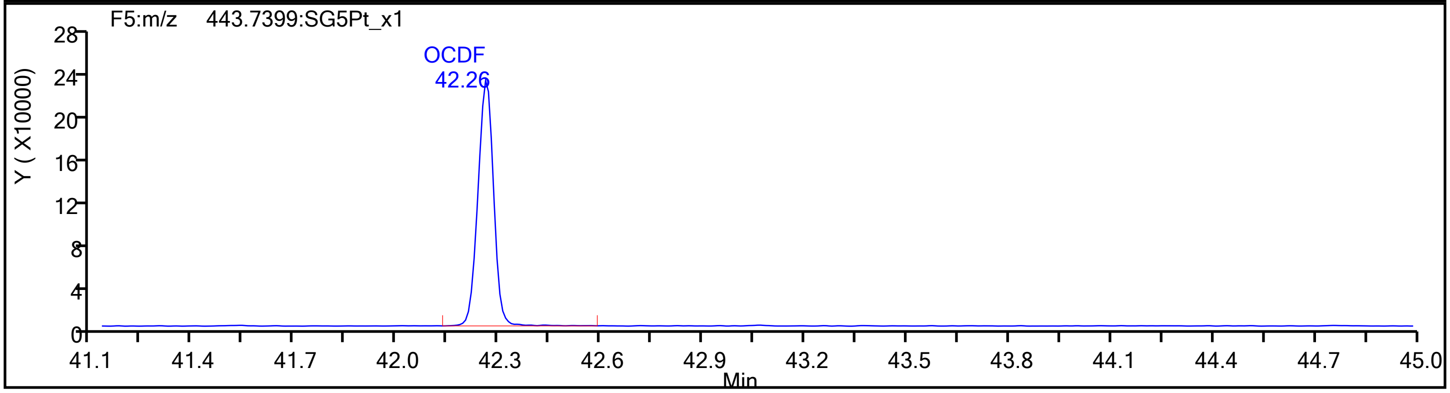

OCDF Standards

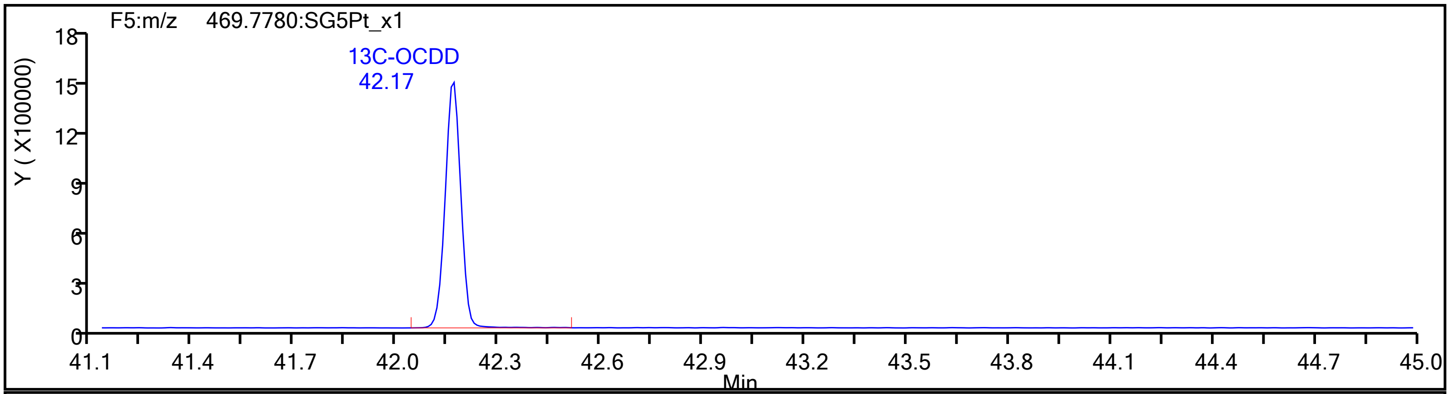

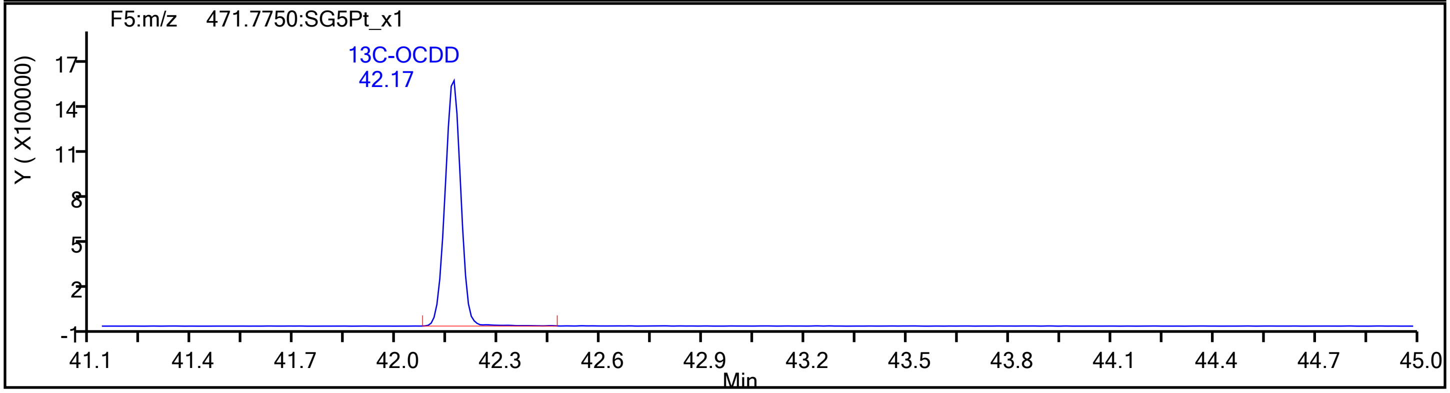

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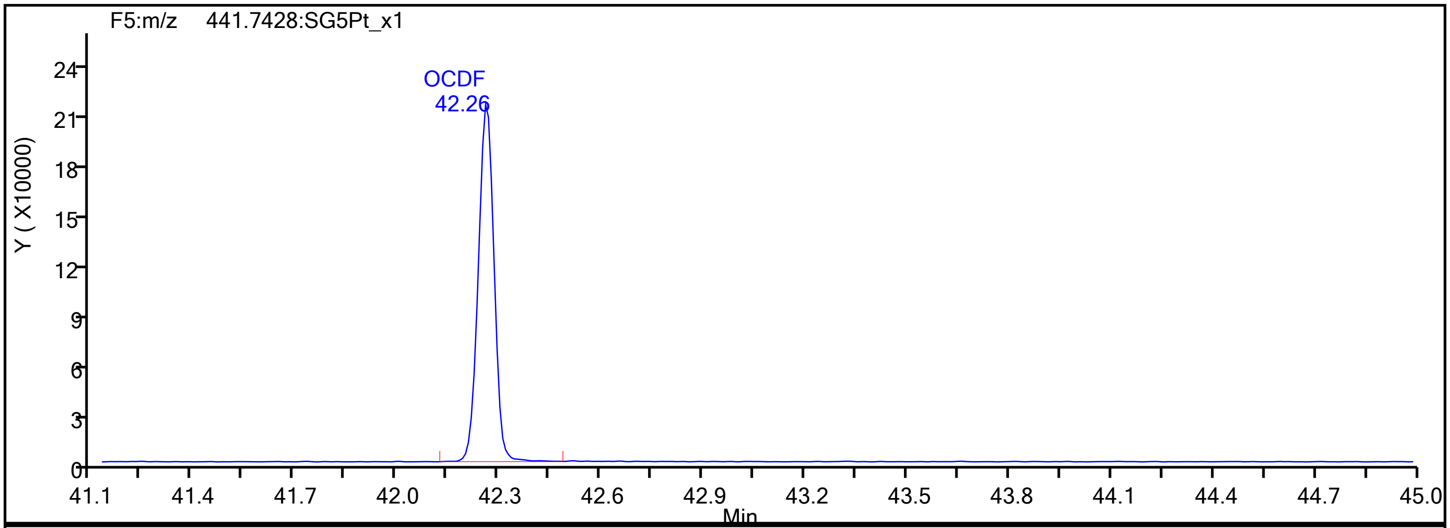

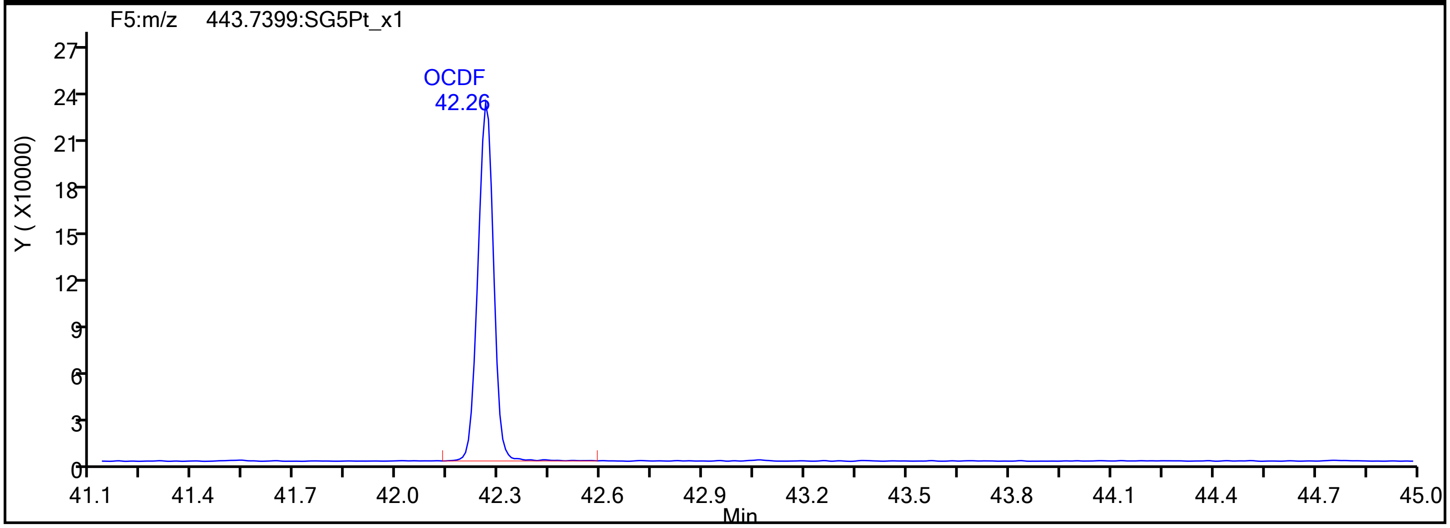

OCDF Interference Mass

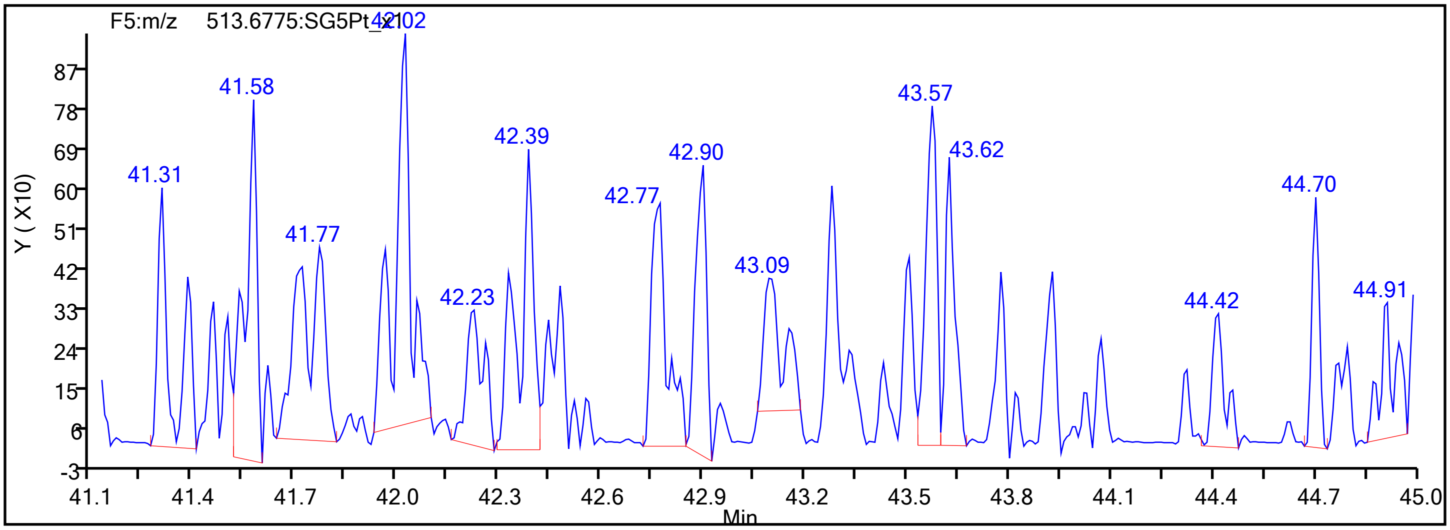

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Eurofins TestAmerica, Sacramento

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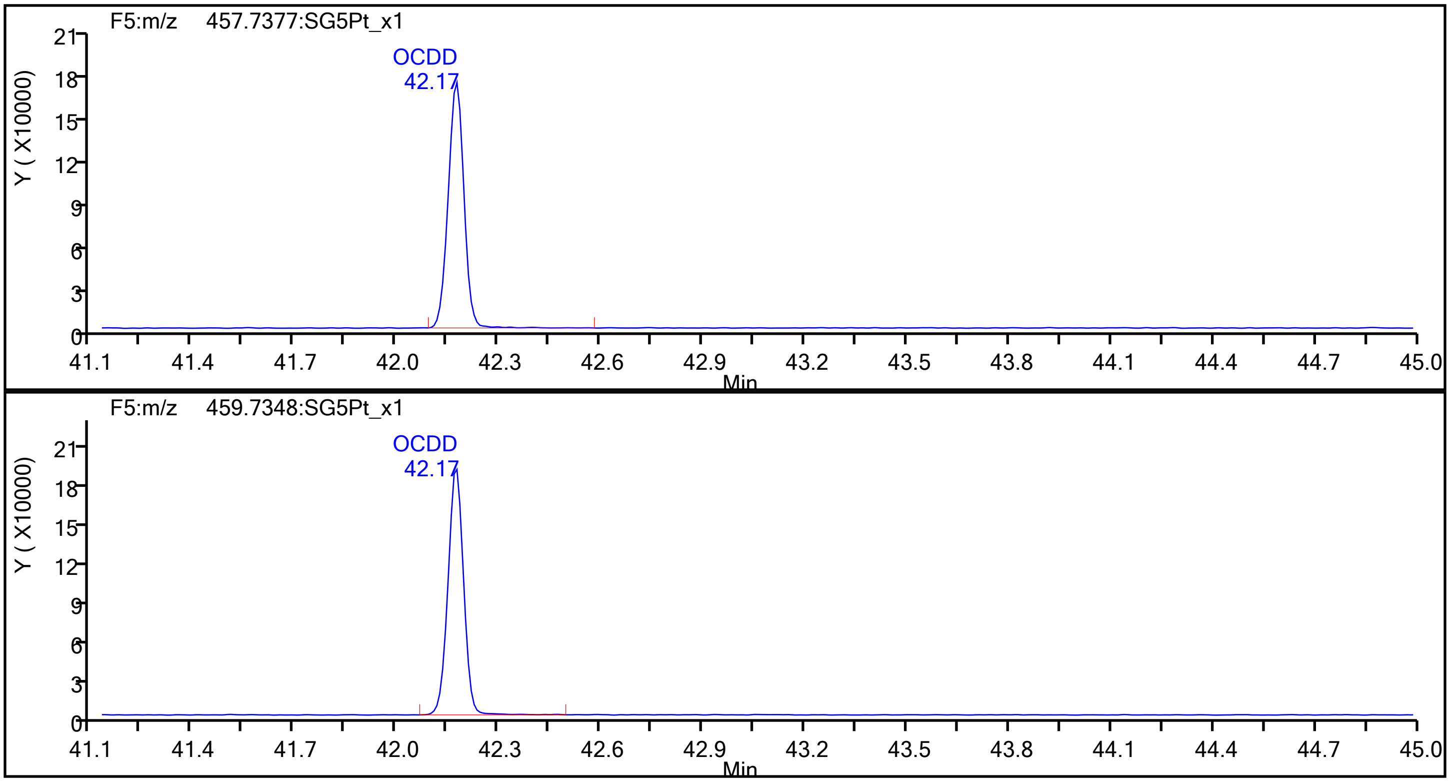

OCDD Standards

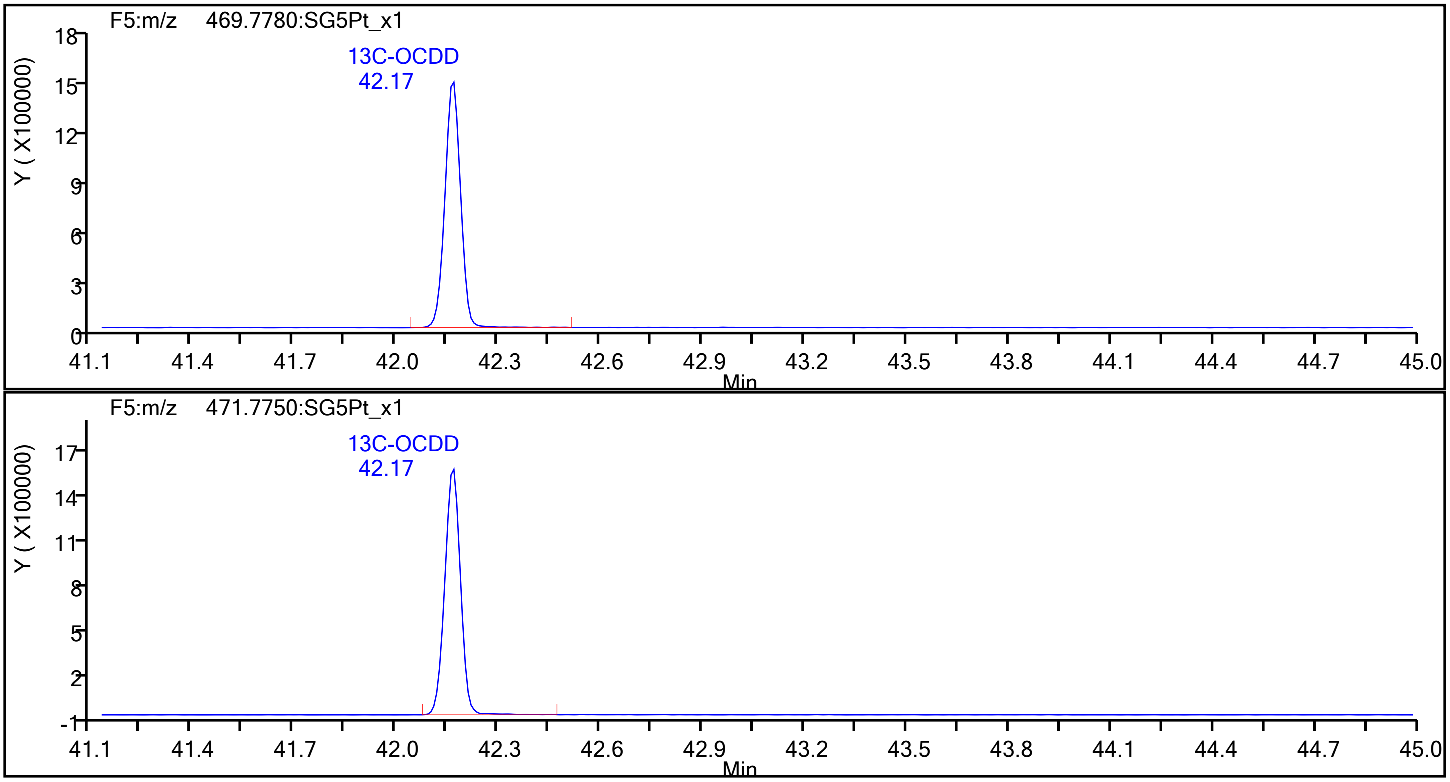

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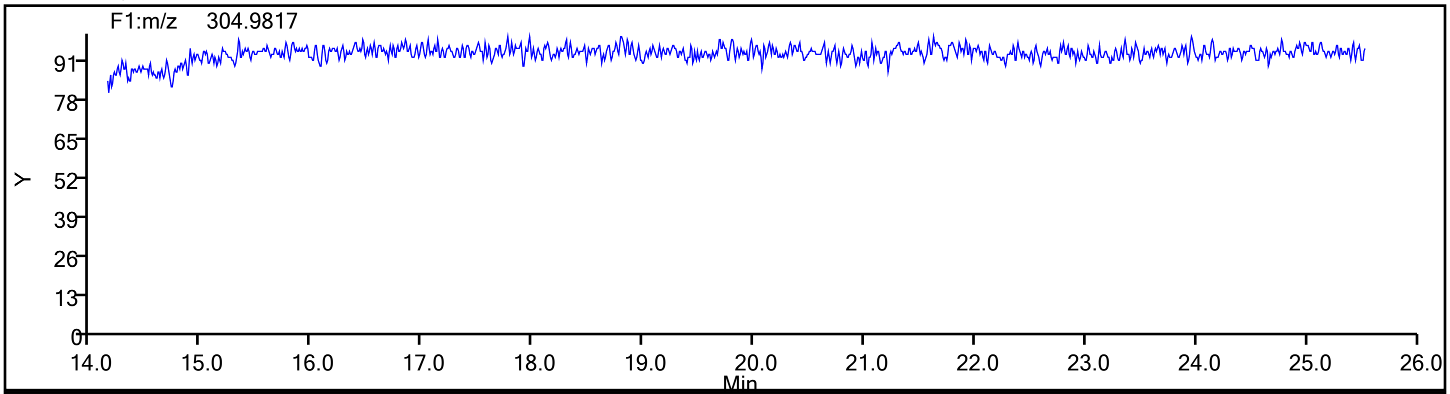

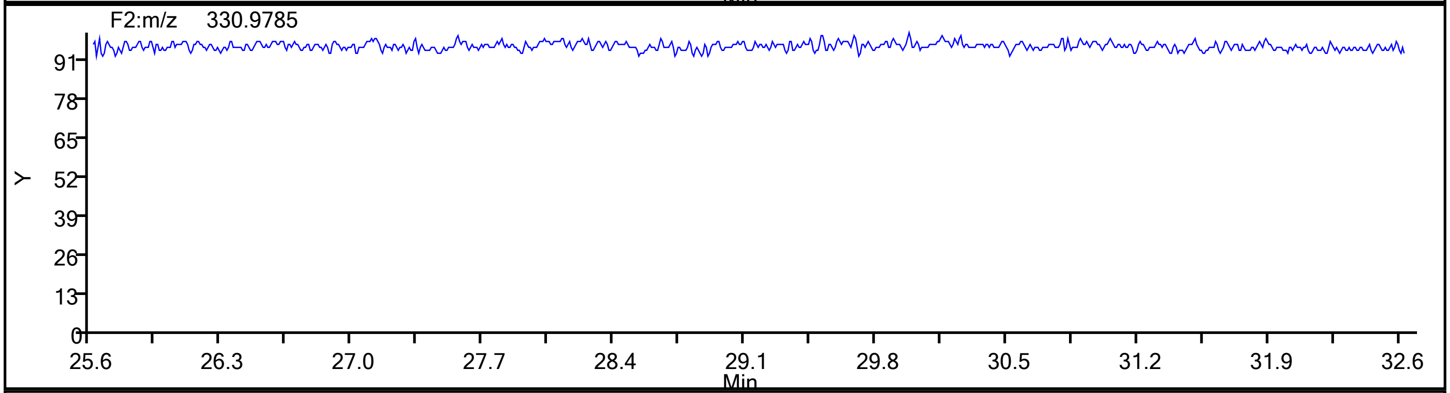

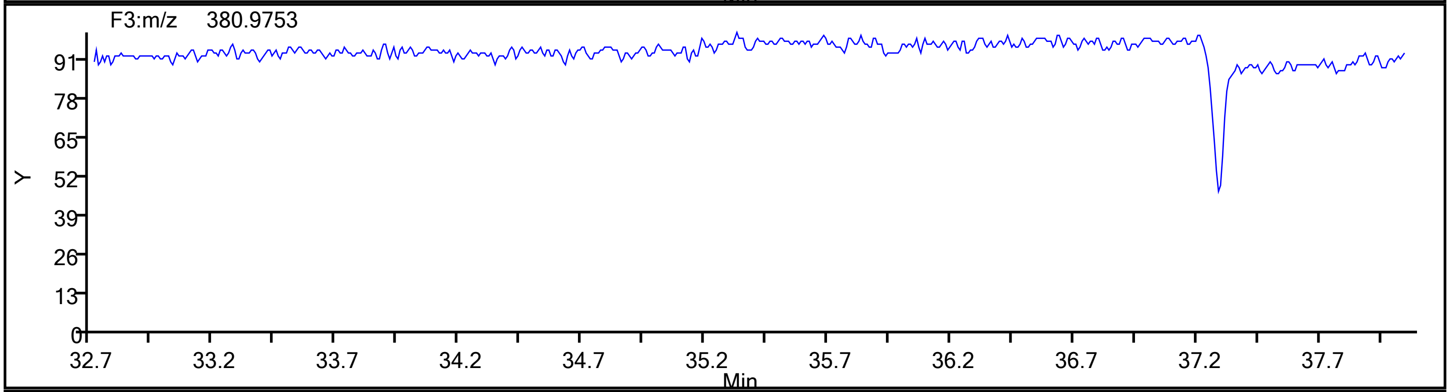

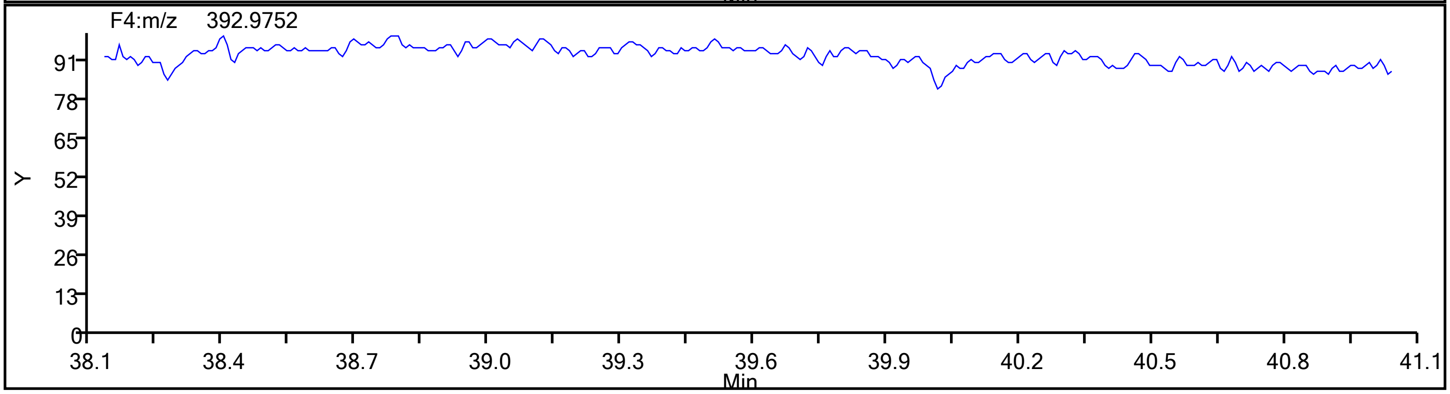

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_6.d

Injection Date:	24-Sep-2021 14:43:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

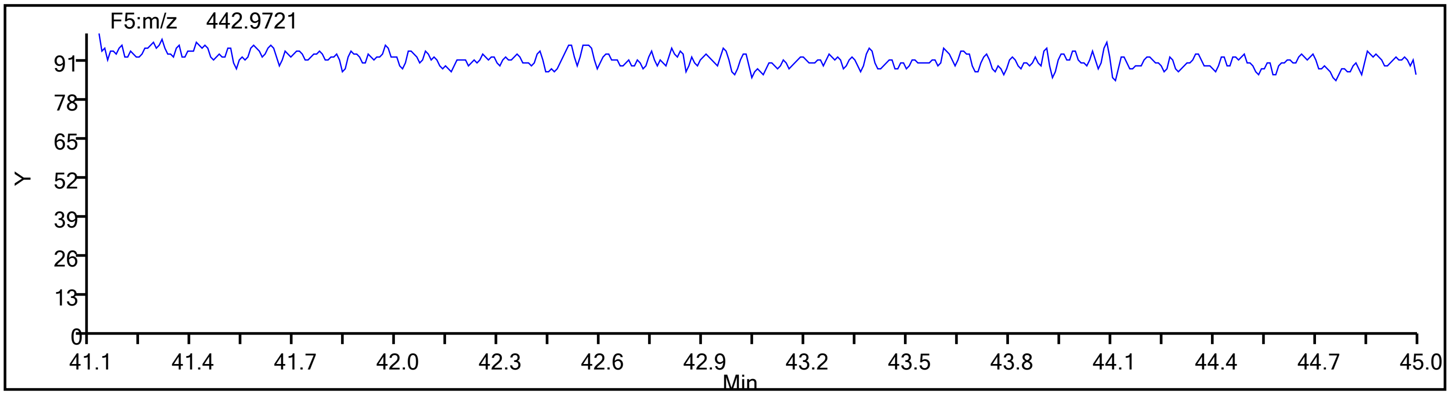

Report Date: 25-Sep-2021 14:17:14 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_7.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	24-Sep-2021 15:31:00	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC CS4_HRDXNL4_00102				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Sep-2021 14:17:12	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1609				

First Level Reviewer: stephensk Date: 24-Sep-2021 16:32:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.554	17437987	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.549	21487623	0.81	1.2244	100.6	100.6	0.2633	0.2633	101	
2,3,7,8-TCDF	20.584	2228526	0.77	1.1194	9.265	9.265	0.0305	0.0305	92.65	
S Total TCDF					9.265	9.265	0.0305	0.0305		
D 13C-2,3,7,8-TCDD	21.932	14329259	0.81	0.8210	100.1	100.1	0.2156	0.2156	100	
2,3,7,8-TCDD	21.967	1452889	0.80	1.0943	9.266	9.266	0.0355	0.0355	92.66	
$ 37Cl4-2,3,7,8-TCDD	21.958	1604465		0.8658	10.6	10.6	0.0356	0.0356	106	
S Total TCDD					9.266	9.266	0.0355	0.0355		
D 13C-1,2,3,7,8-PeCDF	27.447	19146052	1.57	1.1026	99.6	99.6	0.5325	0.5325	99.57	
1,2,3,7,8-PeCDF	27.472	9648424	1.57	1.0920	46.1	46.1	0.1844	0.1844	92.30	
D 13C-2,3,4,7,8-PeCDF	28.988	23563927	1.59	1.3454	100.4	100.4	0.4364	0.4364	100	
2,3,4,7,8-PeCDF	29.013	9532264	1.57	0.8752	46.2	46.2	0.2035	0.2035	92.44	
S Total PeCDF					92.4	92.4	0.1939	0.1939		
D 13C-1,2,3,7,8-PeCDD	29.821	12063083	1.59	0.6987	99.0	99.0	0.1747	0.1747	99.01	
1,2,3,7,8-PeCDD	29.847	6008461	1.57	1.0594	47.0	47.0	0.0882	0.0882	94.03	
S Total PeCDD					47.0	47.0	0.0882	0.0882		
D 13C-1,2,3,4,7,8-HxCDF	35.081	20225184	0.53	1.1295	97.6	97.6	0.3173	0.3173	97.59	
1,2,3,4,7,8-HxCDF	35.098	8890110	1.25	0.9737	45.1	45.1	0.2076	0.2076	90.29	
D 13C-1,2,3,6,7,8-HxCDF	35.241	18845511	0.54	1.0613	96.8	96.8	0.3377	0.3377	96.77	
1,2,3,6,7,8-HxCDF	35.258	10471010	1.25	1.2201	45.5	45.5	0.1816	0.1816	91.08	
D 13C-2,3,4,6,7,8-HxCDF	36.049	17027465	0.54	0.9480	97.9	97.9	0.3780	0.3780	97.88	
2,3,4,6,7,8-HxCDF	36.066	9649955	1.25	1.2435	45.6	45.6	0.1772	0.1772	91.15	
D 13C-1,2,3,7,8,9-HxCDF	36.925	15744381	0.54	0.8526	100.6	100.6	0.4203	0.4203	101	
1,2,3,7,8,9-HxCDF	36.942	8856436	1.25	1.2454	45.2	45.2	0.1766	0.1766	90.33	
S Total HxCDF					181.4	181.4	0.1858	0.1858		
* 13C-1,2,3,7,8,9-HxCDD	36.732	18349395	1.28	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.260	14990207	1.27	0.8312	98.3	98.3	0.2252	0.2252	98.28	
1,2,3,4,7,8-HxCDD	36.277	6273171	1.27	0.9085	46.1	46.1	0.1025	0.1025	92.12	
D 13C-1,2,3,6,7,8-HxCDD	36.378	13563584	1.25	0.7550	97.9	97.9	0.2479	0.2479	97.91	
1,2,3,6,7,8-HxCDD	36.386	6419648	1.23	1.0279	46.0	46.0	0.1050	0.1050	92.10	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.749	6735651	1.26	1.0268	45.9	45.9	0.0974	0.0974	91.89	
S Total HxCDD					138.1	138.1	0.1016	0.1016		
D 13C-1,2,3,4,6,7,8-HpCDF	38.722	11412402	0.47	0.6190	100.5	100.5	0.2860	0.2860	100	
1,2,3,4,6,7,8-HpCDF	38.739	8034061	1.07	1.5851	44.4	44.4	0.1847	0.1847	88.83	
D 13C-1,2,3,4,7,8,9-HpCDF	39.969	12489528	0.47	0.6516	104.5	104.5	0.2717	0.2717	104	
1,2,3,4,7,8,9-HpCDF	39.977	6554662	1.05	1.1597	45.3	45.3	0.2112	0.2112	90.51	
S Total HpCDF					89.7	89.7	0.1979	0.1979		
D 13C-1,2,3,4,6,7,8-HpCDD	39.666	9948237	1.08	0.5362	101.1	101.1	0.3676	0.3676	101	
1,2,3,4,6,7,8-HpCDD	39.674	4971728	1.05	1.0819	46.2	46.2	0.1233	0.1233	92.38	
S Total HpCDD					46.2	46.2	0.1233	0.1233		
D 13C-OCDD	42.164	14965098	0.91	0.3802	214.5	214.5	0.2480	0.2480	107	
OCDF	42.257	10010706	0.91	1.5094	88.6	88.6	0.0626	0.0626	88.63	
OCDD	42.172	7642737	0.90	1.1344	90.0	90.0	0.0703	0.0703	90.04	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00102 Amount Added: 1.00 Units: uL

Report Date: 25-Sep-2021 14:17:15 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 24-Sep-2021 15:31:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS4_HRDXNL4_00102
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:17:12 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 16:32:51

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.554	21.567	-1		7816173	1121660	1124	2810	998		
333.9338	21.554	21.567	-1		9621814	1396800	659	1647	2120	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.549	20.565	-1	0.953	9609540	1425458	2036	5090	700		
317.9389	20.558	20.565	0	0.954	11878083	1792497	1212	3030	1479	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.584	20.598	-1	1.002	971275	146299	174	435	841		
305.8987	20.584	20.598	-1	1.002	1257251	189317	266	665	712	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.932	21.948	-1	1.018	6413419	911164	1124	2810	811		
333.9338	21.941	21.948	0	1.018	7915840	1108642	659	1647	1682	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.967	21.977	-1	1.002	646680	93922	206	515	456		
321.8936	21.967	21.977	-1	1.002	806209	113298	108	270	1049	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.958	21.977	-1	1.019	1604465	224362	311	777	721		
13C-1,2,3,7,8-PeCDF											
351.9000	27.447	27.459	-1	1.273	11689508	2006246	3592	8980	559		
353.8970	27.447	27.459	-1	1.273	7456544	1285289	2323	5807	553	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.472	27.484	-1	1.001	5893066	984351	1552	3880	634		
341.8567	27.472	27.484	-1	1.001	3755358	625355	1099	2747	569	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.988	28.999	-1	1.345	14459647	2287701	3592	8980	637		
353.8970	28.988	28.999	-1	1.345	9104280	1433543	2323	5807	617	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.013	29.026	-1	1.001	5829589	922364	1552	3880	594		
341.8567	29.013	29.026	-1	1.001	3702675	585551	1099	2747	533	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.821	29.832	-1	1.384	7411598	1113741	777	1942	1433		
369.8919	29.821	29.832	-1	1.384	4651485	715789	453	1132	1580	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.847	29.859	-1	1.001	3671290	558621	485	1212	1152		
357.8516	29.847	29.859	-1	1.001	2337171	352334	199	497	1771	1.57(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.081	35.084	0	0.955	7047906	1648880	2455	6137	672		
385.8610	35.081	35.084	0	0.955	13177278	3078825	4647	11617	663	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.098	35.101	0	1.000	4933471	1161103	2137	5342	543		
375.8178	35.098	35.101	0	1.000	3956639	929676	1685	4212	552	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.241	35.244	0	0.959	6603586	1511367	2455	6137	616		
385.8610	35.241	35.244	0	0.959	12241925	2801791	4647	11617	603	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.258	35.259	0	1.000	5813150	1309278	2137	5342	613		
375.8178	35.258	35.259	0	1.000	4657860	1061090	1685	4212	630	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.049	36.051	0	0.981	5940471	1504959	2455	6137	613		
385.8610	36.049	36.051	0	0.981	11086994	2830627	4647	11617	609	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.066	36.066	0	1.000	5357547	1373249	2137	5342	643		
375.8178	36.066	36.066	0	1.000	4292408	1106284	1685	4212	657	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.925	36.927	0	1.005	5492202	1509184	2455	6137	615		
385.8610	36.925	36.927	0	1.005	10252179	2834015	4647	11617	610	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.942	36.940	0	1.000	4920838	1343454	2137	5342	629		
375.8178	36.942	36.940	0	1.000	3935598	1086730	1685	4212	645	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.732	36.733	0		10293417	2788696	2174	5435	1283		
403.8529	36.732	36.733	0		8055978	2165291	1535	3837	1411	1.28(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.260	36.260	0	0.987	8387631	2319309	2174	5435	1067		
403.8529	36.260	36.260	0	0.987	6602576	1805495	1535	3837	1176	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.277	36.273	0	1.000	3510653	941252	929	2322	1013		
391.8127	36.277	36.273	0	1.000	2762518	753341	607	1517	1241	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.378	36.376	0	0.990	7546566	1978300	2174	5435	910		
403.8529	36.378	36.376	0	0.990	6017018	1578218	1535	3837	1028	1.25(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.386	36.389	0	1.000	3542103	928968	929	2322	1000		
391.8127	36.386	36.389	0	1.000	2877545	737245	607	1517	1215	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.749	36.745	0	1.013	3752958	1006507	929	2322	1083		
391.8127	36.749	36.745	0	1.013	2982693	803288	607	1517	1323	1.26(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.722	38.721	0	1.054	3639736	1196221	1768	4420	677		
419.8220	38.722	38.721	0	1.054	7772666	2526866	1740	4350	1452	0.47(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.739	38.734	0	1.000	4144158	1339428	2397	5992	559		
409.7788	38.731	38.734	0	1.000	3889903	1269931	1963	4907	647	1.07(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.969	39.962	0	1.088	3973507	1403882	1768	4420	794		
419.8220	39.969	39.962	0	1.088	8516021	3047509	1740	4350	1751	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.977	39.970	0	1.000	3356298	1192084	2397	5992	497		
409.7788	39.977	39.970	0	1.000	3198364	1138391	1963	4907	580	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.666	39.661	0	1.080	5161225	1880182	2067	5167	910		
437.8140	39.666	39.661	0	1.080	4787012	1744570	1839	4597	949	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.674	39.671	0	1.000	2542512	925951	1026	2565	902		
425.7737	39.674	39.671	0	1.000	2429216	881378	908	2270	971	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.164	42.159	0	1.148	7137470	2297064	1127	2817	2038		
471.7750	42.164	42.159	0	1.148	7827628	2558626	741	1852	3453	0.91(0.76-1.02)	
OCDF											
441.7428	42.257	42.255	0	1.002	4773229	1460166	388	970	3763		
443.7399	42.257	42.255	0	1.002	5237477	1612377	530	1325	3042	0.91(0.76-1.02)	
OCDD											
457.7377	42.172	42.169	0	1.000	3627643	1184383	389	972	3045		
459.7348	42.172	42.169	0	1.000	4015094	1311141	385	962	3406	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00102 Amount Added: 1.00 Units: uL

Report Date: 25-Sep-2021 14:17:15 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_7.d

Injection Date: 24-Sep-2021 15:31:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

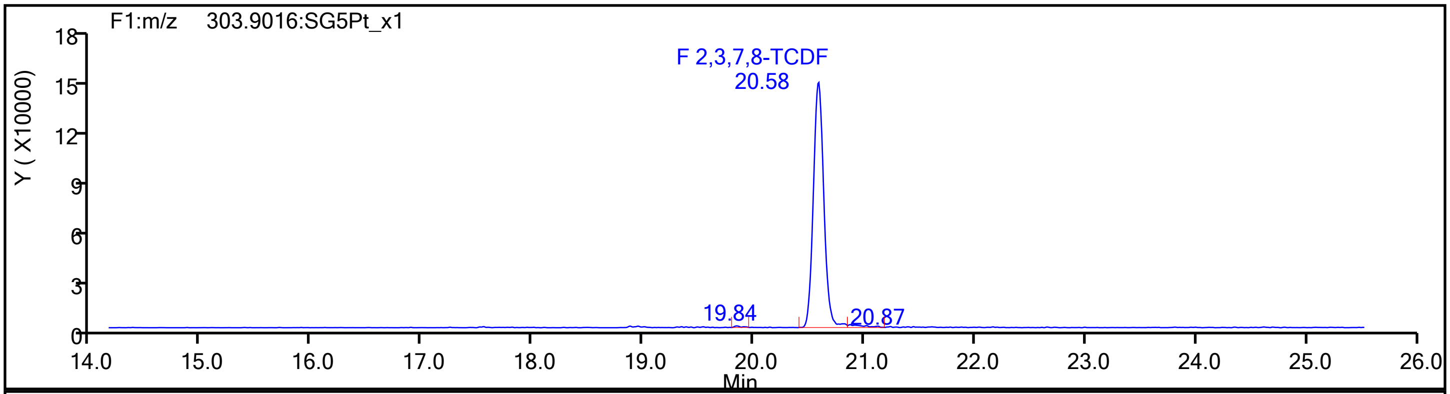

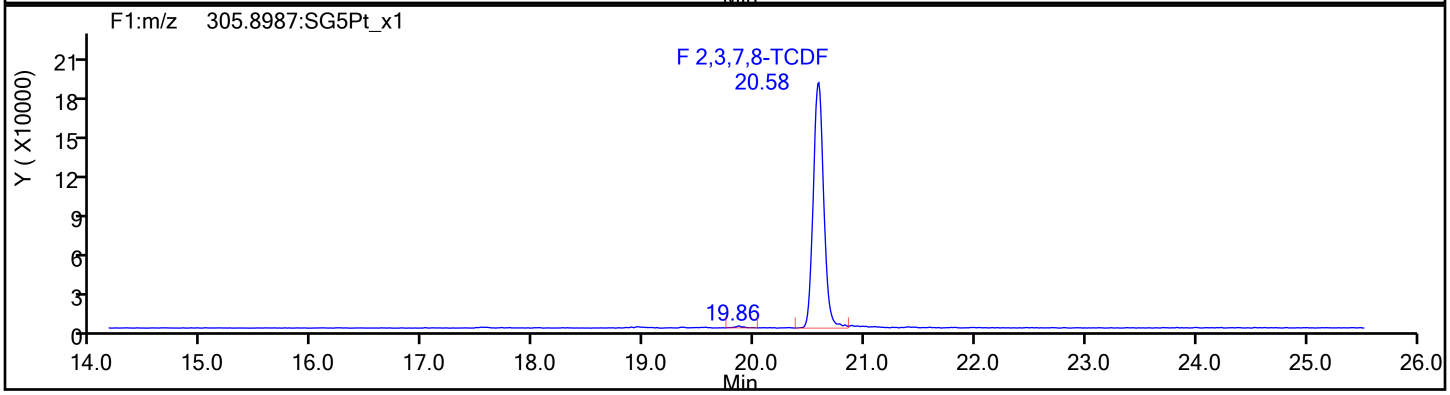

TCDF Standards

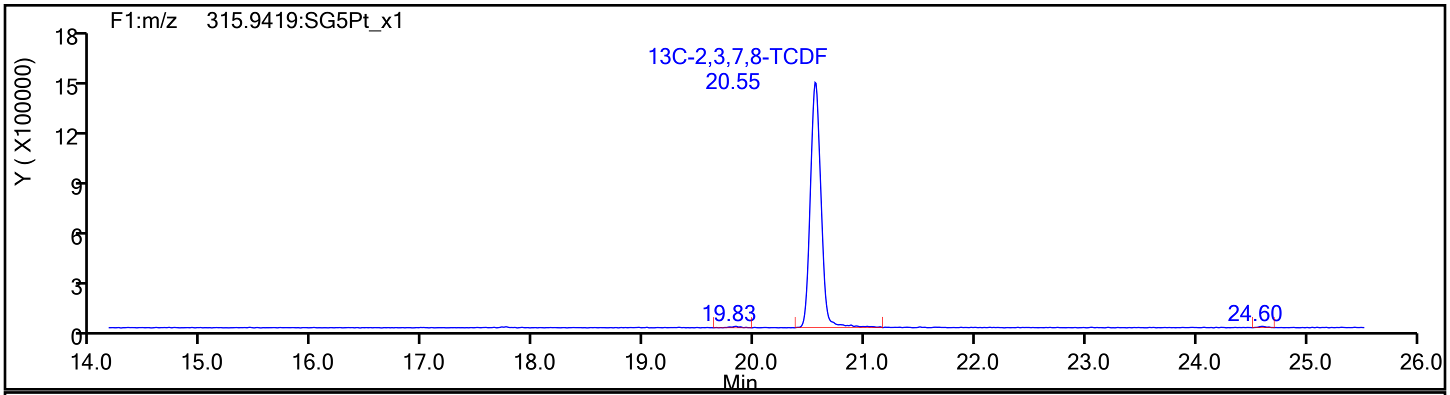

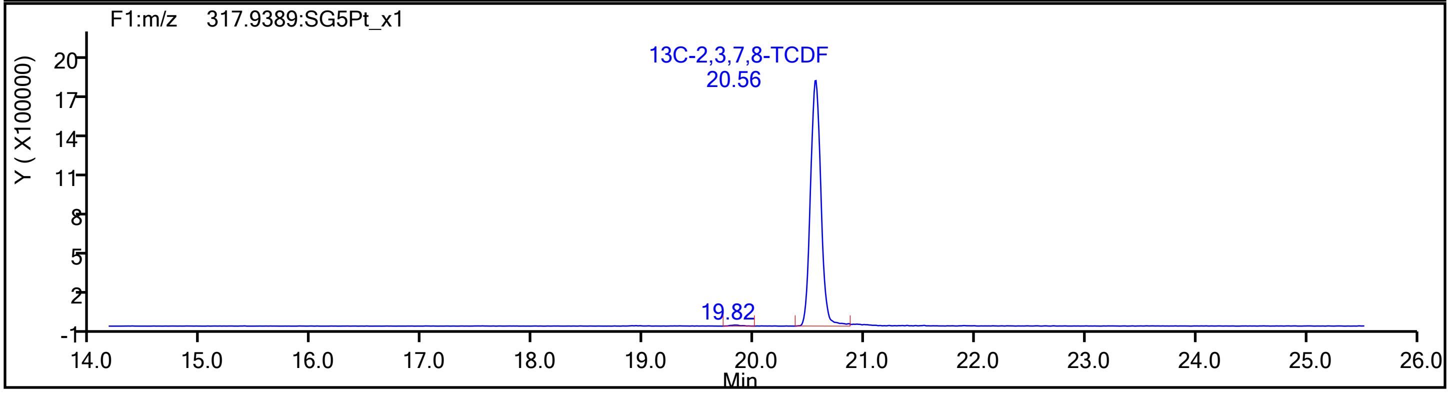

Report Date: 25-Sep-2021 14:17:15 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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Sample Line#: 6
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Column Dia: 0.32 mm

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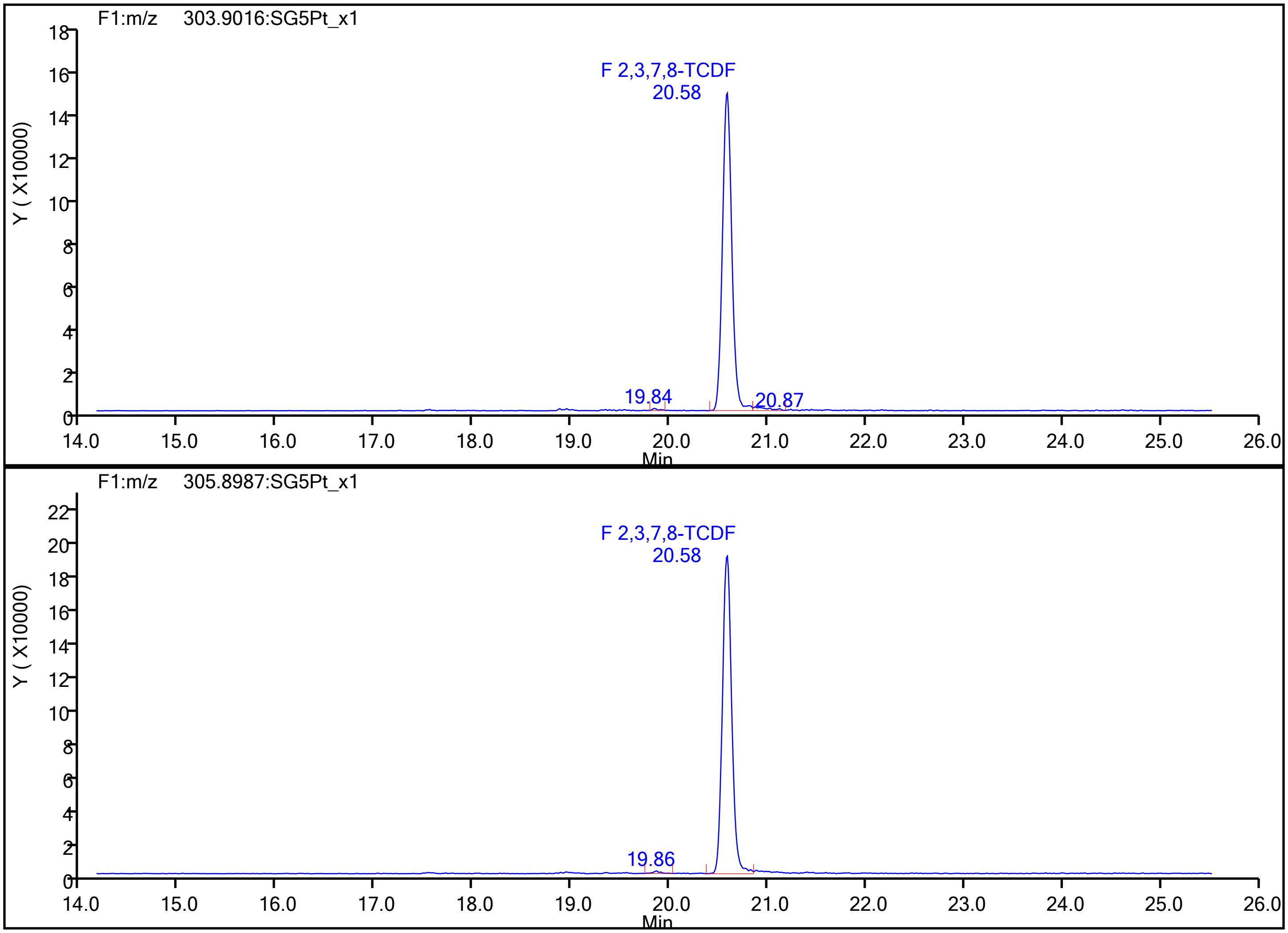

TCDF Interference Mass

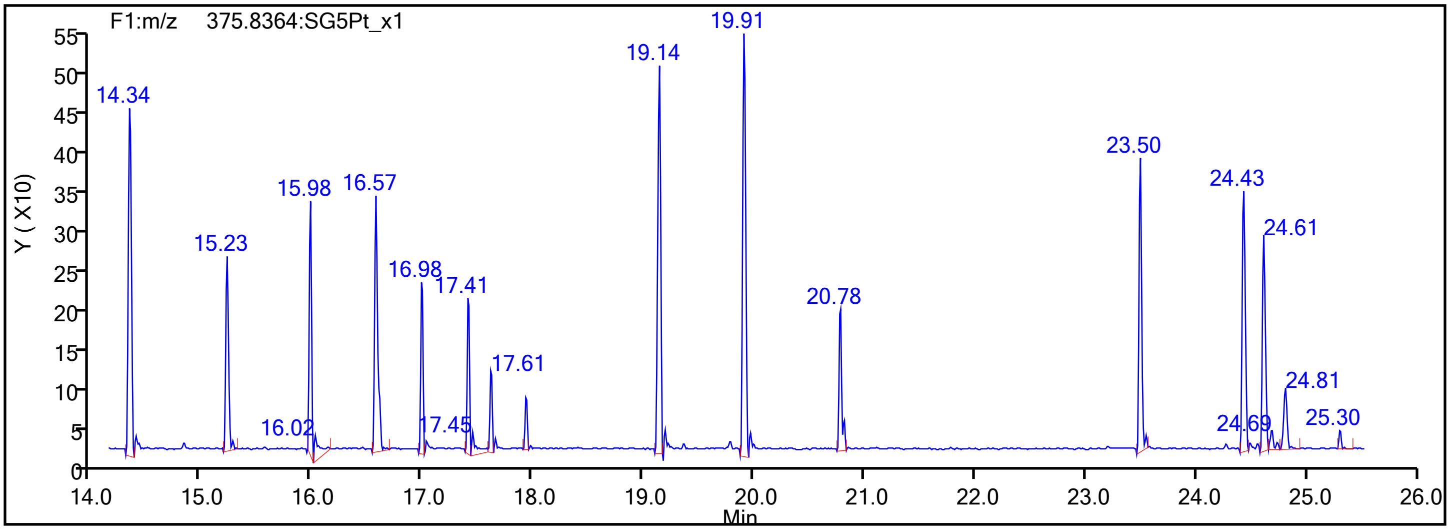

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Eurofins TestAmerica, Sacramento

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TCDD

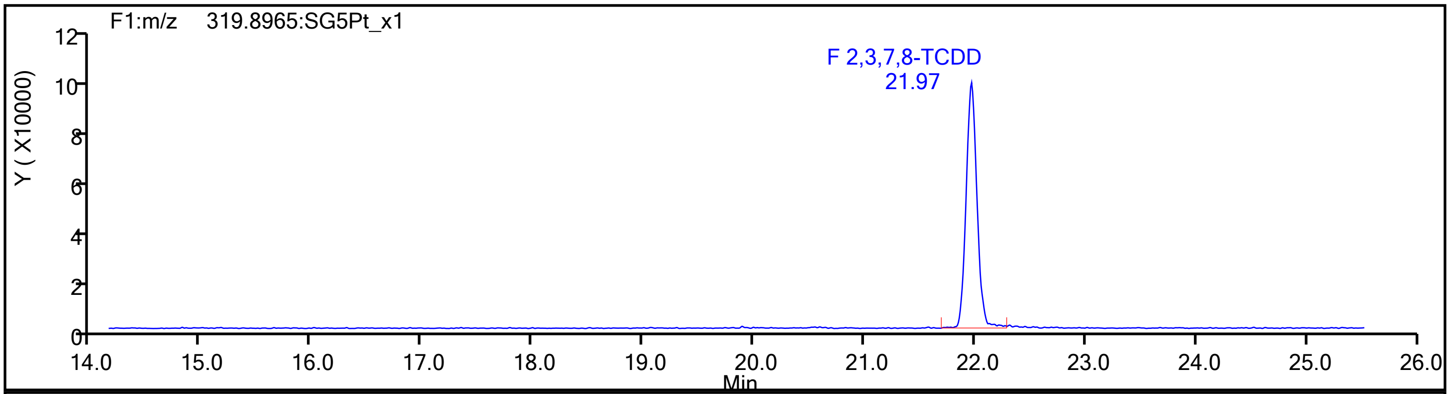

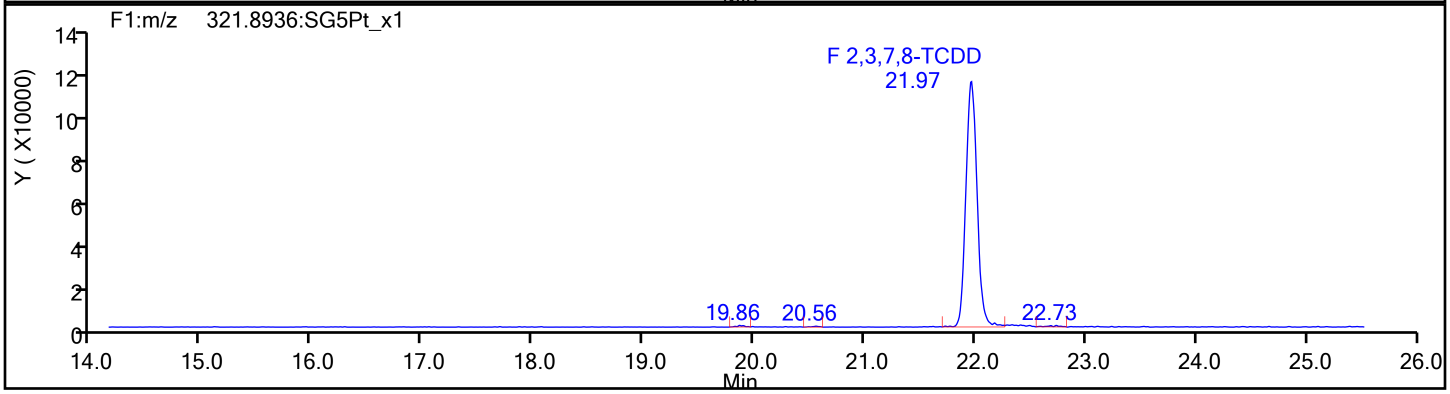

TCDD Standards

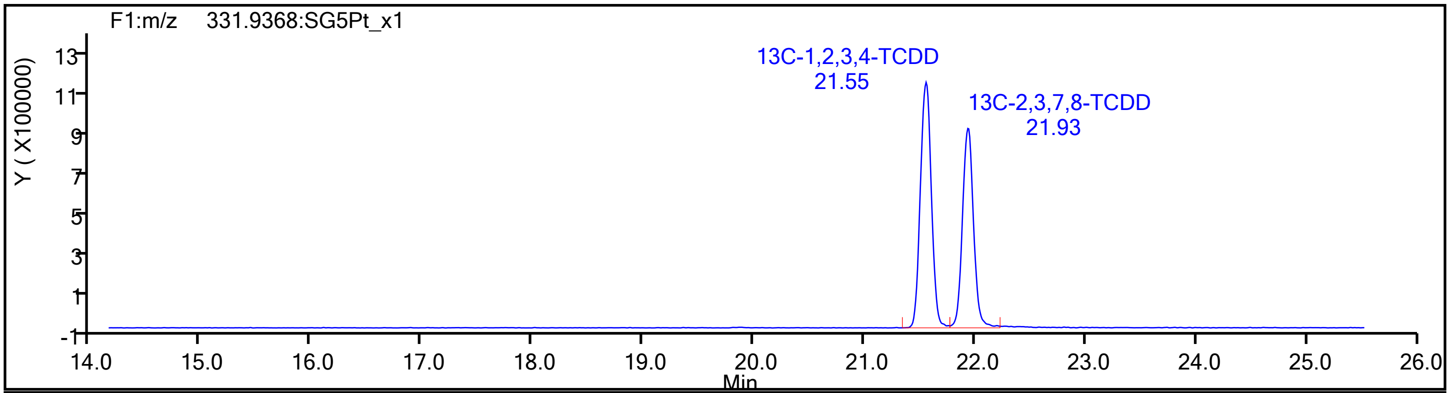

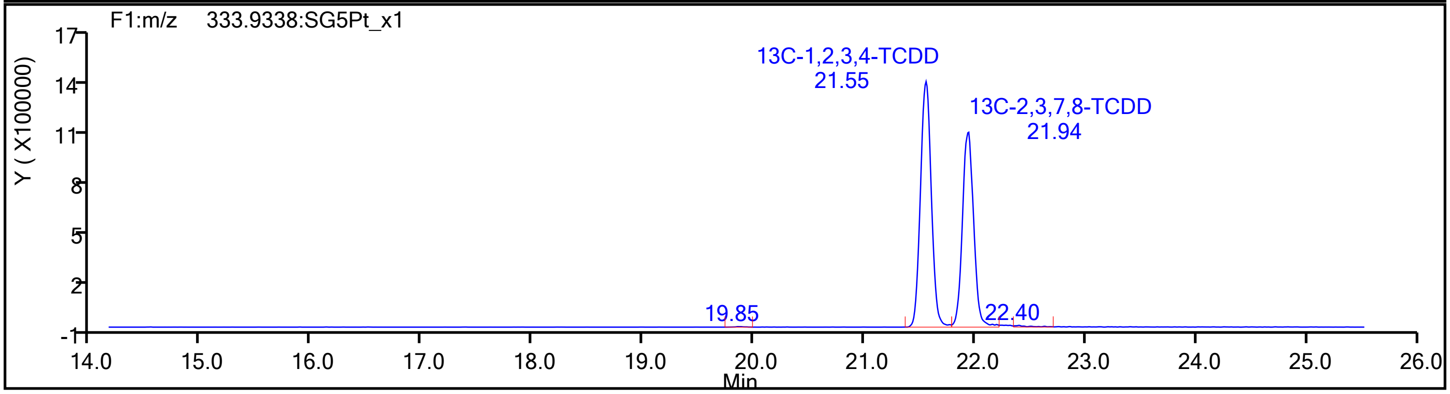

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

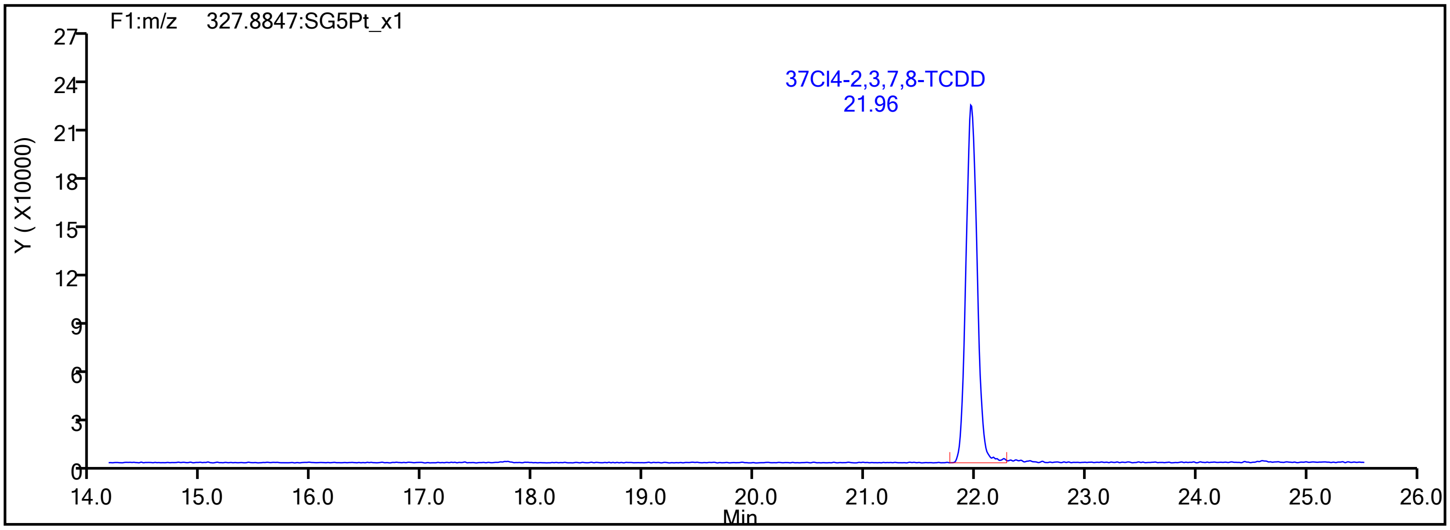

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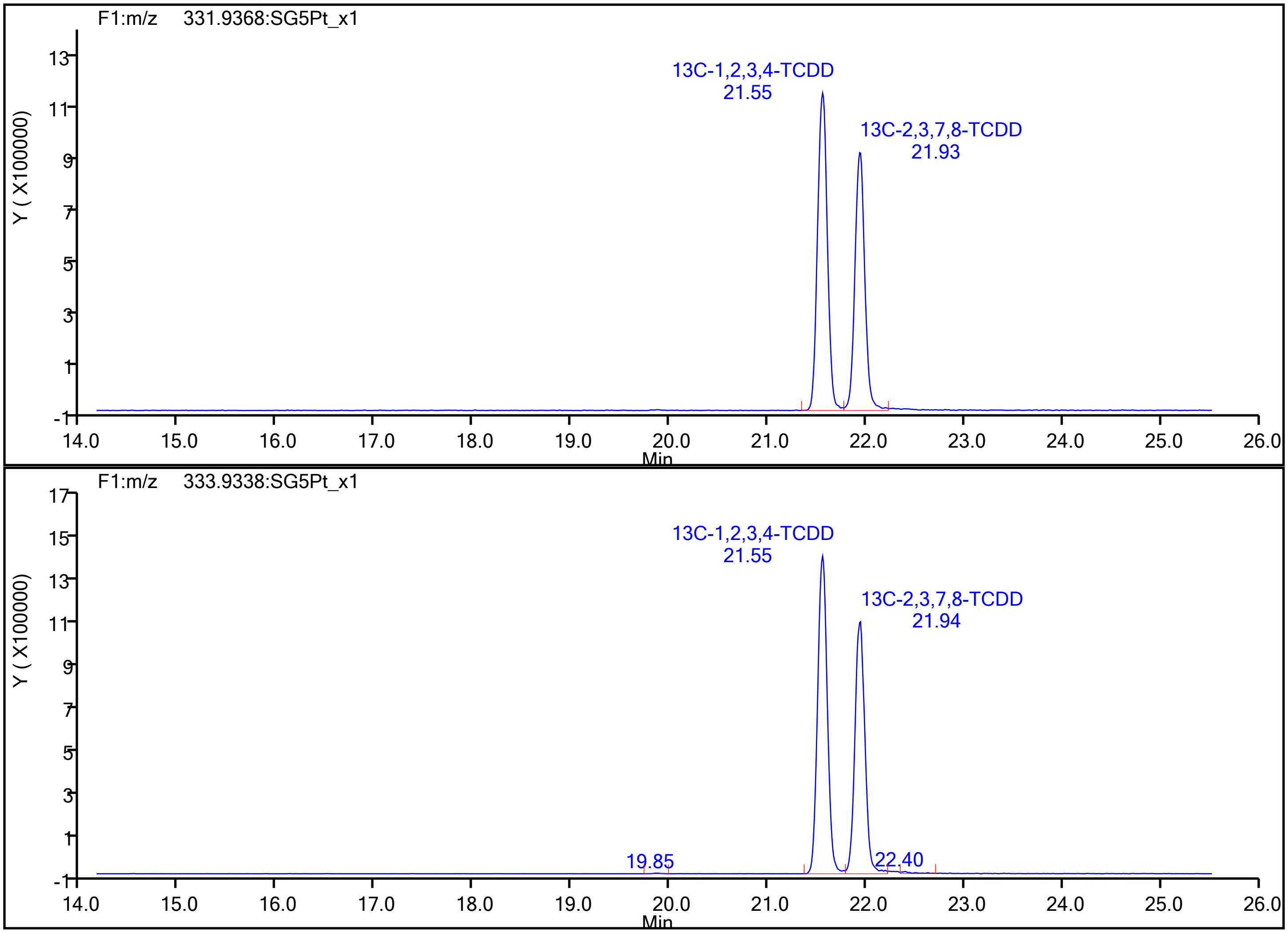

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

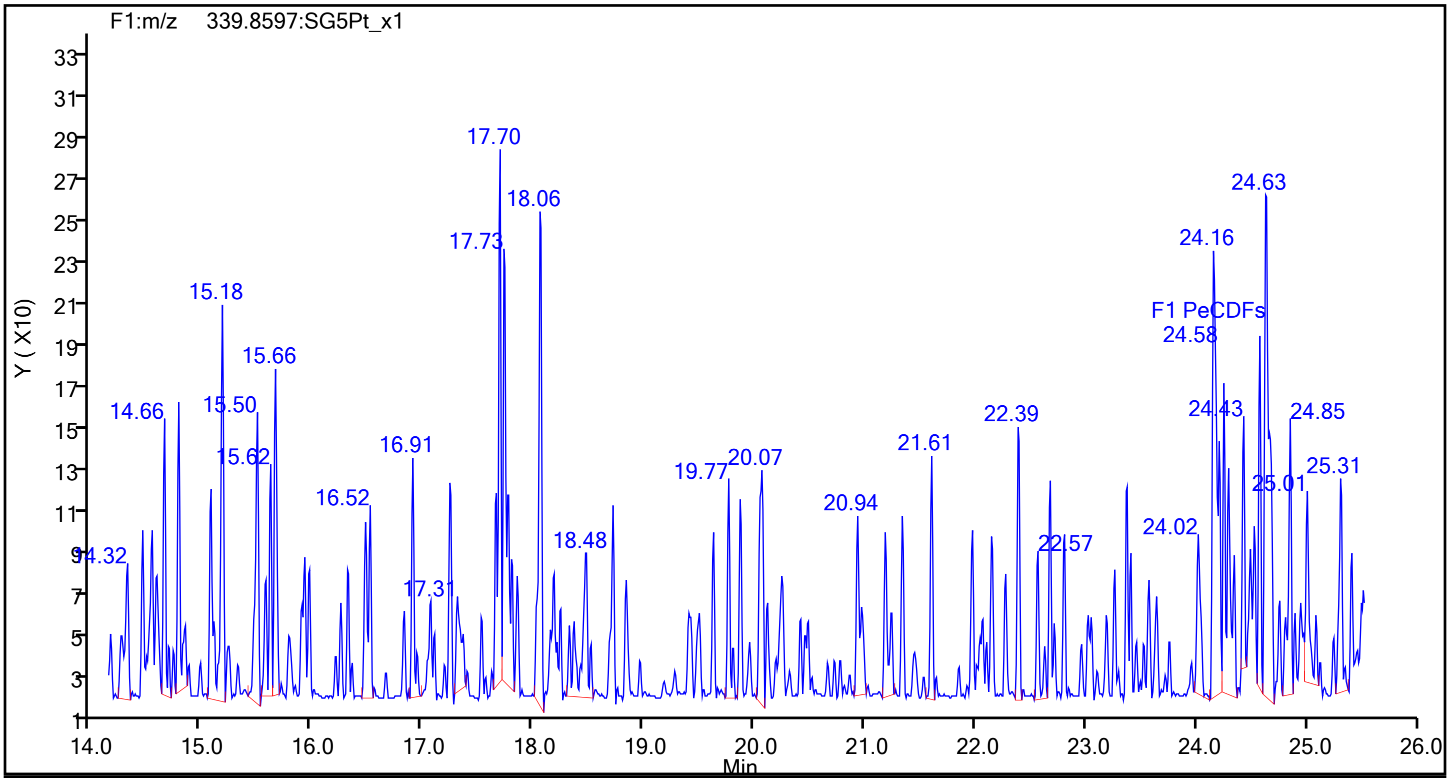

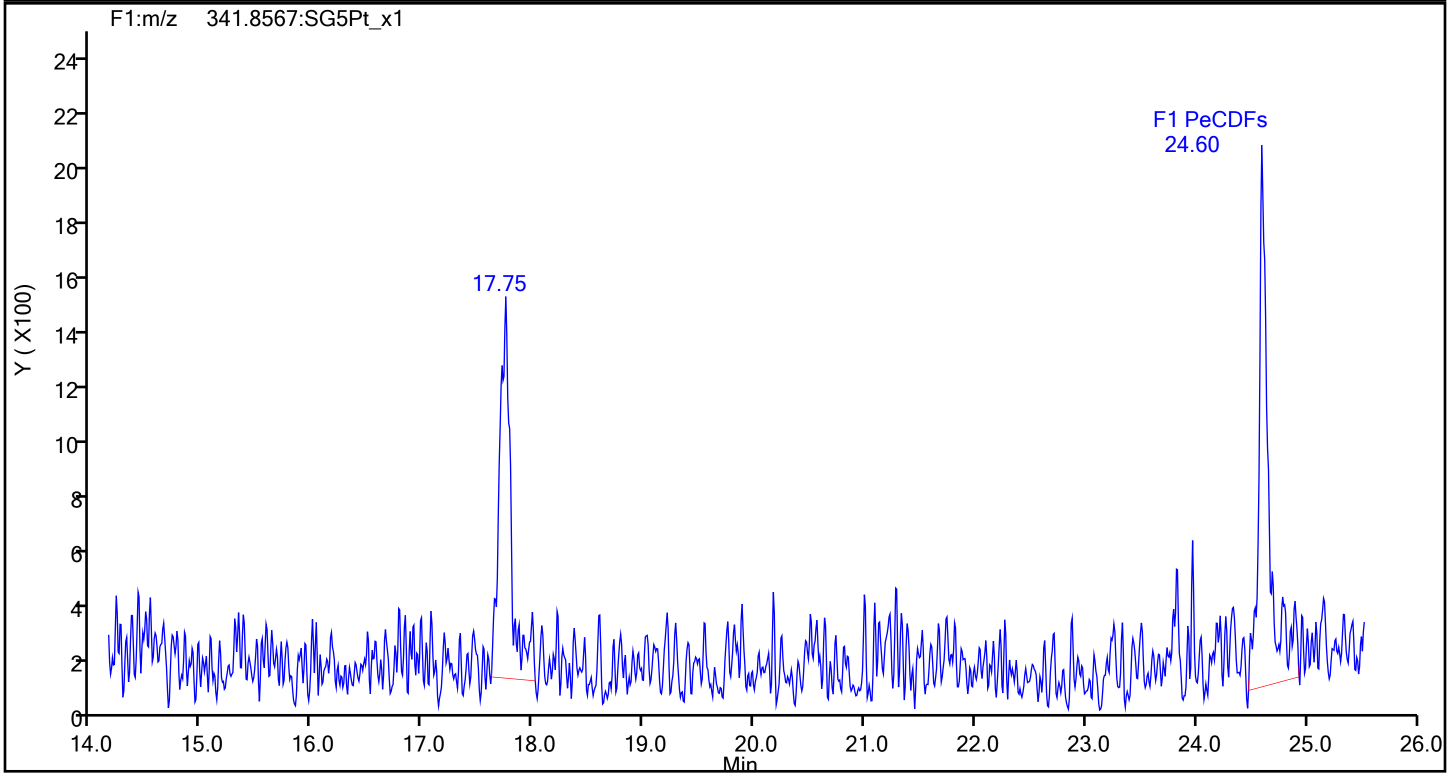

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Eurofins TestAmerica, Sacramento

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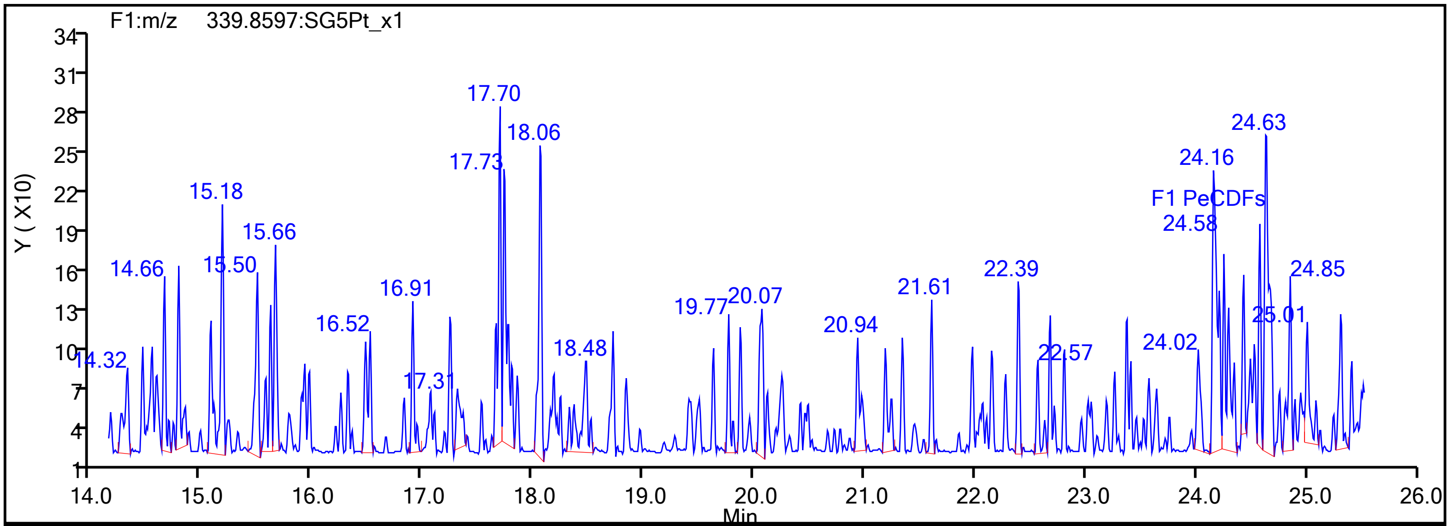

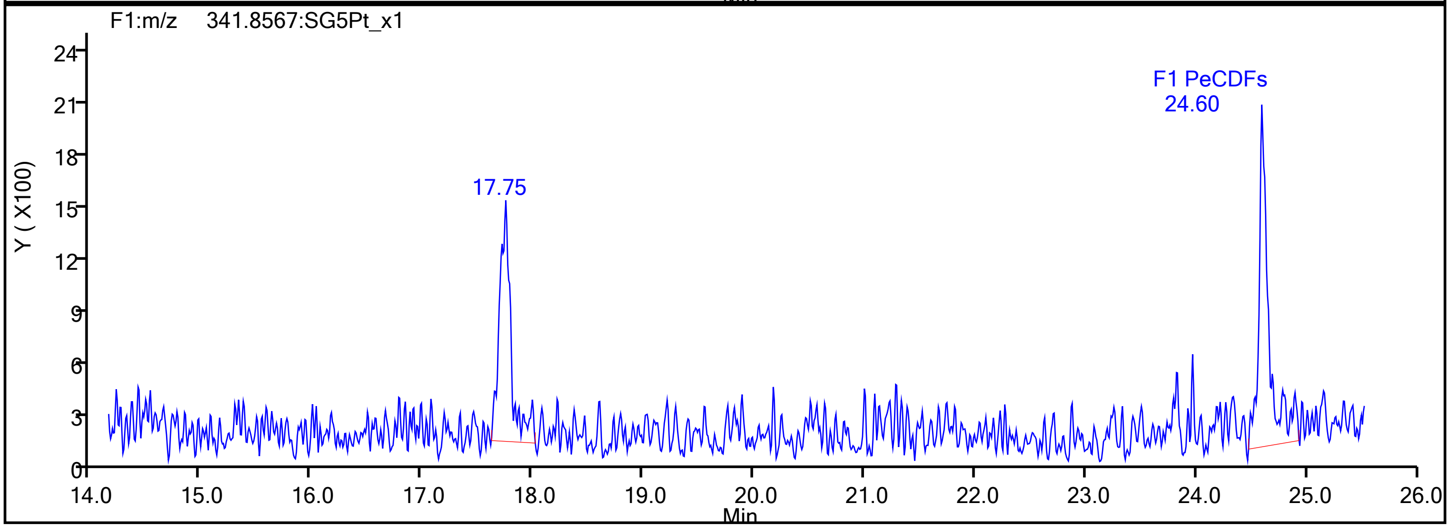

F1 PeCDFs Interference Mass

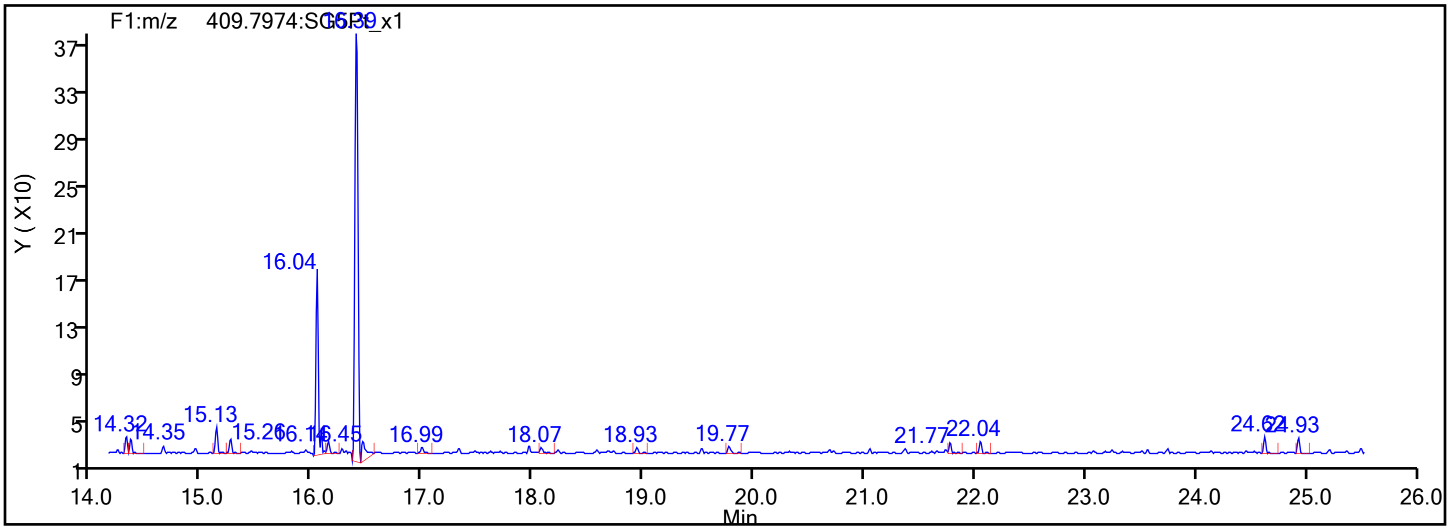

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Eurofins TestAmerica, Sacramento

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PeCDF

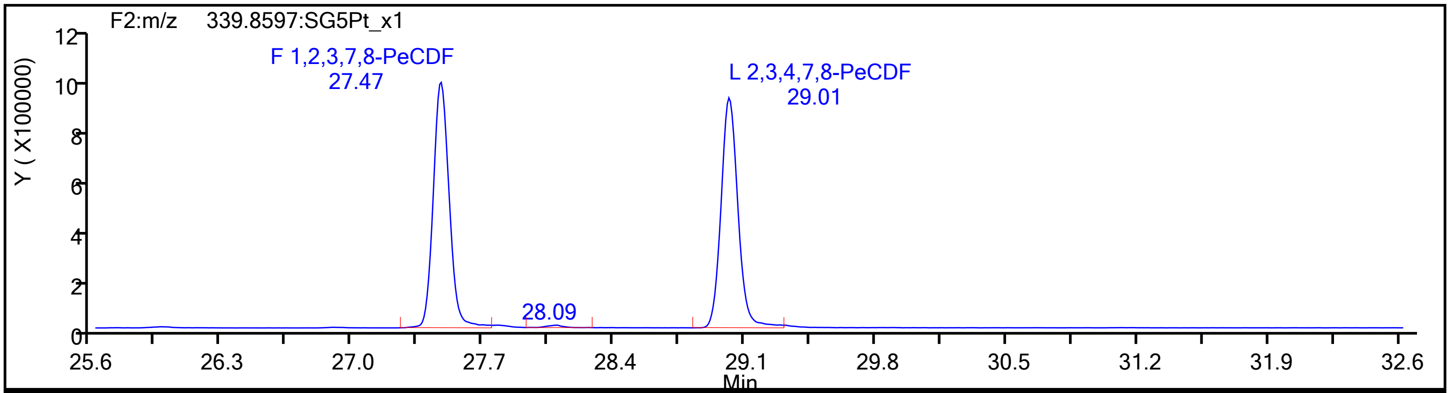

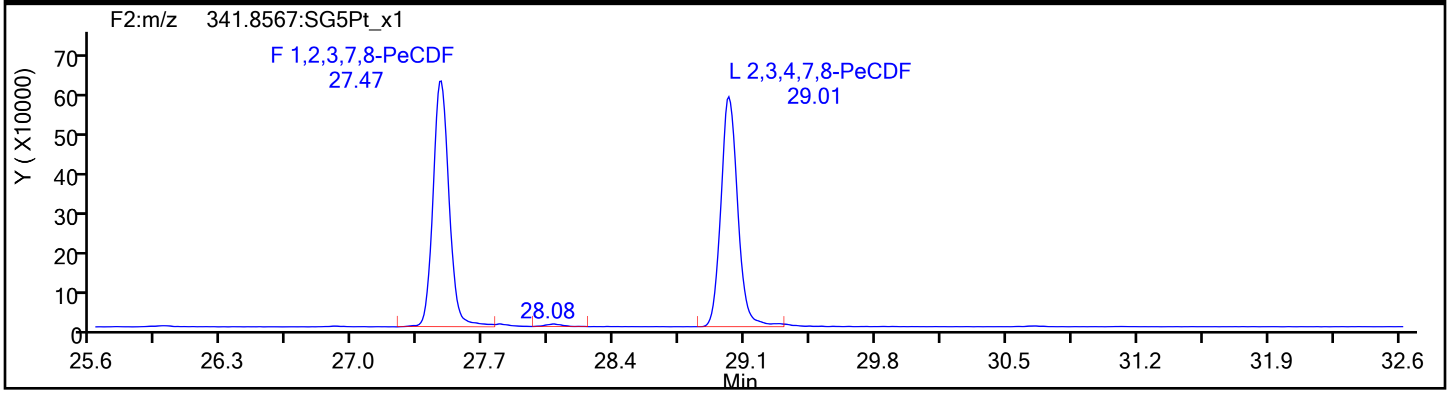

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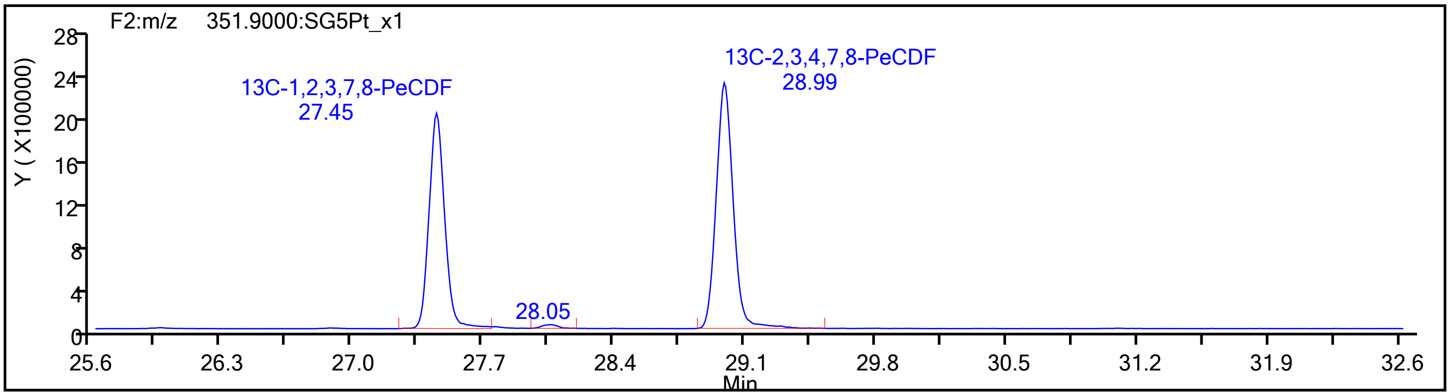

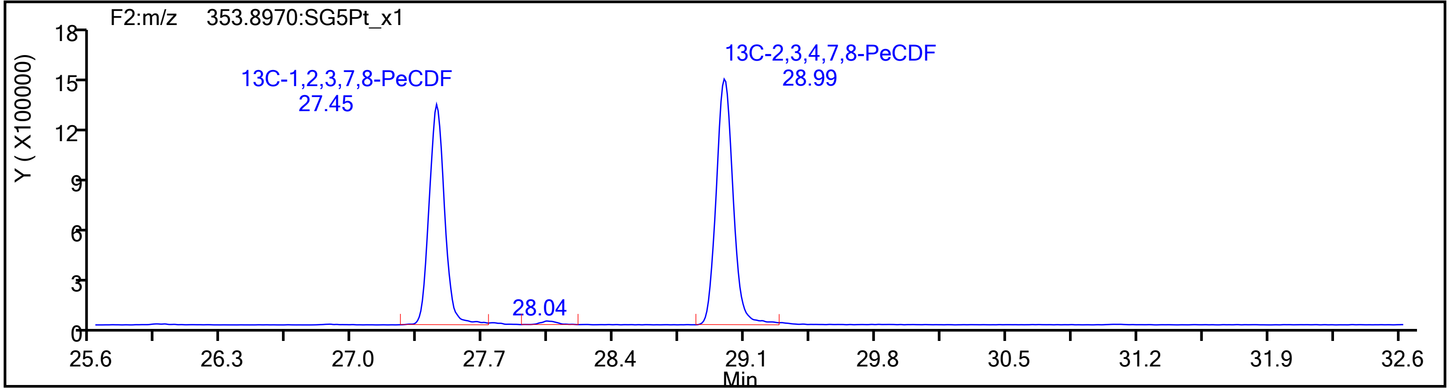

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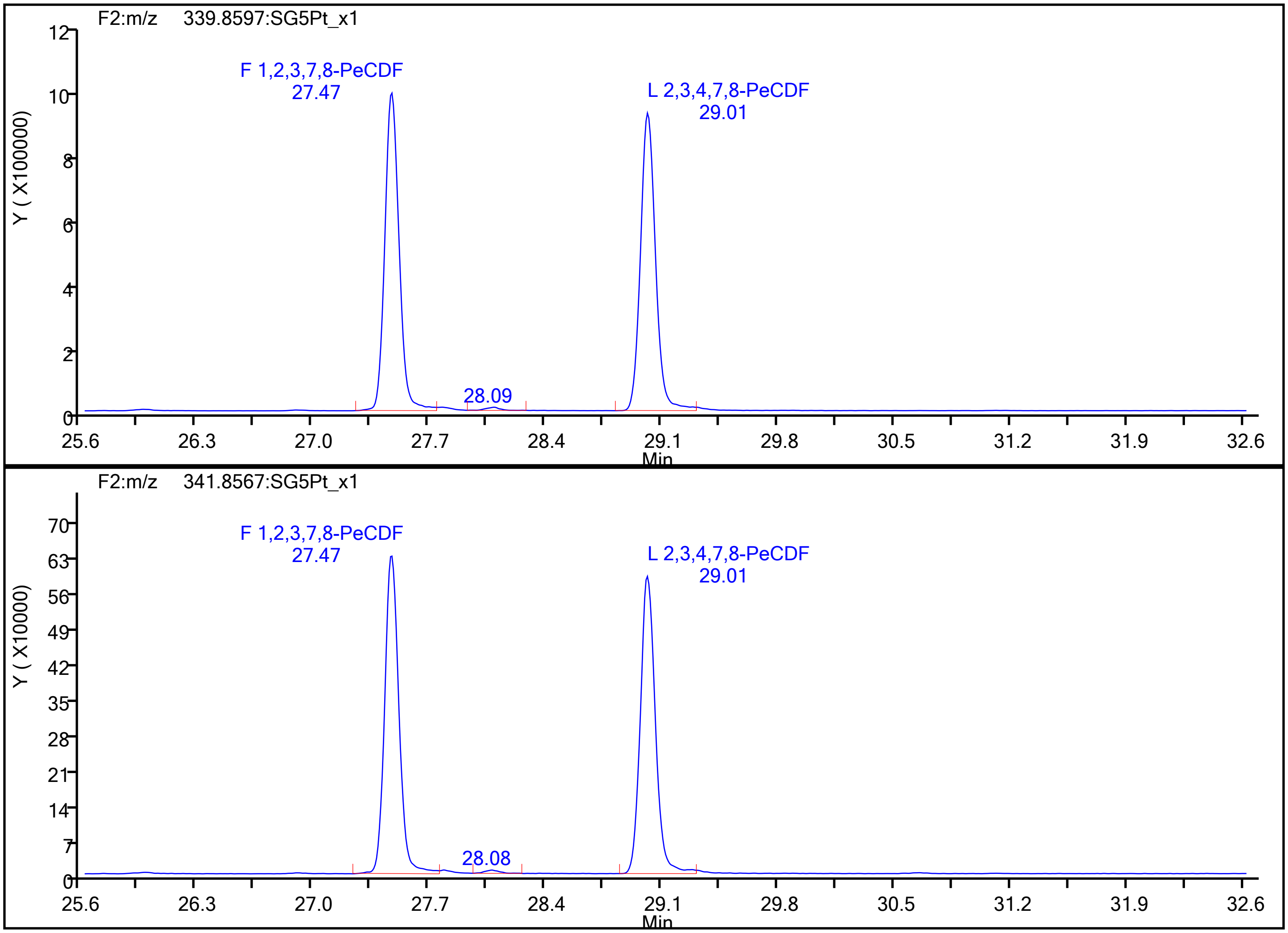

PeCDF Interference Mass

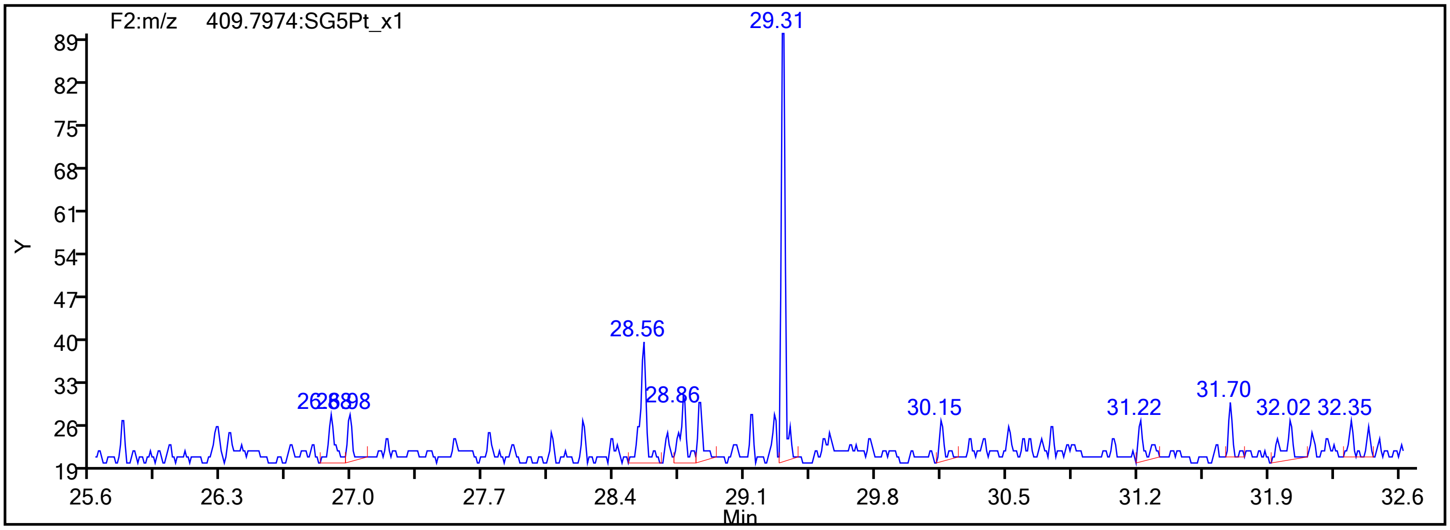

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Eurofins TestAmerica, Sacramento

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PeCDD

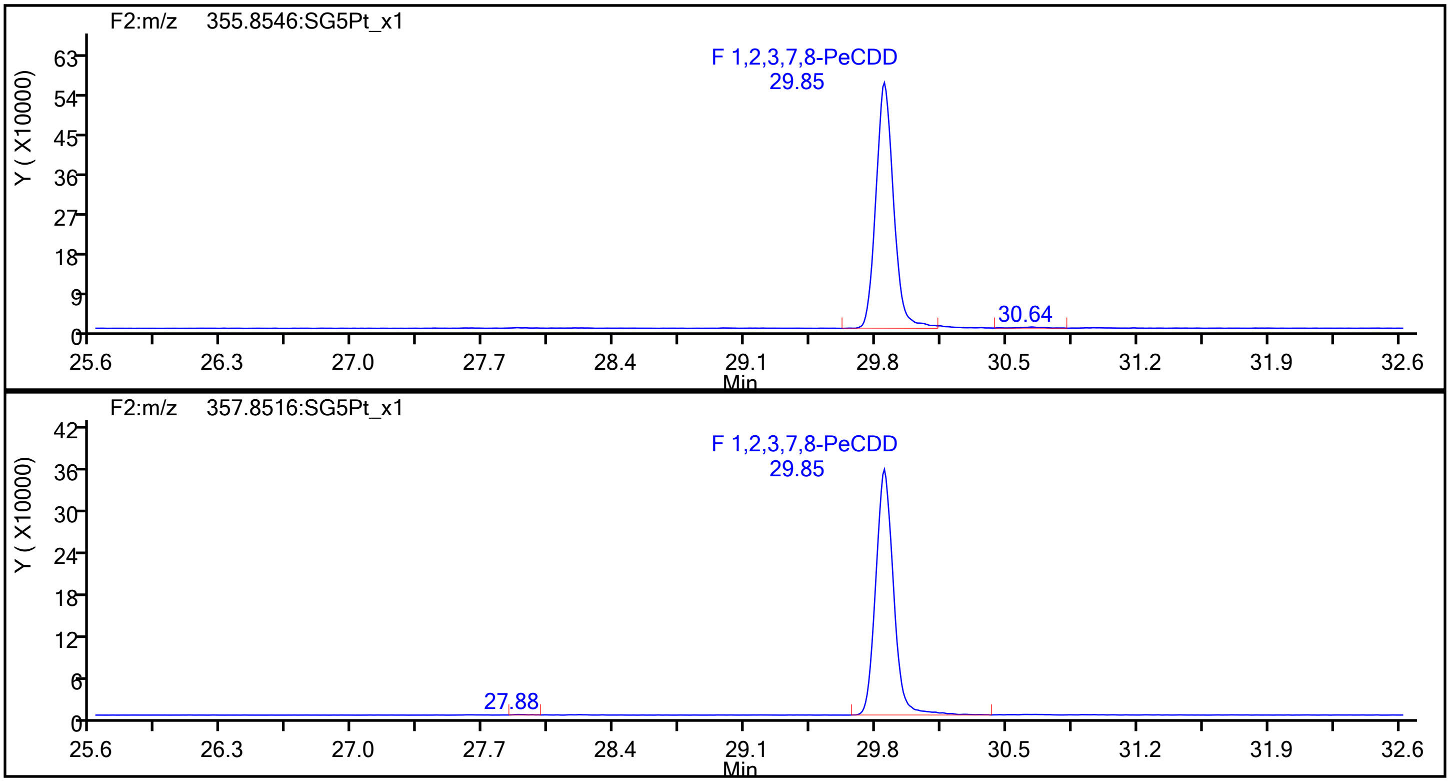

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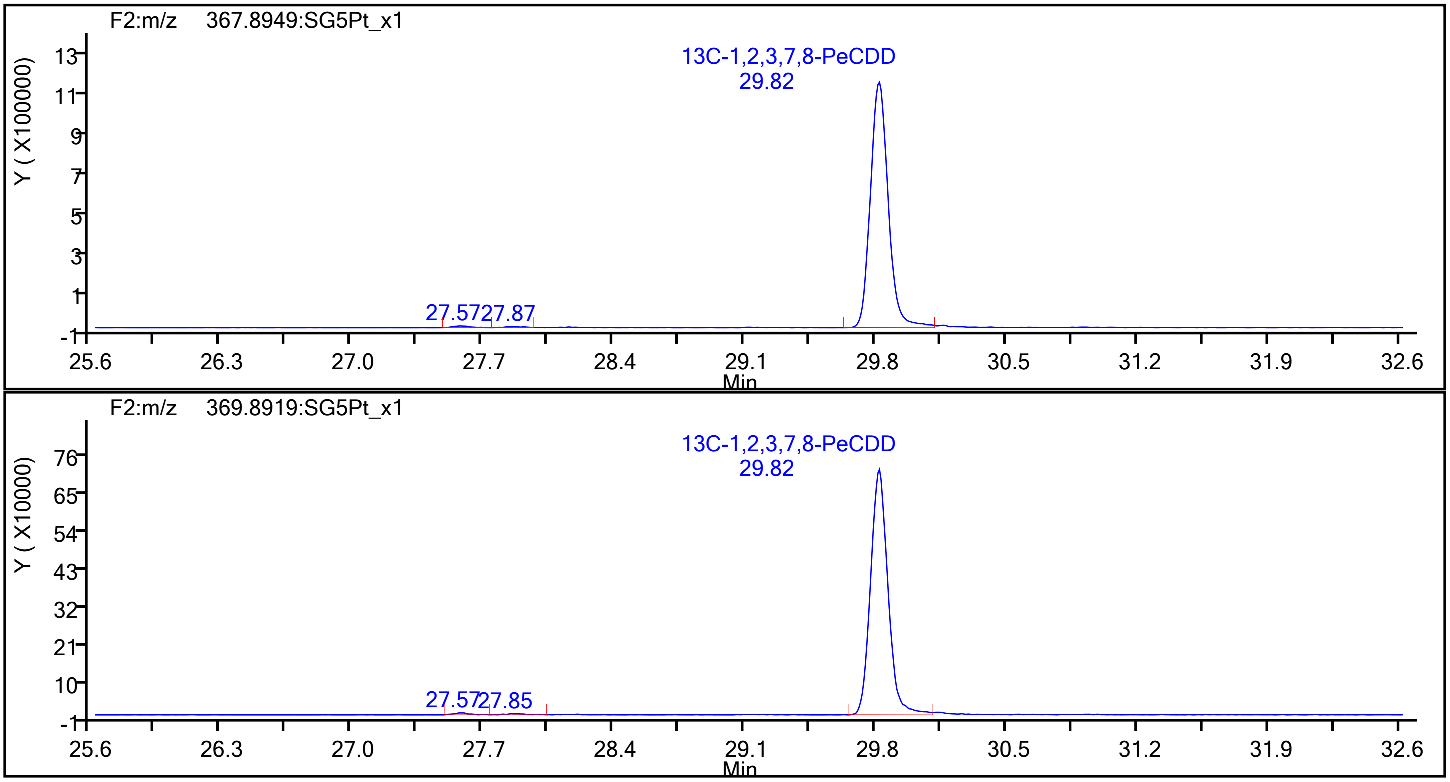

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HxCDF

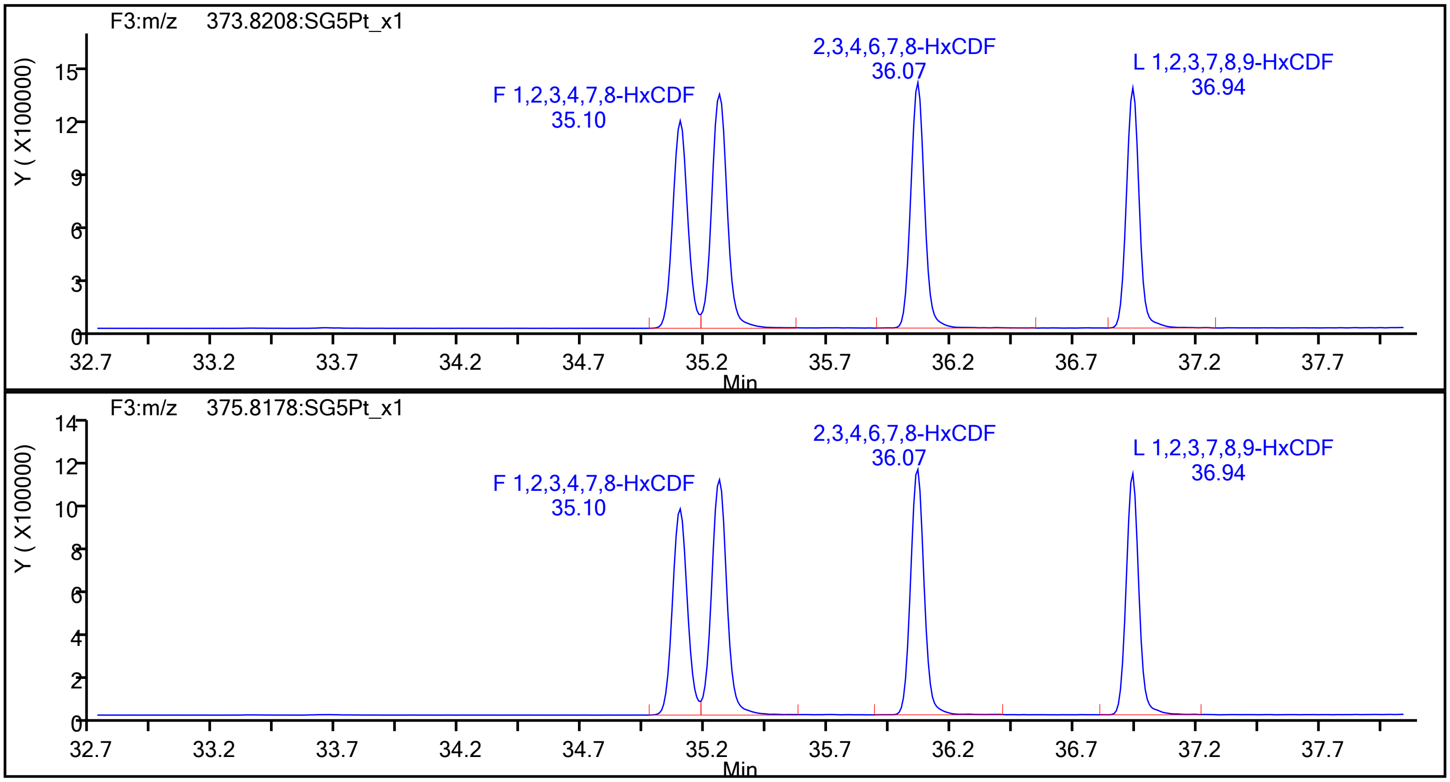

HxCDF Standards

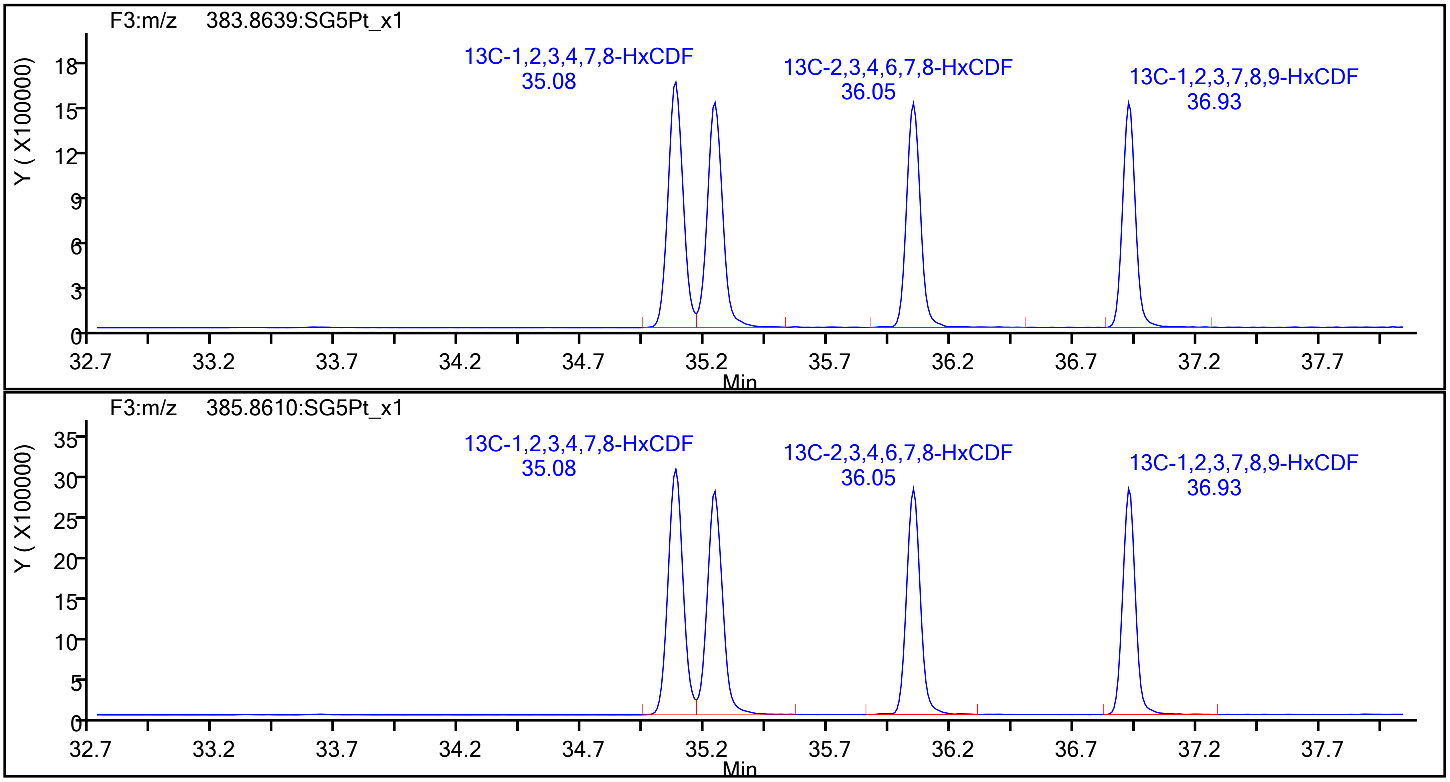

Eurofins TestAmerica, Sacramento

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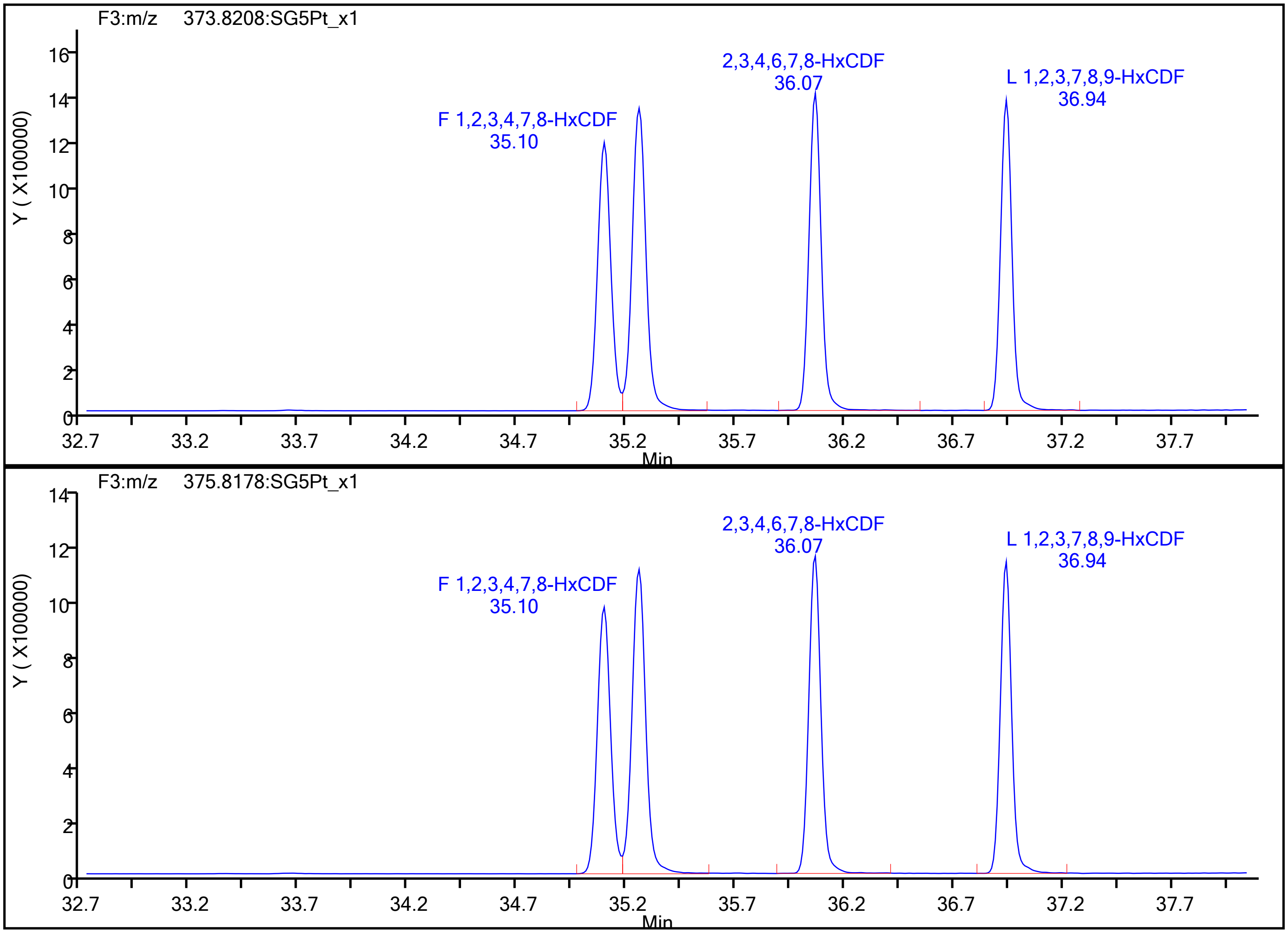

HxCDF Interference Mass

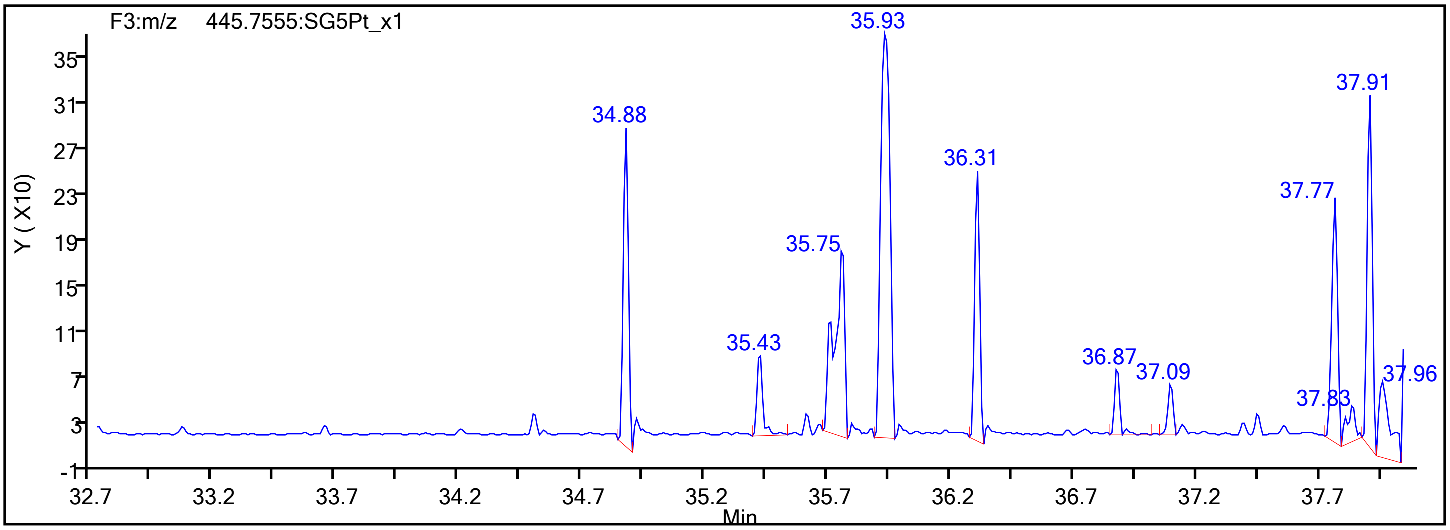

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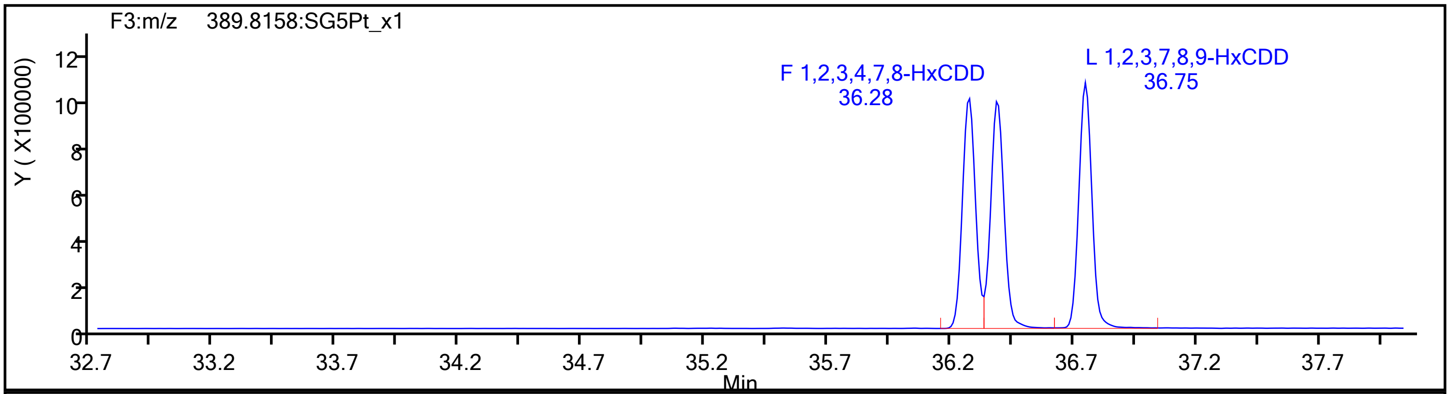

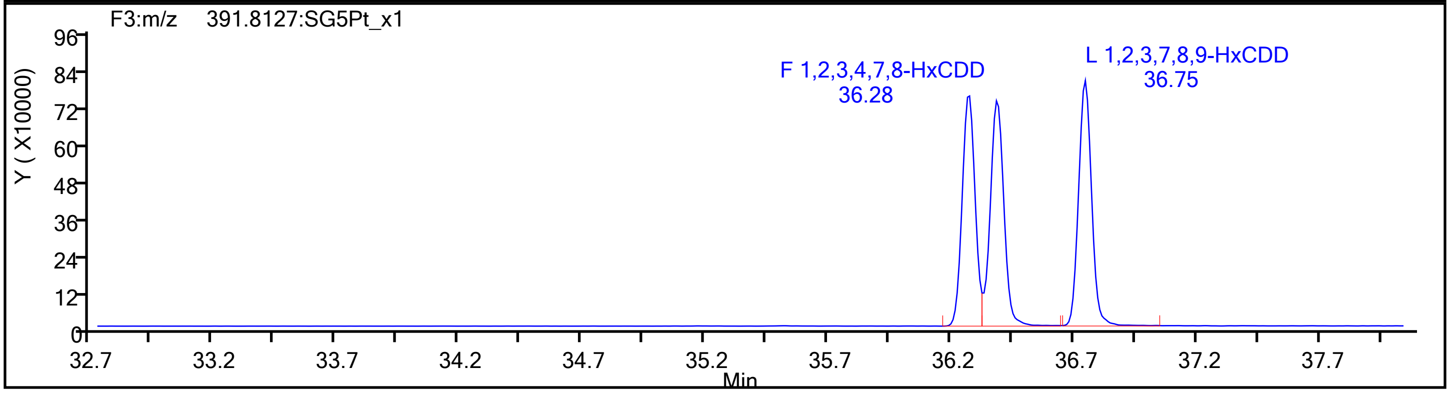

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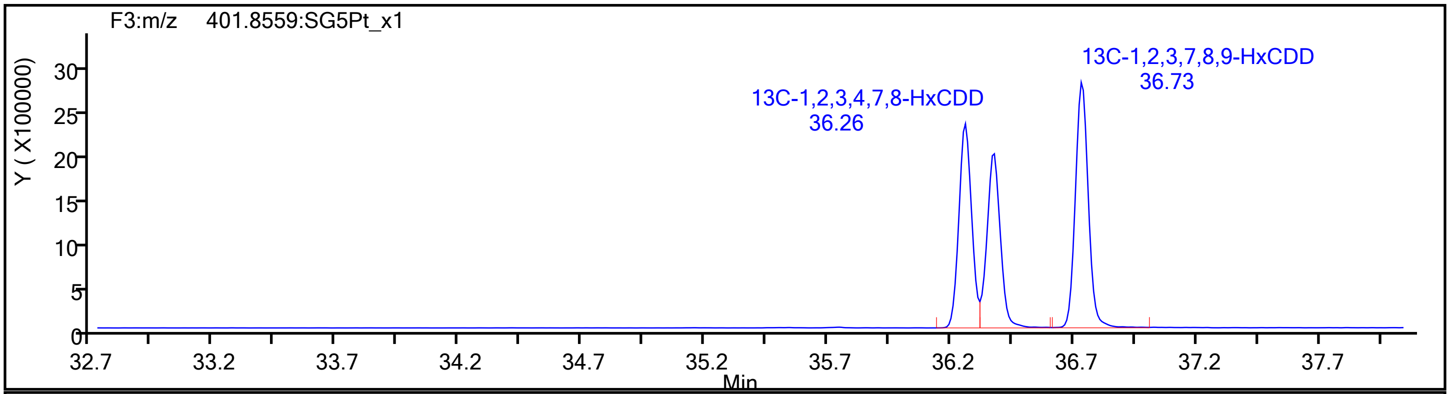

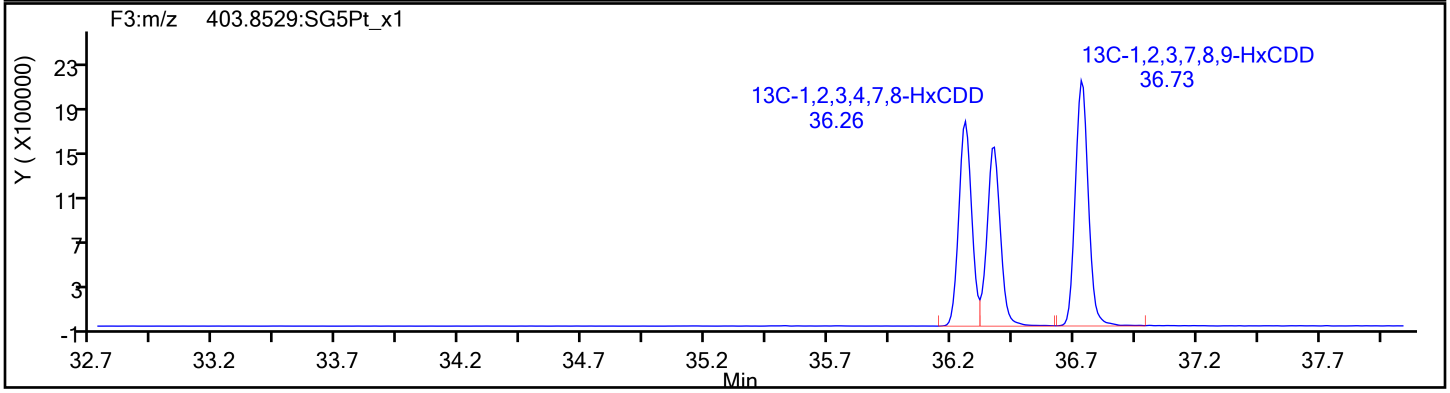

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Eurofins TestAmerica, Sacramento

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Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

HpCDF

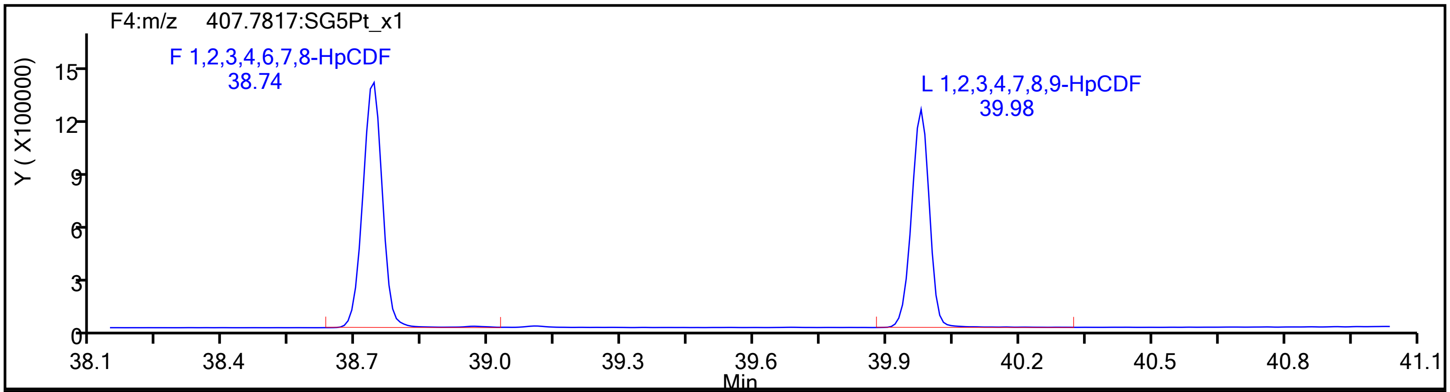

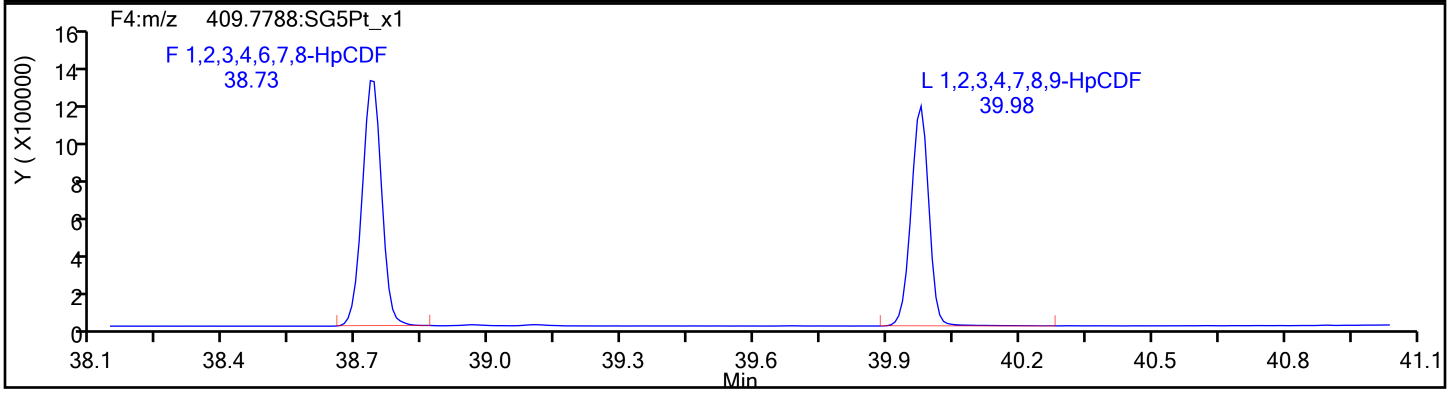

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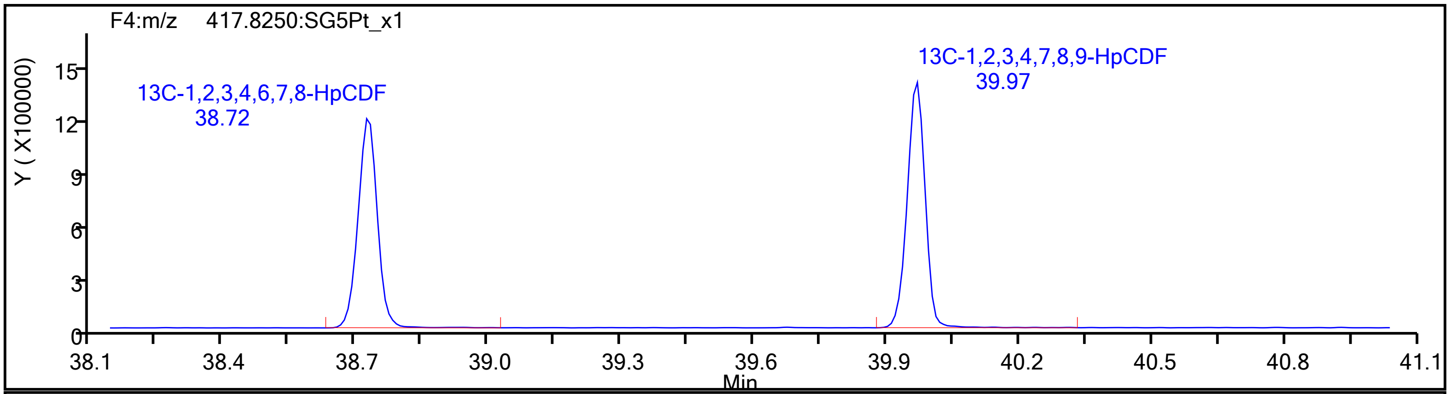

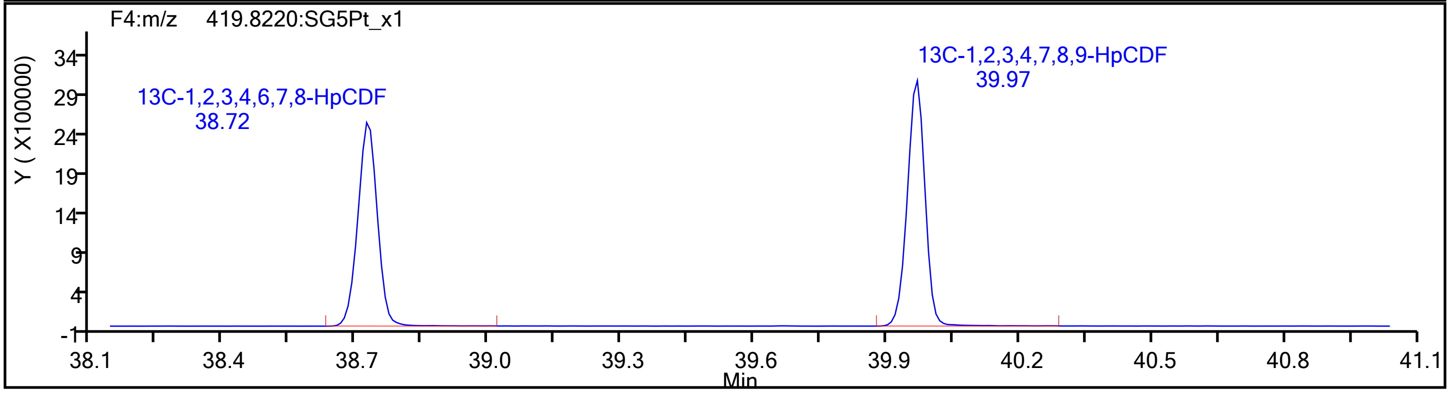

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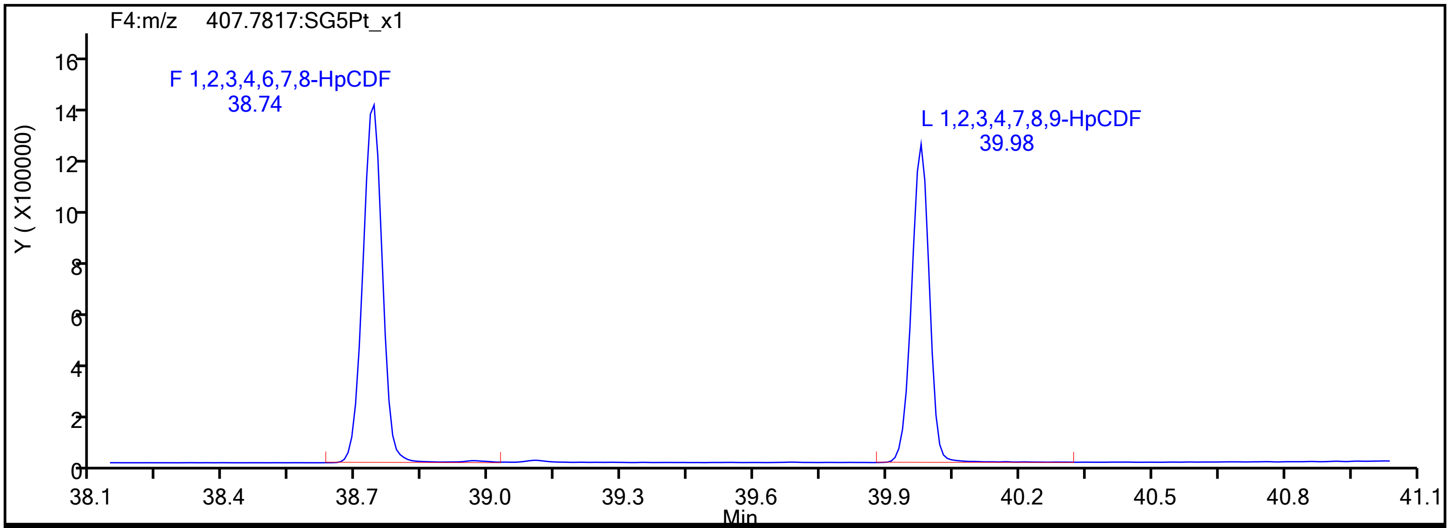

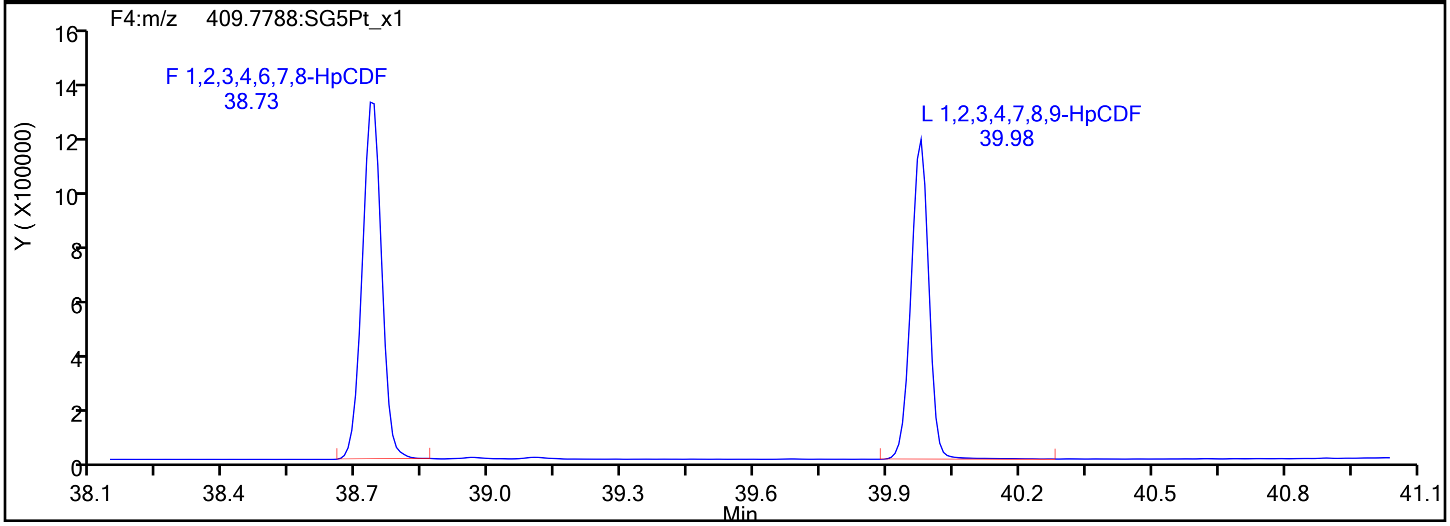

HpCDF Interference Mass

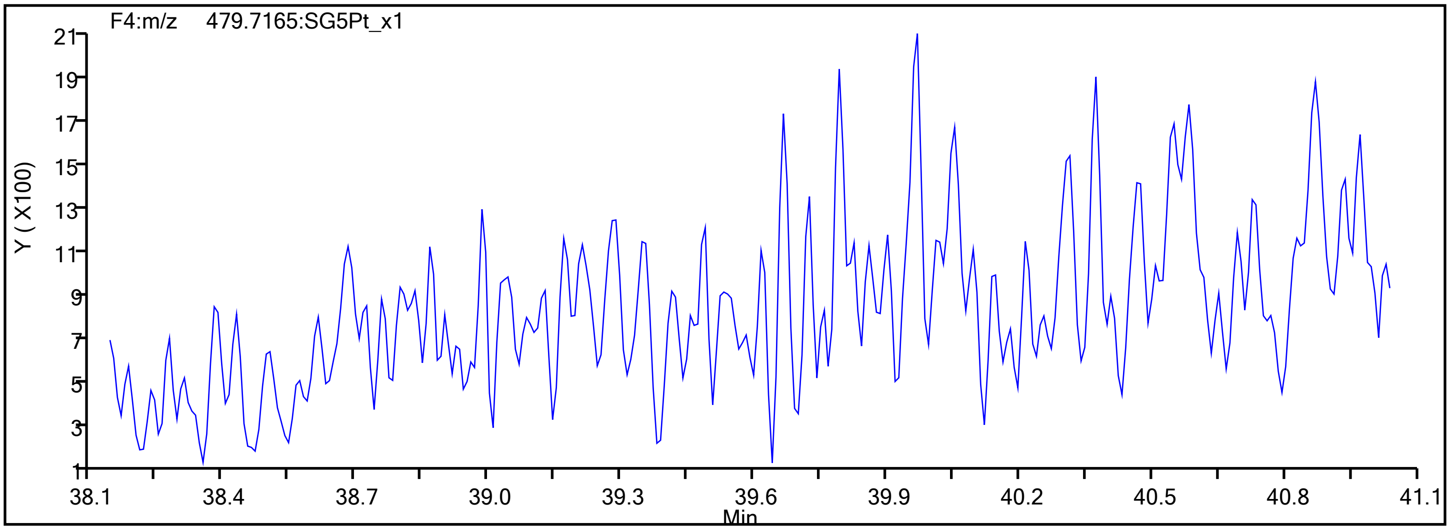

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HpCDD

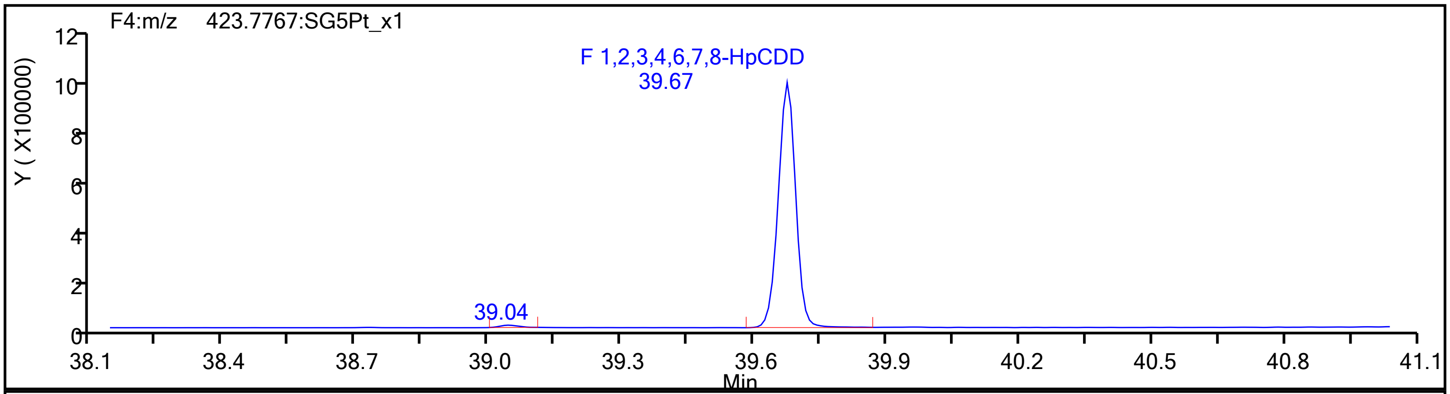

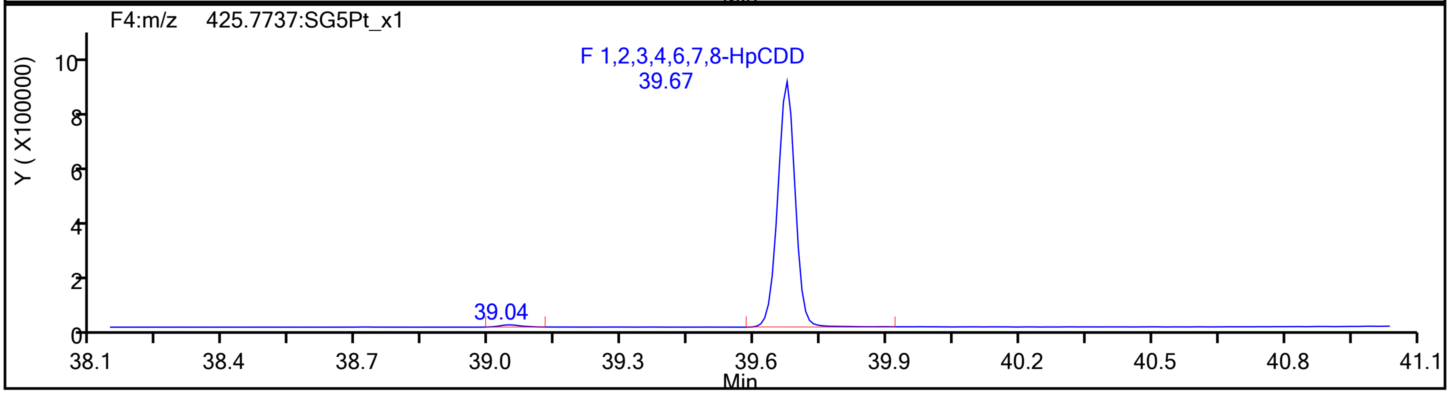

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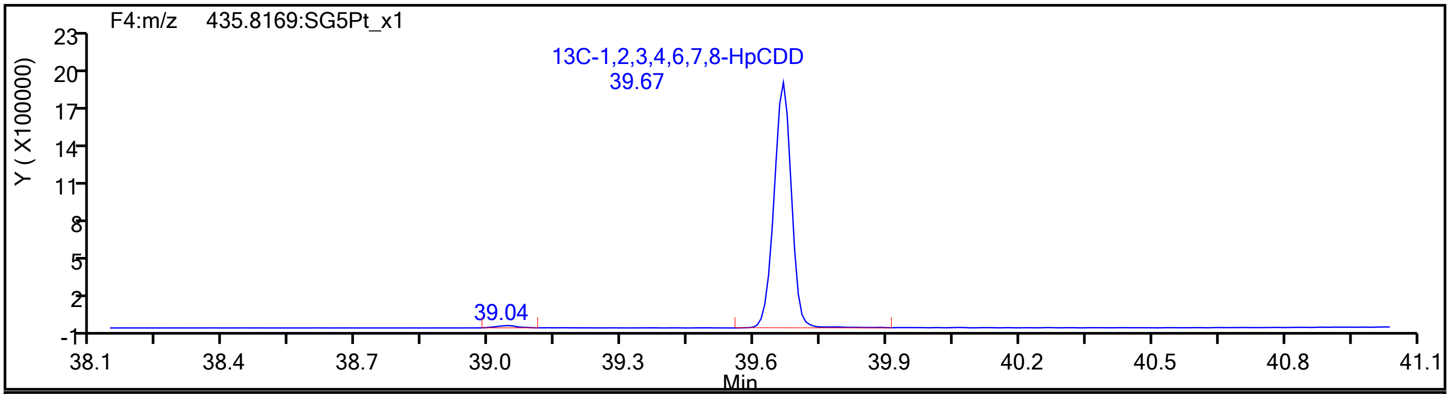

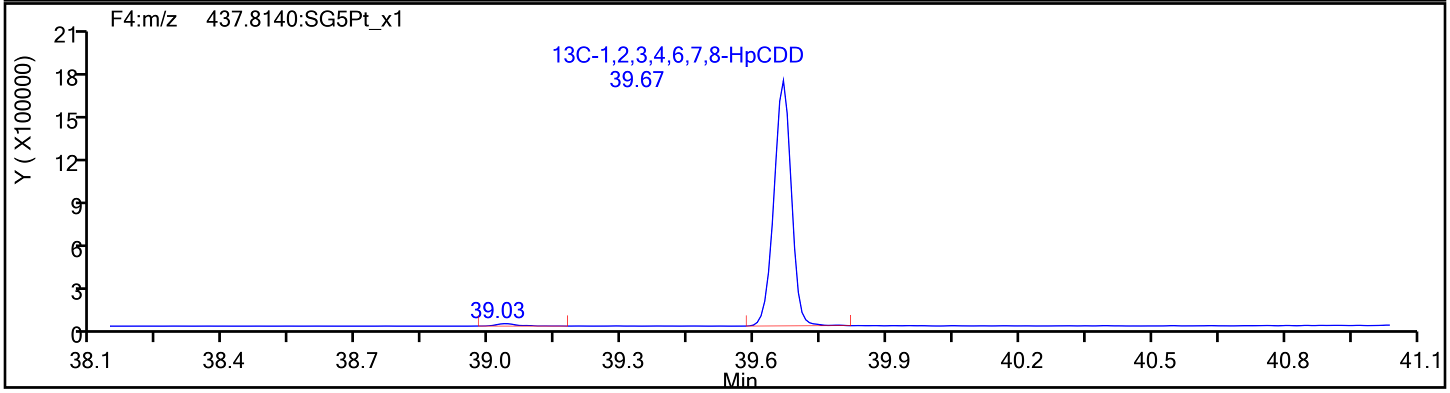

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OCDF

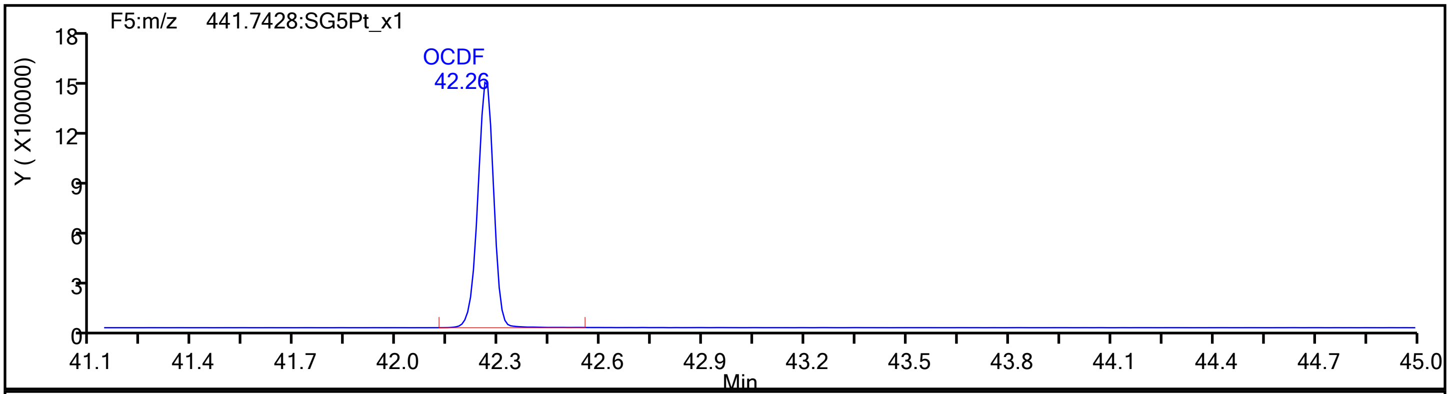

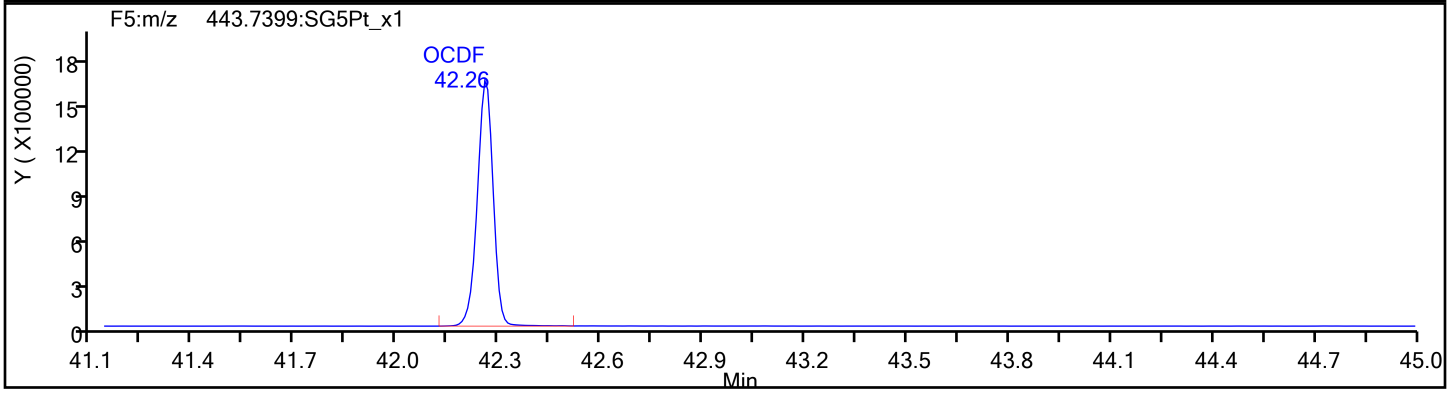

OCDF Standards

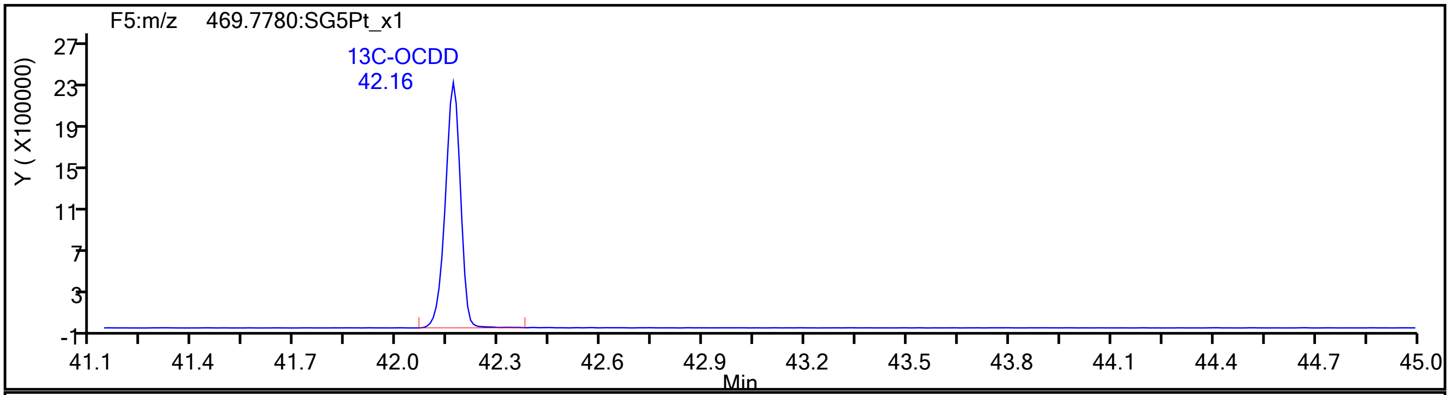

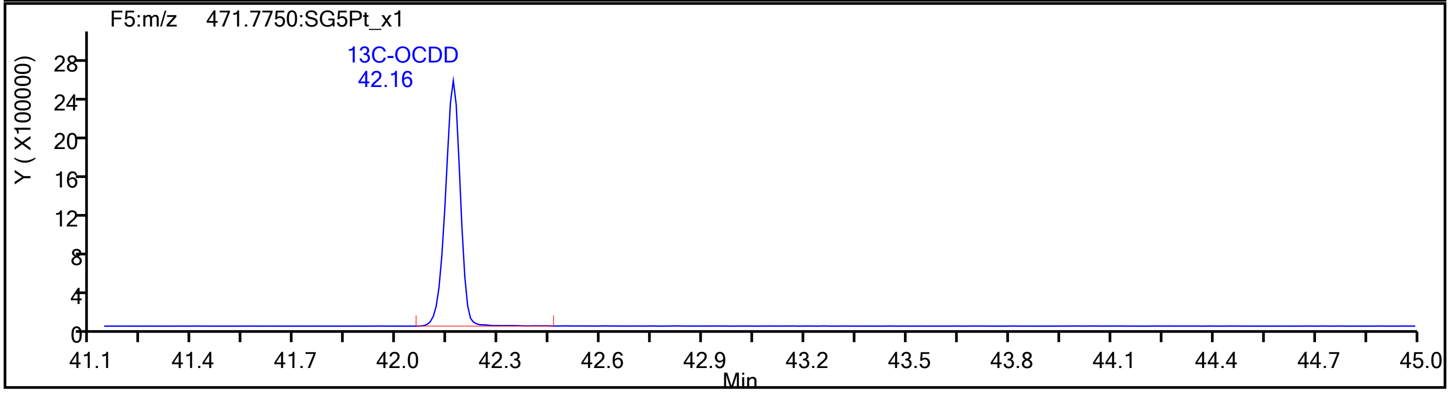

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Sep-2021 15:31:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

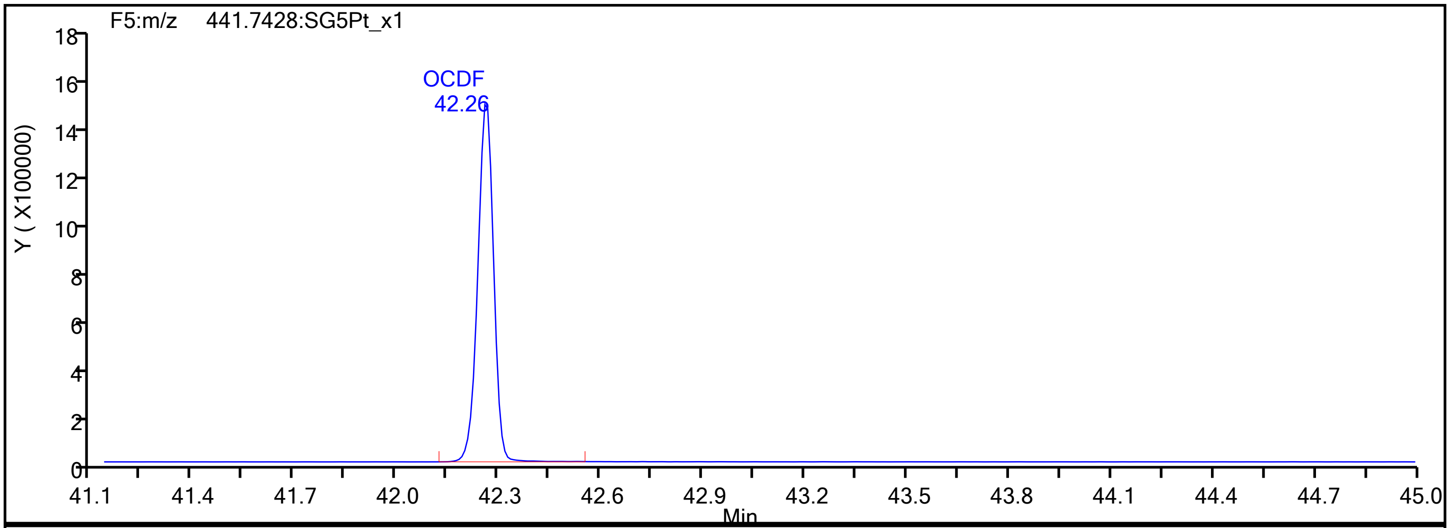

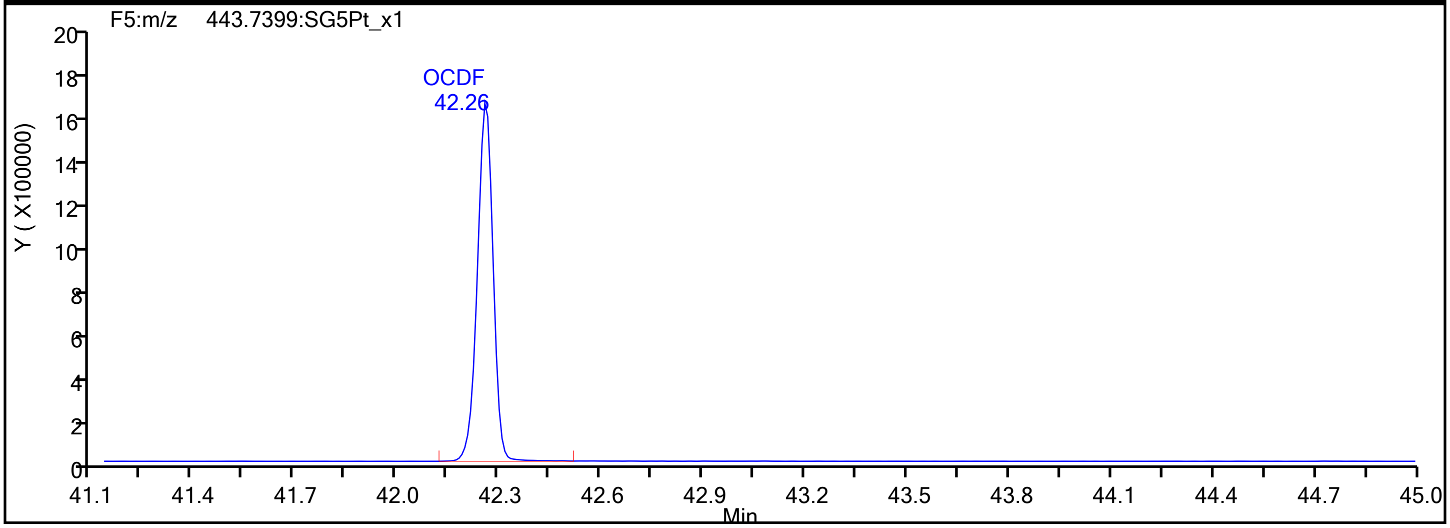

OCDF Interference Mass

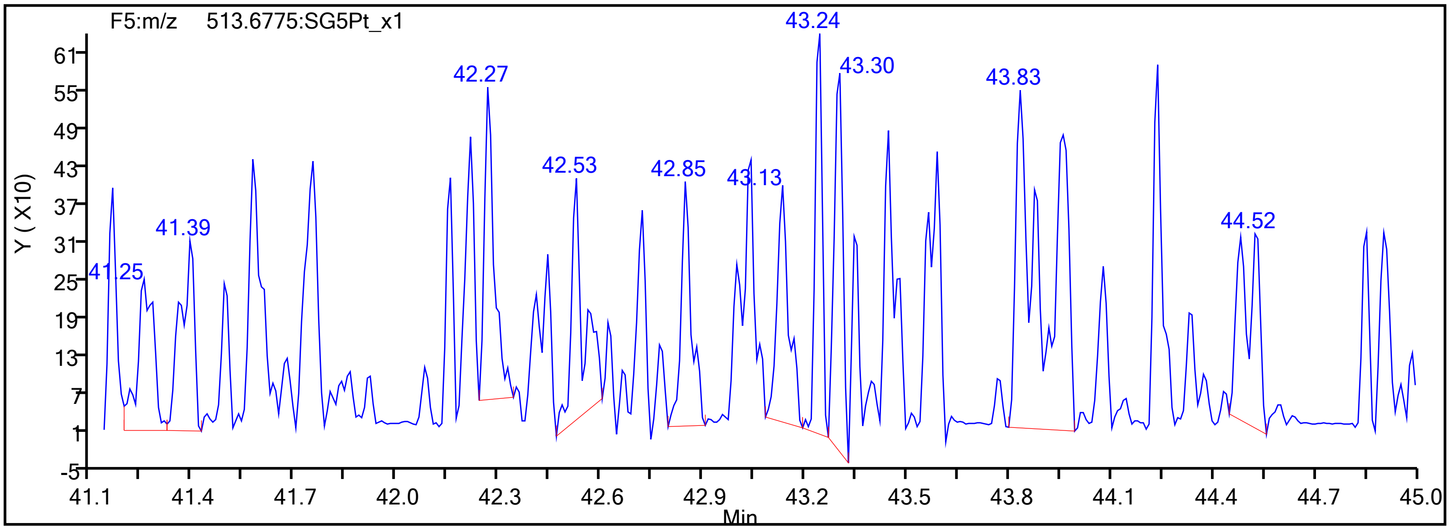

Report Date: 25-Sep-2021 14:17:16 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_7.d

Injection Date:	24-Sep-2021 15:31:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

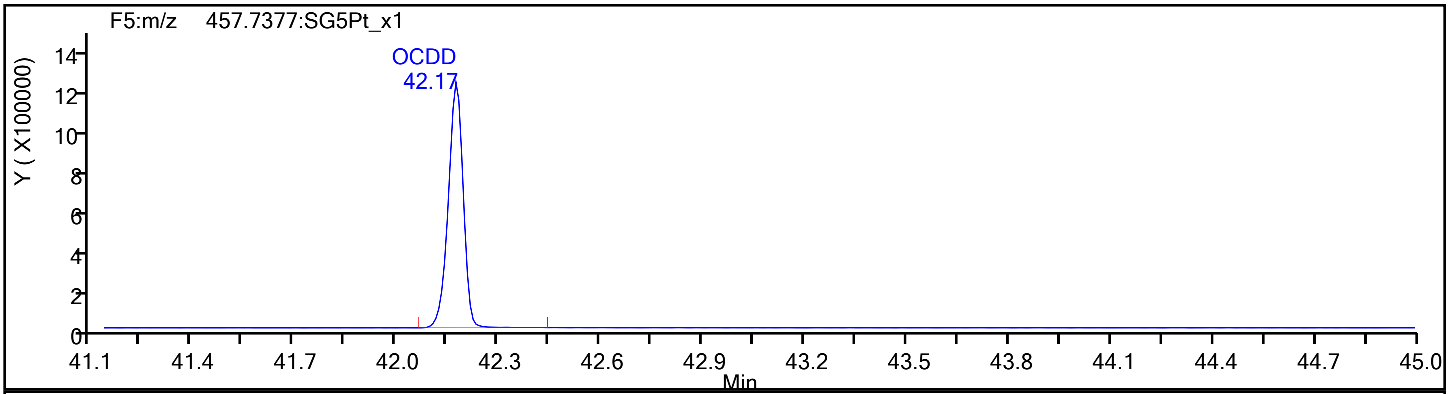

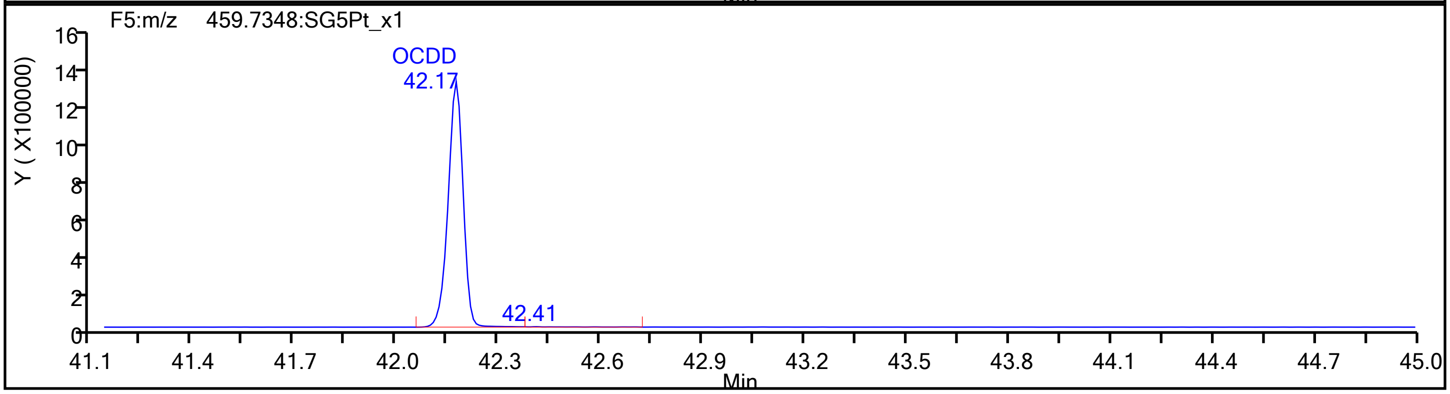

OCDD Standards

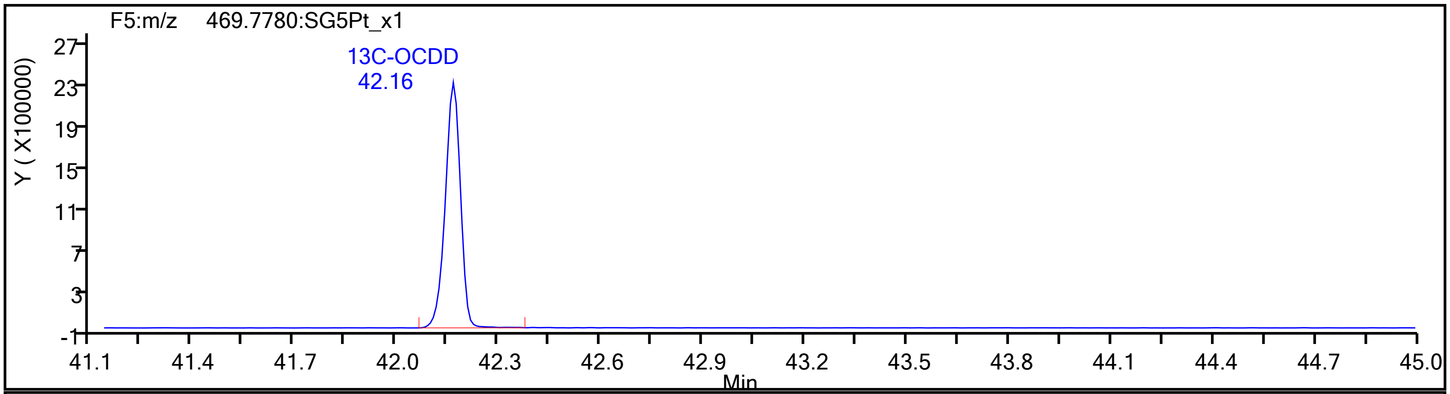

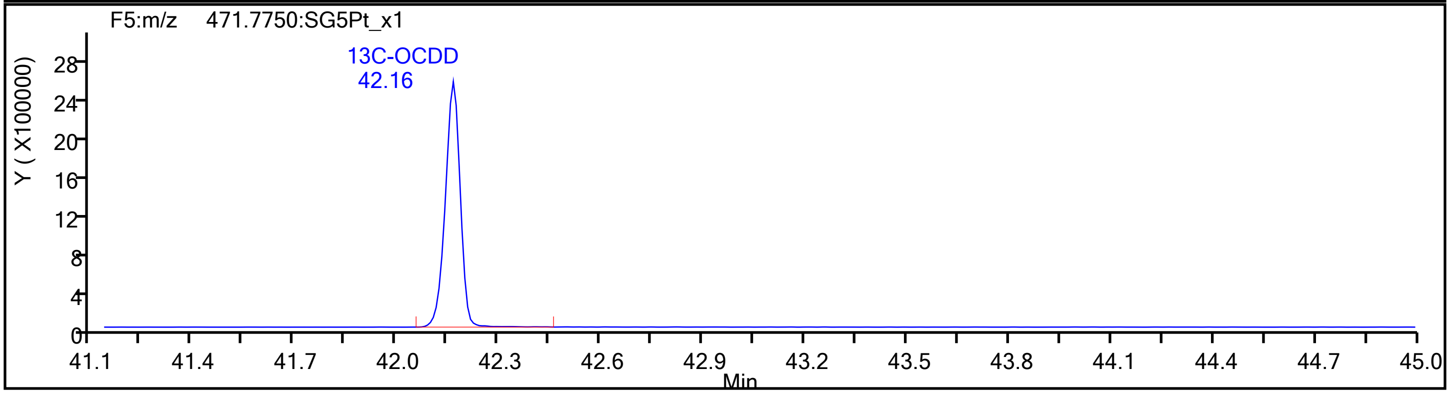

Report Date: 25-Sep-2021 14:17:16 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_7.d		
Injection Date:	24-Sep-2021 15:31:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

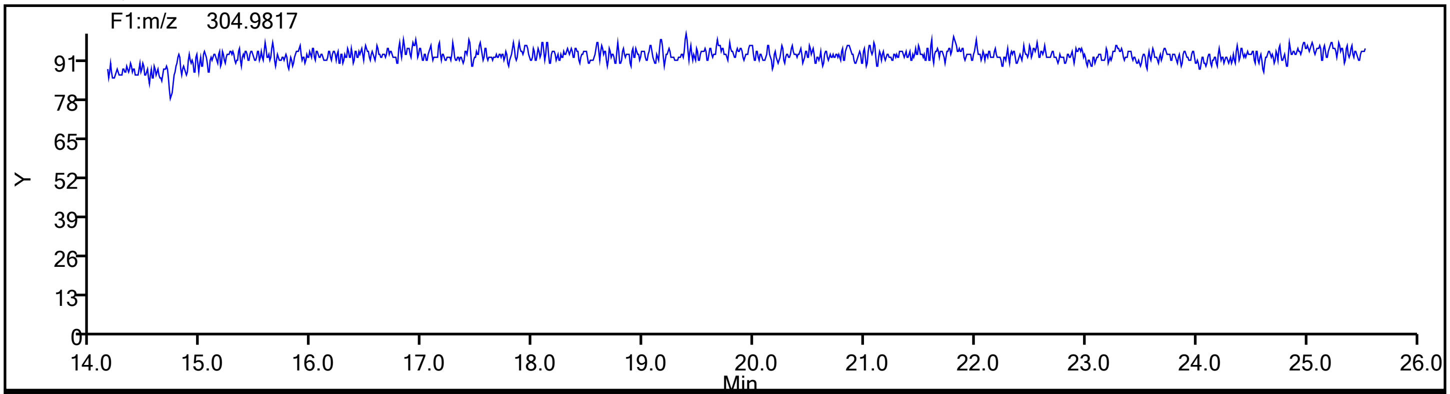

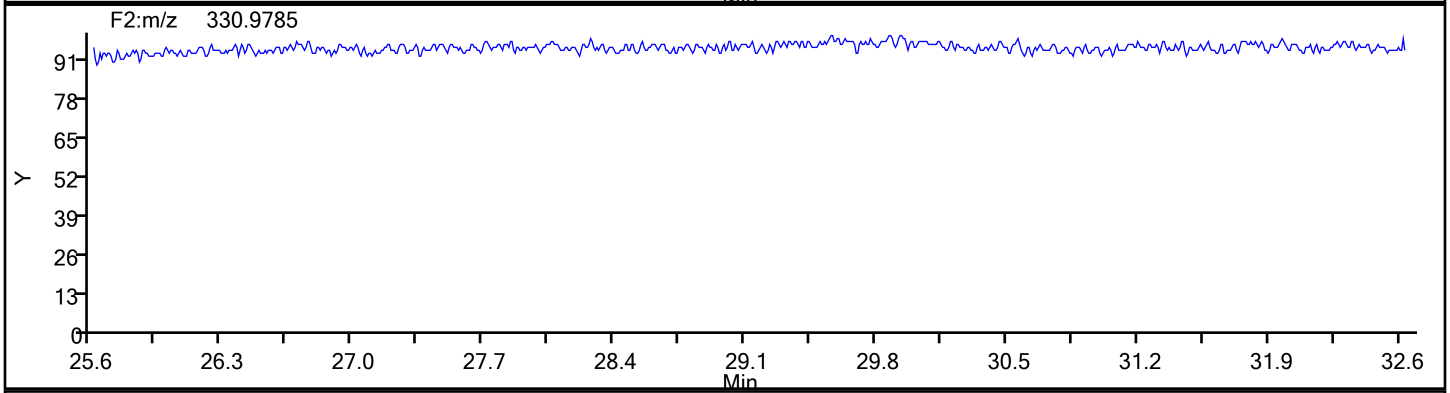

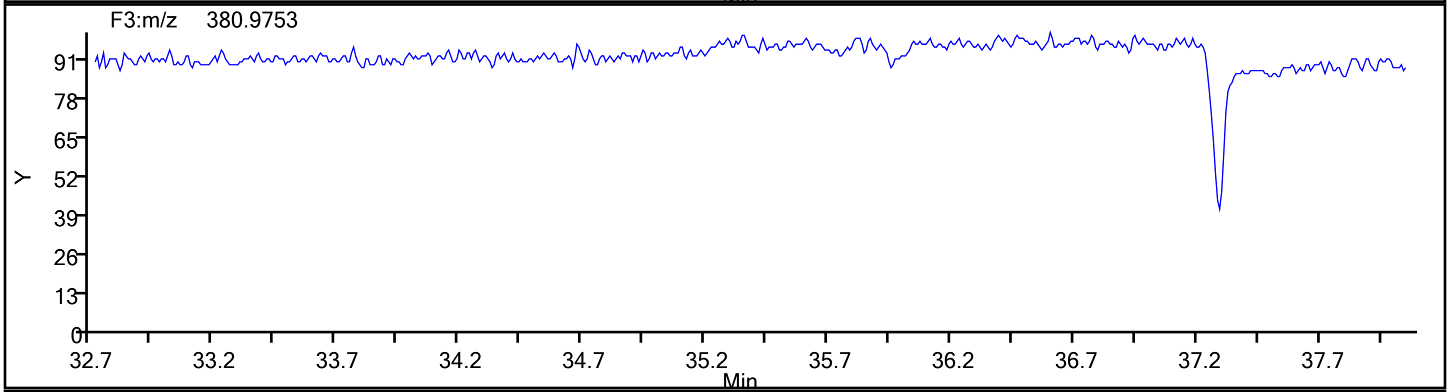

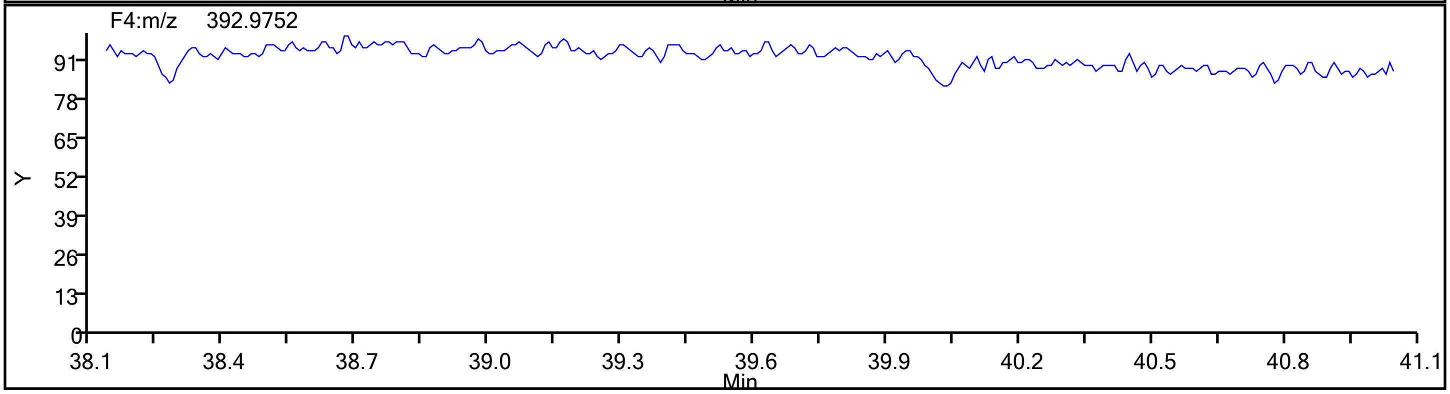

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_7.d		
Injection Date:	24-Sep-2021 15:31:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

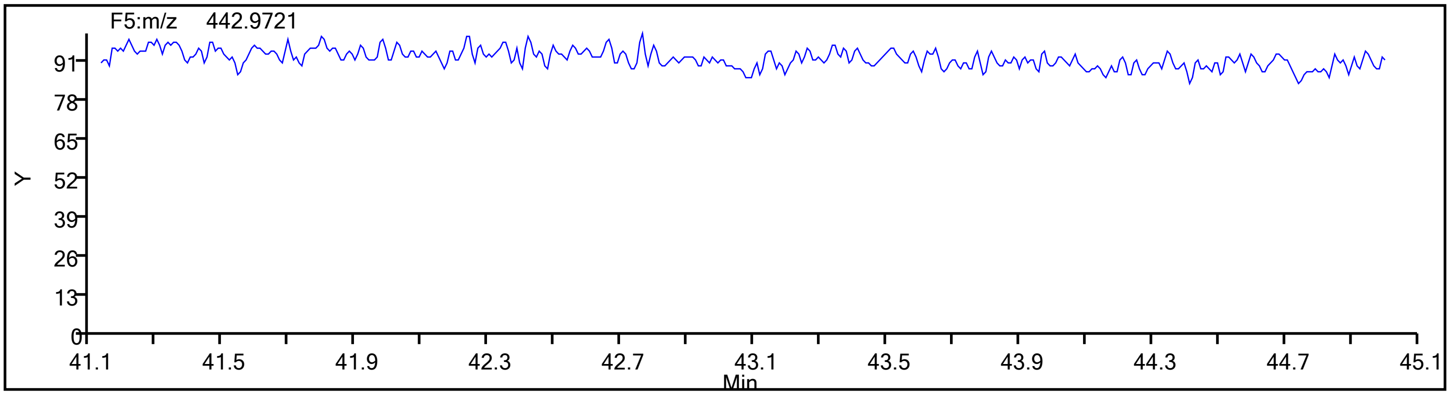

Report Date: 25-Sep-2021 14:17:30 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 24-Sep-2021 16:19:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS5_HRDXNL5_00033
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:17:28 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 17:14:57

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.570	16678112	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.574	20659561	0.79	1.2244	101.2	101.2	0.2732	0.2732	101	
2,3,7,8-TCDF	20.599	9410223	0.80	1.1194	40.7	40.7	0.0826	0.0826	102	
S Total TCDF					40.7	40.7	0.0826	0.0826		
D 13C-2,3,7,8-TCDD	21.956	13784993	0.81	0.8210	100.7	100.7	0.2256	0.2256	101	
2,3,7,8-TCDD	21.990	6119842	0.79	1.0943	40.6	40.6	0.0600	0.0600	101	
$ 37Cl4-2,3,7,8-TCDD	21.990	5868610		0.8658	40.6	40.6	0.0469	0.0469	102	
S Total TCDD					40.6	40.6	0.0600	0.0600		
D 13C-1,2,3,7,8-PeCDF	27.455	18549570	1.55	1.1026	100.9	100.9	0.5124	0.5124	101	
1,2,3,7,8-PeCDF	27.480	39070203	1.58	1.0920	192.9	192.9	0.7516	0.7516	96.44	
D 13C-2,3,4,7,8-PeCDF	28.997	22582343	1.58	1.3454	100.6	100.6	0.4200	0.4200	101	
2,3,4,7,8-PeCDF	29.022	38643819	1.56	0.8752	195.5	195.5	0.8199	0.8199	97.76	
S Total PeCDF					388.4	388.4	0.7857	0.7857		
D 13C-1,2,3,7,8-PeCDD	29.831	11758785	1.57	0.6987	100.9	100.9	0.2589	0.2589	101	
1,2,3,7,8-PeCDD	29.857	24475212	1.56	1.0594	196.5	196.5	0.2178	0.2178	98.23	
S Total PeCDD					196.5	196.5	0.2178	0.2178		
D 13C-1,2,3,4,7,8-HxCDF	35.083	19719695	0.54	1.1295	103.8	103.8	0.3253	0.3253	104	
1,2,3,4,7,8-HxCDF	35.099	36673716	1.25	0.9737	191.0	191.0	0.7730	0.7730	95.50	
D 13C-1,2,3,6,7,8-HxCDF	35.243	18367884	0.55	1.0613	102.9	102.9	0.3462	0.3462	103	
1,2,3,6,7,8-HxCDF	35.259	42935544	1.26	1.2201	191.6	191.6	0.6719	0.6719	95.80	
D 13C-2,3,4,6,7,8-HxCDF	36.043	16390446	0.54	0.9480	102.8	102.8	0.3876	0.3876	103	
2,3,4,6,7,8-HxCDF	36.059	38623837	1.26	1.2435	189.5	189.5	0.6719	0.6719	94.75	
D 13C-1,2,3,7,8,9-HxCDF	36.919	14457299	0.54	0.8526	100.8	100.8	0.4309	0.4309	101	
1,2,3,7,8,9-HxCDF	36.936	34105399	1.26	1.2454	189.4	189.4	0.7347	0.7347	94.71	
S Total HxCDF					761.5	761.5	0.7129	0.7129		
* 13C-1,2,3,7,8,9-HxCDD	36.725	16814249	1.25	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.253	14130869	1.28	0.8312	101.1	101.1	0.2195	0.2195	101	
1,2,3,4,7,8-HxCDD	36.270	24861298	1.25	0.9085	193.7	193.7	0.2772	0.2772	96.83	
D 13C-1,2,3,6,7,8-HxCDD	36.371	13075432	1.26	0.7550	103.0	103.0	0.2417	0.2417	103	
1,2,3,6,7,8-HxCDD	36.388	25626461	1.25	1.0279	190.7	190.7	0.2864	0.2864	95.34	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.742	26538127	1.25	1.0268	190.0	190.0	0.2644	0.2644	95.00	
S Total HxCDD					574.3	574.3	0.2760	0.2760		
D 13C-1,2,3,4,6,7,8-HpCDF	38.716	10531395	0.46	0.6190	101.2	101.2	0.2904	0.2904	101	
1,2,3,4,6,7,8-HpCDF	38.724	31746298	1.05	1.5851	190.2	190.2	0.7104	0.7104	95.09	
D 13C-1,2,3,4,7,8,9-HpCDF	39.954	10909301	0.46	0.6516	99.6	99.6	0.2758	0.2758	99.57	
1,2,3,4,7,8,9-HpCDF	39.962	24224058	1.05	1.1597	191.5	191.5	0.8877	0.8877	95.74	
S Total HpCDF					381.7	381.7	0.7990	0.7990		
D 13C-1,2,3,4,6,7,8-HpCDD	39.659	9074703	1.07	0.5362	100.7	100.7	0.3479	0.3479	101	
1,2,3,4,6,7,8-HpCDD	39.667	18754590	1.05	1.0819	191.0	191.0	0.5116	0.5116	95.51	
S Total HpCDD					191.0	191.0	0.5116	0.5116		
D 13C-OCDD	42.156	12560439	0.93	0.3802	196.5	196.5	0.2520	0.2520	98.24	
OCDF	42.248	35831794	0.91	1.5094	378.0	378.0	0.1984	0.1984	94.50	
OCDD	42.164	26999258	0.90	1.1344	379.0	379.0	0.2344	0.2344	94.74	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00033 Amount Added: 1.00 Units: uL

Report Date: 25-Sep-2021 14:17:30 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	24-Sep-2021 16:19:00	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC CS5_HRDXNL5_00033				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Sublist:	chrom-Dioxin_DFS1*sub1				
Method:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	25-Sep-2021 14:17:28	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1609				

First Level Reviewer: stephensk Date: 24-Sep-2021 17:14:57

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.570	21.567	0		7471482	1093497	1159	2897	943		
333.9338	21.570	21.567	0		9206630	1347510	649	1622	2076	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.574	20.565	0	0.954	9125866	1392142	1965	4912	708		
317.9389	20.574	20.565	0	0.954	11533695	1690971	1301	3252	1300	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.599	20.598	0	1.001	4191464	624005	443	1107	1409		
305.8987	20.599	20.598	0	1.001	5218759	788572	697	1742	1131	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.956	21.948	0	1.018	6149165	876766	1159	2897	756		
333.9338	21.956	21.948	0	1.018	7635828	1073213	649	1622	1654	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.990	21.977	1	1.002	2707971	380040	286	715	1329		
321.8936	21.982	21.977	0	1.001	3411871	479997	226	565	2124	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.990	21.977	1	1.020	5868610	832168	397	992	2096		
13C-1,2,3,7,8-PeCDF											
351.9000	27.455	27.459	0	1.273	11266548	1851585	3454	8635	536		
353.8970	27.455	27.459	0	1.273	7283022	1236110	2063	5157	599	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.480	27.484	0	1.001	23914599	4022514	6177	15442	651		
341.8567	27.480	27.484	0	1.001	15155604	2525353	3959	9897	638	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.997	28.999	0	1.344	13844334	2152672	3454	8635	623		
353.8970	28.997	28.999	0	1.344	8738009	1378814	2063	5157	668	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.022	29.026	0	1.001	23538811	3616965	6177	15442	586		
341.8567	29.022	29.026	0	1.001	15105008	2317372	3959	9897	585	1.56(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.831	29.832	0	1.383	7184900	1086667	1104	2760	984		
369.8919	29.831	29.832	0	1.383	4573885	689016	662	1655	1041	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.857	29.859	0	1.001	14927846	2239143	1038	2595	2157		
357.8516	29.857	29.859	0	1.001	9547366	1429134	601	1502	2378	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.083	35.084	0	0.955	6887800	1573700	2209	5522	712		
385.8610	35.083	35.084	0	0.955	12831895	2849183	4028	10070	707	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.099	35.101	0	1.000	20402738	4709438	7460	18650	631		
375.8178	35.099	35.101	0	1.000	16270978	3726622	5855	14637	636	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.243	35.244	0	0.960	6490089	1420045	2209	5522	643		
385.8610	35.243	35.244	0	0.960	11877795	2640728	4028	10070	656	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.259	35.259	0	1.000	23902159	5345486	7460	18650	717		
375.8178	35.251	35.259	0	1.000	19033385	4239543	5855	14637	724	1.26(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.043	36.051	0	0.981	5731393	1406631	2209	5522	637		
385.8610	36.043	36.051	0	0.981	10659053	2577155	4028	10070	640	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.059	36.066	0	1.000	21512928	5388921	7460	18650	722		
375.8178	36.059	36.066	0	1.000	17110909	4292538	5855	14637	733	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.919	36.927	0	1.005	5089634	1284619	2209	5522	582		
385.8610	36.919	36.927	0	1.005	9367665	2353233	4028	10070	584	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.936	36.940	0	1.000	19036284	4929402	7460	18650	661		
375.8178	36.936	36.940	0	1.000	15069115	3862524	5855	14637	660	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.725	36.733	0		9356154	2350856	1819	4547	1292		
403.8529	36.725	36.733	0		7458095	1892495	1278	3195	1481	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.253	36.260	0	0.987	7939040	2080501	1819	4547	1144		
403.8529	36.253	36.260	0	0.987	6191829	1666018	1278	3195	1304	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.270	36.273	0	1.000	13808717	3681329	2148	5370	1714		
391.8127	36.270	36.273	0	1.000	11052581	2913840	1627	4067	1791	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.371	36.376	0	0.990	7289802	1779151	1819	4547	978		
403.8529	36.371	36.376	0	0.990	5785630	1426585	1278	3195	1116	1.26(1.05-1.43)	

Report Date: 25-Sep-2021 14:17:30 Chrom Revision: 2.3 13-May-2021 07:57:40
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.388	36.389	0	1.000	14258929	3613851	2148	5370	1682		
391.8127	36.388	36.389	0	1.000	11367532	2873729	1627	4067	1766	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.742	36.745	0	1.013	14743428	3798913	2148	5370	1769		
391.8127	36.742	36.745	0	1.013	11794699	3032820	1627	4067	1864	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.716	38.721	0	1.054	3333995	996262	1544	3860	645		
419.8220	38.716	38.721	0	1.054	7197400	2155486	1507	3767	1430	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.724	38.734	-1	1.000	16266385	4879050	7488	18720	652		
409.7788	38.724	38.734	-1	1.000	15479913	4641473	6708	16770	692	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.954	39.962	0	1.088	3456608	1104769	1544	3860	716		
419.8220	39.954	39.962	0	1.088	7452693	2342869	1507	3767	1555	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.962	39.970	0	1.000	12387025	3875848	7488	18720	518		
409.7788	39.962	39.970	0	1.000	11837033	3734153	6708	16770	557	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.659	39.661	0	1.080	4699697	1503763	1699	4247	885		
437.8140	39.651	39.661	-1	1.080	4375006	1398845	1467	3667	954	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.667	39.671	0	1.000	9626423	3025359	3239	8097	934		
425.7737	39.659	39.671	-1	1.000	9128167	2851253	3187	7967	895	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.156	42.159	0	1.148	6052875	1689862	968	2420	1746		
471.7750	42.156	42.159	0	1.148	6507564	1846781	658	1645	2807	0.93(0.76-1.02)	
OCDF											
441.7428	42.248	42.255	0	1.002	17103235	4780096	1027	2567	4654		
443.7399	42.248	42.255	0	1.002	18728559	5265031	1091	2727	4826	0.91(0.76-1.02)	
OCDD											
457.7377	42.164	42.169	0	1.000	12777216	3600200	918	2295	3922		
459.7348	42.164	42.169	0	1.000	14222042	3991486	963	2407	4145	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL5_00033 Amount Added: 1.00 Units: uL

Report Date: 25-Sep-2021 14:17:30 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d

Injection Date:	24-Sep-2021 16:19:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

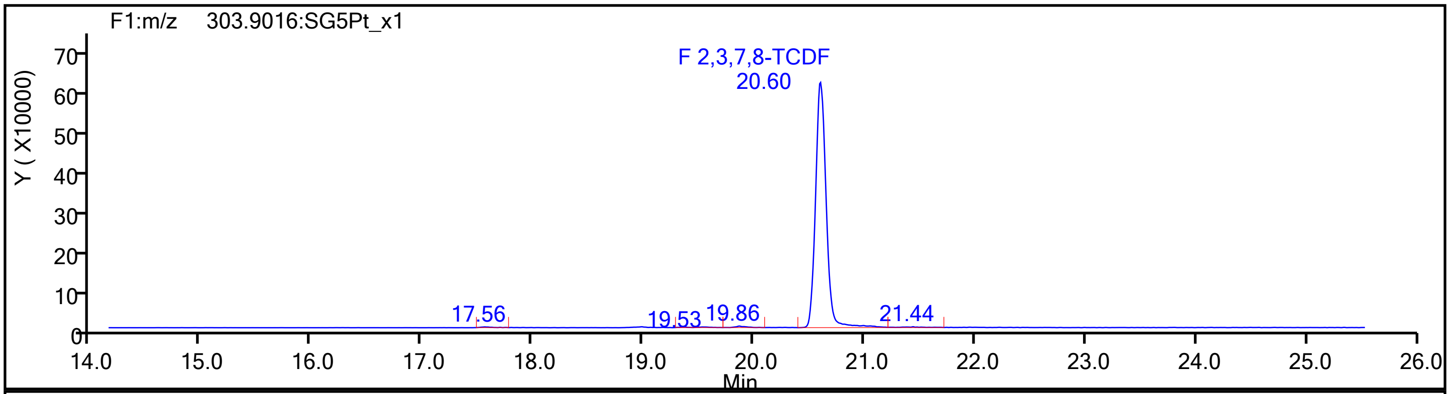

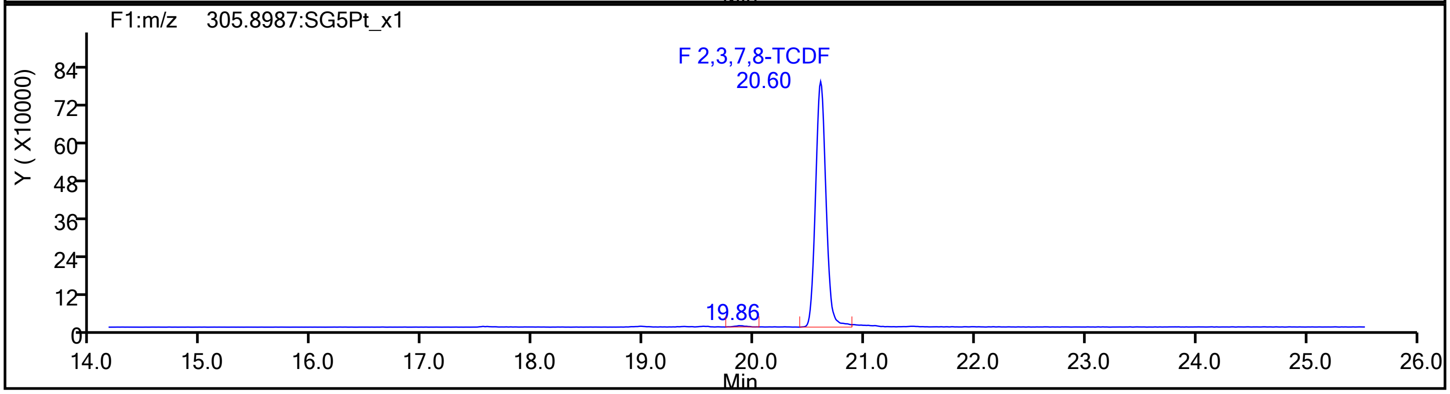

TCDF Standards

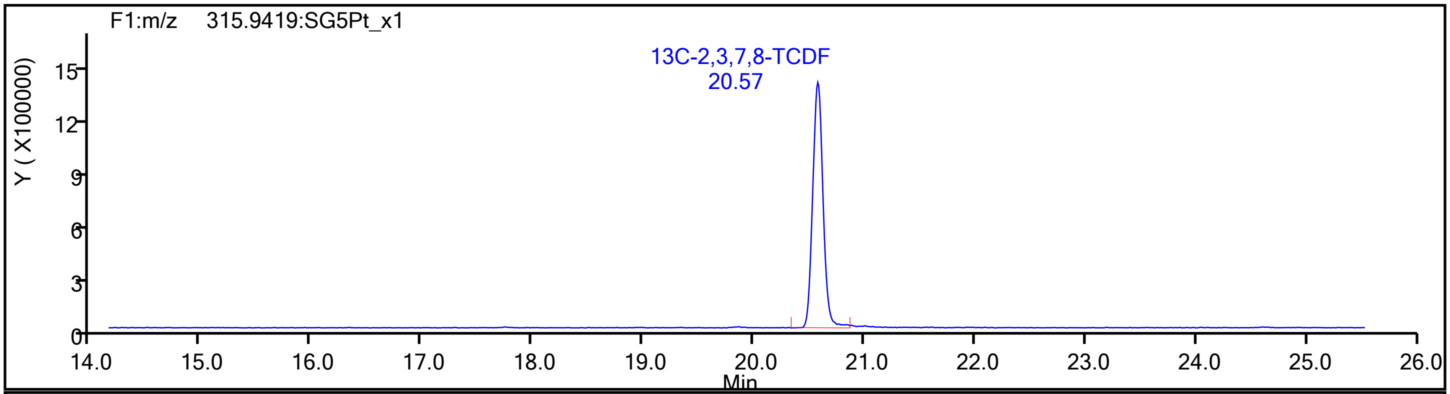

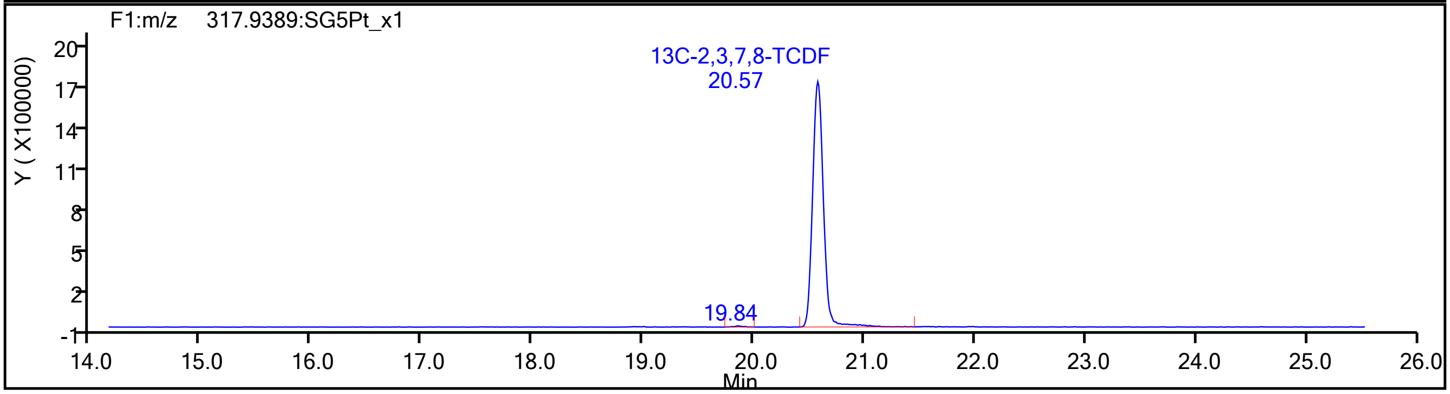

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

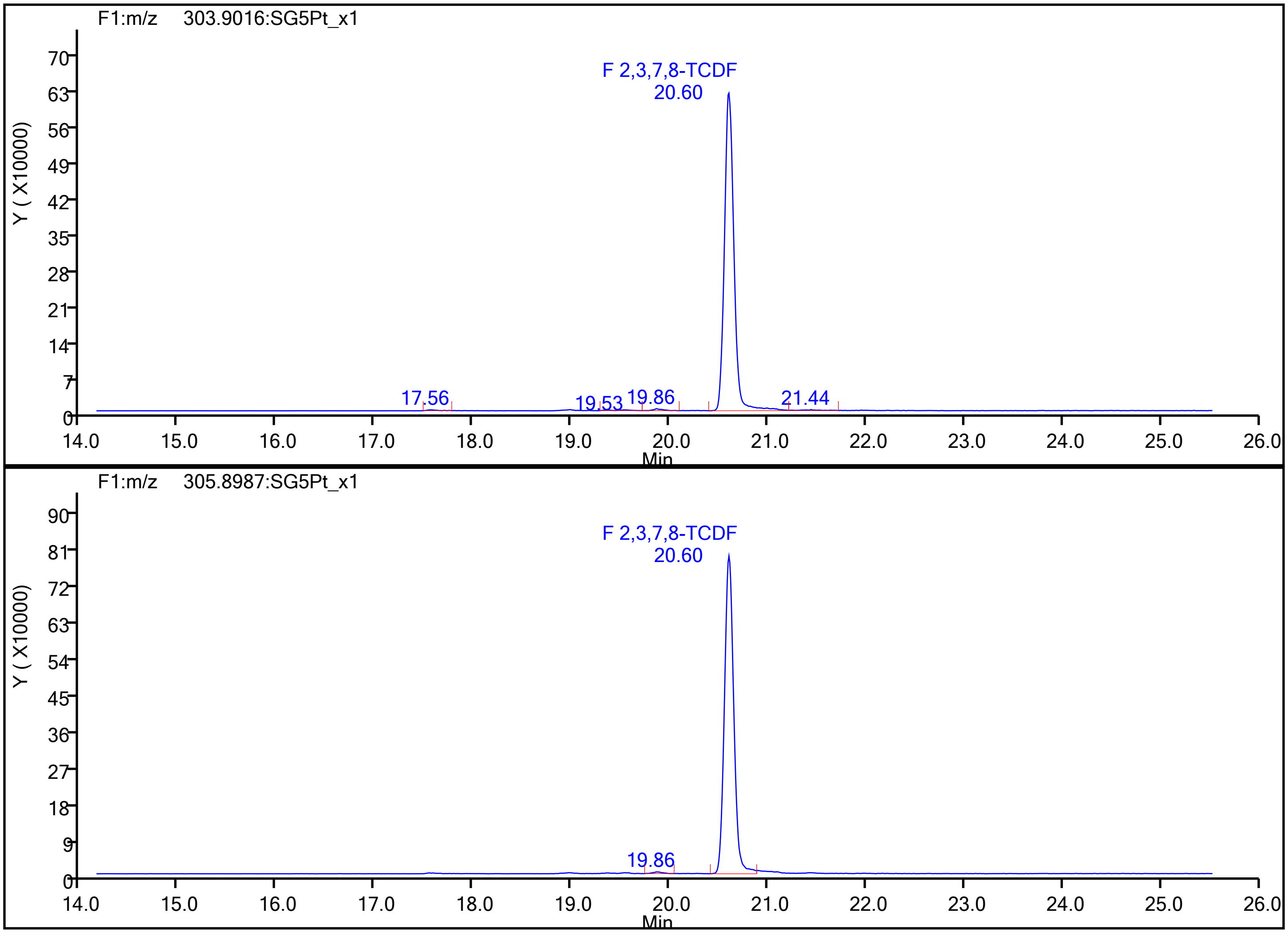

TCDF Interference Mass

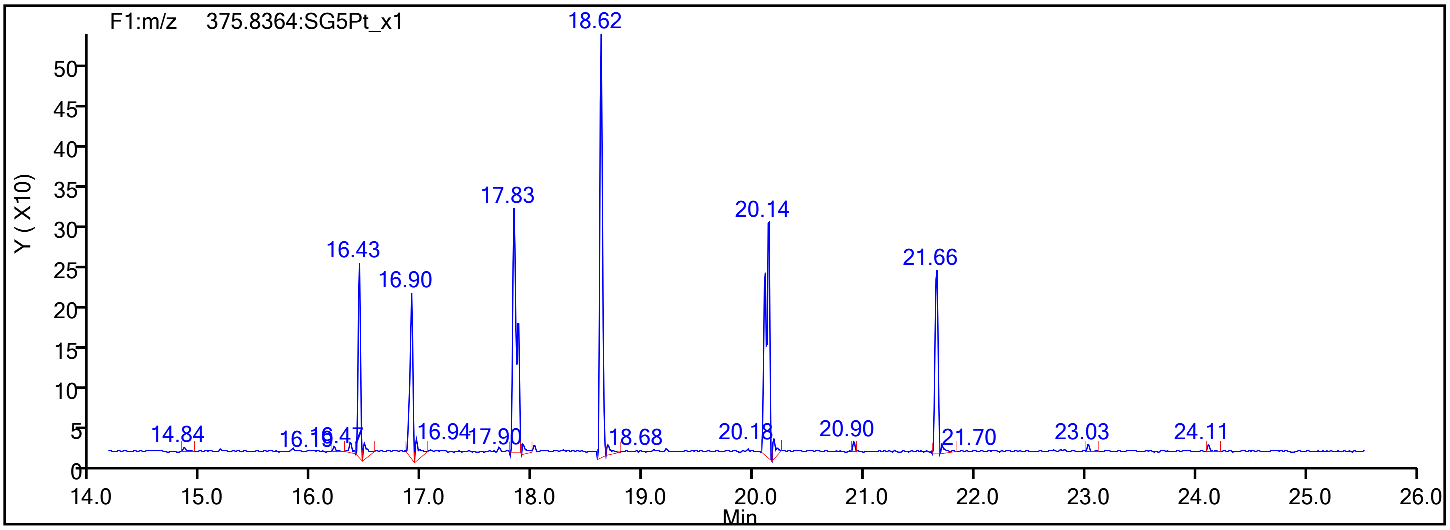

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

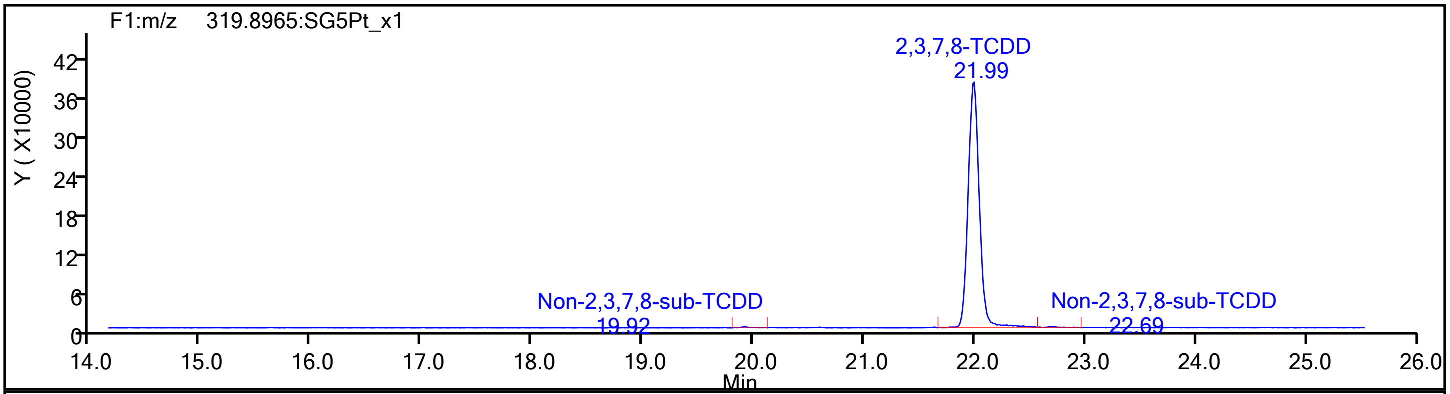

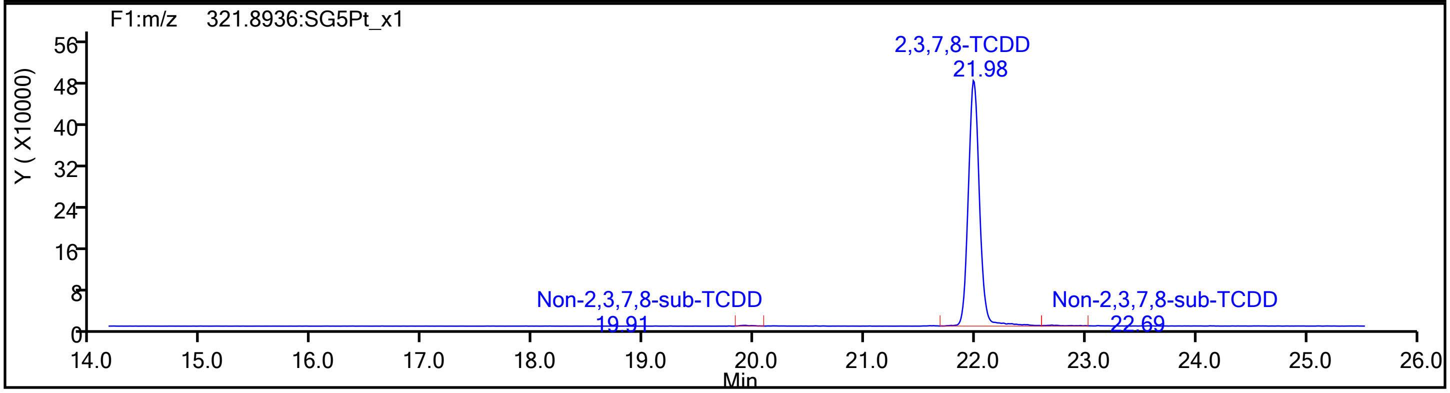

TCDD Standards

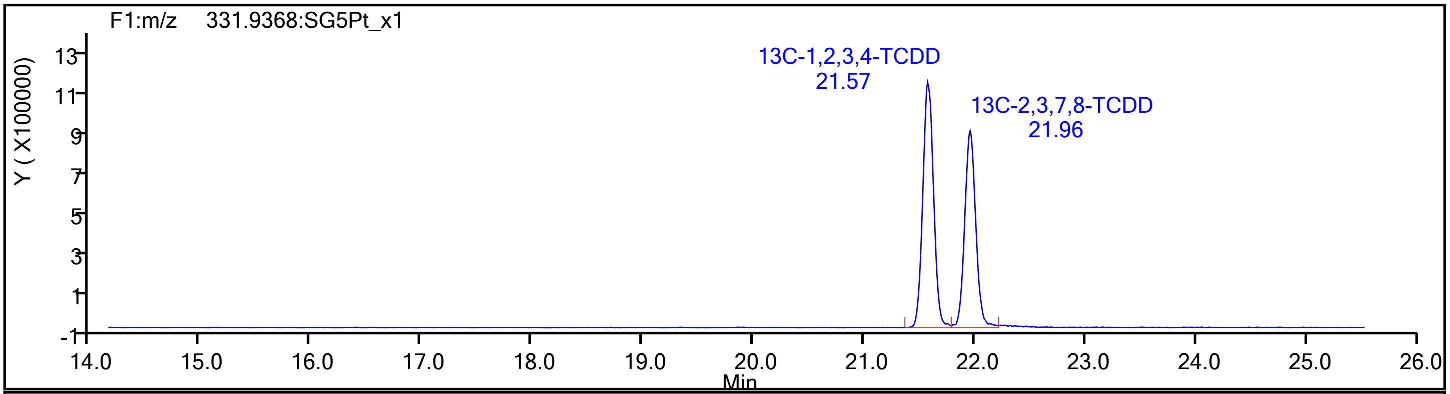

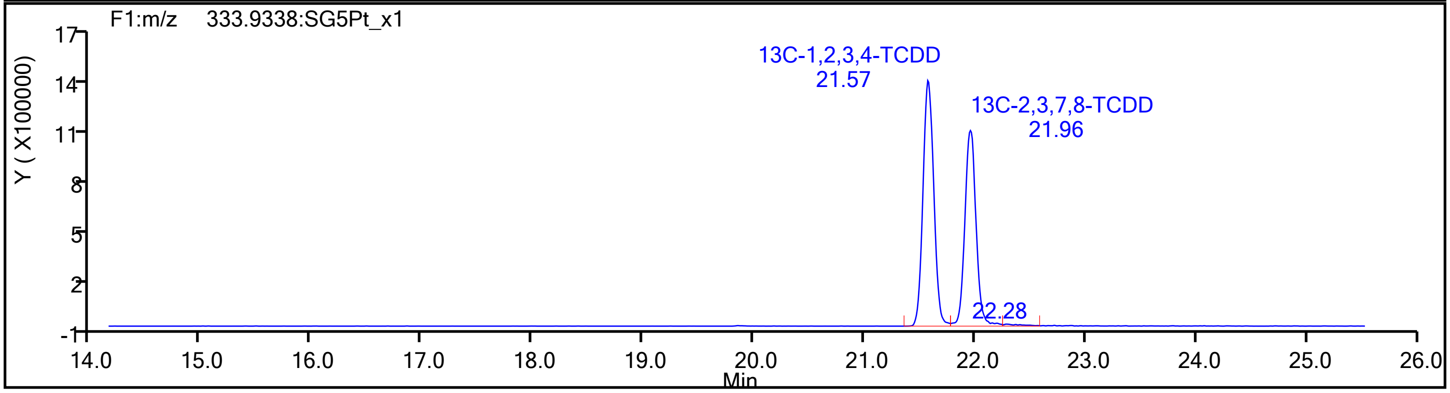

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

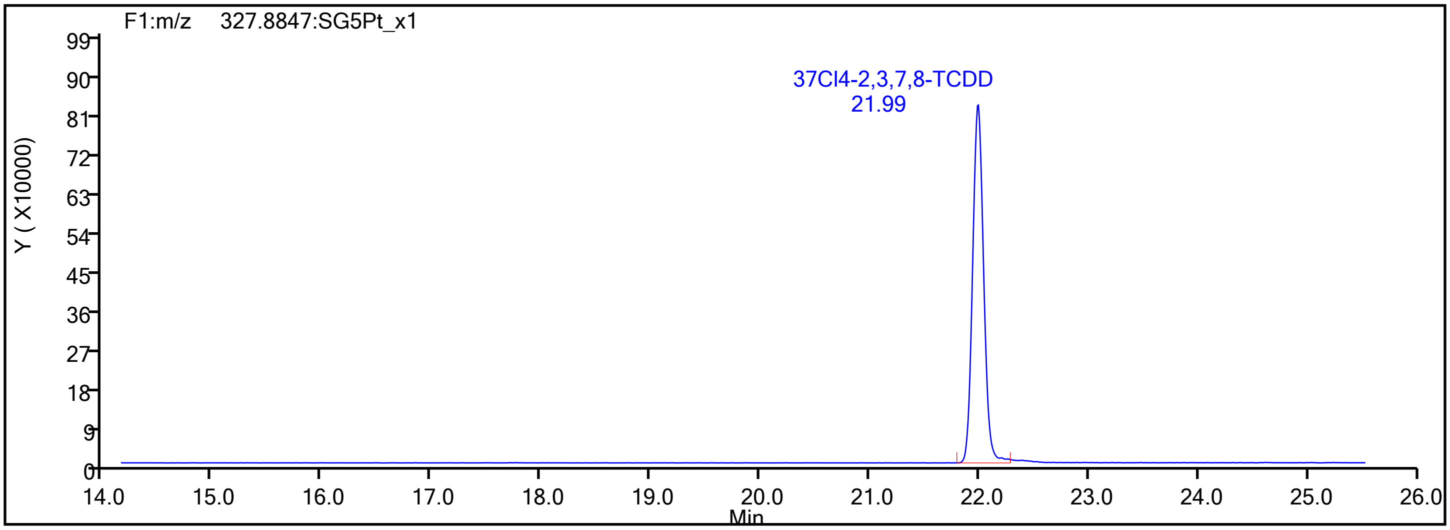

37Cl4-TCDD Standards

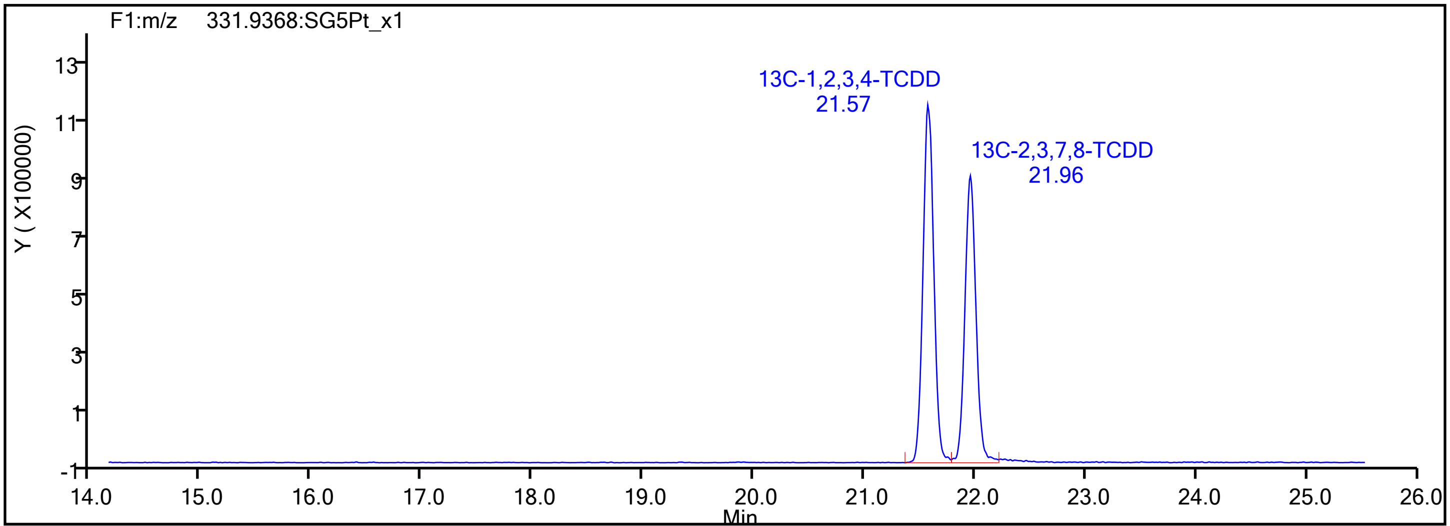

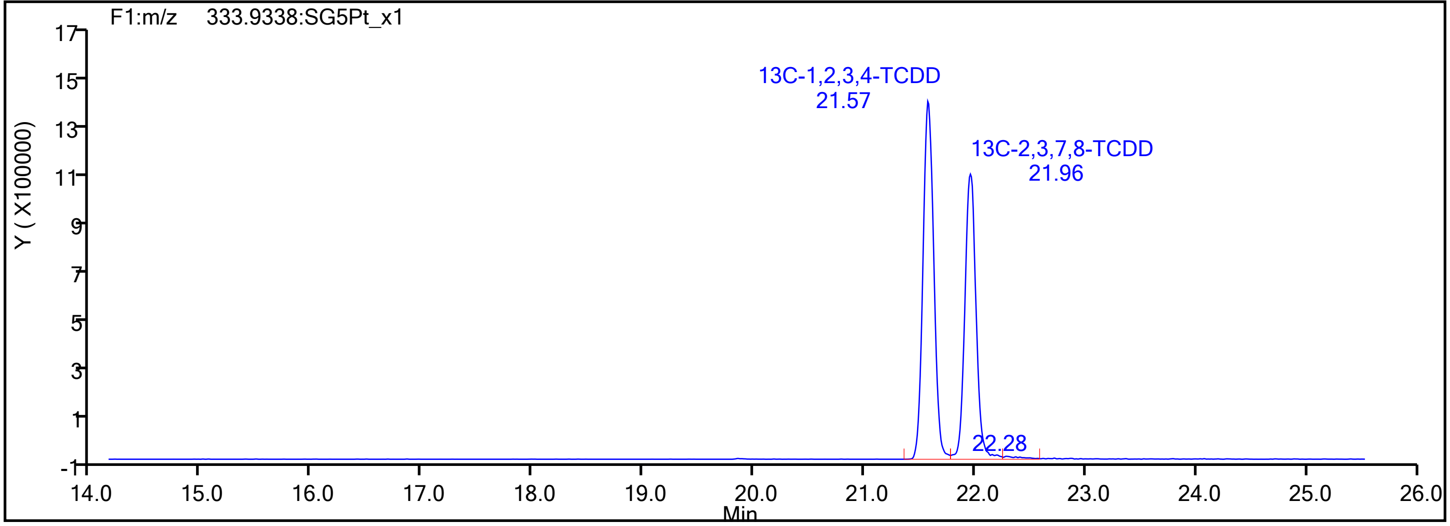

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

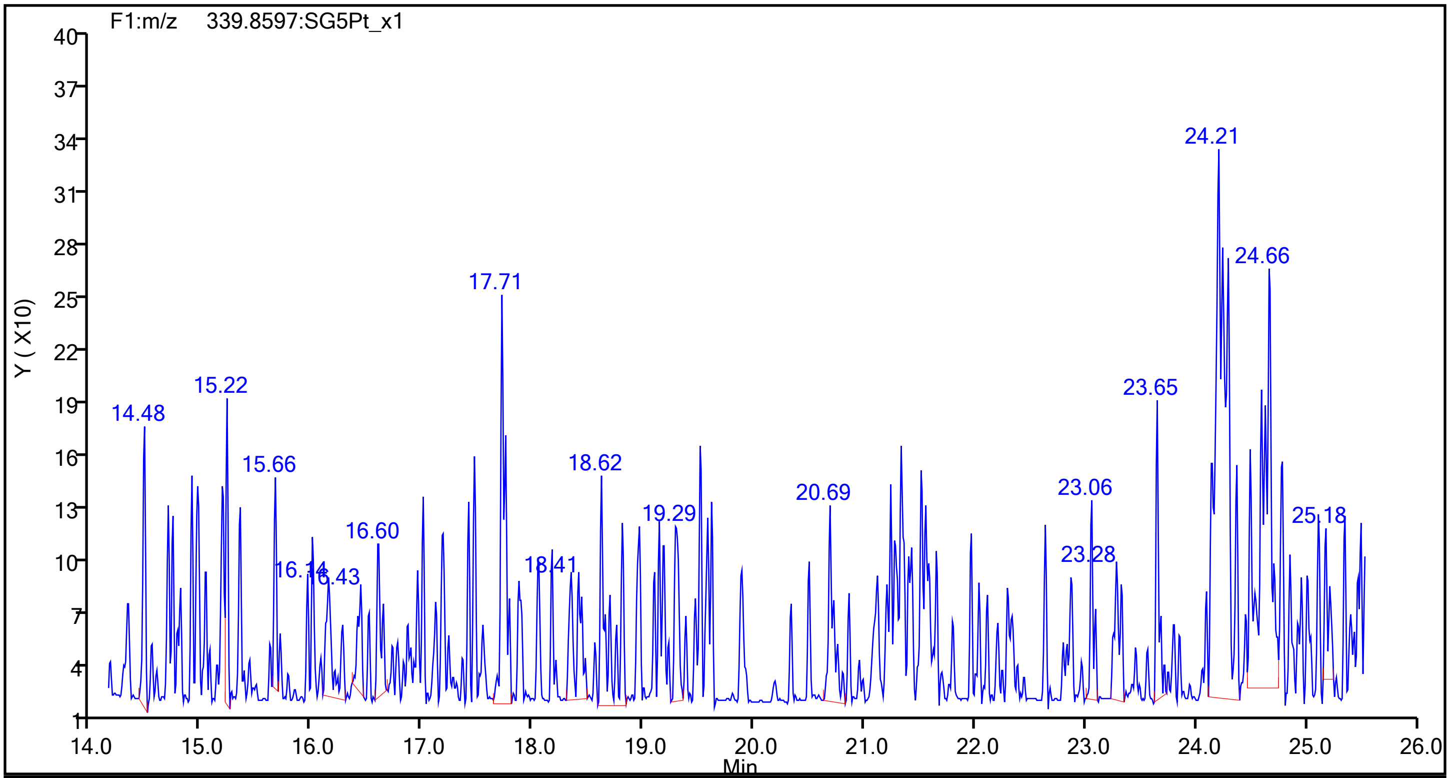

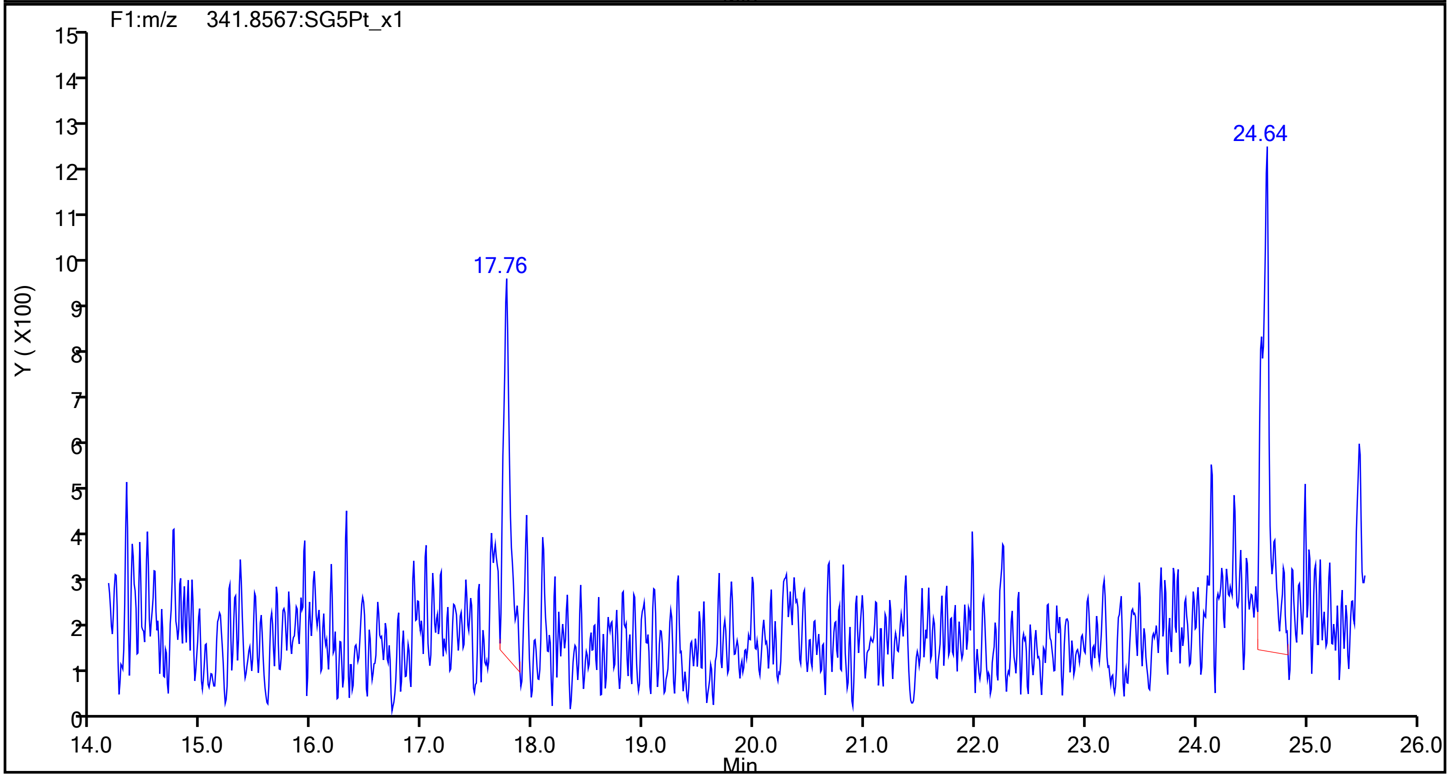

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d
Injection Date: 24-Sep-2021 16:19:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
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Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

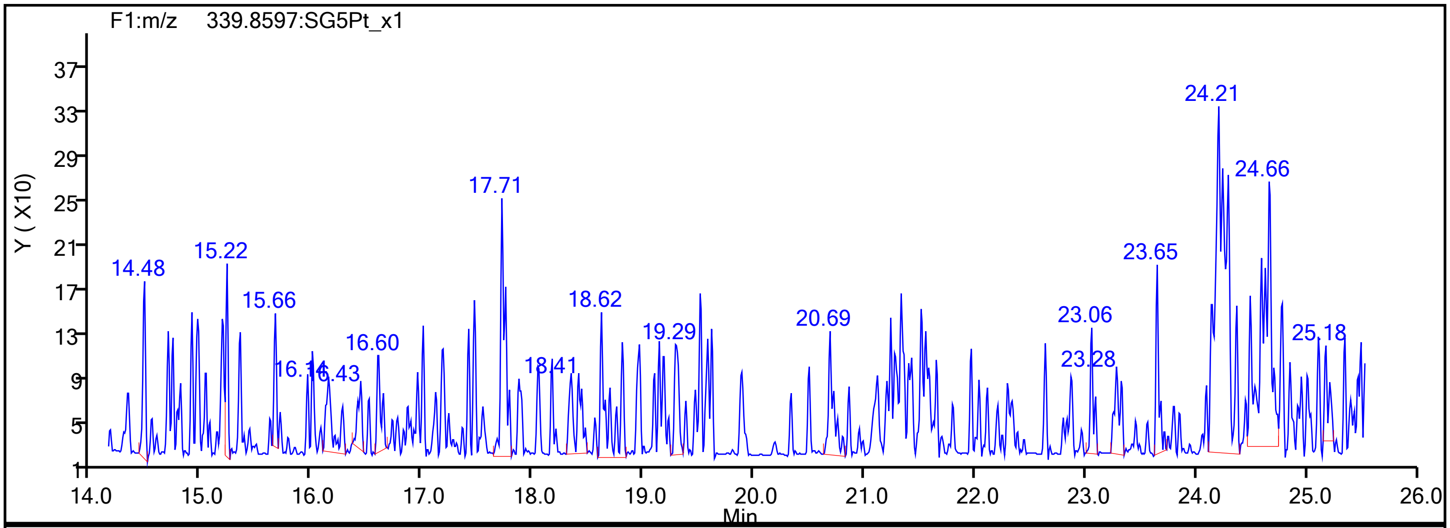

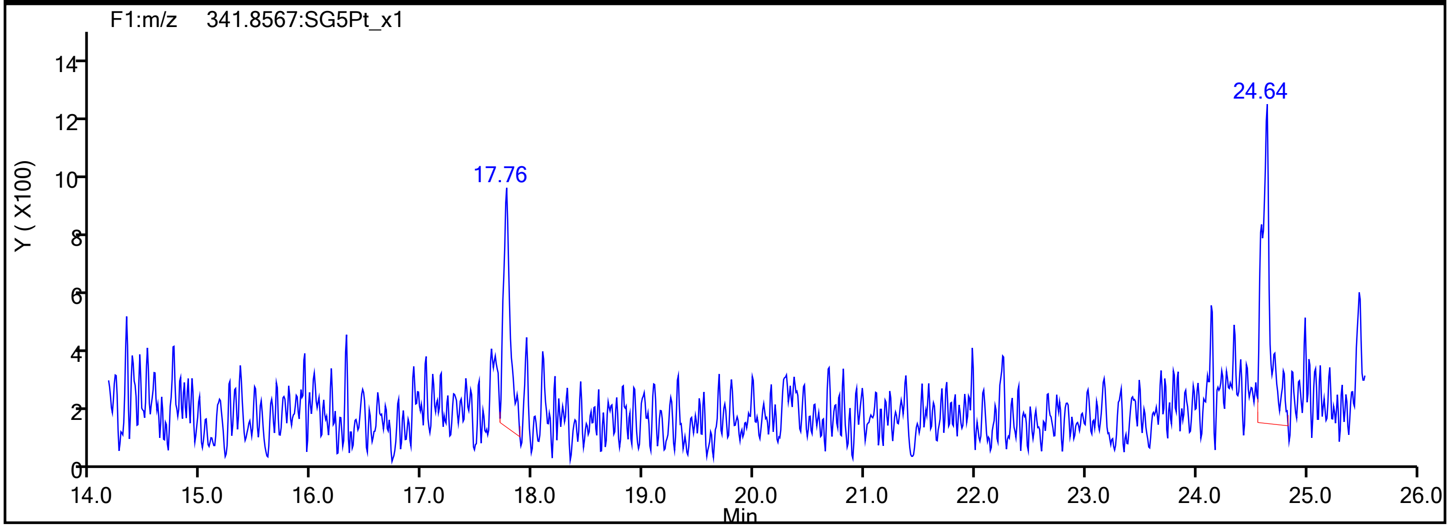

F1 PeCDFs Interference Mass

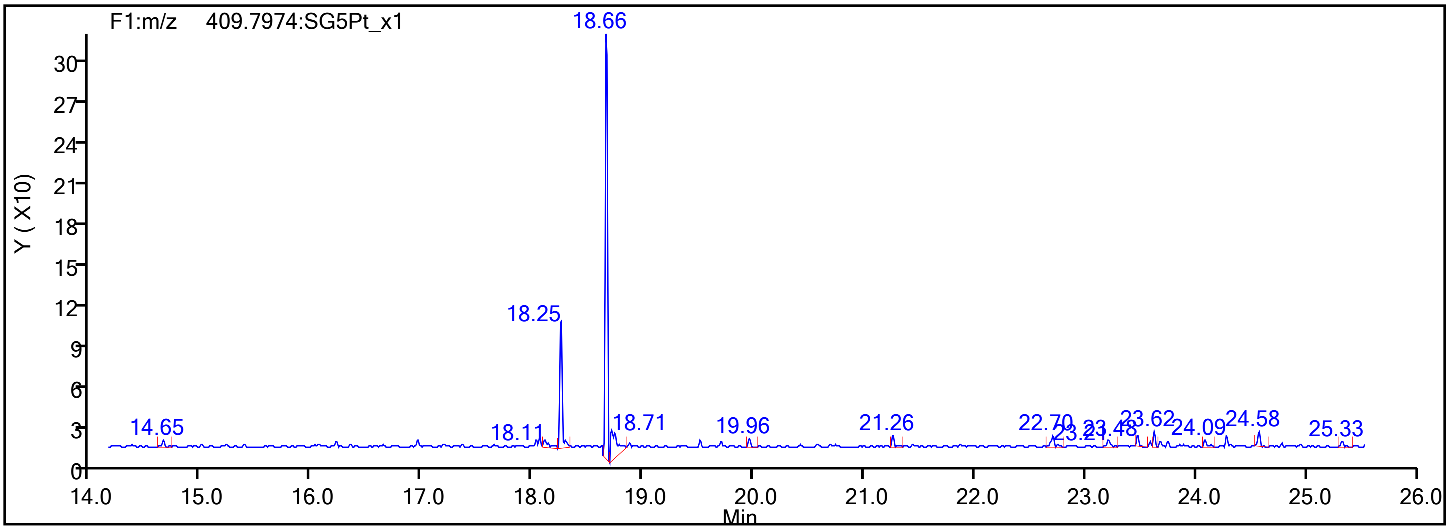

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

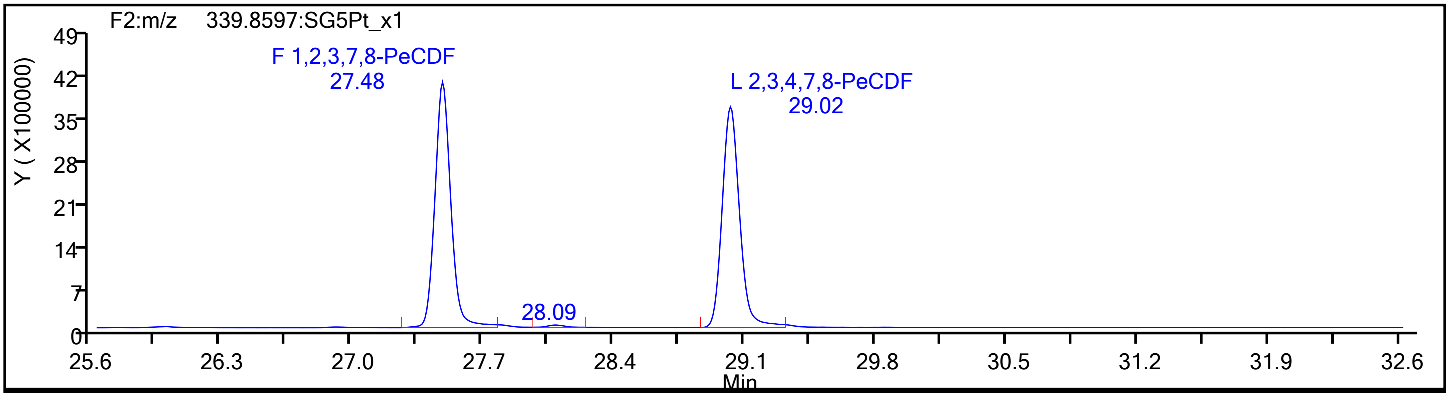

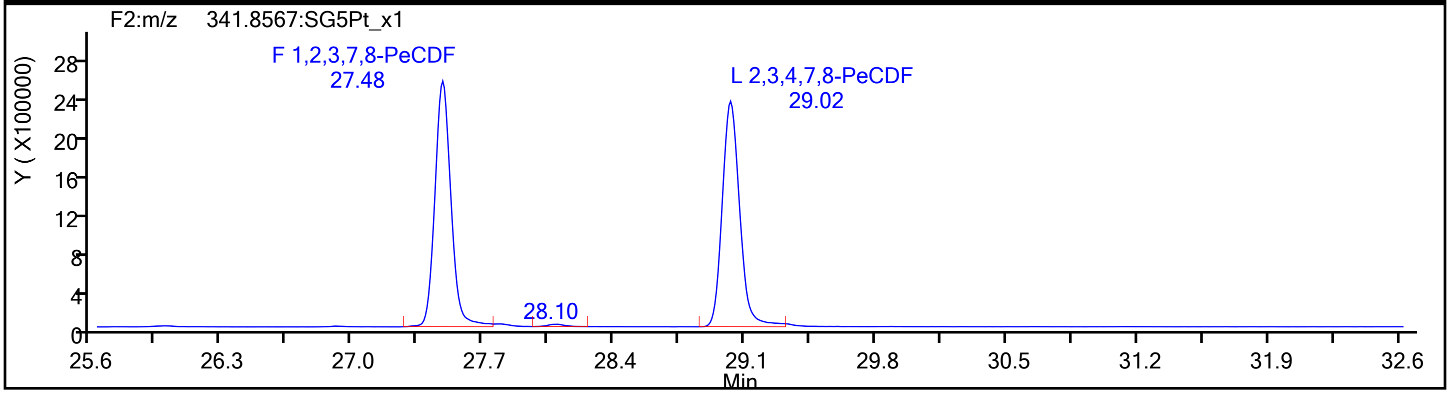

PeCDF Standards

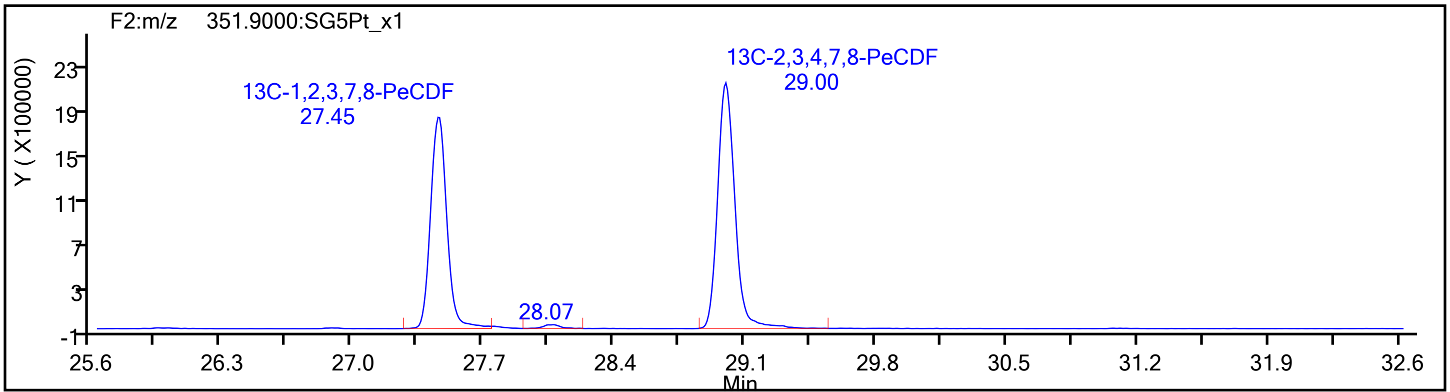

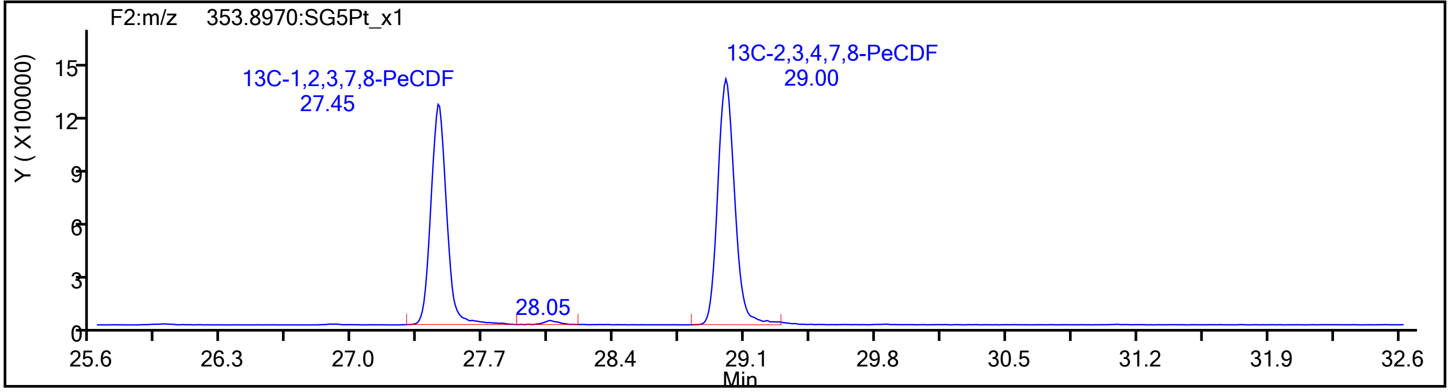

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

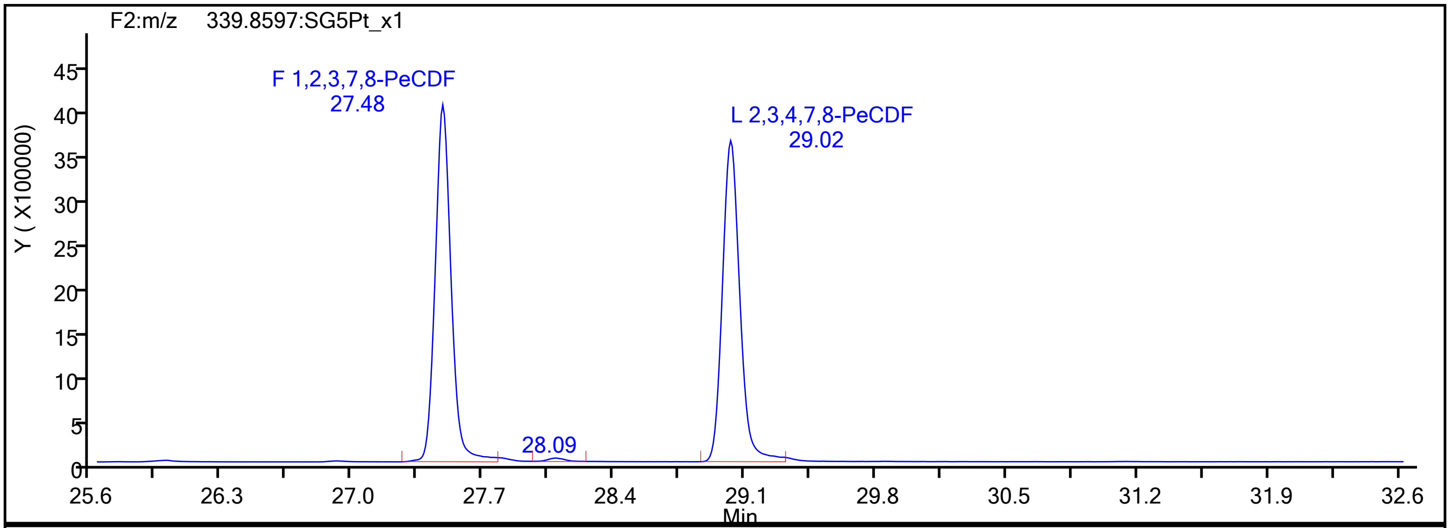

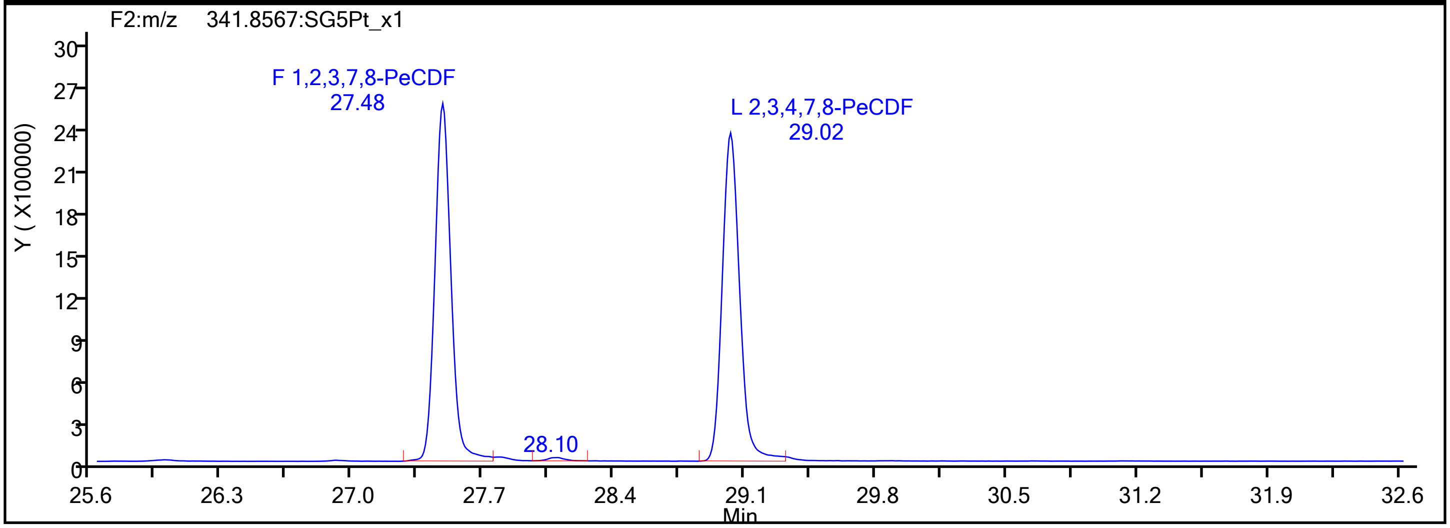

PeCDF Interference Mass

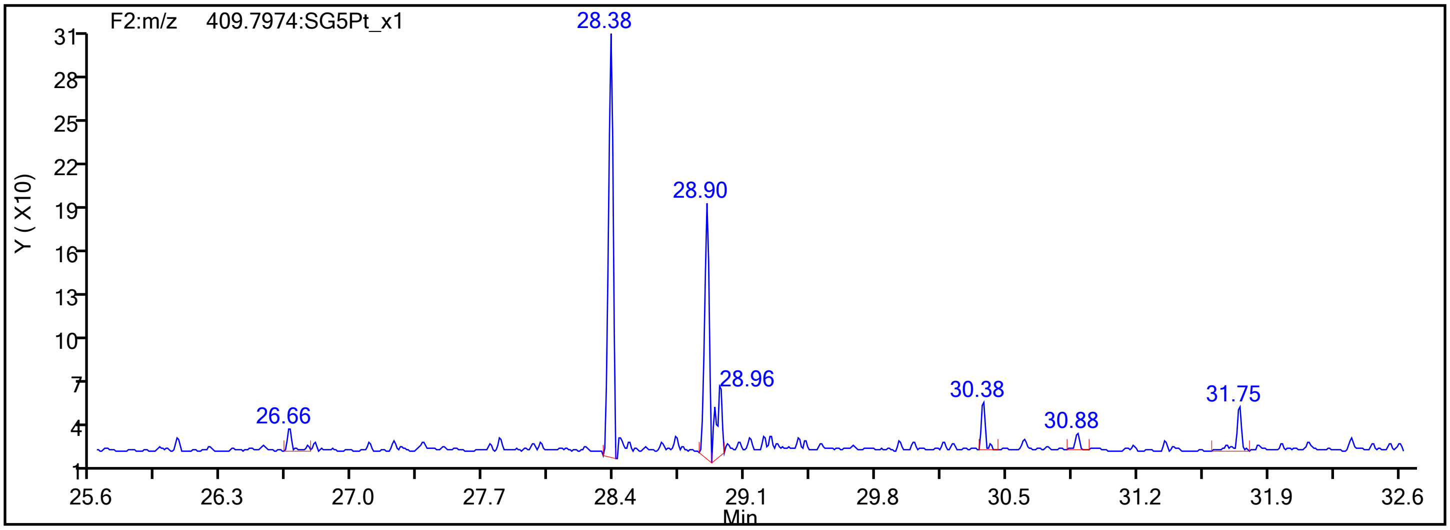

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d
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Injection Vol: 1.0 ul
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Method: Dioxin_DFS1
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Client ID:
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Column Dia: 0.32 mm

PeCDD

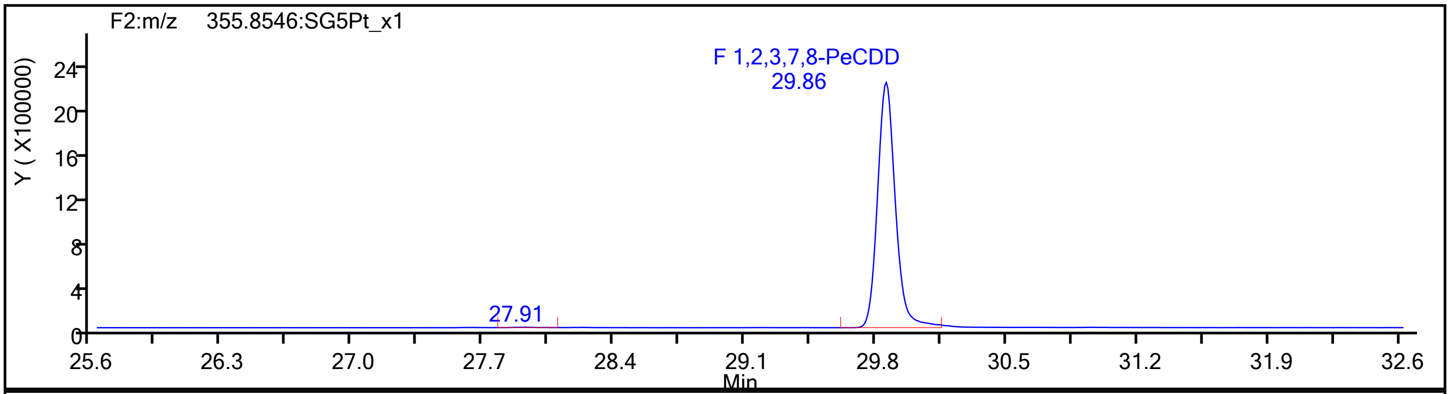

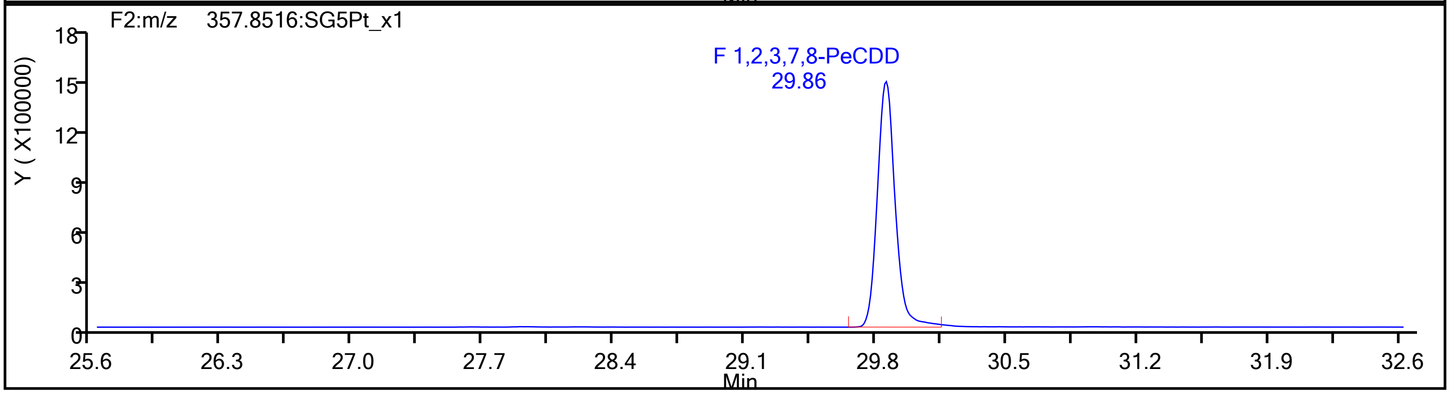

PeCDD Standards

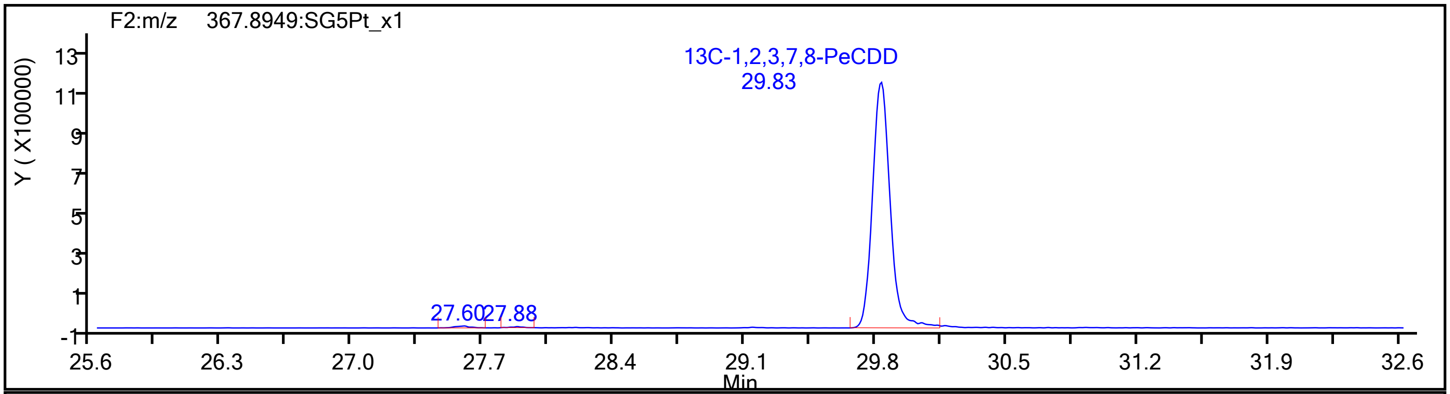

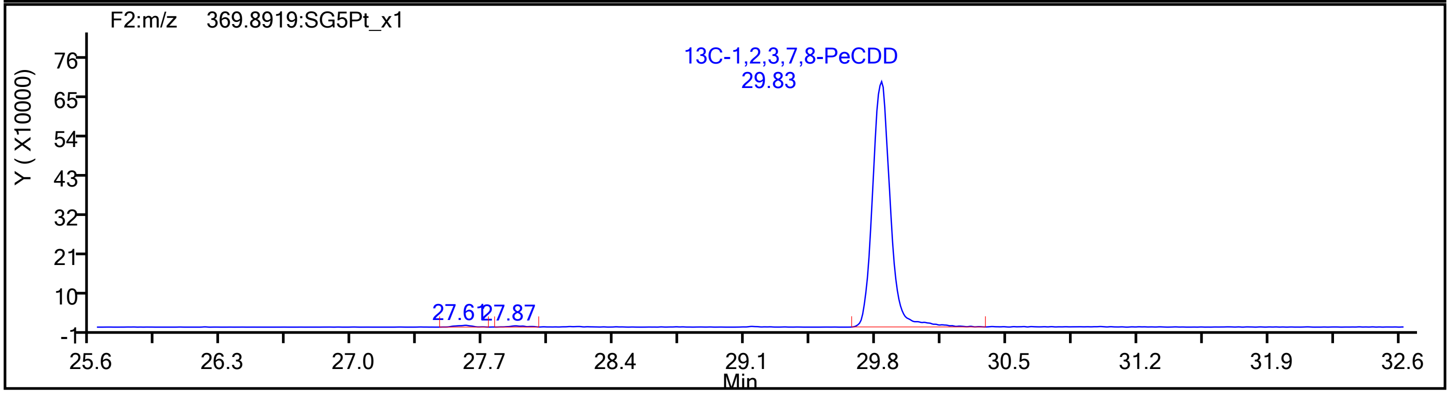

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d

Injection Date: 24-Sep-2021 16:19:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

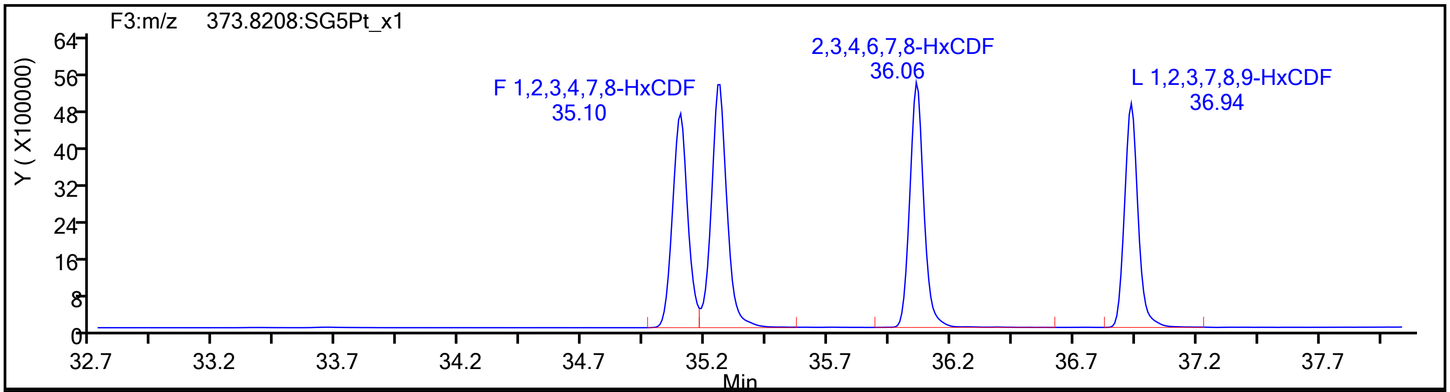

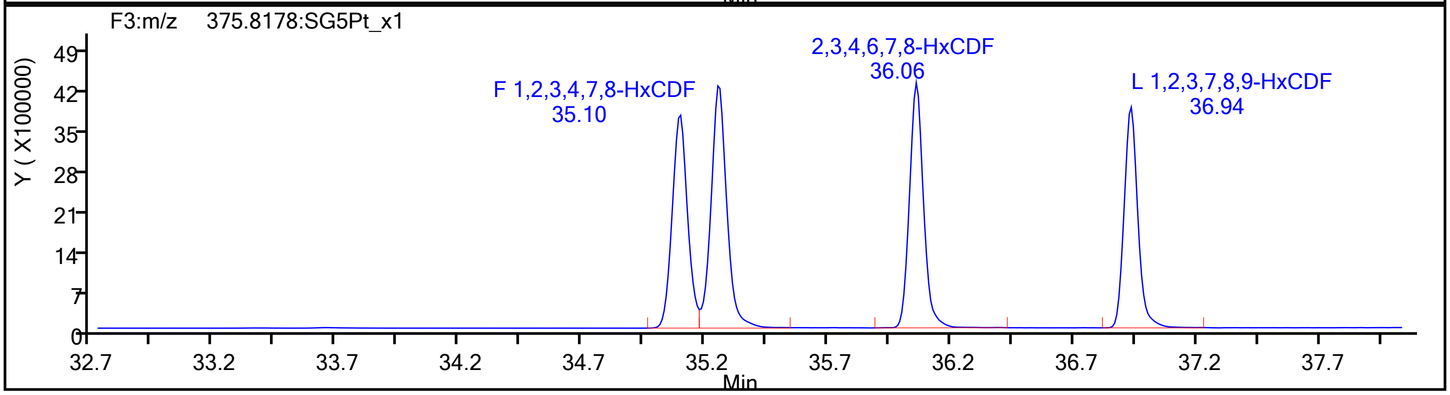

HxCDF Standards

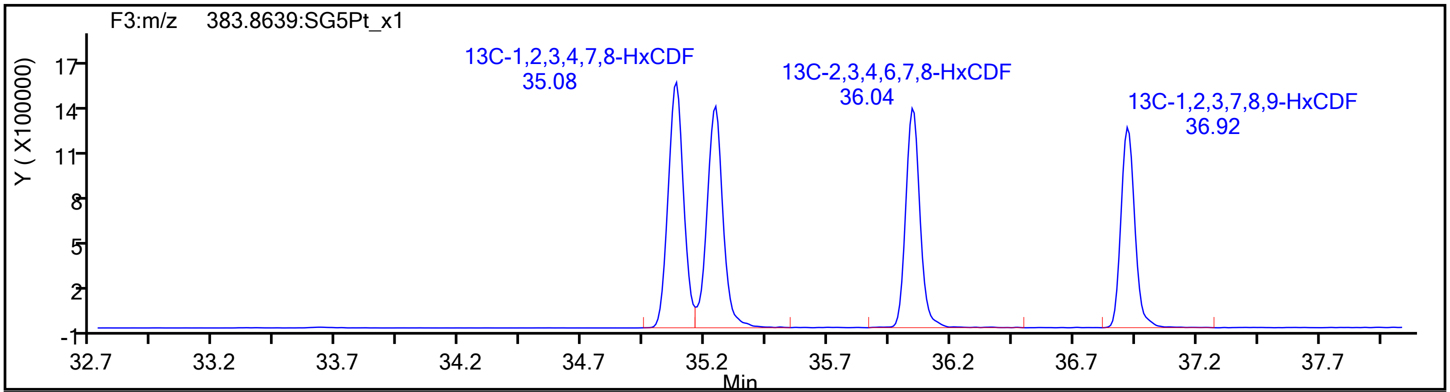

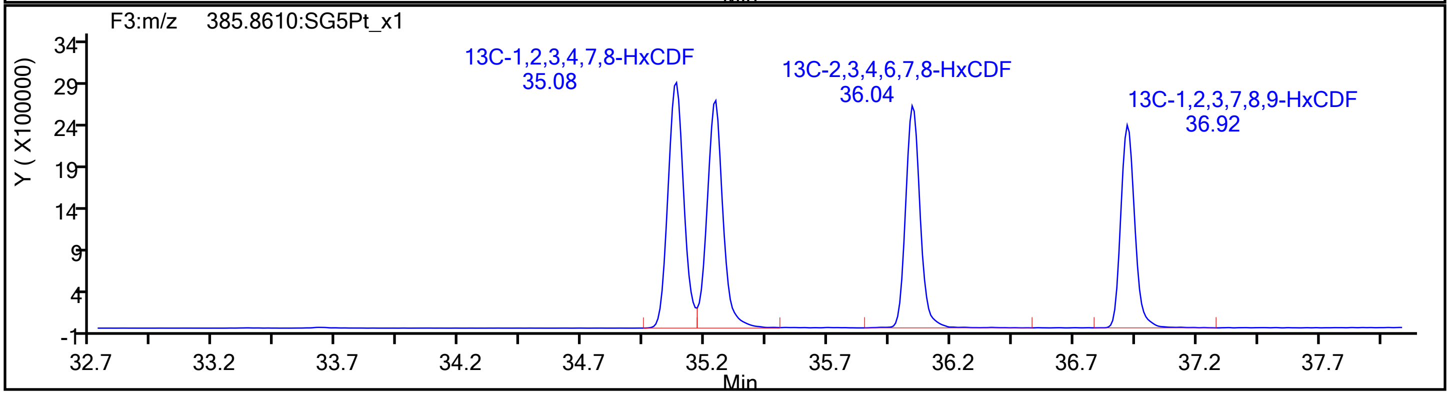

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDF

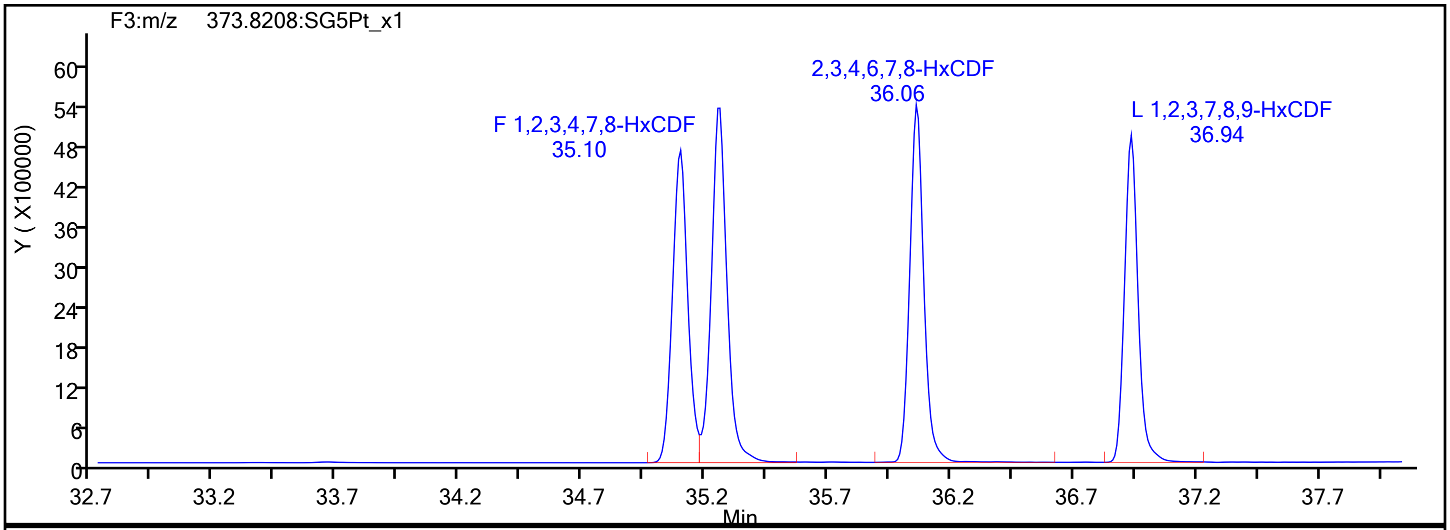

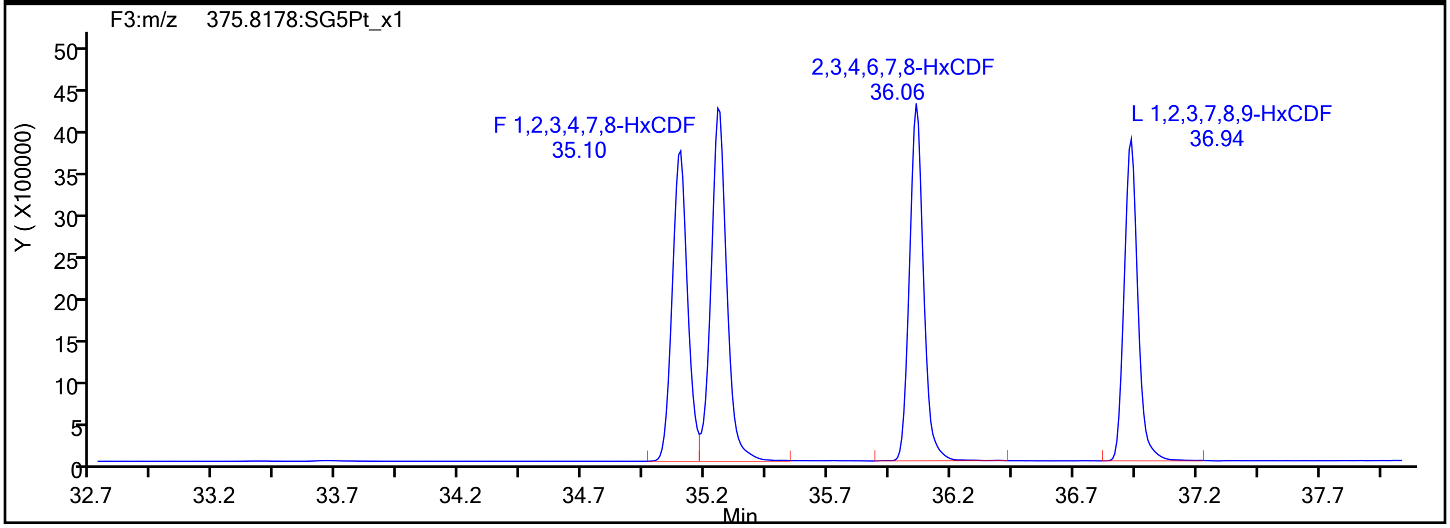

HxCDF Interference Mass

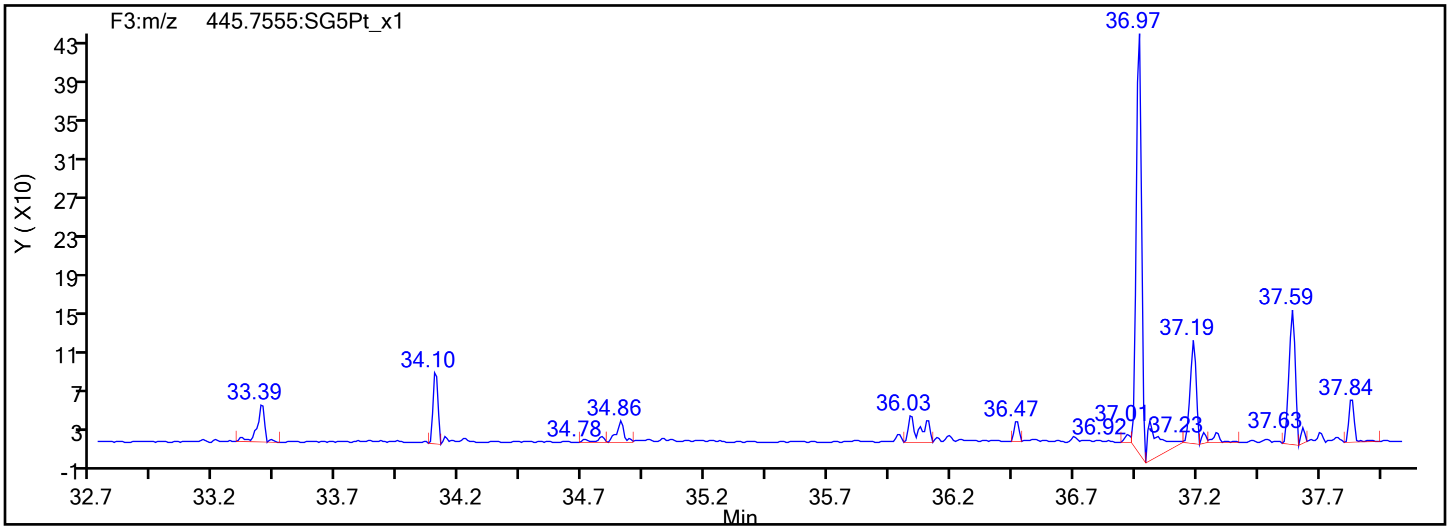

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Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

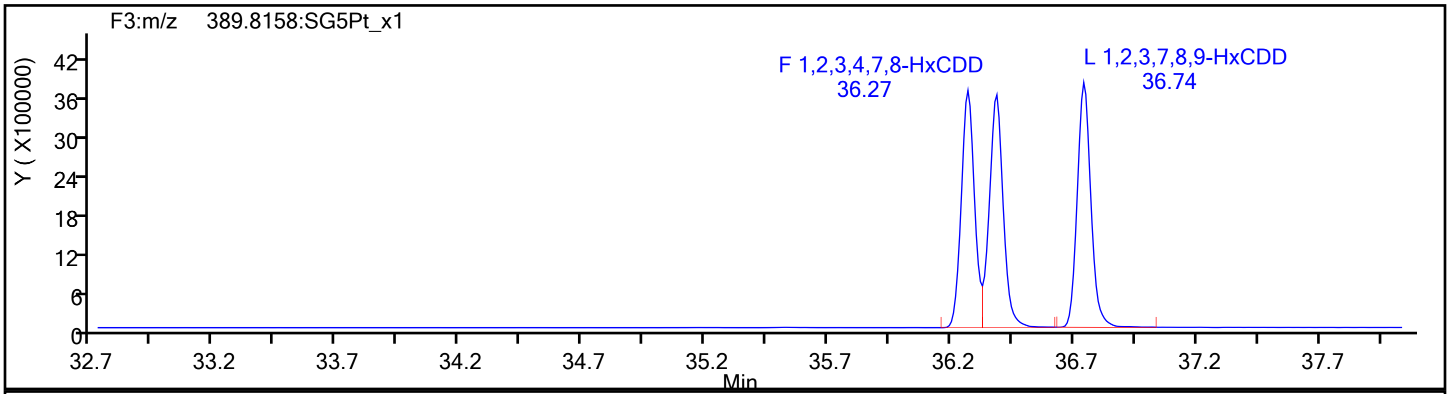

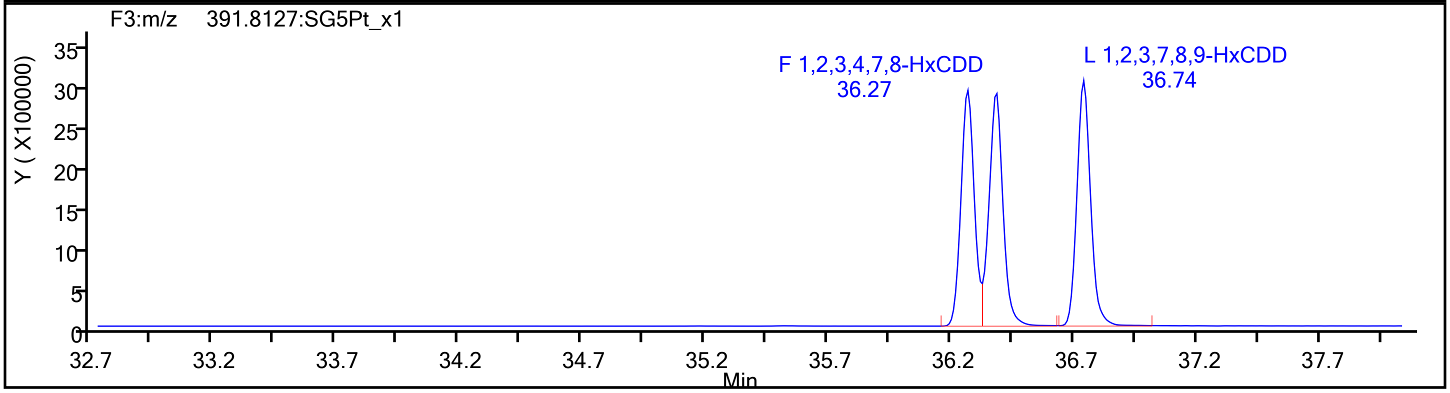

HxCDD Standards

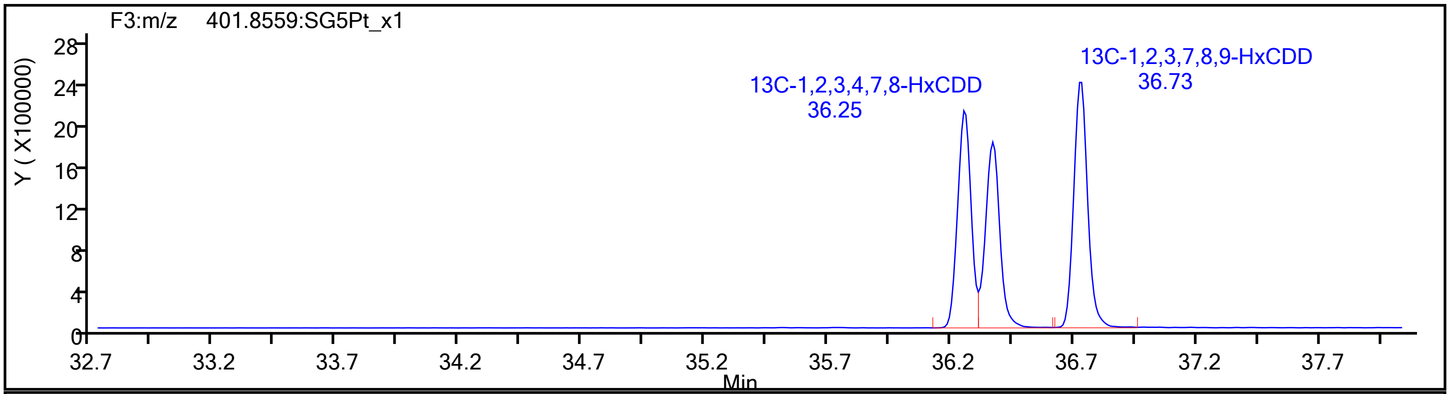

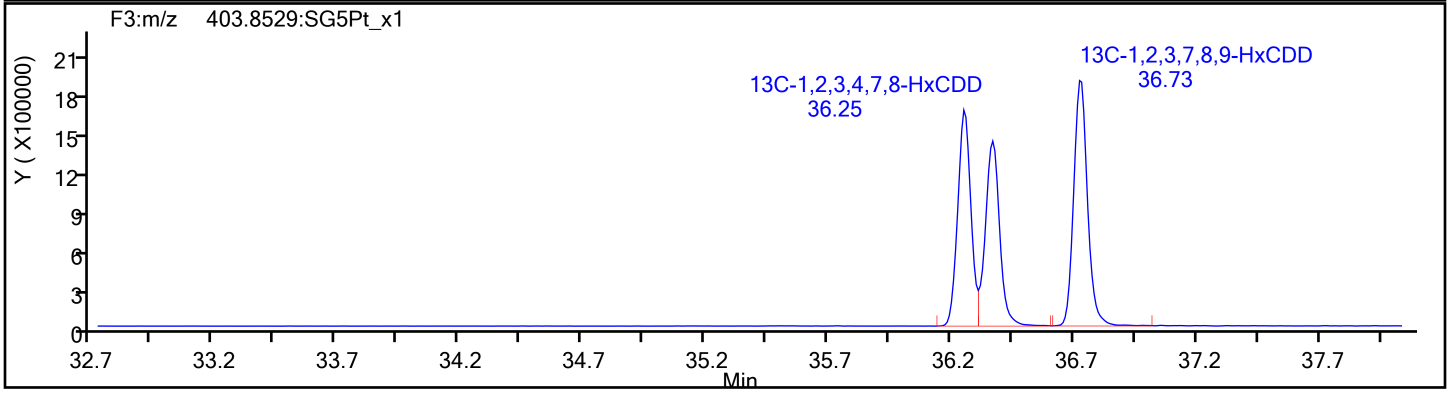

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Injection Date: 24-Sep-2021 16:19:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
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Client ID:
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HpCDF

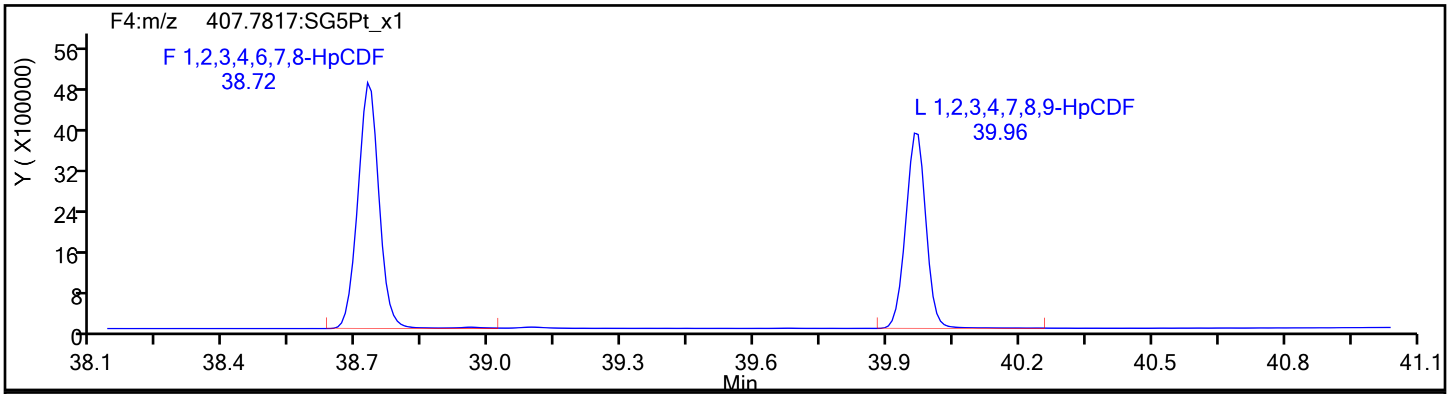

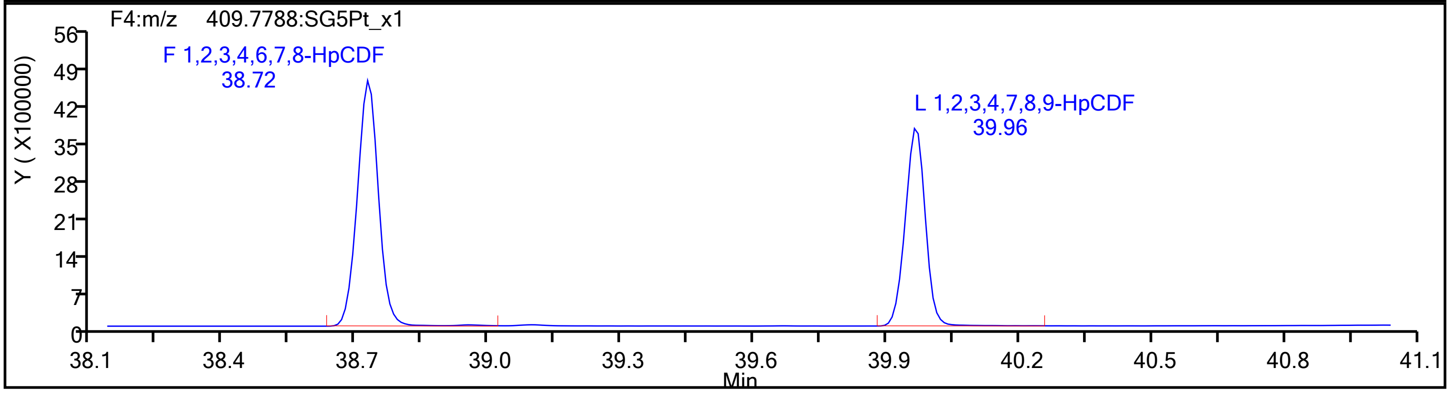

HpCDF Standards

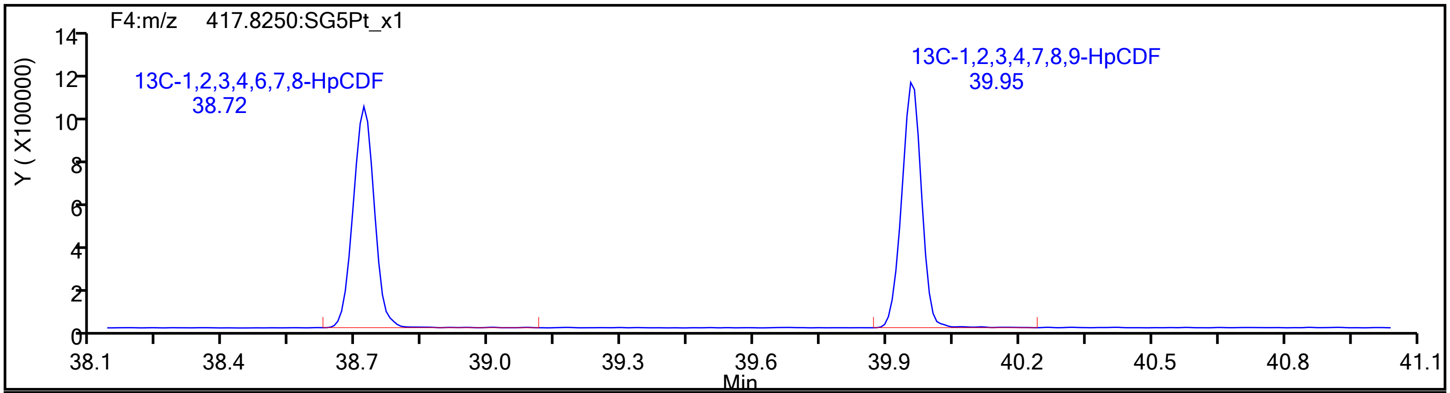

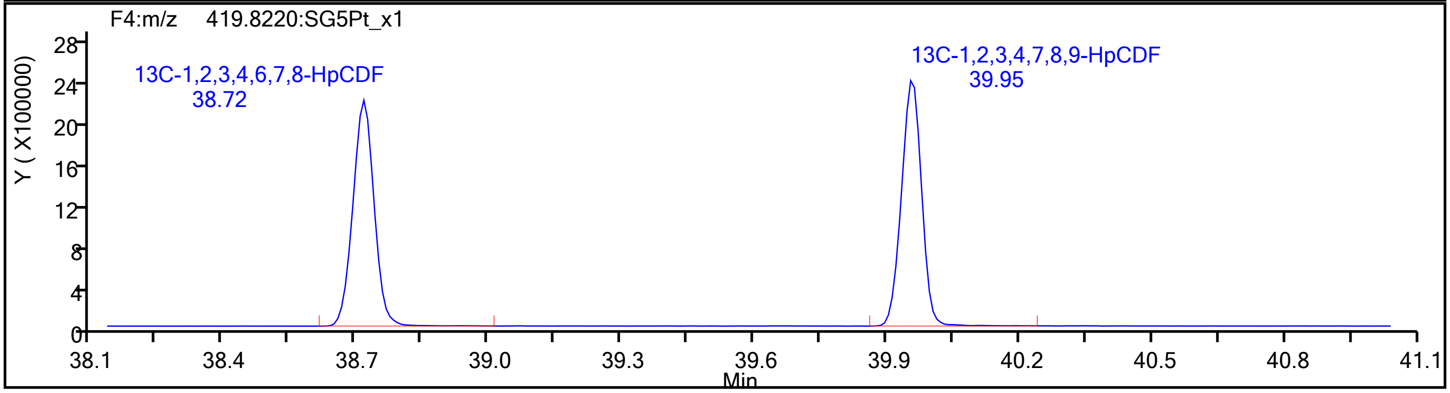

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
Injection Date:	24-Sep-2021 16:19:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

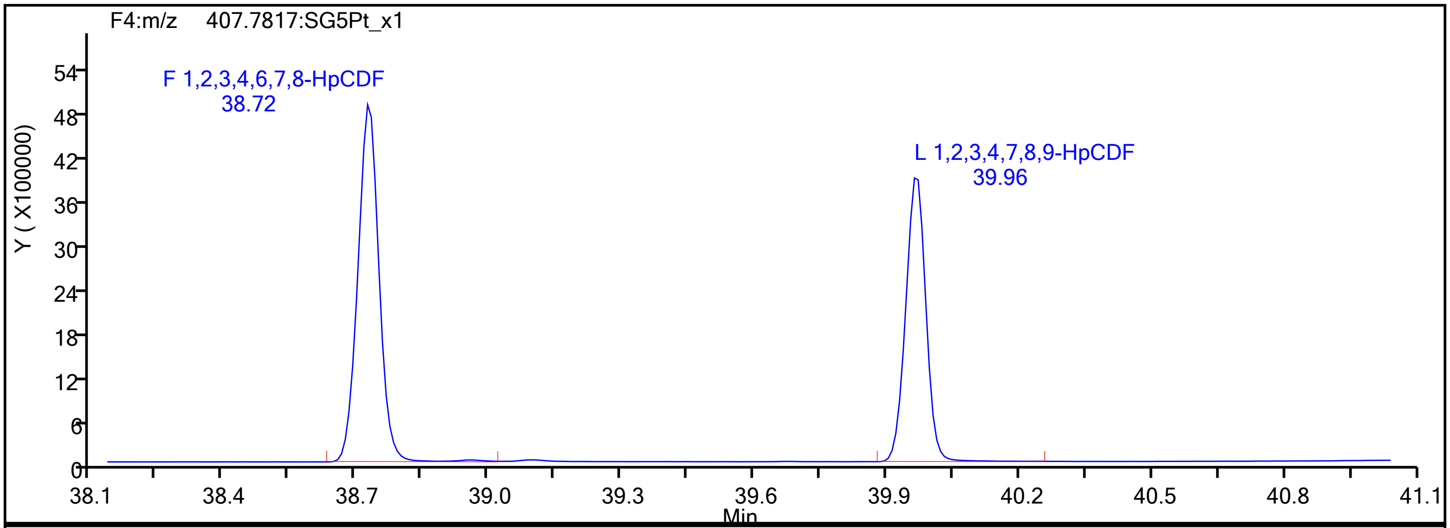

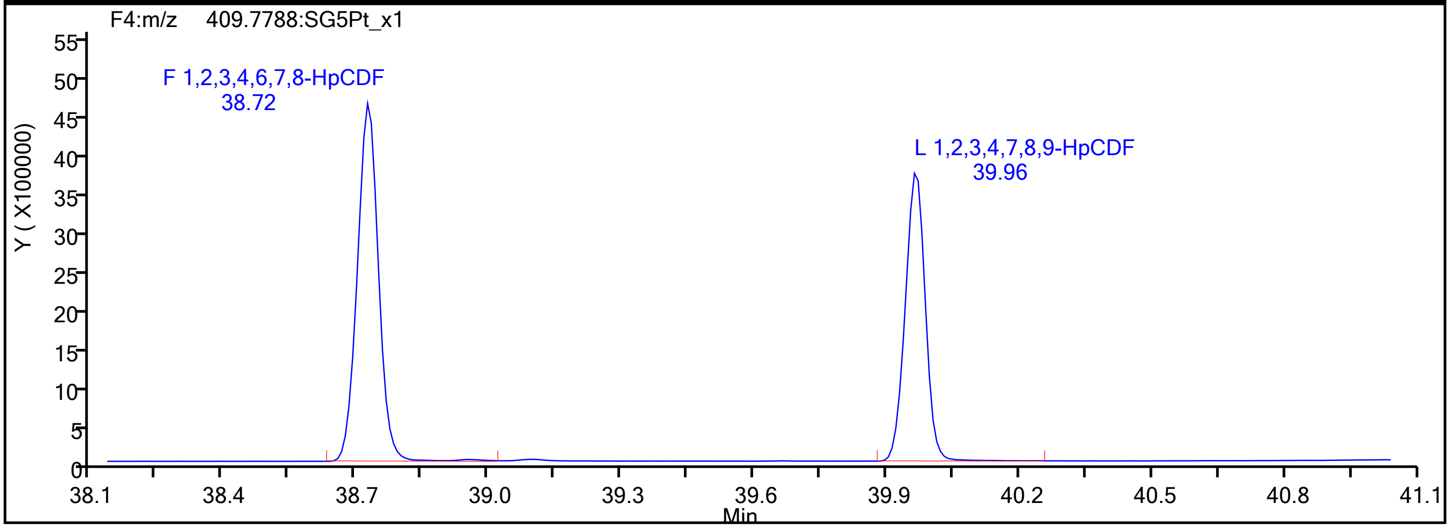

HpCDF Interference Mass

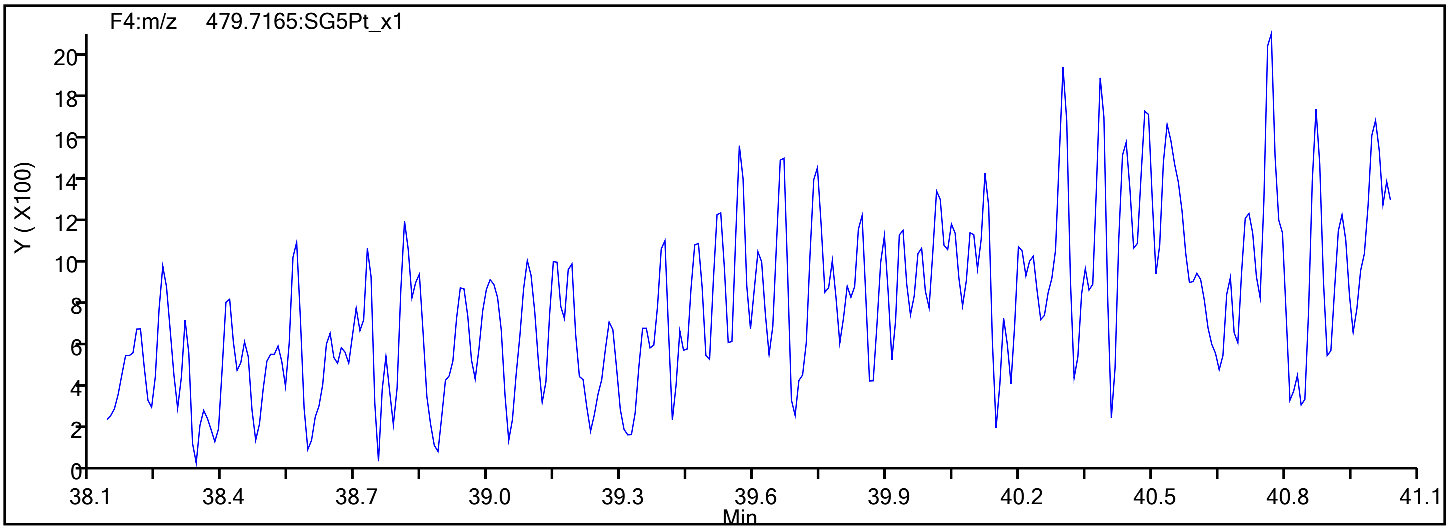

Report Date: 25-Sep-2021 14:17:31 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
Injection Date:	24-Sep-2021 16:19:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

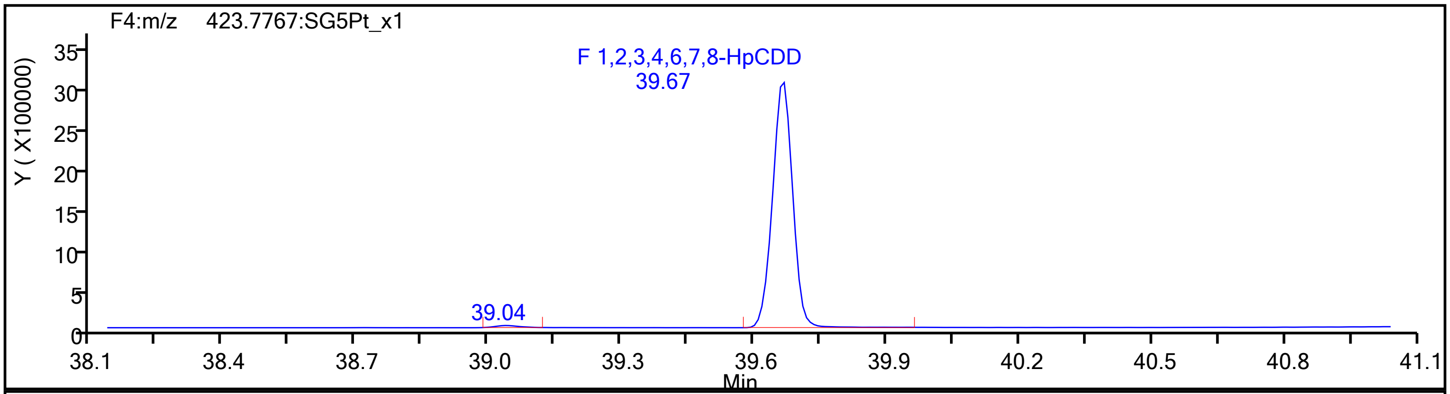

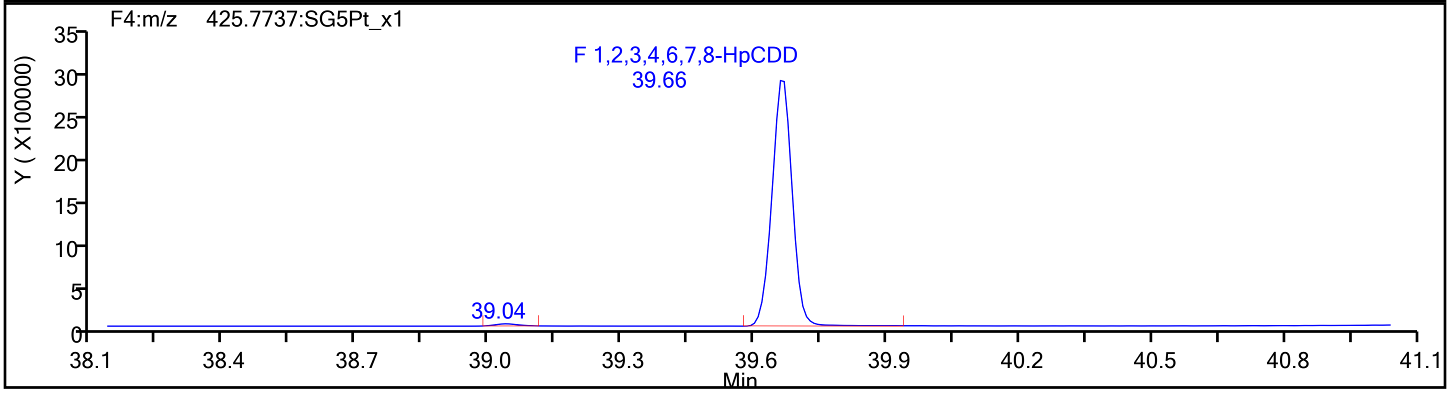

HpCDD Standards

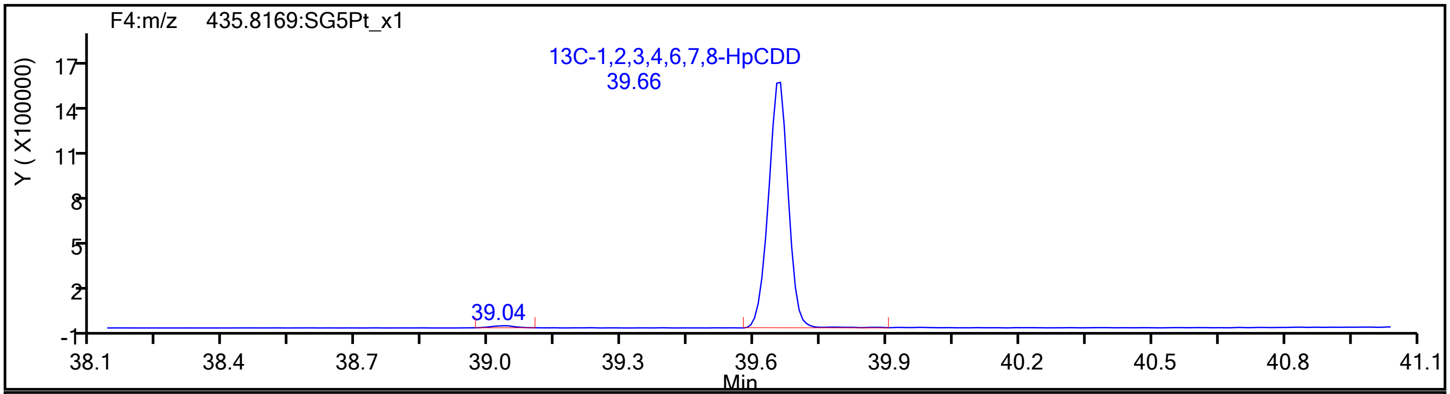

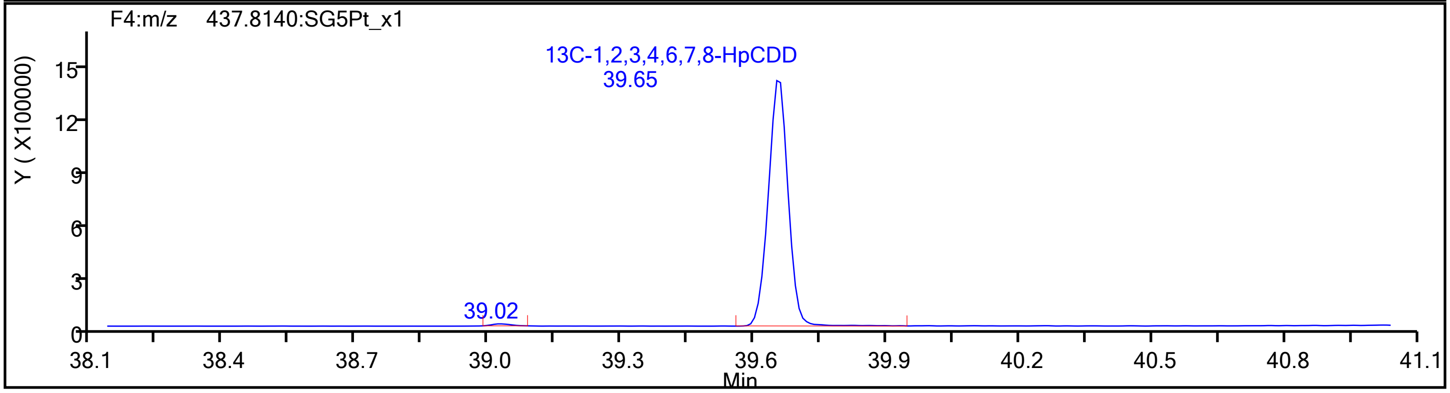

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
Injection Date:	24-Sep-2021 16:19:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

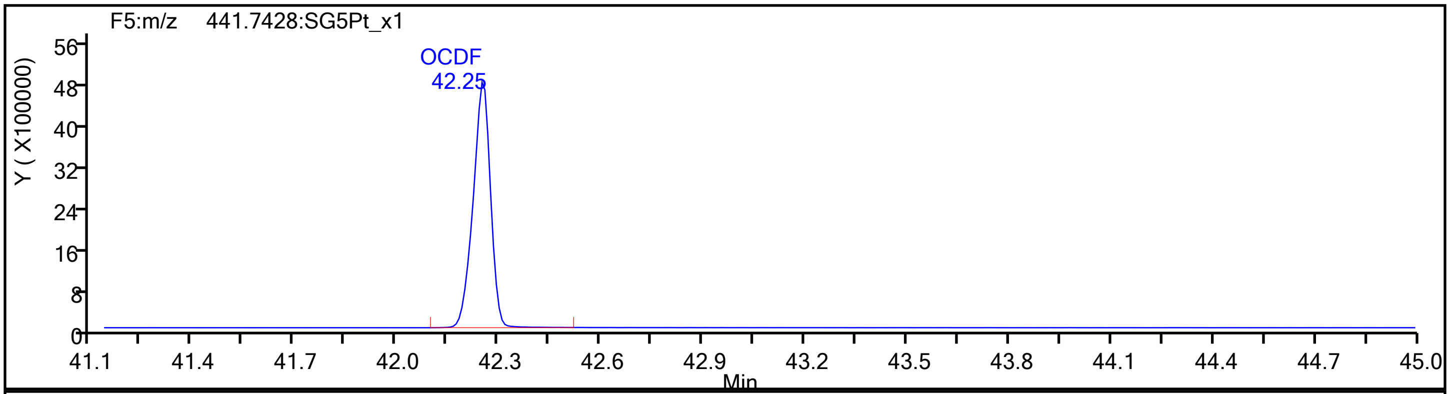

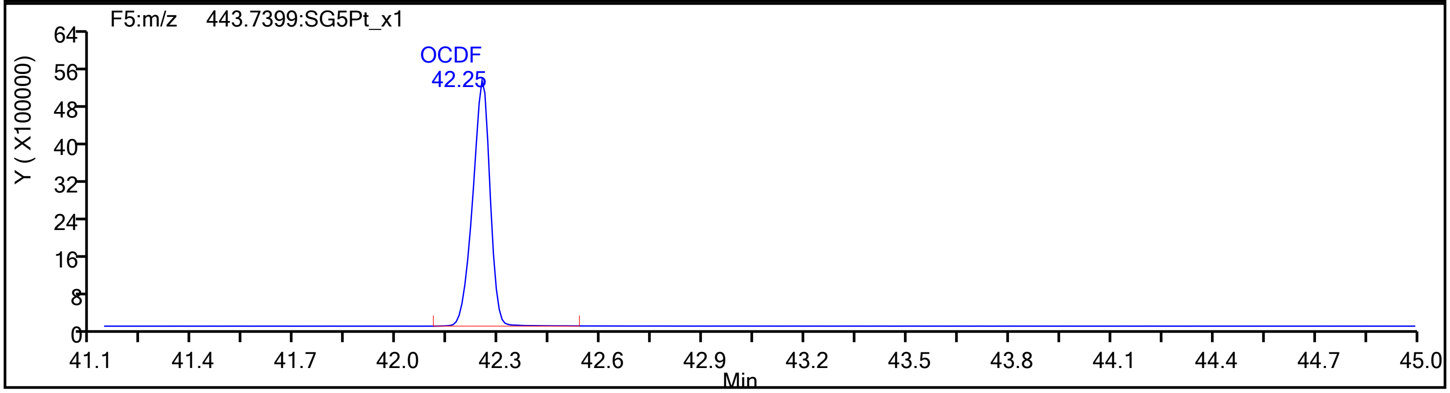

OCDF Standards

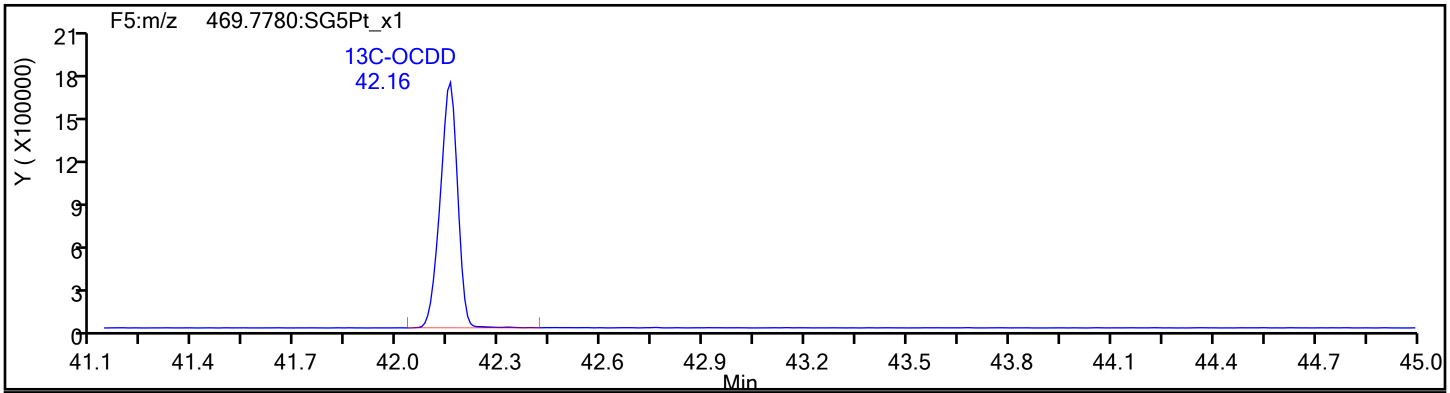

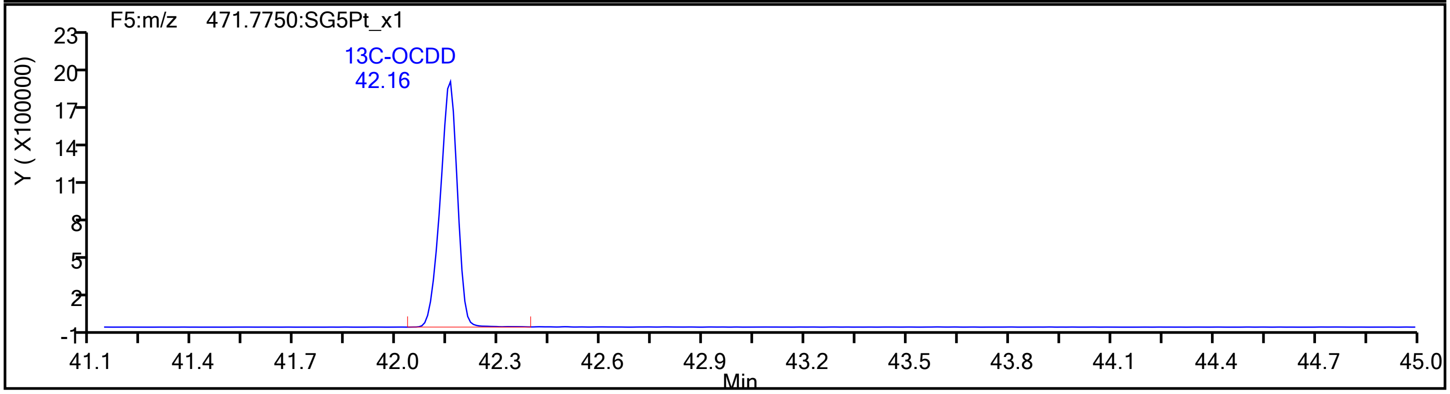

Report Date: 25-Sep-2021 14:17:32 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
Injection Date:	24-Sep-2021 16:19:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

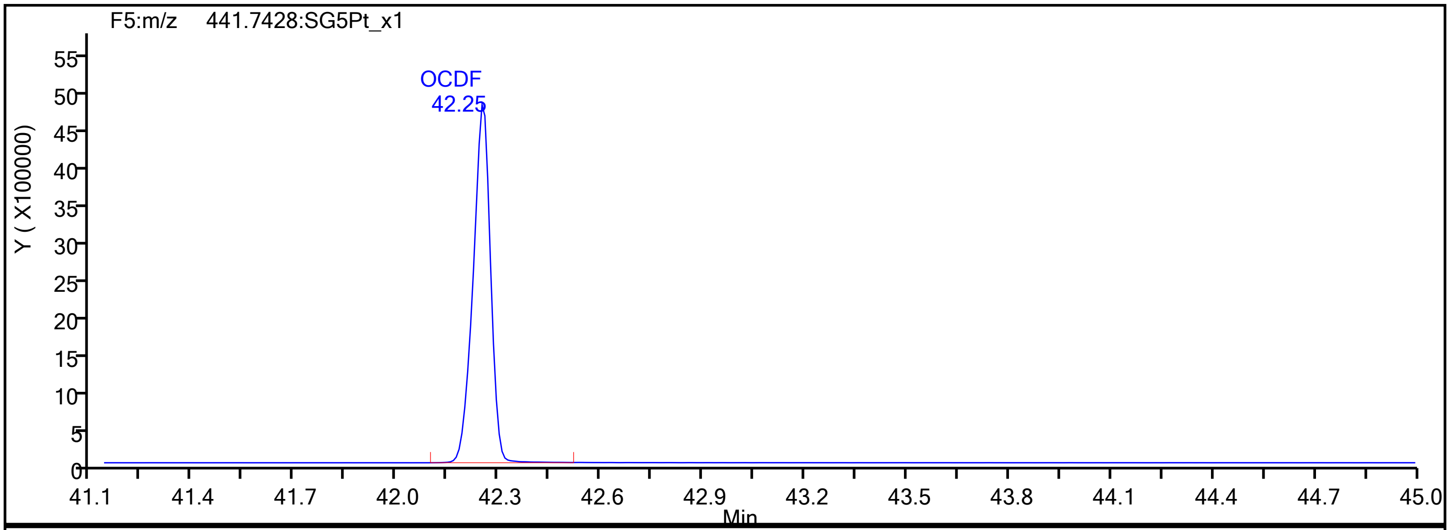

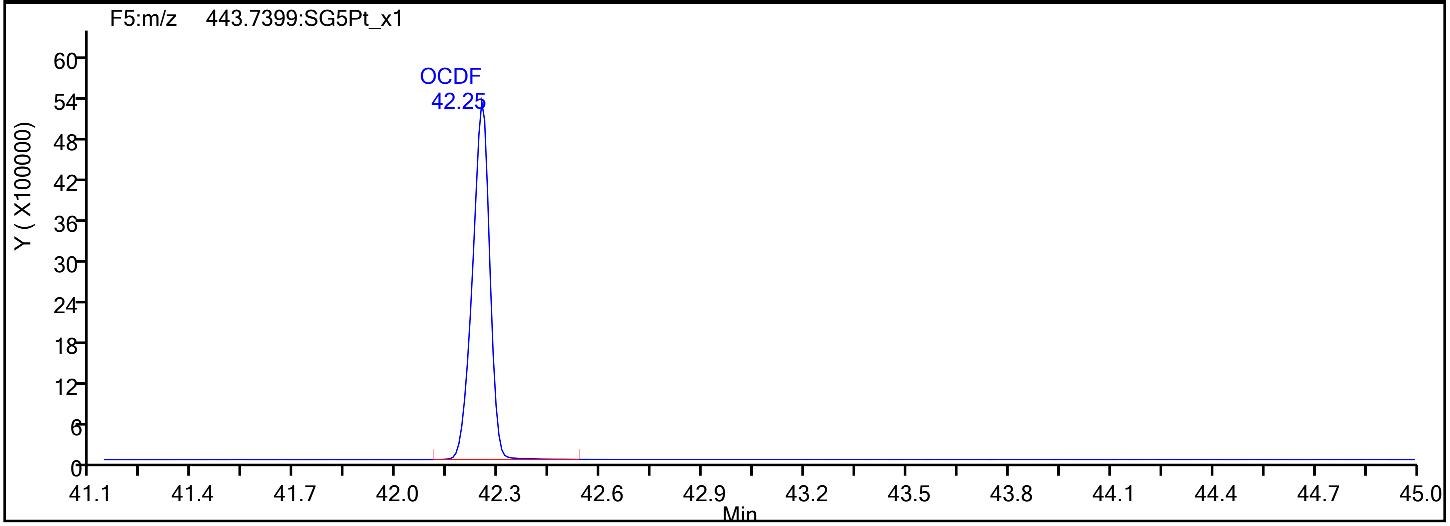

OCDF Interference Mass

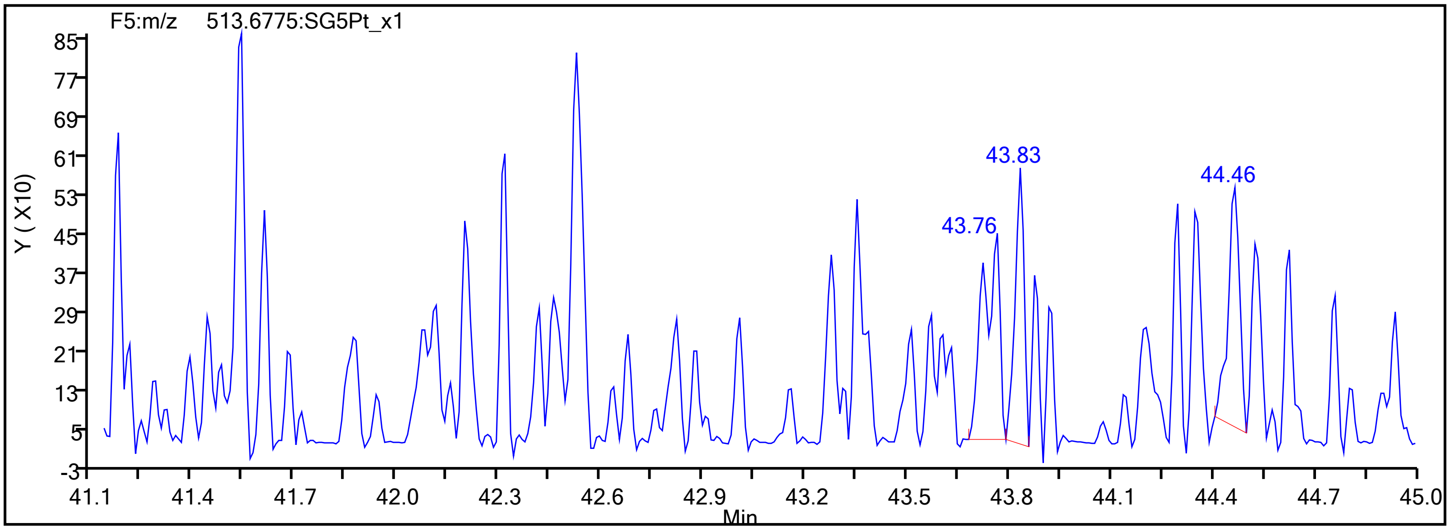

Report Date: 25-Sep-2021 14:17:32 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d		
Injection Date:	24-Sep-2021 16:19:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

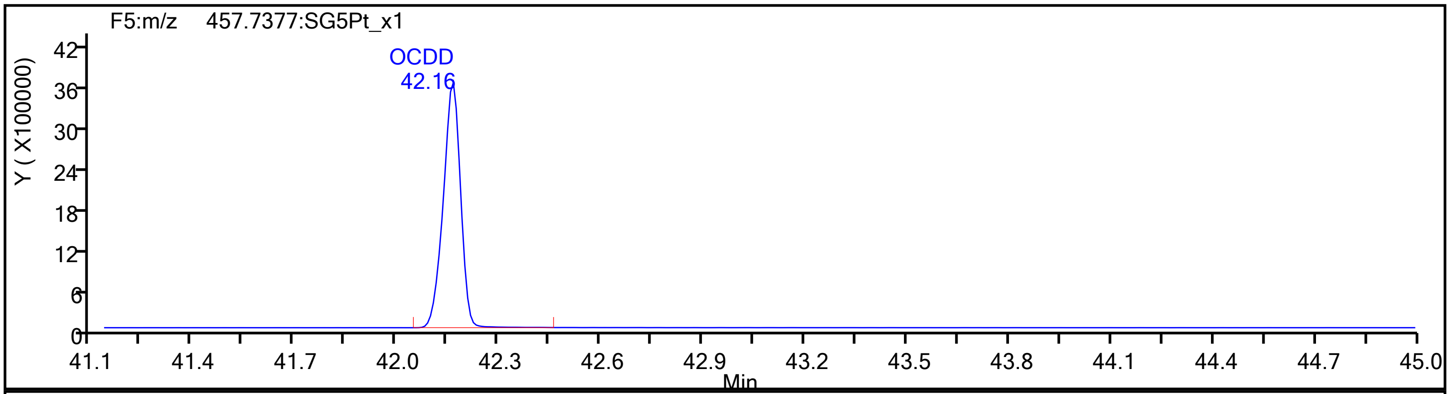

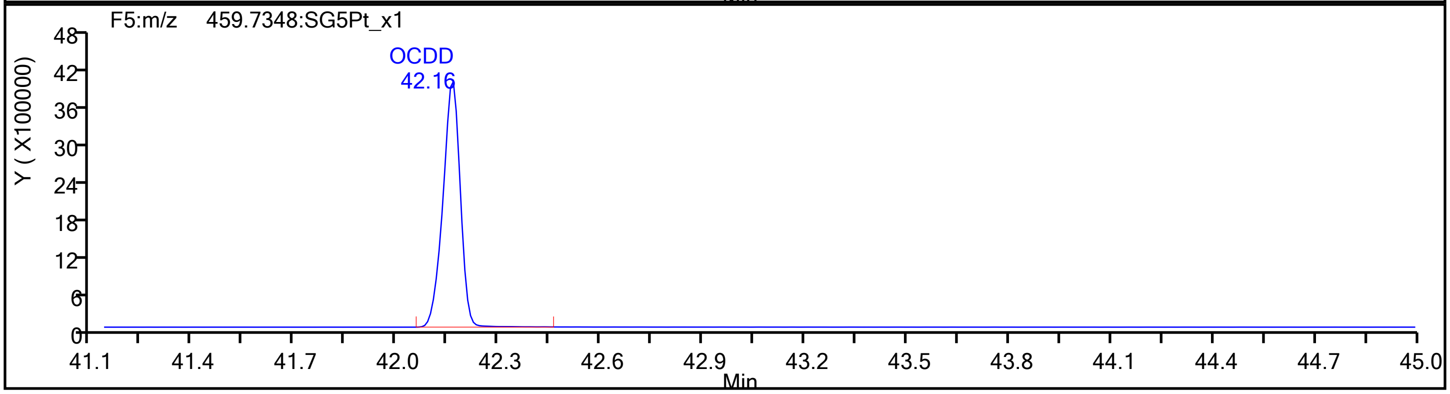

OCDD Standards

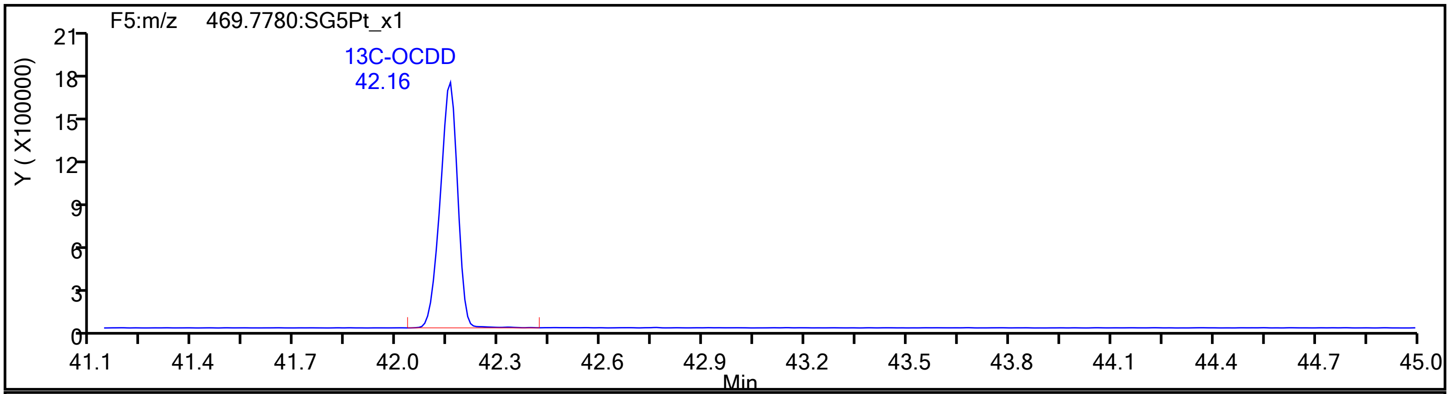

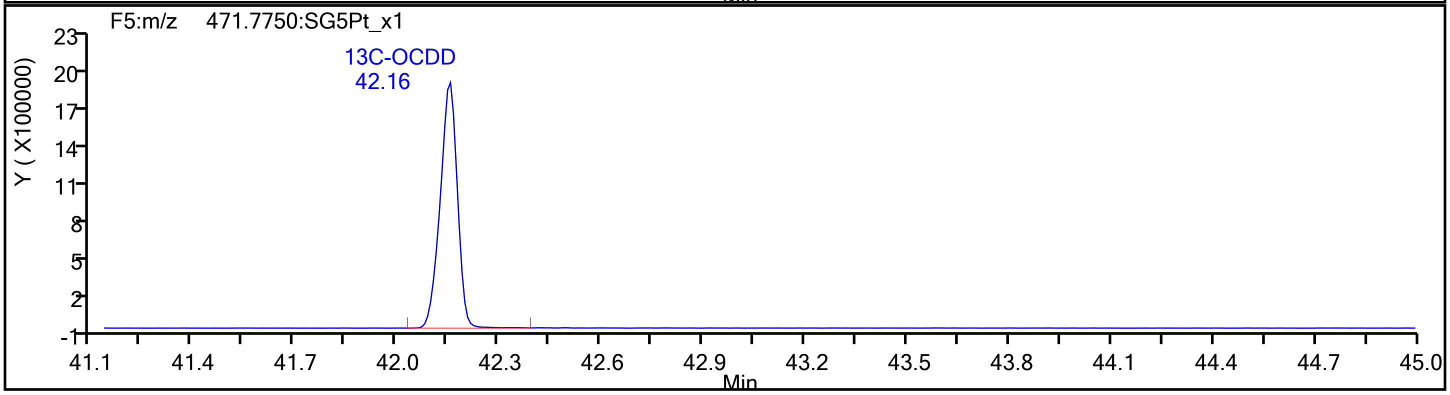

Report Date: 25-Sep-2021 14:17:32 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d
Injection Date: 24-Sep-2021 16:19:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

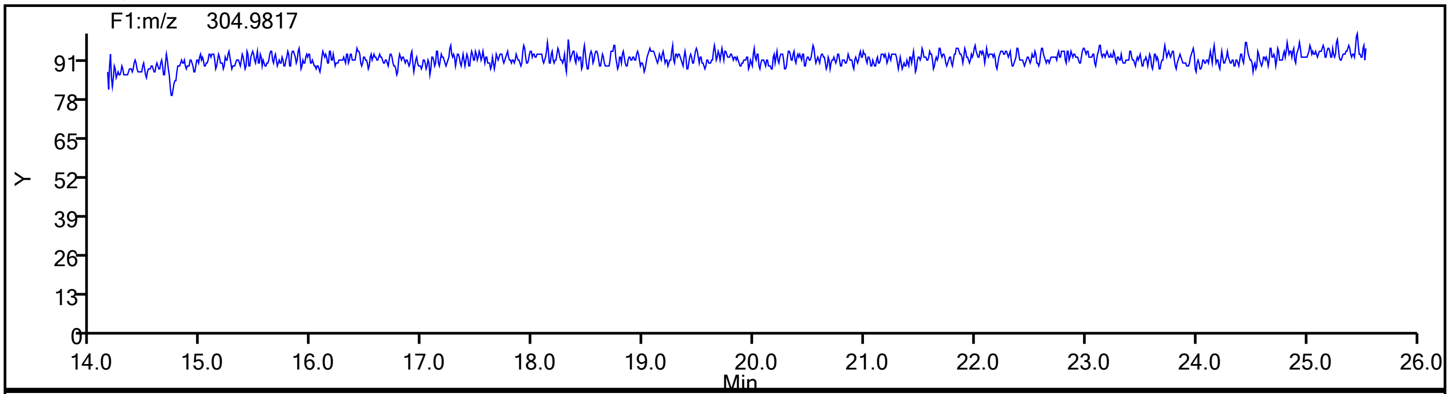

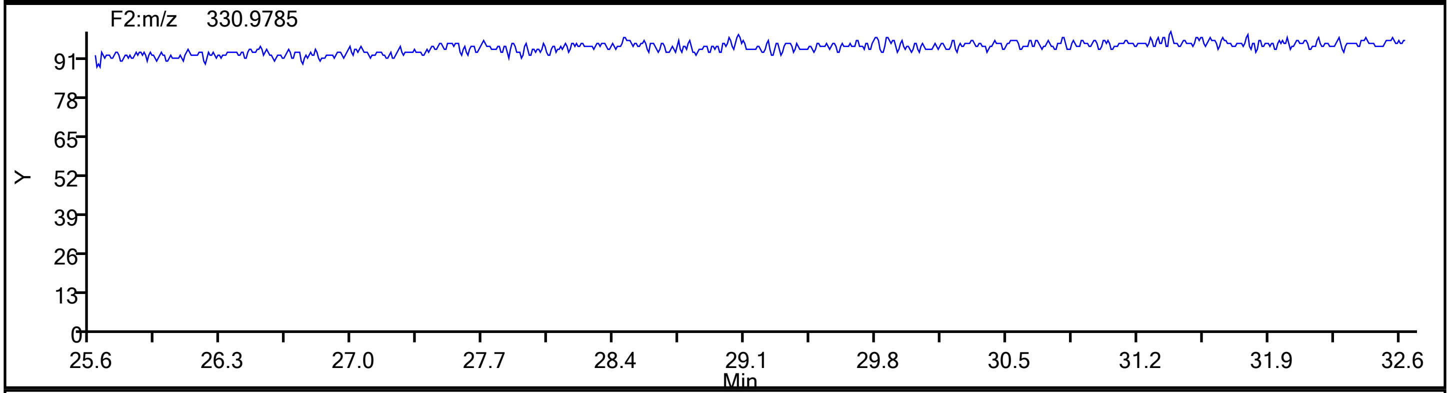

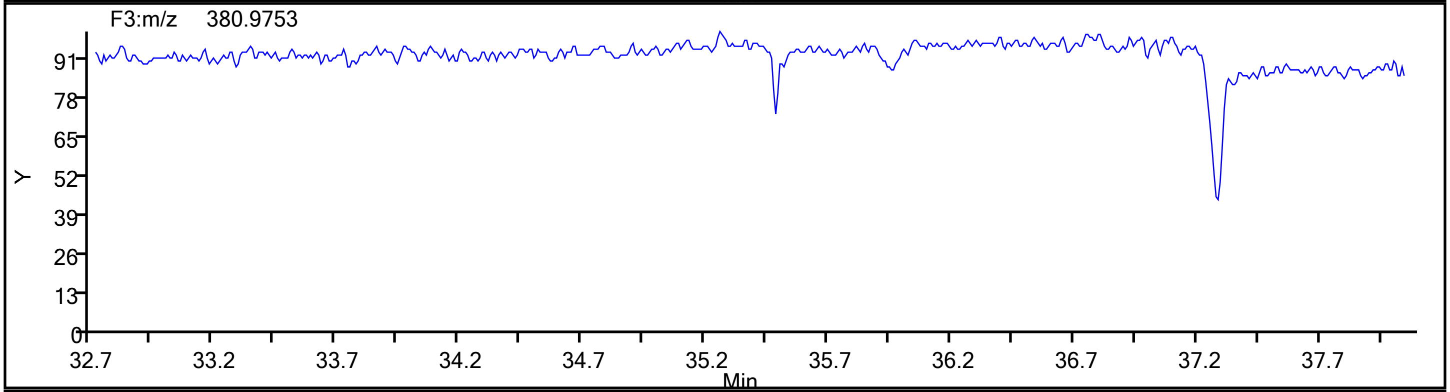

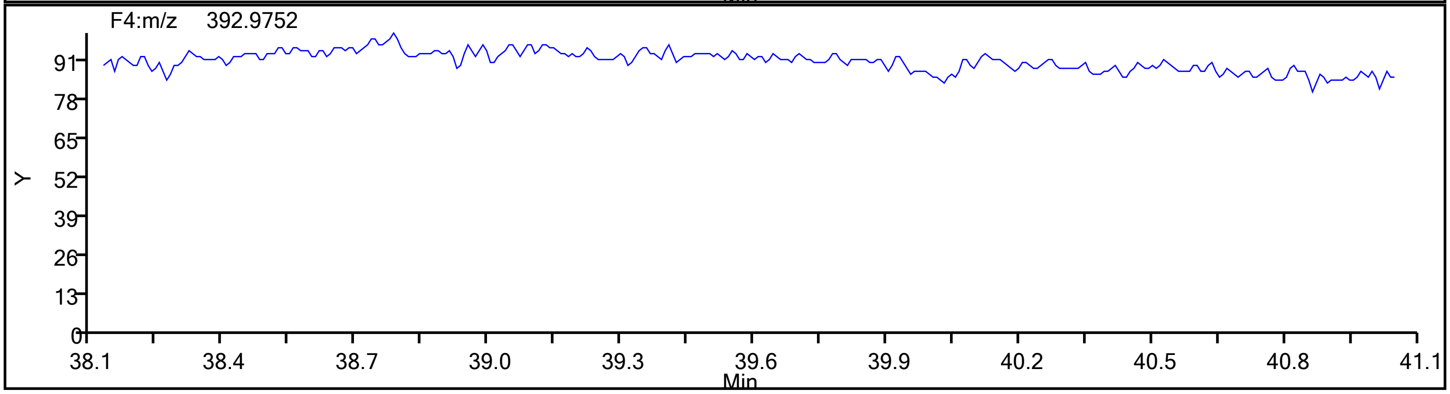

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_8.d

Injection Date: 24-Sep-2021 16:19:00
Injection Vol: 1.0 ul

Instrument ID: DFS 1
Operator ID: Xcalibur_System

Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108
Sample Line#: 7

Column Type: DB-5
Column Dia: 0.32 mm

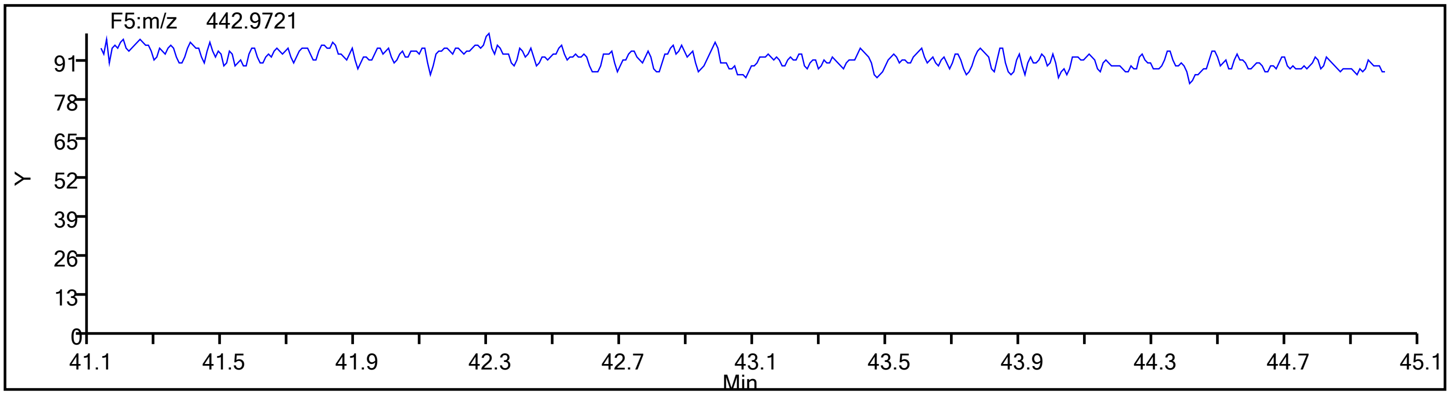

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 24-Sep-2021 17:07:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS6_HRDXNL6_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:17:44 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 25-Sep-2021 14:08:28

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.553	16990344	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.557	21593614	0.82	1.2244	103.8	103.8	0.2993	0.2993	104	
2,3,7,8-TCDF	20.591	45301306	0.80	1.1194	187.4	187.4	0.3382	0.3382	93.70	
S Total TCDF					187.4	187.4	0.3382	0.3382		
D 13C-2,3,7,8-TCDD	21.939	14477445	0.83	0.8210	103.8	103.8	0.2144	0.2144	104	
2,3,7,8-TCDD	21.974	29833225	0.80	1.0943	188.3	188.3	0.1829	0.1829	94.16	
$ 37Cl4-2,3,7,8-TCDD	21.974	29438147		0.8658	200.1	200.1	0.1227	0.1227	100	
S Total TCDD					188.3	188.3	0.1829	0.1829		
D 13C-1,2,3,7,8-PeCDF	27.456	20333017	1.58	1.1026	108.5	108.5	0.5027	0.5027	109	
1,2,3,7,8-PeCDF	27.481	224591956	1.65	1.0920	1011.5	1011.5	3.256	3.256	101	
D 13C-2,3,4,7,8-PeCDF	28.989	24919348	1.57	1.3454	109.0	109.0	0.4120	0.4120	109	
2,3,4,7,8-PeCDF	29.023	222789374	1.63	0.8752	1021.5	1021.5	3.480	3.480	102	
S Total PeCDF					2033.1	2033.1	3.368	3.368		
D 13C-1,2,3,7,8-PeCDD	29.823	12870820	1.56	0.6987	108.4	108.4	0.1472	0.1472	108	
1,2,3,7,8-PeCDD	29.849	132740314	1.61	1.0594	973.5	973.5	0.9900	0.9900	97.35	
S Total PeCDD					973.5	973.5	0.9900	0.9900		
D 13C-1,2,3,4,7,8-HxCDF	35.078	22750843	0.54	1.1295	101.2	101.2	0.2857	0.2857	101	
1,2,3,4,7,8-HxCDF	35.095	236854508	1.29	0.9737	1069.2	1069.2	3.399	3.399	107	
D 13C-1,2,3,6,7,8-HxCDF	35.238	20861110	0.54	1.0613	98.7	98.7	0.3040	0.3040	98.71	
1,2,3,6,7,8-HxCDF	35.246	271050866	1.29	1.2201	1065.0	1065.0	3.002	3.002	106	
D 13C-2,3,4,6,7,8-HxCDF	36.046	18859777	0.53	0.9480	99.9	99.9	0.3404	0.3404	99.90	
2,3,4,6,7,8-HxCDF	36.055	252099309	1.29	1.2435	1074.9	1074.9	2.974	2.974	107	
D 13C-1,2,3,7,8,9-HxCDF	36.922	17838715	0.54	0.8526	105.1	105.1	0.3785	0.3785	105	
1,2,3,7,8,9-HxCDF	36.930	239003645	1.30	1.2454	1075.8	1075.8	2.882	2.882	108	
S Total HxCDF					4284.9	4284.9	3.064	3.064		
* 13C-1,2,3,7,8,9-HxCDD	36.728	19913076	1.27	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.248	16359900	1.28	0.8312	98.8	98.8	0.1984	0.1984	98.84	
1,2,3,4,7,8-HxCDD	36.265	152902170	1.28	0.9085	1028.7	1028.7	1.179	1.179	103	
D 13C-1,2,3,6,7,8-HxCDD	36.366	14896294	1.26	0.7550	99.1	99.1	0.2184	0.2184	99.09	
1,2,3,6,7,8-HxCDD	36.383	155916515	1.28	1.0279	1018.3	1018.3	1.173	1.173	102	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,7,8,9-HxCDD	36.737	168570347	1.27	1.0268	1050.5	1050.5	1.105	1.105	105	
S Total HxCDD					3097.5	3097.5	1.153	1.153		
D 13C-1,2,3,4,6,7,8-HpCDF	38.711	12626397	0.48	0.6190	102.4	102.4	0.2330	0.2330	102	
1,2,3,4,6,7,8-HpCDF	38.728	216089136	1.04	1.5851	1079.7	1079.7	2.650	2.650	108	
D 13C-1,2,3,4,7,8,9-HpCDF	39.958	14011940	0.47	0.6516	108.0	108.0	0.2214	0.2214	108	
1,2,3,4,7,8,9-HpCDF	39.966	173303287	1.05	1.1597	1066.5	1066.5	2.992	2.992	107	
S Total HpCDF					2146.2	2146.2	2.821	2.821		
D 13C-1,2,3,4,6,7,8-HpCDD	39.655	11100268	1.07	0.5362	104.0	104.0	0.3012	0.3012	104	
1,2,3,4,6,7,8-HpCDD	39.663	122709391	1.05	1.0819	1021.7	1021.7	1.877	1.877	102	
S Total HpCDD					1021.7	1021.7	1.877	1.877		
D 13C-OCDD	42.152	17567983	0.91	0.3802	232.1	232.1	0.2259	0.2259	116	
OCDF	42.253	316765766	0.88	1.5094	2389.1	2389.1	0.6389	0.6389	119	
OCDD	42.168	214177640	0.87	1.1344	2149.4	2149.4	0.7407	0.7407	107	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00030 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 24-Sep-2021 17:07:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: IC CS6_HRDXNL6_00030
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:17:44 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 25-Sep-2021 14:08:28

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.553	21.567	-1		7606087	1120713	1128	2820	994		
333.9338	21.561	21.567	0		9384257	1368728	625	1562	2190	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.557	20.565	-1	0.954	9710265	1502135	2515	6287	597		
317.9389	20.557	20.565	-1	0.954	11883349	1794140	1134	2835	1582	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.591	20.598	0	1.002	20133964	3038940	2185	5462	1391		
305.8987	20.591	20.598	0	1.002	25167342	3827817	2807	7017	1364	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.939	21.948	-1	1.018	6587182	939801	1128	2820	833		
333.9338	21.948	21.948	0	1.018	7890263	1146073	625	1562	1834	0.83(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.974	21.977	0	1.002	13263598	1869339	833	2082	2244		
321.8936	21.974	21.977	0	1.002	16569627	2352447	837	2092	2811	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.974	21.977	0	1.020	29438147	4256540	1058	2645	4023		
13C-1,2,3,7,8-PeCDF											
351.9000	27.456	27.459	0	1.274	12438888	2082413	3241	8102	643		
353.8970	27.447	27.459	-1	1.274	7894129	1329688	2279	5697	583	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.481	27.484	0	1.001	139691380	25502918	29759	74397	857		
341.8567	27.473	27.484	-1	1.001	84900576	15272922	18771	46927	814	1.65(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.989	28.999	-1	1.345	15233015	2447308	3241	8102	755		
353.8970	28.998	28.999	0	1.345	9686333	1535972	2279	5697	674	1.57(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	29.023	29.026	0	1.001	138152599	23381998	29759	74397	786		
341.8567	29.015	29.026	-1	1.001	84636775	14146987	18771	46927	754	1.63(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.823	29.832	-1	1.384	7850794	1209982	603	1507	2007		
369.8919	29.823	29.832	-1	1.384	5020026	741474	421	1052	1761	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.849	29.859	-1	1.001	81886430	13027792	5225	13062	2493		
357.8516	29.849	29.859	-1	1.001	50853884	8005586	2962	7405	2703	1.61(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.078	35.084	0	0.955	7962319	1880492	2430	6075	774		
385.8610	35.078	35.084	0	0.955	14788524	3582613	4659	11647	769	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.095	35.101	0	1.000	133271345	35066947	40459	101147	867		
375.8178	35.086	35.101	-1	1.000	103583163	26943386	31854	79635	846	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.238	35.244	0	0.959	7322118	1714312	2430	6075	705		
385.8610	35.229	35.244	-1	0.959	13538992	3221708	4659	11647	692	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.246	35.259	-1	1.000	152636156	39164820	40459	101147	968		
375.8178	35.246	35.259	-1	1.000	118414710	30341016	31854	79635	953	1.29(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.046	36.051	0	0.981	6561586	1705926	2430	6075	702		
385.8610	36.038	36.051	-1	0.981	12298191	3182844	4659	11647	683	0.53(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.055	36.066	-1	1.000	142076237	40785616	40459	101147	1008		
375.8178	36.055	36.066	-1	1.000	110023072	31360768	31854	79635	985	1.29(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.922	36.927	0	1.005	6256260	1774402	2430	6075	730		
385.8610	36.922	36.927	0	1.005	11582455	3261784	4659	11647	700	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.930	36.940	-1	1.000	135088045	42286708	40459	101147	1045		
375.8178	36.930	36.940	-1	1.000	103915600	32373029	31854	79635	1016	1.30(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.728	36.733	0		11139715	3077518	2026	5065	1519		
403.8529	36.728	36.733	0		8773361	2414335	1597	3992	1512	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.248	36.260	-1	0.987	9188077	2535987	2026	5065	1252		
403.8529	36.248	36.260	-1	0.987	7171823	1982757	1597	3992	1242	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.265	36.273	0	1.000	85847601	25003250	10896	27240	2295		
391.8127	36.265	36.273	0	1.000	67054569	19407629	8468	21170	2292	1.28(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.366	36.376	-1	0.990	8293505	2230241	2026	5065	1101		
403.8529	36.366	36.376	-1	0.990	6602789	1783756	1597	3992	1117	1.26(1.05-1.43)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8158	36.383	36.389	0	1.000	87551468	25627167	10896	27240	2352		
391.8127	36.383	36.389	0	1.000	68365047	19871059	8468	21170	2347	1.28(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.737	36.745	0	1.013	94403223	27948414	10896	27240	2565		
391.8127	36.737	36.745	0	1.013	74167124	21890625	8468	21170	2585	1.27(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.711	38.721	-1	1.054	4081508	1351284	1547	3867	873		
419.8220	38.711	38.721	-1	1.054	8544889	2835254	1622	4055	1748	0.48(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.728	38.734	0	1.000	110338471	40148473	36548	91370	1099		
409.7788	38.728	38.734	0	1.000	105750665	37891492	33790	84475	1121	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.958	39.962	0	1.088	4460037	1624862	1547	3867	1050		
419.8220	39.958	39.962	0	1.088	9551903	3443567	1622	4055	2123	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.966	39.970	0	1.000	88649890	34491753	36548	91370	944		
409.7788	39.966	39.970	0	1.000	84653397	33027257	33790	84475	977	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.655	39.661	0	1.080	5725548	2035523	1788	4470	1138		
437.8140	39.655	39.661	0	1.080	5374720	1904703	1760	4400	1082	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7767	39.663	39.671	0	1.000	62798131	23740328	16363	40907	1451		
425.7737	39.663	39.671	0	1.000	59911260	22656556	15639	39097	1449	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.152	42.159	0	1.148	8378622	2613010	1119	2797	2335		
471.7750	42.160	42.159	0	1.148	9189361	2875859	768	1920	3745	0.91(0.76-1.02)	
OCDF											
441.7428	42.253	42.255	0	1.002	148306806	51084029	5078	12695	10060		
443.7399	42.253	42.255	0	1.002	168458960	59317274	5508	13770	10769	0.88(0.76-1.02)	
OCDD											
457.7377	42.168	42.169	0	1.000	99411662	33969619	4356	10890	7798		
459.7348	42.168	42.169	0	1.000	114765978	39348296	4868	12170	8083	0.87(0.76-1.02)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNL6_00030 Amount Added: 1.00 Units: uL

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
Injection Date:	24-Sep-2021 17:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

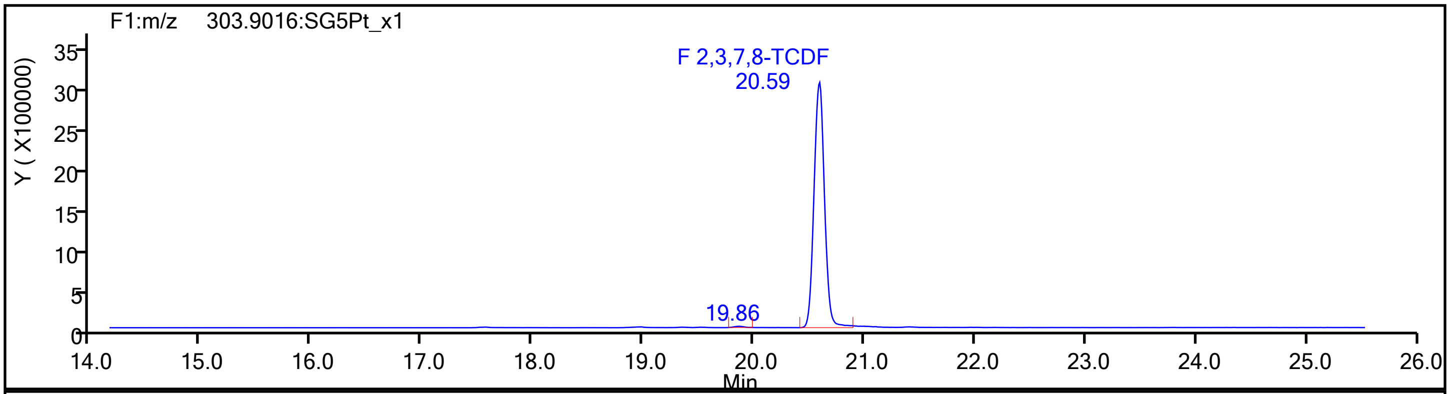

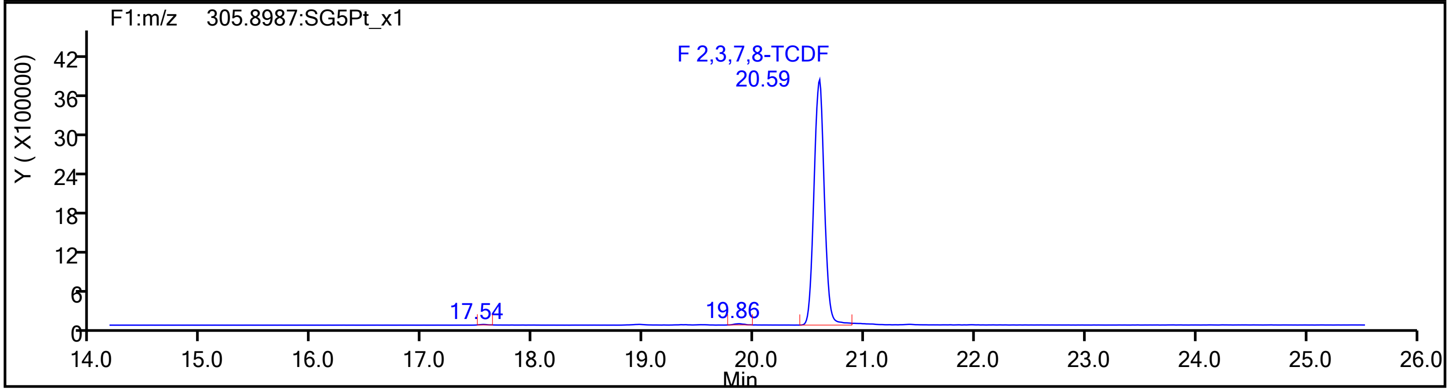

TCDF Standards

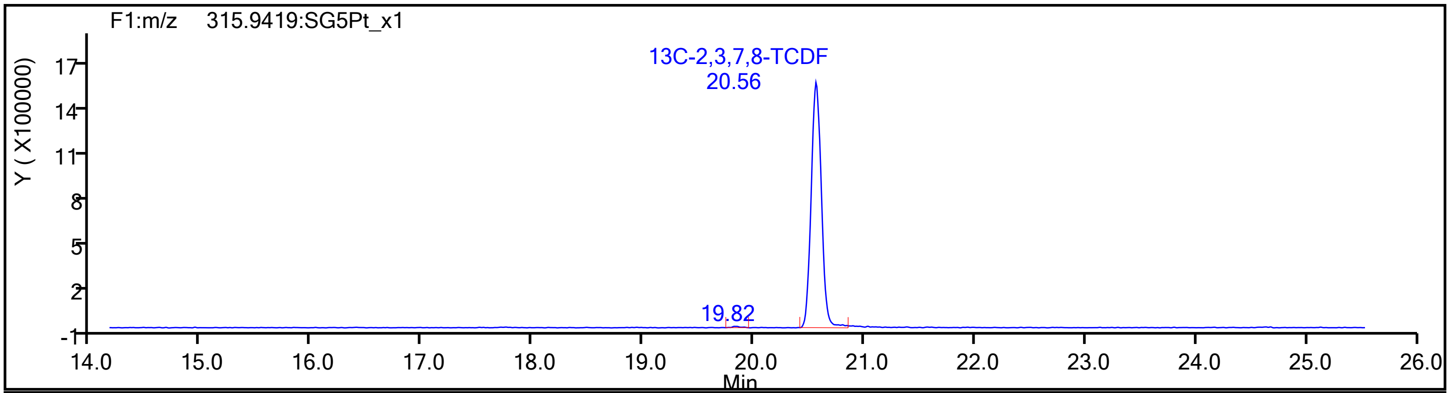

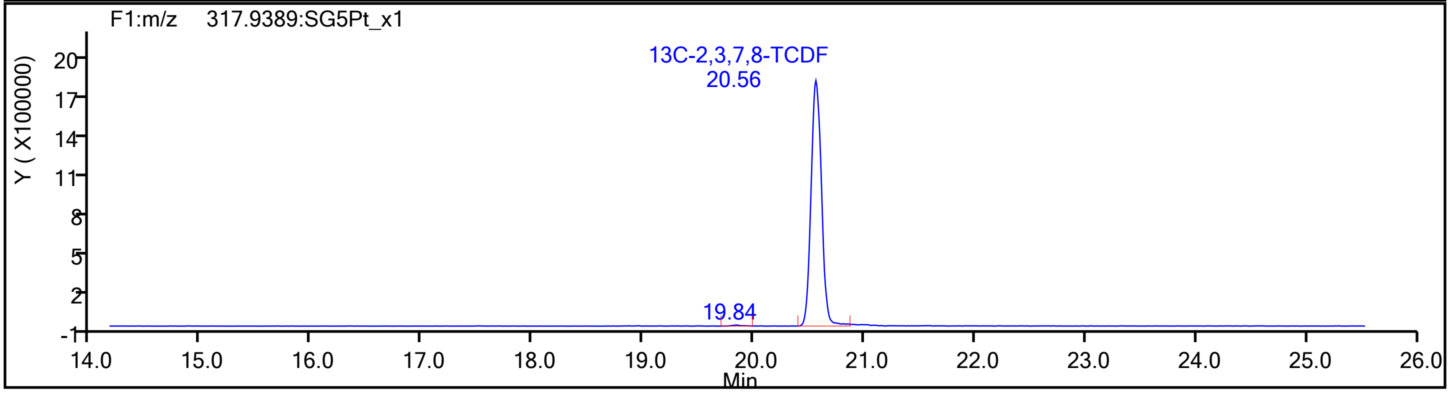

Report Date: 25-Sep-2021 14:17:46 Chrom Revision: 2.3 13-May-2021 07:57:40

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Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

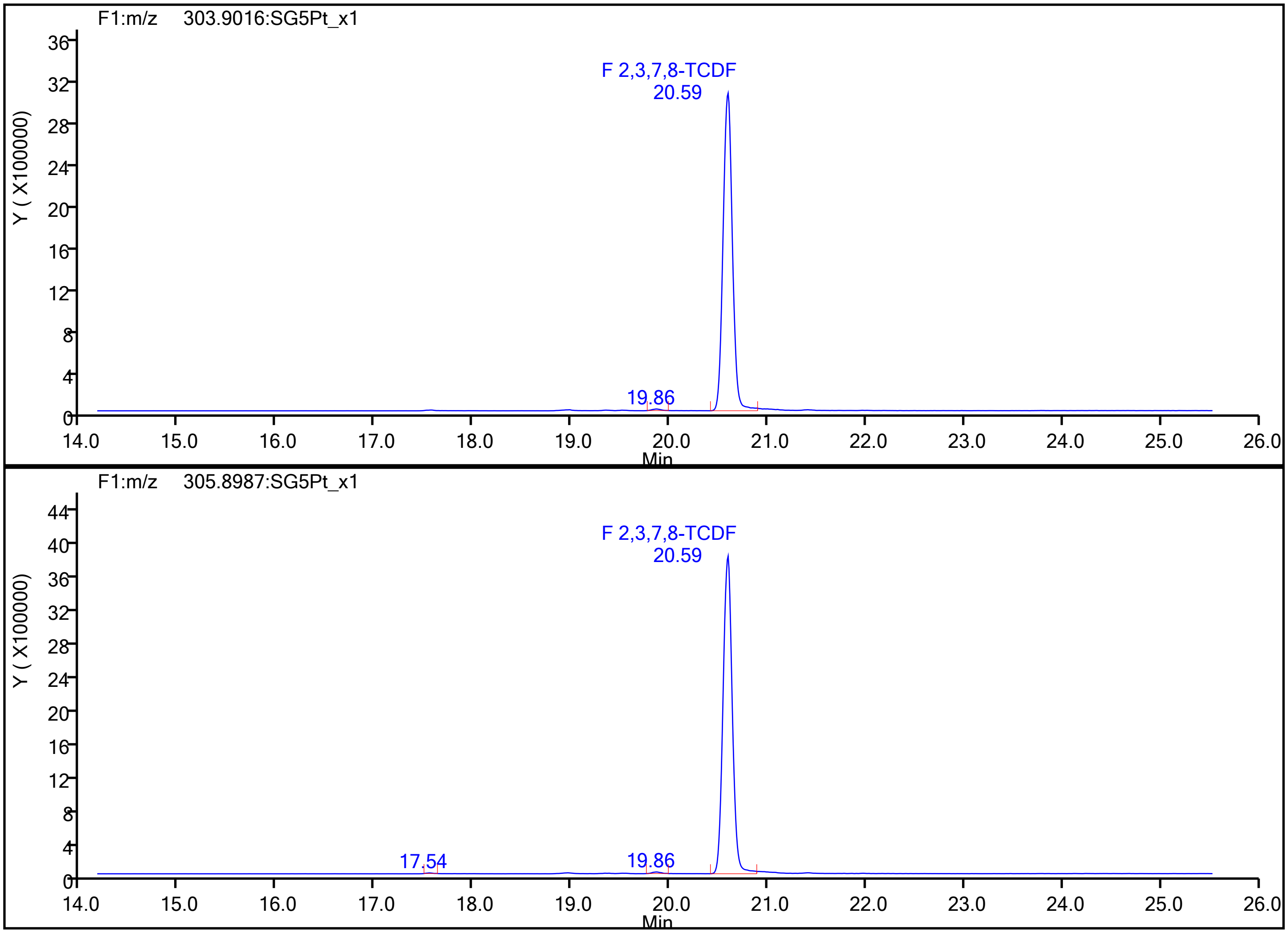

TCDF Interference Mass

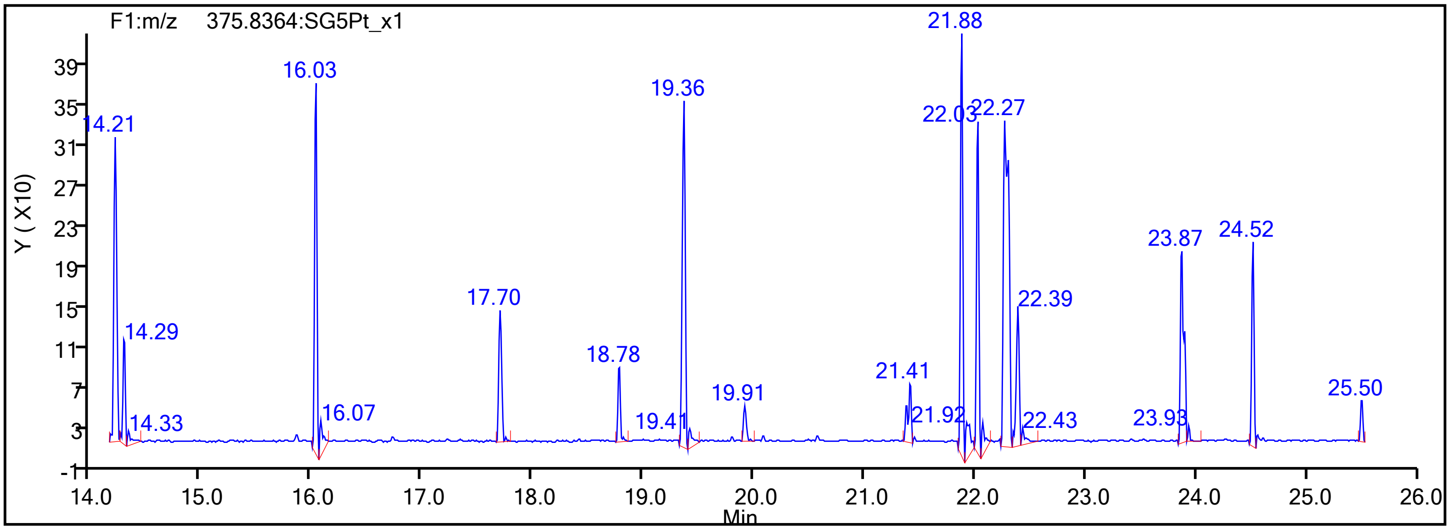

Report Date: 25-Sep-2021 14:17:46　　Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

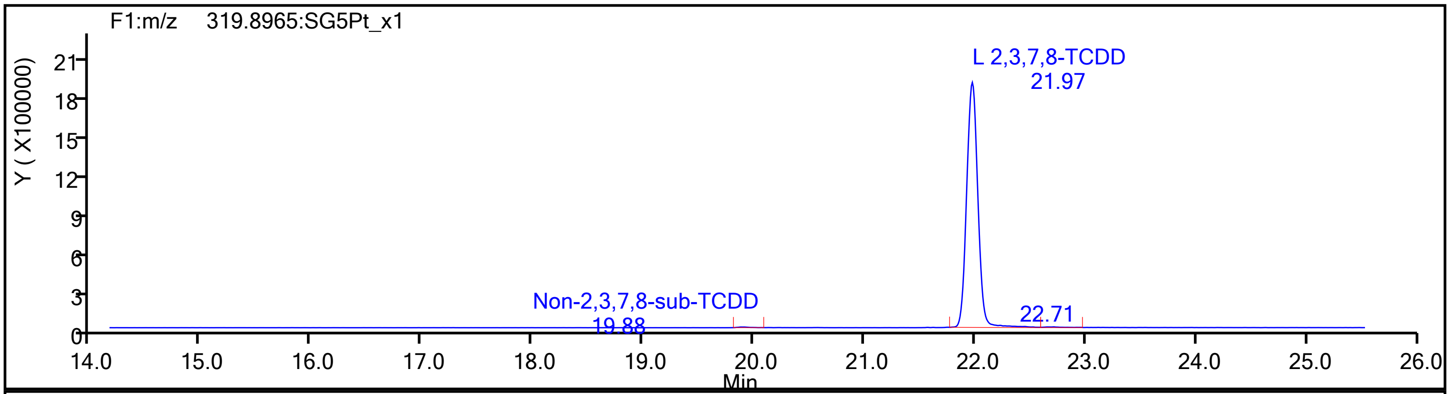

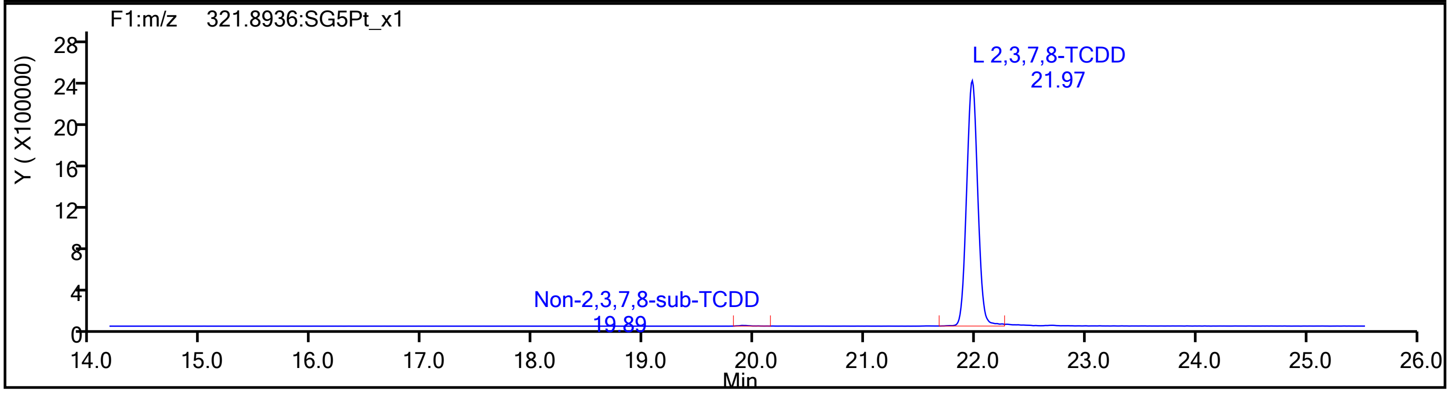

TCDD Standards

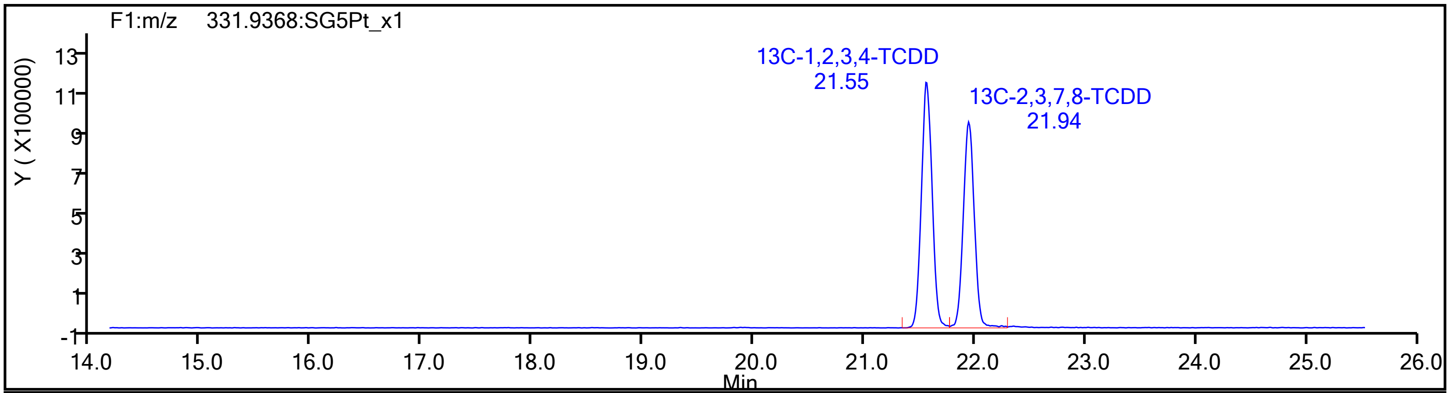

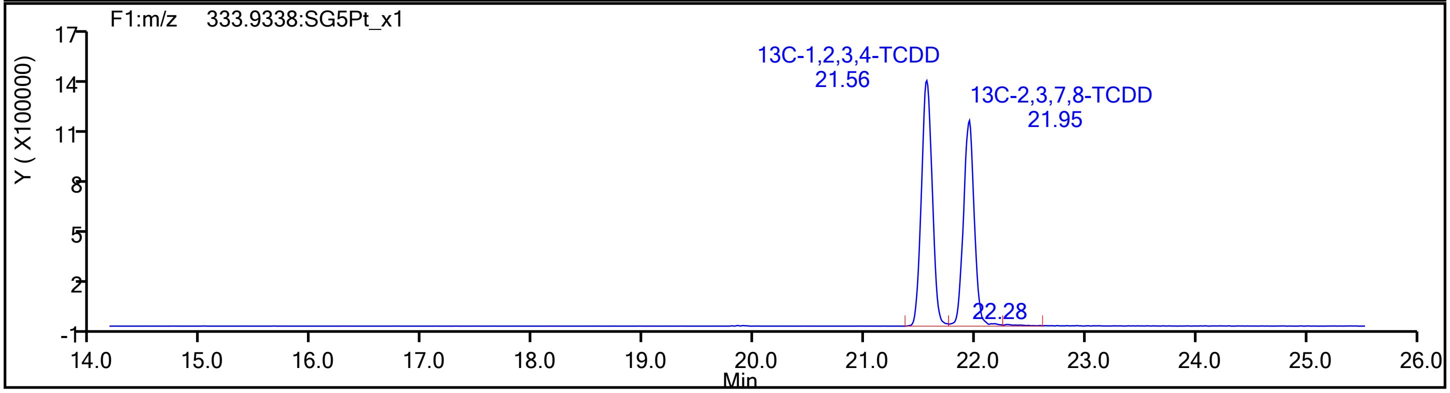

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d
Injection Date: 24-Sep-2021 17:07:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

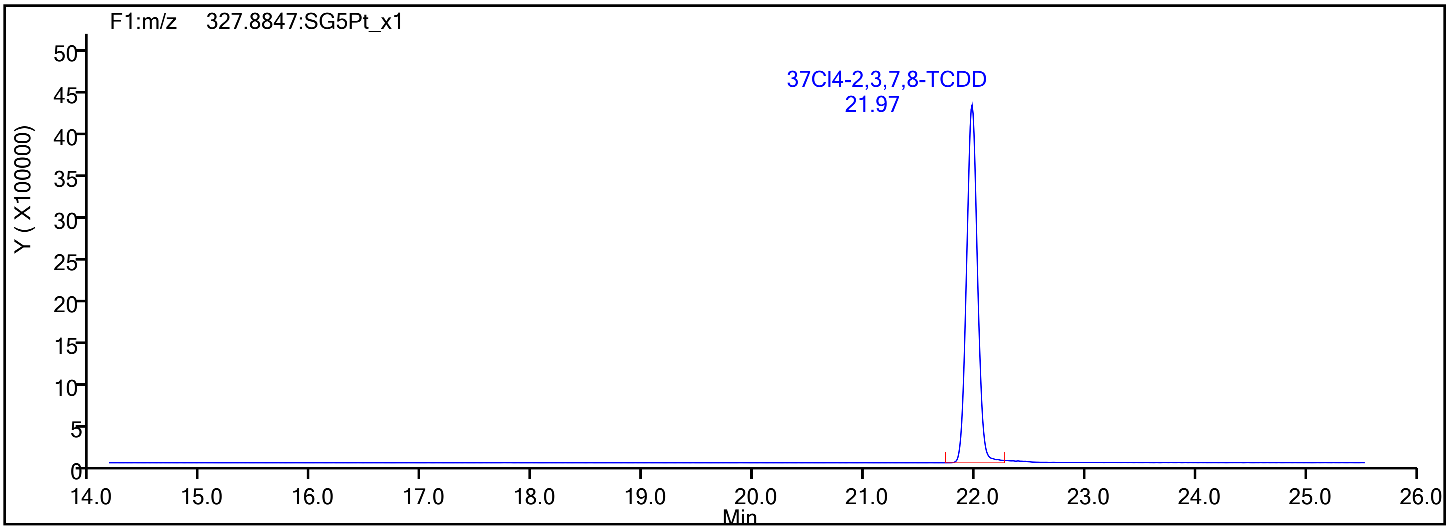

37Cl4-TCDD Standards

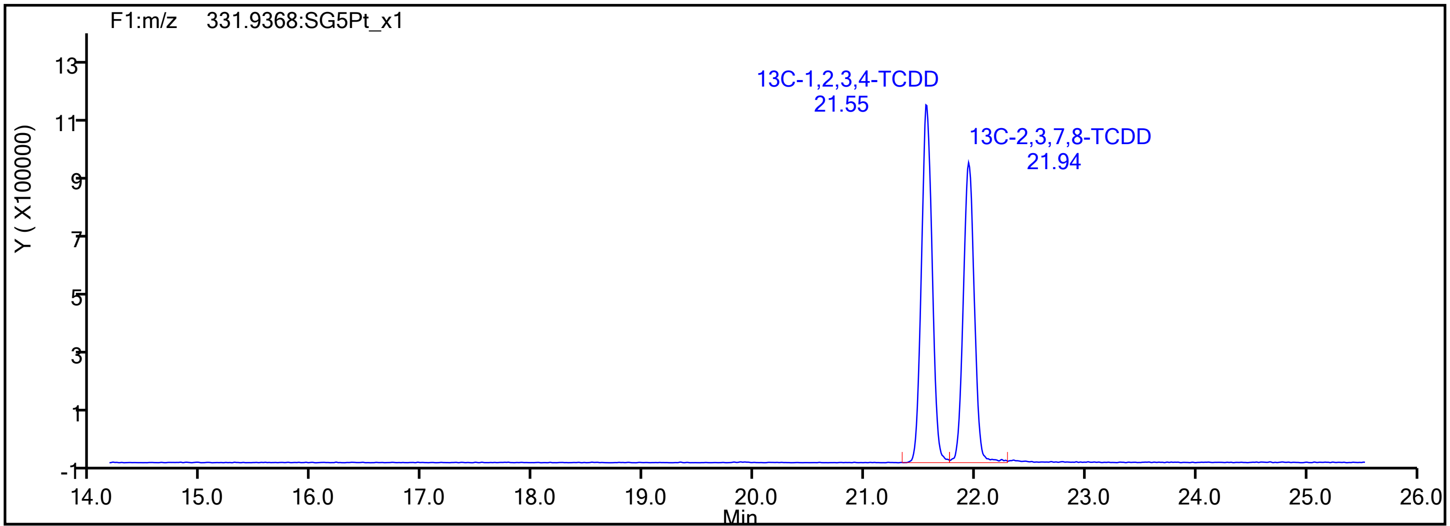

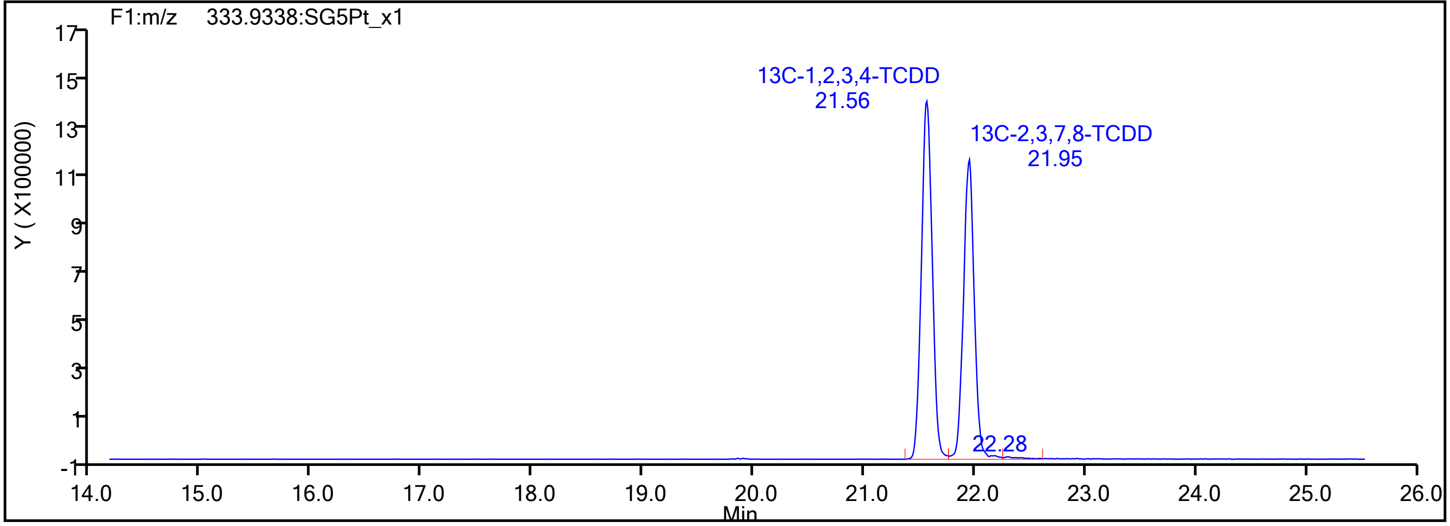

Report Date: 25-Sep-2021 14:17:47		Chrom Revision: 2.3 13-May-2021 07:57:40	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

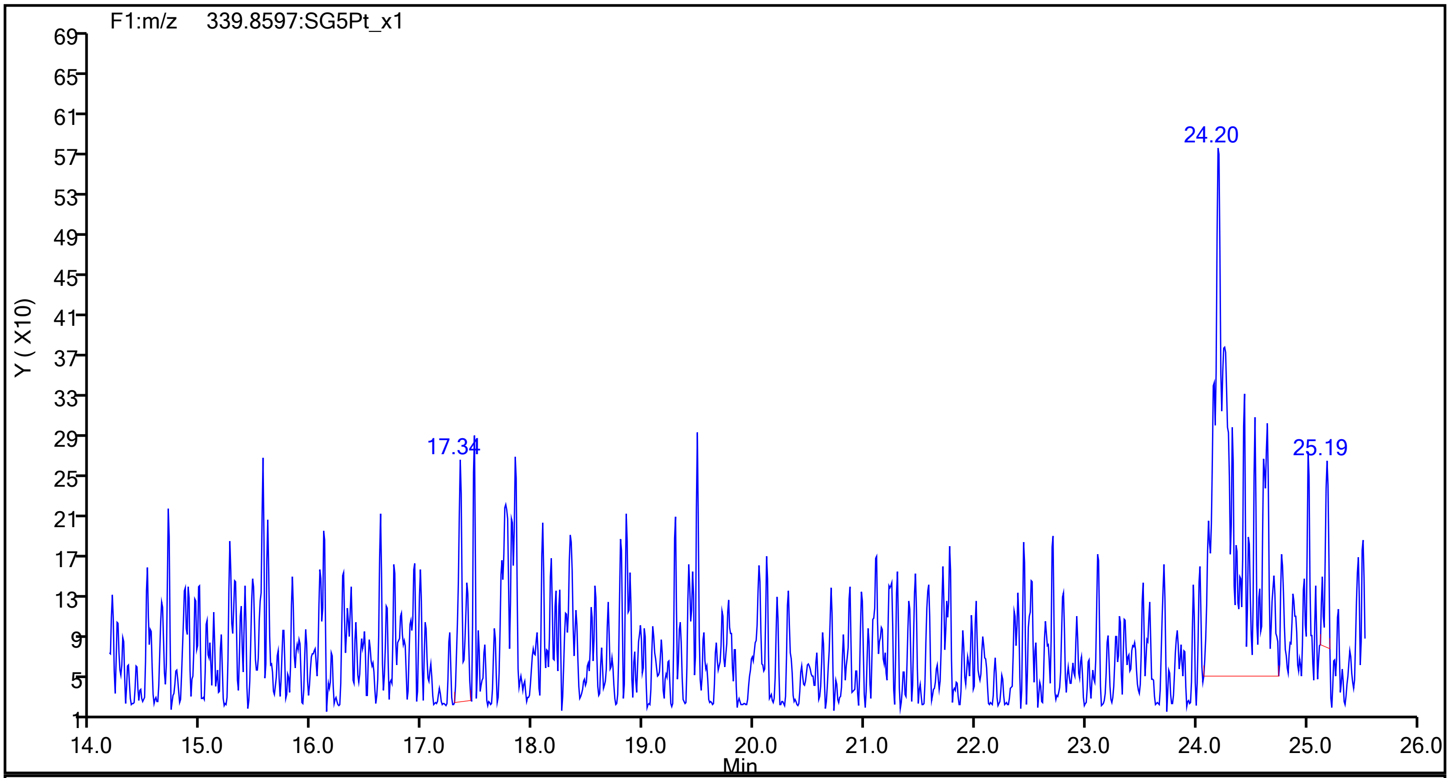

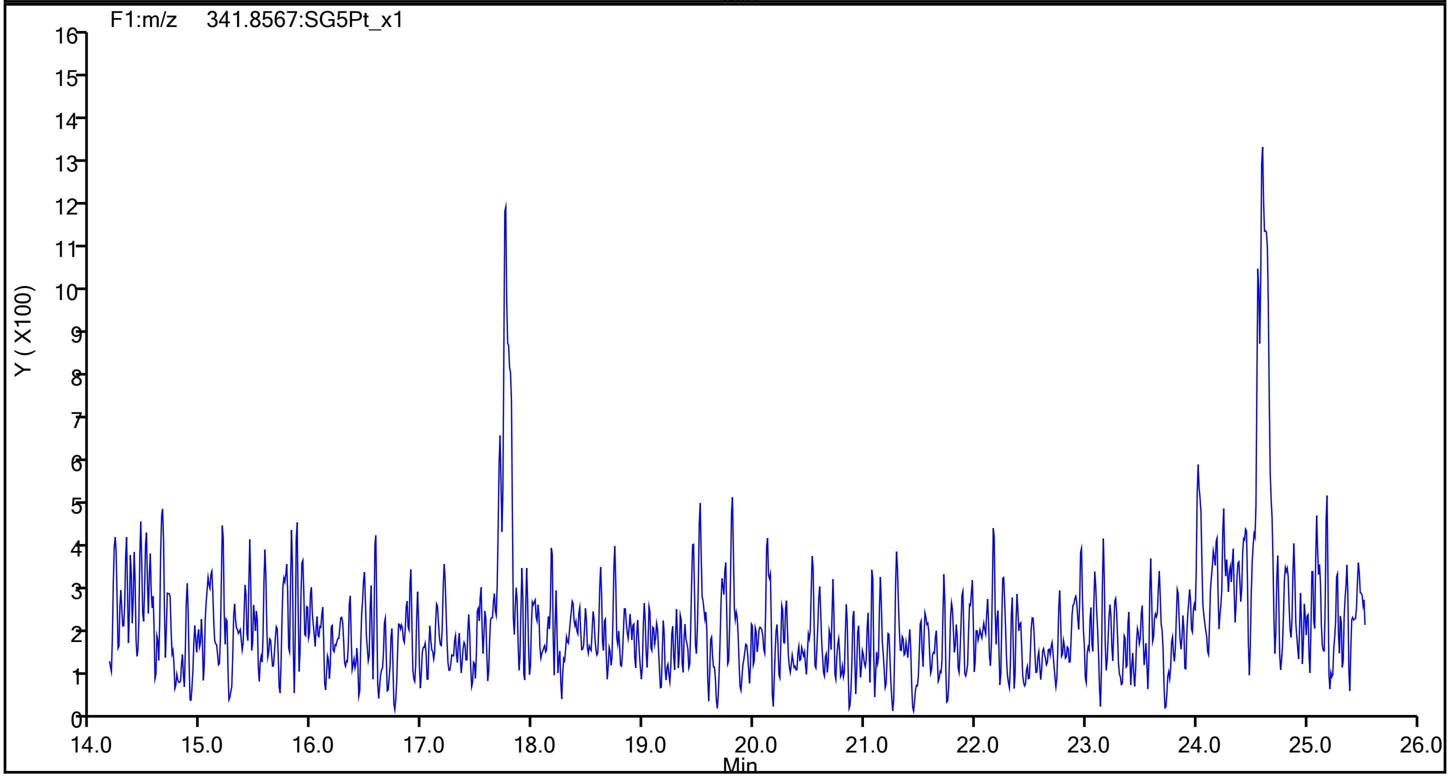

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

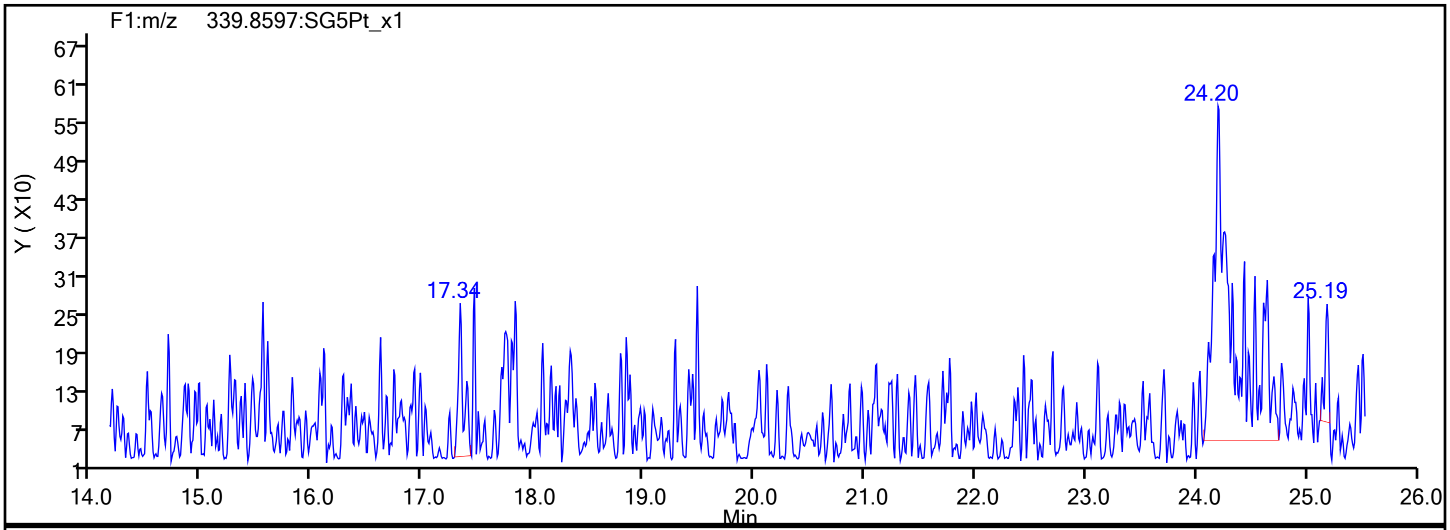

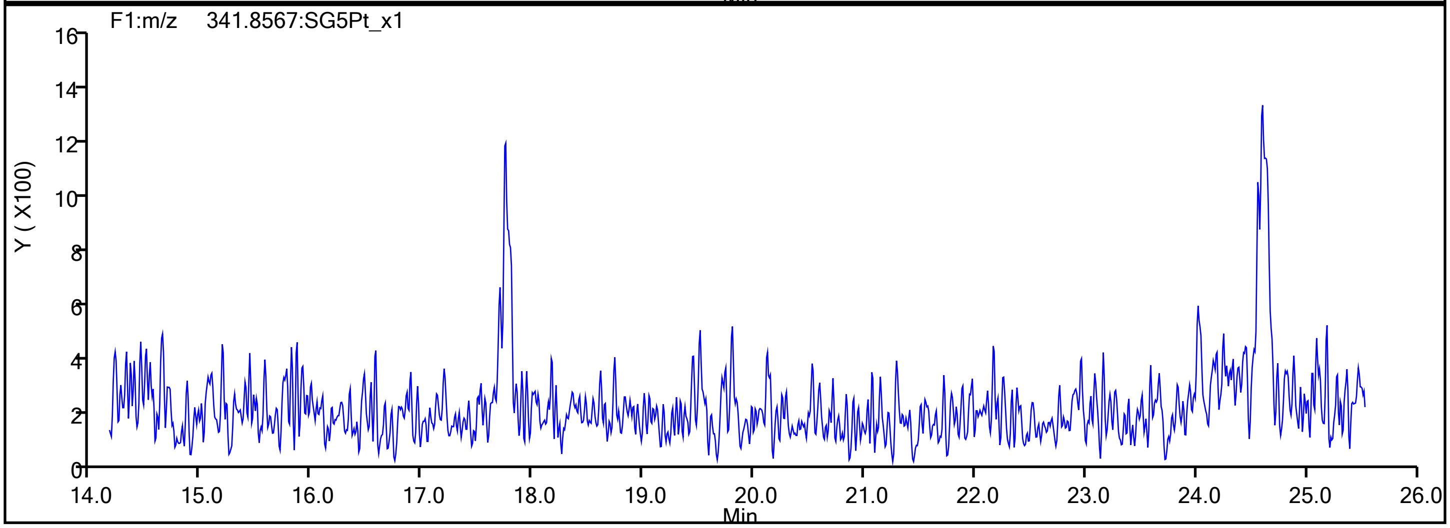

F1 PeCDFs Interference Mass

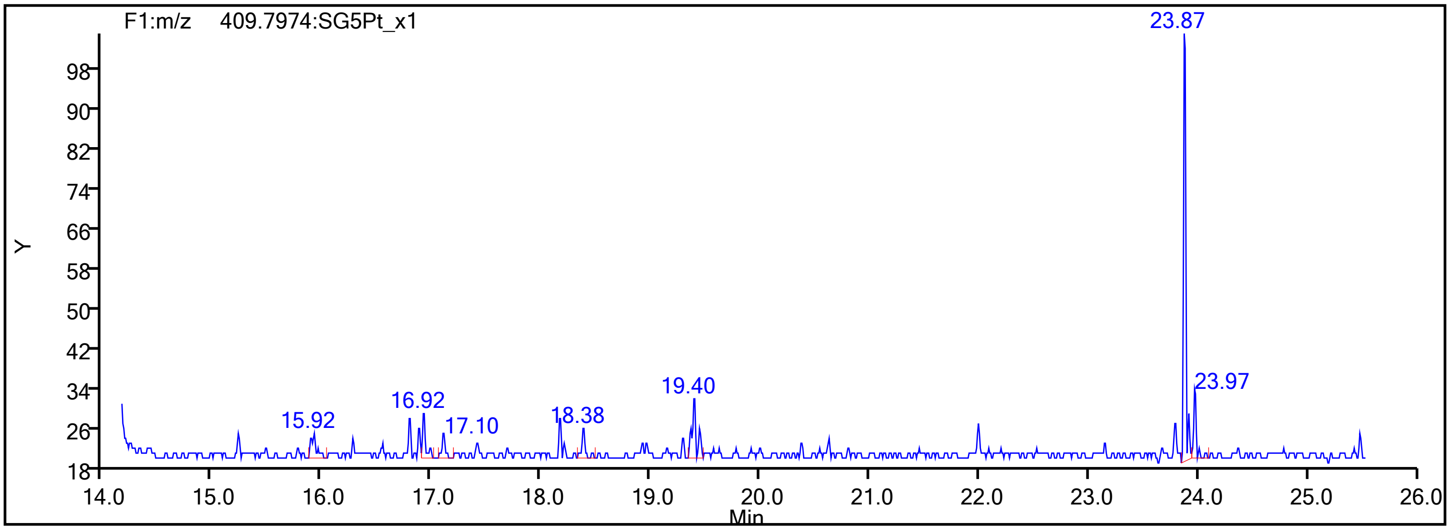

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

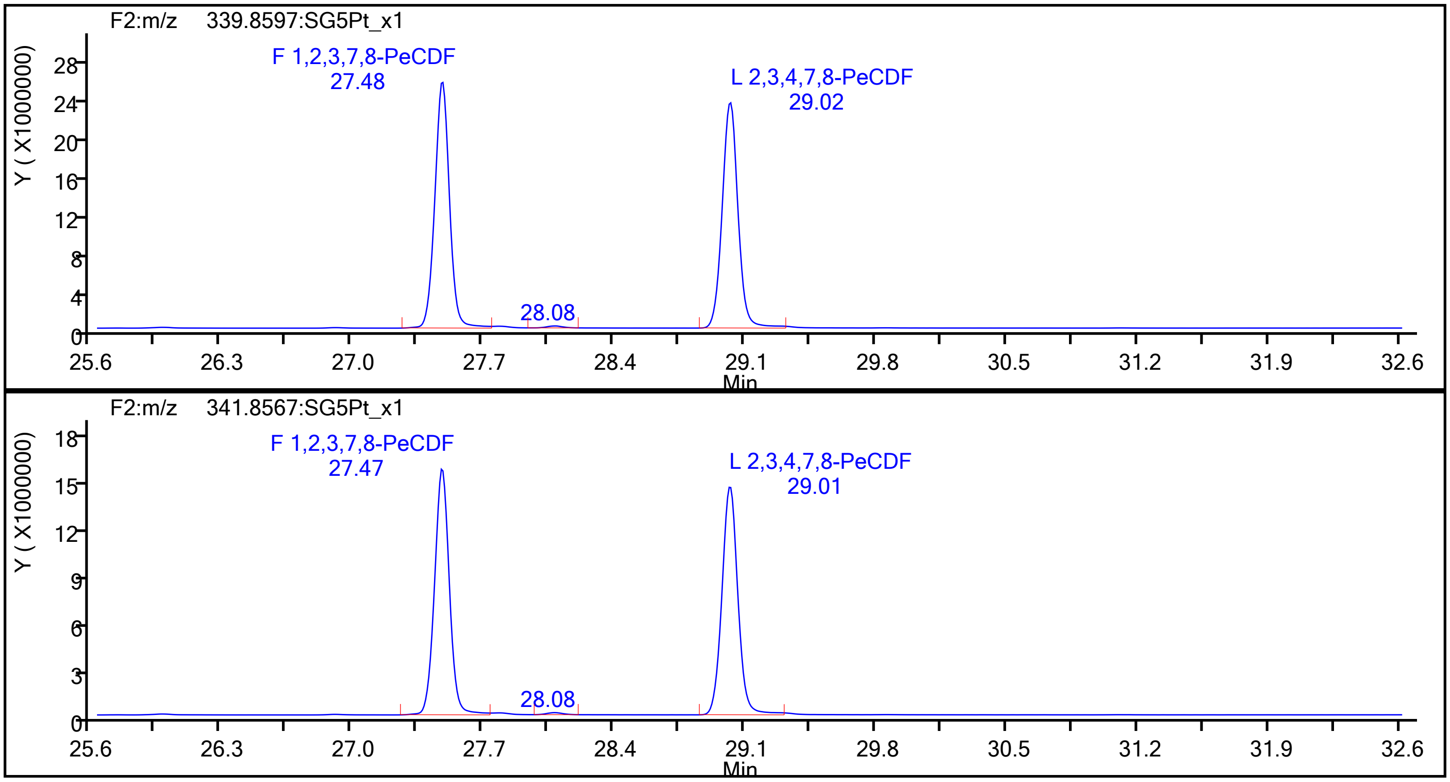

PeCDF Standards

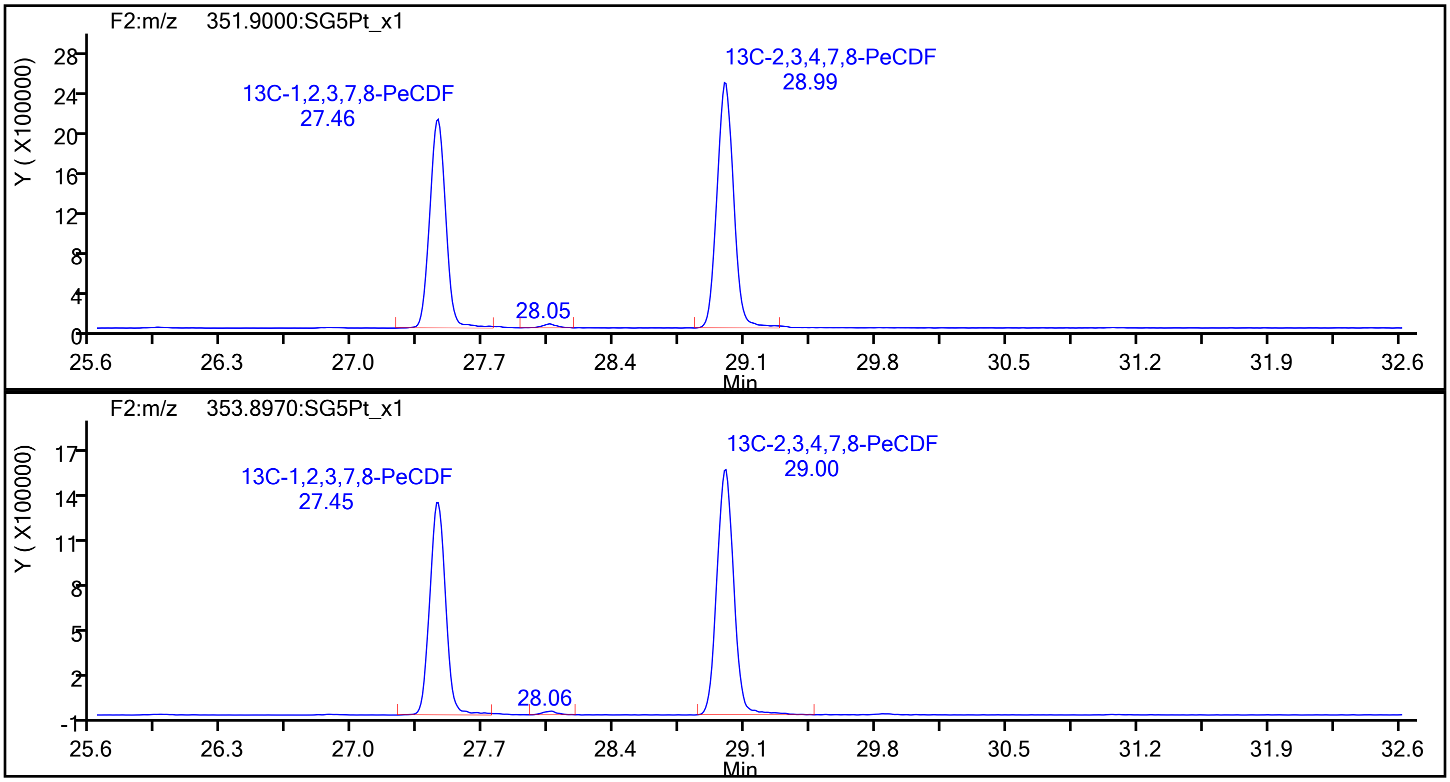

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

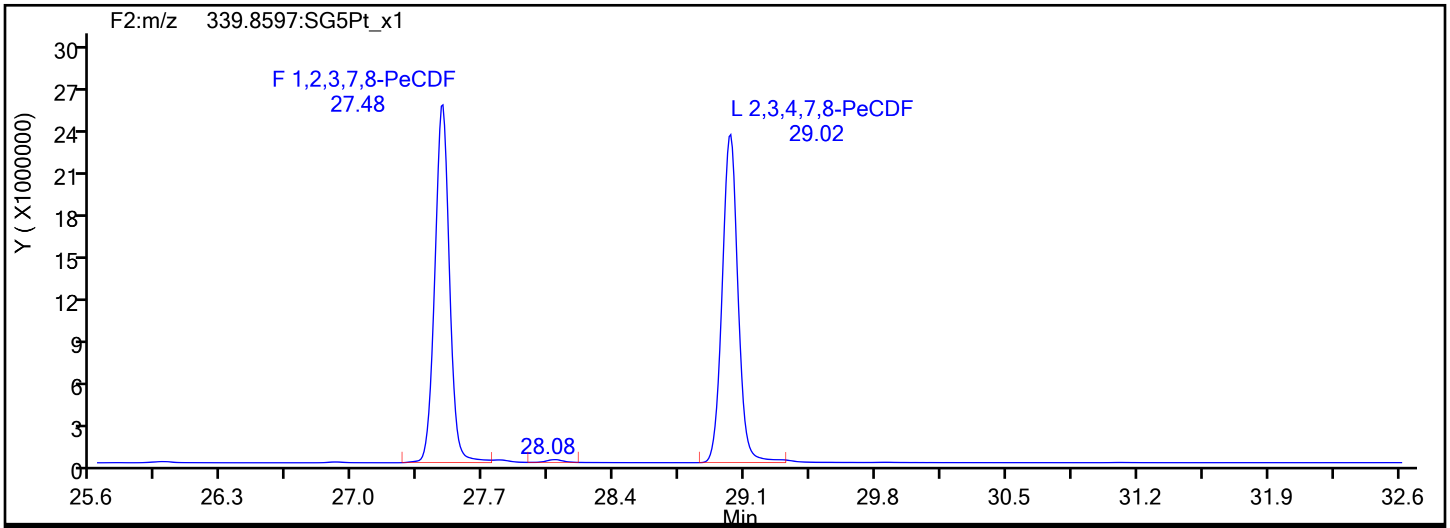

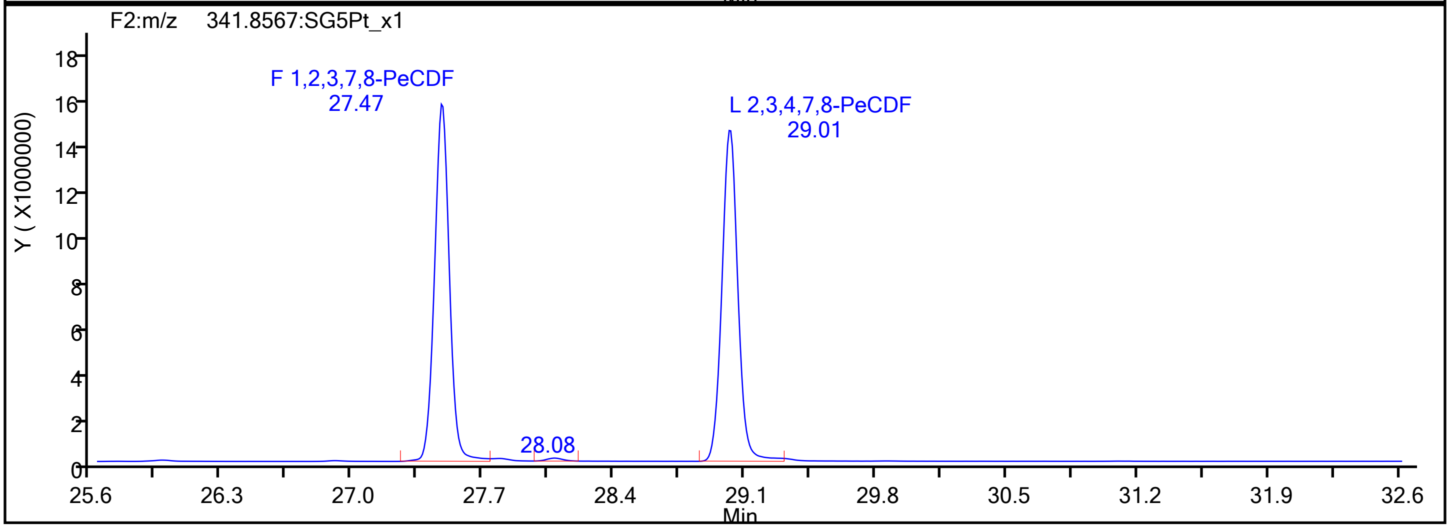

PeCDF Interference Mass

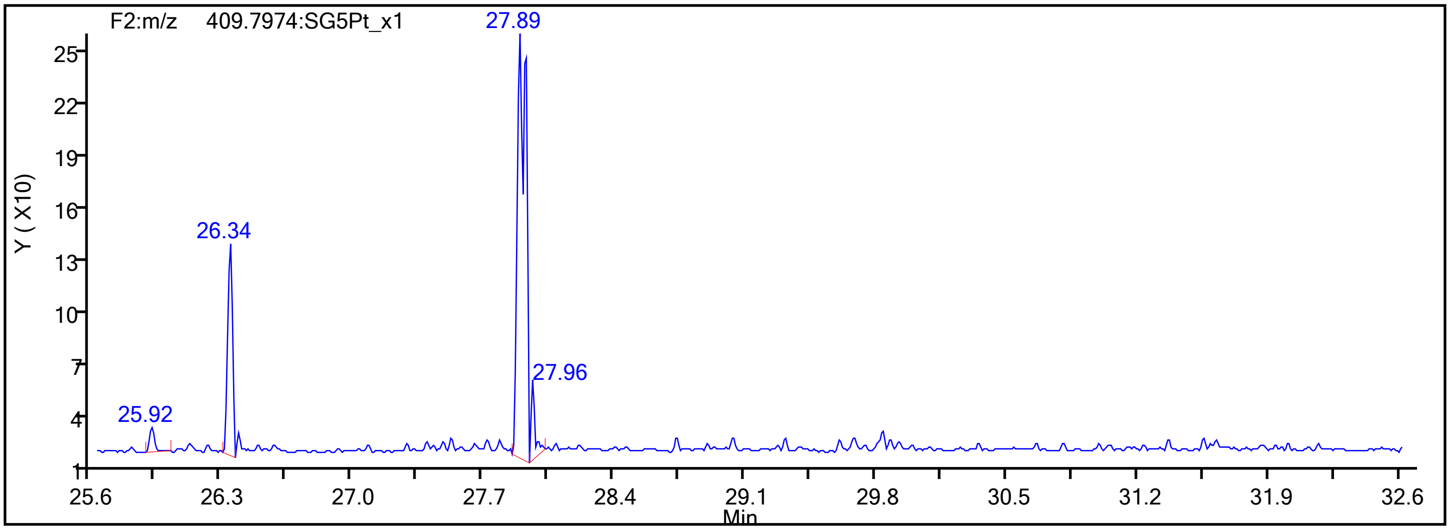

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d
Injection Date: 24-Sep-2021 17:07:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

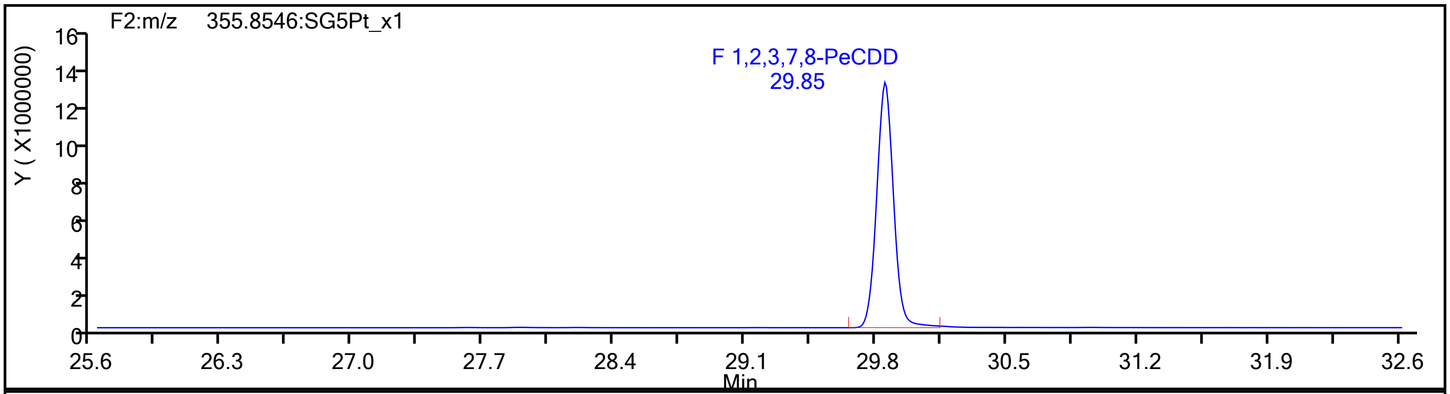

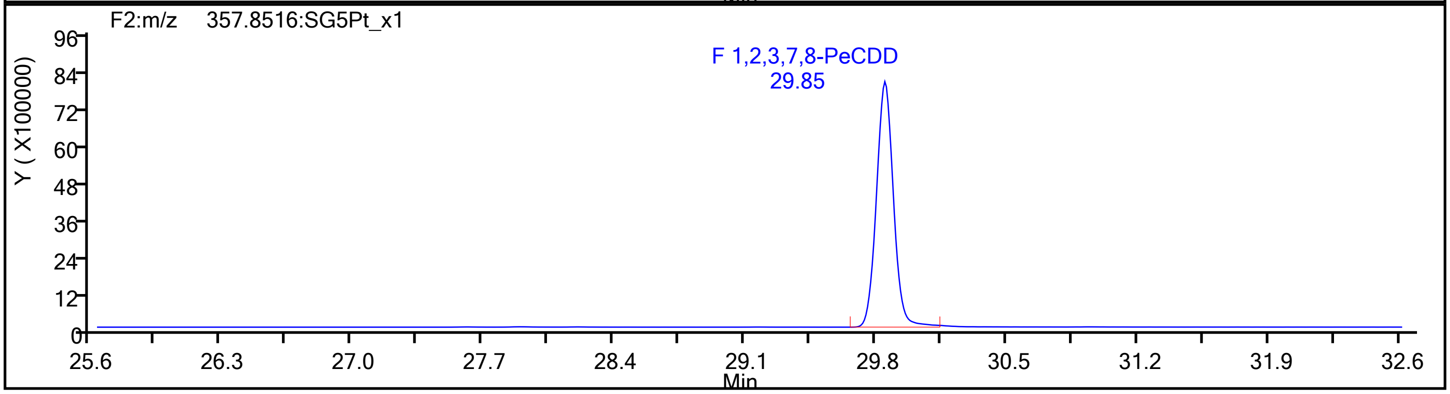

PeCDD Standards

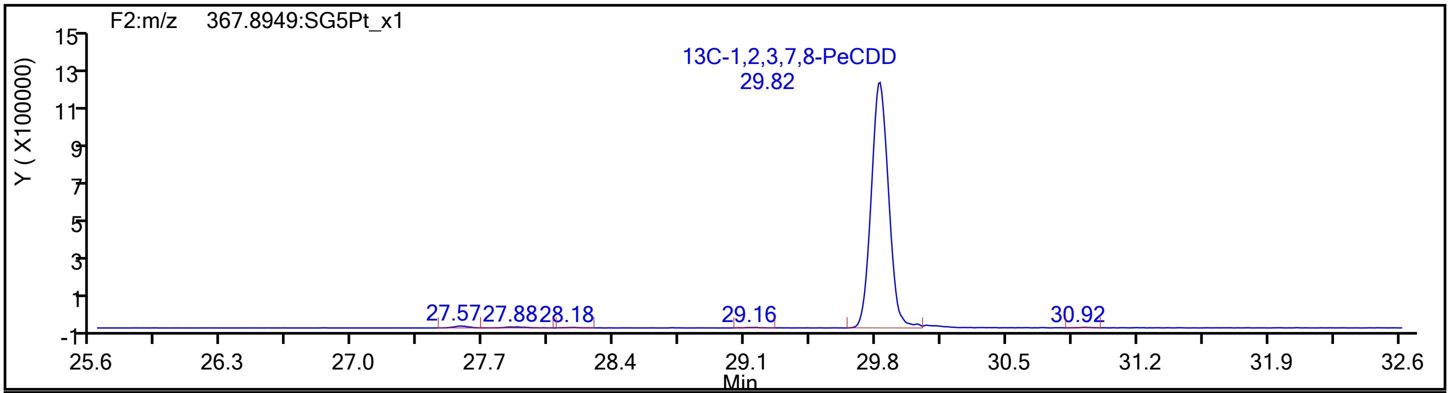

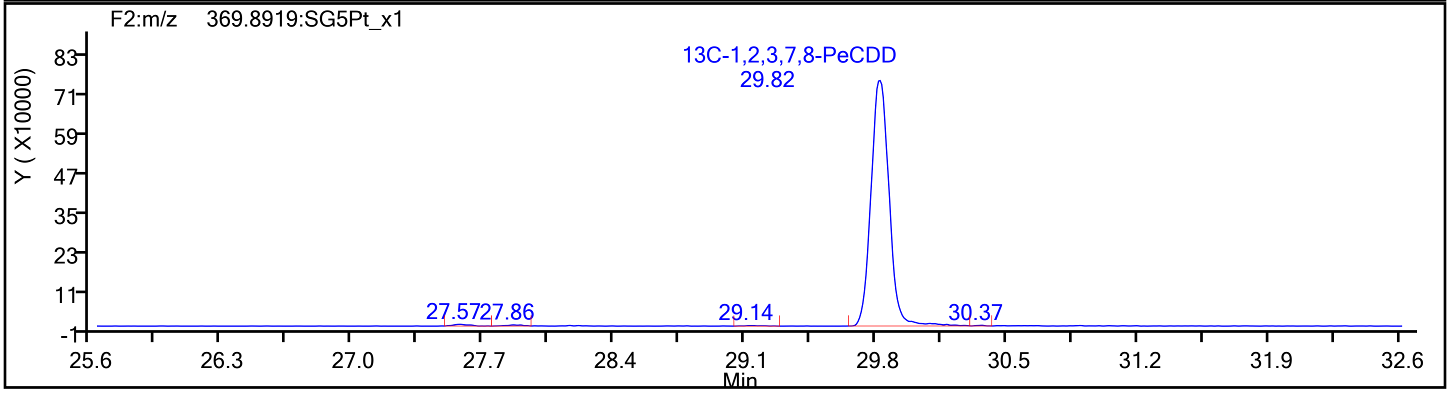

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d
Injection Date: 24-Sep-2021 17:07:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

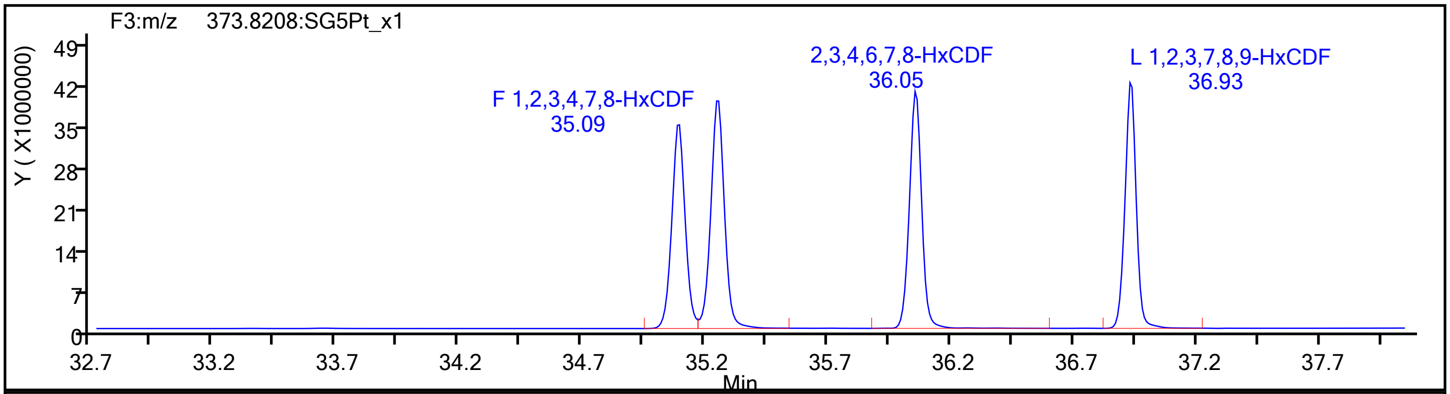

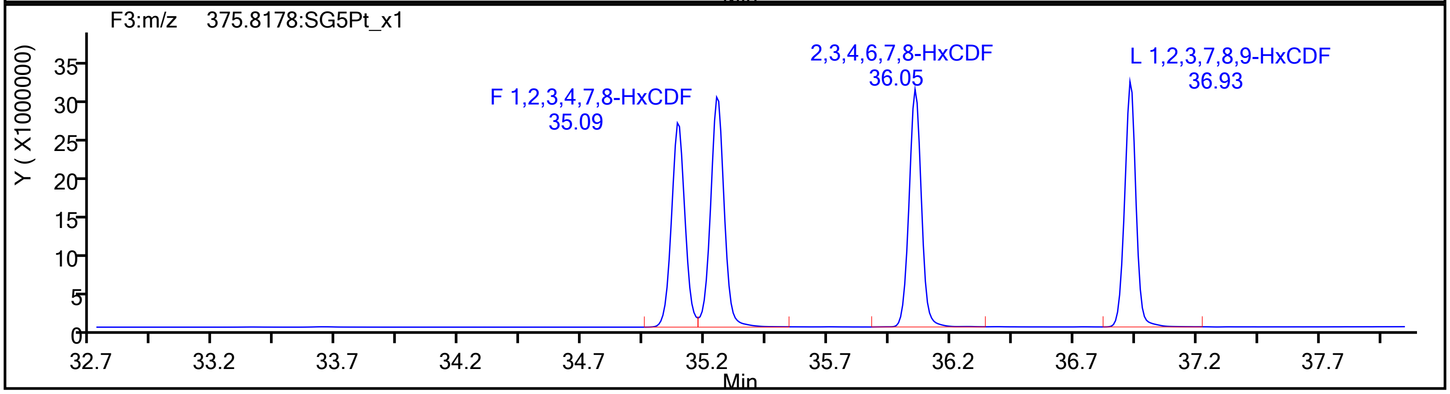

HxCDF Standards

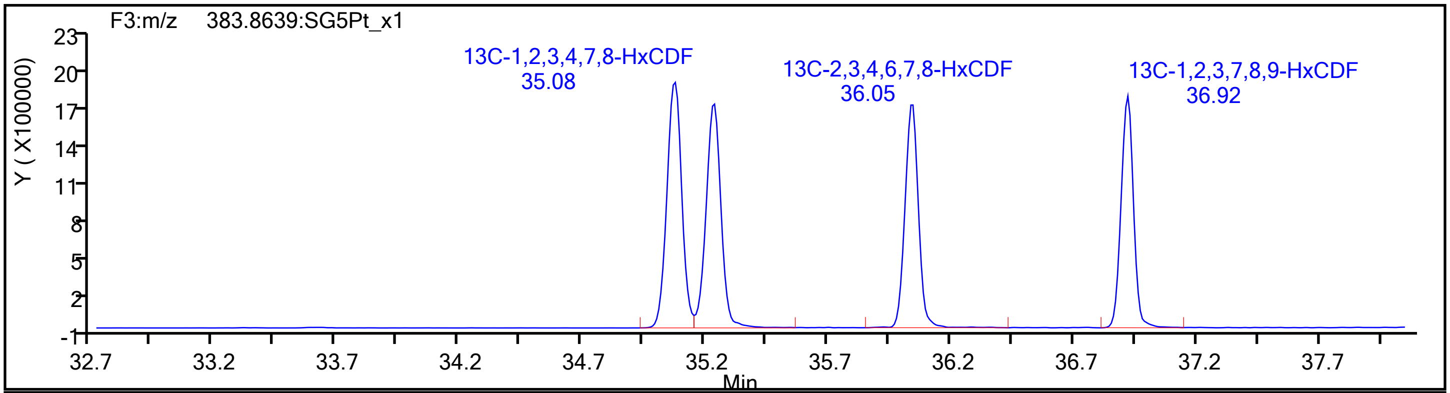

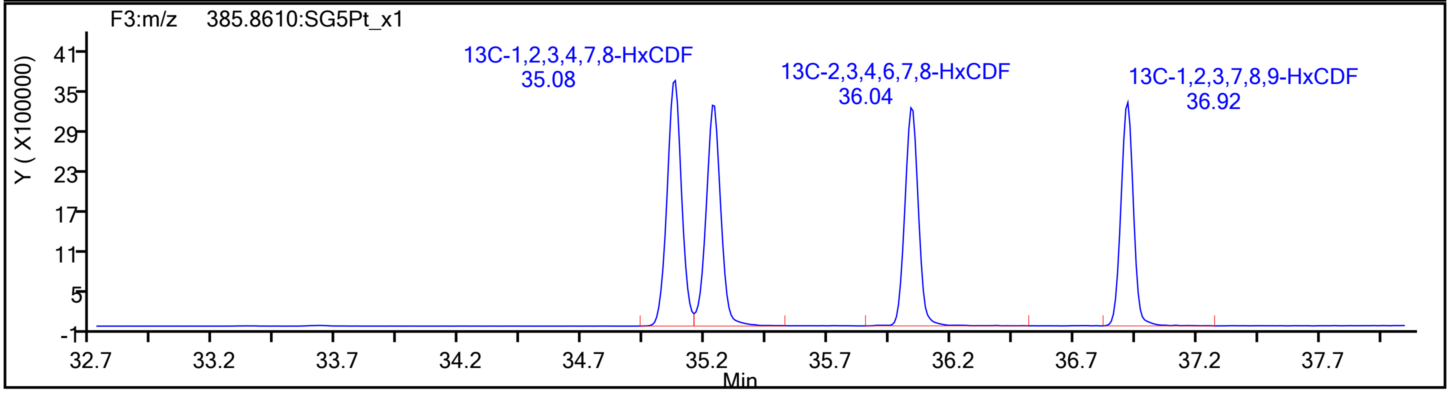

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Injection Date:	24-Sep-2021 17:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

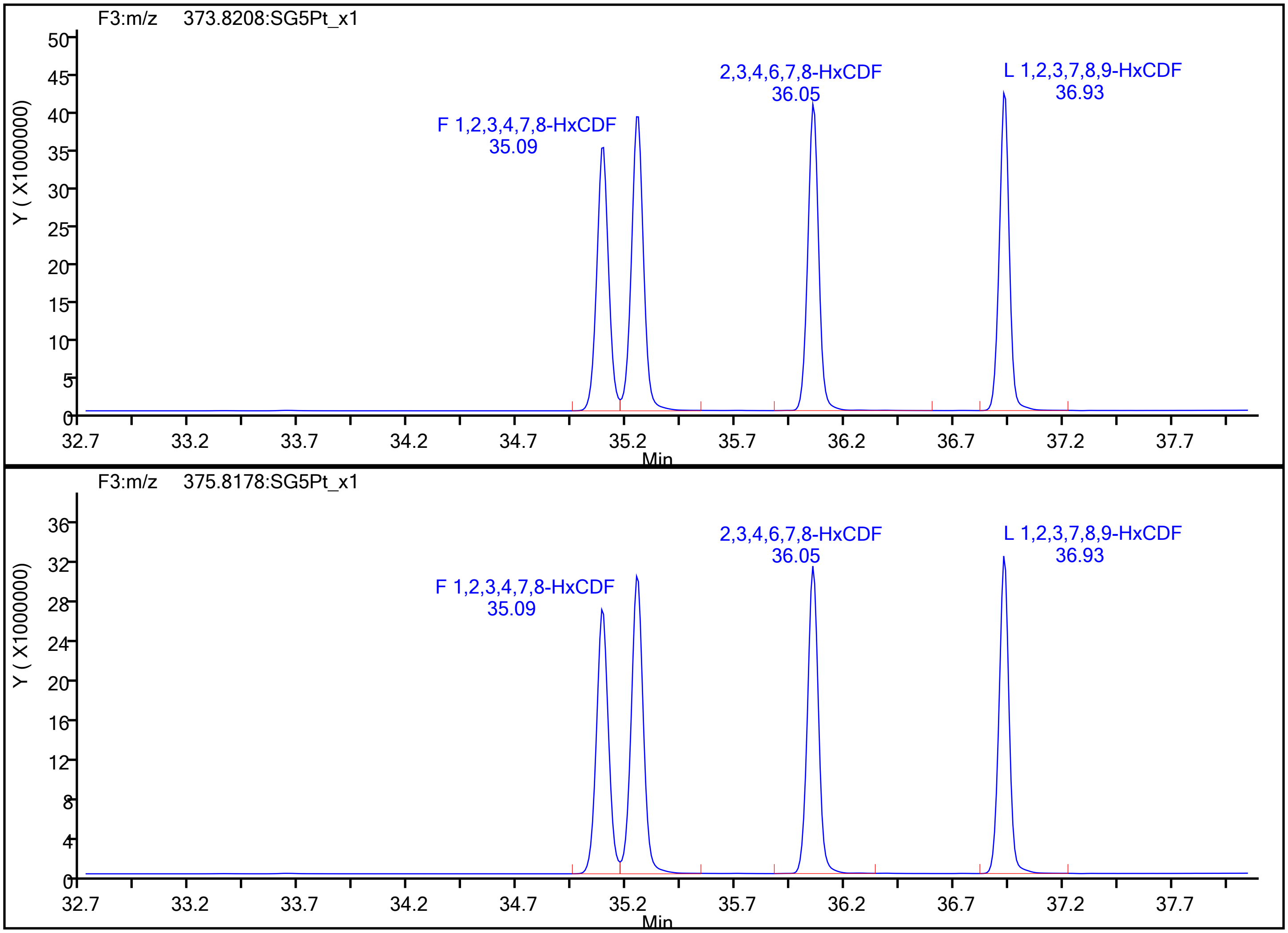

HxCDF Interference Mass

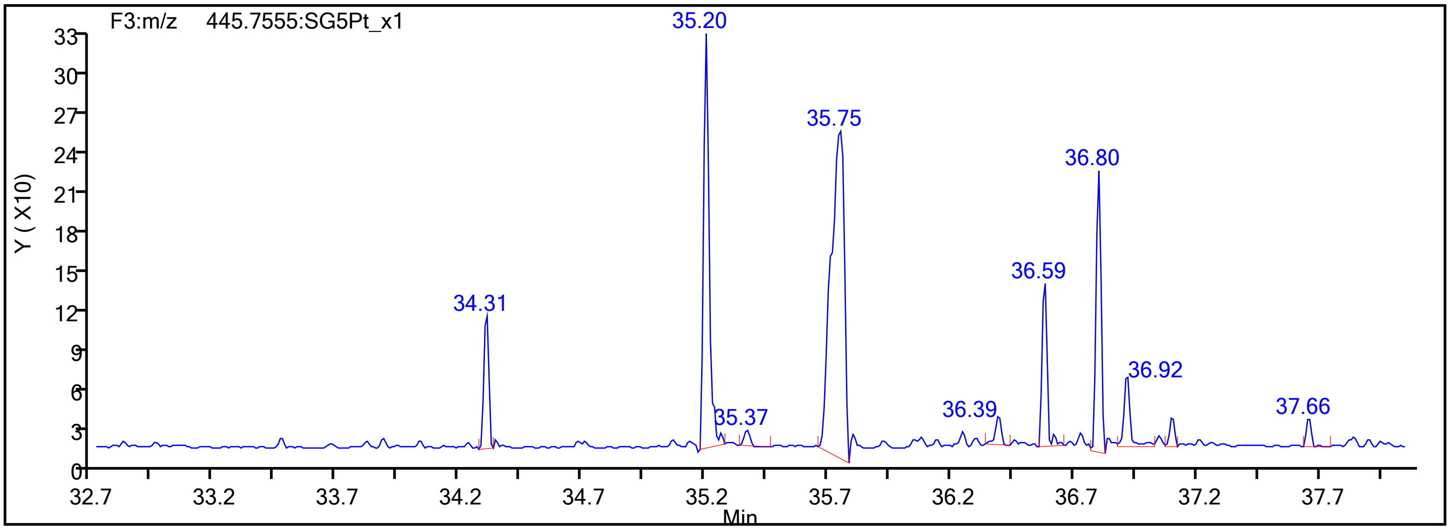

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Injection Date: 24-Sep-2021 17:07:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108 Sample Line#: 8

Column Type: DB-5 Column Dia: 0.32 mm

HxCDD

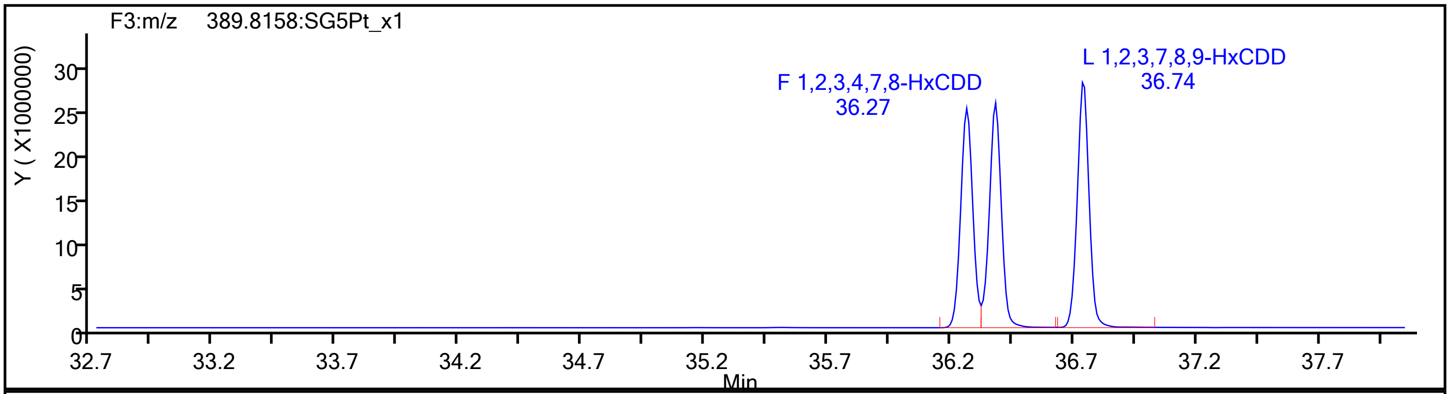

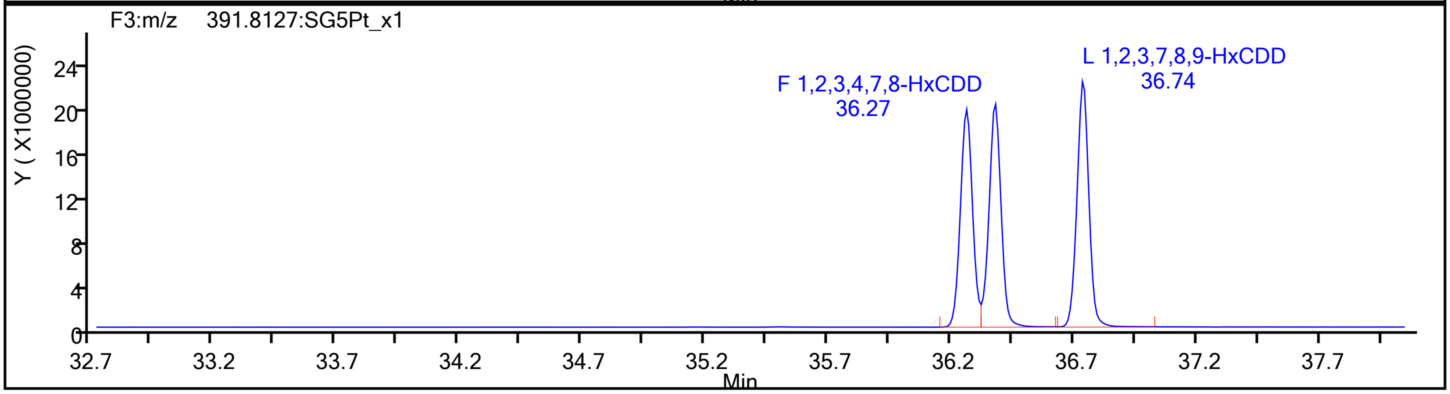

HxCDD Standards

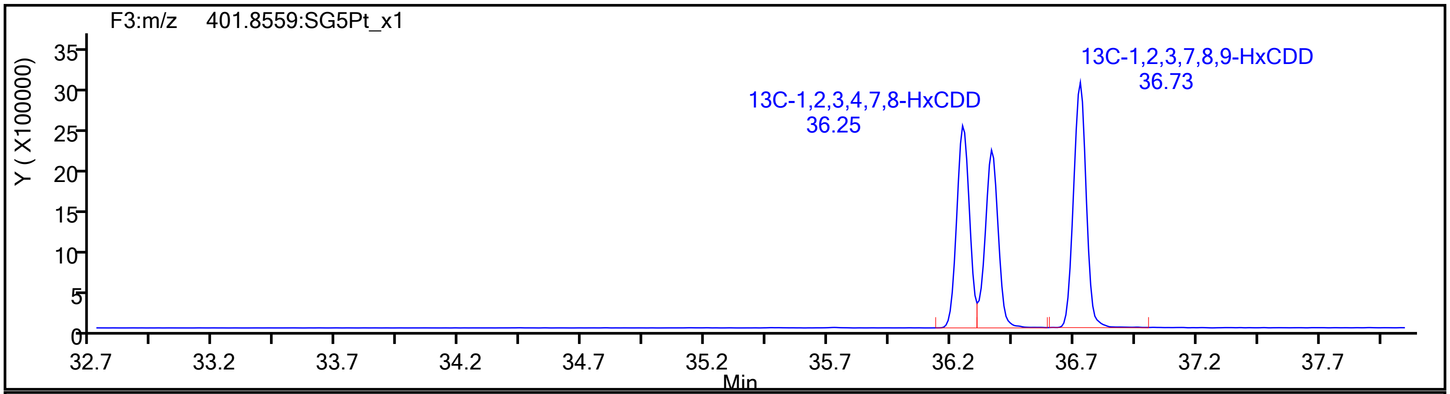

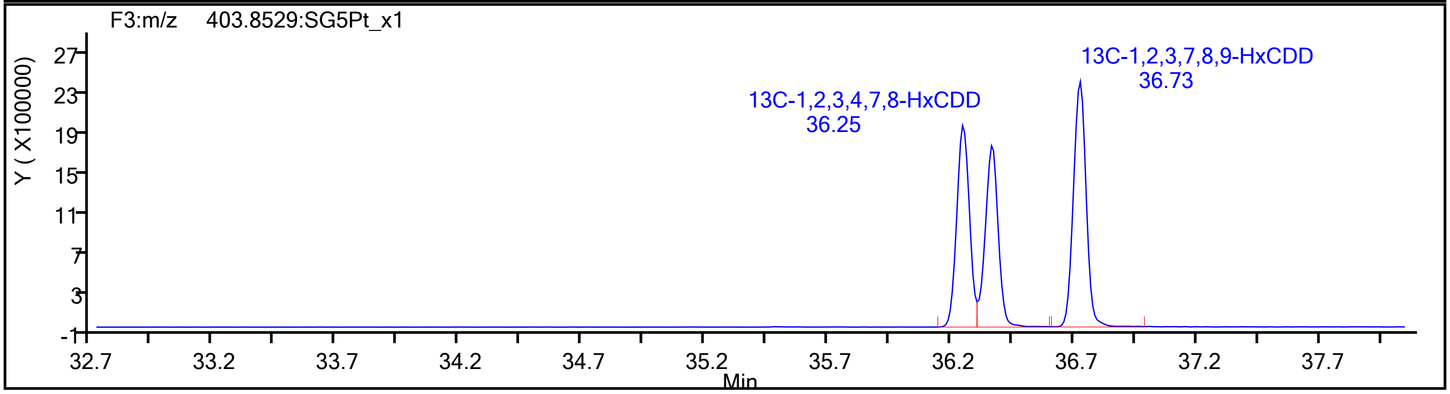

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

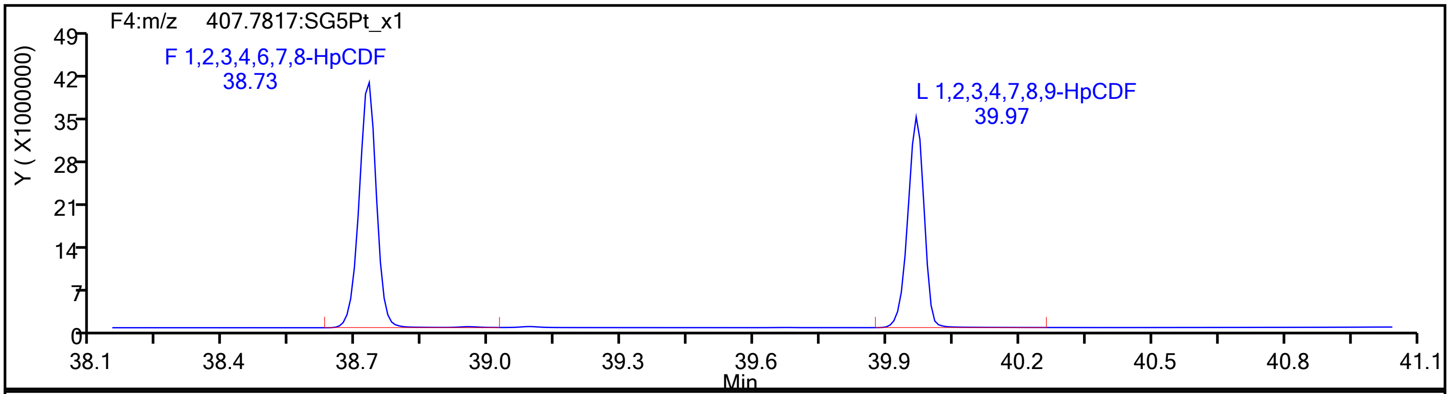

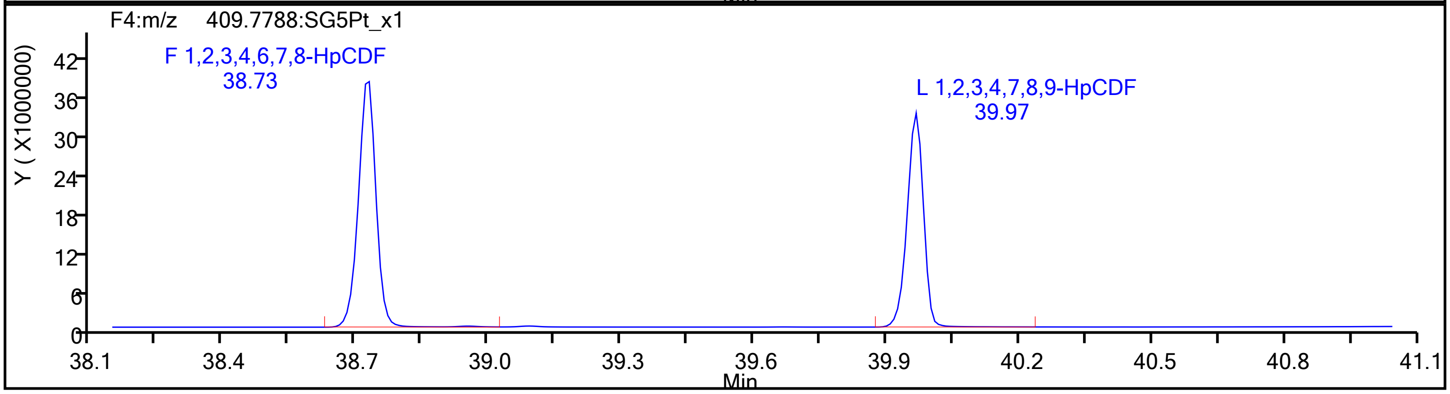

HpCDF Standards

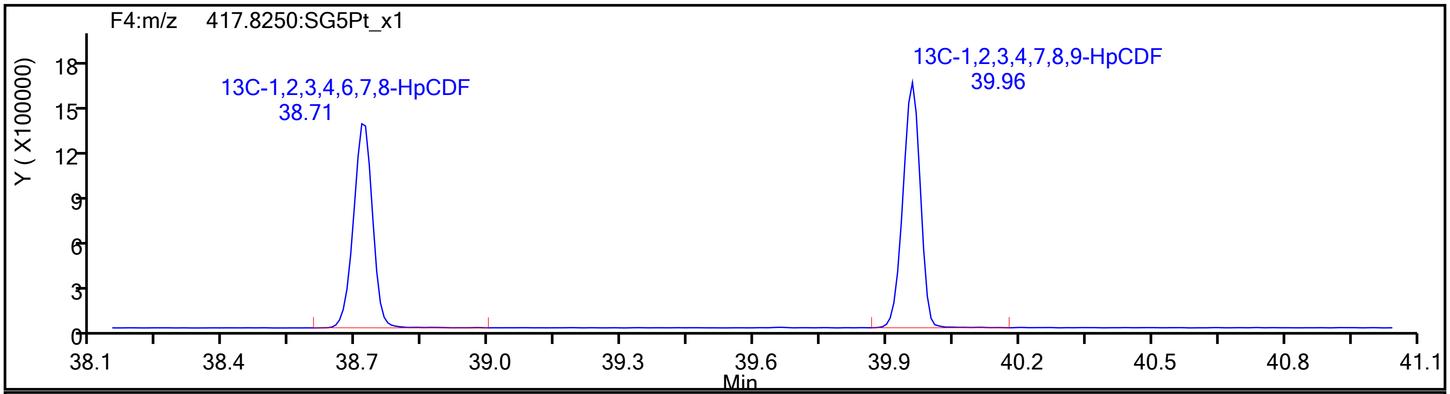

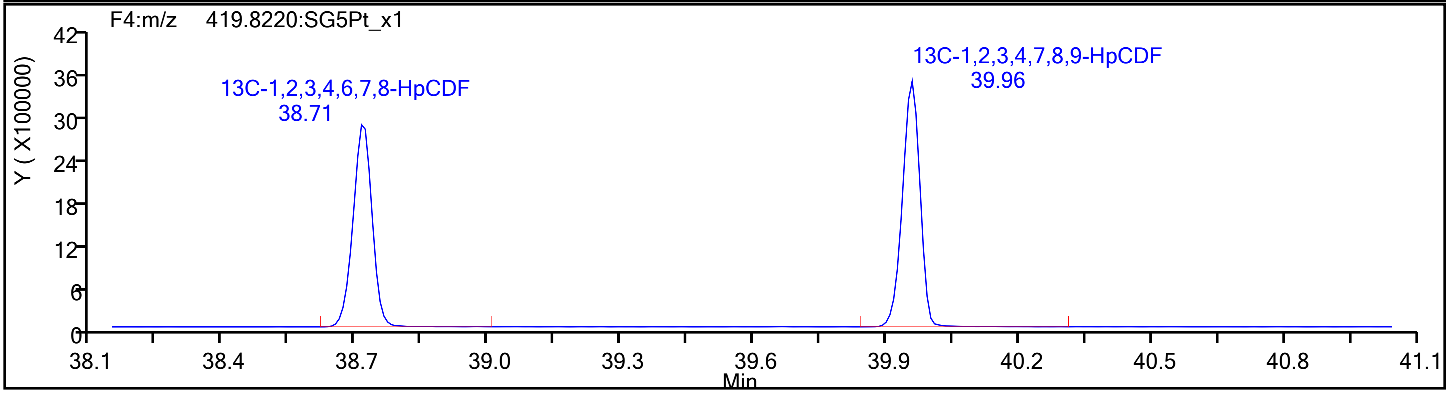

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

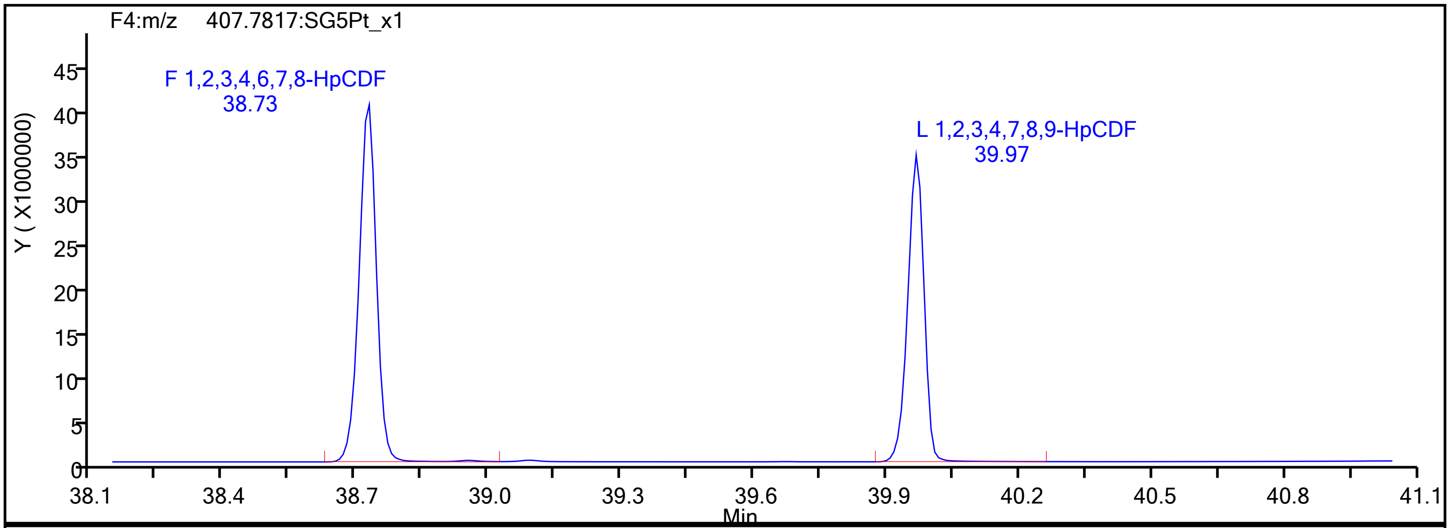

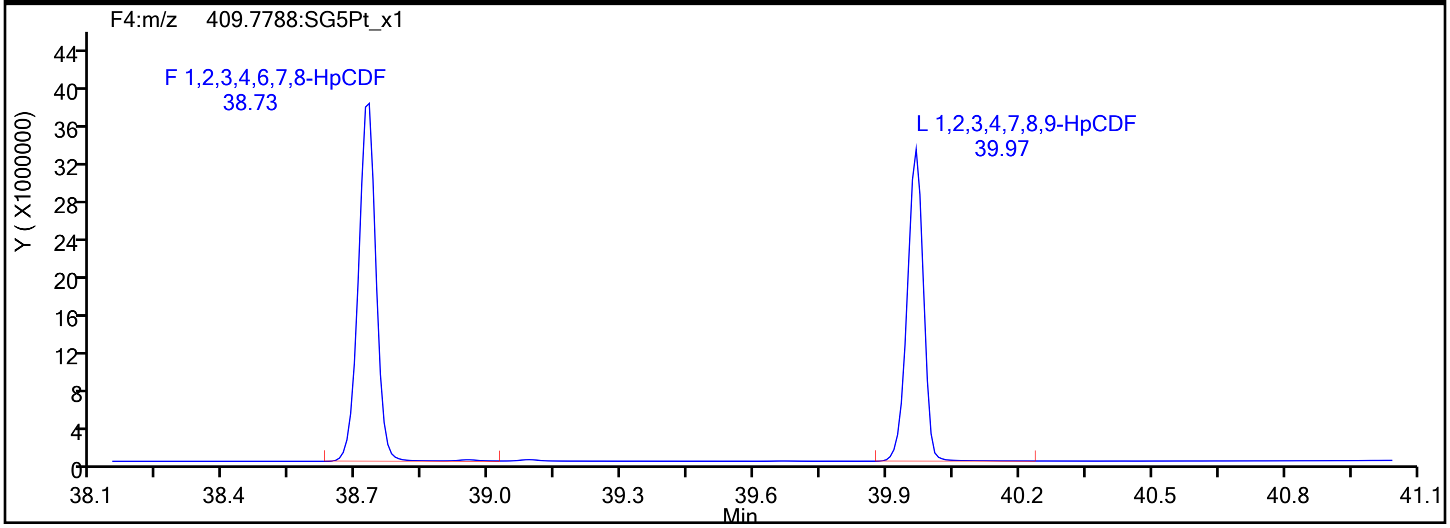

HpCDF Interference Mass

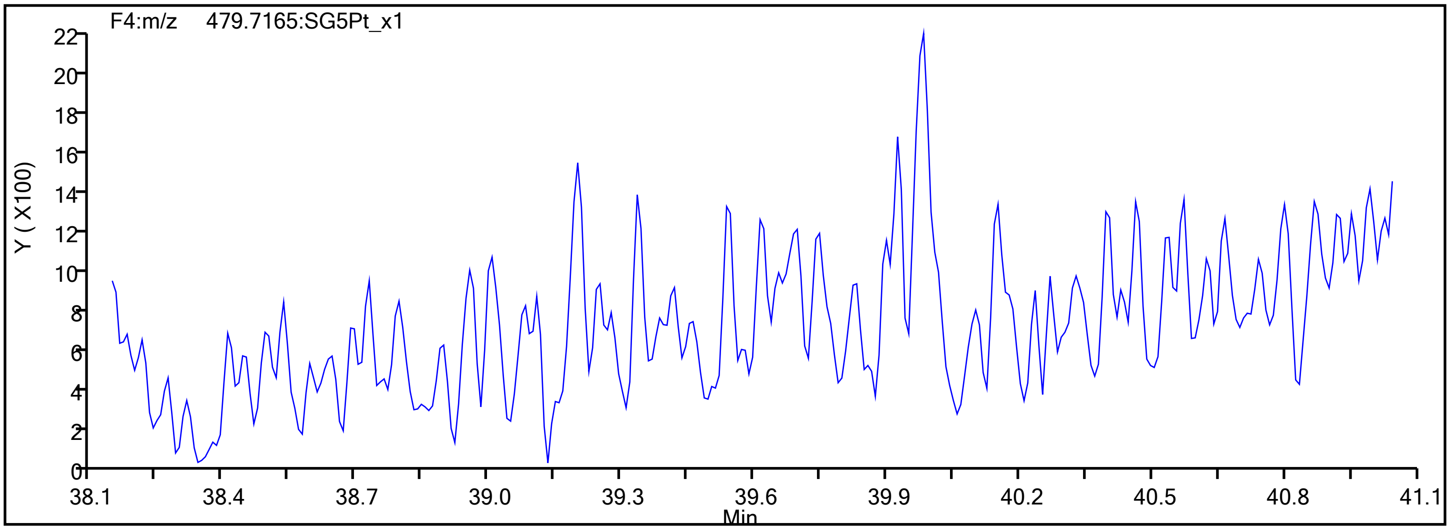

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

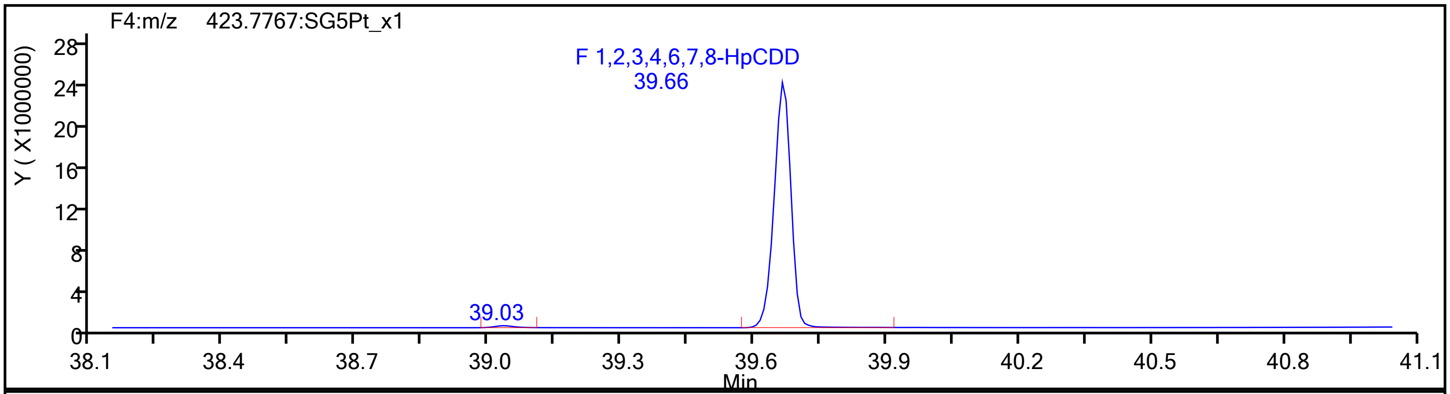

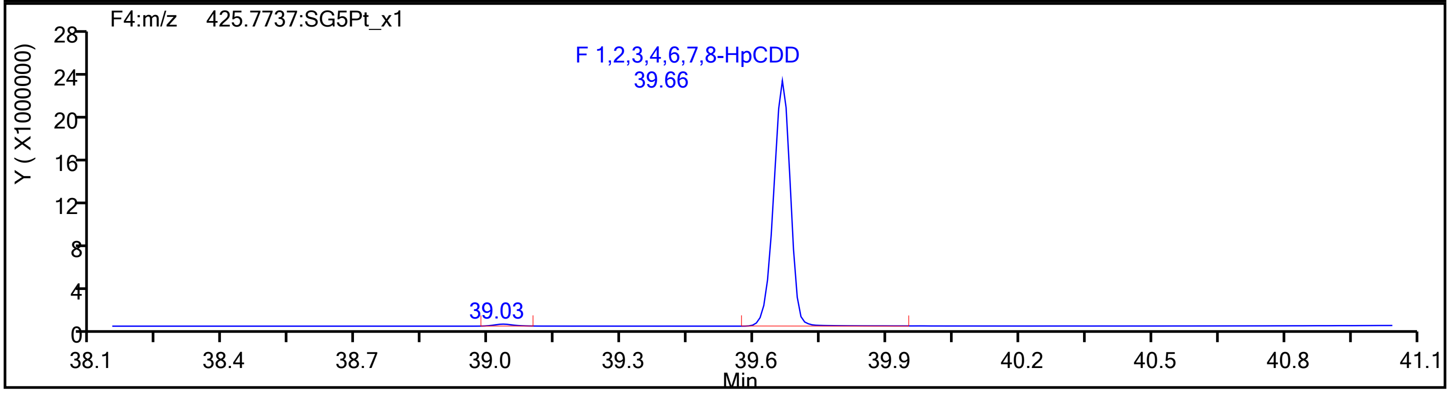

HpCDD Standards

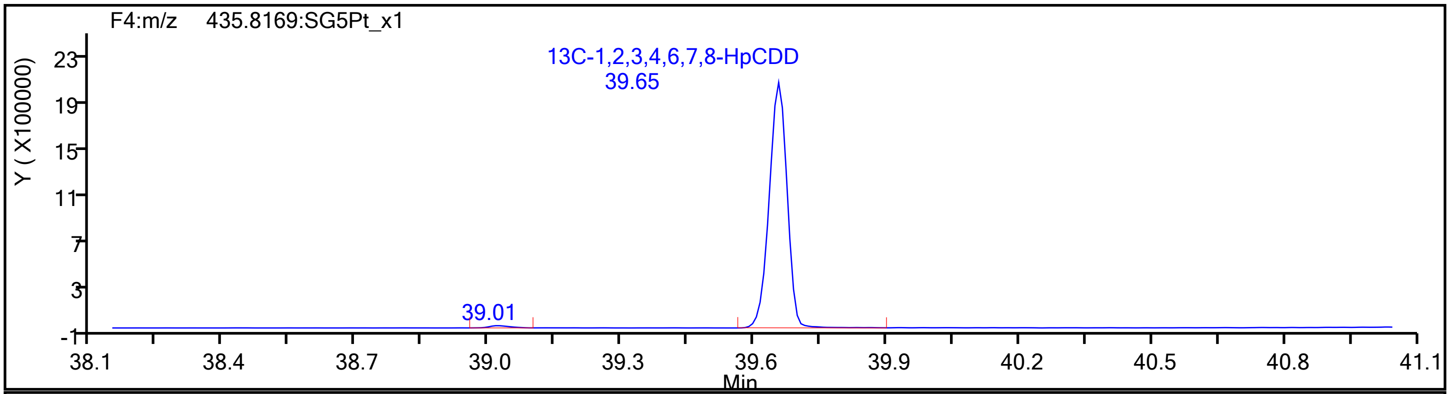

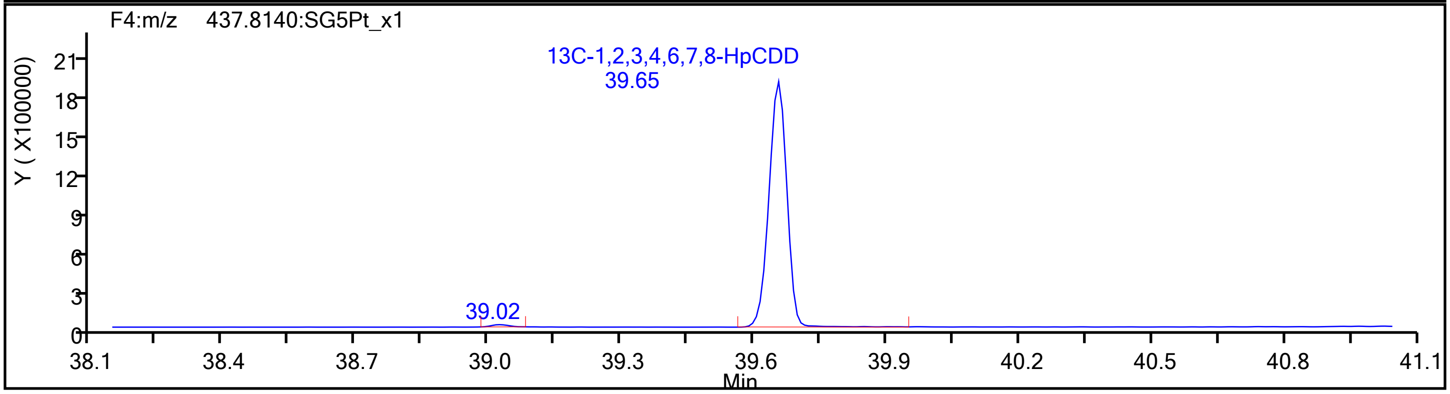

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
Injection Date:	24-Sep-2021 17:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

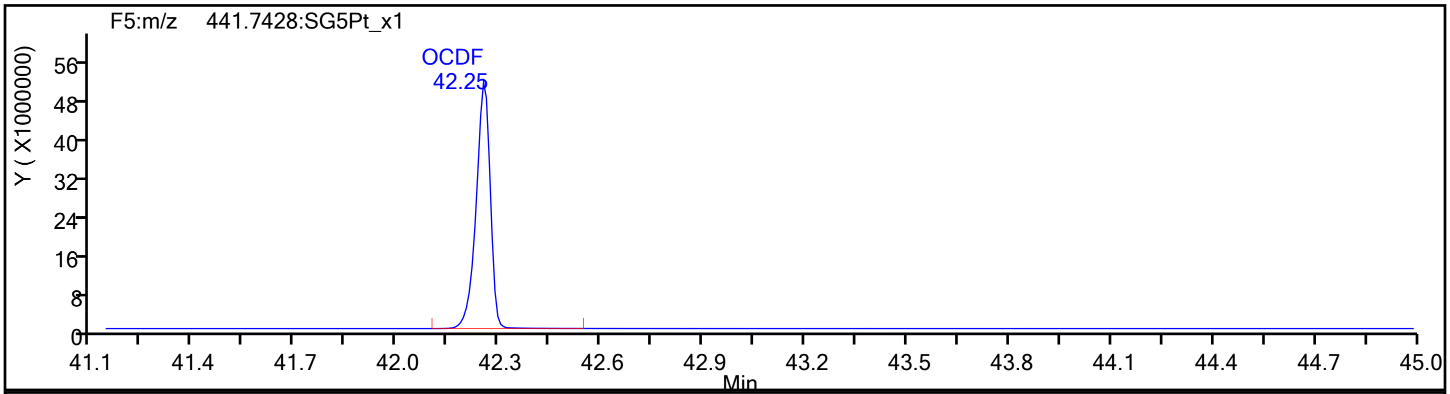

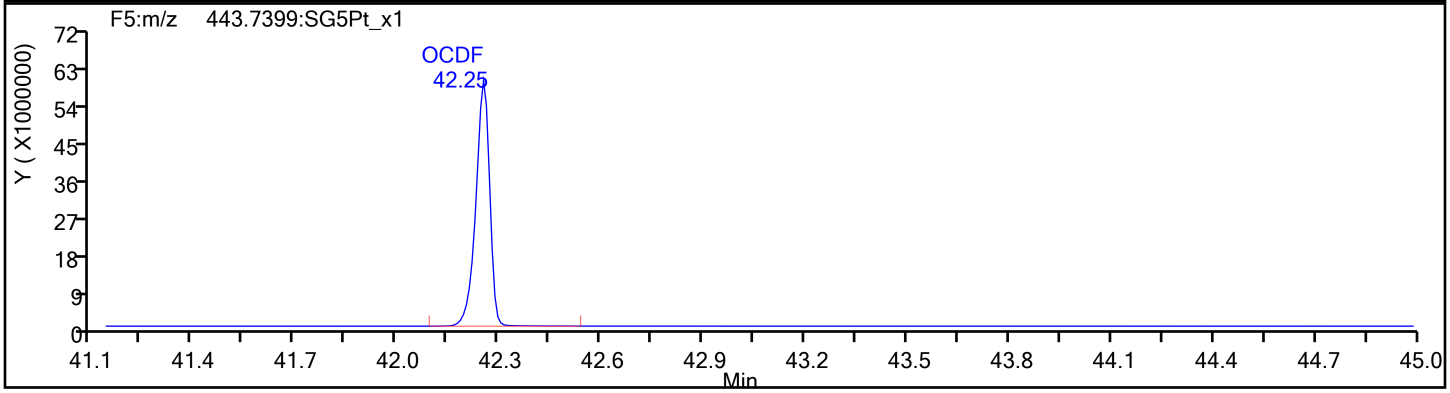

OCDF Standards

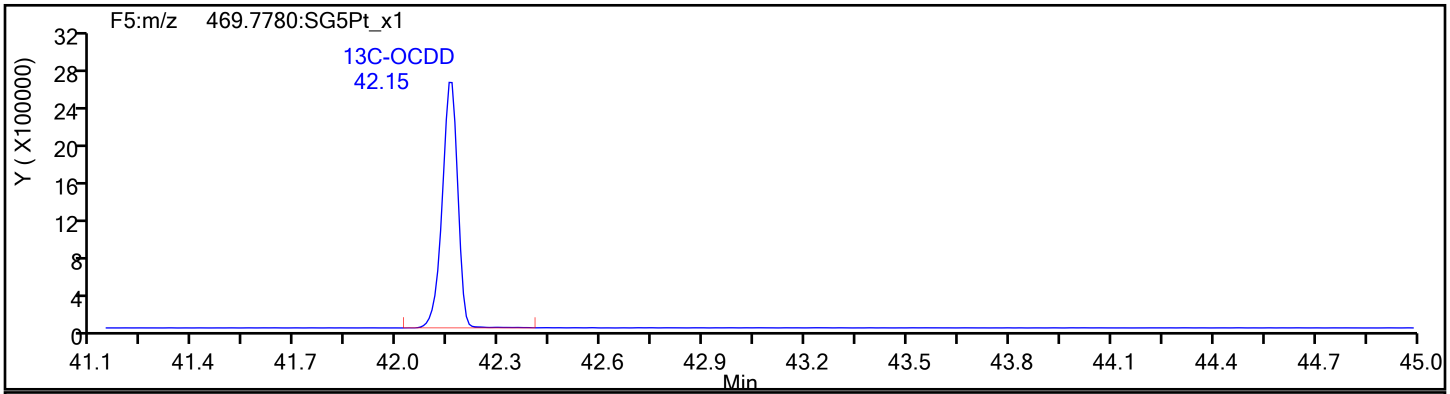

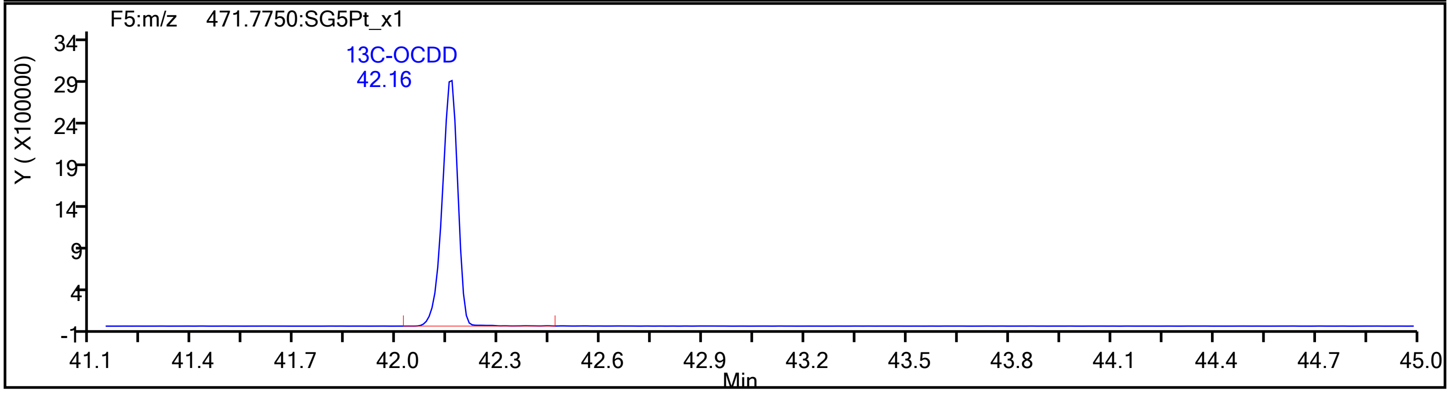

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d
Injection Date: 24-Sep-2021 17:07:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

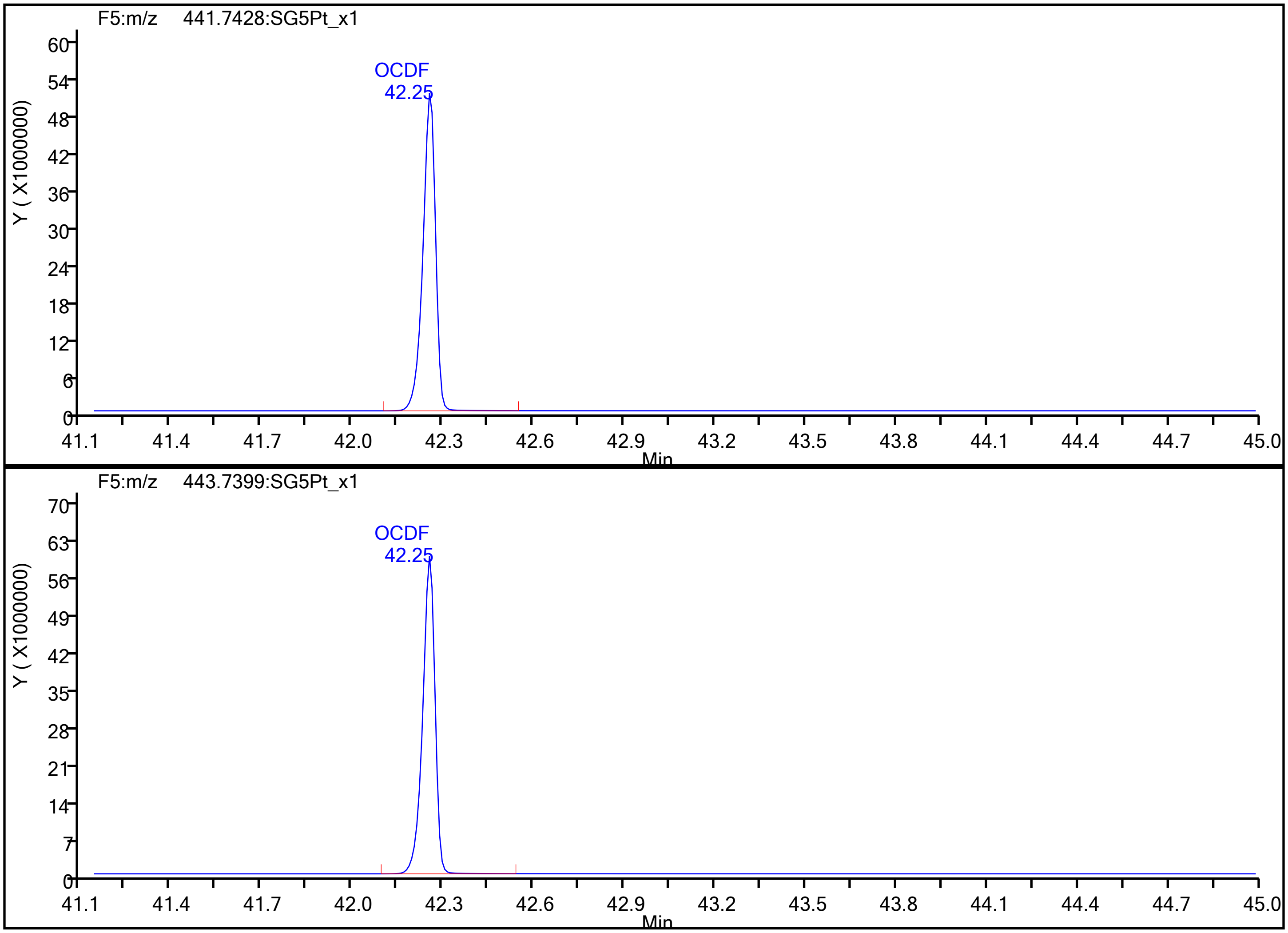

OCDF Interference Mass

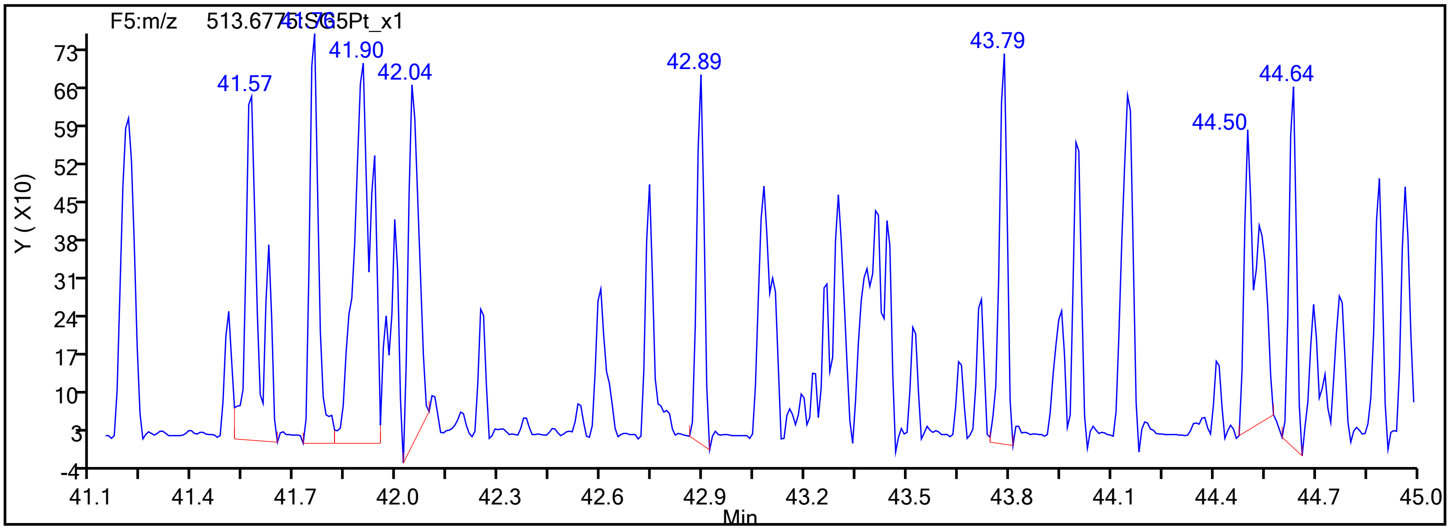

Report Date: 25-Sep-2021 14:17:47 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
Injection Date:	24-Sep-2021 17:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

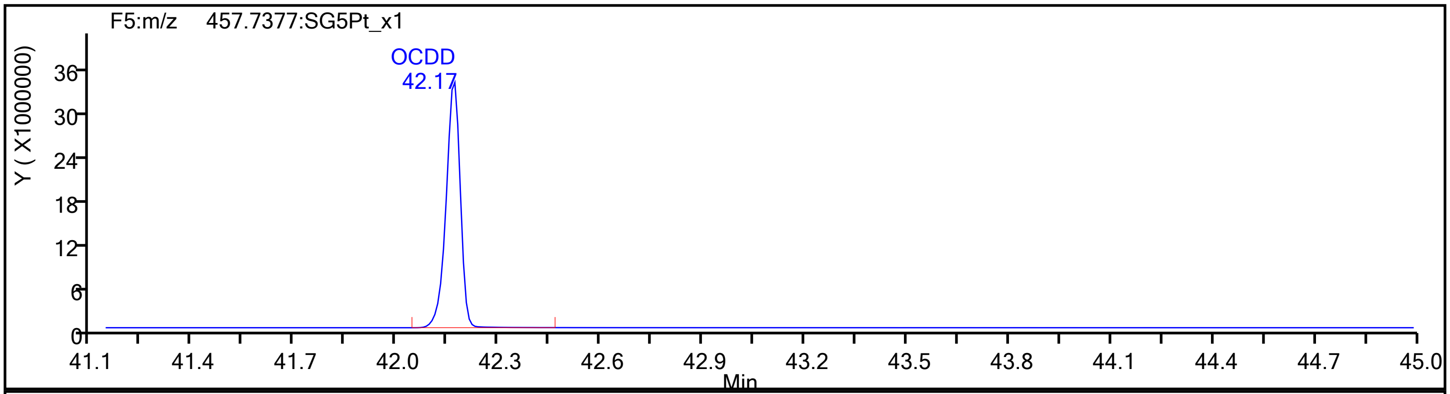

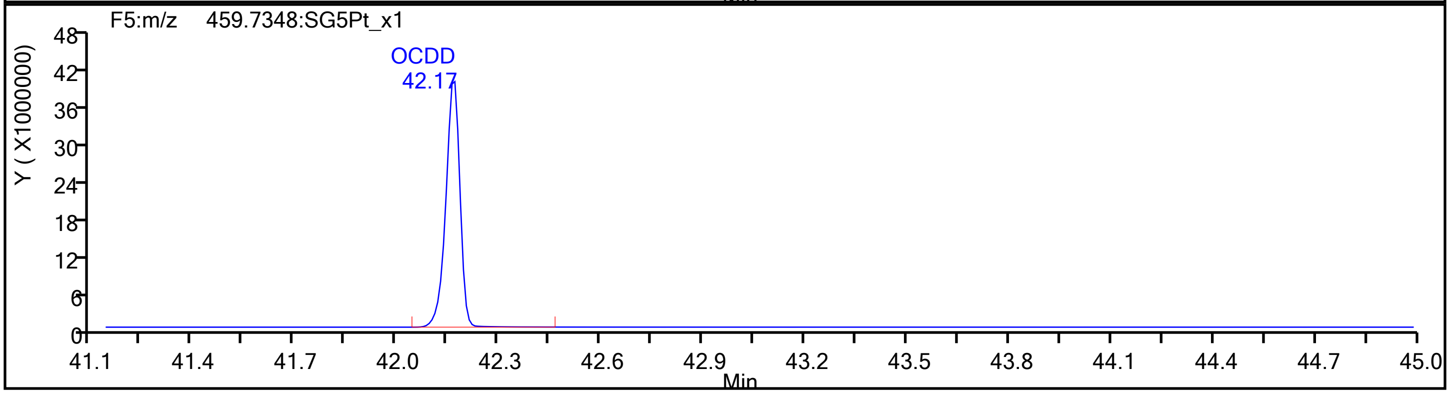

OCDD Standards

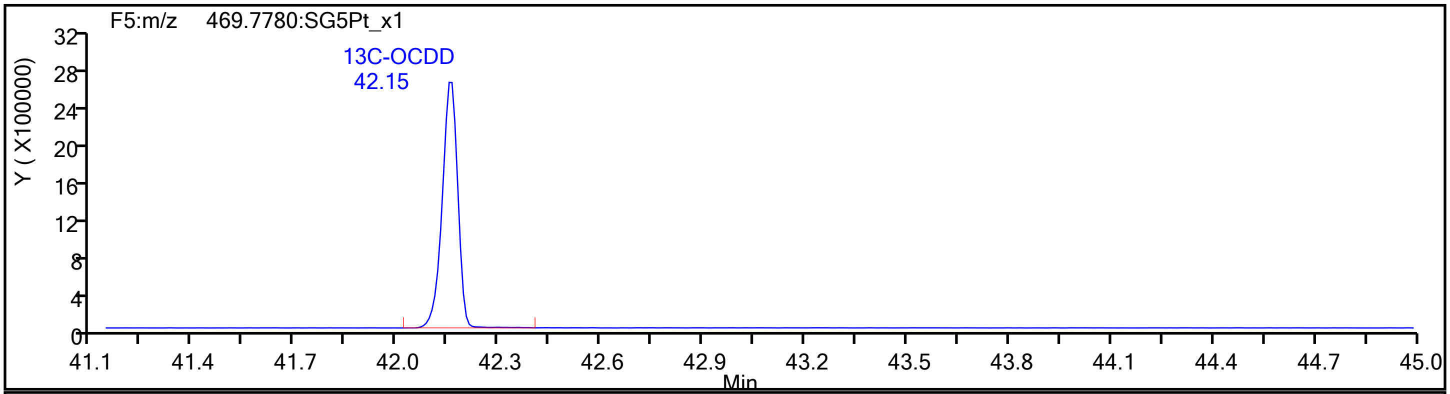

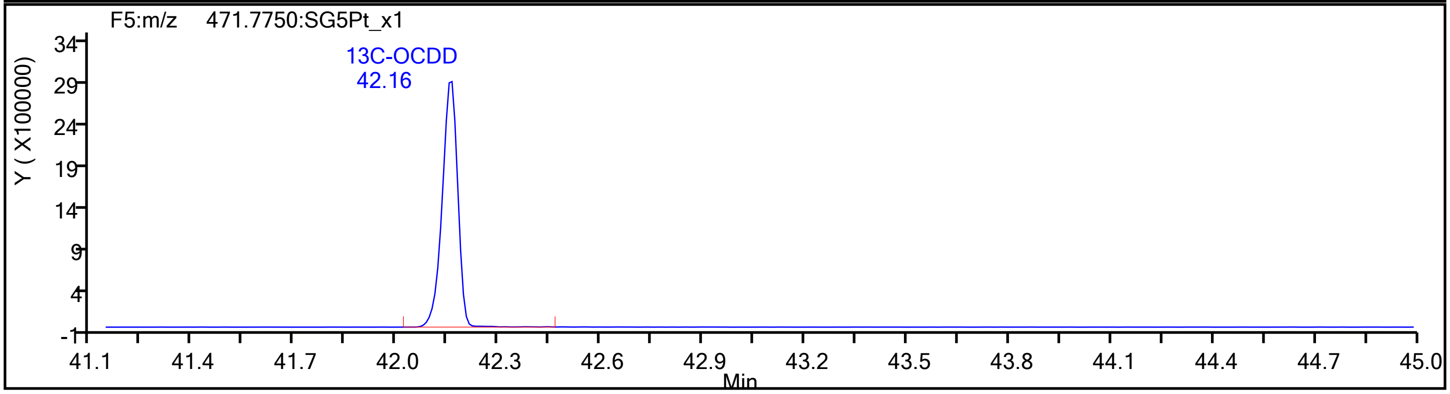

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
Injection Date:	24-Sep-2021 17:07:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

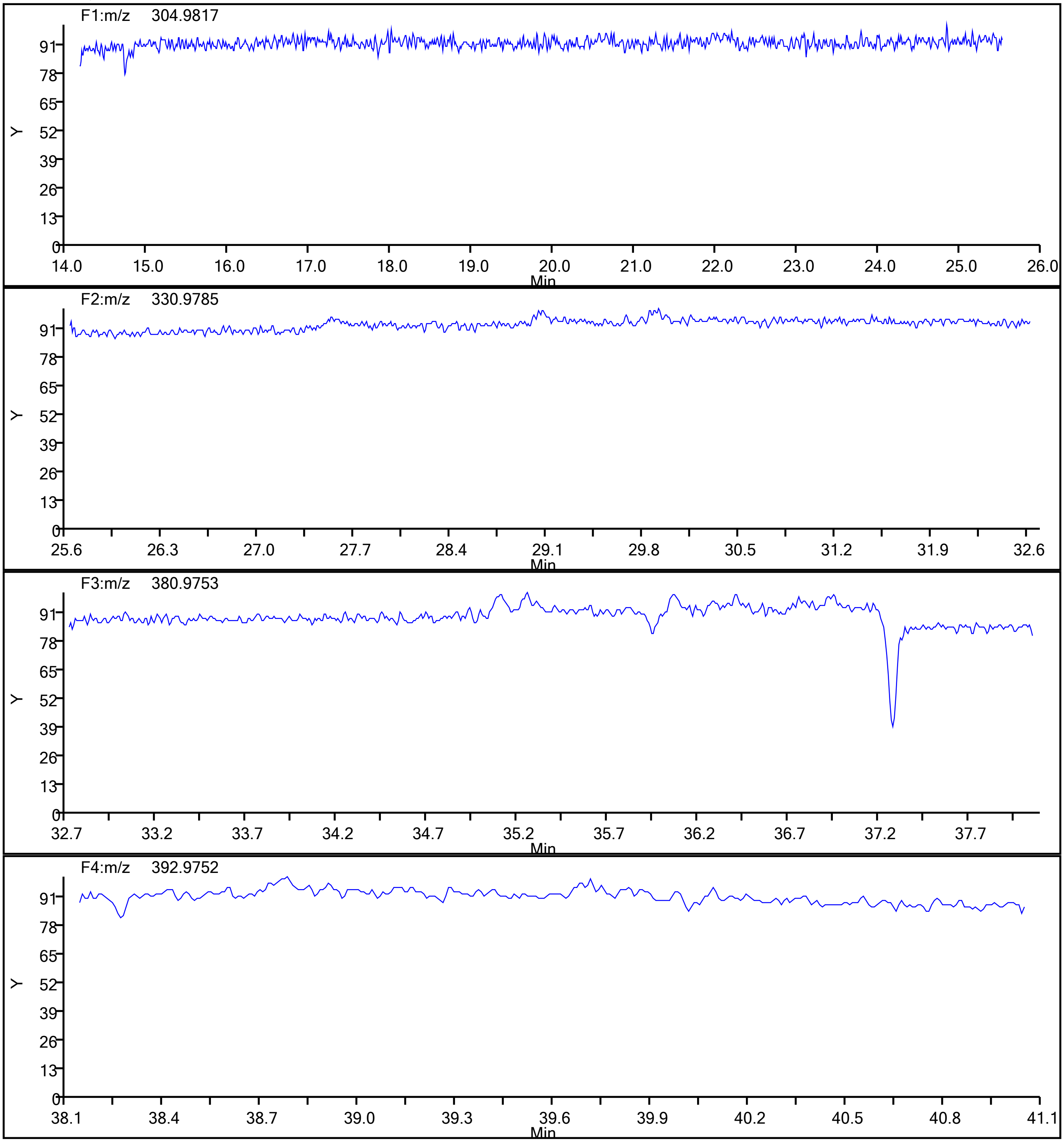

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

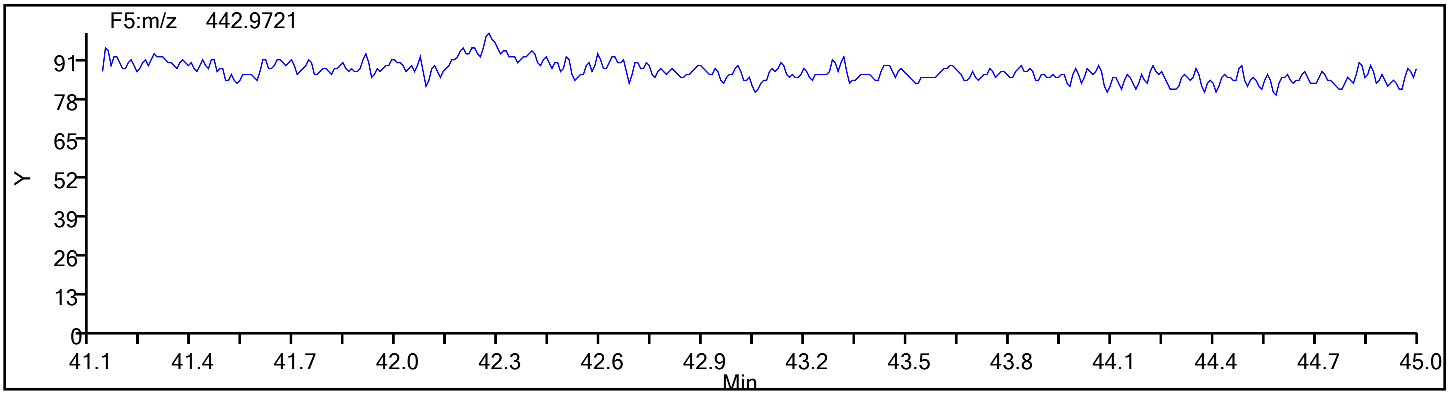

Calibration

/ 1,2,3,4,6,7,8-HpCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.082

Error Coefficients

Standard Error:	62100000
Relative Standard Error:	5.9
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.795379	100.0	9020994.0	1.118152	Y
2	IC 320-528108/5	10.0	11.531794	100.0	7960279.0	1.153179	Y
3	IC 320-528108/6	50.0	49.975971	100.0	9948237.0	0.999519	Y
4	IC 320-528108/7	200.0	206.668912	100.0	9074703.0	1.033345	Y
5	IC 320-528108/8	1000.0	1105.463319	100.0	11100268.0	1.105463	Y

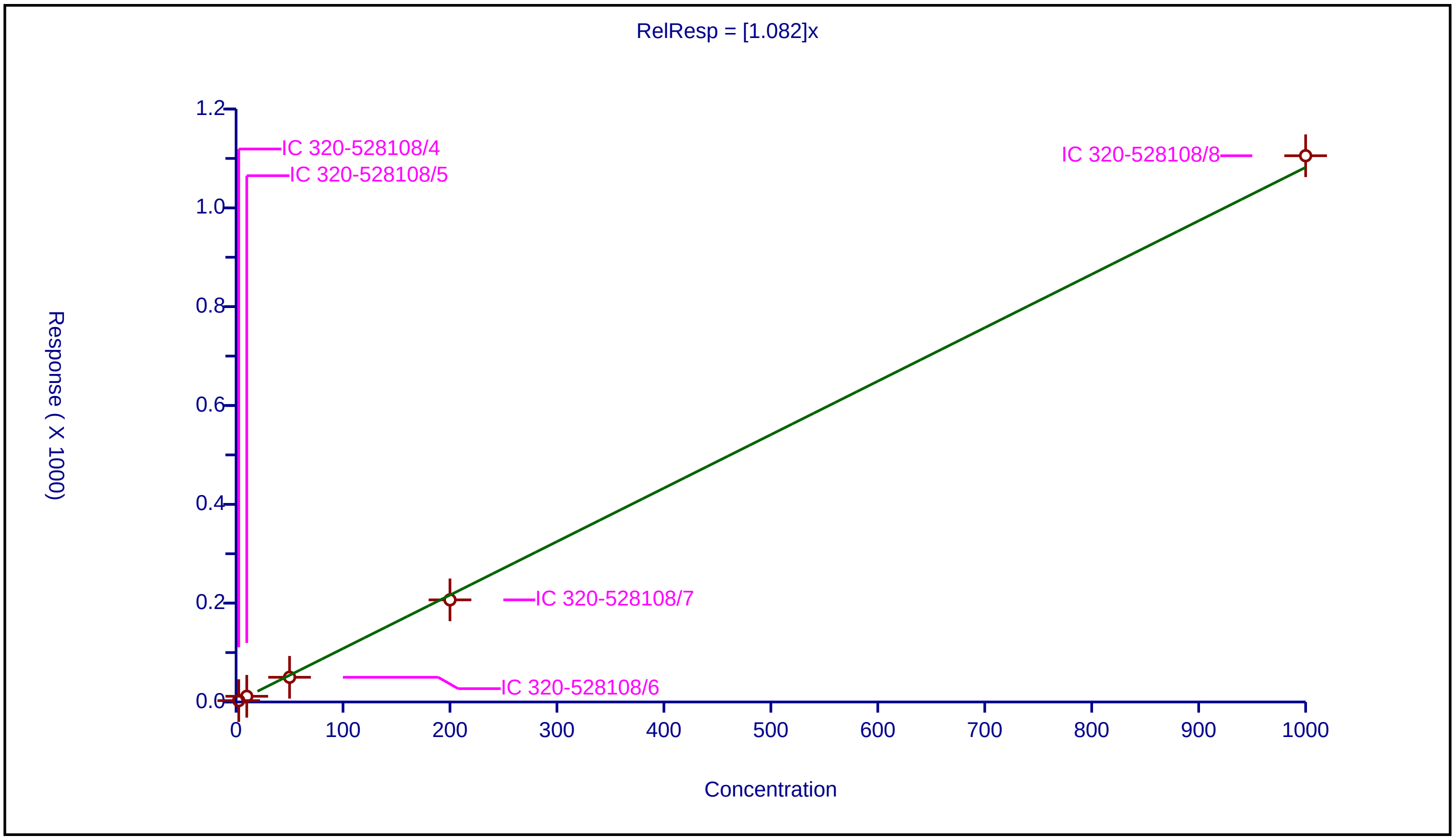

Calibration

/ 1,2,3,4,6,7,8-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.585

Error Coefficients

Standard Error:	109000000
Relative Standard Error:	8.2
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	3.978626	100.0	10444284.0	1.59145	Y
2	IC 320-528108/5	10.0	17.073134	100.0	9322764.0	1.707313	Y
3	IC 320-528108/6	50.0	70.397634	100.0	11412402.0	1.407953	Y
4	IC 320-528108/7	200.0	301.444377	100.0	10531395.0	1.507222	Y
5	IC 320-528108/8	1000.0	1711.407744	100.0	12626397.0	1.711408	Y

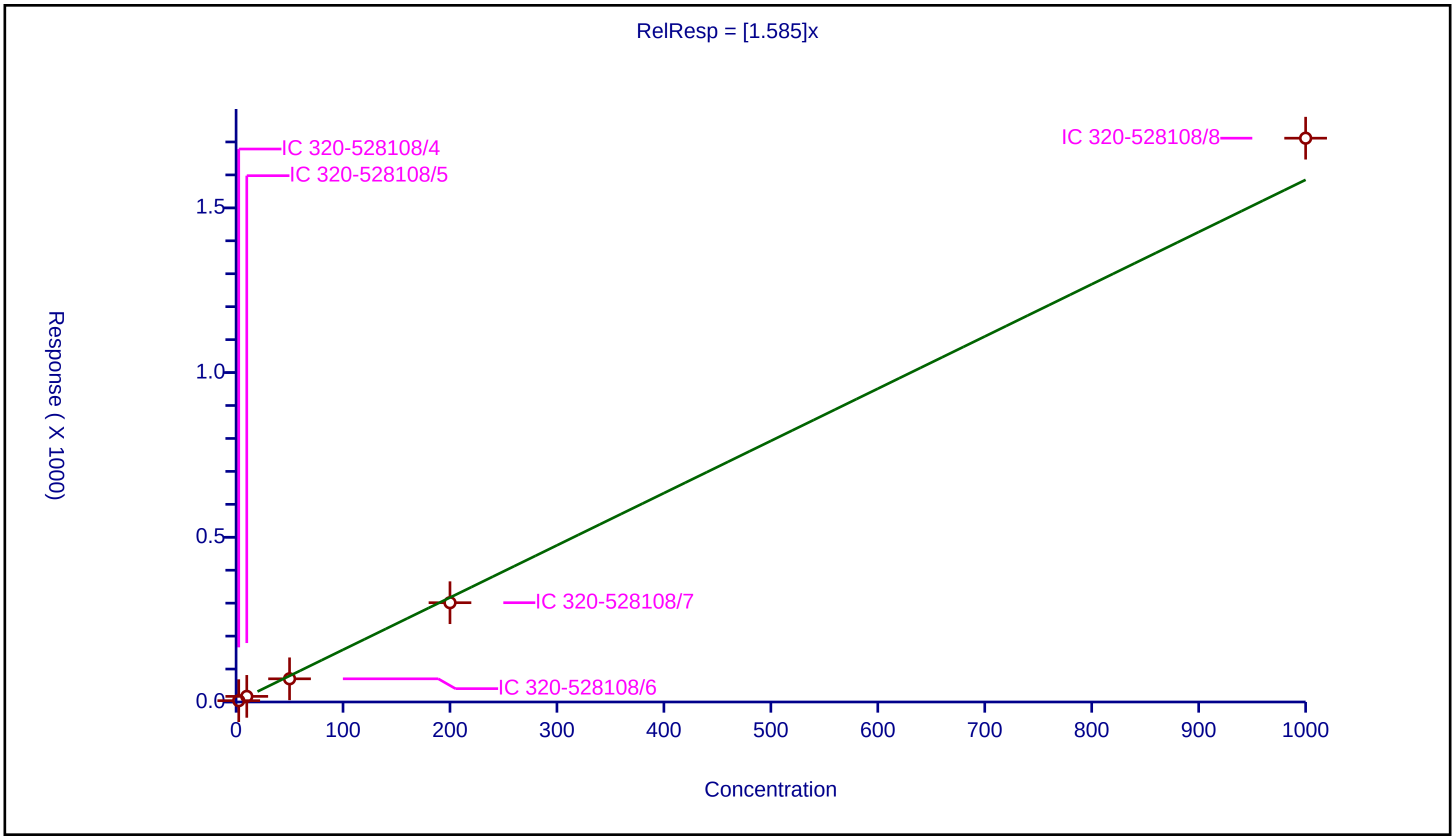

Calibration

/ 1,2,3,4,7,8,9-HpCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.16

Error Coefficients

Standard Error:	87600000
Relative Standard Error:	6.7
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	3.010799	100.0	10816131.0	1.20432	Y
2	IC 320-528108/5	10.0	11.973718	100.0	9173650.0	1.197372	Y
3	IC 320-528108/6	50.0	52.481263	100.0	12489528.0	1.049625	Y
4	IC 320-528108/7	200.0	222.049589	100.0	10909301.0	1.110248	Y
5	IC 320-528108/8	1000.0	1236.825786	100.0	14011940.0	1.236826	Y

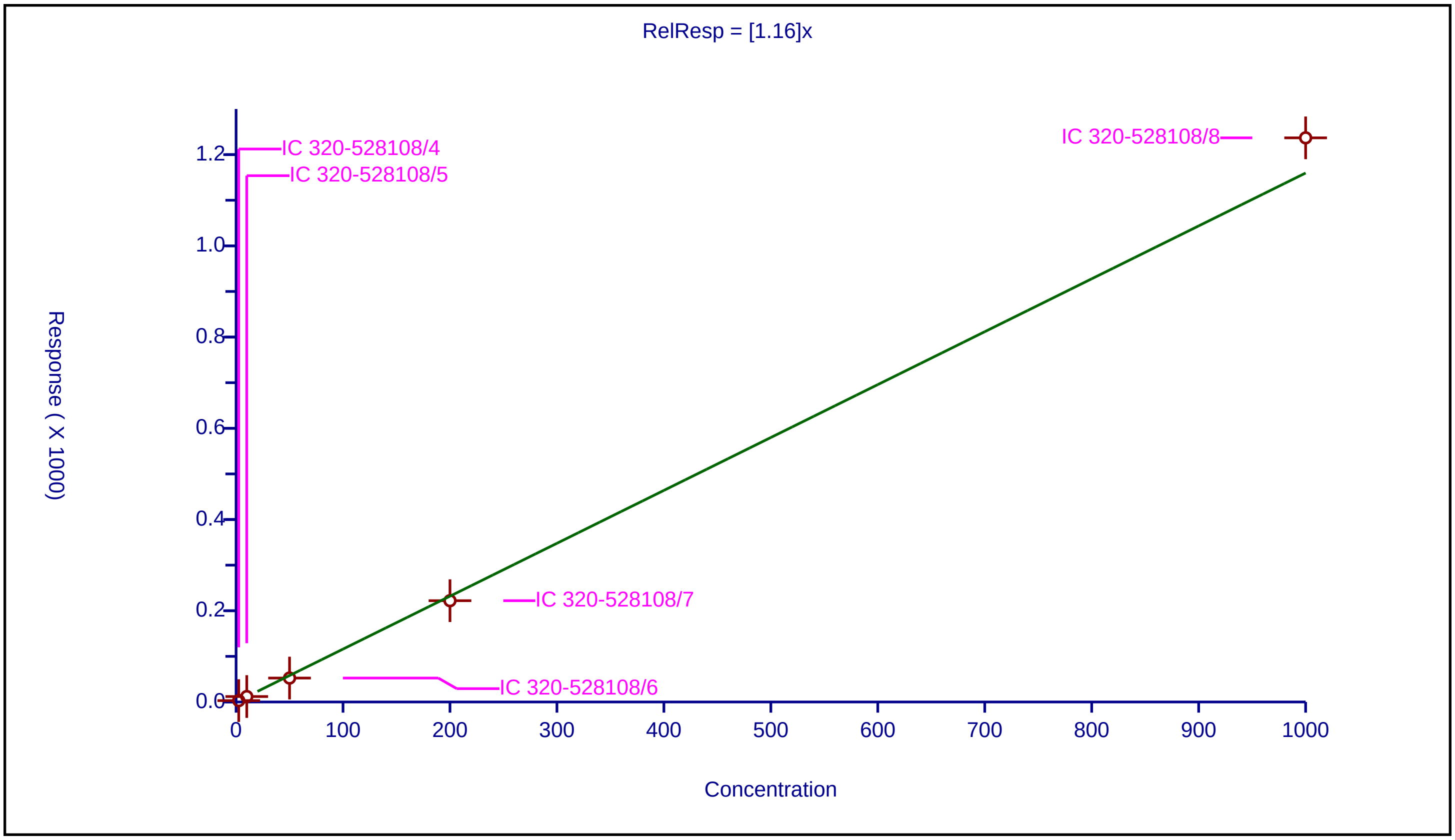

Calibration

/ 1,2,3,4,7,8-HxCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9085

Error Coefficients

Standard Error:	77500000
Relative Standard Error:	5.6
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.414833	100.0	13945479.0	0.965933	Y
2	IC 320-528108/5	10.0	9.254248	100.0	13348929.0	0.925425	Y
3	IC 320-528108/6	50.0	41.848461	100.0	14990207.0	0.836969	Y
4	IC 320-528108/7	200.0	175.936087	100.0	14130869.0	0.87968	Y
5	IC 320-528108/8	1000.0	934.615554	100.0	16359900.0	0.934616	Y

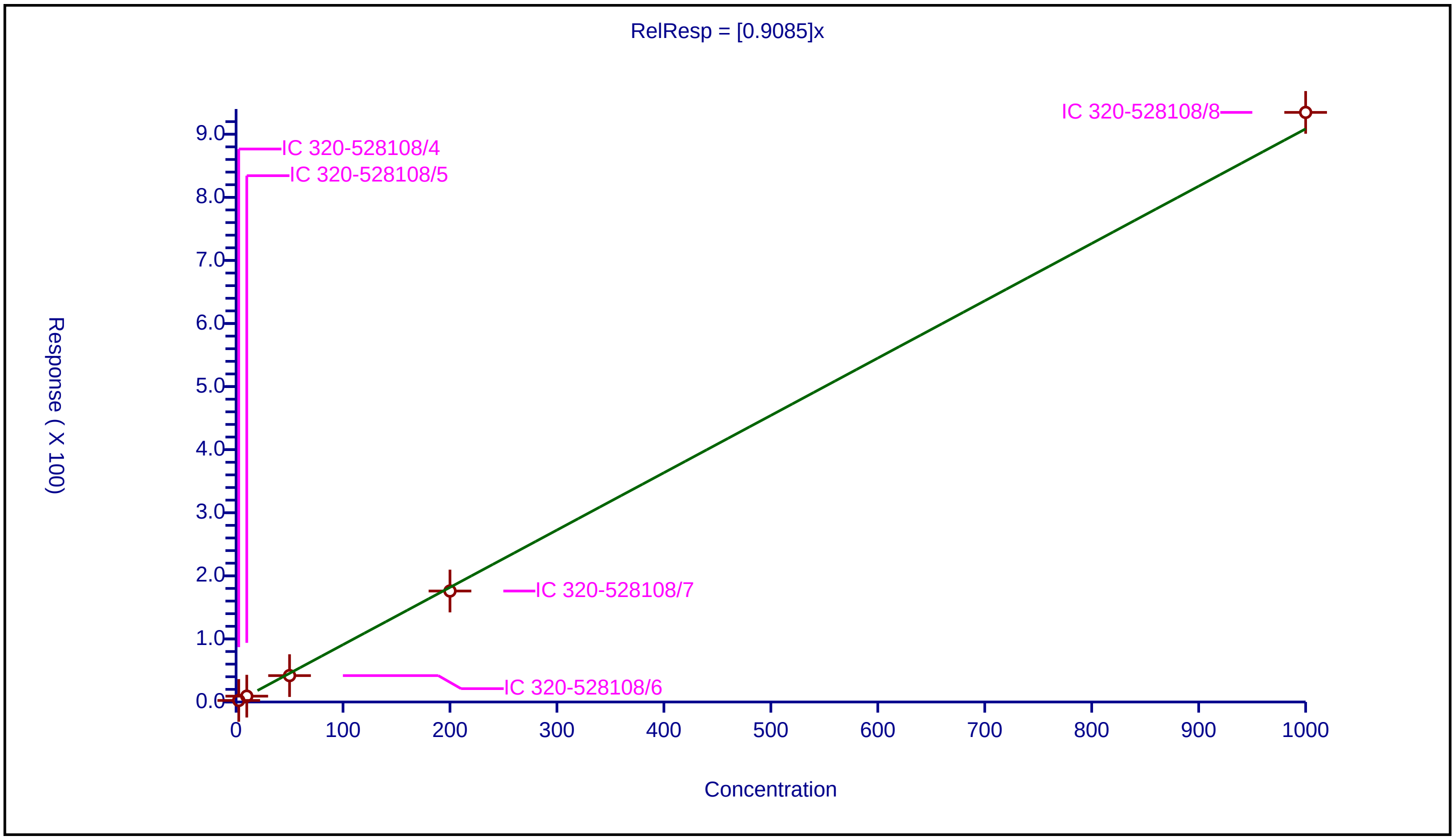

Calibration

/ 1,2,3,4,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9737

Error Coefficients

Standard Error:	120000000
Relative Standard Error:	6.9
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.506071	100.0	18390142.0	1.002428	Y
2	IC 320-528108/5	10.0	10.158763	100.0	17885091.0	1.015876	Y
3	IC 320-528108/6	50.0	43.955645	100.0	20225184.0	0.879113	Y
4	IC 320-528108/7	200.0	185.975067	100.0	19719695.0	0.929875	Y
5	IC 320-528108/8	1000.0	1041.080139	100.0	22750843.0	1.04108	Y

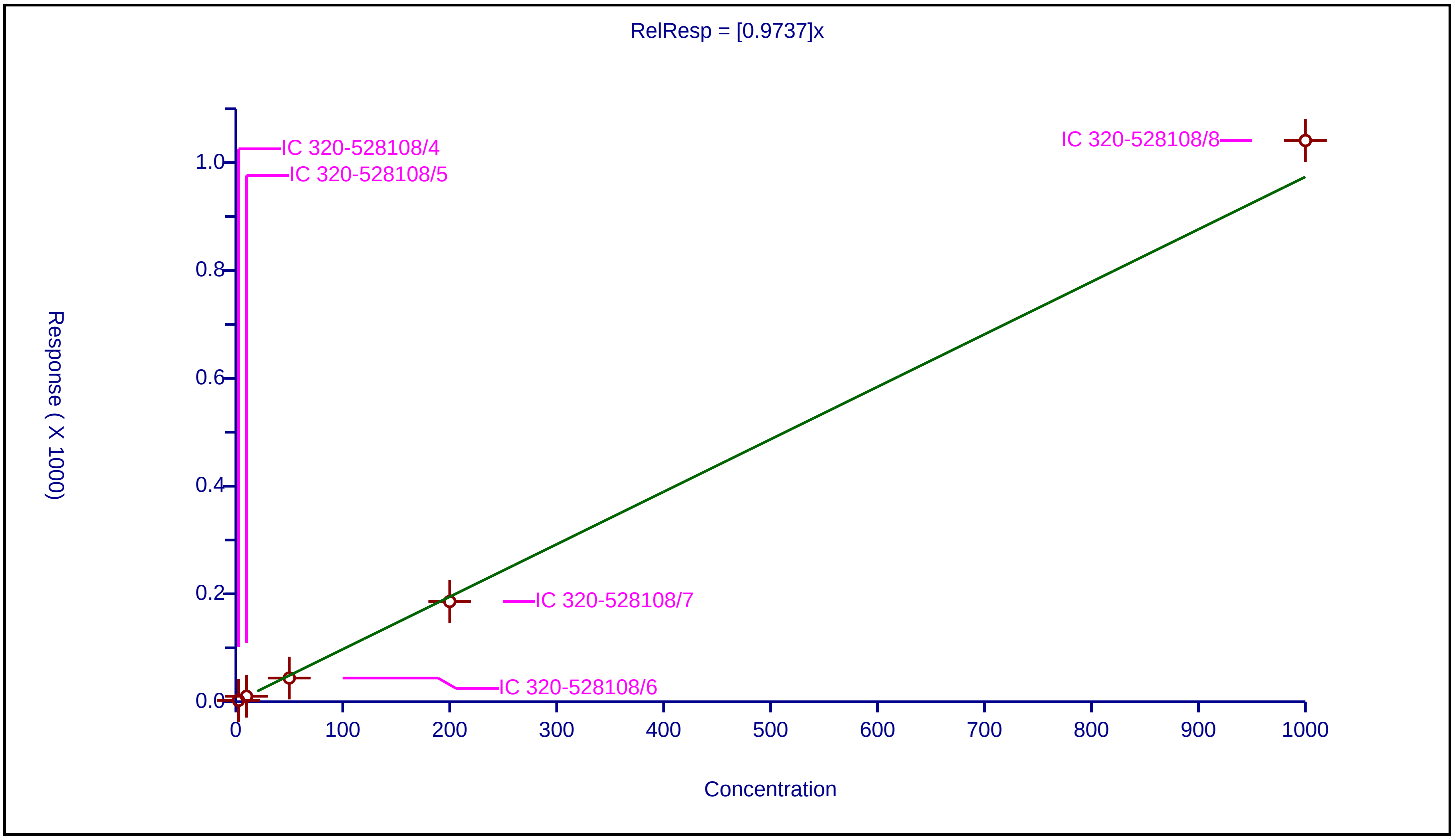

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.028

Error Coefficients

Standard Error:	79100000
Relative Standard Error:	6.2
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.661747	100.0	12564416.0	1.064699	Y
2	IC 320-528108/5	10.0	11.013274	100.0	12008945.0	1.101327	Y
3	IC 320-528108/6	50.0	47.330027	100.0	13563584.0	0.946601	Y
4	IC 320-528108/7	200.0	195.989402	100.0	13075432.0	0.979947	Y
5	IC 320-528108/8	1000.0	1046.679899	100.0	14896294.0	1.04668	Y

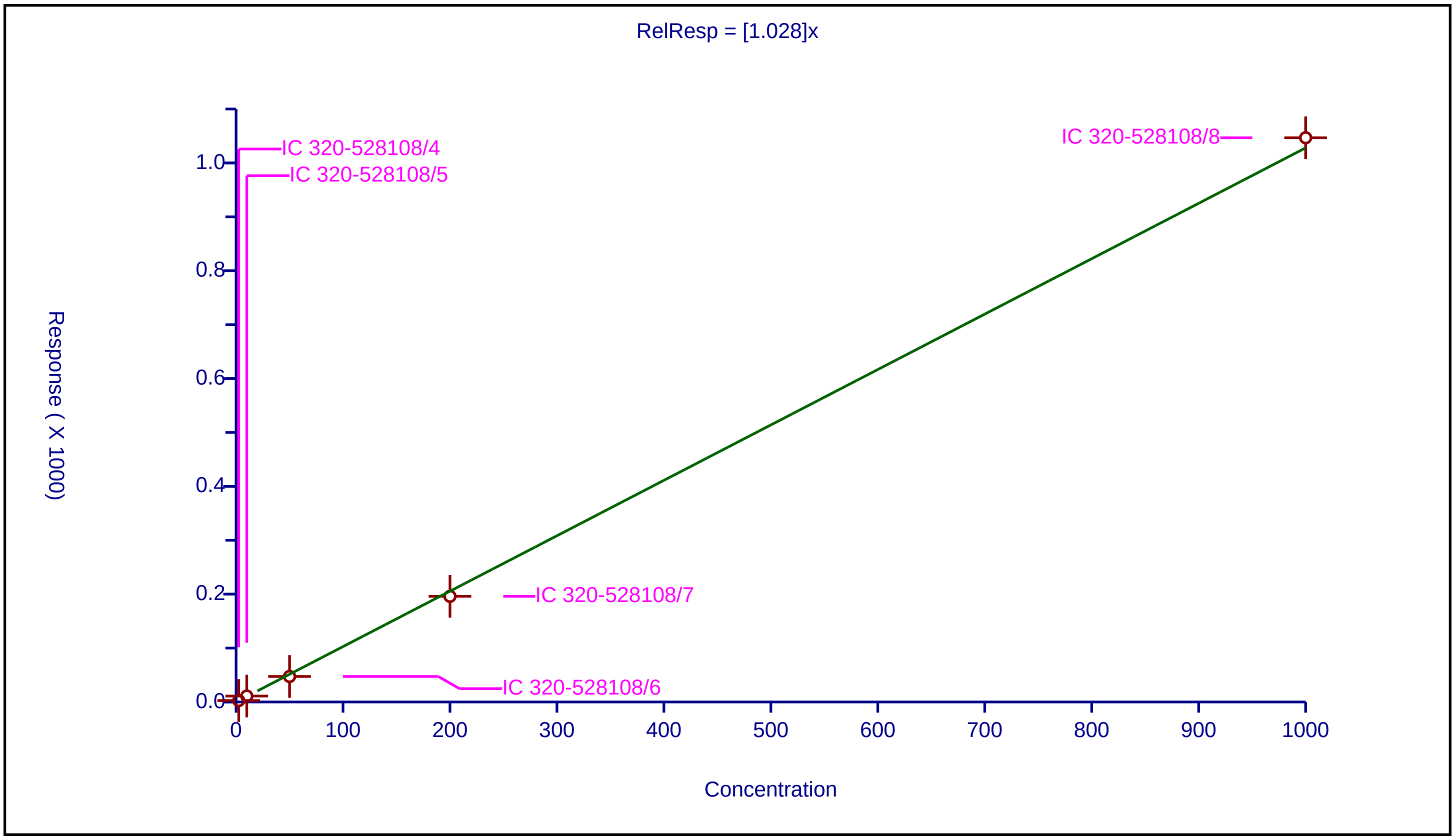

Calibration

/ 1,2,3,6,7,8-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.22

Error Coefficients

Standard Error:	137000000
Relative Standard Error:	6.4
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	3.121622	100.0	17590761.0	1.248649	Y
2	IC 320-528108/5	10.0	12.722814	100.0	17214674.0	1.272281	Y
3	IC 320-528108/6	50.0	55.562356	100.0	18845511.0	1.111247	Y
4	IC 320-528108/7	200.0	233.753349	100.0	18367884.0	1.168767	Y
5	IC 320-528108/8	1000.0	1299.31181	100.0	20861110.0	1.299312	Y

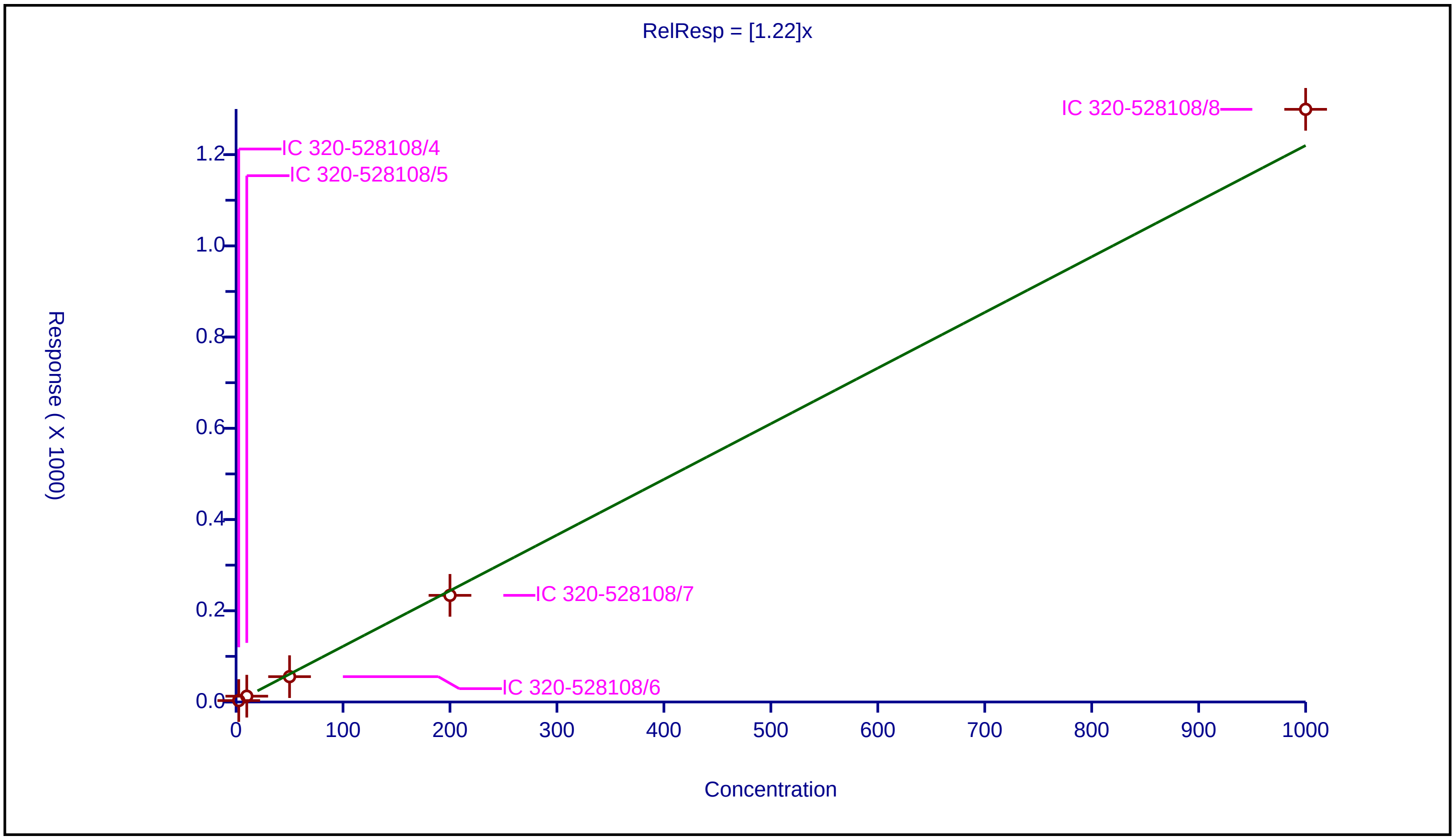

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9796

Error Coefficients

Standard Error:	85400000
Relative Standard Error:	6.0
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.571923	100.0	13945479.0	1.028769	Y
2	IC 320-528108/5	10.0	10.010788	100.0	13348929.0	1.001079	Y
3	IC 320-528108/6	50.0	44.933676	100.0	14990207.0	0.898674	Y
4	IC 320-528108/7	200.0	187.802512	100.0	14130869.0	0.939013	Y
5	IC 320-528108/8	1000.0	1030.387392	100.0	16359900.0	1.030387	Y

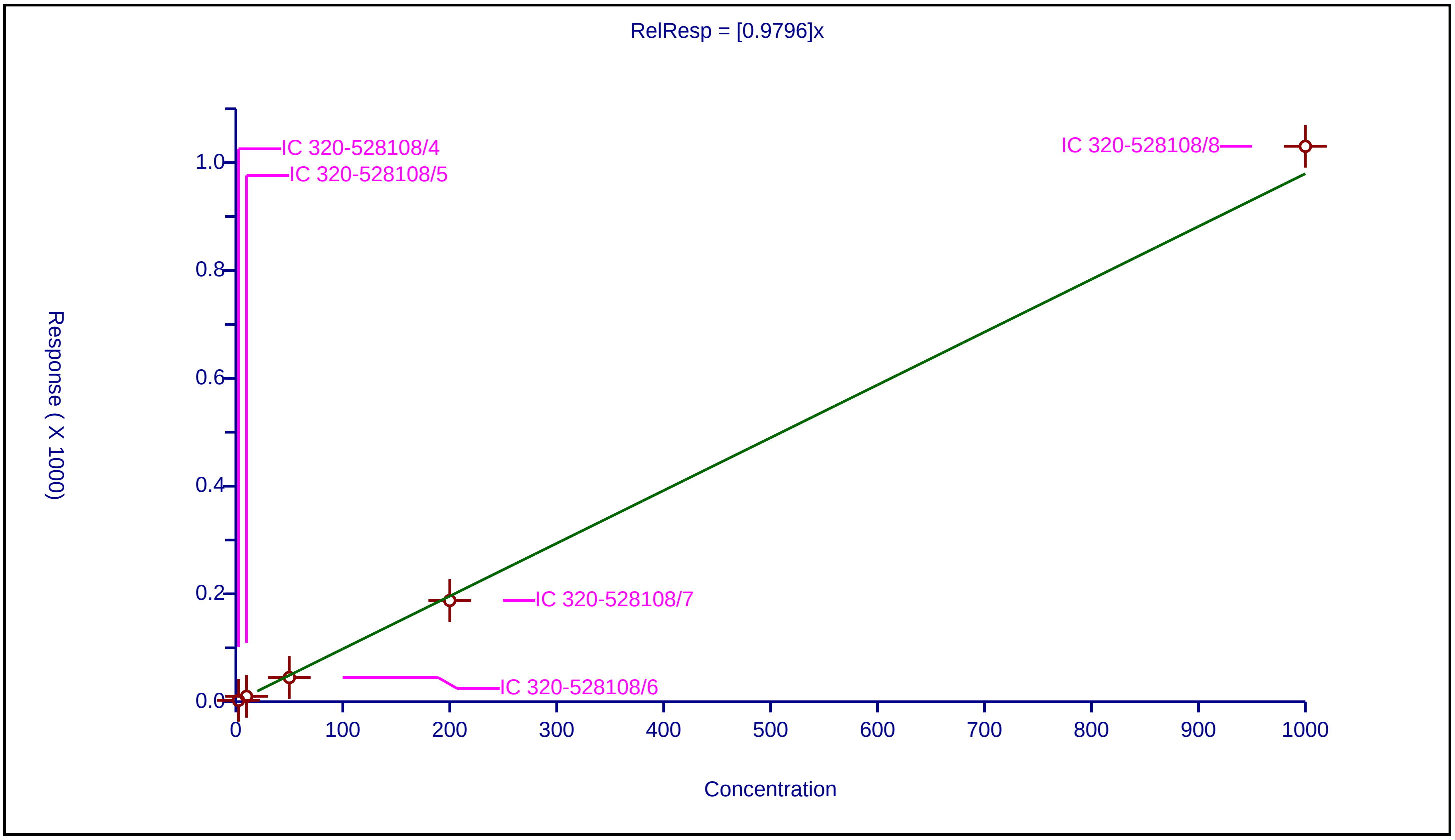

Calibration

/ 1,2,3,7,8,9-HxCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.245

Error Coefficients

Standard Error:	121000000
Relative Standard Error:	7.2
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	3.214243	100.0	14365871.0	1.285697	Y
2	IC 320-528108/5	10.0	12.969898	100.0	12533090.0	1.29699	Y
3	IC 320-528108/6	50.0	56.251408	100.0	15744381.0	1.125028	Y
4	IC 320-528108/7	200.0	235.904362	100.0	14457299.0	1.179522	Y
5	IC 320-528108/8	1000.0	1339.803035	100.0	17838715.0	1.339803	Y

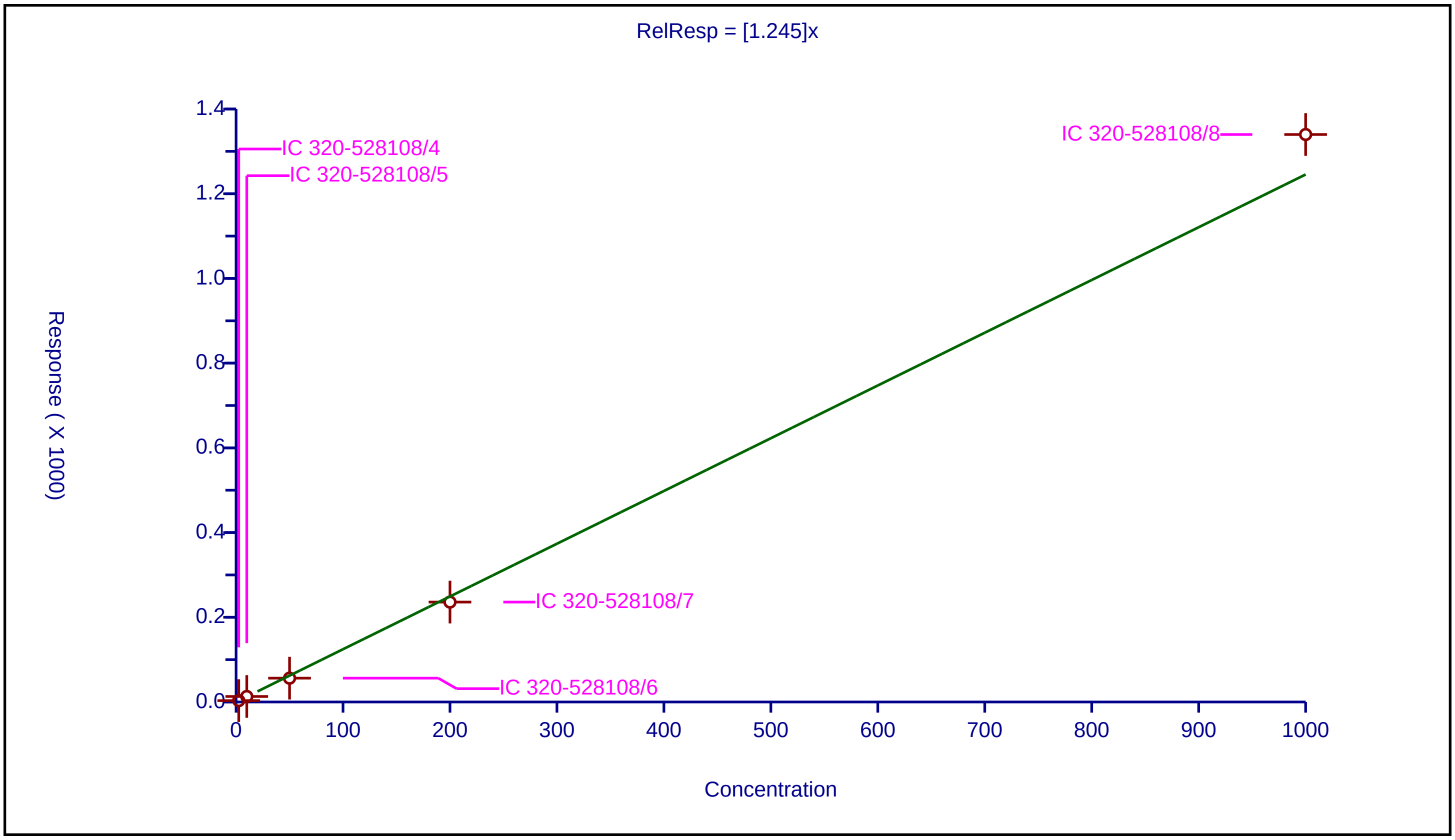

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.059

Error Coefficients

Standard Error:	67600000
Relative Standard Error:	5.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.738624	100.0	11616054.0	1.095449	Y
2	IC 320-528108/5	10.0	11.334921	100.0	11471690.0	1.133492	Y
3	IC 320-528108/6	50.0	49.808668	100.0	12063083.0	0.996173	Y
4	IC 320-528108/7	200.0	208.144056	100.0	11758785.0	1.04072	Y
5	IC 320-528108/8	1000.0	1031.327561	100.0	12870820.0	1.031328	Y

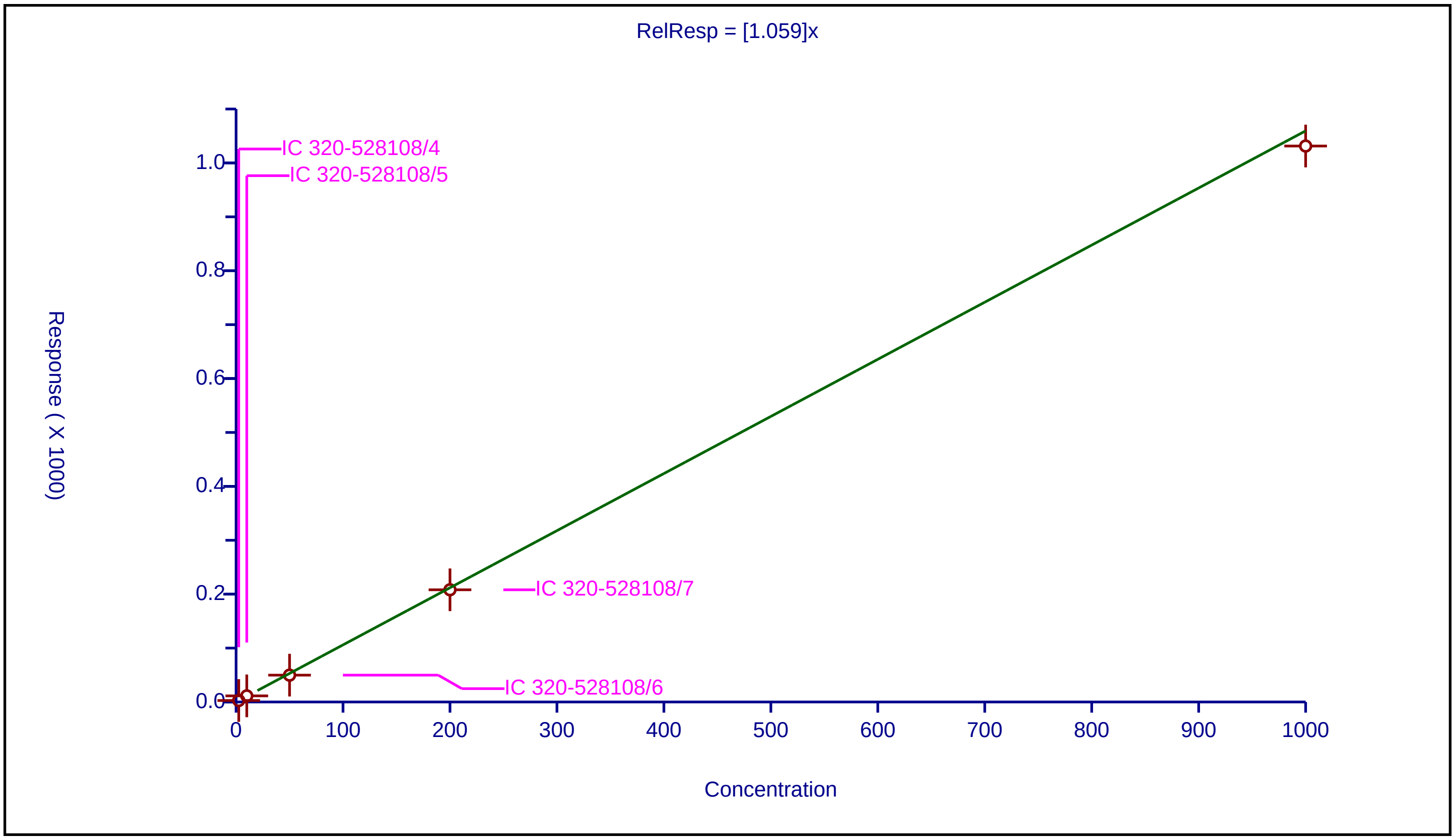

Calibration

/ 1,2,3,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.092

Error Coefficients

Standard Error:	114000000
Relative Standard Error:	5.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.809835	100.0	18307019.0	1.123934	Y
2	IC 320-528108/5	10.0	11.702993	100.0	18005950.0	1.170299	Y
3	IC 320-528108/6	50.0	50.393804	100.0	19146052.0	1.007876	Y
4	IC 320-528108/7	200.0	210.625923	100.0	18549570.0	1.05313	Y
5	IC 320-528108/8	1000.0	1104.567787	100.0	20333017.0	1.104568	Y

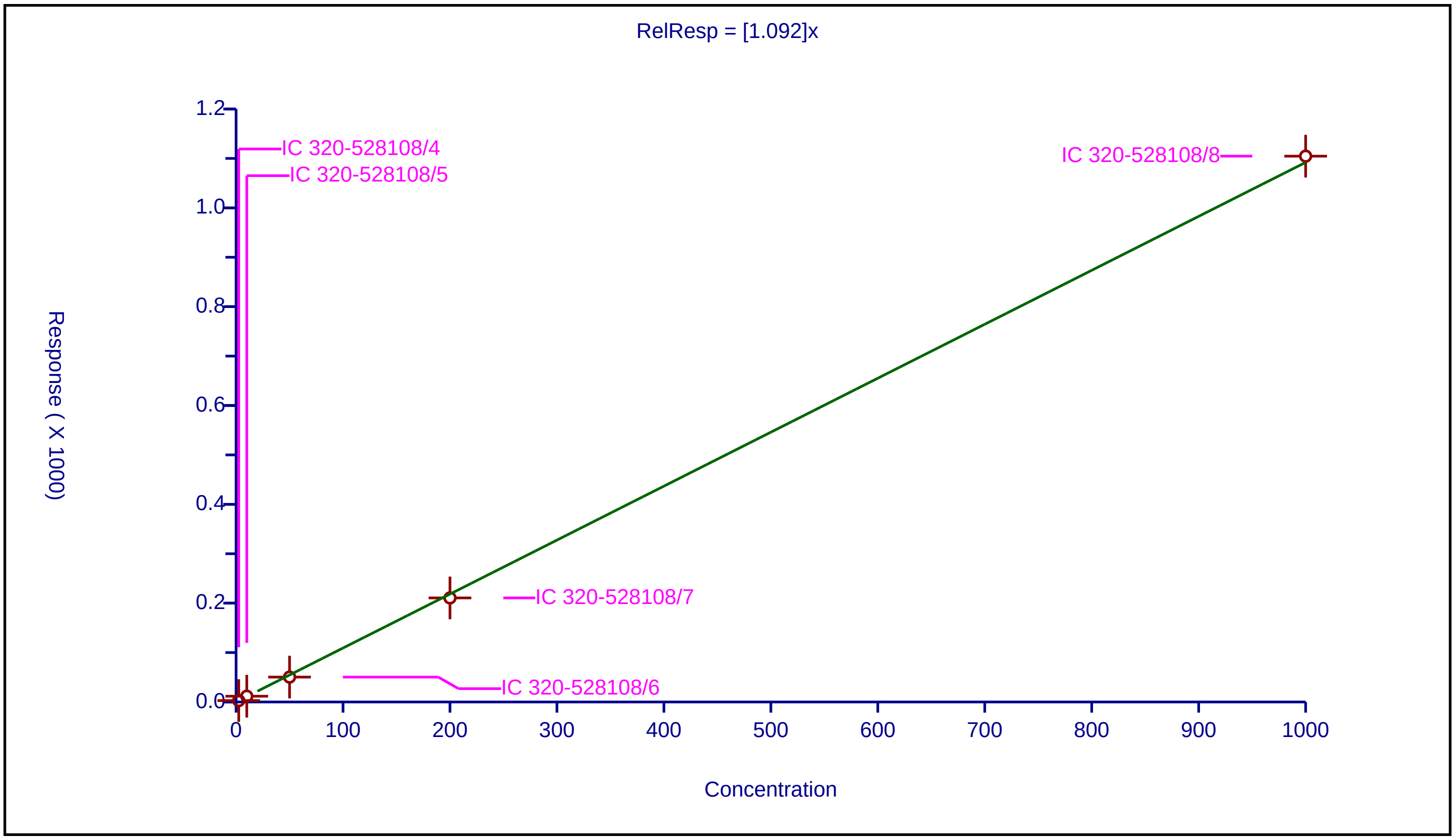

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.244

Error Coefficients

Standard Error:	128000000
Relative Standard Error:	6.8
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	3.176777	100.0	15872346.0	1.270711	Y
2	IC 320-528108/5	10.0	12.985863	100.0	14904500.0	1.298586	Y
3	IC 320-528108/6	50.0	56.672881	100.0	17027465.0	1.133458	Y
4	IC 320-528108/7	200.0	235.648481	100.0	16390446.0	1.178242	Y
5	IC 320-528108/8	1000.0	1336.703552	100.0	18859777.0	1.336704	Y

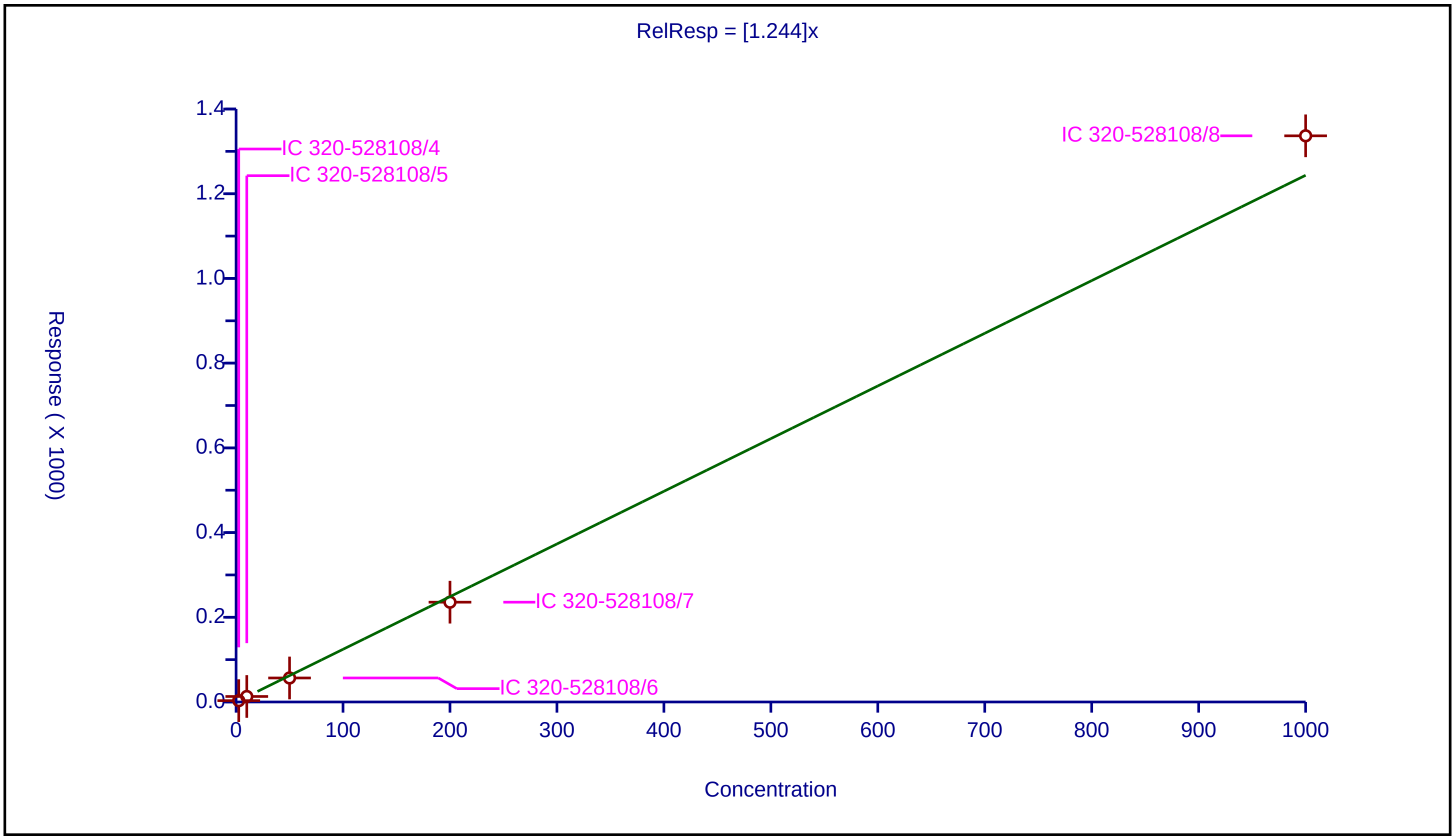

Calibration

/ 2,3,4,7,8-PeCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8752

Error Coefficients

Standard Error:	113000000
Relative Standard Error:	5.0
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	2.5	2.238237	100.0	22159006.0	0.895295	Y
2	IC 320-528108/5	10.0	9.220426	100.0	21889488.0	0.922043	Y
3	IC 320-528108/6	50.0	40.452782	100.0	23563927.0	0.809056	Y
4	IC 320-528108/7	200.0	171.124046	100.0	22582343.0	0.85562	Y
5	IC 320-528108/8	1000.0	894.041746	100.0	24919348.0	0.894042	Y

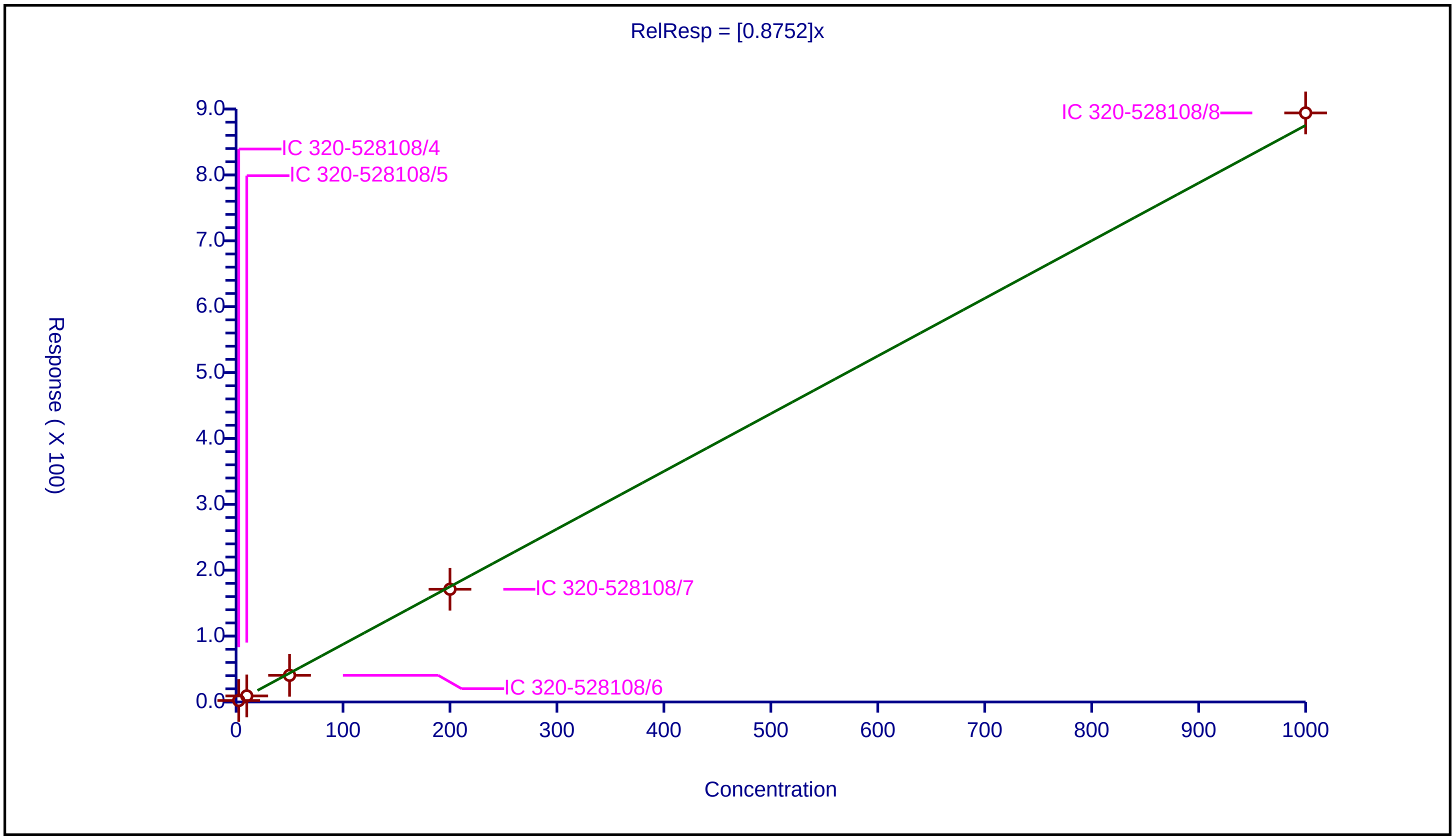

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.094

Error Coefficients

Standard Error:	15200000
Relative Standard Error:	6.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	0.5	0.577082	100.0	13835121.0	1.154164	Y
2	IC 320-528108/5	2.0	2.326158	100.0	13826062.0	1.163079	Y
3	IC 320-528108/6	10.0	10.139317	100.0	14329259.0	1.013932	Y
4	IC 320-528108/7	40.0	44.394959	100.0	13784993.0	1.109874	Y
5	IC 320-528108/8	200.0	206.06692	100.0	14477445.0	1.030335	Y

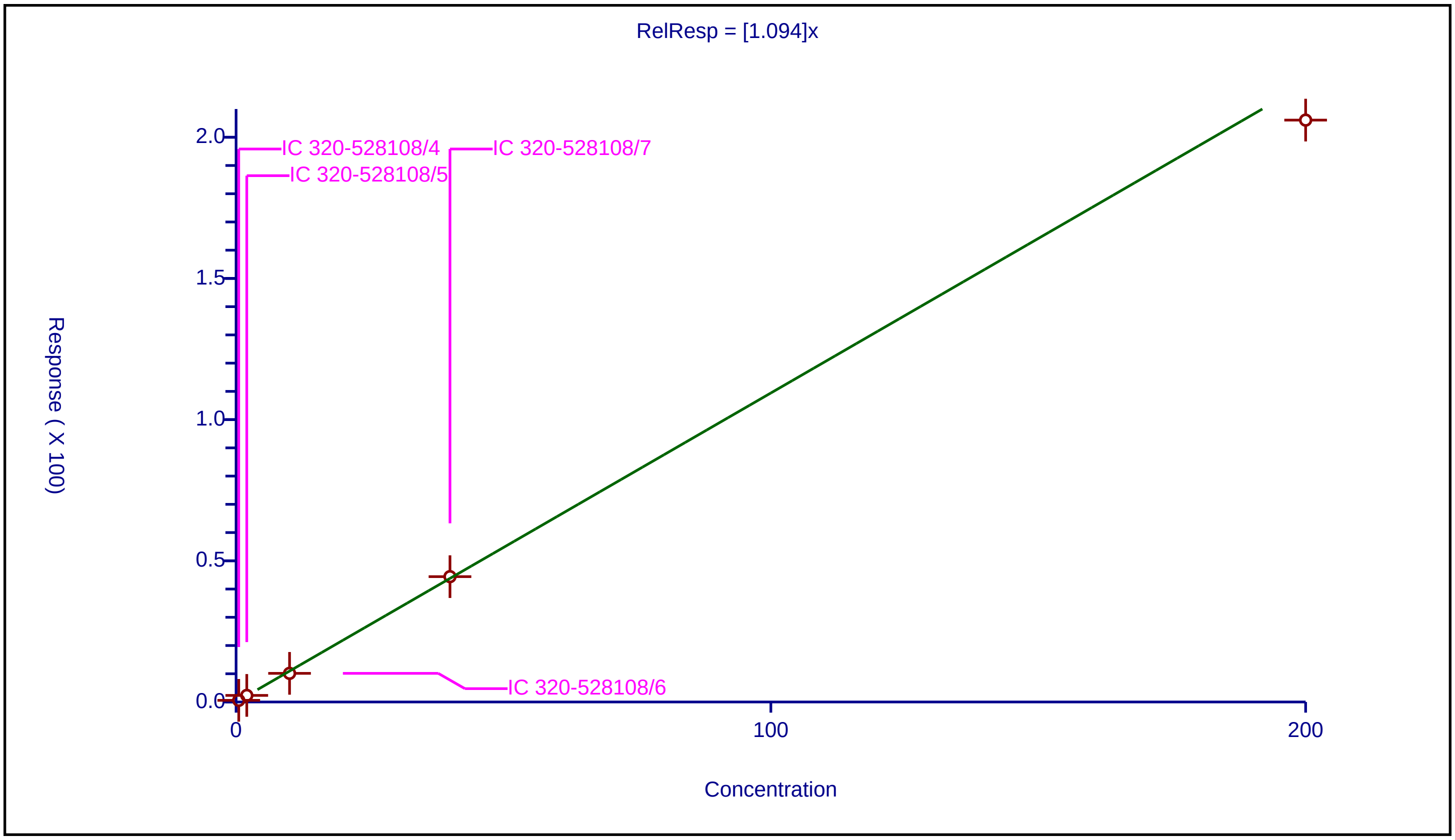

Calibration

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.119

Error Coefficients

Standard Error:	23200000
Relative Standard Error:	6.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	0.5	0.592176	100.0	20596575.0	1.184352	Y
2	IC 320-528108/5	2.0	2.376045	100.0	20437364.0	1.188023	Y
3	IC 320-528108/6	10.0	10.371208	100.0	21487623.0	1.037121	Y
4	IC 320-528108/7	40.0	45.548998	100.0	20659561.0	1.138725	Y
5	IC 320-528108/8	200.0	209.790293	100.0	21593614.0	1.048951	Y

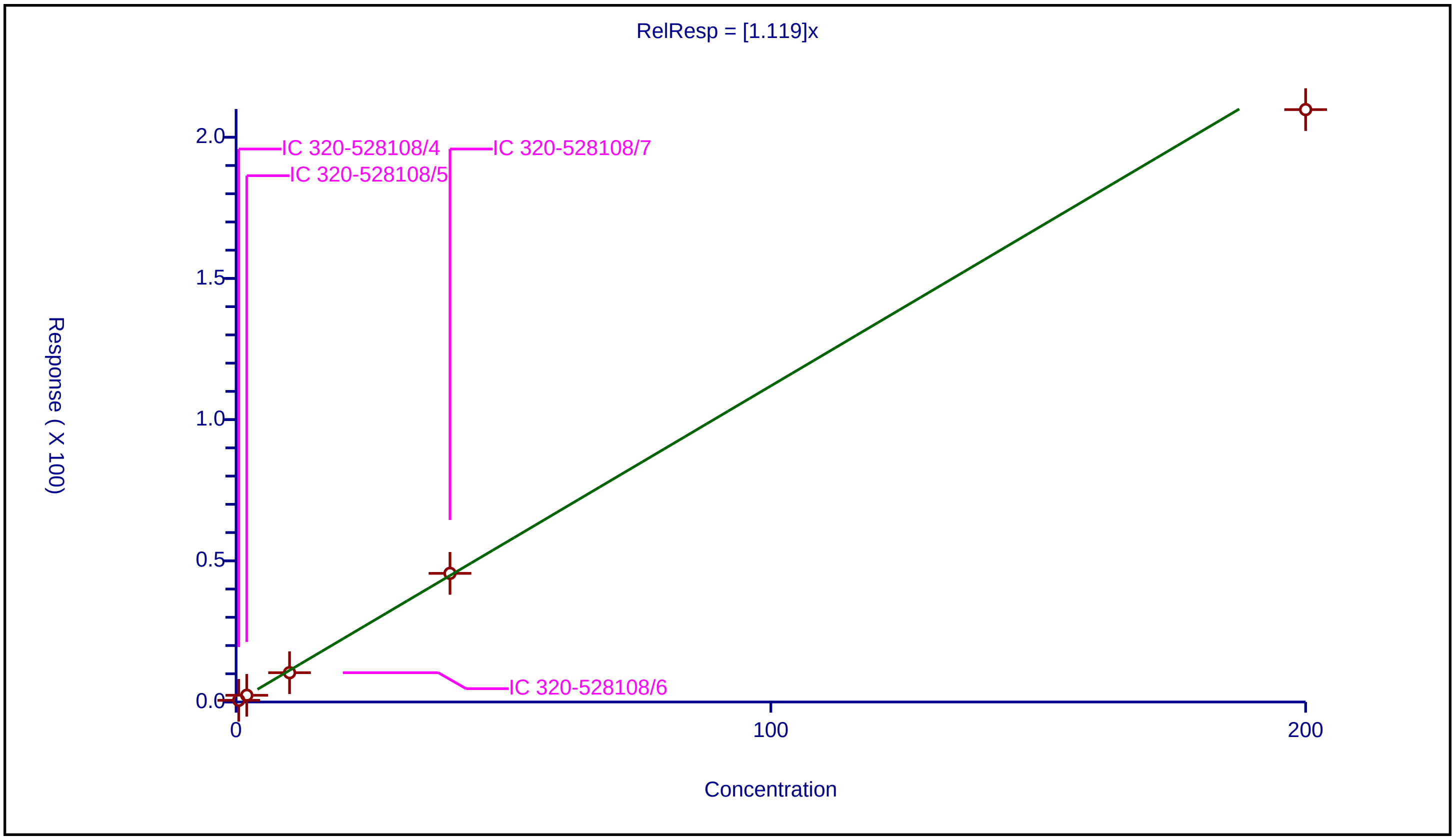

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.8658

Error Coefficients

Standard Error:	15000000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	0.5	0.411846	100.0	17230704.0	0.823692	Y
2	IC 320-528108/5	2.0	1.678072	100.0	17249801.0	0.839036	Y
3	IC 320-528108/6	10.0	9.200976	100.0	17437987.0	0.920098	Y
4	IC 320-528108/7	40.0	35.187496	100.0	16678112.0	0.879687	Y
5	IC 320-528108/8	200.0	173.263985	100.0	16990344.0	0.86632	Y

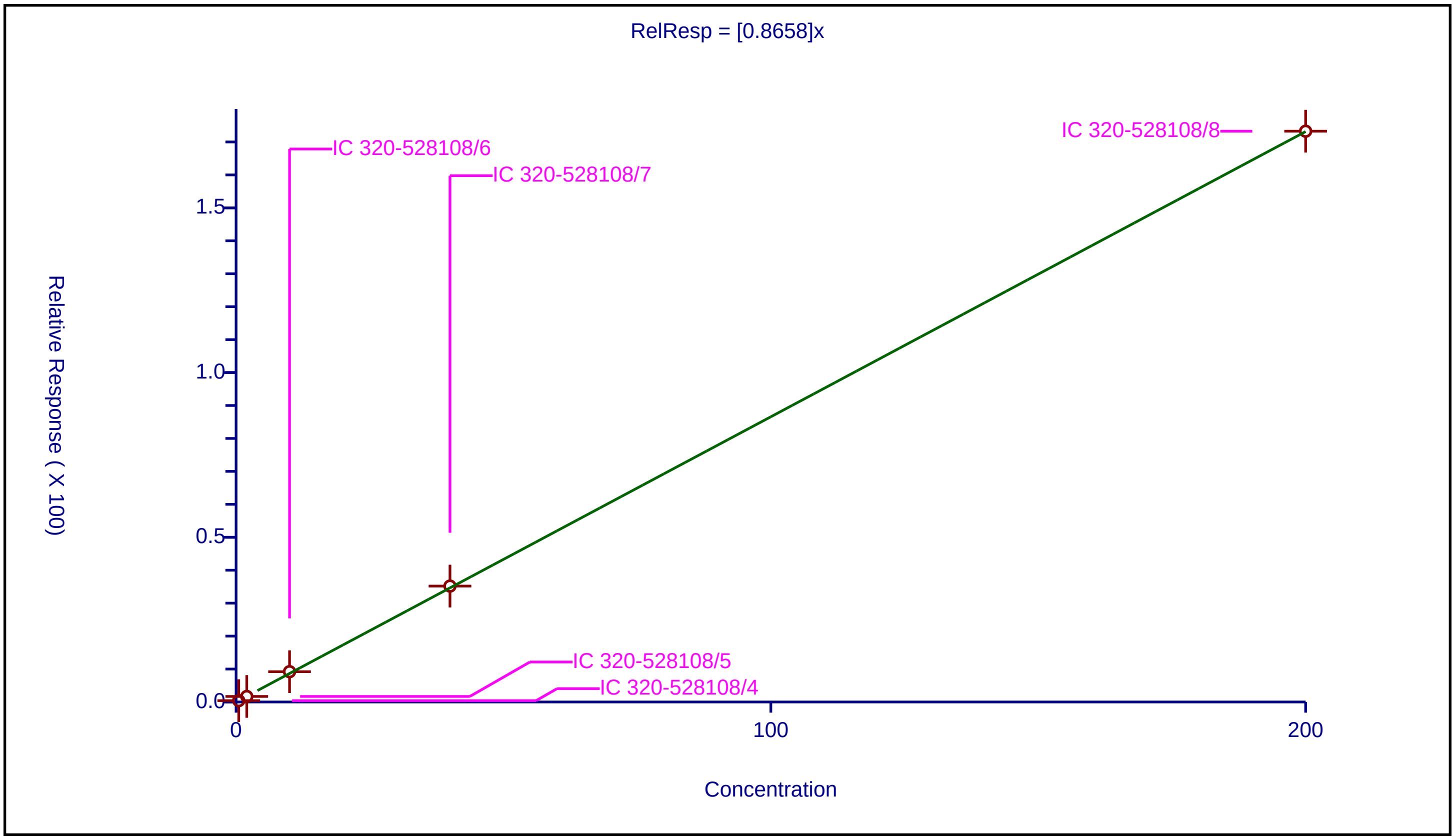

Calibration

/ OCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.134

Error Coefficients

Standard Error:	108000000
Relative Standard Error:	7.4
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	5.0	5.813184	200.0	12598776.0	1.162637	Y
2	IC 320-528108/5	20.0	23.87992	200.0	9594270.0	1.193996	Y
3	IC 320-528108/6	100.0	102.140821	200.0	14965098.0	1.021408	Y
4	IC 320-528108/7	400.0	429.909464	200.0	12560439.0	1.074774	Y
5	IC 320-528108/8	2000.0	2438.272396	200.0	17567983.0	1.219136	Y

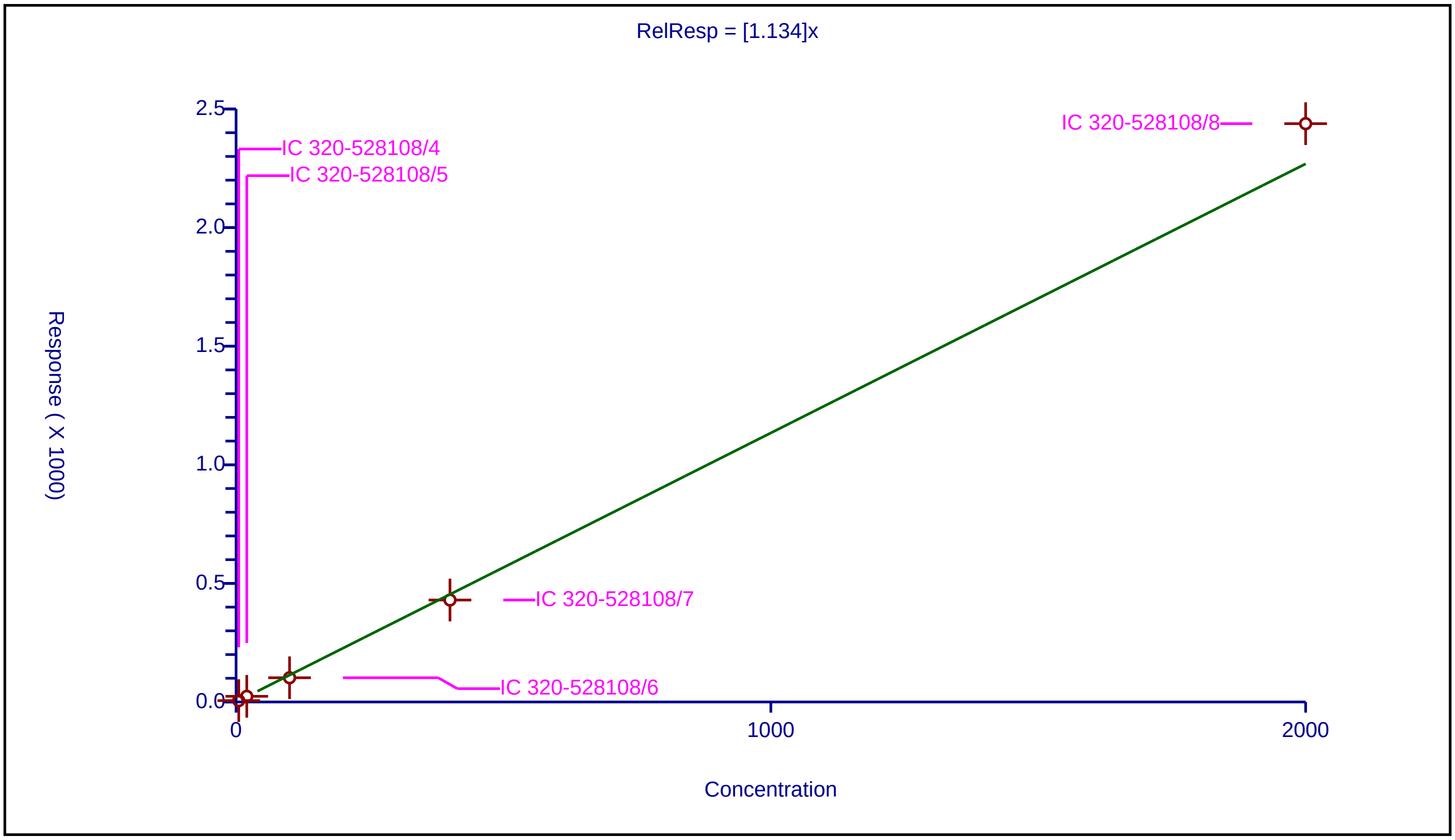

Calibration

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.509

Error Coefficients

Standard Error:	159000000
Relative Standard Error:	11.6
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.984

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-528108/4	5.0	7.390273	200.0	12598776.0	1.478055	Y
2	IC 320-528108/5	20.0	30.035177	200.0	9594270.0	1.501759	Y
3	IC 320-528108/6	100.0	133.787376	200.0	14965098.0	1.337874	Y
4	IC 320-528108/7	400.0	570.550026	200.0	12560439.0	1.426375	Y
5	IC 320-528108/8	2000.0	3606.171135	200.0	17567983.0	1.803086	Y

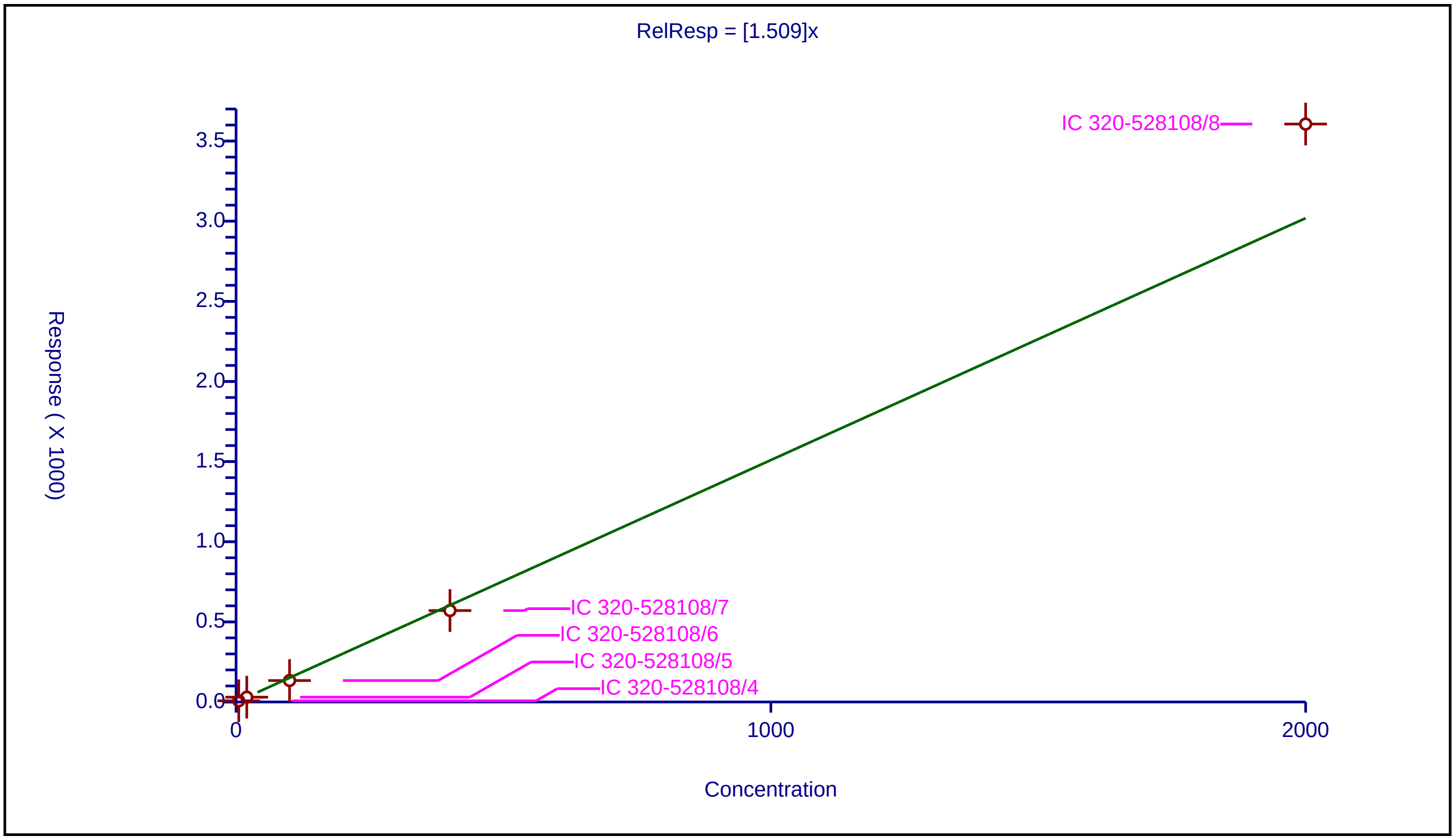

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-79918-1

SDG No.:

Lab Sample ID (1): WDM 320-528108/1   Instrument ID (1): DFS 1

GC Column (1): DB-5   ID: 0.32(mm)   Date Analyzed (1): 09/24/2021 11:17

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.94	13

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d				
Injection Date:	24-Sep-2021 11:17:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 56616
H (Peak Height) = 423788

%R = 13 <= 25
Passed

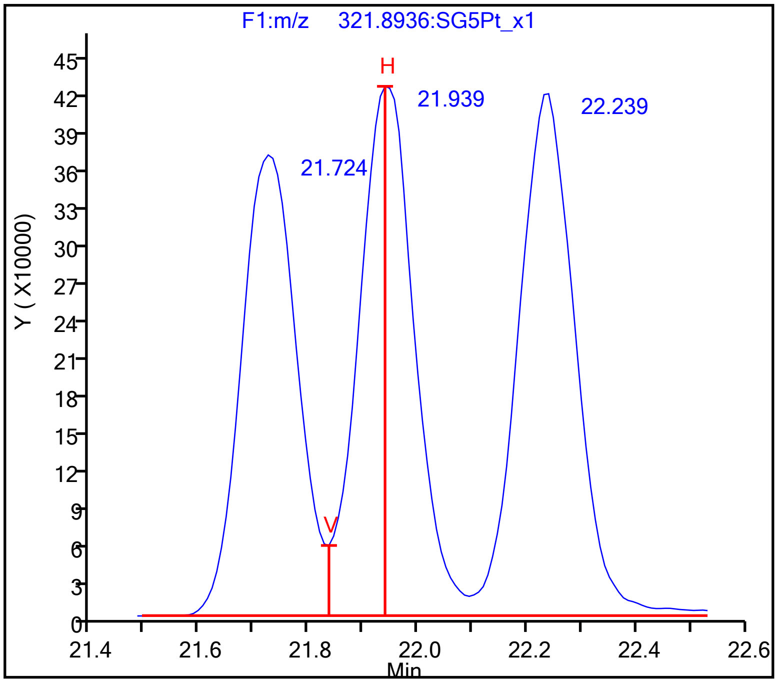

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-79918-1

SDG No.:

Lab Sample ID (1): WDM 320-531494/1   Instrument ID (1): 11D2

GC Column (1): DB-225   ID: 0.32(mm)   Date Analyzed (1): 10/06/2021 09:44

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.52	16

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d				
Injection Date:	06-Oct-2021 09:44:37	Instrument ID:	11D2		
Lims ID:	WDM				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 625769
H (Peak Height) = 3837932

%R = 16 <= 25
Passed

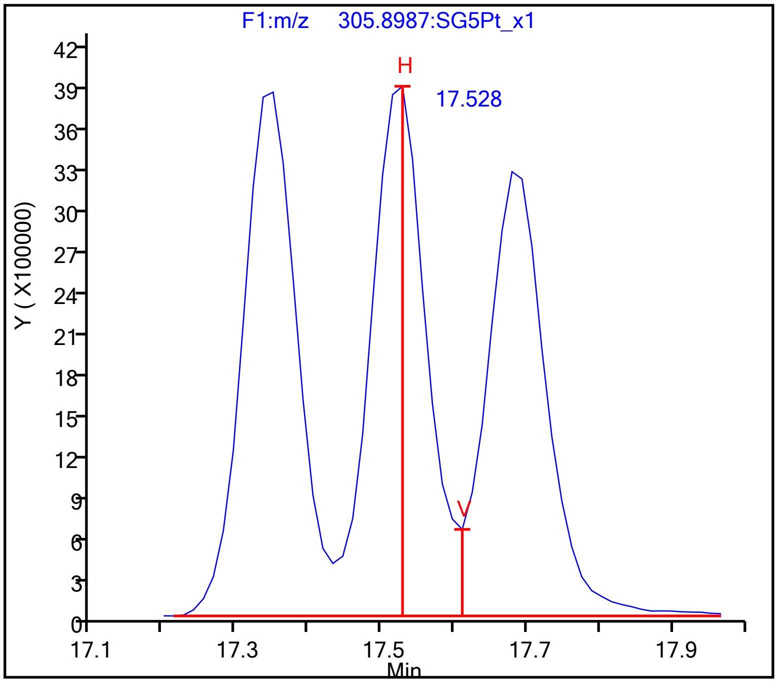

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d				
Injection Date:	06-Oct-2021 09:44:37	Instrument ID:	11D2		
Lims ID:	WDM				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Lab Sample ID (1): WDM 320-534320/1 Instrument ID (1): DFS 1

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/15/2021 10:15

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	21.17	14

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d				
Injection Date:	15-Oct-2021 10:15:00	Instrument ID:	DFS 1		
Lims ID:	WDM				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 45889
H (Peak Height) = 328396

%R = 14 <= 25
Passed

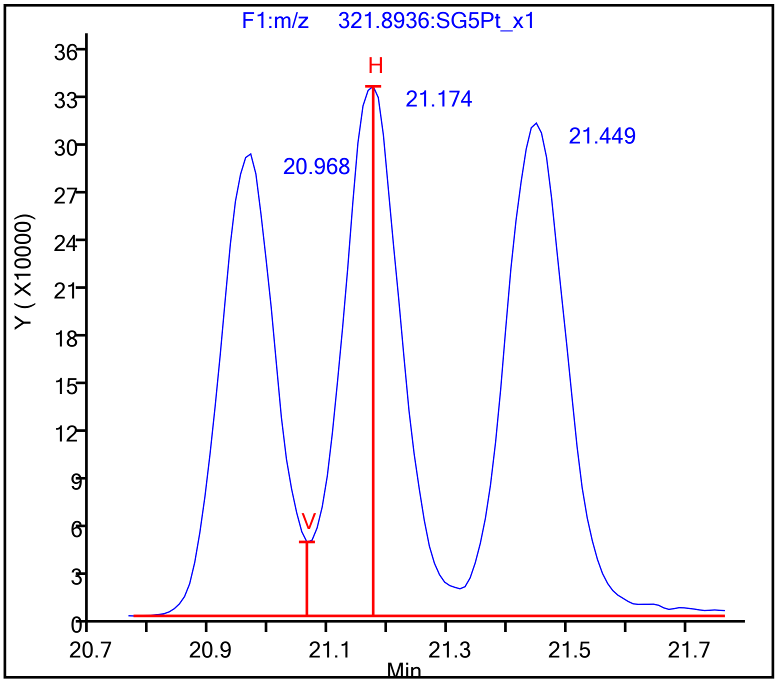

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Lab Sample ID (1): CPS 320-535163/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 10/18/2021 11:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.47	18

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_001.d				
Injection Date:	18-Oct-2021 11:47:33	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 489793
H (Peak Height) = 2750411

%R = 18 <= 25
Passed

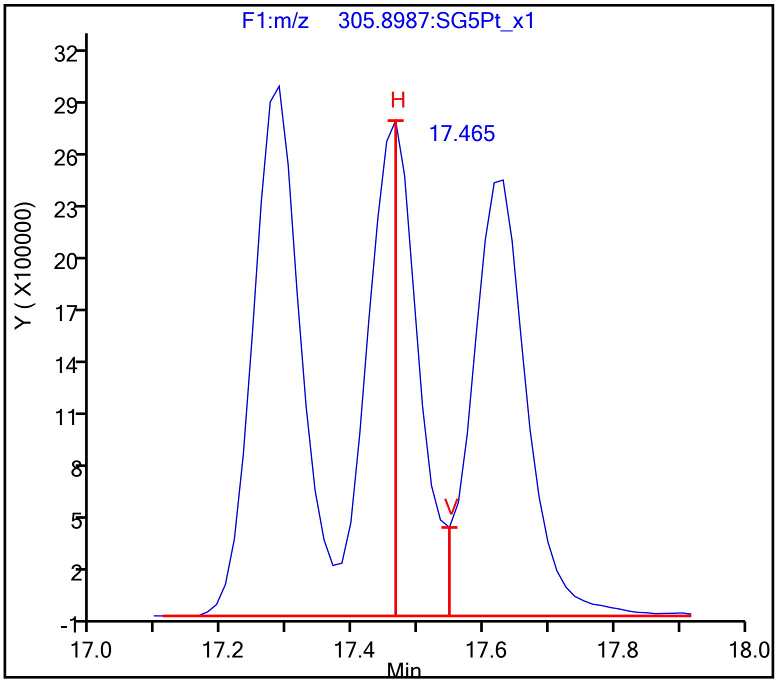

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Lab Sample ID: ICV 320-531494/9 Calibration Date: 10/06/2021 14:51

Instrument ID: 11D2 Calib Start Date: 10/06/2021 11:01

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 10/06/2021 13:34

Lab File ID: 06OC2111D2_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	0.9807	1.094		44.6	40.0	112	70-130
2,3,7,8-TCDF	AveID	0.9474	0.9779		41.3	40.0	103	70-130
13C-2,3,7,8-TCDD	Ave	0.7189	0.7133		99.2	100	99	82-121
13C-2,3,7,8-TCDF	Ave	0.9820	1.017		104	100	104	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.7344	0.7367		40.1	40.0	100	79-127

FORM VII 1613B

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	06-Oct-2021 14:51:16	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00048				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:11:48	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				
First Level Reviewer: bennettd		Date:	06-Oct-2021 16:06:08		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.179	59558387	0.77	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.482	60576257	0.86	0.9820	103.6	103.6	0.3652	0.3652	104	
2,3,7,8-TCDF	17.510	23693899	0.78	0.9474	41.3	41.3	0.2124	0.2124	103	
D 13C-2,3,7,8-TCDD	15.960	42483915	0.77	0.7189	99.2	99.2	0.6003	0.6003	99.22	
$ 37Cl4-2,3,7,8-TCDD	15.987	17551322		0.7344	40.1	40.1	0.0954	0.0954	100	
2,3,7,8-TCDD	15.987	18591491	0.80	0.9807	44.6	44.6	0.2037	0.2037	112	M
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
Review Flags
M - Manually Integrated

Reagents:

HRDXNIC_00048 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:11:49 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 06-Oct-2021 14:51:16 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00048
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:11:48 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd Date: 06-Oct-2021 16:06:08

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.179	16.175	0		25881911	5497180	10238	25595	537		
333.9339	16.179	16.175	0		33676476	7245974	11760	29400	616	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.482	17.501	-1	1.081	27928788	5430231	9600	24000	566		
317.9389	17.482	17.501	-1	1.081	32647469	5965900	8681	21702	687	0.86(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.510	17.515	0	1.002	10398865	1848000	4608	11520	401		
305.8987	17.510	17.515	0	1.002	13295034	2430967	4563	11407	533	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.960	15.978	-1	0.986	18541737	4058856	10238	25595	396		
333.9339	15.960	15.978	-1	0.986	23942178	5418719	11760	29400	461	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.987	15.983	0	0.988	17551322	3887099	3571	8927	1089		
2,3,7,8-TCDD											M
319.8965	15.987	16.006	-1	1.002	8282575	1814462	3494	8735	519		
321.8936	15.973	16.006	-2	1.001	10308916	2186934	4081	10202	536	0.80(0.65-0.89)	M

QC Flag Legend
Processing Flags
Review Flags
M - Manually Integrated

Reagents:
HRDXNIC_00048 Amount Added: 2.00 Units: uL

Report Date: 06-Oct-2021 16:11:49 Chrom Revision: 2.3 13-May-2021 07:57:40

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d

Injection Date:	06-Oct-2021 14:51:16	Instrument ID:	11D2		
Lims ID:	ICV				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

Processing Integration Results

RT: 15.97
Area: 10511853
Amount: 45.111019
Amount Units: pg/ul

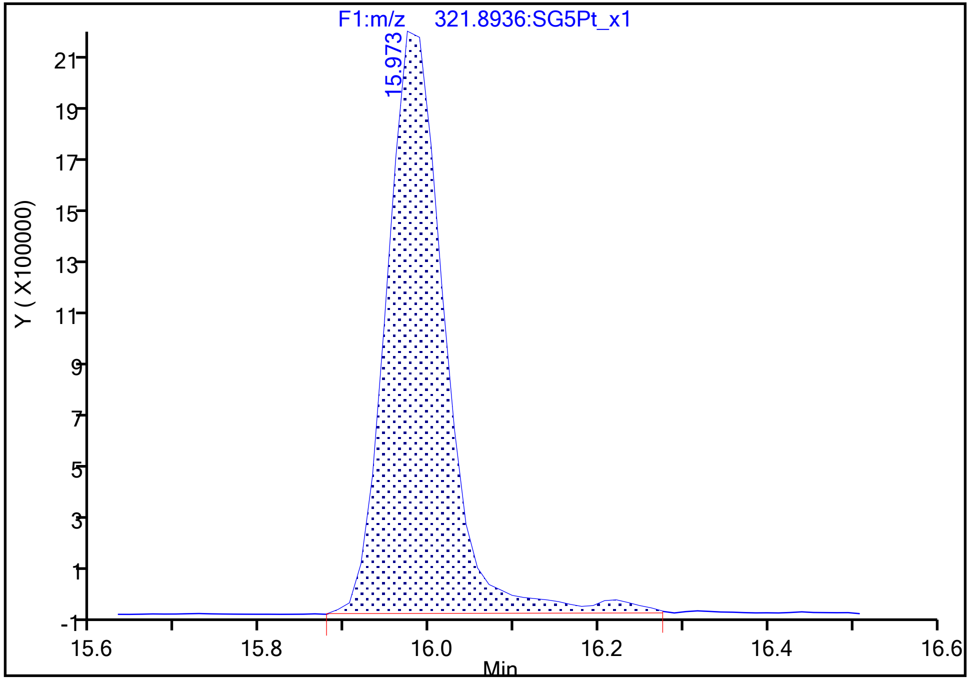

Manual Integration Results

RT: 15.97
Area: 10308916
Amount: 44.623923
Amount Units: pg/ul

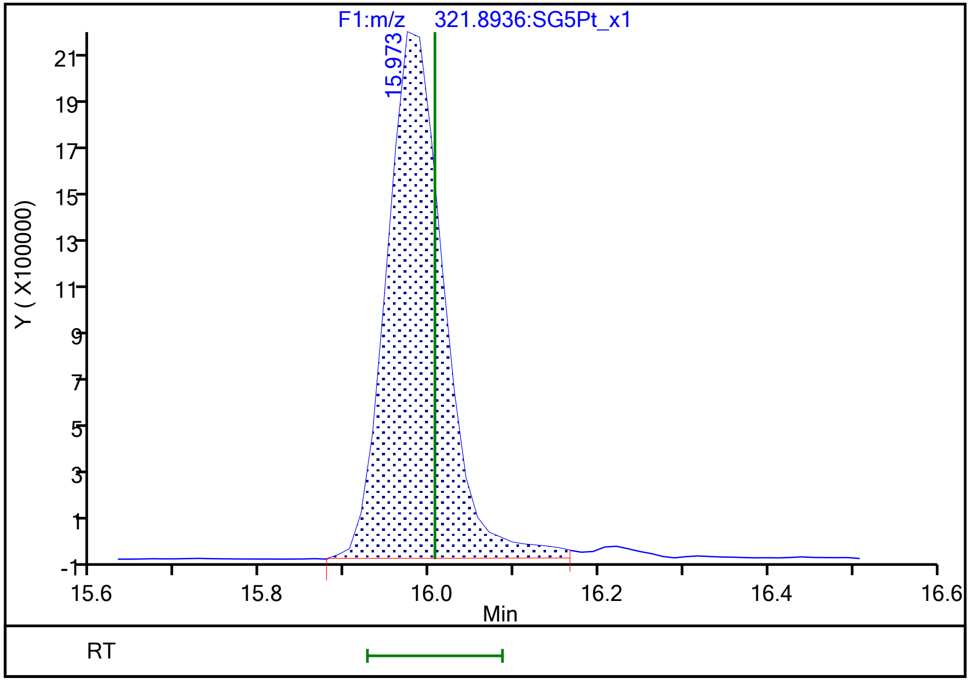

Reviewer: bennettd, 06-Oct-2021 16:04:54

Audit Action: Split an Integrated Peak Audit Reason: Peak Tail

Report Date: 06-Oct-2021 16:11:49 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d

Injection Date: 06-Oct-2021 14:51:16 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 531494 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

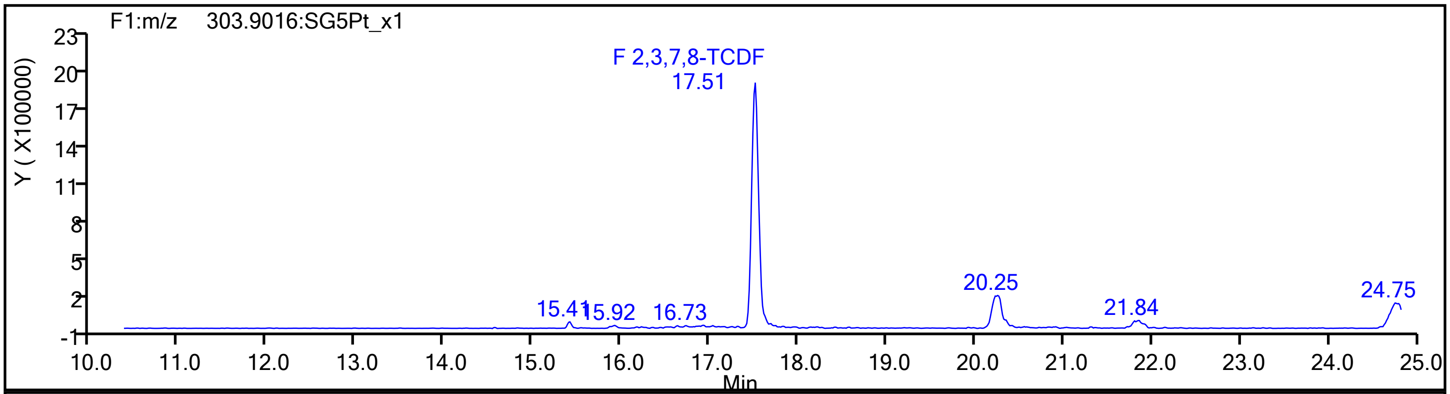

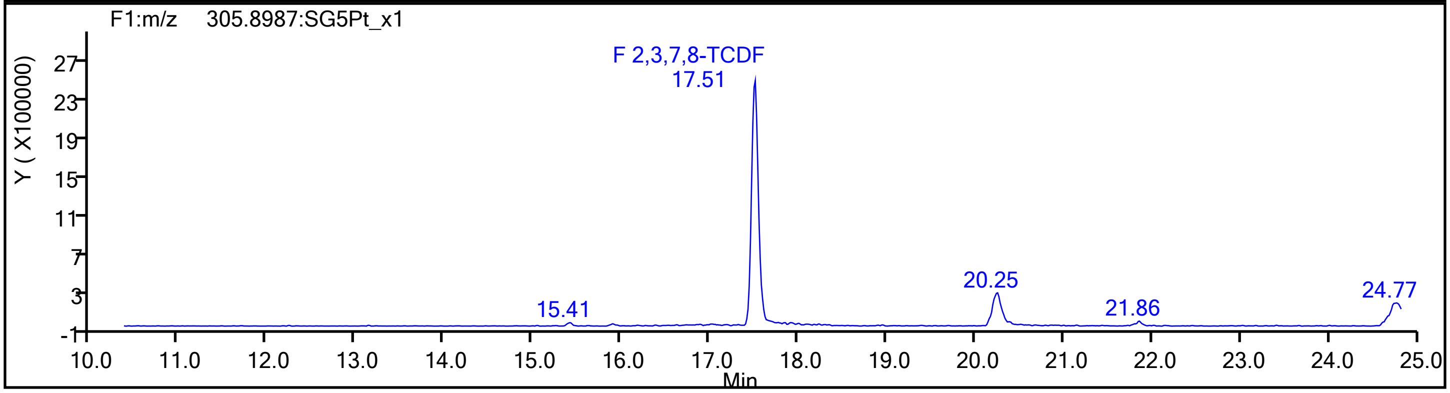

TCDF Standards

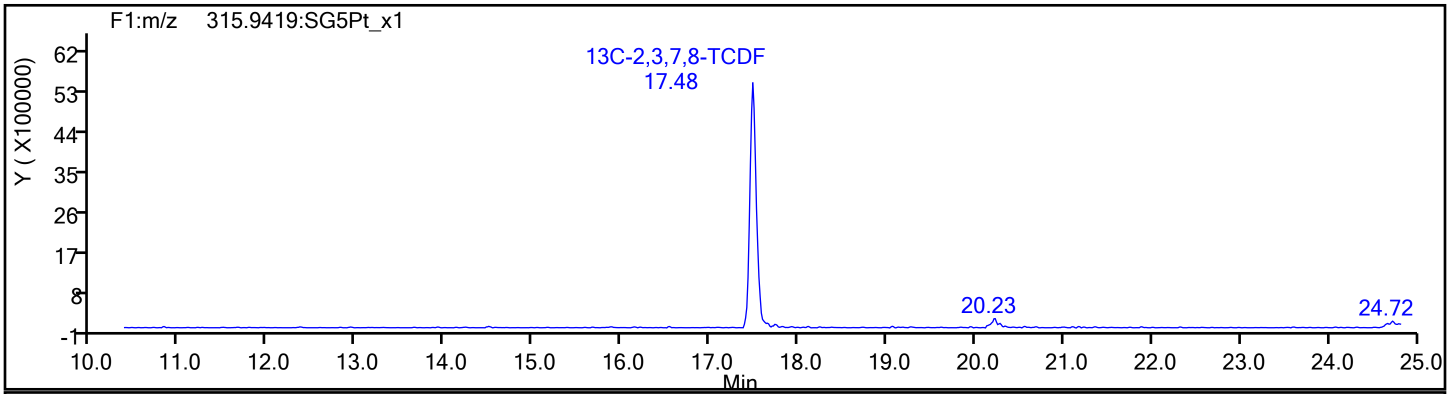

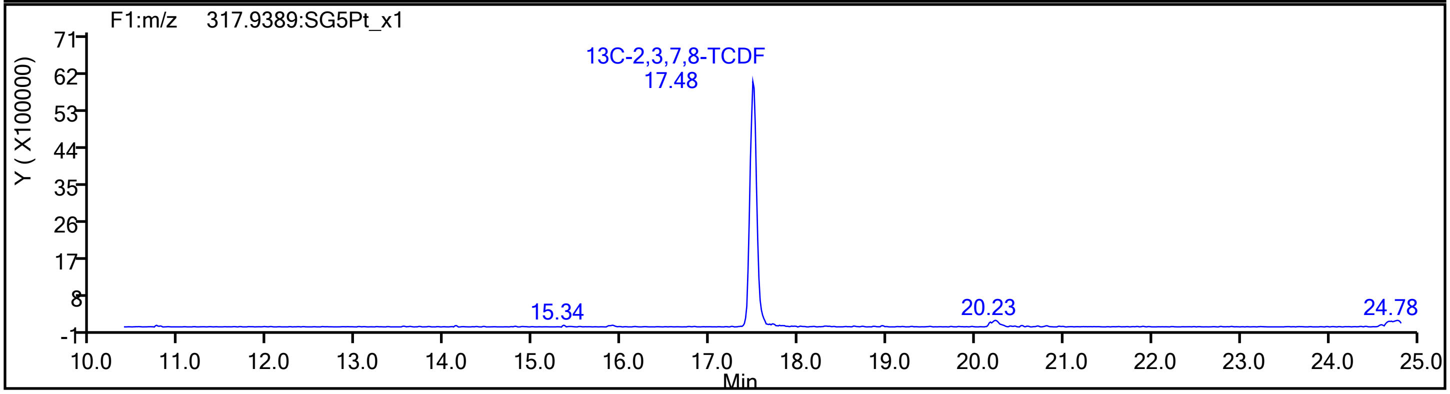

Report Date: 06-Oct-2021 16:11:49 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d

Injection Date:	06-Oct-2021 14:51:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

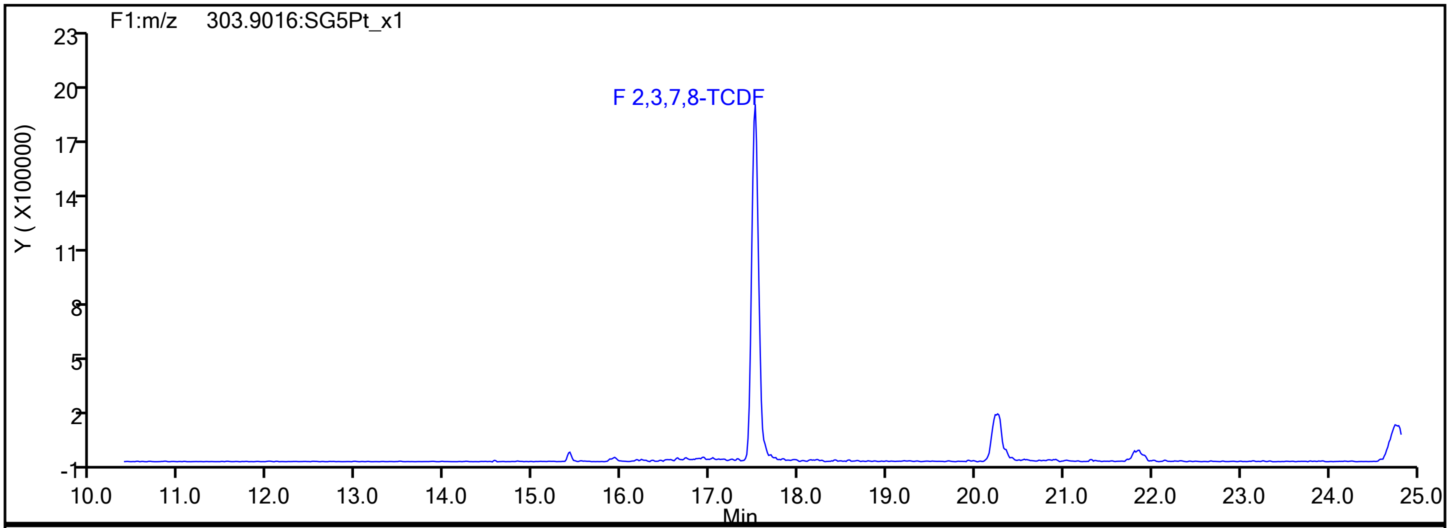

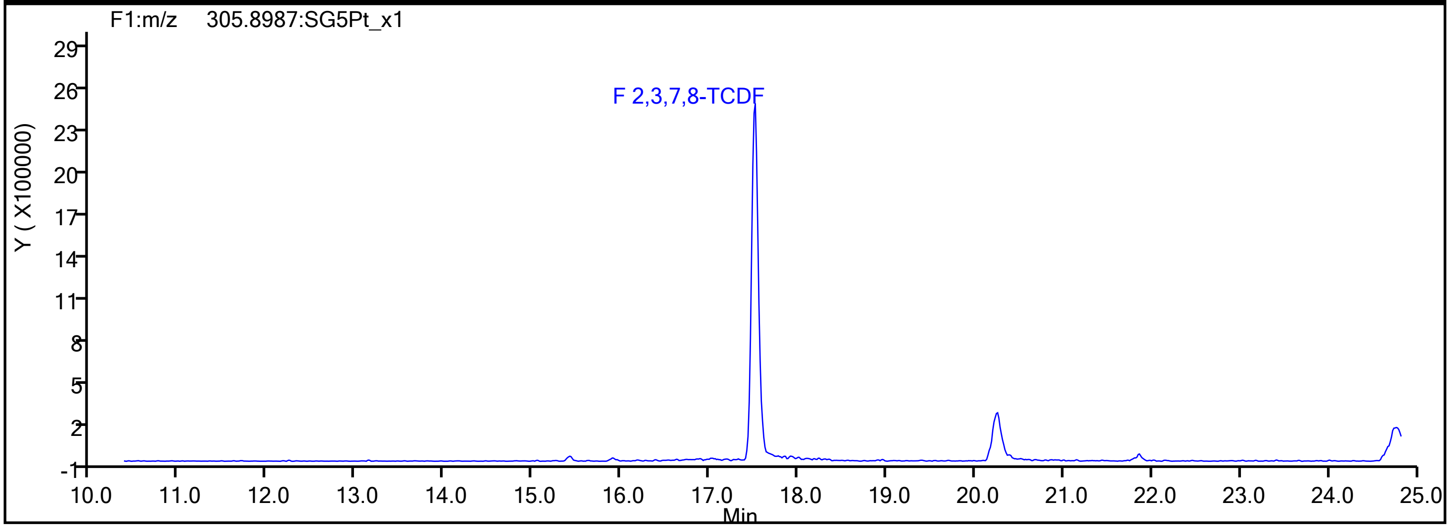

TCDF Interference Mass

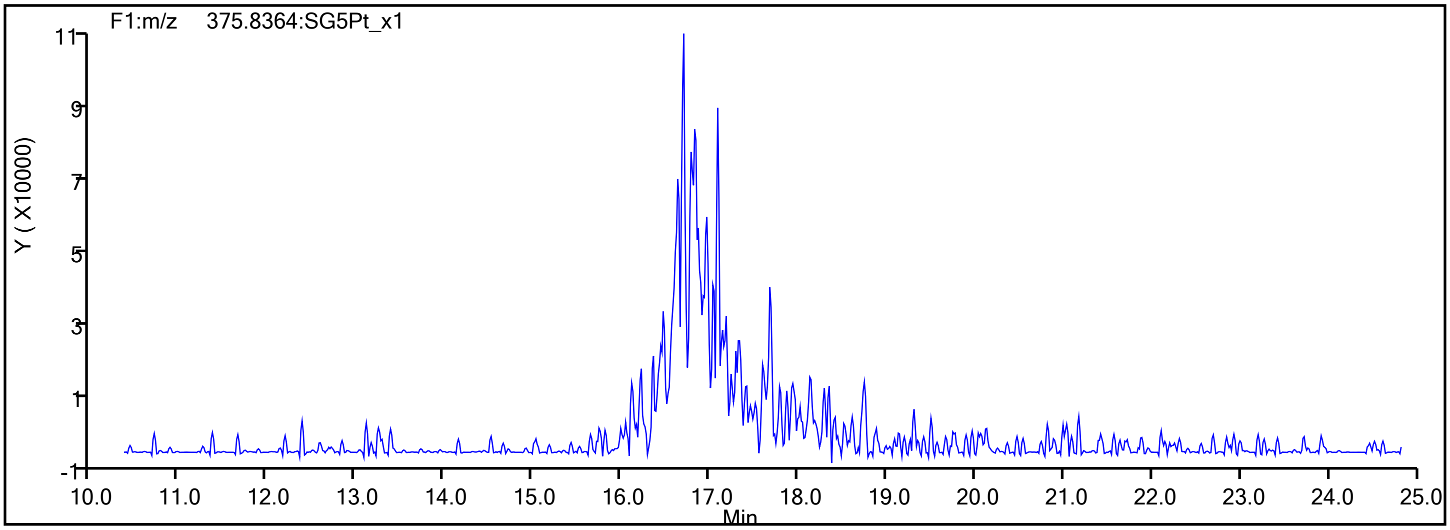

Report Date: 06-Oct-2021 16:11:49 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d
Injection Date: 06-Oct-2021 14:51:16
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

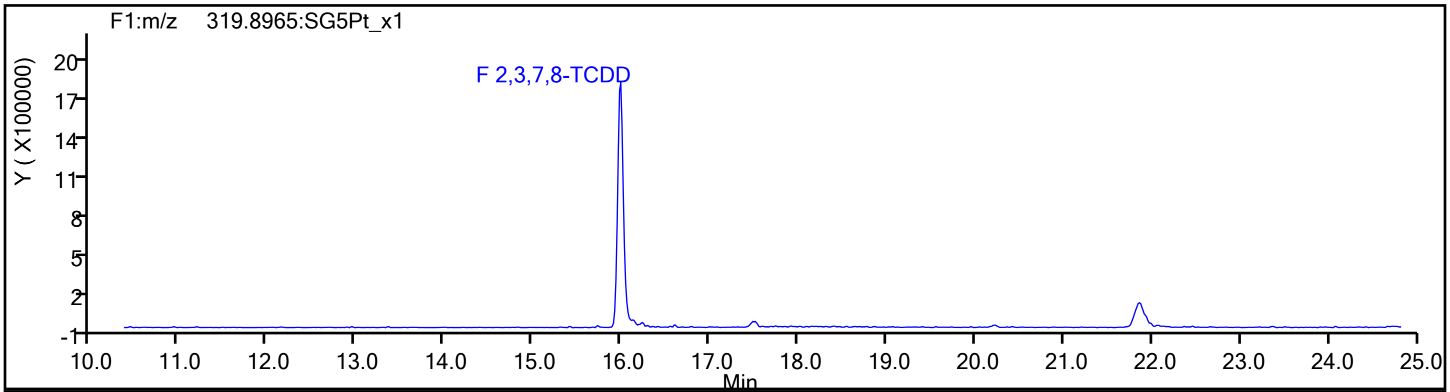

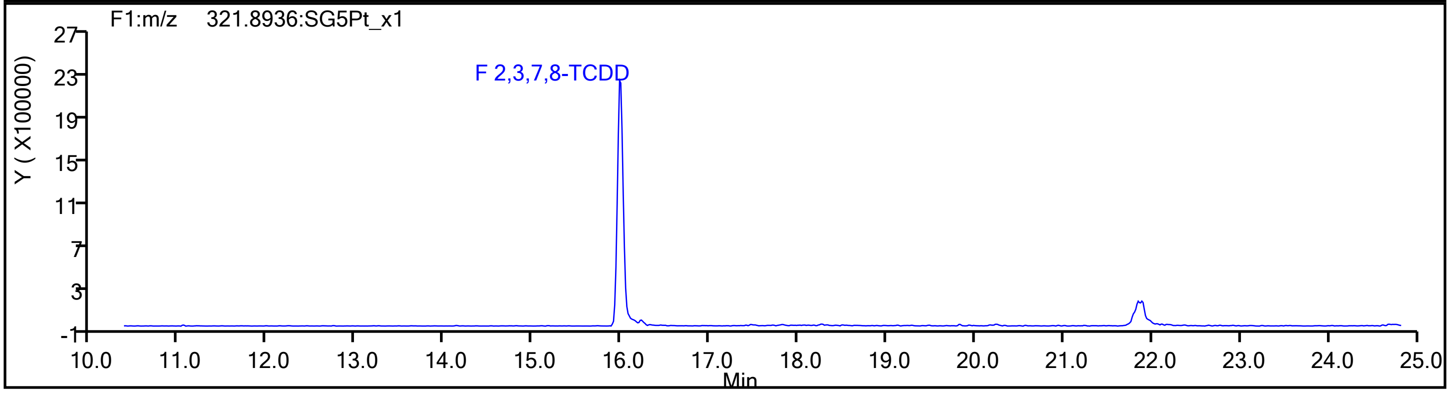

TCDD Standards

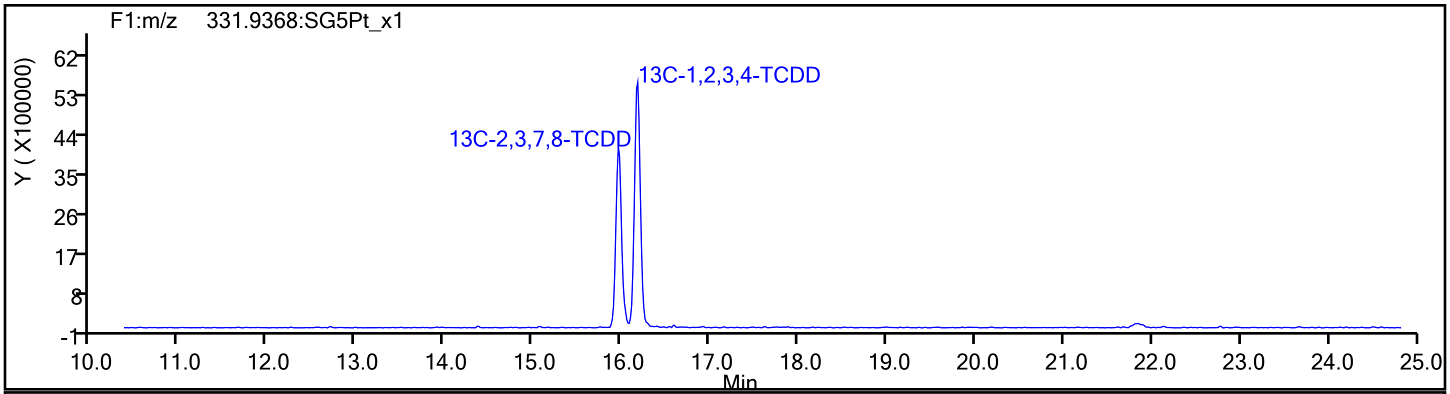

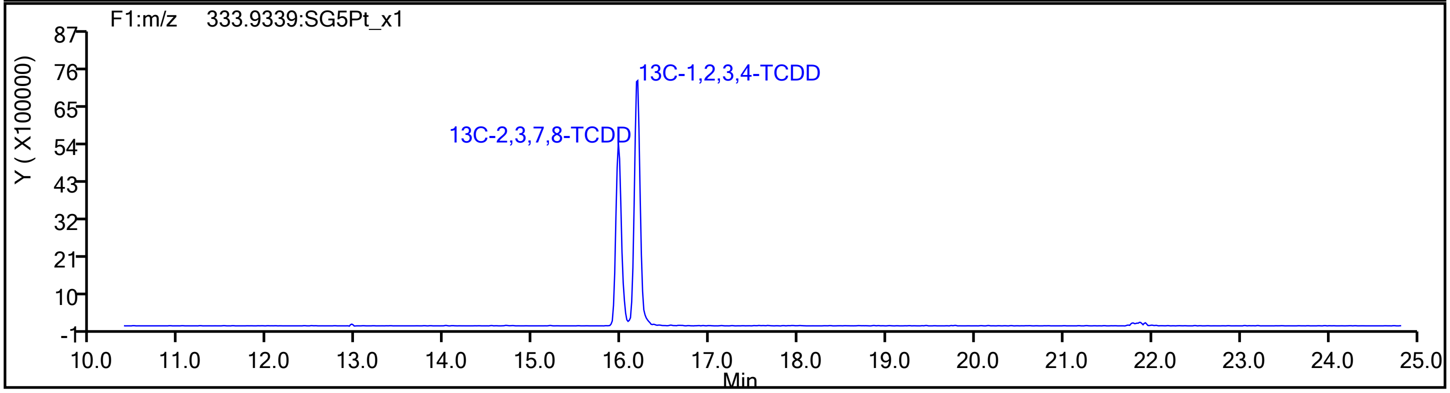

Report Date: 06-Oct-2021 16:11:49 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d

Injection Date: 06-Oct-2021 14:51:16 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 531494 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

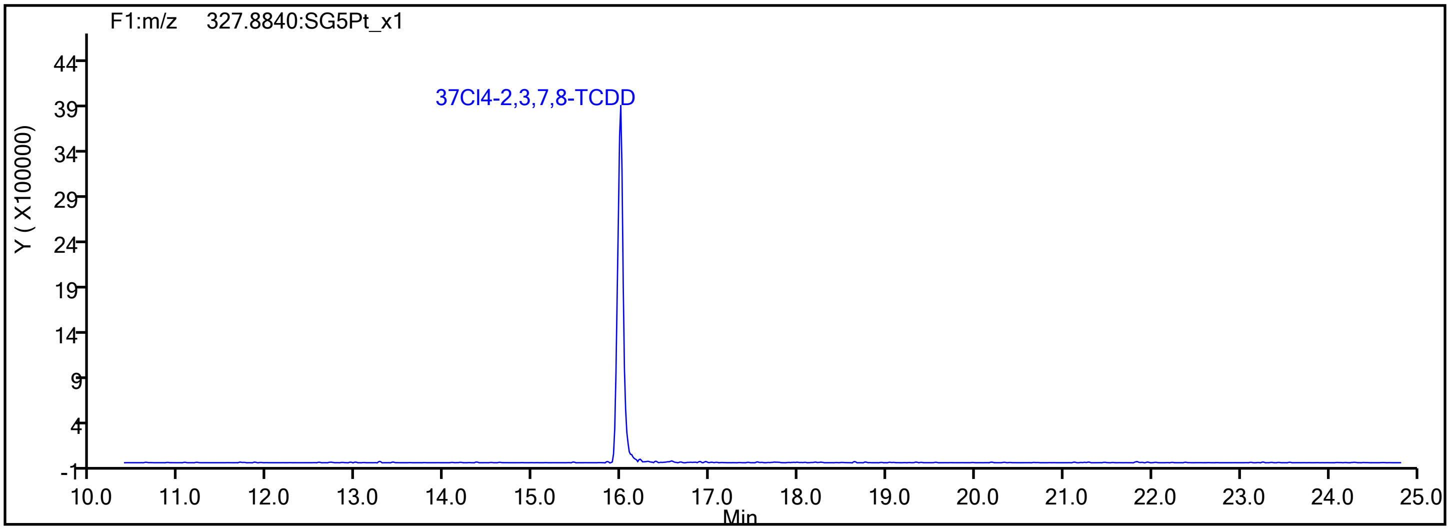

37Cl4-TCDD Standards

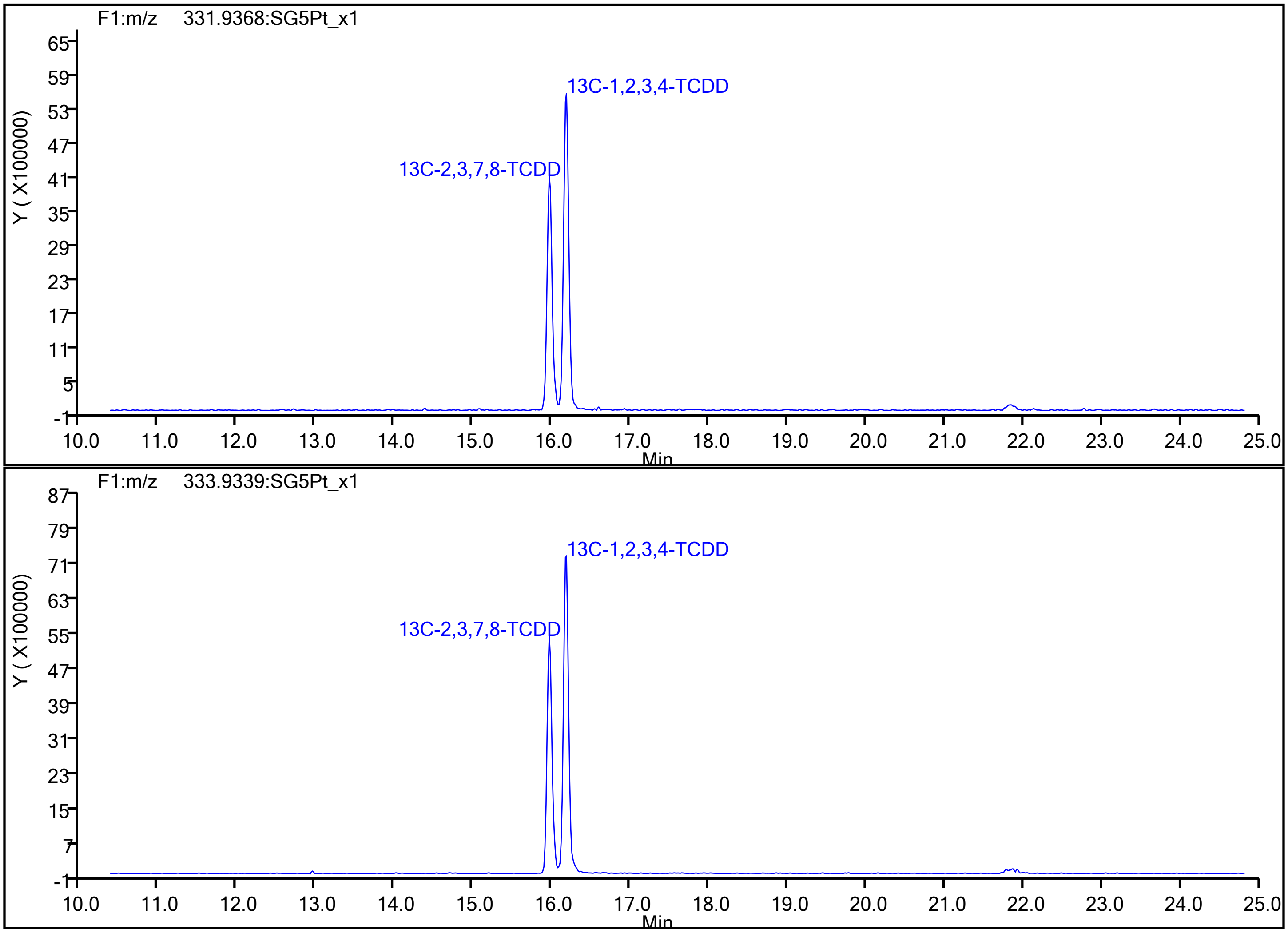

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_009.d		
Injection Date:	06-Oct-2021 14:51:16	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

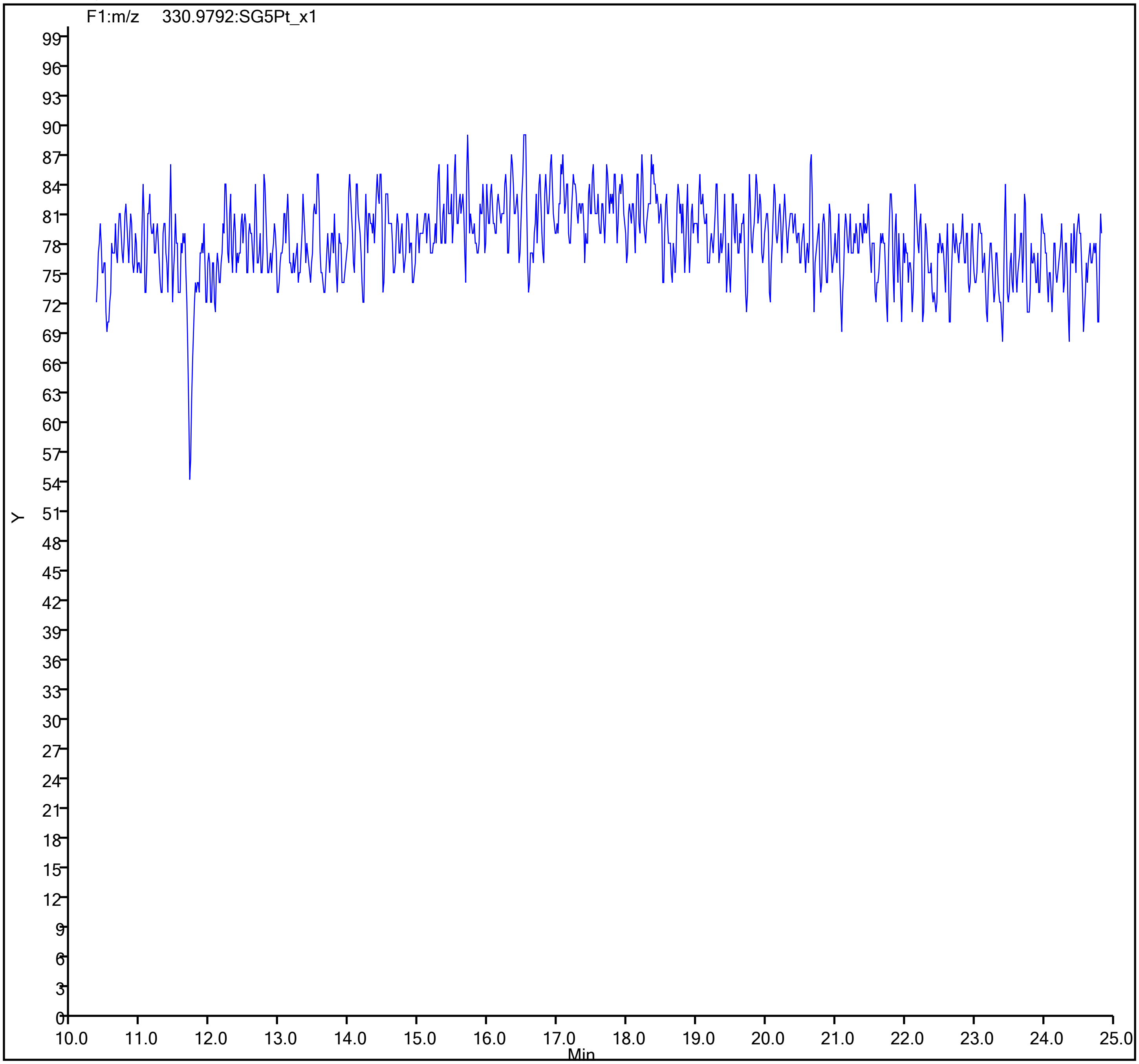

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 320-79918-1

SDG No.:

Lab Sample ID: CCV 320-535163/2   Calibration Date: 10/18/2021 12:25

Instrument ID: 11D2   Calib Start Date: 10/06/2021 11:01

GC Column: DB-225   ID: 0.32(mm)   Calib End Date: 10/06/2021 13:34

Lab File ID: 18OC2111D2_002.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	0.9807	0.9585		9.77	10.0	98	78-129
2,3,7,8-TCDF	AveID	0.9474	0.9080		9.58	10.0	96	84-120
13C-2,3,7,8-TCDD	Ave	0.7189	0.7249		101	100	101	82-121
13C-2,3,7,8-TCDF	Ave	0.9820	1.142		116	100	116	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.7344	0.7504		10.2	10.0	102	79-127

FORM VII 1613B

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
18OC2111D2	1	CPS 101821	CPS HRDXNCP_00044				1.00000	
18OC2111D2	2	CCV 101821	CCV CS-4 HRDXNL4_00102				1.00000	
18OC2111D2	3	SB 101821	Solvent Blank C-14				1.00000	
18OC2111D2	4	320-532713	LCS 320-532710/2-B	20	TO_9/Air	1	1.00000	SA
18OC2111D2	5	320-532713	LCSD 320-532710/3-B	20	TO_9/Air		1.00000	SA
18OC2111D2	6	320-532854	320-79936-A-1-B	20	1613B/Water	D281	1.00000	L
18OC2111D2	7	SB 101821A	Solvent Blank C-14				1.00000	
18OC2111D2	8	320-532854	320-79918-A-2-A	20	1613B/Water	D281	1.00000	L
18OC2111D2	9	320-532854	320-79918-A-1-A	20	1613B/Water		1.00000	L
18OC2111D2	10	SB 101821B	Solvent Blank C-14				1.00000	
18OC2111D2	11	CCV 101821A	CCV CS-4 HRDXNL4_00102				1.00000	
18OC2111D2	12						1.00000	
18OC2111D2	13						1.00000	
18OC2111D2	14						1.00000	
18OC2111D2	15						1.00000	
18OC2111D2	16						1.00000	
18OC2111D2	17		DB 10-18-21				1.00000	
18OC2111D2	18						1.00000	

LOGFILE CHECKED
DB 10/19/21

Peak Locate Examination:18-OCT-2021:11:45 File:18OC2111D2
Experiment:DB225RES Function:1 Reference:PFK

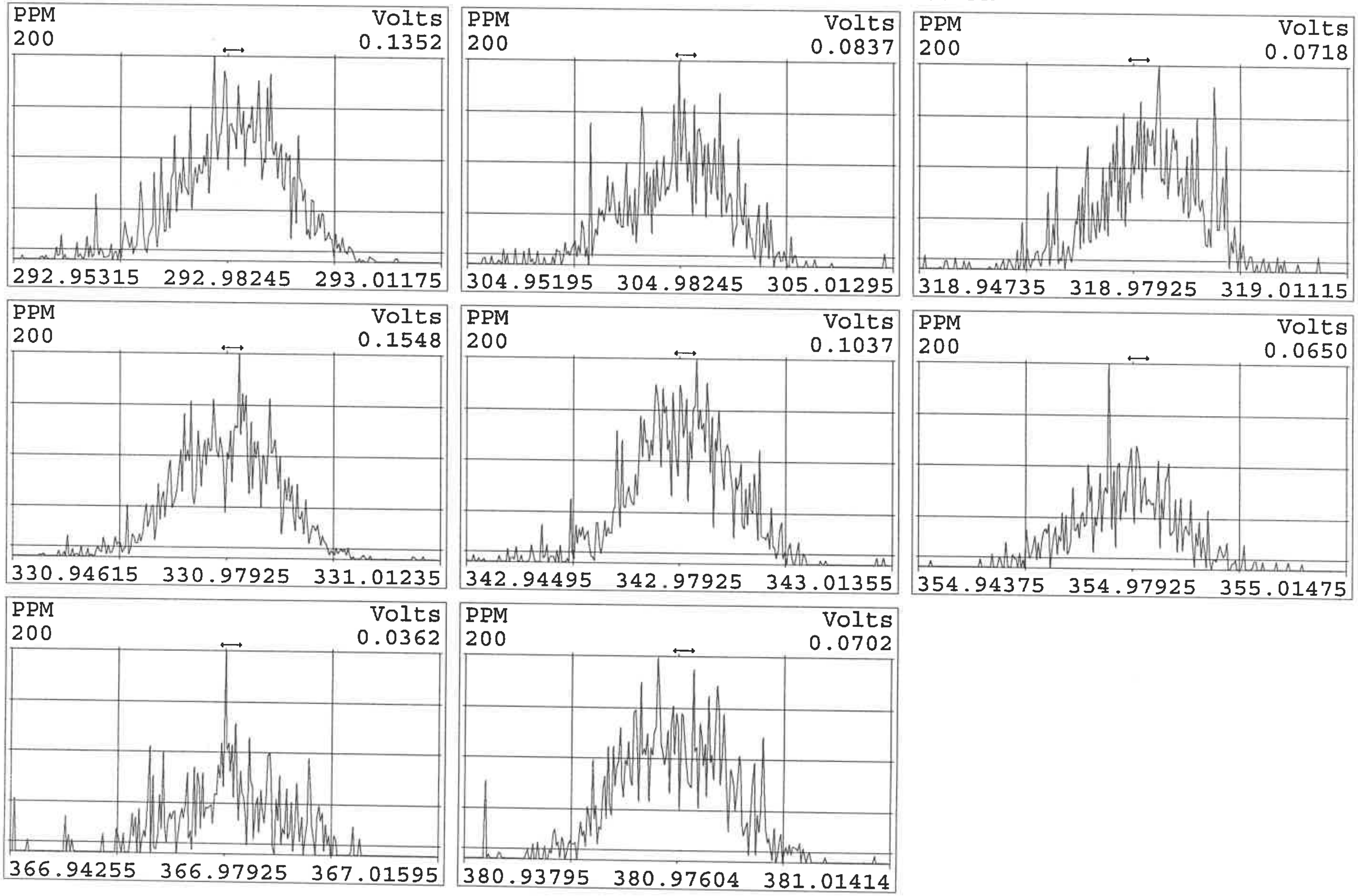

Peak Locate Examination:18-OCT-2021:19:37 File:RESCHECK11D2
Experiment:DB225RES Function:1 Reference:PFK

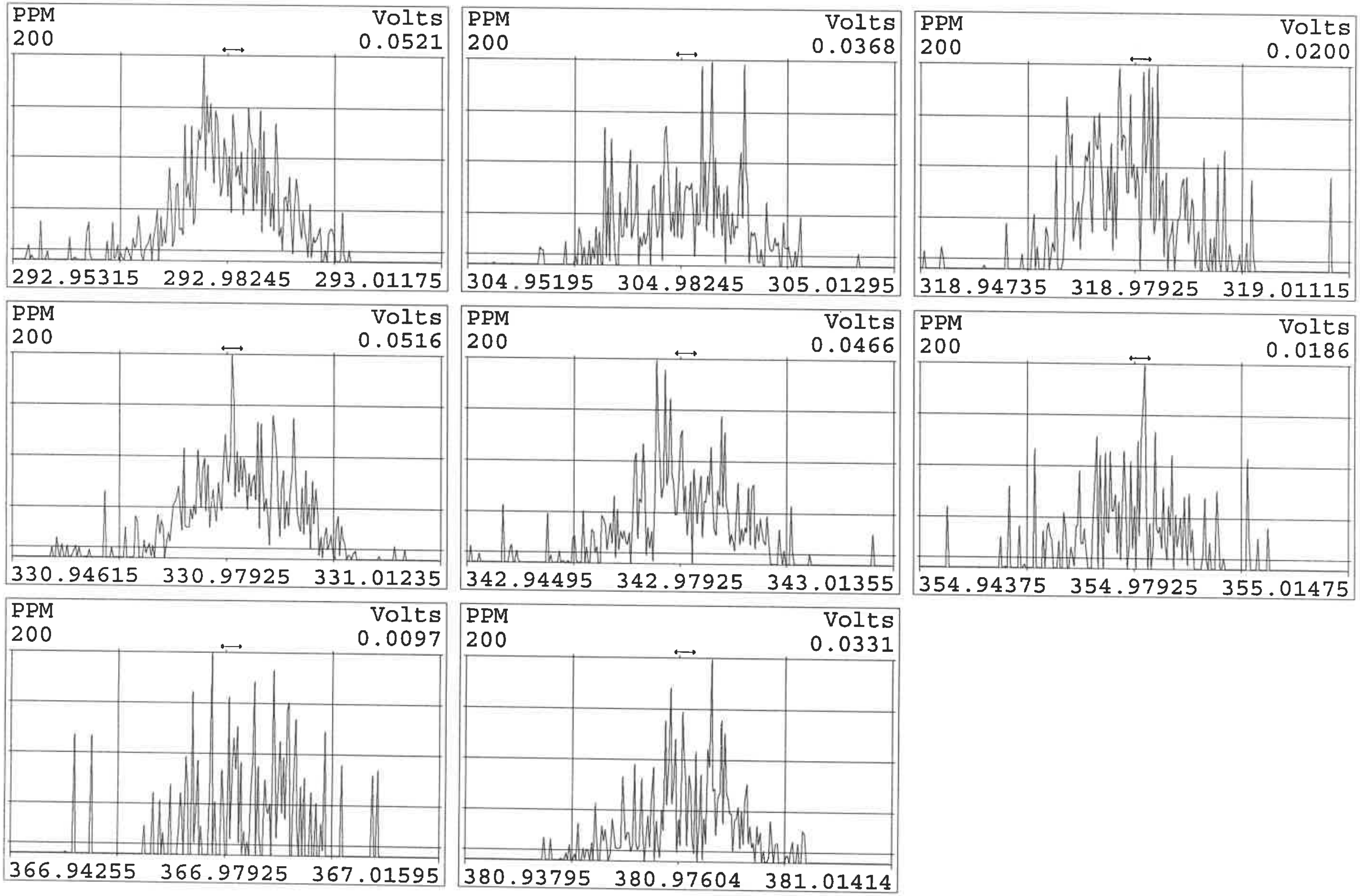

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	18-Oct-2021 12:25:51	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00102				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Oct-2021 09:28:02	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				

First Level Reviewer: bennettd Date: 19-Oct-2021 09:24:26

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	16.120	69353696	0.79	7.4E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.423	79214505	0.78	0.9820	116.3	116.3	0.3198	0.3198	116	
2,3,7,8-TCDF	17.451	7192421	0.77	0.9474	9.584	9.584	0.0593	0.0593	95.84	
D 13C-2,3,7,8-TCDD	15.914	50275026	0.84	0.7189	100.8	100.8	0.3942	0.3942	101	
2,3,7,8-TCDD	15.928	4818768	0.78	0.9807	9.774	9.774	0.0771	0.0771	97.74	
$ 37Cl4-2,3,7,8-TCDD	15.928	5204515		0.7344	10.2	10.2	0.0685	0.0685	102	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00102 Amount Added: 2.00 Units: uL

Report Date: 19-Oct-2021 09:28:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	18-Oct-2021 12:25:51	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00102				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Oct-2021 09:28:02	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				
First Level Reviewer: bennettd		Date:	19-Oct-2021 09:24:26		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	16.120	16.120	0		30503812	6770367	11149	27872	607		
333.9339	16.120	16.120	0		38849884	8419810	6071	15177	1387	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.423	17.423	0	1.081	34799661	6729310	7413	18532	908		
317.9389	17.423	17.423	0	1.081	44414844	8293530	11670	29175	711	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.451	17.451	0	1.002	3119207	597101	1436	3590	416		
305.8987	17.437	17.451	-1	1.001	4073214	724107	1939	4847	373	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.914	15.914	0	0.987	22896683	5138898	11149	27872	461		
333.9339	15.914	15.914	0	0.987	27378343	6380292	6071	15177	1051	0.84(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.928	15.928	0	1.001	2116786	492609	1604	4010	307		
321.8936	15.928	15.928	0	1.001	2701982	600665	1878	4695	320	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.928	15.928	0	0.988	5204515	1118422	3059	7647	366		

QC Flag Legend

Processing Flags

Reagents:

HRDXNL4_00102 Amount Added: 2.00 Units: uL

Report Date: 19-Oct-2021 09:28:03 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d		
Injection Date:	18-Oct-2021 12:25:51	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	535163	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

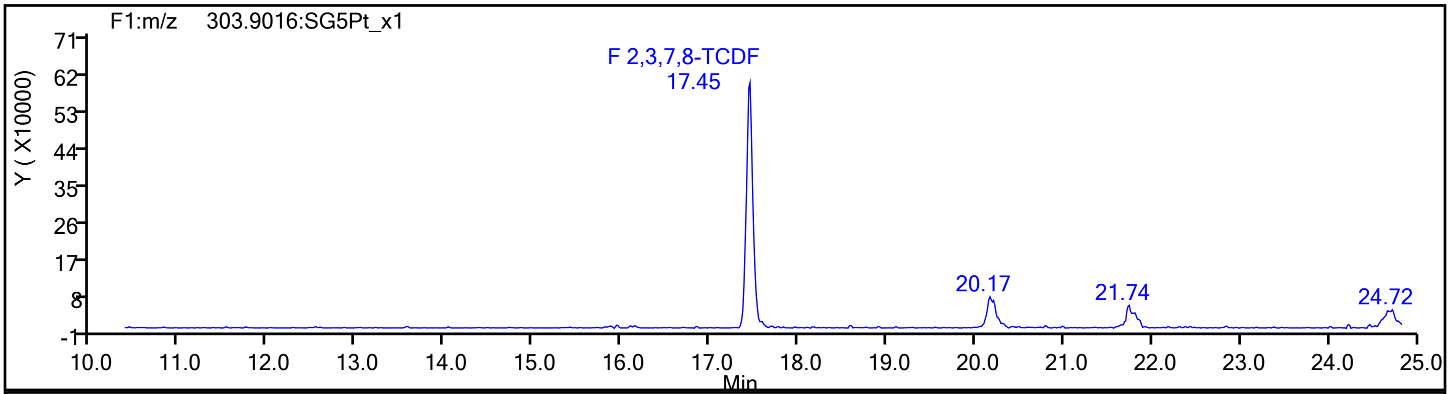

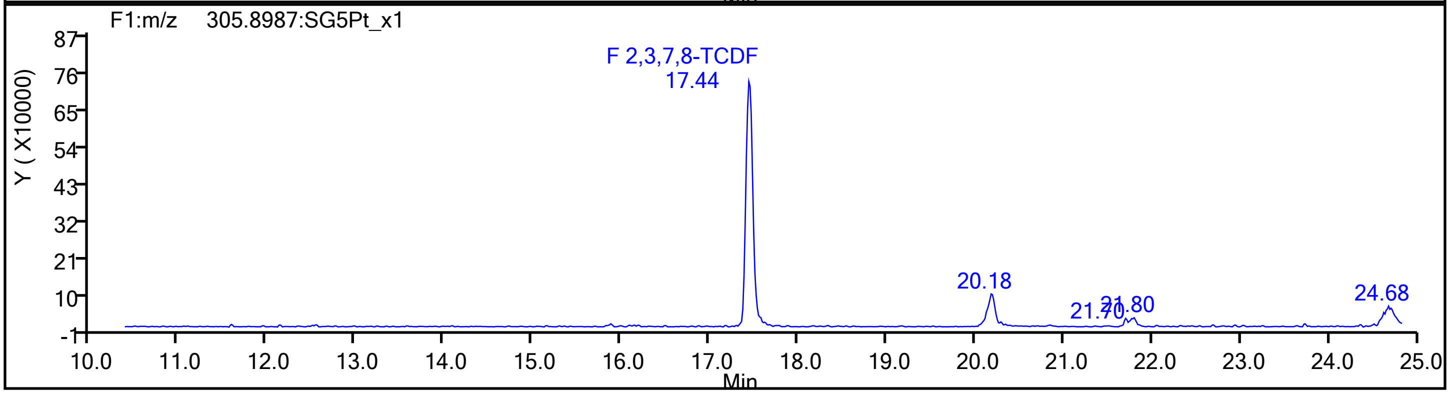

TCDF Standards

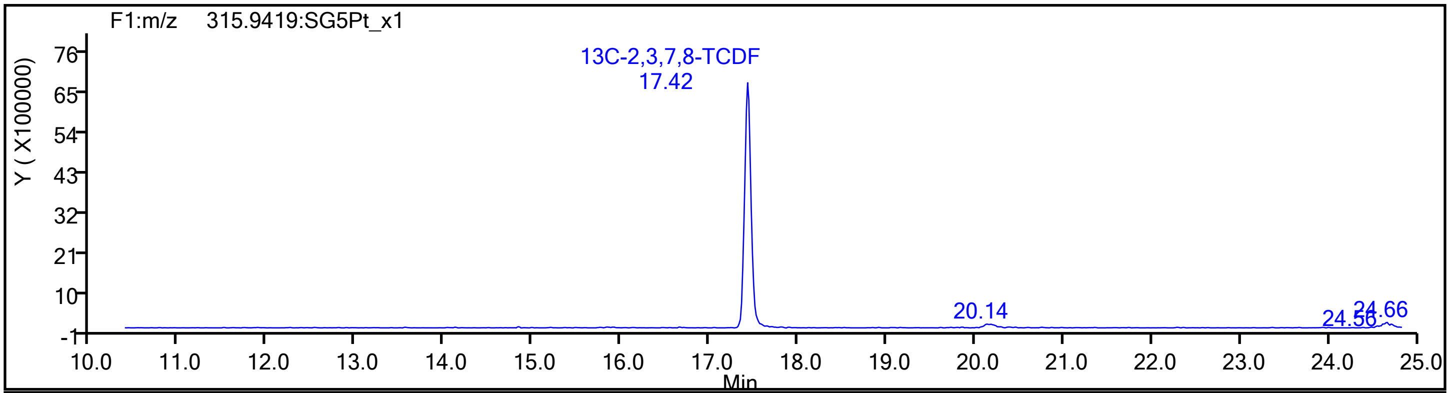

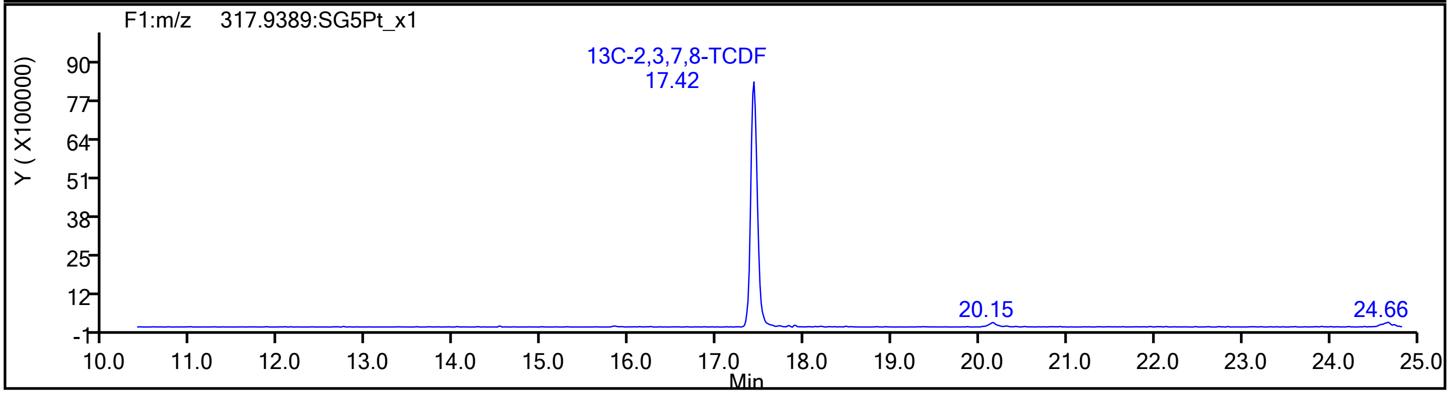

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d		
Injection Date:	18-Oct-2021 12:25:51	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	535163	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

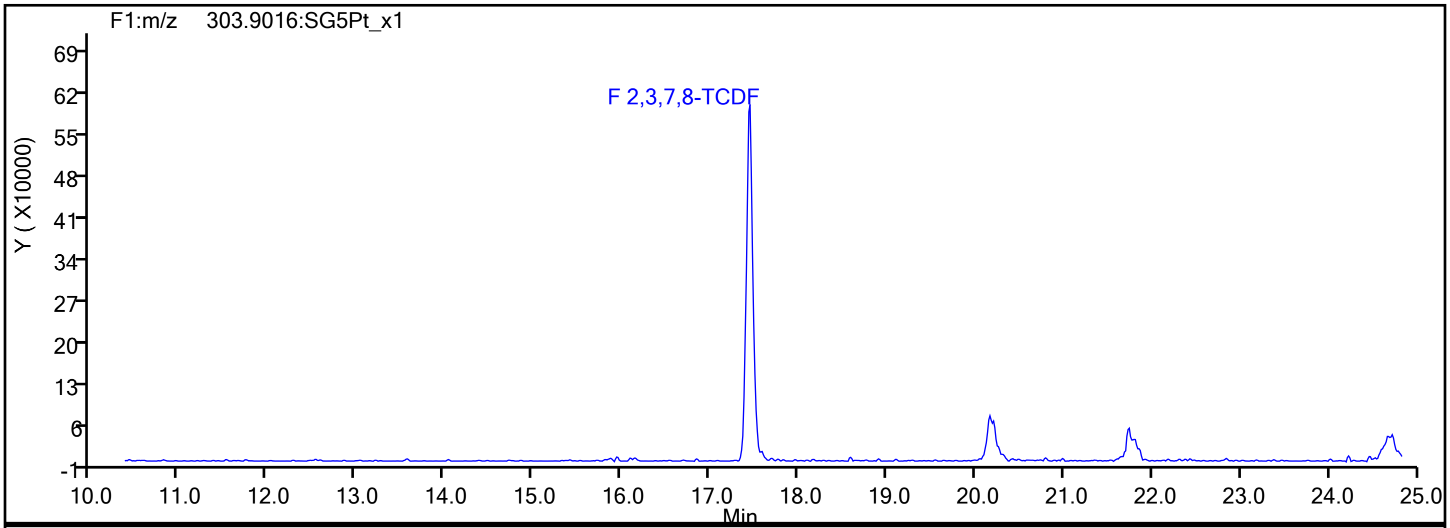

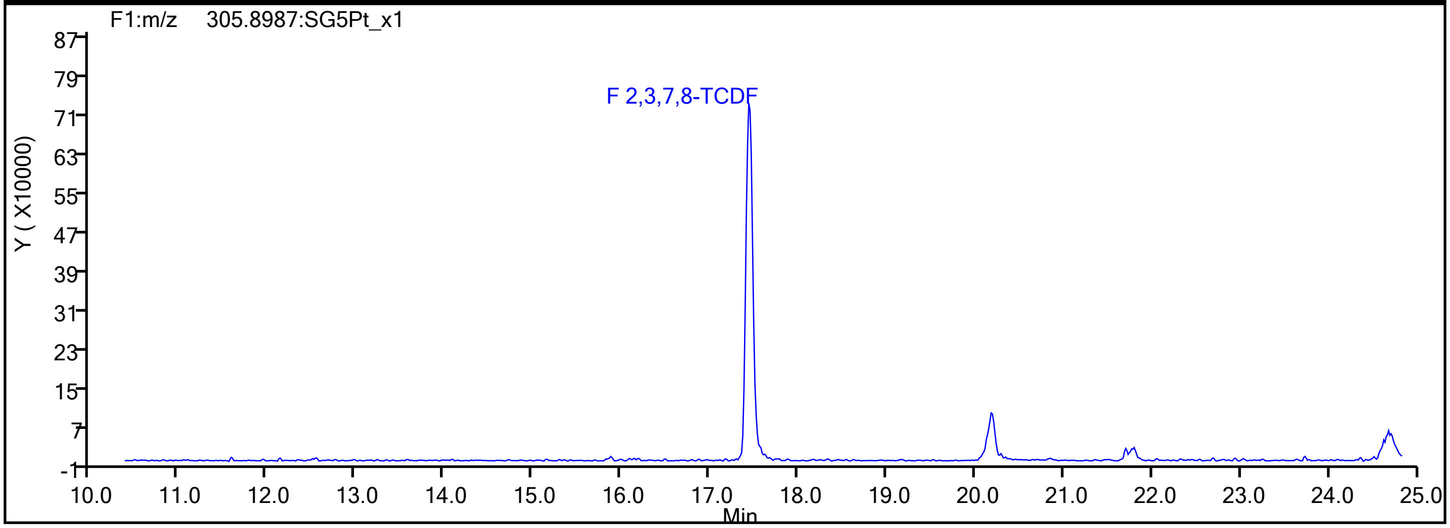

TCDF Interference Mass

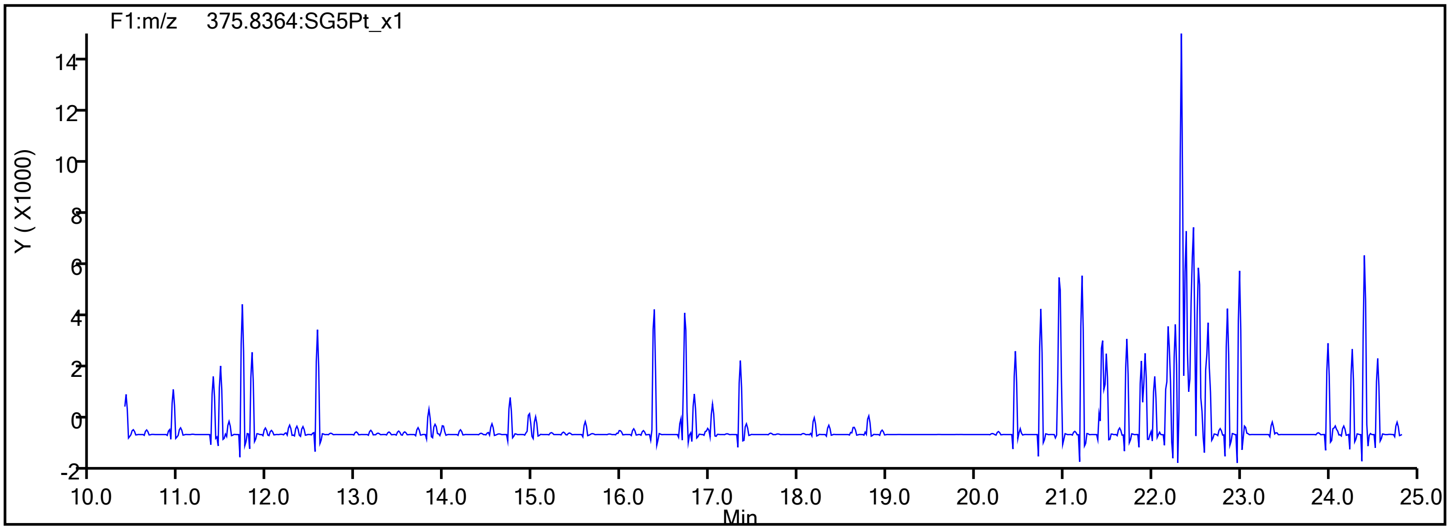

Report Date: 19-Oct-2021 09:28:03 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d

Injection Date: 18-Oct-2021 12:25:51
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 535163
Sample Line#: 2
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

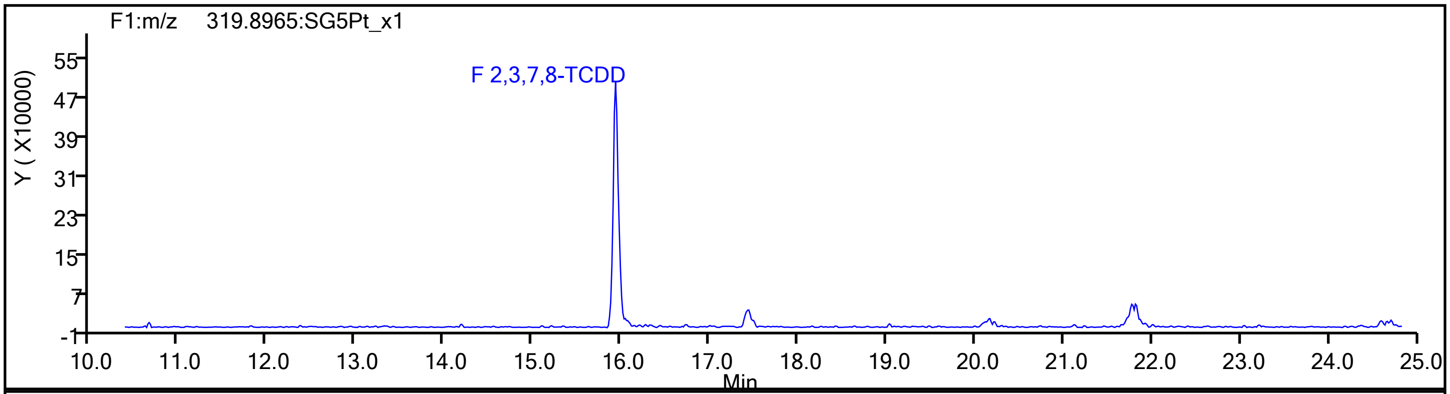

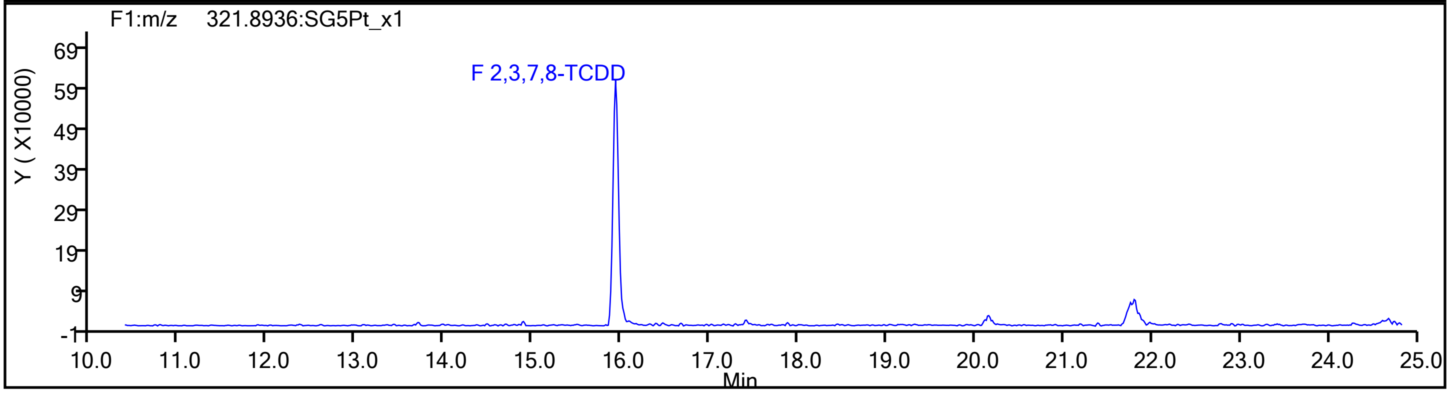

TCDD Standards

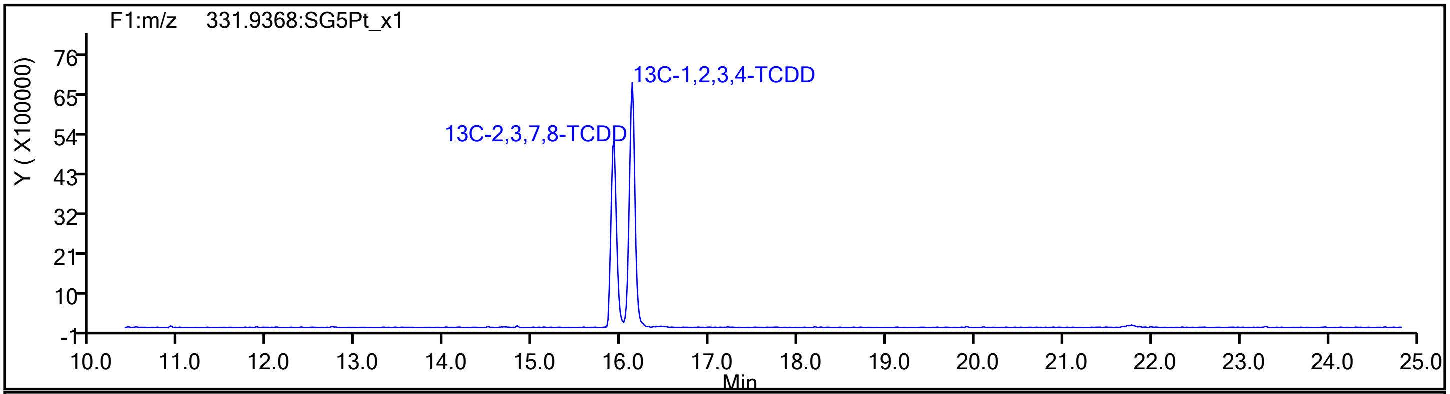

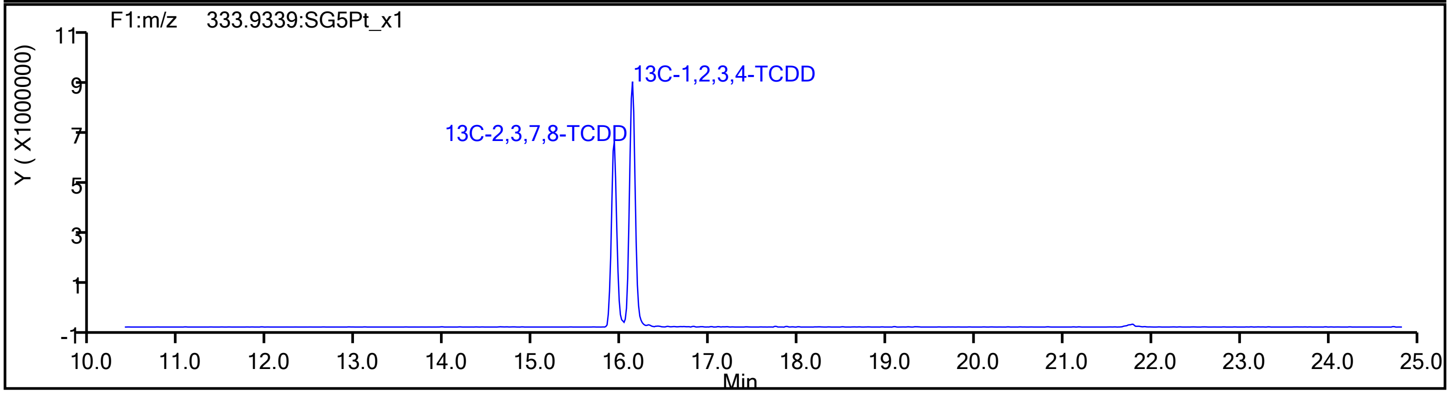

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d		
Injection Date:	18-Oct-2021 12:25:51	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	535163	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

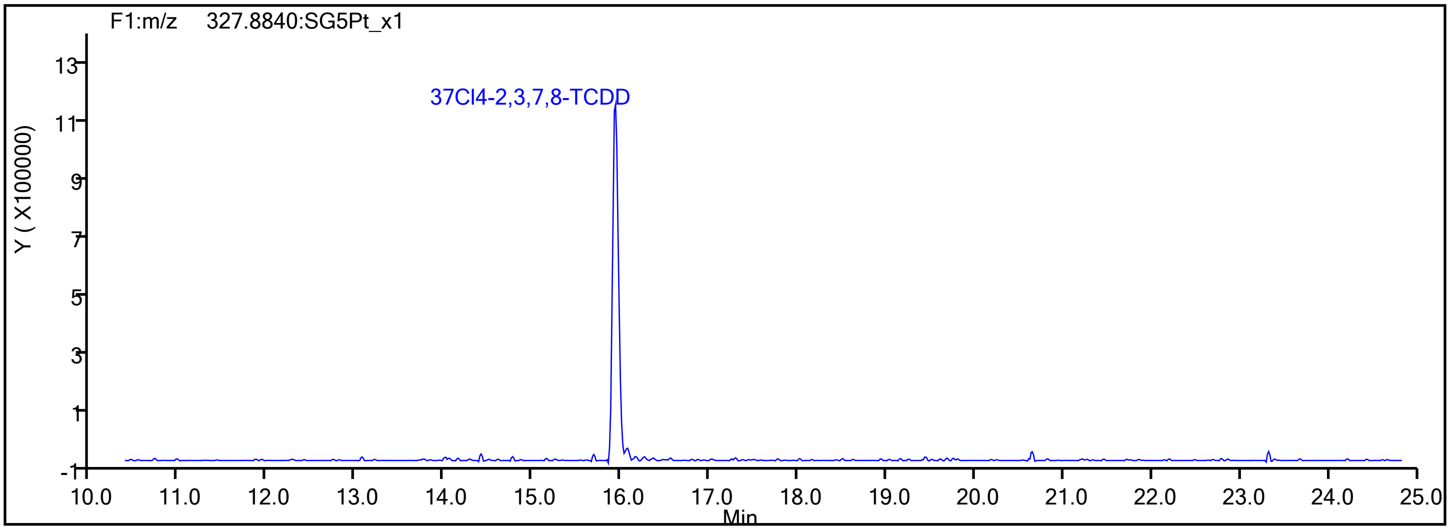

37Cl4-TCDD Standards

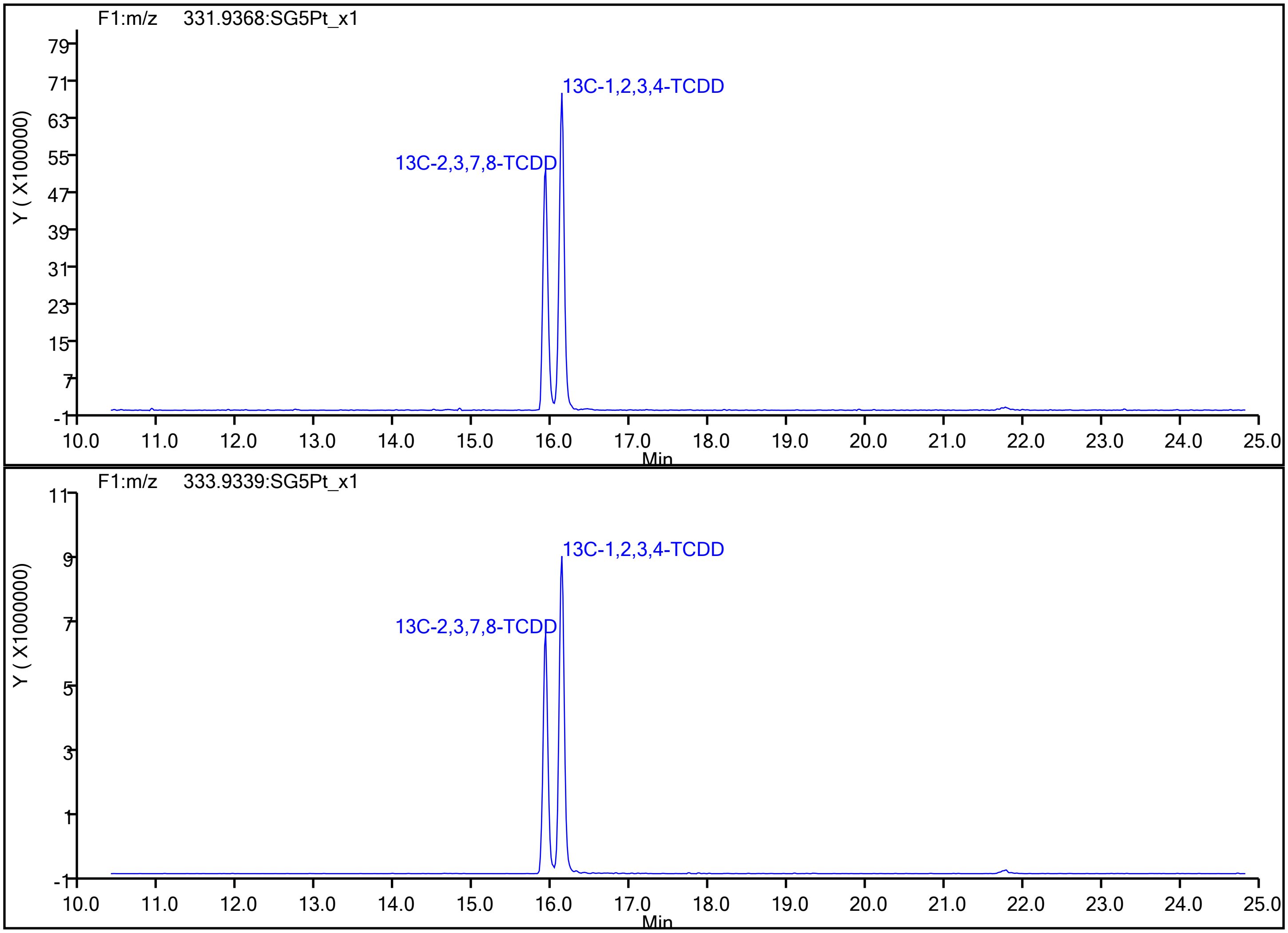

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_002.d		
Injection Date:	18-Oct-2021 12:25:51	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	535163	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

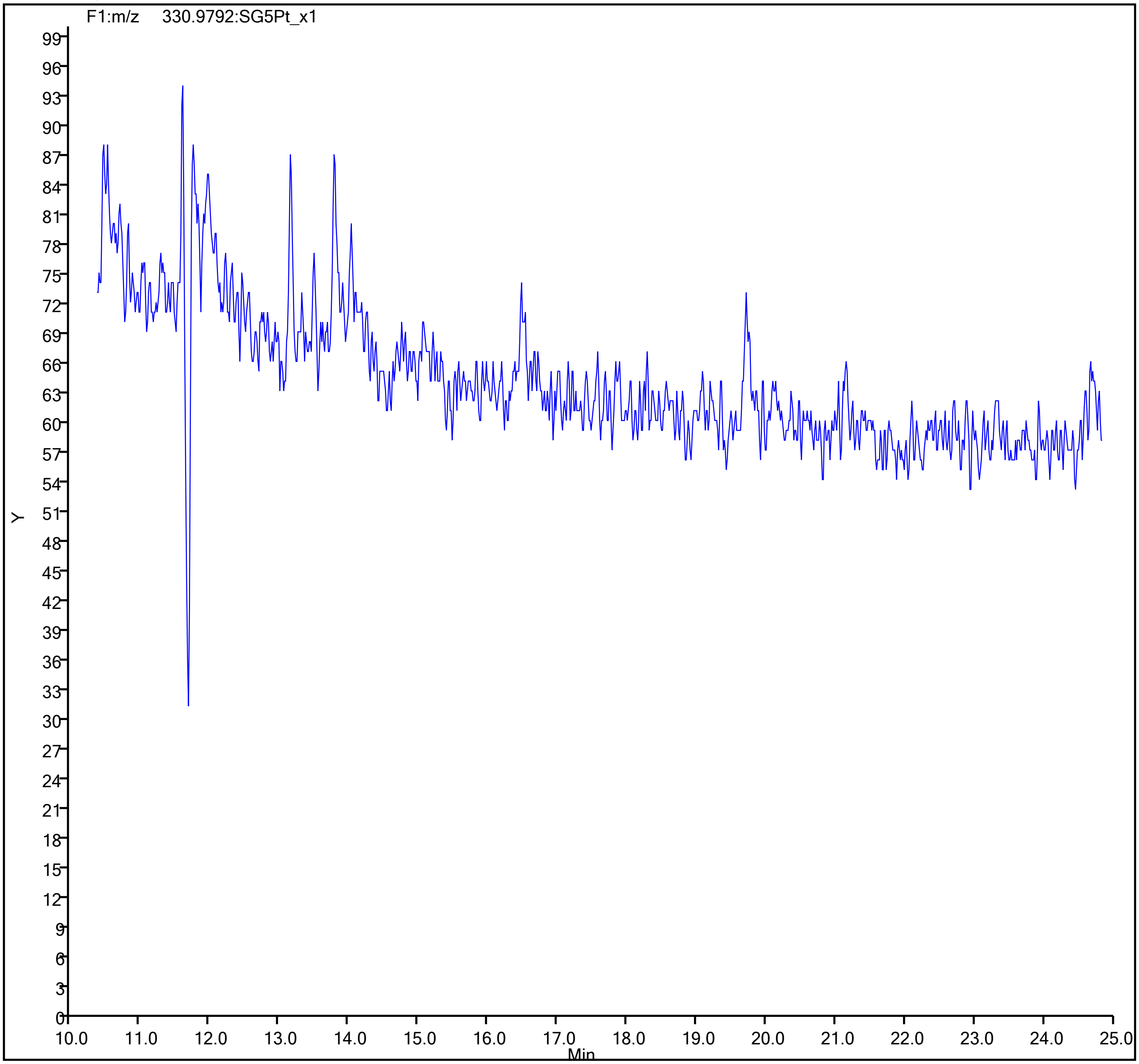

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Lab Sample ID: ICV 320-528108/10 Calibration Date: 09/24/2021 19:02

Instrument ID: DFS 1 Calib Start Date: 09/24/2021 13:55

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/24/2021 17:07

Lab File ID: 24se21dfs1_12.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.119	1.174		42.0	40.0	105	70-130
2,3,7,8-TCDD	AveID	1.094	1.203		44.0	40.0	110	70-130
1,2,3,7,8-PeCDF	AveID	1.092	1.046		192	200	96	70-130
2,3,4,7,8-PeCDF	AveID	0.8752	0.8840		202	200	101	70-130
1,2,3,7,8-PeCDD	AveID	1.059	1.019		192	200	96	70-130
1,2,3,4,7,8-HxCDF	AveID	0.9737	0.9383		193	200	96	70-130
1,2,3,6,7,8-HxCDF	AveID	1.220	1.200		197	200	98	70-130
2,3,4,6,7,8-HxCDF	AveID	1.244	1.246		200	200	100	70-130
1,2,3,4,7,8-HxCDD	AveID	0.9085	0.8667		191	200	95	70-130
1,2,3,6,7,8-HxCDD	AveID	1.028	1.058		206	200	103	70-130
1,2,3,7,8,9-HxCDD	AveID	1.027	0.9515		185	200	93	70-130
1,2,3,7,8,9-HxCDF	AveID	1.245	1.178		189	200	95	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.585	1.559		197	200	98	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.082	1.094		202	200	101	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.160	1.105		191	200	95	70-130
OCDD	AveID	1.134	1.149		405	400	101	70-130
OCDF	AveID	1.509	1.469		389	400	97	70-130
13C-2,3,7,8-TCDF	Ave	1.224	1.214		99.1	100	99	71-140
13C-2,3,7,8-TCDD	Ave	0.8210	0.8184		99.7	100	100	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.103	1.094		99.2	100	99	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.345	1.362		101	100	101	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.6987	0.6787		97.1	100	97	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.129	1.144		101	100	101	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.061	1.089		103	100	103	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9480	0.9863		104	100	104	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8312	0.8838		106	100	106	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.7550	0.7899		105	100	105	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8526	0.8159		95.7	100	96	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.6190	0.6373		103	100	103	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.5362	0.5333		99.5	100	99	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.6516	0.6430		98.7	100	99	77-129
13C-OCDD	Ave	0.3802	0.3423		180	200	90	48-208
37Cl4-2,3,7,8-TCDD	Ave	0.8658	0.8838		40.8	40.0	102	79-127

FORM VII 1613B

Report Date: 25-Sep-2021 14:19:06 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 24-Sep-2021 19:02:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00044
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:19:05 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 25-Sep-2021 14:09:22

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	21.534	11452354	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	20.530	13898693	0.80	1.2244	99.1	99.1	0.3397	0.3397	99.12	
2,3,7,8-TCDF	20.564	6528800	0.80	1.1194	42.0	42.0	0.1129	0.1129	105	
A Non-2,3,7,8-sub-TCDF	19.981	110914	0.85	1.1194	0.7129	0.7129	0.1129	0.7129		
S Total TCDF					42.7	42.7	0.1129	0.1129		
D 13C-2,3,7,8-TCDD	21.921	9372965	0.81	0.8210	99.7	99.7	0.2482	0.2482	99.69	
2,3,7,8-TCDD	21.955	4511576	0.79	1.0943	44.0	44.0	0.1057	0.1057	110	
$ 37Cl4-2,3,7,8-TCDD	21.955	4048482		0.8658	40.8	40.8	0.0508	0.0508	102	
A Non-2,3,7,8-sub-TCDD	20.836	126297	0.77	1.0943	1.286	1.231	0.1057	1.005		RQ
S Total TCDD					45.3	45.2	0.1057	0.1057		RQ
D 13C-1,2,3,7,8-PeCDF	27.443	12523443	1.59	1.1026	99.2	99.2	0.5858	0.5858	99.17	
1,2,3,7,8-PeCDF	27.468	26207086	1.57	1.0920	191.6	191.6	0.9552	0.9552	95.82	
D 13C-2,3,4,7,8-PeCDF	28.984	15593548	1.55	1.3454	101.2	101.2	0.4801	0.4801	101	
2,3,4,7,8-PeCDF	29.010	27570012	1.56	0.8752	202.0	202.0	1.029	1.029	101	
A F1 PeCDFs	24.826						0.0235	0.0235		
A Non-2,3,7,8-sub-PeCDF	28.354						0.9829	0.9829		
S Total PeCDF					393.7	393.7	0.992	0.992		
D 13C-1,2,3,7,8-PeCDD	29.818	7772687	1.56	0.6987	97.1	97.1	0.2239	0.2239	97.14	
1,2,3,7,8-PeCDD	29.844	15841162	1.56	1.0594	192.4	192.4	0.3461	0.3461	96.19	
A Non-2,3,7,8-sub-PeCDD	28.567						0.3461	0.3461		Rn
S Total PeCDD					192.4	192.4	0.3461	0.3461		
D 13C-1,2,3,4,7,8-HxCDF	35.070	12863942	0.54	1.1295	101.3	101.3	0.3278	0.3278	101	
1,2,3,4,7,8-HxCDF	35.087	24139891	1.25	0.9737	192.7	192.7	0.8213	0.8213	96.36	
D 13C-1,2,3,6,7,8-HxCDF	35.230	12248747	0.54	1.0613	102.6	102.6	0.3488	0.3488	103	
1,2,3,6,7,8-HxCDF	35.247	29386110	1.25	1.2201	196.6	196.6	0.7561	0.7561	98.32	
D 13C-2,3,4,6,7,8-HxCDF	36.038	11091721	0.54	0.9480	104.0	104.0	0.3905	0.3905	104	
2,3,4,6,7,8-HxCDF	36.047	27643679	1.26	1.2435	200.4	200.4	0.7130	0.7130	100	
D 13C-1,2,3,7,8,9-HxCDF	36.915	9175598	0.53	0.8526	95.7	95.7	0.4342	0.4342	95.69	
1,2,3,7,8,9-HxCDF	36.923	21625435	1.25	1.2454	189.2	189.2	0.7968	0.7968	94.62	
A Non-2,3,7,8-sub-HxCDF	35.169						0.7644	0.7644		
S Total HxCDF					779.0	779.0	0.7718	0.7718		

Report Date: 25-Sep-2021 14:19:06 Chrom Revision: 2.3 13-May-2021 07:57:40
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.721	11246031	1.27	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	36.241	9939757	1.28	0.8312	106.3	106.3	0.2768	0.2768	106	
1,2,3,4,7,8-HxCDD	36.258	17229748	1.25	0.9085	190.8	190.8	0.3365	0.3365	95.40	
D 13C-1,2,3,6,7,8-HxCDD	36.358	8882825	1.25	0.7550	104.6	104.6	0.3047	0.3047	105	
1,2,3,6,7,8-HxCDD	36.375	18800076	1.25	1.0279	205.9	205.9	0.3301	0.3301	103	
1,2,3,7,8,9-HxCDD	36.729	17908977	1.25	1.0268	185.3	185.3	0.3133	0.3133	92.66	
A Non-2,3,7,8-sub-HxCDD	35.523						0.3256	0.3256		
S Total HxCDD					582.0	582.0	0.3266	0.3266		
1,2,3,4,6,7,8-HpCDF	38.715	22343125	1.05	1.5851	196.7	196.7	0.7297	0.7297	98.33	
D 13C-1,2,3,4,6,7,8-HpCDF	38.707	7167382	0.47	0.6190	103.0	103.0	0.3109	0.3109	103	
1,2,3,4,7,8,9-HpCDF	39.962	15977733	1.06	1.1597	190.5	190.5	0.9392	0.9392	95.26	
D 13C-1,2,3,4,7,8,9-HpCDF	39.945	7231589	0.46	0.6516	98.7	98.7	0.2954	0.2954	98.68	
A Non-2,3,7,8-sub-HpCDF	39.319						0.8175	0.8175		
S Total HpCDF					387.2	387.2	0.8344	0.8344		
1,2,3,4,6,7,8-HpCDD	39.659	13116153	1.05	1.0819	202.1	202.1	0.6457	0.6457	101	
D 13C-1,2,3,4,6,7,8-HpCDD	39.642	5996987	1.08	0.5362	99.5	99.5	0.4027	0.4027	99.45	
A Non-2,3,7,8-sub-HpCDD	39.323	322907	1.05	1.0819	4.977	4.977	0.6457	4.977		
S Total HpCDD					207.1	207.1	0.6457	0.6457		
D 13C-OCDD	42.139	7698569	0.92	0.3802	180.1	180.1	0.2974	0.2974	90.03	
OCDF	42.241	22613258	0.90	1.5094	389.2	389.2	0.2355	0.2355	97.30	
OCDD	42.148	17695733	0.90	1.1344	405.3	405.3	0.2827	0.2827	101	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00048 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 24-Sep-2021 19:02:00 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00044
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist:

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:19:05 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 25-Sep-2021 14:09:22

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	21.534	21.553	-1		5136825	721510	856	2140	843		
333.9338	21.534	21.553	-1		6315529	921108	483	1207	1907	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	20.530	20.531	0	0.953	6168501	941401	1605	4012	587		
317.9389	20.538	20.531	0	0.954	7730192	1158982	1128	2820	1027	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.564	20.582	-1	1.002	2905382	421561	420	1050	1004		
305.8987	20.555	20.582	-2	1.001	3623418	525952	642	1605	819	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.319	19.981	-40	0.941	50915	5795	420	1050	14		
305.8987	19.319	19.981	-40	0.941	59999	7191	642	1605	11	0.85(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.921	21.904	1	1.018	4194903	583902	856	2140	682		
333.9338	21.921	21.904	1	1.018	5178062	713143	483	1207	1476	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.955	21.939	1	1.002	1997060	267483	363	907	737		
321.8936	21.946	21.939	0	1.001	2514516	339024	237	592	1430	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.955	21.974	-1	1.020	4048482	551883	289	722	1910		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	19.955	20.836	-53	0.910	15745	1363	363	907	4		
	Empc Correction				10118	1068	363	907	3		
321.8936	19.886	20.836	-57	0.907	13141	1388	237	592	6	1.20(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	21.766	20.836	56	0.993	42745	6801	363	907	19		
321.8936	21.757	20.836	55	0.993	60293	9553	237	592	40	0.71(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	27.443	27.456	-1	1.274	7687238	1215911	2604	6510	467		
353.8970	27.443	27.456	-1	1.274	4836205	772982	1640	4100	471	1.59(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	27.468	27.481	-1	1.001	15991458	2542125	5001	12502	508		
341.8567	27.468	27.481	-1	1.001	10215628	1623564	3297	8242	492	1.57(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.984	28.989	0	1.346	9469958	1392842	2604	6510	535		
353.8970	28.984	28.989	0	1.346	6123590	910003	1640	4100	555	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	29.010	29.023	-1	1.001	16784127	2466571	5001	12502	493		
341.8567	29.010	29.023	-1	1.001	10785885	1581986	3297	8242	480	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.826						45	112			
341.8567	24.826						154	385			
A Non-2,3,7,8-sub-PeCDF											
339.8597	28.354						5001	12502			
341.8567	28.354						3297	8242			
13C-1,2,3,7,8-PeCDD											
367.8949	29.818	29.823	0	1.385	4732118	664499	629	1572	1056		
369.8919	29.818	29.823	0	1.385	3040569	423606	399	997	1062	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.844	29.849	0	1.001	9644222	1364569	1015	2537	1344		
357.8516	29.844	29.849	0	1.001	6196940	876921	581	1452	1509	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	27.898	28.567	-40	0.936	53555	4197	1015	2537	4		
357.8516	27.898	28.567	-40	0.936	26915	2776	581	1452	5	1.99(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	35.070	35.078	0	0.955	4495333	1028088	1563	3907	658		
385.8610	35.070	35.078	0	0.955	8368609	1905862	2792	6980	683	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	35.087	35.095	0	1.000	13427650	3025857	5282	13205	573		
375.8178	35.087	35.095	0	1.000	10712241	2397255	4103	10257	584	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	35.230	35.238	0	0.959	4277768	891063	1563	3907	570		
385.8610	35.230	35.238	0	0.959	7970979	1652188	2792	6980	592	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	35.247	35.246	0	1.000	16346273	3499940	5282	13205	663		
375.8178	35.247	35.246	0	1.000	13039837	2801853	4103	10257	683	1.25(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	36.038	36.046	0	0.981	3871735	922566	1563	3907	590		
385.8610	36.038	36.046	0	0.981	7219986	1723433	2792	6980	617	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	36.047	36.055	0	1.000	15401014	3664307	5282	13205	694		
375.8178	36.047	36.055	0	1.000	12242665	2930132	4103	10257	714	1.26(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.915	36.922	0	1.005	3187460	829907	1563	3907	531		
385.8610	36.915	36.922	0	1.005	5988138	1534346	2792	6980	550	0.53(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	36.923	36.930	0	1.000	12027870	3096171	5282	13205	586		
375.8178	36.923	36.930	0	1.000	9597565	2473665	4103	10257	603	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.169						5282	13205			
375.8178	35.169						4103	10257			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.721	36.728	0		6287295	1636111	1619	4047	1011		
403.8529	36.721	36.728	0		4958736	1304665	1087	2717	1200	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	36.241	36.248	0	0.987	5571681	1442178	1619	4047	891		
403.8529	36.241	36.248	0	0.987	4368076	1120459	1087	2717	1031	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	36.258	36.265	0	1.000	9566610	2510465	1807	4517	1389		
391.8127	36.258	36.265	0	1.000	7663138	2007041	1327	3317	1512	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	36.358	36.366	0	0.990	4943015	1296028	1619	4047	801		
403.8529	36.358	36.366	0	0.990	3939810	1013065	1087	2717	932	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.375	36.383	0	1.000	10427470	2657731	1807	4517	1471		
391.8127	36.375	36.383	0	1.000	8372606	2129185	1327	3317	1605	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.729	36.737	0	1.013	9943727	2555973	1807	4517	1414		
391.8127	36.729	36.737	0	1.013	7965250	2058235	1327	3317	1551	1.25(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.523						1807	4517			
391.8127	35.523						1327	3317			
1,2,3,4,6,7,8-HpCDF											
407.7817	38.715	38.700	1	1.000	11422714	3558067	5562	13905	640		
409.7788	38.715	38.700	1	1.000	10920411	3409690	4859	12147	702	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.707	38.711	0	1.054	2278369	716235	1121	2802	639		
419.8220	38.707	38.711	0	1.054	4889013	1536067	1143	2857	1344	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.962	39.938	1	1.000	8210529	2704465	5562	13905	486		
409.7788	39.954	39.938	1	1.000	7767204	2579144	4859	12147	531	1.06(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.945	39.958	-1	1.088	2268514	757005	1121	2802	675		
419.8220	39.945	39.958	-1	1.088	4963075	1635026	1143	2857	1430	0.46(0.37-0.51)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.319						5562	13905			
409.7788	39.319						4859	12147			

Report Date: 25-Sep-2021 14:19:06 Chrom Revision: 2.3 13-May-2021 07:57:40
Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.659	39.643	1	1.000	6732093	2176016	2860	7150	761		
425.7737	39.651	39.643	0	1.000	6384060	2032226	2664	6660	763	1.05(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.642	39.655	-1	1.080	3108857	1014271	1330	3325	763		
437.8140	39.642	39.655	-1	1.080	2888130	962660	1210	3025	796	1.08(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.035	39.323	-17	0.985	165633	50204	2860	7150	18		
425.7737	39.035	39.323	-17	0.985	157274	47237	2664	6660	18	1.05(0.88-1.20)	
13C-OCDD											
469.7780	42.139	42.152	-1	1.148	3682389	1115580	836	2090	1334		
471.7750	42.139	42.152	-1	1.148	4016180	1205724	494	1235	2441	0.92(0.76-1.02)	
OCDF											
441.7428	42.241	42.253	-1	1.002	10740219	3158308	711	1777	4442		
443.7399	42.241	42.253	-1	1.002	11873039	3507636	939	2347	3736	0.90(0.76-1.02)	
OCDD											
457.7377	42.148	42.168	-1	1.000	8395465	2509903	726	1815	3457		
459.7348	42.148	42.168	-1	1.000	9300268	2810401	763	1907	3683	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNIC_00048 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	24-Sep-2021 19:02:00	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	528108	Lims Sample ID:	10
Sublist:			

Non-2,3,7,8-sub-TCDF, RT: 19.981

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.119	D 13C-2,3,7,8-TCDF	100.000	13898693	2100383

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		100.000	13898693	2100383

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
19.319	50915	5795	59999	7191	0.7129	0.85	
Signal Totals:							
	50915	5795	59999	7191			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	110914	12986				0.85	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7129 = (110914 * 100.000) / (13898693 * 1.119)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d
Lims ID: ICV
Client ID:
Inject. Date: 24-Sep-2021 19:02:00 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 528108 Lims Sample ID: 10
Sublist:

Non-2,3,7,8-sub-TCDD, RT: 20.836

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.094	D 13C-2,3,7,8-TCDD	100.000	9372965	1297045

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.094		100.000	9372965	1297045

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
19.955	15745	1363	13141	1388	0.2816	1.20	RnQ
19.955	10118	1068	13141	1388	0.2268		Empc Correction
21.766	42745	6801	60293	9553	1.00	0.71	
Signal Totals:							
	52863	7869	73434	10941			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	131924	19105				0.80	RQ
	126297	18810					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 1.286 = (131924 * 100.000) / (9372965 * 1.094)
Empc Amount: 1.231 = (126297 * 100.000) / (9372965 * 1.094)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d
Lims ID: ICV
Client ID:
Inject. Date: 24-Sep-2021 19:02:00
Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 528108
Lims Sample ID: 10
Sublist:

Non-2,3,7,8-sub-HpCDD, RT: 39.323

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.082	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	5996987	1976931

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.082		100.000	5996987	1976931

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
39.035	165633	50204	157274	47237	4.98	1.05	
Signal Totals:							
	165633	50204	157274	47237			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	322907	97441				1.05	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.977 = (322907 * 100.000) / (5996987 * 1.082)

Report Date: 25-Sep-2021 14:19:07 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d

Injection Date: 24-Sep-2021 19:02:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 10
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

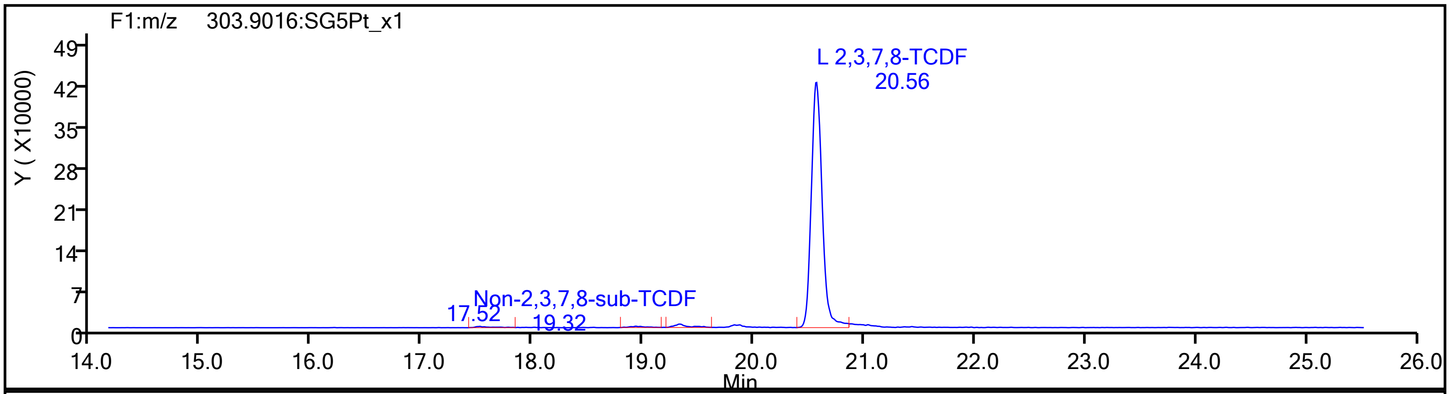

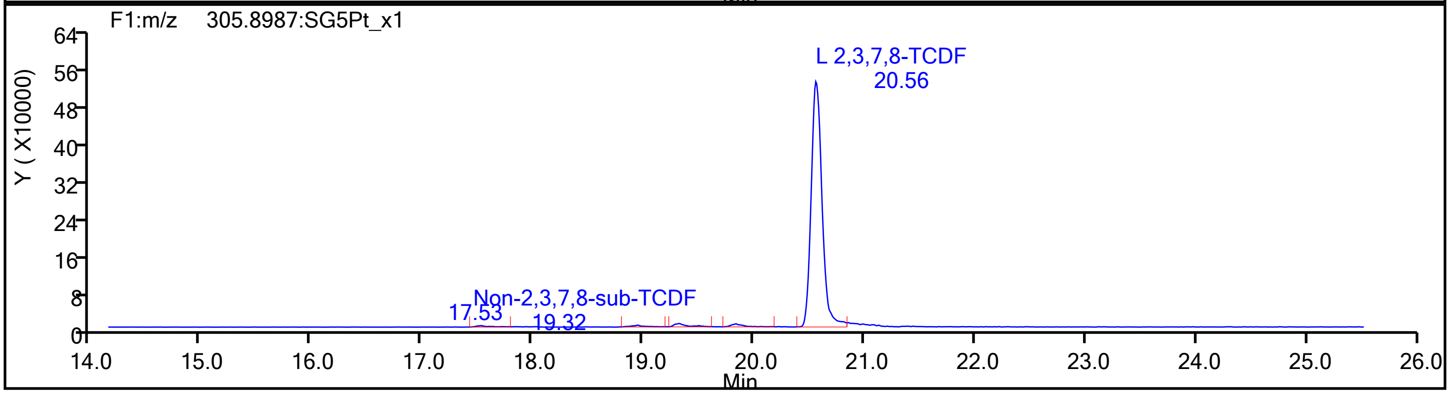

TCDF Standards

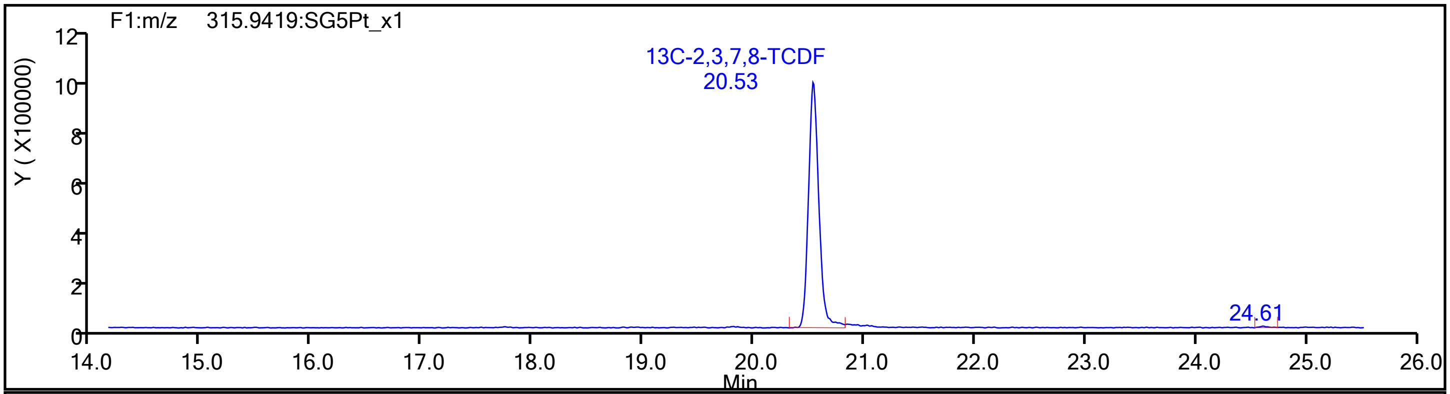

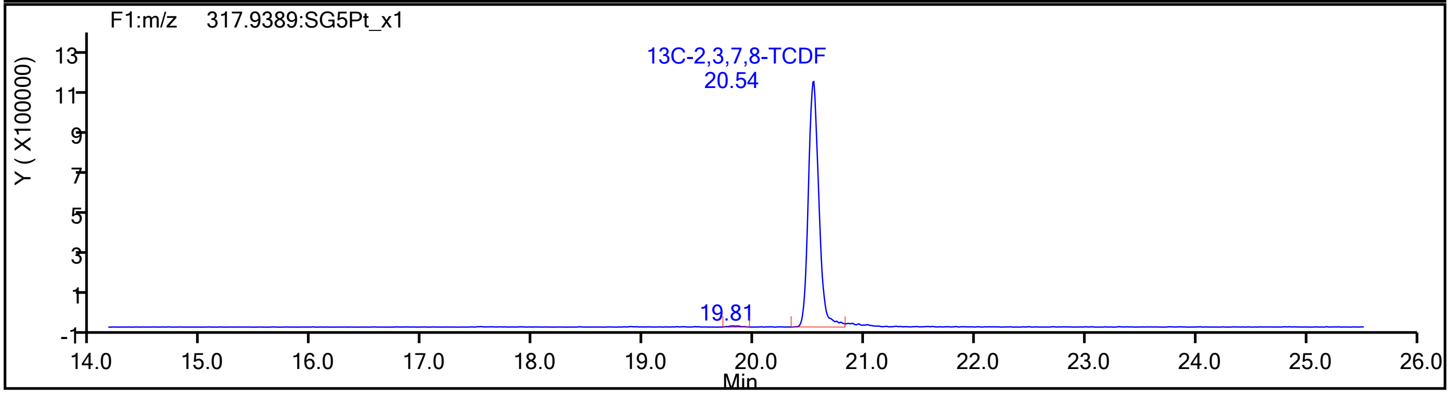

Report Date: 25-Sep-2021 14:19:07   Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d		
Injection Date:	24-Sep-2021 19:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

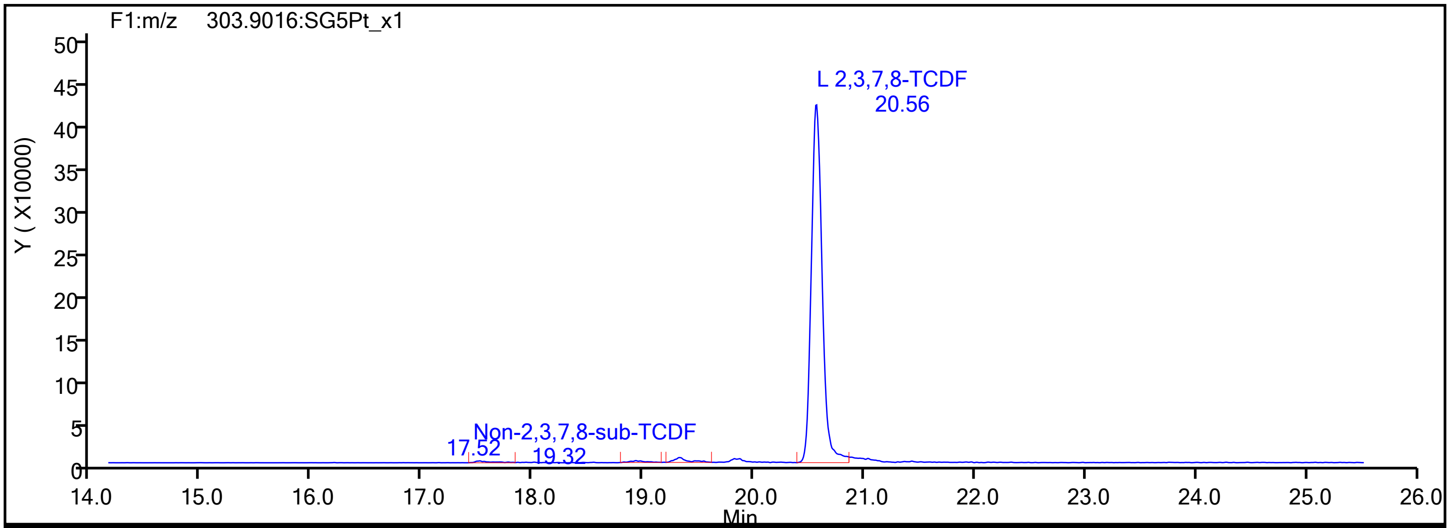

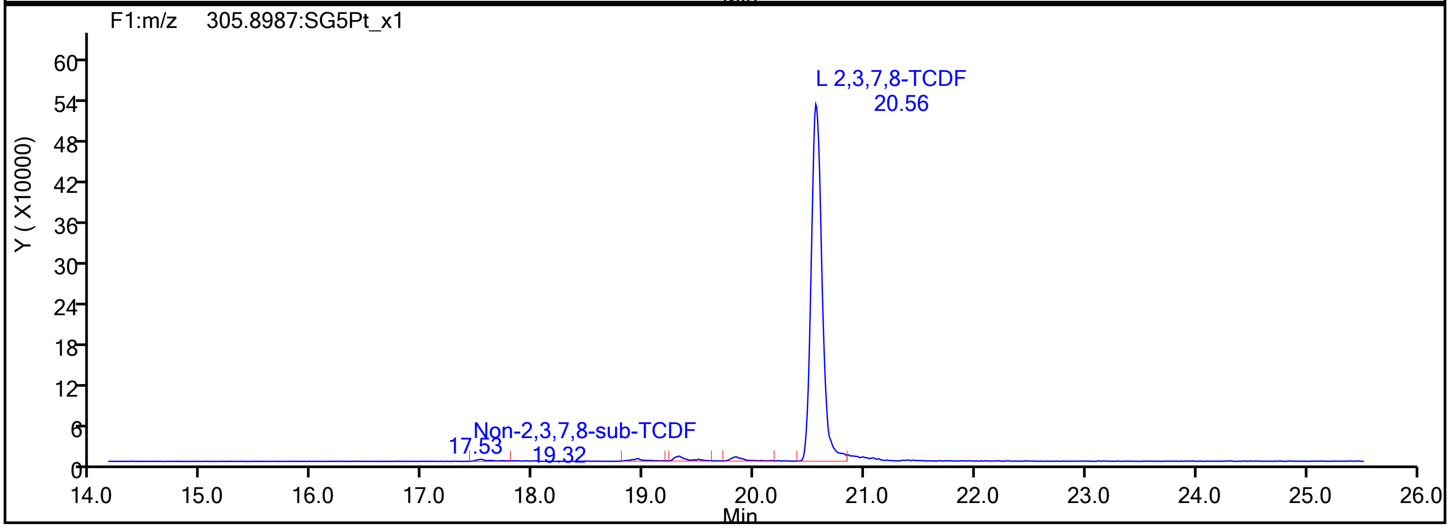

TCDF Interference Mass

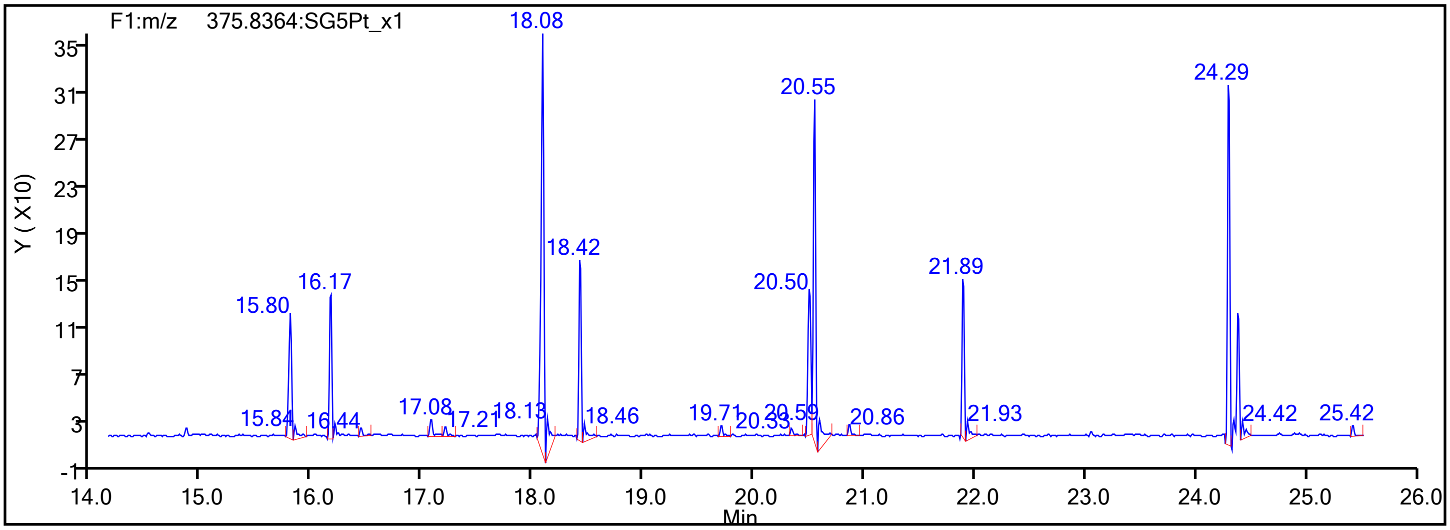

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d

Injection Date:	24-Sep-2021 19:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

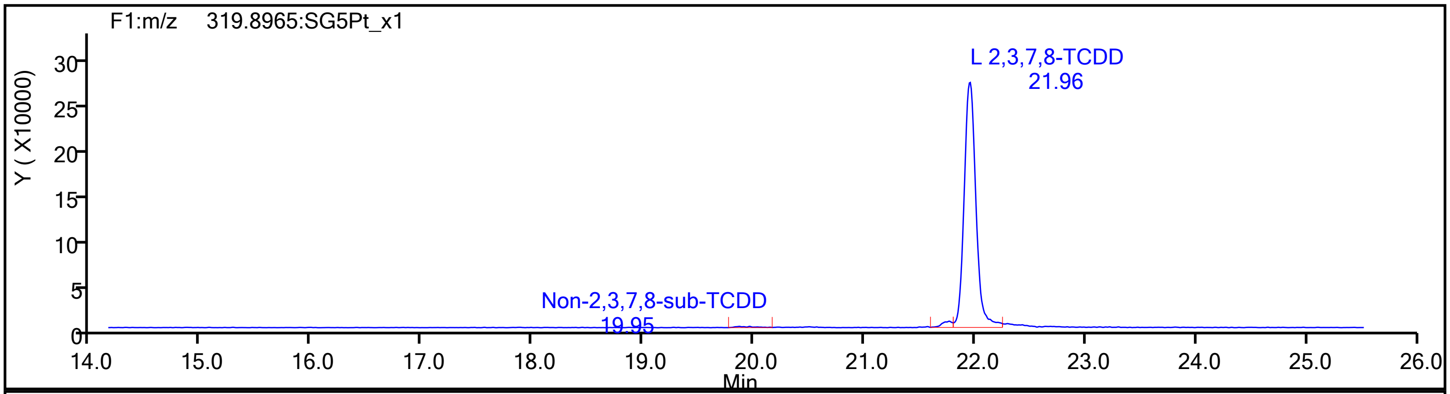

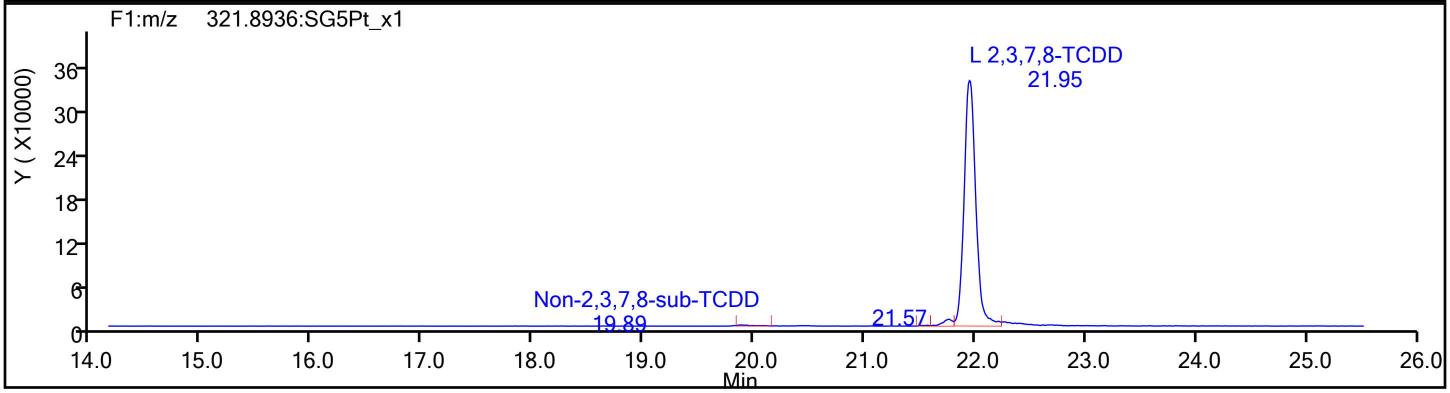

TCDD Standards

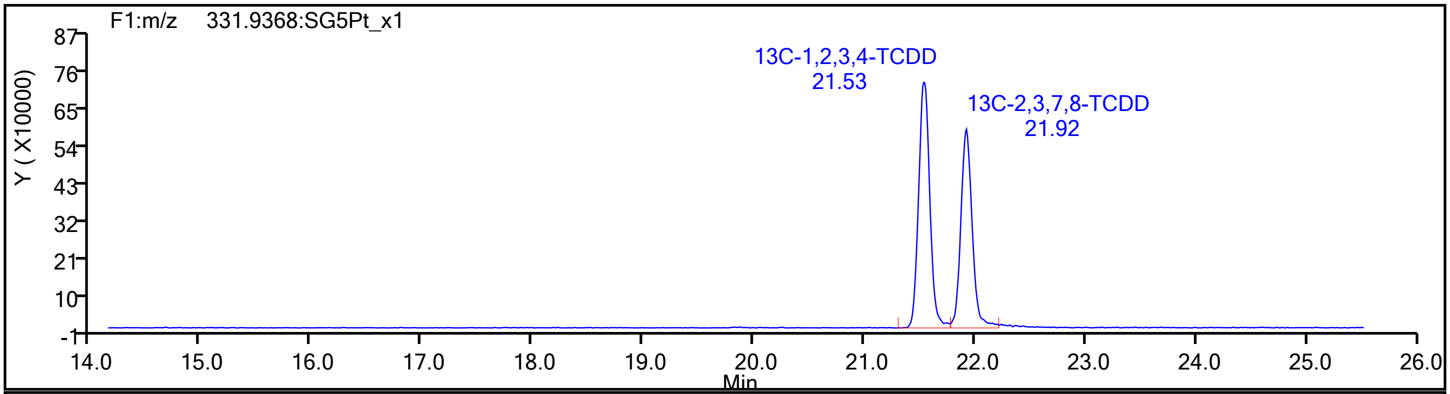

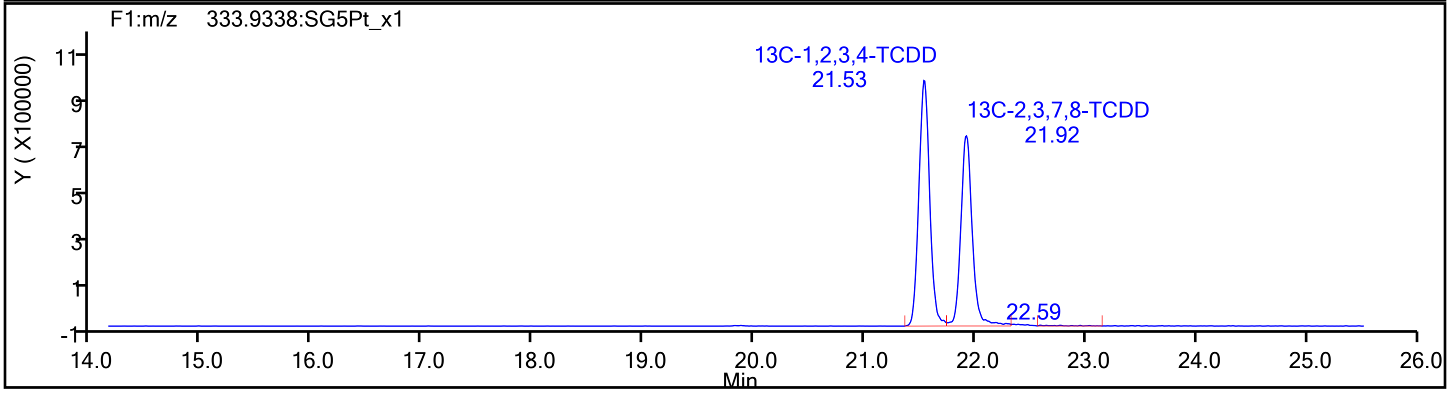

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d		
Injection Date:	24-Sep-2021 19:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

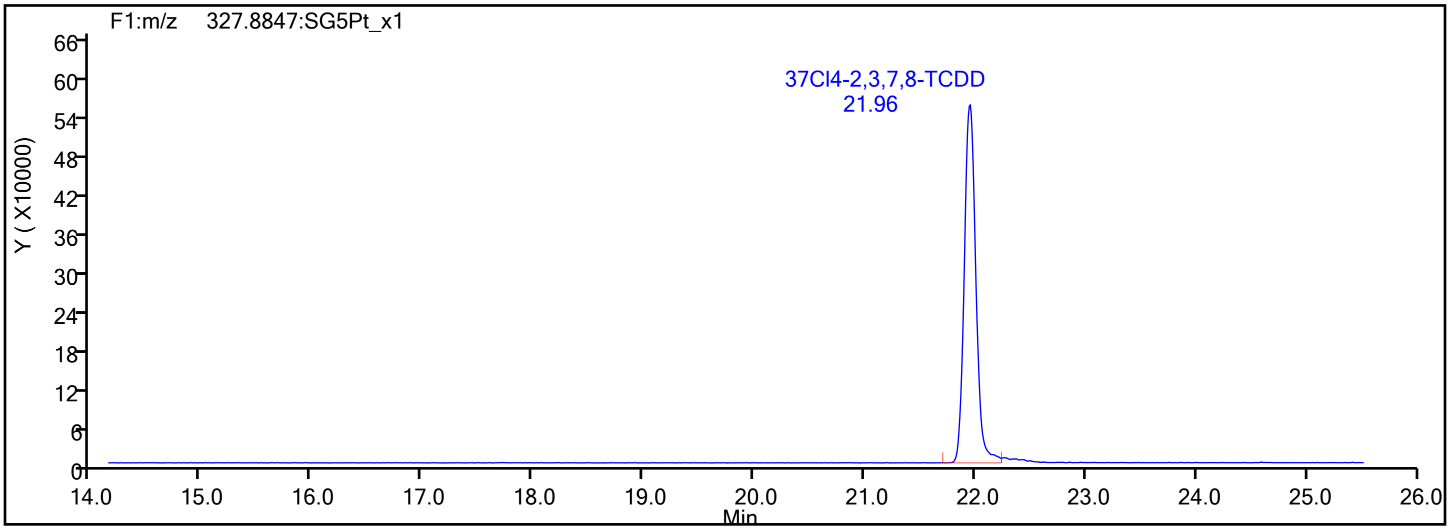

37Cl4-TCDD Standards

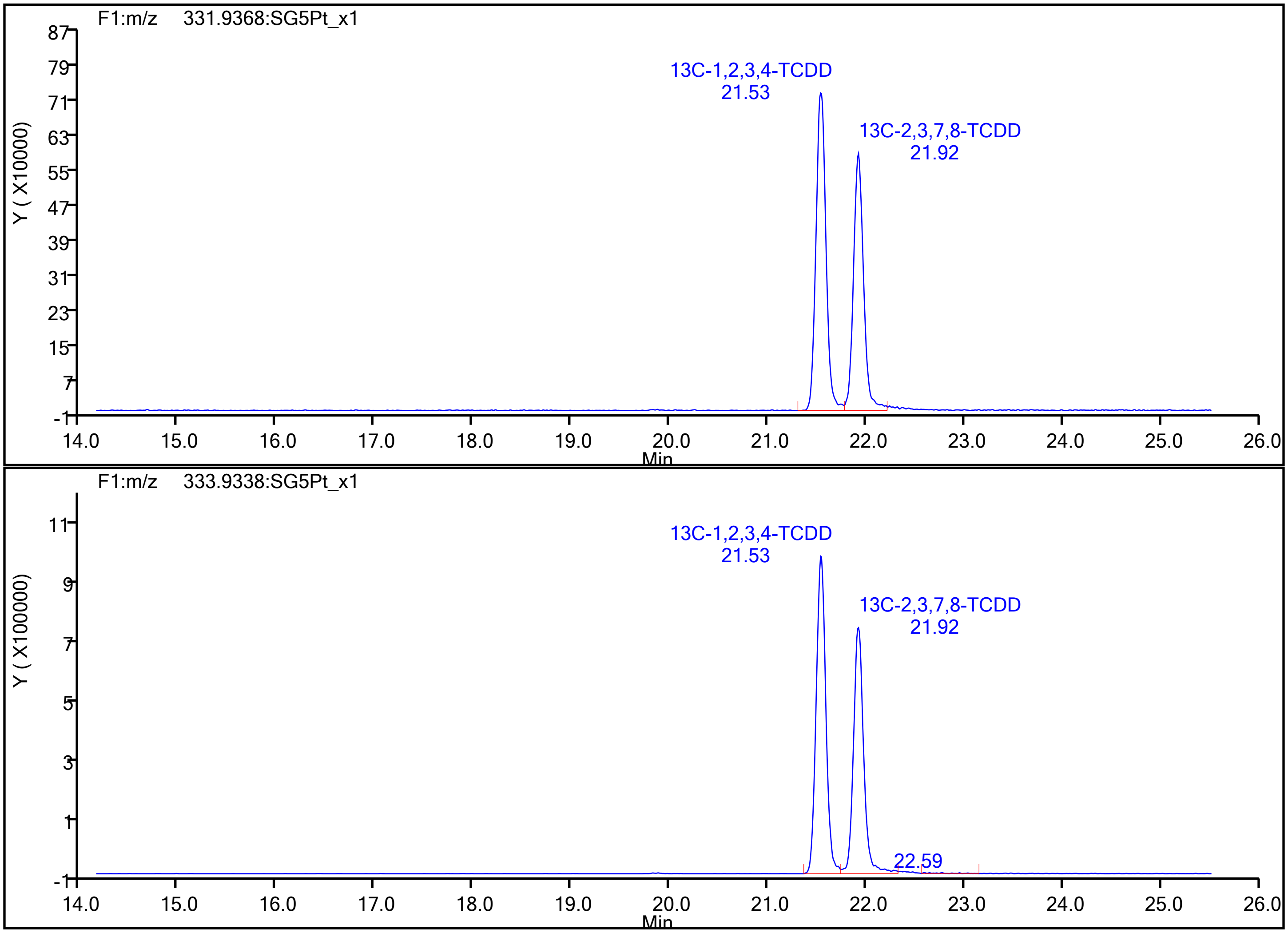

Eurofins TestAmerica, Sacramento

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F1 PeCDFs

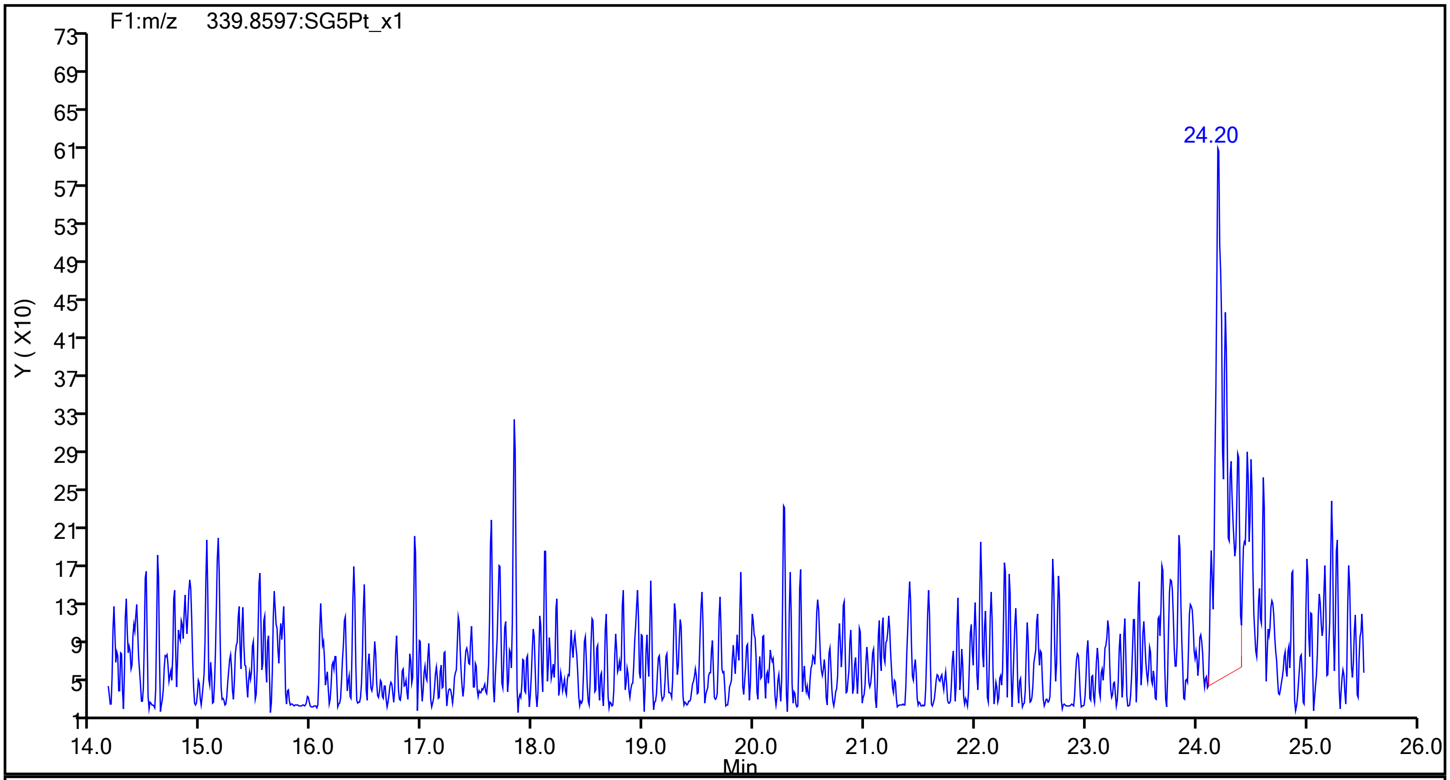

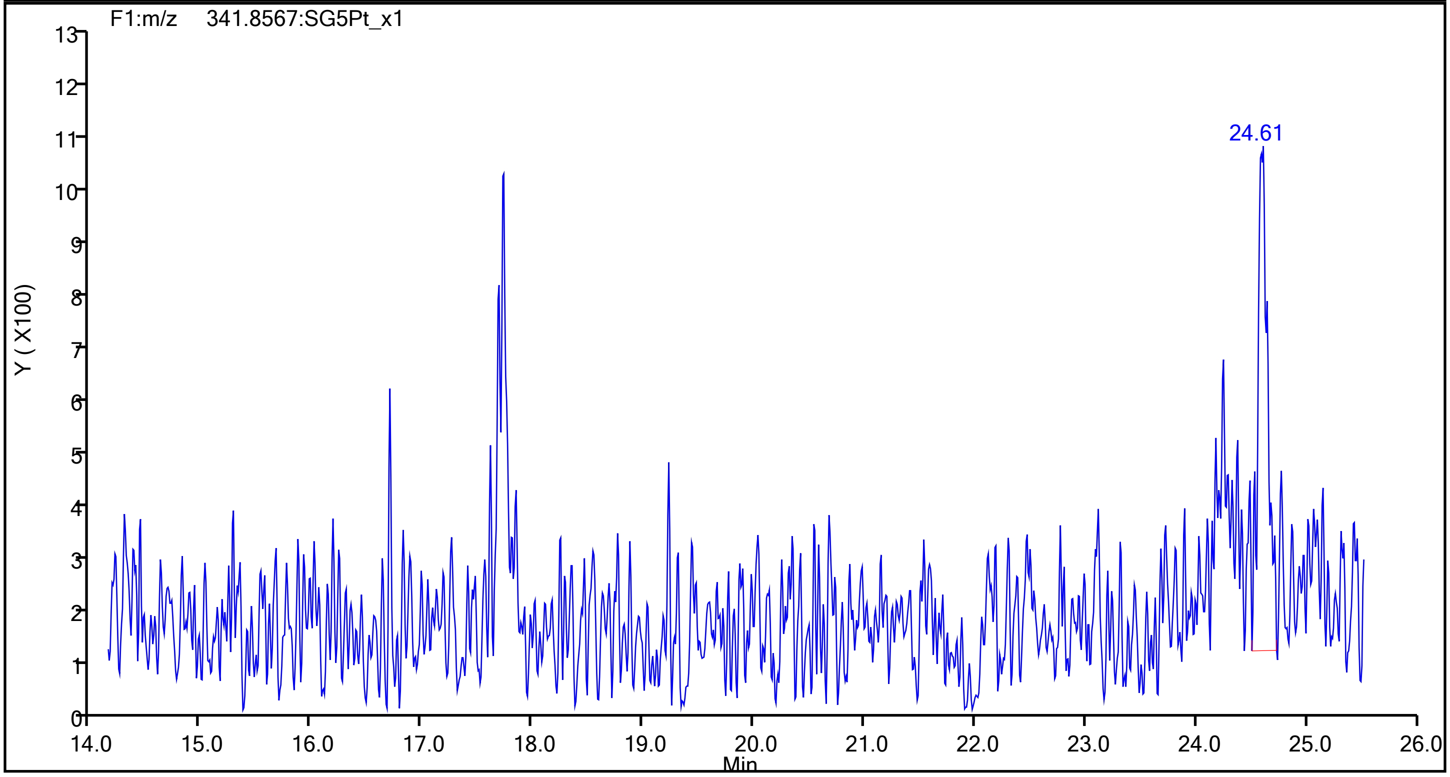

Eurofins TestAmerica, Sacramento

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Injection Date:	24-Sep-2021 19:02:00	Injection Vol:	1.0 ul
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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F1 PeCDFs

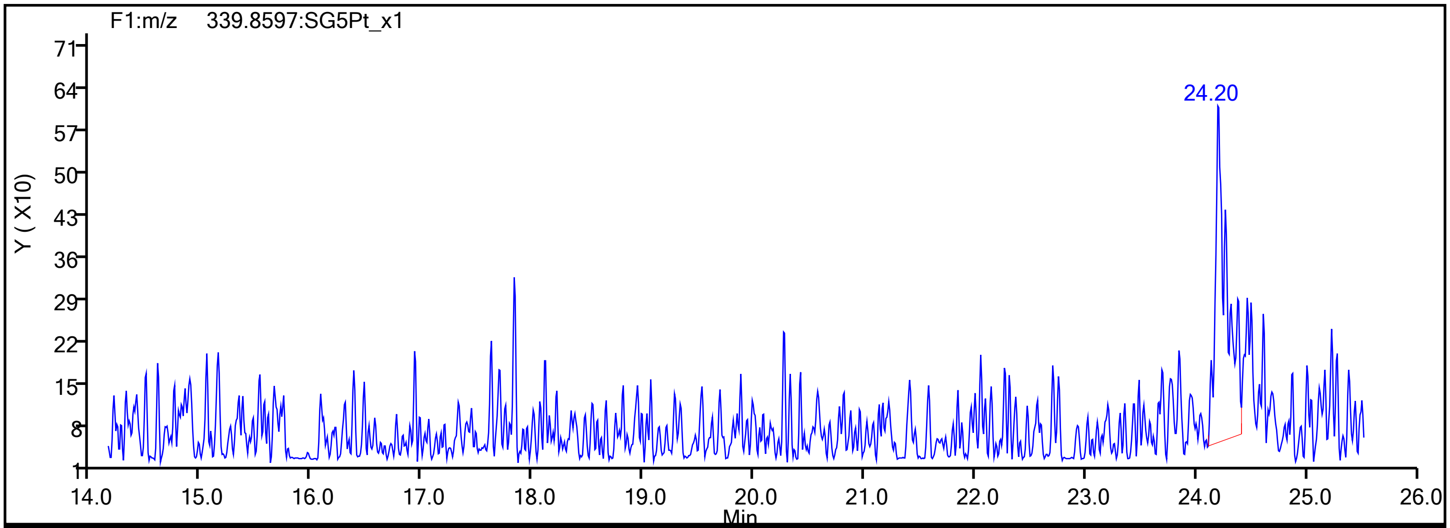

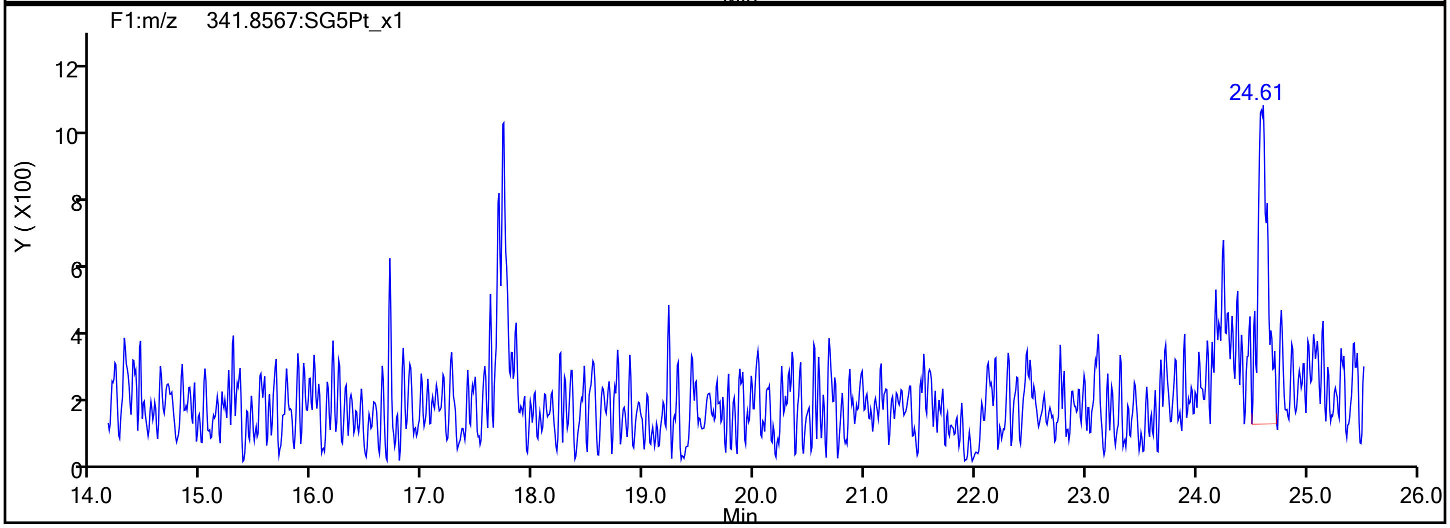

F1 PeCDFs Interference Mass

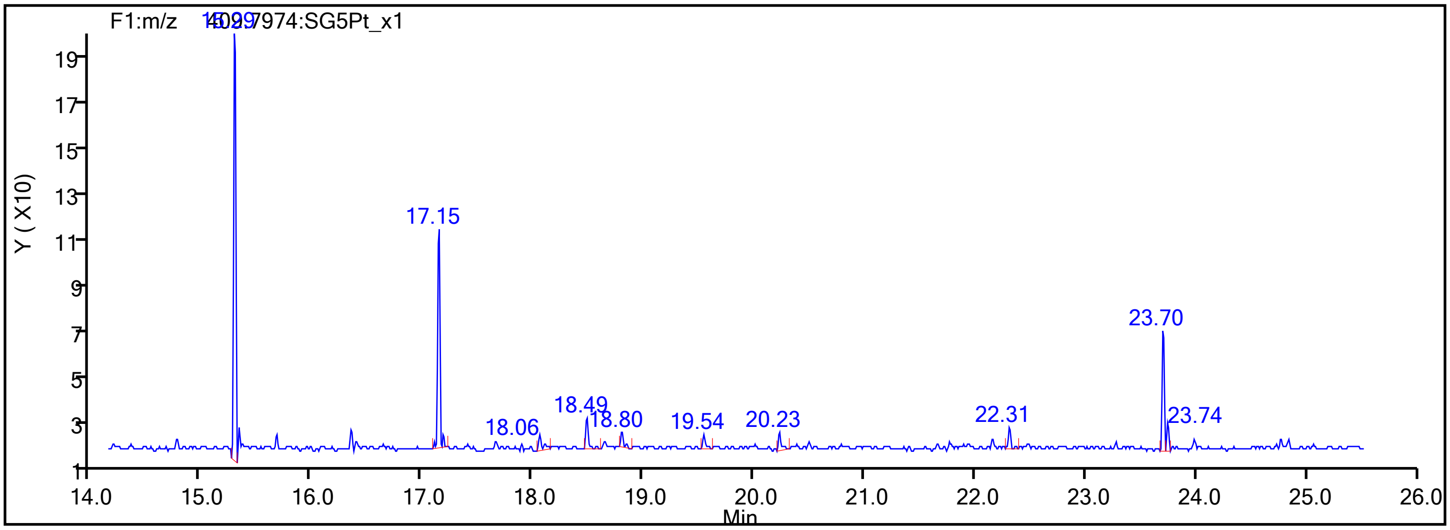

Report Date: 25-Sep-2021 14:19:07 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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Column Dia: 0.32 mm

PeCDF

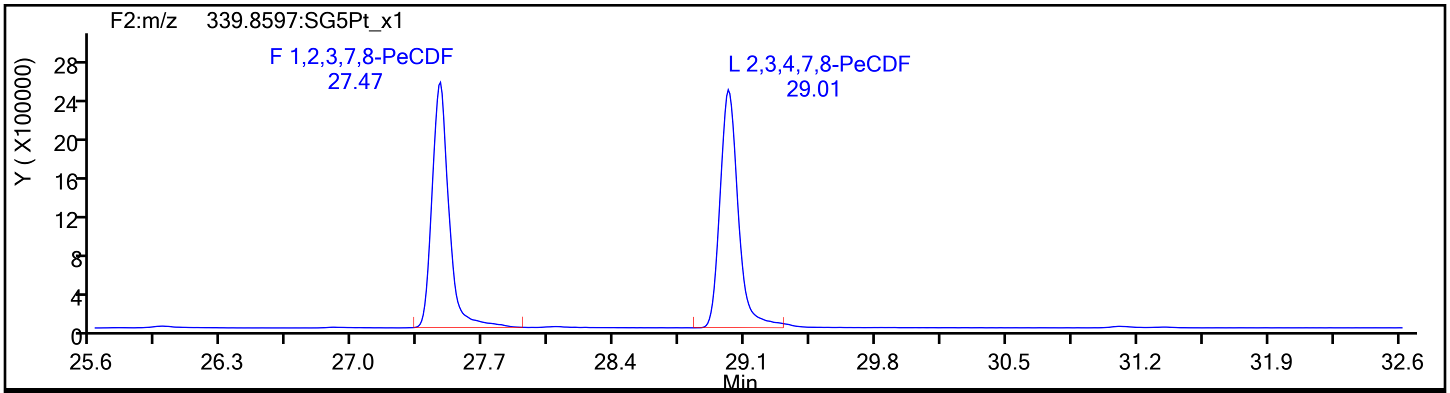

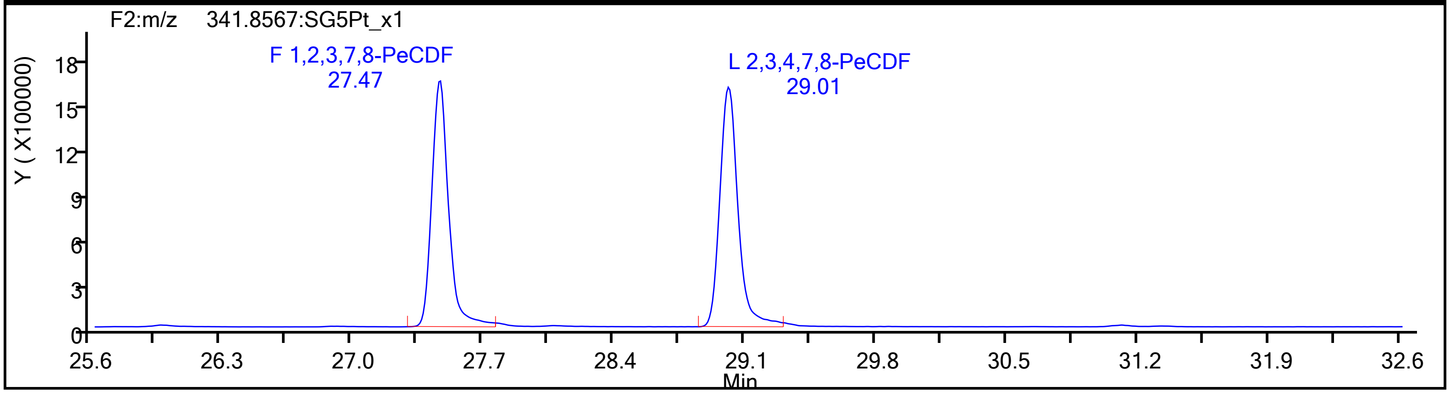

PeCDF Standards

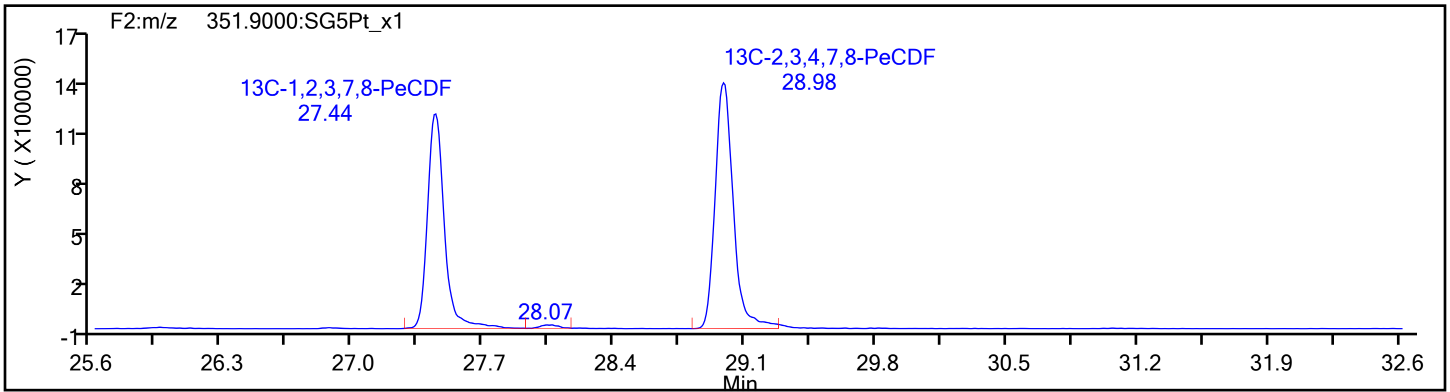

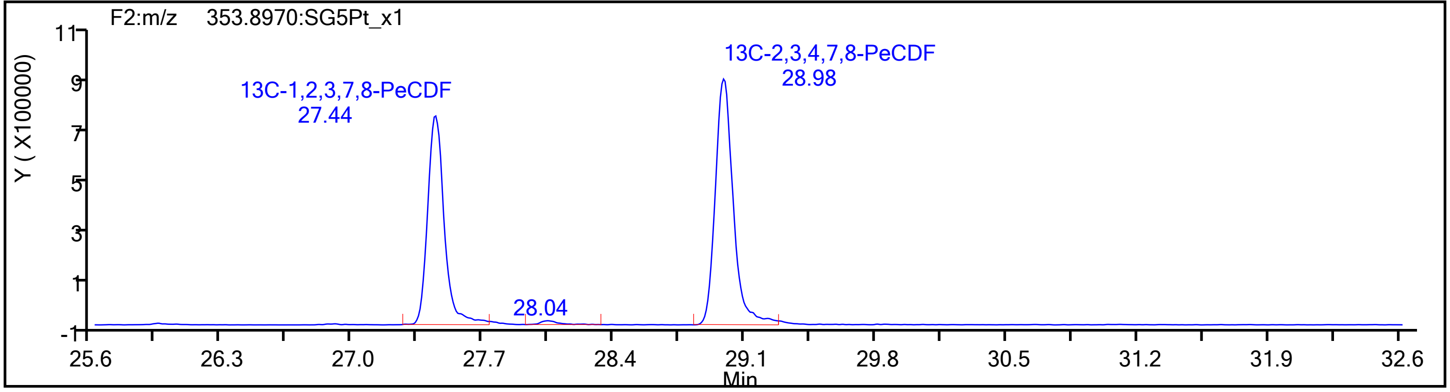

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Eurofins TestAmerica, Sacramento

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PeCDF

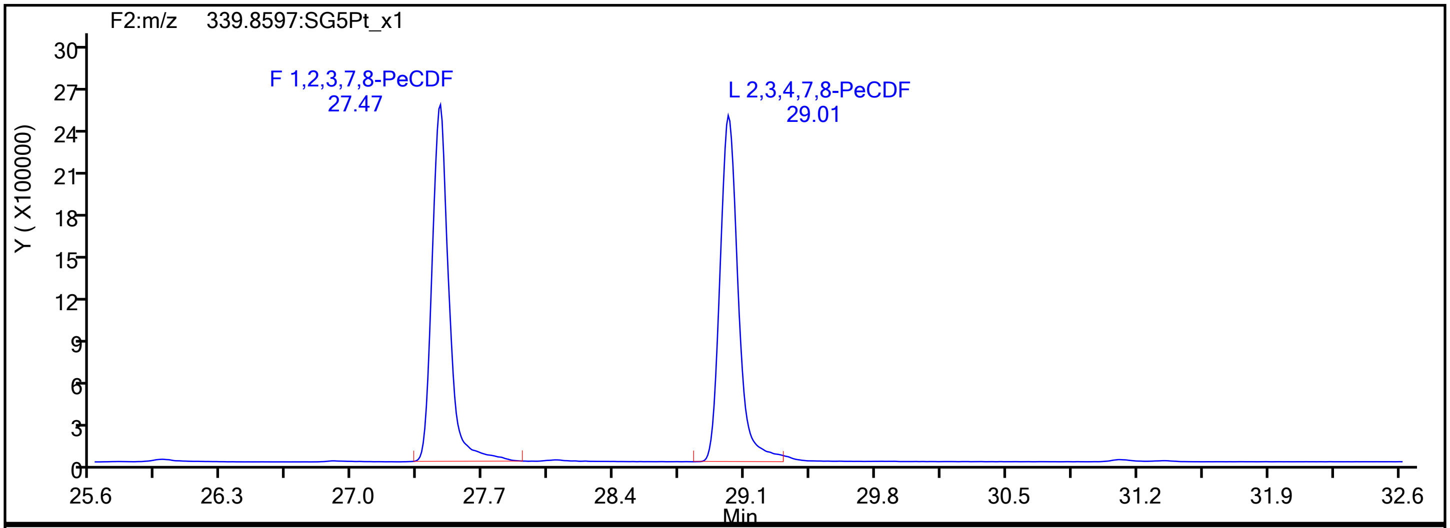

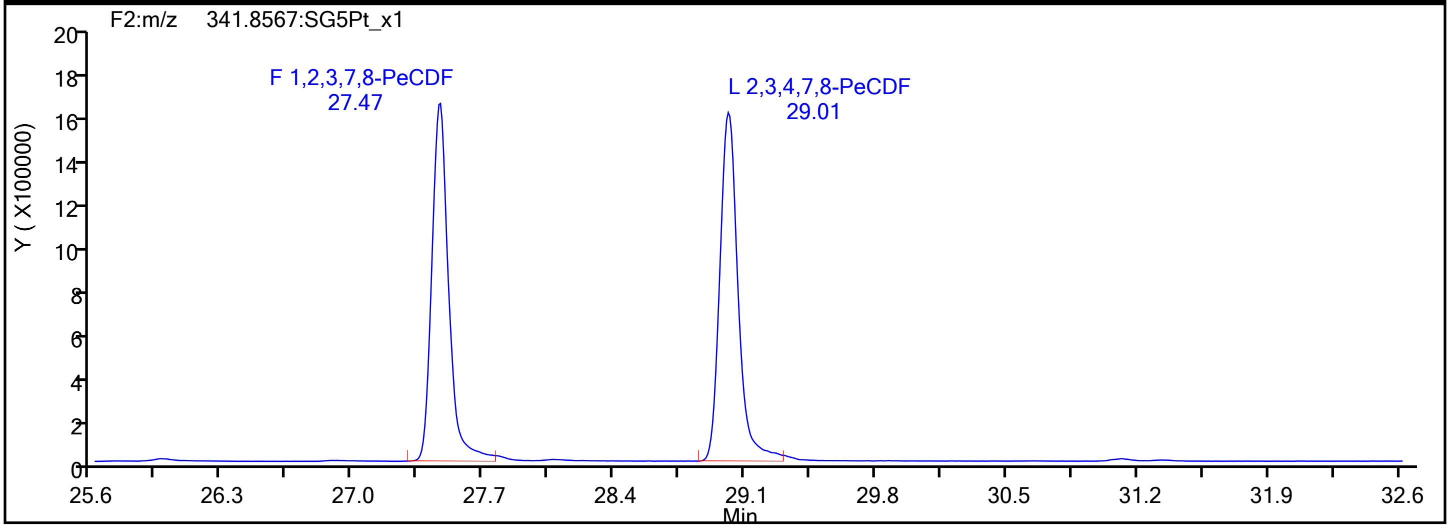

PeCDF Interference Mass

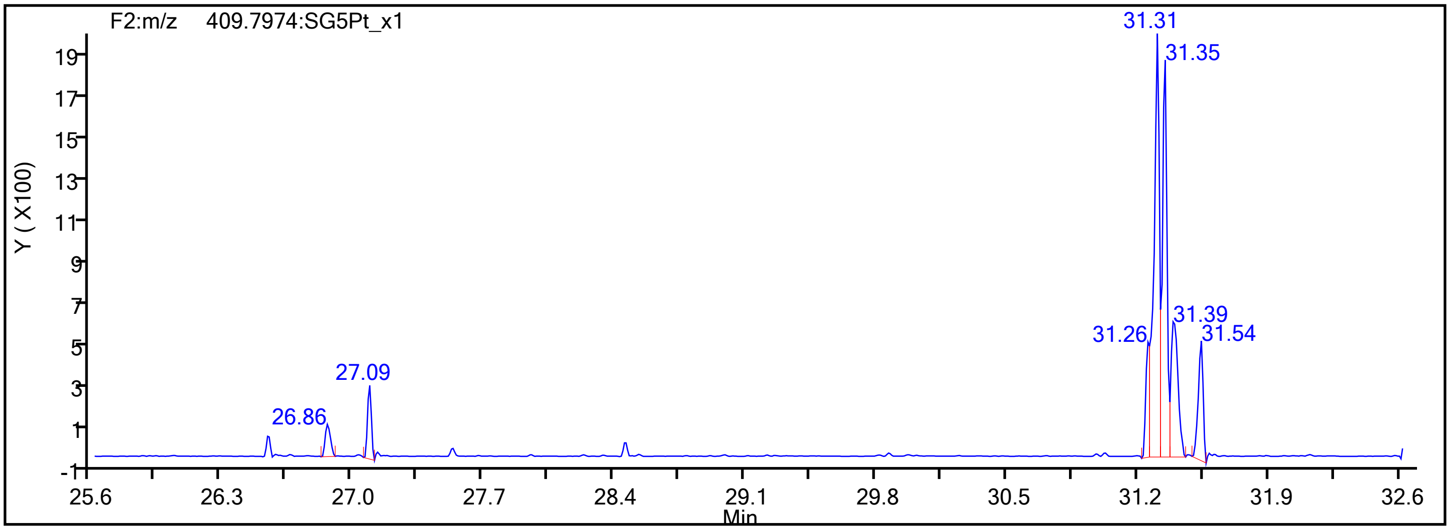

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Eurofins TestAmerica, Sacramento

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PeCDD

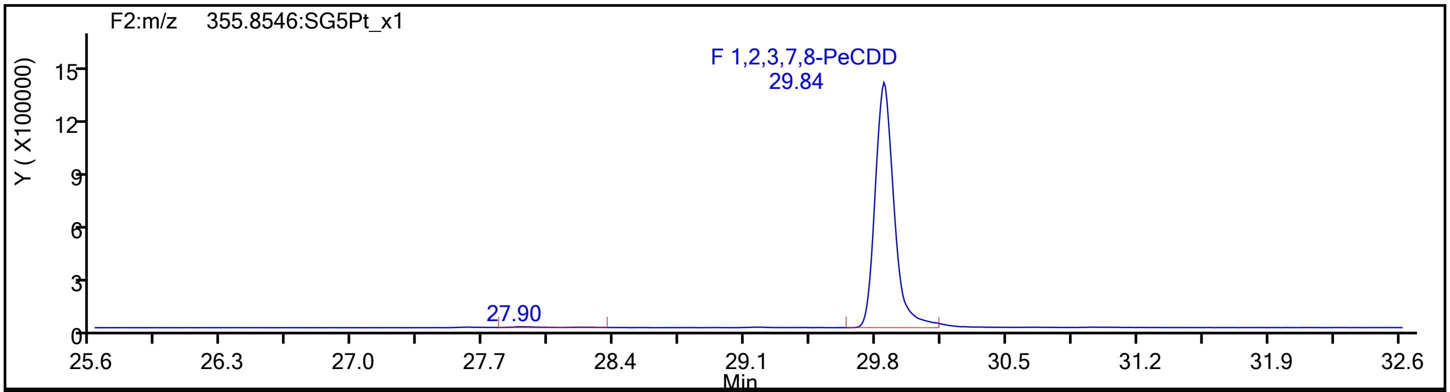

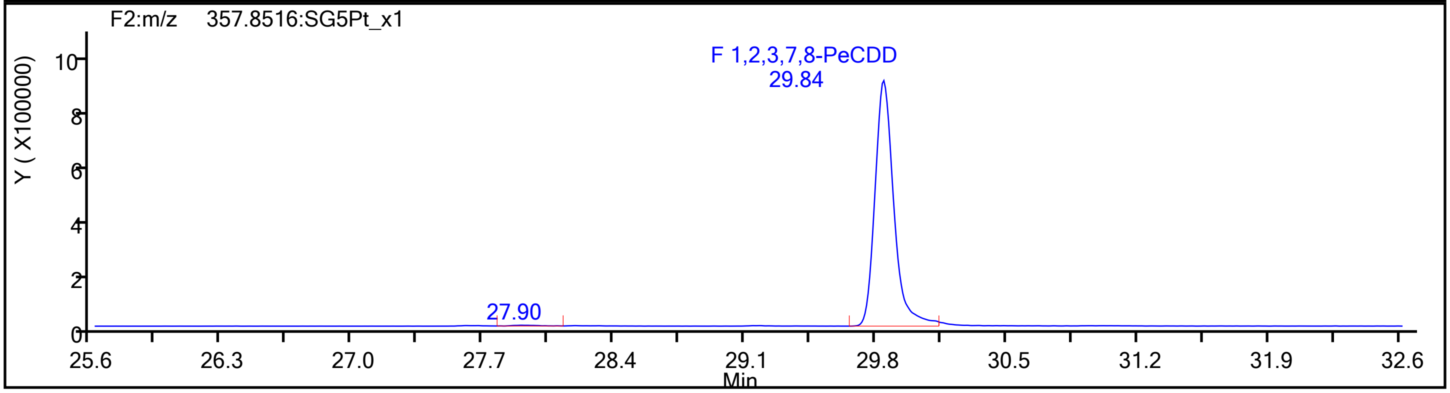

PeCDD Standards

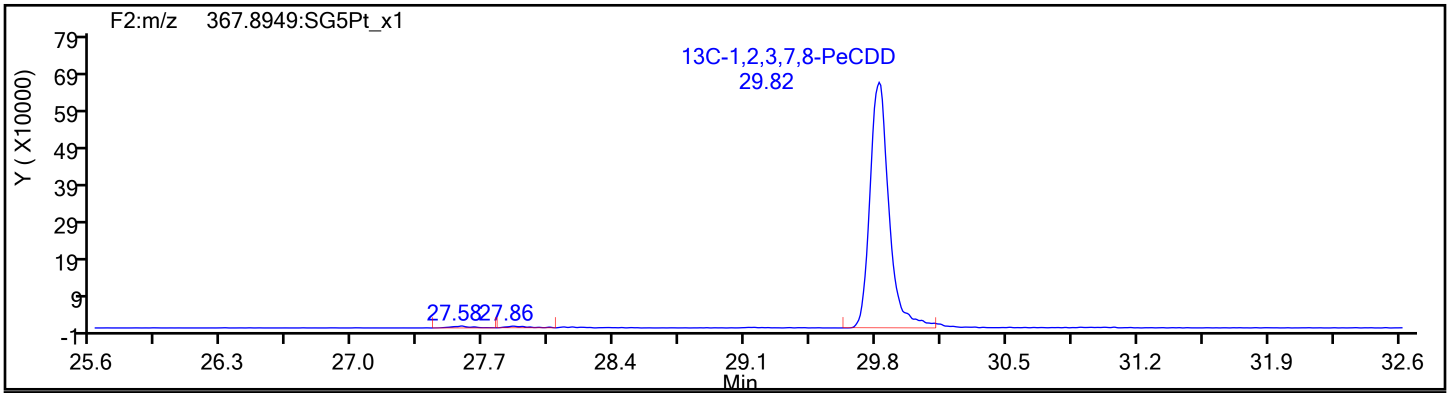

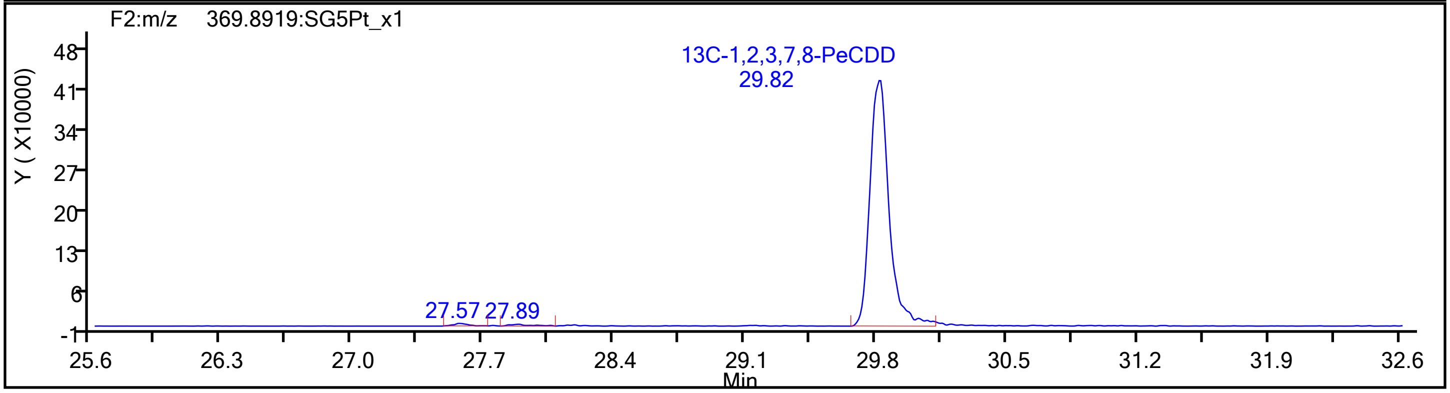

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

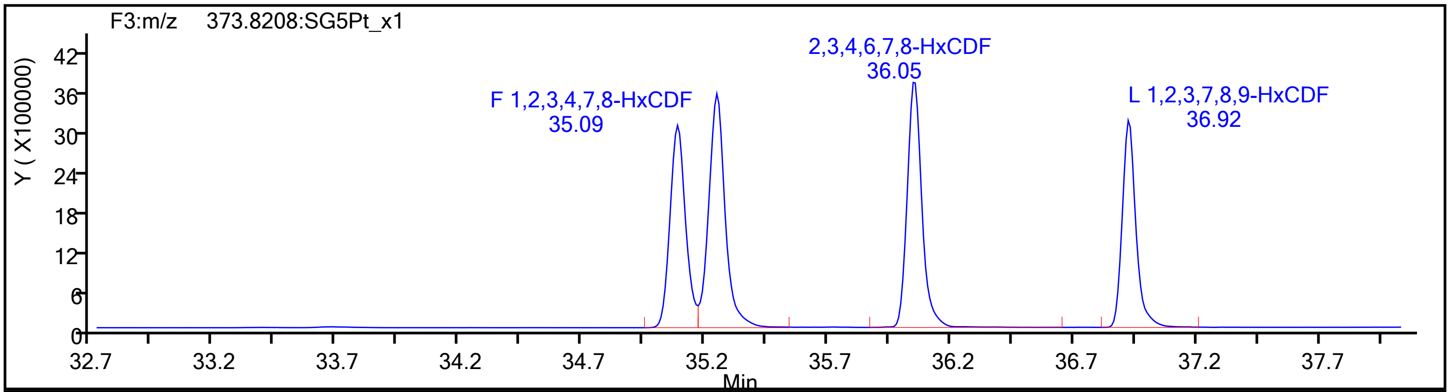

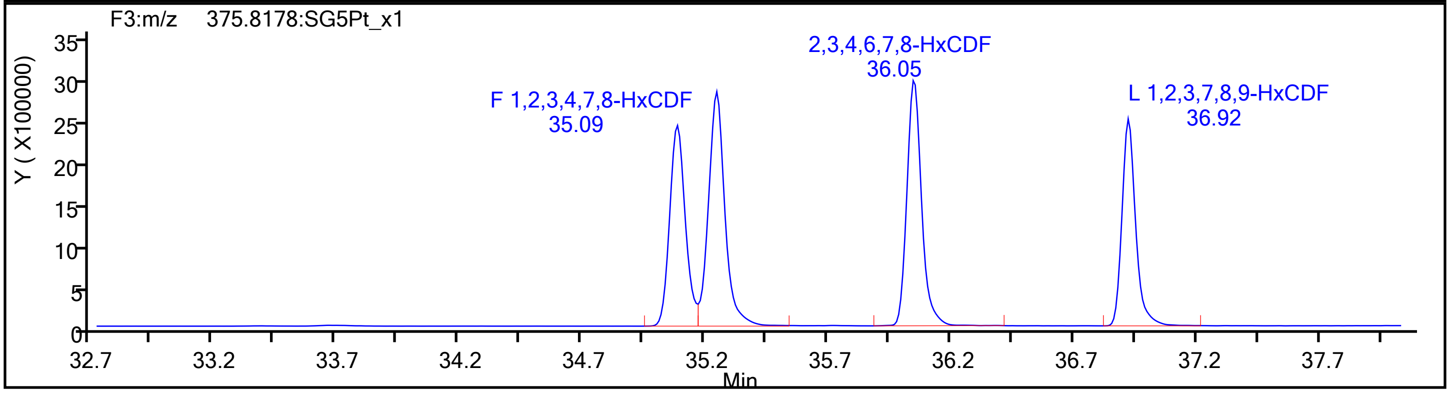

HxCDF Standards

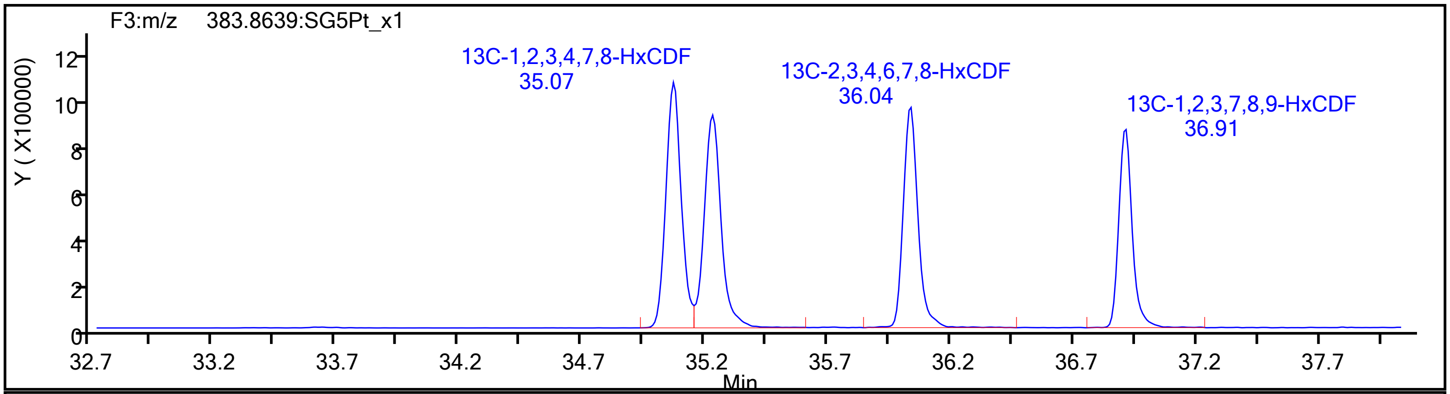

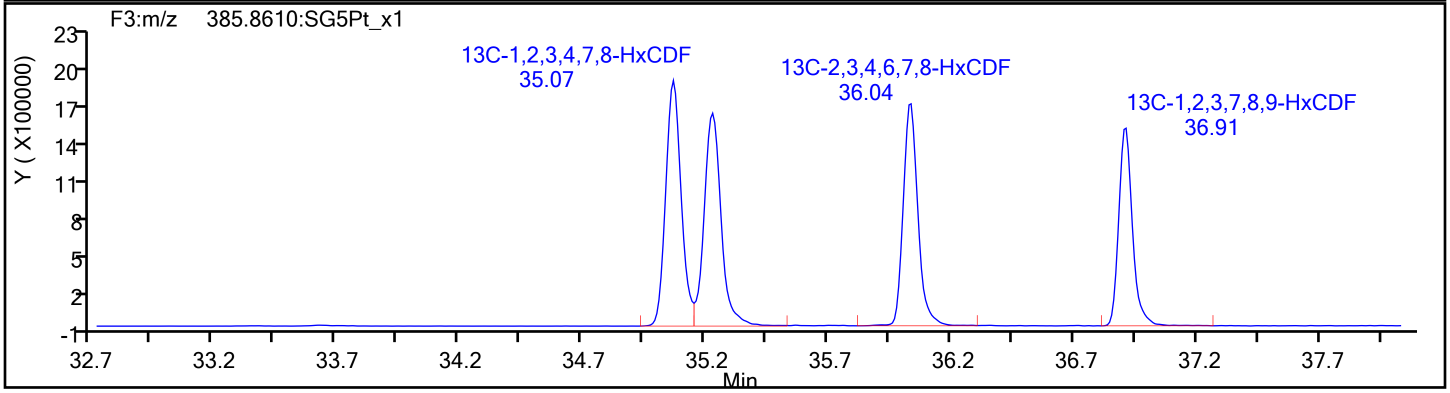

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Eurofins TestAmerica, Sacramento

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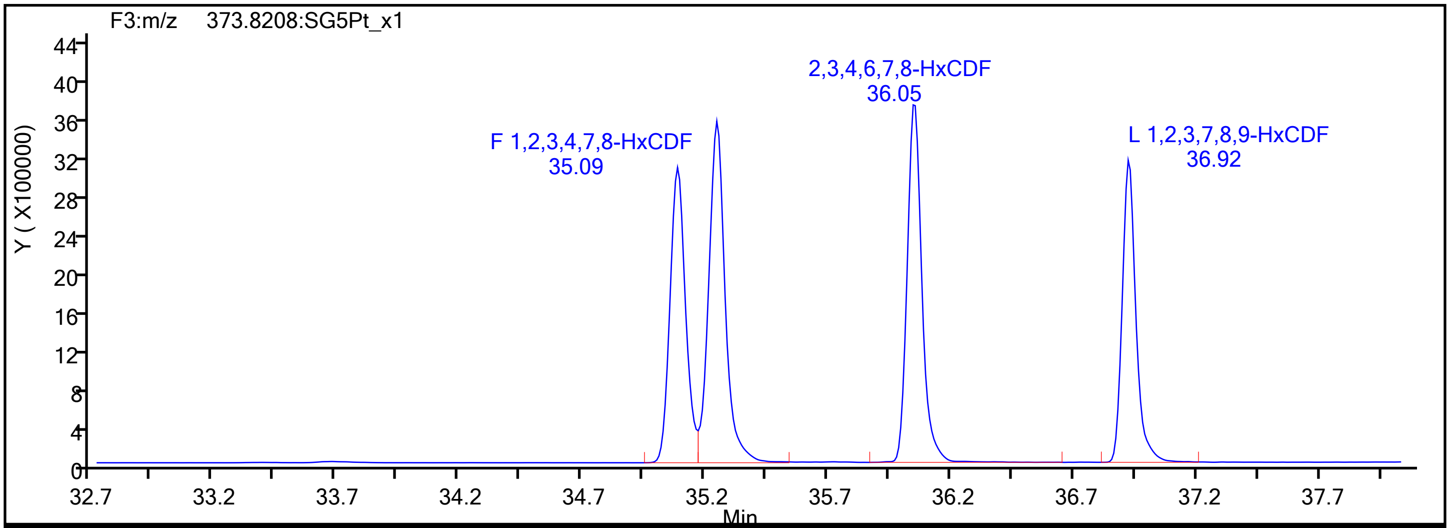

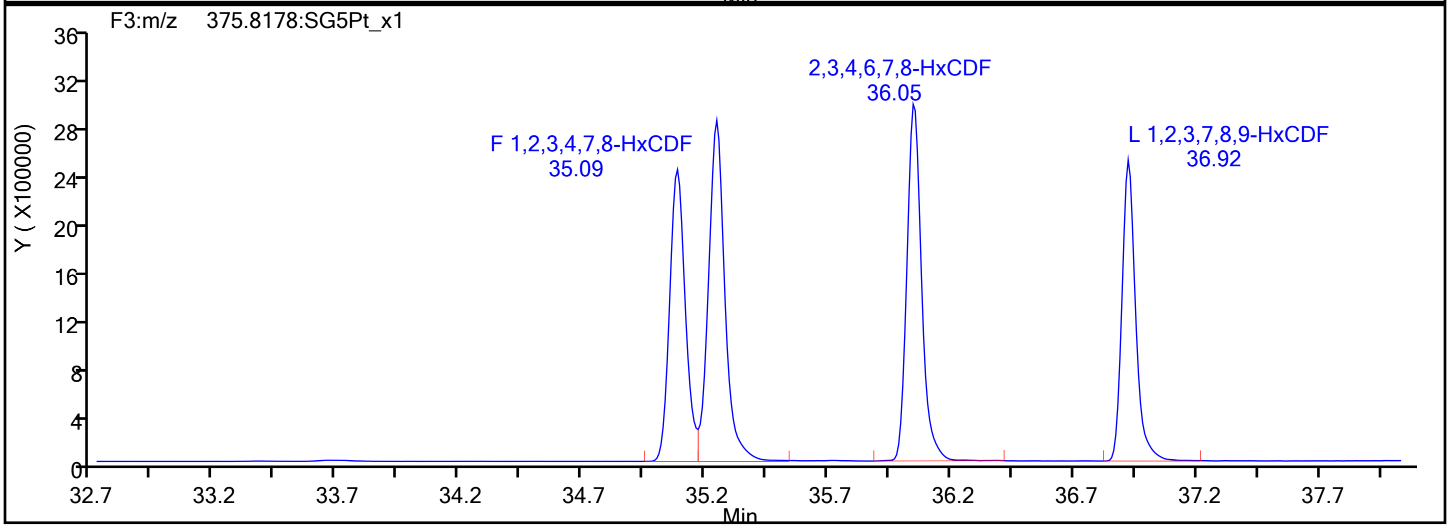

HxCDF Interference Mass

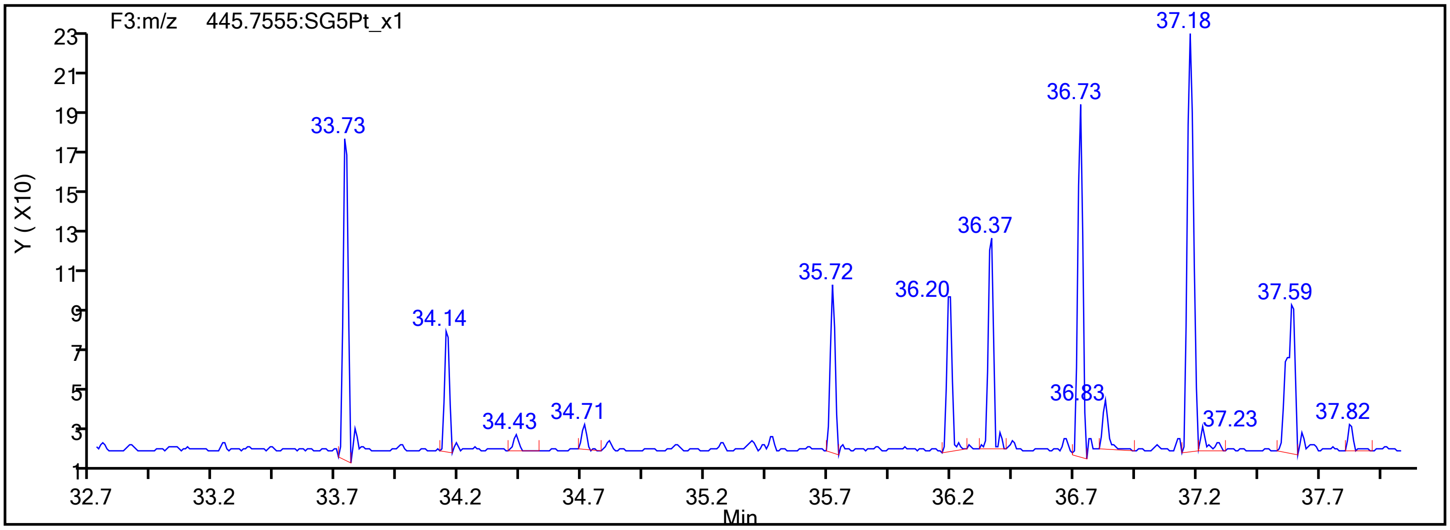

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Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

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HxCDD

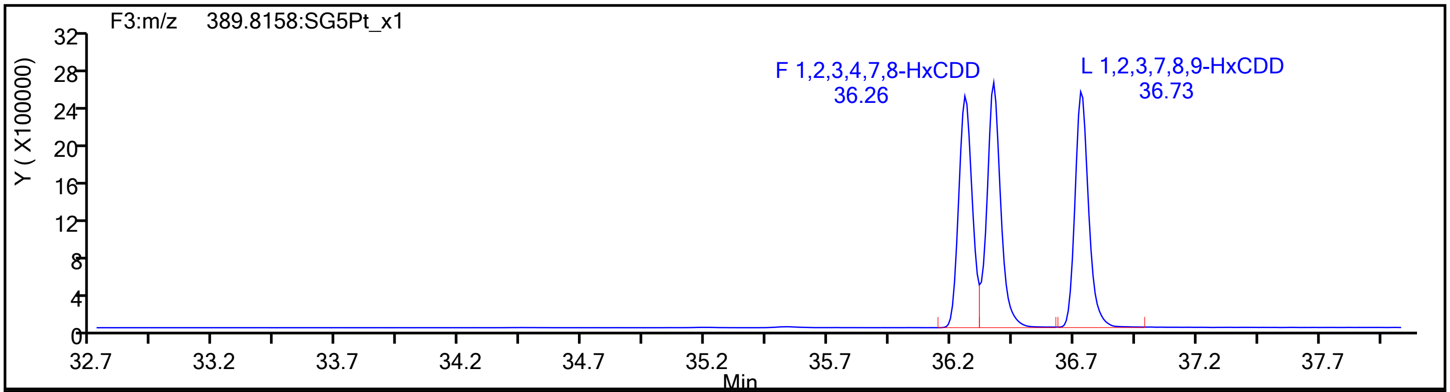

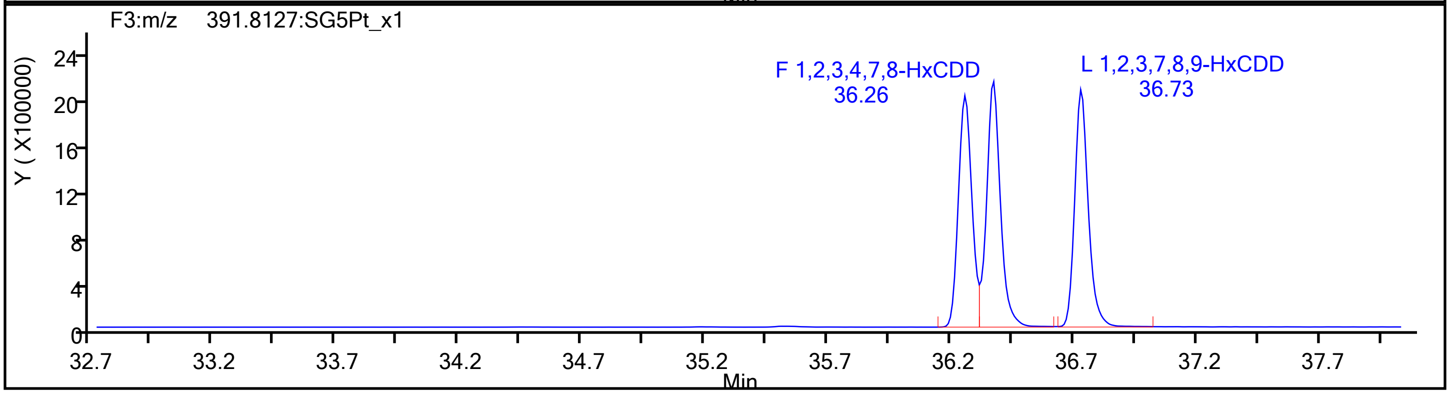

HxCDD Standards

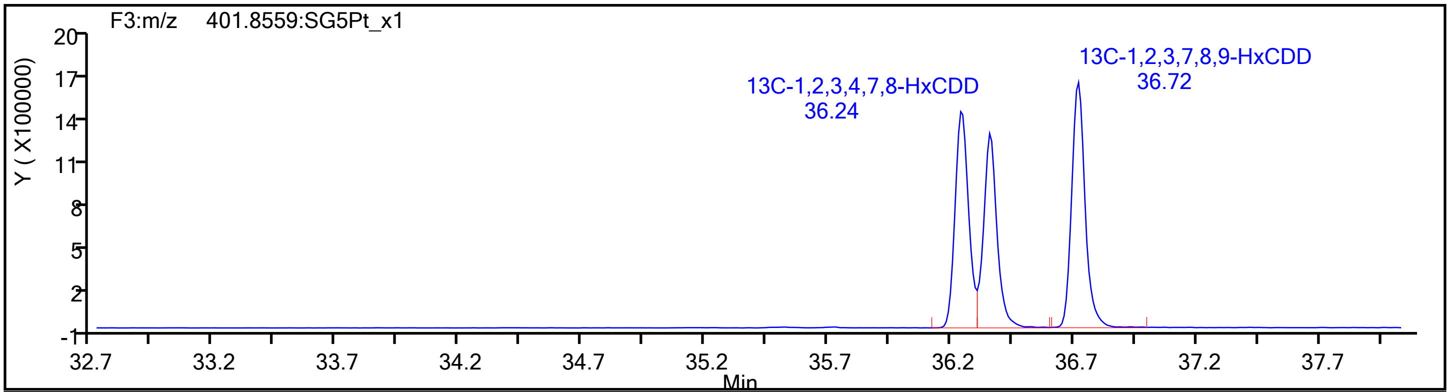

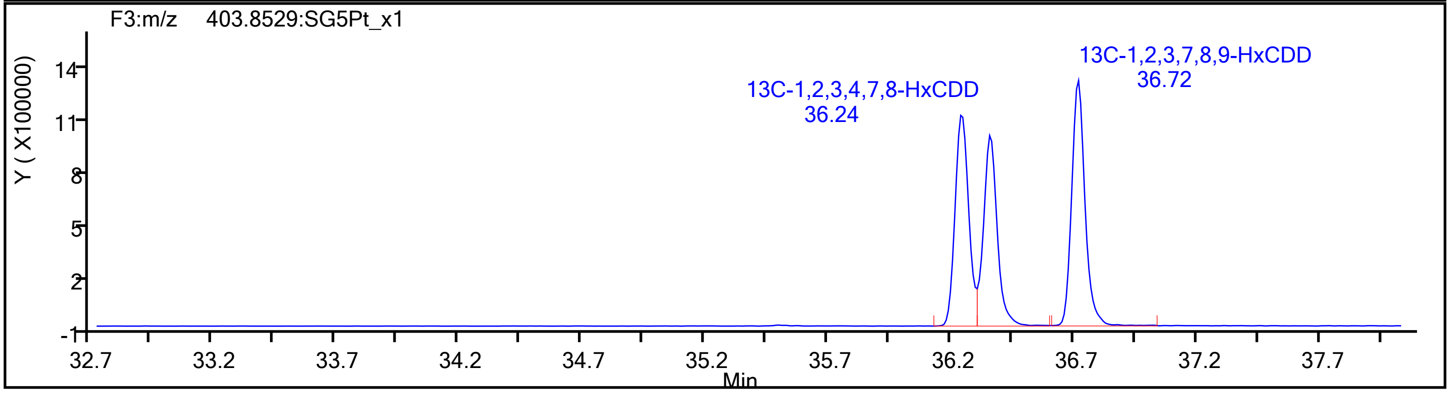

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Eurofins TestAmerica, Sacramento

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HpCDF

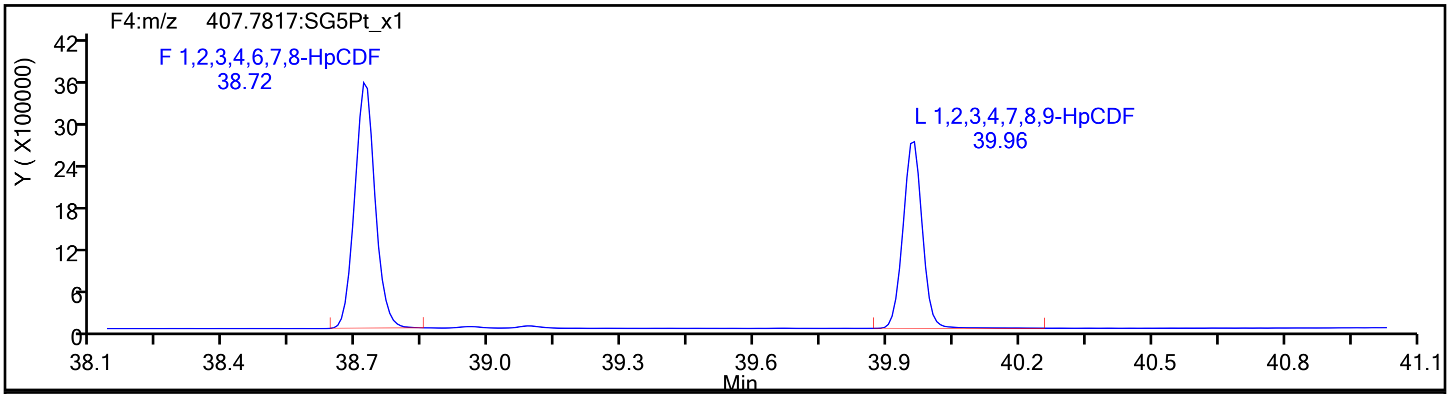

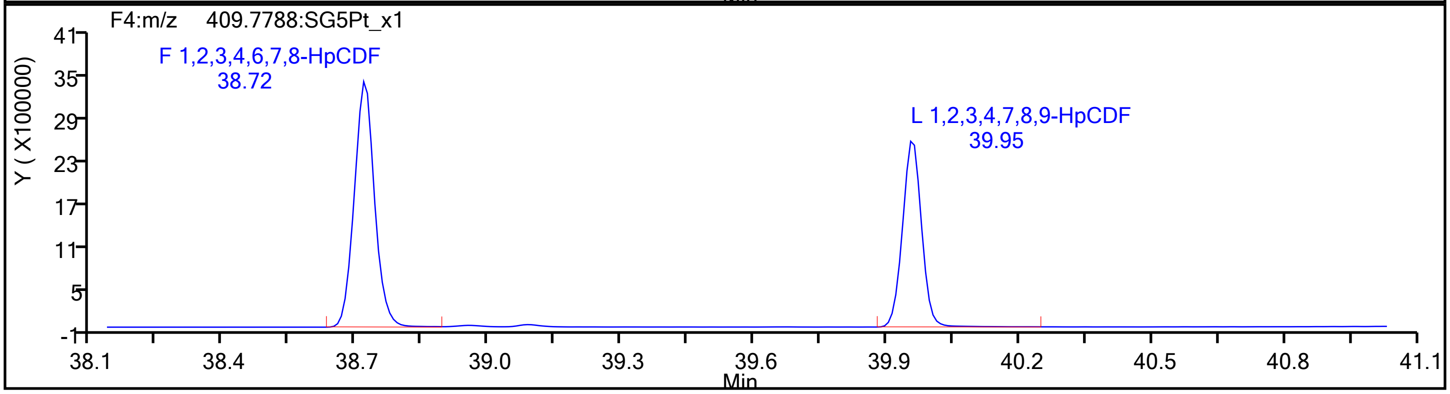

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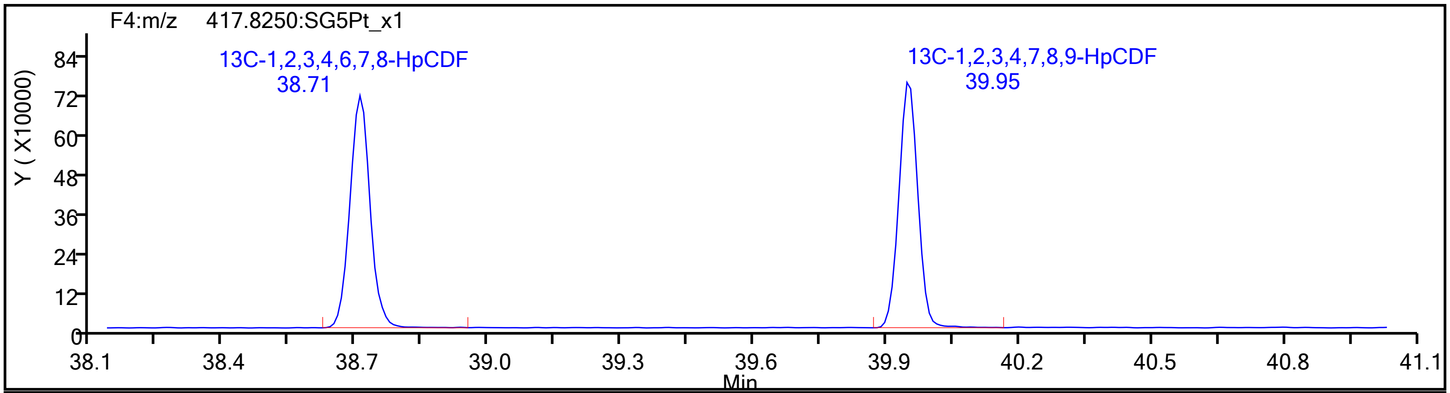

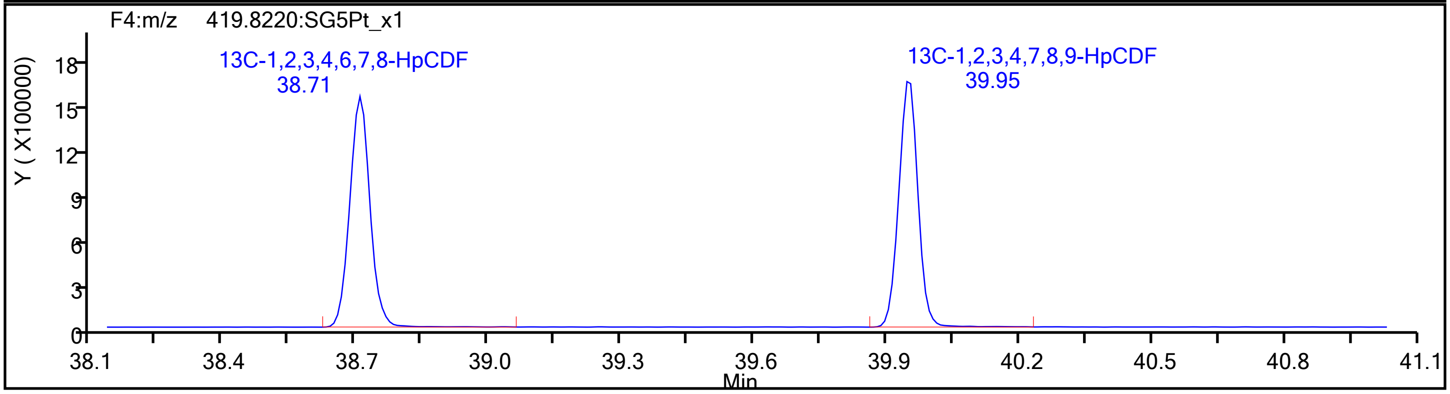

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Eurofins TestAmerica, Sacramento

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HpCDF

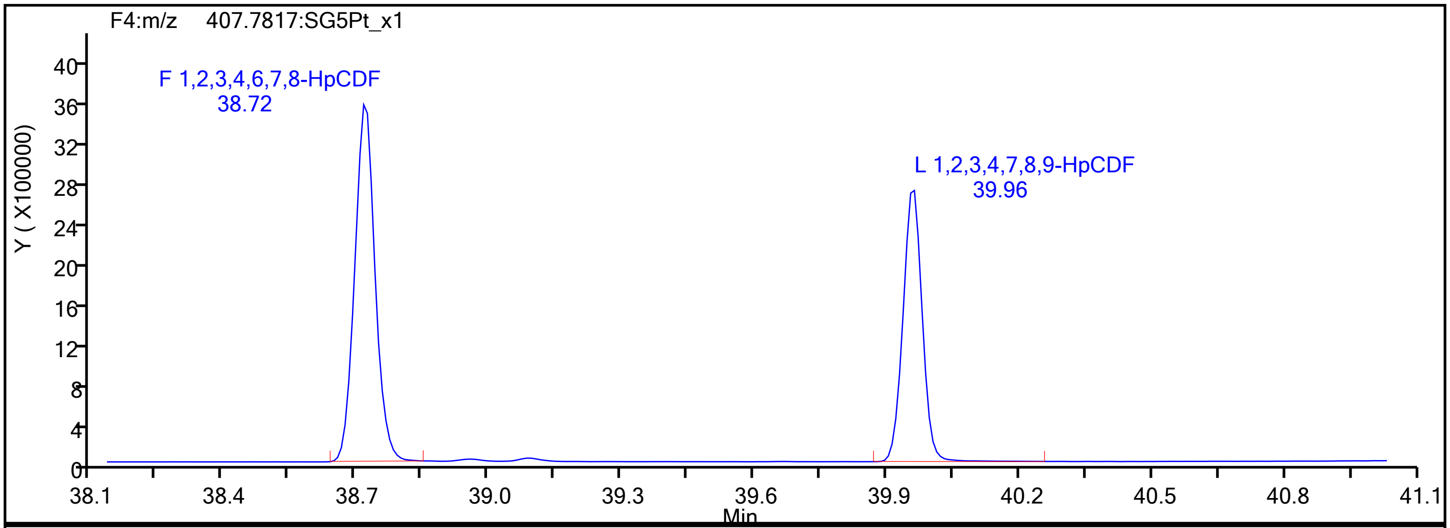

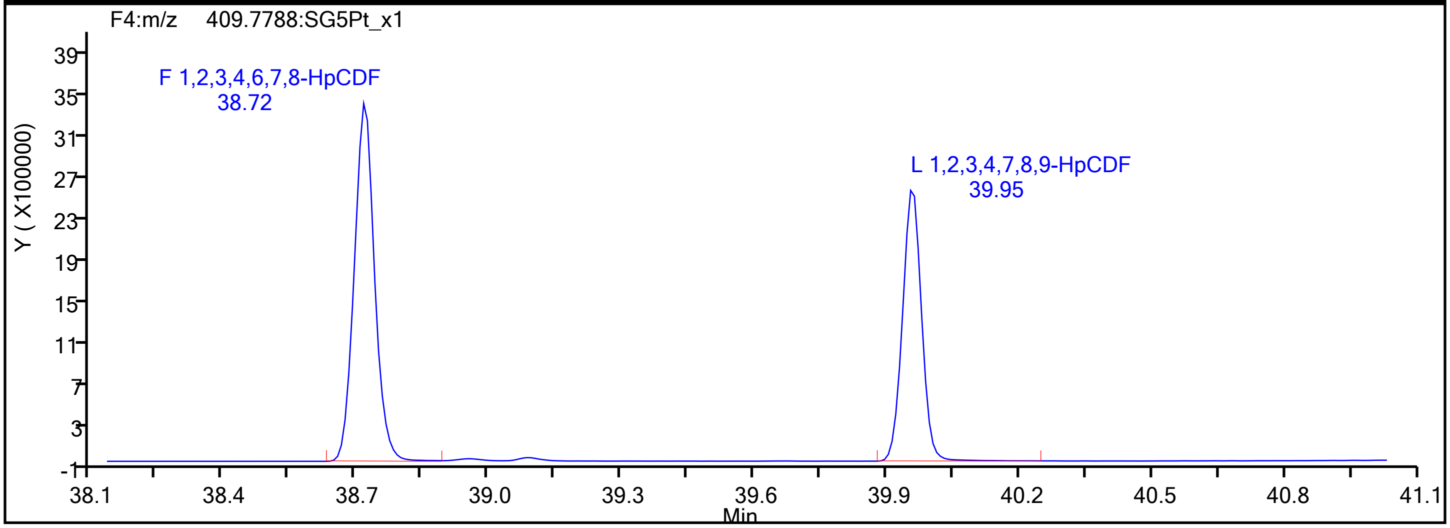

HpCDF Interference Mass

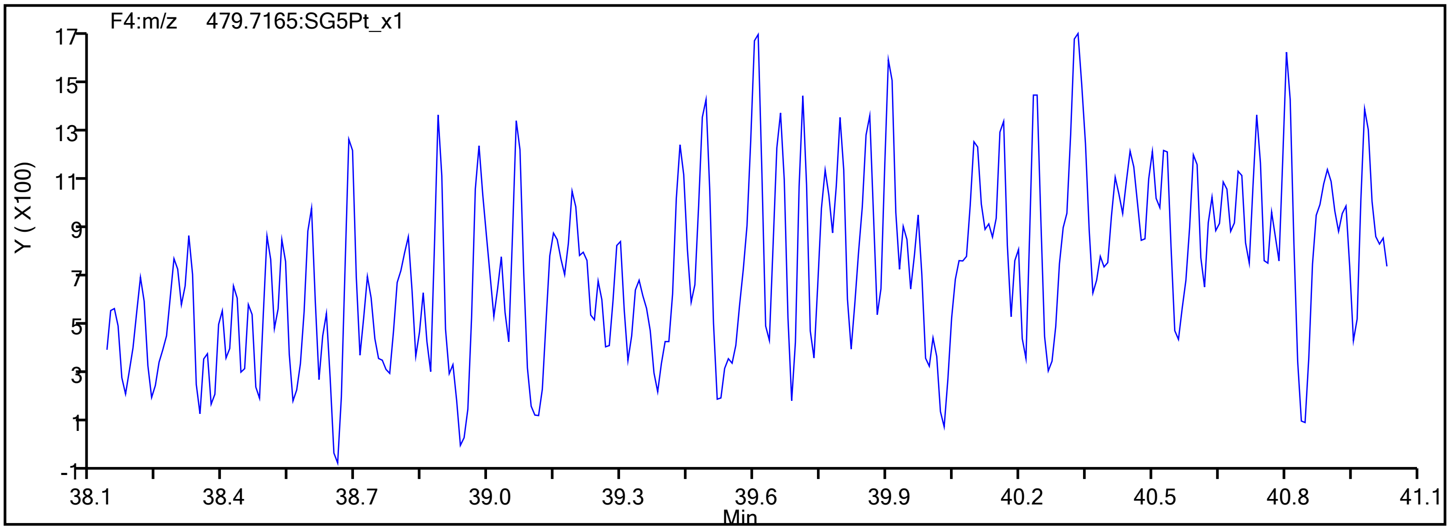

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Eurofins TestAmerica, Sacramento

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HpCDD

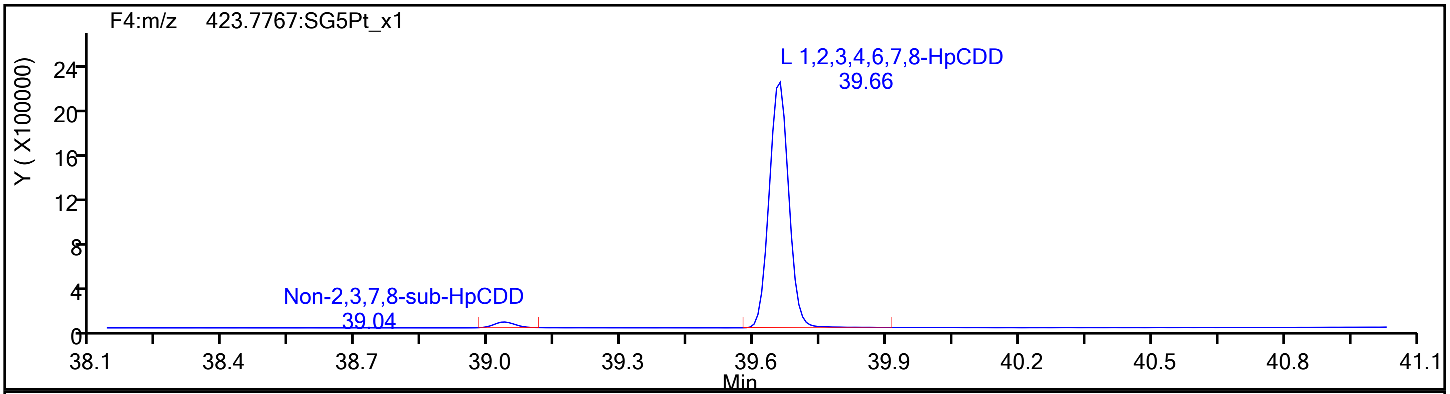

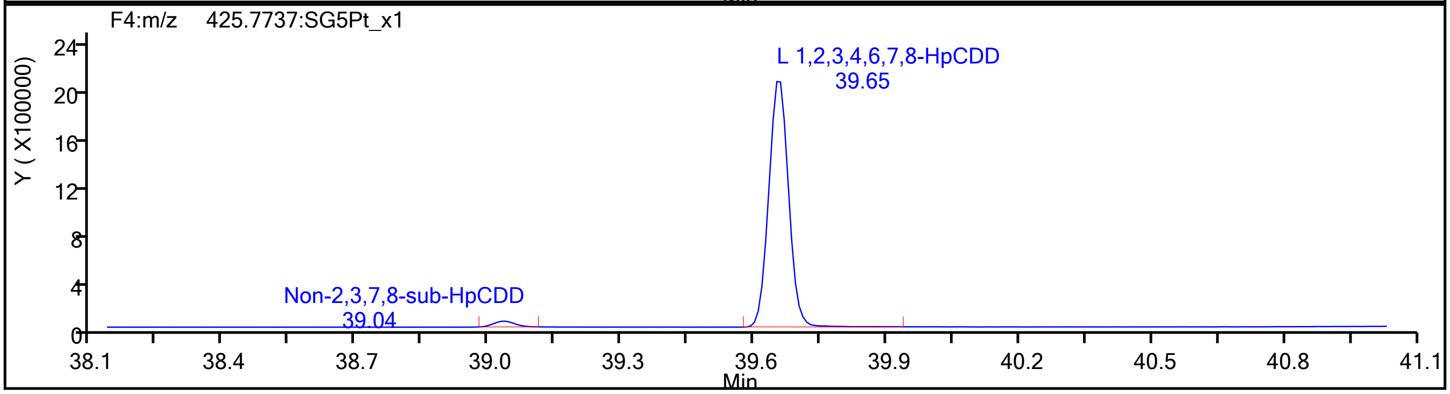

HpCDD Standards

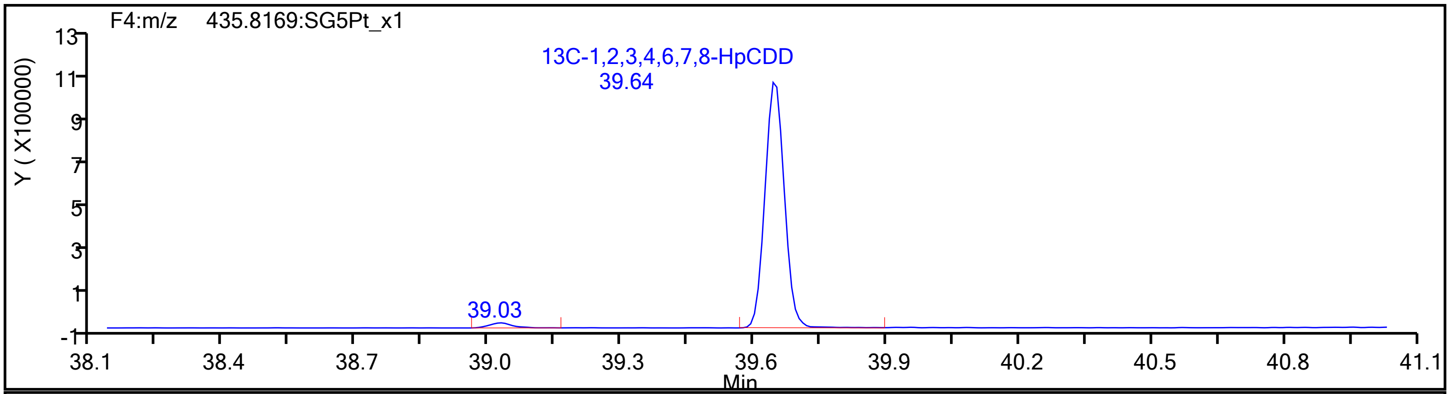

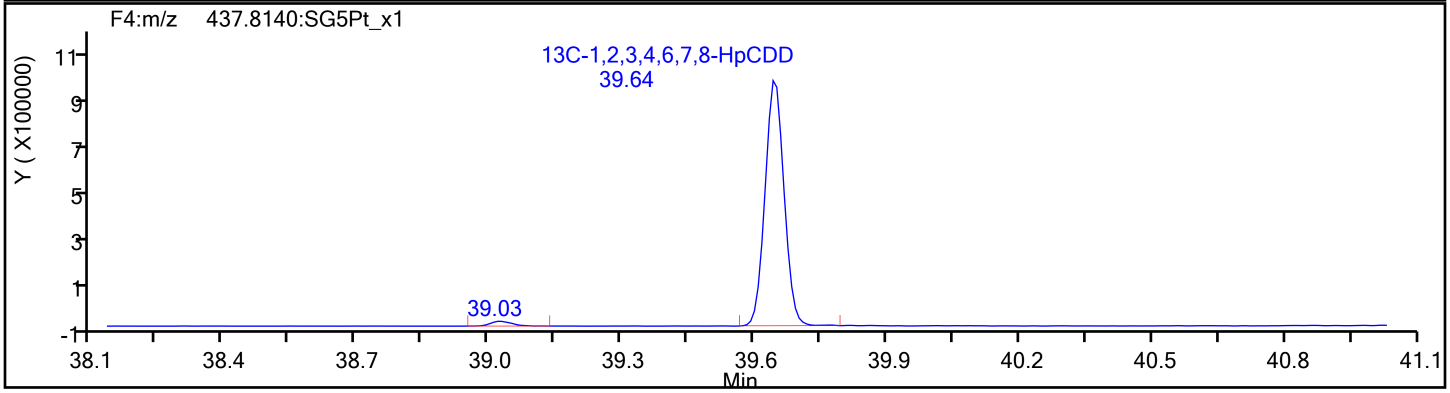

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Eurofins TestAmerica, Sacramento

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OCDF

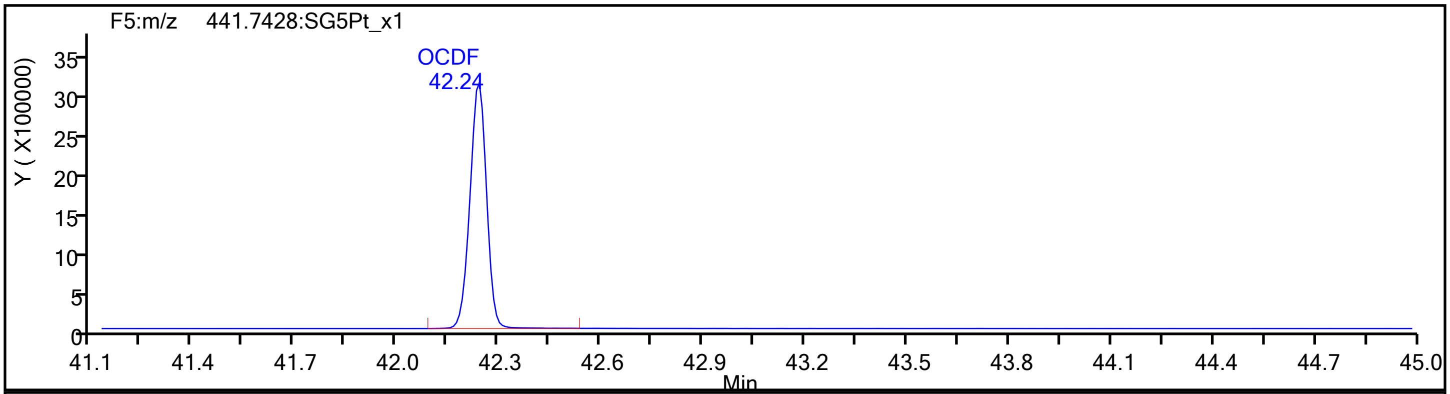

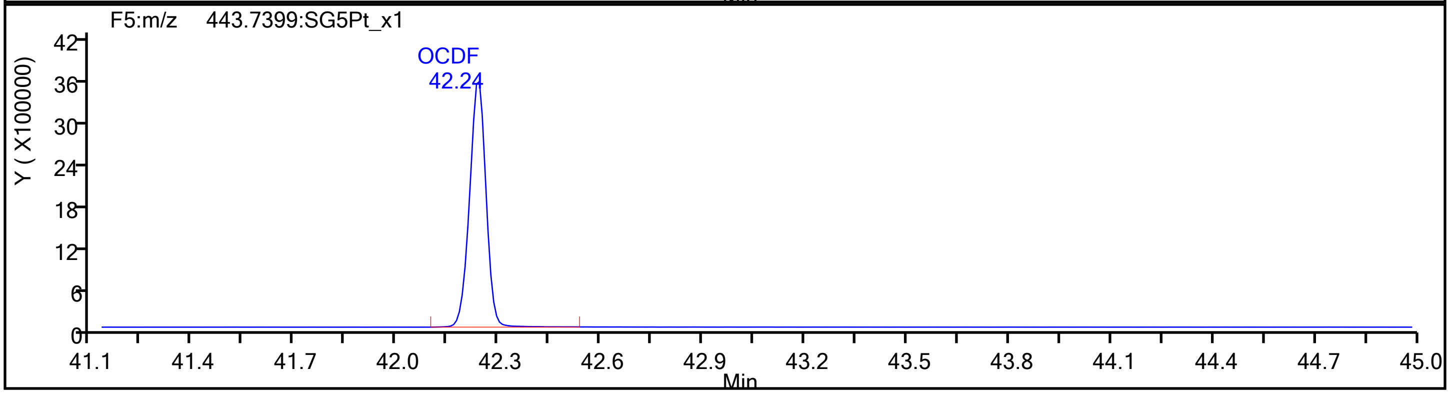

OCDF Standards

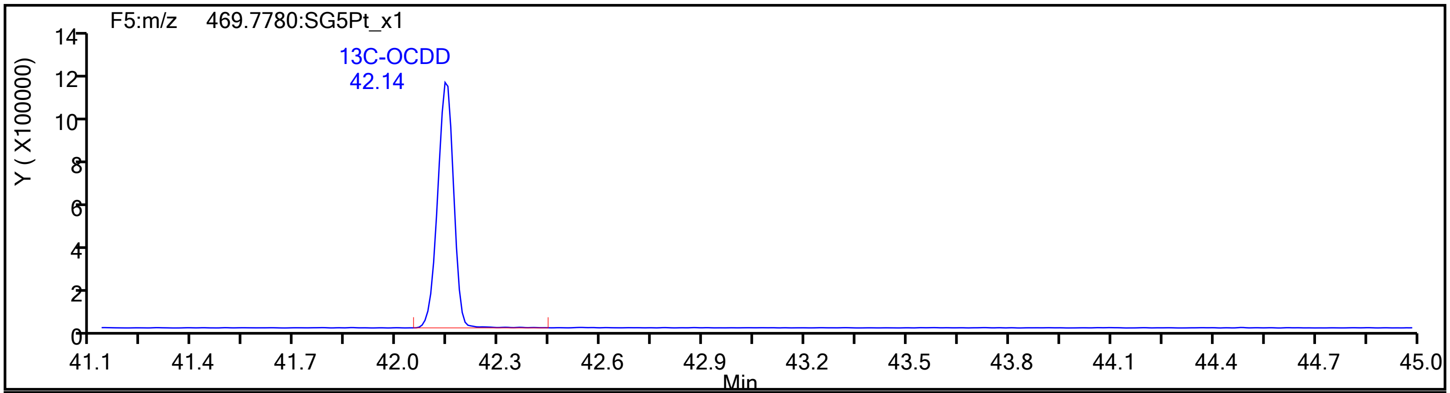

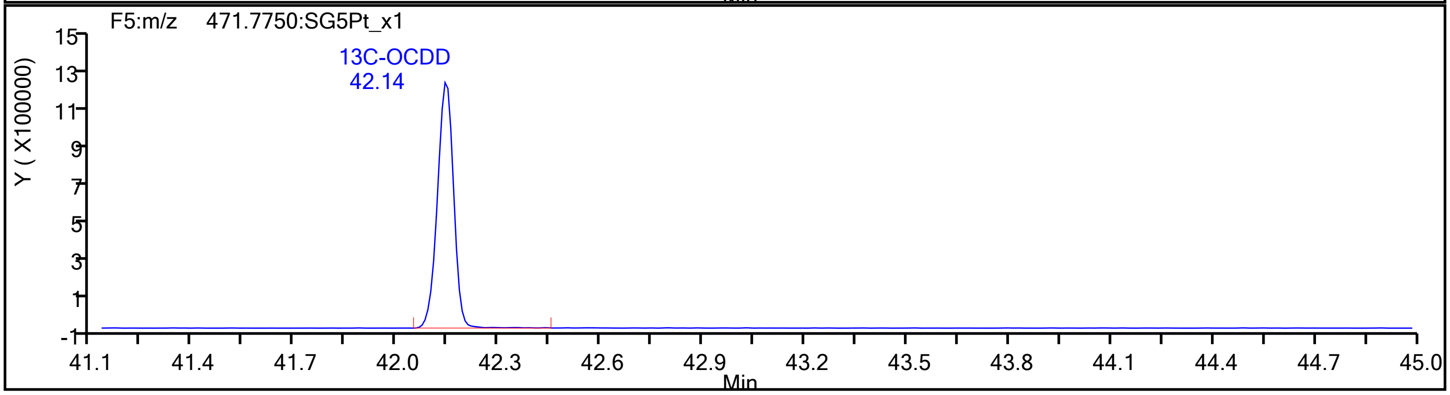

Eurofins TestAmerica, Sacramento

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OCDF

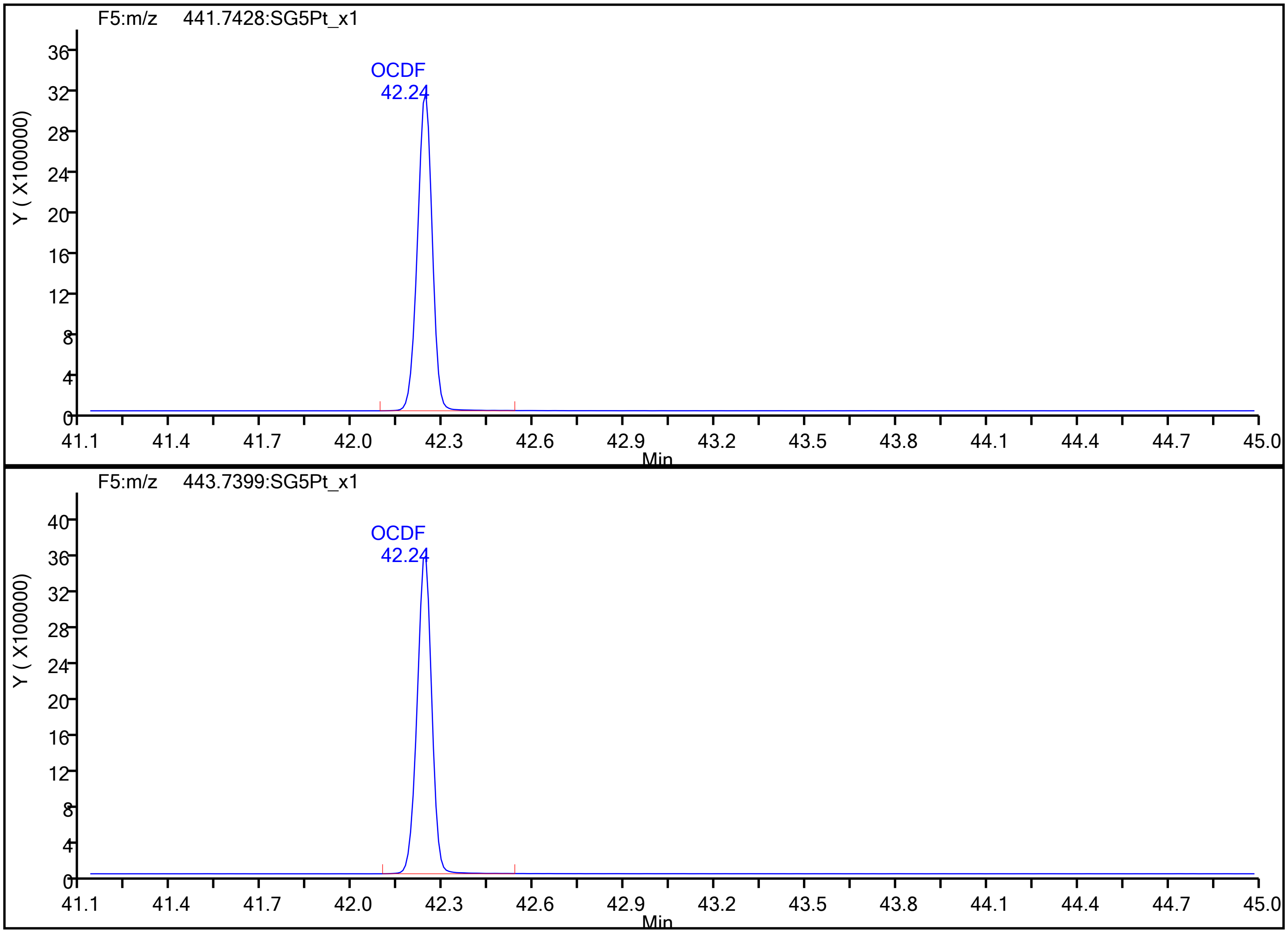

OCDF Interference Mass

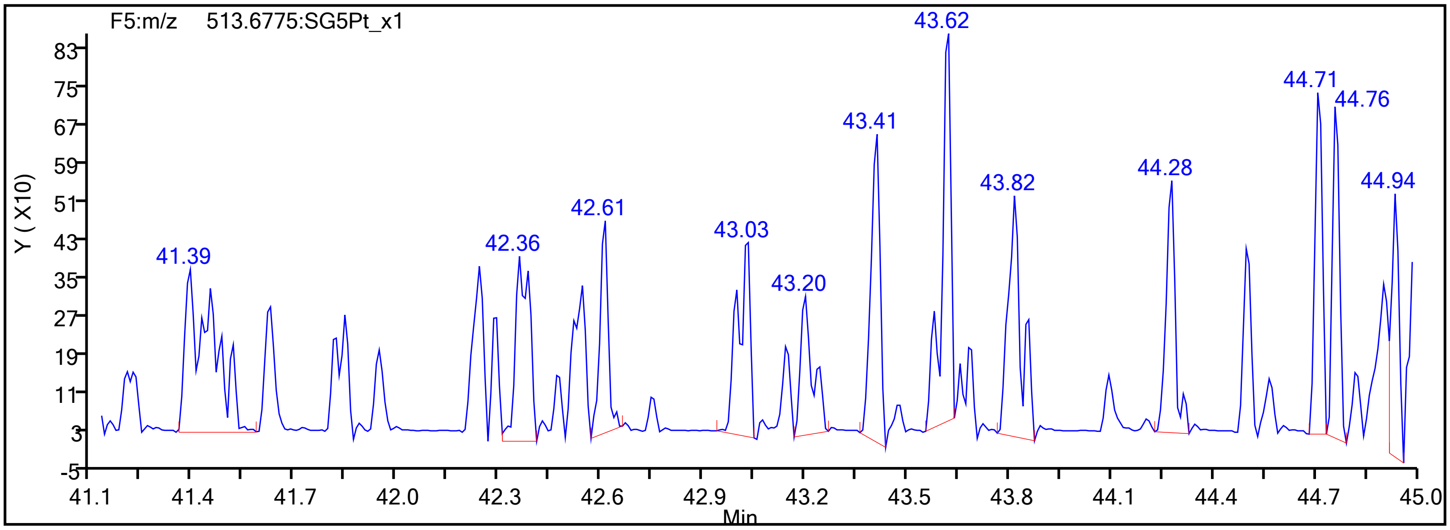

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Eurofins TestAmerica, Sacramento

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OCDD

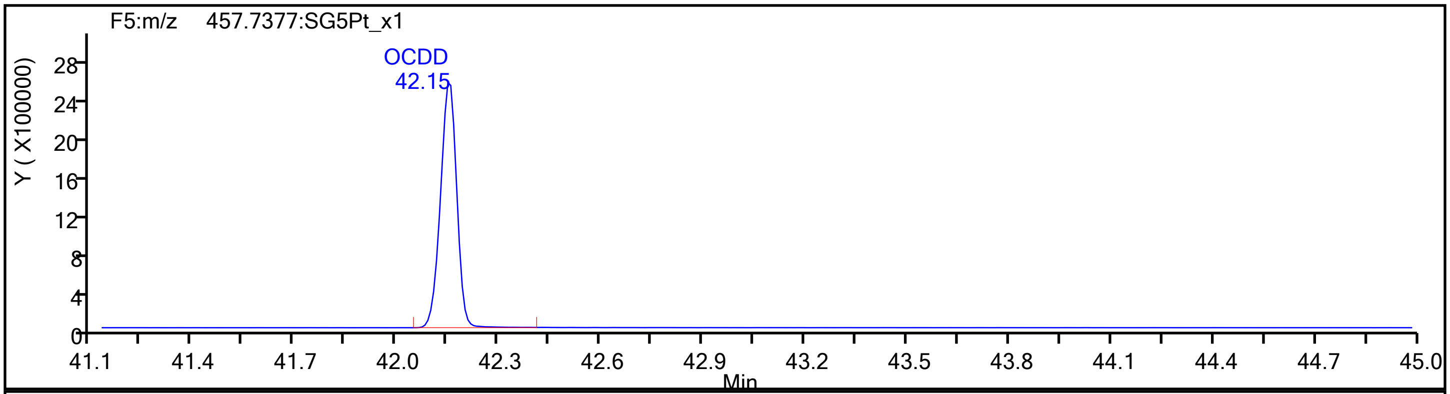

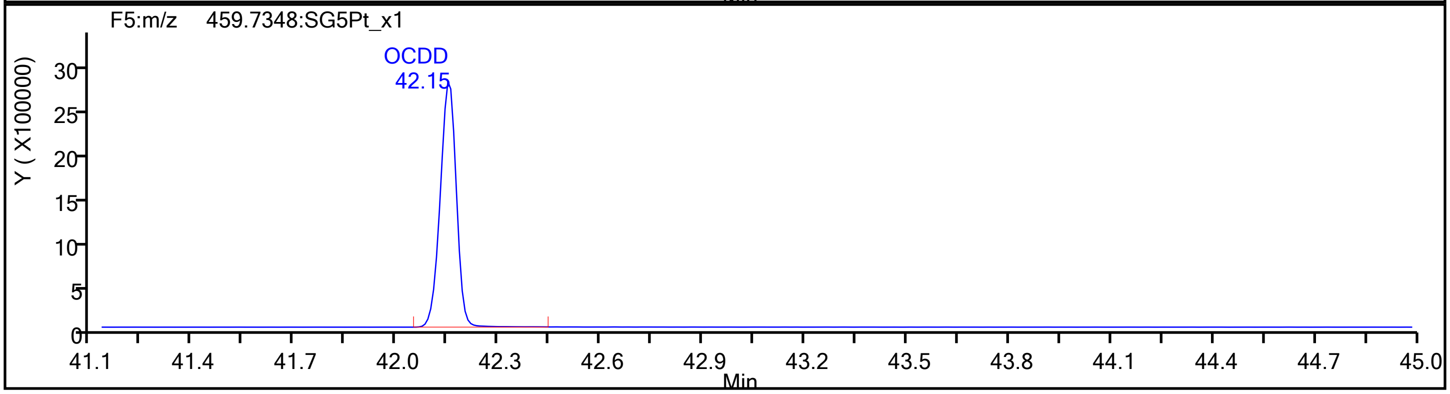

OCDD Standards

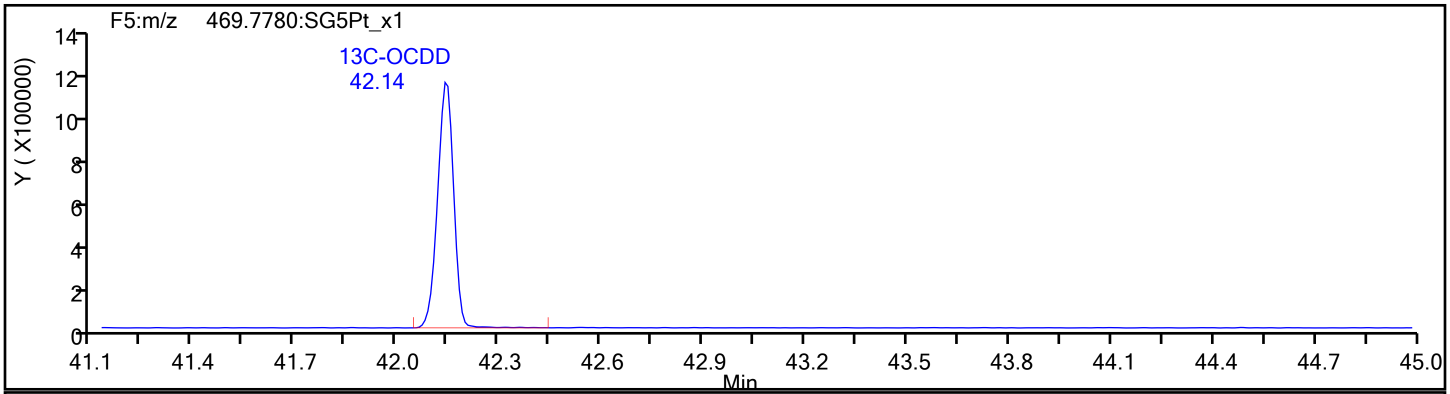

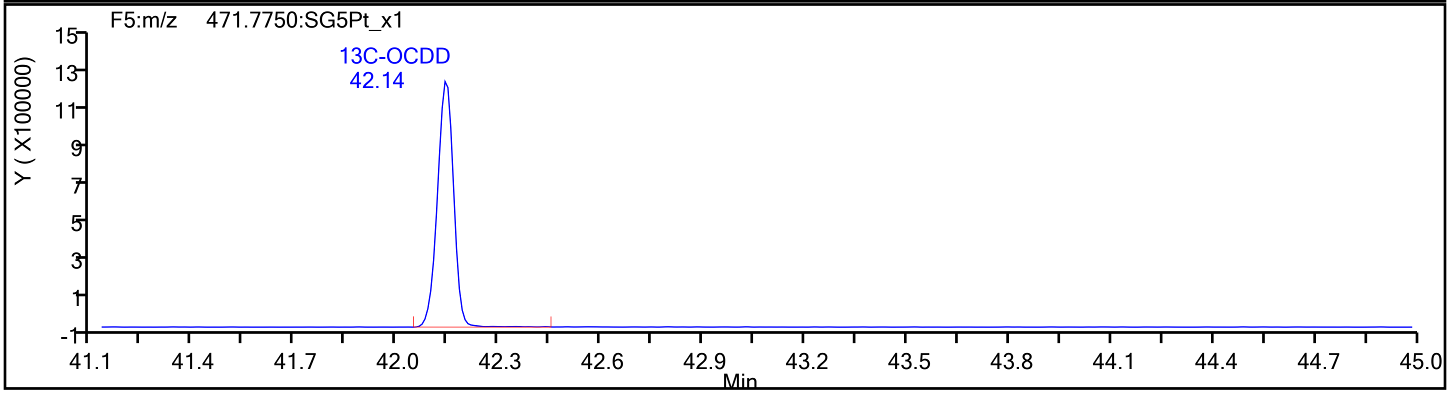

Report Date: 25-Sep-2021 14:19:08 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d		
Injection Date:	24-Sep-2021 19:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

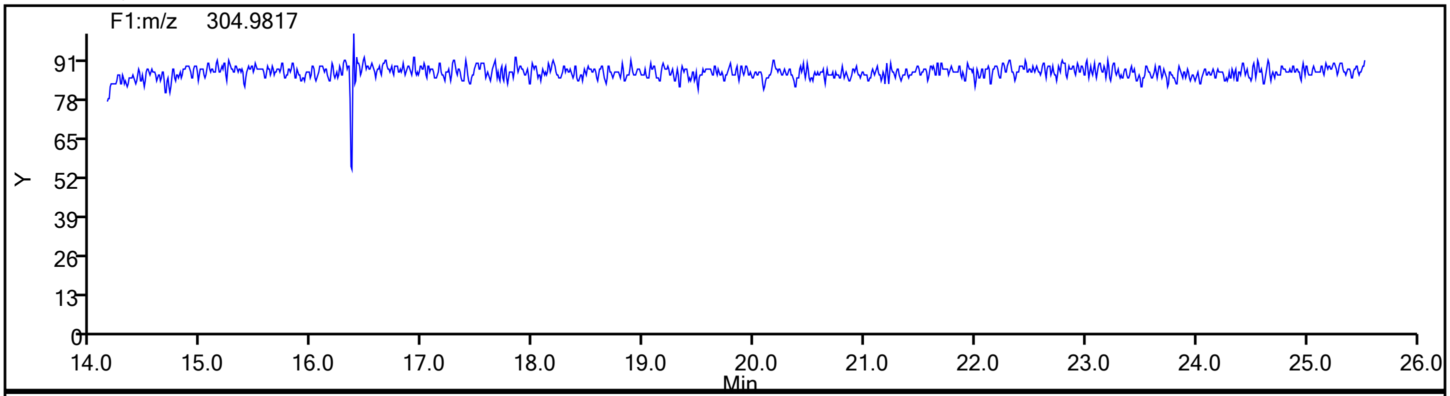

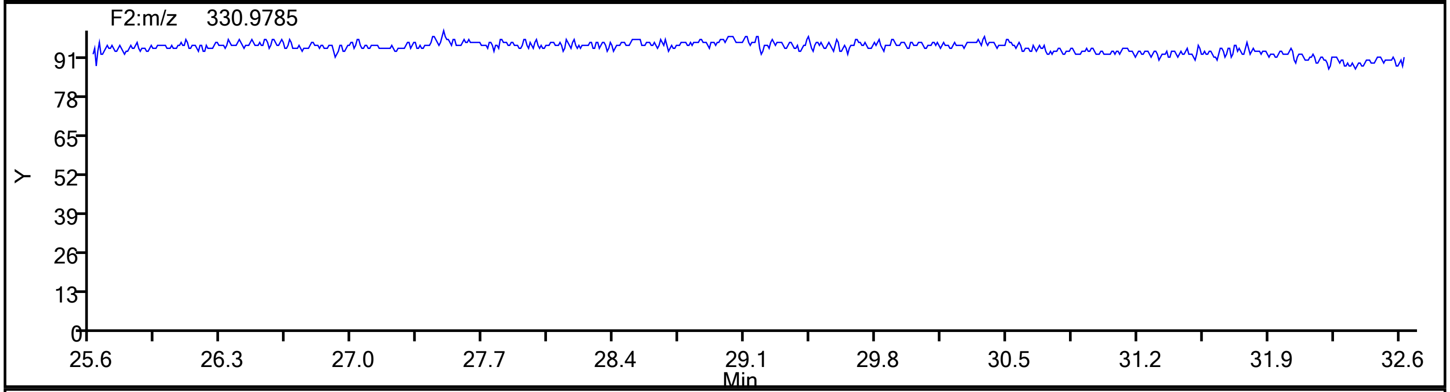

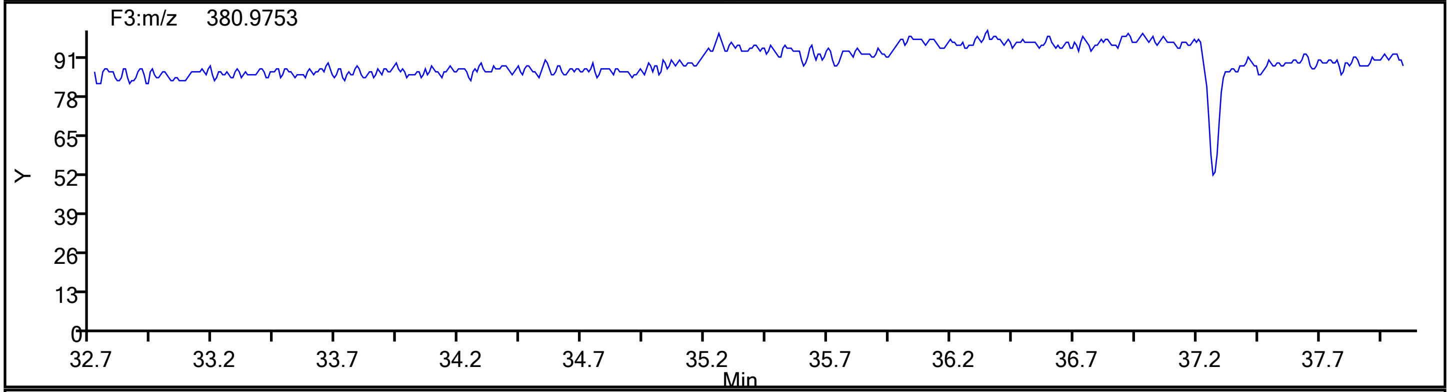

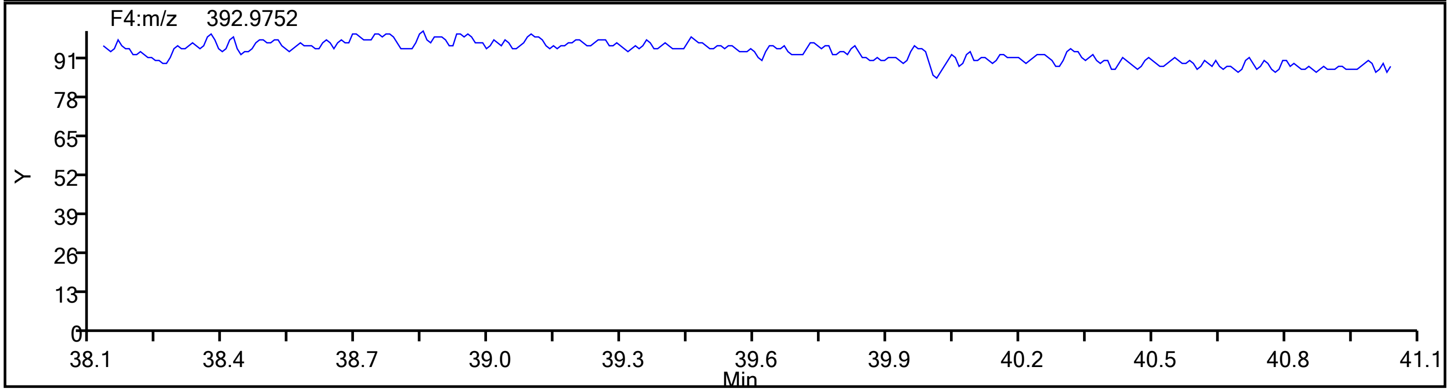

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_12.d		
Injection Date:	24-Sep-2021 19:02:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

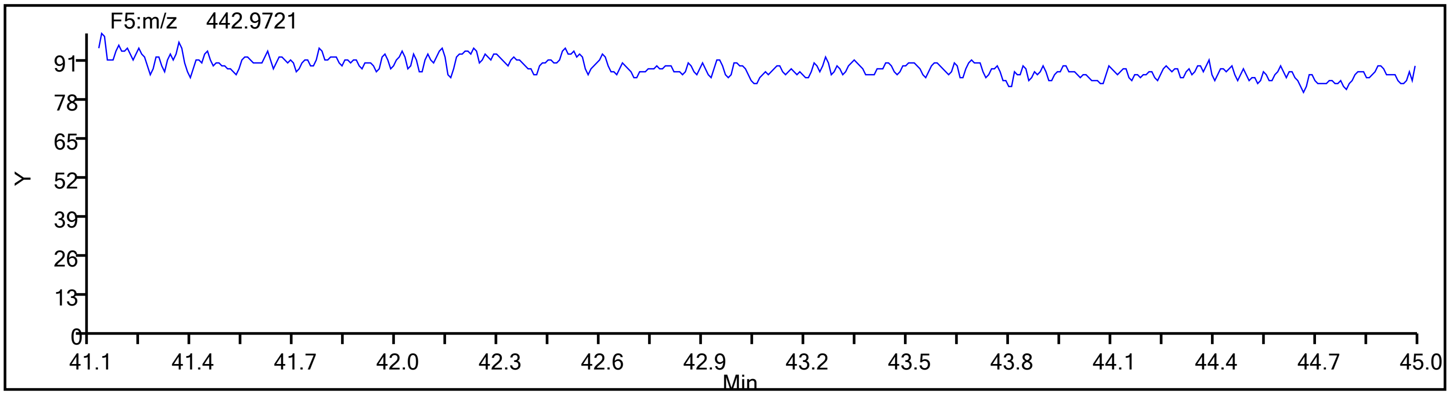

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Lab Sample ID: CCV 320-534320/2 Calibration Date: 10/15/2021 11:03

Instrument ID: DFS 1 Calib Start Date: 09/24/2021 13:55

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 09/24/2021 17:07

Lab File ID: 15oc21dfs1_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	1.119	1.079		9.64	10.0	96	84-120
2,3,7,8-TCDD	AveID	1.094	1.029		9.40	10.0	94	78-129
1,2,3,7,8-PeCDF	AveID	1.092	1.031		47.2	50.0	94	82-120
2,3,4,7,8-PeCDF	AveID	0.8752	0.8230		47.0	50.0	94	82-122
1,2,3,7,8-PeCDD	AveID	1.059	1.008		47.6	50.0	95	78-130
1,2,3,4,7,8-HxCDF	AveID	0.9737	0.9074		46.6	50.0	93	90-112
1,2,3,6,7,8-HxCDF	AveID	1.220	1.156		47.4	50.0	95	88-114
2,3,4,6,7,8-HxCDF	AveID	1.244	1.166		46.9	50.0	94	88-114
1,2,3,4,7,8-HxCDD	AveID	0.9085	0.8414		46.3	50.0	93	78-128
1,2,3,6,7,8-HxCDD	AveID	1.028	0.9460		46.0	50.0	92	78-128
1,2,3,7,8,9-HxCDD	AveID	1.027	0.9639		46.9	50.0	94	82-122
1,2,3,7,8,9-HxCDF	AveID	1.245	1.151		46.2	50.0	92	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.585	1.427		45.0	50.0	90	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.082	0.9788		45.2	50.0	90	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.160	1.059		45.7	50.0	91	86-116
OCDD	AveID	1.134	1.016		89.6	100	90	79-126
OCDF	AveID	1.509	1.364		90.4	100	90	63-159
13C-2,3,7,8-TCDF	Ave	1.224	1.248		102	100	102	71-140
13C-2,3,7,8-TCDD	Ave	0.8210	0.8105		98.7	100	99	82-121
13C-1,2,3,7,8-PeCDF	Ave	1.103	1.072		97.2	100	97	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.345	1.292		96.0	100	96	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.6987	0.6002		85.9	100	86	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	1.129	1.137		101	100	101	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	1.061	1.002		94.4	100	94	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.9480	1.014		107	100	107	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8312	0.8061		97.0	100	97	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.7550	0.7605		101	100	101	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.8526	0.9221		108	100	108	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.6190	0.6653		107	100	107	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.5362	0.6152		115	100	115	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.6516	0.7814		120	100	120	77-129
13C-OCDD	Ave	0.3802	0.5075		267	200	133	48-208
37Cl4-2,3,7,8-TCDD	Ave	0.8658	0.9111		10.5	10.0	105	79-127

	File Name	SampleName	Sample ID	Position	Method/Matrix	Box	User	Sample Vol	Units
1	150C21DFS1_1	Resolution Check	RC 101521	46			KSS	1.000	
2	150C21DFS1_2	WDM HRDXNCP_00044	WDM 101521	1	Dioxin		KSS	1.000	
3	150C21DFS1_3	CS-4 HRDXNL4_00102	CCV 101521	2	Dioxin		KSS	1.000	
4	150C21DFS1_4	SB Solvent Blank C14	SB 101521	3	Dioxin		KSS	1.000	
5	150C21DFS1_5	mb 320-532854/1-a	mb 320-532854/1-a	4	1613B/Water	D281	KSS	1.000	L
6	150C21DFS1_6	lcs 320-532854/2-a	lcs 320-532854/2-a	5	1613B/Water		KSS	1.000	L
7	150C21DFS1_7	lcsd 320-532854/3-a	lcsd 320-532854/3-a	6	1613B/Water		KSS	1.000	L
8	150C21DFS1_8	320-79936-a-1-b	320-79936-a-1-b	7	1613B/Water		KSS	1.000	L
9	150C21DFS1_9	320-79936-a-2-b	320-79936-a-2-b	8	1613B/Water		KSS	1.000	L
10	150C21DFS1_10	320-79936-a-3-b	320-79936-a-3-b	9	1613B/Water		KSS	1.000	L
11	150C21DFS1_11	320-79918-a-1-a	320-79918-a-1-a	10	1613B/Water		KSS	1.000	L
12	150C21DFS1_12	320-79918-a-2-a	320-79918-a-2-a	11	1613B/Water		KSS	1.000	L
13	150C21DFS1_13	320-79918-a-3-a	320-79918-a-3-a	12	1613B/Water		KSS	1.000	L
14	150C21DFS1_14	320-79918-a-4-a	320-79918-a-4-a	13	1613B/Water		KSS	1.000	L
15	150C21DFS1_15	SB Solvent Blank C14	SB 101521A	3	Dioxin		KSS	1.000	
16	150C21DFS1_16	Resolution Check	RC 101521A	46			KSS	1.000	
17	150C21DFS1_17	WDM HRDXNCP_00044	WDM 101521A	1	Dioxin		KSS	1.000	
18	150C21DFS1_18	CCV CS-4 HRDXNL4_00102	CCV 101521A	2	Dioxin		KSS	1.000	
19	150C21DFS1_19	QC Daily CRS HRDXNSU_00259	QC 101521	47	Dioxin/QC	QC1	KSS	1.000	QC
20	150C21DFS1_20	mb 320-533432/1-a	mb 320-533432/1-a	14	1613B_T/DW	D282	KSS	1.000	L
21	150C21DFS1_21	lcs 320-533432/2-a	lcs 320-533432/2-a	15	1613B_T/DW		KSS	1.000	L
22	150C21DFS1_22	lcsd 320-533432/3-a	lcsd 320-533432/3-a	16	1613B_T/DW		KSS	1.000	L
23	150C21DFS1_23	440-289790-b-1-a	440-289790-b-1-a	17	1613B_T/DW		KSS	1.000	L
24	150C21DFS1_24	Eluent QC #1A	DH28_00200 (20%)	18	1613B/QC	QC1	KSS	1.000	QC
25	150C21DFS1_25	Eluent QC #1	DH28_00200 (65%)	19	1613B/QC		KSS	1.000	QC
26	150C21DFS1_26	Eluent QC #2	DH6535_00560 (65%)	20	1613B/QC		KSS	1.000	QC
27	150C21DFS1_27	Eluent QC #3	DH6535_00561 (65%)	21	1613B/QC		KSS	1.000	QC
28	150C21DFS1_28	Eluent QC #4	DH6535_00562 (65%)	22	1613B/QC		KSS	1.000	QC
29	150C21DFS1_29	Eluent QC #5	DH6535_00563 (65%)	23	1613B/QC		KSS	1.000	QC
30	150C21DFS1_30	SB Solvent Blank C14	SB 101521B	3	Dioxin		KSS	1.000	
31	150C21DFS1_31	Resolution Check	RC 101521B	46			KSS	1.000	

LOGFILE CHECKED
DB 10/15/21

Resolution Check Report (DFS SN: 3487)

eurofins Environment Testing TestAmerica

Date: 15 Oct 2021 09:56
MID Experiment: 5w_db5_pfk_singleGC01_RS
Target Resolution: 10000
Resolution Warning : 9500
Resolution Error : 8000
Reference: pfk
Status: RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11149 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 10847 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 10944 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11046 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11082 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11239 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10610 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 10916 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 10722 [5%height]

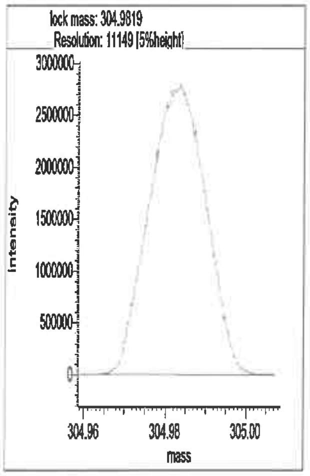

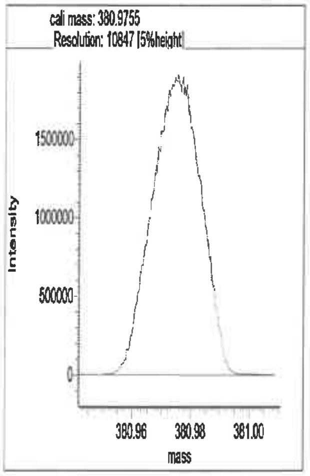

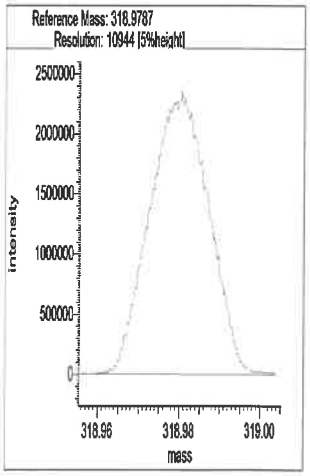

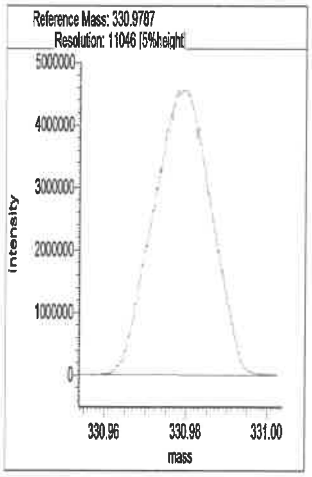

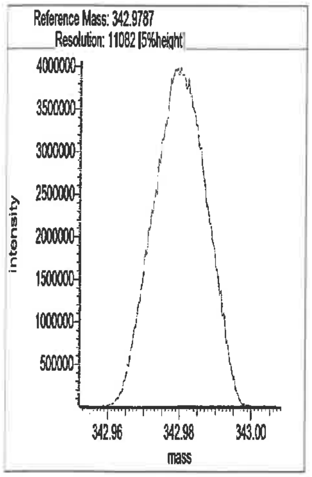

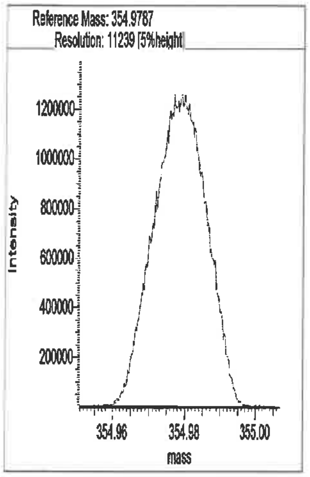

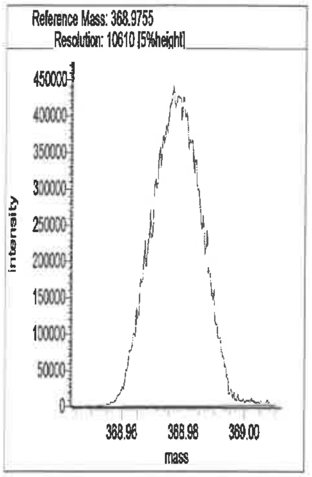

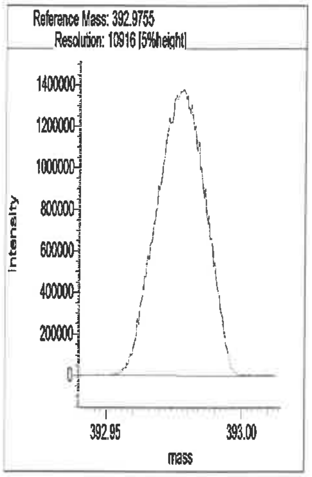

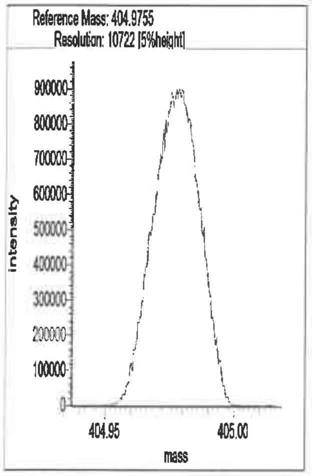

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11076 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 10841 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 10969 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11088 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10632 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 10948 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11049 [5%height]

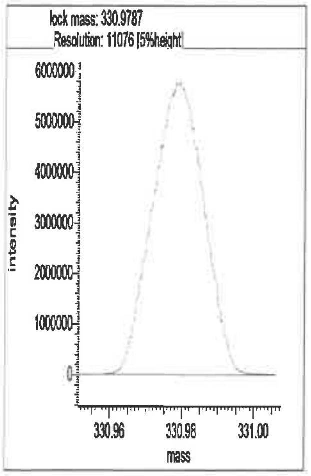

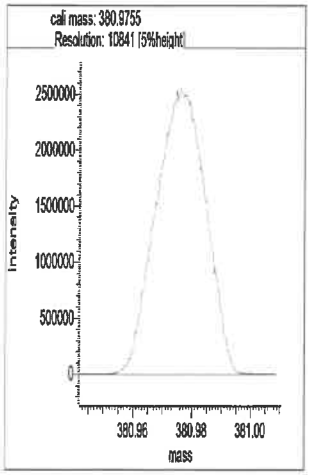

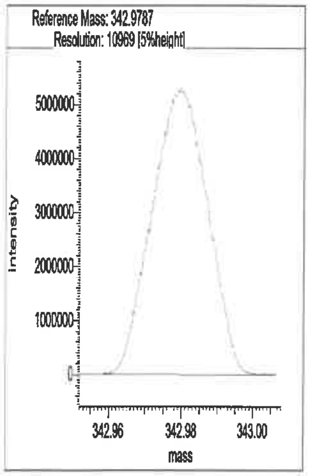

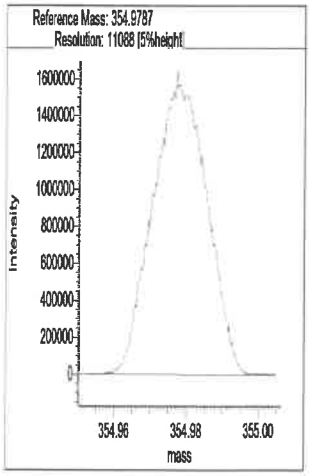

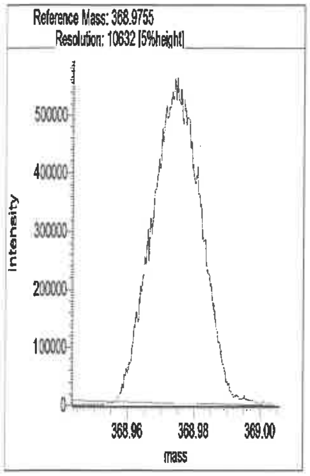
Reference Mass: 368.9755
Resolution: 10632 [5%height]

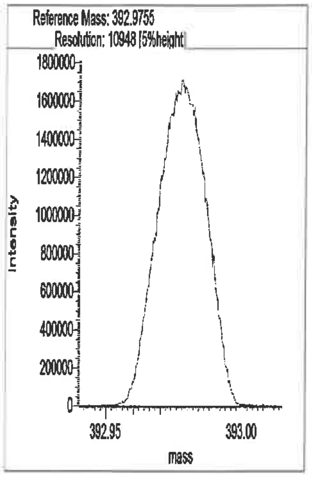
Reference Mass: 392.9755
Resolution: 10948 [5%height]

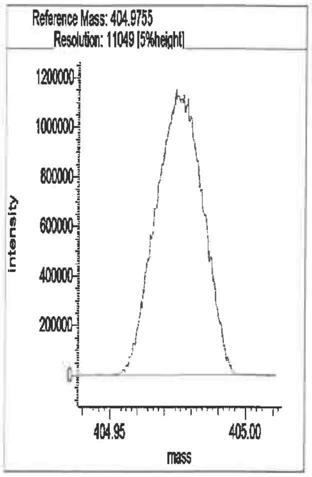
Reference Mass: 404.9755
Resolution: 11049 [5%height]

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11082 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 10984 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11184 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11030 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 10894 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11058 [5%height]

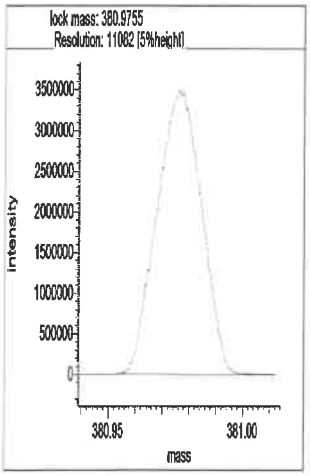
lock mass: 380.9755
Resolution: 11082 [5%height]

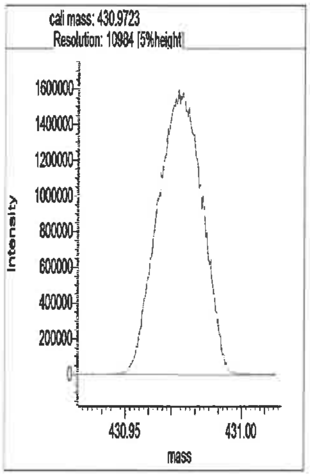
cali mass: 430.9723
Resolution: 10984 [5%height]

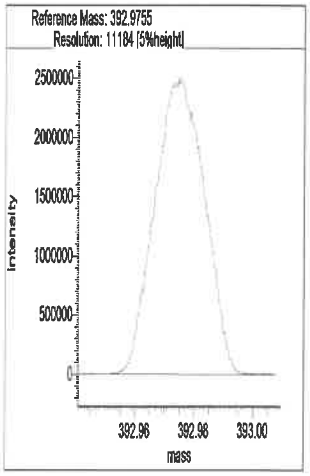
Reference Mass: 392.9755
Resolution: 11184 [5%height]

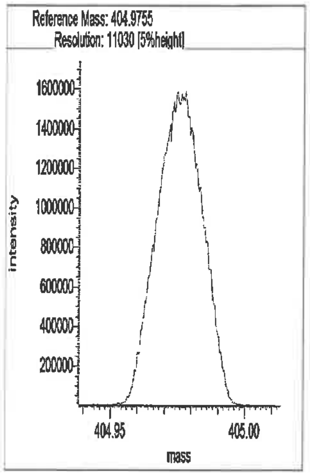
Reference Mass: 404.9755
Resolution: 11030 [5%height]

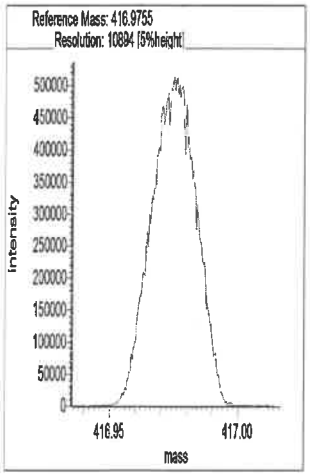
Reference Mass: 416.9755
Resolution: 10894 [5%height]

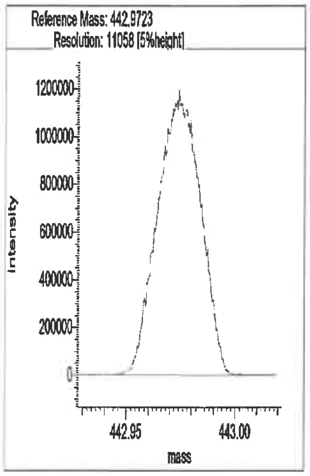
Reference Mass: 442.9723
Resolution: 11058 [5%height]

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11213 [5%height]

Cali. mass 480.9691 [m/z] Resolution: 11212 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11029 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11116 [5%height]

Ref. mass 430.9723 [m/z] Resolution: 11311 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11101 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 10921 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 11180 [5%height]

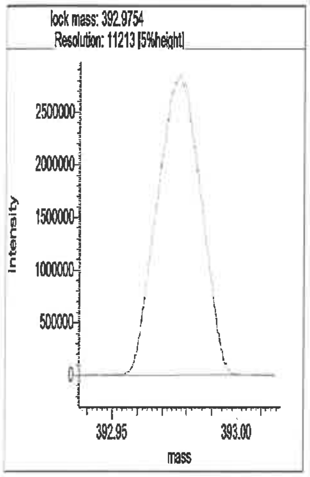

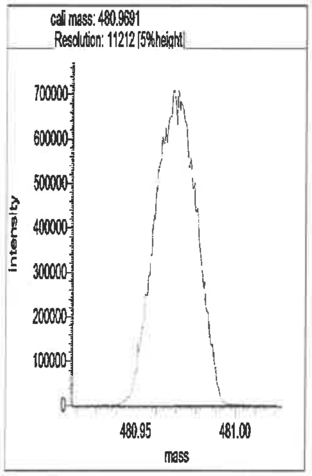

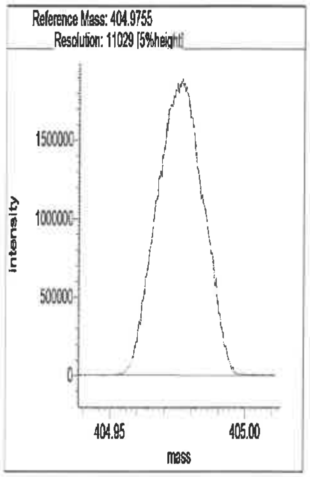

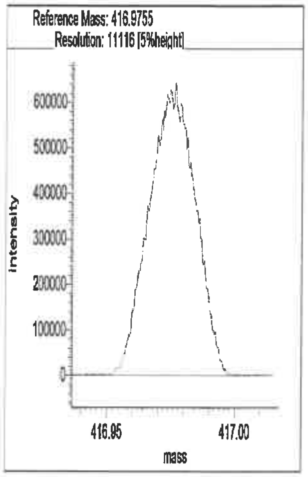

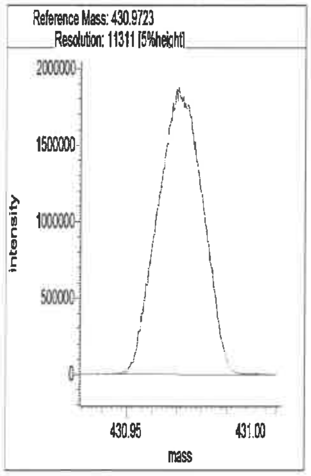

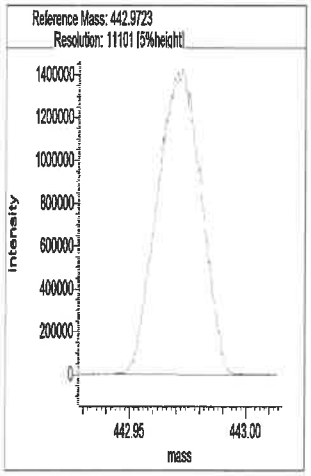

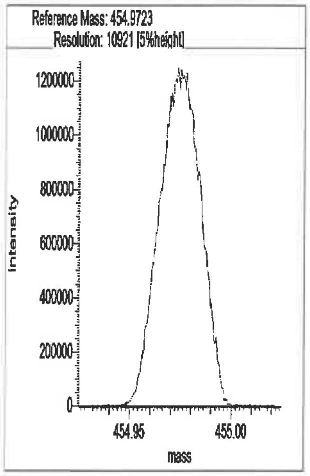

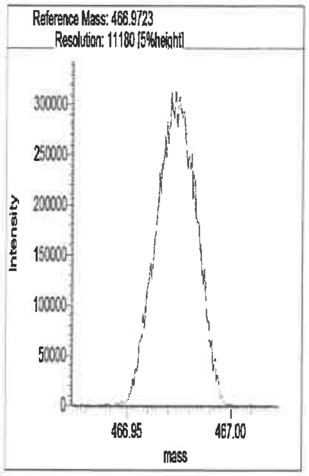

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11223 [5%height]

Cali. mass 504.9691 [m/z] Resolution: 11316 [5%height]

Ref. mass 454.9723 [m/z] Resolution: 11016 [5%height]

Ref. mass 466.9723 [m/z] Resolution: 10995 [5%height]

Ref. mass 480.9691 [m/z] Resolution: 11178 [5%height]

Ref. mass 492.9691 [m/z] Resolution: 11239 [5%height]

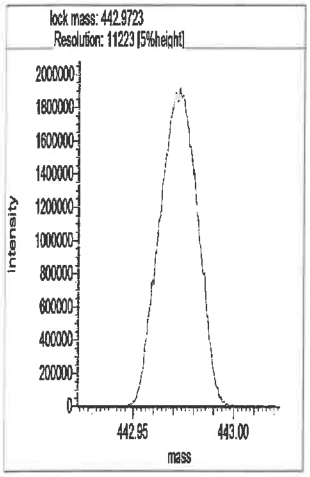
lock mass: 442.9723
Resolution: 11223 [5%height]
intensity
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

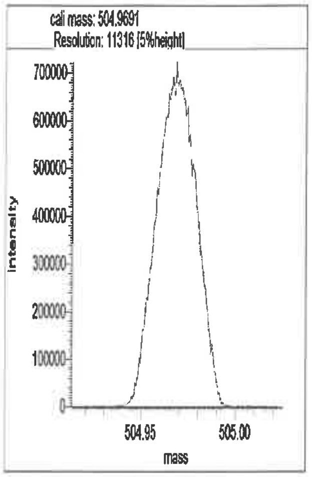
cali mass: 504.9691
Resolution: 11316 [5%height]
intensity
700000
600000
500000
400000
300000
200000
100000
0
504.95
505.00
mass

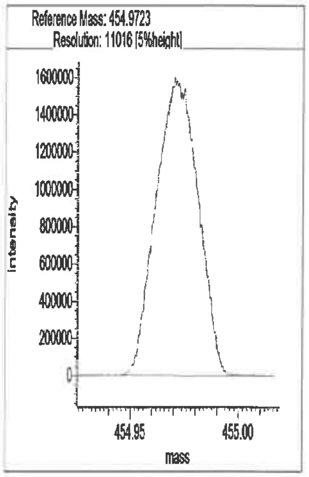
Reference Mass: 454.9723
Resolution: 11016 [5%height]
intensity
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

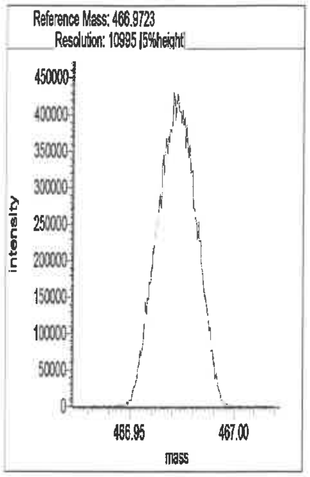
Reference Mass: 466.9723
Resolution: 10995 [5%height]
intensity
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
466.95
467.00
mass

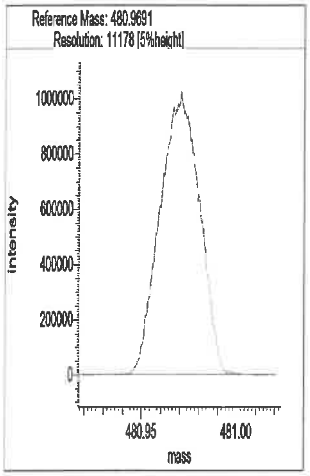
Reference Mass: 480.9691
Resolution: 11178 [5%height]
intensity
1000000
800000
600000
400000
200000
0
480.95
481.00
mass

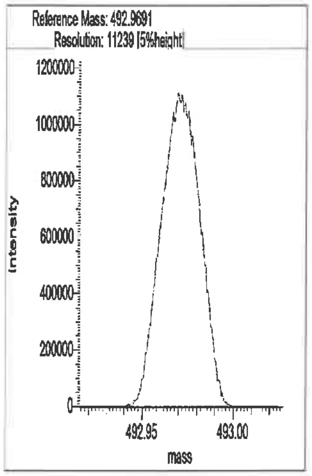
Reference Mass: 492.9691
Resolution: 11239 [5%height]
intensity
1200000
1000000
800000
600000
400000
200000
0
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	15 Oct 2021 21:28
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 12041 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11877 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 12076 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11807 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12130 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12432 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11104 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11924 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12104 [5%height]

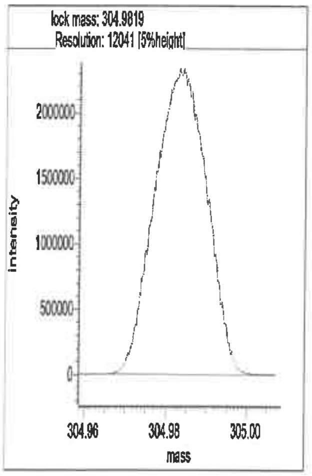
lock mass: 304.9819
Resolution: 12041 [5%height]

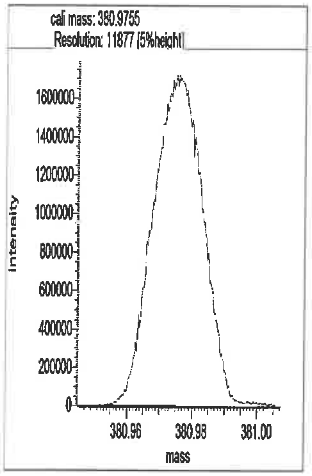
cali mass: 380.9755
Resolution: 11877 [5%height]

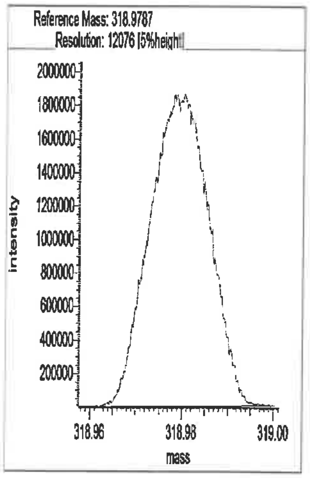
Reference Mass: 318.9787
Resolution: 12076 [5%height]

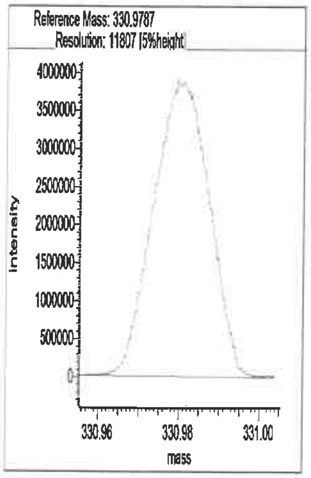
Reference Mass: 330.9787
Resolution: 11807 [5%height]

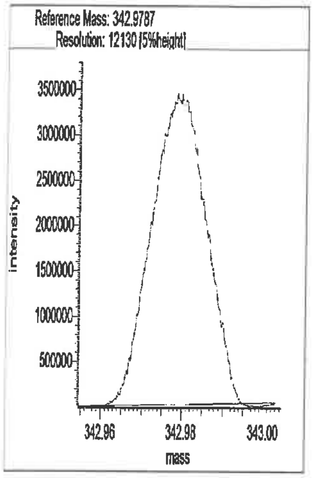

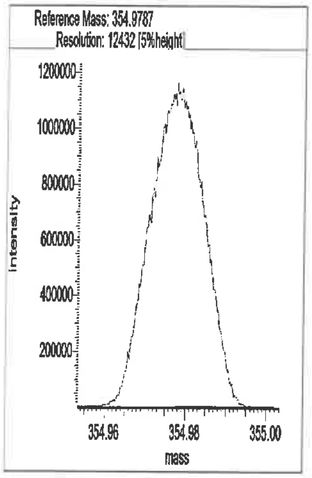

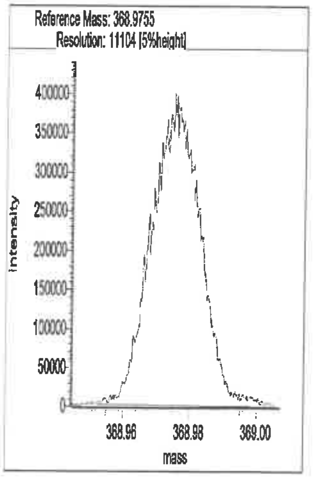

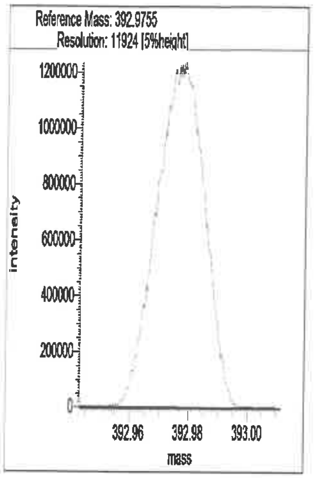

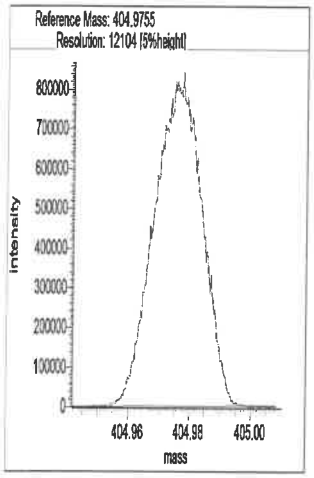

Segment 2

Lock mass 330.9787 [m/z] Resolution: 12398 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 12007 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 12139 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 12098 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 11617 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11949 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11856 [5%height]

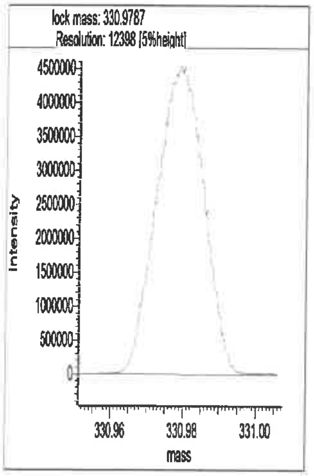

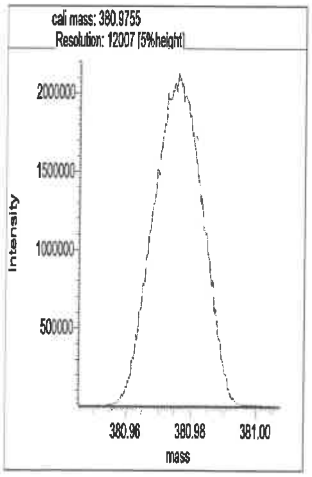

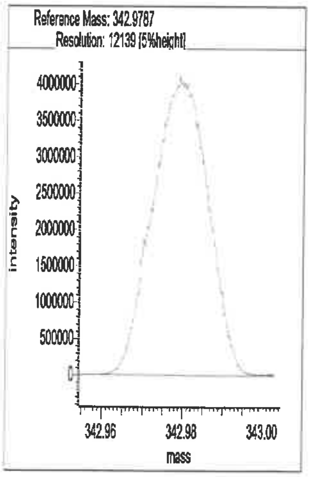

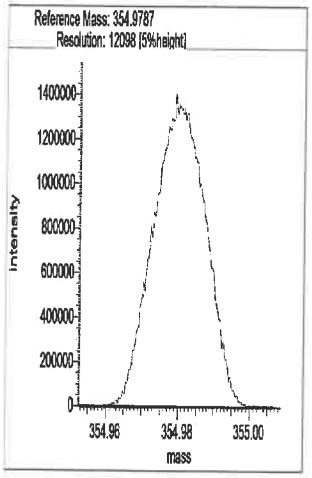

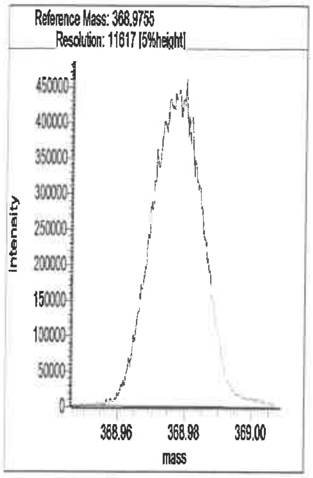

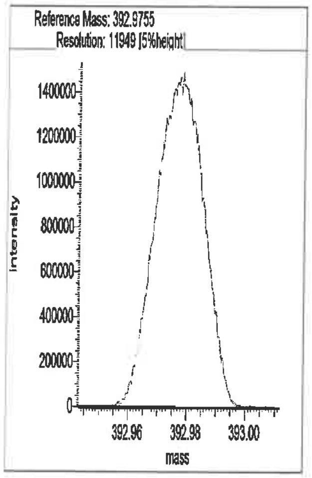

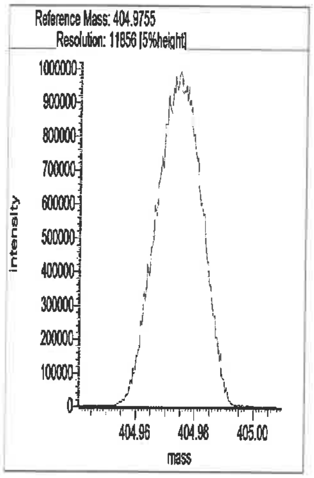

Segment 3

Lock mass 380.9755 [m/z] Resolution: 12108 [5%height]
Cali. mass 430.9723 [m/z] Resolution: 11992 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 12273 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12347 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12102 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12256 [5%height]

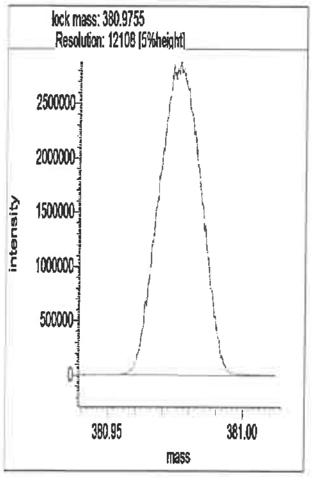

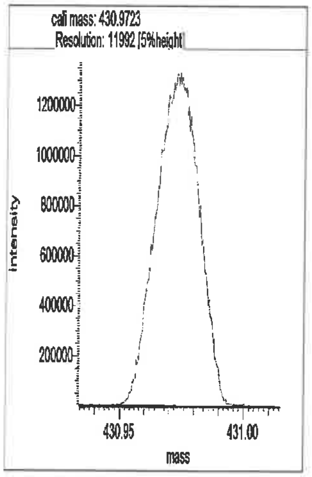

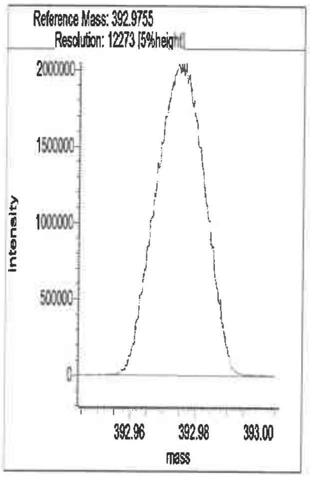

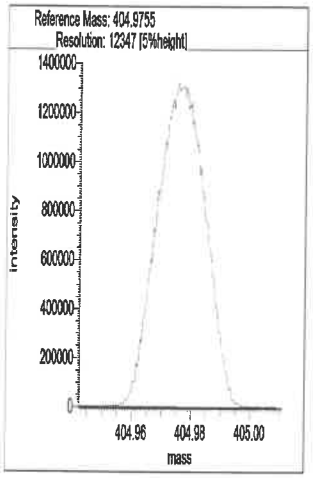

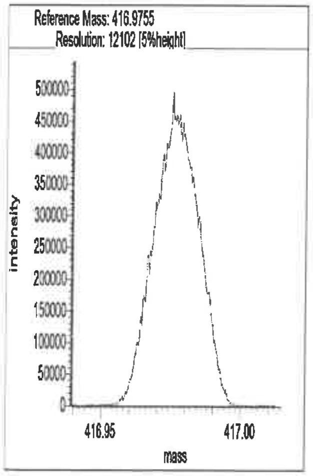

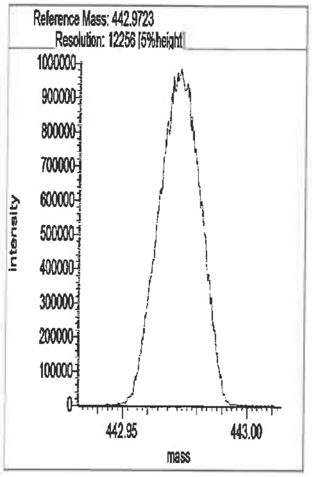

Segment 4

Lock mass 392.9754 [m/z] Resolution: 12266 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11931 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 12306 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 12026 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 12096 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 12291 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12011 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11813 [5%height]

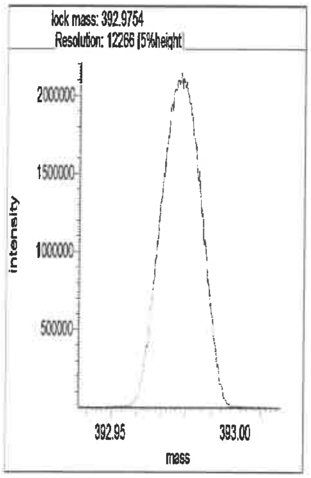

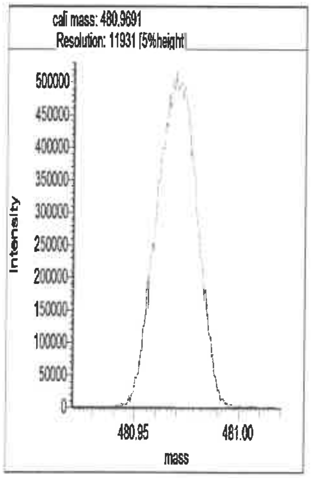

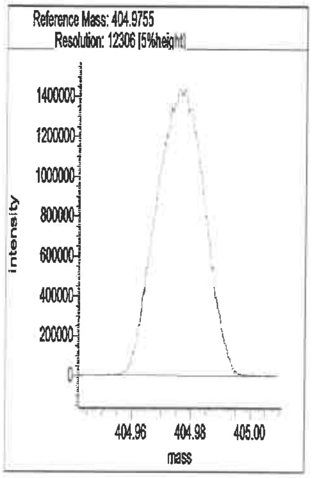

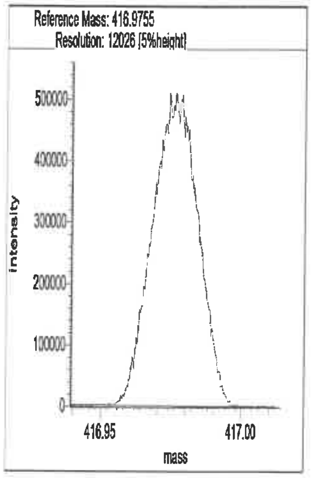

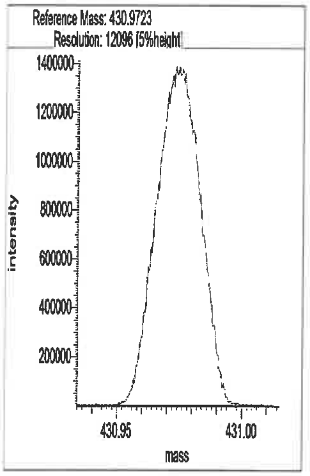

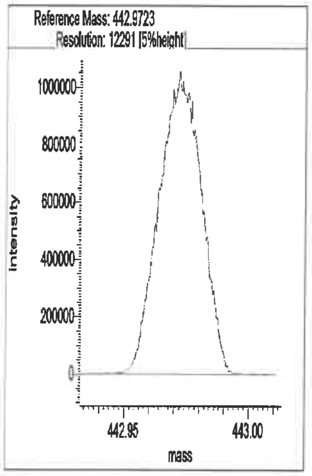

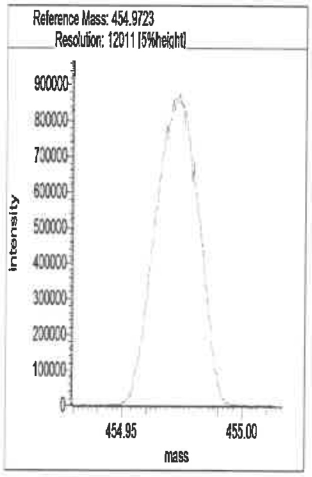

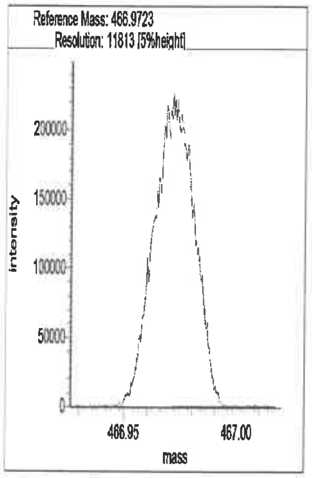

Segment 5

Lock mass 442.9723 [m/z] Resolution: 12445 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 12165 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 12141 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12426 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 12049 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 12383 [5%height]

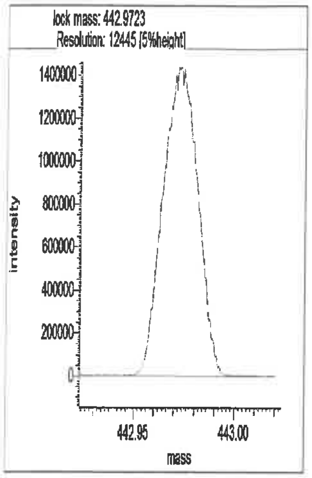
lock mass: 442.9723
Resolution: 12445 [5%height]
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
442.95
443.00
mass

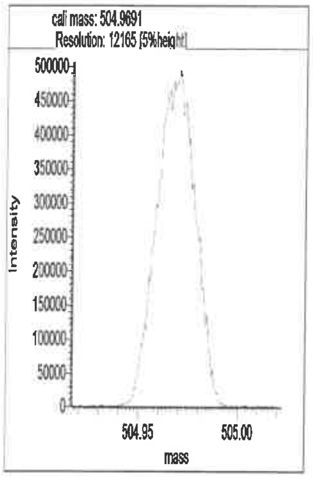
cali mass: 504.9691
Resolution: 12165 [5%height]
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
504.95
505.00
mass

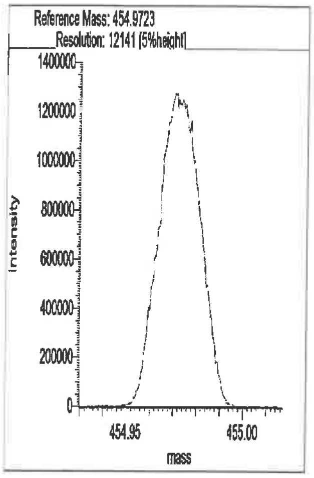
Reference Mass: 454.9723
Resolution: 12141 [5%height]
1400000
1200000
1000000
800000
600000
400000
200000
0
intensity
454.95
455.00
mass

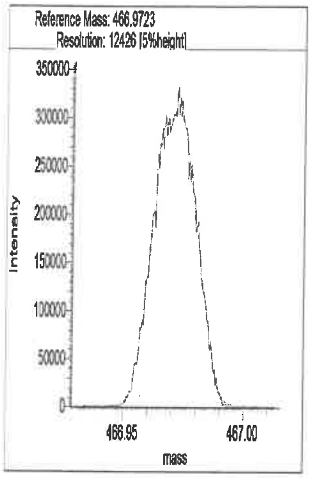
Reference Mass: 466.9723
Resolution: 12426 [5%height]
350000
300000
250000
200000
150000
100000
50000
0
intensity
466.95
467.00
mass

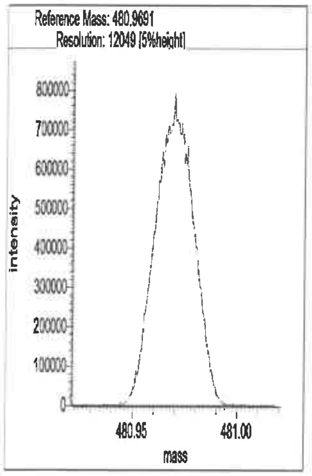
Reference Mass: 480.9691
Resolution: 12049 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
480.95
481.00
mass

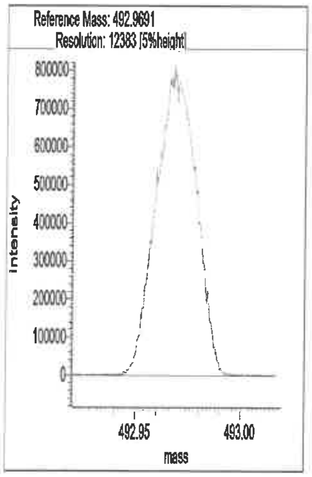
Reference Mass: 492.9691
Resolution: 12383 [5%height]
800000
700000
600000
500000
400000
300000
200000
100000
0
intensity
492.95
493.00
mass

Resolution Check Report (DFS SN: 3487)

Date:	16 Oct 2021 08:59
MID Experiment:	5w_db5_pfk_singleGC01_RS
Target Resolution:	10000
Resolution Warning :	9500
Resolution Error :	8000
Reference:	pfk
Status:	RESOLUTION PASSED

Segment 1

Lock mass 304.9819 [m/z] Resolution: 11758 [5%height]
Cali. mass 380.9755 [m/z] Resolution: 11548 [5%height]
Ref. mass 318.9787 [m/z] Resolution: 11529 [5%height]
Ref. mass 330.9787 [m/z] Resolution: 11596 [5%height]
Ref. mass 342.9787 [m/z] Resolution: 11720 [5%height]
Ref. mass 354.9787 [m/z] Resolution: 11608 [5%height]
Ref. mass 368.9755 [m/z] Resolution: 10614 [5%height]
Ref. mass 392.9755 [m/z] Resolution: 11709 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11348 [5%height]

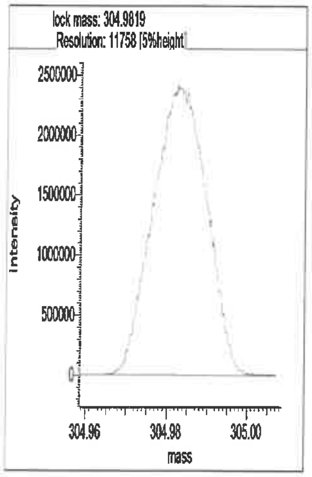

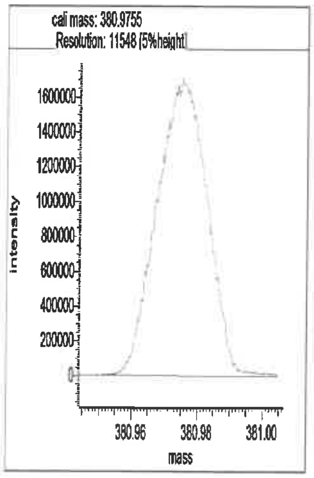

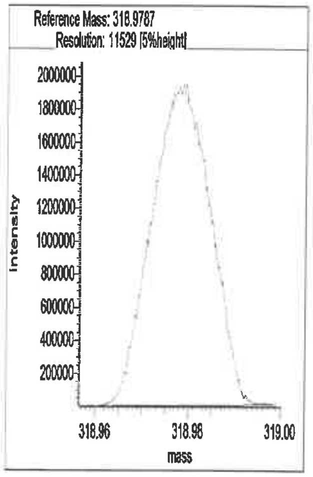

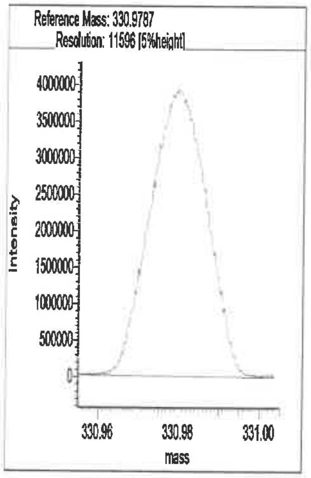

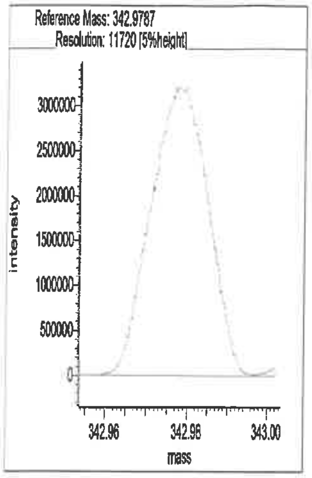

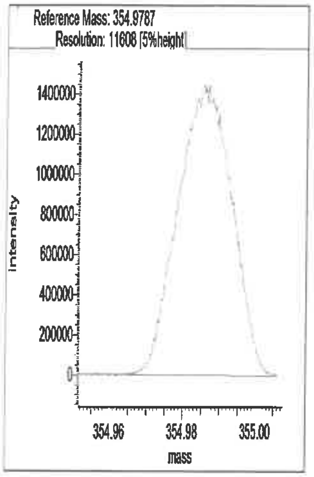

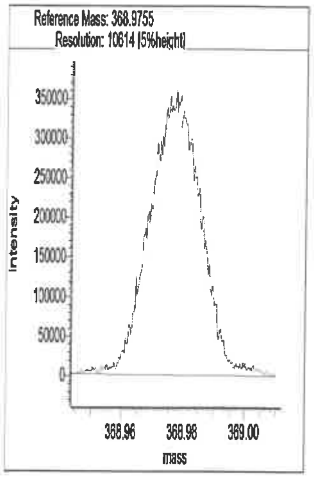

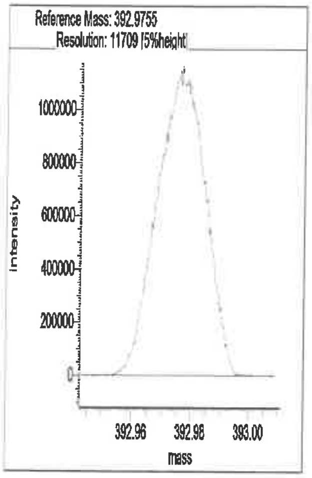

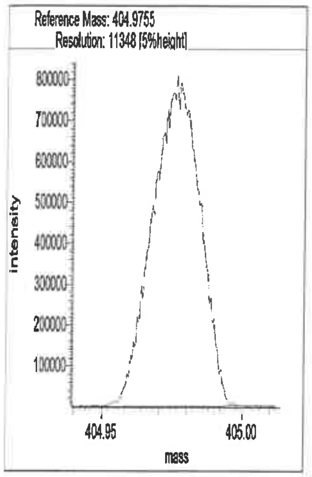

Segment 2

Lock mass 330.9787 [m/z] Resolution: 11641 [5%height]

Cali. mass 380.9755 [m/z] Resolution: 11619 [5%height]

Ref. mass 342.9787 [m/z] Resolution: 11623 [5%height]

Ref. mass 354.9787 [m/z] Resolution: 11596 [5%height]

Ref. mass 368.9755 [m/z] Resolution: 10647 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11510 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11661 [5%height]

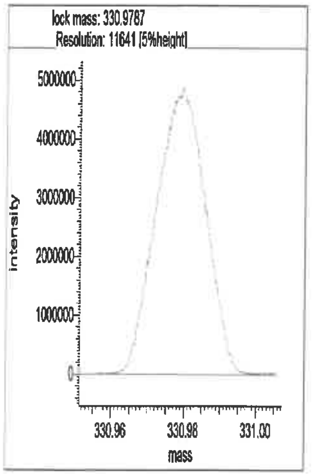

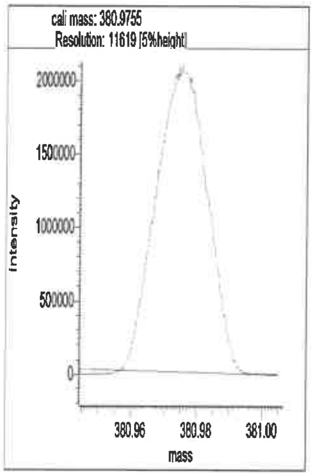

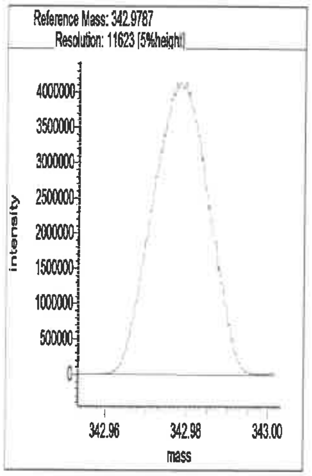

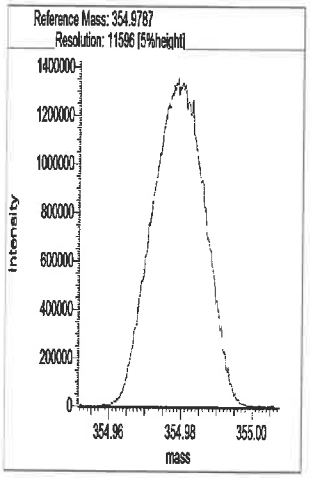

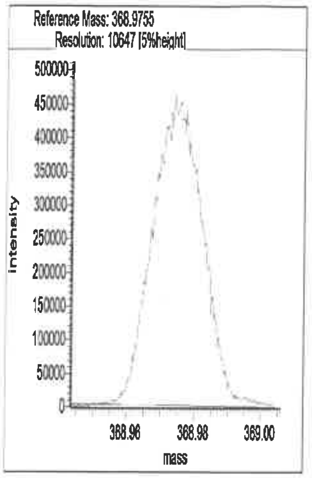

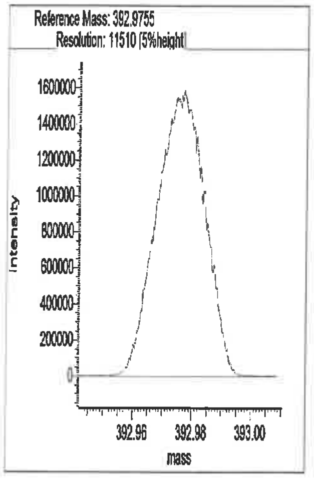

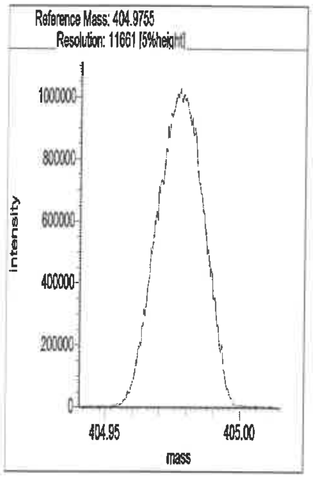

Segment 3

Lock mass 380.9755 [m/z] Resolution: 11616 [5%height]

Cali. mass 430.9723 [m/z] Resolution: 11604 [5%height]

Ref. mass 392.9755 [m/z] Resolution: 11573 [5%height]

Ref. mass 404.9755 [m/z] Resolution: 11560 [5%height]

Ref. mass 416.9755 [m/z] Resolution: 11666 [5%height]

Ref. mass 442.9723 [m/z] Resolution: 11614 [5%height]

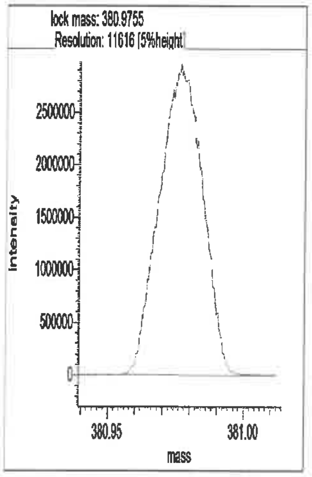

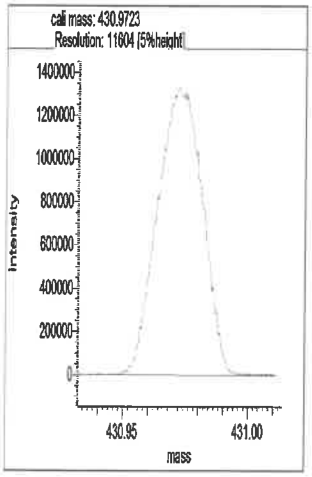

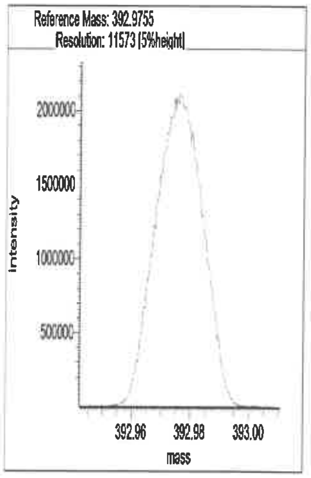

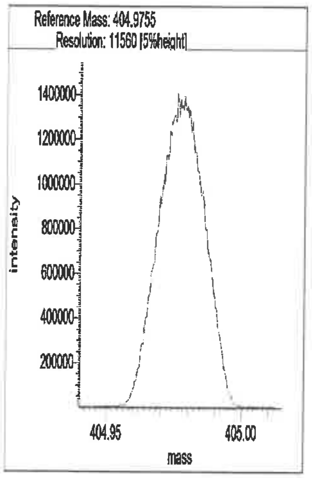

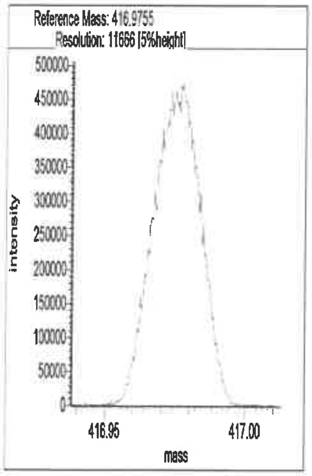

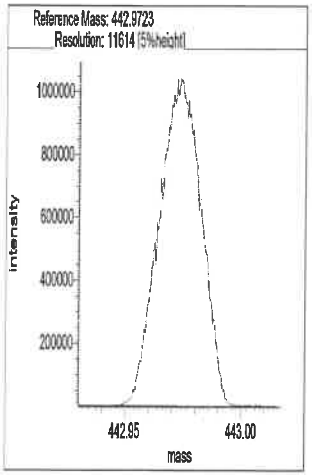

Segment 4

Lock mass 392.9754 [m/z] Resolution: 11748 [5%height]
Cali. mass 480.9691 [m/z] Resolution: 11433 [5%height]
Ref. mass 404.9755 [m/z] Resolution: 11608 [5%height]
Ref. mass 416.9755 [m/z] Resolution: 11655 [5%height]
Ref. mass 430.9723 [m/z] Resolution: 11638 [5%height]
Ref. mass 442.9723 [m/z] Resolution: 11606 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11511 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 11782 [5%height]

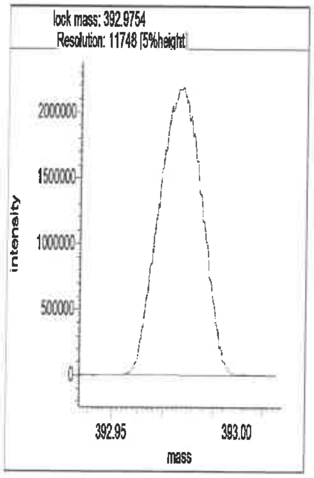

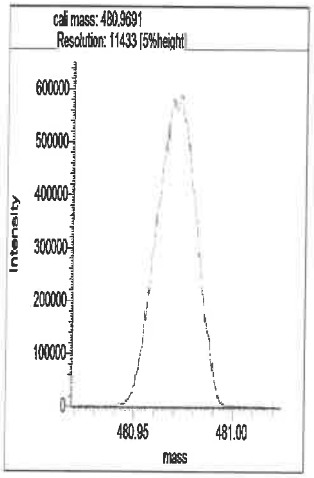

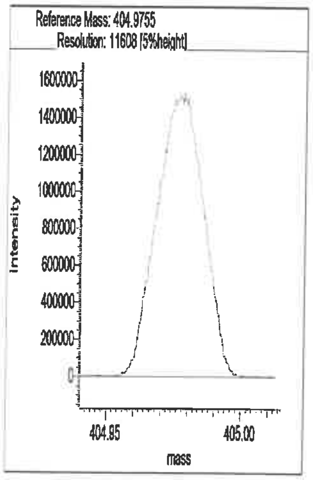

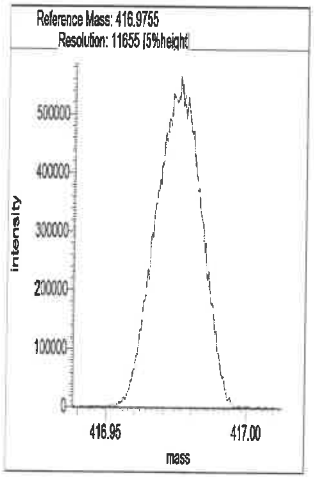

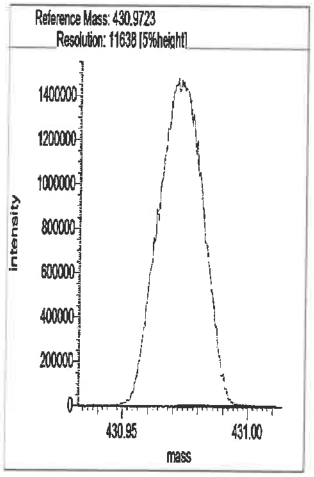

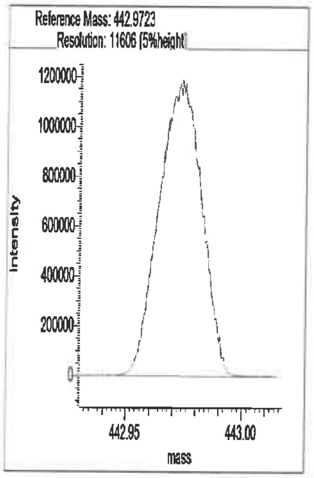

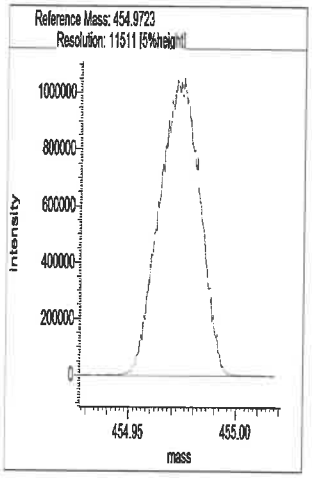

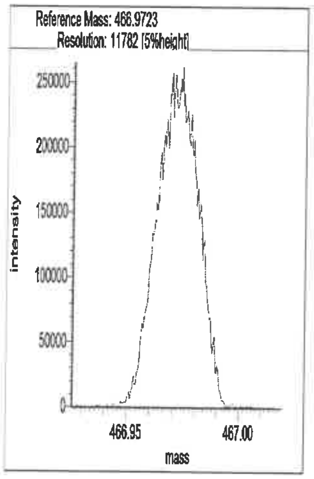

Segment 5

Lock mass 442.9723 [m/z] Resolution: 11805 [5%height]
Cali. mass 504.9691 [m/z] Resolution: 11928 [5%height]
Ref. mass 454.9723 [m/z] Resolution: 11638 [5%height]
Ref. mass 466.9723 [m/z] Resolution: 12290 [5%height]
Ref. mass 480.9691 [m/z] Resolution: 11712 [5%height]
Ref. mass 492.9691 [m/z] Resolution: 11626 [5%height]

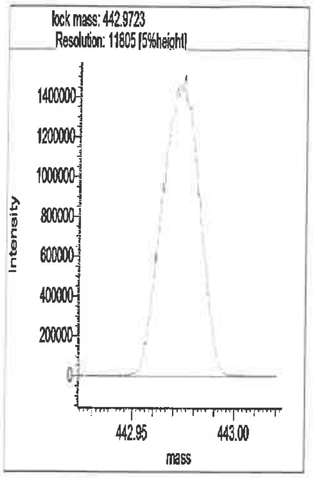
lock mass: 442.9723
Resolution: 11805 [5%height]
intensity
1400000
1200000
1000000
800000
600000
400000
200000
0
442.95
443.00
mass

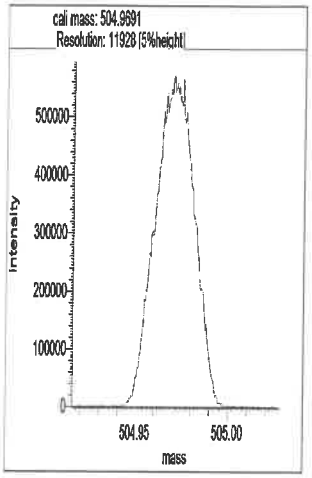
cali mass: 504.9691
Resolution: 11928 [5%height]
intensity
500000
400000
300000
200000
100000
0
504.95
505.00
mass

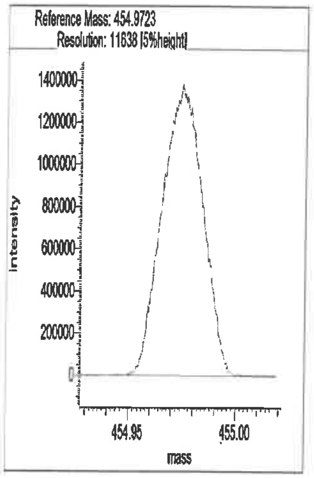
Reference Mass: 454.9723
Resolution: 11638 [5%height]
intensity
1400000
1200000
1000000
800000
600000
400000
200000
0
454.95
455.00
mass

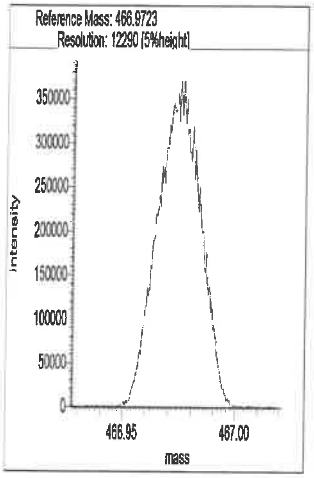
Reference Mass: 466.9723
Resolution: 12290 [5%height]
intensity
350000
300000
250000
200000
150000
100000
50000
0
466.95
467.00
mass

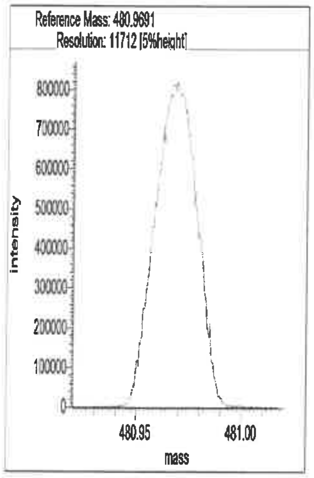
Reference Mass: 480.9691
Resolution: 11712 [5%height]
intensity
800000
700000
600000
500000
400000
300000
200000
100000
0
480.95
481.00
mass

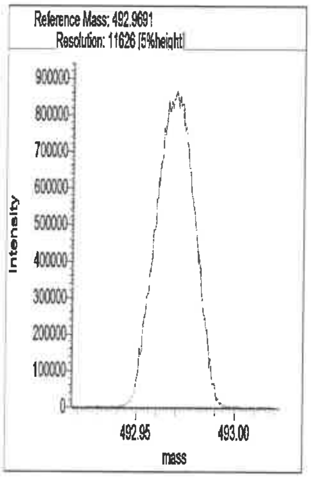
Reference Mass: 492.9691
Resolution: 11626 [5%height]
intensity
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
492.95
493.00
mass

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 15-Oct-2021 11:03:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00102
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.777	9174884	0.82	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.806	11449098	0.80	1.2244	101.9	101.9	0.3853	0.3853	102	
2,3,7,8-TCDF	19.832	1235207	0.80	1.1194	9.638	9.638	0.0352	0.0352	96.38	
A Non-2,3,7,8-sub-TCDF	19.372						0.0352	0.0352		
S Total TCDF					9.638	9.638	0.0352	0.0352		
D 13C-2,3,7,8-TCDD	21.138	7436056	0.81	0.8210	98.7	98.7	0.2330	0.2330	98.72	
2,3,7,8-TCDD	21.163	765087	0.82	1.0943	9.402	9.402	0.0530	0.0530	94.02	
$ 37Cl4-2,3,7,8-TCDD	21.163	835918		0.8658	10.5	10.5	0.0190	0.0190	105	
A Non-2,3,7,8-sub-TCDD	20.213						0.0530	0.0530		
S Total TCDD					9.402	9.402	0.0530	0.0530		
D 13C-1,2,3,7,8-PeCDF	26.799	9832106	1.61	1.1026	97.2	97.2	0.4436	0.4436	97.19	
1,2,3,7,8-PeCDF	26.833	5067539	1.58	1.0920	47.2	47.2	0.1790	0.1790	94.40	
D 13C-2,3,4,7,8-PeCDF	28.300	11850890	1.59	1.3454	96.0	96.0	0.3636	0.3636	96.01	
2,3,4,7,8-PeCDF	28.325	4876459	1.59	0.8752	47.0	47.0	0.1996	0.1996	94.03	
A F1 PeCDFs	24.221	462	1.55	0.9836	0.0148	0.004333	0.008439	0.008439	0.00	RQ
A Non-2,3,7,8-sub-PeCDF	27.645						0.1876	0.1876		Rn
S Total PeCDF					94.2	94.2	0.1893	0.1893		RQ
D 13C-1,2,3,7,8-PeCDD	29.108	5507066	1.60	0.6987	85.9	85.9	0.1512	0.1512	85.91	
1,2,3,7,8-PeCDD	29.133	2774368	1.59	1.0594	47.6	47.6	0.0799	0.0799	95.10	
A Non-2,3,7,8-sub-PeCDD	28.034						0.0799	0.0799		
S Total PeCDD					47.6	47.6	0.0799	0.0799		
D 13C-1,2,3,4,7,8-HxCDF	34.597	11004979	0.54	1.1295	100.7	100.7	0.3303	0.3303	101	
1,2,3,4,7,8-HxCDF	34.613	4992924	1.27	0.9737	46.6	46.6	0.2166	0.2166	93.19	
D 13C-1,2,3,6,7,8-HxCDF	34.773	9697681	0.54	1.0613	94.4	94.4	0.3515	0.3515	94.40	
1,2,3,6,7,8-HxCDF	34.790	5605169	1.27	1.2201	47.4	47.4	0.1993	0.1993	94.75	
D 13C-2,3,4,6,7,8-HxCDF	35.625	9812186	0.54	0.9480	106.9	106.9	0.3935	0.3935	107	
2,3,4,6,7,8-HxCDF	35.641	5718791	1.27	1.2435	46.9	46.9	0.1632	0.1632	93.74	
D 13C-1,2,3,7,8,9-HxCDF	36.551	8925271	0.54	0.8526	108.1	108.1	0.4375	0.4375	108	
1,2,3,7,8,9-HxCDF	36.560	5137056	1.26	1.2454	46.2	46.2	0.1704	0.1704	92.43	
A Non-2,3,7,8-sub-HxCDF	34.703						0.1847	0.1847		
S Total HxCDF					187.1	187.1	0.1874	0.1874		
* 13C-1,2,3,7,8,9-HxCDD	36.358	9678974	1.27	1.8E+05	100.0	100.0				

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-1,2,3,4,7,8-HxCDD	35.861	7801925	1.25	0.8312	97.0	97.0	0.2031	0.2031	96.98	
1,2,3,4,7,8-HxCDD	35.869	3282311	1.26	0.9085	46.3	46.3	0.0947	0.0947	92.61	
D 13C-1,2,3,6,7,8-HxCDD	35.979	7361077	1.26	0.7550	100.7	100.7	0.2236	0.2236	101	
1,2,3,6,7,8-HxCDD	35.995	3481945	1.26	1.0279	46.0	46.0	0.0946	0.0946	92.04	
1,2,3,7,8,9-HxCDD	36.366	3653845	1.26	1.0268	46.9	46.9	0.0889	0.0889	93.87	
A Non-2,3,7,8-sub-HxCDD	35.108						0.0924	0.0924		
S Total HxCDD					139.3	139.3	0.0927	0.0927		
D 13C-1,2,3,4,6,7,8-HpCDF	38.425	6439752	0.46	0.6190	107.5	107.5	0.3943	0.3943	107	
1,2,3,4,6,7,8-HpCDF	38.434	4594198	1.04	1.5851	45.0	45.0	0.1917	0.1917	90.02	
D 13C-1,2,3,4,7,8,9-HpCDF	39.698	7563259	0.47	0.6516	119.9	119.9	0.3745	0.3745	120	
1,2,3,4,7,8,9-HpCDF	39.706	4005316	1.04	1.1597	45.7	45.7	0.2129	0.2129	91.33	
A Non-2,3,7,8-sub-HpCDF	39.072						0.1986	0.1986		
S Total HpCDF					90.7	90.7	0.2023	0.2023		
D 13C-1,2,3,4,6,7,8-HpCDD	39.394	5954812	1.06	0.5362	114.7	114.7	0.4166	0.4166	115	
1,2,3,4,6,7,8-HpCDD	39.403	2914395	1.05	1.0819	45.2	45.2	0.1294	0.1294	90.47	
A Non-2,3,7,8-sub-HpCDD	39.202						0.1294	0.1294		
S Total HpCDD					45.2	45.2	0.1294	0.1294		
D 13C-OCDD	41.875	9823741	0.92	0.3802	267.0	267.0	0.3406	0.3406	133	
OCDF	41.959	6701264	0.92	1.5094	90.4	90.4	0.0869	0.0869	90.39	
OCDD	41.883	4989773	0.90	1.1344	89.6	89.6	0.1019	0.1019	89.55	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00102	Amount Added: 1.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 15-Oct-2021 11:03:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00102
Operator ID: Xcalibur_System Instrument ID: DFS 1
Sublist: chrom-Dioxin_DFS1*sub1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.777	20.777	0		4133871	635996	719	1797	885		
333.9338	20.768	20.777	-1		5041013	771618	358	895	2155	0.82(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.806	19.806	0	0.953	5084790	779800	1805	4512	432		
317.9389	19.806	19.806	0	0.953	6364308	988420	851	2127	1161	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.832	19.832	0	1.001	548573	82264	97	242	848		
305.8987	19.824	19.832	-1	1.001	686634	101878	182	455	560	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.372						97	242			
305.8987	19.372						182	455			
13C-2,3,7,8-TCDD											
331.9368	21.138	21.138	0	1.017	3318484	478057	719	1797	665		
333.9338	21.138	21.138	0	1.017	4117572	582451	358	895	1627	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.163	21.163	0	1.001	344580	49474	180	450	275		
321.8936	21.172	21.163	1	1.002	420507	62793	66	165	951	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.163	21.163	0	1.019	835918	119359	93	232	1283		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						180	450			
321.8936	20.213						66	165			
13C-1,2,3,7,8-PeCDF											
351.9000	26.799	26.799	0	1.290	6060771	1027223	1693	4232	607		
353.8970	26.808	26.799	1	1.290	3771335	644157	1061	2652	607	1.61(1.32-1.78)	

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.833	26.833	0	1.001	3101726	531882	739	1847	720		
341.8567	26.825	26.833	-1	1.001	1965813	336214	568	1420	592	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.300	28.300	0	1.362	7283939	1144349	1693	4232	676		
353.8970	28.300	28.300	0	1.362	4566951	726096	1061	2652	684	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.325	28.325	0	1.001	2994440	479559	739	1847	649		
341.8567	28.325	28.325	0	1.001	1882019	303851	568	1420	535	1.59(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	24.290	24.221	4	0.906	281	62	1	2	62		
341.8567	24.264	24.221	3	0.905	1301	279	58	145	5	0.22(1.32-1.78)	
	Empc Correction				181	40	58	145	1		
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.398	27.645	-15	1.022	31667	4797	739	1847	6		
341.8567	27.415	27.645	-14	1.023	17276	2986	568	1420	5	1.83(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.108	29.108	0	1.401	3389635	531317	379	947	1402		
369.8919	29.100	29.108	-1	1.401	2117431	325374	216	540	1506	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.133	29.133	0	1.001	1701542	258054	195	487	1323		
357.8516	29.133	29.133	0	1.001	1072826	163410	95	237	1720	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						195	487			
357.8516	28.034						95	237			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.597	34.597	0	0.952	3843361	847098	1318	3295	643		
385.8610	34.597	34.597	0	0.952	7161618	1574133	2543	6357	619	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.613	34.613	0	1.000	2794760	612506	1125	2812	544		
375.8178	34.613	34.613	0	1.000	2198164	487930	918	2295	532	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.773	34.773	0	0.956	3404451	741730	1318	3295	563		
385.8610	34.773	34.773	0	0.956	6293230	1359085	2543	6357	534	0.54(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.790	34.790	0	1.000	3135947	675880	1125	2812	601		
375.8178	34.790	34.790	0	1.000	2469222	530724	918	2295	578	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.625	35.625	0	0.980	3457308	892739	1318	3295	677		
385.8610	35.625	35.625	0	0.980	6354878	1623742	2543	6357	639	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.641	35.641	0	1.000	3198537	804927	1125	2812	715		
375.8178	35.641	35.641	0	1.000	2520254	644449	918	2295	702	1.27(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.551	36.551	0	1.005	3145007	843723	1318	3295	640		
385.8610	36.543	36.551	-1	1.005	5780264	1563130	2543	6357	615	0.54(0.43-0.59)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.560	36.560	0	1.000	2862021	766082	1125	2812	681		
375.8178	36.560	36.560	0	1.000	2275035	613260	918	2295	668	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.703						1125	2812			
375.8178	34.703						918	2295			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.358	36.358	0		5416402	1454670	991	2477	1468		
403.8529	36.358	36.358	0		4262572	1132687	756	1890	1498	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.861	35.861	0	0.986	4341353	1166354	991	2477	1177		
403.8529	35.861	35.861	0	0.986	3460572	951034	756	1890	1258	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.869	35.869	0	1.000	1828504	483293	412	1030	1173		
391.8127	35.869	35.869	0	1.000	1453807	390880	317	792	1233	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.979	35.979	0	0.990	4110605	1048161	991	2477	1058		
403.8529	35.979	35.979	0	0.990	3250472	826460	756	1890	1093	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.995	35.995	0	1.000	1944650	499798	412	1030	1213		
391.8127	35.995	35.995	0	1.000	1537295	396184	317	792	1250	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.366	36.366	0	1.014	2038147	545373	412	1030	1324		
391.8127	36.366	36.366	0	1.014	1615698	430373	317	792	1358	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						412	1030			
391.8127	35.108						317	792			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.425	38.425	0	1.057	2031202	665675	999	2497	666		
419.8220	38.425	38.425	0	1.057	4408550	1431908	1527	3817	938	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.434	38.434	0	1.000	2340517	771265	1371	3427	563		
409.7788	38.434	38.434	0	1.000	2253681	724695	1179	2947	615	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.698	39.698	0	1.092	2416069	821787	999	2497	823		
419.8220	39.689	39.698	-1	1.092	5147190	1759731	1527	3817	1152	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.706	39.706	0	1.000	2044933	702050	1371	3427	512		
409.7788	39.706	39.706	0	1.000	1960383	669980	1179	2947	568	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						1371	3427			
409.7788	39.072						1179	2947			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.394	39.394	0	1.084	3062996	1058850	1183	2957	895		
437.8140	39.394	39.394	0	1.084	2891816	991304	1129	2822	878	1.06(0.88-1.20)	

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.403	39.403	0	1.000	1491585	519120	616	1540	843		
425.7737	39.403	39.403	0	1.000	1422810	490852	532	1330	923	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.202						616	1540			
425.7737	39.202						532	1330			
13C-OCDD											
469.7780	41.875	41.875	0	1.152	4701343	1478870	717	1792	2063		
471.7750	41.875	41.875	0	1.152	5122398	1612228	623	1557	2588	0.92(0.76-1.02)	
OCDF											
441.7428	41.959	41.959	0	1.002	3206317	1030766	358	895	2879		
443.7399	41.959	41.959	0	1.002	3494947	1117376	453	1132	2467	0.92(0.76-1.02)	
OCDD											
457.7377	41.883	41.883	0	1.000	2362974	759787	326	815	2331		
459.7348	41.883	41.883	0	1.000	2626799	832775	389	972	2141	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- n - Failed Sig-To-Noise Test
- Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNL4_00102 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
Lims ID:	CCV		
Client ID:			
Inject. Date:	15-Oct-2021 11:03:00	Dil. Factor:	1.0000
Sample Type:	CCV, Cal Verification		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	2
Sublist:	chrom-Dioxin_DFS1*sub1		

F1 PeCDFs, RT: 24.221

Initial Calibration RRF　　IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	9832106	1671380
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	11850890	1870445

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	10841498	1770912

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.290	281	62	1301	279	0.0148	0.22	RnQ
24.290	281	62	181	40	0.004333		Empc Correction
Signal Totals:							
	281	62	181	40			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1582	341				0.22	RQ
	462	102					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0148 = (1582 * 100.000) / (10841498 * 0.984)
Empc Amount: 0.004333 = (462 * 100.000) / (10841498 * 0.984)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
n - Failed Sig-To-Noise Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d

Injection Date: 15-Oct-2021 11:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

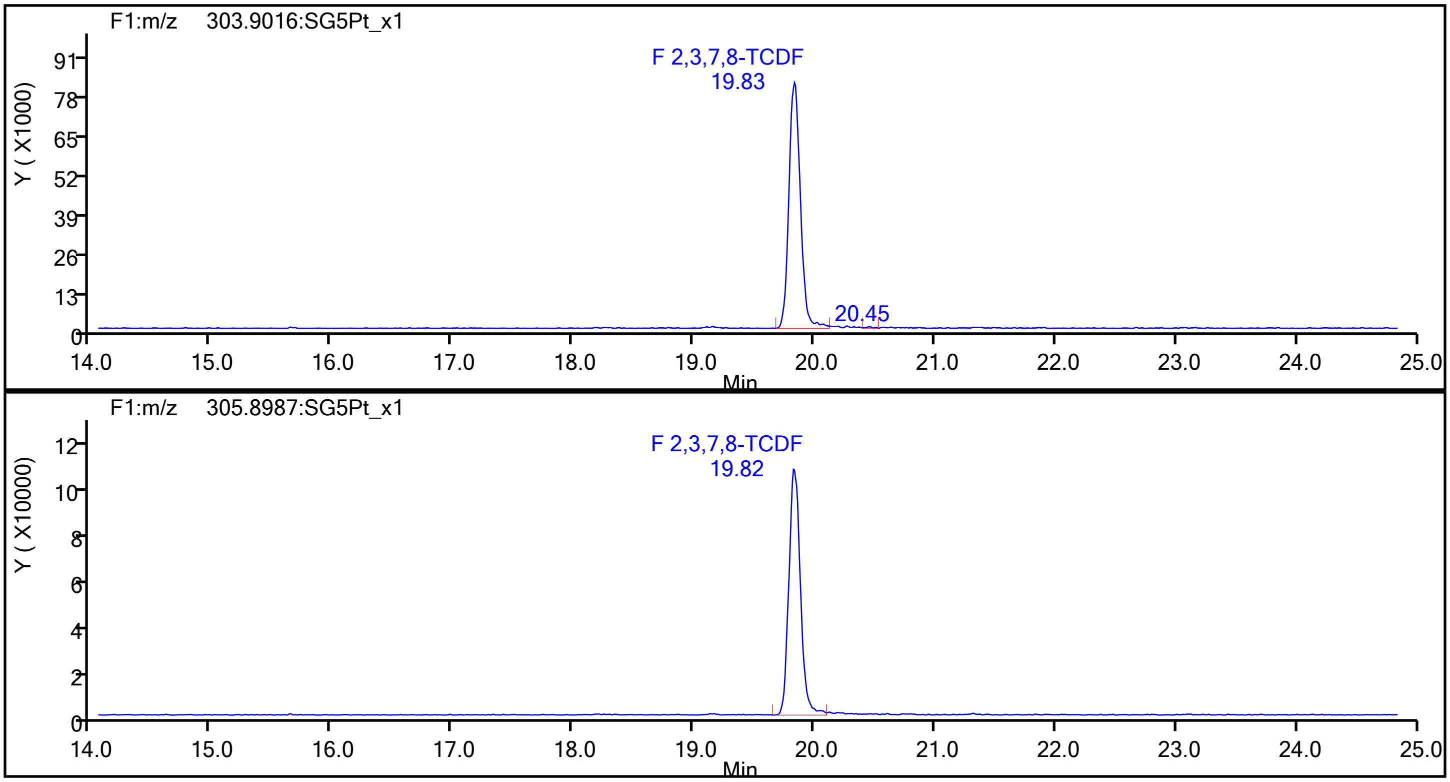

TCDF Standards

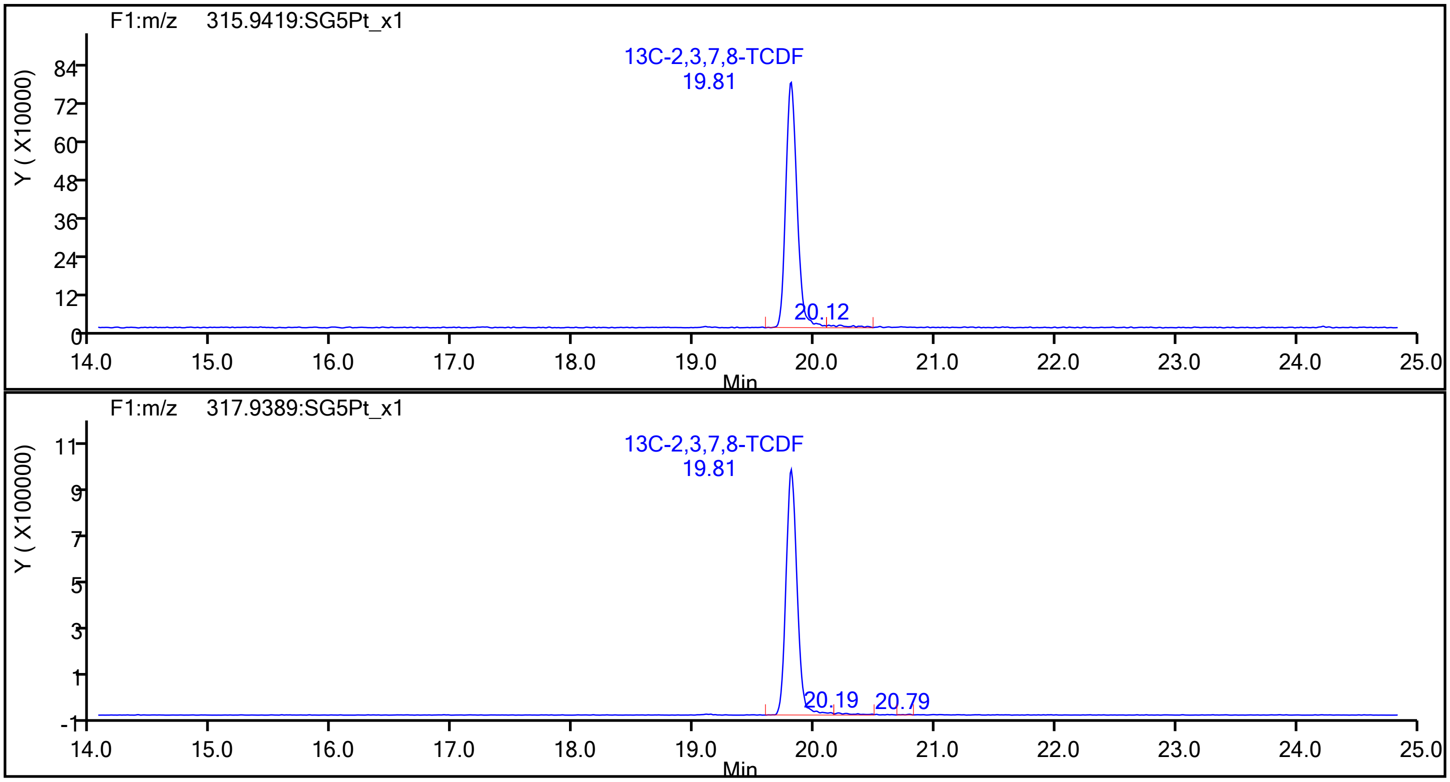

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

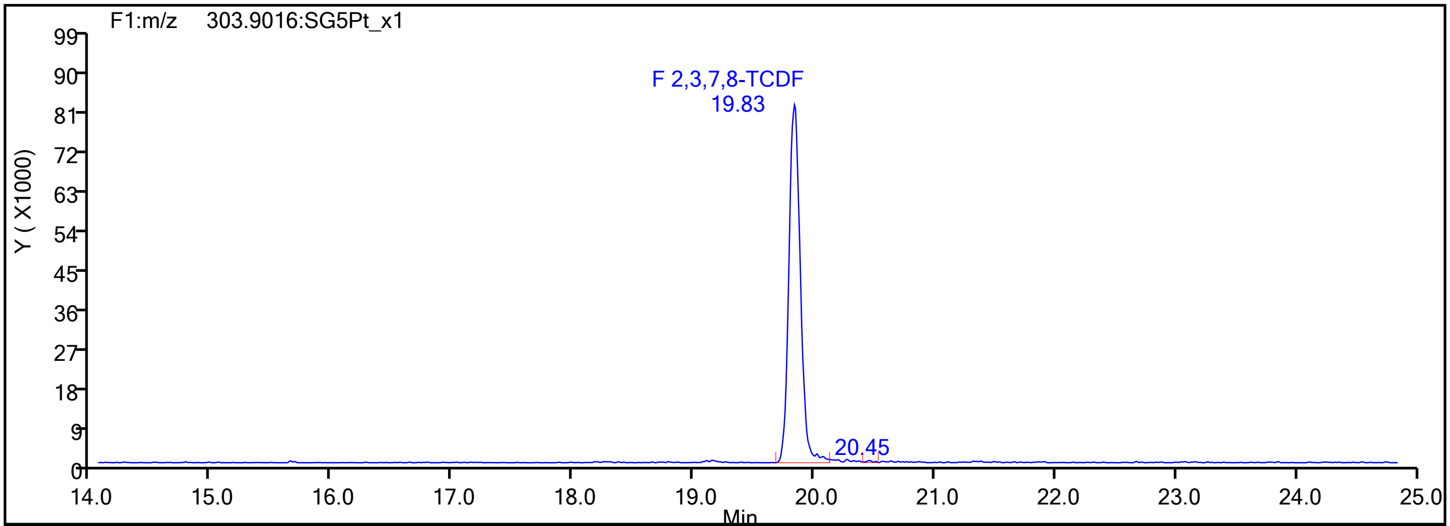

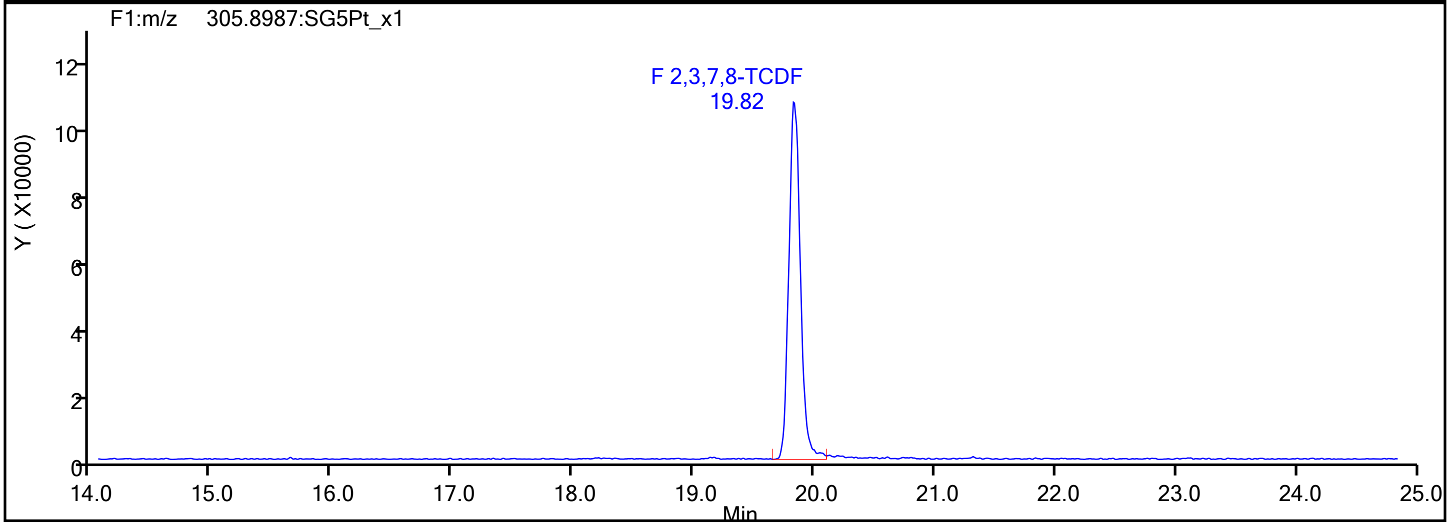

TCDF Interference Mass

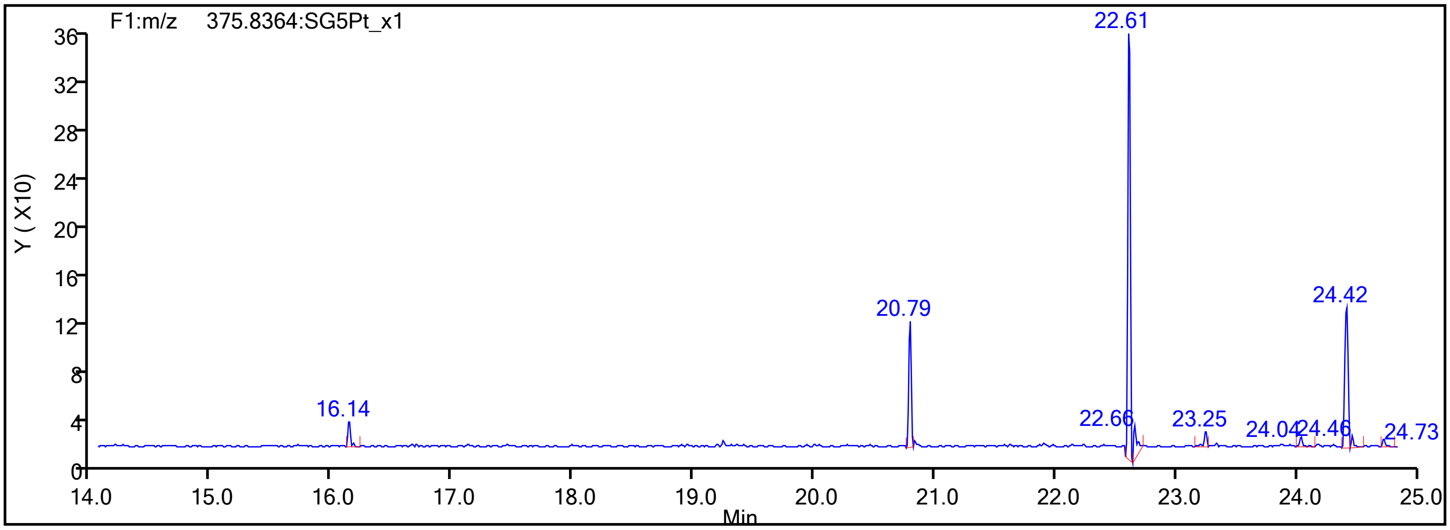

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
Injection Date: 15-Oct-2021 11:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

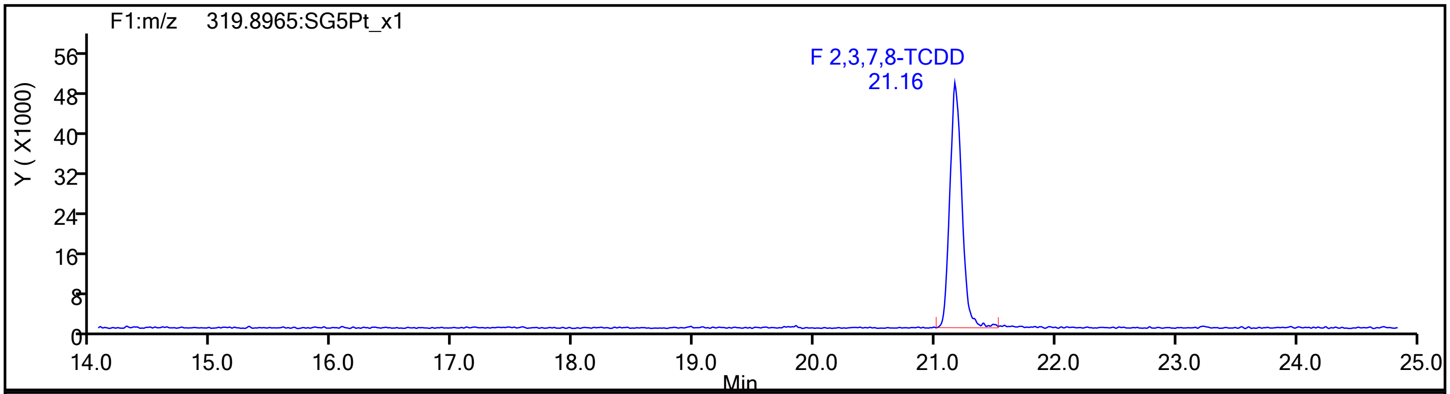

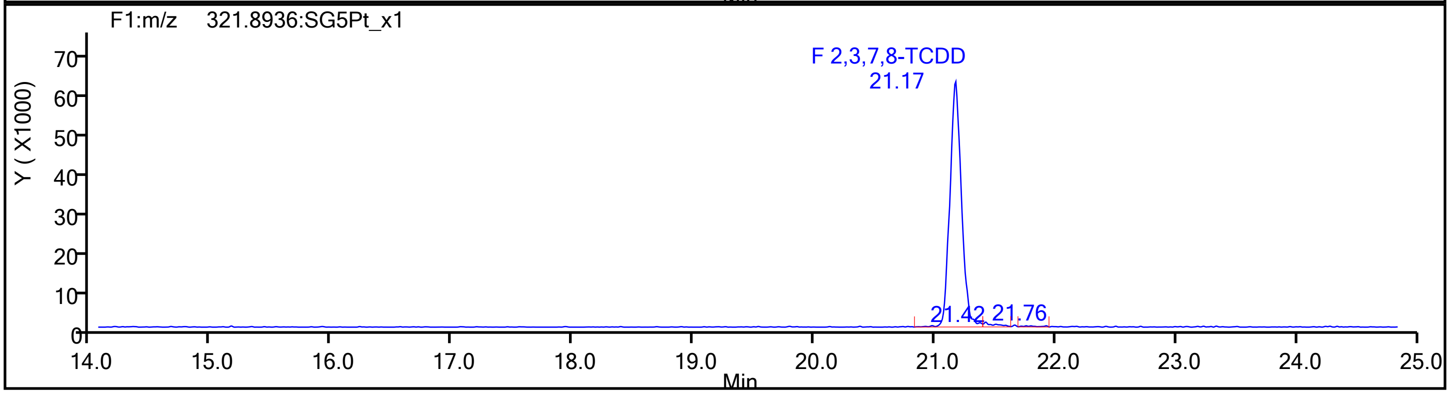

TCDD Standards

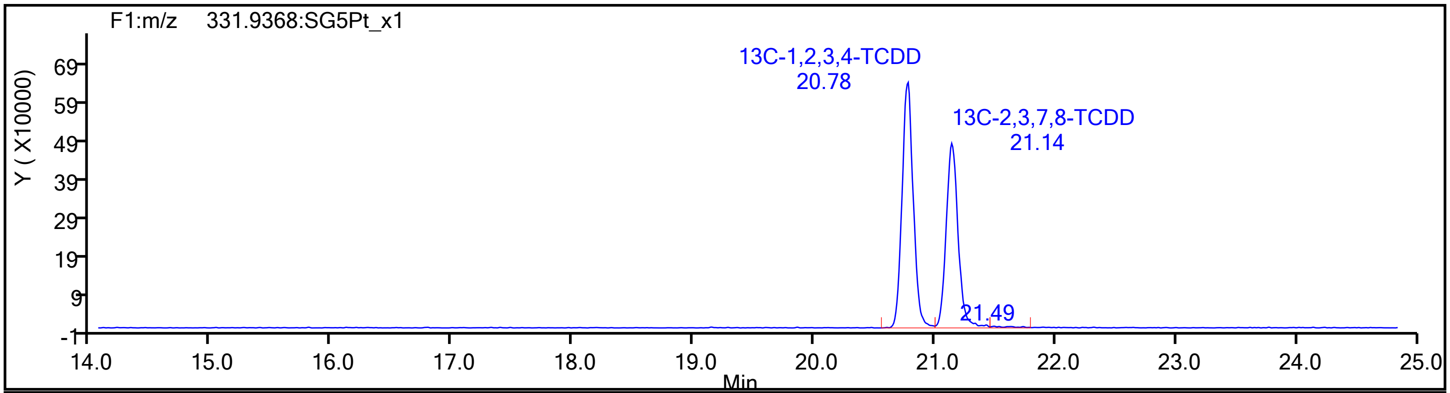

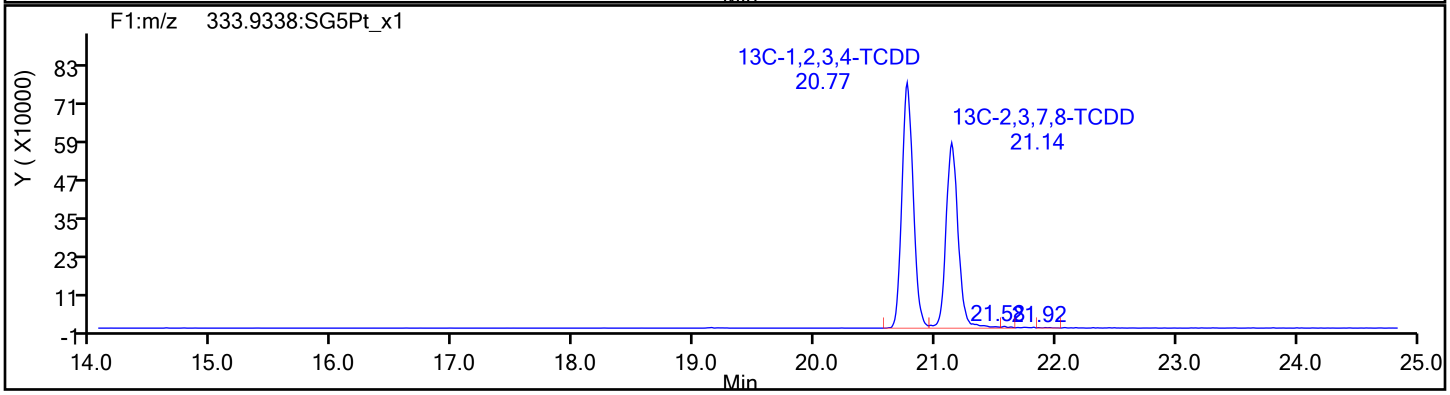

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

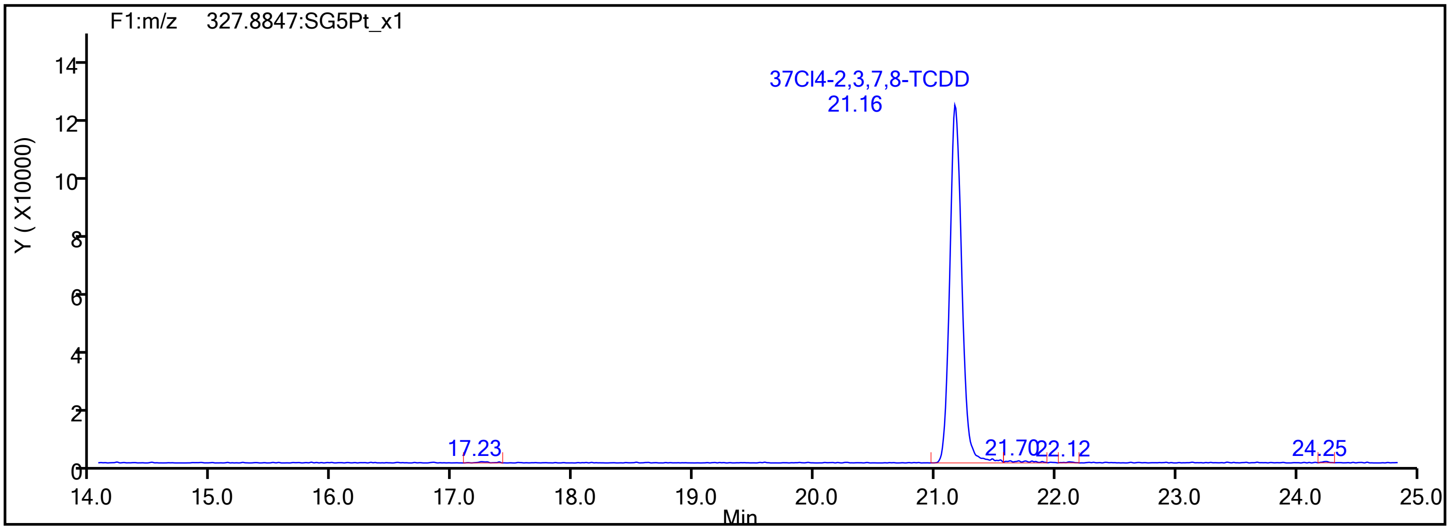

37Cl4-TCDD Standards

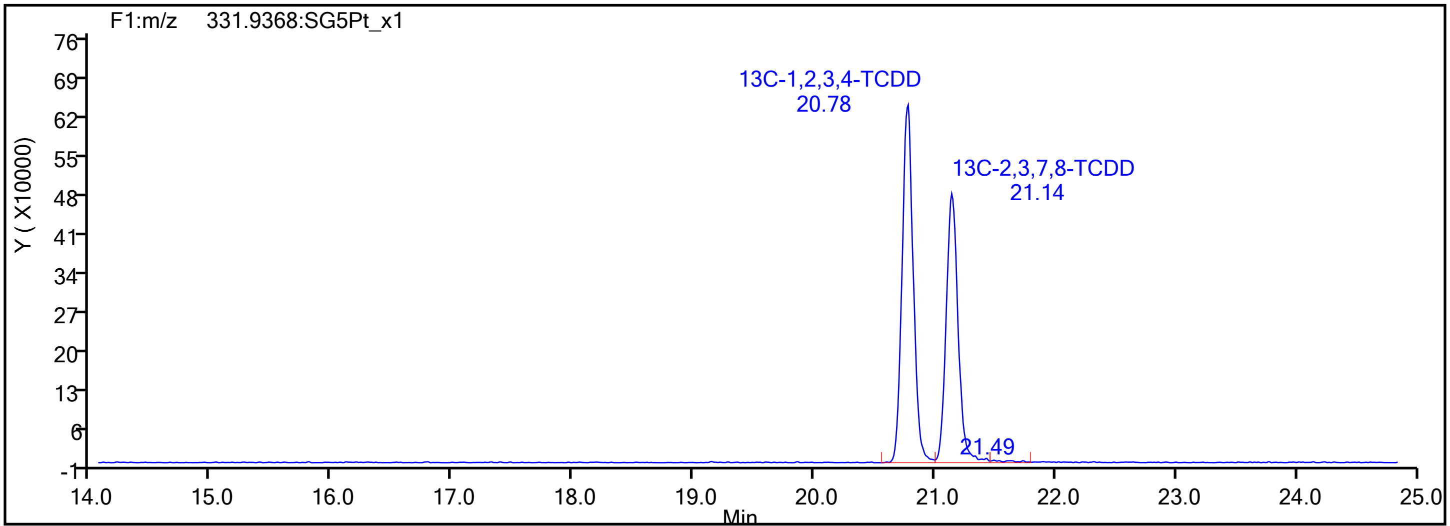

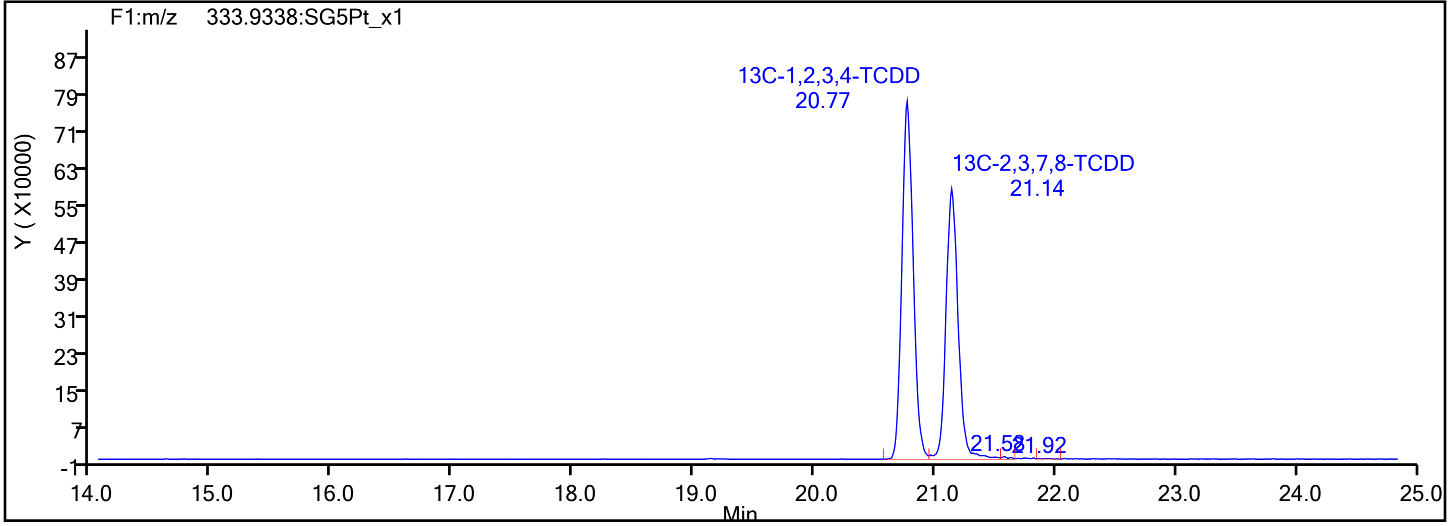

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Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

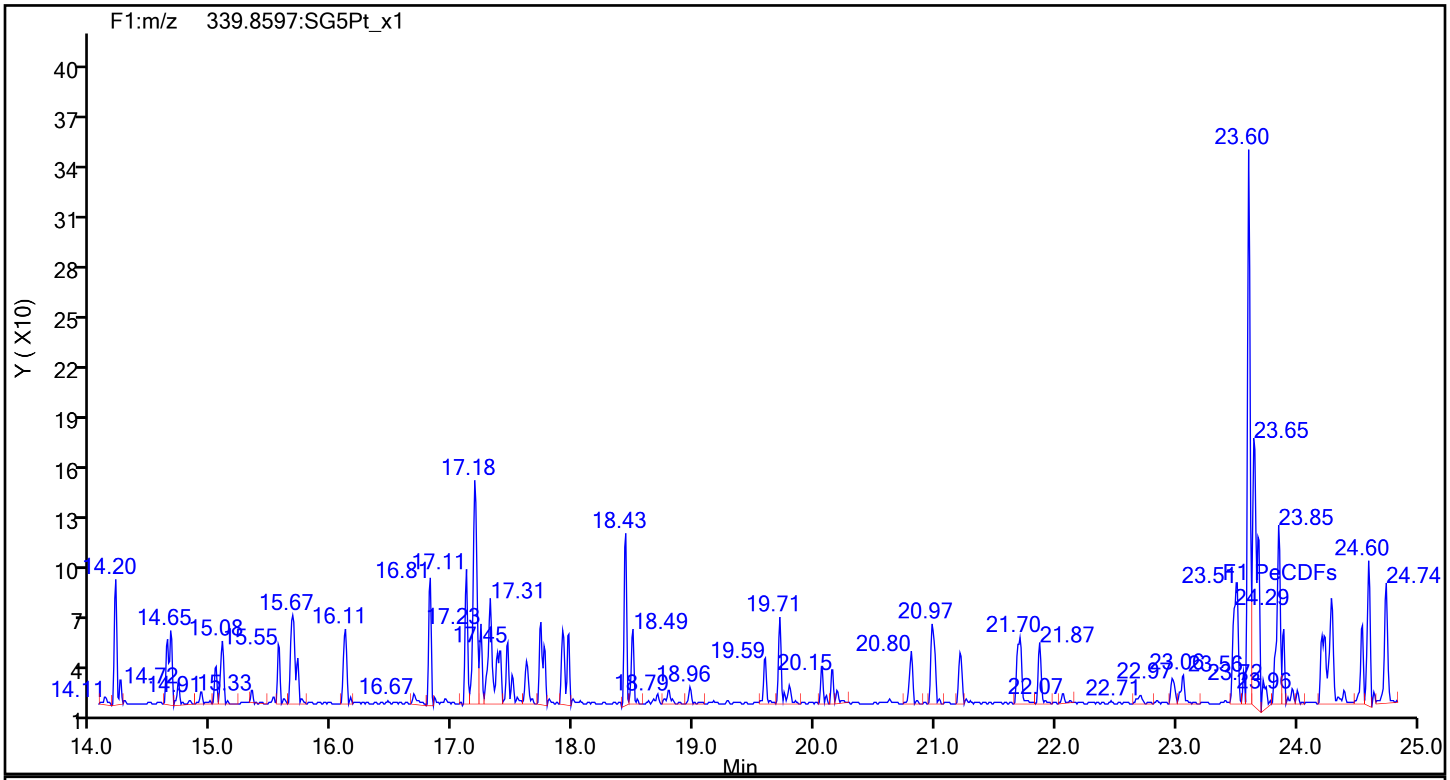

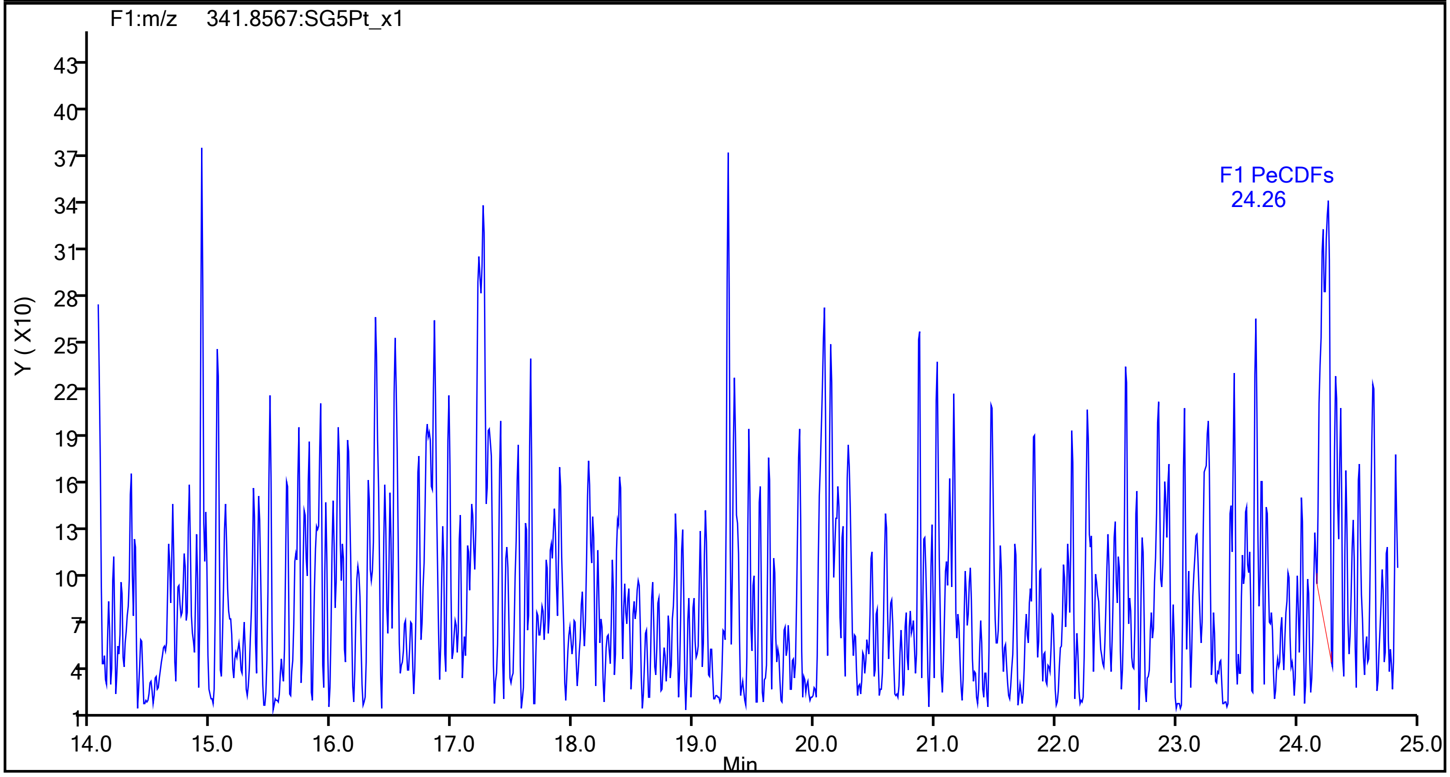

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
Injection Date: 15-Oct-2021 11:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

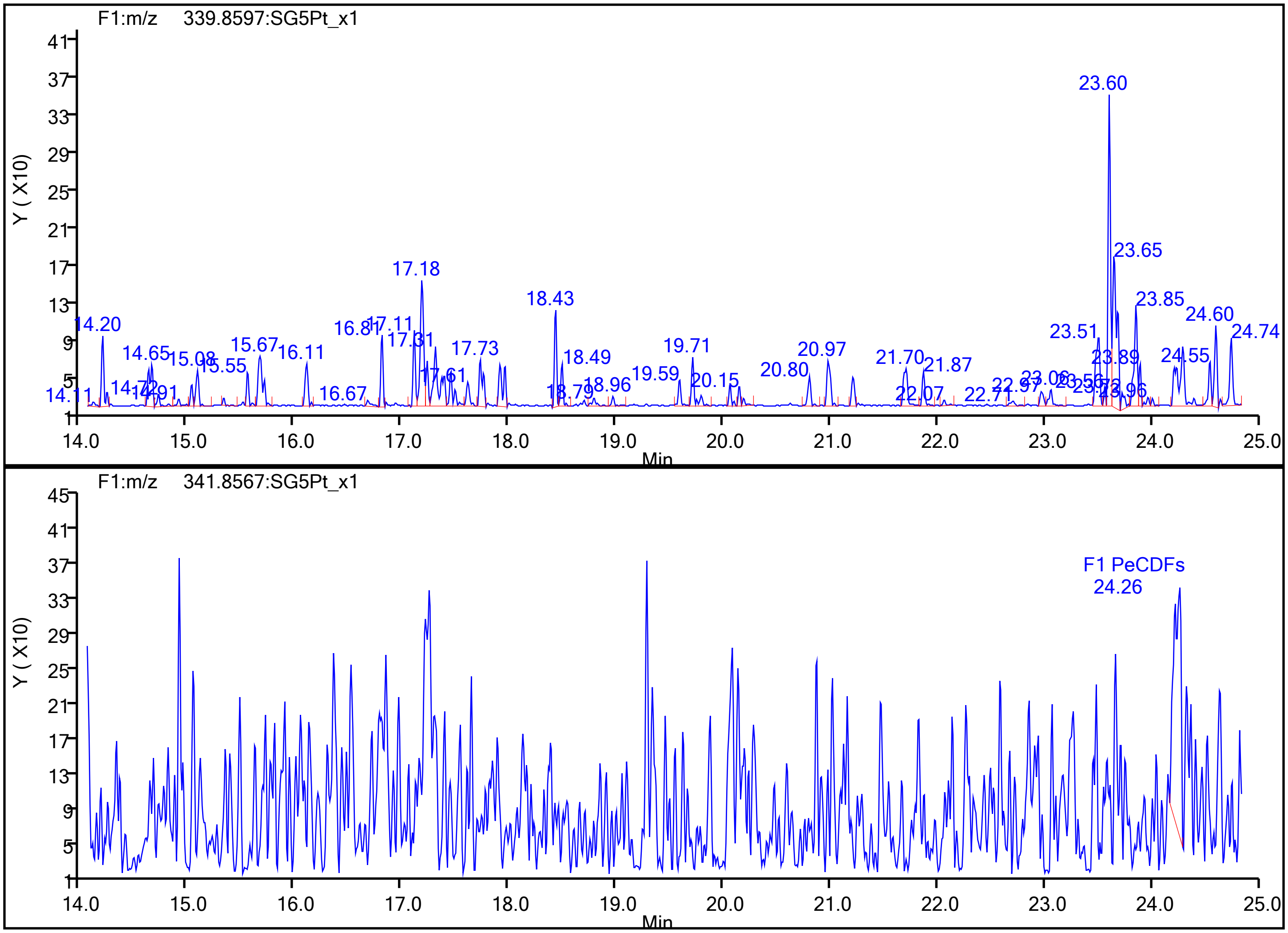

F1 PeCDFs Interference Mass

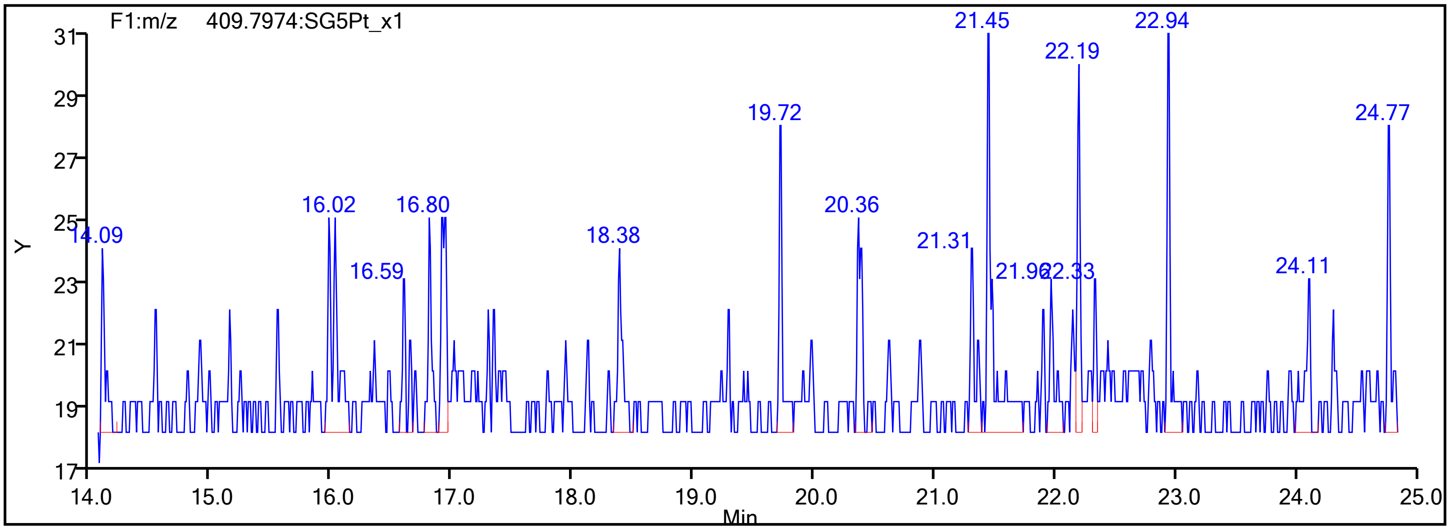

Report Date: 18-Oct-2021 13:41:26 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

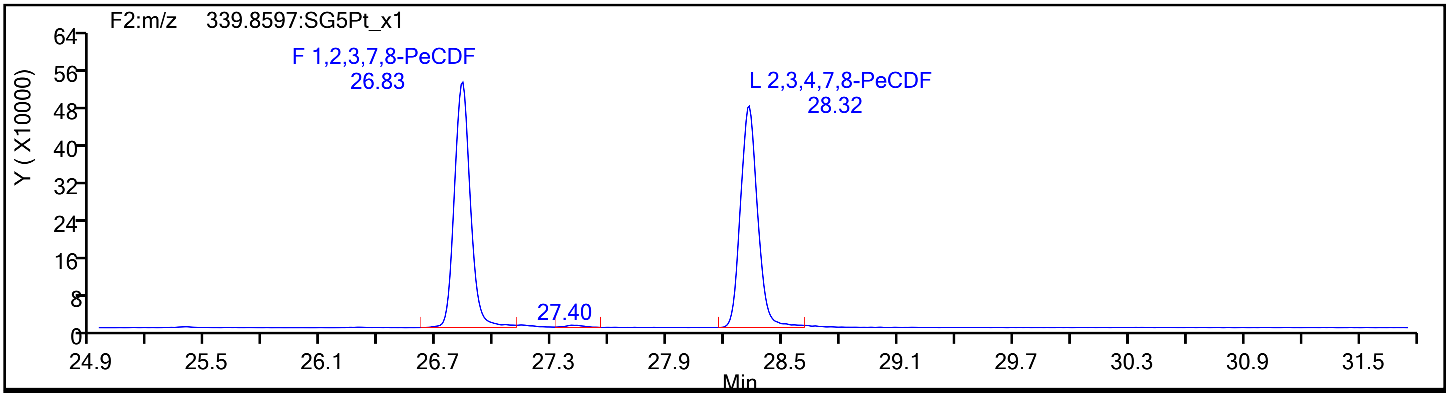

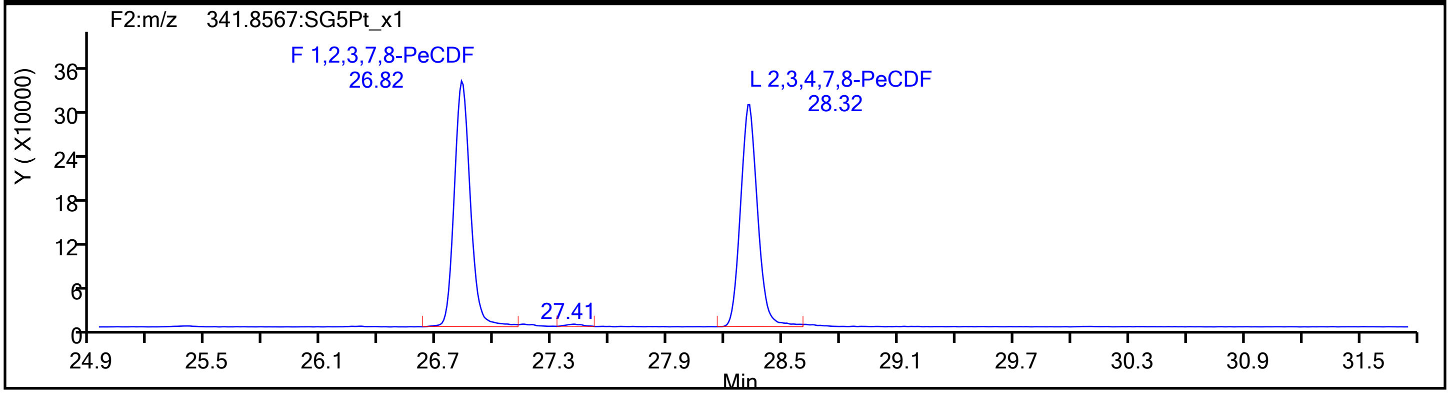

PeCDF Standards

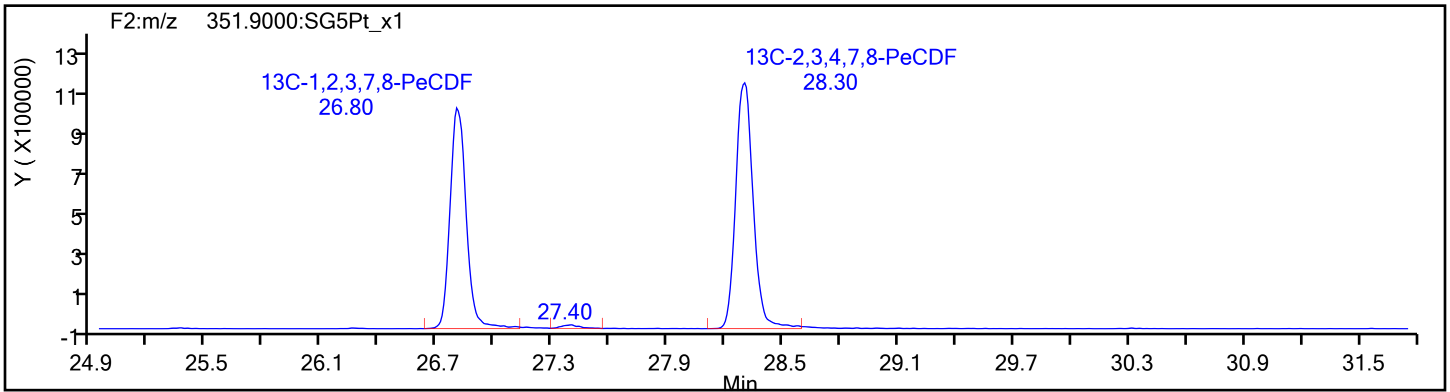

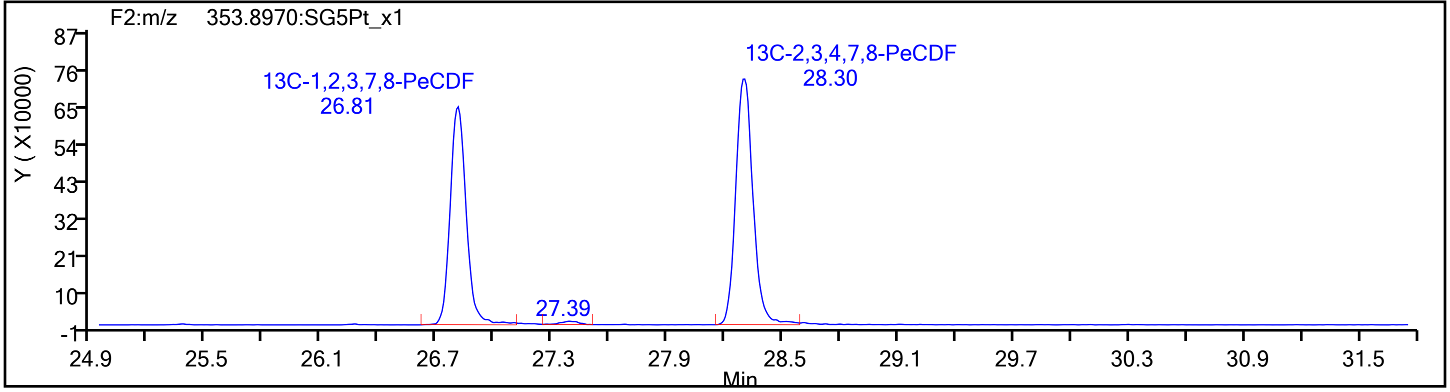

Report Date: 18-Oct-2021 13:41:26
Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

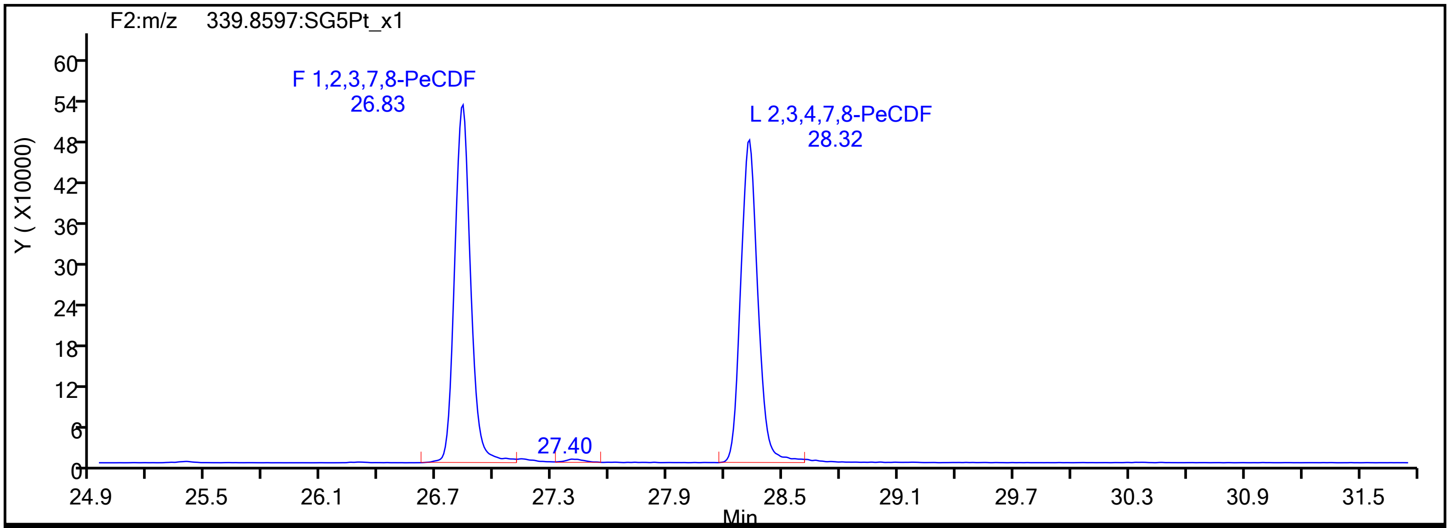

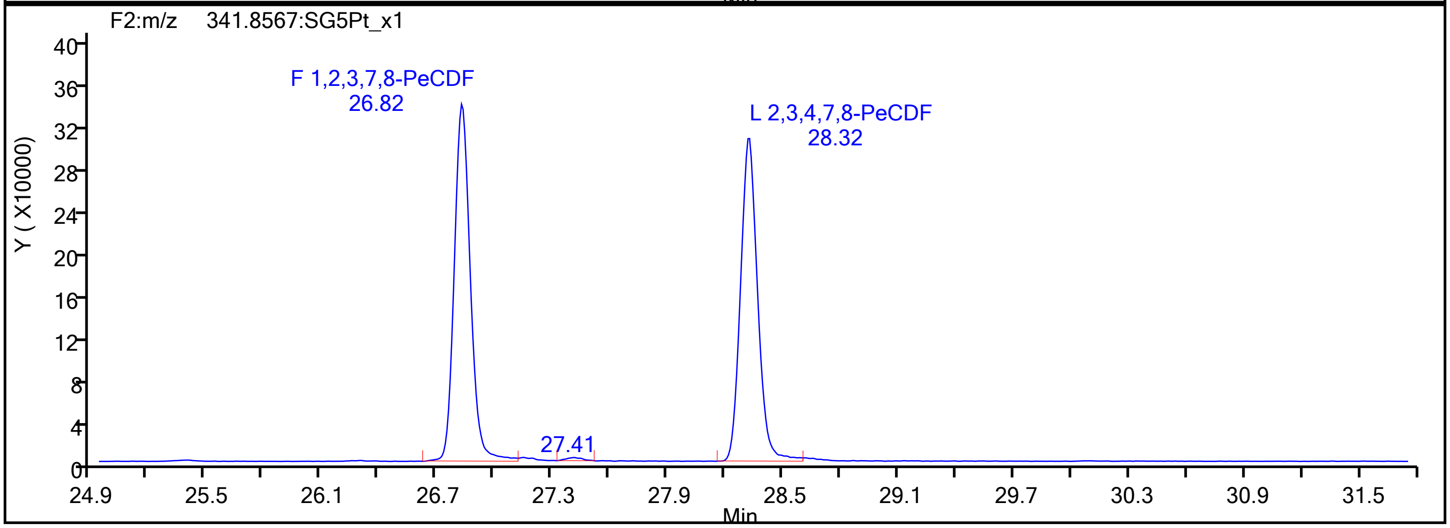

PeCDF Interference Mass

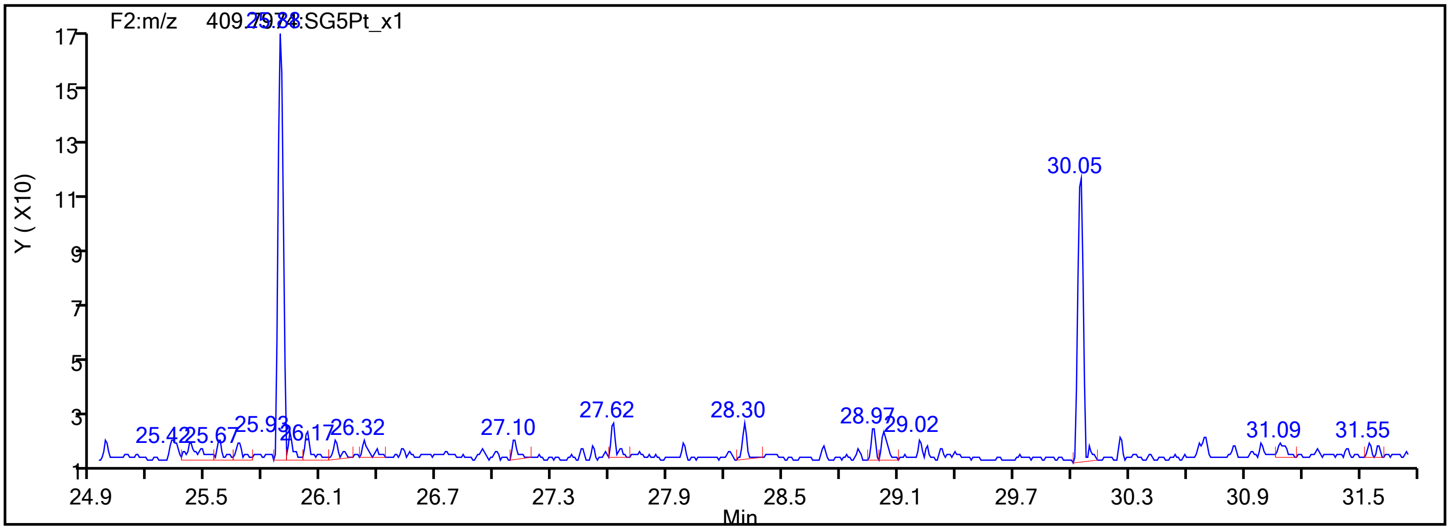

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
Injection Date: 15-Oct-2021 11:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

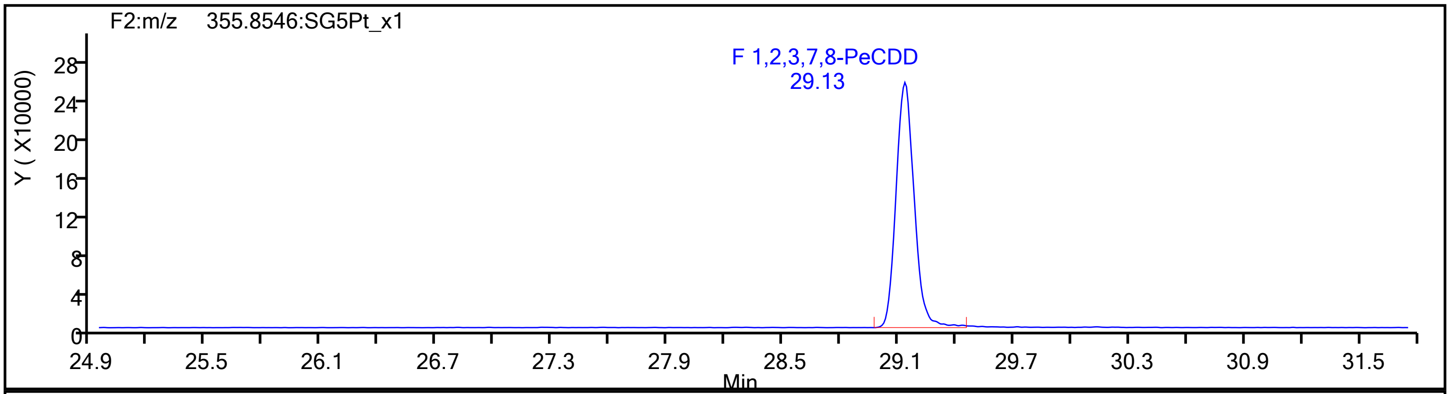

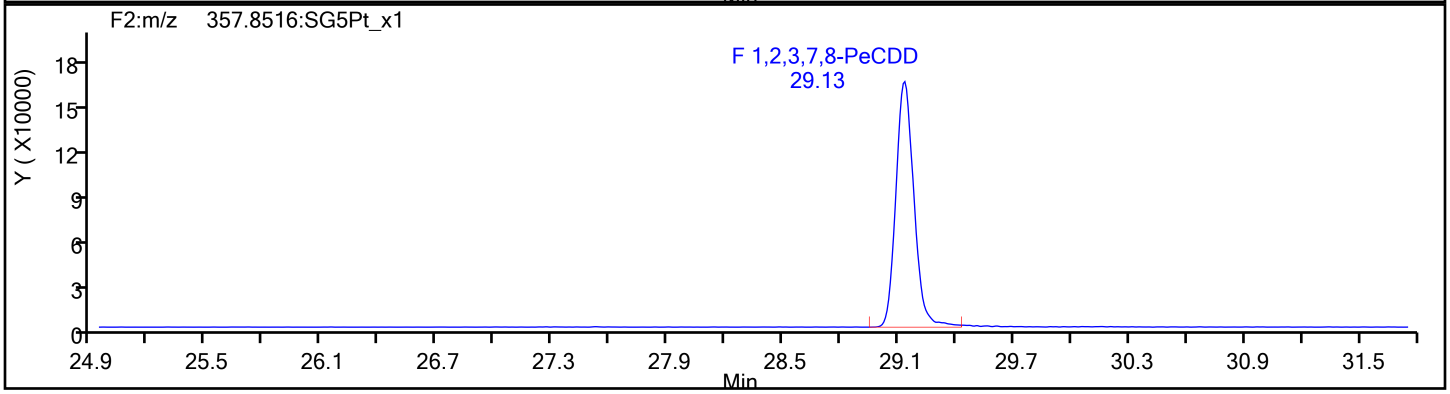

PeCDD Standards

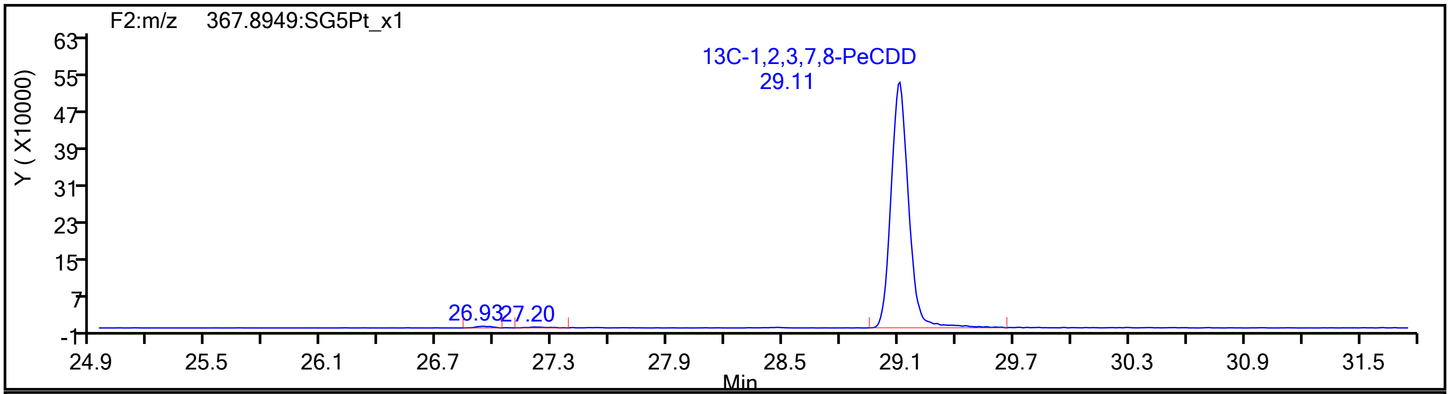

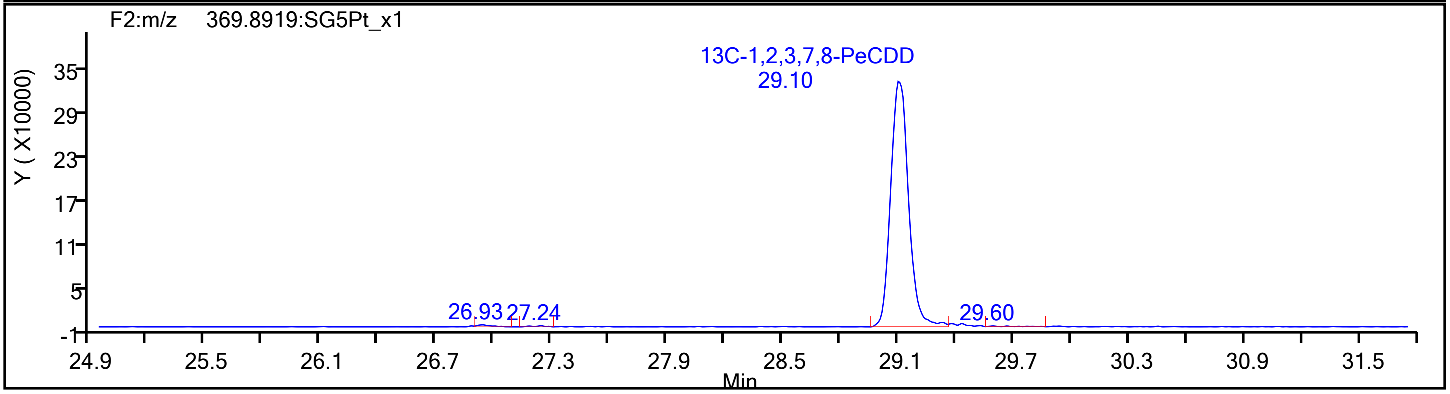

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

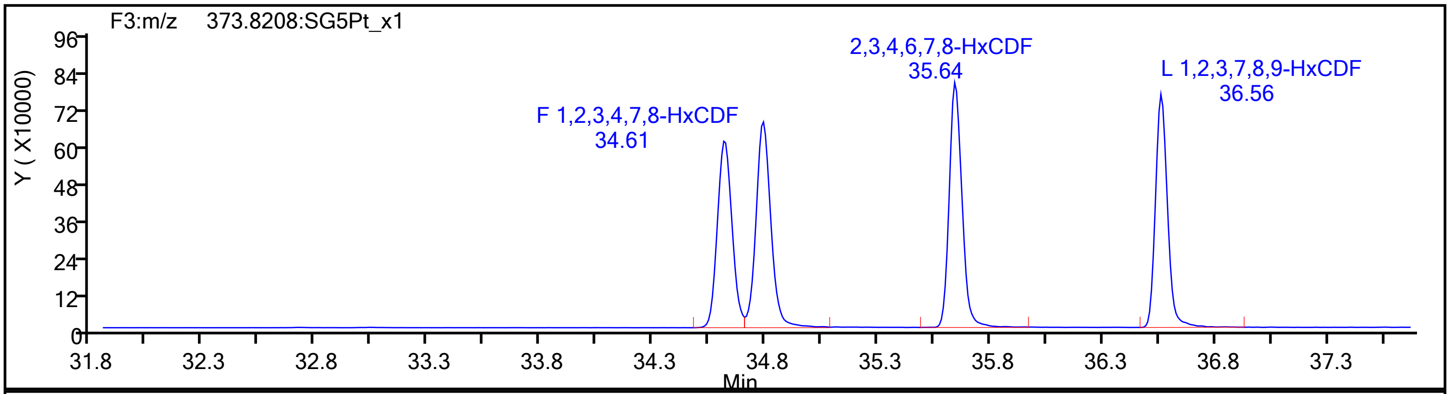

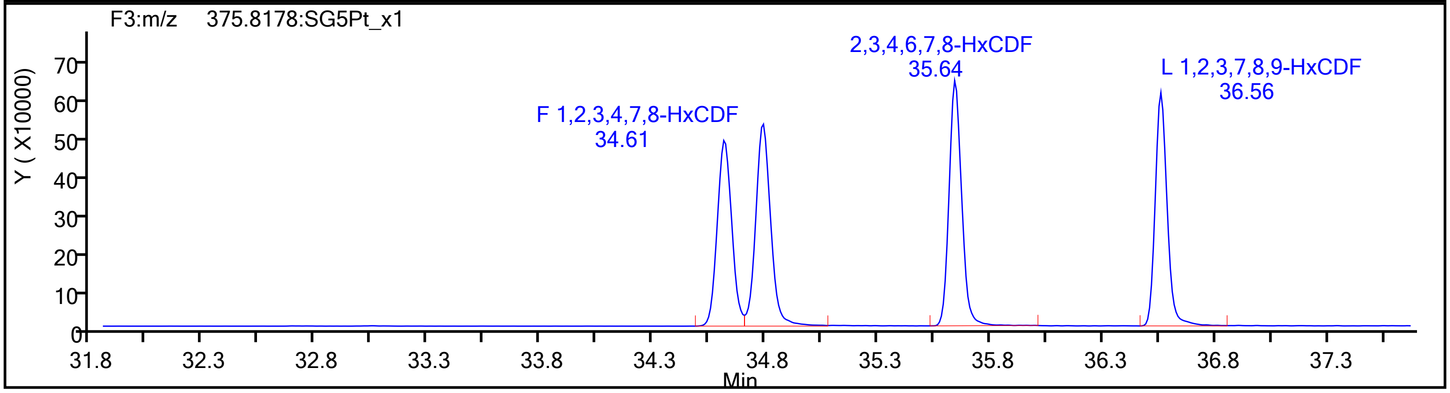

HxCDF Standards

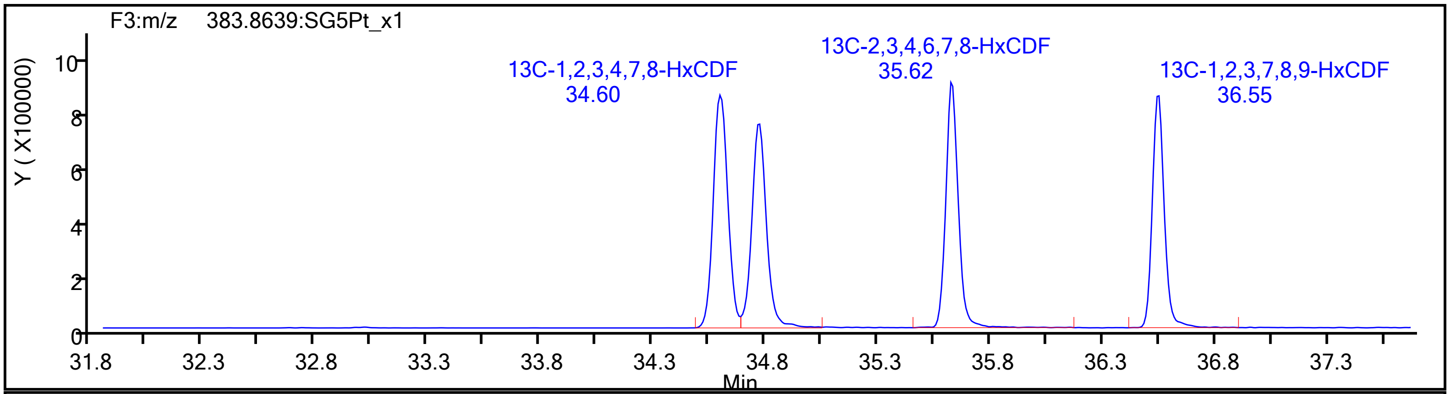

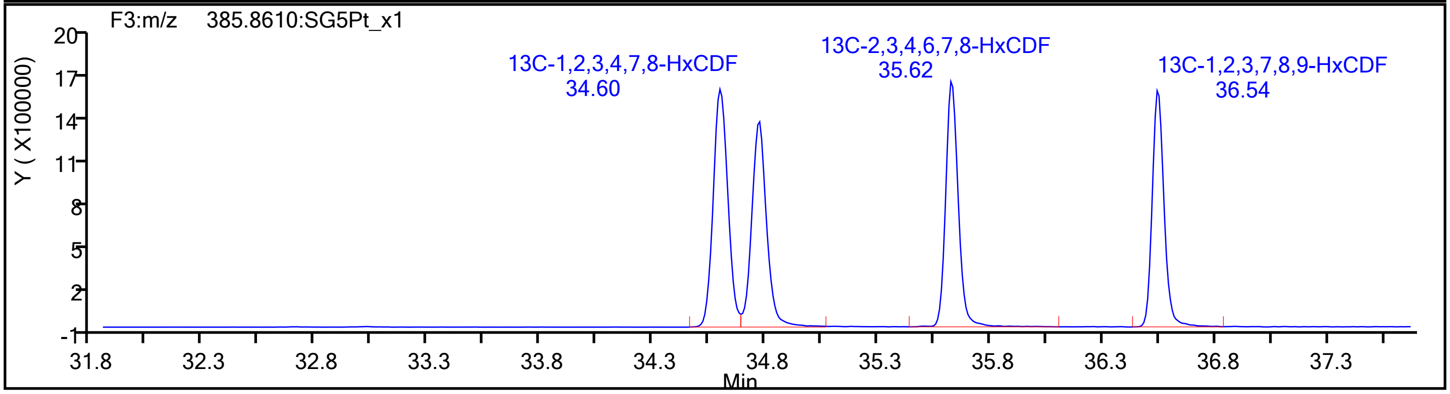

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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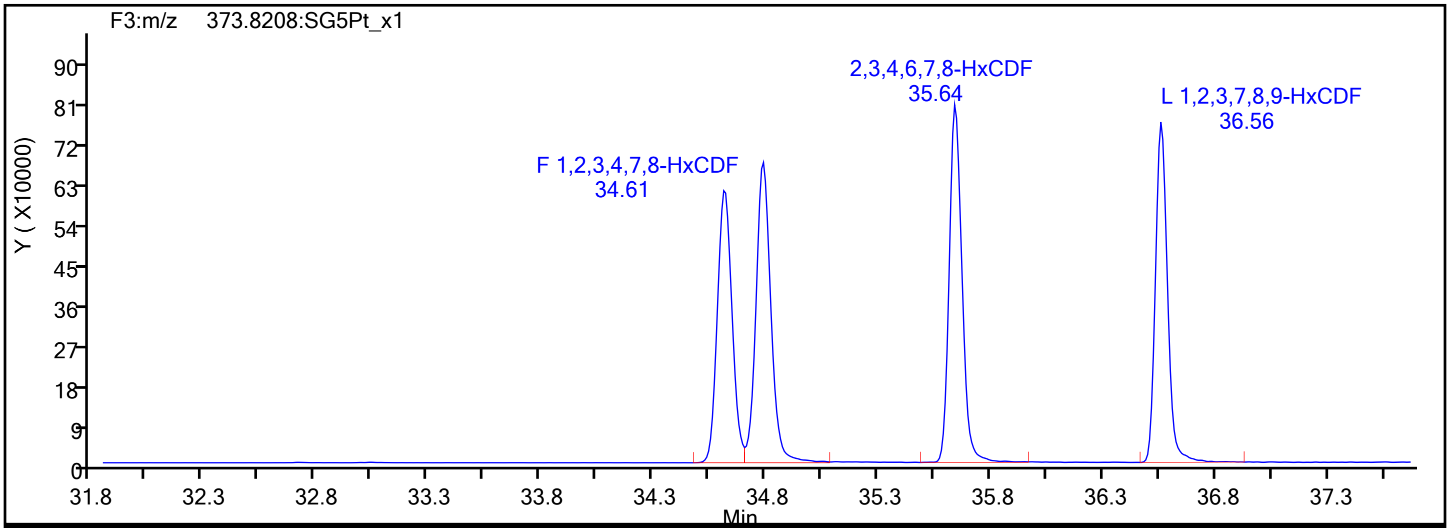

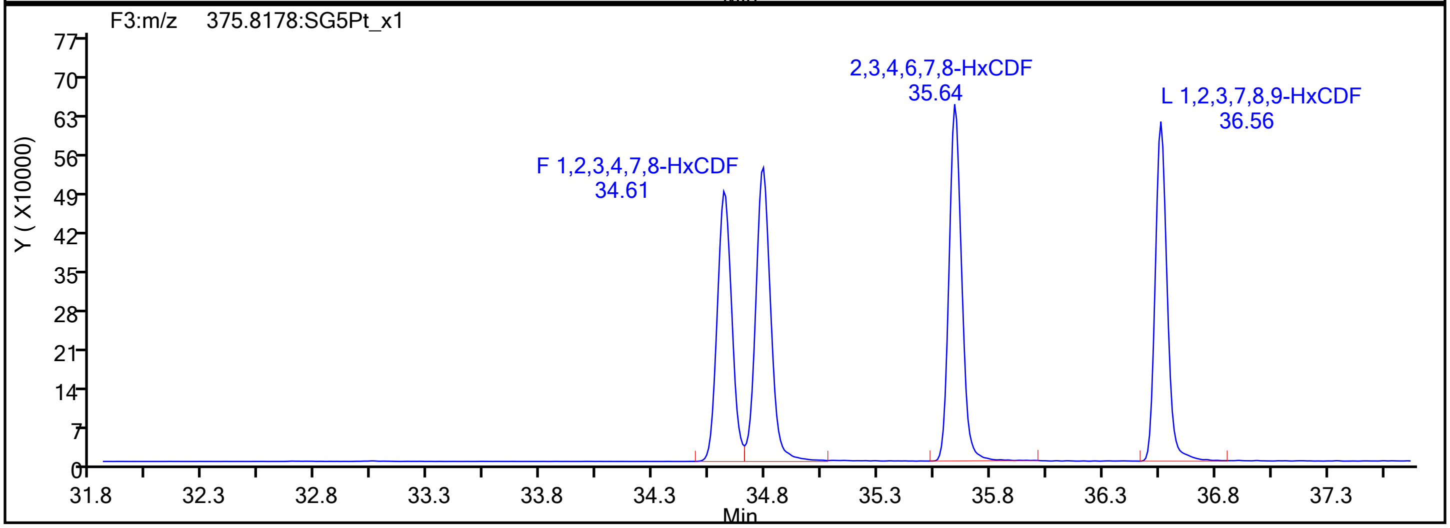

HxCDF Interference Mass

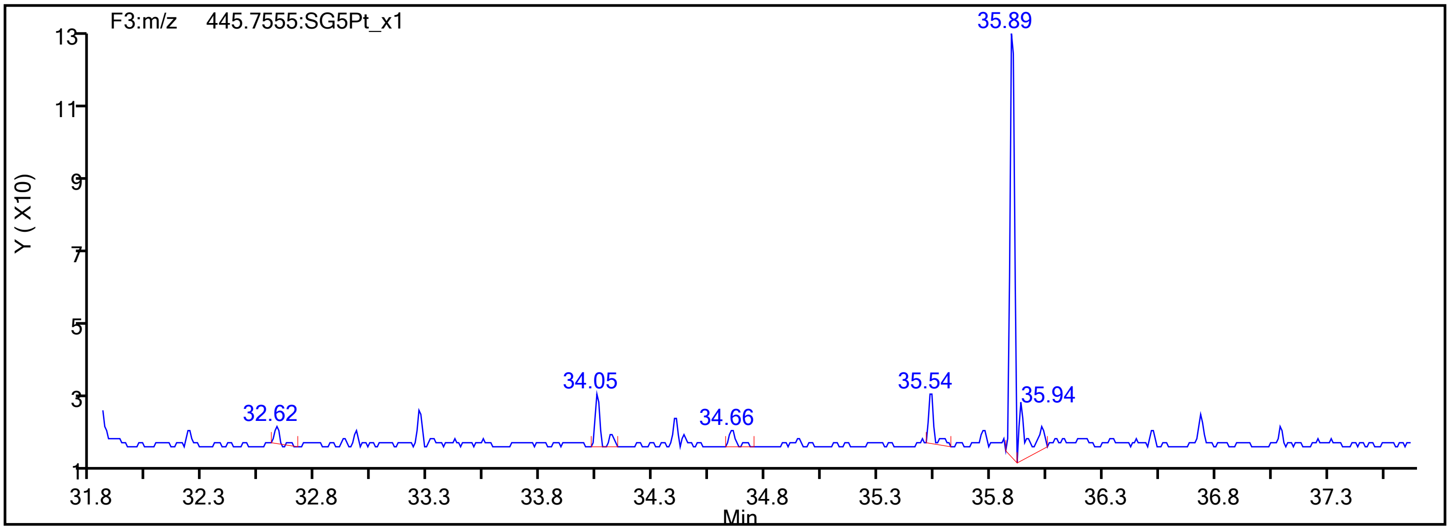

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d

Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

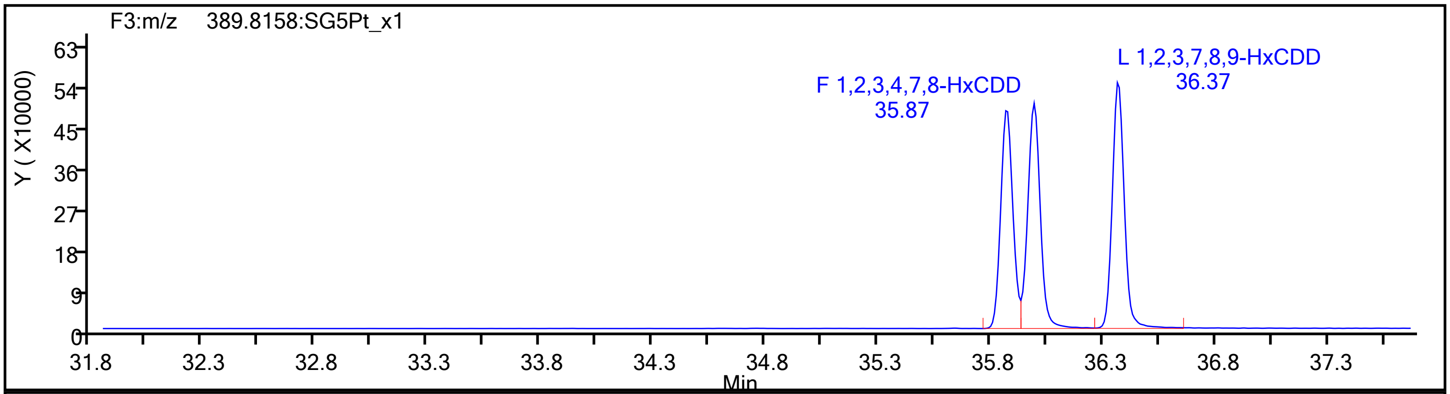

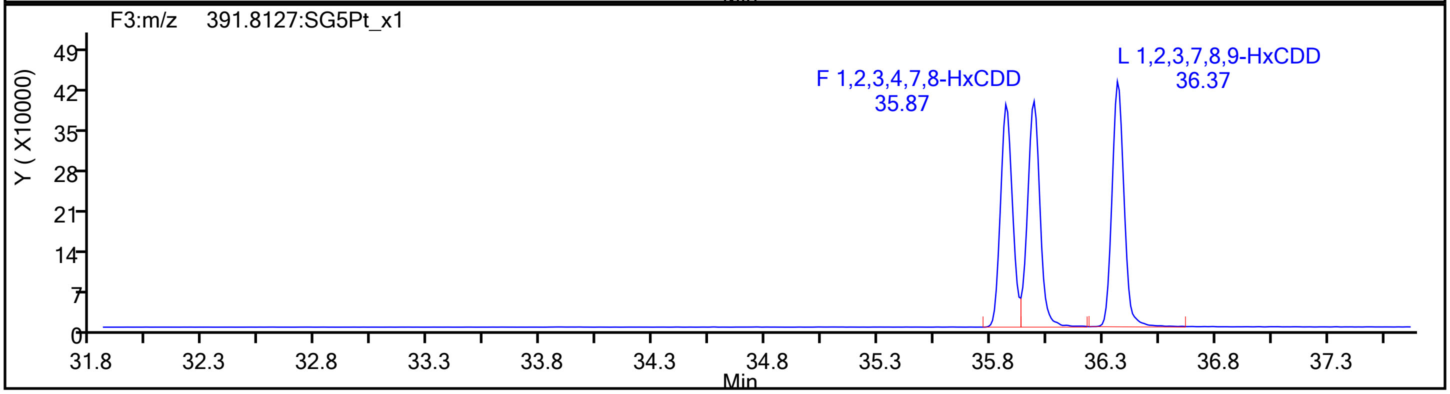

HxCDD Standards

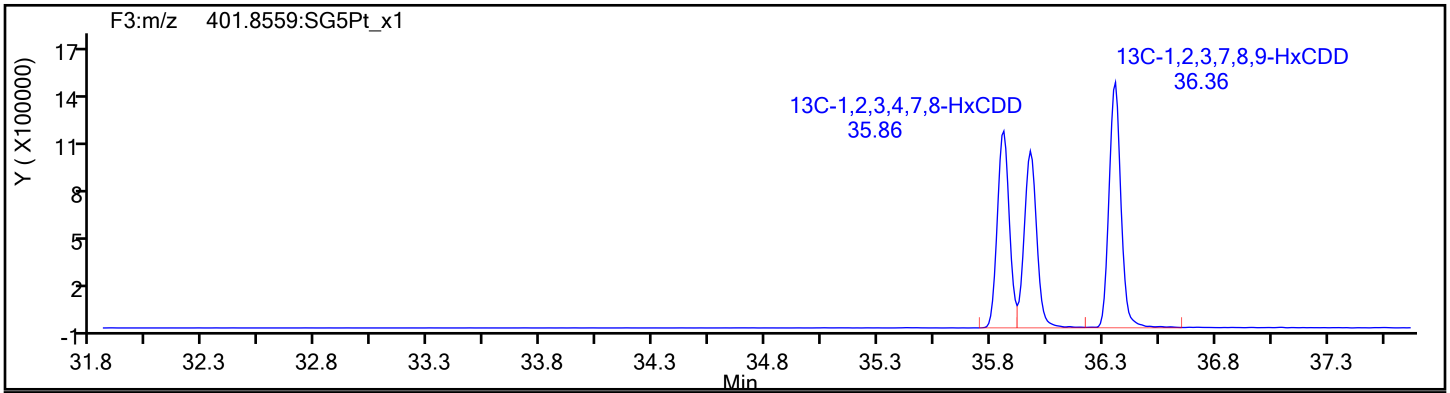

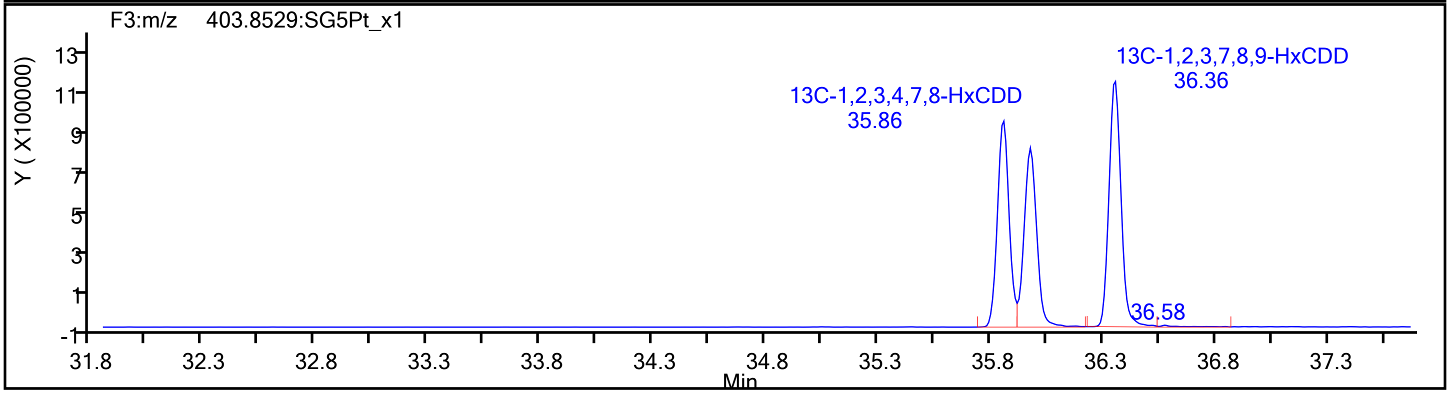

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
Injection Date: 15-Oct-2021 11:03:00
Injection Vol: 1.0 ul
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Method: Dioxin_DFS1
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Client ID:
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HpCDF

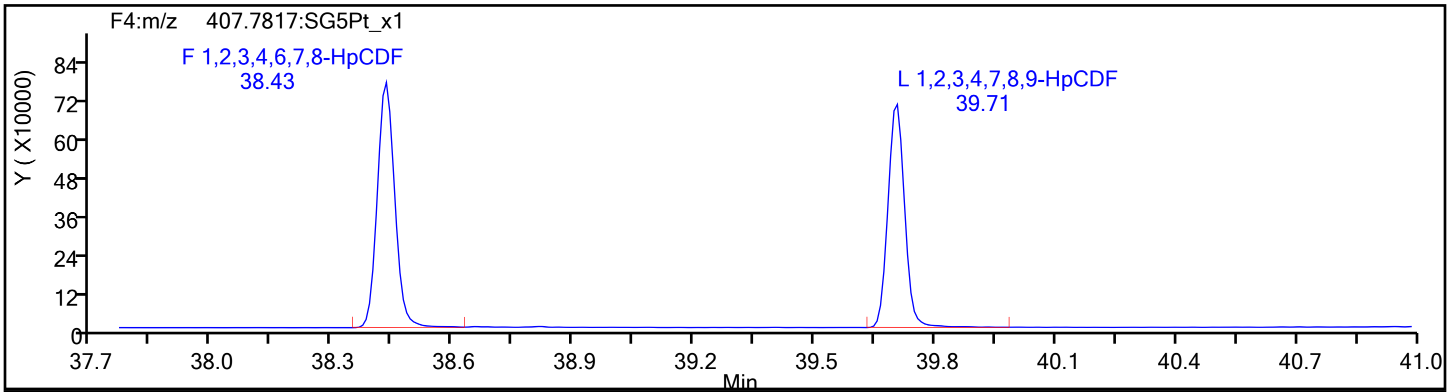

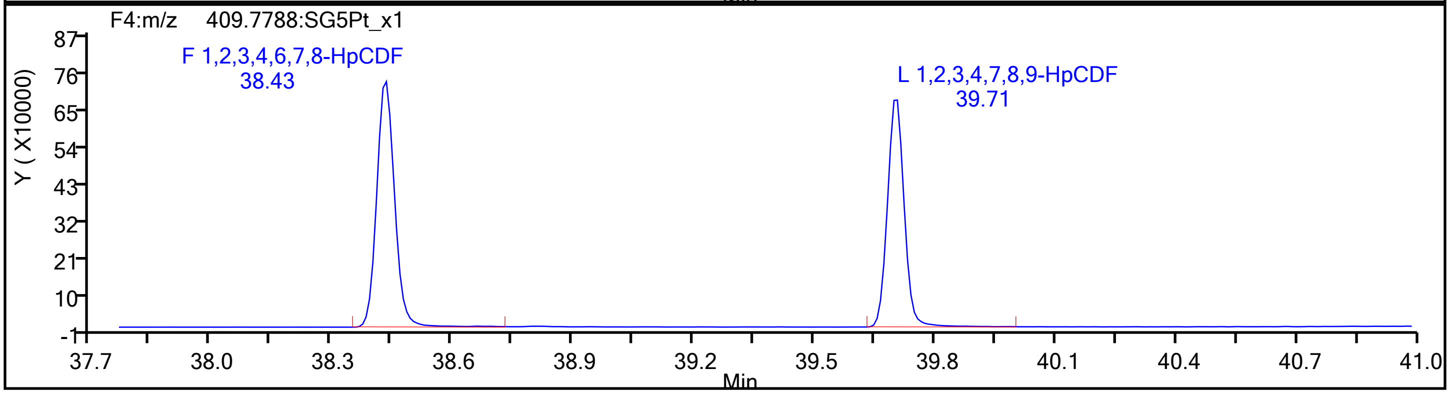

HpCDF Standards

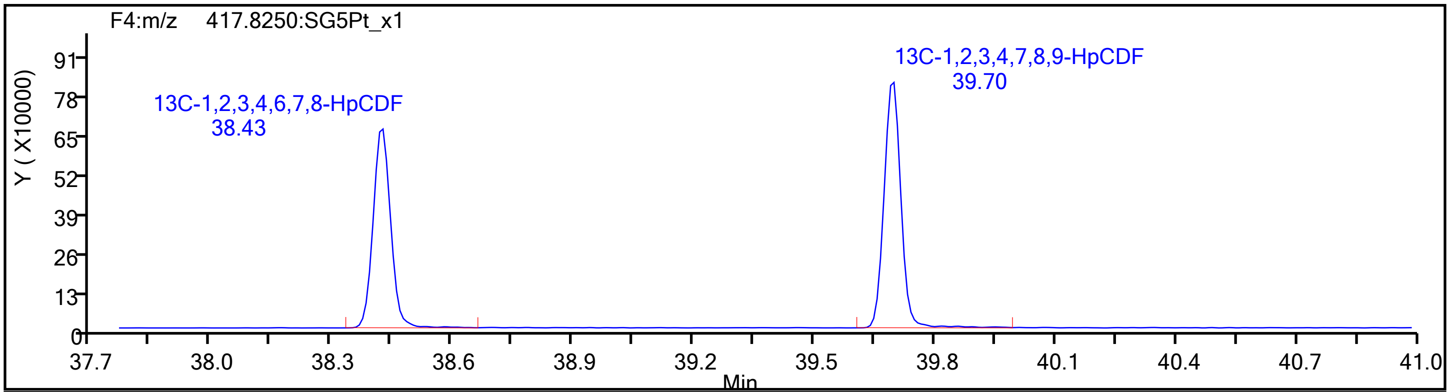

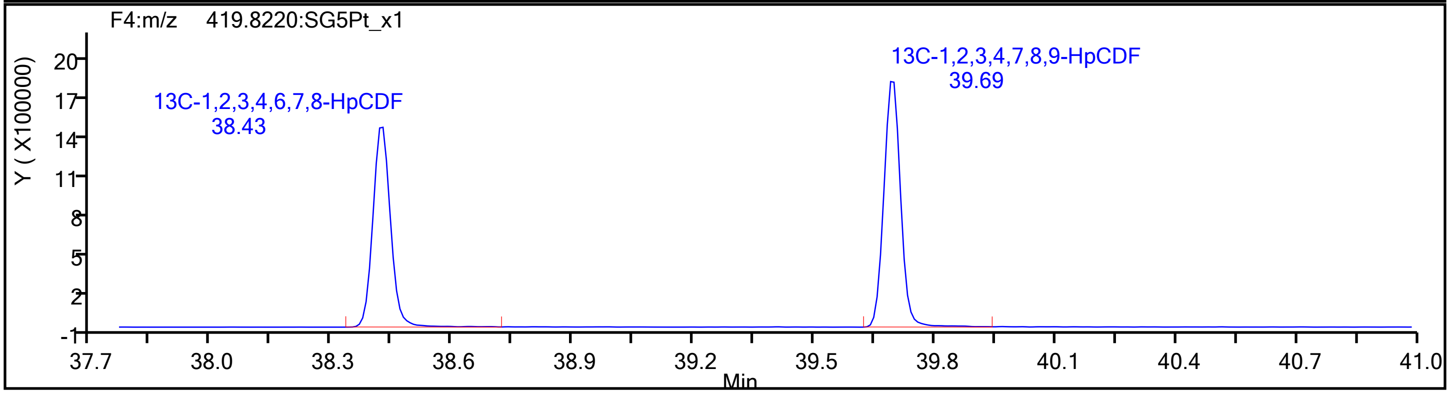

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d
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Injection Vol: 1.0 ul
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Operator ID: Xcalibur_System
Method: Dioxin_DFS1
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Client ID:
Worklist#: 534320
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

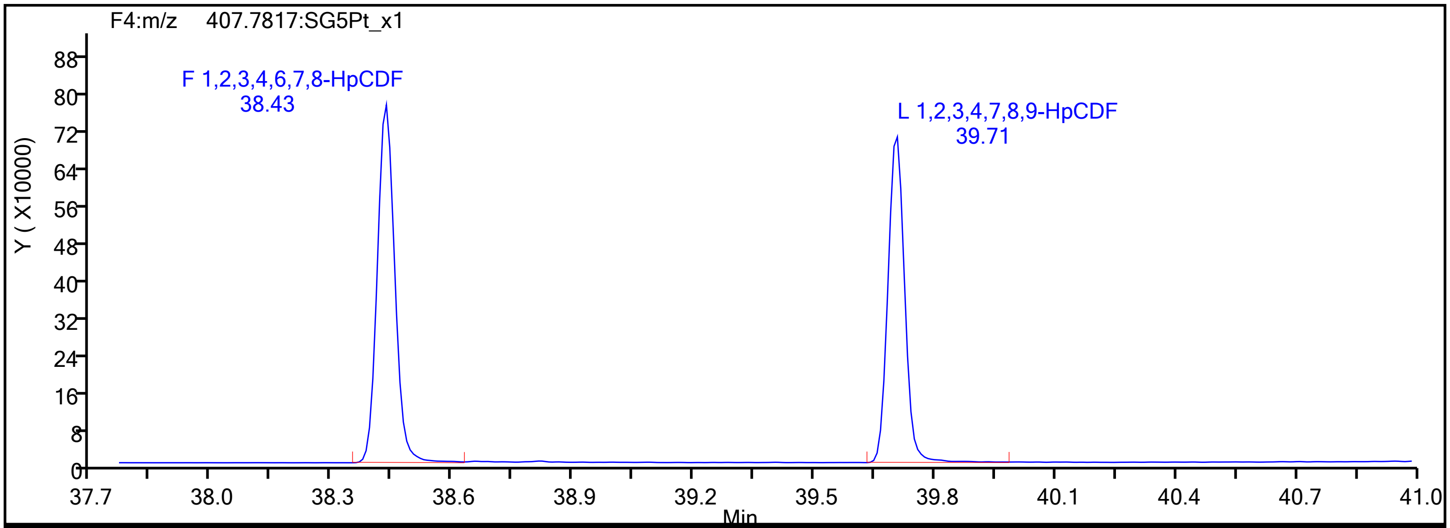

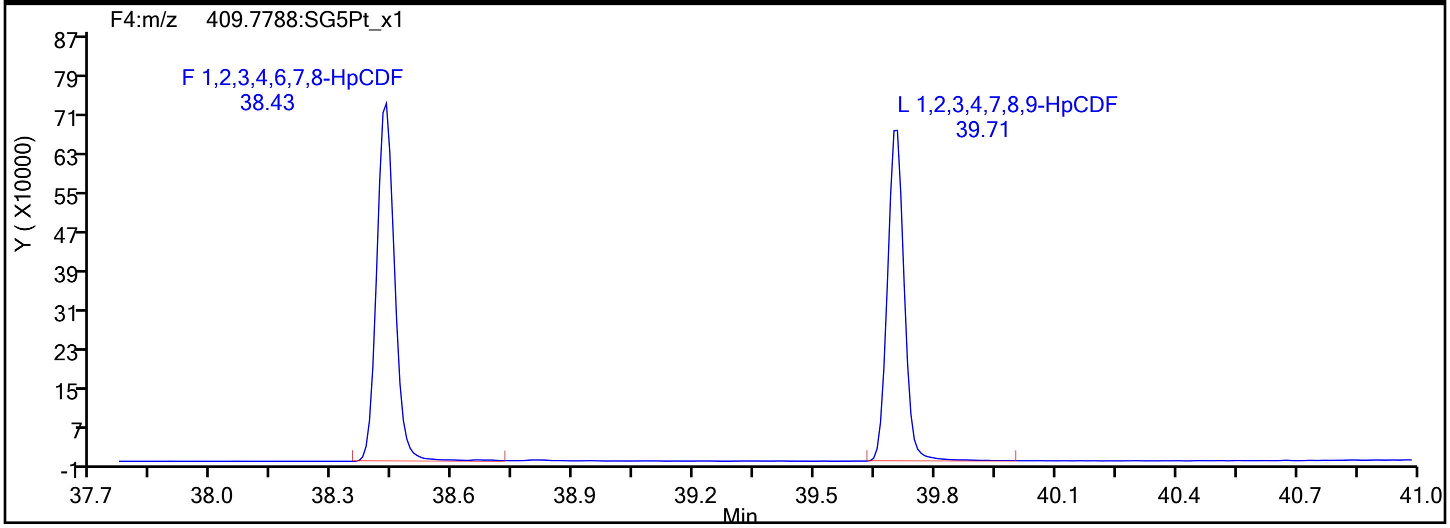

HpCDF Interference Mass

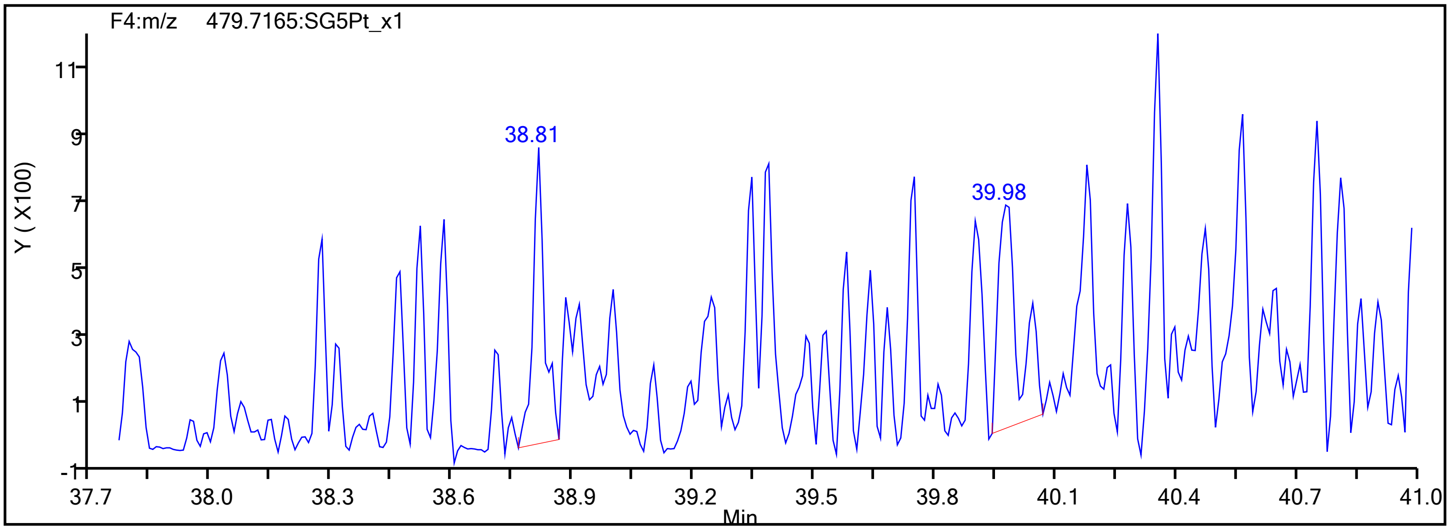

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d		
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Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
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HpCDD

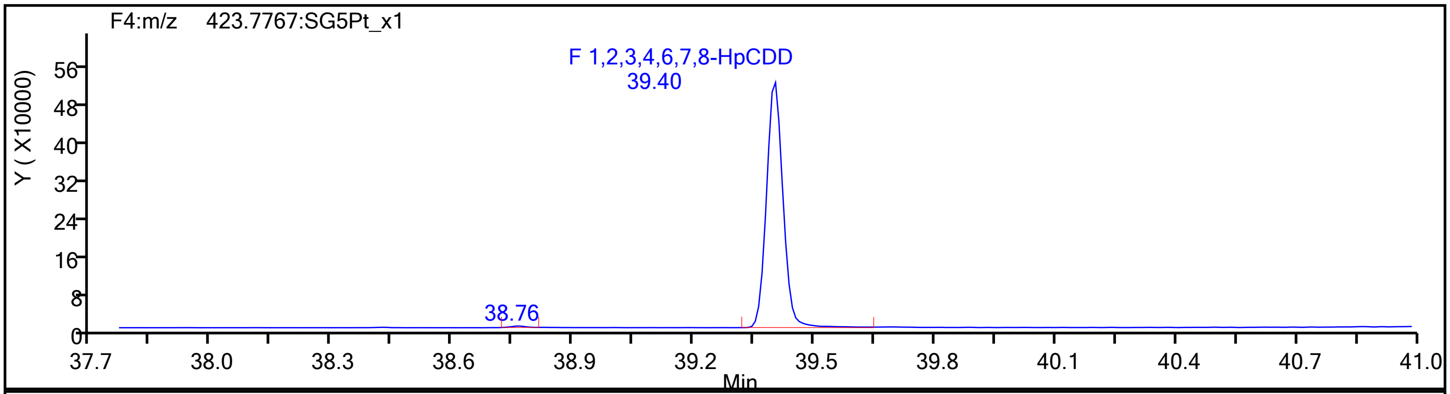

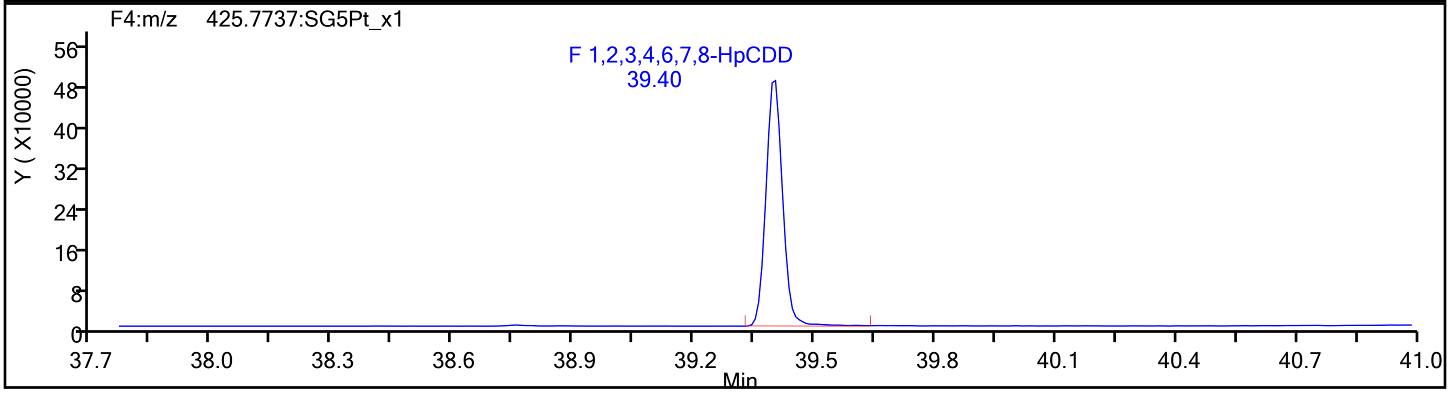

HpCDD Standards

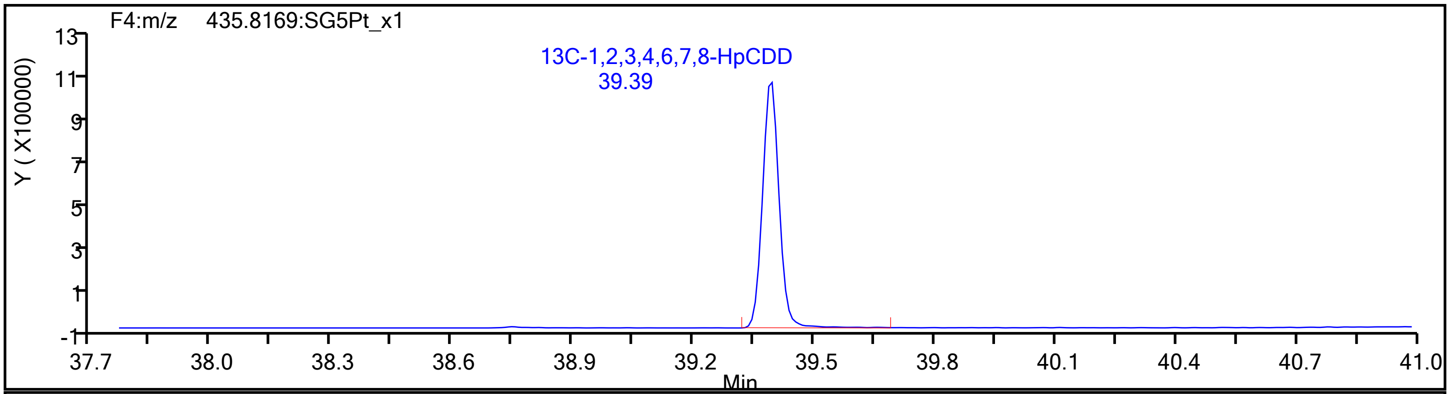

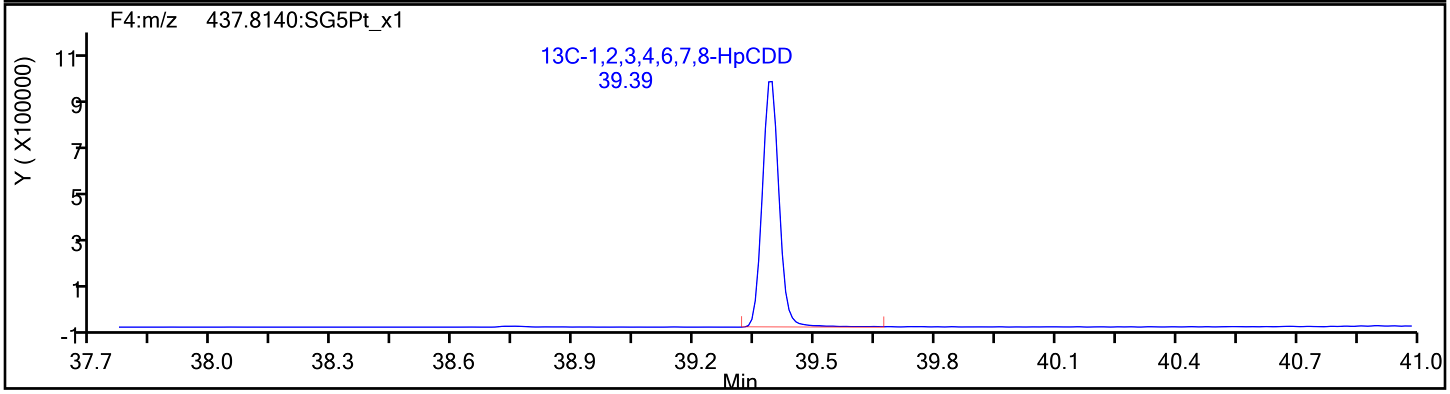

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

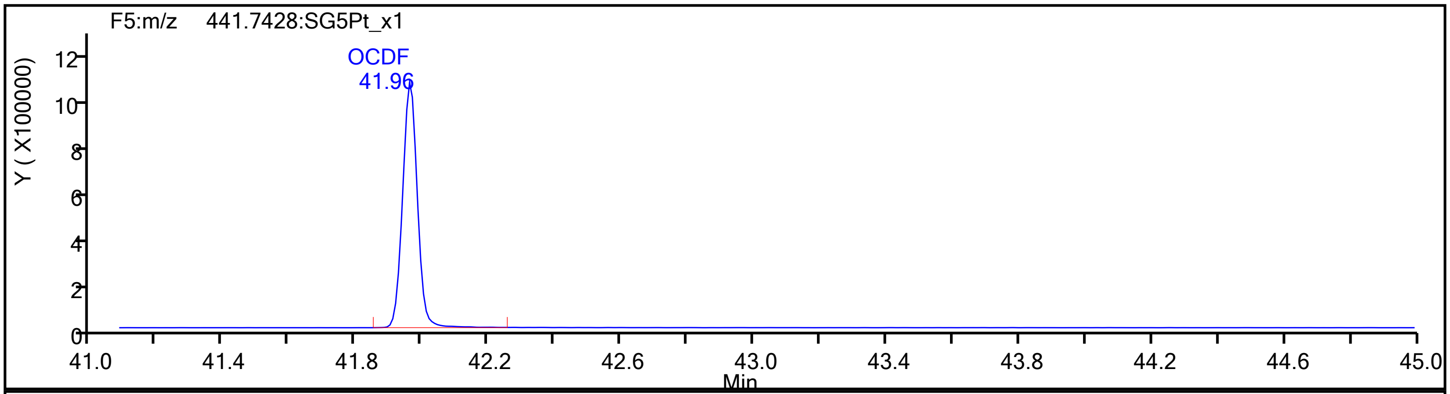

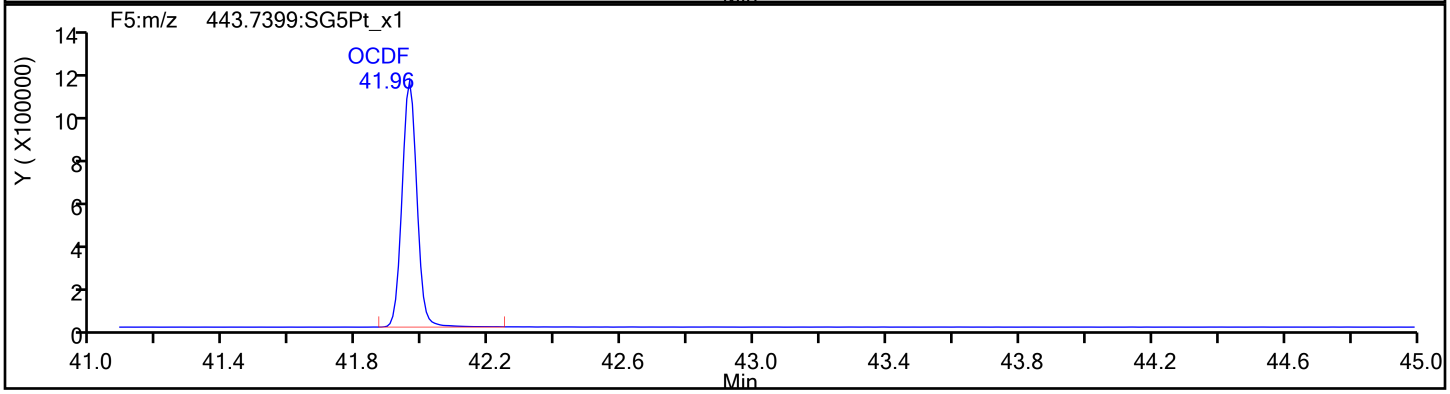

OCDF Standards

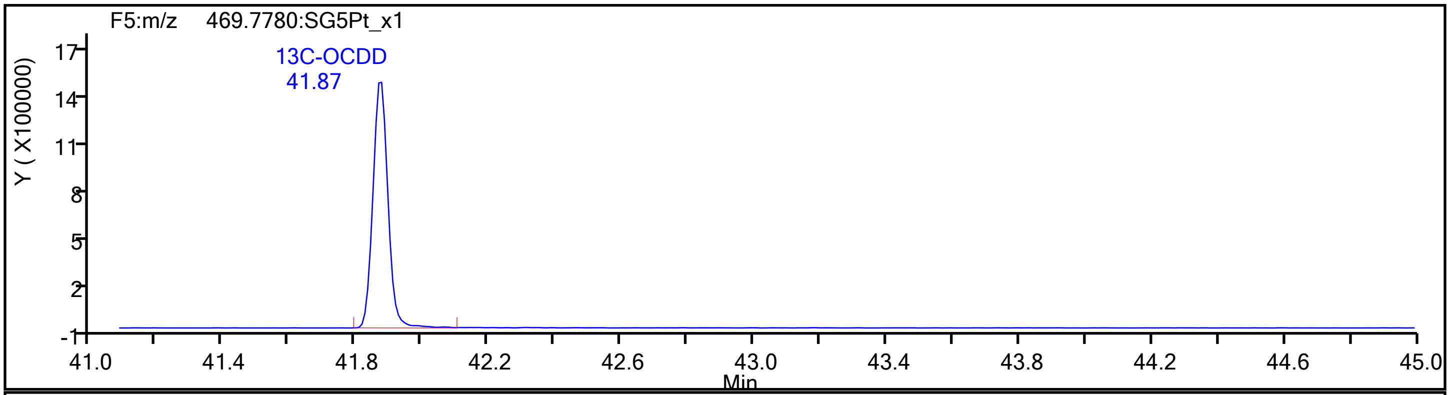

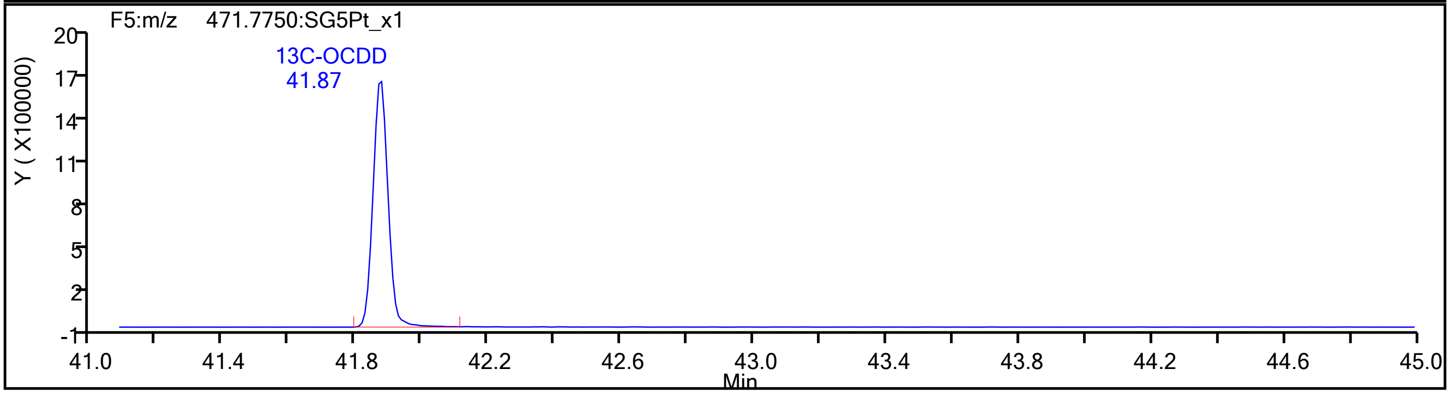

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 11:03:00
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Method: Dioxin_DFS1
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Client ID:
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Column Type: DB-5
Column Dia: 0.32 mm

OCDF

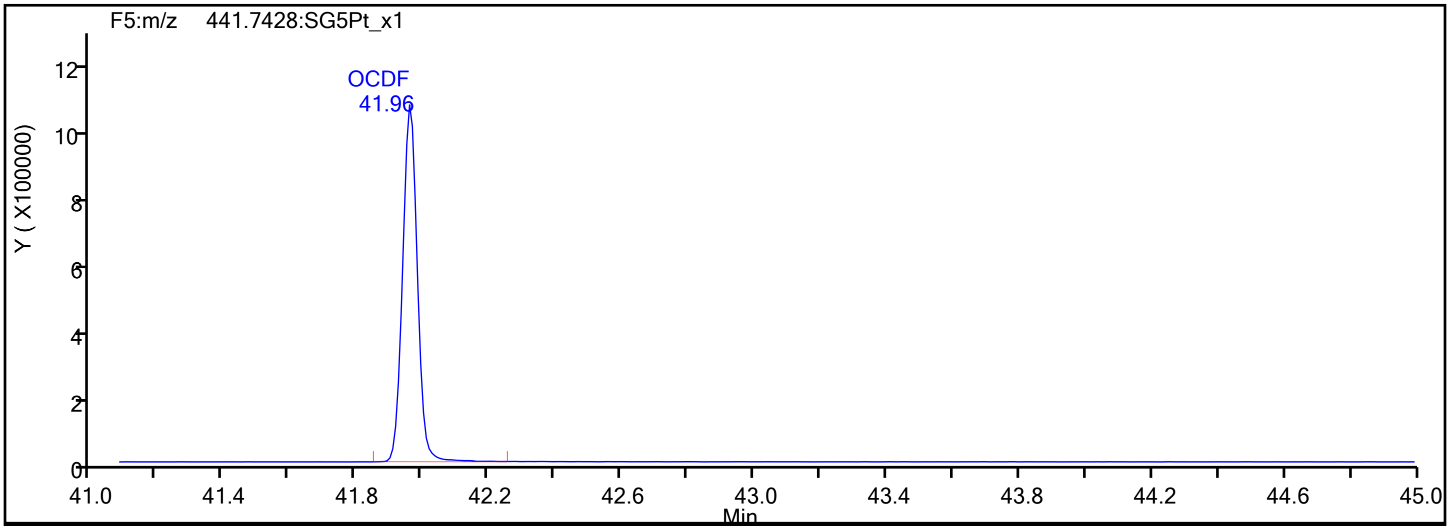

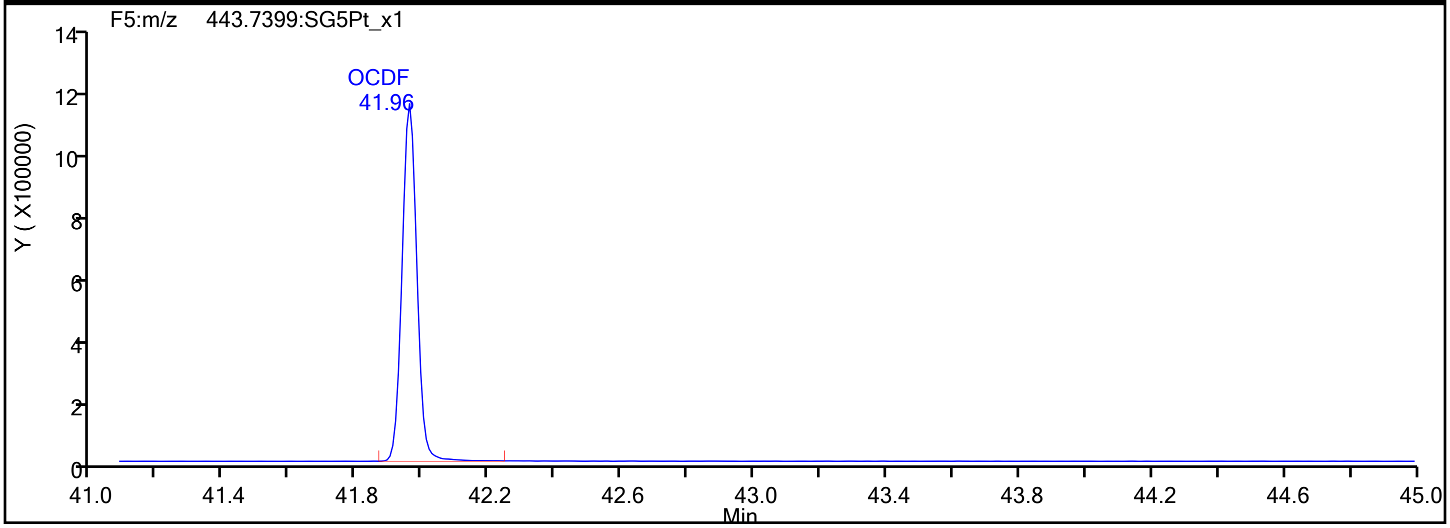

OCDF Interference Mass

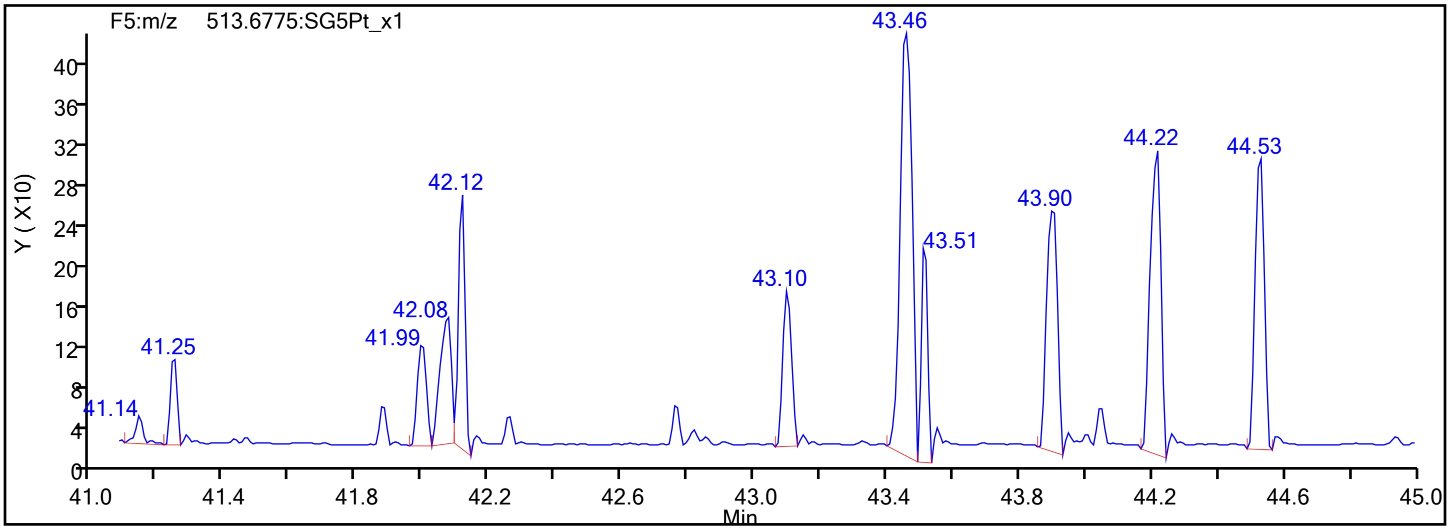

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

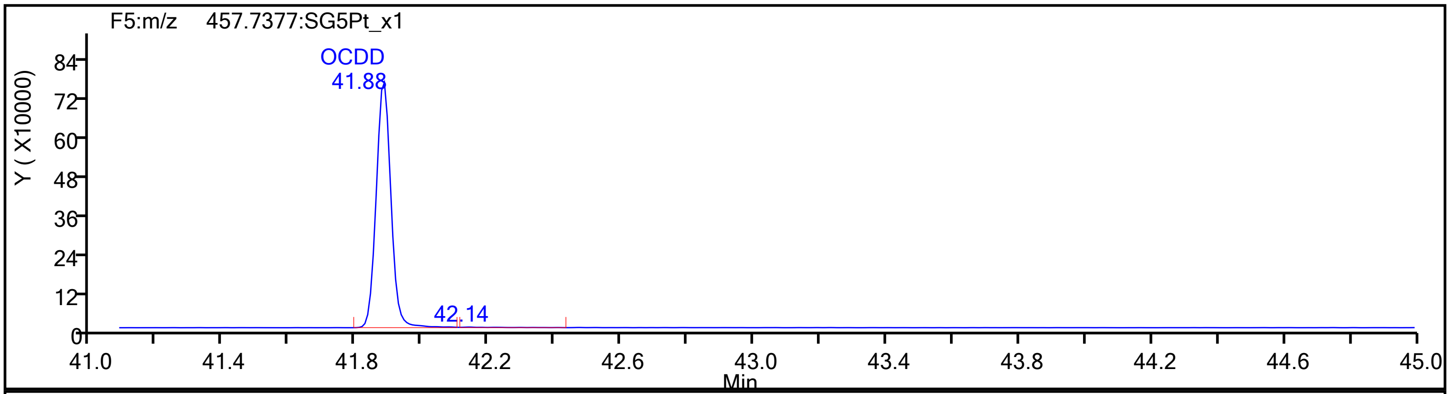

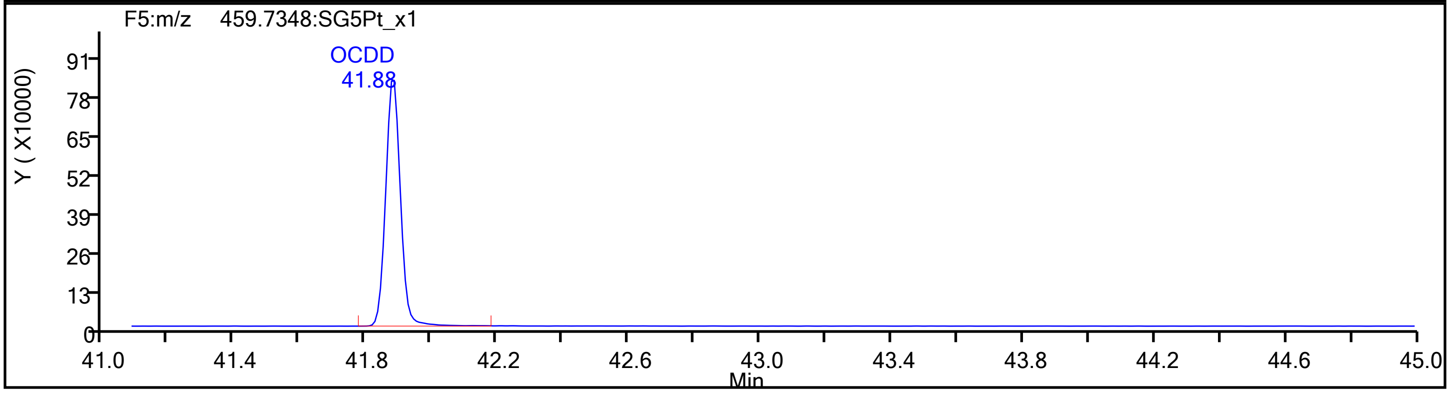

OCDD Standards

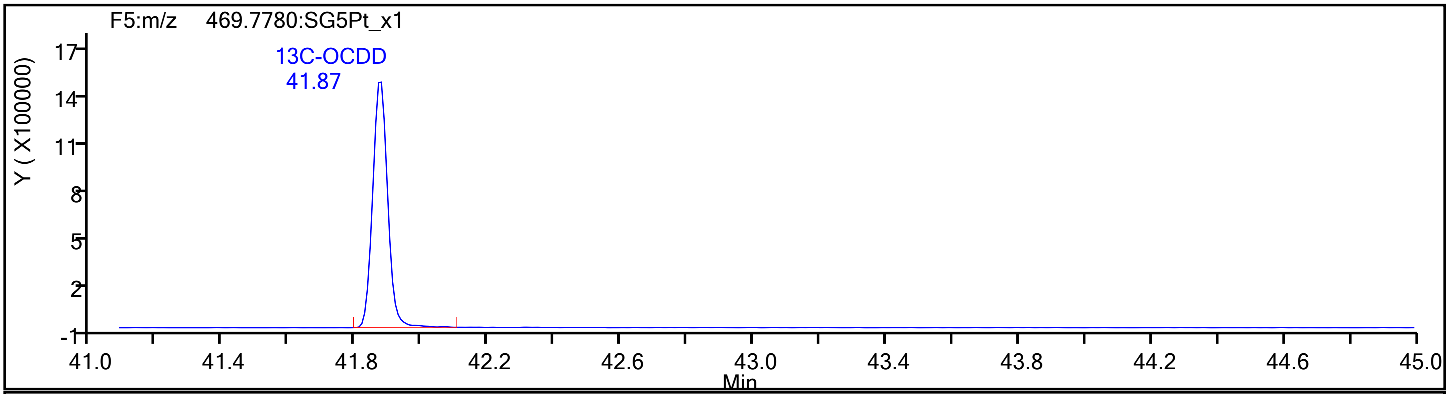

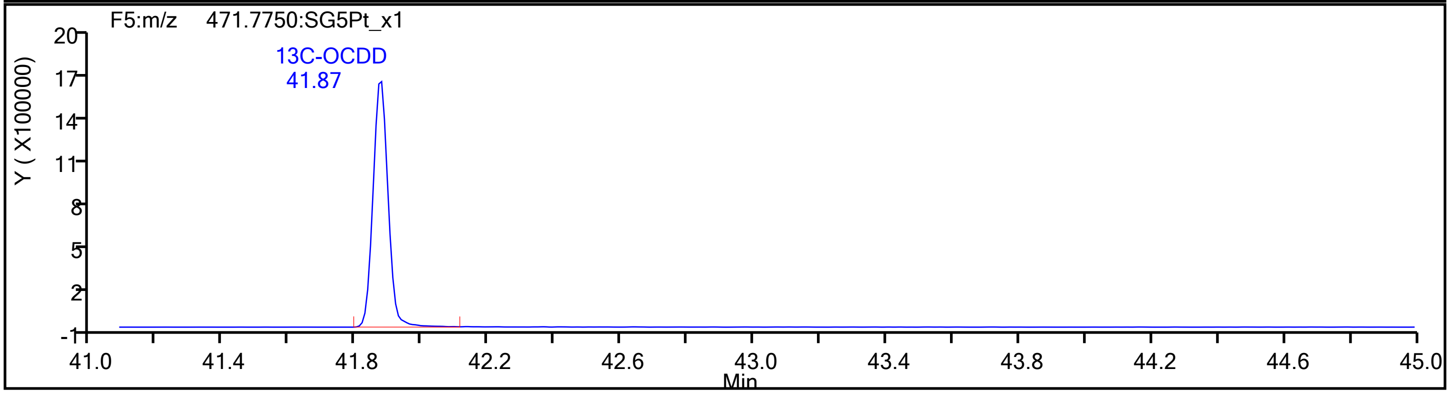

Report Date: 18-Oct-2021 13:41:27 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

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Injection Date: 15-Oct-2021 11:03:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
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Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

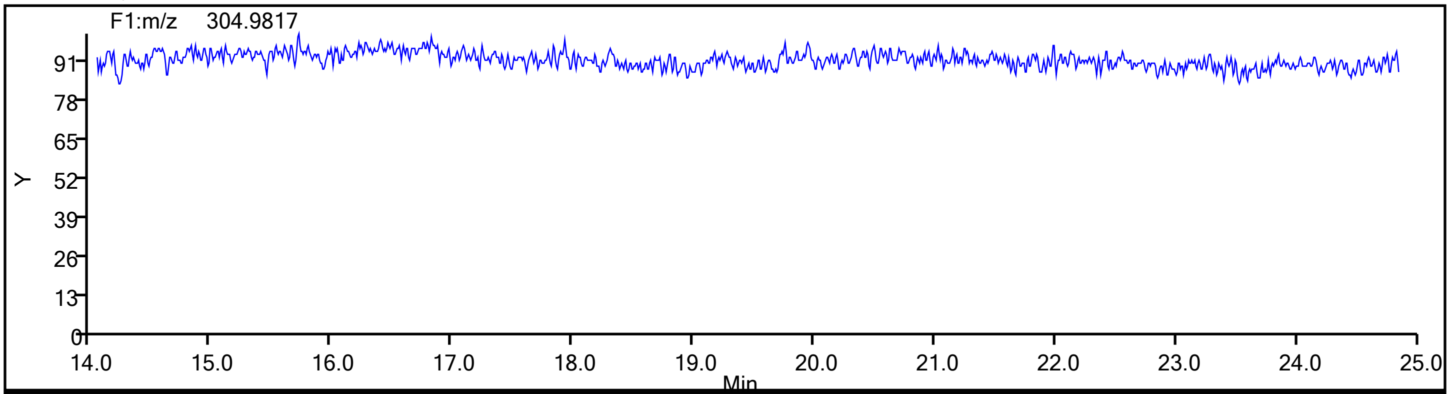

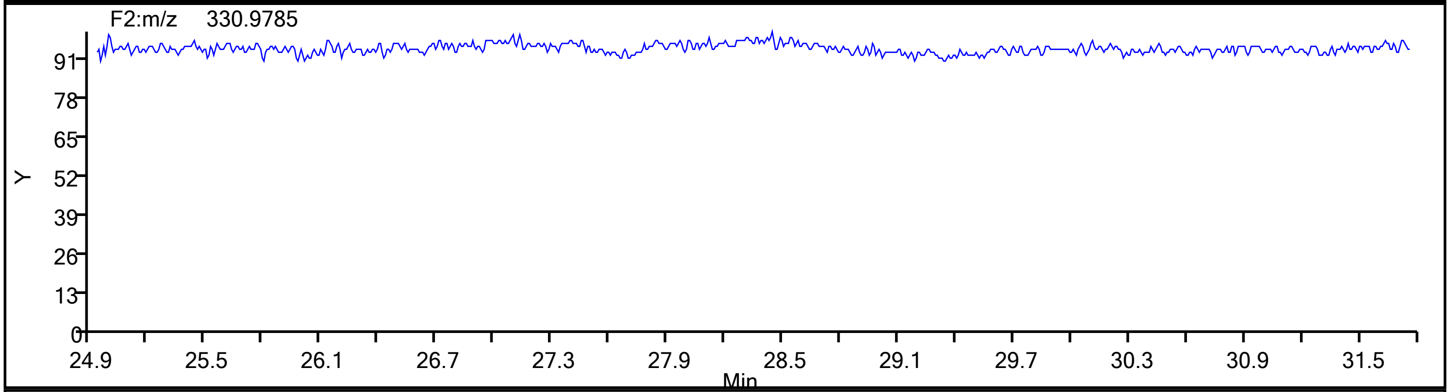

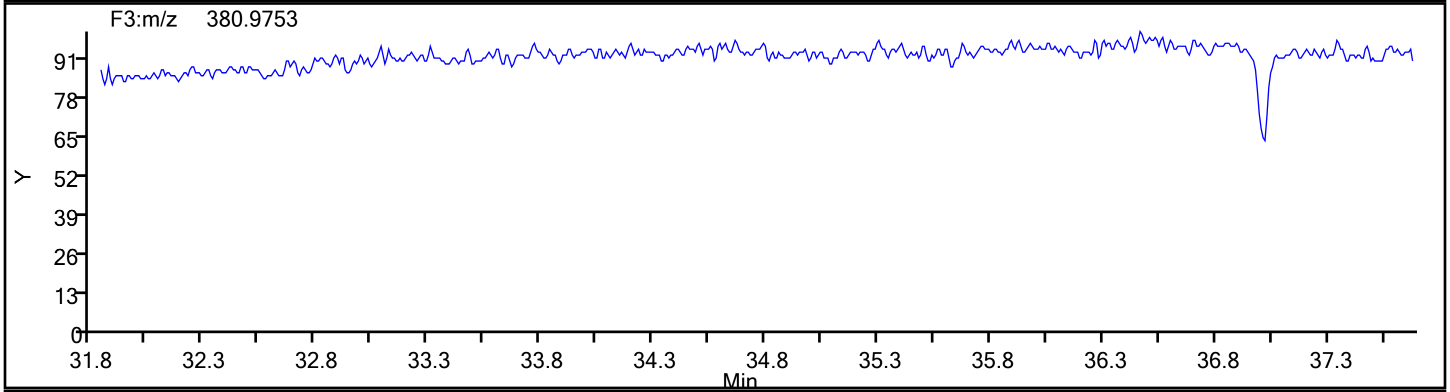

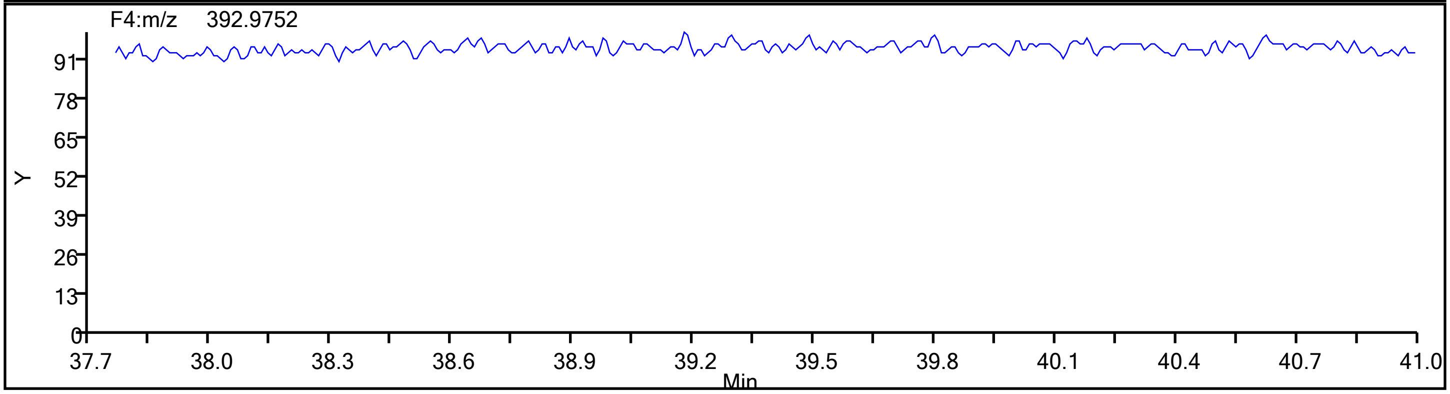

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_3.d

Injection Date:	15-Oct-2021 11:03:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

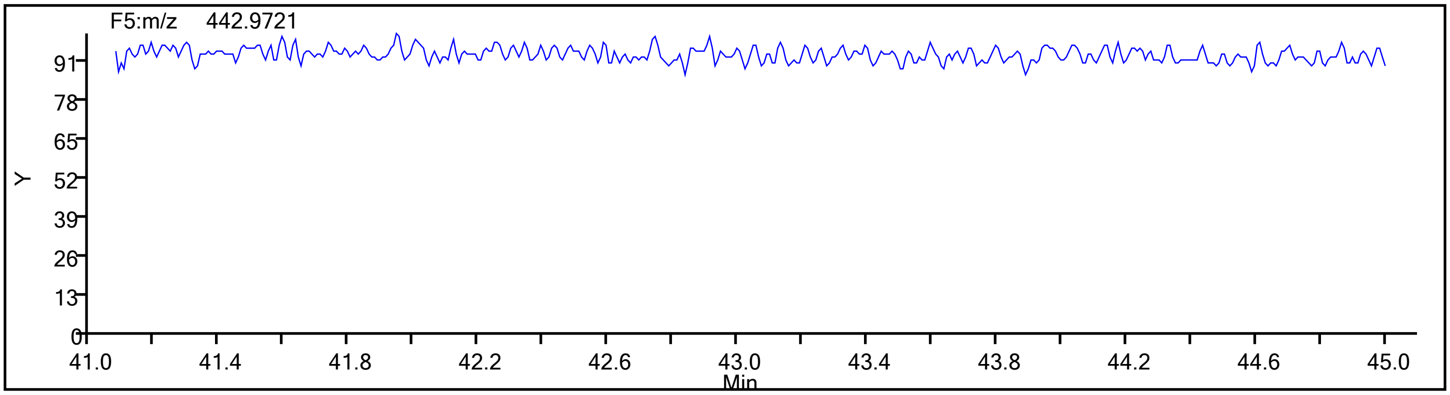

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	06-Oct-2021 09:44:37	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Oct-2021 16:11:37	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1657				

First Level Reviewer: bennettd Date: 06-Oct-2021 15:59:51

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.501	36158524	0.81	0.9820					0.00	
2,3,7,8-TCDF	17.515	35687865	0.74	0.9474	41.7	41.7	0.1371	0.1371		
D 13C-2,3,7,8-TCDD	15.978	24690488	0.78	0.7189					0.00	
2,3,7,8-TCDD	16.006	25430968	0.80	0.9807	42.0	42.0	0.1715	0.1715		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00044 Amount Added: 20.00 Units: uL

Report Date: 06-Oct-2021 16:11:37 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 06-Oct-2021 09:44:37 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Oct-2021 16:11:37 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1657

First Level Reviewer: bennettd Date: 06-Oct-2021 15:59:51

Signal	RT (min.)	Adj RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.501	17.501	0	1.000	16219778	3167322	6999	17497	453		
317.9389	17.501	17.501	0	1.000	19938746	3735651	8200	20500	456	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.515	17.509	0	1.001	15166609	2787993	3397	8492	821		
305.8987	17.528	17.509	1	1.002	20521256	3838846	5570	13925	689	0.74(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.978	15.978	0	1.000	10800367	2293794	11940	29850	192		
333.9339	15.978	15.978	0	1.000	13890121	2980553	3573	8932	834	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	16.006	15.984	1	1.002	11304039	2427150	4543	11357	534		
321.8936	15.992	15.984	0	1.001	14126929	3131679	4326	10815	724	0.80(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00044 Amount Added: 20.00 Units: uL

Report Date: 06-Oct-2021 16:11:38　　Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d
Injection Date: 06-Oct-2021 09:44:37
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 531494
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

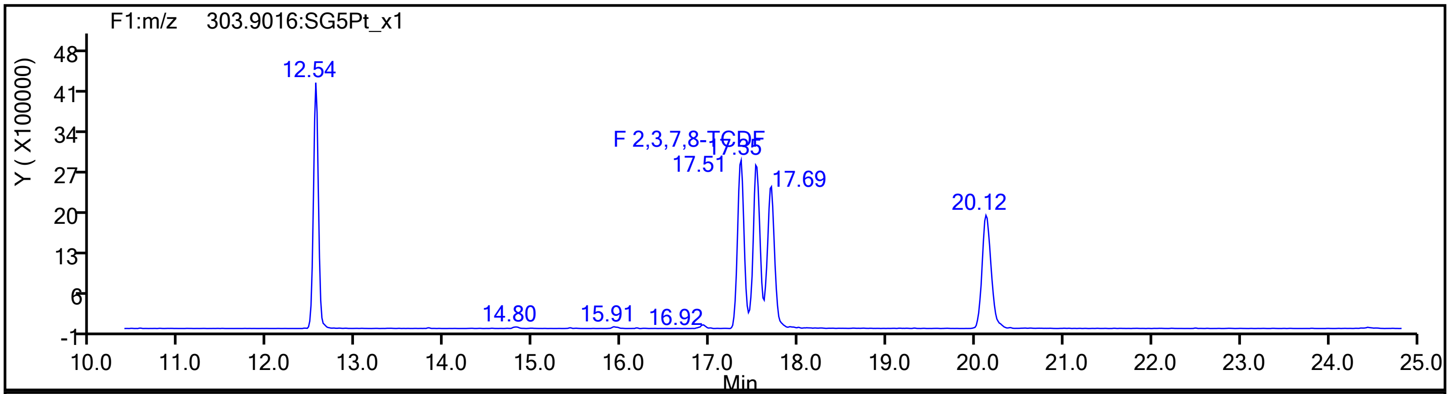

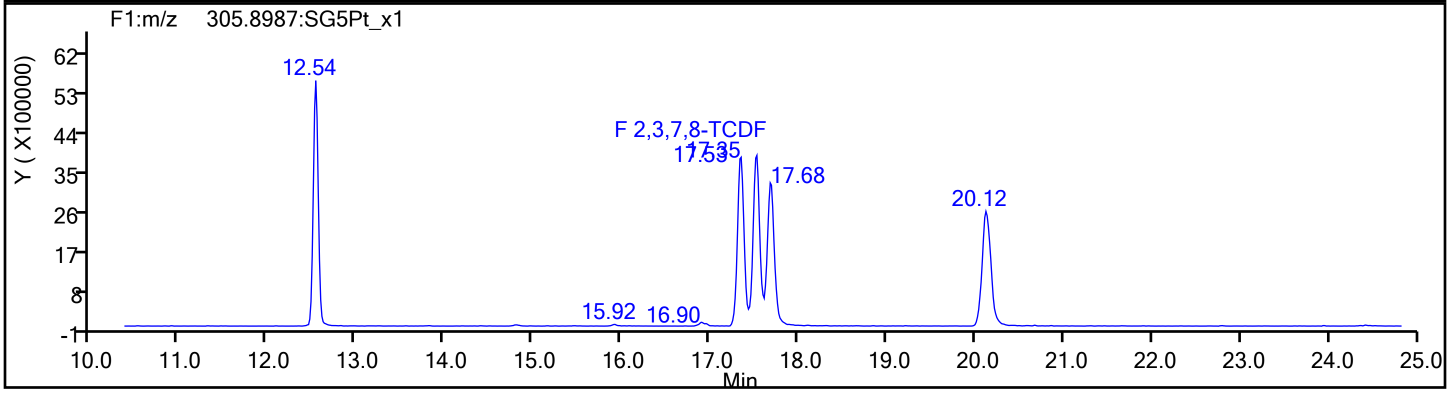

TCDF Standards

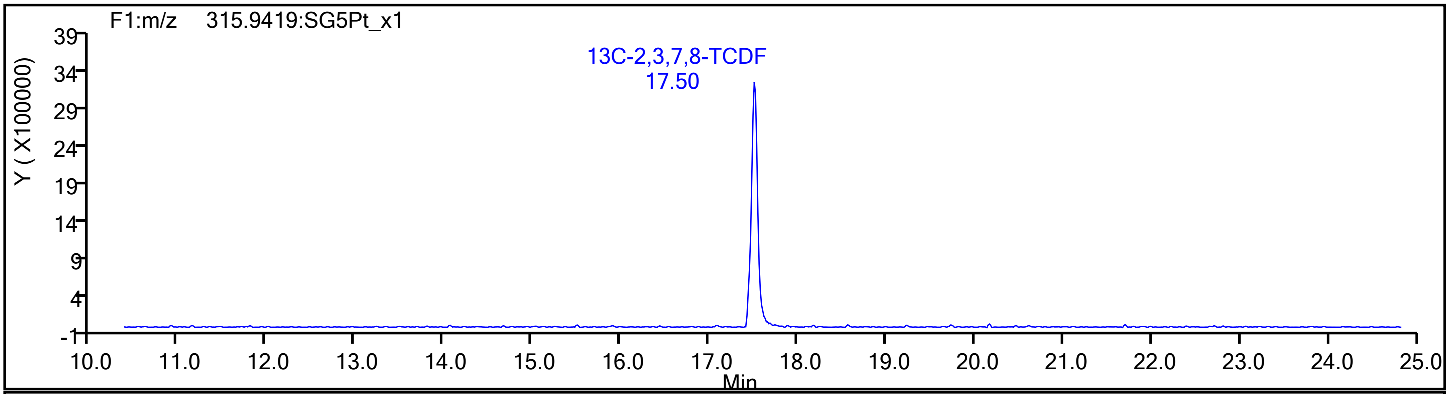

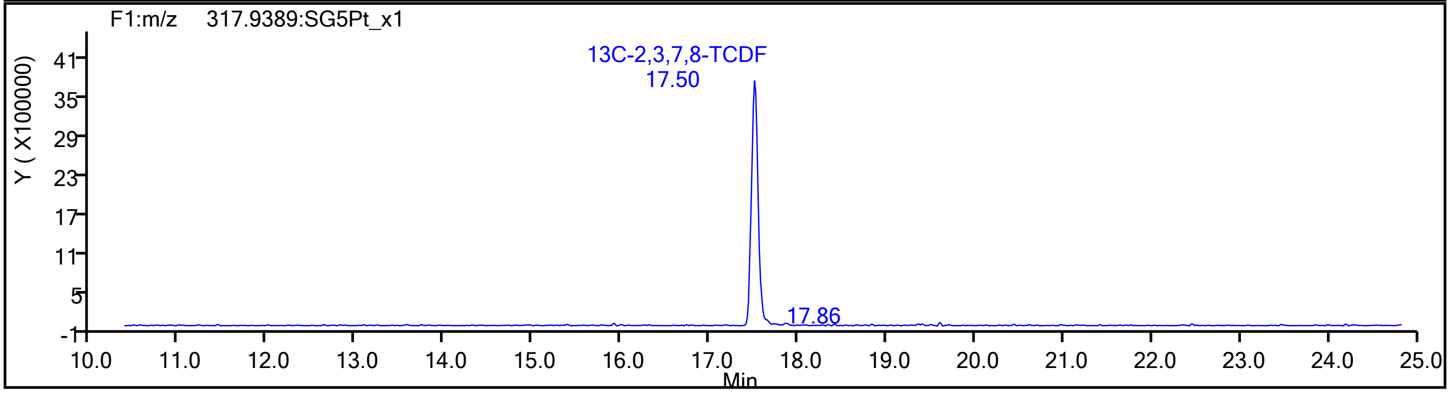

Report Date: 06-Oct-2021 16:11:38 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d		
Injection Date:	06-Oct-2021 09:44:37	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

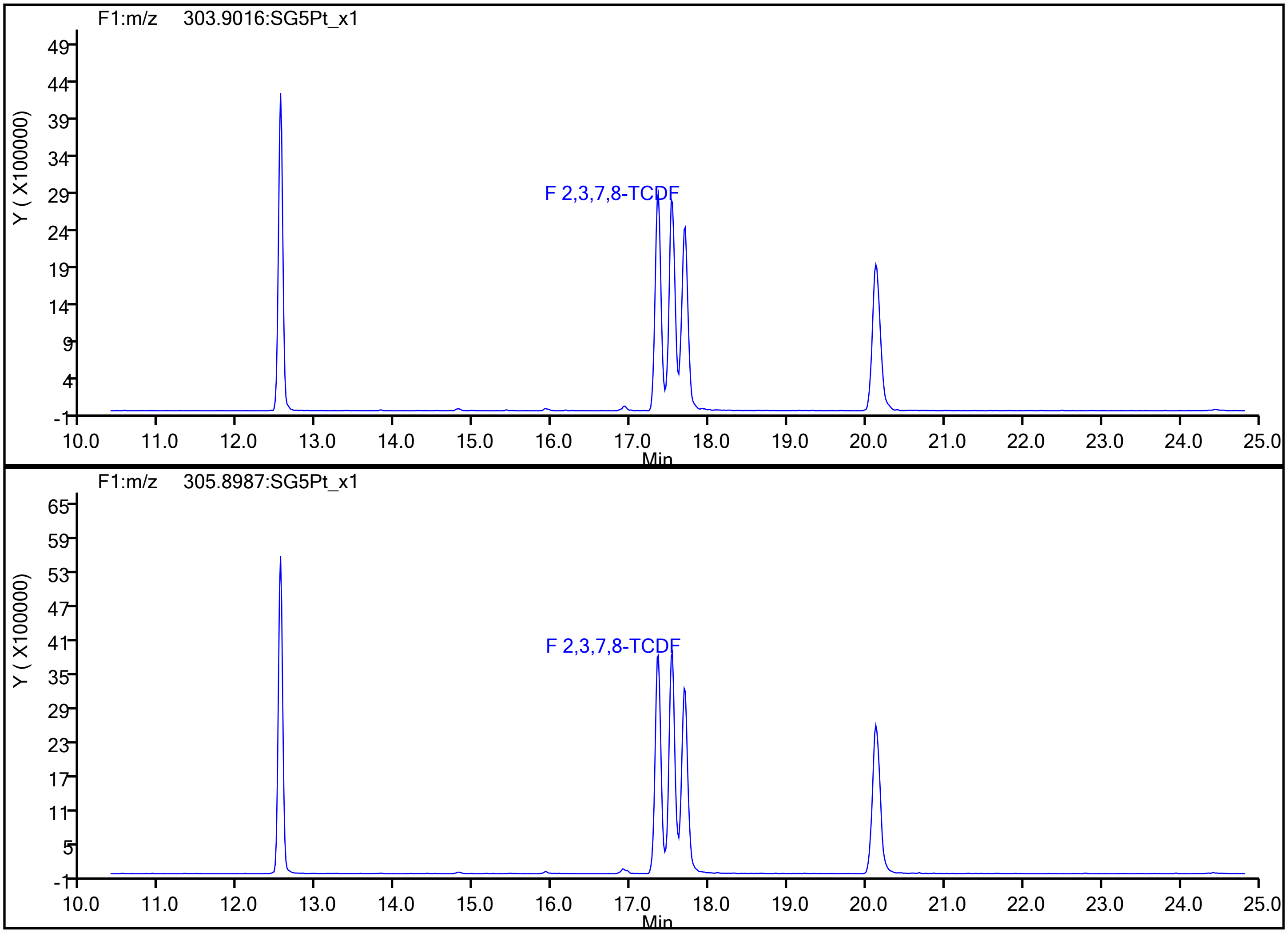

TCDF Interference Mass

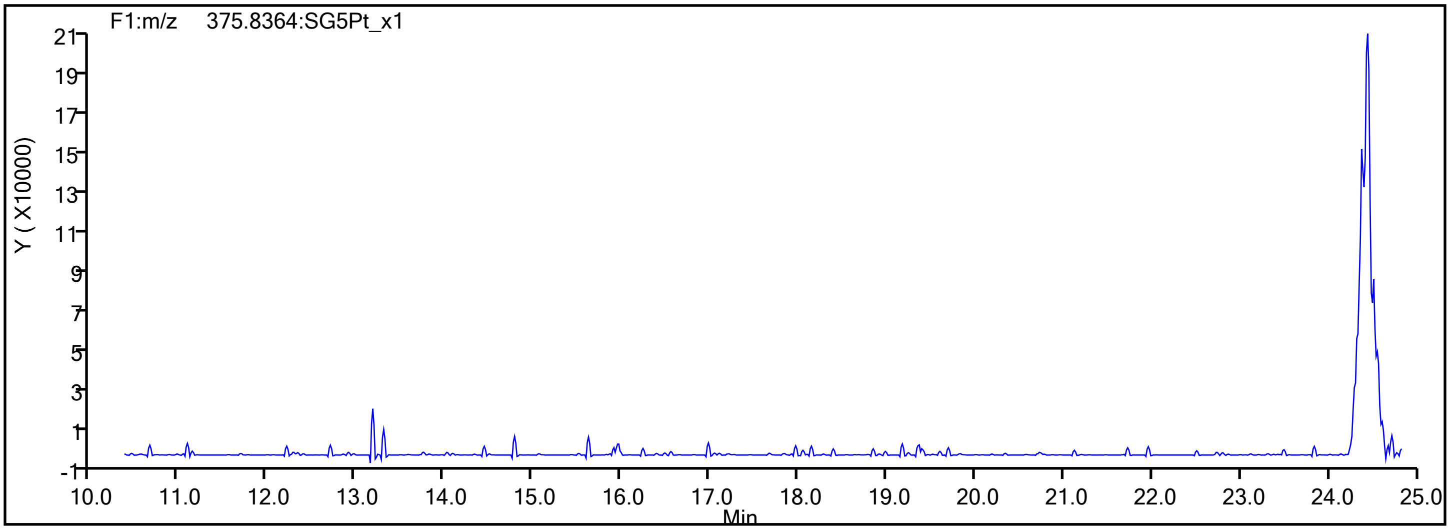

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d		
Injection Date:	06-Oct-2021 09:44:37	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

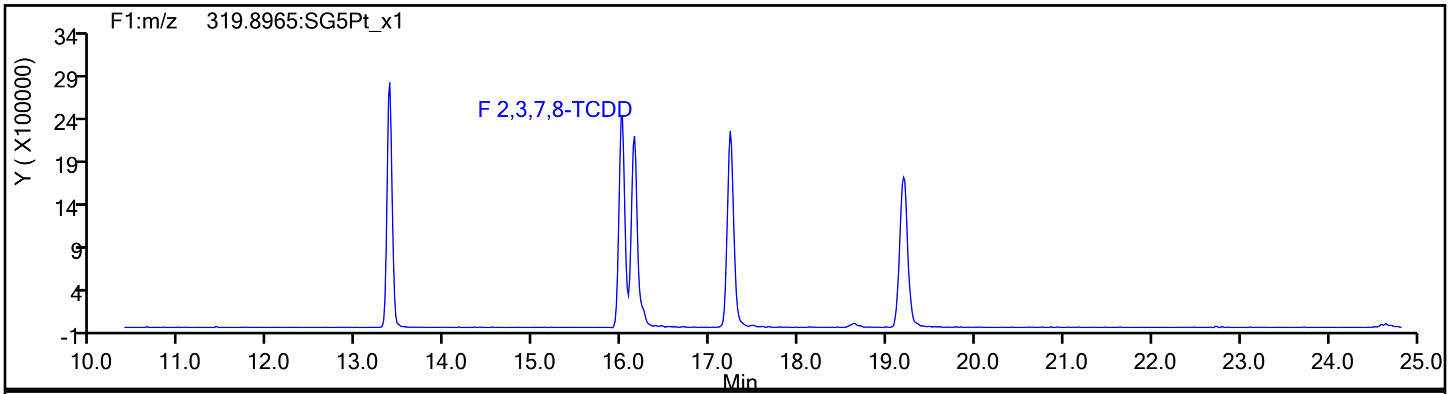

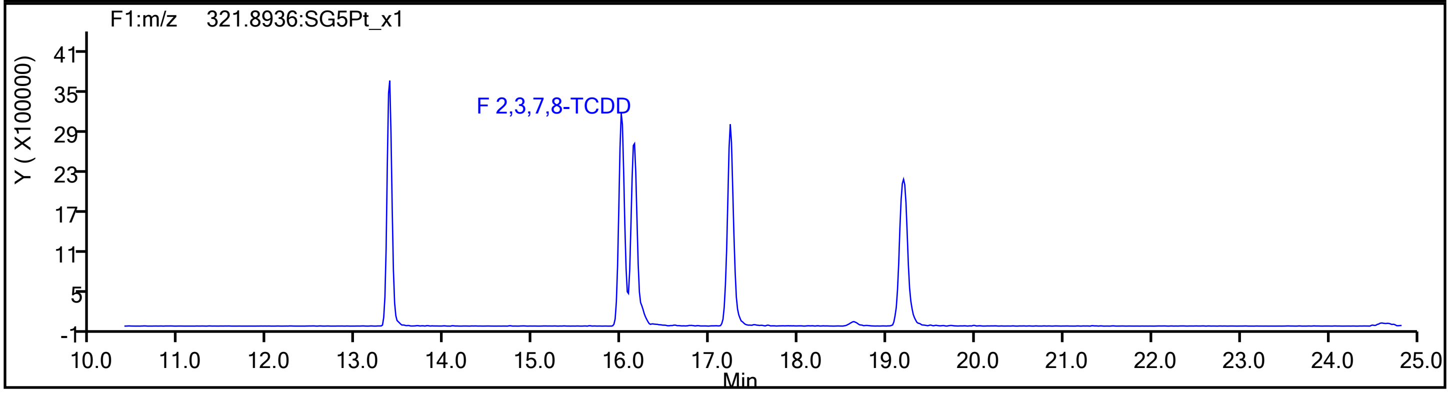

TCDD Standards

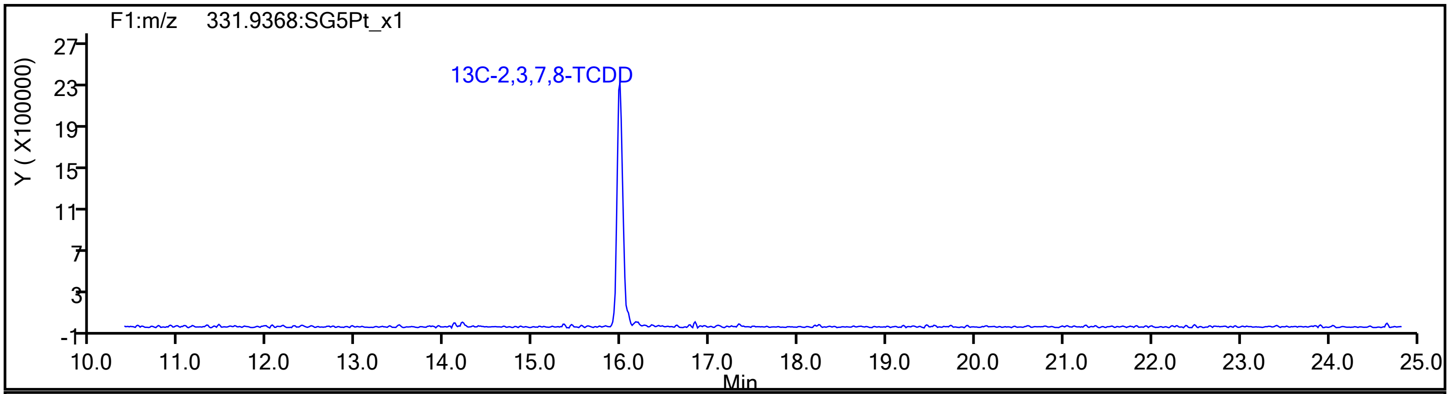

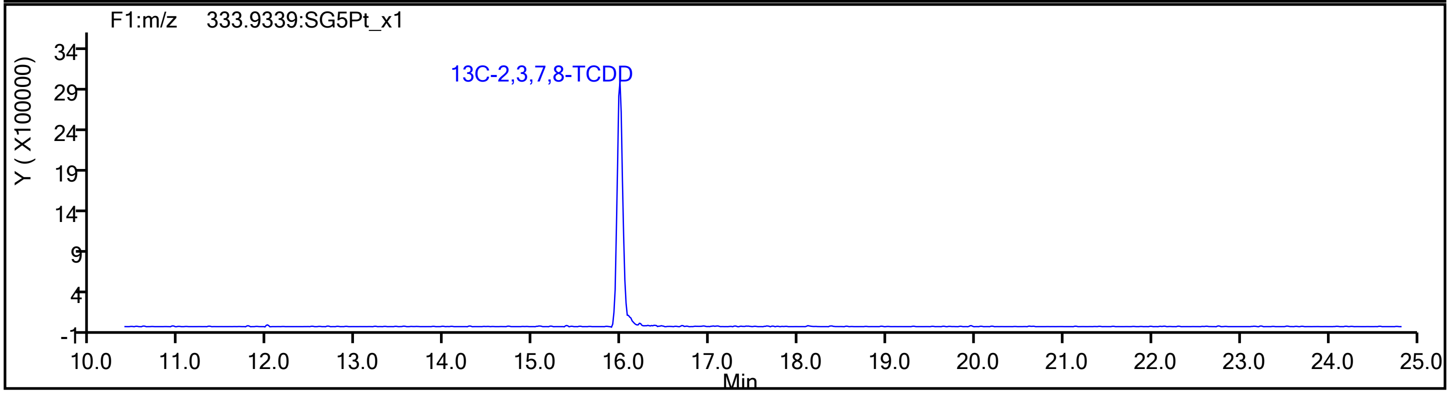

Report Date: 06-Oct-2021 16:11:38 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d		
Injection Date:	06-Oct-2021 09:44:37	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

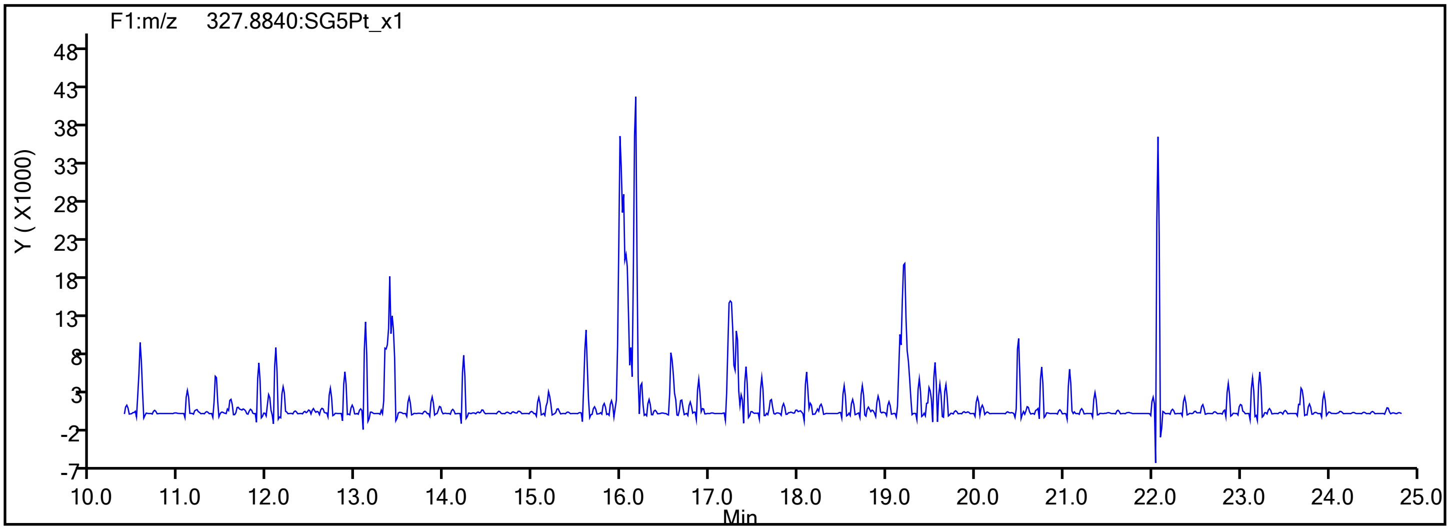

37Cl4-TCDD Standards

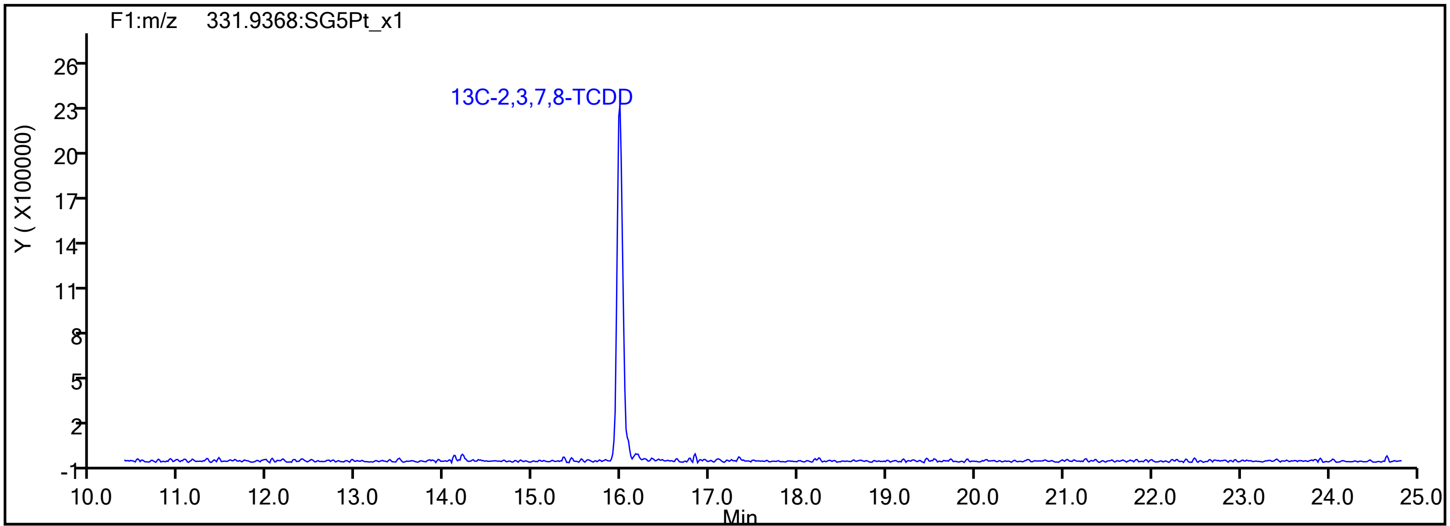

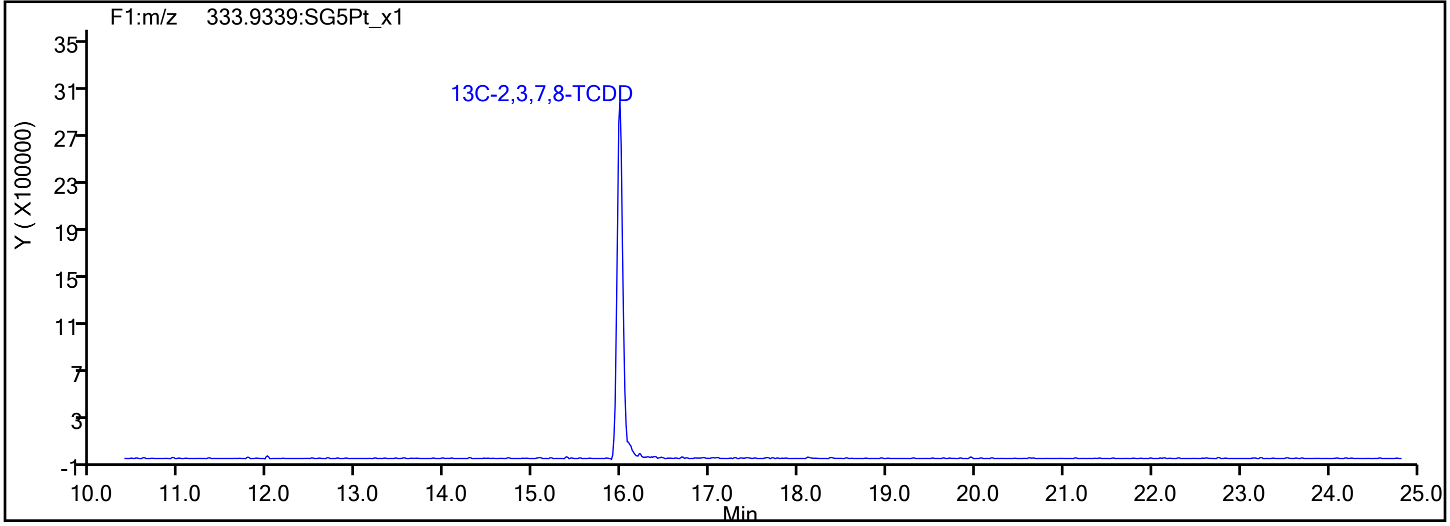

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_001.d		
Injection Date:	06-Oct-2021 09:44:37	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	531494	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

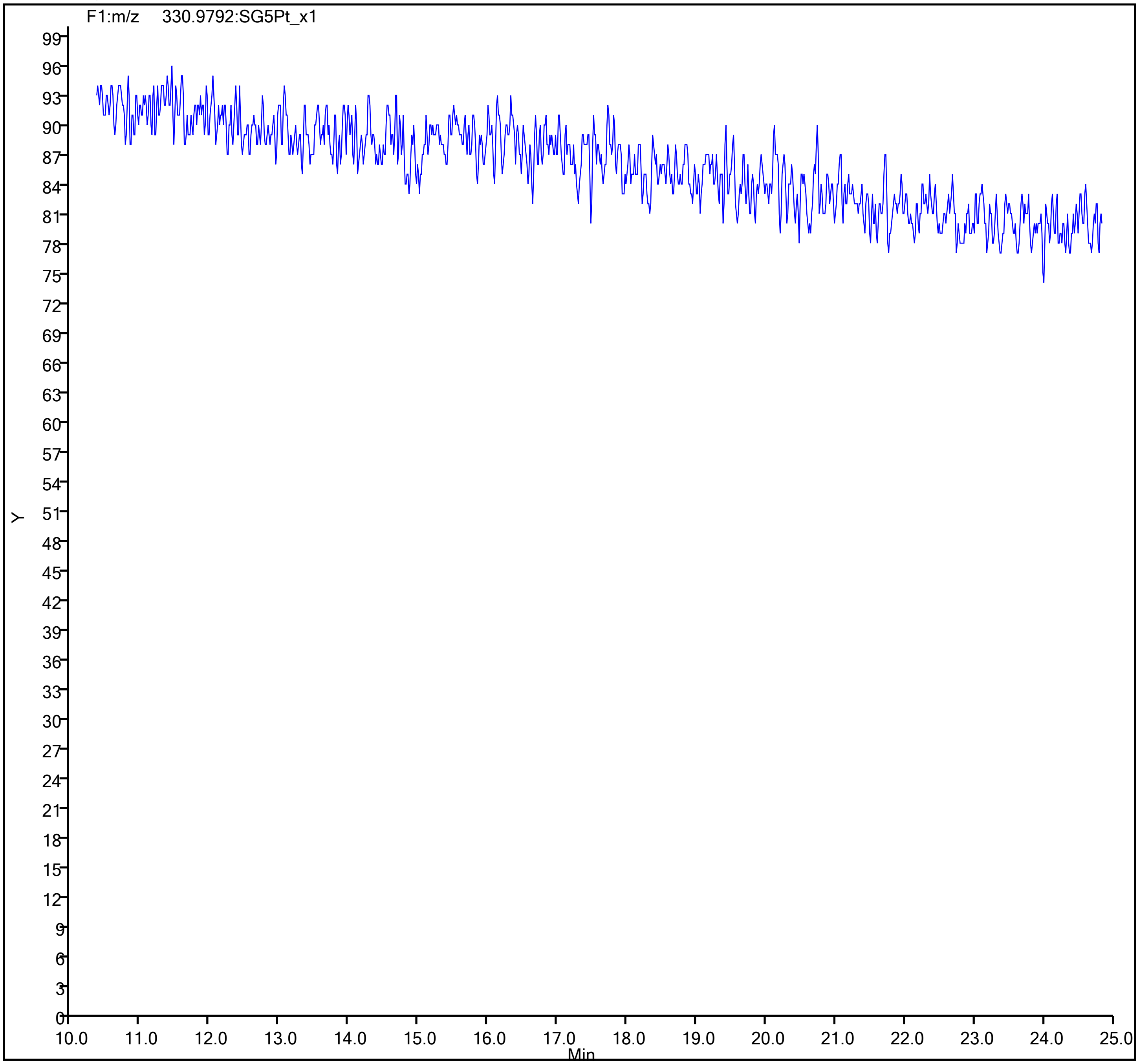

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 18-Oct-2021 11:47:33 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 19-Oct-2021 09:28:00 Calib Date: 06-Oct-2021 13:34:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1627

First Level Reviewer: bennettd Date: 19-Oct-2021 09:24:03

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.438	25435976	0.75	0.9820					0.00	
2,3,7,8-TCDF	17.465	26839492	0.80	0.9474	44.6	44.6	0.1529	0.1529		
D 13C-2,3,7,8-TCDD	15.915	16534239	0.79	0.7189					0.00	
2,3,7,8-TCDD	15.943	18128920	0.79	0.9807	44.7	44.7	0.1988	0.1988		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00044 Amount Added: 20.00 Units: uL

Report Date: 19-Oct-2021 09:28:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	18-Oct-2021 11:47:33	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	19-Oct-2021 09:28:00	Calib Date:	06-Oct-2021 13:34:32		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20211006-128395.b\06OC2111D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1627				
First Level Reviewer: bennettd		Date:	19-Oct-2021 09:24:03		

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.438	17.438	0	1.000	10898368	2010929	3901	9752	515		
317.9389	17.438	17.438	0	1.000	14537608	2673309	4415	11037	606	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.465	17.465	0	1.002	11939873	2226411	2520	6300	883		
305.8987	17.465	17.465	0	1.002	14899619	2751456	4264	10660	645	0.80(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.915	15.915	0	1.000	7296742	1632495	5693	14232	287		
333.9339	15.929	15.915	1	1.000	9237497	2077524	1828	4570	1137	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.943	15.943	0	1.002	7984800	1818704	3740	9350	486		
321.8936	15.943	15.943	0	1.002	10144120	2221806	3492	8730	636	0.79(0.65-0.89)	

QC Flag Legend

Processing Flags

Reagents:

HRDXNCP_00044 Amount Added: 20.00 Units: uL

Report Date: 19-Oct-2021 09:28:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_001.d
Injection Date: 18-Oct-2021 11:47:33
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 535163
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

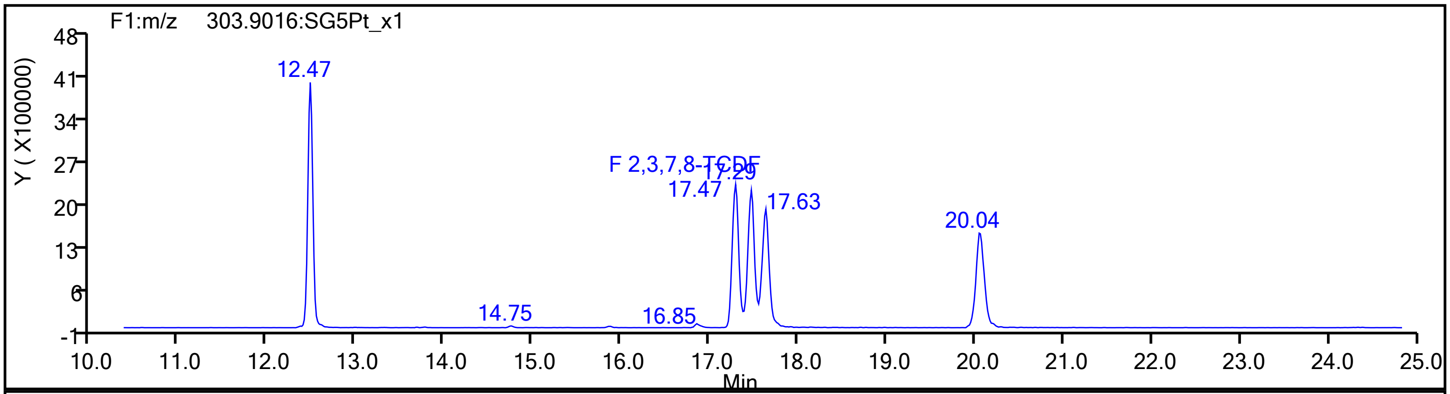

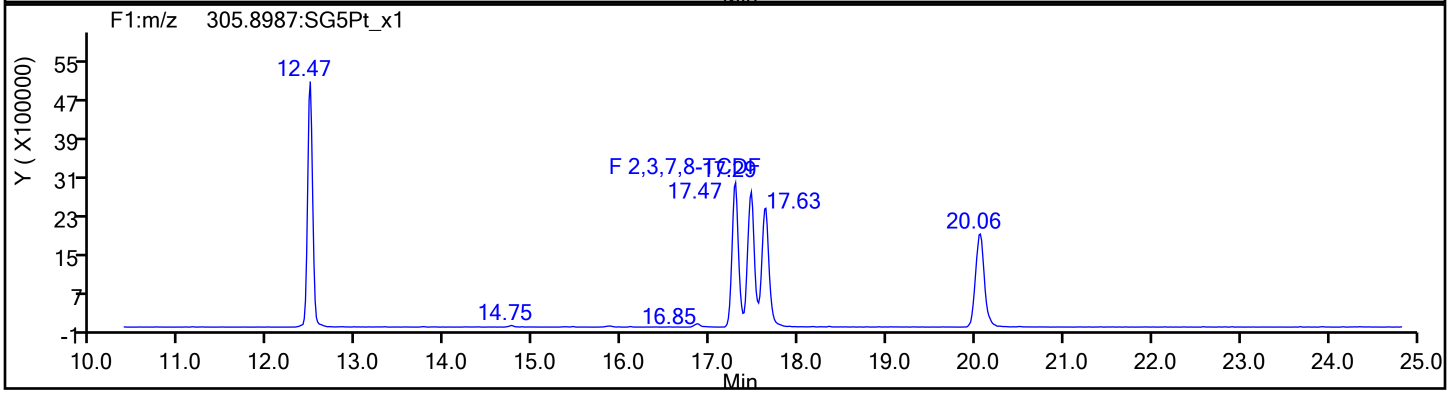

TCDF Standards

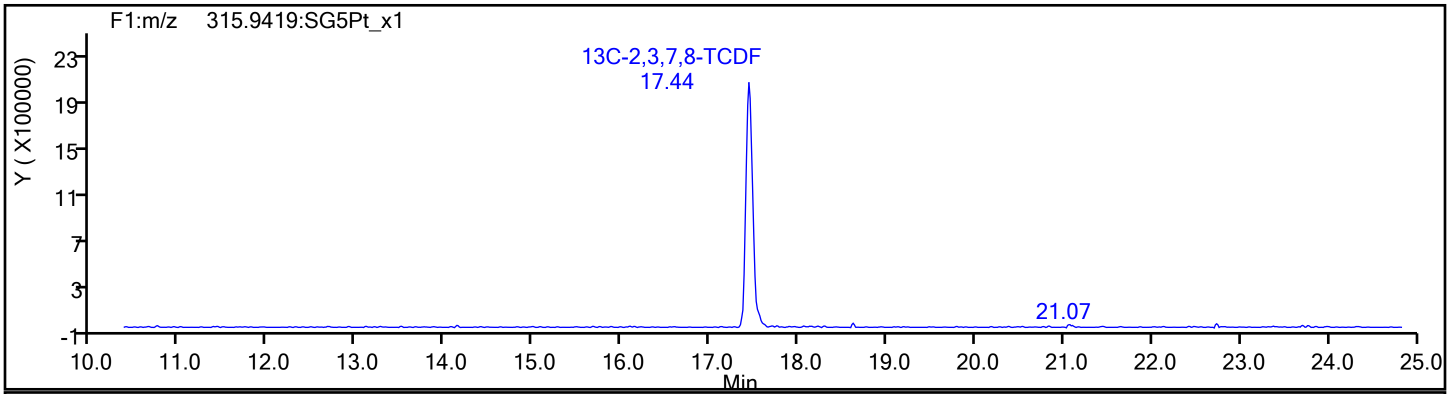

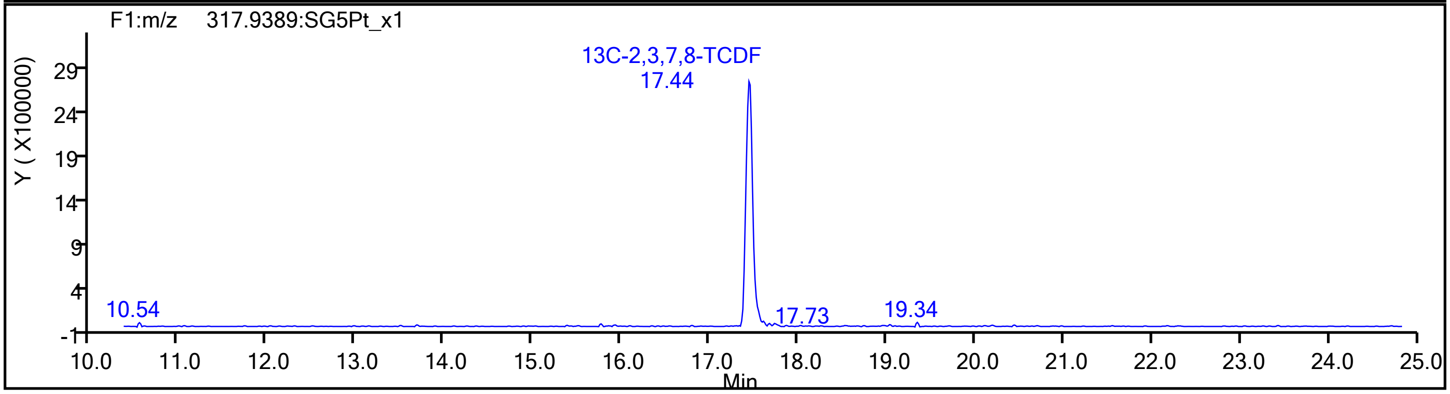

Report Date: 19-Oct-2021 09:28:01 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_001.d

Injection Date: 18-Oct-2021 11:47:33
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 535163
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

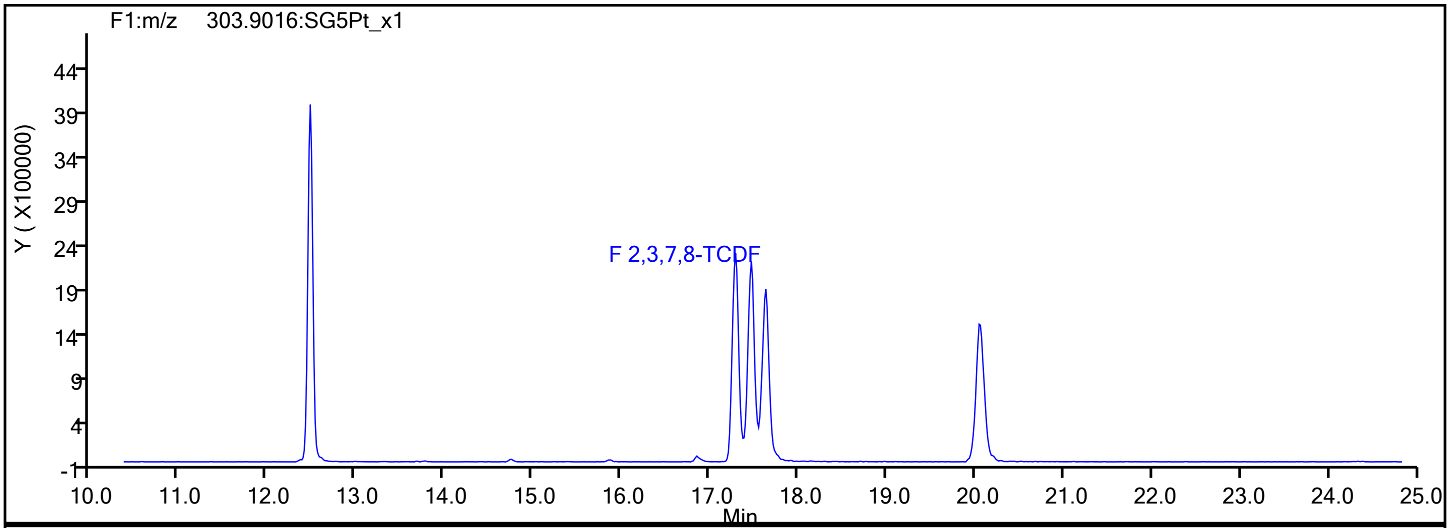

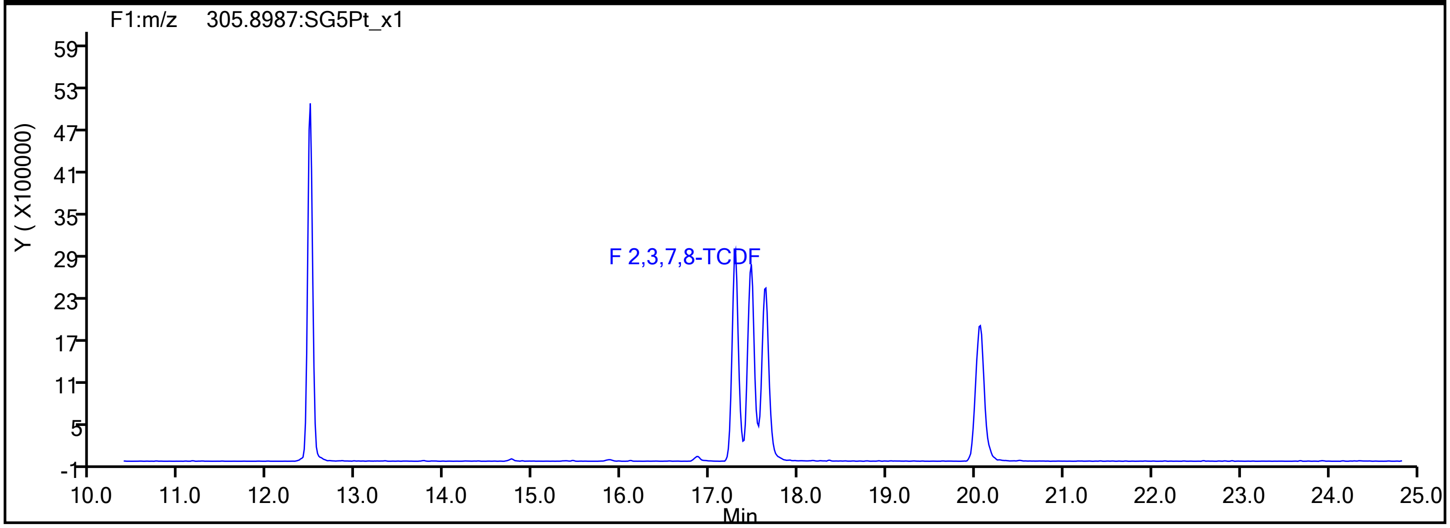

TCDF Interference Mass

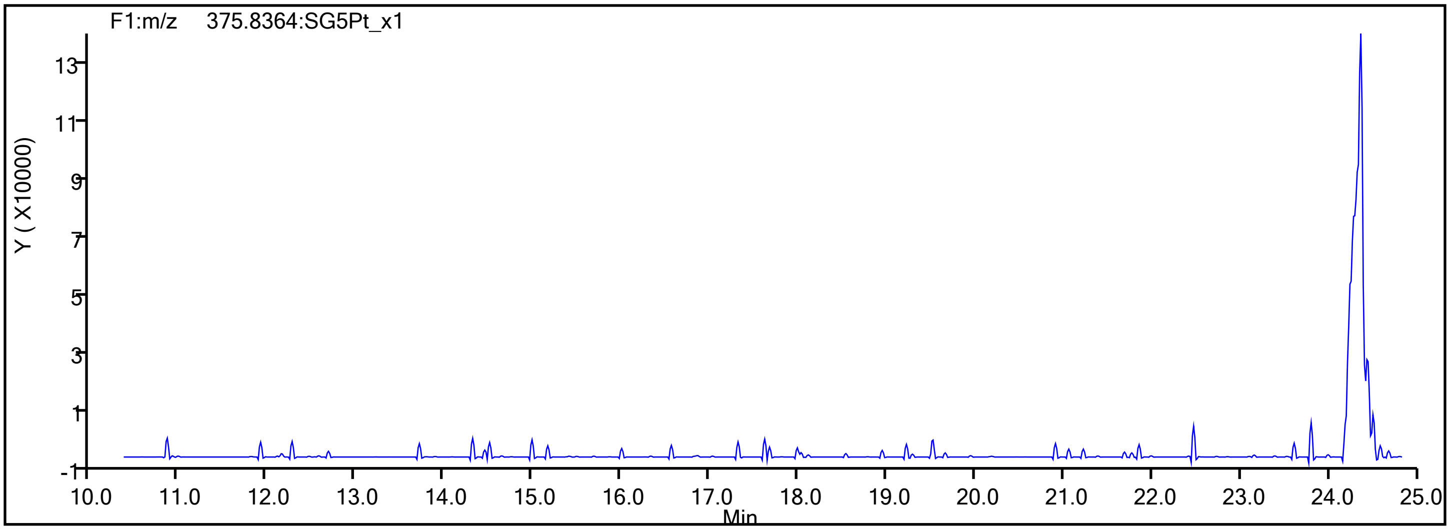

Data File:	\\chromfs\Sacramento\ChromData\11D2\20211018-129243.b\18OC2111D2_001.d		
Injection Date:	18-Oct-2021 11:47:33	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	535163	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

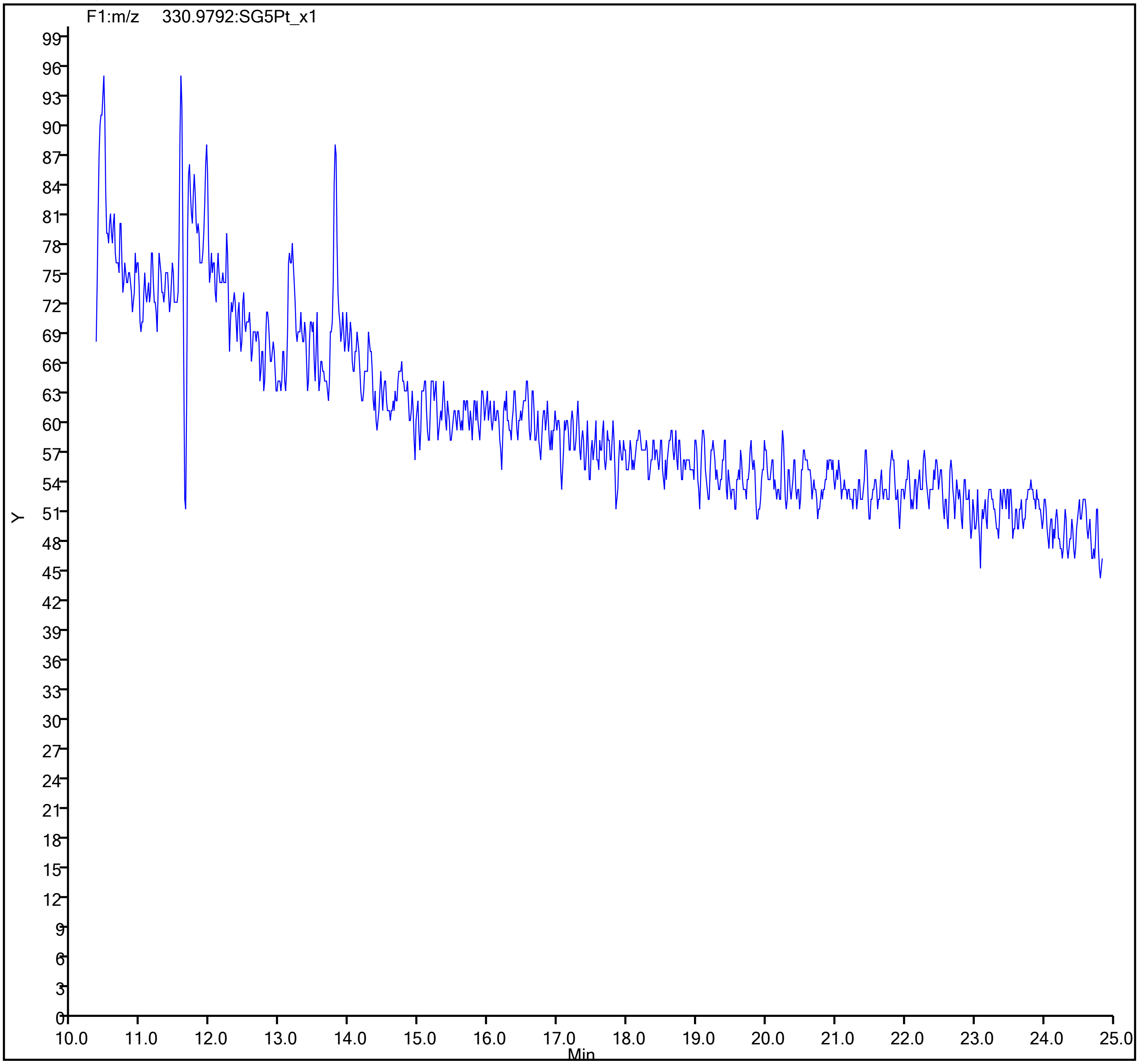

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Sep-2021 11:17:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00044
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:18:50 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 12:30:32

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	20.531	7528113	0.80	1.2244					0.00	
2,3,7,8-TCDF	20.582	16111384	0.80	1.1194	76.5	76.5	0.1996	0.1996		
A Non-2,3,7,8-sub-TCDF	19.981	154618	0.77	1.1194	0.7664	0.7339	0.1996	0.5100		RQ
S Total TCDF					77.2	77.2	0.1996	0.1996		RQ
D 13C-2,3,7,8-TCDD	21.904	4764214	0.81	0.8210					0.00	
2,3,7,8-TCDD	21.939	5437232	0.80	1.0943	41.7	41.7	0.1525	0.1525		
A Non-2,3,7,8-sub-TCDD	20.836						0.1525	0.1525		
S Total TCDD					41.7	41.7	0.1525	0.1525		
A F1 PeCDFs	24.826						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	28.354	137230	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.567						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	35.169						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.523						0.0	0.0		
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.700	6345977	1.04	1.5851						
1,2,3,4,7,8,9-HpCDF	39.938	5162530	1.05	1.1597						
A Non-2,3,7,8-sub-HpCDF	39.319						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.643	4036219	1.05	1.0819						
A Non-2,3,7,8-sub-HpCDD	39.323						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	16.213	9629126	0.80							
1,3,6,8-TCDD	17.862	5607228	0.79							
2,3,4,7-TCDF	20.582	16111384	0.80							
1,2,3,7-TCDD	21.724	4722274	0.79							
1,2,3,9-TCDF	22.128	6848545	0.79							
1,2,3,9-TCDD	22.231	5477055	0.79							
1,2,8,9-TCDF	23.750	7354618	0.79							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	23.810	2363484								
1,3,4,6,8-PeCDF	24.154	6742523	1.57							
1,2,3,8,9-PeCDD	26.230	4586188	1.56							
1,2,4,7,9-PeCDD	30.904	3804240	1.57							
1,2,3,8,9-PeCDF	31.072	4966660	1.58							
1,2,3,4,6,8-HxCDF	33.324	5800729	1.26							
1,2,4,6,7,9-HxCDD	34.377	4200058	1.24							
1,2,3,4,6,7-HxCDD	36.668	4265145	1.25							
1,2,3,4,8,9-HxCDF	37.013	5333214	1.25							
1,2,3,4,6,7,9-HpCDD	39.003	4512008	1.03							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00044 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 24-Sep-2021 11:17:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00044
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 25-Sep-2021 14:18:50 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1609

First Level Reviewer: stephensk Date: 24-Sep-2021 12:30:32

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	20.531	20.531	0	1.000	3348773	541231	1963	4907	276		
317.9389	20.531	20.531	0	1.000	4179340	655304	759	1897	863	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	20.582	20.598	-1	1.003	7148898	985472	1143	2857	862		
305.8987	20.582	20.598	-1	1.003	8962486	1231956	1531	3827	805	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	18.831	19.981	-69	0.917	20525	3896	1143	2857	3		
305.8987	18.831	19.981	-69	0.917	33509	6078	1531	3827	4	0.61(0.65-0.89)	
	Empc Correction				26655	5059	1531	3827	3		
303.9016	24.162	19.981	250	1.177	43816	9017	1143	2857	8		
305.8987	24.162	19.981	250	1.177	63622	12827	1531	3827	8	0.69(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.904	21.904	0	1.000	2130530	304507	848	2120	359		
333.9338	21.904	21.904	0	1.000	2633684	388706	213	532	1825	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.939	21.977	-2	1.002	2413722	337593	579	1447	583		
321.8936	21.939	21.977	-2	1.002	3023510	423763	578	1445	733	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.836						579	1447			
321.8936	20.836						578	1445			
A F1 PeCDFs											
339.8597	24.826						102	255			
341.8567	24.826						262	655			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.910	28.354	-146	1.000	15340	2481	445	1112	6		
341.8567	25.901	28.354	-147	1.000	11749	1691	422	1055	4	1.31(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.870	28.354	-89	1.000	17732	3076	445	1112	7		
341.8567	26.861	28.354	-89	1.000	11386	2069	422	1055	5	1.56(1.32-1.78)	
339.8597	27.476	28.354	-53	1.000	42735	4379	445	1112	10		
341.8567	27.476	28.354	-53	1.000	19360	3093	422	1055	7	2.21(1.32-1.78)	
339.8597	28.090	28.354	-16	1.000	19736	2822	445	1112	6		
341.8567	28.073	28.354	-17	1.000	13773	1873	422	1055	4	1.43(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.567						616	1540			
357.8516	28.567						361	902			
A Non-2,3,7,8-sub-HxCDF											
373.8208	35.169						1133	2832			
375.8178	35.169						896	2240			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.523						965	2412			
391.8127	35.523						701	1752			
1,2,3,4,6,7,8-HpCDF											
407.7817	38.700	38.734	-2	1.000	3233226	1002849	1325	3312	757		
409.7788	38.700	38.734	-2	1.000	3112751	962718	681	1702	1414	1.04(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.938	39.970	-2	1.000	2645790	872750	1325	3312	659		
409.7788	39.938	39.970	-2	1.000	2516740	841686	681	1702	1236	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.319						1325	3312			
409.7788	39.319						681	1702			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.643	39.671	-2	1.000	2069594	701671	470	1175	1493		
425.7737	39.643	39.671	-2	1.000	1966625	657716	425	1062	1548	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.323						470	1175			
425.7737	39.323						425	1062			
1,3,6,8-TCDF											
303.9016	16.213	16.213	0		4276289	859314	1143	2857	752		
305.8987	16.213	16.213	0		5352837	1064791	1531	3827	695	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.862	17.862	0		2469161	449258	579	1447	776		
321.8936	17.853	17.862	-1		3138067	576088	578	1445	997	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	20.582	20.582	0		7148898	985472	1143	2857	862		
305.8987	20.582	20.582	0		8962486	1231956	1531	3827	805	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	21.724	21.724	0		2085645	297745	579	1447	514		
321.8936	21.724	21.724	0		2636629	368892	578	1445	638	0.79(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	22.128	22.128	0		3015436	417584	1143	2857	365		
305.8987	22.128	22.128	0		3833109	534509	1531	3827	349	0.79(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,9-TCDD											
319.8965	22.231	22.231	0		2414343	322499	579	1447	557		
321.8936	22.239	22.231	1		3062712	417831	578	1445	723	0.79(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	23.750	23.750	0		3252115	630339	1143	2857	551		
305.8987	23.742	23.750	-1		4102503	785595	1531	3827	513	0.79(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.810	23.810	0		2363484	467133	579	1447	807		
1,3,4,6,8-PeCDF											
339.8597	24.154	24.154	0		4123557	850937	102	255	8343		
341.8567	24.154	24.154	0		2618966	540600	262	655	2063	1.57(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	26.230	26.230	0		2791926	452799	616	1540	735		
357.8516	26.230	26.230	0		1794262	289944	361	902	803	1.56(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	30.904	30.904	0		2324635	329518	616	1540	535		
357.8516	30.904	30.904	0		1479605	210278	361	902	582	1.57(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	31.072	31.072	0		3038551	415654	445	1112	934		
341.8567	31.072	31.072	0		1928109	262864	422	1055	623	1.58(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	33.324	33.324	0		3229343	570160	1133	2832	503		
375.8178	33.324	33.324	0		2571386	457259	896	2240	510	1.26(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	34.377	34.377	0		2321918	490045	965	2412	508		
391.8127	34.377	34.377	0		1878140	398185	701	1752	568	1.24(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.668	36.668	0		2369526	633808	965	2412	657		
391.8127	36.668	36.668	0		1895619	513847	701	1752	733	1.25(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	37.013	37.013	0		2958333	799327	1133	2832	705		
375.8178	37.013	37.013	0		2374881	642315	896	2240	717	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	39.003	39.003	0		2290382	733767	470	1175	1561		
425.7737	39.003	39.003	0		2221626	719390	425	1062	1693	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00044 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Sep-2021 11:17:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	528108	Lims Sample ID:	1

Non-2,3,7,8-sub-TCDF, RT: 19.981

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.119	D 13C-2,3,7,8-TCDF	40.000	7528113	1196535

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		40.000	7528113	1196535

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
18.831	20525	3896	33509	6078	0.2565	0.61	RQ
18.831	20525	3896	26655	5059	0.2239		Empc Correction
24.162	43816	9017	63622	12827	0.5100	0.69	
Signal Totals:							
	64341	12913	90277	17886			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	161472	31818				0.66	RQ
	154618	30799					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.7664 = (161472 * 40.000) / (7528113 * 1.119)
Empc Amount: 0.7339 = (154618 * 40.000) / (7528113 * 1.119)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	24-Sep-2021 11:17:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	528108	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 28.354

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092				
2,3,4,7,8-PeCDF	0.875				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.910	15340	2481	11749	1691		1.31	R
26.870	17732	3076	11386	2069		1.56	
27.476	42735	4379	19360	3093		2.21	R
28.090	19736	2822	13773	1873		1.43	
Signal Totals:							
	95543	12758	56268	8726			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	151811	21484				1.70	RQ
	137230	21808					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (151811 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (137230 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 25-Sep-2021 14:18:52 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

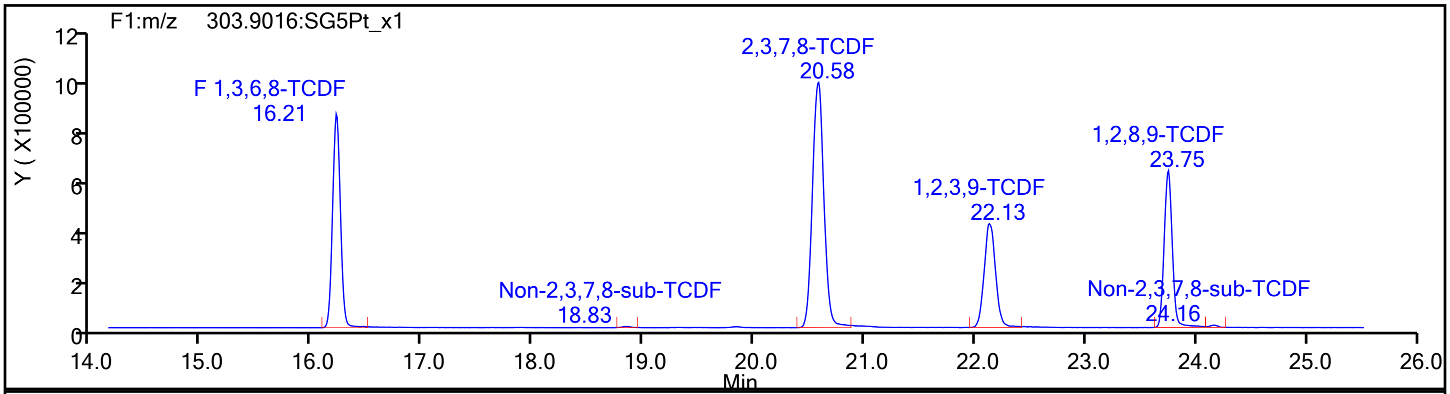

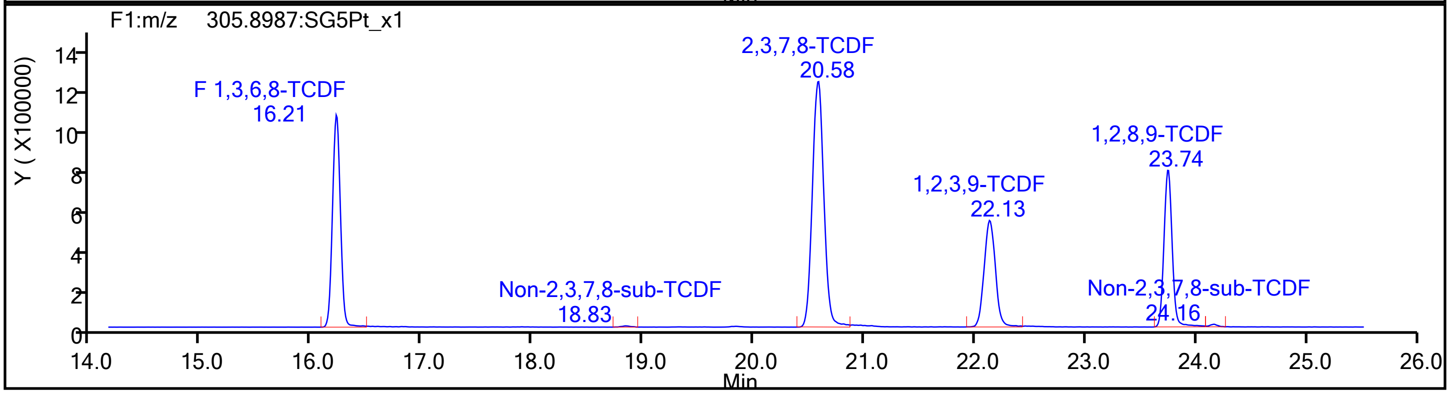

TCDF Standards

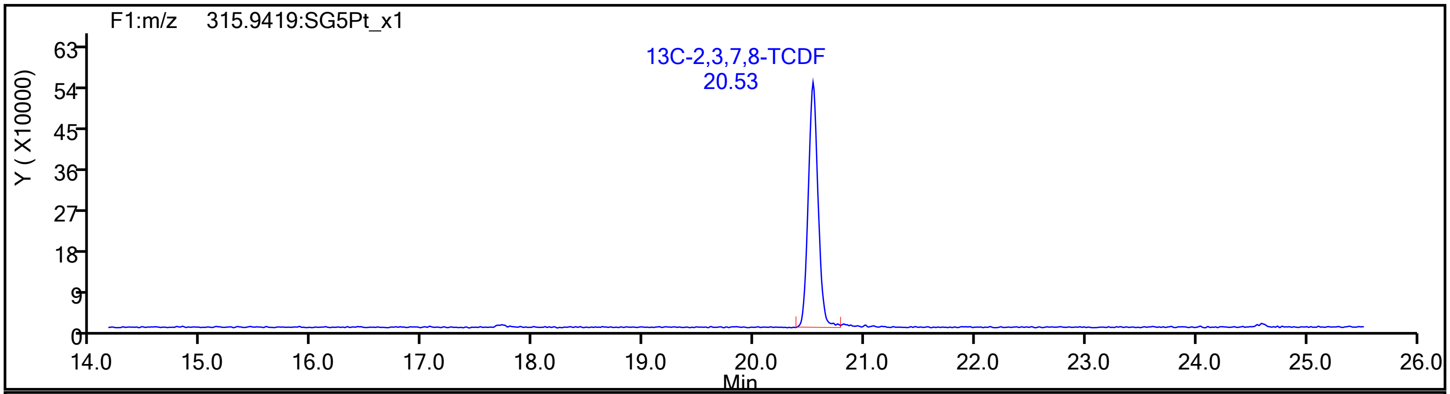

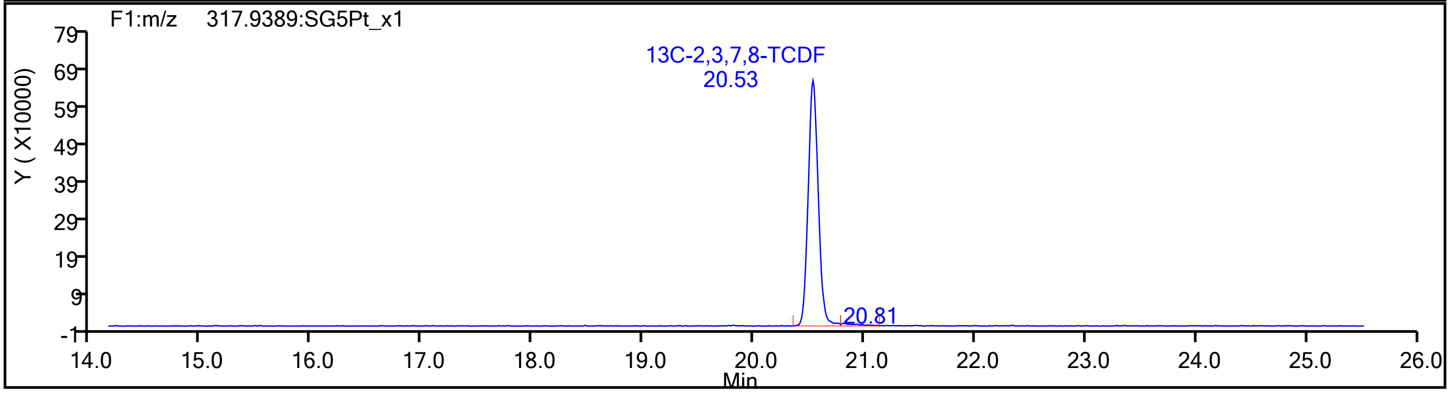

Report Date: 25-Sep-2021 14:18:52 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

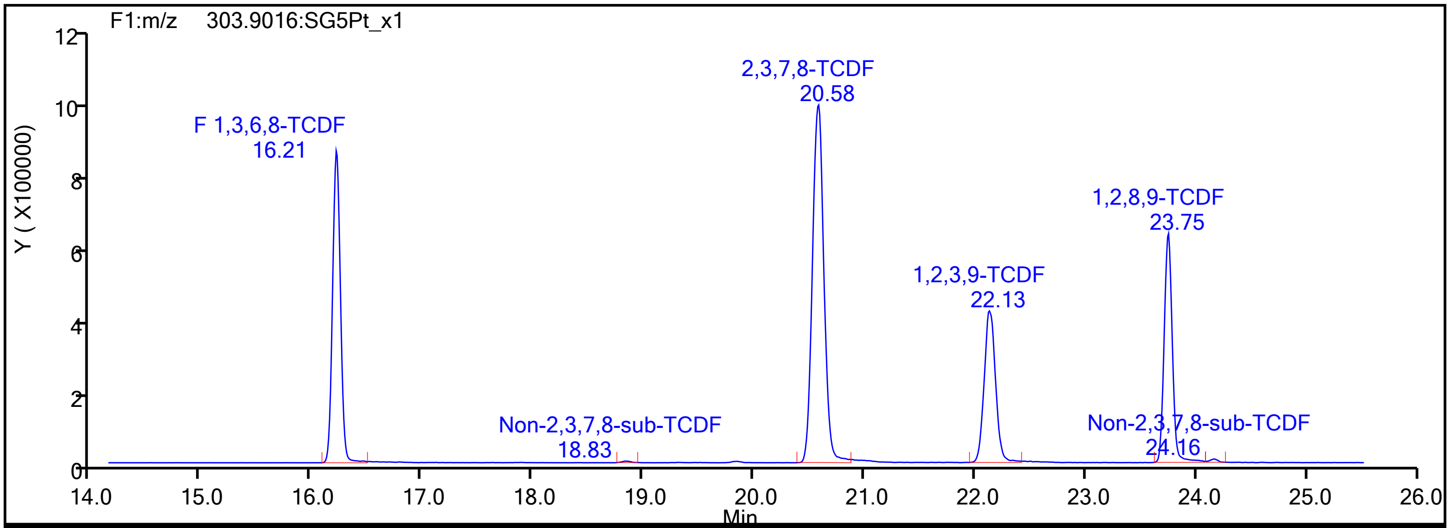

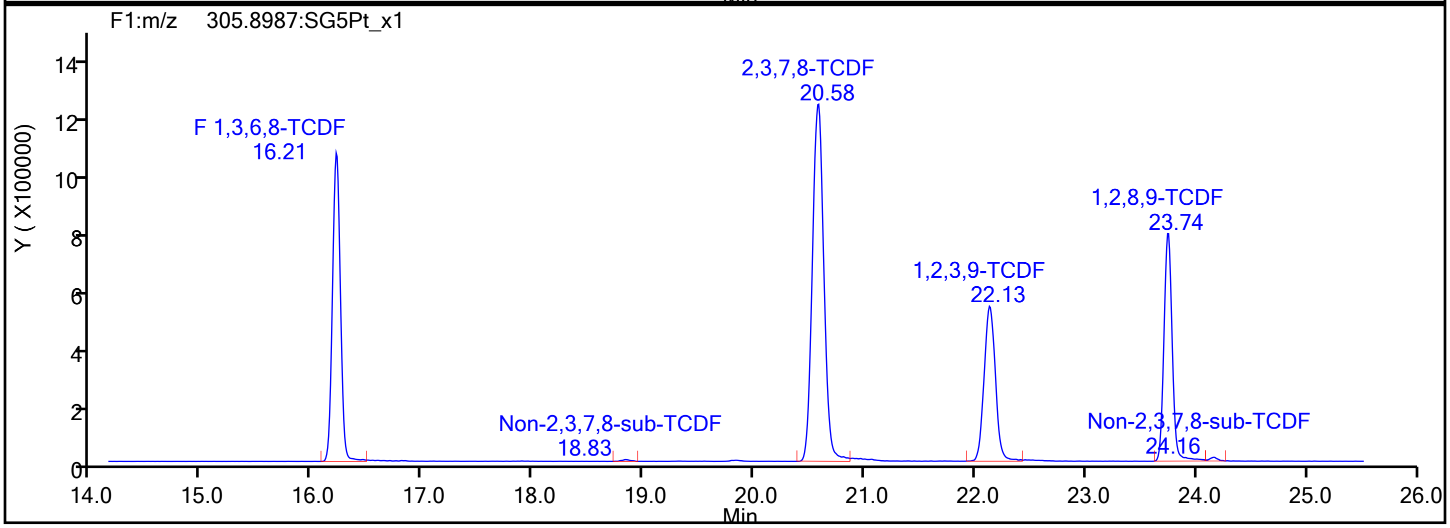

TCDF Interference Mass

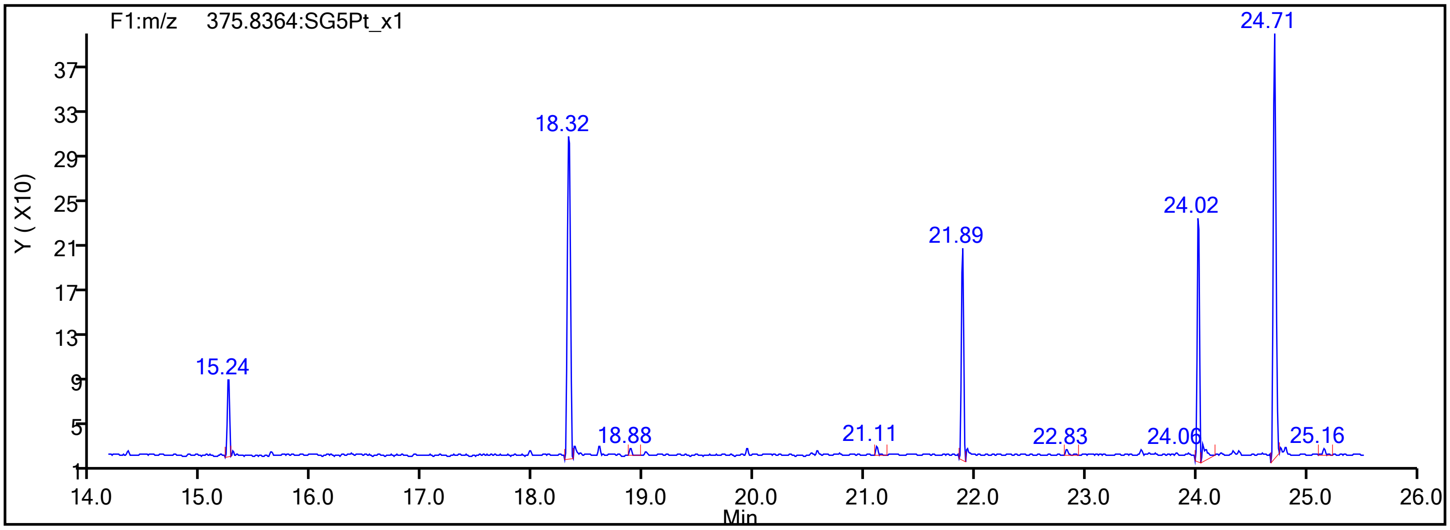

Report Date: 25-Sep-2021 14:18:52 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d
Injection Date: 24-Sep-2021 11:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

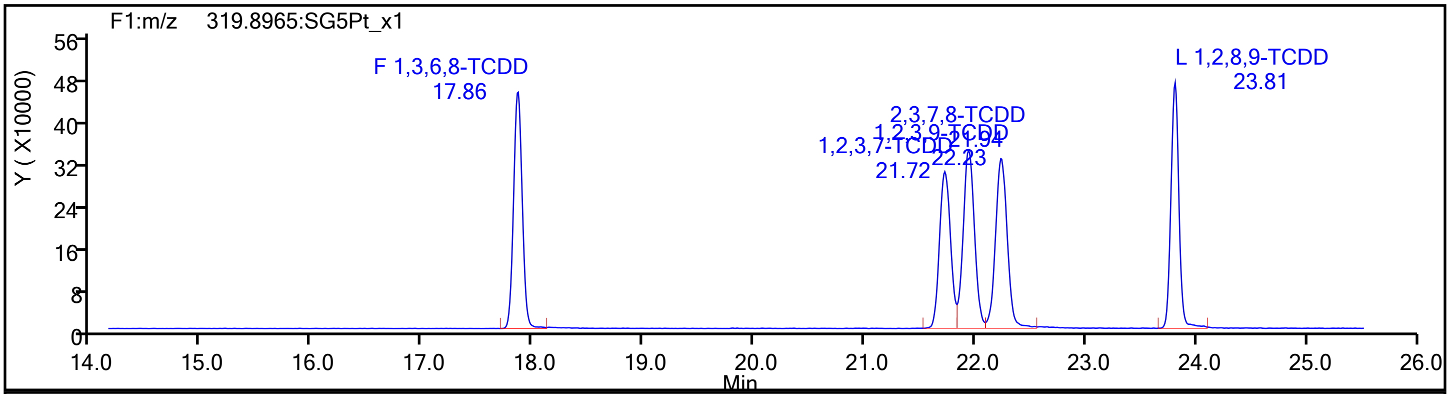

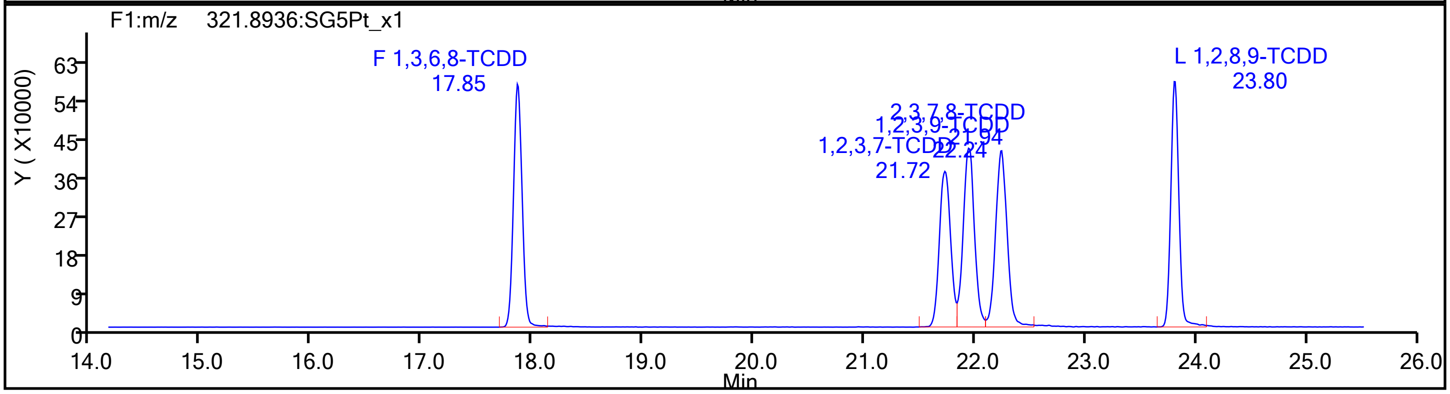

TCDD Standards

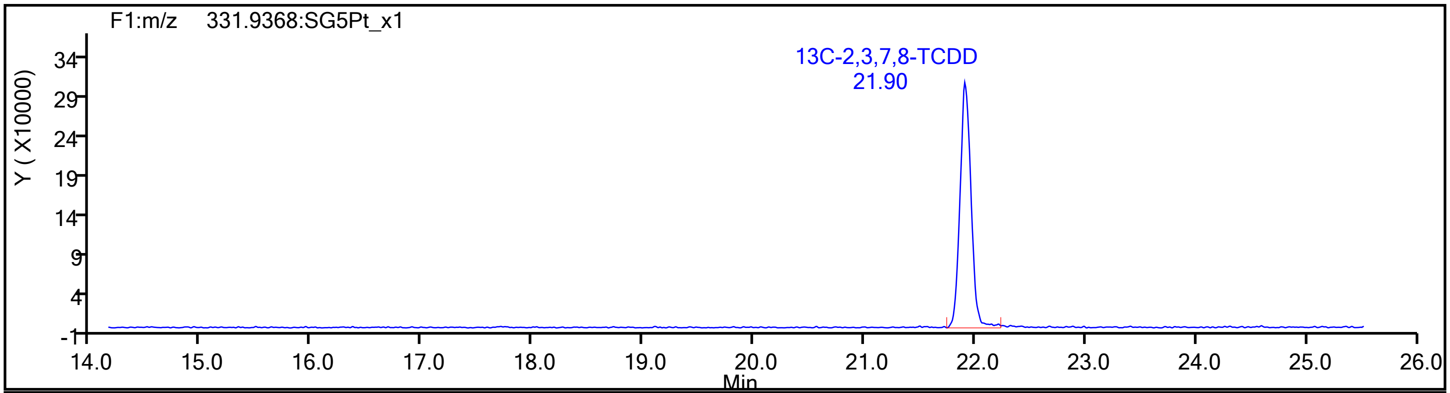

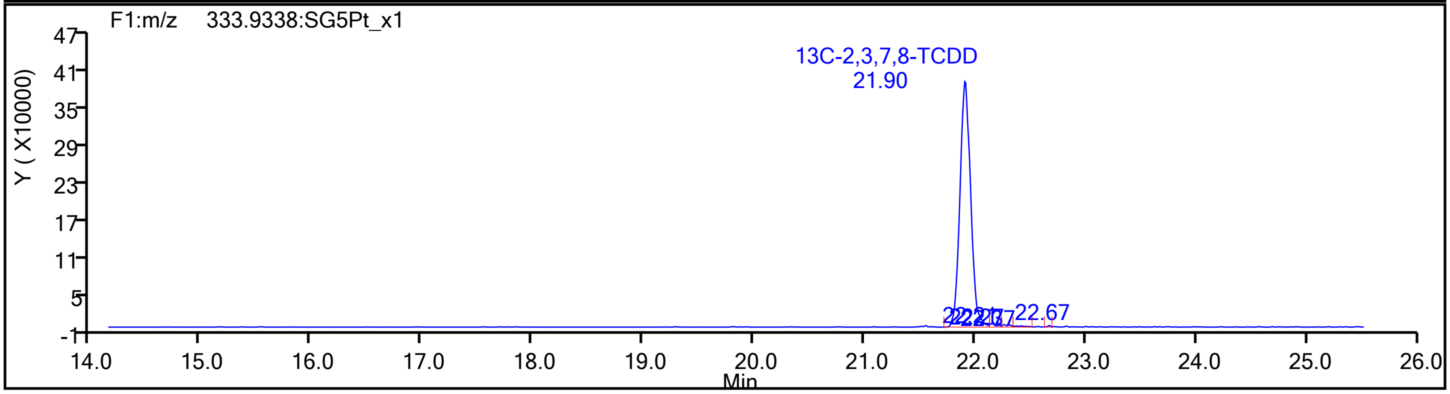

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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

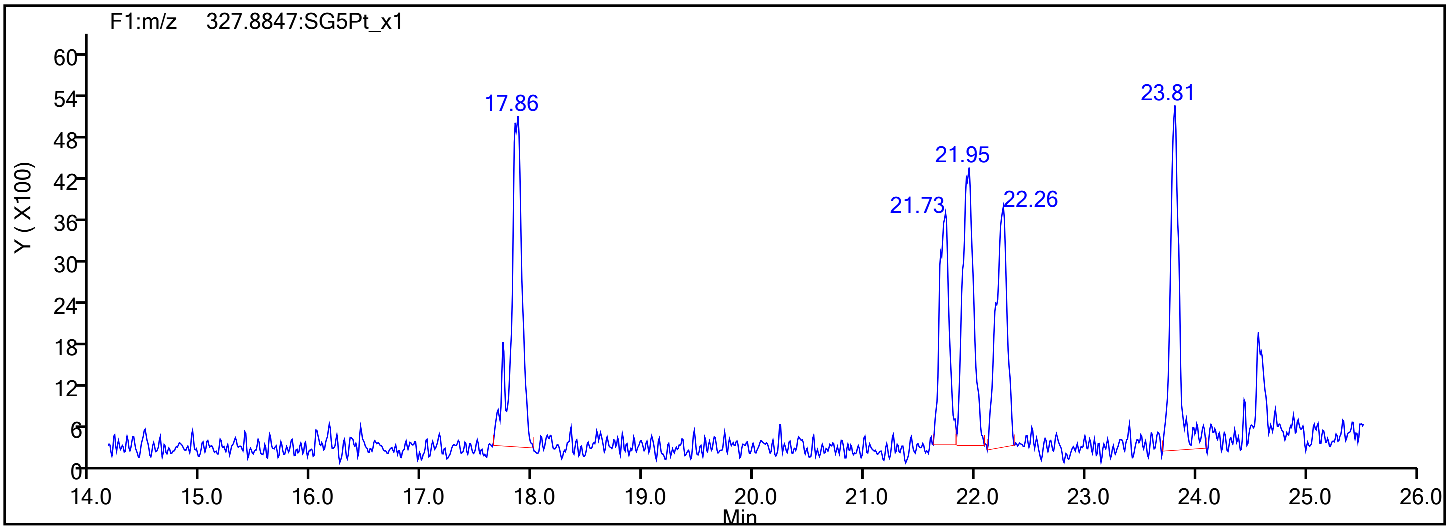

37Cl4-TCDD Standards

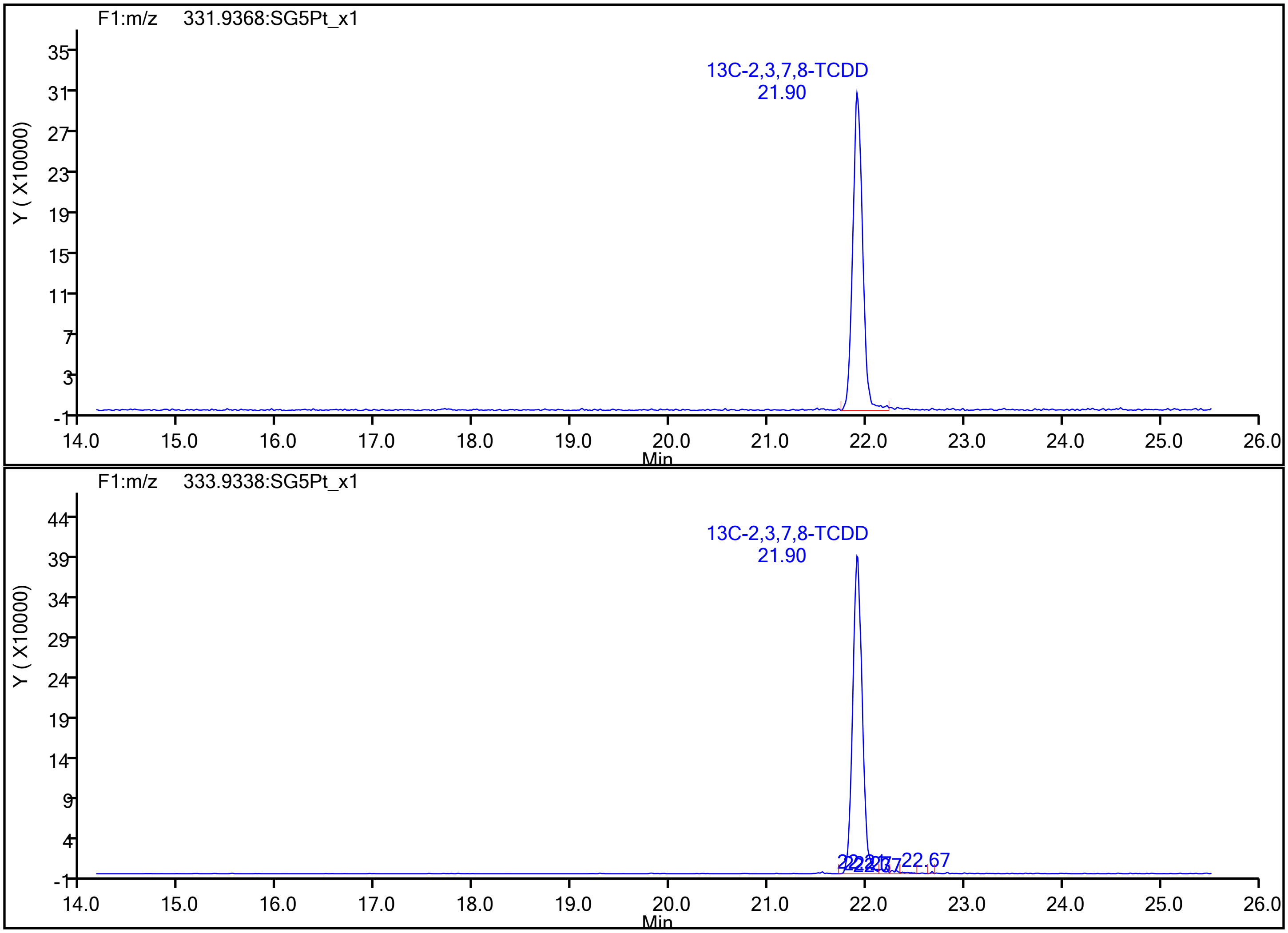

Report Date: 25-Sep-2021 14:18:52 Chrom Revision: 2.3 13-May-2021 07:57:40

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Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

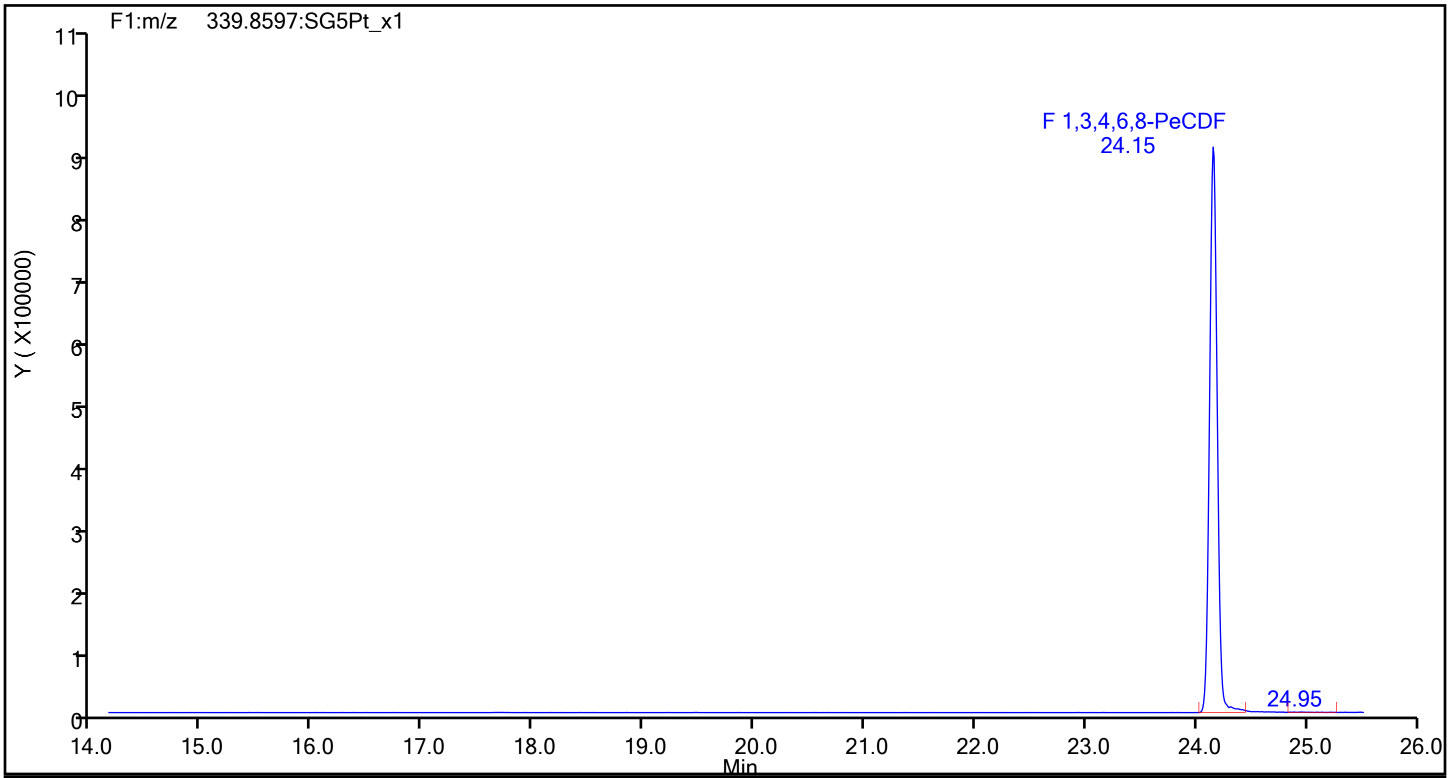

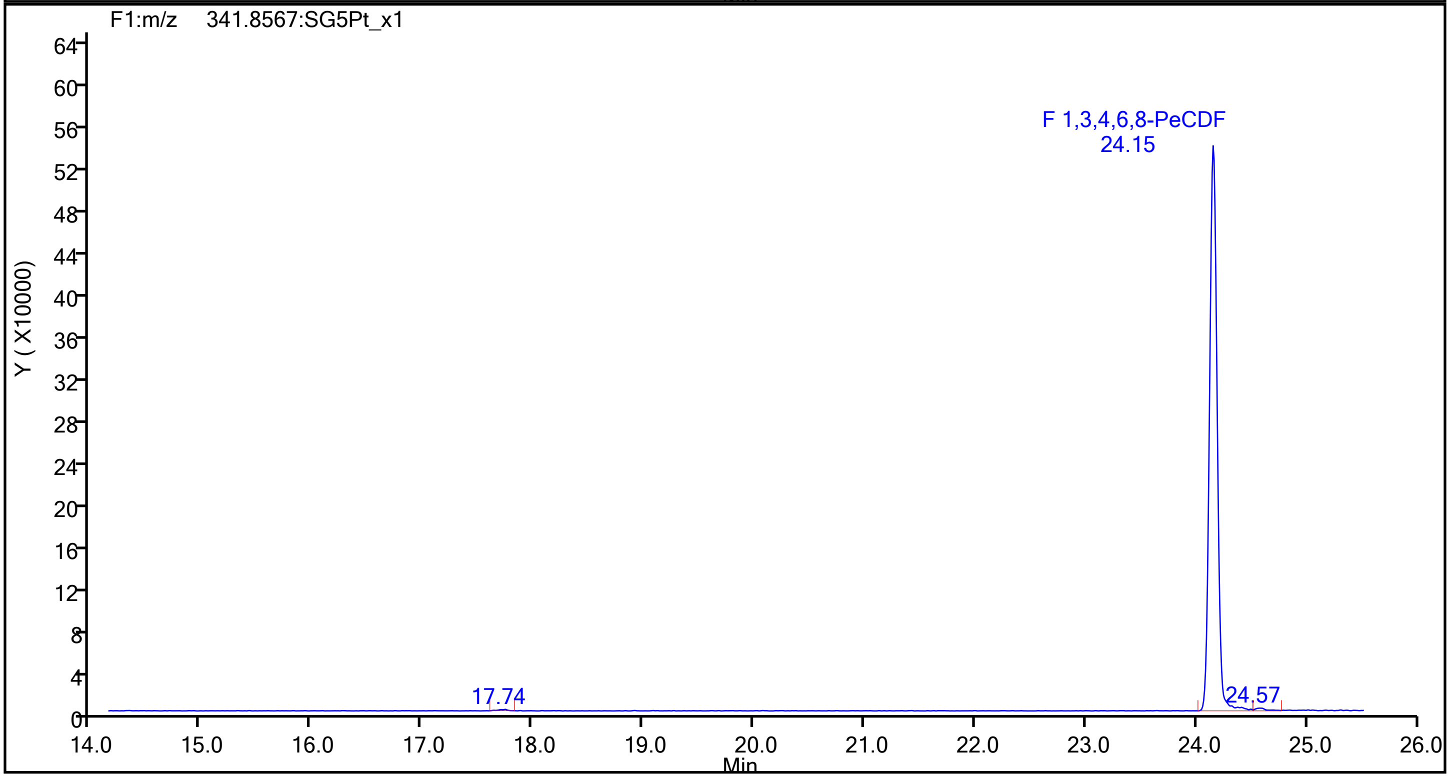

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Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

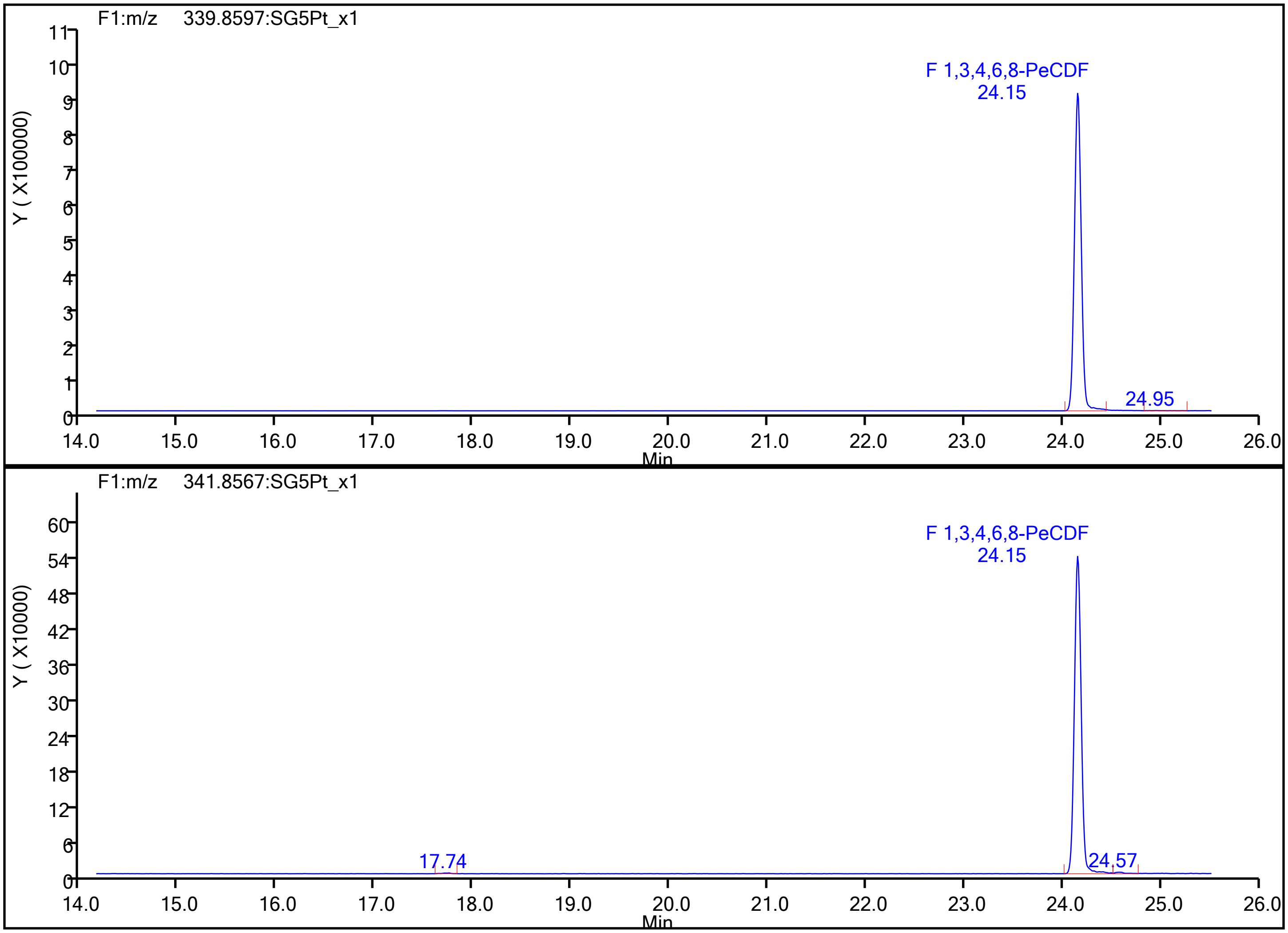

F1 PeCDFs Interference Mass

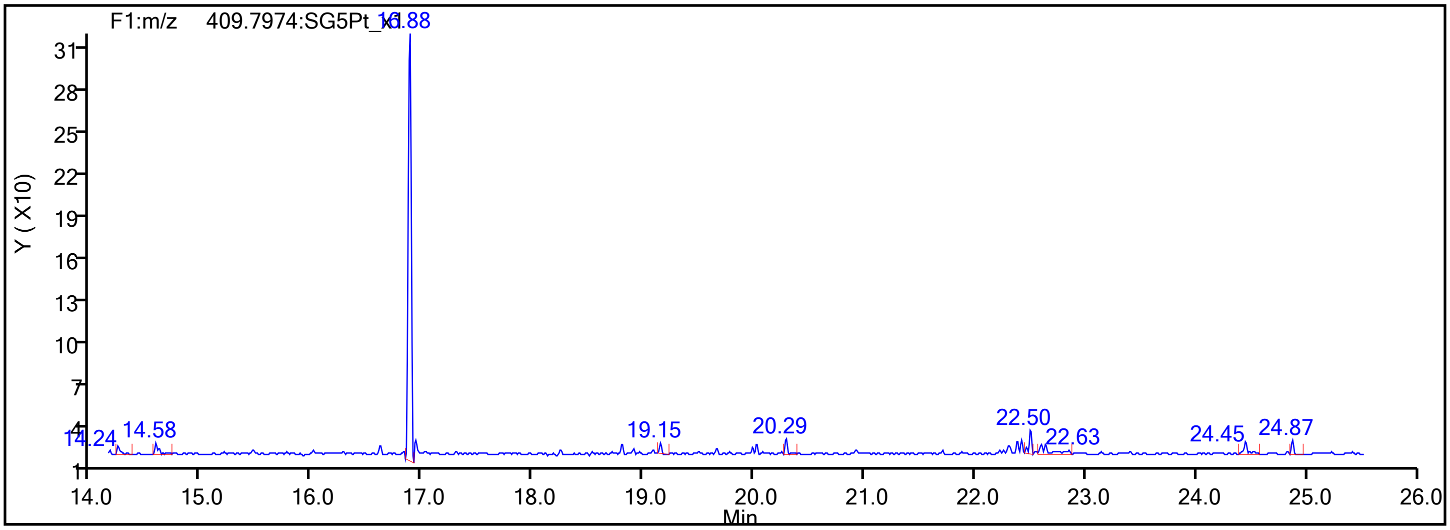

Report Date: 25-Sep-2021 14:18:52 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

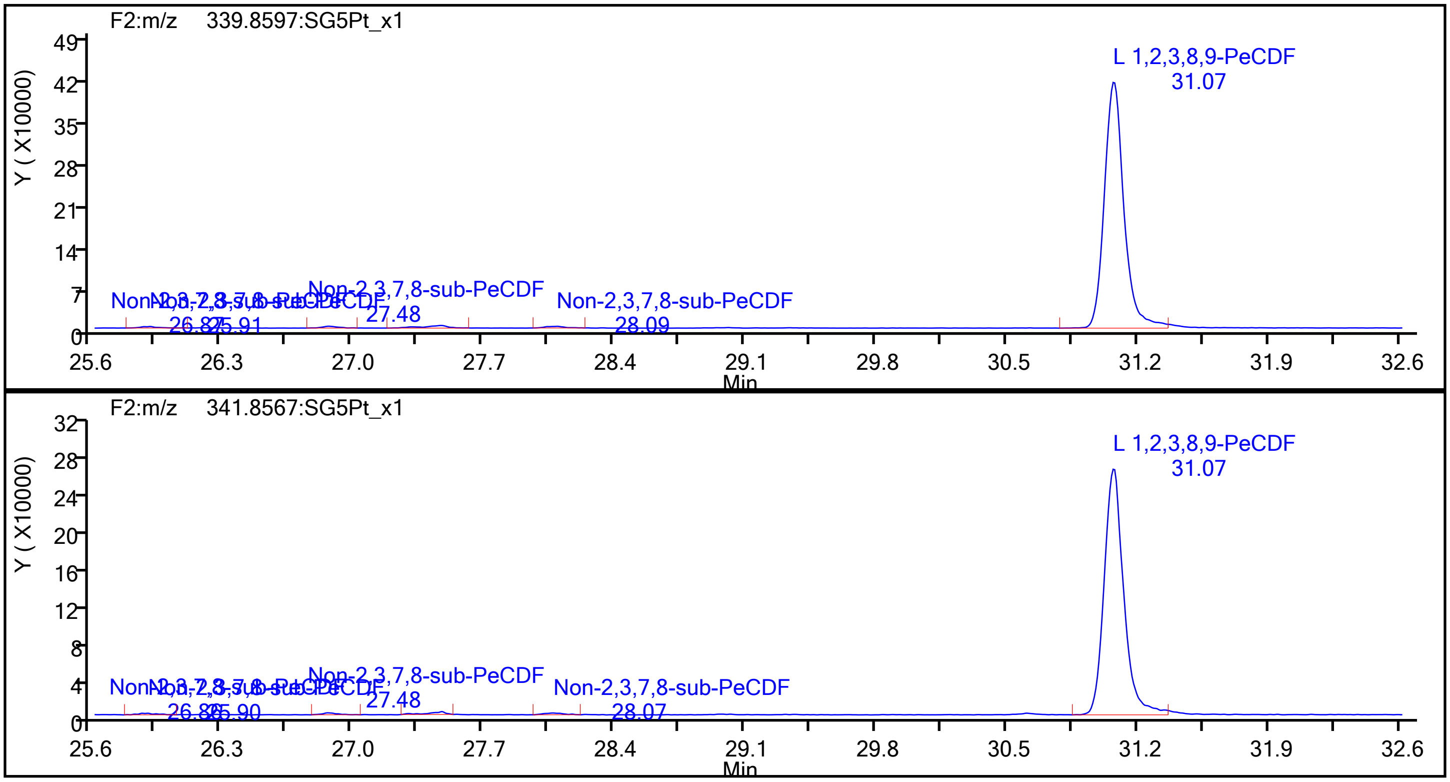

PeCDF Standards

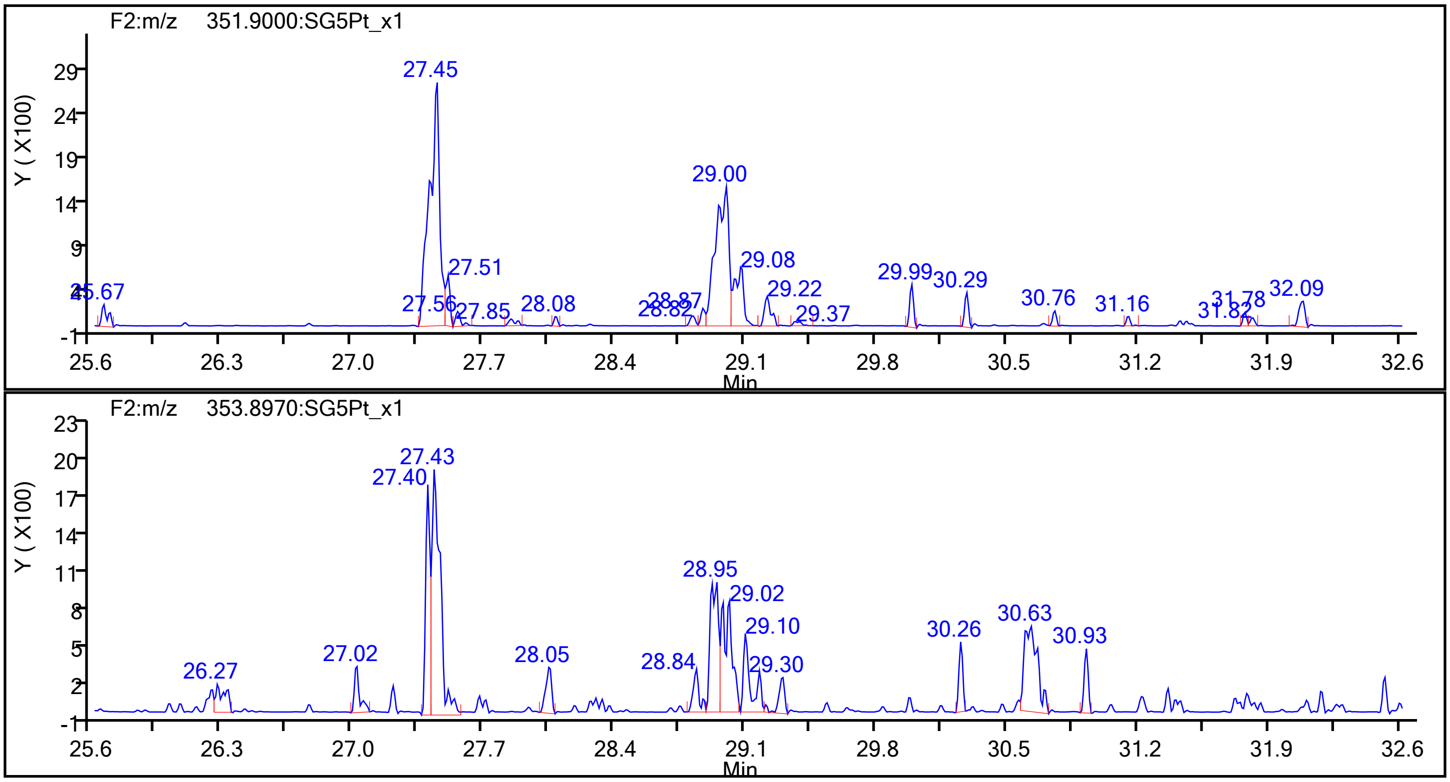

Report Date: 25-Sep-2021 14:18:52 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

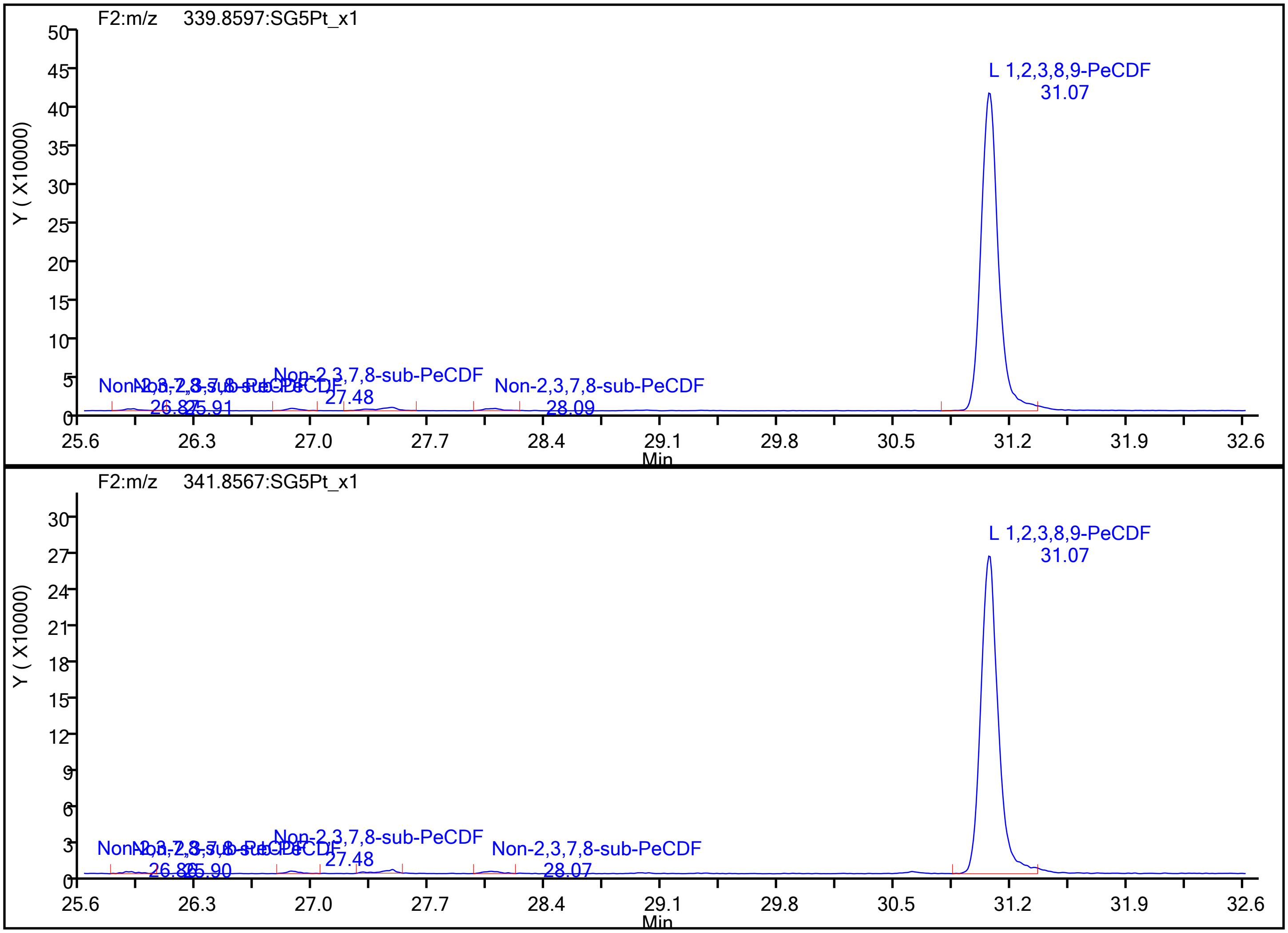

PeCDF Interference Mass

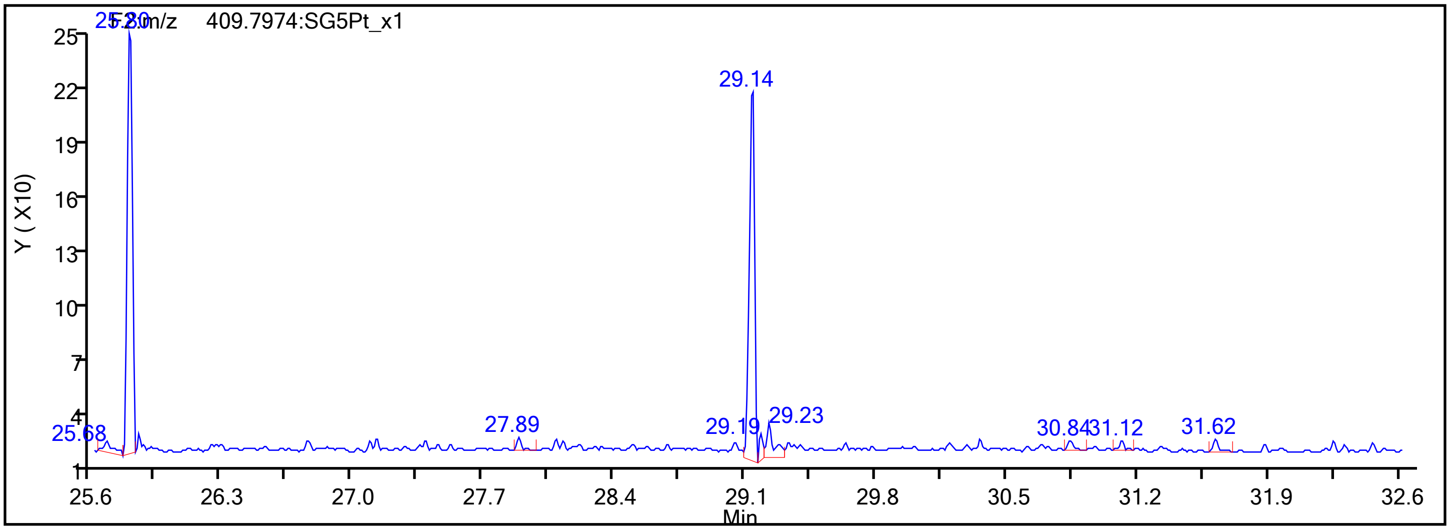

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

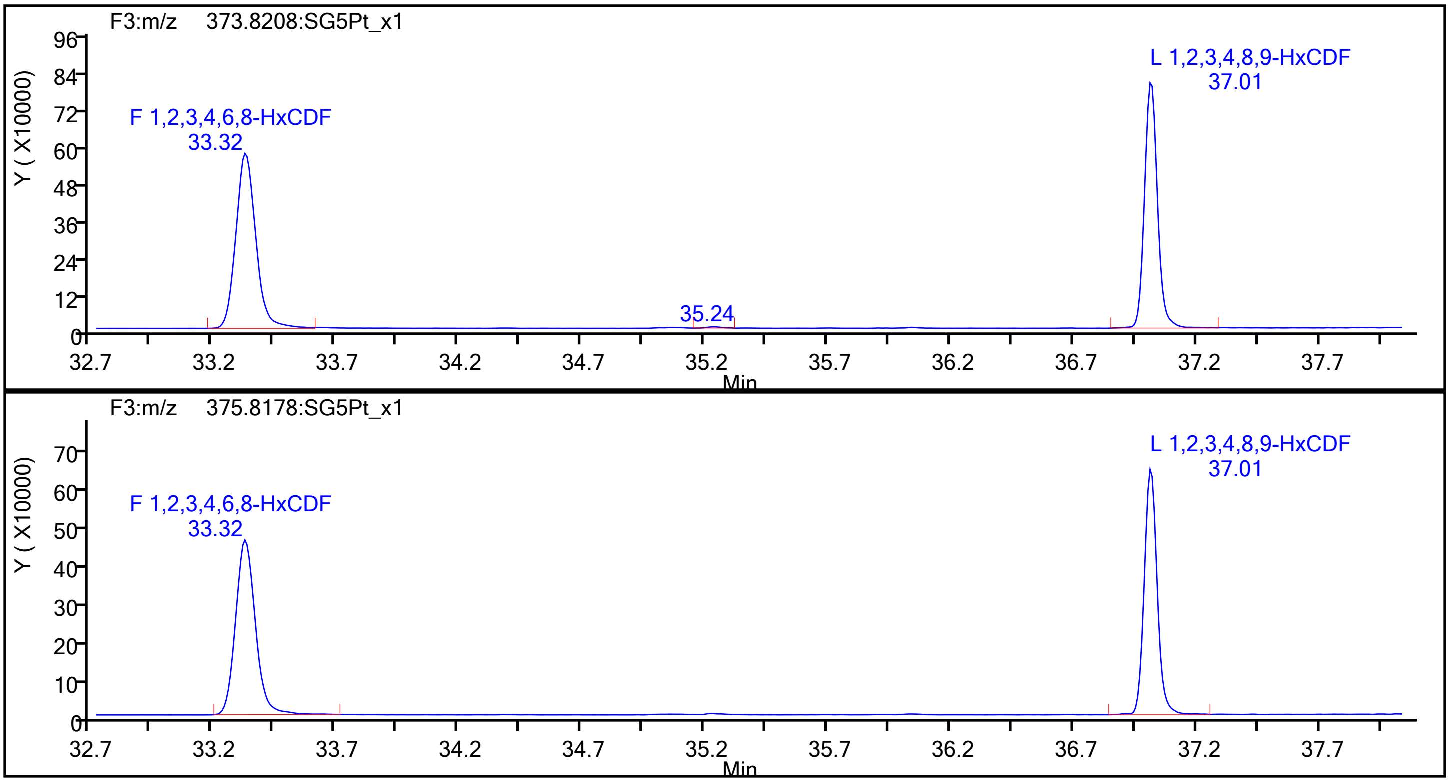

HxCDF Standards

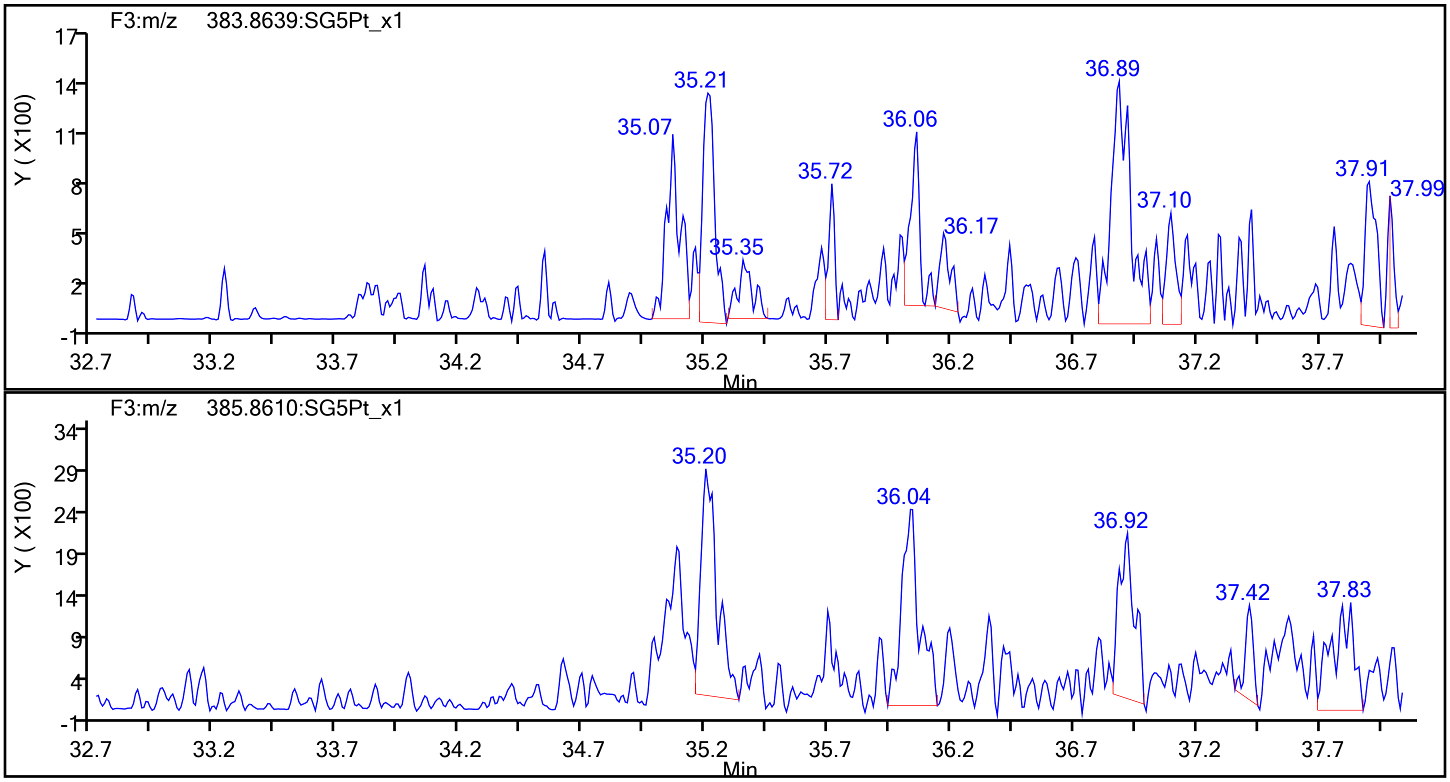

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d
Injection Date: 24-Sep-2021 11:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

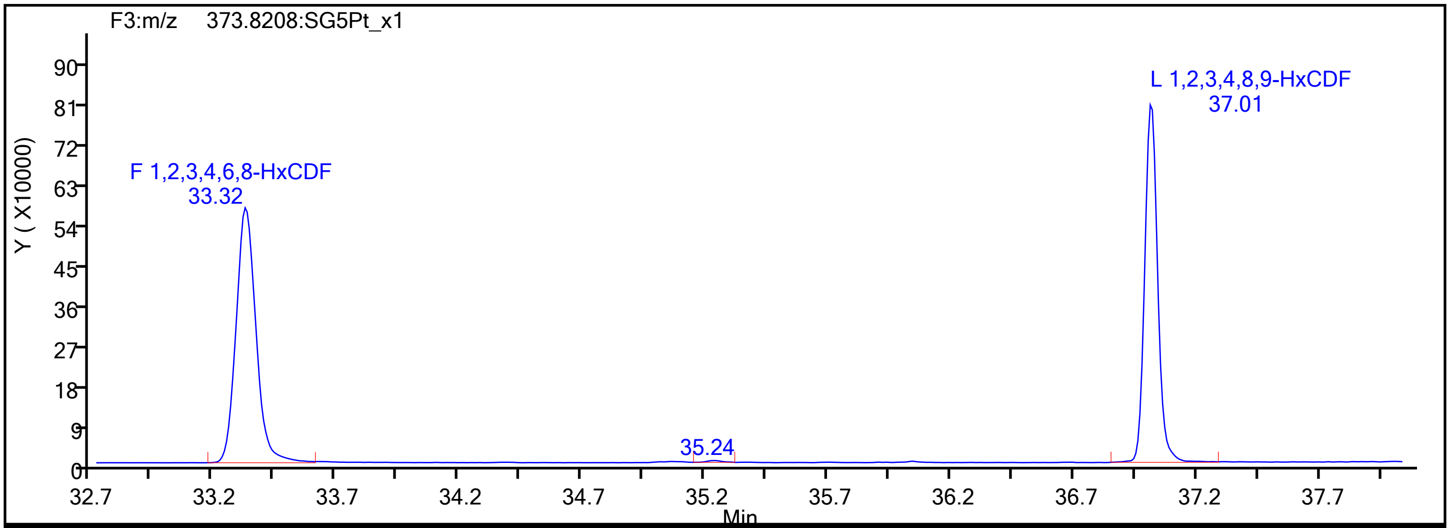

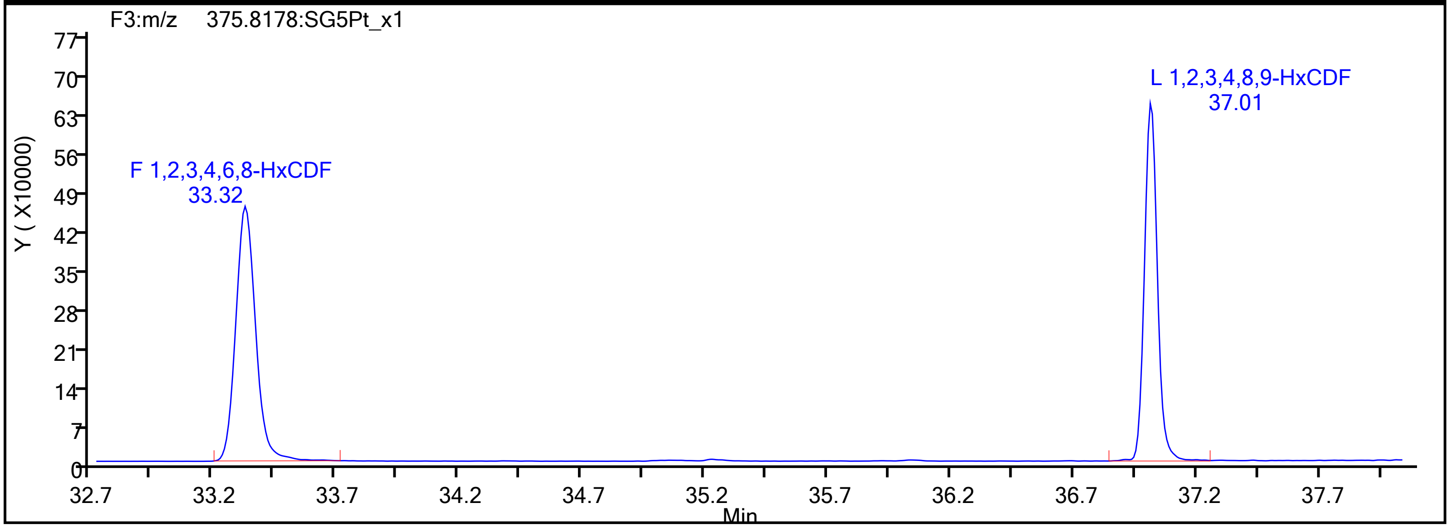

HxCDF Interference Mass

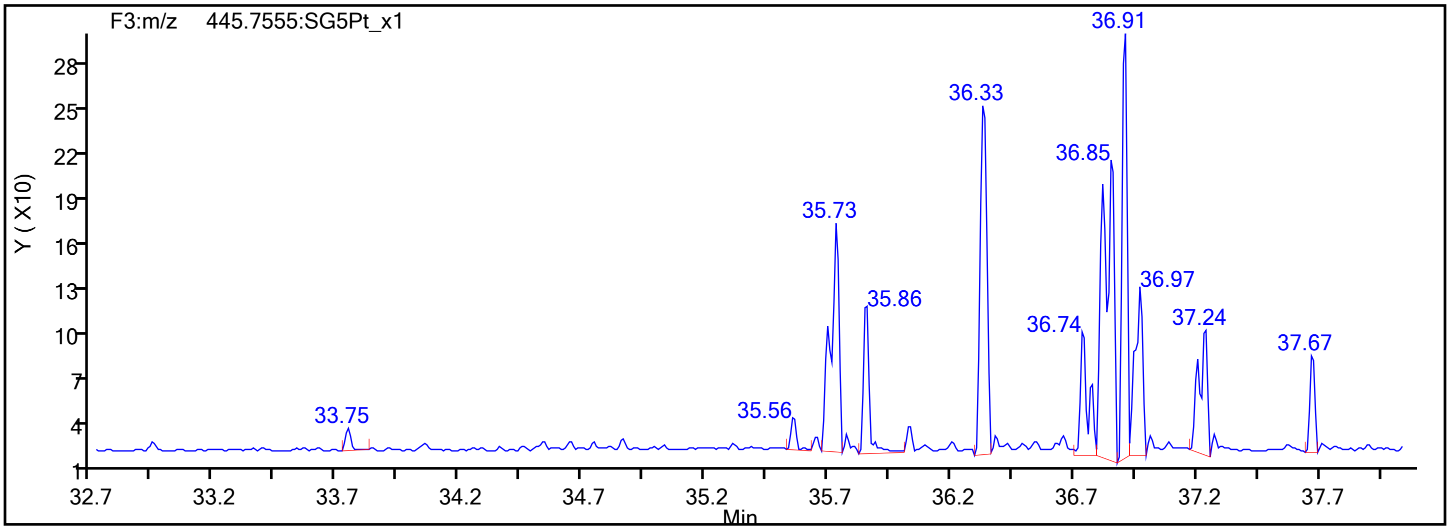

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d

Injection Date: 24-Sep-2021 11:17:00

Injection Vol: 1.0 ul

Instrument ID: DFS 1

Operator ID: Xcalibur_System

Method: Dioxin_DFS1

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

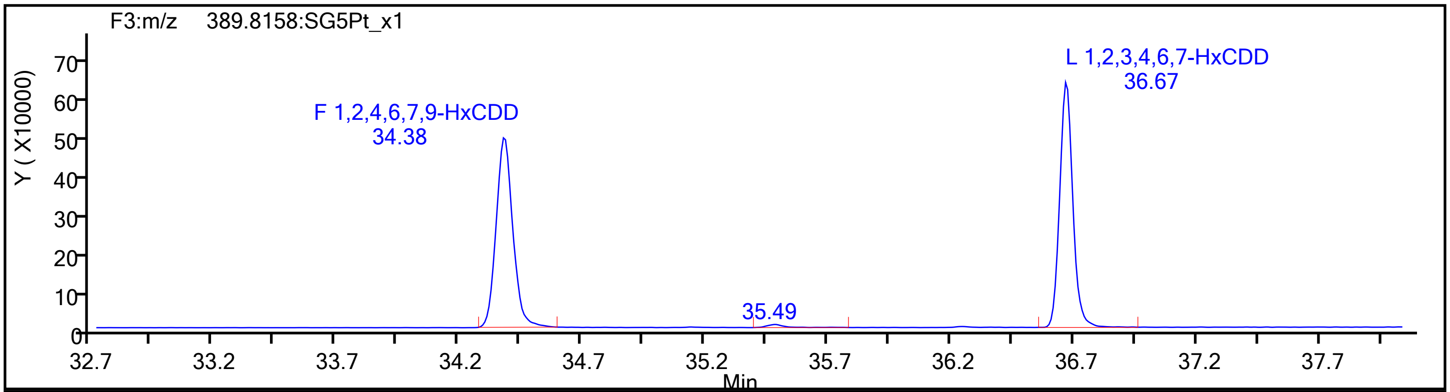

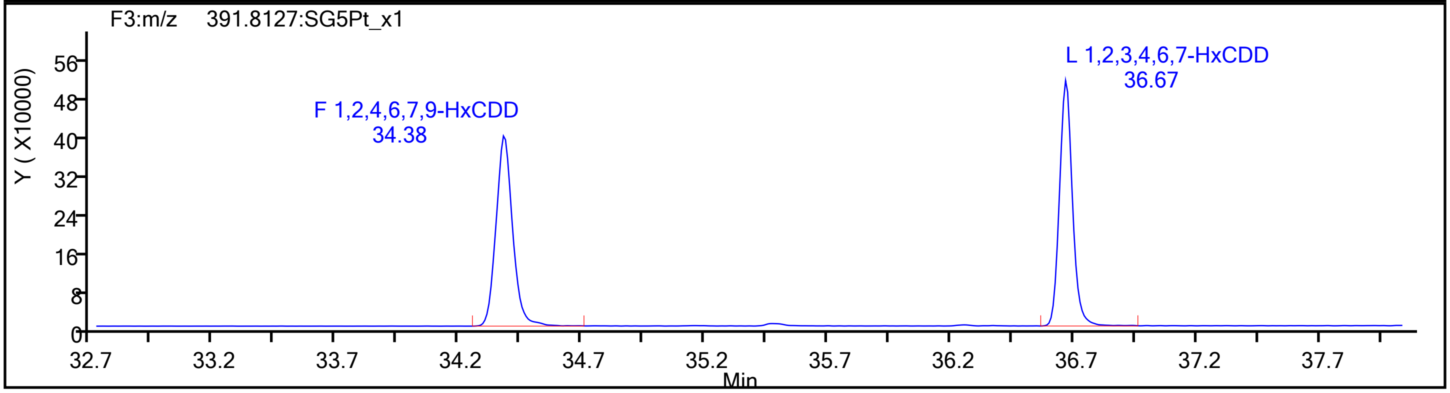

HxCDD Standards

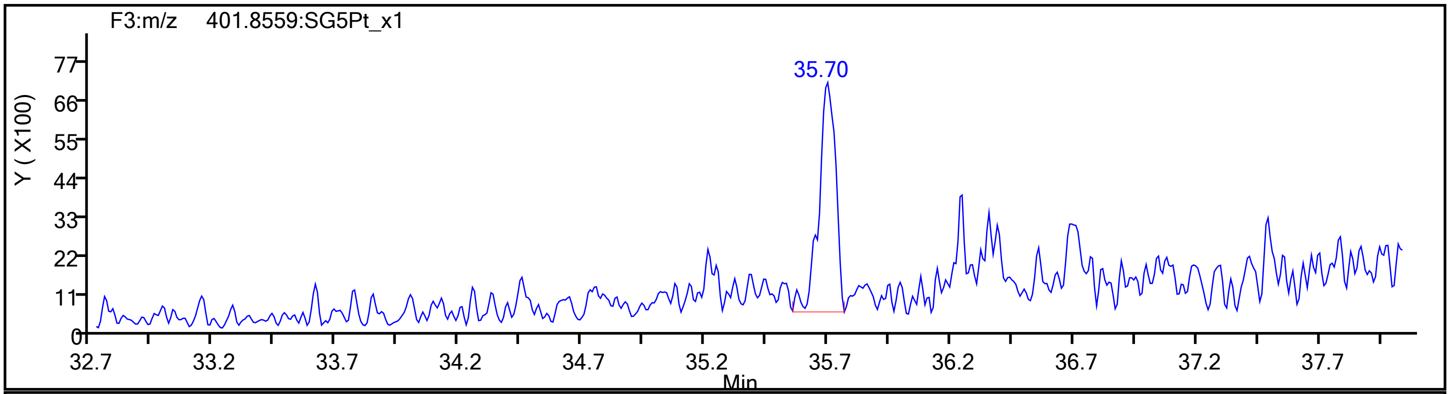

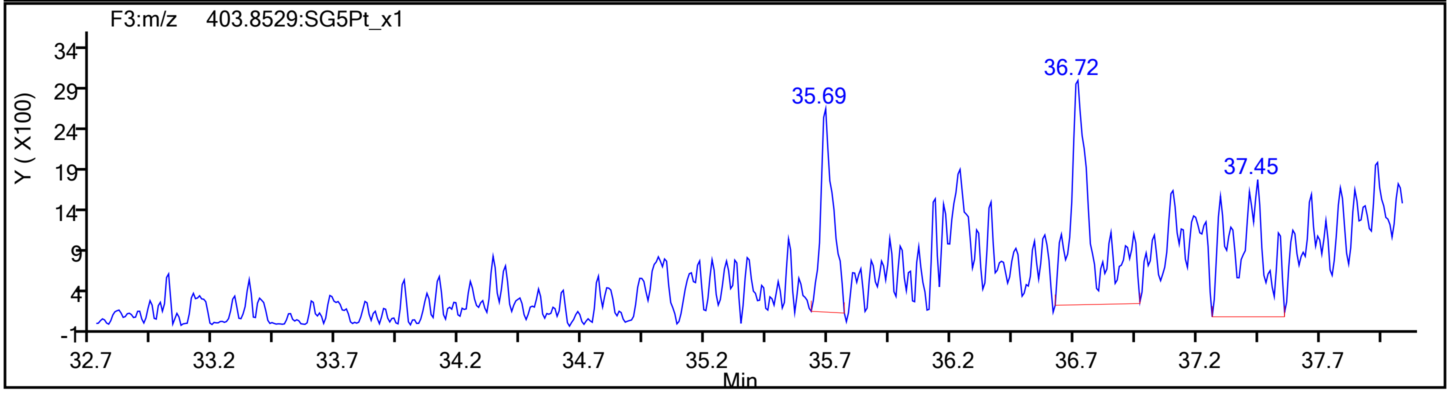

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d
Injection Date: 24-Sep-2021 11:17:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

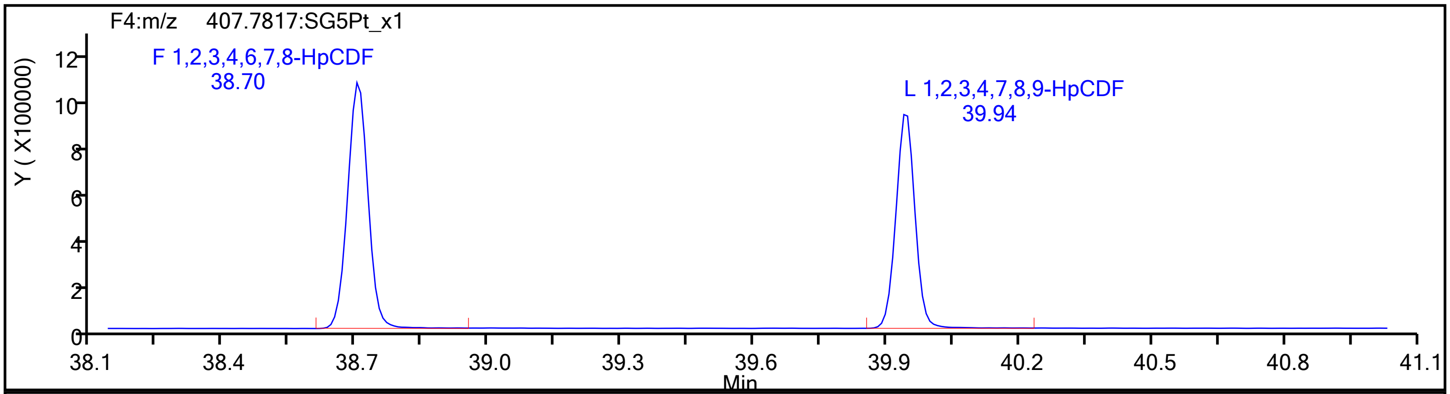

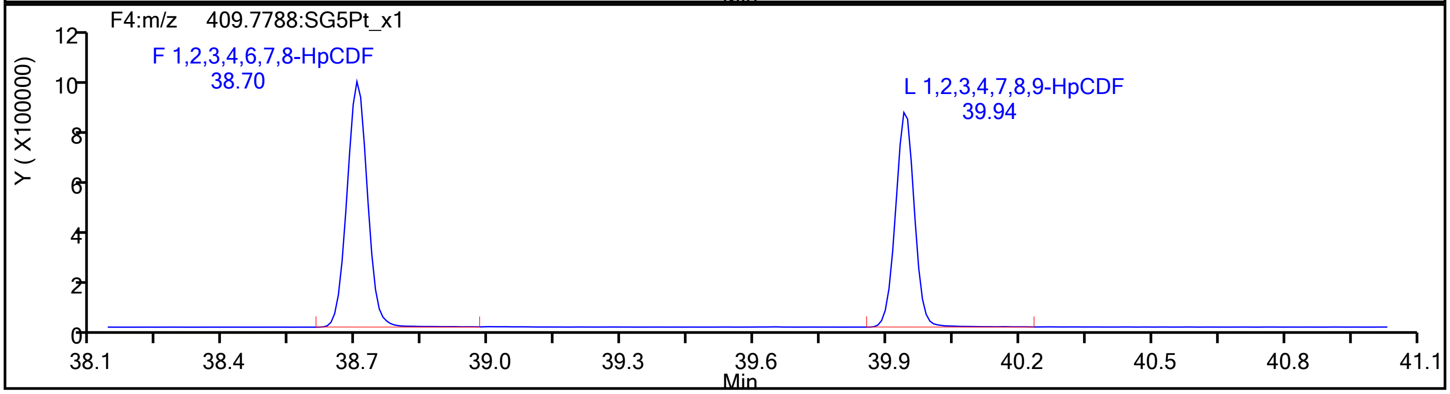

HpCDF Standards

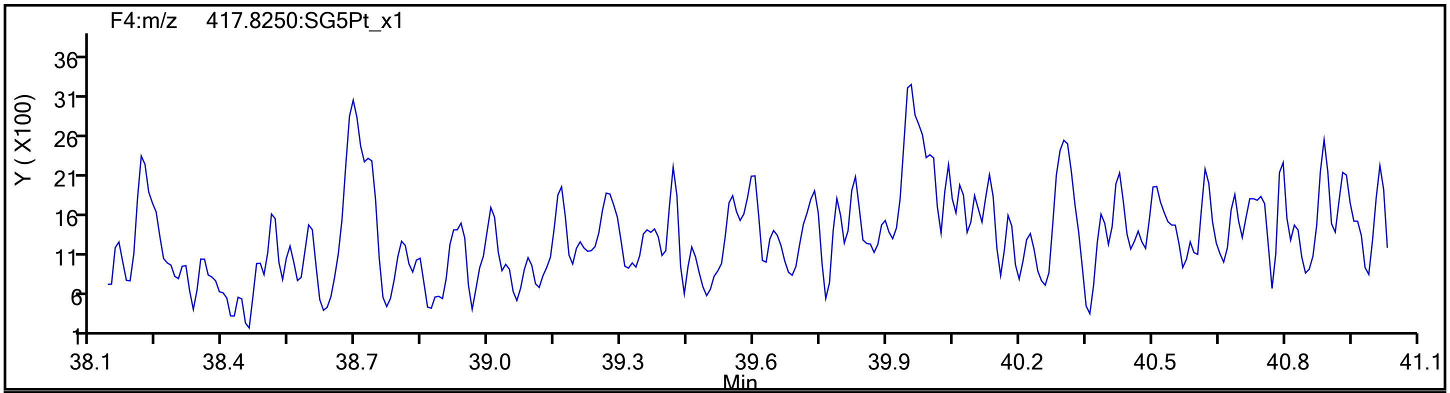

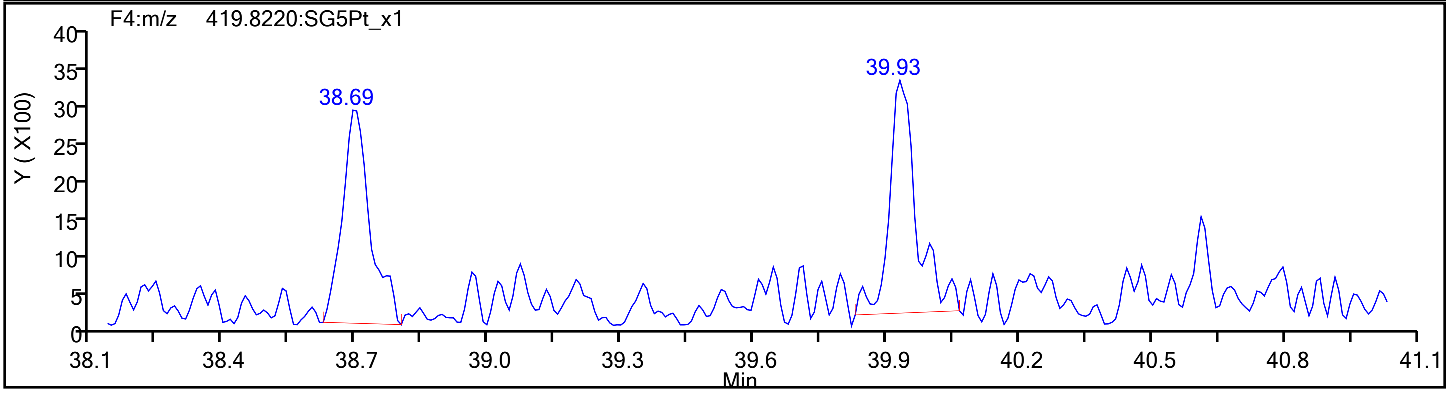

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

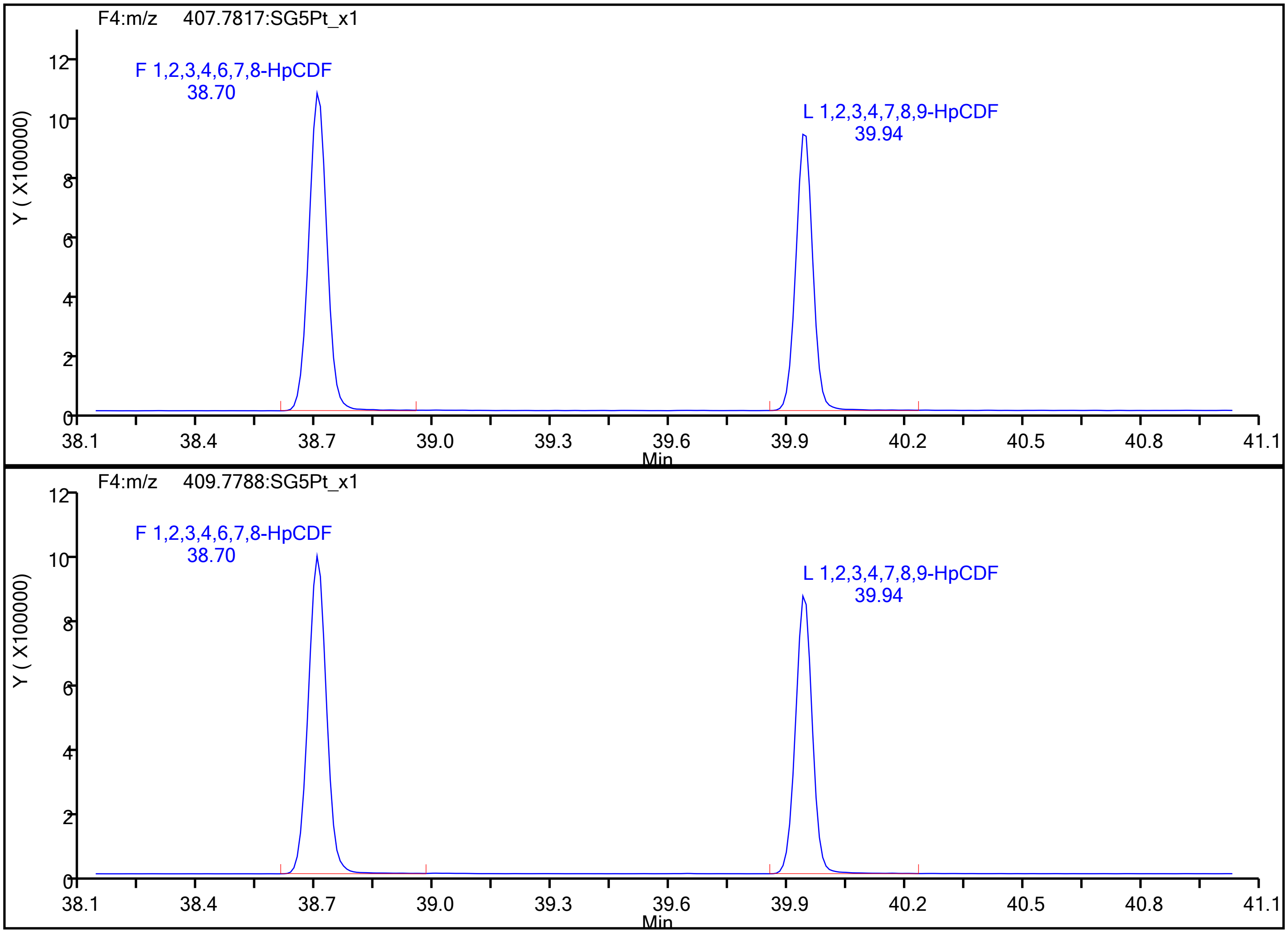

HpCDF Interference Mass

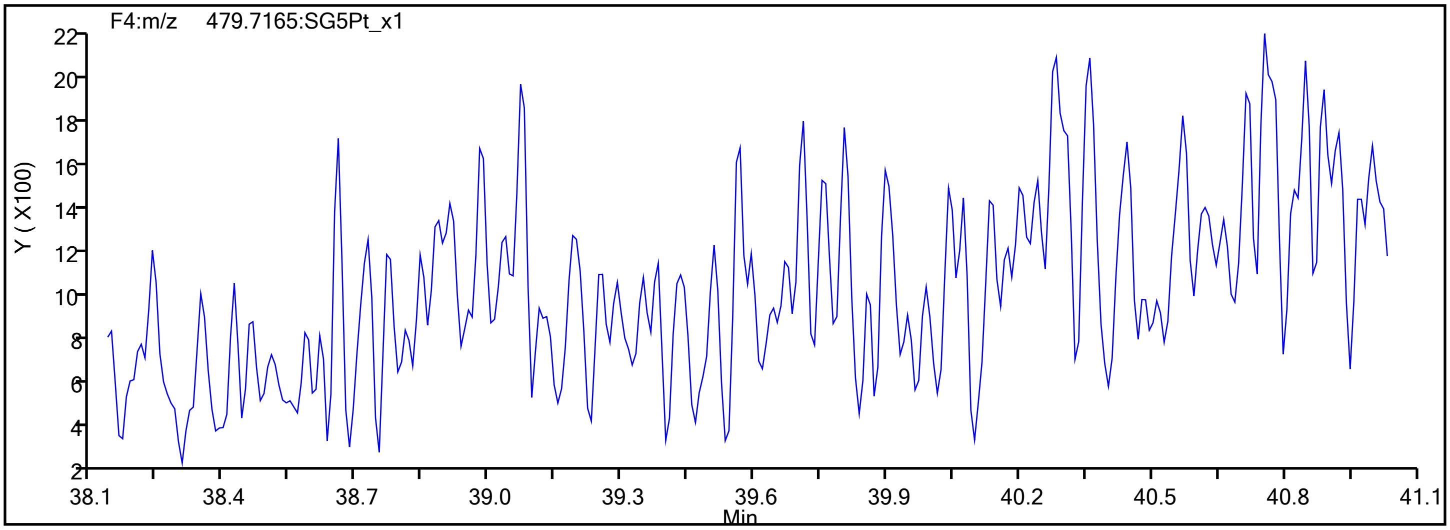

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d
Injection Date: 24-Sep-2021 11:17:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 528108 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

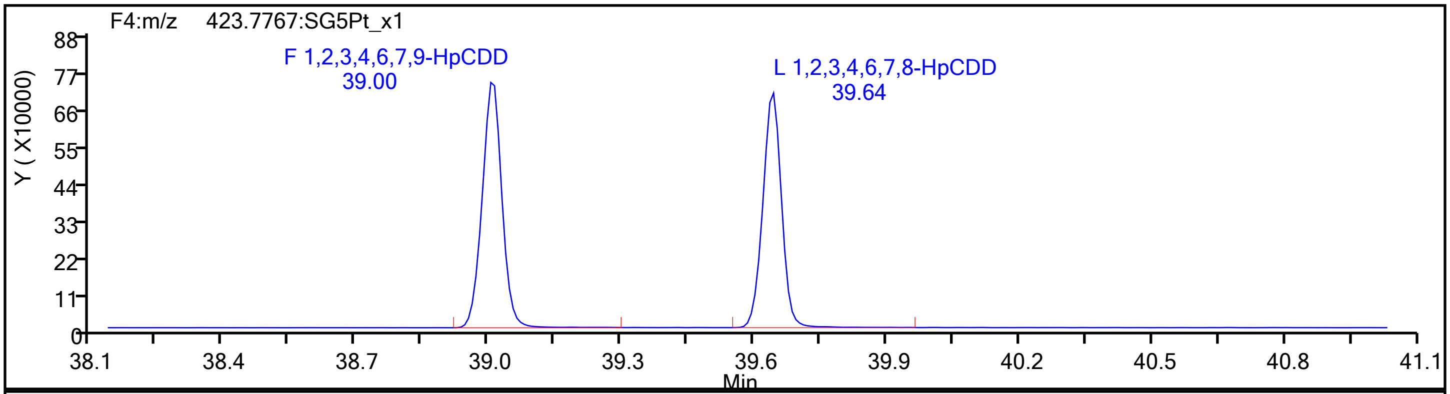

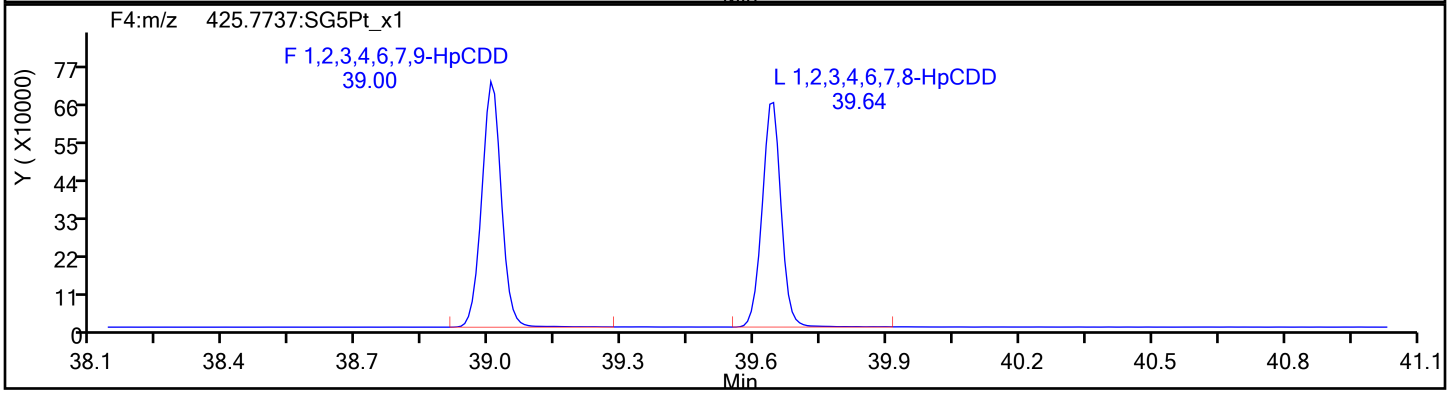

HpCDD Standards

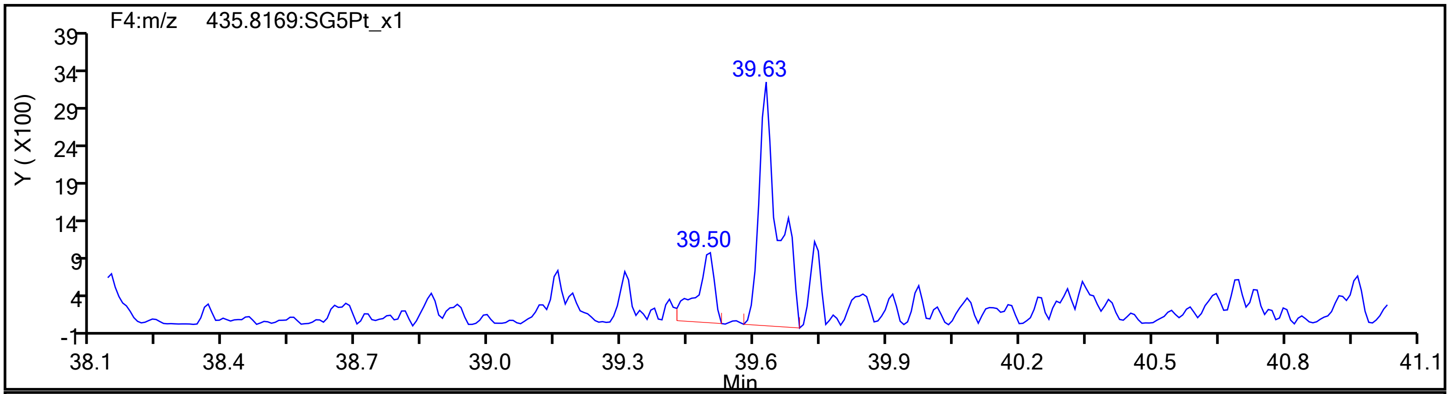

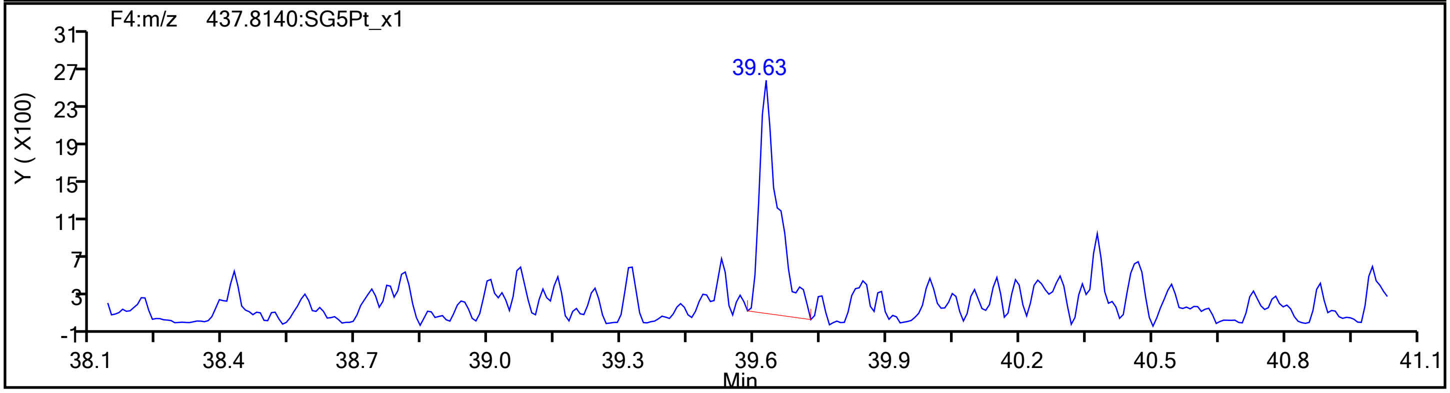

Report Date: 25-Sep-2021 14:18:53 Chrom Revision: 2.3 13-May-2021 07:57:40

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d

Injection Date: 24-Sep-2021 11:17:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 528108 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

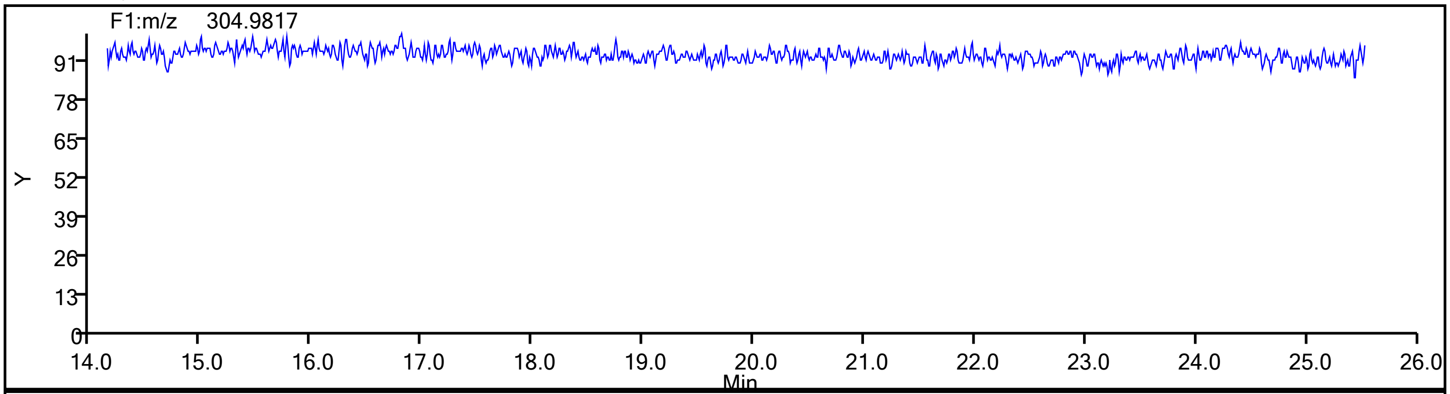

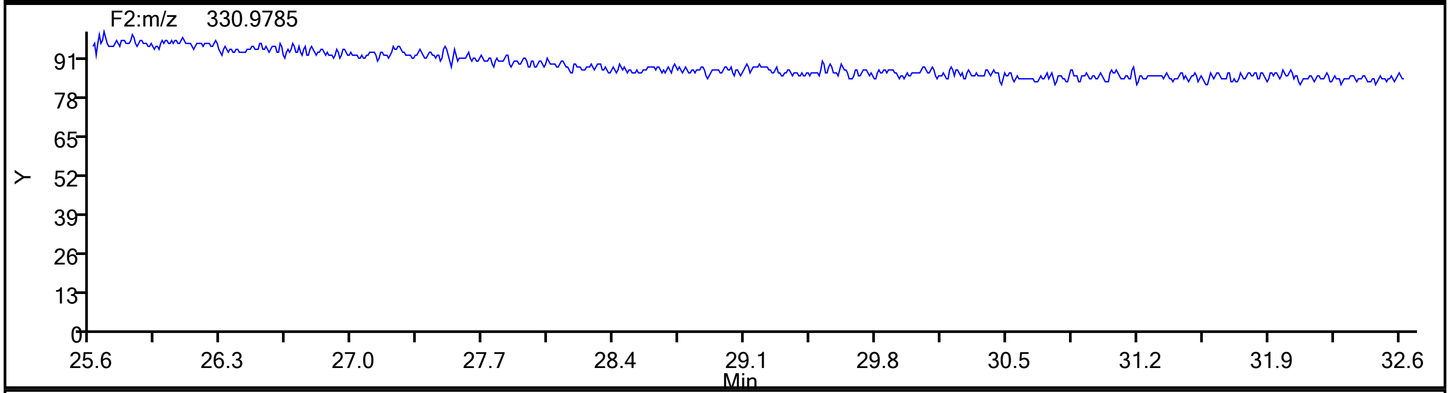

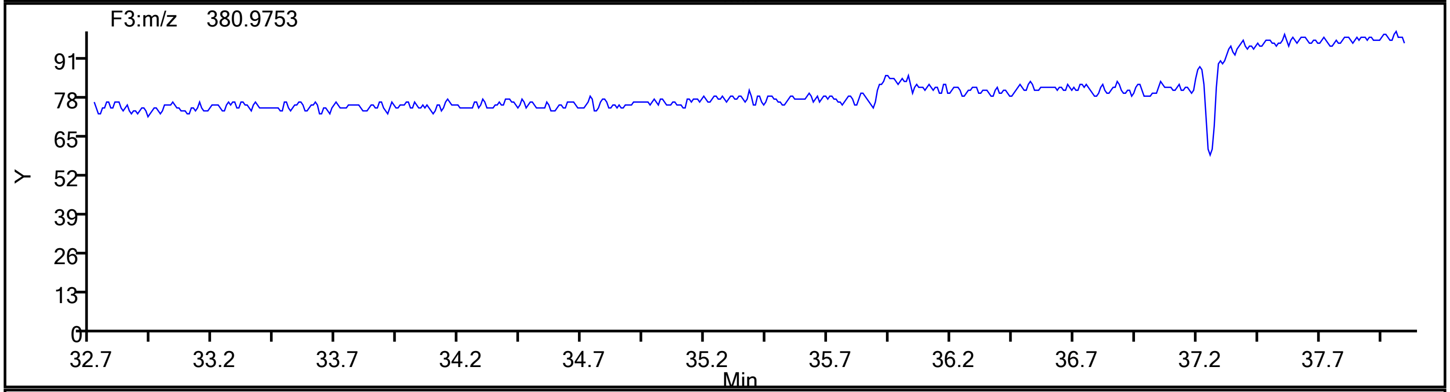

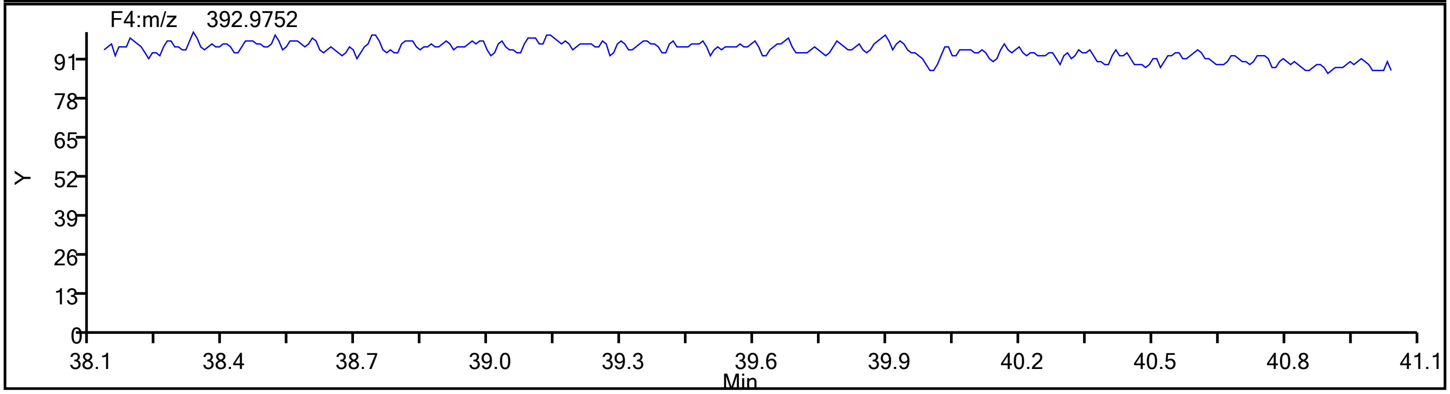

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_2.d		
Injection Date:	24-Sep-2021 11:17:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	528108	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

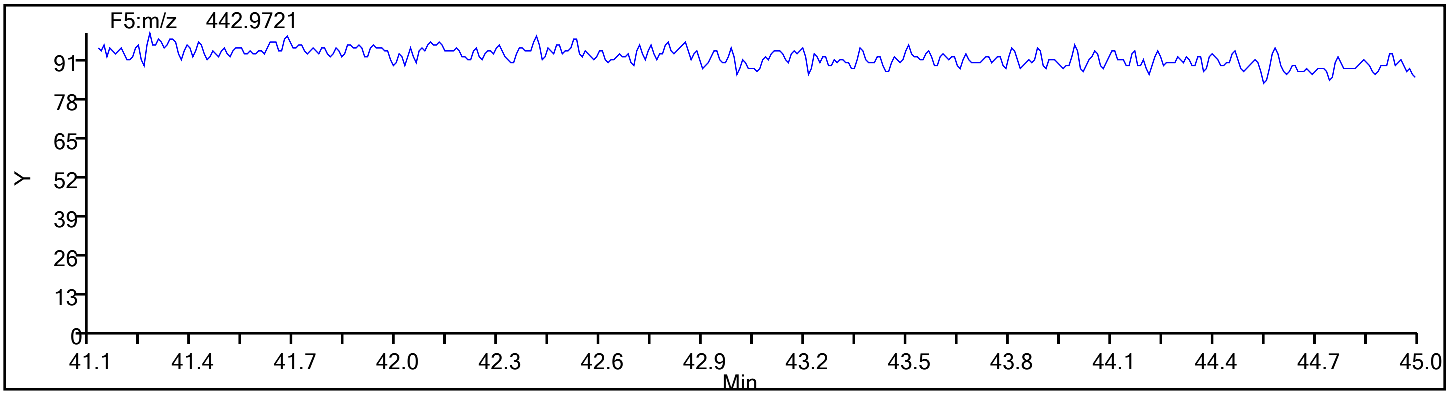

Report Date: 18-Oct-2021 13:41:23 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 15-Oct-2021 10:15:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: WDM HRDXNCP_00044
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:23 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: stephensk Date: 15-Oct-2021 12:44:25

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	19.809	5789118	0.81	1.2244					0.00	
2,3,7,8-TCDF	19.852	13139350	0.80	1.1194	81.1	81.1	0.2248	0.2248		
A Non-2,3,7,8-sub-TCDF	19.372	100796	0.72	1.1194	0.6221	0.6221	0.2248	0.6221		
S Total TCDF					81.7	81.7	0.2248	0.2248		
D 13C-2,3,7,8-TCDD	21.148	3313204	0.82	0.8210					0.00	
2,3,7,8-TCDD	21.174	4097434	0.78	1.0943	45.2	45.2	0.1765	0.1765		
A Non-2,3,7,8-sub-TCDD	20.213						0.1765	0.1765		
S Total TCDD					45.2	45.2	0.1765	0.1765		
A F1 PeCDFs	24.221	20952	1.55	0.0000						RQ
A Non-2,3,7,8-sub-PeCDF	27.645	92937	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	28.034						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	34.703						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	35.108	44337	1.27	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	38.435	4953837	1.05	1.5851						
1,2,3,4,7,8,9-HpCDF	39.708	4250641	1.05	1.1597						
A Non-2,3,7,8-sub-HpCDF	39.072						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	39.405	3077839	1.05	1.0819						
A Non-2,3,7,8-sub-HpCDD	39.202						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.662	7609611	0.80							
1,3,6,8-TCDD	17.251	3908041	0.79							
2,3,4,7-TCDF	19.852	13139350	0.80							
1,2,3,7-TCDD	20.968	3400278	0.80							
1,2,3,9-TCDF	21.337	5564862	0.81							
1,2,3,9-TCDD	21.449	4088470	0.80							
1,2,8,9-TCDF	23.081	6091844	0.81							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	23.175	1700924								
1,3,4,6,8-PeCDF	23.622	4444486	1.59							
1,2,3,8,9-PeCDD	25.670	3298497	1.59							
1,2,4,7,9-PeCDD	30.180	3190776	1.59							
1,2,3,8,9-PeCDF	30.331	4682624	1.59							
1,2,3,4,6,8-HxCDF	32.727	5747192	1.24							
1,2,4,6,7,9-HxCDD	33.891	3789629	1.27							
1,2,3,4,6,7-HxCDD	36.326	3769891	1.26							
1,2,3,4,8,9-HxCDF	36.680	5380023	1.25							
1,2,3,4,6,7,9-HpCDD	38.756	3350262	1.03							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00044 Amount Added: 1.00 Units: uL

Report Date: 18-Oct-2021 13:41:23 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d				
Lims ID:	WDM				
Client ID:					
Sample Type:	WDM				
Inject. Date:	15-Oct-2021 10:15:00	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	WDM HRDXNCP_00044				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Oct-2021 13:41:23	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1621				

First Level Reviewer: stephensk Date: 15-Oct-2021 12:44:25

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	19.809	19.809	0	1.000	2590532	416940	1626	4065	256		
317.9389	19.809	19.809	0	1.000	3198586	504699	554	1385	911	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.852	19.852	0	1.002	5829288	831007	981	2452	847		
305.8987	19.852	19.852	0	1.002	7310062	1045223	1338	3345	781	0.80(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	23.622	19.372	255	1.192	42322	6357	981	2452	6		
305.8987	23.622	19.372	255	1.192	58474	9144	1338	3345	7	0.72(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	21.148	21.148	0	1.000	1491798	213605	498	1245	429		
333.9338	21.140	21.148	-1	1.000	1821406	255541	141	352	1812	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.174	21.174	0	1.001	1800685	260429	465	1162	560		
321.8936	21.174	21.174	0	1.001	2296749	328338	441	1102	745	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						465	1162			
321.8936	20.213						441	1102			
A F1 PeCDFs											RQ
339.8597	23.957	24.221	-16	1.000	12736	2280	45	112	51		
341.8567	23.948	24.221	-16	1.000	10062	1636	85	212	19	1.27(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	25.333	27.645	-138	1.000	8823	1583	413	1032	4		
341.8567	25.308	27.645	-140	1.000	5528	1279	314	785	4	1.60(1.32-1.78)	
339.8597	26.286	27.645	-81	1.000	10873	2063	413	1032	5		
341.8567	26.294	27.645	-81	1.000	7455	1223	314	785	4	1.46(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	26.859	27.645	-47	1.000	22535	3136	413	1032	8		
341.8567	26.843	27.645	-48	1.000	18226	2610	314	785	8	1.24(1.32-1.78)	
339.8597	27.441	27.645	-12	1.000	14093	2759	413	1032	7		
341.8567	27.424	27.645	-13	1.000	11931	1771	314	785	6	1.18(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						452	1130			
357.8516	28.034						237	592			
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.703						821	2052			
375.8178	34.703						599	1497			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.070	35.108	-2	1.000	24808	5796	536	1340	11		
391.8127	35.079	35.108	-2	1.000	19529	4187	426	1065	10	1.27(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.435	38.435	0	1.000	2534363	816918	1018	2545	802		
409.7788	38.435	38.435	0	1.000	2419474	775972	874	2185	888	1.05(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.708	39.708	0	1.000	2178486	755458	1018	2545	742		
409.7788	39.708	39.708	0	1.000	2072155	721121	874	2185	825	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						1018	2545			
409.7788	39.072						874	2185			
1,2,3,4,6,7,8-HpCDD											
423.7767	39.405	39.405	0	1.000	1578492	549053	584	1460	940		
425.7737	39.405	39.405	0	1.000	1499347	528162	545	1362	969	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.202						584	1460			
425.7737	39.202						545	1362			
1,3,6,8-TCDF											
303.9016	15.662	15.662	0		3375867	700771	981	2452	714		
305.8987	15.654	15.662	-1		4233744	872174	1338	3345	652	0.80(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	17.251	17.251	0		1724845	320133	465	1162	688		
321.8936	17.251	17.251	0		2183196	403625	441	1102	915	0.79(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	19.852	19.852	0		5829288	831007	981	2452	847		
305.8987	19.852	19.852	0		7310062	1045223	1338	3345	781	0.80(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	20.968	20.968	0		1514154	225035	465	1162	484		
321.8936	20.968	20.968	0		1886124	286445	441	1102	650	0.80(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	21.337	21.337	0		2482226	357275	981	2452	364		
305.8987	21.337	21.337	0		3082636	433350	1338	3345	324	0.81(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	21.449	21.449	0		1817996	247400	465	1162	532		
321.8936	21.449	21.449	0		2270474	305571	441	1102	693	0.80(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	23.081	23.081	0		2721688	393244	981	2452	401		
305.8987	23.081	23.081	0		3370156	484501	1338	3345	362	0.81(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	23.175	23.175	0		1700924	247308	465	1162	532		
1,3,4,6,8-PeCDF											
339.8597	23.622	23.622	0		2725431	494783	45	112	10995		
341.8567	23.622	23.622	0		1719055	315899	85	212	3716	1.59(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.670	25.670	0		2026463	333054	452	1130	737		
357.8516	25.670	25.670	0		1272034	208716	237	592	881	1.59(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	30.180	30.180	0		1957548	279815	452	1130	619		
357.8516	30.180	30.180	0		1233228	179786	237	592	759	1.59(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	30.331	30.331	0		2875297	401738	413	1032	973		
341.8567	30.331	30.331	0		1807327	250893	314	785	799	1.59(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	32.727	32.727	0		3180369	512886	821	2052	625		
375.8178	32.719	32.727	-1		2566823	409565	599	1497	684	1.24(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8158	33.891	33.891	0		2122508	416269	536	1340	777		
391.8127	33.891	33.891	0		1667121	327847	426	1065	770	1.27(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8158	36.326	36.326	0		2105059	559831	536	1340	1044		
391.8127	36.326	36.326	0		1664832	446522	426	1065	1048	1.26(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	36.680	36.680	0		2992937	834260	821	2052	1016		
375.8178	36.680	36.680	0		2387086	650815	599	1497	1087	1.25(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7767	38.756	38.756	0		1702335	571477	584	1460	979		
425.7737	38.756	38.756	0		1647927	549627	545	1362	1008	1.03(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00044 Amount Added: 1.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	15-Oct-2021 10:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	1

Non-2,3,7,8-sub-TCDF, RT: 19.372

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	1.119	D 13C-2,3,7,8-TCDF	40.000	5789118	921639

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.119		40.000	5789118	921639

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
23.622	42322	6357	58474	9144	0.6221	0.72	
Signal Totals:							
	42322	6357	58474	9144			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	100796	15501				0.72	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.6221 = (100796 * 40.000) / (5789118 * 1.119)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	15-Oct-2021 10:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	1

F1 PeCDFs, RT: 24.221

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092				
2,3,4,7,8-PeCDF	0.875				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.957	12736	2280	10062	1636		1.27	R
Signal Totals:							
	12736	2280	10062	1636			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22798	3916				1.27	RQ
	20952	3750					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (22798 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (20952 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	15-Oct-2021 10:15:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	1

Non-2,3,7,8-sub-PeCDF, RT: 27.645

Initial Calibration RRF　　IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092				
2,3,4,7,8-PeCDF	0.875				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
25.333	8823	1583	5528	1279		1.60	
26.286	10873	2063	7455	1223		1.46	
26.859	22535	3136	18226	2610		1.24	R
27.441	14093	2759	11931	1771		1.18	R
Signal Totals:							
	56324	9541	43140	6883			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	99464	16424				1.31	RQ
	92937	15846					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (99464 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (92937 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Lims ID: WDM
Client ID:
Inject. Date: 15-Oct-2021 10:15:00
Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 534320
Lims Sample ID: 1

Non-2,3,7,8-sub-HxCDD, RT: 35.108

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.909				
1,2,3,6,7,8-HxCDD	1.028				
1,2,3,7,8,9-HxCDD	1.027				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8158 Area	389.8158 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
35.070	24808	5796	19529	4187		1.27	
Signal Totals:							
	24808	5796	19529	4187			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	44337	9983				1.27	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (44337 * 0.0) / (0 * 0.000)

Report Date: 18-Oct-2021 13:41:23
Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Injection Date: 15-Oct-2021 10:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

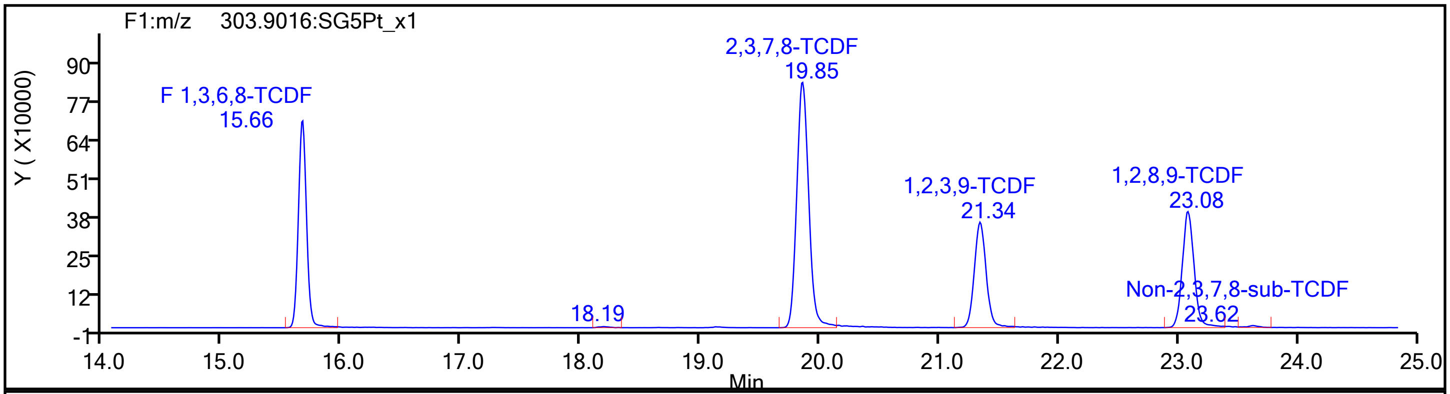

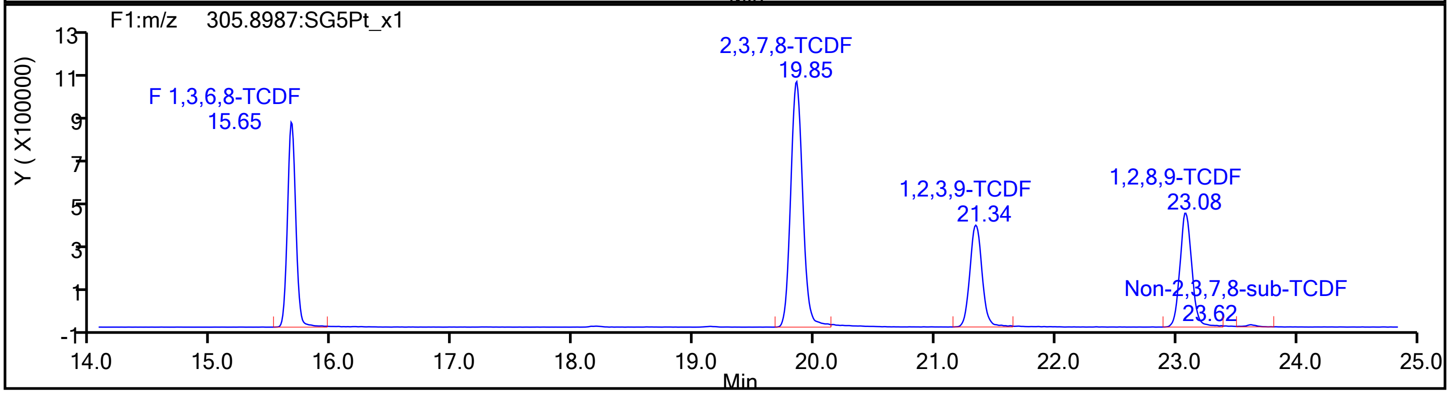

TCDF Standards

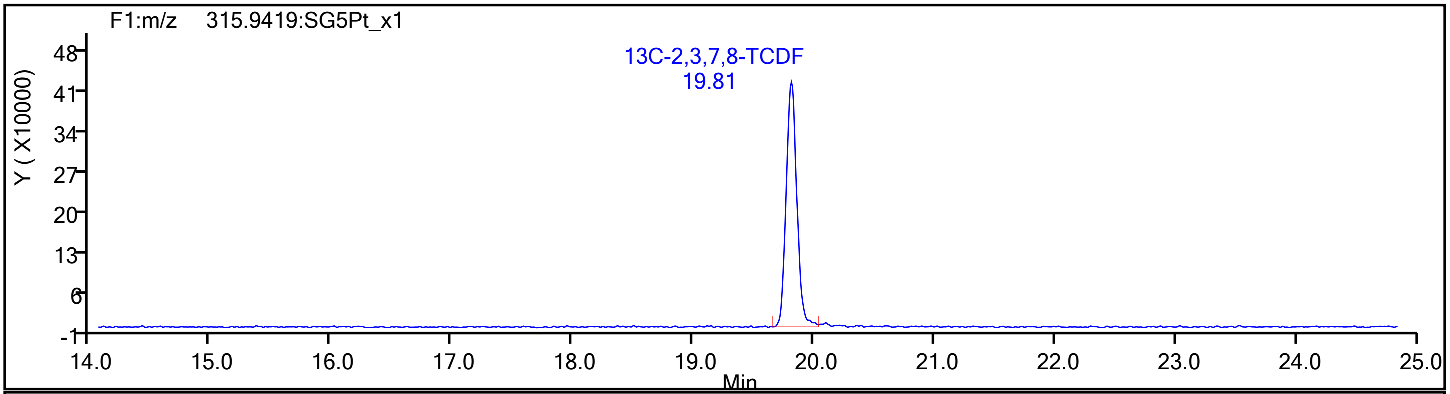

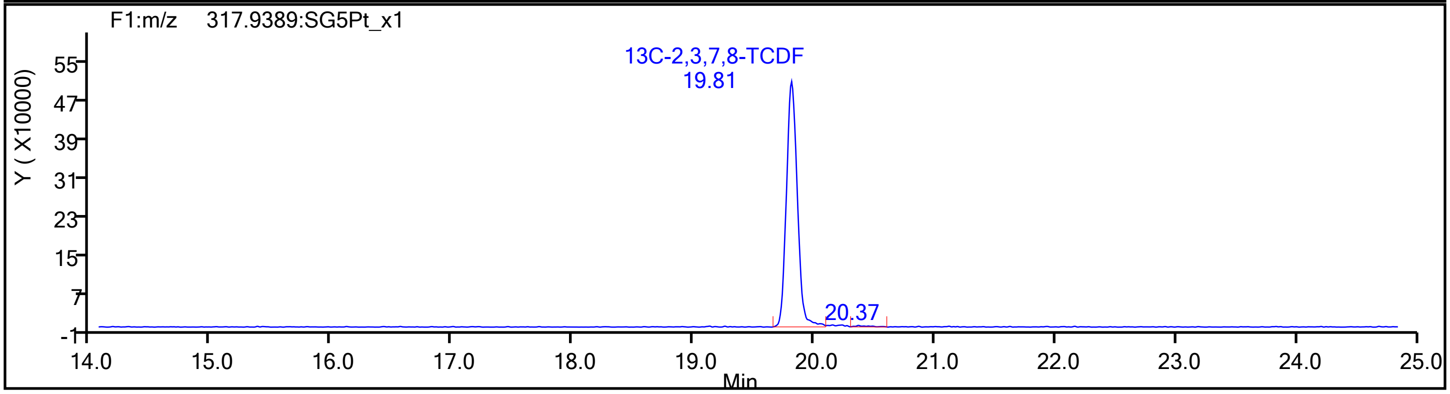

Report Date: 18-Oct-2021 13:41:23 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

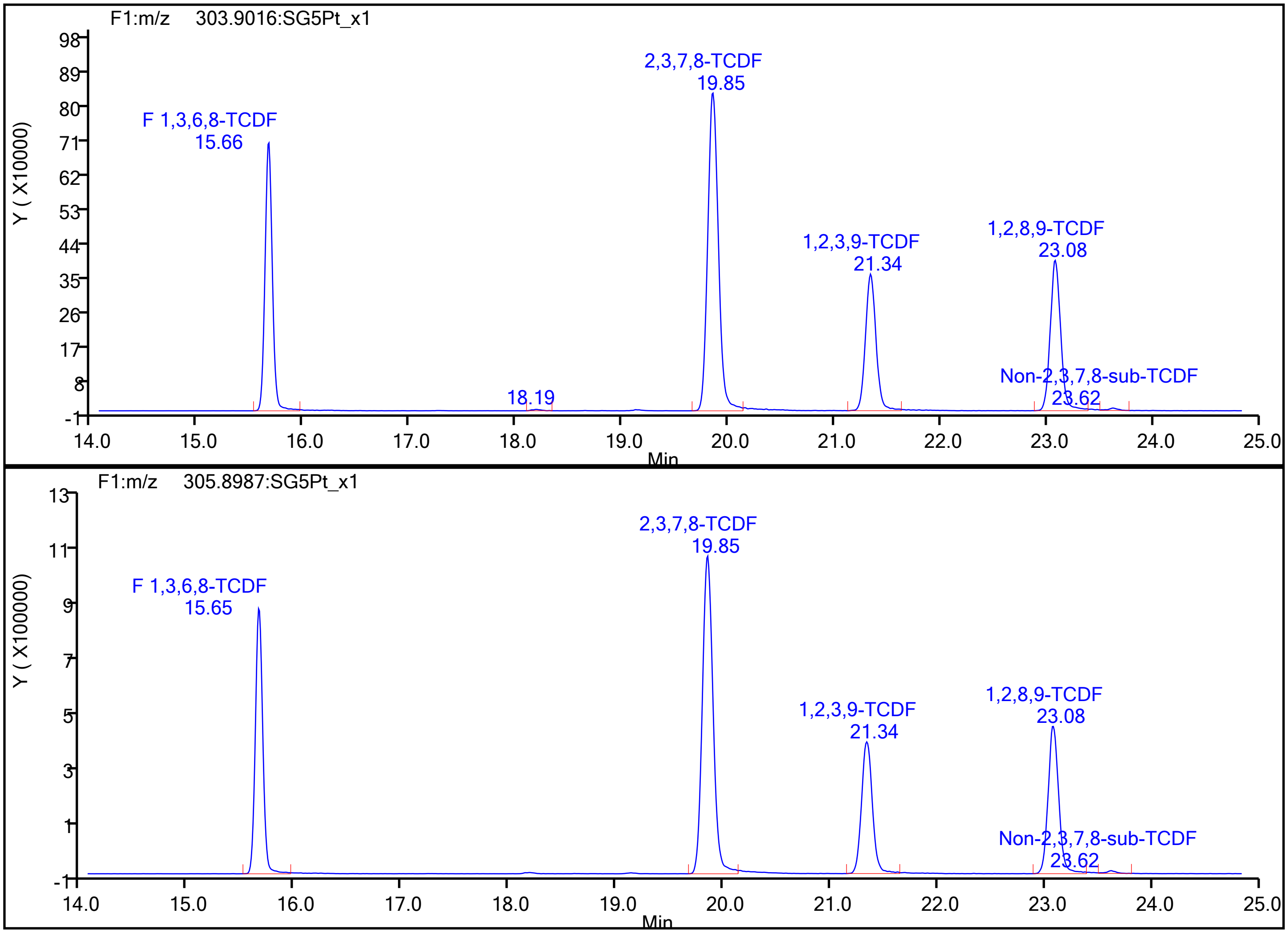

TCDF Interference Mass

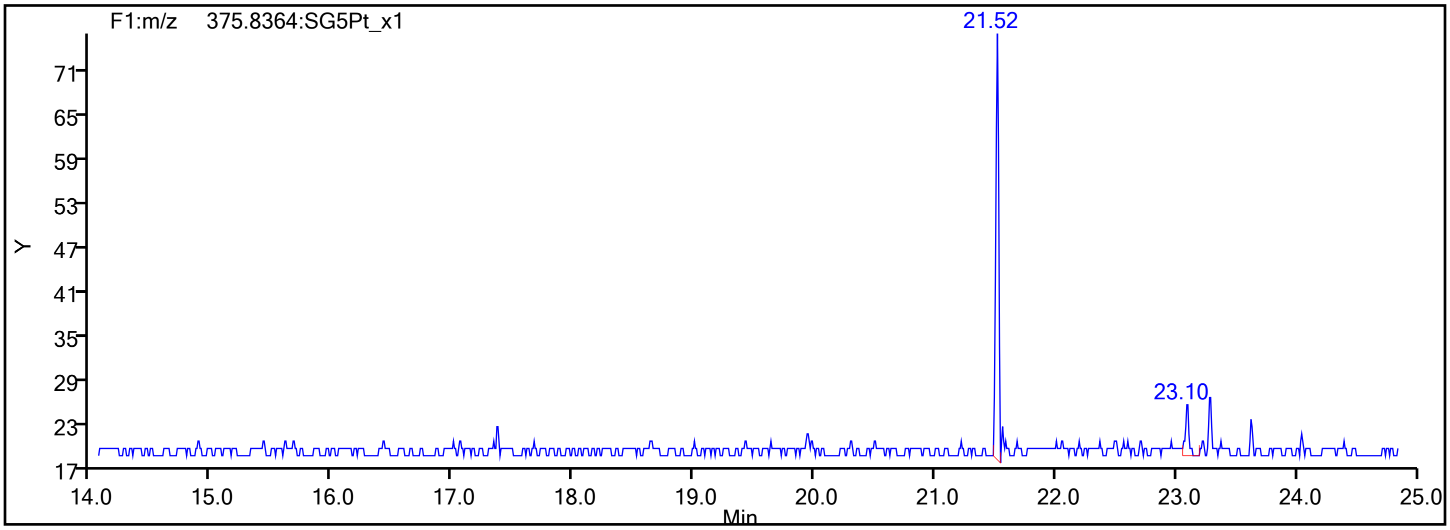

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

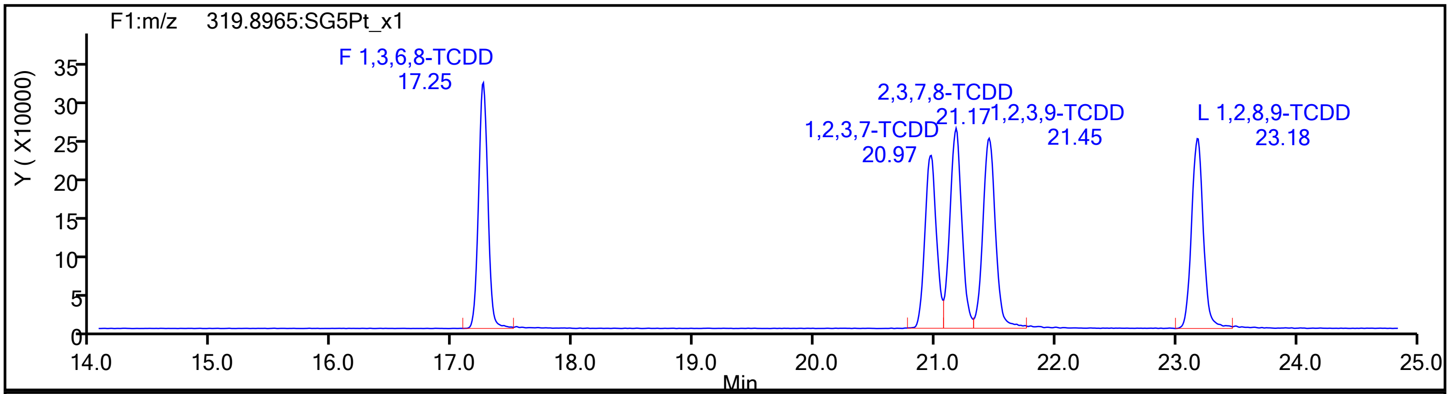

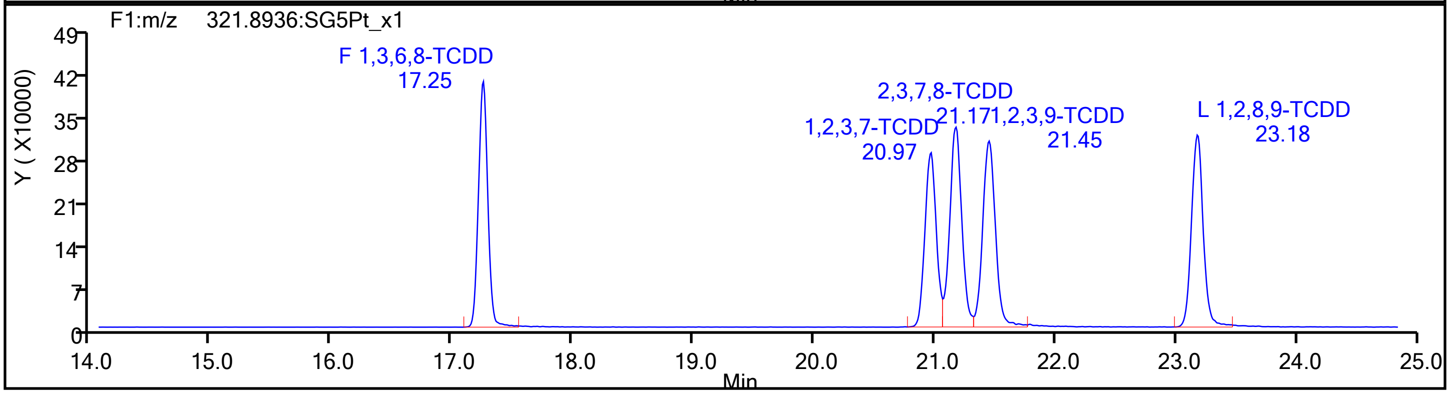

TCDD Standards

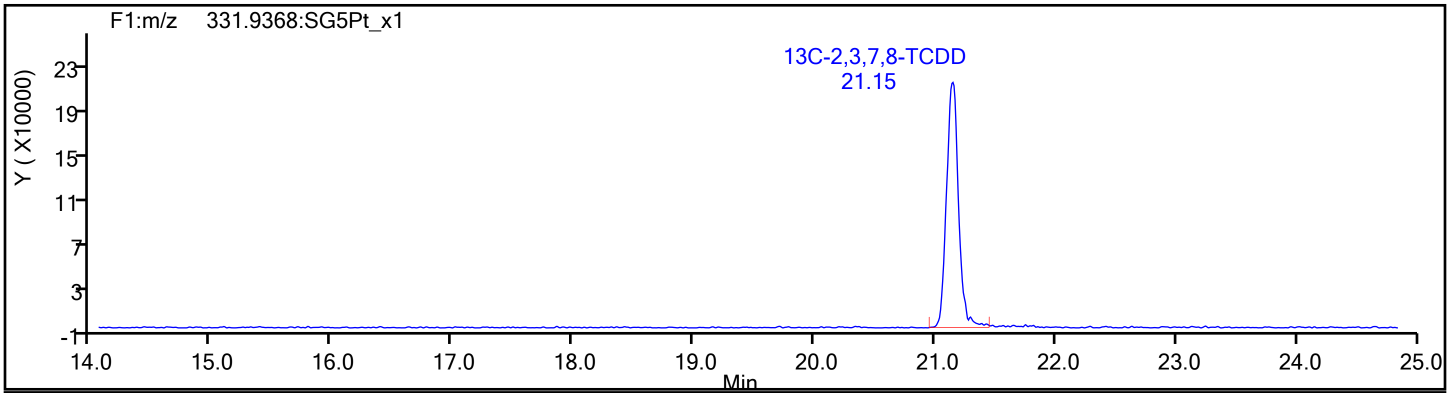

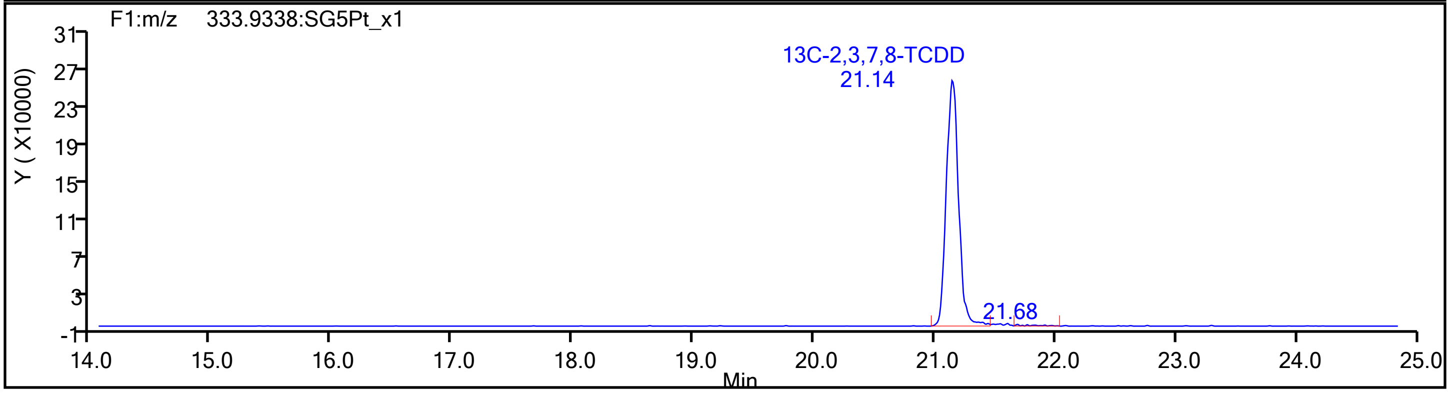

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

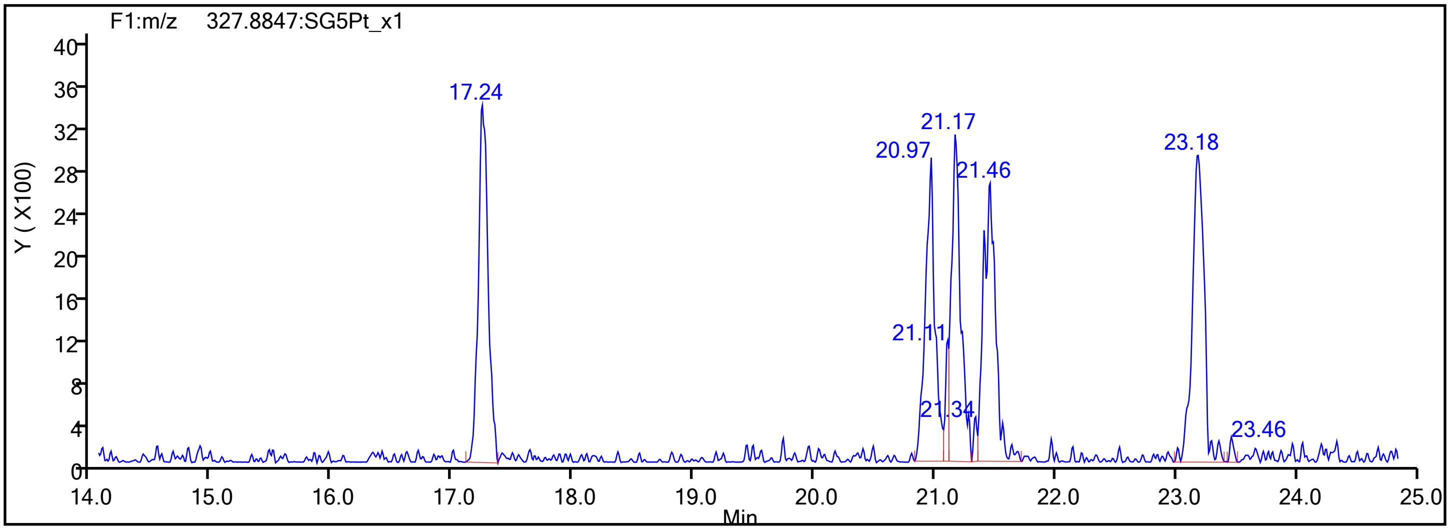

37Cl4-TCDD Standards

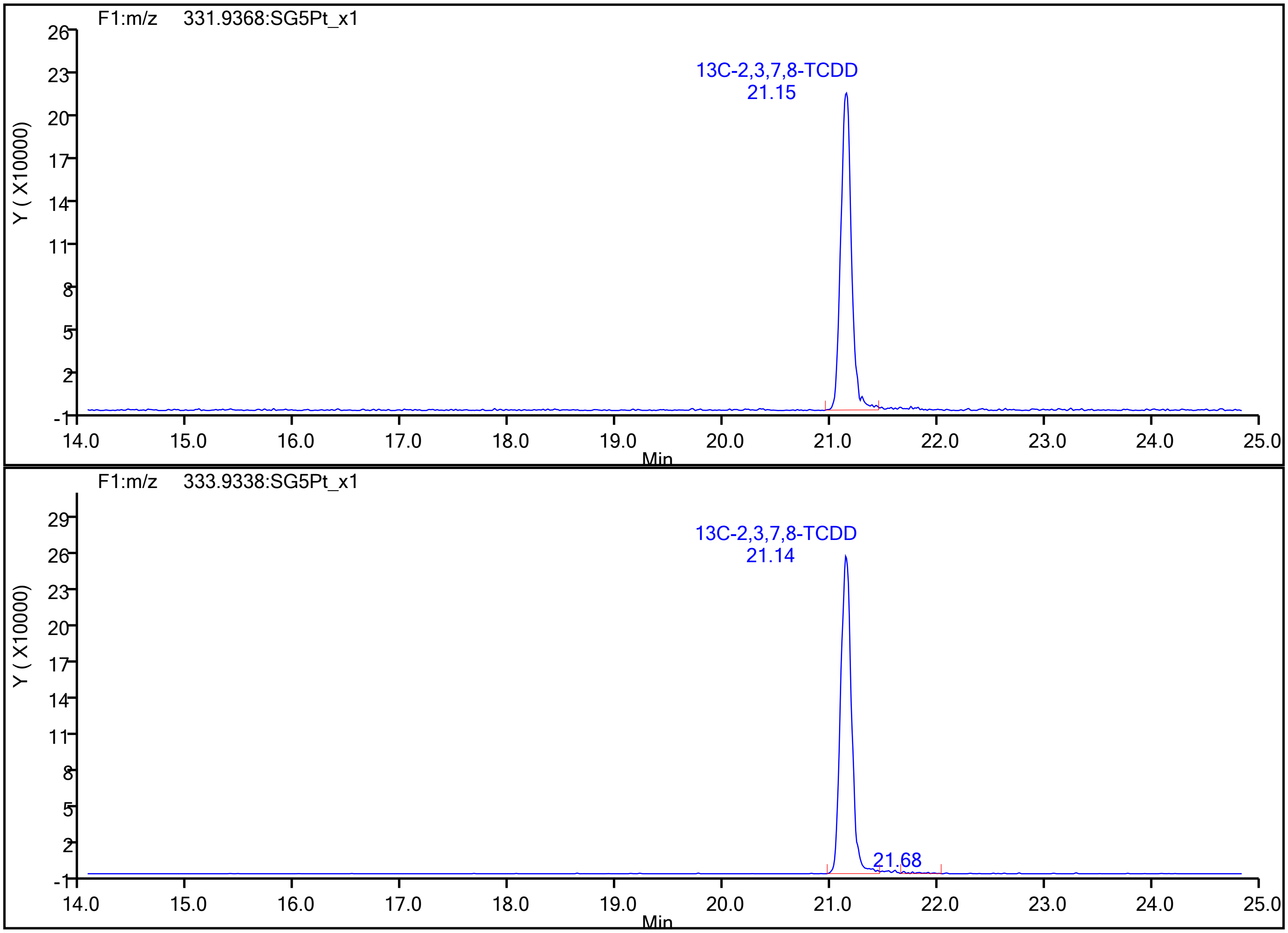

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d

Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

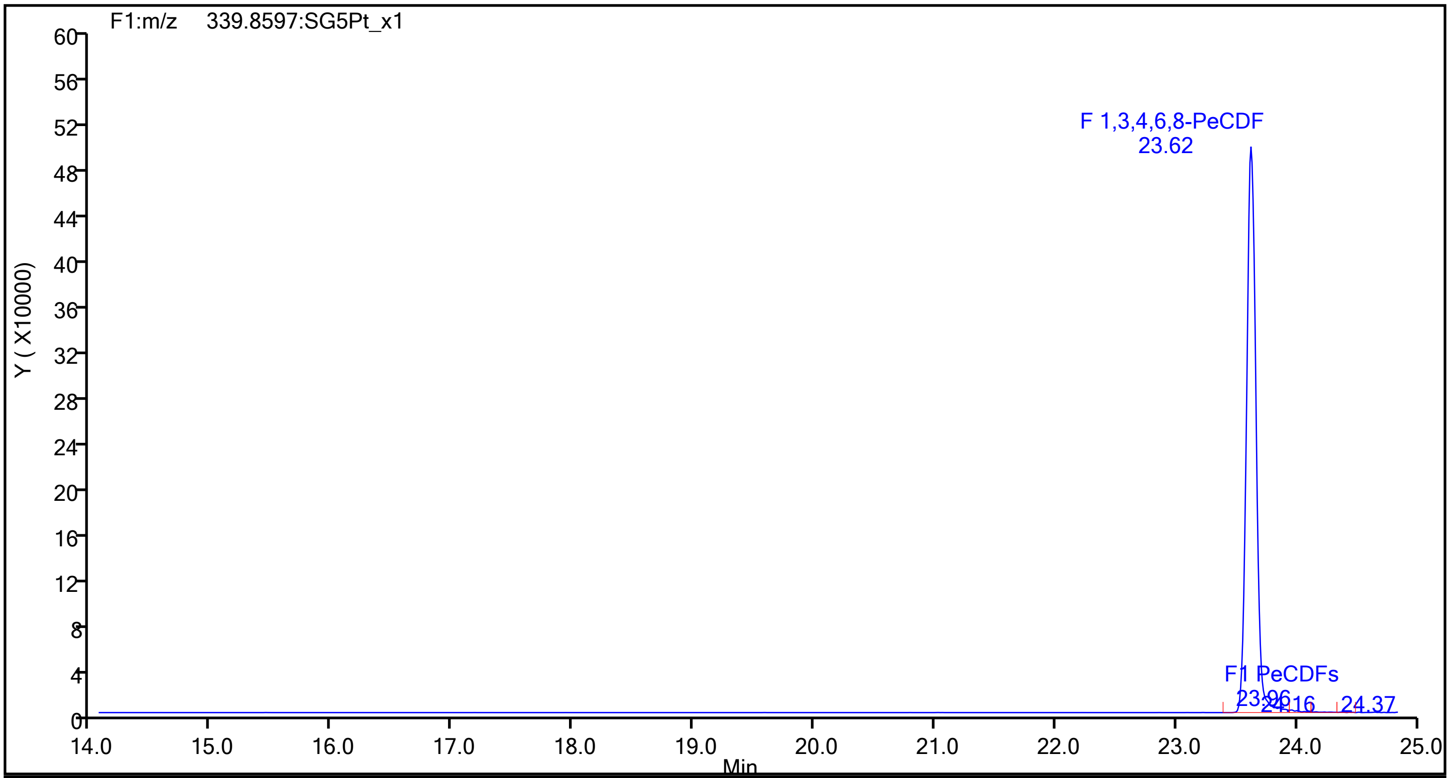

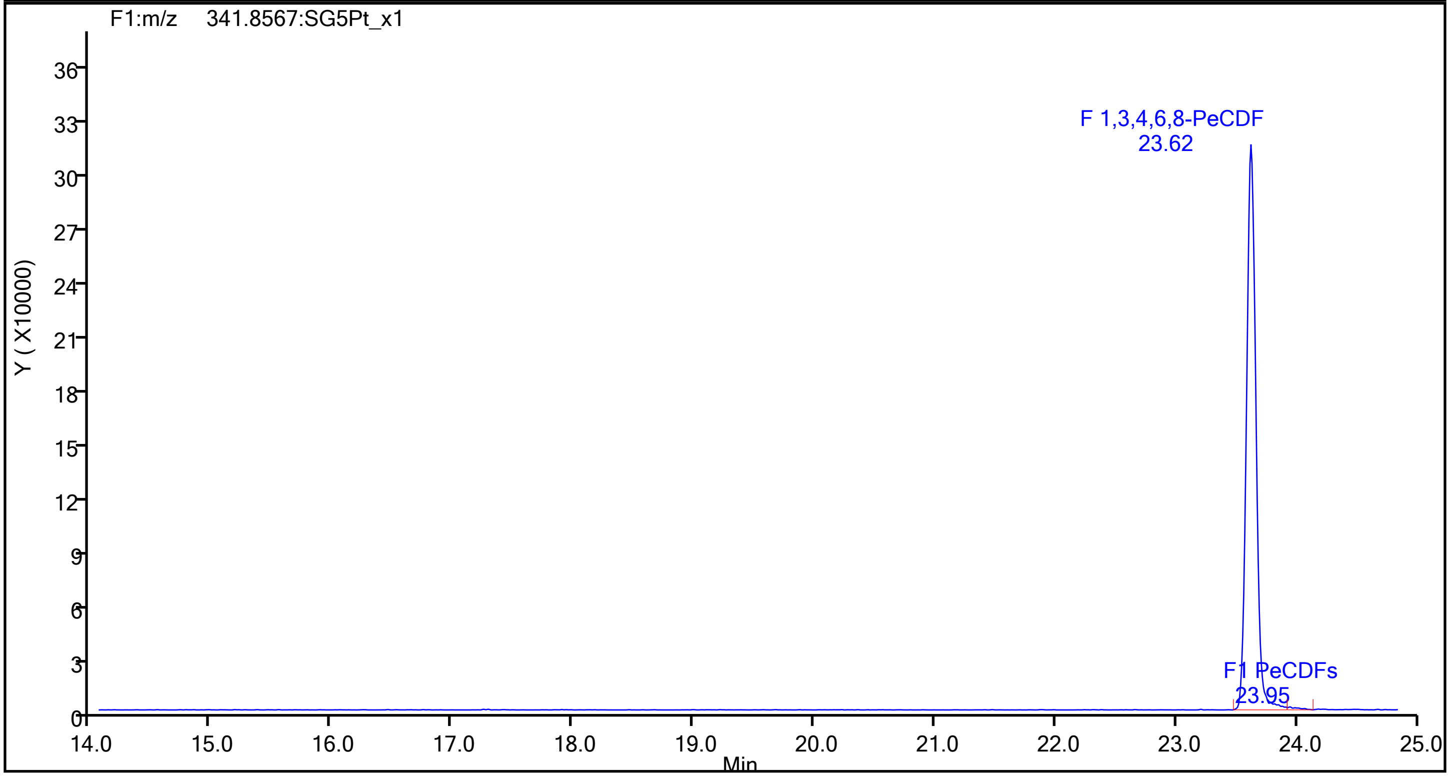

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d

Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

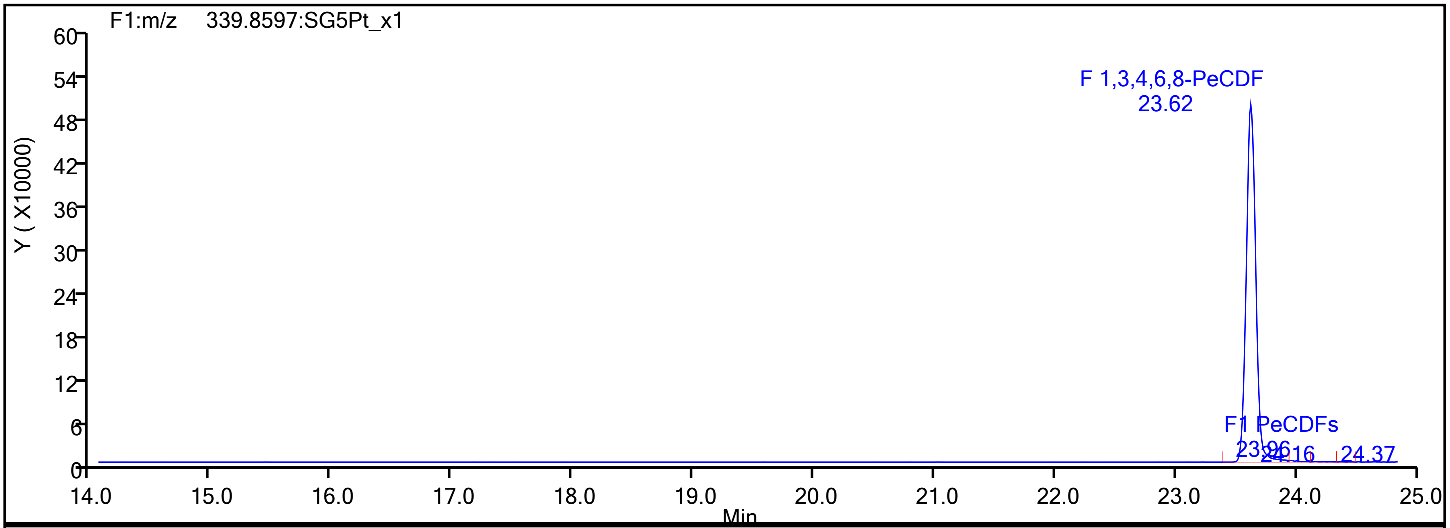

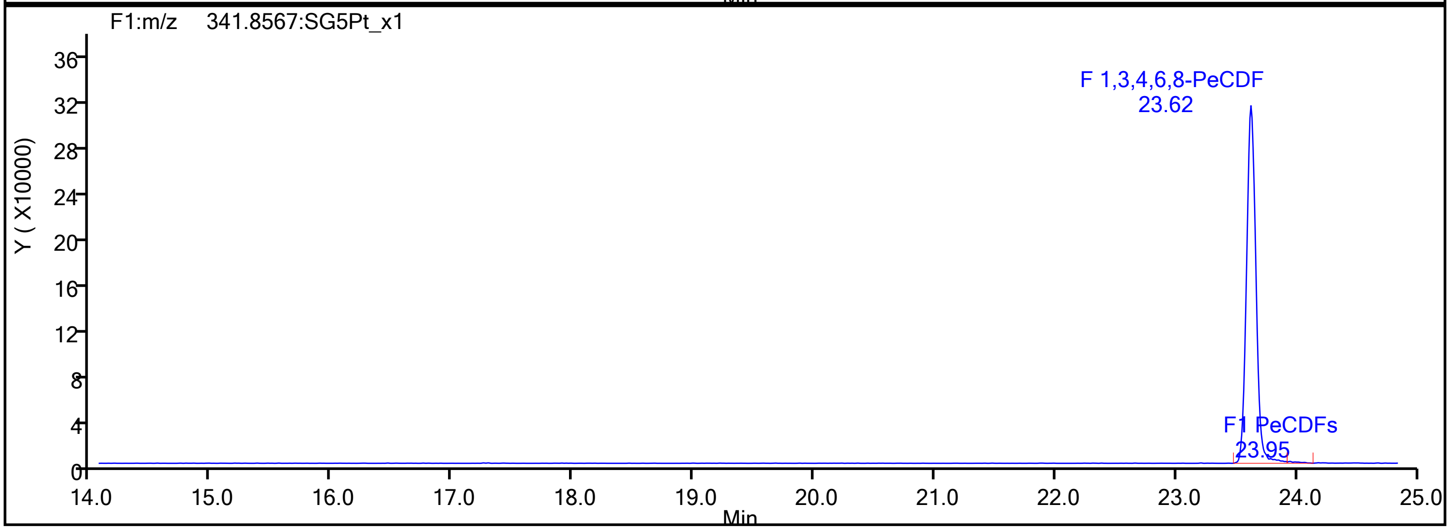

F1 PeCDFs Interference Mass

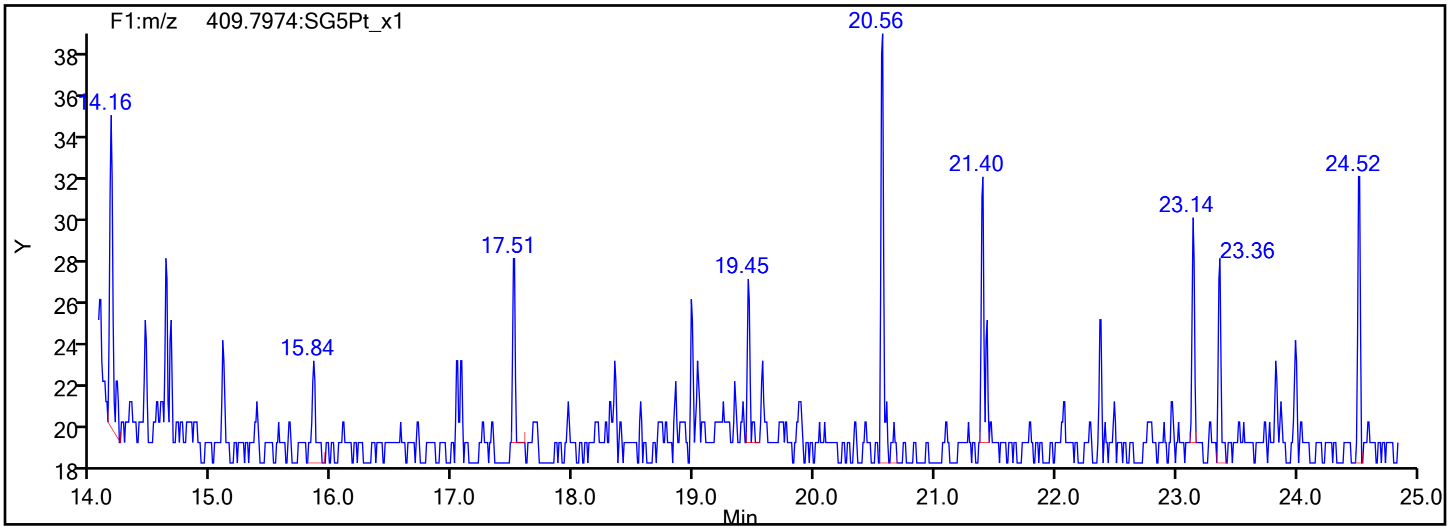

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d

Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

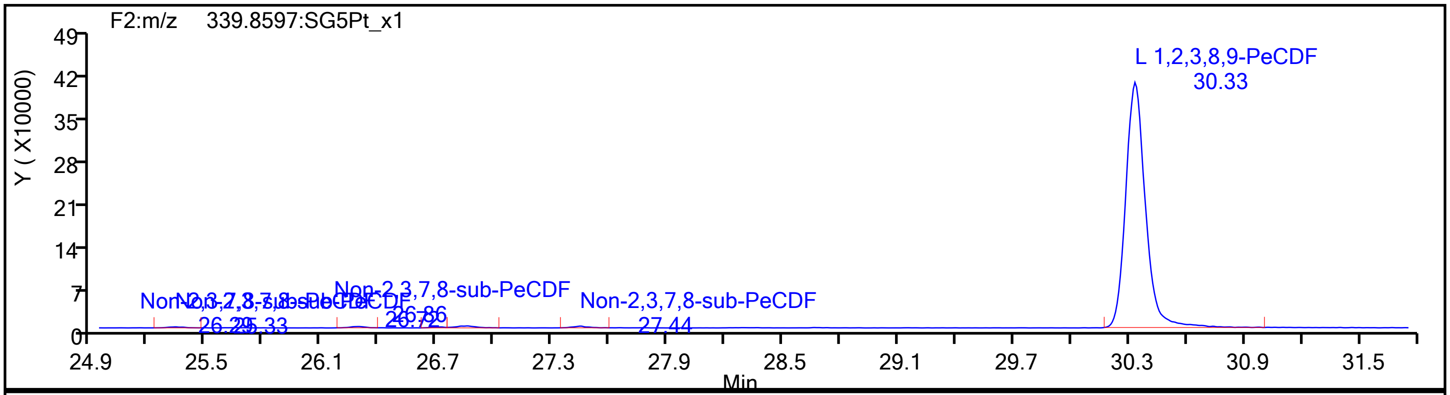

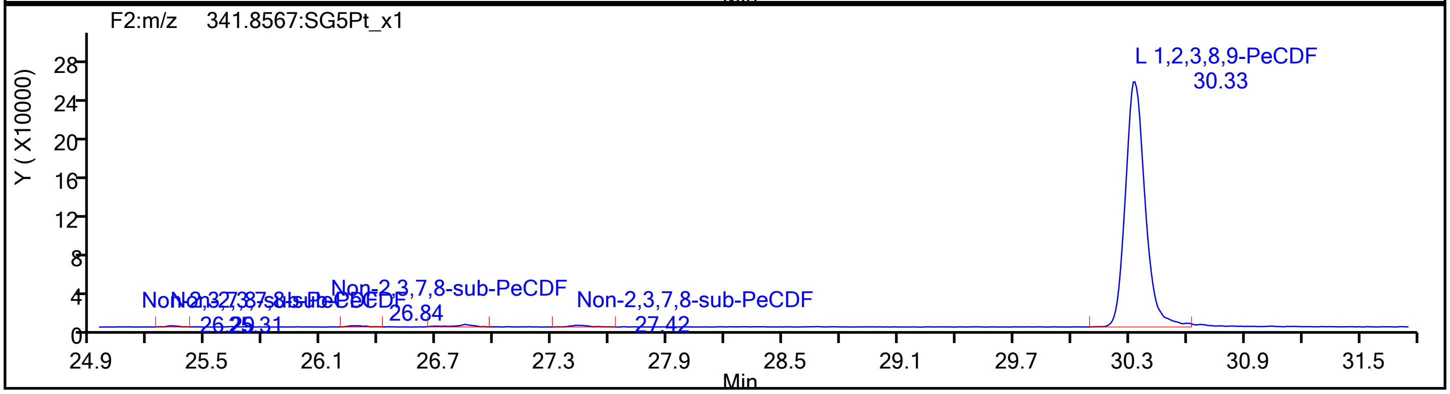

PeCDF Standards

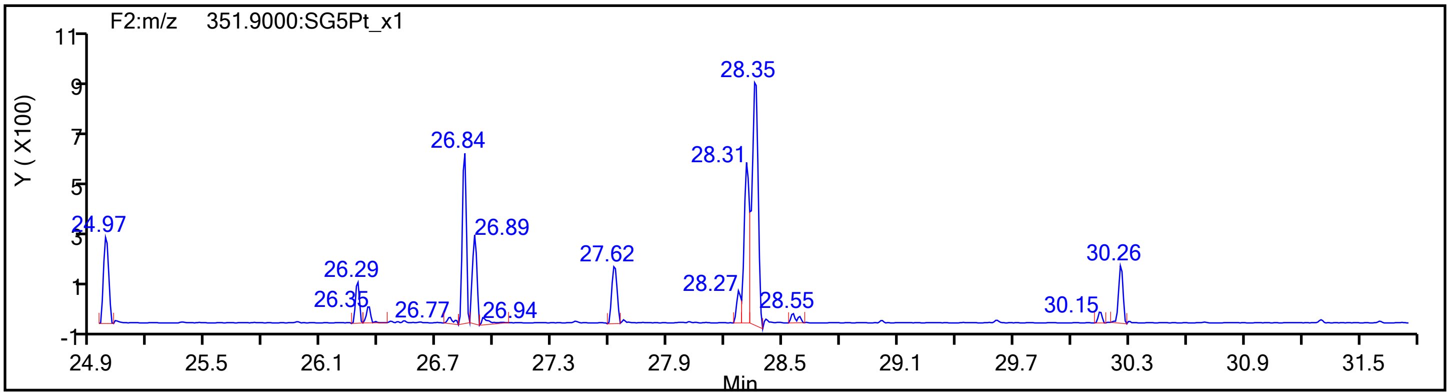

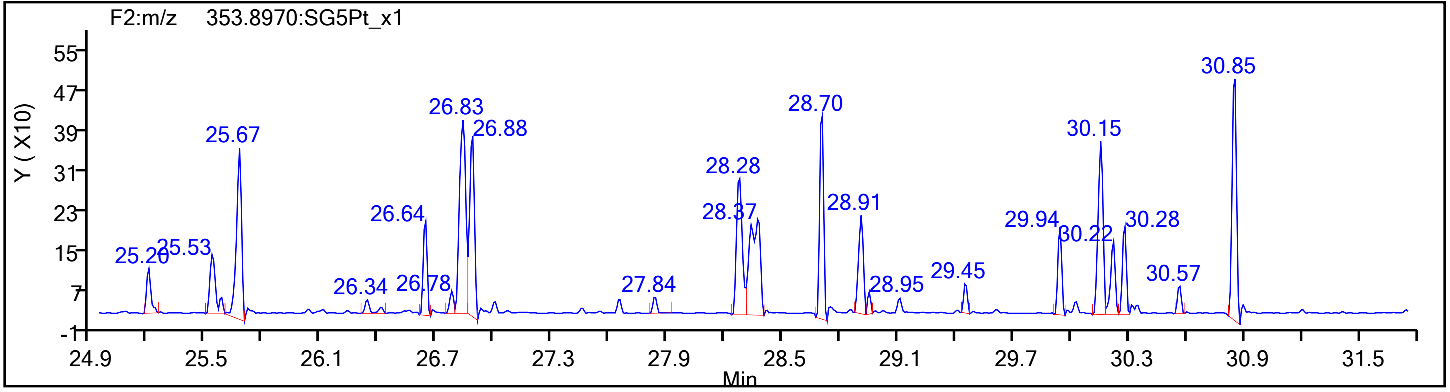

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Injection Date: 15-Oct-2021 10:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

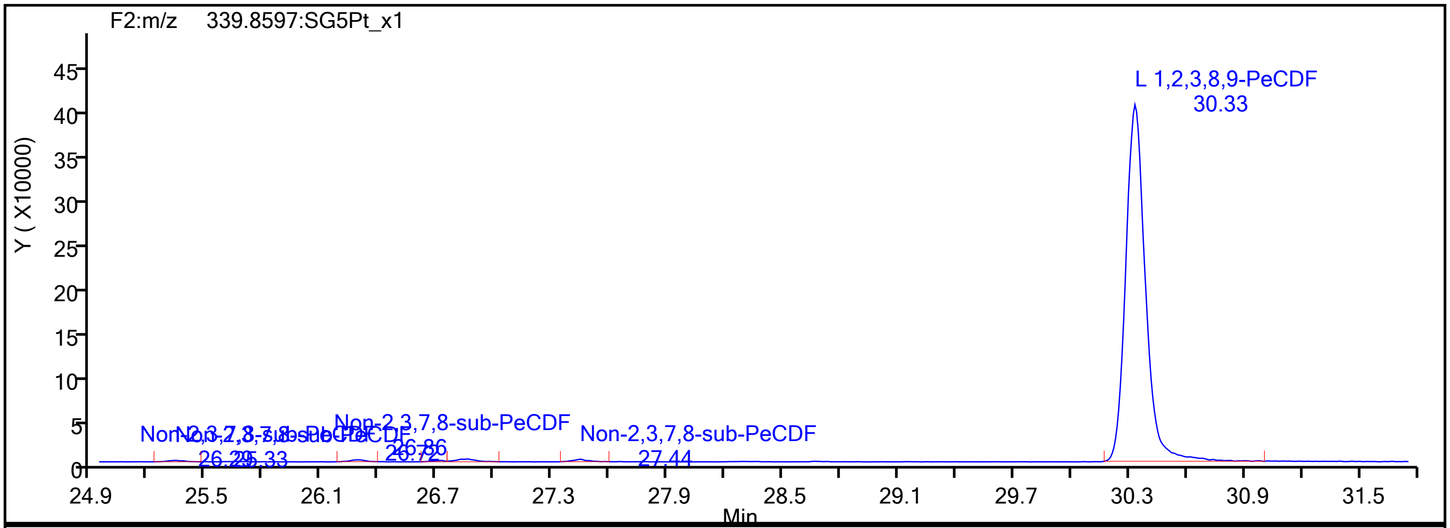

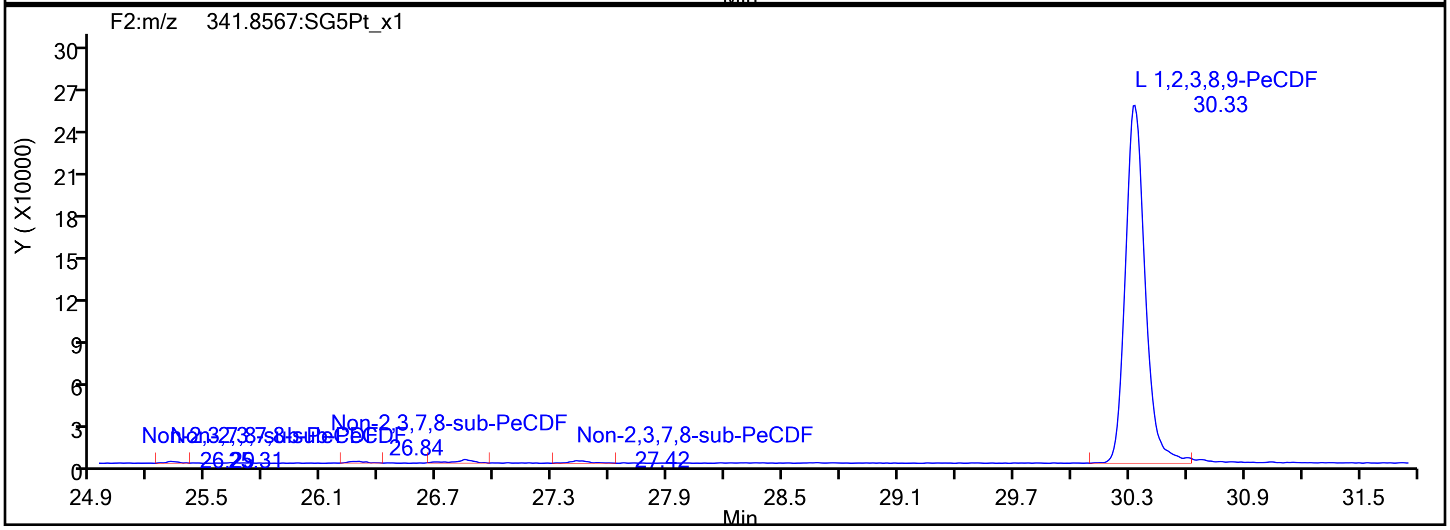

PeCDF Interference Mass

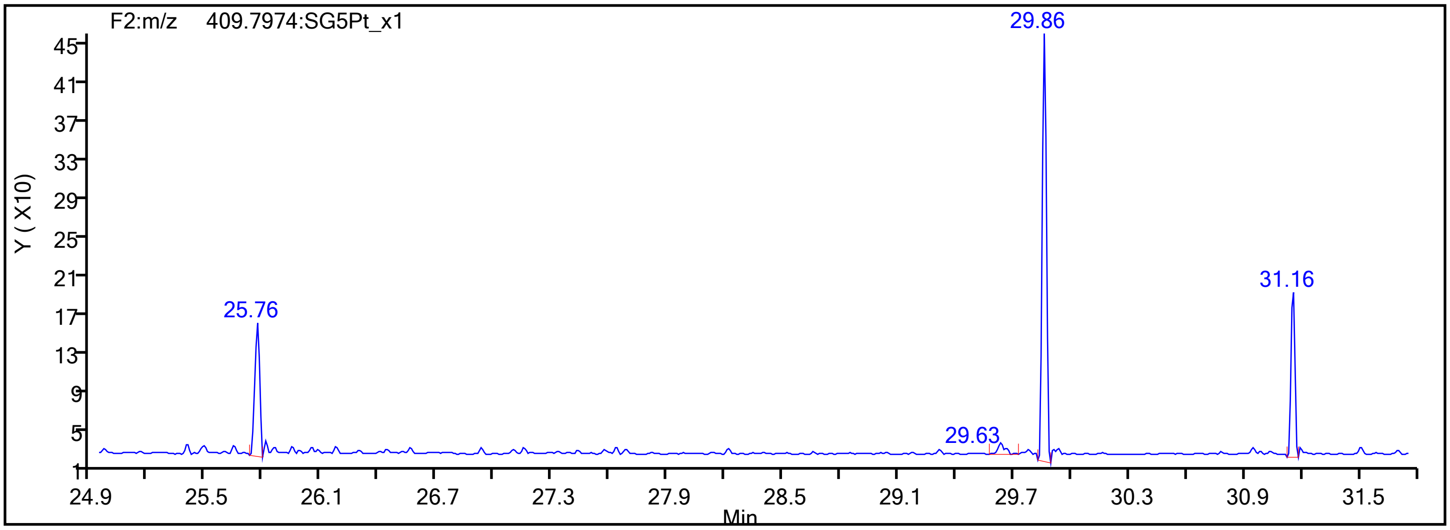

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Injection Date: 15-Oct-2021 10:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

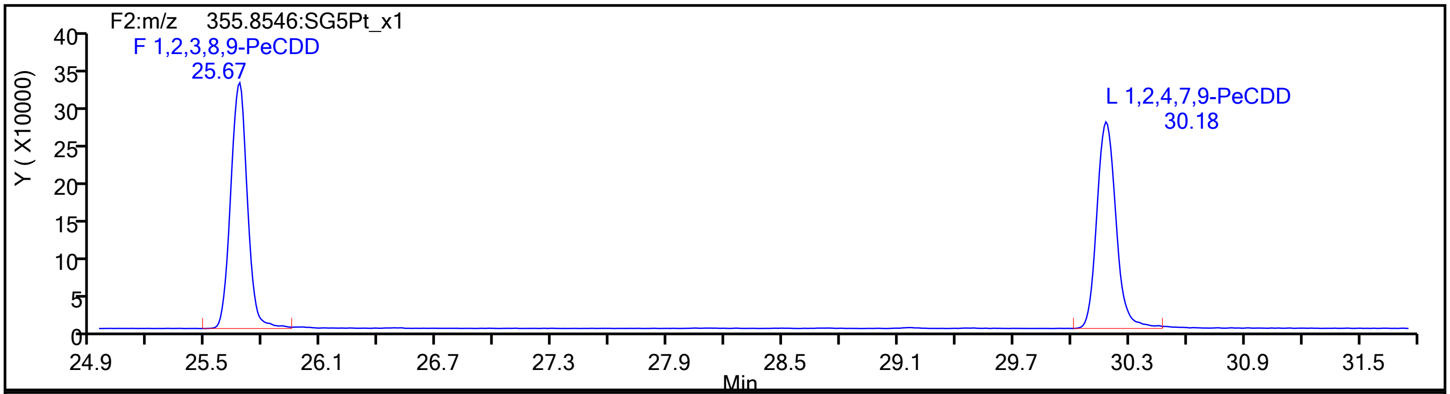

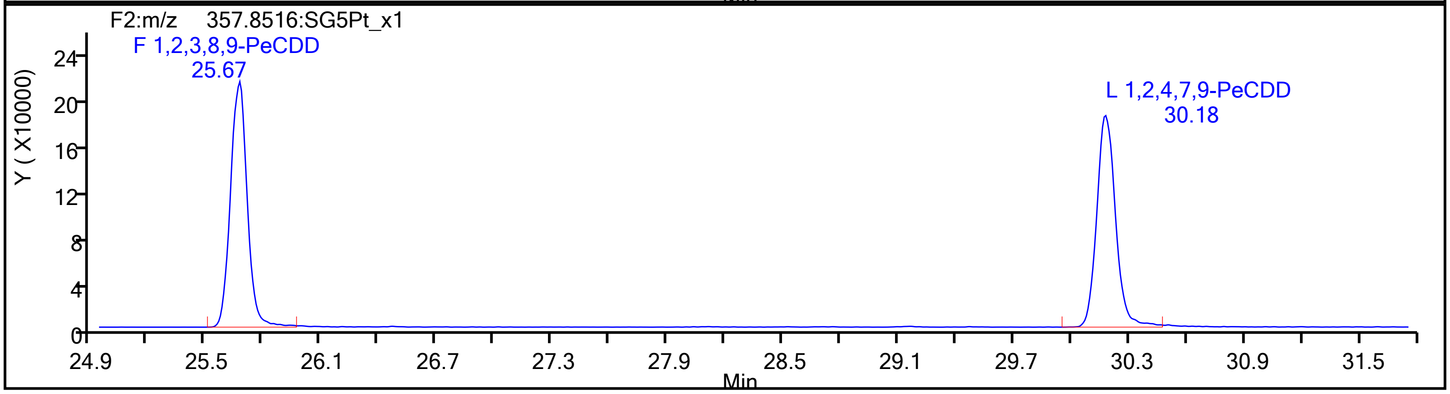

PeCDD Standards

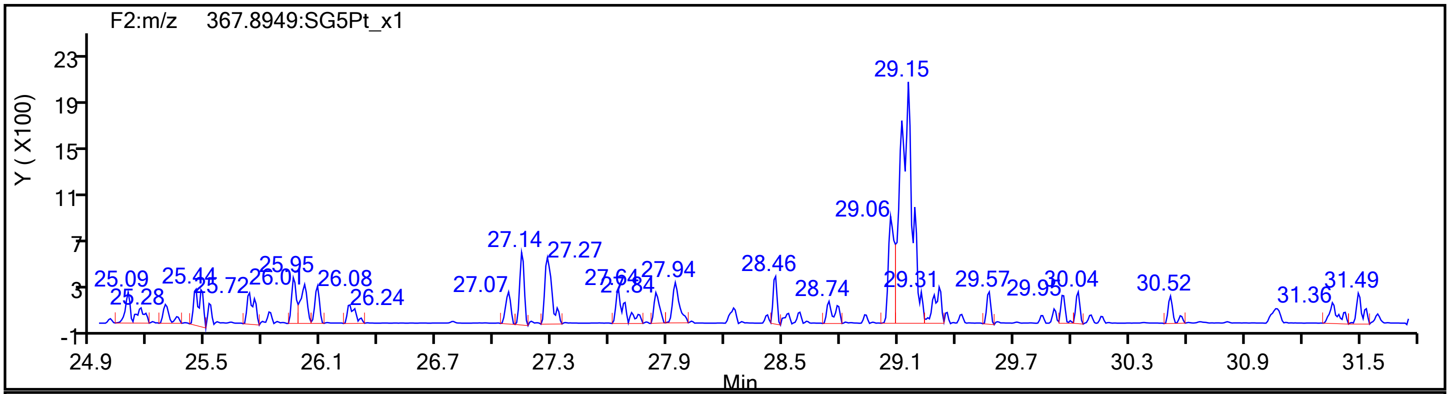

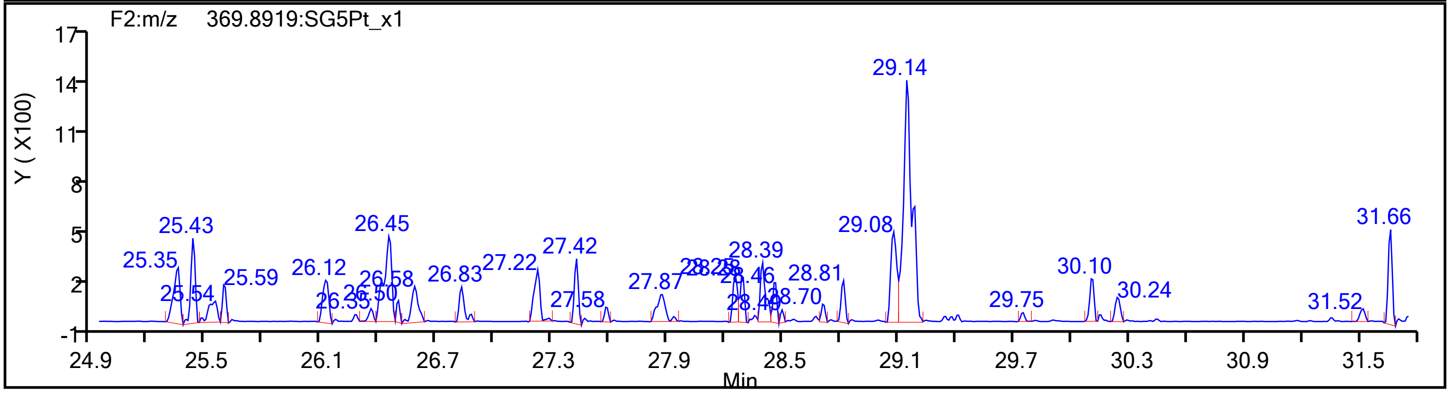

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d

Injection Date: 15-Oct-2021 10:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

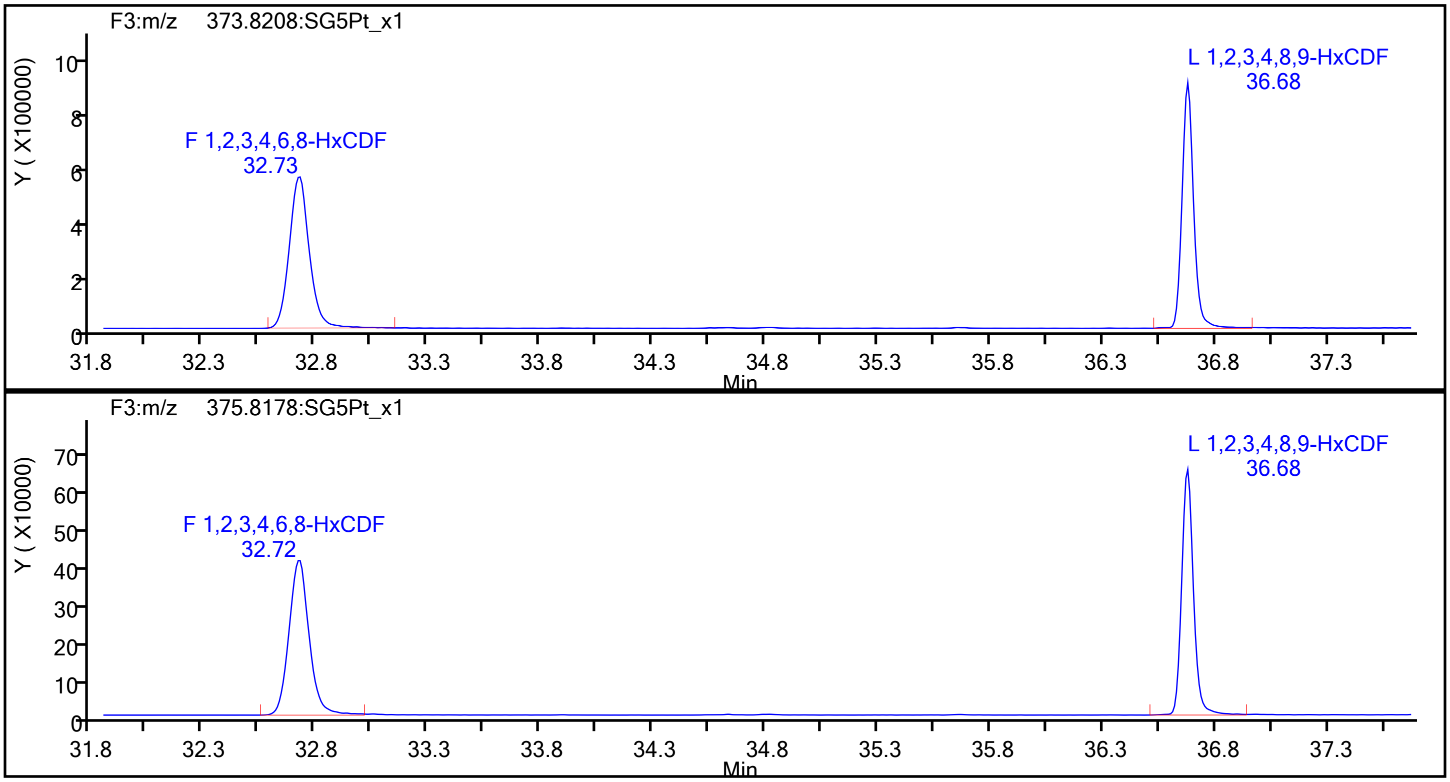

HxCDF Standards

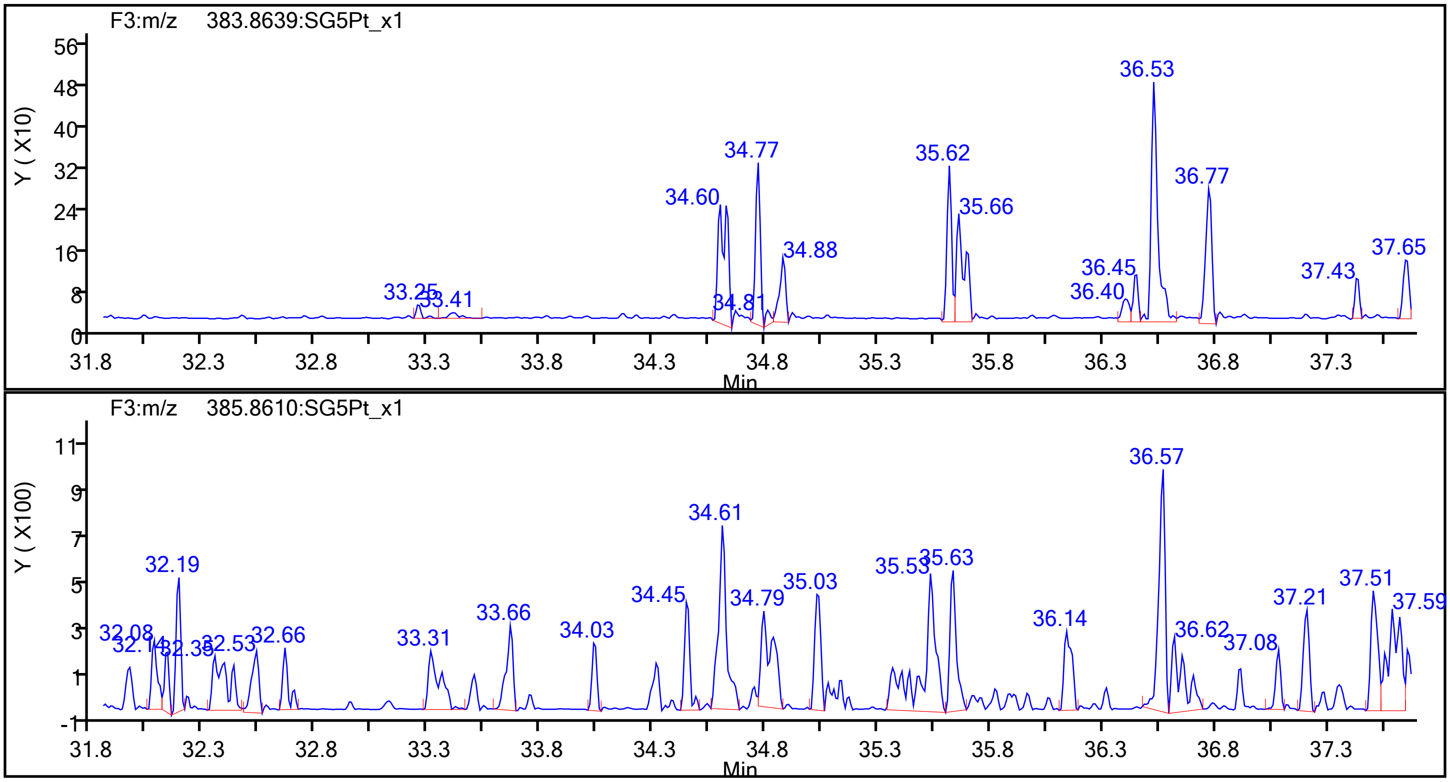

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

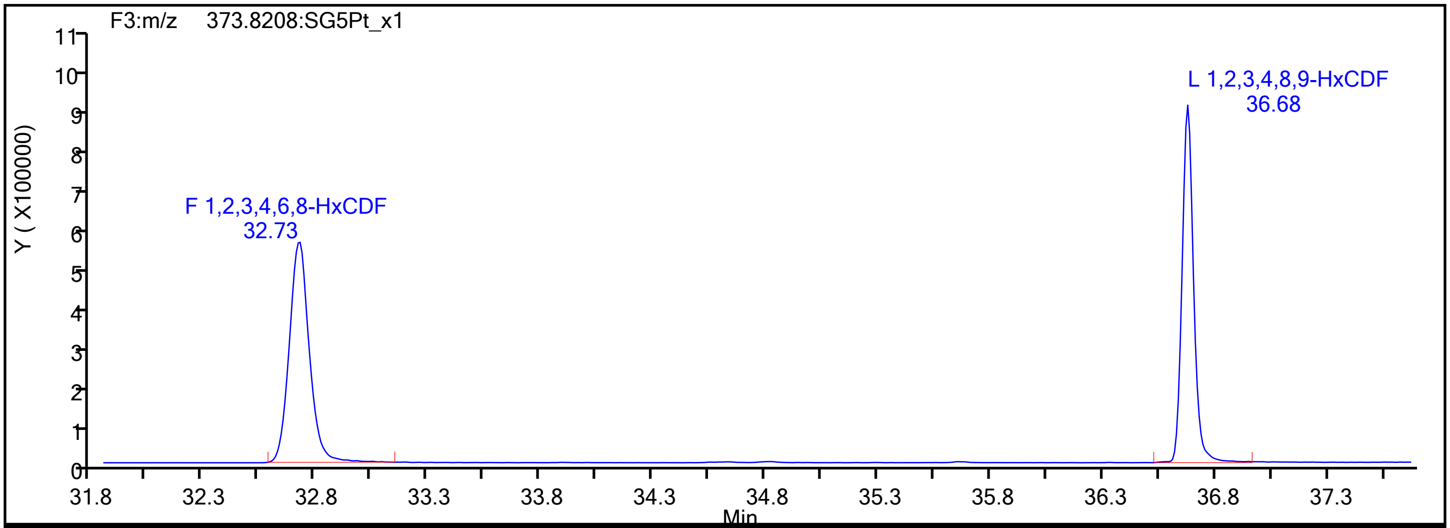

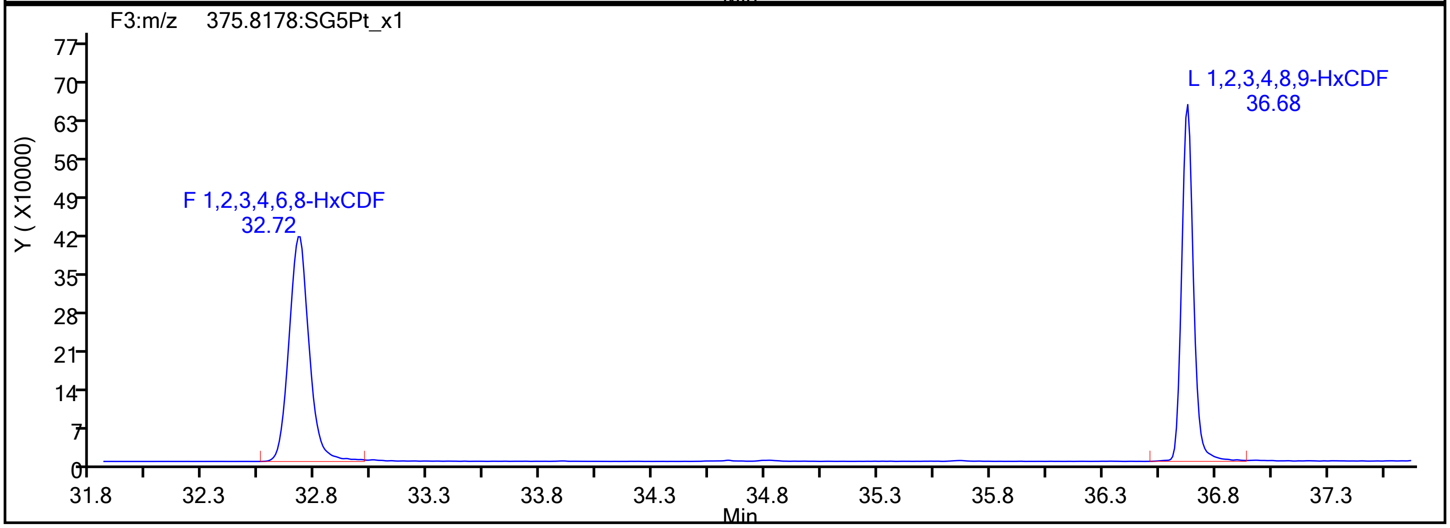

HxCDF Interference Mass

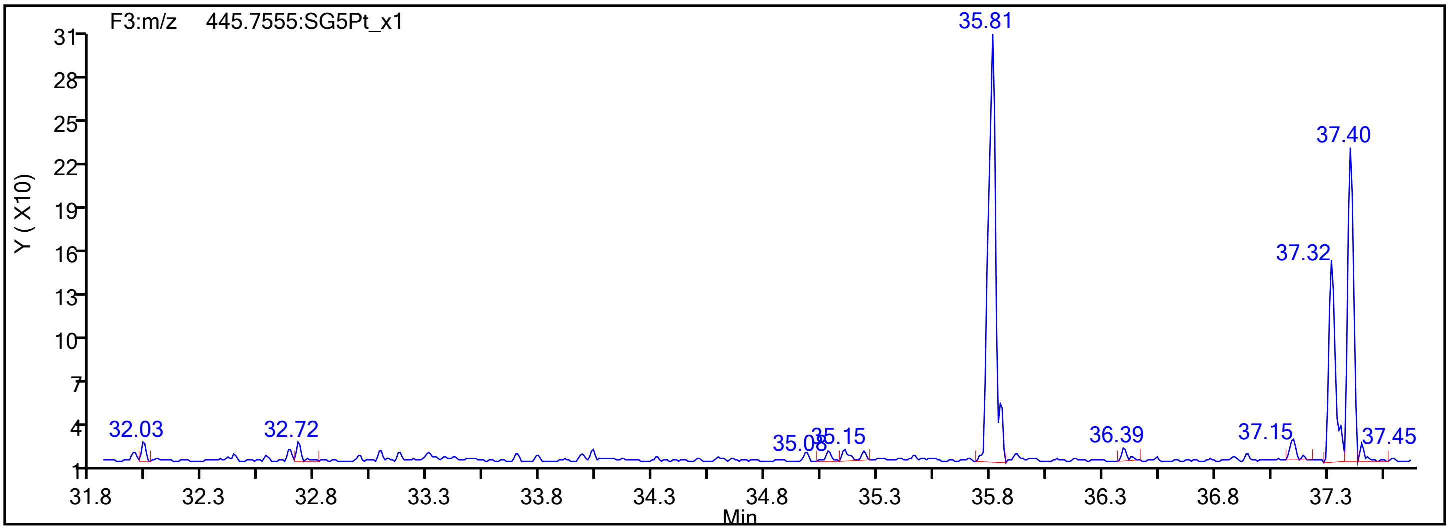

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

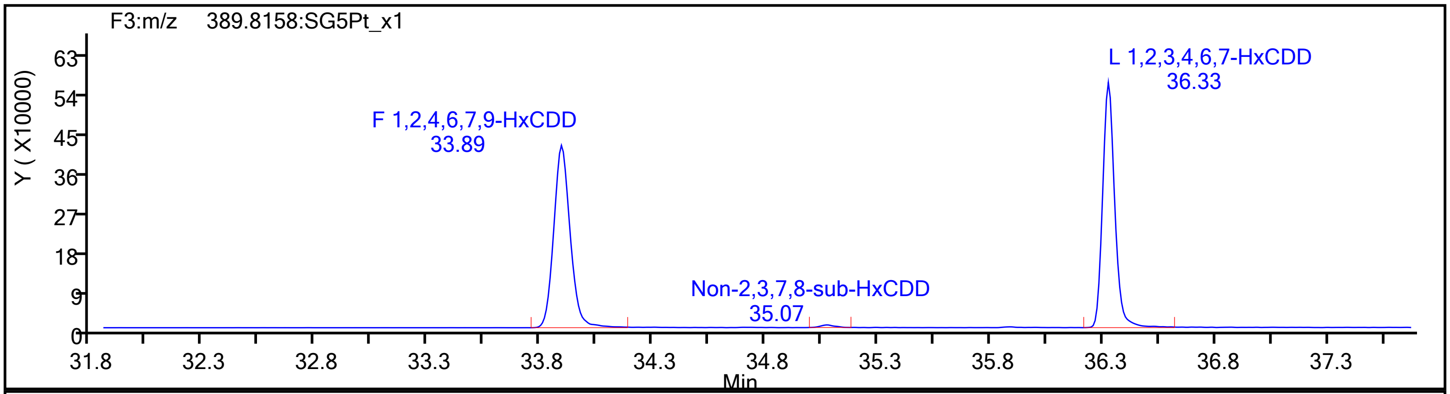

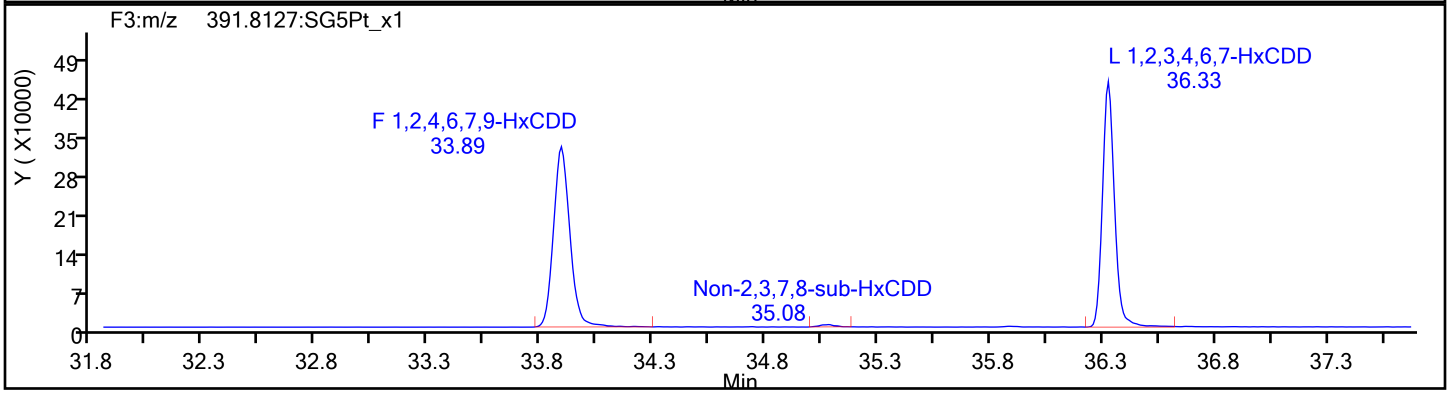

HxCDD Standards

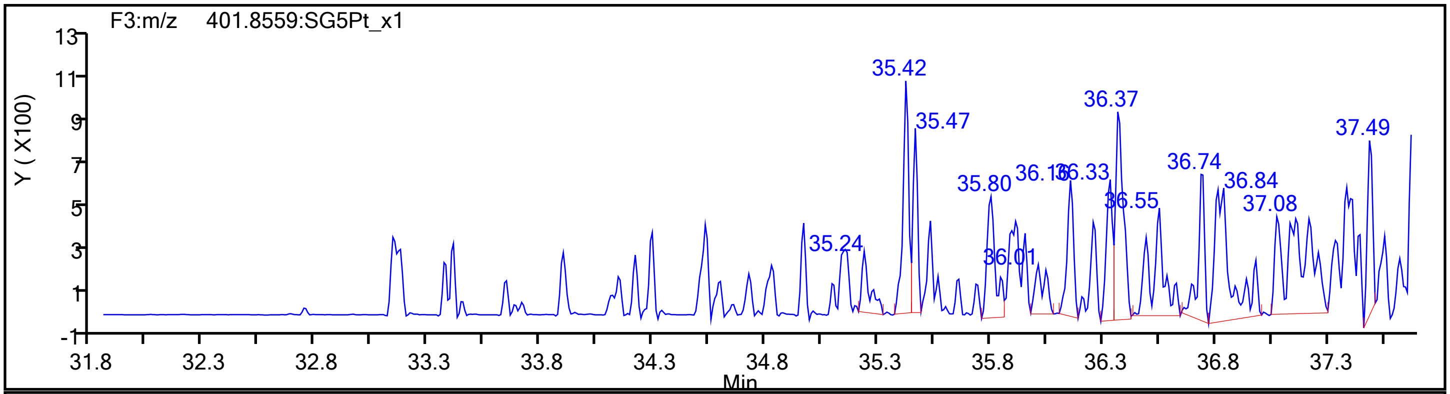

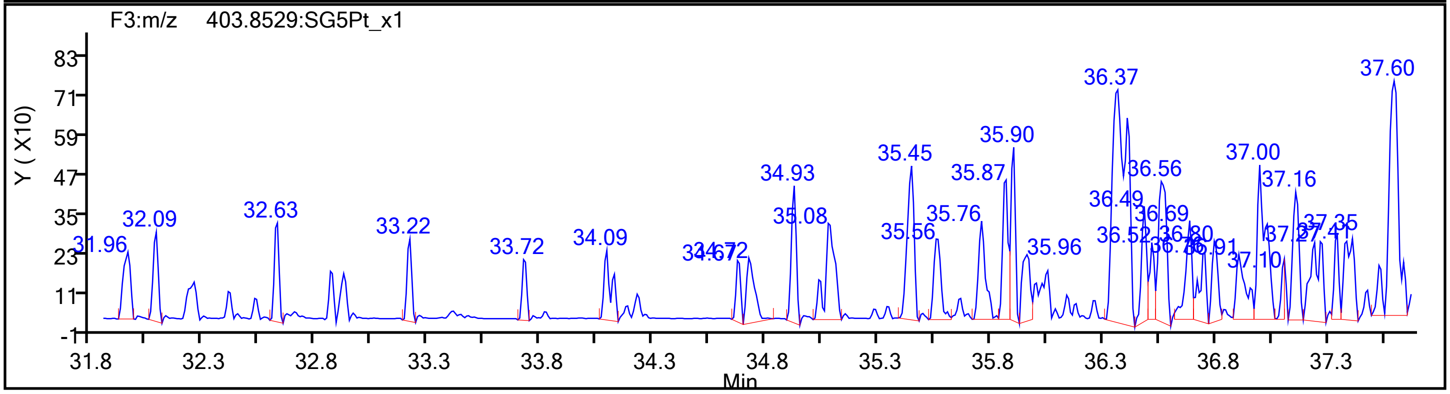

Report Date: 18-Oct-2021 13:41:24 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

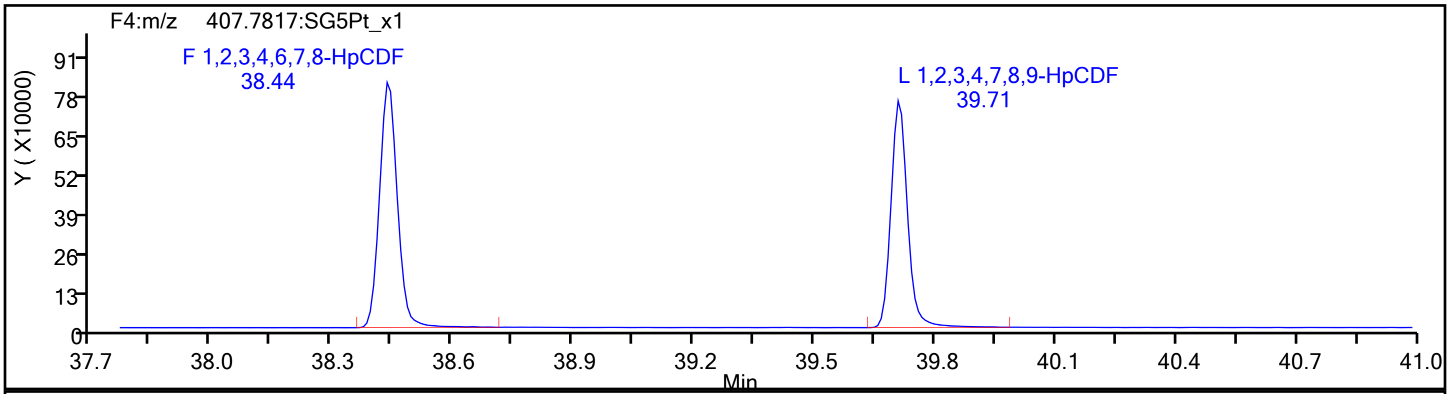

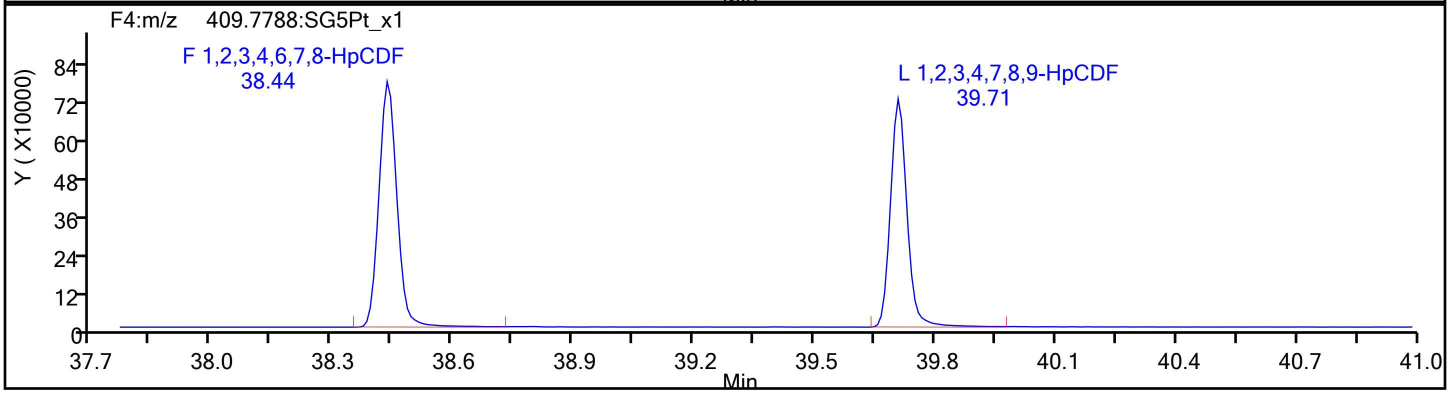

HpCDF Standards

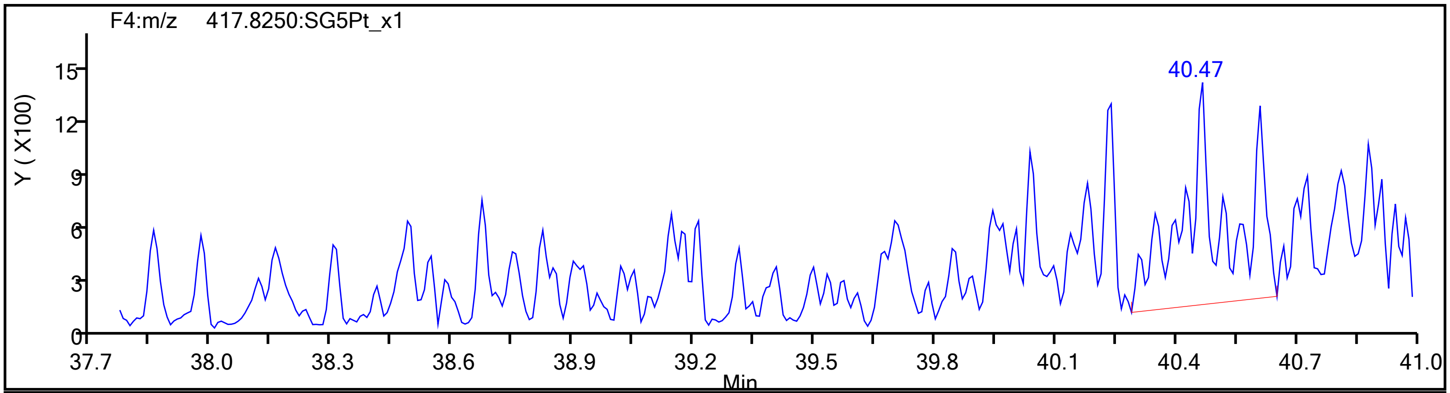

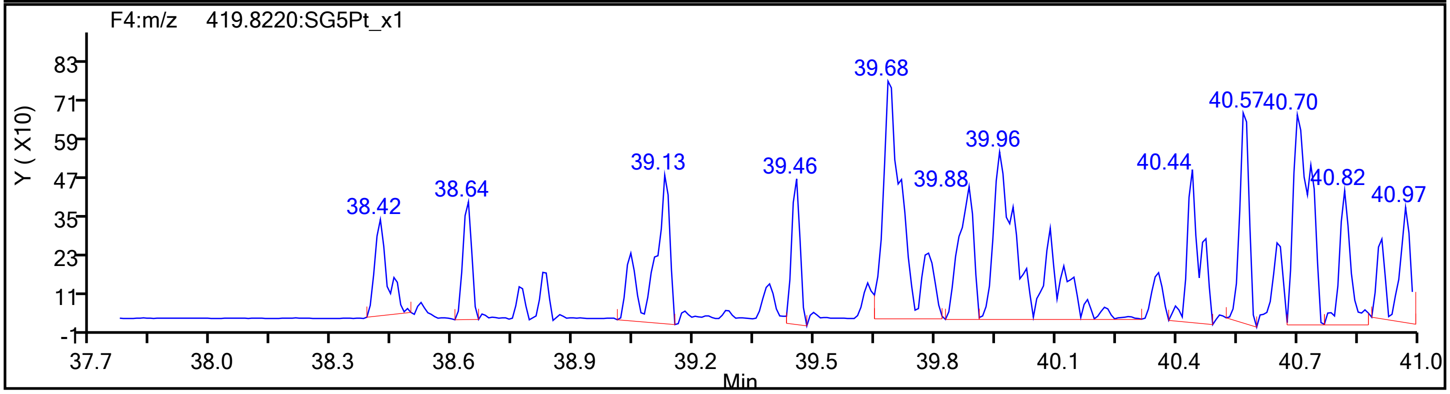

Report Date: 18-Oct-2021 13:41:25 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Injection Date: 15-Oct-2021 10:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

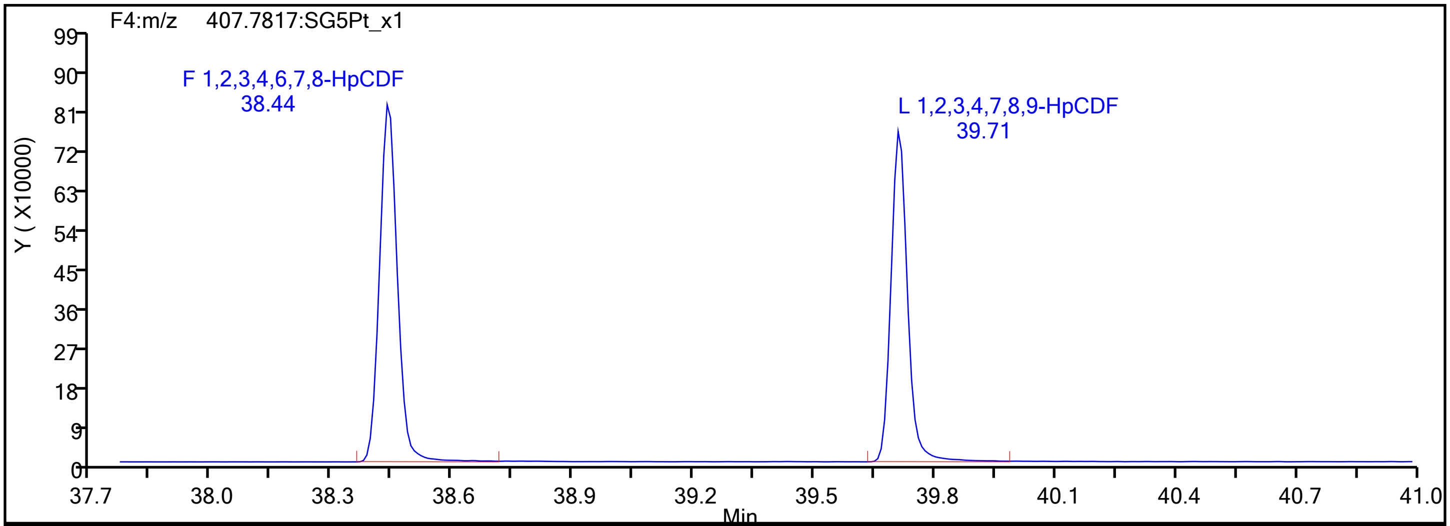

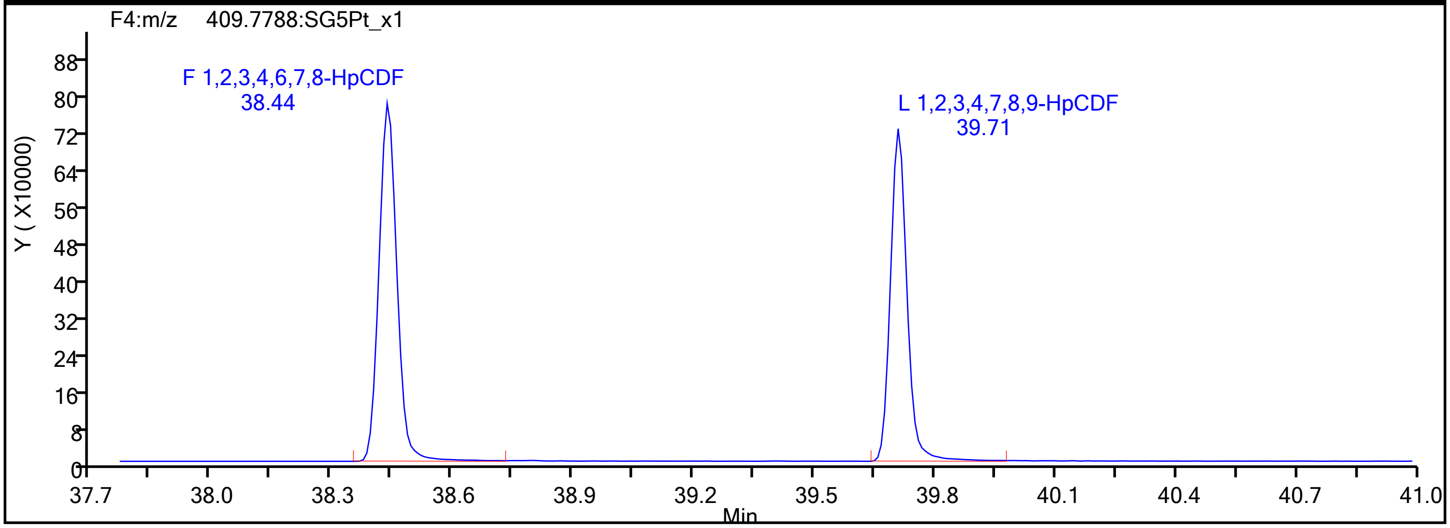

HpCDF Interference Mass

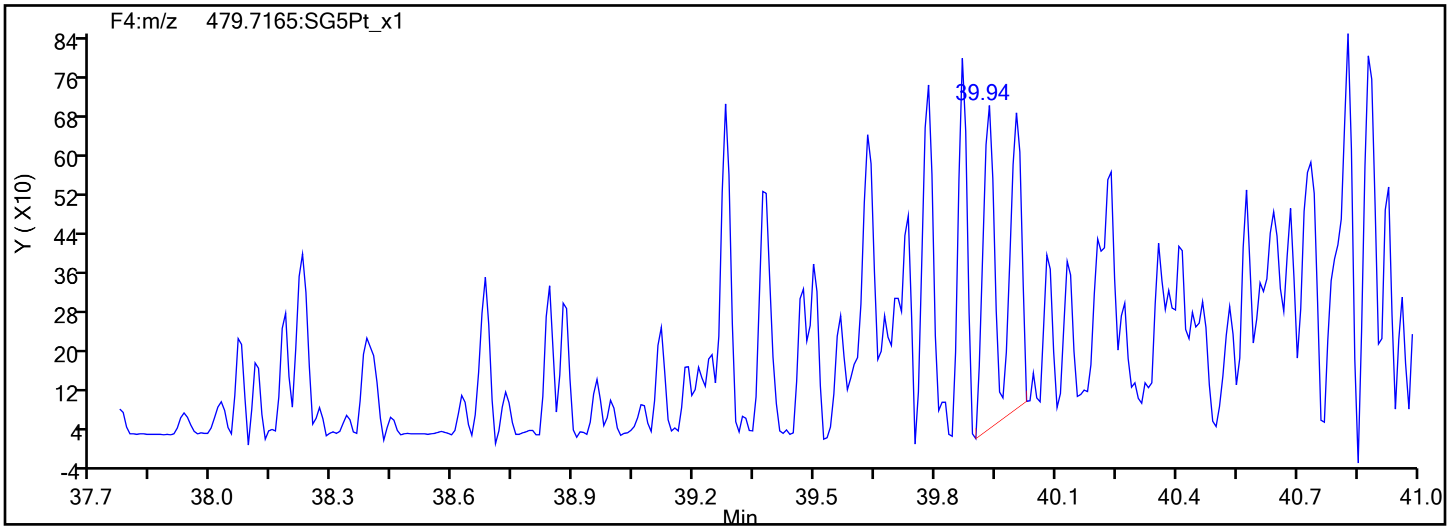

Report Date: 18-Oct-2021 13:41:25 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d
Injection Date: 15-Oct-2021 10:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

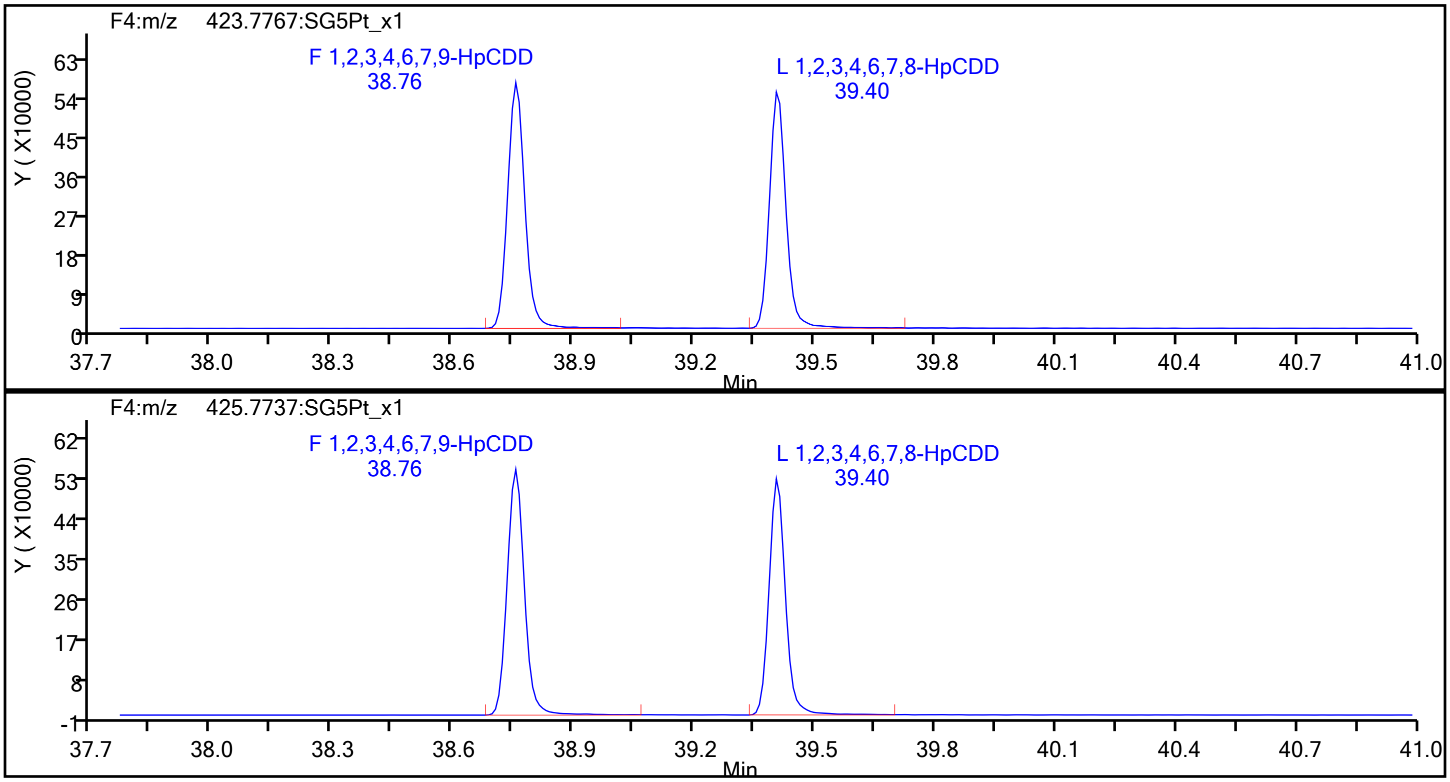

HpCDD Standards

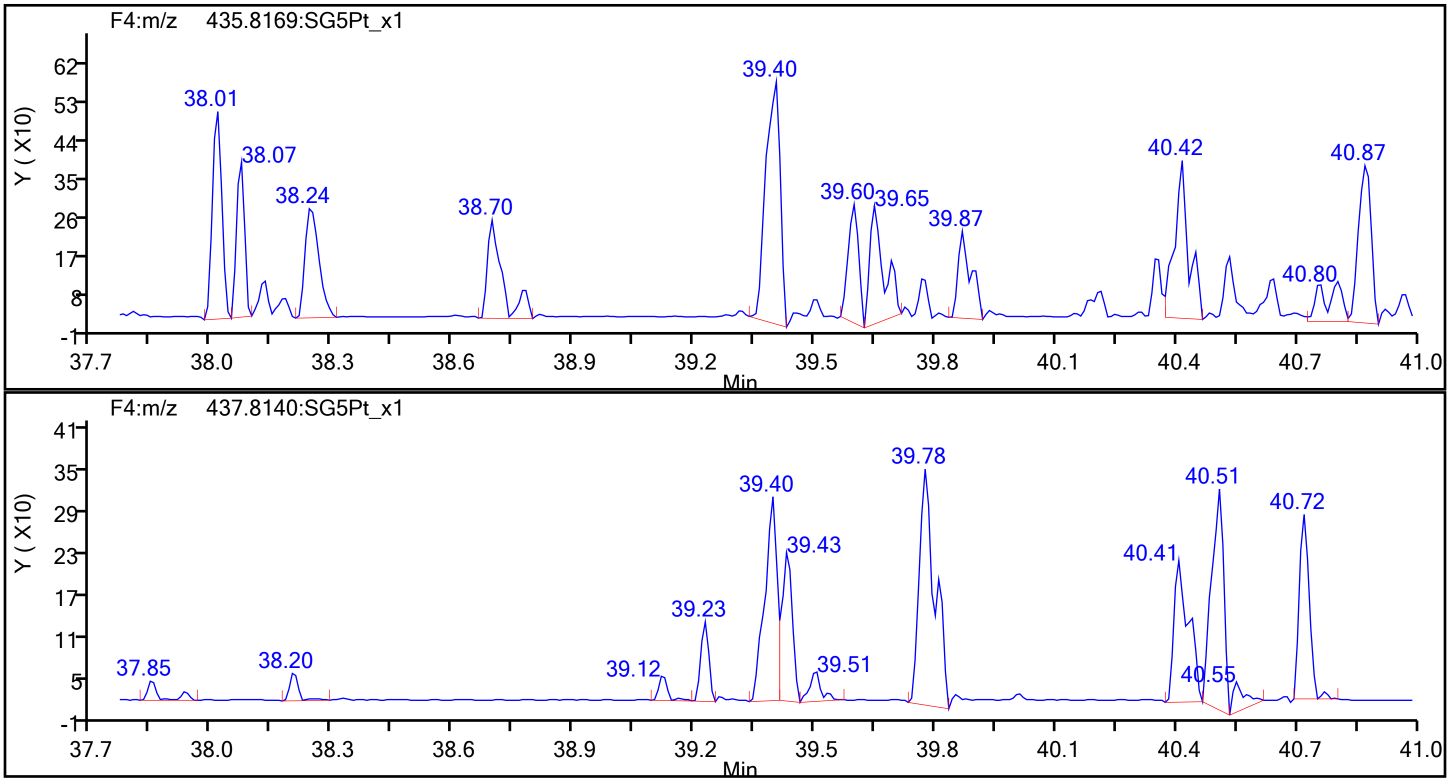

Report Date: 18-Oct-2021 13:41:25

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
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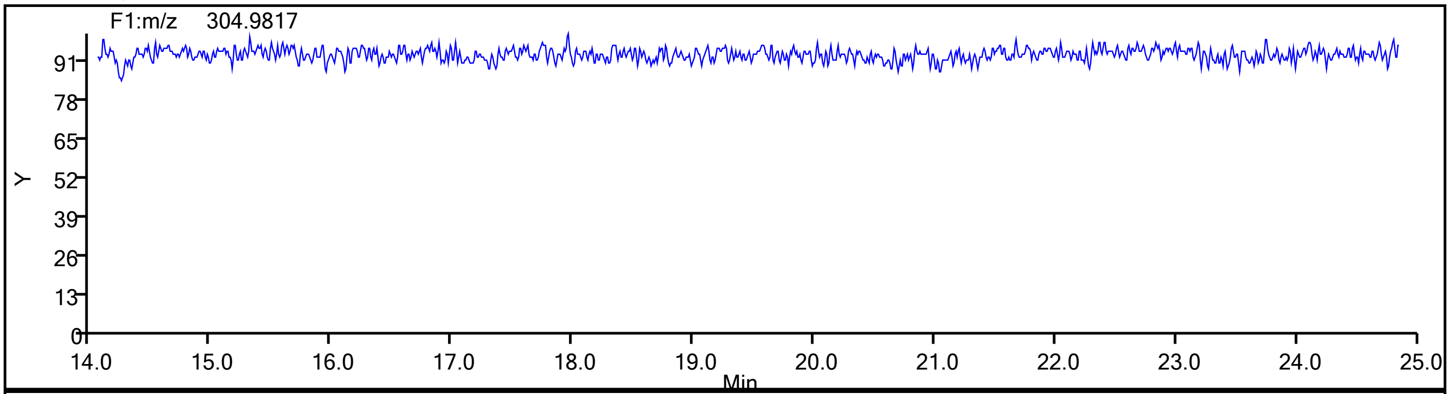

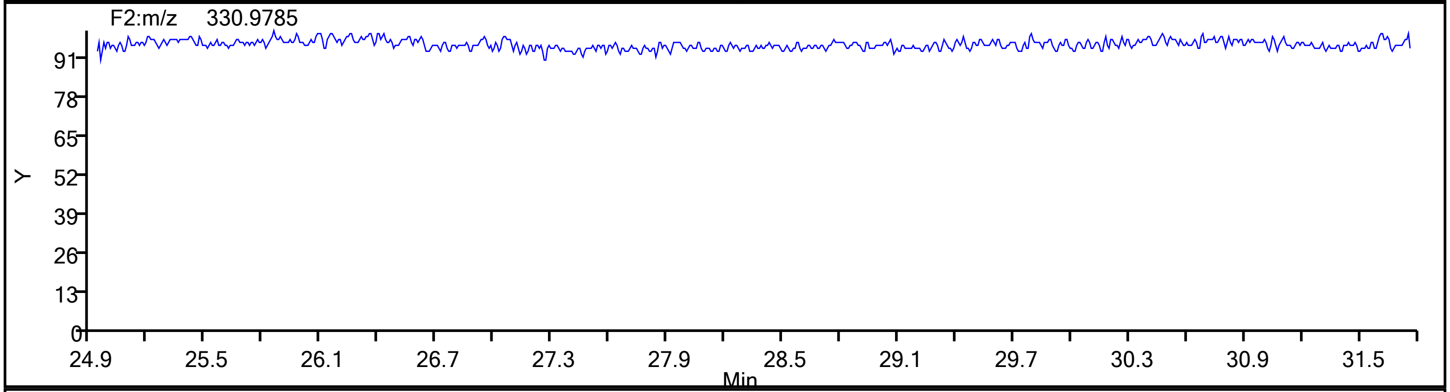

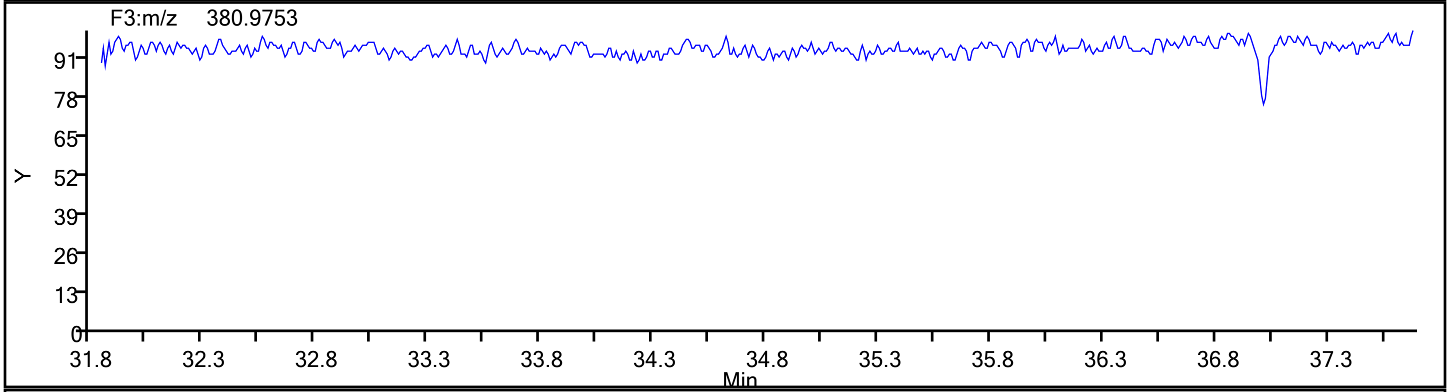

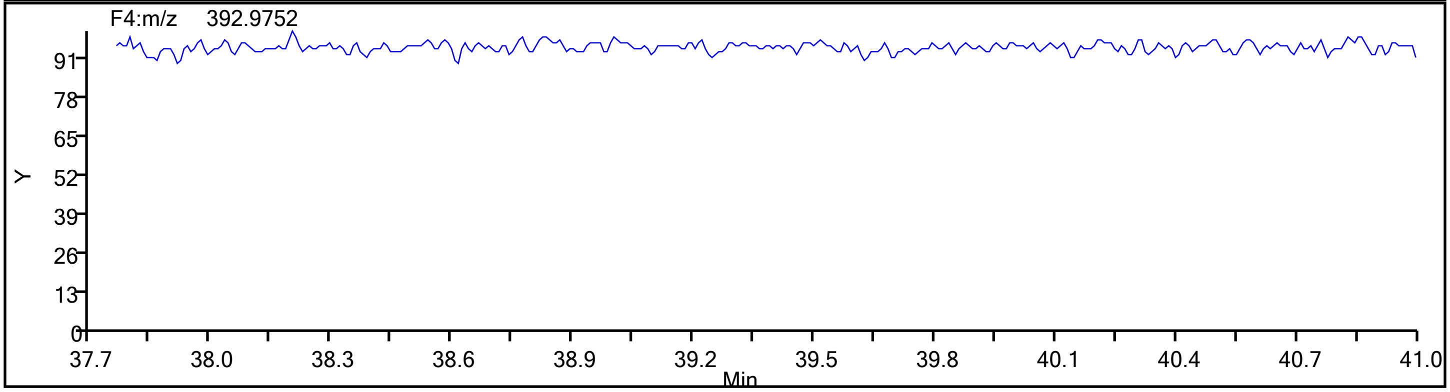

Report Date: 18-Oct-2021 13:41:25 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_2.d		
Injection Date:	15-Oct-2021 10:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

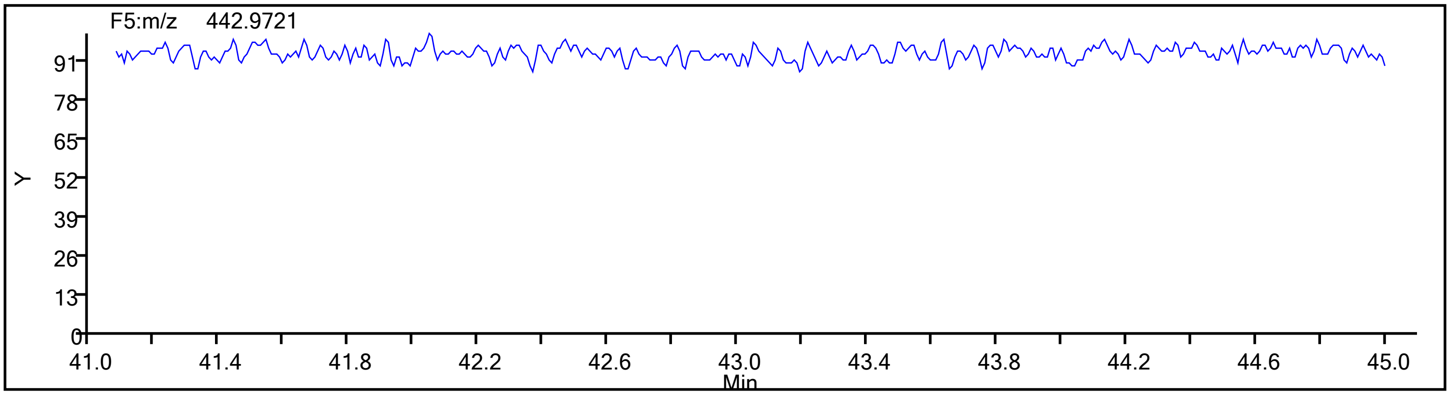

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-532854/1-A
Matrix: Water	Lab File ID: 15oc21dfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1000(mL)	Date Analyzed: 10/15/2021 12:39
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.78
51207-31-9	2,3,7,8-TCDF	ND		10	0.32
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.61
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.30
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.34
39227-28-6	1,2,3,4,7,8-HxCDD	2.13	J	50	0.36
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.35
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.33
70648-26-9	1,2,3,4,7,8-HxCDF	0.395	J	50	0.28
57117-44-9	1,2,3,6,7,8-HxCDF	0.336	J	50	0.23
72918-21-9	1,2,3,7,8,9-HxCDF	0.642	J	50	0.20
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.20
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.919	J	50	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.917	J	50	0.46
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.49
3268-87-9	OCDD	3.66	J	100	0.63
39001-02-0	OCDF	1.61	J	100	0.54
41903-57-5	Total TCDD	ND		10	0.78
30402-14-3	Total TCDF	ND		10	0.32
36088-22-9	Total PeCDD	1.37	J	50	0.61
30402-15-4	Total PeCDF	ND		50	0.32
34465-46-8	Total HxCDD	2.13	J	50	0.35
55684-94-1	Total HxCDF	1.37	J	50	0.23
37871-00-4	Total HpCDD	2.67	J	50	0.15
38998-75-3	Total HpCDF	0.917	J	50	0.47

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-532854/1-A
Matrix: Water	Lab File ID: 15oc21dfs1_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1000(mL)	Date Analyzed: 10/15/2021 12:39
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		25-164
89059-46-1	13C-2,3,7,8-TCDF	87		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	80		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	83		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	80		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	77		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	81		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	84		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	95		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	92		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	99		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	100		26-138
114423-97-1	13C-OCDD	108		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	99		35-197

FORM I 1613B

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Lims ID: MB 320-532854/1-A
Client ID:
Sample Type: MB
Inject. Date: 15-Oct-2021 12:39:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-532854/1-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: stephensk Date: 15-Oct-2021 14:46:14

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.811	8960874	0.80	1.7E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	19.849	9593444	0.81	1.2244	87.4	87.4	0.3345	0.3345	87.44	
2,3,7,8-TCDF	19.852						0.0160	0.0160		
A Non-2,3,7,8-sub-TCDF	19.372						0.0160	0.0160		
S Total TCDF							0.0160	0.0160		
D 13C-2,3,7,8-TCDD	21.189	6060420	0.82	0.8210	82.4	82.4	0.1995	0.1995	82.38	
2,3,7,8-TCDD	21.163						0.0390	0.0390		
$ 37Cl4-2,3,7,8-TCDD	21.223	3078595		0.8658	39.7	39.7	0.0373	0.0373	99.21	
A Non-2,3,7,8-sub-TCDD	20.213						0.0390	0.0390		
S Total TCDD							0.0390	0.0390		
D 13C-1,2,3,7,8-PeCDF	26.839	8221302	1.59	1.1026	83.2	83.2	0.3857	0.3857	83.21	
1,2,3,7,8-PeCDF	26.833						0.0152	0.0152		
D 13C-2,3,4,7,8-PeCDF	28.330	9686918	1.59	1.3454	80.3	80.3	0.3161	0.3161	80.35	
2,3,4,7,8-PeCDF	28.325						0.0172	0.0172		
A F1 PeCDFs	24.221	985	1.55	0.9836	0.0451	0.0112	0.009279	0.0112		RQM
A Non-2,3,7,8-sub-PeCDF	27.645						0.0160	0.0160		
S Total PeCDF					0.0451	0.0112	0.0162	0.0162		RQ
D 13C-1,2,3,7,8-PeCDD	29.139	4999710	1.58	0.6987	79.9	79.9	0.1350	0.1350	79.85	
1,2,3,7,8-PeCDD	29.133						0.0307	0.0307		
A Non-2,3,7,8-sub-PeCDD	28.034	3633	1.55	1.0594	0.1061	0.0686	0.0307	0.0686		RQM
S Total PeCDD					0.1061	0.0686	0.0307	0.0307		RQ
D 13C-1,2,3,4,7,8-HxCDF	34.621	8655146	0.54	1.1295	83.3	83.3	0.2755	0.2755	83.26	
1,2,3,4,7,8-HxCDF	34.663	1666	1.24	0.9737	0.0259	0.0198	0.0138	0.0138		RQMa
D 13C-1,2,3,6,7,8-HxCDF	34.789	8161539	0.55	1.0613	83.5	83.5	0.2932	0.2932	83.55	
1,2,3,6,7,8-HxCDF	34.814	1675	1.24	1.2201	0.0220	0.0168	0.0117	0.0117		RQMa
D 13C-2,3,4,6,7,8-HxCDF	35.641	8008830	0.55	0.9480	91.8	91.8	0.3283	0.3283	91.78	
2,3,4,6,7,8-HxCDF	35.641						0.0102	0.0102		
D 13C-1,2,3,7,8,9-HxCDF	36.559	7438016	0.54	0.8526	94.8	94.8	0.3650	0.3650	94.78	
1,2,3,7,8,9-HxCDF	36.559	2972	1.35	1.2454	0.0321	0.0321	0.0102	0.0102		Ma
A Non-2,3,7,8-sub-HxCDF	34.703						0.0113	0.0113		
S Total HxCDF					0.0800	0.0687	0.0115	0.0115		RQ

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.365	9204109	1.27	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.877	5880685	1.27	0.8312	76.9	76.9	0.1714	0.1714	76.87	
1,2,3,4,7,8-HxCDD	35.894	5701	1.33	0.9085	0.1067	0.1067	0.0179	0.0179		M
D 13C-1,2,3,6,7,8-HxCDD	35.995	5623069	1.27	0.7550	80.9	80.9	0.1888	0.1888	80.92	
1,2,3,6,7,8-HxCDD	35.894						0.0174	0.0174		RQU
1,2,3,7,8,9-HxCDD	36.366						0.0166	0.0166		
A Non-2,3,7,8-sub-HxCDD	35.108						0.0172	0.0172		
S Total HxCDD					0.1067	0.1067	0.0173	0.0173		
D 13C-1,2,3,4,6,7,8-HpCDF	38.433	5126277	0.45	0.6190	90.0	90.0	0.3196	0.3196	89.97	
1,2,3,4,6,7,8-HpCDF	38.450	3727	1.04	1.5851	0.0562	0.0459	0.0228	0.0228		RQMa
D 13C-1,2,3,4,7,8,9-HpCDF	39.698	6026602	0.46	0.6516	100.5	100.5	0.3036	0.3036	100	
1,2,3,4,7,8,9-HpCDF	39.706						0.0245	0.0245		
A Non-2,3,7,8-sub-HpCDF	39.072						0.0232	0.0232		
S Total HpCDF					0.0562	0.0459	0.0237	0.0237		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	39.403	4910134	1.06	0.5362	99.5	99.5	0.3866	0.3866	99.49	
1,2,3,4,6,7,8-HpCDD	39.411	2441	1.04	1.0819	0.0722	0.0459	0.007453	0.007453		RQ
A Non-2,3,7,8-sub-HpCDD	39.202	4647	1.08	1.0819	0.0875	0.0875	0.007453	0.0875		
S Total HpCDD					0.1596	0.1334	0.007453	0.007453		RQ
D 13C-OCDD	41.875	7550825	0.91	0.3802	215.8	215.8	0.2702	0.2702	108	
OCDF	41.967	4588	0.89	1.5094	0.0932	0.0805	0.0271	0.0271		RQM
OCDD	41.900	7827	0.90	1.1344	0.1828	0.1828	0.0317	0.0317		Ma

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 18-Oct-2021 13:41:35 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Lims ID:	MB 320-532854/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	15-Oct-2021 12:39:00	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	mb 320-532854/1-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Oct-2021 13:41:26	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1621				
First Level Reviewer: stephensk		Date:	15-Oct-2021 14:46:14		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	20.811	20.777	2		3977198	595601	576	1440	1034		a
333.9338	20.811	20.777	2		4983676	735246	296	740	2484	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.849	19.806	3	0.954	4287121	680952	1457	3642	467		
317.9389	19.849	19.806	3	0.954	5306323	833598	723	1807	1153	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.832						11	27			
305.8987	19.832						98	245			
A Non-2,3,7,8-sub-TCDF											
303.9016	19.372						11	27			
305.8987	19.372						98	245			
13C-2,3,7,8-TCDD											
331.9368	21.189	21.138	3	1.018	2729340	373622	576	1440	649		
333.9338	21.180	21.138	3	1.018	3331080	480934	296	740	1625	0.82(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.163						127	317			
321.8936	21.163						19	47			
37Cl4-2,3,7,8-TCDD											
327.8847	21.223	21.163	4	1.020	3078595	444976	172	430	2587		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						127	317			
321.8936	20.213						19	47			
13C-1,2,3,7,8-PeCDF											
351.9000	26.839	26.799	2	1.290	5049753	886479	1370	3425	647		
353.8970	26.839	26.799	2	1.290	3171549	570861	894	2235	639	1.59(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.833						9	22			
341.8567	26.833						88	220			
13C-2,3,4,7,8-PeCDF											
351.9000	28.330	28.300	2	1.361	5949965	985667	1370	3425	719		
353.8970	28.339	28.300	2	1.362	3736953	624864	894	2235	699	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.325						9	22			
341.8567	28.325						88	220			
A F1 PeCDFs											RQM
339.8597	24.247	24.221	2	0.903	599	225	3	7	75		M
341.8567	24.230	24.221	1	0.903	3375	806	53	132	15	0.18(1.32-1.78)	M
	Empc Correction				386	145	53	132	3		
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.645						9	22			
341.8567	27.645						88	220			
13C-1,2,3,7,8-PeCDD											
367.8949	29.139	29.108	2	1.400	3059706	468015	297	742	1576		
369.8919	29.139	29.108	2	1.400	1940004	300194	205	512	1464	1.58(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.133						86	215			
357.8516	29.133						14	35			
A Non-2,3,7,8-sub-PeCDD											RQM
355.8546	30.142	28.034	126	1.034	4197	679	86	215	8		M
	Empc Correction				2208	378	86	215	4		
357.8516	30.133	28.034	126	1.034	1425	244	14	35	17	2.95(1.32-1.78)	M
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.621	34.597	1	0.952	3046536	669747	1098	2745	610		
385.8610	34.621	34.597	1	0.952	5608610	1207141	1983	4957	609	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											RQMa
373.8208	34.663	34.613	3	1.001	1439	301	76	190	4		M
	Empc Correction				922	455	76	190	6		
375.8178	34.646	34.613	2	1.001	744	367	25	62	15	1.93(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.789	34.773	1	0.957	2880843	614442	1098	2745	560		
385.8610	34.789	34.773	1	0.957	5280696	1153892	1983	4957	582	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											RQMa
373.8208	34.814	34.790	1	1.001	1442	292	76	190	4		M
	Empc Correction				927	290	76	190	4		
375.8178	34.806	34.790	1	1.000	748	234	25	62	9	1.93(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.641	35.625	1	0.980	2827135	707150	1098	2745	644		
385.8610	35.641	35.625	1	0.980	5181695	1284458	1983	4957	648	0.55(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.641						76	190			
375.8178	35.641						25	62			

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Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.559	36.551	0	1.005	2622974	690079	1098	2745	628		
385.8610	36.559	36.551	0	1.005	4815042	1286411	1983	4957	649	0.54(0.43-0.59)	
1,2,3,7,8,9-HxCDF											Ma
373.8208	36.559	36.560	0	1.000	1710	457	76	190	6		M
375.8178	36.568	36.560	0	1.000	1262	347	25	62	14	1.35(1.05-1.43)	M
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.703						76	190			
375.8178	34.703						25	62			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.365	36.358	0		5146329	1384347	806	2015	1718		
403.8529	36.365	36.358	0		4057780	1090609	605	1512	1803	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.877	35.861	1	0.987	3291877	884198	806	2015	1097		
403.8529	35.877	35.861	1	0.987	2588808	712551	605	1512	1178	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8158	35.894	35.869	1	1.000	3259	854	51	127	17		M
391.8127	35.885	35.869	1	1.000	2442	797	53	132	15	1.33(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.995	35.979	1	0.990	3140804	805069	806	2015	999		
403.8529	35.995	35.979	1	0.990	2482265	651243	605	1512	1076	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQU
389.8158	35.995						51	127			
391.8127	35.995						53	132			
1,2,3,7,8,9-HxCDD											
389.8158	36.366						51	127			
391.8127	36.366						53	132			
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						51	127			
391.8127	35.108						53	132			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.433	38.425	1	1.057	1594750	515341	865	2162	596		
419.8220	38.433	38.425	1	1.057	3531527	1110615	1094	2735	1015	0.45(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQMa
407.7817	38.450	38.434	1	1.000	2740	747	210	525	4		M
	Empc Correction				1900	580	210	525	3		
409.7788	38.450	38.434	1	1.000	1827	558	25	62	22	1.50(0.88-1.20)	a
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.698	39.698	0	1.092	1902347	646161	865	2162	747		
419.8220	39.698	39.698	0	1.092	4124255	1416539	1094	2735	1295	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.706						210	525			
409.7788	39.706						25	62			
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						210	525			
409.7788	39.072						25	62			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.403	39.394	1	1.084	2524845	863121	1061	2652	813		
437.8140	39.403	39.394	1	1.084	2385289	811171	991	2477	819	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											RQ
423.7767	39.411	39.403	1	1.000	2636	852	41	102	21		
	Empc Correction				1244	512	41	102	12		
425.7737	39.411	39.403	1	1.000	1197	493	13	32	38	2.20(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	38.762	39.202	-26	0.984	2416	806	41	102	20		
425.7737	38.779	39.202	-25	0.984	2231	647	13	32	50	1.08(0.88-1.20)	
13C-OCDD											
469.7780	41.875	41.875	0	1.151	3588708	1153212	560	1400	2059		
471.7750	41.875	41.875	0	1.151	3962117	1265488	457	1142	2769	0.91(0.76-1.02)	
OCDF											RQM
441.7428	41.967	41.959	0	1.002	2881	832	54	135	15		
	Empc Correction				2160	558	54	135	10		
443.7399	41.967	41.959	0	1.002	2428	628	144	360	4	1.19(0.76-1.02)	M
OCDD											Ma
457.7377	41.900	41.883	1	1.001	3708	1024	82	205	12		M
459.7348	41.892	41.883	1	1.000	4119	1458	92	230	16	0.90(0.76-1.02)	a

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Lims ID:	MB 320-532854/1-A		
Client ID:			
Inject. Date:	15-Oct-2021 12:39:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	4

F1 PeCDFs, RT: 24.221

Initial Calibration RRF — IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	8221302	1457340
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	9686918	1610531

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	8954110	1533935

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.247	599	225	3375	806	0.0451	0.18	RQM
24.247	599	225	386	145	0.0112		Empc Correction
Signal Totals:							
	599	225	386	145			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	3974	1031				0.18	RQM
	985	370					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0451 = (3974 * 100.000) / (8954110 * 0.984)
Empc Amount: 0.0112 = (985 * 100.000) / (8954110 * 0.984)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 18-Oct-2021 13:41:35 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Lims ID:	MB 320-532854/1-A		
Client ID:			
Inject. Date:	15-Oct-2021 12:39:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDD, RT: 28.034

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDD	1.059	D 13C-1,2,3,7,8-PeCDD	100.000	4999710	768209

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.059		100.000	4999710	768209

Sum the Uncalibrated Results

RT	355.8546 Area	355.8546 Height	357.8516 Area	357.8516 Height	Amount	Ratio	Flags
30.142	4197	679	1425	244	0.1061	2.95	RQM
30.142	2208	378	1425	244	0.0686		Empc Correction
Signal Totals:							
	2208	378	1425	244			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5622	923				2.95	RQM
	3633	622					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1061 = (5622 * 100.000) / (4999710 * 1.059)
Empc Amount: 0.0686 = (3633 * 100.000) / (4999710 * 1.059)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 18-Oct-2021 13:41:35 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Lims ID:	MB 320-532854/1-A		
Client ID:			
Inject. Date:	15-Oct-2021 12:39:00	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDD, RT: 39.202

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.082	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	4910134	1674292

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.082		100.000	4910134	1674292

Sum the Uncalibrated Results

RT	423.7767 Area	423.7767 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
38.762	2416	806	2231	647	0.0875	1.08	
Signal Totals:							
	2416	806	2231	647			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	4647	1453				1.08	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0875 = (4647 * 100.000) / (4910134 * 1.082)

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00 Instrument ID: DFS 1
Lims ID: MB 320-532854/1-A
Client ID:
Operator ID: Xcalibur_System ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm) Detector F1(14.80 :26.00)

F1 PeCDFs, Signal: 1, m/z: 339.8597, RT: (23.59- 24.85)

Signal: 1

Processing Integration Results

RT = 24.247 Area = 479

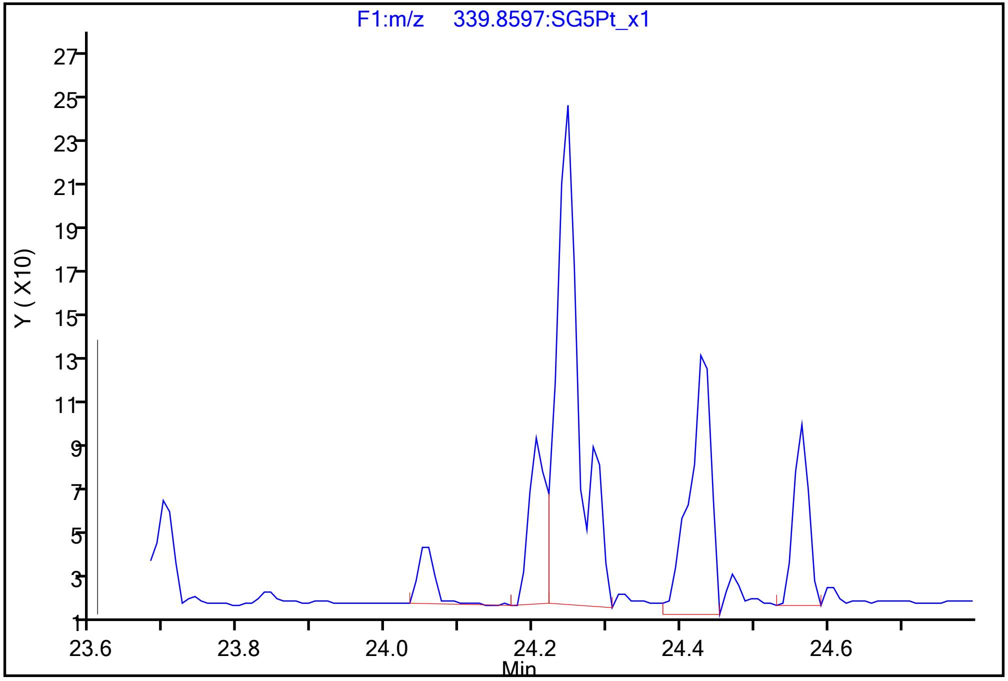

Manual Integration Results

RT = 24.247 Area = 599 M

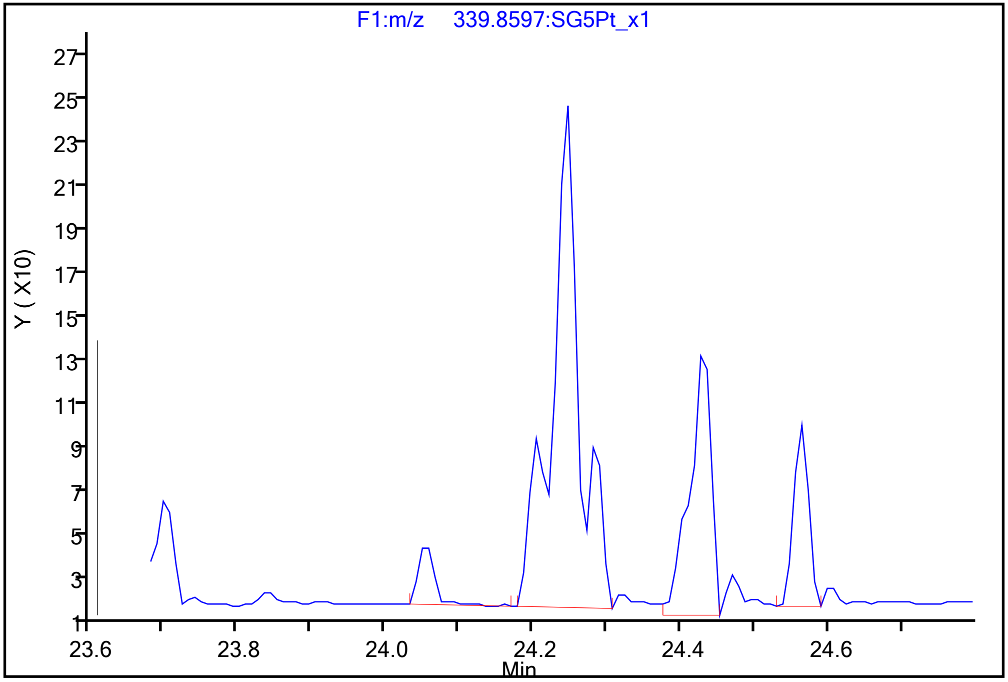

Reviewer: stephensk, 15-Oct-2021 14:43:38
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1(14.80 :26.00)		

F1 PeCDFs, Signal: 2, m/z: 341.8567, RT: (23.59- 24.85)

Signal: 2

Processing Integration Results

RT = 24.230 Area = 1398

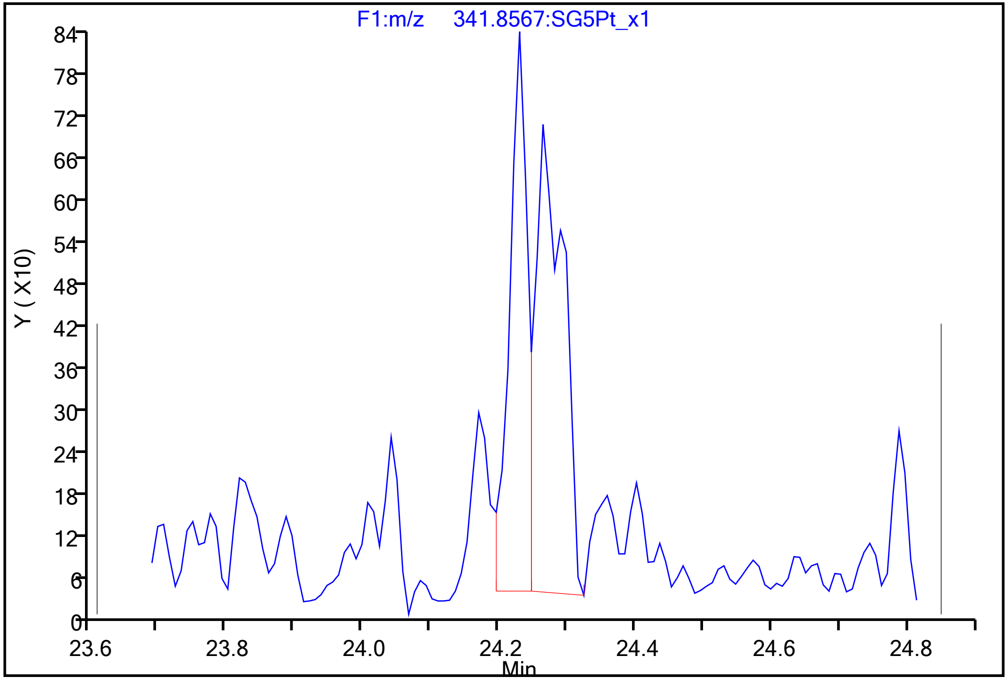

Manual Integration Results

RT = 24.230 Area = 3375 M

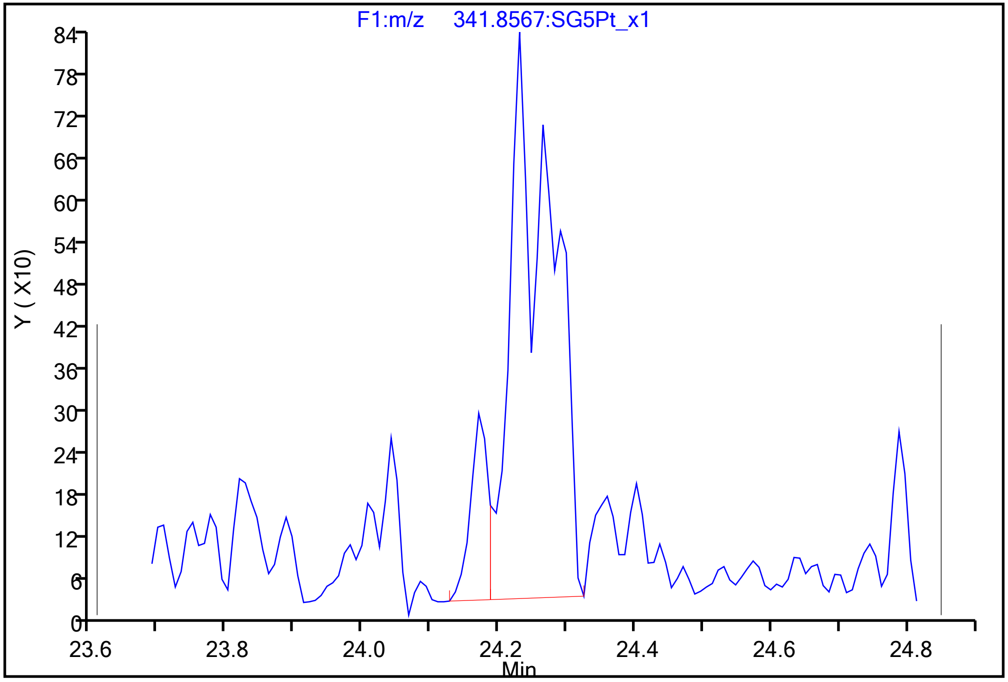

Reviewer: stephensk, 15-Oct-2021 14:43:53

Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDD, Signal: 1, m/z: 355.8546, RT: (25.54- 30.53)

Signal: 1

Processing Integration Results

RT = 30.142 Area = 4605

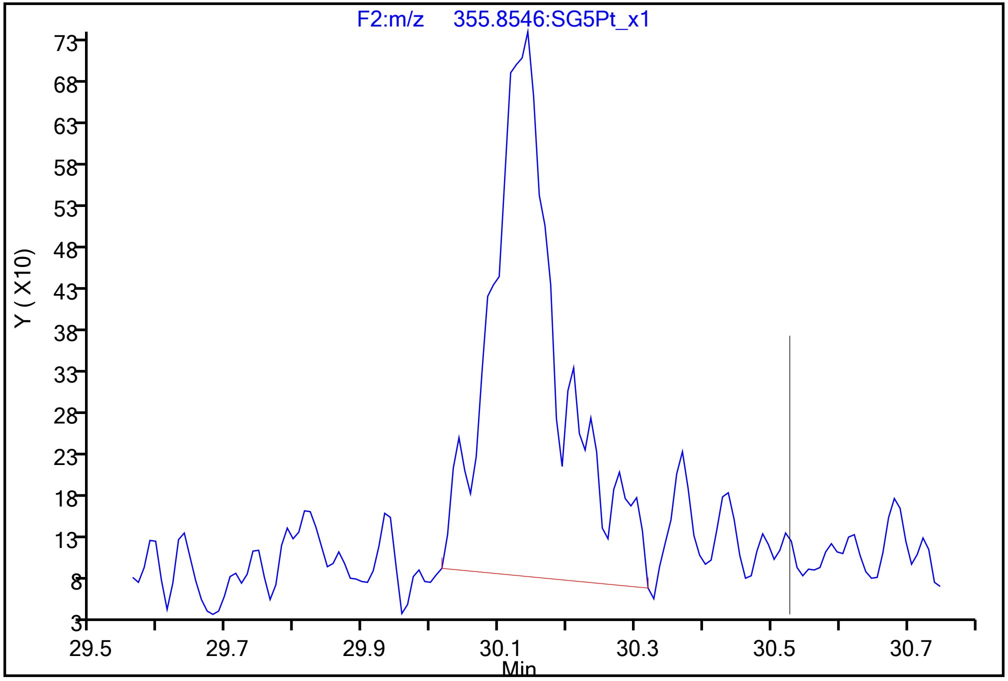

Manual Integration Results

RT = 30.142 Area = 4197 M

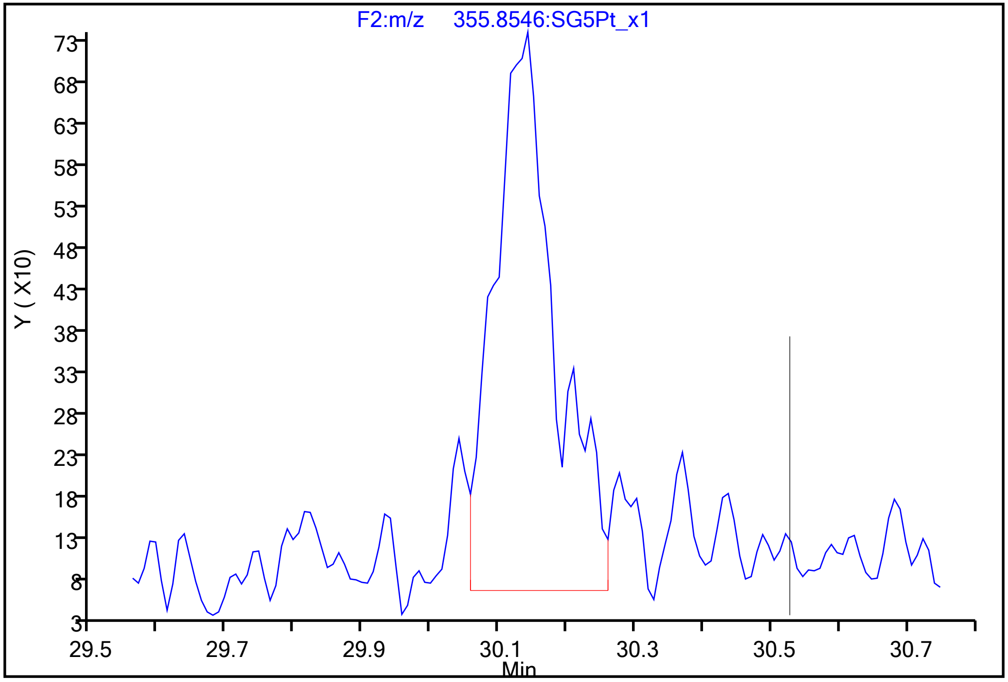

Reviewer: stephensk, 15-Oct-2021 14:44:49

Audit Action: Manually Integrated Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2(26.07 :33.00)		

Non-2,3,7,8-sub-PeCDD, Signal: 2, m/z: 357.8516, RT: (25.54- 30.53)

Signal: 2

Processing Integration Results

RT = 30.133 Area = 848

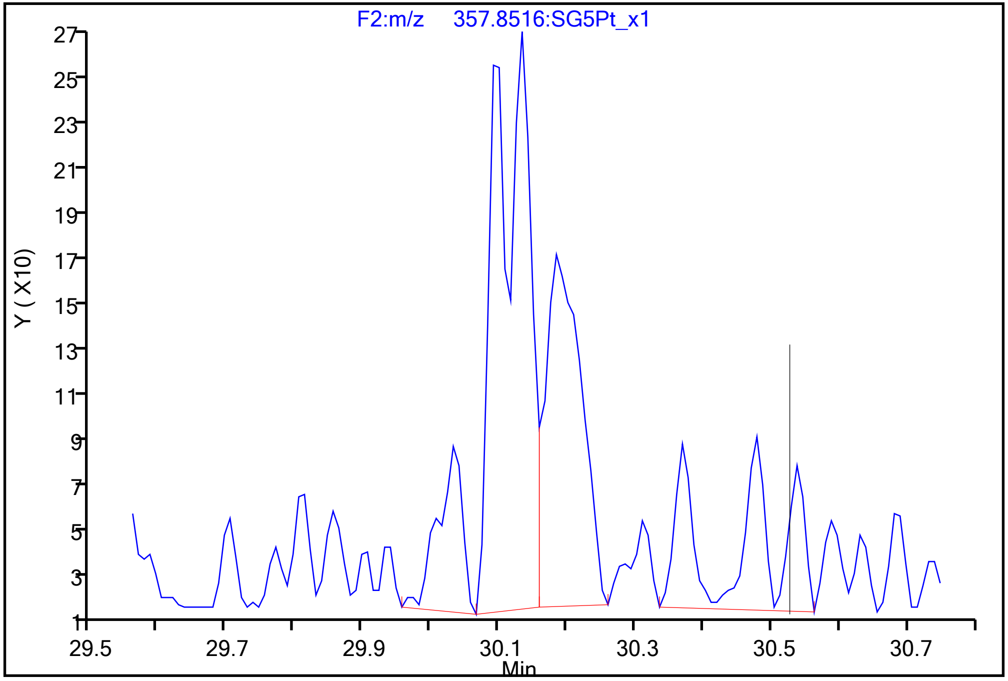

Manual Integration Results

RT = 30.133 Area = 1425 M

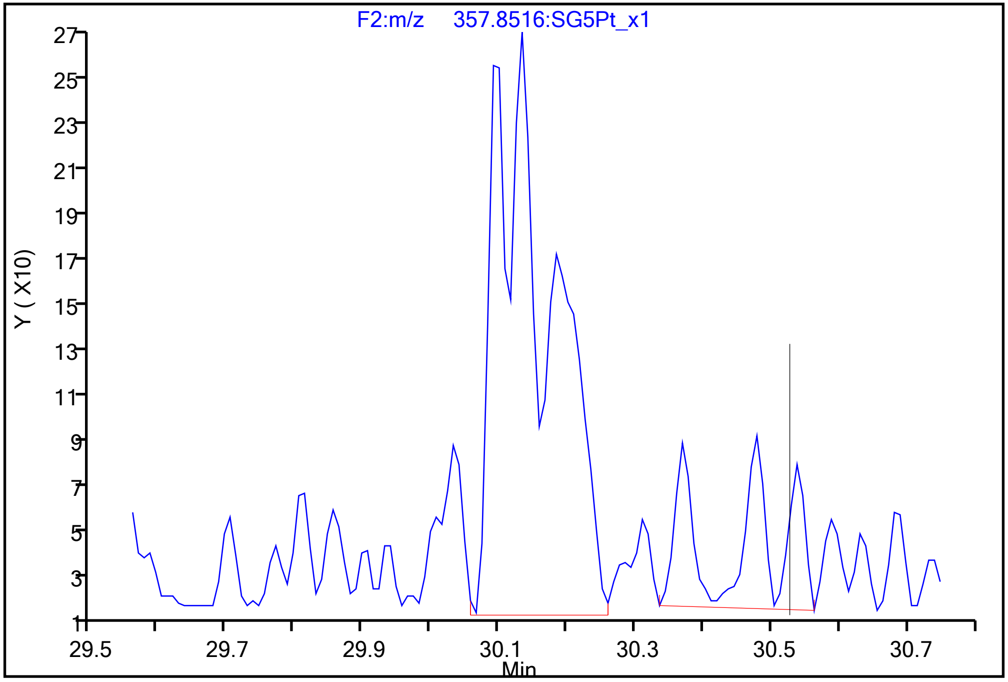

Reviewer: stephensk, 15-Oct-2021 14:44:29

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Not Detected

Expected RT: 34.61

Processing Integration Results

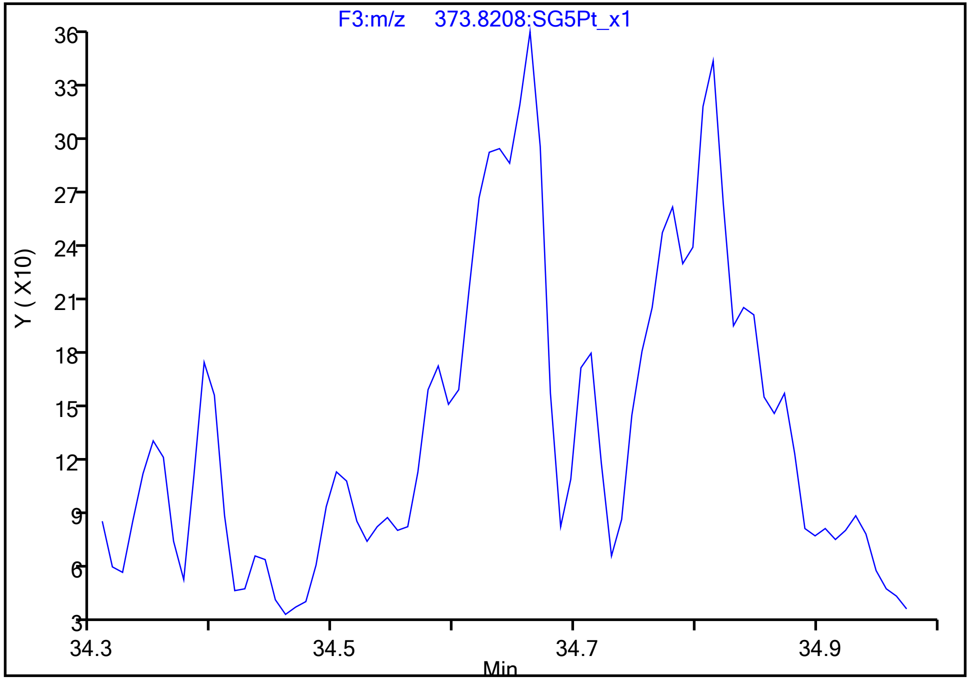

Manual Integration Results

RT: 34.66

Area: 1439

Amount: 0.025904

Amount Units: pg/ul

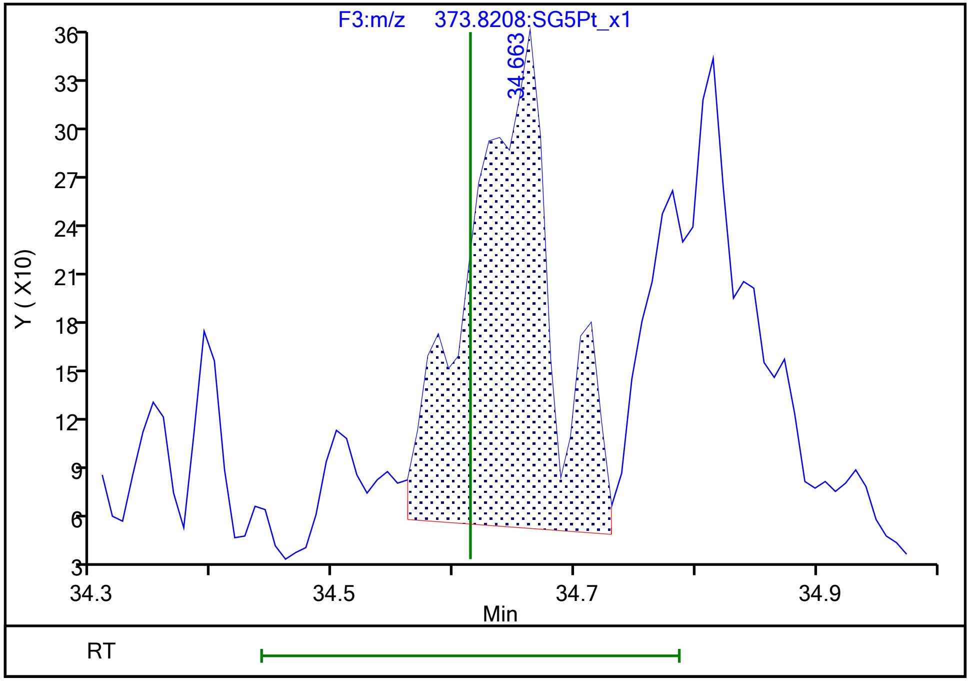

Reviewer: bennettd, 18-Oct-2021 12:44:24

Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

Not Detected

Expected RT: 34.79

Processing Integration Results

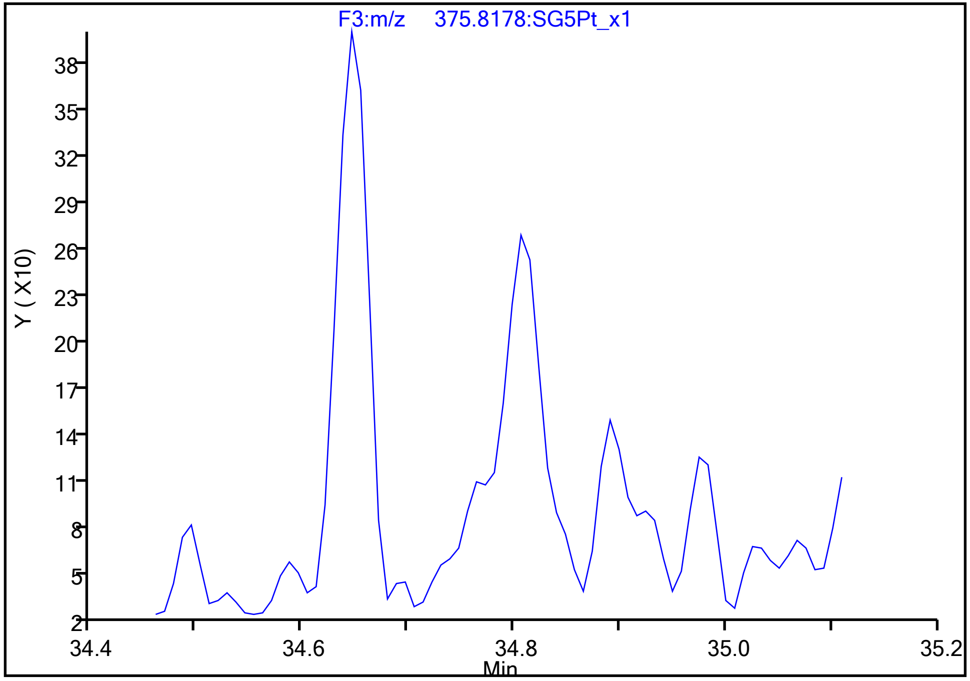

RT: 34.81

Area: 748

Amount: 0.021993

Amount Units: pg/ul

Manual Integration Results

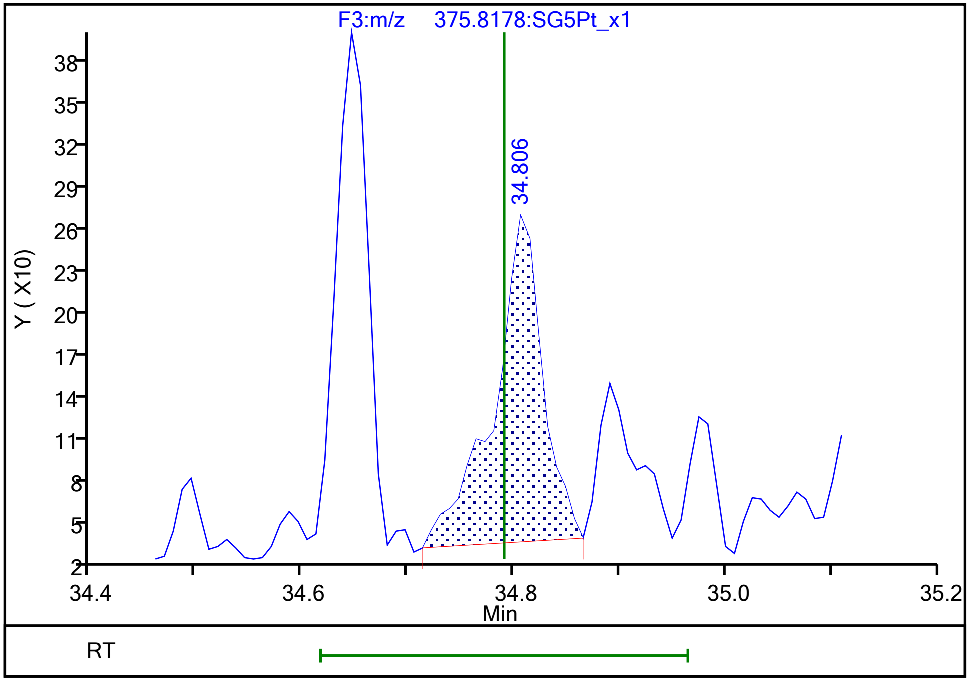

Reviewer: bennettd, 18-Oct-2021 12:43:50

Audit Action: Assigned Compound ID Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Not Detected

Expected RT: 34.79

Processing Integration Results

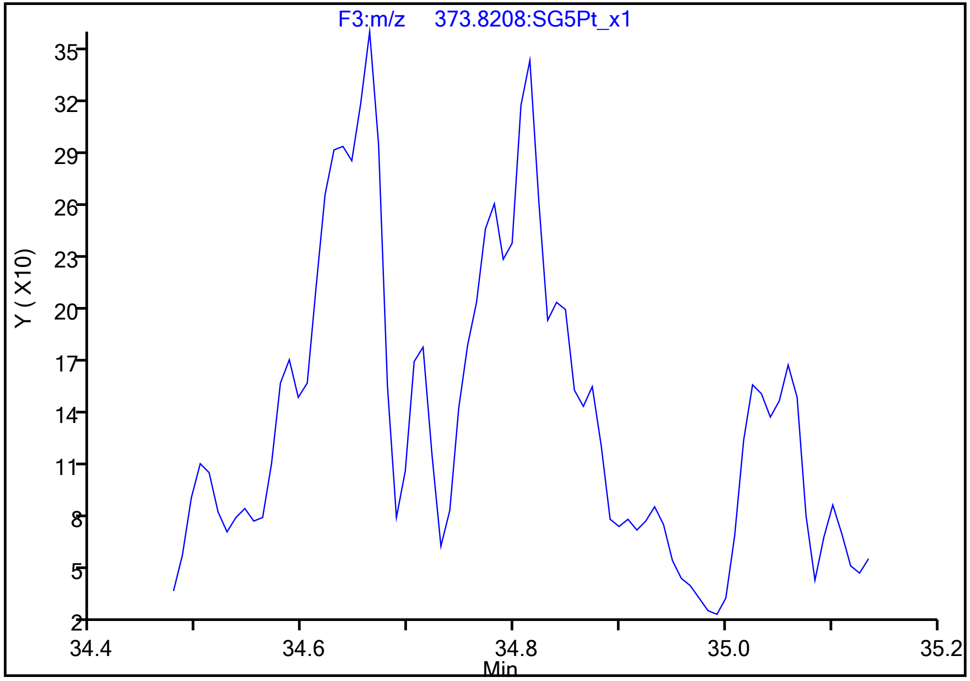

Manual Integration Results

RT: 34.81

Area: 1442

Amount: 0.021993

Amount Units: pg/ul

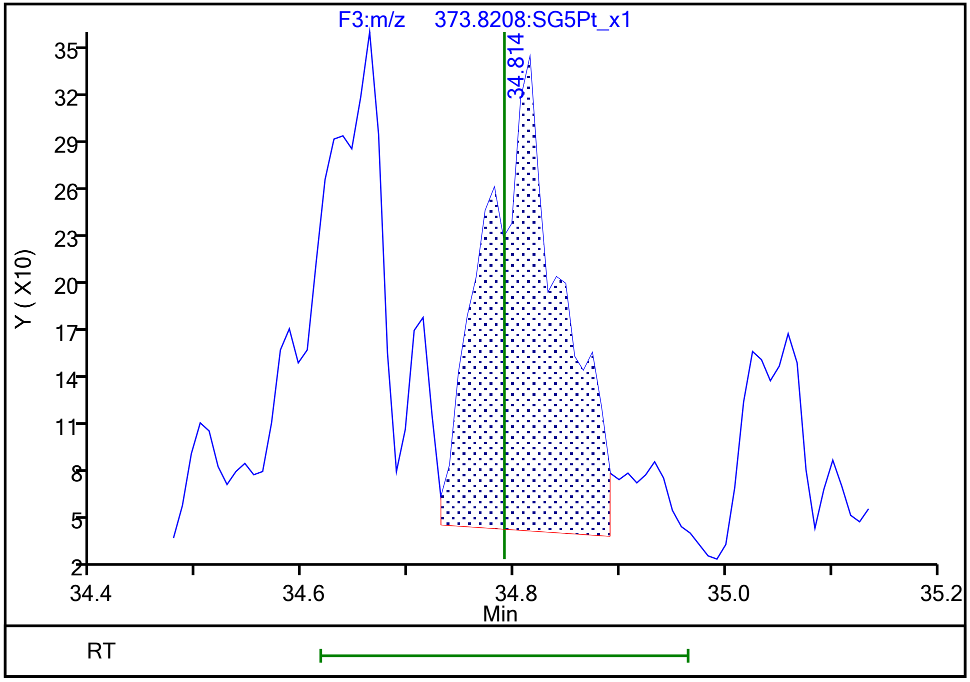

Reviewer: bennettd, 18-Oct-2021 12:44:08

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:35

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00
Instrument ID: DFS 1
Lims ID: MB 320-532854/1-A
Client ID:
Operator ID: Xcalibur_System
ALS Bottle#: 0
Worklist Smp#: 4
Injection Vol: 1.0 ul
Dil. Factor: 1.0000
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3(33.08 :38.50)

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 1

Not Detected
Expected RT: 36.56

Processing Integration Results

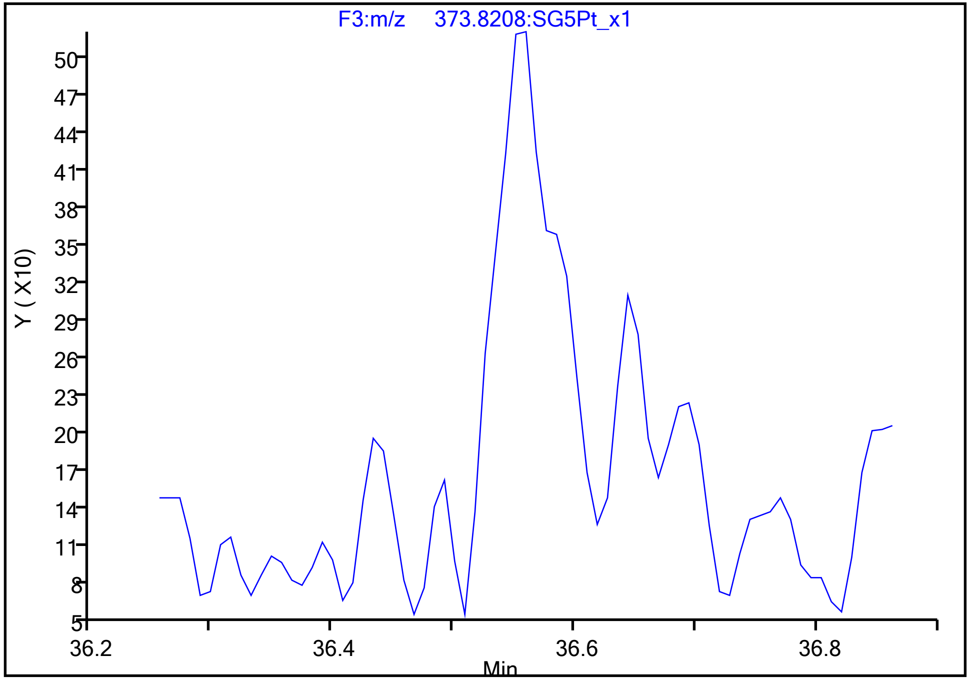

RT: 36.56
Area: 1710
Amount: 0.032083
Amount Units: pg/ul

Manual Integration Results

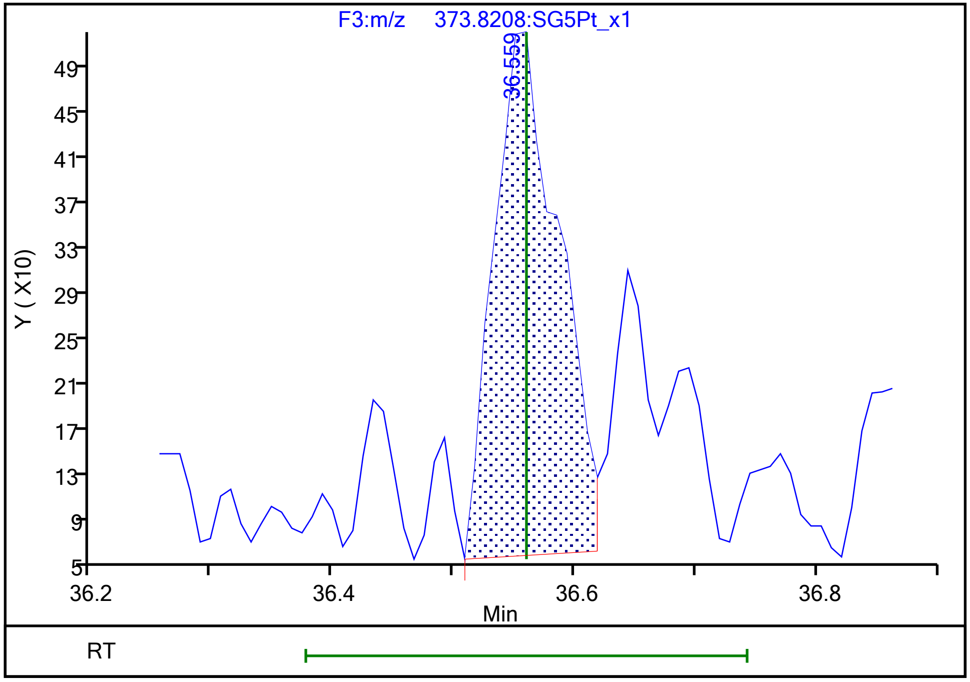

Reviewer: bennettd, 18-Oct-2021 12:43:29
Audit Action: Split an Integrated Peak
Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:35 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,7,8,9-HxCDF, CAS: 72918-21-9

Signal: 2

Not Detected

Expected RT: 36.56

Processing Integration Results

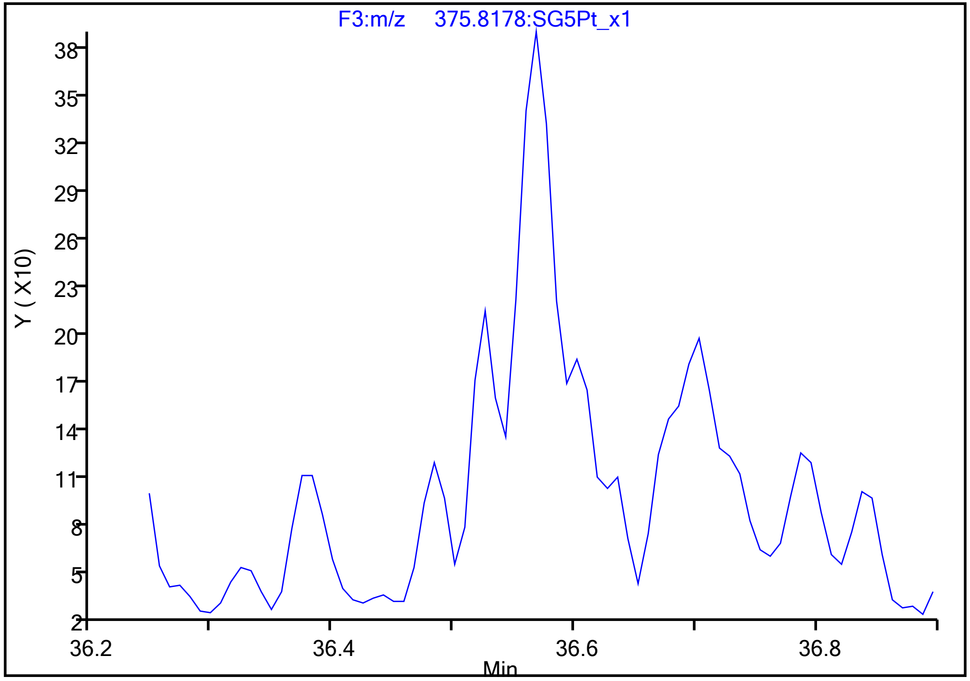

RT: 36.57

Area: 1262

Amount: 0.032083

Amount Units: pg/ul

Manual Integration Results

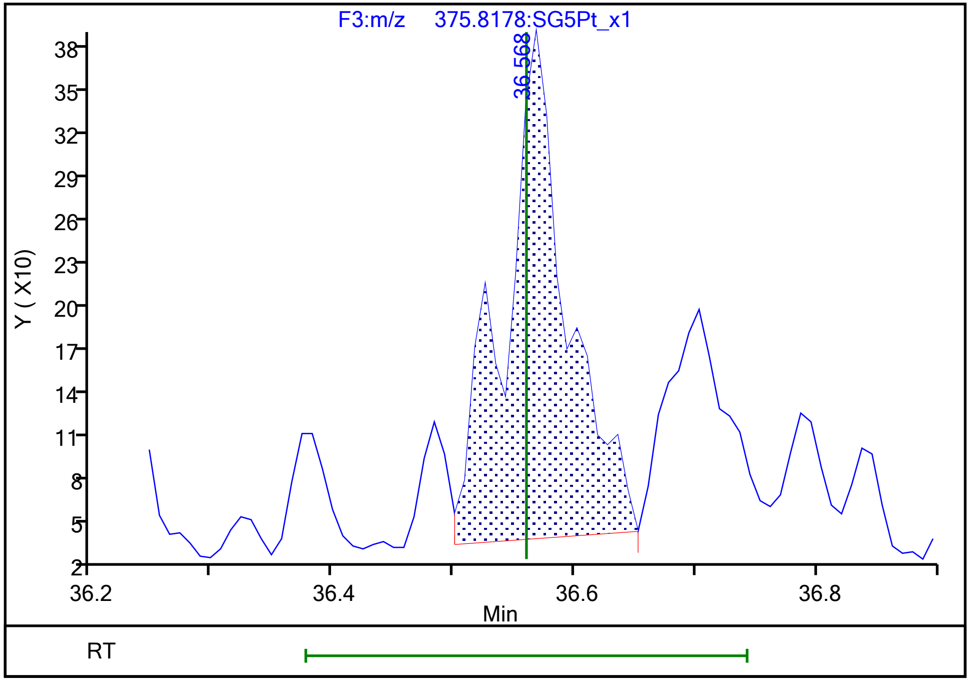

Reviewer: bennettd, 18-Oct-2021 12:43:33

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:35 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT:	35.89
Area:	3587
Amount:	0.112845
Amount Units:	pg/ul

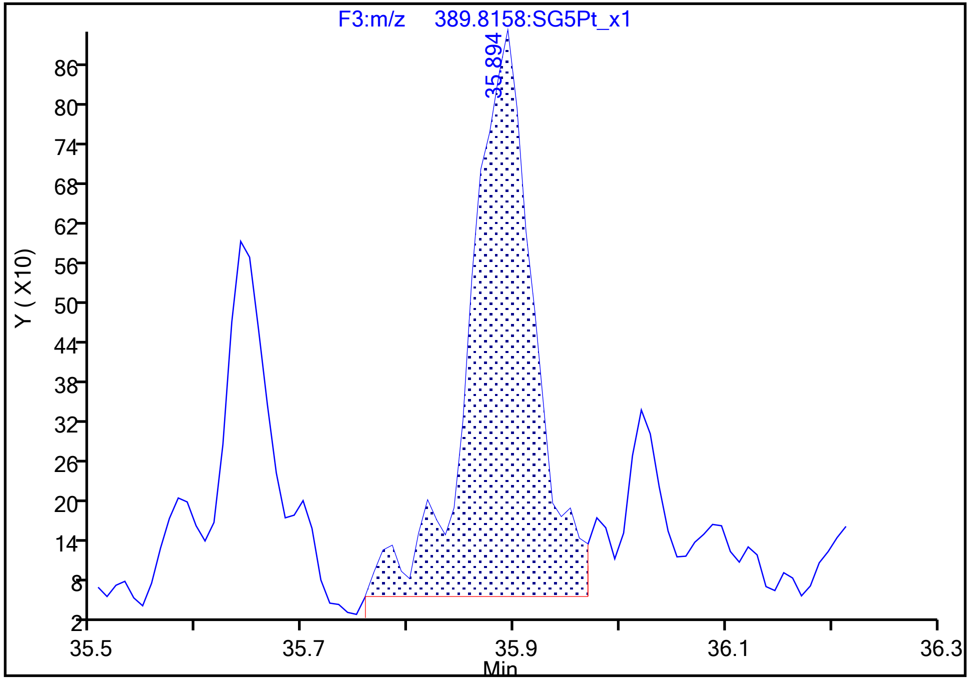

Manual Integration Results

RT:	35.89
Area:	3259
Amount:	0.106705
Amount Units:	pg/ul

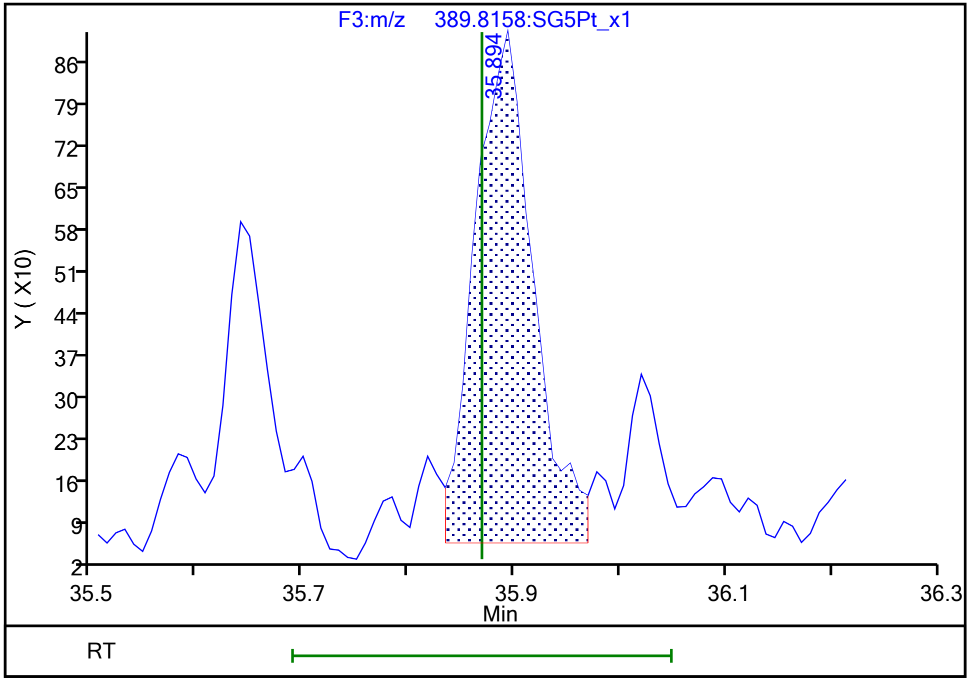

Reviewer: stephensk, 18-Oct-2021 08:32:42

Audit Action: Split an Integrated Peak Audit Reason: Poor chromatography

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 2

RT: 35.99
Area: 2482265
Amount: 80.922461
Amount Units: pg/ul

Processing Integration Results

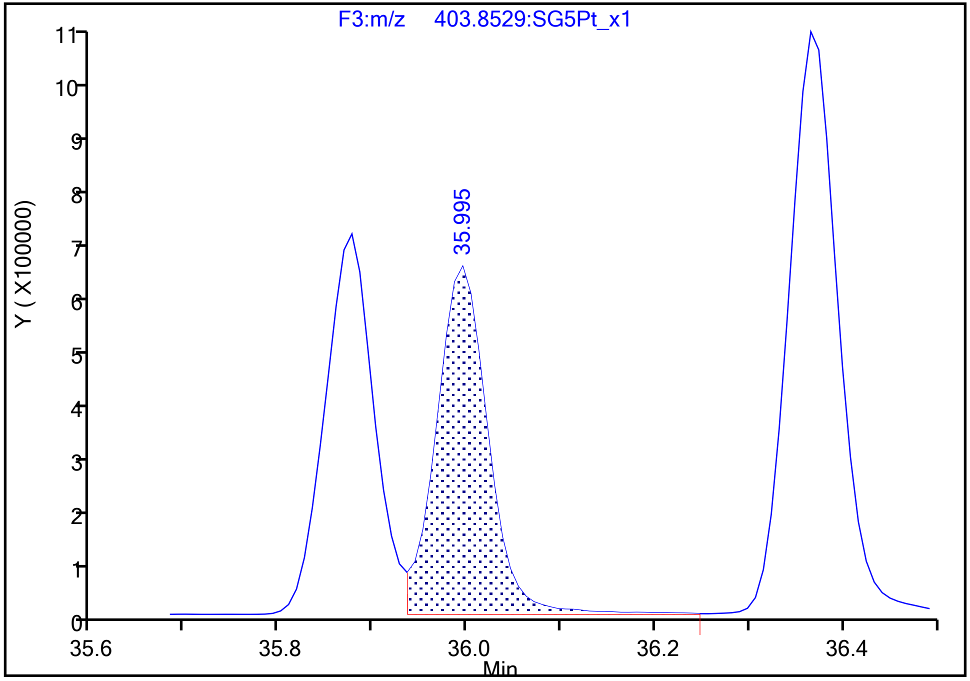

RT: 35.99
Area: 2482265
Amount: 80.922461
Amount Units: pg/ul

Manual Integration Results

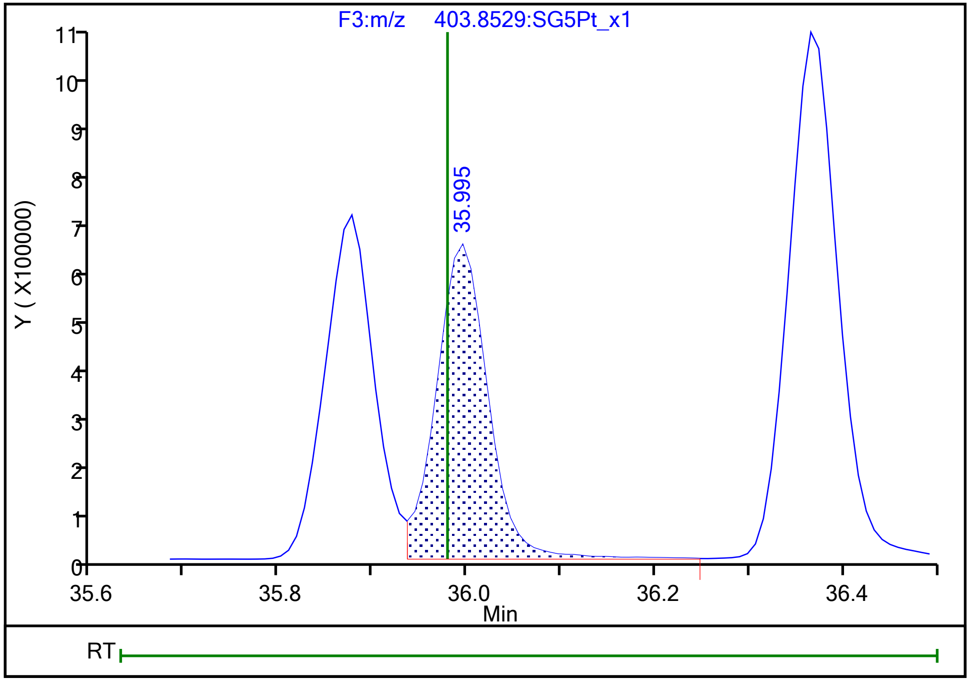

Reviewer: stephensk, 15-Oct-2021 14:45:07

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3(33.08 :38.50)		

13C-1,2,3,6,7,8-HxCDD, CAS: 109719-81-5

Signal: 3

Processing Integration Results

RT: 35.99
Area: 5623069
Amount: 80.922461
Amount Units: pg/ul

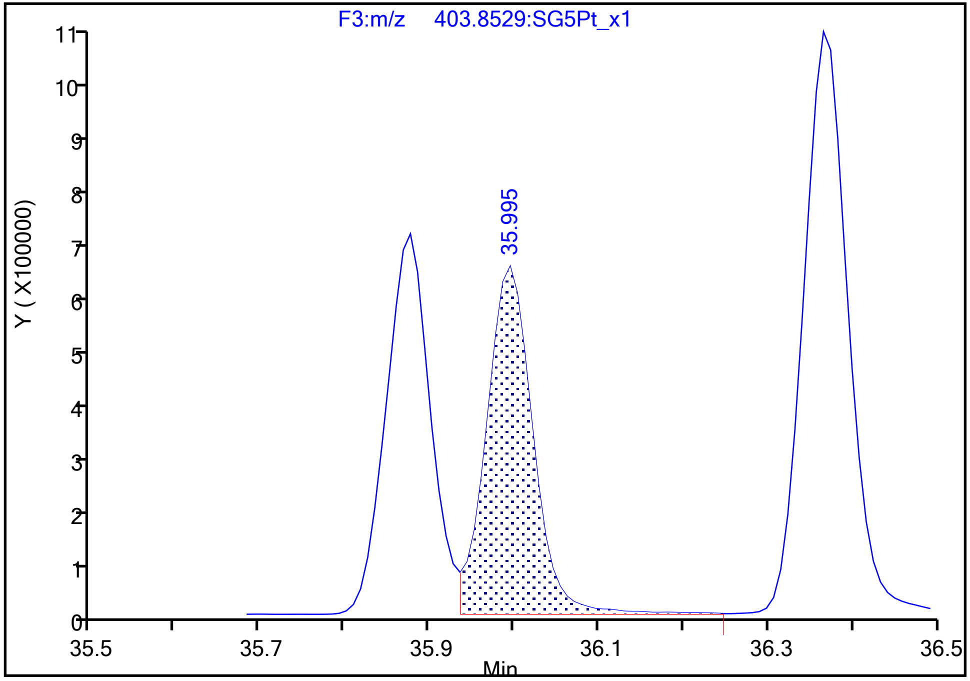

Manual Integration Results

RT: 35.99
Area: 5623069
Amount: 80.922461
Amount Units: pg/ul
Reviewer: stephensk, 15-Oct-2021 14:45:07
Audit Action: Marked Compound Undetected
Audit Reason: Invalid Compound ID

Report Date: 18-Oct-2021 13:41:36

Chrom Revision: 2.3 22-Sep-2021 15:38:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Not Detected

Expected RT: 38.43

Processing Integration Results

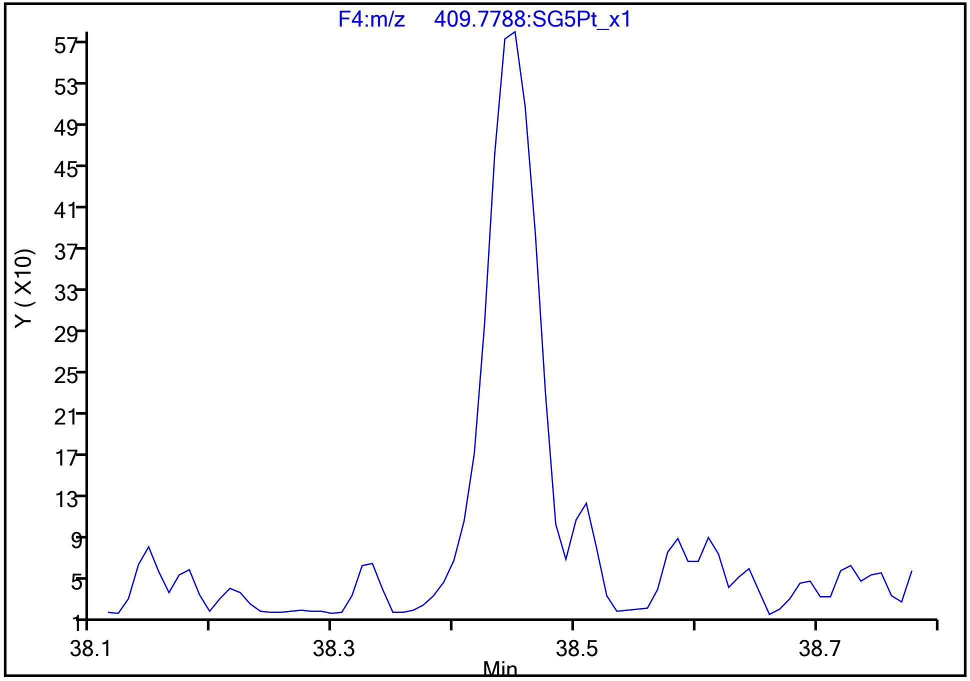

RT:	38.45
Area:	1827
Amount:	0.056206
Amount Units:	pg/ul

Manual Integration Results

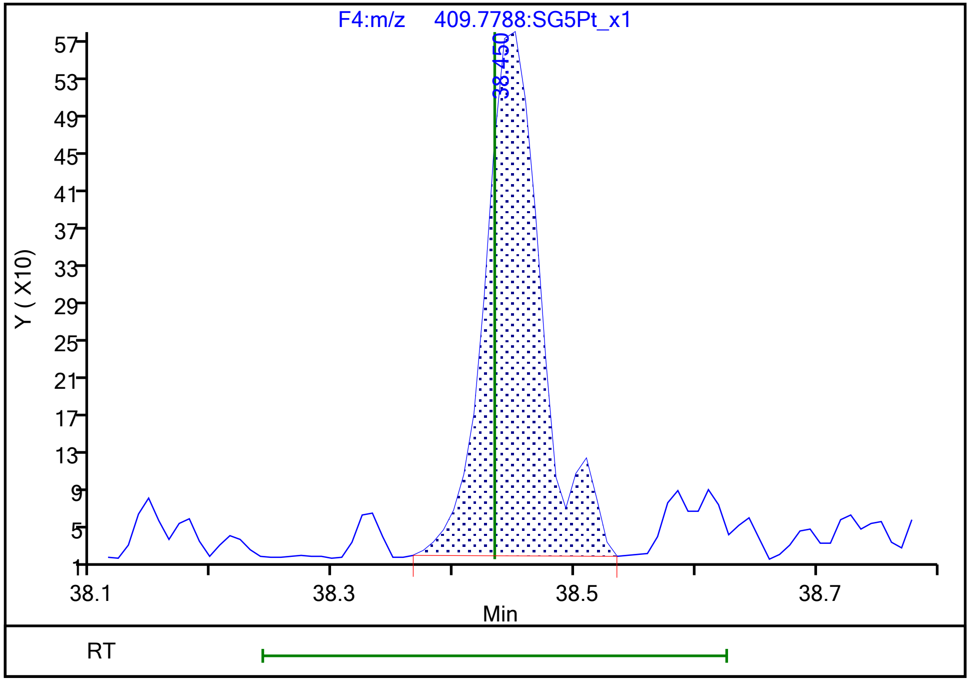

Reviewer: bennettd, 18-Oct-2021 12:44:58

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4(38.58 :41.00)		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Not Detected
Expected RT: 38.43

Processing Integration Results

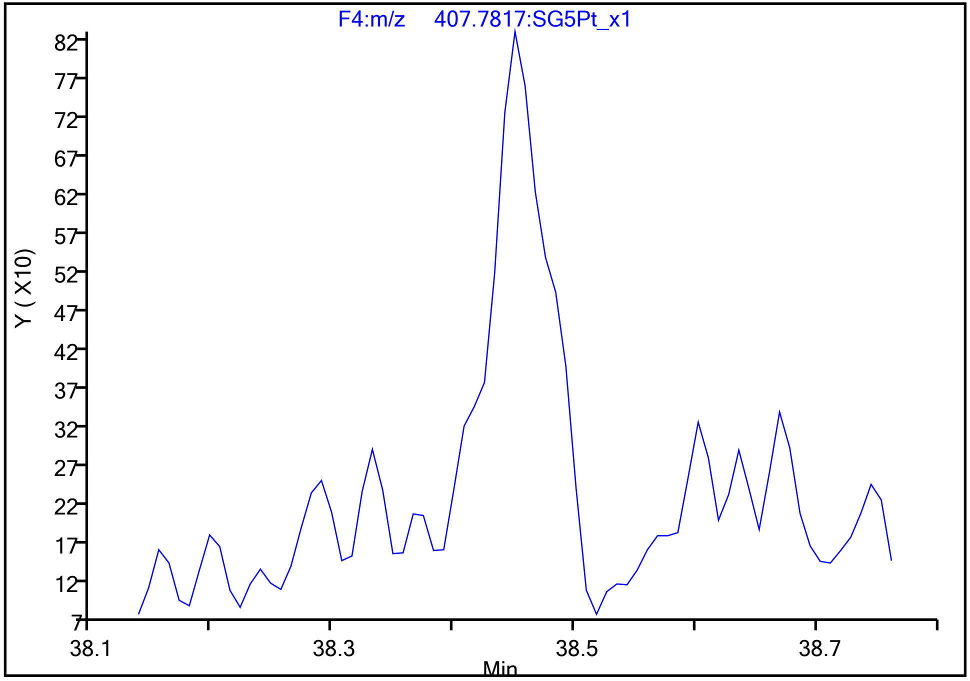

RT:	38.45
Area:	2740
Amount:	0.056206
Amount Units:	pg/ul

Manual Integration Results

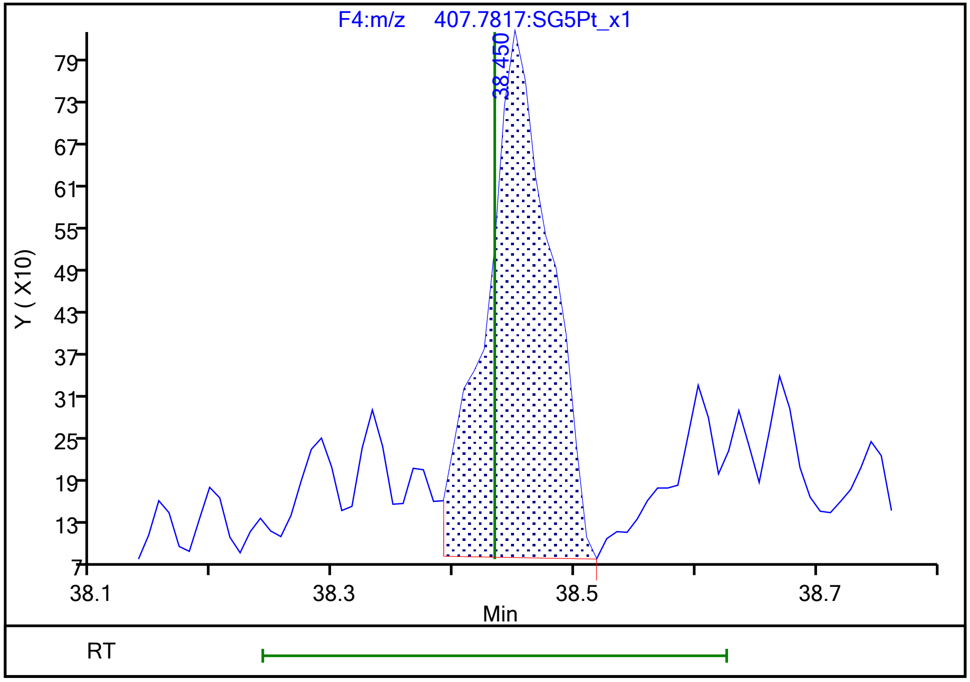

Reviewer: bennettd, 18-Oct-2021 12:45:03

Audit Action: Split an Integrated Peak Audit Reason: Missed Peak

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDF, CAS: 39001-02-0

Signal: 2

Not Detected
Expected RT: 41.96

Processing Integration Results

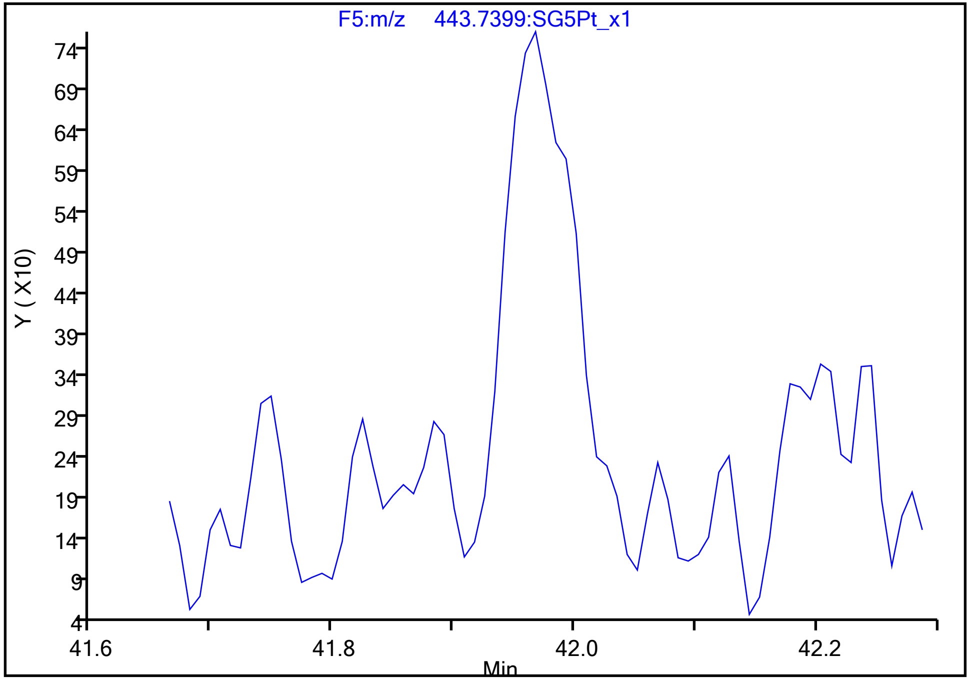

RT: 41.97
Area: 2428
Amount: 0.093161
Amount Units: pg/ul

Manual Integration Results

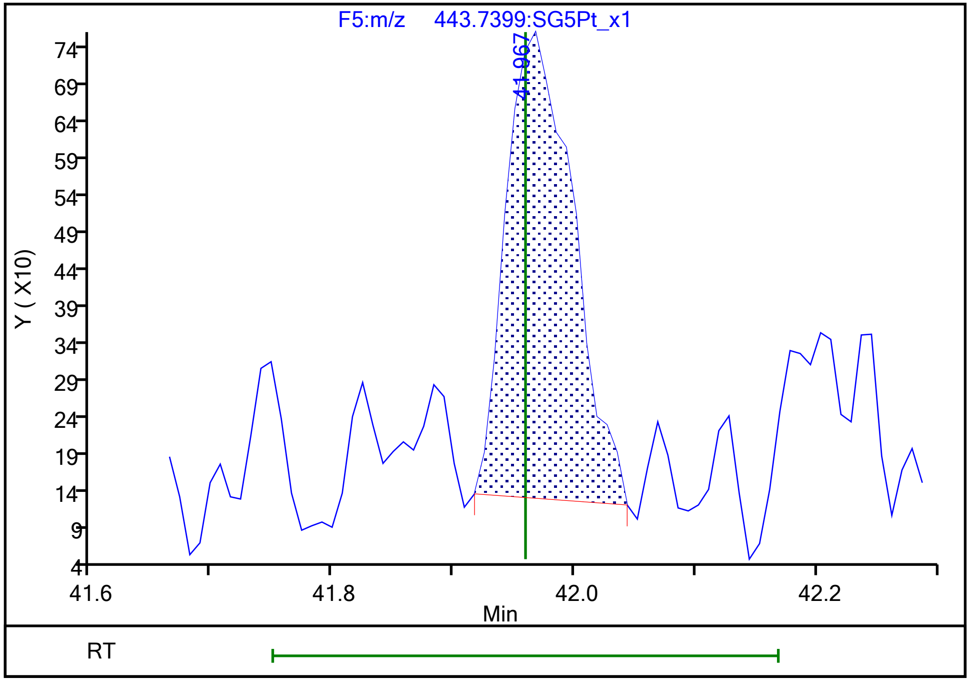

Reviewer: bennettd, 18-Oct-2021 12:45:23
Audit Action: Manually Integrated Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:36

Chrom Revision: 2.3 22-Sep-2021 15:38:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d

Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 2

Not Detected

Expected RT: 41.88

Processing Integration Results

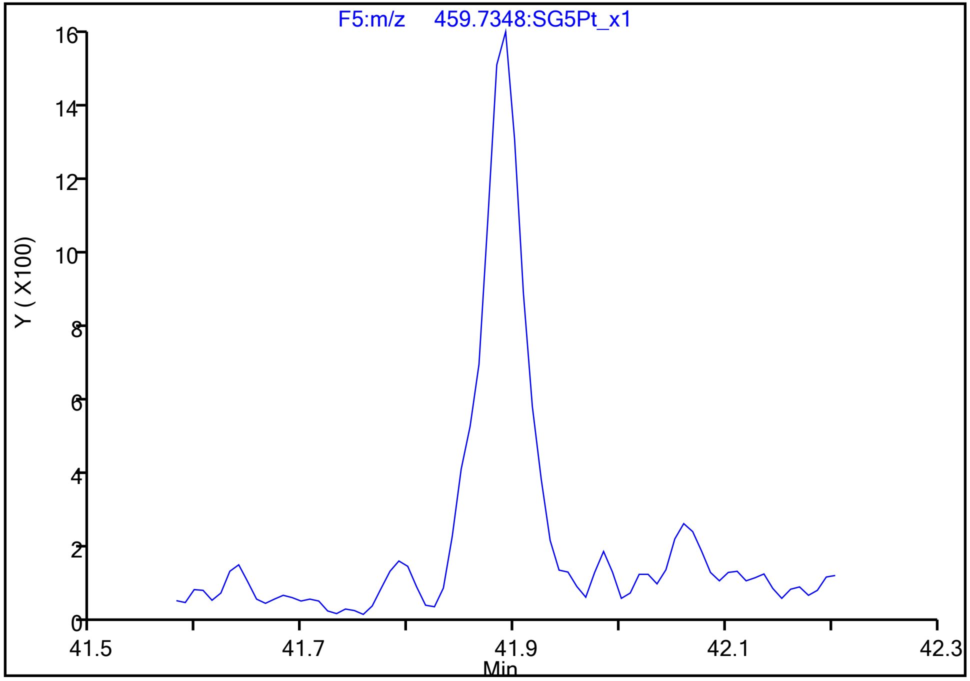

RT: 41.89

Area: 4119

Amount: 0.182755

Amount Units: pg/ul

Manual Integration Results

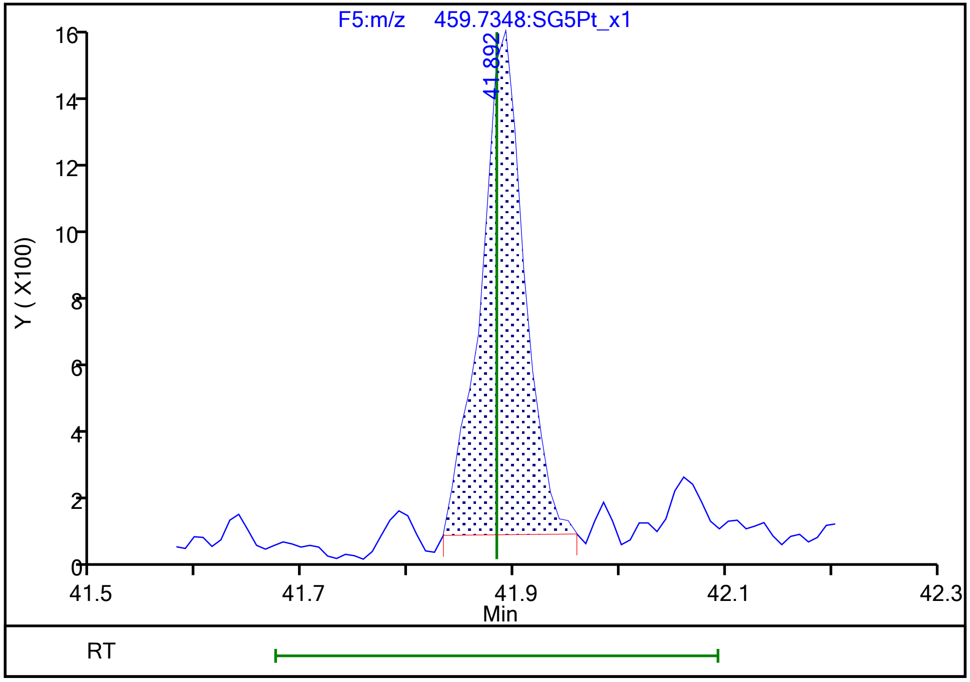

Reviewer: stephensk, 15-Oct-2021 14:46:04

Audit Action: Assigned Compound ID

Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d				
Injection Date:	15-Oct-2021 12:39:00	Instrument ID:	DFS 1		
Lims ID:	MB 320-532854/1-A				
Client ID:					
Operator ID:	Xcalibur_System	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5(41.08 :46.00)		

OCDD, CAS: 3268-87-9

Signal: 1

Not Detected

Expected RT: 41.88

Processing Integration Results

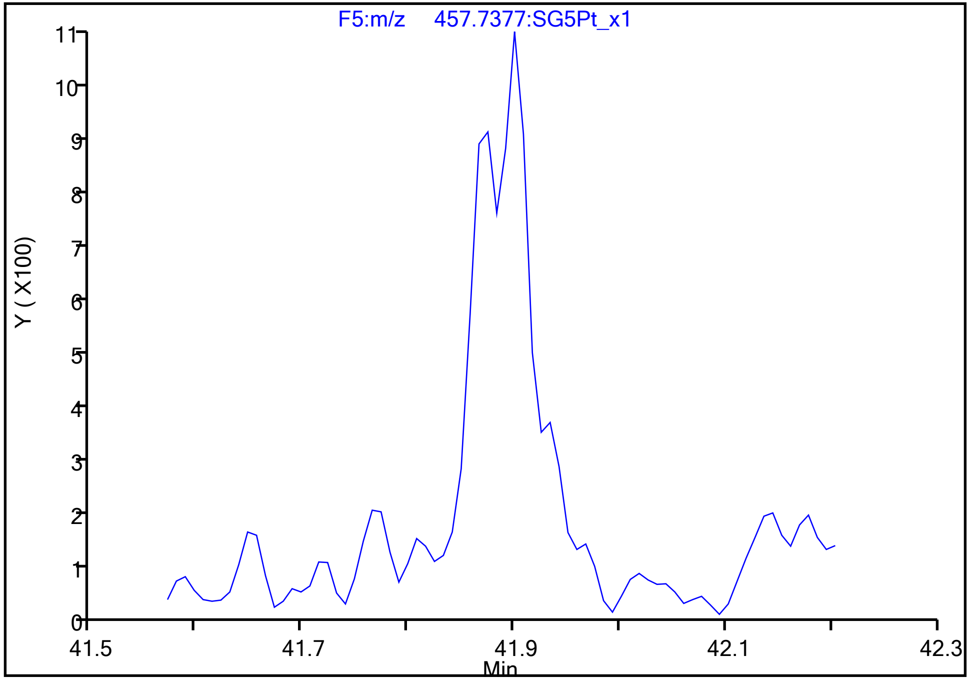

RT:	41.90
Area:	3708
Amount:	0.182755
Amount Units:	pg/ul

Manual Integration Results

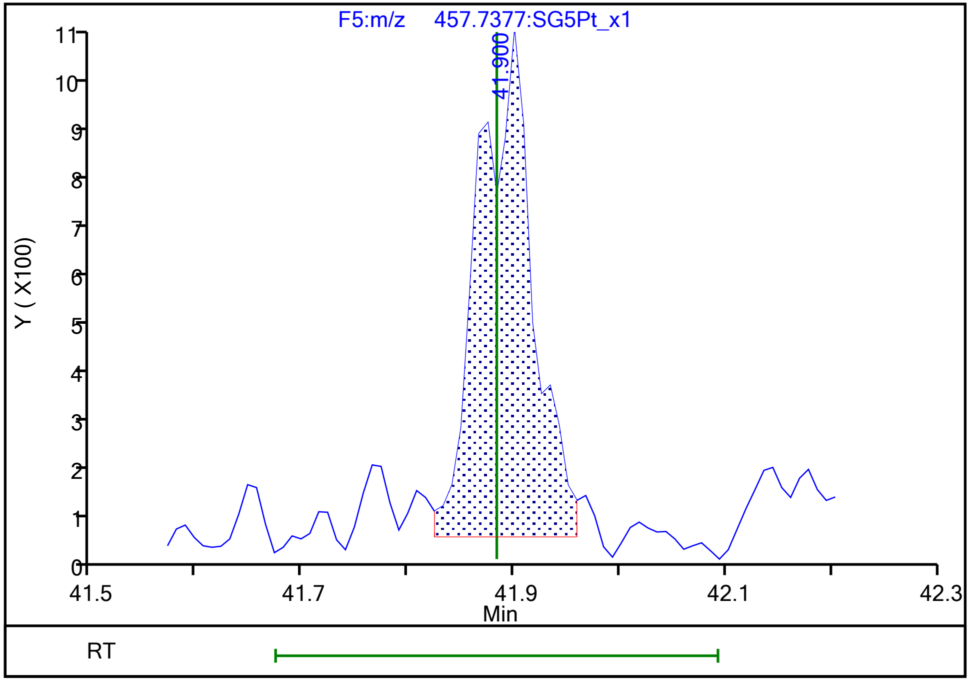

Reviewer: stephensk, 15-Oct-2021 14:46:04

Audit Action: Manually Integrated Audit Reason: Missed Peak

Report Date: 18-Oct-2021 13:41:36
Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

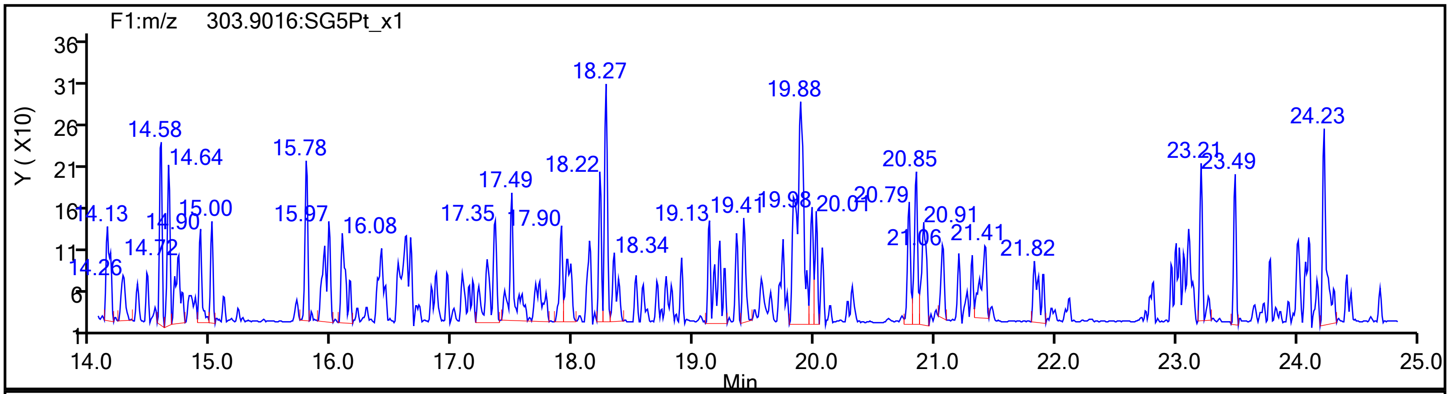

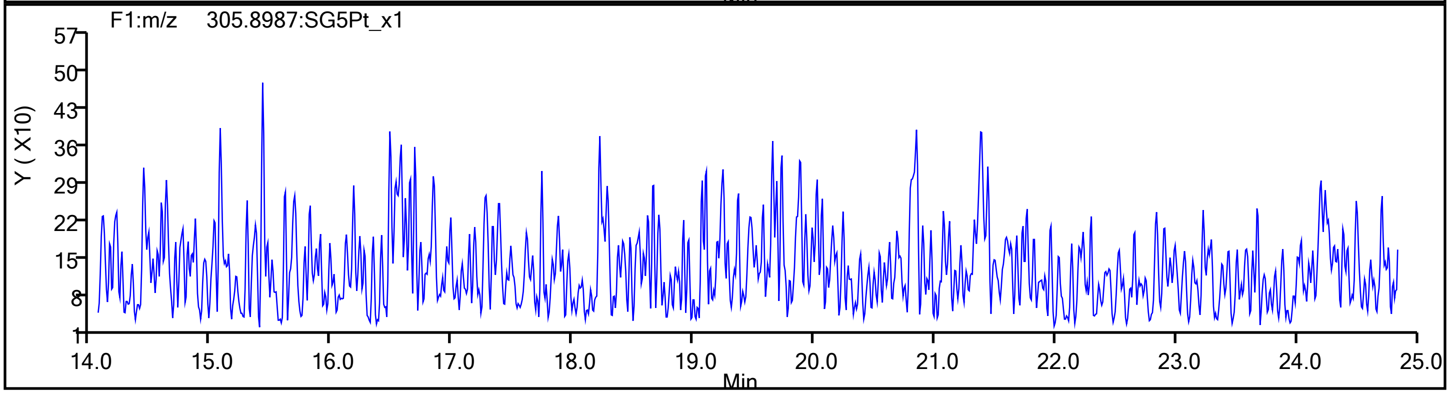

TCDF Standards

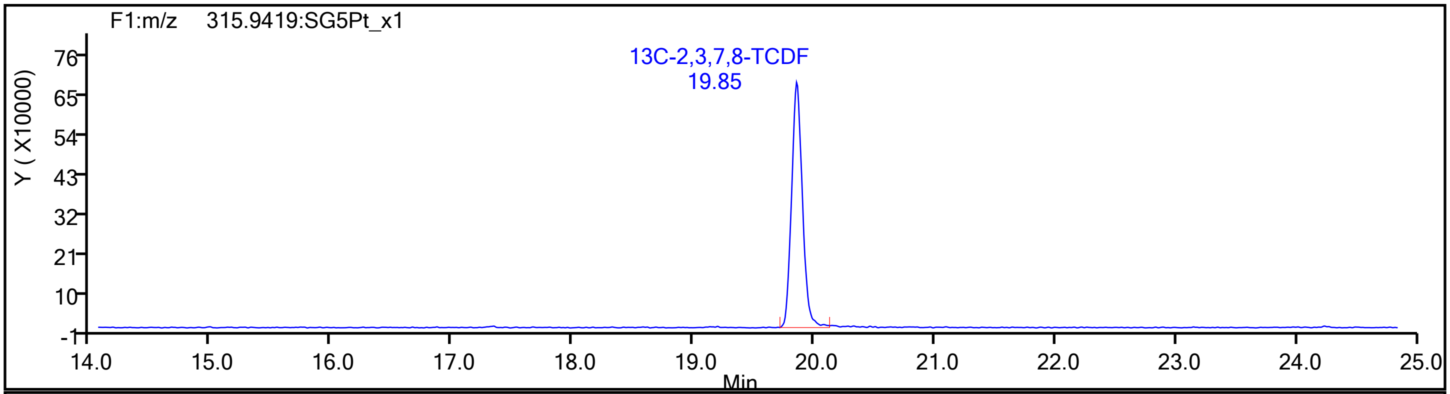

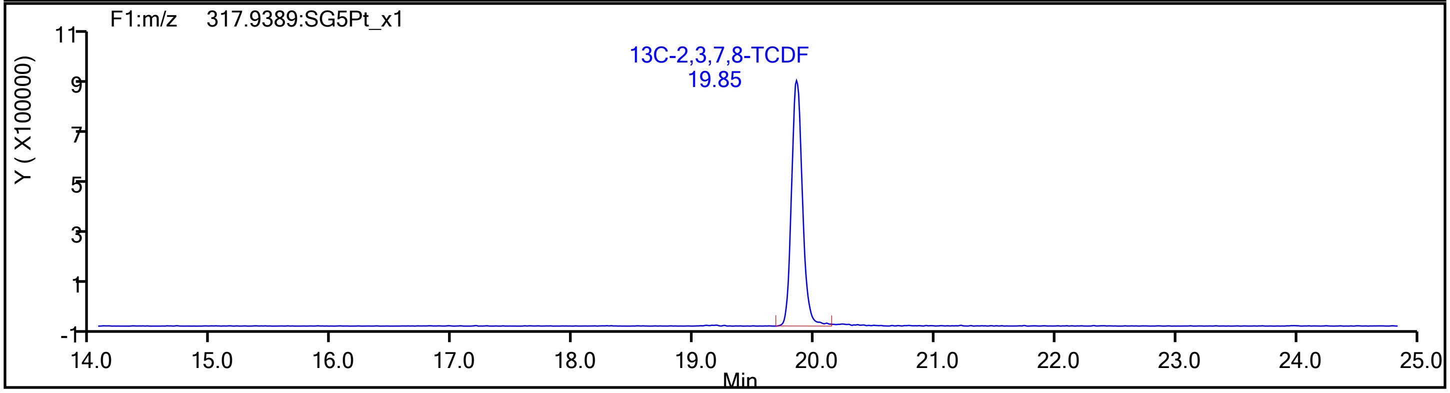

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

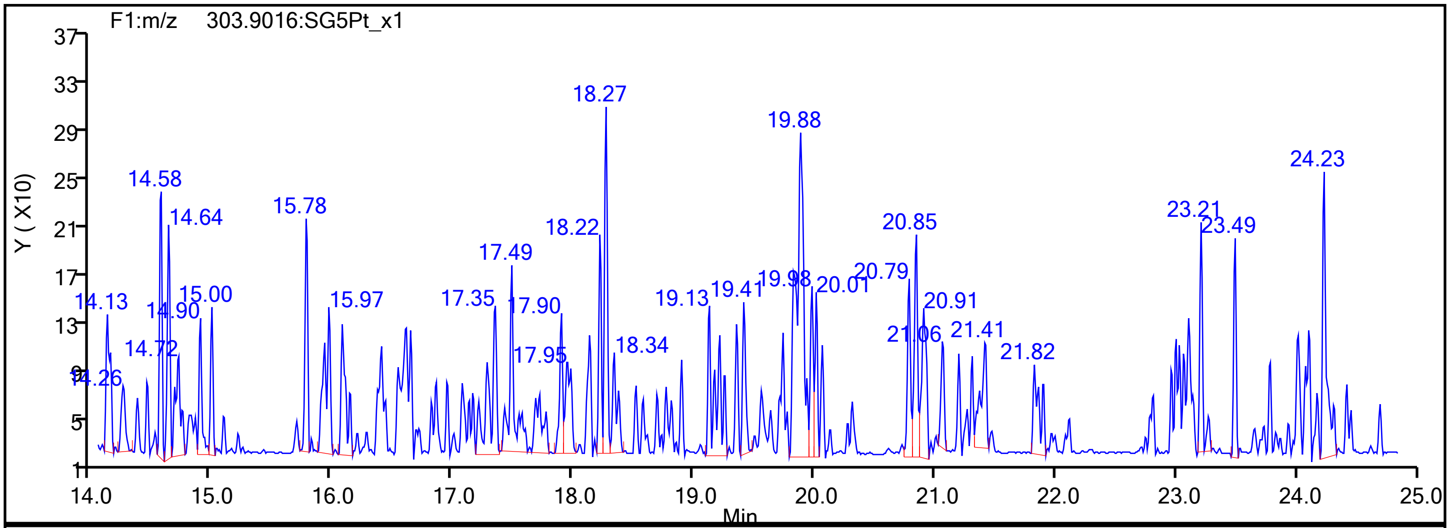

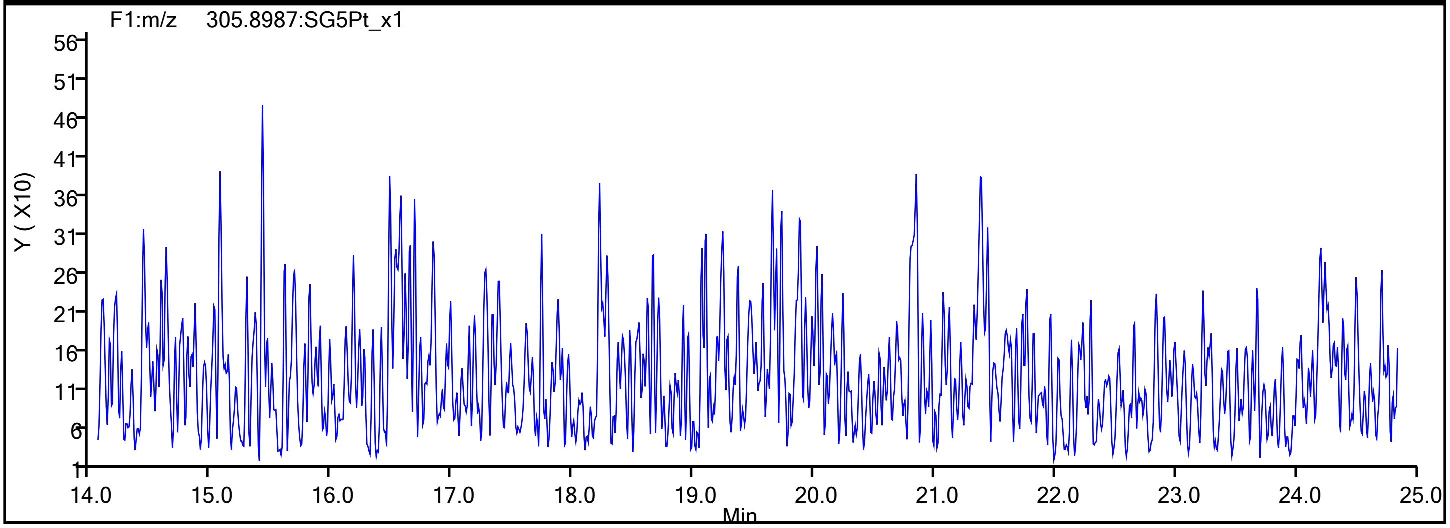

TCDF Interference Mass

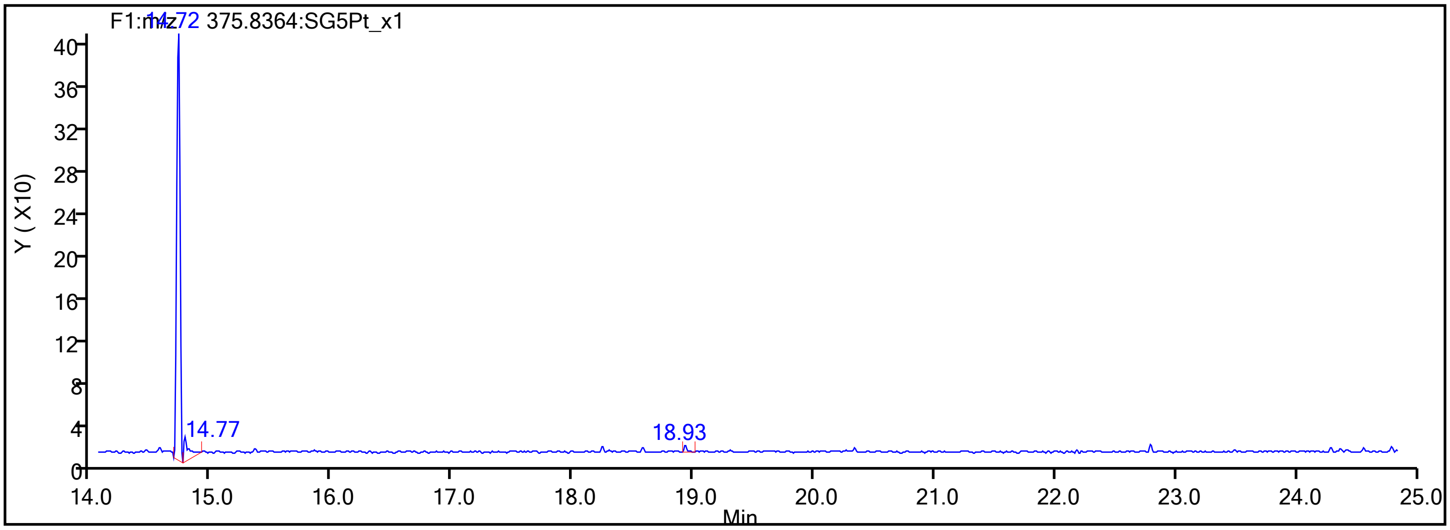

Report Date: 18-Oct-2021 13:41:36 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

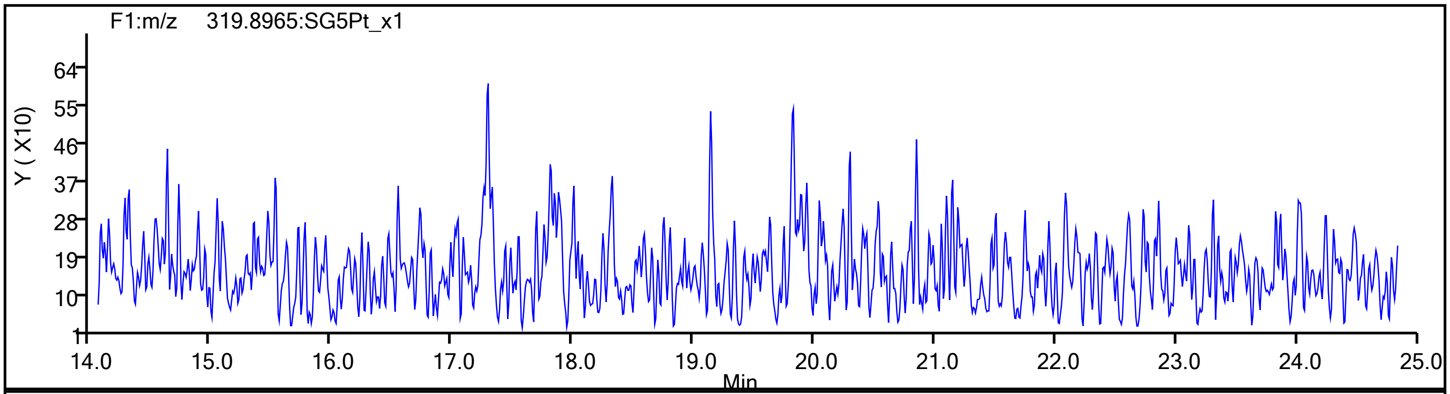

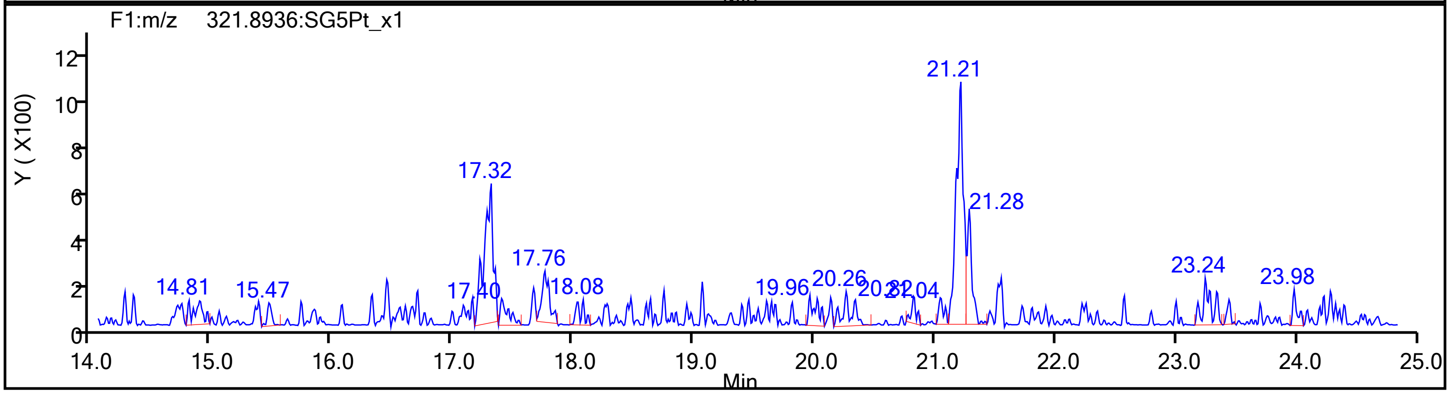

TCDD Standards

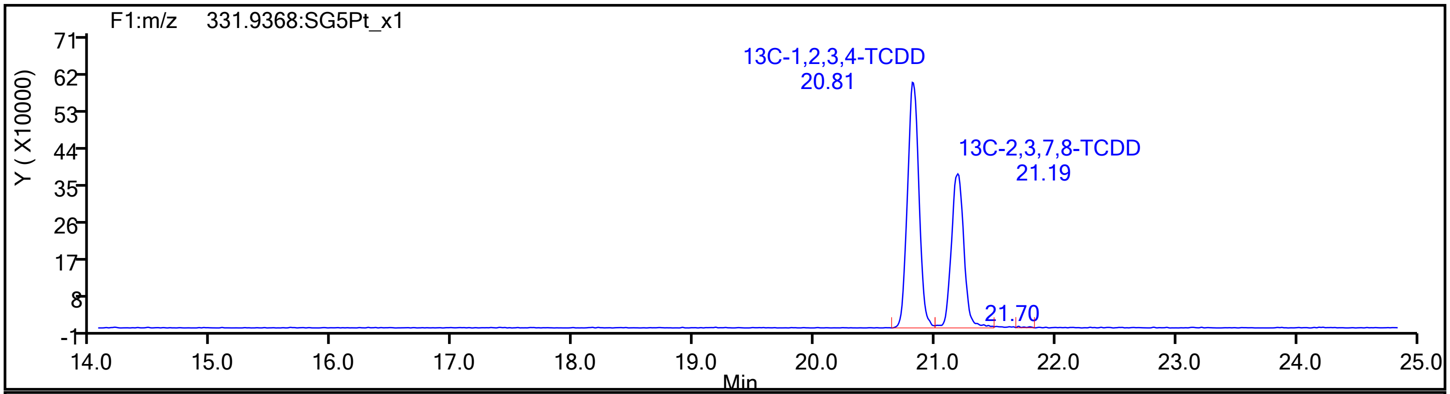

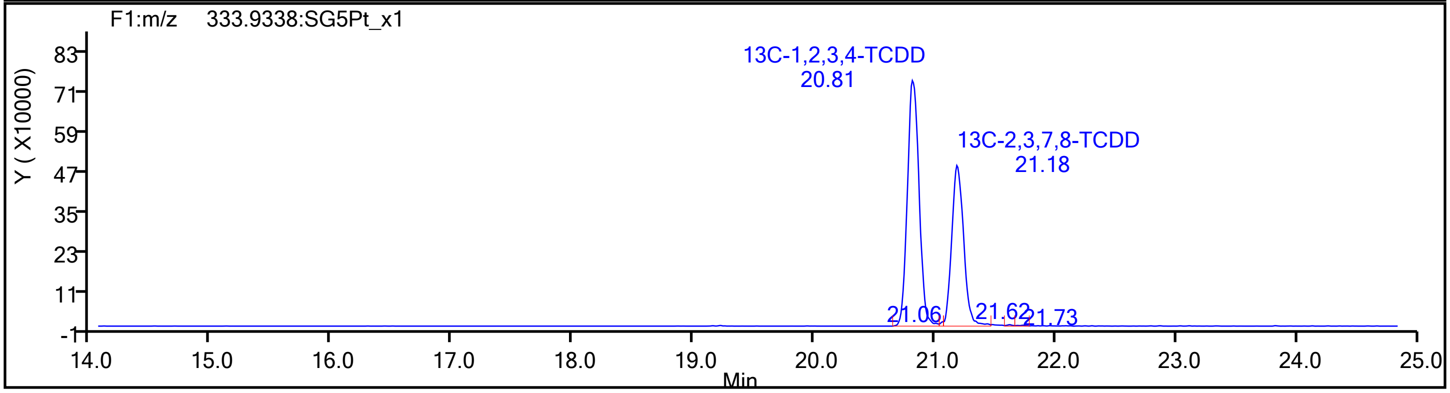

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

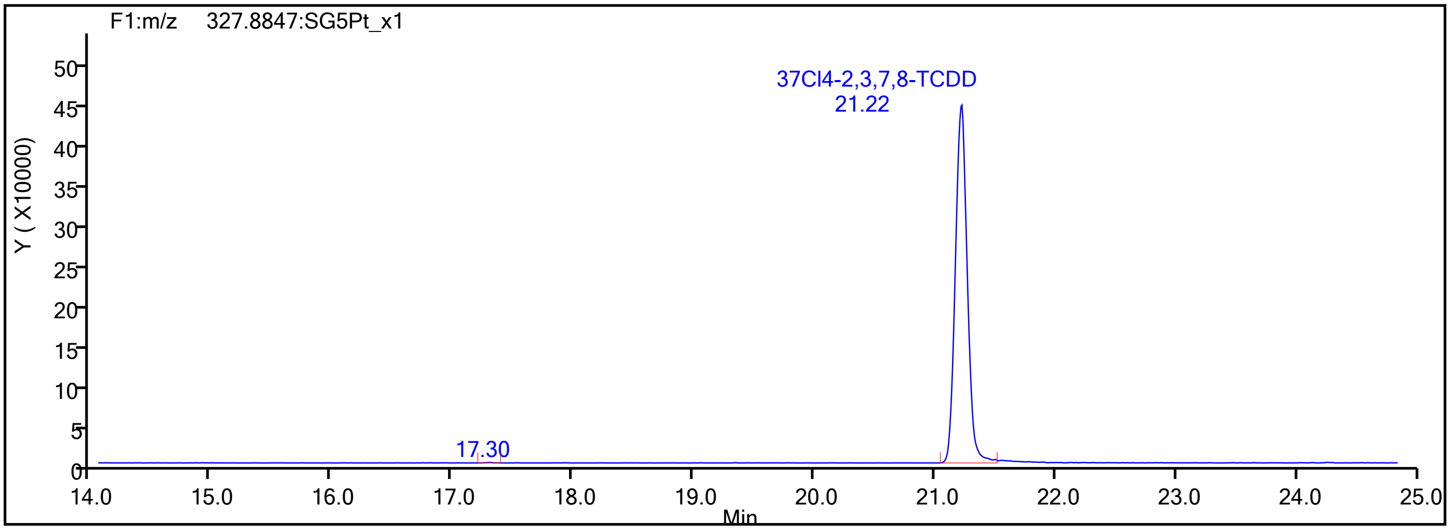

37Cl4-TCDD Standards

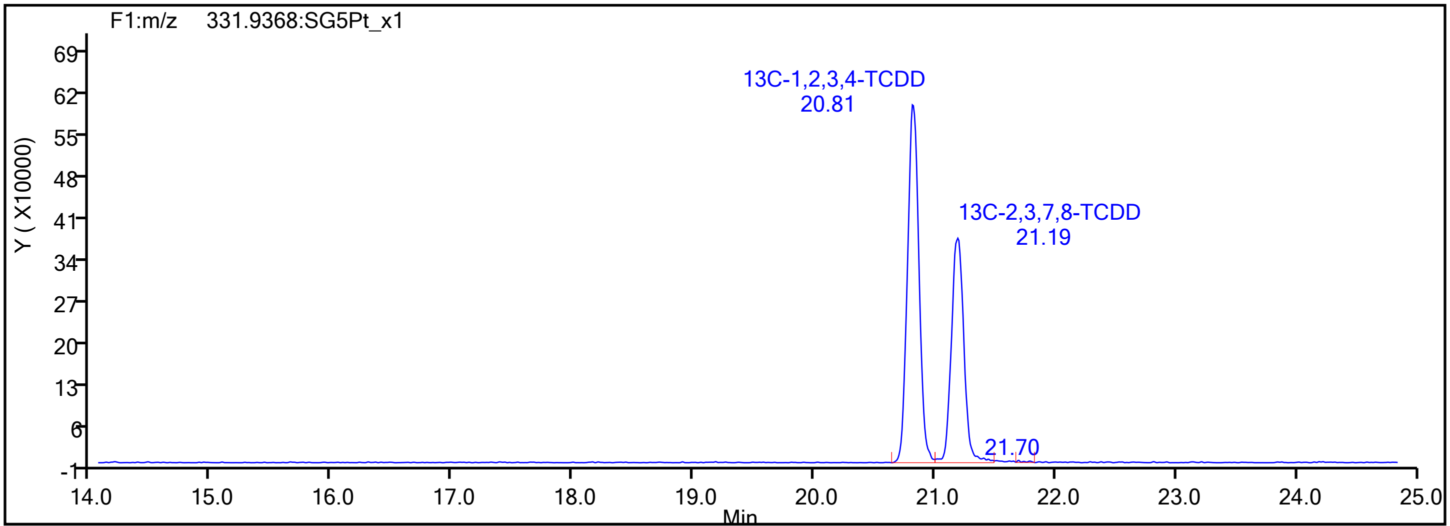

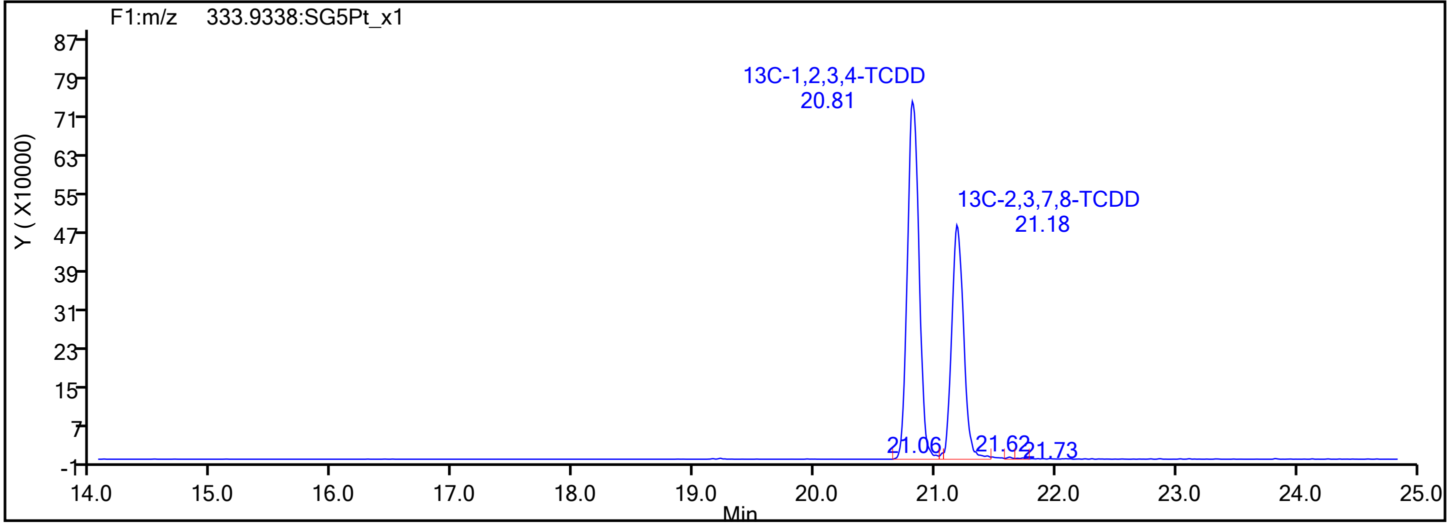

Report Date: 18-Oct-2021 13:41:36 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

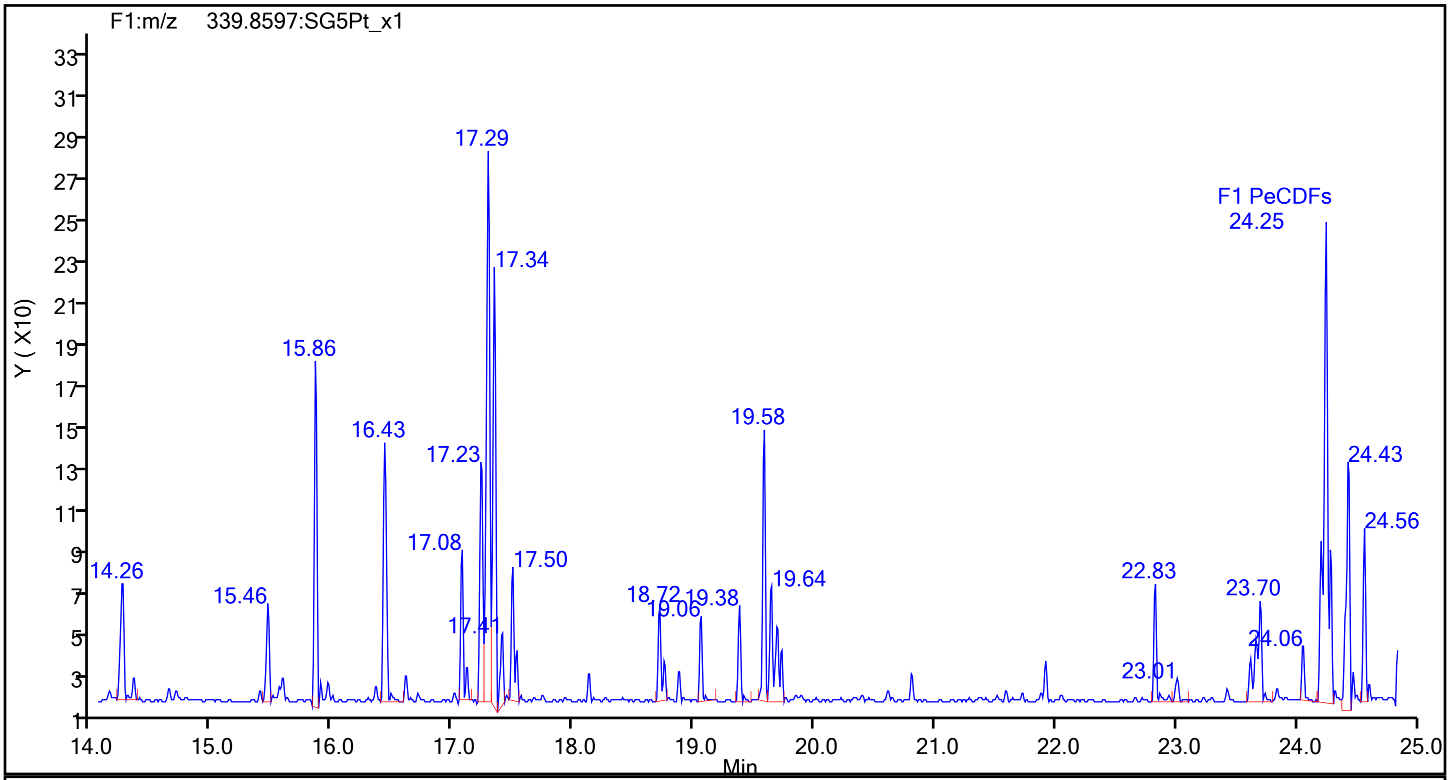

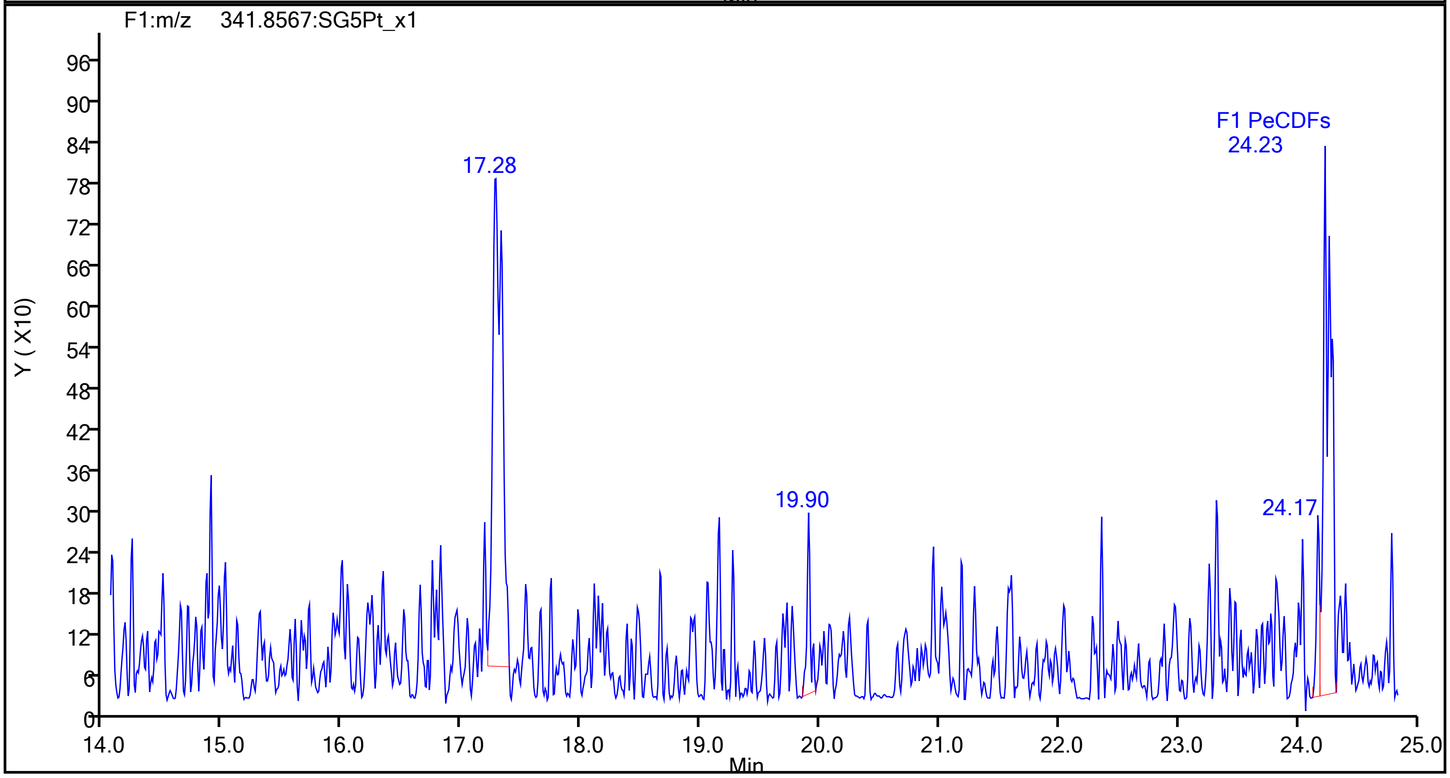

Report Date: 18-Oct-2021 13:41:36 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

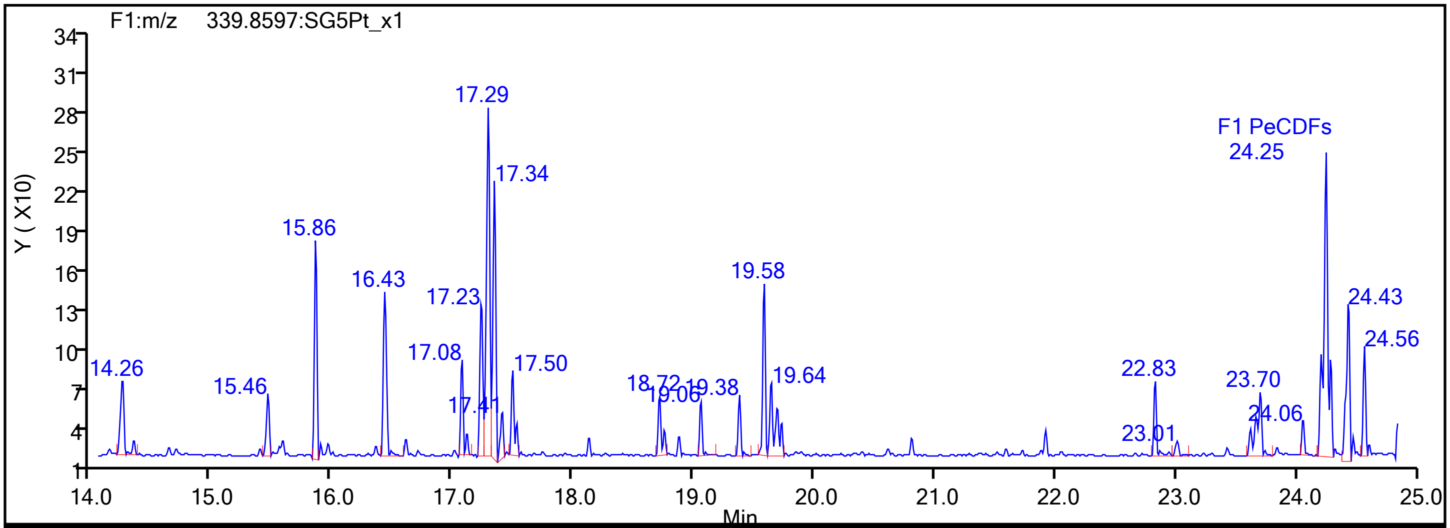

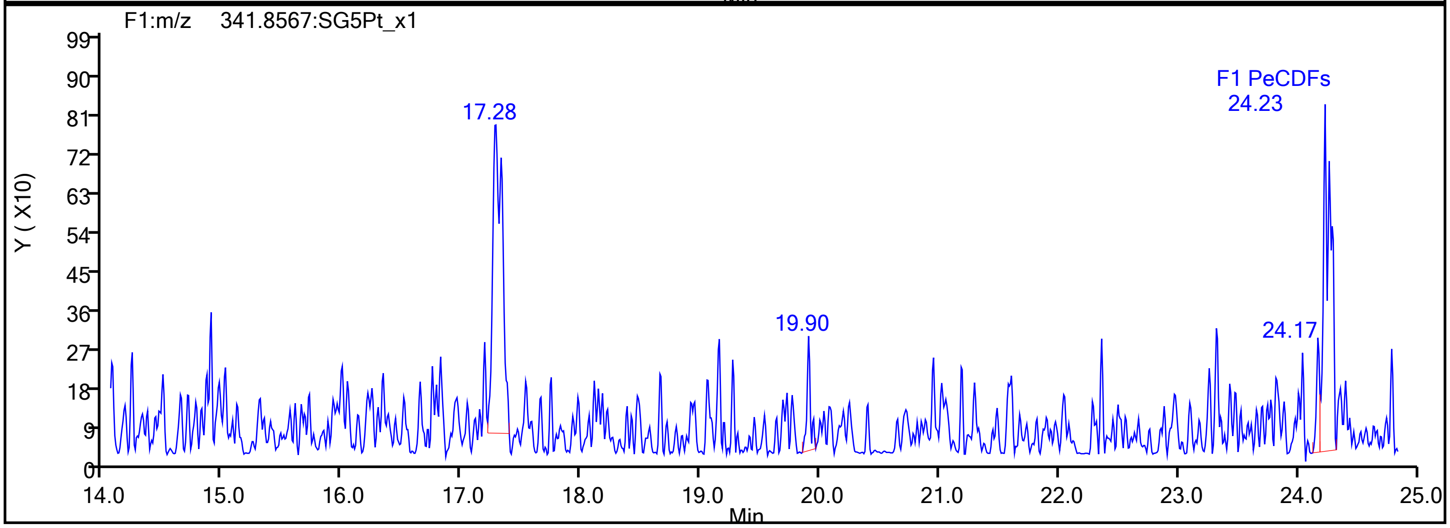

F1 PeCDFs Interference Mass

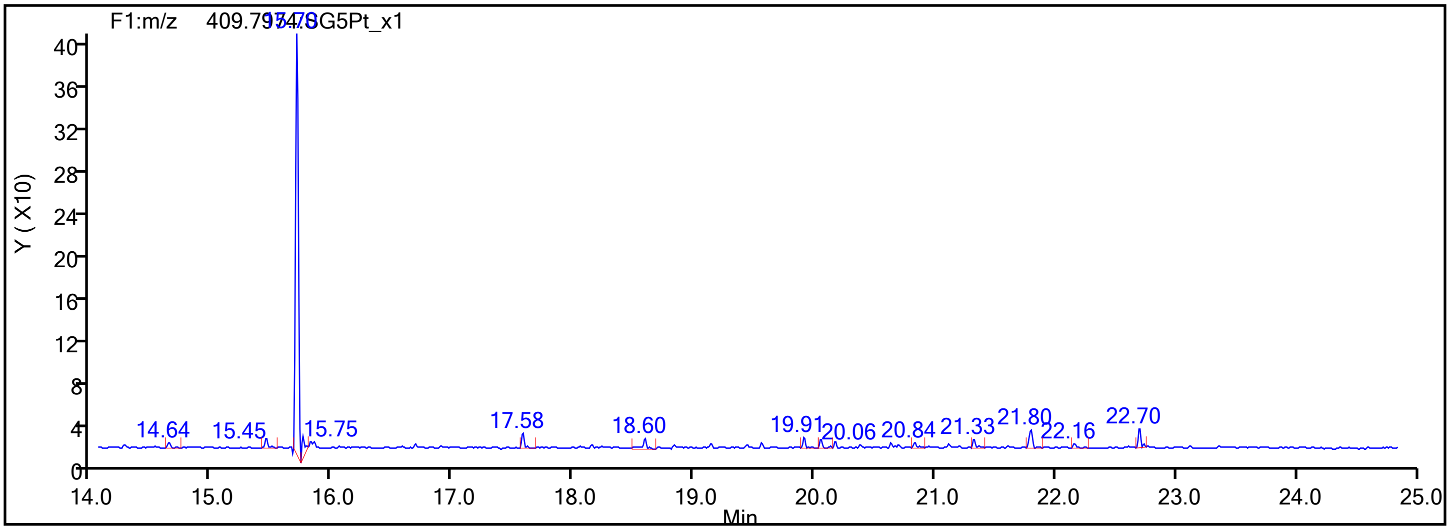

Report Date: 18-Oct-2021 13:41:36 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

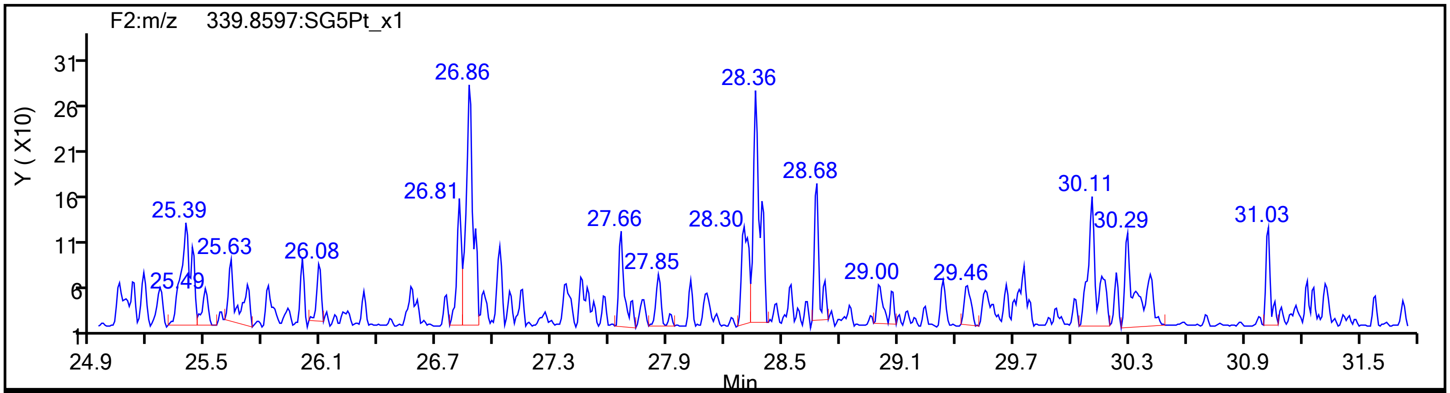

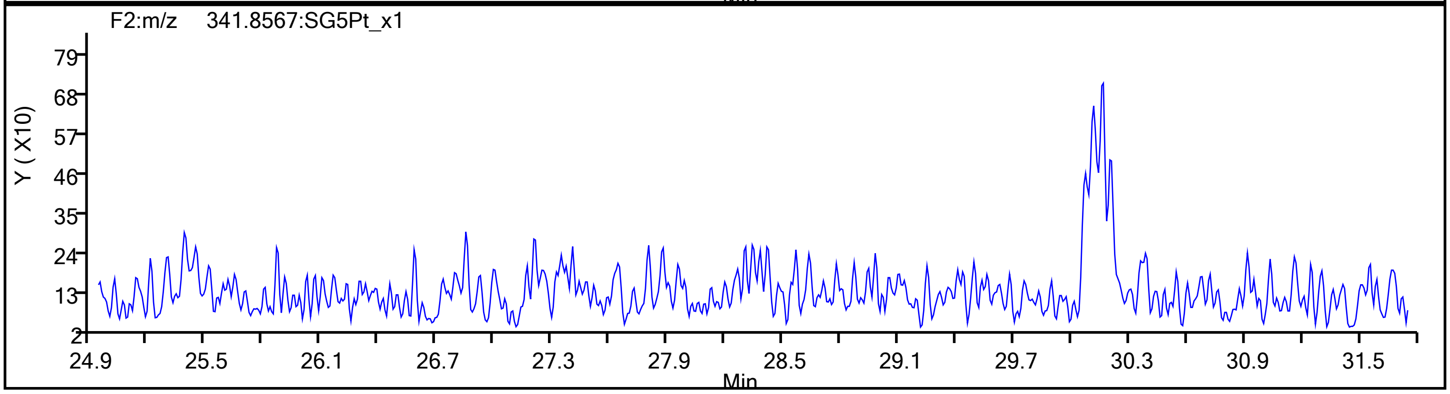

PeCDF Standards

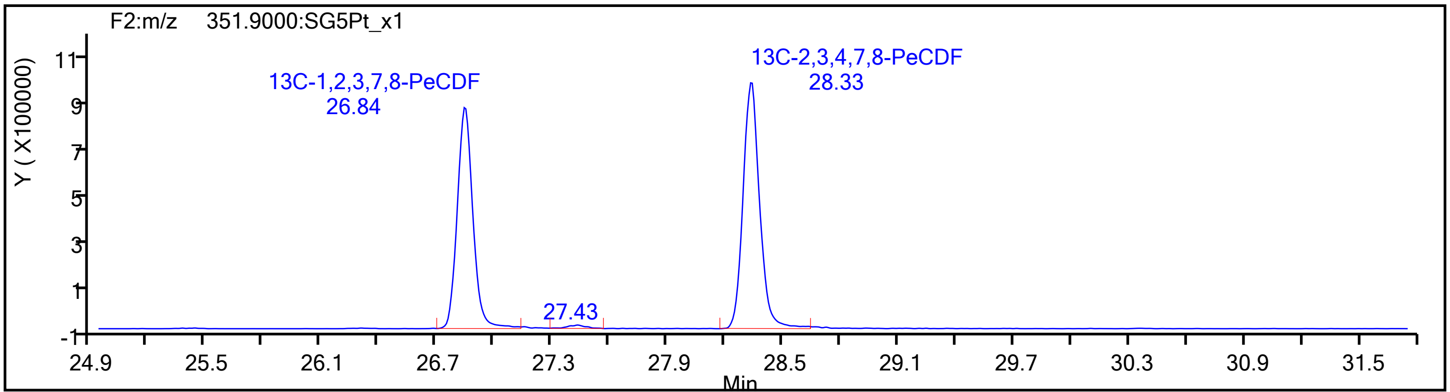

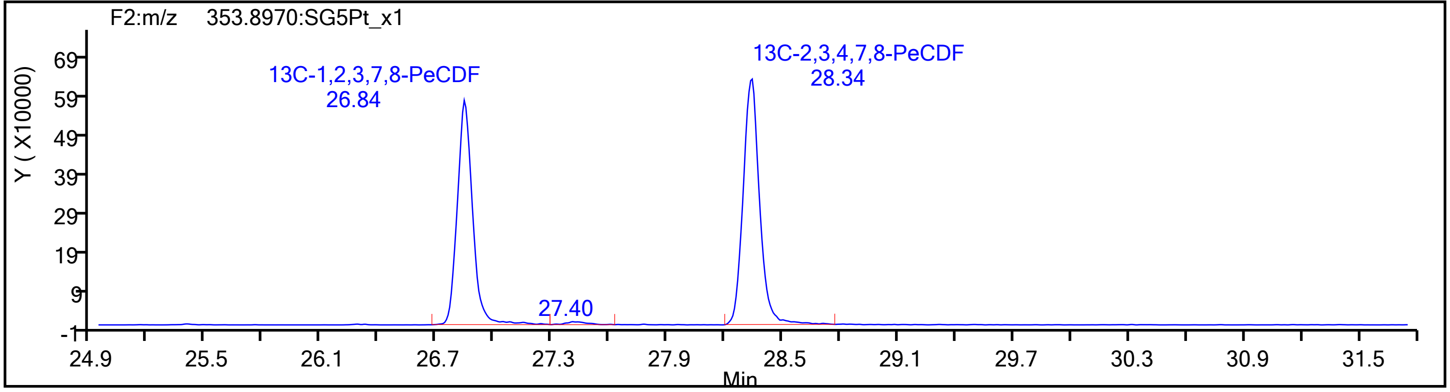

Report Date: 18-Oct-2021 13:41:36 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

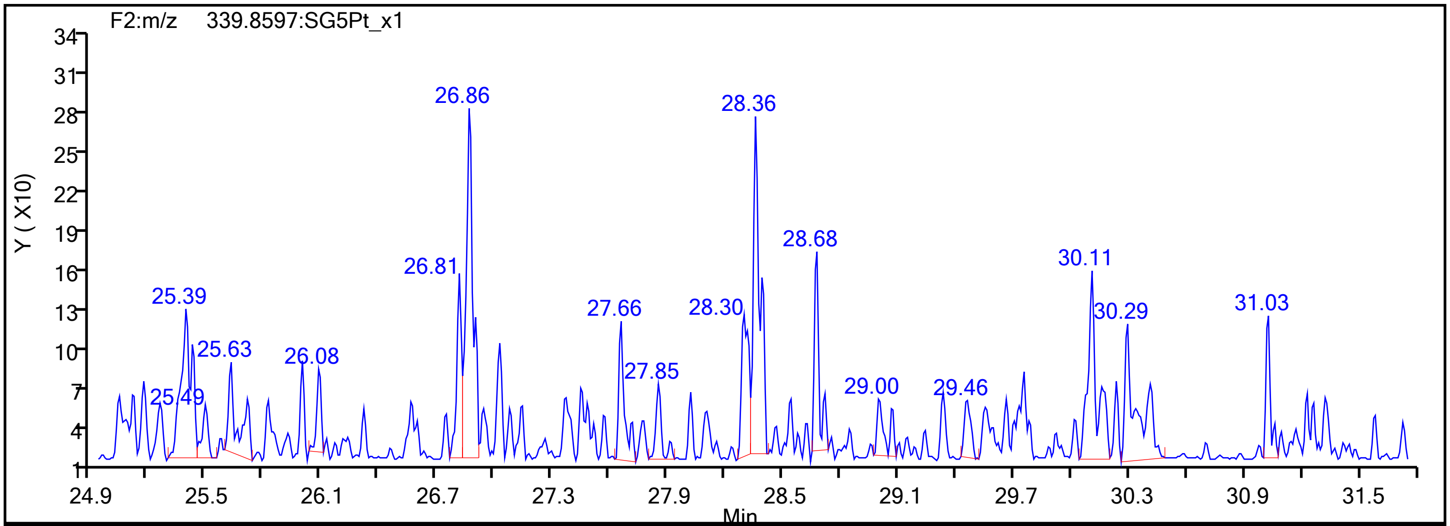

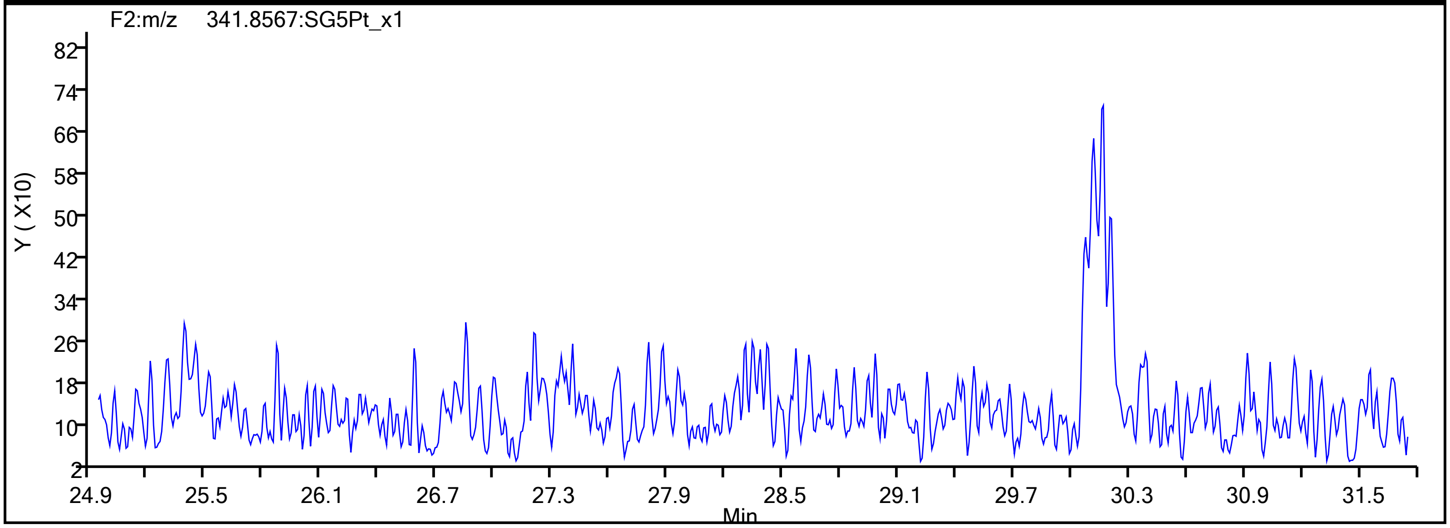

PeCDF Interference Mass

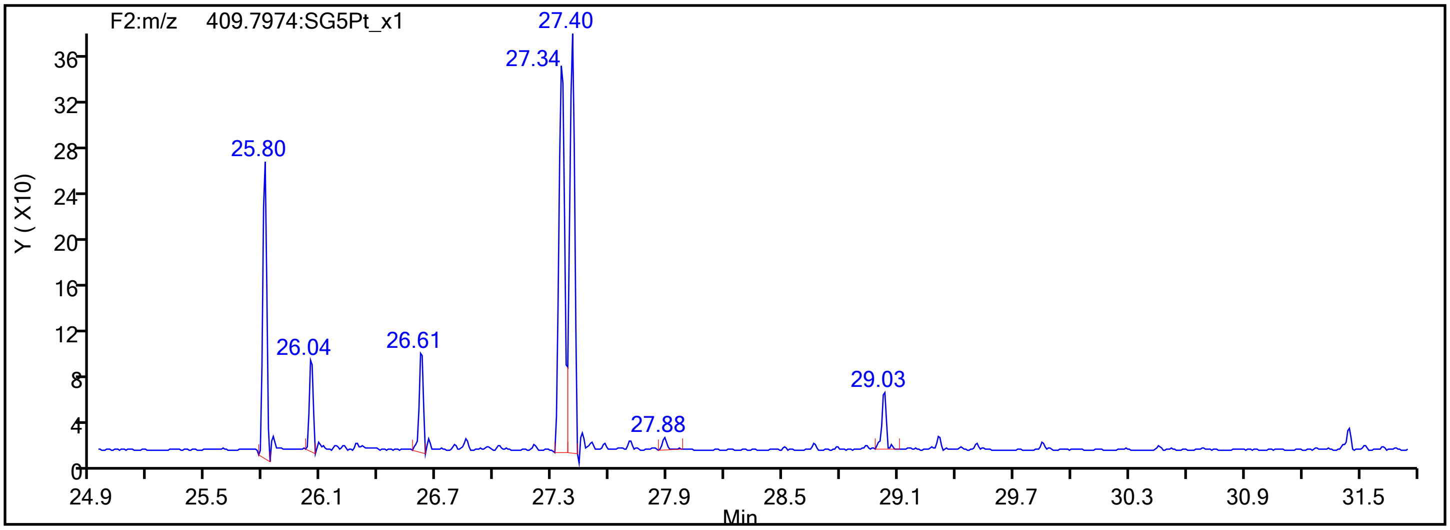

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
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PeCDD

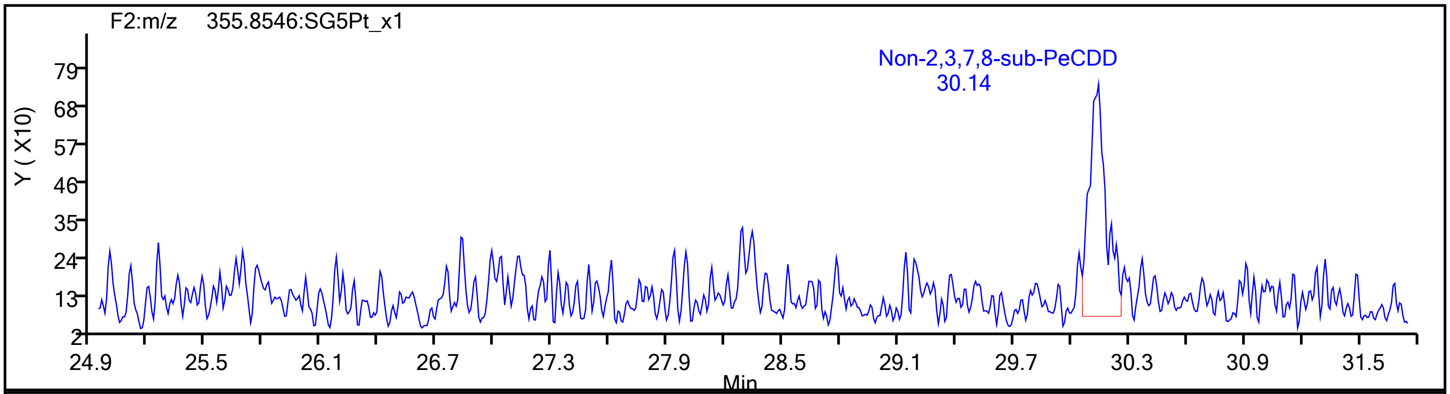

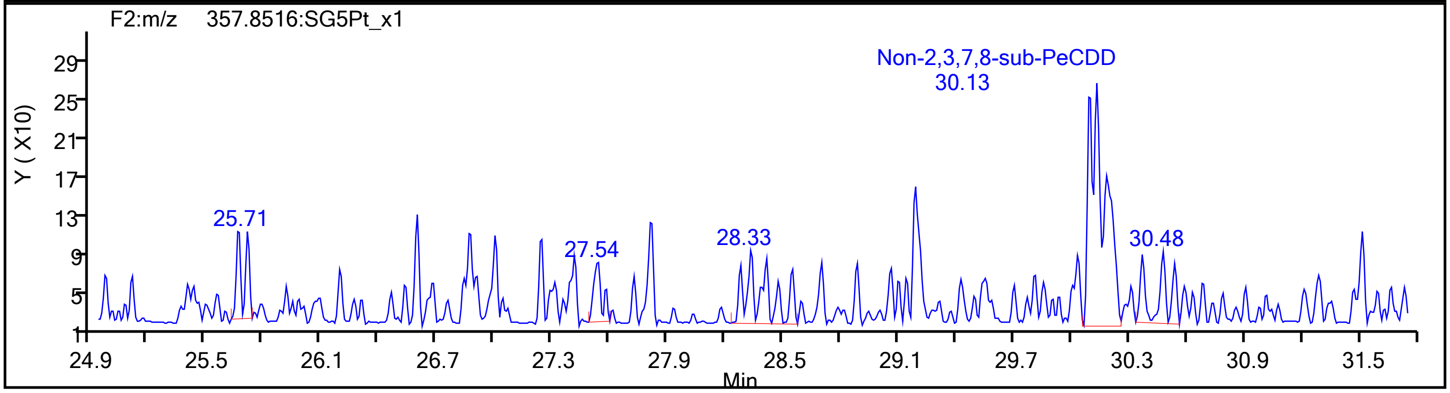

PeCDD Standards

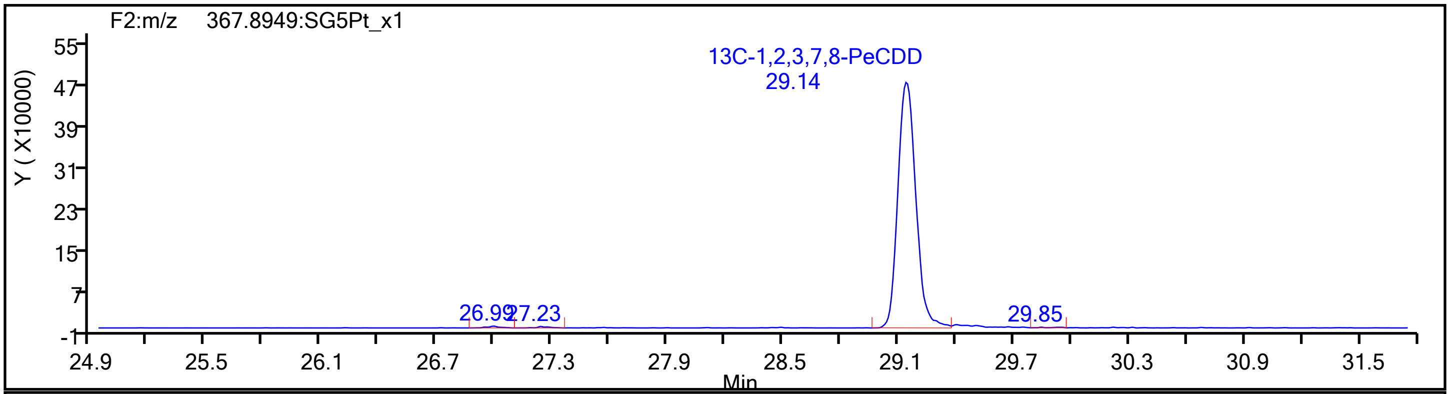

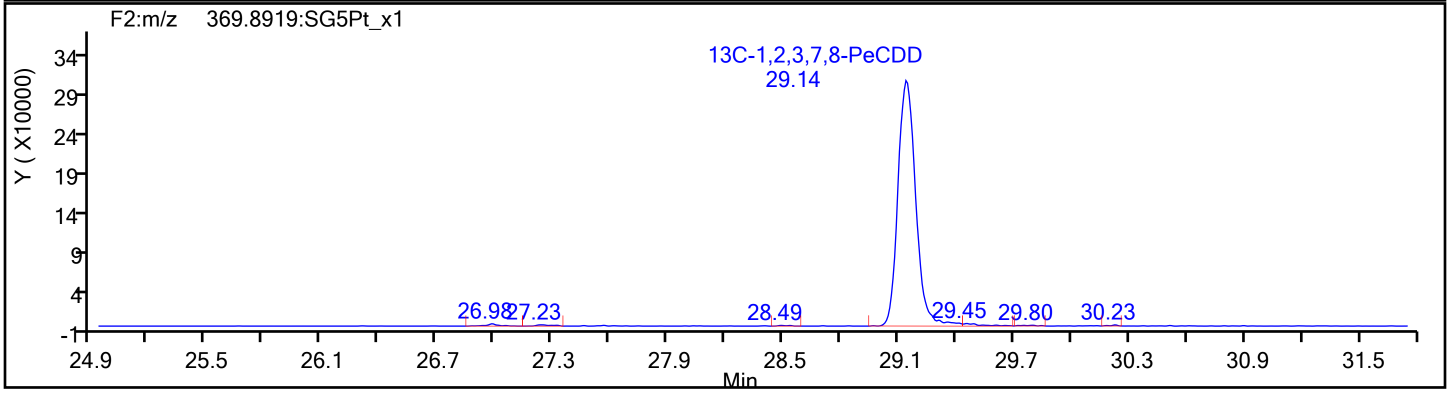

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d

Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

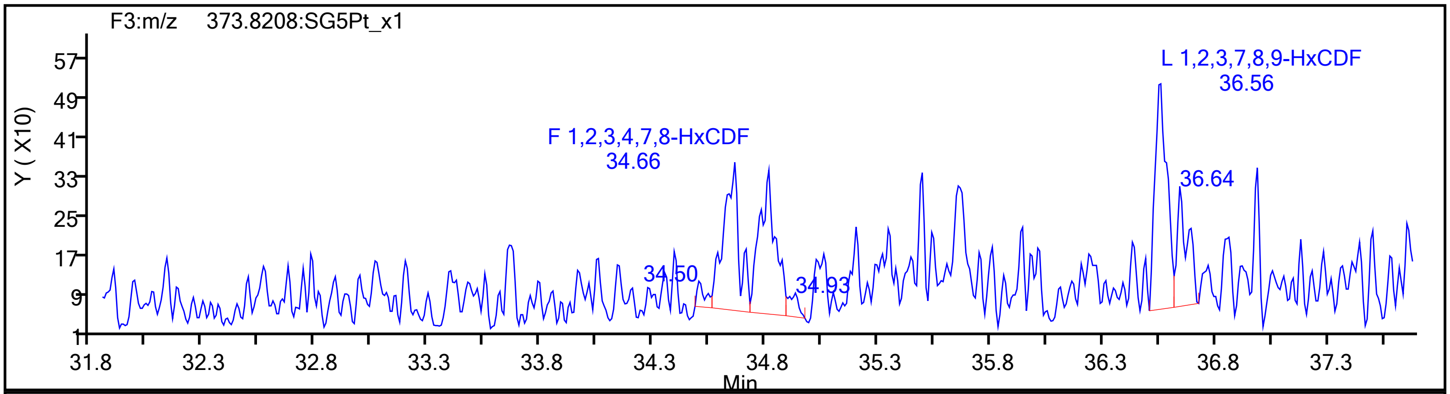

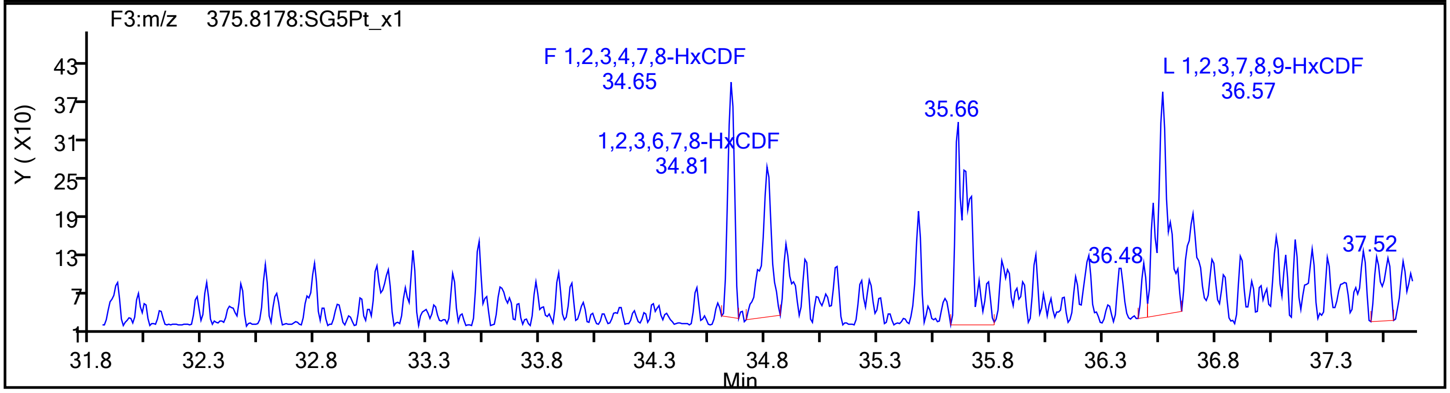

HxCDF Standards

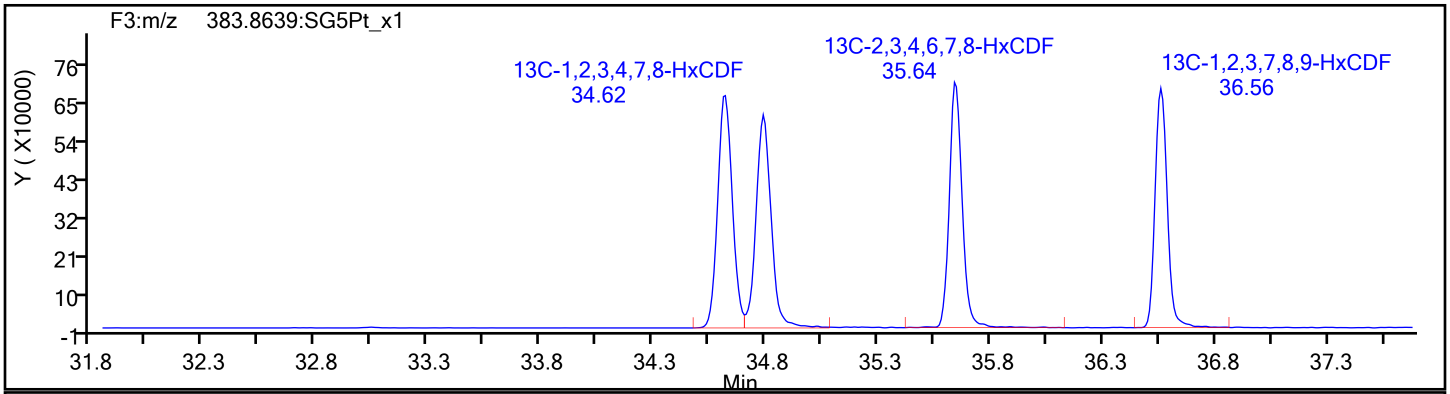

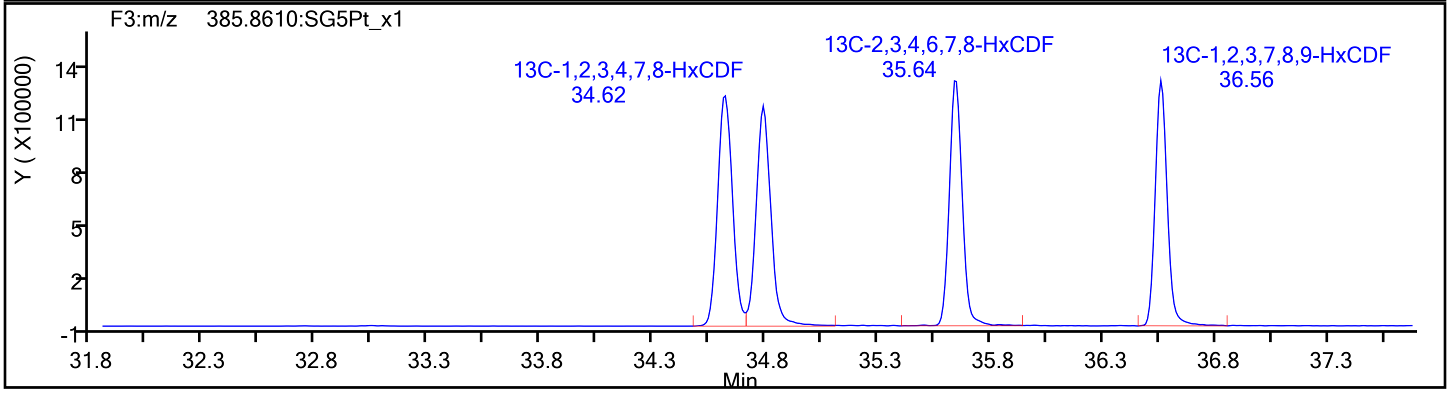

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
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HxCDF

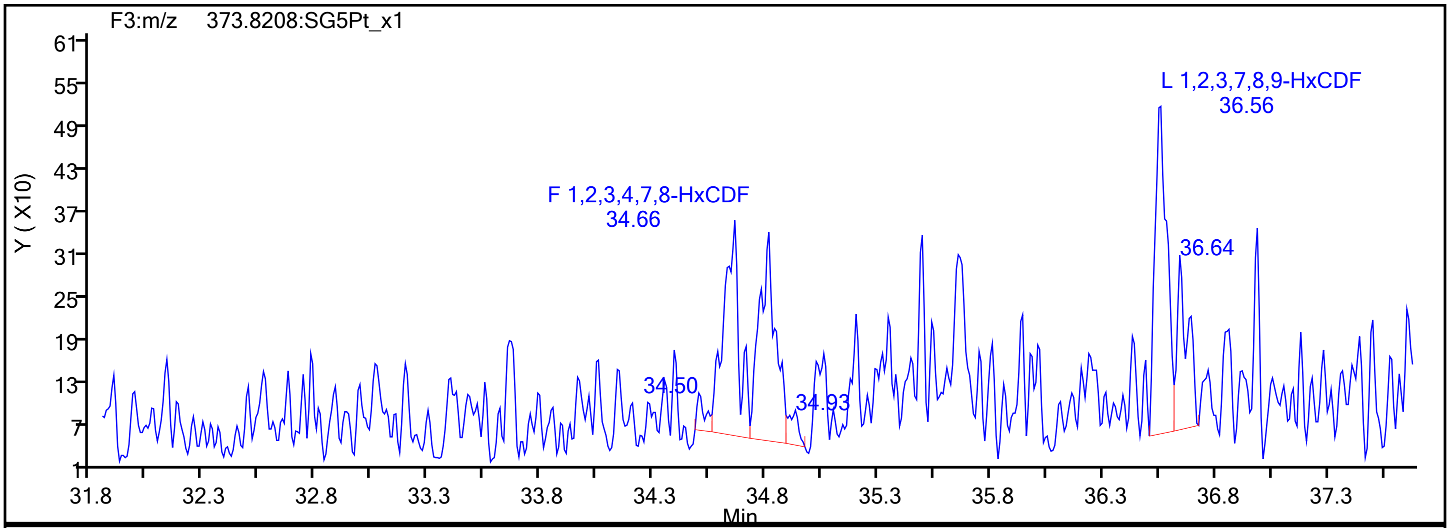

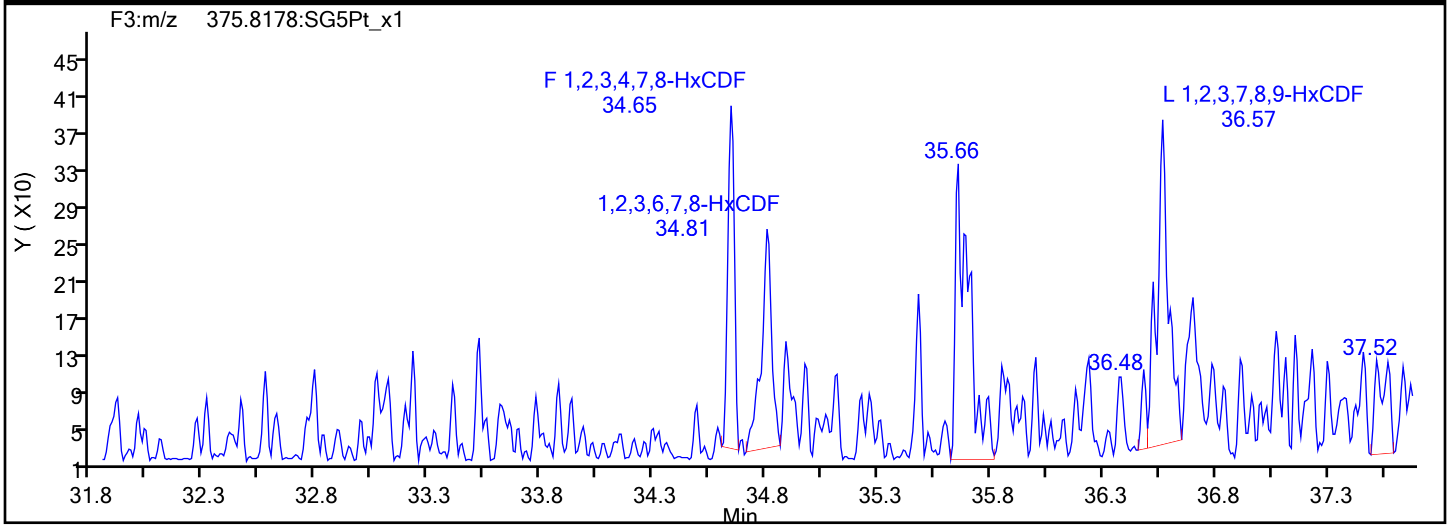

HxCDF Interference Mass

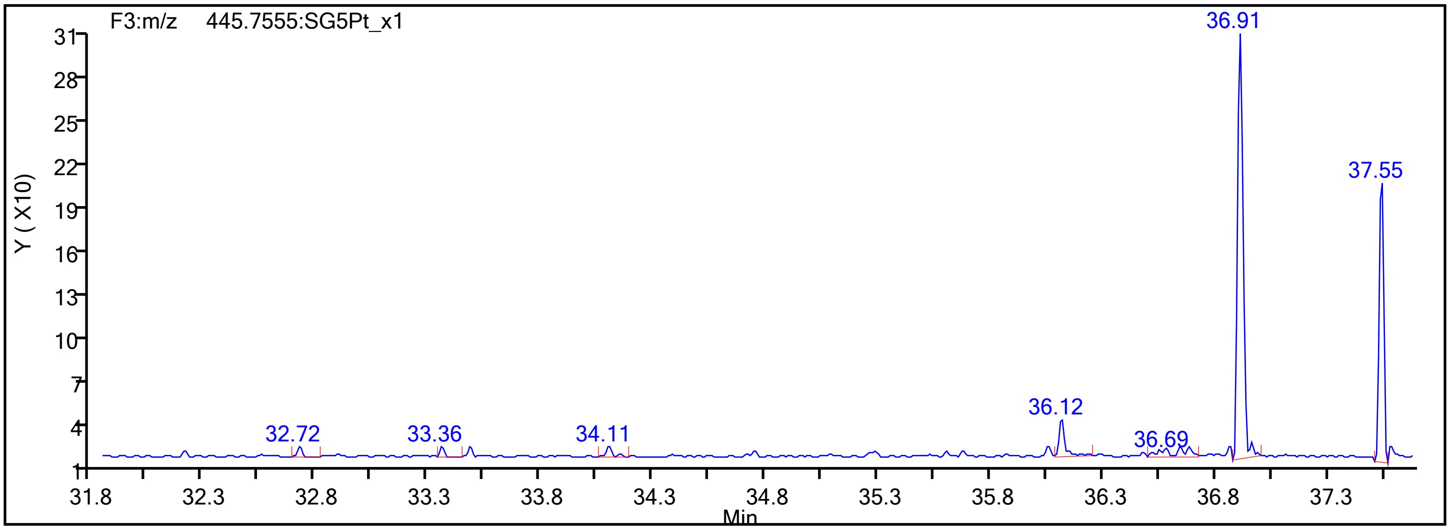

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDD

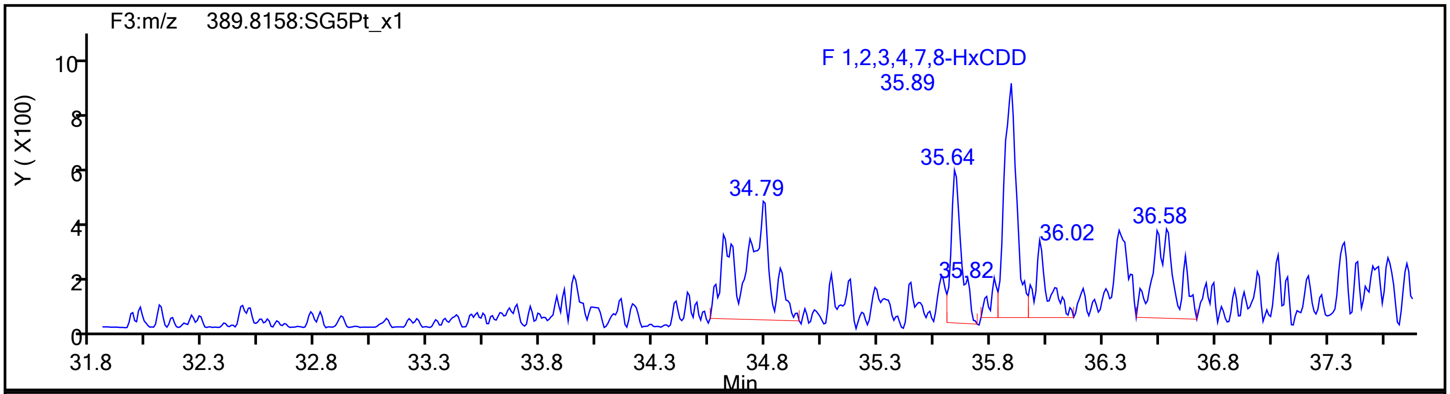

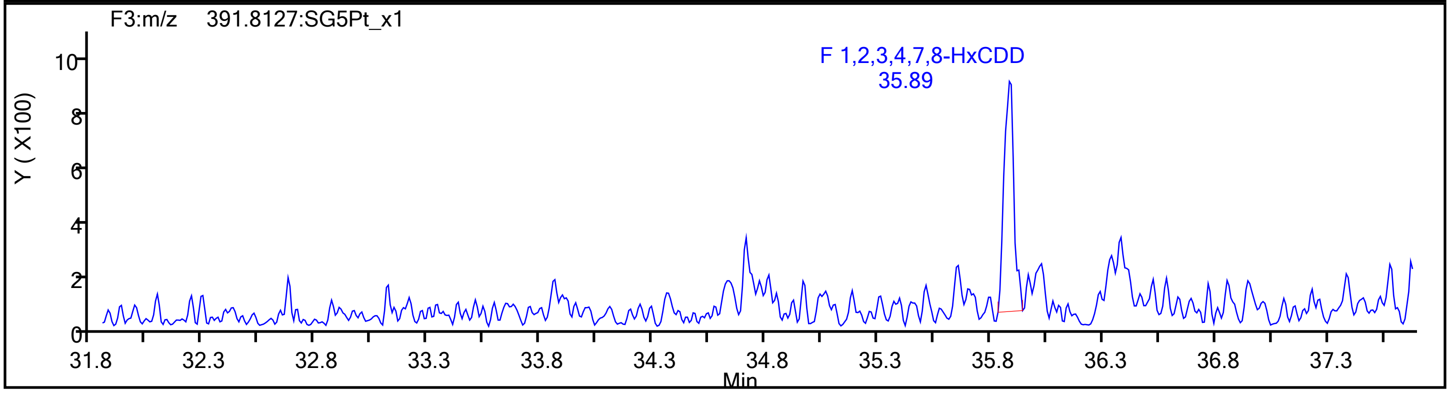

HxCDD Standards

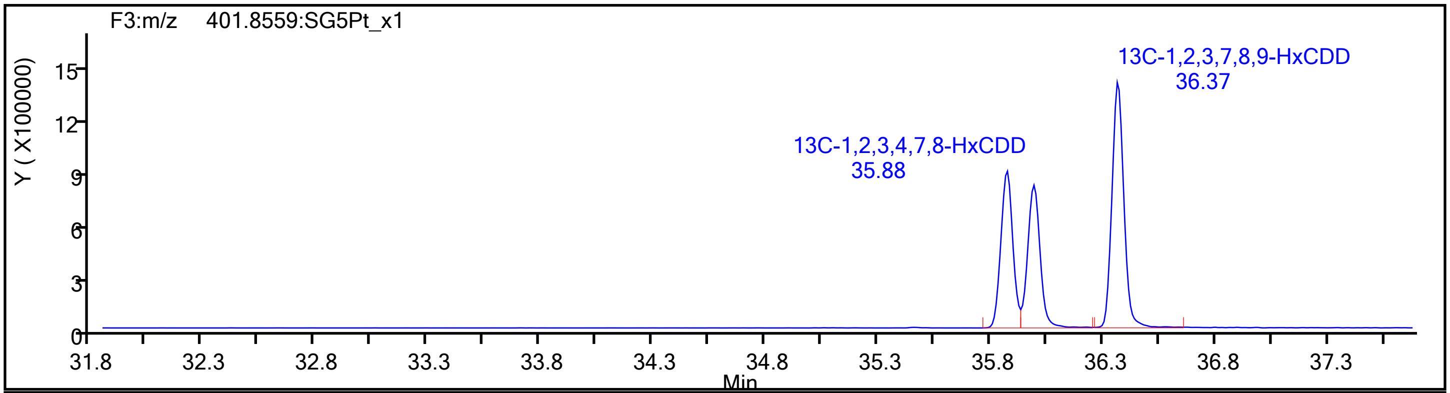

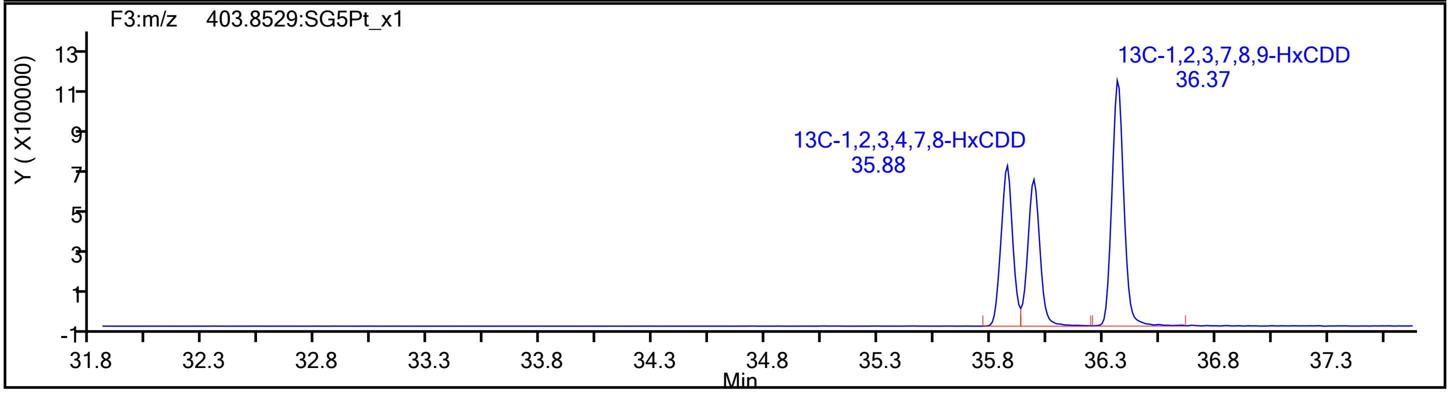

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

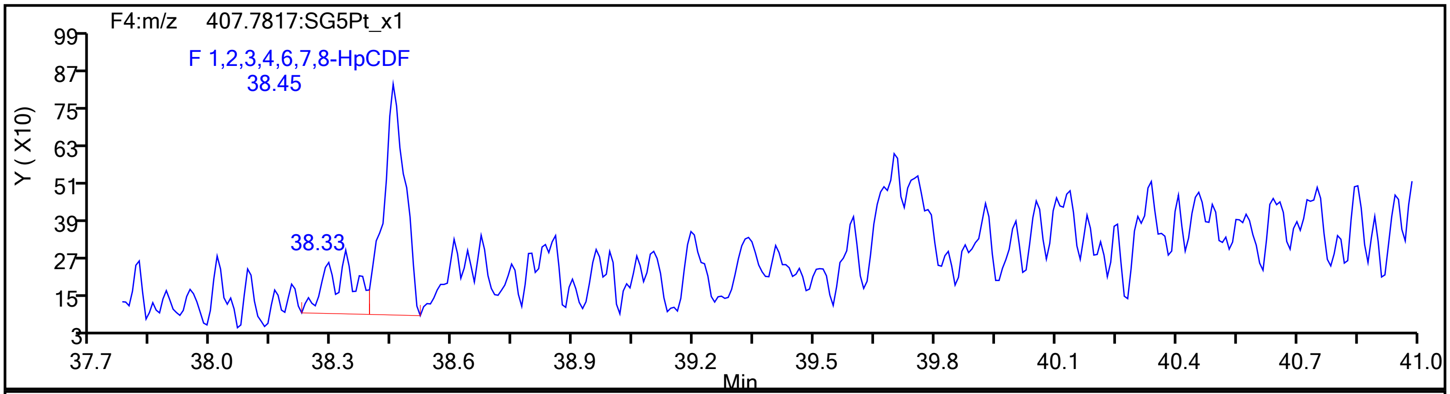

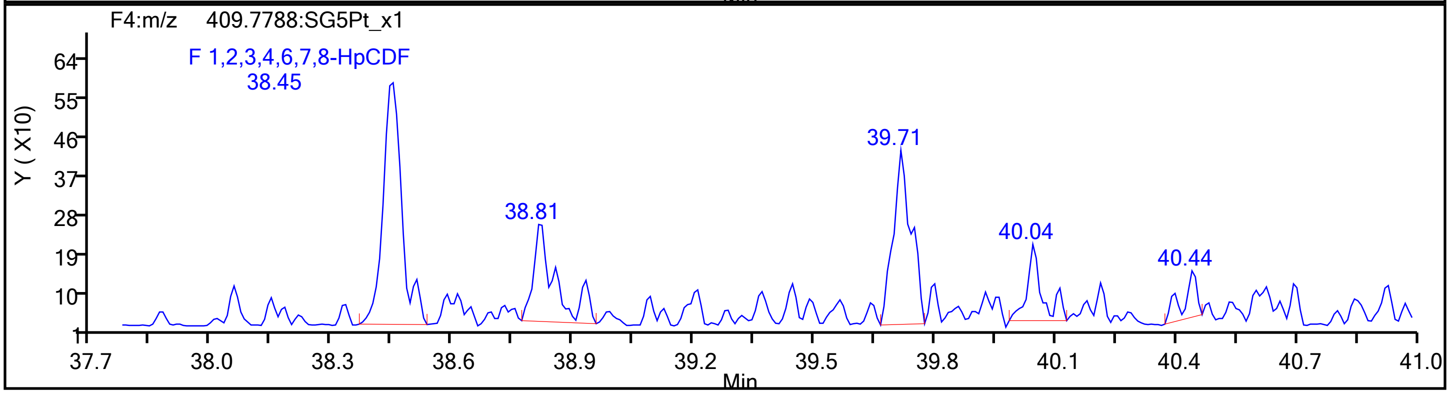

HpCDF Standards

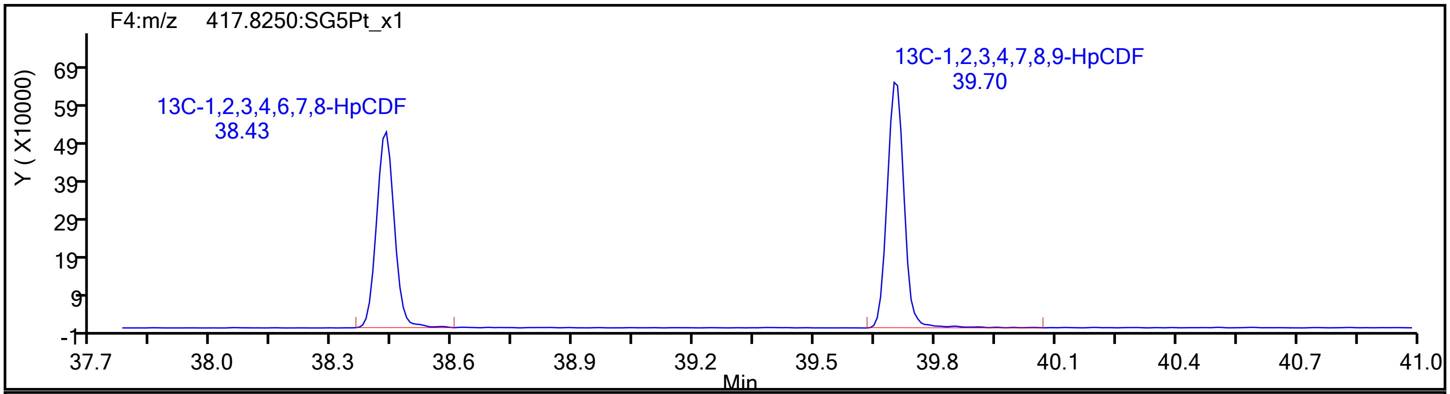

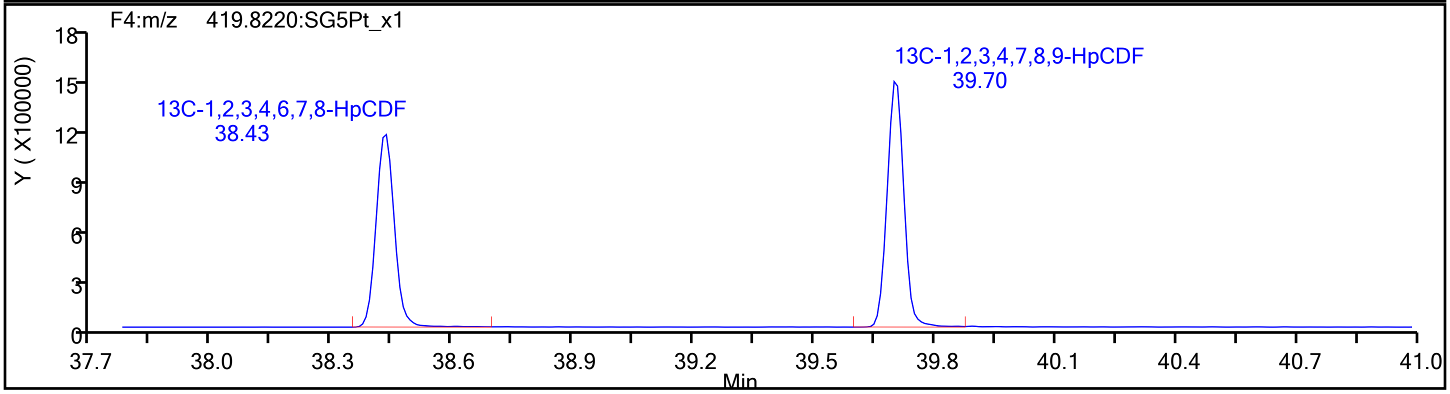

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

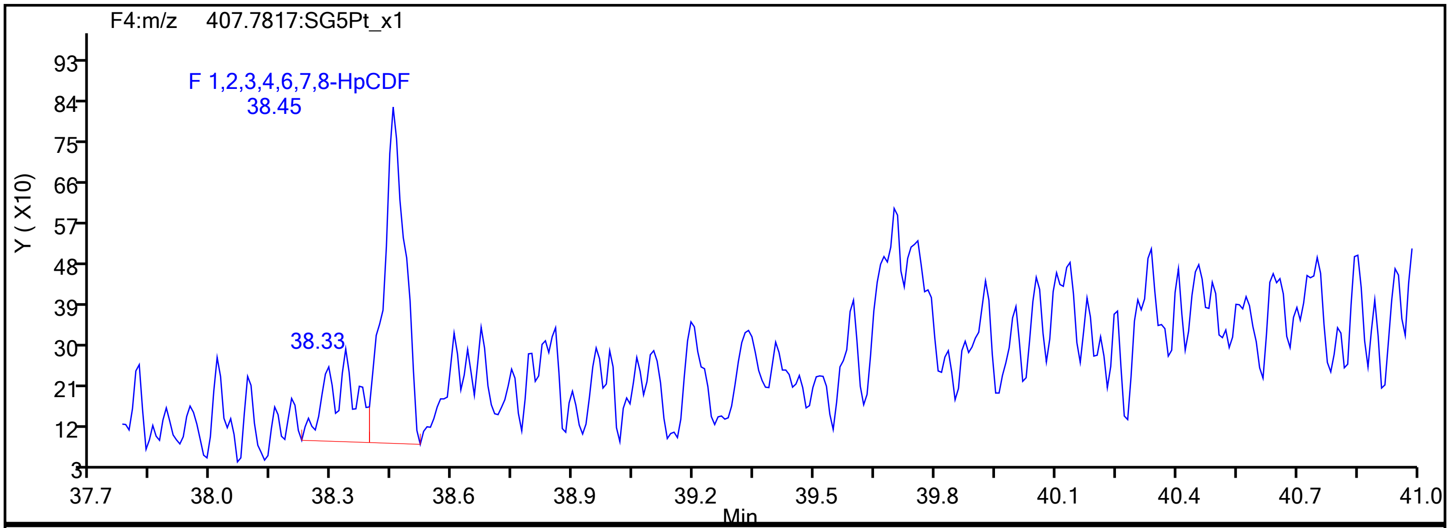

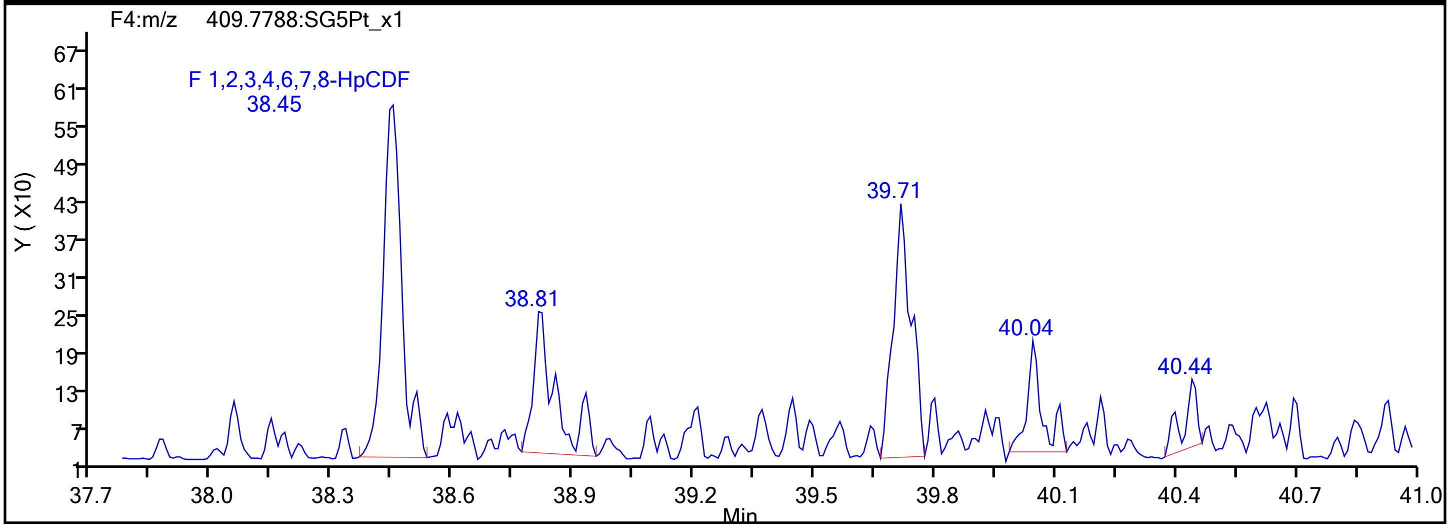

HpCDF Interference Mass

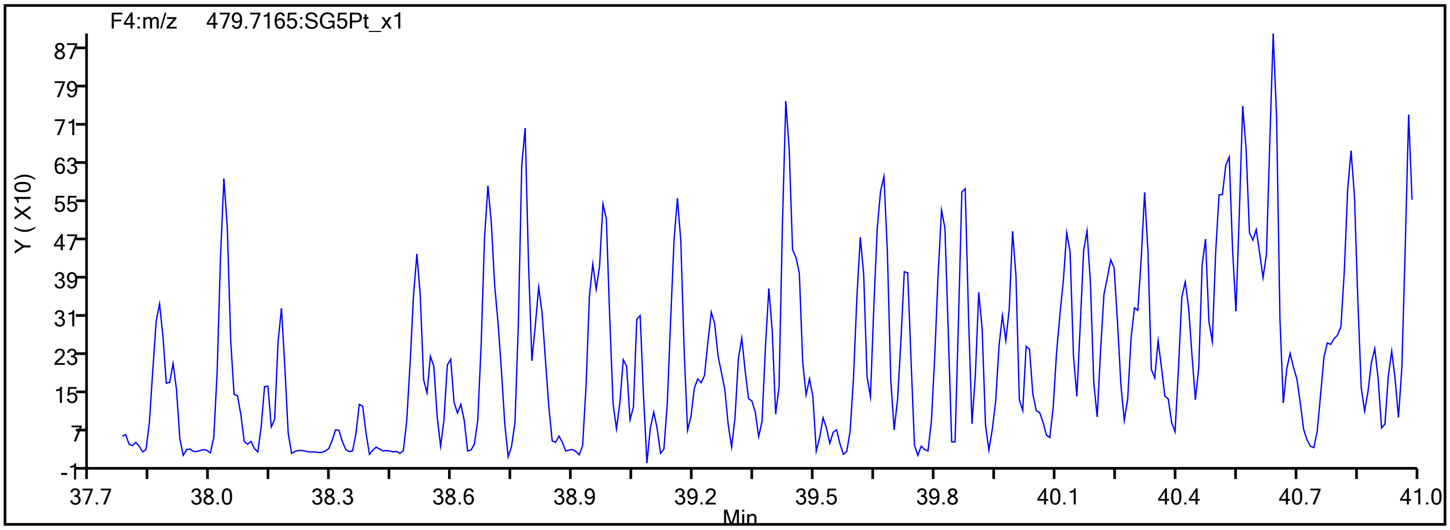

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

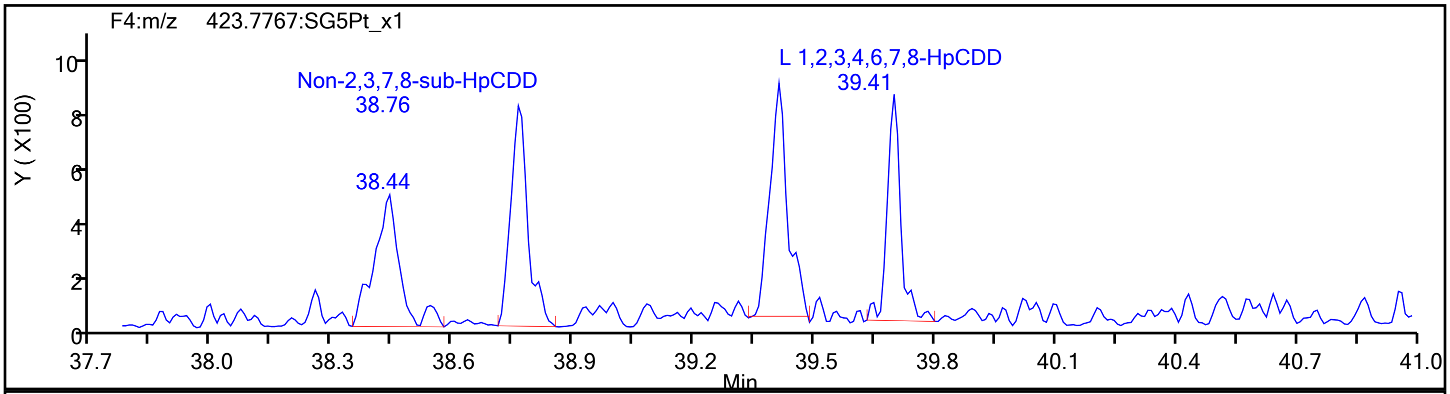

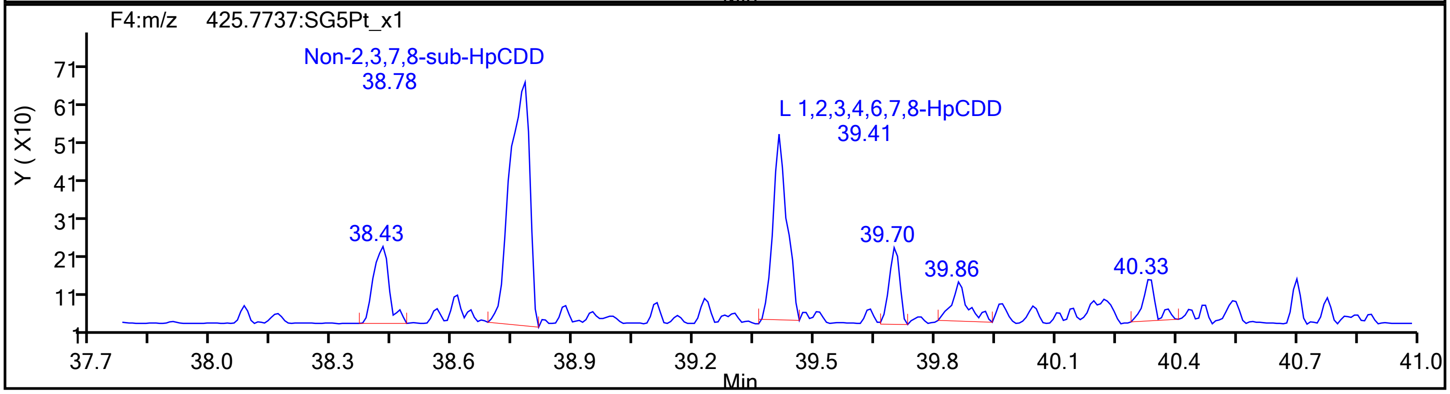

HpCDD Standards

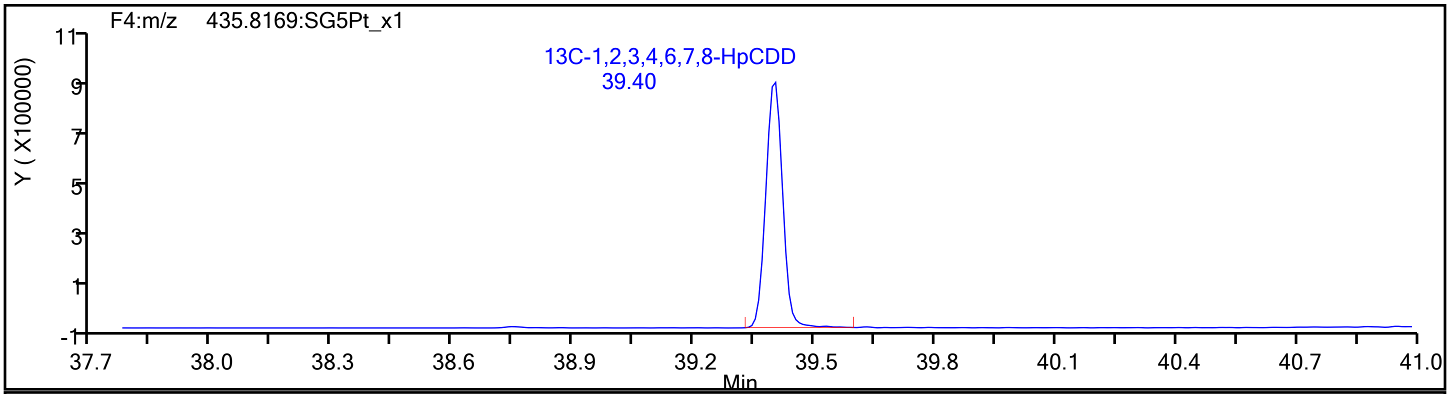

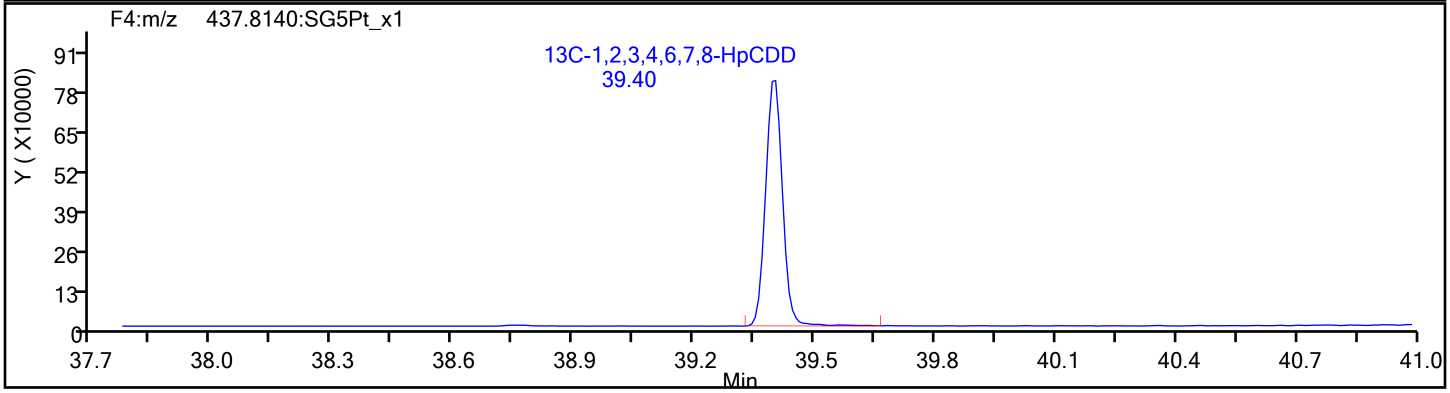

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d

Injection Date: 15-Oct-2021 12:39:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

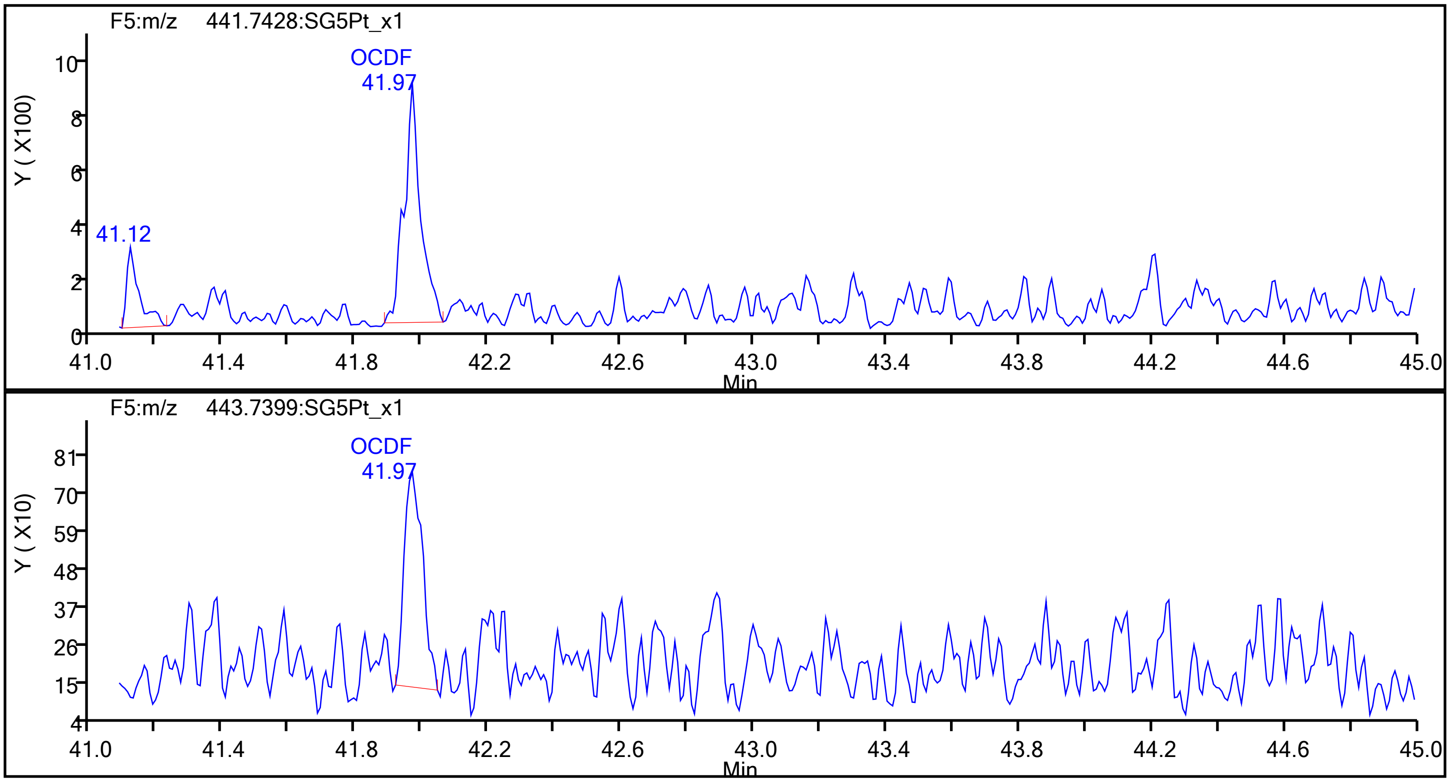

OCDF Standards

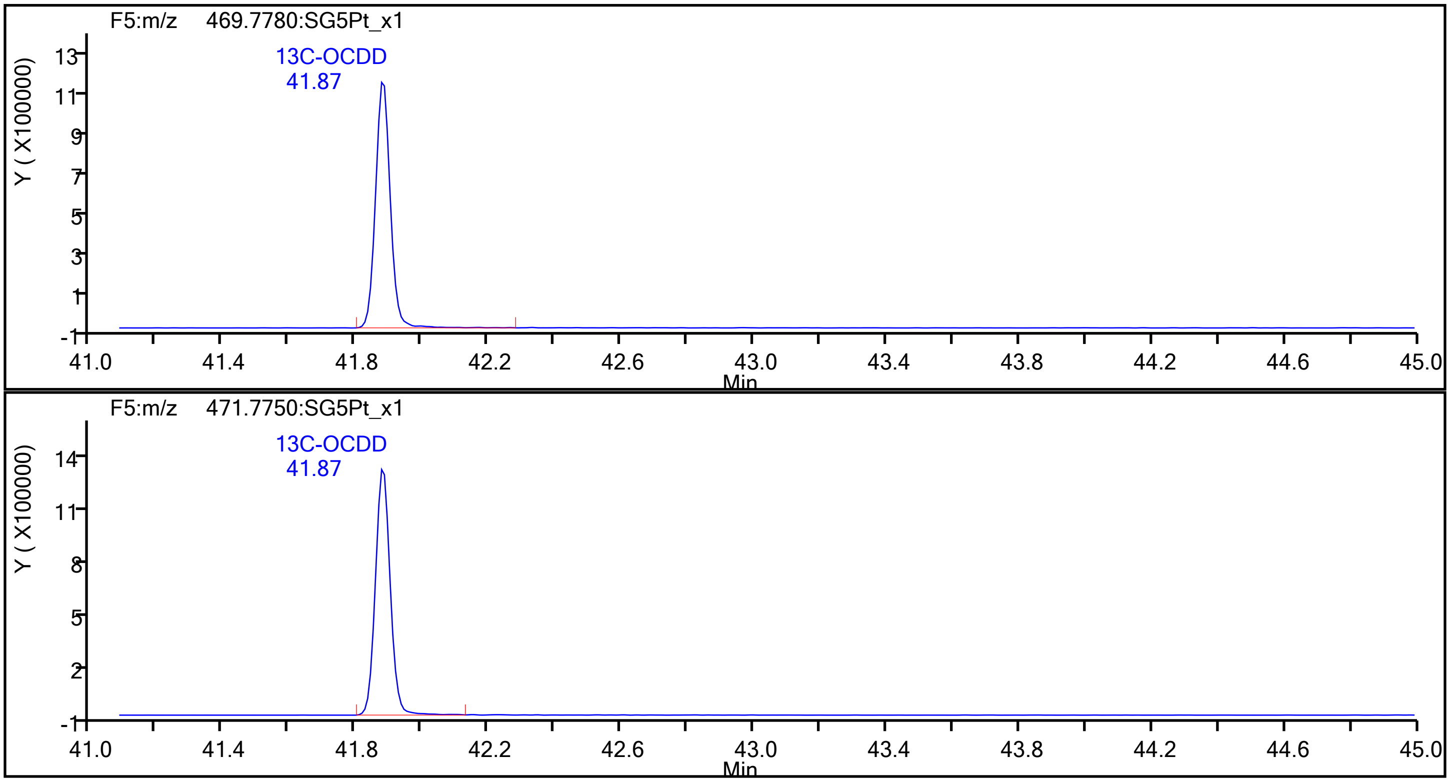

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d
Injection Date: 15-Oct-2021 12:39:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

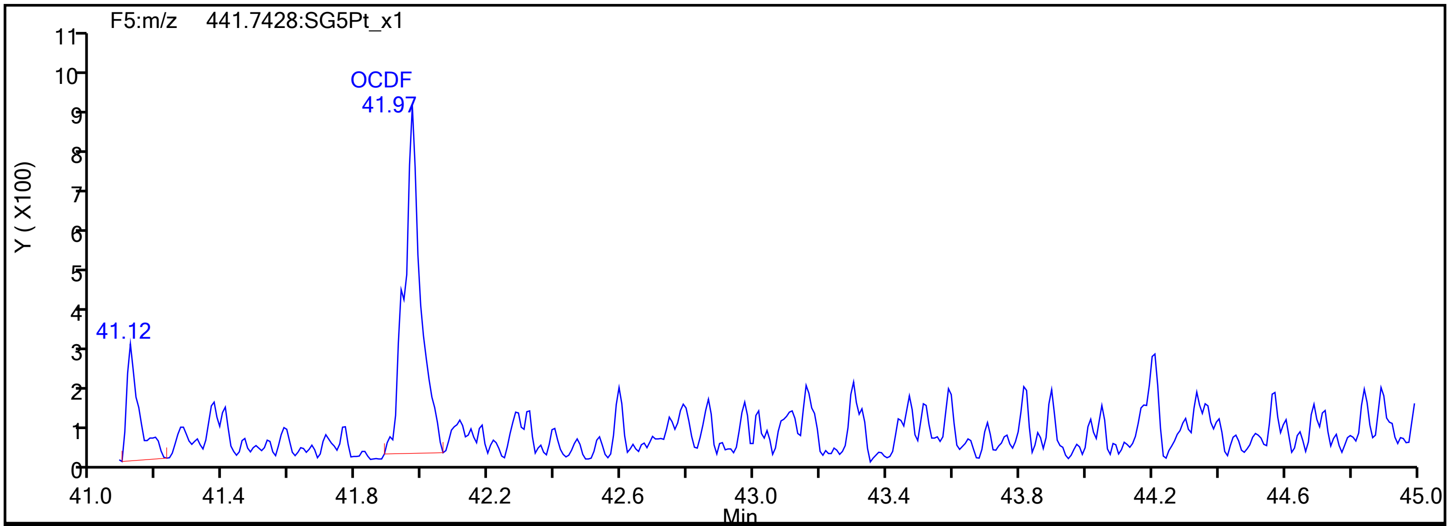

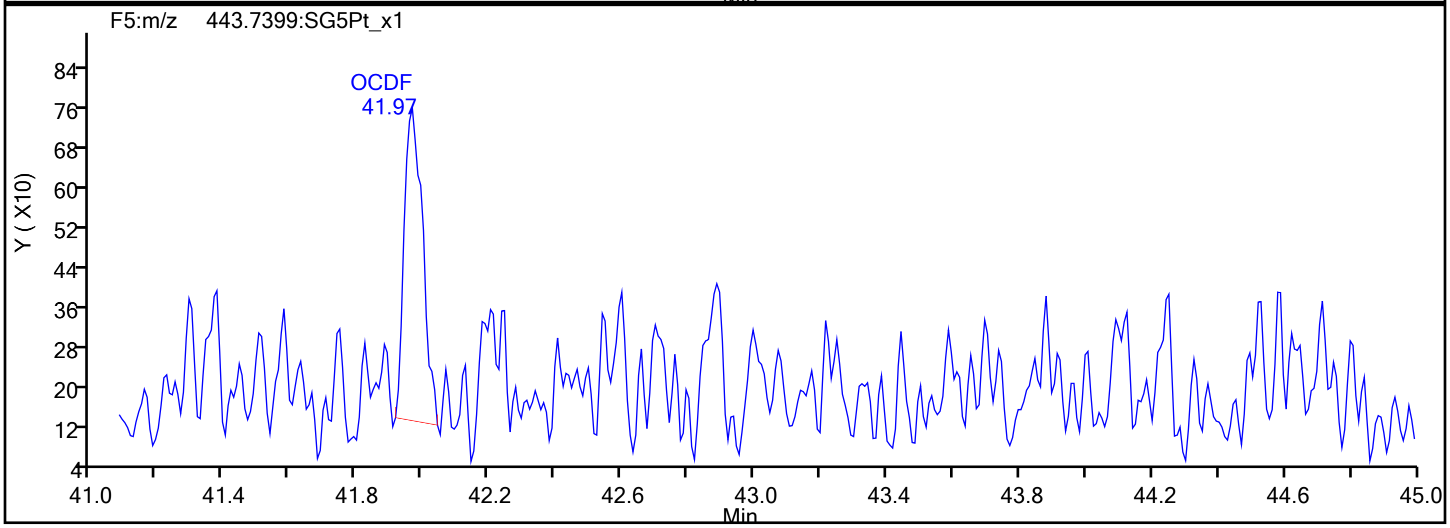

OCDF Interference Mass

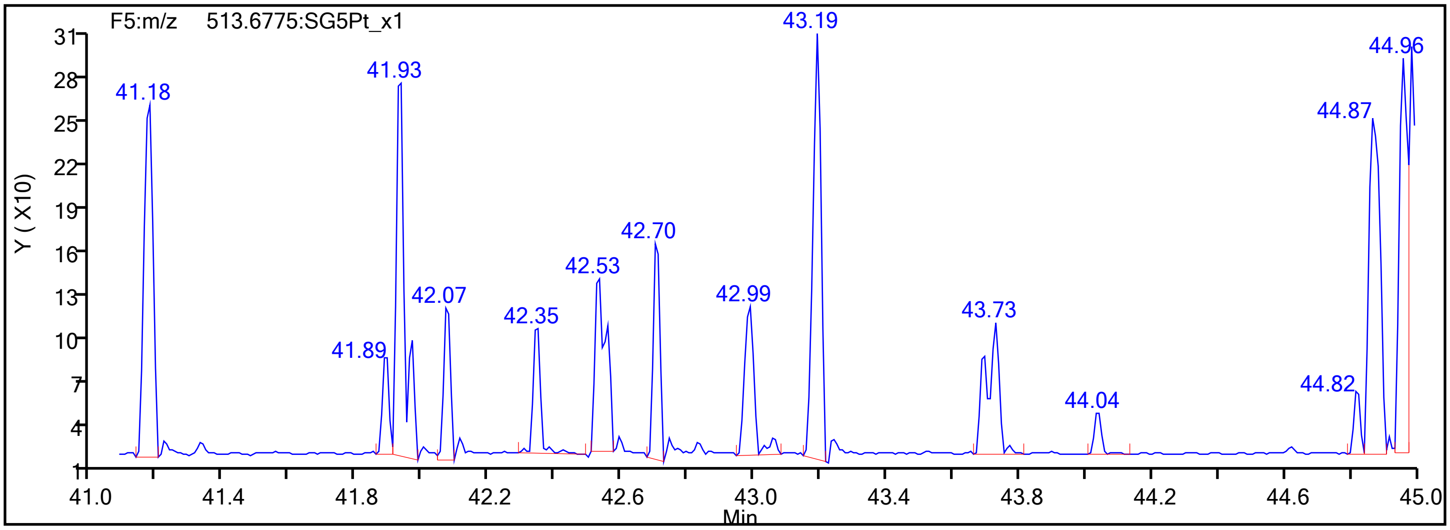

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

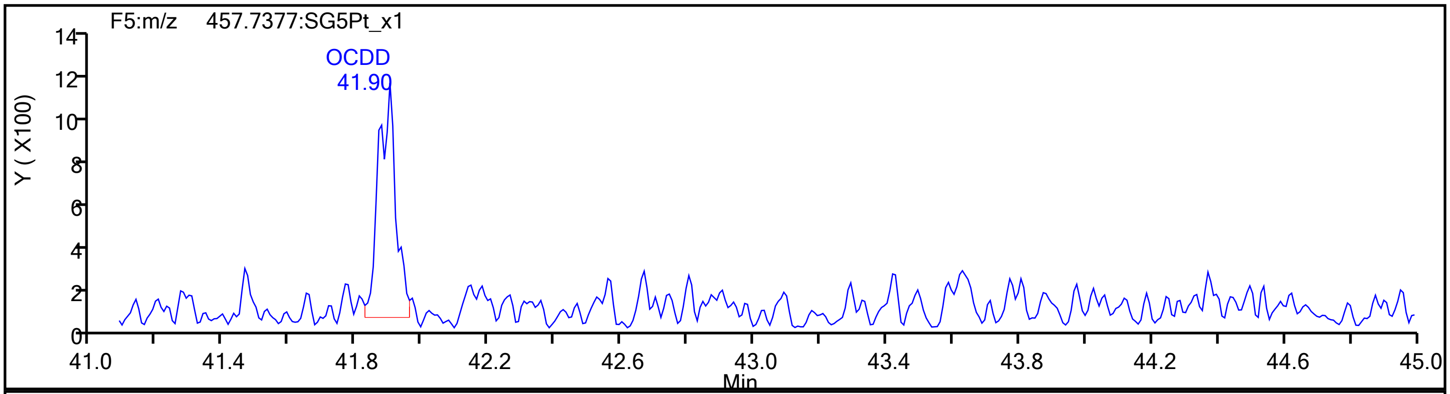

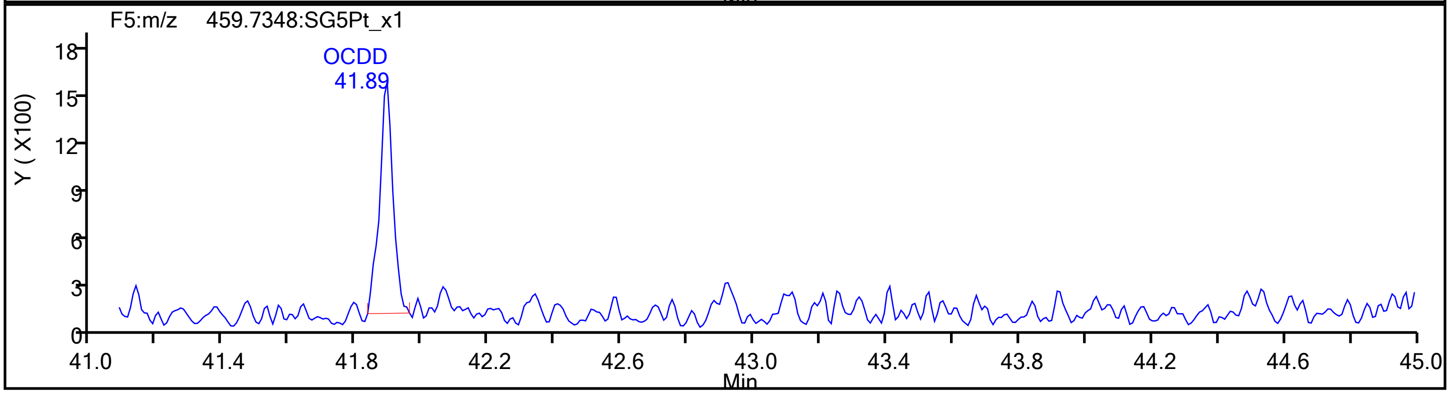

OCDD Standards

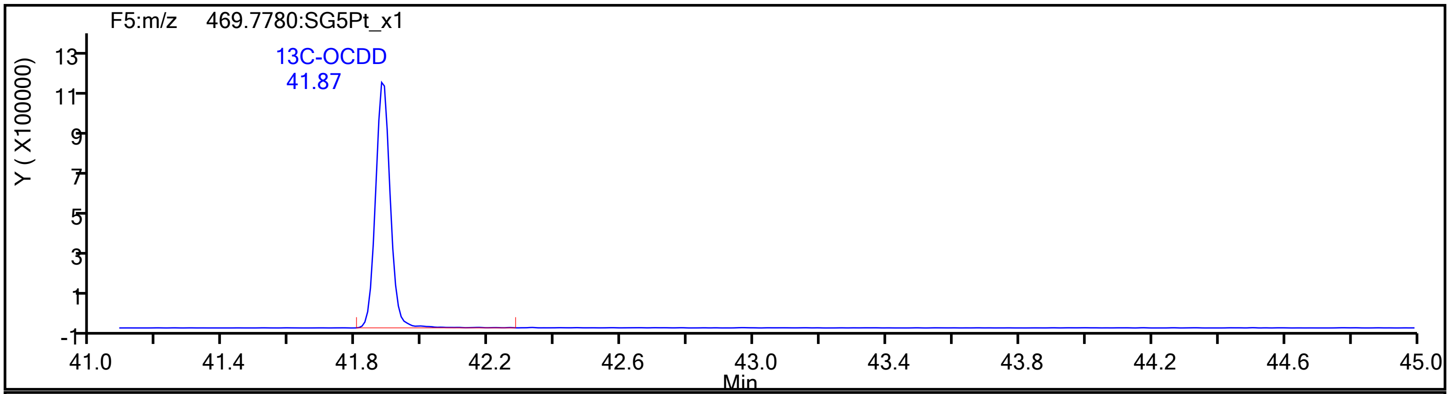

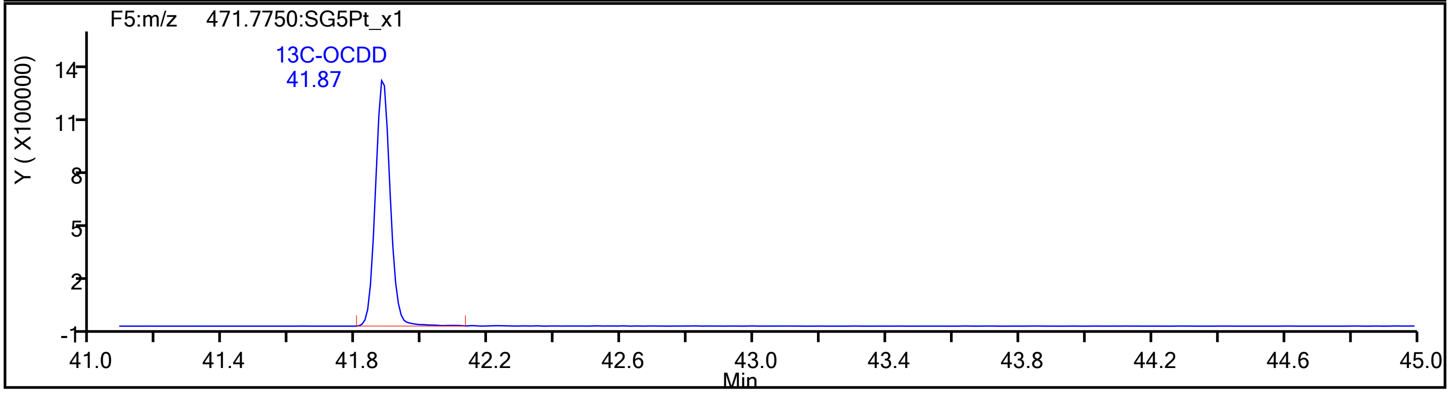

Report Date: 18-Oct-2021 13:41:37 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
Injection Date:	15-Oct-2021 12:39:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

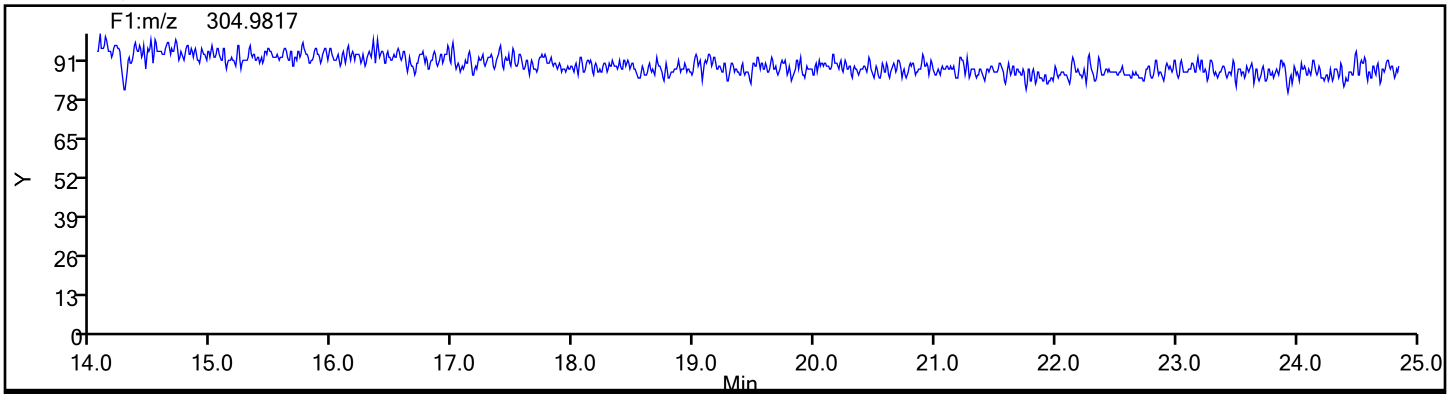

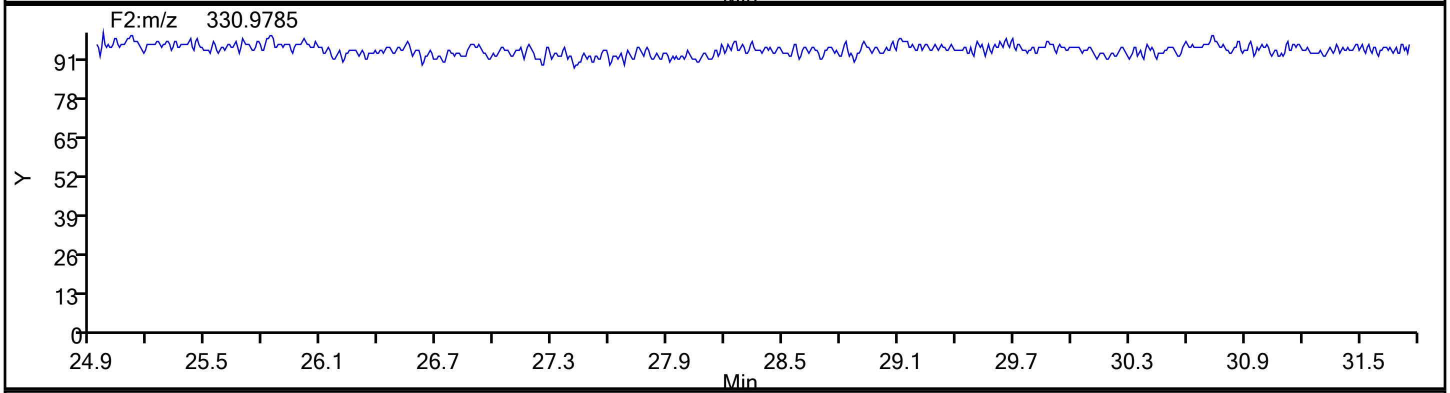

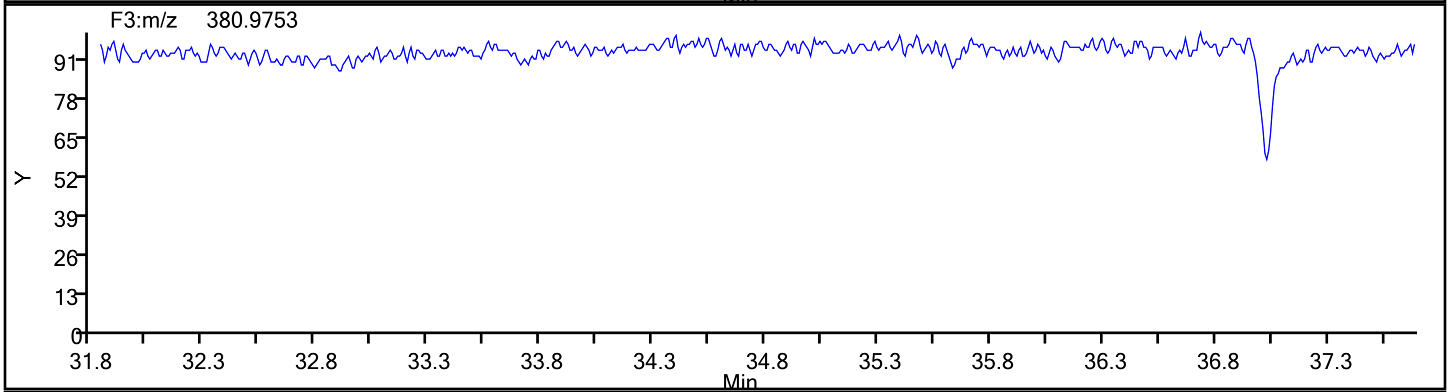

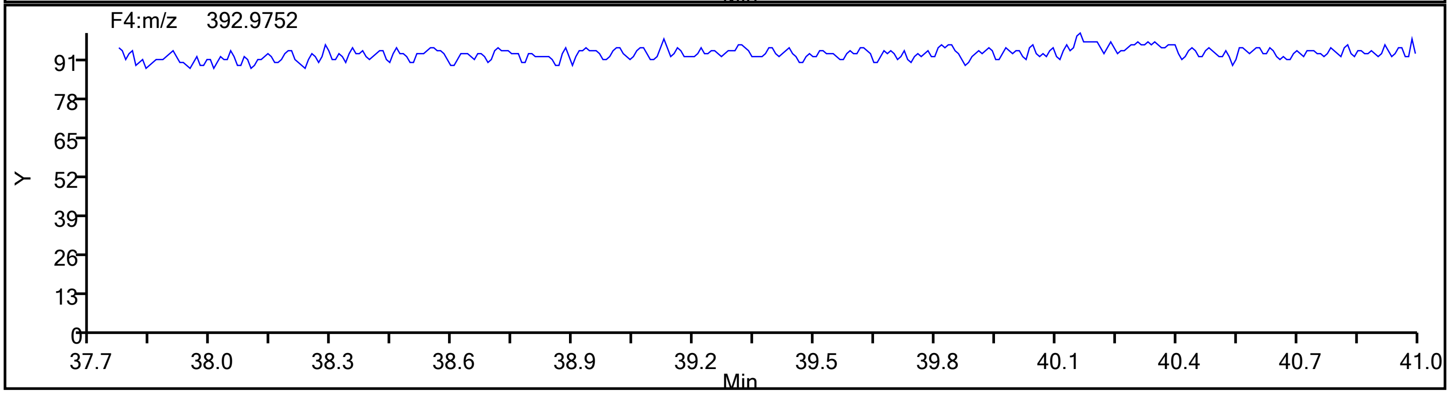

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_5.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

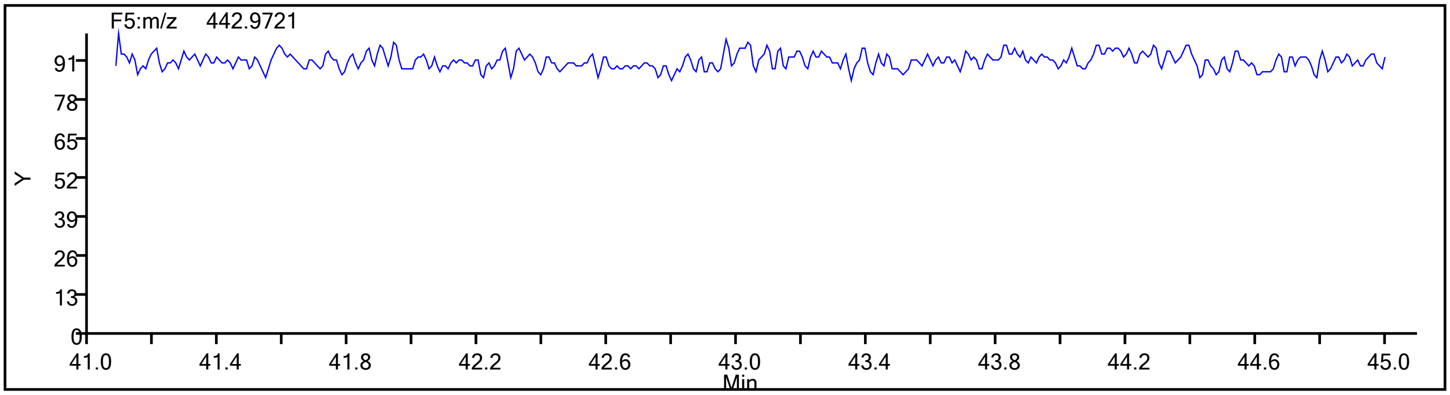

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-532854/2-A

Matrix: Water Lab File ID: 15oc21dfs1_6.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1000(mL) Date Analyzed: 10/15/2021 13:27

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	197		10	1.2
51207-31-9	2,3,7,8-TCDF	198		10	0.81
40321-76-4	1,2,3,7,8-PeCDD	925		50	1.8
57117-41-6	1,2,3,7,8-PeCDF	916		50	3.4
57117-31-4	2,3,4,7,8-PeCDF	981		50	4.0
39227-28-6	1,2,3,4,7,8-HxCDD	939		50	1.9
57653-85-7	1,2,3,6,7,8-HxCDD	914		50	1.8
19408-74-3	1,2,3,7,8,9-HxCDD	942		50	1.7
70648-26-9	1,2,3,4,7,8-HxCDF	934		50	4.3
57117-44-9	1,2,3,6,7,8-HxCDF	907		50	3.8
72918-21-9	1,2,3,7,8,9-HxCDF	875		50	3.1
60851-34-5	2,3,4,6,7,8-HxCDF	894		50	3.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	889		50	2.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	889		50	4.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	937		50	4.6
3268-87-9	OCDD	1810		100	1.8
39001-02-0	OCDF	1800		100	1.6
41903-57-5	Total TCDD	197		10	1.2
30402-14-3	Total TCDF	198		10	0.81
36088-22-9	Total PeCDD	925		50	1.8
30402-15-4	Total PeCDF	1910		50	3.7
34465-46-8	Total HxCDD	2800		50	1.8
55684-94-1	Total HxCDF	3610		50	3.6
37871-00-4	Total HpCDD	889		50	2.8
38998-75-3	Total HpCDF	1830		50	4.3

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 320-79918-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-532854/2-A
Matrix: Water	Lab File ID: 15oc21dfs1_6.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 10/11/2021 08:36
Sample wt/vol: 1000(mL)	Date Analyzed: 10/15/2021 13:27
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 1(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 534320	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	78		20-175
89059-46-1	13C-2,3,7,8-TCDF	85		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	89		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	90		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	87		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	77		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	82		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	77		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	88		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	88		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	93		20-186
114423-97-1	13C-OCDD	103		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	95		31-191

Report Date: 18-Oct-2021 13:41:38 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d
Lims ID: LCS 320-532854/2-A
Client ID:
Sample Type: LCS
Inject. Date: 15-Oct-2021 13:27:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-532854/2-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: stephensk Date: 15-Oct-2021 16:14:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.765	8236440	0.80	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.794	8568862	0.80	1.2244	85.0	85.0	0.3089	0.3089	84.97	
2,3,7,8-TCDF	19.820	949945	0.82	1.1194	9.903	9.903	0.0404	0.0404	99.03	
A Non-2,3,7,8-sub-TCDF	19.372						0.0404	0.0404		
S Total TCDF					9.903	9.903	0.0404	0.0404		
D 13C-2,3,7,8-TCDD	21.135	5261239	0.81	0.8210	77.8	77.8	0.2044	0.2044	77.81	
2,3,7,8-TCDD	21.169	567243	0.80	1.0943	9.853	9.853	0.0604	0.0604	98.53	
$ 37Cl4-2,3,7,8-TCDD	21.161	2721431		0.8658	38.2	38.2	0.0292	0.0292	95.41	
A Non-2,3,7,8-sub-TCDD	20.213						0.0604	0.0604		
S Total TCDD					9.853	9.853	0.0604	0.0604		
D 13C-1,2,3,7,8-PeCDF	26.806	8194252	1.61	1.1026	90.2	90.2	0.4216	0.4216	90.23	
1,2,3,7,8-PeCDF	26.823	4099858	1.61	1.0920	45.8	45.8	0.1710	0.1710	91.64	
D 13C-2,3,4,7,8-PeCDF	28.290	9618276	1.59	1.3454	86.8	86.8	0.3455	0.3455	86.80	
2,3,4,7,8-PeCDF	28.324	4128308	1.58	0.8752	49.0	49.0	0.1978	0.1978	98.08	
A F1 PeCDFs	24.221						0.007627	0.007627		
A Non-2,3,7,8-sub-PeCDF	27.645	40945	1.35	0.9836	0.4674	0.4674	0.1826	0.4674	0.00	
S Total PeCDF					95.3	95.3	0.1844	0.1844		
D 13C-1,2,3,7,8-PeCDD	29.099	5110006	1.54	0.6987	88.8	88.8	0.1664	0.1664	88.79	
1,2,3,7,8-PeCDD	29.133	2502948	1.57	1.0594	46.2	46.2	0.0883	0.0883	92.47	
A Non-2,3,7,8-sub-PeCDD	28.034						0.0883	0.0883		
S Total PeCDD					46.2	46.2	0.0883	0.0883		
D 13C-1,2,3,4,7,8-HxCDF	34.600	9055140	0.53	1.1295	79.1	79.1	0.2579	0.2579	79.09	
1,2,3,4,7,8-HxCDF	34.617	4117226	1.25	0.9737	46.7	46.7	0.2127	0.2127	93.40	
D 13C-1,2,3,6,7,8-HxCDF	34.769	8333305	0.55	1.0613	77.5	77.5	0.2745	0.2745	77.46	
1,2,3,6,7,8-HxCDF	34.786	4610253	1.27	1.2201	45.3	45.3	0.1884	0.1884	90.69	
D 13C-2,3,4,6,7,8-HxCDF	35.628	8486736	0.54	0.9480	88.3	88.3	0.3073	0.3073	88.31	
2,3,4,6,7,8-HxCDF	35.645	4718781	1.25	1.2435	44.7	44.7	0.1549	0.1549	89.43	
D 13C-1,2,3,7,8,9-HxCDF	36.547	7620285	0.54	0.8526	88.2	88.2	0.3417	0.3417	88.17	
1,2,3,7,8,9-HxCDF	36.555	4150676	1.26	1.2454	43.7	43.7	0.1569	0.1569	87.47	
A Non-2,3,7,8-sub-HxCDF	34.703						0.1753	0.1753		
S Total HxCDF					180.5	180.5	0.1782	0.1782		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.353	10136797	1.26	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.856	6525154	1.29	0.8312	77.4	77.4	0.1539	0.1539	77.44	
1,2,3,4,7,8-HxCDD	35.873	2783503	1.25	0.9085	47.0	47.0	0.0939	0.0939	93.91	
D 13C-1,2,3,6,7,8-HxCDD	35.974	6263973	1.27	0.7550	81.9	81.9	0.1695	0.1695	81.85	
1,2,3,6,7,8-HxCDD	35.991	2942573	1.26	1.0279	45.7	45.7	0.0895	0.0895	91.41	
1,2,3,7,8,9-HxCDD	36.362	3092535	1.26	1.0268	47.1	47.1	0.0862	0.0862	94.20	
A Non-2,3,7,8-sub-HxCDD	35.108						0.0897	0.0897		
S Total HxCDD					139.8	139.8	0.0899	0.0899		
D 13C-1,2,3,4,6,7,8-HpCDF	38.413	5434300	0.48	0.6190	86.6	86.6	0.2831	0.2831	86.60	
1,2,3,4,6,7,8-HpCDF	38.430	3830773	1.05	1.5851	44.5	44.5	0.2031	0.2031	88.95	
D 13C-1,2,3,4,7,8,9-HpCDF	39.686	6135430	0.47	0.6516	92.9	92.9	0.2690	0.2690	92.88	
1,2,3,4,7,8,9-HpCDF	39.694	3333904	1.04	1.1597	46.9	46.9	0.2287	0.2287	93.71	
A Non-2,3,7,8-sub-HpCDF	39.072						0.2119	0.2119		
S Total HpCDF					91.3	91.3	0.2159	0.2159		
D 13C-1,2,3,4,6,7,8-HpCDD	39.382	4814259	1.08	0.5362	88.6	88.6	0.3663	0.3663	88.58	
1,2,3,4,6,7,8-HpCDD	39.391	2316097	1.06	1.0819	44.5	44.5	0.1425	0.1425	88.93	
A Non-2,3,7,8-sub-HpCDD	39.202						0.1425	0.1425		
S Total HpCDD					44.5	44.5	0.1425	0.1425		
D 13C-OCDD	41.863	7907022	0.92	0.3802	205.2	205.2	0.2417	0.2417	103	
OCDF	41.956	5372799	0.92	1.5094	90.0	90.0	0.0824	0.0824	90.03	
OCDD	41.872	4066549	0.90	1.1344	90.7	90.7	0.0887	0.0887	90.67	

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d				
Lims ID:	LCS 320-532854/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	15-Oct-2021 13:27:00	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	lcs 320-532854/2-a				
Operator ID:	Xcalibur_System	Instrument ID:	DFS 1		
Method:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	18-Oct-2021 13:41:26	Calib Date:	24-Sep-2021 17:07:00		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1(14.80 :26.00)		
Process Host:	CTX1621				

First Level Reviewer: stephensk Date: 15-Oct-2021 16:14:19

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.765	20.777	-1		3651932	537436	520	1300	1034		
333.9338	20.765	20.777	-1		4584508	670781	291	727	2305	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.794	19.806	-1	0.953	3795642	586385	1288	3220	455		
317.9389	19.794	19.806	-1	0.953	4773220	766788	540	1350	1420	0.80(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.820	19.832	-1	1.001	427876	66337	82	205	809		
305.8987	19.820	19.832	-1	1.001	522069	76821	163	407	471	0.82(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.372						82	205			
305.8987	19.372						163	407			
13C-2,3,7,8-TCDD											
331.9368	21.135	21.138	0	1.018	2351222	337526	520	1300	649		
333.9338	21.126	21.138	-1	1.017	2910017	421810	291	727	1450	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.169	21.163	0	1.002	251392	35543	147	367	242		
321.8936	21.161	21.163	0	1.001	315851	46790	54	135	866	0.80(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.161	21.163	0	1.019	2721431	393567	122	305	3226		
A Non-2,3,7,8-sub-TCDD											
319.8965	20.213						147	367			
321.8936	20.213						54	135			
13C-1,2,3,7,8-PeCDF											
351.9000	26.806	26.799	0	1.291	5050917	882659	1369	3422	645		
353.8970	26.806	26.799	0	1.291	3143335	554061	878	2195	631	1.61(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.823	26.833	-1	1.001	2529840	437043	620	1550	705		
341.8567	26.823	26.833	-1	1.001	1570018	273295	453	1132	603	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.290	28.300	-1	1.362	5906824	940705	1369	3422	687		
353.8970	28.298	28.300	0	1.363	3711452	608644	878	2195	693	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.324	28.325	0	1.001	2529662	400588	620	1550	646		
341.8567	28.324	28.325	0	1.001	1598646	256016	453	1132	565	1.58(1.32-1.78)	
A F1 PeCDFs											
339.8597	24.221						1	2			
341.8567	24.221						44	110			
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.404	27.645	-14	1.022	23514	4076	620	1550	7		
341.8567	27.396	27.645	-15	1.022	17431	2738	453	1132	6	1.35(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.099	29.108	-1	1.401	3101761	486733	415	1037	1173		
369.8919	29.099	29.108	-1	1.401	2008245	314854	147	367	2142	1.54(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.133	29.133	0	1.001	1530855	231189	203	507	1139		
357.8516	29.133	29.133	0	1.001	972093	151356	97	242	1560	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						203	507			
357.8516	28.034						97	242			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.600	34.597	0	0.952	3148324	703677	1092	2730	644		
385.8610	34.592	34.597	0	0.952	5906816	1293310	2066	5165	626	0.53(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.617	34.613	0	1.000	2286666	500747	917	2292	546		
375.8178	34.617	34.613	0	1.000	1830560	401450	737	1842	545	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.769	34.773	0	0.956	2949236	631620	1092	2730	578		
385.8610	34.769	34.773	0	0.956	5384069	1167450	2066	5165	565	0.55(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.786	34.790	0	1.000	2575956	553524	917	2292	604		
375.8178	34.786	34.790	0	1.000	2034297	432638	737	1842	587	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.628	35.625	0	0.980	2986491	766846	1092	2730	702		
385.8610	35.628	35.625	0	0.980	5500245	1380276	2066	5165	668	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.645	35.641	0	1.000	2616877	664308	917	2292	724		
375.8178	35.645	35.641	0	1.000	2101904	532273	737	1842	722	1.25(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.547	36.551	0	1.005	2669284	727300	1092	2730	666		
385.8610	36.547	36.551	0	1.005	4951001	1389183	2066	5165	672	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.555	36.560	0	1.000	2310419	638048	917	2292	696		
375.8178	36.555	36.560	0	1.000	1840257	515127	737	1842	699	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.703						917	2292			
375.8178	34.703						737	1842			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.353	36.358	0		5660340	1514977	792	1980	1913		
403.8529	36.353	36.358	0		4476457	1195120	595	1487	2009	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.856	35.861	0	0.986	3676618	995483	792	1980	1257		
403.8529	35.856	35.861	0	0.986	2848536	768223	595	1487	1291	1.29(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.873	35.869	0	1.000	1547724	419524	333	832	1260		
391.8127	35.873	35.869	0	1.000	1235779	332501	269	672	1236	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.974	35.979	0	0.990	3509024	919503	792	1980	1161		
403.8529	35.974	35.979	0	0.990	2754949	715761	595	1487	1203	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	35.991	35.995	0	1.000	1641635	420012	333	832	1261		
391.8127	35.991	35.995	0	1.000	1300938	335749	269	672	1248	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.362	36.366	0	1.014	1724772	457804	333	832	1375		
391.8127	36.362	36.366	0	1.014	1367763	359772	269	672	1337	1.26(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						333	832			
391.8127	35.108						269	672			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.413	38.425	-1	1.057	1758081	588199	820	2050	717		
419.8220	38.413	38.425	-1	1.057	3676219	1212235	1080	2700	1122	0.48(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.430	38.434	0	1.000	1963453	640720	1248	3120	513		
409.7788	38.430	38.434	0	1.000	1867320	602020	1070	2675	563	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.686	39.698	-1	1.092	1955225	702175	820	2050	856		
419.8220	39.686	39.698	-1	1.092	4180205	1482386	1080	2700	1373	0.47(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.694	39.706	-1	1.000	1703367	598234	1248	3120	479		
409.7788	39.694	39.706	-1	1.000	1630537	579037	1070	2675	541	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						1248	3120			
409.7788	39.072						1070	2675			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.382	39.394	-1	1.083	2494188	892199	1095	2737	815		
437.8140	39.382	39.394	-1	1.083	2320071	854386	1034	2585	826	1.08(0.88-1.20)	

Report Date: 18-Oct-2021 13:41:38 Chrom Revision: 2.3 22-Sep-2021 15:38:46
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.391	39.403	-1	1.000	1194297	422189	563	1407	750		
425.7737	39.391	39.403	-1	1.000	1121800	402851	514	1285	784	1.06(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.202						563	1407			
425.7737	39.202						514	1285			
13C-OCDD											
469.7780	41.863	41.875	-1	1.152	3780615	1243374	598	1495	2079		
471.7750	41.863	41.875	-1	1.152	4126407	1360937	398	995	3419	0.92(0.76-1.02)	
OCDF											
441.7428	41.956	41.959	0	1.002	2575724	850960	286	715	2975		
443.7399	41.956	41.959	0	1.002	2797075	925278	362	905	2556	0.92(0.76-1.02)	
OCDD											
457.7377	41.872	41.883	-1	1.000	1925317	635133	243	607	2614		
459.7348	41.872	41.883	-1	1.000	2141232	704587	281	702	2507	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d
Lims ID: LCS 320-532854/2-A
Client ID:
Inject. Date: 15-Oct-2021 13:27:00 Dil. Factor: 1.0000
Sample Type: LCS, Lab Control Sample
Instrument ID: DFS 1 Operator: Xcalibur_System
Lims Batch ID: 534320 Lims Sample ID: 5

Non-2,3,7,8-sub-PeCDF, RT: 27.645

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	8194252	1436720
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	9618276	1549349

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	8906264	1493034

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.404	23514	4076	17431	2738	0.4674	1.35	
Signal Totals:							
	23514	4076	17431	2738			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	40945	6814				1.35	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4674 = (40945 * 100.000) / (8906264 * 0.984)

Report Date: 18-Oct-2021 13:41:38 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d

Injection Date: 15-Oct-2021 13:27:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 534320 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

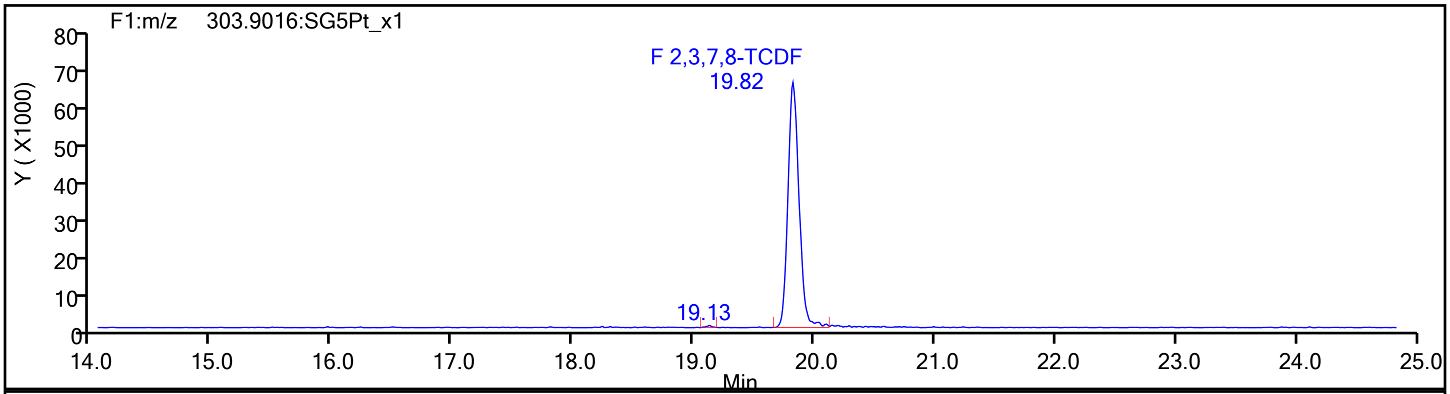

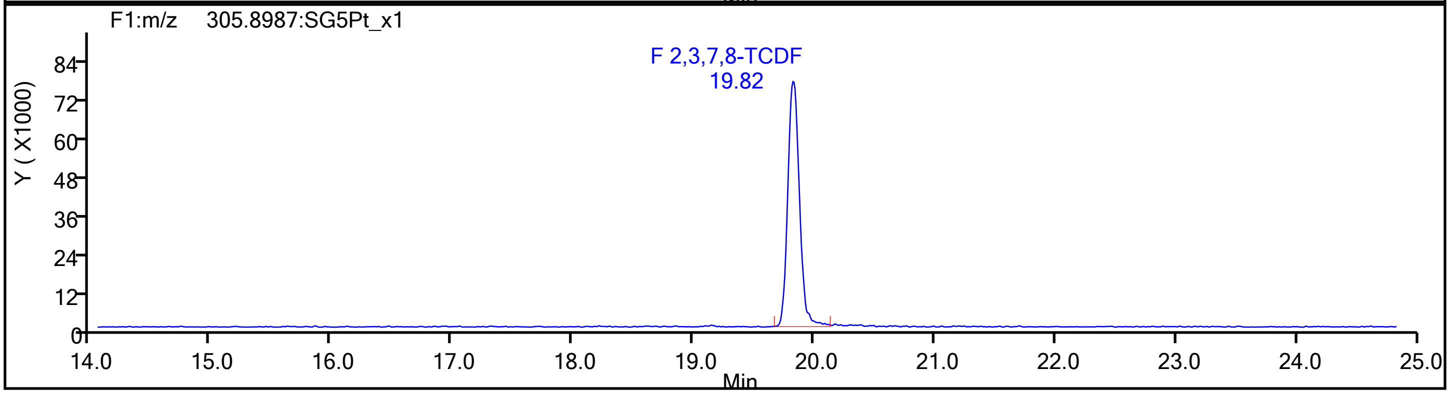

TCDF Standards

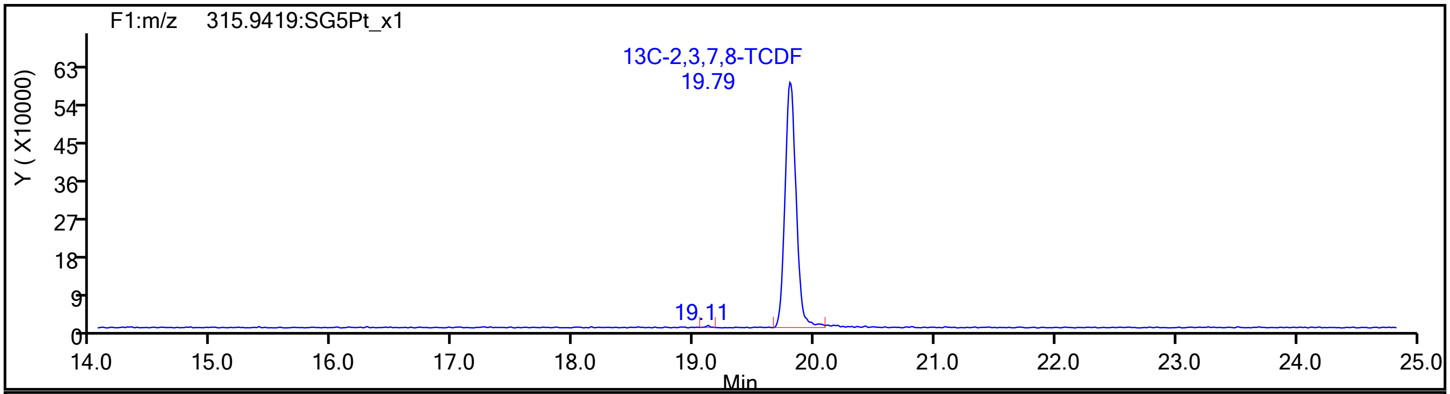

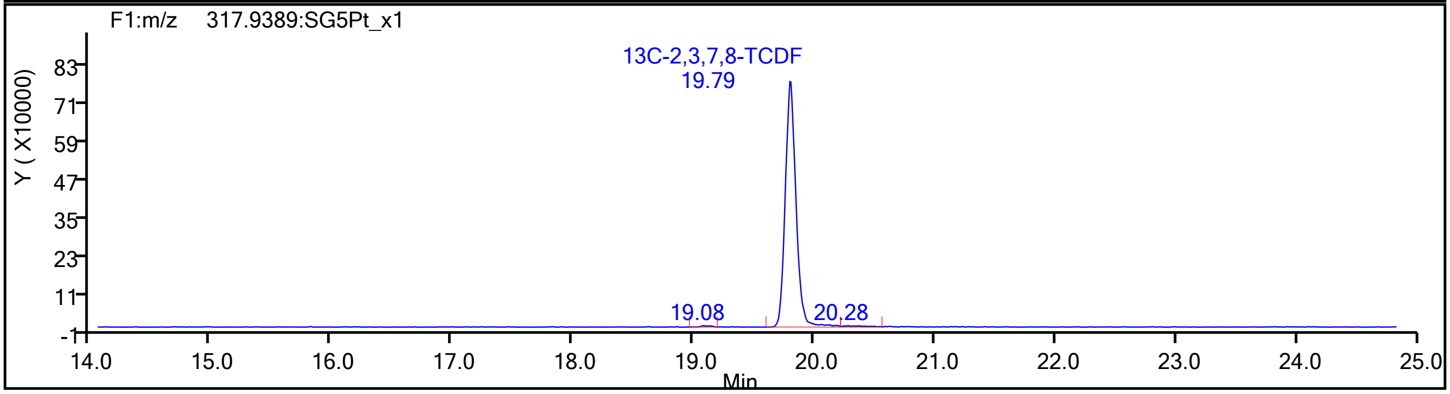

Report Date: 18-Oct-2021 13:41:38 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d		
Injection Date:	15-Oct-2021 13:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

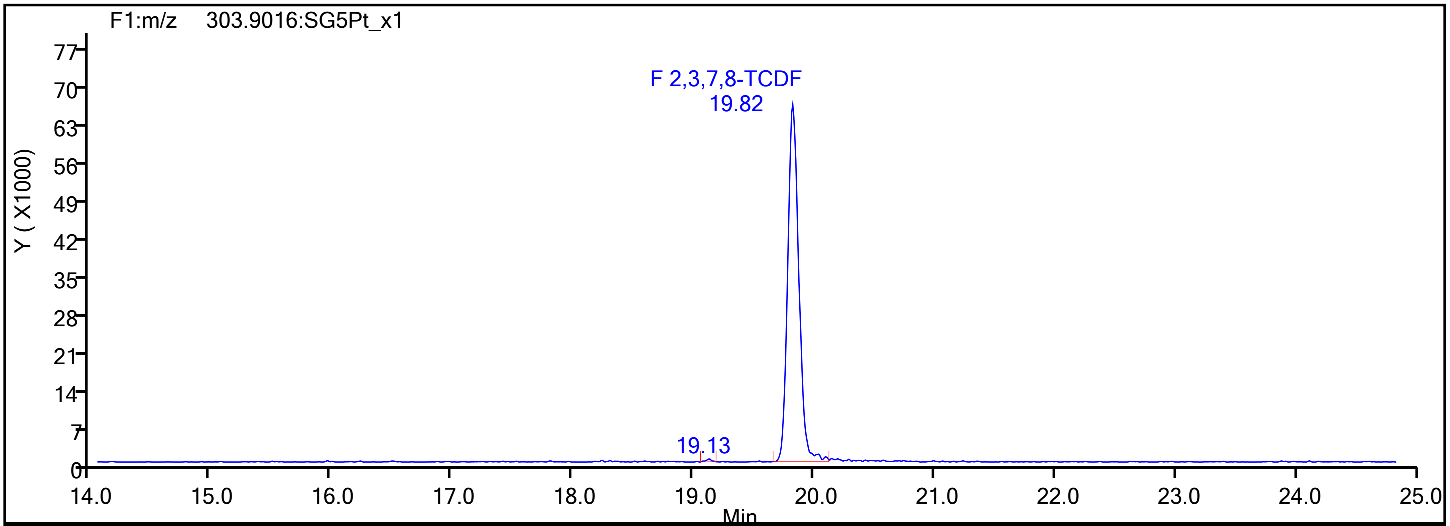

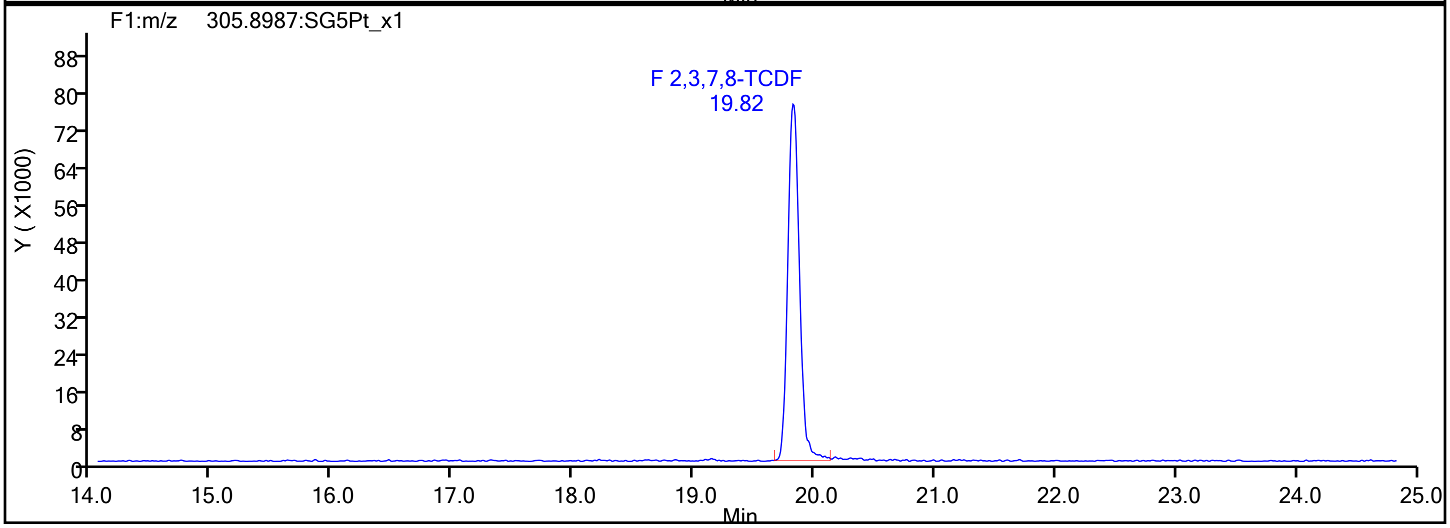

TCDF Interference Mass

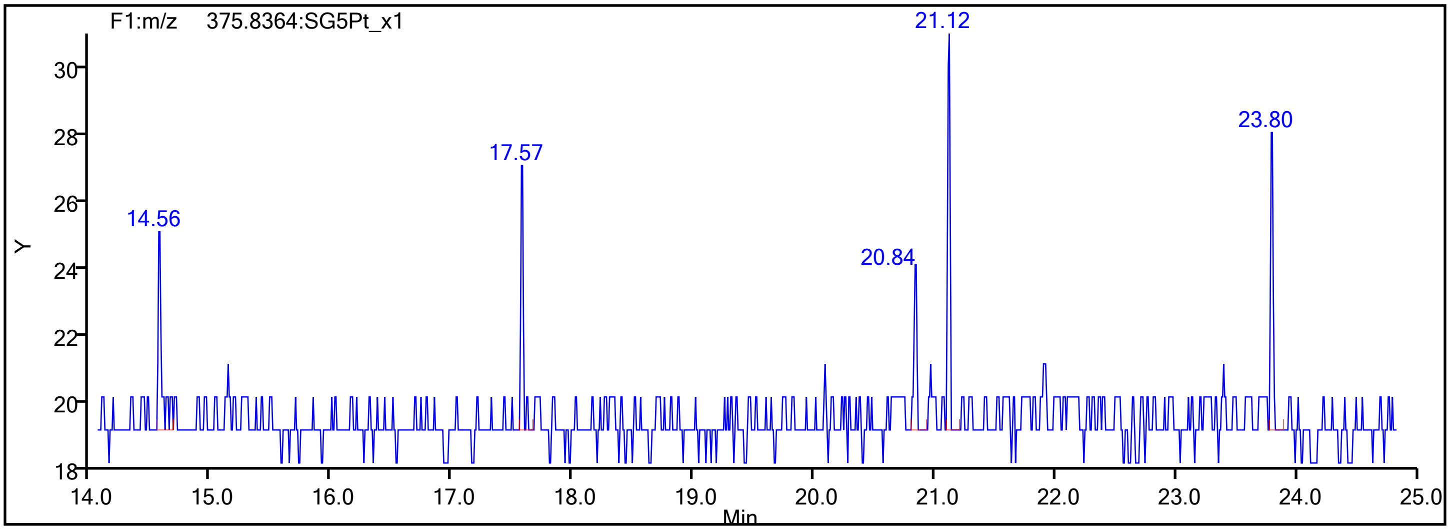

Report Date: 18-Oct-2021 13:41:38 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d		
Injection Date:	15-Oct-2021 13:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

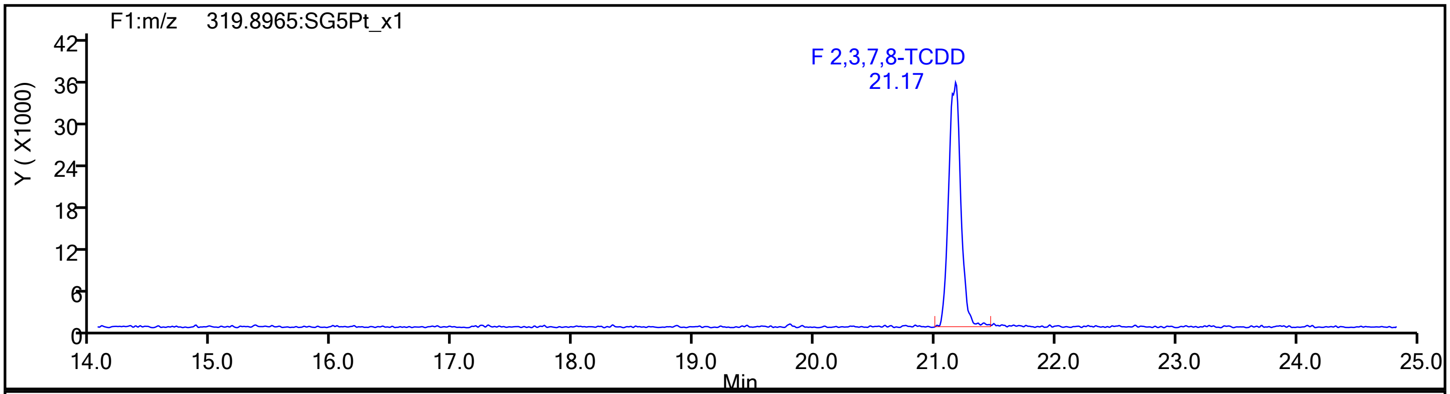

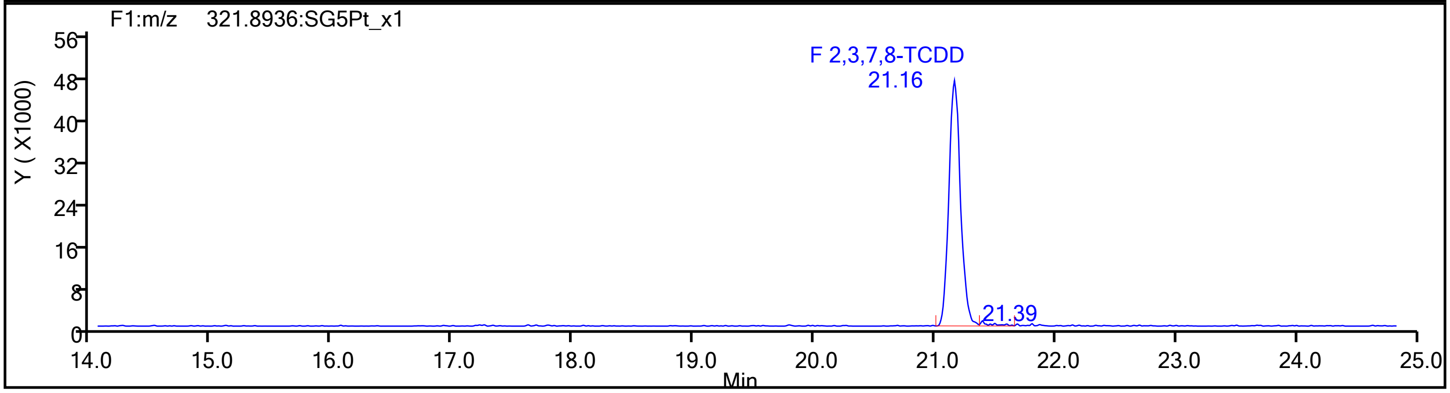

TCDD Standards

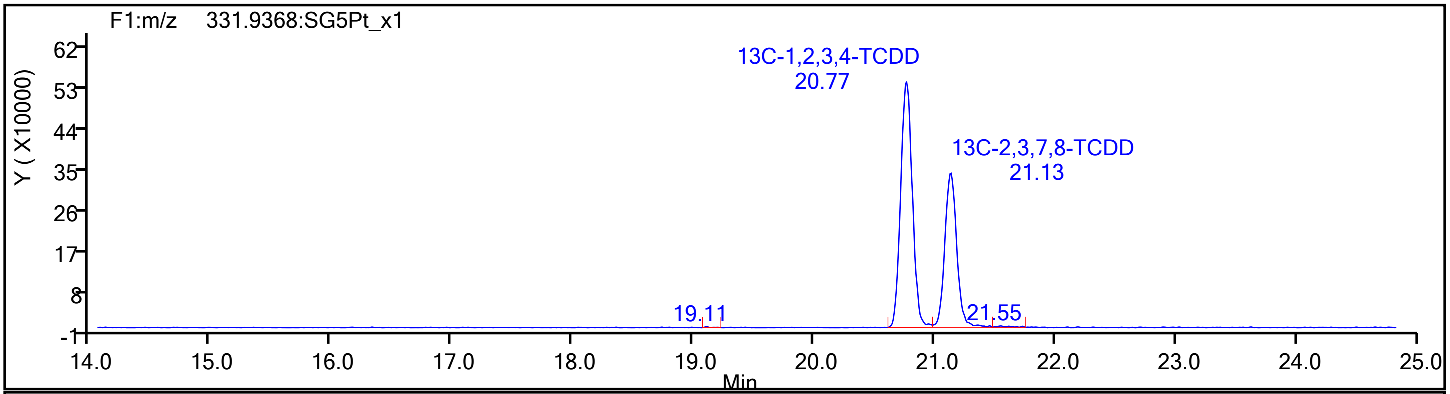

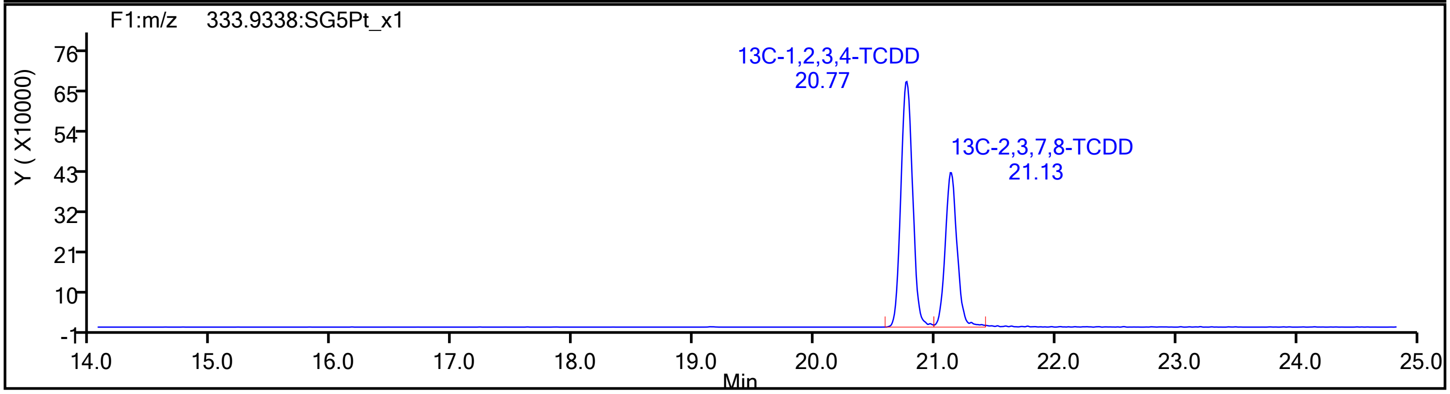

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Eurofins TestAmerica, Sacramento

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Method: Dioxin_DFS1
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37Cl4-TCDD

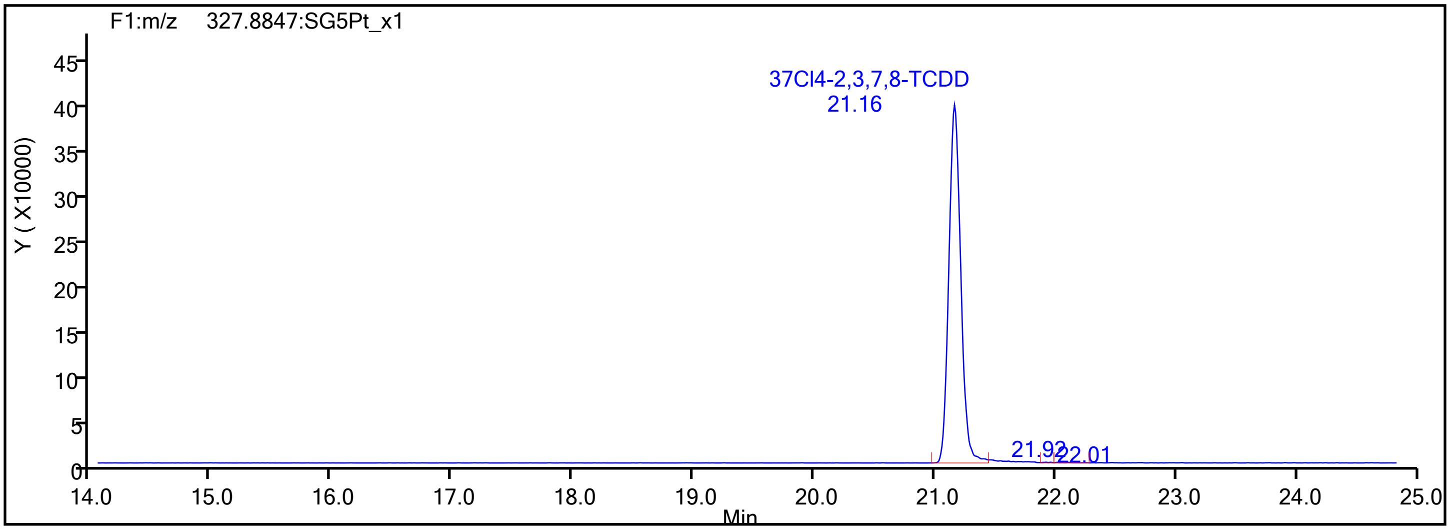

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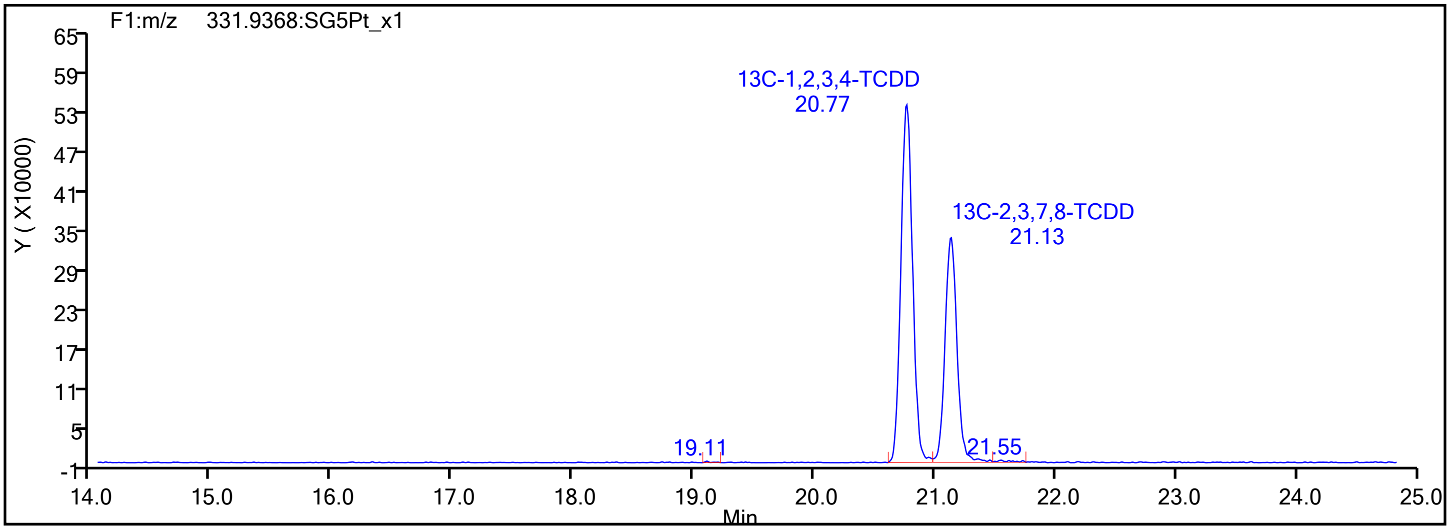

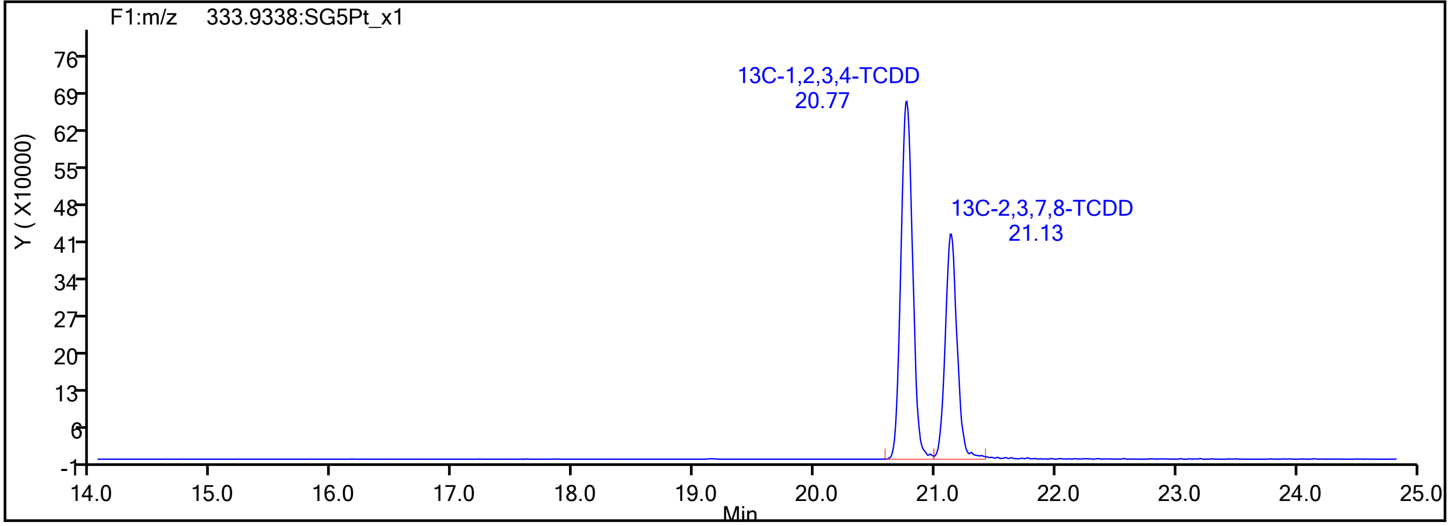

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

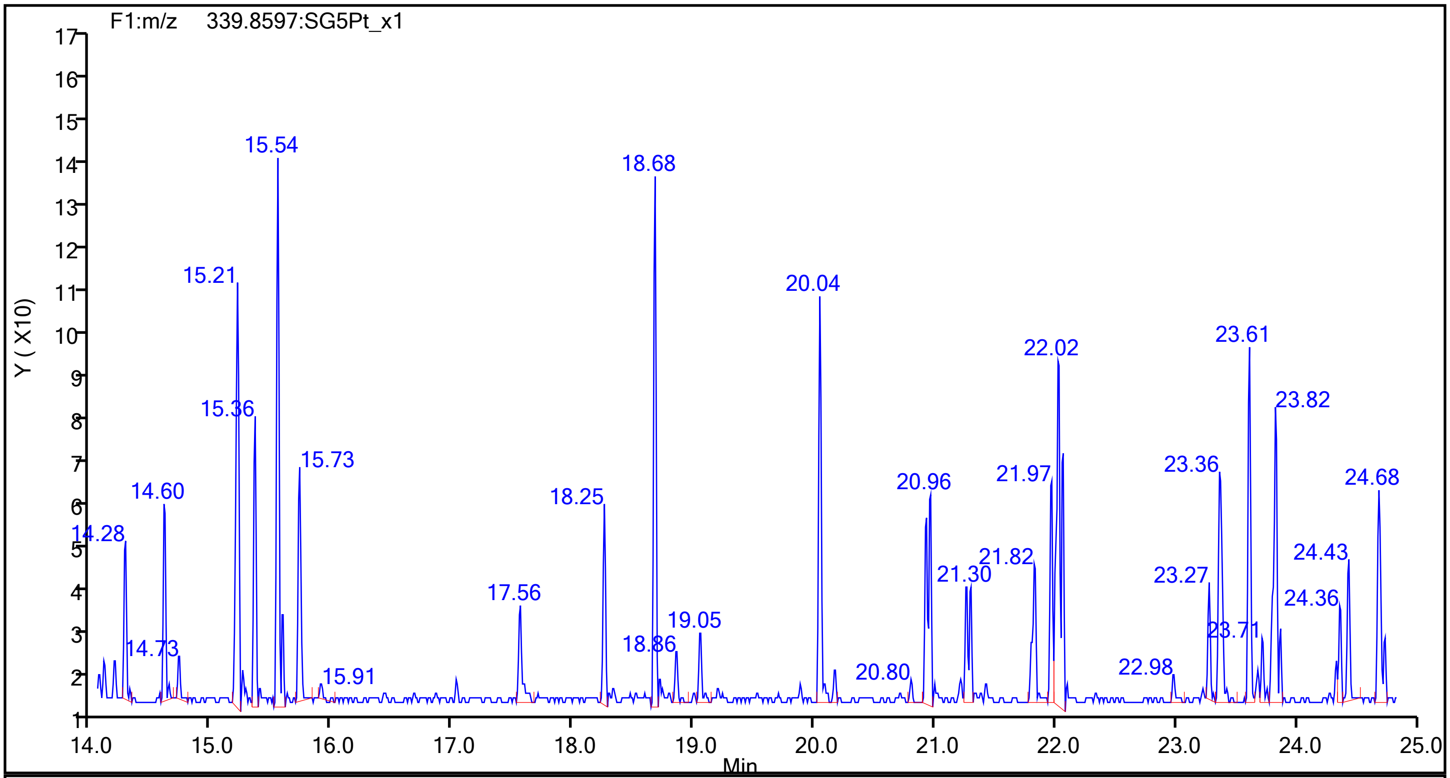

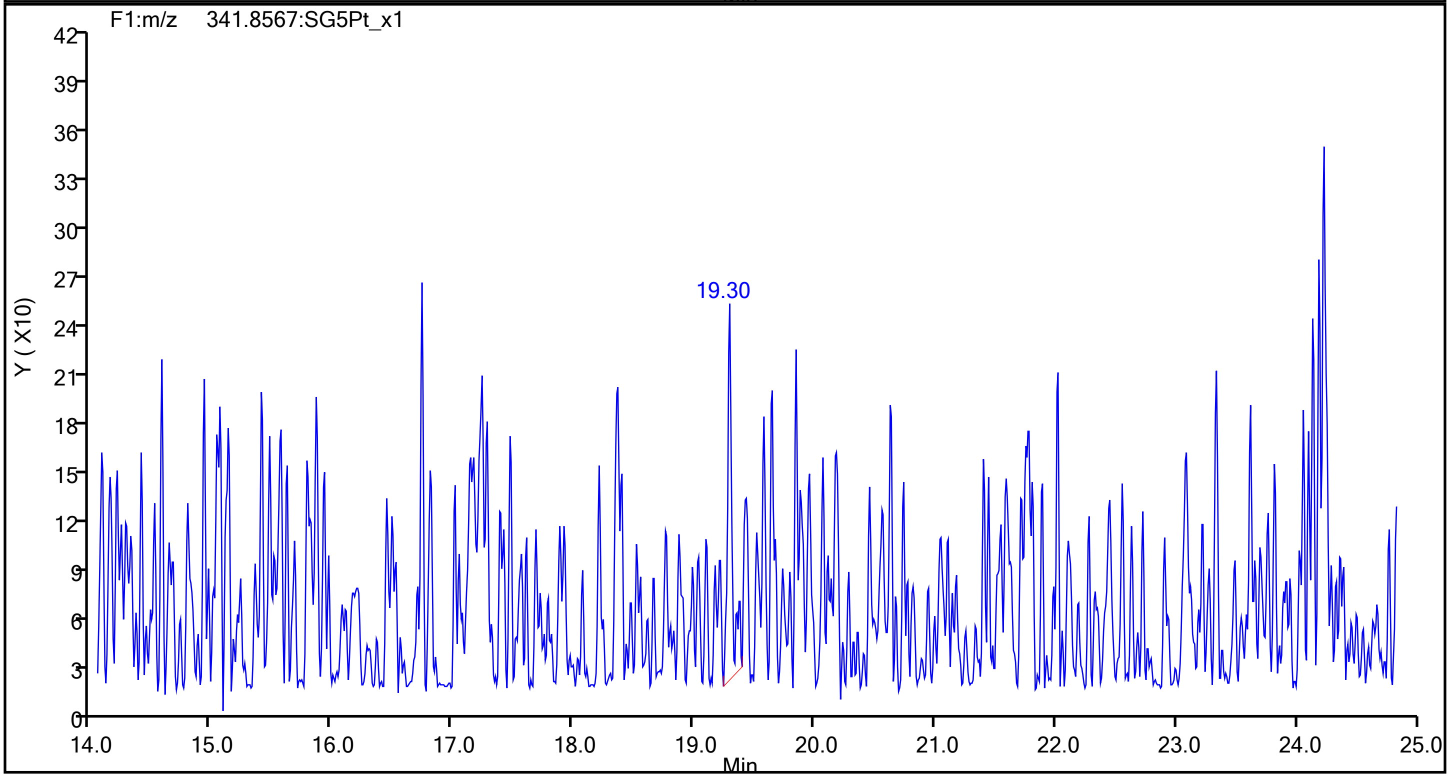

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Eurofins TestAmerica, Sacramento

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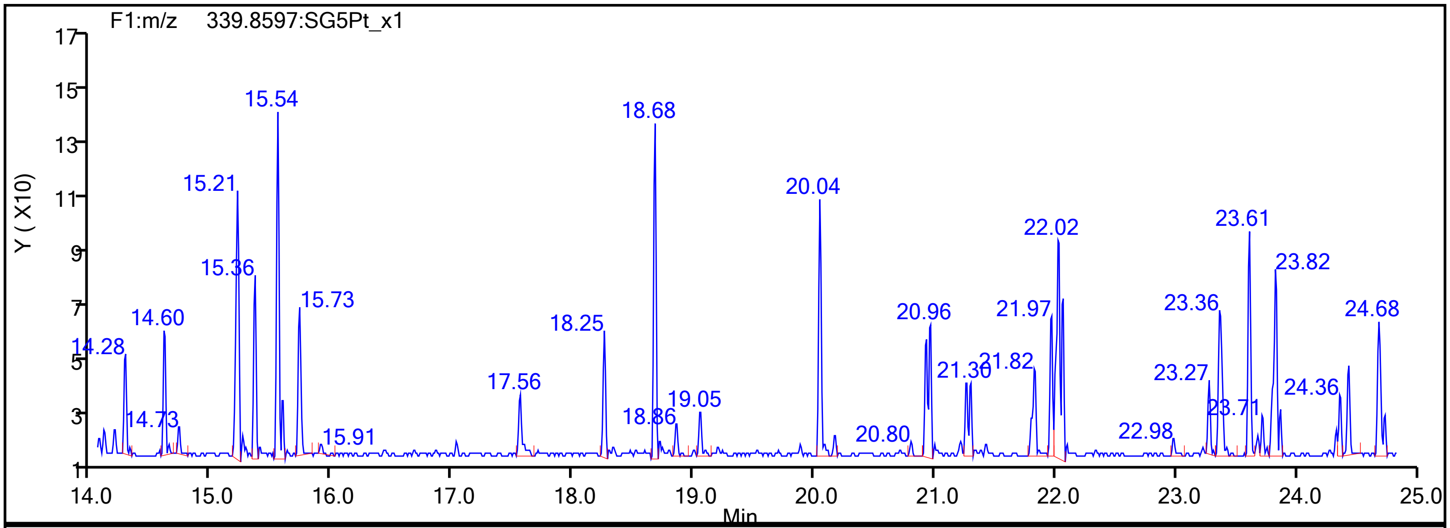

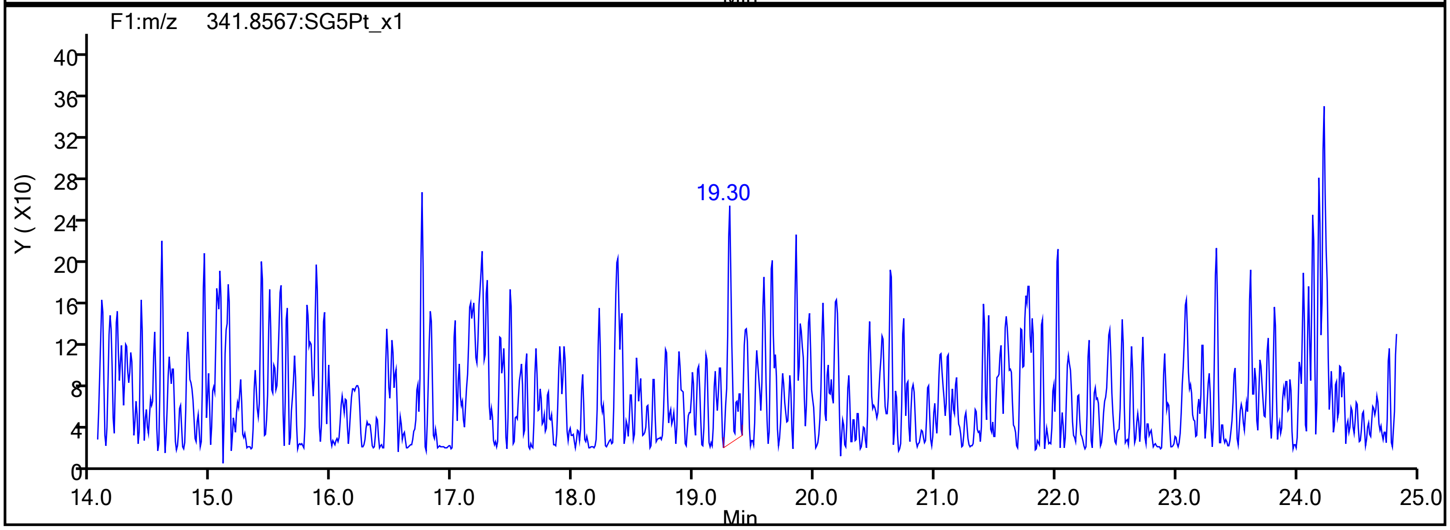

F1 PeCDFs Interference Mass

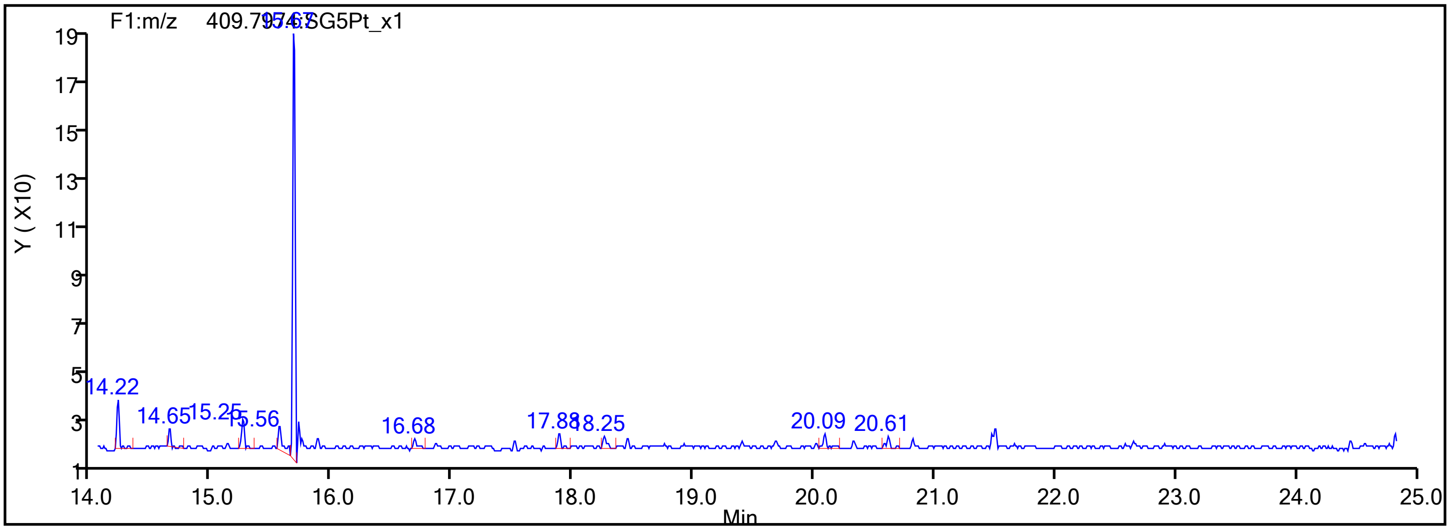

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Eurofins TestAmerica, Sacramento

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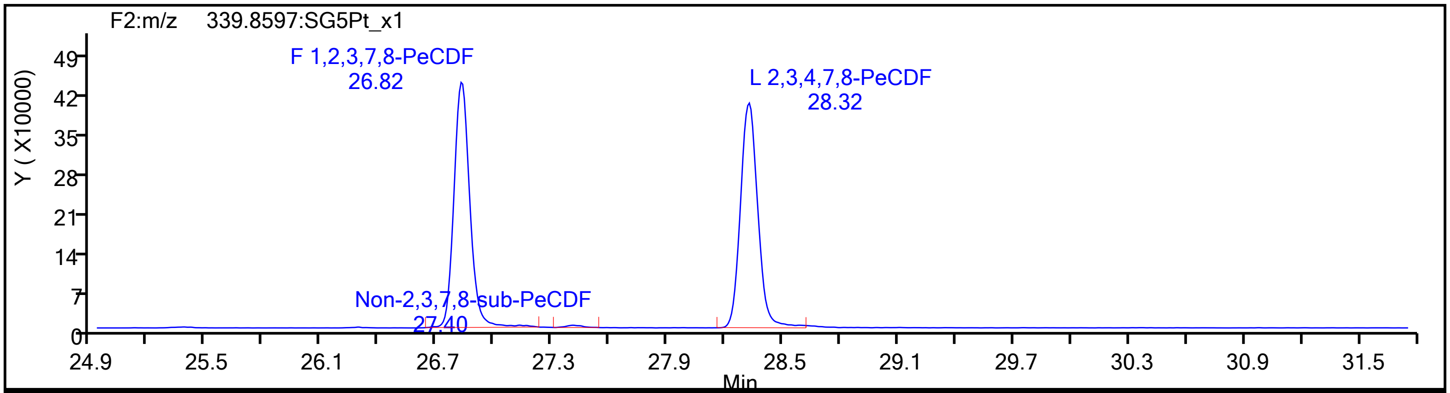

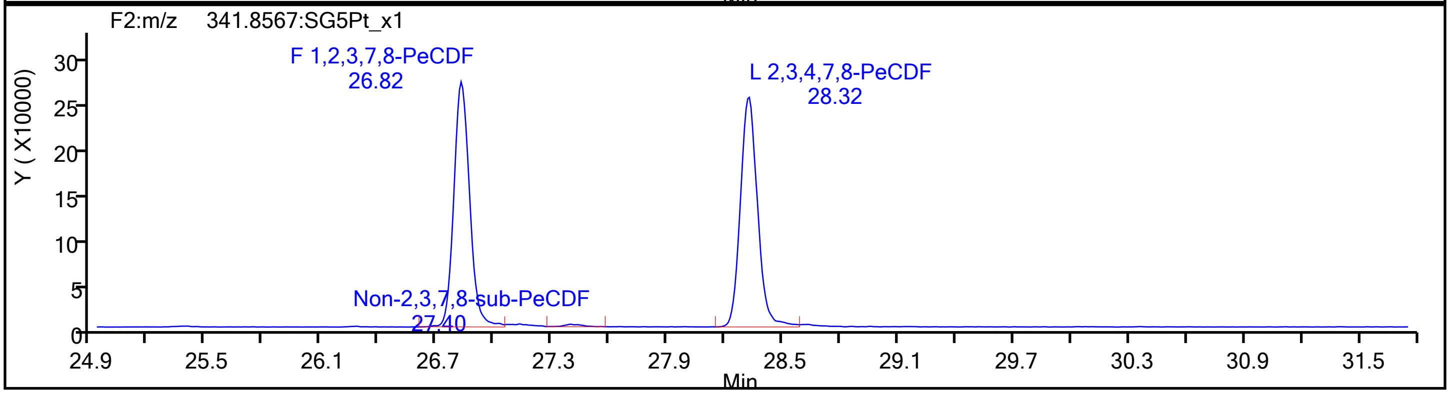

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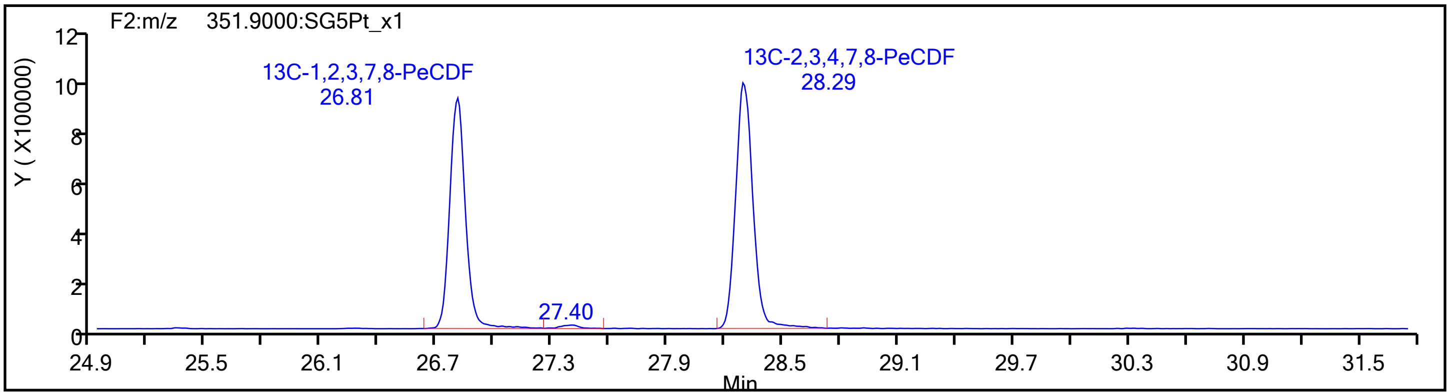

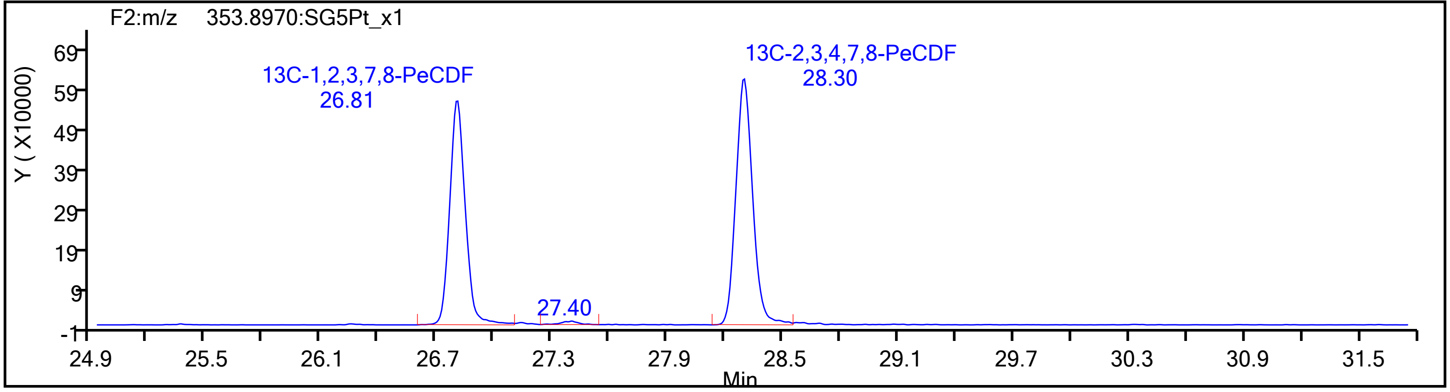

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Eurofins TestAmerica, Sacramento

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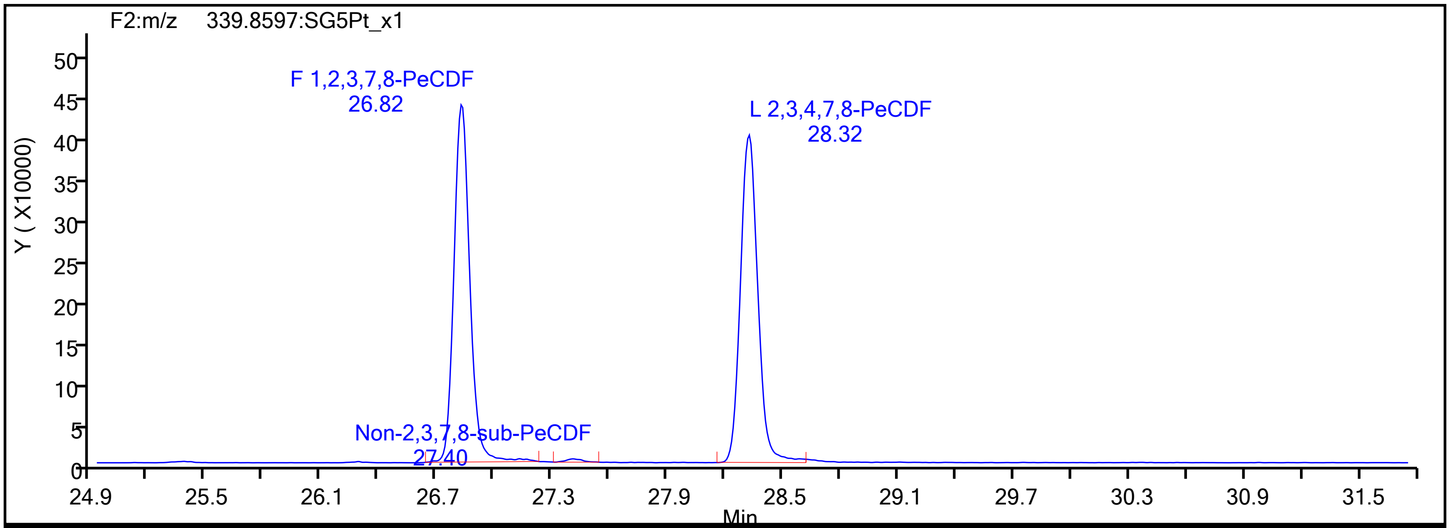

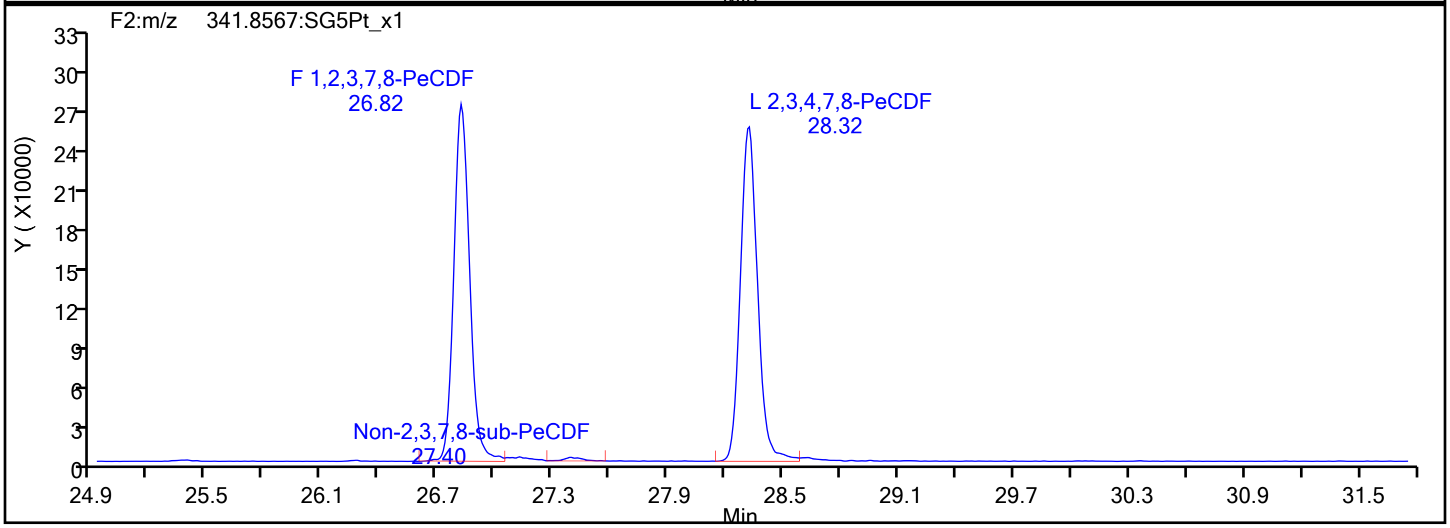

PeCDF Interference Mass

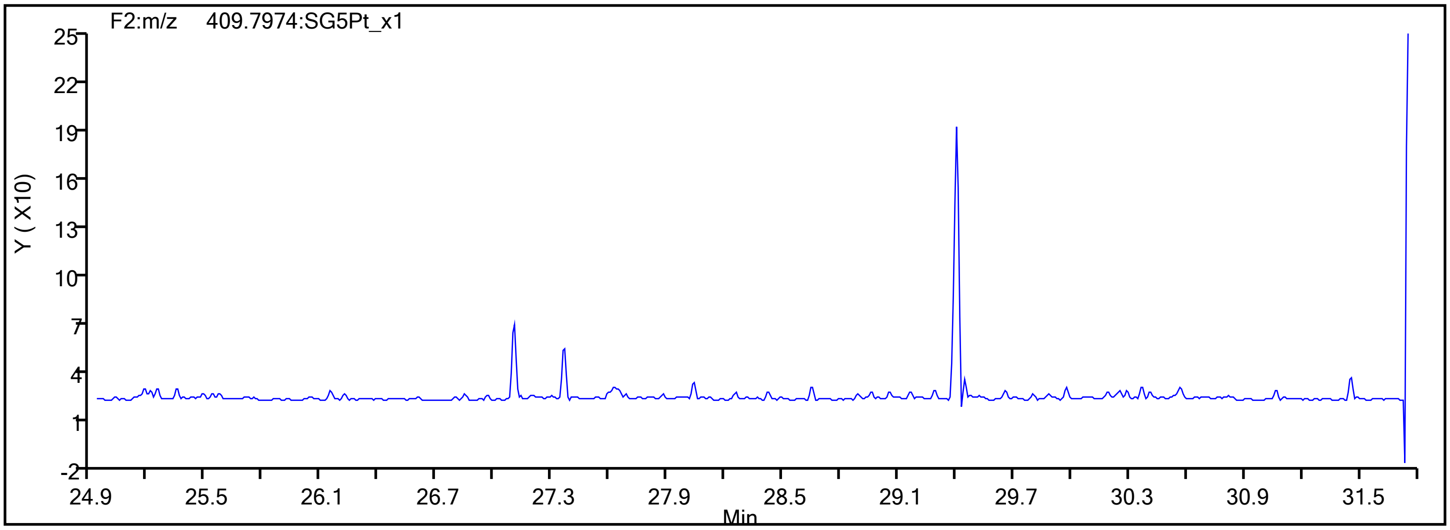

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Eurofins TestAmerica, Sacramento

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Client ID:

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PeCDD

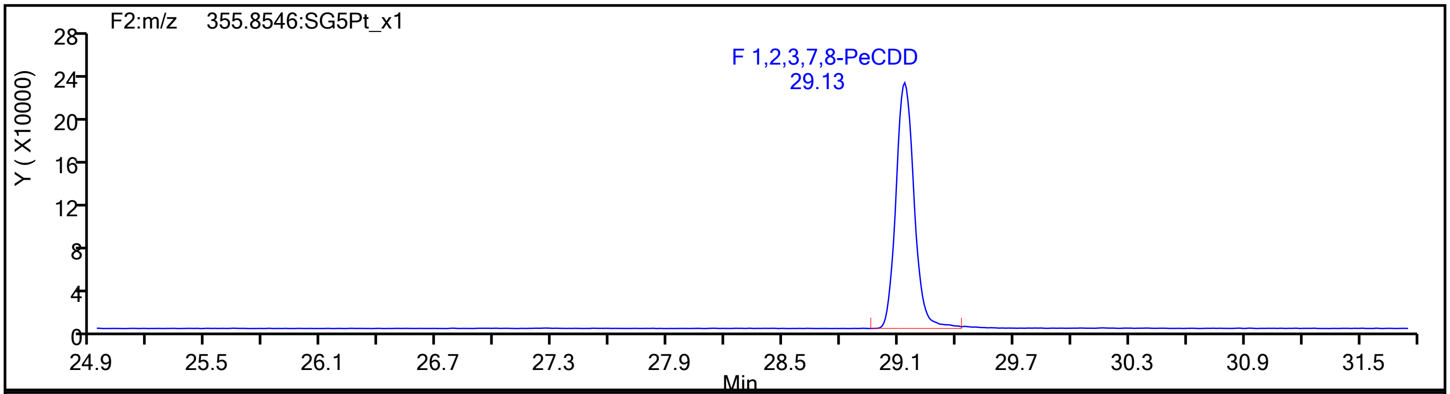

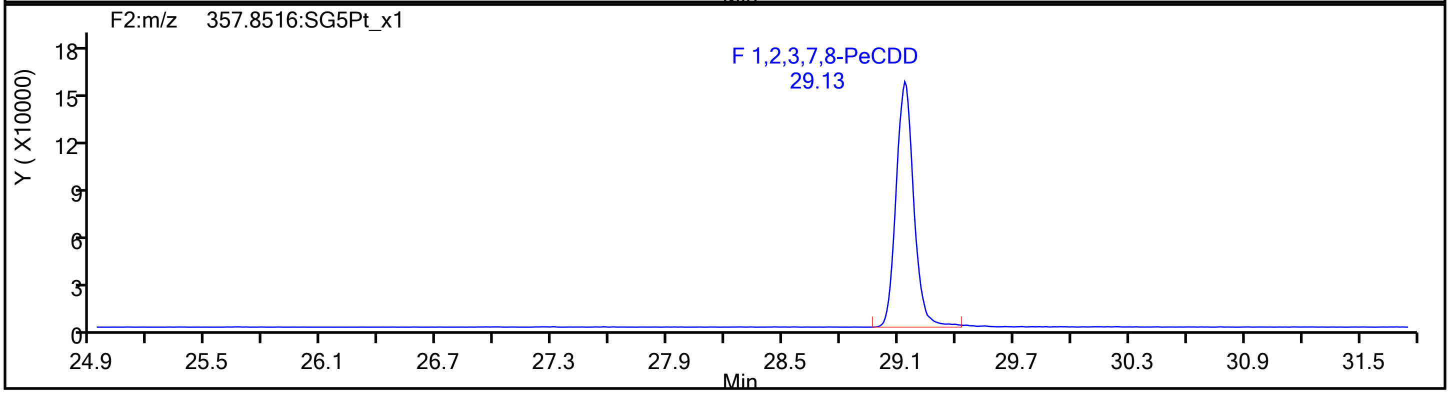

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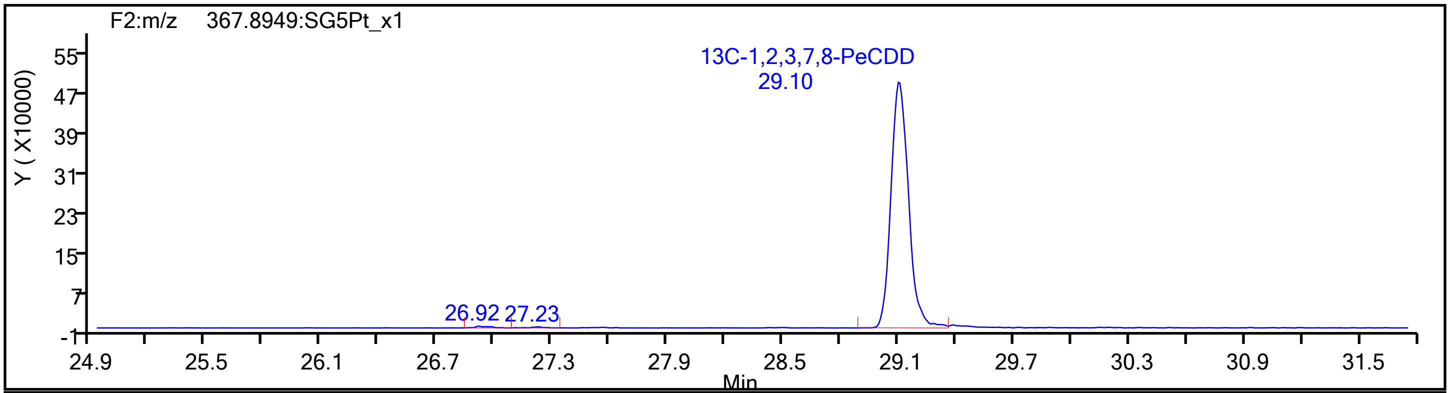

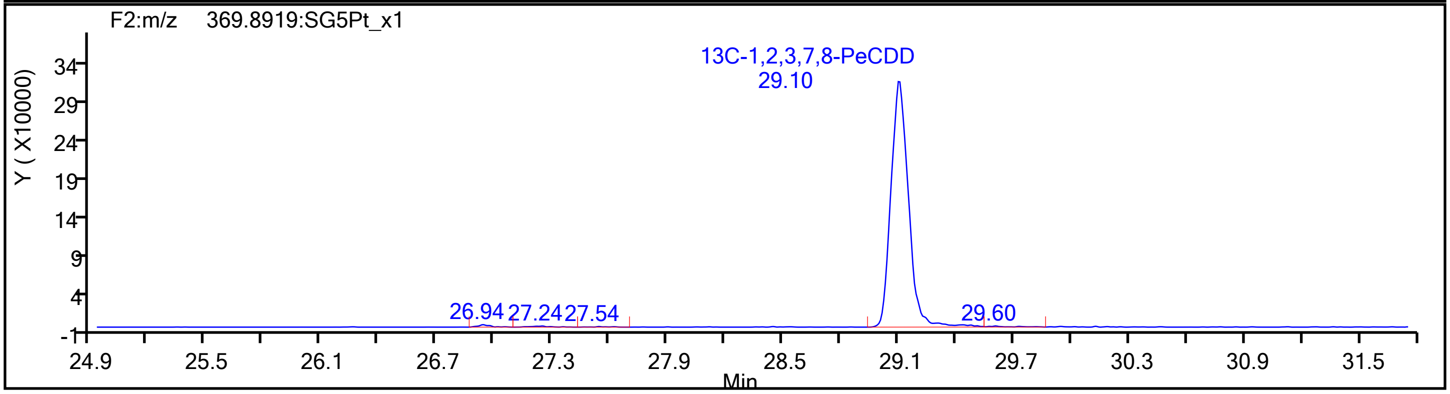

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Eurofins TestAmerica, Sacramento

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HxCDF

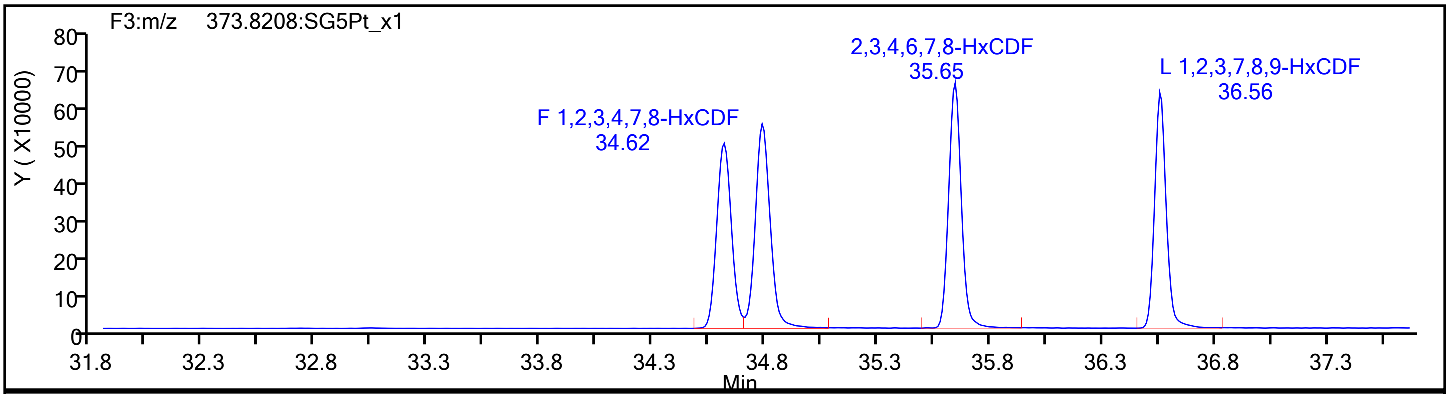

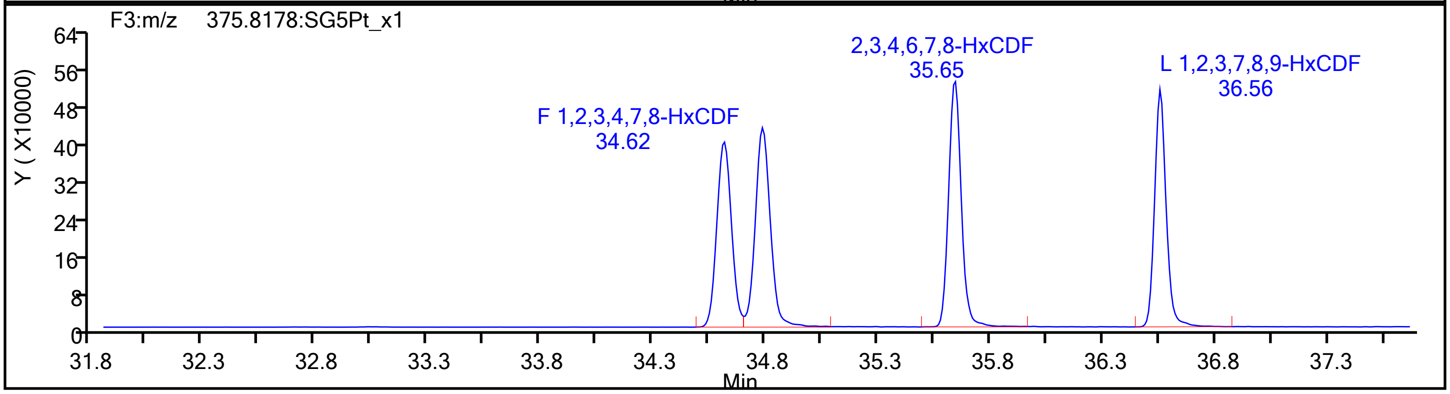

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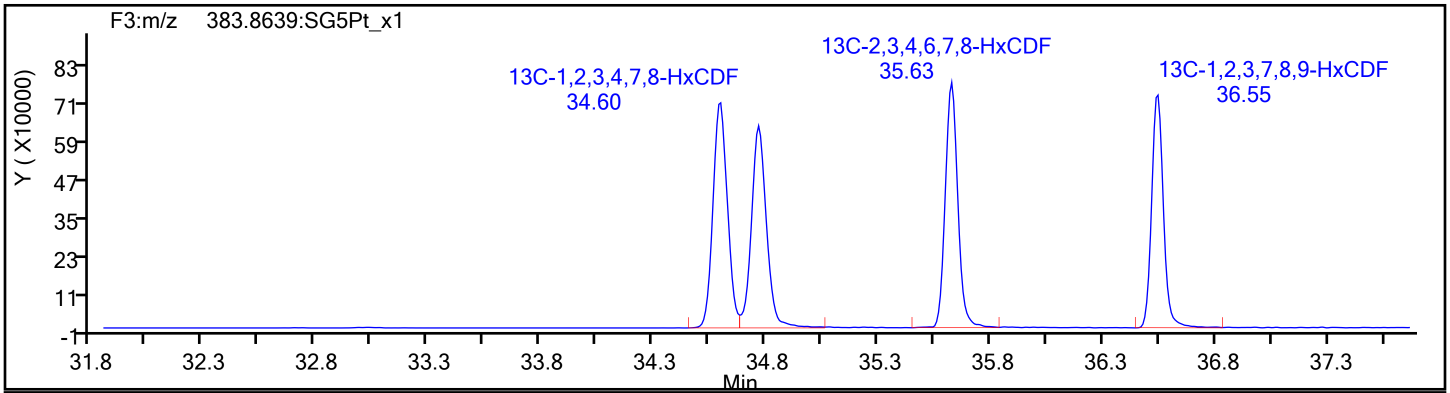

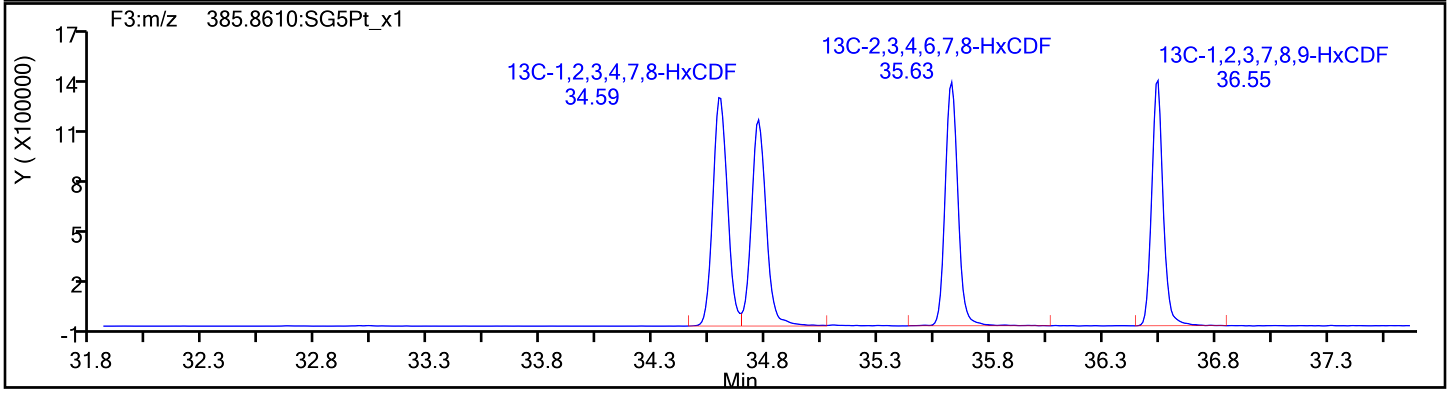

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Eurofins TestAmerica, Sacramento

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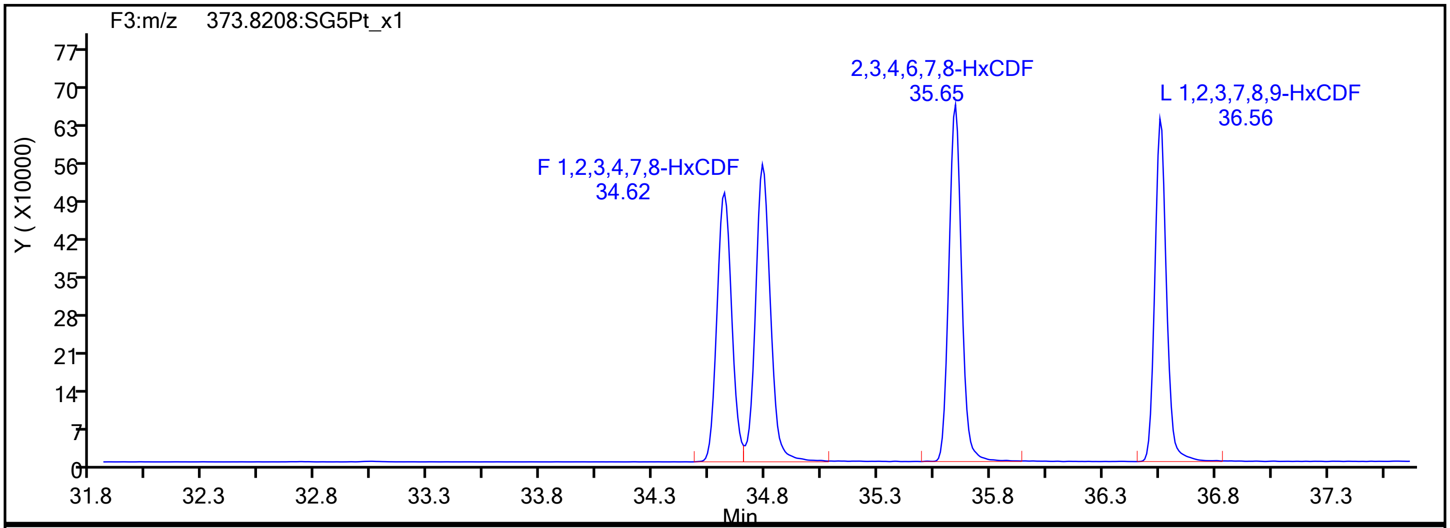

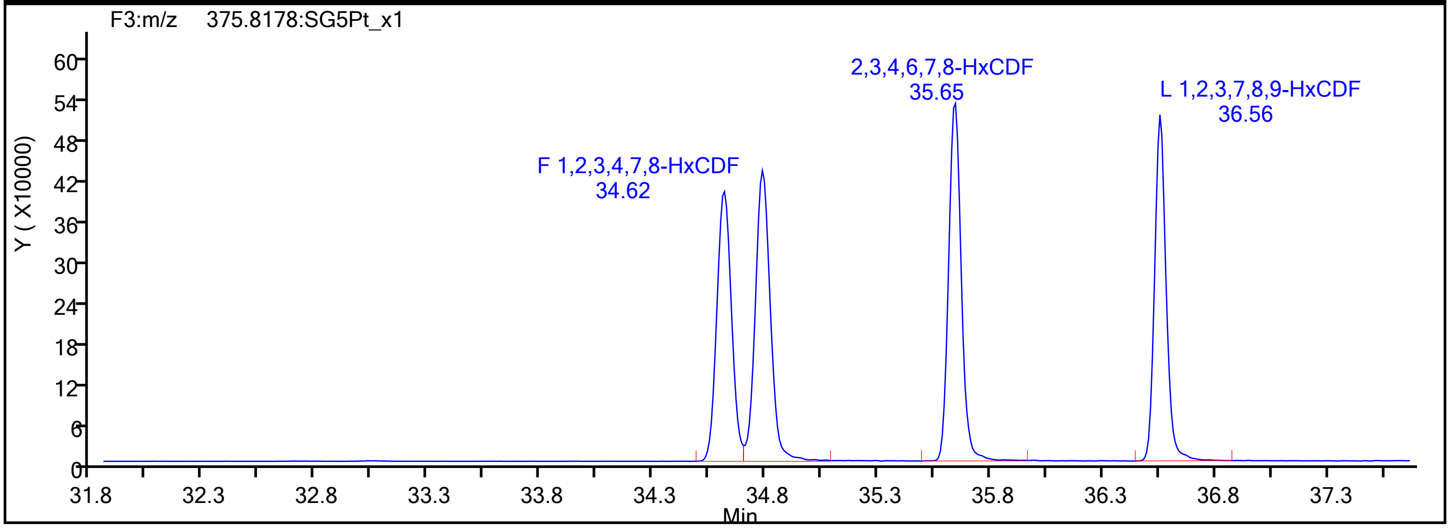

HxCDF Interference Mass

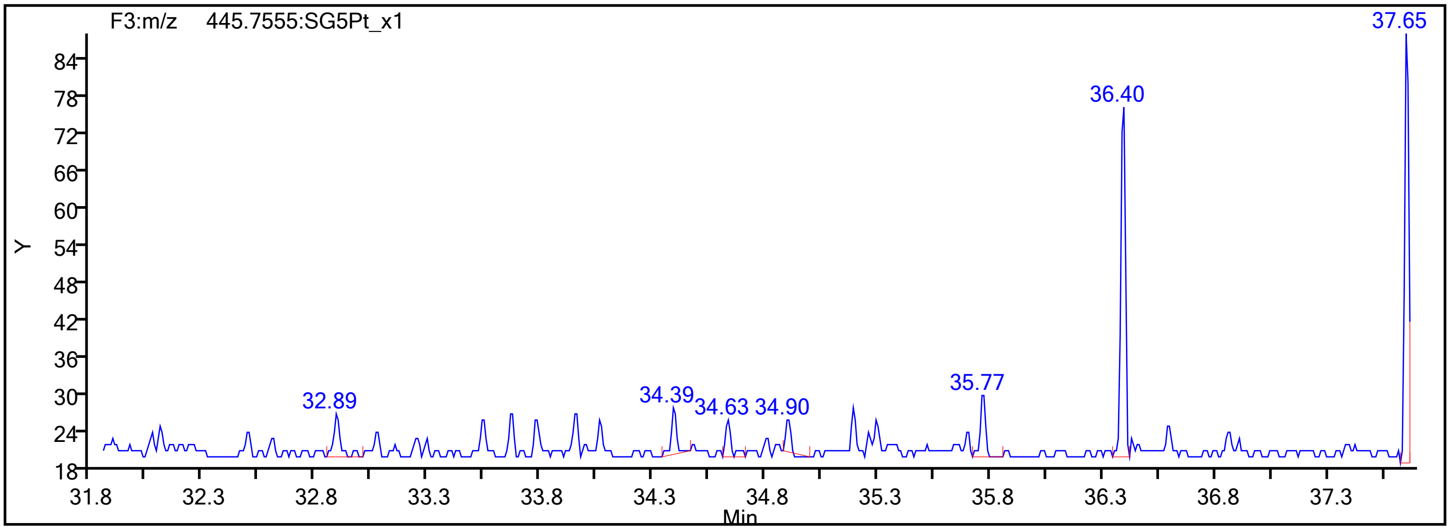

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Eurofins TestAmerica, Sacramento

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HxCDD

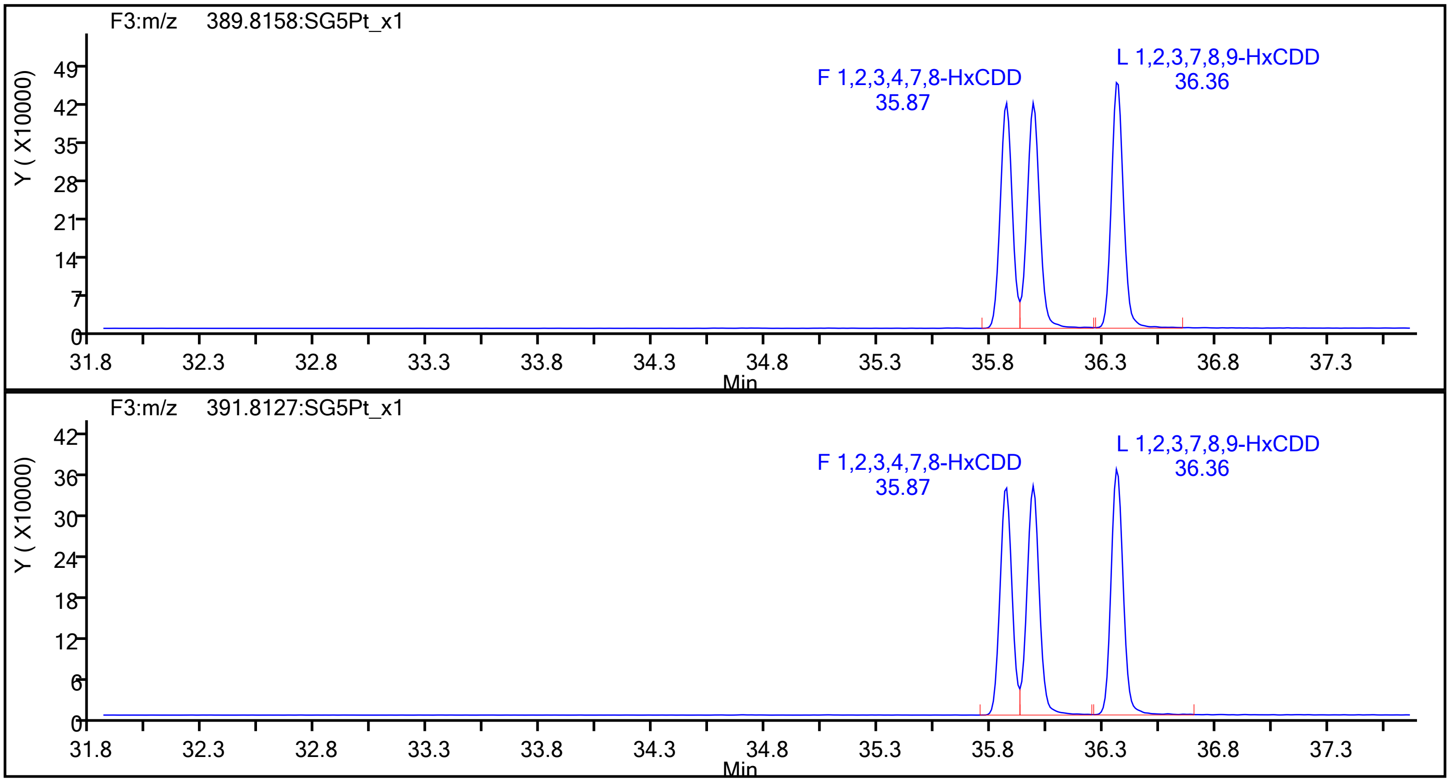

HxCDD Standards

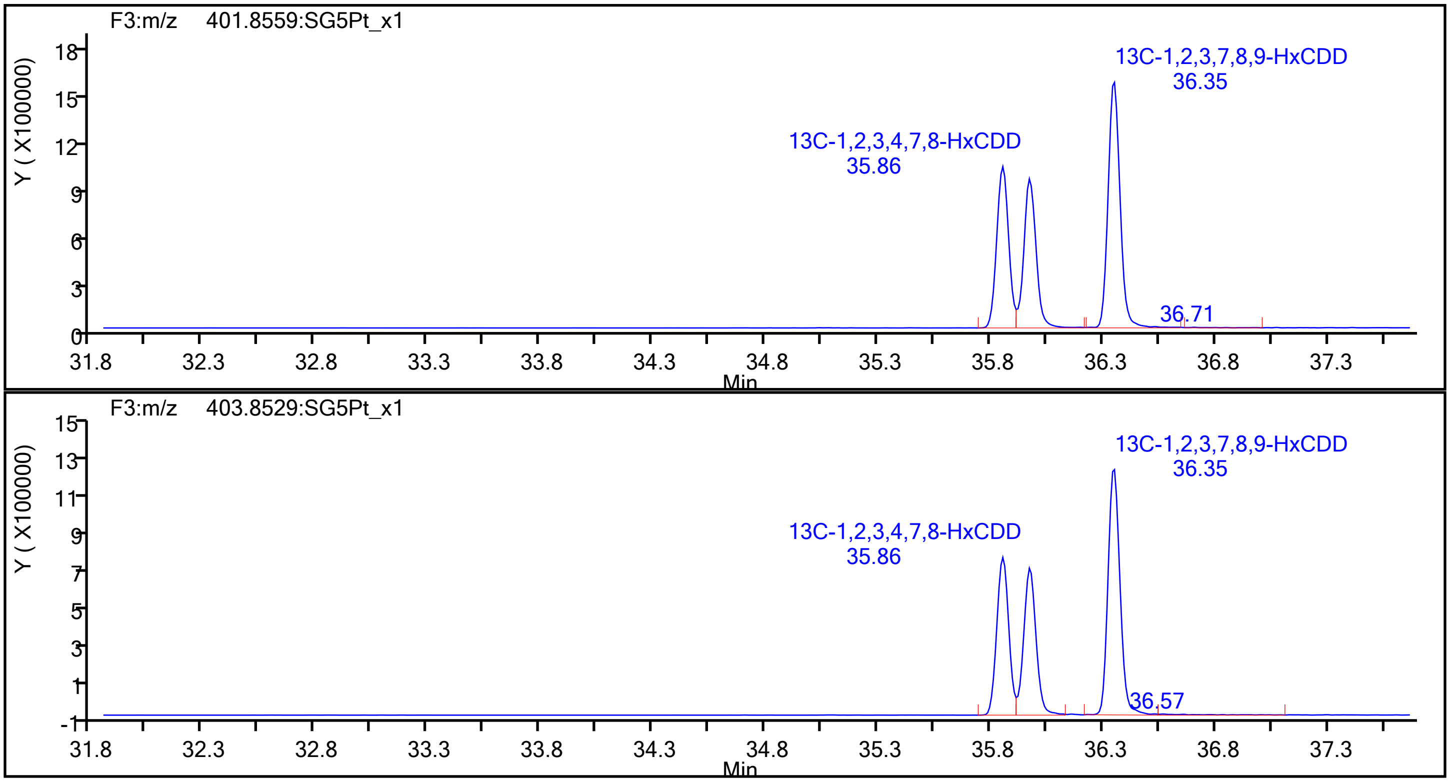

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Eurofins TestAmerica, Sacramento

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HpCDF

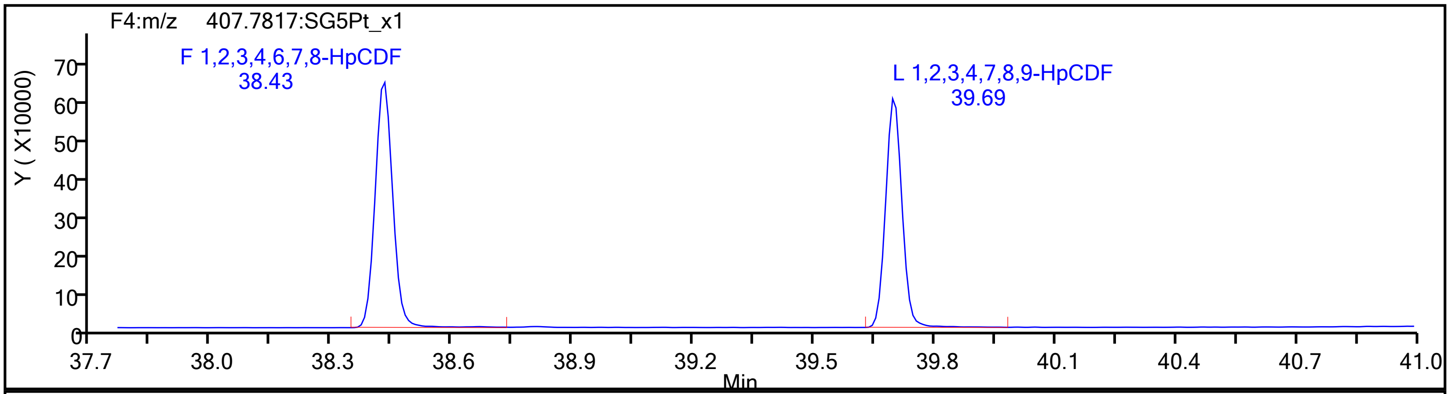

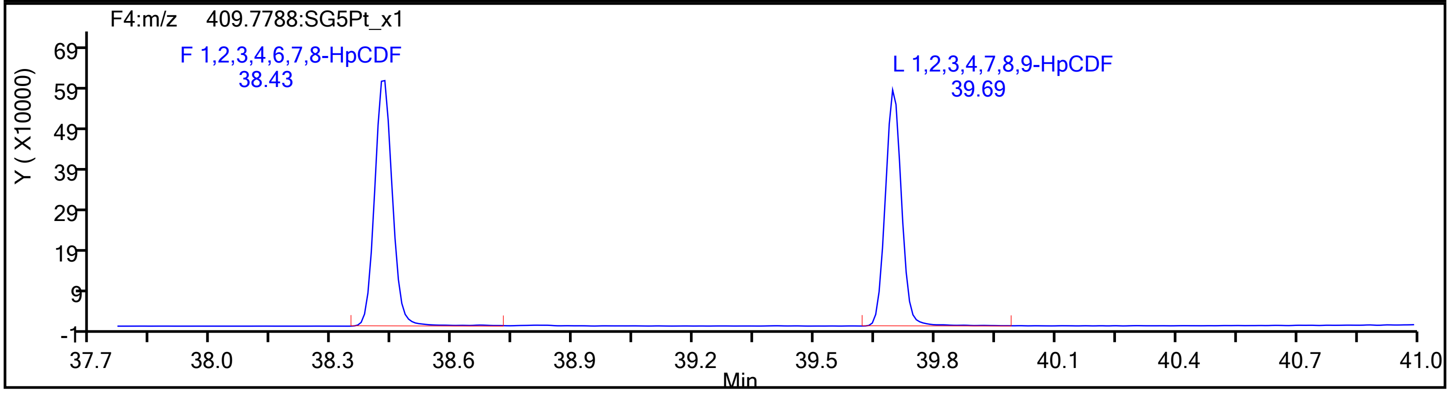

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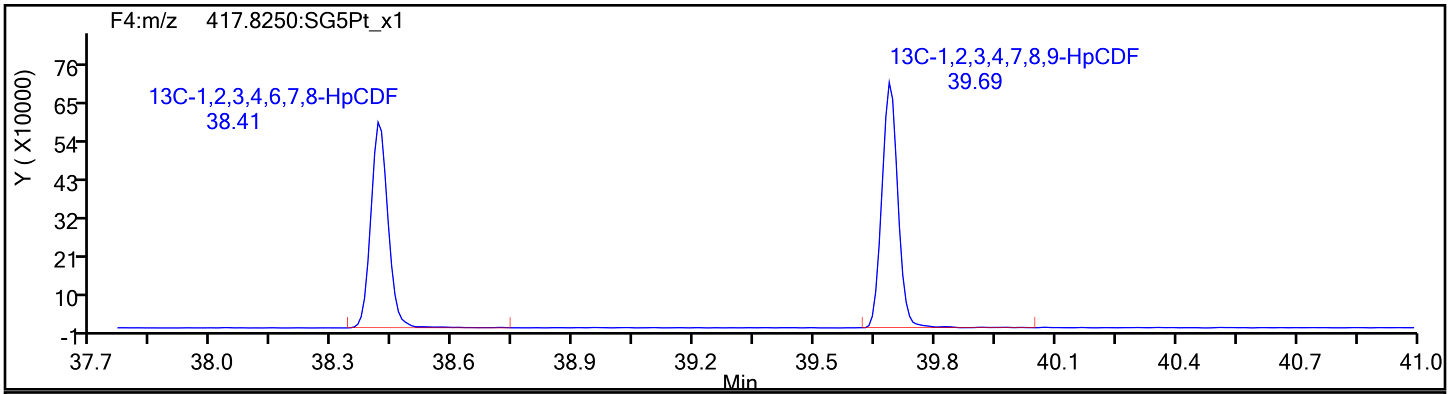

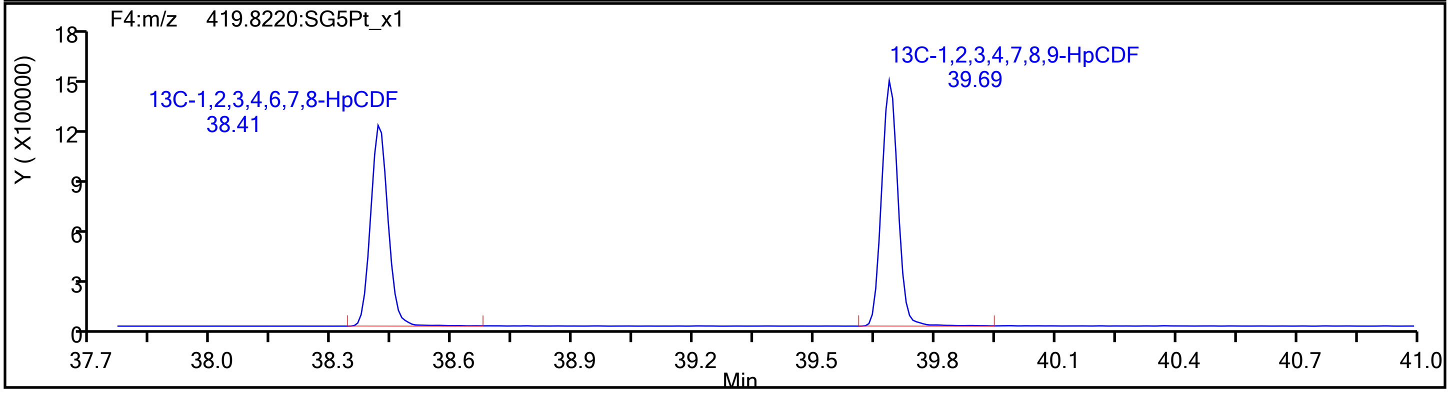

Eurofins TestAmerica, Sacramento

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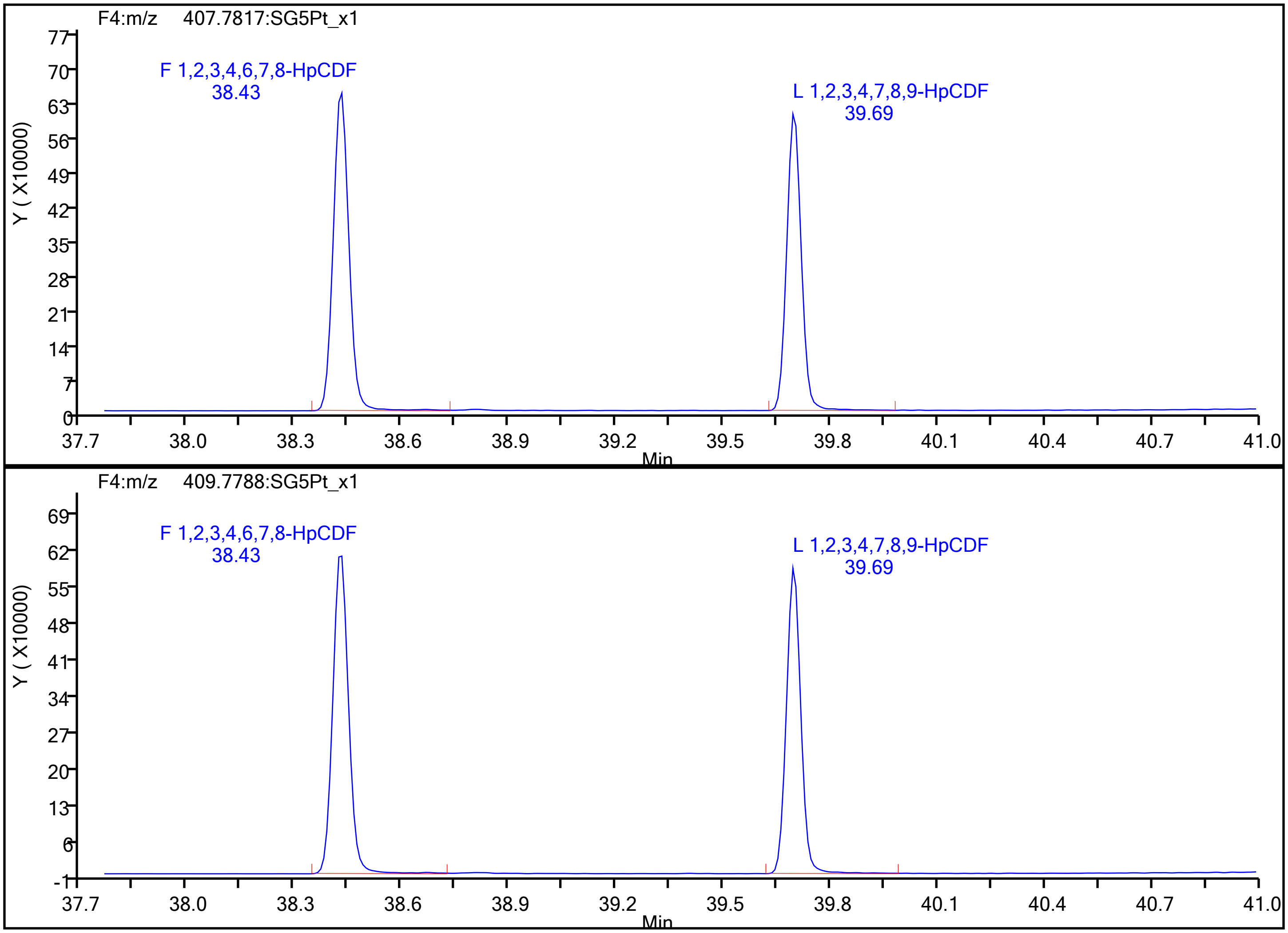

HpCDF Interference Mass

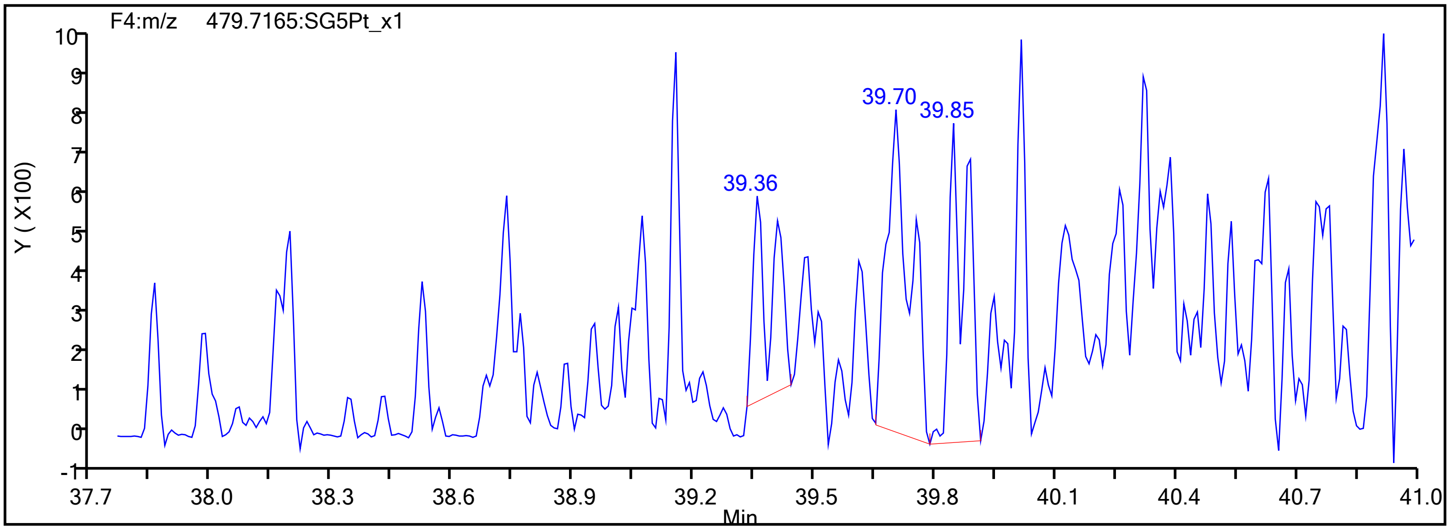

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Eurofins TestAmerica, Sacramento

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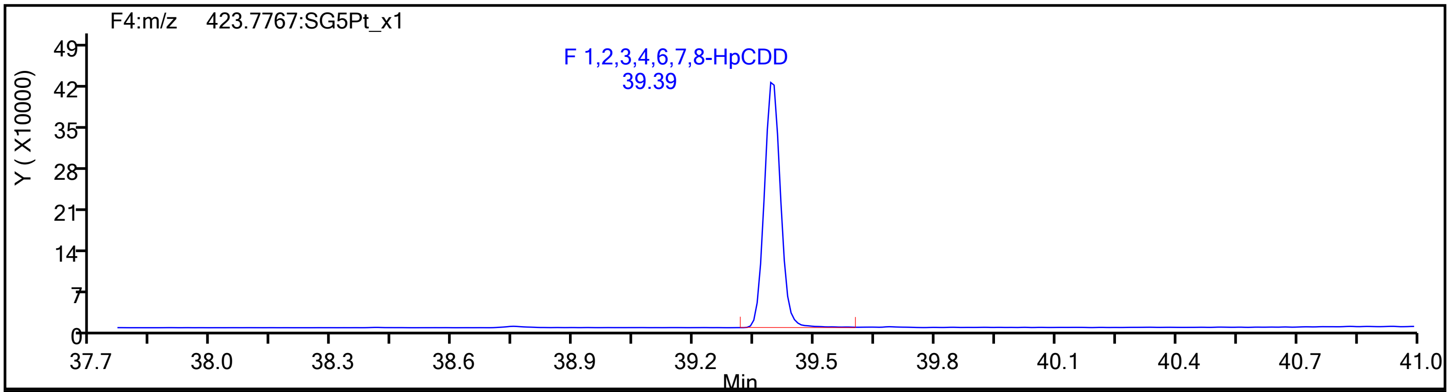

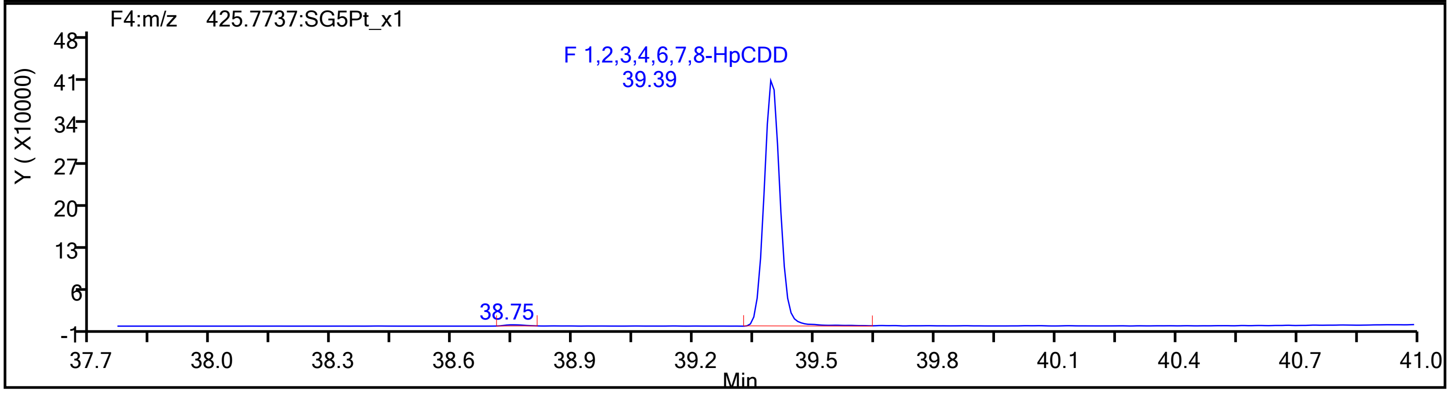

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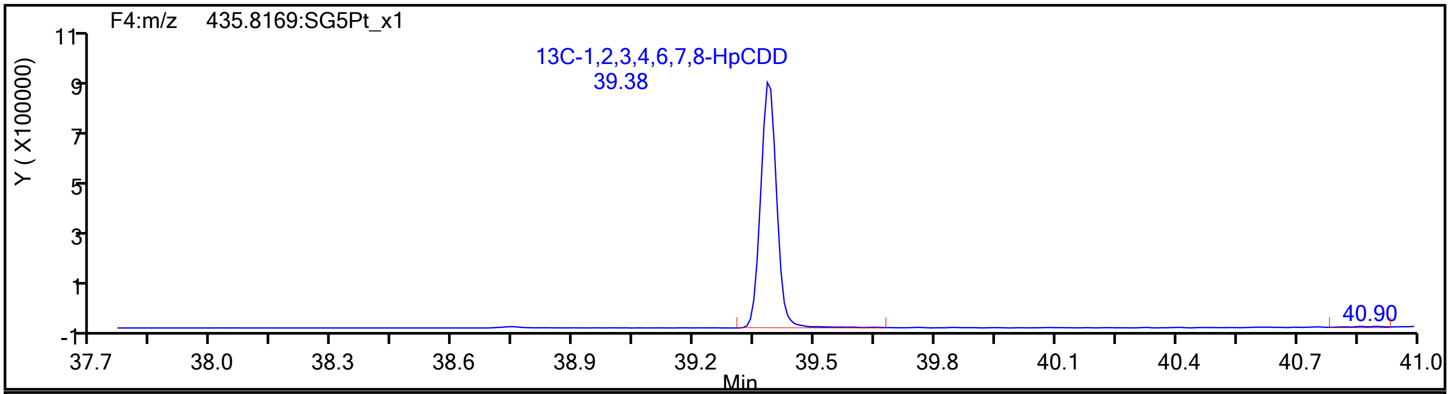

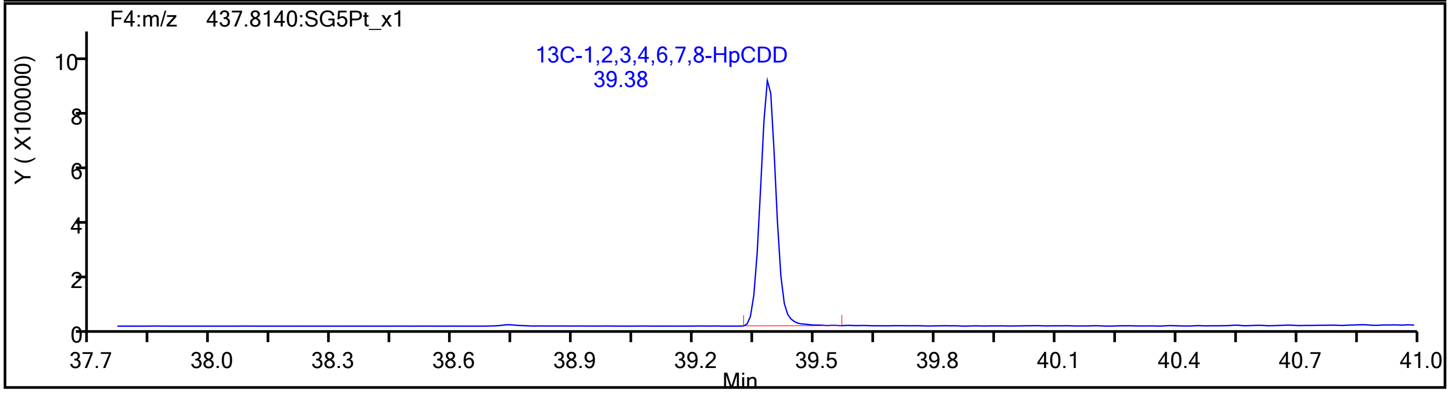

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Eurofins TestAmerica, Sacramento

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OCDF

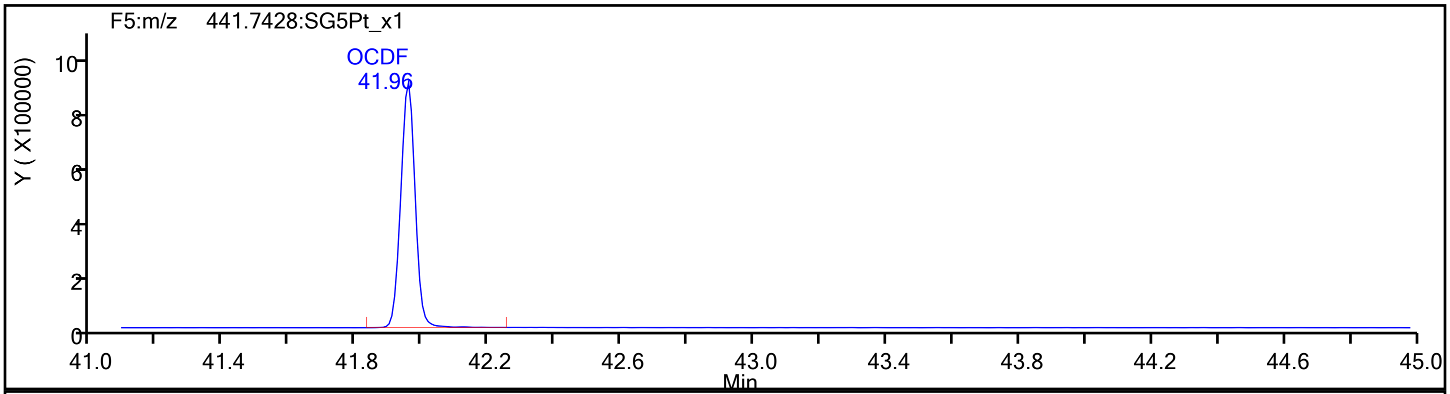

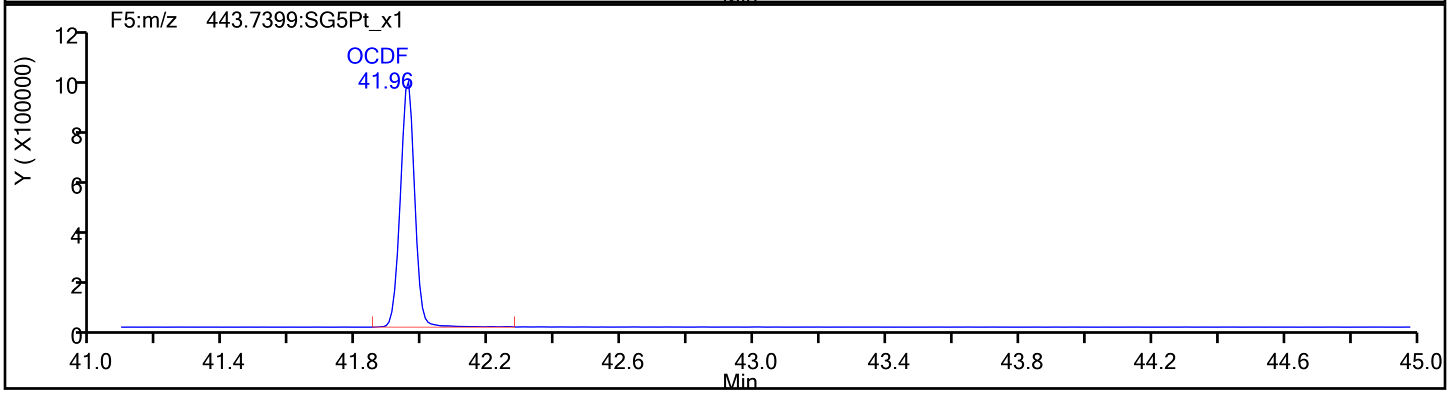

OCDF Standards

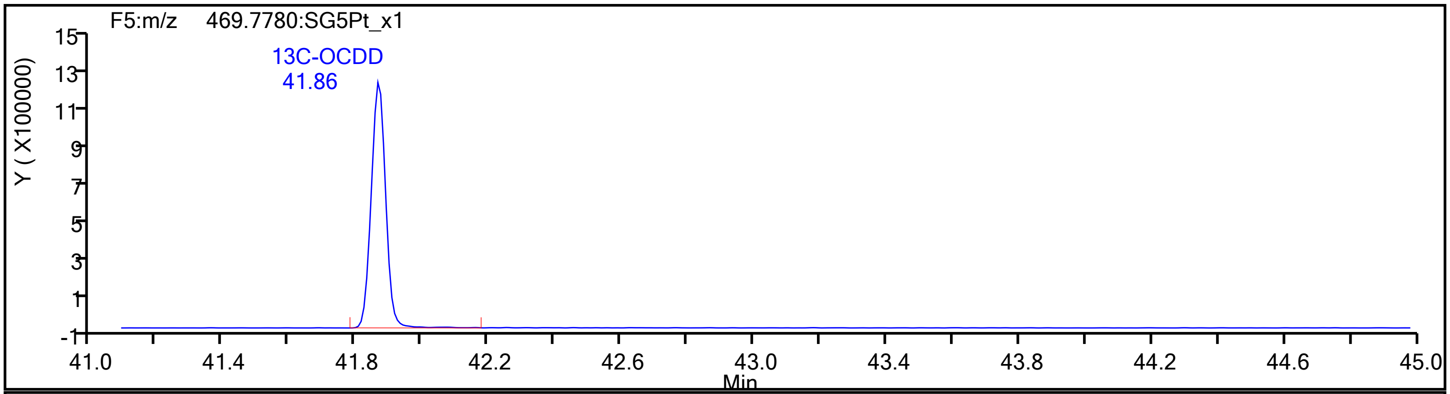

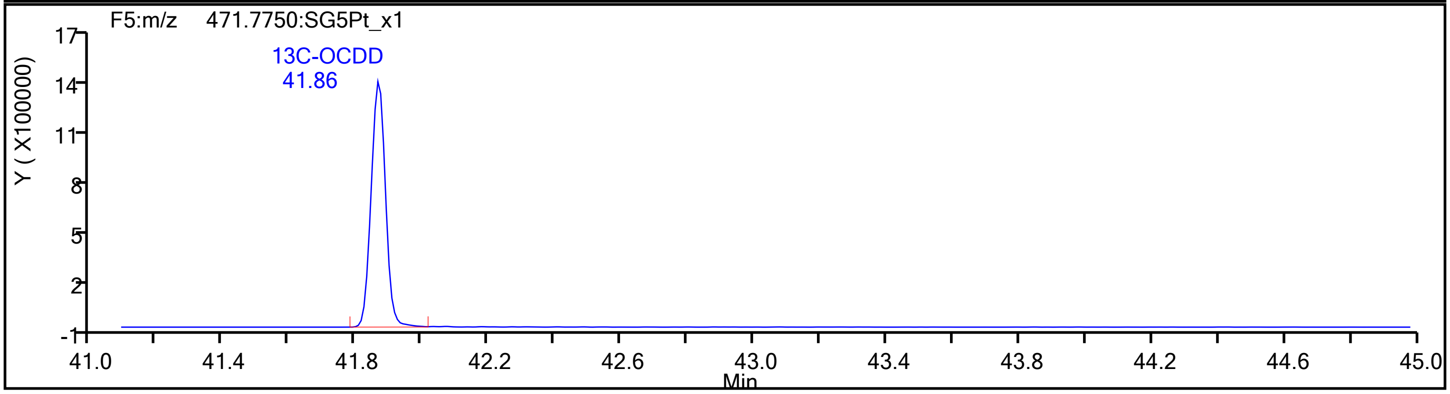

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Eurofins TestAmerica, Sacramento

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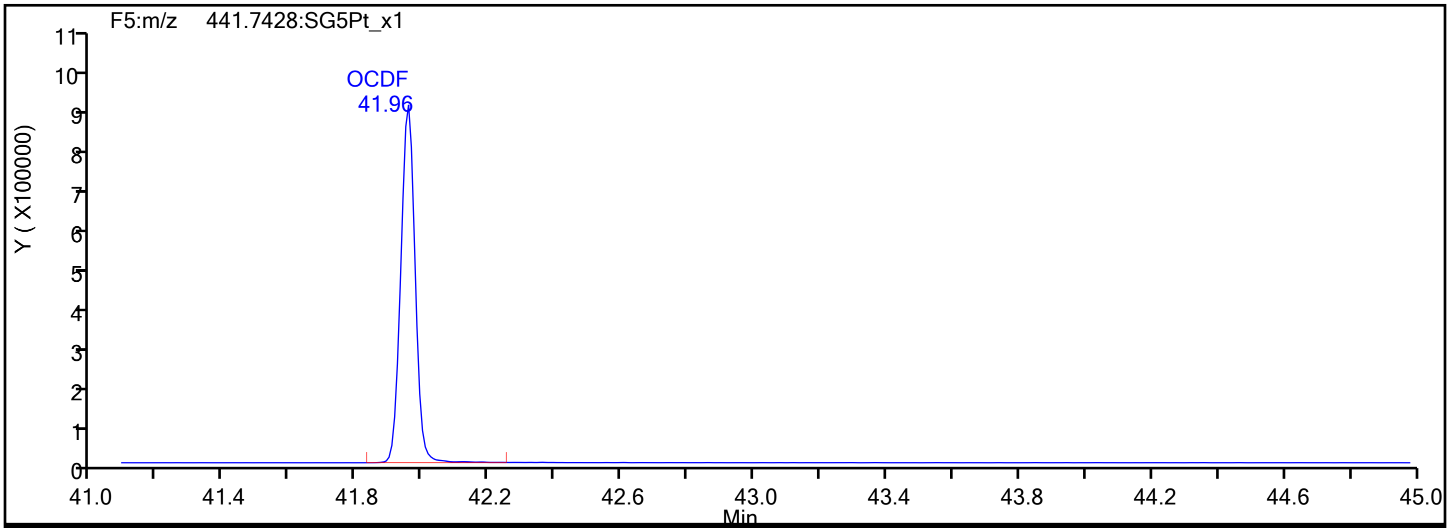

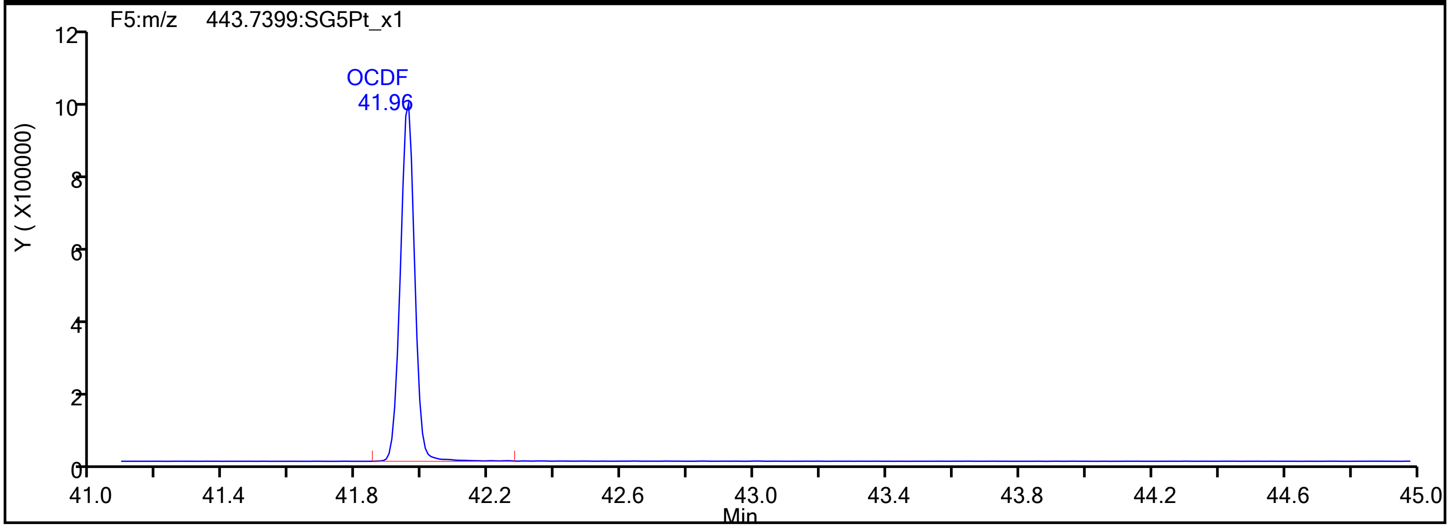

OCDF Interference Mass

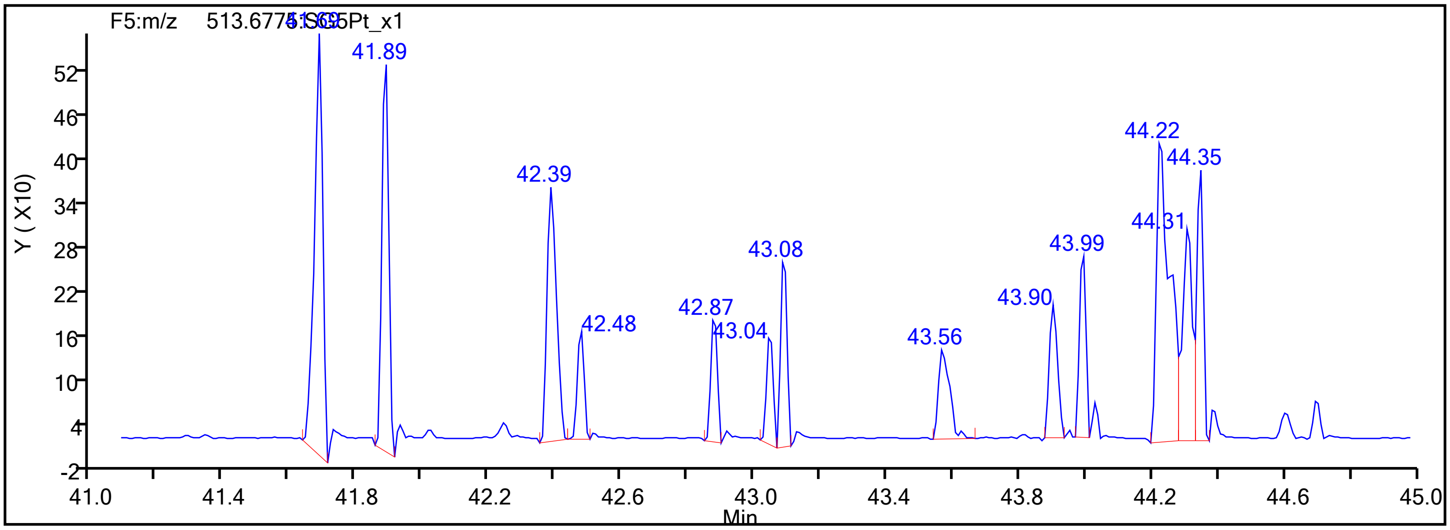

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Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

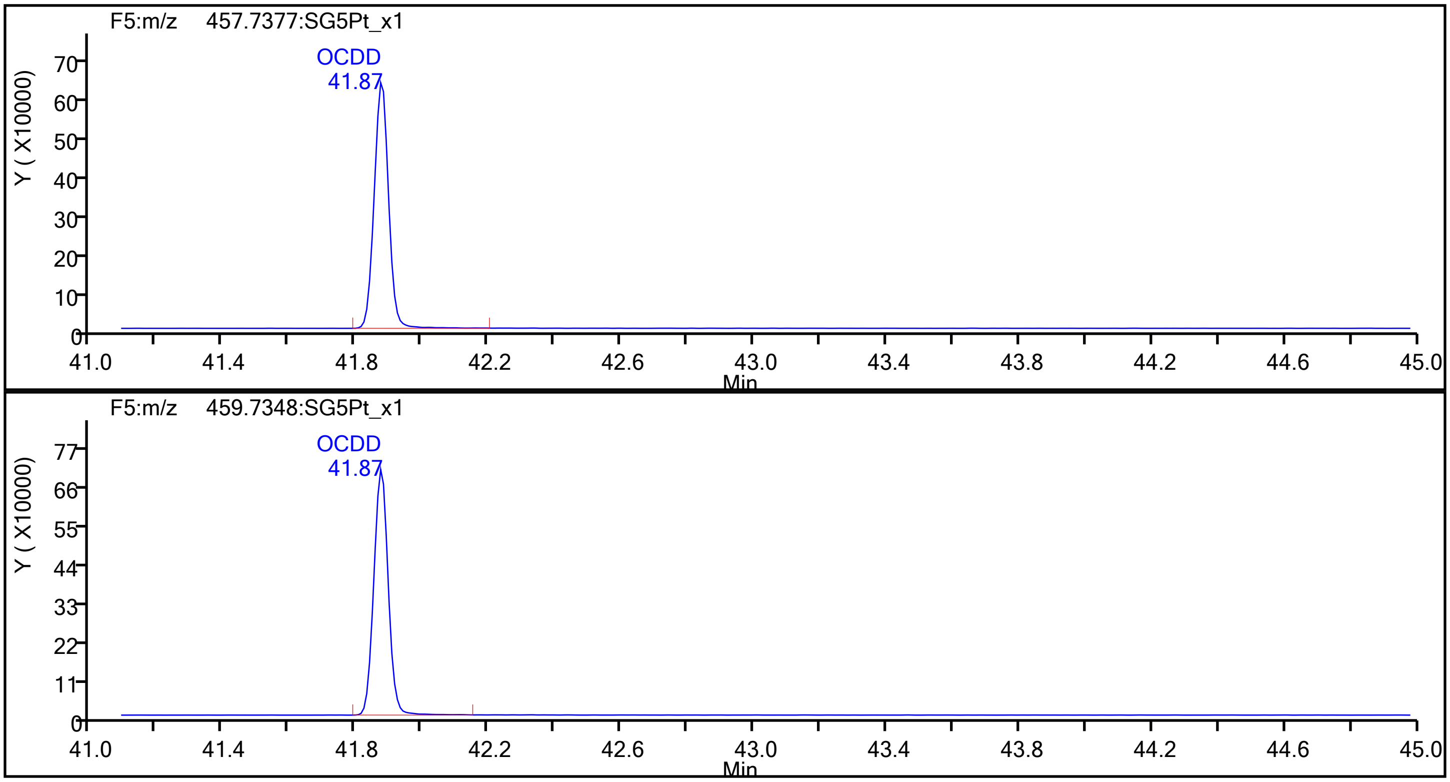

OCDD Standards

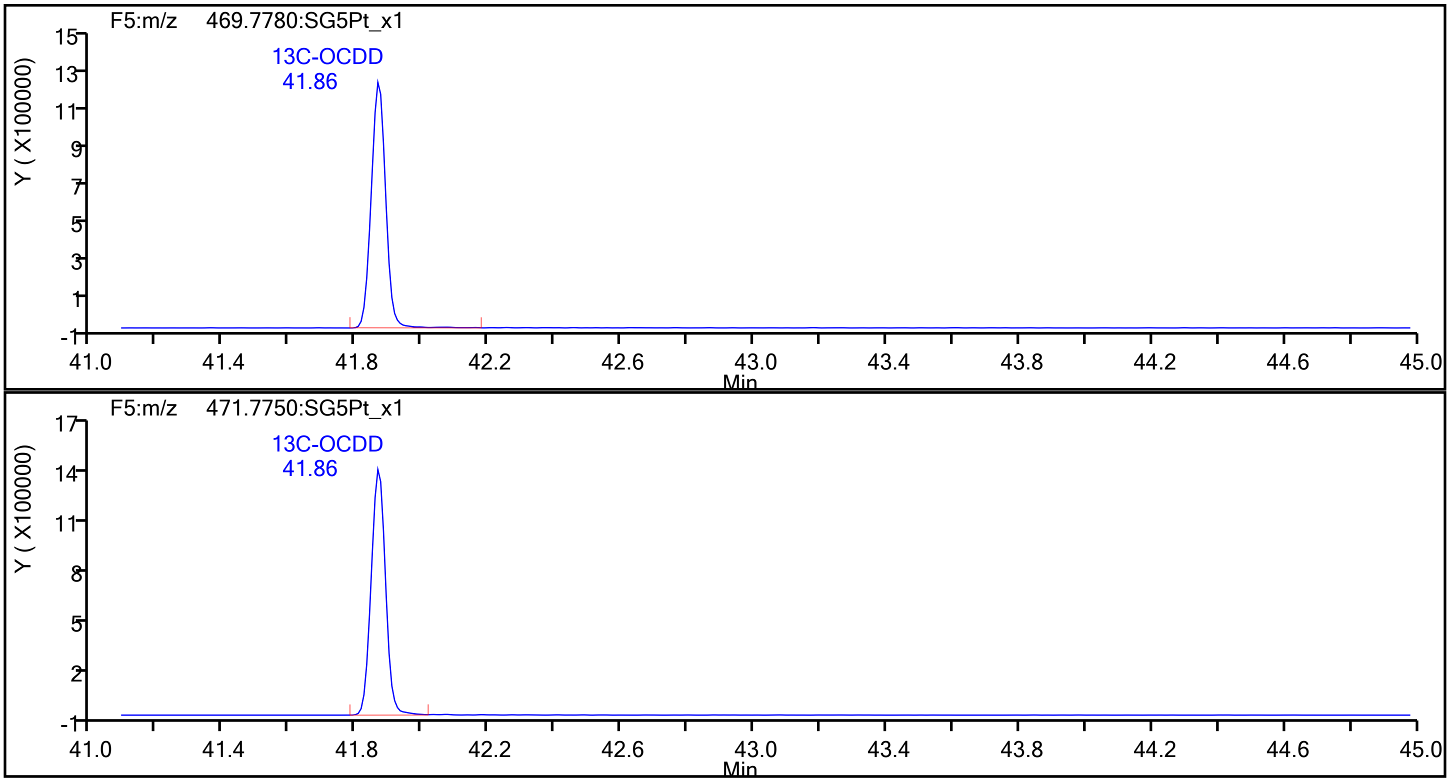

Report Date: 18-Oct-2021 13:41:40 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d		
Injection Date:	15-Oct-2021 13:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

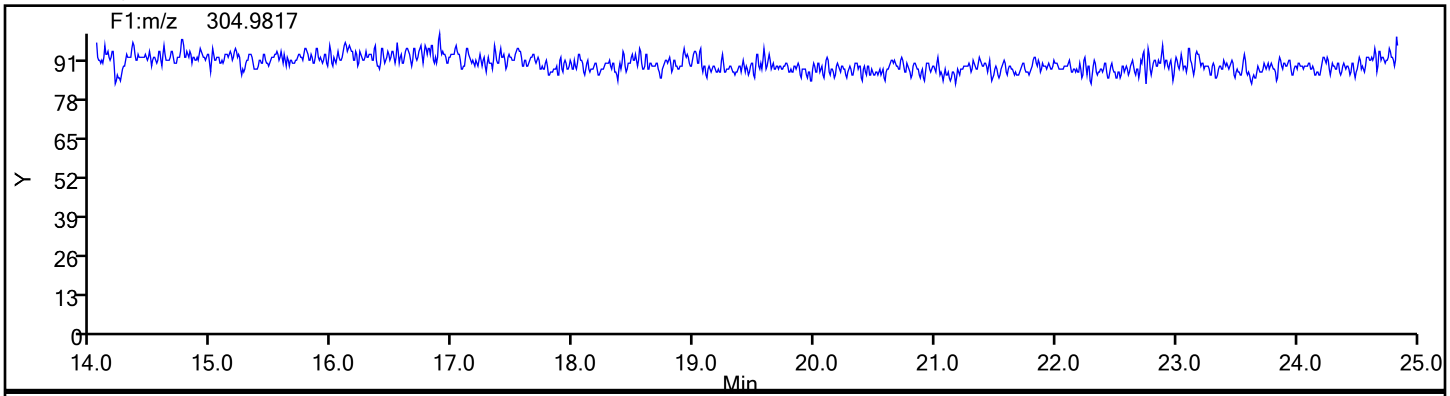

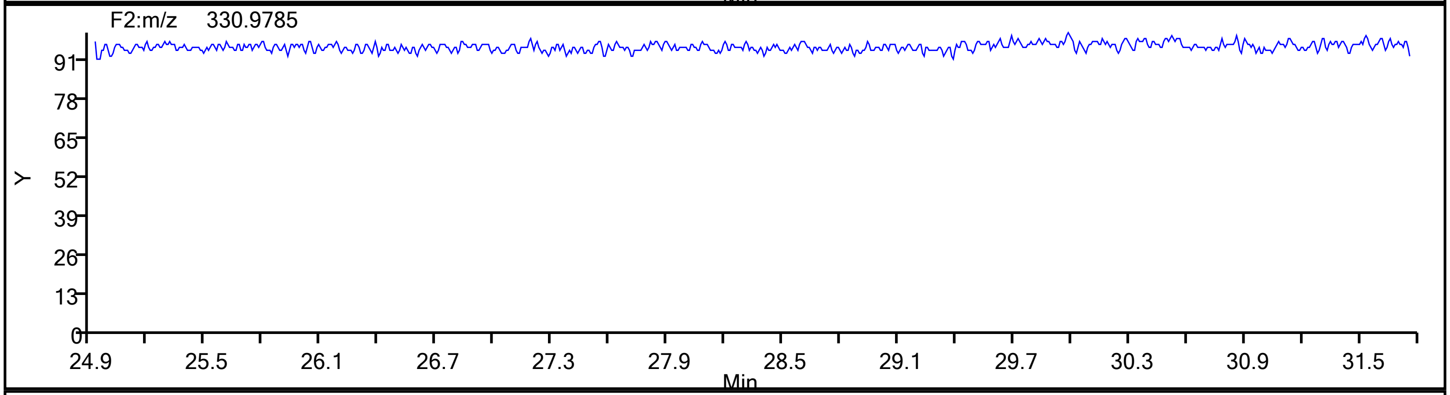

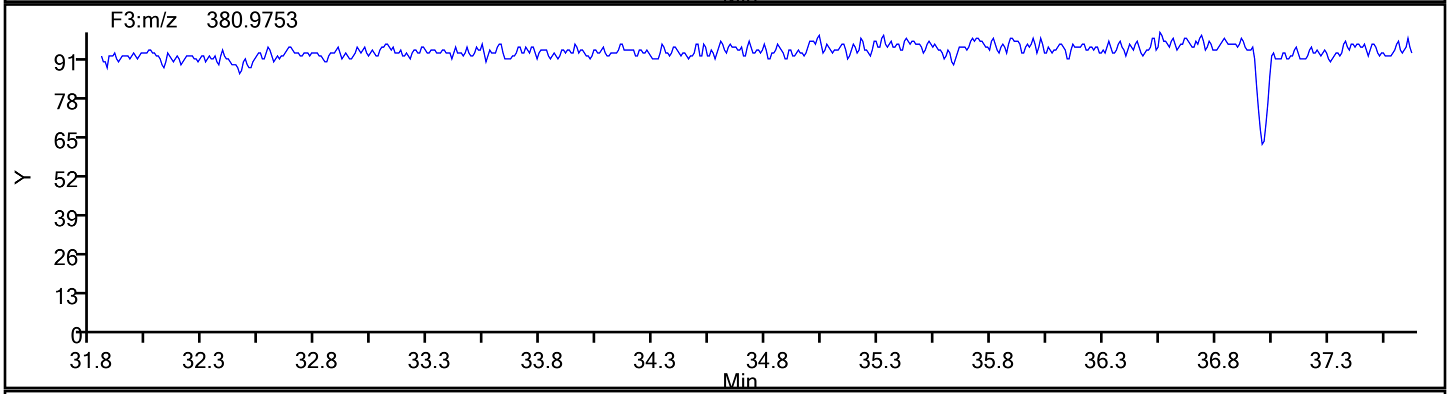

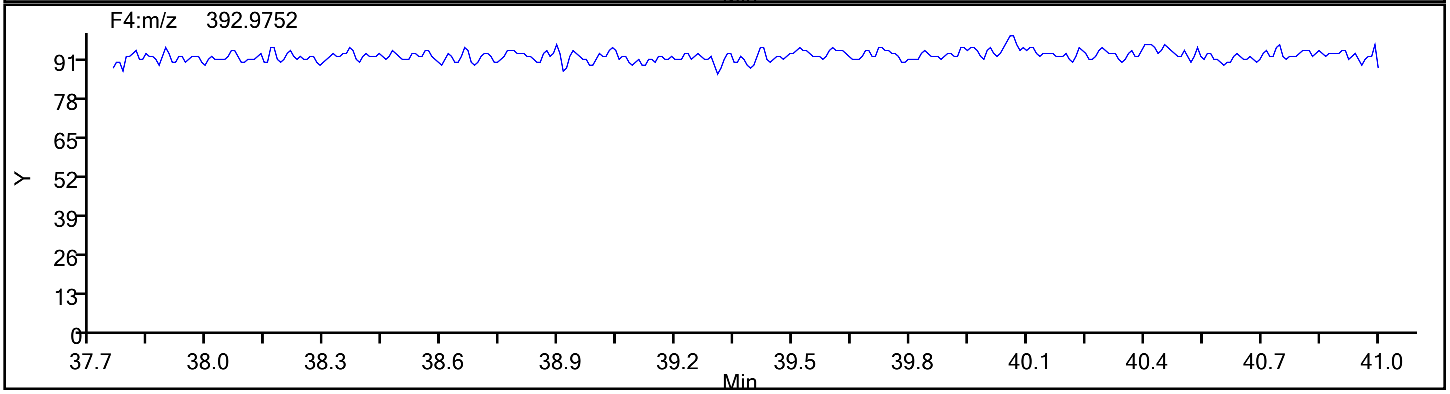

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_6.d		
Injection Date:	15-Oct-2021 13:27:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

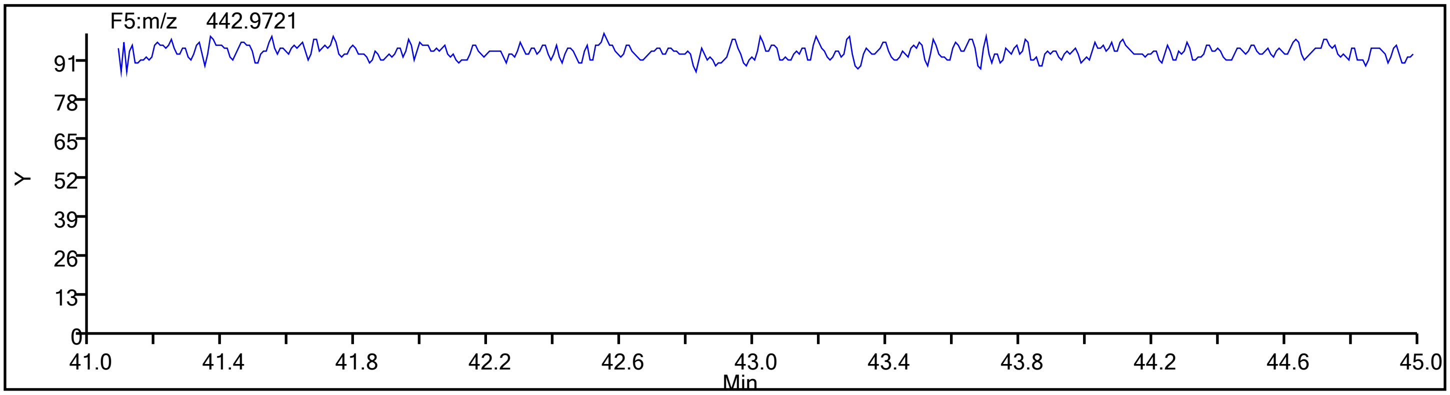

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 320-79918-1

SDG No.:

Client Sample ID:

Lab Sample ID: LCSD 320-532854/3-A

Matrix: Water

Lab File ID: 15oc21dfs1_7.d

Analysis Method: 1613B

Date Collected:

Extract. Method: 1613B

Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1000(mL)

Date Analyzed: 10/15/2021 14:15

Con. Extract Vol.: 20.0(uL)

Dilution Factor: 1

Injection Volume: 1(uL)

Level: (low/med) Low

% Moisture:

GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320

Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	190		10	1.1
51207-31-9	2,3,7,8-TCDF	191		10	0.58
40321-76-4	1,2,3,7,8-PeCDD	911		50	1.4
57117-41-6	1,2,3,7,8-PeCDF	909		50	3.3
57117-31-4	2,3,4,7,8-PeCDF	977		50	3.9
39227-28-6	1,2,3,4,7,8-HxCDD	943		50	1.8
57653-85-7	1,2,3,6,7,8-HxCDD	908		50	1.8
19408-74-3	1,2,3,7,8,9-HxCDD	934		50	1.7
70648-26-9	1,2,3,4,7,8-HxCDF	933		50	4.0
57117-44-9	1,2,3,6,7,8-HxCDF	893		50	3.6
72918-21-9	1,2,3,7,8,9-HxCDF	888		50	3.0
60851-34-5	2,3,4,6,7,8-HxCDF	892		50	2.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	861		50	2.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	872		50	3.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	906		50	3.8
3268-87-9	OCDD	1760		100	1.6
39001-02-0	OCDF	1750		100	1.5
41903-57-5	Total TCDD	191		10	1.1
30402-14-3	Total TCDF	191		10	0.58
36088-22-9	Total PeCDD	911		50	1.4
30402-15-4	Total PeCDF	1890		50	3.6
34465-46-8	Total HxCDD	2780		50	1.8
55684-94-1	Total HxCDF	3610		50	3.4
37871-00-4	Total HpCDD	861		50	2.4
38998-75-3	Total HpCDF	1780		50	3.7

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-532854/3-A

Matrix: Water Lab File ID: 15oc21dfs1_7.d

Analysis Method: 1613B Date Collected:

Extract. Method: 1613B Date Extracted: 10/11/2021 08:36

Sample wt/vol: 1000(mL) Date Analyzed: 10/15/2021 14:15

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 534320 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	77		20-175
89059-46-1	13C-2,3,7,8-TCDF	87		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	76		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	82		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	78		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	79		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	84		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	84		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	83		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	92		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	92		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	102		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	92		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	104		20-186
114423-97-1	13C-OCDD	112		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	92		31-191

FORM I 1613B

Report Date: 18-Oct-2021 13:41:40 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Lims ID: LCSD 320-532854/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 15-Oct-2021 14:15:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-532854/3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: stephensk Date: 15-Oct-2021 16:14:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	20.784	9936869	0.81	1.7E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	19.813	10579016	0.79	1.2244	87.0	87.0	0.2741	0.2741	86.95	
2,3,7,8-TCDF	19.839	1129507	0.79	1.1194	9.538	9.538	0.0290	0.0290	95.38	
A Non-2,3,7,8-sub-TCDF	19.372						0.0290	0.0290		
S Total TCDF					9.538	9.538	0.0290	0.0290		
D 13C-2,3,7,8-TCDD	21.153	6243300	0.80	0.8210	76.5	76.5	0.1815	0.1815	76.53	
2,3,7,8-TCDD	21.188	647943	0.77	1.0943	9.484	9.484	0.0554	0.0554	94.84	
$ 37Cl4-2,3,7,8-TCDD	21.179	3165559		0.8658	36.8	36.8	0.0273	0.0273	91.99	
A Non-2,3,7,8-sub-TCDD	20.213	3118	0.77	1.0943	0.0806	0.0456	0.0554	0.0554	0.00	RQ
S Total TCDD					9.565	9.530	0.0554	0.0554		RQ
D 13C-1,2,3,7,8-PeCDF	26.822	9035264	1.60	1.1026	82.5	82.5	0.3668	0.3668	82.46	
1,2,3,7,8-PeCDF	26.847	4485970	1.61	1.0920	45.5	45.5	0.1657	0.1657	90.94	
D 13C-2,3,4,7,8-PeCDF	28.313	10466981	1.58	1.3454	78.3	78.3	0.3006	0.3006	78.29	
2,3,4,7,8-PeCDF	28.338	4473584	1.58	0.8752	48.8	48.8	0.1931	0.1931	97.67	
A F1 PeCDFs	24.221	279	1.55	0.9836	0.0101	0.002909	0.008892	0.008892	0.00	RQ
A Non-2,3,7,8-sub-PeCDF	27.645	41949	1.36	0.9836	0.4374	0.4374	0.1777	0.4374	0.00	
S Total PeCDF					94.7	94.7	0.1794	0.1794		RQ
D 13C-1,2,3,7,8-PeCDD	29.122	5261095	1.60	0.6987	75.8	75.8	0.1519	0.1519	75.78	
1,2,3,7,8-PeCDD	29.148	2537610	1.59	1.0594	45.5	45.5	0.0721	0.0721	91.06	
A Non-2,3,7,8-sub-PeCDD	28.034						0.0721	0.0721		
S Total PeCDD					45.5	45.5	0.0721	0.0721		
D 13C-1,2,3,4,7,8-HxCDF	34.611	9842846	0.54	1.1295	84.0	84.0	0.2525	0.2525	84.01	
1,2,3,4,7,8-HxCDF	34.628	4471878	1.26	0.9737	46.7	46.7	0.2004	0.2004	93.32	
D 13C-1,2,3,6,7,8-HxCDF	34.780	9091990	0.53	1.0613	82.6	82.6	0.2687	0.2687	82.58	
1,2,3,6,7,8-HxCDF	34.796	4953509	1.27	1.2201	44.7	44.7	0.1794	0.1794	89.31	
D 13C-2,3,4,6,7,8-HxCDF	35.639	9094359	0.54	0.9480	92.5	92.5	0.3008	0.3008	92.48	
2,3,4,6,7,8-HxCDF	35.656	5041688	1.26	1.2435	44.6	44.6	0.1465	0.1465	89.16	
D 13C-1,2,3,7,8,9-HxCDF	36.550	8125319	0.54	0.8526	91.9	91.9	0.3344	0.3344	91.87	
1,2,3,7,8,9-HxCDF	36.566	4493386	1.28	1.2454	44.4	44.4	0.1506	0.1506	88.81	
A Non-2,3,7,8-sub-HxCDF	34.703						0.1666	0.1666		
S Total HxCDF					180.3	180.3	0.1692	0.1692		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	36.356	10373323	1.26	1.8E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	35.867	6829157	1.27	0.8312	79.2	79.2	0.1683	0.1683	79.20	
1,2,3,4,7,8-HxCDD	35.884	2926501	1.27	0.9085	47.2	47.2	0.0901	0.0901	94.34	
D 13C-1,2,3,6,7,8-HxCDD	35.985	6578710	1.24	0.7550	84.0	84.0	0.1853	0.1853	84.00	
1,2,3,6,7,8-HxCDD	36.002	3069900	1.27	1.0279	45.4	45.4	0.0886	0.0886	90.80	
1,2,3,7,8,9-HxCDD	36.373	3213237	1.24	1.0268	46.7	46.7	0.0840	0.0840	93.36	
A Non-2,3,7,8-sub-HxCDD	35.108						0.0873	0.0873		
S Total HxCDD					139.2	139.2	0.0876	0.0876		
D 13C-1,2,3,4,6,7,8-HpCDF	38.424	5880379	0.46	0.6190	91.6	91.6	0.2956	0.2956	91.57	
1,2,3,4,6,7,8-HpCDF	38.432	4062620	1.05	1.5851	43.6	43.6	0.1830	0.1830	87.17	
D 13C-1,2,3,4,7,8,9-HpCDF	39.696	7034840	0.46	0.6516	104.1	104.1	0.2809	0.2809	104	
1,2,3,4,7,8,9-HpCDF	39.705	3695309	1.05	1.1597	45.3	45.3	0.1902	0.1902	90.59	
A Non-2,3,7,8-sub-HpCDF	39.072						0.1826	0.1826		
S Total HpCDF					88.9	88.9	0.1866	0.1866		
D 13C-1,2,3,4,6,7,8-HpCDD	39.393	5690843	1.05	0.5362	102.3	102.3	0.3435	0.3435	102	
1,2,3,4,6,7,8-HpCDD	39.402	2651986	1.04	1.0819	43.1	43.1	0.1198	0.1198	86.14	
A Non-2,3,7,8-sub-HpCDD	39.202						0.1198	0.1198		
S Total HpCDD					43.1	43.1	0.1198	0.1198		
D 13C-OCDD	41.873	8833621	0.89	0.3802	224.0	224.0	0.2599	0.2599	112	
OCDF	41.965	5849007	0.93	1.5094	87.7	87.7	0.0746	0.0746	87.73	
OCDD	41.881	4420407	0.90	1.1344	88.2	88.2	0.0790	0.0790	88.22	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 18-Oct-2021 13:41:40 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Lims ID: LCSD 320-532854/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 15-Oct-2021 14:15:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-532854/3-a
Operator ID: Xcalibur_System Instrument ID: DFS 1

Method: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\Dioxin_DFS1.m
Limit Group: HR - 1613B - ICAL
Last Update: 18-Oct-2021 13:41:26 Calib Date: 24-Sep-2021 17:07:00
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\DFS1\20210924-127621.b\24se21dfs1_9.d

Column 1 : DB-5 (0.32 mm) Det: F1(14.80 :26.00)
Process Host: CTX1621

First Level Reviewer: stephensk Date: 15-Oct-2021 16:14:54

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	20.784	20.777	0		4458373	661131	570	1425	1160		
333.9338	20.784	20.777	0		5478496	839044	324	810	2590	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	19.813	19.806	0	0.953	4656680	745488	1414	3535	527		
317.9389	19.813	19.806	0	0.953	5922336	917300	600	1500	1529	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	19.839	19.832	0	1.001	498672	78069	61	152	1280		
305.8987	19.839	19.832	0	1.001	630835	96439	155	387	622	0.79(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	19.372						61	152			
305.8987	19.372						155	387			
13C-2,3,7,8-TCDD											
331.9368	21.153	21.138	1	1.018	2784239	398359	570	1425	699		
333.9338	21.153	21.138	1	1.018	3459061	492058	324	810	1519	0.80(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	21.188	21.163	1	1.002	282110	41158	164	410	251		
321.8936	21.171	21.163	0	1.001	365833	51073	52	130	982	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	21.179	21.163	1	1.019	3165559	451659	142	355	3181		
A Non-2,3,7,8-sub-TCDD											RQ
319.8965	21.522	20.213	78	1.017	3745	621	164	410	4		
	Empc Correction				1356	389	164	410	2		
321.8936	21.565	20.213	81	1.019	1762	506	52	130	10	2.13(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	26.822	26.799	1	1.291	5556717	941023	1492	3730	631		
353.8970	26.822	26.799	1	1.291	3478547	605022	935	2337	647	1.60(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	26.847	26.833	1	1.001	2768806	464238	643	1607	722		
341.8567	26.839	26.833	0	1.001	1717164	294524	476	1190	619	1.61(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	28.313	28.300	1	1.362	6416405	1005227	1492	3730	674		
353.8970	28.313	28.300	1	1.362	4050576	650092	935	2337	695	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	28.338	28.325	1	1.001	2738638	446260	643	1607	694		
341.8567	28.338	28.325	1	1.001	1734946	279577	476	1190	587	1.58(1.32-1.78)	
A F1 PeCDFs											RQ
339.8597	24.203	24.221	-1	0.902	170	58	1	2	58		
341.8567	24.228	24.221	0	0.903	803	380	55	137	7	0.21(1.32-1.78)	
	Empc Correction				109	37	55	137	1		
A Non-2,3,7,8-sub-PeCDF											
339.8597	27.429	27.645	-13	1.023	24138	3983	643	1607	6		
341.8567	27.429	27.645	-13	1.023	17811	2866	476	1190	6	1.36(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	29.122	29.108	1	1.401	3239020	487000	371	927	1313		
369.8919	29.131	29.108	1	1.402	2022075	324734	266	665	1221	1.60(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	29.148	29.133	1	1.001	1558349	236371	174	435	1358		
357.8516	29.148	29.133	1	1.001	979261	151347	74	185	2045	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	28.034						174	435			
357.8516	28.034						74	185			
13C-1,2,3,4,7,8-HxCDF											
383.8639	34.611	34.597	1	0.952	3467282	763232	1120	2800	681		
385.8610	34.611	34.597	1	0.952	6375564	1392966	2066	5165	674	0.54(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	34.628	34.613	1	1.000	2496889	550777	965	2412	571		
375.8178	34.628	34.613	1	1.000	1974989	436692	718	1795	608	1.26(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	34.780	34.773	0	0.957	3168700	676931	1120	2800	604		
385.8610	34.780	34.773	0	0.957	5923290	1245631	2066	5165	603	0.53(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	34.796	34.790	0	1.000	2767382	582542	965	2412	604		
375.8178	34.796	34.790	0	1.000	2186127	462750	718	1795	644	1.27(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	35.639	35.625	1	0.980	3186078	807502	1120	2800	721		
385.8610	35.639	35.625	1	0.980	5908281	1501298	2066	5165	727	0.54(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	35.656	35.641	1	1.000	2811007	710029	965	2412	736		
375.8178	35.656	35.641	1	1.000	2230681	570244	718	1795	794	1.26(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	36.550	36.551	0	1.005	2851115	790640	1120	2800	706		
385.8610	36.550	36.551	0	1.005	5274204	1451695	2066	5165	703	0.54(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	36.566	36.560	0	1.000	2520827	707595	965	2412	733		
375.8178	36.566	36.560	0	1.000	1972559	546005	718	1795	760	1.28(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	34.703						965	2412			
375.8178	34.703						718	1795			
13C-1,2,3,7,8,9-HxCDD											
401.8559	36.356	36.358	0		5787374	1563208	880	2200	1776		
403.8529	36.356	36.358	0		4585949	1229994	683	1707	1801	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	35.867	35.861	0	0.987	3824113	1045797	880	2200	1188		
403.8529	35.867	35.861	0	0.987	3005044	823243	683	1707	1205	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8158	35.884	35.869	1	1.000	1635832	438914	357	892	1229		
391.8127	35.884	35.869	1	1.000	1290669	343444	255	637	1347	1.27(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	35.985	35.979	0	0.990	3647729	928072	880	2200	1055		
403.8529	35.985	35.979	0	0.990	2930981	751722	683	1707	1101	1.24(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8158	36.002	35.995	0	1.000	1715826	454324	357	892	1273		
391.8127	36.002	35.995	0	1.000	1354074	358518	255	637	1406	1.27(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8158	36.373	36.366	0	1.014	1780901	478521	357	892	1340		
391.8127	36.373	36.366	0	1.014	1432336	382873	255	637	1501	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8158	35.108						357	892			
391.8127	35.108						255	637			
13C-1,2,3,4,6,7,8-HpCDF											
417.8250	38.424	38.425	0	1.057	1851726	605649	852	2130	711		
419.8220	38.424	38.425	0	1.057	4028653	1313859	1193	2982	1101	0.46(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7817	38.432	38.434	0	1.000	2085306	671737	1222	3055	550		
409.7788	38.432	38.434	0	1.000	1977314	649808	1005	2512	647	1.05(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8250	39.696	39.698	0	1.092	2217832	797059	852	2130	936		
419.8220	39.696	39.698	0	1.092	4817008	1726934	1193	2982	1448	0.46(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7817	39.705	39.706	0	1.000	1891122	677412	1222	3055	554		
409.7788	39.705	39.706	0	1.000	1804187	643407	1005	2512	640	1.05(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7817	39.072						1222	3055			
409.7788	39.072						1005	2512			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	39.393	39.394	0	1.084	2916577	1032442	1115	2787	926		
437.8140	39.393	39.394	0	1.084	2774266	988855	943	2357	1049	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7767	39.402	39.403	0	1.000	1353754	479113	560	1400	856		
425.7737	39.402	39.403	0	1.000	1298232	464393	488	1220	952	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7767	39.202						560	1400			
425.7737	39.202						488	1220			
13C-OCDD											
469.7780	41.873	41.875	0	1.152	4168909	1390324	603	1507	2306		
471.7750	41.873	41.875	0	1.152	4664712	1557163	501	1252	3108	0.89(0.76-1.02)	
OCDF											
441.7428	41.965	41.959	0	1.002	2811302	918765	281	702	3270		
443.7399	41.957	41.959	0	1.002	3037705	987192	383	957	2578	0.93(0.76-1.02)	
OCDD											
457.7377	41.881	41.883	0	1.000	2091101	702971	252	630	2790		
459.7348	41.881	41.883	0	1.000	2329306	782404	276	690	2835	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Lims ID:	LCSD 320-532854/3-A		
Client ID:			
Inject. Date:	15-Oct-2021 14:15:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	6

Non-2,3,7,8-sub-TCDD, RT: 20.213

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.094	D 13C-2,3,7,8-TCDD	100.000	6243300	890417

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.094		100.000	6243300	890417

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
21.522	3745	621	1762	506	0.0806	2.13	RQ
21.522	1356	389	1762	506	0.0456		Empc Correction
Signal Totals:							
	1356	389	1762	506			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	5507	1127				2.13	RQ
	3118	895					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0806 = (5507 * 100.000) / (6243300 * 1.094)
Empc Amount: 0.0456 = (3118 * 100.000) / (6243300 * 1.094)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Lims ID: LCSD 320-532854/3-A
Client ID:
Inject. Date: 15-Oct-2021 14:15:00
Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: DFS 1
Operator: Xcalibur_System
Lims Batch ID: 534320
Lims Sample ID: 6

F1 PeCDFs, RT: 24.221

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	9035264	1546045
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	10466981	1655319

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	9751122	1600682

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
24.203	170	58	803	380	0.0101	0.21	RQ
24.203	170	58	109	37	0.002909		Empc Correction
Signal Totals:							
	170	58	109	37			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	973	438				0.21	RQ
	279	95					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0101 = (973 * 100.000) / (9751122 * 0.984)
Empc Amount: 0.002909 = (279 * 100.000) / (9751122 * 0.984)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Lims ID:	LCSD 320-532854/3-A		
Client ID:			
Inject. Date:	15-Oct-2021 14:15:00	Dil. Factor:	1.0000
Sample Type:	LCSD, LCS Duplicate		
Instrument ID:	DFS 1	Operator:	Xcalibur_System
Lims Batch ID:	534320	Lims Sample ID:	6

Non-2,3,7,8-sub-PeCDF, RT: 27.645

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	1.092	D 13C-1,2,3,7,8-PeCDF	100.000	9035264	1546045
2,3,4,7,8-PeCDF	0.875	D 13C-2,3,4,7,8-PeCDF	100.000	10466981	1655319

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.984		100.000	9751122	1600682

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
27.429	24138	3983	17811	2866	0.4374	1.36	
Signal Totals:							
	24138	3983	17811	2866			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41949	6849				1.36	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.4374 = (41949 * 100.000) / (9751122 * 0.984)

Report Date: 18-Oct-2021 13:41:40 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

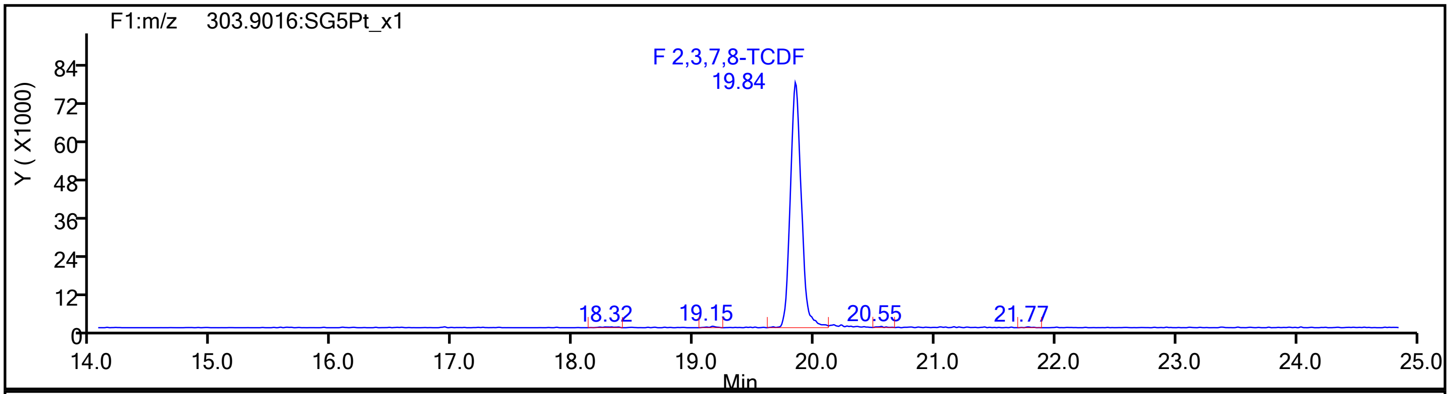

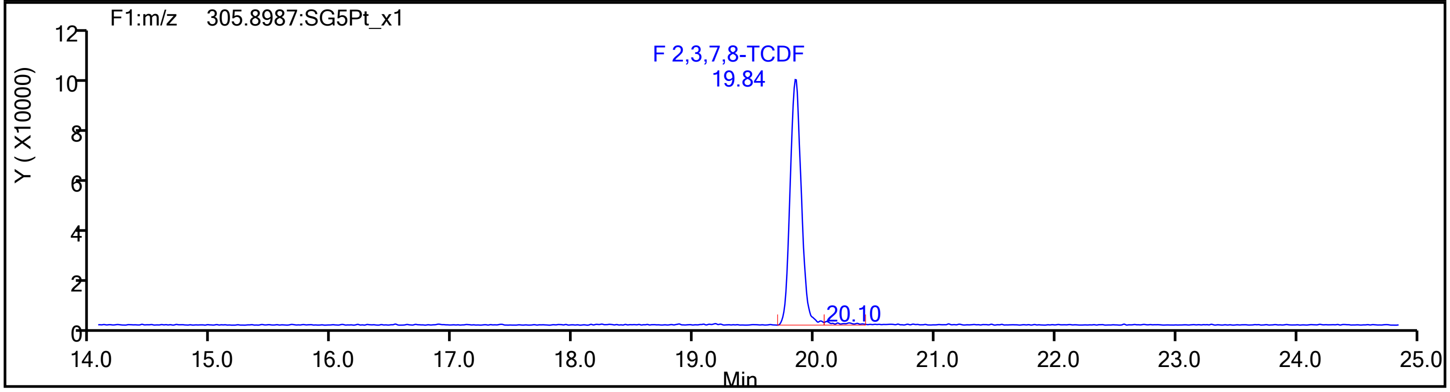

TCDF Standards

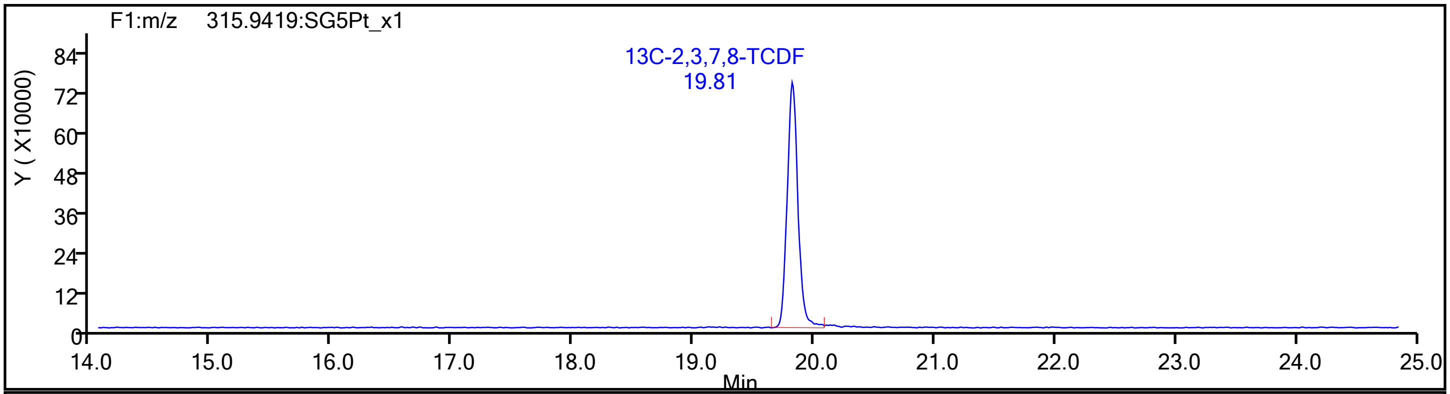

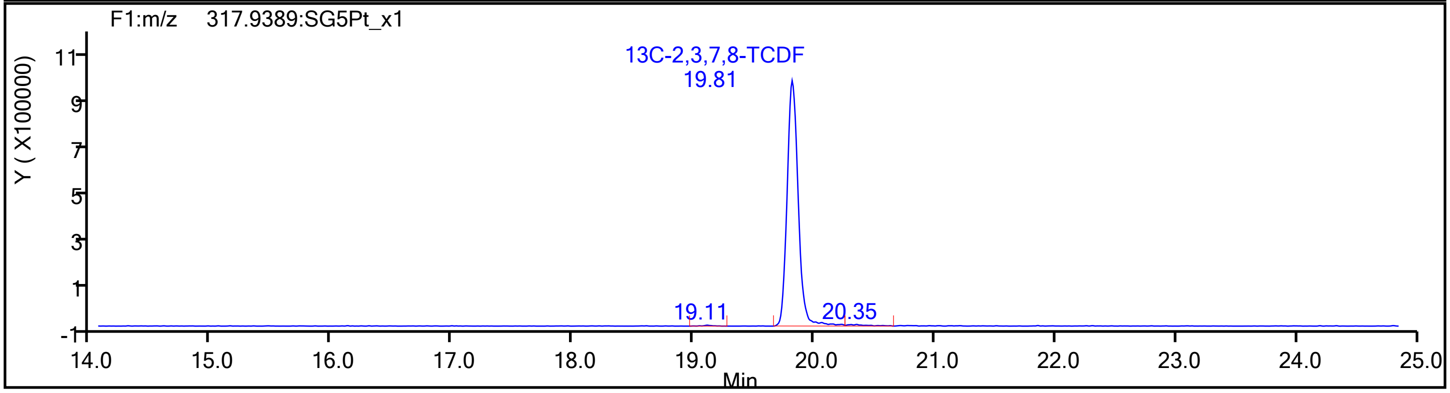

Report Date: 18-Oct-2021 13:41:40 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

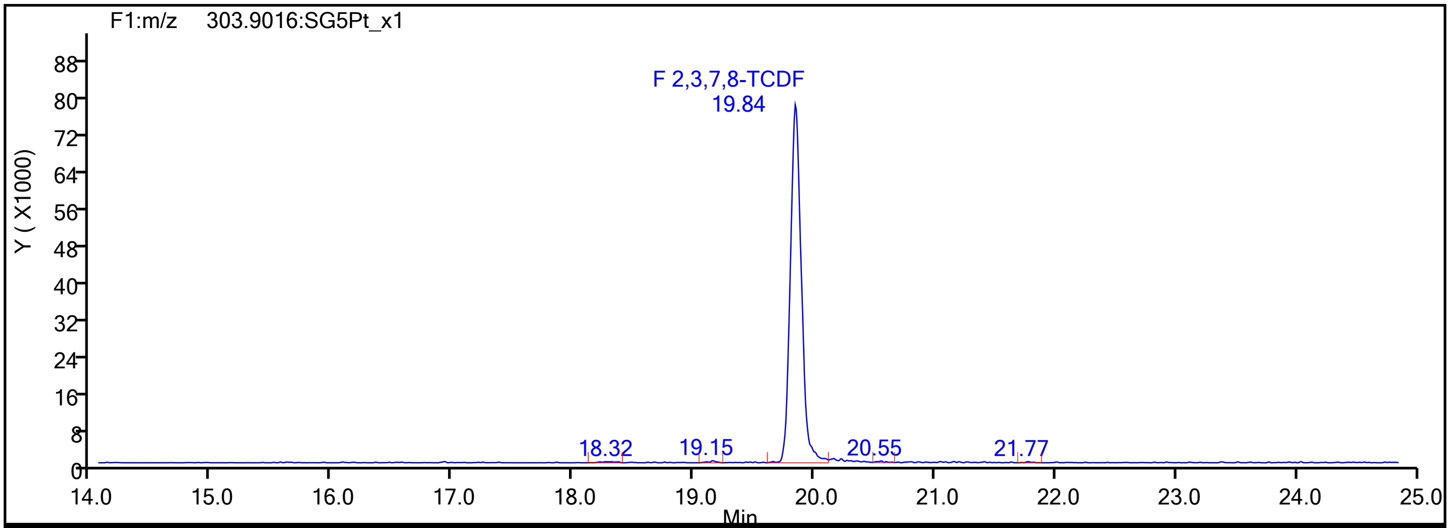

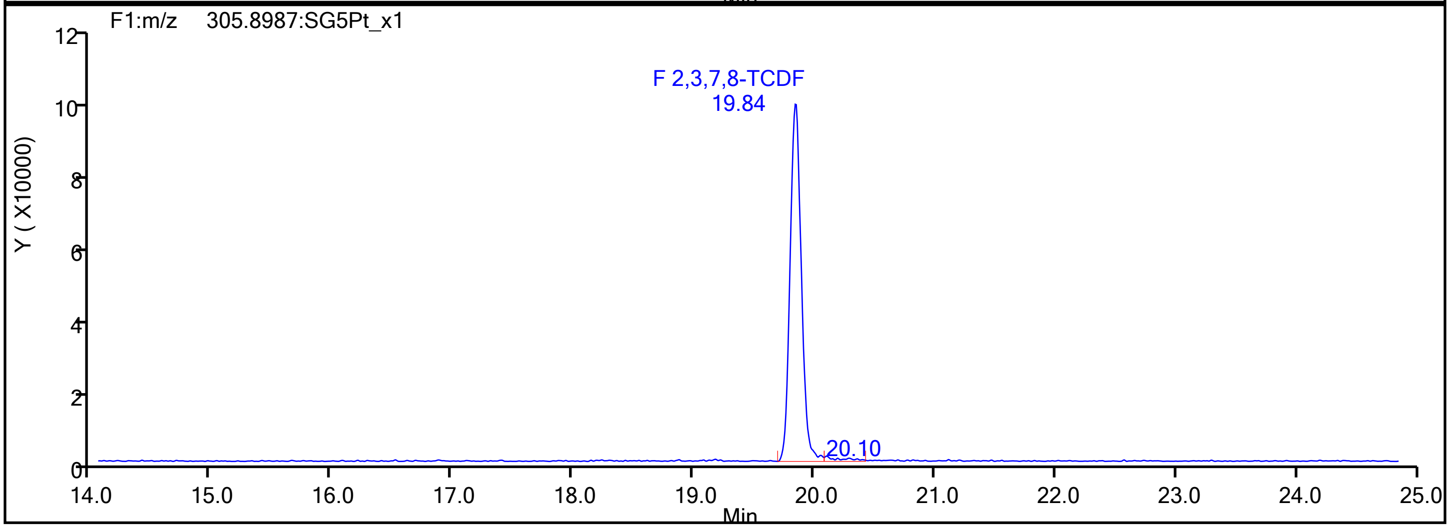

TCDF Interference Mass

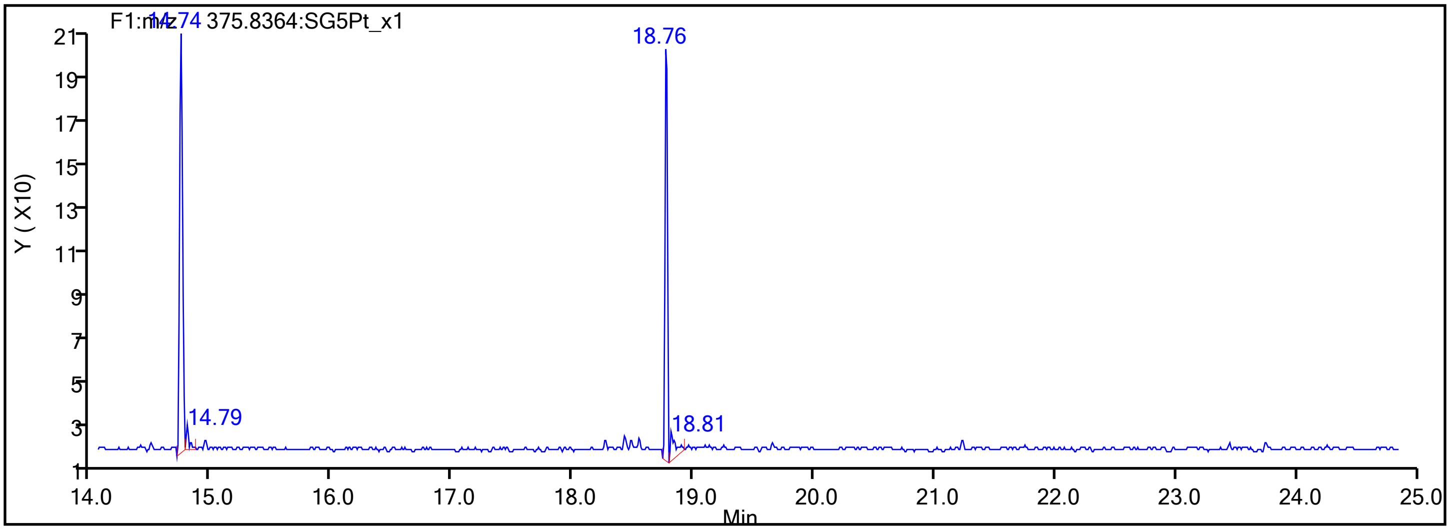

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

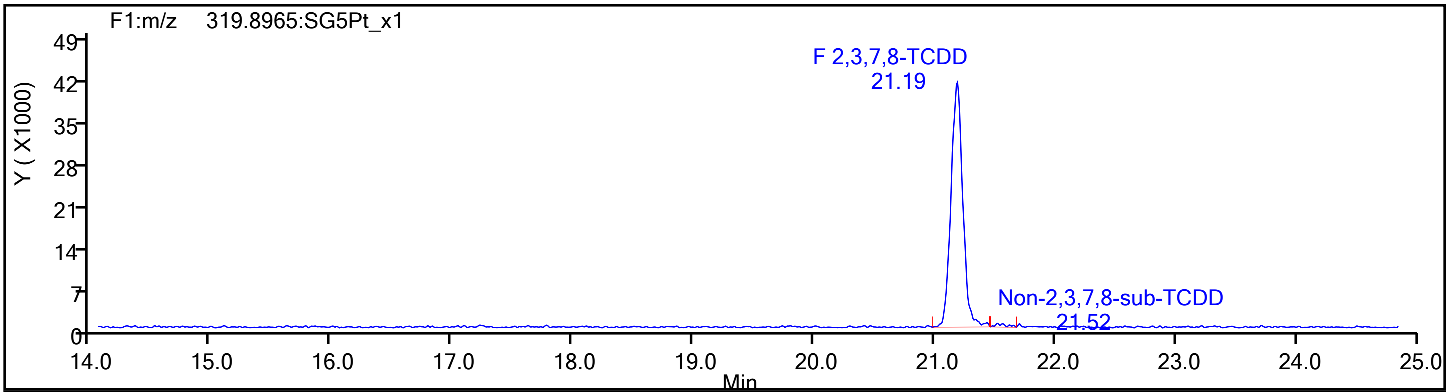

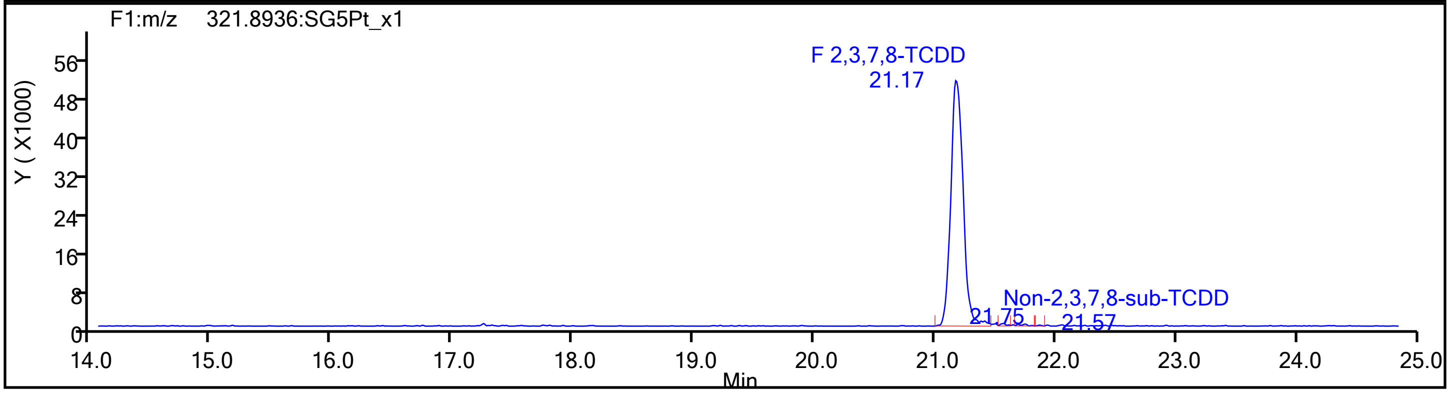

TCDD Standards

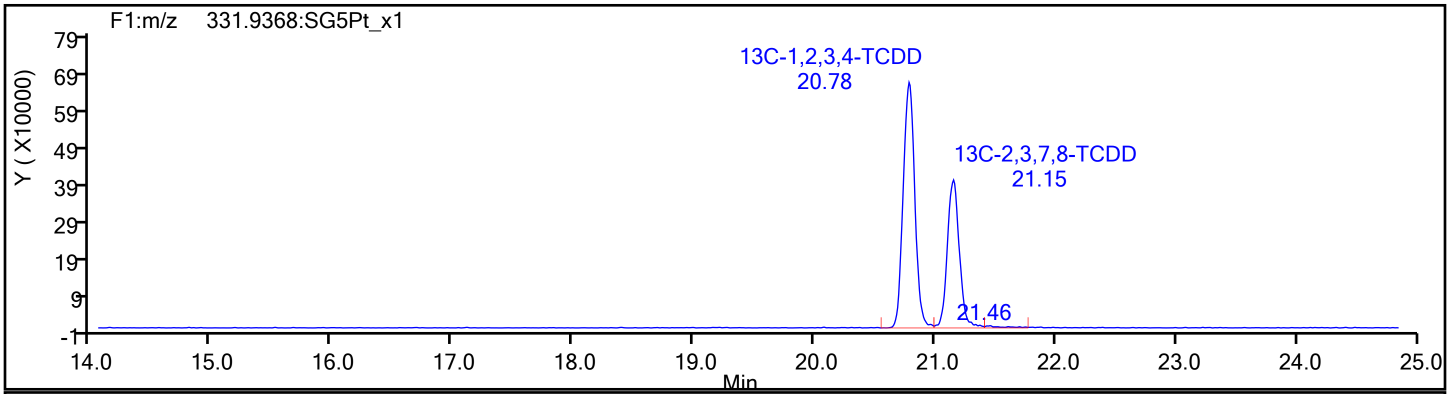

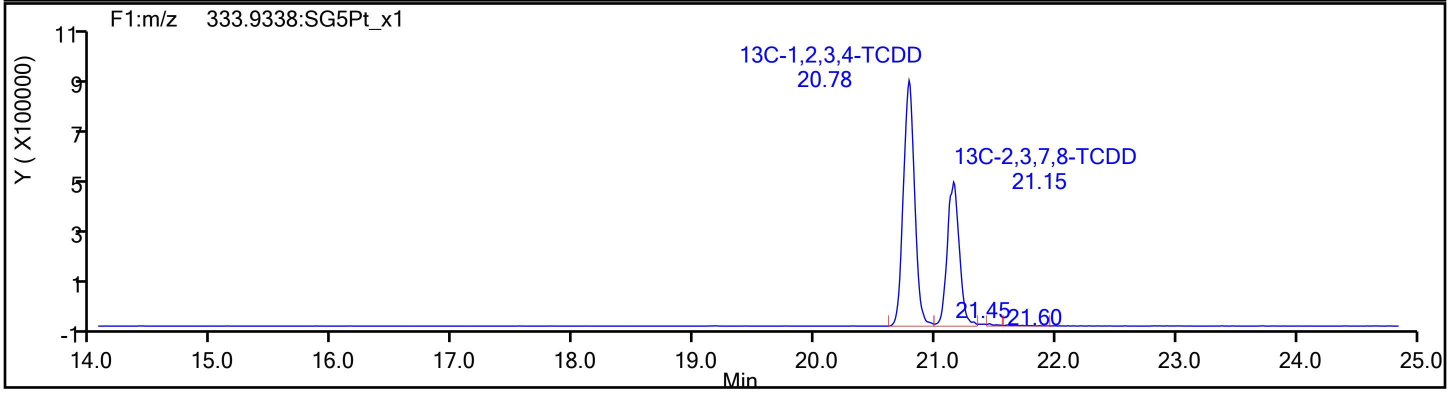

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Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Injection Date: 15-Oct-2021 14:15:00 Injection Vol: 1.0 ul
Instrument ID: DFS 1 Operator ID: Xcalibur_System
Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

37Cl4-TCDD

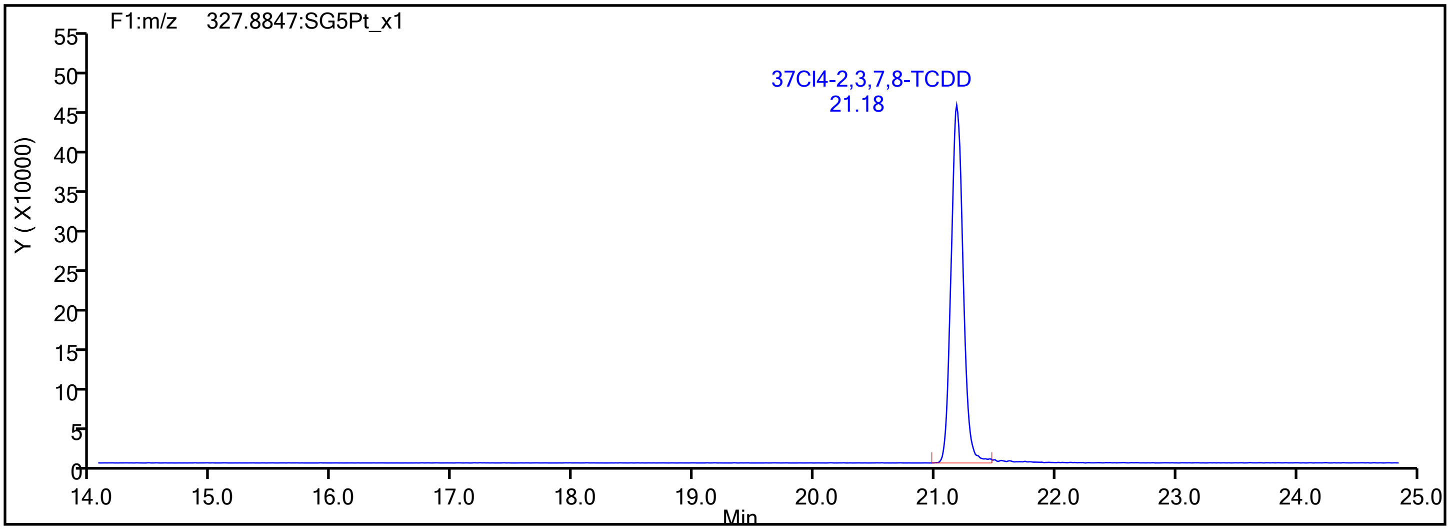

37Cl4-TCDD Standards

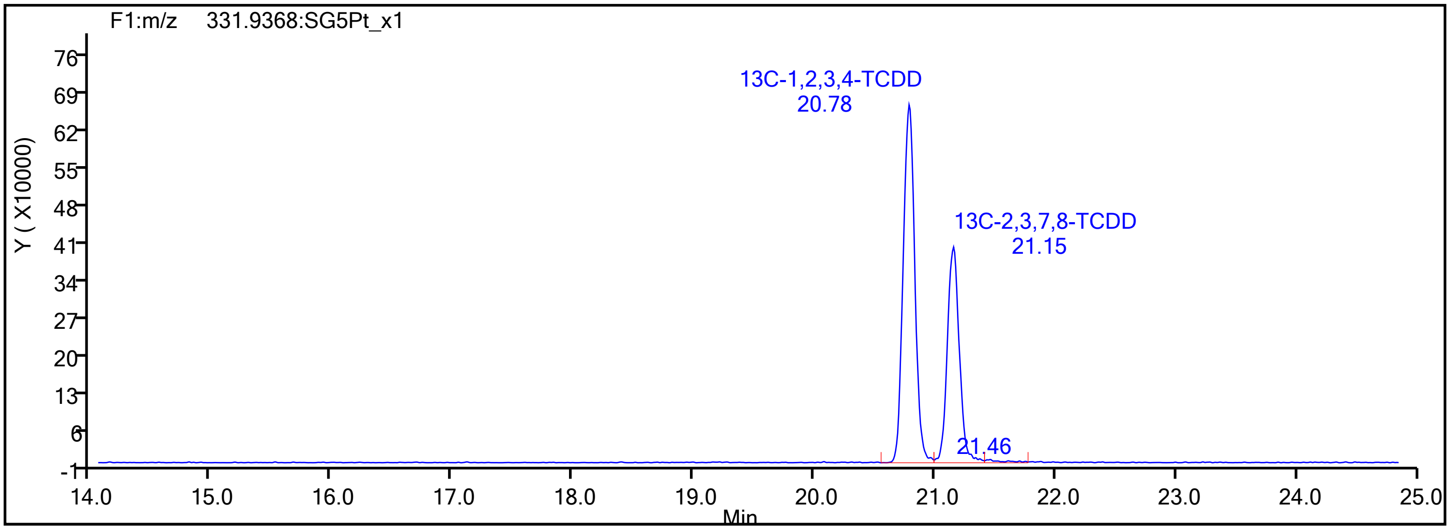

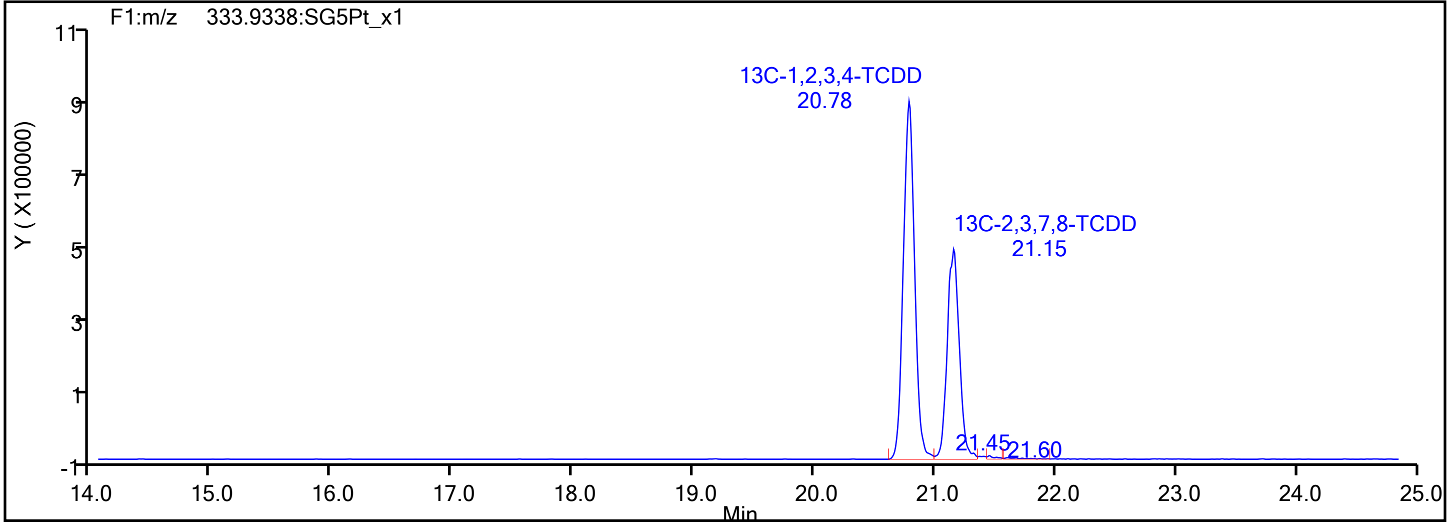

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Injection Date: 15-Oct-2021 14:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

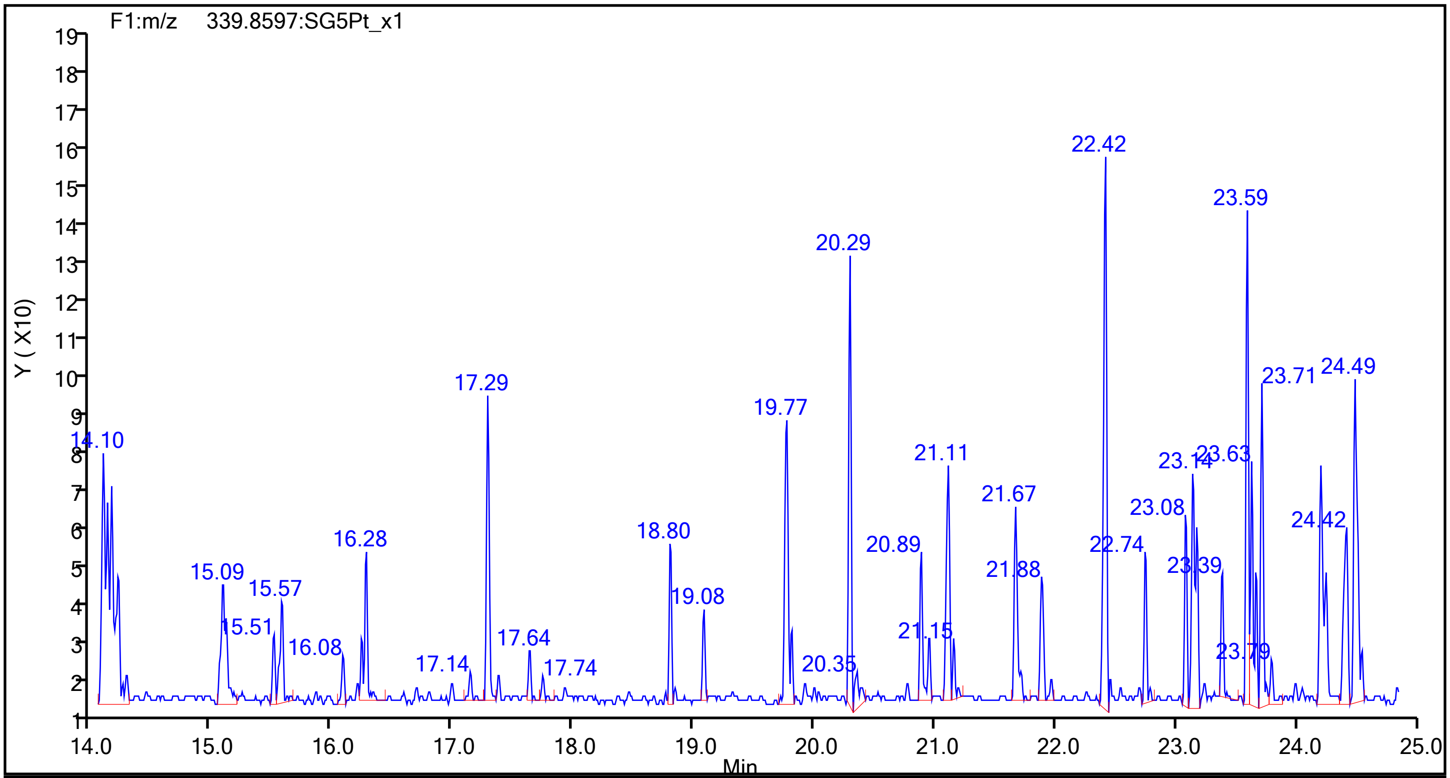

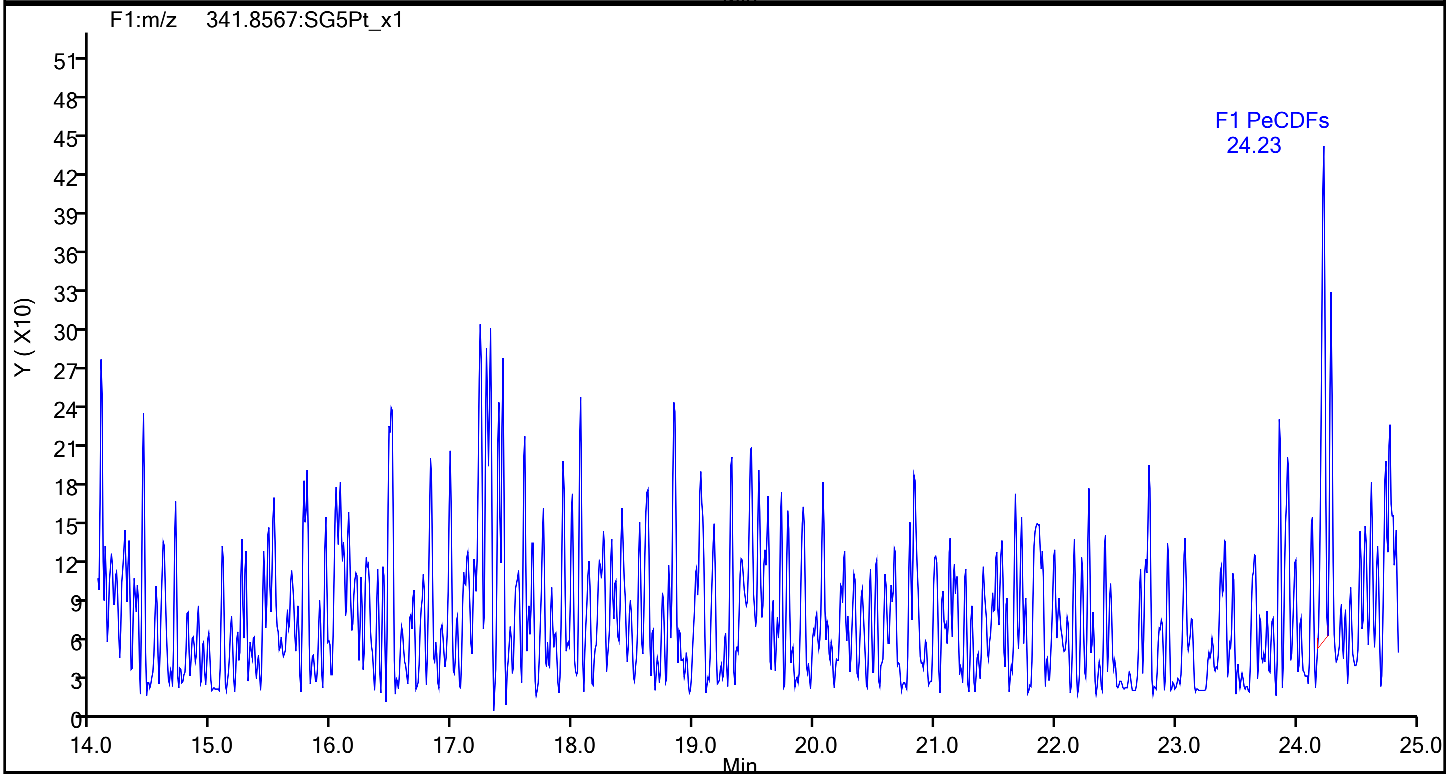

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d

Injection Date: 15-Oct-2021 14:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

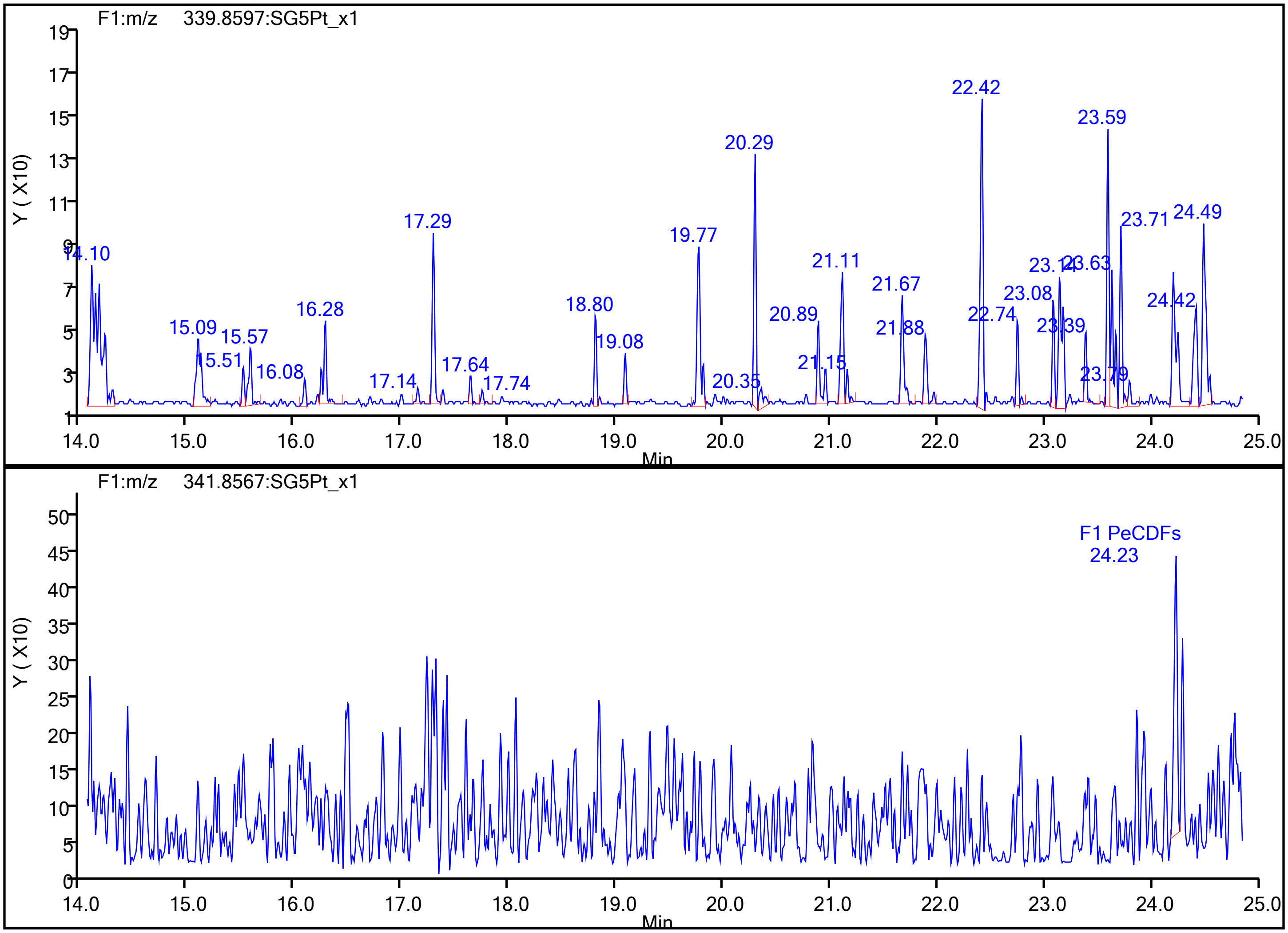

F1 PeCDFs Interference Mass

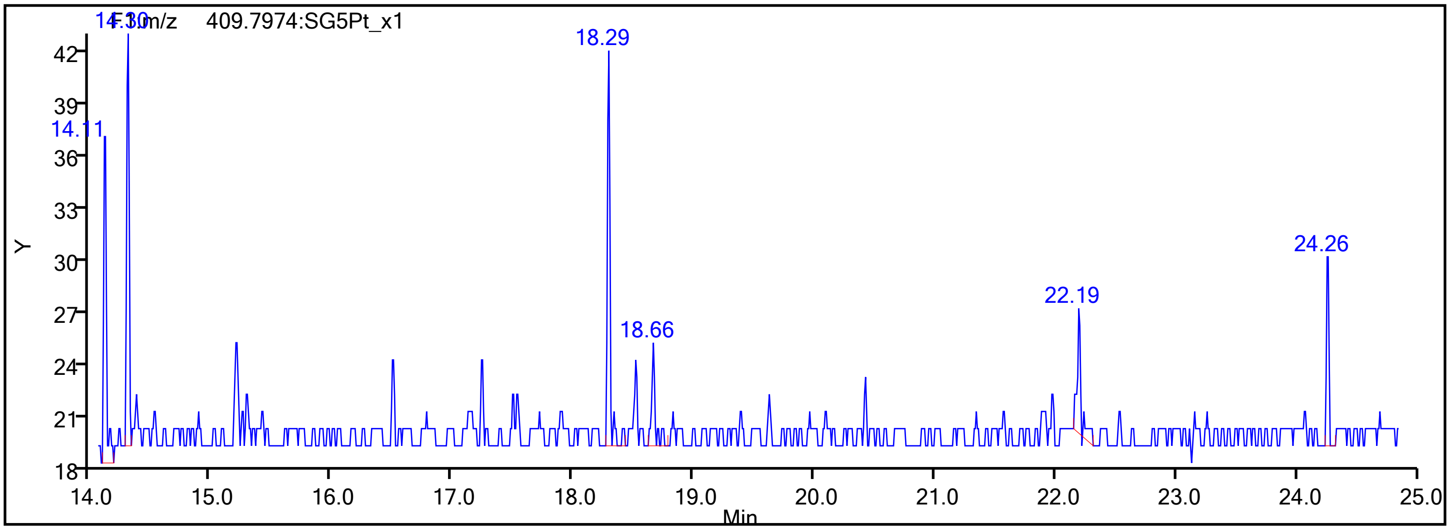

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

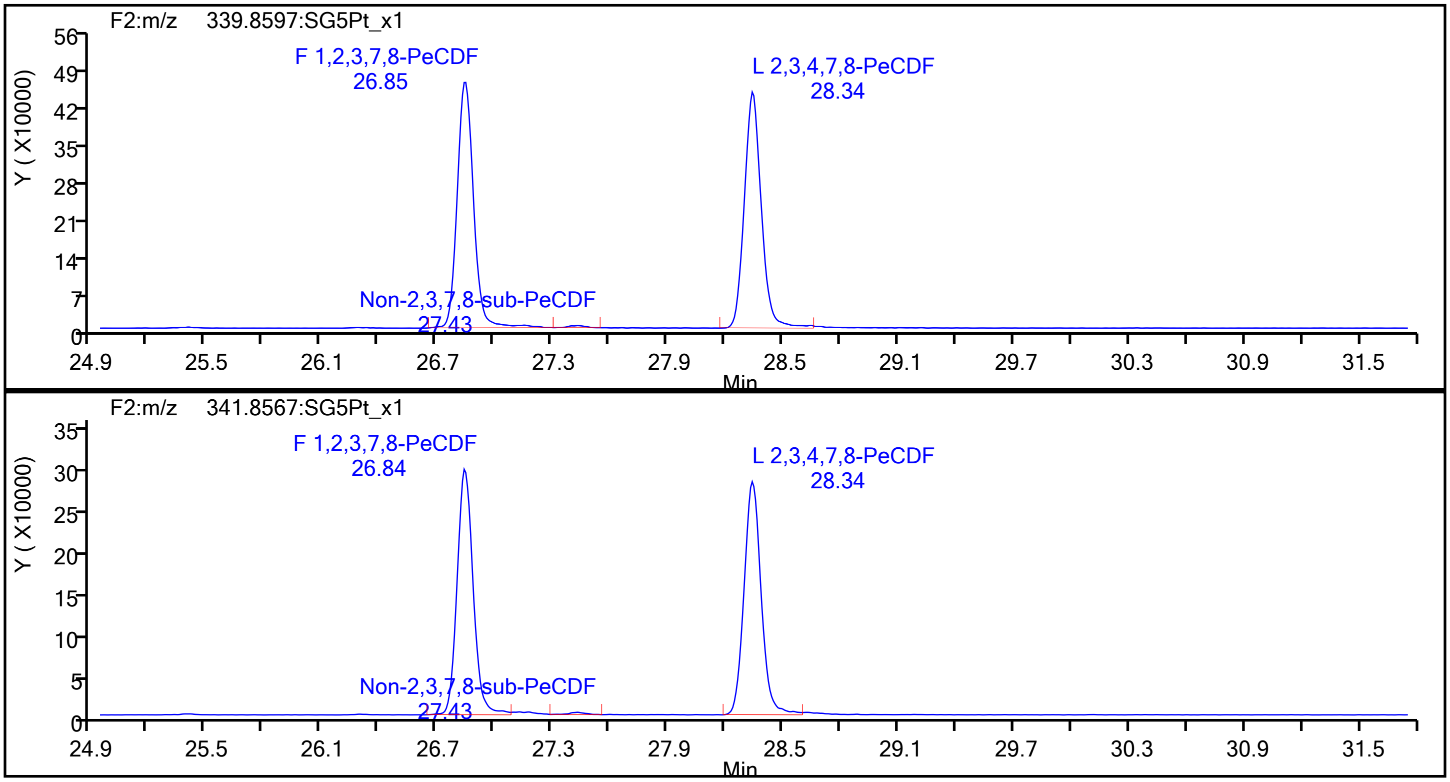

PeCDF Standards

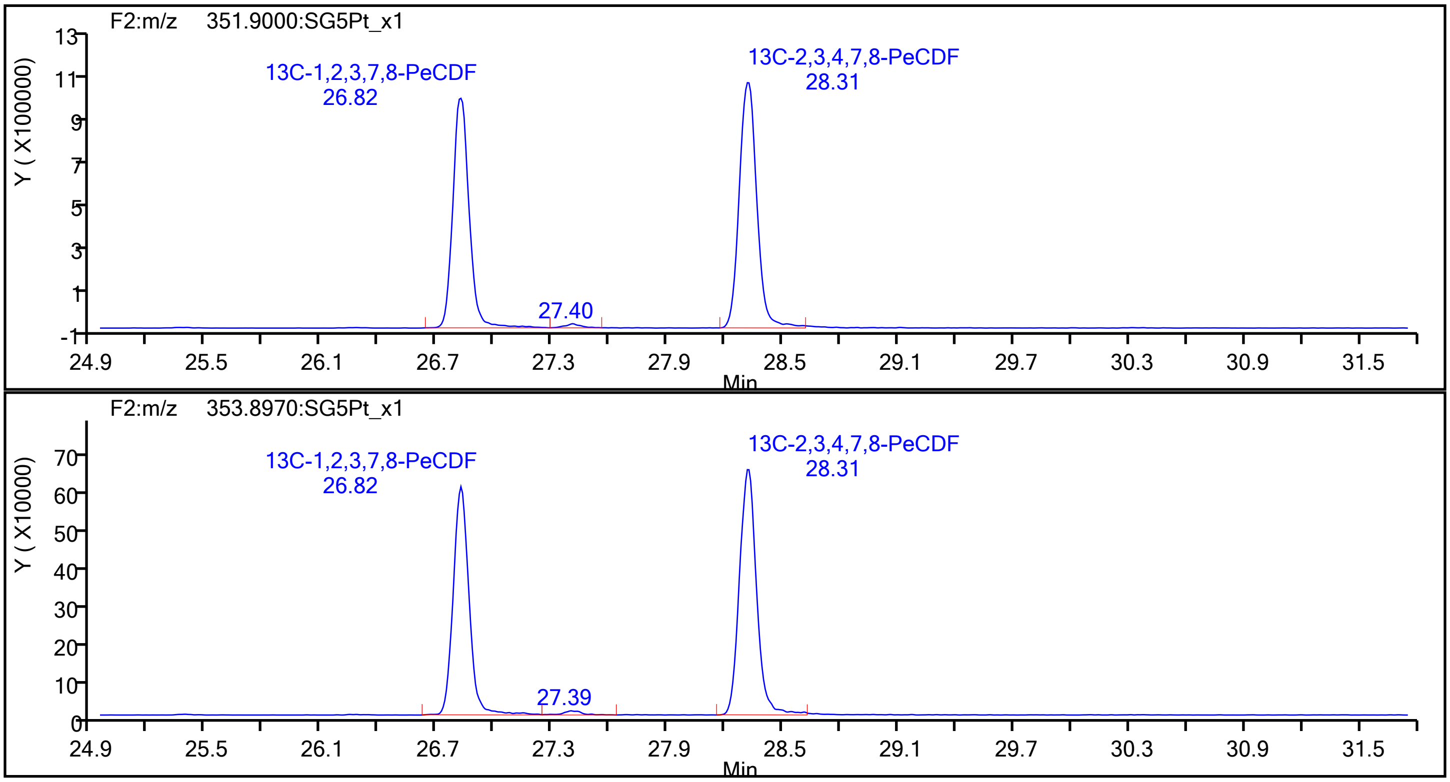

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d

Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

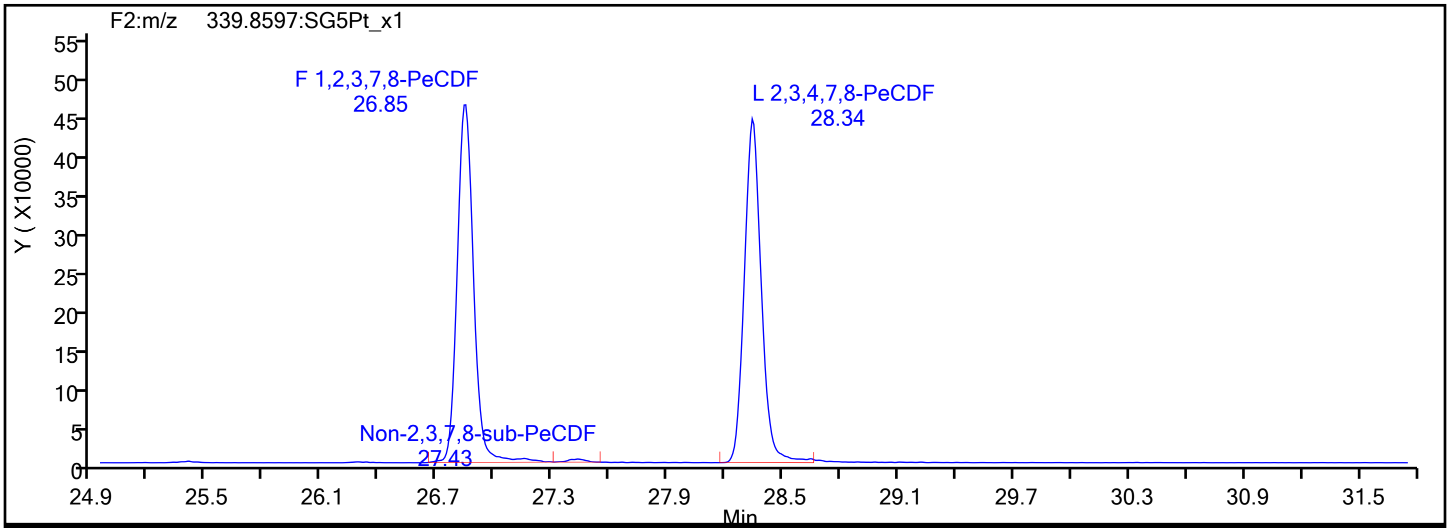

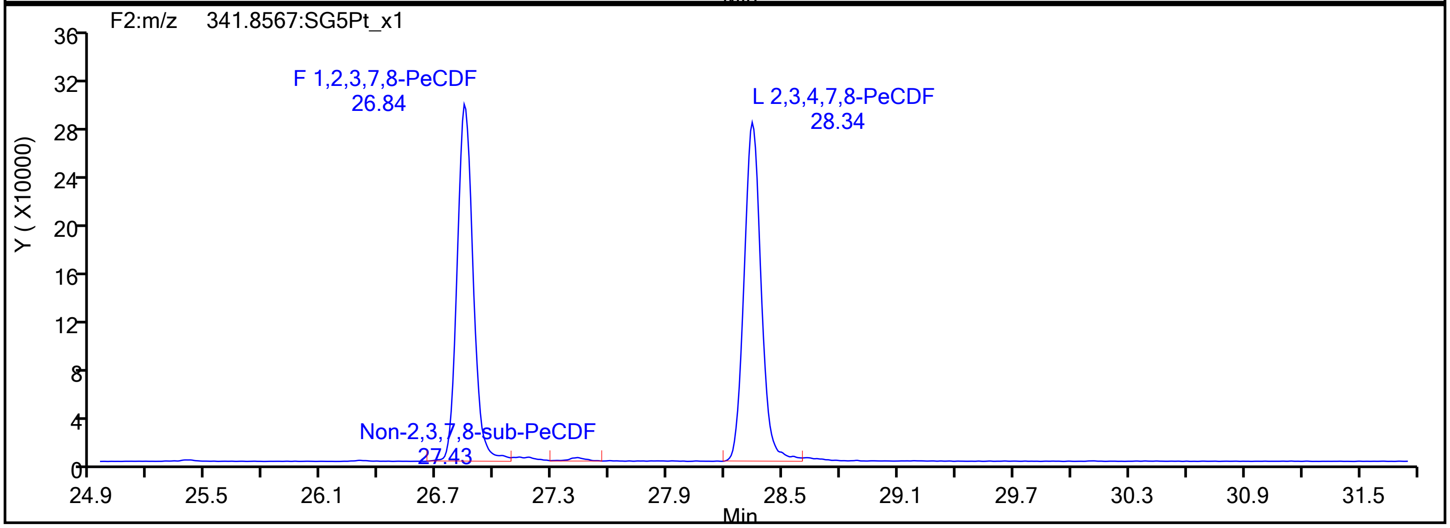

PeCDF Interference Mass

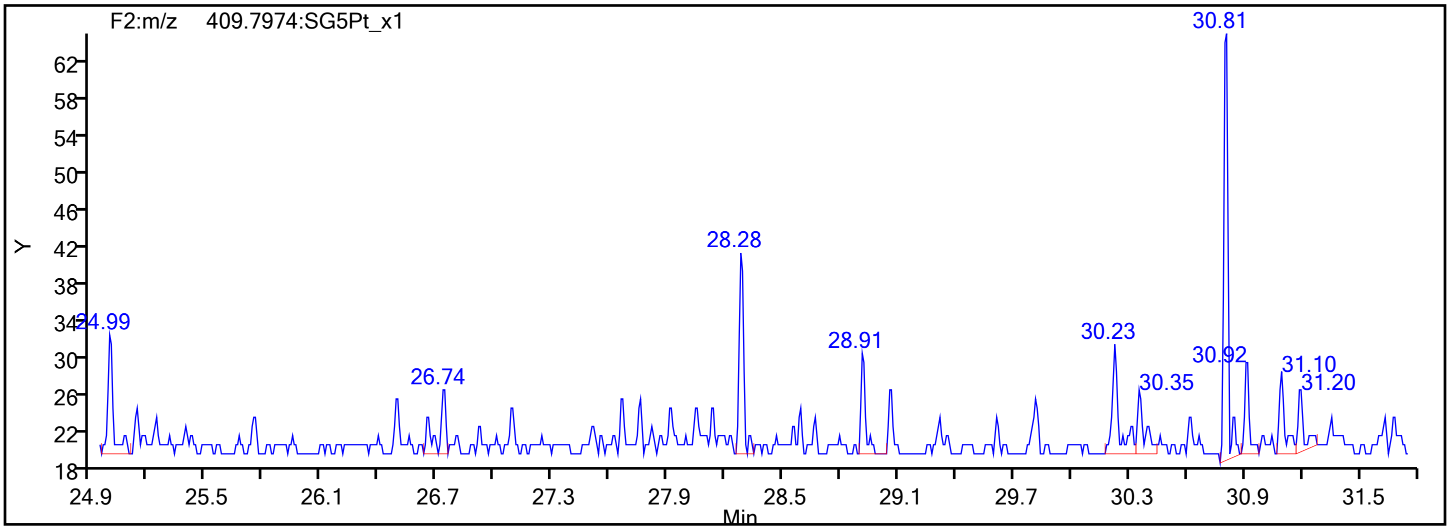

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

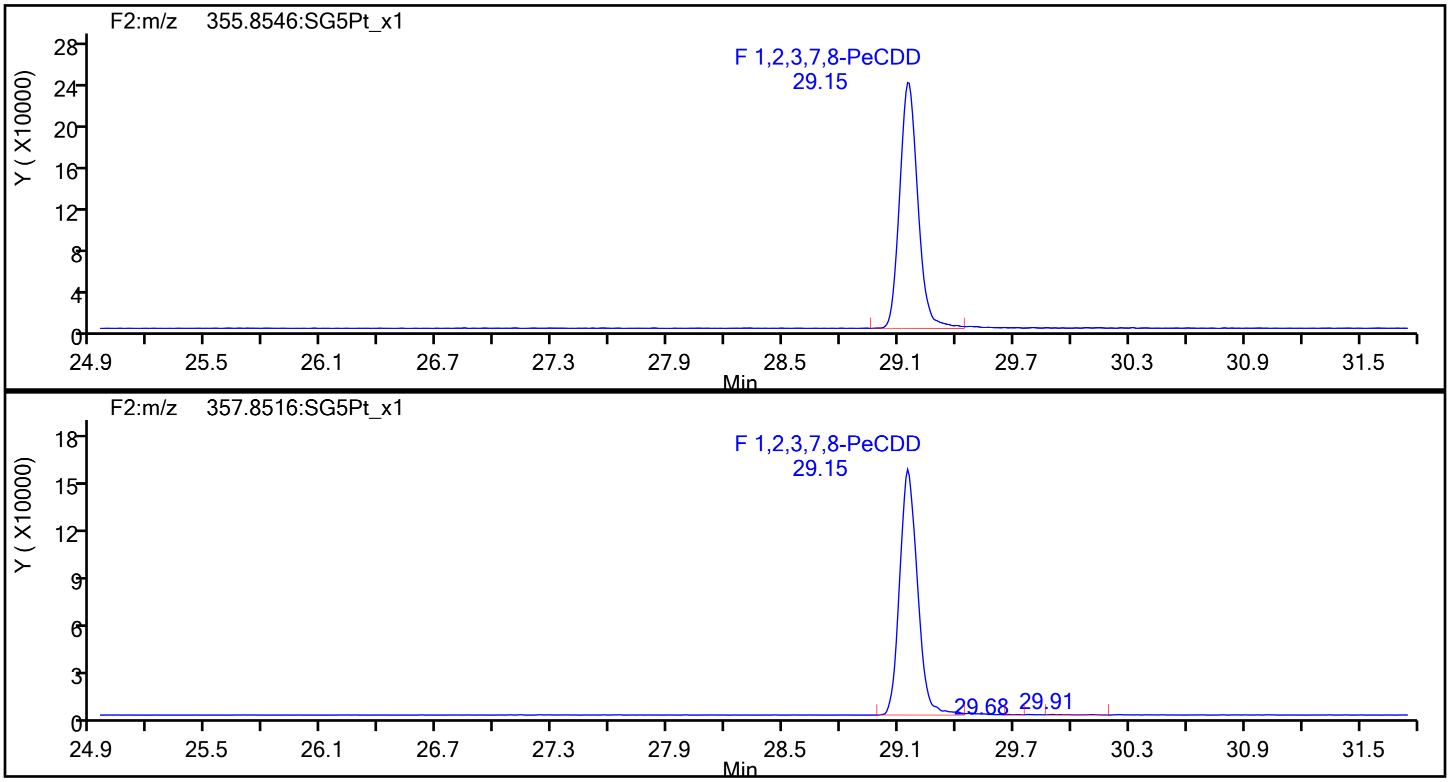

PeCDD Standards

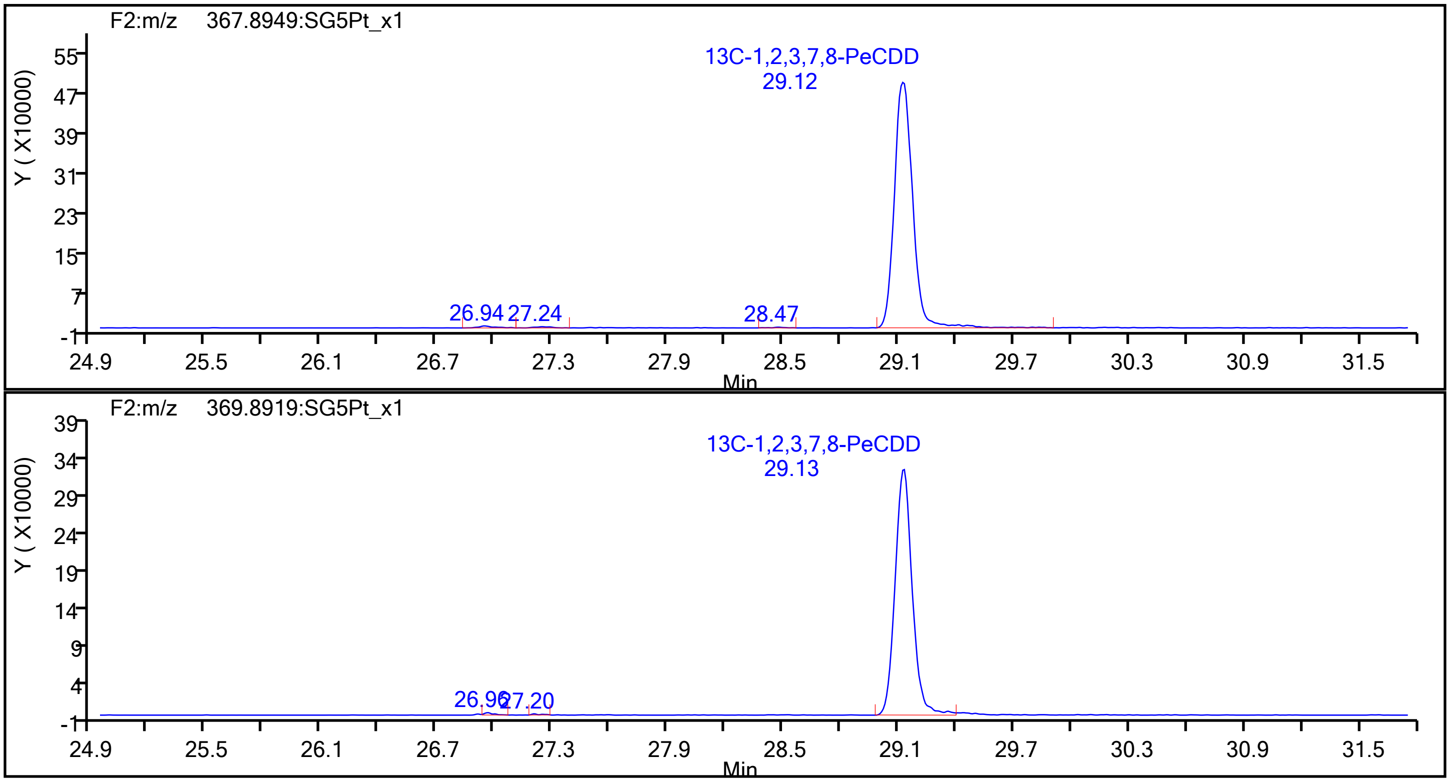

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

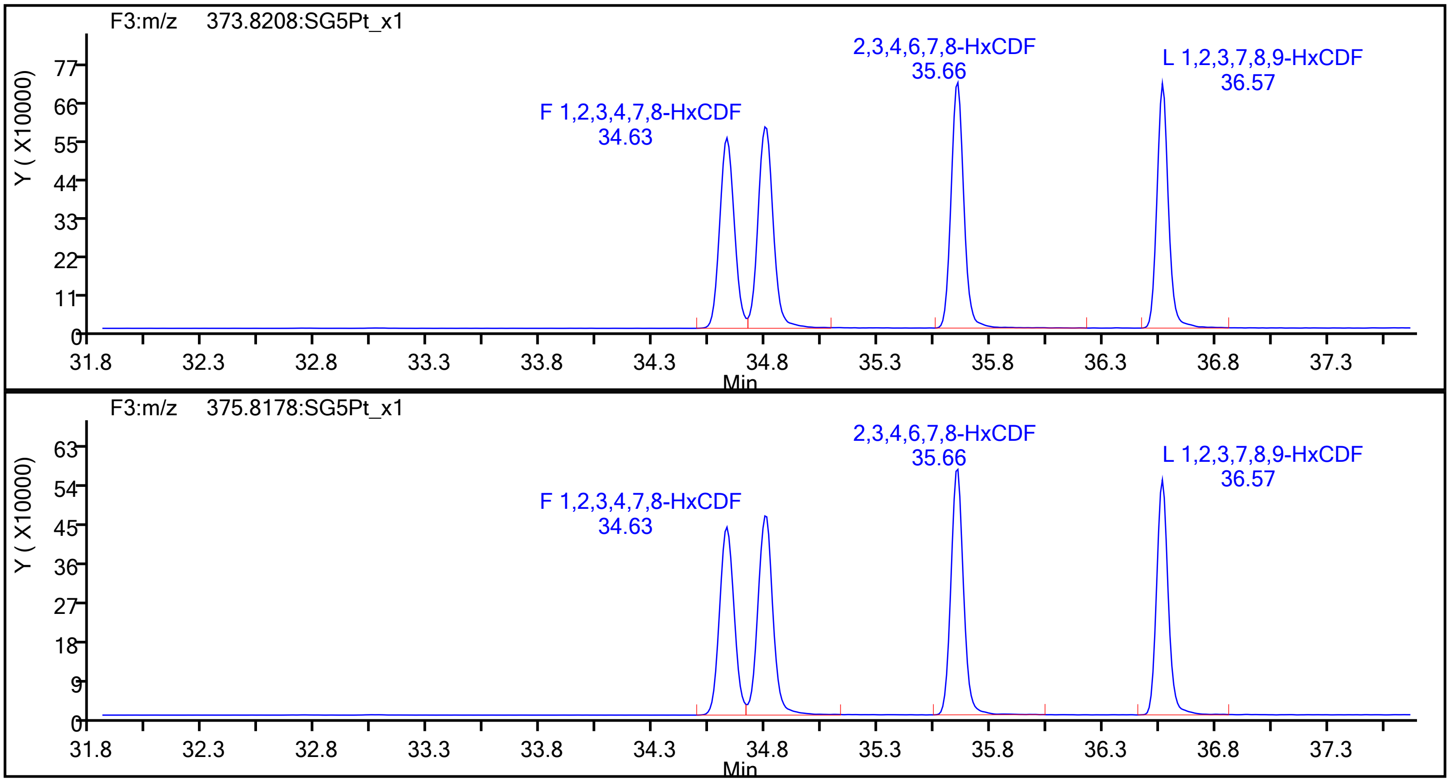

HxCDF Standards

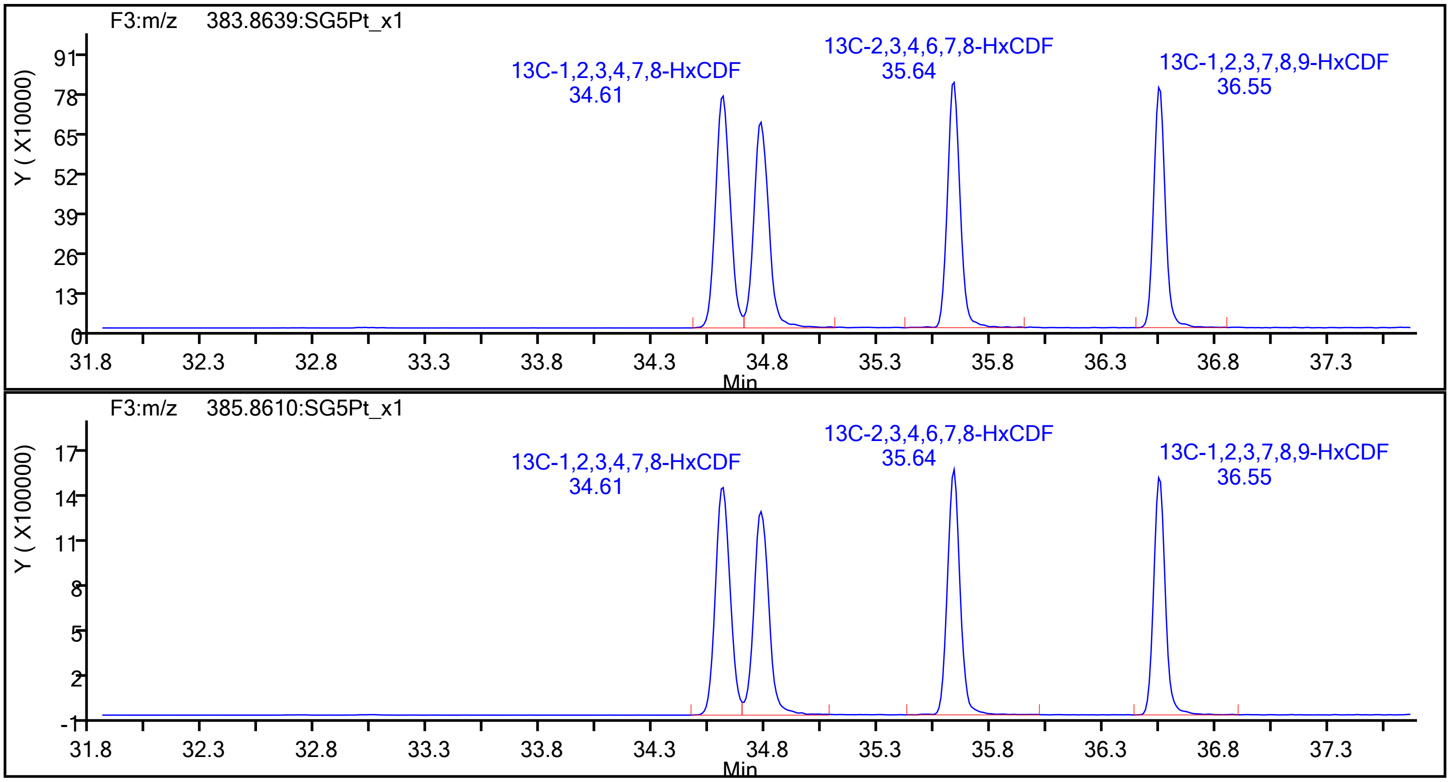

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d

Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

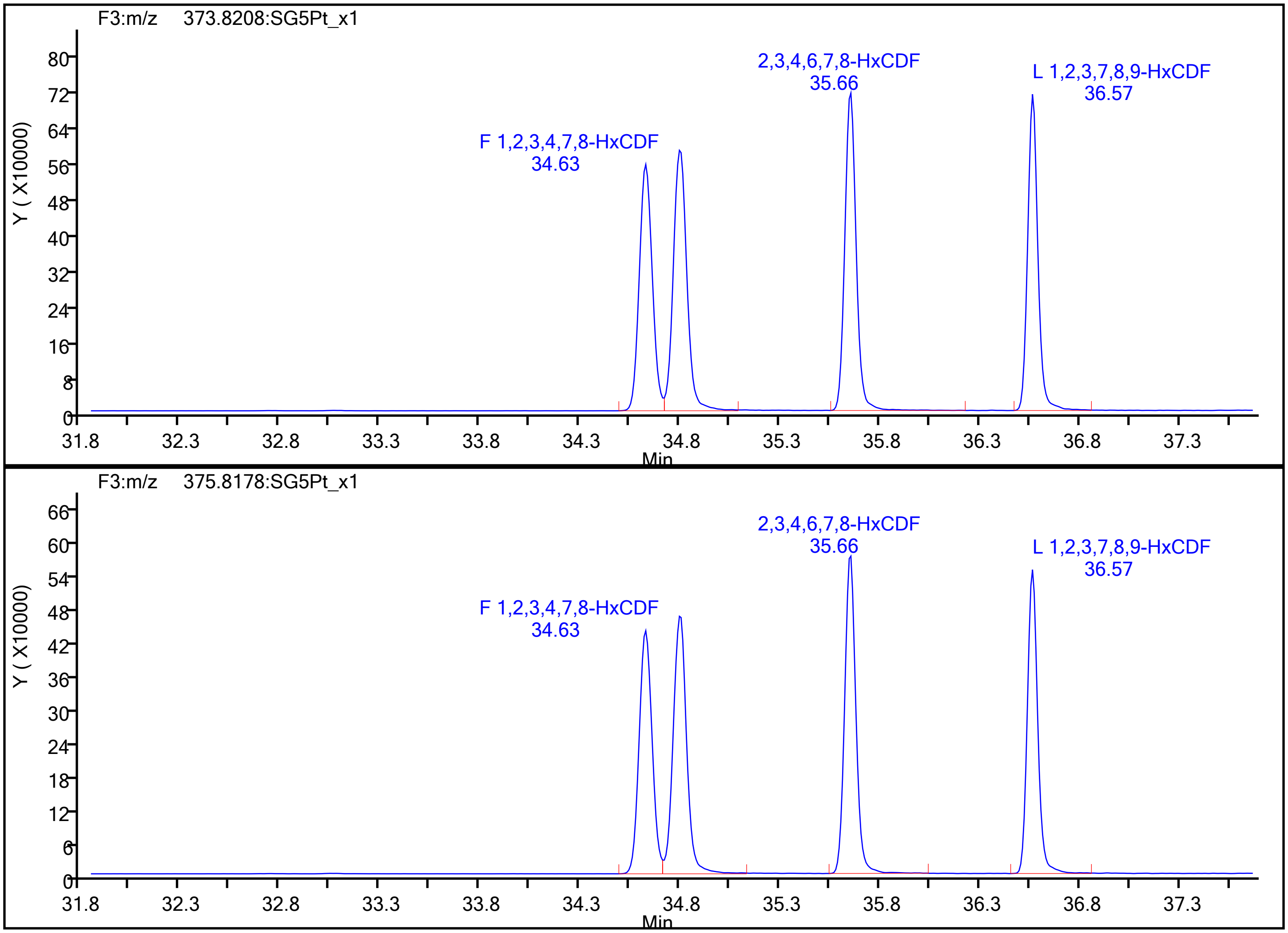

HxCDF Interference Mass

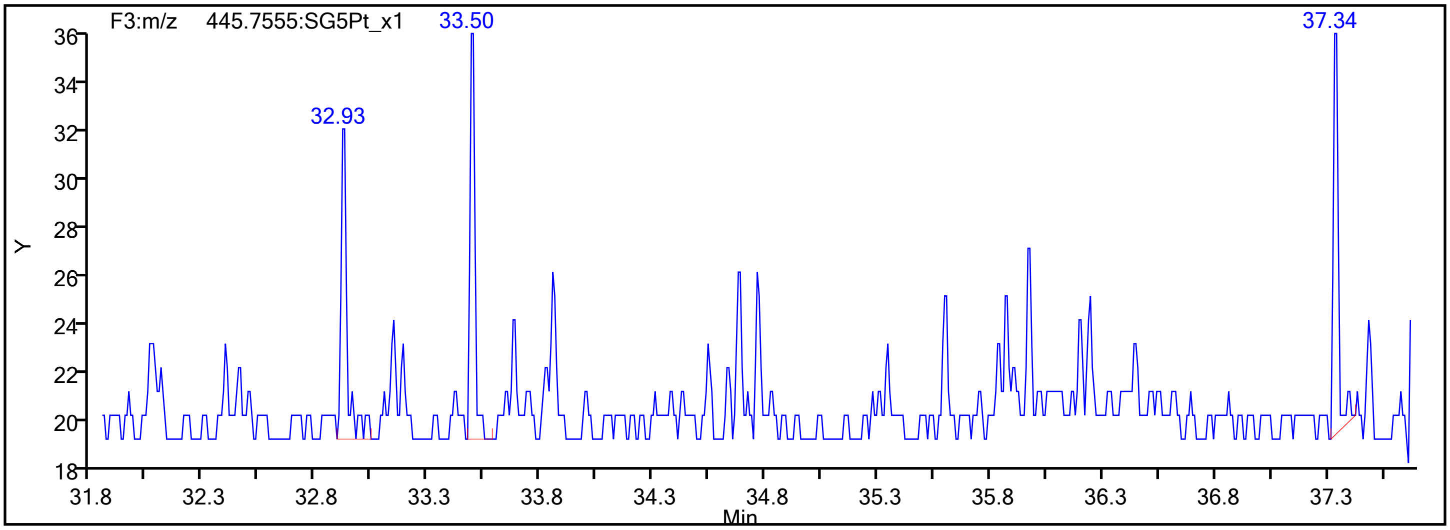

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

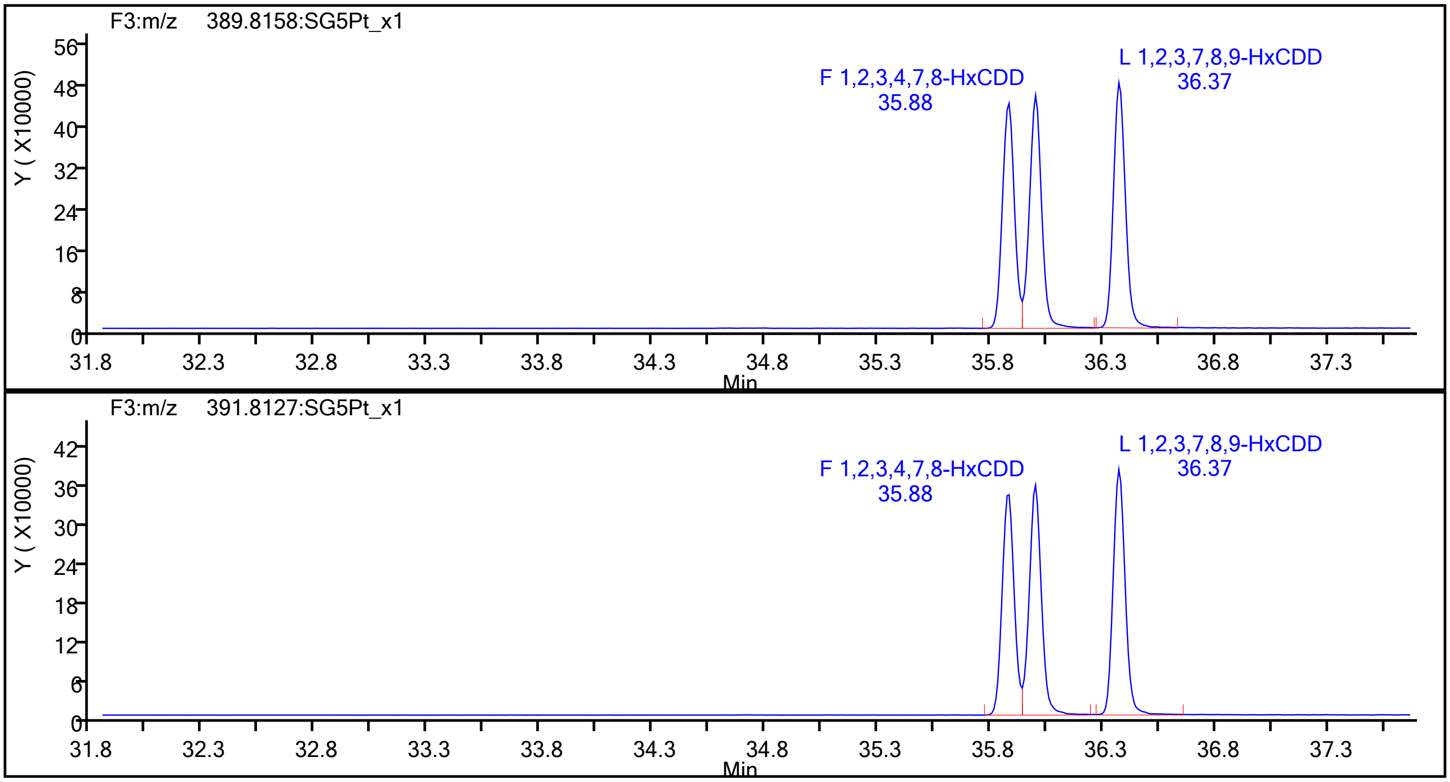

HxCDD Standards

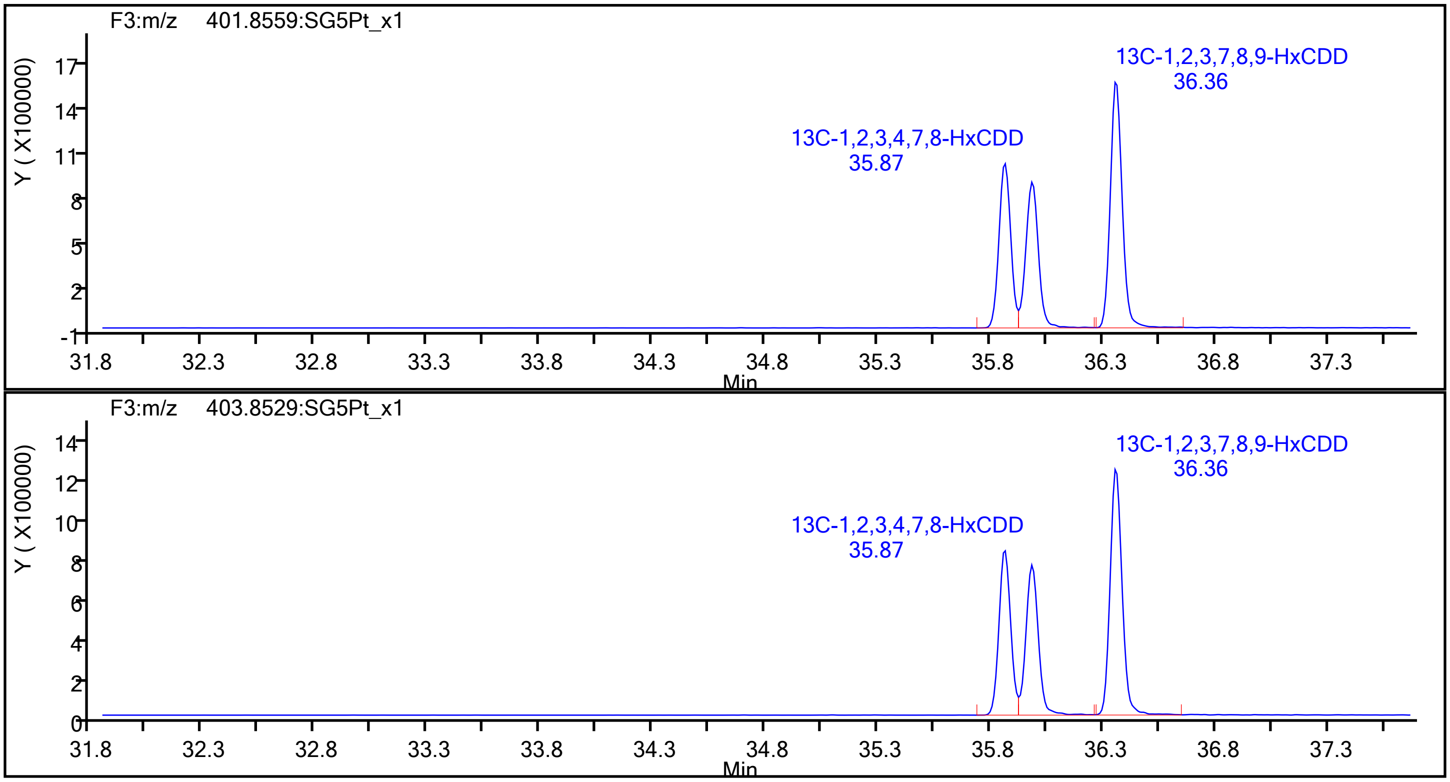

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

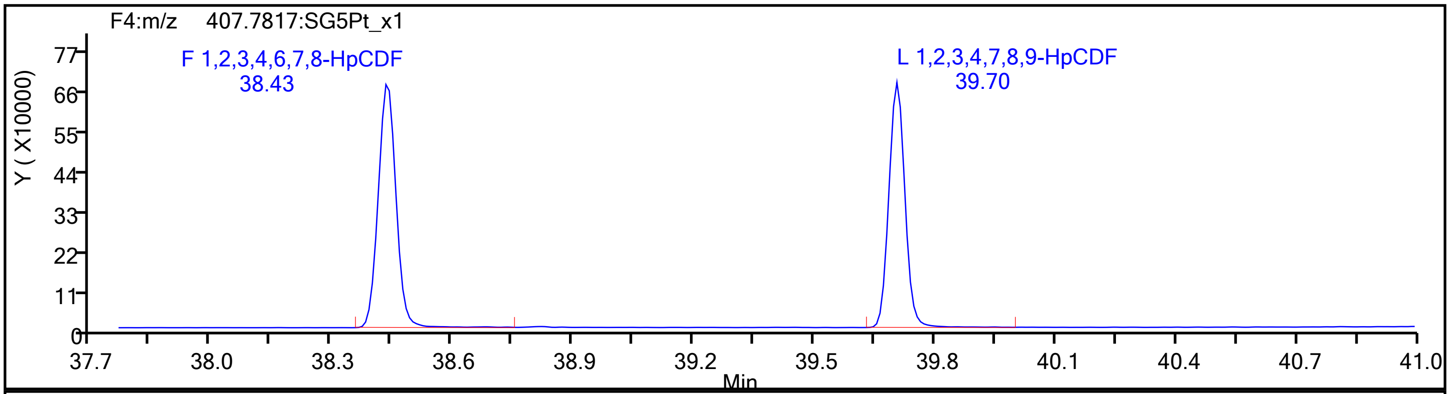

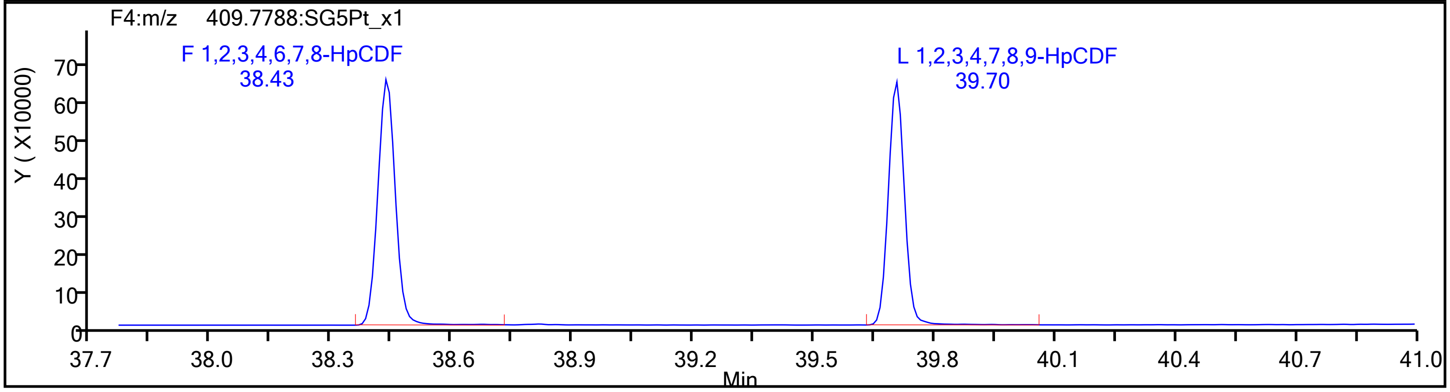

HpCDF Standards

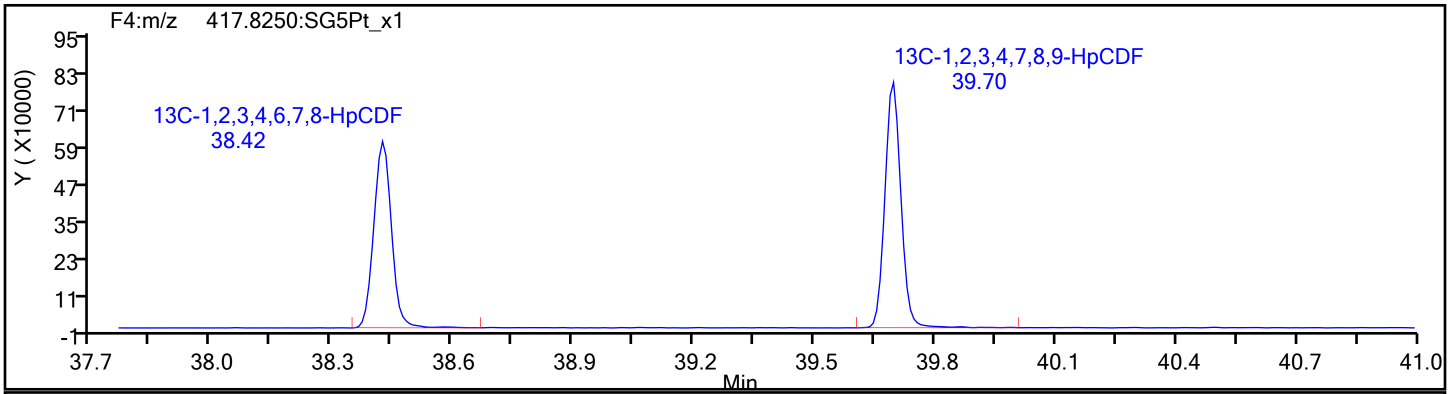

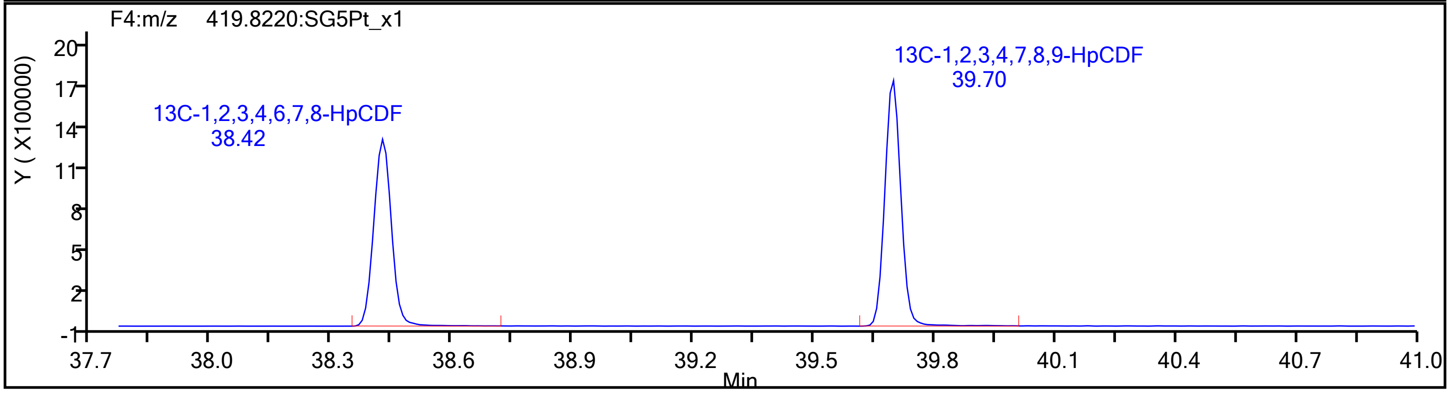

Report Date: 18-Oct-2021 13:41:41 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

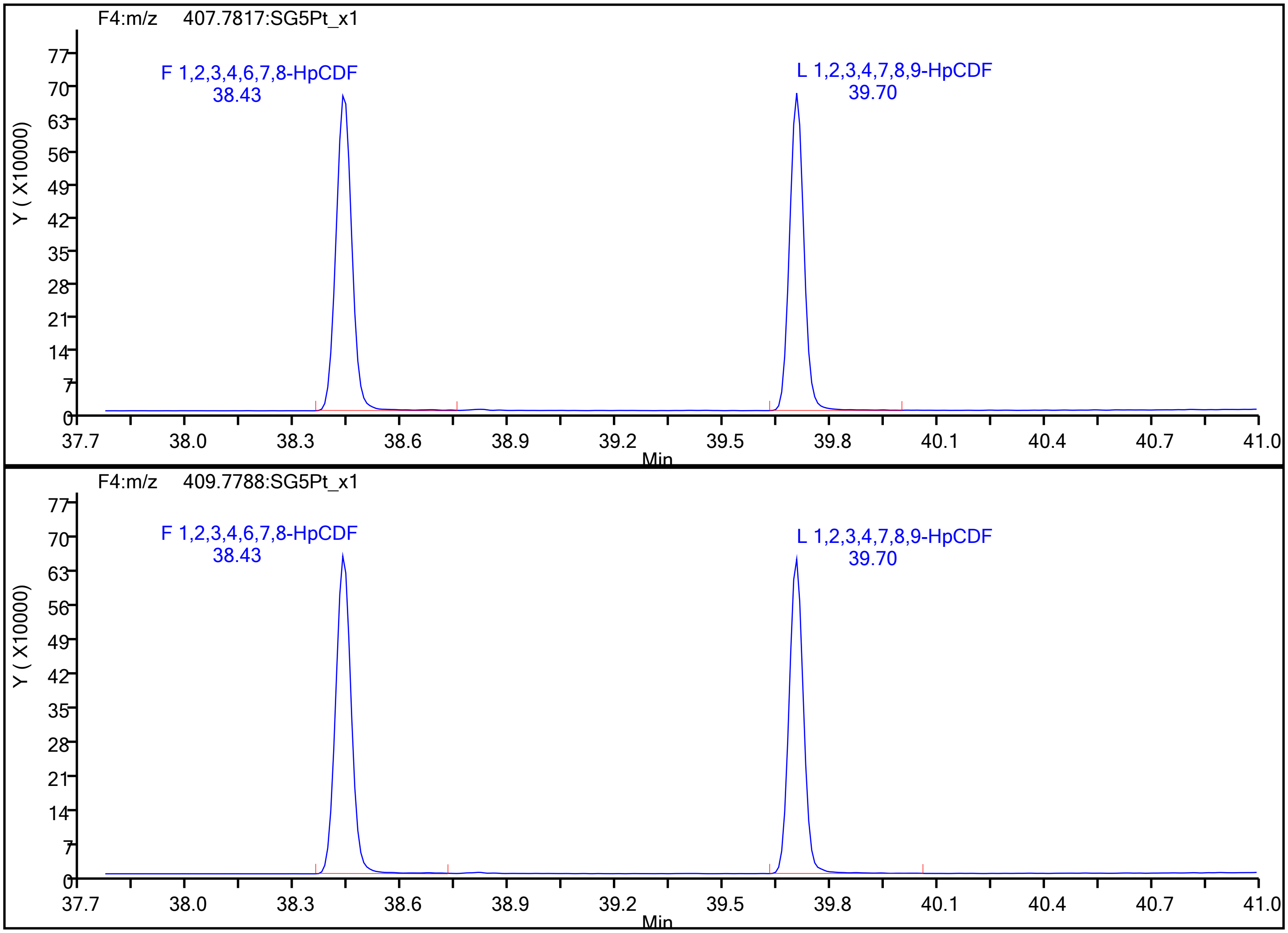

HpCDF Interference Mass

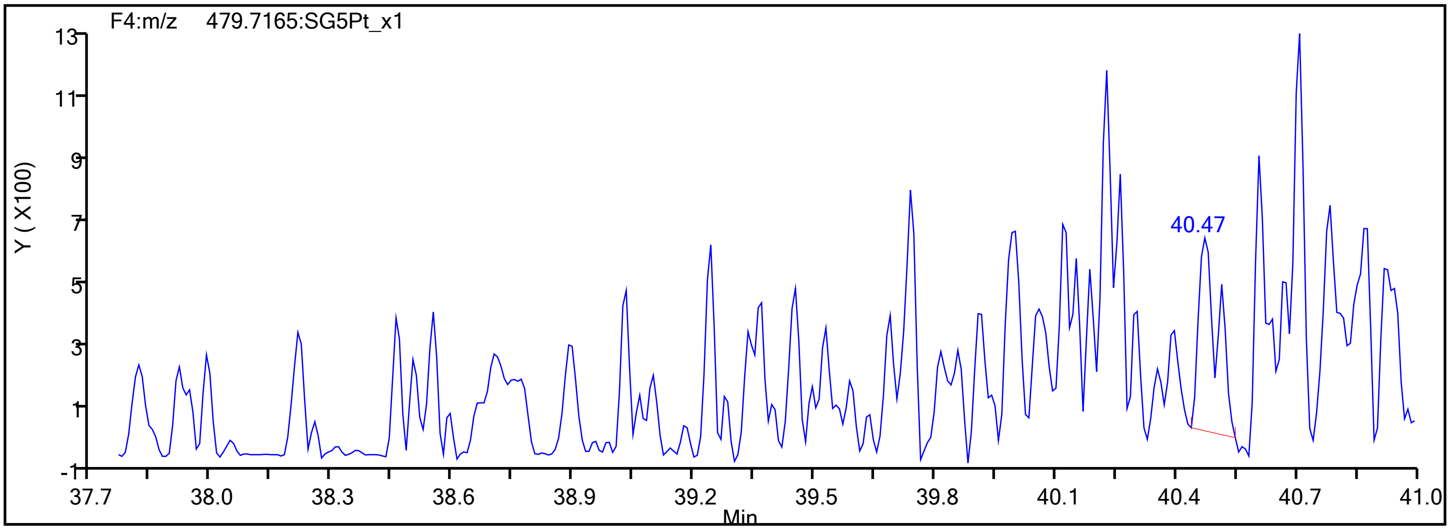

Report Date: 18-Oct-2021 13:41:42 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Injection Date: 15-Oct-2021 14:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

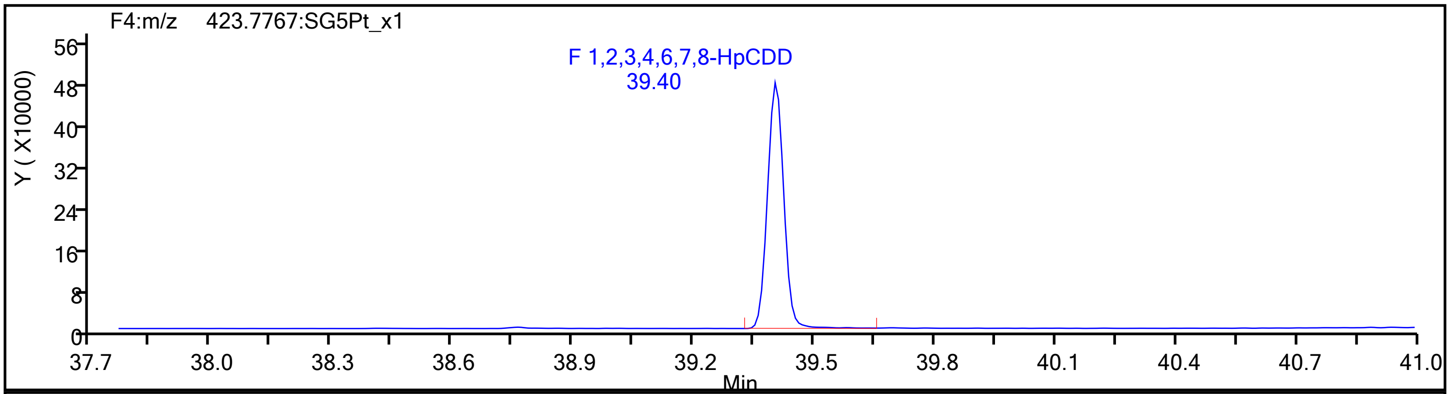

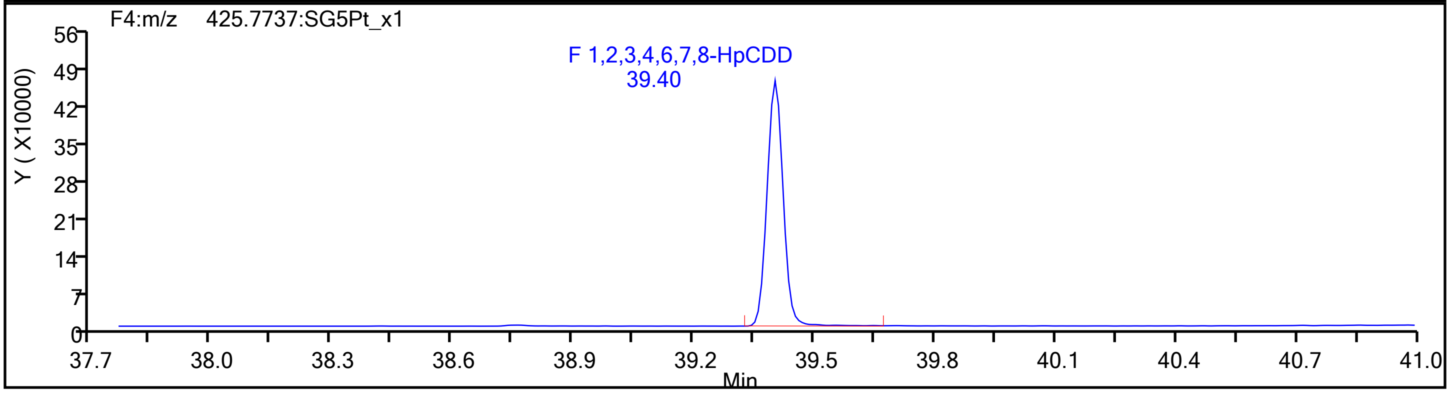

HpCDD Standards

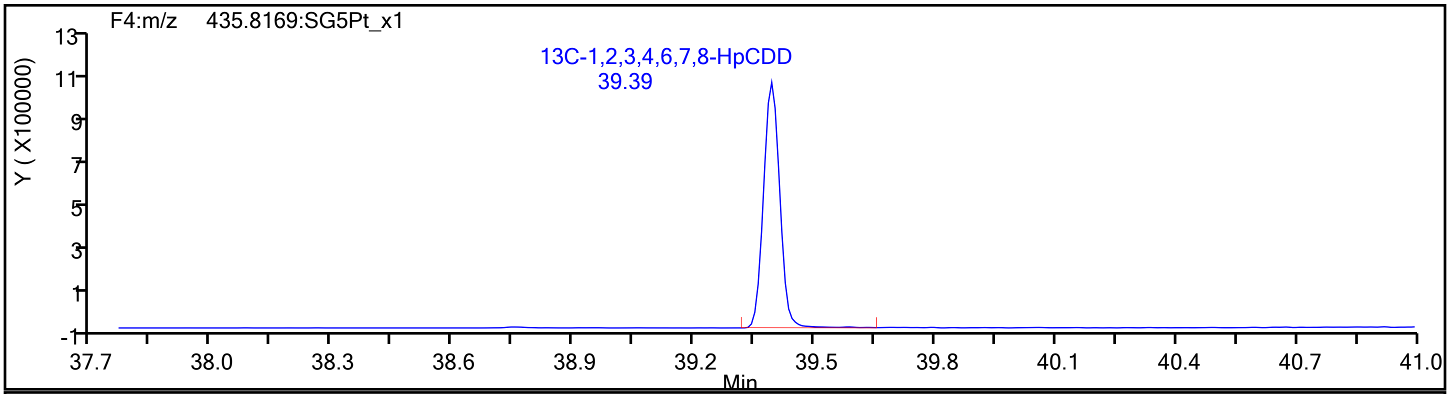

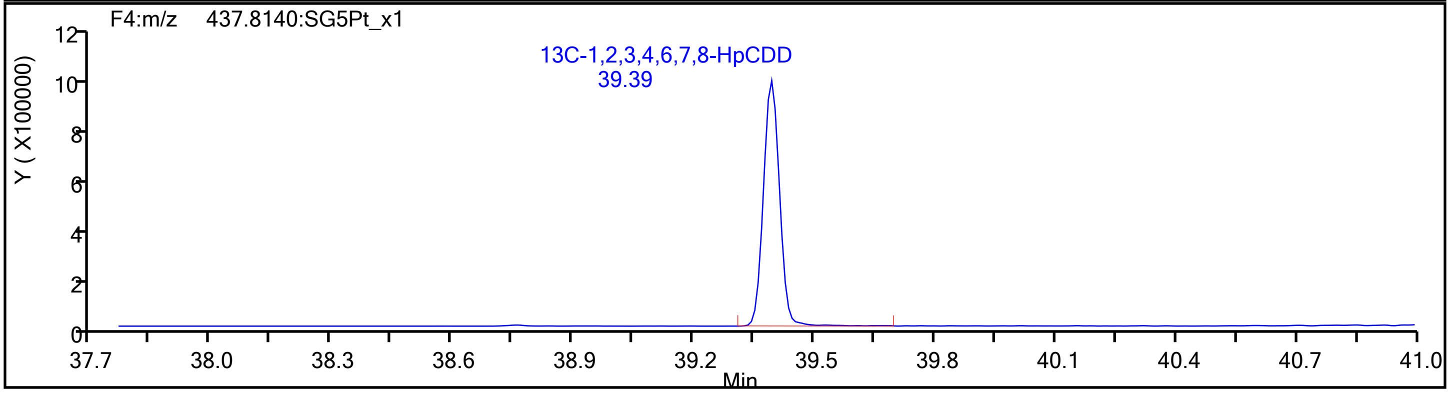

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
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Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

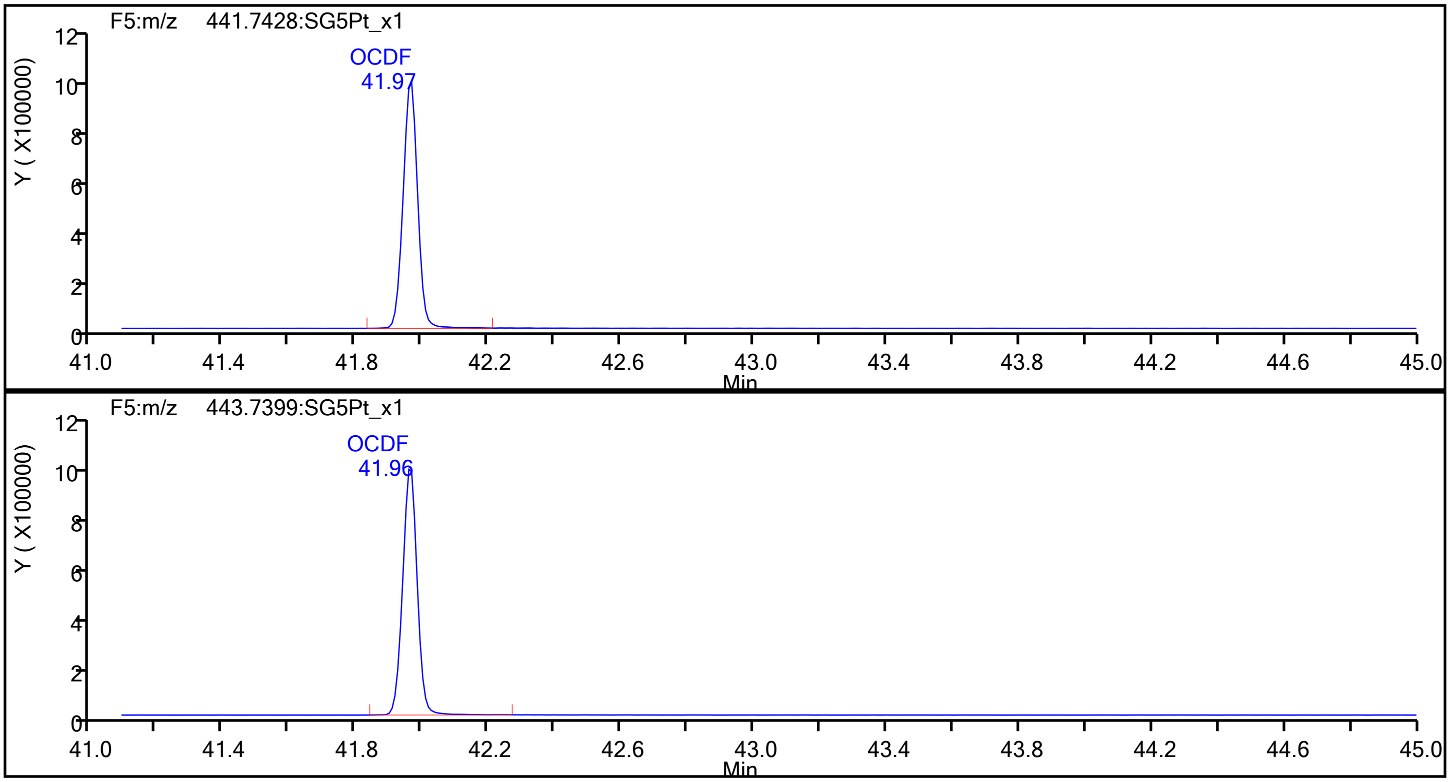

OCDF Standards

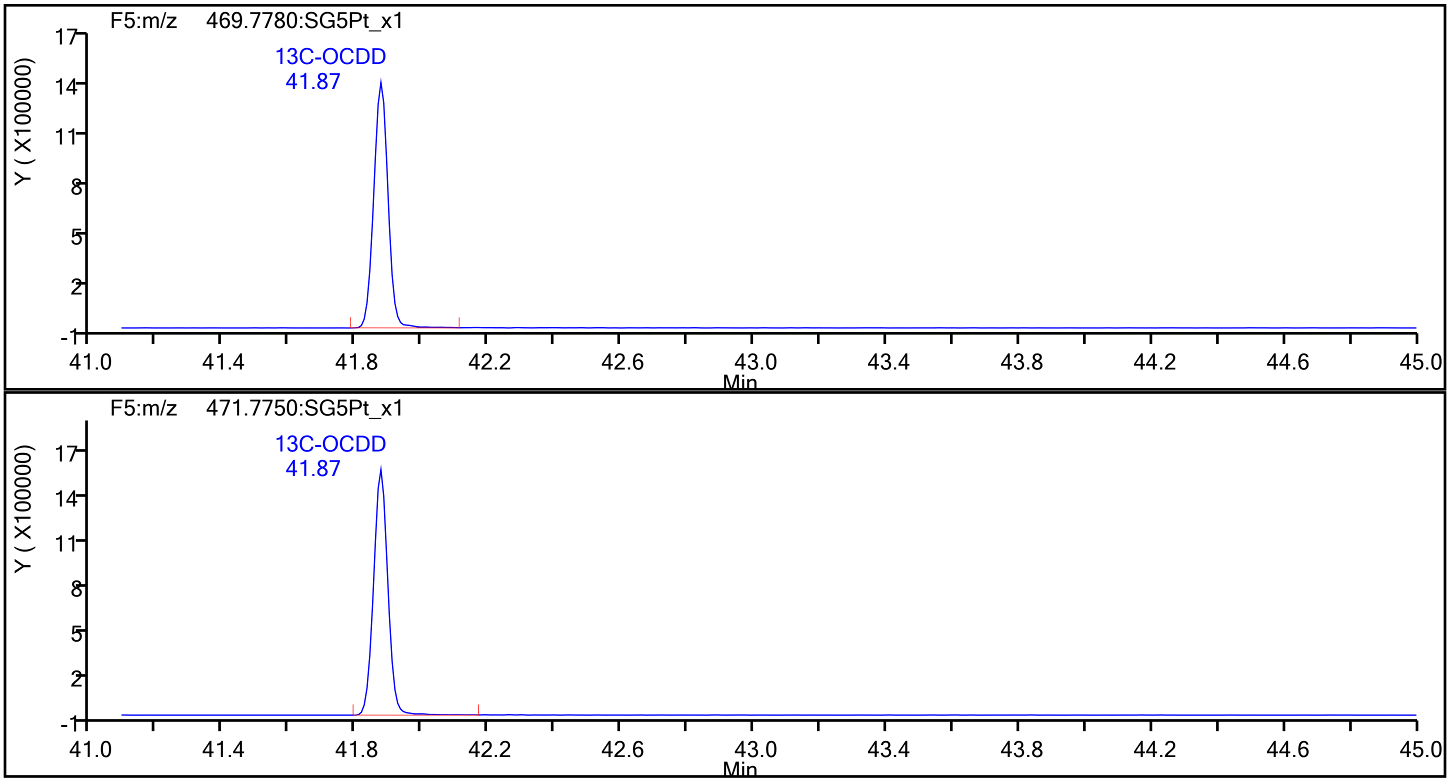

Report Date: 18-Oct-2021 13:41:42
Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d
Injection Date: 15-Oct-2021 14:15:00
Injection Vol: 1.0 ul
Instrument ID: DFS 1
Operator ID: Xcalibur_System
Method: Dioxin_DFS1
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 534320
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

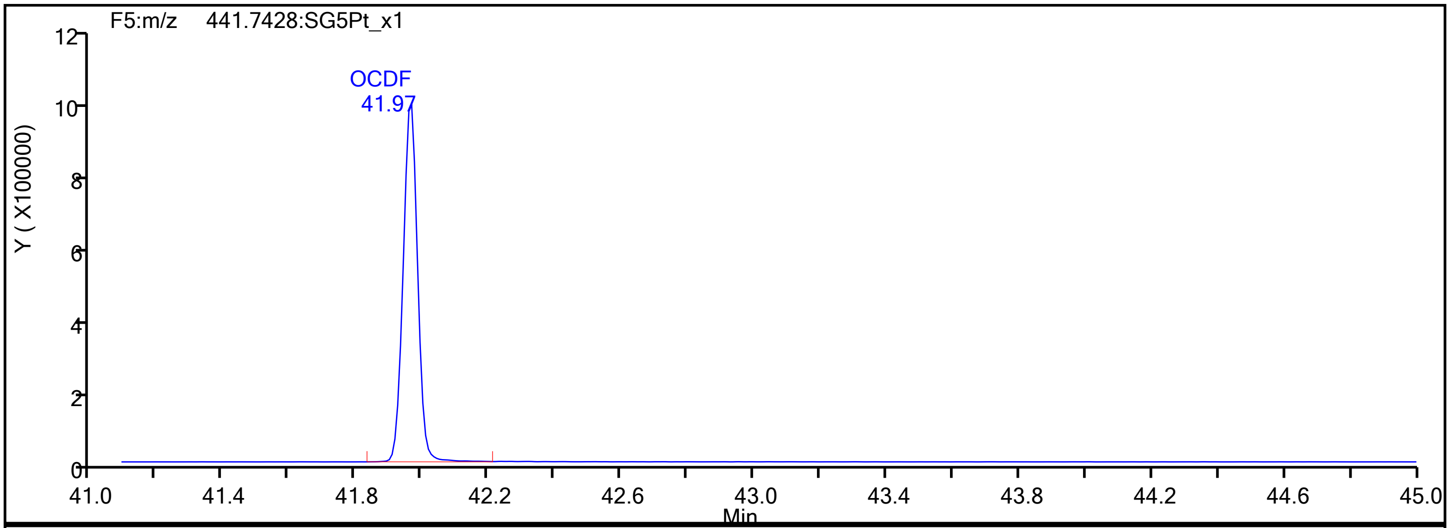

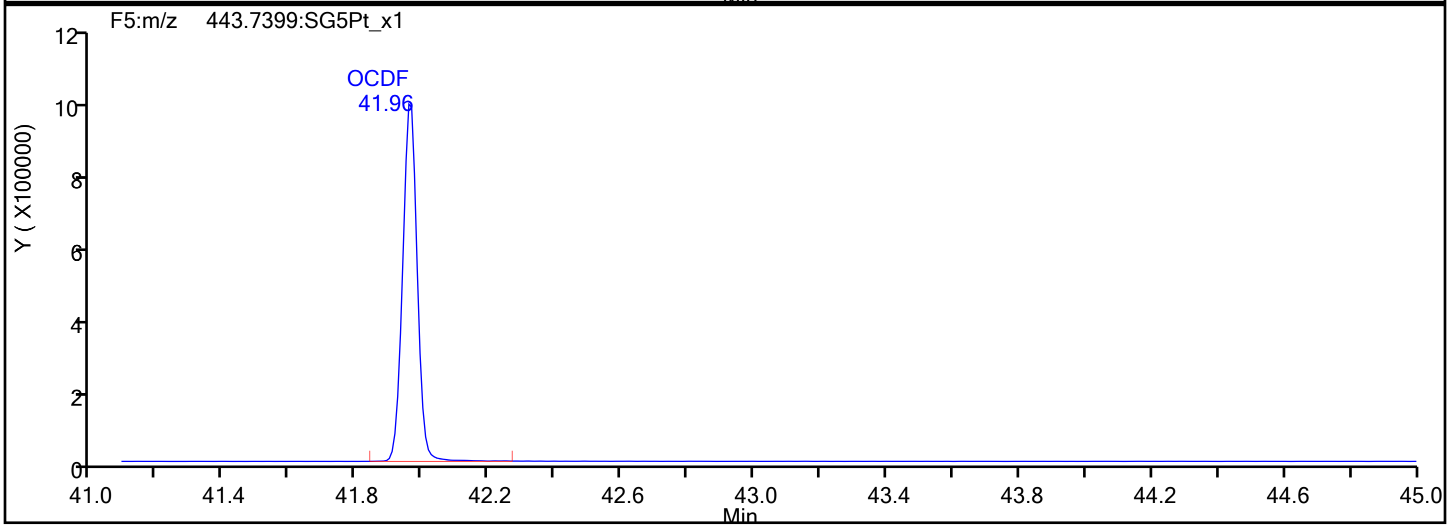

OCDF Interference Mass

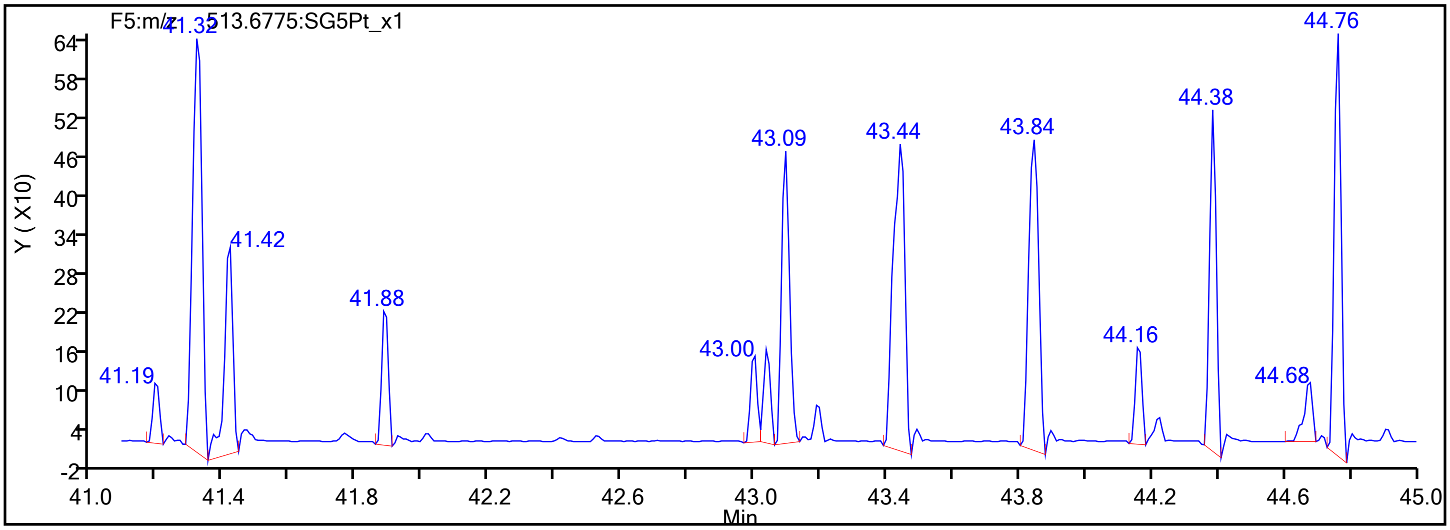

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

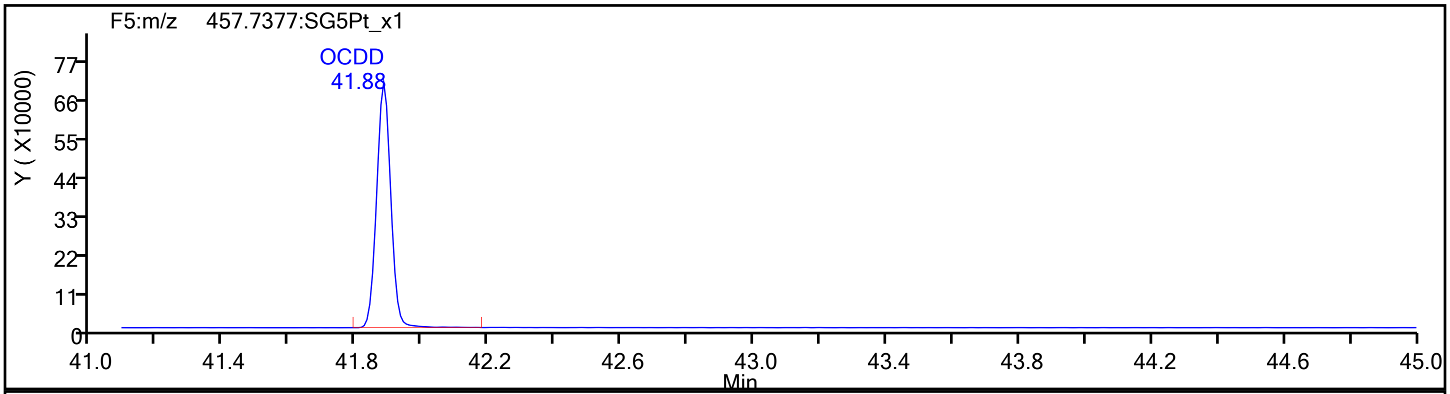

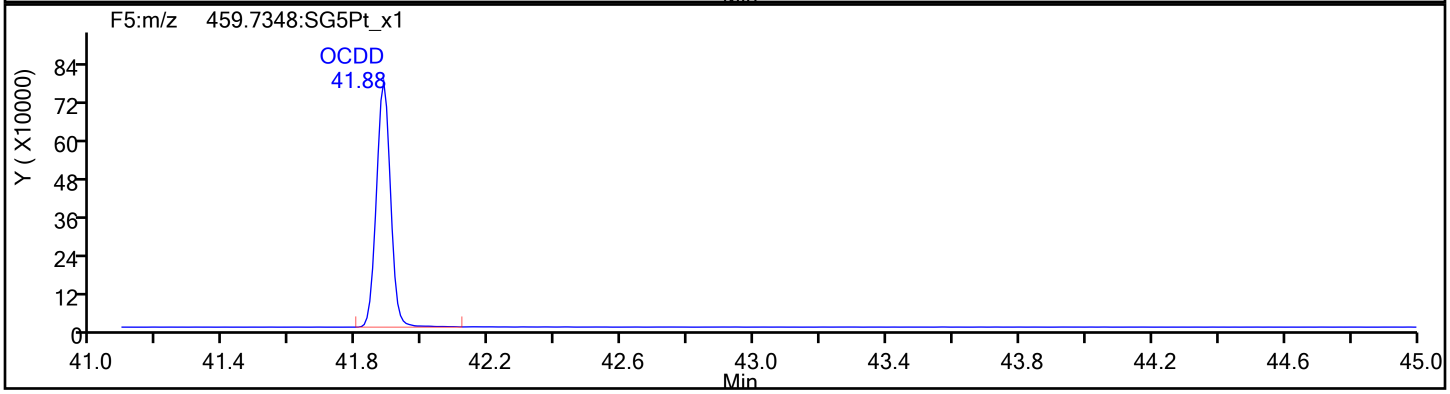

OCDD Standards

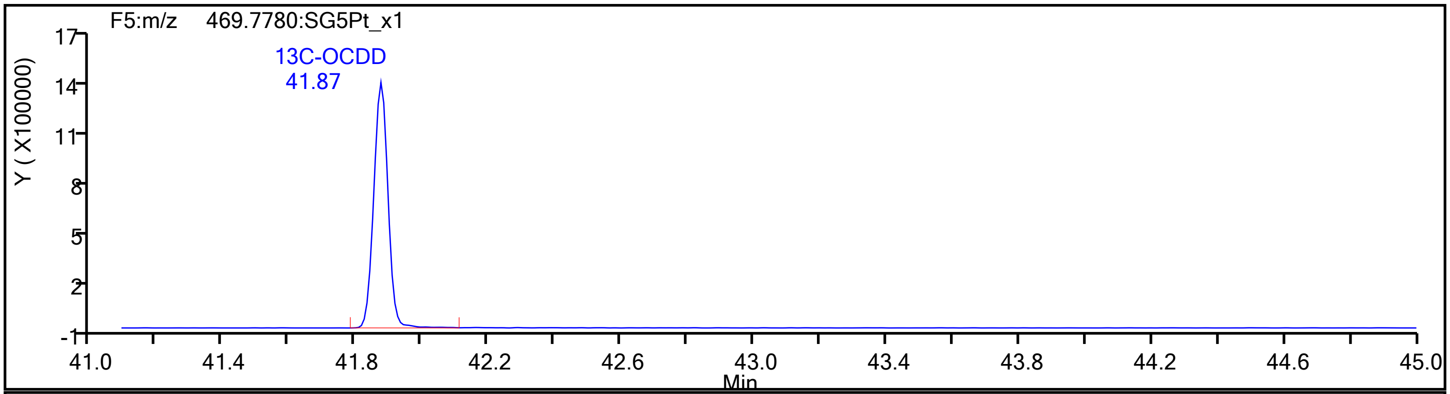

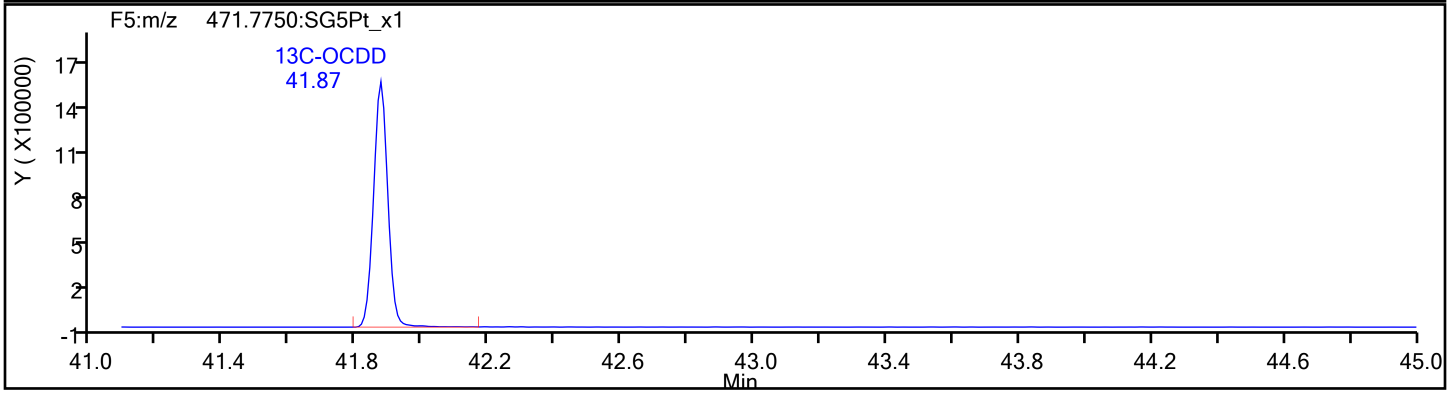

Report Date: 18-Oct-2021 13:41:42 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d

Injection Date: 15-Oct-2021 14:15:00 Injection Vol: 1.0 ul

Instrument ID: DFS 1 Operator ID: Xcalibur_System

Method: Dioxin_DFS1 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 534320 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

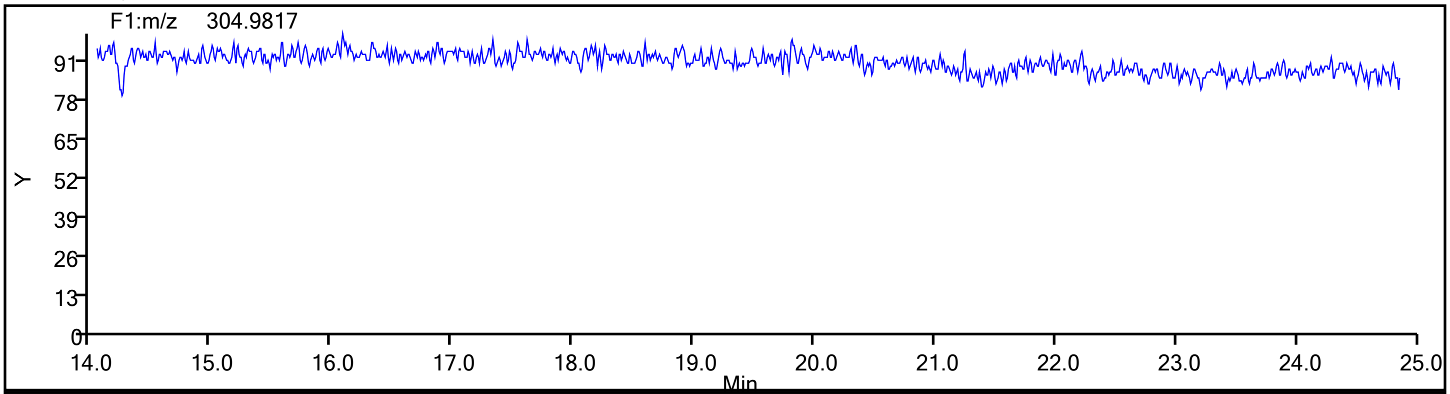

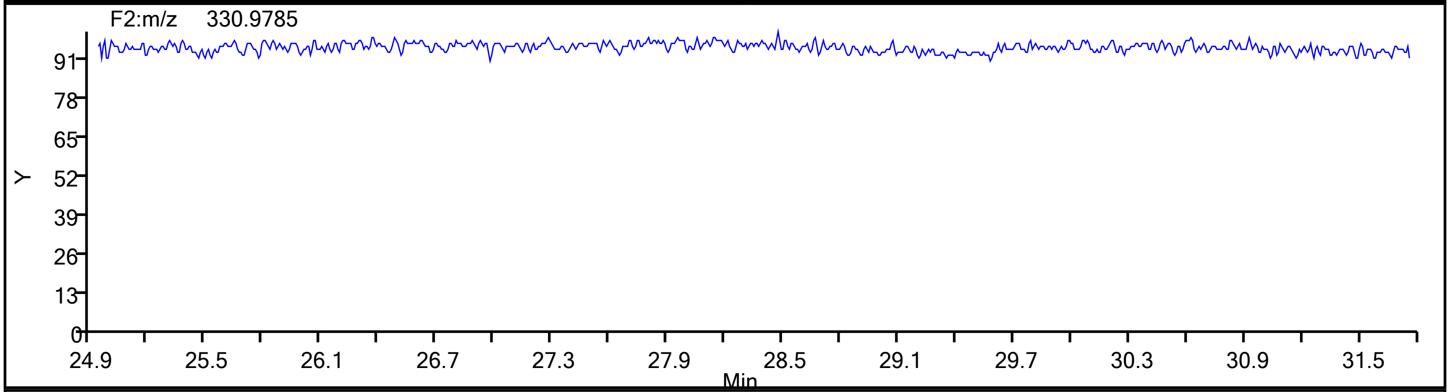

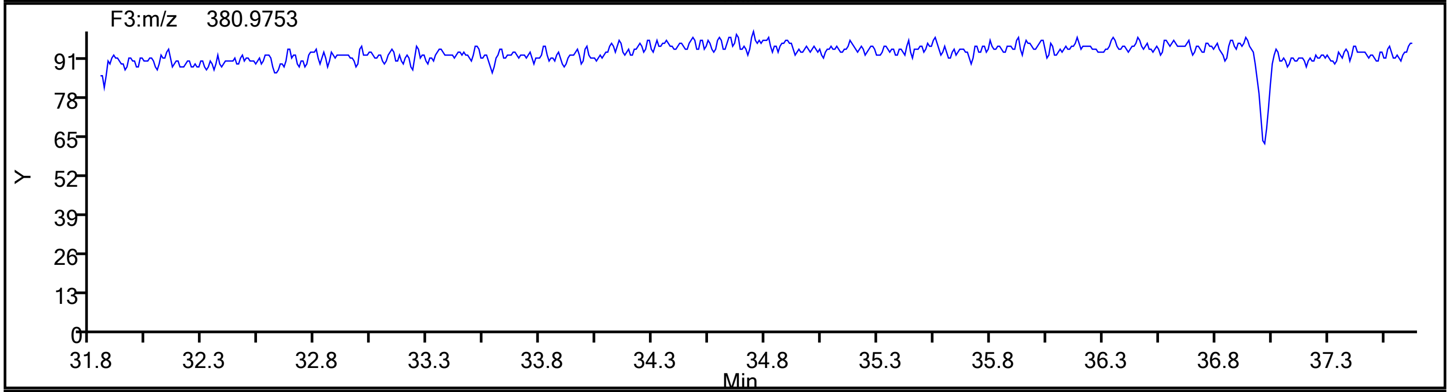

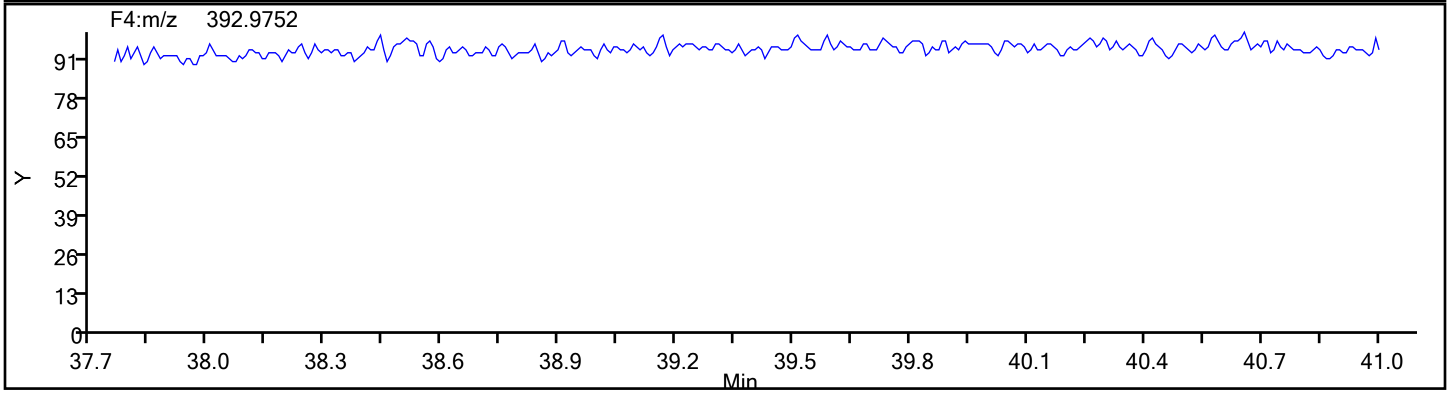

Report Date: 18-Oct-2021 13:41:42 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\DFS1\20211015-129065.b\15oc21dfs1_7.d		
Injection Date:	15-Oct-2021 14:15:00	Injection Vol:	1.0 ul
Instrument ID:	DFS 1	Operator ID:	Xcalibur_System
Method:	Dioxin_DFS1	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	534320	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

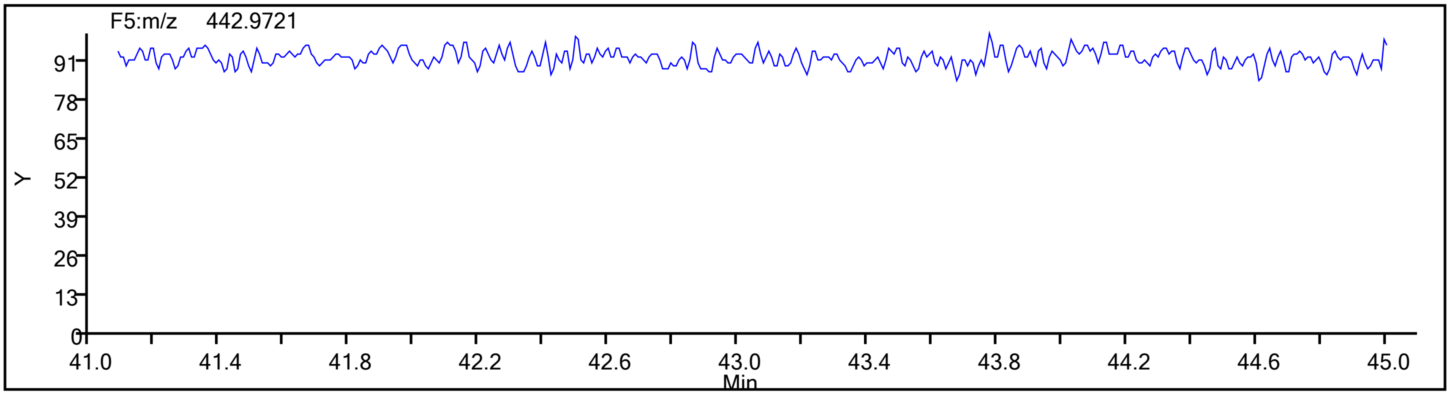

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Instrument ID: DFS 1 Start Date: 09/24/2021 11:17

Analysis Batch Number: 528108 End Date: 09/24/2021 19:02

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-528108/1		09/24/2021 11:17	1	24se21dfs1_2.d	DB-5 0.32(mm)
IC 320-528108/4		09/24/2021 13:55	1	24se21dfs1_5.d	DB-5 0.32(mm)
IC 320-528108/5		09/24/2021 14:43	1	24se21dfs1_6.d	DB-5 0.32(mm)
IC 320-528108/6		09/24/2021 15:31	1	24se21dfs1_7.d	DB-5 0.32(mm)
IC 320-528108/7		09/24/2021 16:19	1	24se21dfs1_8.d	DB-5 0.32(mm)
IC 320-528108/8		09/24/2021 17:07	1	24se21dfs1_9.d	DB-5 0.32(mm)
ICV 320-528108/10		09/24/2021 19:02	1	24se21dfs1_12.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Instrument ID: 11D2 Start Date: 10/06/2021 09:44

Analysis Batch Number: 531494 End Date: 10/06/2021 14:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-531494/1		10/06/2021 09:44	1	06OC2111D2_001.d	DB-225 0.32(mm)
IC 320-531494/3		10/06/2021 11:01	1	06OC2111D2_003.d	DB-225 0.32(mm)
IC 320-531494/4		10/06/2021 11:39	1	06OC2111D2_004.d	DB-225 0.32(mm)
IC 320-531494/5		10/06/2021 12:17	1	06OC2111D2_005.d	DB-225 0.32(mm)
IC 320-531494/6		10/06/2021 12:56	1	06OC2111D2_006.d	DB-225 0.32(mm)
IC 320-531494/7		10/06/2021 13:34	1	06OC2111D2_007.d	DB-225 0.32(mm)
ICV 320-531494/9		10/06/2021 14:51	1	06OC2111D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Instrument ID: DFS 1 Start Date: 10/15/2021 10:15

Analysis Batch Number: 534320 End Date: 10/15/2021 19:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-534320/1		10/15/2021 10:15	1	15oc21dfs1_2.d	DB-5 0.32(mm)
CCV 320-534320/2		10/15/2021 11:03	1	15oc21dfs1_3.d	DB-5 0.32(mm)
MB 320-532854/1-A		10/15/2021 12:39	1	15oc21dfs1_5.d	DB-5 0.32(mm)
LCS 320-532854/2-A		10/15/2021 13:27	1	15oc21dfs1_6.d	DB-5 0.32(mm)
LCSD 320-532854/3-A		10/15/2021 14:15	1	15oc21dfs1_7.d	DB-5 0.32(mm)
ZZZZZ		10/15/2021 15:03	1		DB-5 0.32(mm)
ZZZZZ		10/15/2021 15:51	1		DB-5 0.32(mm)
ZZZZZ		10/15/2021 16:39	1		DB-5 0.32(mm)
320-79918-1	11215702-Pretreatment	10/15/2021 17:27	1	15oc21dfs1_11.d	DB-5 0.32(mm)
320-79918-2	11215702-T=1hr-Settle	10/15/2021 18:15	1	15oc21dfs1_12.d	DB-5 0.32(mm)
320-79918-3	11215702-5Mm	10/15/2021 19:03	1	15oc21dfs1_13.d	DB-5 0.32(mm)
320-79918-4	11215702-1Mm	10/15/2021 19:51	1	15oc21dfs1_14.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-79918-1

SDG No.:

Instrument ID: 11D2 Start Date: 10/18/2021 11:47

Analysis Batch Number: 535163 End Date: 10/18/2021 16:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-535163/1		10/18/2021 11:47	1	18OC2111D2_001.d	DB-225 0.32(mm)
CCV 320-535163/2		10/18/2021 12:25	1	18OC2111D2_002.d	DB-225 0.32(mm)
ZZZZZ		10/18/2021 14:59	1		DB-225 0.32(mm)
320-79918-2 RA	11215702-T=1hr-Settle RA	10/18/2021 16:15	1	18OC2111D2_008.d	DB-225 0.32(mm)
320-79918-1 RA	11215702-Pretreatment RA	10/18/2021 16:53	1	18OC2111D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-79918-1

SDG No.:

Batch Number: 532854 Batch Start Date: 10/11/21 08:36 Batch Analyst: Bojorquez, Courtney

Batch Method: 1613B Batch End Date: 10/13/21 14:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RoundBottomID
MB 320-532854/1		1613B, 1613B				1000 mL	20.0 uL	C-1 / 43	29
LCS 320-532854/2		1613B, 1613B				1000 mL	20.0 uL	C-2 / 20	32
LCSD 320-532854/3		1613B, 1613B				1000 mL	20.0 uL	C-3 / 45	2
320-79918-A-1	11215702-Pretreatment	1613B, 1613B	T	1564.9 g	514.74 g	1050.2 mL	20.0 uL	D-1 / 1	10
320-79918-A-2	11215702-T=1hr-Settle	1613B, 1613B	T	1565.1 g	514.21 g	1050.9 mL	20.0 uL	D-2 / 22	31
320-79918-A-3	11215702-5Mm	1613B, 1613B	T	1566.1 g	514.88 g	1051.2 mL	20.0 uL	D-3 / 51	4
320-79918-A-4	11215702-1Mm	1613B, 1613B	T	1563.5 g	514.27 g	1049.2 mL	20.0 uL	D-4 / 11	21

Lab Sample ID	Client Sample ID	Method Chain	Basis	RotoVapID	HRDXNIDA 00485	HRDXNIS 00137	HRDXNSU 00257	HRDXNTA 00138	
MB 320-532854/1		1613B, 1613B		4	1 mL	20 uL	1 mL		
LCS 320-532854/2		1613B, 1613B		6	1 mL	20 uL	1 mL	50 uL	
LCSD 320-532854/3		1613B, 1613B		4	1 mL	20 uL	1 mL	50 uL	
320-79918-A-1	11215702-Pretreatment	1613B, 1613B	T	4	1 mL	20 uL	1 mL		
320-79918-A-2	11215702-T=1hr-Settle	1613B, 1613B	T	6	1 mL	20 uL	1 mL		
320-79918-A-3	11215702-5Mm	1613B, 1613B	T	4	1 mL	20 uL	1 mL		
320-79918-A-4	11215702-1Mm	1613B, 1613B	T	6	1 mL	20 uL	1 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-79918-1

SDG No.:

Batch Number: 532854 Batch Start Date: 10/11/21 08:36 Batch Analyst: Bojorquez, Courtney

Batch Method: 1613B Batch End Date: 10/13/21 14:00

Batch Notes	
20% DCM:Hexane ID	DH28_00197 mL
65% DCM:Hexane ID	DH6535_00557 mL
Acid Silica Gel ID	SA5644_00746
Acid Alumina ID	Acid_Alumina_00020
Balance ID	QA - 070
Batch Comment	Samples were brought up to 10.0 mL and 20.0 uL was aliquoted for screening.
C14 ID	Tetradecane_00016
Hexane ID	Hexane_00300 mL
IFB Clean Up	TGL 10/13/21
MeCL2 ID	DCM_00415 mL
Na2SO4 ID	Na2SO4_00139
Analyst ID - IDA Reagent Drop	CB 10/11/21 HD05018 HRDXNIDA_00485 B-5/8 1.0 mL
Analyst ID - IDA Reagent Drop Witness	SN 10/11/21
Analyst ID - IS Reagent Drop	TGL 10/13/21 CN15436 HRDXNNIS_00137 B 2/4 20.0 uL
Analyst ID - IS Reagent Drop Witness	SR 10/13/21
Analyst ID - SU Reagent Drop	TGL 10/13/21 HD05018 HRDXNSU_00257 B 3/5 1.0 mL
Analyst ID - SU Reagent Drop Witness	CB 10/13/21
Analyst ID - TA Reagent Drop	CB 10/11/21 CN15436 HRDXNTA_00138 B-3/10 50.0 uL
Analyst ID - TA Reagent Drop Witness	SN 10/11/21
Silica Gel ID	SilicaGel_00377
Soxhlet/Soxtherm End	10/11/21 13:30
Soxhlet/Soxtherm Start	10/11/21 10:30
Storage Box ID	DXN -281
Toluene ID	Toluene_00120 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

CHAIN OF CUSTODY RECORD

COC NO.: 60276

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-205-1972 **Fax:**

Project No/ Phase/Task Code: 11215702-NI0411	**Laboratory Name:** Eurofins/Test America	**Lab Location:** Sacramento, CA	**SSOW ID:**
Project Name: San Jacinto	**Lab Contact:**		**Cooler No:**
Project Location:			**Carrier:**
GHD Chemistry Contact: Don Pope			**Airbill No:**
Sampler(s): Jennifer Wasielewski			**Total # of Containers:**

SAMPLE TYPE — ANALYSIS REQUESTED (See Back of COC for Definitions)

PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Dioxins												Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	11215702-Pretreatment	10/05/21	15:00				X														
2	11215702-T=1hr-settle	|	|				X														
3	11215702-5um	|	|				X														
4	11215702-1um	|	|				X														
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

320-79918 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ ☐1 Day ☐2 Days ☐3 Days ☐1Week ☐2Week Other:

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME		RECEIVED BY	COMPANY	DATE	TIME
1.		GHD	10/5/21	15:30	1.	~~EtaSac~~ SO 10-6-21	EtaSac	10-6-21	1030
2.					2.				
3.					3.				

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

6.0°C

CRA Form COC-10B (20110804)

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-79918-1

Login Number: 79918
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins TestAmerica, Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Job Number: 180-110097-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
9/6/2020 8:07 PM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
Carrie.Gamber@Eurofinset.com
09/06/2020

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238
Tel (412) 963-7058 Fax (412) 963-2468 www.testamericainc.com

PA Lab ID: 02-00416

Table of Contents

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 180-110097-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 08/27/2020; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.8 C.

The COC and labels read H_2SO_4; however there is no manufacturer preservation label on the containers 11215702-GW-TANK#1 (180-110097-1) and 11215702-GW-TANK#2 (180-110097-2).

The vials were received with headspace present.

TOTAL ORGANIC CARBON
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client Sample ID: 11215702-GW-TANK#1 — Lab Sample ID: 180-110097-1

No Detections.

Client Sample ID: 11215702-GW-TANK#2 — Lab Sample ID: 180-110097-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

General Chemistry

Client Sample ID: 11215702-GW-TANK#1
Lab Sample ID: 180-110097-1
Date Collected: 08/26/20 13:00
Matrix: Water
Date Received: 08/27/20 10:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		1.0	0.51	mg/L			09/03/20 01:33	1

General Chemistry

Client Sample ID: 11215702-GW-TANK#2 **Lab Sample ID: 180-110097-2**
Date Collected: 08/26/20 14:00 **Matrix: Water**
Date Received: 08/27/20 10:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		1.0	0.51	mg/L			09/03/20 01:51	1

Default Detection Limits

Client: GHD Services Inc.
Job ID: 180-110097-1
Project/Site: San Jacinto River Waste Pits Superfund

General Chemistry

Analyte	RL	MDL	Units
Total Organic Carbon - Duplicates	1.0	0.51	mg/L

QC Sample Results

Method: SM 5310C - Total Organic Carbon

Lab Sample ID: MB 180-328433/6
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 328433

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	ND		1.0	0.51	mg/L			09/02/20 21:16	1

Lab Sample ID: LCS 180-328433/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 328433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	20.0	19.2		mg/L		96	85 - 115

Lab Sample ID: LCSD 180-328433/5
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 328433

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	20.0	19.5		mg/L		98	85 - 115	1	20

QC Association Summary

General Chemistry

Analysis Batch: 328433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-110097-1	11215702-GW-TANK#1	Total/NA	Water	SM 5310C	
180-110097-2	11215702-GW-TANK#2	Total/NA	Water	SM 5310C	
MB 180-328433/6	Method Blank	Total/NA	Water	SM 5310C	
LCS 180-328433/4	Lab Control Sample	Total/NA	Water	SM 5310C	
LCSD 180-328433/5	Lab Control Sample Dup	Total/NA	Water	SM 5310C	

Lab Chronicle

Client: GHD Services Inc.
Job ID: 180-110097-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: 11215702-GW-TANK#1

Lab Sample ID: 180-110097-1

Date Collected: 08/26/20 13:00
Matrix: Water
Date Received: 08/27/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5310C		1			328433	09/03/20 01:33	TAM	TAL PIT
	Instrument ID:	TOC1030								

Client Sample ID: 11215702-GW-TANK#2

Lab Sample ID: 180-110097-2

Date Collected: 08/26/20 14:00
Matrix: Water
Date Received: 08/27/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5310C		1			328433	09/03/20 01:51	TAM	TAL PIT
	Instrument ID:	TOC1030								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT
    Batch Type: Analysis
        TAM = Tessa Mastalski

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 180-110097-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-21

Method Summary

Method	Method Description	Protocol	Laboratory
SM 5310C	Total Organic Carbon	SM	TAL PIT

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Sample Summary

Client: GHD Services Inc.
Job ID: 180-110097-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-110097-1	11215702-GW-TANK#1	Water	08/26/20 13:00	08/27/20 10:00	
180-110097-2	11215702-GW-TANK#2	Water	08/26/20 14:00	08/27/20 10:00	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-110097-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
10 PPM TOC/CC_01482	09/03/20	09/02/20	DI Water, Lot DI WATER	200 mg/L	WTOC1000SP_00030	2 mL	Total Organic Carbon - Duplicates	10 mg/L
.WTOC1000SP_00030	10/31/20	Ricca Chemical Co, Lot 2910D79			(Purchased Reagent)		Total Organic Carbon - Duplicates	1000 mg/L
ICV 40 PPM_01621	09/03/20	09/02/20	DI Water, Lot DIWATER	100 mg/L	WTOC1000SP_00030	4 mL	Total Organic Carbon - Duplicates	40 mg/L
.WTOC1000SP_00030	10/31/20	Ricca Chemical Co, Lot 2910D79			(Purchased Reagent)		Total Organic Carbon - Duplicates	1000 mg/L
LCS 20 PPM_01616	09/03/20	09/02/20	DI Water, Lot DIWATER	200 mg/L	WTOC1000P_00048	4 mL	Total Organic Carbon - Duplicates	20 mg/L
.WTOC1000P_00048	05/28/22	Lab Chem, Lot K149-01			(Purchased Reagent)		Total Organic Carbon - Duplicates	1000 mg/L

Reagent

WTOC1000P_00048

LabChem
performance through chemistry
Jackson's Pointe Commerce Park - Building 1000
1010 Jackson's Pointe Court, Zelienople, PA 16063
Ph: 412-826-5230 | Fax: 724-473-0647 | www.labchem.com

3799720
ID: WTOC1000P_00048
Exp:05/28/22 Prpd:TAM Opn:07/29/20
1000 ppm TOC standard

CERTIFICATE OF ANALYSIS

Description: CARBON STANDARD, 1000ppm ORGANIC (1mL = 1mg C)

Mfg. Date: 05/29/2020

Catalog Number: LC12910

Exp. Date: 05/29/2022

Lot Number: K149-01

ANALYTICAL SECTION

Test	Specification	Test Result
Appearance	clear, colorless solution	Pass Test
Concentration ppm C	1000ppm +/- 10ppm	996 ppm
Concentration mg C/mL	1.000 +/- 0.010 mg C/mL	0.996 mg C/mL
Traceable to NIST	Potassium Hydrogen Phthalate	84L

Intended Use - Product is intended for use in manufacturing procedures and laboratory procedures and protocols.

Storage Information - Unless otherwise noted on the product label, store the product under normal lab conditions in its tightly closed, original container. Do not pipet directly from the container or return unused portions to the container.

Instructions for Handling and Use - Please refer to the associated product label and Safety Data Sheet (SDS) for information regarding safety and handling of this product.

Preparation - All products are manufactured and tested according to established, documented procedures and methodology. Production documentation records manufacturing data, raw material traceability and testing history on a per lot basis. Balances, thermometers, and glassware are calibrated before first use and on a regular schedule with references traceable to NIST standards.

Submitted by: Greg Albright, Chemist Supervisor

Greg Albright

Reagent

WTOC1000SP_00030

RICCA CHEMICAL COMPANY®

1841 Broad Street
Pocomoke City, MD 21851
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

3463729
ID: WTOC1000SP_00030
Exp:10/31/20 Prpd:TAM Opn:11/11/19
1000 ppm TOC standard

Organic Carbon Standard, 1000 ppm C

Manufacture Date: OCT 21, 2019

Lot Number: 2910D79 **Product Number:** 1847 **Expiration Date:** OCT 2020

The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is based upon the volumetric method of preparation.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Phosphoric Acid	7664-38-2	ACS
Potassium Acid Phthalate	877-24-7	ACS Acidimetric

Test	Specification	Result
Appearance	Colorless liquid	Passed
Carbon (C)	995-1005 ppm	1000 ppm

Specification	Reference
Organic Carbon Stock Solution	APHA (5310 B)
Potassium Hydrogen Phthalate, Stock Solution	EPA (SW-846) (9060)
Potassium Hydrogen Phthalate, Stock Solution, 1000 mg Carbon/lite	EPA (415.1)
Organic Carbon Solution, Standard (1 mL = 1 mg C)	ASTM (D 2579)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1847-16	500 mL amber glass	12 months
1847-32	1 L amber glass	12 months
1847-4	120 mL amber glass	12 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Chris Collins (10/21/2019)
Quality Control Supervisor

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job Number: 180-110097-1

SDG No.:

Project: San Jacinto River Waste Pits Superfund

Client Sample ID	Lab Sample ID
11215702-GW-TANK#1	180-110097-1
11215702-GW-TANK#2	180-110097-2

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 11215702-GW-TANK#1

Lab Sample ID: 180-110097-1

Lab Name: Eurofins TestAmerica, Pittsburgh

Job No.: 180-110097-1

SDG ID.:

Matrix: Water

Date Sampled: 08/26/2020 13:00

Reporting Basis: WET

Date Received: 08/27/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	ND	1.0	0.51	mg/L			1	SM 5310C

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID:	11215702-GW-TANK#2	Lab Sample ID:	180-110097-2
Lab Name:	Eurofins TestAmerica, Pittsburgh	Job No.:	180-110097-1
SDG ID.:			
Matrix:	Water	Date Sampled:	08/26/2020 14:00
Reporting Basis:	WET	Date Received:	08/27/2020 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon - Duplicates	ND	1.0	0.51	mg/L			1	SM 5310C

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh   Job No.: 180-110097-1

SDG No.:

Analyst: TAM   Batch Start Date: 09/02/2020

Reporting Units: mg/L   Analytical Batch No.: 328433

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
2	ICV	20:03	Total Organic Carbon - Duplicates	37.6	40.0	94	90-110		ICV 40 PPM_01621
3	ICB	20:21	Total Organic Carbon - Duplicates	ND					
14	CCV	23:44	Total Organic Carbon - Duplicates	10.1	10.0	101	90-110		10 PPM TOC/CC_01482
15	CCB	00:02	Total Organic Carbon - Duplicates	ND					
26	CCV	03:23	Total Organic Carbon - Duplicates	9.81	10.0	98	90-110		10 PPM TOC/CC_01482
27	CCB	03:41	Total Organic Carbon - Duplicates	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-110097-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 328433 Date: 09/02/2020 21:16							
SM 5310C	MB 180-328433/6	Total Organic Carbon - Duplicates	ND		mg/L	1.0	1

FORM III-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-110097-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 328433	Date: 09/02/2020 20:39										
					LCS Source:	LCS 20 PPM_01616					
SM 5310C	LCS 180-328433/4	Total Organic Carbon - Duplicates	19.2		mg/L	20.0	96	85-115	1	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE DUPLICATE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-110097-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 328433 Date: 09/02/2020 20:58											
						LCSD Source: LCS 20 PPM_01616					
SM 5310C	LCSD 180-328433/5	Total Organic Carbon - Duplicates	19.5		mg/L	20.0	98	85-115	1	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburg

Job Number: 180-110097-1

SDG Number:

Matrix: Water

Instrument ID: TOC1030

Method: SM 5310C

MDL Date: 03/21/2017 16:51

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Total Organic Carbon - Duplicates		1	0.5084

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburg   Job Number: 180-110097-1

SDG Number:

Matrix: Water   Instrument ID: TOC1030

Method: SM 5310C   XMDL Date: 03/21/2017 16:52

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Organic Carbon - Duplicates		1	0.5084

FORM IX - IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Pittsburgh Job No.: 180-110097-1
SDG No.:
Instrument ID: TOC1030 Analysis Method: SM 5310C
Start Date: 09/02/2020 19:45 End Date: 09/03/2020 07:02

Lab Sample Id	D/F	Type	Time	Analytes
				TOCD
ZZZZZZ			19:45	
ICV 180-328433/2	1		20:03	X
ICB 180-328433/3	1		20:21	X
LCS 180-328433/4	1	T	20:39	X
LCSD 180-328433/5	1	T	20:58	X
MB 180-328433/6	1	T	21:16	X
ZZZZZZ			21:34	
ZZZZZZ			21:53	
ZZZZZZ			22:11	
ZZZZZZ			22:30	
ZZZZZZ			22:49	
ZZZZZZ			23:07	
ZZZZZZ			23:25	
CCV 180-328433/14	1		23:44	X
CCB 180-328433/15	1		00:02	X
ZZZZZZ			00:20	
ZZZZZZ			00:38	
ZZZZZZ			00:56	
ZZZZZZ			01:15	
180-110097-1	1	T	01:33	X
180-110097-2	1	T	01:51	X
ZZZZZZ			02:10	
ZZZZZZ			02:28	
ZZZZZZ			02:47	
ZZZZZZ			03:05	
CCV 180-328433/26	1		03:23	X
CCB 180-328433/27	1		03:41	X
ZZZZZZ			03:59	
ZZZZZZ			04:17	
ZZZZZZ			04:35	
ZZZZZZ			04:54	
ZZZZZZ			05:12	
ZZZZZZ			05:31	
ZZZZZZ			05:49	
ZZZZZZ			06:07	
ZZZZZZ			06:25	
CCV 180-328433/37			06:44	
CCB 180-328433/38			07:02	

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Pittsbur Job No.: 180-110097-1

SDG No.:

Batch Number: 328433 Batch Start Date: 09/02/20 19:45 Batch Analyst: Mastalski, Tessa A

Batch Method: SM 5310C Batch End Date: 09/03/20 07:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	Res1&2RPD	RPDOK	10 PPM TOC/CC 01482	ICV 40 PPM 01621	LCS 20 PPM 01616
ICV 180-328433/2		SM 5310C			2 %	TOC Pass		40 mL	
ICB 180-328433/3		SM 5310C			200 %	TOC Fail			
LCS 180-328433/4		SM 5310C			2 %	TOC Pass			40 mL
LCSD 180-328433/5		SM 5310C			0 %	TOC Pass			40 mL
MB 180-328433/6		SM 5310C				TOC Pass			
CCV 180-328433/14		SM 5310C			1 %	TOC Pass	40 mL		
CCB 180-328433/15		SM 5310C				TOC Pass			
180-110097-B-1	11215702-GW-TANK #1	SM 5310C	T	<2 SU	200 %	TOC Fail			
180-110097-A-2	11215702-GW-TANK #2	SM 5310C	T	<2 SU	171 %	TOC Fail			
CCV 180-328433/26		SM 5310C			1 %	TOC Pass	40 mL		
CCB 180-328433/27		SM 5310C				TOC Pass			

Batch Notes	
Batch Comment	pH strips: HC991818
Phosphoric Acid ID	3837491
Pipette/Syringe/Dispenser ID	B747014653
Sodium Persulfate ID	3837492

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

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15238
USA

Date Prepared: 09/03/2020 By: TOC

Date Approved: By: TM 9/3/20

TOC1030 5310C Batch #328433 090220TOC

Sample Results Summary

Spl #	Vial #	Sample ID	Num Rep	Act Rep	Method	Type	Dil	Cust ID	Mode	Avg. Area (cts)	Avg. Mass (ug)	Avg. Conc (PPM)	Std. Dev	% RSD	Notes
1	1	BLANK	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	926	0.276	0.116	390	42.12	Pass
2	2	ICV 40 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	164,532	90.216	37.591	2,604	1.58	Fail
3	3	ICB	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	1,007	0.016	0.006	176	17.47	Fail
4	4	LCS 20 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	84,668	46.137	19.224	1,394	1.65	Fail
5	5	LCSD 20 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	85,873	46.803	19.501	82	0.10	Fail
6	6	MB	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	756	0.000	0.000	169	22.31	Fail
7	7	180-109957-B-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	24,591	13.338	5.558	603	2.45	Pass
8	8	180-109958-B-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	23,225	12.584	5.244	801	3.45	Pass
9	9	180-110017-C-2	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	87,451	48.032	20.013	997	1.14	Pass
10	10	180-109862-E-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	277,716	153.045	63.769	6,606	2.38	Pass
11	11	180-109937-K-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	14,511	7.775	3.239	541	3.73	Pass
12	12	180-110035-I-5	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	2,860	1.344	0.560	299	10.47	Pass
13	13	180-110035-J-6	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	3,049	1.448	0.604	306	10.04	Pass
14	14	CCV 10 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	44,815	24.141	10.059	163	0.36	Fail
15	15	CCB	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	879	0.000	0.000	38	4.35	Fail
16	16	180-110036-J-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	12,890	6.880	2.867	756	5.87	Pass
17	17	180-110036-J-2	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	9,804	5.177	2.157	163	1.66	Pass
18	18	180-110036-I-3	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	9,809	5.179	2.158	144	1.47	Pass
19	19	180-110036-J-4	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	9,794	5.171	2.154	213	2.17	Pass
20	20	180-110097-B-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	434	0.007	0.003	23	5.42	Pass
21	21	180-110097-A-2	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	633	0.115	0.048	253	40.01	Pass
22	22	180-110125-C-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	3,723	1.820	0.758	123	3.30	Pass
23	23	180-110143-J-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	10,029	5.301	2.208	404	4.03	Pass

Instrument ID: E717730273 (Wet Chemical)
Report_ID: TOC1030-R03115 (Report generated by OI Analytical's TOC Reporter V1.4.2)

Date Printed: 9/3/2020

By Sample Report

▨ Denotes Excluded Replicates

Denotes First Failed Samples

24	24	180-110143-I-2	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	6,726	3.478	1.448	100	1.48	Pass
25	25	180-110143-I-3	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	6,229	3.203	1.335	67	1.08	Pass
26	26	CCV 10 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	43,748	23.552	9.813	182	0.42	Fail
27	27	CCB	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	628	0.000	0.000	262	41.73	Fail
28	28	180-110143-I-4	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	8,579	4.500	1.876	445	5.19	Pass
29	29	180-110182-J-4	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	30,755	16.740	6.975	932	3.03	Pass
30	30	180-110182-J-5	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	4,708	2.364	0.985	631	13.40	Pass
31	31	LCS 20 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	84,289	45.928	19.137	2,872	3.41	Fail
32	32	LCSD 20 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	86,341	47.061	19.608	354	0.41	Fail
33	33	MB	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	934	0.024	0.010	321	34.31	Fail
34	34	180-110182-J-6	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	8,380	4.391	1.829	364	4.34	Pass
35	35	180-110182-J-7	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	8,198	4.290	1.788	42	0.51	Pass
36	36	180-110174-B-1	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	24,176	13.109	5.462	1,360	5.63	Pass
37	37	CCV 10 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	44,901	24.189	10.079	370	0.82	Fail
38	38	CCB	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Chk Standard	1 : 1	00000000	TOC	984	0.021	0.009	238	24.15	Fail

▨ Denotes Excluded Replicates

Denotes First Failed Samples

Sample Results

Spl #: 1 **Sample ID :** BLANK **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 1 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	7:45 pm	-	-	-	1,201	0.429	0.179
2	7:53 pm	-	-	-	650	0.124	0.052
Avg.		-	-	-	926	0.276	0.116
Std.Dev.							
% RSD.					42.12		

Spl #: 2 **Sample ID :** ICV 40 PPM **Type :** Chk Standarc **Date:** 09/02/2020 **Status:** Fail
Vial #: 2 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:03 pm	-	-	-	162,690	89.200	37.167
2	8:12 pm	-	-	-	166,373	91.232	38.014
Avg.		-	-	-	164,532	90.216	37.591
Std.Dev.							
% RSD.					1.58		

Spl #: 3 **Sample ID :** ICB **Type :** Chk Standarc **Date:** 09/02/2020 **Status:** Fail
Vial #: 3 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:21 pm	-	-	-	1,131	0.031	0.012
2	8:30 pm	-	-	-	883	0.000	0.000
Avg.		-	-	-	1,007	0.016	0.006
Std.Dev.							
% RSD.					17.47		

Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Spl #: 4 **Sample ID :** LCS 20 PPM **Type :** Chk Standarc **Date:** 09/02/2020 **Status:** Fail
Vial #: 4 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:39 pm	-	-	-	83,682	45.593	18.997
2	8:48 pm	-	-	-	85,653	46.681	19.451
Avg.		-	-	-	84,668	46.137	19.224
Std.Dev.							
% RSD.					1.65		

Spl #: 5 **Sample ID :** LCSD 20 PPM **Type :** Chk Standarc **Date:** 09/02/2020 **Status:** Fail
Vial #: 5 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:58 pm	-	-	-	85,815	46.771	19.488
2	9:06 pm	-	-	-	85,931	46.835	19.514
Avg.		-	-	-	85,873	46.803	19.501
Std.Dev.							
% RSD.					0.10		

Spl #: 6 **Sample ID :** MB **Type :** Chk Standarc **Date:** 09/02/2020 **Status:** Fail
Vial #: 6 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	9:16 pm	-	-	-	875	0.000	0.000
2	9:24 pm	-	-	-	636	0.000	0.000
Avg.		-	-	-	756	0.000	0.000
Std.Dev.							
% RSD.					22.31		

▨ Denotes Excluded Replicates

Denotes First Failed Samples

Date Prepared: 09/03/2020 **By:** TOC
Date Approved: **By:**

Spl #: 7 **Sample ID :** 180-109957-B-1 **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 7 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	9:34 pm	-	-	-	24,165	13.103	5.460
2	9:43 pm	-	-	-	25,018	13.573	5.656
Avg.		-	-	-	24,591	13.338	5.558
Std.Dev.							
% RSD.					2.45		

Spl #: 8 **Sample ID :** 180-109958-B-1 **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 8 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	9:53 pm	-	-	-	22,659	12.271	5.113
2	10:01 pm	-	-	-	23,792	12.897	5.374
Avg.		-	-	-	23,225	12.584	5.244
Std.Dev.							
% RSD.					3.45		

Spl #: 9 **Sample ID :** 180-110017-C-2 **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 9 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	10:11 pm	-	-	-	86,746	47.643	19.851
2	10:20 pm	-	-	-	88,156	48.421	20.175
Avg.		-	-	-	87,451	48.032	20.013
Std.Dev.							
% RSD.					1.14		

Spl #: 10 **Sample ID :** 180-109862-E-1 **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 10 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	10:30 pm	-	-	-	273,045	150.467	62.695
2	10:39 pm	-	-	-	282,388	155.623	64.843
Avg.		-	-	-	277,716	153.045	63.769
Std.Dev.							
% RSD.					2.38		

Comments: 200X

Spl #: 11 **Sample ID :** 180-109937-K-1 **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 11 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	10:49 pm	-	-	-	14,894	7.986	3.327
2	10:58 pm	-	-	-	14,129	7.563	3.151
Avg.		-	-	-	14,511	7.775	3.239
Std.Dev.							
% RSD.					3.73		

Spl #: 12 **Sample ID :** 180-110035-I-5 **Type :** Sample **Date:** 09/02/2020 **Status:** Pass
Vial #: 12 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	11:07 pm	-	-	-	2,648	1.227	0.511
2	11:16 pm	-	-	-	3,072	1.461	0.609
Avg.		-	-	-	2,860	1.344	0.560
Std.Dev.							
% RSD.					10.47		

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PITTSBURGH, PA.
15238
USA

Date Prepared:	09/03/2020	**By:**	TOC
Date Approved:		**By:**	

Spl #:	13	**Sample ID :**	180-110035-J-6	**Type :**	Sample	**Date:**	09/02/2020	**Status:**	Pass
Vial #:	13	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000		

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	11:25 pm	-	-	-	2,833	1.329	0.554
2	11:34 pm	-	-	-	3,266	1.568	0.653
Avg.		-	-	-	3,049	1.448	0.604
Std.Dev.							
% RSD.					10.04		

Spl #:	14	**Sample ID :**	CCV 10 PPM	**Type :**	Chk Standarc	**Date:**	09/02/2020	**Status:**	Fail
Vial #:	14	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000		

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	11:44 pm	-	-	-	44,930	24.205	10.085
2	11:52 pm	-	-	-	44,699	24.077	10.032
Avg.		-	-	-	44,815	24.141	10.059
Std.Dev.							
% RSD.					0.36		

Spl #:	15	**Sample ID :**	CCB	**Type :**	Chk Standarc	**Date:**	09/03/2020	**Status:**	Fail
Vial #:	15	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000		

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	12:02 am	-	-	-	906	0.000	0.000
2	12:10 am	-	-	-	852	0.000	0.000
Avg.		-	-	-	879	0.000	0.000
Std.Dev.							
% RSD.					4.35		

Spl #: 16 **Sample ID :** 180-110036-J-1 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 16 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	12:20 am	-	-	-	12,356	6.585	2.744
2	12:28 am	-	-	-	13,425	7.175	2.990
Avg.		-	-	-	12,890	6.880	2.867
Std.Dev.							
% RSD.					5.87		

Spl #: 17 **Sample ID :** 180-110036-J-2 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 17 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	12:38 am	-	-	-	9,919	5.240	2.183
2	12:47 am	-	-	-	9,689	5.113	2.131
Avg.		-	-	-	9,804	5.177	2.157
Std.Dev.							
% RSD.					1.66		

Spl #: 18 **Sample ID :** 180-110036-I-3 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 18 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	12:56 am	-	-	-	9,707	5.123	2.135
2	1:05 am	-	-	-	9,911	5.236	2.182
Avg.		-	-	-	9,809	5.179	2.158
Std.Dev.							
% RSD.					1.47		

Spl #: 19 **Sample ID :** 180-110036-J-4 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 19 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** C0000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	1:15 am	-	-	-	9,644	5.088	2.120
2	1:23 am	-	-	-	9,945	5.254	2.189
Avg.		-	-	-	9,794	5.171	2.154
Std.Dev.							
% RSD.					2.17		

Spl #: 20 **Sample ID :** 180-110097-B-1 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 20 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	1:33 am	-	-	-	450	0.014	0.006
2	1:41 am	-	-	-	417	0.000	0.000
Avg.		-	-	-	434	0.007	0.003
Std.Dev.							
% RSD.					5.42		

Spl #: 21 **Sample ID :** 180-110097-A-2 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 21 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	1:51 am	-	-	-	813	0.214	0.089
2	1:59 am	-	-	-	454	0.016	0.007
Avg.		-	-	-	633	0.115	0.048
Std.Dev.							
% RSD.					40.01		

Date Prepared: 09/03/2020 **By:** TOC
Date Approved: **By:**

Spl #: 22 **Sample ID :** 180-110125-C-1 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 22 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	2:10 am	-	-	-	3,809	1.868	0.778
2	2:18 am	-	-	-	3,636	1.772	0.738
Avg.		-	-	-	3,723	1.820	0.758
Std.Dev.							
% RSD.					3.30		

Comments: 40X

Spl #: 23 **Sample ID :** 180-110143-J-1 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 23 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	2:28 am	-	-	-	9,743	5.143	2.143
2	2:37 am	-	-	-	10,315	5.458	2.274
Avg.		-	-	-	10,029	5.301	2.208
Std.Dev.							
% RSD.					4.03		

Spl #: 24 **Sample ID :** 180-110143-I-2 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 24 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	2:47 am	-	-	-	6,656	3.439	1.432
2	2:55 am	-	-	-	6,797	3.517	1.465
Avg.		-	-	-	6,726	3.478	1.448
Std.Dev.							
% RSD.					1.48		

Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Spl #: 25 **Sample ID :** 180-110143-I-3 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 25 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	3:05 am	-	-	-	6,276	3.230	1.346
2	3:13 am	-	-	-	6,182	3.177	1.324
Avg.		-	-	-	6,229	3.203	1.335
Std.Dev.							
% RSD.					1.08		

Spl #: 26 **Sample ID :** CCV 10 PPM **Type :** Chk Standar **Date:** 09/03/2020 **Status:** Fail
Vial #: 26 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	3:23 am	-	-	-	43,877	23.623	9.843
2	3:32 am	-	-	-	43,620	23.482	9.783
Avg.		-	-	-	43,748	23.552	9.813
Std.Dev.							
% RSD.					0.42		

Spl #: 27 **Sample ID :** CCB **Type :** Chk Standar **Date:** 09/03/2020 **Status:** Fail
Vial #: 27 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	3:41 am	-	-	-	813	0.000	0.000
2	3:49 am	-	-	-	443	0.000	0.000
Avg.		-	-	-	628	0.000	0.000
Std.Dev.							
% RSD.					41.73		

Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Spl #: 28 **Sample ID :** 180-110143-I-4 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 28 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	3:59 am	-	-	-	8,264	4.327	1.803
2	4:07 am	-	-	-	8,894	4.674	1.948
Avg.		-	-	-	8,579	4.500	1.876
Std.Dev.							
% RSD.					5.19		

Spl #: 29 **Sample ID :** 180-110182-J-4 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 29 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	4:17 am	-	-	-	30,096	16.376	6.824
2	4:26 am	-	-	-	31,414	17.104	7.127
Avg.		-	-	-	30,755	16.740	6.975
Std.Dev.							
% RSD.					3.03		

Spl #: 30 **Sample ID :** 180-110182-J-5 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 30 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	4:35 am	-	-	-	4,262	2.118	0.882
2	4:44 am	-	-	-	5,154	2.610	1.088
Avg.		-	-	-	4,708	2.364	0.985
Std.Dev.							
% RSD.					13.40		

▨ Denotes Excluded Replicates

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Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Spl #: 31 **Sample ID :** LCS 20 PPM **Type :** Chk Standar **Date:** 09/03/2020 **Status:** Fail
Vial #: 31 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	4:54 am	-	-	-	82,258	44.807	18.670
2	5:02 am	-	-	-	86,320	47.049	19.604
Avg.		-	-	-	84,289	45.928	19.137
Std.Dev.							
% RSD.					3.41		

Spl #: 32 **Sample ID :** LCSD 20 PPM **Type :** Chk Standar **Date:** 09/03/2020 **Status:** Fail
Vial #: 32 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	5:12 am	-	-	-	86,091	46.923	19.551
2	5:21 am	-	-	-	86,591	47.199	19.666
Avg.		-	-	-	86,341	47.061	19.608
Std.Dev.							
% RSD.					0.41		

Spl #: 33 **Sample ID :** MB **Type :** Chk Standar **Date:** 09/03/2020 **Status:** Fail
Vial #: 33 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	5:31 am	-	-	-	1,161	0.048	0.020
2	5:39 am	-	-	-	708	0.000	0.000
Avg.		-	-	-	934	0.024	0.010
Std.Dev.							
% RSD.					34.31		

Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Spl #: 34 **Sample ID :** 180-110182-J-6 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 34 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	5:49 am	-	-	-	8,123	4.249	1.770
2	5:57 am	-	-	-	8,638	4.533	1.889
Avg.		-	-	-	8,380	4.391	1.829
Std.Dev.							
% RSD.					4.34		

Spl #: 35 **Sample ID :** 180-110182-J-7 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 35 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	6:07 am	-	-	-	8,168	4.274	1.781
2	6:15 am	-	-	-	8,228	4.307	1.794
Avg.		-	-	-	8,198	4.290	1.788
Std.Dev.							
% RSD.					0.51		

Spl #: 36 **Sample ID :** 180-110174-B-1 **Type :** Sample **Date:** 09/03/2020 **Status:** Pass
Vial #: 36 **Method :** TOC MAR 2020 - Mar 03, 202 **Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	6:25 am	-	-	-	23,214	12.578	5.241
2	6:34 am	-	-	-	25,137	13.639	5.683
Avg.		-	-	-	24,176	13.109	5.462
Std.Dev.							
% RSD.					5.63		

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Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Spl #:	37	**Sample ID :**	CCV 10 PPM	**Type :**	Chk Standarc	**Date:**	09/03/2020	**Status:**	Fail
Vial #:	37	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000		

Rep #	**Time**	**TIC Area (cts)**	**TIC Mass (ugC)**	**TIC Conc (PPM)**	**TOC Area (cts)**	**TOC Mass (ugC)**	**TOC Conc (PPM)**
1	6:44 am	-	-	-	44,640	24.045	10.019
2	6:53 am	-	-	-	45,163	24.333	10.139
Avg.		-	-	-	44,901	24.189	10.079
Std.Dev.							
% RSD.					0.82		

Spl #:	38	**Sample ID :**	CCB	**Type :**	Chk Standarc	**Date:**	09/03/2020	**Status:**	Fail
Vial #:	38	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000		

Rep #	**Time**	**TIC Area (cts)**	**TIC Mass (ugC)**	**TIC Conc (PPM)**	**TOC Area (cts)**	**TOC Mass (ugC)**	**TOC Conc (PPM)**
1	7:02 am	-	-	-	1,152	0.042	0.018
2	7:10 am	-	-	-	816	0.000	0.000
Avg.		-	-	-	984	0.021	0.009
Std.Dev.							
% RSD.					24.15		

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Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Method Summary

Method Details

Method Name: TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM
Date Created: 03/03/2020
Time Created: 16:44
Created By: toc

Analysis Mode: NPOC Only
Sparging Mode: Internal
Pre-Acid Volume (mL): 1.000
Sparge Time (mm:ss): 02:00

Volumes
Sample Volume (mL): 2.400
Acid Volume (mL): 1.000
Persulfate Volume(mL): 1.500

Other
SysPressure: 20.00

Pre-Processing

Sample Dilution: Disabled
Dilution Mode: Automatic
Dilution Factor: 1 : 1

Outlier Removal Criteria
Enabled: No
Additional Replicates: 1
Max. % RSD. 10.00

Rinses
Rinse Volume (mL): 10.000
Rinses Per Sample: 1
Rinses Per Replicate: 0

Max. Std. Dev. 100

Times

	React	Detect
TIC	01:30	03:00
TOC	02:00	03:00

Temp

	React	Detect
TIC	70	70
TOC	98	98

Use Modified Oxidant: No

Calibration Summary

Calibration Generation

Generation Mode: Manual
# of Stds: 5
Dilution Factor: 10 : 1
Dilution Volume (mL): 1.000
Add Zero as Std #1: No

Calibration Mode

Primary Mode: TOC
User for ALL Modes: Enabled

Calibration Pass/Fail Criteria

Parameter	Enabled	Low	High	Failure
RF (ugC/K-cts)	Yes	0.1000	0.3000	Continue
	Yes	0.950	1.000	Continue
Offset (area) (cts)	No	-	-	-
Offset (mass) (ugC)	No	-	-	-
QC Blank(cts)	No	-	-	-

Checks, QC's and Actions

Type	Target (PPM)	Tolerance (+/- %)	1st Failure	2nd Failure
CK Std	n/a	10.00	Re-run	Continue
QC #1	0.000	10.00	Re-run	Continue
QC #2	0.000	10.00	Re-run	Continue
QC #3	0.000	10.00	Re-run	Continue
QC #4	0.000	10.00	Re-run	Continue
SST	0.000	15.00	Abort	Abort

Instrument ID: E717730273 (Wet Chemical)
Report_ID: TOC1030-R03115 (Report generated by OI Analytical's TOC Reporter V1.4.2)

Date Printed: 9/3/2020

By Sample Report

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Date Prepared: 09/03/2020 **By:** TOC

Date Approved: **By:**

Calibration Details

Calibration Mode:	TOC
Date Calibrated:	06/29/2020
Time Calibrated:	8:51 pm
Calibrated By:	toc
RF (ugC/k-cts):	0.5519
R2:	0.9983
R:	0.9991
QC Blank(cts):	2,710
Offset (cts):	-993
Offset (ugC):	0.548
Reagent Blank (cts):	425
Units of Measure:	PPM->mg/L C

Calibration Settings

Stock Conc. For Dilutions: (PPM)	1,000.000
# of Reagent Blanks:	4
EFC Enabled:	No
Total Flowrate w/EFC:	100 ml/min
Check Standards:	Subtract RW
Samples:	Substract RB
Regression type:	Unweighted Linear

Calculations:

$$Concentration = \frac{\frac{RF}{1000} \times Area}{volume}$$

Samples: $Area = Area_{Peak} - Area_{Offset}$ or $Area = Area_{Peak} - Area_{RB}$

CHK Stds: $Area = Area_{Peak} - Area_{Offset}$ or $Area = Area_{Peak} - Area_{RW}$

QC Samples: $Area = Area_{Peak} - Area_{QCBlank}$

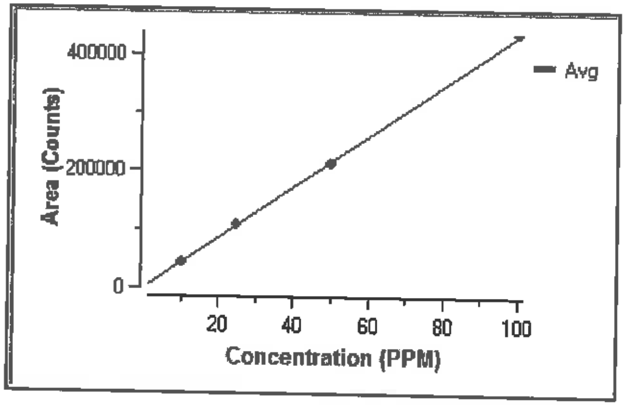

$$y = m \times x + b$$

$y \Rightarrow Area$ $\qquad m \Rightarrow \frac{1000}{RF \times volume}$ $\qquad b \Rightarrow 0$

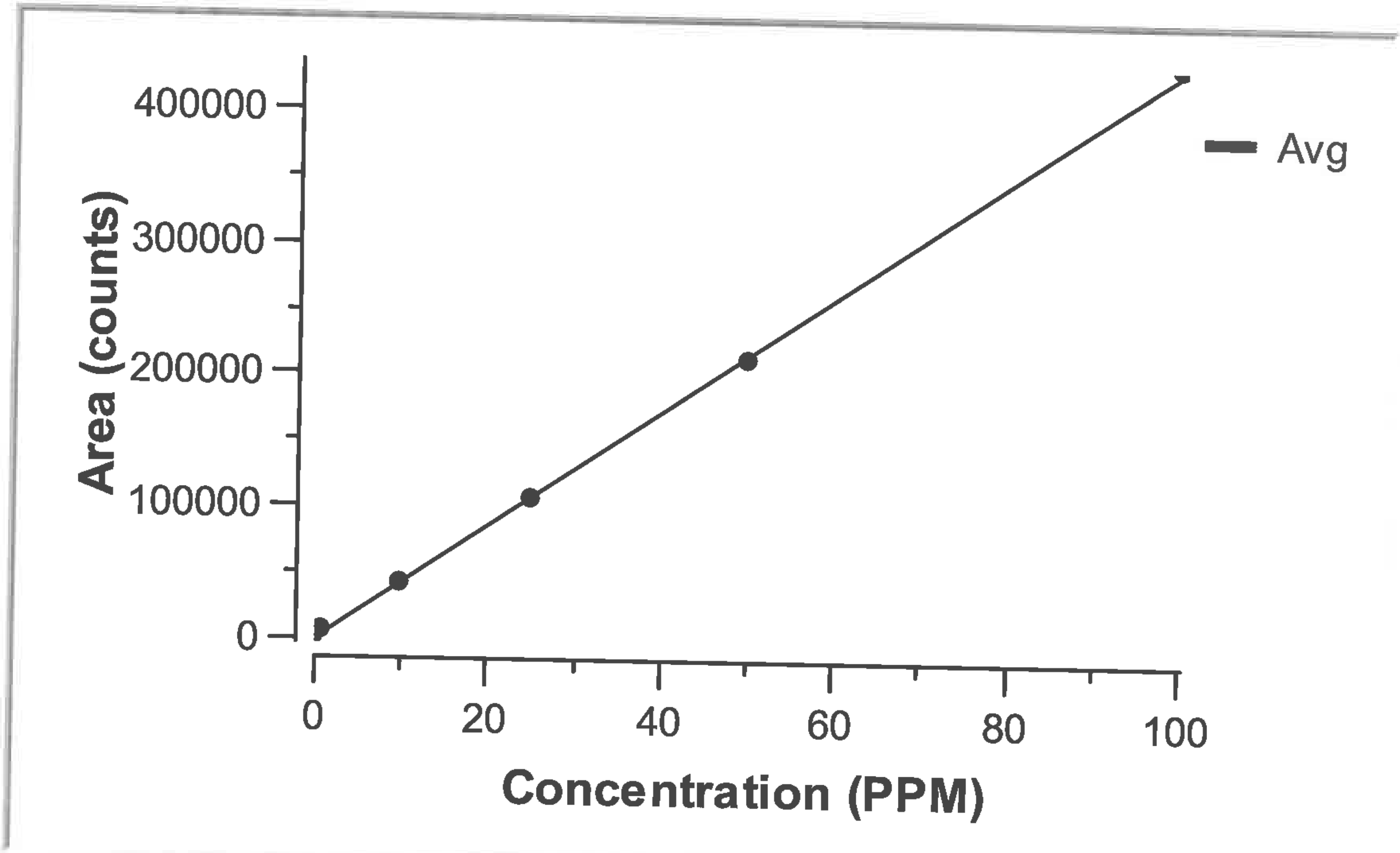
Area (counts)
400000
300000
200000
100000
0
Avg
0
20
40
60
80
100
Concentration (PPM)

User ID:toc Name:Total Organic Carbon
Title:Mr Dept:OIC-TOC

Calibration - Quick View -TOC

Revision:	6-TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM
Modified By:	toc
Date Created:	2020/03/03; 04:44 PM
Last Modified:	2020/06/29; 08:31 PM
Last Calibrated:	2020/06/29; 08:31 PM
RF(ugC/k-cnt):	0.5519
R2:	0.9983
Reagent Blank(cts):	425
Offset Area(cts):	-993
Offset Mass(ugC):	0.55

Std #	Conc (PPM)	Volume (mL)	# Reps	Area	Std. Dev	%RSD	Date Analysed
RW	0.000	2.400	2	1,076	18	1.66	2020-06-29; 07:07PM
1	1.000	2.400	2	5,296	233	4.39	2020-06-29; 07:24PM
2	10.000	2.400	2	41,163	1,899	4.61	2020-06-29; 07:39PM
3	25.000	2.400	2	106,170	4,159	3.92	2020-06-29; 07:54PM
4	50.000	2.400	2	213,156	3,977	1.87	2020-06-29; 08:10PM
5	100.000	2.400	2	435,981	19,941	4.57	2020-06-29; 08:25PM

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Date Prepared: 06/29/2020 **By:** TOC

Date Approved: **By:**

Sample Results Summary

Spl #	Vial #	Sample ID	Num Rep	Act Rep	Method	Type	Dil	Cust ID	Mode	Avg. Area (cts)	Avg. Mass (ug)	Avg. Conc (PPM)	Std. Dev	% RSD	Notes
1	1	DI WATER	4	4	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	2,028	0.936	0.390	1,563	77.08	Pass
2	2	BLANK	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Sample	1 : 1	00000000	TOC	1,137	0.441	0.184	428	37.61	Pass
4	3	TOC-RW	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Std	1 : 1	00000000	TOC	1,076	0.000	0.000	18	1.66	
5	4	TOC-Std#1-1.000 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Std	1 : 1	00000000	TOC	5,296	2.400	1.000	233	4.39	
6	5	TOC-Std#2-10.000 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Std	1 : 1	00000000	TOC	41,163	24.000	10.000	1,899	4.61	
7	6	TOC-Std#3-25.000 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Std	1 : 1	00000000	TOC	106,170	60.000	25.000	4,159	3.92	
8	7	TOC-Std#4-50.000 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Std	1 : 1	00000000	TOC	213,156	120.000	50.000	3,977	1.87	
9	8	TOC-Std#5-100.000 PPM	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	Std	1 : 1	00000000	TOC	435,981	240.000	100.000	19,941	4.57	
10	9	QC BLANK	2	2	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM	QC Blank	1 : 1	00000000	TOC	2,710	0.000	0.000	1,552	57.26	

062920TOCCAL

▨ Denotes Excluded Replicates

Denotes First Failed Samples

Sample Results

Spl #: 1 **Sample ID :** DI WATER **Type :** Sample **Date:** 06/29/2020 **Status:** Pass
Vial #: 1 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	5:38 pm	-	-	-	4,092	2.082	0.868
2	5:42 pm	-	-	-	791	0.249	0.104
3	5:49 pm	-	-	-	2,389	1.136	0.474
4	5:54 pm	-	-	-	840	0.276	0.114
Avg.		-	-	-	2,028	0.936	0.390
Std.Dev.							
% RSD.					77.08		

Spl #: 2 **Sample ID :** BLANK **Type :** Sample **Date:** 06/29/2020 **Status:** Pass
Vial #: 2 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	6:04 pm	-	-	-	1,440	0.609	0.254
2	6:09 pm	-	-	-	835	0.273	0.114
Avg.		-	-	-	1,137	0.441	0.184
Std.Dev.							
% RSD.					37.61		

Spl #: 4 **Sample ID :** TOC-RW **Type :** Std **Date:** 06/29/2020 **Status:**
Vial #: 3 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	7:07 pm	-	-	-	1,088	0.000	0.000
2	7:13 pm	-	-	-	1,063	0.000	0.000
Avg.		-	-	-	1,076	0.000	0.000
Std.Dev.							
% RSD.					1.66		

Spl #:	5	**Sample ID :**	TOC-Std#1-1.000 PPM	**Type :**	Std	**Date:**	06/29/2020	**Status:**
Vial #:	4	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000	

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	7:24 pm	-	-	-	5,460	2.400	1.000
2	7:30 pm	-	-	-	5,131	2.400	1.000
Avg.		-	-	-	5,296	2.400	1.000
Std.Dev.							
% RSD.					4.39		

Spl #:	6	**Sample ID :**	TOC-Std#2-10.000 PPM	**Type :**	Std	**Date:**	06/29/2020	**Status:**
Vial #:	5	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000	

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	7:39 pm	-	-	-	39,820	24.000	10.000
2	7:45 pm	-	-	-	42,506	24.000	10.000
Avg.		-	-	-	41,163	24.000	10.000
Std.Dev.							
% RSD.					4.61		

Spl #:	7	**Sample ID :**	TOC-Std#3-25.000 PPM	**Type :**	Std	**Date:**	06/29/2020	**Status:**
Vial #:	6	**Method :**	TOC MAR 2020 - Mar 03, 202(	**Dilution**	1 : 1	**Customer ID:**	00000000	

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	7:54 pm	-	-	-	103,229	60.000	25.000
2	8:00 pm	-	-	-	109,111	60.000	25.000
Avg.		-	-	-	106,170	60.000	25.000
Std.Dev.							
% RSD.					3.92		

Date Prepared: 06/29/2020 **By:** TOC

Date Approved: **By:**

Spl #: 8 **Sample ID :** TOC-Std#4-50.000 PPM **Type :** Std **Date:** 06/29/2020 **Status:**
Vial #: 7 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:10 pm	-	-	-	210,344	120.000	50.000
2	8:15 pm	-	-	-	215,968	120.000	50.000
Avg.		-	-	-	213,156	120.000	50.000
Std.Dev.							
% RSD.					1.87		

Spl #: 9 **Sample ID :** TOC-Std#5-100.000 PPM **Type :** Std **Date:** 06/29/2020 **Status:**
Vial #: 8 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:25 pm	-	-	-	421,881	240.000	100.000
2	8:31 pm	-	-	-	450,082	240.000	100.000
Avg.		-	-	-	435,981	240.000	100.000
Std.Dev.							
% RSD.					4.57		

Spl #: 10 **Sample ID :** QC BLANK **Type :** QC Blank **Date:** 06/29/2020 **Status:**
Vial #: 9 **Method :** TOC MAR 2020 - Mar 03, 202(**Dilution** 1 : 1 **Customer ID:** 00000000

Rep #	Time	TIC Area (cts)	TIC Mass (ugC)	TIC Conc (PPM)	TOC Area (cts)	TOC Mass (ugC)	TOC Conc (PPM)
1	8:44 pm	-	-	-	3,808	0.000	0.000
2	8:51 pm	-	-	-	1,613	0.000	0.000
Avg.		-	-	-	2,710	0.000	0.000
Std.Dev.							
% RSD.					57.26		

▨ Denotes Excluded Replicates

Denotes First Failed Samples

TEST AMERICA
301 ALPHA DRIVE
PITTSBURGH, PA.
15238
USA

Date Prepared: 06/29/2020 **By:** TOC

Date Approved: **By:**

Method Summary

Method Details

Method Name:	TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM
Date Created:	03/03/2020
Time Created:	16:44
Created By:	toc

Analysis Mode:	NPOC Only
Sparging Mode:	Internal
Pre-Acid Volume (mL):	1.000
Sparge Time (mm:ss):	02:00

Volumes

Sample Volume (mL):	2.400
Acid Volume (mL):	1.000
Persulfate Volume(mL):	1.500

Other

SysPressure:	20.00

Pre-Processing

Sample Dilution:	Disabled
Dilution Mode:	Automatic
Dilution Factor:	1 : 1

Outlier Removal Criteria

Enabled:	No
Additional Replicates:	1
Max. % RSD:	10.00

Rinses

Rinse Volume (mL):	10.000
Rinses Per Sample:	1
Rinses Per Replicate:	0
Max. Std. Dev.	100

Use Modified Oxidant: No

Times

	React	Detect
TIC	01:30	03:00
TOC	02:00	03:00

Temp

	React	Detect
TIC	70	70
TOC	98	98

Calibration Summary

Calibration Generation

Generation Mode:	Manual
# of Stds:	5
Dilution Factor:	10 : 1
Dilution Volume (mL):	1.000
Add Zero as Std #1:	No

Calibration Mode

Primary Mode:	TOC
User for ALL Modes:	Enabled

Calibration Pass/Fail Criteria

Parameter	Enabled	Low	High	Failure
R² (ugC/K-cts)	Yes	0.1000	0.3000	Continue
	Yes	0.950	1.000	Continue
Offset (area) (cts)	No	-	-	-
Offset (mass) (ugC)	No	-	-	-
QC Blank(cts)	No	-	-	-

Checks, QC's and Actions

Type	Target (PPM)	Tolerance (+/- %)	1st Failure	2nd Failure
CK Std	n/a	10.00	Re-run	Continue
QC #1	0.000	10.00	Re-run	Continue
QC #2	0.000	10.00	Re-run	Continue
QC #3	0.000	10.00	Re-run	Continue
QC #4	0.000	10.00	Re-run	Continue
SST	0.000	15.00	Abort	Abort

▨ Denotes Excluded Replicates
Denotes First Failed Samples

Date Prepared: 06/29/2020 **By:** TOC

Date Approved: **By:**

Calibration Details

Calibration Mode:	TOC
Date Calibrated:	05/15/2020
Time Calibrated:	6:14 pm
Calibrated By:	toc
RF (ugC/k-cts):	0.5554
R2:	0.9981
R:	0.9990
QC Blank(cts):	3,948
Offset (cts):	-1456
Offset (ugC):	0.809
Reagent Blank (cts):	343
Units of Measure:	PPM->mg/L C

Calibration Settings

Stock Conc. For Dilutions: (PPM)	1,000.000
# of Reagent Blanks:	4
EFC Enabled:	No
Total Flowrate w/EFC:	100 ml/min
Check Standards:	Subtract RW
Samples:	Substract RB
Regression type:	Unweighted Linear

Calculations:

$$Concentration = \frac{\frac{RF}{1000} \times Area}{volume}$$

Samples: $Area = Area_{Peak} - Area_{Offset}$ or $Area = Area_{Peak} - Area_{RB}$

CHK Stds: $Area = Area_{Peak} - Area_{Offset}$ or $Area = Area_{Peak} - Area_{RW}$

QC Samples: $Area = Area_{Peak} - Area_{QCBlank}$

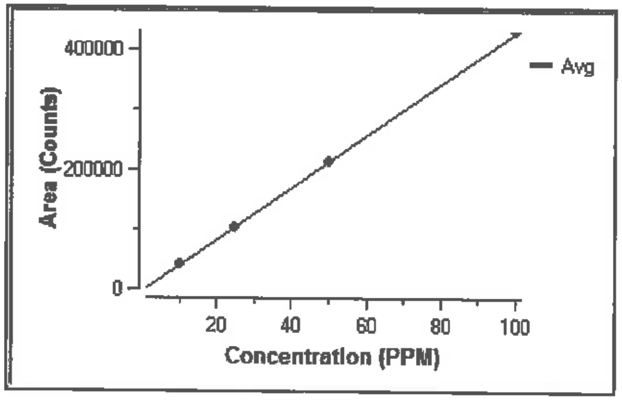

$$y = m \times x + b$$

$y \Rightarrow Area$ $m \Rightarrow \frac{1000}{RF \times volume}$ $b \Rightarrow 0$

TEST AMERICA
301 ALPHA DRIVE
PITTSBURGH, PA.
15238
USA

Date Prepared: 06/29/2020 **By:** TOC

Date Approved: **By:**

Calibration Details

Calibration Mode: TOC
Date Calibrated: 06/29/2020
Time Calibrated: 8:31 pm
Calibrated By: toc
RF (ugC/k-cts): 0.5519
R2: 0.9983
R: 0.9991
QC Blank(cts): 0
Offset (cts): -993
Offset (ugC): 0.548
Reagent Blank (cts): 425
Units of Measure: PPM->mg/L C

Calibration Settings

Stock Conc. For Dilutions: (PPM) 1,000.000
# of Reagent Blanks: 4
EFC Enabled: No
Total Flowrate w/EFC: 100 ml/min
Check Standards: Subtract RW
Samples: Substract RB
Regression type: Unweighted Linear

Calculations:

$$Concentration = \frac{\frac{RF}{1000} \times Area}{volume}$$

Samples: $Area = Area_{Peak} - Area_{Offset}$ *or* $Area = Area_{Peak} - Area_{RB}$
CHK Stds: $Area = Area_{Peak} - Area_{Offset}$ *or* $Area = Area_{Peak} - Area_{RW}$
QC Samples: $Area = Area_{Peak} - Area_{QCBlank}$

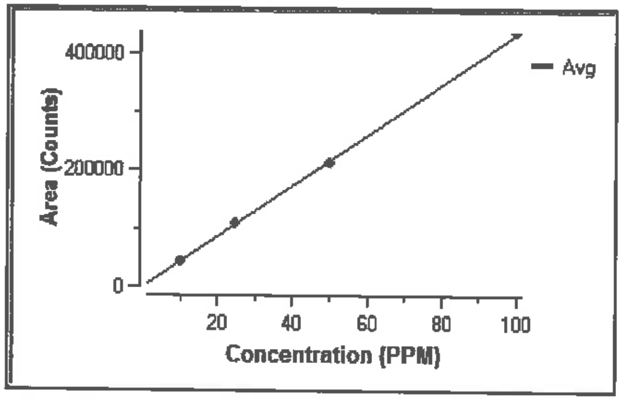

$$y = m \times x + b$$

$y \Rightarrow Area$ $m \Rightarrow \frac{1000}{RF \times volume}$ $b \Rightarrow 0$

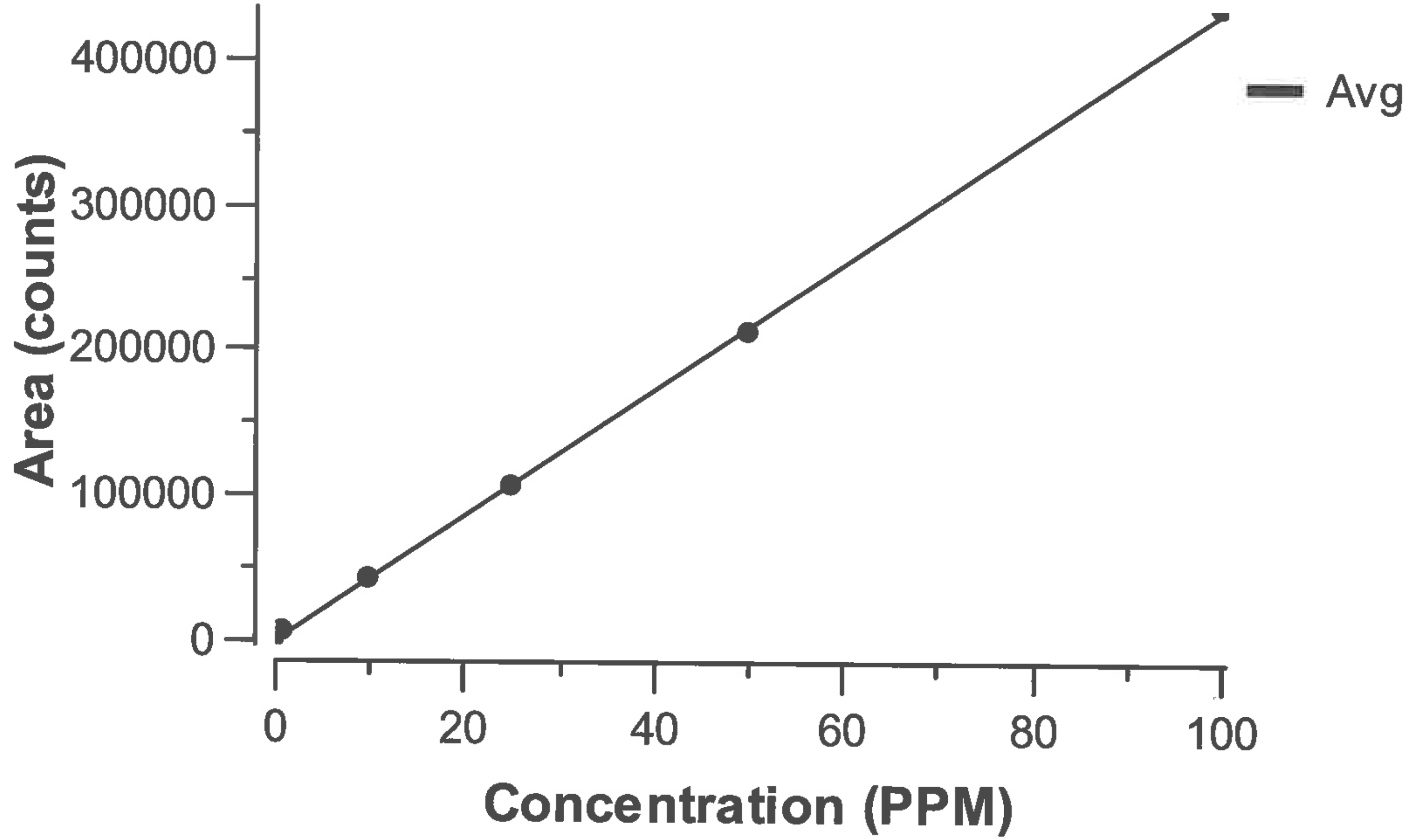
Area (counts)
400000
300000
200000
100000
0
0
20
40
60
80
100
Concentration (PPM)
Avg

User ID:toc	Name:Total Organic Carbon
Title:Mr	Dept:OIC-TOC

Calibration - Quick View -TOC

Revision:	6-TOC MAR 2020 - Mar 03, 2020; 04-44-41 PM
Modified By:	toc
Date Created:	2020/03/03; 04:44 PM
Last Modified:	2020/06/29; 08:31 PM
Last Calibrated:	2020/06/29; 08:31 PM
RF(ugC/k-cnt):	0.5519
R2:	0.9983
Reagent Blank(cts):	425
Offset Area(cts):	-993
Offset Mass(ugC):	0.55

Std #	Conc (PPM)	Volume (mL)	# Reps	Area	Std. Dev	%RSD	Date Analysed
RW	0.000	2.400	2	1,076	18	1.66	2020-06-29; 07:07PM
1	1.000	2.400	2	5,296	233	4.39	2020-06-29; 07:24PM
2	10.000	2.400	2	41,163	1,899	4.61	2020-06-29; 07:39PM
3	25.000	2.400	2	106,170	4,159	3.92	2020-06-29; 07:54PM
4	50.000	2.400	2	213,156	3,977	1.87	2020-06-29; 08:10PM
5	100.000	2.400	2	435,981	19,941	4.57	2020-06-29; 08:25PM

TM 6/29/20

5310C/9060A TOC %Readback Error Calculation Spreadsheet

ICAL Std (ppm)	ICAL RF	ICAL ID	Average Area	Result (ppm)	%Readback Error	%Readback Criteria
1.000	0.5519	062920TOCCAL	5296	1.218	21.786	≤50%
10.000	0.5519	062920TOCCAL	41163	9.466	-5.342	≤20%
25.000	0.5519	062920TOCCAL	106170	24.415	-2.341	≤20%
50.000	0.5519	062920TOCCAL	213156	49.017	-1.966	≤20%
100.000	0.5519	062920TOCCAL	435981	100.257	0.257	≤20%

Shipping and Receiving Documents

CHAIN OF CUSTODY RECORD

COC NO.: 59848

PAGE ___ OF ___

Address: 2055 Niagara Falls Blvd

Phone: 716-297-6150

Fax:

Project No/ Phase/Task Code: 11215702-NI0402

Laboratory Name: Eurofins/TestAmerica

Lab Location: Pittsburgh

SSOW ID: 11187072-2019-002

Project Name: San Jacinto

Lab Contact: Carrie Gamber/Beth Hitt

Cooler No:

Project Location: Texas

Carrier:

GHD Chemistry Contact: Debbie Brennan

Airbill No:

Sampler(s): Don Pope

Total # of Containers: 4

ANALYSIS REQUESTED (See Back of COC for Definitions)

PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd//yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	TOC	Total Containers/sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	11215702-GW-Tank#1	8/26/20	13:00	WG			X	2		Attn to: Carrie Gamber
2	11215702-GW-Tank#2	8/26/20	14:00	WG			X	2		412-963-2428
3										
4										Preserved w/ H_2SO_4
5										
6										
7										
8										
9										
10										
11										
12										

180-110097 Chain of Custody

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TAT Required in business days (use separate COCs for different TATs):

☐ ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☑ 2 Week Other:

Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME		RECEIVED BY	COMPANY	DATE	TIME
1.	Don Pope	GHD	8/26/20	15:15	1.		ETA Pitt	8-27-20	10:00
2.					2.				
3.					3.				

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B

Do N

ORIGIN ID:DKKA (716) 297-2160
BRITT GEBHARDT
SHD
2055 NIAGARA FALLS B

NIAGARA FALLS, NY
UNITED STATES US

26AUG20
00 LB MAN
CAFE3313
9 IN

FT 97
FZ
1
15:00
A
6545
08.27

TO **SAMPLE CU**
EUROFINS/T
301 ALPHA D

PITTSBURGH PA 152381330
(412) 963 – 7058
REF: 11215702 – NI0402 MANNS (D. POPE)

565C2/7709/05A2

FedEx
Express
E

J191219082001uv

180-110097 Waybill

TRK# 0201 **4576 5886 6545**

3:00P
STANDARD OVERNIGHT

NA AGCA

15238
PA – US **PIT**

Uncorrected temp 1.8 °C
Thermometer ID 14
CF 0 Initials TB
PT-WI-SR-001 effective 11/8/18

Part # 154254-354 RIT EXP 10/20

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 180-110097-1

Login Number: 110097

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Job Number: 600-205895-1

Job Description: San Jacinto River Waste Pits Superfund

For:
GHD Services Inc.
5551 Corporate Boulevard
Suite 200
Baton Rouge, LA 70808

Attention: Janie Smith

Carrie L. Gamber

Approved for release.
Carrie L Gamber
Senior Project Manager
6/30/2020 8:35 AM

Carrie L Gamber, Senior Project Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
carrie.gamber@testamericainc.com
06/30/2020

Eurofins TestAmerica, Houston
6310 Rothway Street, Houston, TX 77040
Tel (713) 690-4444 Fax (713) 690-5646 www.testamericainc.com

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Qualifiers

Dioxin

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE

Client: GHD Services Inc.

Project: San Jacinto River Waste Pits Superfund

Report Number: 600-205895-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 05/29/2020; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 17.6º C and 17.7º C.

NOTE: Results for non-detect PCDD/PCDF analytes are reported using the Estimated Detection Limit (EDL) convention, which provides the lowest possible detection limits for each analyte in each sample based on the magnitude of chromatographic and detector ‘noise’ at the expected retention time of each analyte. EDL values are typically well below 1 pg/g, and the TEQ-weighted sum of EDL values is below the targeted action limit of 30 pg/g in each reported sample.

DIOXINS
Elevated reporting limits are provided for the following sample due to insufficient sample provided for 1613B_Sox_Sep_P preparation/analysis: AFINF (600-205895-1) and AFEFF10 (600-205895-3) was received in a narrow-mouth amber glass bottle.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: AFINF (600-205895-1), DUP (600-205895-4) and (CCV 320-388496/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following sample run on instrument 11D2 exceeded this criteria: (CCV 320-389615/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV062520). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 10D5 exceeded this criteria: AFINF (600-205895-1), AFEFF5 (600-205895-2), AFEFF10 (600-205895-3), AFEFF10 (600-205895-3[MS]), AFEFF10 (600-205895-3[MSD]), DUP (600-205895-4), (CCV 320-389621/2), (LCS 320-389032/2-A), (LCSD 320-389032/3-A) and (MB 320-389032/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: AFINF (600-205895-1) and (CCV 320-390059/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Several analytes were detected in method blank MB 320-389032/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

METALS
Calcium and Tin were detected in method blank MB 320-382787/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the

MDL and/or RL, the result has been flagged.

Sodium failed the recovery criteria low for the MS of sample AFINFMS (600-205895-1) in batch 320-383213. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

TOTAL SUSPENDED SOLIDS

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Job ID: 600-205895-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: AFINF
Lab Sample ID: 600-205895-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	1.9	J q	9.5	0.68	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	13	J	47	0.78	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	4.0	J q	47	0.71	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.6	J	47	0.52	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	15	J	47	1.0	pg/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	5.2	J	47	1.1	pg/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	1.8	J q	47	0.89	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	2.4	J q	47	0.47	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	13	J B	47	0.63	pg/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	2.1	J q	47	0.78	pg/L	1		1613B	Total/NA
OCDD	23	J B	95	0.76	pg/L	1		1613B	Total/NA
OCDF	8.7	J B	95	0.76	pg/L	1		1613B	Total/NA
Total TCDD	6.5	J q B	9.5	0.68	pg/L	1		1613B	Total/NA
Total TCDF	20		9.5	0.58	pg/L	1		1613B	Total/NA
Total PeCDF	29	J q B	47	0.75	pg/L	1		1613B	Total/NA
Total HxCDD	2.0	J q	47	0.51	pg/L	1		1613B	Total/NA
Total HxCDF	22	J q	47	0.99	pg/L	1		1613B	Total/NA
Total HpCDD	6.6	J q	47	0.47	pg/L	1		1613B	Total/NA
Total HpCDF	19	J q B	47	0.71	pg/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	12		9.5	0.42	pg/L	1		1613B	Total/NA
Barium	0.28		0.0050	0.0025	mg/L	1		6010C	Total/NA
Boron	0.22		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	55	B	0.50	0.050	mg/L	1		6010C	Total/NA
Copper	0.0071	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	2.7		0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	15		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	35		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.15		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0086	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	380		1.0	0.25	mg/L	1		6010C	Total/NA
Nickel	0.0049	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Vanadium	0.0037	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.034		0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.50		0.050	0.0050	mg/L	1		6010C	Total/NA
Barium	0.26		0.0050	0.0025	mg/L	1		6010C	Dissolved
Boron	0.22		0.10	0.021	mg/L	1		6010C	Dissolved
Calcium	53		0.50	0.050	mg/L	1		6010C	Dissolved
Iron	0.025	J	0.10	0.020	mg/L	1		6010C	Dissolved
Magnesium	35		0.50	0.040	mg/L	1		6010C	Dissolved
Manganese	0.0038	J	0.0050	0.0025	mg/L	1		6010C	Dissolved
Molybdenum	0.0094	J	0.020	0.0027	mg/L	1		6010C	Dissolved
Potassium	14		1.0	0.093	mg/L	1		6010C	Dissolved
Sodium	380		1.0	0.25	mg/L	1		6010C	Dissolved
Strontium	0.49		0.050	0.0050	mg/L	1		6010C	Dissolved
Zinc	0.0065	J	0.010	0.0030	mg/L	1		6010C	Dissolved
Total Suspended Solids	11		2.0	2.0	mg/L	1		2540 D-1997	Total/NA

Client Sample ID: AFEFF5
Lab Sample ID: 600-205895-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	0.96	J q	9.9	0.48	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AFEFF5 (Continued) Lab Sample ID: 600-205895-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.3	J	50	0.40	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	1.2	J	50	0.56	pg/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.59	J q	50	0.54	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.6	J B	50	0.35	pg/L	1		1613B	Total/NA
OCDD	3.4	J B	99	0.76	pg/L	1		1613B	Total/NA
Total TCDD	3.8	J B q	9.9	0.56	pg/L	1		1613B	Total/NA
Total TCDF	0.96	J q	9.9	0.48	pg/L	1		1613B	Total/NA
Total HxCDD	1.3	J	50	0.39	pg/L	1		1613B	Total/NA
Total HxCDF	1.8	J q	50	0.55	pg/L	1		1613B	Total/NA
Total HpCDF	1.6	J B	50	0.38	pg/L	1		1613B	Total/NA
Barium	0.25		0.0050	0.0025	mg/L	1		6010C	Total/NA
Boron	0.20		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	52	B	0.50	0.050	mg/L	1		6010C	Total/NA
Iron	0.13		0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	14		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	34		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.0094		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0085	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	370		1.0	0.25	mg/L	1		6010C	Total/NA
Zinc	0.0076	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.48		0.050	0.0050	mg/L	1		6010C	Total/NA
Barium	0.25		0.0050	0.0025	mg/L	1		6010C	Dissolved
Boron	0.21		0.10	0.021	mg/L	1		6010C	Dissolved
Calcium	51		0.50	0.050	mg/L	1		6010C	Dissolved
Iron	0.13		0.10	0.020	mg/L	1		6010C	Dissolved
Magnesium	33		0.50	0.040	mg/L	1		6010C	Dissolved
Manganese	0.0092		0.0050	0.0025	mg/L	1		6010C	Dissolved
Molybdenum	0.0094	J	0.020	0.0027	mg/L	1		6010C	Dissolved
Nickel	0.0026	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Potassium	14		1.0	0.093	mg/L	1		6010C	Dissolved
Sodium	360		1.0	0.25	mg/L	1		6010C	Dissolved
Strontium	0.47		0.050	0.0050	mg/L	1		6010C	Dissolved
Zinc	0.0086	J	0.010	0.0030	mg/L	1		6010C	Dissolved

Client Sample ID: AFEFF10 Lab Sample ID: 600-205895-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	3.4	J q	10	0.56	pg/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	5.4	J	50	0.86	pg/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	2.1	J	50	0.77	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.4	J	50	0.69	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	6.7	J	50	1.1	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	1.3	J	50	0.69	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	3.6	J B	50	0.51	pg/L	1		1613B	Total/NA
OCDD	8.3	J B q	100	0.90	pg/L	1		1613B	Total/NA
OCDF	2.3	J B q	100	1.1	pg/L	1		1613B	Total/NA
Total TCDD	3.6	J B q	10	0.72	pg/L	1		1613B	Total/NA
Total TCDF	5.6	J q	10	0.56	pg/L	1		1613B	Total/NA
Total PeCDF	12	J B q	50	0.82	pg/L	1		1613B	Total/NA
Total HxCDD	1.4	J	50	0.67	pg/L	1		1613B	Total/NA
Total HxCDF	6.7	J	50	1.0	pg/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AFEFF10 (Continued) Lab Sample ID: 600-205895-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HpCDD	1.3	J	50	0.69	pg/L	1		1613B	Total/NA
Total HpCDF	5.5	J B q	50	0.56	pg/L	1		1613B	Total/NA
Barium	0.25		0.0050	0.0025	mg/L	1		6010C	Total/NA
Boron	0.20		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	51	B	0.50	0.050	mg/L	1		6010C	Total/NA
Copper	0.0029	J	0.010	0.0021	mg/L	1		6010C	Total/NA
Iron	0.80		0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	14		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	33		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.050		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0078	J	0.020	0.0027	mg/L	1		6010C	Total/NA
Sodium	360		1.0	0.25	mg/L	1		6010C	Total/NA
Zinc	0.0094	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.47		0.050	0.0050	mg/L	1		6010C	Total/NA
Barium	0.25		0.0050	0.0025	mg/L	1		6010C	Dissolved
Boron	0.21		0.10	0.021	mg/L	1		6010C	Dissolved
Calcium	51		0.50	0.050	mg/L	1		6010C	Dissolved
Copper	0.0029	J	0.010	0.0021	mg/L	1		6010C	Dissolved
Iron	0.82		0.10	0.020	mg/L	1		6010C	Dissolved
Magnesium	34		0.50	0.040	mg/L	1		6010C	Dissolved
Manganese	0.050		0.0050	0.0025	mg/L	1		6010C	Dissolved
Molybdenum	0.0084	J	0.020	0.0027	mg/L	1		6010C	Dissolved
Nickel	0.0036	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Potassium	14		1.0	0.093	mg/L	1		6010C	Dissolved
Sodium	370		1.0	0.25	mg/L	1		6010C	Dissolved
Strontium	0.47		0.050	0.0050	mg/L	1		6010C	Dissolved
Zinc	0.0096	J	0.010	0.0030	mg/L	1		6010C	Dissolved
Total Suspended Solids	3.8		2.0	2.0	mg/L	1		2540 D-1997	Total/NA

Client Sample ID: DUP Lab Sample ID: 600-205895-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.99	J q	48	0.49	pg/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	1.5	J	48	0.45	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	1.1	J	48	0.46	pg/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	1.3	J B q	48	0.43	pg/L	1		1613B	Total/NA
OCDD	6.5	J B	95	0.72	pg/L	1		1613B	Total/NA
OCDF	3.2	J B	95	0.76	pg/L	1		1613B	Total/NA
Total TCDD	1.9	J B	9.5	0.53	pg/L	1		1613B	Total/NA
Total PeCDF	0.99	J B q	48	0.47	pg/L	1		1613B	Total/NA
Total HxCDD	1.5	J	48	0.45	pg/L	1		1613B	Total/NA
Total HpCDD	1.1	J	48	0.46	pg/L	1		1613B	Total/NA
Total HpCDF	1.3	J B q	48	0.48	pg/L	1		1613B	Total/NA
Barium	0.25		0.0050	0.0025	mg/L	1		6010C	Total/NA
Boron	0.21		0.10	0.021	mg/L	1		6010C	Total/NA
Calcium	51	B	0.50	0.050	mg/L	1		6010C	Total/NA
Iron	0.12		0.10	0.020	mg/L	1		6010C	Total/NA
Potassium	14		1.0	0.093	mg/L	1		6010C	Total/NA
Magnesium	33		0.50	0.040	mg/L	1		6010C	Total/NA
Manganese	0.0081		0.0050	0.0025	mg/L	1		6010C	Total/NA
Molybdenum	0.0095	J	0.020	0.0027	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

## Client Sample ID: DUP (Continued)	Lab Sample ID: 600-205895-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	360		1.0	0.25	mg/L	1		6010C	Total/NA
Zinc	0.0055	J	0.010	0.0030	mg/L	1		6010C	Total/NA
Strontium	0.47		0.050	0.0050	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AFINF

Lab Sample ID: 600-205895-1

Date Collected: 05/28/20 10:30
Matrix: Water
Date Received: 05/29/20 09:11

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**1.9**	**J q**	9.5	0.68	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,7,8-PeCDD	ND		47	0.50	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,7,8-PeCDF	**13**	**J**	47	0.78	pg/L		06/24/20 12:40	06/25/20 22:25	1
2,3,4,7,8-PeCDF	**4.0**	**J q**	47	0.71	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,4,7,8-HxCDD	**1.6**	**J**	47	0.52	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,6,7,8-HxCDD	ND		47	0.53	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,7,8,9-HxCDD	ND		47	0.48	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,4,7,8-HxCDF	**15**	**J**	47	1.0	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,6,7,8-HxCDF	**5.2**	**J**	47	1.1	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,7,8,9-HxCDF	ND		47	0.96	pg/L		06/24/20 12:40	06/25/20 22:25	1
2,3,4,6,7,8-HxCDF	**1.8**	**J q**	47	0.89	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,4,6,7,8-HpCDD	**2.4**	**J q**	47	0.47	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,4,6,7,8-HpCDF	**13**	**J B**	47	0.63	pg/L		06/24/20 12:40	06/25/20 22:25	1
1,2,3,4,7,8,9-HpCDF	**2.1**	**J q**	47	0.78	pg/L		06/24/20 12:40	06/25/20 22:25	1
OCDD	**23**	**J B**	95	0.76	pg/L		06/24/20 12:40	06/25/20 22:25	1
OCDF	**8.7**	**J B**	95	0.76	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total TCDD	**6.5**	**J q B**	9.5	0.68	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total TCDF	**20**		9.5	0.58	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total PeCDD	ND		47	0.50	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total PeCDF	**29**	**J q B**	47	0.75	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total HxCDD	**2.0**	**J q**	47	0.51	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total HxCDF	**22**	**J q**	47	0.99	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total HpCDD	**6.6**	**J q**	47	0.47	pg/L		06/24/20 12:40	06/25/20 22:25	1
Total HpCDF	**19**	**J q B**	47	0.71	pg/L		06/24/20 12:40	06/25/20 22:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*55*		*25 - 164*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-2,3,7,8-TCDF	*46*		*24 - 169*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,7,8-PeCDD	*54*		*25 - 181*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,7,8-PeCDF	*46*		*24 - 185*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-2,3,4,7,8-PeCDF	*52*		*21 - 178*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,4,7,8-HxCDD	*54*		*32 - 141*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,4,7,8-HxCDF	*58*		*26 - 152*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,6,7,8-HxCDF	*57*		*26 - 123*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,7,8,9-HxCDF	*52*		*29 - 147*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-2,3,4,6,7,8-HxCDF	*51*		*28 - 136*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*64*		*23 - 140*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*60*		*28 - 143*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*67*		*26 - 138*	*06/24/20 12:40*	*06/25/20 22:25*	*1*
13C-OCDD	*65*		*17 - 157*	*06/24/20 12:40*	*06/25/20 22:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*69*		*35 - 197*	*06/24/20 12:40*	*06/25/20 22:25*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**12**		9.5	0.42	pg/L		06/24/20 12:40	06/26/20 16:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*48*		*24 - 169*	*06/24/20 12:40*	*06/26/20 16:00*	*1*

Client Sample ID: AFINF

Lab Sample ID: 600-205895-1

Date Collected: 05/28/20 10:30
Date Received: 05/29/20 09:11
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*73*		*35 - 197*	*06/24/20 12:40*	*06/26/20 16:00*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 17:45	1
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 17:45	1
Barium	**0.28**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:45	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 17:45	1
Boron	**0.22**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 17:45	1
Calcium	**55**	**B**	0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:45	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 17:45	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 17:45	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 17:45	1
Copper	**0.0071**	**J**	0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:45	1
Iron	**2.7**		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 17:45	1
Potassium	**15**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 17:45	1
Magnesium	**35**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 17:45	1
Manganese	**0.15**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:45	1
Molybdenum	**0.0086**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 17:45	1
Sodium	**380**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 17:45	1
Nickel	**0.0049**	**J**	0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 17:45	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:45	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:45	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 17:45	1
Vanadium	**0.0037**	**J**	0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 17:45	1
Zinc	**0.034**		0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 17:45	1
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 17:45	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 17:45	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 17:45	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:45	1
Strontium	**0.50**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 17:45	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 16:42	1
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 16:42	1
Barium	**0.26**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 16:42	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 16:42	1
Boron	**0.22**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 16:42	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 16:42	1
Calcium	**53**		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 16:42	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 16:42	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 16:42	1
Copper	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 16:42	1
Iron	**0.025**	**J**	0.10	0.020	mg/L		06/03/20 06:45	06/03/20 16:42	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 16:42	1
Magnesium	**35**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 16:42	1
Manganese	**0.0038**	**J**	0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 16:42	1
Molybdenum	**0.0094**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 16:42	1
Nickel	ND		0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 16:42	1

Client Sample ID: AFINF
Lab Sample ID: 600-205895-1
Date Collected: 05/28/20 10:30
Matrix: Water
Date Received: 05/29/20 09:11

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 16:42	1
Potassium	**14**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 16:42	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 16:42	1
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 16:42	1
Sodium	**380**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 16:42	1
Strontium	**0.49**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 16:42	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 16:42	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 16:42	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 16:42	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 16:42	1
Zinc	**0.0065**	**J**	0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 16:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**11**		2.0	2.0	mg/L			06/01/20 08:40	1

Client Sample ID: AFEFF5
Lab Sample ID: 600-205895-2
Date Collected: 05/28/20 11:15
Matrix: Water
Date Received: 05/29/20 09:11

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.9	0.56	pg/L		06/24/20 12:40	06/25/20 23:10	1
2,3,7,8-TCDF	**0.96**	**J q**	9.9	0.48	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,7,8-PeCDD	ND		50	0.55	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,7,8-PeCDF	ND		50	0.61	pg/L		06/24/20 12:40	06/25/20 23:10	1
2,3,4,7,8-PeCDF	ND		50	0.53	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,4,7,8-HxCDD	**1.3**	**J**	50	0.40	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,6,7,8-HxCDD	ND		50	0.40	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,7,8,9-HxCDD	ND		50	0.36	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,4,7,8-HxCDF	**1.2**	**J**	50	0.56	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,6,7,8-HxCDF	ND		50	0.60	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,7,8,9-HxCDF	**0.59**	**J q**	50	0.54	pg/L		06/24/20 12:40	06/25/20 23:10	1
2,3,4,6,7,8-HxCDF	ND		50	0.47	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,4,6,7,8-HpCDD	ND		50	0.44	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,4,6,7,8-HpCDF	**1.6**	**J B**	50	0.35	pg/L		06/24/20 12:40	06/25/20 23:10	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.41	pg/L		06/24/20 12:40	06/25/20 23:10	1
OCDD	**3.4**	**J B**	99	0.76	pg/L		06/24/20 12:40	06/25/20 23:10	1
OCDF	ND		99	0.99	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total TCDD	**3.8**	**J B q**	9.9	0.56	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total TCDF	**0.96**	**J q**	9.9	0.48	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total PeCDD	ND		50	0.55	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total PeCDF	ND		50	0.61	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total HxCDD	**1.3**	**J**	50	0.39	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total HxCDF	**1.8**	**J q**	50	0.55	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total HpCDD	ND		50	0.44	pg/L		06/24/20 12:40	06/25/20 23:10	1
Total HpCDF	**1.6**	**J B**	50	0.38	pg/L		06/24/20 12:40	06/25/20 23:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*58*		*25 - 164*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-2,3,7,8-TCDF	*51*		*24 - 169*	*06/24/20 12:40*	*06/25/20 23:10*	*1*

Client Sample ID: AFEFF5 Lab Sample ID: 600-205895-2

Date Collected: 05/28/20 11:15 **Matrix: Water**
Date Received: 05/29/20 09:11

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,7,8-PeCDF	*48*		*24 - 185*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-2,3,4,7,8-PeCDF	*57*		*21 - 178*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,6,7,8-HxCDD	*70*		*28 - 130*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,4,7,8-HxCDF	*60*		*26 - 152*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,6,7,8-HxCDF	*60*		*26 - 123*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,7,8,9-HxCDF	*54*		*29 - 147*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-2,3,4,6,7,8-HxCDF	*53*		*28 - 136*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*66*		*23 - 140*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*61*		*28 - 143*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*68*		*26 - 138*	*06/24/20 12:40*	*06/25/20 23:10*	*1*
13C-OCDD	*68*		*17 - 157*	*06/24/20 12:40*	*06/25/20 23:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*70*		*35 - 197*	*06/24/20 12:40*	*06/25/20 23:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 17:49	1
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 17:49	1
Barium	**0.25**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:49	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 17:49	1
Boron	**0.20**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 17:49	1
Calcium	**52**	**B**	0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:49	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 17:49	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 17:49	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 17:49	1
Copper	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:49	1
Iron	**0.13**		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 17:49	1
Potassium	**14**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 17:49	1
Magnesium	**34**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 17:49	1
Manganese	**0.0094**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:49	1
Molybdenum	**0.0085**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 17:49	1
Sodium	**370**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 17:49	1
Nickel	ND		0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 17:49	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:49	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:49	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 17:49	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 17:49	1
Zinc	**0.0076**	**J**	0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 17:49	1
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 17:49	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 17:49	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 17:49	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:49	1
Strontium	**0.48**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 17:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 17:02	1

Client Sample ID: AFEFF5 Lab Sample ID: 600-205895-2

Date Collected: 05/28/20 11:15 **Matrix: Water**
Date Received: 05/29/20 09:11

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 17:02	1
Barium	**0.25**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:02	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 17:02	1
Boron	**0.21**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 17:02	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 17:02	1
Calcium	**51**		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:02	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 17:02	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 17:02	1
Copper	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:02	1
Iron	**0.13**		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 17:02	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:02	1
Magnesium	**33**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 17:02	1
Manganese	**0.0092**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:02	1
Molybdenum	**0.0094**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 17:02	1
Nickel	**0.0026**	**J**	0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 17:02	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:02	1
Potassium	**14**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 17:02	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 17:02	1
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 17:02	1
Sodium	**360**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 17:02	1
Strontium	**0.47**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 17:02	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 17:02	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 17:02	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:02	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 17:02	1
Zinc	**0.0086**	**J**	0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 17:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		2.0	2.0	mg/L			06/01/20 08:40	1

Client Sample ID: AFEFF10 Lab Sample ID: 600-205895-3

Date Collected: 05/28/20 16:00 **Matrix: Water**
Date Received: 05/29/20 09:11

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.72	pg/L		06/24/20 12:40	06/25/20 23:55	1
2,3,7,8-TCDF	**3.4**	**J q**	10	0.56	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,7,8-PeCDD	ND		50	0.81	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,7,8-PeCDF	**5.4**	**J**	50	0.86	pg/L		06/24/20 12:40	06/25/20 23:55	1
2,3,4,7,8-PeCDF	**2.1**	**J**	50	0.77	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,4,7,8-HxCDD	**1.4**	**J**	50	0.69	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,6,7,8-HxCDD	ND		50	0.70	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,7,8,9-HxCDD	ND		50	0.63	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,4,7,8-HxCDF	**6.7**	**J**	50	1.1	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,6,7,8-HxCDF	ND		50	1.1	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,7,8,9-HxCDF	ND		50	1.0	pg/L		06/24/20 12:40	06/25/20 23:55	1
2,3,4,6,7,8-HxCDF	ND		50	0.92	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,4,6,7,8-HpCDD	**1.3**	**J**	50	0.69	pg/L		06/24/20 12:40	06/25/20 23:55	1

Client Sample ID: AFEFF10

Lab Sample ID: 600-205895-3

Date Collected: 05/28/20 16:00
Matrix: Water
Date Received: 05/29/20 09:11

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDF	**3.6**	**J B**	50	0.51	pg/L		06/24/20 12:40	06/25/20 23:55	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.62	pg/L		06/24/20 12:40	06/25/20 23:55	1
OCDD	**8.3**	**J B q**	100	0.90	pg/L		06/24/20 12:40	06/25/20 23:55	1
OCDF	**2.3**	**J B q**	100	1.1	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total TCDD	**3.6**	**J B q**	10	0.72	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total TCDF	**5.6**	**J q**	10	0.56	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total PeCDD	ND		50	0.81	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total PeCDF	**12**	**J B q**	50	0.82	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total HxCDD	**1.4**	**J**	50	0.67	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total HxCDF	**6.7**	**J**	50	1.0	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total HpCDD	**1.3**	**J**	50	0.69	pg/L		06/24/20 12:40	06/25/20 23:55	1
Total HpCDF	**5.5**	**J B q**	50	0.56	pg/L		06/24/20 12:40	06/25/20 23:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*43*		*25 - 164*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-2,3,7,8-TCDF	*36*		*24 - 169*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,7,8-PeCDD	*40*		*25 - 181*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,7,8-PeCDF	*35*		*24 - 185*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-2,3,4,7,8-PeCDF	*40*		*21 - 178*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,4,7,8-HxCDD	*39*		*32 - 141*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,6,7,8-HxCDD	*48*		*28 - 130*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,4,7,8-HxCDF	*42*		*26 - 152*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,6,7,8-HxCDF	*40*		*26 - 123*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,7,8,9-HxCDF	*37*		*29 - 147*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-2,3,4,6,7,8-HxCDF	*37*		*28 - 136*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*45*		*23 - 140*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*42*		*28 - 143*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*46*		*26 - 138*	*06/24/20 12:40*	*06/25/20 23:55*	*1*
13C-OCDD	*45*		*17 - 157*	*06/24/20 12:40*	*06/25/20 23:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*53*		*35 - 197*	*06/24/20 12:40*	*06/25/20 23:55*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 17:53	1
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 17:53	1
Barium	**0.25**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:53	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 17:53	1
Boron	**0.20**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 17:53	1
Calcium	**51**	**B**	0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:53	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 17:53	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 17:53	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 17:53	1
Copper	**0.0029**	**J**	0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:53	1
Iron	**0.80**		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 17:53	1
Potassium	**14**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 17:53	1
Magnesium	**33**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 17:53	1
Manganese	**0.050**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:53	1
Molybdenum	**0.0078**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 17:53	1
Sodium	**360**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 17:53	1

Client Sample ID: AFEFF10

Lab Sample ID: 600-205895-3

Date Collected: 05/28/20 16:00
Matrix: Water
Date Received: 05/29/20 09:11

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	ND		0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 17:53	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:53	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:53	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 17:53	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 17:53	1
Zinc	**0.0094**	**J**	0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 17:53	1
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 17:53	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 17:53	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 17:53	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:53	1
Strontium	**0.47**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 17:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 17:05	1
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 17:05	1
Barium	**0.25**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:05	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 17:05	1
Boron	**0.21**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 17:05	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 17:05	1
Calcium	**51**		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:05	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 17:05	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 17:05	1
Copper	**0.0029**	**J**	0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:05	1
Iron	**0.82**		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 17:05	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:05	1
Magnesium	**34**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 17:05	1
Manganese	**0.050**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:05	1
Molybdenum	**0.0084**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 17:05	1
Nickel	**0.0036**	**J**	0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 17:05	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:05	1
Potassium	**14**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 17:05	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 17:05	1
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 17:05	1
Sodium	**370**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 17:05	1
Strontium	**0.47**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 17:05	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 17:05	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 17:05	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:05	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 17:05	1
Zinc	**0.0096**	**J**	0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 17:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**3.8**		2.0	2.0	mg/L			06/01/20 08:40	1

Client Sample ID: DUP

Lab Sample ID: 600-205895-4

Date Collected: 05/28/20 00:00
Matrix: Water
Date Received: 05/29/20 09:11

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.5	0.53	pg/L		06/24/20 12:40	06/26/20 02:11	1
2,3,7,8-TCDF	ND		9.5	0.41	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,7,8-PeCDD	ND		48	0.50	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,7,8-PeCDF	**0.99**	**J q**	48	0.49	pg/L		06/24/20 12:40	06/26/20 02:11	1
2,3,4,7,8-PeCDF	ND		48	0.45	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,4,7,8-HxCDD	**1.5**	**J**	48	0.45	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,6,7,8-HxCDD	ND		48	0.47	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,7,8,9-HxCDD	ND		48	0.42	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,4,7,8-HxCDF	ND		48	0.81	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,6,7,8-HxCDF	ND		48	0.82	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,7,8,9-HxCDF	ND		48	0.71	pg/L		06/24/20 12:40	06/26/20 02:11	1
2,3,4,6,7,8-HxCDF	ND		48	0.63	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,4,6,7,8-HpCDD	**1.1**	**J**	48	0.46	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,4,6,7,8-HpCDF	**1.3**	**J B q**	48	0.43	pg/L		06/24/20 12:40	06/26/20 02:11	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.53	pg/L		06/24/20 12:40	06/26/20 02:11	1
OCDD	**6.5**	**J B**	95	0.72	pg/L		06/24/20 12:40	06/26/20 02:11	1
OCDF	**3.2**	**J B**	95	0.76	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total TCDD	**1.9**	**J B**	9.5	0.53	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total TCDF	ND		9.5	0.41	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total PeCDD	ND		48	0.50	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total PeCDF	**0.99**	**J B q**	48	0.47	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total HxCDD	**1.5**	**J**	48	0.45	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total HxCDF	ND		48	0.82	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total HpCDD	**1.1**	**J**	48	0.46	pg/L		06/24/20 12:40	06/26/20 02:11	1
Total HpCDF	**1.3**	**J B q**	48	0.48	pg/L		06/24/20 12:40	06/26/20 02:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-2,3,7,8-TCDF	*51*		*24 - 169*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,7,8-PeCDF	*50*		*24 - 185*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-2,3,4,7,8-PeCDF	*56*		*21 - 178*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,4,7,8-HxCDD	*57*		*32 - 141*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,4,7,8-HxCDF	*61*		*26 - 152*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,6,7,8-HxCDF	*60*		*26 - 123*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,7,8,9-HxCDF	*55*		*29 - 147*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-2,3,4,6,7,8-HxCDF	*54*		*28 - 136*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*66*		*23 - 140*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*61*		*28 - 143*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*69*		*26 - 138*	*06/24/20 12:40*	*06/26/20 02:11*	*1*
13C-OCDD	*66*		*17 - 157*	*06/24/20 12:40*	*06/26/20 02:11*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*68*		*35 - 197*	*06/24/20 12:40*	*06/26/20 02:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 18:20	1
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 18:20	1
Barium	**0.25**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 18:20	1

Client Sample ID: DUP

Lab Sample ID: 600-205895-4

Date Collected: 05/28/20 00:00

Matrix: Water

Date Received: 05/29/20 09:11

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 18:20	1
Boron	**0.21**		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 18:20	1
Calcium	**51**	**B**	0.50	0.050	mg/L		06/03/20 06:45	06/03/20 18:20	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 18:20	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 18:20	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 18:20	1
Copper	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 18:20	1
Iron	**0.12**		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 18:20	1
Potassium	**14**		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 18:20	1
Magnesium	**33**		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 18:20	1
Manganese	**0.0081**		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 18:20	1
Molybdenum	**0.0095**	**J**	0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 18:20	1
Sodium	**360**		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 18:20	1
Nickel	ND		0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 18:20	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 18:20	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 18:20	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 18:20	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 18:20	1
Zinc	**0.0055**	**J**	0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 18:20	1
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 18:20	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 18:20	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 18:20	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 18:20	1
Strontium	**0.47**		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 18:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		2.0	2.0	mg/L			06/02/20 08:23	1

Client Sample ID: AFINF Lab Sample ID: 600-205895-1

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	**1.9**	**J q**	9.5	0.68	pg/L	1	**1.9**	1613B
1,2,3,7,8-PeCDD	ND		47	0.50	pg/L	1	0.25	1613B
1,2,3,7,8-PeCDF	**13**	**J**	47	0.78	pg/L	0.03	**0.39**	1613B
2,3,4,7,8-PeCDF	**4.0**	**J q**	47	0.71	pg/L	0.3	**1.2**	1613B
1,2,3,4,7,8-HxCDD	**1.6**	**J**	47	0.52	pg/L	0.1	**0.16**	1613B
1,2,3,6,7,8-HxCDD	ND		47	0.53	pg/L	0.1	0.027	1613B
1,2,3,7,8,9-HxCDD	ND		47	0.48	pg/L	0.1	0.024	1613B
1,2,3,4,7,8-HxCDF	**15**	**J**	47	1.0	pg/L	0.1	**1.5**	1613B
1,2,3,6,7,8-HxCDF	**5.2**	**J**	47	1.1	pg/L	0.1	**0.52**	1613B
1,2,3,7,8,9-HxCDF	ND		47	0.96	pg/L	0.1	0.048	1613B
2,3,4,6,7,8-HxCDF	**1.8**	**J q**	47	0.89	pg/L	0.1	**0.18**	1613B
1,2,3,4,6,7,8-HpCDD	**2.4**	**J q**	47	0.47	pg/L	0.01	**0.024**	1613B
1,2,3,4,6,7,8-HpCDF	**13**	**J B**	47	0.63	pg/L	0.01	**0.13**	1613B
1,2,3,4,7,8,9-HpCDF	**2.1**	**J q**	47	0.78	pg/L	0.01	**0.021**	1613B
OCDD	**23**	**J B**	95	0.76	pg/L	0.0003	**0.0069**	1613B
OCDF	**8.7**	**J B**	95	0.76	pg/L	0.0003	**0.0026**	1613B
2,3,7,8-TCDF - RA	**12**		9.5	0.42	pg/L	0.1	**1.2**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		7.6	TEQ

Client Sample ID: AFEFF5 Lab Sample ID: 600-205895-2

						WHO 2005		
						ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
2,3,7,8-TCDD	ND		9.9	0.56	pg/L	1	0.28	1613B
2,3,7,8-TCDF	**0.96**	**J q**	9.9	0.48	pg/L	0.1	**0.096**	1613B
1,2,3,7,8-PeCDD	ND		50	0.55	pg/L	1	0.28	1613B
1,2,3,7,8-PeCDF	ND		50	0.61	pg/L	0.03	0.0092	1613B
2,3,4,7,8-PeCDF	ND		50	0.53	pg/L	0.3	0.080	1613B
1,2,3,4,7,8-HxCDD	**1.3**	**J**	50	0.40	pg/L	0.1	**0.13**	1613B
1,2,3,6,7,8-HxCDD	ND		50	0.40	pg/L	0.1	0.020	1613B
1,2,3,7,8,9-HxCDD	ND		50	0.36	pg/L	0.1	0.018	1613B
1,2,3,4,7,8-HxCDF	**1.2**	**J**	50	0.56	pg/L	0.1	**0.12**	1613B
1,2,3,6,7,8-HxCDF	ND		50	0.60	pg/L	0.1	0.030	1613B
1,2,3,7,8,9-HxCDF	**0.59**	**J q**	50	0.54	pg/L	0.1	**0.059**	1613B
2,3,4,6,7,8-HxCDF	ND		50	0.47	pg/L	0.1	0.024	1613B
1,2,3,4,6,7,8-HpCDD	ND		50	0.44	pg/L	0.01	0.0022	1613B
1,2,3,4,6,7,8-HpCDF	**1.6**	**J B**	50	0.35	pg/L	0.01	**0.016**	1613B
1,2,3,4,7,8,9-HpCDF	ND		50	0.41	pg/L	0.01	0.0021	1613B
OCDD	**3.4**	**J B**	99	0.76	pg/L	0.0003	**0.0010**	1613B
OCDF	ND		99	0.99	pg/L	0.0003	0.00015	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: AFEFF5 (Continued) Lab Sample ID: 600-205895-2

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		1.2	TEQ

Client Sample ID: AFEFF10 Lab Sample ID: 600-205895-3

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		10	0.72	pg/L	1	0.36	1613B
2,3,7,8-TCDF	**3.4**	**J q**	10	0.56	pg/L	0.1	**0.34**	1613B
1,2,3,7,8-PeCDD	ND		50	0.81	pg/L	1	0.41	1613B
1,2,3,7,8-PeCDF	**5.4**	**J**	50	0.86	pg/L	0.03	**0.16**	1613B
2,3,4,7,8-PeCDF	**2.1**	**J**	50	0.77	pg/L	0.3	**0.63**	1613B
1,2,3,4,7,8-HxCDD	**1.4**	**J**	50	0.69	pg/L	0.1	**0.14**	1613B
1,2,3,6,7,8-HxCDD	ND		50	0.70	pg/L	0.1	0.035	1613B
1,2,3,7,8,9-HxCDD	ND		50	0.63	pg/L	0.1	0.032	1613B
1,2,3,4,7,8-HxCDF	**6.7**	**J**	50	1.1	pg/L	0.1	**0.67**	1613B
1,2,3,6,7,8-HxCDF	ND		50	1.1	pg/L	0.1	0.055	1613B
1,2,3,7,8,9-HxCDF	ND		50	1.0	pg/L	0.1	0.050	1613B
2,3,4,6,7,8-HxCDF	ND		50	0.92	pg/L	0.1	0.046	1613B
1,2,3,4,6,7,8-HpCDD	**1.3**	**J**	50	0.69	pg/L	0.01	**0.013**	1613B
1,2,3,4,6,7,8-HpCDF	**3.6**	**J B**	50	0.51	pg/L	0.01	**0.036**	1613B
1,2,3,4,7,8,9-HpCDF	ND		50	0.62	pg/L	0.01	0.0031	1613B
OCDD	**8.3**	**J B q**	100	0.90	pg/L	0.0003	**0.0025**	1613B
OCDF	**2.3**	**J B q**	100	1.1	pg/L	0.0003	**0.00069**	1613B

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**NONE**	**NONE**	**Unit**	**TEF**	**TEQ**	**Method**
Total Dioxin/Furan TEQ					pg/L		3.0	TEQ

Client Sample ID: DUP Lab Sample ID: 600-205895-4

						WHO 2005		
						ND = ½ EDL		
Analyte	**Result**	**Qualifier**	**RL**	**EDL**	**Unit**	**TEF**	**TEQ**	**Method**
2,3,7,8-TCDD	ND		9.5	0.53	pg/L	1	0.27	1613B
2,3,7,8-TCDF	ND		9.5	0.41	pg/L	0.1	0.021	1613B
1,2,3,7,8-PeCDD	ND		48	0.50	pg/L	1	0.25	1613B
1,2,3,7,8-PeCDF	**0.99**	**J q**	48	0.49	pg/L	0.03	**0.030**	1613B
2,3,4,7,8-PeCDF	ND		48	0.45	pg/L	0.3	0.068	1613B
1,2,3,4,7,8-HxCDD	**1.5**	**J**	48	0.45	pg/L	0.1	**0.15**	1613B
1,2,3,6,7,8-HxCDD	ND		48	0.47	pg/L	0.1	0.024	1613B
1,2,3,7,8,9-HxCDD	ND		48	0.42	pg/L	0.1	0.021	1613B
1,2,3,4,7,8-HxCDF	ND		48	0.81	pg/L	0.1	0.041	1613B
1,2,3,6,7,8-HxCDF	ND		48	0.82	pg/L	0.1	0.041	1613B
1,2,3,7,8,9-HxCDF	ND		48	0.71	pg/L	0.1	0.036	1613B
2,3,4,6,7,8-HxCDF	ND		48	0.63	pg/L	0.1	0.032	1613B

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Client Sample ID: DUP (Continued) Lab Sample ID: 600-205895-4

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	RL	EDL	Unit	TEF	TEQ	Method
1,2,3,4,6,7,8-HpCDD	**1.1**	**J**	48	0.46	pg/L	0.01	**0.011**	1613B
1,2,3,4,6,7,8-HpCDF	**1.3**	**J B q**	48	0.43	pg/L	0.01	**0.013**	1613B
1,2,3,4,7,8,9-HpCDF	ND		48	0.53	pg/L	0.01	0.0027	1613B
OCDD	**6.5**	**J B**	95	0.72	pg/L	0.0003	**0.0020**	1613B
OCDF	**3.2**	**J B**	95	0.76	pg/L	0.0003	**0.00096**	1613B

						WHO 2005 ND = ½ EDL		
Analyte	Result	Qualifier	NONE	NONE	Unit	TEF	TEQ	Method
Total Dioxin/Furan TEQ					pg/L		1.0	TEQ

TEF Reference:

WHO 2005 = World Health Organization (WHO) 2005 TEF, Dioxins, Furans and PCB Congeners

Default Detection Limits

Client: GHD Services Inc. Job ID: 600-205895-1

Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Prep: 1613B

Analyte	RL		Units
1,2,3,4,6,7,8-HpCDD	50		pg/L
1,2,3,4,6,7,8-HpCDF	50		pg/L
1,2,3,4,7,8,9-HpCDF	50		pg/L
1,2,3,4,7,8-HxCDD	50		pg/L
1,2,3,4,7,8-HxCDF	50		pg/L
1,2,3,6,7,8-HxCDD	50		pg/L
1,2,3,6,7,8-HxCDF	50		pg/L
1,2,3,7,8,9-HxCDD	50		pg/L
1,2,3,7,8,9-HxCDF	50		pg/L
1,2,3,7,8-PeCDD	50		pg/L
1,2,3,7,8-PeCDF	50		pg/L
2,3,4,6,7,8-HxCDF	50		pg/L
2,3,4,7,8-PeCDF	50		pg/L
2,3,7,8-TCDD	10		pg/L
2,3,7,8-TCDF	10		pg/L
OCDD	100		pg/L
OCDF	100		pg/L
Total HpCDD	50		pg/L
Total HpCDF	50		pg/L
Total HxCDD	50		pg/L
Total HxCDF	50		pg/L
Total PeCDD	50		pg/L
Total PeCDF	50		pg/L
Total TCDD	10		pg/L
Total TCDF	10		pg/L

Method: 6010C - Metals (ICP)

Prep: 3010A

Analyte	RL	MDL	Units
Antimony	0.020	0.0098	mg/L
Arsenic	0.020	0.012	mg/L
Barium	0.0050	0.0025	mg/L
Beryllium	0.0020	0.00030	mg/L
Boron	0.10	0.021	mg/L
Cadmium	0.0020	0.00050	mg/L
Calcium	0.50	0.050	mg/L
Chromium	0.0080	0.0012	mg/L
Cobalt	0.0050	0.0030	mg/L
Copper	0.010	0.0021	mg/L
Iron	0.10	0.020	mg/L
Lead	0.0050	0.0025	mg/L
Magnesium	0.50	0.040	mg/L
Manganese	0.0050	0.0025	mg/L
Molybdenum	0.020	0.0027	mg/L
Nickel	0.0050	0.0024	mg/L
Phosphorus	0.50	0.050	mg/L
Potassium	1.0	0.093	mg/L
Selenium	0.020	0.013	mg/L
Silver	0.0050	0.00084	mg/L
Sodium	1.0	0.25	mg/L
Strontium	0.050	0.0050	mg/L

Method: 6010C - Metals (ICP) (Continued)

Prep: 3010A

Analyte	RL	MDL	Units
Thallium	0.020	0.0090	mg/L
Tin	0.020	0.0050	mg/L
Titanium	0.010	0.0021	mg/L
Vanadium	0.0050	0.0019	mg/L
Zinc	0.010	0.0030	mg/L

Method: 6010C - Metals (ICP) - Dissolved

Prep: 3010A

Analyte	RL	MDL	Units
Antimony	0.020	0.0098	mg/L
Arsenic	0.020	0.012	mg/L
Barium	0.0050	0.0025	mg/L
Beryllium	0.0020	0.00030	mg/L
Boron	0.10	0.021	mg/L
Cadmium	0.0020	0.00050	mg/L
Calcium	0.50	0.050	mg/L
Chromium	0.0080	0.0012	mg/L
Cobalt	0.0050	0.0030	mg/L
Copper	0.010	0.0021	mg/L
Iron	0.10	0.020	mg/L
Lead	0.0050	0.0025	mg/L
Magnesium	0.50	0.040	mg/L
Manganese	0.0050	0.0025	mg/L
Molybdenum	0.020	0.0027	mg/L
Nickel	0.0050	0.0024	mg/L
Phosphorus	0.50	0.050	mg/L
Potassium	1.0	0.093	mg/L
Selenium	0.020	0.013	mg/L
Silver	0.0050	0.00084	mg/L
Sodium	1.0	0.25	mg/L
Strontium	0.050	0.0050	mg/L
Thallium	0.020	0.0090	mg/L
Tin	0.020	0.0050	mg/L
Titanium	0.010	0.0021	mg/L
Vanadium	0.0050	0.0019	mg/L
Zinc	0.010	0.0030	mg/L

General Chemistry

Analyte	RL	MDL	Units
Total Suspended Solids	2.0	2.0	mg/L

Surrogate Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (35-197)
600-205895-1	AFINF	69
600-205895-1 - RA	AFINF	73
600-205895-2	AFEFF5	70
600-205895-3	AFEFF10	53
600-205895-3 MS	AFEFF10	68
600-205895-3 MSD	AFEFF10	64
600-205895-4	DUP	68
MB 320-389032/1-A	Method Blank	61

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-389032/2-A	Lab Control Sample	63
LCSD 320-389032/3-A	Lab Control Sample Dup	63

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: GHD Services Inc.
Job ID: 600-205895-1
Project/Site: San Jacinto River Waste Pits Superfund

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
600-205895-1	AFINF	55	46	54	46	52	54	69	58
600-205895-1 - RA	AFINF		48						
600-205895-2	AFEFF5	58	51	58	48	57	59	70	60
600-205895-3	AFEFF10	43	36	40	35	40	39	48	42
600-205895-3 MS	AFEFF10	59	49	57	48	54	56	69	57
600-205895-3 MSD	AFEFF10	50	43	48	41	48	47	57	48
600-205895-4	DUP	61	51	58	50	56	57	69	61
MB 320-389032/1-A	Method Blank	53	46	50	43	49	47	61	51

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)
600-205895-1	AFINF	57	52	51	64	60	67	65
600-205895-1 - RA	AFINF							
600-205895-2	AFEFF5	60	54	53	66	61	68	68
600-205895-3	AFEFF10	40	37	37	45	42	46	45
600-205895-3 MS	AFEFF10	57	54	54	67	61	69	69
600-205895-3 MSD	AFEFF10	46	44	44	52	49	55	59
600-205895-4	DUP	60	55	54	66	61	69	66
MB 320-389032/1-A	Method Blank	52	46	48	51	47	54	48

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-389032/2-A	Lab Control Sample	53	45	51	44	51	53	61	55
LCSD 320-389032/3-A	Lab Control Sample Dup	51	43	49	41	47	46	55	47

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-389032/2-A	Lab Control Sample	54	47	48	55	51	58	53
LCSD 320-389032/3-A	Lab Control Sample Dup	47	44	44	52	48	53	51

Isotope Dilution Summary

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-389032/1-A
Matrix: Water
Analysis Batch: 389621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 389032

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.90	pg/L		06/24/20 12:40	06/25/20 20:09	1
2,3,7,8-TCDF	ND		10	0.68	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,7,8-PeCDD	ND		50	0.77	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,7,8-PeCDF	ND		50	0.66	pg/L		06/24/20 12:40	06/25/20 20:09	1
2,3,4,7,8-PeCDF	ND		50	0.59	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,4,7,8-HxCDD	ND		50	0.70	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,6,7,8-HxCDD	ND		50	0.73	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,7,8,9-HxCDD	ND		50	0.65	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,4,7,8-HxCDF	ND		50	1.0	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,6,7,8-HxCDF	ND		50	1.1	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,7,8,9-HxCDF	ND		50	0.95	pg/L		06/24/20 12:40	06/25/20 20:09	1
2,3,4,6,7,8-HxCDF	ND		50	0.85	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,4,6,7,8-HpCDD	ND		50	0.72	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,4,6,7,8-HpCDF	3.81	J	50	0.58	pg/L		06/24/20 12:40	06/25/20 20:09	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.67	pg/L		06/24/20 12:40	06/25/20 20:09	1
OCDD	7.37	J	100	1.2	pg/L		06/24/20 12:40	06/25/20 20:09	1
OCDF	2.57	J	100	1.3	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total TCDD	2.47	J	10	0.90	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total TCDF	ND		10	0.68	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total PeCDD	ND		50	0.77	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total PeCDF	0.722	J q	50	0.63	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total HxCDD	ND		50	0.73	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total HxCDF	ND		50	1.1	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total HpCDD	ND		50	0.72	pg/L		06/24/20 12:40	06/25/20 20:09	1
Total HpCDF	3.81	J	50	0.62	pg/L		06/24/20 12:40	06/25/20 20:09	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*53*		*25 - 164*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-2,3,7,8-TCDF	*46*		*24 - 169*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,7,8-PeCDD	*50*		*25 - 181*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,7,8-PeCDF	*43*		*24 - 185*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-2,3,4,7,8-PeCDF	*49*		*21 - 178*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,4,7,8-HxCDD	*47*		*32 - 141*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,6,7,8-HxCDD	*61*		*28 - 130*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,4,7,8-HxCDF	*51*		*26 - 152*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,6,7,8-HxCDF	*52*		*26 - 123*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,7,8,9-HxCDF	*46*		*29 - 147*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-2,3,4,6,7,8-HxCDF	*48*		*28 - 136*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*51*		*23 - 140*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*47*		*28 - 143*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*54*		*26 - 138*	*06/24/20 12:40*	*06/25/20 20:09*	*1*
13C-OCDD	*48*		*17 - 157*	*06/24/20 12:40*	*06/25/20 20:09*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*61*		*35 - 197*	*06/24/20 12:40*	*06/25/20 20:09*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-389032/2-A
Matrix: Water
Analysis Batch: 389621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 389032

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	172		pg/L		86	67 - 158
2,3,7,8-TCDF	200	191		pg/L		95	75 - 158
1,2,3,7,8-PeCDD	1000	848		pg/L		85	70 - 142
1,2,3,7,8-PeCDF	1000	914		pg/L		91	80 - 134
2,3,4,7,8-PeCDF	1000	780		pg/L		78	68 - 160
1,2,3,4,7,8-HxCDD	1000	802		pg/L		80	70 - 164
1,2,3,6,7,8-HxCDD	1000	887		pg/L		89	76 - 134
1,2,3,7,8,9-HxCDD	1000	862		pg/L		86	64 - 162
1,2,3,4,7,8-HxCDF	1000	851		pg/L		85	72 - 134
1,2,3,6,7,8-HxCDF	1000	967		pg/L		97	84 - 130
1,2,3,7,8,9-HxCDF	1000	1000		pg/L		100	78 - 130
2,3,4,6,7,8-HxCDF	1000	995		pg/L		100	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	859		pg/L		86	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	897		pg/L		90	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	779		pg/L		78	78 - 138
OCDD	2000	1870		pg/L		94	78 - 144
OCDF	2000	1800		pg/L		90	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*53*		*20 - 175*
13C-2,3,7,8-TCDF	*45*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*51*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*44*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*51*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*53*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*61*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*55*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*54*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*47*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*48*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*55*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*51*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*58*		*20 - 186*
13C-OCDD	*53*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*63*		*31 - 191*

Lab Sample ID: LCSD 320-389032/3-A
Matrix: Water
Analysis Batch: 389621

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 389032

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	200	198		pg/L		99	67 - 158	14	50
2,3,7,8-TCDF	200	222		pg/L		111	75 - 158	15	50
1,2,3,7,8-PeCDD	1000	922		pg/L		92	70 - 142	8	50
1,2,3,7,8-PeCDF	1000	1040		pg/L		104	80 - 134	13	50
2,3,4,7,8-PeCDF	1000	900		pg/L		90	68 - 160	14	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-389032/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 389621 **Prep Batch: 389032**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3,4,7,8-HxCDD			1000	918		pg/L		92	70 - 164	13	50
1,2,3,6,7,8-HxCDD			1000	980		pg/L		98	76 - 134	10	50
1,2,3,7,8,9-HxCDD			1000	999		pg/L		100	64 - 162	15	50
1,2,3,4,7,8-HxCDF			1000	936		pg/L		94	72 - 134	10	50
1,2,3,6,7,8-HxCDF			1000	1110		pg/L		111	84 - 130	14	50
1,2,3,7,8,9-HxCDF			1000	1130		pg/L		113	78 - 130	12	50
2,3,4,6,7,8-HxCDF			1000	1140		pg/L		114	70 - 156	13	50
1,2,3,4,6,7,8-HpCDD			1000	961		pg/L		96	70 - 140	11	50
1,2,3,4,6,7,8-HpCDF			1000	1030		pg/L		103	82 - 122	13	50
1,2,3,4,7,8,9-HpCDF			1000	898		pg/L		90	78 - 138	14	50
OCDD			2000	2080		pg/L		104	78 - 144	11	50
OCDF			2000	2030		pg/L		101	63 - 170	12	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*51*		*20 - 175*
13C-2,3,7,8-TCDF	*43*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*49*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*41*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*47*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*46*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*55*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*47*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*47*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*44*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*44*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*52*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*48*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*53*		*20 - 186*
13C-OCDD	*51*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*63*		*31 - 191*

Lab Sample ID: 600-205895-3 MS **Client Sample ID: AFEFF10**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 389621 **Prep Batch: 389032**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	ND		195	184		pg/L		94	67 - 158
2,3,7,8-TCDF	3.4	J q	195	214		pg/L		108	75 - 158
1,2,3,7,8-PeCDD	ND		976	897		pg/L		92	70 - 142
1,2,3,7,8-PeCDF	5.4	J	976	1010		pg/L		103	80 - 134
2,3,4,7,8-PeCDF	2.1	J	976	855		pg/L		87	68 - 160
1,2,3,4,7,8-HxCDD	1.4	J	976	896		pg/L		92	70 - 164
1,2,3,6,7,8-HxCDD	ND		976	931		pg/L		95	76 - 134
1,2,3,7,8,9-HxCDD	ND		976	977		pg/L		100	64 - 162
1,2,3,4,7,8-HxCDF	6.7	J	976	959		pg/L		98	72 - 134
1,2,3,6,7,8-HxCDF	ND		976	1090		pg/L		112	84 - 130

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: 600-205895-3 MS
Client Sample ID: AFEFF10
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 389621
Prep Batch: 389032

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8,9-HxCDF	ND		976	1130		pg/L		115	78 - 130
2,3,4,6,7,8-HxCDF	ND		976	1090		pg/L		112	70 - 156
1,2,3,4,6,7,8-HpCDD	1.3	J	976	950		pg/L		97	70 - 140
1,2,3,4,6,7,8-HpCDF	3.6	J B	976	1020		pg/L		104	82 - 122
1,2,3,4,7,8,9-HpCDF	ND		976	898		pg/L		92	78 - 138
OCDD	8.3	J B q	1950	2130		pg/L		108	78 - 144
OCDF	2.3	J B q	1950	2040		pg/L		104	63 - 170

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*59*		*25 - 164*
13C-2,3,7,8-TCDF	*49*		*24 - 169*
13C-1,2,3,7,8-PeCDD	*57*		*25 - 181*
13C-1,2,3,7,8-PeCDF	*48*		*24 - 185*
13C-2,3,4,7,8-PeCDF	*54*		*21 - 178*
13C-1,2,3,4,7,8-HxCDD	*56*		*32 - 141*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*
13C-1,2,3,4,7,8-HxCDF	*57*		*26 - 152*
13C-1,2,3,6,7,8-HxCDF	*57*		*26 - 123*
13C-1,2,3,7,8,9-HxCDF	*54*		*29 - 147*
13C-2,3,4,6,7,8-HxCDF	*54*		*28 - 136*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*23 - 140*
13C-1,2,3,4,6,7,8-HpCDF	*61*		*28 - 143*
13C-1,2,3,4,7,8,9-HpCDF	*69*		*26 - 138*
13C-OCDD	*69*		*17 - 157*

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*68*		*35 - 197*

Lab Sample ID: 600-205895-3 MSD
Client Sample ID: AFEFF10
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 389621
Prep Batch: 389032

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3,7,8-TCDD	ND		196	182		pg/L		93	67 - 158	1	50
2,3,7,8-TCDF	3.4	J q	196	220		pg/L		110	75 - 158	3	50
1,2,3,7,8-PeCDD	ND		981	918		pg/L		94	70 - 142	2	50
1,2,3,7,8-PeCDF	5.4	J	981	1030		pg/L		104	80 - 134	2	50
2,3,4,7,8-PeCDF	2.1	J	981	882		pg/L		90	68 - 160	3	50
1,2,3,4,7,8-HxCDD	1.4	J	981	900		pg/L		92	70 - 164	0	50
1,2,3,6,7,8-HxCDD	ND		981	970		pg/L		99	76 - 134	4	50
1,2,3,7,8,9-HxCDD	ND		981	1020		pg/L		104	64 - 162	4	50
1,2,3,4,7,8-HxCDF	6.7	J	981	968		pg/L		98	72 - 134	1	50
1,2,3,6,7,8-HxCDF	ND		981	1160		pg/L		118	84 - 130	6	50
1,2,3,7,8,9-HxCDF	ND		981	1150		pg/L		118	78 - 130	2	50
2,3,4,6,7,8-HxCDF	ND		981	1130		pg/L		115	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD	1.3	J	981	984		pg/L		100	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF	3.6	J B	981	1050		pg/L		106	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF	ND		981	898		pg/L		92	78 - 138	0	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: 600-205895-3 MSD **Client Sample ID: AFEFF10**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 389621 **Prep Batch: 389032**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
OCDD	8.3	J B q	1960	2110		pg/L		107	78 - 144	1	50
OCDF	2.3	J B q	1960	1920		pg/L		98	63 - 170	6	50

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*50*		*25 - 164*
13C-2,3,7,8-TCDF	*43*		*24 - 169*
13C-1,2,3,7,8-PeCDD	*48*		*25 - 181*
13C-1,2,3,7,8-PeCDF	*41*		*24 - 185*
13C-2,3,4,7,8-PeCDF	*48*		*21 - 178*
13C-1,2,3,4,7,8-HxCDD	*47*		*32 - 141*
13C-1,2,3,6,7,8-HxCDD	*57*		*28 - 130*
13C-1,2,3,4,7,8-HxCDF	*48*		*26 - 152*
13C-1,2,3,6,7,8-HxCDF	*46*		*26 - 123*
13C-1,2,3,7,8,9-HxCDF	*44*		*29 - 147*
13C-2,3,4,6,7,8-HxCDF	*44*		*28 - 136*
13C-1,2,3,4,6,7,8-HpCDD	*52*		*23 - 140*
13C-1,2,3,4,6,7,8-HpCDF	*49*		*28 - 143*
13C-1,2,3,4,7,8,9-HpCDF	*55*		*26 - 138*
13C-OCDD	*59*		*17 - 157*

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*64*		*35 - 197*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 320-382787/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 383213 **Prep Batch: 382787**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 17:37	1
Barium	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:37	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 17:37	1
Boron	ND		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 17:37	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 17:37	1
Calcium	0.0597	J	0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:37	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 17:37	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 17:37	1
Copper	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:37	1
Iron	ND		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 17:37	1
Magnesium	ND		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 17:37	1
Manganese	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:37	1
Molybdenum	ND		0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 17:37	1
Nickel	ND		0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 17:37	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 17:37	1
Potassium	ND		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 17:37	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 17:37	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 17:37	1
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 17:37	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 320-382787/1-A
Matrix: Water
Analysis Batch: 383213

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382787

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 17:37	1
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 17:37	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 17:37	1
Tin	0.0142	J	0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 17:37	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 17:37	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 17:37	1
Strontium	ND		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 17:37	1

Lab Sample ID: MB 320-382787/1-A
Matrix: Water
Analysis Batch: 383649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382787

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		0.010	0.0030	mg/L		06/03/20 06:45	06/04/20 12:43	1

Lab Sample ID: LCS 320-382787/2-A
Matrix: Water
Analysis Batch: 383213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382787

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.500	0.479		mg/L		96	80 - 120
Barium	0.500	0.494		mg/L		99	80 - 120
Beryllium	0.250	0.250		mg/L		100	80 - 120
Boron	4.98	4.77		mg/L		96	80 - 120
Cadmium	0.250	0.245		mg/L		98	80 - 120
Calcium	25.0	25.3		mg/L		101	80 - 120
Chromium	0.250	0.243		mg/L		97	80 - 120
Cobalt	0.250	0.242		mg/L		97	80 - 120
Copper	0.250	0.240		mg/L		96	80 - 120
Iron	5.00	5.13		mg/L		103	80 - 120
Magnesium	25.0	24.9		mg/L		100	80 - 120
Manganese	0.250	0.251		mg/L		100	80 - 120
Molybdenum	0.250	0.247		mg/L		99	80 - 120
Nickel	0.250	0.240		mg/L		96	80 - 120
Phosphorus	5.00	5.02		mg/L		100	80 - 120
Potassium	25.0	24.5		mg/L		98	80 - 120
Lead	0.250	0.246		mg/L		98	80 - 120
Selenium	0.500	0.481		mg/L		96	80 - 120
Silver	0.0498	0.0485		mg/L		97	80 - 120
Sodium	25.0	24.6		mg/L		99	80 - 120
Antimony	0.498	0.465		mg/L		93	80 - 120
Thallium	0.500	0.494		mg/L		99	80 - 120
Tin	0.500	0.506		mg/L		101	80 - 120
Titanium	0.250	0.246		mg/L		98	80 - 120
Vanadium	0.250	0.244		mg/L		98	80 - 120
Strontium	0.250	0.248		mg/L		99	80 - 120
Zinc	0.503	0.497		mg/L		99	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 600-205895-3 MS **Client Sample ID: AFEFF10**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 383213 **Prep Batch: 382787**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	ND		0.0498	0.0472		mg/L		95	75 - 125
Arsenic	ND		0.500	0.487		mg/L		97	75 - 125
Barium	0.25		0.500	0.737		mg/L		97	75 - 125
Beryllium	ND		0.250	0.245		mg/L		98	75 - 125
Boron	0.20		4.98	4.72		mg/L		91	75 - 125
Calcium	51	B	25.0	76.0		mg/L		100	75 - 125
Cadmium	ND		0.250	0.239		mg/L		96	75 - 125
Cobalt	ND		0.250	0.235		mg/L		94	75 - 125
Chromium	ND		0.250	0.240		mg/L		96	75 - 125
Copper	0.0029	J	0.250	0.244		mg/L		96	75 - 125
Iron	0.80		5.00	5.76		mg/L		99	75 - 125
Potassium	14		25.0	38.8		mg/L		100	75 - 125
Magnesium	33		25.0	57.7		mg/L		97	75 - 125
Manganese	0.050		0.250	0.294		mg/L		98	75 - 125
Molybdenum	0.0078	J	0.250	0.253		mg/L		98	75 - 125
Sodium	360		25.0	393	4	mg/L		120	75 - 125
Nickel	ND		0.250	0.235		mg/L		94	75 - 125
Phosphorus	ND		5.00	5.20		mg/L		104	75 - 125
Lead	ND		0.250	0.231		mg/L		92	75 - 125
Selenium	ND		0.500	0.481		mg/L		96	75 - 125
Vanadium	ND		0.250	0.245		mg/L		98	75 - 125
Zinc	0.0094	J	0.503	0.509		mg/L		99	75 - 125
Antimony	ND		0.498	0.459		mg/L		92	75 - 125
Thallium	ND		0.500	0.449		mg/L		90	75 - 125
Tin	ND		0.500	0.497		mg/L		99	75 - 125
Titanium	ND		0.250	0.245		mg/L		98	75 - 125
Strontium	0.47		0.250	0.721		mg/L		100	75 - 125

Lab Sample ID: 600-205895-3 MSD **Client Sample ID: AFEFF10**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 383213 **Prep Batch: 382787**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silver	ND		0.0498	0.0463		mg/L		93	75 - 125	2	20
Arsenic	ND		0.500	0.477		mg/L		95	75 - 125	2	20
Barium	0.25		0.500	0.724		mg/L		94	75 - 125	2	20
Beryllium	ND		0.250	0.240		mg/L		96	75 - 125	2	20
Boron	0.20		4.98	4.62		mg/L		89	75 - 125	2	20
Calcium	51	B	25.0	74.5		mg/L		94	75 - 125	2	20
Cadmium	ND		0.250	0.235		mg/L		94	75 - 125	2	20
Cobalt	ND		0.250	0.230		mg/L		92	75 - 125	2	20
Chromium	ND		0.250	0.237		mg/L		95	75 - 125	1	20
Copper	0.0029	J	0.250	0.241		mg/L		95	75 - 125	1	20
Iron	0.80		5.00	5.76		mg/L		99	75 - 125	0	20
Potassium	14		25.0	38.3		mg/L		97	75 - 125	1	20
Magnesium	33		25.0	56.7		mg/L		93	75 - 125	2	20
Manganese	0.050		0.250	0.289		mg/L		96	75 - 125	2	20
Molybdenum	0.0078	J	0.250	0.249		mg/L		96	75 - 125	2	20
Sodium	360		25.0	384	4	mg/L		83	75 - 125	2	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 600-205895-3 MSD
Client Sample ID: AFEFF10
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 383213
Prep Batch: 382787

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nickel	ND		0.250	0.232		mg/L		93	75 - 125	1	20
Phosphorus	ND		5.00	5.06		mg/L		101	75 - 125	3	20
Lead	ND		0.250	0.225		mg/L		90	75 - 125	3	20
Selenium	ND		0.500	0.464		mg/L		93	75 - 125	3	20
Vanadium	ND		0.250	0.243		mg/L		97	75 - 125	1	20
Zinc	0.0094	J	0.503	0.499		mg/L		97	75 - 125	2	20
Antimony	ND		0.498	0.446		mg/L		90	75 - 125	3	20
Thallium	ND		0.500	0.445		mg/L		89	75 - 125	1	20
Tin	ND		0.500	0.489		mg/L		98	75 - 125	2	20
Titanium	ND		0.250	0.243		mg/L		97	75 - 125	1	20
Strontium	0.47		0.250	0.707		mg/L		94	75 - 125	2	20

Lab Sample ID: MB 320-382794/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 383213
Prep Batch: 382794

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.012	mg/L		06/03/20 06:45	06/03/20 14:48	1
Barium	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 14:48	1
Beryllium	ND		0.0020	0.00030	mg/L		06/03/20 06:45	06/03/20 14:48	1
Boron	ND		0.10	0.021	mg/L		06/03/20 06:45	06/03/20 14:48	1
Cadmium	ND		0.0020	0.00050	mg/L		06/03/20 06:45	06/03/20 14:48	1
Calcium	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 14:48	1
Chromium	ND		0.0080	0.0012	mg/L		06/03/20 06:45	06/03/20 14:48	1
Cobalt	ND		0.0050	0.0030	mg/L		06/03/20 06:45	06/03/20 14:48	1
Copper	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 14:48	1
Iron	ND		0.10	0.020	mg/L		06/03/20 06:45	06/03/20 14:48	1
Magnesium	ND		0.50	0.040	mg/L		06/03/20 06:45	06/03/20 14:48	1
Manganese	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 14:48	1
Molybdenum	ND		0.020	0.0027	mg/L		06/03/20 06:45	06/03/20 14:48	1
Nickel	ND		0.0050	0.0024	mg/L		06/03/20 06:45	06/03/20 14:48	1
Phosphorus	ND		0.50	0.050	mg/L		06/03/20 06:45	06/03/20 14:48	1
Potassium	ND		1.0	0.093	mg/L		06/03/20 06:45	06/03/20 14:48	1
Lead	ND		0.0050	0.0025	mg/L		06/03/20 06:45	06/03/20 14:48	1
Selenium	ND		0.020	0.013	mg/L		06/03/20 06:45	06/03/20 14:48	1
Silver	ND		0.0050	0.00084	mg/L		06/03/20 06:45	06/03/20 14:48	1
Sodium	ND		1.0	0.25	mg/L		06/03/20 06:45	06/03/20 14:48	1
Antimony	ND		0.020	0.0098	mg/L		06/03/20 06:45	06/03/20 14:48	1
Thallium	ND		0.020	0.0090	mg/L		06/03/20 06:45	06/03/20 14:48	1
Tin	ND		0.020	0.0050	mg/L		06/03/20 06:45	06/03/20 14:48	1
Titanium	ND		0.010	0.0021	mg/L		06/03/20 06:45	06/03/20 14:48	1
Vanadium	ND		0.0050	0.0019	mg/L		06/03/20 06:45	06/03/20 14:48	1
Strontium	ND		0.050	0.0050	mg/L		06/03/20 06:45	06/03/20 14:48	1
Zinc	ND		0.010	0.0030	mg/L		06/03/20 06:45	06/03/20 14:48	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 320-382794/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 383213 **Prep Batch: 382794**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.500	0.478		mg/L		96	80 - 120
Barium	0.500	0.493		mg/L		99	80 - 120
Beryllium	0.250	0.250		mg/L		100	80 - 120
Boron	4.98	4.75		mg/L		95	80 - 120
Cadmium	0.250	0.243		mg/L		97	80 - 120
Calcium	25.0	25.4		mg/L		102	80 - 120
Chromium	0.250	0.242		mg/L		97	80 - 120
Cobalt	0.250	0.243		mg/L		97	80 - 120
Copper	0.250	0.236		mg/L		95	80 - 120
Iron	5.00	5.16		mg/L		103	80 - 120
Magnesium	25.0	24.9		mg/L		100	80 - 120
Manganese	0.250	0.251		mg/L		100	80 - 120
Molybdenum	0.250	0.248		mg/L		99	80 - 120
Nickel	0.250	0.240		mg/L		96	80 - 120
Phosphorus	5.00	5.02		mg/L		100	80 - 120
Potassium	25.0	24.6		mg/L		98	80 - 120
Lead	0.250	0.248		mg/L		99	80 - 120
Selenium	0.500	0.481		mg/L		96	80 - 120
Silver	0.0498	0.0488		mg/L		98	80 - 120
Sodium	25.0	24.7		mg/L		99	80 - 120
Antimony	0.498	0.465		mg/L		93	80 - 120
Thallium	0.500	0.496		mg/L		99	80 - 120
Tin	0.500	0.504		mg/L		101	80 - 120
Titanium	0.250	0.245		mg/L		98	80 - 120
Vanadium	0.250	0.244		mg/L		98	80 - 120
Strontium	0.250	0.248		mg/L		99	80 - 120
Zinc	0.503	0.493		mg/L		98	80 - 120

Lab Sample ID: 600-205895-1 MS **Client Sample ID: AFINF**
Matrix: Water **Prep Type: Dissolved**
Analysis Batch: 383213 **Prep Batch: 382794**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.500	0.473		mg/L		95	75 - 125
Barium	0.26		0.500	0.722		mg/L		93	75 - 125
Beryllium	ND		0.250	0.240		mg/L		96	75 - 125
Boron	0.22		4.98	4.59		mg/L		88	75 - 125
Cadmium	ND		0.250	0.234		mg/L		94	75 - 125
Calcium	53		25.0	75.4		mg/L		89	75 - 125
Chromium	ND		0.250	0.237		mg/L		95	75 - 125
Cobalt	ND		0.250	0.230		mg/L		92	75 - 125
Copper	ND		0.250	0.235		mg/L		94	75 - 125
Iron	0.025	J	5.00	4.94		mg/L		98	75 - 125
Magnesium	35		25.0	57.7		mg/L		92	75 - 125
Manganese	0.0038	J	0.250	0.243		mg/L		96	75 - 125
Molybdenum	0.0094	J	0.250	0.250		mg/L		96	75 - 125
Nickel	ND		0.250	0.228		mg/L		91	75 - 125
Phosphorus	ND		5.00	5.06		mg/L		101	75 - 125
Potassium	14		25.0	38.7		mg/L		97	75 - 125

QC Sample Results

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 600-205895-1 MS
Matrix: Water
Analysis Batch: 383213

Client Sample ID: AFINF
Prep Type: Dissolved
Prep Batch: 382794

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		0.250	0.229		mg/L		92	75 - 125
Selenium	ND		0.500	0.463		mg/L		93	75 - 125
Silver	ND		0.0498	0.0462		mg/L		93	75 - 125
Sodium	380		25.0	388	4	mg/L		31	75 - 125
Antimony	ND		0.498	0.443		mg/L		89	75 - 125
Thallium	ND		0.500	0.443		mg/L		89	75 - 125
Tin	ND		0.500	0.487		mg/L		97	75 - 125
Titanium	ND		0.250	0.241		mg/L		96	75 - 125
Vanadium	ND		0.250	0.240		mg/L		96	75 - 125
Strontium	0.49		0.250	0.715		mg/L		90	75 - 125
Zinc	0.0065	J	0.503	0.495		mg/L		97	75 - 125

Lab Sample ID: 600-205895-1 MSD
Matrix: Water
Analysis Batch: 383213

Client Sample ID: AFINF
Prep Type: Dissolved
Prep Batch: 382794

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.500	0.490		mg/L		98	75 - 125	4	20
Barium	0.26		0.500	0.752		mg/L		98	75 - 125	4	20
Beryllium	ND		0.250	0.252		mg/L		101	75 - 125	5	20
Boron	0.22		4.98	4.75		mg/L		91	75 - 125	3	20
Cadmium	ND		0.250	0.244		mg/L		98	75 - 125	4	20
Calcium	53		25.0	78.7		mg/L		102	75 - 125	4	20
Chromium	ND		0.250	0.245		mg/L		98	75 - 125	4	20
Cobalt	ND		0.250	0.239		mg/L		96	75 - 125	4	20
Copper	ND		0.250	0.245		mg/L		98	75 - 125	4	20
Iron	0.025	J	5.00	5.17		mg/L		103	75 - 125	4	20
Magnesium	35		25.0	60.0		mg/L		101	75 - 125	4	20
Manganese	0.0038	J	0.250	0.254		mg/L		100	75 - 125	4	20
Molybdenum	0.0094	J	0.250	0.261		mg/L		101	75 - 125	4	20
Nickel	ND		0.250	0.239		mg/L		95	75 - 125	5	20
Phosphorus	ND		5.00	5.24		mg/L		105	75 - 125	3	20
Potassium	14		25.0	40.1		mg/L		103	75 - 125	4	20
Lead	ND		0.250	0.235		mg/L		94	75 - 125	2	20
Selenium	ND		0.500	0.484		mg/L		97	75 - 125	4	20
Silver	ND		0.0498	0.0487		mg/L		98	75 - 125	5	20
Sodium	380		25.0	404	4	mg/L		97	75 - 125	4	20
Antimony	ND		0.498	0.465		mg/L		93	75 - 125	5	20
Thallium	ND		0.500	0.463		mg/L		93	75 - 125	4	20
Tin	ND		0.500	0.508		mg/L		102	75 - 125	4	20
Titanium	ND		0.250	0.253		mg/L		101	75 - 125	5	20
Vanadium	ND		0.250	0.251		mg/L		100	75 - 125	4	20
Strontium	0.49		0.250	0.742		mg/L		101	75 - 125	4	20
Zinc	0.0065	J	0.503	0.519		mg/L		102	75 - 125	5	20

Method: 2540 D-1997 - Solids, Total Suspended (TSS) - SM Online, 2011

Lab Sample ID: MB 600-295566/1 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 295566

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		2.0	2.0	mg/L			06/01/20 08:38	1

Lab Sample ID: LCS 600-295566/2 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 295566

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			1200	1110		mg/L		92	90 - 110		

Lab Sample ID: MB 600-295666/1 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 295666

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		2.0	2.0	mg/L			06/02/20 08:23	1

Lab Sample ID: LCS 600-295666/2 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 295666

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			1200	1160		mg/L		97	90 - 110		

Lab Sample ID: 600-205895-4 DU **Client Sample ID: DUP**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 295666

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	ND			ND		mg/L				NC	10

Specialty Organics

Prep Batch: 389032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1	AFINF	Total/NA	Water	1613B	
600-205895-1 - RA	AFINF	Total/NA	Water	1613B	
600-205895-2	AFEFF5	Total/NA	Water	1613B	
600-205895-3	AFEFF10	Total/NA	Water	1613B	
600-205895-4	DUP	Total/NA	Water	1613B	
MB 320-389032/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-389032/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-389032/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	
600-205895-3 MS	AFEFF10	Total/NA	Water	1613B	
600-205895-3 MSD	AFEFF10	Total/NA	Water	1613B	

Analysis Batch: 389621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1	AFINF	Total/NA	Water	1613B	389032
600-205895-2	AFEFF5	Total/NA	Water	1613B	389032
600-205895-3	AFEFF10	Total/NA	Water	1613B	389032
600-205895-4	DUP	Total/NA	Water	1613B	389032
MB 320-389032/1-A	Method Blank	Total/NA	Water	1613B	389032
LCS 320-389032/2-A	Lab Control Sample	Total/NA	Water	1613B	389032
LCSD 320-389032/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	389032
600-205895-3 MS	AFEFF10	Total/NA	Water	1613B	389032
600-205895-3 MSD	AFEFF10	Total/NA	Water	1613B	389032

Analysis Batch: 390059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1 - RA	AFINF	Total/NA	Water	1613B	389032

Metals

Prep Batch: 382787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1	AFINF	Total/NA	Water	3010A	
600-205895-2	AFEFF5	Total/NA	Water	3010A	
600-205895-3	AFEFF10	Total/NA	Water	3010A	
600-205895-4	DUP	Total/NA	Water	3010A	
MB 320-382787/1-A	Method Blank	Total/NA	Water	3010A	
LCS 320-382787/2-A	Lab Control Sample	Total/NA	Water	3010A	
600-205895-3 MS	AFEFF10	Total/NA	Water	3010A	
600-205895-3 MSD	AFEFF10	Total/NA	Water	3010A	

Prep Batch: 382794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1	AFINF	Dissolved	Water	3010A	
600-205895-2	AFEFF5	Dissolved	Water	3010A	
600-205895-3	AFEFF10	Dissolved	Water	3010A	
MB 320-382794/1-A	Method Blank	Total/NA	Water	3010A	
LCS 320-382794/2-A	Lab Control Sample	Total/NA	Water	3010A	
600-205895-1 MS	AFINF	Dissolved	Water	3010A	
600-205895-1 MSD	AFINF	Dissolved	Water	3010A	

QC Association Summary

Client: GHD Services Inc.
Job ID: 600-205895-1
Project/Site: San Jacinto River Waste Pits Superfund

Metals

Analysis Batch: 383213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1	AFINF	Dissolved	Water	6010C	382794
600-205895-1	AFINF	Total/NA	Water	6010C	382787
600-205895-2	AFEFF5	Dissolved	Water	6010C	382794
600-205895-2	AFEFF5	Total/NA	Water	6010C	382787
600-205895-3	AFEFF10	Dissolved	Water	6010C	382794
600-205895-3	AFEFF10	Total/NA	Water	6010C	382787
600-205895-4	DUP	Total/NA	Water	6010C	382787
MB 320-382787/1-A	Method Blank	Total/NA	Water	6010C	382787
MB 320-382794/1-A	Method Blank	Total/NA	Water	6010C	382794
LCS 320-382787/2-A	Lab Control Sample	Total/NA	Water	6010C	382787
LCS 320-382794/2-A	Lab Control Sample	Total/NA	Water	6010C	382794
600-205895-1 MS	AFINF	Dissolved	Water	6010C	382794
600-205895-1 MSD	AFINF	Dissolved	Water	6010C	382794
600-205895-3 MS	AFEFF10	Total/NA	Water	6010C	382787
600-205895-3 MSD	AFEFF10	Total/NA	Water	6010C	382787

Analysis Batch: 383649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-382787/1-A	Method Blank	Total/NA	Water	6010C	382787

General Chemistry

Analysis Batch: 295566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-1	AFINF	Total/NA	Water	2540 D-1997	
600-205895-2	AFEFF5	Total/NA	Water	2540 D-1997	
600-205895-3	AFEFF10	Total/NA	Water	2540 D-1997	
MB 600-295566/1	Method Blank	Total/NA	Water	2540 D-1997	
LCS 600-295566/2	Lab Control Sample	Total/NA	Water	2540 D-1997	

Analysis Batch: 295666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-205895-4	DUP	Total/NA	Water	2540 D-1997	
MB 600-295666/1	Method Blank	Total/NA	Water	2540 D-1997	
LCS 600-295666/2	Lab Control Sample	Total/NA	Water	2540 D-1997	
600-205895-4 DU	DUP	Total/NA	Water	2540 D-1997	

Lab Chronicle

Client: GHD Services Inc.
Job ID: 600-205895-1
Project/Site: San Jacinto River Waste Pits Superfund

Client Sample ID: AFINF
Lab Sample ID: 600-205895-1

Date Collected: 05/28/20 10:30
Matrix: Water
Date Received: 05/29/20 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			389032	06/24/20 12:40	NR	TAL SAC
Total/NA	Analysis	1613B		1	389621	06/25/20 22:25	SMA	TAL SAC
Total/NA	Prep	1613B	RA		389032	06/24/20 12:40	NR	TAL SAC
Total/NA	Analysis	1613B	RA	1	390059	06/26/20 16:00	AS	TAL SAC
Dissolved	Prep	3010A			382794	06/03/20 06:45	NIM	TAL SAC
Dissolved	Analysis	6010C		1	383213	06/03/20 16:42	GSH	TAL SAC
Total/NA	Prep	3010A			382787	06/03/20 06:45	NIM	TAL SAC
Total/NA	Analysis	6010C		1	383213	06/03/20 17:45	GSH	TAL SAC
Total/NA	Analysis	2540 D-1997		1	295566	06/01/20 08:40	TNL	TAL HOU

Client Sample ID: AFEFF5
Lab Sample ID: 600-205895-2

Date Collected: 05/28/20 11:15
Matrix: Water
Date Received: 05/29/20 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			389032	06/24/20 12:40	NR	TAL SAC
Total/NA	Analysis	1613B		1	389621	06/25/20 23:10	SMA	TAL SAC
Dissolved	Prep	3010A			382794	06/03/20 06:45	NIM	TAL SAC
Dissolved	Analysis	6010C		1	383213	06/03/20 17:02	GSH	TAL SAC
Total/NA	Prep	3010A			382787	06/03/20 06:45	NIM	TAL SAC
Total/NA	Analysis	6010C		1	383213	06/03/20 17:49	GSH	TAL SAC
Total/NA	Analysis	2540 D-1997		1	295566	06/01/20 08:40	TNL	TAL HOU

Client Sample ID: AFEFF10
Lab Sample ID: 600-205895-3

Date Collected: 05/28/20 16:00
Matrix: Water
Date Received: 05/29/20 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			389032	06/24/20 12:40	NR	TAL SAC
Total/NA	Analysis	1613B		1	389621	06/25/20 23:55	SMA	TAL SAC
Dissolved	Prep	3010A			382794	06/03/20 06:45	NIM	TAL SAC
Dissolved	Analysis	6010C		1	383213	06/03/20 17:05	GSH	TAL SAC
Total/NA	Prep	3010A			382787	06/03/20 06:45	NIM	TAL SAC
Total/NA	Analysis	6010C		1	383213	06/03/20 17:53	GSH	TAL SAC
Total/NA	Analysis	2540 D-1997		1	295566	06/01/20 08:40	TNL	TAL HOU

Client Sample ID: DUP
Lab Sample ID: 600-205895-4

Date Collected: 05/28/20 00:00
Matrix: Water
Date Received: 05/29/20 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			389032	06/24/20 12:40	NR	TAL SAC
Total/NA	Analysis	1613B		1	389621	06/26/20 02:11	SMA	TAL SAC
Total/NA	Prep	3010A			382787	06/03/20 06:45	NIM	TAL SAC
Total/NA	Analysis	6010C		1	383213	06/03/20 18:20	GSH	TAL SAC

Client Sample ID: DUP

Lab Sample ID: 600-205895-4

Date Collected: 05/28/20 00:00

Matrix: Water

Date Received: 05/29/20 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540 D-1997		1	295666	06/02/20 08:23	TNL	TAL HOU

Laboratory References:

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 600-205895-1
Project/Site: San Jacinto River Waste Pits Superfund

Laboratory: Eurofins TestAmerica, Houston

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704223-19-25	10-31-20

Laboratory: Eurofins TestAmerica, Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-21

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704399-19-13	06-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010C	3010A	Water	Antimony
6010C	3010A	Water	Arsenic
6010C	3010A	Water	Barium
6010C	3010A	Water	Beryllium
6010C	3010A	Water	Boron
6010C	3010A	Water	Cadmium
6010C	3010A	Water	Calcium
6010C	3010A	Water	Chromium
6010C	3010A	Water	Cobalt
6010C	3010A	Water	Copper
6010C	3010A	Water	Iron
6010C	3010A	Water	Lead
6010C	3010A	Water	Magnesium
6010C	3010A	Water	Manganese
6010C	3010A	Water	Molybdenum
6010C	3010A	Water	Nickel
6010C	3010A	Water	Phosphorus
6010C	3010A	Water	Potassium
6010C	3010A	Water	Selenium
6010C	3010A	Water	Silver
6010C	3010A	Water	Sodium
6010C	3010A	Water	Strontium
6010C	3010A	Water	Thallium
6010C	3010A	Water	Tin
6010C	3010A	Water	Titanium
6010C	3010A	Water	Vanadium
6010C	3010A	Water	Zinc
TEQ		Water	Total Dioxin/Furan TEQ

Method Summary

Client: GHD Services Inc.
Project/Site: San Jacinto River Waste Pits Superfund

Job ID: 600-205895-1

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	TAL SAC
TEQ	Total TEQ Calculation	Lab SOP	TAL SAC
6010C	Metals (ICP)	SW846	TAL SAC
2540 D-1997	Solids, Total Suspended (TSS) - SM Online, 2011	SM-Online	TAL HOU
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	TAL SAC
3010A	Preparation, Total Metals	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure
SM-Online = Standard Methods Online
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = Eurofins TestAmerica, Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444
TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Job ID: 600-205895-1
Project/Site: San Jacinto River Waste Pits Superfund

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-205895-1	AFINF	Water	05/28/20 10:30	05/29/20 09:11	
600-205895-2	AFEFF5	Water	05/28/20 11:15	05/29/20 09:11	
600-205895-3	AFEFF10	Water	05/28/20 16:00	05/29/20 09:11	
600-205895-4	DUP	Water	05/28/20 00:00	05/29/20 09:11	

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 600-205895-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 362307

Lab Sample ID: ICV 320-362307/9 Client Sample ID:

Date Analyzed: 03/05/20 21:47 Lab File ID: 05MR20A10D5_9.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	17.98	Peak assignment corrected	messecara	03/05/20 22:47

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 600-205895-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 389621

Lab Sample ID: CCV 320-389621/2 Client Sample ID:

Date Analyzed: 06/25/20 18:28 Lab File ID: 25JN2010D5_2.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
13C-1,2,3,4-TCDD	17.58	Peak assignment corrected	arghestanis	06/26/20 11:42

Lab Sample ID: MB 320-389032/1-A Client Sample ID:

Date Analyzed: 06/25/20 20:09 Lab File ID: 25JN2010D5_4.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,4,6,7,8-HpCDF	33.60	Baseline	arghestanis	06/26/20 11:52

Lab Sample ID: 600-205895-1 Client Sample ID: AFINF

Date Analyzed: 06/25/20 22:25 Lab File ID: 25JN2010D5_7.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,7,8,9-HxCDF		Unspecified		
2,3,7,8-TCDD	17.78	Baseline	arghestanis	06/26/20 12:02
1,2,3,4,7,8-HxCDF	30.13	Baseline	arghestanis	06/26/20 12:07
1,2,3,6,7,8-HxCDF	30.33	Baseline	arghestanis	06/26/20 12:07
1,2,3,4,7,8-HxCDD	31.44	Baseline	arghestanis	06/26/20 12:11
1,2,3,6,7,8-HxCDD	31.55	Split Peak	arghestanis	06/26/20 12:11
1,2,3,4,6,7,8-HpCDD	34.37	Baseline	arghestanis	06/26/20 12:14
1,2,3,4,7,8,9-HpCDF	34.65	Baseline	arghestanis	06/26/20 12:13
OCDF	36.76	Baseline	arghestanis	06/26/20 12:15

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 600-205895-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 389621

Lab Sample ID: 600-205895-2 Client Sample ID: AFEFF5

Date Analyzed: 06/25/20 23:10 Lab File ID: 25JN2010D5_8.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Baseline	arghestanis	06/26/20 12:59
2,3,7,8-TCDF	17.08	Baseline	arghestanis	06/26/20 12:57
1,2,3,4,7,8-HxCDD	31.46	Baseline	arghestanis	06/26/20 12:59

Lab Sample ID: 600-205895-3 Client Sample ID: AFEFF10

Date Analyzed: 06/25/20 23:55 Lab File ID: 25JN2010D5_9.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDF		Missed Peak	arghestanis	06/26/20 13:02
1,2,3,4,7,8-HxCDF	30.14	Baseline	arghestanis	06/26/20 13:02
1,2,3,4,7,8-HxCDD	31.44	Baseline	arghestanis	06/26/20 13:03
1,2,3,4,6,7,8-HpCDF	33.60	Baseline	arghestanis	06/26/20 13:04
1,2,3,4,6,7,8-HpCDD	34.38	Baseline	arghestanis	06/26/20 13:04
OCDF	36.76	Baseline	arghestanis	06/26/20 13:05

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 600-205895-1

SDG No.:

Instrument ID: 10D5 Analysis Batch Number: 389621

Lab Sample ID: 600-205895-4 Client Sample ID: DUP

Date Analyzed: 06/26/20 02:11 Lab File ID: 25JN2010D5_12.d GC Column: DB-5 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3,6,7,8-HxCDD		Split Peak	arghestanis	06/26/20 13:13
1,2,3,4,7,8-HxCDD	31.47	Split Peak	arghestanis	06/26/20 13:13
1,2,3,4,6,7,8-HpCDF	33.60	Missed Peak	arghestanis	06/26/20 13:14
1,2,3,4,6,7,8-HpCDD	34.38	Baseline	arghestanis	06/26/20 13:15

1613B

DIOXIN MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Sacram Job No.: 600-205895-1

SDG No.:

Instrument ID: 11D2 Analysis Batch Number: 390059

Lab Sample ID: 600-205895-1 RA Client Sample ID: AFINF RA

Date Analyzed: 06/26/20 16:00 Lab File ID: 26JN2011D2T_004.d GC Column: DB-225 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,3,7,8-TCDF	17.01	Peak Tail	shardaa	06/26/20 17:16

1613B

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
TSSICCV_00981	06/26/20	05/26/20	DI WATER, Lot N/A	1 L	WETDCELITE_00008	0.6 g	Total Suspended Solids	600 mg/L
.WETDCELITE_00008	05/29/23	FISHER, Lot 175788			(Purchased Reagent)		Total Suspended Solids	100 %
TSSILCS_01032	06/26/20	05/26/20	DI WATER, Lot N/A	1 L	WETDCELITE_00010	1.2 g	Total Suspended Solids	1200 mg/L
.WETDCELITE_00010	04/12/22	FISHER, Lot 166571			(Purchased Reagent)		Total Suspended Solids	100 %

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
HRDXNCP_00040	08/30/20	08/30/19	C14, Lot STBH7678	6 mL	HRDXNCP_00039	1.2 mL	1,2,3,4,6,7,9-HpCDD	40 pg/uL
							1,2,3,4,6,7-HxCDD	40 pg/uL
							1,2,3,4,6,8-HxCDF	40 pg/uL
							1,2,3,4,8,9-HxCDF	40 pg/uL
							1,2,3,7-TCDD	40 pg/uL
							1,2,3,8,9-PeCDD	40 pg/uL
							1,2,3,8,9-PeCDF	40 pg/uL
							1,2,3,9-TCDD	40 pg/uL
							1,2,3,9-TCDF	40 pg/uL
							1,2,4,6,7,9-HxCDD	40 pg/uL
							1,2,4,7,9-PeCDD	40 pg/uL
							1,2,8,9-TCDD	40 pg/uL
							1,2,8,9-TCDF	40 pg/uL
							1,3,4,6,8-PeCDF	40 pg/uL
							1,3,6,8-TCDD	40 pg/uL
							1,3,6,8-TCDF	40 pg/uL
							13C-2,3,7,8-TCDD	40 pg/uL
							13C-2,3,7,8-TCDF	40 pg/uL
							2,3,4,7-TCDF	40 pg/uL
							2,3,7,8-TCDD	40 pg/uL
							2,3,7,8-TCDF	40 pg/uL
.HRDXNCP_00039	03/31/25		CIL, Lot ER03111502		(Purchased Reagent)		1,2,3,4,6,7,9-HpCDD	200 ng/mL
							1,2,3,4,6,7-HxCDD	200 ng/mL
							1,2,3,4,6,8-HxCDF	200 ng/mL
							1,2,3,4,8,9-HxCDF	200 ng/mL
							1,2,3,7-TCDD	200 ng/mL
							1,2,3,8,9-PeCDD	200 ng/mL
							1,2,3,8,9-PeCDF	200 ng/mL
							1,2,3,9-TCDD	200 ng/mL
							1,2,3,9-TCDF	200 ng/mL
							1,2,4,6,7,9-HxCDD	200 ng/mL
							1,2,4,7,9-PeCDD	200 ng/mL
							1,2,8,9-TCDD	200 ng/mL
							1,2,8,9-TCDF	200 ng/mL
							1,3,4,6,8-PeCDF	200 ng/mL
							1,3,6,8-TCDD	200 ng/mL
							1,3,6,8-TCDF	200 ng/mL
							13C-2,3,7,8-TCDD	200 ng/mL
							13C-2,3,7,8-TCDF	200 ng/mL
							2,3,4,7-TCDF	200 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
HRDXNIC_00044	07/31/20	02/06/20	C14, Lot STBJ0716	0.5 mL	HRDXNIDA_00303	0.125 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00364	0.25 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNSU_00229	0.05 mL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	0.5 mL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00303	07/31/20	09/20/17	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00247	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00297	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00301	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00302	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00247	03/31/26		CIL, Lot ER053107-02		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00297	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00301	10/31/21		CIL, Lot ER102711-01		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00302	07/31/20		CIL, Lot ER072810-02		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20	CIL, Lot ER111010-01			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24	CIL, Lot ER08101404			(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00357	04/30/26	CIL, Lot ER02241603			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20	CIL, Lot ER100610-01			(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20	CIL, Lot ER100610-02			(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24	CIL, Lot ER08041401			(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21	CIL, Lot ER012111-01			(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28	CIL, Lot ER03151801			(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27	CIL, Lot ER04051701			(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNSU_00229	07/31/25	01/08/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00228	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00228	07/31/25	01/08/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00211	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00211	07/31/25	CIL, Lot ER05211501			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25	Wellington Labs, Lot 13PAR0418			(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
HRDXNIC_00045	01/31/21	05/06/20	C14, Lot STBJ3415	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	50 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00108	500 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00108	03/01/25		Wellington Labs, Lot 13PAR0418		(Purchased Reagent)		2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
HRDXNIDA_00430	01/31/21	06/02/20	Acetone, Lot 0000242181	500 mL	HRDXNIDA_00379	2.5 mL	13C-1,2,3,4,7,8,9-HpCDF	2 pg/uL
							13C-2,3,4,7,8-PeCDF	2 pg/uL
							13C-1,2,3,4,7,8-HxCDD	2 pg/uL
							13C-1,2,3,4,7,8-HxCDF	2 pg/uL
					HRDXNIDA_00429	5 mL	13C-OCDD	4 pg/uL
							13C-2,3,7,8-TCDF	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDD	2 pg/uL
							13C-2,3,7,8-TCDD	2 pg/uL
							13C-1,2,3,7,8-PeCDF	2 pg/uL
							13C-1,2,3,7,8-PeCDD	2 pg/uL
							13C-1,2,3,4,6,7,8-HpCDD	2 pg/uL
							13C-1,2,3,7,8,9-HxCDF	2 pg/uL
							13C-2,3,4,6,7,8-HxCDF	2 pg/uL
							13C-1,2,3,6,7,8-HxCDF	2 pg/uL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00398	10 mL	13C-OCDD	0.4 ug/mL
					HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00408	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00409	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00421	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00422	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00423	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00424	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00425	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00426	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
..HRDXNIDA_00398	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00408	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00409	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00421	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00422	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00423	10/31/26		CIL, Lot ER09271601		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00424	12/31/30		CIL, Lot ER01062016		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00425	01/31/30		CIL, Lot ER01062015		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00426	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
HRDXNIS_00125	10/09/20	03/23/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00112	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
.HRDXNIS_00112	09/30/26	10/25/18	Isooctane, Lot 0000192372	10 mL	HRDXNIS_00110	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00111	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
..HRDXNIS_00110	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
..HRDXNIS_00111	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
HRDXNL2_00028	07/31/20	01/22/20	C14, Lot STBJ0716	1 mL	HRDXNIDA_00303	0.25 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00364	0.5 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIS_00121	1 mL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00232	0.625 mL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00118	0.125 mL	1,2,3,4,6,7,8-HpCDD	2.5 ng/mL
							1,2,3,4,6,7,8-HpCDF	2.5 ng/mL
							1,2,3,4,7,8,9-HpCDF	2.5 ng/mL
							1,2,3,4,7,8-HxCDD	2.5 ng/mL
							1,2,3,4,7,8-HxCDF	2.5 ng/mL
							1,2,3,6,7,8-HxCDD	2.5 ng/mL
							1,2,3,6,7,8-HxCDF	2.5 ng/mL
							1,2,3,7,8,9-HxCDD	2.5 ng/mL
							1,2,3,7,8,9-HxCDF	2.5 ng/mL
							1,2,3,7,8-PeCDD	2.5 ng/mL
							1,2,3,7,8-PeCDF	2.5 ng/mL
							2,3,4,6,7,8-HxCDF	2.5 ng/mL
							2,3,4,7,8-PeCDF	2.5 ng/mL
							2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
							OCDD	5 ng/mL
							OCDF	5 ng/mL
.HRDXNIDA_00303	07/31/20	09/20/17	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00247	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00297	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00301	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00302	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00247	03/31/26		CIL, Lot ER053107-02		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00297	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00301	10/31/21		CIL, Lot ER102711-01		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00302	07/31/20		CIL, Lot ER072810-02		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20		CIL, Lot ER111010-01		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00357	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20		CIL, Lot ER100610-01		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20		CIL, Lot ER100610-02		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIS_00121	10/09/20	10/09/19	C14, Lot STBJ0716	100 mL	HRDXNIS_00112	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00112	09/30/26	10/25/18	Isooctane, Lot 0000192372	10 mL	HRDXNIS_00110	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00111	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00110	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00111	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00232	01/18/21	01/18/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00229	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00229	07/31/25	01/08/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00228	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00228	07/31/25	01/08/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00211	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00211	07/31/25		CIL, Lot ER05211501		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00118	01/03/21	01/03/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL2_00029	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	625 uL	37Cl4-2,3,7,8-TCDD	0.5 ng/mL
					HRDXNTA_00119	125 uL	2,3,7,8-TCDD	0.5 ng/mL
							2,3,7,8-TCDF	0.5 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

				Reagent	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Final Volume	Reagent ID	Volume Added	Analyte	Concentration
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL3_00026	07/31/20	01/22/20	C14, Lot STBJ0716	0.5 mL	HRDXNIDA_00303	0.125 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00364	0.25 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIS_00121	0.5 mL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00232	1.25 mL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00118	0.25 mL	1,2,3,4,6,7,8-HpCDD	10 ng/mL
							1,2,3,4,6,7,8-HpCDF	10 ng/mL
							1,2,3,4,7,8,9-HpCDF	10 ng/mL
							1,2,3,4,7,8-HxCDD	10 ng/mL
							1,2,3,4,7,8-HxCDF	10 ng/mL
							1,2,3,6,7,8-HxCDD	10 ng/mL
							1,2,3,6,7,8-HxCDF	10 ng/mL
							1,2,3,7,8,9-HxCDD	10 ng/mL
							1,2,3,7,8,9-HxCDF	10 ng/mL
							1,2,3,7,8-PeCDD	10 ng/mL
							1,2,3,7,8-PeCDF	10 ng/mL
							2,3,4,6,7,8-HxCDF	10 ng/mL
							2,3,4,7,8-PeCDF	10 ng/mL
							2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
							OCDD	20 ng/mL
							OCDF	20 ng/mL
.HRDXNIDA_00303	07/31/20	09/20/17	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00247	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00297	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00301	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00302	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00247	03/31/26		CIL, Lot ER053107-02		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00297	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00301	10/31/21		CIL, Lot ER102711-01		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00302	07/31/20		CIL, Lot ER072810-02		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20		CIL, Lot ER111010-01		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00357	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20		CIL, Lot ER100610-01		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20		CIL, Lot ER100610-02		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIS_00121	10/09/20	10/09/19	C14, Lot STBJ0716	100 mL	HRDXNIS_00112	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00112	09/30/26	10/25/18	Isooctane, Lot 0000192372	10 mL	HRDXNIS_00110	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00111	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00110	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00111	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00232	01/18/21	01/18/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00229	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00229	07/31/25	01/08/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00228	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00228	07/31/25	01/08/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00211	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
....HRDXNSU_00211	07/31/25		CIL, Lot ER05211501		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00118	01/03/21	01/03/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	20 ng/mL
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
..HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL3_00027	01/31/21	05/06/20	C14, Lot STBJ3715	0.5 mL	HRDXNIDA_00429	250 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	500 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00238	1250 uL	37Cl4-2,3,7,8-TCDD	2 ng/mL
					HRDXNTA_00119	250 uL	2,3,7,8-TCDD	2 ng/mL
							2,3,7,8-TCDF	2 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00238	05/06/21	05/06/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
..HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
...HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00119	03/04/21	03/04/20	Acetone, Lot 00000236884	25 mL	HRDXNTA_00110	0.25 mL	2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
..HRDXNTA_00110	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00090	10/09/20	01/18/20	C14, Lot STBH7678	1 mL	HRDXNIDA_00364	0.5 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00379	0.25 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNSU_00226	0.025 mL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00110	0.025 mL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20		CIL, Lot ER111010-01		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00357	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20		CIL, Lot ER100610-01		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20		CIL, Lot ER100610-02		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNSU_00226	01/07/21	01/07/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00195	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00195	07/31/25	09/10/18	Isooctane, Lot 0000192372	10 mL	HRDXNSU_00187	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00187	07/31/25		CIL, Lot ER05211501		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00091	10/09/20	01/22/20	C14, Lot STBJ0716	1 mL	HRDXNIDA_00364	0.5 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIDA_00379	0.25 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIS_00121	1 mL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00226	0.025 mL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00110	0.025 mL	1,2,3,4,6,7,8-HpCDD	50 ng/mL
							1,2,3,4,6,7,8-HpCDF	50 ng/mL
							1,2,3,4,7,8,9-HpCDF	50 ng/mL
							1,2,3,4,7,8-HxCDD	50 ng/mL
							1,2,3,4,7,8-HxCDF	50 ng/mL
							1,2,3,6,7,8-HxCDD	50 ng/mL
							1,2,3,6,7,8-HxCDF	50 ng/mL
							1,2,3,7,8,9-HxCDD	50 ng/mL
							1,2,3,7,8,9-HxCDF	50 ng/mL
							1,2,3,7,8-PeCDD	50 ng/mL
							1,2,3,7,8-PeCDF	50 ng/mL
							2,3,4,6,7,8-HxCDF	50 ng/mL
							2,3,4,7,8-PeCDF	50 ng/mL
							2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
							OCDD	100 ng/mL
							OCDF	100 ng/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20		CIL, Lot ER111010-01		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00357	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20		CIL, Lot ER100610-01		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20		CIL, Lot ER100610-02		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIDA_00379	04/11/26	04/11/19	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00375	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00376	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00377	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00378	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00375	05/31/26		CIL, Lot ER04251601		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00376	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00377	06/30/26		CIL, Lot ER04211601		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00378	07/31/27		CIL, Lot ER04211701		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIS_00121	10/09/20	10/09/19	C14, Lot STBJ0716	100 mL	HRDXNIS_00112	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00112	09/30/26	10/25/18	Isooctane, Lot 0000192372	10 mL	HRDXNIS_00110	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00111	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00110	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00111	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00226	01/07/21	01/07/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00195	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00195	07/31/25	09/10/18	Isooctane, Lot 0000192372	10 mL	HRDXNSU_00187	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00187	07/31/25		CIL, Lot ER05211501		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL4_00092	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL4_00093	01/31/21	05/06/20	C14, Lot STBJ3715	1 mL	HRDXNIDA_00429	500 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	1000 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	25 uL	37Cl4-2,3,7,8-TCDD	10 ng/mL
					HRDXNTA_00111	25 uL	2,3,7,8-TCDD	10 ng/mL
							2,3,7,8-TCDF	10 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL5_00029	07/31/20	01/22/20	C14, Lot STBH7678	0.2 mL	HRDXNIDA_00303	0.05 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00364	0.1 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIS_00121	0.2 mL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00229	0.02 mL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00110	0.02 mL	1,2,3,4,6,7,8-HpCDD	200 ng/mL
							1,2,3,4,6,7,8-HpCDF	200 ng/mL
							1,2,3,4,7,8,9-HpCDF	200 ng/mL
							1,2,3,4,7,8-HxCDD	200 ng/mL
							1,2,3,4,7,8-HxCDF	200 ng/mL
							1,2,3,6,7,8-HxCDD	200 ng/mL
							1,2,3,6,7,8-HxCDF	200 ng/mL
							1,2,3,7,8,9-HxCDD	200 ng/mL
							1,2,3,7,8,9-HxCDF	200 ng/mL
							1,2,3,7,8-PeCDD	200 ng/mL
							1,2,3,7,8-PeCDF	200 ng/mL
							2,3,4,6,7,8-HxCDF	200 ng/mL
							2,3,4,7,8-PeCDF	200 ng/mL
							2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
							OCDD	400 ng/mL
							OCDF	400 ng/mL
.HRDXNIDA_00303	07/31/20	09/20/17	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00247	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00297	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL
					HRDXNIDA_00301	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00302	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00247	03/31/26		CIL, Lot ER053107-02		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00297	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00301	10/31/21		CIL, Lot ER102711-01		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00302	07/31/20		CIL, Lot ER072810-02		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20		CIL, Lot ER111010-01		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIDA_00357	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20		CIL, Lot ER100610-01		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20		CIL, Lot ER100610-02		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIS_00121	10/09/20	10/09/19	C14, Lot STBJ0716	100 mL	HRDXNIS_00112	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00112	09/30/26	10/25/18	Isooctane, Lot 0000192372	10 mL	HRDXNIS_00110	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00111	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00110	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00111	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00229	07/31/25	01/08/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00228	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00228	07/31/25	01/08/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00211	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00211	07/31/25		CIL, Lot ER05211501		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL5_00030	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	20 uL	37Cl4-2,3,7,8-TCDD	40 ng/mL
					HRDXNTA_00111	20 uL	2,3,7,8-TCDD	40 ng/mL
							2,3,7,8-TCDF	40 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24		WELLINGTON LABS, Lot MCDD0480505		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNL6_00025	07/31/20	01/22/20	C14, Lot STBJ0716	0.2 mL	HRDXNIDA_00303	0.05 mL	13C-1,2,3,4,7,8,9-HpCDF	100 ng/mL
							13C-2,3,4,7,8-PeCDF	100 ng/mL
							13C-1,2,3,4,7,8-HxCDD	100 ng/mL
							13C-1,2,3,4,7,8-HxCDF	100 ng/mL
					HRDXNIDA_00364	0.1 mL	13C-1,2,3,4,6,7,8-HpCDD	100 ng/mL
							13C-1,2,3,4,6,7,8-HpCDF	100 ng/mL
							13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
							13C-1,2,3,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8,9-HxCDF	100 ng/mL
							13C-2,3,4,6,7,8-HxCDF	100 ng/mL
							13C-1,2,3,7,8-PeCDD	100 ng/mL
							13C-1,2,3,7,8-PeCDF	100 ng/mL
							13C-1,2,3,6,7,8-HxCDD	100 ng/mL
							13C-OCDD	200 ng/mL
					HRDXNIS_00121	0.2 mL	13C-1,2,3,7,8,9-HxCDD	100 ng/mL
							13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00229	0.1 mL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00110	0.1 mL	1,2,3,4,6,7,8-HpCDD	1000 ng/mL
							1,2,3,4,6,7,8-HpCDF	1000 ng/mL
							1,2,3,4,7,8,9-HpCDF	1000 ng/mL
							1,2,3,4,7,8-HxCDD	1000 ng/mL
							1,2,3,4,7,8-HxCDF	1000 ng/mL
							1,2,3,6,7,8-HxCDD	1000 ng/mL
							1,2,3,6,7,8-HxCDF	1000 ng/mL
							1,2,3,7,8,9-HxCDD	1000 ng/mL
							1,2,3,7,8,9-HxCDF	1000 ng/mL
							1,2,3,7,8-PeCDD	1000 ng/mL
							1,2,3,7,8-PeCDF	1000 ng/mL
							2,3,4,6,7,8-HxCDF	1000 ng/mL
							2,3,4,7,8-PeCDF	1000 ng/mL
							2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
							OCDD	2000 ng/mL
							OCDF	2000 ng/mL
.HRDXNIDA_00303	07/31/20	09/20/17	Isooctane, Lot 0000134126	100 mL	HRDXNIDA_00247	0.8 mL	13C-1,2,3,4,7,8,9-HpCDF	0.4 ug/mL
					HRDXNIDA_00297	0.8 mL	13C-2,3,4,7,8-PeCDF	0.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					HRDXNIDA_00301	0.8 mL	13C-1,2,3,4,7,8-HxCDD	0.4 ug/mL
					HRDXNIDA_00302	0.8 mL	13C-1,2,3,4,7,8-HxCDF	0.4 ug/mL
..HRDXNIDA_00247	03/31/26		CIL, Lot ER053107-02		(Purchased Reagent)		13C-1,2,3,4,7,8,9-HpCDF	50 ug/mL
..HRDXNIDA_00297	01/31/27		CIL, Lot ER01061701		(Purchased Reagent)		13C-2,3,4,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00301	10/31/21		CIL, Lot ER102711-01		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00302	07/31/20		CIL, Lot ER072810-02		(Purchased Reagent)		13C-1,2,3,4,7,8-HxCDF	50 ug/mL
.HRDXNIDA_00364	11/30/20	01/28/19	Isooctane, Lot 0000192372	250 mL	HRDXNIDA_00075	1 mL	13C-1,2,3,4,6,7,8-HpCDD	0.2 ug/mL
					HRDXNIDA_00353	1 mL	13C-1,2,3,4,6,7,8-HpCDF	0.2 ug/mL
					HRDXNIDA_00354	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00355	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
					HRDXNIDA_00357	1 mL	13C-1,2,3,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00358	1 mL	13C-1,2,3,7,8,9-HxCDF	0.2 ug/mL
					HRDXNIDA_00359	1 mL	13C-2,3,4,6,7,8-HxCDF	0.2 ug/mL
					HRDXNIDA_00360	1 mL	13C-1,2,3,7,8-PeCDD	0.2 ug/mL
					HRDXNIDA_00361	1 mL	13C-1,2,3,7,8-PeCDF	0.2 ug/mL
					HRDXNIDA_00362	1 mL	13C-1,2,3,6,7,8-HxCDD	0.2 ug/mL
					HRDXNIDA_00365	10 mL	13C-OCDD	0.4 ug/mL
..HRDXNIDA_00075	11/30/20		CIL, Lot ER111010-01		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDD	50 ug/mL
..HRDXNIDA_00353	11/30/24		CIL, Lot ER08101404		(Purchased Reagent)		13C-1,2,3,4,6,7,8-HpCDF	50 ug/mL
..HRDXNIDA_00354	09/30/26		CIL, Lot ER09131601		(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00355	03/31/26		CIL, Lot ER03031601		(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
..HRDXNIDA_00357	04/30/26		CIL, Lot ER02241603		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00358	12/31/20		CIL, Lot ER100610-01		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDF	50 ug/mL
..HRDXNIDA_00359	12/31/20		CIL, Lot ER100610-02		(Purchased Reagent)		13C-2,3,4,6,7,8-HxCDF	50 ug/mL
..HRDXNIDA_00360	08/31/24		CIL, Lot ER08041401		(Purchased Reagent)		13C-1,2,3,7,8-PeCDD	50 ug/mL
..HRDXNIDA_00361	01/31/21		CIL, Lot ER012111-01		(Purchased Reagent)		13C-1,2,3,7,8-PeCDF	50 ug/mL
..HRDXNIDA_00362	03/31/28		CIL, Lot ER03151801		(Purchased Reagent)		13C-1,2,3,6,7,8-HxCDD	50 ug/mL
..HRDXNIDA_00365	04/30/27		CIL, Lot ER04051701		(Purchased Reagent)		13C-OCDD	10 ug/mL
.HRDXNIS_00121	10/09/20	10/09/19	C14, Lot STBJ0716	100 mL	HRDXNIS_00112	2 mL	13C-1,2,3,7,8,9-HxCDD	0.1 ug/mL
							13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00112	09/30/26	10/25/18	Isooctane, Lot 0000192372	10 mL	HRDXNIS_00110	1 mL	13C-1,2,3,7,8,9-HxCDD	5 ug/mL
					HRDXNIS_00111	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00110	09/30/26		CIL, Lot ER08221601		(Purchased Reagent)		13C-1,2,3,7,8,9-HxCDD	50 ug/mL
...HRDXNIS_00111	01/31/27		CIL, Lot ER11081602		(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00229	07/31/25	01/08/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00228	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00228	07/31/25	01/08/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00211	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00211	07/31/25		CIL, Lot ER05211501		(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00110	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
HRDXNL6_00026	01/31/21	05/06/20	C14, Lot STBJ3715	0.2 mL	HRDXNIDA_00429	100 uL	13C-2,3,7,8-TCDF	100 ng/mL
							13C-2,3,7,8-TCDD	100 ng/mL
					HRDXNIS_00129	200 uL	13C-1,2,3,4-TCDD	100 ng/mL
					HRDXNSU_00234	100 uL	37Cl4-2,3,7,8-TCDD	200 ng/mL
					HRDXNTA_00111	100 uL	2,3,7,8-TCDD	200 ng/mL
							2,3,7,8-TCDF	200 ng/mL
.HRDXNIDA_00429	01/31/21	05/05/20	Isooctane, Lot 0000221197	250 mL	HRDXNIDA_00407	1 mL	13C-2,3,7,8-TCDF	0.2 ug/mL
					HRDXNIDA_00410	1 mL	13C-2,3,7,8-TCDD	0.2 ug/mL
..HRDXNIDA_00407	09/30/26	CIL, Lot ER09131601			(Purchased Reagent)		13C-2,3,7,8-TCDF	50 ug/mL
..HRDXNIDA_00410	03/31/26	CIL, Lot ER03031601			(Purchased Reagent)		13C-2,3,7,8-TCDD	50 ug/mL
.HRDXNIS_00129	05/05/21	05/05/20	C14, Lot STBJ3715	100 mL	HRDXNIS_00128	2 mL	13C-1,2,3,4-TCDD	0.1 ug/mL
..HRDXNIS_00128	05/05/25	05/05/20	Isooctane, Lot 0000221197	10 mL	HRDXNIS_00127	1 mL	13C-1,2,3,4-TCDD	5 ug/mL
...HRDXNIS_00127	01/31/27	CIL, Lot ER11081602			(Purchased Reagent)		13C-1,2,3,4-TCDD	50 ug/mL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
.HRDXNTA_00111	04/30/26	CIL, Lot ER02241602			(Purchased Reagent)		2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
HRDXNSU_00239	06/16/21	06/16/20	Isooctane, Lot 0000221197	500 mL	HRDXNSU_00234	1 mL	37Cl4-2,3,7,8-TCDD	0.8 pg/uL
.HRDXNSU_00234	08/01/24	01/22/20	Isooctane, Lot 0000221197	25 mL	HRDXNSU_00233	2 mL	37Cl4-2,3,7,8-TCDD	0.4 ug/mL
..HRDXNSU_00233	08/01/24	01/22/20	Isooctane, Lot 0000221197	10 mL	HRDXNSU_00201	1 mL	37Cl4-2,3,7,8-TCDD	5 ug/mL
...HRDXNSU_00201	08/01/24	WELLINGTON LABS, Lot MCDD0480505			(Purchased Reagent)		37Cl4-2,3,7,8-TCDD	50 ug/mL
HRDXNTA_00121	06/02/21	06/02/20	Acetone, Lot 00000242181	25 mL	HRDXNTA_00111	0.25 mL	1,2,3,4,6,7,8-HpCDD	20 ng/mL
							1,2,3,4,6,7,8-HpCDF	20 ng/mL
							1,2,3,4,7,8,9-HpCDF	20 ng/mL
							1,2,3,4,7,8-HxCDD	20 ng/mL
							1,2,3,4,7,8-HxCDF	20 ng/mL
							1,2,3,6,7,8-HxCDD	20 ng/mL
							1,2,3,6,7,8-HxCDF	20 ng/mL
							1,2,3,7,8,9-HxCDD	20 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

				Reagent Final Volume	Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used		Reagent ID	Volume Added	Analyte	Concentration
							1,2,3,7,8,9-HxCDF	20 ng/mL
							1,2,3,7,8-PeCDD	20 ng/mL
							1,2,3,7,8-PeCDF	20 ng/mL
							2,3,4,6,7,8-HxCDF	20 ng/mL
							2,3,4,7,8-PeCDF	20 ng/mL
							2,3,7,8-TCDD	4 ng/mL
							2,3,7,8-TCDF	4 ng/mL
							OCDD	40 ng/mL
							OCDF	40 ng/mL
.HRDXNTA_00111	04/30/26		CIL, Lot ER02241602		(Purchased Reagent)		1,2,3,4,6,7,8-HpCDD	2 ug/mL
							1,2,3,4,6,7,8-HpCDF	2 ug/mL
							1,2,3,4,7,8,9-HpCDF	2 ug/mL
							1,2,3,4,7,8-HxCDD	2 ug/mL
							1,2,3,4,7,8-HxCDF	2 ug/mL
							1,2,3,6,7,8-HxCDD	2 ug/mL
							1,2,3,6,7,8-HxCDF	2 ug/mL
							1,2,3,7,8,9-HxCDD	2 ug/mL
							1,2,3,7,8,9-HxCDF	2 ug/mL
							1,2,3,7,8-PeCDD	2 ug/mL
							1,2,3,7,8-PeCDF	2 ug/mL
							2,3,4,6,7,8-HxCDF	2 ug/mL
							2,3,4,7,8-PeCDF	2 ug/mL
							2,3,7,8-TCDD	0.4 ug/mL
							2,3,7,8-TCDF	0.4 ug/mL
							OCDD	4 ug/mL
							OCDF	4 ug/mL
MT6010CCV_00093	07/02/20	05/26/20	HNO3/HCL, Lot --	500 mL	MT-CALSTD1_00031	250 mL	Al	25 mg/L
							Calcium	25 mg/L
							Iron	25 mg/L
							Magnesium	25 mg/L
							Potassium	25 mg/L
							Sodium	25 mg/L
							Silver	0.498 mg/L
							Arsenic	0.5 mg/L
							Barium	2.5 mg/L
							Beryllium	0.498 mg/L
							Boron	1.001 mg/L
							Cadmium	0.5 mg/L
							Cobalt	2.4925 mg/L
							Chromium	2.5075 mg/L
							Copper	2.4775 mg/L
							Manganese	2.5025 mg/L
							Molybdenum	0.999 mg/L
							Nickel	2.5075 mg/L
							Lead	0.5045 mg/L
							Phosphorus	2.505 mg/L
							Antimony	0.498 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							Selenium	0.502 mg/L
							Tin	2.4975 mg/L
							Strontium	2.49 mg/L
							Titanium	0.998 mg/L
							Thallium	0.501 mg/L
							Vanadium	2.5075 mg/L
							Zinc	2.5125 mg/L
.MT-CALSTD1_00031	10/25/20	05/21/20	HNO3/HCL, Lot --	1000 mL	MT_CalMix2_00003	25 mL	Al	50 mg/L
							Calcium	50 mg/L
							Iron	50 mg/L
							Magnesium	50 mg/L
							Potassium	50 mg/L
							Sodium	50 mg/L
					MTAgXXXTA_00012	1 mL	Silver	0.996 mg/L
					MTAsXXXTA_00010	1 mL	Arsenic	1 mg/L
					MTBaXXXTA_00010	5 mL	Barium	5 mg/L
					MTBeXXXTA_00009	1 mL	Beryllium	0.996 mg/L
					MTBXXXXTA_00011	2 mL	Boron	2.002 mg/L
					MTCdXXXTA_00009	1 mL	Cadmium	1 mg/L
					MTCoXXXTA_00009	5 mL	Cobalt	4.985 mg/L
					MTCrXXXTA_00010	5 mL	Chromium	5.015 mg/L
					MTCuXXXTA_00009	5 mL	Copper	4.955 mg/L
					MTMnXXXTA_00009	5 mL	Manganese	5.005 mg/L
					MTMoXXXTA_00009	2 mL	Molybdenum	1.998 mg/L
					MTNiXXXTA_00009	5 mL	Nickel	5.015 mg/L
					MTPbXXXTA_00011	1 mL	Lead	1.009 mg/L
					MTPXXXTA_00004	5 mL	Phosphorus	5.01 mg/L
					MTSbXXXTA_00009	1 mL	Antimony	0.996 mg/L
					MTSeXXXTA_00009	1 mL	Selenium	1.004 mg/L
					MTSnXXXTA_00011	5 mL	Tin	4.995 mg/L
					MTSrXXXTA_00009	5 mL	Strontium	4.98 mg/L
					MTTiXXXTA_00009	2 mL	Titanium	1.996 mg/L
					MTTlXXXTA_00010	1 mL	Thallium	1.002 mg/L
					MTVXXXXTA_00010	5 mL	Vanadium	5.015 mg/L
					MTZnXXXTA_00012	5 mL	Zinc	5.025 mg/L
..MT_CalMix2_00003	11/14/20	CPI International, Lot 1018877-1			(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2000 mg/L
..MTAgXXXTA_00012	10/28/20	CPI International, Lot 975475-80			(Purchased Reagent)		Silver	996 ug/mL
..MTAsXXXTA_00010	10/25/20	CPI, Lot 175385-53			(Purchased Reagent)		Arsenic	1000 ug/mL
..MTBaXXXTA_00010	11/25/20	CPI international, Lot 273421-73			(Purchased Reagent)		Barium	1000 ug/mL
..MTBeXXXTA_00009	11/25/20	CPI international, Lot 660981-51			(Purchased Reagent)		Beryllium	996 ug/mL
..MTBXXXXTA_00011	11/21/20	CPI, Lot 982524-63			(Purchased Reagent)		Boron	1001 ug/mL
..MTCdXXXTA_00009	11/25/20	CPI International, Lot 160499-113			(Purchased Reagent)		Cadmium	1000 ug/mL
..MTCoXXXTA_00009	11/25/20	CPI, Lot 979906-18			(Purchased Reagent)		Cobalt	997 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MTCrXXXTA_00010	11/25/20		CPI International, Lot 975466-82		(Purchased Reagent)		Chromium	1003 ug/mL
..MTCuXXXTA_00009	11/25/20		CPI International, Lot 982446-23		(Purchased Reagent)		Copper	991 ug/mL
..MTMnXXXTA_00009	11/25/20		CPI International, Lot 167539-89		(Purchased Reagent)		Manganese	1001 ug/mL
..MTMoXXXTA_00009	11/25/20		CPI International, Lot 169424-57		(Purchased Reagent)		Molybdenum	999 ug/mL
..MTNiXXXTA_00009	11/25/20		CPI, Lot 984273-10		(Purchased Reagent)		Nickel	1003 ug/mL
..MTPbXXXTA_00011	11/25/20		CPI, Lot 981329-43		(Purchased Reagent)		Lead	1009 ug/mL
..MTPXXXTA_00004	11/25/20		CPI, Lot 978200-13		(Purchased Reagent)		Phosphorus	1002 ug/mL
..MTSbXXXTA_00009	10/28/20		CPI, Lot 1013797-6		(Purchased Reagent)		Antimony	996 ug/mL
..MTSeXXXTA_00009	11/25/20		CPI, Lot 982461-24		(Purchased Reagent)		Selenium	1004 ug/mL
..MTSnXXXTA_00011	11/25/20		CPI, Lot 977645-7		(Purchased Reagent)		Tin	999 ug/mL
..MTSrXXXTA_00009	11/25/20		CPI, Lot 998106-28		(Purchased Reagent)		Strontium	996 ug/mL
..MTTiXXXTA_00009	11/25/20		CPI, Lot 987438-5		(Purchased Reagent)		Titanium	998 ug/mL
..MTTlXXXTA_00010	11/25/20		CPI, Lot 148983-103		(Purchased Reagent)		Thallium	1002 ug/mL
..MTVXXXXTA_00010	11/25/20		CPI International, Lot 990117-53		(Purchased Reagent)		Vanadium	1003 ug/mL
..MTZnXXXTA_00012	10/28/20		CPI International, Lot 984272-63		(Purchased Reagent)		Zinc	1005 ug/mL
MT6010CRI_QSM_00046	11/23/20	11/26/19	HNO3/HCL, Lot --	100 mL	MT6010QSMLL_00008	1 mL	Al	0.2 mg/L
							Antimony	0.02998 mg/L
							Arsenic	0.03997 mg/L
							Barium	0.02001 mg/L
							Beryllium	0.002996 mg/L
							Boron	0.2 mg/L
							Cadmium	0.002998 mg/L
							Calcium	0.4996 mg/L
							Chromium	0.01 mg/L
							Cobalt	0.01001 mg/L
							Copper	0.015 mg/L
							Iron	0.1 mg/L
							Lead	0.01 mg/L
							Magnesium	0.4995 mg/L
							Manganese	0.01001 mg/L
							Molybdenum	0.01999 mg/L
							Nickel	0.01001 mg/L
							Phosphorus	0.4996 mg/L
							Potassium	1 mg/L
							Selenium	0.04 mg/L
							Silver	0.005 mg/L
							Sodium	0.5 mg/L
							Strontium	0.05002 mg/L
							Thallium	0.02999 mg/L
							Tin	0.02 mg/L
							Titanium	0.01 mg/L
							Vanadium	0.02 mg/L
							Zinc	0.02001 mg/L
.MT6010QSMLL_00008	11/23/20		Inorganic Ventures, Lot P2-MEB686159		(Purchased Reagent)		Al	20 mg/L
							Antimony	2.998 mg/L
							Arsenic	3.997 mg/L
							Barium	2.001 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Beryllium	0.2996 mg/L
							Boron	20 mg/L
							Cadmium	0.2998 mg/L
							Calcium	49.96 mg/L
							Chromium	1 mg/L
							Cobalt	1.001 mg/L
							Copper	1.5 mg/L
							Iron	10 mg/L
							Lead	1 mg/L
							Magnesium	49.95 mg/L
							Manganese	1.001 mg/L
							Molybdenum	1.999 mg/L
							Nickel	1.001 mg/L
							Phosphorus	49.96 mg/L
							Potassium	100 mg/L
							Selenium	4 mg/L
							Silver	0.5 mg/L
							Sodium	50 mg/L
							Strontium	5.002 mg/L
							Thallium	2.999 mg/L
							Tin	2 mg/L
							Titanium	1 mg/L
							Vanadium	2 mg/L
							Zinc	2.001 mg/L
MT6010CRI_STD_00039	11/23/20	05/28/20	HNO3/HCL, Lot --	100 mL	MT6010LLSTD_00016	1 mL	Antimony	0.01999 mg/L
							Arsenic	0.02 mg/L
							Barium	0.004995 mg/L
							Beryllium	0.002 mg/L
							Boron	0.1 mg/L
							Cadmium	0.002 mg/L
							Calcium	0.4996 mg/L
							Chromium	0.005006 mg/L
							Cobalt	0.004994 mg/L
							Copper	0.01 mg/L
							Iron	0.1 mg/L
							Lead	0.004998 mg/L
							Magnesium	0.5004 mg/L
							Manganese	0.004998 mg/L
							Molybdenum	0.01999 mg/L
							Nickel	0.005003 mg/L
							Phosphorus	0.5003 mg/L
							Potassium	0.999 mg/L
							Selenium	0.01999 mg/L
							Silver	0.005 mg/L
							Sodium	0.5003 mg/L
							Strontium	0.05004 mg/L
							Thallium	0.02001 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tin	0.02 mg/L
							Titanium	0.01 mg/L
							Vanadium	0.005 mg/L
							Zinc	0.01 mg/L
.MT6010LLSTD_00016	11/23/20	Inorganic Ventures, Lot P2-MEB686161			(Purchased Reagent)		Antimony	1.999 ug/mL
							Arsenic	2 ug/mL
							Barium	0.4995 ug/mL
							Beryllium	0.2 ug/mL
							Boron	10 ug/mL
							Cadmium	0.2 ug/mL
							Calcium	49.96 ug/mL
							Chromium	0.5006 ug/mL
							Cobalt	0.4994 ug/mL
							Copper	1 ug/mL
							Iron	10 ug/mL
							Lead	0.4998 ug/mL
							Magnesium	50.04 ug/mL
							Manganese	0.4998 ug/mL
							Molybdenum	1.999 ug/mL
							Nickel	0.5003 ug/mL
							Phosphorus	50.03 ug/mL
							Potassium	99.9 ug/mL
							Selenium	1.999 ug/mL
							Silver	0.5 ug/mL
							Sodium	50.03 ug/mL
							Strontium	5.004 ug/mL
							Thallium	2.001 ug/mL
							Tin	2 ug/mL
							Titanium	1 ug/mL
							Vanadium	0.5 ug/mL
							Zinc	1 ug/mL
MT6010ICSA_00053	01/08/21	05/18/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 ug/mL
							Calcium	500 ug/mL
							Iron	200 ug/mL
							Magnesium	500 ug/mL
.MT-ICP-ICSA_00002	01/08/21	CPI, Lot 1025879-1			(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
MT6010ICSAB_00039	01/08/21	05/22/20	HNO3/HCL, Lot --	100 mL	MT-ICP-ICSA_00002	10 mL	Al	500 mg/L
							Calcium	500 mg/L
							Iron	200 mg/L
							Magnesium	500 mg/L
					MT-ICP-ICSB2_00002	1 mL	Arsenic	1 mg/L
							Barium	1.001 mg/L
							Beryllium	0.5 mg/L
							Boron	10 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	1 mg/L
							Chromium	1.001 mg/L
							Cobalt	1 mg/L
							Copper	1.001 mg/L
							Lead	1 mg/L
							Manganese	1 mg/L
							Nickel	1.001 mg/L
							Phosphorus	10 mg/L
							Potassium	10 mg/L
							Selenium	1 mg/L
							Silver	1 mg/L
							Sodium	10 mg/L
							Strontium	1 mg/L
							Thallium	1 mg/L
							Vanadium	1.001 mg/L
							Zinc	1 mg/L
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Al	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
.MT-ICP-ICSB2_00002	01/08/21		CPI, Lot 992185-1		(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100.1 mg/L
							Beryllium	50 mg/L
							Boron	1000 mg/L
							Cadmium	100 mg/L
							Chromium	100.1 mg/L
							Cobalt	100 mg/L
							Copper	100.1 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100.1 mg/L
							Phosphorus	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Strontium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100.1 mg/L
							Zinc	100 mg/L
MT6010ICV_00050	11/21/20	05/22/20	5% HCl +2%HNO3, Lot NA	100 mL	MT_CalMix1-SS_00002	1 mL	Antimony	1 ppm
							Arsenic	1.001 ppm
							Barium	1 ppm
							Beryllium	1 ppm
							Cadmium	1 ppm
							Chromium	1 ppm
							Cobalt	1 ppm

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

					Parent Reagent			
Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Reagent ID	Volume Added	Analyte	Concentration
							Copper	1 ppm
							Lead	1 ppm
							Manganese	1 ppm
							Molybdenum	1.001 ppm
							Nickel	1 ppm
							Selenium	1 ppm
							Strontium	1.001 ppm
							Thallium	1 ppm
							Tin	1 ppm
							Titanium	1 ppm
							Vanadium	1 ppm
					MT_CalMix2-SS_00002	0.5 mL	Al	10 ppm
							Calcium	10 ppm
							Iron	10 ppm
							Magnesium	10 ppm
							Potassium	10 ppm
							Sodium	10.005 ppm
					MT_CalMix3-SS_00002	0.2 mL	Phosphorus	2 ppm
					MTAgXXXTA-SS_00002	0.025 mL	Silver	0.2505 ppm
					MTBXXXXTA_00011	0.05 mL	Boron	0.5005 ppm
					MTZnXXXTA-SS_00002	0.1 mL	Zinc	1 ppm
.MT_CalMix1-SS_00002	11/21/20	CPI International, Lot 992738-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100.1 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Molybdenum	100.1 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Strontium	100.1 mg/L
							Thallium	100 mg/L
							Tin	100 mg/L
							Titanium	100 mg/L
							Vanadium	100 mg/L
.MT_CalMix2-SS_00002	11/21/20	CPI International, Lot 992740-2			(Purchased Reagent)		Al	2000 mg/L
							Calcium	2000 mg/L
							Iron	2000 mg/L
							Magnesium	2000 mg/L
							Potassium	2000 mg/L
							Sodium	2001 mg/L
.MT_CalMix3-SS_00002	11/21/20	CPI International, Lot 987270-1			(Purchased Reagent)		Phosphorus	1000 mg/L
.MTAgXXXTA-SS_00002	11/21/20	Inorganic Ventures, Lot P2-AG678505			(Purchased Reagent)		Silver	1002 ug/mL
.MTBXXXXTA_00011	11/21/20	CPI, Lot 982524-63			(Purchased Reagent)		Boron	1001 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MTZnXXXTA-SS_00002	11/21/20		Inorganic Ventures, Lot P2-ZN675323		(Purchased Reagent)		Zinc	1000 ug/mL
MT6010LCS1_00015	08/19/20	12/30/19	5% HNO3, Lot na	1000 mL	MT_spike1_00002	250 mL	Arsenic	50 mg/L
							Barium	50 mg/L
							Beryllium	25 mg/L
							Cadmium	25 mg/L
							Chromium	25 mg/L
							Cobalt	25 mg/L
							Copper	25 mg/L
							Lead	25.025 mg/L
							Li	25 mg/L
							Manganese	25.025 mg/L
							Molybdenum	25 mg/L
							Nickel	25 mg/L
							Selenium	50 mg/L
							Si	50 mg/L
							Strontium	25 mg/L
							Thallium	50 mg/L
							Tin	50 mg/L
							Titanium	25 mg/L
							Vanadium	25 mg/L
.MT_spike1_00002	09/19/20		CPI, Lot 993218-2		(Purchased Reagent)		Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100.1 mg/L
							Li	100 mg/L
							Manganese	100.1 mg/L
							Molybdenum	100 mg/L
							Nickel	100 mg/L
							Selenium	200 mg/L
							Si	200 mg/L
							Strontium	100 mg/L
							Thallium	200 mg/L
							Tin	200 mg/L
							Titanium	100 mg/L
							Vanadium	100 mg/L
MT6010LCS2_00014	07/26/20	12/30/19	5% HNO3, Lot na	1000 mL	MT_spike2_00002	500 mL	Al	500 mg/L
							Calcium	2500 mg/L
							Iron	500 mg/L
							Magnesium	2500 mg/L
							Potassium	2500 mg/L
							Sodium	2500 mg/L
.MT_spike2_00002	07/26/20		CPI, Lot 982744-1		(Purchased Reagent)		Al	1000 mg/L
							Calcium	5000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Iron	1000 mg/L
							Magnesium	5000 mg/L
							Potassium	5000 mg/L
							Sodium	5000 mg/L
MT6010LCS3_00035	10/28/20	06/01/20	5%HNO3, Lot na	100 mL	MTAgXXXTA_00012	0.5 mL	Silver	4.98 mg/L
					MTBXXXXTA_00013	10 mL	Boron	498.1 mg/L
					MTPXXXTA_00005	5 mL	Phosphorus	500 mg/L
					MTSbXXXTA_00009	5 mL	Antimony	49.8 mg/L
					MTSiXXXTA_00020	4.5 mL	Si	448.65 mg/L
							SiO2	930.015 mg/L
					MTSXXXXTA_00016	5 mL	Sulfur	495.1 mg/L
					MTZnXXXTA_00012	5 mL	Zinc	50.25 mg/L
.MTAgXXXTA_00012	10/28/20	CPI International, Lot 975475-80			(Purchased Reagent)		Silver	996 ug/mL
.MTBXXXXTA_00013	05/21/21	CPI, Lot 1009207-4			(Purchased Reagent)		Boron	4981 ug/mL
.MTPXXXTA_00005	11/25/20	CPI, Lot 451077-29			(Purchased Reagent)		Phosphorus	10000 ug/mL
.MTSbXXXTA_00009	10/28/20	CPI, Lot 1013797-6			(Purchased Reagent)		Antimony	996 ug/mL
.MTSiXXXTA_00020	04/14/21	CPI, Lot 977647-58			(Purchased Reagent)		Si	9970 ug/mL
							SiO2	20667 ug/mL
.MTSXXXXTA_00016	10/28/20	CPI, Lot 996813-5			(Purchased Reagent)		Sulfur	9902 ug/mL
.MTZnXXXTA_00012	10/28/20	CPI International, Lot 984272-63			(Purchased Reagent)		Zinc	1005 ug/mL
MT6010PDS_00009	07/30/20	05/27/20	5% HNO3, Lot n/a	100 mL	MT-ICP-ICSA_00002	5 mL	Calcium	250 mg/L
							Iron	100 mg/L
							Magnesium	250 mg/L
					MT-ICP-ICSB1_00002	2.5 mL	Antimony	2.5 mg/L
							Molybdenum	2.5 mg/L
							Tin	2.5025 mg/L
							Titanium	2.5 mg/L
					MT-ICP-ICSB2_00002	2.5 mL	Arsenic	2.5 mg/L
							Barium	2.5025 mg/L
							Beryllium	1.25 mg/L
							Boron	25 mg/L
							Cadmium	2.5 mg/L
							Chromium	2.5025 mg/L
							Cobalt	2.5 mg/L
							Copper	2.5025 mg/L
							Lead	2.5 mg/L
							Manganese	2.5 mg/L
							Nickel	2.5025 mg/L
							Phosphorus	25 mg/L
							Potassium	249.213 mg/L
							Selenium	2.5 mg/L
							Silver	2.5 mg/L
							Sodium	251.575 mg/L
							Strontium	2.5 mg/L
							Thallium	2.5 mg/L
							Vanadium	2.5025 mg/L
							Zinc	2.5 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MTKXXXXTA_00015	2.25 mL	Potassium	249.213 mg/L
					MTNaXXXXTA_00004	2.25 mL	Sodium	251.575 mg/L
.MT-ICP-ICSA_00002	01/08/21		CPI, Lot 1025879-1		(Purchased Reagent)		Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
.MT-ICP-ICSB1_00002	01/08/21		CPI, Lot 1023499-1		(Purchased Reagent)		Antimony	100 mg/L
							Molybdenum	100 mg/L
							Tin	100.1 mg/L
							Titanium	100 mg/L
.MT-ICP-ICSB2_00002	01/08/21		CPI, Lot 992185-1		(Purchased Reagent)		Arsenic	100 mg/L
							Barium	100.1 mg/L
							Beryllium	50 mg/L
							Boron	1000 mg/L
							Cadmium	100 mg/L
							Chromium	100.1 mg/L
							Cobalt	100 mg/L
							Copper	100.1 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100.1 mg/L
							Phosphorus	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Strontium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100.1 mg/L
							Zinc	100 mg/L
.MTKXXXXTA_00015	07/30/20		CPI International, Lot 172053-80		(Purchased Reagent)		Potassium	9965 ug/mL
.MTNaXXXXTA_00004	07/30/20		CPI International, Lot 752887-33		(Purchased Reagent)		Sodium	10070 ug/mL

Reagent

HRDXNCP_00039

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Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

Certificate of Analysis

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5)

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-4147
Solution Lot:	ER03111502
Expiration Date:	March 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

March 24, 2015
Date

Component	Chromatographic Purity	Concentration
1,3,6,8-Tetrachlorodibenzo-p-dioxin	99.9%	200.3 ± 2.0 ng/mL
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	99.8%	200.6 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin	99.2%	200.3 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzo-p-dioxin	99.6%	199.9 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzo-p-dioxin	99.2%	200.2 ± 2.0 ng/mL
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	98.9%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	99.0%	200.1 ± 2.0 ng/mL
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	98.7%	200.2 ± 2.0 ng/mL
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	98.9%	200.1 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	99.8%	200.3 ± 2.0 ng/mL
1,3,6,8-Tetrachlorodibenzofuran	98.5%	200.1 ± 2.0 ng/mL
1,2,3,9-Tetrachlorodibenzofuran	98.2%	200.4 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran	99.4%	200.0 ± 2.0 ng/mL
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.2%	200.5 ± 2.0 ng/mL
2,3,4,7-Tetrachlorodibenzofuran	98.7%	200.2 ± 2.0 ng/mL
1,2,8,9-Tetrachlorodibenzofuran	99.3%	199.9 ± 2.0 ng/mL
1,3,4,6,8-Pentachlorodibenzofuran	99.5%	200.6 ± 2.0 ng/mL
1,2,3,8,9-Pentachlorodibenzofuran	99.0%	200.5 ± 2.0 ng/mL
1,2,3,4,6,8-Hexachlorodibenzofuran	98.6%	200.5 ± 2.0 ng/mL
1,2,3,4,8,9-Hexachlorodibenzofuran	99.7%	200.5 ± 2.0 ng/mL
1,2,3,4,6,7,8-Heptachlorodibenzofuran	98.9%	200.6 ± 2.0 ng/mL
1,2,3,4,7,8,9-Heptachlorodibenzofuran	99.1%	200.1 ± 2.0 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/MS
Column:	DB-5ms 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min
Injector Temp:	Cool-on-Column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	ng/mL	Acceptance Criteria	%	Acceptance Criteria
1,3,6,8-Tetrachlorodibenzo-p-dioxin	200.4	± 10%	1.6	≤ 5%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin/ 2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1,2,3,9-Tetrachlorodibenzo-p-dioxin [1]	591.2	± 10%	1.6	≤ 5%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	196.8	± 10%	2.7	≤ 5%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	197.2	± 10%	2.8	≤ 5%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	194.6	± 10%	2.8	≤ 5%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	194.7	± 10%	2.3	≤ 5%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	195.3	± 10%	1.7	≤ 5%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	192.6	± 10%	2.3	≤ 5%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	191.2	± 10%	2.5	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	196.7	± 10%	2.1	≤ 5%
1,3,6,8-Tetrachlorodibenzofuran	202.3	± 10%	2.1	≤ 5%
1,2,3,9-Tetrachlorodibenzofuran	194.4	± 10%	2.4	≤ 5%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	198.0	± 10%	3.3	≤ 5%
2,3,4,7-Tetrachlorodibenzofuran/ 2,3,7,8-Tetrachlorodibenzofuran [1]	399.3	± 10%	2.4	≤ 5%
1,2,8,9-Tetrachlorodibenzofuran	198.9	± 10%	2.9	≤ 5%
1,3,4,6,8-Pentachlorodibenzofuran	195.0	± 10%	2.1	≤ 5%
1,2,3,8,9-Pentachlorodibenzofuran	199.6	± 10%	2.1	≤ 5%
1,2,3,4,6,8-Hexachlorodibenzofuran	195.5	± 10%	2.4	≤ 5%
1,2,3,4,8,9-Hexachlorodibenzofuran	196.4	± 10%	1.8	≤ 5%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	197.4	± 10%	2.9	≤ 5%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	195.3	± 10%	2.1	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

[1] Compounds co-elute. Concentration is the sum of both or all analytes.

Neat Material Data

Compound	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity
1,3,6,8-Tetrachlorodibenzo-p-dioxin	ER040811-02	33423-92-6	$C_{12}H_4Cl_4O_2$	321.97	99.9%
1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	ER021510-01	NA	$C_{12}H_4Cl_4O_2$	321.97	99.8%
2,3,7,8-Tetrachlorodibenzo-p-dioxin	ER061009-02	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	ER01031401	76523-40-5	$^{13}C_{12}H_4Cl_4O_2$	333.84	98.9%
1,2,3,9-Tetrachlorodibenzo-p-dioxin	ER0529401	71669-26-6	$C_{12}H_4Cl_4O_2$	321.97	99.6%
1,2,8,9-Tetrachlorodibenzo-p-dioxin	ER11201301	62470-54-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%
1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin	ER11051302	NA	$C_{12}H_3Cl_5O_2$	356.42	98.9%
1,2,3,8,9-Pentachlorodibenzo-p-dioxin	ER05161401	NA	$C_{12}H_3Cl_5O_2$	356.42	99.0%
1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin	ER08101402	NA	$C_{12}H_2Cl_6O_2$	390.86	98.7%
1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin	ER030107-01	NA	$C_{12}H_2Cl_6O_2$	390.86	99.0%
1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin	ER01201502	58200-70-7	$C_{12}HCl_7O_2$	425.31	98.9%
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	ER100207-02	35822-46-9	$C_{12}HCl_7O_2$	425.31	99.8%
1,3,6,8-Tetrachlorodibenzofuran	ER021808-01	71998-72-6	$C_{12}H_4Cl_4O$	305.98	98.5%
1,2,3,9-Tetrachlorodibenzofuran	ER071107-01	NA	$C_{12}H_4Cl_4O$	305.98	98.2%
2,3,7,8-Tetrachlorodibenzofuran	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.98	99.4%
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	ER12101304	89059-46-1	$^{13}C_{12}H_4Cl_4O$	317.88	99.2%
2,3,4,7-Tetrachlorodibenzofuran	ER052307-01	NA	$C_{12}H_4Cl_4O$	305.98	98.7%
1,2,8,9-Tetrachlorodibenzofuran	ER041508-03	NA	$C_{12}H_4Cl_4O$	305.98	99.3%
1,3,4,6,8-Pentachlorodibenzofuran	ER04231401	NA	$C_{12}H_3Cl_5O$	340.42	99.5%
1,2,3,8,9-Pentachlorodibenzofuran	ER12101303	NA	$C_{12}H_3Cl_5O$	340.42	99.0%
1,2,3,4,6,8-Hexachlorodibenzofuran	ER04231402	NA	$C_{12}H_2Cl_6O$	374.86	98.6%
1,2,3,4,8,9-Hexachlorodibenzofuran	ER12091401	92341-07-6	$C_{12}H_2Cl_6O$	374.86	99.7%
1,2,3,4,6,7,8-Heptachlorodibenzofuran	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%
1,2,3,4,7,8,9-Heptachlorodibenzofuran	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%

Product Analysis

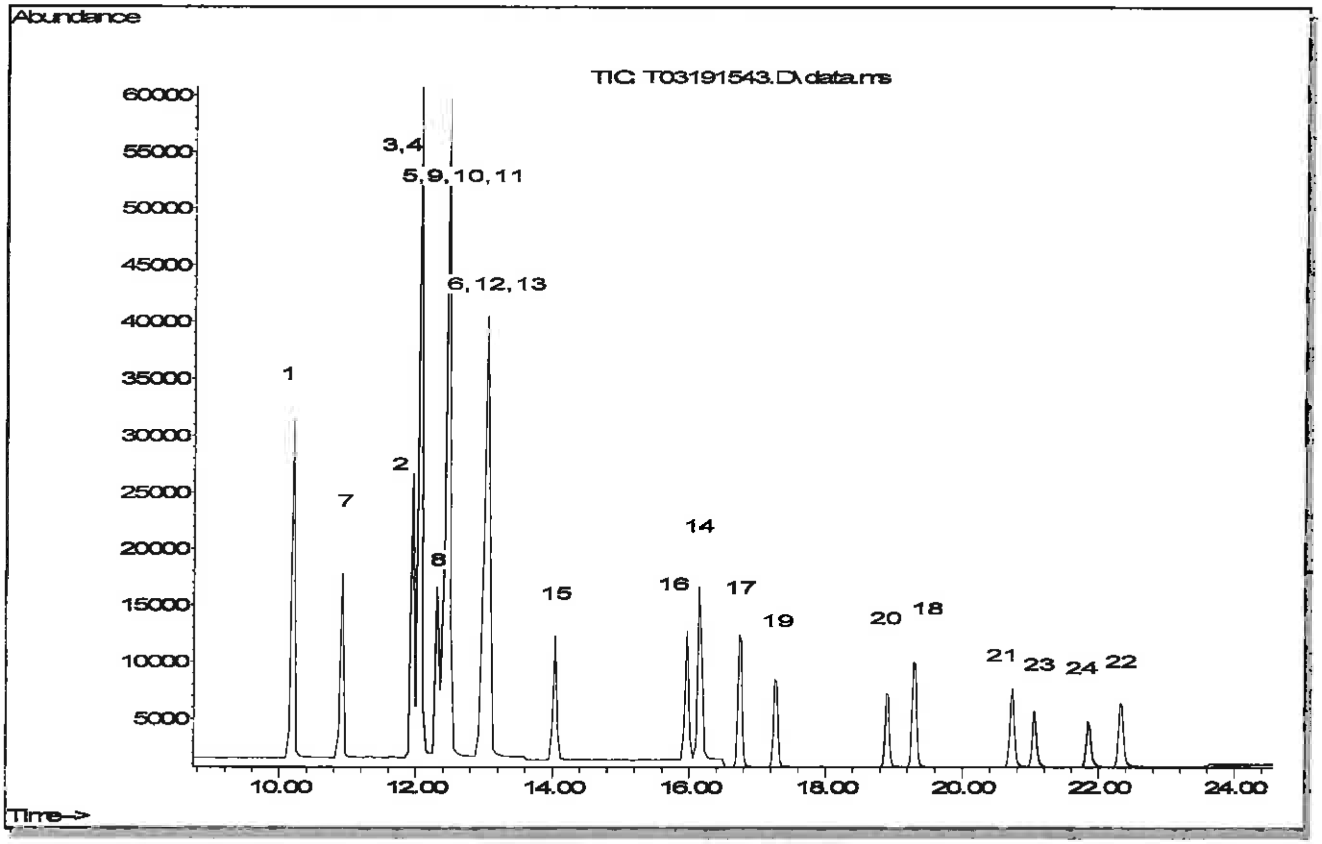

1	1,3,6,8-Tetrachlorodibenzofuran	13	1,3,4,6,8-Pentachlorodibenzofuran
2	2,3,4,7-Tetrachlorodibenzofuran	14	1,2,3,8,9-Pentachlorodibenzofuran
3	2,3,7,8-Tetrachlorodibenzofuran	15	1,2,4,6,8/1,2,4,7,9-Pentachlorodibenzo-p-dioxin
4	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	16	1,2,3,8,9-Pentachlorodibenzo-p-dioxin
5	1,2,3,9-Tetrachlorodibenzofuran	17	1,2,3,4,6,8-Hexachlorodibenzofuran
6	1,2,8,9-Tetrachlorodibenzofuran	18	1,2,3,4,8,9-Hexachlorodibenzofuran
7	1,3,6,8-Tetrachlorodibenzo-p-dioxin	19	1,2,4,6,7,9/1,2,4,6,8,9-Hexachlorodibenzo-p-dioxin
8	1,2,3,7/1,2,3,8-Tetrachlorodibenzo-p-dioxin	20	1,2,3,4,6,7-Hexachlorodibenzo-p-dioxin
9	1,2,3,9-Tetrachlorodibenzo-p-dioxin	21	1,2,3,4,6,7,8-Heptachlorodibenzofuran
10	2,3,7,8-Tetrachlorodibenzo-p-dioxin	22	1,2,3,4,7,8,9-Heptachlorodibenzofuran
11	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	23	1,2,3,4,6,7,9-Heptachlorodibenzo-p-dioxin
12	1,2,8,9-Tetrachlorodibenzo-p-dioxin	24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin

COA Revision History

Revision No.	**Date**	**Reason for Revision**
00	March 24, 2015	Initial version

Reagent

HRDXNIDA_00075

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 9001:2008

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

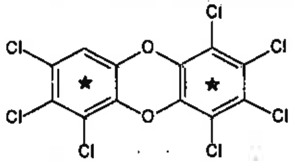

Catalog Number:	ED-972
Solution Lot:	ER111010-01
Expiration Date:	November 2020
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.9%	50.03 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Crtieria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Crtieria
New Lot	ER111010-01	50.5	± 5%	0.5	≤ 3%
Previous Lot	ER011807-01	47.4	± 5%	1.8	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

January 15, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER100110-01

Chemical Formula: $^{13}C_{12}HO_2Cl_7$
CAS Number: NA
Molecular Weight: 437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.9%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		**98.91%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

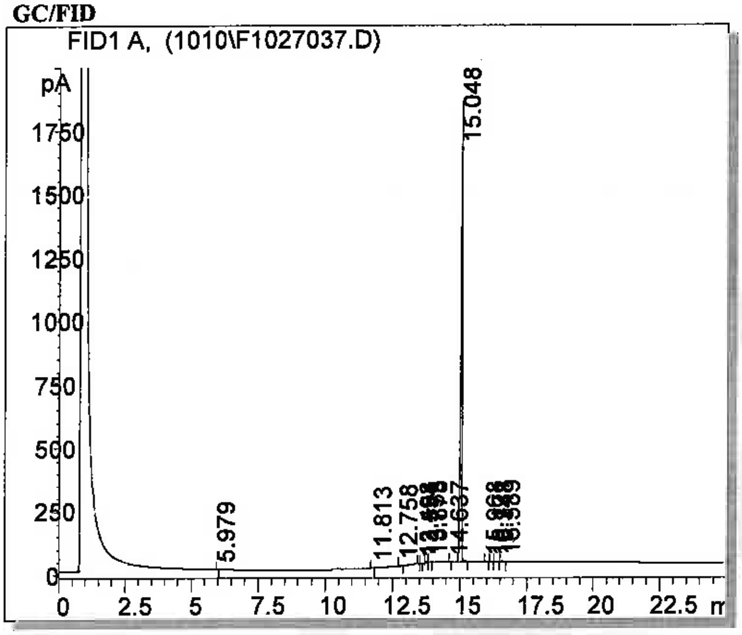

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

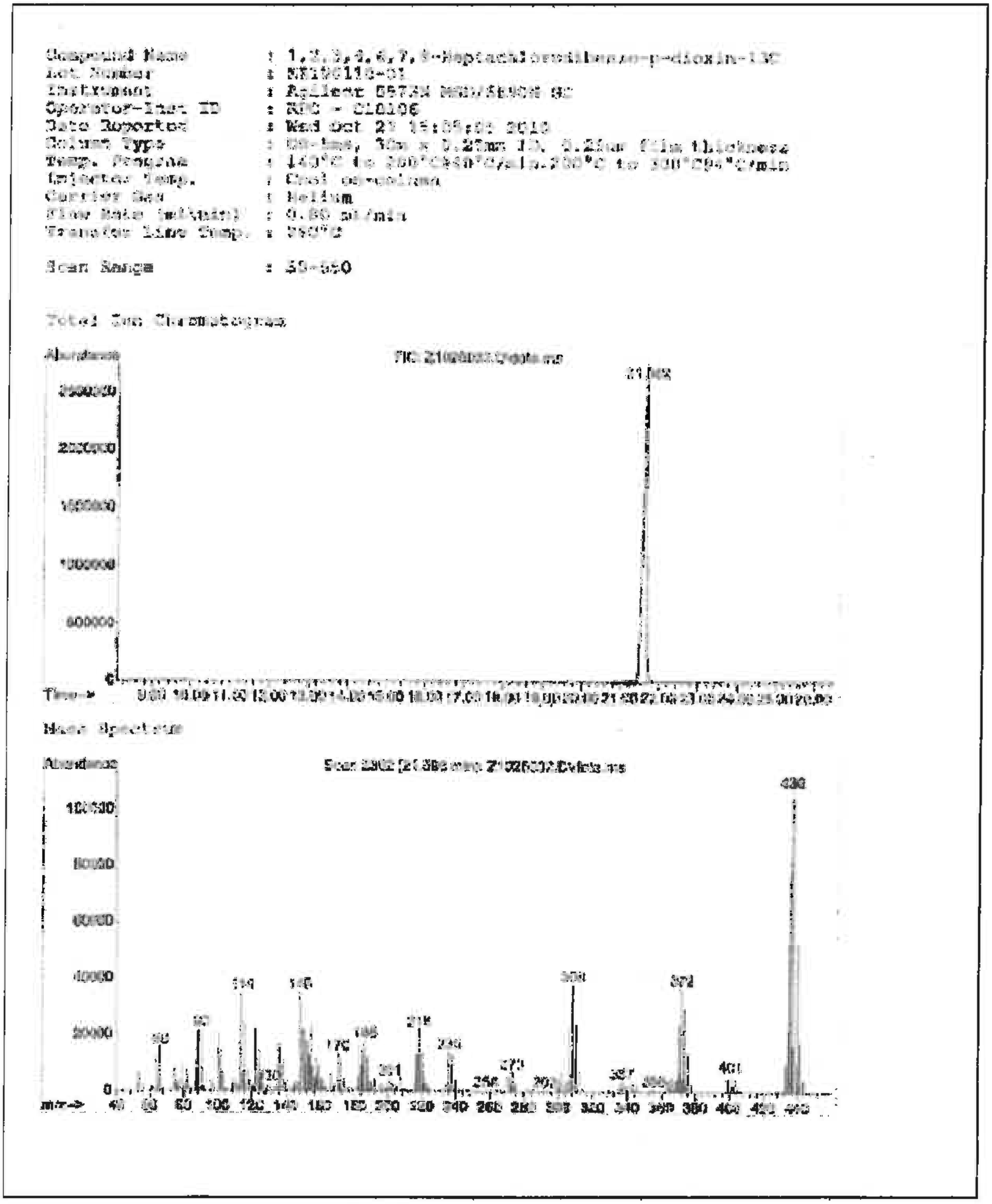

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number : ST100116-01
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst ID : RDC - C10106
Date Reported : Wed Oct 27 15:05:03 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@20°C/min,200°C to 300°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (ml/min) : 0.80 ml/min
Transfer Line Temp. : 300°C

Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 24, 2010	Initial version
01	January 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00247

Recd 8-17-16

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

HpCDF

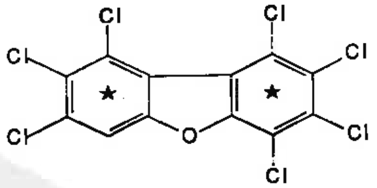

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

June 21, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602

Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.10%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data (cont.)

GC/FID

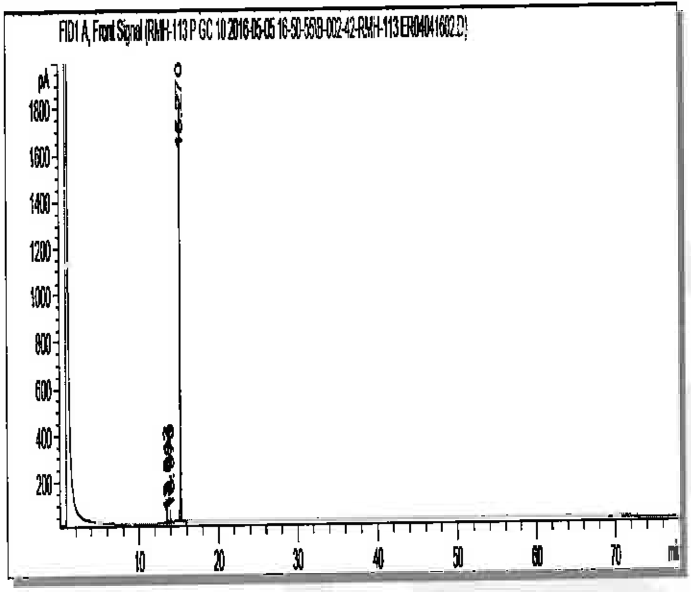

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument: GC#10
Sample Name: ER04041602
Acquired: May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13.51	8.76	2.52	0.12
2	13.68	17.42	7.45	0.24
3	13.97	39.65	15.48	0.54
4	15.27	7226.95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

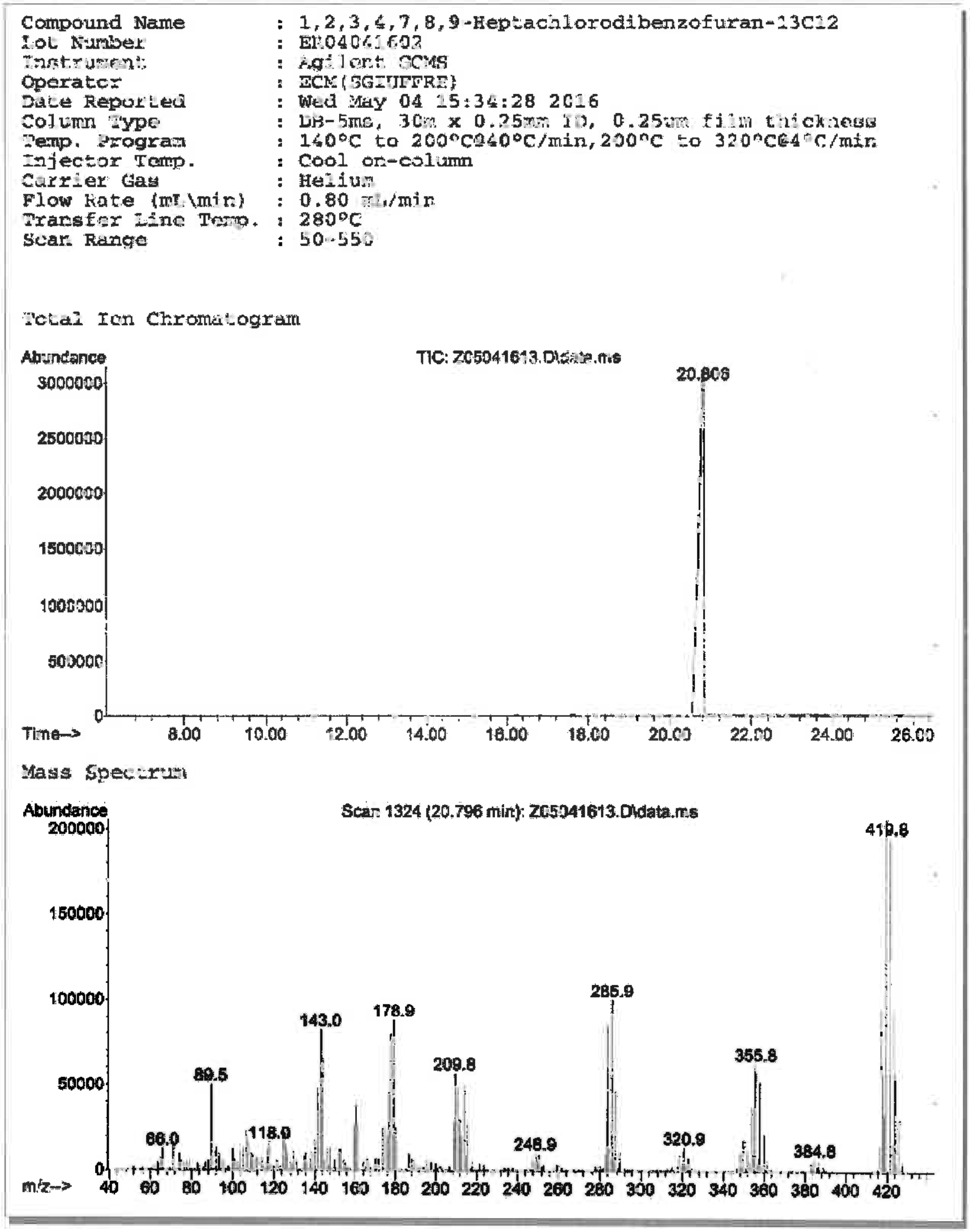

```
Compound Name          : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number             : ER04041602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Wed May 04 15:34:28 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version

Reagent

HRDXNIDA_00297

r: 9/28/17

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

1042065
ID: HRDXN!DA_00297
Exp: 01/31/27 Prpd: SKV
13C-2,3,4,7,8-PeCDF [50ug

CIL

Revision 00
Page 1 of 4

Certificate of Analysis

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

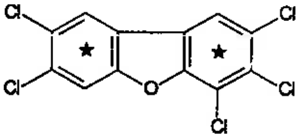

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11101601

Chemical Formula: $^{13}C_{12}H_3Cl_5O$
CAS Number: 116843-02-8
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		98.33%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

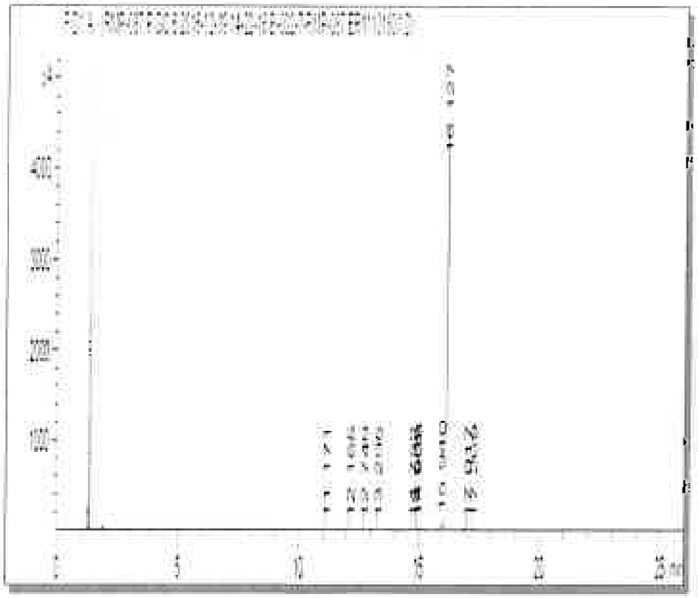

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11 17	0.94	0.40	0.01
2	12.17	1 30	0.39	0.01
3	12.75	0 47	0.20	0.00
4	13 30	0 90	0.35	0.01
5	14 75	1 70	0.87	0.02
6	14 91	1 09	0.56	0.01
7	14.97	32.24	17.54	0.29
8	15.94	124 38	64.36	1.13
9	16.13	10866 60	4688.80	98.41
10	17.02	6.31	2.46	0.06
11	17.27	6 76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

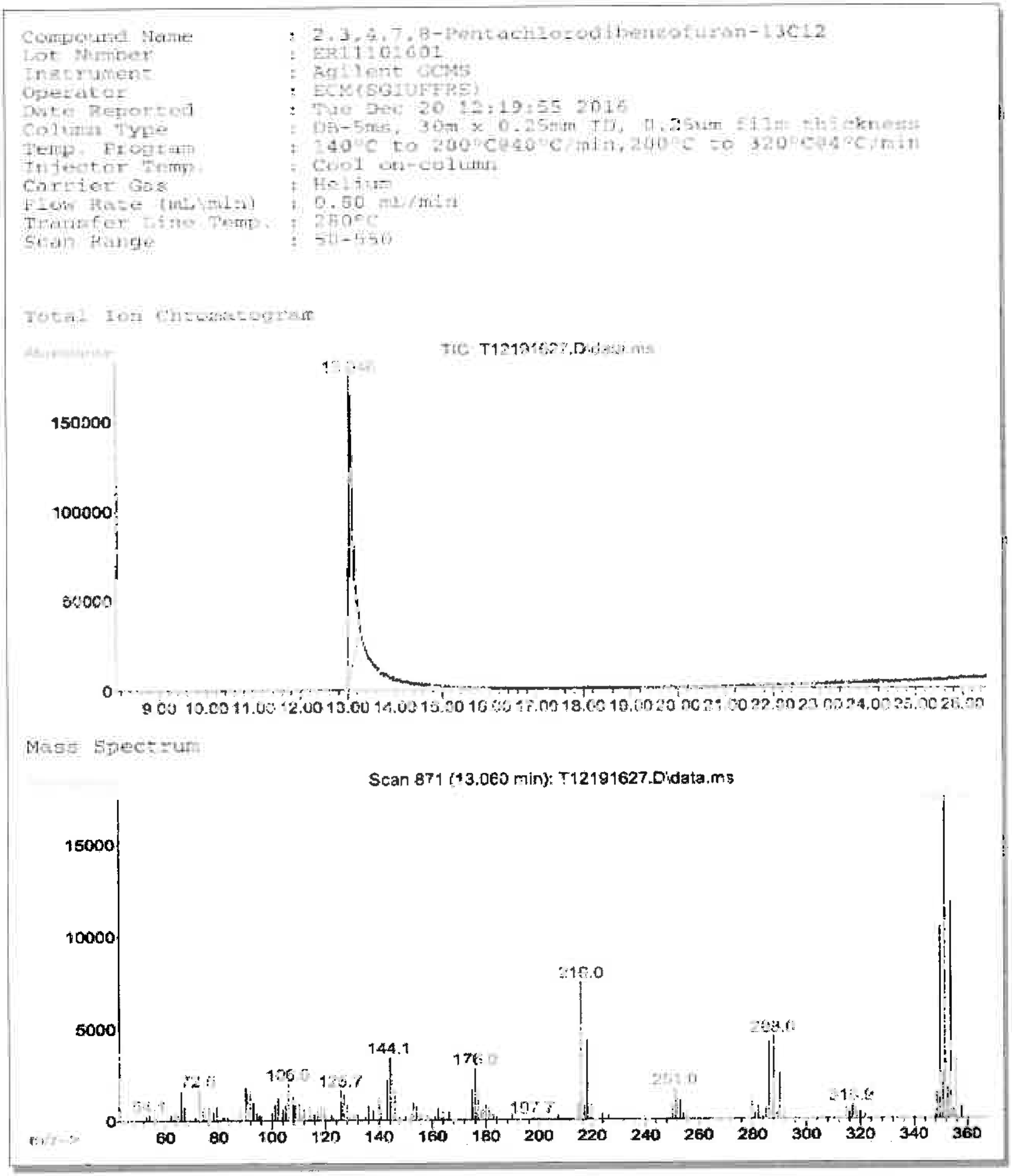

Compound Name : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number : ER11101601
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Tue Dec 20 12:19:55 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.50 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

TIC: T12191627.D\data.ms

Mass Spectrum

Scan 871 (13.060 min): T12191627.D\data.ms

Reagent

HRDXNIDA_00301

r: 9/20/17 SKV

Cerilliant
Analytical Reference Standards
a SIGMA-ALDRICH company

1042073
ID: HRDXNIDA_00301
Exp: 10/31/21 Prpd: SKV
13C-1,2,3,4,7,8-HxCDD [50

CIL

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-946
Solution Lot:	ER102711-01
Expiration Date:	October 2021
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

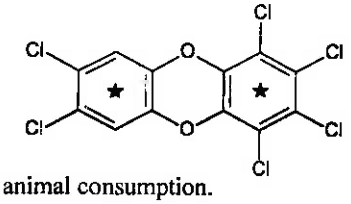

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.0%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER102711-01	48.2	± 5%	0.2	≤ 3%
Previous Lot	ER012208-01	49.6	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

September 17, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER011008-01

Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-80-4
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.19% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.19%

- Chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

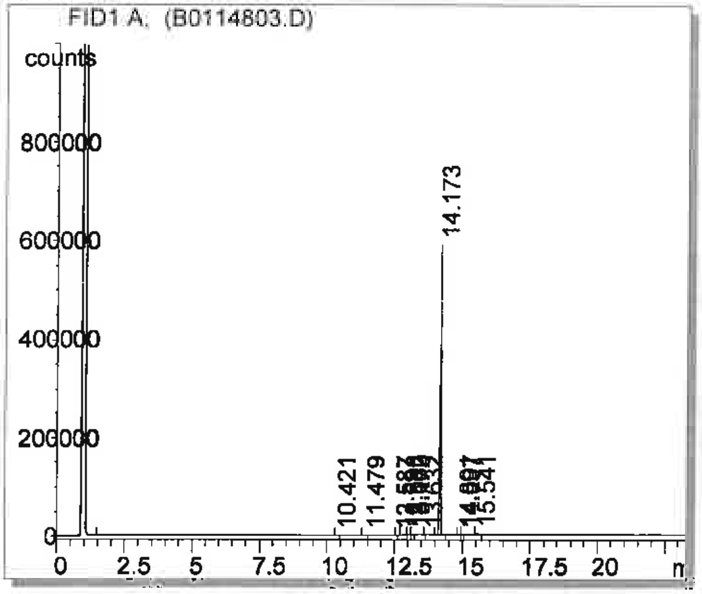

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: C:\HPCHEM\1\DATA\B0114803.D
Instrument: GC#2
Sample Name: ER011008-01
Acquired: January 14, 2008

Peak #	Ret Time	Area	Height	Area %
1	10.42	287.44	132.33	0.02
2	11.48	242.24	92.03	0.01
3	12.59	389.12	196.33	0.02
4	12.90	3015.36	1199.07	0.17
5	13.06	2243.36	788.13	0.13
6	13.17	2243.90	754.45	0.13
7	13.63	2349.03	134.07	0.02
8	14.17	427.02	588610.00	99.20
9	14.89	1731980.00	110.79	0.03
10	15.00	512.26	86.41	0.02
11	15.54	4077.63	1008.44	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

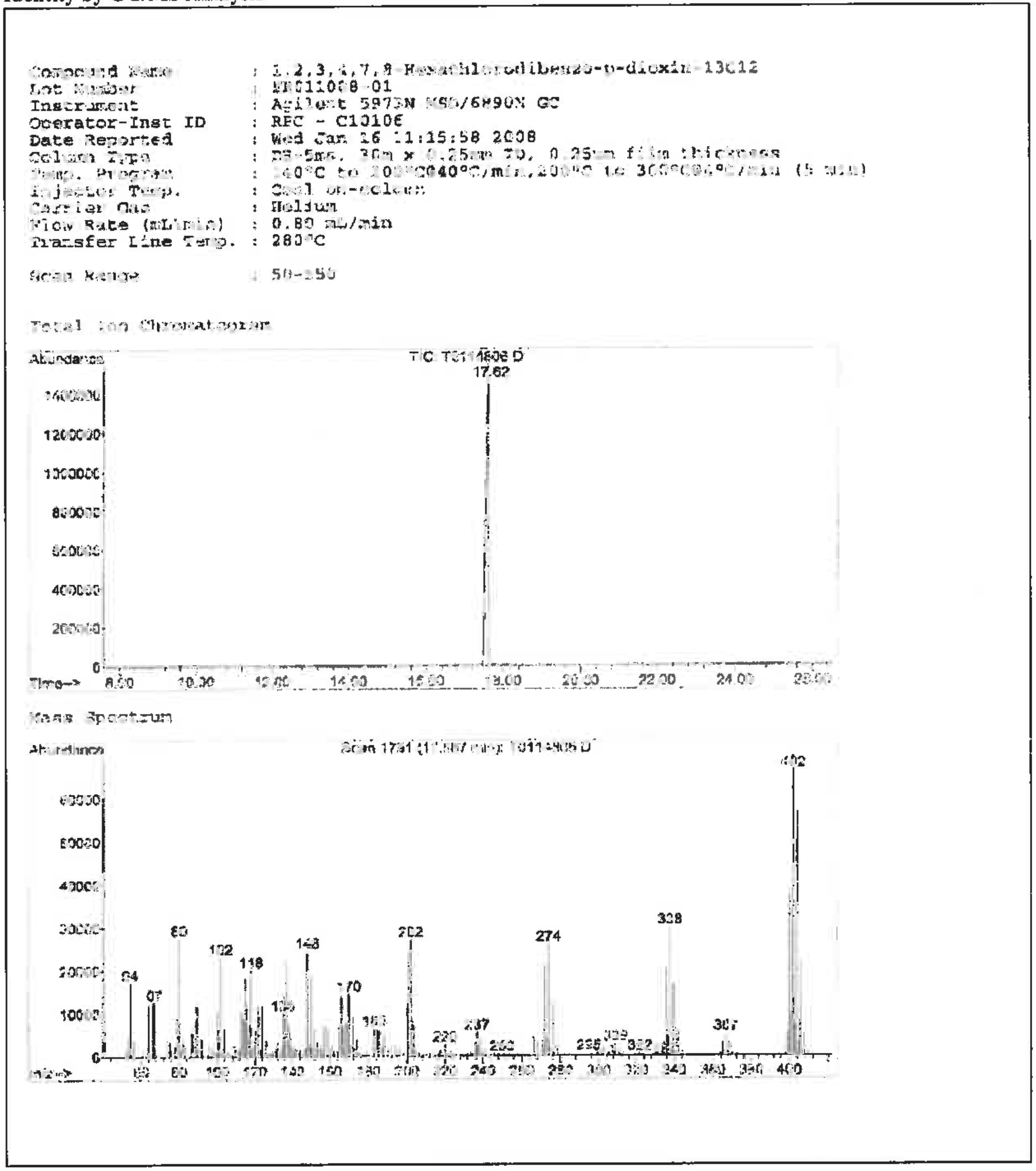

```
Compound Name           : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number              : ERC11008-01
Instrument              : Agilent 5973N MSD/6890N GC
Operator-Inst ID        : RFC - C10106
Date Reported           : Wed Jan 16 11:15:58 2008
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min (5 min)
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL/min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C

Scan Range              : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 12, 2011	Initial version
01	September 17, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00302

r: 9/20/17 SKV

1042074
ID: HRDXNIDA_00302
Exp: 07/31/20 Prpd: SKV
13C-1,2,3,4,7,8-HxCDF [50

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Analytical Reference Standards
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 9001:2008

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

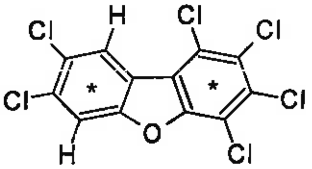

Catalog Number:	EF-963
Solution Lot:	ER072810-02
Expiration Date:	July 2020
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Protect from air and light, store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	FR072810-02	47.4	± 5%	0.3	≤ 3%
Previous Lot	LR011907-01	46.6	—	1.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

November 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: 35135-45

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 114423-98-2
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.6%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% C_0 vs C_{12}
		0.13% C_6 vs C_{12}
Purity Factor		99.57%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

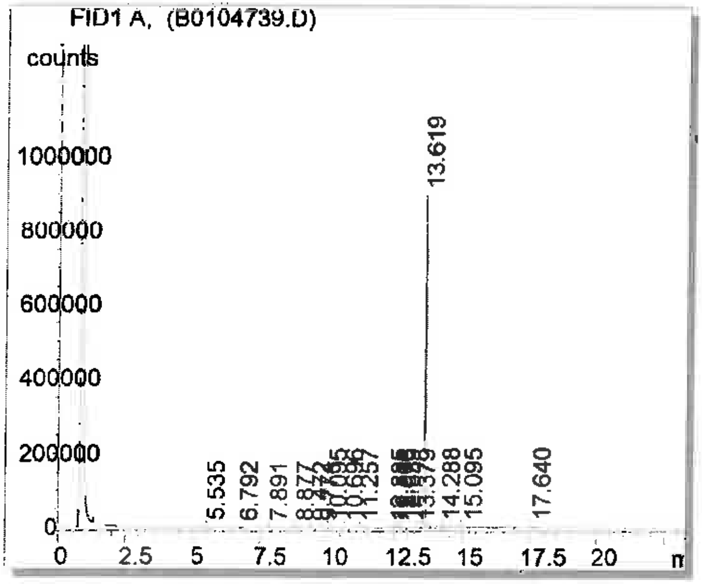

Column: DB-5ms, 30m x 0.53mm ID, 1.5 μm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: C:\HPCHEM\1\DATA\B0104739.D
Instrument: GC#2
Sample Name: 35135-45
Acquired: January 05, 2007

Peak #	Ret Time	Area	Height	Area %
1	4.21	615.24	161.26	0.02
2	5 21	1024.94	292.85	0.04
3	6 09	326.05	83.67	0.01
4	7.10	301.83	31.69	0.01
5	7.75	169 71	40.31	0.01
6	8.38	136.91	47.17	0.01
7	8 97	123 76	38.29	0.00
8	12 30	2684 80	1153.73	0.10
9	12.48	1162 83	467.42	0.04
10	12.56	1893 94	719.41	0.07
11	12.68	466 69	180.24	0.02
12	12.86	690 32	301.63	0.03
13	13.62	2651450 00	979725.00	99.58
14	14.34	274 11	82.01	0.01
15	15.17	1208 09	320.67	0.05
16	19 00	166.44	32.66	0.01

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

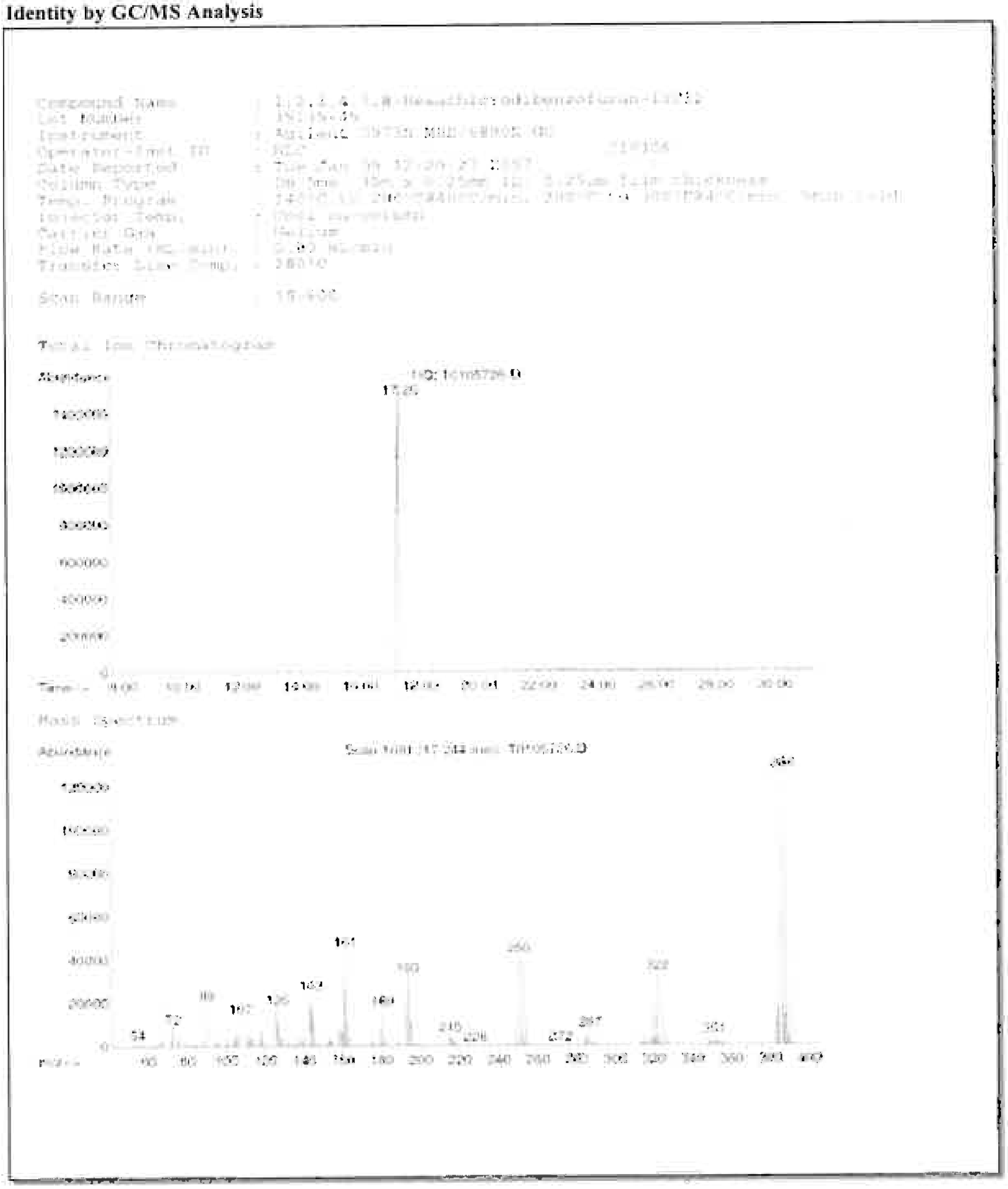

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number : [illegible]
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst. ID : [illegible]
Date Reported : [illegible]
Column Type : [illegible]
Temp. Program : [illegible]
Injector Temp. : [illegible]
Carrier Gas : Helium
Flow Rate (mL/min) : [illegible]
Transfer Line Temp. : 280°C

Scan Range : 15-600

COA Revision History

Revision No.	Date	Reason for Revision
00	September 22, 2010	Initial version
01	September 22, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"
02	November 15, 2016	Corrected Molecular Weight from 368.77 to 386.77

Reagent

HRDXNIDA_00353

r: 11/28/18 SKV

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Revision 01
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

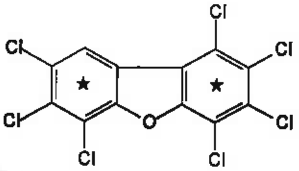

Catalog Number: EF-974
Solution Lot: ER08101404
Expiration Date: November 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	98.7%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass no single DD/DF impurity ≥1.0%
Purity Factor		98.69%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

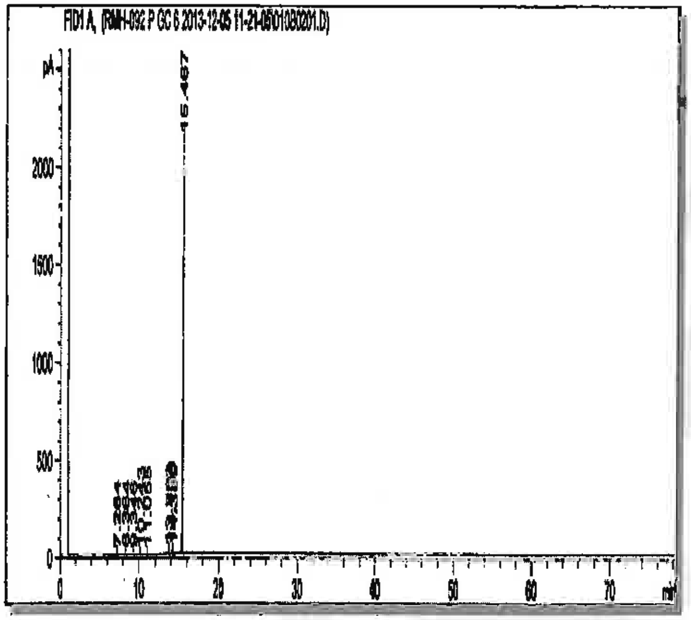

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\010B0201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

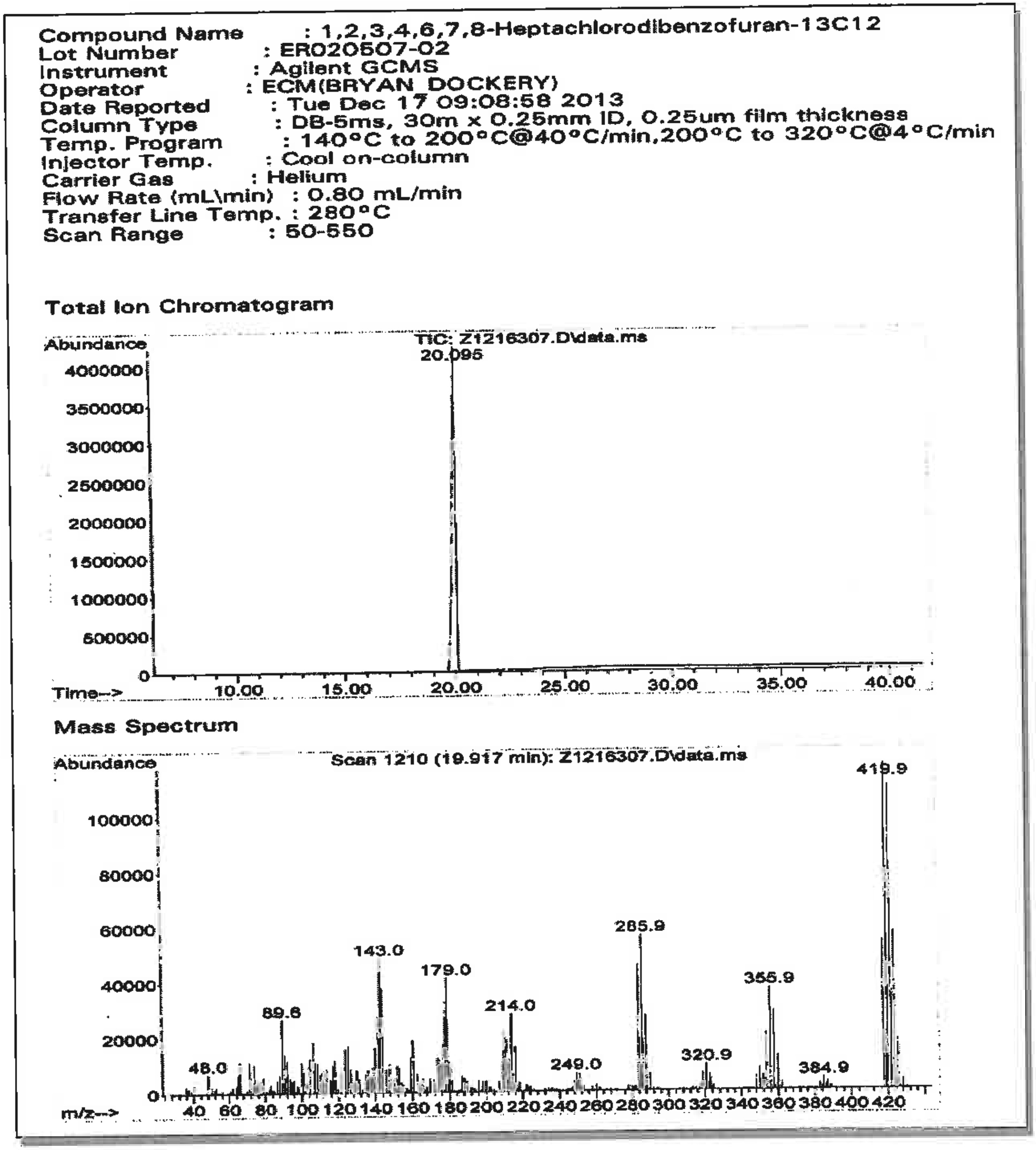

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00354

Rec: 11/28/18 SKV

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Analytical Reference Standards
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

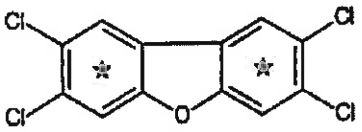

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER01161401
Chemical Formula:	$^{13}C_{12}H_4Cl_4O$
CAS Number:	89059-46-1
Molecular Weight:	317.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.2%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data (cont.)

GC/FID

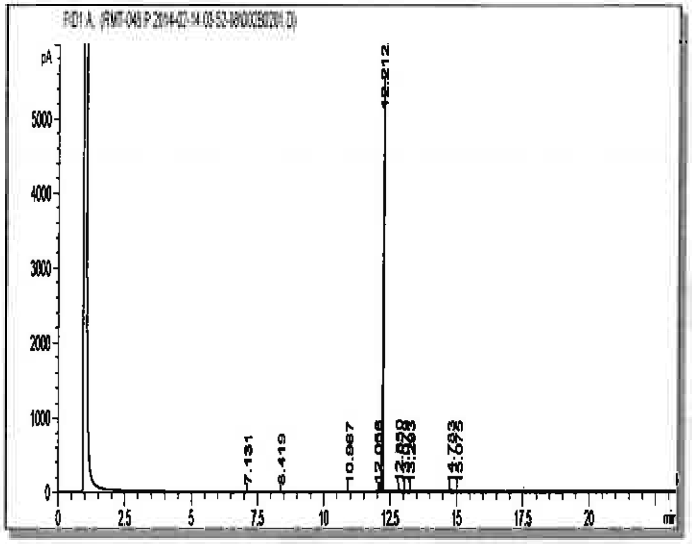

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8 42	3.23	1.42	0.03
3	10 97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764 70	5466.96	99.29
6	12.85	30 72	15.48	0.26
7	13 08	7 62	4.03	0.06
8	13 29	5 47	2.91	0.05
9	14 78	7 62	2.76	0.06
10	15.08	3 87	1.33	0.03

GC/MS

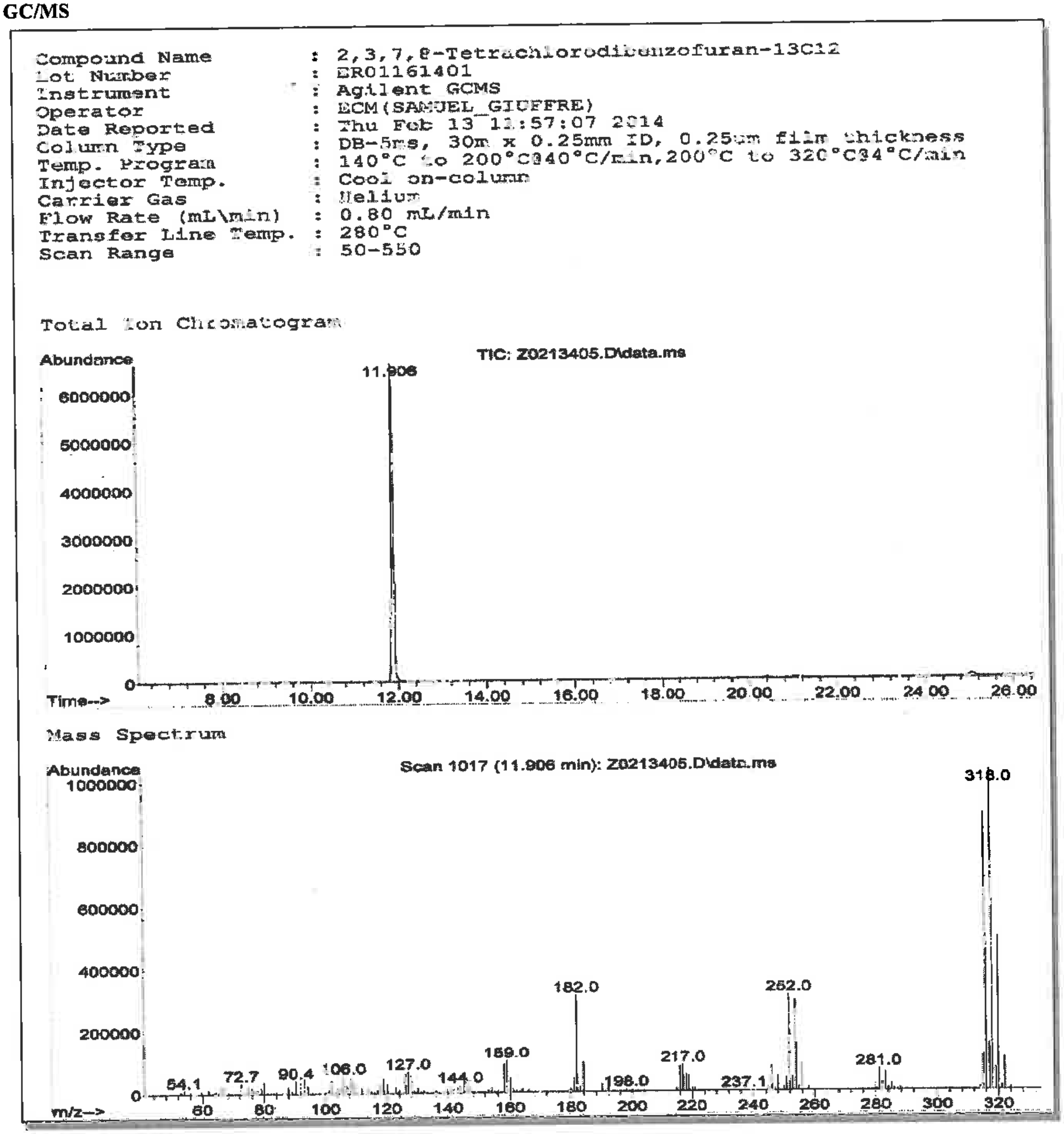

```
Compound Name           : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number              : ER01161401
Instrument              : Agilent GCMS
Operator                : ECM(SAMUEL_GIUFFRE)
Date Reported           : Thu Feb 13 11:57:07 2014
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00355

rec: 11/28/18 saw

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Revision 0
Page 1 of 4

Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

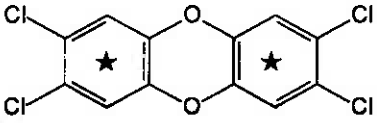

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

March 24, 2016
Date

Cerilliant Corporation 811 Paloma Drive, Suite A, Round Rock, TX 78665 800-848-7837 / 512-238-9974

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405

Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

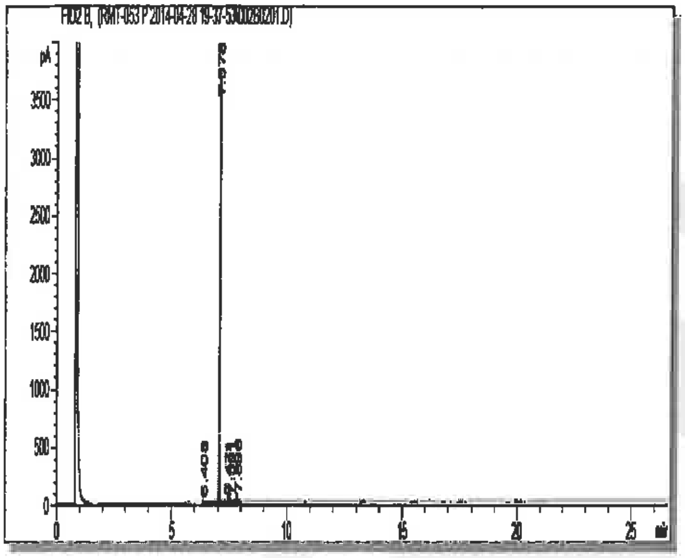

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

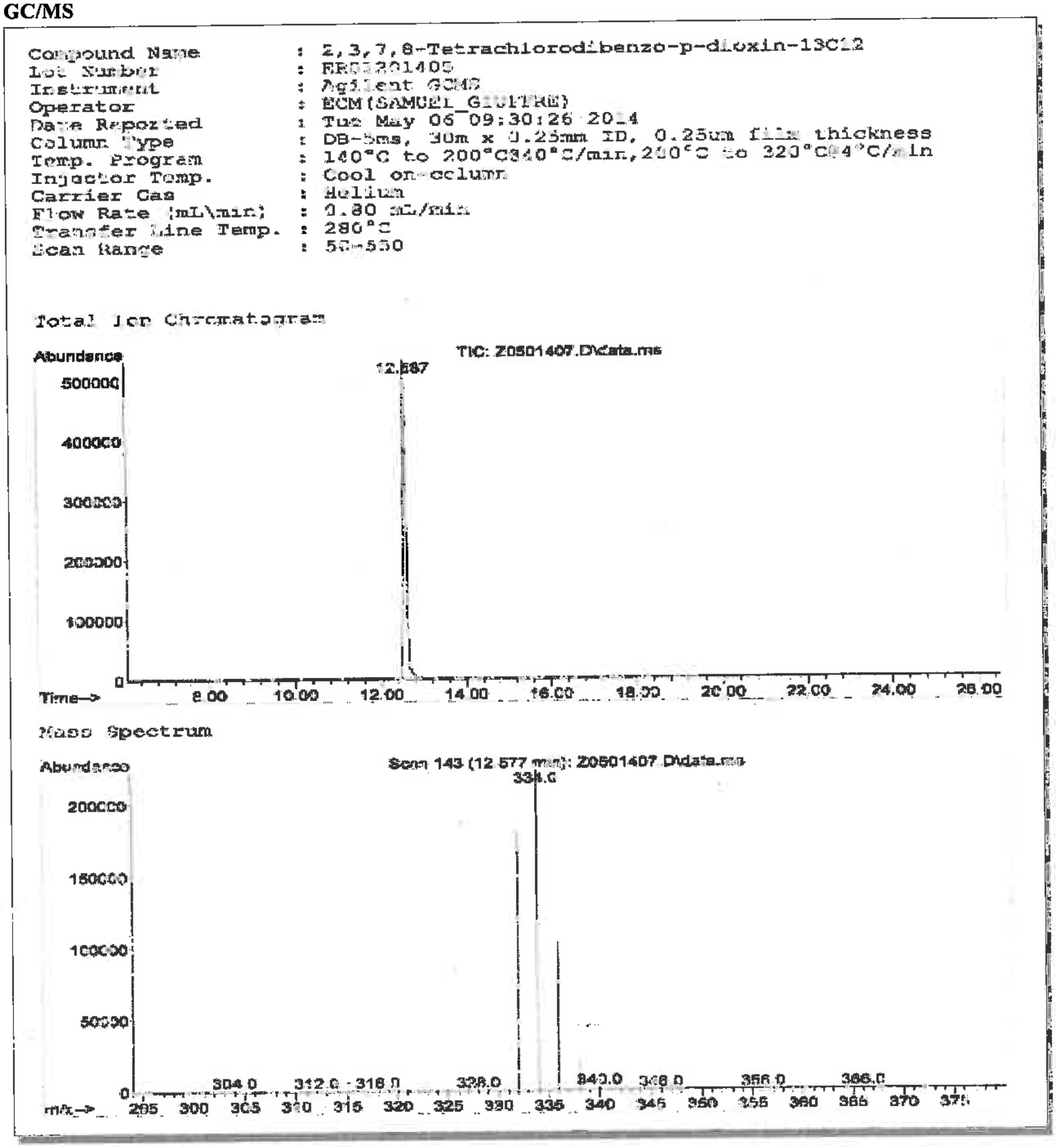

```
Compound Name            : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number               : ER03201405
Instrument               : Agilent GCMS
Operator                 : ECM(SAMUEL_GIUFFRE)
Date Reported            : Tue May 06 09:30:26 2014
Column Type              : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program            : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.           : Cool on-column
Carrier Gas              : Helium
Flow Rate (mL\min)       : 0.80 mL/min
Transfer Line Temp.      : 280°C
Scan Range               : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00357

r: 1/15/19 SKW

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Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

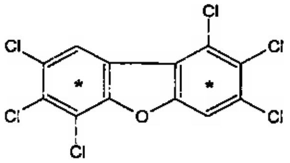

Catalog Number:	EF-985
Solution Lot:	ER02241603
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (µg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

May 04, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01
Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

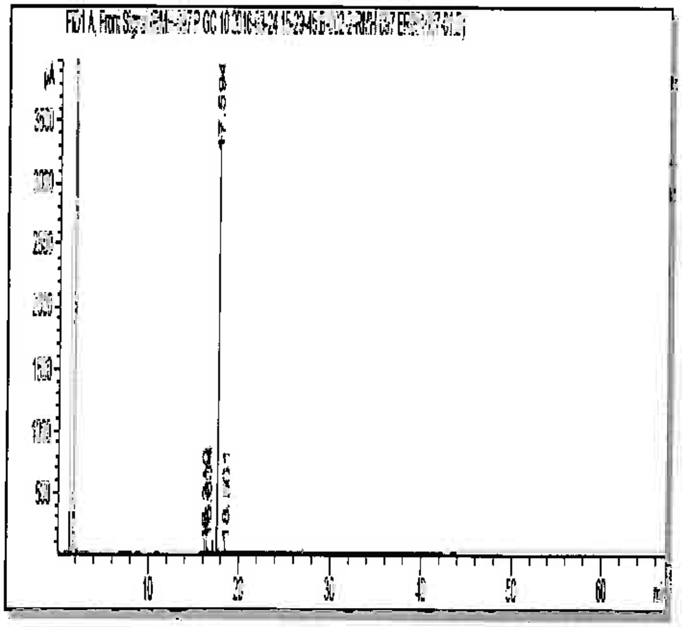

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name           : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number              : ER051607-01
Instrument              : Agilent GCMS
Operator                : ECM(SGIUFFRE)
Date Reported           : Fri Mar 18 07:08:54 2016
Column Type             : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program           : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.          : Cool on-column
Carrier Gas             : Helium
Flow Rate (mL\min)      : 0.80 mL/min
Transfer Line Temp.     : 280°C
Scan Range              : 50-550
```

Total Ion Chromatogram

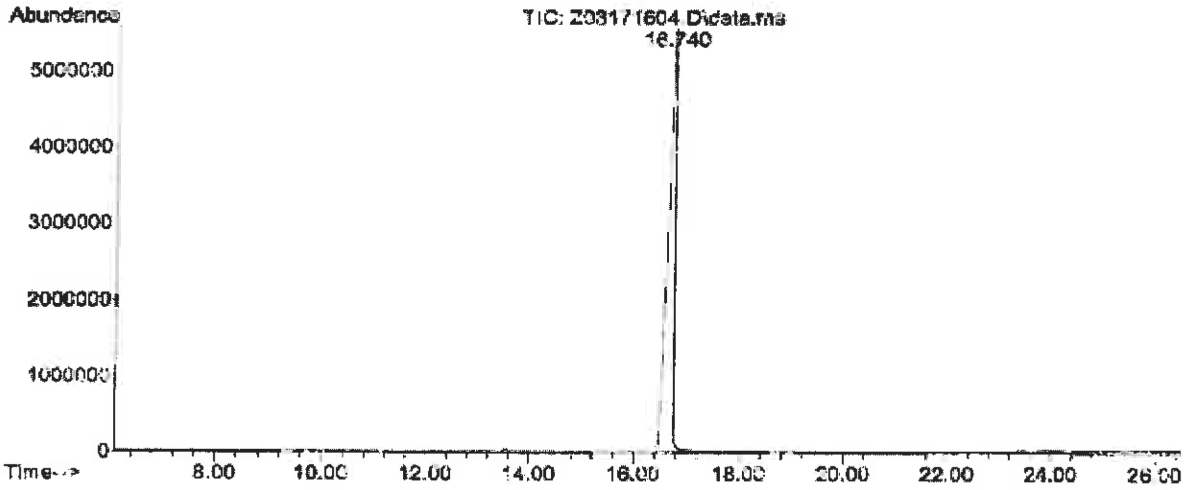

Mass Spectrum

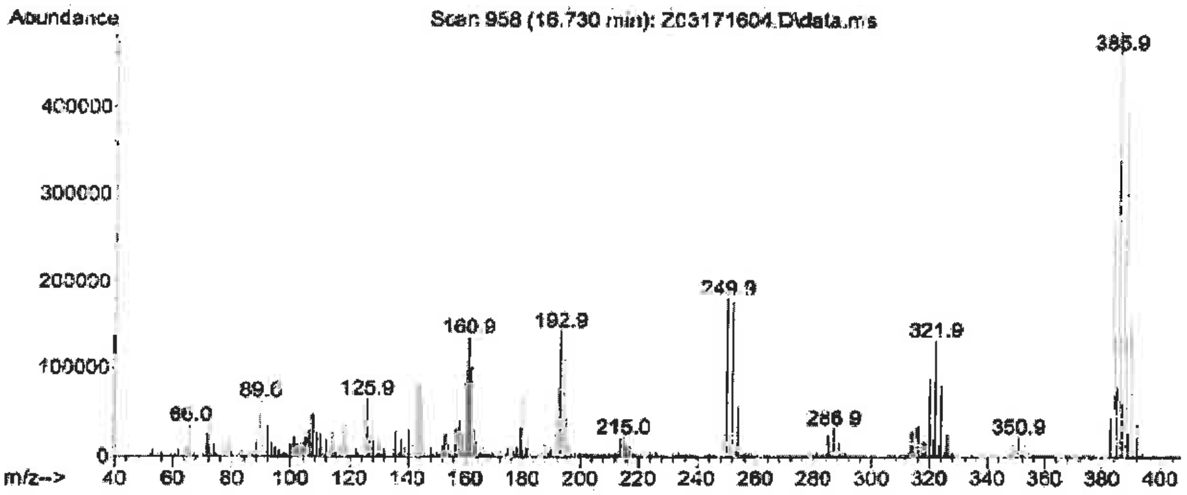

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIDA_00358

r: 1/15/19 SKV

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Revision 02
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 9001:2008

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-986
Solution Lot: ER100610-01
Expiration Date: December 2020
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

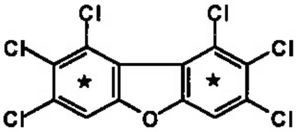

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER100610-01	51.2	± 5%	0.4	≤ 3%
Previous Lot	ER100107-01	49.9	± 5%	1.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 14, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03
Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.5%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.09% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		**99.49%**

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

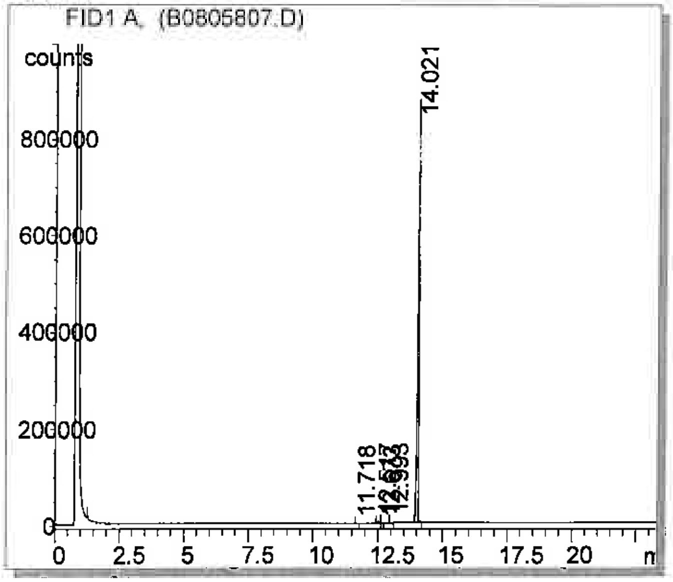

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: C:\HPCHEM\1\DATA\B0805807.D
Instrument: GC#2
Sample Name: ER080108-03
Acquired: August 05, 2008

Peak #	Ret Time	Area	Height	Area %
1	11.72	318.47	152.10	0.01
2	12.52	8294.54	2994.64	0.30
3	12.67	155.17	67.29	0.01
4	12.99	4248.66	1646.53	0.16
5	14.02	2708910.00	880320.00	99.52

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

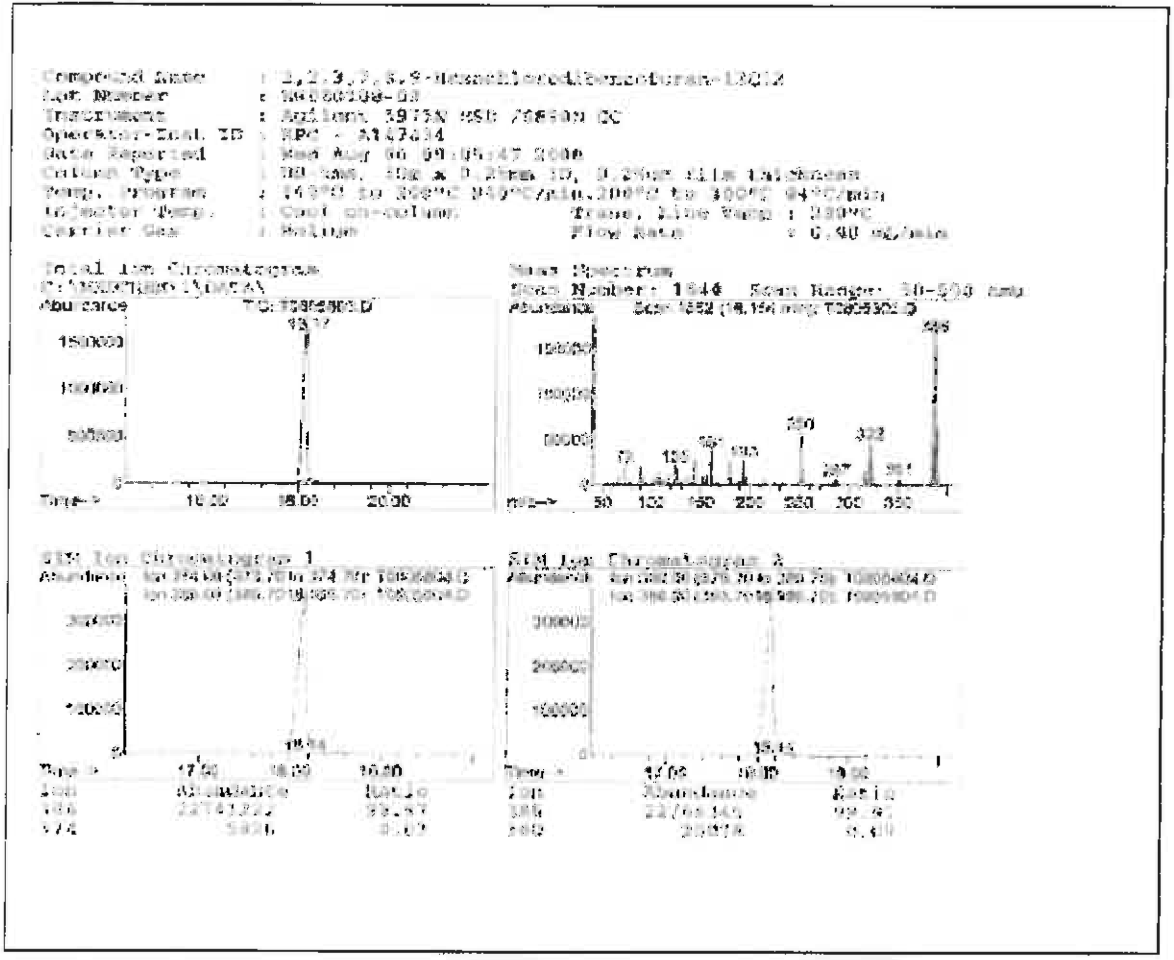

COA Revision History

Revision No.	Date	Reason for Revision
00	January 12, 2011	Initial version
01	November 05, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".
02	February 14, 2017	Corrected Isotopic Purity by GC/MS SIM from C to ^{13}C.

Reagent

HRDXNIDA_00359

r: 1/15/19 SKV

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 9001:2008

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

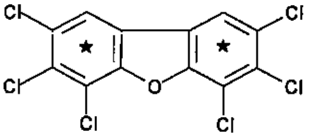

Catalog Number:	EF-987
Solution Lot:	ER100610-02
Expiration Date:	December 2020
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration

Component	Chromatographic Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER100610-02	50.9	± 5%	0.6	≤ 3%
Previous Lot	ER031507-03	50.3	± 5%	1.8	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

January 15, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER061906-02
Chemical Formula:	$^{13}C_{12}H_2Cl_6O$
CAS Number:	116843-05-1
Molecular Weight:	386.73

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.4%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.04% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.40%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

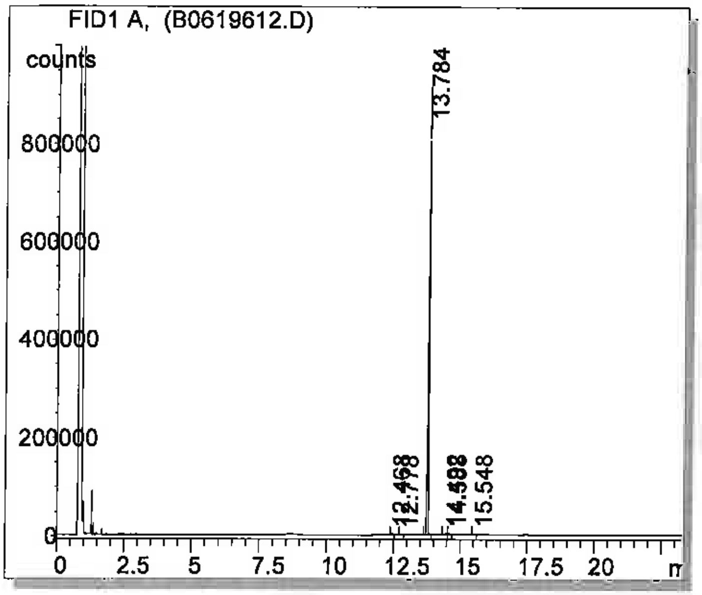

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: C:\HPCHEM\1\DATA\B0619612.D
Instrument: GC#2
Sample Name: ER061906-02
Acquired: June 19, 2006

Peak #	Ret Time	Area	Height	Area %
1	12.47	4458	1822	0.18
2	12.78	3496	1304	0.14
3	13.78	2443150	925399	99.39
4	14.49	1528	387	0.06
5	14.59	4236	1332	0.17
6	15.55	1361	348	0.06

Spectral and Physical Data (cont.)

GC/MS

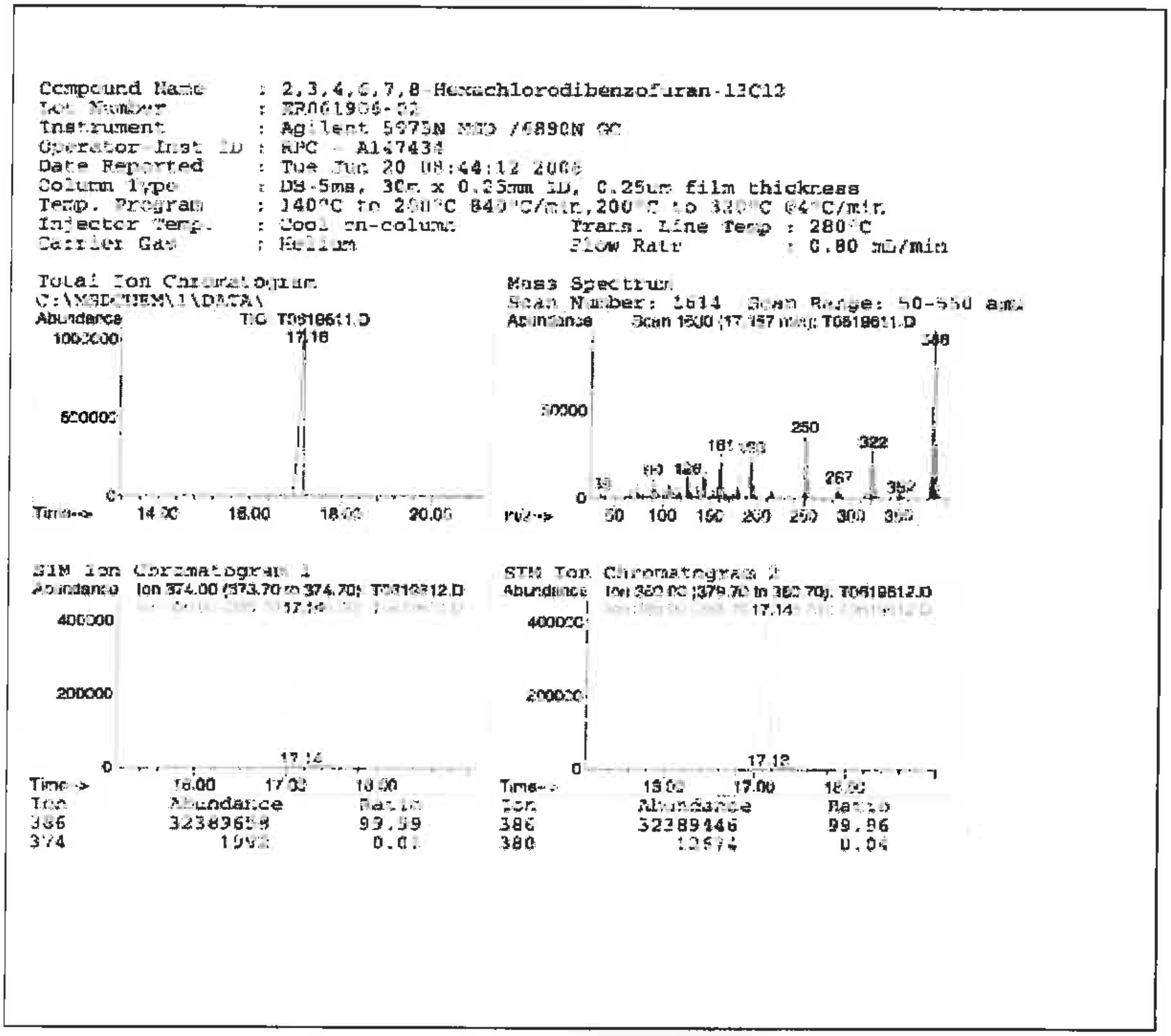

```
Compound Name       : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number          : ER061906-02
Instrument          : Agilent 5973N MSD /6890N GC
Operator-Inst ID    : KPC - A147434
Date Reported       : Tue Jun 20 08:44:12 2006
Column Type         : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program       : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp.      : Cool on-column         Trans. Line Temp  : 280°C
Carrier Gas         : Helium                 Flow Rate         : 0.80 mL/min

Total Ion Chromatogram                   Mass Spectrum
C:\MSDCHEM\1\DATA\                       Scan Number: 1614   Scan Range: 50-550 amu

SIM Ion Chromatogram 1                   SIM Ion Chromatogram 2
Ion     Abundance      Ratio             Ion     Abundance      Ratio
386     32389658       99.99             386     32389446       99.96
374         1992        0.01             380        12574        0.04
```

COA Revision History

Revision No.	Date	Reason for Revision
00	January 04, 2011	Initial version
01	January 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00360

r: 1/15/19 skv

Cerilliant
Analytical Reference Standards
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Revision 01
Page 1 of 5

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

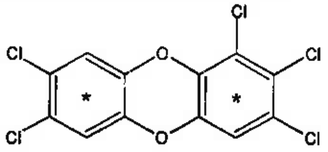

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER06241403
Chemical Formula:	$^{13}C_{12}H_3Cl_5O_2$
CAS Number:	109719-79-1
Molecular Weight:	368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$ 0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq 0.5\%$
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

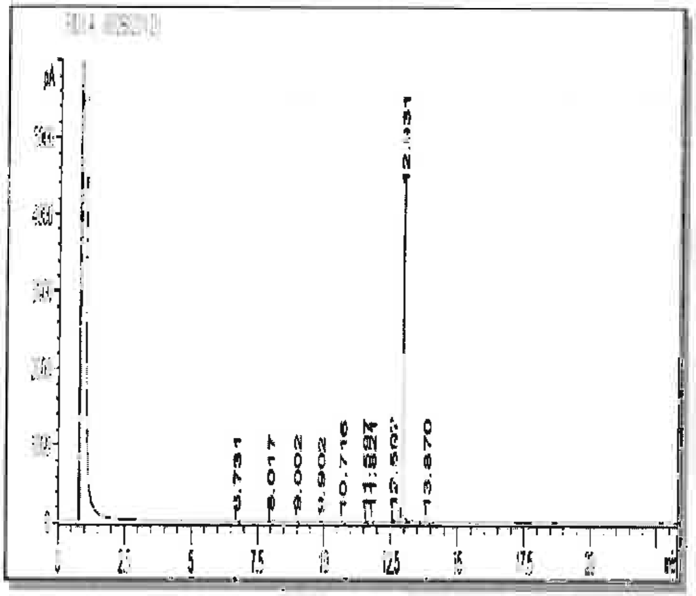

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

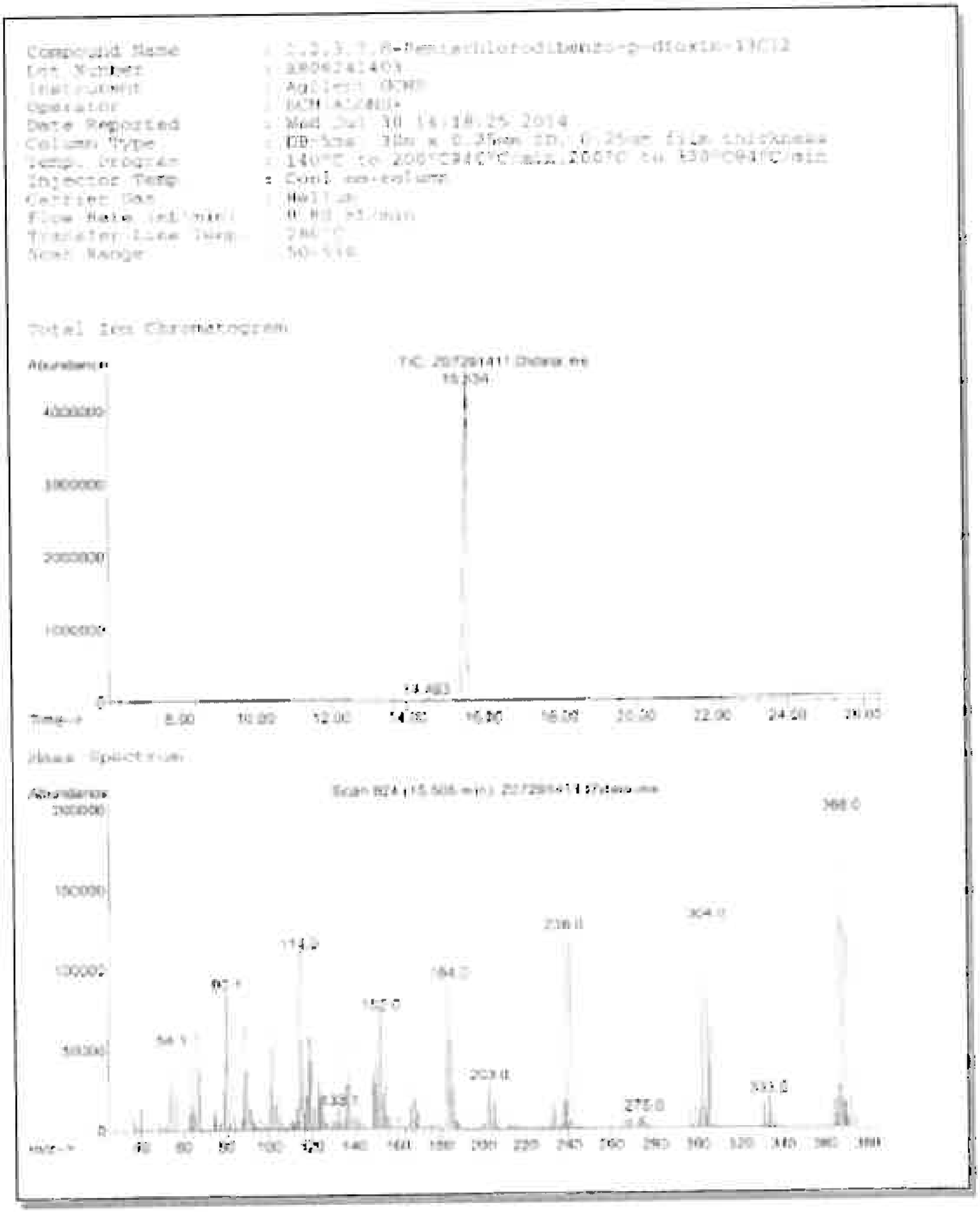

```
Compound Name          : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number             : 1806241403
Instrument             : Agilent GCMS
Operator               : [illegible]
Date Reported          : Wed Jul 30 14:18:25 2014
Column Type            : DB-5ms  30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 330°C@4°C/min
Injector Temp          : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL/min)     : 0.80 mL/min
Transfer Line Temp     : 280°C
Scan Range             : 50-510
```

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00361

r: 1/15/19 SKV

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Revision 02
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 9001:2008

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-952
Solution Lot: ER012111-01
Expiration Date: January 2021
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For laboratory use only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

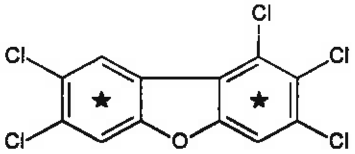

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Crtieria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

February 15, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER090110-01
Chemical Formula:	$^{13}C_{12}H_3OCl_5$
CAS Number:	109719-77-9
Molecular Weight:	352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

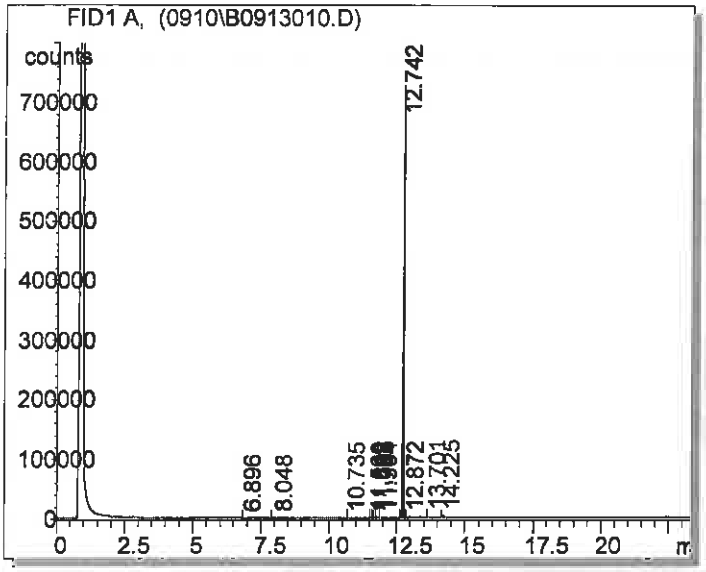

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

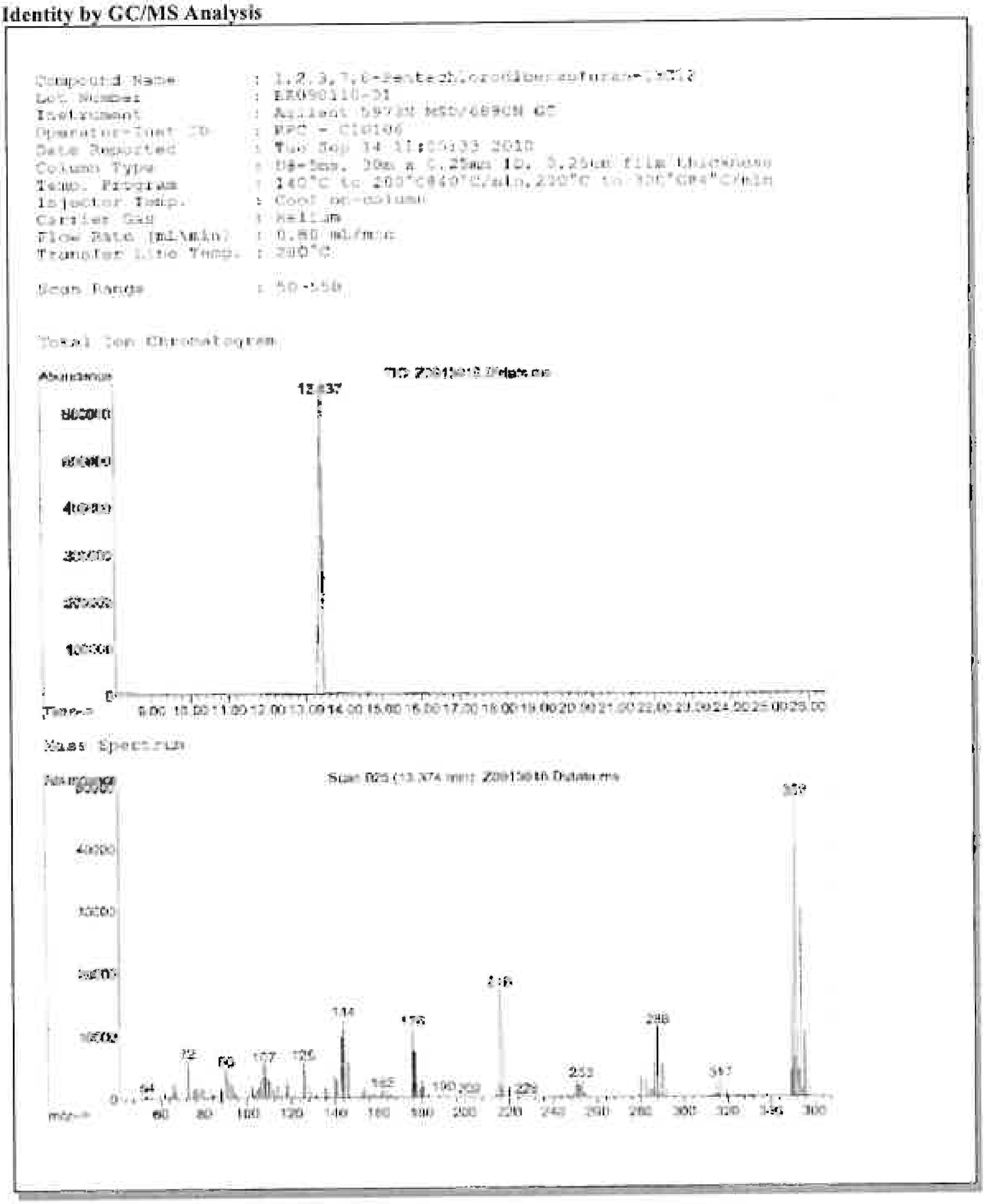

```
Compound Name         : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number            : ER090110-01
Instrument            : Agilent 5973N MSD/6890N GC
Operator-Inst ID      : RPC - CI0106
Date Reported         : Tue Sep 14 11:05:33 2010
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (ml\min)    : 0.80 ml/min
Transfer Line Temp.   : 280°C

Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00362

P: 1/15/19 SKV

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Revision 0
Page 1 of 4

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

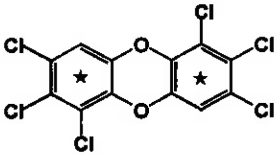

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	FN01151802
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-81-5
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$ 0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

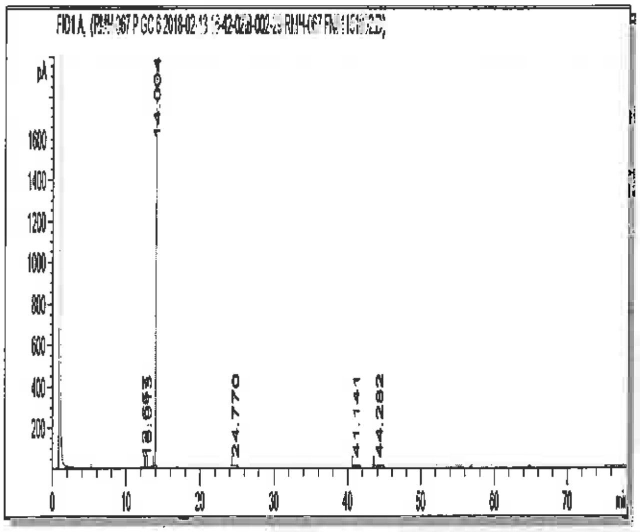

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number             : FN01151802
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Mon Mar 05 10:17:32 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

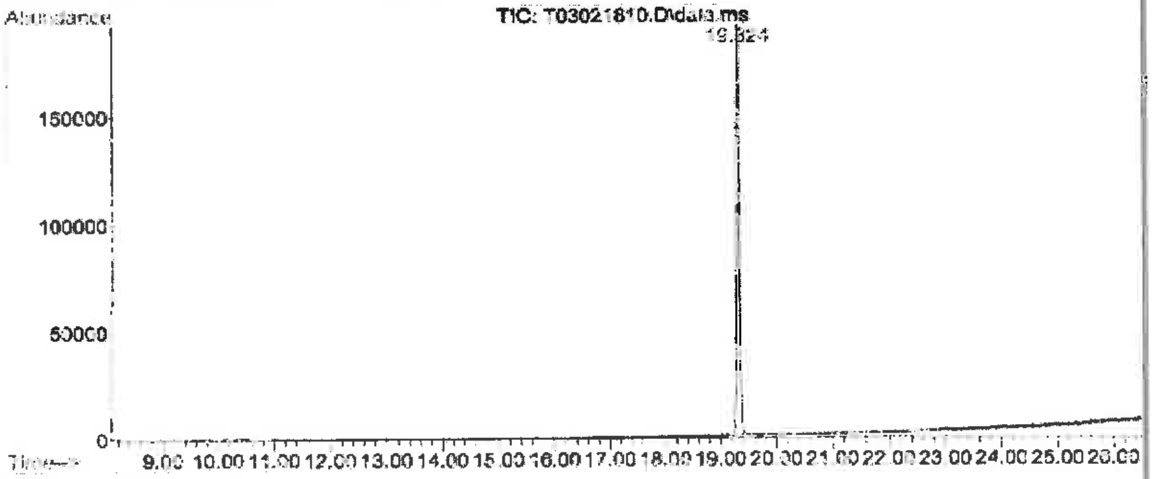

Mass Spectrum

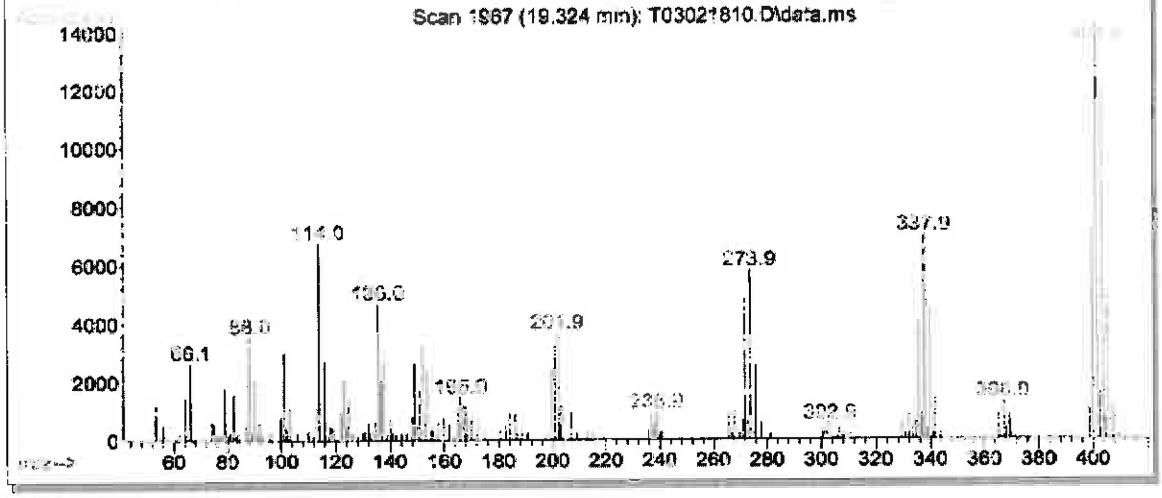

Reagent

HRDXNIDA_00365

rec 11/28/18 skv

1450145
ID: HRDXNIDA_00347
Exp: 04/30/27 Prpd: SKV
13C-OCDD [10 ug/mL]

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

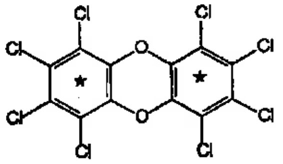

Catalog Number: ED-981-1.2
Solution Lot: ER04051701
Expiration Date: April 2027
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	70°C to 200°C at 40°C/min 200°C to 280°C at 10°C/min hold 15 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	3
Linearity (r):	0.997

Neat Material Data

Compound Name:	Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER04041601
Chemical Formula:	$^{13}C_{12}Cl_8O_2$
CAS Number:	114423-97-1
Molecular Weight:	471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		**99.15%**

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

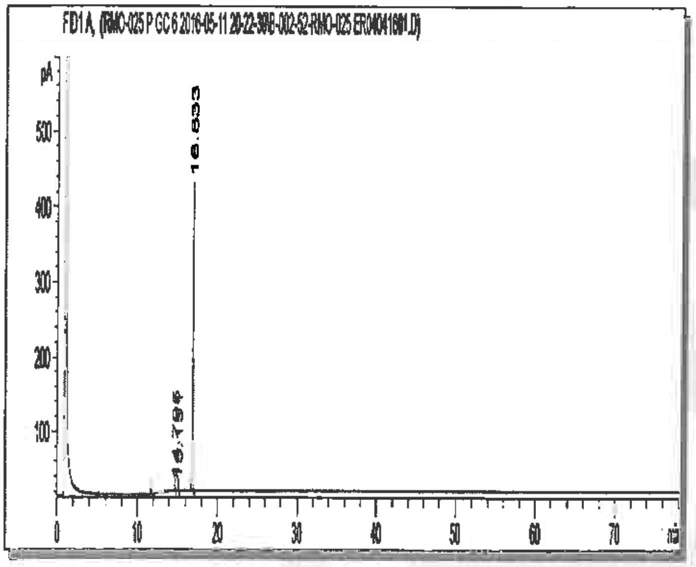

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 μm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.80	12.12	3.62	0.61
2	15.15	4.72	1.32	0.24
3	16.83	1980.56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

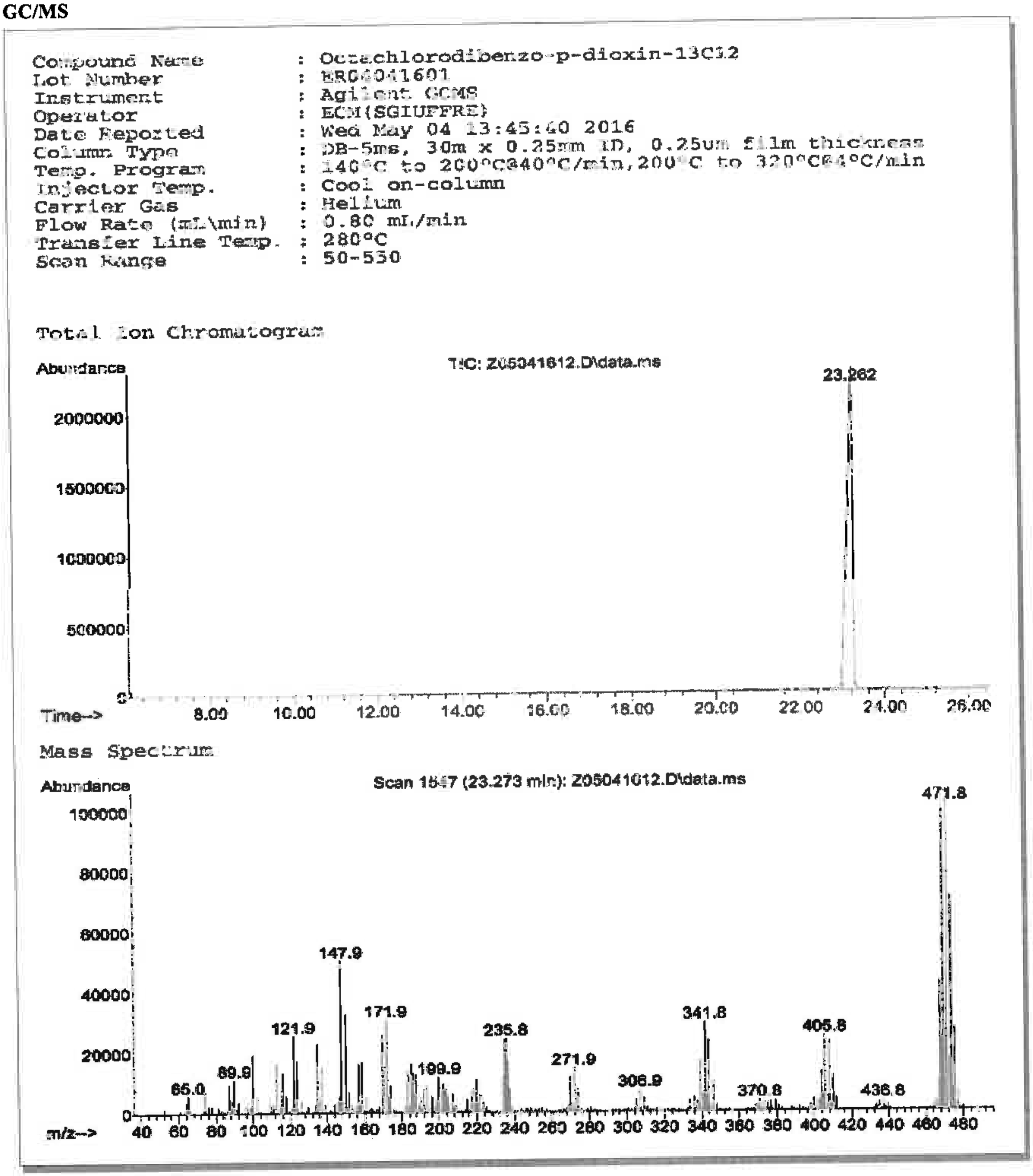

```
Compound Name         : Octachlorodibenzo-p-dioxin-13C12
Lot Number            : ER04041601
Instrument            : Agilent GCMS
Operator              : ECM(SGIUFFRE)
Date Reported         : Wed May 04 13:45:40 2016
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C
Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00375

r: 4/8/19 BW

Cerilliant
Analytical Reference Standards
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CIL

Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$

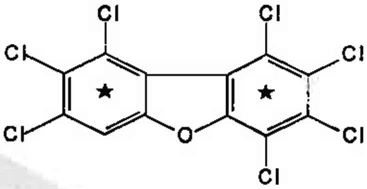

Catalog Number:	EF-988
Solution Lot:	ER04251601
Expiration Date:	May 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$	99.1%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04251601	49.11	± 5%	0.2	≤ 3%
Previous Lot	ER053107-02	50.58	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED

Darron Ellsworth, Quality Assurance Manager

November 09, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,7,8,9-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER04041602
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-94-0
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.1%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		**99.10%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The primary chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data (cont.)

GC/FID

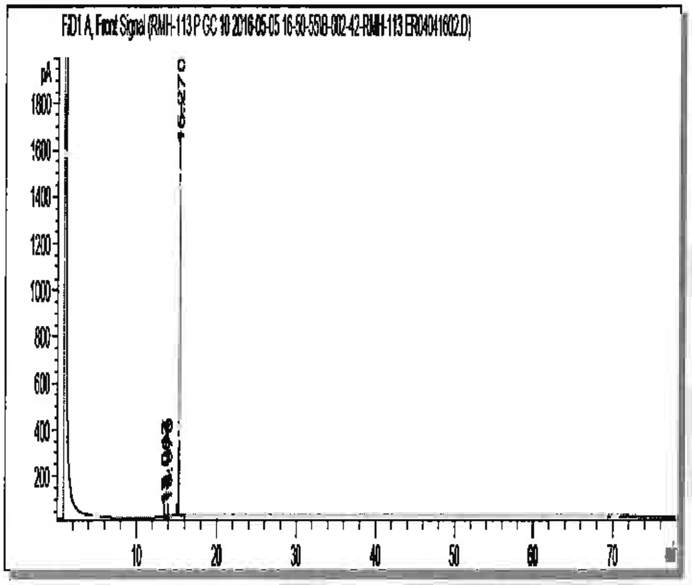

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Data File Name:	RMH-113 P GC 10 2016-05-05 16-50-55\B-002-42.D
Instrument:	GC#10
Sample Name:	ER04041602
Acquired:	May 05, 2016

Peak #	Ret Time	Area	Height	Area %
1	13 51	8.76	2.52	0.12
2	13 68	17.42	7.45	0.24
3	13 97	39.65	15.48	0.54
4	15 27	7226 95	1798.33	99.10

Spectral and Physical Data (cont.)

GC/MS

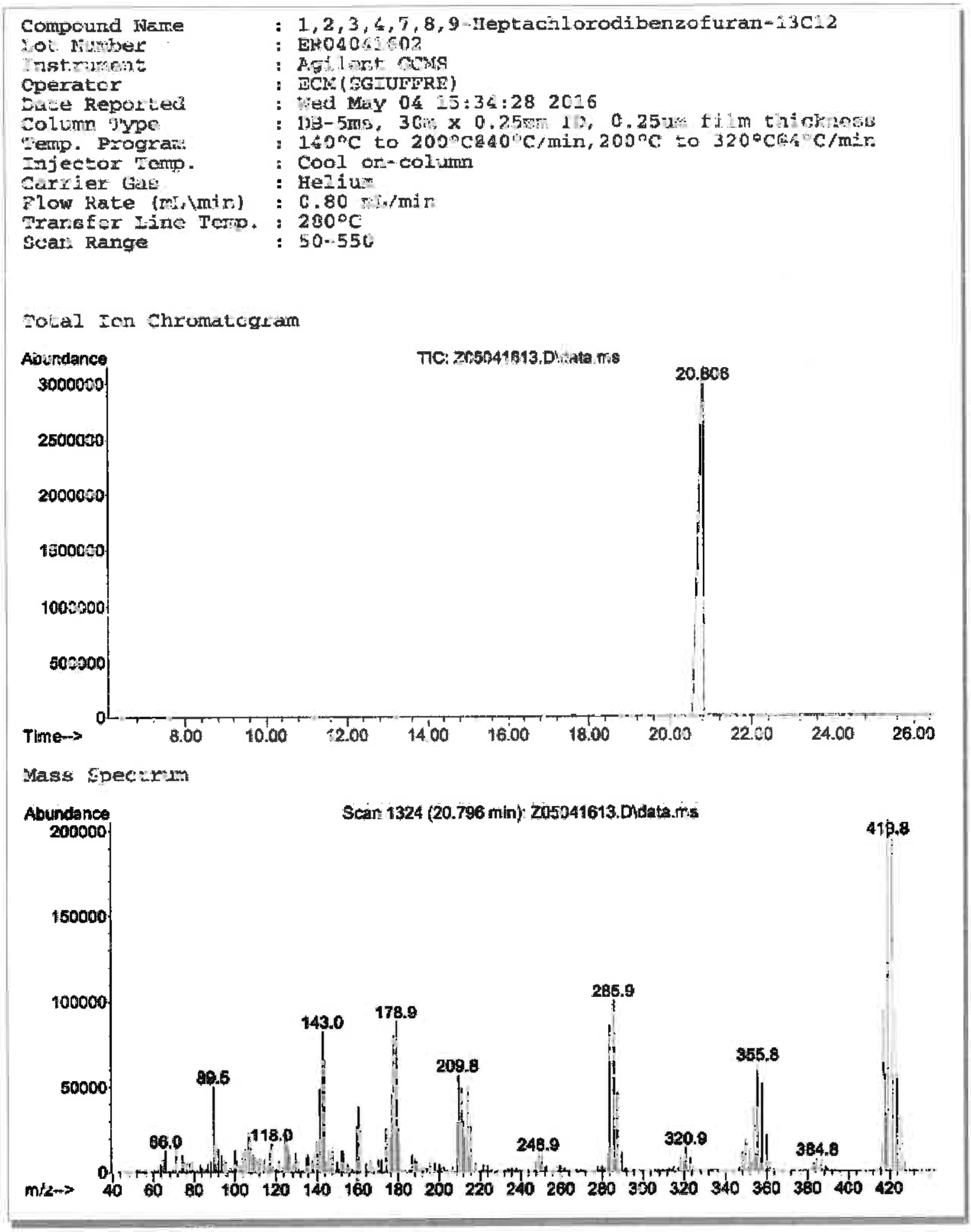

Compound Name : 1,2,3,4,7,8,9-Heptachlorodibenzofuran-13C12
Lot Number : ER04041602
Instrument : Agilent GCMS
Operator : ECM(SGIUFFRE)
Date Reported : Wed May 04 15:34:28 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	June 21, 2016	Initial version
01	November 09, 2016	Corrected Expiration Date from March 2026 to May 2026.

Reagent

HRDXNIDA_00376

R: 4/8/19 SW

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Analytical Reference Standards
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CIL

Revision 00
Page 1 of 4

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

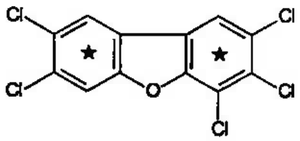

Catalog Number:	EF-958
Solution Lot:	ER01061701
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	97.9%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER01061701	50.51	± 5%	0.1	≤ 3%
Previous Lot	ER11041601	49.56	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 27, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11101601

Chemical Formula: $^{13}C_{12}H_3Cl_5O$
CAS Number: 116843-02-8
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		**98.33%**

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

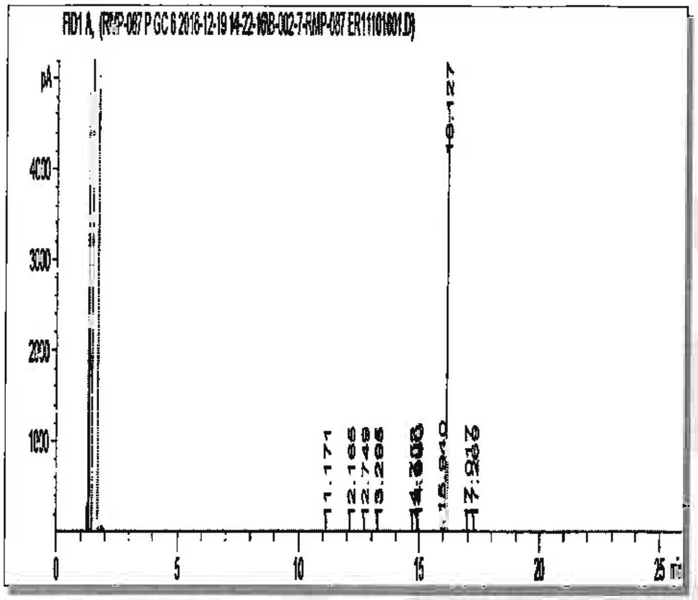

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-087 P GC 6 2016-12-19 14-22-16\B-002-7.D
Instrument: GC#6
Sample Name: ER11101601
Acquired: December 19, 2016

Peak #	Ret Time	Area	Height	Area %
1	11 17	0.94	0.40	0.01
2	12 17	1 30	0.39	0.01
3	12 75	0 47	0.20	0.00
4	13 30	0 90	0.35	0.01
5	14 75	1 70	0.87	0.02
6	14 91	1 09	0.56	0.01
7	14 97	32.24	17.54	0.29
8	15.94	124 38	64.36	1.13
9	16.13	10866 60	4688.80	98.41
10	17.02	6 31	2.46	0.06
11	17.27	6 76	2.34	0.06

Spectral and Physical Data (cont.)

GC/MS

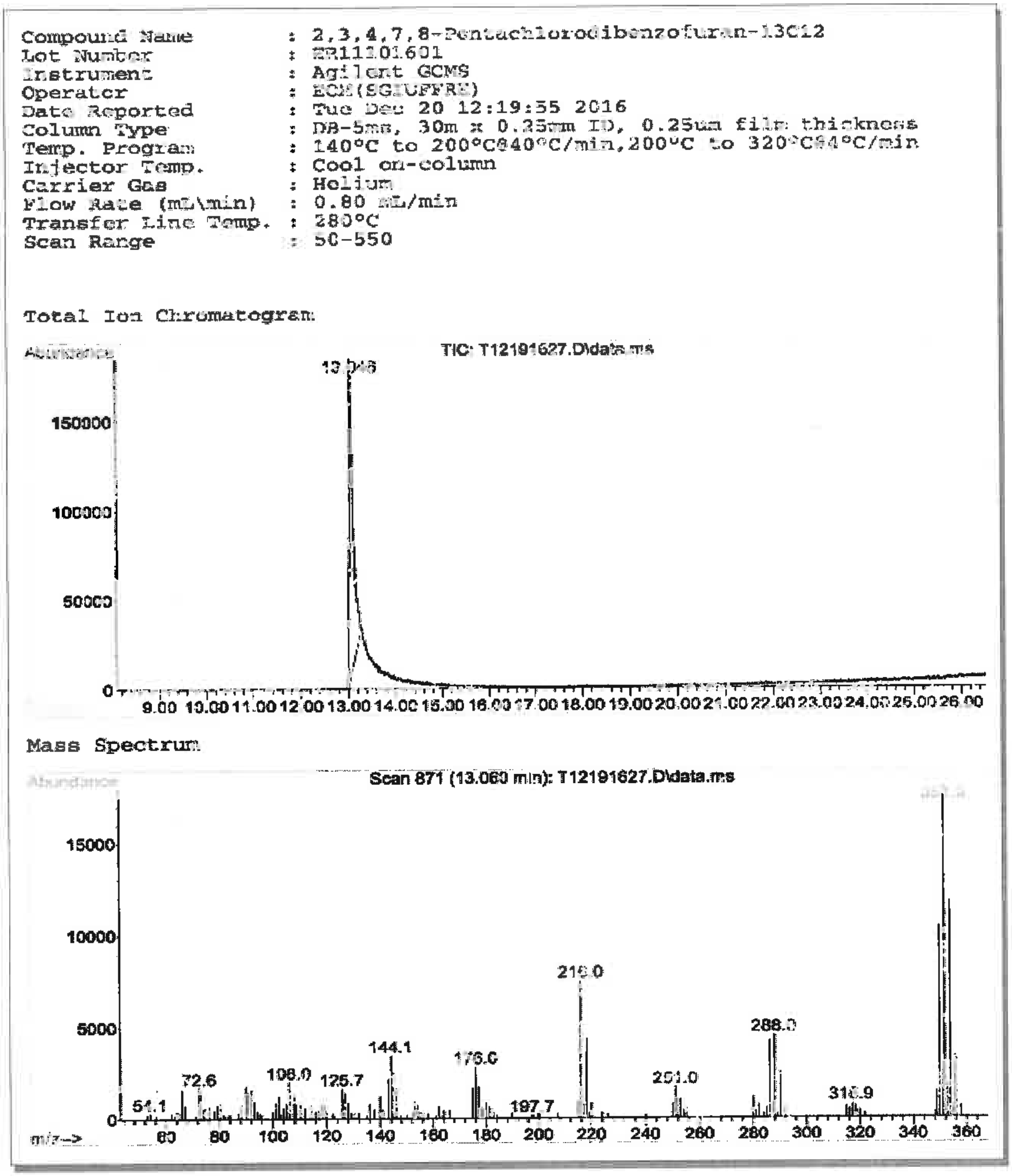

```
Compound Name          : 2,3,4,7,8-Pentachlorodibenzofuran-13C12
Lot Number             : ER11101601
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Tue Dec 20 12:19:55 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00377

r: 4/8/19 skw

Cerilliant
Analytical Reference Standards
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CIL

Revision 00
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

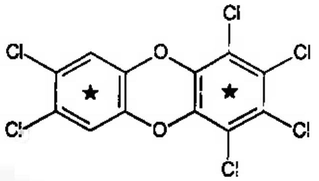

Catalog Number:	ED-946
Solution Lot:	ER04211601
Expiration Date:	June 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04211601	49.24	± 5%	0.4	≤ 3%
Previous Lot	ER102711-01	49.69	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

August 11, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER011008-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-80-4
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.08% $^{13}C_0$ vs $^{13}C_{12}$
		0.21% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.26%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

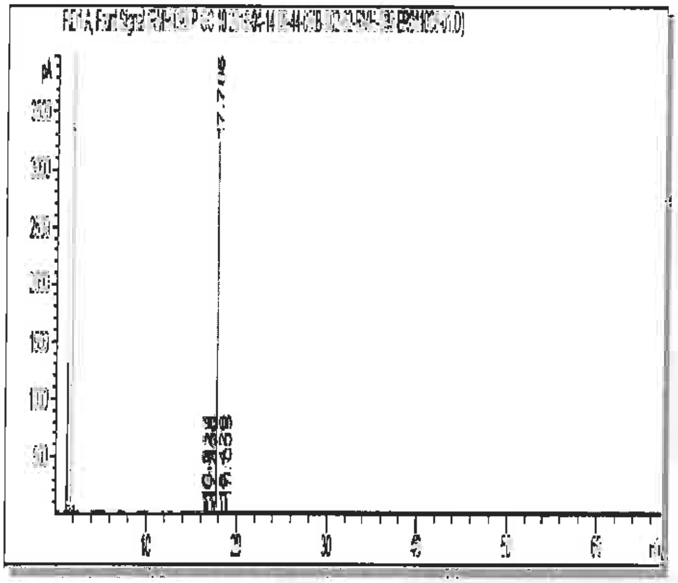

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-098 P GC 10 2016-04-14 08-44-08\B-002-62.D
Instrument: GC#10
Sample Name: ER011008-01
Acquired: April 14, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.56	16.58	7.74	0.19
2	16.72	11.25	5.08	0.13
3	16.83	8.45	4.05	0.10
4	17.30	1.81	0.71	0.02
5	17.48	1.07	0.50	0.01
6	17.79	8682.22	3203.58	99.29
7	18.43	1.99	0.68	0.02
8	19.01	20.62	6.08	0.24

Spectral and Physical Data (cont.)

GC/MS

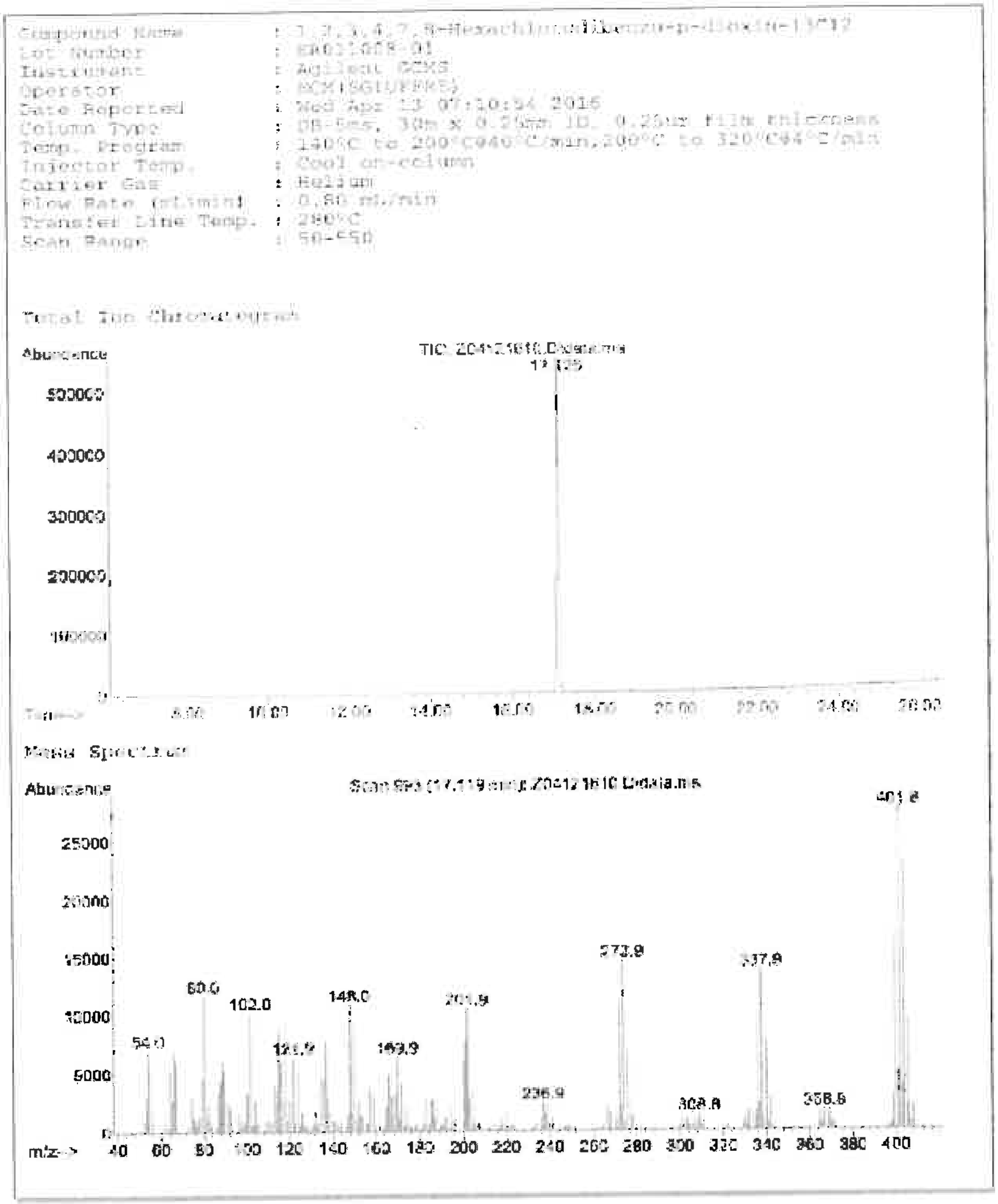

Compound Name : 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER021608-01
Instrument : Agilent GCMS
Operator : [illegible]
Date Reported : Wed Apr 13 07:10:54 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00378

r: 4/8/19 SKJ

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Certificate of Analysis

Certified Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

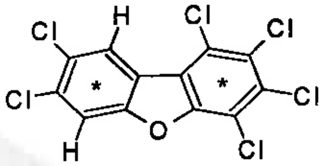

Catalog Number:	EF-963
Solution Lot:	ER04211701
Expiration Date:	July 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.4%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER04211701	49.47	± 5%	0.2	≤ 3%
Previous Lot	ER072810-02	45.87	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release

Traceability

- Gravemetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

September 11, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER11281601

Chemical Formula: $^{13}C_{12}Cl_6H_2O$
CAS Number: 114423-98-2
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0102	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$ 0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 0.5%
Mass Balance Purity Factor		99.31%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

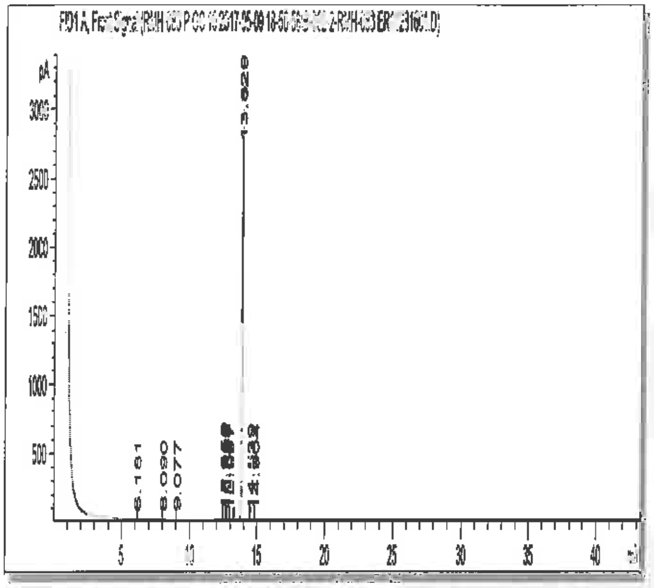

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 30 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-083 P GC 10 2017-05-09 18-50-58\B-002-2.D
Instrument: GC#10
Sample Name: ER11281601
Acquired: May 09, 2017

Peak #	Ret Time	Area	Height	Area %
1	6.18	1.10	0.64	0.01
2	8.09	2.00	0.70	0.02
3	9.08	1.17	0.48	0.01
4	12.55	14.76	7.25	0.16
5	12.73	32.67	11.32	0.36
6	12.84	5.45	2.50	0.06
7	13.00	2.51	1.30	0.03
8	13.83	8993.56	3122.16	99.30
9	14.54	1.11	0.20	0.01
10	14.90	2.71	0.86	0.03

Spectral and Physical Data (cont.)

GC/MS

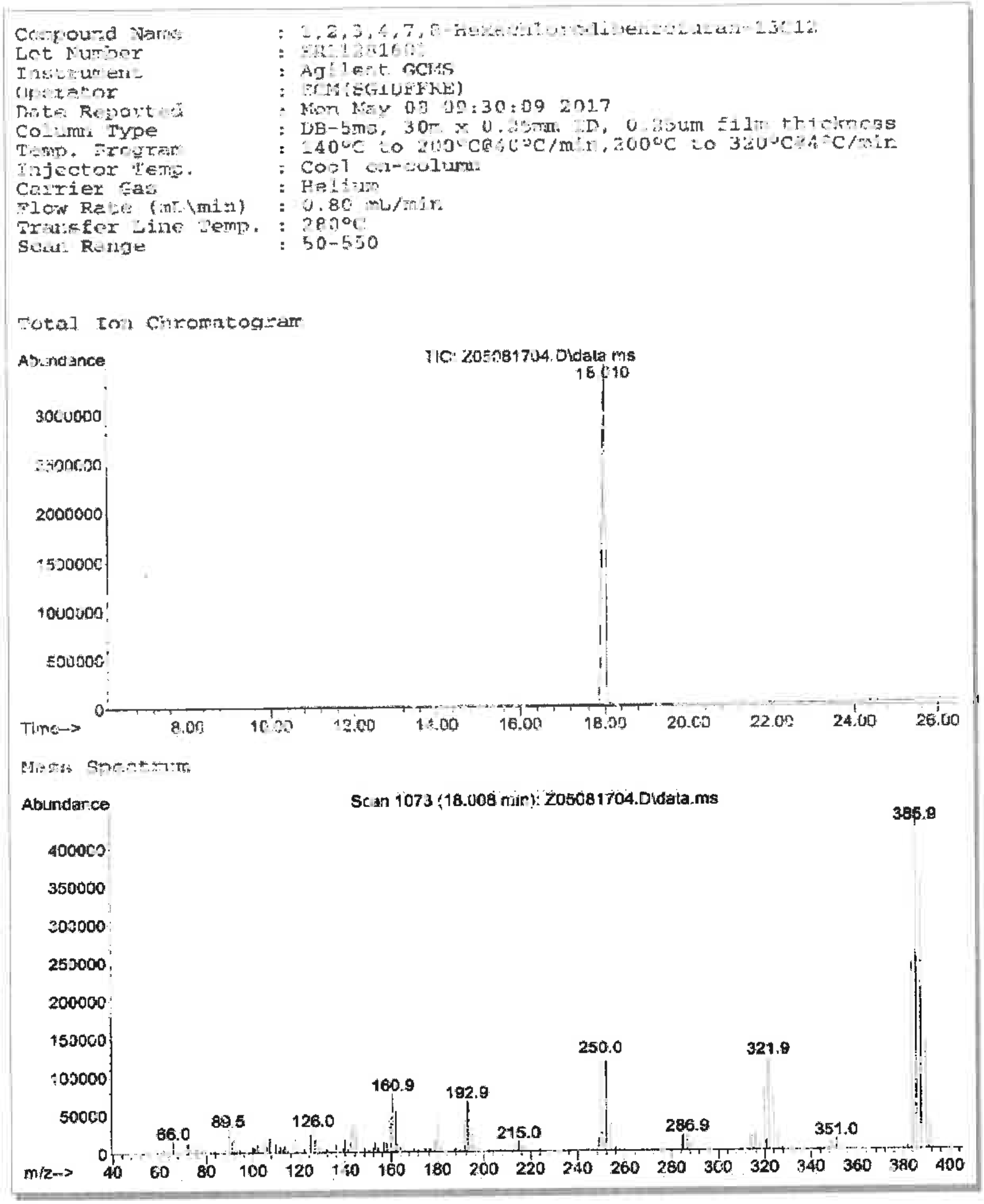

```
Compound Name          : 1,2,3,4,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : FR11281602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Mon May 08 09:30:09 2017
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00398

9280 I-#24
Received 11-14-19
GWS

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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

13C OCDD

Octachlorodibenzo-p-dioxin-$^{13}C_{12}$

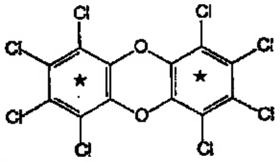

Catalog Number:	ED-981-1.2
Solution Lot:	ER04051701
Expiration Date:	April 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration

Component	Solution Purity	Certified Concentration
Octachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	10.00 ± 0.05 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass, Purity Factor of the analyte(s), measured mass of the solution, and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER04057101	10.22	± 5%	1.1	≤ 5%
Previous Lot	ER06061601	10.17	± 5%	0.8	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 19, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program: 70°C to 200°C at 40°C/min
200°C to 280°C at 10°C/min hold 15 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 3
Linearity (r): 0.997

Neat Material Data

Compound Name: Octachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER04041601
Chemical Formula: $^{13}C_{12}Cl_8O_2$
CAS Number: 114423-97-1
Molecular Weight: 471.66

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**99.1%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.96% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.15%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

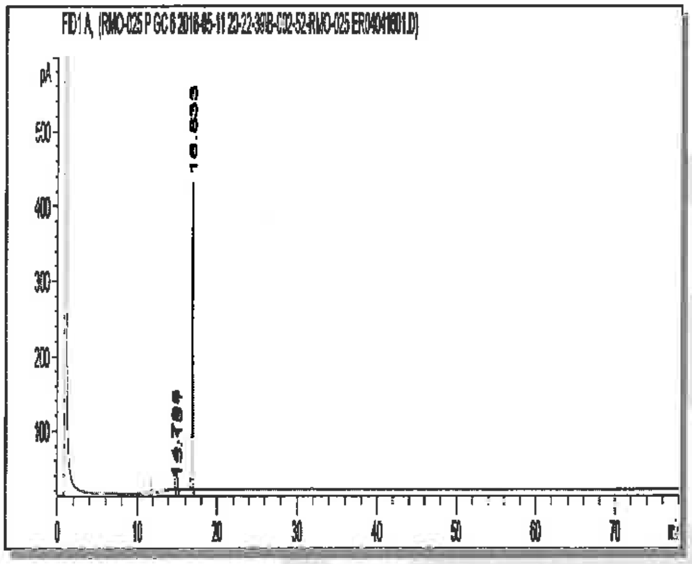

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMO-025 P GC 6 2016-05-11 20-22-39\B-002-52.D
Instrument: GC#6
Sample Name: ER04041601
Acquired: May 11, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.80	12.12	3.62	0.61
2	15.15	4.72	1.32	0.24
3	16.83	1980.56	409.54	99.16

Spectral and Physical Data (cont.)

GC/MS

Compound Name : Octachlorodibenzo-p-dioxin-13C12
Lot Number : ER04041601
Instrument : Agilent GCMS
Operator : ECM(SCIUFFRE)
Date Reported : Wed May 04 13:45:40 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

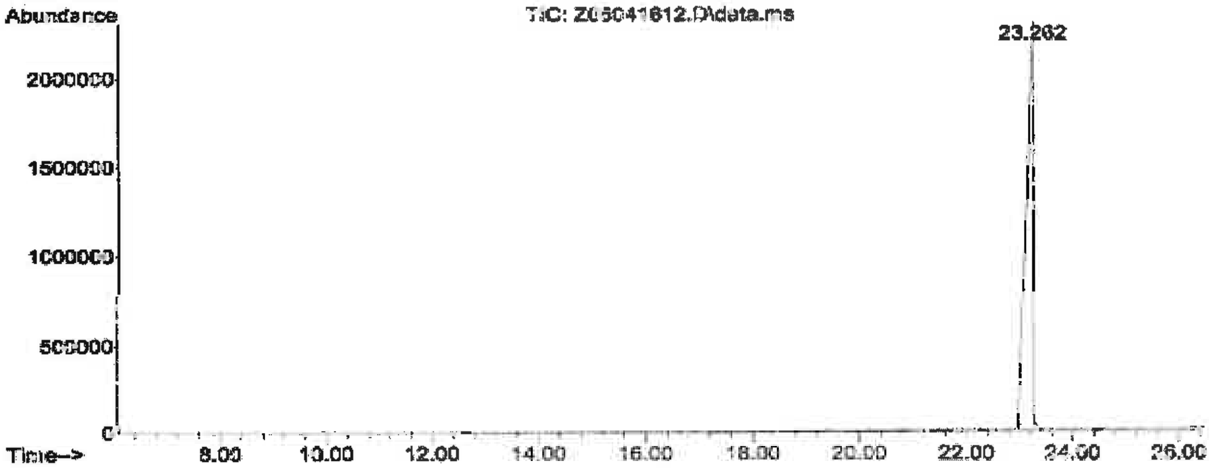

Mass Spectrum

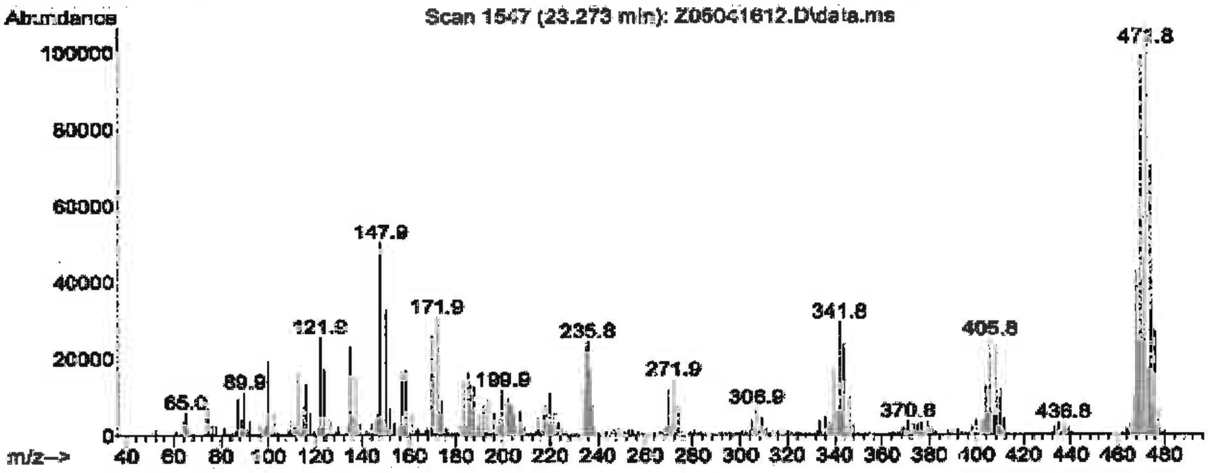

Reagent

HRDXNIDA_00407

Received 11-26-19

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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$

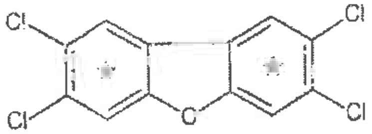

Catalog Number:	EF-904
Solution Lot:	ER09131601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09131601	49.91	± 5%	0.2	≤ 3%
Previous Lot	ER12101304	51.13	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

November 02, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER01161401
Chemical Formula: $^{13}C_{12}H_4Cl_4O$
CAS Number: 89059-46-1
Molecular Weight: 317.88

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS SIM	SP10-0105	No single DD/DF ≥ 0.5%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$
		0.00% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.24%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

GC/FID

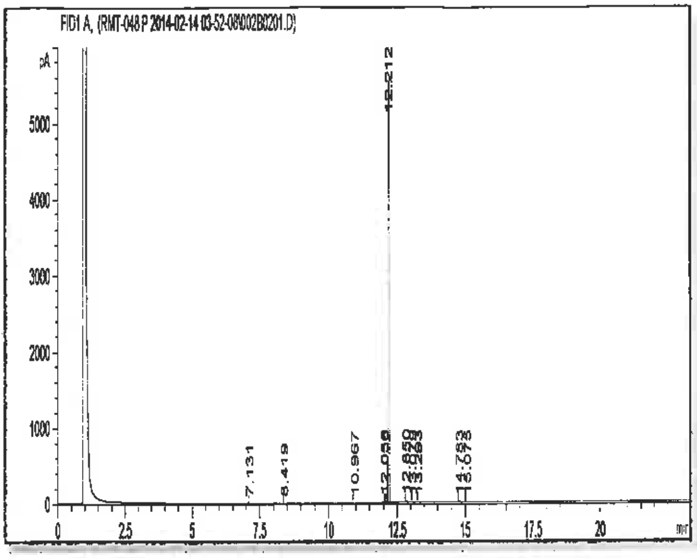

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-048 P 2014-02-14 03-52-08\002B0201.D
Instrument: GC#10
Sample Name: ER01161401
Acquired: February 14, 2014

Peak #	Ret Time	Area	Height	Area %
1	7.13	1.19	0.61	0.01
2	8.42	3.23	1.42	0.03
3	10.97	3.57	1.04	0.03
4	12.06	20.86	12.47	0.18
5	12.21	11764.70	5466.96	99.29
6	12.85	30.72	15.48	0.26
7	13.08	7.62	4.03	0.06
8	13.29	5.47	2.91	0.05
9	14.78	7.62	2.76	0.06
10	15.08	3.87	1.33	0.03

GC/MS

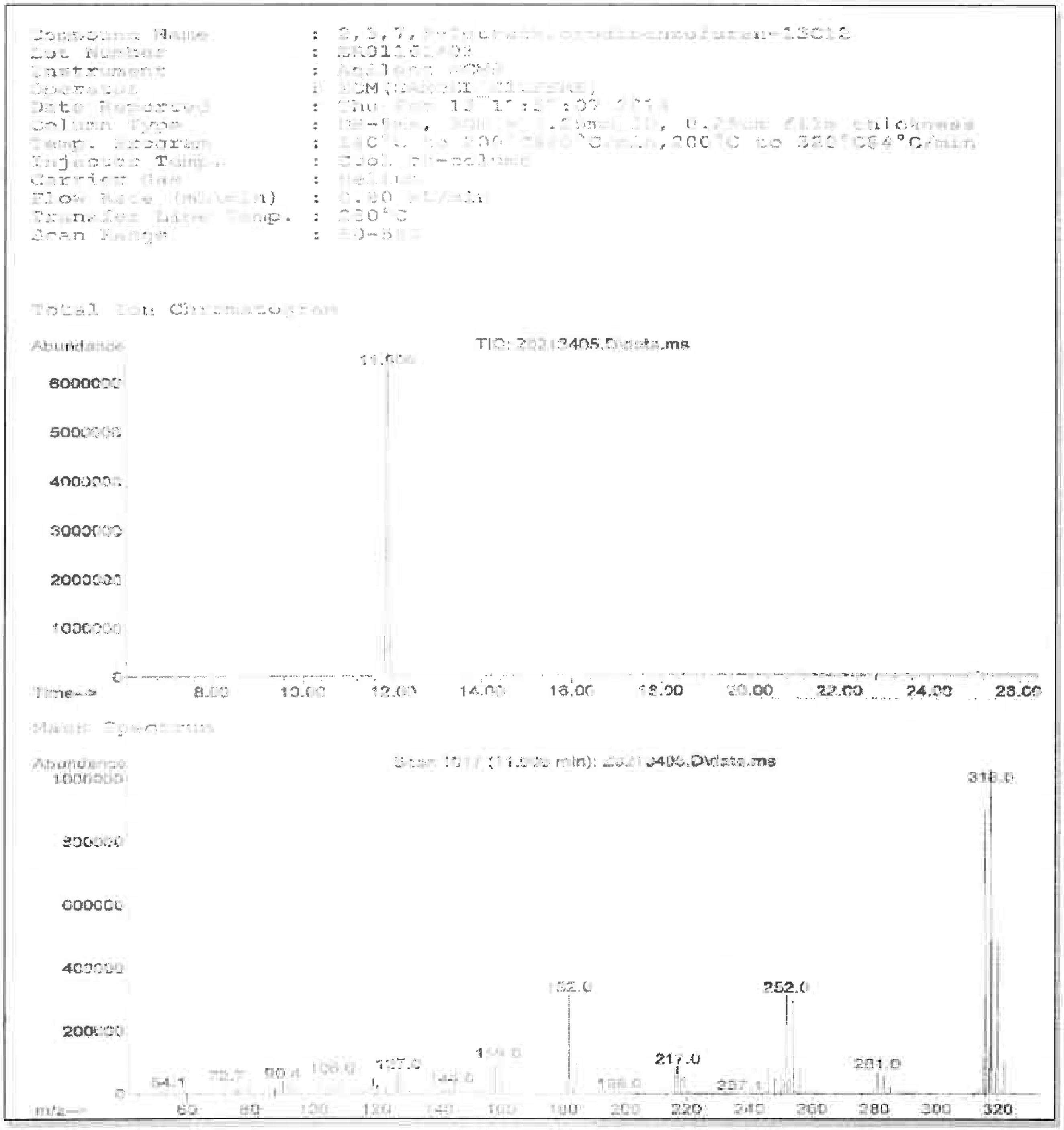

```
Compound Name          : 2,3,7,8-Tetrachlorodibenzofuran-13C12
Lot Number             : ER011[illegible]
Instrument             : Agilent [illegible]
Operator               : BCM([illegible])
Date Reported          : Thu Feb 13 11:57:07 2014
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL/min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	November 02, 2016	Initial version

Reagent

HRDXNIDA_00408

Received 11-21-18

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Analytical Reference Standards
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Revision 01
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Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

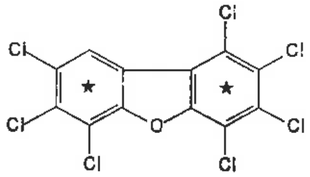

Catalog Number: EF-974
Solution Lot: ER08101404
Expiration Date: November 2024
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$	98.3%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20°C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08101404	48.75	± 5%	0.3	≤ 3%
Previous Lot	ER102711-02	51.49	± 5%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

Darron Ellsworth, Quality Assurance Manager

December 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4,6,7,8-Heptachlorodibenzofuran-$^{13}C_{12}$
Compound Lot:	ER020507-02
Chemical Formula:	$^{13}C_{12}HCl_7O$
CAS Number:	109719-84-8
Molecular Weight:	421.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.7%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.16% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	Pass
		no single DD/DF impurity ≥1.0%
Purity Factor		**98.69%**

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

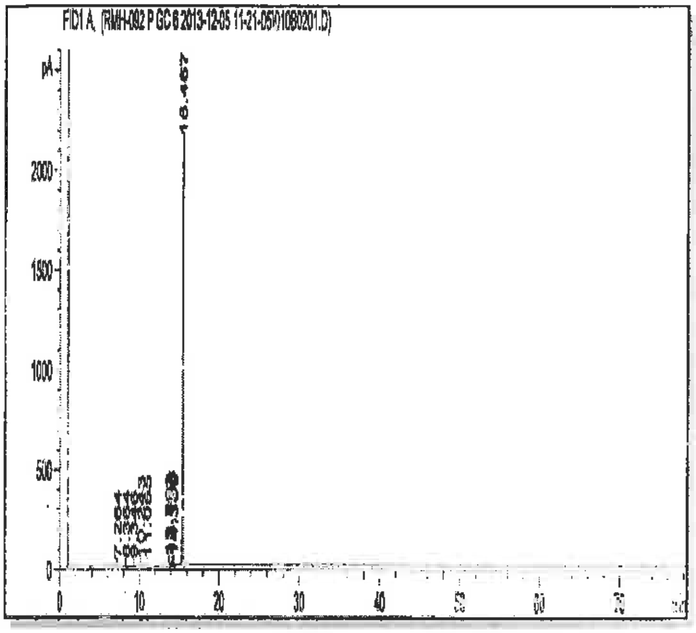

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-092 P GC 6 2013-12-05 11-21-05\01030201.D
Instrument: GC#6
Sample Name: ER020507-02
Acquired: December 05, 2013

Peak #	Ret Time	Area	Height	Area %
1	7.26	4.41	2.08	0.05
2	8.36	11.76	5.45	0.12
3	9.35	5.20	2.32	0.05
4	10.24	1.47	0.62	0.02
5	11.06	0.34	0.17	0.00
6	13.75	8.81	4.38	0.09
7	13.80	23.67	9.98	0.25
8	14.13	43.07	16.42	0.45
9	14.20	21.73	8.77	0.23
10	14.39	4.79	1.81	0.05
11	15.47	9349.36	2200.33	98.68

Spectral and Physical Data (cont.)

GC/MS

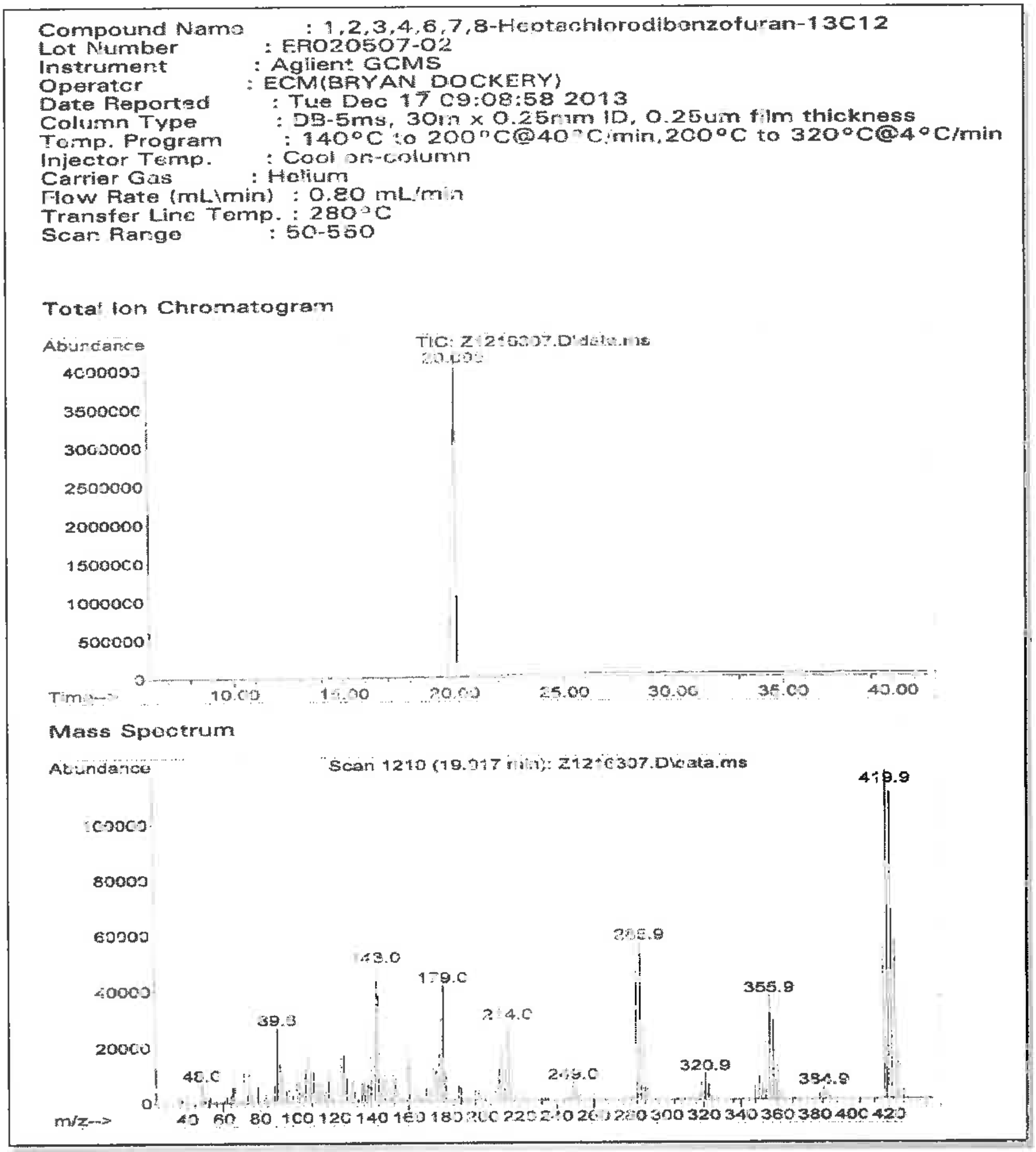

Compound Name : 1,2,3,4,6,7,8-Heptachlorodibenzofuran-13C12
Lot Number : ER020507-02
Instrument : Agilent GCMS
Operator : ECM(BRYAN_DOCKERY)
Date Reported : Tue Dec 17 09:08:58 2013
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	January 19, 2015	Initial version
01	December 04, 2015	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet"

Reagent

HRDXNIDA_00409

Rec'd 11-21-18

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Revision 0
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

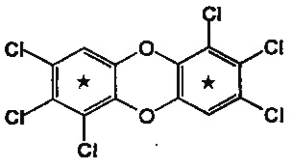

Catalog Number:	ED-966
Solution Lot:	ER03151801
Expiration Date:	March 2028
Solvent:	n-Nonane:Toluene (80:20) (v/v)
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	> 99.9%	50.03 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03151801	52.29	± 5%	0.2	≤ 3%
Previous Lot	ER010209-01	48.05	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 19, 2018
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: FN01151802
Chemical Formula: $^{13}C_{12}H_2Cl_6O_2$
CAS Number: 109719-81-5
Molecular Weight: 402.77

Neat Material Characterization Summary

Analytical Test	**Method**	**Results**
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

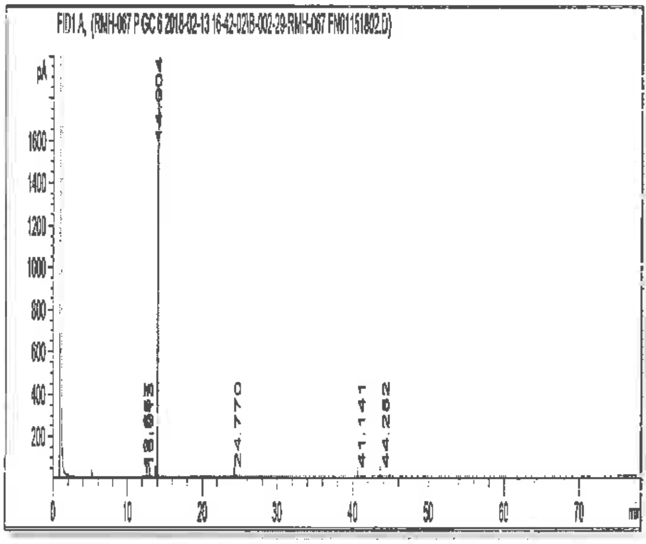

Column: DB-5:ns, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-067 P GC 6 2018-02-13 16-42-02\B-002-29.D
Instrument: GC#6
Sample Name: FN01151802
Acquired: February 13, 2018

Peak #	Ret Time	Area	Height	Area %
1	12.66	1.69	0.62	0.03
2	13.01	1.96	0.53	0.03
3	14.00	5617.62	1952.76	98.87
4	24.77	5.26	0.34	0.09
5	41.14	10.58	0.38	0.19
6	44.28	44.69	1.49	0.79

Spectral and Physical Data (cont.)

GC/MS

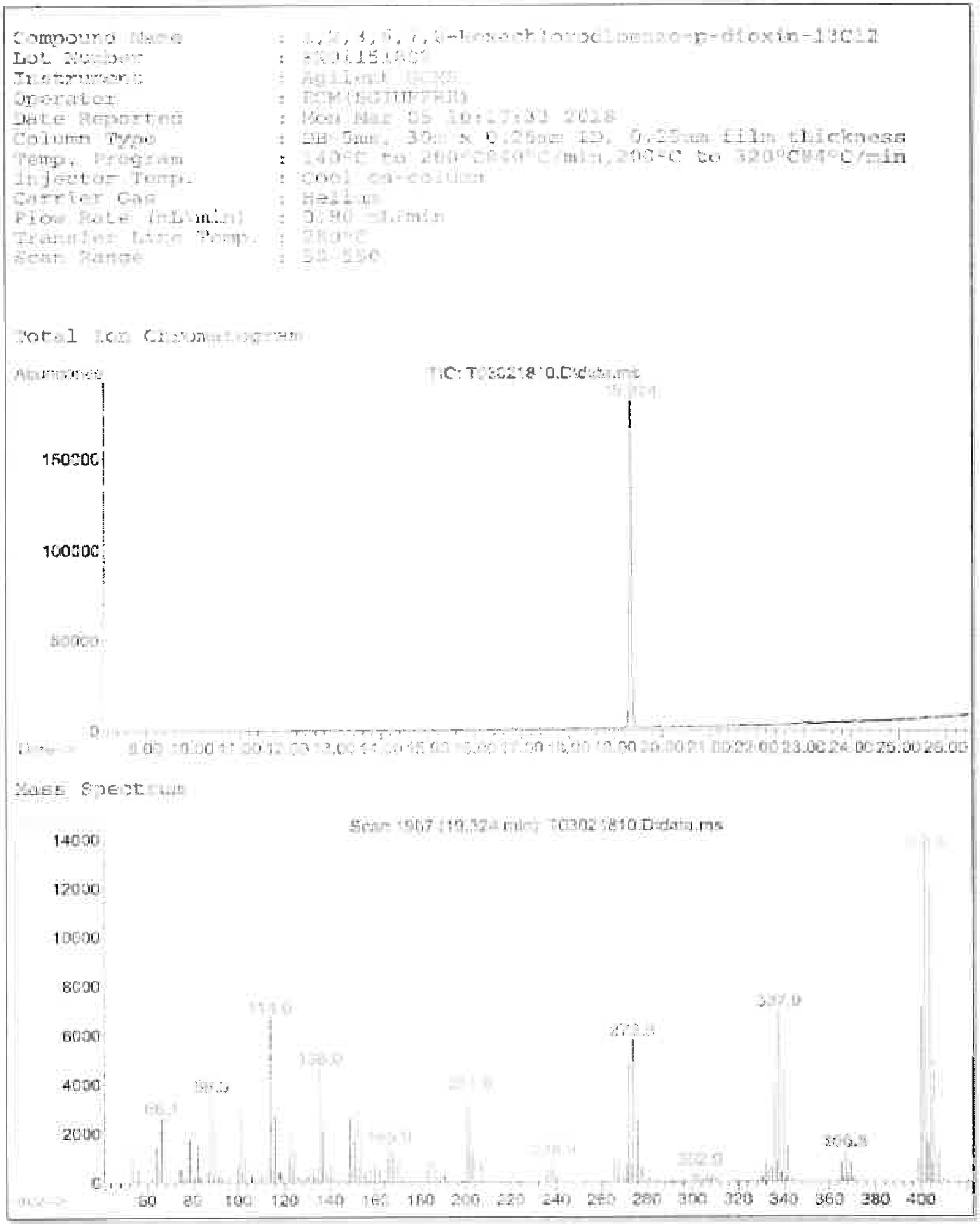

```
Compound Name          : 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-13C12
Lot Number             : [illegible]
Instrument             : Agilent GCMS
Operator               : ECM(SCHUFFER)
Date Reported          : Mon Mar 05 10:17:33 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@20°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.90 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00410

Rec'd 11-21-16

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Revision 0
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

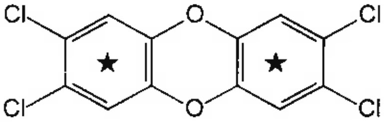

Catalog Number:	ED-900
Solution Lot:	ER03031601
Expiration Date:	March 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER03031601	52.66	± 5%	0.3	≤ 3%
Previous Lot	ER01031401	49.83	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

March 24, 2016

Darron Ellsworth, Quality Assurance Manager
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-35ms 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER01201405

Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	76523-40-5
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity and Distribution by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.05% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity ≥0.5%
Mass Balance Purity Factor		99.34%

- The primary chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Mass Balance Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

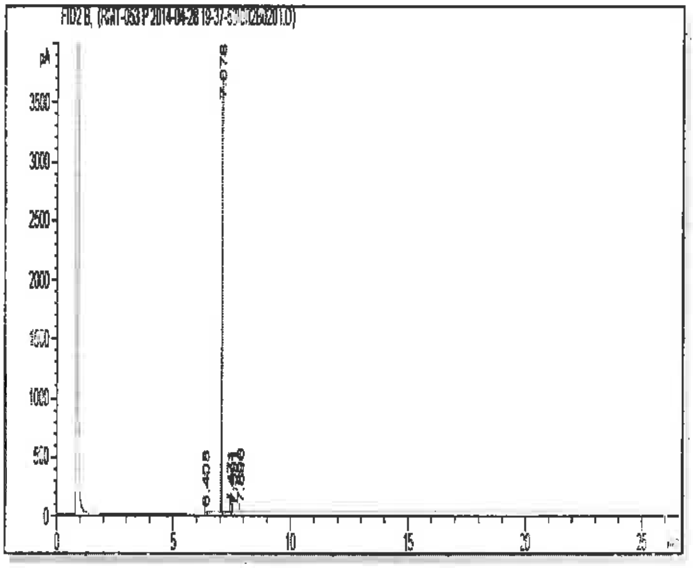

Column: DB-35ms, 30 m x 0.53 mm ID, 1.0 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-053 P 2014-04-28 19-37-53\002B0201.D
Instrument: GC#6
Sample Name: ER01201405
Acquired: April 28, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.41	4.36	2.80	0.08
2	7.08	5225.21	3678.99	99.32
3	7.47	5.29	3.00	0.10
4	7.59	9.11	4.81	0.17
5	7.90	17.05	9.22	0.32

GC/MS

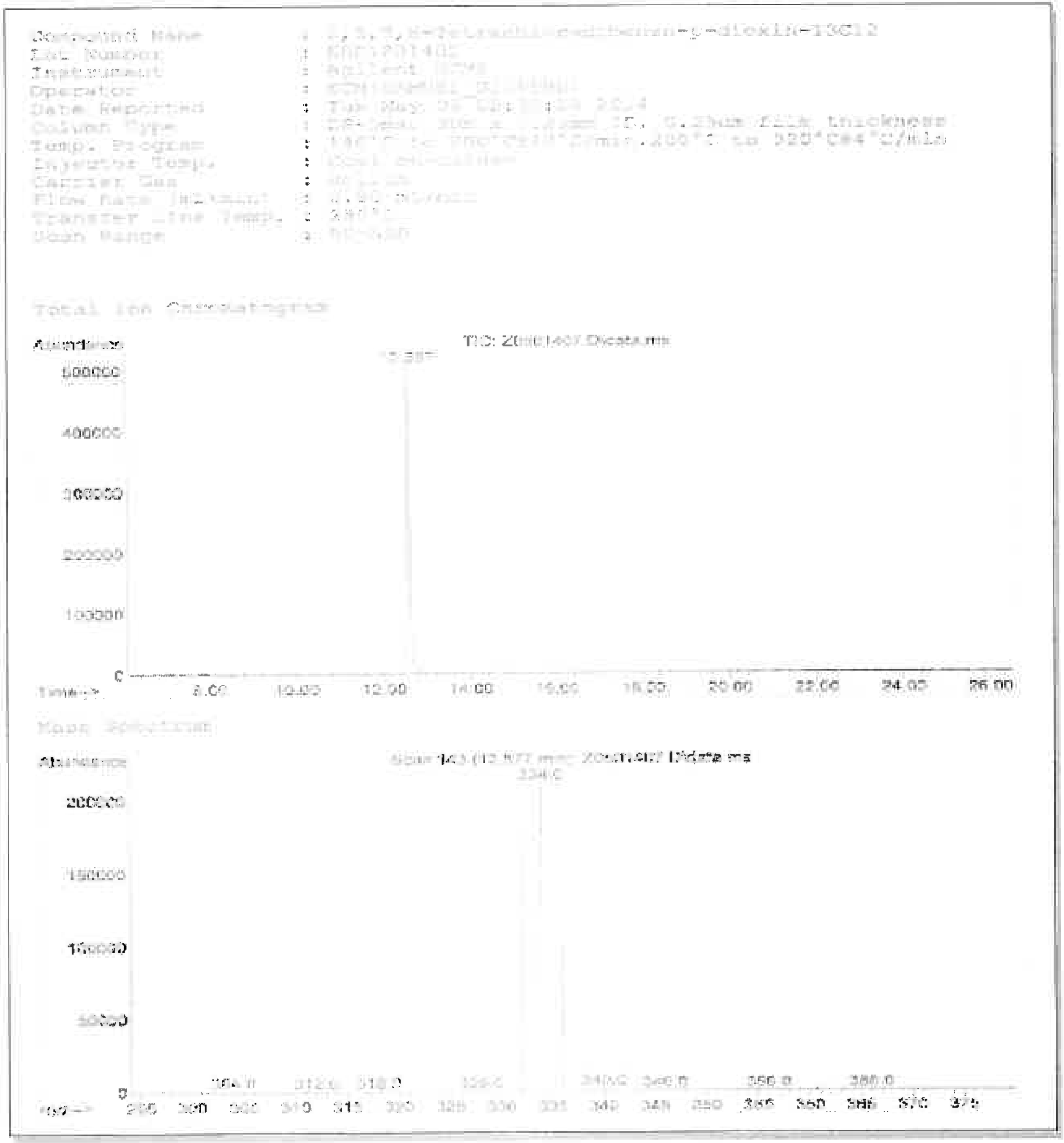

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent [illegible]
Operator : [illegible]
Date Reported : Tue May 06 [illegible] 2014
Column Type : DB-5MS, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@10°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 1.00 mL/min
Transfer Line Temp. : 280°C
Scan Range : [illegible]

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00421

r: 4/21/20 sd

Cerilliant
Analytical Reference Standards
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CIL

Cerilliant Quality
ISO GUIDE 34
CERTIFICATE AR1353
ISO/IEC 17025
CERTIFICATE AT1352
ISO 9001:2008
CERTIFICATE 3854

Certificate of Analysis

1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$

Catalog Number:	EF-952
Solution Lot:	ER012111-01
Expiration Date:	January 2021
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For laboratory use only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

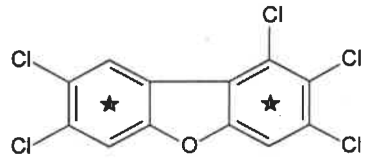

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume fill. We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Chromatographic Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$	99.2%	50.00 ± 0.32 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Crtieria	Actual Results	Acceptance Crtieria
New Lot	ER012111-01	50.7	± 5%	0.4	≤ 3%
Previous Lot	ER0100407-02	51.0	± 5%	0.5	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS

February 15, 2016

Darron Ellsworth, Quality Assurance Manager

Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER090110-01

Chemical Formula: $^{13}C_{12}H_3OCl_5$
CAS Number: 109719-77-9
Molecular Weight: 352.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.2%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_{12}$ 0.03% $^{13}C_6$ vs $^{13}C_{12}$
Purity Factor		99.17%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

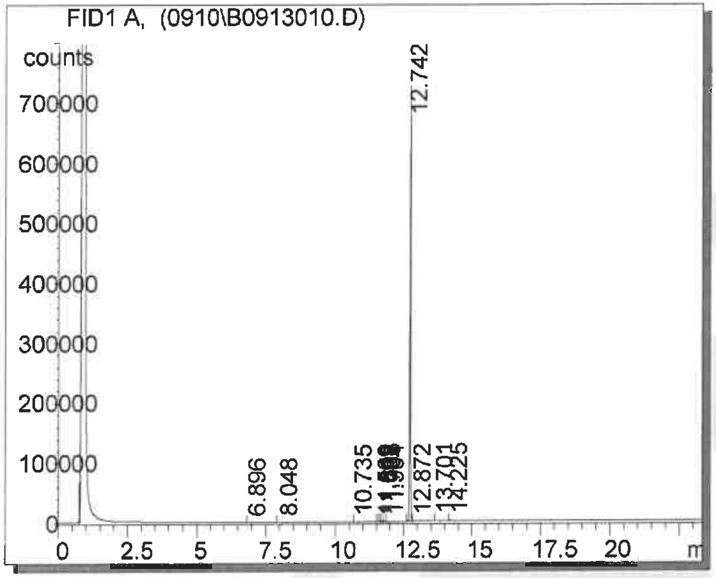

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0910\B0913010.D
Instrument: GC#2
Sample Name: ER090110-01
Acquired: September 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.90	618.64	296.84	0.04
2	8.05	254.50	102.70	0.01
3	10.74	162.25	70.86	0.01
4	11.57	145.03	82.11	0.01
5	11.62	468.46	216.27	0.03
6	11.69	1863.76	870.51	0.11
7	11.79	1631.76	576.35	0.10
8	11.90	421.31	184.81	0.02
9	12.74	1702290.00	729831.00	99.20
10	12.87	308.15	147.54	0.02
11	13.70	3743.55	1299.40	0.22
12	14.23	4032.24	1491.01	0.23

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

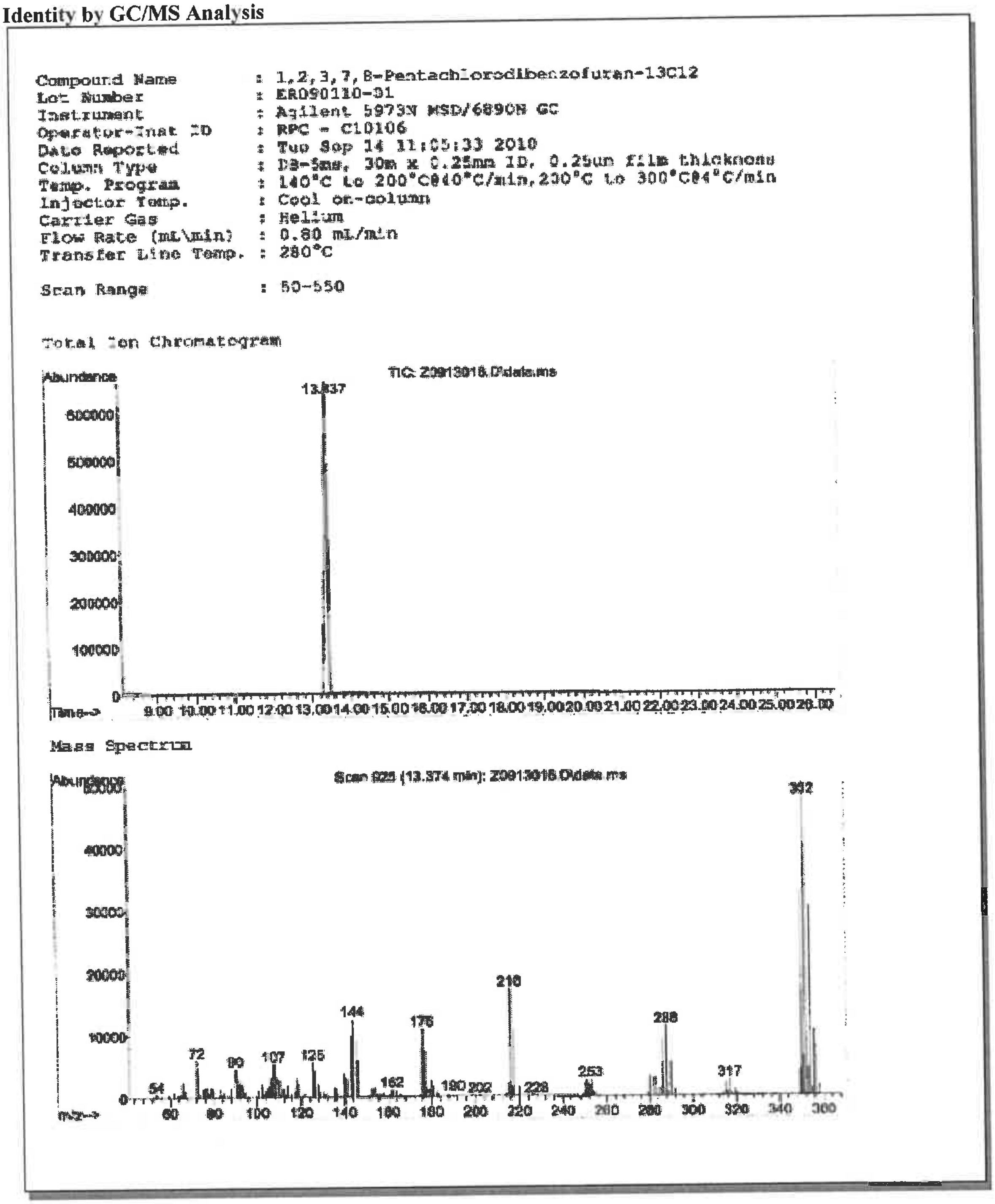

```
Compound Name         : 1,2,3,7,8-Pentachlorodibenzofuran-13C12
Lot Number            : ER090110-01
Instrument            : Agilent 5973N MSD/6890N GC
Operator-Inst ID      : RPC - C10106
Date Reported         : Tue Sep 14 11:05:33 2010
Column Type           : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program         : 140°C to 200°C@10°C/min,200°C to 300°C@4°C/min
Injector Temp.        : Cool on-column
Carrier Gas           : Helium
Flow Rate (mL\min)    : 0.80 mL/min
Transfer Line Temp.   : 280°C

Scan Range            : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 11, 2011	Initial version
01	March 01, 2011	Corrected typographical error: Chemical Structure
02	February 15, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00422

r: 4/21/20SKV

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Analytical Reference Standards
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Revision 01
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Certificate of Analysis

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$

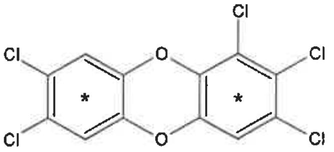

Catalog Number:	ED-955
Solution Lot:	ER08041401
Expiration Date:	August 2024
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$	98.2%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER08041401	48.80	± 5%	0.3	≤ 3%
Previous Lot	ER030907-02	49.84	± 5%	0.4	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 10, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER06241403

Chemical Formula: $^{13}C_{12}H_3Cl_5O_2$
CAS Number: 109719-79-1
Molecular Weight: 368.33

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS-SIM Analysis	SP10-0105	0.07% $^{13}C_0$ vs $^{13}C_{12}$
		0.14% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS	SP10-0105	No single DD/DF $\geq$ 0.5%
Mass Balance Purity Factor		98.90%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

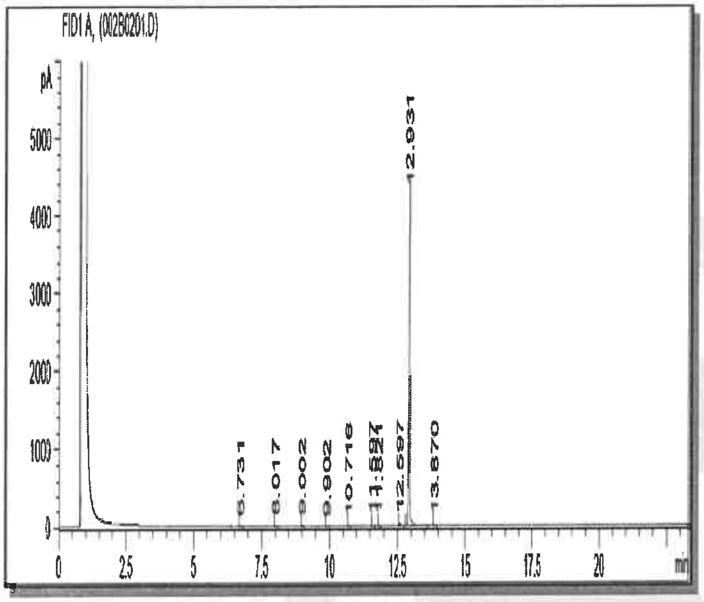

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min, hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMP-085 P GC 6 2014-07-30 18-11-11\002B0201.D
Instrument: GC#6
Sample Name: ER06241403
Acquired: July 30, 2014

Peak #	Ret Time	Area	Height	Area %
1	6.73	7.32	3.42	0.07
2	8.02	3.79	1.60	0.04
3	9.00	8.74	3.64	0.08
4	9.90	3.38	1.35	0.03
5	10.72	1.31	0.45	0.01
6	11.60	14.46	6.69	0.14
7	11.82	2.21	1.11	0.02
8	12.60	68.05	28.10	0.64
9	12.93	10594.10	4235.85	98.91
10	13.87	7.09	2.57	0.07

Spectral and Physical Data (cont.)

GC/MS

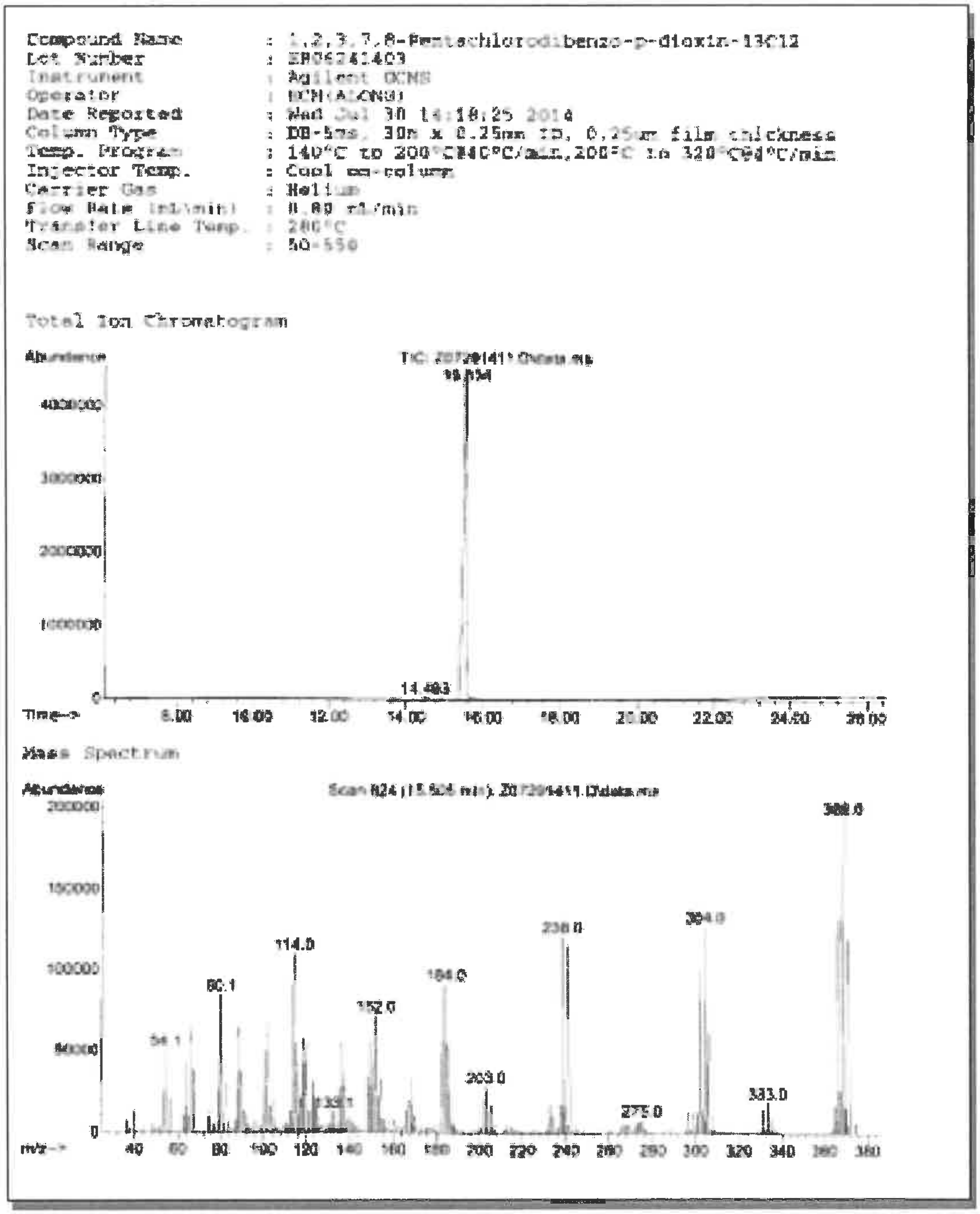

Compound Name : 1,2,3,7,8-Pentachlorodibenzo-p-dioxin-13C12
Lot Number : ER06241403
Instrument : Agilent GCMS
Operator : BCM(ALONG)
Date Reported : Wed Jul 30 14:18:25 2014
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (ml/min) : 0.80 ml/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	September 24, 2014	Initial version
01	February 10, 2016	Updated Safety Section from "Flammable" to "Danger. See Safety Data Sheet".

Reagent

HRDXNIDA_00423

r: 4/21/20 SKV

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Revision 00
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Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$

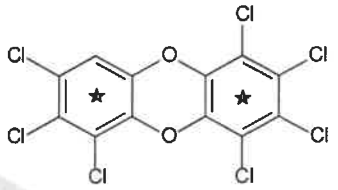

Catalog Number: ED-972
Solution Lot: ER09271601
Expiration Date: October 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.4%	49.99 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER09271601	51.51	± 5%	0.2	≤ 3%
Previous Lot	ER111010-01	52.04	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

October 26, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 0.999

Neat Material Data

Compound Name: 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER100110-01
Chemical Formula: $^{13}C_{12}HCl_7O_2$
CAS Number: 109719-83-7
Molecular Weight: 437.22

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.9%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.10% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		98.91%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

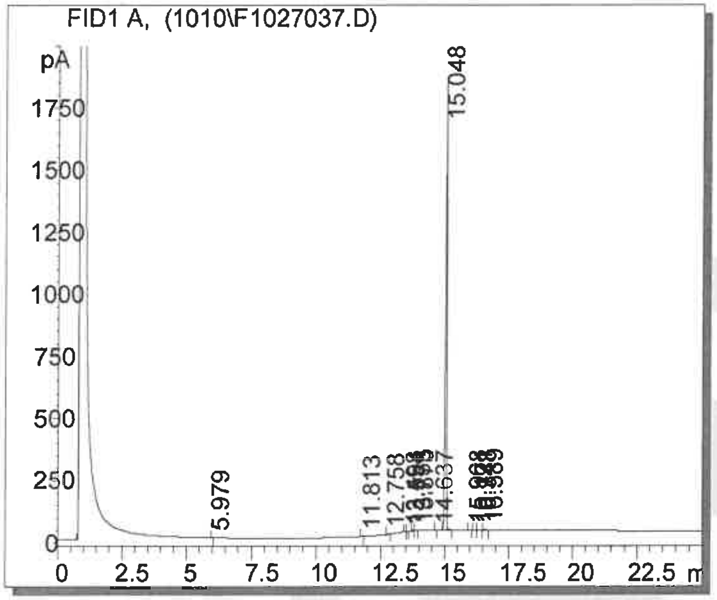

Column: DB-5ms, 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1010\F1027037.D
Instrument: GC#6
Sample Name: ER100110-01
Acquired: October 28, 2010

Peak #	Ret Time	Area	Height	Area %
1	5.98	0.34	0.18	0.00
2	11.81	1.00	0.08	0.01
3	12.76	10.96	2.89	0.16
4	13.50	1.19	0.32	0.02
5	13.55	2.63	0.80	0.04
6	13.75	13.39	3.28	0.19
7	13.88	7.04	1.81	0.10
8	14.64	0.86	0.28	0.01
9	15.05	6900.70	1812.09	98.81
10	15.97	3.15	0.73	0.05
11	16.17	2.25	0.55	0.03
12	16.35	5.12	1.10	0.07
13	16.59	18.93	4.26	0.27
14	26.99	15.17	0.35	0.22
15	35.58	0.06	0.21	0.00
16	41.80	0.77	0.13	0.01

Spectral and Physical Data (cont.)

GC/MS

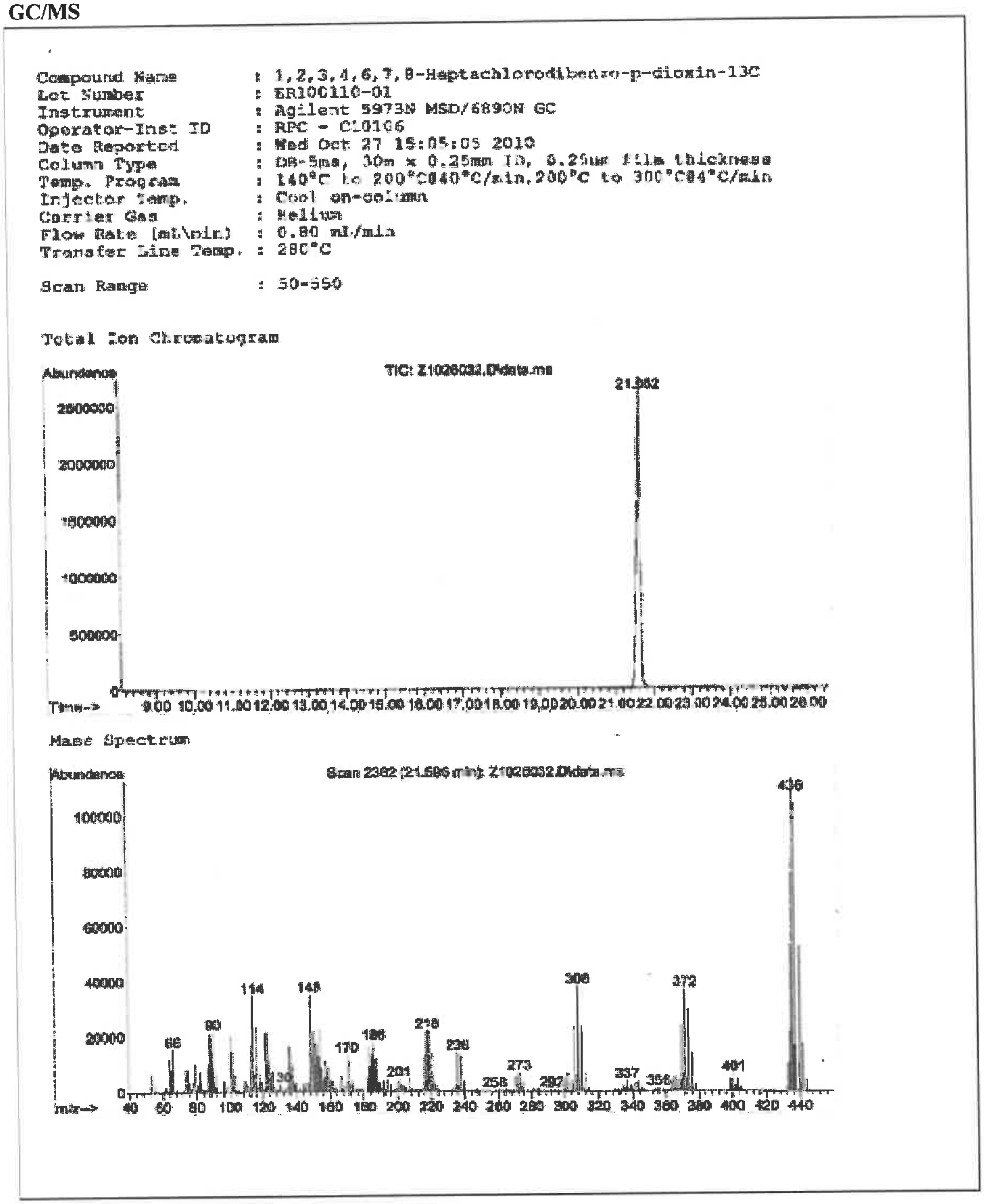

```
Compound Name          : 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin-13C
Lot Number             : ER10C110-01
Instrument             : Agilent 5973N MSD/6890N GC
Operator-Inst ID       : RPC - C10106
Date Reported          : Wed Oct 27 15:05:05 2010
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C

Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIDA_00424

r: 4/21/20 SW

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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$

Catalog Number:	EF-986
Solution Lot:	ER01062016
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

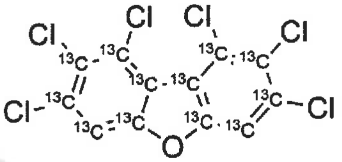

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$	99.5%	50.00 ± 0.28 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062016	49.54	± 5%	0.5	≤ 3%
Previous Lot	ER100610-01	49.08	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

February 03, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,7,8,9-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER080108-03

Chemical Formula: $^{13}C_{12}H_2OCl_6$
CAS Number: 116843-04-0
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.5%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{13}C_0$ vs $^{13}C_6$
		0.02% $^{13}C_6$ vs $^{13}C_{12}$
Impurity by GC/MS SIM Analysis	SP10-0105	No single DD/DF impurity ≥ 0.5%
Mass Balance Purity Factor		99.47%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

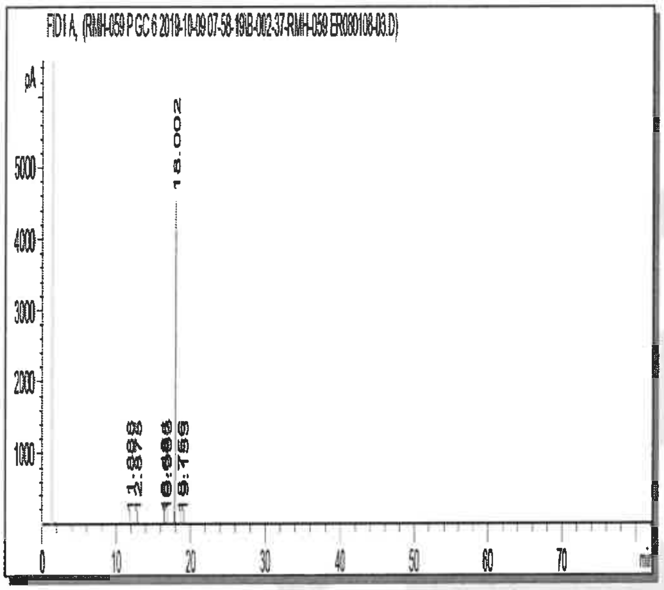

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Sample Name: ER080108-03
Acquired: October 09, 2019

Peak #	Ret Time	Area %
1	11.89	0.00
2	12.88	0.00
3	16.48	0.33
4	16.64	0.01
5	16.95	0.17
6	18.00	99.47
7	18.76	0.00
8	19.15	0.00

Spectral and Physical Data (cont.)

GC/MS

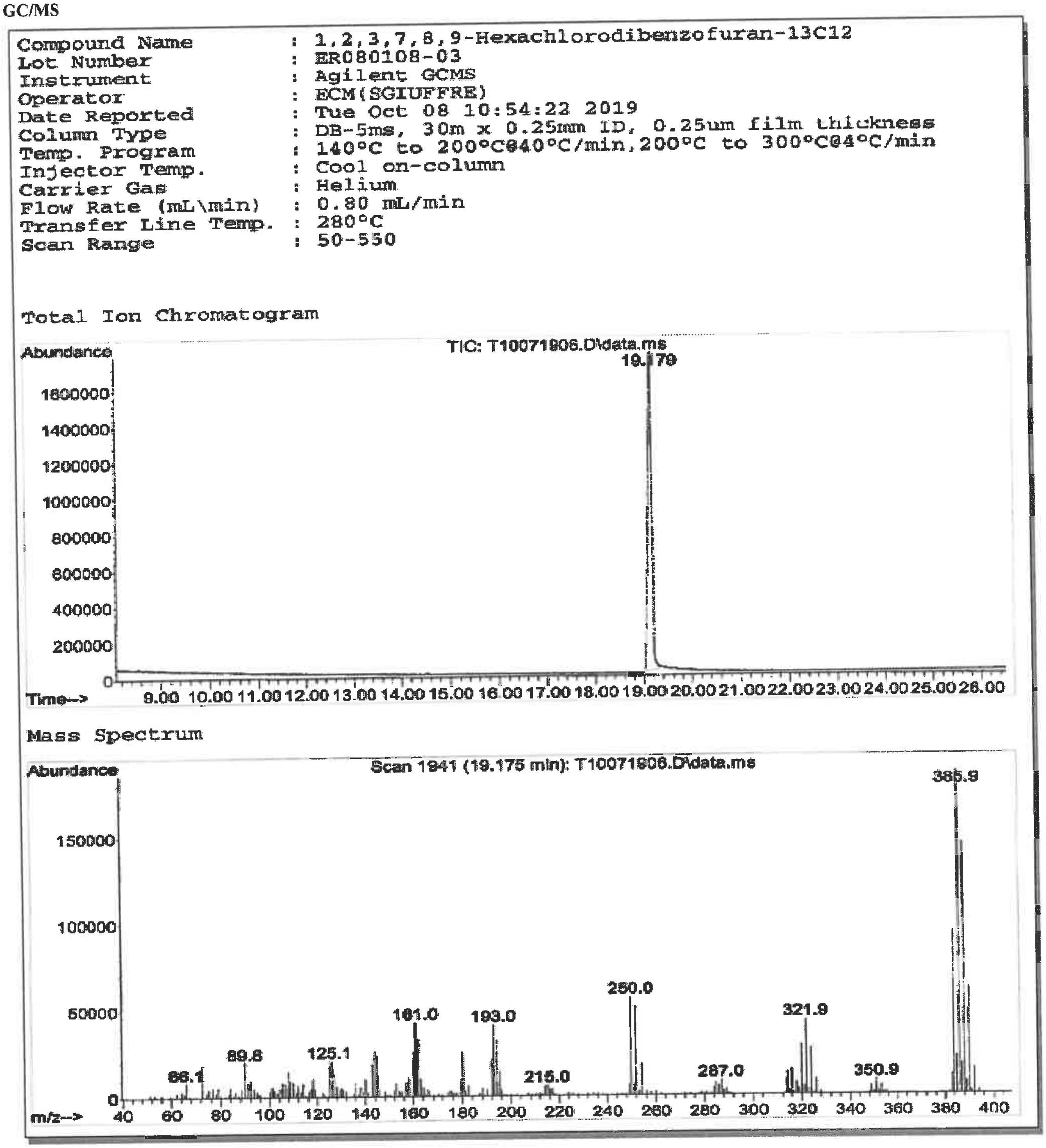

```
Compound Name          : 1,2,3,7,8,9-Hexachlorodibenzofuran-13C12
Lot Number             : ER080108-03
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Tue Oct 08 10:54:22 2019
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 300°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	February 03, 2020	Initial version

Reagent

HRDXNIDA_00425

r: 4/21/20 SKJ

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

Cerilliant Quality
ISO 17034
ISO/IEC 17025
ISO 13485
ISO 14001
ISO 9001

2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

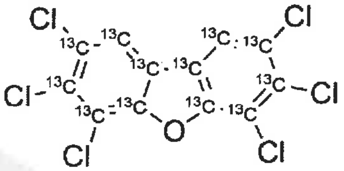

Catalog Number:	EF-987
Solution Lot:	ER01062015
Expiration Date:	January 2030
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.3%	49.97 ± 0.27 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and ISO 17034 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard		Verified Concentration (μg/mL)		%RSD - Homogeneity	
Solution	Lot Number	Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER01062015	50.13	± 5%	0.3	≤ 3%
Previous Lot	ER100610-02	49.53	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using balances that have been qualified and calibrated to ISO 17025 requirements. All calibrations utilize NIST traceable weights which are calibrated externally by a qualified ISO 17025 accredited calibration laboratory to NIST standards. Qualification of each balance includes the assignment of a minimum weighing by a qualified and ISO 17025 accredited calibration vendor taking into consideration the balance and installed environmental conditions to ensure compliance with USP tolerances of NMT 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

April 16, 2020
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,4,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER09051801

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-05-1
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.02% $^{13}C_0$ vs $^{13}C_{12}$
		0.04% $^{13}C_6$ vs $^{13}C_{12}$
Impurity Analysis by GC/MS SIM	SP10-0105	No Single DD/DF ≥ 1.0%
Mass Balance Purity Factor		98.96%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

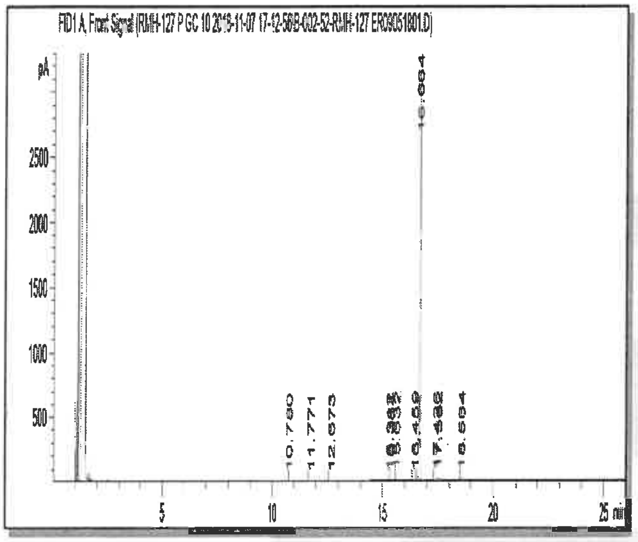

Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	100°C to 300°C at 15°C/min hold 65 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C
Sample Name:	ER09051801
Acquired:	February 13, 2018

Peak #	Ret Time	Area %
1	12.66	0.03
2	13.01	0.03
3	14.00	98.87
4	24.77	0.09
5	41.14	0.19
6	44.28	0.79

Spectral and Physical Data (cont.)

GC/MS

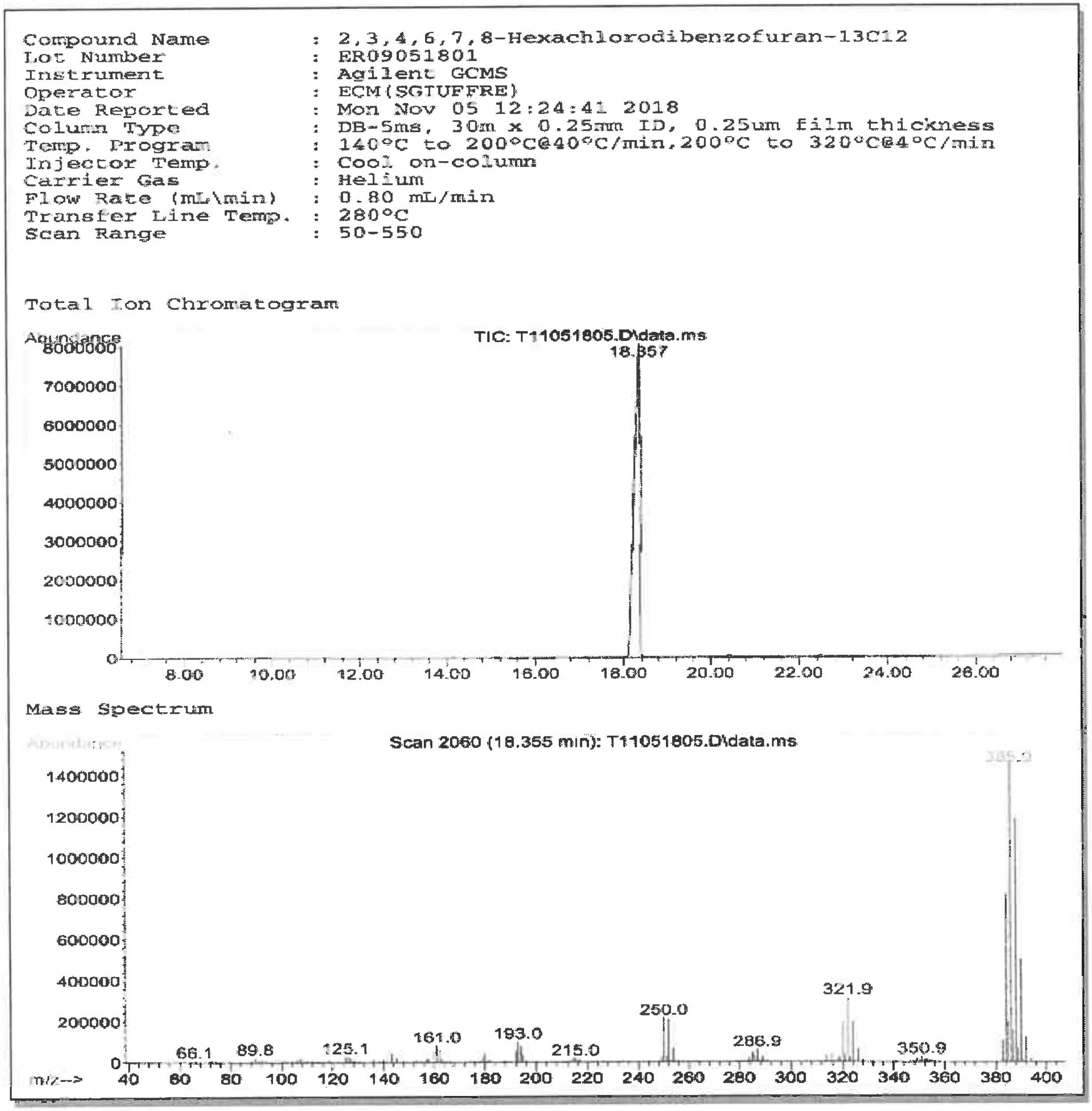

```
Compound Name          : 2,3,4,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER09051801
Instrument             : Agilent GCMS
Operator               : ECM(SGTUFFRE)
Date Reported          : Mon Nov 05 12:24:41 2018
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

COA Revision History

Revision No.	Date	Reason for Revision
00	April 16, 2020	Initial version

Reagent

HRDXNIDA_00426

r: 4/21/20

Cerilliant
Analytical Reference Standards
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Revision 0
Page 1 of 5

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Certificate of Analysis

1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$

Catalog Number: EF-985
Solution Lot: ER02241603
Expiration Date: April 2026
Solvent: n-Nonane
Volume per Ampule: Not less than 1.2 mL
Storage: Store at room temperature. Do not store cold.
Intended Use: For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety: **Danger. See Safety Data Sheet.**

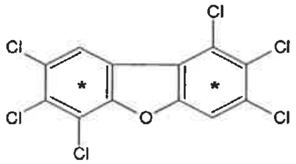

- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$	99.6%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Acceptance Criteria	%RSD - Homogeneity Actual Results	Acceptance Criteria
New Lot	ER02241603	50.09	± 5%	0.4	≤ 3%
Previous Lot	ER053107-03	50.81	± 5%	0.3	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

May 04, 2016
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,6,7,8-Hexachlorodibenzofuran-$^{13}C_{12}$
Compound Lot: ER051607-01

Chemical Formula: $^{13}C_{12}H_2Cl_6O$
CAS Number: 116843-03-9
Molecular Weight: 386.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.01% $^{13}C_0$ vs $^{13}C_{12}$
		0.06% $^{13}C_6$ vs $^{13}C_{12}$
Impurities by GC/MS SIM Analysis	SP10-0105	no single DD/DF impurity $\geq$ 0.5%
Mass Balance Purity Factor		99.01%

- The chromatographic purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The chromatographic purity value is used to calculate the Mass Balance Purity Factor.
- Mass Balance Purity Factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

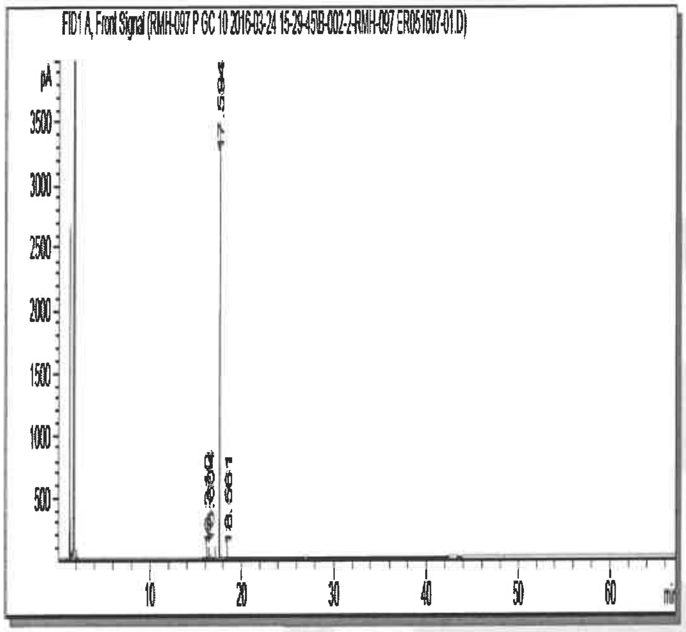

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 μm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMH-097 P GC 10 2016-03-24 15-29-45\B-002-2.D
Instrument: GC#10
Sample Name: ER051607-01
Acquired: March 24, 2016

Peak #	Ret Time	Area	Height	Area %
1	16.31	6.97	3.21	0.08
2	16.60	77.08	33.51	0.83
3	17.59	9156.82	3458.38	99.00
4	18.56	8.48	2.69	0.09

Spectral and Physical Data (cont.)

GC/MS

```
Compound Name          : 1,2,3,6,7,8-Hexachlorodibenzofuran-13C12
Lot Number             : ER051607-01
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Mar 18 07:08:54 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

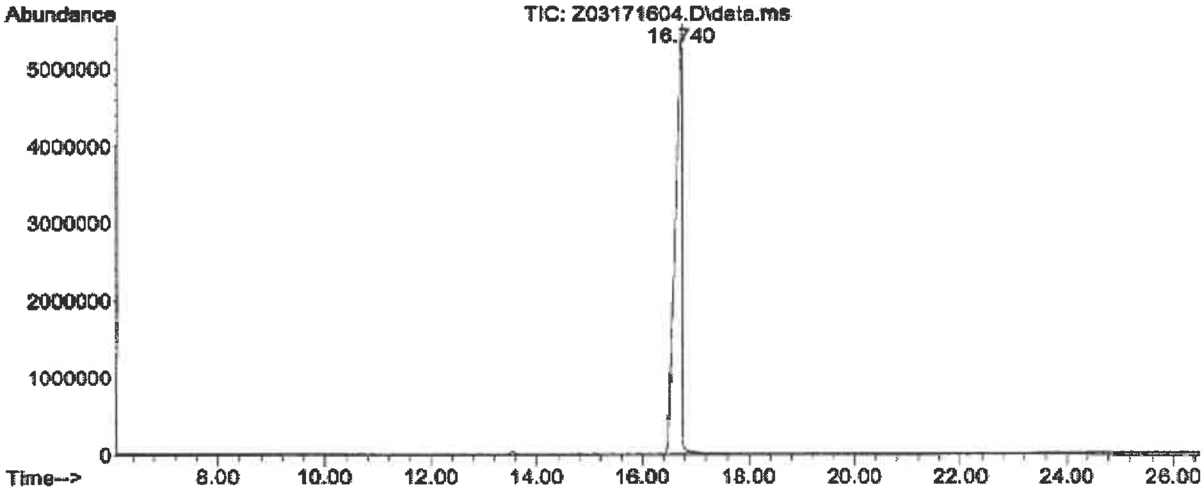

Mass Spectrum

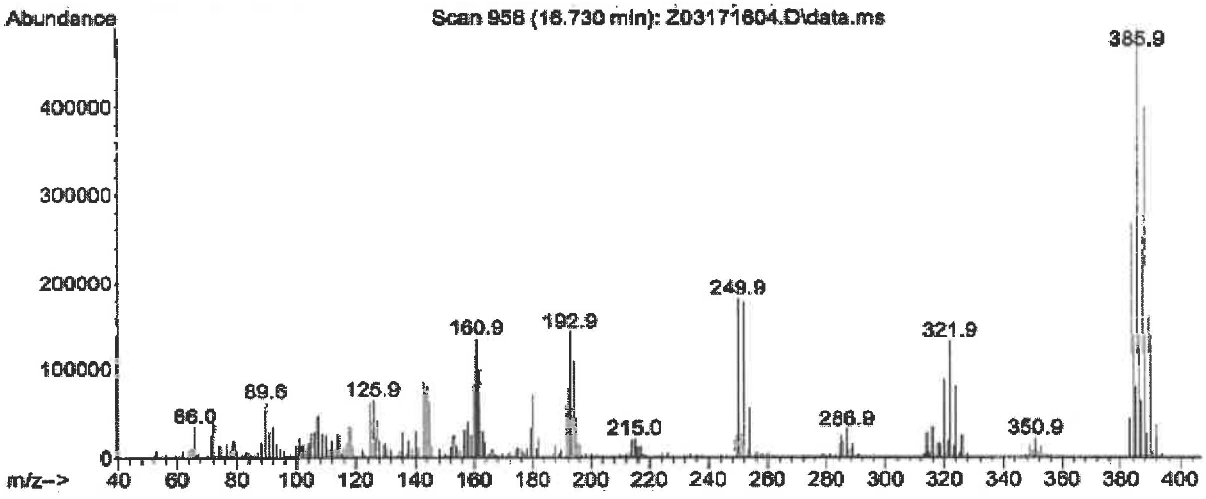

COA Revision History

Revision No.	Date	Reason for Revision
00	May 04, 2016	Initial version

Reagent

HRDXNIS_00110

r: 9|4|18 sw

Cerilliant
Analytical Reference Standards
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CIL

Revision 00
Page 1 of 4

Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$

Catalog Number:	ED-996
Solution Lot:	ER08221601
Expiration Date:	September 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampoules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER08221601	49.20	± 5%	0.3	≤ 3%
Previous Lot	ER021315-01	49.56	± 5%	0.2	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

September 28, 2016
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER110510-01
Chemical Formula:	$^{13}C_{12}H_2Cl_6O_2$
CAS Number:	109719-82-6
Molecular Weight:	402.77

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.04% $^{13}C_0$ vs $^{13}C_{12}$ 0.27% $^{13}C_6$ vs $^{13}C_{12}$
Mass Balance Purity Factor		99.02%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

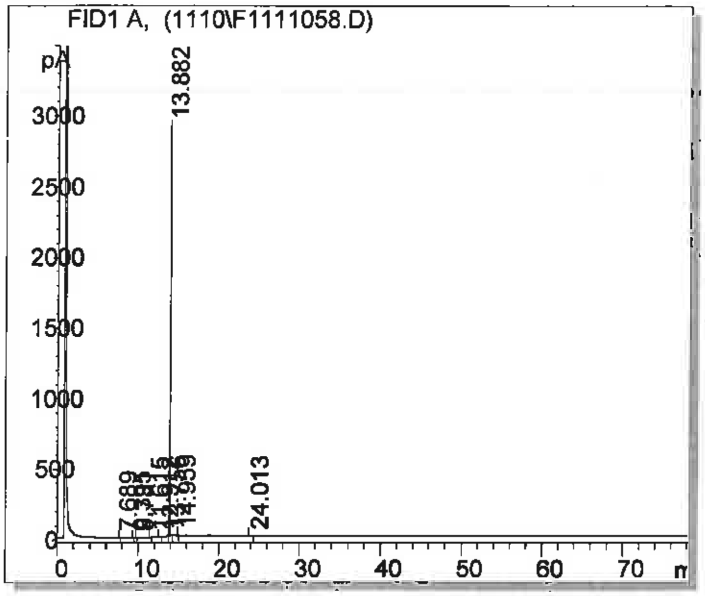

Column: DB-5ms 30m x 0.53mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 65 min
Injector Temp: Cool-on-column
Detector Temp: 325°C

Data File Name: S:\GC\GC6\2010\1110\F1111058.D
Instrument: GC#6
Sample Name: ER110510-01
Acquired: November 12, 2010

Peak #	Ret Time	Area	Height	Area %
1	4.69	0.45	0.10	0.01
2	9.40	0.72	0.14	0.01
3	9.78	0.80	0.13	0.01
4	11.62	7.34	2.54	0.09
5	12.91	2.59	0.23	0.03
6	13.76	1.91	1.00	0.02
7	13.88	8026.07	2938.74	99.11
8	14.96	36.82	11.38	0.45
9	24.01	21.08	1.62	0.26

Spectral and Physical Data (cont.)

GC/MS

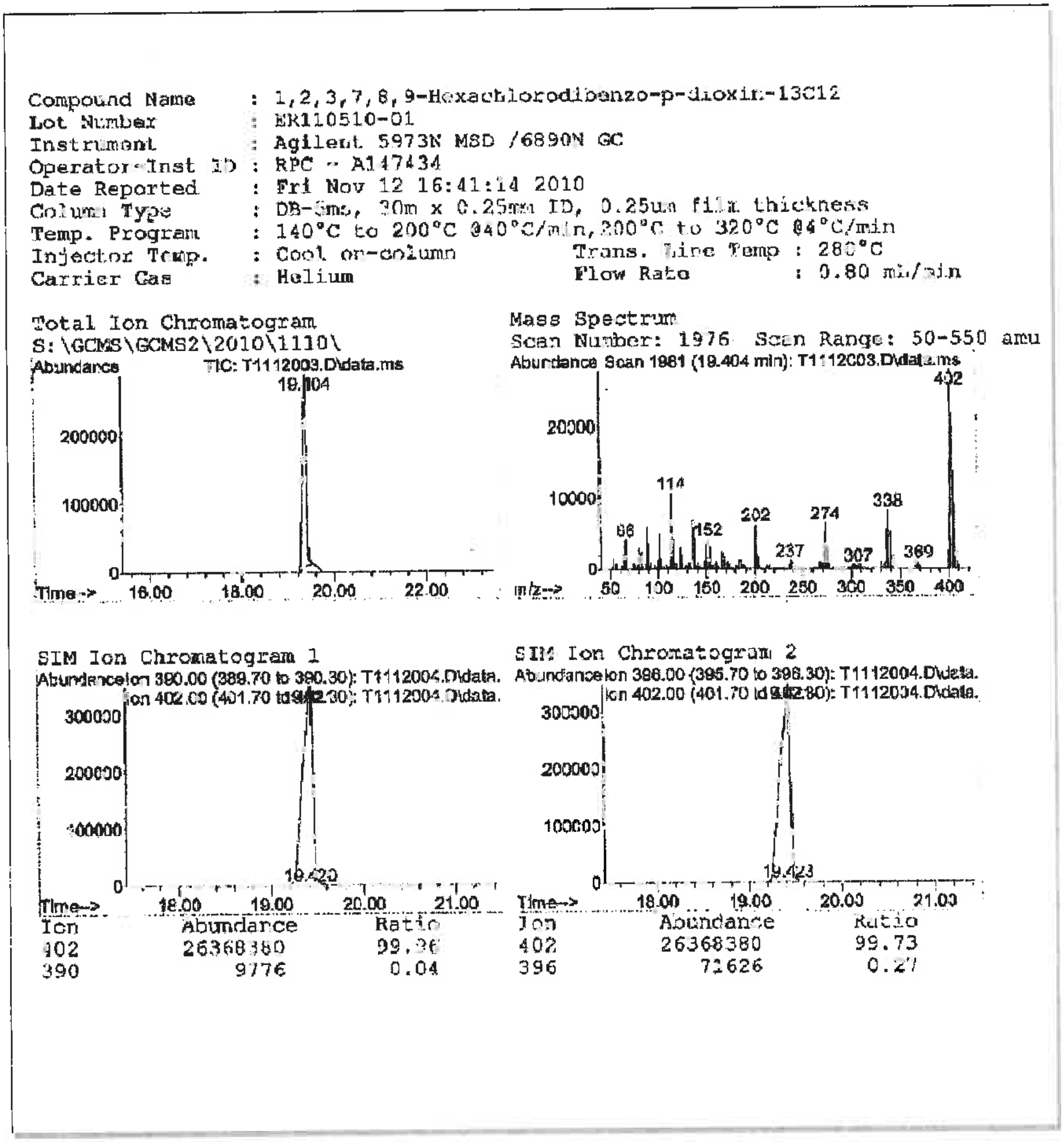

Compound Name : 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin-13C12
Lot Number : ER110510-01
Instrument : Agilent 5973N MSD /6890N GC
Operator-Inst ID : RPC - A147434
Date Reported : Fri Nov 12 16:41:14 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C @40°C/min,200°C to 320°C @4°C/min
Injector Temp. : Cool on-column
Trans. Line Temp : 280°C
Carrier Gas : Helium
Flow Rate : 0.80 mL/min

Total Ion Chromatogram
S:\GCMS\GCMS2\2010\1110\

Mass Spectrum
Scan Number: 1976 Scan Range: 50-550 amu

SIM Ion Chromatogram 1

Ion	Abundance	Ratio
402	26368380	99.96
390	9776	0.04

SIM Ion Chromatogram 2

Ion	Abundance	Ratio
402	26368380	99.73
396	71626	0.27

Reagent

HRDXNIS_00111

rec: 9/4/18 skv

Cerilliant
Analytical Reference Standards
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Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

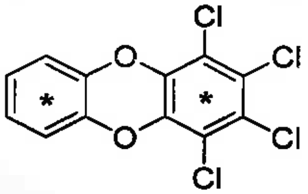

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 μg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (μg/mL) Actual Results	Verified Concentration (μg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot:	ER02021602
Chemical Formula:	$^{13}C_{12}H_4Cl_4O_2$
CAS Number:	114423-99-3
Molecular Weight:	333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$ 0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

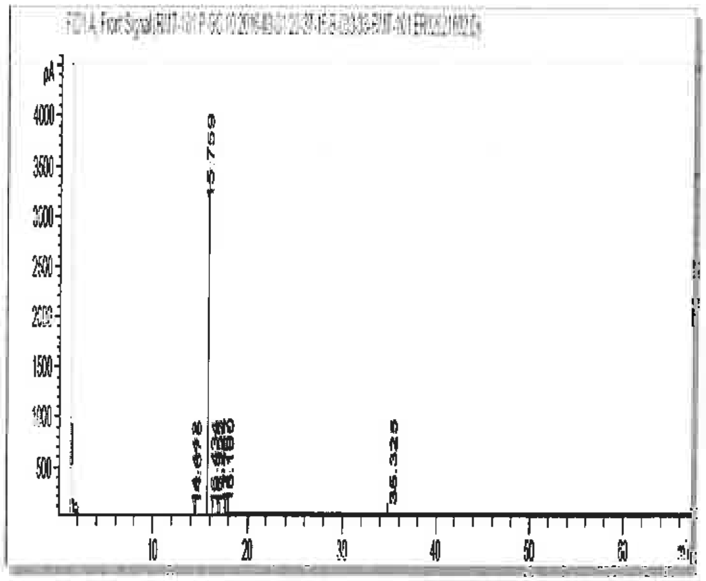

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3 60	0.58	0.05
3	15.76	7522 29	3054.11	99.22
4	16 43	3 51	0.80	0.05
5	16 96	2 38	1.09	0.03
6	17 13	4 79	2.26	0.06
7	17.77	8 72	3.38	0.11
8	18.10	1 68	0.54	0.02
9	35.33	32 94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

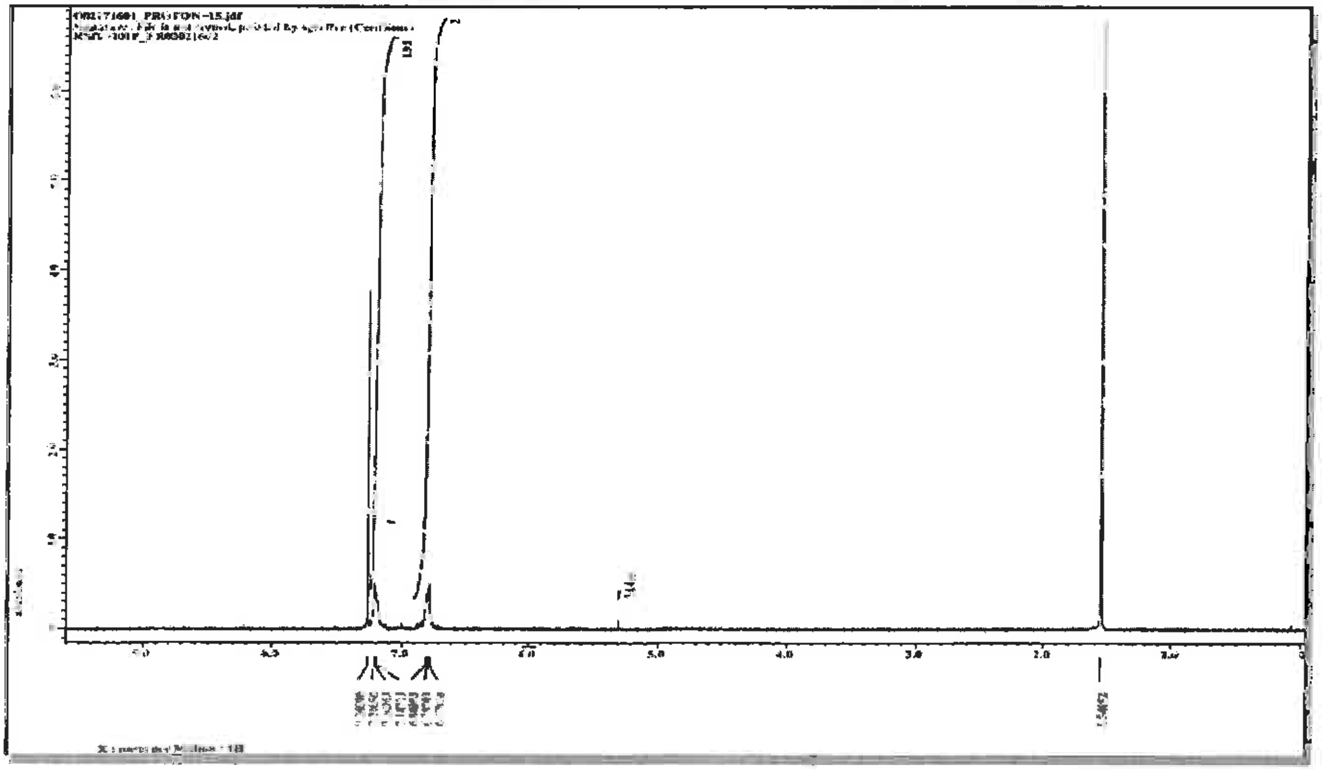

Spectral and Physical Data (cont.)

GC/MS

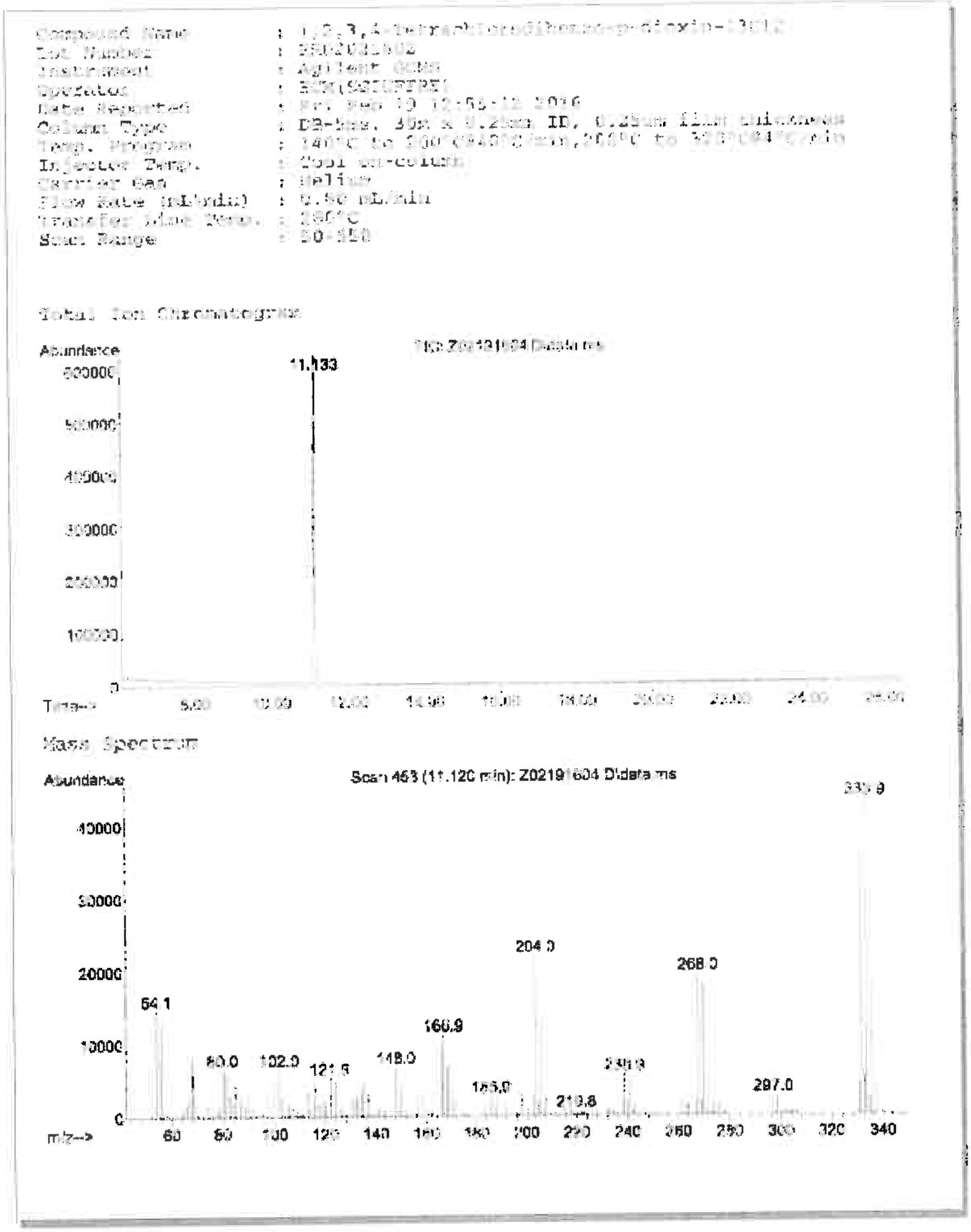

Compound Name : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number : [illegible]
Instrument : Agilent GCMS
Operator : [illegible]
Date Reported : Fri Feb 19 12:55:12 2016
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C(@40°C/min),200°C to 325°C(@4°C/min)
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.90 mL/min
Transfer Line Temp. : 280°C
Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNIS_00127

r: 3/26/20 SKW

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Revision 00
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Certificate of Analysis

1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	ED-911
Solution Lot:	ER11081602
Expiration Date:	January 2027
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

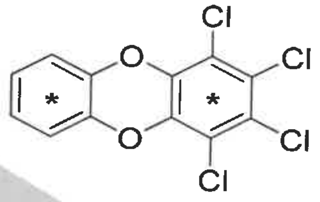

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.

Component	Solution Purity	Certified Concentration
1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$	99.7%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s); measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER11081602	51.01	± 10%	0.1	≤ 3%
Previous Lot	ER060710-01	50.59	± 10%	0.1	≤ 3%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

January 23, 2017
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 1,2,3,4-Tetrachlorodibenzo-p-dioxin-$^{13}C_{12}$
Compound Lot: ER02021602

Chemical Formula: $^{13}C_{12}H_4Cl_4O_2$
CAS Number: 114423-99-3
Molecular Weight: 333.88

Neat Material Characterization Summary

Analytical Test	Method	Results
Chromatographic Purity by GC/FID Analysis	SP10-0101	99.0%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Impurity Analysis by GC/MS	SP10-0105	no single DD/DF impurity ≥ 1.0%
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.03% $^{13}C_0$ vs $^{13}C_{12}$
		0.01% $^{13}C_6$ vs $^{13}C_{12}$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent by ^{1}H-NMR Analysis	USP <761>, SP10-0116	0.31% Dichloromethane
Mass Balance Purity Factor		98.71%

- Purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other
- The chromatographic purity value is used to calculate the Purity Factor
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

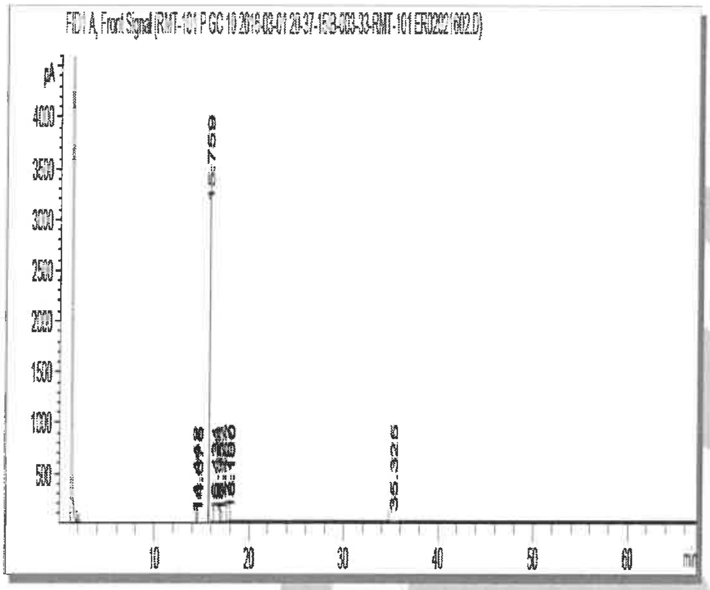

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 40°C to 300°C at 15°C/min hold 50 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: RMT-101 P GC 10 2016-03-01 20-37-15\B-003-33.D
Instrument: GC#10
Sample Name: ER02021602
Acquired: March 01, 2016

Peak #	Ret Time	Area	Height	Area %
1	14.44	1.34	0.53	0.02
2	14.68	3.60	0.58	0.05
3	15.76	7522.29	3054.11	99.22
4	16.43	3.51	0.80	0.05
5	16.96	2.38	1.09	0.03
6	17.13	4.79	2.26	0.06
7	17.77	8.72	3.38	0.11
8	18.10	1.68	0.54	0.02
9	35.33	32.94	1.28	0.43

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Chloroform-D

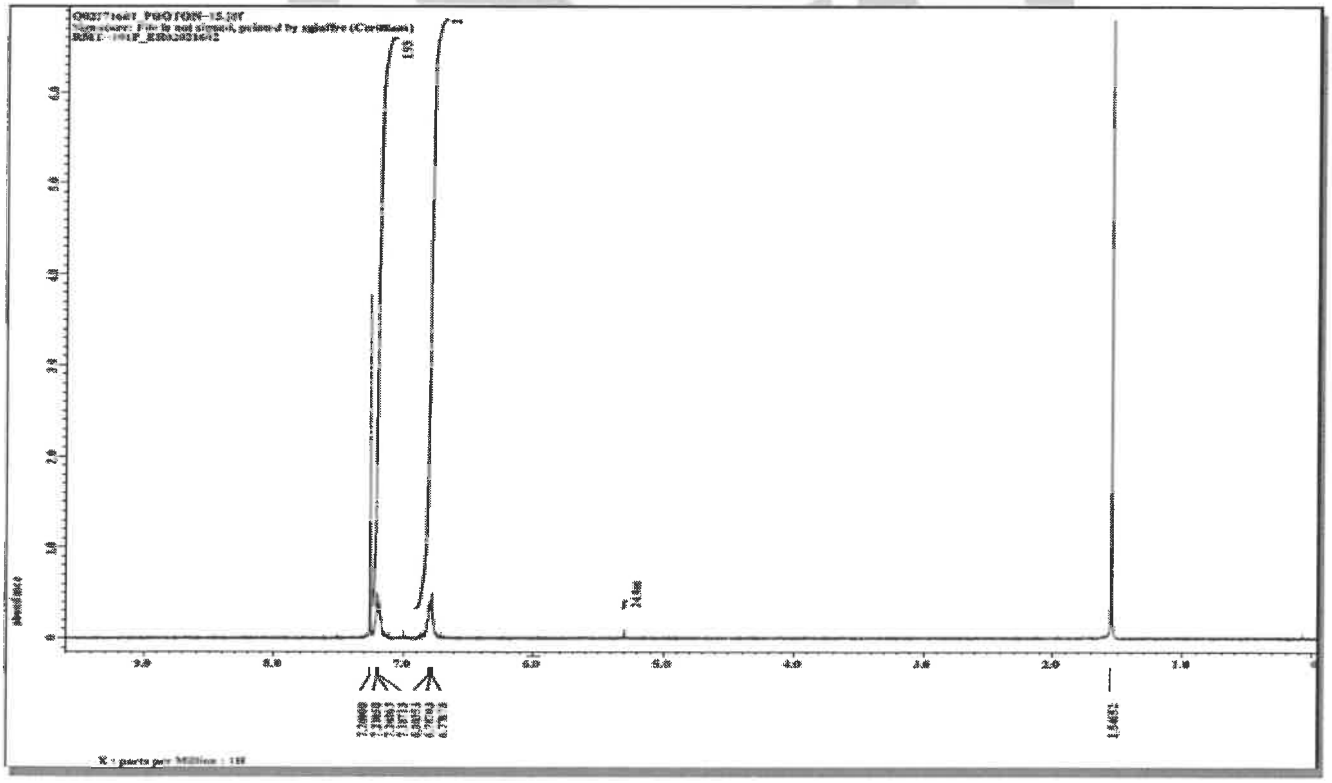

Spectral and Physical Data (cont.)

GC/MS

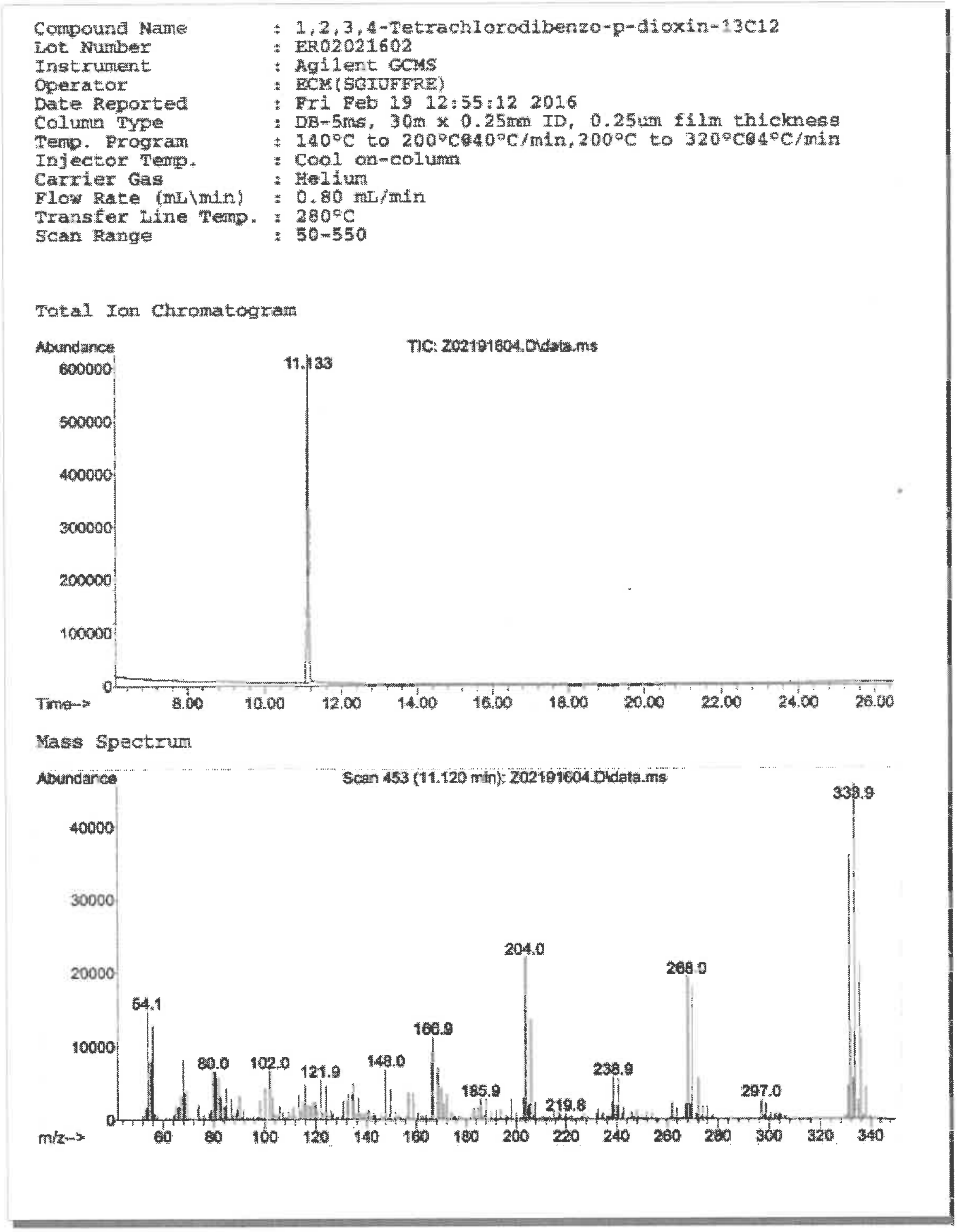

```
Compound Name          : 1,2,3,4-Tetrachlorodibenzo-p-dioxin-13C12
Lot Number             : ER02021602
Instrument             : Agilent GCMS
Operator               : ECM(SGIUFFRE)
Date Reported          : Fri Feb 19 12:55:12 2016
Column Type            : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program          : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp.         : Cool on-column
Carrier Gas            : Helium
Flow Rate (mL\min)     : 0.80 mL/min
Transfer Line Temp.    : 280°C
Scan Range             : 50-550
```

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNSU_00187

r: 7/30/18 SRN)

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Analytical Reference Standards
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Revision 0
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Certificate of Analysis

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{37}Cl_4$

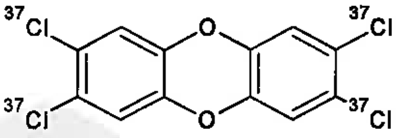

Catalog Number:	ED-907
Solution Lot:	ER05211501
Expiration Date:	July 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold
Shipping:	Ambient.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Instructions for Use:	Sonicate before use.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration
- For MS Applications, we advise laboratories not to mix lots during a single sequence.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{37}Cl_4$	98.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL) Actual Results	Verified Concentration (µg/mL) Acceptance Criteria	%RSD - Homogeneity Actual Results	%RSD - Homogeneity Acceptance Criteria
New Lot	ER05211501	50.60	± 10%	0.2	≤ 5%
Previous Lot	ER052010-02	49.73	± 10%	0.5	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after

ACLASS ACCREDITED
REFERENCE MATERIAL PRODUCER

Darron Ellsworth, Quality Assurance Manager

August 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method:	GC/FID
Column:	DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program:	60°C to 300°C at 40°C/min hold 10 min
Injector Temp:	Cool-on-Column
Detector Temp:	325°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	4
Linearity (r):	1.000

Neat Material Data

Compound Name:	2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{37}Cl_4$
Compound Lot:	ER040510-01
Chemical Formula:	$C_{12}H_4O_2{}^{37}Cl_4$
CAS Number	85508-50-5
Molecular Weight	328.02

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	**98.3%**
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{37}Cl_0$ vs $^{37}Cl_4$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent Analysis by ^{1}H-NMR	USP <761>, SP10-0116	1.2% Chloroform
Purity Factor		97.14%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity.

Spectral and Physical Data

GC/FID

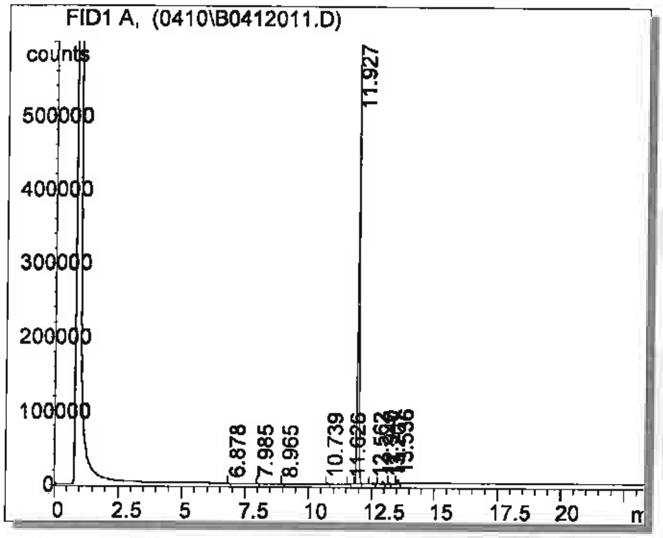

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 μm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0410\B0412011.D
Instrument: GC#2
Sample Name: ER040510-01
Acquired: April 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.88	245.58	89.37	0.01
2	7.99	304.03	131.27	0.01
3	8.97	233.91	72.32	0.01
4	10.74	931.14	265.29	0.04
5	11.63	127.86	46.74	0.01
6	11.93	2261830.00	580792.00	98.34
7	12.56	6435.54	1838.17	0.28
8	12.94	13336.80	4373.86	0.58
9	13.20	2178.30	729.98	0.09
10	13.54	14483.80	5038.43	0.63

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Toluene-D_8

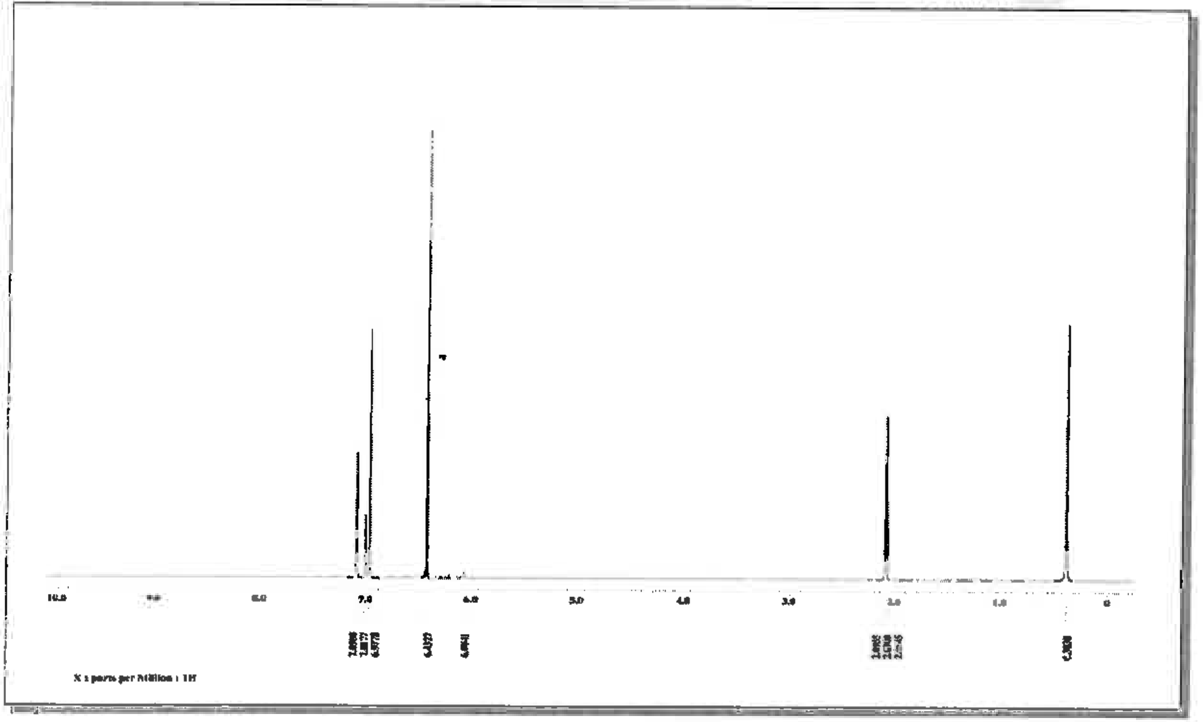

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

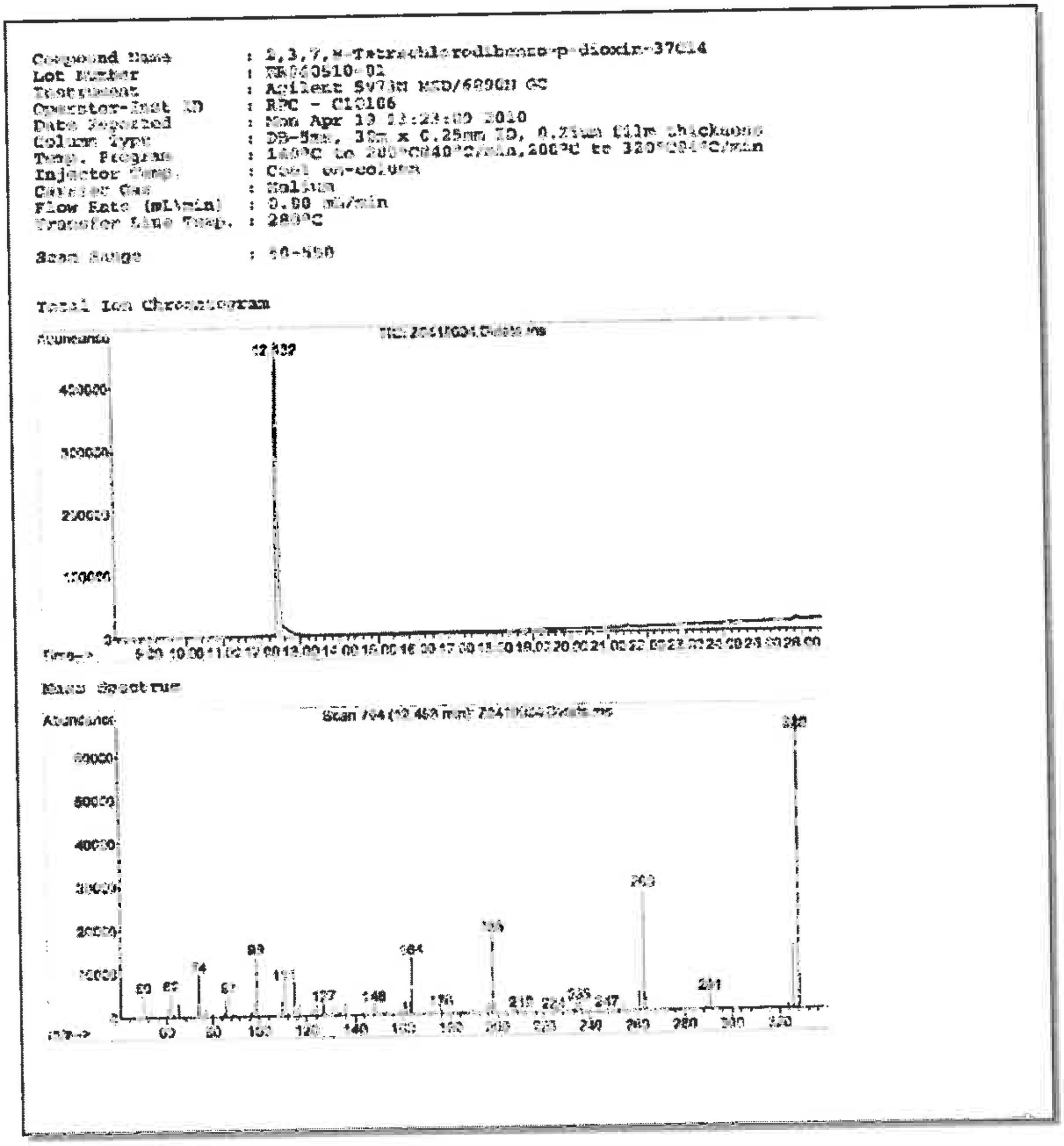

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-37Cl4
Lot Number : FN040510-02
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst ID : RPC - C10106
Date Reported : Mon Apr 19 13:23:09 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 160°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL\min) : 0.80 mL/min
Transfer Line Temp. : 280°C

Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNSU_00211

Rec 4/30/19 SW)

⑧

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Certificate of Analysis

2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{37}Cl_4$

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

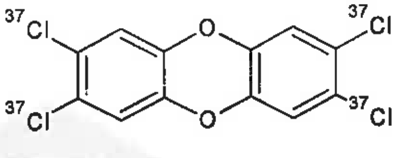

Catalog Number:	ED-907
Solution Lot:	ER05211501
Expiration Date:	July 2025
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Shipping:	Ambient.
Intended Use:	For R&D/analytical purposes only. Not suitable for human or animal consumption.
Instructions for Use:	Sonicate before use.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies.
- Ampules are overfilled to ensure a minimum 1.2 mL volume. We advise laboratories to quantitatively transfer desired volumes of this standard using established good laboratory practices to dilute to the desired concentration.
- For MS Applications, we advise laboratories not to mix lots during a single sequence.

Component	Solution Purity	Certified Concentration
2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{37}Cl_4$	98.5%	50.00 ± 0.23 µg/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- This standard is prepared gravimetrically and mass results are reported on the conventional basis for weighing in air. Concentration is calculated based on: the actual measured mass; Purity Factor of the analyte(s), measured mass of the solution; and the density of the pure diluent at 20 °C.
- Concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Solution Standard Verification and Homogeneity

Standard Solution	Lot Number	Verified Concentration (µg/mL)		%RSD - Homogeneity	
		Actual Results	Acceptance Criteria	Actual Results	Acceptance Criteria
New Lot	ER05211501	50.60	± 10%	0.2	≤ 5%
Previous Lot	ER052010-02	49.73	± 10%	0.5	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity of the New Lot is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The % RSD of samples pulled from across the lot demonstrate homogeneity of the New Lot.
- The % RSD of the Previous Lot represents variability of the analysis performed at the time of release.

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.1% relative error.
- Concentration is verified against an independently prepared 4-point calibration curve gravimetrically prepared using balances calibrated to NIST.
- In addition, each neat material utilized has been identified and thoroughly characterized through the use of multiple analytical techniques. Spectral data is provided on subsequent pages of the COA.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after

ACLASS

Darron Ellsworth, Quality Assurance Manager

August 03, 2015
Date

Standard Solution Assay Parameters

Analysis Method: GC/FID
Column: DB-5ms 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 60°C to 300°C at 40°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Calibration Curve

Calibration Curve: Linear Regression
Number of Points: 4
Linearity (r): 1.000

Neat Material Data

Compound Name: 2,3,7,8-Tetrachlorodibenzo-p-dioxin-$^{37}Cl_4$
Compound Lot: ER040510-01

Chemical Formula: $C_{12}H_4O_2{}^{37}Cl_4$
CAS Number: 85508-50-5
Molecular Weight: 328.02

Neat Material Characterization Summary

Analytical Test	Method	Results
Primary Chromatographic Purity by GC/FID Analysis	SP10-0101	98.3%
Identity by GC/MS Analysis	SP10-0105	Consistent with Structure
Isotopic Purity by GC/MS SIM Analysis	SP10-0105	0.00% $^{37}Cl_0$ vs $^{37}Cl_4$
Identity by ^{1}H-NMR Analysis	USP <761>, SP10-0116	Consistent with Structure
Residual Solvent Analysis by ^{1}H-NMR	USP <761>, SP10-0116	1.2% Chloroform
Purity Factor		97.14%

- Primary purity is calculated as the average of two independently performed analyses utilizing two different methods. Acceptance criteria requires the purity values to be within 0.5% of each other.
- The primary chromatographic purity value is used to calculate the Purity Factor.
- Purity factor does not include adjustment for chiral and/or isotopic purity

Spectral and Physical Data

GC/FID

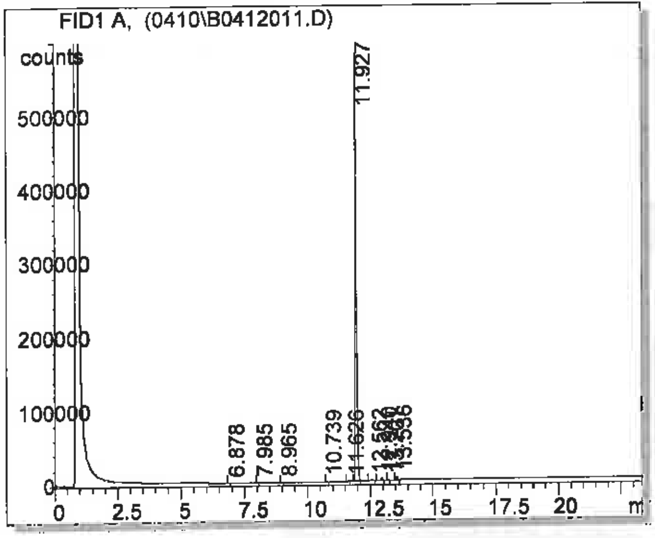

Column: DB-5ms, 30 m x 0.53 mm ID, 1.5 µm film thickness
Temp Program: 100°C to 300°C at 15°C/min hold 10 min
Injector Temp: Cool-on-Column
Detector Temp: 325°C

Data File Name: S:\GC\GC2\2010\0410\B0412011.D
Instrument: GC#2
Sample Name: ER040510-01
Acquired: April 13, 2010

Peak #	Ret Time	Area	Height	Area %
1	6.88	245.58	89.37	0.01
2	7.99	304 03	131.27	0.01
3	8.97	233 91	72.32	0.01
4	10 74	931.14	265.29	0.04
5	11 63	127.86	46.74	0.01
6	11 93	2261830.00	580792.00	98.34
7	12 56	6435.54	1838.17	0.28
8	12.94	13336.80	4373.86	0.58
9	13.20	2178.30	729.98	0.09
10	13.54	14483.80	5038.43	0.63

^{1}H NMR

Instrument: JEOL ECS 400
Solvent: Toluene-D_8

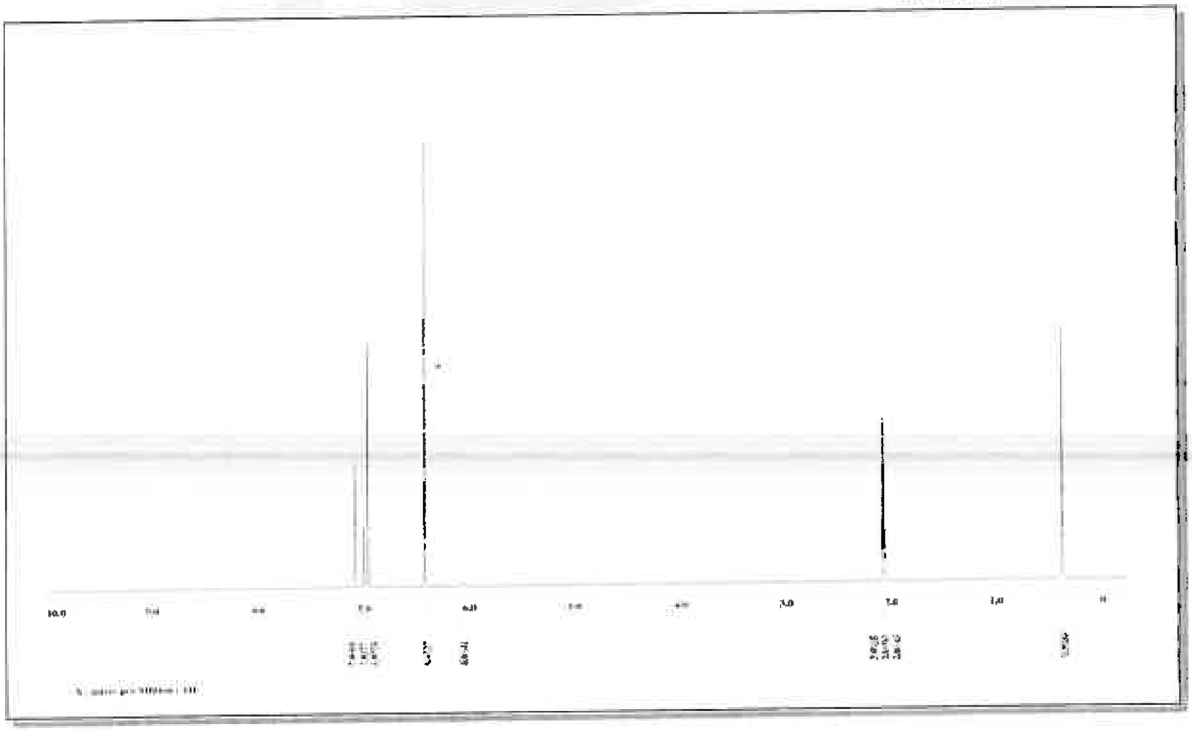

Spectral and Physical Data (cont.)

Identity by GC/MS Analysis

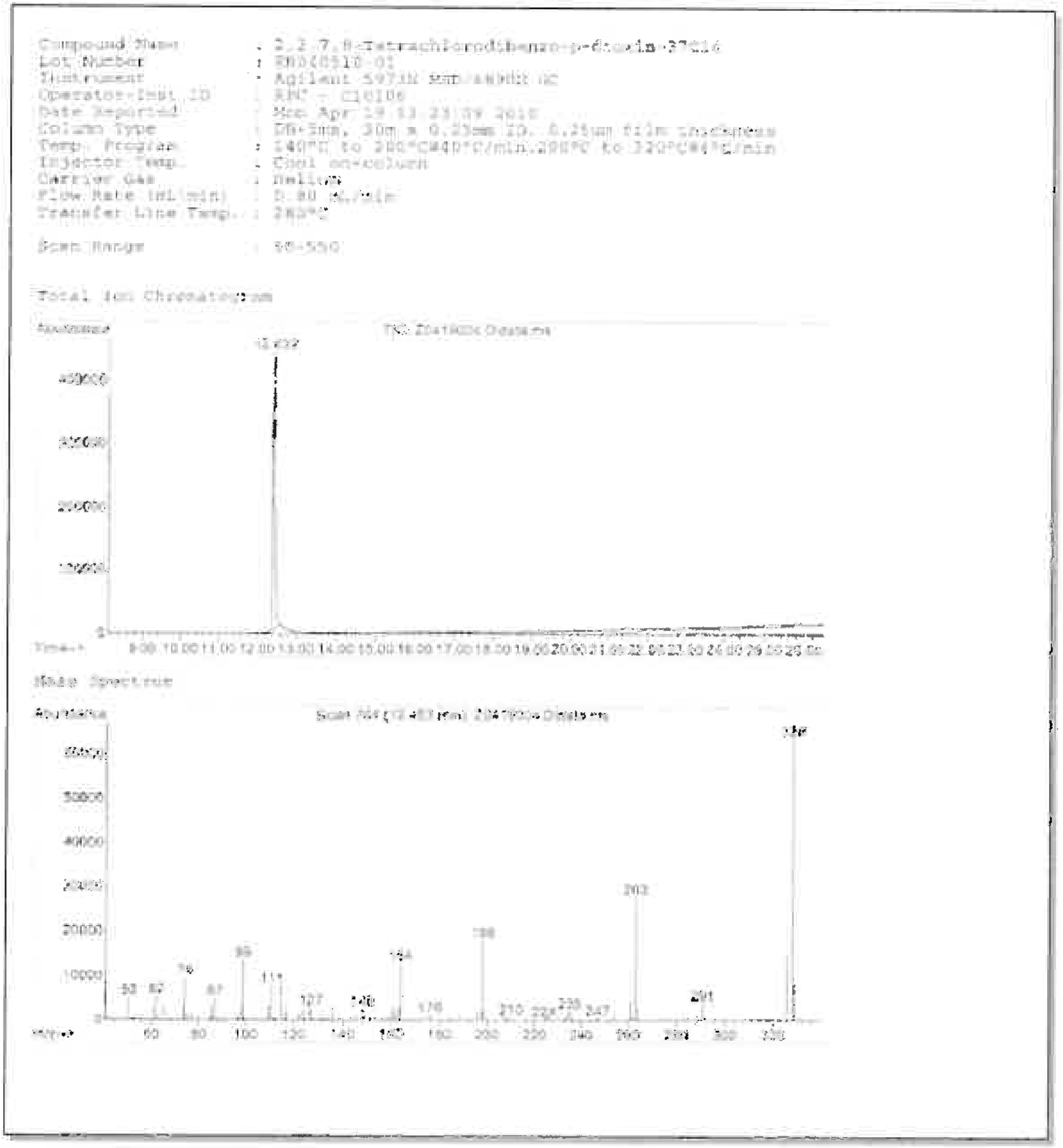

Compound Name : 2,3,7,8-Tetrachlorodibenzo-p-dioxin-37Cl4
Lot Number : [illegible]
Instrument : Agilent 5973N MSD/6890N GC
Operator-Inst. ID : [illegible]
Date Reported : Mon Apr 19 11:23:59 2010
Column Type : DB-5ms, 30m x 0.25mm ID, 0.25um film thickness
Temp. Program : 140°C to 200°C@40°C/min,200°C to 320°C@4°C/min
Injector Temp. : Cool on-column
Carrier Gas : Helium
Flow Rate (mL/min) : 0.80 mL/min
Transfer Line Temp. : 280°C

Scan Range : 50-550

Total Ion Chromatogram

Mass Spectrum

Reagent

HRDXNTA_00108

②

P: 4/20/19 SKJ

WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF
Precision and Recovery Stock Solution

PRODUCT CODE: EPA-1613PAR
LOT NUMBER: 13PAR0418
SOLVENT(S): Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy) 04/11/2018
LAST TESTED: (mm/dd/yyyy) 04/12/2018
EXPIRY DATE: (mm/dd/yyyy) 03/01/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \dots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \dots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: ____________________
B.G. Chittim, General Manager

Date: 04/16/2018
(mm/dd/yyyy)

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**

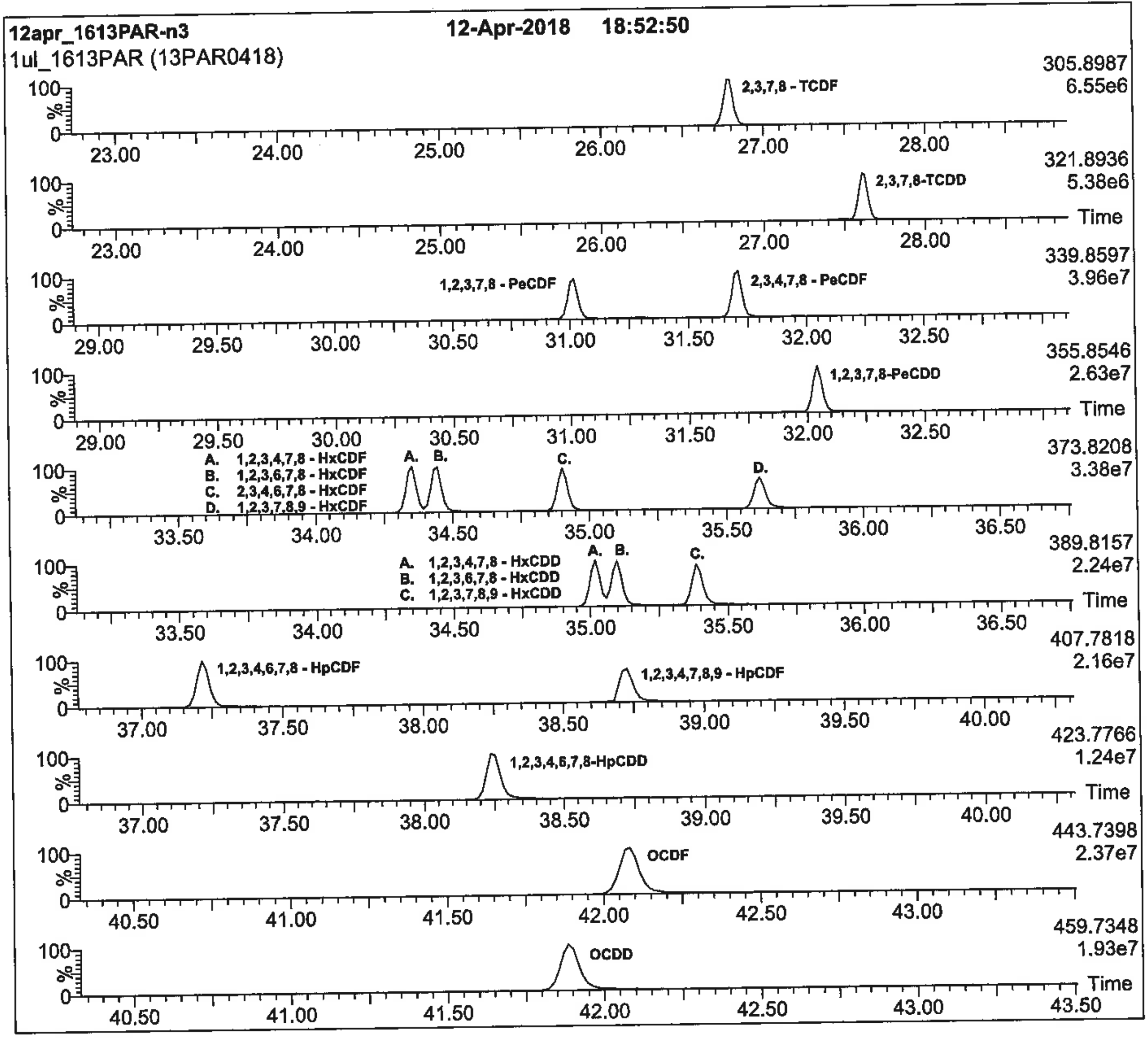

HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow: Constant at 1 ml/min
Injector: 280 °C (Splitless Injection)
Ionization: EI+
Detector: 280 °C
SIR at 10,000 mass resolving power

Oven:
150 °C (1 min)
12 °C/min to 200 °C
3 °C/min to 235 °C
235 °C (8 min)
8 °C/min to 310 °C
310 °C (8 min)

Reagent

HRDXNTA_00110

③

r: 4/30/19 SKV

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Revision 01
Page 1 of 4

Certificate of Analysis

Method 1613 PAR Stock Solution

ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
2,3,7,8-TeCDF	ER101211-02	51207-31-9	$C_{12}H_4Cl_4O$	305.97	99.4%	399.9 ± 4.0 ng/mL
1,2,3,7,8-PeCDD	ER110909-02	40321-76-4	$C_{12}H_3Cl_5O_2$	356.42	99.2%	2000 ± 20 ng/mL
1,2,3,7,8-PeCDF	ER03121401	57117-41-6	$C_{12}H_3Cl_5O$	340.42	99.5%	1999 ± 20 ng/mL
2,3,4,7,8-PeCDF	ER070710-01	57117-31-4	$C_{12}H_3Cl_5O$	340.42	99.4%	1999 ± 20 ng/mL
1,2,3,4,7,8-HxCDD	ER080108-02	39227-28-6	$C_{12}H_2Cl_6O_2$	390.86	98.6%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDD	ER03231501	57653-85-7	$C_{12}H_2Cl_6O_2$	390.86	99.6%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDD	ER02041601	19408-74-3	$C_{12}H_2Cl_6O_2$	390.86	99.2%	2000 ± 20 ng/mL
1,2,3,4,7,8-HxCDF	ER021110-01	70648-26-9	$C_{12}H_2Cl_6O$	374.86	99.0%	2000 ± 20 ng/mL
1,2,3,6,7,8-HxCDF	ER04161501	57117-44-9	$C_{12}H_2Cl_6O$	374.86	99.8%	2000 ± 20 ng/mL
1,2,3,7,8,9-HxCDF	ER060107-01	72918-21-9	$C_{12}H_2Cl_6O$	374.86	97.5%	1999 ± 20 ng/mL
2,3,4,6,7,8-HxCDF	ER02041602	60851-34-5	$C_{12}H_2Cl_6O$	374.86	99.1%	2001 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDD	ER01201504	35822-46-9	$C_{12}HCl_7O_2$	425.31	98.5%	1999 ± 20 ng/mL
1,2,3,4,6,7,8-HpCDF	ER02281403	67562-39-4	$C_{12}HCl_7O$	409.31	98.9%	1999 ± 20 ng/mL
1,2,3,4,7,8,9-HpCDF	ER01121503	55673-89-7	$C_{12}HCl_7O$	409.31	99.1%	1999 ± 20 ng/mL
OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

- Uncertainty of the concentration is expressed as an expanded uncertainty in accordance with ISO 17025 and Guide 34 at the approximate 95% confidence interval using a coverage factor of k = 2 and has been calculated by statistical analysis of our production system and incorporates uncertainty of the purity factor, material density, and balance and weighing technique.
- Stock solution concentration is corrected for chromatographic purity, residual water, residual solvents and residual inorganics.

Cerilliant certifies that this standard meets the specifications stated in this certificate and warrants this product to meet the stated acceptance criteria through the expiration/retest date when stored unopened as recommended. Product should be used shortly after opening to avoid concentration changes due to evaporation. Warranty does not apply to ampoules stored after opening.

ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

Traceability

- Gravimetrically prepared using qualified balances calibrated semi-annually by Mettler Toledo using NIST traceable weights. Calibration verification performed weekly and prior to each use utilizing NIST traceable weights. Each balance has been assigned a minimum weighing by Mettler Toledo taking into consideration the balance and installed environmental conditions to ensure weighing complies with USP tolerances of no more than 0.10% relative error.
- Concentration is verified against an independently prepared calibration solution gravimetrically prepared using balances calibrated to NIST.

Standard Solution Assay Parameters

Analysis Method:	GC/ECD
Column:	DB-5ms, 30 m x 0.25 mm ID, 0.25 µm film thickness
Temp Program:	140°C to 200°C at 40°C/min 200°C to 300°C at 4°C/min hold 3 min
Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

Compound	Verified Concentration		%RSD - Homogeneity	
	ng/mL	Acceptance Criteria	%	Acceptance Criteria
2,3,7,8-TeCDD	397.1	± 10%	0.7	≤ 5%
2,3,7,8-TeCDF	386.6	± 10%	0.7	≤ 5%
1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDD	1987	± 10%	0.8	≤ 5%
1,2,3,7,8,9-HxCDD	1943	± 10%	0.7	≤ 5%
1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

- Concentration is verified through multiple analyses and is calculated as the average of multiple analyses compared to an independently prepared calibration solution.
- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

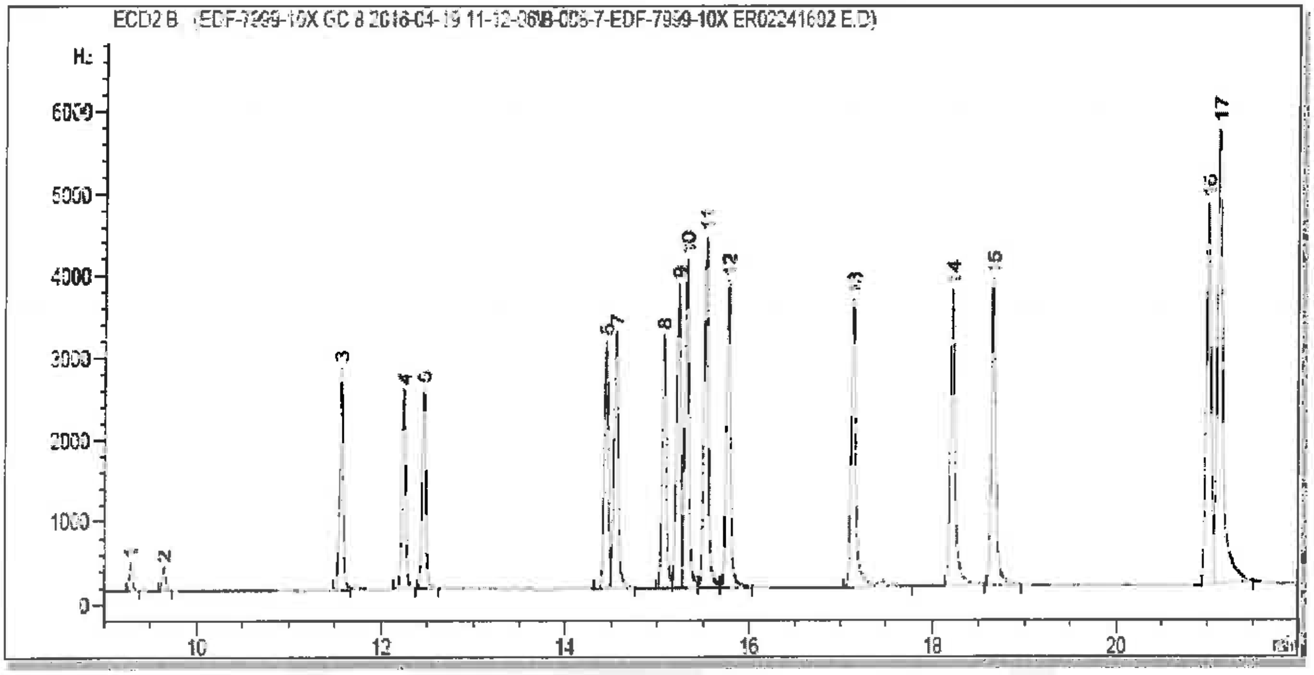

Peak:	Analyte:
1	2,3,7,8-Tetrachlorodibenzofuran
2	2,3,7,8-Tetrachloro-p-dioxin
3	1,2,3,7,8-Pentachlorodibenzofuran
4	2,3,4,7,8-Pentachlorodibenzofuran
5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

HRDXNTA_00111

③ R: 4/30/16 SKV

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Revision 01
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Certificate of Analysis

Method 1613 PAR Stock Solution

Cerilliant Quality
ISO GUIDE 34
ISO/IEC 17025
ISO 13485
ISO 15194
ISO 9001
GMP/GLP

Catalog Number:	EDF-7999-10X
Solution Lot:	ER02241602
Expiration Date:	April 2026
Solvent:	n-Nonane
Volume per Ampule:	Not less than 1.2 mL
Storage:	Store at room temperature. Do not store cold.
Intended Use:	For R&D/ analytical purposes only. Not suitable for human or animal consumption.
Safety:	**Danger. See Safety Data Sheet.**

- Expiration Date has been established through real time stability studies
- Ampules are overfilled to ensure a minimum 1.2 volume We advise laboratories to use measured volumes of this standard solution before diluting to the desired concentration.

Component	Lot Number	CAS Number	Chemical Formula	Molecular Weight	Chromatographic Purity	Concentration
2,3,7,8-TeCDD	ER04271502	1746-01-6	$C_{12}H_4Cl_4O_2$	321.97	99.2%	399.9 ± 4.0 ng/mL
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OCDD	ER05221301	3268-87-9	$C_{12}Cl_8O_2$	459.75	99.9%	3999 ± 40 ng/mL
OCDF	ER040811-01	39001-02-0	$C_{12}Cl_8O$	443.75	98.9%	4000 ± 40 ng/mL

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ANAB

Darron Ellsworth, Quality Assurance Manager

April 28, 2016
Date

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Injector Temp:	Cool on-column
Detector Temp:	280°C

Calibration Curve

Calibration Curve:	Linear Regression
Number of Points:	1

Solution Standard Verification and Homogeneity

	Verified Concentration		%RSD - Homogeneity	
Compound	**ng/mL**	**Acceptance Criteria**	**%**	**Acceptance Criteria**
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1,2,3,7,8-PeCDD	1937	± 10%	0.8	≤ 5%
1,2,3,7,8-PeCDF	1919	± 10%	0.8	≤ 5%
2,3,4,7,8-PeCDF	1941	± 10%	0.8	≤ 5%
1,2,3,4,7,8-HxCDD	1932	± 10%	0.9	≤ 5%
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1,2,3,4,7,8-HxCDF	1933	± 10%	0.9	≤ 5%
1,2,3,6,7,8-HxCDF	1909	± 10%	0.9	≤ 5%
1,2,3,7,8,9-HxCDF	1942	± 10%	0.7	≤ 5%
2,3,4,6,7,8-HxCDF	1950	± 10%	0.8	≤ 5%
1,2,3,4,6,7,8-HpCDD	1930	± 10%	0.9	≤ 5%
1,2,3,4,6,7,8-HpCDF	1919	± 10%	0.9	≤ 5%
1,2,3,4,7,8,9-HpCDF	1943	± 10%	1.0	≤ 5%
OCDD	3844	± 10%	1.0	≤ 5%
OCDF	3906	± 10%	0.9	≤ 5%

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- Homogeneity is ensured through rigorous production process controls statistically analyzed to evaluate risk and verified by analysis. The %RSD of samples pulled from across the lot demonstrate homogeneity.
- Product is compared to prior lot and meets acceptance criteria of ± 10%.

Product Analysis

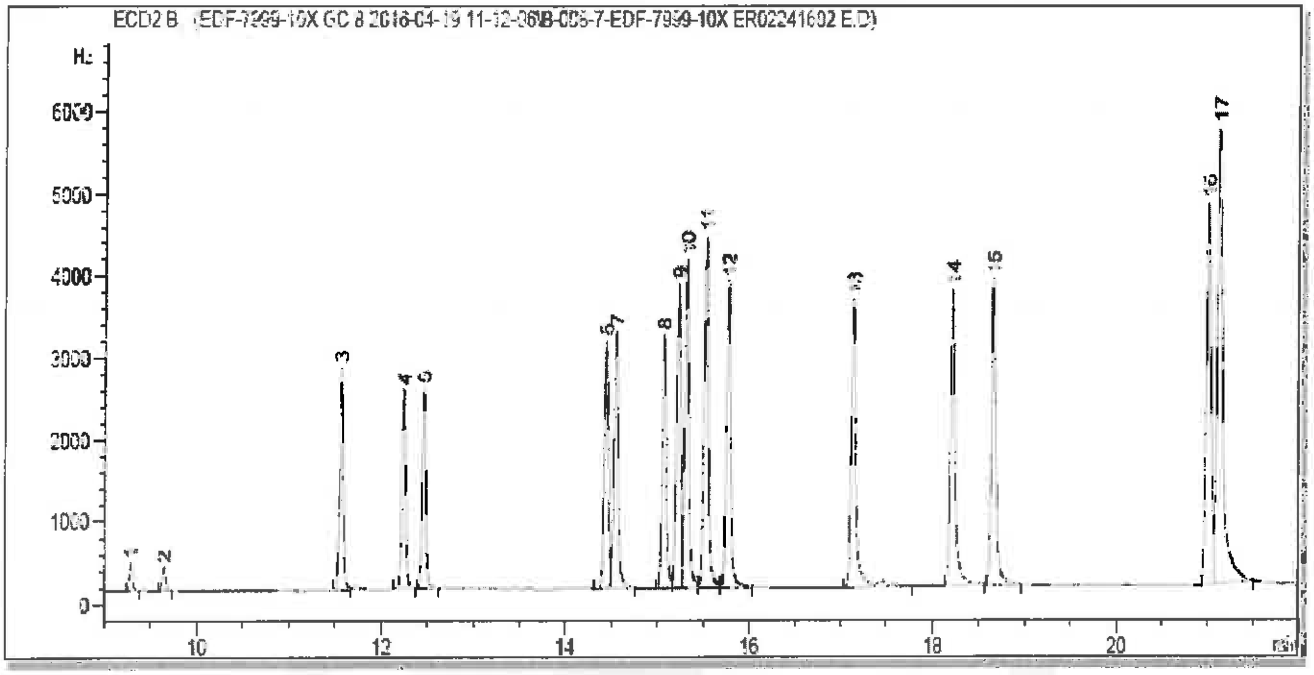

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5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
6	1,2,3,4,7,8-Hexachlorodibenzofuran
7	1,2,3,6,7,8-Hexachlorodibenzofuran
8	2,3,4,6,7,8-Hexachlorodibenzofuran
9	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
10	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
12	1,2,3,7,8,9-Hexachlorodibenzofuran
13	1,2,3,4,6,7,8-Heptachlorodibenzofuran
14	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
15	1,2,3,4,7,8,9-Heptachlorodibenzofuran
16	Octachlorodibenzo-p-dioxin
17	Octachlorodibenzofuran

COA Revision History

Revision No.	Date	Reason for Revision
00	April 28, 2016	Initial version

Reagent

MT-ICP-ICSA_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM RC: 12/6/19 JMO

Product #: TA-ICP-ICSA

ICP ICSA Mix

Lot #: 1025879-1

1863494
ID: MT-ICP-ICSA_00002
Exp:01/08/21 Prpd:GSH Opn:01/08/20
ICSA mix for ICP

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	5000 ± 25 mg/L	Fe	2000 ± 10 mg/L
Ca	5000 ± 25 mg/L	Mg	5000 ± 25 mg/L

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#
Al	992545	Fe	1004971
Ca	150704	Mg	738337

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

November 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT-ICP-ICSB1_00002

CPI
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CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

RC: 10/01/19 DMO Product #: TA-ICP-ICSAB-1

ICP ICSAB Mix Solution 1

Lot #: 1023499-1

Matrix: 5% HNO_3/0.5% HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Mo	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L	Ti	100.0 ± 0.5 mg/L
Sb	100.0 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L		

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
Mo	175215	Si	977647	Ti	161694
Sb	987317	Sn	171360		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT-ICP-ICSB2_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICP-ICSAB-2

ICP ICSAB Mix Solution 2

1863495
ID: MT-ICP-ICSB2_00002
Exp:01/08/21 Prpd:GSH Opn:01/08/20
ICSAB Solution2 for ICP

RC: 10/01/19 JMO

Lot #: 992185-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag	100.0 ± 0.5 mg/L	Cr	100.1 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L
As	100.0 ± 0.5 mg/L	Cu	100.1 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L
B	1000 ± 5 mg/L	K	1000 ± 5 mg/L	Sr	100.0 ± 0.5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Be	50.00 ± 0.25 mg/L	Na	1000 ± 5 mg/L	V	100.1 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.1 ± 0.5 mg/L	Zn	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	P	1000 ± 5 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix1-SS_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Re: 10/01/19 OMO

Product #: TA-CAL1-SS

ICP ICPMS CAL Mix # 1

Lot #: 992738-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	100.1 ± 0.5 mg/L	Li	100.1 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Sn	100.0 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.1 ± 0.5 mg/L	Sr	100.1 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Sb	100.0 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cu	100.0 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix2-SS_00002

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Rc: 10/01/19 OMD Product #: TA-CAL2-SS

ICP ICPMS CAL Mix # 2

Lot #: 992740-2

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO_4^{-2}	3181	—
Br^-	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl^-	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO_3^-	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO_4^{-3}	3186	—	Y	3167a	3167a
F^-	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

MT_CalMix2_00003

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

RC: 10/01/19 OMD

Multi-Element Aqueous CRM

Product #: TA-CAL2

ICP ICPMS CAL Mix # 2

Lot #: 1018877-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	2000 ± 10 mg/L	Fe	2000 ± 10 mg/L	Mg	2000 ± 10 mg/L
Ca	2000 ± 10 mg/L	K	2000 ± 10 mg/L	Na	2000 ± 10 mg/L

Source Material Lot# Chart

Element	Source Material Lot#	Element	Source Material Lot#	Element	Source Material Lot#
Al	992545	Fe	1004971	Mg	738337
Ca	150704	K	983959	Na	994710

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
  - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_CalMix3-SS_00002

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Rc: 10/01/19 JMD Product #: TA-CAL3-SS

ICP ICPMS CAL Mix # 3

Lot #: 987270-1

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
P	1000 ± 5 mg/L	U	100.0 ± 0.5 mg/L
S	1000 ± 5 mg/L	W	100.0 ± 0.5 mg/L

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_spike1_00002

re: 8/14/19

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE1+

Spike Mix # 1

Lot #: 993218-2

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	200.0 ± 1.0 mg/L	Li	100.0 ± 0.5 mg/L	Sn	200.0 ± 1.0 mg/L
Ba	200.0 ± 1.0 mg/L	Mn	100.1 ± 0.5 mg/L	Sr	100.0 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Tl	200.0 ± 1.0 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.1 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Se	200.0 ± 1.0 mg/L		
Cu	100.0 ± 0.5 mg/L	Si	200.0 ± 1.0 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

April 4, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT_spike2_00002

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE2

Spike Mix # 2

Lot #: 982744-1

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Mg	5000 ± 25 mg/L
Ca	5000 ± 25 mg/L	K	5000 ± 25 mg/L	Na	5000 ± 25 mg/L

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

March 11, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO_4^{-2}	3181	—
Br^-	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl^-	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO_3^-	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO_4^{-3}	3186	—		Y	3167a	3167a
F^-	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

MT6010LLSTD_00016

INORGANIC™ VENTURES

CERTIFICATE OF ANALYSIS

[illegible]

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

Re: 1117119 OMD

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6010 STD LL
Lot Number:	P2-MEB686161
Matrix:	7% (v/v) HNO3 tr. HF
Value / Analyte(s):	100 µg/mL ea:

Potassium,

50 µg/mL ea:

Magnesium, Calcium, Sodium,
Phosphorus, Sulfur, Silicon,

20 µg/mL ea:

Aluminum,

10 µg/mL ea:

Boron, Iron,

5 µg/mL ea:

Strontium,

2 µg/mL ea:

Thallium, Tin, Antimony,
Selenium, Molybdenum, Arsenic,

1 µg/mL ea:

Lithium, Copper, Titanium,
Zinc,

0.5 µg/mL ea:

Vanadium, Lead, Nickel,
Silver, Manganese, Barium,
Cobalt, Chromium,

0.2 µg/mL ea:

Cadmium, Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	19.99 ± 0.10 µg/mL	Antimony, Sb	1.999 ± 0.014 µg/mL
Arsenic, As	2.000 ± 0.017 µg/mL	Barium, Ba	0.4995 ± 0.0028 µg/mL
Beryllium, Be	0.2000 ± 0.0012 µg/mL	Boron, B	10.00 ± 0.07 µg/mL
Cadmium, Cd	0.2000 ± 0.0012 µg/mL	Calcium, Ca	49.96 ± 0.22 µg/mL
Chromium, Cr	0.5006 ± 0.0031 µg/mL	Cobalt, Co	0.4994 ± 0.0028 µg/mL
Copper, Cu	1.000 ± 0.004 µg/mL	Iron, Fe	10.00 ± 0.05 µg/mL
Lead, Pb	0.4998 ± 0.0025 µg/mL	Lithium, Li	1.000 ± 0.006 µg/mL
Magnesium, Mg	50.04 ± 0.20 µg/mL	Manganese, Mn	0.4998 ± 0.0023 µg/mL
Molybdenum, Mo	1.999 ± 0.013 µg/mL	Nickel, Ni	0.5003 ± 0.0025 µg/mL
Phosphorus, P	50.03 ± 0.23 µg/mL	Potassium, K	99.9 ± 0.4 µg/mL
Selenium, Se	1.999 ± 0.015 µg/mL	Silicon, Si	50.02 ± 0.32 µg/mL
Silver, Ag	0.4996 ± 0.0035 µg/mL	Sodium, Na	50.03 ± 0.18 µg/mL
Strontium, Sr	5.004 ± 0.030 µg/mL	Sulfur, S	49.99 ± 0.24 µg/mL
Thallium, Tl	2.001 ± 0.013 µg/mL	Tin, Sn	2.000 ± 0.011 µg/mL
Titanium, Ti	1.000 ± 0.007 µg/mL	Vanadium, V	0.5000 ± 0.0029 µg/mL
Zinc, Zn	1.000 ± 0.006 µg/mL		

Density: 1.037 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	Calculated		See Sec. 4.2
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Ca	Calculated		See Sec. 4.2
Cd	Calculated		See Sec. 4.2
Co	Calculated		See Sec. 4.2
Cr	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
S	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	130912
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Ti	Calculated		See Sec. 4.2
Tl	Calculated		See Sec. 4.2
V	Calculated		See Sec. 4.2
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains “LOW” levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ____________________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MT6010QSMLL_00008

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01

ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION 11/7/19

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6010 QSM LL
Lot Number:	P2-MEB686159
Matrix:	7% (v/v) HNO_3 tr. HF

Value / Analyte(s):

100 µg/mL ea:
Potassium,

50 µg/mL ea:
Magnesium, Calcium, Sodium,
Phosphorus, Sulfur, Silicon,

20 µg/mL ea:
Aluminum, Boron,

10 µg/mL ea:
Iron,

5 µg/mL ea:
Strontium,

4 µg/mL ea:
Selenium, Arsenic,

3 µg/mL ea:
Thallium, Antimony,

2 µg/mL ea:
Tin, Vanadium, Zinc,
Barium, Molybdenum, Lithium,

1.5 µg/mL ea:
Copper,

1 µg/mL ea:
Manganese, Cobalt, Chromium,
Titanium, Lead, Nickel,

0.5 µg/mL ea:
Silver,

0.3 µg/mL ea:
Cadmium, Beryllium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	20.00 ± 0.10 µg/mL	Antimony, Sb	2.998 ± 0.021 µg/mL
Arsenic, As	3.997 ± 0.027 µg/mL	Barium, Ba	2.001 ± 0.011 µg/mL
Beryllium, Be	0.2996 ± 0.0016 µg/mL	Boron, B	20.00 ± 0.14 µg/mL
Cadmium, Cd	0.2998 ± 0.0018 µg/mL	Calcium, Ca	49.96 ± 0.22 µg/mL
Chromium, Cr	1.000 ± 0.006 µg/mL	Cobalt, Co	1.001 ± 0.006 µg/mL
Copper, Cu	1.500 ± 0.006 µg/mL	Iron, Fe	10.00 ± 0.05 µg/mL
Lead, Pb	1.000 ± 0.005 µg/mL	Lithium, Li	1.999 ± 0.011 µg/mL
Magnesium, Mg	49.95 ± 0.20 µg/mL	Manganese, Mn	1.001 ± 0.005 µg/mL
Molybdenum, Mo	1.999 ± 0.013 µg/mL	Nickel, Ni	1.001 ± 0.005 µg/mL
Phosphorus, P	49.96 ± 0.23 µg/mL	Potassium, K	100.0 ± 0.4 µg/mL
Selenium, Se	4.000 ± 0.024 µg/mL	Silicon, Si	49.99 ± 0.32 µg/mL
Silver, Ag	0.4998 ± 0.0035 µg/mL	Sodium, Na	50.00 ± 0.18 µg/mL
Strontium, Sr	5.002 ± 0.030 µg/mL	Sulfur, S	50.01 ± 0.24 µg/mL
Thallium, Tl	2.999 ± 0.021 µg/mL	Tin, Sn	2.000 ± 0.011 µg/mL
Titanium, Ti	1.000 ± 0.007 µg/mL	Vanadium, V	2.000 ± 0.011 µg/mL
Zinc, Zn	2.001 ± 0.012 µg/mL		

Density: 1.036 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
B	ICP Assay	3107	110830
B	Calculated		See Sec. 4.2
Ba	Calculated		See Sec. 4.2
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Ca	Calculated		See Sec. 4.2
Cd	Calculated		See Sec. 4.2
Co	Calculated		See Sec. 4.2
Cr	Calculated		See Sec. 4.2
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	Calculated		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
S	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Si	ICP Assay	3150	130912
Si	Calculated		See Sec. 4.2
Sn	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Ti	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
V	Calculated		See Sec. 4.2
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **October 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ____________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Michael L Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTAgXXXTA-SS_00002

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tel: 800.669.6799 · 540.585.3030
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info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG1
Lot Number:	P2-AG678505
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2217
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1002 ± 6 µg/mL
Density:	1.026 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**1001 ± 5 µg/mL** ICP Assay NIST SRM 3151 Lot Number: 160729
Assay Method #2	**1003 ± 3 µg/mL** Volhard NIST SRM 999c Lot Number: 999c
Assay Method #3	**1000 ± 3 µg/mL** Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000253	O	Na		0.000572	M	Se	<	0.018179	M	Zn		0.000596
O	Al		0.000647	O	Fe		0.000301	M	Nb	<	0.000253	M	Si		0.002313	M	Zr	<	0.005559
M	As	<	0.002403	M	Ga	<	0.000253	M	Nd	<	0.000253	M	Sm	<	0.000253				
M	Au		0.000168	M	Gd	<	0.000253	O	Ni	<	0.005472	M	Sn		0.000198				
O	B	<	0.009978	M	Ge	<	0.000754	M	Os	<	0.000254	O	Sr		0.000008				
M	Ba	<	0.000785	M	Hf	<	0.000253	M	P	<	0.053784	M	Ta	<	0.000253				
M	Be	<	0.002407	M	Hg	<	0.001332	M	Pb		0.000337	M	Tb	<	0.000253				
M	Bi		0.000171	M	Ho	<	0.000253	M	Pd	<	0.001382	M	Te	<	0.003715				
O	Ca		0.000732	M	In	<	0.003483	M	Pr	<	0.000253	M	Th	<	0.000253				
M	Cd	<	0.000253	M	Ir	<	0.000254	M	Pt	<	0.000253	M	Ti	<	0.002706				
M	Ce	<	0.000573	O	K		0.000412	M	Rb	<	0.000253	M	Tl	<	0.000253				
M	Co	<	0.000253	M	La	<	0.000253	M	Re	<	0.000253	M	Tm	<	0.000253				
O	Cr	<	0.005043	O	Li	<	0.000214	M	Rh	<	0.000253	M	U	<	0.000253				
M	Cs	<	0.002769	M	Lu	<	0.000253	M	Ru	<	0.000254	M	V	<	0.000822				
O	Cu		0.000474	O	Mg		0.000106	M	S	<	0.560935	M	W	<	0.002146				
M	Dy	<	0.000253	M	Mn	<	0.000253	M	Sb	<	0.006899	M	Y	<	0.000253				
M	Er	<	0.000253	M	Mo	<	0.000479	M	Sc	<	0.000733	M	Yb	<	0.000253				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$
Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [$AgCl_x^{1-x}$] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	$^{91}Zr^{16}O$
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 06, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 06, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ______________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTAgXXXTA_00012

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM Rc: 10/11/19

Product #: TA-1000511

SE Std Silver (Ag) – 1000 µg/mL

Lot #: 975475-80

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ag	**996 ± 3 µg/mL (w/v)**
	987 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure silver (Ag) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151, lot #992212**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	MAJOR	Co	<0.5	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1		
Al	<2	Cs	<1	Hf	<0.2	Mg	<5	Pb	2	Sc	<5	Ti	<2		
As	<2	Cr	<0.5	Hg	3	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5		
Au	2	Cu	9	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2		
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1		
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5		
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2		
Cd	<0.5	Ga	<0.5	Li	<2	Os	2	Ru	<0.5	Tb	<0.5	Zn	<2		
Ce	<0.2	Gd	<0.2												

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTAsXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rc: 10/01/19 [illegible]

Product #: TA-100031

SE Std Arsenic (As) – 1000 µg/mL

Lot #: 175385-53

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
As	1000 ± 2 µg/mL (w/v)
	983 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure arsenic (As) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3103a, lot #100818**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	MAJOR	Cr	0.7	Hg	<0.5	Mo	0.7	Pt	<0.5	Sn	1	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	2	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	13	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	3	Ru	6	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
  - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBaXXXTA_00010

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 OWD Product #: TA-100041

SE Std Barium (Ba) – 1000 µg/mL

Lot #: 273421-73

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ba	1000 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure barium nitrate [$Ba(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3104a, lot #140909**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	3	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	0.9	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	0.7	Pt	<0.5	Sn	<0.5	Y	1
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	2	Sr	3	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	MAJOR	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	14	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	2	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBeXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 MND

Product #: TA-100051

SE Std Beryllium (Be) – 1000 µg/mL

Lot #: 660981-51

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Be	**996 ± 5 µg/mL (w/v)**
	983 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure beryllium acetate [$Be_4O(C_2H_3O_2)_6$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3105a, lot #090514**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBXXXXTA_00011

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM Rc: 10/01/19 OMO **Product #: TA-100074**

SE Std Boron (B) – 1000 µg/mL **Lot #: 982524-63**

Matrix: H_2O

Element	Certified Concentration & Uncertainty
B	1001 ± 2 µg/mL (w/v)
	1003 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9995% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3107, lot #110830**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<5	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	MAJOR	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTBXXXXTA_00013

CPI
INTERNATIONAL

REPORT OF ANALYSIS

rec: 1/6/2020

Single-Element Aqueous RM

Boron (B) – 5000 µg/mL

2006159
ID: MTBXXXXTA_00013
Exp:05/21/21 Prpd:GSH Opn:05/21/20
Boron 5,000 ug/mL

Matrix: H_2O

Product #: S4400-5M74

Lot #: 1009207-4

Element	Certified Concentration
B	**4981 µg/mL**

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This RM was prepared to a nominal concentration of 5000 µg/mL by gravimetric methods using 99.9995% pure boric acid (H_3BO_3) dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to **NIST SRM 3107**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

December 13, 2019
Certification Date

Reagent

MTCdXXXTA_00009

CERTIFICATE OF ANALYSIS

Re: 10/01/19
MWO

Single-Element Aqueous CRM

SE Std Cadmium (Cd) – 1000 µg/mL

Matrix: 5% HNO_3

Product #: TA-100081

Lot #: 160499-113

Element	Certified Concentration & Uncertainty
Cd	**1000 ± 5 µg/mL (w/v)**
	997 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9997% pure cadmium (Cd) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3108, lot #130116**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	<5	Hf	<2	Mn	22	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	10	Cu	<10	Ho	<2	Na	<250	Rb	<5	Sr	<10	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	<10	Er	<2	Ir	<2	Nd	<2	Rh	6	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	6	Sb	<5	Ti	<20		
Cd	MAJOR	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	12		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	17		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCoXXXTA_00009

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19
OYMD

Product #: TA-1000131

SE Std Cobalt (Co) – 1000 µg/mL

Product Lot #: 979906-18

Matrix: 5% HNO_3

Source Material Lot #: COD12017A1

Element	Certified Concentration & Uncertainty
Co	997 ± 2 µg/mL (w/v)
	994 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.998% pure cobalt (Co) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3113, lot #000630**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	MAJOR	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	~~Te~~	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	6	Pb	<1	Sc	<5	~~Ti~~	<2
As	60	Cr	<0.5	Hg	<0.5	Mn	8	Pd	100	Se	15	~~Tl~~	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	~~Tm~~	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	~~V~~	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	~~W~~	<0.5
Bi	0.4	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	~~Y~~	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	~~Yb~~	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	~~Zn~~	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCrXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM Re: 10/01/19 OMP Product #: TA-1000121

SE Std Chromium (Cr) – 1000 µg/mL Lot #: 975466-82

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cr	**1003 ± 3 µg/mL (w/v)**
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure chromium (Cr) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3112a, lot #030730.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	2	Co	<1	Ge	<0.5	Mg	<5	Pd	2	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	MAJOR	Hg	<0.5	Mo	2	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	16	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTCuXXXTA_00009

CPI
INTERNATIONAL

CERTIFICATE OF ANALYSIS

re: 10/01/19
GMD

Single-Element Aqueous CRM

Product #: TA-1000141

SE Std Copper (Cu) – 1000 µg/mL

Lot #: 982446-23

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Cu	**991 ± 2 µg/mL (w/v)**
	988 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure copper (Cu) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3114, lot #121207**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	MAJOR	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTKXXXXTA_00015

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-10M411

RC: 6/24/19

SE Std Potassium (K) – 10,000 µg/mL

Lot #: 172053-80

Matrix: 5% HNO_3

1687334
D: MTKXXXXTA_00015
Exp 07/30/20 Prod JMC Opn 07/30/19
Potassium 10 000 ug/mL

Element	Certified Concentration & Uncertainty
K	9965 ± 50 µg/mL (w/v)
	9744 ± 50 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure potassium nitrate (KNO_3) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3141a, lot #140813** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	<5	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	<250	Rb	79	Sr	<10	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	<10	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	MAJOR	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 14, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTMnXXXTA_00009

CERTIFICATE OF ANALYSIS

Re: 10/01/19

Single-Element Aqueous CRM

Product #: TA-1000321

SE Std Manganese (Mn) – 1000 µg/mL

Lot #: 167539-89

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Mn	1001 ± 3 µg/mL (w/v)
	995 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.98% pure manganese (Mn) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3132, lot #050429**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	2	Ge	<0.5	Mg	63	Pd	<0.5	Si	<100	V	3
Al	3	Cs	<0.5	Hf	<0.2	Mn	MAJOR	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	2	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTMoXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

rev: 10/01/19
MWD

Single-Element Aqueous CRM

SE Std Molybdenum (Mo) – 1000 µg/mL

Product #: TA-1000343

Lot #: 169424-57

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Mo	**999 ± 3 µg/mL (w/v)**
	980 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure molybdenum (Mo) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3134, lot #891307**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	60
As	<2	Cr	<0.5	Hg	<0.5	Mo	MAJOR	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	1	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	6	Ta	2	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<5		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	<0.5		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTNaXXXXTA_00004

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-10M521

SE Std Sodium (Na) – 10,000 µg/mL

RC: 6/24/19

Lot #: 752887-33

Matrix: 5% HNO_3

[illegible]
[illegible] NaXXXXTA_00004
Exp 07/30/20 Prod JMD Con 07/[illegible]-19
Sodium 10 000 ug/mL

Element	Certified Concentration & Uncertainty
Na	10,070 ± 20 µg/mL (w/v)
	9771 ± 24 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure sodium carbonate (Na_2CO_3) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3152a, lot #120715.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	11	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	MAJOR	Rb	70	Sr	14	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	26	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 10, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTNiXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

pe: 10|01|19

SE Std Nickel (Ni) – 1000 µg/mL

Product #: TA-1000361

Lot #: 984273-10

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Ni	**1003 ± 4 µg/mL (w/v)**
	996 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.996% pure nickel (Ni) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3136, lot #120619**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	33	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	MAJOR	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPbXXXTA_00011

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Re: 10/01/19 gmw

Single-Element Aqueous CRM — Product #: TA-1000281

SE Std Lead (Pb) – 1000 µg/mL — Lot #: 981329-43

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Pb	1009 ± 2 µg/mL (w/v)
	1003 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure lead (Pb) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3128, lot #101026**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	1	Hf	<0.2	Mg	<5	Pb	MAJOR	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	0.9
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPXXXTA_00004

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Re: 10/01/19 OMP

Product #: TA-1000391

SE Std Phosphorous (P) – 1000 µg/mL

Lot #: 978200-13

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
P	1002 ± 4 µg/mL (w/v)
	997 ± 4 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.7% pure phosphoric acid (H_3PO_4) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a, lot #060717**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	MAJOR	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTPXXXTA_00005

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM rec : 10/1/19 Product #: G34-S4400-10M391

Phosphorus (P) – 10,000 µg/mL Lot #: 451077-29

Matrix: 0.05% HNO_3

Element	Certified Concentration & Uncertainty
P	10,000 ± 50 µg/mL (w/v)
	9867 ± 50 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using a single-element concentrate dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3139a**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tl	<5
Al	<20	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	Tm	<2
As	<20	Cs	<5	Hf	<2	Mn	<10	Pr	<2	Sm	<2	U	<5
Au	<5	Cr	<5	Hg	<5	Mo	146	Pt	<5	Sn	<5	V	<10
B	<50	Cu	<10	Ho	<2	Na	<250	Rb	<5	Sr	<10	W	<5
Ba	<10	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Y	<5
Be	<5	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5	Yb	<2
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10	Zn	<20
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Th	<5	Zr	<5
Cd	<5	Ga	<5	Li	<20	P	MAJOR	Sc	<50	Ti	<20		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

June 13, 2019
Certification Date

Reagent

MTSbXXXTA_00009

CERTIFICATE OF ANALYSIS

Re: 10/01/19
omb

Single-Element Aqueous CRM — Product #: TA-100023

SE Std Antimony (Sb) – 1000 µg/mL — Lot #: 1013797-6

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Sb	**996 ± 4 µg/mL (w/v)**
	977 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001, ISO 17034,** and **ISO/IEC 17025.** This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure antimony (Sb) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3102a, lot #140911.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	MAJOR	Te	<1
Al	98	Cs	<0.5	Hf	2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	370	Dy	<0.2	In	nd	Na	190	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	1	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	1	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSeXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Rev: 10/01/19 omp

Single-Element Aqueous CRM

Product #: TA-1000491

SE Std Selenium (Se) – 1000 µg/mL

Lot #: 982461-24

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Se	**1004 ± 7 µg/mL (w/v)**
	996 ± 7 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure selenium (Se) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3149, lot #100901**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	MAJOR	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSnXXXTA_00011

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rec: 10/01/19
omo

Product #: TA-1000613

SE Std Tin (Sn) – 1000 µg/mL

Lot #: 977645-7

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Sn	999 ± 3 µg/mL (w/v)
	979 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure tin (Sn) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3161a, lot #140917.** The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	6	Lu	<0.2	P	<100	Sb	3	Te	<1
Al	10	Cs	0.8	Hf	<0.2	Mg	16	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	0.8	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<1000	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	MAJOR	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	0.9	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	20	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

September 23, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSrXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

re: 10/02/19
MWP

Product #: TA-1000531

SE Std Strontium (Sr) – 1000 µg/mL

Lot #: 998106-28

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Sr	**996 ± 5 µg/mL (w/v)**
	991 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9965% pure strontium nitrate [$Sr(NO_3)_2$] dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3153a, lot #990906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	<2	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	370	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	MAJOR	Y	1
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTSXXXXTA_00016

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Sulfur (S) – 10,000 µg/mL

Matrix: H_2O

Product #: G34-S4400-10M544

Lot #: 996813-5

Re: 6/24/19

Element	Certified Concentration & Uncertainty
S	9902 ± 64 µg/mL (w/v)
	9720 ± 62 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO Guide 34**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.999% pure ammonium sulfate $[(NH_4)_2SO_4]$ dissolved and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3154, lot #892205**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Lu	<2	P	<1000	Sb	<5	Te	<10
Al	<20	Cs	<5	Hf	<2	Mg	<50	Pb	<10	Sc	<50	Ti	<20
As	<20	Cr	7	Hg	<5	Mn	<10	Pd	<5	Se	<20	Tl	<5
Au	<5	Cu	<10	Ho	<2	Mo	<5	Pr	<2	Si	<1000	Tm	<2
B	<50	Dy	<2	In	nd	Na	<250	Pt	<5	Sm	<2	V	<10
Ba	<10	Er	<2	Ir	8	Nb	<5	Rb	83	Sn	<5	W	<5
Bi	<2	Eu	<2	K	<250	Nd	<2	Re	<2	Sr	<10	Y	<5
Ca	<250	Fe	<100	La	<5	Ni	<20	Rh	<5	Ta	<5	Yb	<2
Cd	<5	Ga	<5	Li	<20	Os	<5	Ru	<5	Tb	<5	Zn	<20
Ce	<2	Gd	<2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

June 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTTiXXXTA_00009

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rec: 10/01/19
DMP

Product #: TA-1000623

SE Std Titanium (Ti) – 1000 µg/mL

Lot #: 987438-5

Matrix: 5% HNO_3/tr. HF

Element	Certified Concentration & Uncertainty
Ti	998 ± 2 µg/mL (w/v)
	978 ± 2 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99+% pure titanium (Ti) metal dissolved in high purity nitric acid (HNO_3), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3162a, lot #130925**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	0.7	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	<2	Cs	<0.5	Hf	1	Mg	<5	Pb	<1	Sc	<5	Ti	MAJOR
As	<2	Cr	1	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	15	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	0.8	Rb	<0.5	Sn	2	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	23	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau
Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTTlXXXTA_00010

CPI INTERNATIONAL

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Rc: 10/01/19
OMP

Product #: TA-1000581

SE Std Thallium (Tl) – 1000 µg/mL

Lot #: 148983-103

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Tl	1002 ± 3 µg/mL (w/v)
	997 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.99% pure thallium (Tl) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3158, lot #993012**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<1	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	V	<1
Al	<2	Cs	<0.5	Hf	<0.2	Mn	<1	Pr	<0.2	Sm	<0.2	W	<0.5
As	<2	Cr	<0.5	Hg	13	Mo	<0.5	Pt	<0.5	Sn	<0.5	Y	<0.5
Au	<0.5	Cu	2	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	Yb	<0.2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2	Ta	<0.5	Zn	<2
Ba	<1	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5		
Bi	0.3	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1		
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5	Ti	<2		
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<5	Tl	MAJOR		
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	5	Se	<2	Tm	<0.2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTVXXXXTA_00010

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

rev. 10/01/19

Product #: TA-1000651

SE Std Vanadium (V) – 1000 µg/mL

Lot #: 990117-53

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
V	1003 ± 3 µg/mL (w/v)
	994 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.995% pure vanadium pentoxide (V_2O_5) dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3165, lot #160906**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	35	Te	<1
Al	7	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	20
As	<2	Cr	111	Hg	<0.5	Mn	5	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	7	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	MAJOR
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	<0.5	W	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	124	La	0.8	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	0.9	Li	<2	Os	<0.5	Ru	<0.5	Tb	<0.5	Zn	<2
Ce	2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:
- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
  - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

MTZnXXXTA-SS_00002

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CERTIFICATE OF ANALYSIS

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN1
Lot Number:	P2-ZN675323
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Zinc
Starting Material:	Zn Metal
Starting Material Lot#:	580919
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value:	1000 ± 5 µg/mL
Density:	1.011 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	**999 ± 4 µg/mL** ICP Assay NIST SRM 3168a Lot Number: 120629
Assay Method #2	**1000 ± 3 µg/mL** EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.000726	M	Eu	<	0.000500	O	Na		0.001897	O	Se	<	0.020160	s	Zn	<	
O	Al		0.000545	O	Fe		0.004817	M	Nb	<	0.000500	O	Si		0.001251	M	Zr	<	0.000500
M	As	<	0.005009	M	Ga	<	0.008015	M	Nd	<	0.000500	M	Sm	<	0.000500				
M	Au	<	0.001497	M	Gd	<	0.000500	O	Ni		0.002729	M	Sn	<	0.004007				
O	B	<	0.044800	M	Ge	<	0.004508	M	Os	<	0.011977	O	Sr		0.000022				
M	Ba		0.000078	M	Hf	<	0.000500	O	P	<	0.022400	M	Ta	<	0.000500				
M	Be	<	0.000500	M	Hg	<	0.002994	M	Pb		0.012073	M	Tb	<	0.000500				
M	Bi	<	0.001502	M	Ho	<	0.000500	M	Pd	<	0.001001	M	Te	<	0.000500				
O	Ca		0.002536	M	In	<	0.002003	M	Pr	<	0.000500	M	Th	<	0.000500				
M	Cd		0.000548	M	Ir	<	0.002495	M	Pt	<	0.000500	O	Ti	<	0.001568				
M	Ce	<	0.000500	M	K		0.000727	M	Rb	<	0.004007	M	Tl	<	0.002003				
M	Co	<	0.005009	M	La	<	0.000500	M	Re	<	0.000500	M	Tm	<	0.000500				
M	Cr	<	0.001001	O	Li	<	0.000112	M	Rh	<	0.000500	M	U	<	0.000500				
M	Cs	<	0.000500	M	Lu	<	0.000500	O	Ru	<	0.007840	M	V	<	0.001001				
O	Cu		0.004694	O	Mg		0.000550	O	S	<	0.044800	M	W	<	0.001001				
M	Dy	<	0.000500	O	Mn		0.001433	M	Sb	<	0.009017	M	Y	<	0.000500				
M	Er	<	0.000500	M	Mo	<	0.003506	M	Sc	<	0.002003	M	Yb	<	0.000500				

M - Checked by ICP-MS   O - Checked by ICP-OES   i - Spectral Interference
n - Not Checked For   s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.
Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 25, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 25, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: ______________________

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael 2 Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

MTZnXXXTA_00012

CERTIFICATE OF ANALYSIS

Rec. 10/01/19

Single-Element Aqueous CRM — Product #: TA-1000681

SE Std Zinc (Zn) – 1000 µg/mL — Lot #: 984272-63

Matrix: 5% HNO_3

Element	Certified Concentration & Uncertainty
Zn	**1005 ± 3 µg/mL (w/v)**
	998 ± 3 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.9999% pure zinc (Zn) metal dissolved in high purity nitric acid (HNO_3) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3168a, lot #120629**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<0.5	Co	<1	Ge	<0.5	Lu	<0.2	P	<100	Sb	<0.5	Te	<1
Al	3	Cs	<0.5	Hf	<0.2	Mg	<5	Pb	<1	Sc	<5	Ti	<2
As	6	Cr	<0.5	Hg	<0.5	Mn	<1	Pd	<0.5	Se	<2	Tl	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Mo	<0.5	Pr	<0.2	Si	<100	Tm	<0.2
B	<5	Dy	<0.2	In	nd	Na	<25	Pt	<0.5	Sm	<0.2	V	<1
Ba	<1	Er	<0.2	Ir	<0.2	Nb	<0.5	Rb	<0.5	Sn	12	W	<0.5
Bi	<0.2	Eu	<0.2	K	296	Nd	<0.2	Re	<0.2	Sr	<1	Y	<0.5
Ca	<25	Fe	<10	La	<0.5	Ni	<2	Rh	<0.5	Ta	<0.5	Yb	<0.2
Cd	<0.5	Ga	<0.5	Li	<2	Os	<0.5	Ru	1	Tb	<0.5	Zn	MAJOR
Ce	<0.2	Gd	<0.2										

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

August 13, 2019
Certification Date

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Method 1613B

Dioxins and Furans (HRGC/HRMS) by Method 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Matrix: Water   Level: Low

GC Column (1): DB-5   ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
	LCS 320-389032/2-A	45	53	63	44	51	51	55	54
	LCSD 320-389032/3-A	43	51	63	41	47	49	47	47

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	22-152
TCDD = 13C-2,3,7,8-TCDD	20-175
37TCDD = 37Cl4-2,3,7,8-TCDD	31-191
PeCDF = 13C-1,2,3,7,8-PeCDF	21-192
PeCF = 13C-2,3,4,7,8-PeCDF	13-328
PeCDD = 13C-1,2,3,7,8-PeCDD	21-227
HxCDF = 13C-1,2,3,4,7,8-HxCDF	19-202
HxDF = 13C-1,2,3,6,7,8-HxCDF	21-159

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	600-205895-1
SDG No.:			
Matrix:	Water	Level:	Low
GC Column (1):	DB-5	ID:	0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
	LCS 320-389032/2-A	48	53	61	47	51	55	58	53
	LCSD 320-389032/3-A	44	46	55	44	48	52	53	51

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	22-176
HxCDD = 13C-1,2,3,4,7,8-HxCDD	21-193
HxDD = 13C-1,2,3,6,7,8-HxCDD	25-163
HxCF = 13C-1,2,3,7,8,9-HxCDF	17-205
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	21-158
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	26-166
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	20-186
OCDD = 13C-OCDD	13-199

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-225 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	37TCDD #
AFINF RA	600-205895-1 RA	48	73

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	37TCDD #	PeCDF #	PeCF #	PeCDD #	HxCDF #	HxDF #
AFINF	600-205895-1	46	55	69	46	52	54	58	57
AFEFF5	600-205895-2	51	58	70	48	57	58	60	60
AFEFF10	600-205895-3	36	43	53	35	40	40	42	40
DUP	600-205895-4	51	61	68	50	56	58	61	60
	MB 320-389032/1-A	46	53	61	43	49	50	51	52
AFEFF10 MS	600-205895-3 MS	49	59	68	48	54	57	57	57
AFEFF10 MSD	600-205895-3 MSD	43	50	64	41	48	48	48	46

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	24-169
TCDD = 13C-2,3,7,8-TCDD	25-164
37TCDD = 37Cl4-2,3,7,8-TCDD	35-197
PeCDF = 13C-1,2,3,7,8-PeCDF	24-185
PeCF = 13C-2,3,4,7,8-PeCDF	21-178
PeCDD = 13C-1,2,3,7,8-PeCDD	25-181
HxCDF = 13C-1,2,3,4,7,8-HxCDF	26-152
HxDF = 13C-1,2,3,6,7,8-HxCDF	26-123

Column to be used to flag recovery values

FORM II 1613B

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	13CHxCF #	HxCDD #	HxDD #	HxCF #	HpCDF #	HpCDD #	HpCDF2 #	OCDD #
AFINF	600-205895-1	51	54	69	52	60	64	67	65
AFEFF5	600-205895-2	53	59	70	54	61	66	68	68
AFEFF10	600-205895-3	37	39	48	37	42	45	46	45
DUP	600-205895-4	54	57	69	55	61	66	69	66
	MB 320-389032/1-A	48	47	61	46	47	51	54	48
AFEFF10 MS	600-205895-3 MS	54	56	69	54	61	67	69	69
AFEFF10 MSD	600-205895-3 MSD	44	47	57	44	49	52	55	59

	QC LIMITS
13CHxCF = 13C-2,3,4,6,7,8-HxCDF	28-136
HxCDD = 13C-1,2,3,4,7,8-HxCDD	32-141
HxDD = 13C-1,2,3,6,7,8-HxCDD	28-130
HxCF = 13C-1,2,3,7,8,9-HxCDF	29-147
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	28-143
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	23-140
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF	26-138
OCDD = 13C-OCDD	17-157

Column to be used to flag recovery values

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 25JN2010D5_5.d

Lab ID: LCS 320-389032/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	172	86	67-158	
2,3,7,8-TCDF	200	191	95	75-158	
1,2,3,7,8-PeCDD	1000	848	85	70-142	
1,2,3,7,8-PeCDF	1000	914	91	80-134	
2,3,4,7,8-PeCDF	1000	780	78	68-160	
1,2,3,4,7,8-HxCDD	1000	802	80	70-164	
1,2,3,6,7,8-HxCDD	1000	887	89	76-134	
1,2,3,7,8,9-HxCDD	1000	862	86	64-162	
1,2,3,4,7,8-HxCDF	1000	851	85	72-134	
1,2,3,6,7,8-HxCDF	1000	967	97	84-130	
1,2,3,7,8,9-HxCDF	1000	1000	100	78-130	
2,3,4,6,7,8-HxCDF	1000	995	100	70-156	
1,2,3,4,6,7,8-HpCDD	1000	859	86	70-140	
1,2,3,4,6,7,8-HpCDF	1000	897	90	82-122	
1,2,3,4,7,8,9-HpCDF	1000	779	78	78-138	
OCDD	2000	1870	94	78-144	
OCDF	2000	1800	90	63-170	
13C-2,3,7,8-TCDD	2000	1060	53	20-175	
13C-2,3,7,8-TCDF	2000	908	45	22-152	
13C-1,2,3,7,8-PeCDD	2000	1020	51	21-227	
13C-1,2,3,7,8-PeCDF	2000	886	44	21-192	
13C-2,3,4,7,8-PeCDF	2000	1030	51	13-328	
13C-1,2,3,4,7,8-HxCDD	2000	1070	53	21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1220	61	25-163	
13C-1,2,3,4,7,8-HxCDF	2000	1100	55	19-202	
13C-1,2,3,6,7,8-HxCDF	2000	1090	54	21-159	
13C-1,2,3,7,8,9-HxCDF	2000	946	47	17-205	
13C-2,3,4,6,7,8-HxCDF	2000	964	48	22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1100	55	26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	1020	51	21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1150	58	20-186	
13C-OCDD	4000	2140	53	13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 25JN2010D5_6.d

Lab ID: LCSD 320-389032/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,3,7,8-TCDD	200	198	99	14	50	67-158	
2,3,7,8-TCDF	200	222	111	15	50	75-158	
1,2,3,7,8-PeCDD	1000	922	92	8	50	70-142	
1,2,3,7,8-PeCDF	1000	1040	104	13	50	80-134	
2,3,4,7,8-PeCDF	1000	900	90	14	50	68-160	
1,2,3,4,7,8-HxCDD	1000	918	92	13	50	70-164	
1,2,3,6,7,8-HxCDD	1000	980	98	10	50	76-134	
1,2,3,7,8,9-HxCDD	1000	999	100	15	50	64-162	
1,2,3,4,7,8-HxCDF	1000	936	94	10	50	72-134	
1,2,3,6,7,8-HxCDF	1000	1110	111	14	50	84-130	
1,2,3,7,8,9-HxCDF	1000	1130	113	12	50	78-130	
2,3,4,6,7,8-HxCDF	1000	1140	114	13	50	70-156	
1,2,3,4,6,7,8-HpCDD	1000	961	96	11	50	70-140	
1,2,3,4,6,7,8-HpCDF	1000	1030	103	13	50	82-122	
1,2,3,4,7,8,9-HpCDF	1000	898	90	14	50	78-138	
OCDD	2000	2080	104	11	50	78-144	
OCDF	2000	2030	101	12	50	63-170	
13C-2,3,7,8-TCDD	2000	1010	51			20-175	
13C-2,3,7,8-TCDF	2000	853	43			22-152	
13C-1,2,3,7,8-PeCDD	2000	989	49			21-227	
13C-1,2,3,7,8-PeCDF	2000	825	41			21-192	
13C-2,3,4,7,8-PeCDF	2000	944	47			13-328	
13C-1,2,3,4,7,8-HxCDD	2000	921	46			21-193	
13C-1,2,3,6,7,8-HxCDD	2000	1100	55			25-163	
13C-1,2,3,4,7,8-HxCDF	2000	945	47			19-202	
13C-1,2,3,6,7,8-HxCDF	2000	939	47			21-159	
13C-1,2,3,7,8,9-HxCDF	2000	871	44			17-205	
13C-2,3,4,6,7,8-HxCDF	2000	872	44			22-176	
13C-1,2,3,4,6,7,8-HpCDD	2000	1040	52			26-166	
13C-1,2,3,4,6,7,8-HpCDF	2000	952	48			21-158	
13C-1,2,3,4,7,8,9-HpCDF	2000	1060	53			20-186	
13C-OCDD	4000	2030	51			13-199	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 25JN2010D5_10.d

Lab ID: 600-205895-3 MS Client ID: AFEFF10 MS

COMPOUND	SPIKE ADDED (pg/L)	SAMPLE CONCENTRATION (pg/L)	MS CONCENTRATION (pg/L)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	195	ND	184	94	67-158	
2,3,7,8-TCDF	195	3.4 J	214	108	75-158	
1,2,3,7,8-PeCDD	976	ND	897	92	70-142	
1,2,3,7,8-PeCDF	976	5.4 J	1010	103	80-134	
2,3,4,7,8-PeCDF	976	2.1 J	855	87	68-160	
1,2,3,4,7,8-HxCDD	976	1.4 J	896	92	70-164	
1,2,3,6,7,8-HxCDD	976	ND	931	95	76-134	
1,2,3,7,8,9-HxCDD	976	ND	977	100	64-162	
1,2,3,4,7,8-HxCDF	976	6.7 J	959	98	72-134	
1,2,3,6,7,8-HxCDF	976	ND	1090	112	84-130	
1,2,3,7,8,9-HxCDF	976	ND	1130	115	78-130	
2,3,4,6,7,8-HxCDF	976	ND	1090	112	70-156	
1,2,3,4,6,7,8-HpCDD	976	1.3 J	950	97	70-140	
1,2,3,4,6,7,8-HpCDF	976	3.6 J	1020	104	82-122	
1,2,3,4,7,8,9-HpCDF	976	ND	898	92	78-138	
OCDD	1950	8.3 J	2130	108	78-144	
OCDF	1950	2.3 J	2040	104	63-170	
13C-2,3,7,8-TCDD	1950	870	1140	59	25-164	
13C-2,3,7,8-TCDF	1950	730	957	49	24-169	
13C-1,2,3,7,8-PeCDD	1950	810	1100	57	25-181	
13C-1,2,3,7,8-PeCDF	1950	700	932	48	24-185	
13C-2,3,4,7,8-PeCDF	1950	810	1060	54	21-178	
13C-1,2,3,4,7,8-HxCDD	1950	790	1100	56	32-141	
13C-1,2,3,6,7,8-HxCDD	1950	970	1340	69	28-130	
13C-1,2,3,4,7,8-HxCDF	1950	840	1120	57	26-152	
13C-1,2,3,6,7,8-HxCDF	1950	810	1110	57	26-123	
13C-1,2,3,7,8,9-HxCDF	1950	740	1060	54	29-147	
13C-2,3,4,6,7,8-HxCDF	1950	730	1050	54	28-136	
13C-1,2,3,4,6,7,8-HpCDD	1950	910	1310	67	23-140	
13C-1,2,3,4,6,7,8-HpCDF	1950	840	1200	61	28-143	
13C-1,2,3,4,7,8,9-HpCDF	1950	930	1350	69	26-138	
13C-OCDD	3910	1800	2690	69	17-157	

Column to be used to flag recovery and RPD values

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 25JN2010D5_11.d

Lab ID: 600-205895-3 MSD Client ID: AFEFF10 MSD

COMPOUND	SPIKE ADDED (pg/L)	MSD CONCENTRATION (pg/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	196	182	93	1	50	67-158	
2,3,7,8-TCDF	196	220	110	3	50	75-158	
1,2,3,7,8-PeCDD	981	918	94	2	50	70-142	
1,2,3,7,8-PeCDF	981	1030	104	2	50	80-134	
2,3,4,7,8-PeCDF	981	882	90	3	50	68-160	
1,2,3,4,7,8-HxCDD	981	900	92	0	50	70-164	
1,2,3,6,7,8-HxCDD	981	970	99	4	50	76-134	
1,2,3,7,8,9-HxCDD	981	1020	104	4	50	64-162	
1,2,3,4,7,8-HxCDF	981	968	98	1	50	72-134	
1,2,3,6,7,8-HxCDF	981	1160	118	6	50	84-130	
1,2,3,7,8,9-HxCDF	981	1150	118	2	50	78-130	
2,3,4,6,7,8-HxCDF	981	1130	115	3	50	70-156	
1,2,3,4,6,7,8-HpCDD	981	984	100	3	50	70-140	
1,2,3,4,6,7,8-HpCDF	981	1050	106	2	50	82-122	
1,2,3,4,7,8,9-HpCDF	981	898	92	0	50	78-138	
OCDD	1960	2110	107	1	50	78-144	
OCDF	1960	1920	98	6	50	63-170	
13C-2,3,7,8-TCDD	1960	987	50			25-164	
13C-2,3,7,8-TCDF	1960	847	43			24-169	
13C-1,2,3,7,8-PeCDD	1960	946	48			25-181	
13C-1,2,3,7,8-PeCDF	1960	805	41			24-185	
13C-2,3,4,7,8-PeCDF	1960	934	48			21-178	
13C-1,2,3,4,7,8-HxCDD	1960	913	47			32-141	
13C-1,2,3,6,7,8-HxCDD	1960	1120	57			28-130	
13C-1,2,3,4,7,8-HxCDF	1960	943	48			26-152	
13C-1,2,3,6,7,8-HxCDF	1960	898	46			26-123	
13C-1,2,3,7,8,9-HxCDF	1960	858	44			29-147	
13C-2,3,4,6,7,8-HxCDF	1960	859	44			28-136	
13C-1,2,3,4,6,7,8-HpCDD	1960	1030	52			23-140	
13C-1,2,3,4,6,7,8-HpCDF	1960	967	49			28-143	
13C-1,2,3,4,7,8,9-HpCDF	1960	1080	55			26-138	
13C-OCDD	3920	2310	59			17-157	

Column to be used to flag recovery and RPD values

FORM III 1613B

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Lab File ID: 25JN2010D5_4.d   Lab Sample ID: MB 320-389032/1-A

Matrix: Water   Date Extracted: 06/24/2020 12:40

Instrument ID: 10D5   Date Analyzed: 06/25/2020 20:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-389032/2-A	25JN2010D5_5.d	06/25/2020 20:55
	LCSD 320-389032/3-A	25JN2010D5_6.d	06/25/2020 21:40
AFINF	600-205895-1	25JN2010D5_7.d	06/25/2020 22:25
AFEFF5	600-205895-2	25JN2010D5_8.d	06/25/2020 23:10
AFEFF10	600-205895-3	25JN2010D5_9.d	06/25/2020 23:55
AFEFF10 MS	600-205895-3 MS	25JN2010D5_10.d	06/26/2020 00:40
AFEFF10 MSD	600-205895-3 MSD	25JN2010D5_11.d	06/26/2020 01:26
DUP	600-205895-4	25JN2010D5_12.d	06/26/2020 02:11
AFINF RA	600-205895-1 RA	26JN2011D2T_004.d	06/26/2020 16:00

FORM IV 1613B

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: AFINF	Lab Sample ID: 600-205895-1
Matrix: Water	Lab File ID: 25JN2010D5_7.d
Analysis Method: 1613B	Date Collected: 05/28/2020 10:30
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1052.7(mL)	Date Analyzed: 06/25/2020 22:25
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	1.9	J q	9.5	0.68
40321-76-4	1,2,3,7,8-PeCDD	ND		47	0.50
57117-41-6	1,2,3,7,8-PeCDF	13	J	47	0.78
57117-31-4	2,3,4,7,8-PeCDF	4.0	J q	47	0.71
39227-28-6	1,2,3,4,7,8-HxCDD	1.6	J	47	0.52
57653-85-7	1,2,3,6,7,8-HxCDD	ND		47	0.53
19408-74-3	1,2,3,7,8,9-HxCDD	ND		47	0.48
70648-26-9	1,2,3,4,7,8-HxCDF	15	J	47	1.0
57117-44-9	1,2,3,6,7,8-HxCDF	5.2	J	47	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	ND		47	0.96
60851-34-5	2,3,4,6,7,8-HxCDF	1.8	J q	47	0.89
35822-46-9	1,2,3,4,6,7,8-HpCDD	2.4	J q	47	0.47
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	J B	47	0.63
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.1	J q	47	0.78
3268-87-9	OCDD	23	J B	95	0.76
39001-02-0	OCDF	8.7	J B	95	0.76
41903-57-5	Total TCDD	6.5	J q B	9.5	0.68
30402-14-3	Total TCDF	20		9.5	0.58
36088-22-9	Total PeCDD	ND		47	0.50
30402-15-4	Total PeCDF	29	J q B	47	0.75
34465-46-8	Total HxCDD	2.0	J q	47	0.51
55684-94-1	Total HxCDF	22	J q	47	0.99
37871-00-4	Total HpCDD	6.6	J q	47	0.47
38998-75-3	Total HpCDF	19	J q B	47	0.71

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: AFINF	Lab Sample ID: 600-205895-1
Matrix: Water	Lab File ID: 25JN2010D5_7.d
Analysis Method: 1613B	Date Collected: 05/28/2020 10:30
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1052.7(mL)	Date Analyzed: 06/25/2020 22:25
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	55		25-164
89059-46-1	13C-2,3,7,8-TCDF	46		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	54		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	46		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	52		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	54		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	58		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	57		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	52		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	51		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	64		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	67		26-138
114423-97-1	13C-OCDD	65		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	69		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Sample Type: Client
Inject. Date: 25-Jun-2020 22:25:22 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-1-A 600-205895-B-1-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 12:17:19

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.566	65209217	0.78	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.067	35595712	0.76	1.1970	45.6	45.6	0.1272	0.1272	45.60	
2,3,7,8-TCDF	17.082	202400	0.68	0.7672	0.7412	0.7412	0.0303	0.0303		
A Non-2,3,7,8-sub-TCDF	16.810	91237	0.73	0.7672	0.3341	0.3341	0.0303	0.2832		
S Total TCDF					1.075	1.075	0.0303	0.0303		
D 13C-2,3,7,8-TCDD	17.748	31335081	0.75	0.8773	54.8	54.8	0.2357	0.2357	54.77	
2,3,7,8-TCDD	17.778	31381	0.77	1.0000	0.1757	0.1001	0.0357	0.0357		RQM
$ 37Cl4-2,3,7,8-TCDD	17.778	17010630		0.9515	27.4	27.4	0.0325	0.0325	68.54	
A Non-2,3,7,8-sub-TCDD	17.256	75135	0.77	1.0000	0.2464	0.2398	0.0357	0.1539		RQM
S Total TCDD					0.4221	0.3399	0.0357	0.0357		RQ
D 13C-1,2,3,7,8-PeCDF	21.971	29529040	1.57	0.9904	45.7	45.7	0.1904	0.1904	45.72	
1,2,3,7,8-PeCDF	21.985	184456	1.51	0.9019	0.6926	0.6926	0.0412	0.0412		
D 13C-2,3,4,7,8-PeCDF	23.267	36909153	1.54	1.0797	52.4	52.4	0.1746	0.1746	52.42	
2,3,4,7,8-PeCDF	23.294	64952	1.55	0.8307	0.2304	0.2118	0.0376	0.0376		RQ
A F1 PeCDFs	19.675	33355	1.55	0.8663	0.1350	0.1159	0.0280	0.1159		RQ
A Non-2,3,7,8-sub-PeCDF	22.743	153103	1.55	0.8663	0.5587	0.5320	0.0392	0.3771		RQM
S Total PeCDF					1.617	1.552	0.0394	0.0394		RQ
D 13C-1,2,3,7,8-PeCDD	23.976	24431761	1.57	0.6904	54.3	54.3	0.0892	0.0892	54.27	
1,2,3,7,8-PeCDD	24.044						0.0264	0.0264		
A Non-2,3,7,8-sub-PeCDD	22.953						0.0264	0.0264		
S Total PeCDD							0.0264	0.0264		
D 13C-1,2,3,4,7,8-HxCDF	30.100	21523853	0.50	0.9076	57.8	57.8	0.6677	0.6677	57.83	
1,2,3,4,7,8-HxCDF	30.127	136133	1.16	0.7928	0.7978	0.7978	0.0537	0.0537		M
D 13C-1,2,3,6,7,8-HxCDF	30.313	20274981	0.48	0.8671	57.0	57.0	0.6989	0.6989	57.02	
1,2,3,6,7,8-HxCDF	30.326	47933	1.32	0.8592	0.2752	0.2752	0.0571	0.0571		M
D 13C-2,3,4,6,7,8-HxCDF	31.232	17181433	0.50	0.8287	50.6	50.6	0.7314	0.7314	50.56	
2,3,4,6,7,8-HxCDF	31.245	14384	1.24	0.8896	0.1081	0.0941	0.0466	0.0466		RQ
D 13C-1,2,3,7,8,9-HxCDF	32.097	15890534	0.48	0.7391	52.4	52.4	0.8200	0.8200	52.43	
1,2,3,7,8,9-HxCDF	32.137						0.0503	0.0503		U
A Non-2,3,7,8-sub-HxCDF	29.847						0.0516	0.0516		RQU

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					1.181	1.167	0.0519	0.0519		RQ
* 13C-1,2,3,7,8,9-HxCDD	31.910	41004976	1.24	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.444	18577268	1.26	0.8335	54.4	54.4	0.6324	0.6324	54.35	
1,2,3,4,7,8-HxCDD	31.444	12699	1.28	0.8332	0.0820	0.0820	0.0272	0.0272		M
D 13C-1,2,3,6,7,8-HxCDD	31.551	23230286	1.25	0.8228	68.9	68.9	0.6406	0.6406	68.85	
1,2,3,6,7,8-HxCDD	31.551	4961	1.24	0.8944	0.0392	0.0239	0.0278	0.0278		RQM
1,2,3,7,8,9-HxCDD	31.950						0.0251	0.0251		
A Non-2,3,7,8-sub-HxCDD	30.499						0.0266	0.0266		
S Total HxCDD					0.1213	0.1059	0.0267	0.0267		RQ
D 13C-1,2,3,4,6,7,8-HpCDF	33.578	17381012	0.43	0.7009	60.5	60.5	2.445	2.445	60.48	
1,2,3,4,6,7,8-HpCDF	33.590	155354	1.12	1.3295	0.6723	0.6723	0.0332	0.0332		
D 13C-1,2,3,4,7,8,9-HpCDF	34.635	19884752	0.43	0.7244	66.9	66.9	2.366	2.366	66.95	
1,2,3,4,7,8,9-HpCDF	34.647	23714	1.04	1.0803	0.1206	0.1104	0.0412	0.0412		RQM
A Non-2,3,7,8-sub-HpCDF	34.143	46340	1.14	1.2049	0.2064	0.2064	0.0368	0.2064		M
S Total HpCDF					0.999	0.9891	0.0372	0.0372		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	34.356	18531259	1.06	0.7026	64.3	64.3	1.061	1.061	64.32	
1,2,3,4,6,7,8-HpCDD	34.368	23505	1.04	1.0040	0.1413	0.1263	0.0249	0.0249		RQM
A Non-2,3,7,8-sub-HpCDD	34.119	41308	1.18	1.0040	0.2220	0.2220	0.0249	0.2220		M
S Total HpCDD					0.3633	0.3483	0.0249	0.0249		RQ
D 13C-OCDD	36.653	33044498	0.89	0.6184	130.3	130.3	0.4283	0.4283	65.16	
OCDF	36.760	83963	0.81	1.1076	0.4588	0.4588	0.0398	0.0398		M
OCDD	36.665	199105	0.90	1.0175	1.184	1.184	0.0401	0.0401		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 26-Jun-2020 13:16:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Sample Type: Client
Inject. Date: 25-Jun-2020 22:25:22 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-1-A 600-205895-B-1-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 12:17:19

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.566	17.581	-1		28528197	7134326	6426	16065	1110		
333.9339	17.566	17.581	-1		36681020	9150308	7046	17615	1299	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.067	17.082	-1	0.972	15426646	3612936	4589	11472	787		
317.9389	17.067	17.082	-1	0.972	20169066	4735042	5330	13325	888	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.082	17.097	-1	1.001	81807	17351	281	702	62		
305.8987	17.082	17.097	-1	1.001	120593	26376	496	1240	53	0.68(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.719	16.810	-5	0.980	32367	6200	281	702	22		
305.8987	16.704	16.810	-6	0.979	44984	8240	496	1240	17	0.72(0.65-0.89)	
303.9016	18.564	16.810	105	1.088	6265	1413	281	702	5		
305.8987	18.564	16.810	105	1.088	7621	1991	496	1240	4	0.82(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.748	17.778	-2	1.010	13437991	2890325	6426	16065	450		
333.9339	17.748	17.778	-2	1.010	17897090	3819791	7046	17615	542	0.75(0.65-0.89)	
2,3,7,8-TCDD											RQM
319.8965	17.778	17.793	-1	1.002	13652	3083	649	1622	5		M
321.8936	17.763	17.793	-2	1.001	41389	9372	309	772	30	0.33(0.65-0.89)	M
	Empc Correction				17729	4003	309	772	13		
37Cl4-2,3,7,8-TCDD											
327.8847	17.778	17.793	-1	1.012	17010630	3682017	2016	5040	1826		
A Non-2,3,7,8-sub-TCDD											RQM

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	15.616	17.256	-98	0.880	19347	4640	649	1622	7		M
321.8936	15.601	17.256	-99	0.879	28870	6741	309	772	22	0.67(0.65-0.89)	
319.8965	15.903	17.256	-81	0.896	13801	2727	649	1622	4		
	Empc Correction				11710	4156	649	1622	6		
321.8936	15.888	17.256	-82	0.895	15208	5398	309	772	17	0.91(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.971	21.999	-2	1.251	18052570	2923856	7406	18515	395		
353.8970	21.971	21.999	-2	1.251	11476470	1874999	4875	12187	385	1.57(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.985	22.012	-2	1.001	110882	16500	344	860	48		
341.8567	21.985	22.012	-2	1.001	73574	11923	370	925	32	1.51(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.267	23.308	-2	1.325	22362369	3418008	7406	18515	462		
353.8970	23.267	23.308	-2	1.325	14546784	2296007	4875	12187	471	1.54(1.32-1.78)	
2,3,4,7,8-PeCDF											RQ
339.8597	23.294	23.321	-2	1.001	39481	6948	344	860	20		
341.8567	23.294	23.321	-2	1.001	31153	5220	370	925	14	1.27(1.32-1.78)	
	Empc Correction				25471	4482	370	925	12		
A F1 PeCDFs											RQ
339.8597	19.139	19.675	-32	0.871	20275	4653	192	480	24		
341.8567	19.169	19.675	-30	0.872	18571	2824	319	797	9	1.09(1.32-1.78)	
	Empc Correction				13080	3001	319	797	9		
A Non-2,3,7,8-sub-PeCDF											RQM
339.8597	20.676	22.743	-124	0.941	65135	11519	344	860	33		M
341.8567	20.690	22.743	-123	0.942	43386	7549	370	925	20	1.50(1.32-1.78)	
339.8597	22.503	22.743	-14	1.024	27099	4301	344	860	13		M
341.8567	22.476	22.743	-16	1.023	25154	3850	370	925	10	1.08(1.32-1.78)	
	Empc Correction				17483	2774	370	925	7		
13C-1,2,3,7,8-PeCDD											
367.8949	23.976	24.017	-2	1.365	14913351	2123216	2416	6040	879		
369.8919	23.976	24.017	-2	1.365	9518410	1357186	1596	3990	850	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.044						229	572			
357.8516	24.044						144	360			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						229	572			
357.8516	22.953						144	360			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.100	30.140	-2	0.943	7166737	1100687	6292	15730	175		
385.8610	30.100	30.140	-2	0.943	14357116	2183173	13024	32560	168	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	30.127	30.153	-2	1.001	73227	10852	284	710	38		M
375.8178	30.140	30.153	-1	1.001	62906	8742	275	687	32	1.16(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.313	30.340	-2	0.950	6617803	907591	6292	15730	144		
385.8610	30.313	30.340	-2	0.950	13657178	1939064	13024	32560	149	0.48(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDF											M
373.8208	30.326	30.366	-2	1.000	27309	4094	284	710	14		M
375.8178	30.340	30.366	-2	1.001	20624	3148	275	687	11	1.32(1.05-1.43)	M
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.232	31.258	-2	0.979	5705335	1134147	6292	15730	180		
385.8610	31.232	31.258	-2	0.979	11476098	2234066	13024	32560	172	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											RQ
373.8208	31.245	31.285	-2	1.000	7963	1595	284	710	6		
375.8178	31.245	31.285	-2	1.000	8564	1639	275	687	6	0.93(1.05-1.43)	
	Empc Correction				6421	1286	275	687	5		
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.097	32.123	-2	1.006	5188099	1003724	6292	15730	160		
385.8610	32.097	32.123	-2	1.006	10702435	2100470	13024	32560	161	0.48(0.43-0.59)	
1,2,3,7,8,9-HxCDF											U
373.8208	32.137						284	710			
375.8178	32.137						275	687			
A Non-2,3,7,8-sub-HxCDF											U
373.8208	29.847						284	710			
375.8178	29.847						275	687			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.910	31.924	-1		22722577	4402256	9109	22772	483		
403.8529	31.910	31.924	-1		18282399	3565331	7690	19225	464	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.444	31.471	-2	0.985	10349644	2555796	9109	22772	281		
403.8529	31.444	31.471	-2	0.985	8227624	2009257	7690	19225	261	1.26(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	31.444	31.484	-2	1.000	7123	2033	173	432	12		
391.8127	31.471	31.484	-1	1.001	5576	1479	241	602	6	1.28(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.551	31.577	-2	0.989	12888219	2281628	9109	22772	250		
403.8529	31.551	31.577	-2	0.989	10342067	1882668	7690	19225	245	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											RQM
389.8157	31.551	31.604	-3	1.000	5940	1950	173	432	11		M
	Empc Correction				2746	1278	173	432	7		
391.8127	31.591	31.604	-1	1.001	2215	1031	241	602	4	2.68(1.05-1.43)	M
1,2,3,7,8,9-HxCDD											
389.8157	31.950						173	432			
391.8127	31.950						241	602			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						173	432			
391.8127	30.499						241	602			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.578	33.590	-1	1.052	5225059	1300572	16477	41192	79		
419.8220	33.578	33.590	-1	1.052	12155953	3053623	38141	95352	80	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.590	33.602	-1	1.000	82062	20558	312	780	66		
409.7789	33.590	33.602	-1	1.000	73292	19101	457	1142	42	1.12(0.88-1.20)	

Report Date: 26-Jun-2020 13:16:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.635	34.659	-1	1.085	5973258	1310516	16477	41192	80		
419.8220	34.635	34.659	-1	1.085	13911494	3010381	38141	95352	79	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											RQM
407.7818	34.647	34.659	-1	1.000	14278	3897	312	780	12		M
	Empc Correction				12089	3643	312	780	12		
409.7789	34.635	34.659	-1	1.000	11625	3503	457	1142	8	1.23(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDF											M
407.7818	33.882	34.143	-16	1.009	24655	7580	312	780	24		M
409.7789	33.882	34.143	-16	1.009	21685	6753	457	1142	15	1.14(0.88-1.20)	M
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.356	34.380	-1	1.077	9513923	2208430	12446	31115	177		
437.8140	34.356	34.380	-1	1.077	9017336	2045597	11322	28305	181	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											RQM
423.7766	34.368	34.380	-1	1.000	11983	3596	211	527	17		M
425.7737	34.368	34.380	-1	1.000	14305	3906	215	537	18	0.84(0.88-1.20)	
	Empc Correction				11522	3457	215	537	16		
A Non-2,3,7,8-sub-HpCDD											M
423.7766	33.821	34.119	-18	0.984	22348	5196	211	527	25		M
425.7737	33.833	34.119	-17	0.985	18960	4578	215	537	21	1.18(0.88-1.20)	
13C-OCDD											
469.7779	36.653	36.676	-1	1.149	15520172	2910626	3974	9935	732		
471.7750	36.653	36.676	-1	1.149	17524326	3298205	4466	11165	739	0.89(0.76-1.02)	
OCDF											M
441.7428	36.760	36.772	-1	1.003	37537	7943	201	502	40		M
443.7399	36.749	36.772	-1	1.003	46426	9214	346	865	27	0.81(0.76-1.02)	M
OCDD											
457.7377	36.665	36.688	-1	1.000	94178	17322	250	625	69		
459.7348	36.665	36.688	-1	1.000	104927	17195	257	642	67	0.90(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Lims ID:	600-205895-B-1-A		
Client ID:	AFINF		
Inject. Date:	25-Jun-2020 22:25:22	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	7

Non-2,3,7,8-sub-TCDF, RT: 16.810

Initial Calibration RRF / IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.767	D 13C-2,3,7,8-TCDF	100.000	35595712	8347978

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.767		100.000	35595712	8347978

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.719	32367	6200	44984	8240	0.2832	0.72	
18.564	6265	1413	7621	1991	0.0508	0.82	
Signal Totals:							
	38632	7613	52605	10231			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	91237	17844				0.73	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.3341 = (91237 * 100.000) / (35595712 * 0.767)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Lims ID:	600-205895-B-1-A		
Client ID:	AFINF		
Inject. Date:	25-Jun-2020 22:25:22	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	7

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	31335081	6710116

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	31335081	6710116

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	19347	4640	28870	6741	0.1539	0.67	M
15.903	13801	2727	15208	5398	0.0926	0.91	RQ
15.903	11710	4156	15208	5398	0.0859		Empc Correction
Signal Totals:							
	31057	8796	44078	12139			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	77226	19506				0.75	RQM
	75135	20935					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2464 = (77226 * 100.000) / (31335081 * 1.000)
Empc Amount: 0.2398 = (75135 * 100.000) / (31335081 * 1.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Inject. Date: 25-Jun-2020 22:25:22
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 389621
Lims Sample ID: 7

F1 PeCDFs, RT: 19.675

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902	D 13C-1,2,3,7,8-PeCDF	100.000	29529040	4798855
2,3,4,7,8-PeCDF	0.831	D 13C-2,3,4,7,8-PeCDF	100.000	36909153	5714015

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.866		100.000	33219096	5256435

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
19.139	20275	4653	18571	2824	0.1350	1.09	RQ
19.139	20275	4653	13080	3001	0.1159		Empc Correction
Signal Totals:							
	20275	4653	13080	3001			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	38846	7477				1.09	RQ
	33355	7654					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1350 = (38846 * 100.000) / (33219096 * 0.866)
Empc Amount: 0.1159 = (33355 * 100.000) / (33219096 * 0.866)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Inject. Date: 25-Jun-2020 22:25:22
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 389621
Lims Sample ID: 7

Non-2,3,7,8-sub-PeCDF, RT: 22.743

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902	D 13C-1,2,3,7,8-PeCDF	100.000	29529040	4798855
2,3,4,7,8-PeCDF	0.831	D 13C-2,3,4,7,8-PeCDF	100.000	36909153	5714015

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.866		100.000	33219096	5256435

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.676	65135	11519	43386	7549	0.3771	1.50	M
22.503	27099	4301	25154	3850	0.1816	1.08	RQM
22.503	27099	4301	17483	2774	0.1549		Empc Correction
Signal Totals:							
	92234	15820	60869	10323			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	160774	27219				1.35	RQM
	153103	26143					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5587 = (160774 * 100.000) / (33219096 * 0.866)
Empc Amount: 0.5320 = (153103 * 100.000) / (33219096 * 0.866)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Inject. Date: 25-Jun-2020 22:25:22 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 389621 Lims Sample ID: 7

Non-2,3,7,8-sub-HxCDF, RT: 29.847

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDF	0.793	D 13C-1,2,3,4,7,8-HxCDF	100.000	21523853	3283860
1,2,3,6,7,8-HxCDF	0.859	D 13C-1,2,3,6,7,8-HxCDF	100.000	20274981	2846655
2,3,4,6,7,8-HxCDF	0.890	D 13C-2,3,4,6,7,8-HxCDF	100.000	17181433	3368213
1,2,3,7,8,9-HxCDF	0.894	D 13C-1,2,3,7,8,9-HxCDF	100.000	15890534	3104194

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.859		100.000	18717700	3150730

Sum the Uncalibrated Results

RT	373.8208 Area	373.8208 Height	375.8178 Area	375.8178 Height	Amount	Ratio	Flags

Compound is Marked ND

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Inject. Date: 25-Jun-2020 22:25:22
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 389621
Lims Sample ID: 7

Non-2,3,7,8-sub-HpCDF, RT: 34.143

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.329	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	17381012	4354195
1,2,3,4,7,8,9-HpCDF	1.080	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	19884752	4320897

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.205		100.000	18632882	4337546

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.882	24655	7580	21685	6753	0.2064	1.14	M
Signal Totals:							
	24655	7580	21685	6753			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	46340	14333				1.14	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2064 = (46340 * 100.000) / (18632882 * 1.205)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Lims ID:	600-205895-B-1-A		
Client ID:	AFINF		
Inject. Date:	25-Jun-2020 22:25:22	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	7

Non-2,3,7,8-sub-HpCDD, RT: 34.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.004	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	18531259	4254027

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.004		100.000	18531259	4254027

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags
33.821	22348	5196	18960	4578	0.2220	1.18	M
Signal Totals:							
	22348	5196	18960	4578			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	41308	9774				1.18	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2220 = (41308 * 100.000) / (18531259 * 1.004)

QC Flag Legend

Review Flags
M - Manually Integrated

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Injection Date: 25-Jun-2020 22:25:22
Instrument ID: 10D5
Lims ID: 600-205895-B-1-A
Lab Sample ID: 320-205895-1
Client ID: AFINF
Operator ID: AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 1

Processing Integration Results

RT: 17.78
Area: 21887
Amount: 0.208907
Amount Units: pg/ul

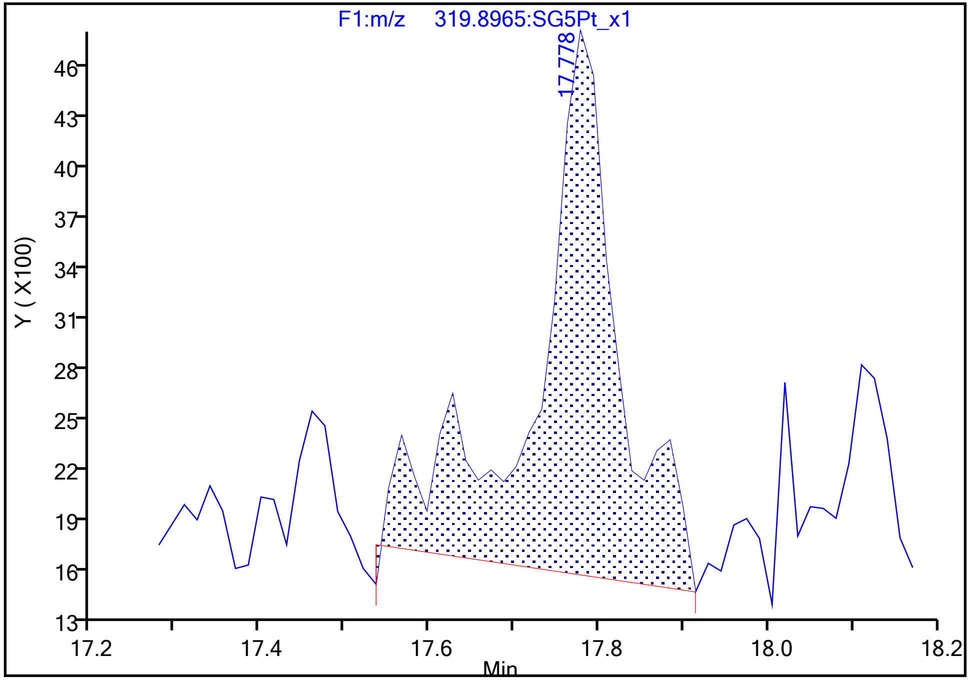

Manual Integration Results

RT: 17.78
Area: 13652
Amount: 0.175651
Amount Units: pg/ul

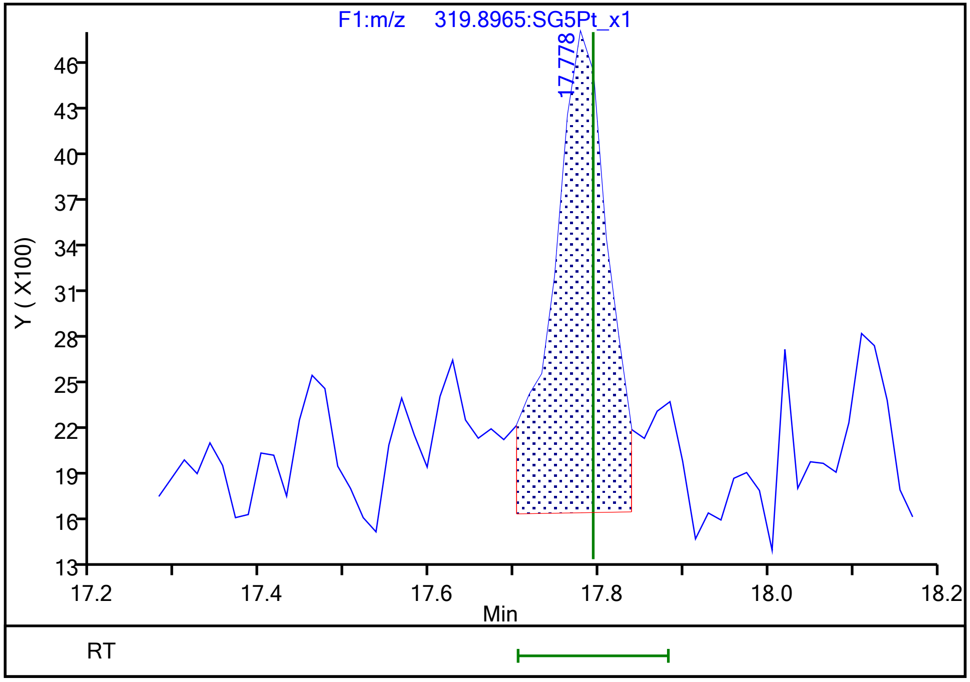

Reviewer: arghestanis, 26-Jun-2020 12:02:29
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d

Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDD, CAS: 1746-01-6

Signal: 2

RT: 17.76
Area: 43575
Amount: 0.208907
Amount Units: pg/ul

Processing Integration Results

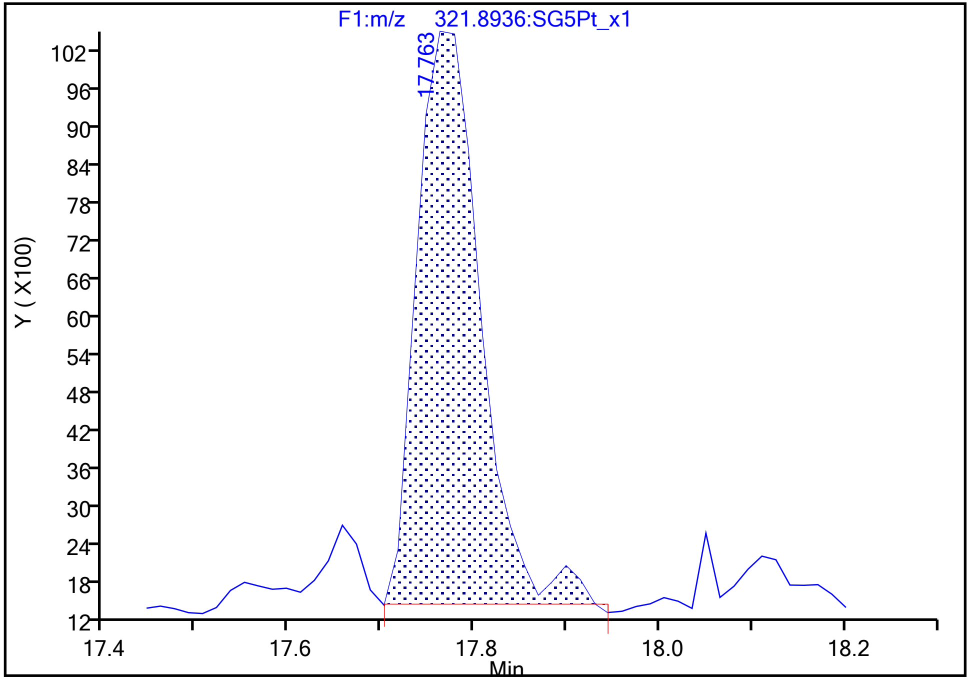

RT: 17.76
Area: 41389
Amount: 0.175651
Amount Units: pg/ul

Manual Integration Results

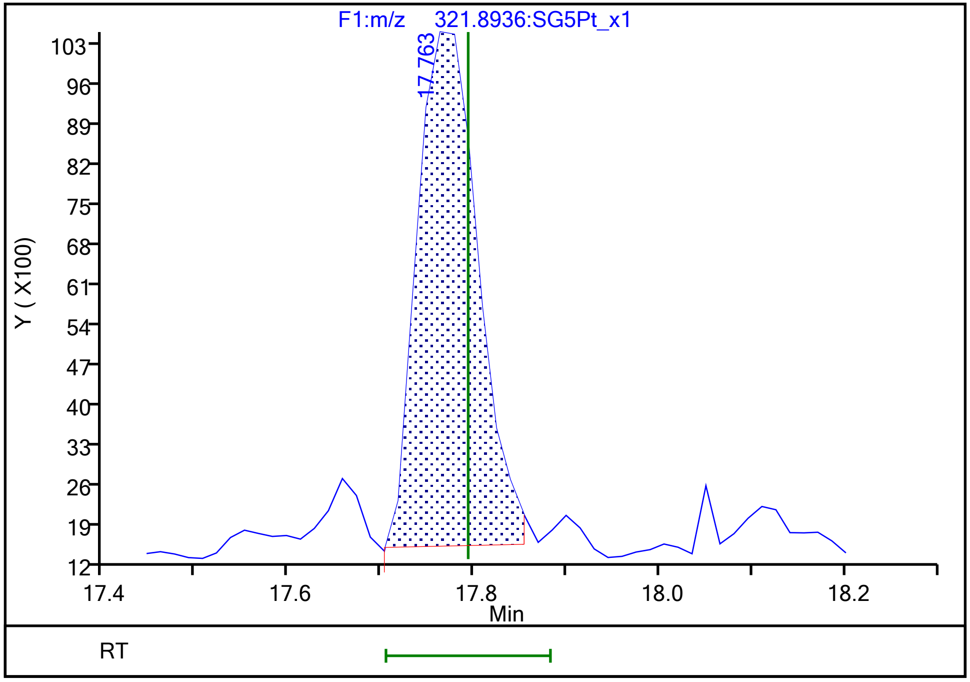

Reviewer: arghestanis, 26-Jun-2020 12:02:36

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:08 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.60- 18.91)

Signal: 1

Processing Integration Results

RT = 15.616 Area = 20615

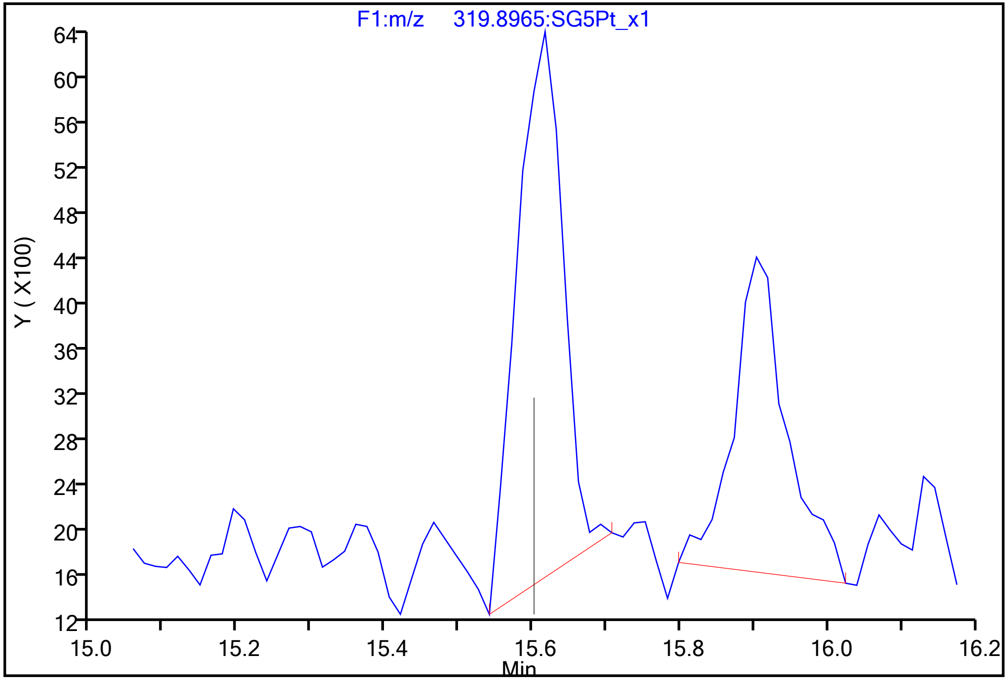

Manual Integration Results

RT = 15.616 Area = 19347 M

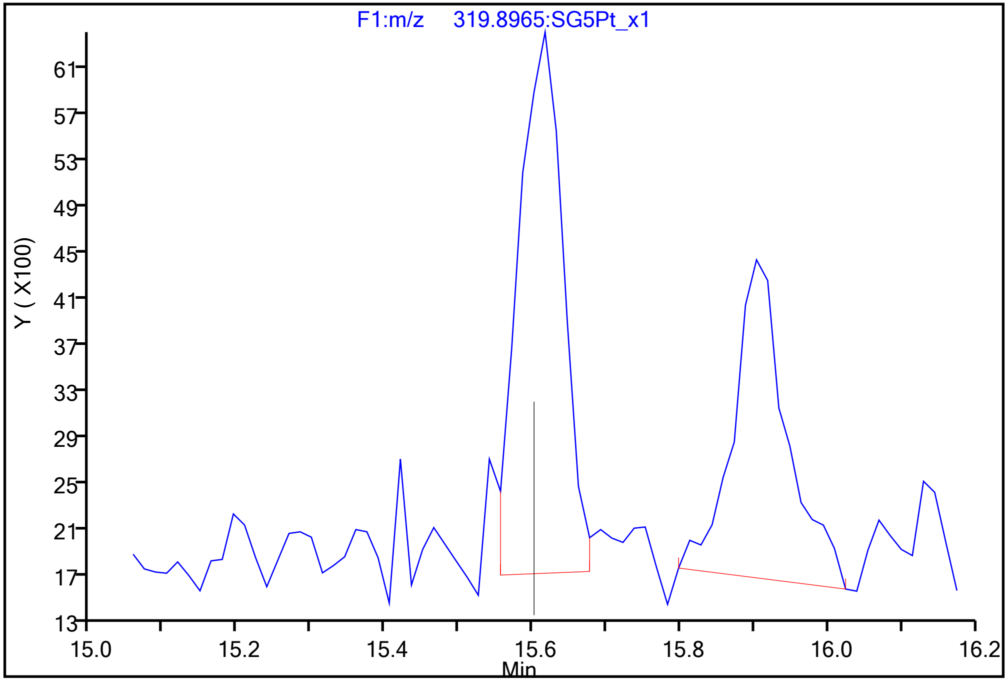

Reviewer: arghestanis, 26-Jun-2020 12:03:37

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR		

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (20.23- 25.26)

Signal: 1

Processing Integration Results

RT = 20.676 Area = 72262

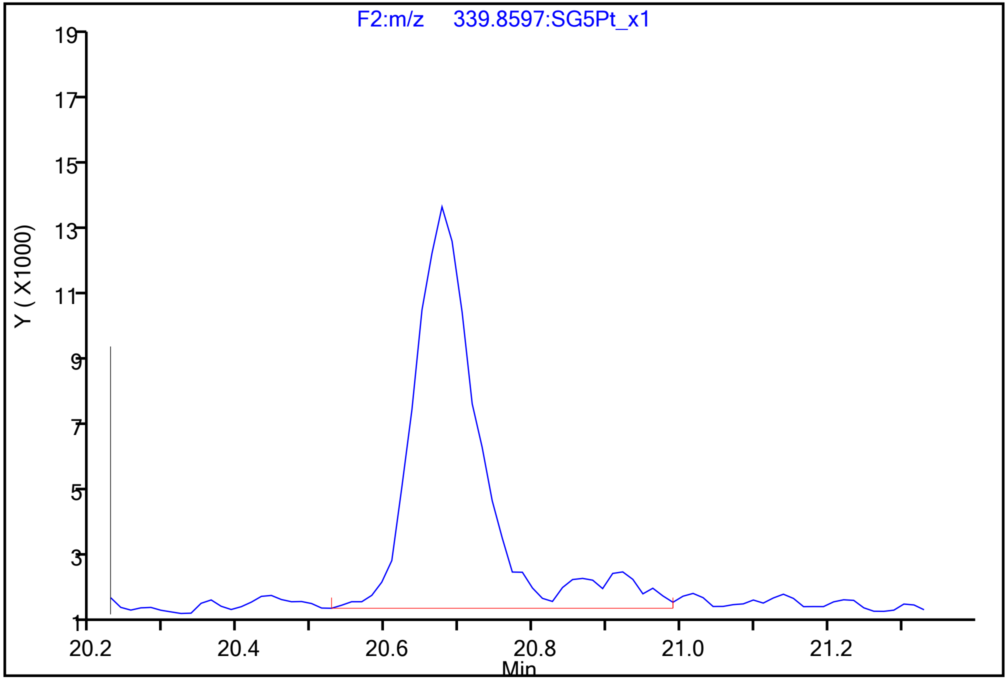

Manual Integration Results

RT = 20.676 Area = 65135 M

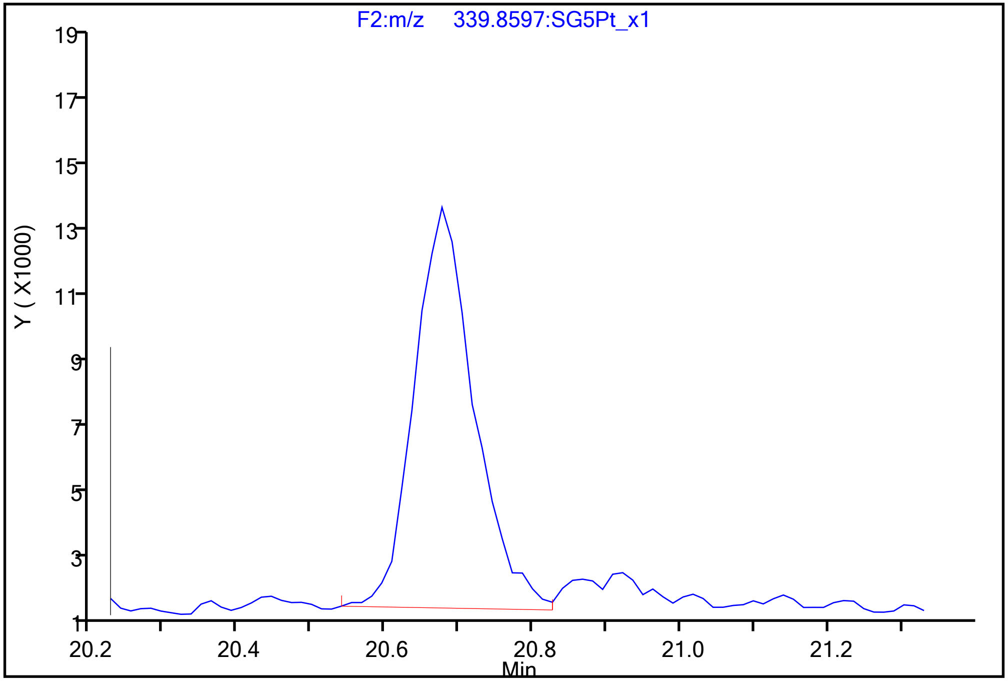

Reviewer: arghestanis, 26-Jun-2020 12:05:59

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09
Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1
Client ID:	AFINF		
Operator ID:	AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F2:HRSIR

Non-2,3,7,8-sub-PeCDF, Signal: 1, m/z: 339.8597, RT: (20.23- 25.26)

Signal: 1

Processing Integration Results

RT = 22.503 Area = 31790

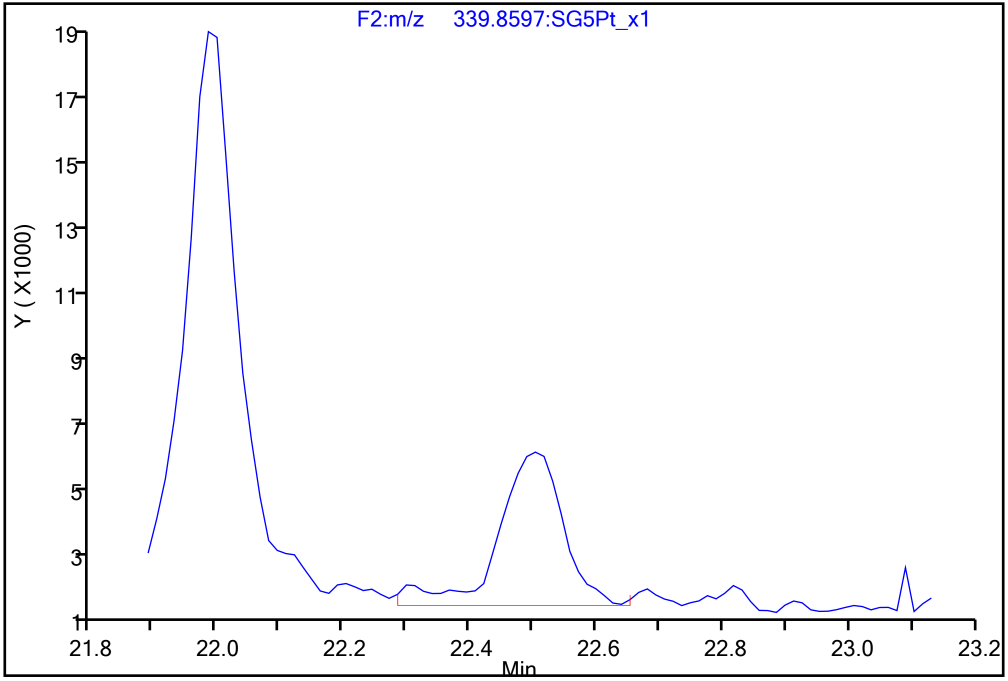

Manual Integration Results

RT = 22.503 Area = 27099 M

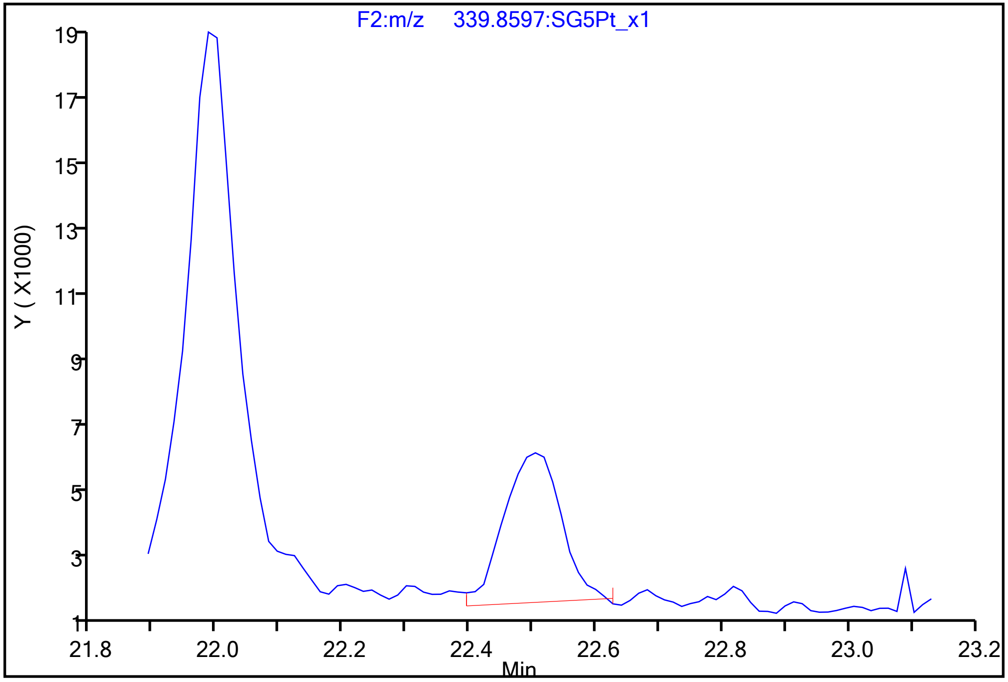

Reviewer: arghestanis, 26-Jun-2020 12:05:59
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Processing Integration Results

RT:	30.13
Area:	71508
Amount:	0.783259
Amount Units:	pg/ul

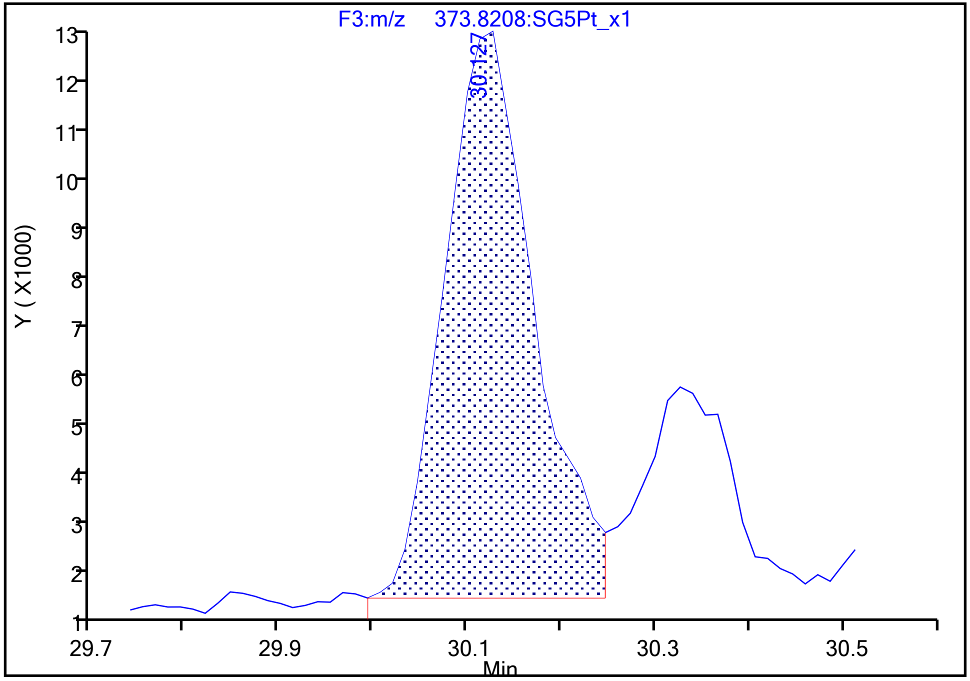

Manual Integration Results

RT:	30.13
Area:	73227
Amount:	0.797768
Amount Units:	pg/ul

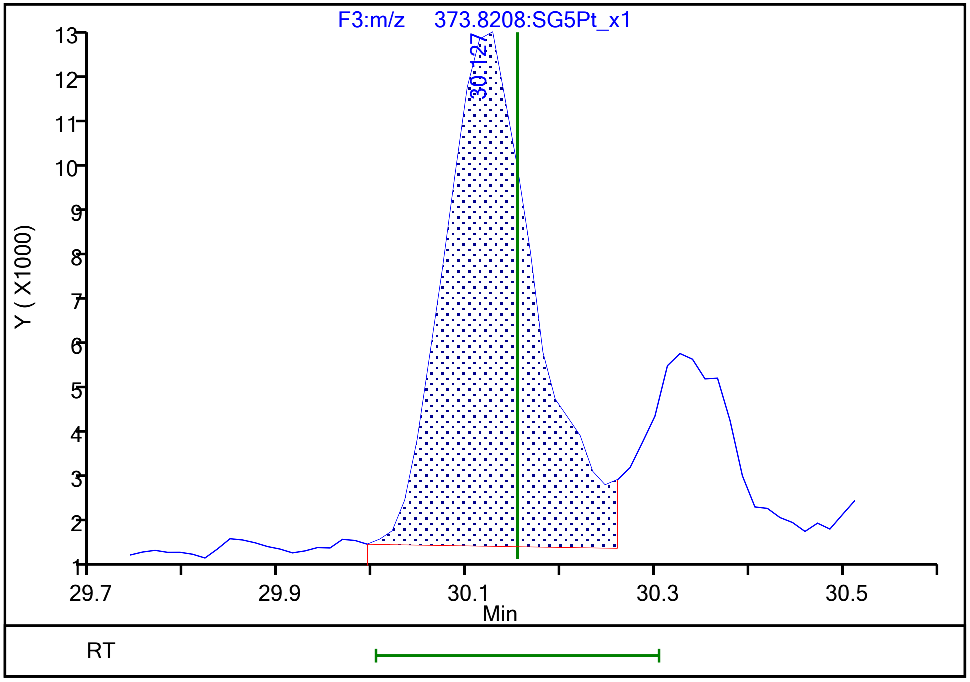

Reviewer: arghestanis, 26-Jun-2020 12:07:07

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09

Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1
Client ID:	AFINF		
Operator ID:	AJS	ALS Bottle#:	7 Worklist Smp#: 7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 2

Processing Integration Results

RT:	30.14
Area:	62149
Amount:	0.783259
Amount Units:	pg/ul

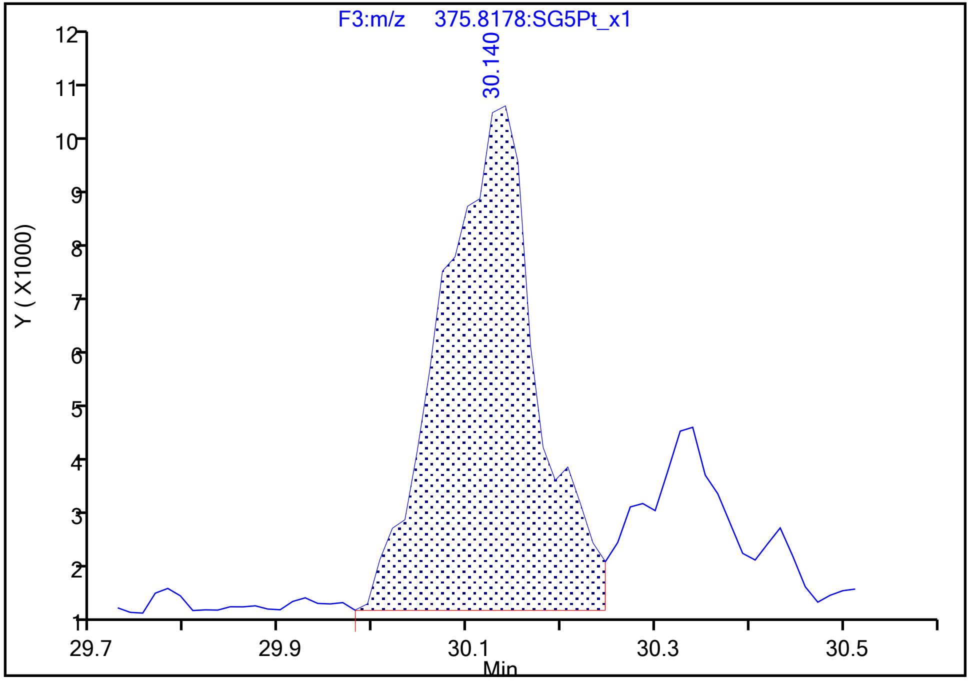

Manual Integration Results

RT:	30.14
Area:	62906
Amount:	0.797768
Amount Units:	pg/ul

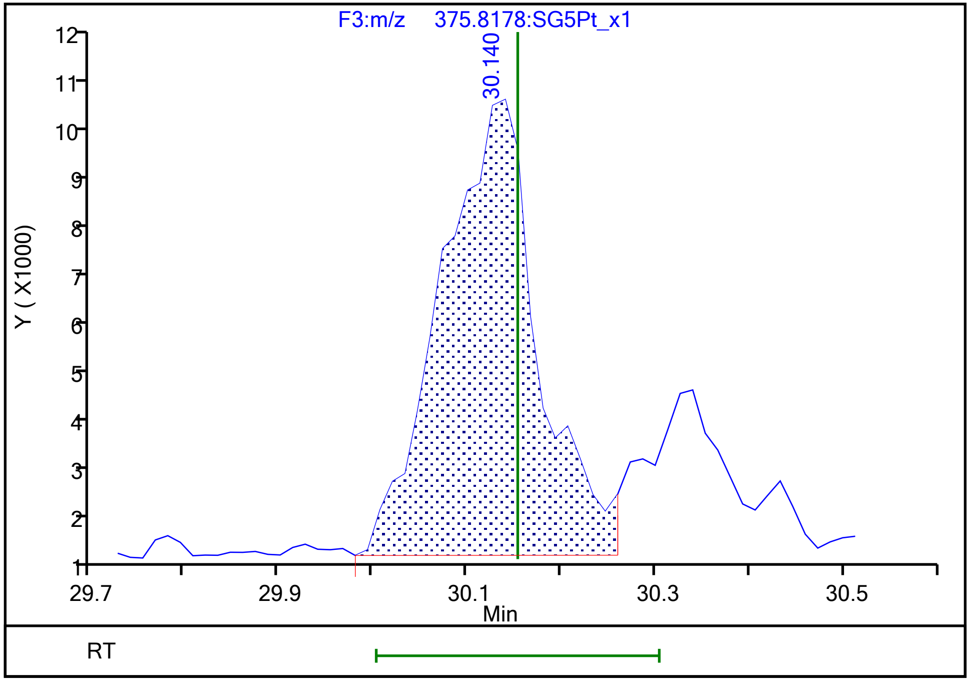

Reviewer: arghestanis, 26-Jun-2020 12:07:31

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09

Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 1

Processing Integration Results

RT:	30.33
Area:	31990
Amount:	0.317719
Amount Units:	pg/ul

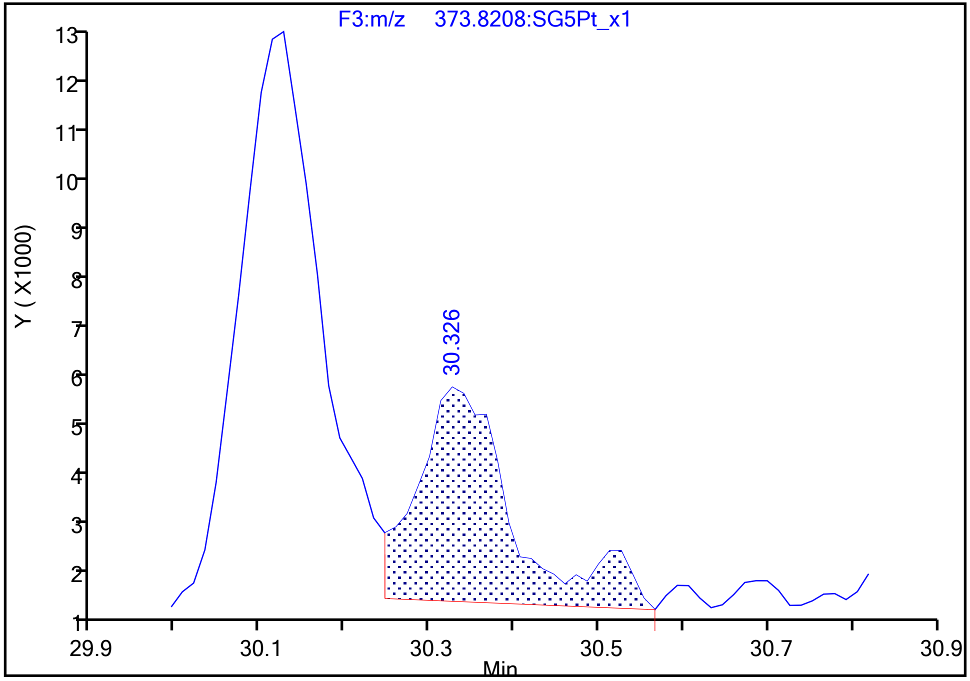

Manual Integration Results

RT:	30.33
Area:	27309
Amount:	0.275159
Amount Units:	pg/ul

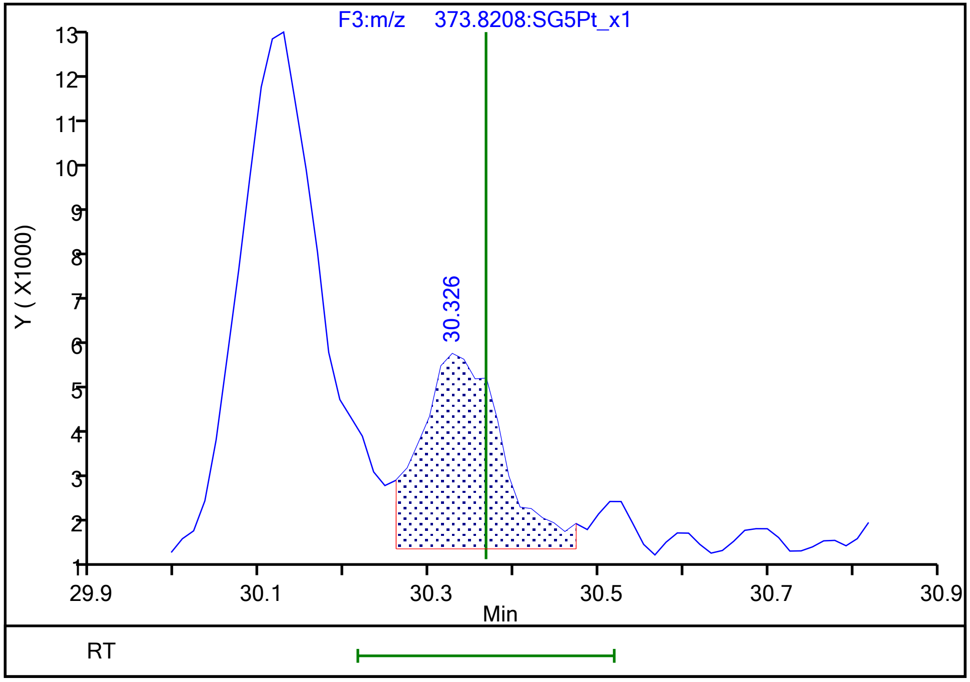

Reviewer: arghestanis, 26-Jun-2020 12:07:07

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Injection Date: 25-Jun-2020 22:25:22
Instrument ID: 10D5
Lims ID: 600-205895-B-1-A
Lab Sample ID: 320-205895-1
Client ID: AFINF
Operator ID: AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3:HRSIR

1,2,3,6,7,8-HxCDF, CAS: 57117-44-9

Signal: 2

RT: 30.34
Area: 23357
Amount: 0.317719
Amount Units: pg/ul

Processing Integration Results

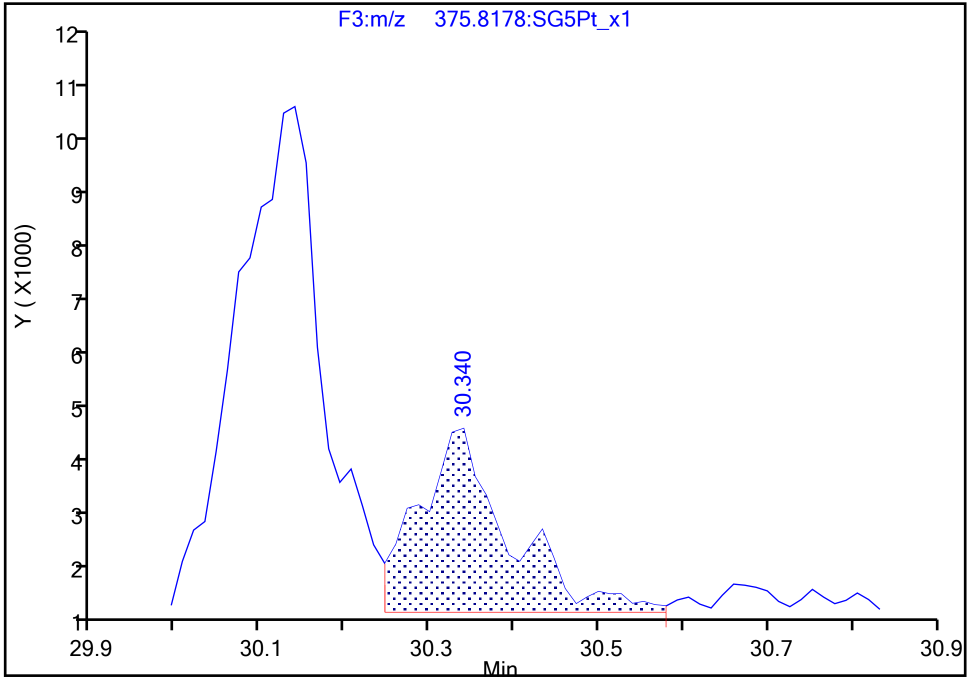

RT: 30.34
Area: 20624
Amount: 0.275159
Amount Units: pg/ul

Manual Integration Results

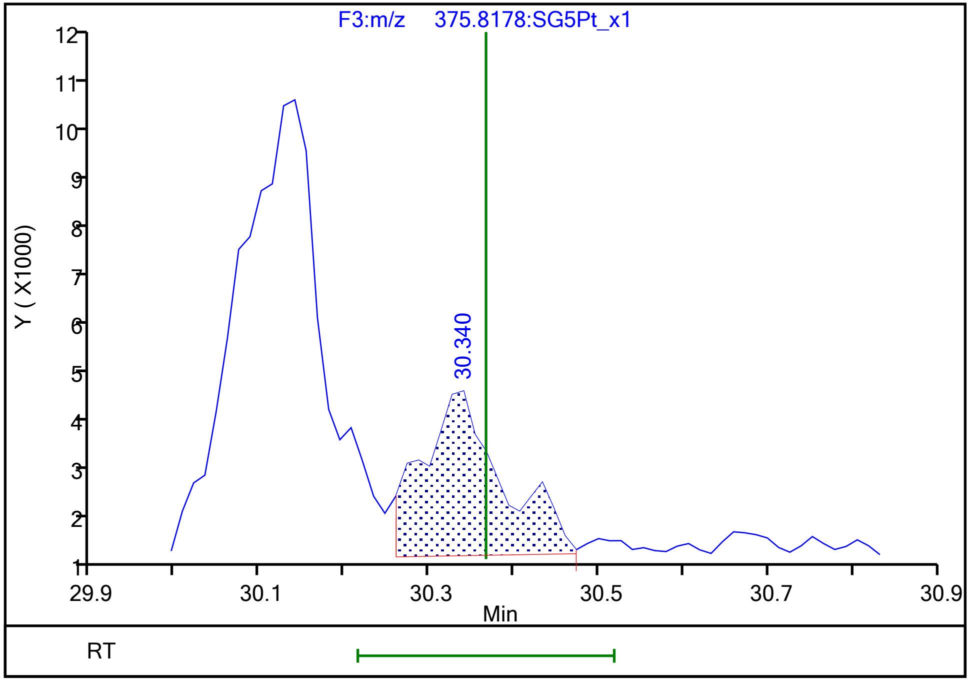

Reviewer: arghestanis, 26-Jun-2020 12:07:31
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Injection Date: 25-Jun-2020 22:25:22
Instrument ID: 10D5
Lims ID: 600-205895-B-1-A
Lab Sample ID: 320-205895-1
Client ID: AFINF
Operator ID: AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 31.47
Area: 9673
Amount: 0.108512
Amount Units: pg/ul

Processing Integration Results

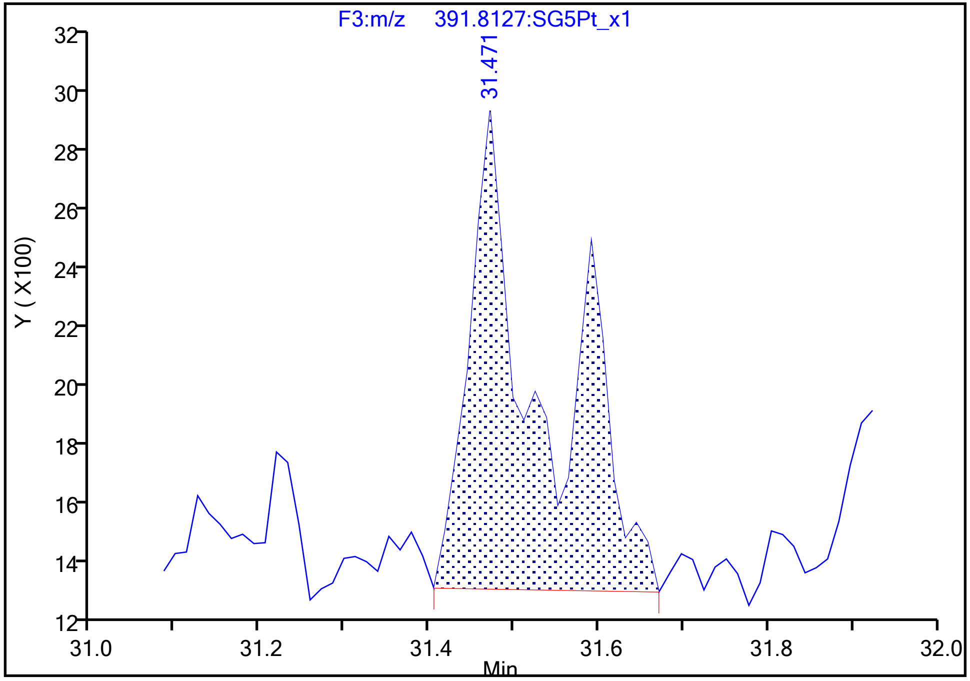

RT: 31.47
Area: 5576
Amount: 0.082043
Amount Units: pg/ul

Manual Integration Results

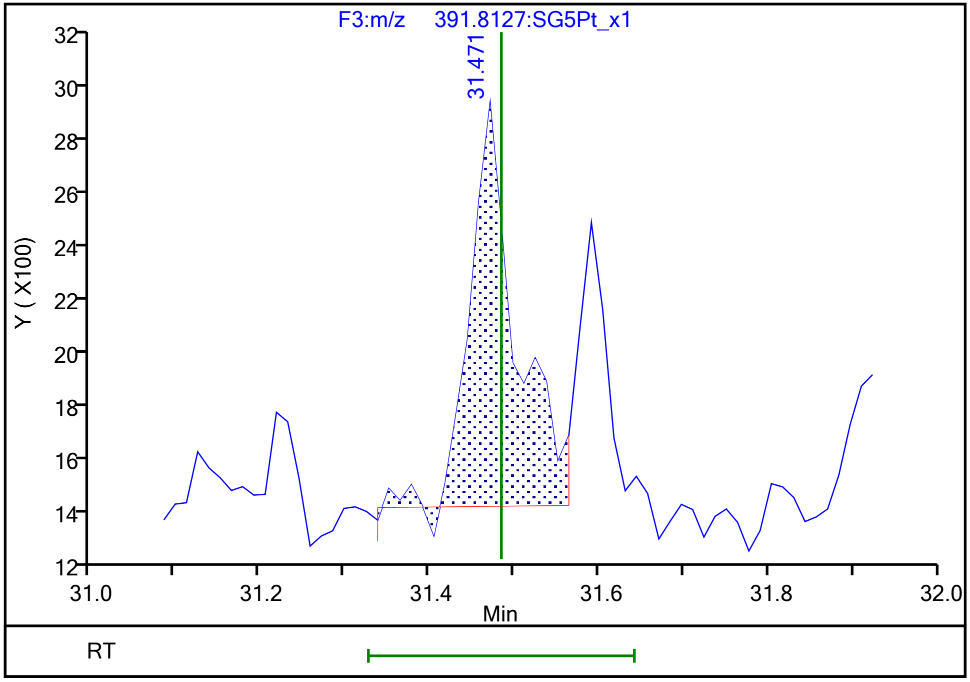

Reviewer: arghestanis, 26-Jun-2020 12:11:49
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09
Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Injection Date: 25-Jun-2020 22:25:22
Instrument ID: 10D5
Lims ID: 600-205895-B-1-A
Lab Sample ID: 320-205895-1
Client ID: AFINF
Operator ID: AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3:HRSIR

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 1

Not Detected
Expected RT: 31.60

Processing Integration Results

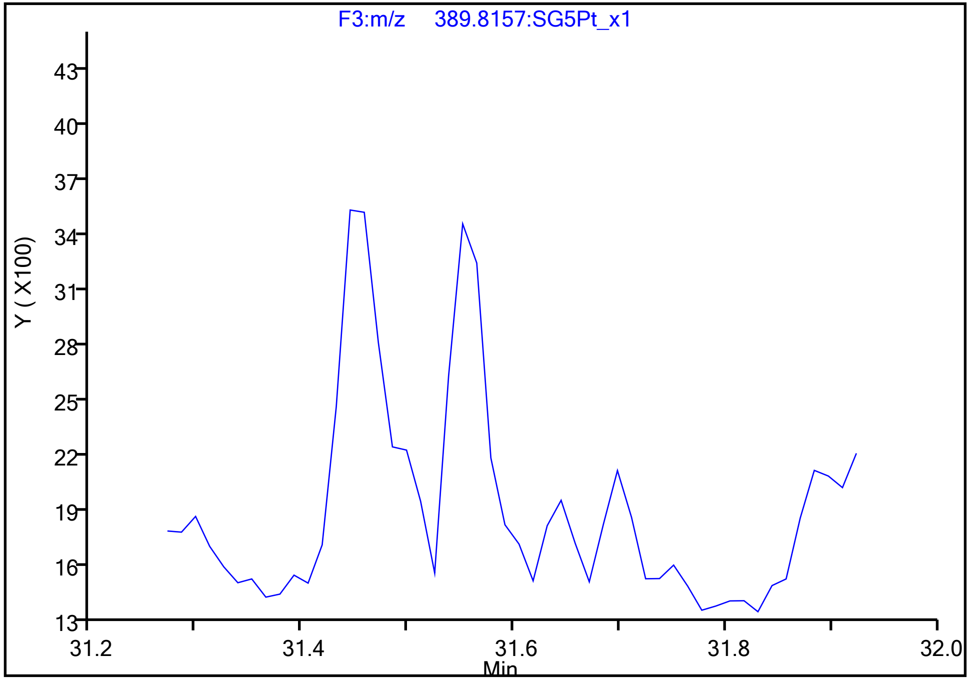

RT: 31.55
Area: 5940
Amount: 0.039249
Amount Units: pg/ul

Manual Integration Results

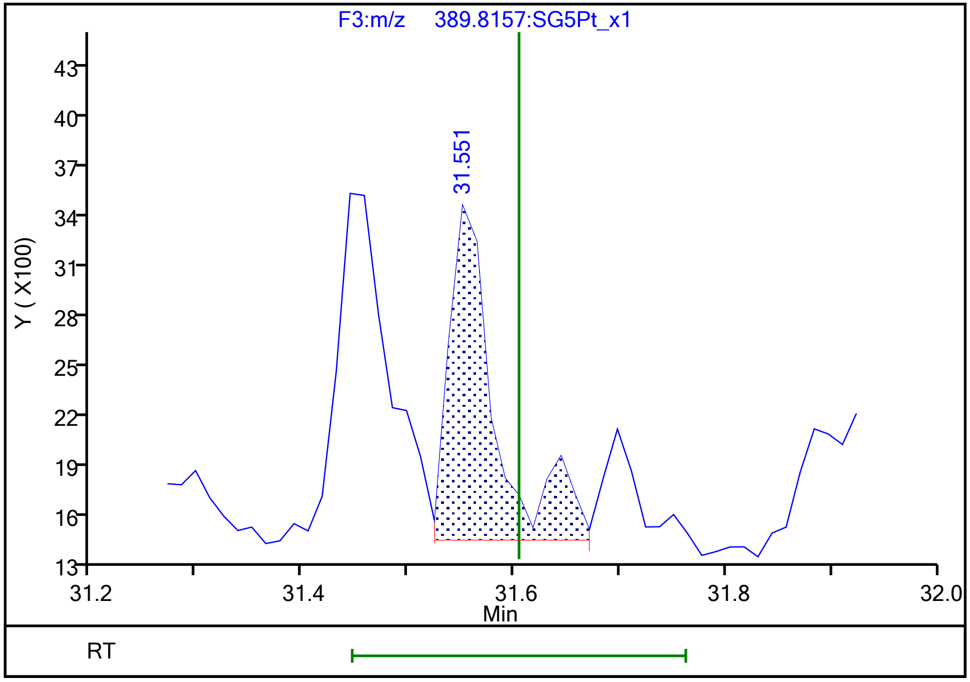

Reviewer: arghestanis, 26-Jun-2020 12:11:27
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,6,7,8-HxCDD, CAS: 57653-85-7

Signal: 2

Not Detected
Expected RT: 31.60

Processing Integration Results

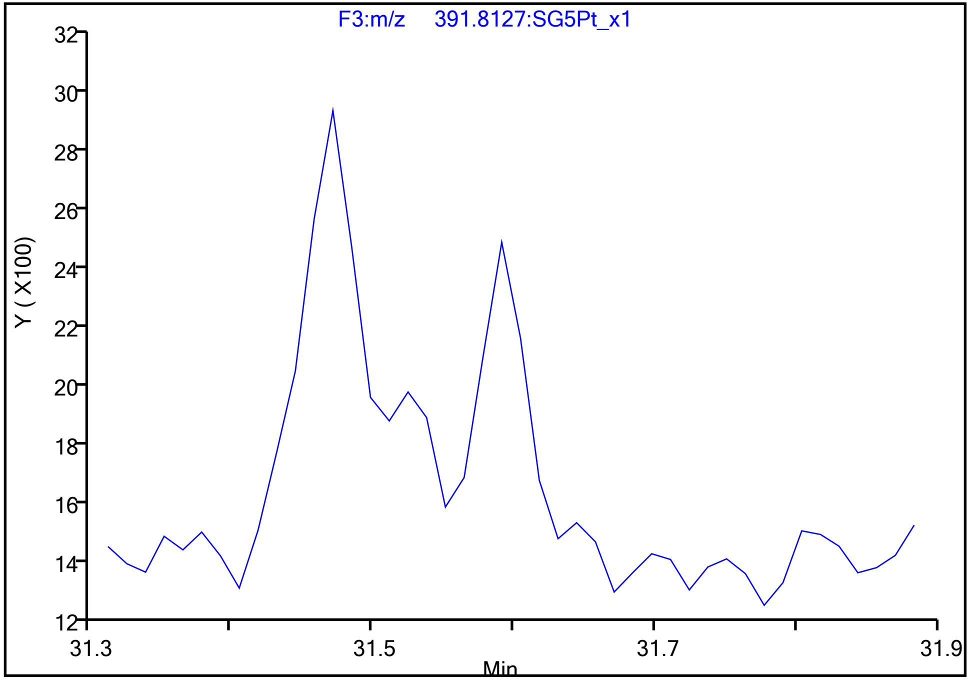

RT: 31.59
Area: 2215
Amount: 0.039249
Amount Units: pg/ul

Manual Integration Results

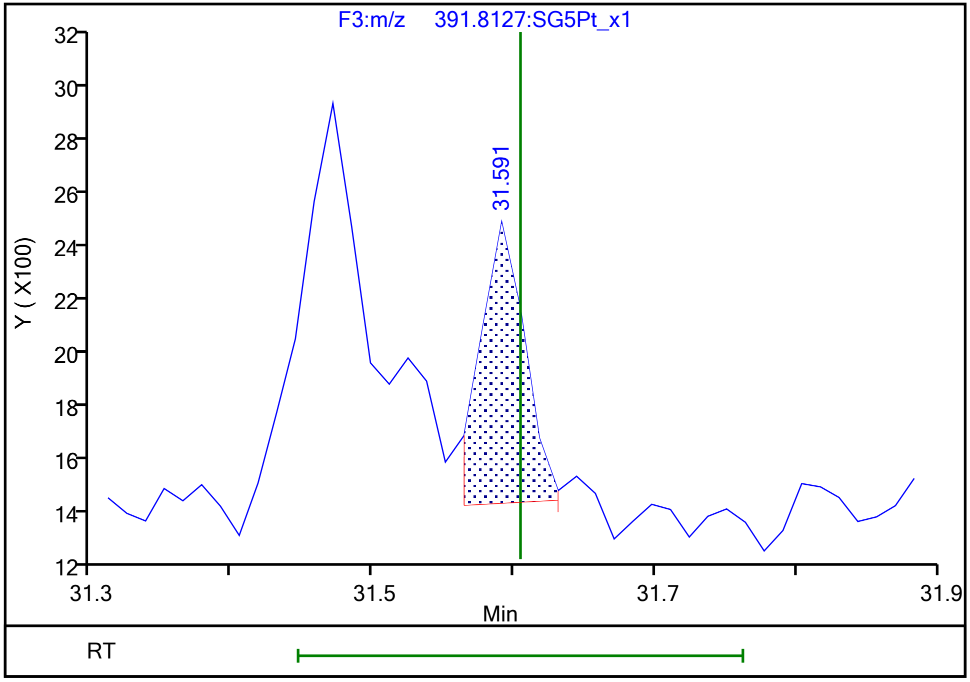

Reviewer: arghestanis, 26-Jun-2020 12:11:49

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d

Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 1

RT: 34.65
Area: 18012
Amount: 0.157030
Amount Units: pg/ul

Processing Integration Results

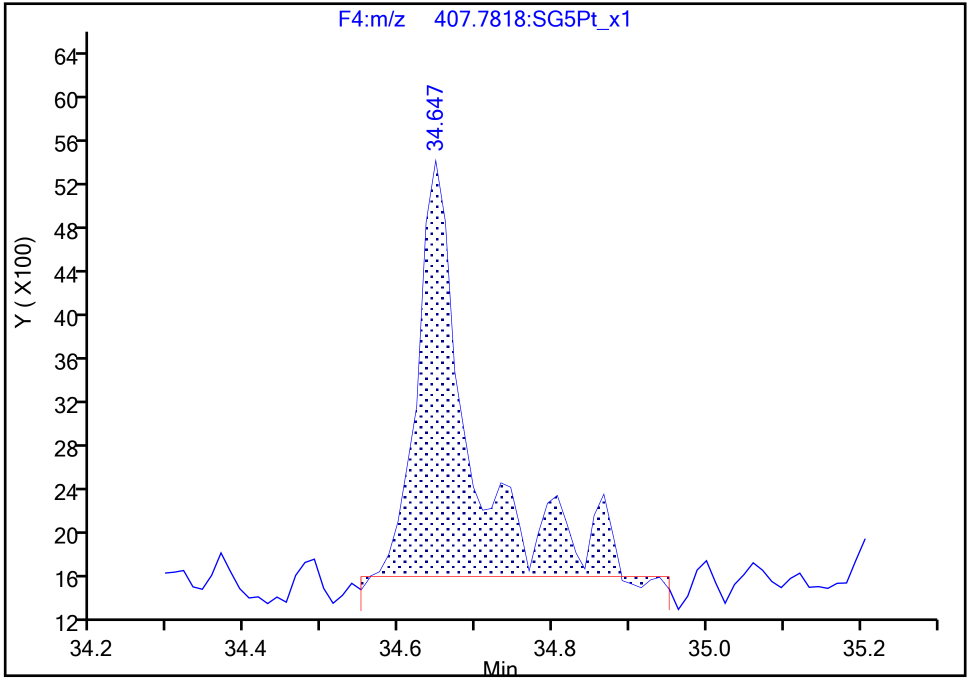

RT: 34.65
Area: 14278
Amount: 0.120581
Amount Units: pg/ul

Manual Integration Results

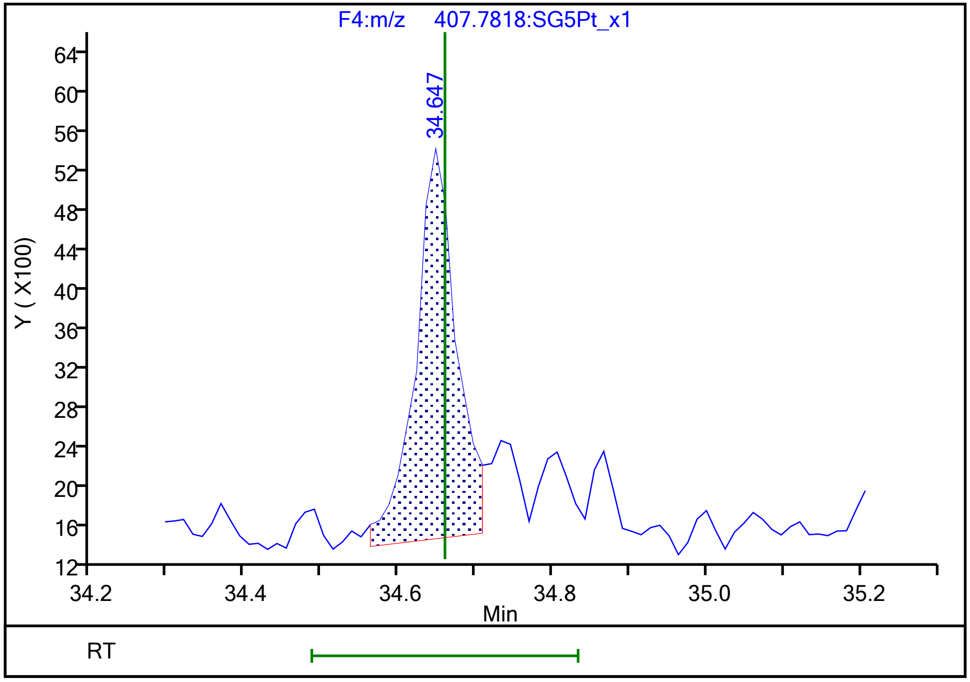

Reviewer: arghestanis, 26-Jun-2020 12:13:49

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,7,8,9-HpCDF, CAS: 55673-89-7

Signal: 2

RT:	34.64
Area:	15721
Amount:	0.157030
Amount Units:	pg/ul

Processing Integration Results

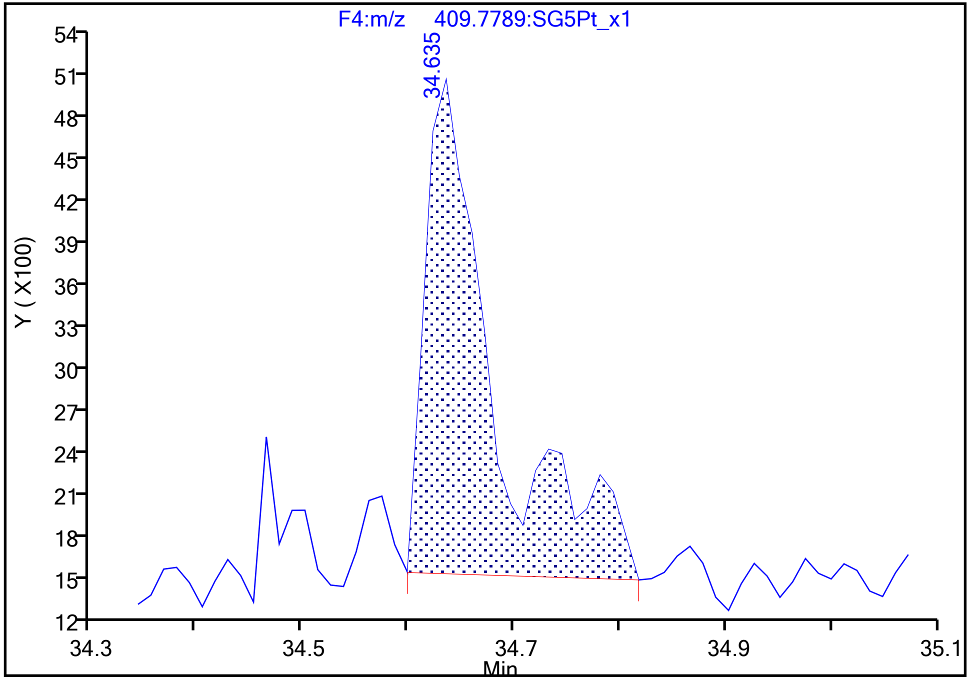

RT:	34.64
Area:	11625
Amount:	0.120581
Amount Units:	pg/ul

Manual Integration Results

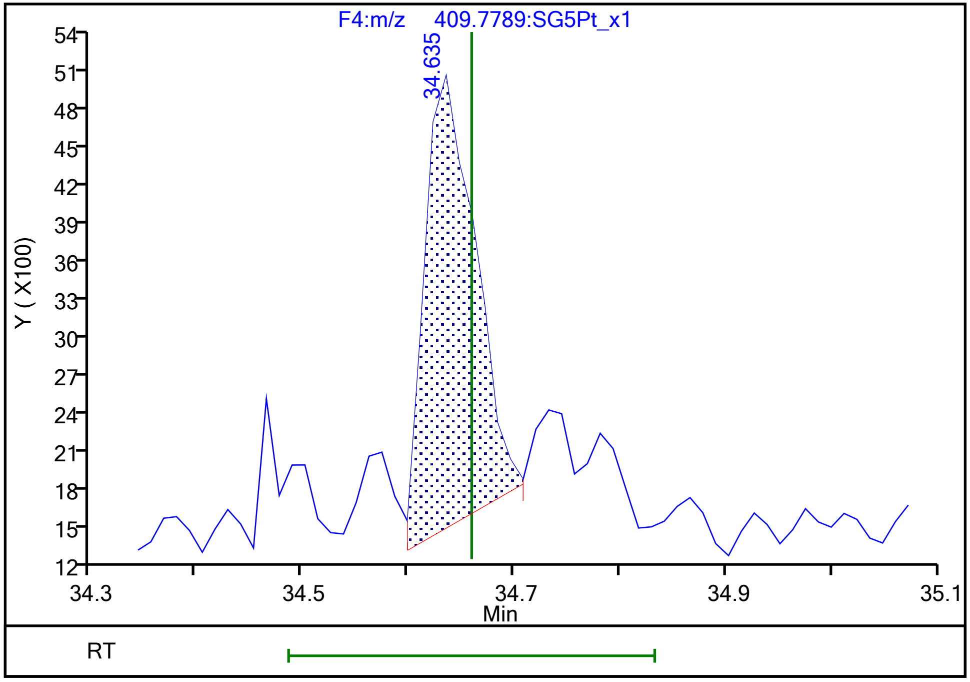

Reviewer: arghestanis, 26-Jun-2020 12:13:57

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDF, Signal: 1, m/z: 407.7818, RT: (33.58- 34.70)

Signal: 1

Processing Integration Results

RT = 33.882 Area = 38111

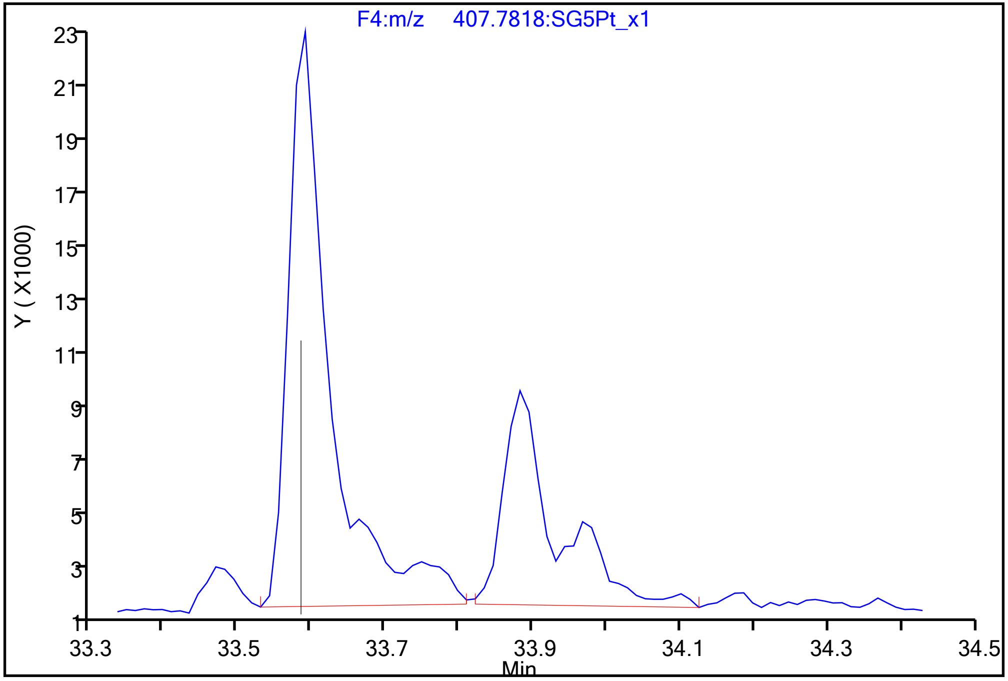

Manual Integration Results

RT = 33.882 Area = 24655 M

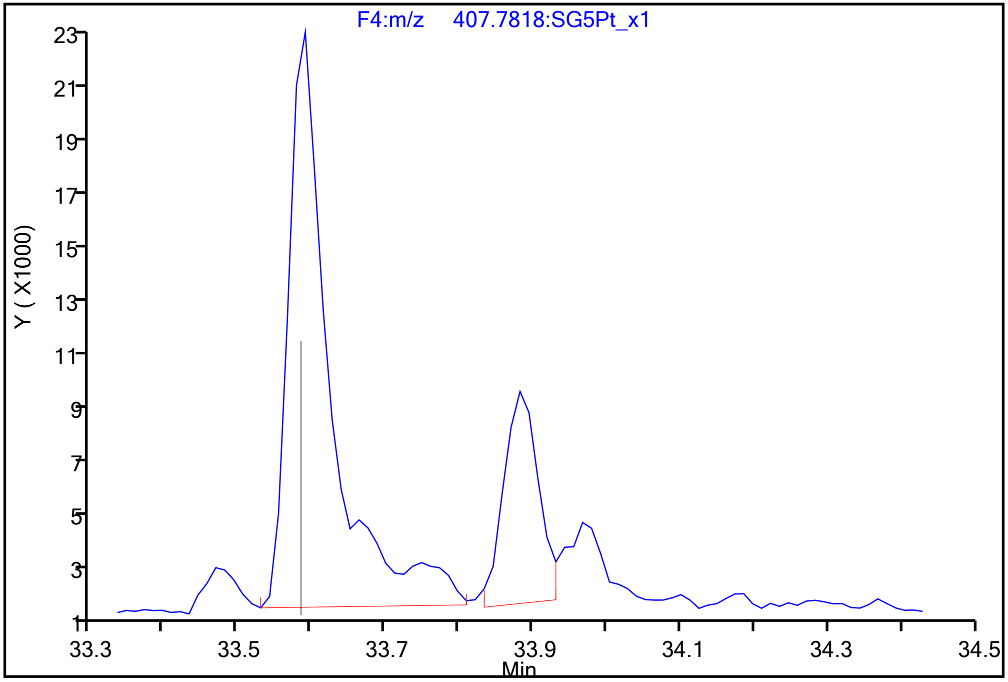

Reviewer: arghestanis, 26-Jun-2020 12:14:20

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

Non-2,3,7,8-sub-HpCDF, Signal: 2, m/z: 409.7789, RT: (33.58- 34.70)

Signal: 2

RT = 33.882 Area = 32826

Processing Integration Results

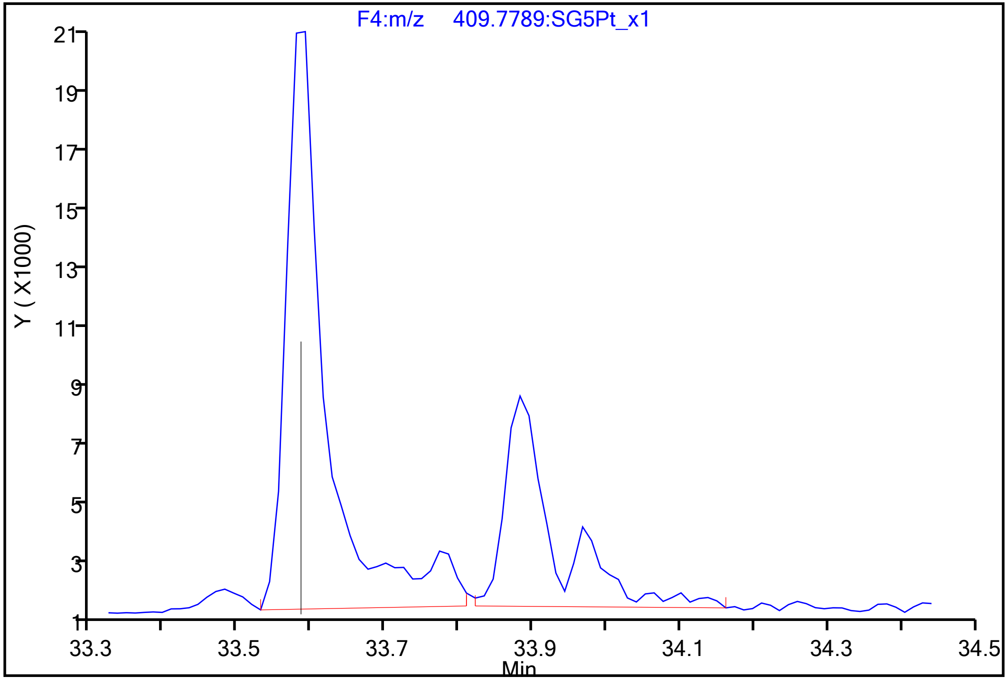

RT = 33.882 Area = 21685 M

Manual Integration Results

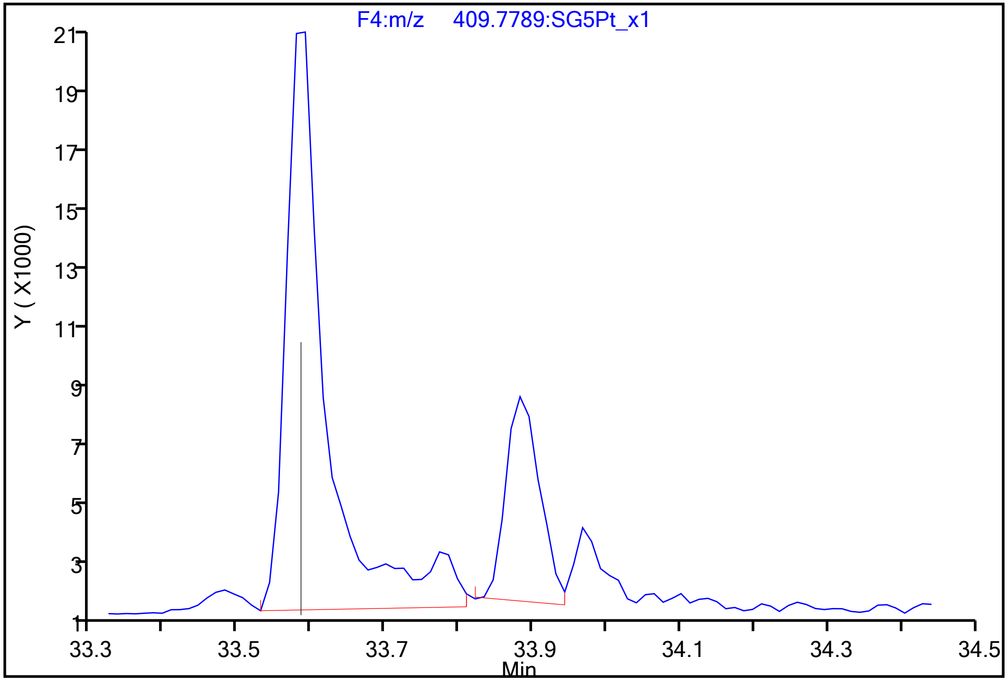

Reviewer: arghestanis, 26-Jun-2020 12:14:26

Audit Action: Manually Integrated Audit Reason: Baseline

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	34.37
Area:	15751
Amount:	0.161541
Amount Units:	pg/ul

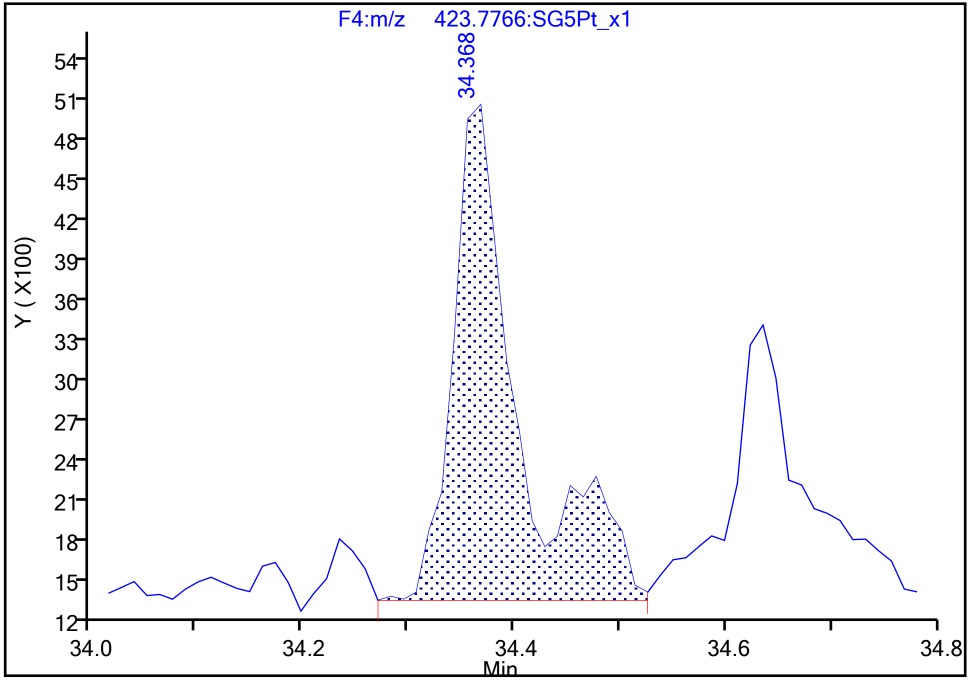

Manual Integration Results

RT:	34.37
Area:	11983
Amount:	0.141289
Amount Units:	pg/ul

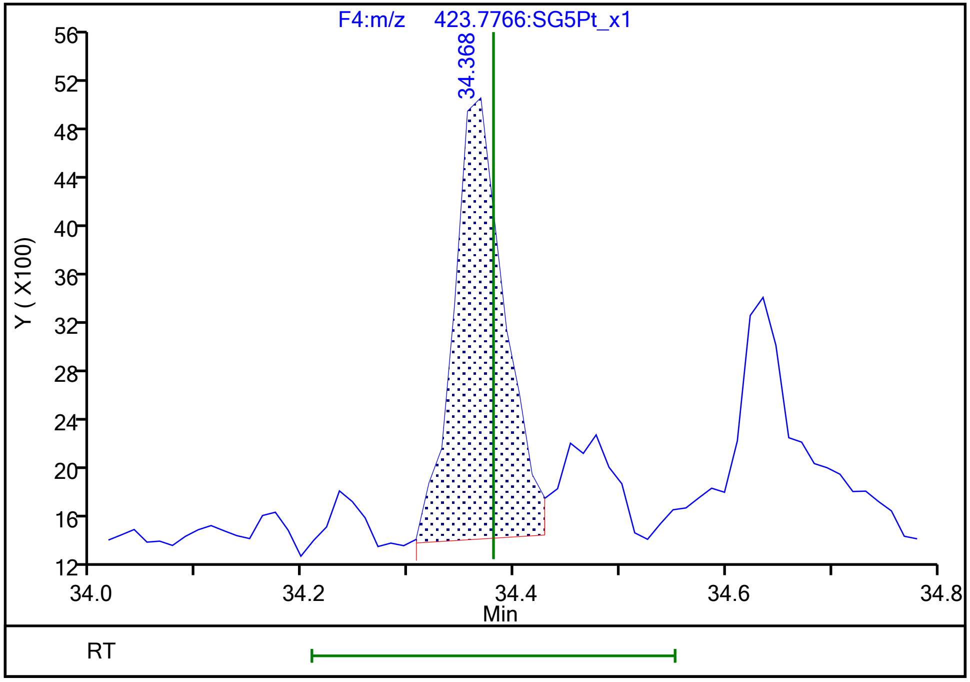

Reviewer: arghestanis, 26-Jun-2020 12:14:45

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Injection Date: 25-Jun-2020 22:25:22
Instrument ID: 10D5
Lims ID: 600-205895-B-1-A
Lab Sample ID: 320-205895-1
Client ID: AFINF
Operator ID: AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F4:HRSIR

Non-2,3,7,8-sub-HpCDD, Signal: 1, m/z: 423.7766, RT: (33.85- 34.39)

Signal: 1

Processing Integration Results

RT = 33.821 Area = 25580

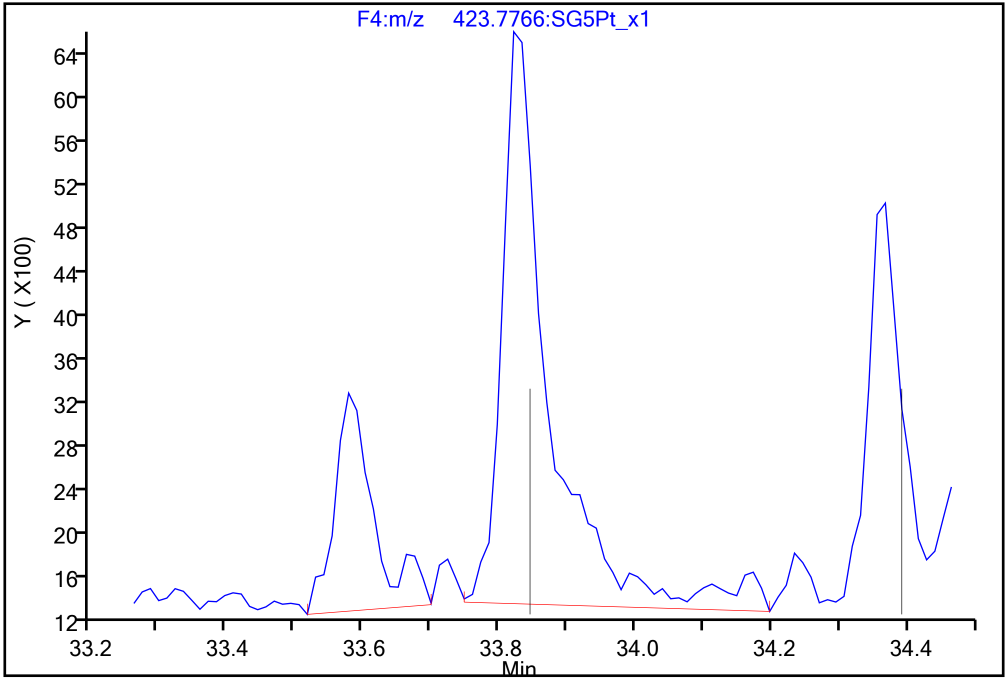

Manual Integration Results

RT = 33.821 Area = 22348 M

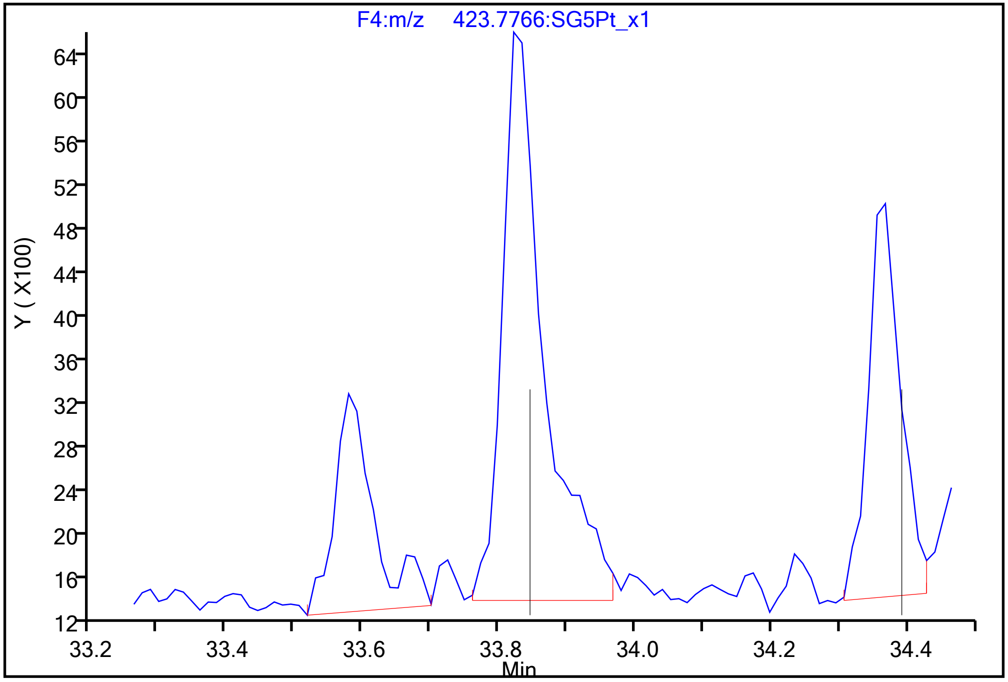

Reviewer: arghestanis, 26-Jun-2020 12:15:04

Audit Action: Manually Integrated

Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d
Injection Date: 25-Jun-2020 22:25:22
Instrument ID: 10D5
Lims ID: 600-205895-B-1-A
Lab Sample ID: 320-205895-1
Client ID: AFINF
Operator ID: AJS
ALS Bottle#: 7
Worklist Smp#: 7
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F5:HRSIR

OCDF, CAS: 39001-02-0

Signal: 1

RT: 36.76
Area: 34352
Amount: 0.498991
Amount Units: pg/ul

Processing Integration Results

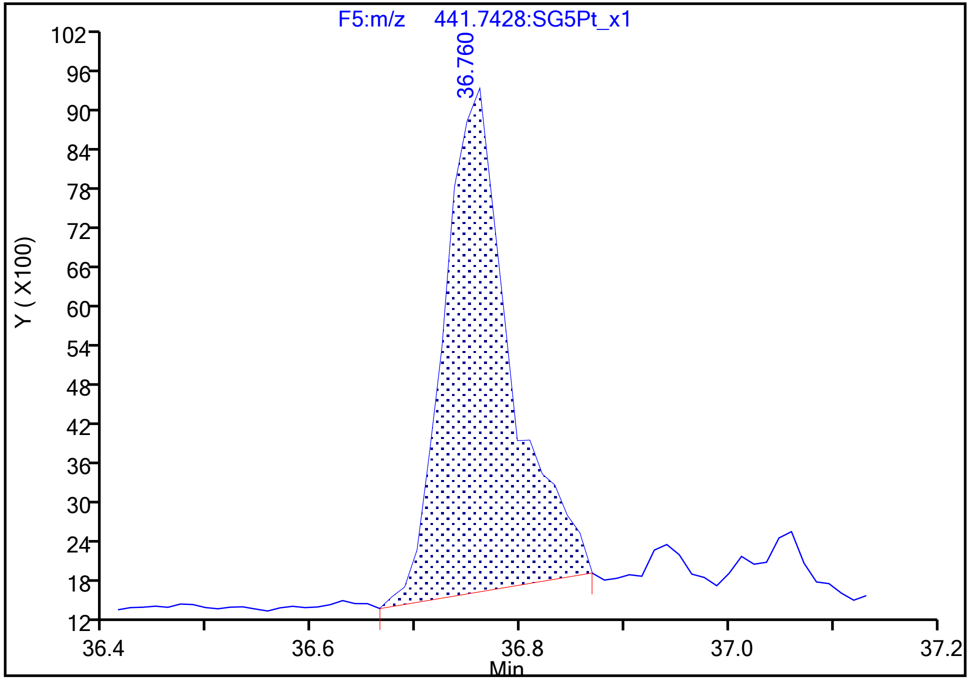

RT: 36.76
Area: 37537
Amount: 0.458811
Amount Units: pg/ul

Manual Integration Results

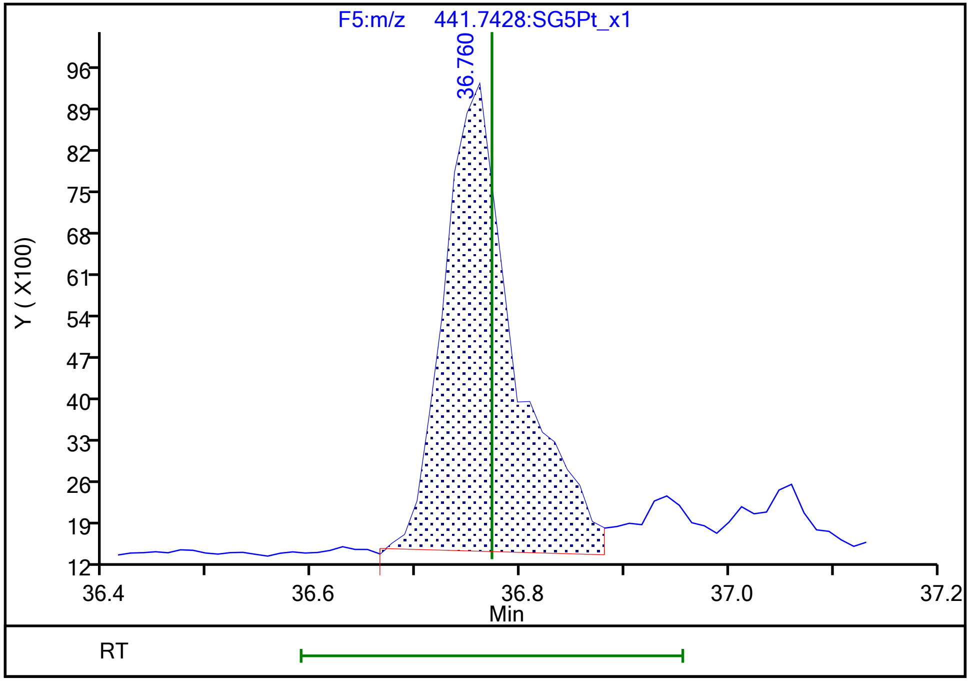

Reviewer: arghestanis, 26-Jun-2020 12:15:31
Audit Action: Manually Integrated
Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d				
Injection Date:	25-Jun-2020 22:25:22	Instrument ID:	10D5		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:	AJS	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

Processing Integration Results

RT: 36.75
Area: 56964
Amount: 0.498991
Amount Units: pg/ul

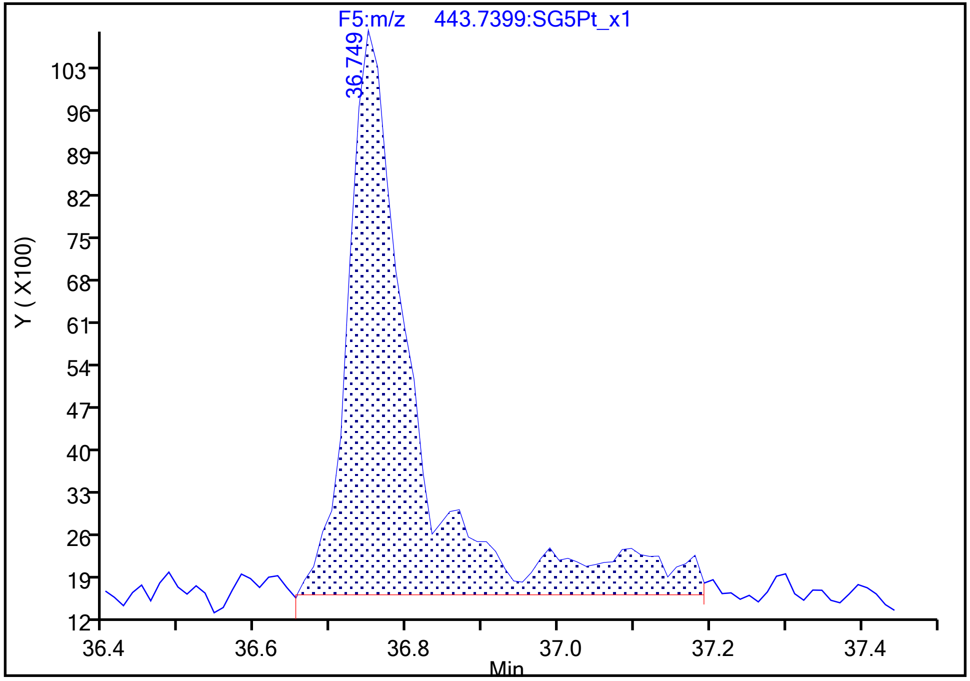

Manual Integration Results

RT: 36.75
Area: 46426
Amount: 0.458811
Amount Units: pg/ul

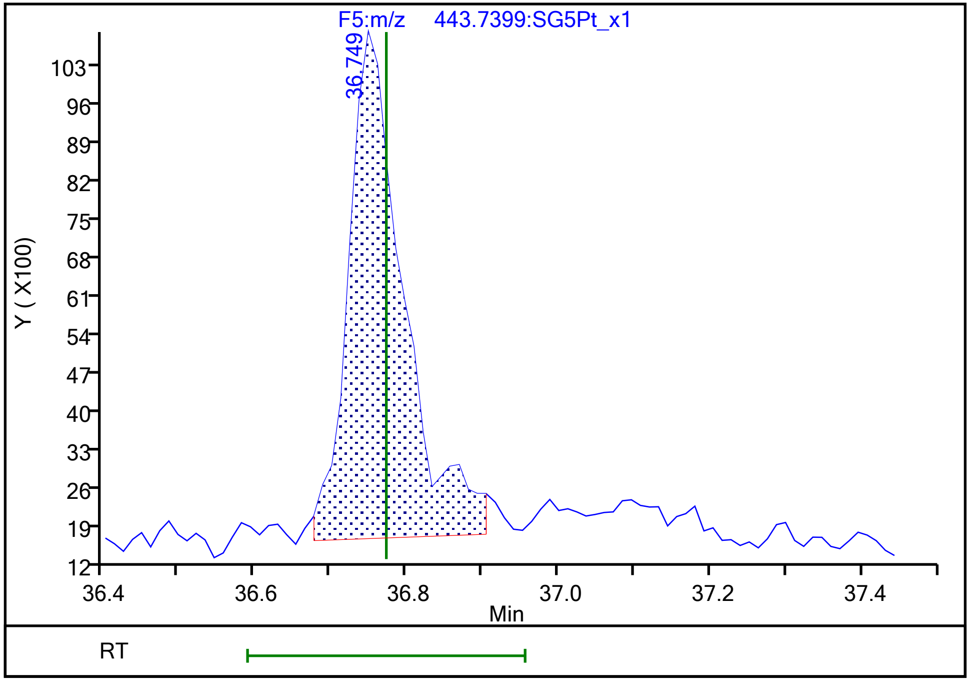

Reviewer: arghestanis, 26-Jun-2020 12:15:35

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d

Injection Date: 25-Jun-2020 22:25:22 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFINF

Worklist#: 389621 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

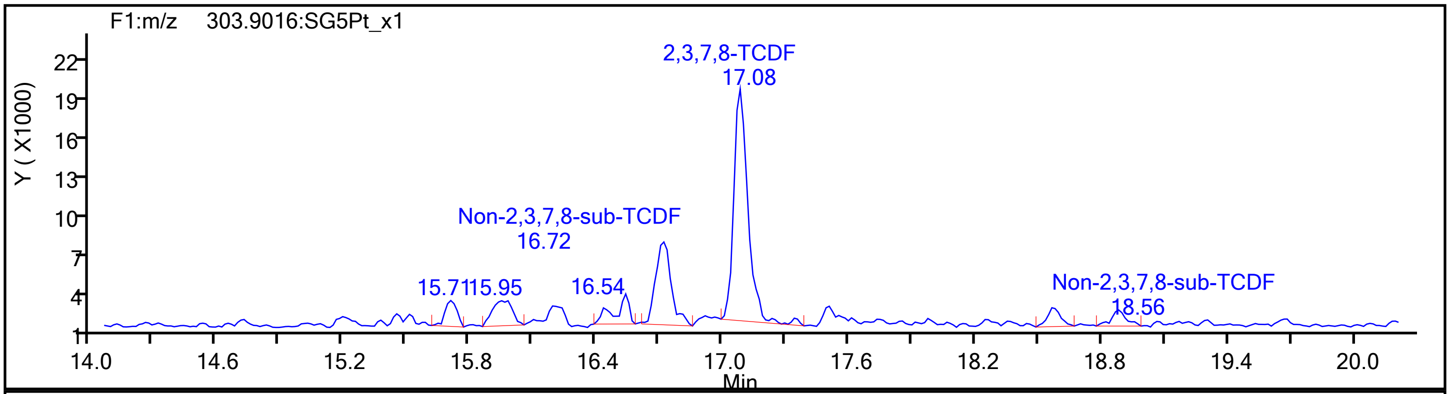

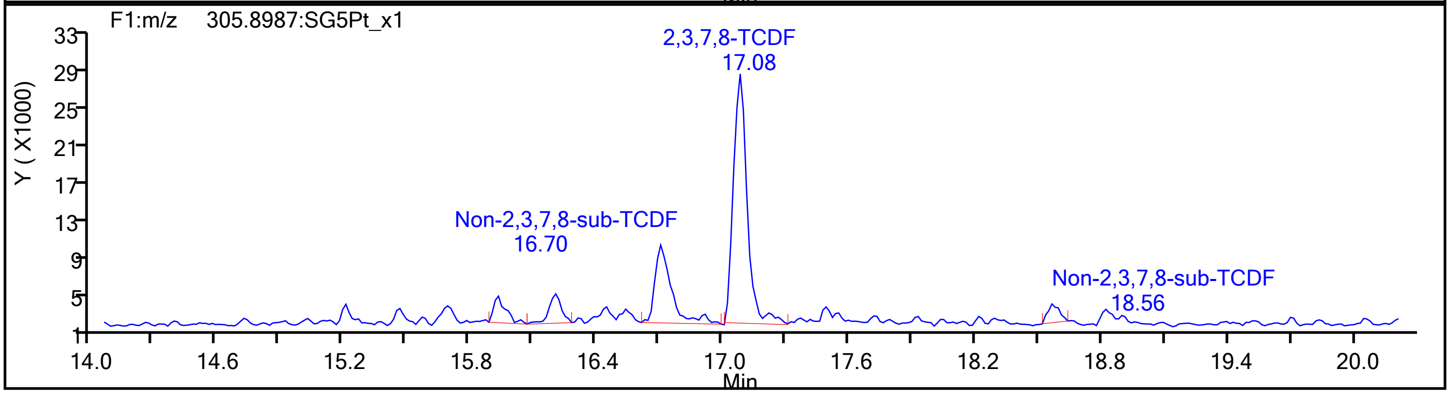

TCDF Standards

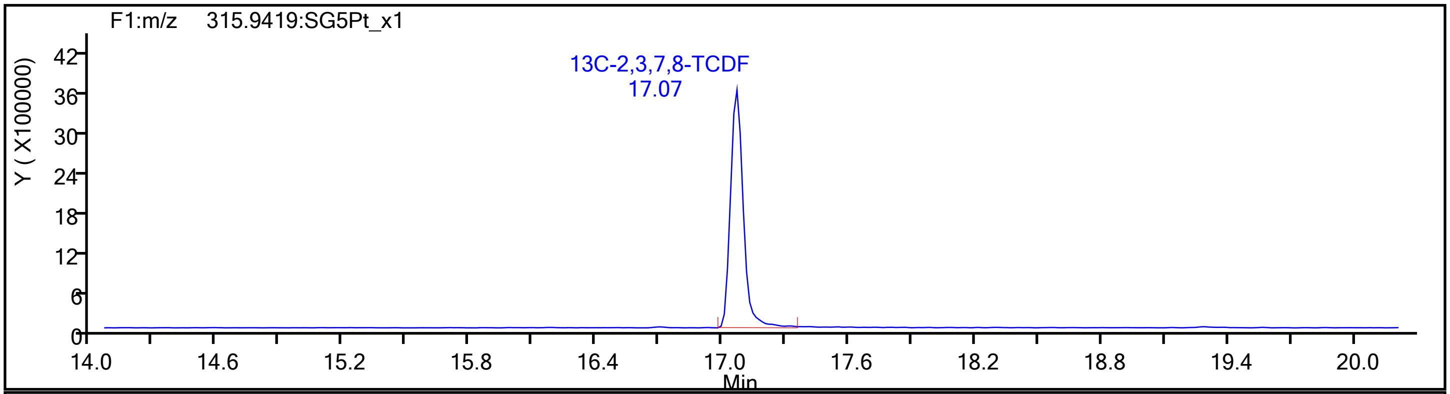

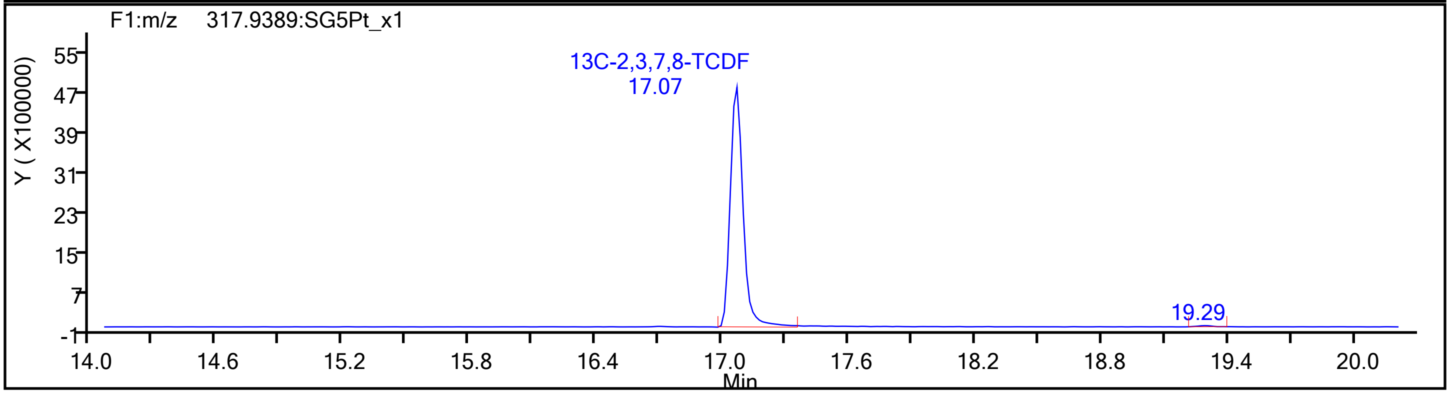

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Injection Date:	25-Jun-2020 22:25:22	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	389621	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

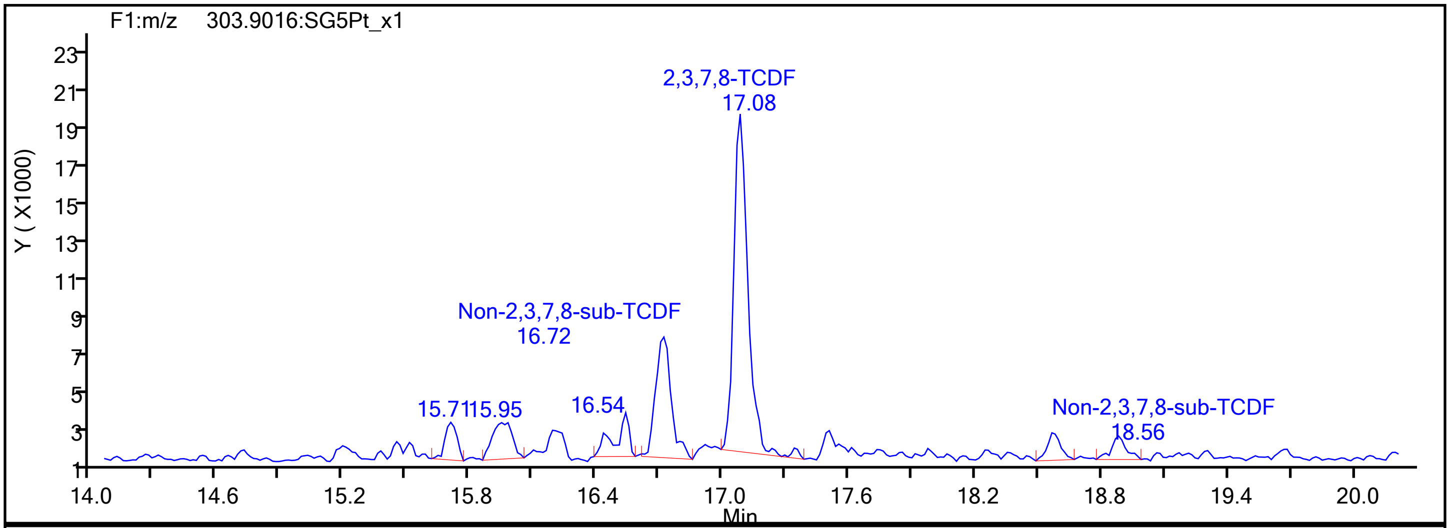

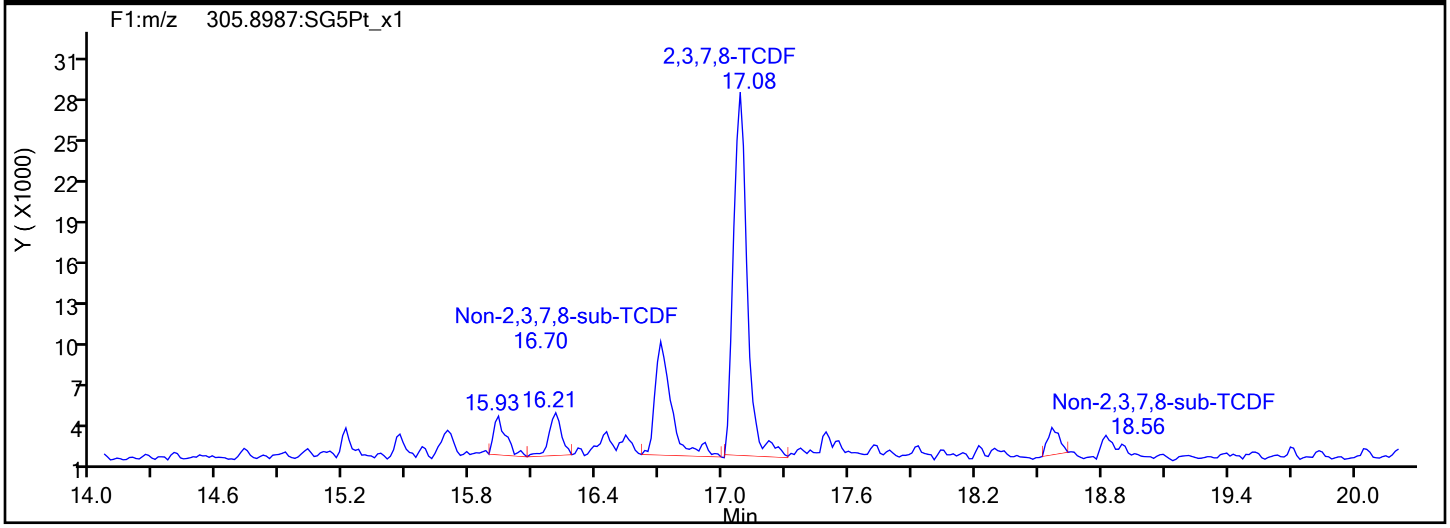

TCDF Interference Mass

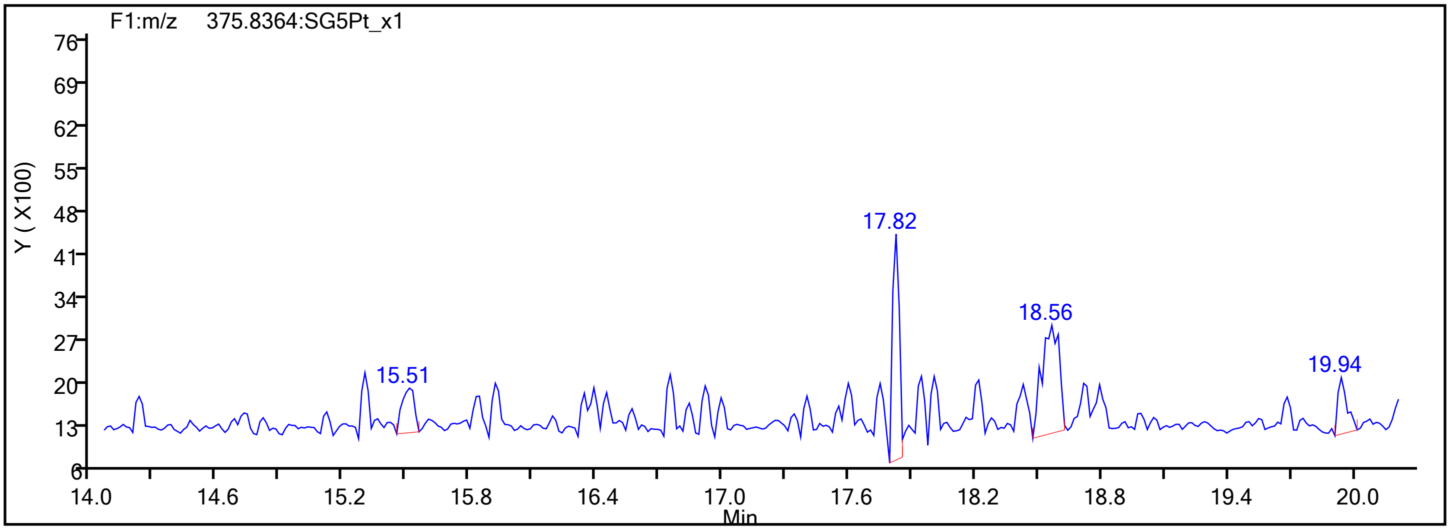

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Injection Date:	25-Jun-2020 22:25:22	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	389621	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

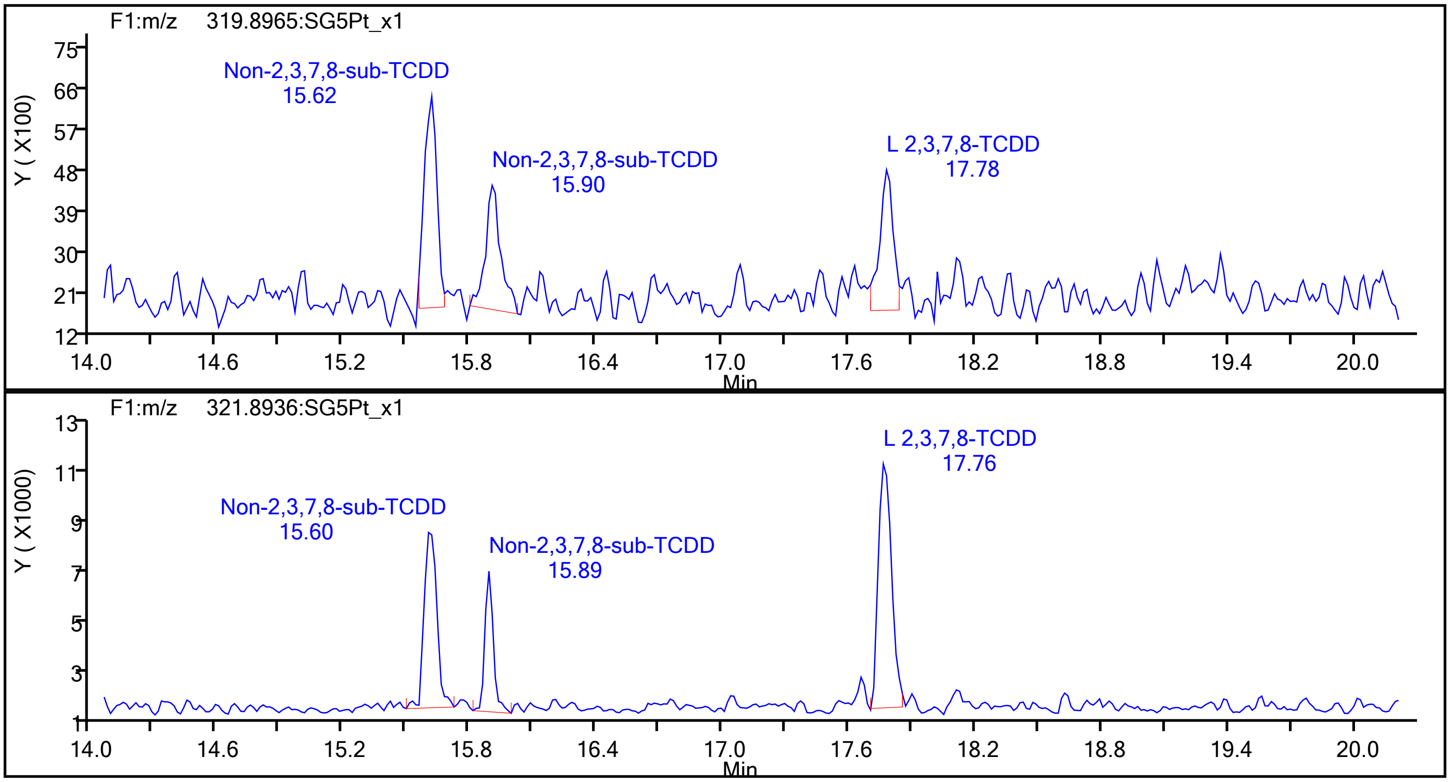

TCDD Standards

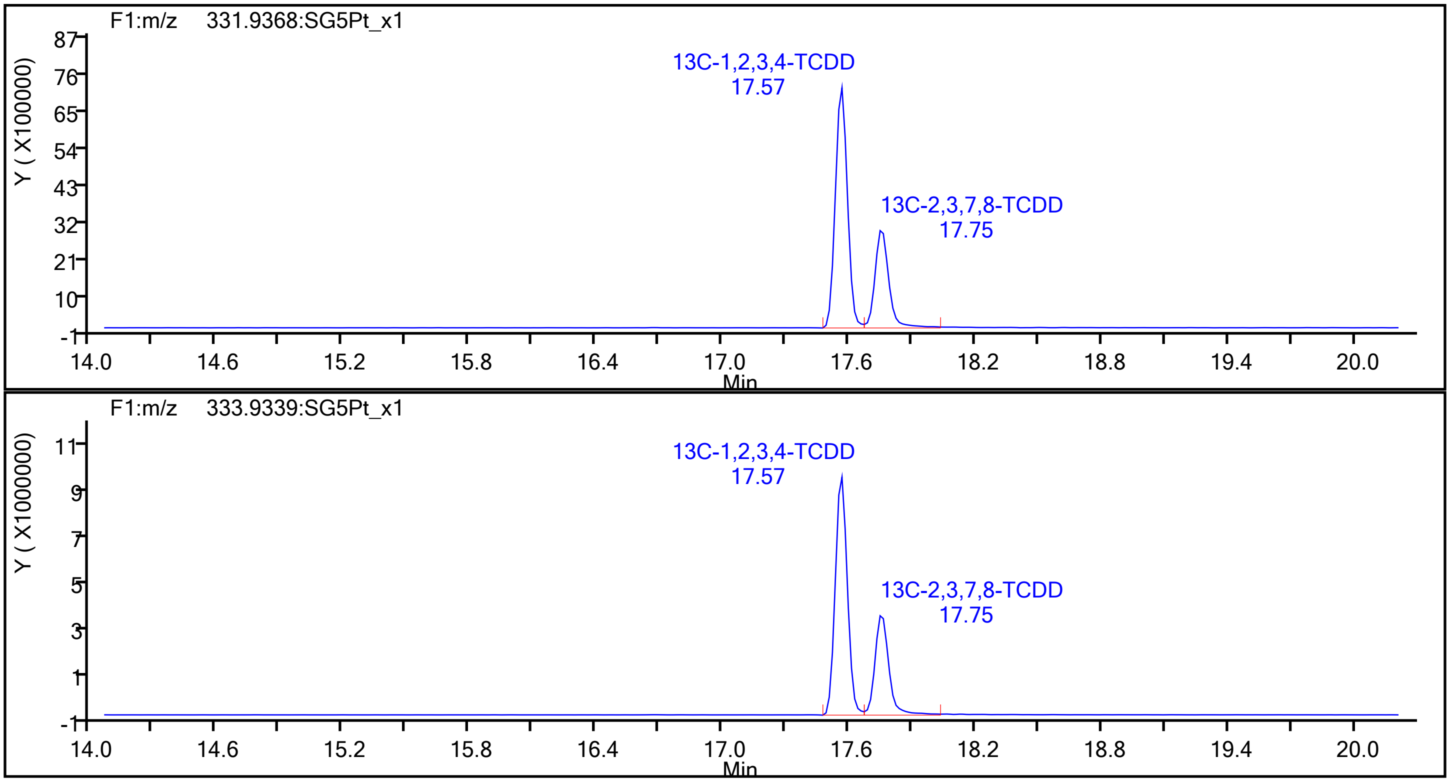

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Injection Date:	25-Jun-2020 22:25:22	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	389621	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

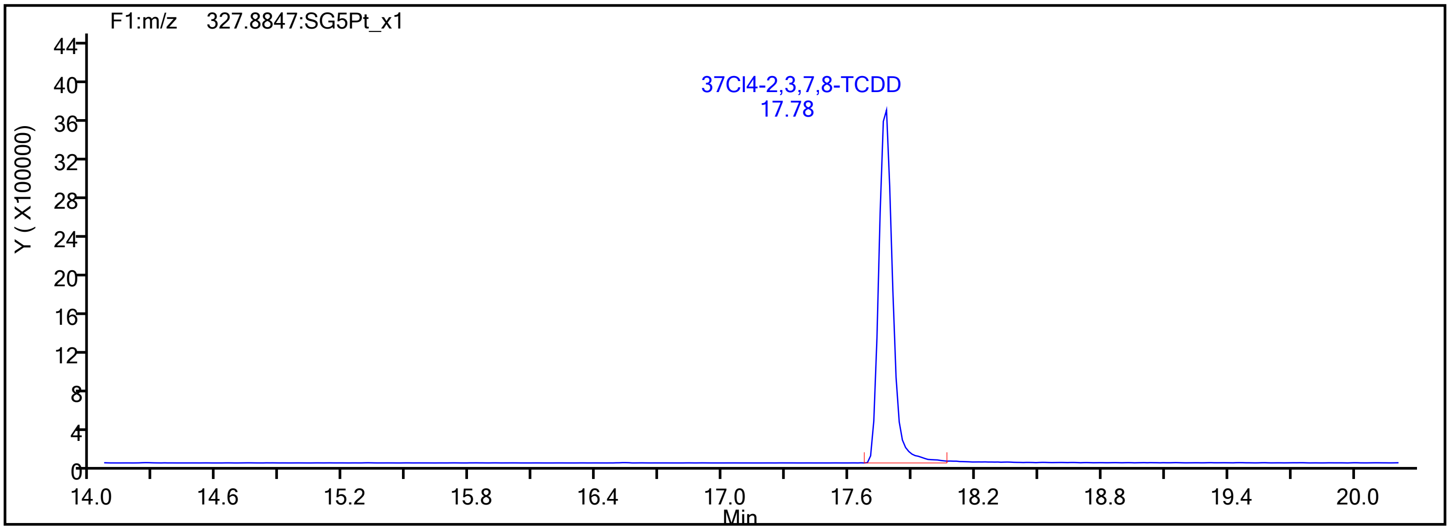

37Cl4-TCDD Standards

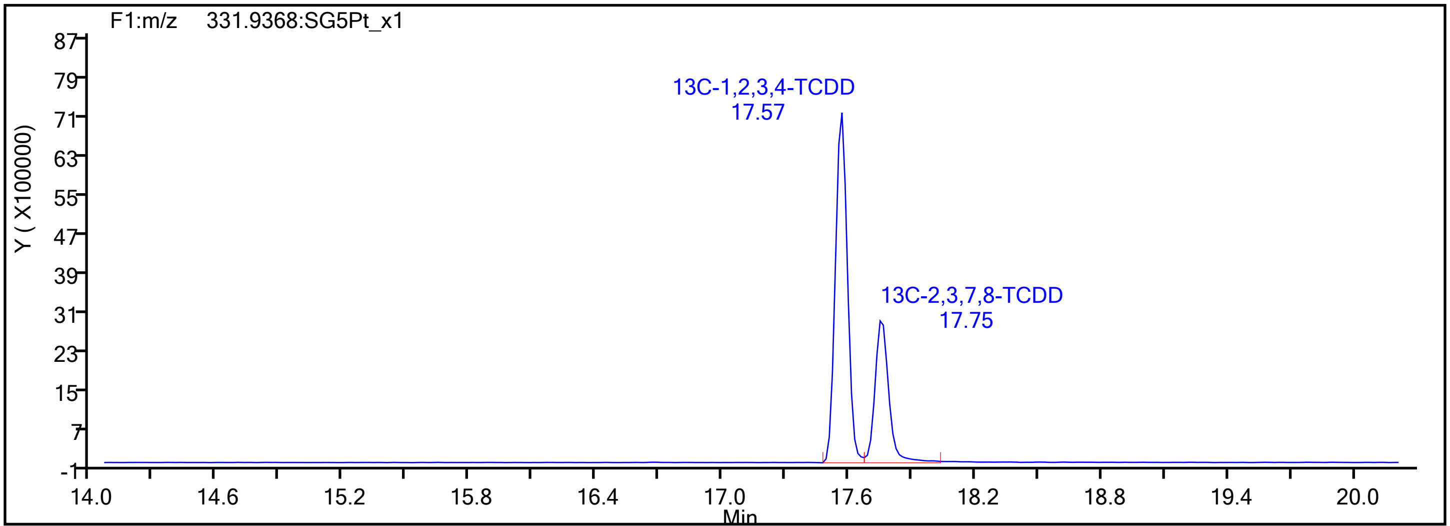

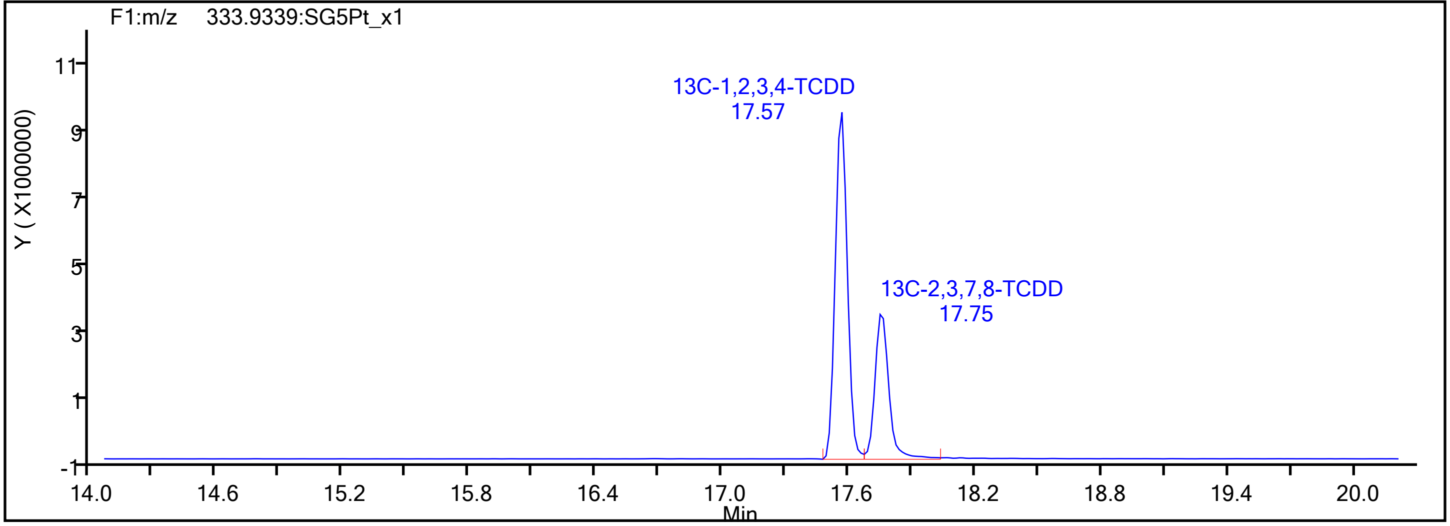

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_7.d		
Injection Date:	25-Jun-2020 22:25:22	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	389621	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

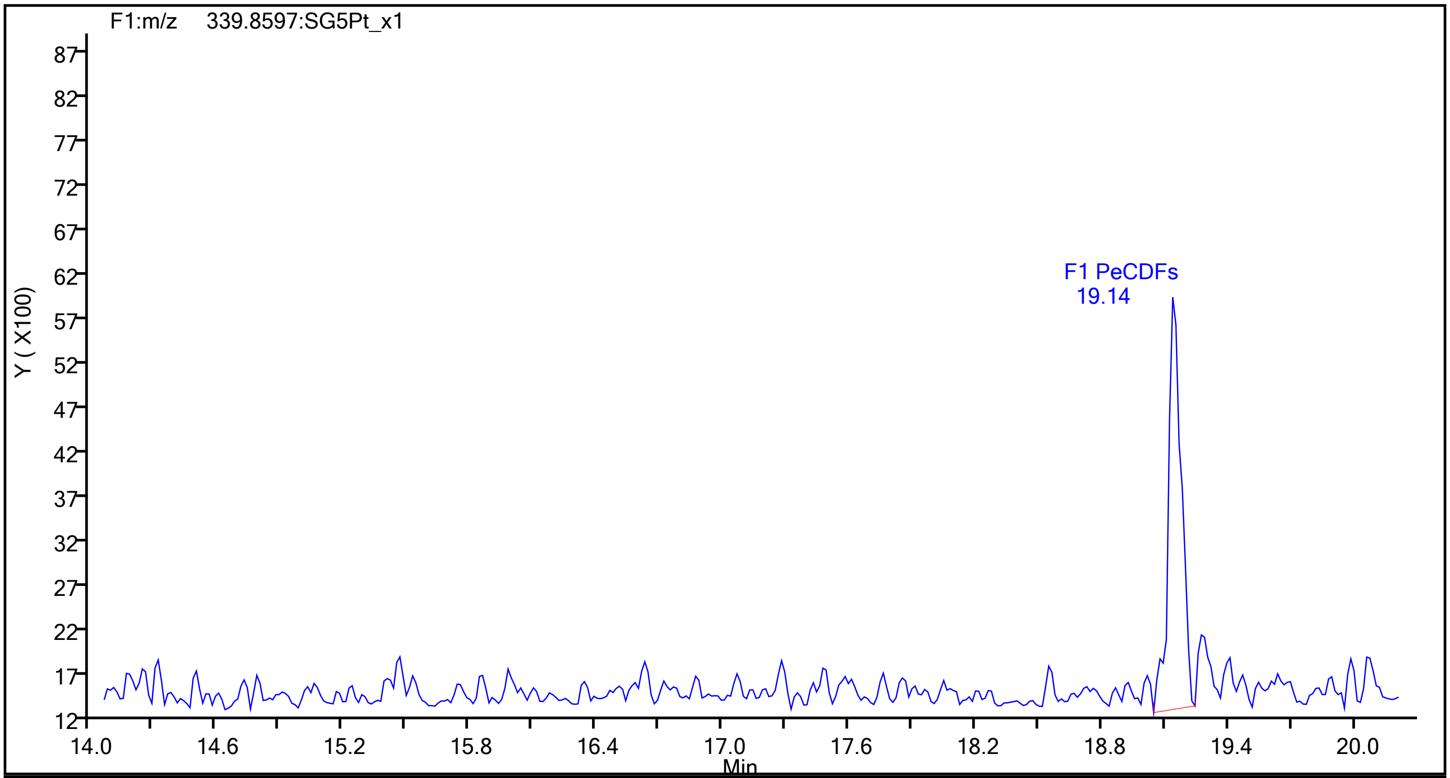

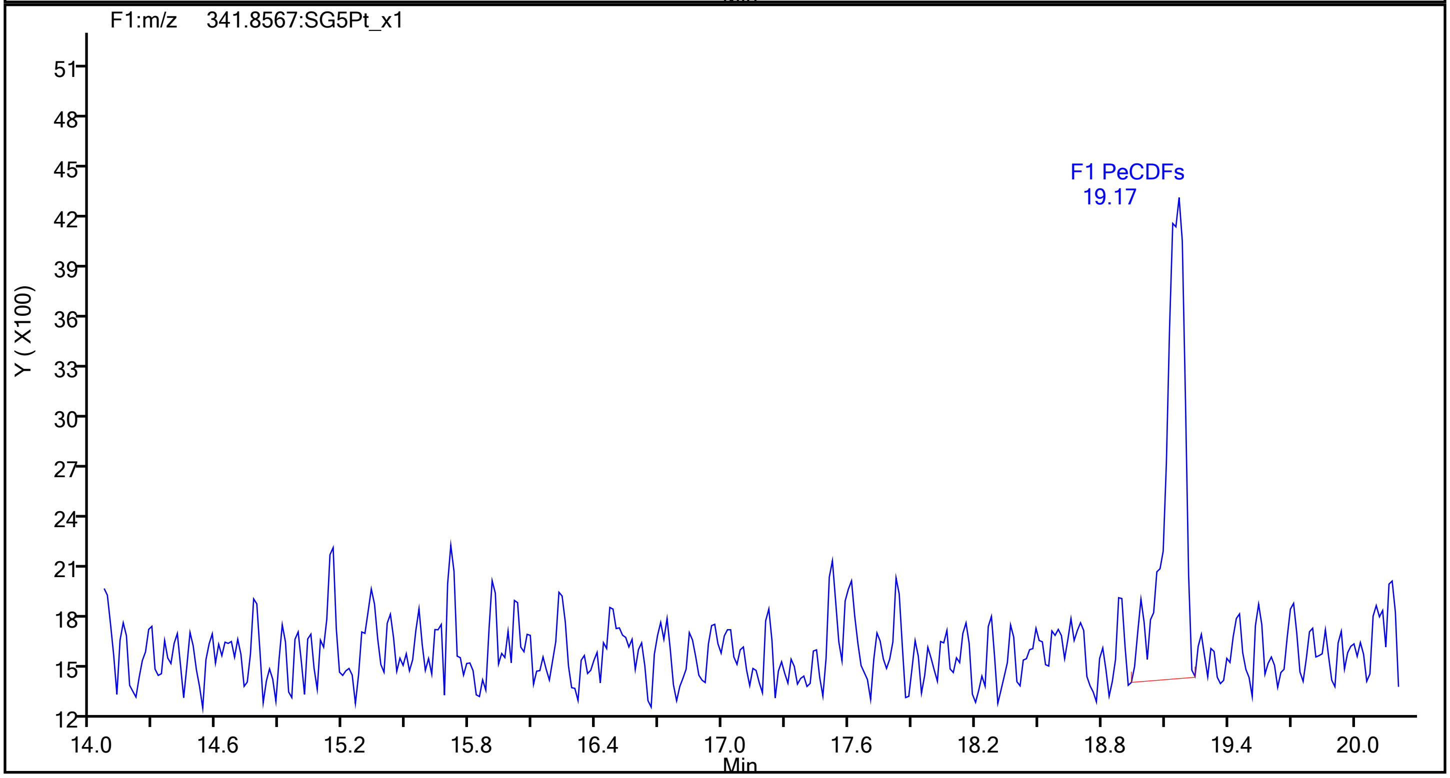

Report Date: 26-Jun-2020 13:16:09 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: AFINF
Worklist#: 389621
Sample Line#: 7
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

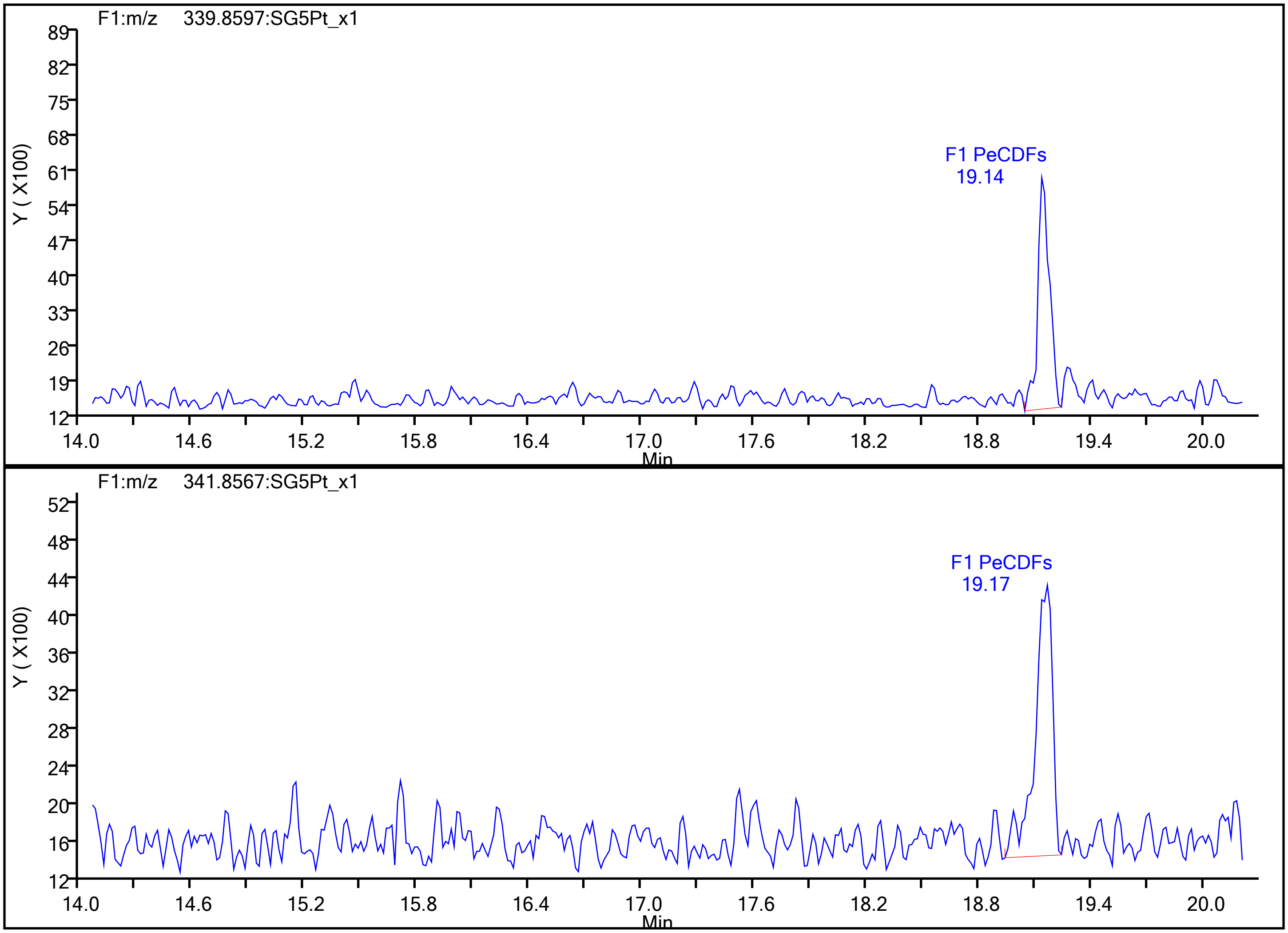

F1 PeCDFs Interference Mass

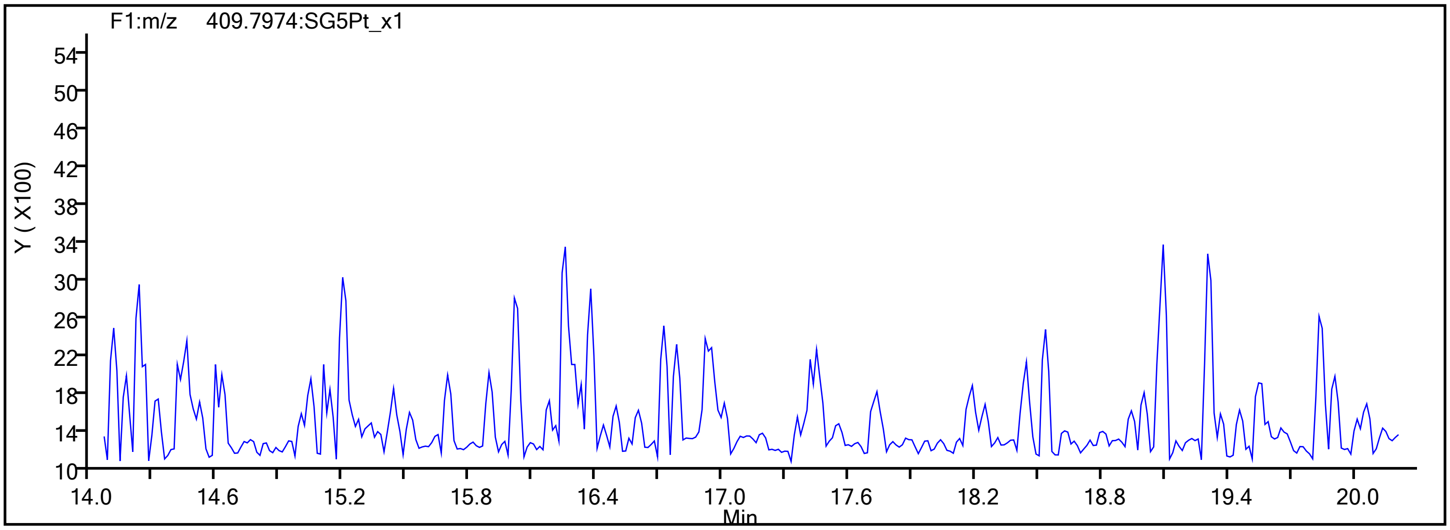

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

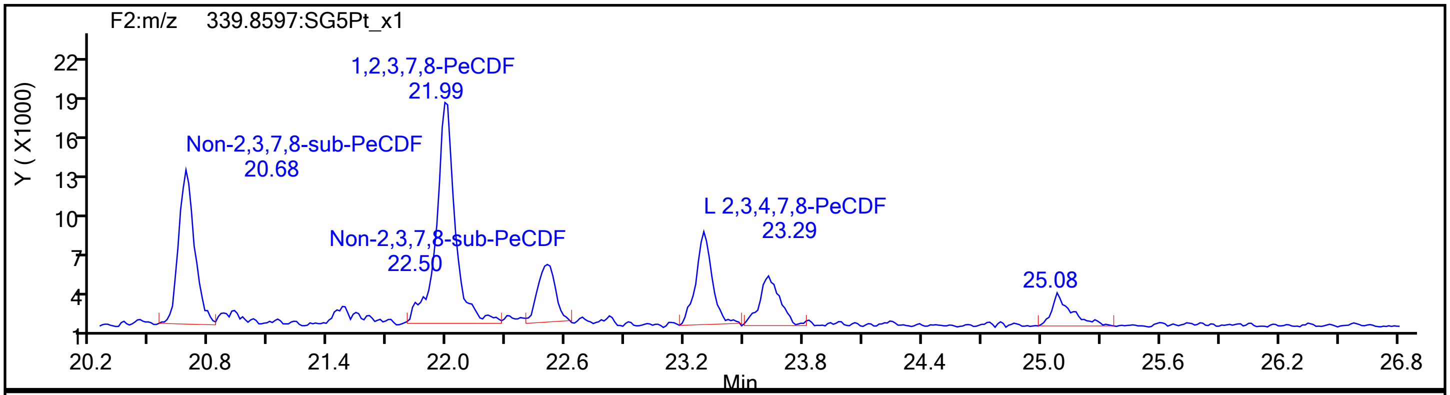

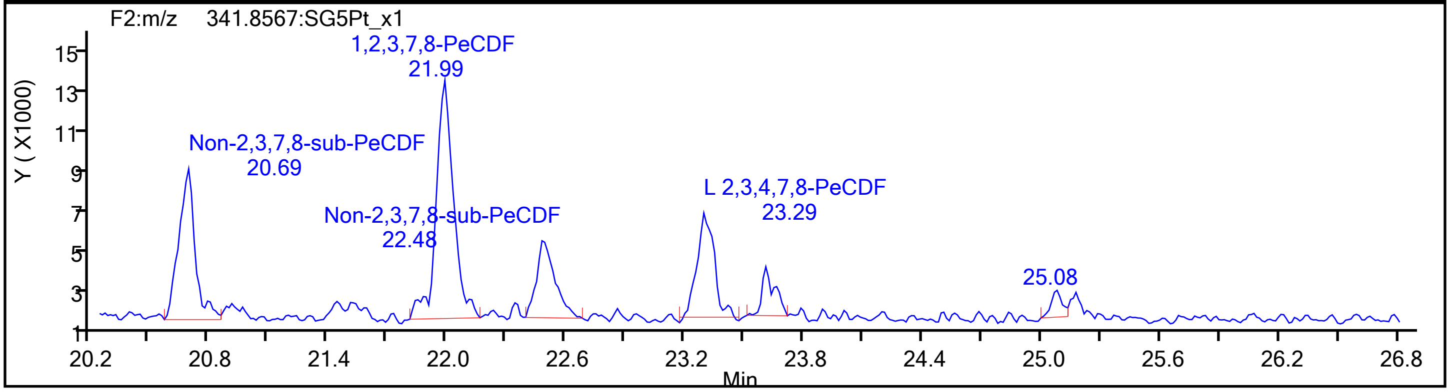

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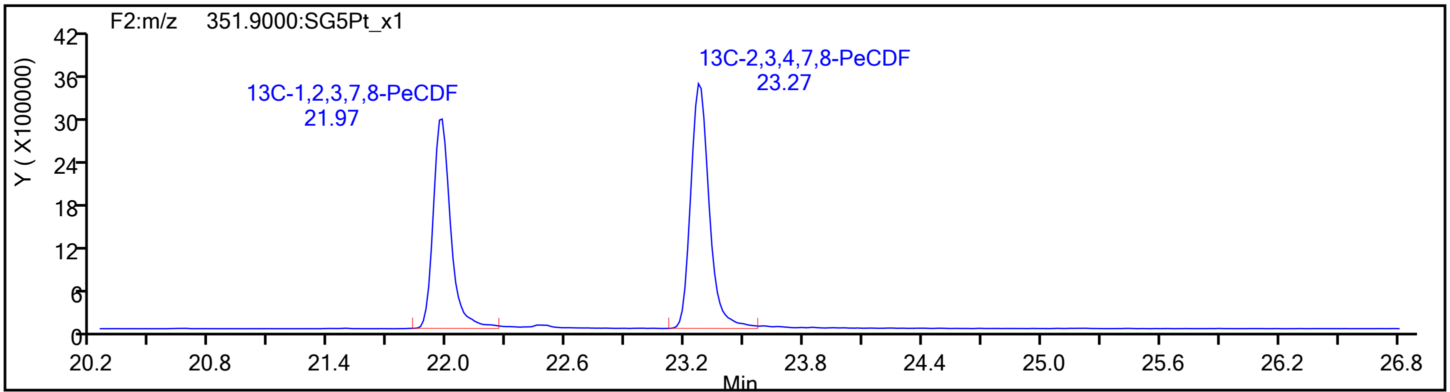

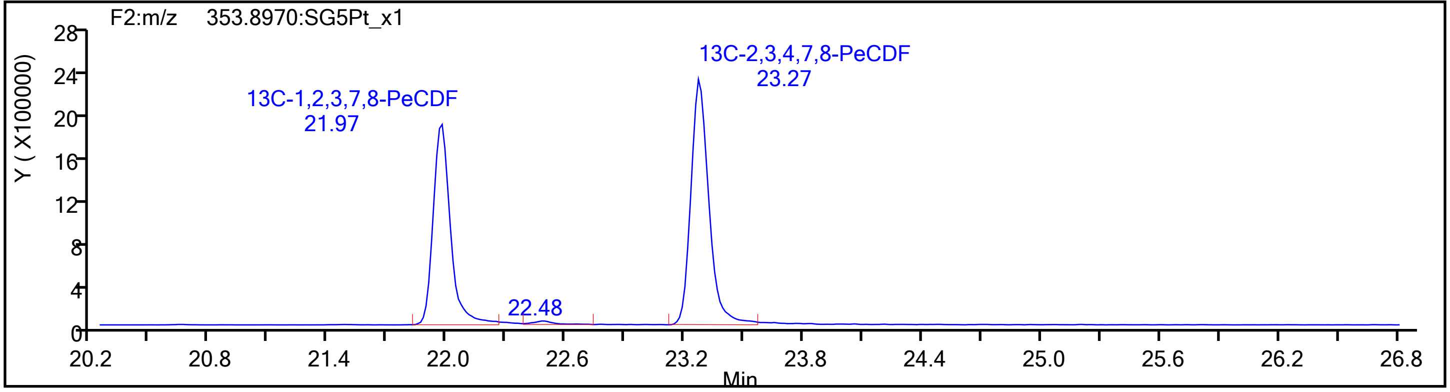

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Eurofins TestAmerica, Sacramento

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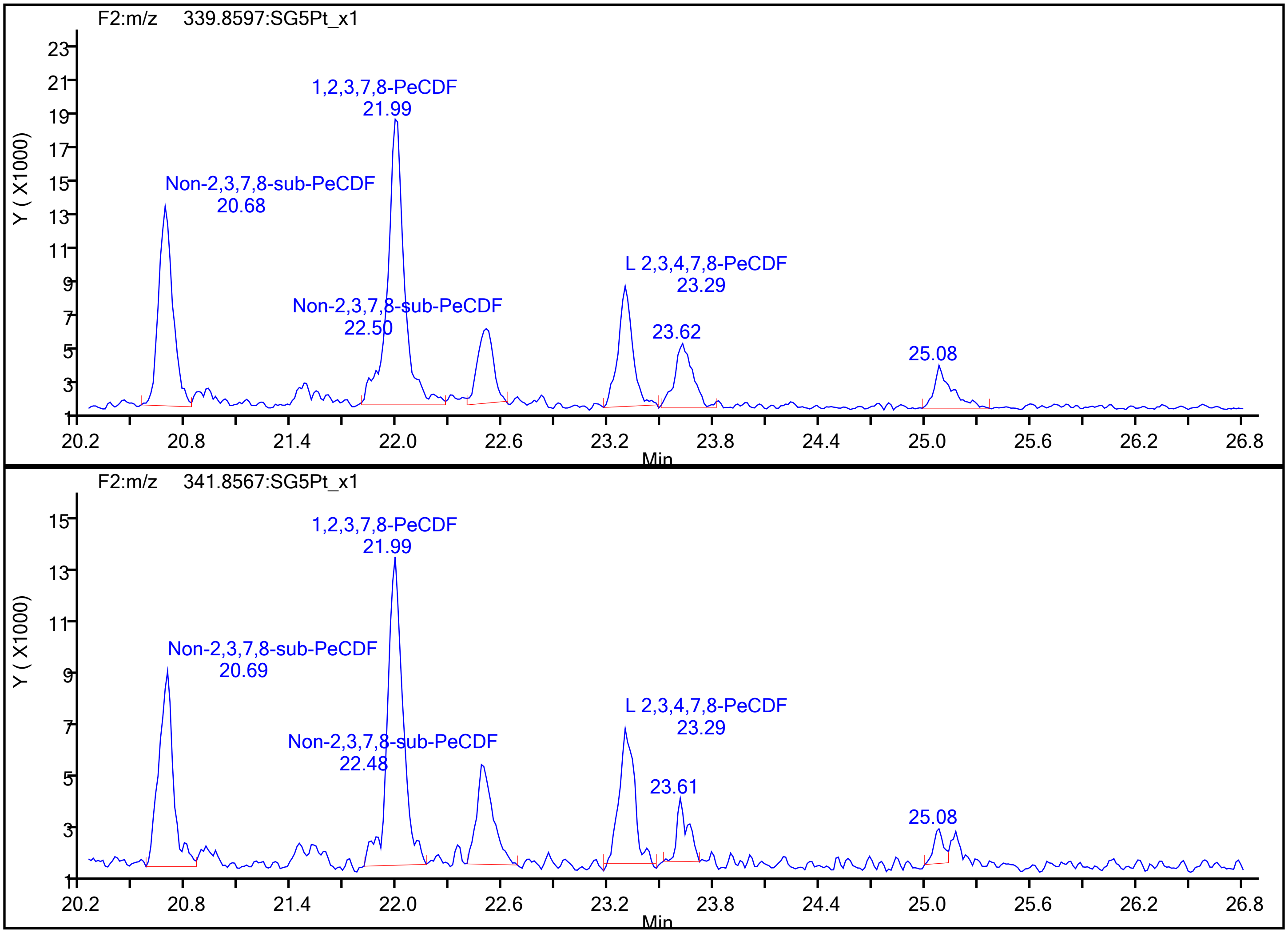

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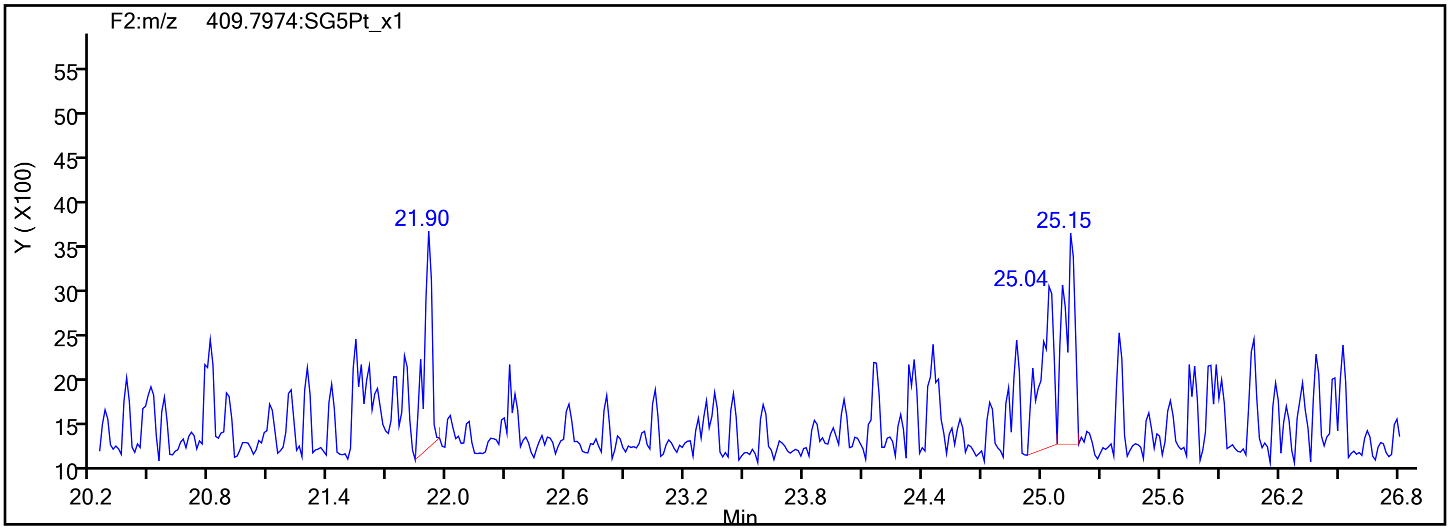

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Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFINF

Worklist#: 389621 Sample Line#: 7

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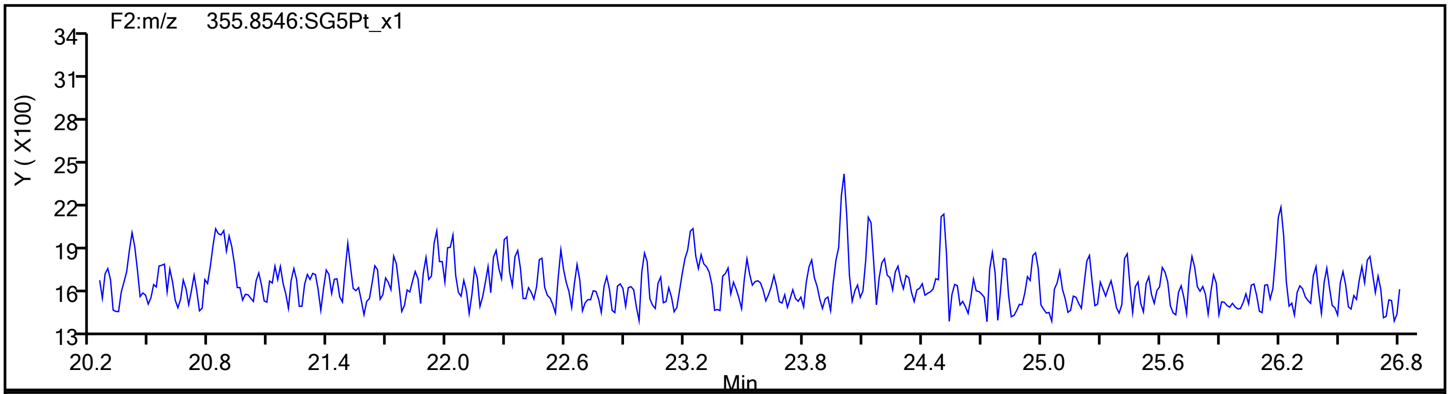

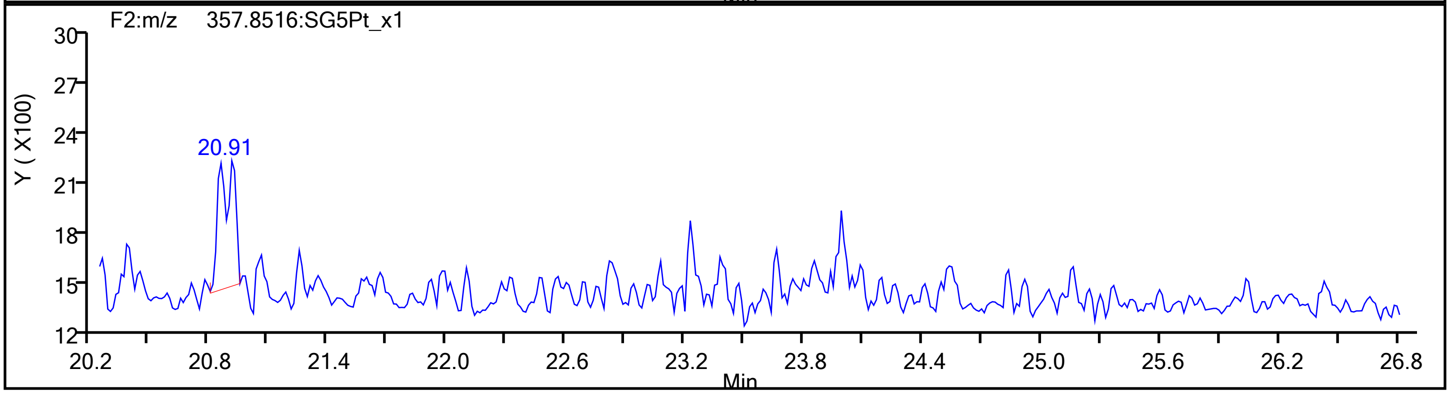

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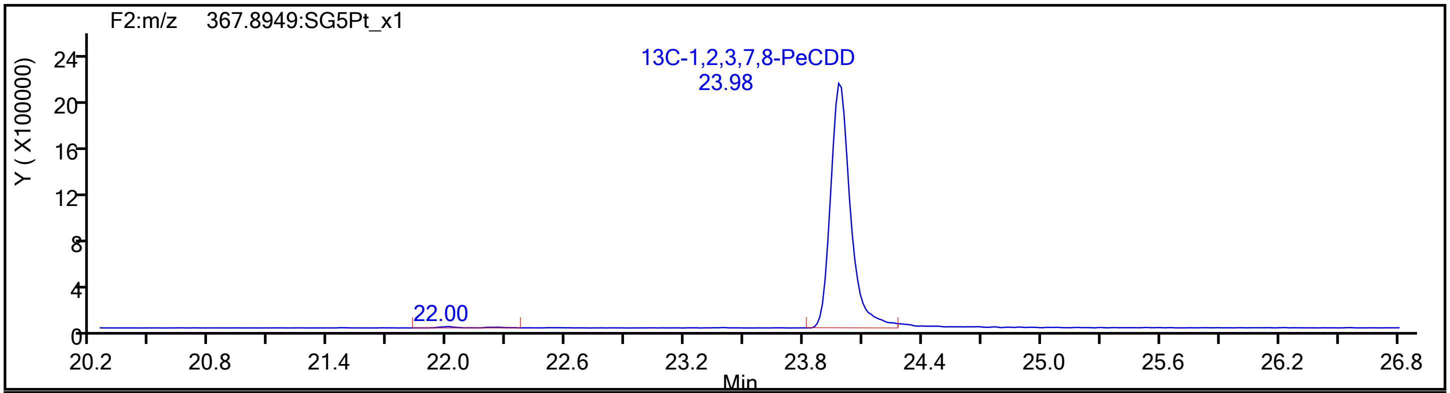

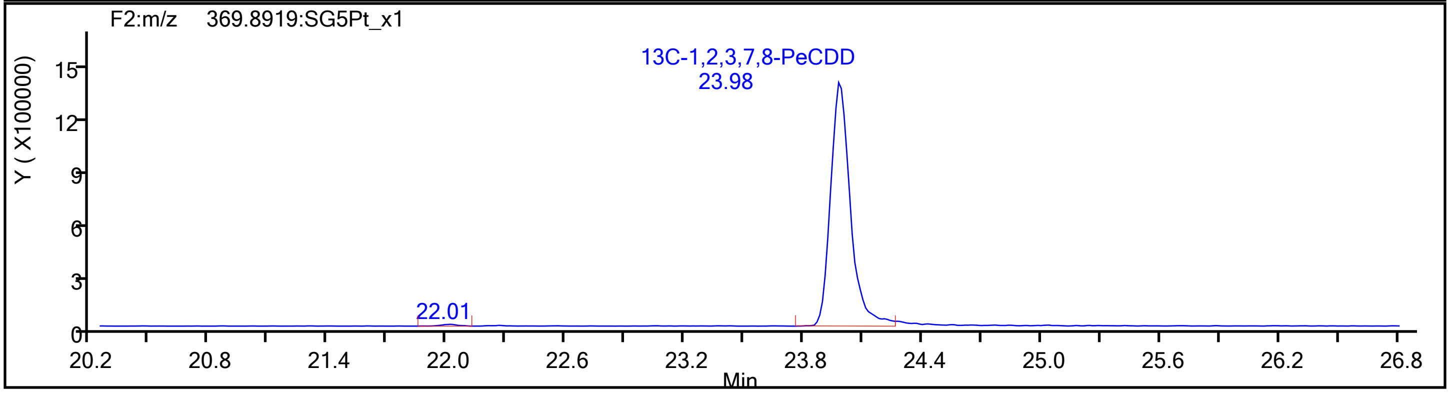

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Eurofins TestAmerica, Sacramento

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Client ID: AFINF

Worklist#: 389621 Sample Line#: 7

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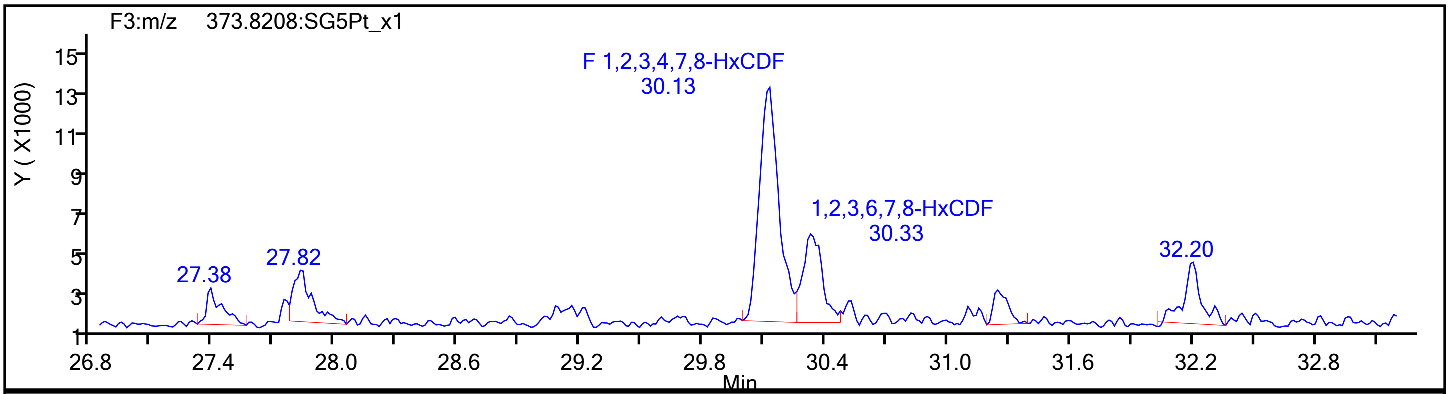

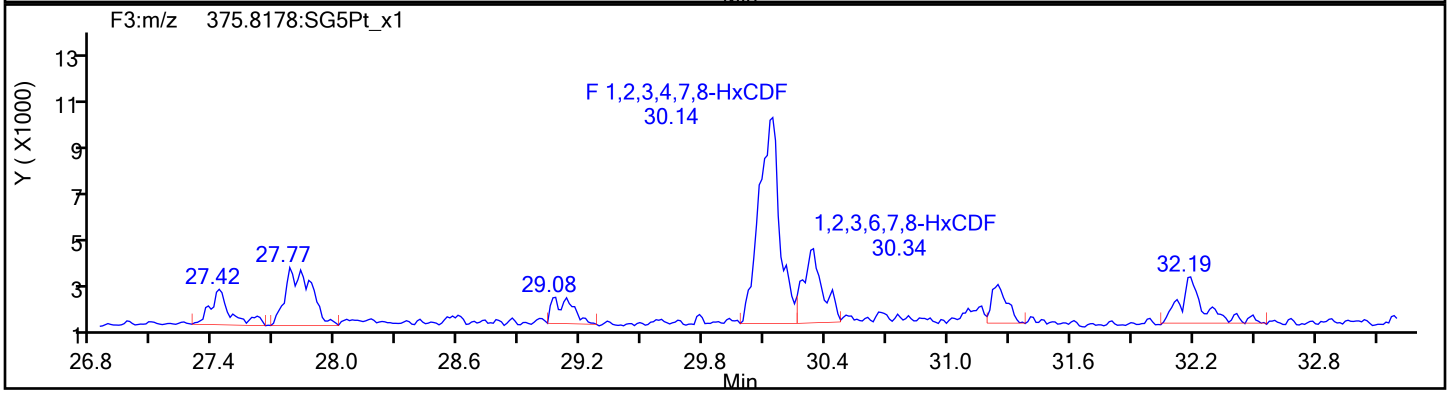

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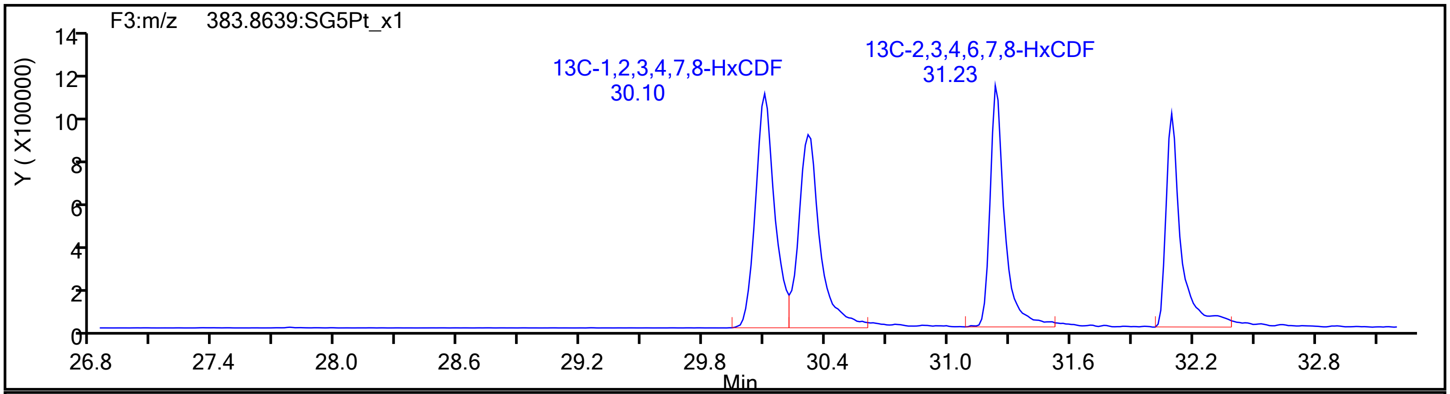

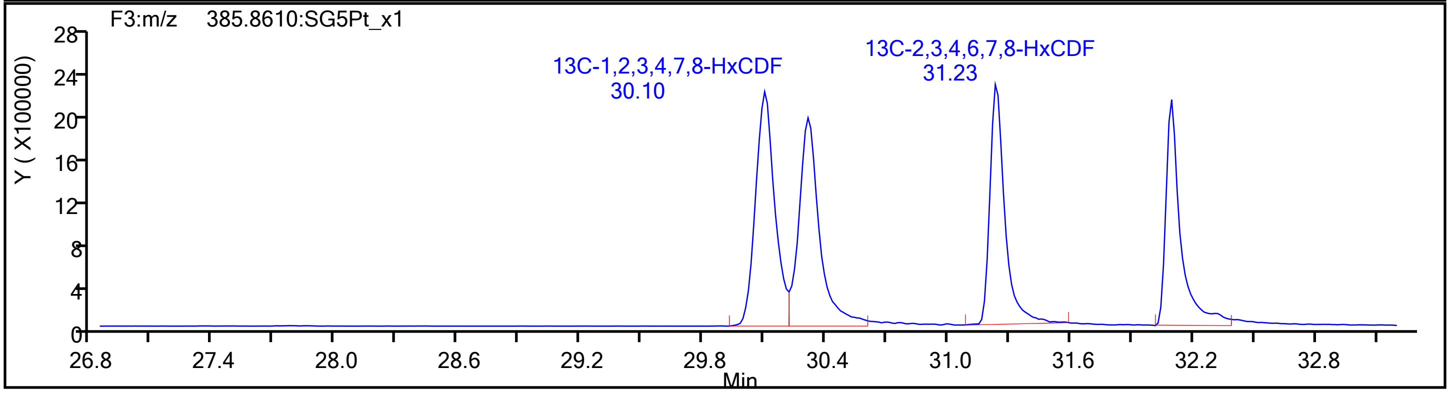

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Eurofins TestAmerica, Sacramento

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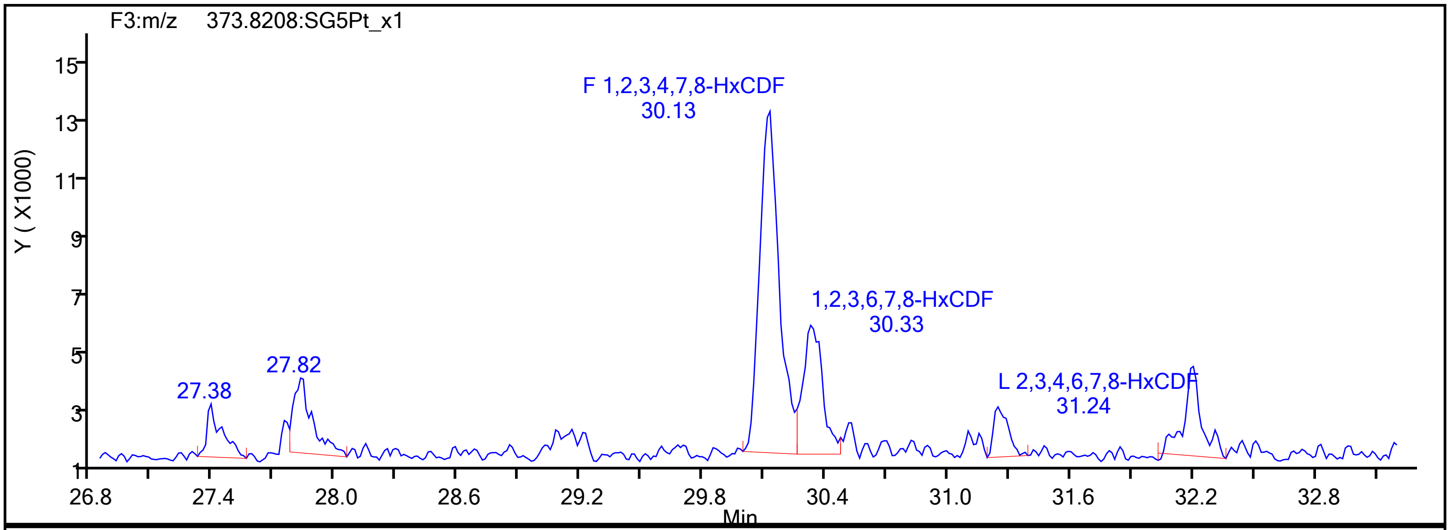

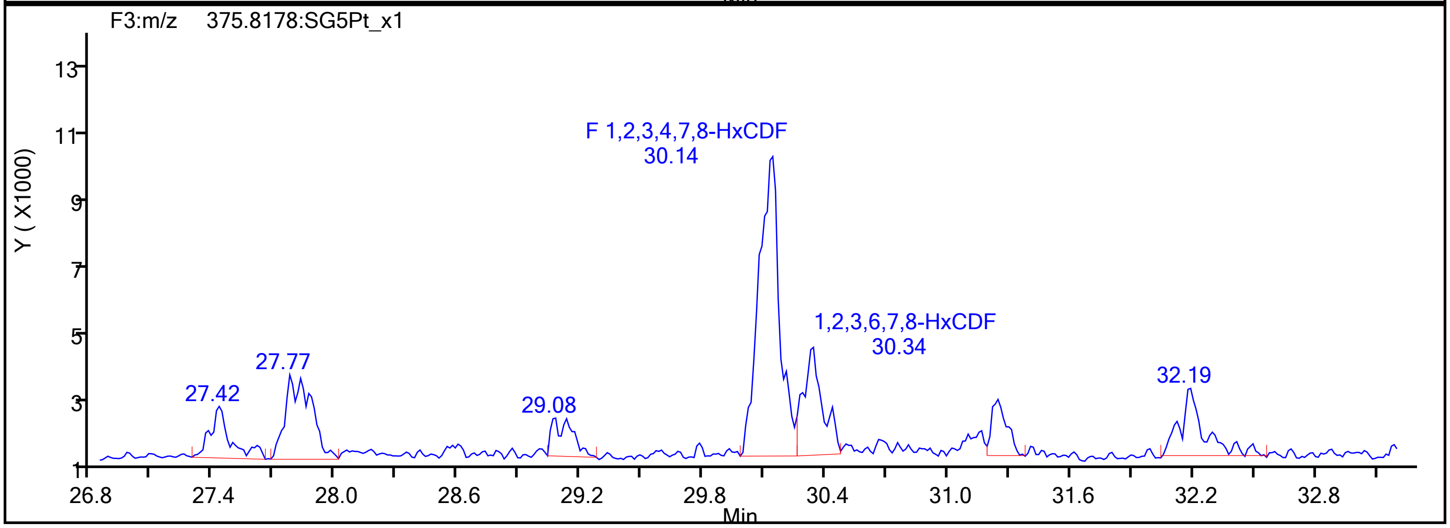

HxCDF Interference Mass

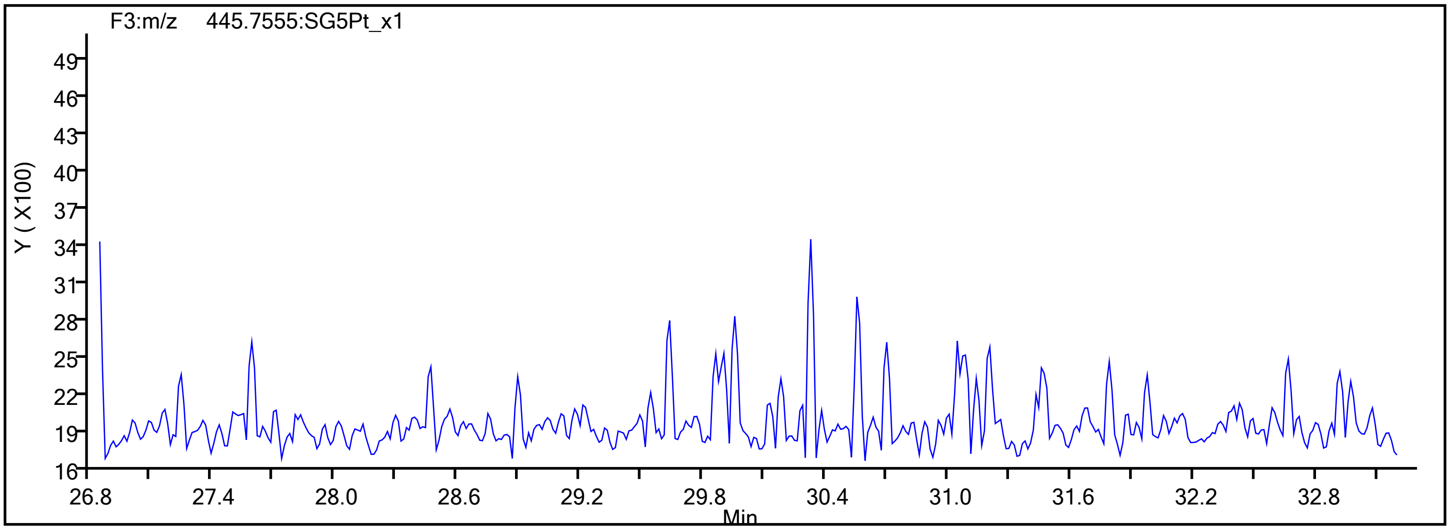

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HxCDD

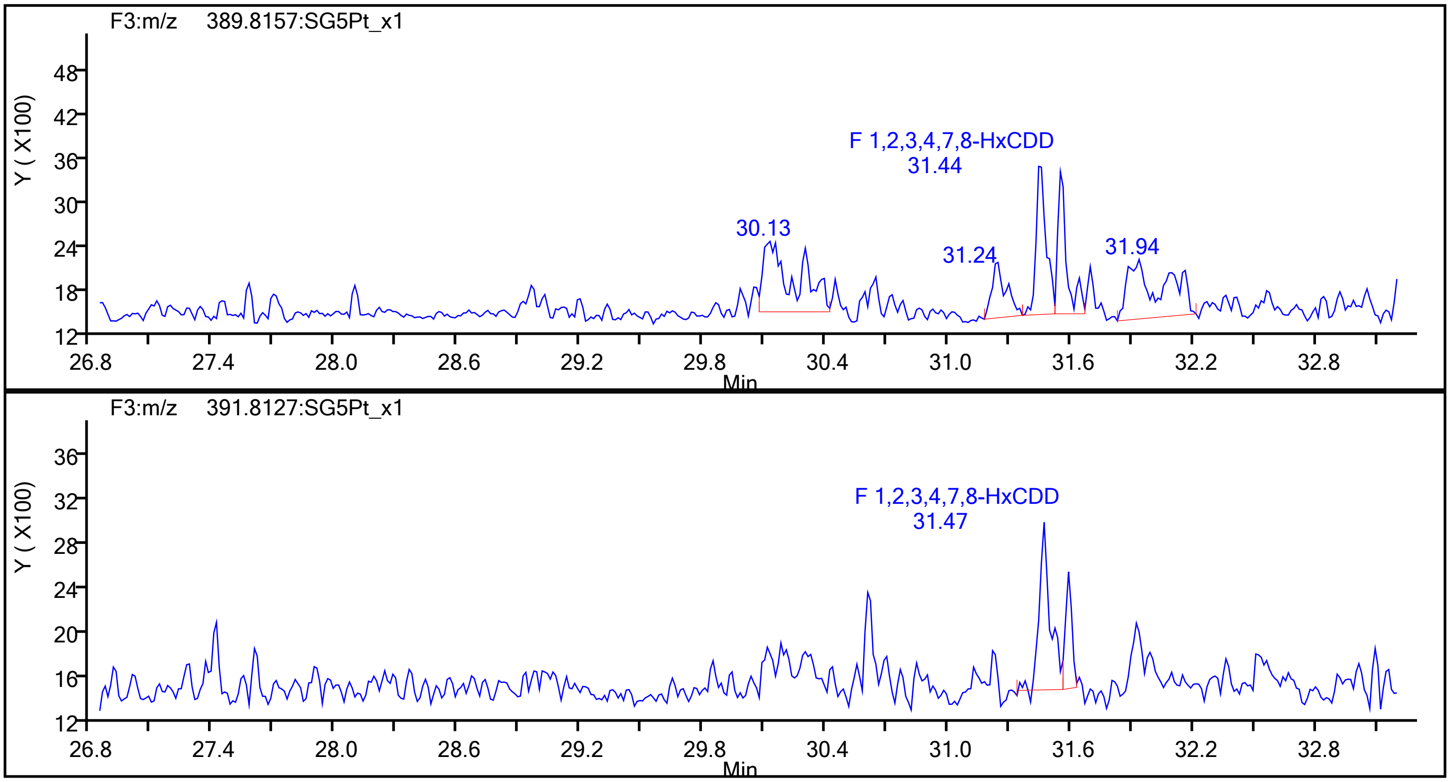

HxCDD Standards

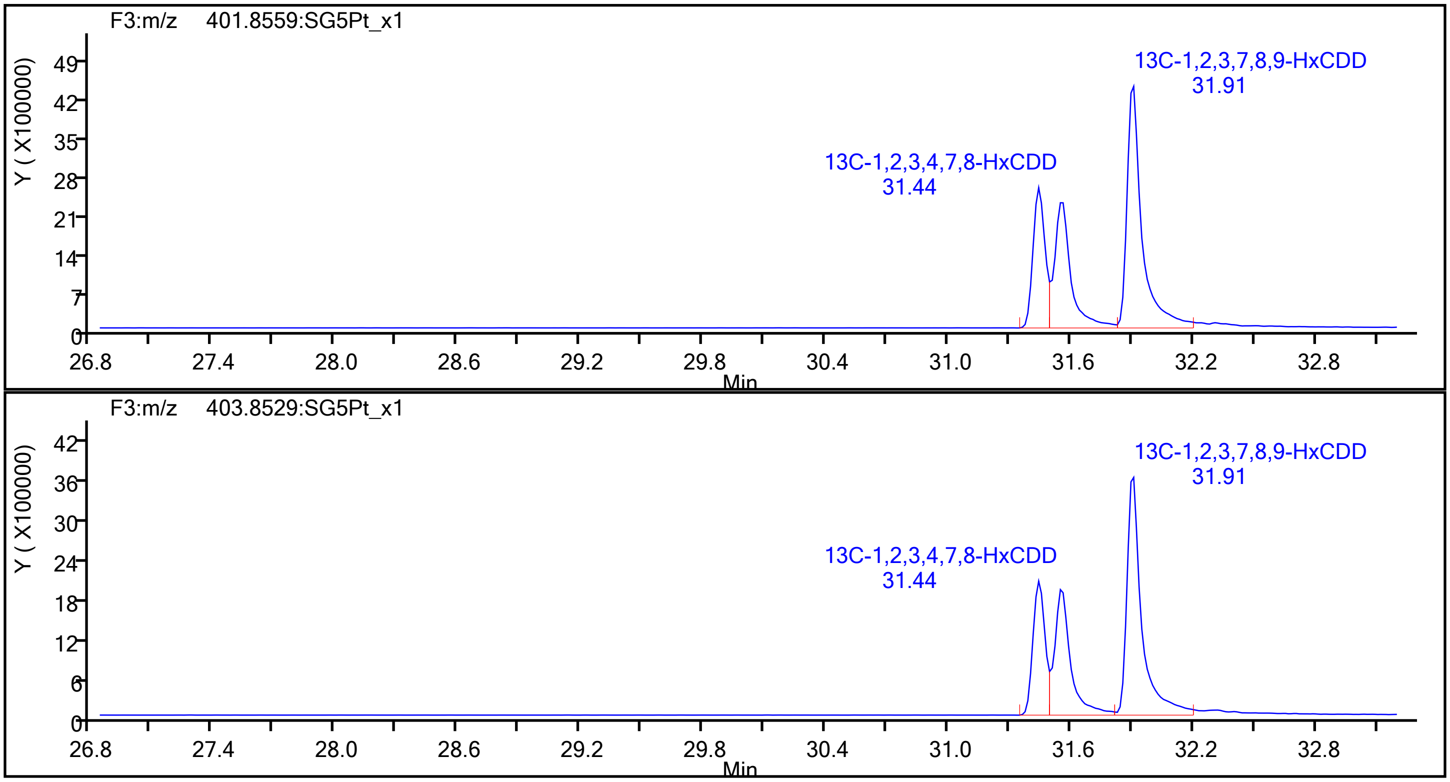

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Eurofins TestAmerica, Sacramento

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HpCDF

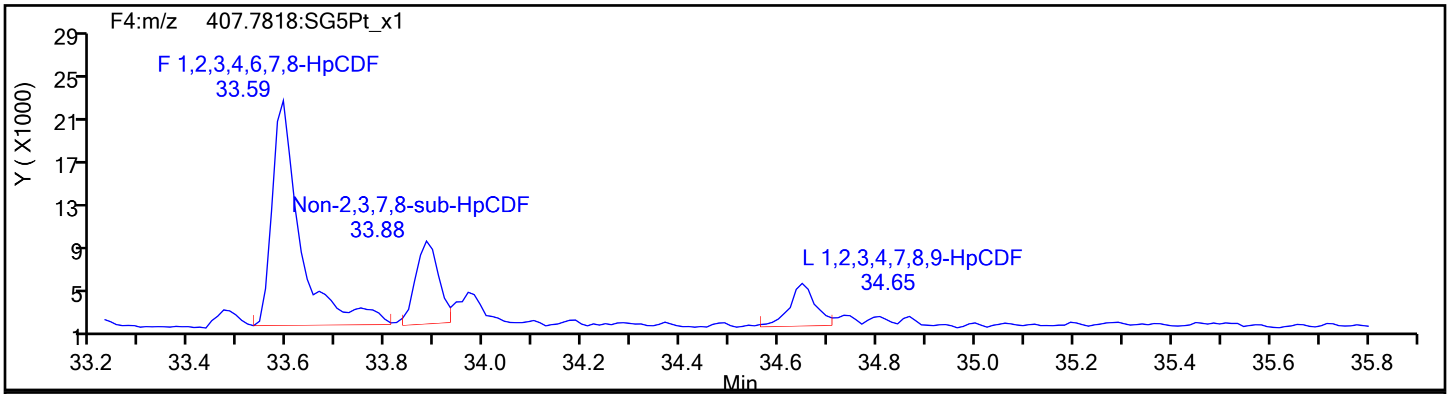

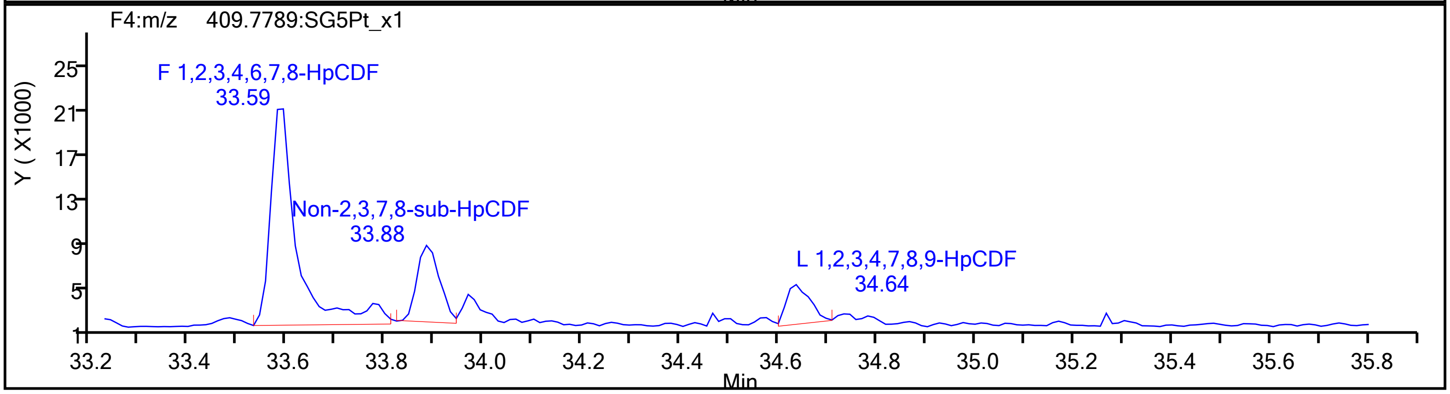

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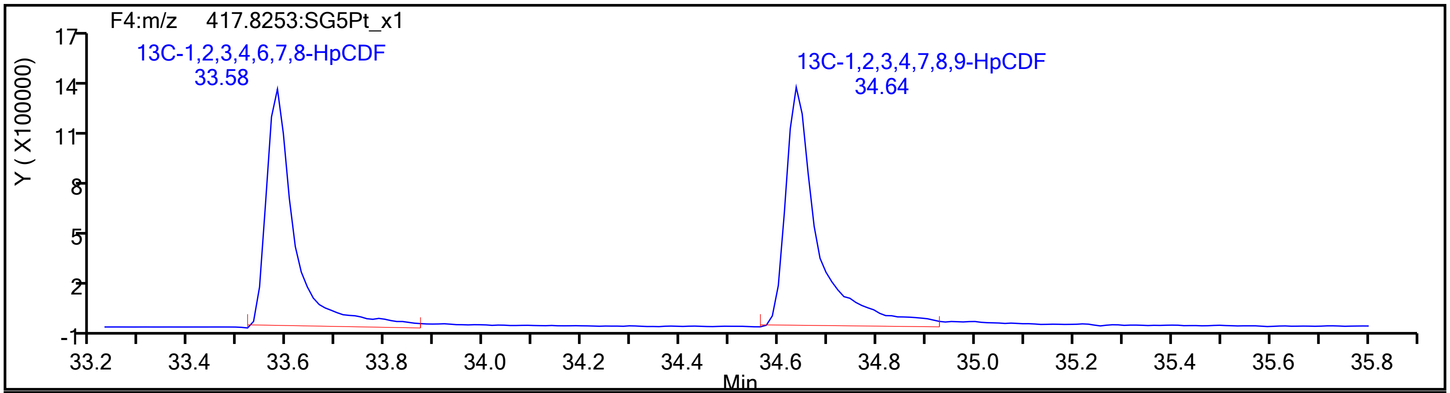

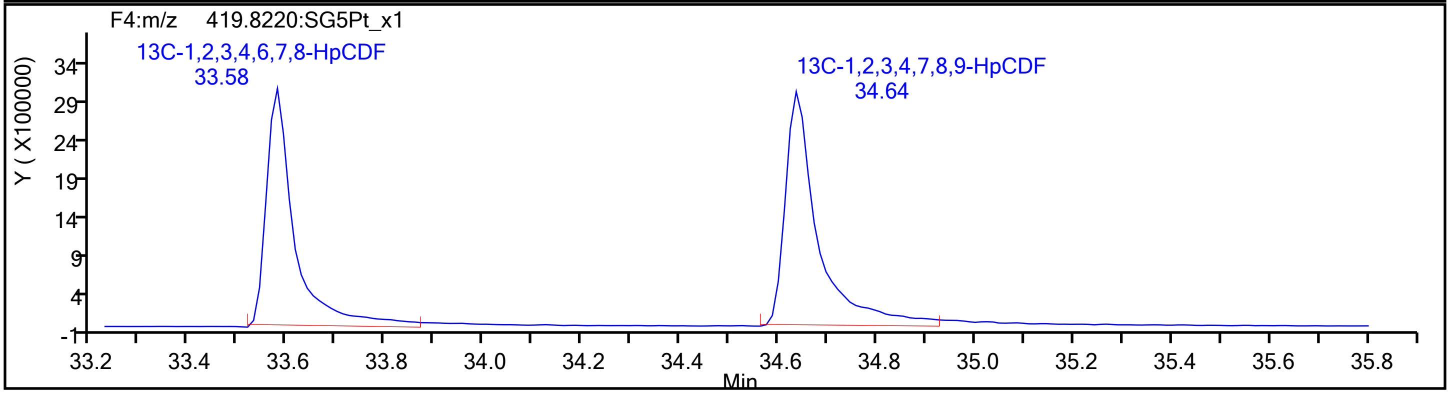

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Eurofins TestAmerica, Sacramento

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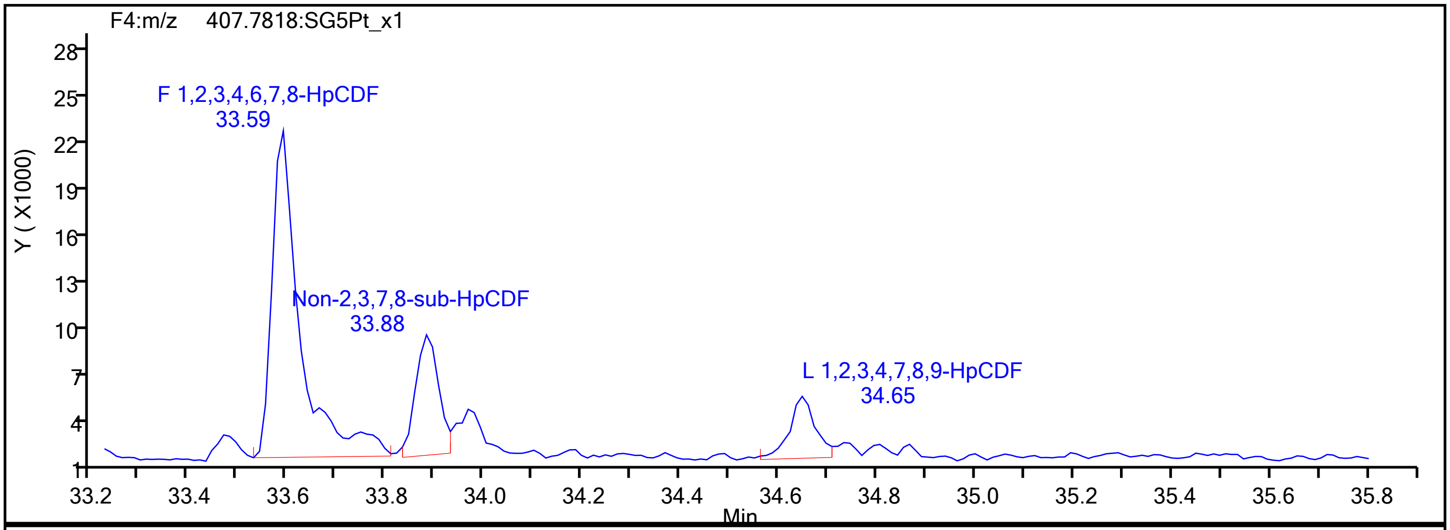

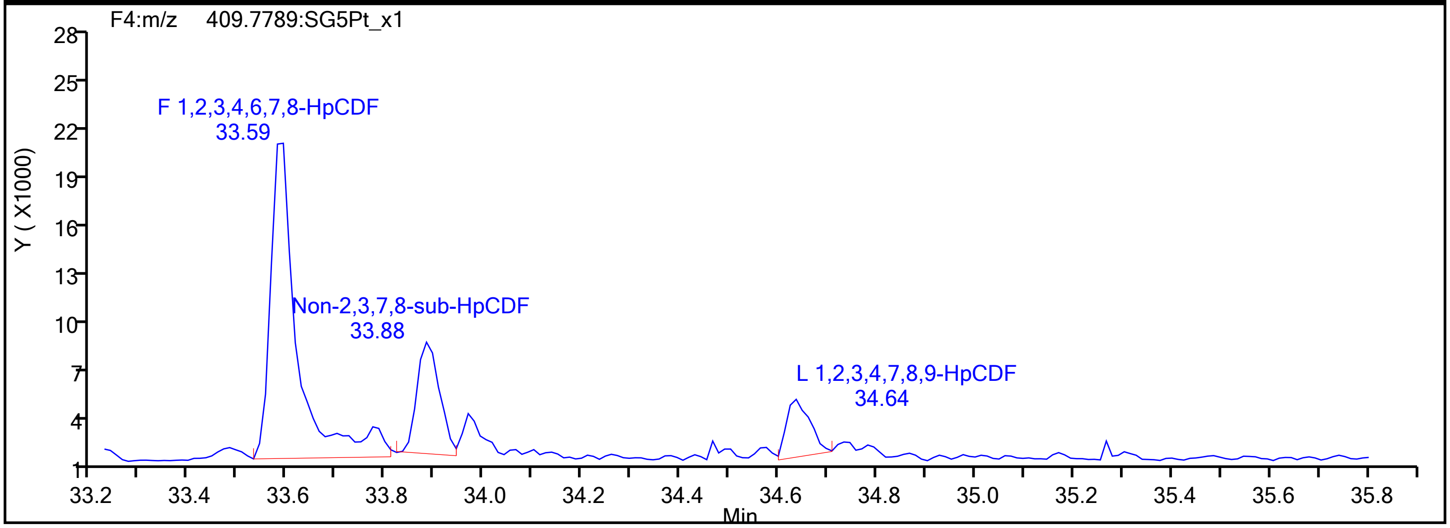

HpCDF Interference Mass

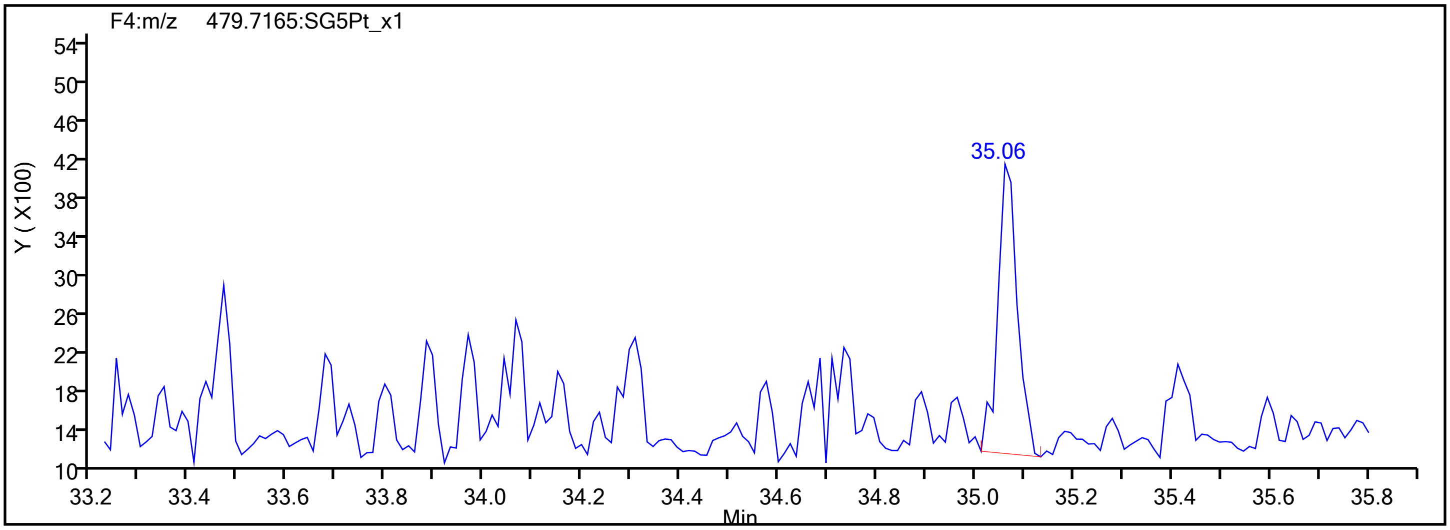

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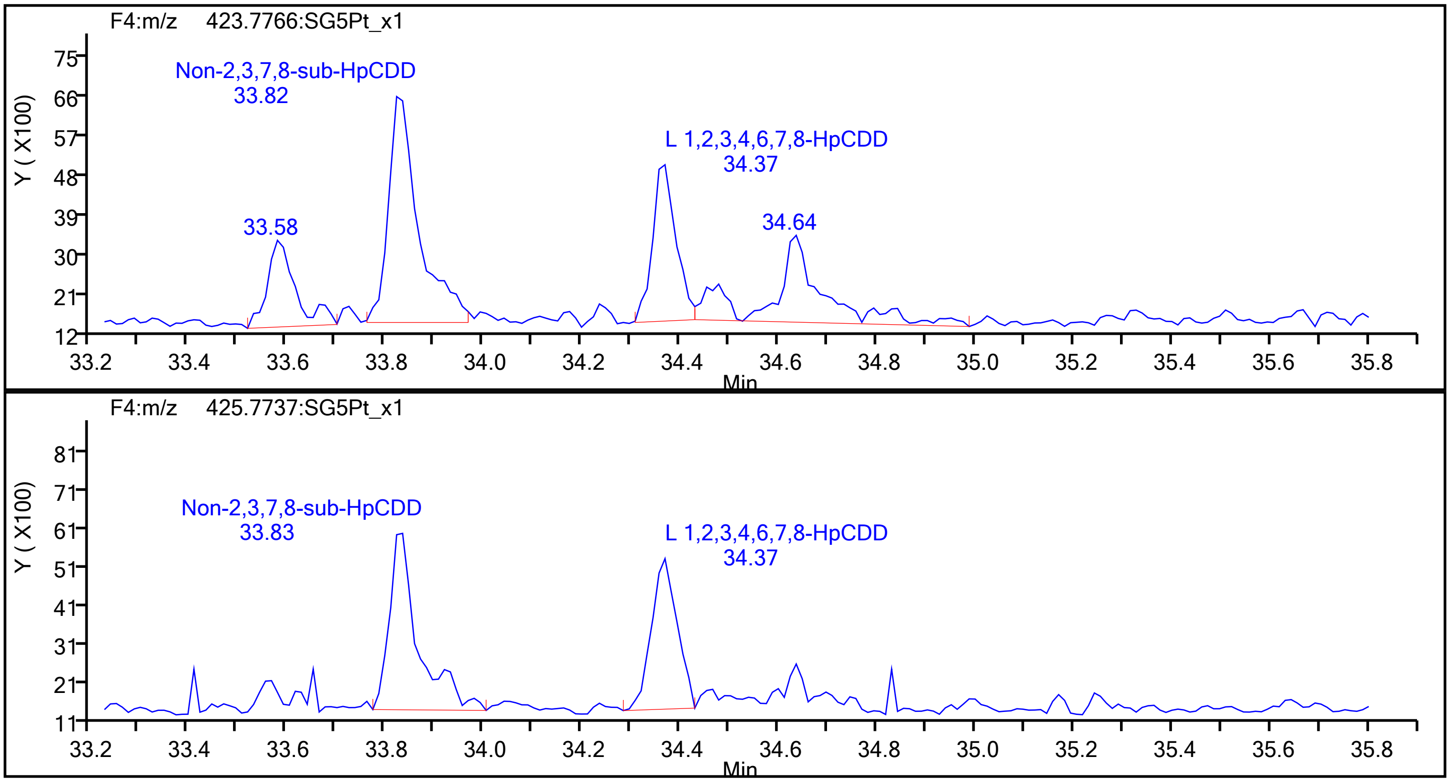

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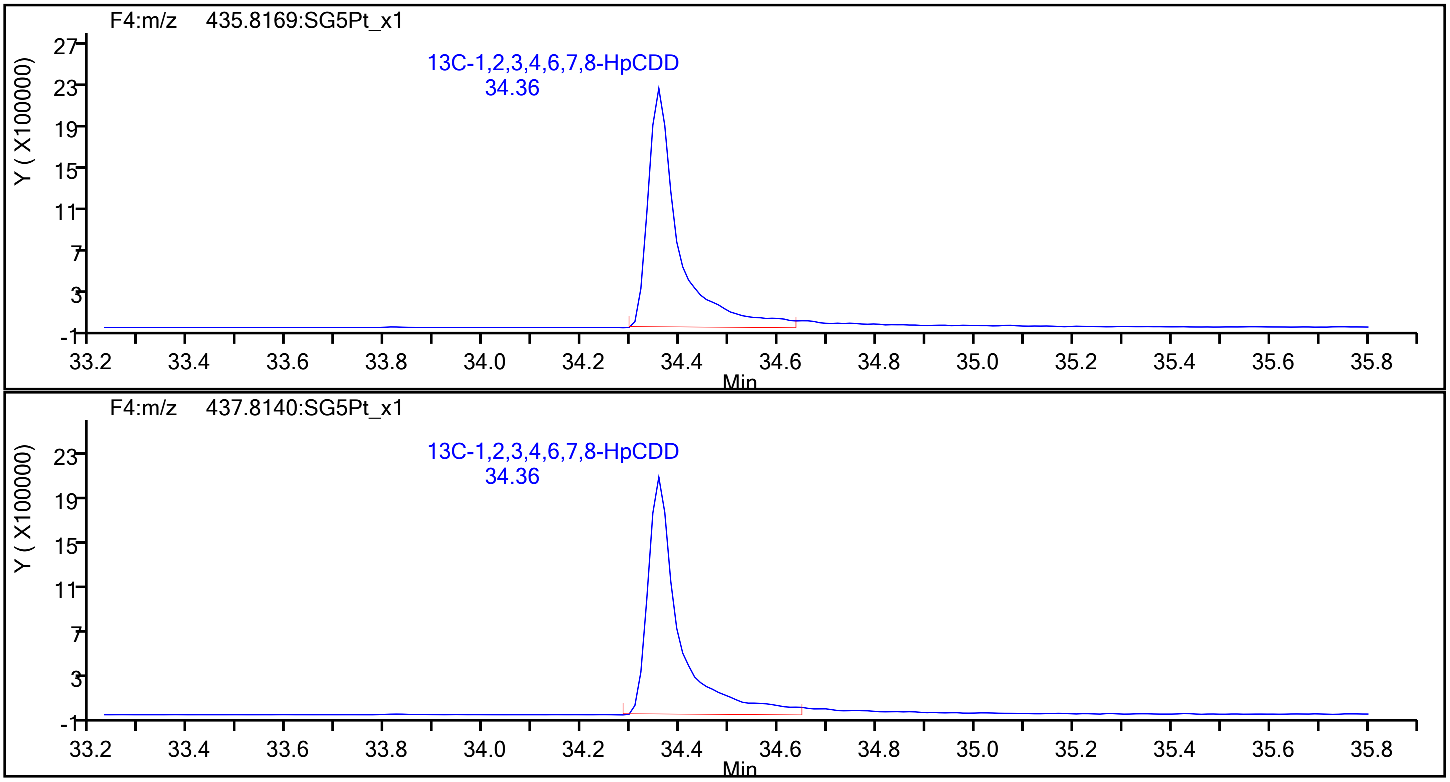

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Client ID: AFINF
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Sample Line#: 7
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OCDF

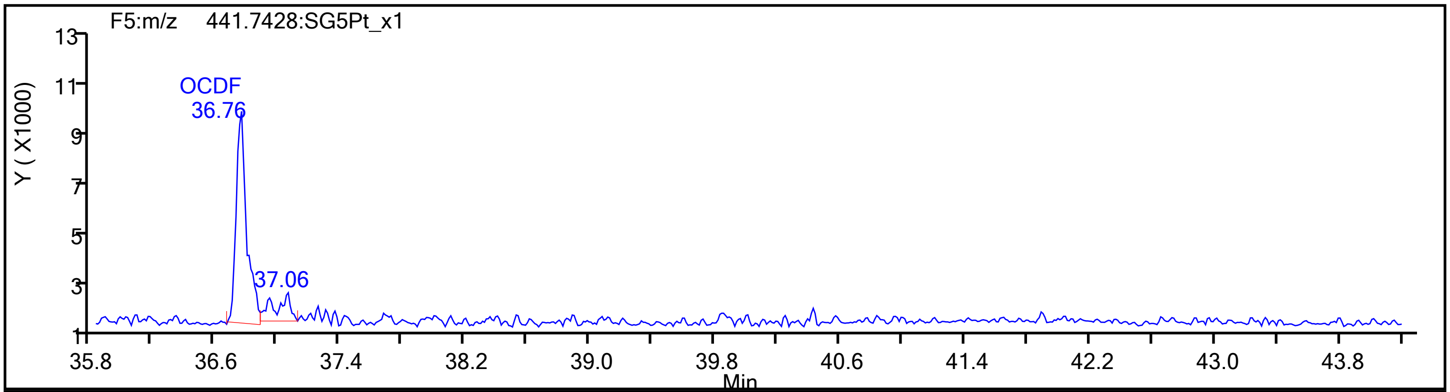

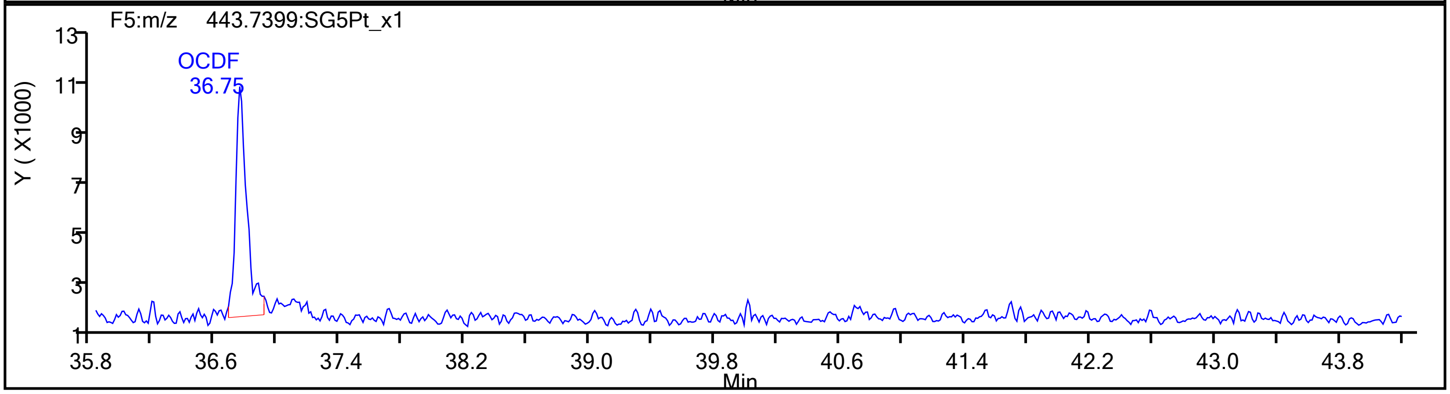

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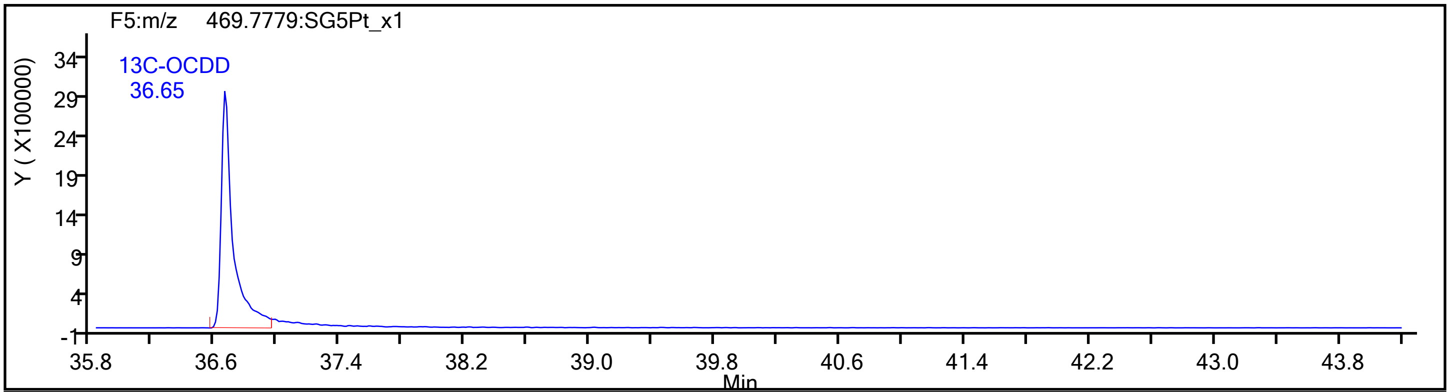

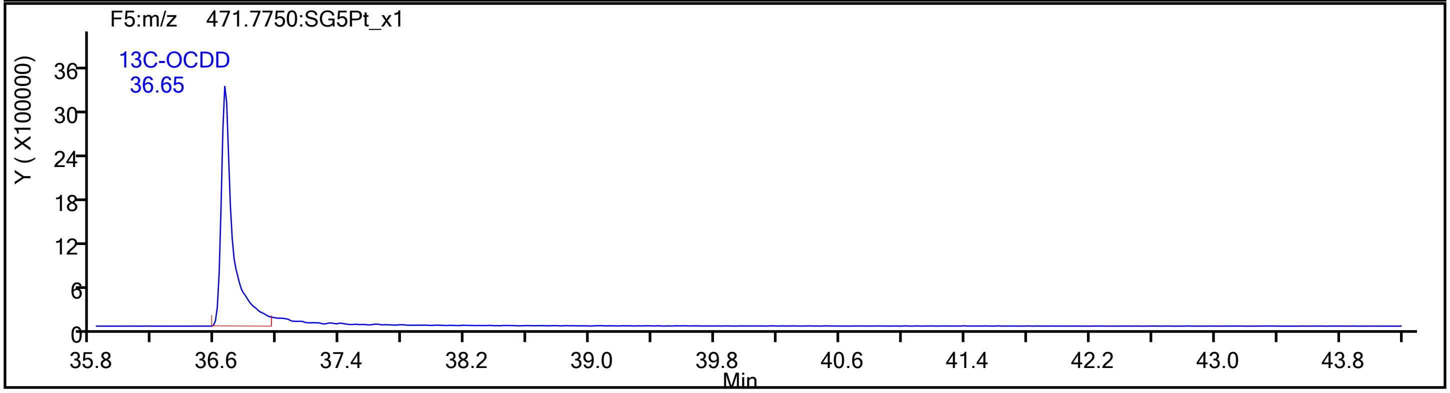

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OCDF

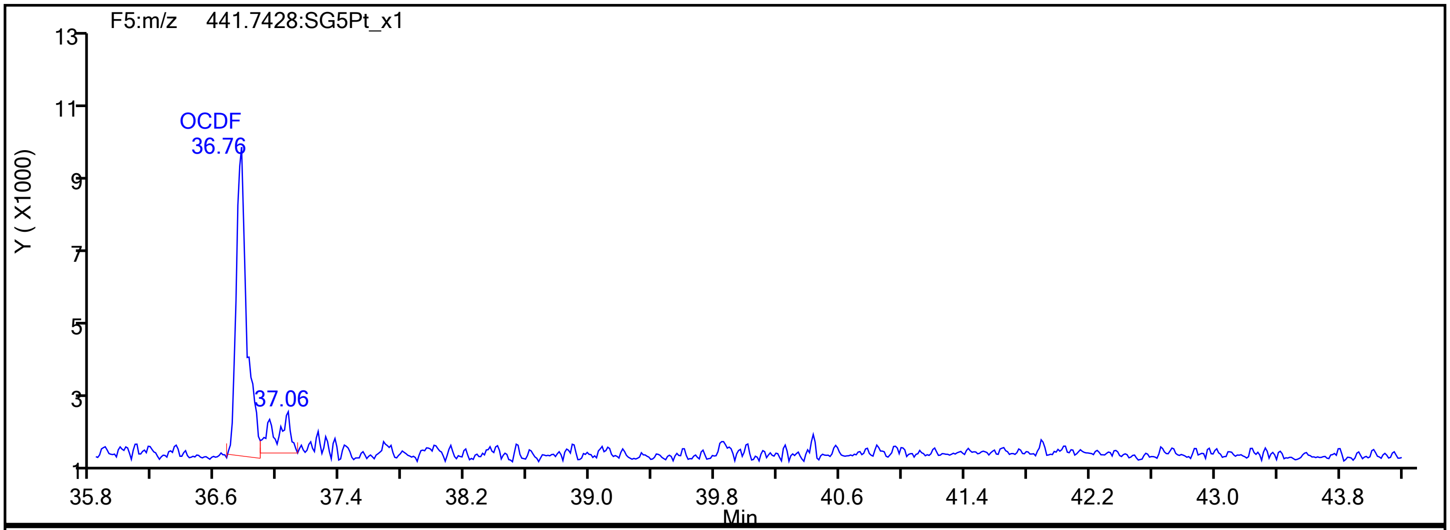

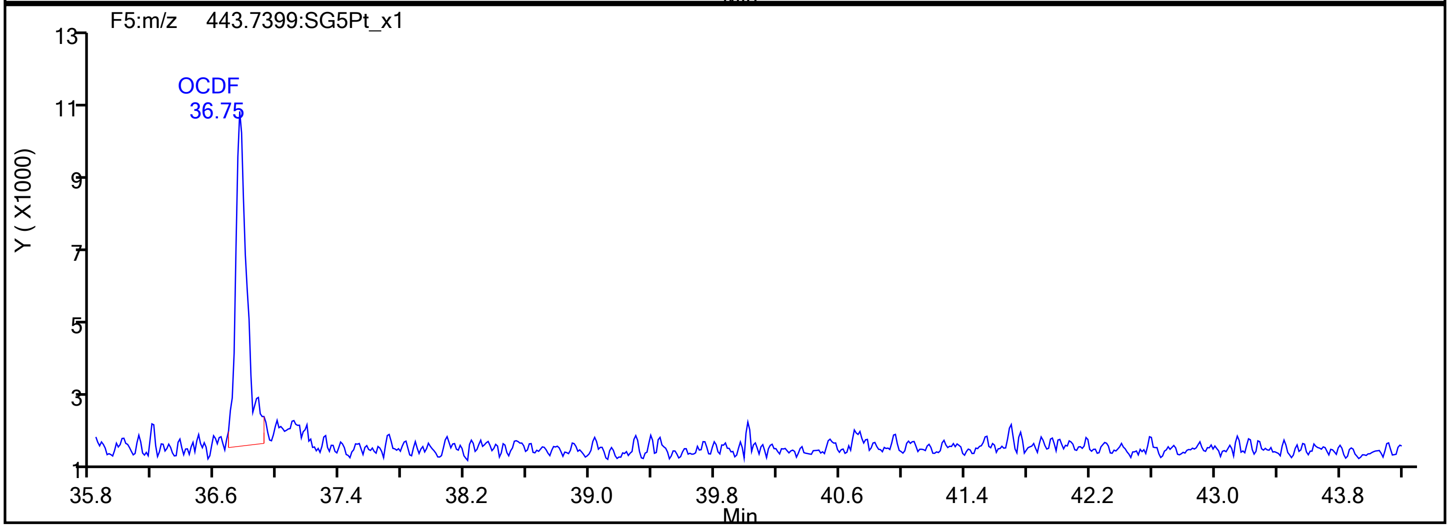

OCDF Interference Mass

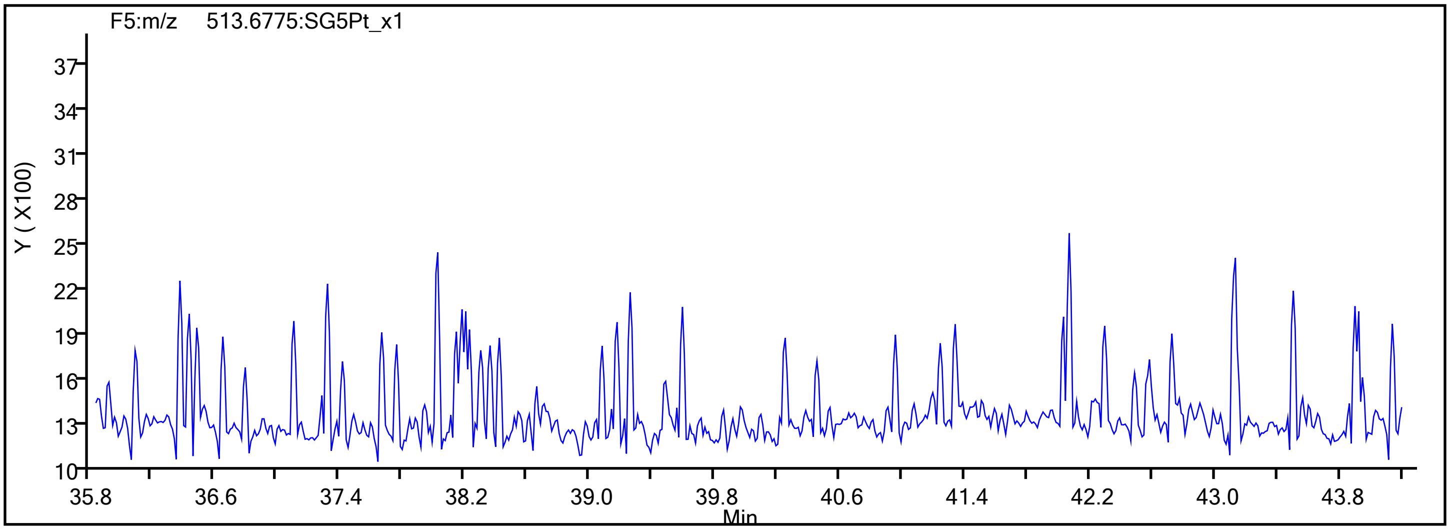

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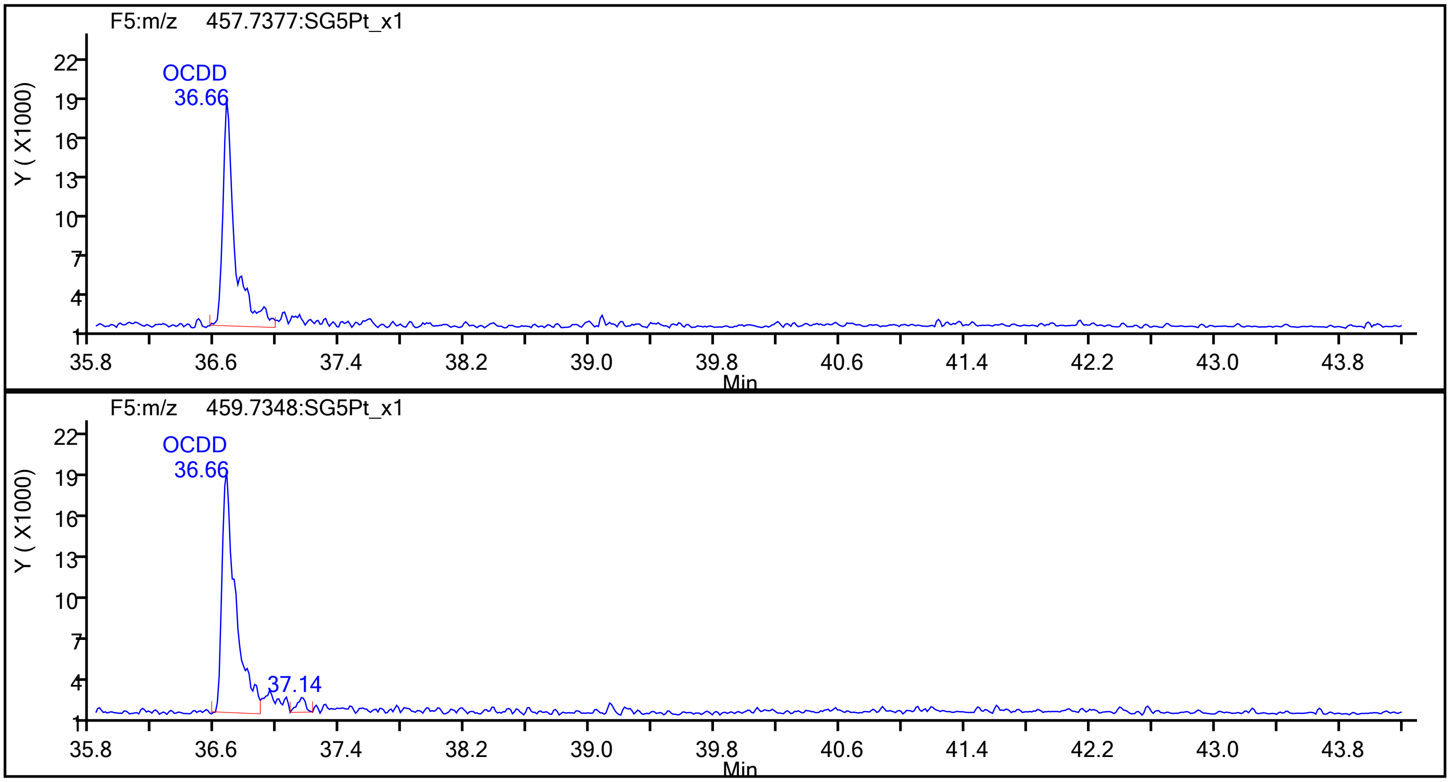

OCDD Standards

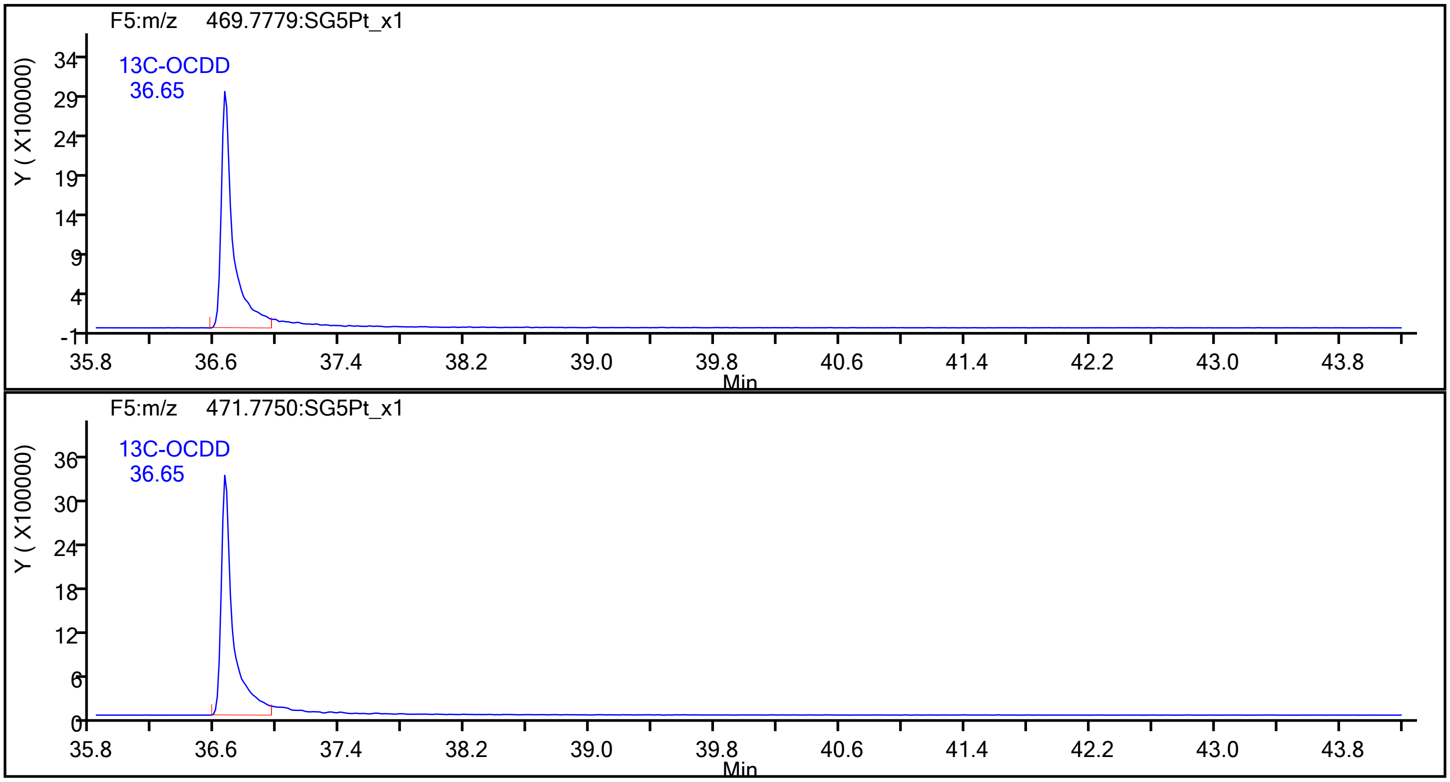

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Eurofins TestAmerica, Sacramento

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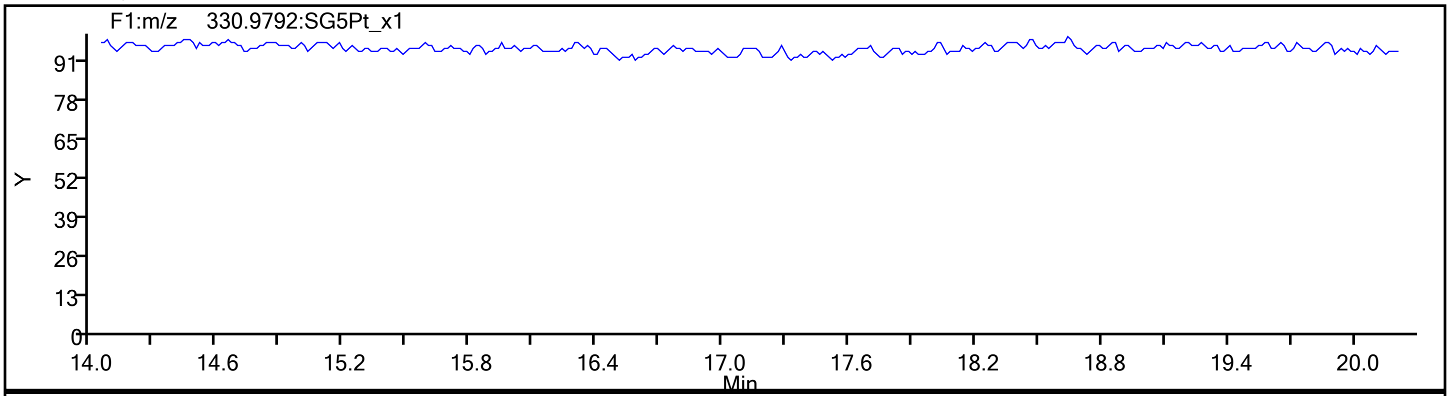

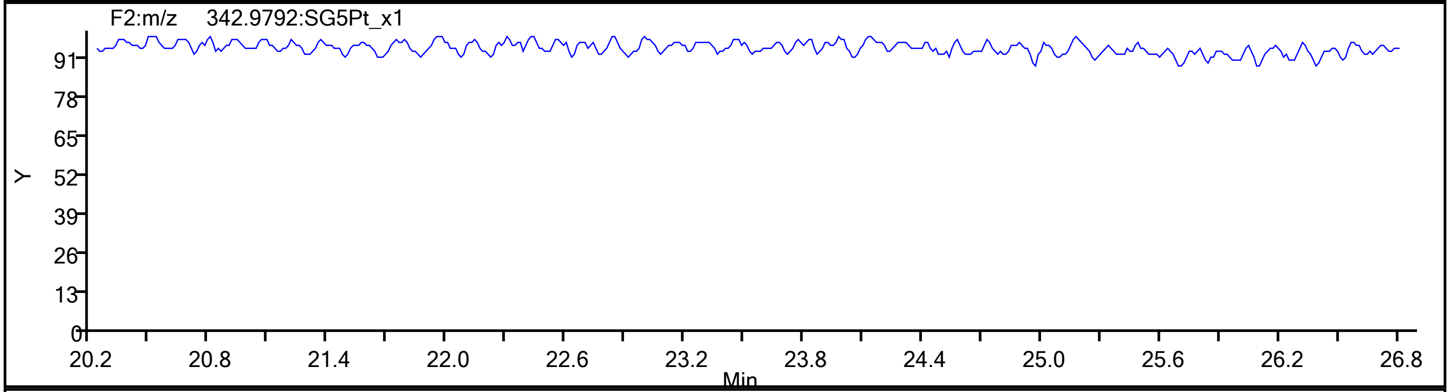

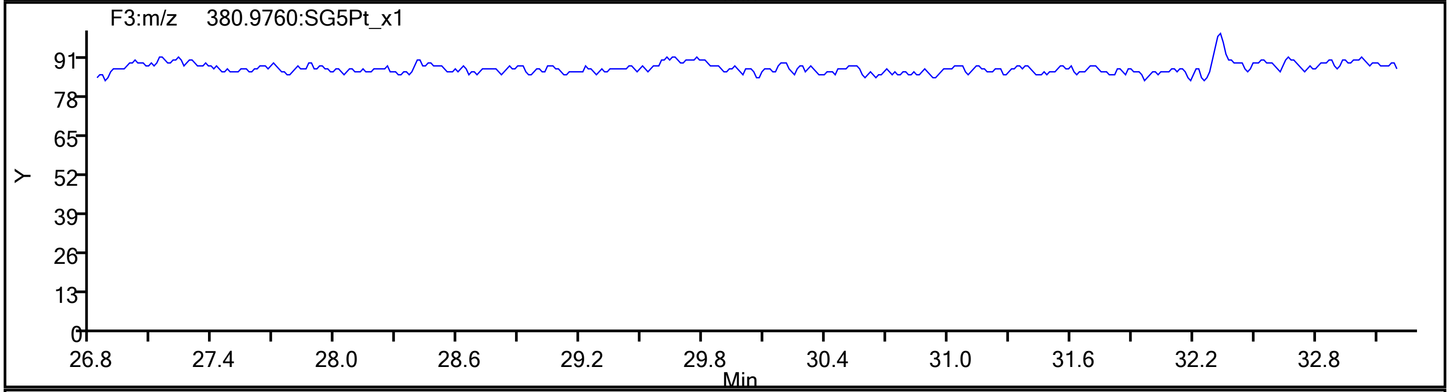

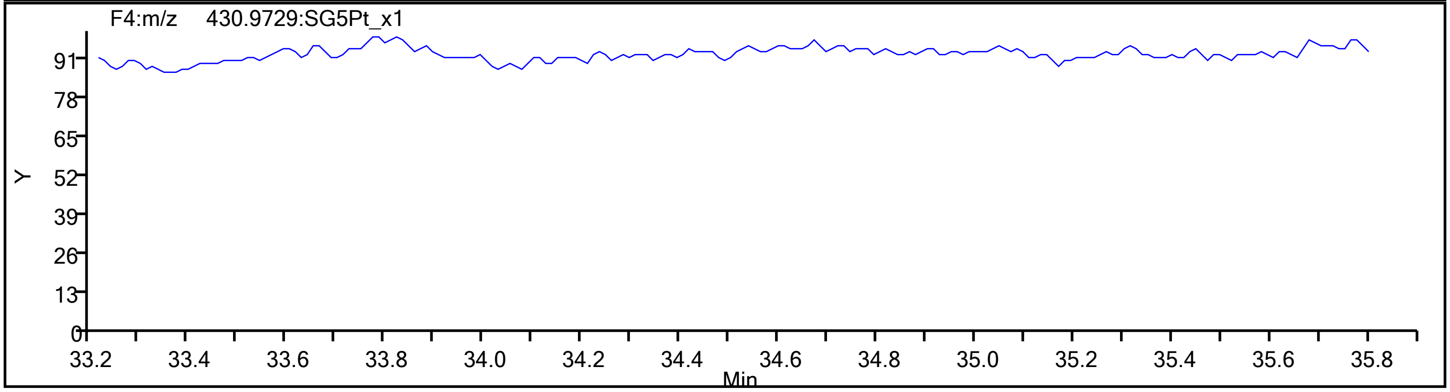

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Eurofins TestAmerica, Sacramento

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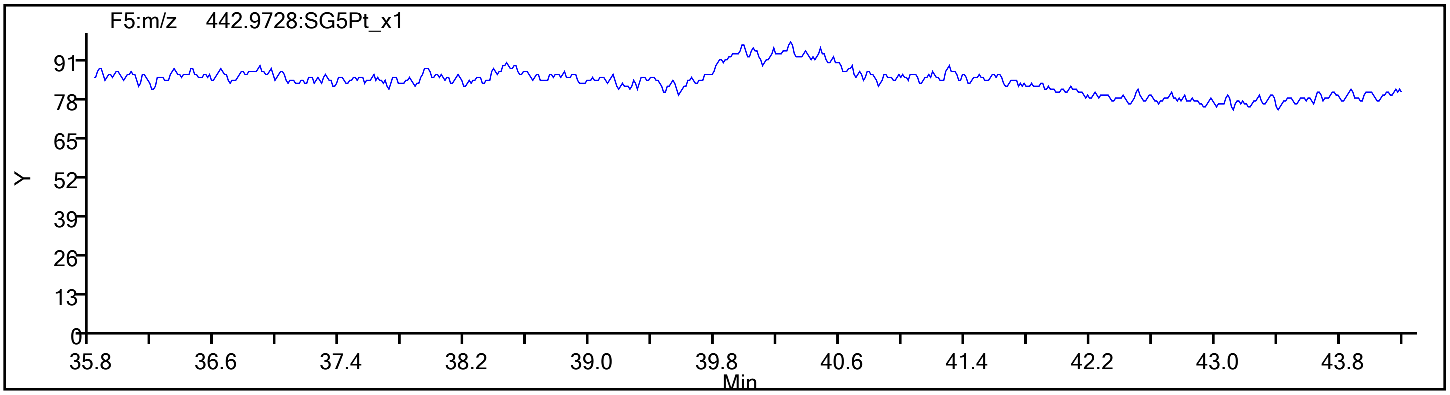

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 600-205895-1
SDG No.:
Client Sample ID: AFINF RA
Lab Sample ID: 600-205895-1 RA
Matrix: Water
Lab File ID: 26JN2011D2T_004.d
Analysis Method: 1613B
Date Collected: 05/28/2020 10:30
Extract. Method: 1613B
Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1052.7(mL)
Date Analyzed: 06/26/2020 16:00
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 390059
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	12		9.5	0.42

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	48		24-169

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	73		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Sample Type: Client
Inject. Date: 26-Jun-2020 16:00:08 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 17:16:22 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 26-Jun-2020 17:16:22

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.793	422468778	0.79	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.000	301994807	0.81	1.4910	47.9	47.9	0.1271	0.1271	47.94	
2,3,7,8-TCDF	17.014	2055061	0.89	1.0809	0.6296	0.6296	0.0222	0.0222		M
D 13C-2,3,7,8-TCDD	15.546	199430821	0.80	0.9832	48.0	48.0	0.1020	0.1020	48.01	
2,3,7,8-TCDD	15.559	450373	0.77	1.2196	0.2763	0.1852	0.0353	0.0353		RQ
$ 37Cl4-2,3,7,8-TCDD	15.559	115746062		0.9421	29.1	29.1	0.0544	0.0544	72.71	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated

Report Date: 26-Jun-2020 17:16:29 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d
Lims ID: 600-205895-B-1-A
Client ID: AFINF
Sample Type: Client
Inject. Date: 26-Jun-2020 16:00:08 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-1-A
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 17:16:22 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 26-Jun-2020 17:16:22

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.793	15.792	0		186709050	40728463	23393	58482	1741		
333.9339	15.793	15.792	0		235759728	52834069	14126	35315	3740	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.000	16.986	1	1.076	135152253	25498340	42393	105982	601		
317.9389	17.000	16.986	1	1.076	166842554	31384497	28527	71317	1100	0.81(0.65-0.89)	
2,3,7,8-TCDF											M
303.9016	17.014	17.027	0	1.001	969595	184650	2161	5402	85		
305.8987	17.027	17.027	1	1.002	1085466	189554	3303	8257	57	0.89(0.65-0.89)	M
13C-2,3,7,8-TCDD											
331.9368	15.546	15.532	1	0.984	88512657	19535754	23393	58482	835		
333.9339	15.546	15.532	1	0.984	110918164	24434115	14126	35315	1730	0.80(0.65-0.89)	
2,3,7,8-TCDD											RQ
319.8965	15.559	15.559	1	1.001	195925	47252	4324	10810	11		
321.8936	15.559	15.559	1	1.001	475968	99430	3257	8142	31	0.41(0.65-0.89)	
	Empc Correction				254448	61366	3257	8142	19		
37Cl4-2,3,7,8-TCDD											
327.8840	15.559	15.546	1	0.985	115746062	25651278	19163	47907	1339		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated

Report Date: 26-Jun-2020 17:16:29

Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d

Injection Date:	26-Jun-2020 16:00:08	Instrument ID:	11D2		
Lims ID:	600-205895-B-1-A	Lab Sample ID:	320-205895-1		
Client ID:	AFINF				
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		
Column:	DB-225 (0.32 mm)	Detector	F1:HRSIR		

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT:	17.03
Area:	1198238
Amount:	0.664109
Amount Units:	pg/ul

Processing Integration Results

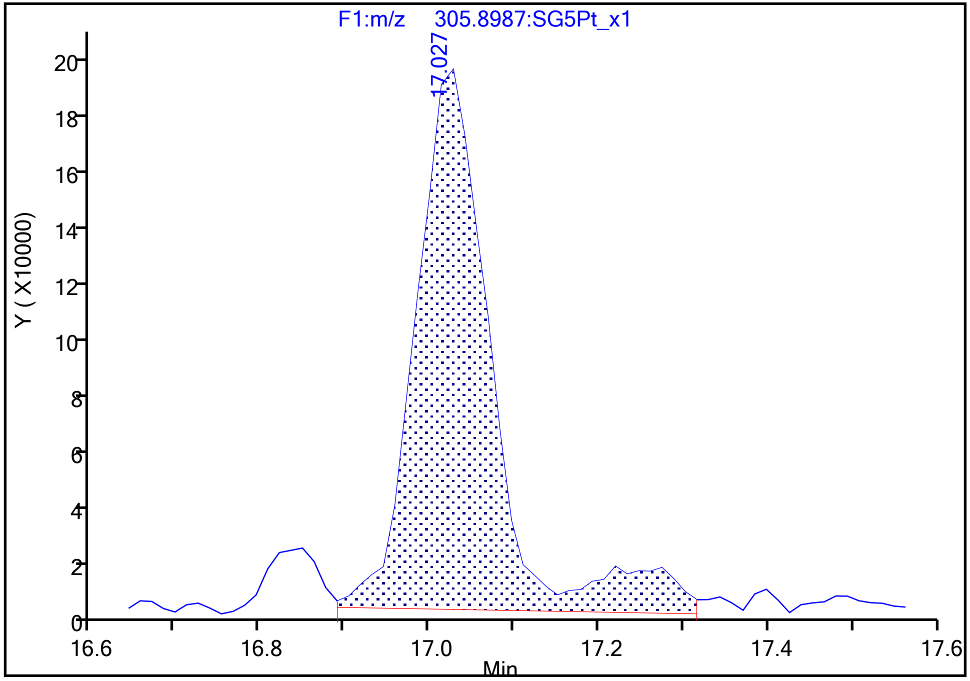

RT:	17.03
Area:	1085466
Amount:	0.629562
Amount Units:	pg/ul

Manual Integration Results

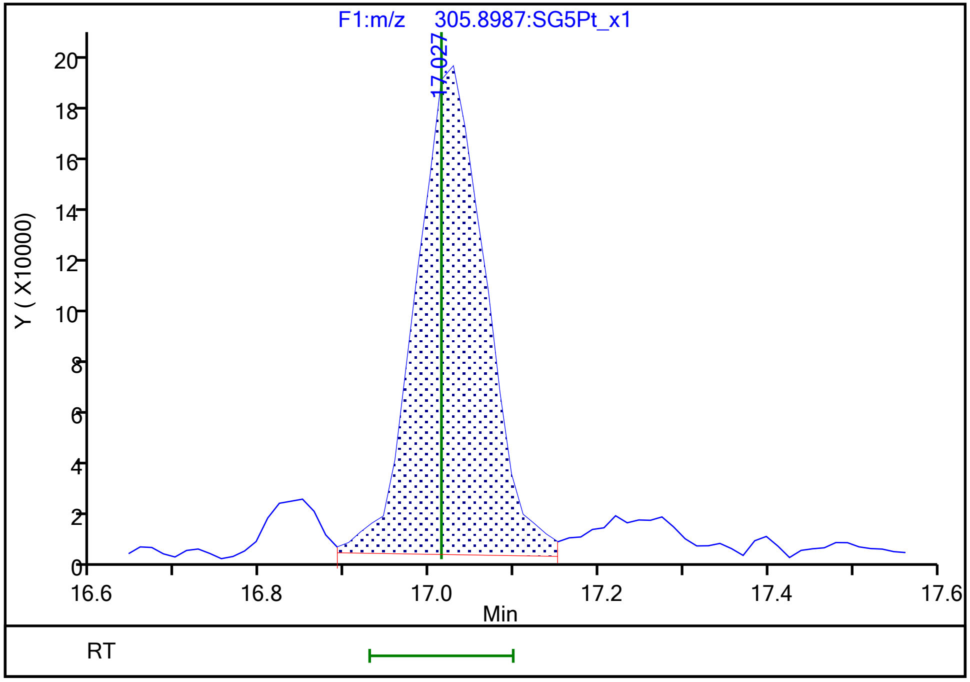

Reviewer: shardaa, 26-Jun-2020 17:16:03

Audit Action: Split an Integrated Peak

Audit Reason: Peak Tail

Report Date: 26-Jun-2020 17:16:29 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d		
Injection Date:	26-Jun-2020 16:00:08	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	390059	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

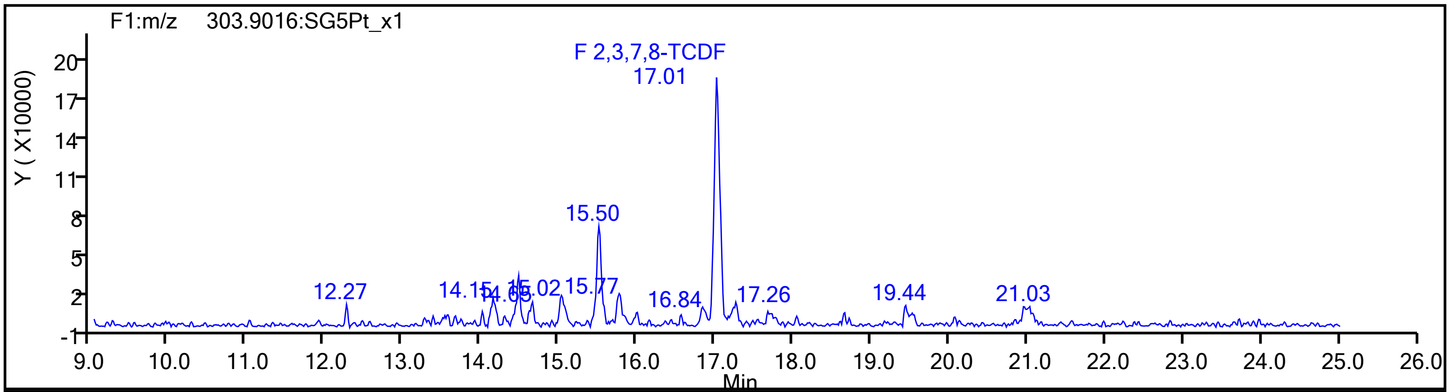

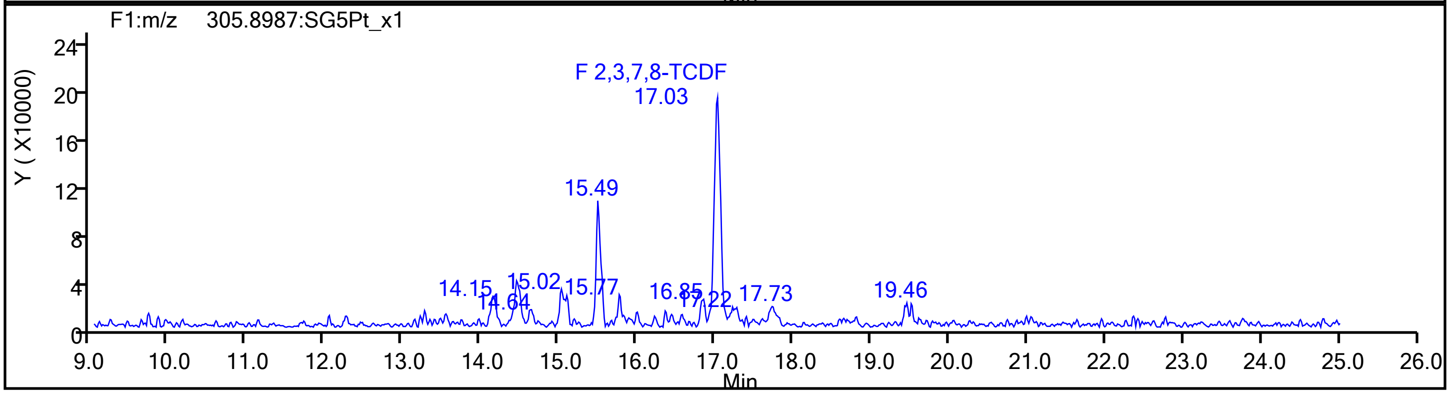

TCDF Standards

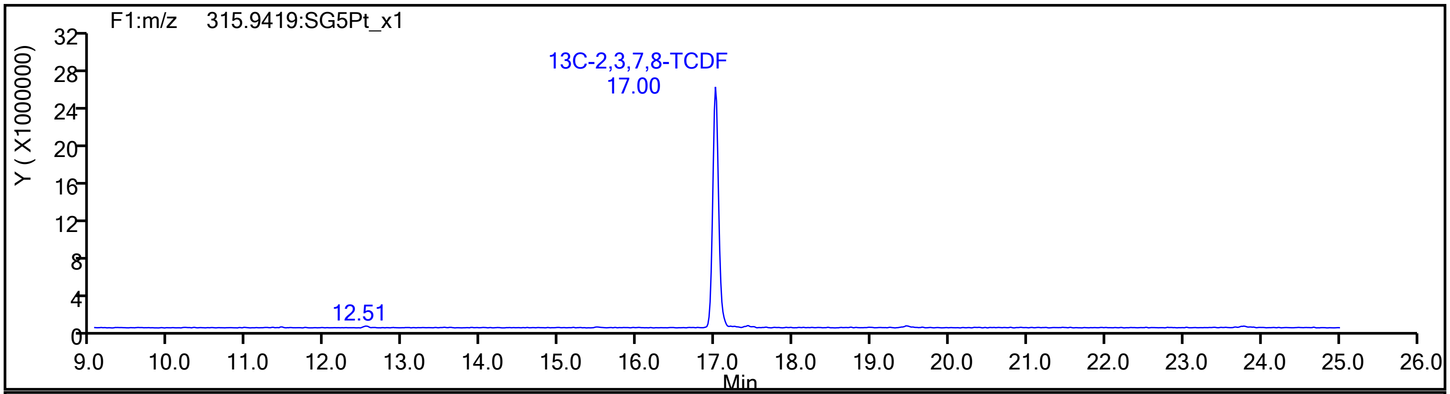

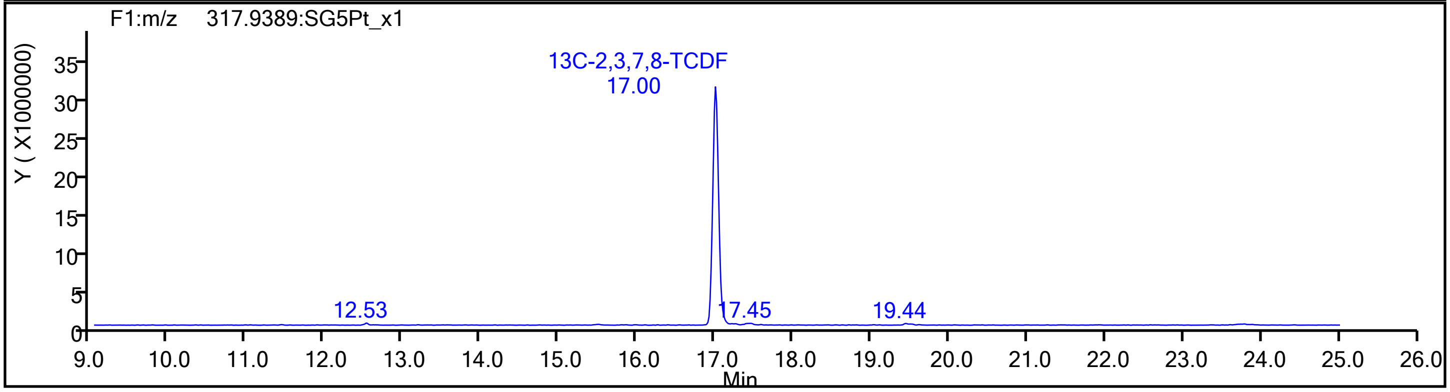

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d		
Injection Date:	26-Jun-2020 16:00:08	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	390059	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

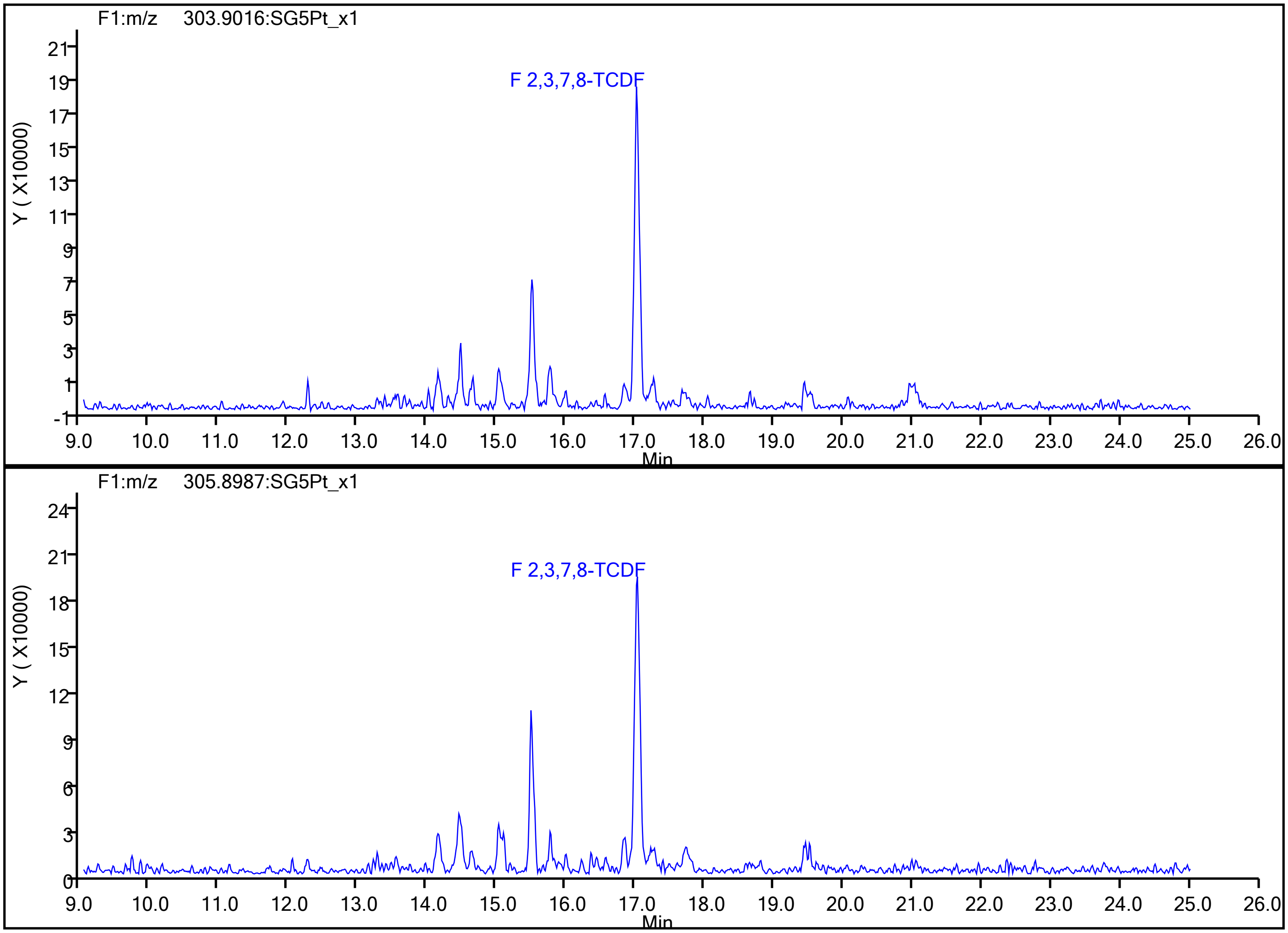

TCDF Interference Mass

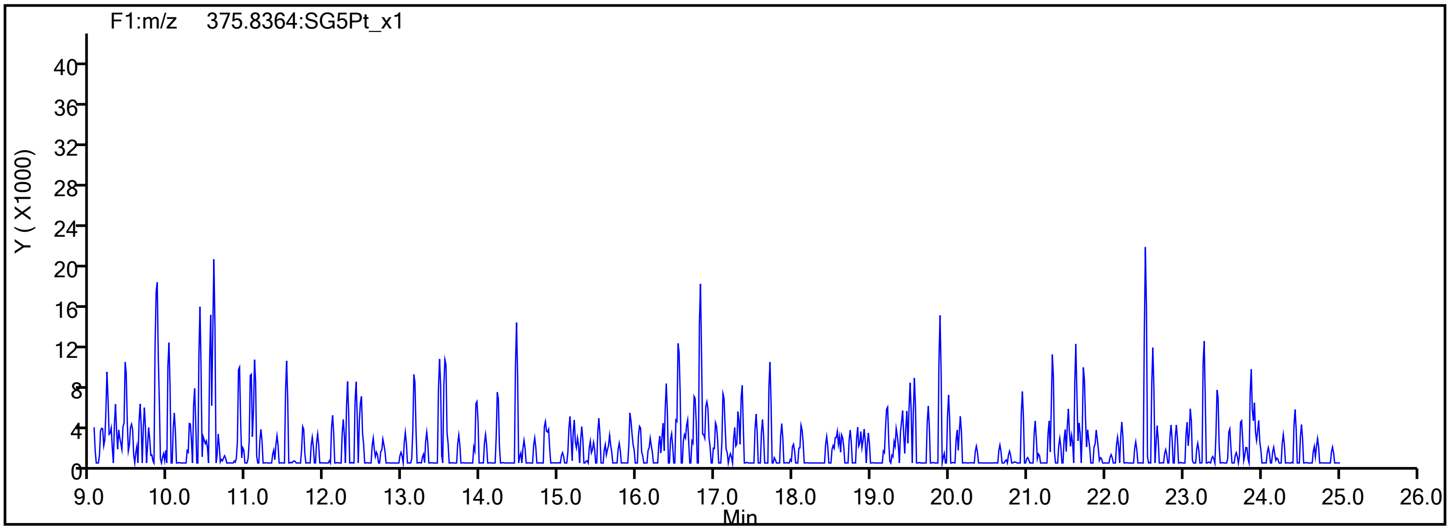

Report Date: 26-Jun-2020 17:16:29 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d		
Injection Date:	26-Jun-2020 16:00:08	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	390059	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

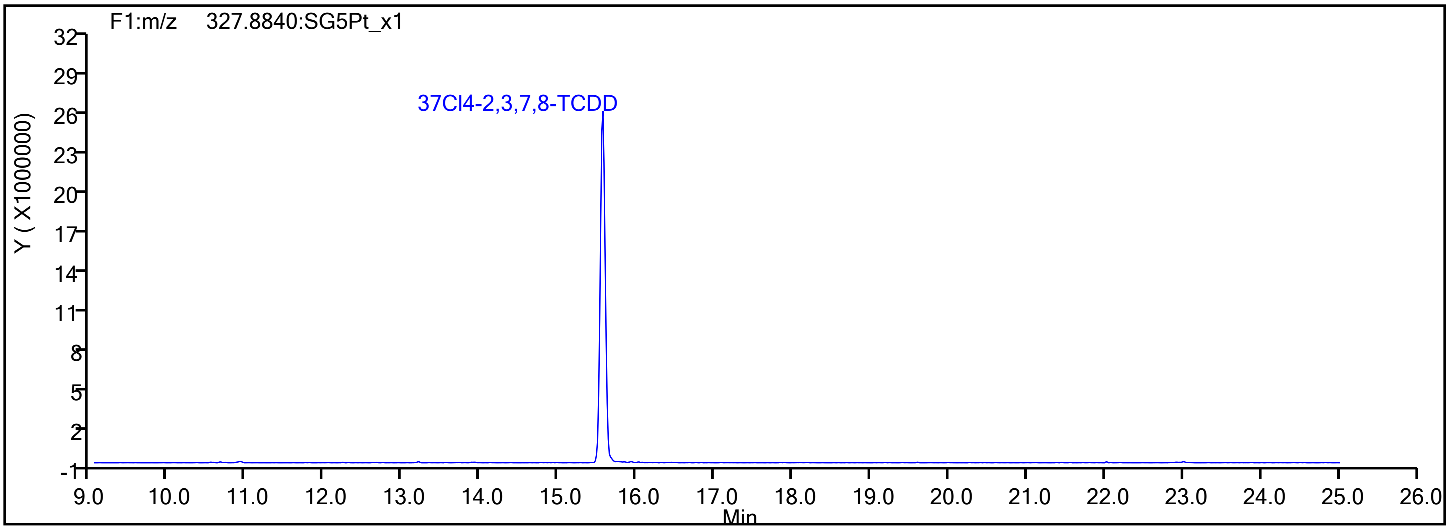

37Cl4-TCDD Standards

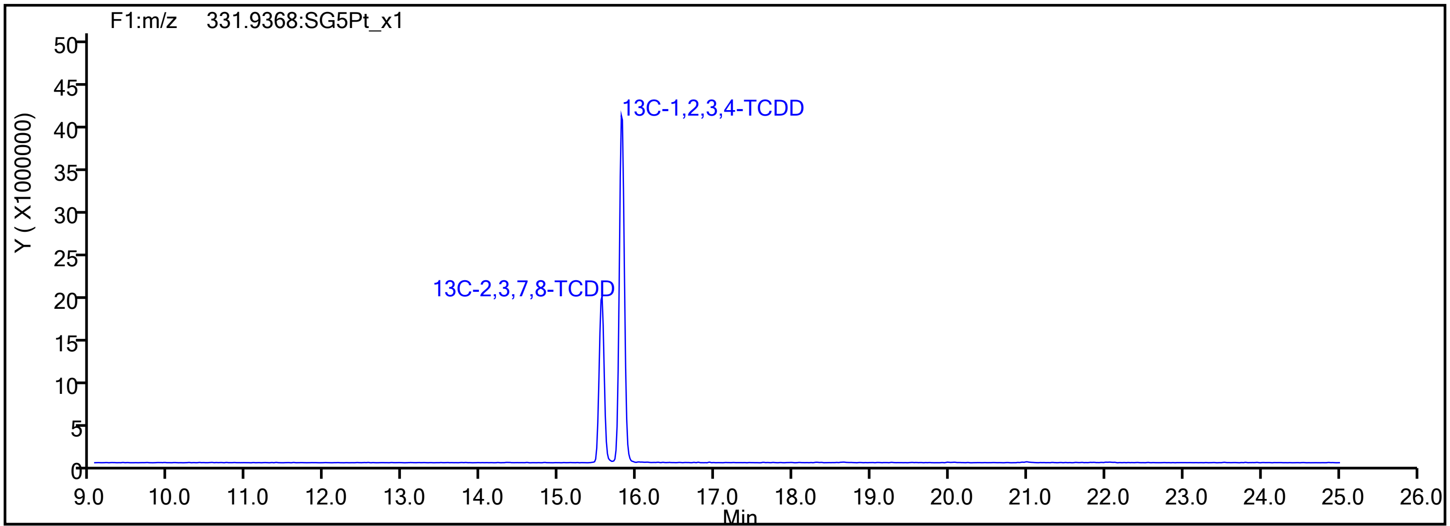

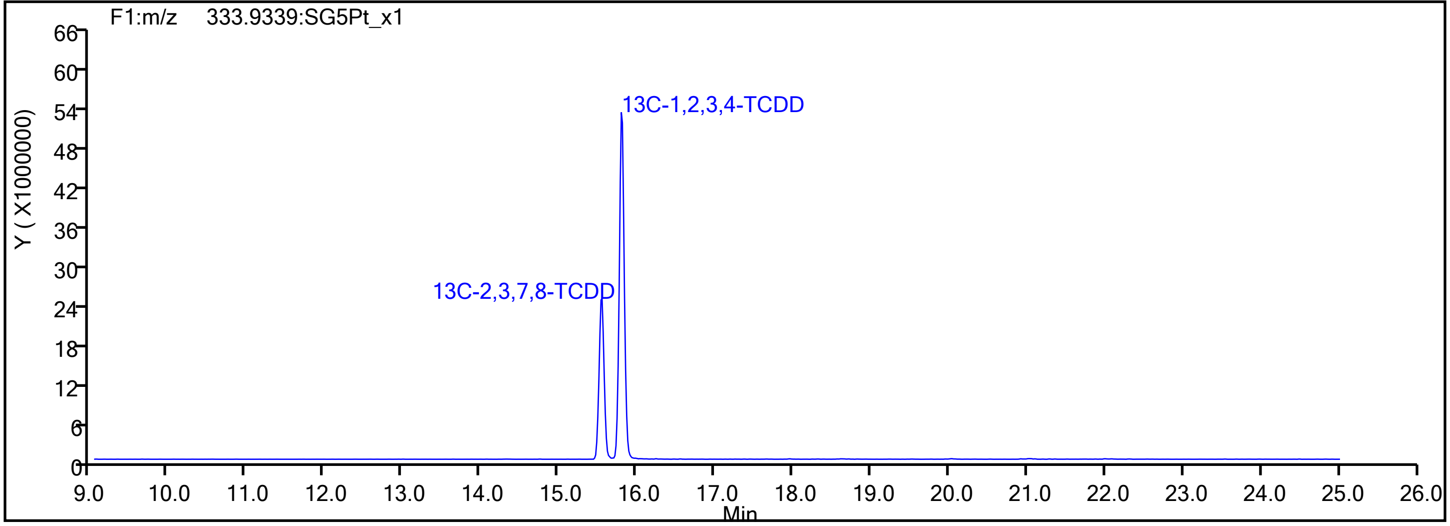

Report Date: 26-Jun-2020 17:16:29 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_004.d		
Injection Date:	26-Jun-2020 16:00:08	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:	AFINF		
Worklist#:	390059	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

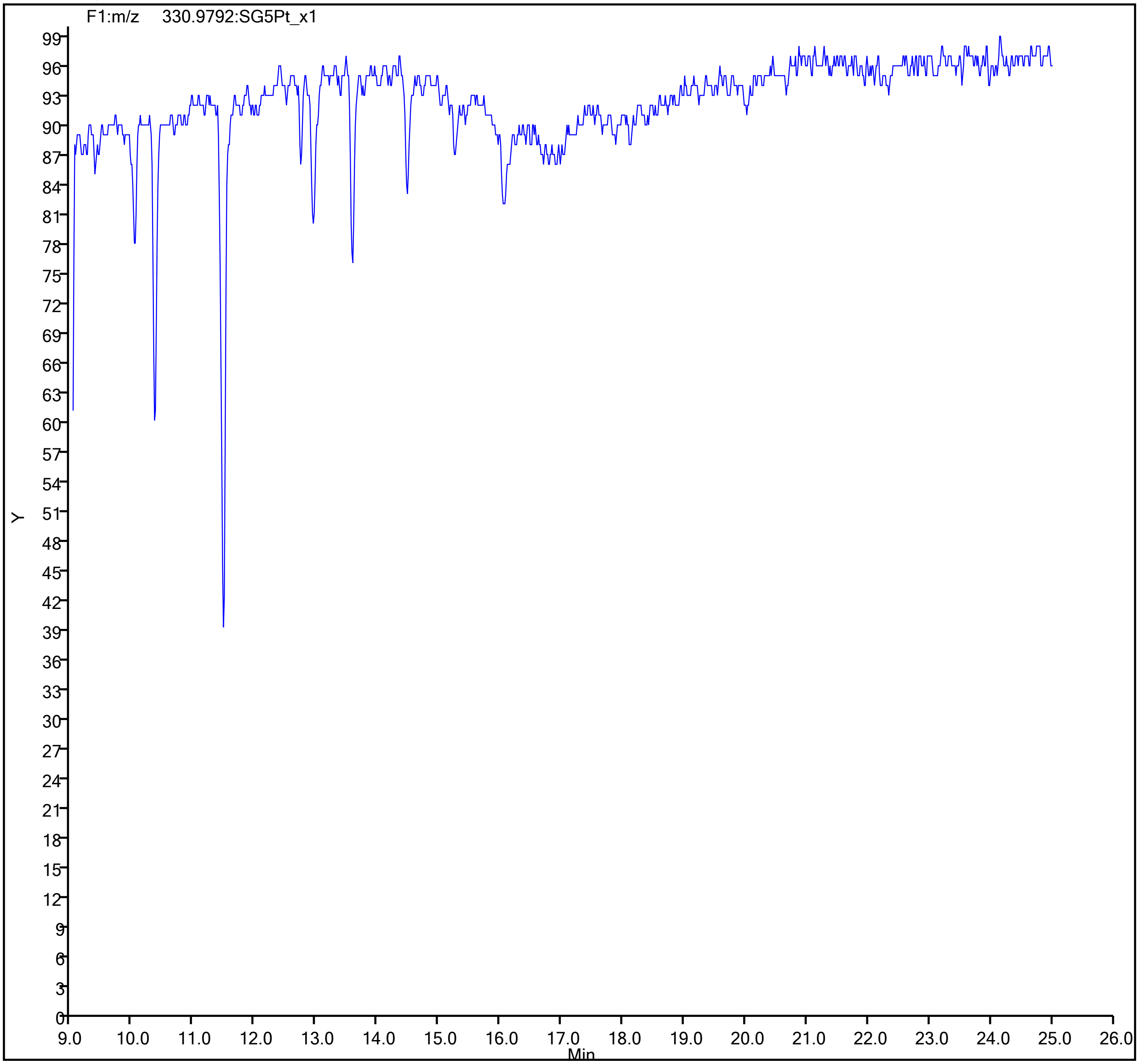

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: AFEFF5	Lab Sample ID: 600-205895-2
Matrix: Water	Lab File ID: 25JN2010D5_8.d
Analysis Method: 1613B	Date Collected: 05/28/2020 11:15
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1006.8(mL)	Date Analyzed: 06/25/2020 23:10
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.9	0.56
51207-31-9	2,3,7,8-TCDF	0.96	J q	9.9	0.48
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.55
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.61
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.53
39227-28-6	1,2,3,4,7,8-HxCDD	1.3	J	50	0.40
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.40
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.36
70648-26-9	1,2,3,4,7,8-HxCDF	1.2	J	50	0.56
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.60
72918-21-9	1,2,3,7,8,9-HxCDF	0.59	J q	50	0.54
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.47
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.44
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.6	J B	50	0.35
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.41
3268-87-9	OCDD	3.4	J B	99	0.76
39001-02-0	OCDF	ND		99	0.99
41903-57-5	Total TCDD	3.8	J B q	9.9	0.56
30402-14-3	Total TCDF	0.96	J q	9.9	0.48
36088-22-9	Total PeCDD	ND		50	0.55
30402-15-4	Total PeCDF	ND		50	0.61
34465-46-8	Total HxCDD	1.3	J	50	0.39
55684-94-1	Total HxCDF	1.8	J q	50	0.55
37871-00-4	Total HpCDD	ND		50	0.44
38998-75-3	Total HpCDF	1.6	J B	50	0.38

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 600-205895-1
SDG No.:
Client Sample ID: AFEFF5
Lab Sample ID: 600-205895-2
Matrix: Water
Lab File ID: 25JN2010D5_8.d
Analysis Method: 1613B
Date Collected: 05/28/2020 11:15
Extract. Method: 1613B
Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1006.8(mL)
Date Analyzed: 06/25/2020 23:10
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621
Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		25-164
89059-46-1	13C-2,3,7,8-TCDF	51		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	58		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	48		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	57		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	59		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	60		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	54		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	53		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	68		26-138
114423-97-1	13C-OCDD	68		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	70		35-197

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d				
Lims ID:	600-205895-B-2-A				
Client ID:	AFEFF5				
Sample Type:	Client				
Inject. Date:	25-Jun-2020 23:10:32	ALS Bottle#:	8	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	600-205895-B-2-A 600-205895-B-2-A				
Misc. Info.:	25JN2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	26-Jun-2020 13:15:56	Calib Date:	05-Mar-2020 20:05:51		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1061				

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:00:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.566	57086039	0.79	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.067	34760246	0.76	1.1970	50.9	50.9	0.1458	0.1458	50.87	
2,3,7,8-TCDF	17.083	12911	0.77	0.7672	0.0653	0.0484	0.0242	0.0242		RQM
A Non-2,3,7,8-sub-TCDF	16.810						0.0242	0.0242		
S Total TCDF					0.0653	0.0484	0.0242	0.0242		RQ
D 13C-2,3,7,8-TCDD	17.748	29143124	0.77	0.8773	58.2	58.2	0.2043	0.2043	58.19	
2,3,7,8-TCDD	17.793						0.0282	0.0282		
$ 37Cl4-2,3,7,8-TCDD	17.763	15245447		0.9515	28.1	28.1	0.0531	0.0531	70.17	
A Non-2,3,7,8-sub-TCDD	17.256	56030	0.77	1.0000	0.2181	0.1923	0.0282	0.1267		RQM
S Total TCDD					0.2181	0.1923	0.0282	0.0282		RQ
D 13C-1,2,3,7,8-PeCDF	21.958	27408332	1.54	0.9904	48.5	48.5	0.2321	0.2321	48.48	
1,2,3,7,8-PeCDF	22.012						0.0306	0.0306		
D 13C-2,3,4,7,8-PeCDF	23.267	35254549	1.56	1.0797	57.2	57.2	0.2129	0.2129	57.20	
2,3,4,7,8-PeCDF	23.321						0.0268	0.0268		
A F1 PeCDFs	19.675						0.0285	0.0285		
A Non-2,3,7,8-sub-PeCDF	22.743						0.0284	0.0284		
S Total PeCDF							0.0306	0.0306		
D 13C-1,2,3,7,8-PeCDD	23.976	22720970	1.56	0.6904	57.6	57.6	0.1064	0.1064	57.65	
1,2,3,7,8-PeCDD	24.044						0.0276	0.0276		
A Non-2,3,7,8-sub-PeCDD	22.953						0.0276	0.0276		
S Total PeCDD							0.0276	0.0276		
D 13C-1,2,3,4,7,8-HxCDF	30.087	19296001	0.48	0.9076	59.8	59.8	0.6394	0.6394	59.75	
1,2,3,4,7,8-HxCDF	30.113	8985	1.36	0.7928	0.0587	0.0587	0.0283	0.0283		
D 13C-1,2,3,6,7,8-HxCDF	30.313	18534867	0.49	0.8671	60.1	60.1	0.6693	0.6693	60.08	
1,2,3,6,7,8-HxCDF	30.366						0.0304	0.0304		
D 13C-2,3,4,6,7,8-HxCDF	31.231	15749283	0.49	0.8287	53.4	53.4	0.7003	0.7003	53.42	
2,3,4,6,7,8-HxCDF	31.285						0.0237	0.0237		
D 13C-1,2,3,7,8,9-HxCDF	32.083	14116337	0.49	0.7391	53.7	53.7	0.7852	0.7852	53.68	
1,2,3,7,8,9-HxCDF	32.123	3749	1.24	0.8941	0.0434	0.0297	0.0274	0.0274		RQ
A Non-2,3,7,8-sub-HxCDF	29.847						0.0272	0.0272		
S Total HxCDF					0.1021	0.0884	0.0275	0.0275		RQ

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.897	35579803	1.26	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.444	17364648	1.24	0.8335	58.6	58.6	0.6617	0.6617	58.55	
1,2,3,4,7,8-HxCDD	31.458	9587	1.16	0.8332	0.0663	0.0663	0.0201	0.0201		M
D 13C-1,2,3,6,7,8-HxCDD	31.551	20574762	1.27	0.8228	70.3	70.3	0.6704	0.6704	70.28	
1,2,3,6,7,8-HxCDD	31.604						0.0200	0.0200		MU
1,2,3,7,8,9-HxCDD	31.950						0.0183	0.0183		
A Non-2,3,7,8-sub-HxCDD	30.499						0.0194	0.0194		
S Total HxCDD					0.0663	0.0663	0.0195	0.0195		
D 13C-1,2,3,4,6,7,8-HpCDF	33.578	15107361	0.44	0.7009	60.6	60.6	2.611	2.611	60.58	
1,2,3,4,6,7,8-HpCDF	33.590	15841	1.15	1.3295	0.0789	0.0789	0.0175	0.0175		
D 13C-1,2,3,4,7,8,9-HpCDF	34.635	17423821	0.43	0.7244	67.6	67.6	2.527	2.527	67.61	
1,2,3,4,7,8,9-HpCDF	34.659						0.0209	0.0209		
A Non-2,3,7,8-sub-HpCDF	34.143						0.0190	0.0190		
S Total HpCDF					0.0789	0.0789	0.0192	0.0192		
D 13C-1,2,3,4,6,7,8-HpCDD	34.356	16390770	1.03	0.7026	65.6	65.6	0.8968	0.8968	65.57	
1,2,3,4,6,7,8-HpCDD	34.380						0.0219	0.0219		
A Non-2,3,7,8-sub-HpCDD	34.119						0.0219	0.0219		
S Total HpCDD							0.0219	0.0219		
D 13C-OCDD	36.653	30031683	0.81	0.6184	136.5	136.5	0.3580	0.3580	68.25	
OCDF	36.772						0.0498	0.0498		
OCDD	36.653	26430	0.89	1.0175	0.1730	0.1730	0.0385	0.0385		

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d				
Lims ID:	600-205895-B-2-A				
Client ID:	AFEFF5				
Sample Type:	Client				
Inject. Date:	25-Jun-2020 23:10:32	ALS Bottle#:	8	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	600-205895-B-2-A 600-205895-B-2-A				
Misc. Info.:	25JN2010D5				
Operator ID:	AJS	Instrument ID:	10D5		

Method:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	26-Jun-2020 13:15:56	Calib Date:	05-Mar-2020 20:05:51
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d		

Column 1 :	DB-5 (0.32 mm)	Det: F1:HRSIR
Process Host:	CTX1061	

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:00:47

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.566	17.581	-1		25119608	6100625	5179	12947	1178		
333.9339	17.551	17.581	-2		31966431	7723886	4734	11835	1632	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.067	17.082	-1	0.972	15040076	3417215	4694	11735	728		
317.9389	17.052	17.082	-2	0.971	19720170	4461376	4959	12397	900	0.76(0.65-0.89)	
2,3,7,8-TCDF											RQM
303.9016	17.083	17.097	-1	1.001	5617	987	239	597	4		
305.8987	17.052	17.097	-3	0.999	11788	2091	346	865	6	0.48(0.65-0.89)	M
	Empc Correction				7294	1281	346	865	4		
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						239	597			
305.8987	16.810						346	865			
13C-2,3,7,8-TCDD											
331.9368	17.748	17.778	-2	1.010	12723309	2786655	5179	12947	538		
333.9339	17.748	17.778	-2	1.010	16419815	3628150	4734	11835	766	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793						432	1080			
321.8936	17.793						291	727			
37Cl4-2,3,7,8-TCDD											
327.8847	17.763	17.793	-2	1.011	15245447	3376086	2793	6982	1209		
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	15.616	17.256	-98	0.880	21285	5211	432	1080	12		
	Empc Correction				16069	4527	432	1080	10		
321.8936	15.601	17.256	-99	0.879	20869	5880	291	727	20	1.02(0.65-0.89)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	15.903	17.256	-81	0.896	10614	2634	432	1080	6		M
	Empc Correction				8305	2505	432	1080	6		
321.8936	15.888	17.256	-82	0.895	10787	3254	291	727	11	0.98(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.958	21.999	-2	1.250	16598943	2679649	7461	18652	359		
353.8970	21.958	21.999	-2	1.250	10809389	1771296	5250	13125	337	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.012						245	612			
341.8567	22.012						246	615			
13C-2,3,4,7,8-PeCDF											
351.9000	23.267	23.308	-2	1.325	21469500	3363157	7461	18652	451		
353.8970	23.267	23.308	-2	1.325	13785049	2156967	5250	13125	411	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.321						245	612			
341.8567	23.321						246	615			
A F1 PeCDFs											
339.8597	19.675						166	415			
341.8567	19.675						326	815			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						245	612			
341.8567	22.743						246	615			
13C-1,2,3,7,8-PeCDD											
367.8949	23.976	24.017	-2	1.365	13857632	1954601	2548	6370	767		
369.8919	23.976	24.017	-2	1.365	8863338	1267421	1516	3790	836	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.044						227	567			
357.8516	24.044						134	335			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						227	567			
357.8516	22.953						134	335			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.087	30.140	-3	0.943	6278476	961122	5325	13312	180		
385.8610	30.087	30.140	-3	0.943	13017525	1962658	10853	27132	181	0.48(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.113	30.153	-2	1.001	5178	1246	142	355	9		
375.8178	30.073	30.153	-5	1.000	3807	634	121	302	5	1.36(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.313	30.340	-2	0.950	6078059	817457	5325	13312	154		
385.8610	30.299	30.340	-2	0.950	12456808	1694499	10853	27132	156	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.366						142	355			
375.8178	30.366						121	302			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.231	31.258	-2	0.979	5173446	1024577	5325	13312	192		
385.8610	31.231	31.258	-2	0.979	10575837	2094102	10853	27132	193	0.49(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,6,7,8-HxCDF											
373.8208	31.285						142	355			
375.8178	31.285						121	302			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.083	32.123	-2	1.006	4656788	880215	5325	13312	165		
385.8610	32.096	32.123	-2	1.006	9459549	1800503	10853	27132	166	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											RQ
373.8208	32.123	32.137	-1	1.001	3806	869	142	355	6		
	Empc Correction				2075	832	142	355	6		
375.8178	32.096	32.137	-2	1.000	1674	671	121	302	6	2.27(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						142	355			
375.8178	29.847						121	302			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.897	31.924	-2		19813878	3869878	9171	22927	422		
403.8529	31.897	31.924	-2		15765925	3099339	6205	15512	499	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.444	31.471	-2	0.986	9628949	2311717	9171	22927	252		
403.8529	31.444	31.471	-2	0.986	7735699	1838996	6205	15512	296	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	31.458	31.484	-2	1.000	5140	1361	112	280	12		M
391.8127	31.444	31.484	-2	1.000	4447	1235	166	415	7	1.16(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.551	31.577	-2	0.989	11502781	2172591	9171	22927	237		
403.8529	31.551	31.577	-2	0.989	9071981	1714752	6205	15512	276	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											MU
389.8157	31.604						112	280			
391.8127	31.604						166	415			
1,2,3,7,8,9-HxCDD											
389.8157	31.950						112	280			
391.8127	31.950						166	415			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						112	280			
391.8127	30.499						166	415			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.578	33.590	-1	1.053	4587762	1123339	14988	37470	75		
419.8220	33.566	33.590	-1	1.052	10519599	2577784	36035	90087	72	0.44(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.590	33.602	-1	1.000	8481	2687	205	512	13		
409.7789	33.614	33.602	1	1.001	7360	1301	140	350	9	1.15(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.635	34.659	-1	1.086	5211458	1129564	14988	37470	75		
419.8220	34.635	34.659	-1	1.086	12212363	2693080	36035	90087	75	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659						205	512			
409.7789	34.659						140	350			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						205	512			
409.7789	34.143						140	350			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.356	34.380	-1	1.077	8326650	1835439	9596	23990	191		
437.8140	34.356	34.380	-1	1.077	8064120	1773608	7969	19922	223	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.380						165	412			
425.7737	34.380						153	382			
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						165	412			
425.7737	34.119						153	382			
13C-OCDD											
469.7779	36.653	36.676	-1	1.149	13484042	2556886	2840	7100	900		
471.7750	36.653	36.676	-1	1.149	16547641	2806915	3331	8327	843	0.81(0.76-1.02)	
OCDF											
441.7428	36.772						254	635			
443.7399	36.772						338	845			
OCDD											
457.7377	36.653	36.688	-2	1.000	12451	2375	238	595	10		
459.7348	36.653	36.688	-2	1.000	13979	2884	182	455	16	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Lims ID:	600-205895-B-2-A		
Client ID:	AFEFF5		
Inject. Date:	25-Jun-2020 23:10:32	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	8

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	29143124	6414805

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	29143124	6414805

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	21285	5211	20869	5880	0.1446	1.02	RQ
15.616	16069	4527	20869	5880	0.1267		Empc Correction
15.903	10614	2634	10787	3254	0.0734	0.98	RQM
15.903	8305	2505	10787	3254	0.0655		Empc Correction
Signal Totals:							
	24374	7032	31656	9134			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	63555	16979				1.01	RQM
	56030	16166					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2181 = (63555 * 100.000) / (29143124 * 1.000)
Empc Amount: 0.1923 = (56030 * 100.000) / (29143124 * 1.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 26-Jun-2020 13:16:11

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d
Injection Date: 25-Jun-2020 23:10:32
Instrument ID: 10D5
Lims ID: 600-205895-B-2-A
Lab Sample ID: 320-205895-2
Client ID: AFEFF5
Operator ID: AJS
ALS Bottle#: 8
Worklist Smp#: 8
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

2,3,7,8-TCDF, CAS: 51207-31-9

Signal: 2

RT: 17.05
Area: 14587
Amount: 0.075762
Amount Units: pg/ul

Processing Integration Results

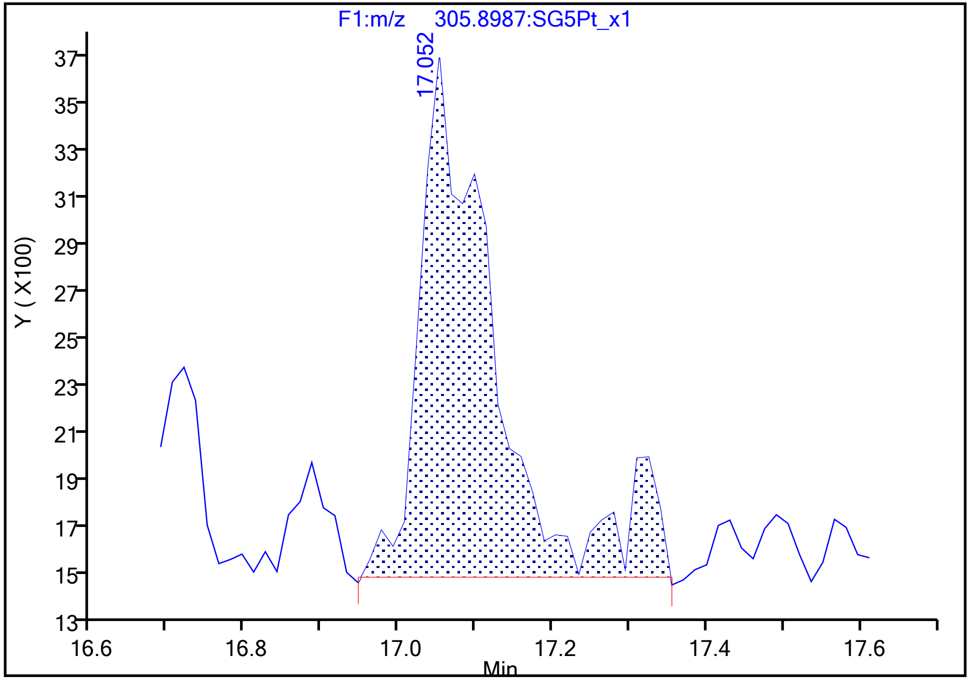

RT: 17.05
Area: 11788
Amount: 0.065266
Amount Units: pg/ul

Manual Integration Results

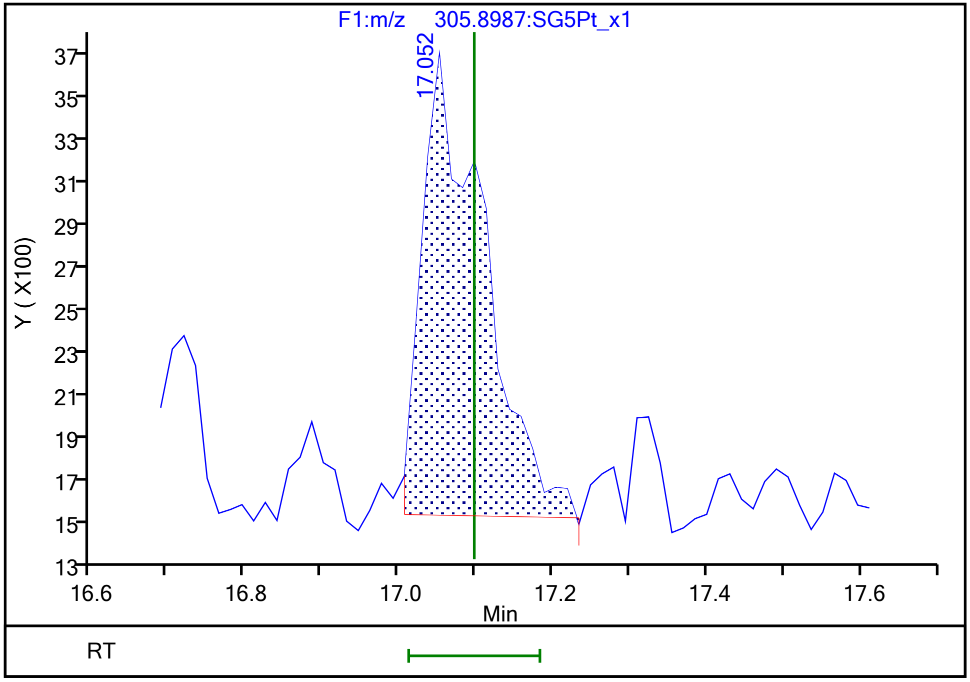

Reviewer: arghestanis, 26-Jun-2020 12:57:45
Audit Action: Manually Integrated
Audit Reason: Baseline

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d
Injection Date: 25-Jun-2020 23:10:32
Instrument ID: 10D5
Lims ID: 600-205895-B-2-A
Lab Sample ID: 320-205895-2
Client ID: AFEFF5
Operator ID: AJS
ALS Bottle#: 8
Worklist Smp#: 8
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.60- 18.91)
Signal: 1

Processing Integration Results

RT = 15.903 Area = 13198

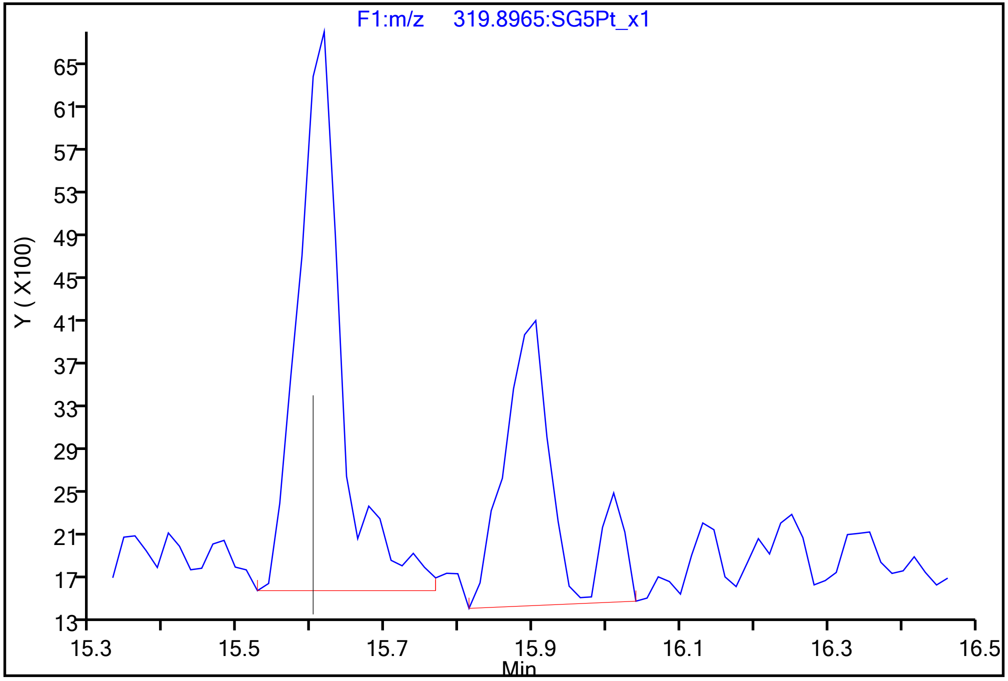

Manual Integration Results

RT = 15.903 Area = 10614 M

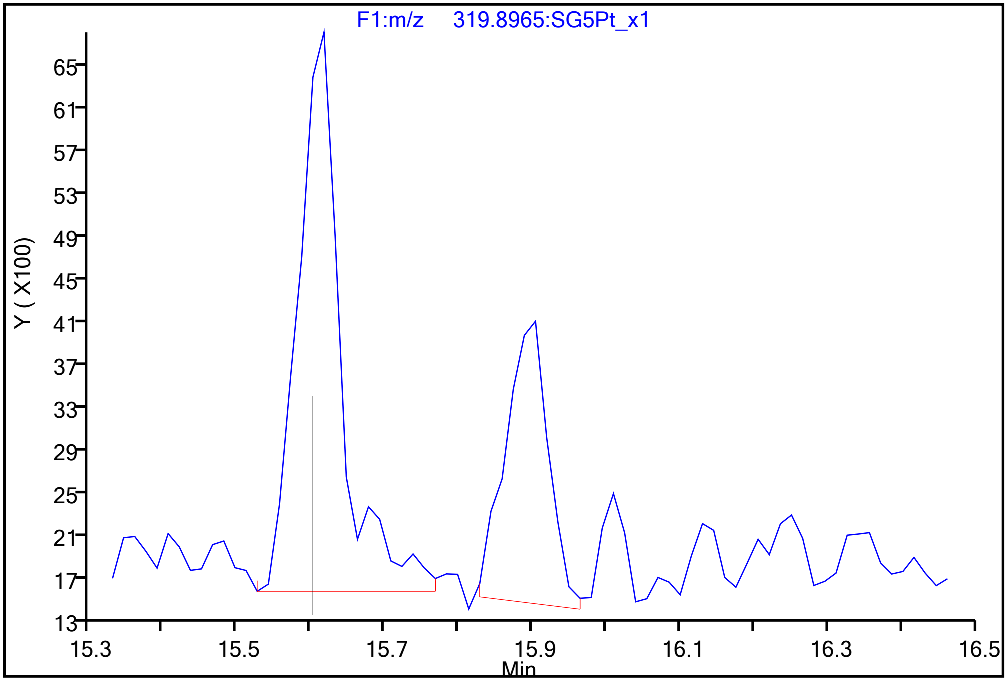

Reviewer: arghestanis, 26-Jun-2020 12:58:09
Audit Action: Manually Integrated
Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d
Injection Date: 25-Jun-2020 23:10:32
Instrument ID: 10D5
Lims ID: 600-205895-B-2-A
Lab Sample ID: 320-205895-2
Client ID: AFEFF5
Operator ID: AJS
ALS Bottle#: 8
Worklist Smp#: 8
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 31.44
Area: 6524
Amount: 0.099253
Amount Units: pg/ul

Processing Integration Results

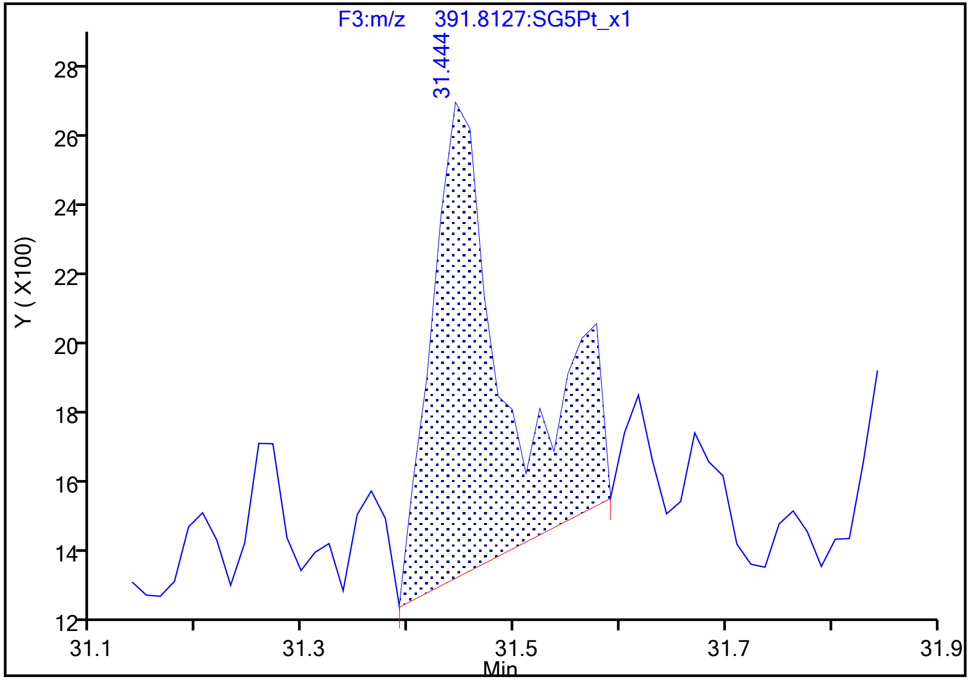

RT: 31.44
Area: 4447
Amount: 0.066263
Amount Units: pg/ul

Manual Integration Results

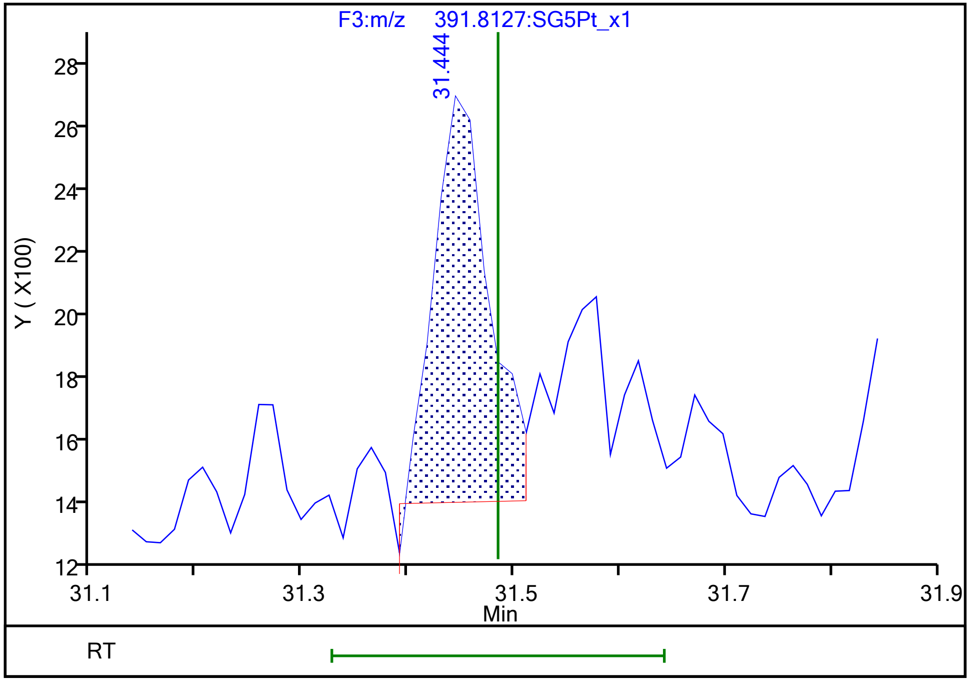

Reviewer: arghestanis, 26-Jun-2020 12:59:21

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Instrument ID:	10D5
Lims ID:	600-205895-B-2-A	Lab Sample ID:	320-205895-2
Client ID:	AFEFF5		
Operator ID:	AJS	ALS Bottle#:	8 Worklist Smp#: 8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 31.46
Area: 7836
Amount: 0.099253
Amount Units: pg/ul

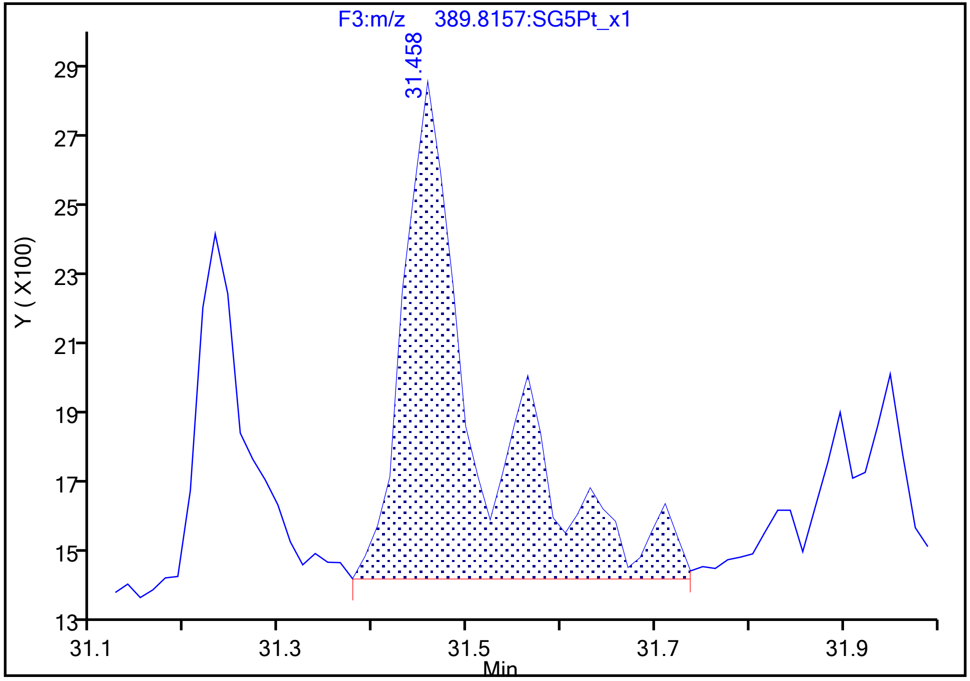

Manual Integration Results

RT: 31.46
Area: 5140
Amount: 0.066263
Amount Units: pg/ul

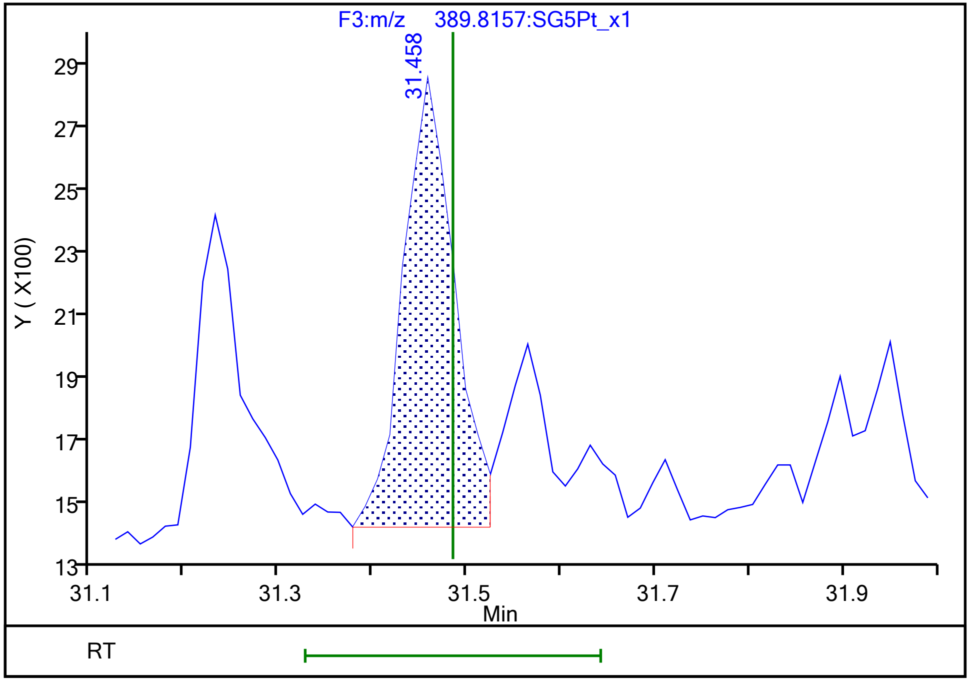

Reviewer: arghestanis, 26-Jun-2020 12:59:33

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 26-Jun-2020 13:16:11

Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

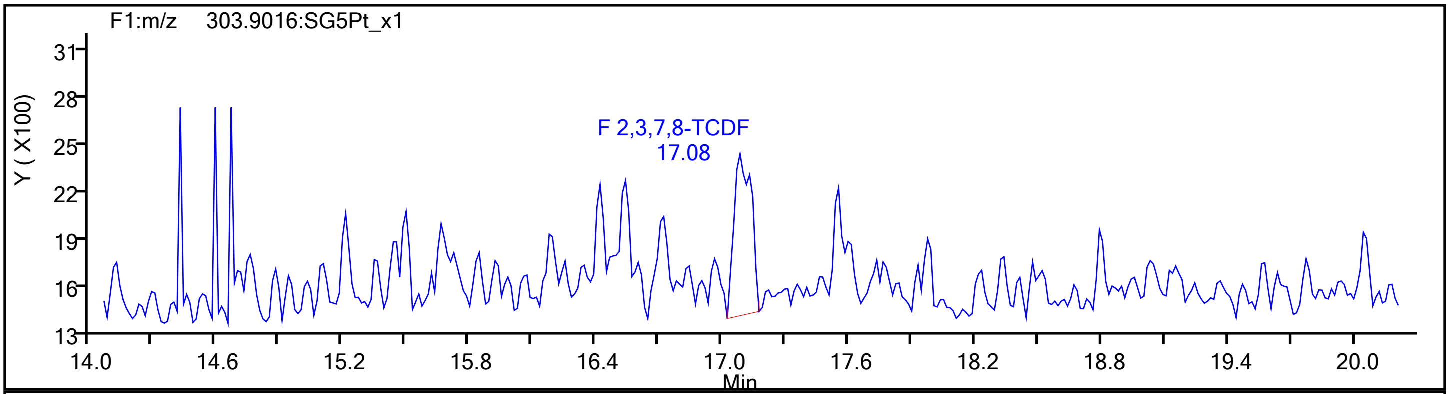

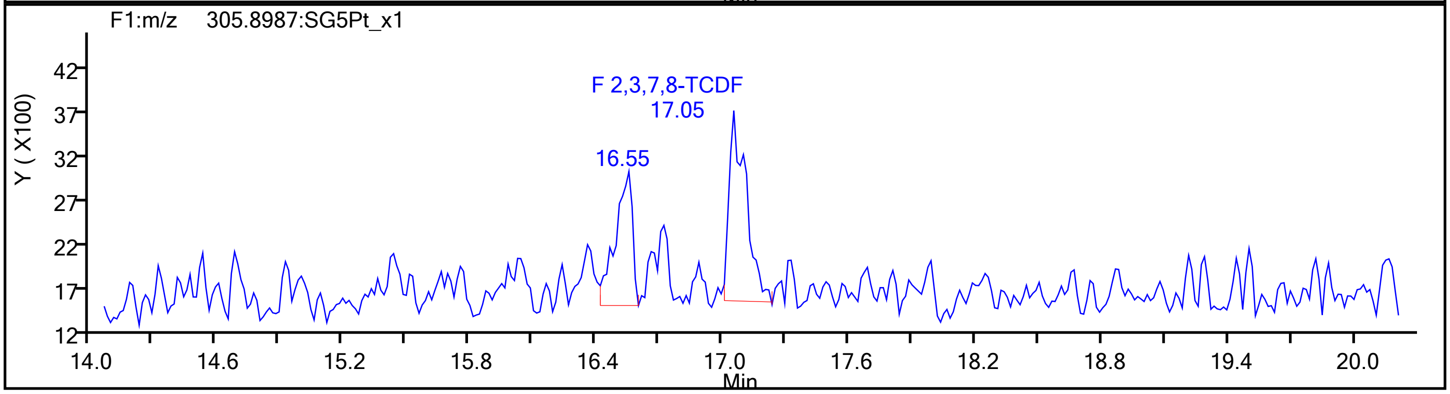

TCDF Standards

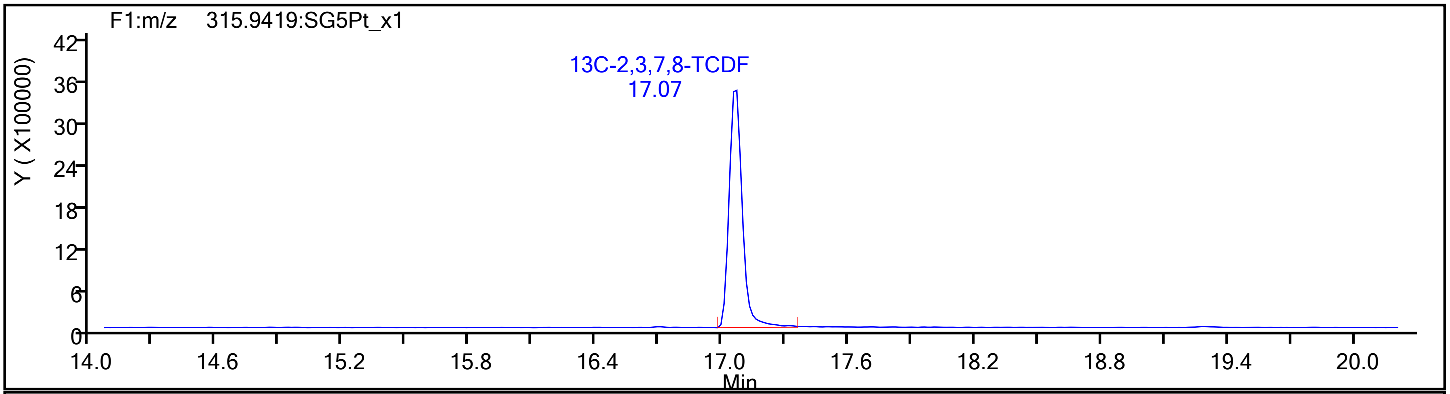

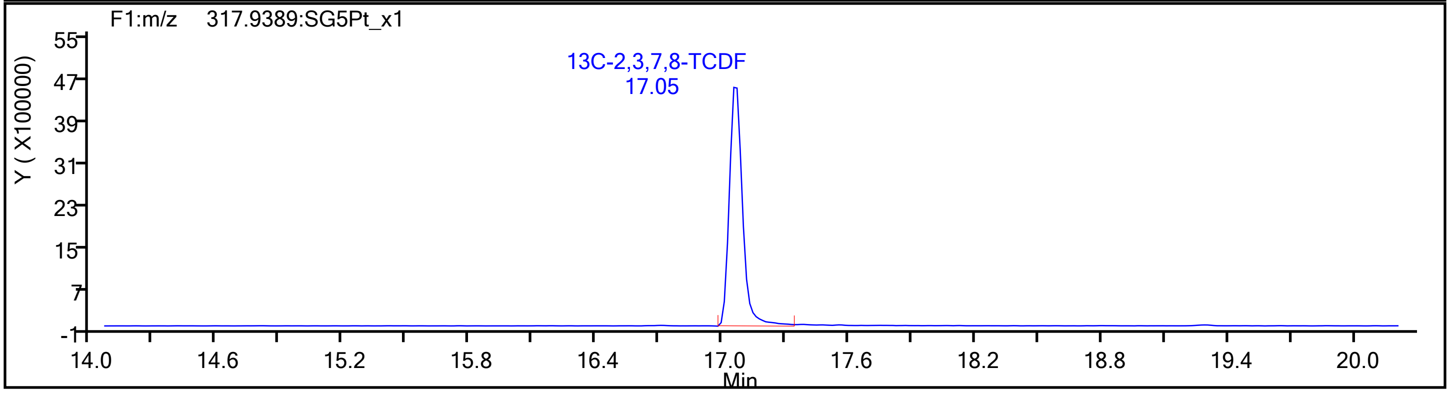

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

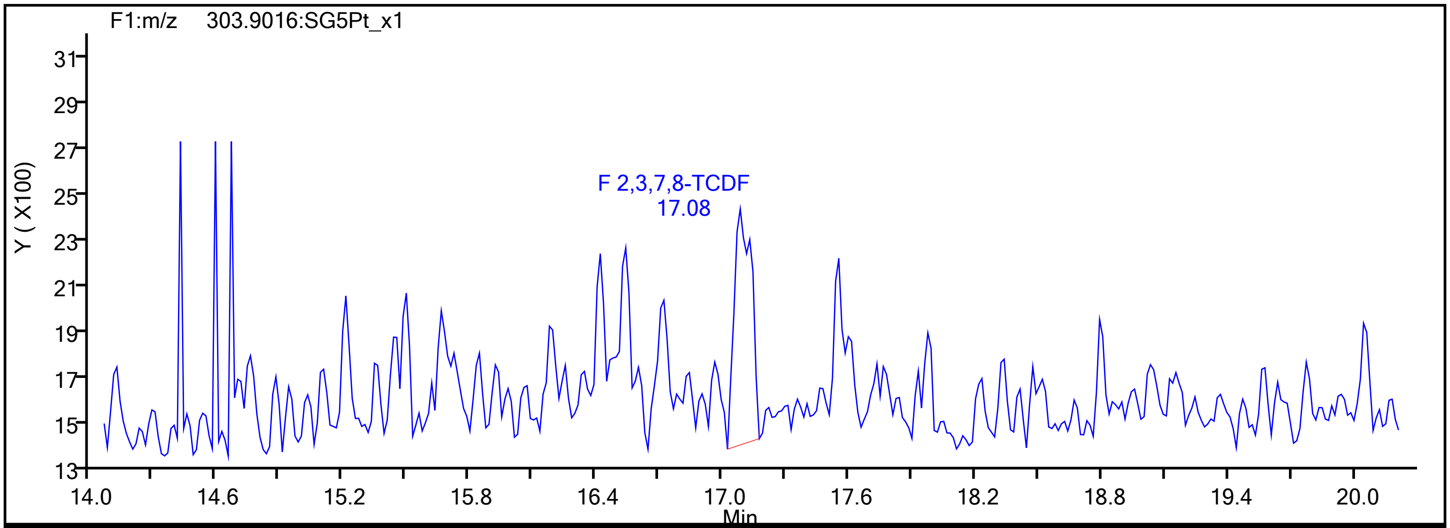

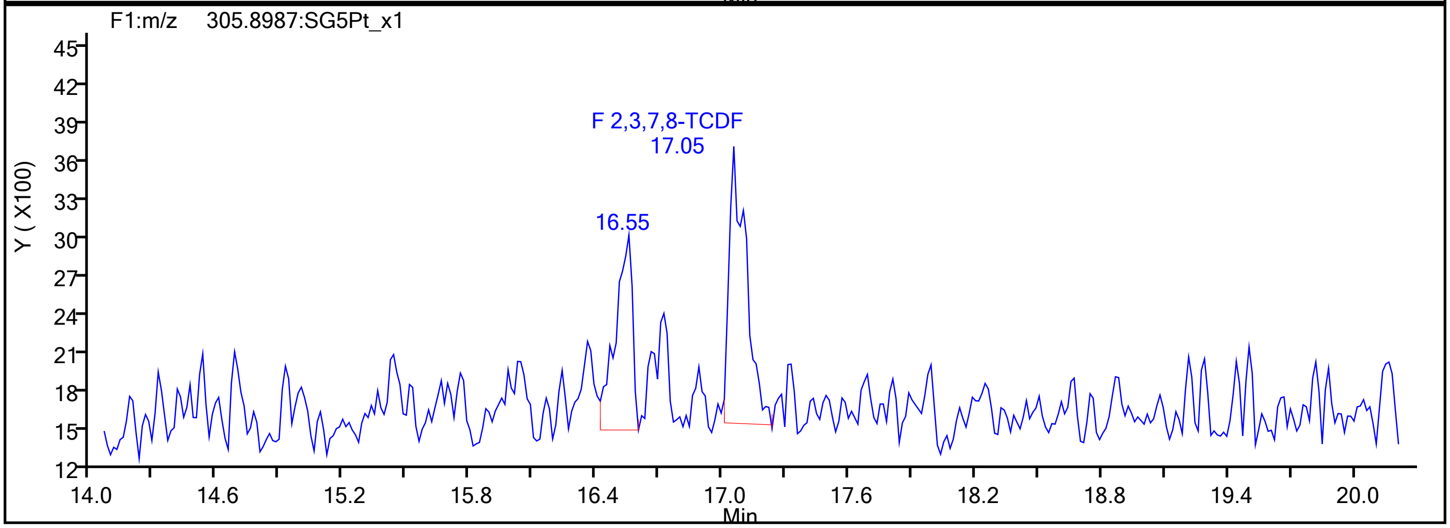

TCDF Interference Mass

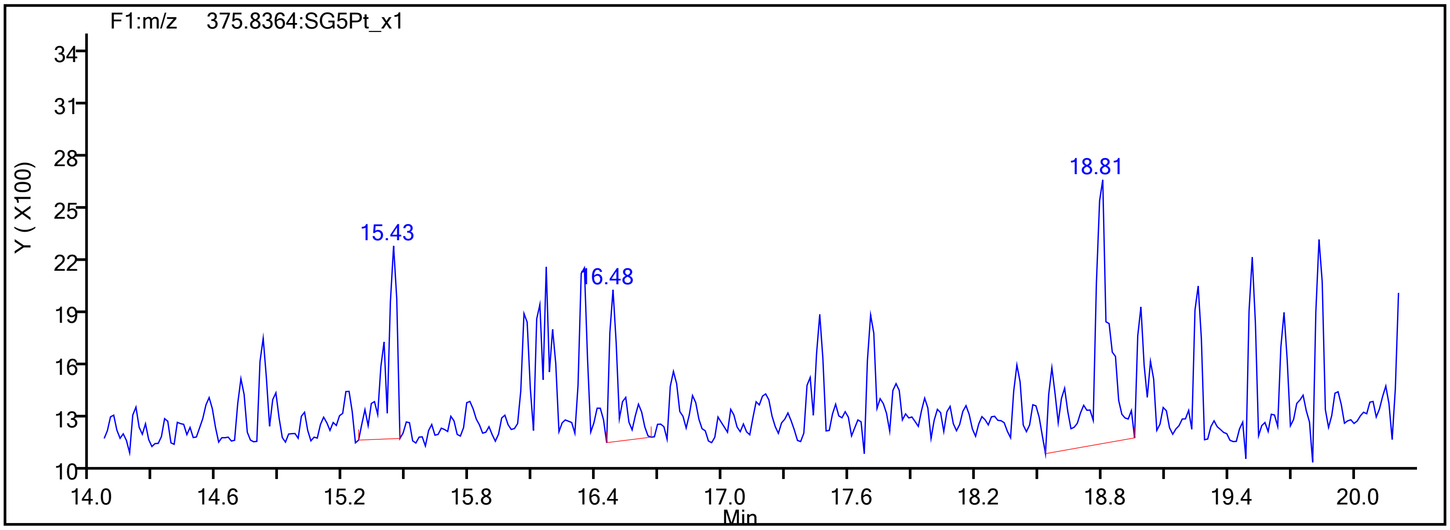

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d
Injection Date: 25-Jun-2020 23:10:32 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: AFEFF5
Worklist#: 389621 Sample Line#: 8
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

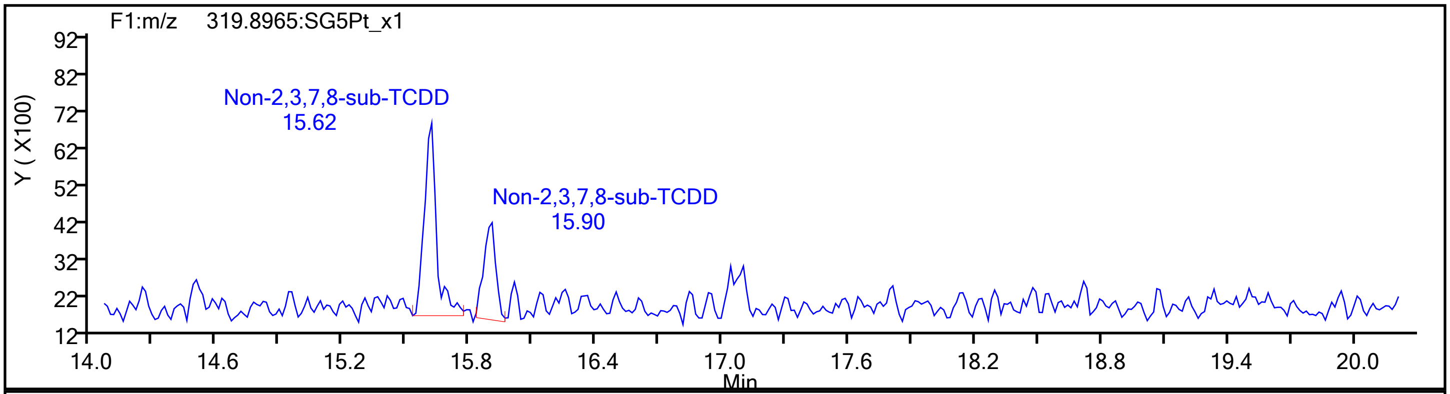

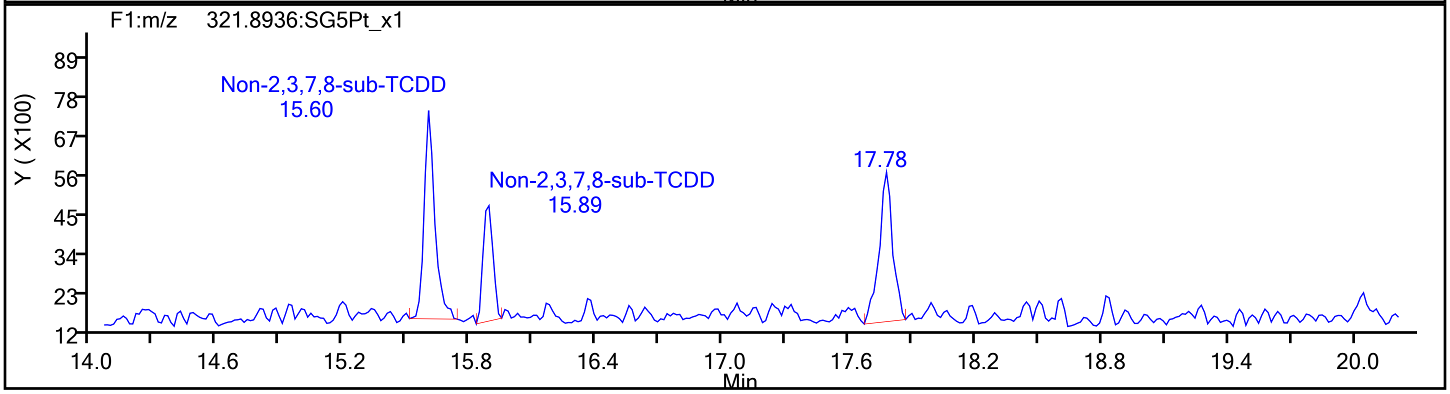

TCDD Standards

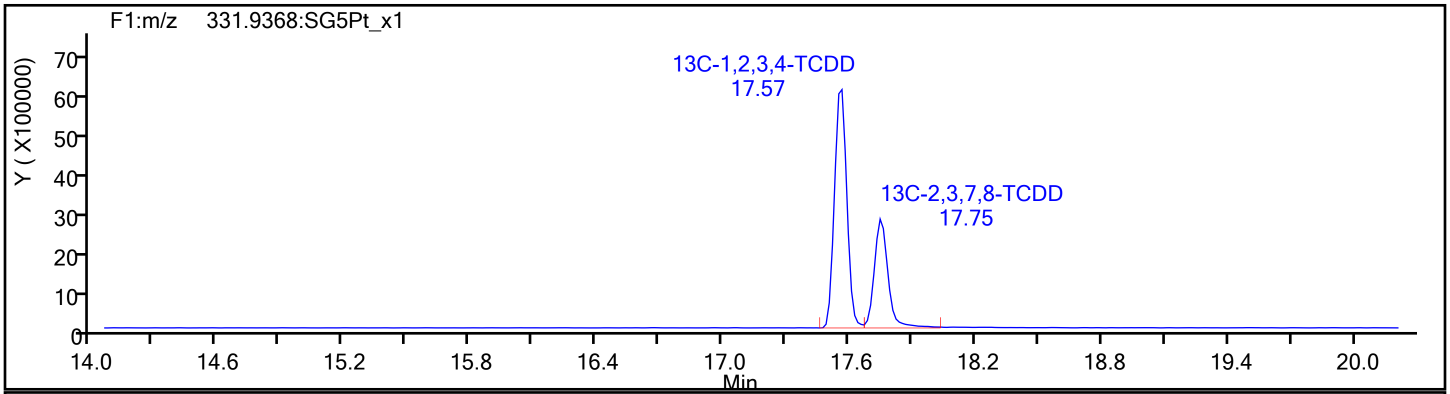

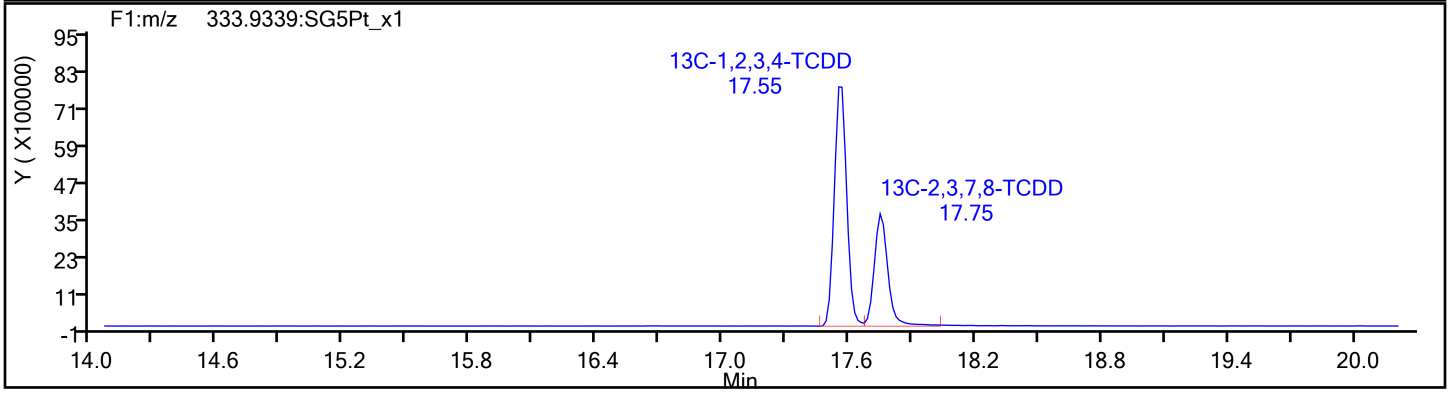

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

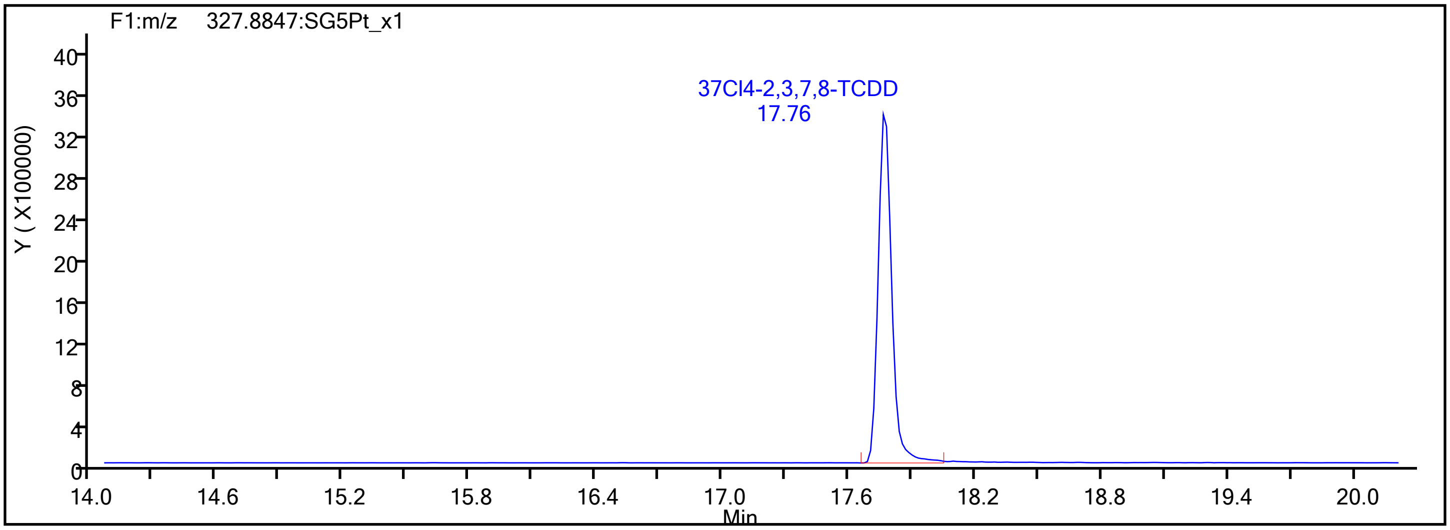

37Cl4-TCDD Standards

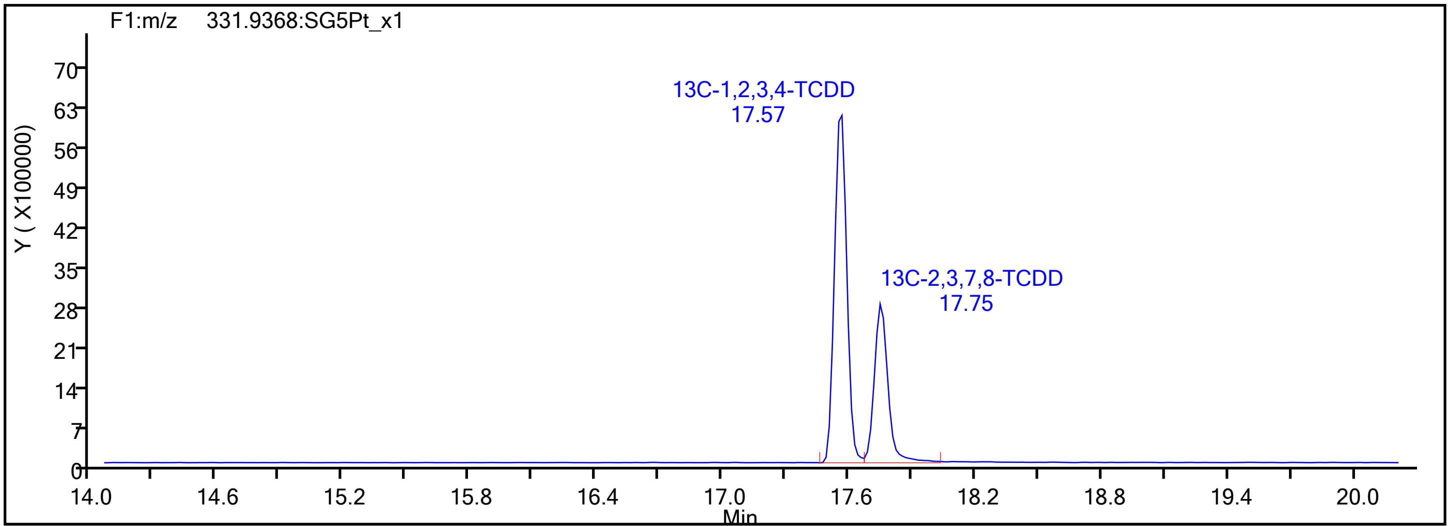

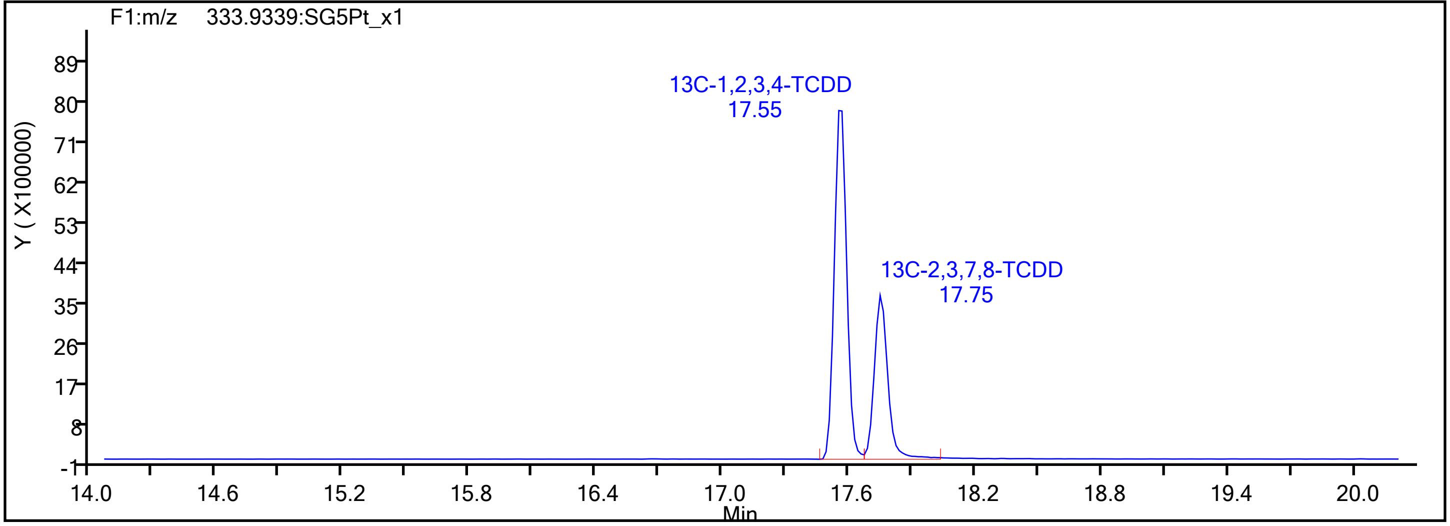

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

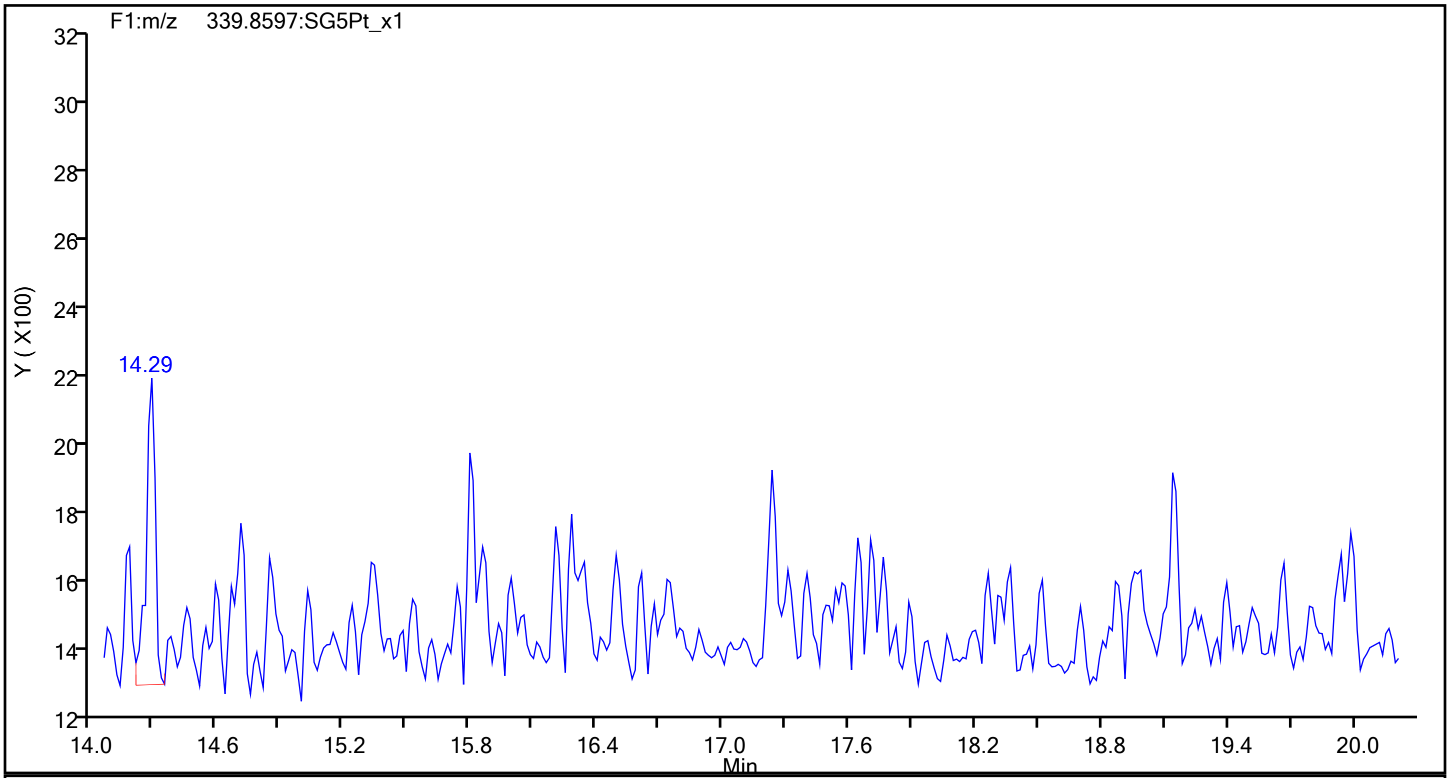

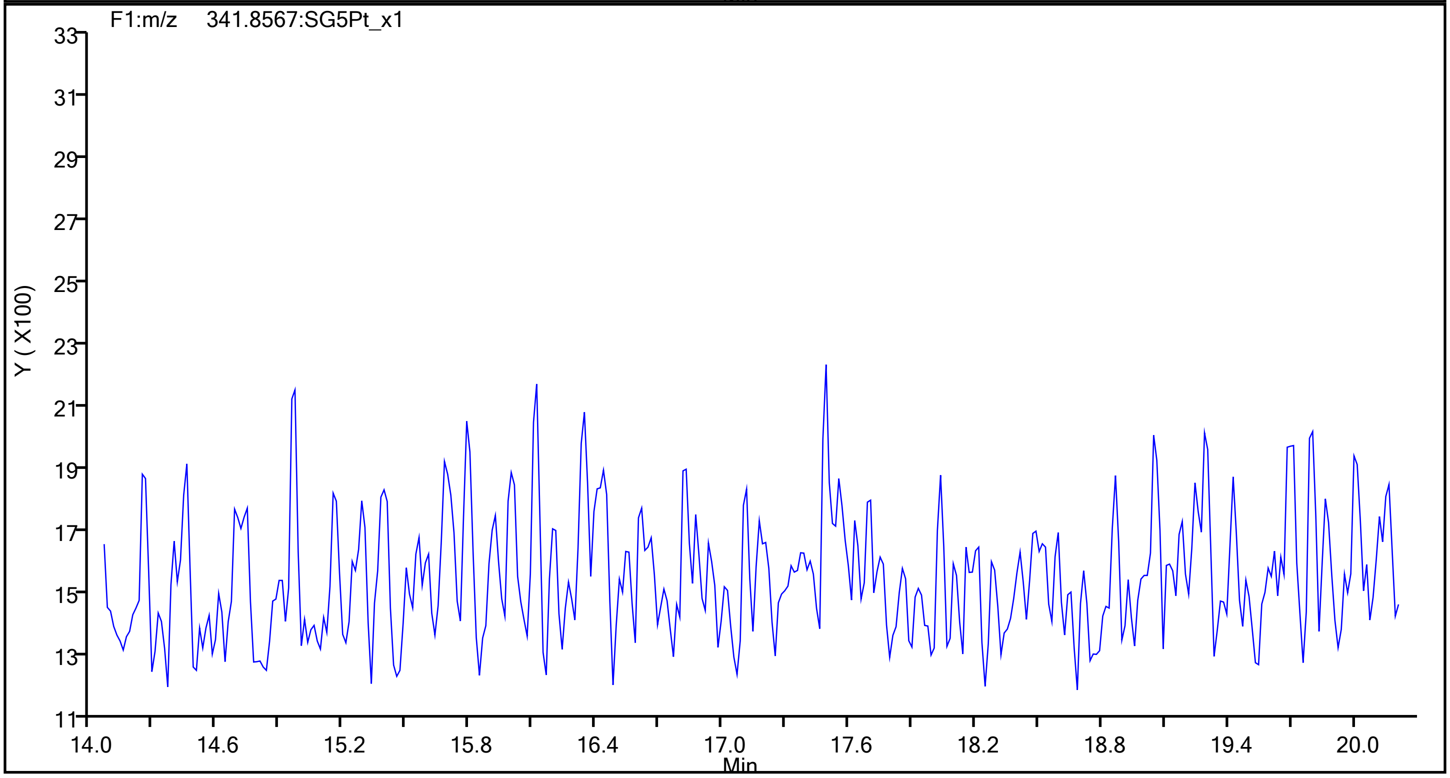

Report Date: 26-Jun-2020 13:16:11 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

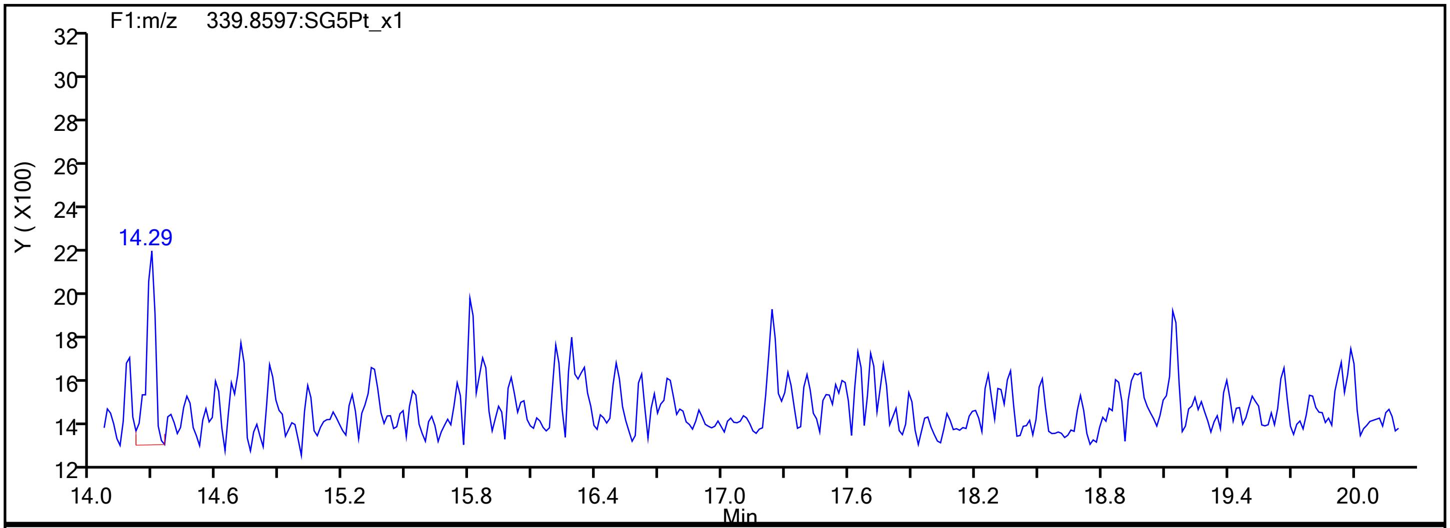

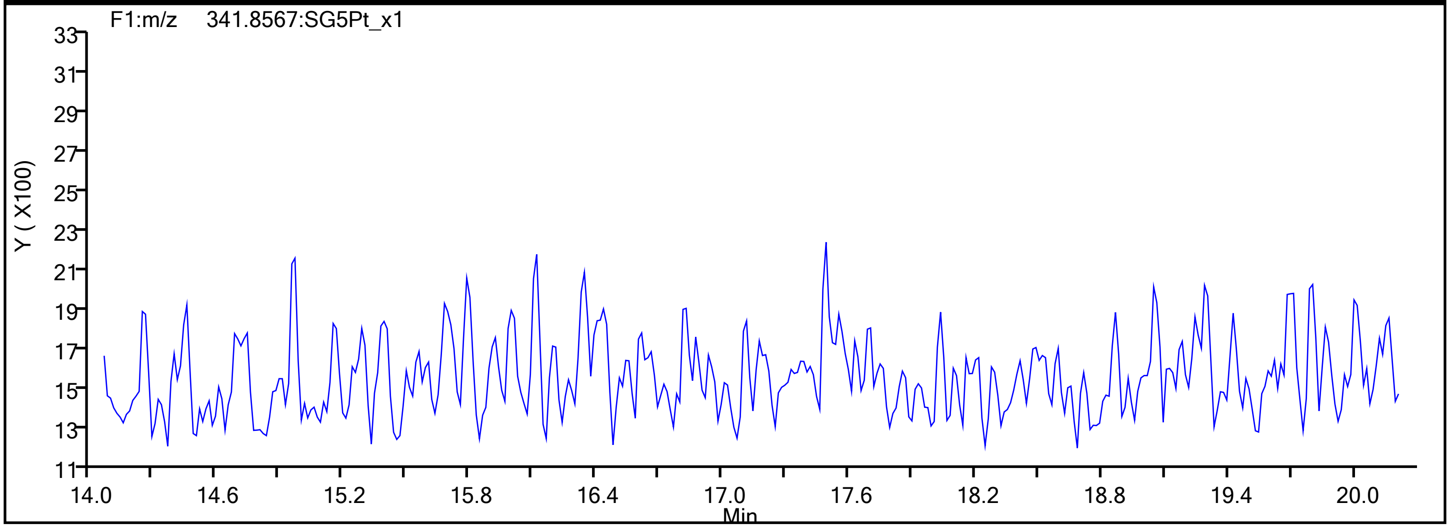

F1 PeCDFs Interference Mass

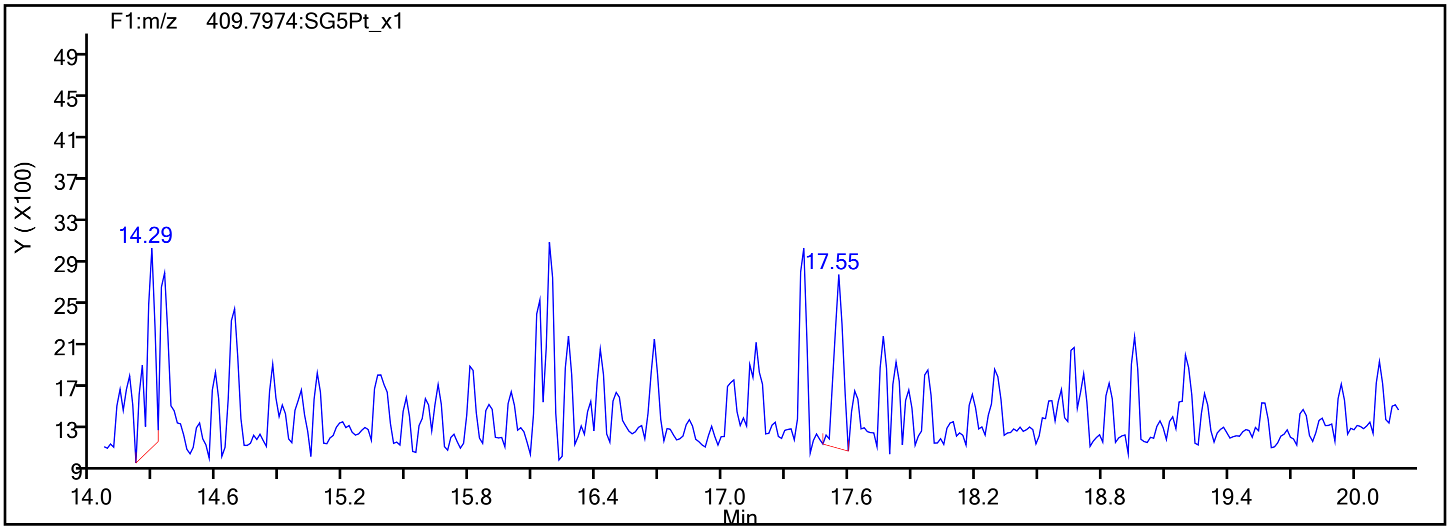

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

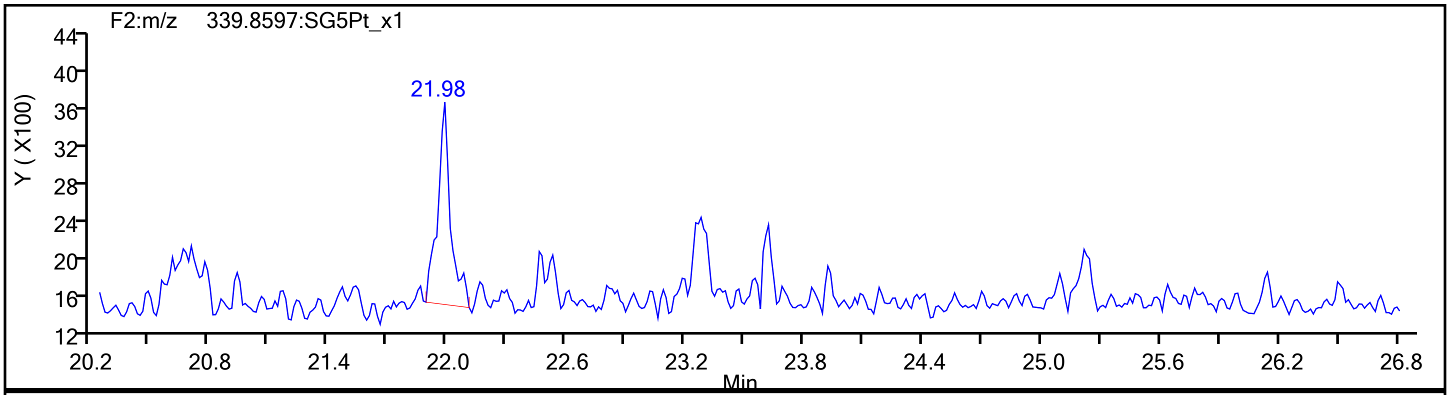

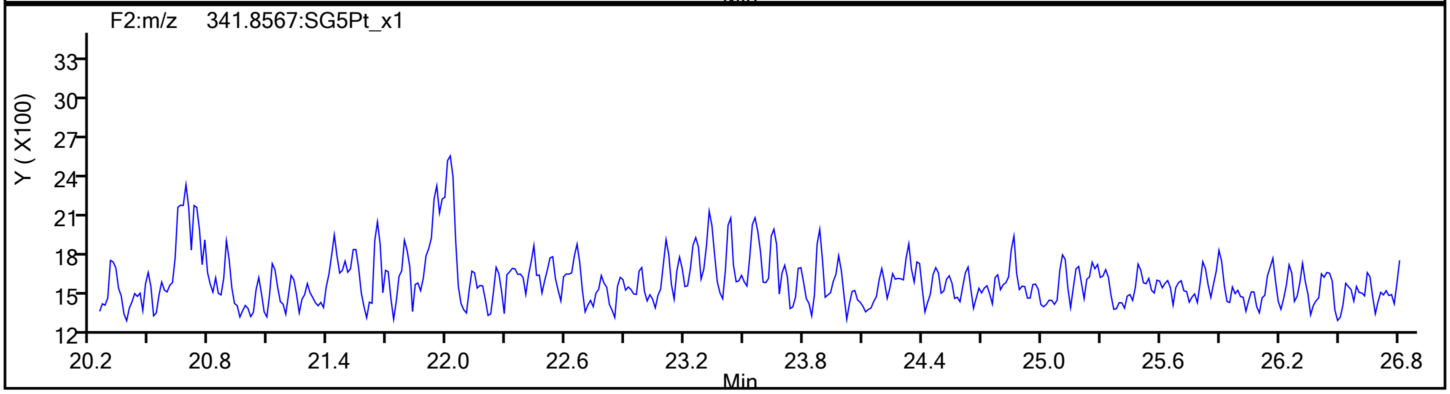

PeCDF Standards

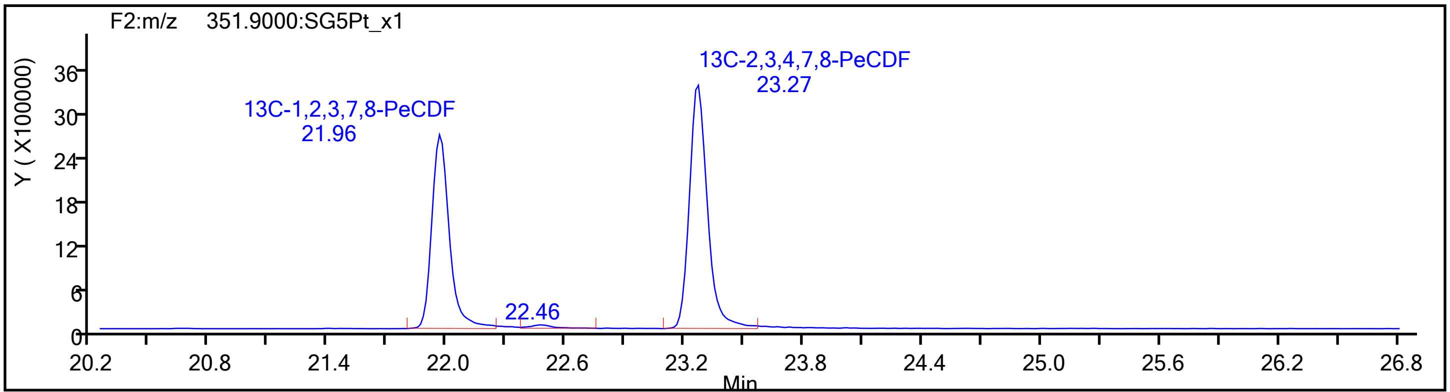

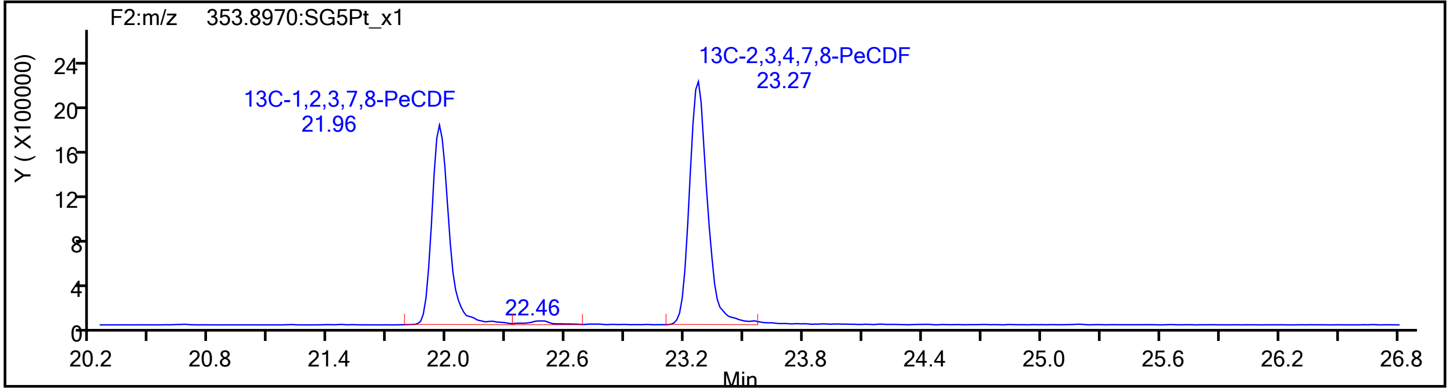

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d

Injection Date: 25-Jun-2020 23:10:32

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID: AFEFF5

Worklist#: 389621

Sample Line#: 8

Column Type: DB-5

Column Dia: 0.32 mm

PeCDF

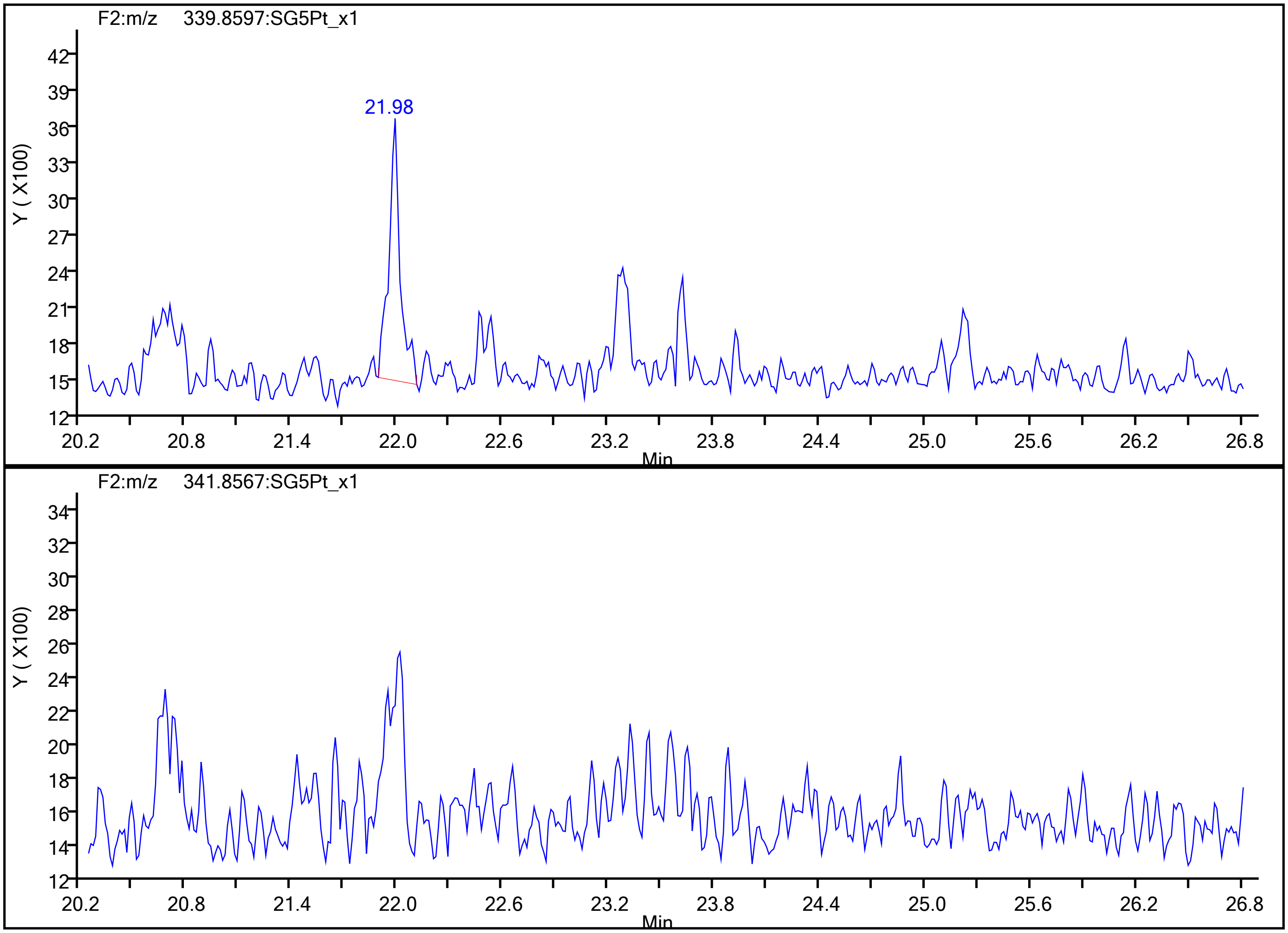

PeCDF Interference Mass

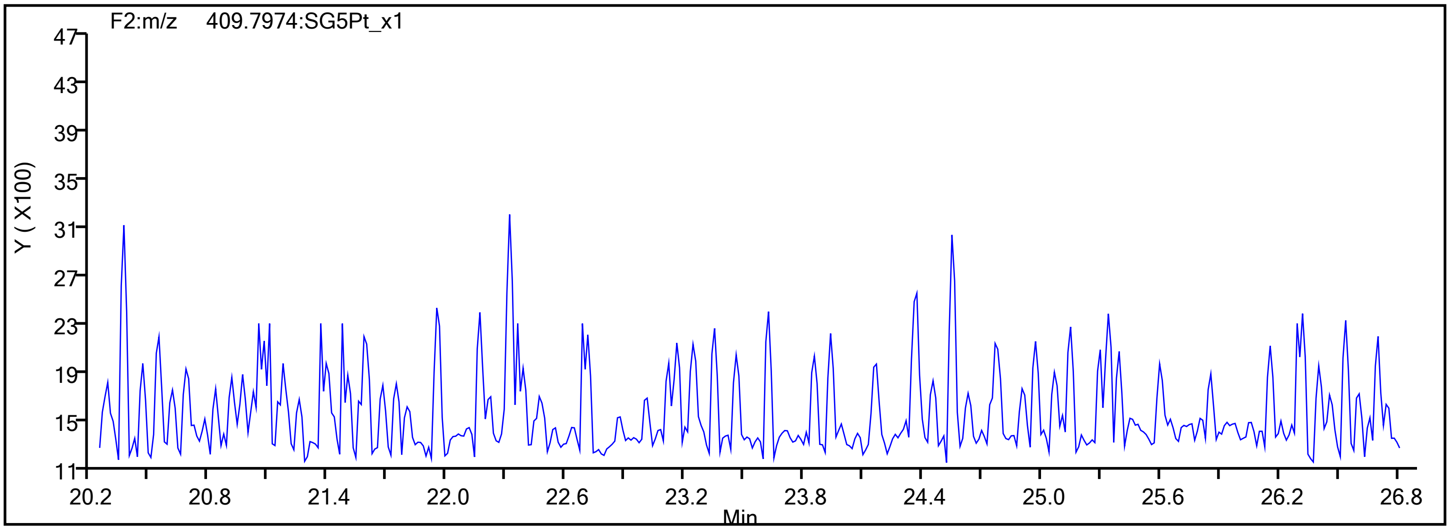

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d

Injection Date: 25-Jun-2020 23:10:32

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID: AFEFF5

Worklist#: 389621

Sample Line#: 8

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

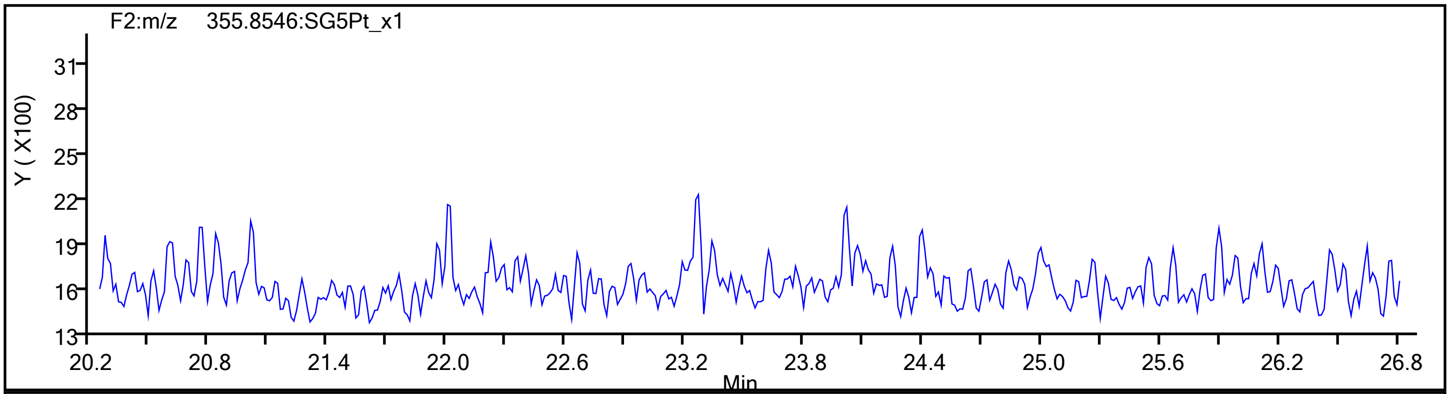

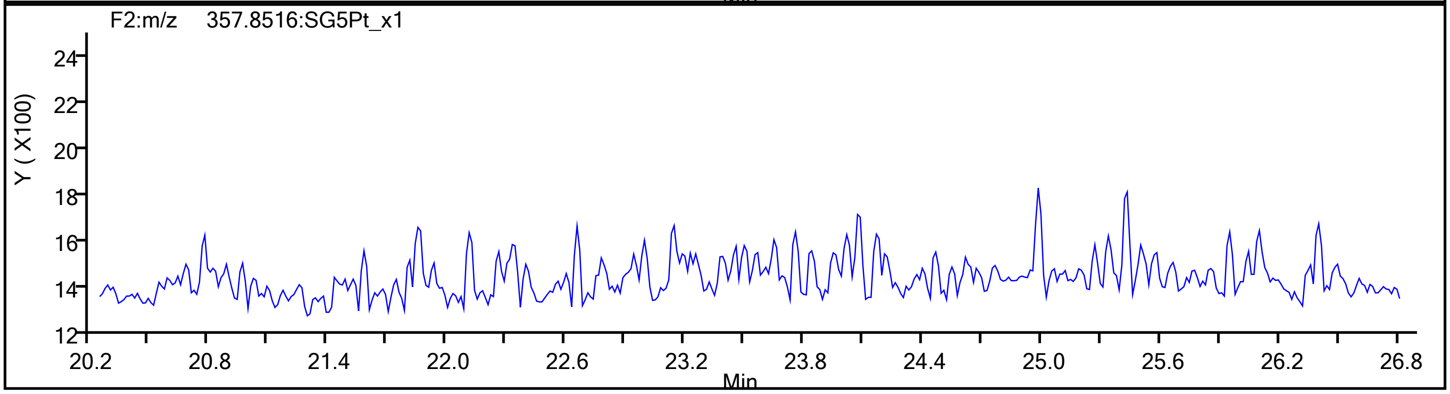

PeCDD Standards

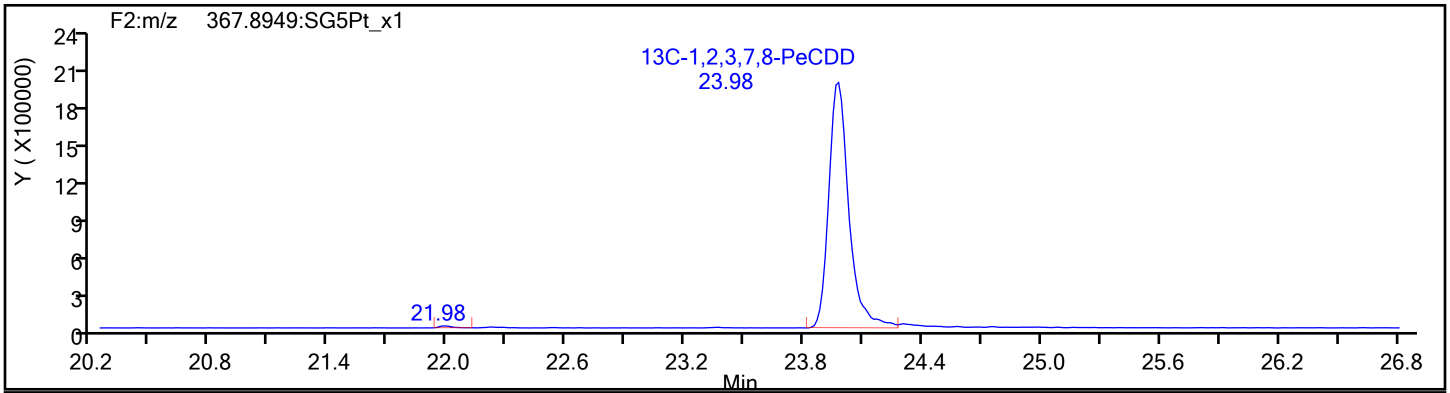

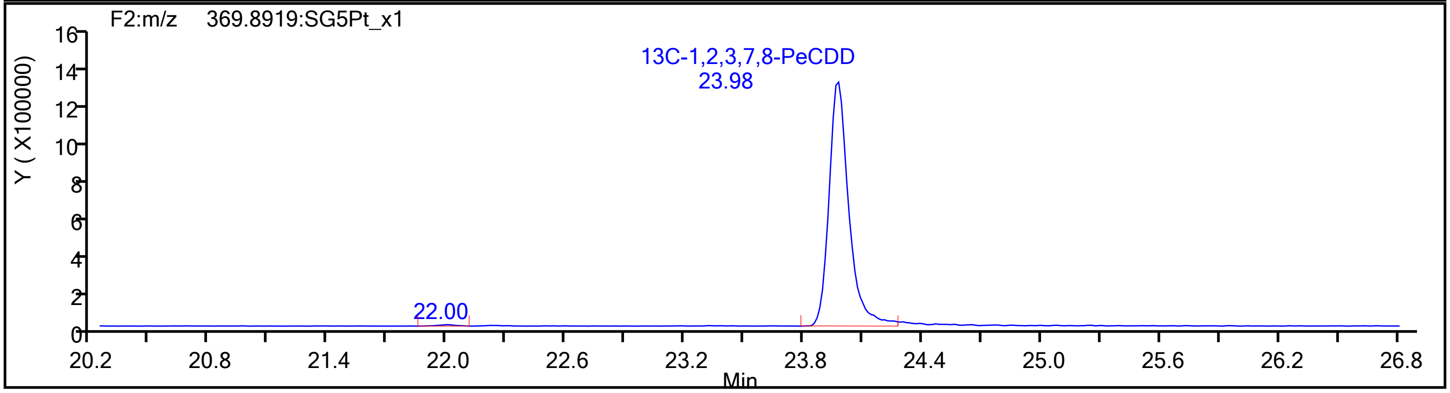

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

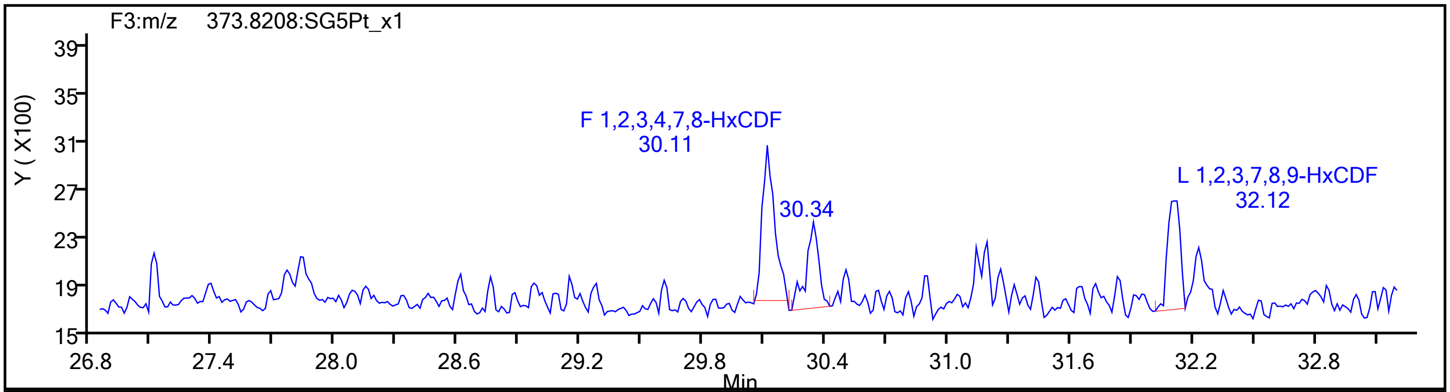

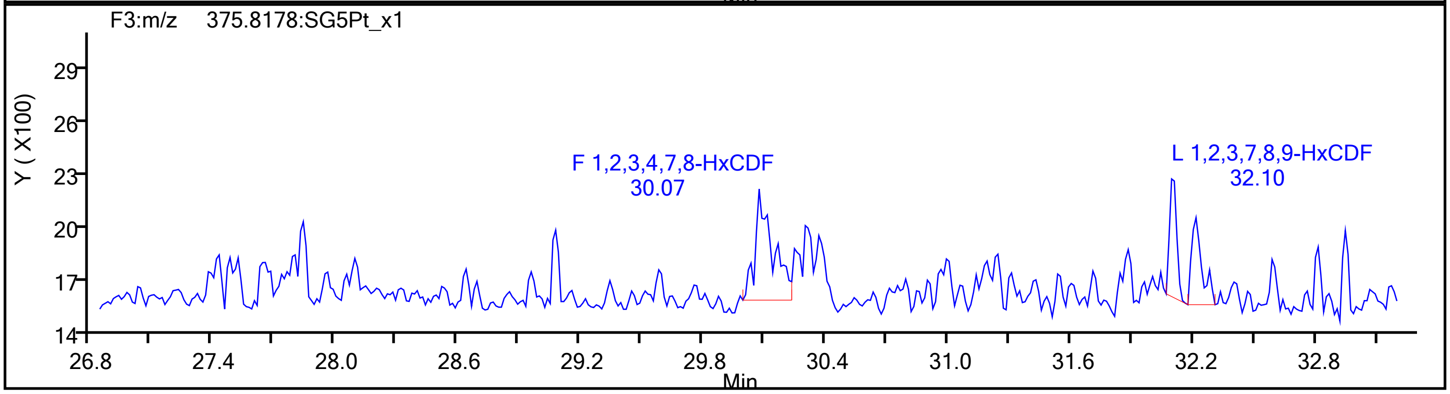

HxCDF Standards

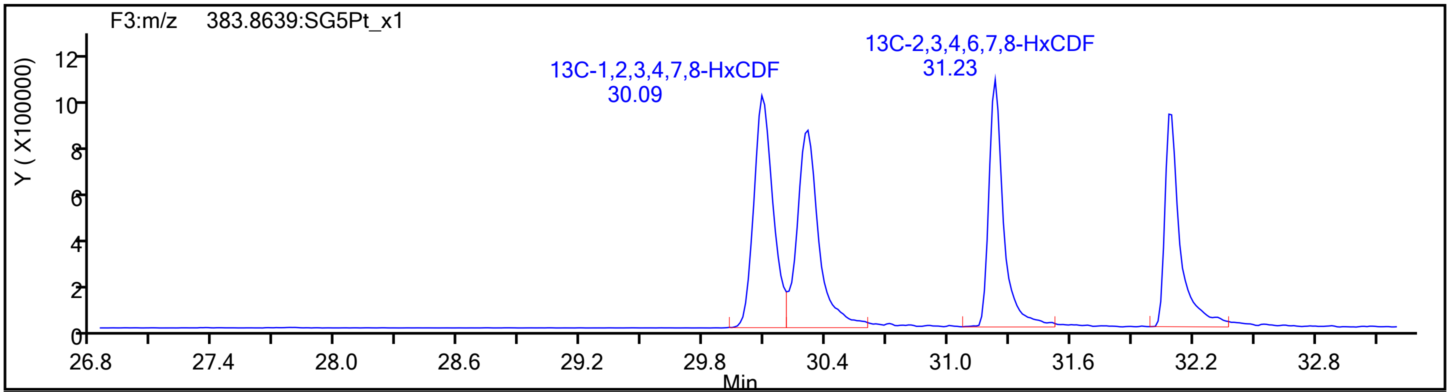

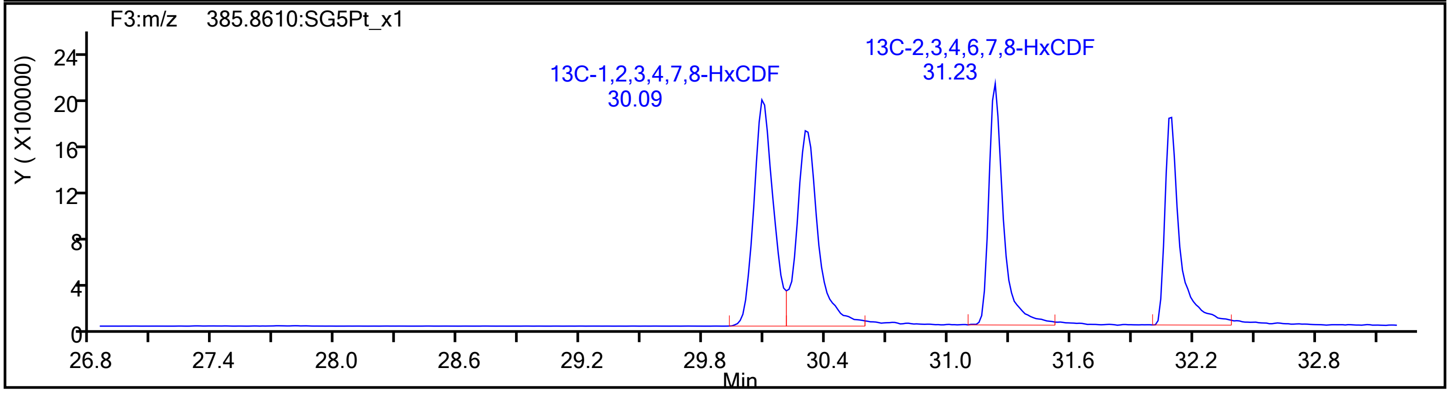

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d

Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

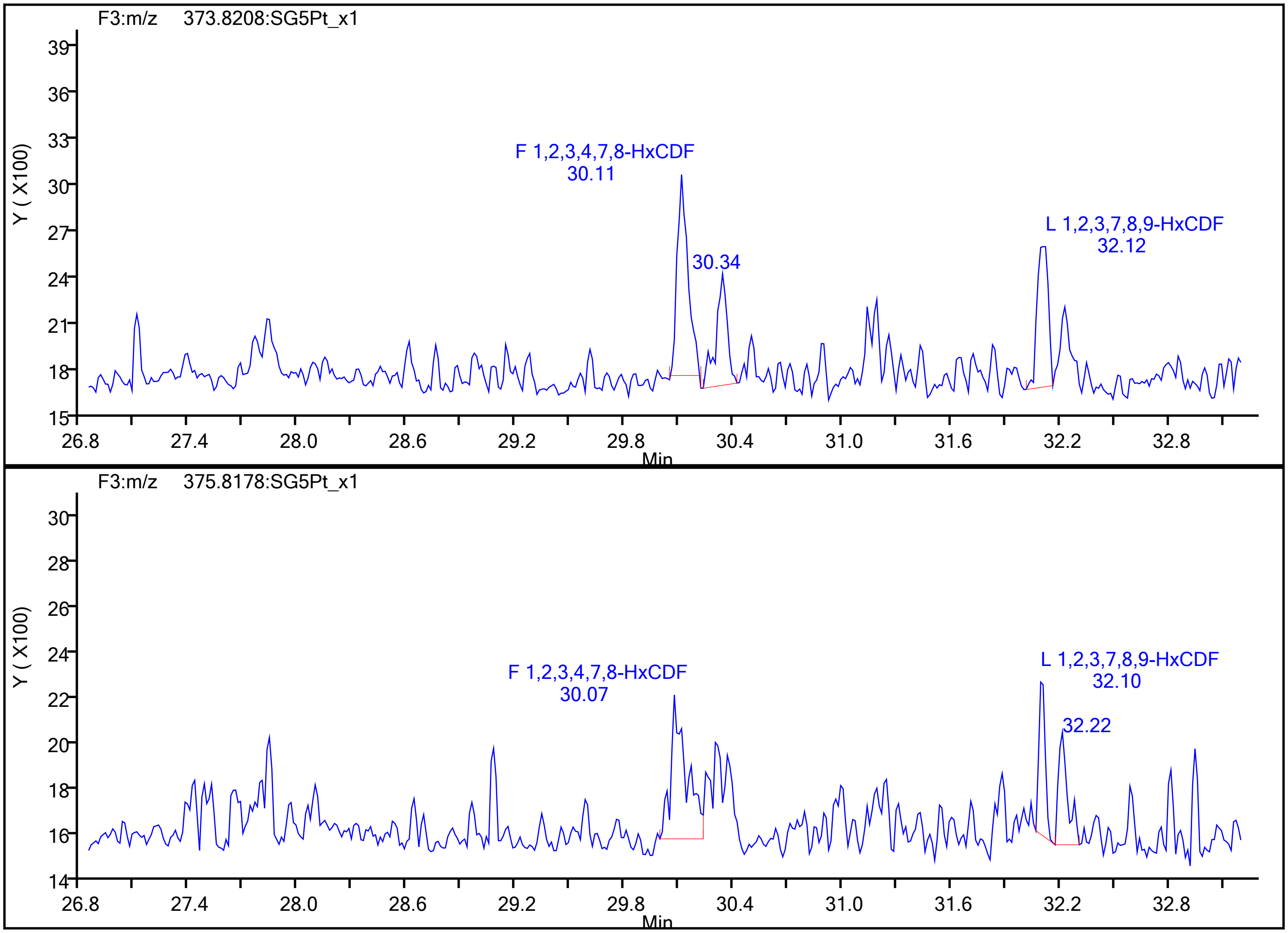

HxCDF Interference Mass

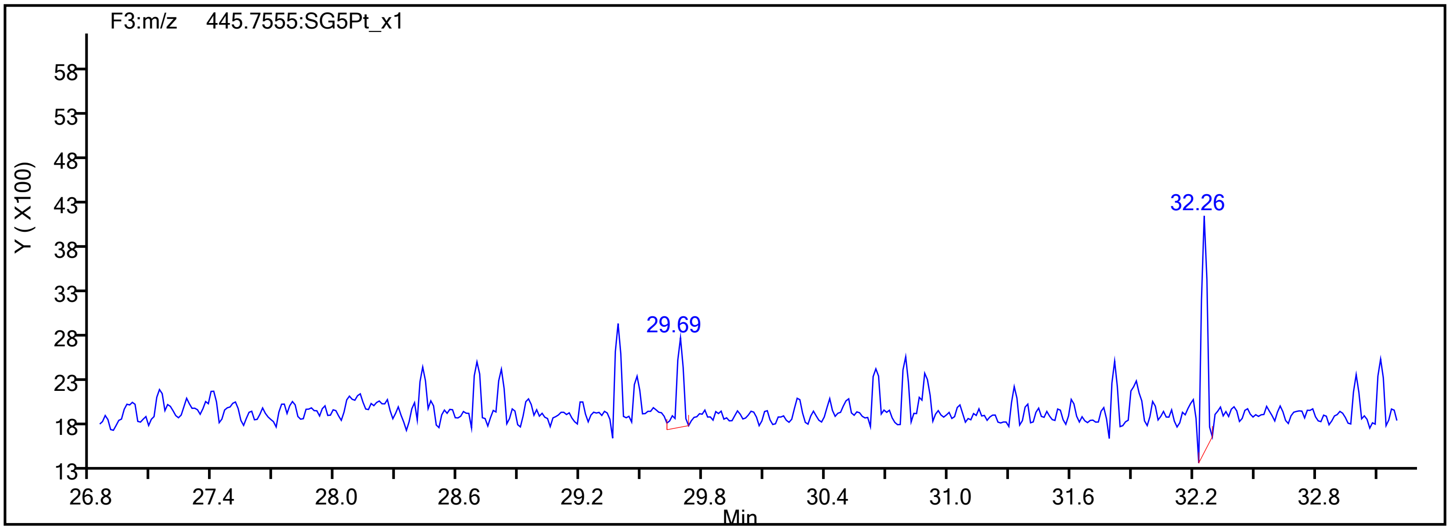

Report Date: 26-Jun-2020 13:16:12
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date: 25-Jun-2020 23:10:32
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
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Worklist#: 389621
Sample Line#: 8
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Column Dia: 0.32 mm

HxCDD

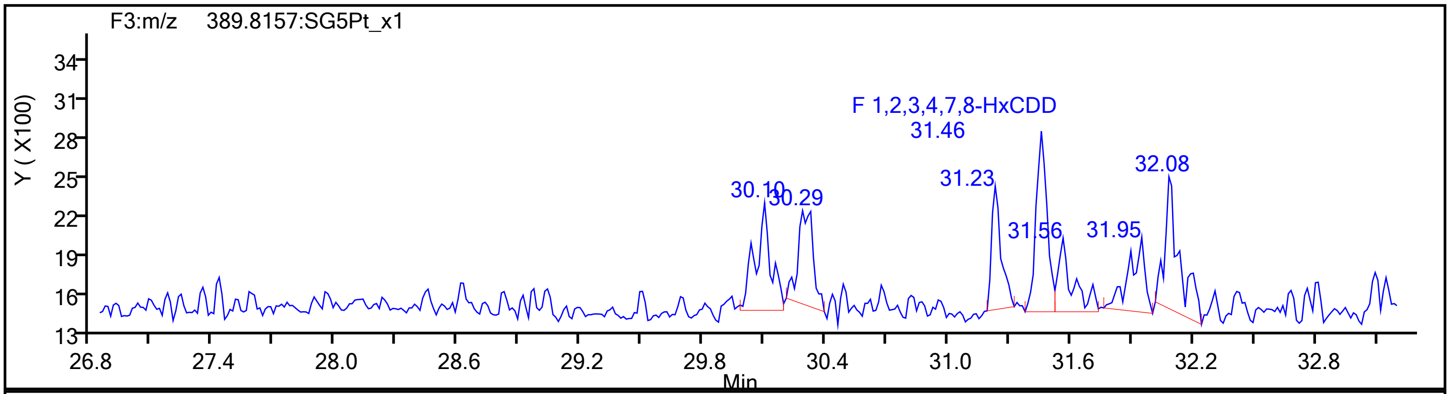

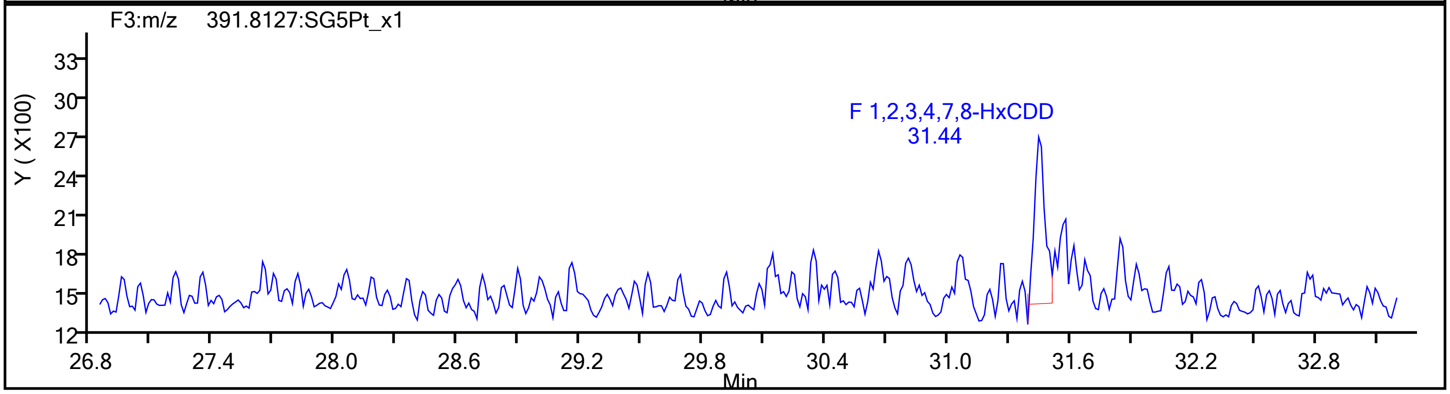

HxCDD Standards

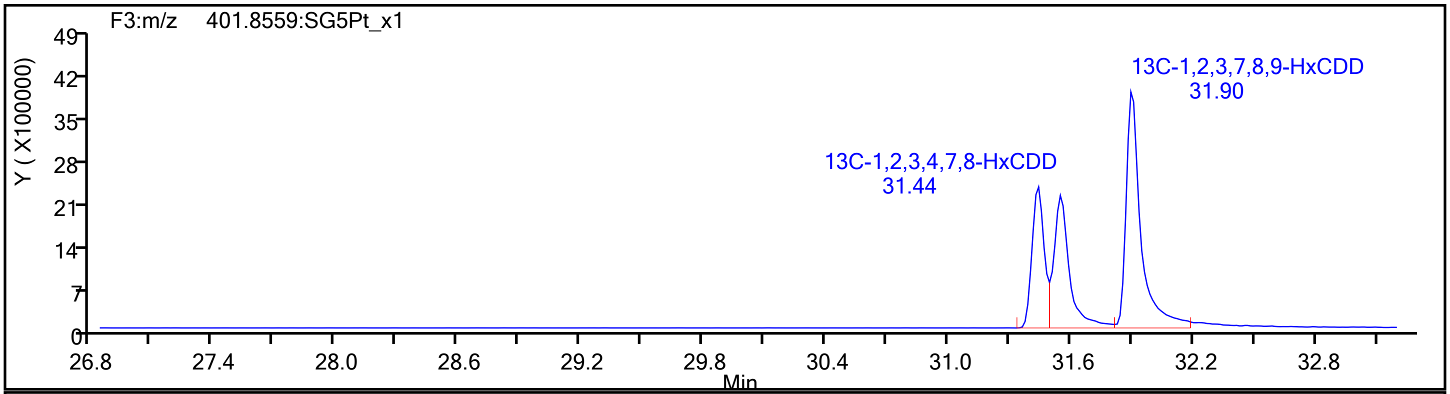

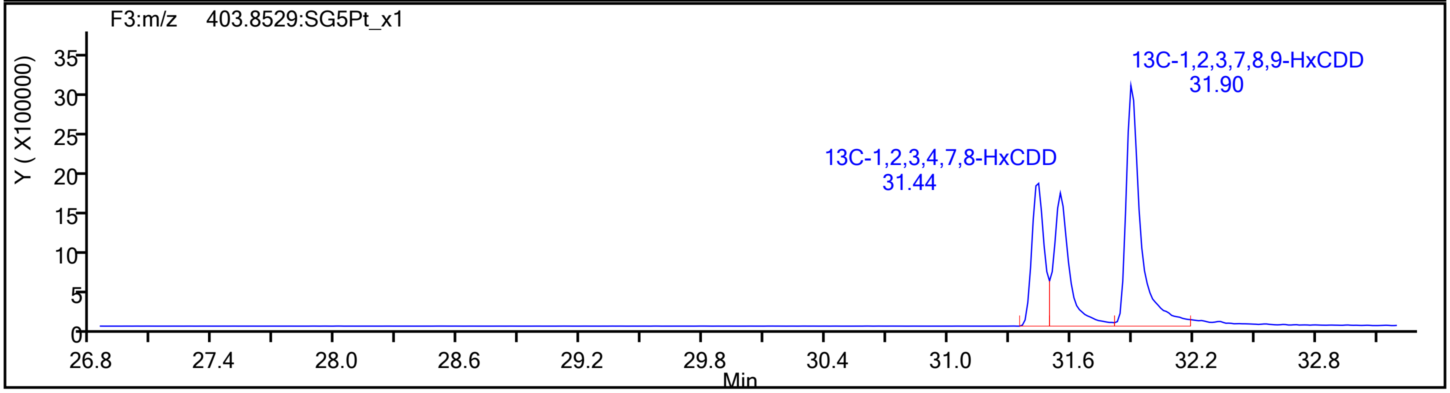

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

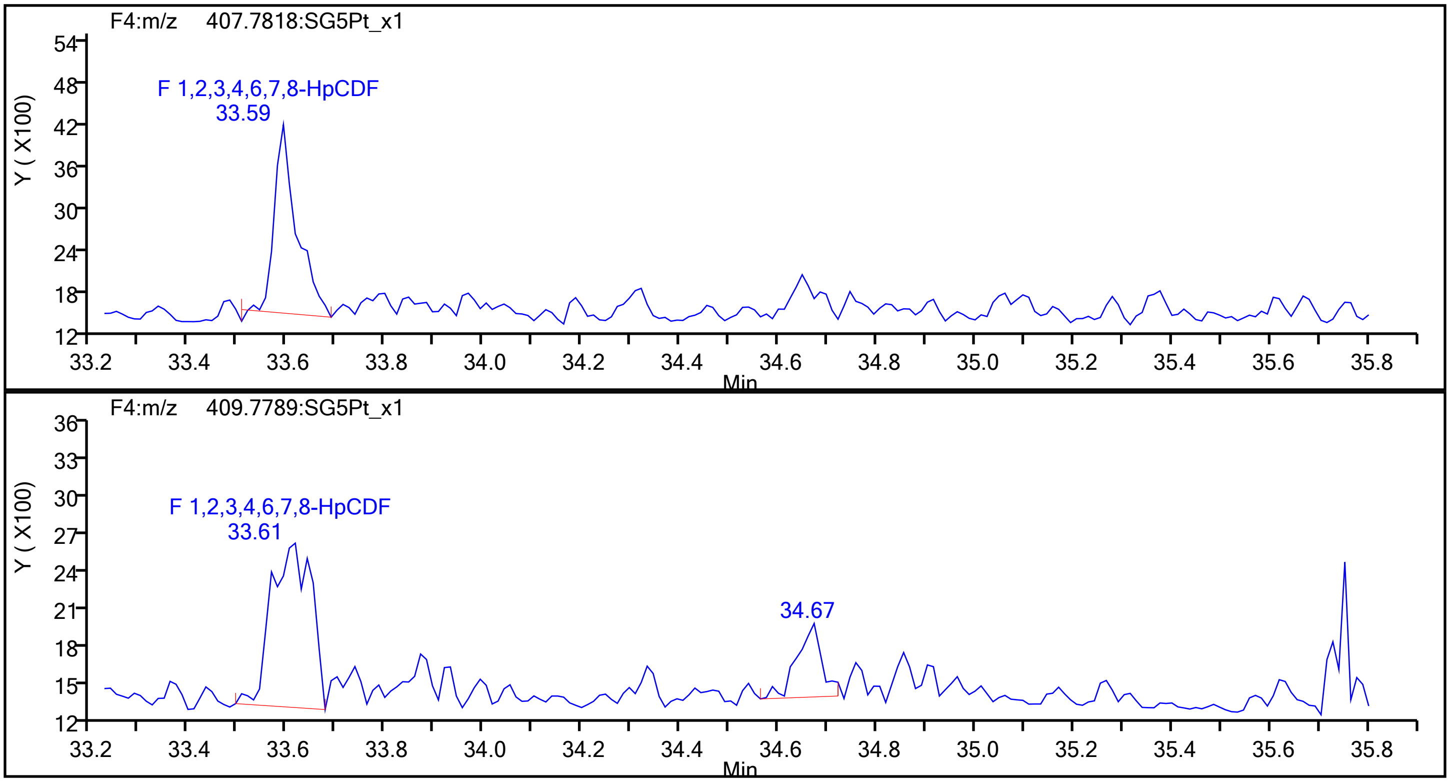

HpCDF Standards

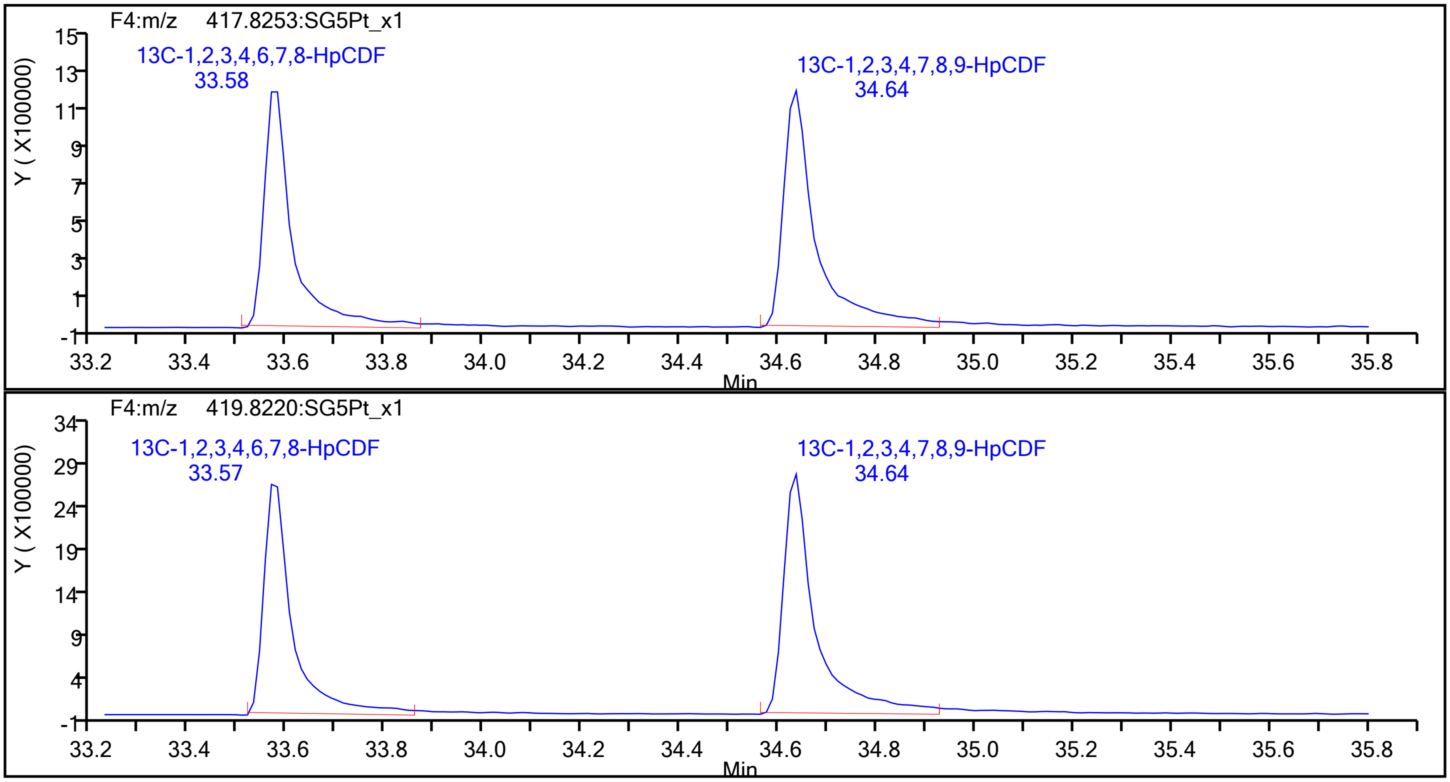

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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HpCDF

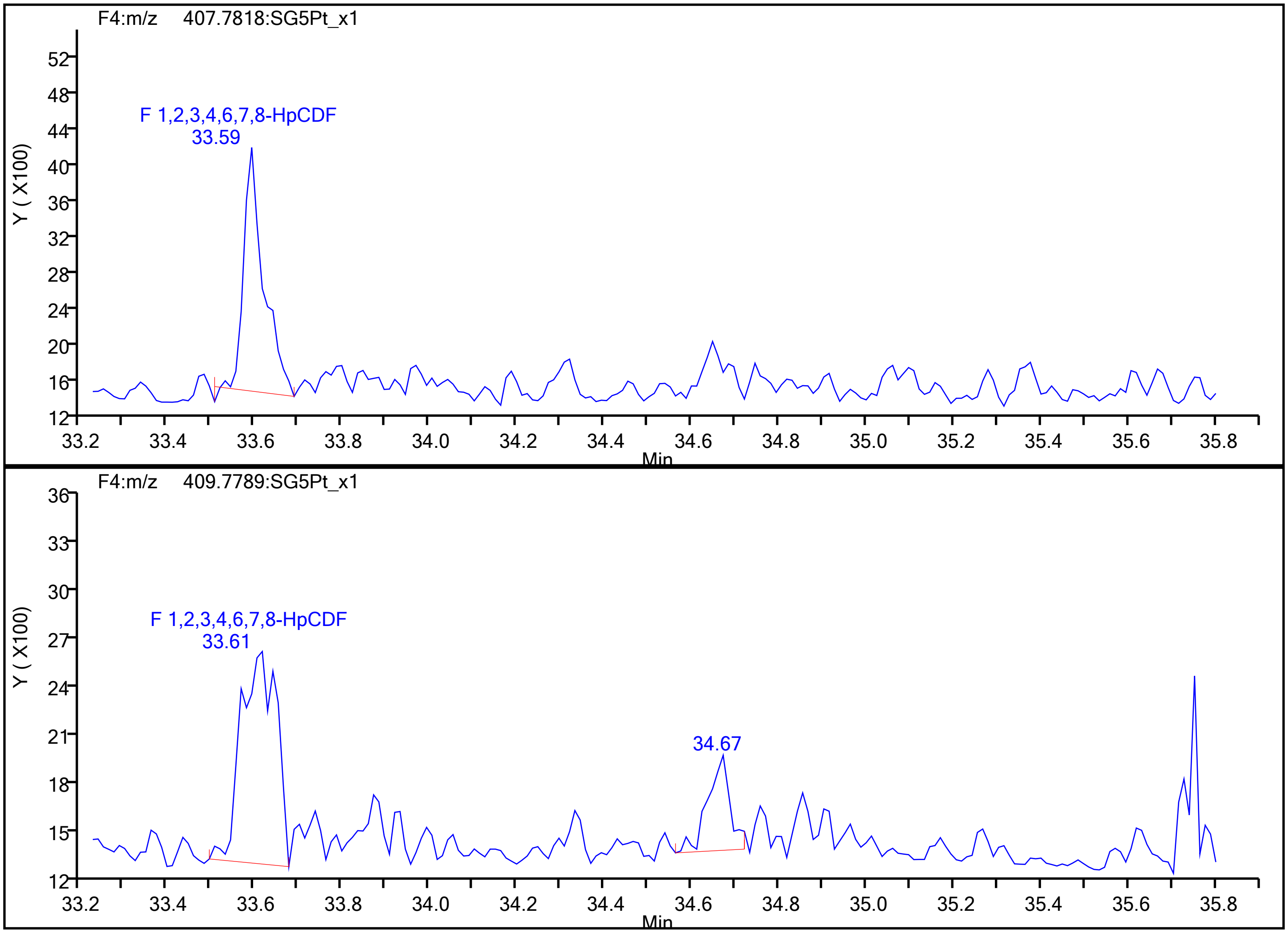

HpCDF Interference Mass

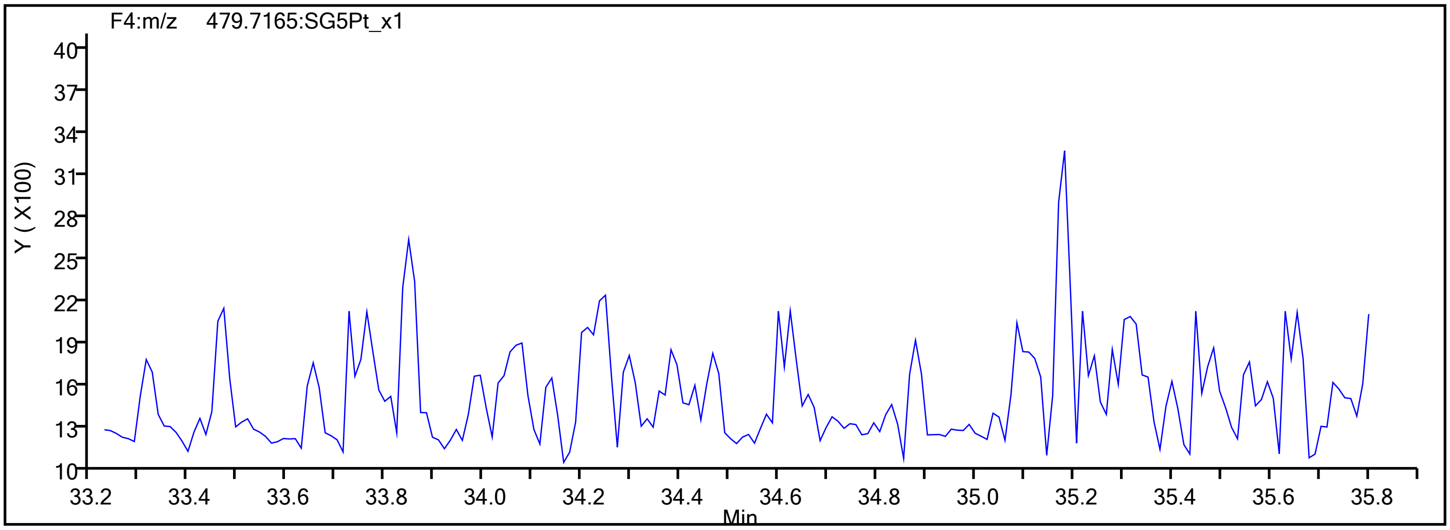

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d
Injection Date: 25-Jun-2020 23:10:32 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: AFEFF5
Worklist#: 389621 Sample Line#: 8
Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

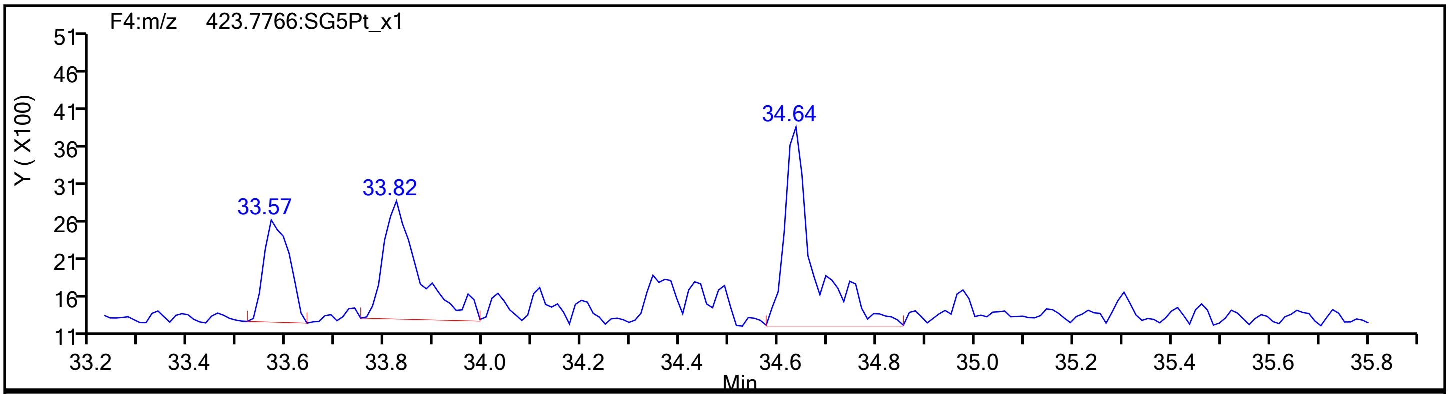

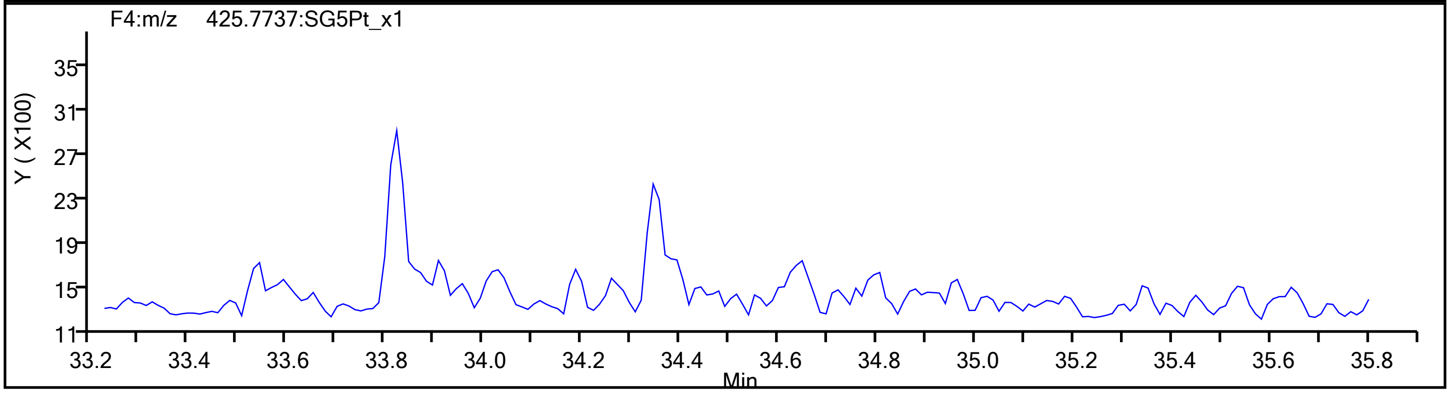

HpCDD Standards

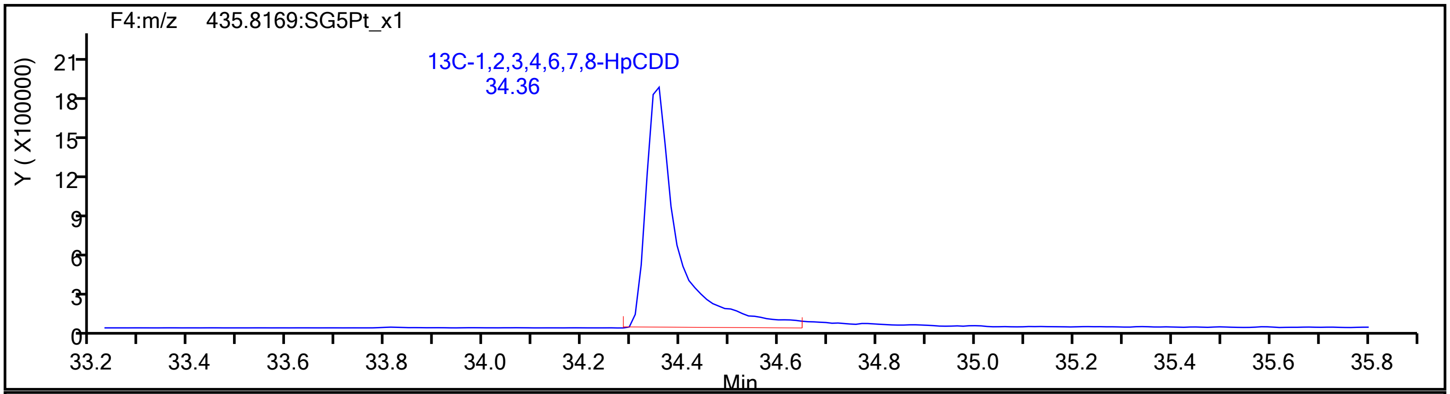

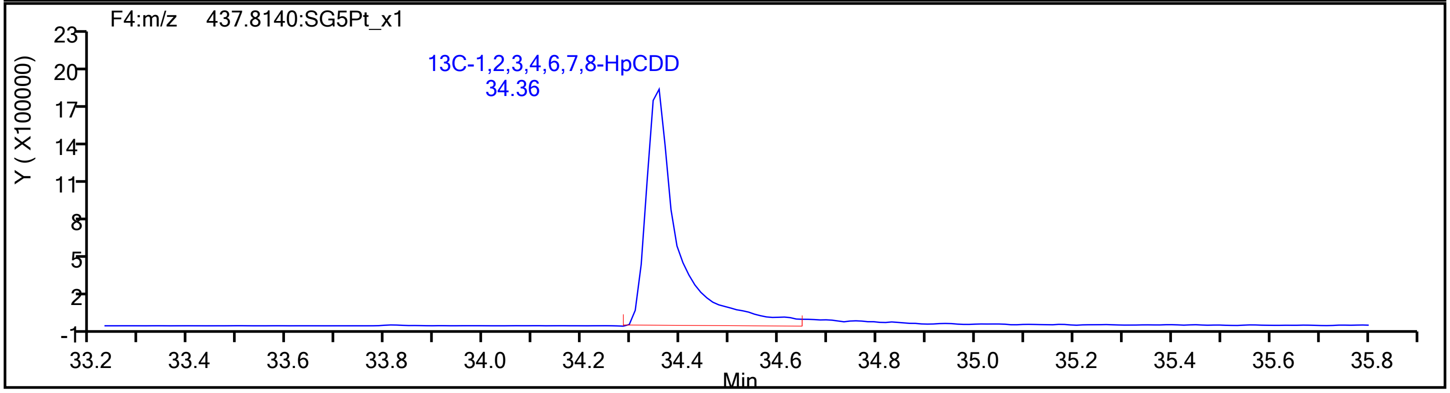

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

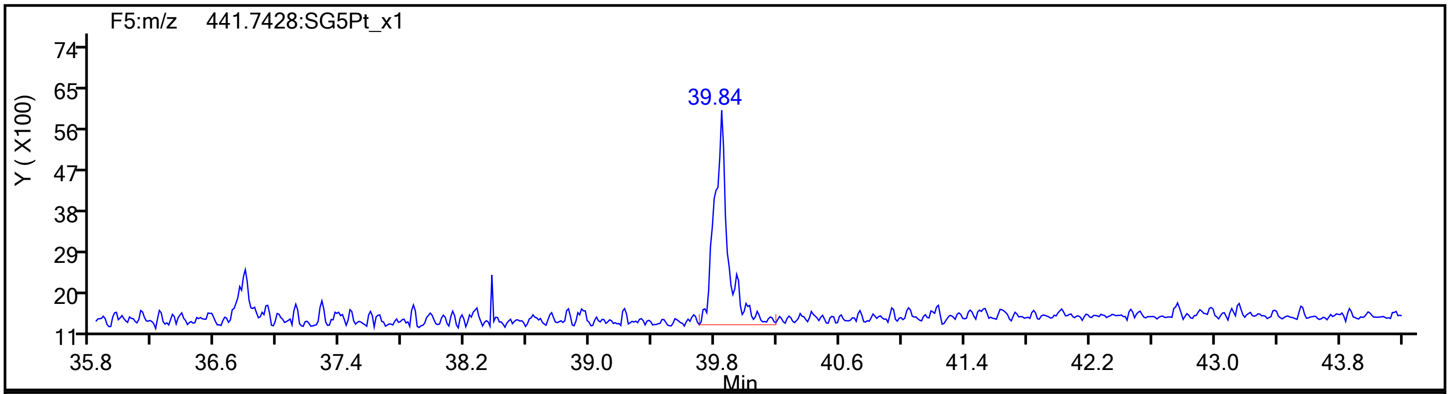

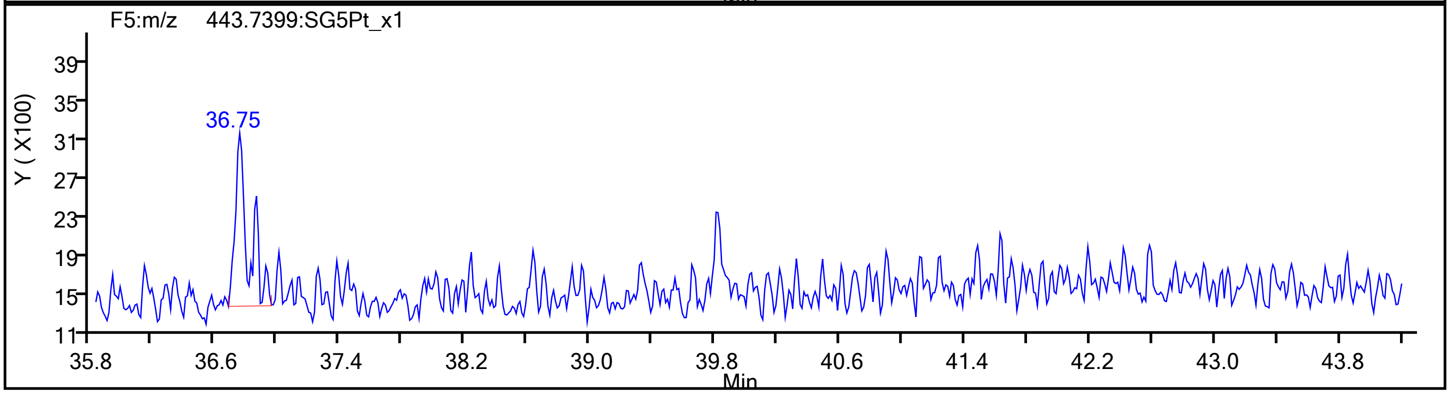

OCDF Standards

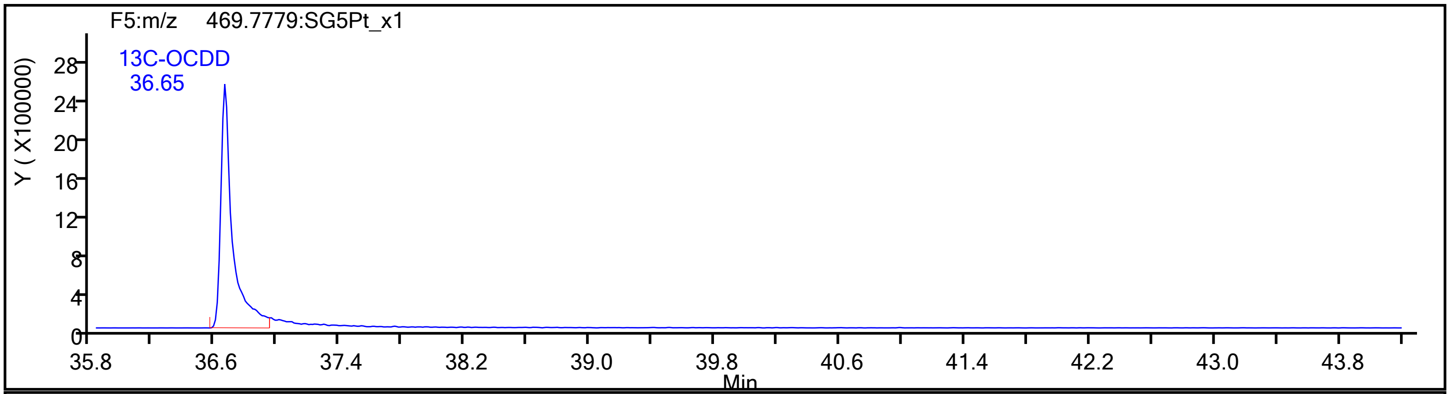

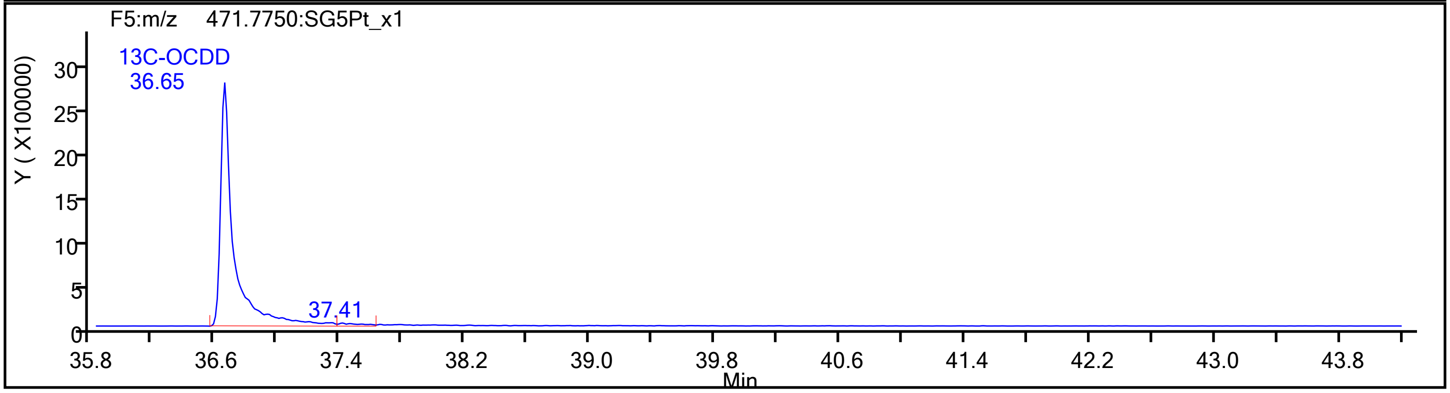

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d
Injection Date: 25-Jun-2020 23:10:32
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: AFEFF5
Worklist#: 389621
Sample Line#: 8
Column Type: DB-5
Column Dia: 0.32 mm

OCDF

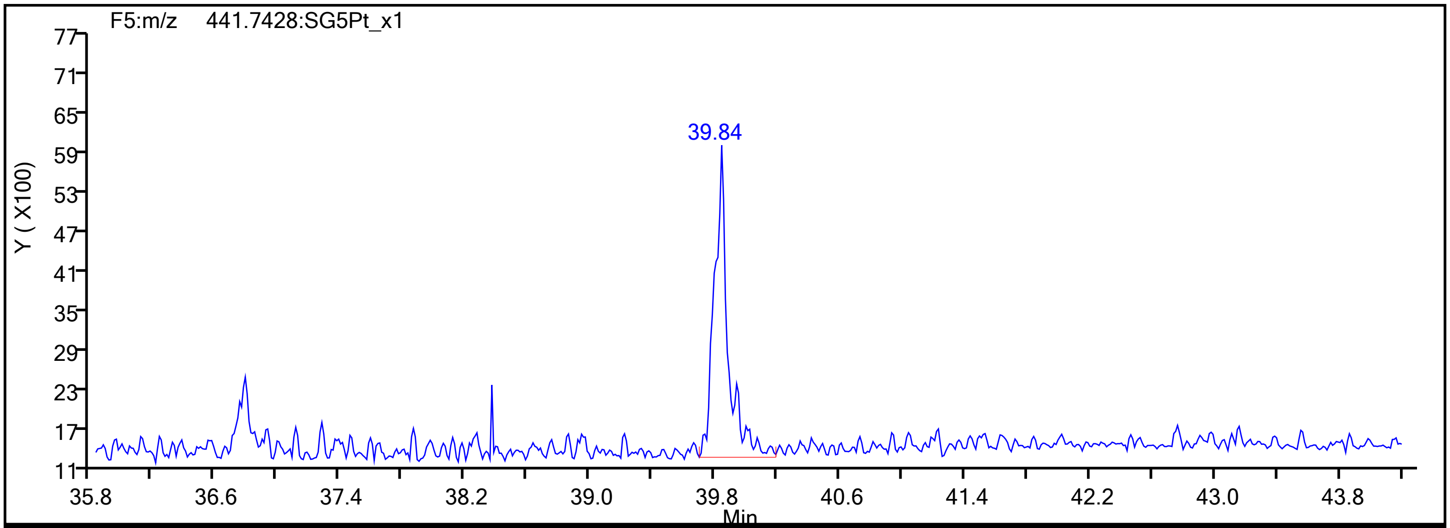

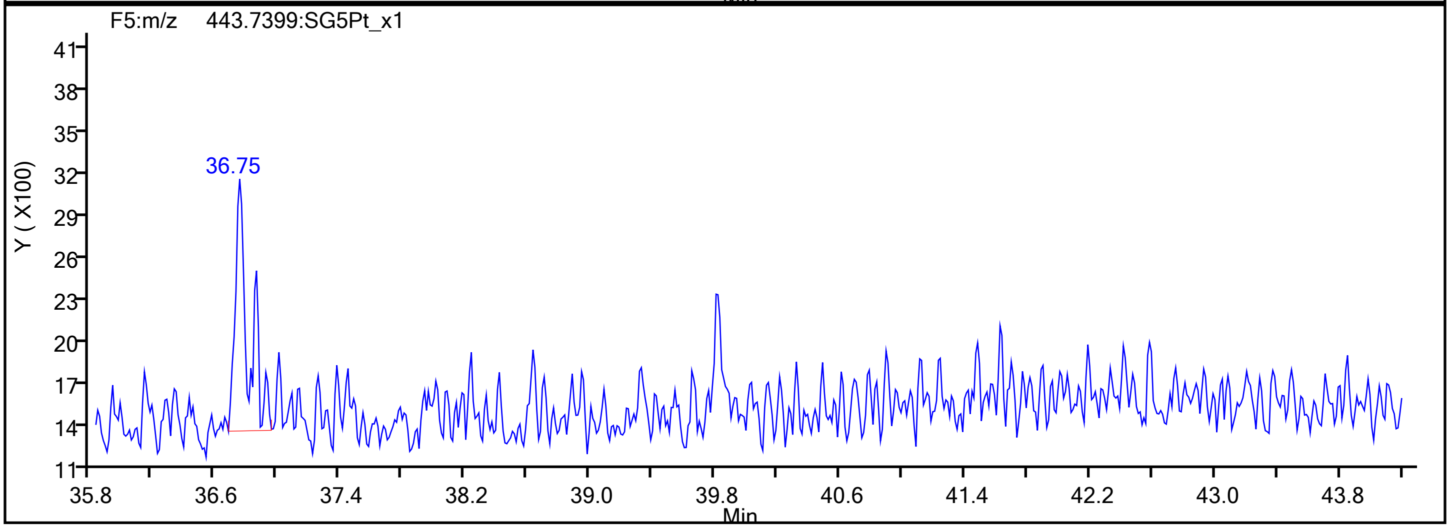

OCDF Interference Mass

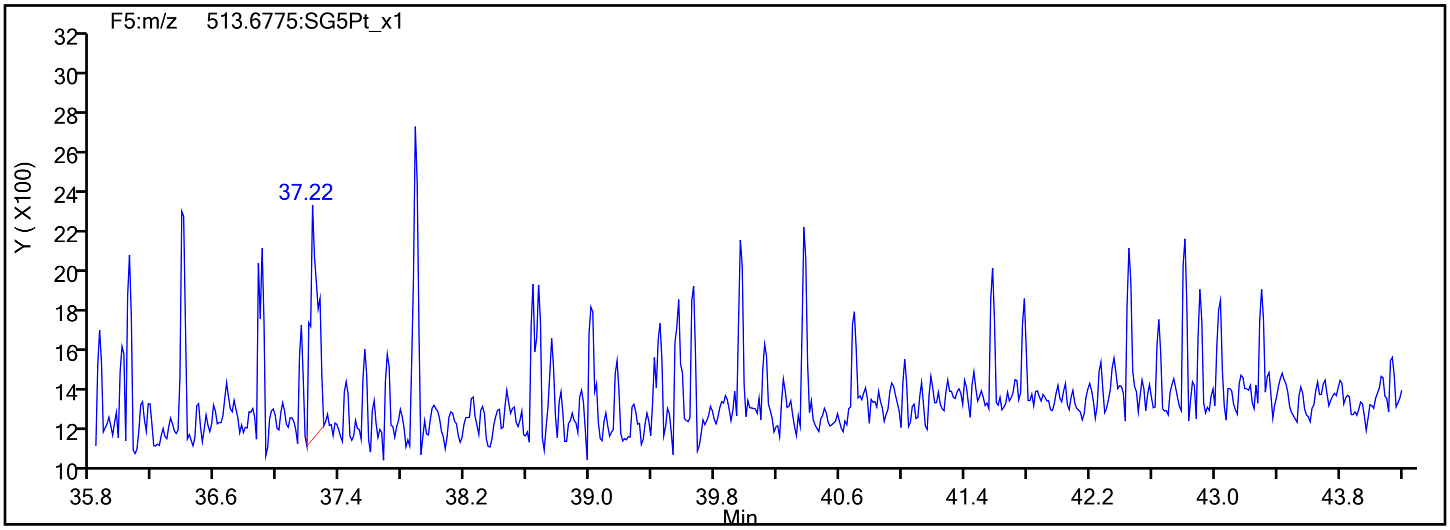

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

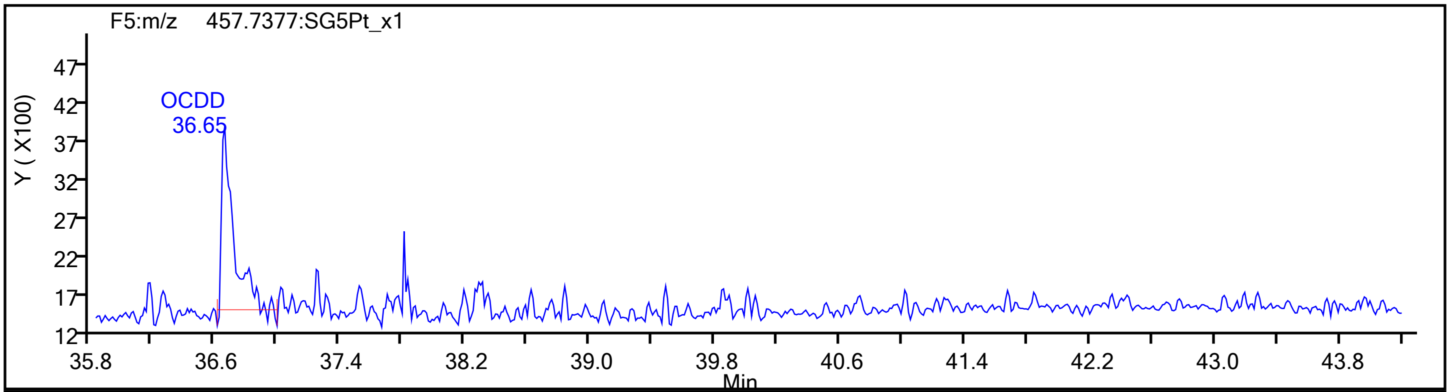

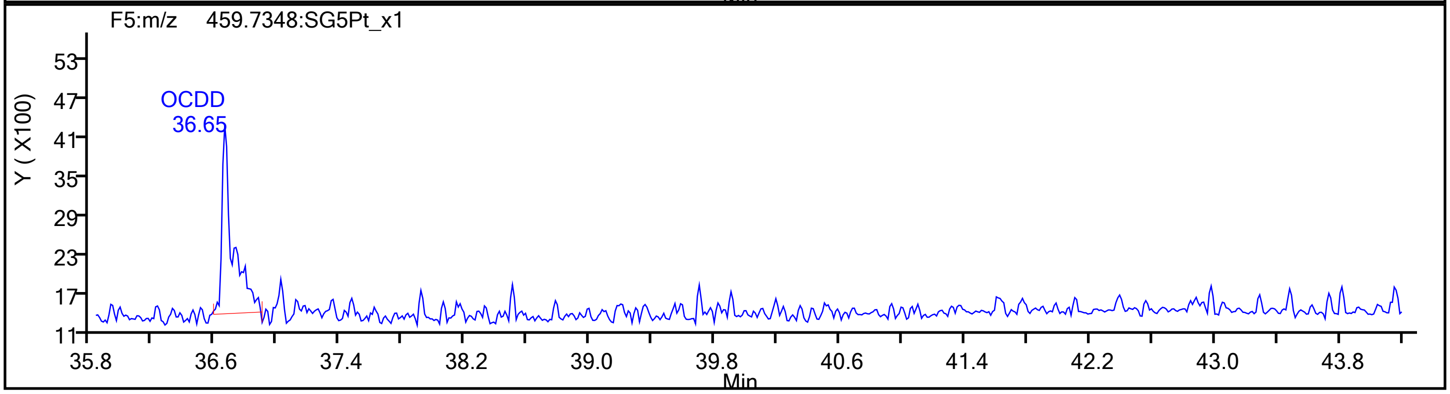

OCDD Standards

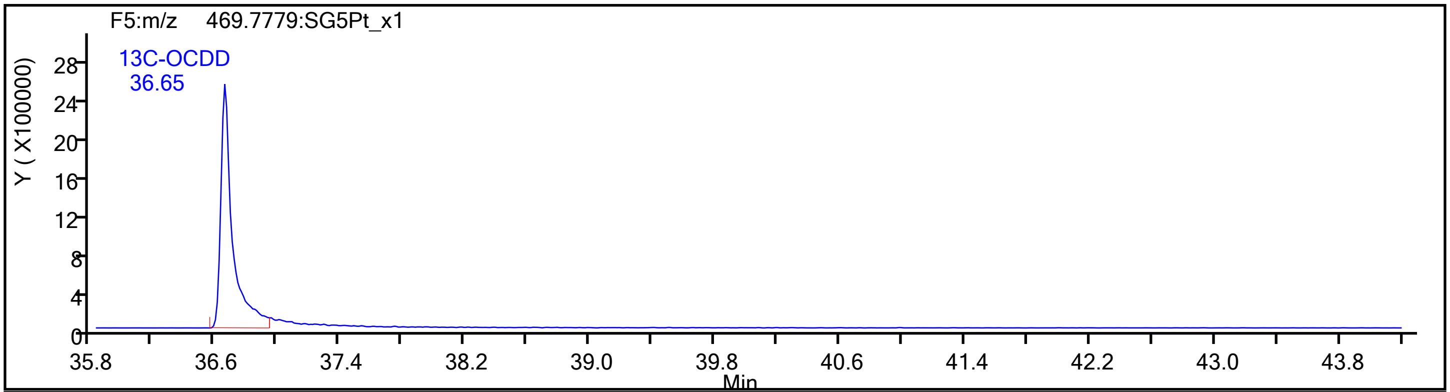

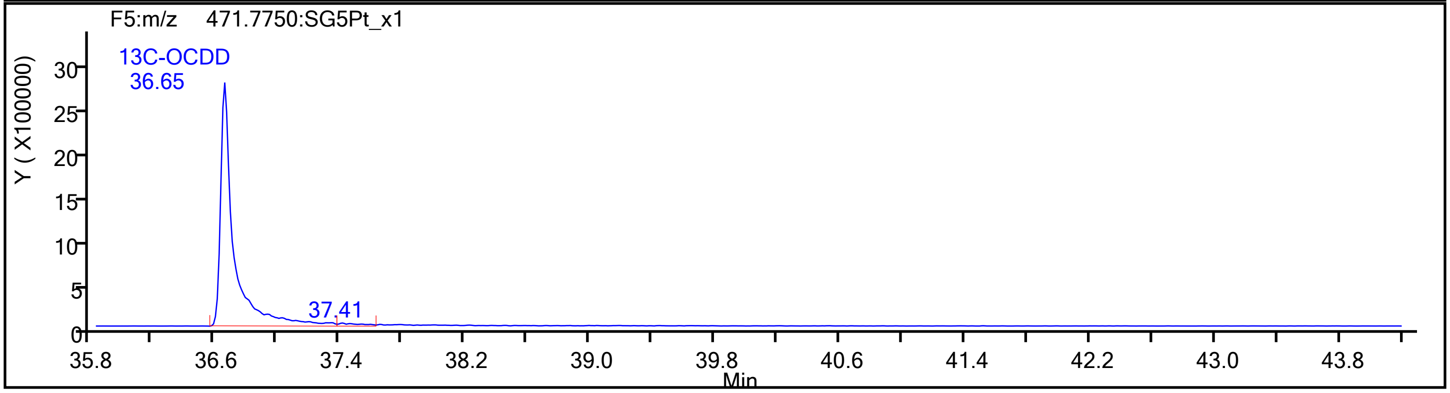

Report Date: 26-Jun-2020 13:16:12 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d		
Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

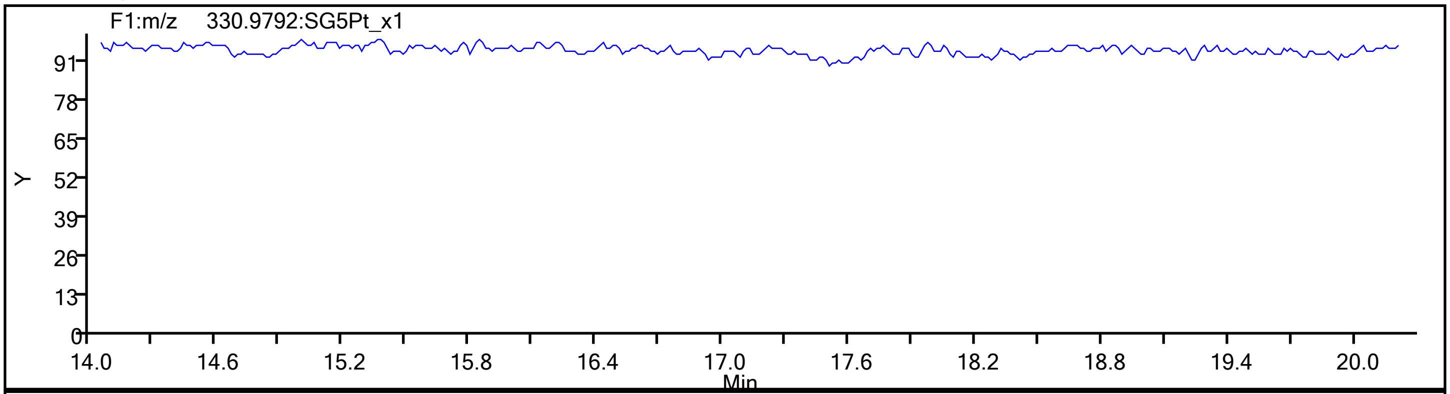

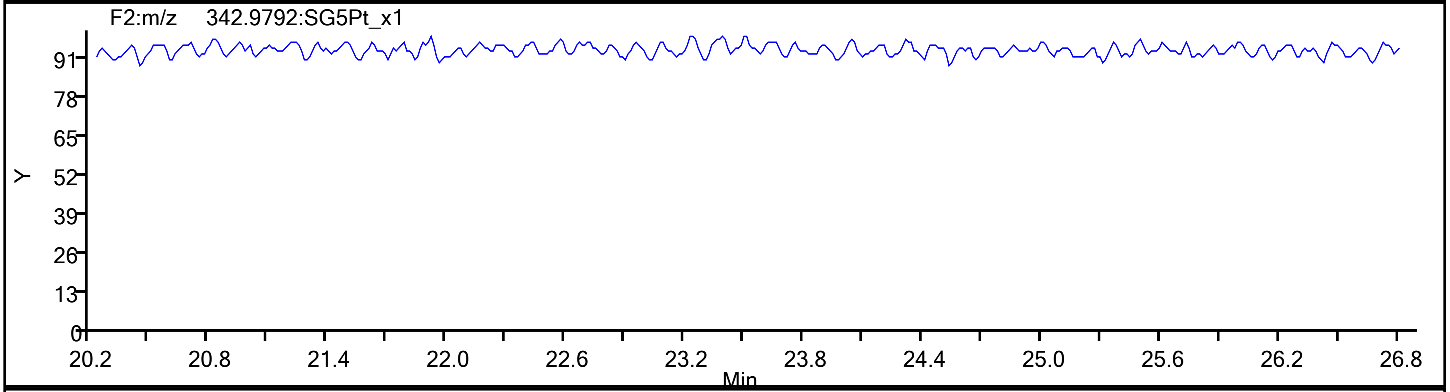

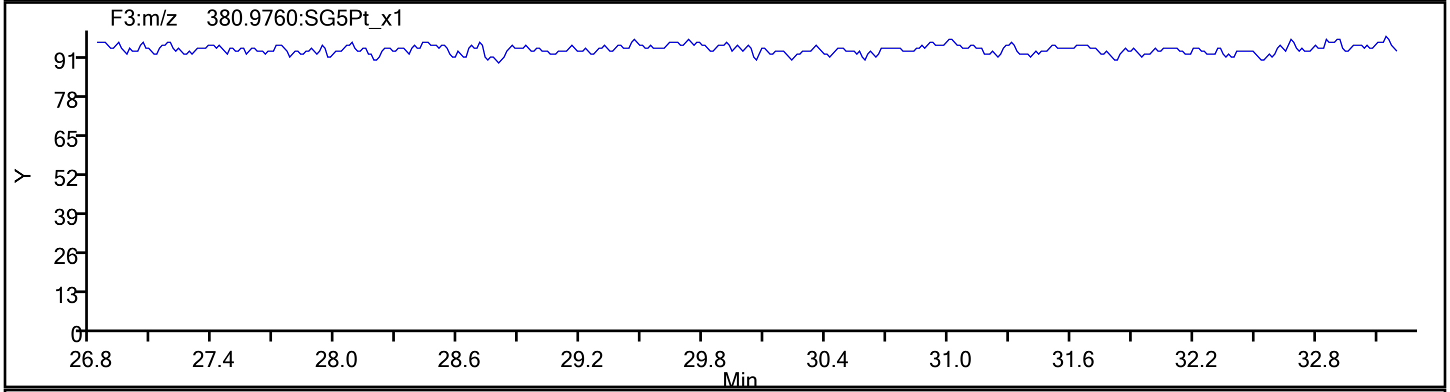

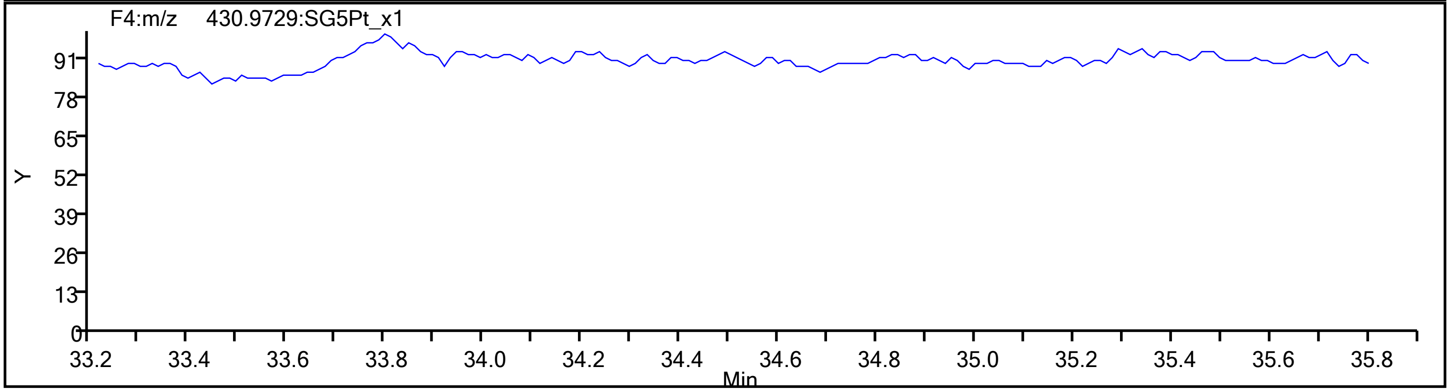

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_8.d

Injection Date:	25-Jun-2020 23:10:32	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF5		
Worklist#:	389621	Sample Line#:	8
Column Type:	DB-5	Column Dia:	0.32 mm

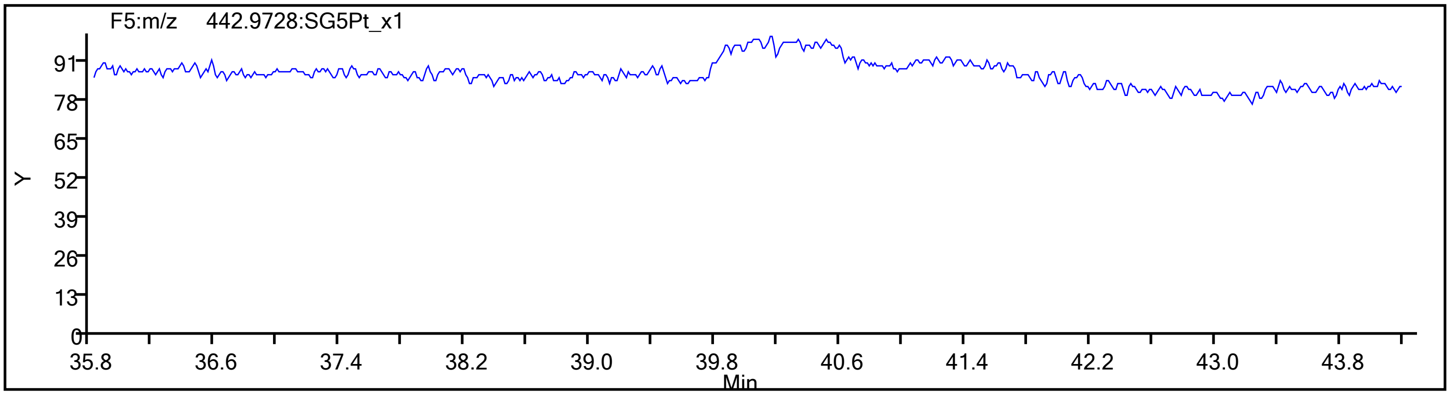

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: AFEFF10	Lab Sample ID: 600-205895-3
Matrix: Water	Lab File ID: 25JN2010D5_9.d
Analysis Method: 1613B	Date Collected: 05/28/2020 16:00
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 993.7(mL)	Date Analyzed: 06/25/2020 23:55
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.72
51207-31-9	2,3,7,8-TCDF	3.4	J q	10	0.56
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.81
57117-41-6	1,2,3,7,8-PeCDF	5.4	J	50	0.86
57117-31-4	2,3,4,7,8-PeCDF	2.1	J	50	0.77
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	50	0.69
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.70
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.63
70648-26-9	1,2,3,4,7,8-HxCDF	6.7	J	50	1.1
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	1.0
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.92
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.3	J	50	0.69
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.6	J B	50	0.51
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.62
3268-87-9	OCDD	8.3	J B q	100	0.90
39001-02-0	OCDF	2.3	J B q	100	1.1
41903-57-5	Total TCDD	3.6	J B q	10	0.72
30402-14-3	Total TCDF	5.6	J q	10	0.56
36088-22-9	Total PeCDD	ND		50	0.81
30402-15-4	Total PeCDF	12	J B q	50	0.82
34465-46-8	Total HxCDD	1.4	J	50	0.67
55684-94-1	Total HxCDF	6.7	J	50	1.0
37871-00-4	Total HpCDD	1.3	J	50	0.69
38998-75-3	Total HpCDF	5.5	J B q	50	0.56

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Client Sample ID: AFEFF10 Lab Sample ID: 600-205895-3

Matrix: Water Lab File ID: 25JN2010D5_9.d

Analysis Method: 1613B Date Collected: 05/28/2020 16:00

Extract. Method: 1613B Date Extracted: 06/24/2020 12:40

Sample wt/vol: 993.7(mL) Date Analyzed: 06/25/2020 23:55

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 389621 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	43		25-164
89059-46-1	13C-2,3,7,8-TCDF	36		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	40		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	35		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	40		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	39		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	48		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	42		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	40		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	37		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	37		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	45		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	42		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	46		26-138
114423-97-1	13C-OCDD	45		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	53		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Lims ID: 600-205895-C-3-C
Client ID: AFEFF10
Sample Type: Client
Inject. Date: 25-Jun-2020 23:55:43 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-C-3-C 600-205895-C-3-C
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:05:37

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.566	62283154	0.77	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.082	27077214	0.77	1.1970	36.3	36.3	0.1325	0.1325	36.32	
2,3,7,8-TCDF	17.097	35193	0.77	0.7672	0.1917	0.1694	0.0277	0.0277		RQ
A Non-2,3,7,8-sub-TCDF	16.810	22303	0.89	0.7672	0.1074	0.1074	0.0277	0.1074		
S Total TCDF					0.2991	0.2768	0.0277	0.0277		RQ
D 13C-2,3,7,8-TCDD	17.763	23535728	0.78	0.8773	43.1	43.1	0.2000	0.2000	43.07	
2,3,7,8-TCDD	17.793						0.0356	0.0356		
$ 37Cl4-2,3,7,8-TCDD	17.778	12607084		0.9515	21.3	21.3	0.0335	0.0335	53.19	
A Non-2,3,7,8-sub-TCDD	17.256	42636	0.77	1.0000	0.2045	0.1812	0.0356	0.1083		RQM
S Total TCDD					0.2045	0.1812	0.0356	0.0356		RQ
D 13C-1,2,3,7,8-PeCDF	21.971	21303425	1.58	0.9904	34.5	34.5	0.1485	0.1485	34.53	
1,2,3,7,8-PeCDF	22.012	51397	1.69	0.9019	0.2675	0.2675	0.0428	0.0428		
D 13C-2,3,4,7,8-PeCDF	23.280	27035554	1.58	1.0797	40.2	40.2	0.1362	0.1362	40.20	
2,3,4,7,8-PeCDF	23.308	23006	1.75	0.8307	0.1024	0.1024	0.0382	0.0382		
A F1 PeCDFs	19.675						0.0350	0.0350		
A Non-2,3,7,8-sub-PeCDF	22.743	44087	1.55	0.8663	0.2450	0.2106	0.0402	0.1380		RQ
S Total PeCDF					0.6149	0.5805	0.0405	0.0405		RQ
D 13C-1,2,3,7,8-PeCDD	23.989	17268651	1.56	0.6904	40.2	40.2	0.0814	0.0814	40.16	
1,2,3,7,8-PeCDD	24.044						0.0402	0.0402		
A Non-2,3,7,8-sub-PeCDD	22.953						0.0402	0.0402		
S Total PeCDD							0.0402	0.0402		
D 13C-1,2,3,4,7,8-HxCDF	30.113	15237142	0.48	0.9076	41.8	41.8	0.4479	0.4479	41.77	
1,2,3,4,7,8-HxCDF	30.140	40088	1.08	0.7928	0.3319	0.3319	0.0531	0.0531		M
D 13C-1,2,3,6,7,8-HxCDF	30.326	14040787	0.50	0.8671	40.3	40.3	0.4688	0.4688	40.29	
1,2,3,6,7,8-HxCDF	30.366						0.0568	0.0568		MU
D 13C-2,3,4,6,7,8-HxCDF	31.245	12158851	0.50	0.8287	36.5	36.5	0.4906	0.4906	36.51	
2,3,4,6,7,8-HxCDF	31.285						0.0458	0.0458		
D 13C-1,2,3,7,8,9-HxCDF	32.110	10959147	0.50	0.7391	36.9	36.9	0.5500	0.5500	36.89	
1,2,3,7,8,9-HxCDF	32.137						0.0503	0.0503		
A Non-2,3,7,8-sub-HxCDF	29.847						0.0511	0.0511		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					0.3319	0.3319	0.0515	0.0515		
* 13C-1,2,3,7,8,9-HxCDD	31.910	40189787	1.25	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	13110259	1.23	0.8335	39.1	39.1	0.4934	0.4934	39.14	
1,2,3,4,7,8-HxCDD	31.444	7777	1.31	0.8332	0.0712	0.0712	0.0342	0.0342		M
D 13C-1,2,3,6,7,8-HxCDD	31.564	15991307	1.25	0.8228	48.4	48.4	0.4998	0.4998	48.36	
1,2,3,6,7,8-HxCDD	31.604						0.0349	0.0349		
1,2,3,7,8,9-HxCDD	31.950						0.0315	0.0315		
A Non-2,3,7,8-sub-HxCDD	30.499						0.0334	0.0334		
S Total HxCDD					0.0712	0.0712	0.0335	0.0335		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	11733050	0.43	0.7009	41.7	41.7	1.557	1.557	41.65	
1,2,3,4,6,7,8-HpCDF	33.602	27743	0.94	1.3295	0.1779	0.1779	0.0254	0.0254		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	13461649	0.43	0.7244	46.2	46.2	1.506	1.506	46.24	
1,2,3,4,7,8,9-HpCDF	34.659						0.0307	0.0307		
A Non-2,3,7,8-sub-HpCDF	34.143	14397	1.04	1.2049	0.1056	0.0949	0.0277	0.0949		RQ
S Total HpCDF					0.2835	0.2727	0.0280	0.0280		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	34.368	12760208	1.03	0.7026	45.2	45.2	0.6698	0.6698	45.19	
1,2,3,4,6,7,8-HpCDD	34.380	7983	0.97	1.0040	0.0623	0.0623	0.0344	0.0344		M
A Non-2,3,7,8-sub-HpCDD	34.119						0.0344	0.0344		
S Total HpCDD					0.0623	0.0623	0.0344	0.0344		
D 13C-OCDD	36.664	22308858	0.91	0.6184	89.8	89.8	0.3239	0.3239	44.88	
OCDF	36.760	14358	0.89	1.1076	0.1331	0.1162	0.0537	0.0537		RQM
OCDD	36.688	46713	0.89	1.0175	0.4520	0.4116	0.0446	0.0446		RQ

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected

Report Date: 26-Jun-2020 13:16:13 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Lims ID: 600-205895-C-3-C
Client ID: AFEFF10
Sample Type: Client
Inject. Date: 25-Jun-2020 23:55:43 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-C-3-C 600-205895-C-3-C
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:05:37

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.566	17.581	-1		27187974	6548399	5202	13005	1259		
333.9339	17.566	17.581	-1		35095180	8399279	5290	13225	1588	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	11811418	2684165	4680	11700	574		
317.9389	17.082	17.082	0	0.972	15265796	3467093	4802	12005	722	0.77(0.65-0.89)	
2,3,7,8-TCDF											RQ
303.9016	17.097	17.097	0	1.001	15310	2772	181	452	15		
305.8987	17.097	17.097	0	1.001	24519	6239	342	855	18	0.62(0.65-0.89)	
	Empc Correction				19883	3600	342	855	11		
A Non-2,3,7,8-sub-TCDF											
303.9016	16.735	16.810	-5	0.980	10475	1777	181	452	10		
305.8987	16.735	16.810	-5	0.980	11828	2719	342	855	8	0.89(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.763	17.778	-1	1.011	10313441	2234590	5202	13005	430		
333.9339	17.763	17.778	-1	1.011	13222287	2907020	5290	13225	550	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793						457	1142			
321.8936	17.793						276	690			
37Cl4-2,3,7,8-TCDD											
327.8847	17.778	17.793	-1	1.012	12607084	2800061	1904	4760	1471		
A Non-2,3,7,8-sub-TCDD											RQM
319.8965	15.616	17.256	-98	0.879	11087	3271	457	1142	7		
321.8936	15.616	17.256	-98	0.879	18164	4332	276	690	16	0.61(0.65-0.89)	
	Empc Correction				14398	4248	276	690	15		

Report Date: 26-Jun-2020 13:16:13 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	15.903	17.256	-81	0.895	9189	2224	457	1142	5		M
	Empc Correction				7461	2104	457	1142	5		
321.8936	15.903	17.256	-81	0.895	9690	2733	276	690	10	0.95(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.971	21.999	-2	1.251	13049846	2105869	5878	14695	358		
353.8970	21.971	21.999	-2	1.251	8253579	1367953	2914	7285	469	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.012	22.012	0	1.002	32303	4856	268	670	18		
341.8567	21.999	22.012	-1	1.001	19094	3277	268	670	12	1.69(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.280	23.308	-2	1.325	16553179	2592128	5878	14695	441		
353.8970	23.280	23.308	-2	1.325	10482375	1628796	2914	7285	559	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.308	23.321	-1	1.001	14632	2504	268	670	9		
341.8567	23.294	23.321	-2	1.001	8374	1709	268	670	6	1.75(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.675						147	367			
341.8567	19.675						319	797			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	20.689	22.743	-123	0.942	17567	3065	268	670	11		
341.8567	20.676	22.743	-124	0.941	16219	2271	268	670	8	1.08(1.32-1.78)	
	Empc Correction				11333	1977	268	670	7		
339.8597	22.476	22.743	-16	1.023	11548	1303	268	670	5		
	Empc Correction				9231	2131	268	670	8		
341.8567	22.530	22.743	-13	1.025	5956	1375	268	670	5	1.94(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	23.989	24.017	-2	1.366	10524927	1515784	2052	5130	739		
369.8919	23.989	24.017	-2	1.366	6743724	976271	1309	3272	746	1.56(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.044						238	595			
357.8516	24.044						169	422			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						238	595			
357.8516	22.953						169	422			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.944	4961647	761821	4353	10882	175		
385.8610	30.113	30.140	-2	0.944	10275495	1555972	8740	21850	178	0.48(0.43-0.59)	
1,2,3,4,7,8-HxCDF											M
373.8208	30.140	30.153	-1	1.001	20786	3400	226	565	15		a
375.8178	30.100	30.153	-3	1.000	19302	2559	164	410	16	1.08(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.326	30.340	-1	0.950	4670922	642882	4353	10882	148		
385.8610	30.326	30.340	-1	0.950	9369865	1355994	8740	21850	155	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											MU
373.8208	30.366						226	565			
375.8178	30.366						164	410			

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.245	31.258	-1	0.979	4036688	784172	4353	10882	180		
385.8610	31.245	31.258	-1	0.979	8122163	1608912	8740	21850	184	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.285						226	565			
375.8178	31.285						164	410			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.110	32.123	-1	1.006	3665830	748034	4353	10882	172		
385.8610	32.110	32.123	-1	1.006	7293317	1420197	8740	21850	162	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.137						226	565			
375.8178	32.137						164	410			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						226	565			
375.8178	29.847						164	410			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.910	31.924	-1		22359214	4474505	7084	17710	632		
403.8529	31.910	31.924	-1		17830573	3577435	6162	15405	581	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.986	7230359	1786854	7084	17710	252		
403.8529	31.458	31.471	-1	0.986	5879900	1467119	6162	15405	238	1.23(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	31.444	31.484	-2	1.000	4411	1464	209	522	7		M
391.8127	31.444	31.484	-2	1.000	3366	1146	162	405	7	1.31(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.564	31.577	-1	0.989	8869070	1647675	7084	17710	233		
403.8529	31.564	31.577	-1	0.989	7122237	1325250	6162	15405	215	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.604						209	522			
391.8127	31.604						162	405			
1,2,3,7,8,9-HxCDD											
389.8157	31.950						209	522			
391.8127	31.950						162	405			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						209	522			
391.8127	30.499						162	405			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.053	3516879	889461	10346	25865	86		
419.8220	33.590	33.590	0	1.053	8216171	2136164	24793	61982	86	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.602	33.602	0	1.000	13441	4301	209	522	21		M
409.7789	33.602	33.602	0	1.000	14302	3740	199	497	19	0.94(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.086	4043526	929390	10346	25865	90		
419.8220	34.647	34.659	-1	1.086	9418123	2147970	24793	61982	87	0.43(0.37-0.51)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659						209	522			
409.7789	34.659						199	497			
A Non-2,3,7,8-sub-HpCDF											RQ
407.7818	33.894	34.143	-15	1.009	7340	2006	209	522	10		
409.7789	33.894	34.143	-15	1.009	8690	2157	199	497	11	0.84(0.88-1.20)	
	Empc Correction				7057	1928	199	497	10		
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.368	34.380	-1	1.077	6478901	1539843	8427	21067	183		
437.8140	34.368	34.380	-1	1.077	6281307	1460810	6729	16822	217	1.03(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.380	34.380	0	1.000	3934	1242	222	555	6		M
425.7737	34.392	34.380	1	1.001	4049	1428	193	482	7	0.97(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						222	555			
425.7737	34.119						193	482			
13C-OCDD											
469.7779	36.664	36.676	-1	1.149	10644567	1981707	2805	7012	706		
471.7750	36.664	36.676	-1	1.149	11664291	2206863	3646	9115	605	0.91(0.76-1.02)	
OCDF											RQM
441.7428	36.760	36.772	-1	1.003	8852	1902	187	467	10		
	Empc Correction				6761	1421	187	467	8		
443.7399	36.772	36.772	0	1.003	7597	1597	311	777	5	1.17(0.76-1.02)	M
OCDD											RQ
457.7377	36.688	36.688	0	1.001	26580	4049	180	450	22		
	Empc Correction				21997	3801	180	450	21		
459.7348	36.676	36.688	-1	1.000	24716	4271	200	500	21	1.08(0.76-1.02)	

QC Flag Legend

Processing Flags

- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags

- M - Manually Integrated
- U - Marked Undetected

Report Date: 26-Jun-2020 13:16:13 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Lims ID: 600-205895-C-3-C
Client ID: AFEFF10
Inject. Date: 25-Jun-2020 23:55:43 Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 389621 Lims Sample ID: 9

Non-2,3,7,8-sub-TCDF, RT: 16.810

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.767	D 13C-2,3,7,8-TCDF	100.000	27077214	6151258

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.767		100.000	27077214	6151258

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.735	10475	1777	11828	2719	0.1074	0.89	
Signal Totals:							
	10475	1777	11828	2719			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	22303	4496				0.89	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1074 = (22303 * 100.000) / (27077214 * 0.767)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Lims ID: 600-205895-C-3-C
Client ID: AFEFF10
Inject. Date: 25-Jun-2020 23:55:43
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 389621
Lims Sample ID: 9

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	23535728	5141610

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	23535728	5141610

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	11087	3271	18164	4332	0.1243	0.61	RQ
15.616	11087	3271	14398	4248	0.1083		Empc Correction
15.903	9189	2224	9690	2733	0.0802	0.95	RQM
15.903	7461	2104	9690	2733	0.0729		Empc Correction
Signal Totals:							
	18548	5375	24088	6981			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	48130	12560				0.73	RQM
	42636	12356					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2045 = (48130 * 100.000) / (23535728 * 1.000)
Empc Amount: 0.1812 = (42636 * 100.000) / (23535728 * 1.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
M - Manually Integrated

Report Date: 26-Jun-2020 13:16:13 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d		
Lims ID:	600-205895-C-3-C		
Client ID:	AFEFF10		
Inject. Date:	25-Jun-2020 23:55:43	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	9

Non-2,3,7,8-sub-PeCDF, RT: 22.743

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902	D 13C-1,2,3,7,8-PeCDF	100.000	21303425	3473822
2,3,4,7,8-PeCDF	0.831	D 13C-2,3,4,7,8-PeCDF	100.000	27035554	4220924

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.866		100.000	24169489	3847373

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.689	17567	3065	16219	2271	0.1614	1.08	RQ
20.689	17567	3065	11333	1977	0.1380		Empc Correction
22.476	11548	1303	5956	1375	0.0836	1.94	RQ
22.476	9231	2131	5956	1375	0.0725		Empc Correction
Signal Totals:							
	26798	5196	17289	3352			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	51290	8014				1.31	RQ
	44087	8548					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.2450 = (51290 * 100.000) / (24169489 * 0.866)
Empc Amount: 0.2106 = (44087 * 100.000) / (24169489 * 0.866)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d		
Lims ID:	600-205895-C-3-C		
Client ID:	AFEFF10		
Inject. Date:	25-Jun-2020 23:55:43	Dil. Factor:	1.0000
Sample Type:	Client Sample		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	9

Non-2,3,7,8-sub-HpCDF, RT: 34.143

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDF	1.329	D 13C-1,2,3,4,6,7,8-HpCDF	100.000	11733050	3025625
1,2,3,4,7,8,9-HpCDF	1.080	D 13C-1,2,3,4,7,8,9-HpCDF	100.000	13461649	3077360

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.205		100.000	12597349	3051492

Sum the Uncalibrated Results

RT	407.7818 Area	407.7818 Height	409.7789 Area	409.7789 Height	Amount	Ratio	Flags
33.894	7340	2006	8690	2157	0.1056	0.84	RQ
33.894	7340	2006	7057	1928	0.0949		Empc Correction
Signal Totals:							
	7340	2006	7057	1928			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	16030	4163				0.84	RQ
	14397	3934					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1056 = (16030 * 100.000) / (12597349 * 1.205)
Empc Amount: 0.0949 = (14397 * 100.000) / (12597349 * 1.205)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d				
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.60- 18.91)

Signal: 1

Processing Integration Results

RT = 15.903 Area = 10959

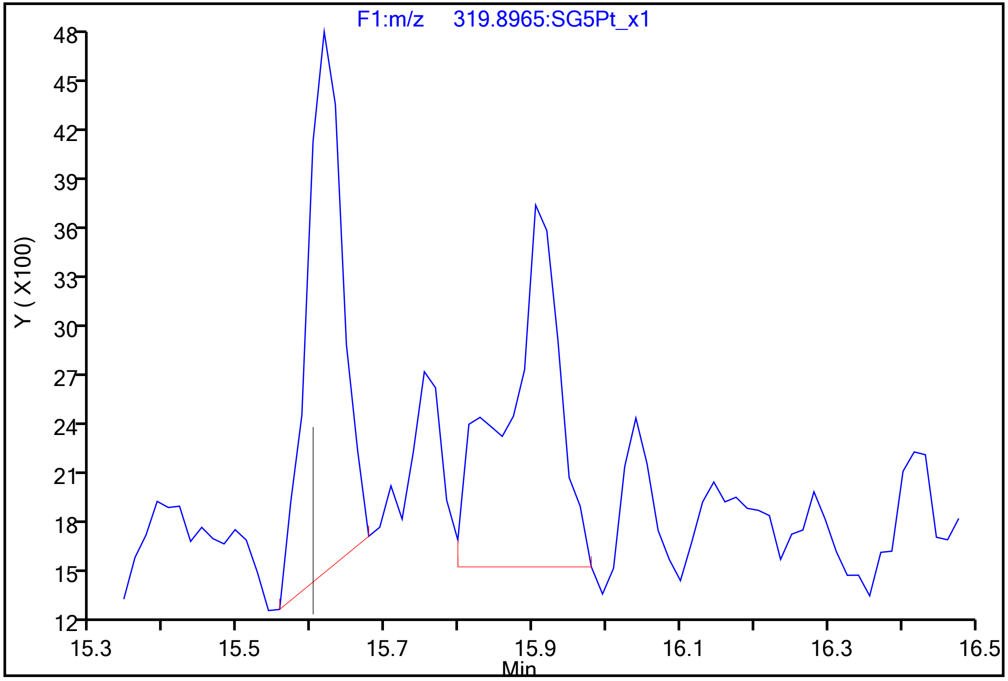

Manual Integration Results

RT = 15.903 Area = 9189 M

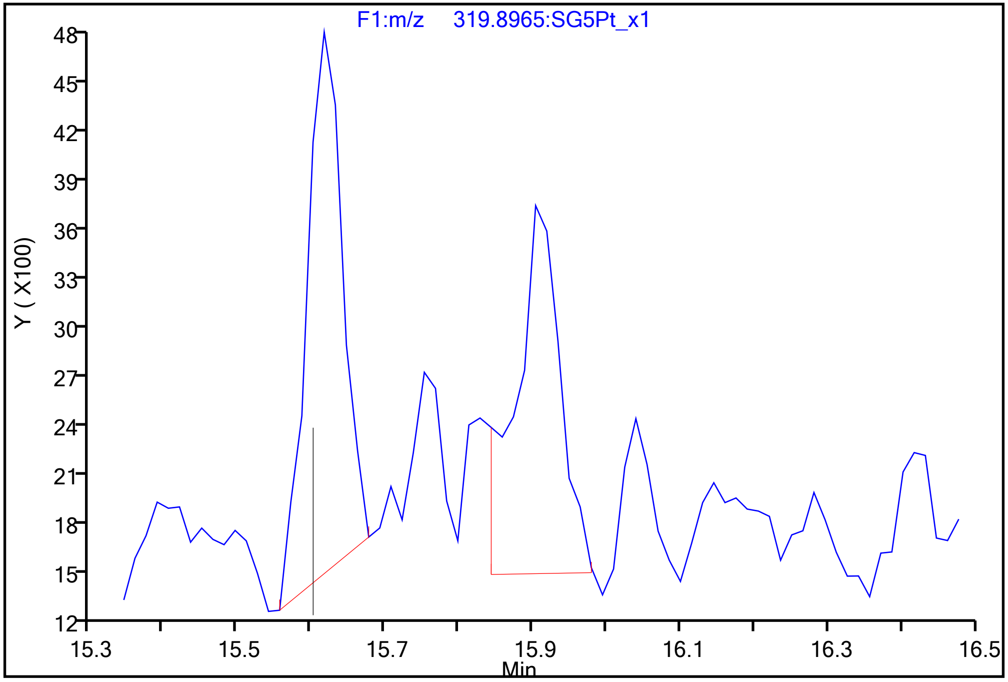

Reviewer: arghestanis, 26-Jun-2020 13:01:38

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d				
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 1

Processing Integration Results

Not Detected
Expected RT: 30.15

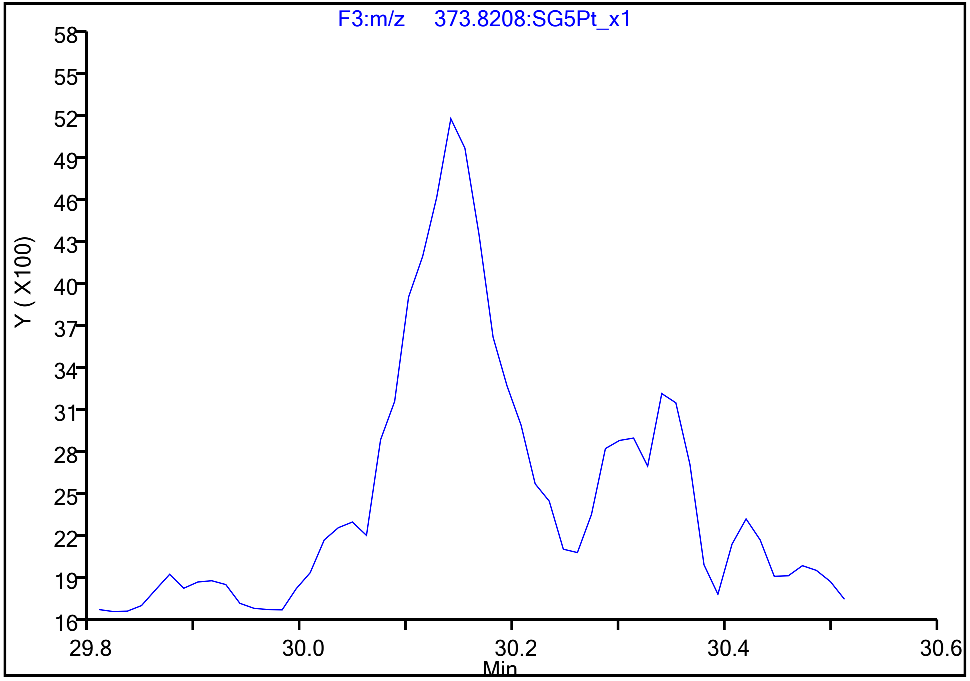

Manual Integration Results

RT: 30.14
Area: 20786
Amount: 0.331852
Amount Units: pg/ul

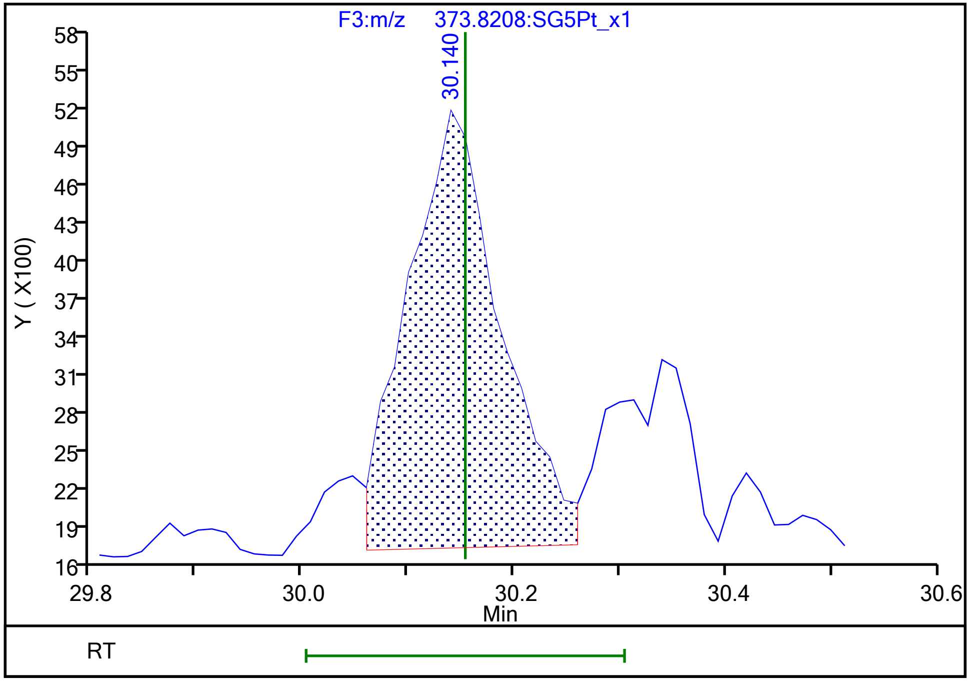

Reviewer: arghestanis, 26-Jun-2020 13:02:12

Audit Action: Assigned Compound ID Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Injection Date: 25-Jun-2020 23:55:43
Instrument ID: 10D5
Lims ID: 600-205895-C-3-C
Lab Sample ID: 320-205895-3
Client ID: AFEFF10
Operator ID: AJS
ALS Bottle#: 9
Worklist Smp#: 9
Injection Vol: 2.0 ul
Dil. Factor: 1.0000
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Column: DB-5 (0.32 mm)
Detector F3:HRSIR

1,2,3,4,7,8-HxCDF, CAS: 70648-26-9

Signal: 2

Not Detected
Expected RT: 30.15

Processing Integration Results

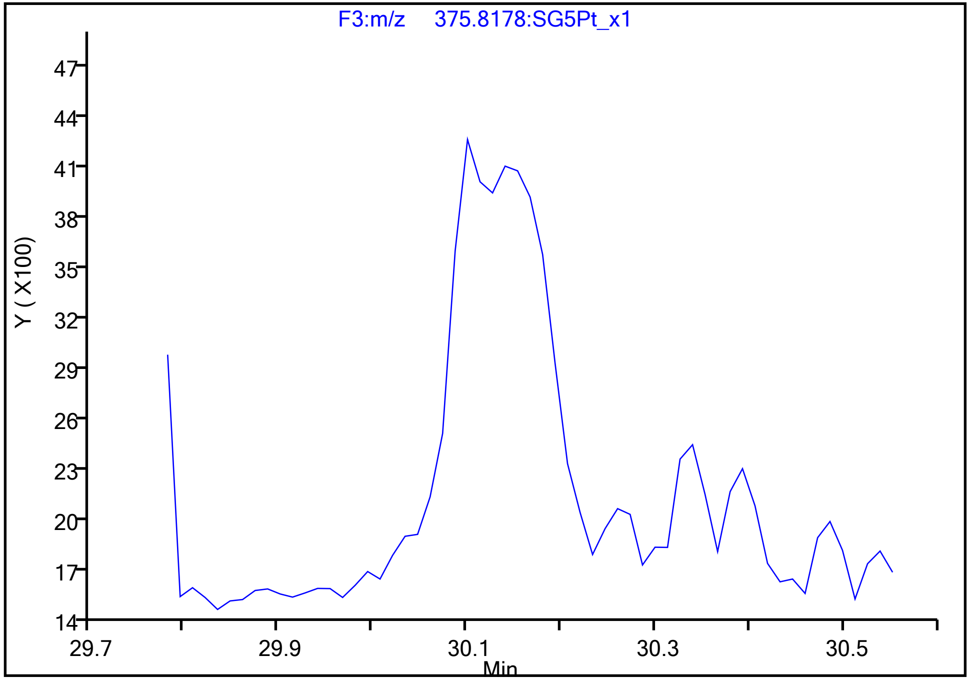

RT: 30.10
Area: 19302
Amount: 0.331852
Amount Units: pg/ul

Manual Integration Results

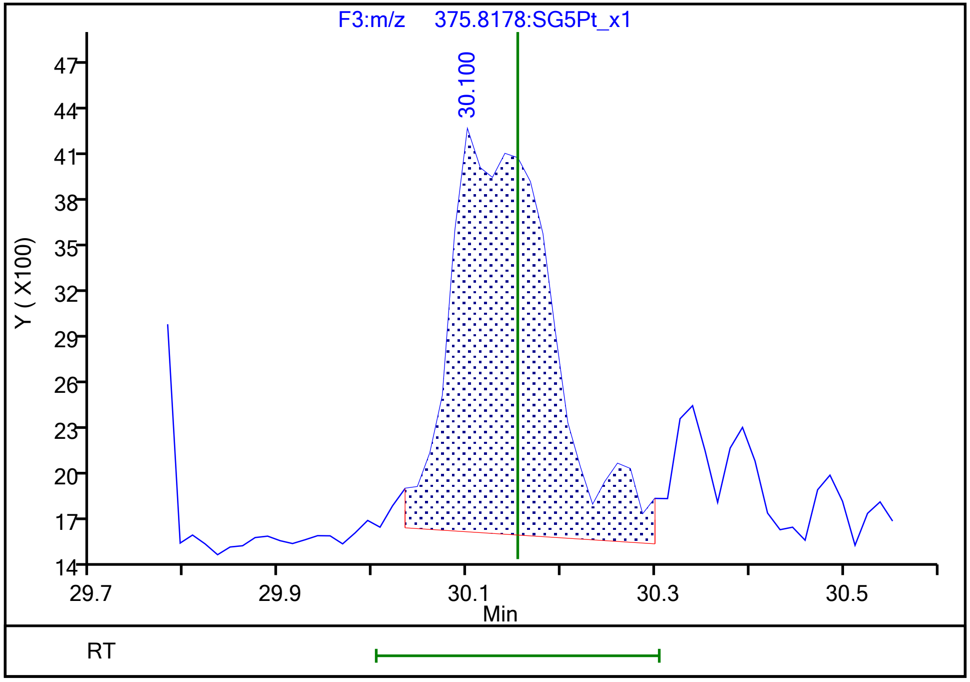

Reviewer: arghestanis, 26-Jun-2020 13:02:38
Audit Action: Manually Integrated
Audit Reason: Missed Peak

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date: 25-Jun-2020 23:55:43

Instrument ID: 10D5

Lims ID: 600-205895-C-3-C

Lab Sample ID: 320-205895-3

Client ID: AFEFF10

Operator ID: AJS

ALS Bottle#: 9

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm)

Detector F3:HRSIR

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

RT: 31.44

Area: 7433

Amount: 0.121382

Amount Units: pg/ul

Processing Integration Results

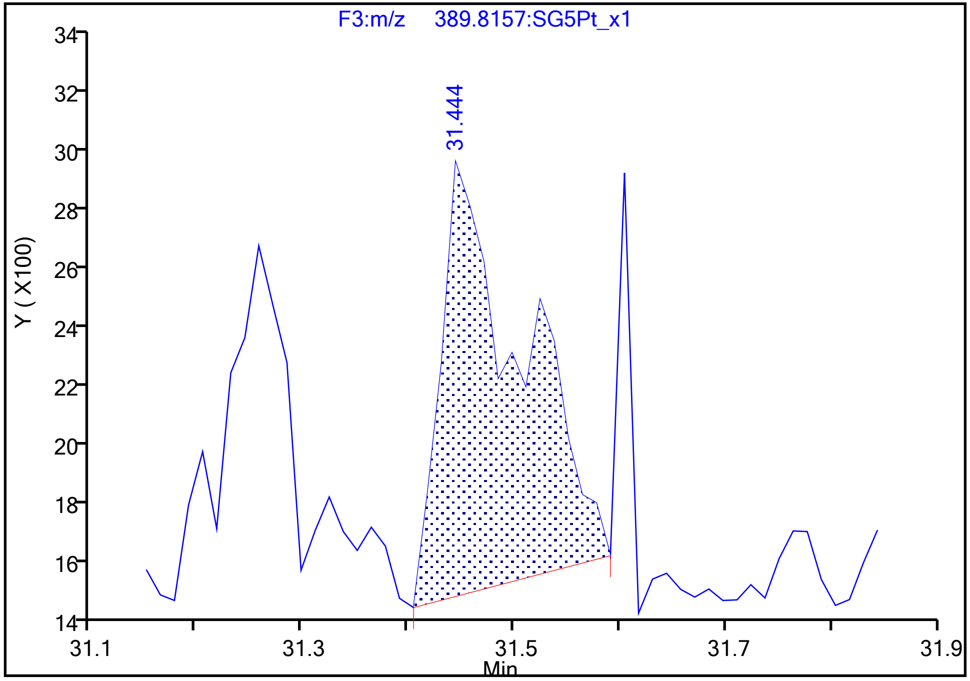

RT: 31.44

Area: 4411

Amount: 0.071196

Amount Units: pg/ul

Manual Integration Results

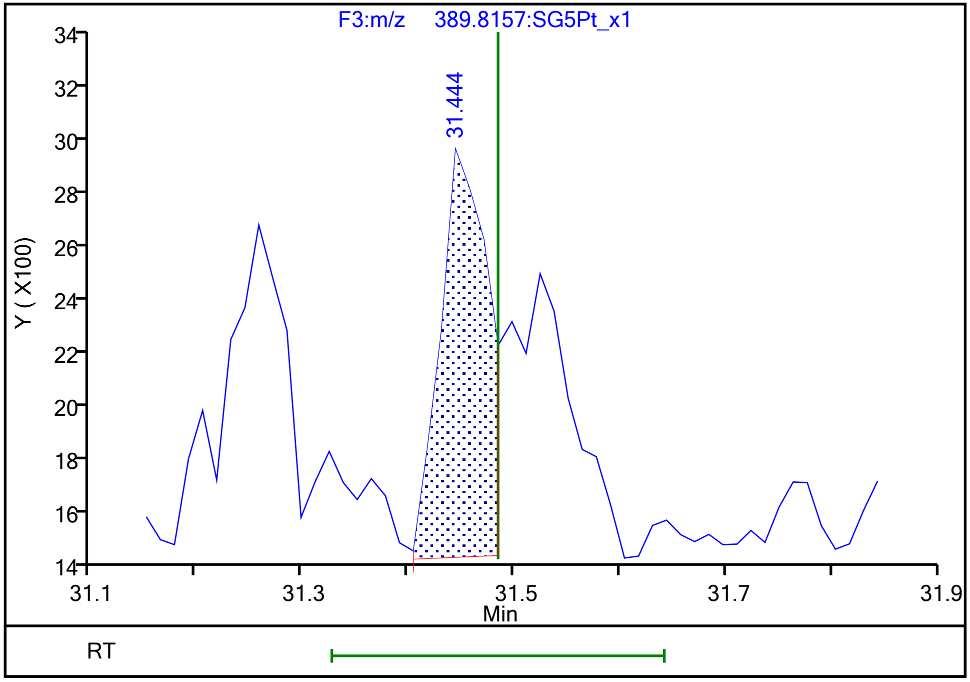

Reviewer: arghestanis, 26-Jun-2020 13:03:45

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d				
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT: 31.44
Area: 5826
Amount: 0.121382
Amount Units: pg/ul

Processing Integration Results

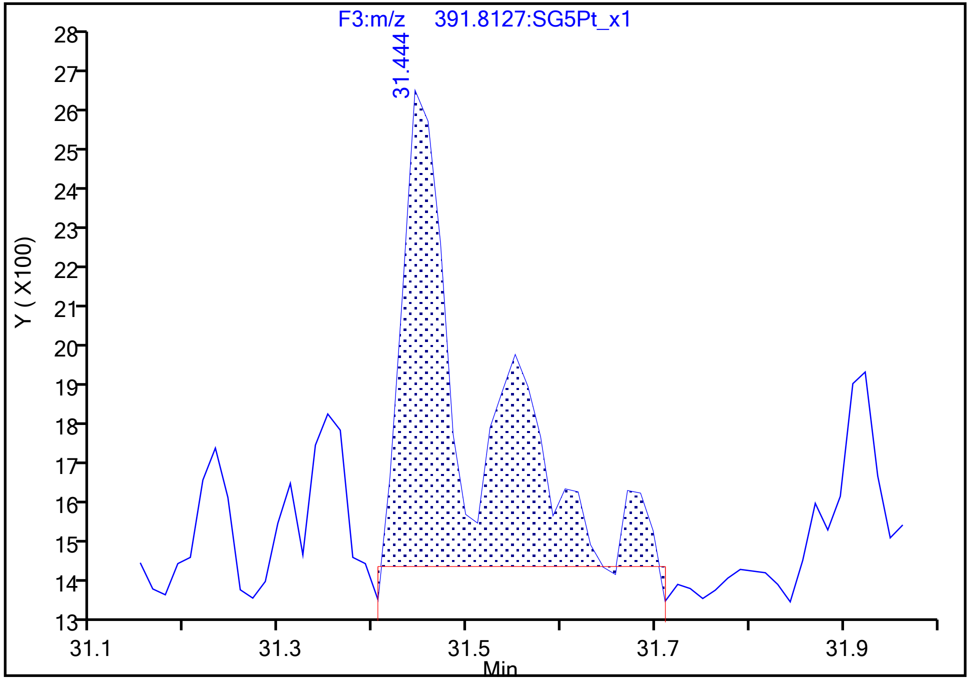

RT: 31.44
Area: 3366
Amount: 0.071196
Amount Units: pg/ul

Manual Integration Results

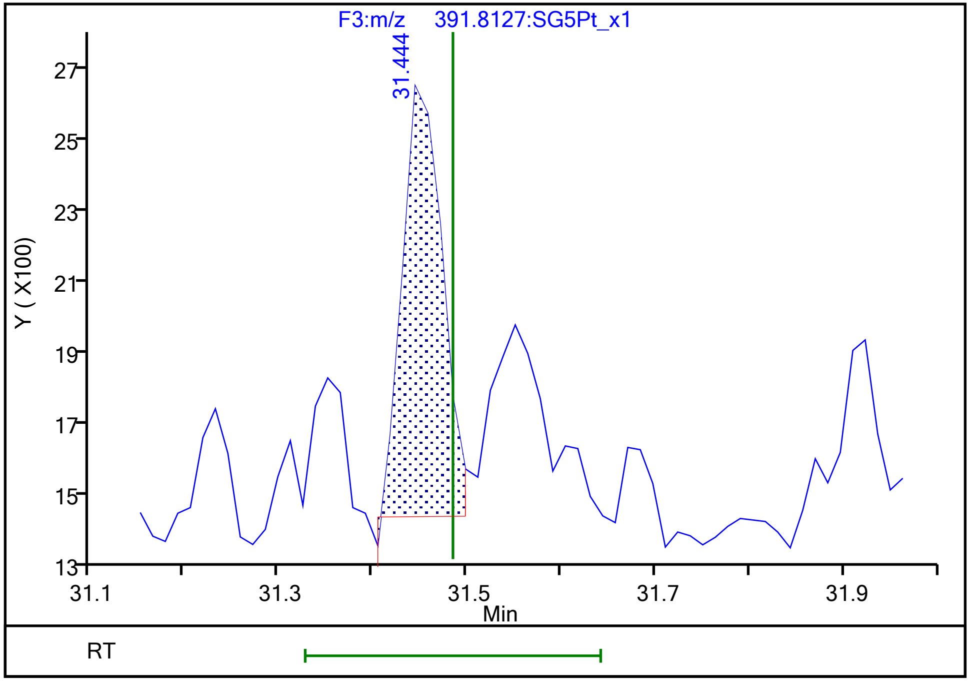

Reviewer: arghestanis, 26-Jun-2020 13:03:50
Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d				
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Processing Integration Results

RT:	33.60
Area:	15030
Amount:	0.202587
Amount Units:	pg/ul

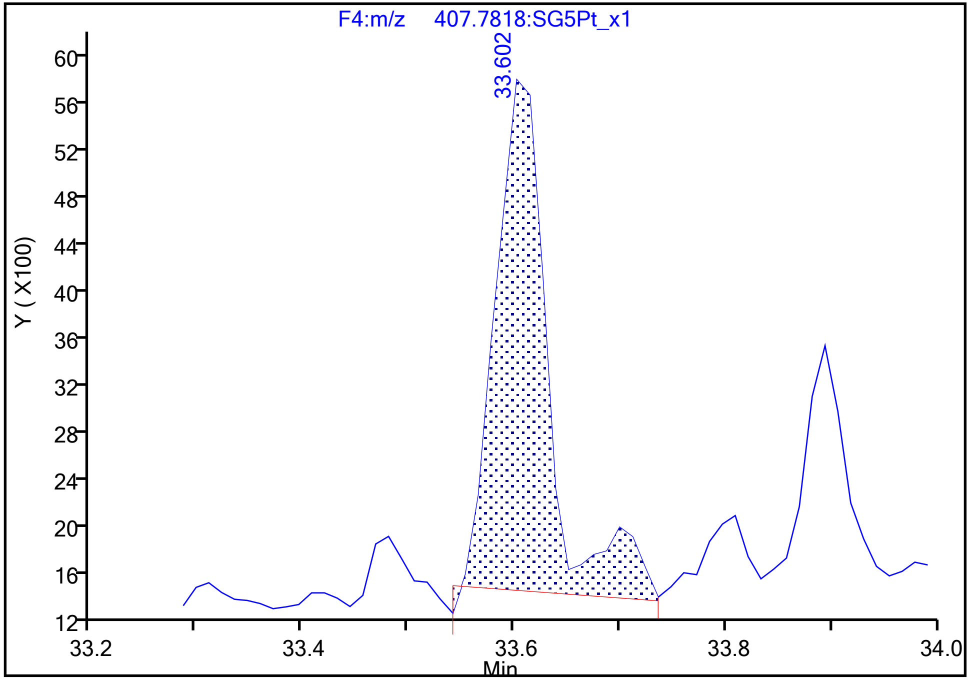

Manual Integration Results

RT:	33.60
Area:	13441
Amount:	0.177854
Amount Units:	pg/ul

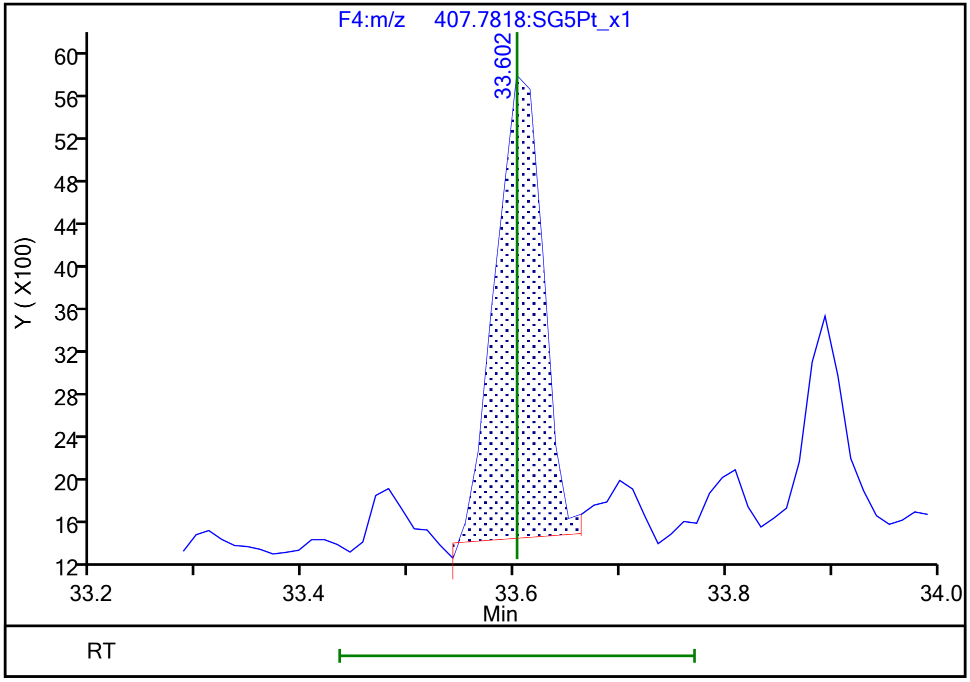

Reviewer: arghestanis, 26-Jun-2020 13:04:15

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d				
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Processing Integration Results

RT: 33.60
Area: 16571
Amount: 0.202587
Amount Units: pg/ul

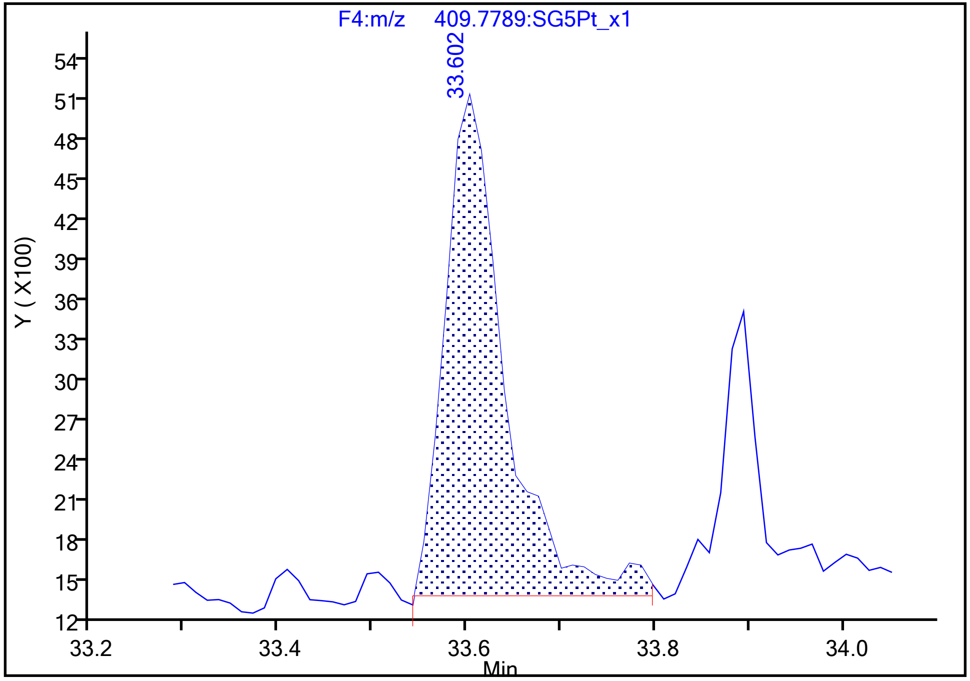

Manual Integration Results

RT: 33.60
Area: 14302
Amount: 0.177854
Amount Units: pg/ul

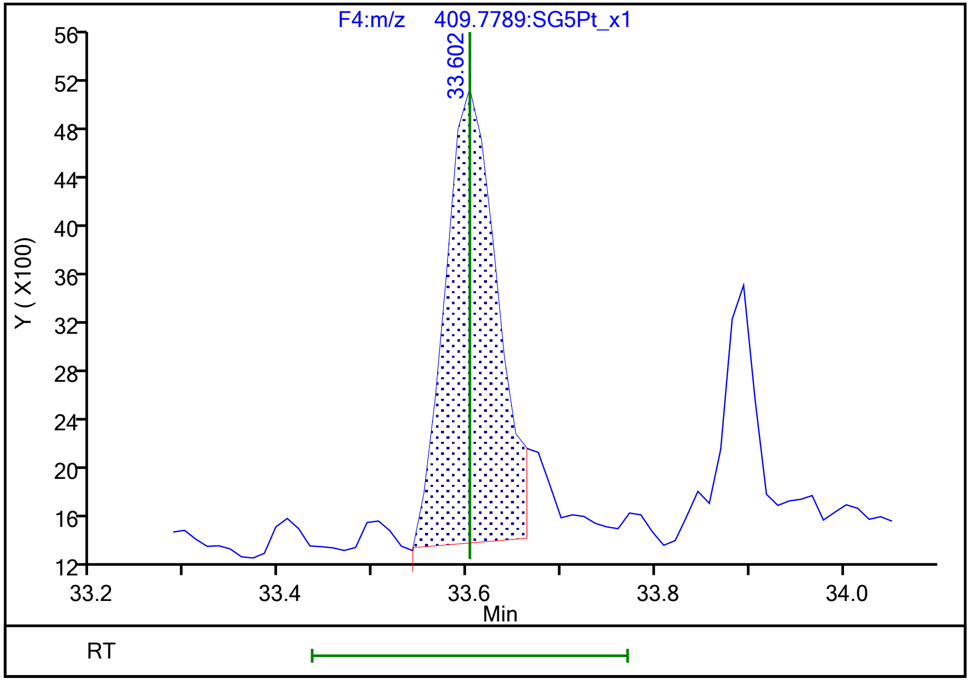

Reviewer: arghestanis, 26-Jun-2020 13:04:24

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:14

Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	34.38
Area:	4928
Amount:	0.071233
Amount Units:	pg/ul

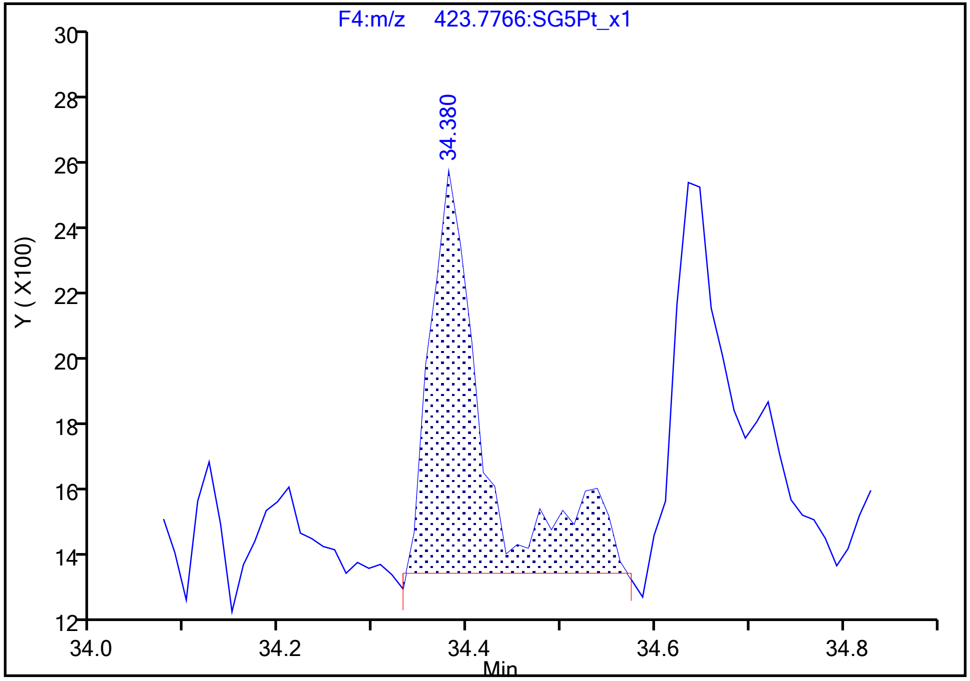

Manual Integration Results

RT:	34.38
Area:	3934
Amount:	0.062311
Amount Units:	pg/ul

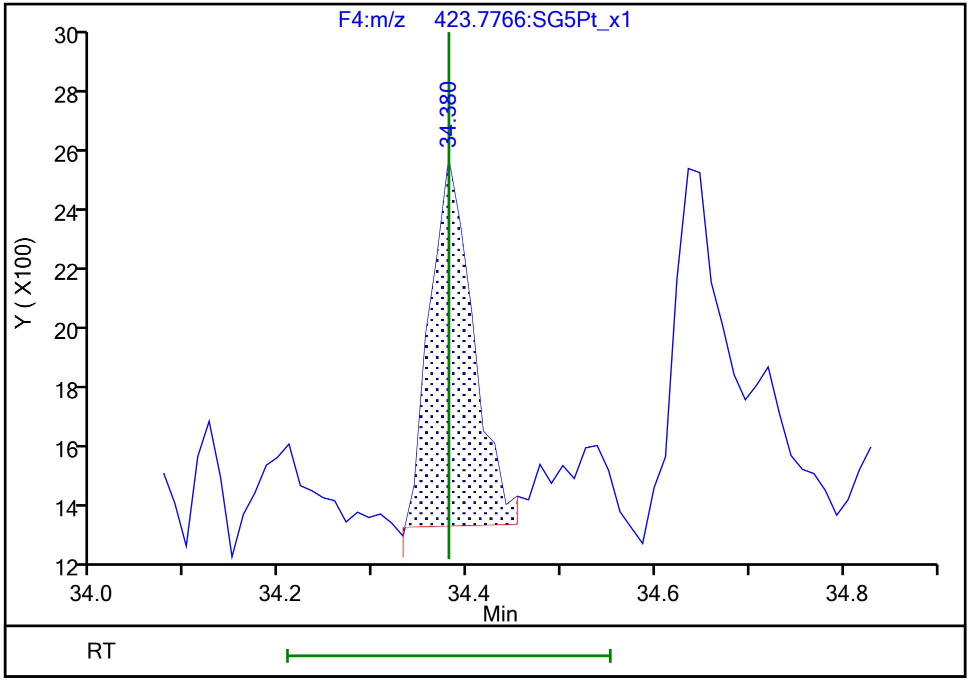

Reviewer: arghestanis, 26-Jun-2020 13:04:44

Audit Action: Manually Integrated

Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d		
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3
Client ID:	AFEFF10		
Operator ID:	AJS	ALS Bottle#:	9 Worklist Smp#: 9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

Processing Integration Results

RT: 34.39
Area: 4198
Amount: 0.071233
Amount Units: pg/ul

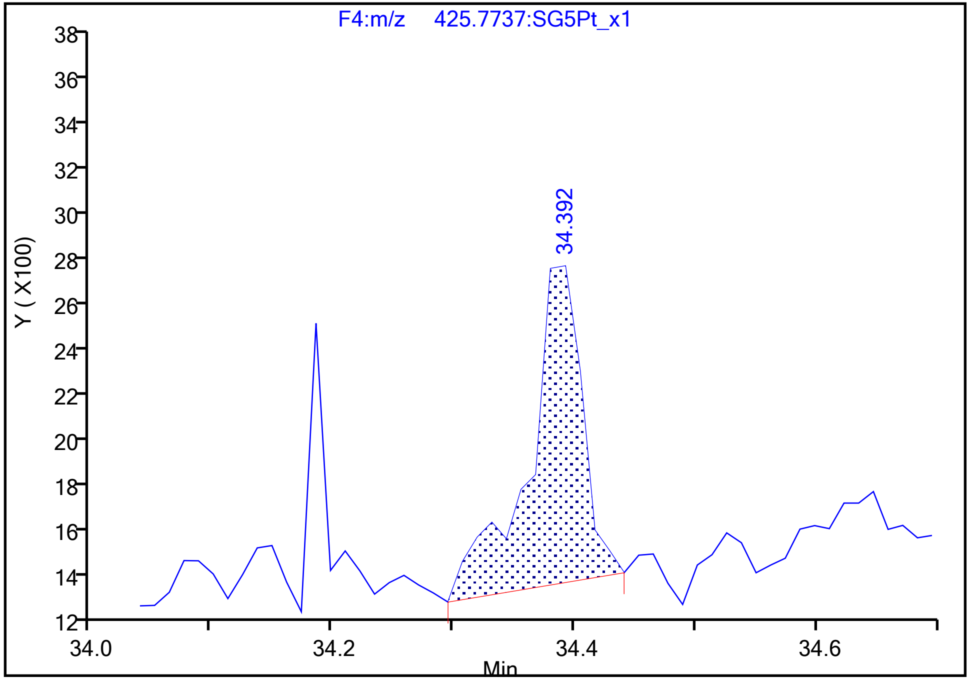

Manual Integration Results

RT: 34.39
Area: 4049
Amount: 0.062311
Amount Units: pg/ul

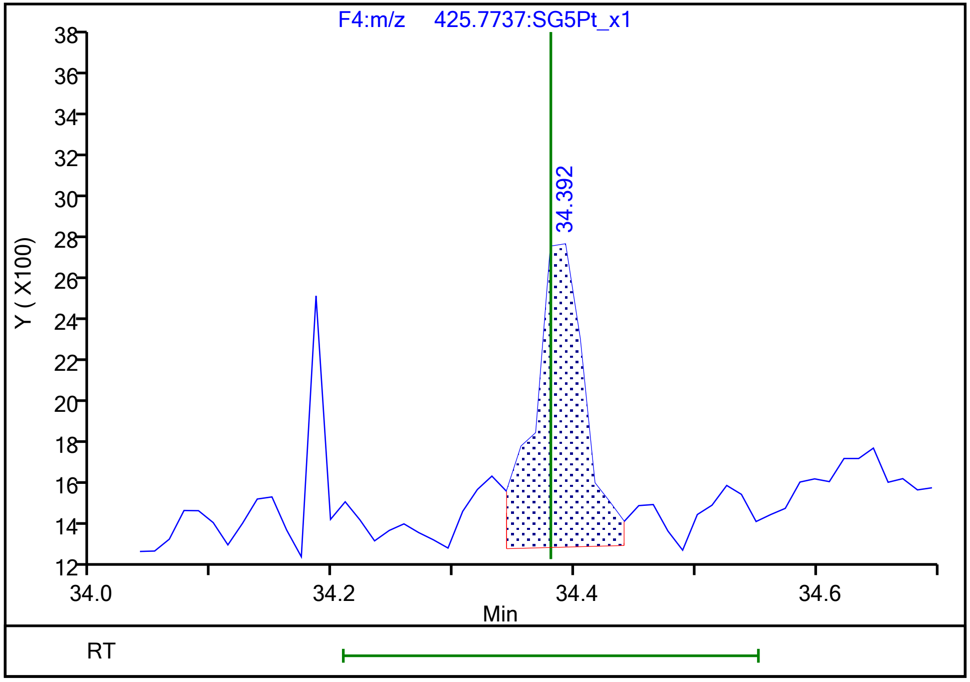

Reviewer: arghestanis, 26-Jun-2020 13:05:02
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d				
Injection Date:	25-Jun-2020 23:55:43	Instrument ID:	10D5		
Lims ID:	600-205895-C-3-C	Lab Sample ID:	320-205895-3		
Client ID:	AFEFF10				
Operator ID:	AJS	ALS Bottle#:	9	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F5:HRSIR		

OCDF, CAS: 39001-02-0

Signal: 2

RT: 36.77
Area: 9341
Amount: 0.147256
Amount Units: pg/ul

Processing Integration Results

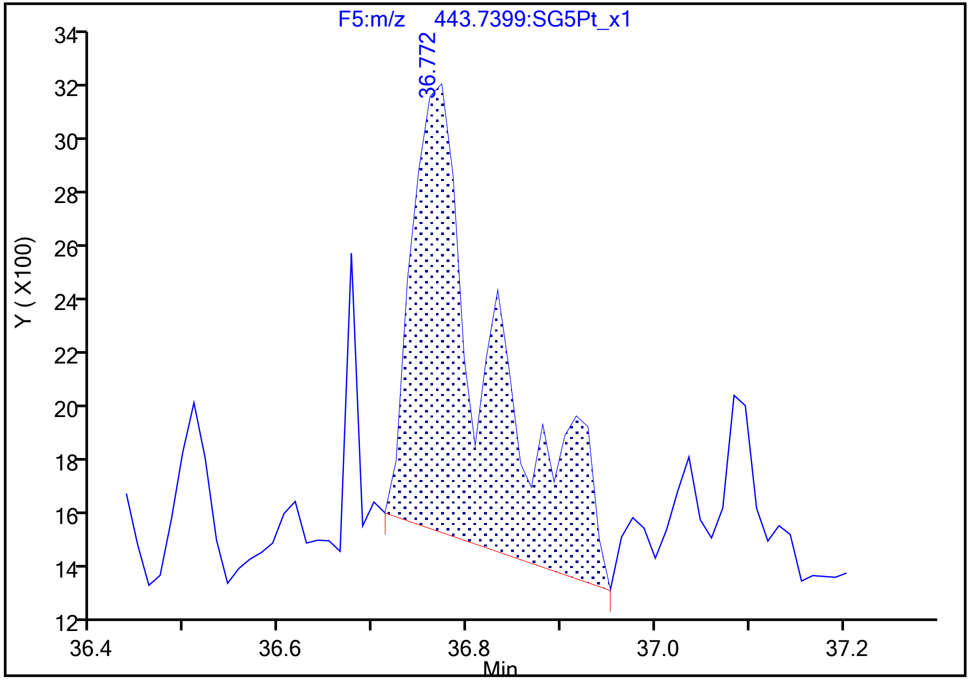

RT: 36.77
Area: 7597
Amount: 0.133140
Amount Units: pg/ul

Manual Integration Results

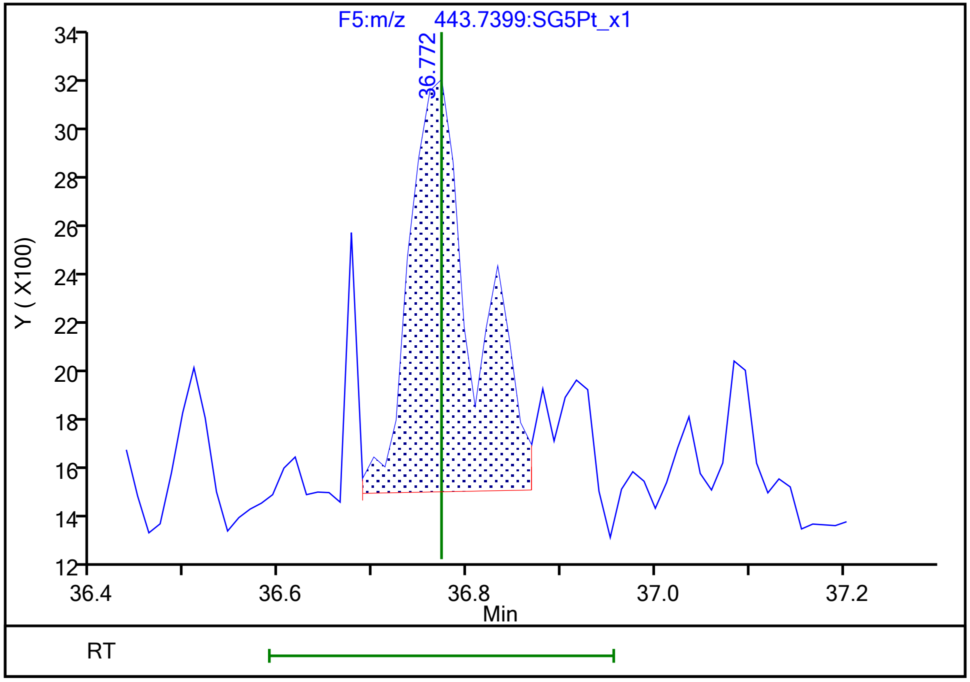

Reviewer: arghestanis, 26-Jun-2020 13:05:25
Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:14　　Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date: 25-Jun-2020 23:55:43　　Injection Vol: 2.0 ul

Instrument ID: 10D5　　Operator ID: AJS

Method: Dioxin_10D5　　Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621　　Sample Line#: 9

Column Type: DB-5　　Column Dia: 0.32 mm

TCDF

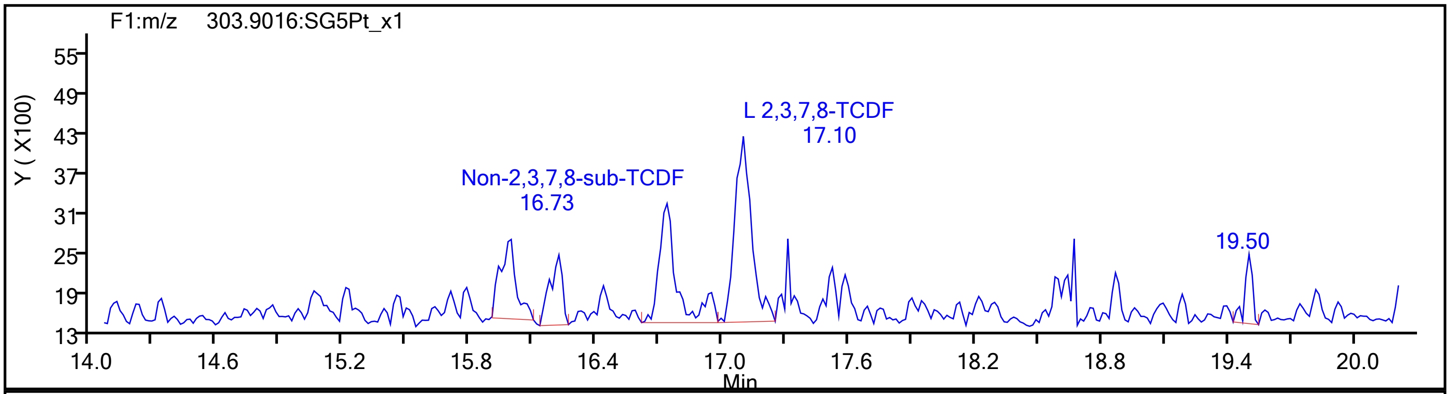

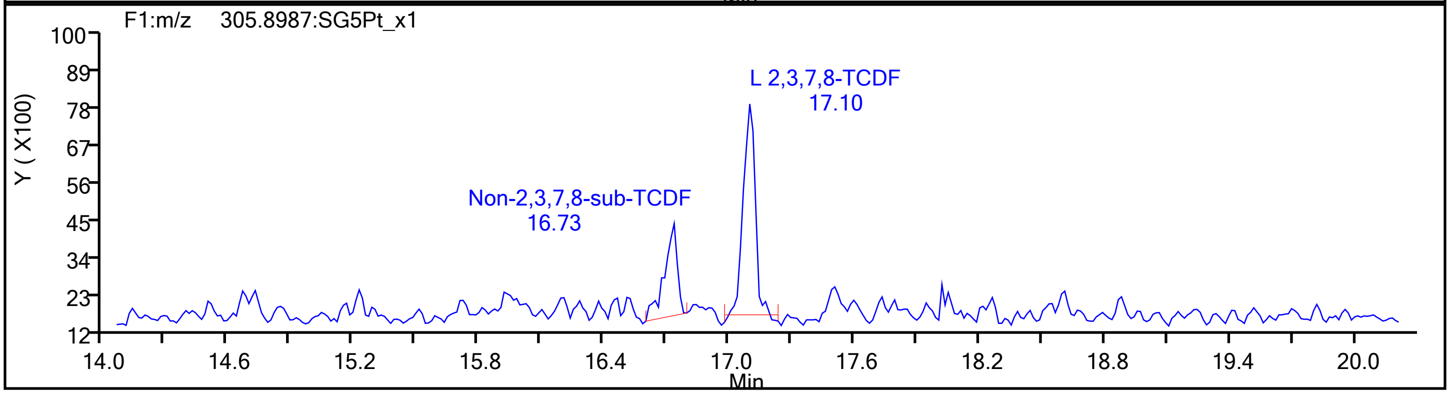

TCDF Standards

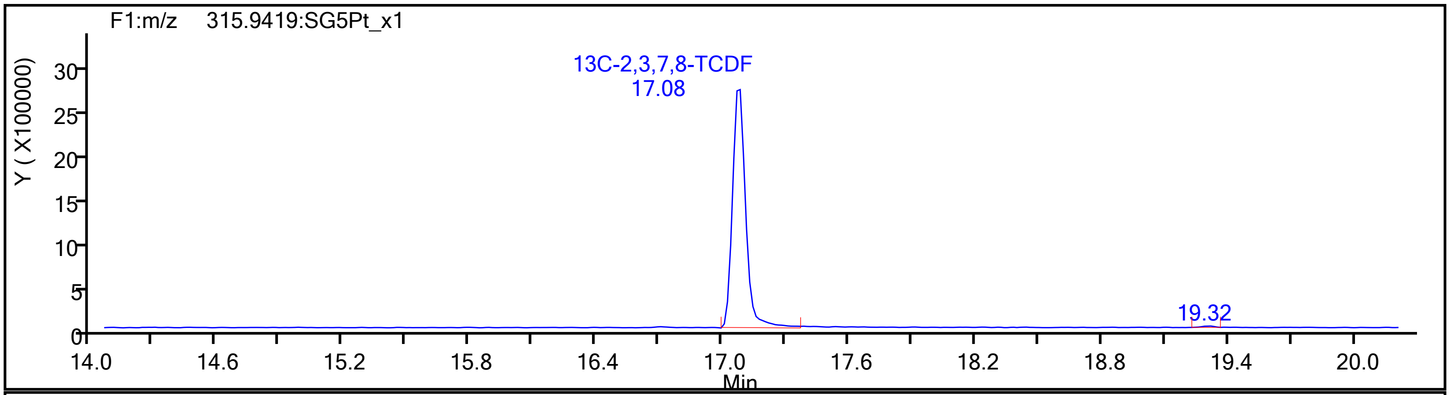

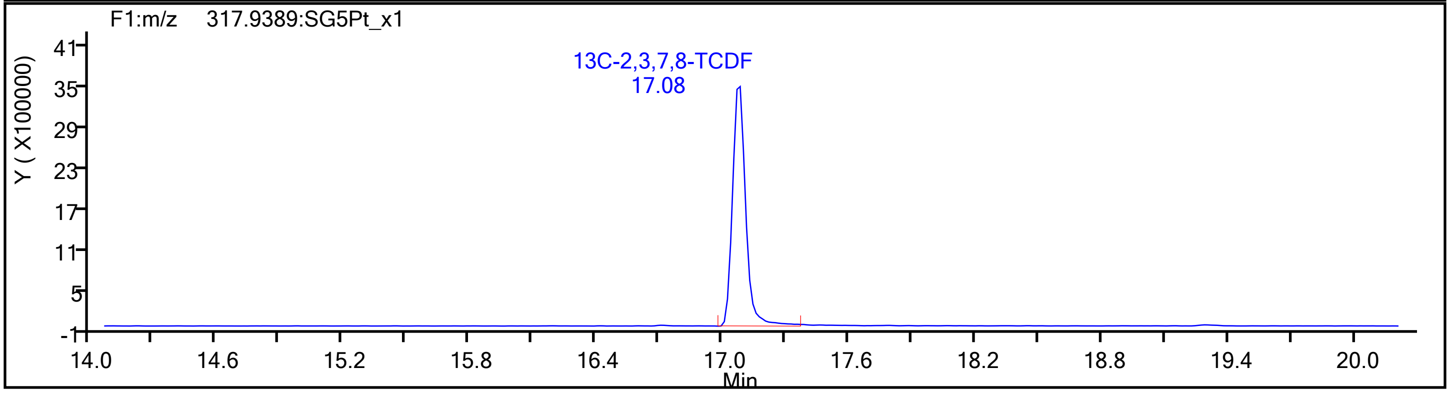

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date:	25-Jun-2020 23:55:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

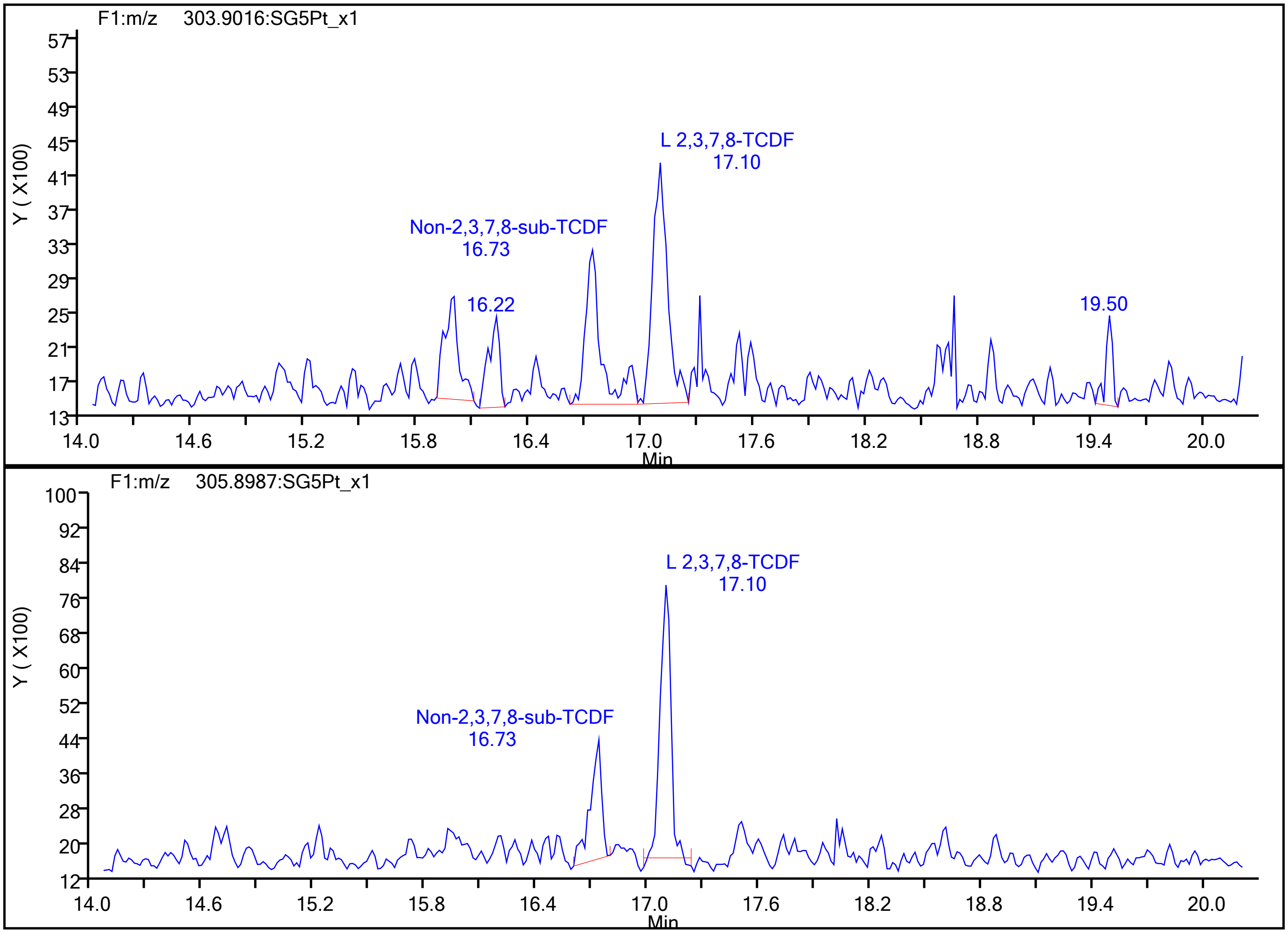

TCDF Interference Mass

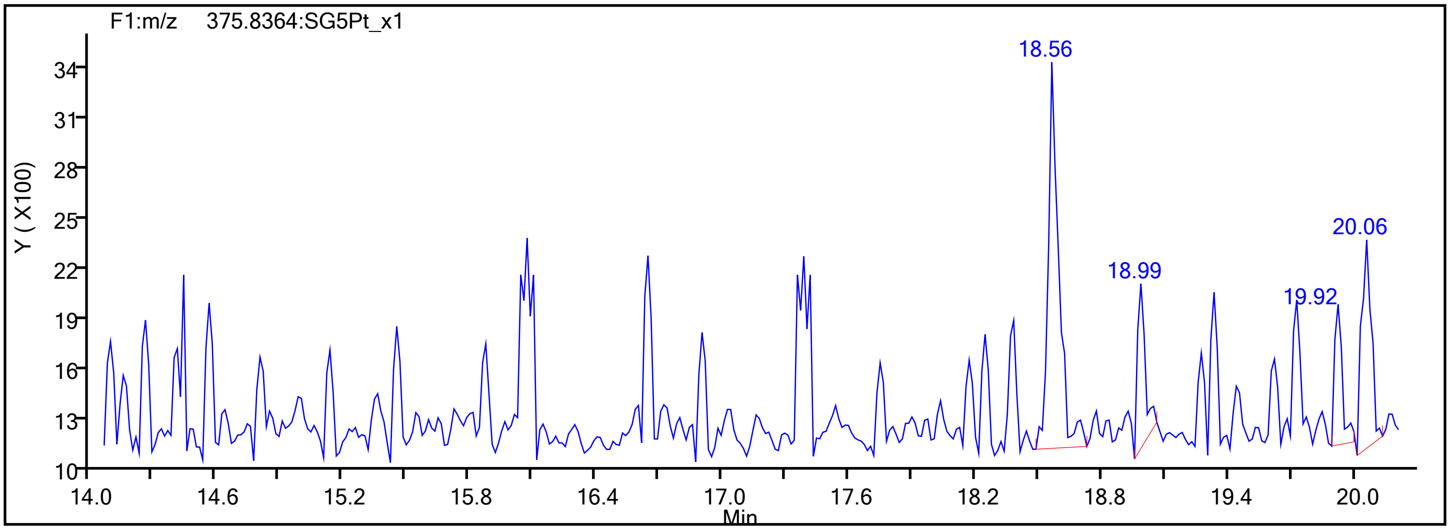

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Injection Date: 25-Jun-2020 23:55:43 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID: AFEFF10
Worklist#: 389621 Sample Line#: 9
Column Type: DB-5 Column Dia: 0.32 mm

TCDD

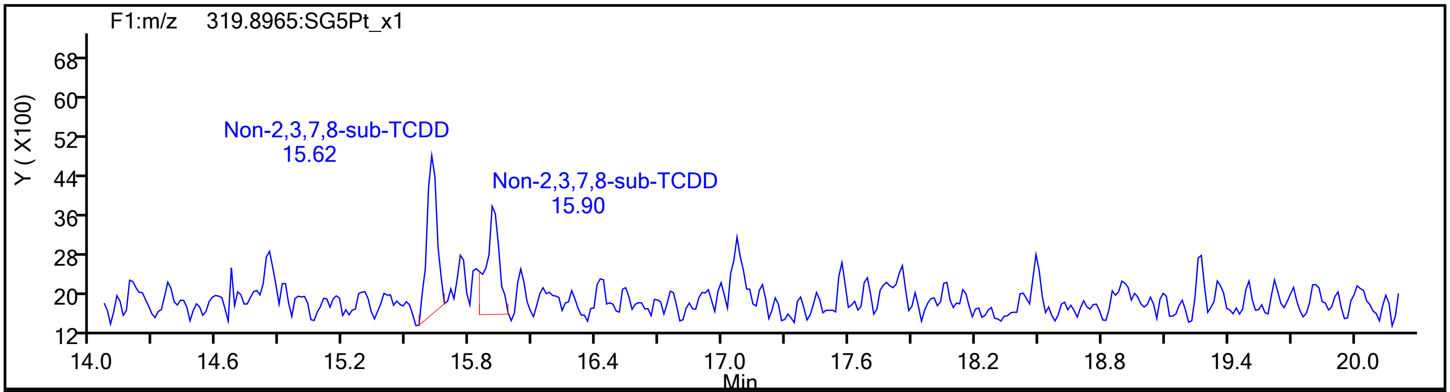

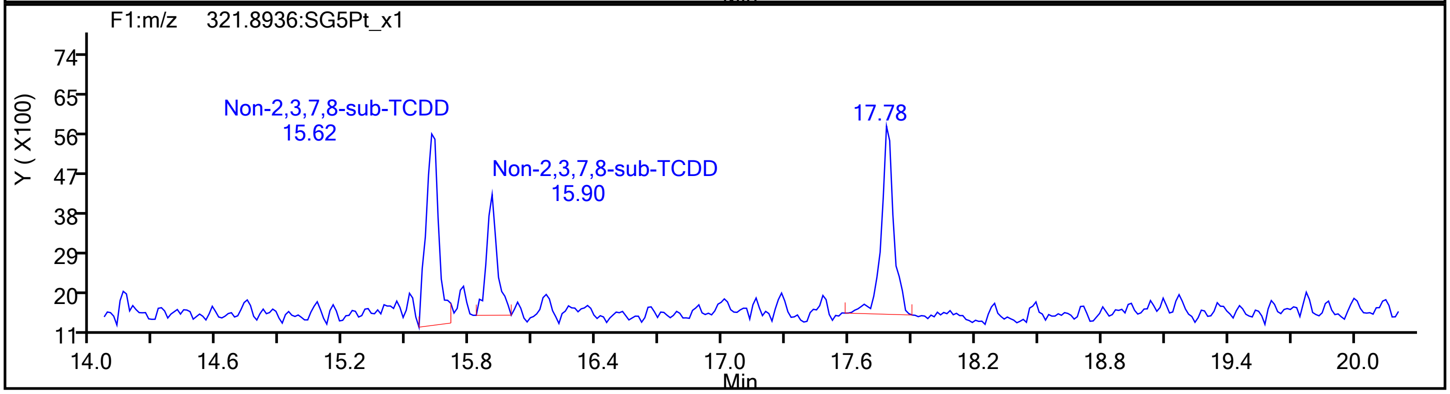

TCDD Standards

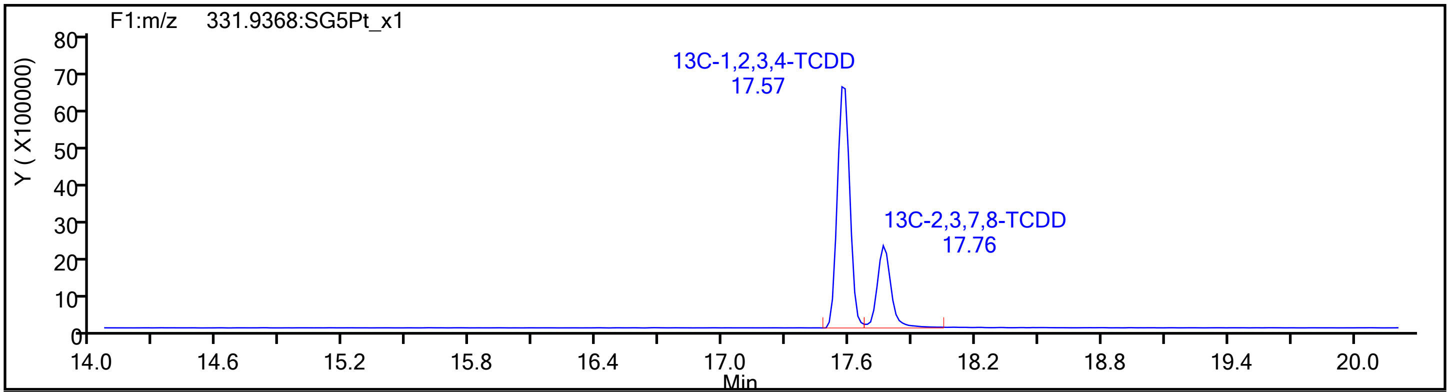

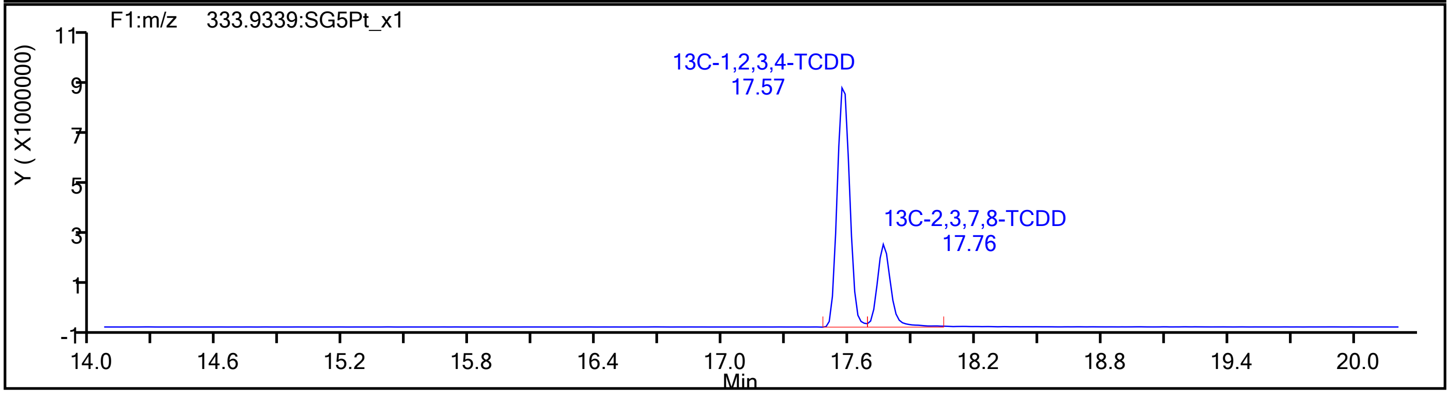

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date:	25-Jun-2020 23:55:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

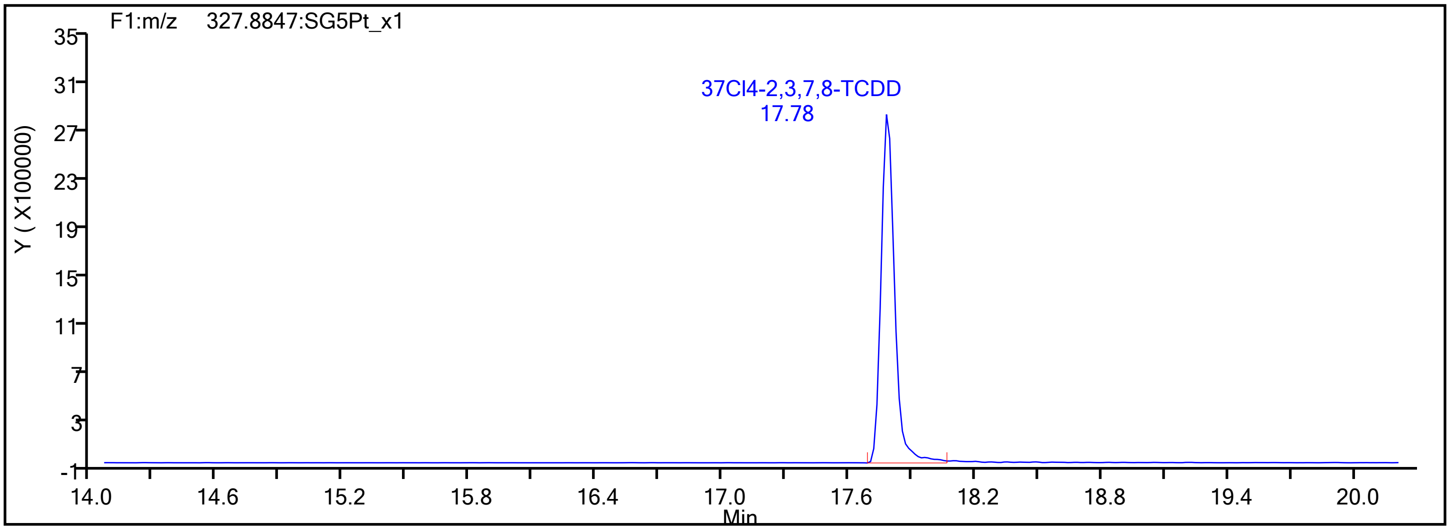

37Cl4-TCDD Standards

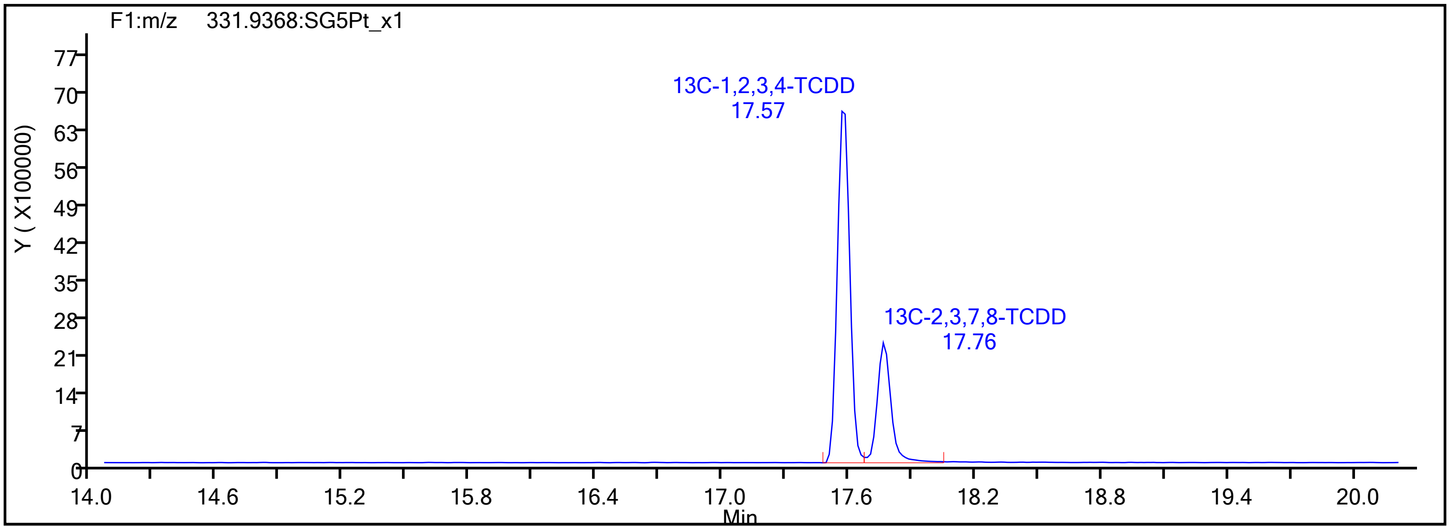

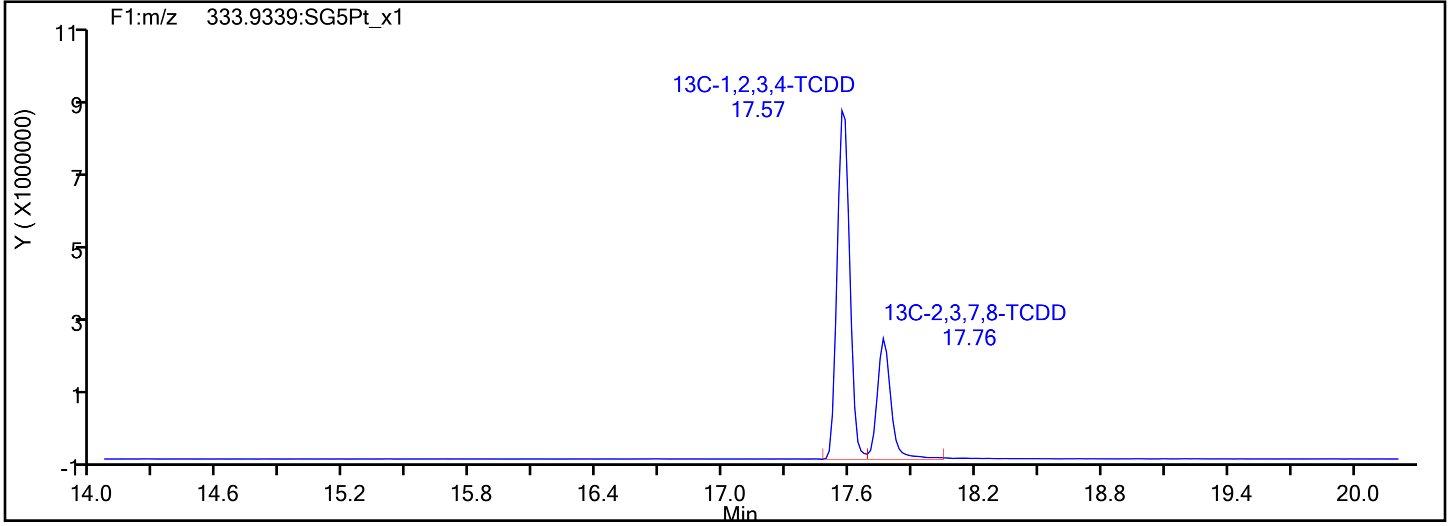

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d		
Injection Date:	25-Jun-2020 23:55:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

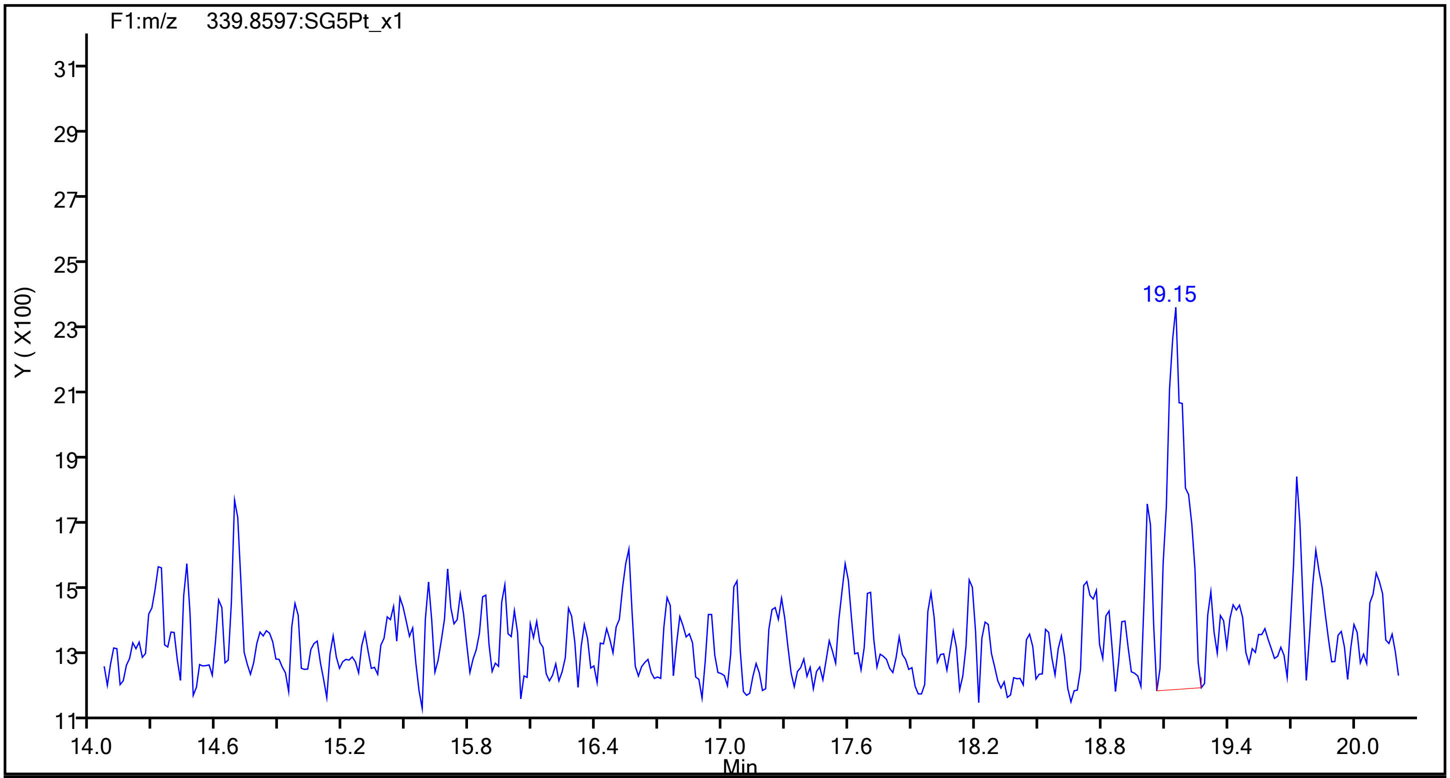

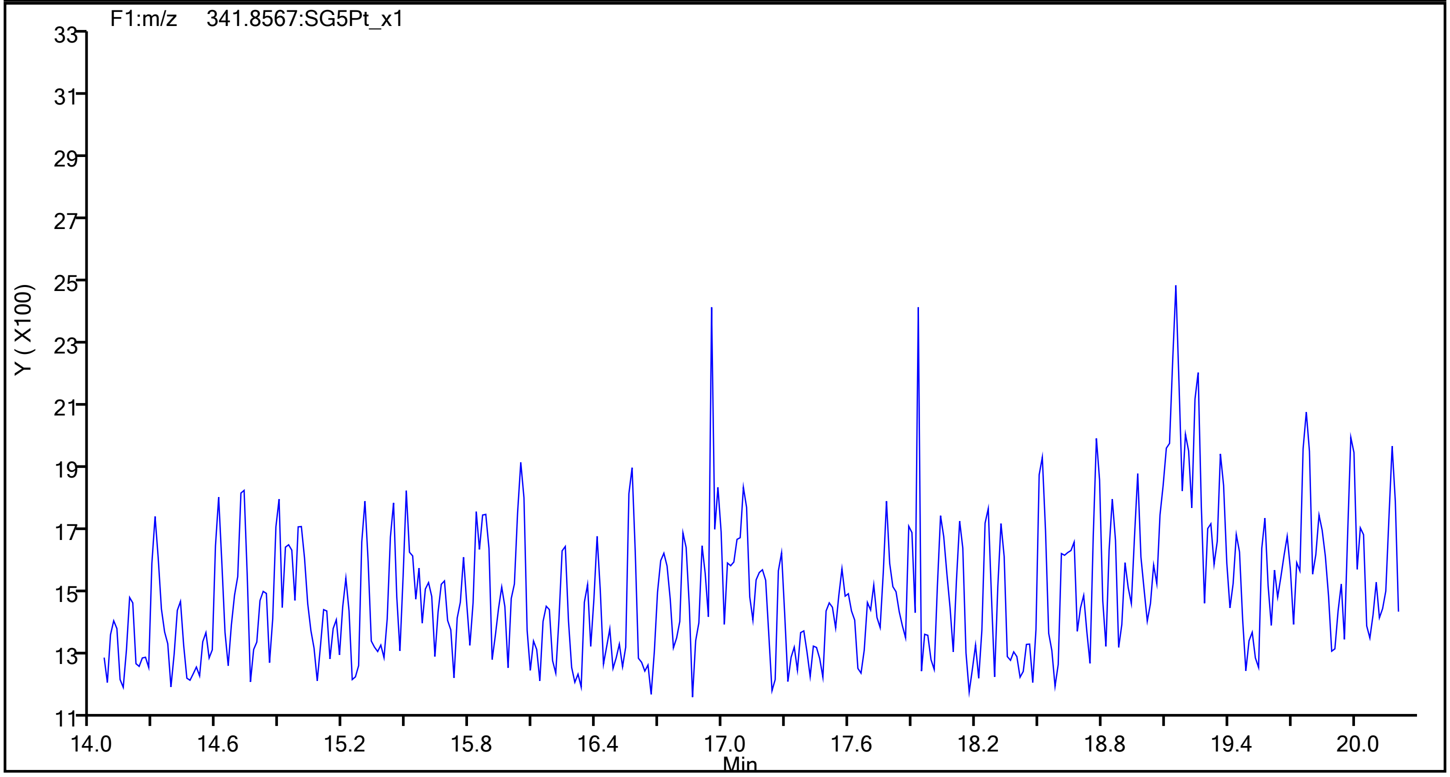

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d		
Injection Date:	25-Jun-2020 23:55:43	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

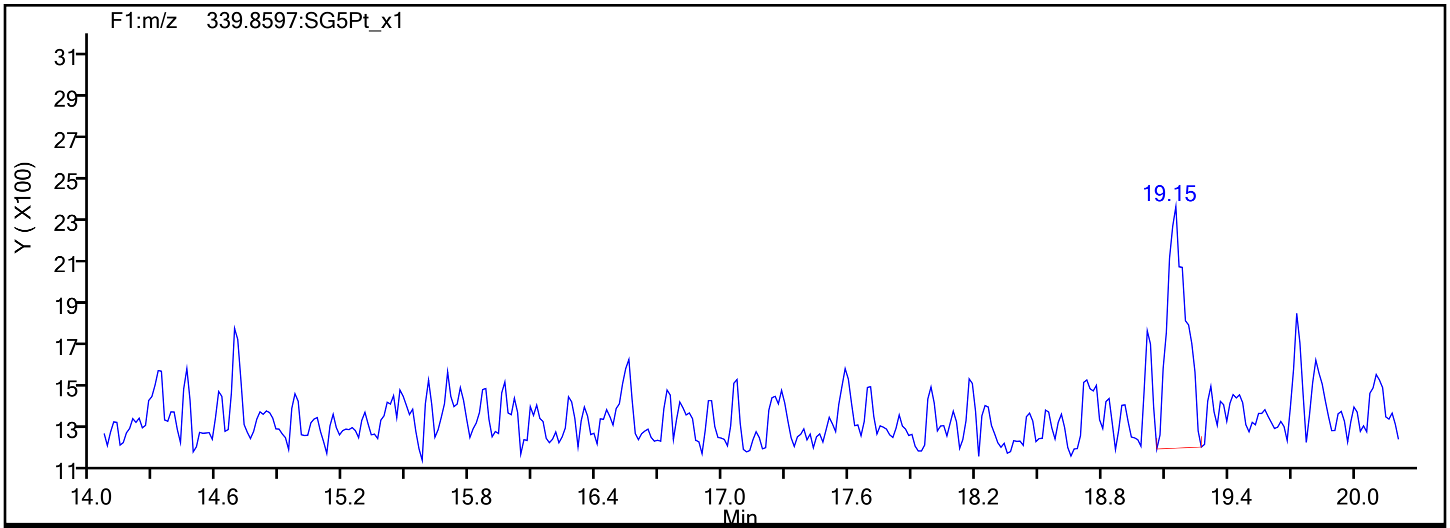

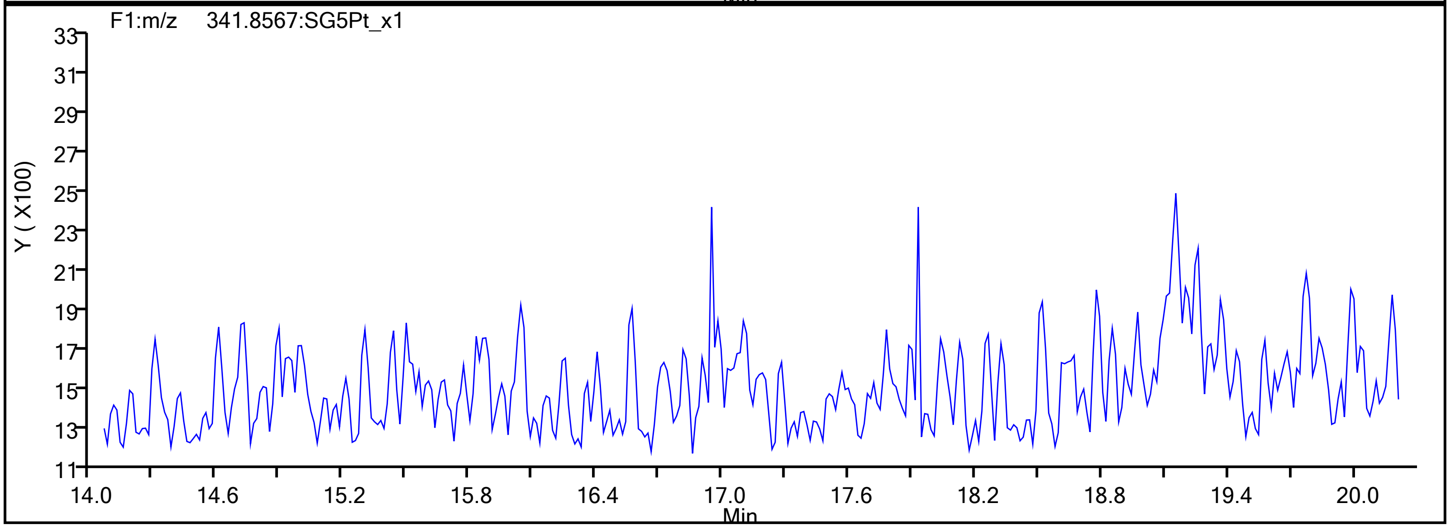

F1 PeCDFs Interference Mass

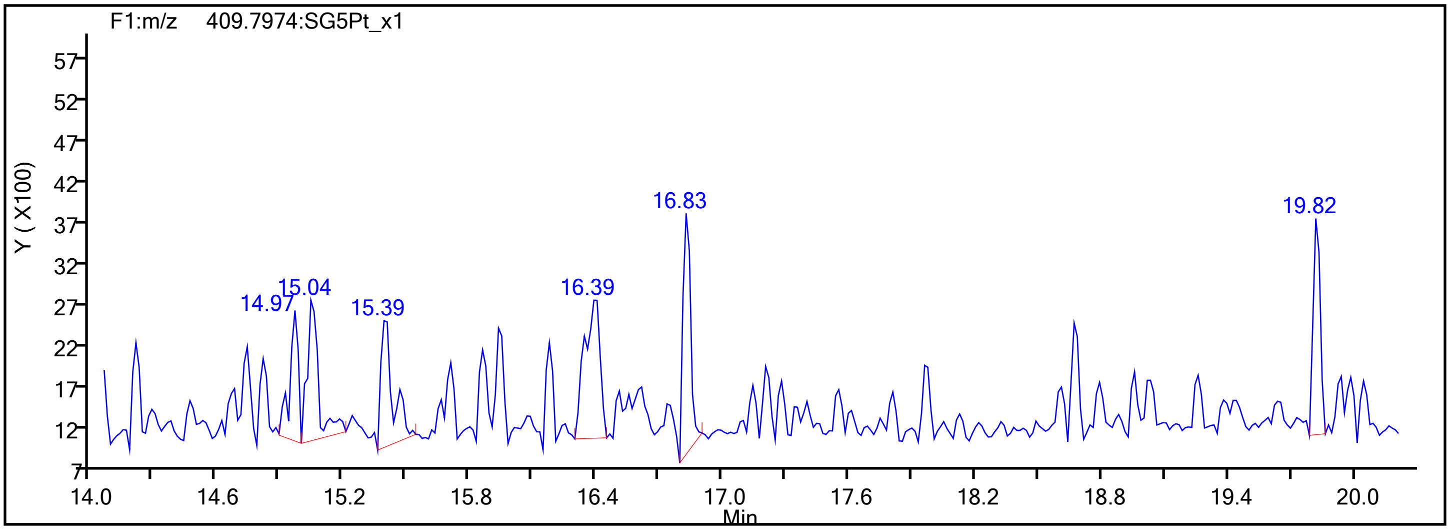

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date: 25-Jun-2020 23:55:43 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

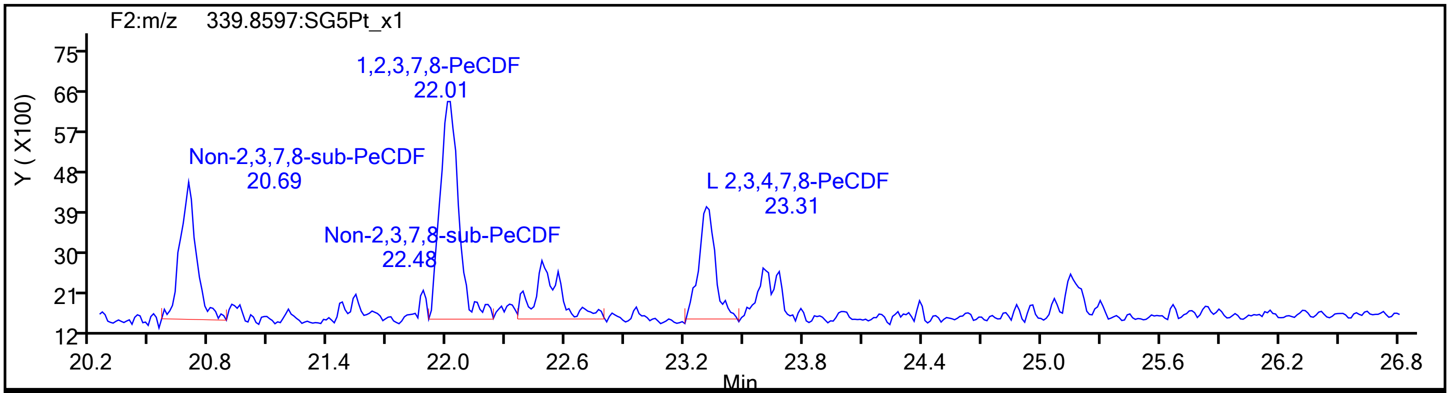

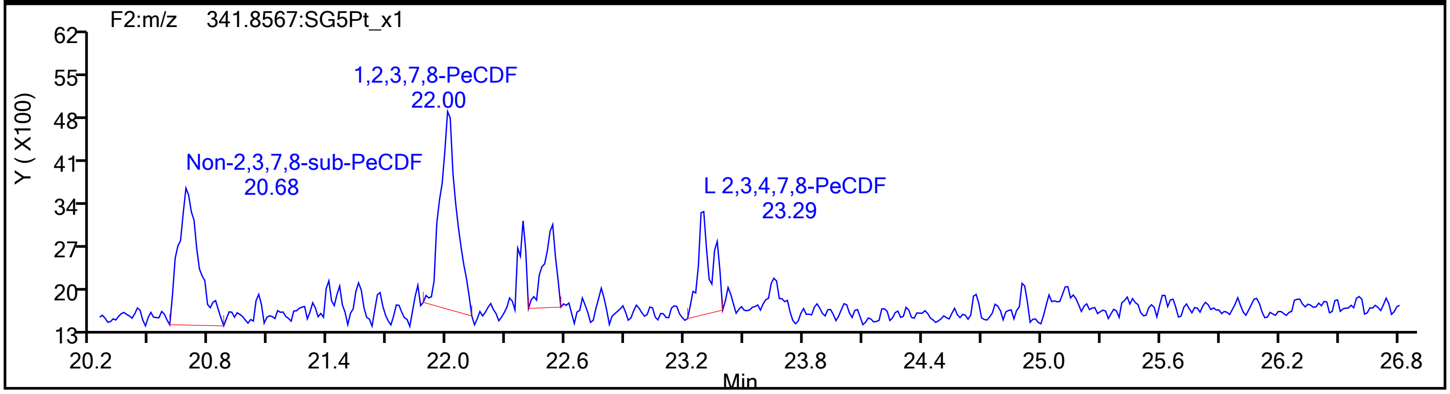

PeCDF Standards

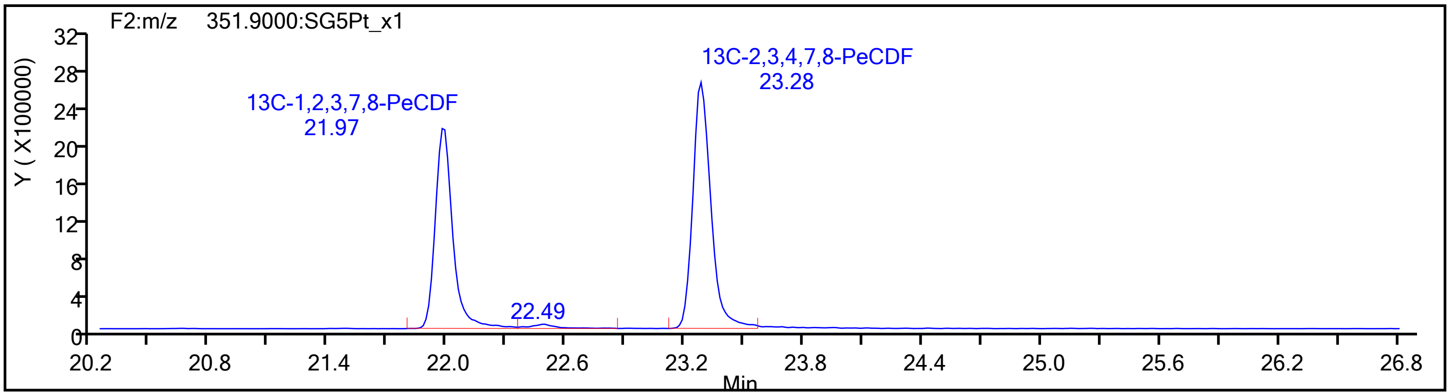

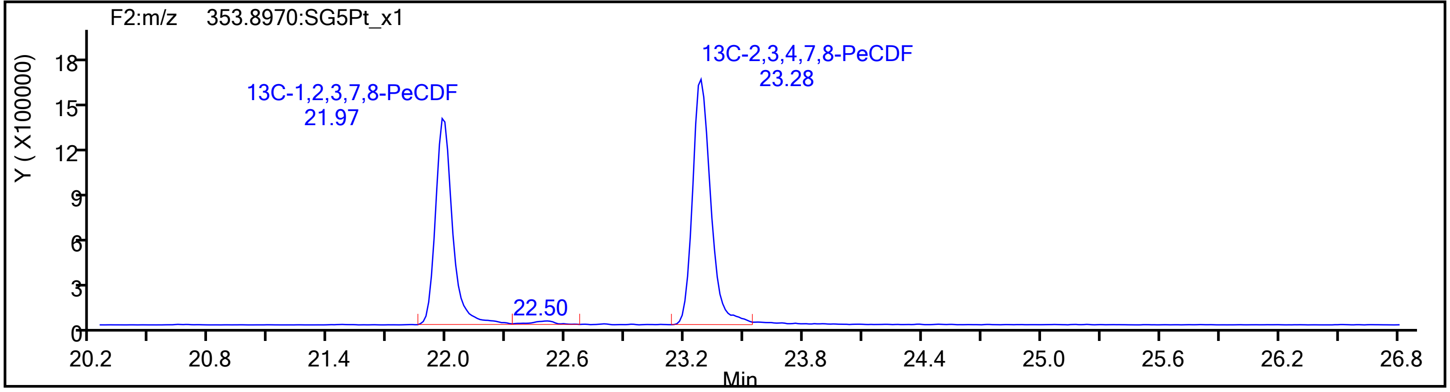

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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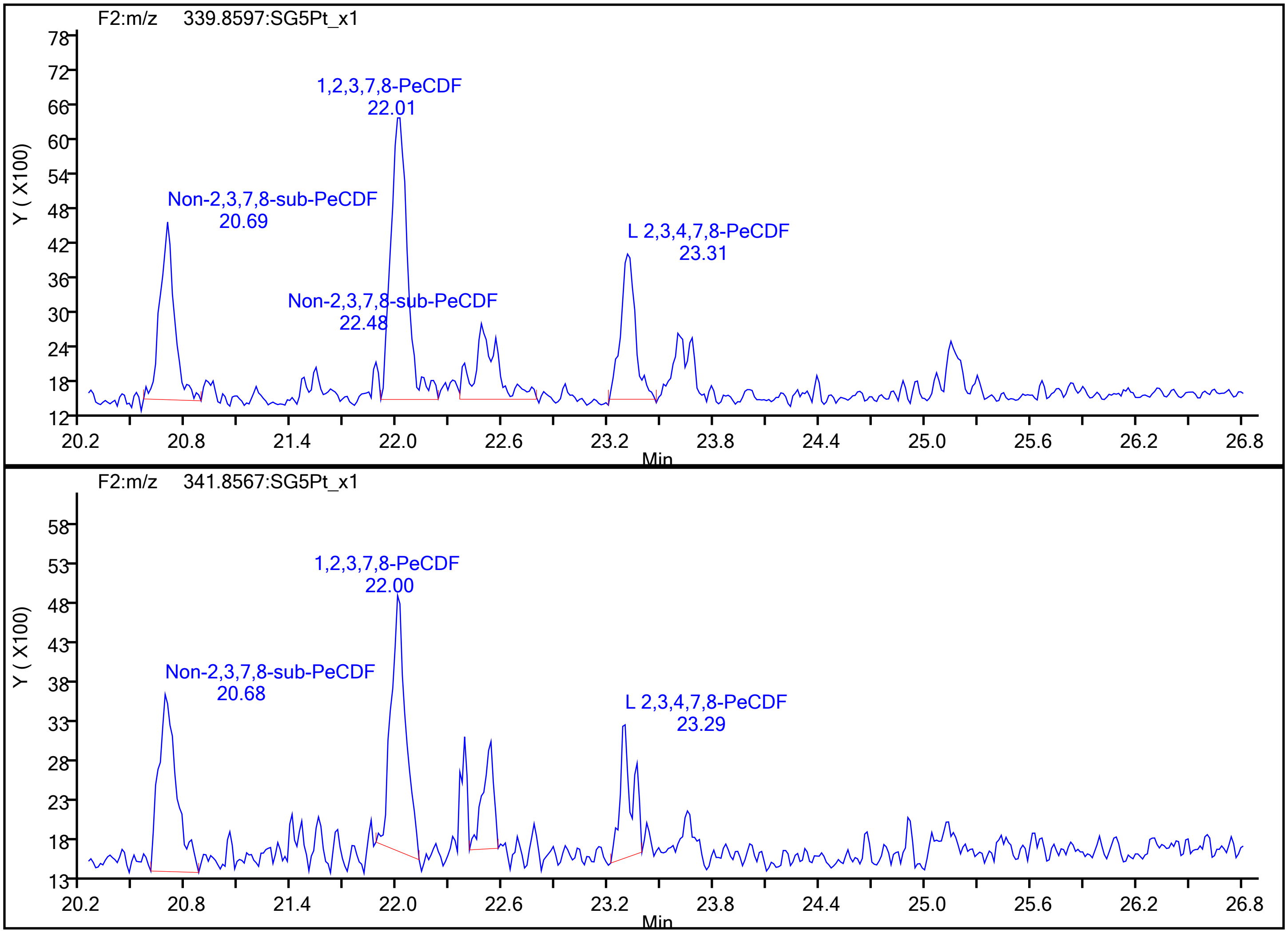

PeCDF Interference Mass

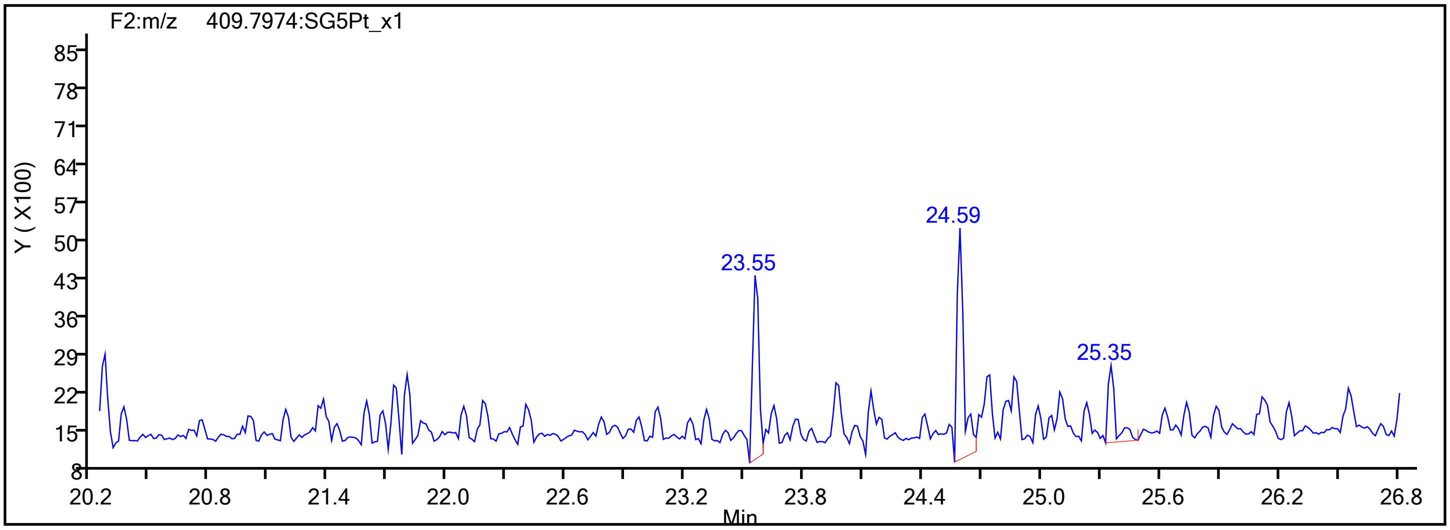

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Eurofins TestAmerica, Sacramento

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Injection Date: 25-Jun-2020 23:55:43 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

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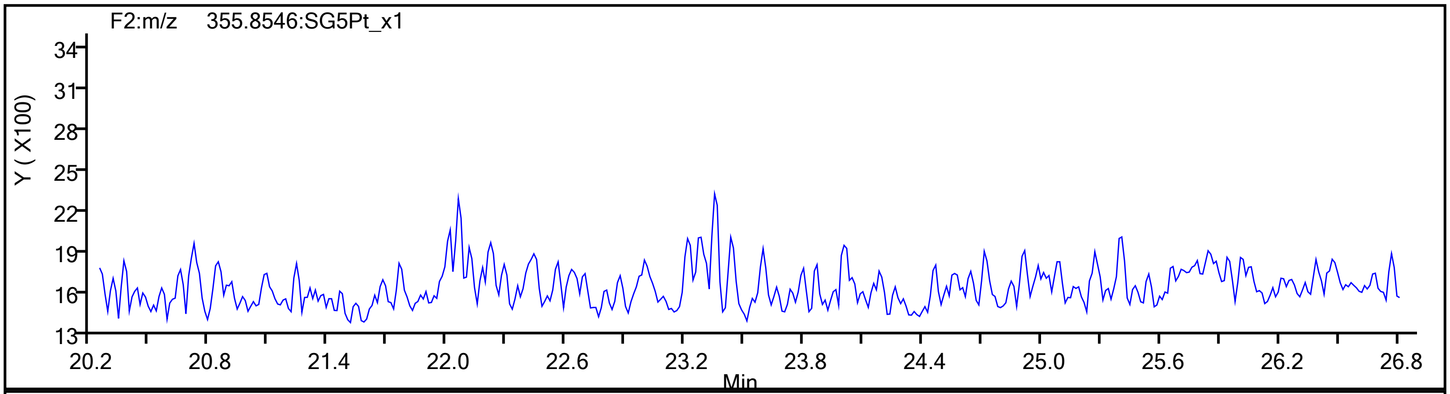

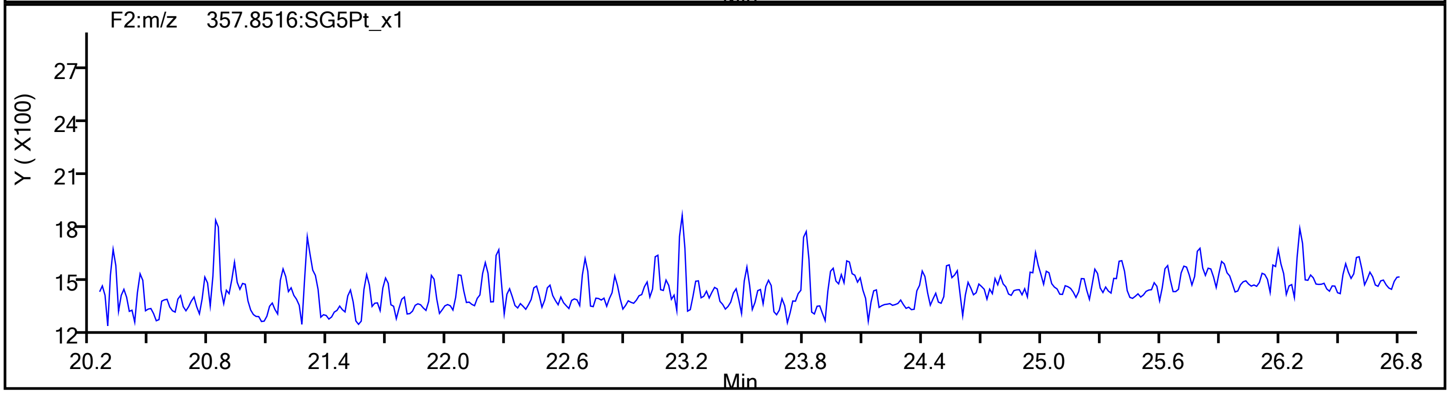

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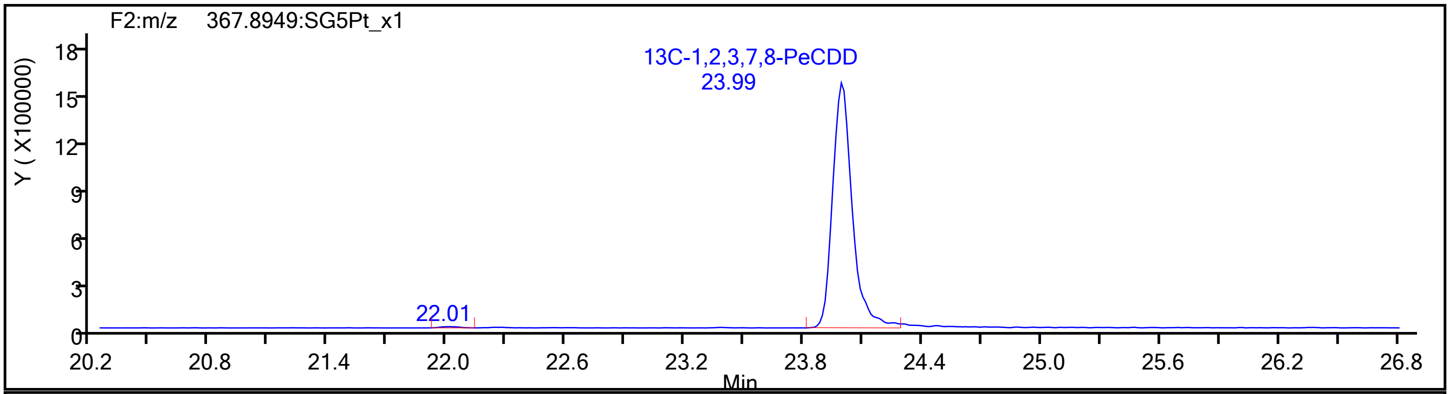

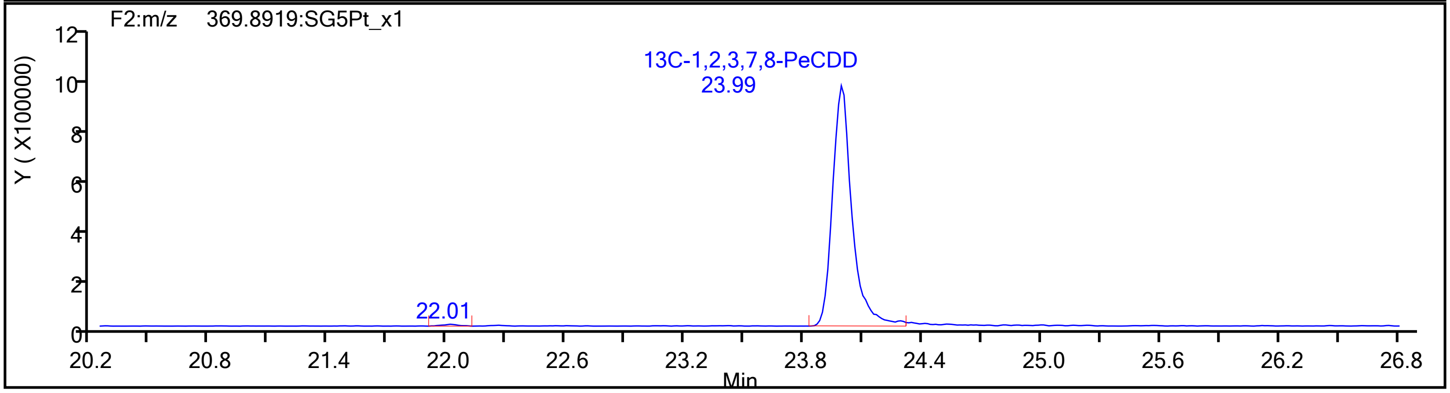

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HxCDF

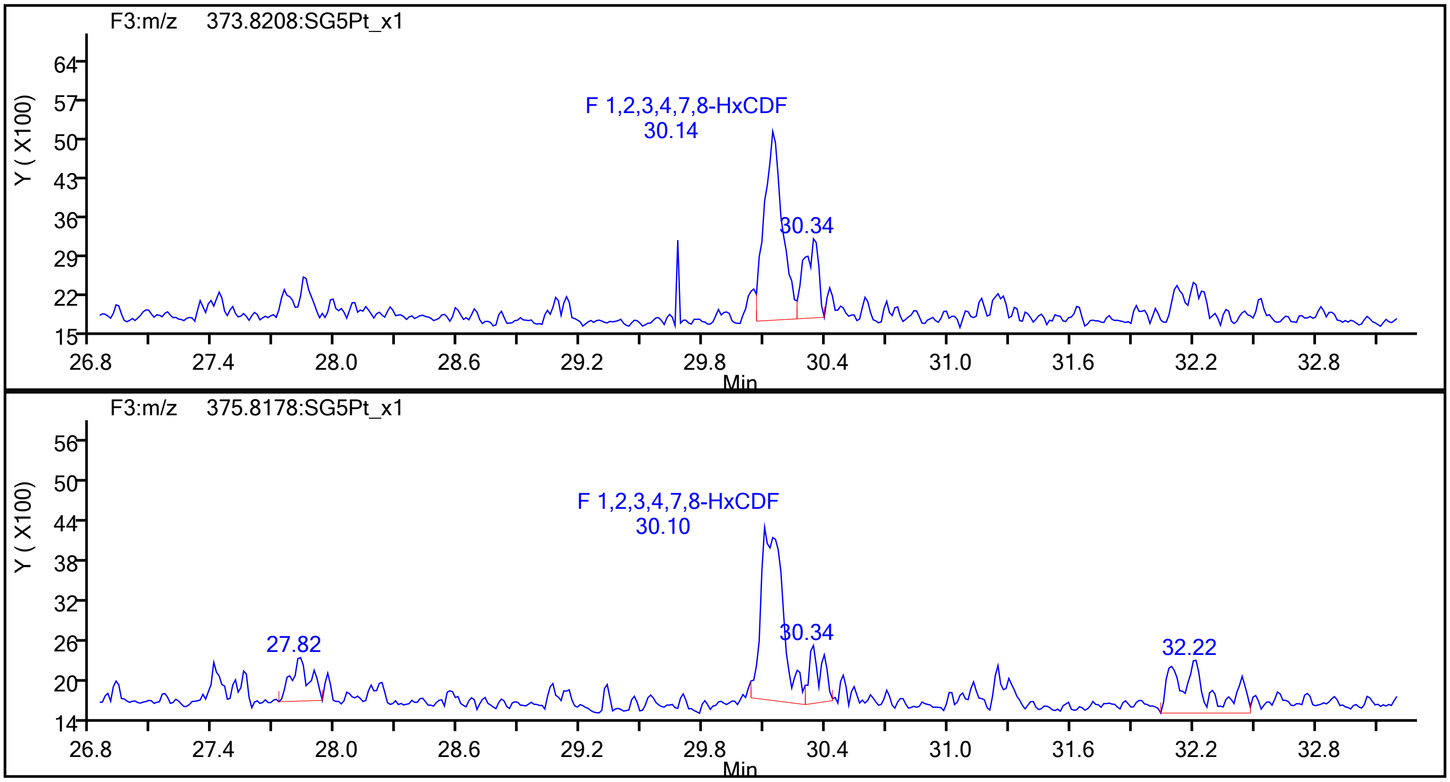

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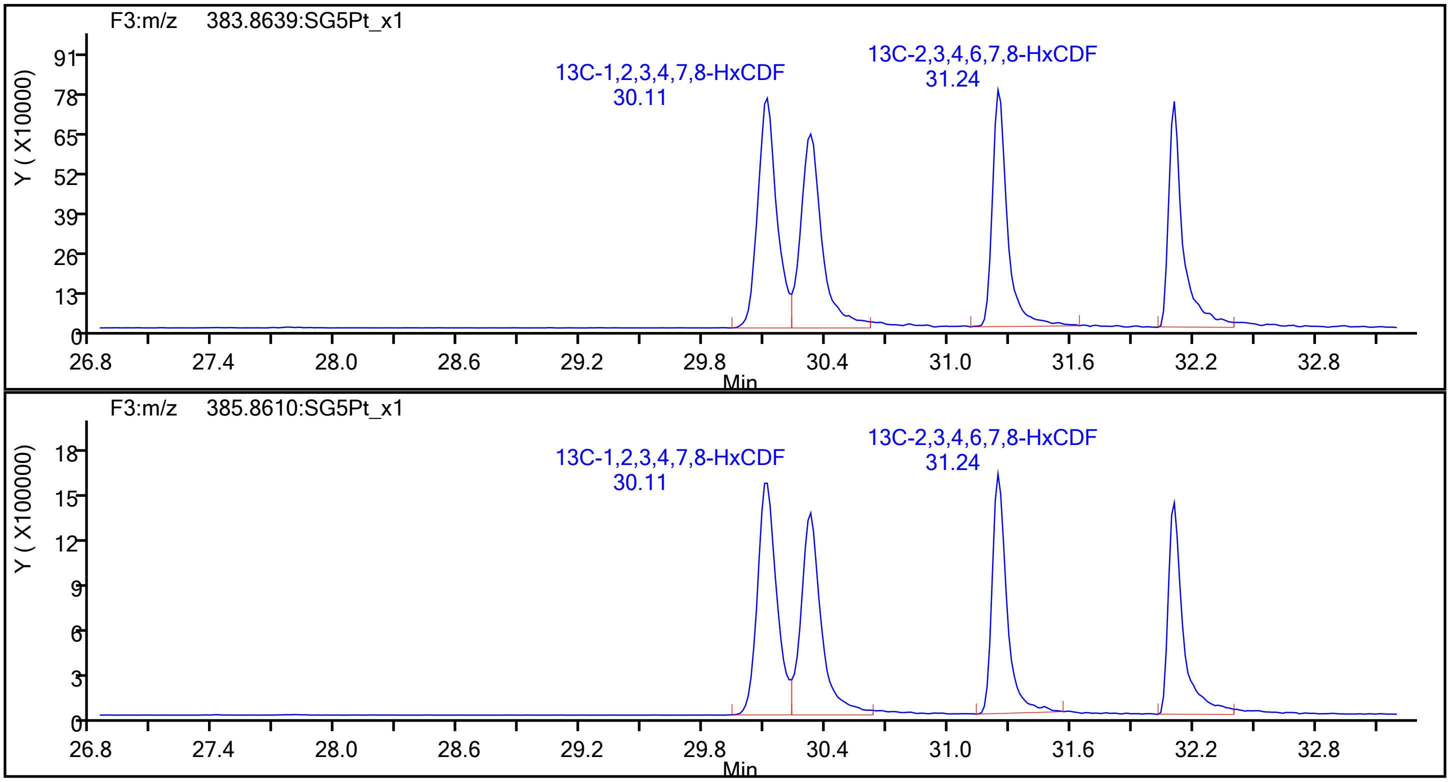

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HxCDF

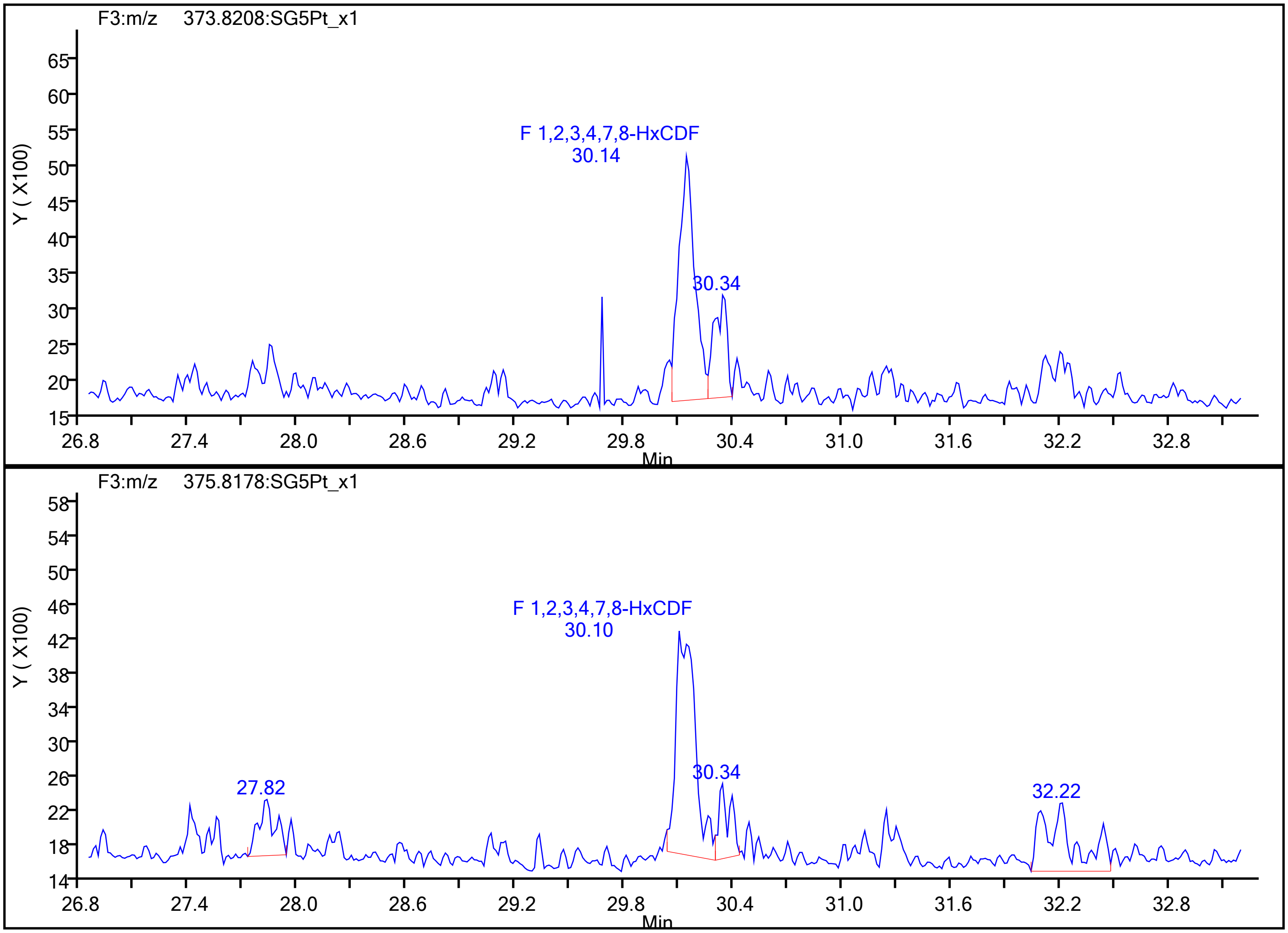

HxCDF Interference Mass

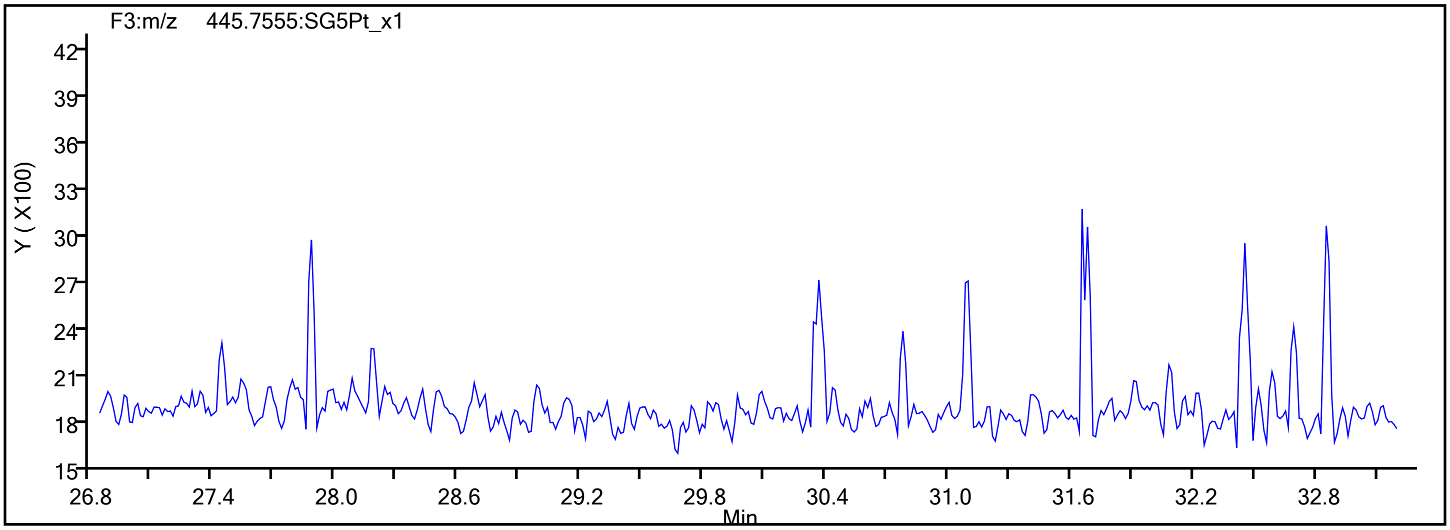

Report Date: 26-Jun-2020 13:16:14 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d
Injection Date: 25-Jun-2020 23:55:43 Injection Vol: 2.0 ul
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HxCDD

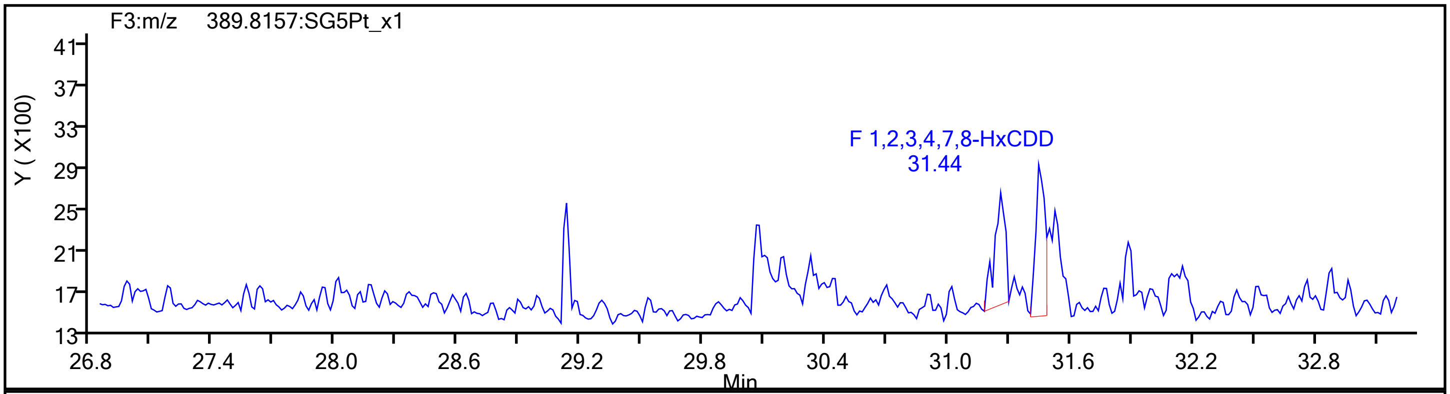

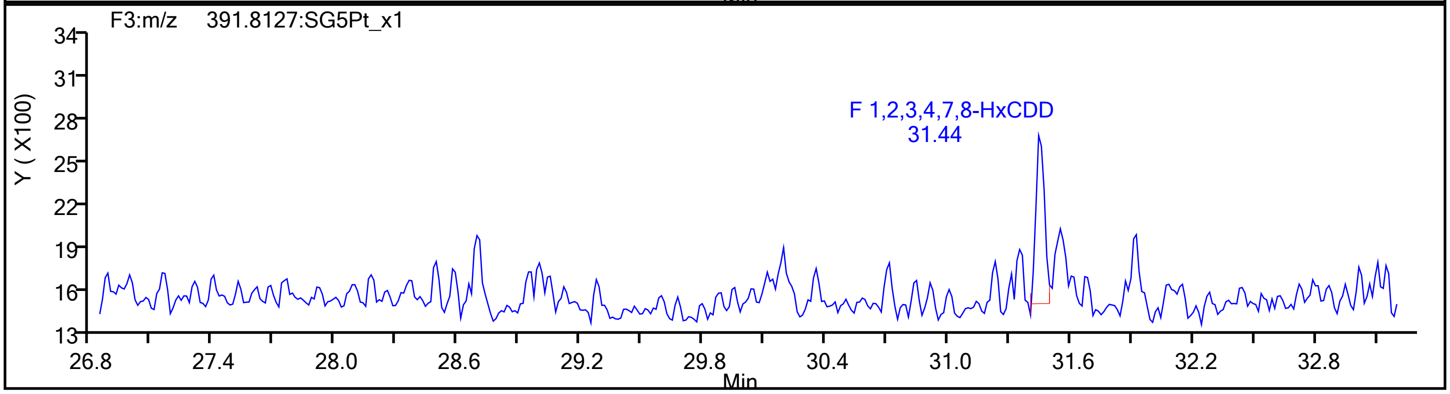

HxCDD Standards

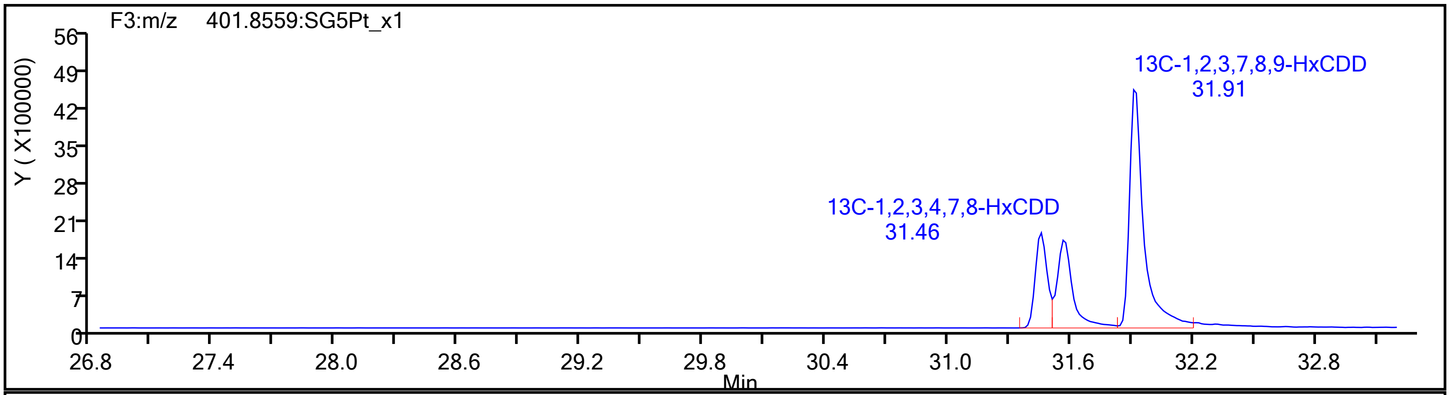

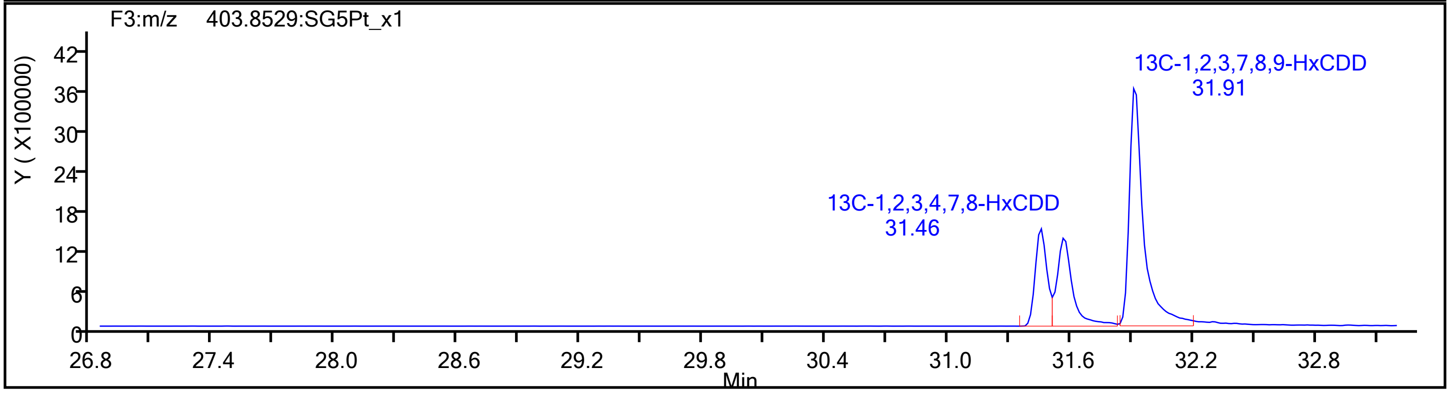

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Eurofins TestAmerica, Sacramento

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HpCDF

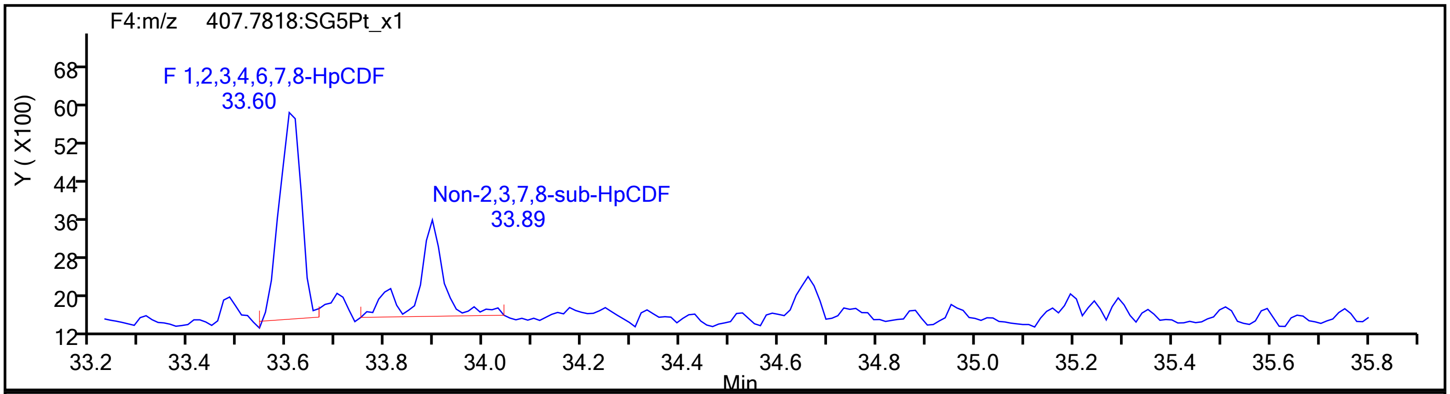

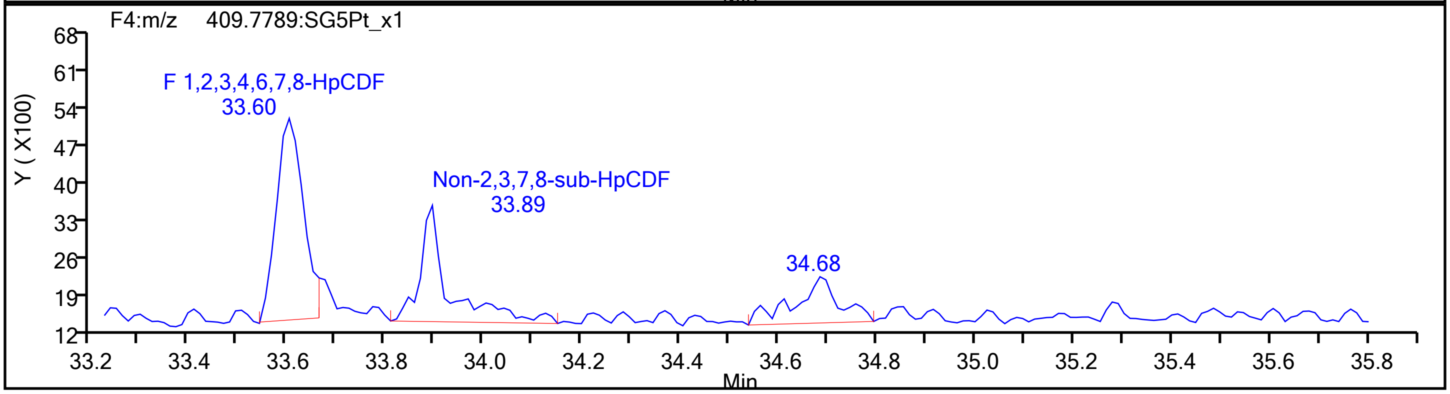

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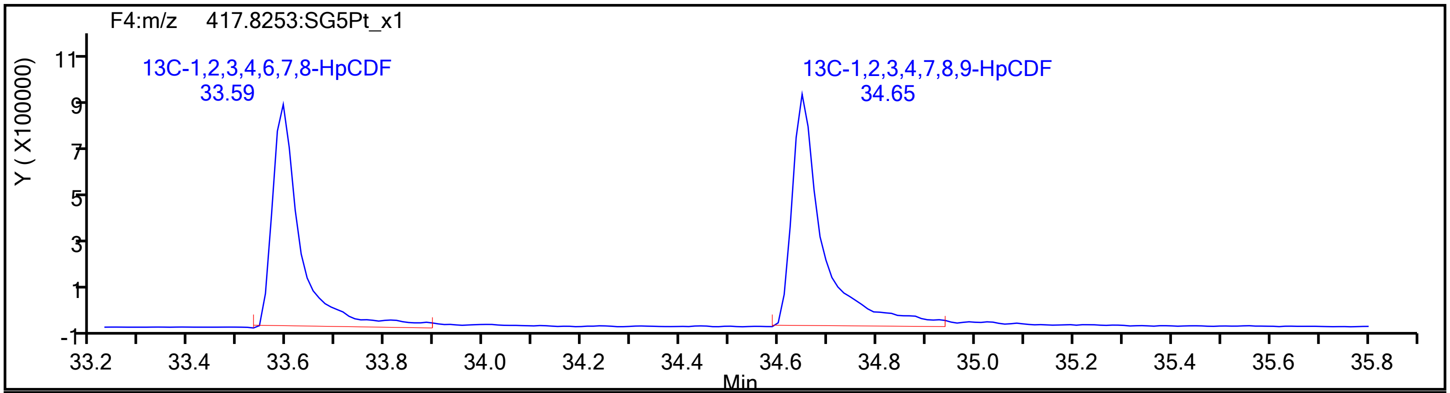

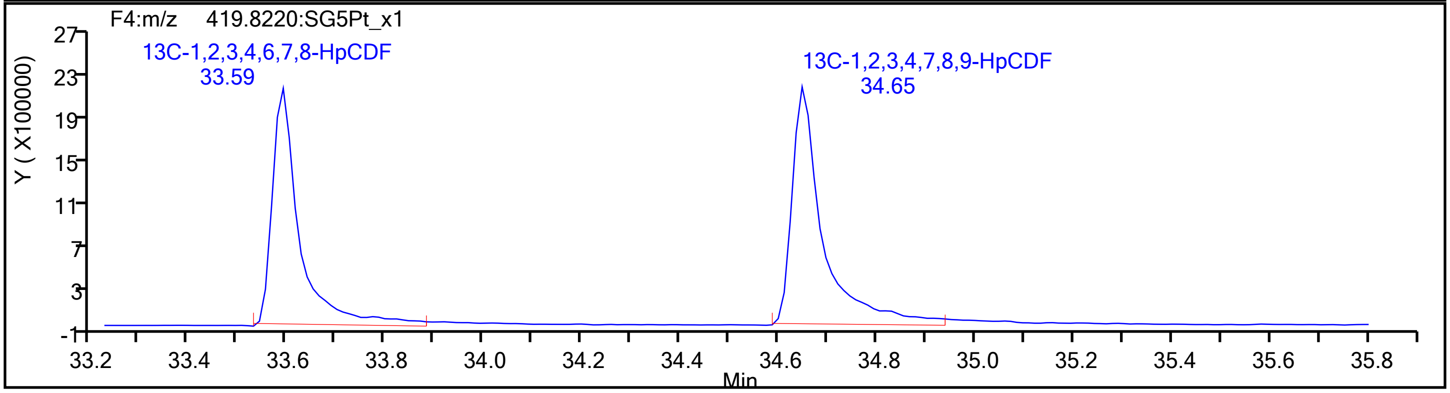

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Eurofins TestAmerica, Sacramento

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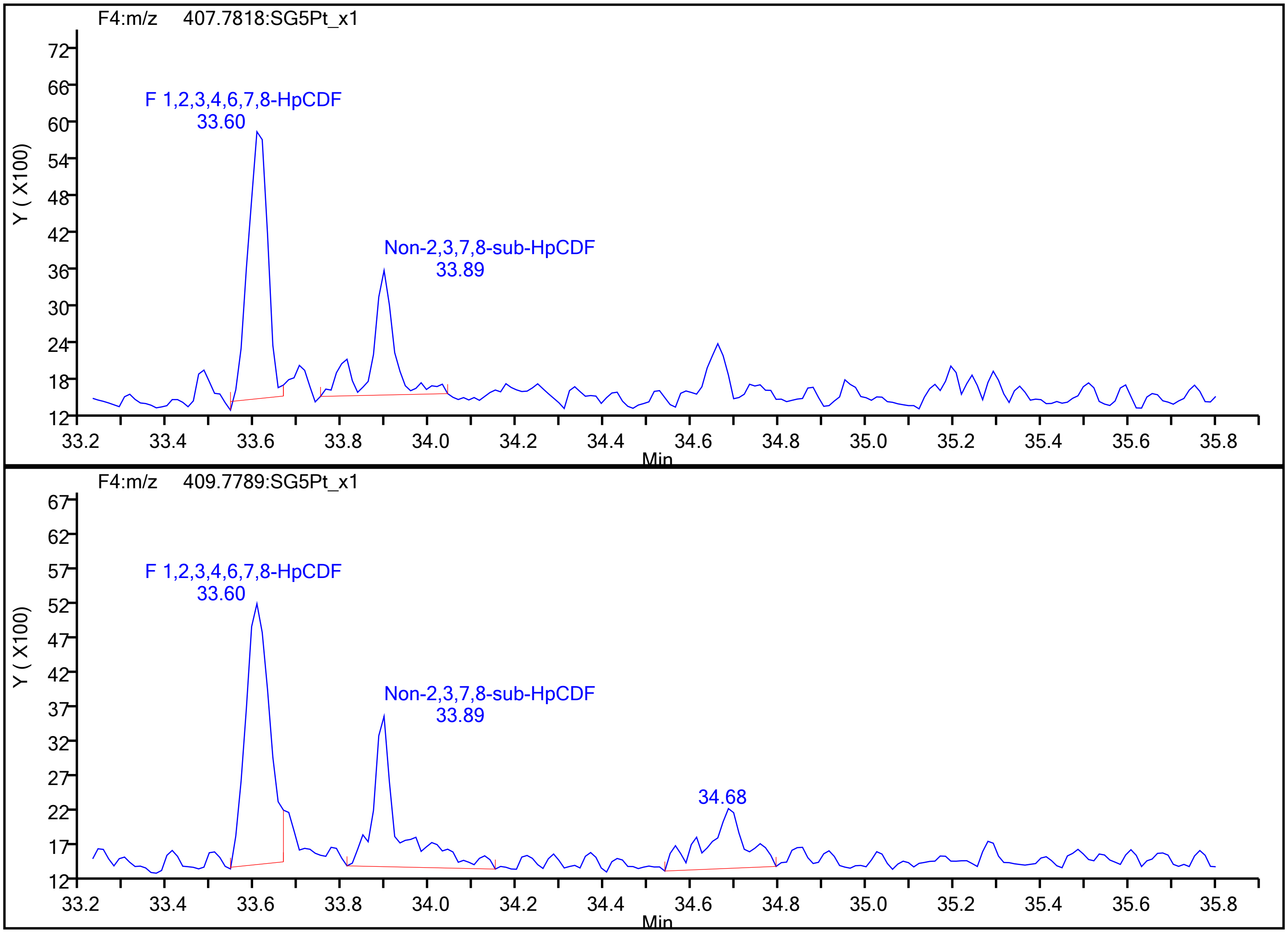

HpCDF Interference Mass

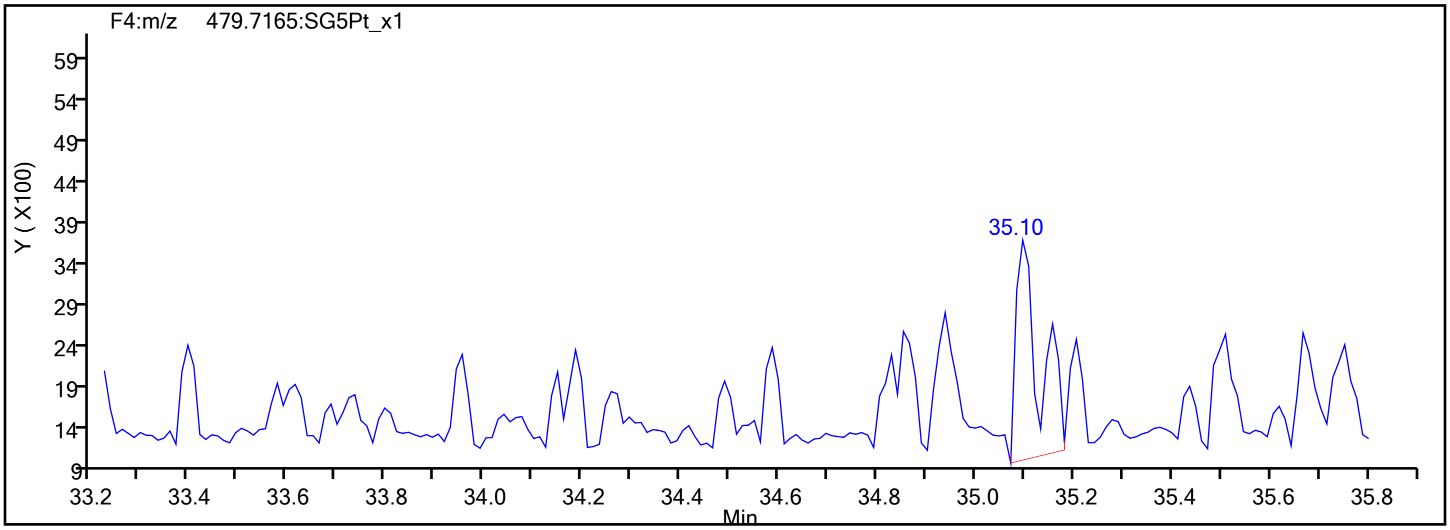

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Eurofins TestAmerica, Sacramento

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Injection Date: 25-Jun-2020 23:55:43 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

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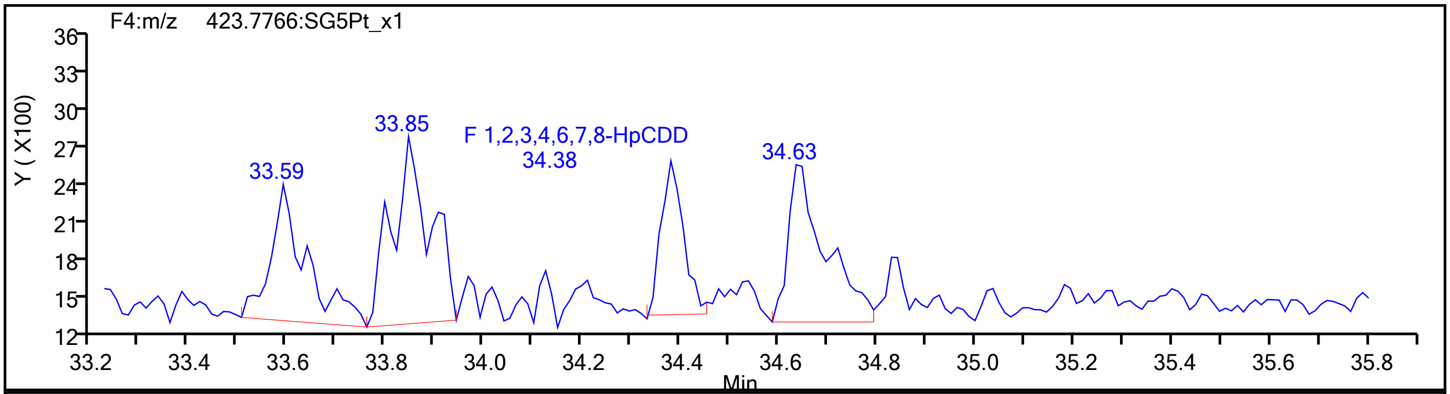

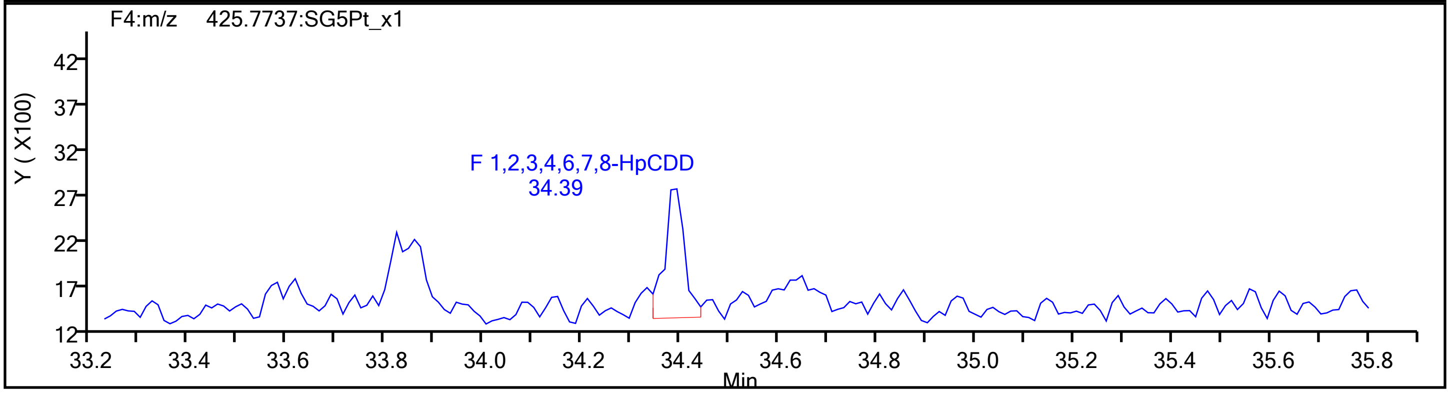

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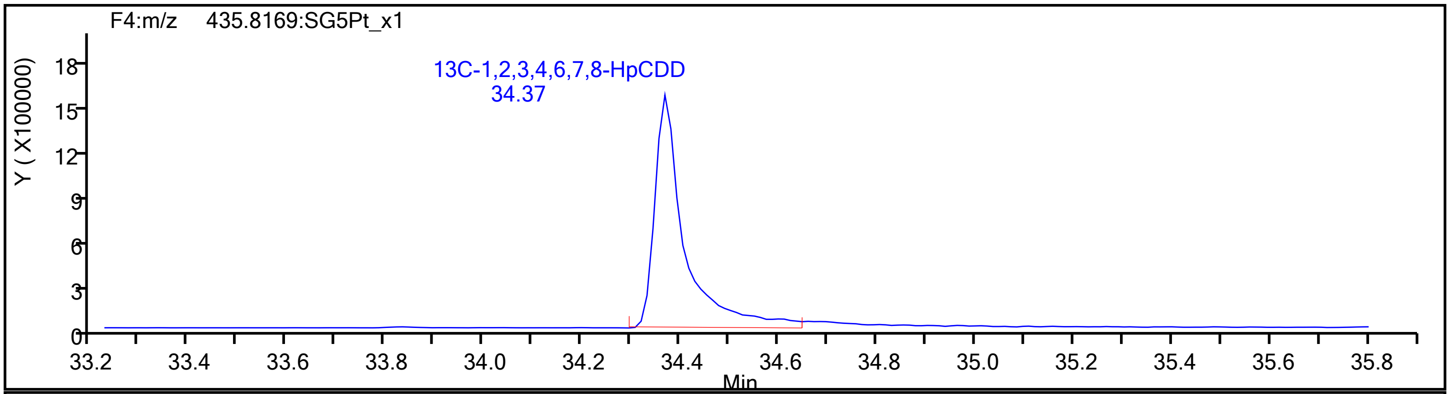

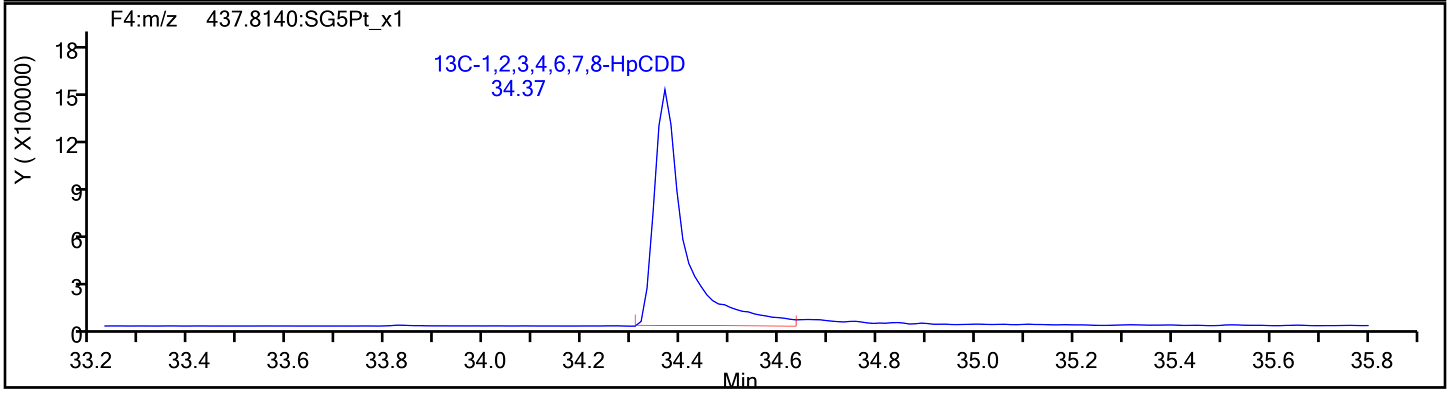

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Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Method: Dioxin_10D5
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Client ID: AFEFF10
Worklist#: 389621
Sample Line#: 9
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Column Dia: 0.32 mm

OCDF

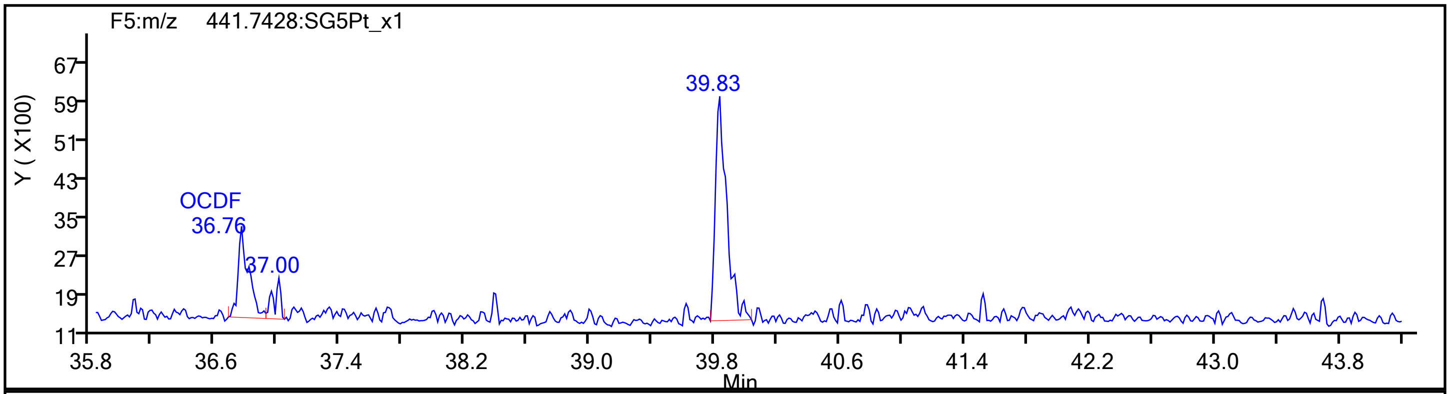

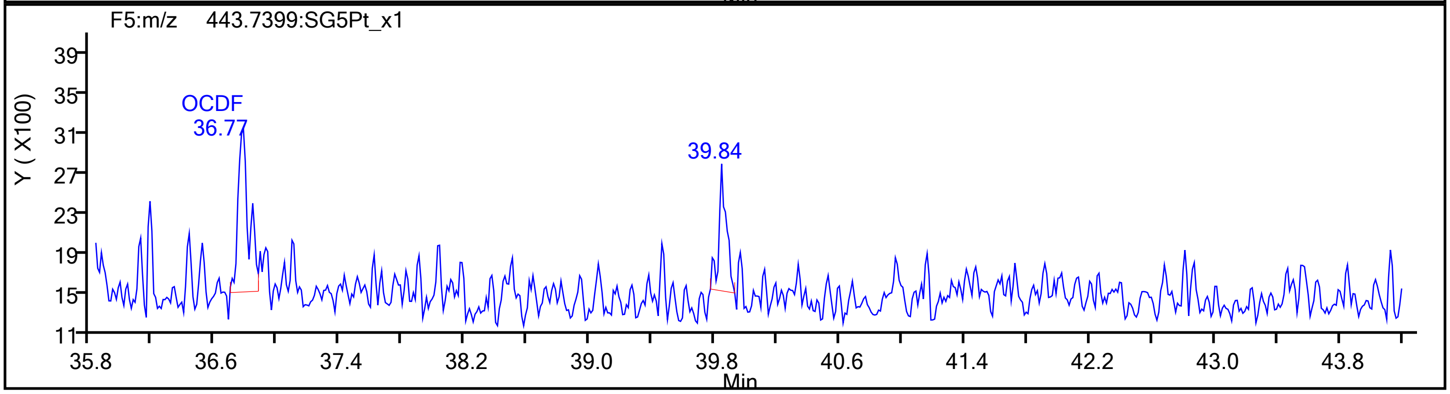

OCDF Standards

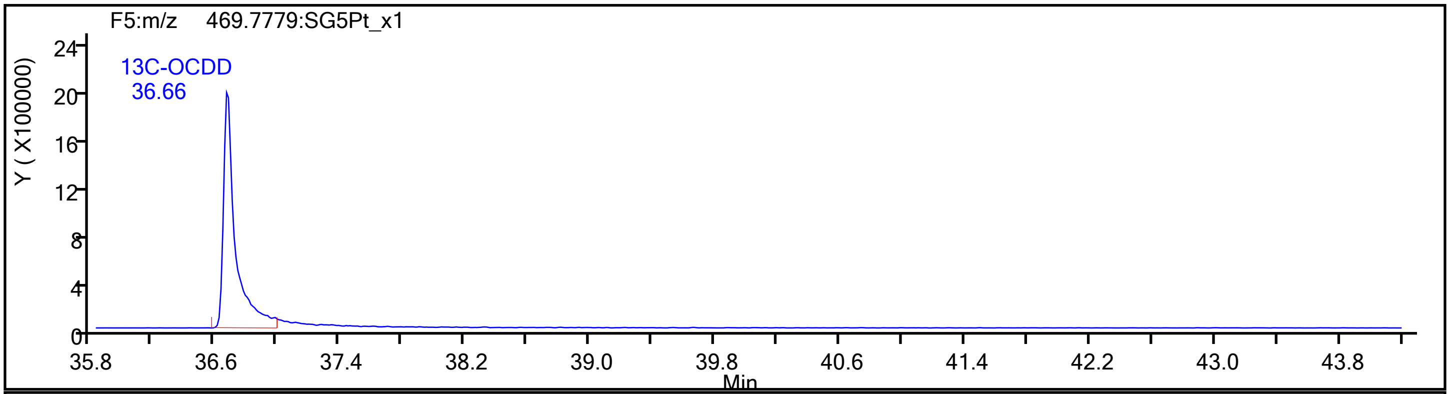

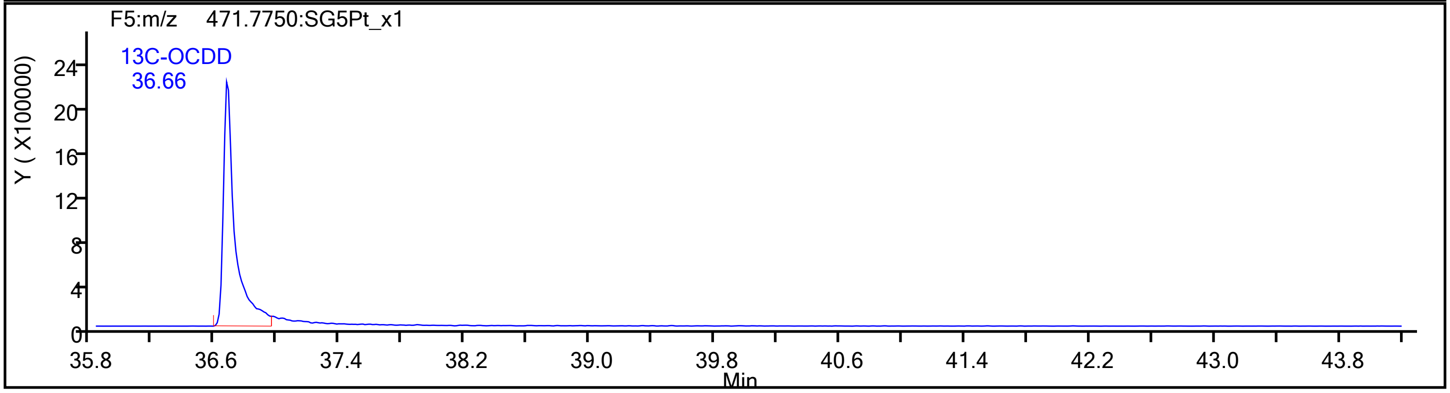

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
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Client ID:	AFEFF10		
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OCDF

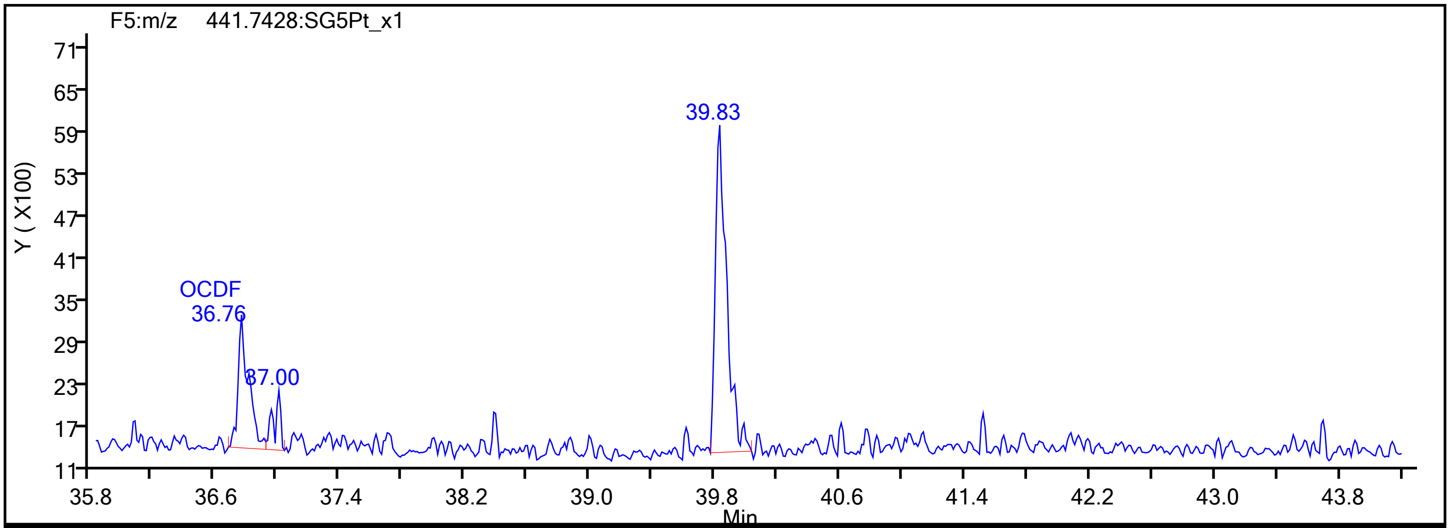

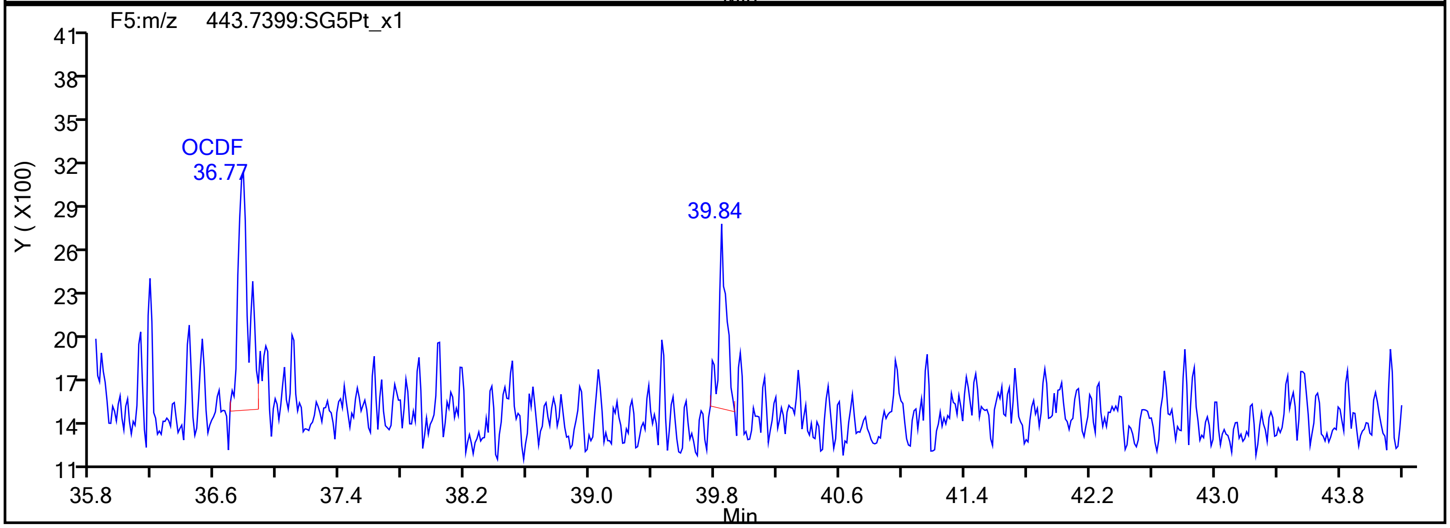

OCDF Interference Mass

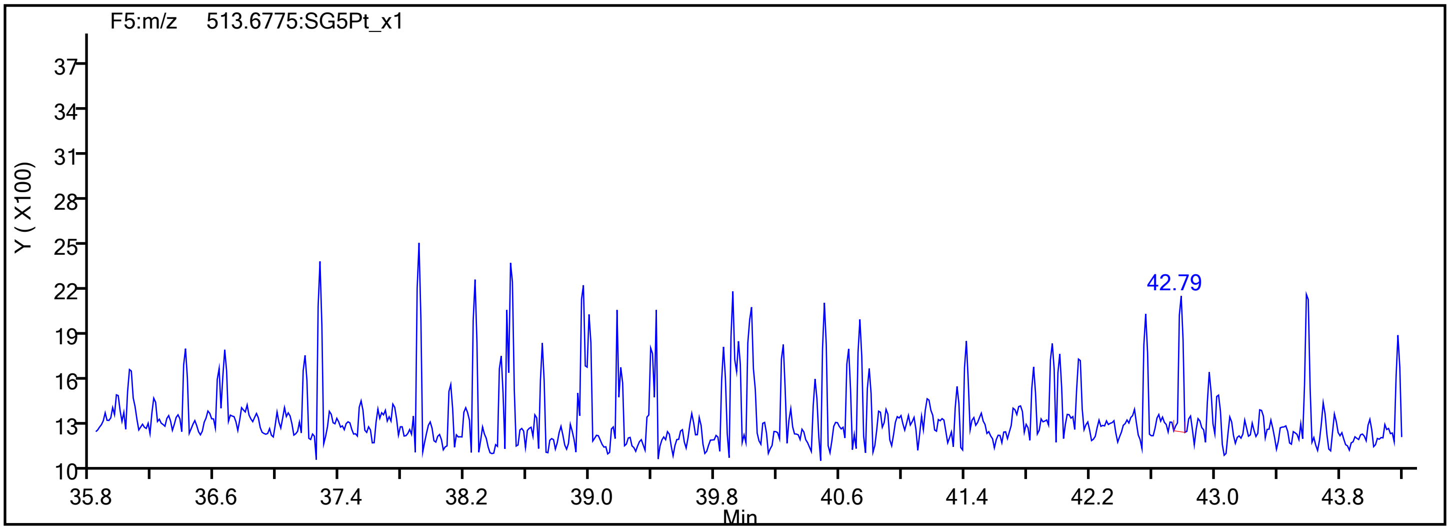

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Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5 Operator ID: AJS
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OCDD

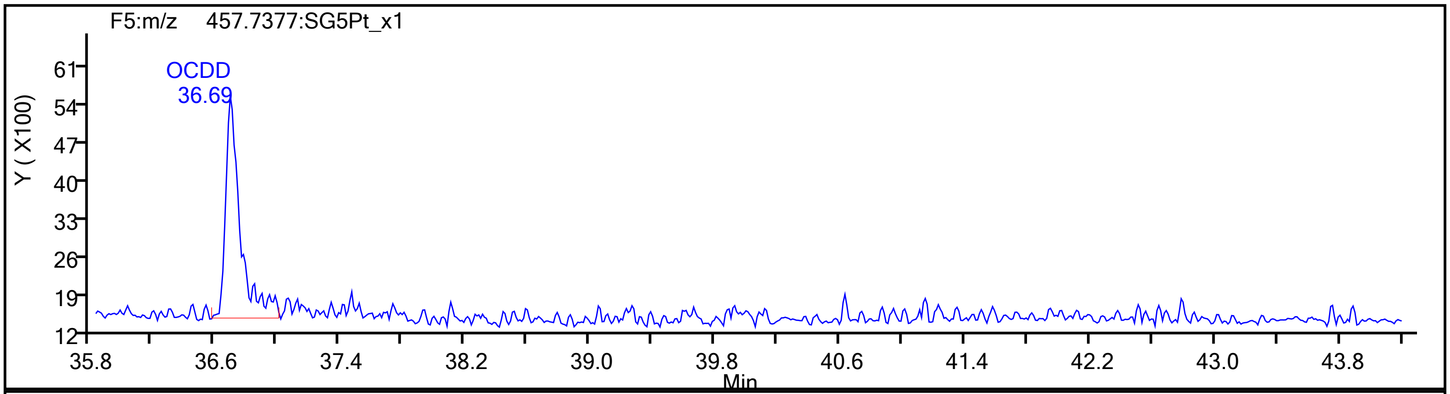

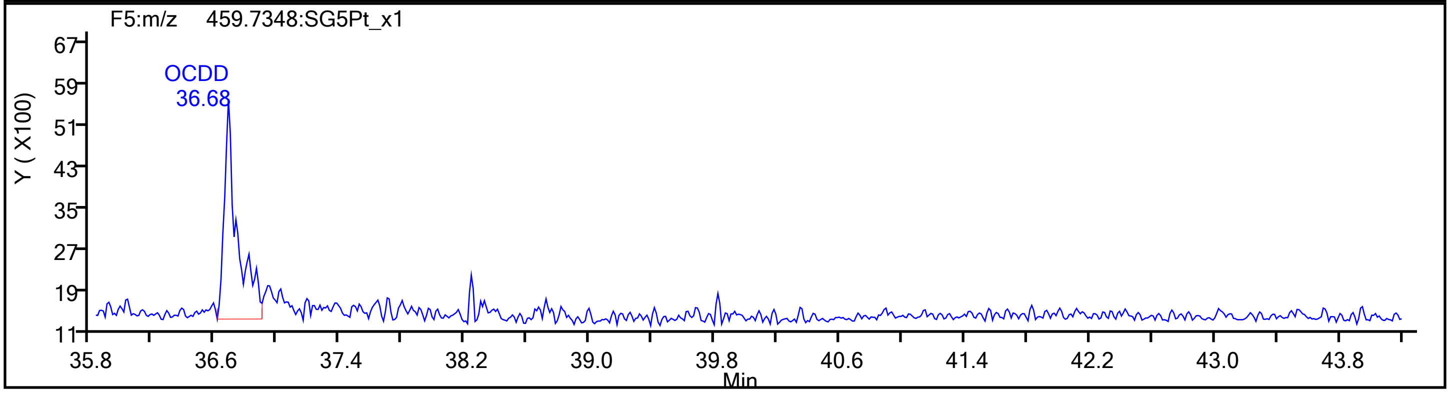

OCDD Standards

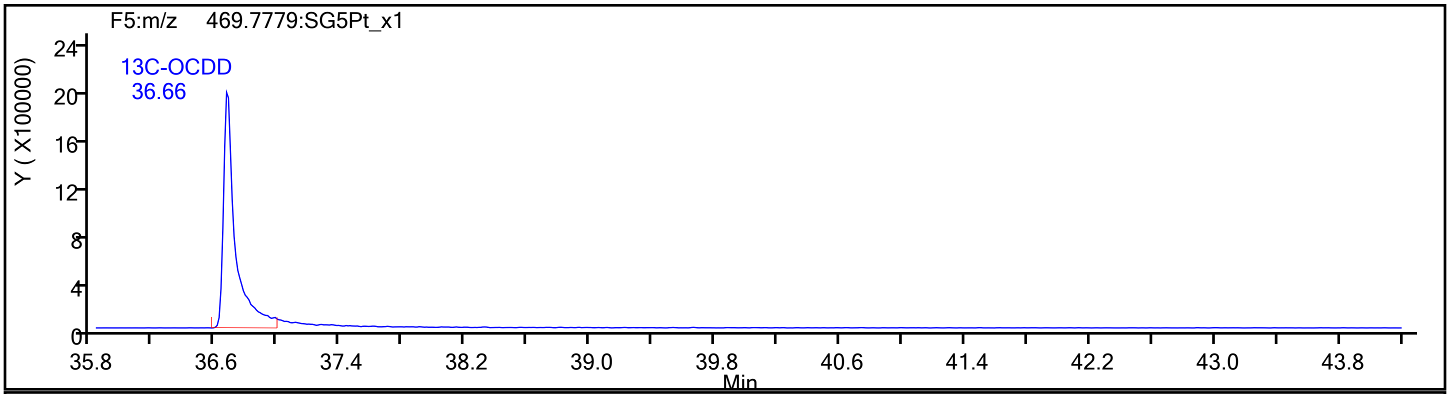

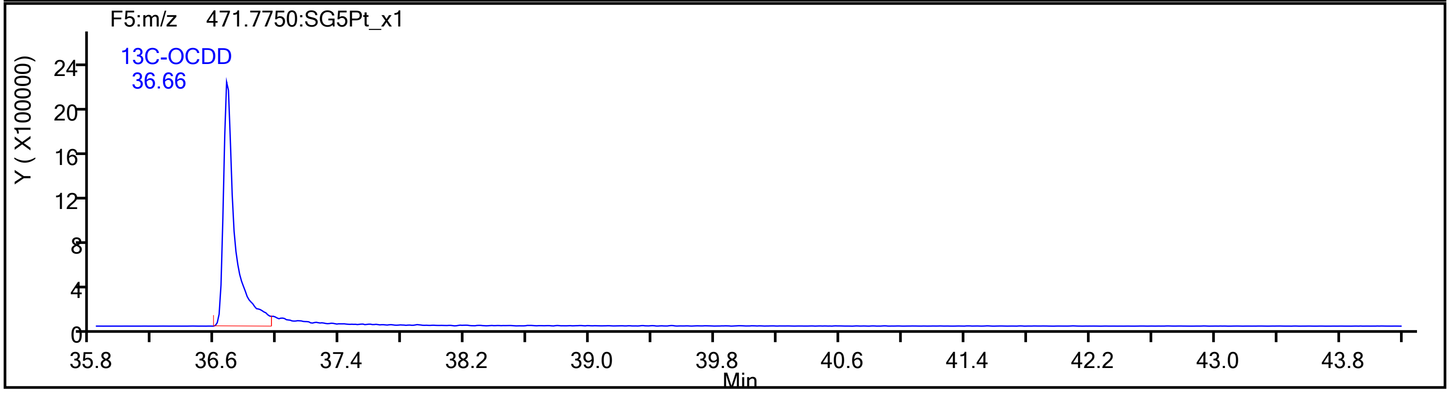

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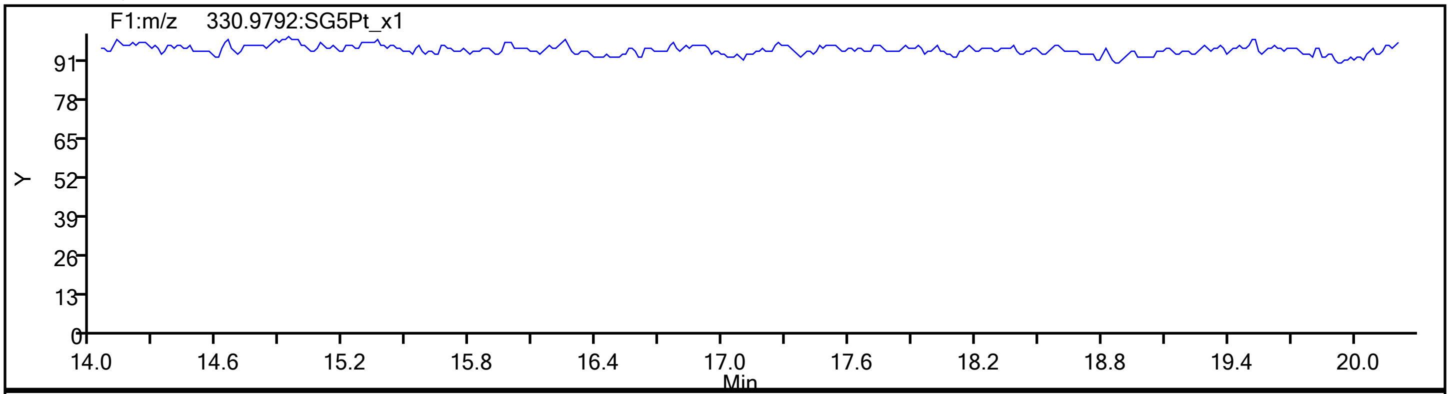

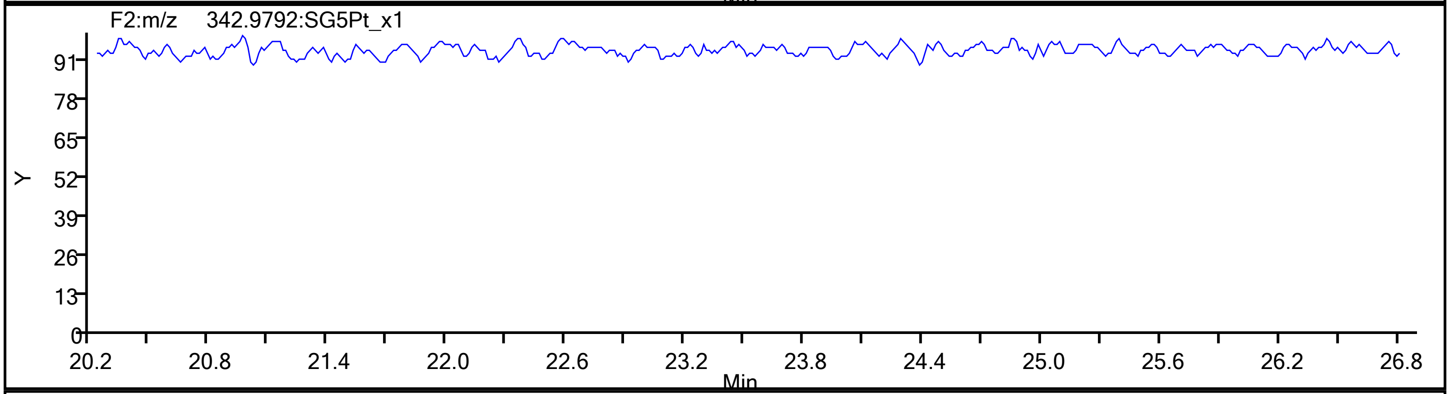

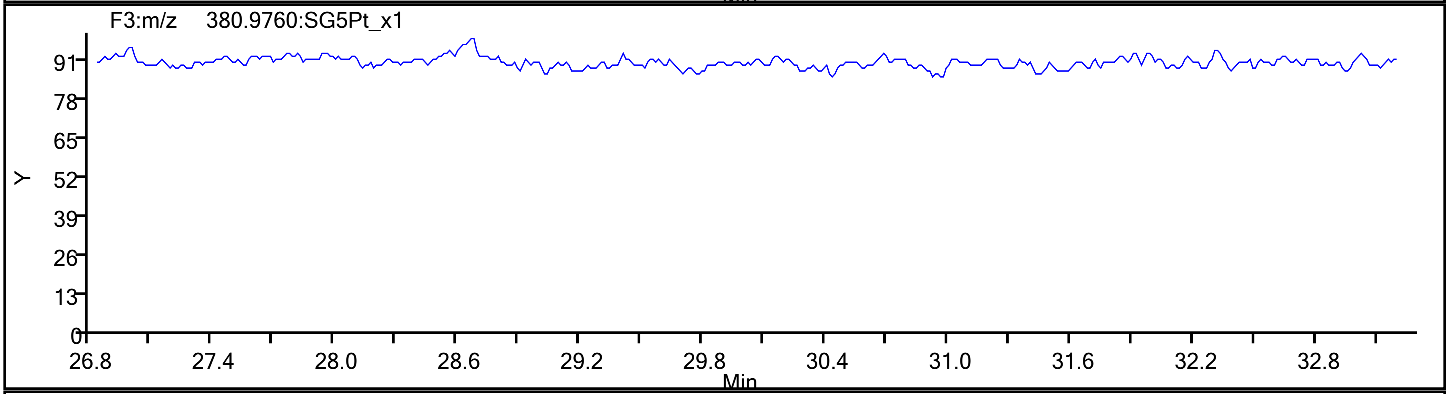

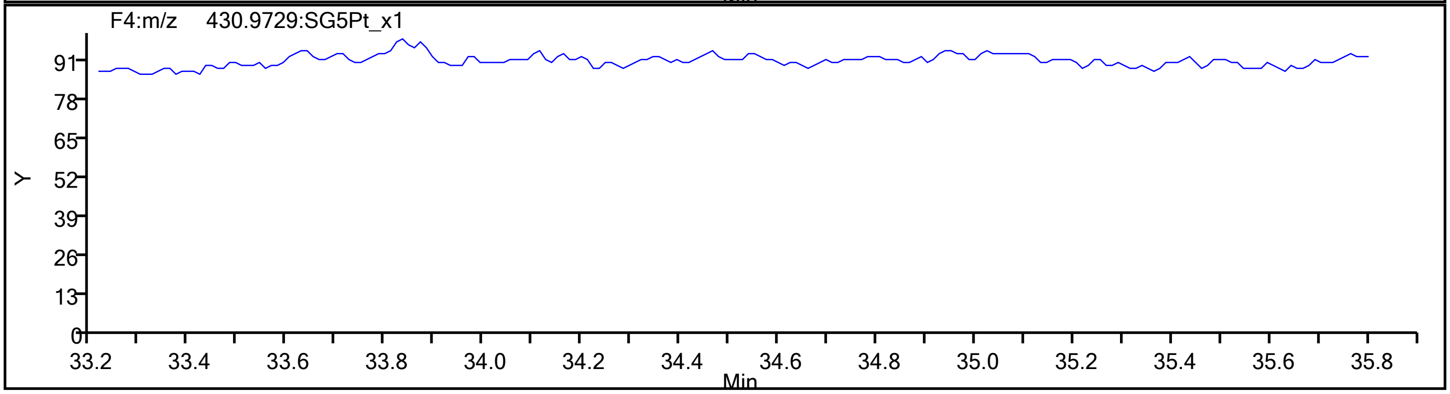

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_9.d

Injection Date: 25-Jun-2020 23:55:43 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 9

Column Type: DB-5 Column Dia: 0.32 mm

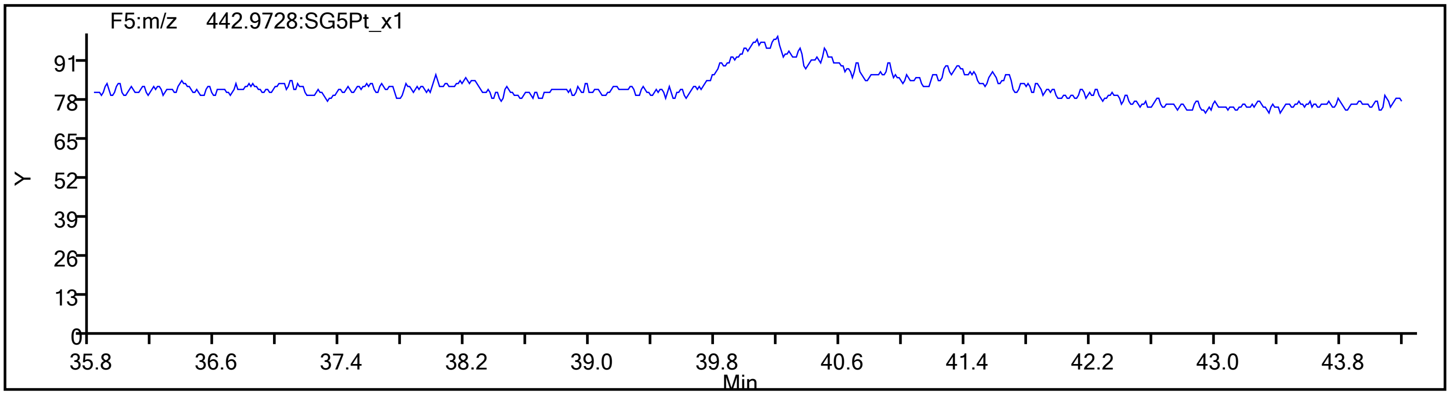

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Client Sample ID: DUP Lab Sample ID: 600-205895-4

Matrix: Water Lab File ID: 25JN2010D5_12.d

Analysis Method: 1613B Date Collected: 05/28/2020 00:00

Extract. Method: 1613B Date Extracted: 06/24/2020 12:40

Sample wt/vol: 1050.9(mL) Date Analyzed: 06/26/2020 02:11

Con. Extract Vol.: 20.0(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 389621 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.5	0.53
51207-31-9	2,3,7,8-TCDF	ND		9.5	0.41
40321-76-4	1,2,3,7,8-PeCDD	ND		48	0.50
57117-41-6	1,2,3,7,8-PeCDF	0.99	J q	48	0.49
57117-31-4	2,3,4,7,8-PeCDF	ND		48	0.45
39227-28-6	1,2,3,4,7,8-HxCDD	1.5	J	48	0.45
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.47
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.42
70648-26-9	1,2,3,4,7,8-HxCDF	ND		48	0.81
57117-44-9	1,2,3,6,7,8-HxCDF	ND		48	0.82
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.71
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.63
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.1	J	48	0.46
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.3	J B q	48	0.43
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.53
3268-87-9	OCDD	6.5	J B	95	0.72
39001-02-0	OCDF	3.2	J B	95	0.76
41903-57-5	Total TCDD	1.9	J B	9.5	0.53
30402-14-3	Total TCDF	ND		9.5	0.41
36088-22-9	Total PeCDD	ND		48	0.50
30402-15-4	Total PeCDF	0.99	J B q	48	0.47
34465-46-8	Total HxCDD	1.5	J	48	0.45
55684-94-1	Total HxCDF	ND		48	0.82
37871-00-4	Total HpCDD	1.1	J	48	0.46
38998-75-3	Total HpCDF	1.3	J B q	48	0.48

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: DUP	Lab Sample ID: 600-205895-4
Matrix: Water	Lab File ID: 25JN2010D5_12.d
Analysis Method: 1613B	Date Collected: 05/28/2020 00:00
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1050.9(mL)	Date Analyzed: 06/26/2020 02:11
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		25-164
89059-46-1	13C-2,3,7,8-TCDF	51		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	58		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	50		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	56		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	57		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	61		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	60		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	55		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	54		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	69		26-138
114423-97-1	13C-OCDD	66		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	68		35-197

Report Date: 26-Jun-2020 13:16:18 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d
Lims ID: 600-205895-B-4-A
Client ID: DUP
Sample Type: Client
Inject. Date: 26-Jun-2020 02:11:13 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-4-A 600-205895-B-4-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:15:32

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.581	53450440	0.78	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.082	32864200	0.78	1.1970	51.4	51.4	0.1256	0.1256	51.37	
2,3,7,8-TCDF	17.097						0.0216	0.0216		
A Non-2,3,7,8-sub-TCDF	16.810						0.0216	0.0216		
S Total TCDF							0.0216	0.0216		
D 13C-2,3,7,8-TCDD	17.763	28776093	0.77	0.8773	61.4	61.4	0.2165	0.2165	61.37	
2,3,7,8-TCDD	17.793						0.0277	0.0277		
$ 37Cl4-2,3,7,8-TCDD	17.778	13828074		0.9515	27.2	27.2	0.0358	0.0358	67.98	
A Non-2,3,7,8-sub-TCDD	17.256	27989	0.72	1.0000	0.0973	0.0973	0.0277	0.0973		M
S Total TCDD					0.0973	0.0973	0.0277	0.0277		
D 13C-1,2,3,7,8-PeCDF	21.971	26424577	1.62	0.9904	49.9	49.9	0.2175	0.2175	49.92	
1,2,3,7,8-PeCDF	21.999	12436	1.55	0.9019	0.0610	0.0522	0.0256	0.0256		RQ
D 13C-2,3,4,7,8-PeCDF	23.280	32315281	1.56	1.0797	56.0	56.0	0.1995	0.1995	55.99	
2,3,4,7,8-PeCDF	23.321						0.0238	0.0238		
A F1 PeCDFs	19.675						0.0315	0.0315		
A Non-2,3,7,8-sub-PeCDF	22.743						0.0246	0.0246		
S Total PeCDF					0.0610	0.0522	0.0247	0.0247		RQ
D 13C-1,2,3,7,8-PeCDD	23.989	21329220	1.57	0.6904	57.8	57.8	0.0962	0.0962	57.80	
1,2,3,7,8-PeCDD	24.044						0.0261	0.0261		
A Non-2,3,7,8-sub-PeCDD	22.953						0.0261	0.0261		
S Total PeCDD							0.0261	0.0261		
D 13C-1,2,3,4,7,8-HxCDF	30.113	18770796	0.48	0.9076	60.8	60.8	0.6560	0.6560	60.84	
1,2,3,4,7,8-HxCDF	30.153						0.0423	0.0423		
D 13C-1,2,3,6,7,8-HxCDF	30.326	17605883	0.50	0.8671	59.7	59.7	0.6867	0.6867	59.73	
1,2,3,6,7,8-HxCDF	30.366						0.0431	0.0431		
D 13C-2,3,4,6,7,8-HxCDF	31.244	15294201	0.50	0.8287	54.3	54.3	0.7186	0.7186	54.29	
2,3,4,6,7,8-HxCDF	31.285						0.0329	0.0329		
D 13C-1,2,3,7,8,9-HxCDF	32.110	13771883	0.50	0.7391	54.8	54.8	0.8056	0.8056	54.81	
1,2,3,7,8,9-HxCDF	32.137						0.0372	0.0372		
A Non-2,3,7,8-sub-HxCDF	29.847						0.0385	0.0385		
S Total HxCDF							0.0431	0.0431		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.923	33993339	1.25	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	16284604	1.28	0.8335	57.5	57.5	0.6480	0.6480	57.47	
1,2,3,4,7,8-HxCDD	31.471	10921	1.17	0.8332	0.0805	0.0805	0.0238	0.0238		M
D 13C-1,2,3,6,7,8-HxCDD	31.564	19402290	1.27	0.8228	69.4	69.4	0.6565	0.6565	69.37	
1,2,3,6,7,8-HxCDD	31.604						0.0247	0.0247		MU
1,2,3,7,8,9-HxCDD	31.950						0.0221	0.0221		
A Non-2,3,7,8-sub-HxCDD	30.499						0.0235	0.0235		
S Total HxCDD					0.0805	0.0805	0.0235	0.0235		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	14573036	0.43	0.7009	61.2	61.2	2.285	2.285	61.17	
1,2,3,4,6,7,8-HpCDF	33.602	12821	1.04	1.3295	0.0765	0.0662	0.0228	0.0228		RQM
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	16909674	0.43	0.7244	68.7	68.7	2.211	2.211	68.67	
1,2,3,4,7,8,9-HpCDF	34.659						0.0280	0.0280		
A Non-2,3,7,8-sub-HpCDF	34.143						0.0251	0.0251		
S Total HpCDF					0.0765	0.0662	0.0254	0.0254		RQ
D 13C-1,2,3,4,6,7,8-HpCDD	34.368	15731800	1.07	0.7026	65.9	65.9	0.9391	0.9391	65.87	
1,2,3,4,6,7,8-HpCDD	34.380	9016	1.09	1.0040	0.0571	0.0571	0.0241	0.0241		M
A Non-2,3,7,8-sub-HpCDD	34.119						0.0241	0.0241		
S Total HpCDD					0.0571	0.0571	0.0241	0.0241		
D 13C-OCDD	36.664	27824941	0.90	0.6184	132.4	132.4	0.4381	0.4381	66.19	
OCDF	36.748	25824	0.76	1.1076	0.1676	0.1676	0.0400	0.0400		
OCDD	36.688	48350	0.89	1.0175	0.3415	0.3415	0.0377	0.0377		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 26-Jun-2020 13:16:18 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Lims ID:	600-205895-B-4-A				
Client ID:	DUP				
Sample Type:	Client				
Inject. Date:	26-Jun-2020 02:11:13	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	600-205895-B-4-A 600-205895-B-4-A				
Misc. Info.:	25JN2010D5				
Operator ID:	AJS	Instrument ID:	10D5		
Method:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	26-Jun-2020 13:15:56	Calib Date:	05-Mar-2020 20:05:51		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1061				

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:15:32

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.581	17.581	0		23386448	5628524	4226	10565	1332		a
333.9339	17.581	17.581	0		30063992	7208151	5526	13815	1304	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	14396077	3322154	4555	11387	729		
317.9389	17.067	17.082	-1	0.971	18468123	4283168	3164	7910	1354	0.78(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097						226	565			
305.8987	17.097						278	695			
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						226	565			
305.8987	16.810						278	695			
13C-2,3,7,8-TCDD											
331.9368	17.763	17.778	-1	1.010	12555787	2798510	4226	10565	662		
333.9339	17.763	17.778	-1	1.010	16220306	3607630	5526	13815	653	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793						467	1167			
321.8936	17.793						242	605			
37Cl4-2,3,7,8-TCDD											
327.8847	17.778	17.793	-1	1.011	13828074	3085521	1750	4375	1763		
A Non-2,3,7,8-sub-TCDD											M
319.8965	15.616	17.256	-98	0.879	11741	3429	467	1167	7		M
321.8936	15.616	17.256	-98	0.879	16248	4128	242	605	17	0.72(0.65-0.89)	M
13C-1,2,3,7,8-PeCDF											
351.9000	21.971	21.999	-2	1.250	16346126	2654691	6631	16577	400		
353.8970	21.971	21.999	-2	1.250	10078451	1658922	4432	11080	374	1.62(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											RQ
339.8597	21.999	22.012	-1	1.001	9660	2335	135	337	17		
	Empc Correction				7559	1571	135	337	12		
341.8567	21.999	22.012	-1	1.001	4877	1014	264	660	4	1.98(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.280	23.308	-2	1.324	19673830	3092389	6631	16577	466		
353.8970	23.280	23.308	-2	1.324	12641451	1948219	4432	11080	440	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.321						135	337			
341.8567	23.321						264	660			
A F1 PeCDFs											
339.8597	19.675						177	442			
341.8567	19.675						334	835			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						135	337			
341.8567	22.743						264	660			
13C-1,2,3,7,8-PeCDD											
367.8949	23.989	24.017	-2	1.364	13024773	1880953	1953	4882	963		
369.8919	23.989	24.017	-2	1.364	8304447	1190065	1457	3642	817	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.044						209	522			
357.8516	24.044						116	290			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						209	522			
357.8516	22.953						116	290			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.943	6128229	898188	5613	14032	160		
385.8610	30.113	30.140	-2	0.943	12642567	1835222	10393	25982	177	0.48(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.153						221	552			
375.8178	30.153						146	365			
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.326	30.340	-1	0.950	5873707	811107	5613	14032	145		
385.8610	30.326	30.340	-1	0.950	11732176	1662883	10393	25982	160	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.366						221	552			
375.8178	30.366						146	365			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.244	31.258	-1	0.979	5085842	1056489	5613	14032	188		
385.8610	31.244	31.258	-1	0.979	10208359	2072063	10393	25982	199	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.285						221	552			
375.8178	31.285						146	365			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.110	32.123	-1	1.006	4566869	921659	5613	14032	164		
385.8610	32.110	32.123	-1	1.006	9205014	1837047	10393	25982	177	0.50(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.137						221	552			
375.8178	32.137						146	365			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						221	552			
375.8178	29.847						146	365			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.923	31.924	0		18904756	3766439	8427	21067	447		
403.8529	31.923	31.924	0		15088583	2953895	6093	15232	485	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.985	9141520	2285452	8427	21067	271		
403.8529	31.458	31.471	-1	0.985	7143084	1754313	6093	15232	288	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											M
389.8157	31.471	31.484	-1	1.000	5891	1324	154	385	9		M
391.8127	31.458	31.484	-2	1.000	5030	1448	167	417	9	1.17(1.05-1.43)	M
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.564	31.577	-1	0.989	10873138	2020791	8427	21067	240		
403.8529	31.564	31.577	-1	0.989	8529152	1614788	6093	15232	265	1.27(1.05-1.43)	
1,2,3,6,7,8-HxCDD											MU
389.8157	31.604						154	385			
391.8127	31.604						167	417			
1,2,3,7,8,9-HxCDD											
389.8157	31.950						154	385			
391.8127	31.950						167	417			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						154	385			
391.8127	30.499						167	417			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.052	4374362	1143223	12240	30600	93		
419.8220	33.590	33.590	0	1.052	10198674	2673640	30819	77047	87	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											RQM
407.7818	33.602	33.602	0	1.000	8533	2431	272	680	9		M
	Empc Correction				6536	2459	272	680	9		
409.7789	33.590	33.602	-1	1.000	6285	2365	191	477	12	1.36(0.88-1.20)	M
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.085	5119555	1134585	12240	30600	93		
419.8220	34.647	34.659	-1	1.085	11790119	2695354	30819	77047	87	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659						272	680			
409.7789	34.659						191	477			
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						272	680			
409.7789	34.143						191	477			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.368	34.380	-1	1.077	8114871	1905000	7324	18310	260		
437.8140	34.368	34.380	-1	1.077	7616929	1807798	10412	26030	174	1.07(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											M
423.7766	34.380	34.380	0	1.000	4704	1157	166	415	7		M
425.7737	34.380	34.380	0	1.000	4312	1398	194	485	7	1.09(0.88-1.20)	M
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						166	415			
425.7737	34.119						194	485			
13C-OCDD											
469.7779	36.664	36.676	-1	1.149	13156518	2495295	3767	9417	662		
471.7750	36.664	36.676	-1	1.149	14668423	2782625	3516	8790	791	0.90(0.76-1.02)	
OCDF											
441.7428	36.748	36.772	-1	1.002	11163	1794	196	490	9		
443.7399	36.760	36.772	-1	1.003	14661	2864	272	680	11	0.76(0.76-1.02)	
OCDD											
457.7377	36.688	36.688	0	1.001	22701	4182	207	517	20		
459.7348	36.676	36.688	-1	1.000	25649	5299	198	495	27	0.89(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d
Lims ID: 600-205895-B-4-A
Client ID: DUP
Inject. Date: 26-Jun-2020 02:11:13
Dil. Factor: 1.0000
Sample Type: Client Sample
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 389621
Lims Sample ID: 12

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	28776093	6406140

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	28776093	6406140

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	11741	3429	16248	4128	0.0973	0.72	M
Signal Totals:							
	11741	3429	16248	4128			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	27989	7557				0.72	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0973 = (27989 * 100.000) / (28776093 * 1.000)

QC Flag Legend

Review Flags
M - Manually Integrated

Report Date: 26-Jun-2020 13:16:18

Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 1, m/z: 319.8965, RT: (15.60- 18.91)

Signal: 1

Processing Integration Results

RT = 15.616 Area = 40407

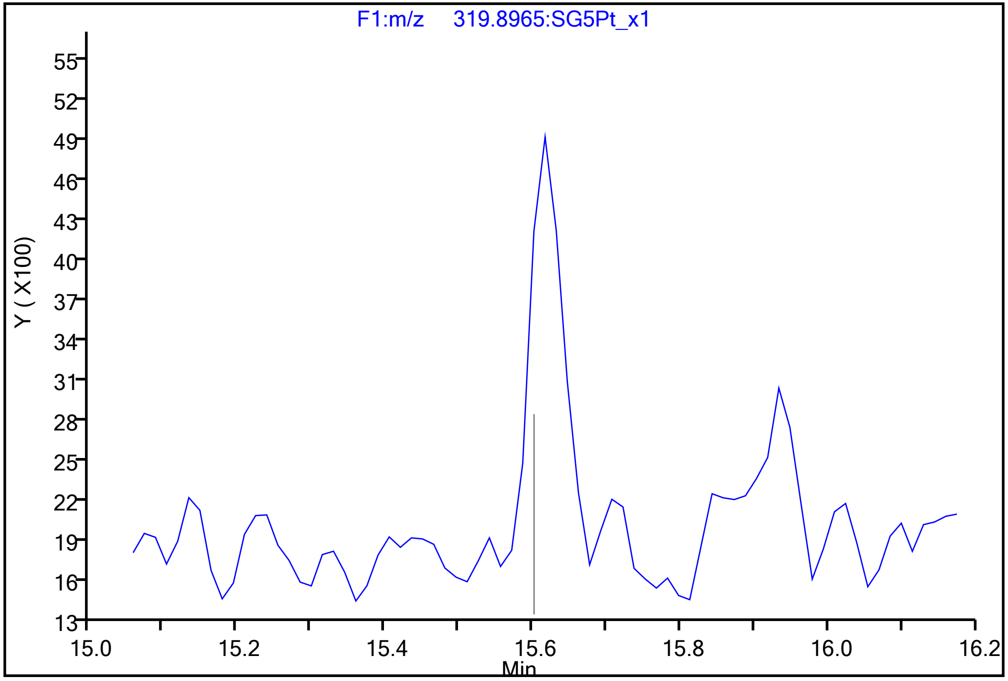

Manual Integration Results

RT = 15.616 Area = 11741 M

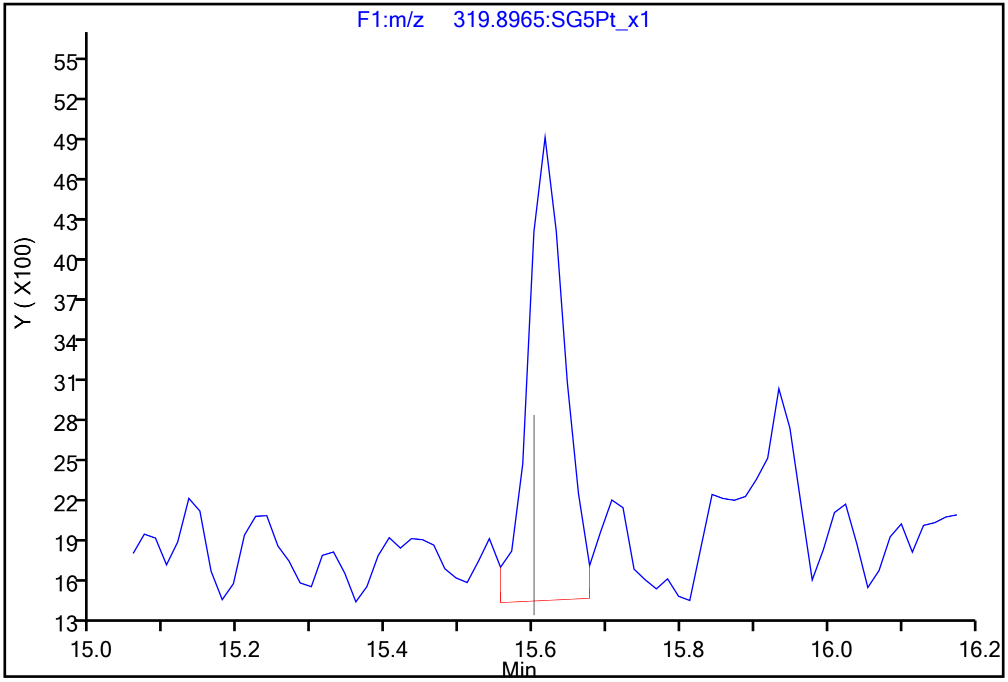

Reviewer: arghestanis, 26-Jun-2020 13:11:56

Audit Action: Manually Integrated

Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (15.60- 18.91)

Signal: 2

Processing Integration Results

RT = 15.616 Area = 17028

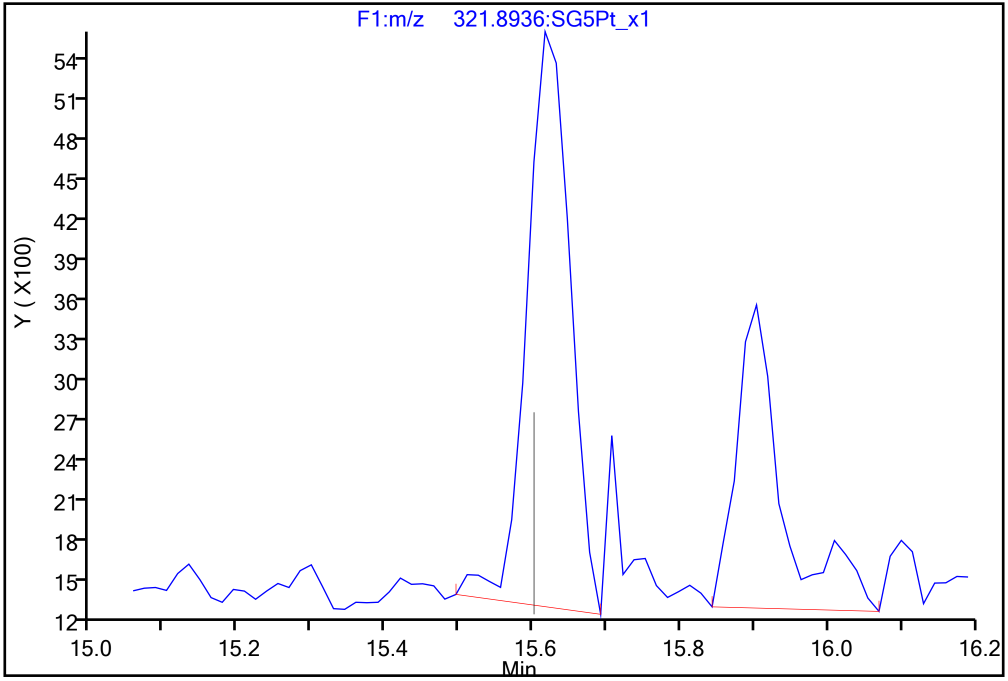

Manual Integration Results

RT = 15.616 Area = 16248 M

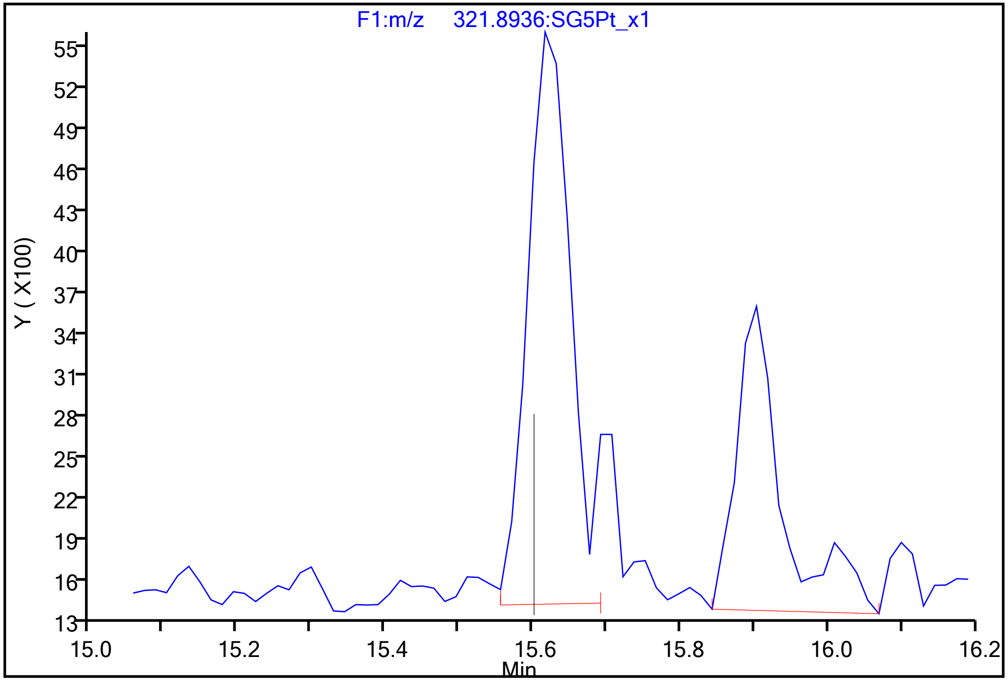

Reviewer: arghestanis, 26-Jun-2020 13:12:09

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:18 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 1

Processing Integration Results

RT: 31.47
Area: 8781
Amount: 0.126819
Amount Units: pg/ul

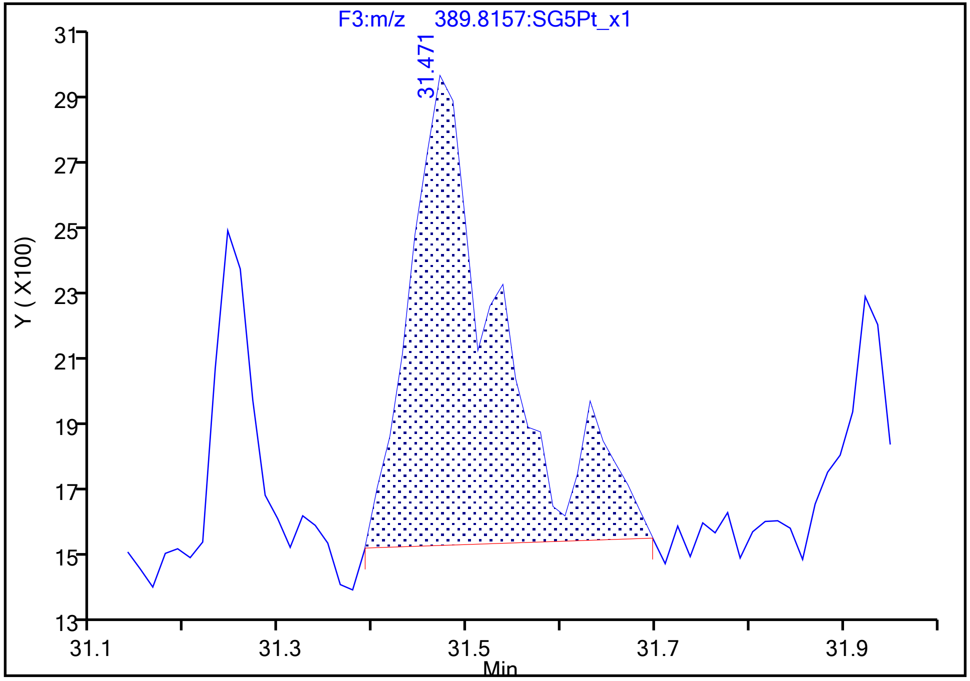

Manual Integration Results

RT: 31.47
Area: 5891
Amount: 0.080490
Amount Units: pg/ul

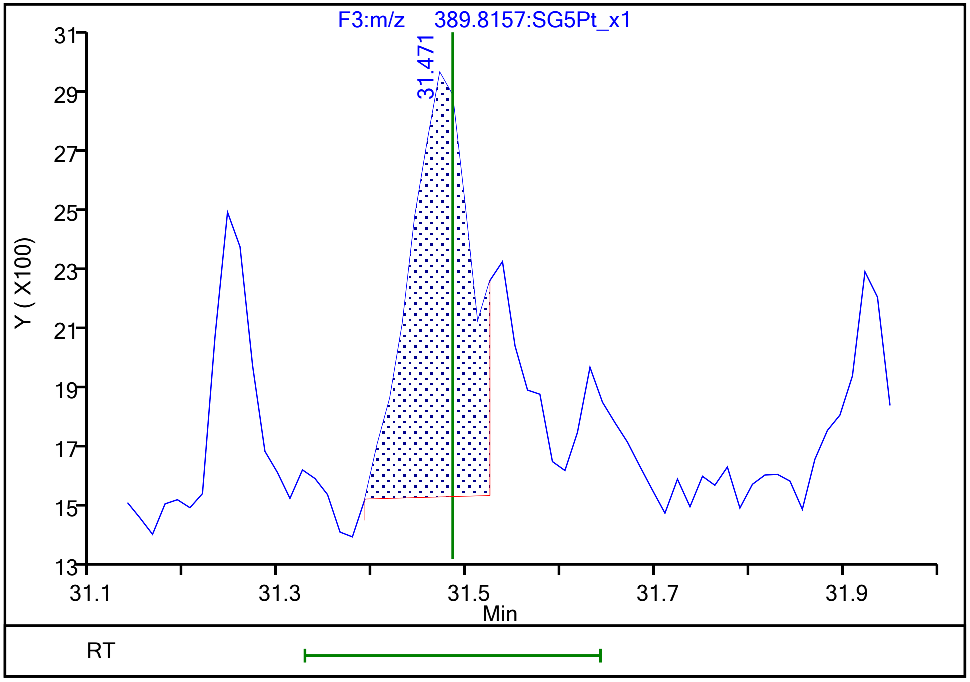

Reviewer: arghestanis, 26-Jun-2020 13:13:34
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 26-Jun-2020 13:16:18 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d

Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F3:HRSIR		

1,2,3,4,7,8-HxCDD, CAS: 39227-28-6

Signal: 2

RT:	31.46
Area:	8426
Amount:	0.126819
Amount Units:	pg/ul

Processing Integration Results

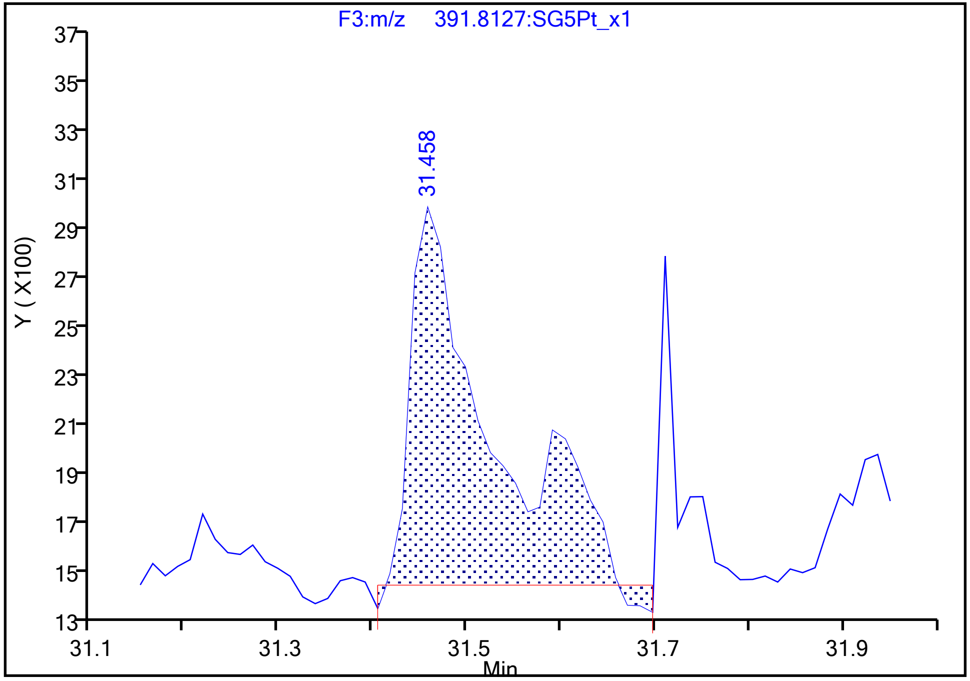

RT:	31.46
Area:	5030
Amount:	0.080490
Amount Units:	pg/ul

Manual Integration Results

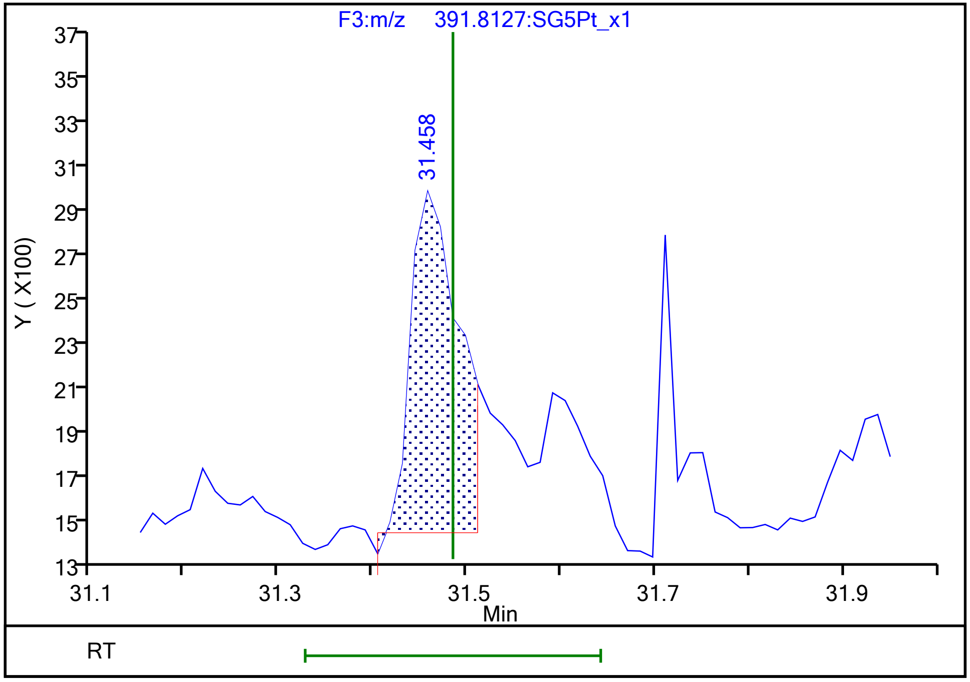

Reviewer: arghestanis, 26-Jun-2020 13:13:43

Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Report Date: 26-Jun-2020 13:16:18
Chrom Revision: 2.3 21-Jun-2020 18:30:46
Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

Not Detected
Expected RT: 33.60

Processing Integration Results

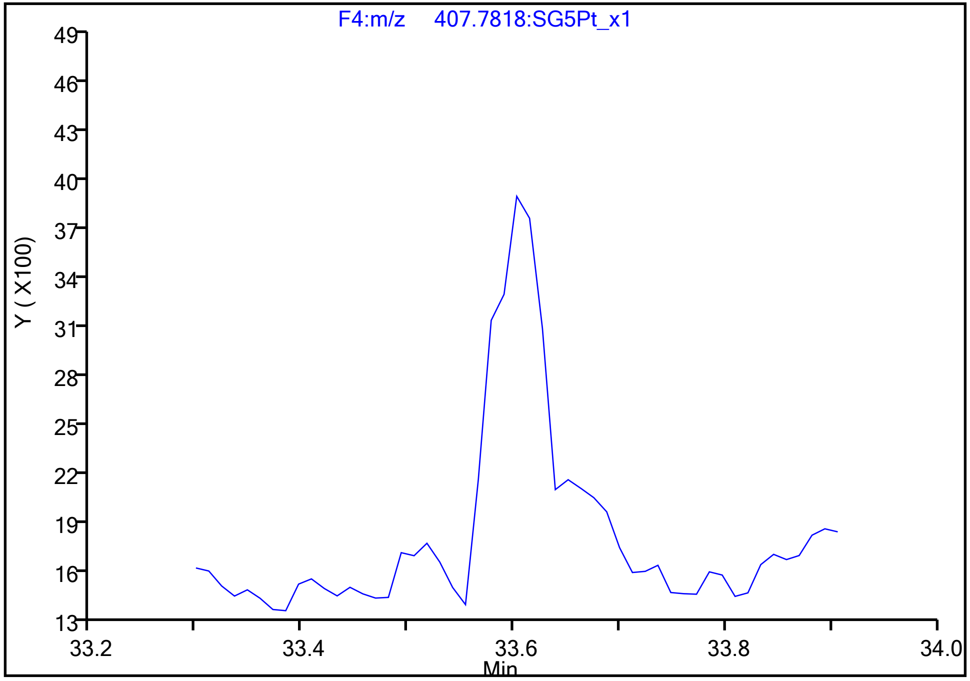

RT: 33.60
Area: 8533
Amount: 0.076482
Amount Units: pg/ul

Manual Integration Results

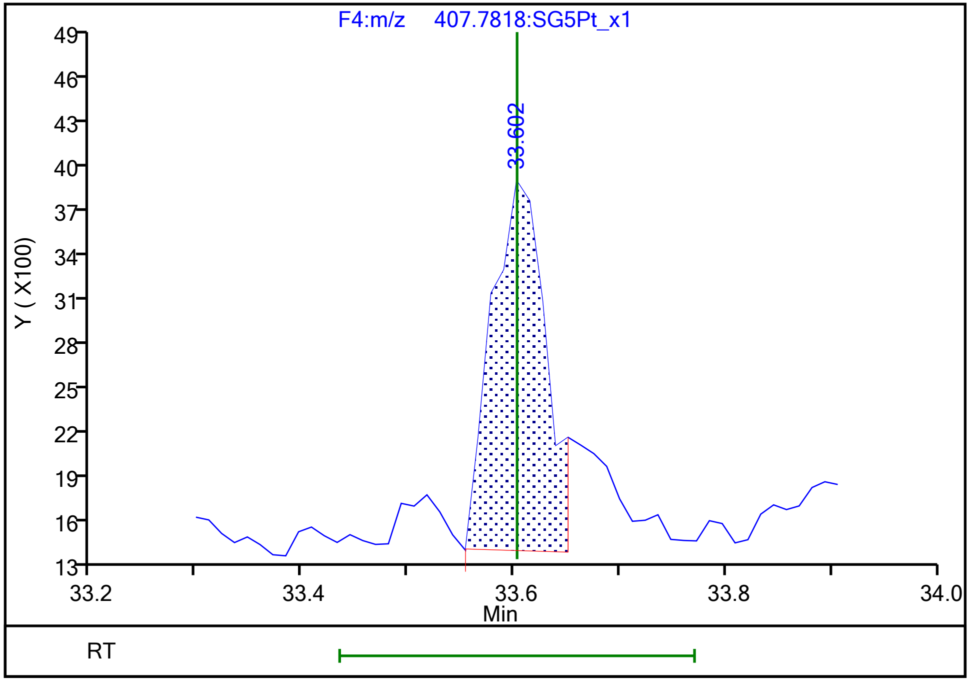

Reviewer: arghestanis, 26-Jun-2020 13:14:29
Audit Action: Manually Integrated
Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 2

Not Detected

Expected RT: 33.60

Processing Integration Results

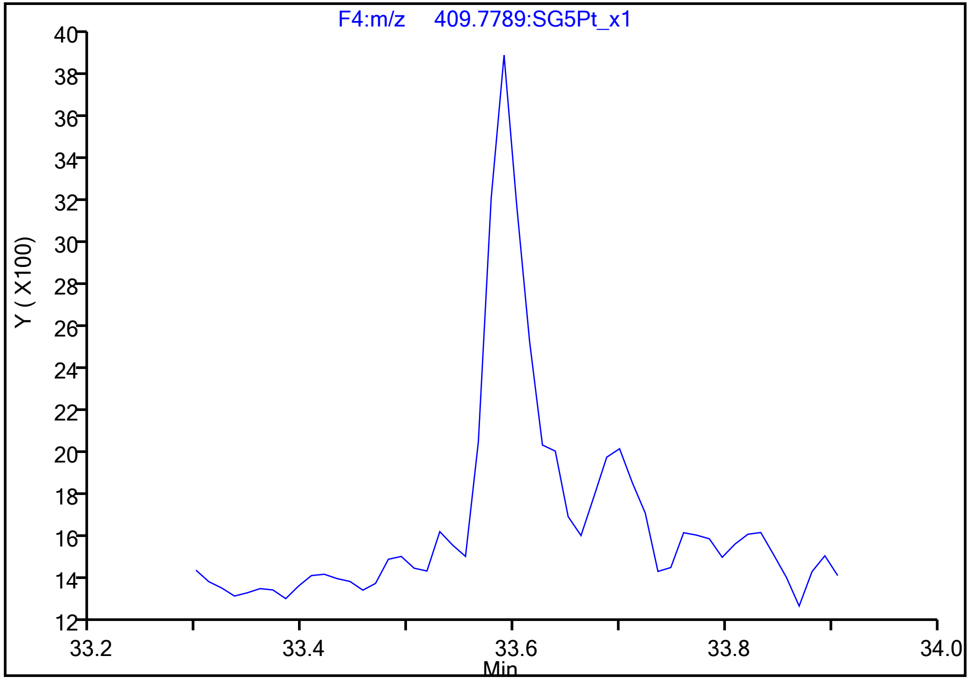

RT: 33.59

Area: 6285

Amount: 0.076482

Amount Units: pg/ul

Manual Integration Results

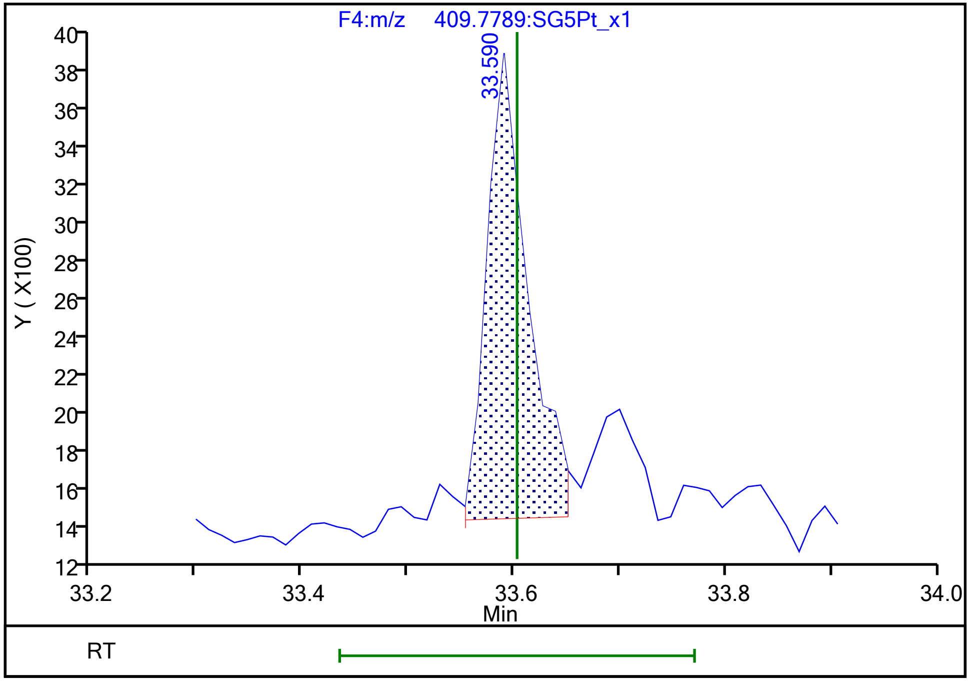

Reviewer: arghestanis, 26-Jun-2020 13:14:33

Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 1

Processing Integration Results

RT:	34.38
Area:	7445
Amount:	0.089933
Amount Units:	pg/ul

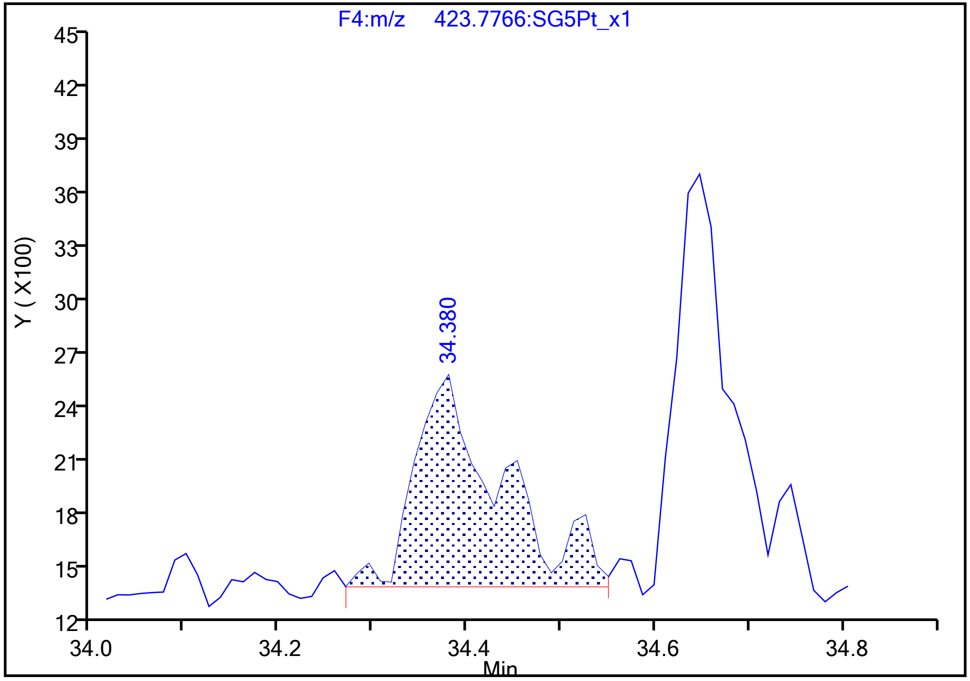

Manual Integration Results

RT:	34.38
Area:	4704
Amount:	0.057081
Amount Units:	pg/ul

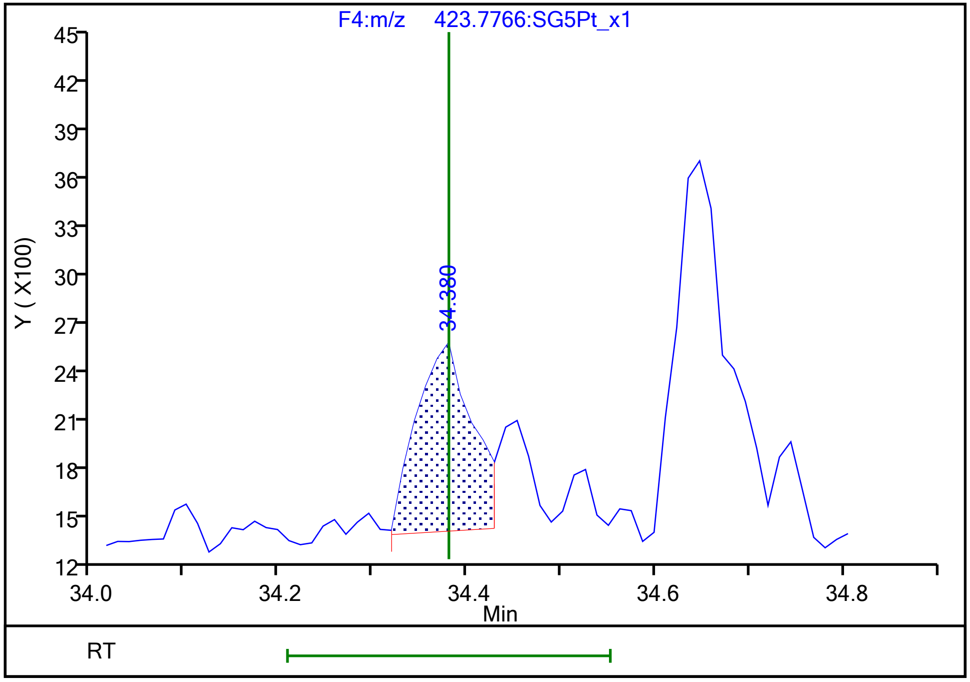

Reviewer: arghestanis, 26-Jun-2020 13:15:02

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d				
Injection Date:	26-Jun-2020 02:11:13	Instrument ID:	10D5		
Lims ID:	600-205895-B-4-A	Lab Sample ID:	320-205895-4		
Client ID:	DUP				
Operator ID:	AJS	ALS Bottle#:	12	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDD, CAS: 35822-46-9

Signal: 2

RT:	34.38
Area:	6760
Amount:	0.089933
Amount Units:	pg/ul

Processing Integration Results

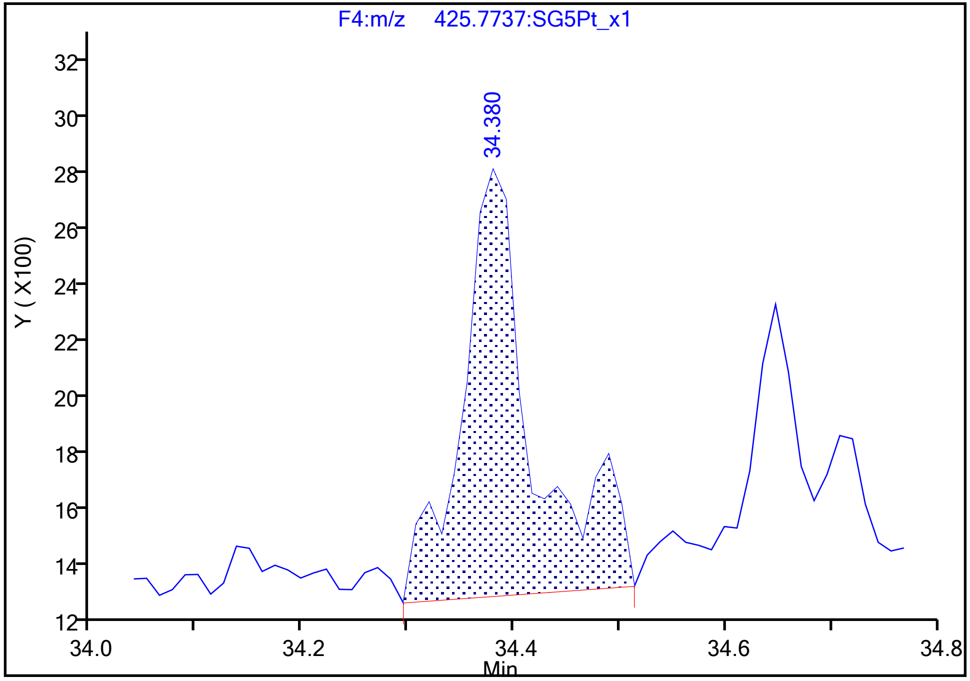

RT:	34.38
Area:	4312
Amount:	0.057081
Amount Units:	pg/ul

Manual Integration Results

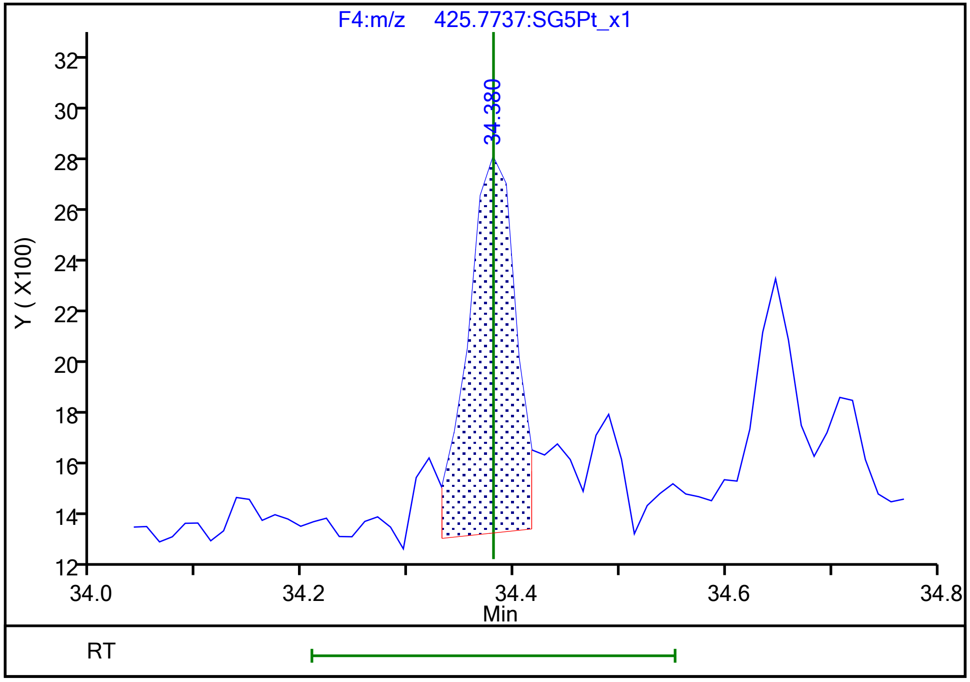

Reviewer: arghestanis, 26-Jun-2020 13:15:10

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:18 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d		
Injection Date:	26-Jun-2020 02:11:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
Worklist#:	389621	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

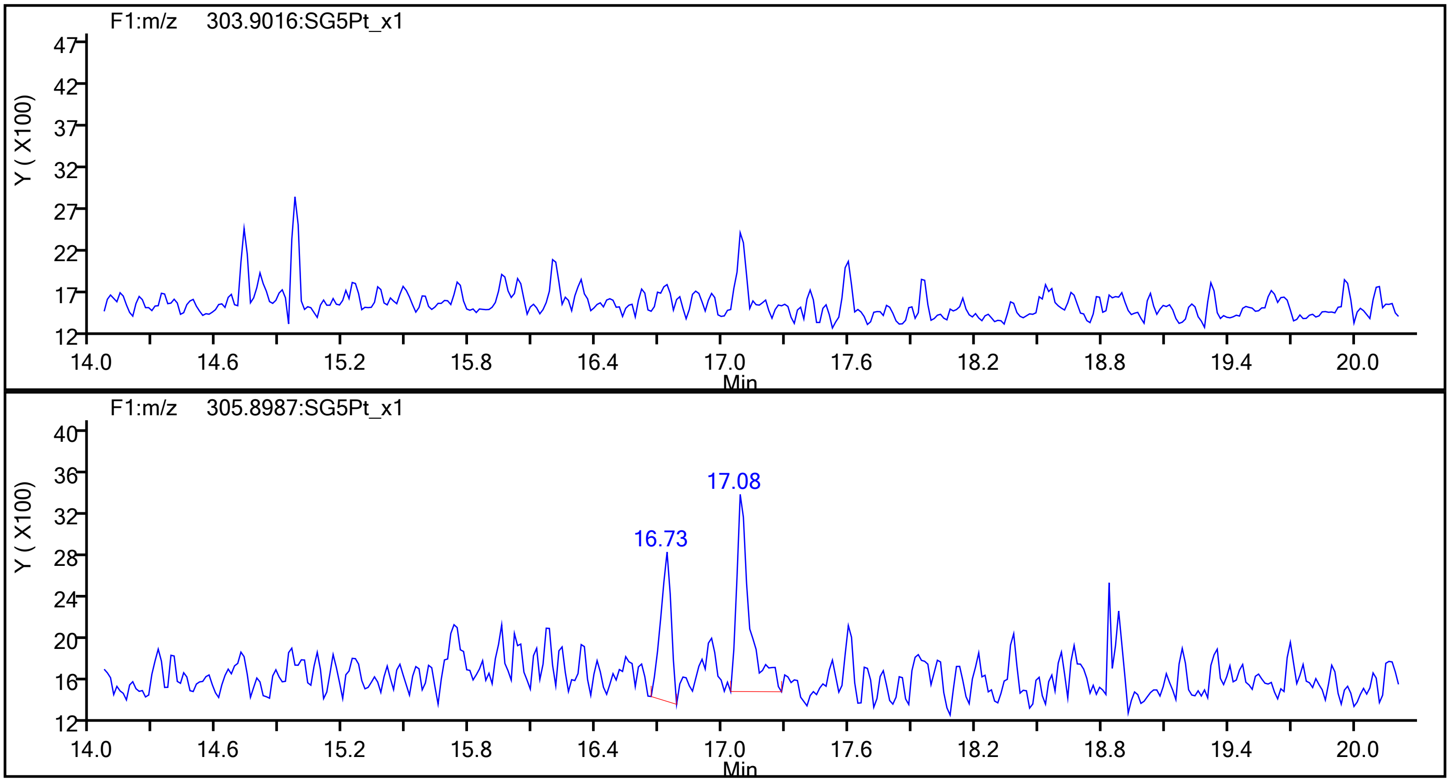

TCDF Standards

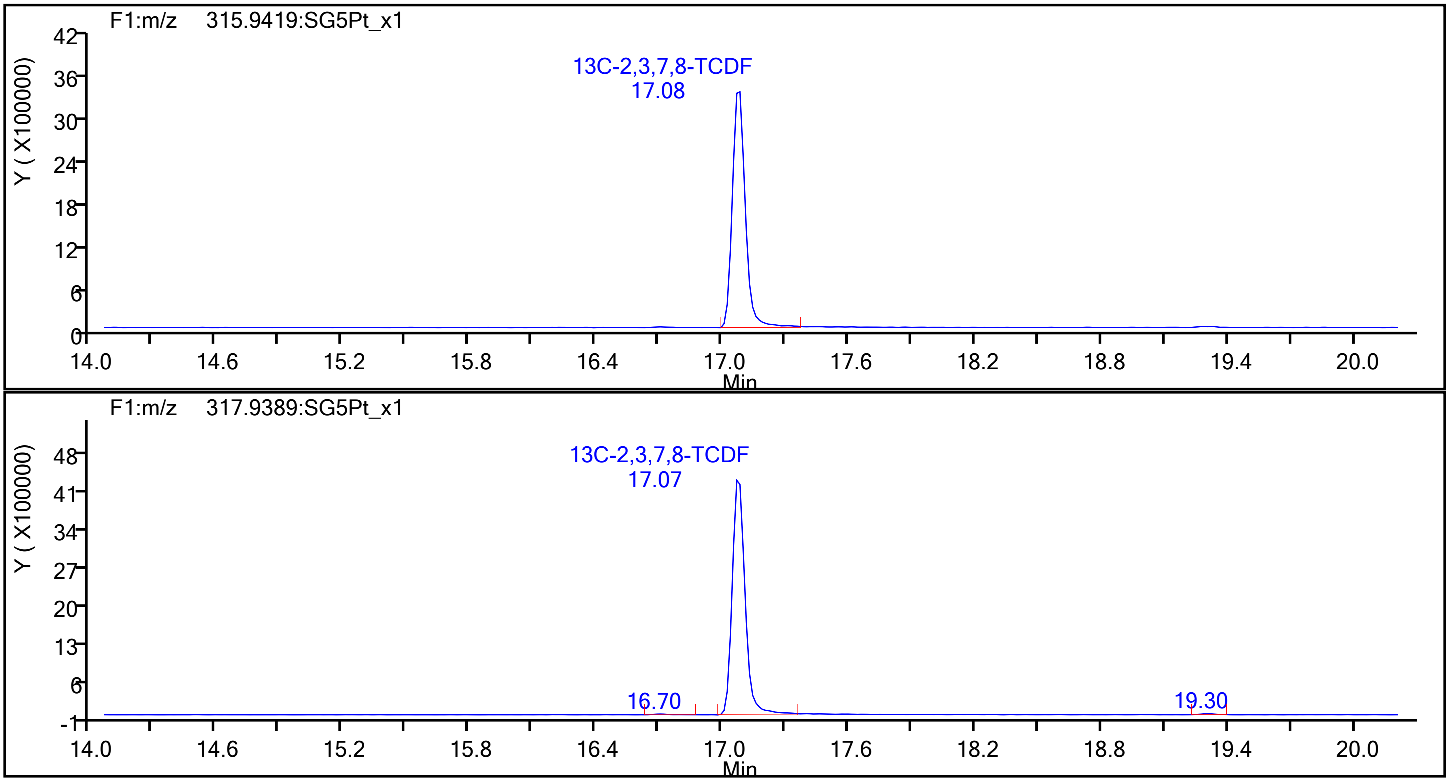

Report Date: 26-Jun-2020 13:16:18		Chrom Revision: 2.3 21-Jun-2020 18:30:46	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d		
Injection Date:	26-Jun-2020 02:11:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
Worklist#:	389621	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

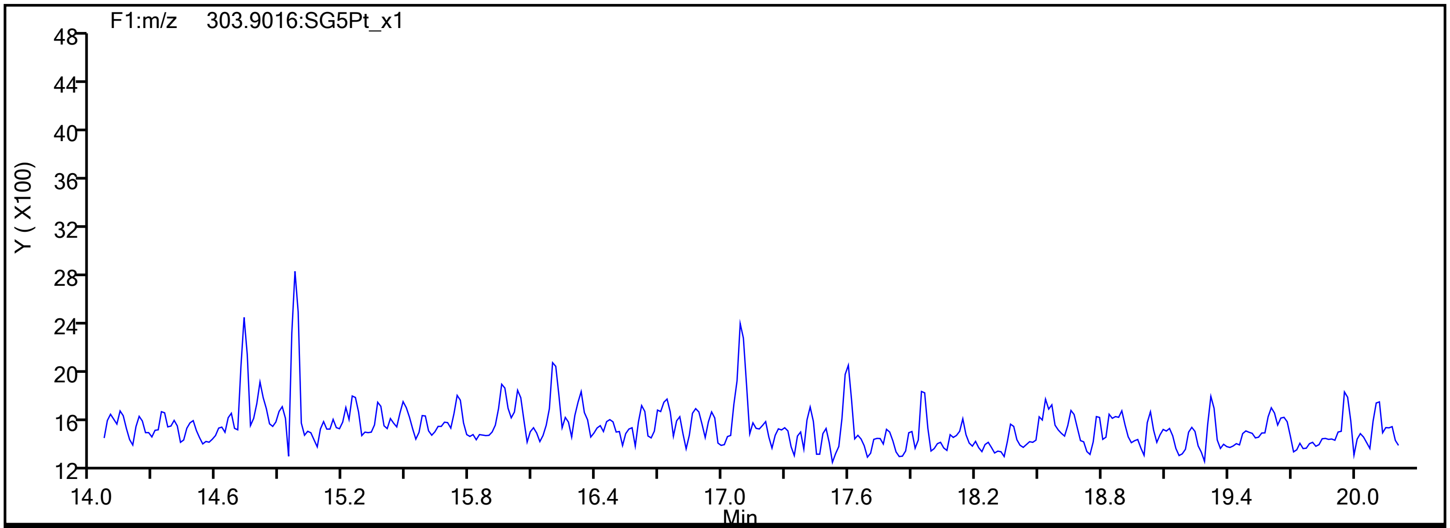

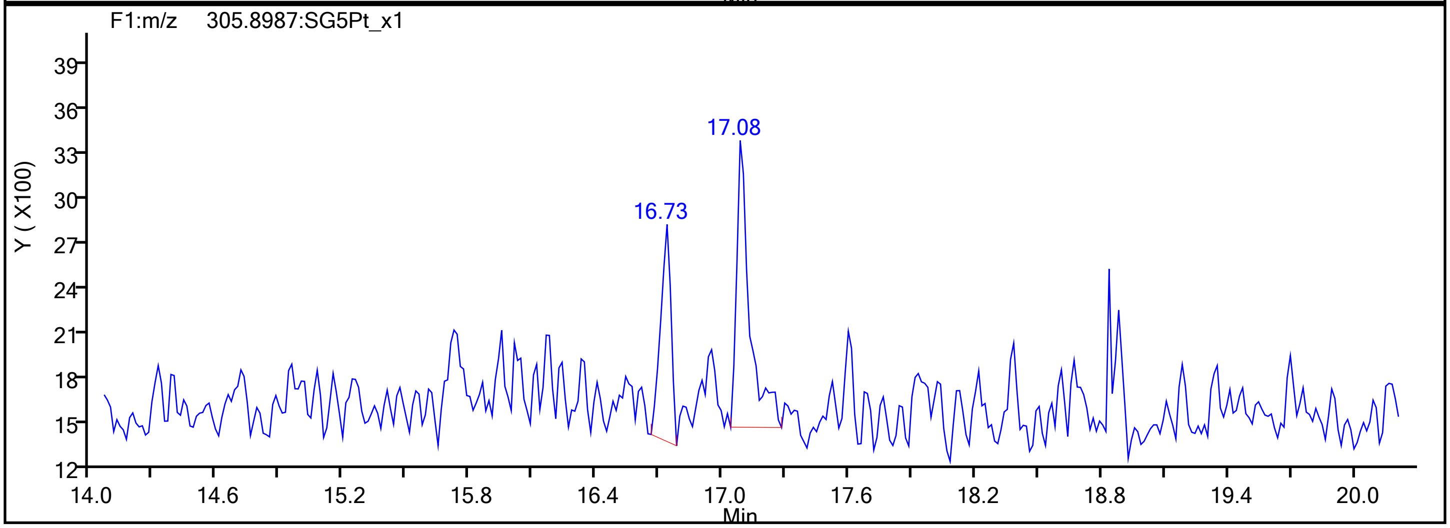

TCDF Interference Mass

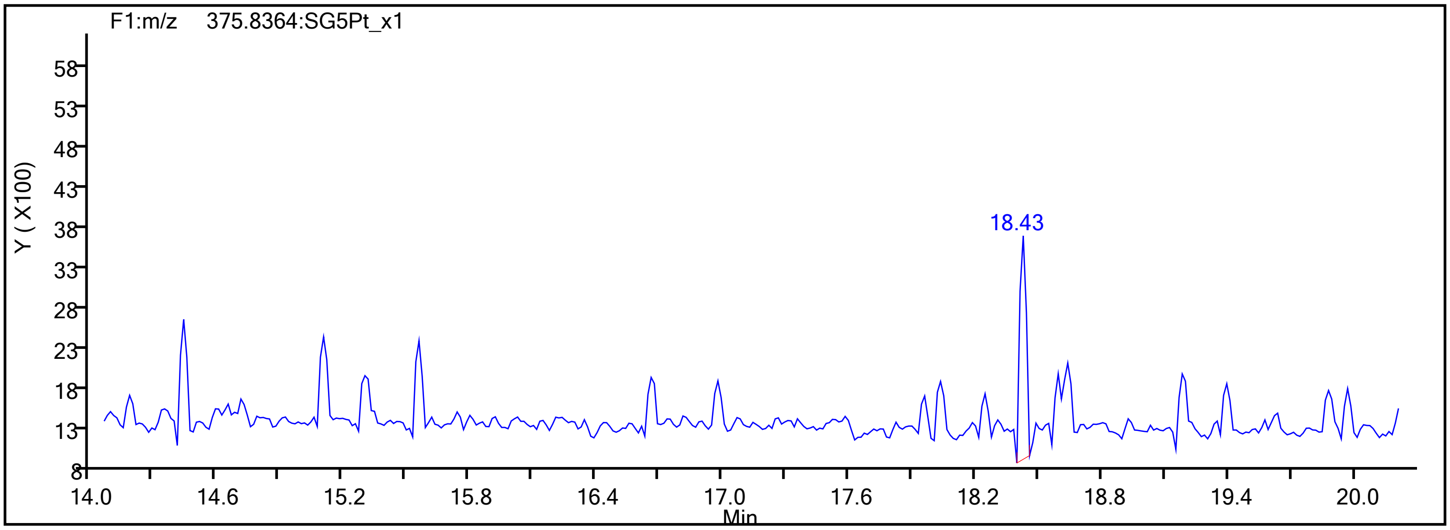

Report Date: 26-Jun-2020 13:16:19 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d
Injection Date: 26-Jun-2020 02:11:13
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: DUP
Worklist#: 389621
Sample Line#: 12
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

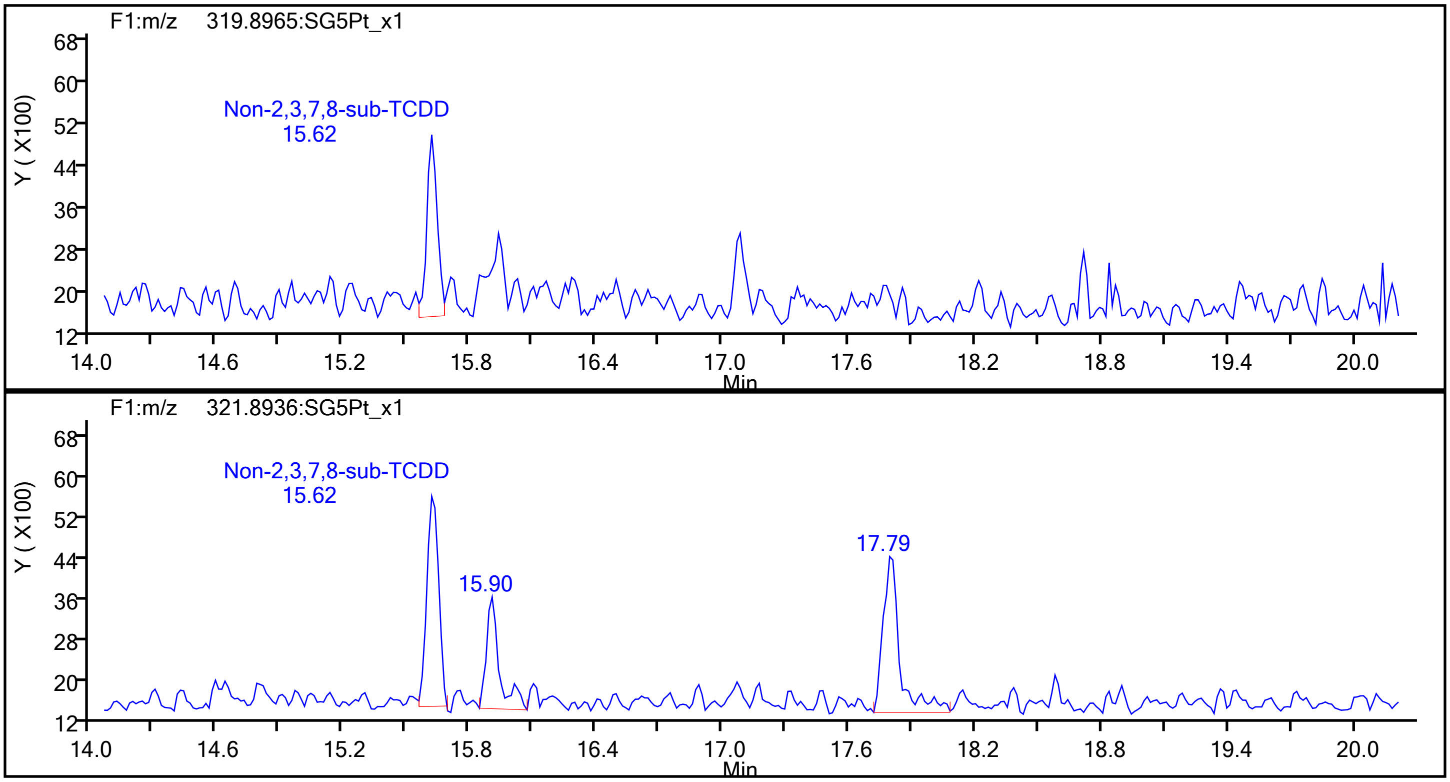

TCDD Standards

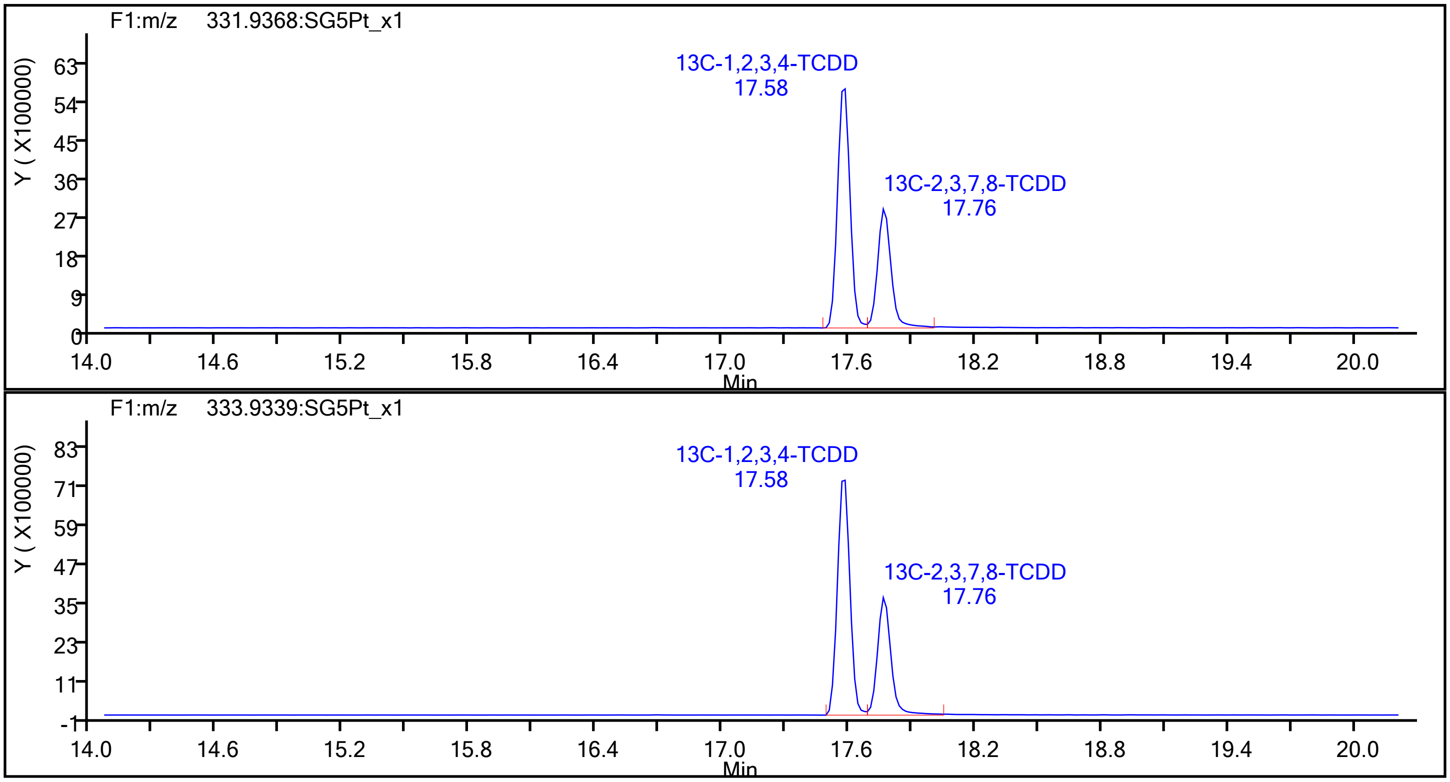

Report Date: 26-Jun-2020 13:16:19 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d		
Injection Date:	26-Jun-2020 02:11:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
Worklist#:	389621	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

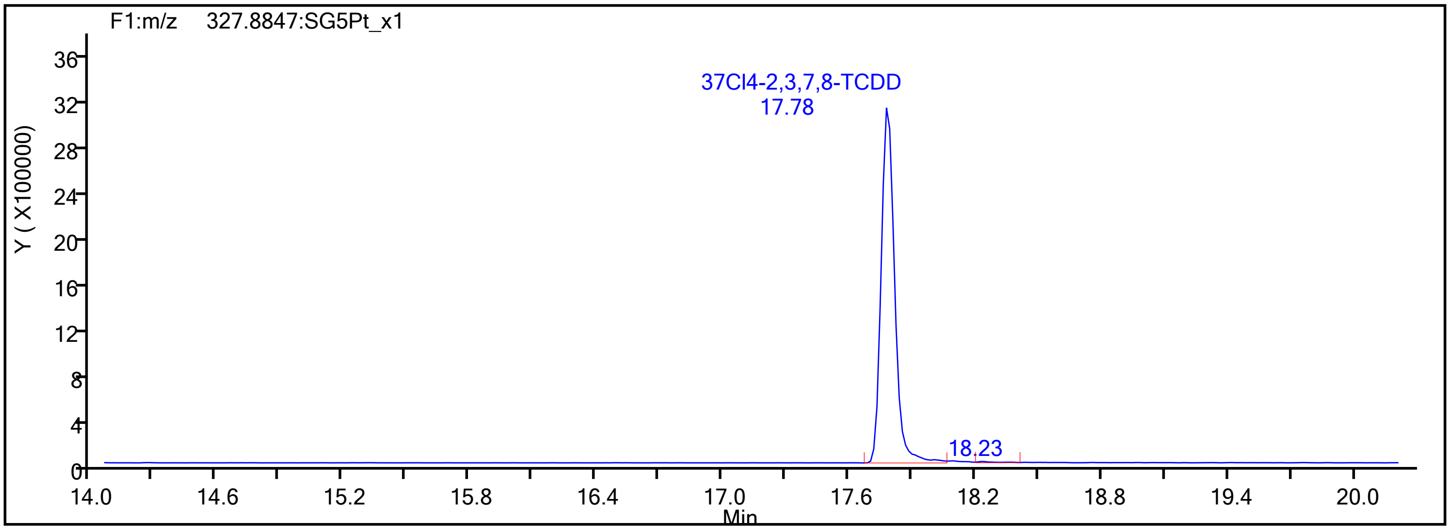

37Cl4-TCDD Standards

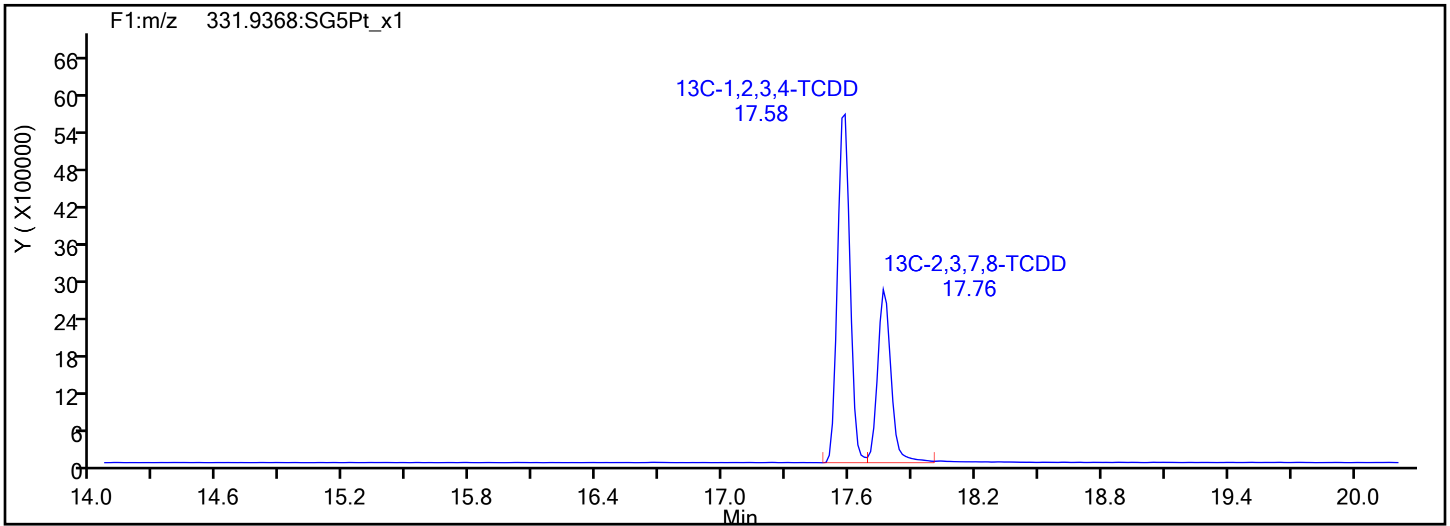

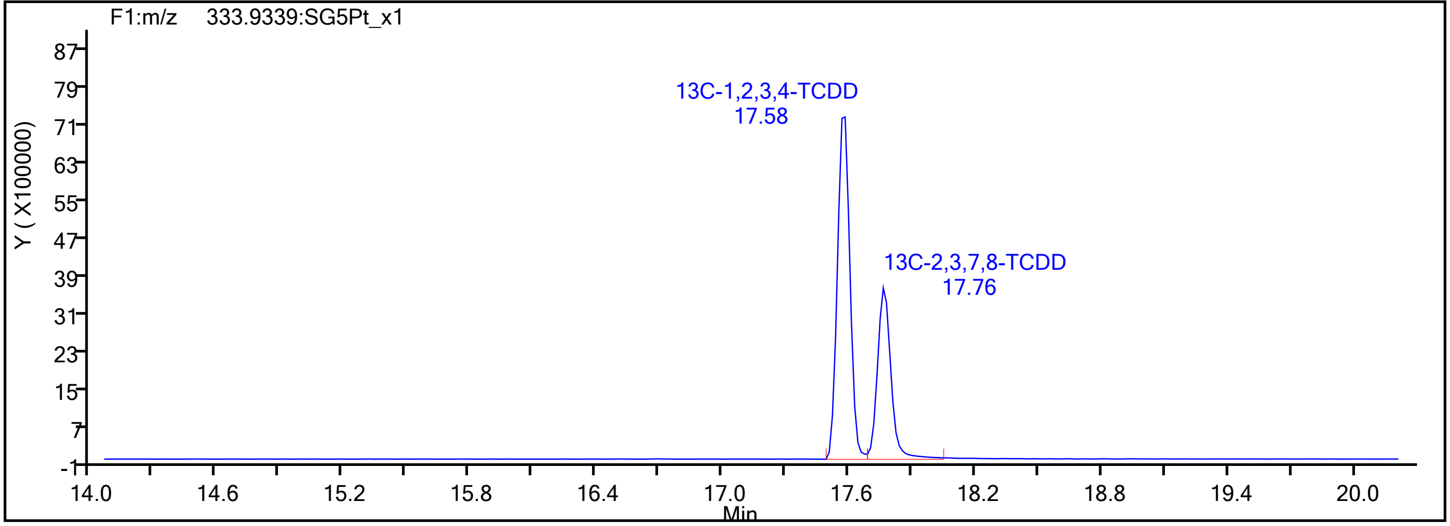

Report Date: 26-Jun-2020 13:16:19 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d		
Injection Date:	26-Jun-2020 02:11:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
Worklist#:	389621	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

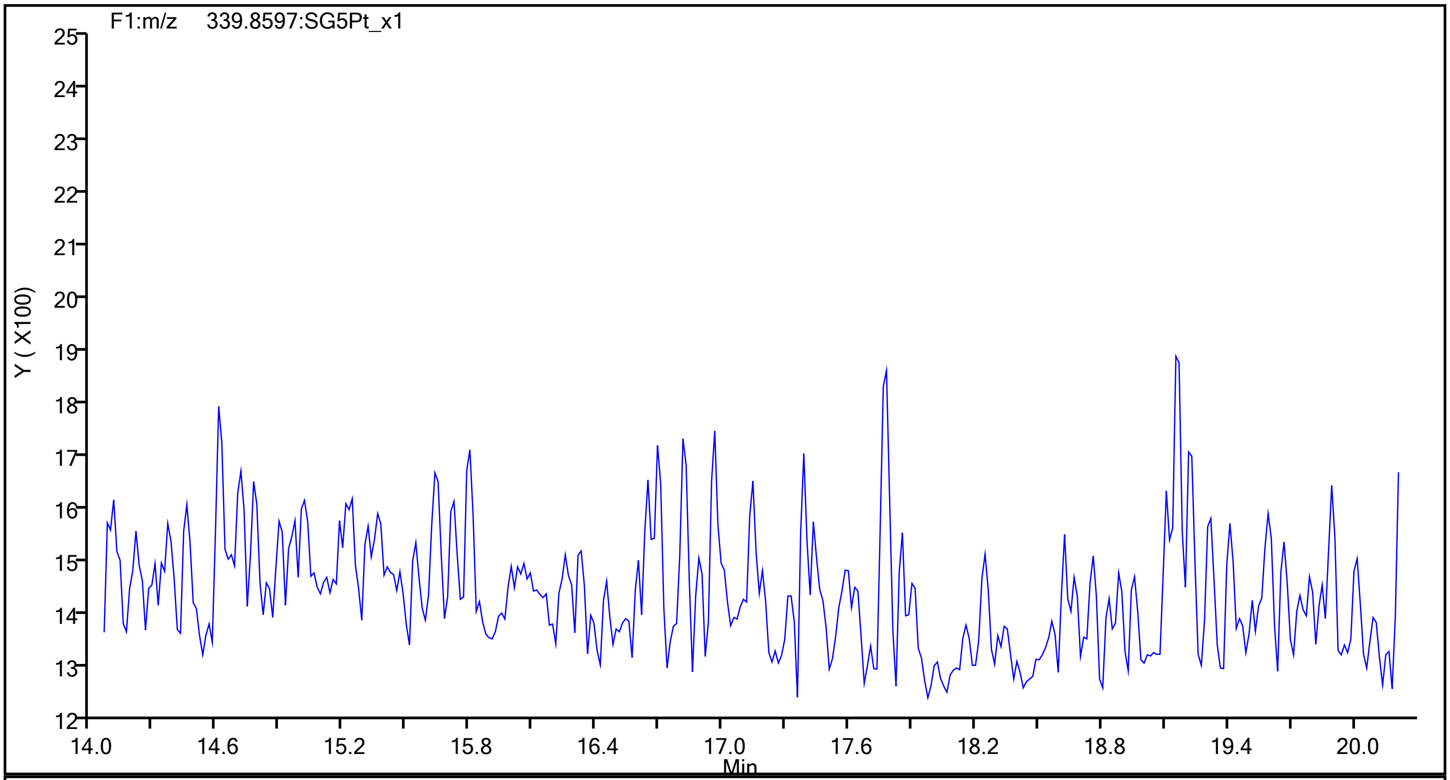

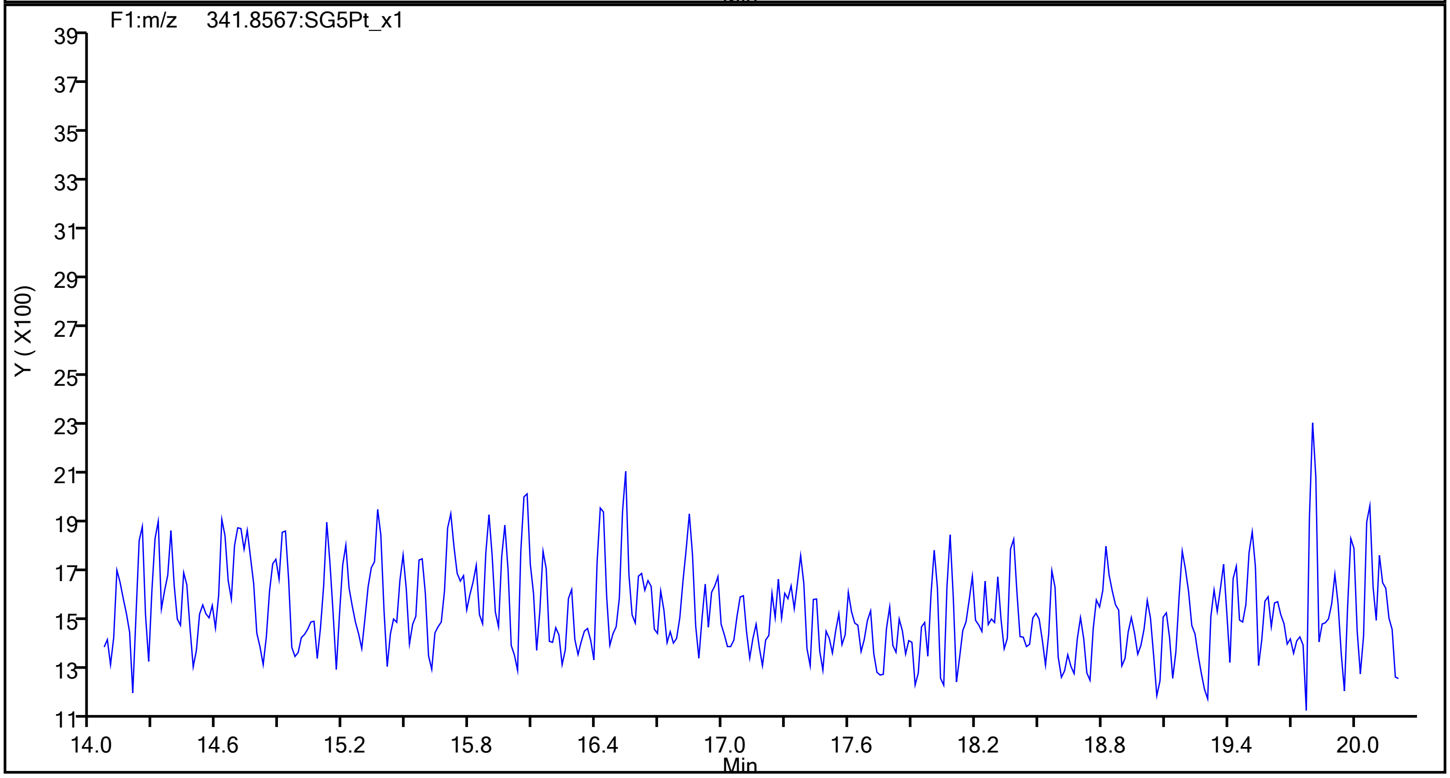

Report Date: 26-Jun-2020 13:16:19
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_12.d		
Injection Date:	26-Jun-2020 02:11:13	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
Worklist#:	389621	Sample Line#:	12
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

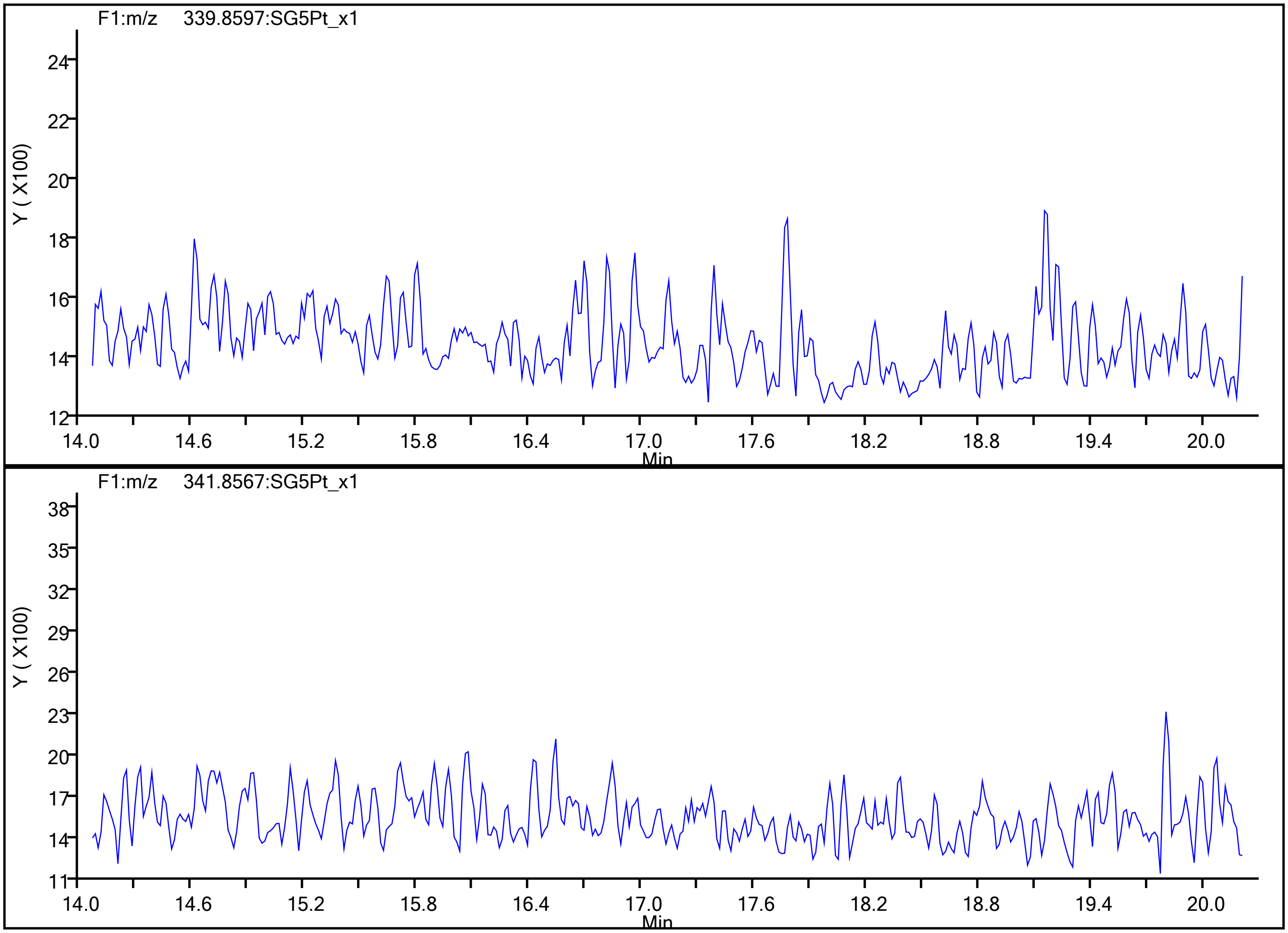

F1 PeCDFs Interference Mass

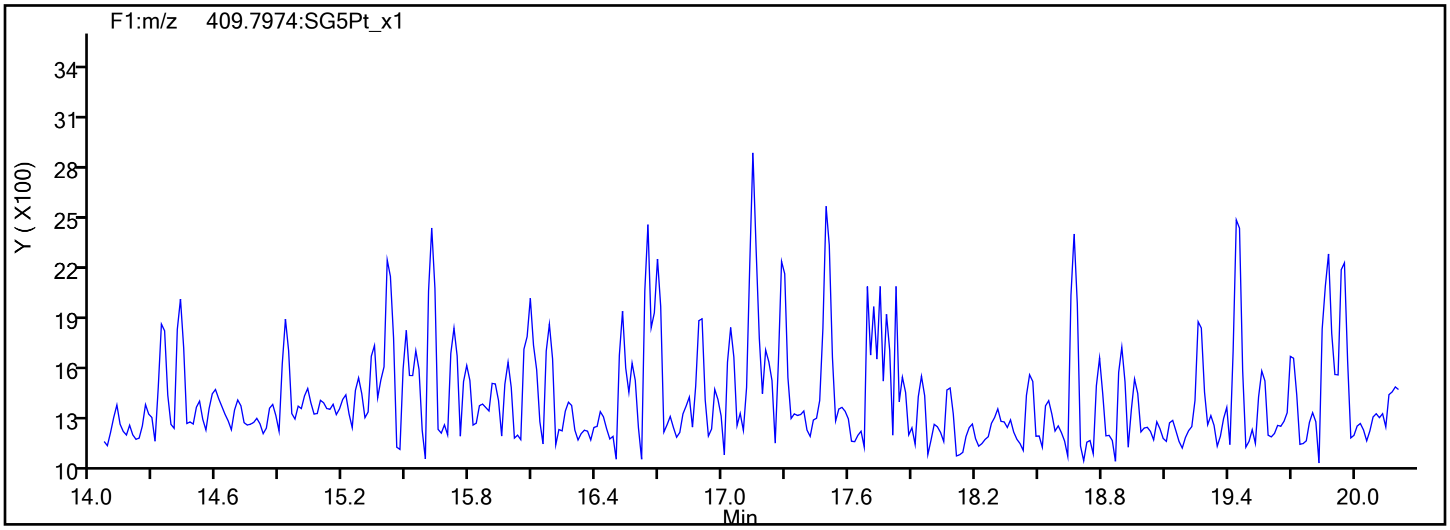

Report Date: 26-Jun-2020 13:16:19 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

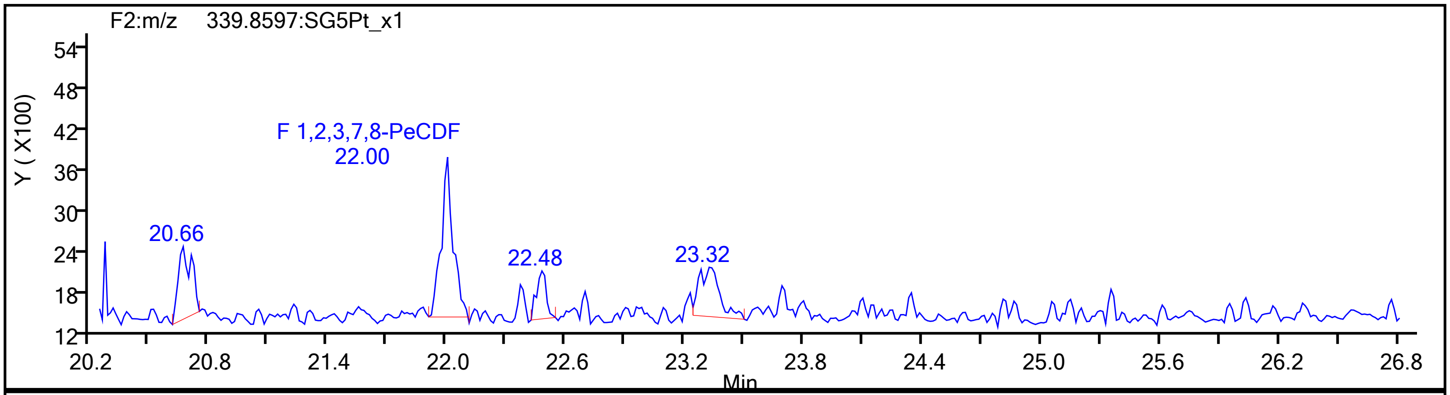

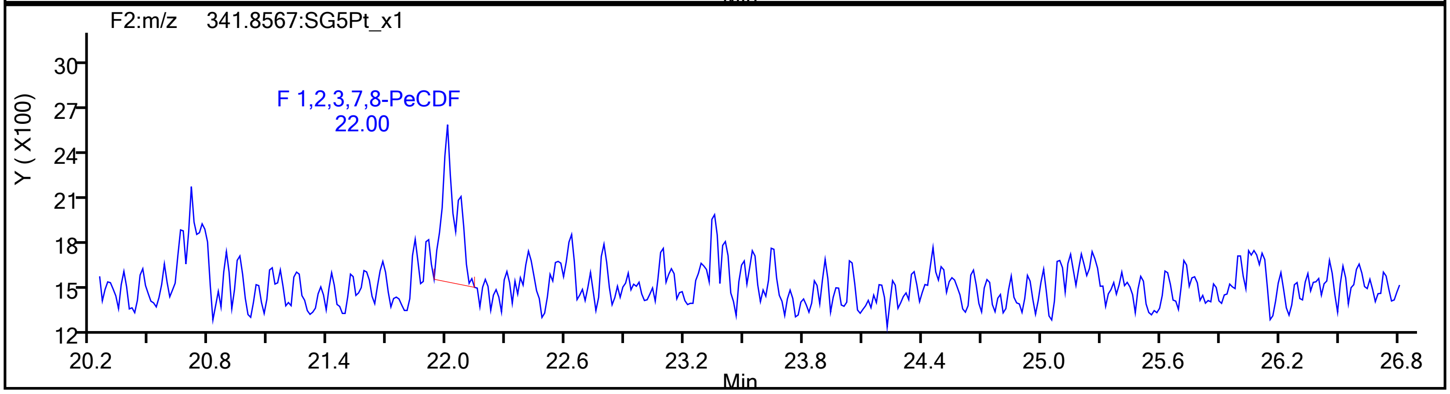

PeCDF Standards

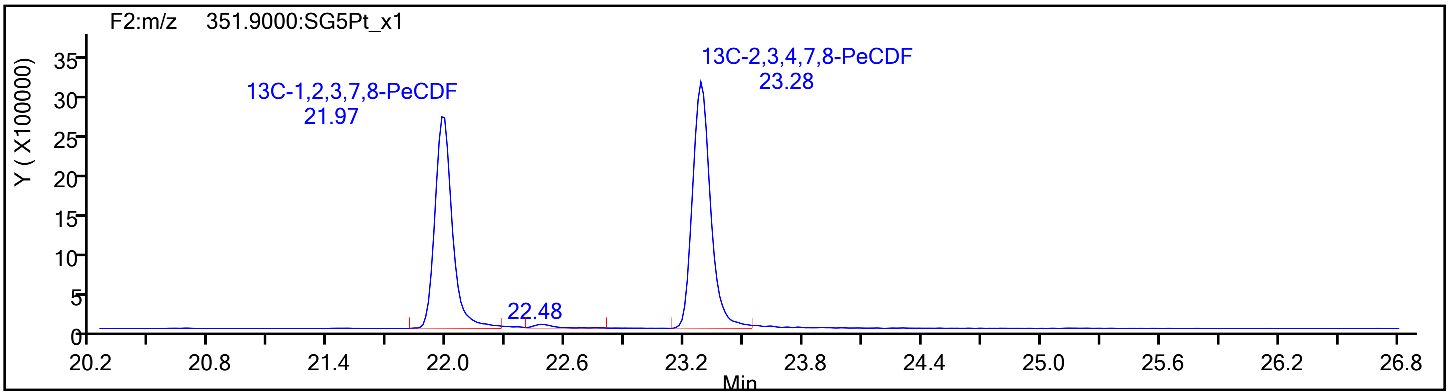

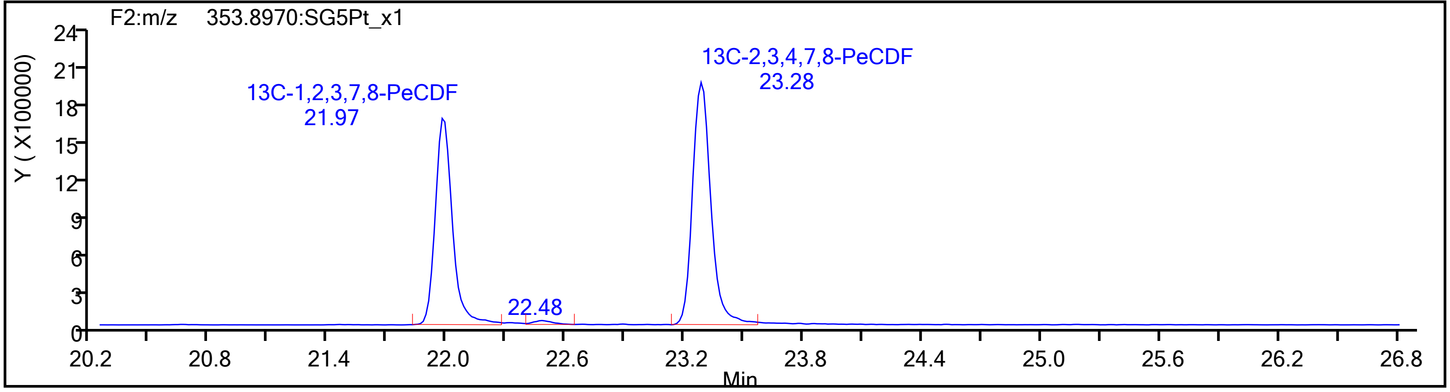

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Eurofins TestAmerica, Sacramento

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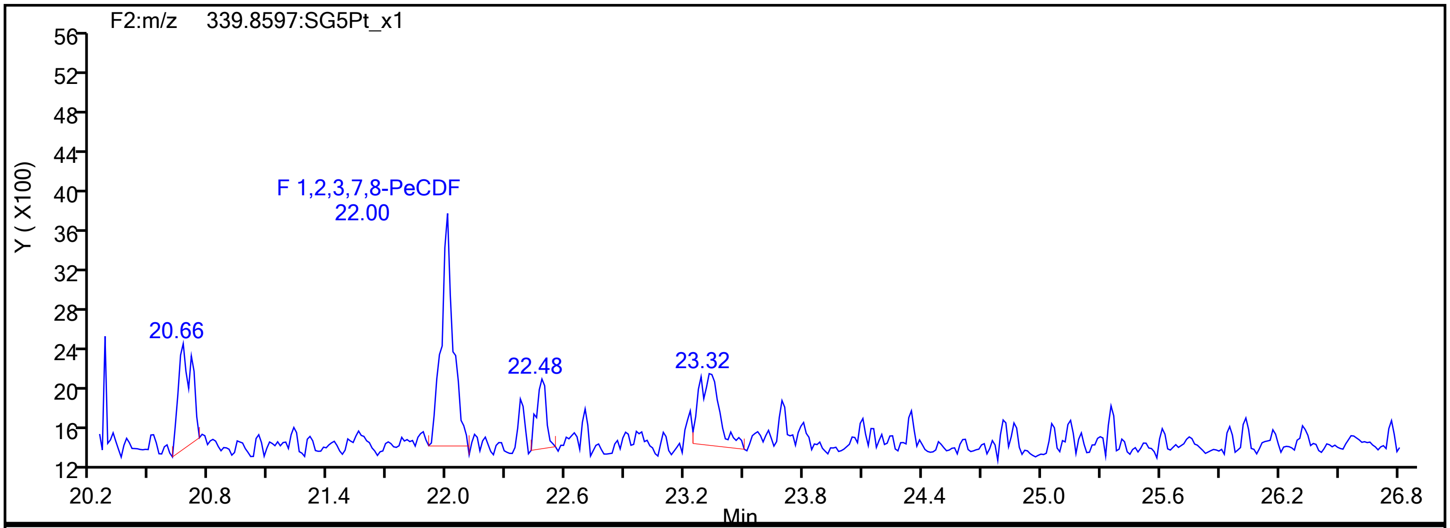

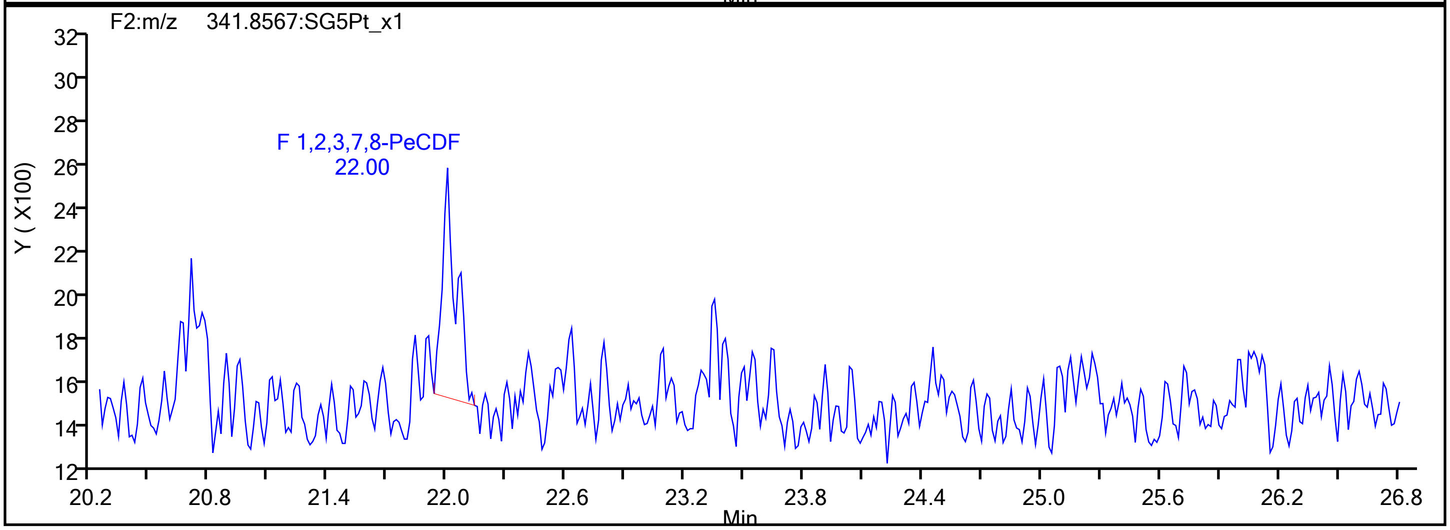

PeCDF Interference Mass

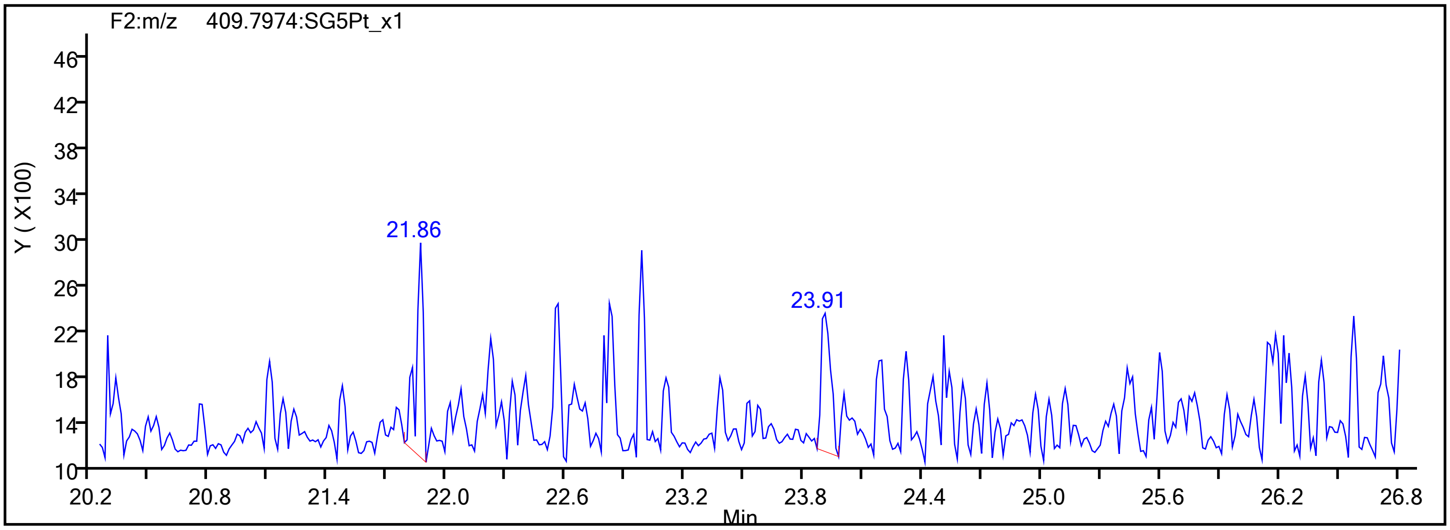

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Eurofins TestAmerica, Sacramento

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Injection Date: 26-Jun-2020 02:11:13 Injection Vol: 2.0 ul
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Client ID: DUP
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PeCDD

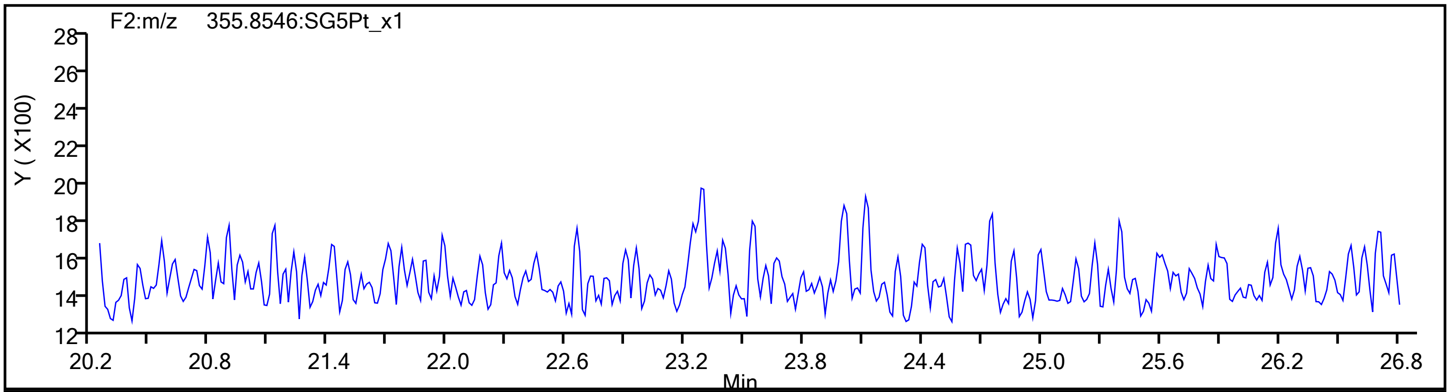

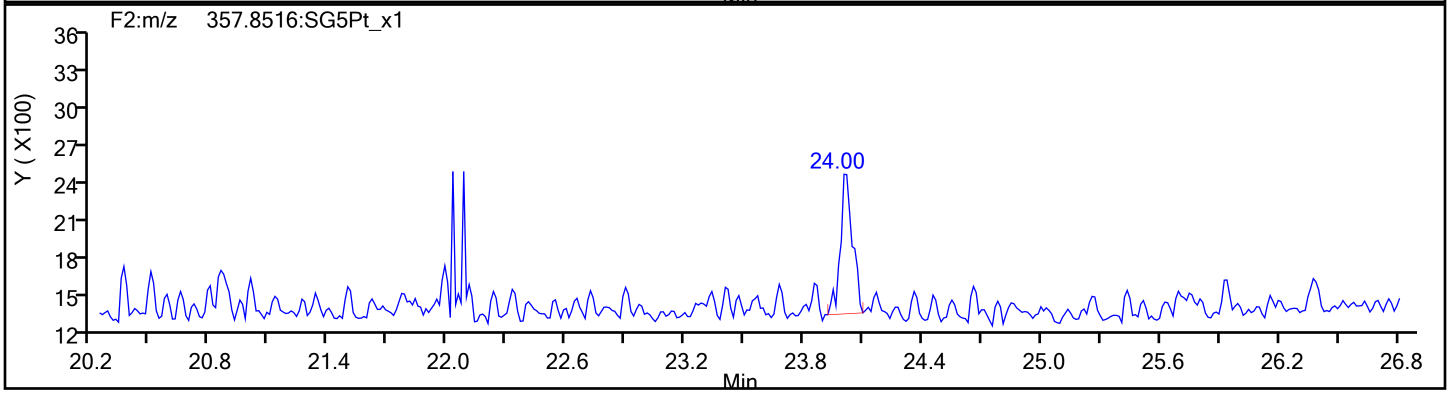

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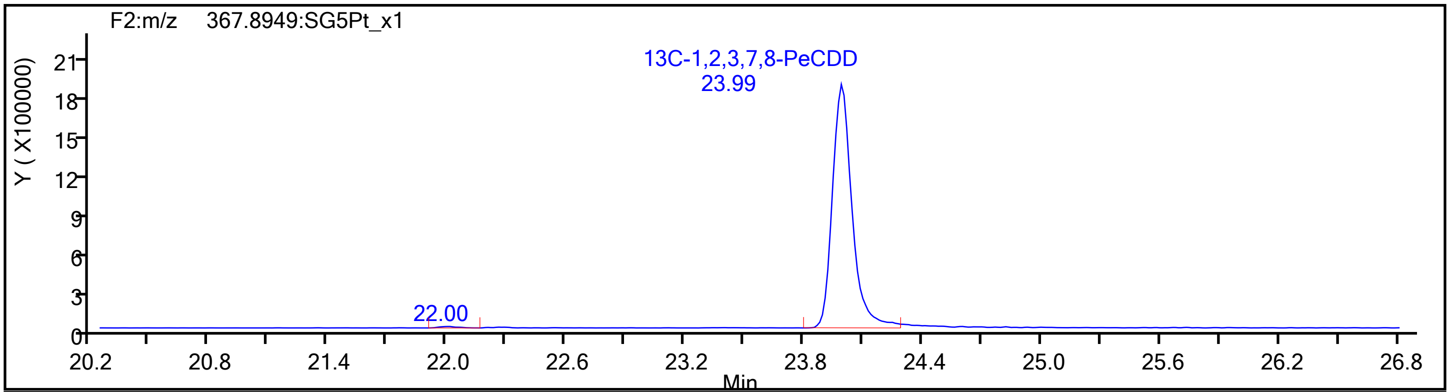

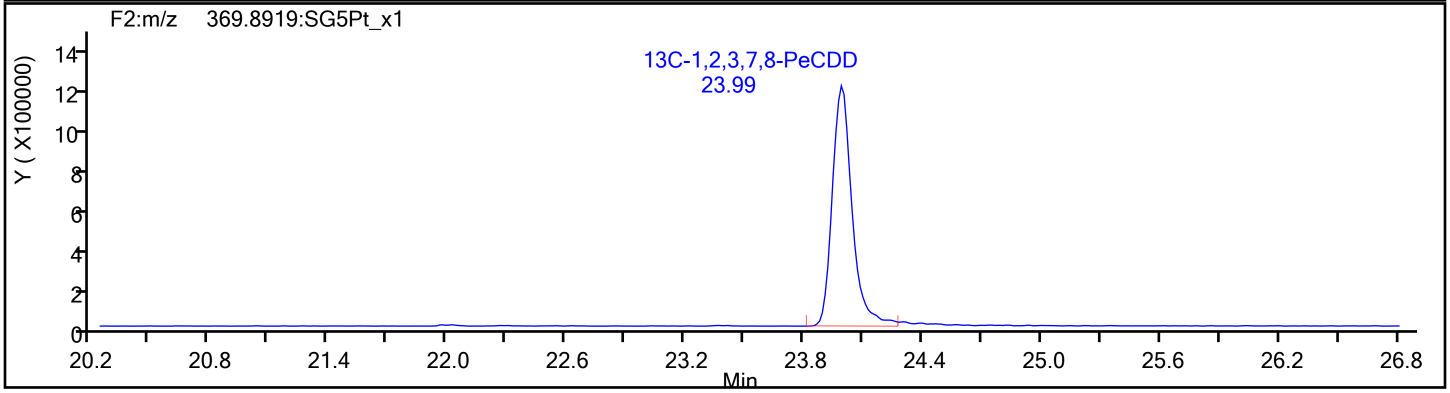

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Eurofins TestAmerica, Sacramento

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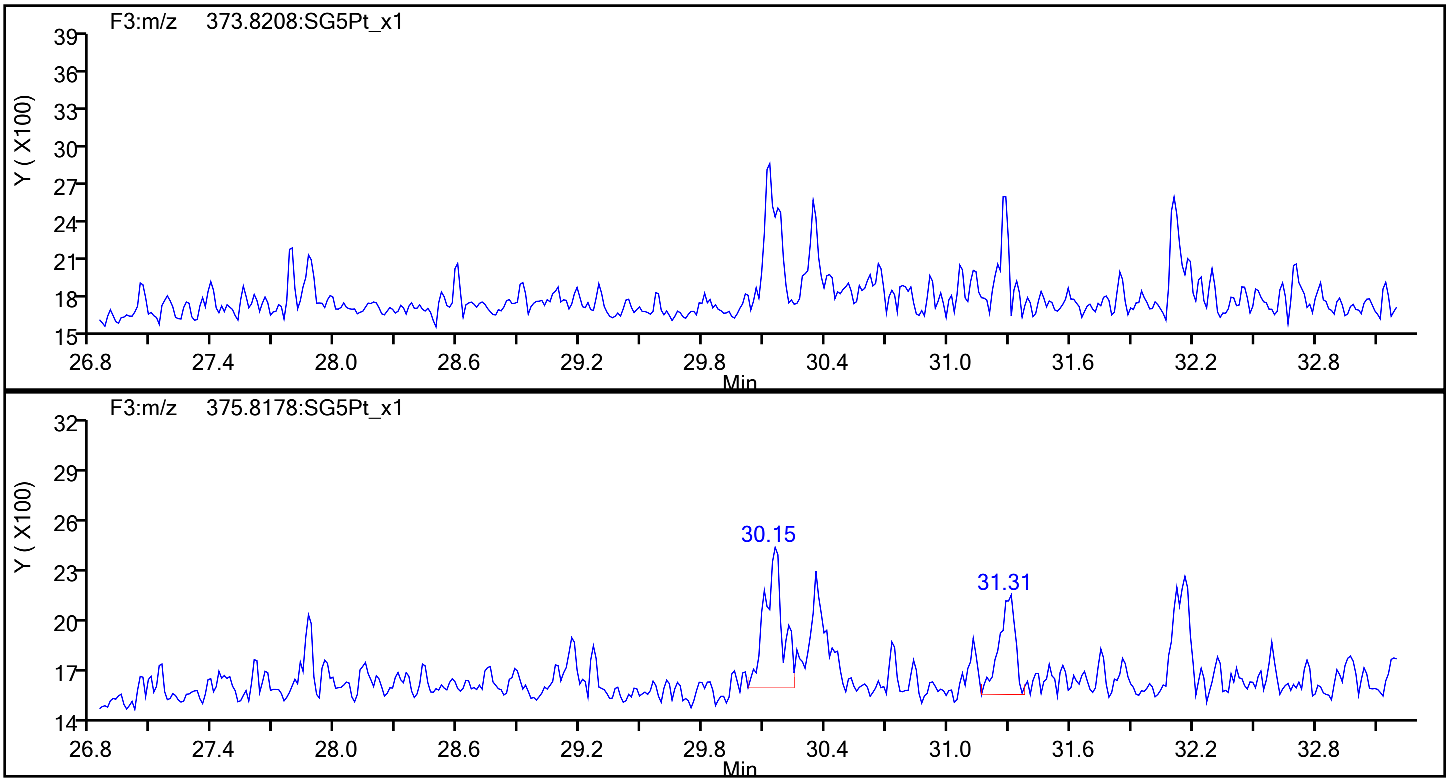

HxCDF Standards

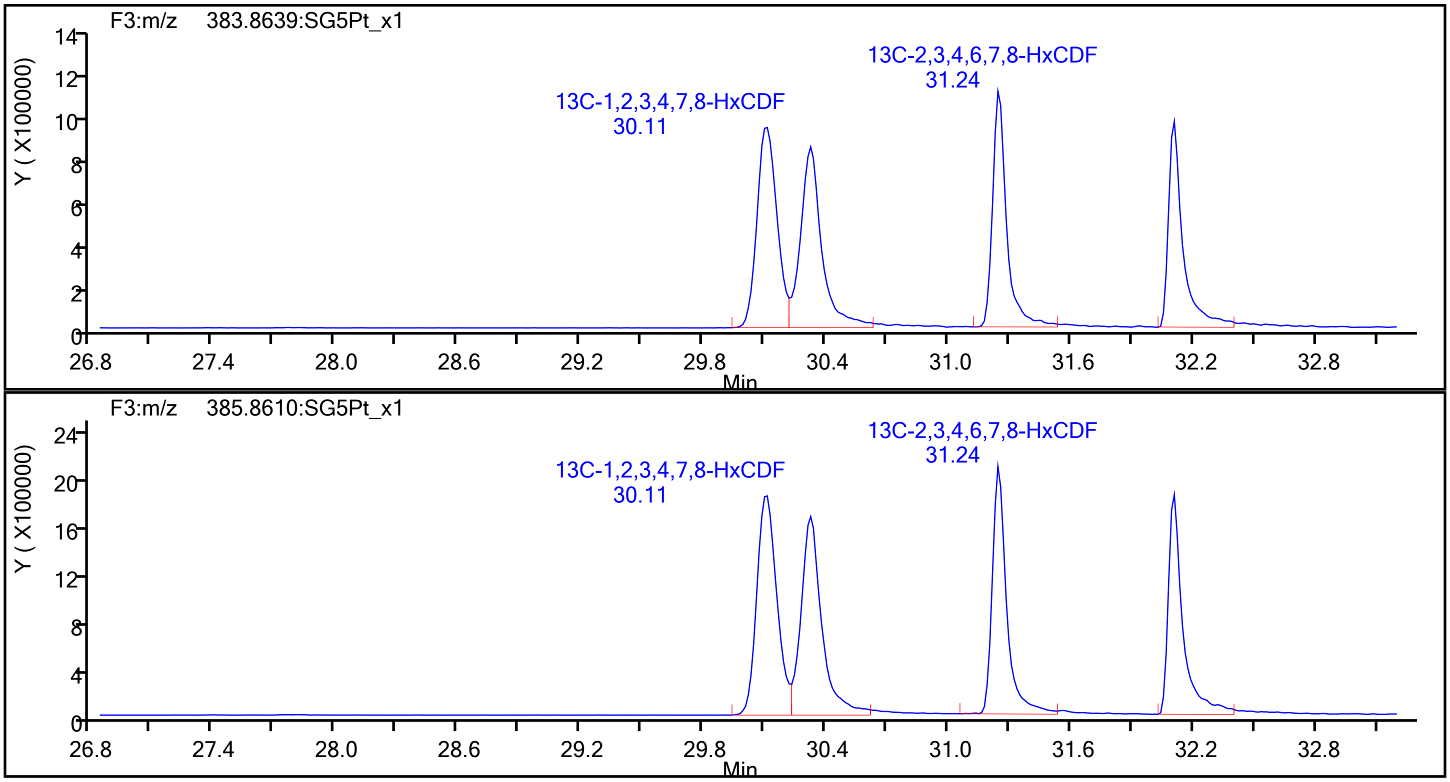

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Eurofins TestAmerica, Sacramento

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HxCDF

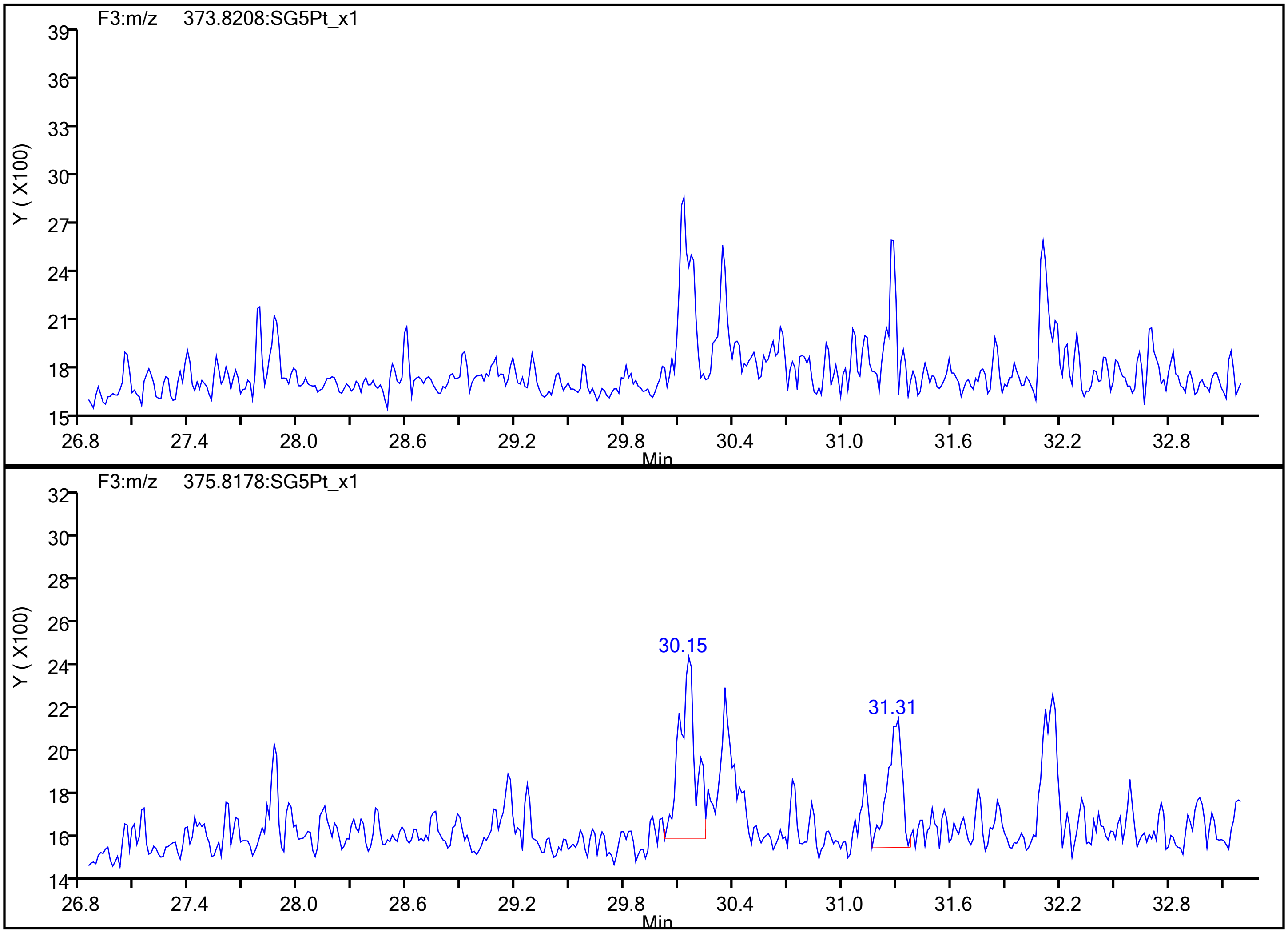

HxCDF Interference Mass

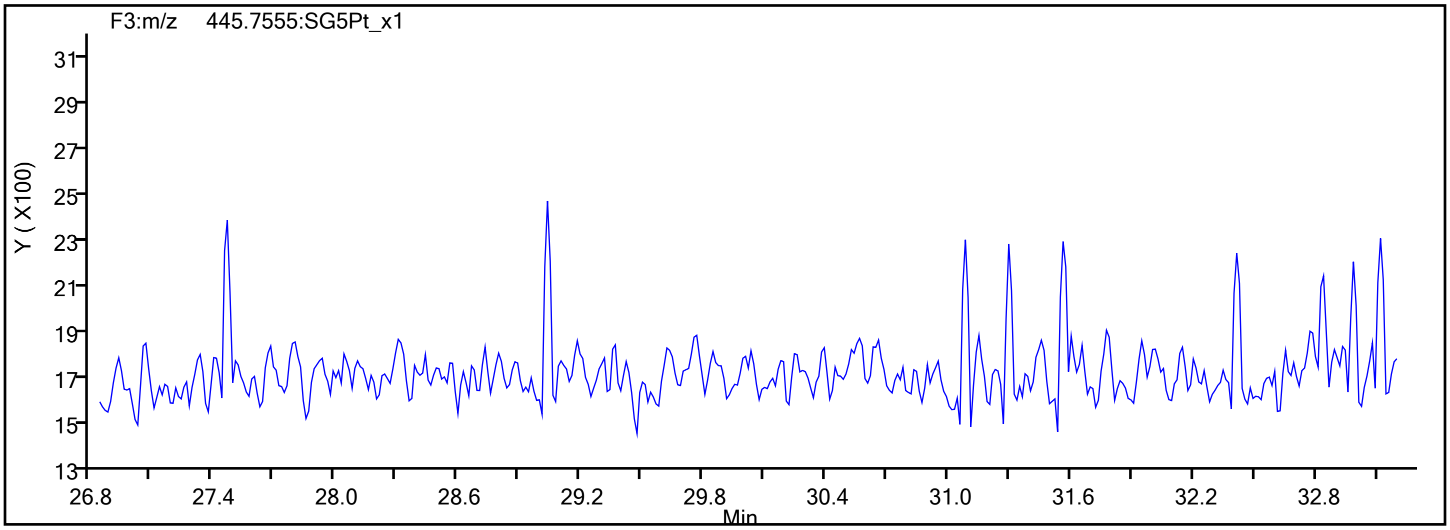

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Operator ID: AJS

Method: Dioxin_10D5

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Client ID: DUP

Worklist#: 389621

Sample Line#: 12

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Column Dia: 0.32 mm

HxCDD

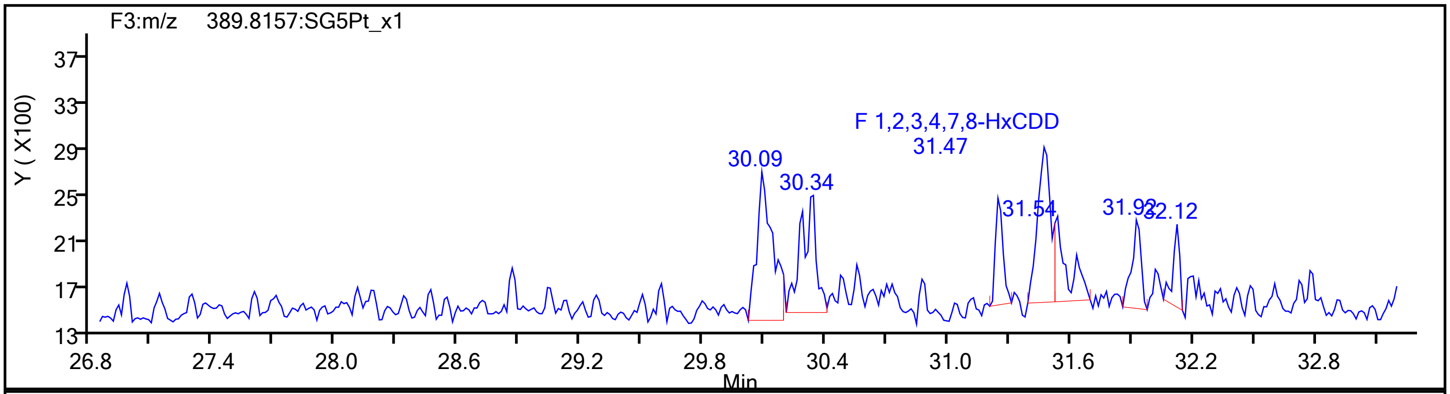

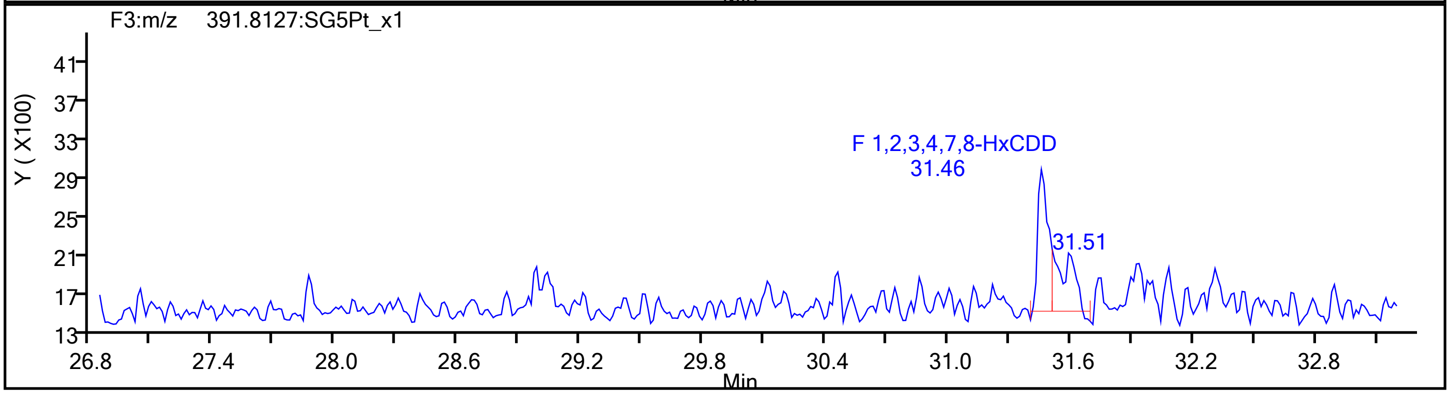

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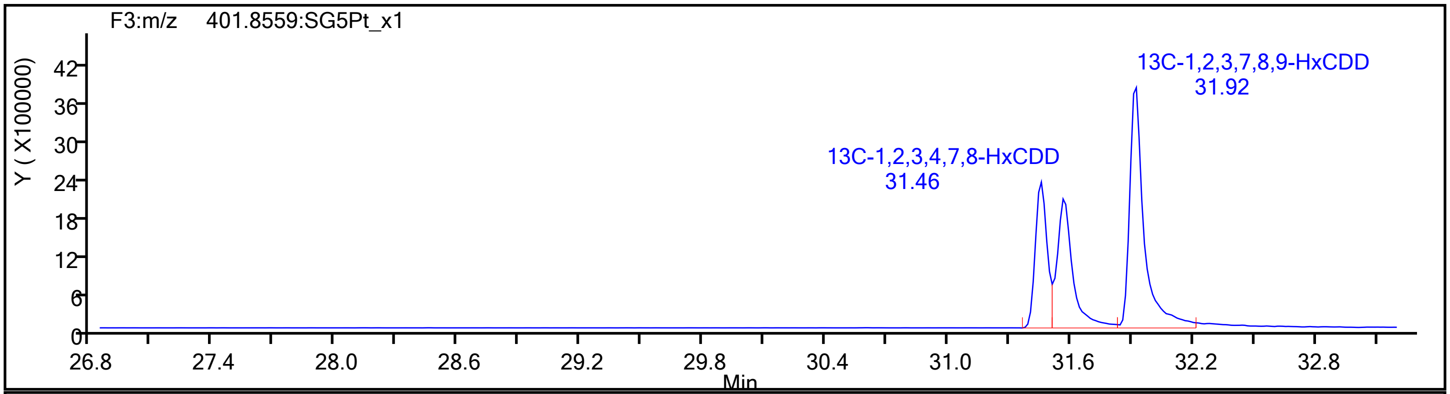

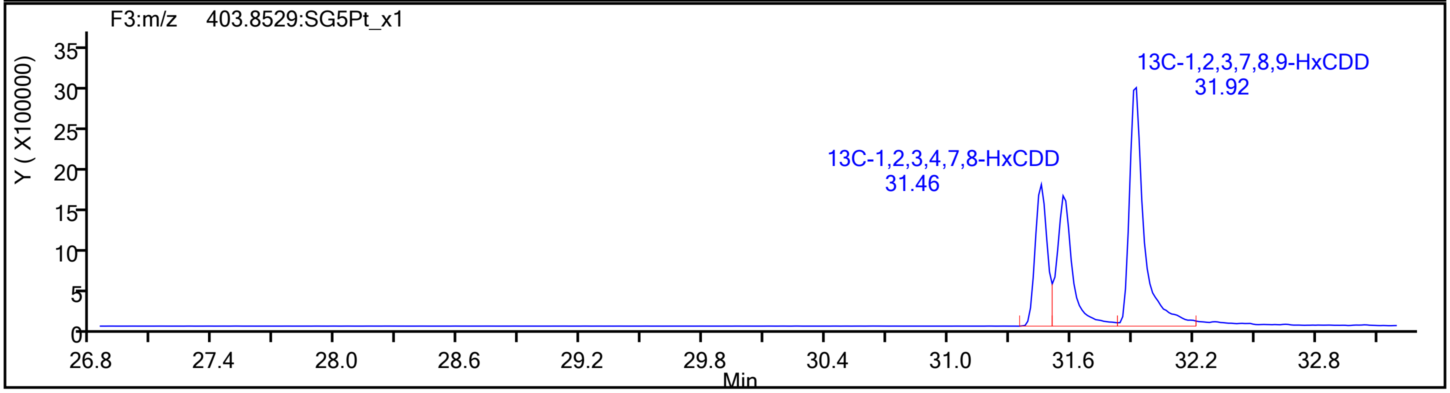

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Client ID: DUP
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Sample Line#: 12
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Column Dia: 0.32 mm

HpCDF

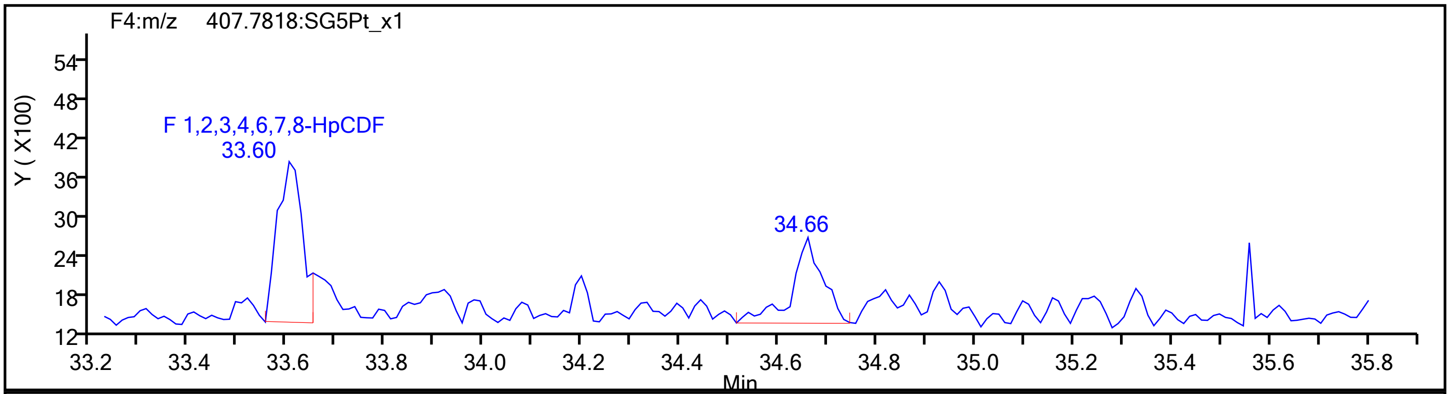

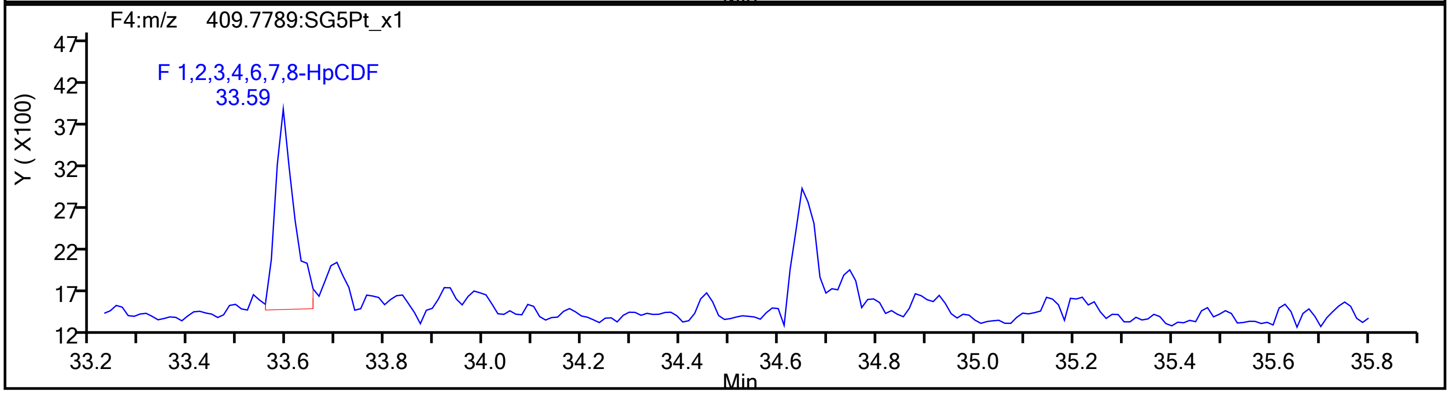

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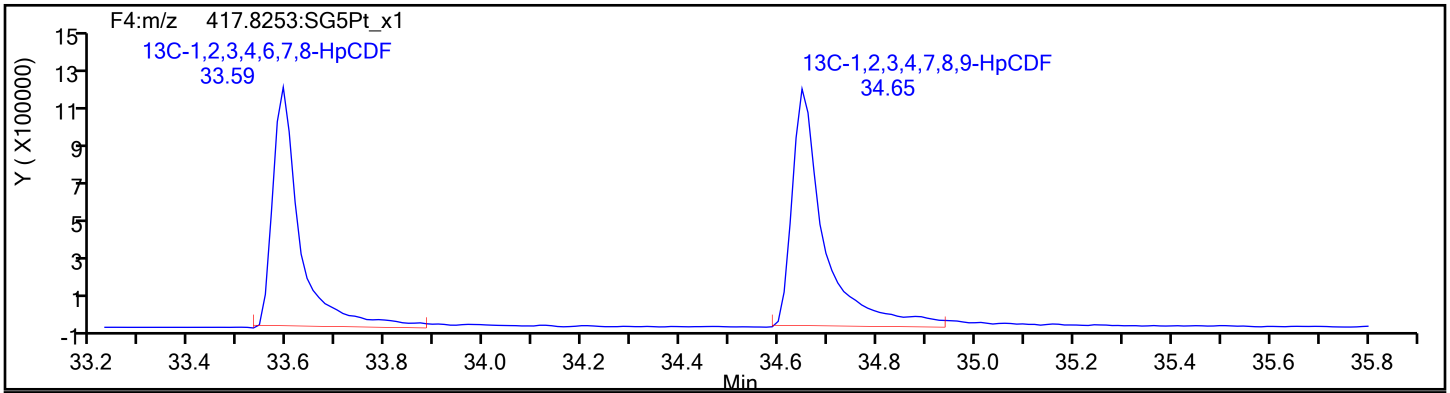

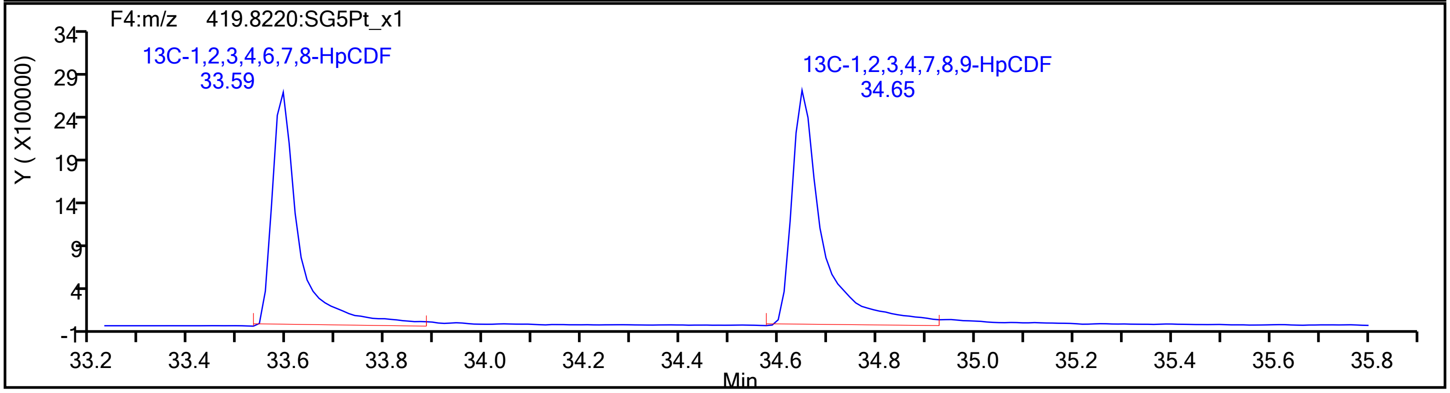

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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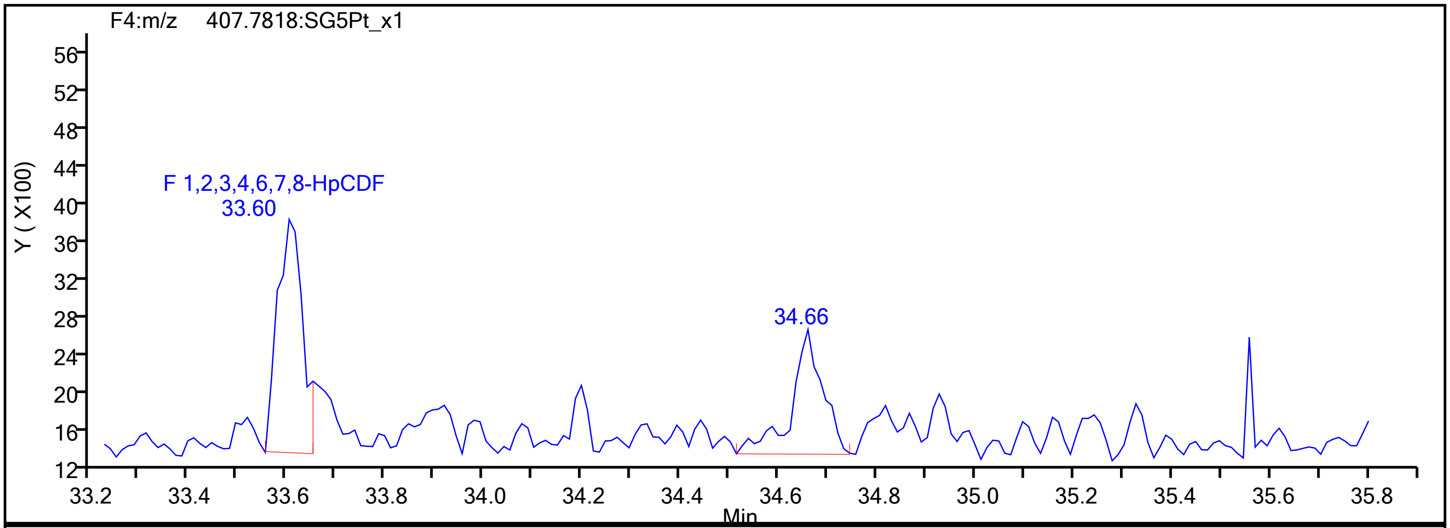

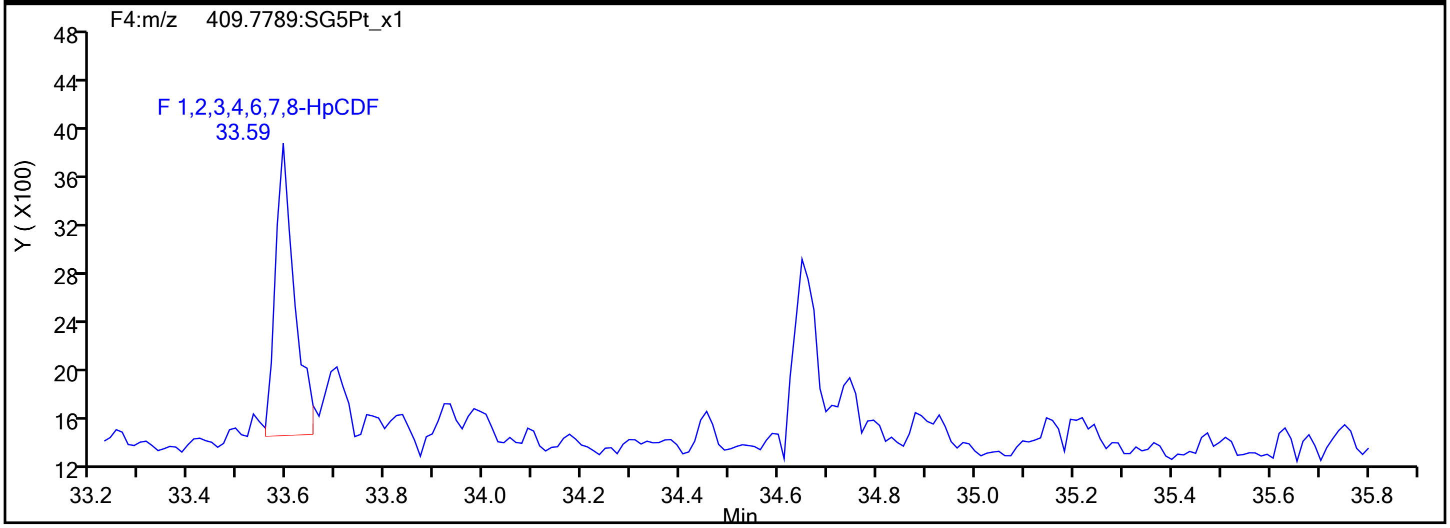

HpCDF Interference Mass

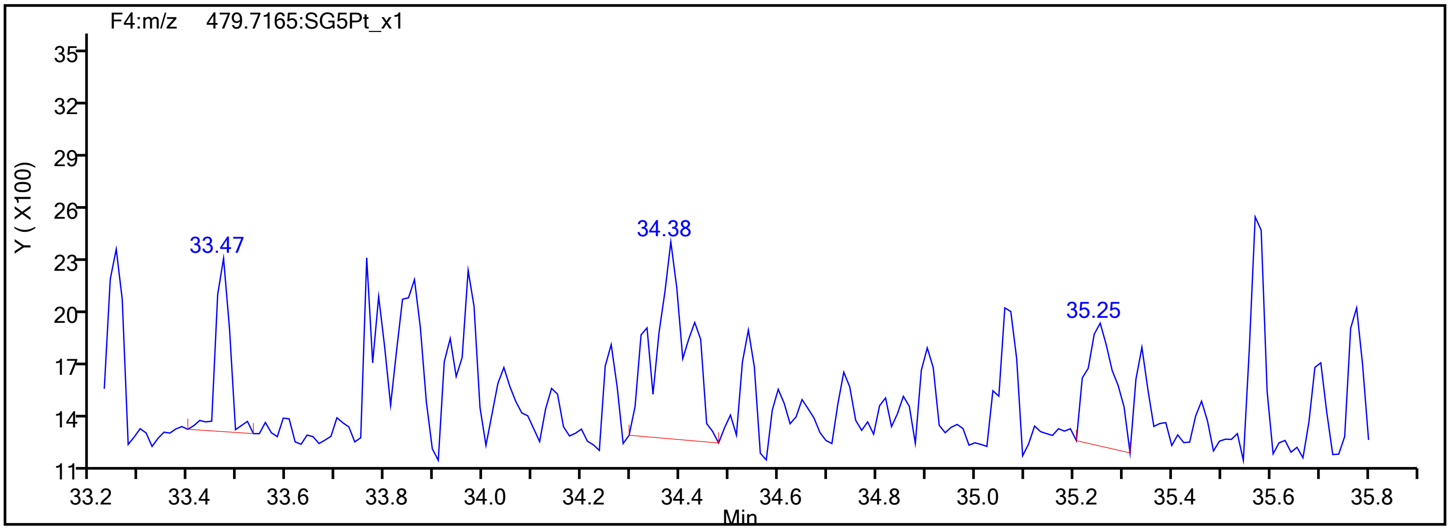

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Method: Dioxin_10D5
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Client ID: DUP
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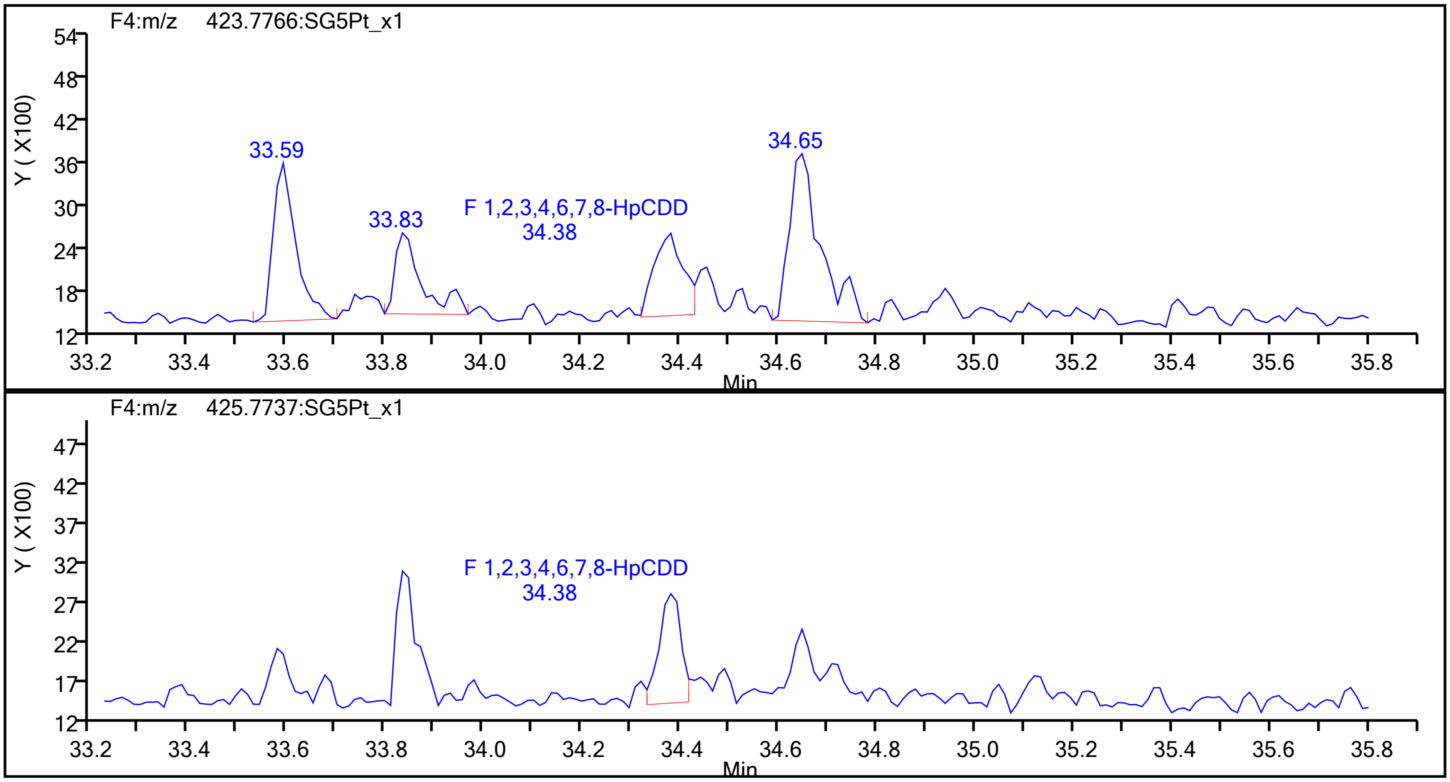

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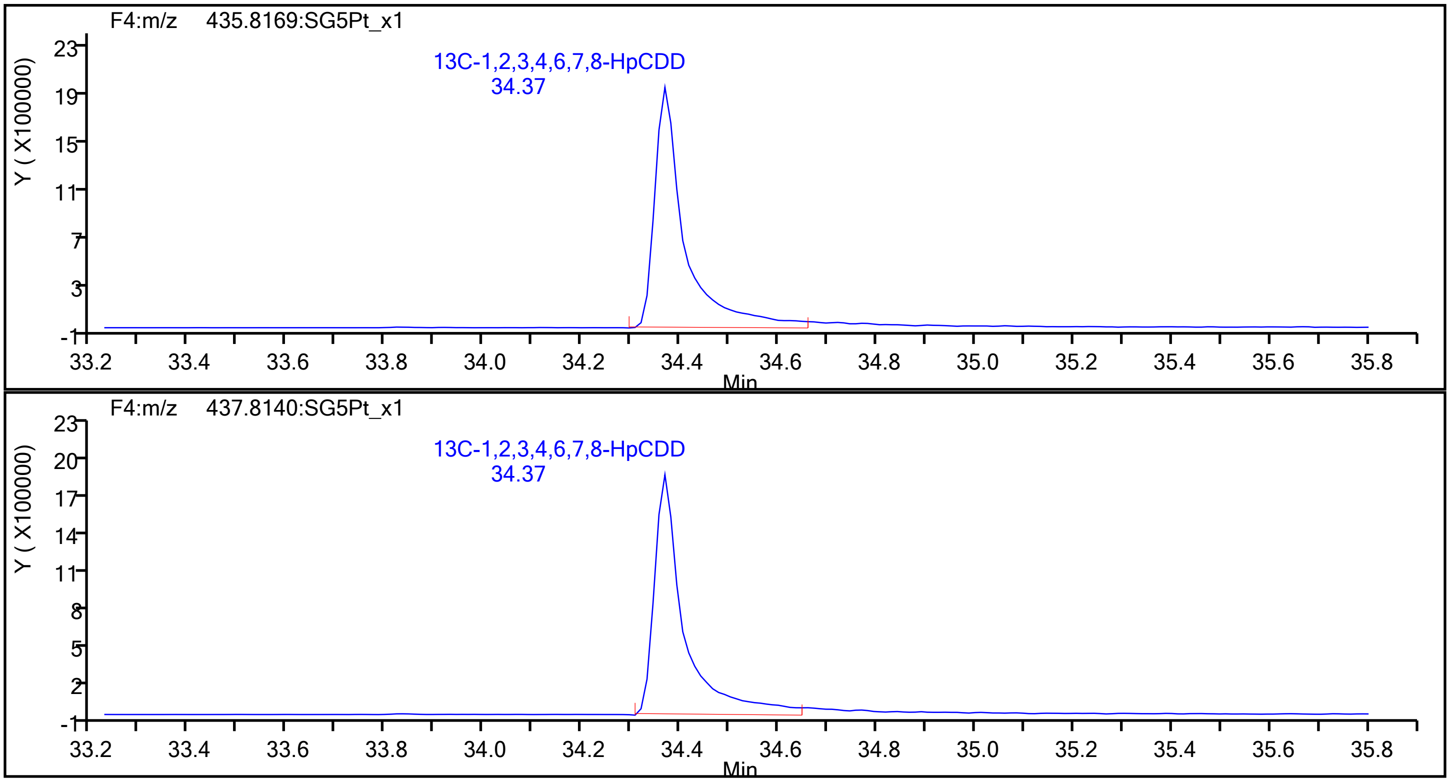

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Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

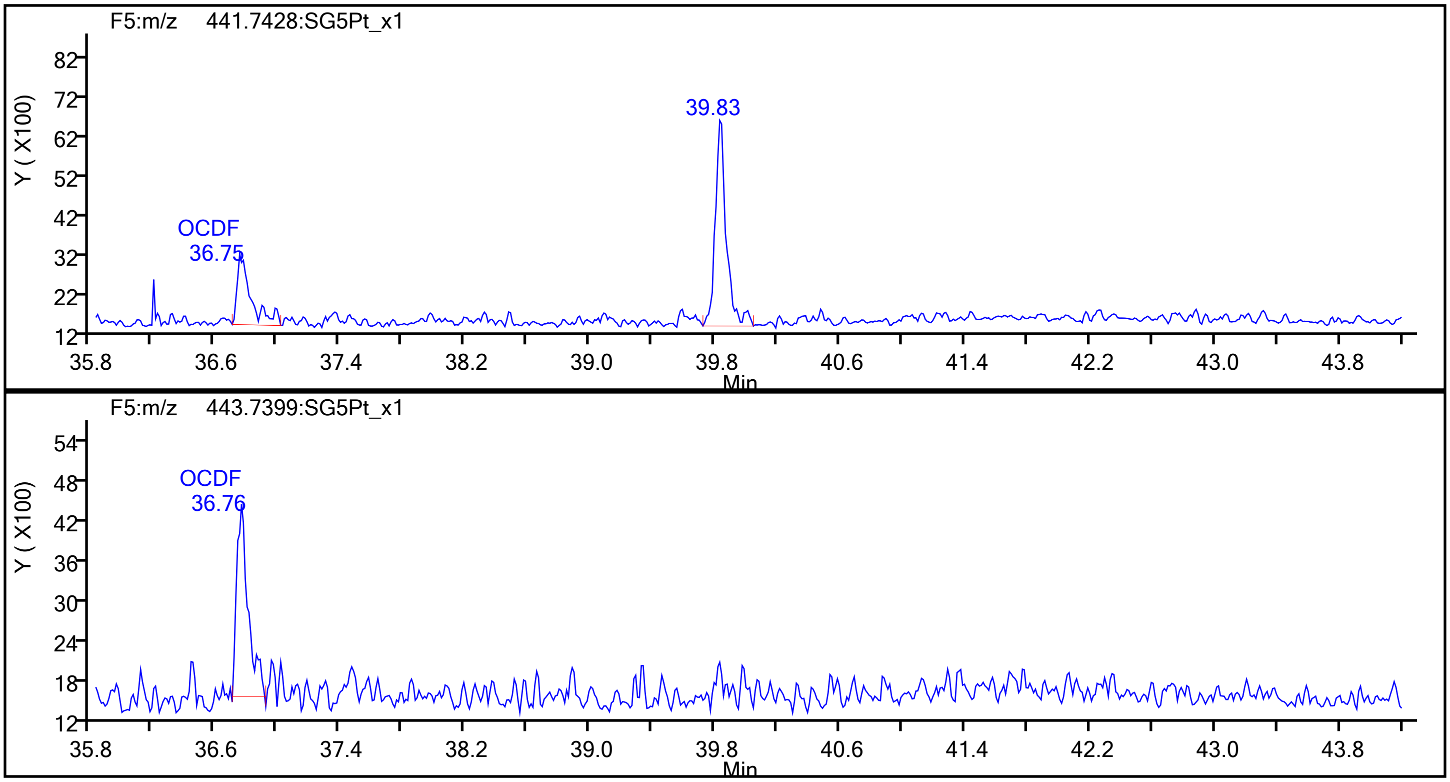

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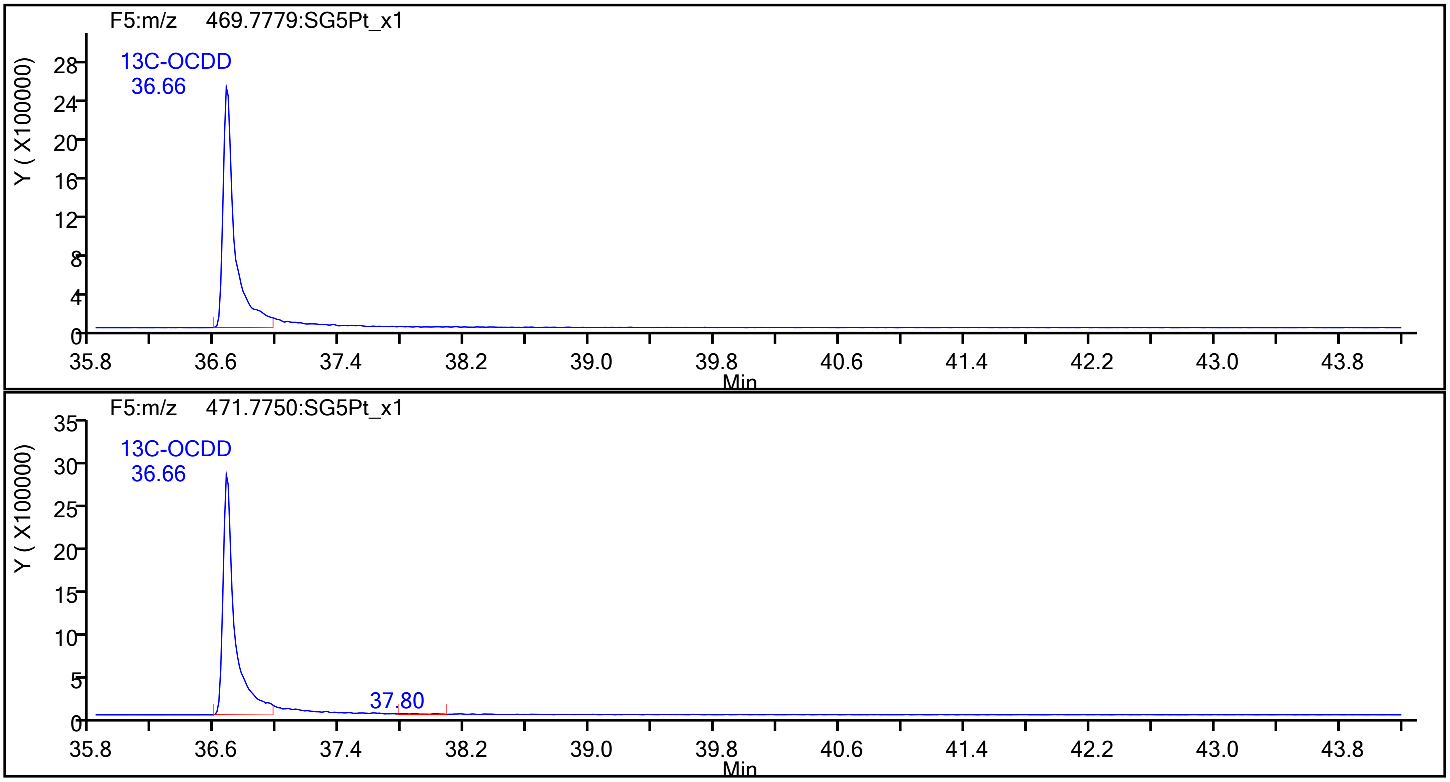

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Eurofins TestAmerica, Sacramento

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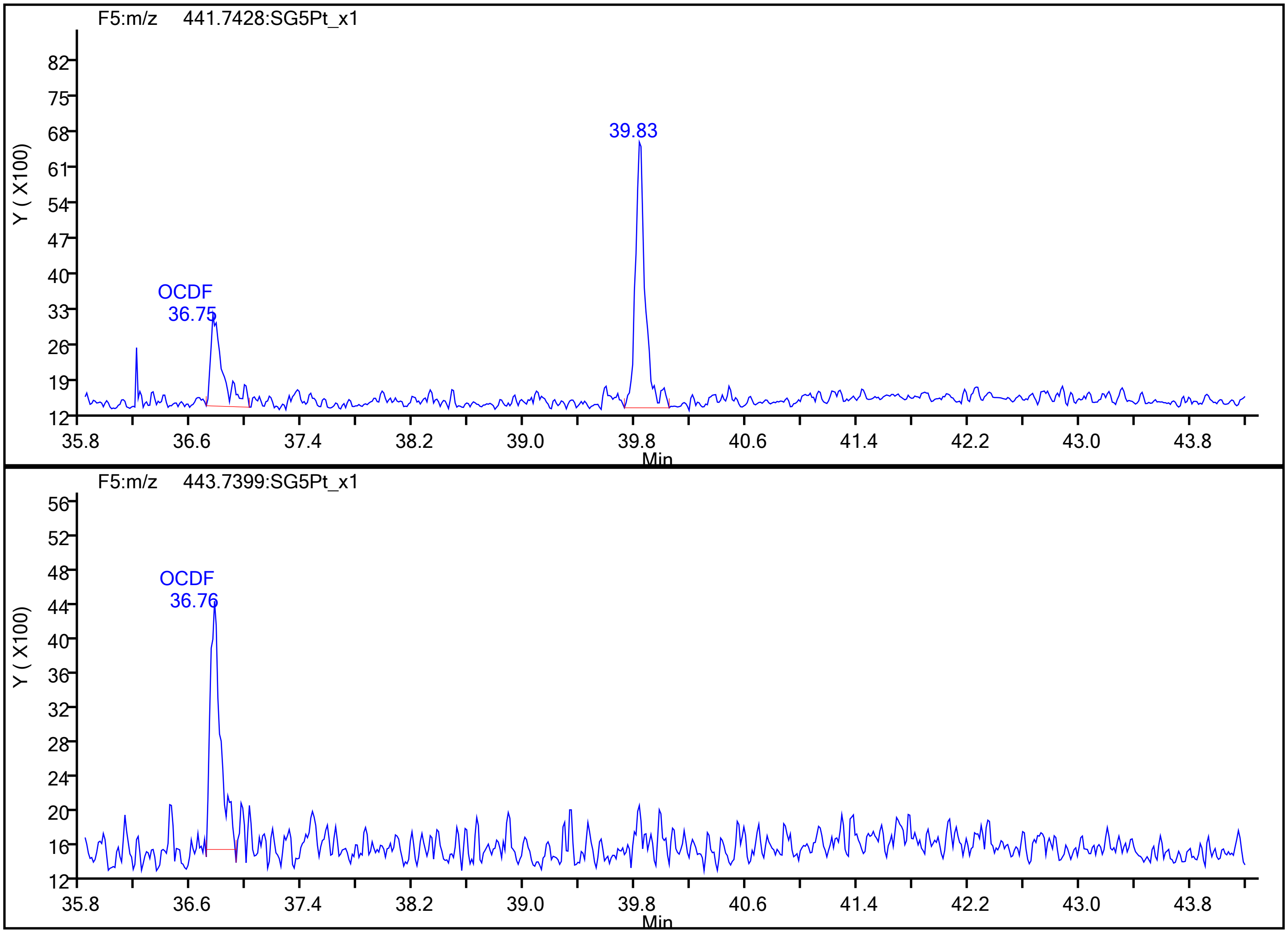

OCDF Interference Mass

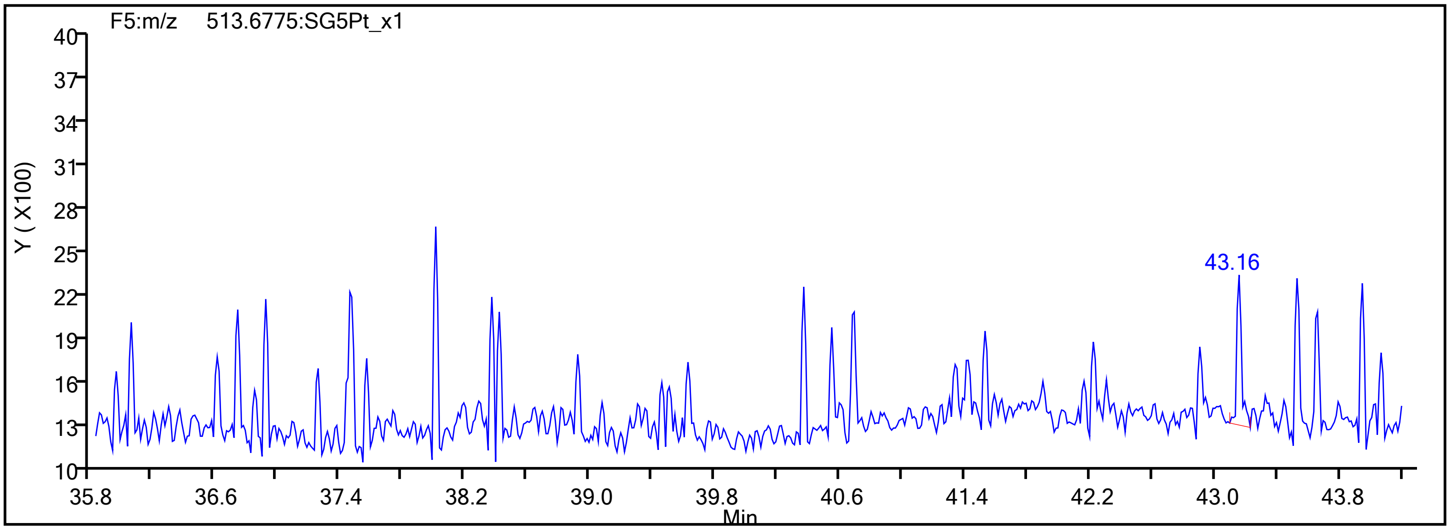

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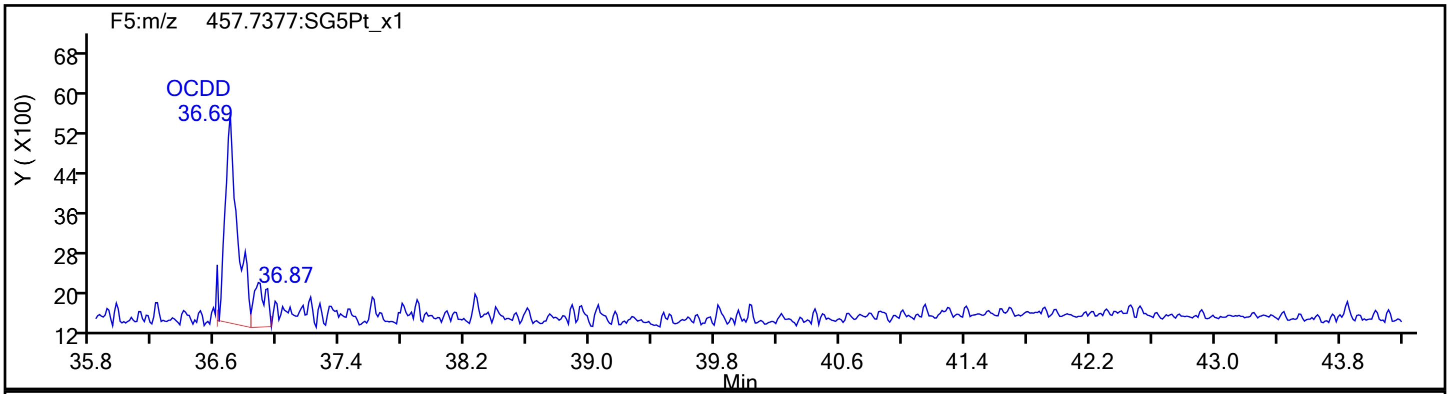

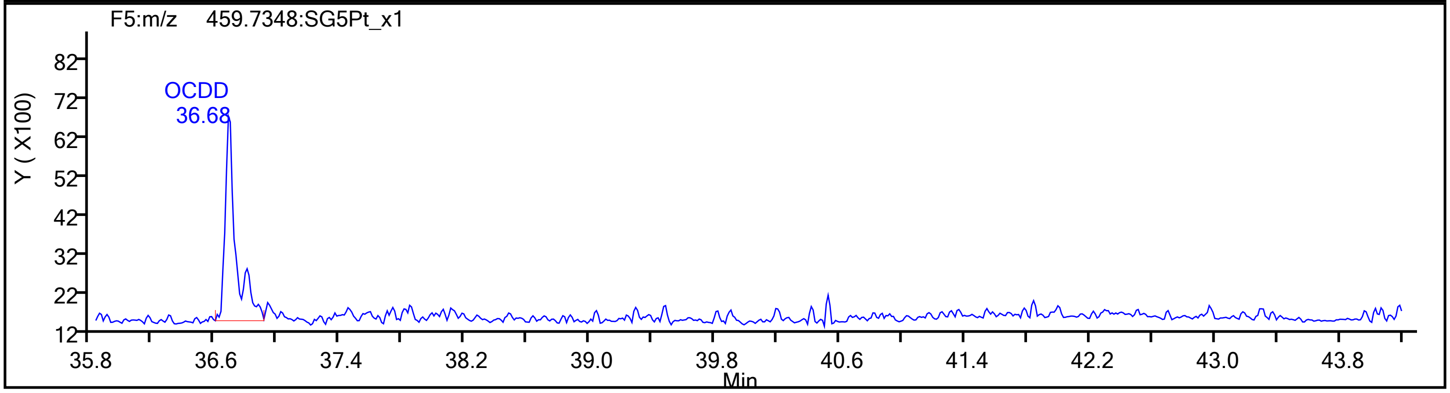

OCDD Standards

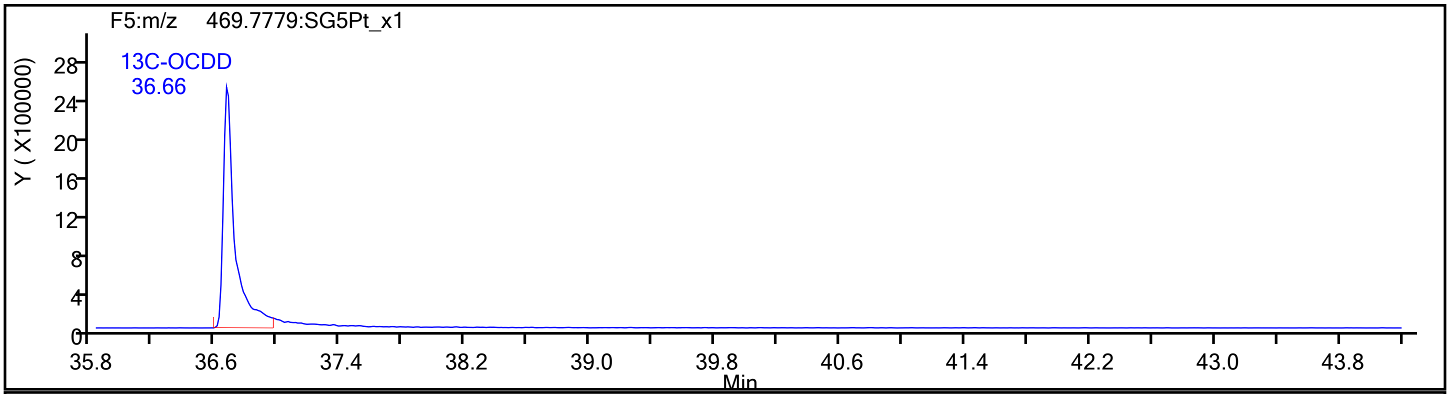

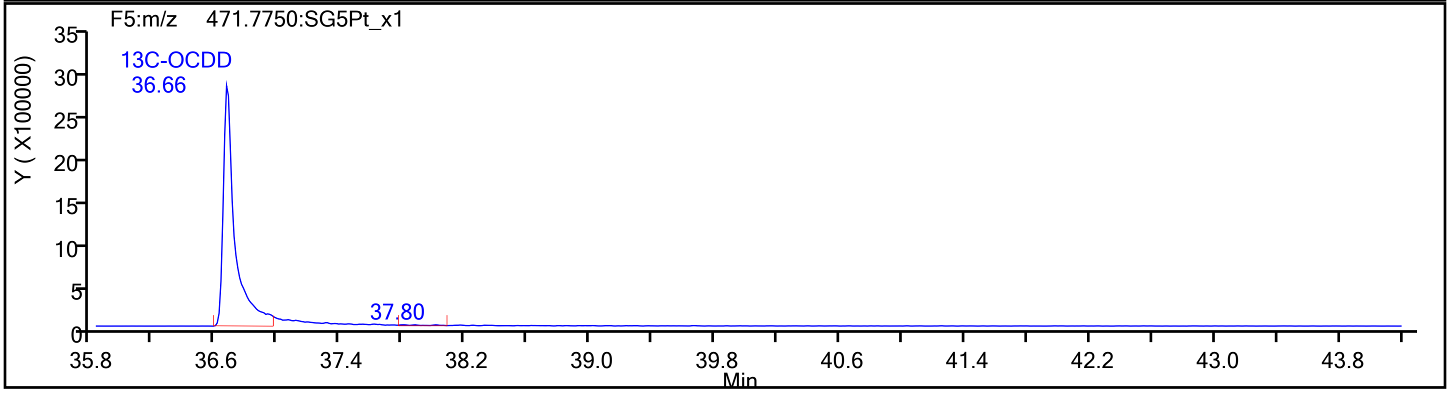

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Eurofins TestAmerica, Sacramento

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Instrument ID: 10D5
Operator ID: AJS

Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL

Client ID: DUP

Worklist#: 389621
Sample Line#: 12

Column Type: DB-5
Column Dia: 0.32 mm

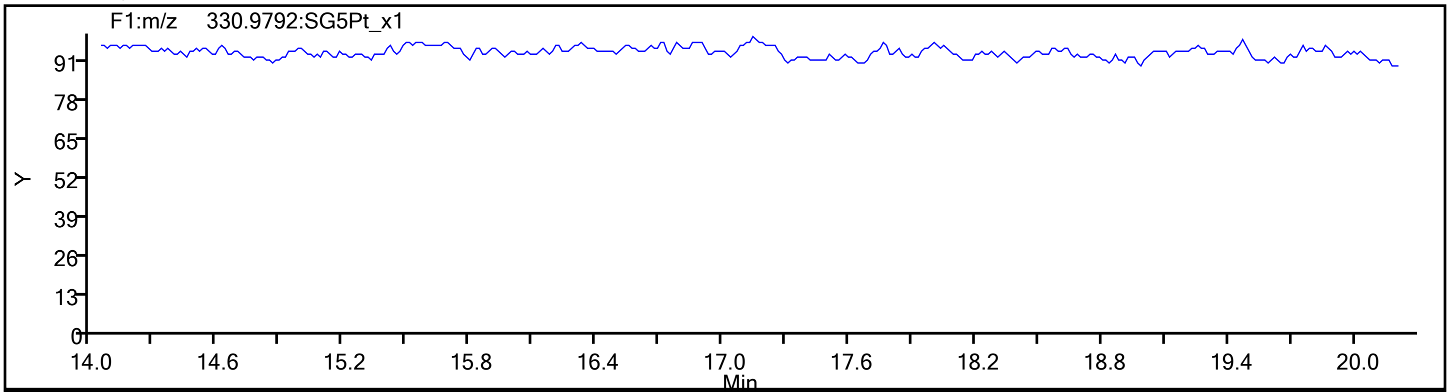

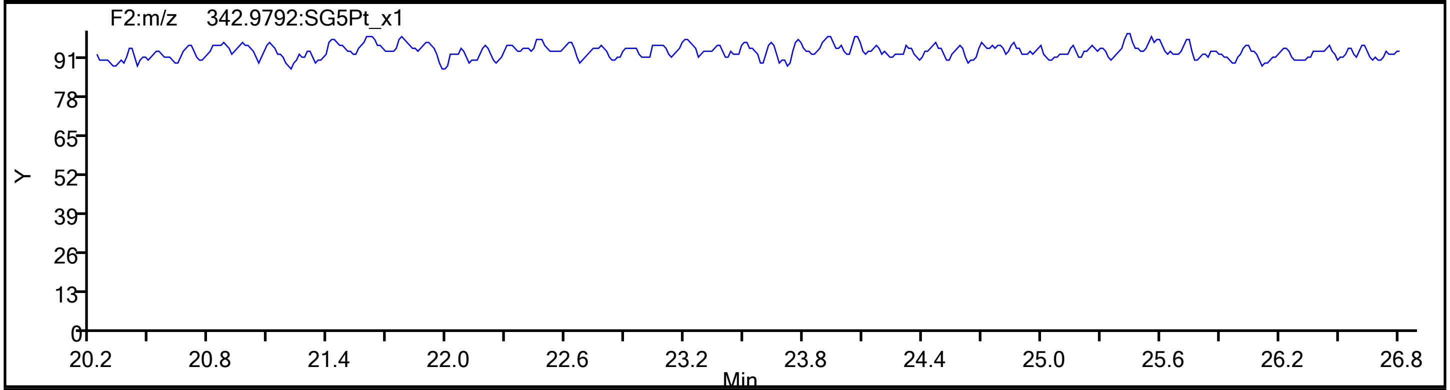

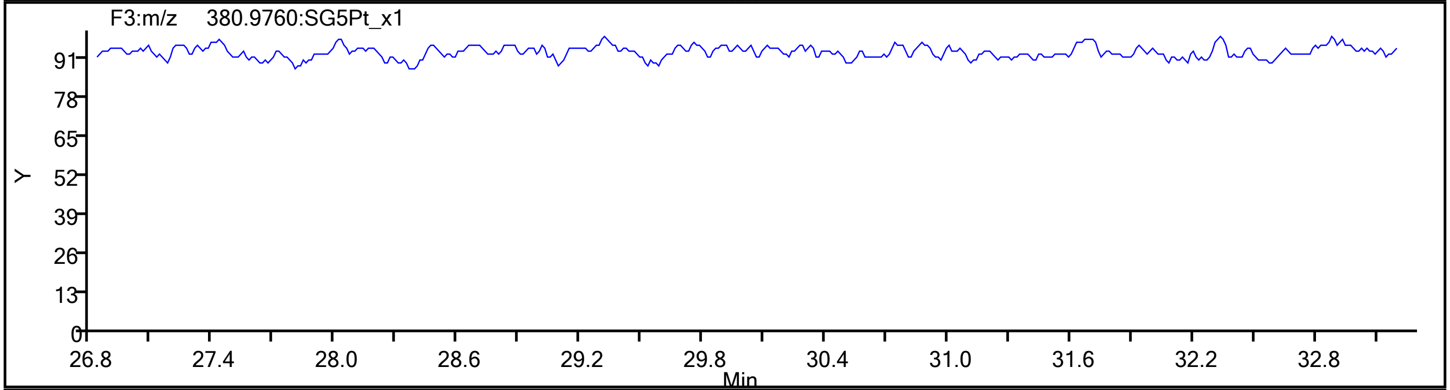

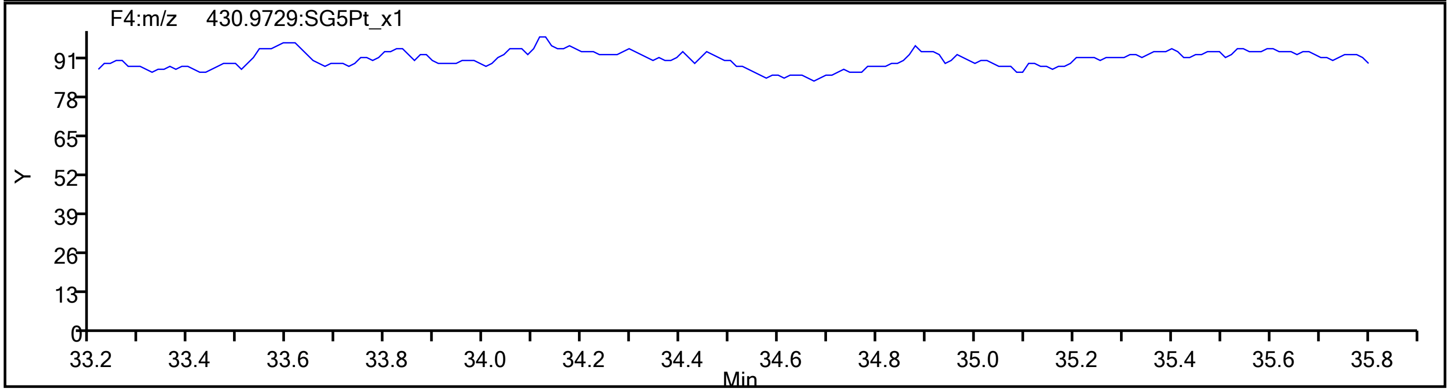

Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	DUP		
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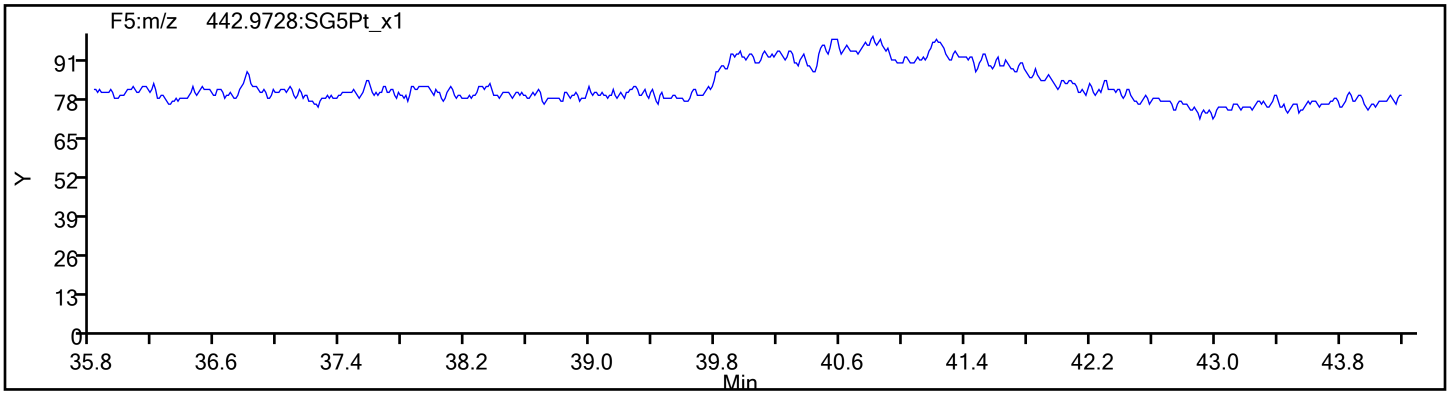

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1 Analy Batch No.: 362307

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/05/2020 17:01 Calibration End Date: 03/05/2020 20:05 Calibration ID: 49375

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-362307/3	05MR20A10D5_3.d
Level 2	IC 320-362307/4	05MR20A10D5_4.d
Level 3	IC 320-362307/5	05MR20A10D5_5.d
Level 4	IC 320-362307/6	05MR20A10D5_6.d
Level 5	IC 320-362307/7	05MR20A10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.7209	0.7187	0.7441	0.8088	0.8434	AveID		0.7672				7.3		20.0			
2,3,7,8-TCDD	1.0329	0.9452	0.9422	1.0227	1.0571	AveID		1.0000				5.3		20.0			
1,2,3,7,8-PeCDF	0.8474	0.8678	0.8765	0.9517	0.9659	AveID		0.9019				5.9		20.0			
2,3,4,7,8-PeCDF	0.7906	0.8105	0.8220	0.8594	0.8711	AveID		0.8307				4.1		20.0			
1,2,3,7,8-PeCDD	0.9437	0.9770	0.9952	1.0757	1.0807	AveID		1.0145				6.0		20.0			
1,2,3,4,7,8-HxCDF	0.7403	0.7666	0.7841	0.8350	0.8381	AveID		0.7928				5.4		20.0			
1,2,3,6,7,8-HxCDF	0.7928	0.8053	0.8498	0.9200	0.9280	AveID		0.8592				7.3		20.0			
2,3,4,6,7,8-HxCDF	0.8342	0.8405	0.8771	0.9416	0.9543	AveID		0.8896				6.3		20.0			
1,2,3,4,7,8-HxCDD	0.7971	0.8121	0.8066	0.8636	0.8866	AveID		0.8332				4.7		20.0			
1,2,3,6,7,8-HxCDD	0.8069	0.8579	0.8899	0.9557	0.9618	AveID		0.8944				7.4		20.0			
1,2,3,7,8,9-HxCDD	0.8680	0.9281	0.9045	1.0138	1.0099	AveID		0.9449				6.9		20.0			
1,2,3,7,8,9-HxCDF	0.8343	0.8436	0.8800	0.9504	0.9624	AveID		0.8941				6.7		20.0			
1,2,3,4,6,7,8-HpCDF	1.2577	1.2815	1.3292	1.3886	1.3903	AveID		1.3295				4.6		20.0			
1,2,3,4,6,7,8-HpCDD	0.9822	0.9717	0.9863	1.0396	1.0403	AveID		1.0040				3.3		20.0			
1,2,3,4,7,8,9-HpCDF	1.0127	1.0574	1.0742	1.1241	1.1332	AveID		1.0803				4.6		20.0			
OCDD	1.0147	0.9898	0.9983	1.0374	1.0474	AveID		1.0175				2.4		20.0			
OCDF	1.0694	1.0644	1.1041	1.1404	1.1598	AveID		1.1076				3.8		20.0			
13C-2,3,7,8-TCDF	1.1670	1.1500	1.2377	1.2377	1.1924	Ave		1.1970				3.4		35.0			
13C-2,3,7,8-TCDD	0.8576	0.9010	0.8564	0.8809	0.8906	Ave		0.8773				2.3		35.0			
13C-1,2,3,7,8-PeCDF	0.9936	0.9420	0.9991	1.0126	1.0049	Ave		0.9904				2.8		35.0			
13C-2,3,4,7,8-PeCDF	1.0243	1.0450	1.0687	1.1550	1.1057	Ave		1.0797				4.8		35.0			
13C-1,2,3,7,8-PeCDD	0.6751	0.6655	0.7014	0.7010	0.7091	Ave		0.6904				2.7		35.0			
13C-1,2,3,4,7,8-HxCDF	0.9639	0.8994	0.9153	0.8452	0.9145	Ave		0.9076				4.7		35.0			
13C-1,2,3,6,7,8-HxCDF	0.9152	0.8773	0.8529	0.8266	0.8636	Ave		0.8671				3.8		35.0			
13C-2,3,4,6,7,8-HxCDF	0.8449	0.8254	0.8611	0.8259	0.7859	Ave		0.8287				3.4		35.0			
13C-1,2,3,4,7,8-HxCDD	0.8501	0.8043	0.8610	0.8119	0.8402	Ave		0.8335				2.9		35.0			
13C-1,2,3,6,7,8-HxCDD	0.8575	0.8344	0.8302	0.8175	0.7744	Ave		0.8228				3.7		35.0			
13C-1,2,3,7,8,9-HxCDF	0.7550	0.7249	0.7218	0.7529	0.7410	Ave		0.7391				2.1		35.0			
13C-1,2,3,4,6,7,8-HpCDF	0.7279	0.7150	0.7092	0.6677	0.6845	Ave		0.7009				3.5		35.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7109	0.6919	0.6919	0.7019	0.7163	Ave		0.7026				1.6		35.0			
13C-1,2,3,4,7,8,9-HpCDF	0.7633	0.6794	0.7186	0.7213	0.7392	Ave		0.7244				4.3		35.0			
13C-OCDD	0.6120	0.5803	0.5956	0.6418	0.6621	Ave		0.6184				5.4		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1 Analy Batch No.: 362307

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/05/2020 17:01 Calibration End Date: 03/05/2020 20:05 Calibration ID: 49375

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
37Cl4-2,3,7,8-TCDD	0.8226	0.8820	0.9184	1.0525	1.0818	Ave		0.9515				11.7					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1 Analy Batch No.: 362307

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/05/2020 17:01 Calibration End Date: 03/05/2020 20:05 Calibration ID: 49375

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-362307/3	05MR20A10D5_3.d
Level 2	IC 320-362307/4	05MR20A10D5_4.d
Level 3	IC 320-362307/5	05MR20A10D5_5.d
Level 4	IC 320-362307/6	05MR20A10D5_6.d
Level 5	IC 320-362307/7	05MR20A10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	139475	608638	3119918	15619331	78405317	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	146870	627029	2733310	14056949	73397084	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	697952	3009562	14831783	75180488	378365760	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	671275	3118181	14879406	77440753	375438875	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	528145	2393975	11822415	58830905	298739216	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	463743	2007538	9942036	48307405	264411389	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	471582	2057258	10041646	52053352	276477770	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	458035	2020258	10464048	53234487	258733732	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	440365	1901863	9621231	47998413	256976076	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	449693	2084279	10234254	53479505	256949982	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	481642	2214257	10596086	56539265	281246053	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	409370	1780461	8800442	48982025	246005828	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	595004	2668090	13059237	63471435	328302698	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	453815	1957807	9453339	49946913	257083793	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	502340	2091882	10693661	55504167	288960080	2.50	10.0	50.0	200	1000
OCDD		AveID	807146	3345250	16473634	91155553	478495714	5.00	20.0	100	400	2000
OCDF		AveID	850674	3597124	18218734	100207446	529837588	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTC	Ave	38696439	42340173	41927619	48279358	46480707	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTC	Ave	28437035	33170661	29010882	34361684	34717344	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTC	Ave	32945780	34681341	33844214	39496543	39171830	100	100	100	100	100
13C-2,3,4,7,8-PeCDF	13CTC	Ave	33962749	38473439	36204391	45053810	43100234	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTC	Ave	22385040	24502857	23759706	27344566	27642555	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx	Ave	25056797	26188806	25359317	28927620	31549179	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDF	13CHx	Ave	23792955	25545397	23632216	28289692	29793327	100	100	100	100	100
13C-2,3,4,6,7,8-HxCDF	13CHx	Ave	21963747	24035131	23859710	28268533	27111178	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDD	13CHx	Ave	22099139	23419559	23856514	27789324	28984636	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx	Ave	22292491	24295909	23002096	27979920	26715501	100	100	100	100	100
13C-1,2,3,7,8,9-HxCDF	13CHx	Ave	19627421	21106563	19999975	25769921	25561442	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx	Ave	18922959	20820567	19649806	22853818	23613576	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx	Ave	18481385	20148239	19169977	24022160	24711481	100	100	100	100	100
13C-1,2,3,4,7,8,9-HpCDF	13CHx	Ave	19842383	19782829	19910498	24687268	25499985	100	100	100	100	100
13C-OCDD	13CHx	Ave	31819611	33795734	33003160	43935149	45682693	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTC	Ave	136381	649436	3111185	16421778	84339150	0.500	2.00	10.0	40.0	200

FORM VI
DIOXIN BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1 Analy Batch No.: 362307

SDG No.:

Instrument ID: 10D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/05/2020 17:01 Calibration End Date: 03/05/2020 20:05 Calibration ID: 49375

Curve Type Legend:
Ave = Average ISTD
AveID = Average isotope dilution

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\DATA 2019.PRO\SampleDB\05MR20A10D5.SPL Page 1 of 3
Last Modified: Thursday, March 05, 2020 22:20:41 Pacific Standard Time
Printed: Thursday, March 05, 2020 22:21:02 Pacific Standard Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #
1	05MR20A10D5_1	WDM HRDXNCP_00040	WDM 030520	Tray01:1	Dioxin	
2	05MR20A10D5_2	Solvent Blank C-14	SB 030520	Tray01:3	---	
3	05MR20A10D5_3	CS-2 HRDXNL2_00028	IC 030520	Tray01:4	Dioxin	
4	05MR20A10D5_4	CS-3 HRDXNL3_00026	IC 030520A	Tray01:5	Dioxin	
5	05MR20A10D5_5	CS-4 HRDXNL4_00091	IC 030520B	Tray01:2	Dioxin	
6	05MR20A10D5_6	CS-5 HRDXNL5_00029	IC 030520C	Tray01:6	Dioxin	
7	05MR20A10D5_7	CS-6 HRDXNL6_00025	IC 030520D	Tray01:7	Dioxin	
8	05MR20A10D5_8	Solvent Blank C-14	SB 030520A	Tray01:3	---	
9	05MR20A10D5_9	ICV HRDXNIC_00044	ICV 030520	Tray01:8	Dioxin	
10	05MR20A10D5_10	WDM HRDXNCP_00040	WDM 030520A	Tray01:1	Dioxin	
11	05MR20A10D5_11	CS-4 HRDXNL4_00091	CCV 030520	Tray01:2	Dioxin	
12	05MR20A10D5_12	Solvent Blank C-14	SB 030520B	Tray01:3	---	
13	05MR20A10D5_13	MB 320-361364/1-A	MB 320-361364/1-A	Tray01:15	8290A_D5/Solid	D137
14	05MR20A10D5_14	LCS 320-361364/2-A	LCS 320-361364/2-A	Tray01:16	8290A_D5/Solid	
15	05MR20A10D5_15	LCSD 320-361364/3-A	LCSD 320-361364/3-A	Tray01:17	8290A_D5/Solid	---
16	05MR20A10D5_16	160-37312-B-1-D	160-37312-B-1-D	Tray01:18	8290A_D5/Solid	---
17	05MR20A10D5_17	160-37312-B-1-E MS	160-37312-B-1-E MS	Tray01:19	8290A_D5/Solid	
18	05MR20A10D5_18	160-37312-B-1-F MSD	160-37312-B-1-F MSD	Tray01:20	8290A_D5/Solid	
19	05MR20A10D5_19	Solvent Blank C-14	SB 030520C	Tray01:3	---	
20	05MR20A10D5_20	CS-4 HRDXNL4_00091	CCV 030520A	Tray01:2	Dioxin	
21	05MR20A10D5_21	WDM HRDXNCP_00040	WDM 030520B	Tray01:1	Dioxin	
22	05MR20A10D5_22	Solvent Blank C-14	SB 030520D	Tray01:3	---	
23	05MR20A10D5_23	QC DCM 030520	QC DCM 030520	Tray01:29	8290	QC84
24	05MR20A10D5_24	MB 320-361707/1-A	MB 320-361707/1-A	Tray01:30	8290/Solid	69
25	05MR20A10D5_25	LCS 320-361707/2-A	LCS 320-361707/2-A	Tray01:31	8290/Solid	
26	05MR20A10D5_26	LCSD 320-361707/3-A	LCSD 320-361707/3-A	Tray01:32	8290/Solid	
27	05MR20A10D5_27	320-59079-A-1-A	320-59079-A-1-A	Tray01:33	8290/Solid	
28	05MR20A10D5_28	Solvent Blank C-14	SB 030520E	Tray01:3	---	
29	05MR20A10D5_29	CS-4 HRDXNL4_00091	CCV 030520B	Tray01:2	Dioxin	
30	05MR20A10D5_30	WDM HRDXNCP_00040	WDM 030520C	Tray01:1	Dioxin	
31	05MR20A10D5_31	Solvent Blank C-14	SB 030520F	Tray01:3	---	

Logfile √'d
3/6/20
KSS

User	Sample Size	Units	MS File	Inlet File	Inject Volume	Process
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
AJS, ALM	1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover

Process Options	**Action On Error**	**s5**
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---	---	C:\CHROM
---	---	C:\CHROM
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---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
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Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, March 05, 2020 15:26:12 Pacific Standard Time

M 292.9824 R 12016

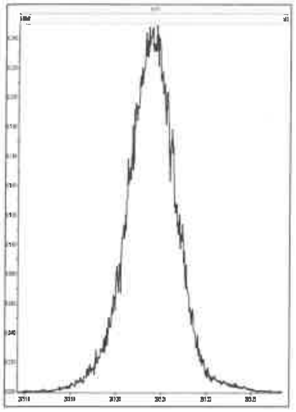

M 304.9824 R 12078

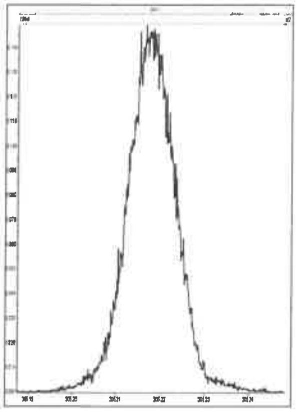

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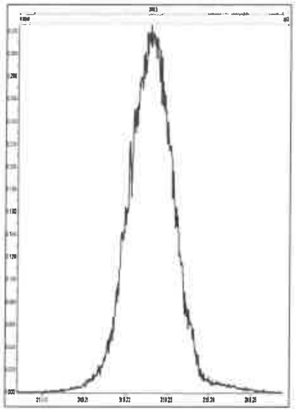

M 330.9792 R 12753

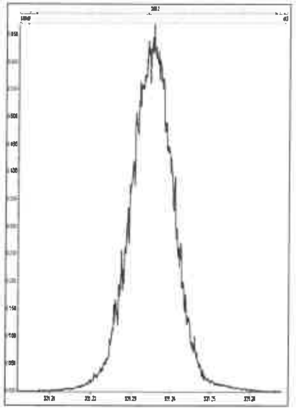

M 342.9792 R 12497

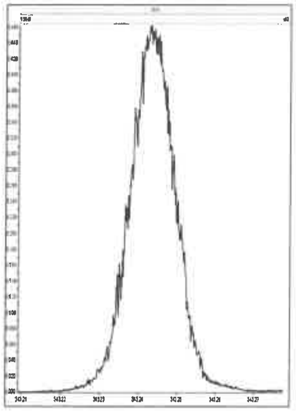

M 354.9792 R 12255

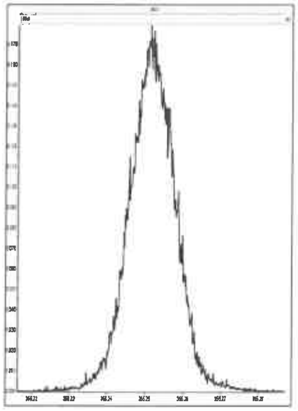

M 366.9792 R 12314

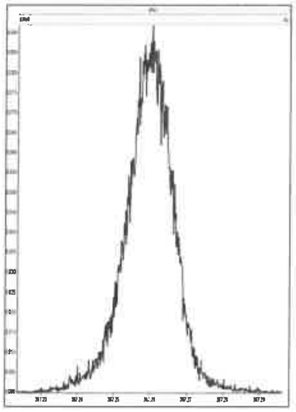

M 380.9760 R 12688

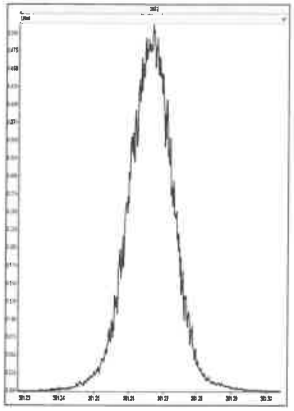

M 392.9760 R 12377

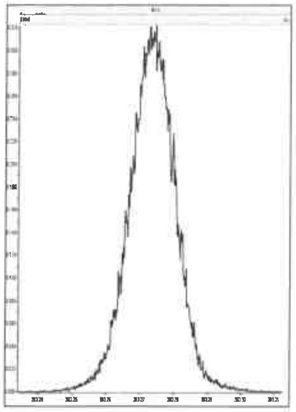

M 404.9760 R 12255

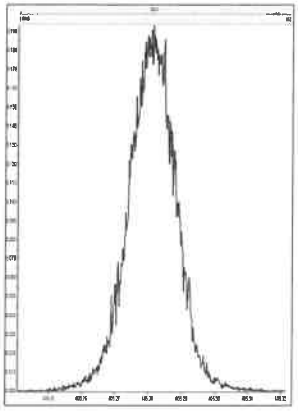

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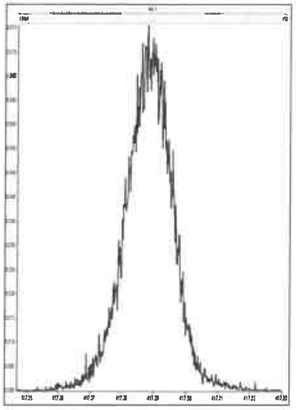

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

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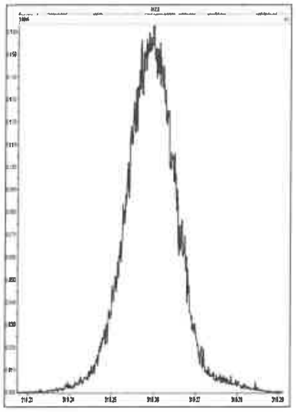

M 330.9792 R 11961

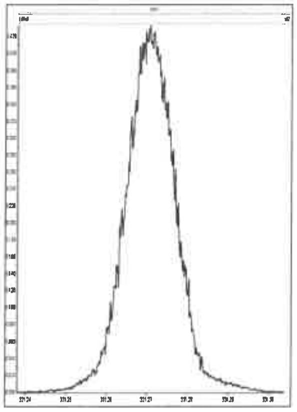

M 342.9792 R 11960

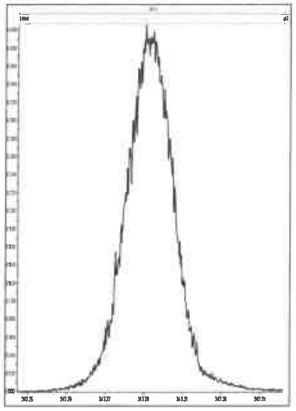

M 354.9792 R 12317

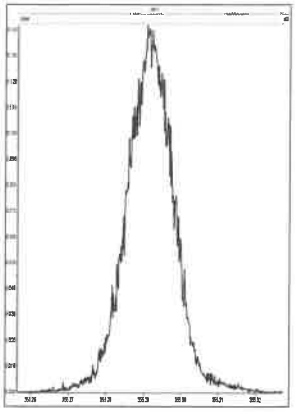

M 366.9792 R 11737

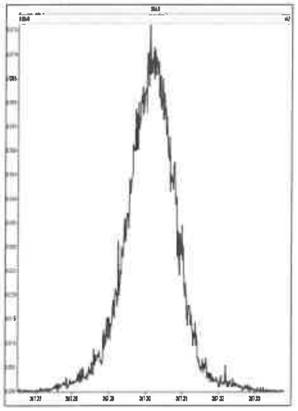

M 380.9760 R 12437

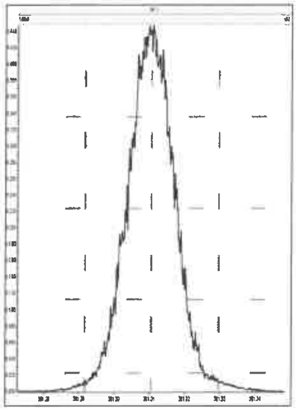

M 392.9760 R 12253

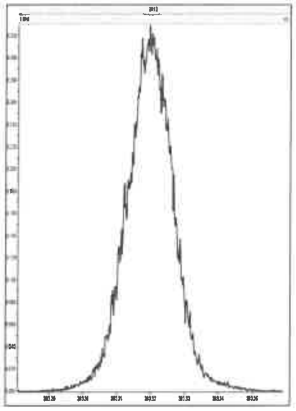

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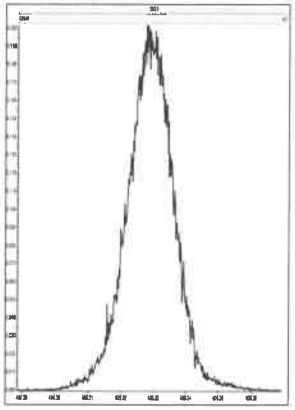

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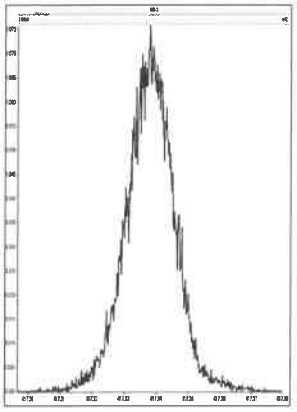

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

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M 366.9792 R 10638

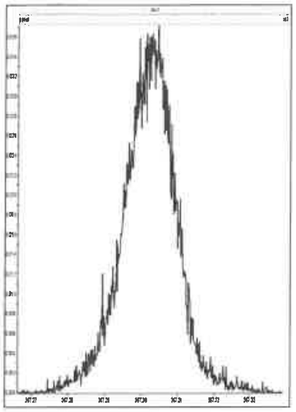

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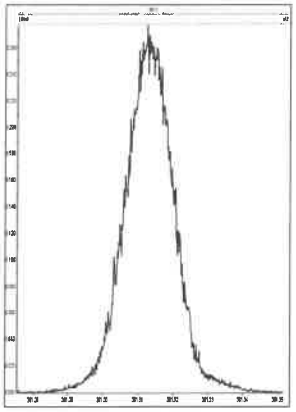

M 392.9760 R 11735

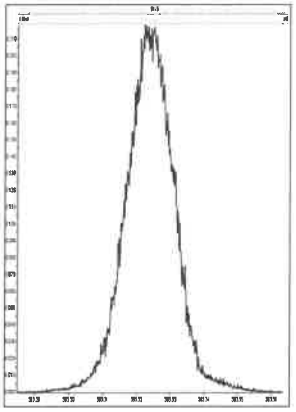

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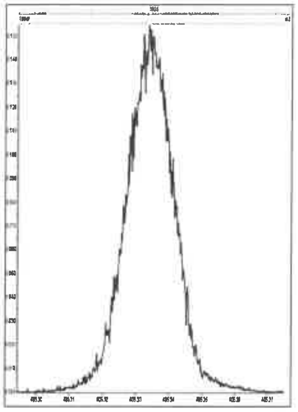

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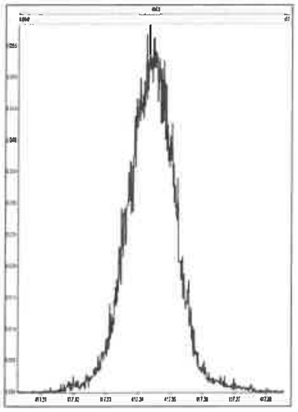

M 430.9728 R 12886

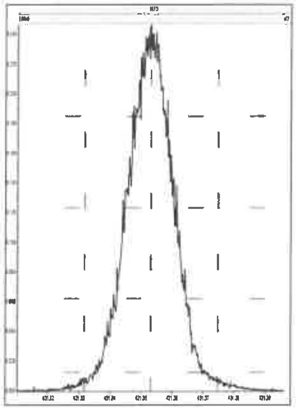

M 442.9728 R 12378

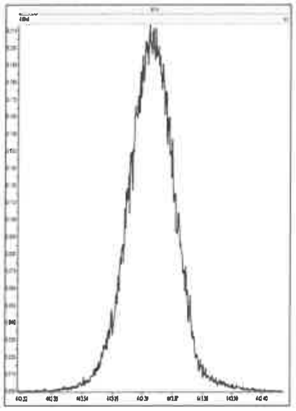

M 454.9728 R 12434

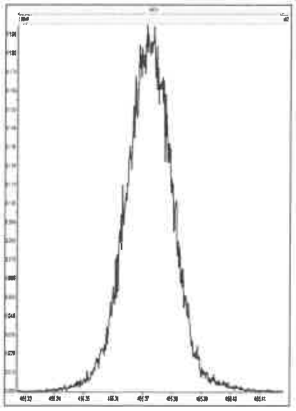

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

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M 380.9760 R 11416

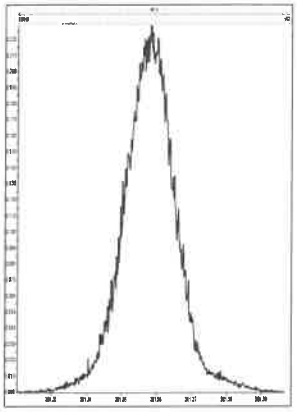

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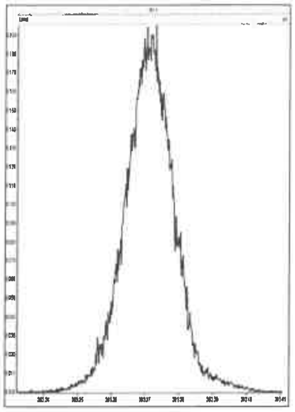

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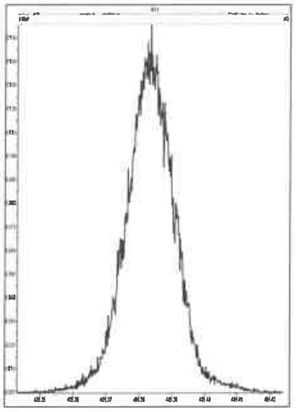

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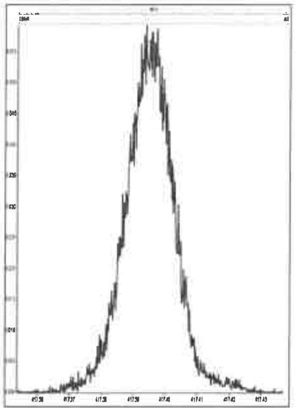

M 430.9728 R 12078

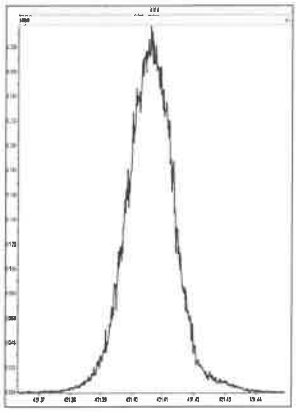

M 442.9728 R 12437

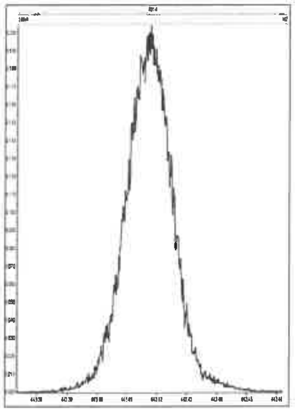

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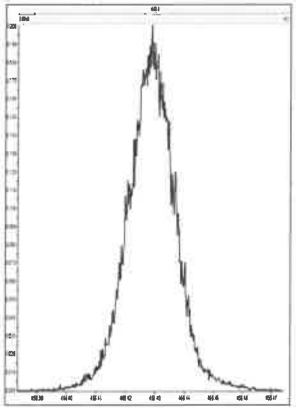

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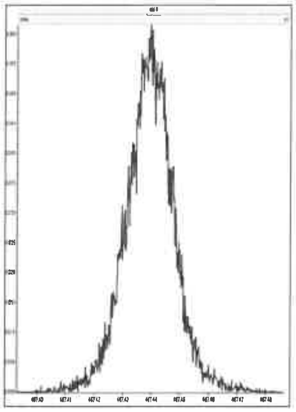

M 480.9696 R 12136

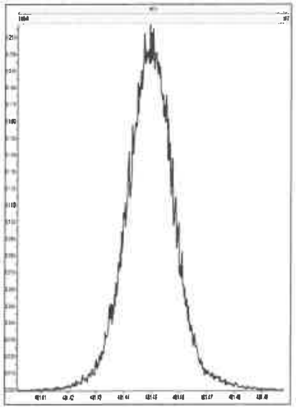

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

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M 380.9760 R 11521

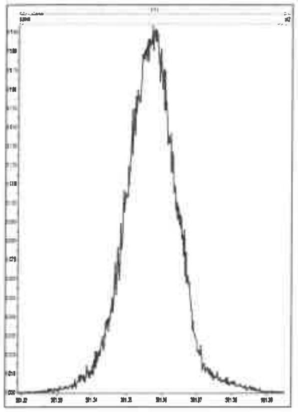

M 392.9760 R 11627

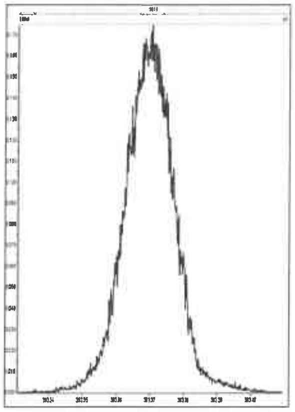

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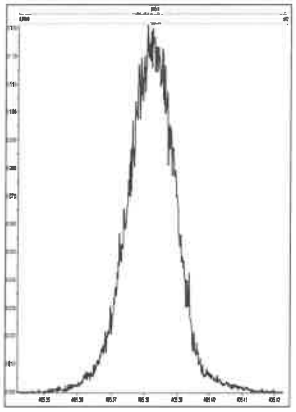

M 416.9760 R 11845

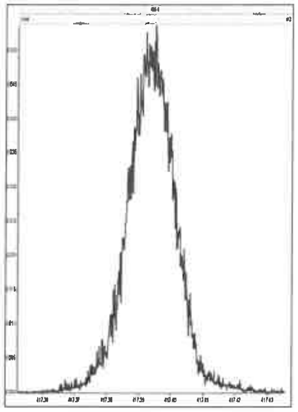

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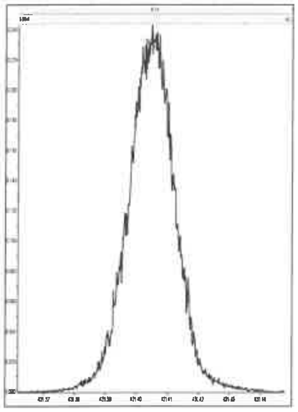

M 442.9728 R 12437

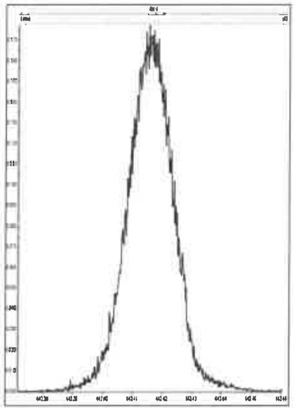

M 454.9728 R 12624

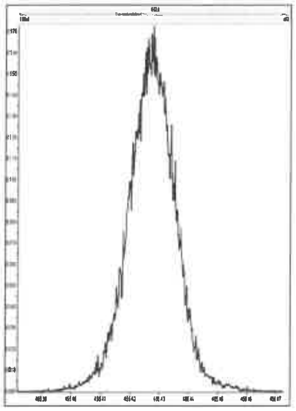

M 466.9728 R 12955

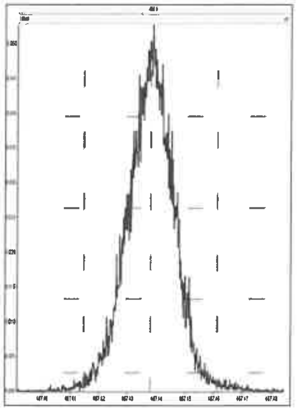

M 480.9696 R 12195

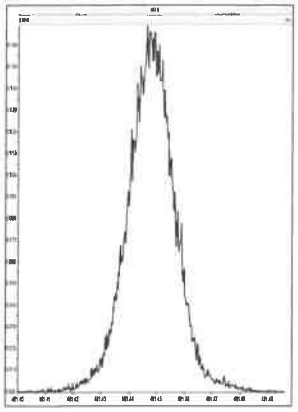

M 492.9696 R 12077

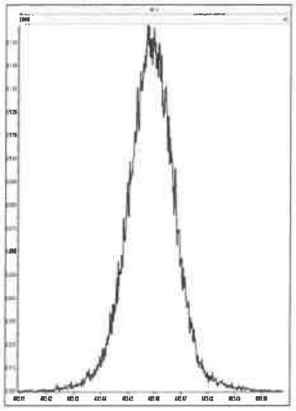

M 504.9696 R 12378

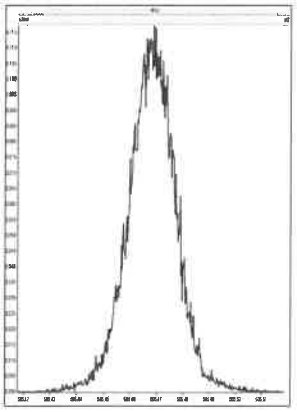

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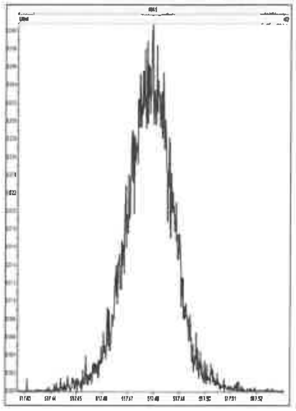

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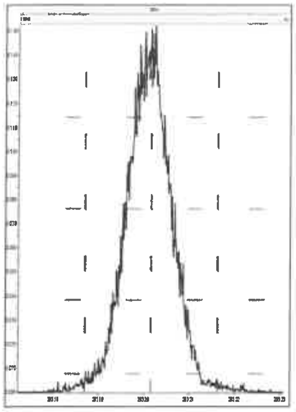

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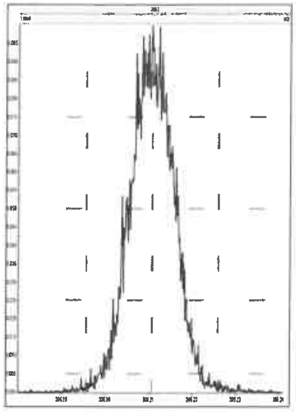

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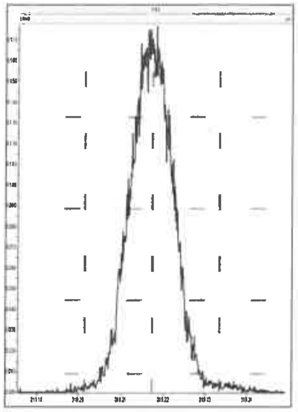

M 330.9792 R 13737

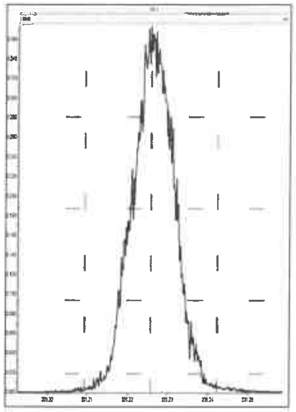

M 342.9792 R 13945

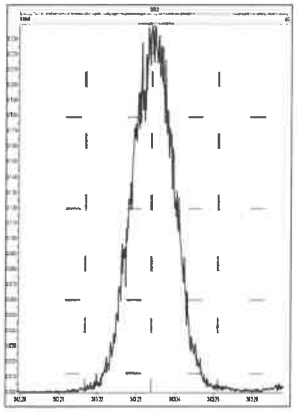

M 354.9792 R 14621

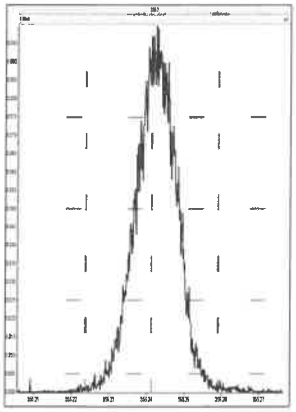

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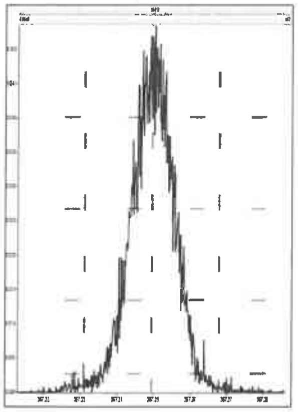

M 380.9760 R 14010

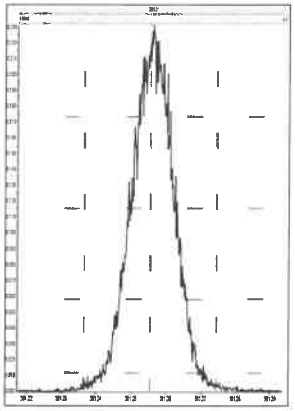

M 392.9760 R 14131

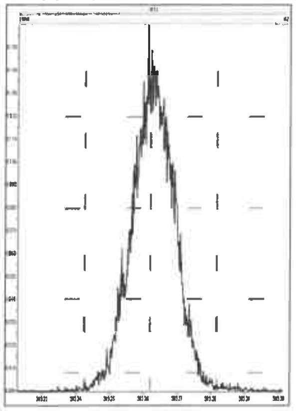

M 404.9760 R 14093

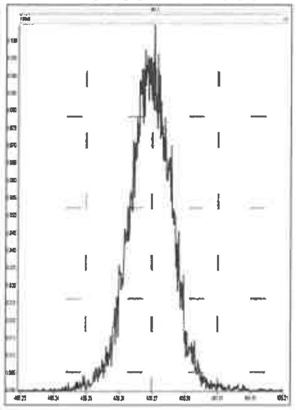

M 416.9760 R 14882

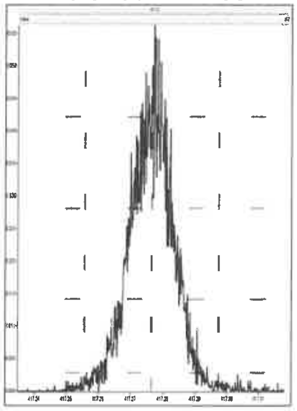

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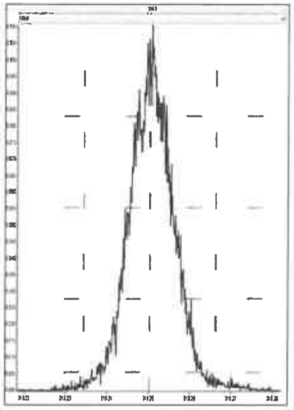

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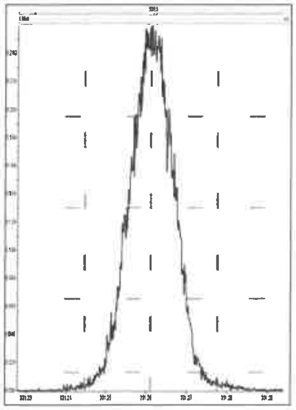

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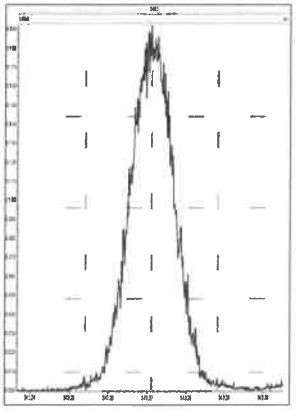

M 354.9792 R 14010

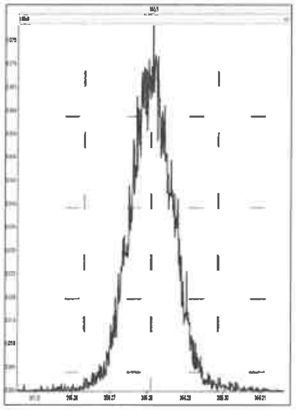

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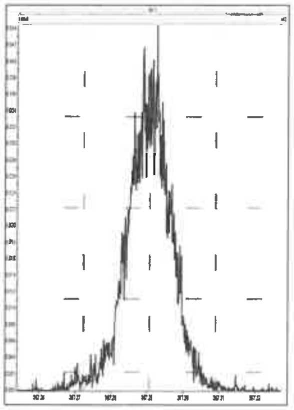

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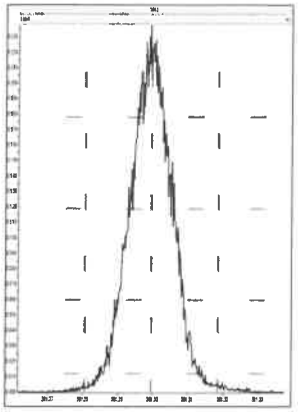

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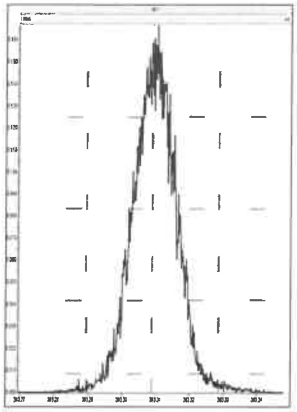

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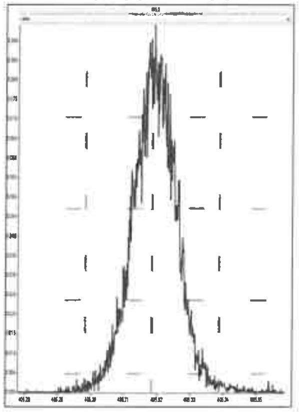

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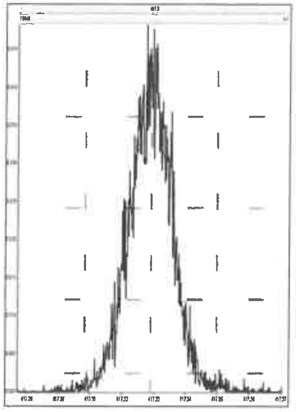

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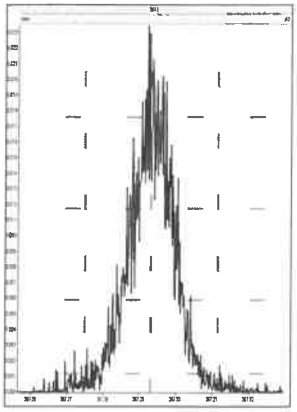

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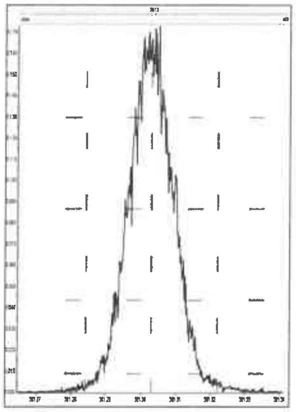

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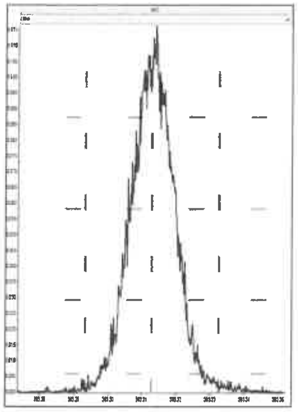

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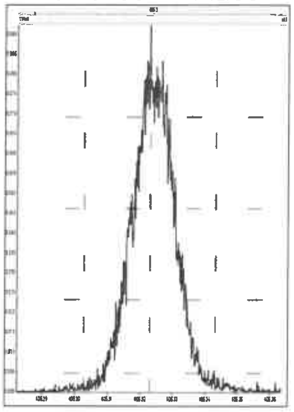

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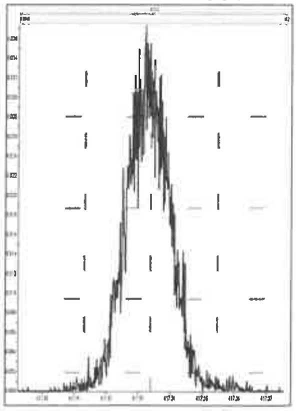

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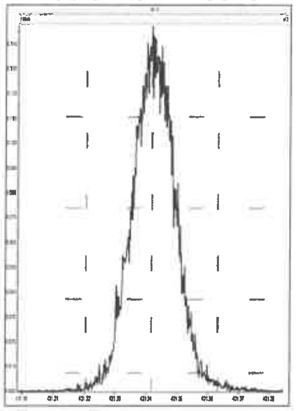

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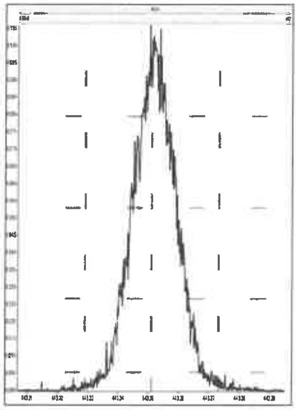

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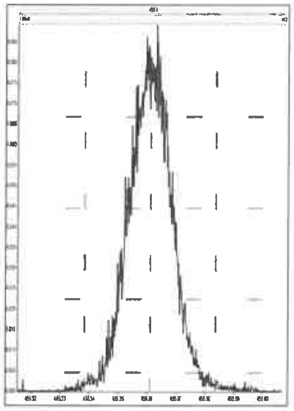

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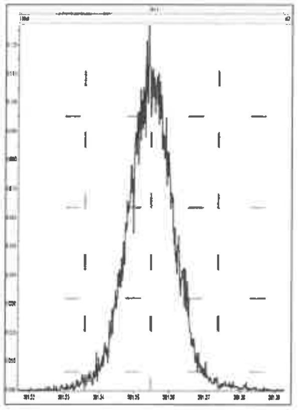

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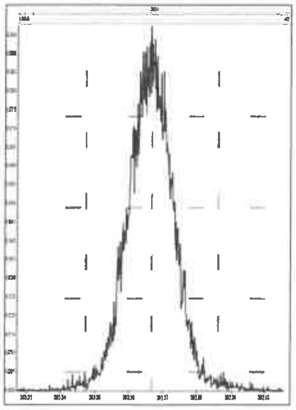

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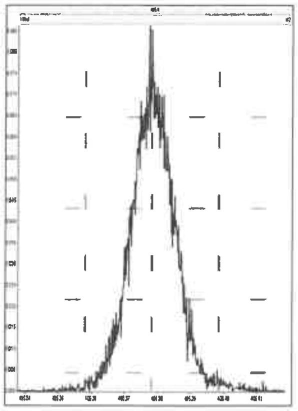

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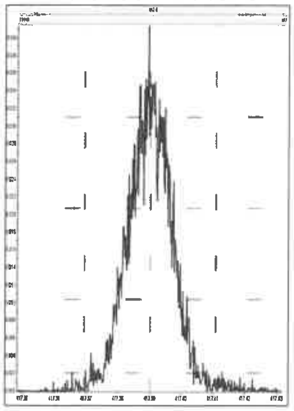

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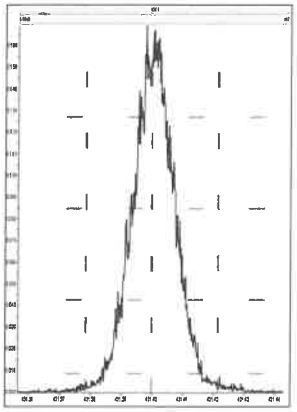

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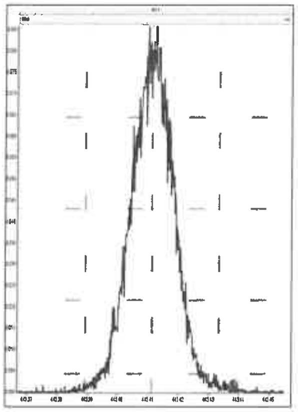

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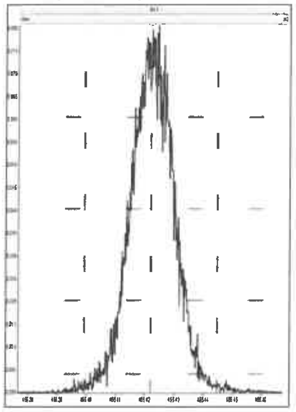

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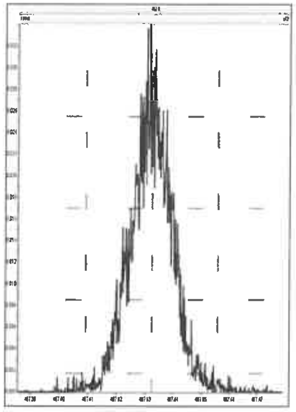

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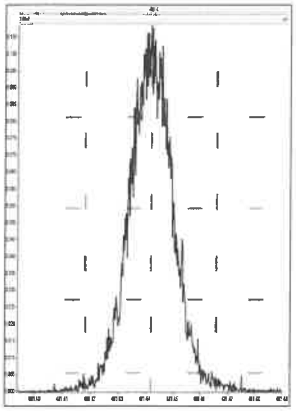

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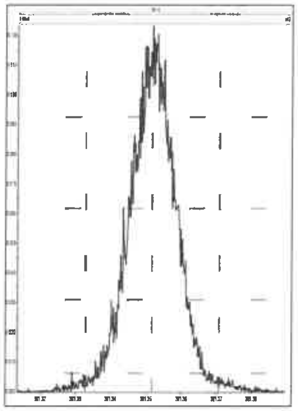

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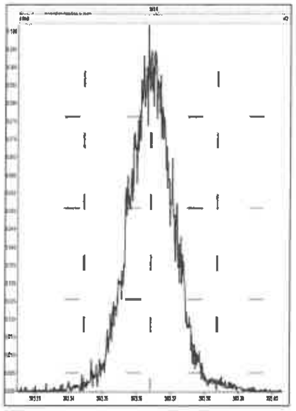

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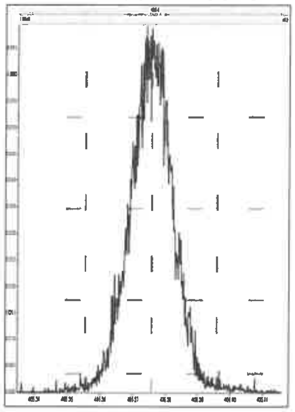

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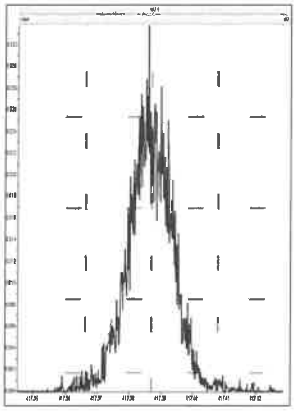

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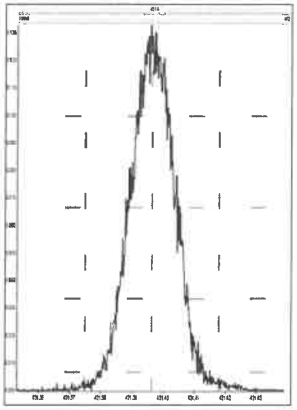

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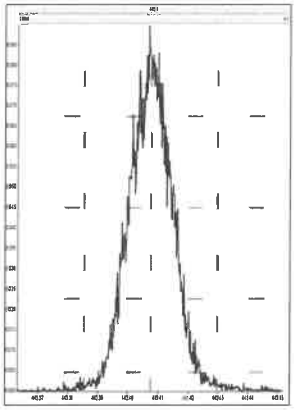

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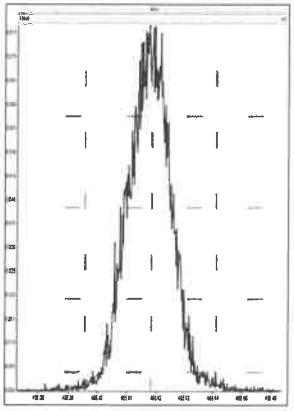

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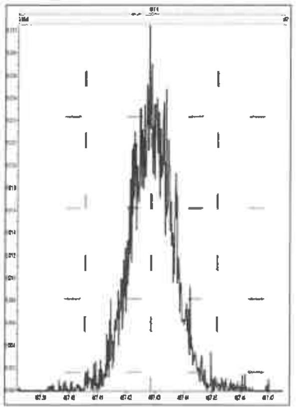

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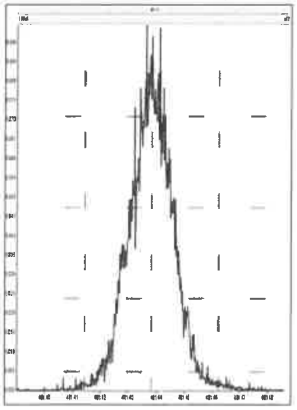

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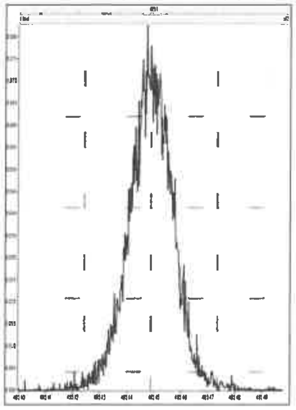

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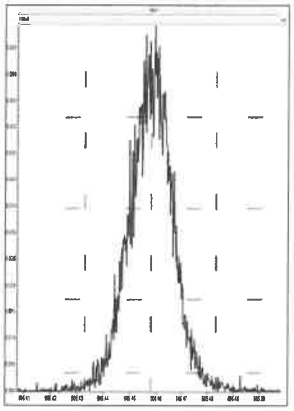

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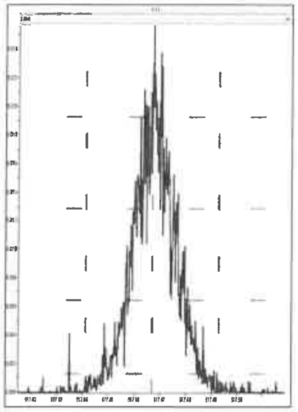

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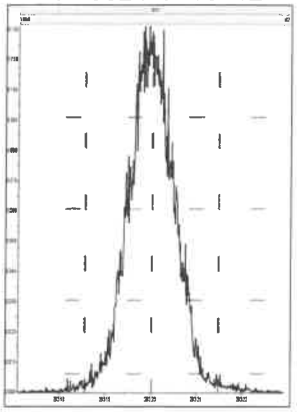

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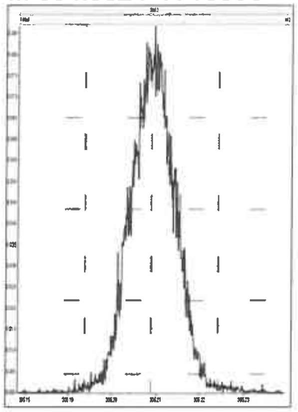

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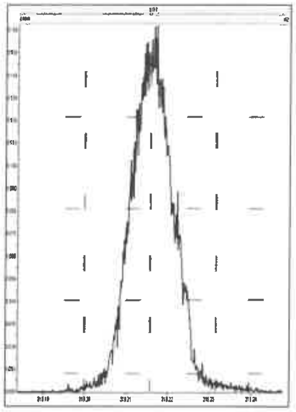

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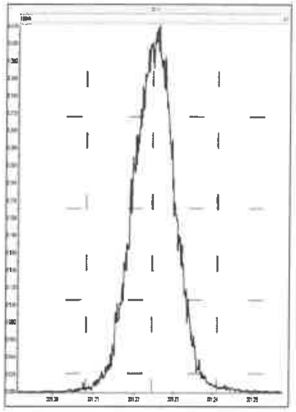

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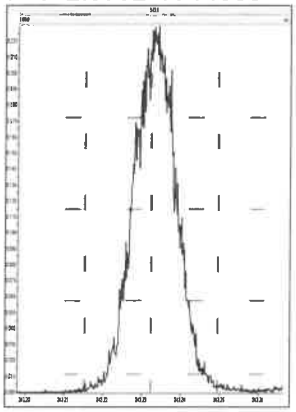

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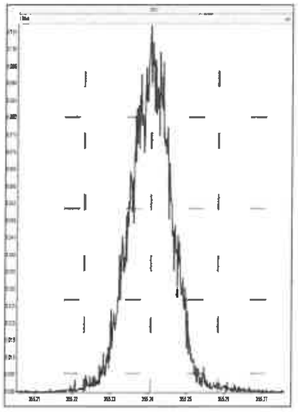

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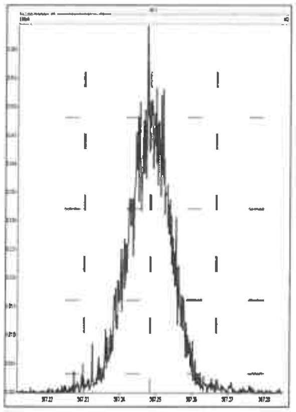

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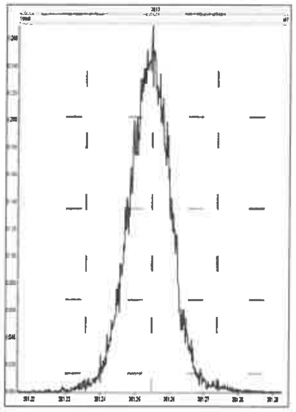

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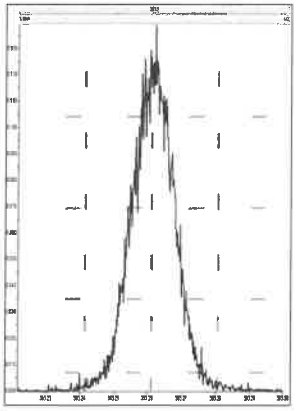

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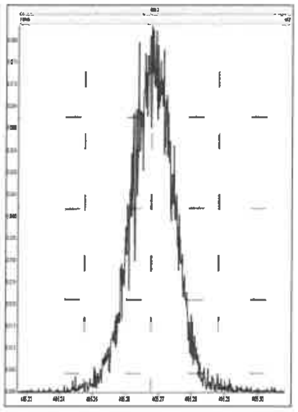

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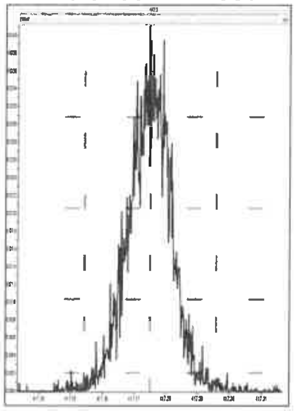

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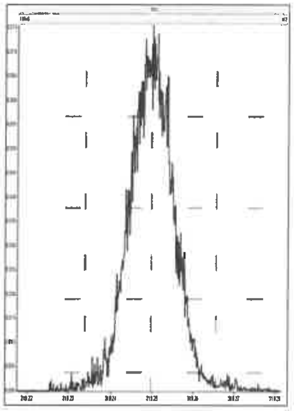

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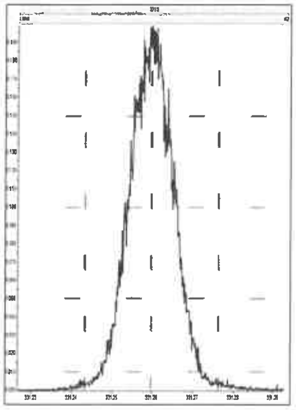

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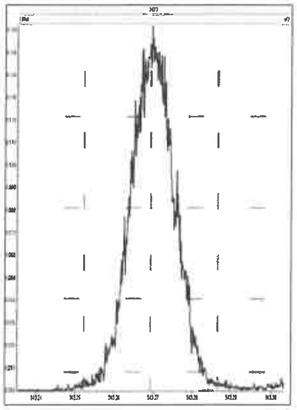

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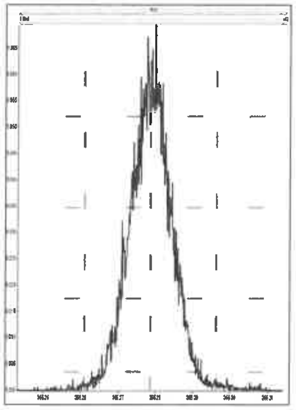

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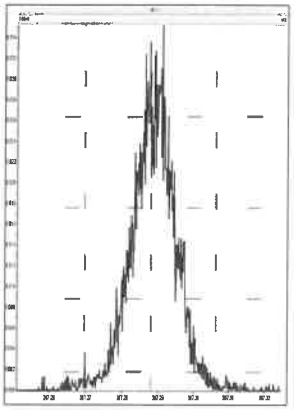

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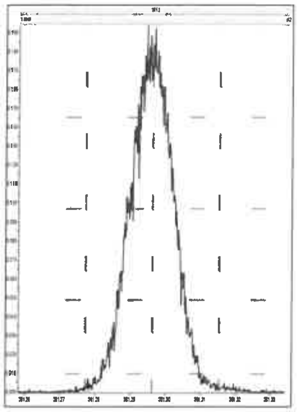

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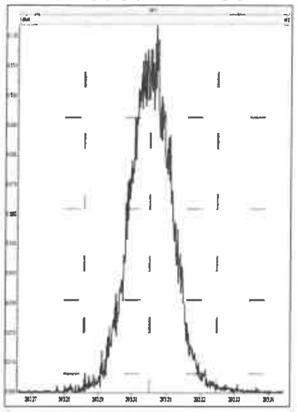

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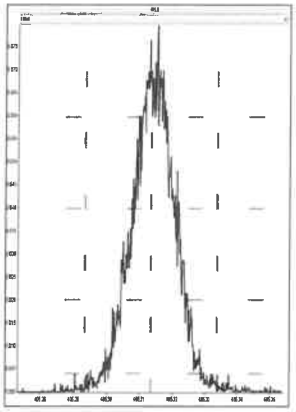

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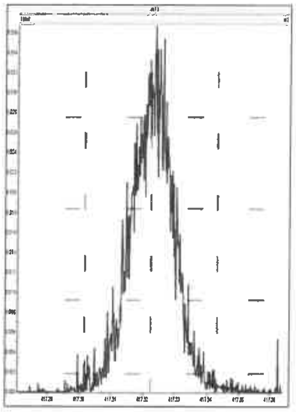

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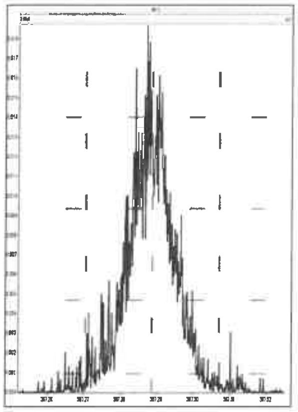

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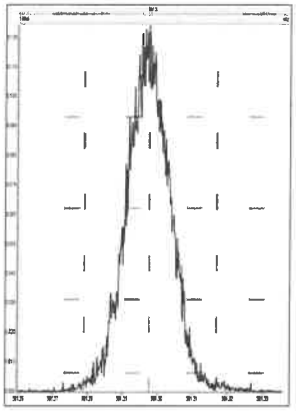

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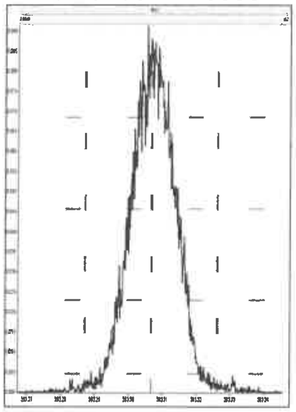

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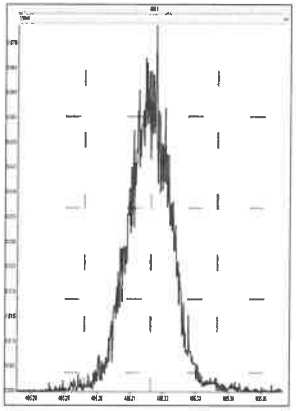

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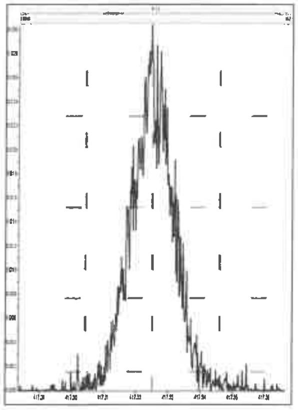

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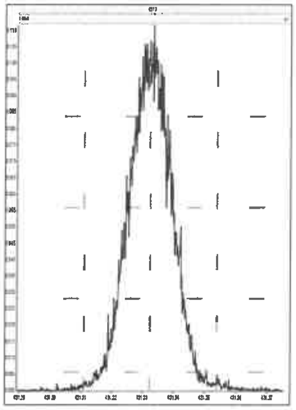

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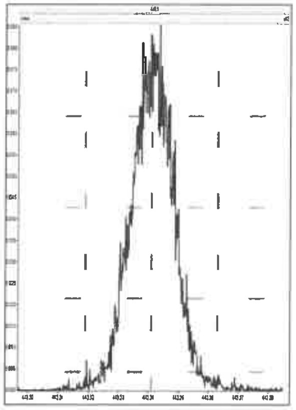

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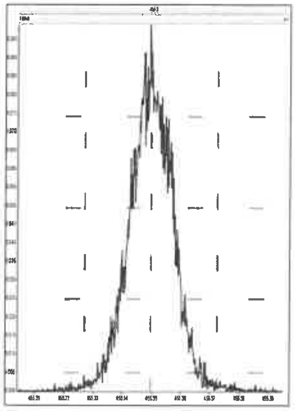

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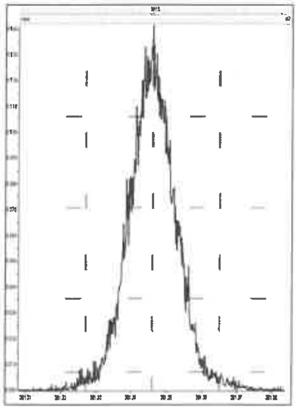

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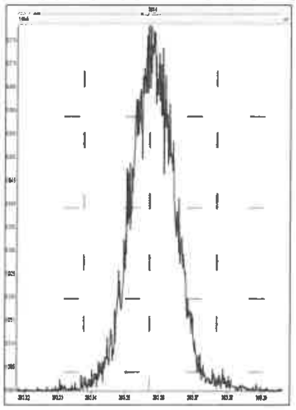

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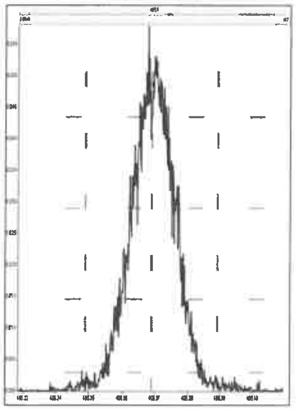

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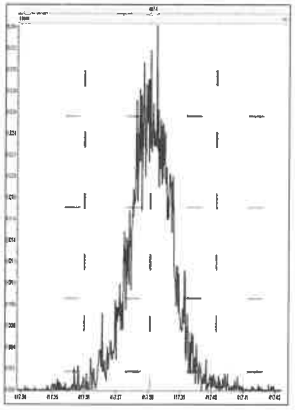

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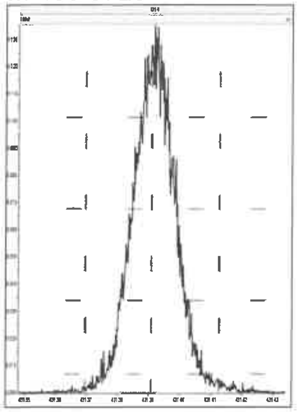

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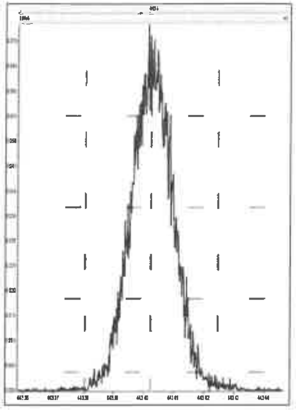

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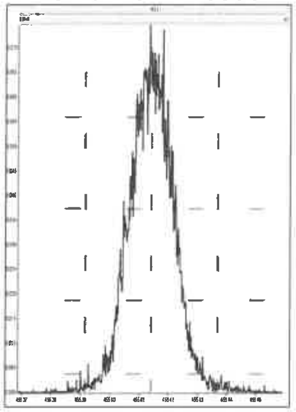

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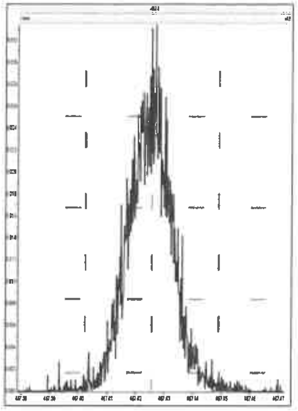

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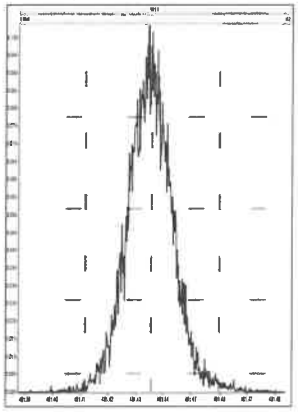

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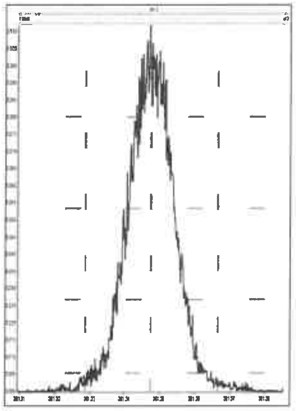

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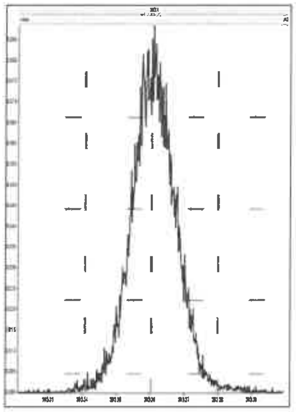

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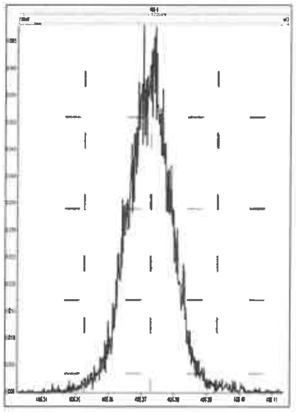

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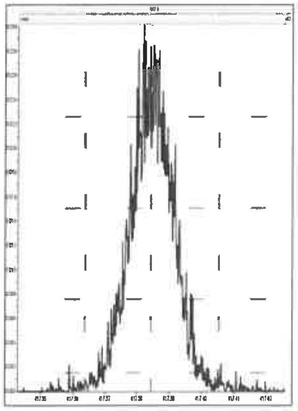

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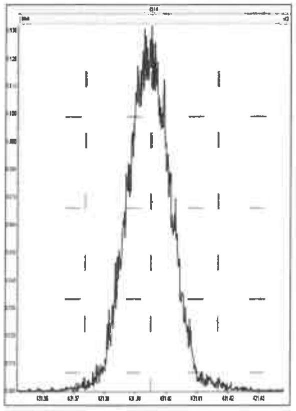

M 442.9728 R 14452

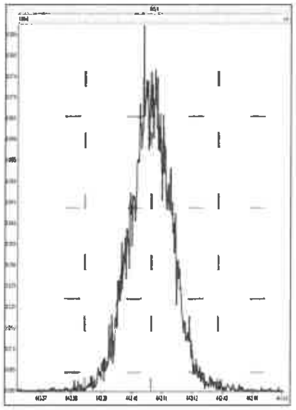

M 454.9728 R 14166

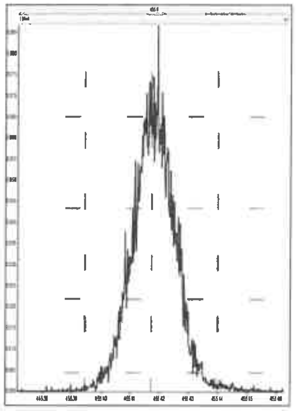

M 466.9728 R 15218

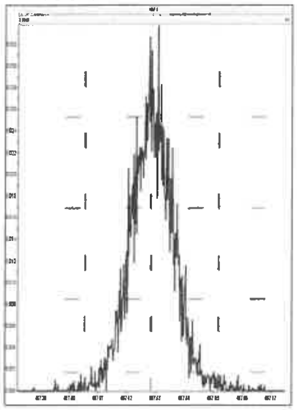

M 480.9696 R 13868

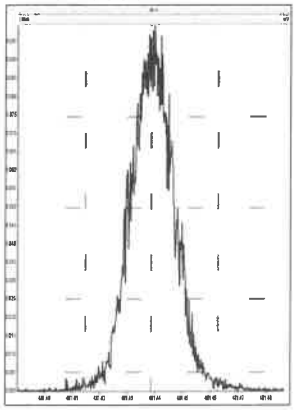

M 492.9696 R 13370

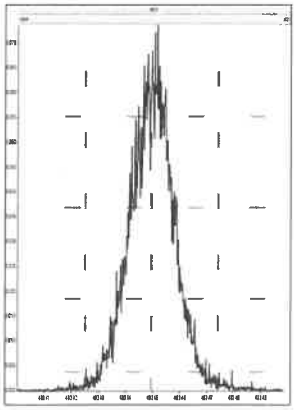

M 504.9696 R 14462

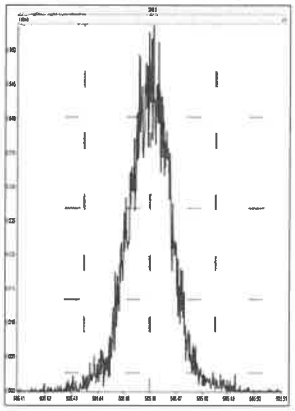

M 516.9697 R 14752

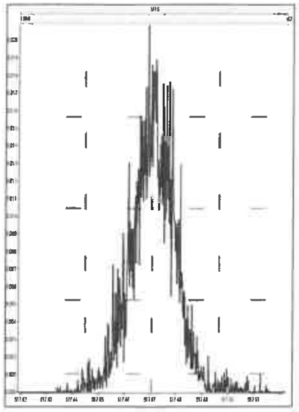

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 05-Mar-2020 17:01:58 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 030520 CS-2 HRDXNL2_00028
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:12:48 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

First Level Reviewer: shardaa Date: 05-Mar-2020 18:05:10

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.005	33157994	0.80	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.491	38696439	0.75	1.1970	97.5	97.5	0.1709	0.1709	97.50	
2,3,7,8-TCDF	17.506	139475	0.65	0.7672	0.4698	0.4698	0.0218	0.0218	93.96	
S Total TCDF					0.4698	0.4698	0.0218	0.0218		
D 13C-2,3,7,8-TCDD	18.201	28437035	0.77	0.8773	97.8	97.8	0.1856	0.1856	97.76	
2,3,7,8-TCDD	18.232	146870	0.82	1.0000	0.5165	0.5165	0.0367	0.0367	103	
$ 37Cl4-2,3,7,8-TCDD	18.232	136381		0.9515	0.4323	0.4323	0.0120	0.0120	86.46	
S Total TCDD					0.5165	0.5165	0.0367	0.0367		
D 13C-1,2,3,7,8-PeCDF	22.593	32945780	1.56	0.9904	100.3	100.3	0.1989	0.1989	100	
1,2,3,7,8-PeCDF	22.607	697952	1.50	0.9019	2.349	2.349	0.0331	0.0331	93.96	
D 13C-2,3,4,7,8-PeCDF	23.956	33962749	1.56	1.0797	94.9	94.9	0.1824	0.1824	94.86	
2,3,4,7,8-PeCDF	23.984	671275	1.46	0.8307	2.379	2.379	0.0370	0.0370	95.17	
S Total PeCDF					4.728	4.728	0.0350	0.0350		
D 13C-1,2,3,7,8-PeCDD	24.693	22385040	1.66	0.6904	97.8	97.8	0.1202	0.1202	97.78	
1,2,3,7,8-PeCDD	24.706	528145	1.48	1.0145	2.326	2.326	0.0478	0.0478	93.03	
S Total PeCDD					2.326	2.326	0.0478	0.0478		
D 13C-1,2,3,4,7,8-HxCDF	30.723	25056797	0.49	0.9076	106.2	106.2	0.3971	0.3971	106	
1,2,3,4,7,8-HxCDF	30.736	463743	1.15	0.7928	2.334	2.334	0.0367	0.0367	93.38	
D 13C-1,2,3,6,7,8-HxCDF	30.883	23792955	0.49	0.8671	105.5	105.5	0.4157	0.4157	106	
1,2,3,6,7,8-HxCDF	30.910	471582	1.17	0.8592	2.307	2.307	0.0369	0.0369	92.27	
D 13C-2,3,4,6,7,8-HxCDF	31.681	21963747	0.49	0.8287	102.0	102.0	0.4350	0.4350	102	
2,3,4,6,7,8-HxCDF	31.695	458035	1.16	0.8896	2.344	2.344	0.0304	0.0304	93.77	
D 13C-1,2,3,7,8,9-HxCDF	32.453	19627421	0.50	0.7391	102.1	102.1	0.4877	0.4877	102	
1,2,3,7,8,9-HxCDF	32.467	409370	1.17	0.8941	2.333	2.333	0.0317	0.0317	93.31	
S Total HxCDF					9.318	9.318	0.0339	0.0339		
* 13C-1,2,3,7,8,9-HxCDD	32.267	25996246	1.22	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.854	22099139	1.21	0.8335	102.0	102.0	0.2974	0.2974	102	
1,2,3,4,7,8-HxCDD	31.868	440365	1.20	0.8332	2.392	2.392	0.0277	0.0277	95.66	
D 13C-1,2,3,6,7,8-HxCDD	31.961	22292491	1.22	0.8228	104.2	104.2	0.3012	0.3012	104	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.974	449693	1.22	0.8944	2.255	2.255	0.0278	0.0278	90.21	
1,2,3,7,8,9-HxCDD	32.294	481642	1.20	0.9449	2.297	2.297	0.0253	0.0253	91.86	
S Total HxCDD					6.944	6.944	0.0270	0.0270		
D 13C-1,2,3,4,6,7,8-HpCDF	33.861	18922959	0.42	0.7009	103.9	103.9	1.096	1.096	104	
1,2,3,4,6,7,8-HpCDF	33.874	595004	1.02	1.3295	2.365	2.365	0.0431	0.0431	94.60	
D 13C-1,2,3,4,7,8,9-HpCDF	34.943	19842383	0.42	0.7244	105.4	105.4	1.060	1.060	105	
1,2,3,4,7,8,9-HpCDF	34.955	502340	0.99	1.0803	2.343	2.343	0.0571	0.0571	93.74	
S Total HpCDF					4.709	4.709	0.0501	0.0501		
D 13C-1,2,3,4,6,7,8-HpCDD	34.651	18481385	1.07	0.7026	101.2	101.2	0.5096	0.5096	101	
1,2,3,4,6,7,8-HpCDD	34.663	453815	1.06	1.0040	2.446	2.446	0.0360	0.0360	97.83	
S Total HpCDD					2.446	2.446	0.0360	0.0360		
D 13C-OCDD	37.014	31819611	0.89	0.6184	197.9	197.9	0.2123	0.2123	98.97	
OCDF	37.122	850674	0.94	1.1076	4.827	4.827	0.0383	0.0383	96.55	
OCDD	37.027	807146	0.86	1.0175	4.986	4.986	0.0367	0.0367	99.72	

Reagents:

HRDXNL2_00028 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 05-Mar-2020 17:01:58 ALS Bottle#: 4 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 030520 CS-2 HRDXNL2_00028
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:12:48 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

First Level Reviewer: shardaa Date: 05-Mar-2020 18:05:10

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.005	18.008	0		14717295	3690857	3099	7747	1191		
333.9339	18.005	18.008	0		18440699	4580778	2287	5717	2003	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.491	17.491	0	0.971	16619979	4260456	4452	11130	957		
317.9389	17.491	17.491	0	0.971	22076460	5669882	2317	5792	2447	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.506	17.509	0	1.001	55049	14059	213	532	66		
305.8987	17.506	17.509	0	1.001	84426	19692	452	1130	44	0.65(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.201	18.204	0	1.011	12407436	2895030	3099	7747	934		
333.9339	18.201	18.204	0	1.011	16029599	3798761	2287	5717	1661	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.232	18.225	0	1.002	66168	13936	668	1670	21		
321.8936	18.232	18.225	0	1.002	80702	18683	315	787	59	0.82(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.232	18.225	0	1.013	136381	36780	379	947	97		
13C-1,2,3,7,8-PeCDF											
351.9000	22.593	22.585	0	1.255	20053525	3549963	3889	9722	913		
353.8970	22.593	22.585	0	1.255	12892255	2335951	2628	6570	889	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.607	22.607	0	1.001	418315	68283	277	692	247		
341.8567	22.620	22.607	1	1.001	279637	49670	426	1065	117	1.50(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.956	23.951	0	1.331	20699256	3504296	3889	9722	901		
353.8970	23.956	23.951	0	1.331	13263493	2218527	2628	6570	844	1.56(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.984	23.976	0	1.001	398064	62186	277	692	224		
341.8567	23.984	23.976	0	1.001	273211	44938	426	1065	105	1.46(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.693	24.685	0	1.371	13965453	2188361	1584	3960	1382		
369.8919	24.693	24.685	0	1.371	8419587	1315958	1163	2907	1132	1.66(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.706	24.709	0	1.001	315312	48027	393	982	122		
357.8516	24.720	24.709	1	1.001	212833	32067	287	717	112	1.48(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.723	30.718	0	0.952	8249481	1682415	3298	8245	510		
385.8610	30.723	30.718	0	0.952	16807316	3445815	6199	15497	556	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.736	30.736	0	1.000	247670	48989	361	902	136		
375.8178	30.736	30.736	0	1.000	216073	43749	236	590	185	1.15(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.883	30.888	0	0.957	7877280	1547994	3298	8245	469		
385.8610	30.883	30.888	0	0.957	15915675	3151693	6199	15497	508	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.910	30.907	0	1.001	254270	50086	361	902	139		
375.8178	30.910	30.907	0	1.001	217312	42465	236	590	180	1.17(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.681	31.676	0	0.982	7192217	1817882	3298	8245	551		
385.8610	31.681	31.676	0	0.982	14771530	3707351	6199	15497	598	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.695	31.689	0	1.000	246456	61100	361	902	169		
375.8178	31.695	31.689	0	1.000	211579	51902	236	590	220	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.453	32.456	0	1.006	6499587	1737668	3298	8245	527		
385.8610	32.453	32.456	0	1.006	13127834	3531640	6199	15497	570	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.467	32.467	0	1.000	220869	57045	361	902	158		
375.8178	32.467	32.467	0	1.000	188501	47567	236	590	202	1.17(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.267	32.272	0		14302735	3618448	3586	8965	1009		
403.8529	32.267	32.272	0		11693511	2967929	2944	7360	1008	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.854	31.855	0	0.987	12110489	3332967	3586	8965	929		
403.8529	31.854	31.855	0	0.987	9988650	2757217	2944	7360	937	1.21(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.868	31.871	0	1.000	240195	66938	283	707	237		
391.8127	31.868	31.871	0	1.000	200170	54508	279	697	195	1.20(1.05-1.43)	

Report Date: 06-Mar-2020 10:12:54 Chrom Revision: 2.3 19-Feb-2020 16:45:46
Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.961	31.956	0	0.991	12266213	3070656	3586	8965	856		
403.8529	31.961	31.956	0	0.991	10026278	2573994	2944	7360	874	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.974	31.972	0	1.000	246751	59260	283	707	209		
391.8127	31.974	31.972	0	1.000	202942	50624	279	697	181	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.294	32.288	0	1.014	263191	64780	283	707	229		
391.8127	32.280	32.288	0	1.013	218451	53680	279	697	192	1.20(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.861	33.864	0	1.049	5593300	1774960	6566	16415	270		
419.8220	33.861	33.864	0	1.049	13329659	4249912	13665	34162	311	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.874	33.869	0	1.000	300033	92523	799	1997	116		
409.7789	33.874	33.869	0	1.000	294971	87662	581	1452	151	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.943	34.948	0	1.083	5875983	1651297	6566	16415	251		
419.8220	34.943	34.948	0	1.083	13966400	3941614	13665	34162	288	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.955	34.960	0	1.000	249736	71115	799	1997	89		
409.7789	34.955	34.960	0	1.000	252604	73420	581	1452	126	0.99(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.651	34.656	0	1.074	9545692	2806208	5168	12920	543		
437.8140	34.651	34.656	0	1.074	8935693	2612658	4265	10662	613	1.07(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.663	34.668	0	1.000	233175	67204	406	1015	166		
425.7737	34.663	34.668	0	1.000	220640	68057	377	942	181	1.06(0.88-1.20)	
13C-OCDD											
469.7779	37.014	37.017	0	1.147	15023916	3631489	1315	3287	2762		
471.7750	37.014	37.017	0	1.147	16795695	4059171	2143	5357	1894	0.89(0.76-1.02)	
OCDF											
441.7428	37.122	37.120	0	1.003	411288	92742	243	607	382		
443.7399	37.110	37.120	-1	1.003	439386	100018	409	1022	245	0.94(0.76-1.02)	
OCDD											
457.7377	37.027	37.029	0	1.000	373420	84002	285	712	295		
459.7348	37.027	37.029	0	1.000	433726	101189	290	725	349	0.86(0.76-1.02)	

Reagents:

HRDXNL2_00028 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:12:54 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d		
Injection Date:	05-Mar-2020 17:01:58	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

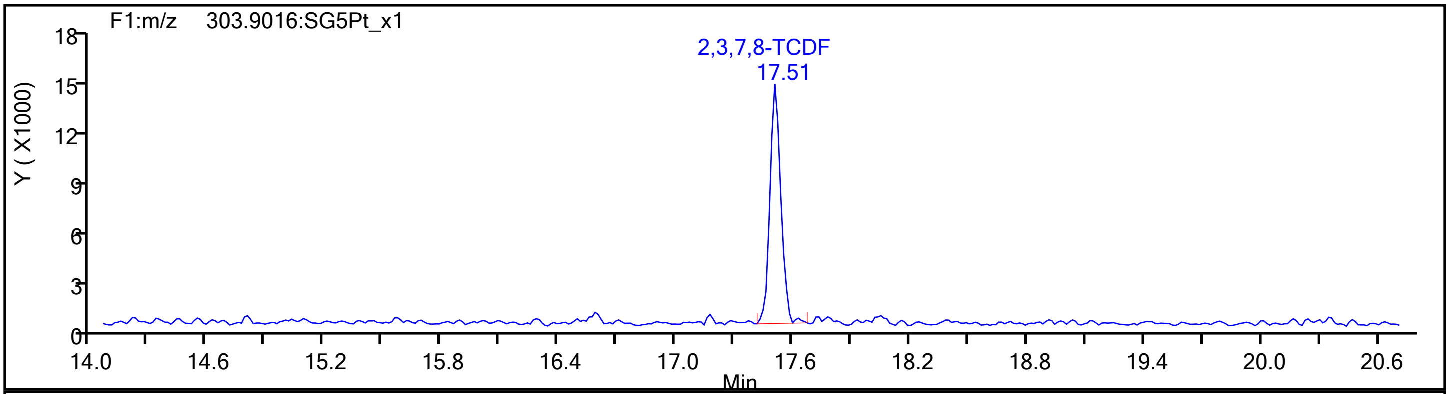

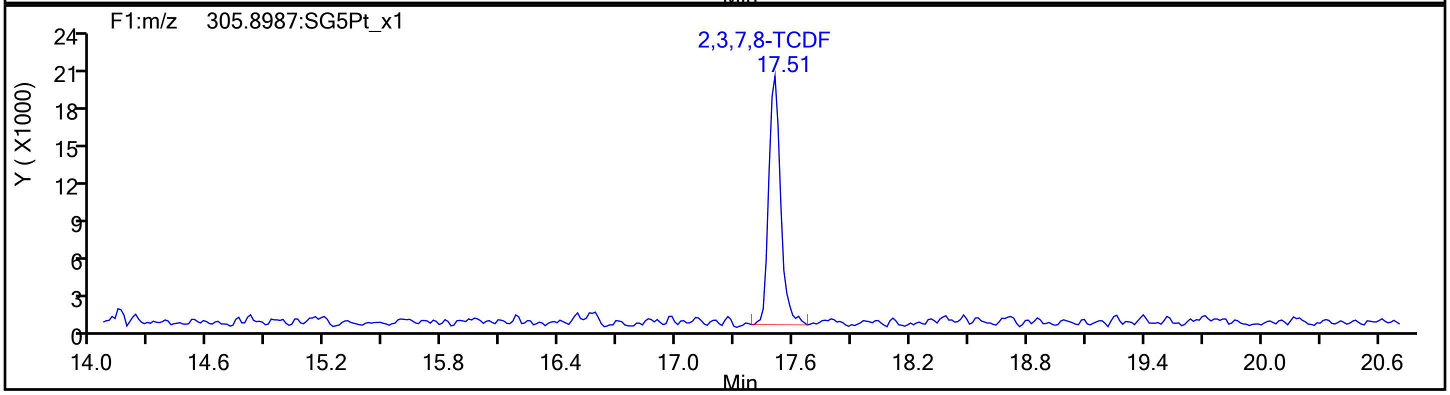

TCDF Standards

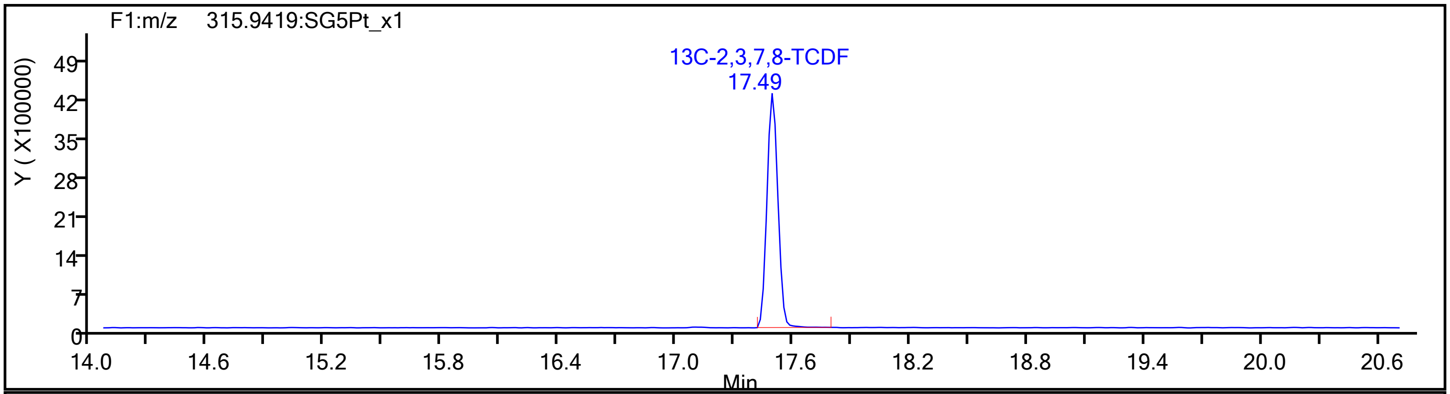

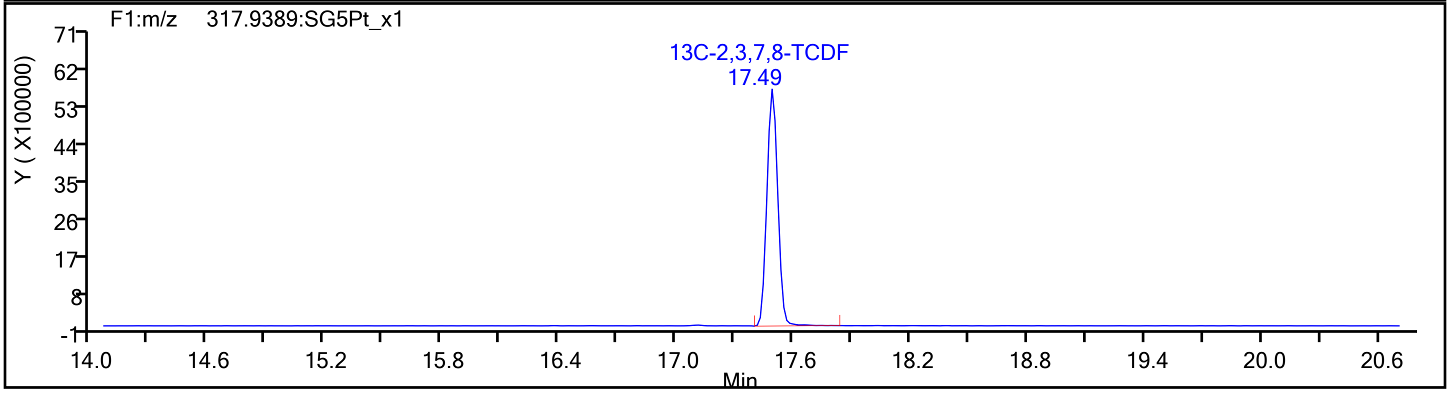

Report Date: 06-Mar-2020 10:12:54 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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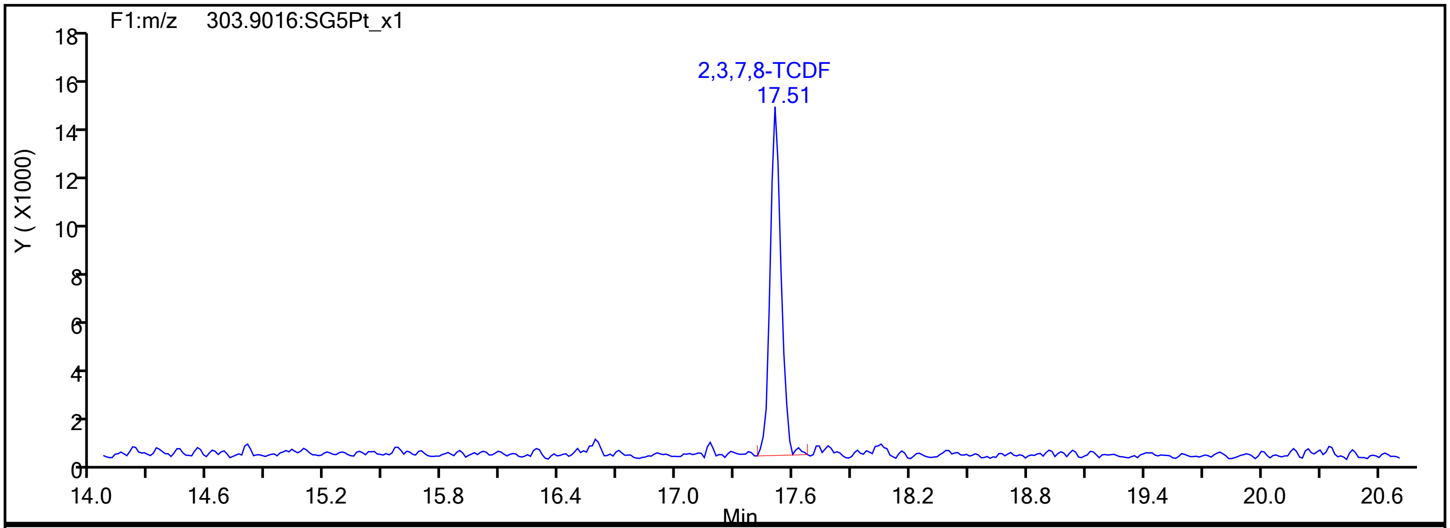

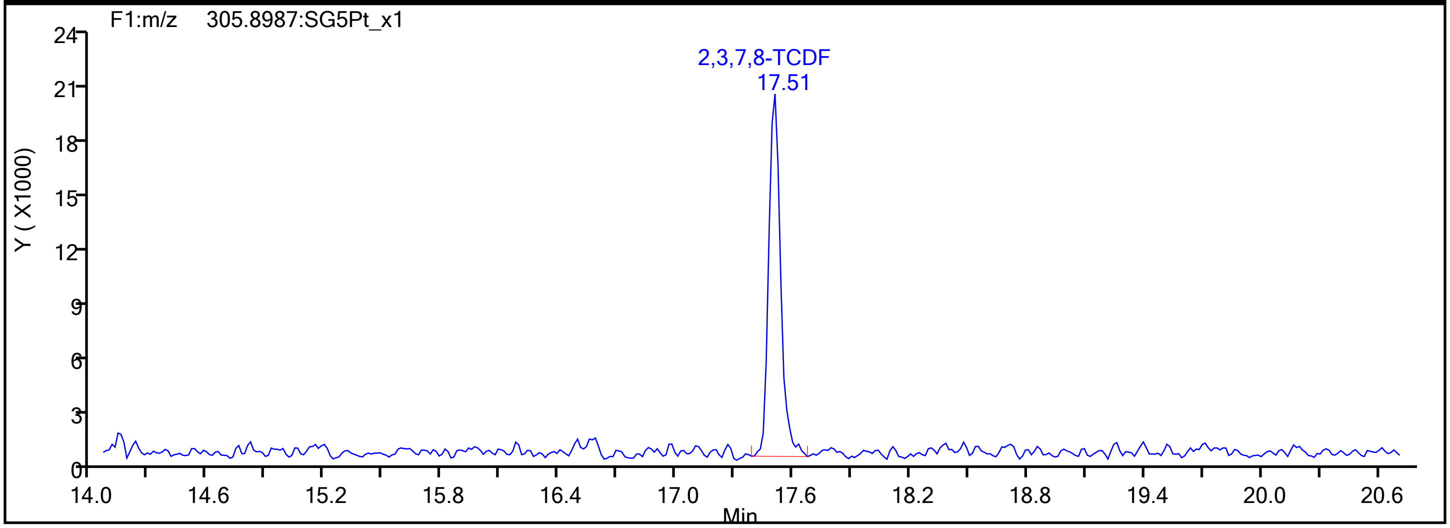

TCDF Interference Mass

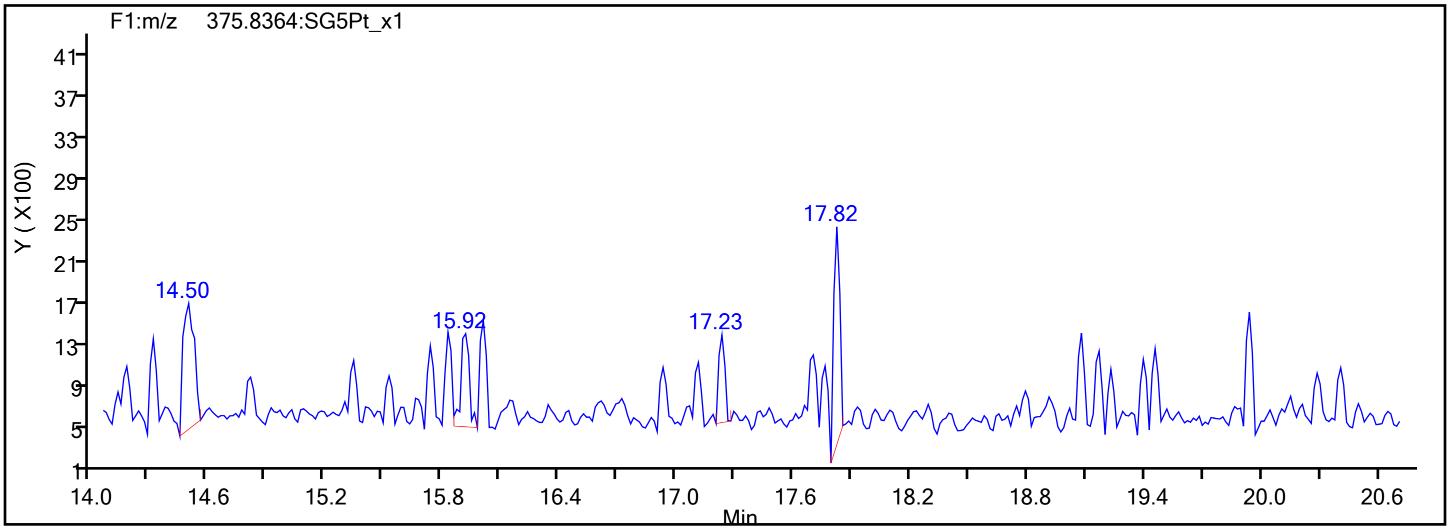

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Eurofins TestAmerica, Sacramento

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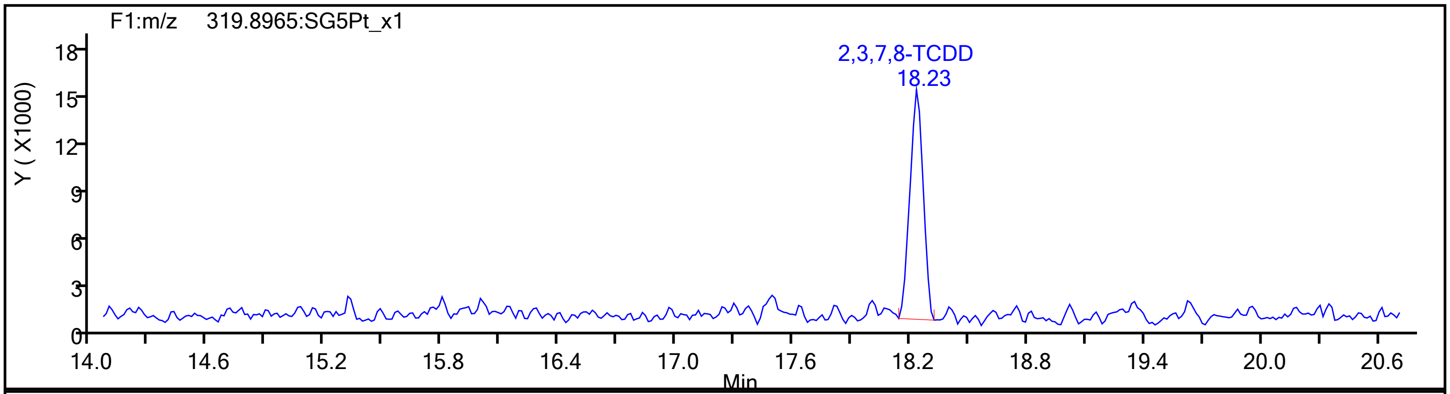

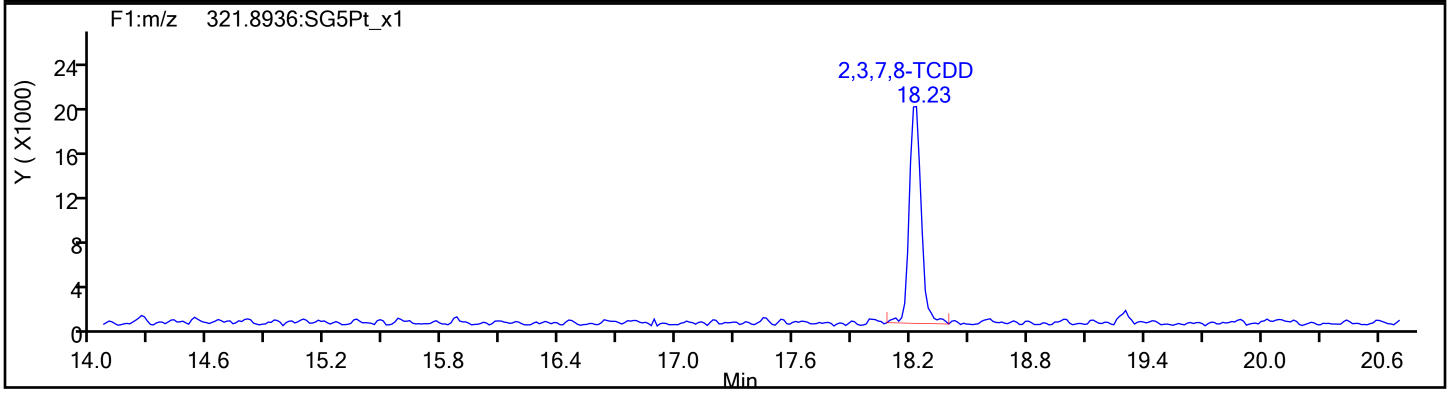

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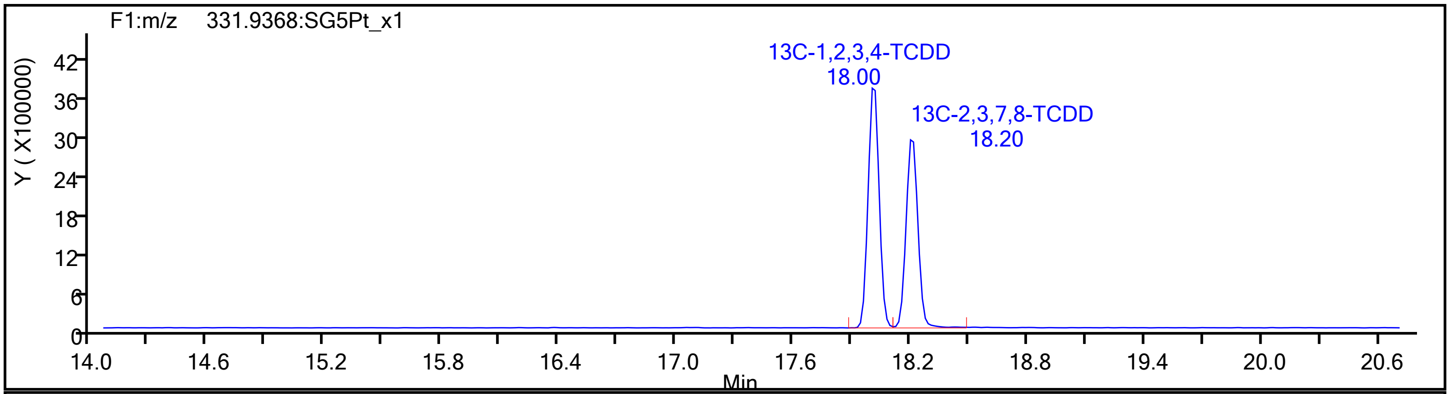

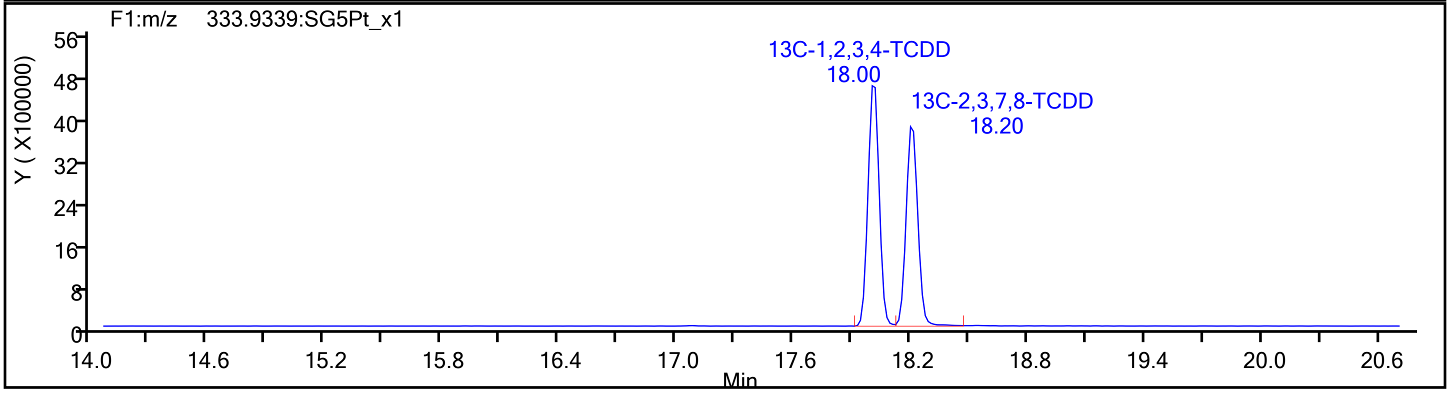

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37Cl4-TCDD

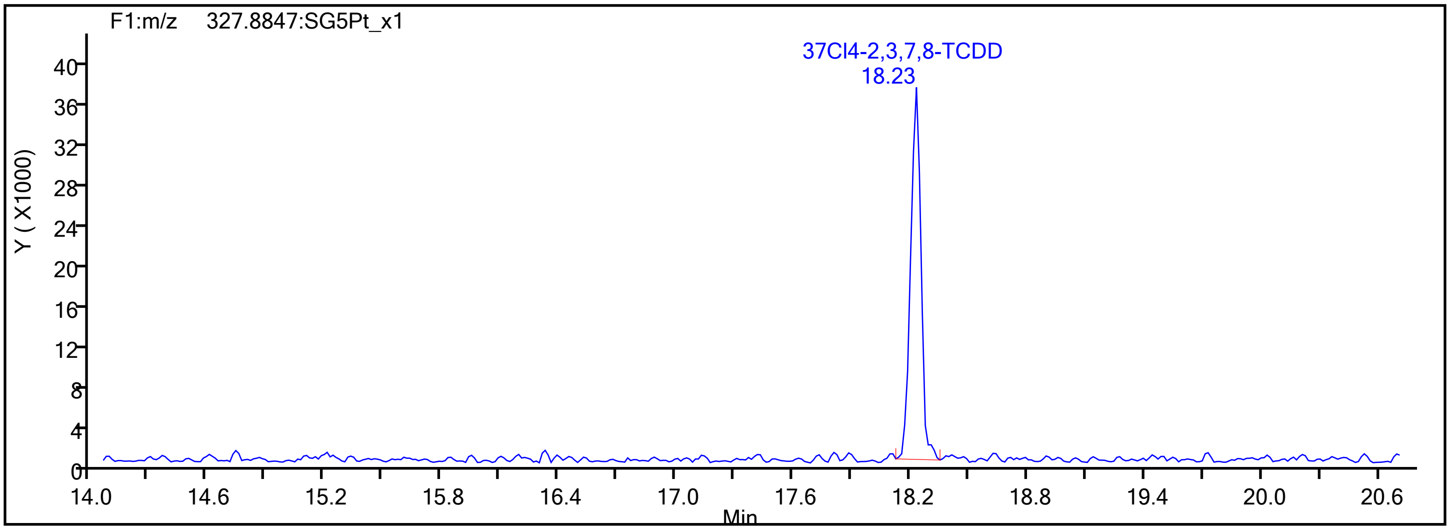

37Cl4-TCDD Standards

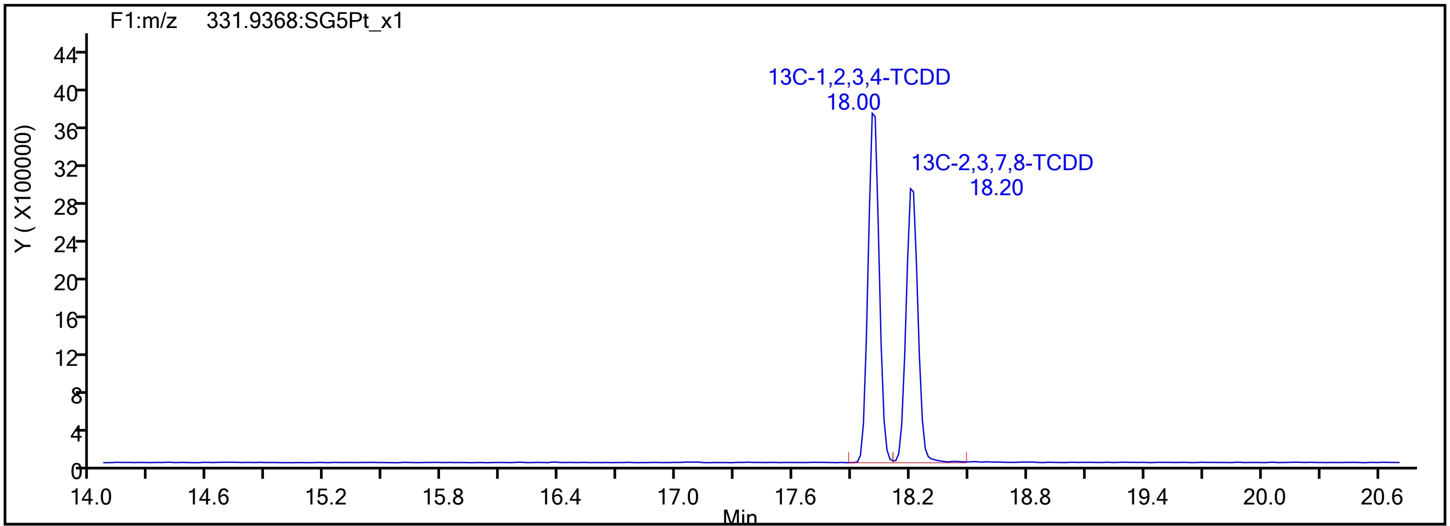

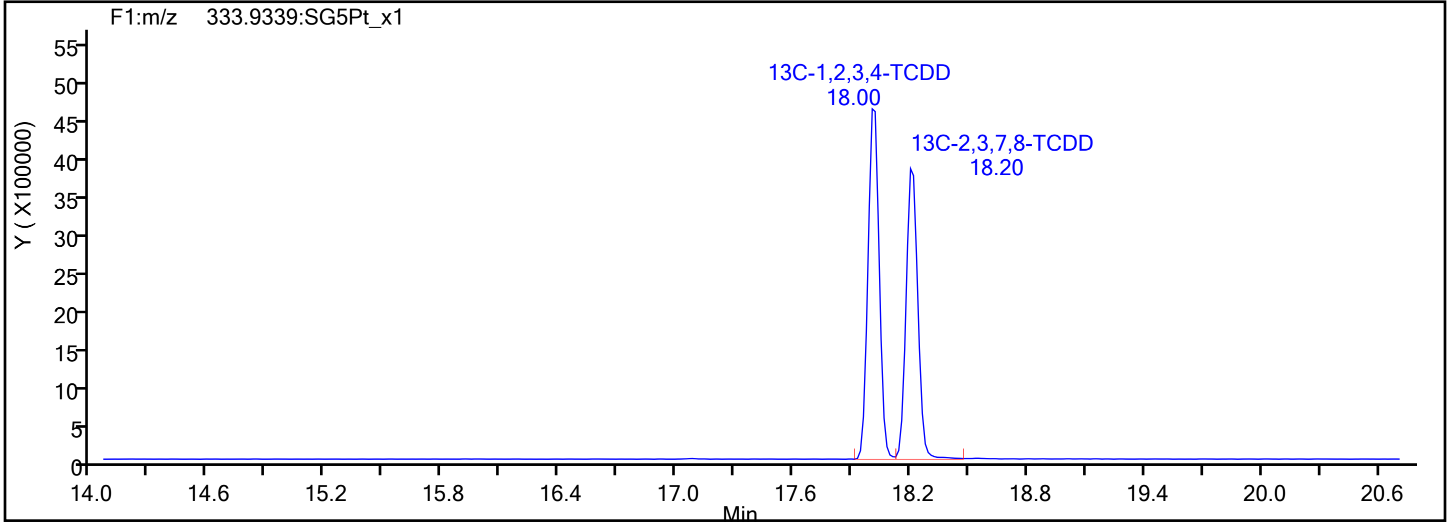

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F1 PeCDFs

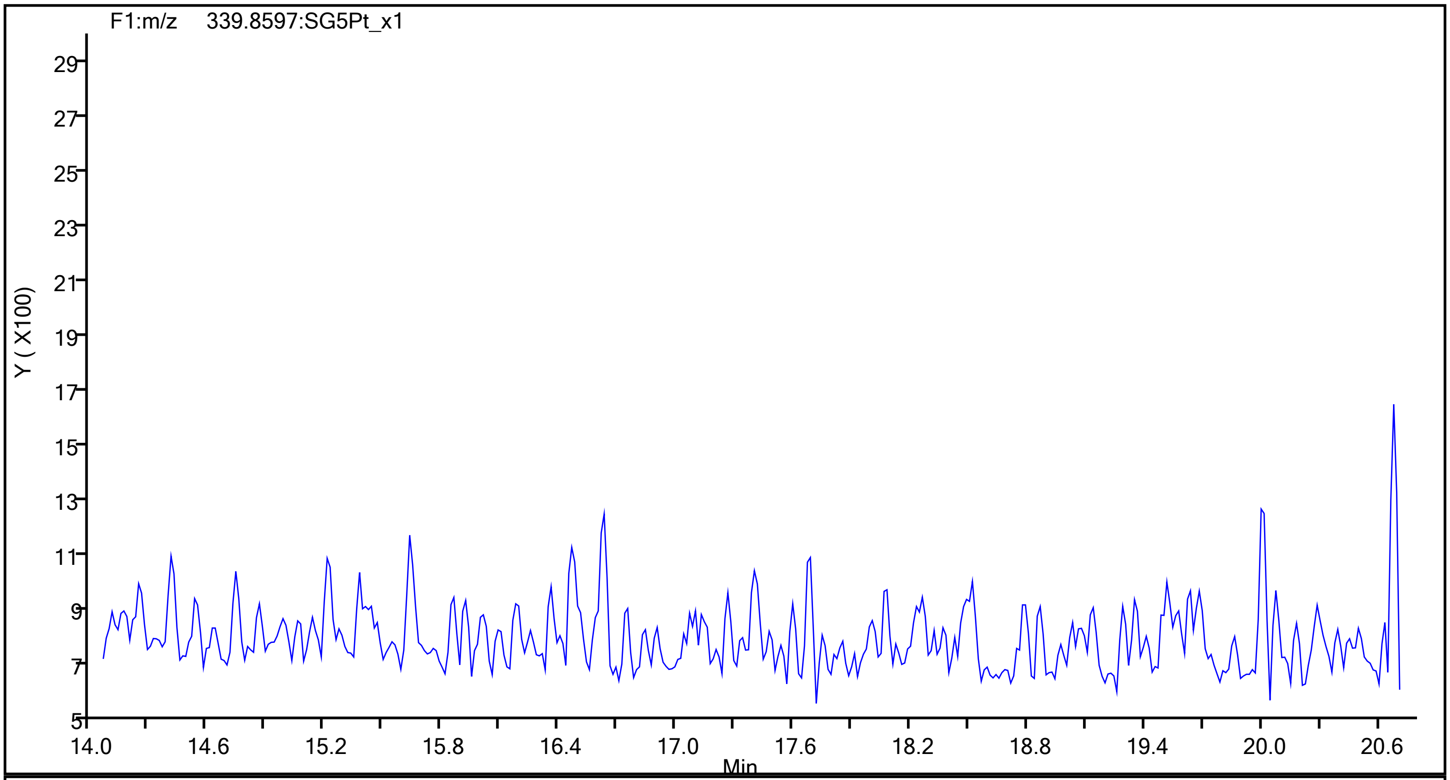

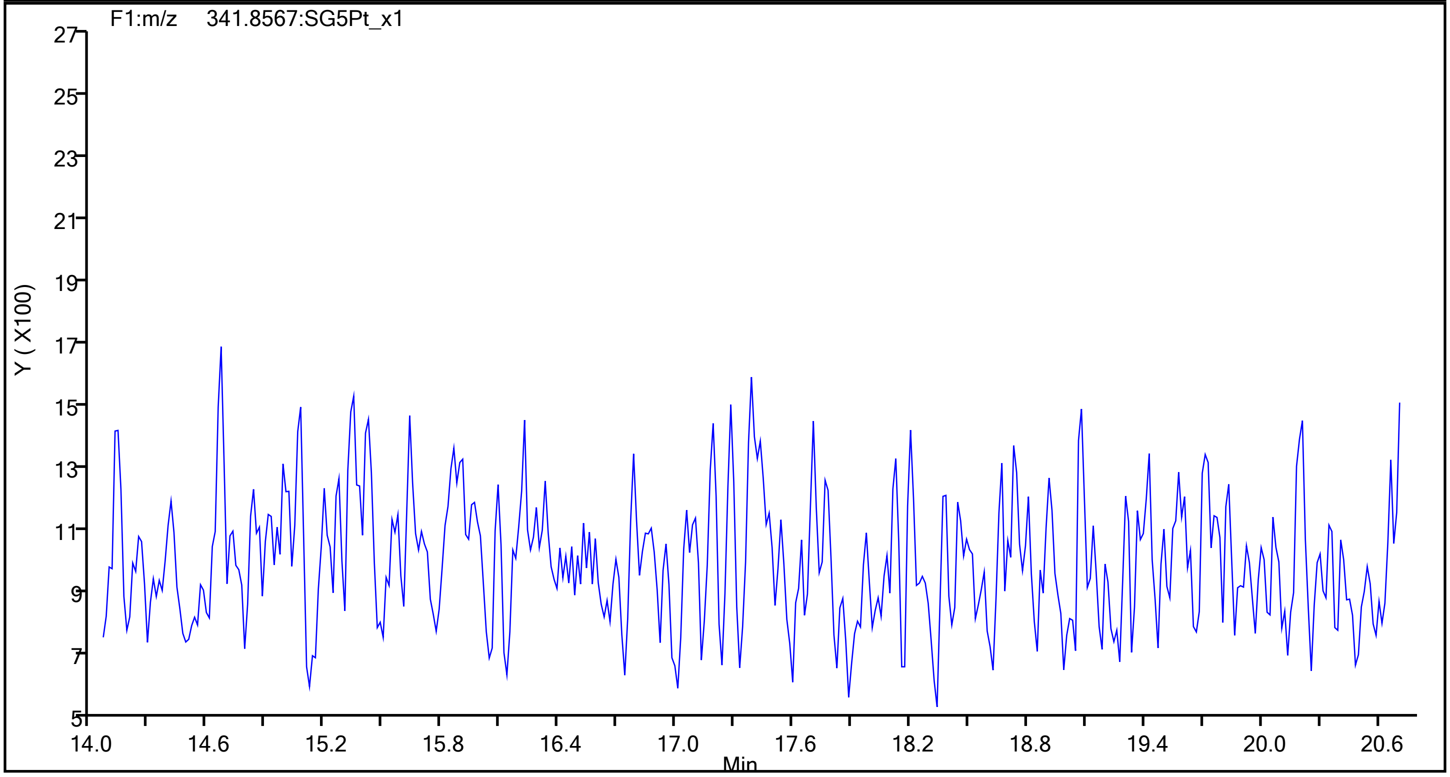

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

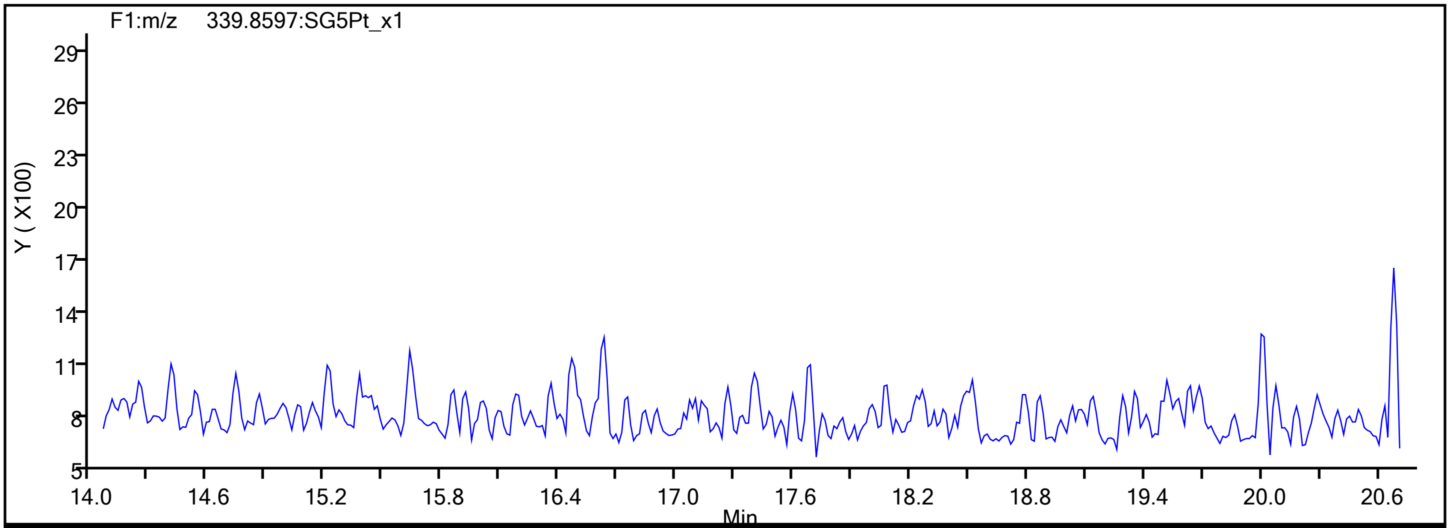

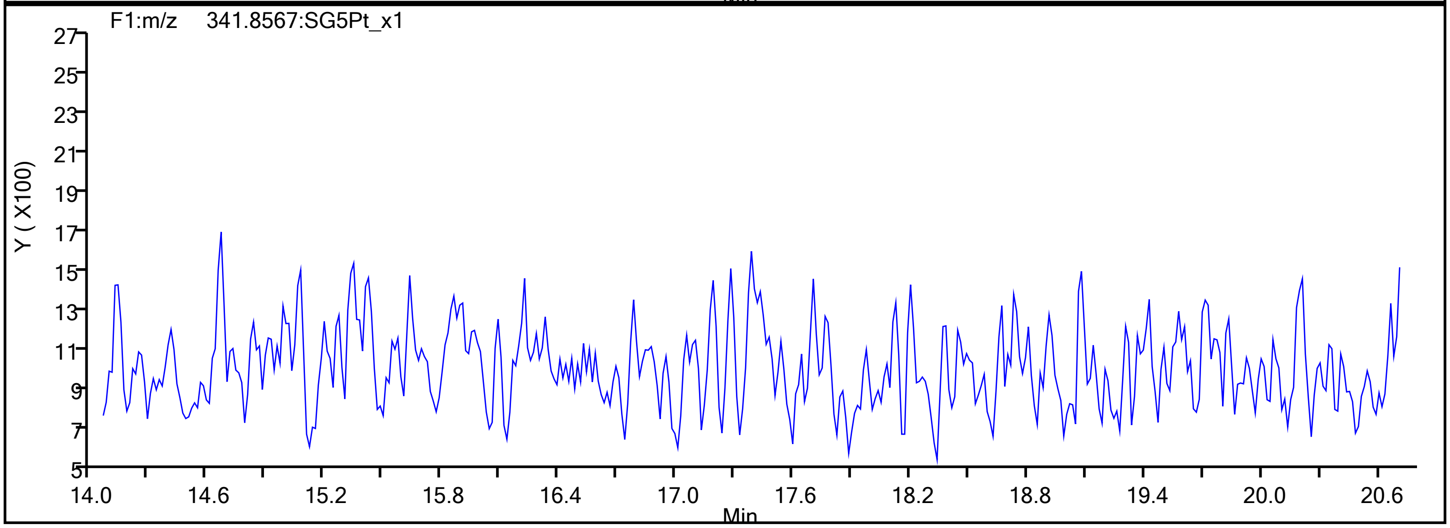

F1 PeCDFs Interference Mass

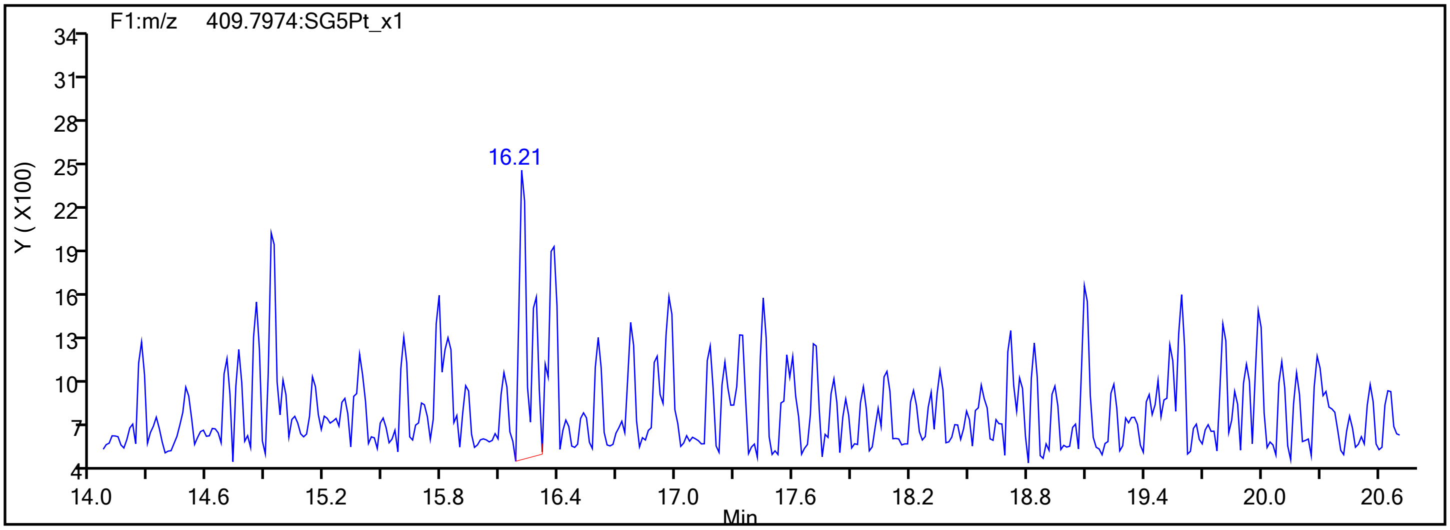

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Eurofins TestAmerica, Sacramento

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PeCDF

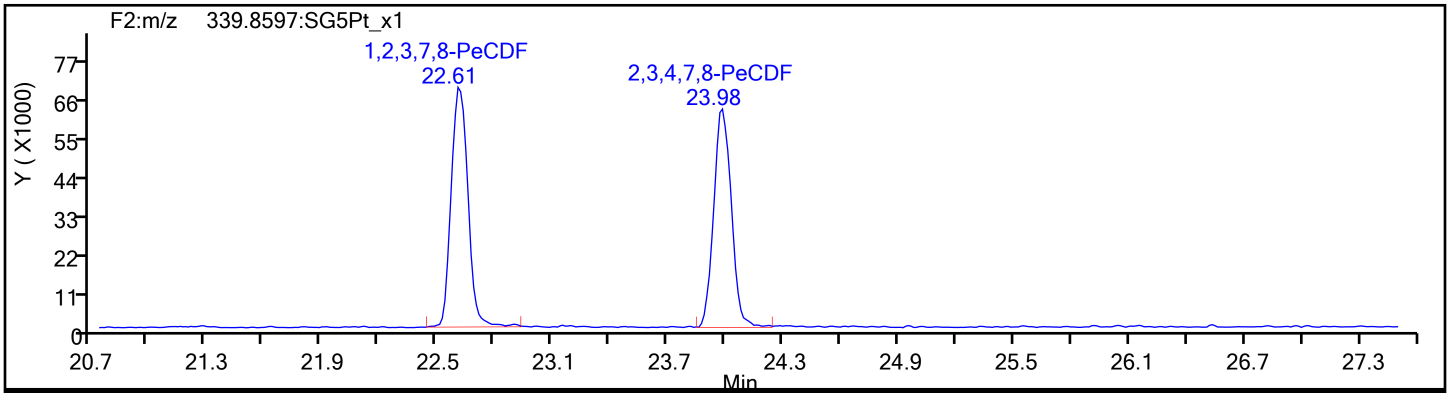

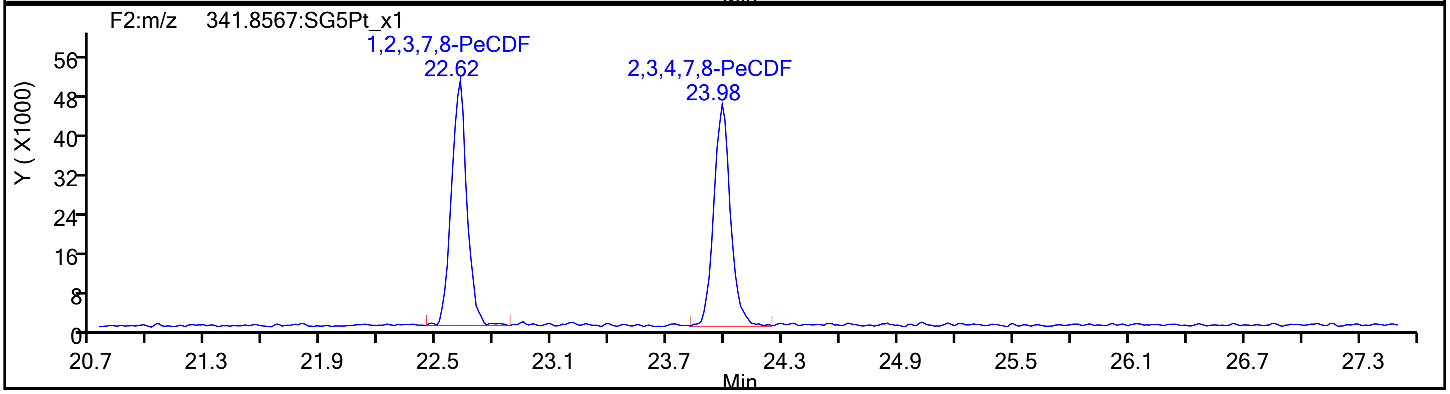

PeCDF Standards

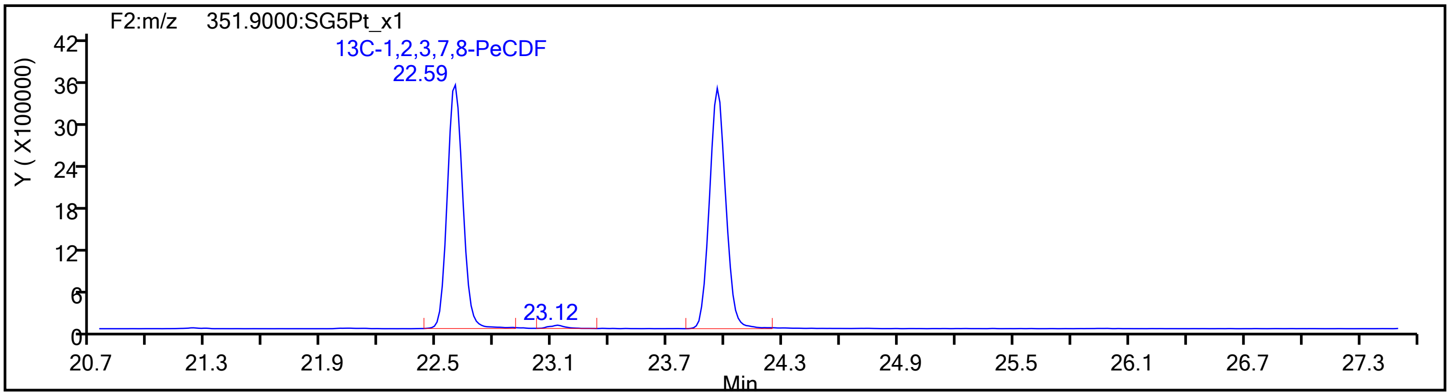

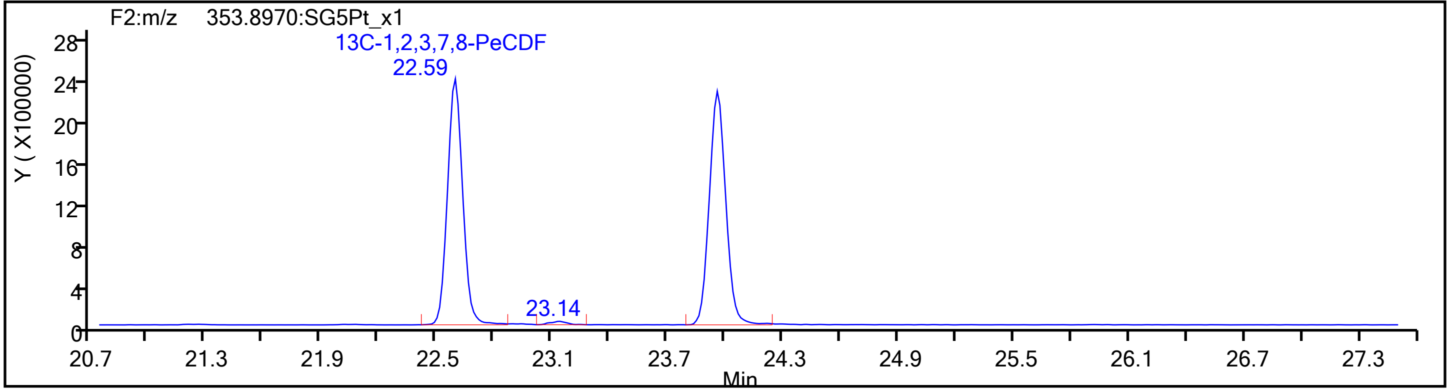

Eurofins TestAmerica, Sacramento

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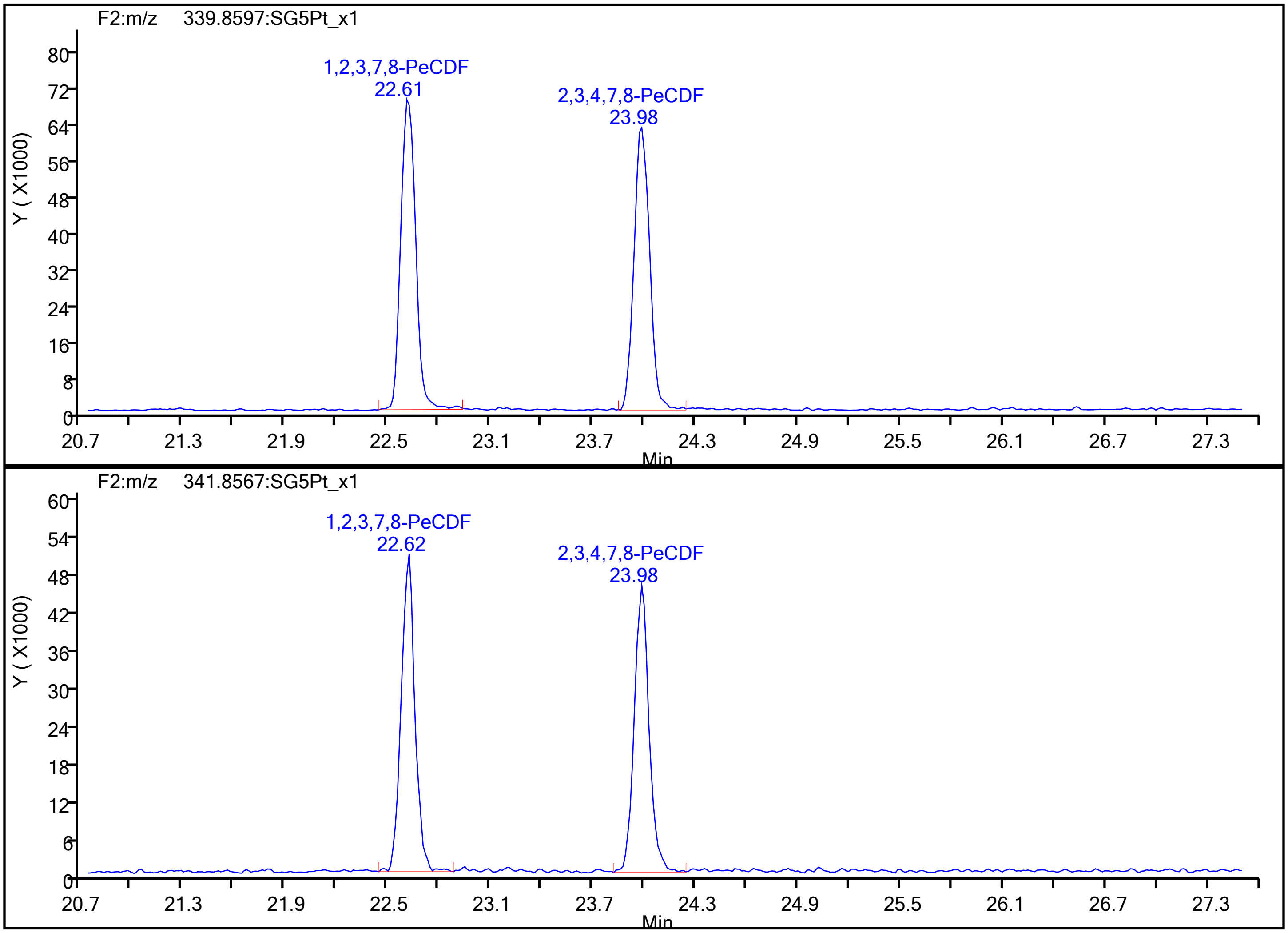

PeCDF Interference Mass

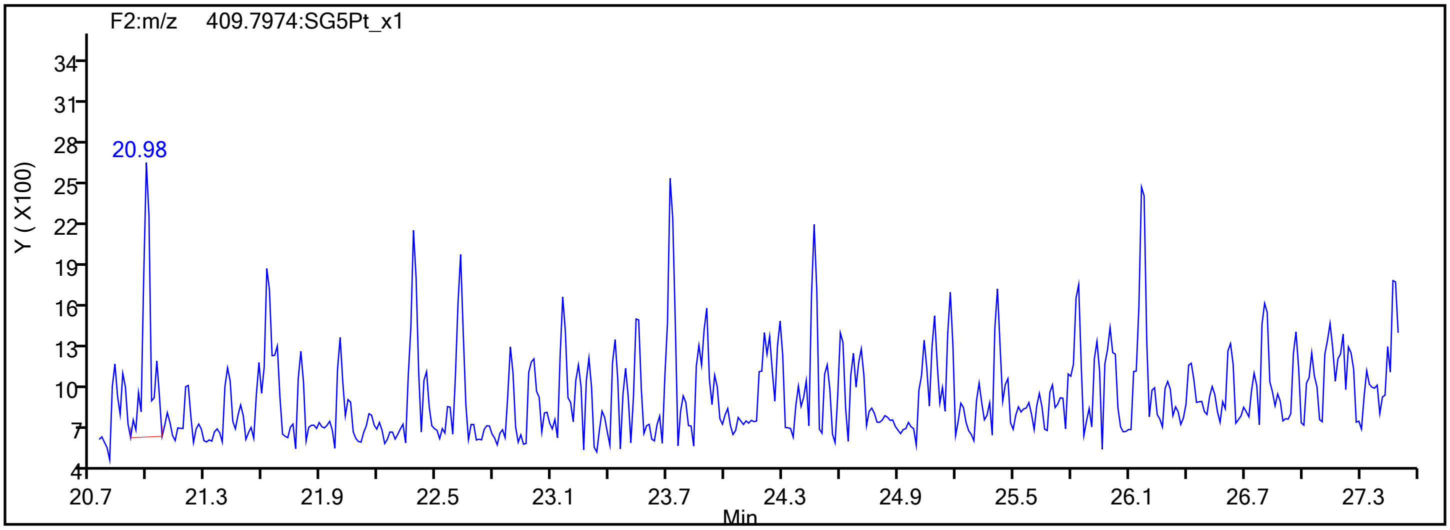

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Eurofins TestAmerica, Sacramento

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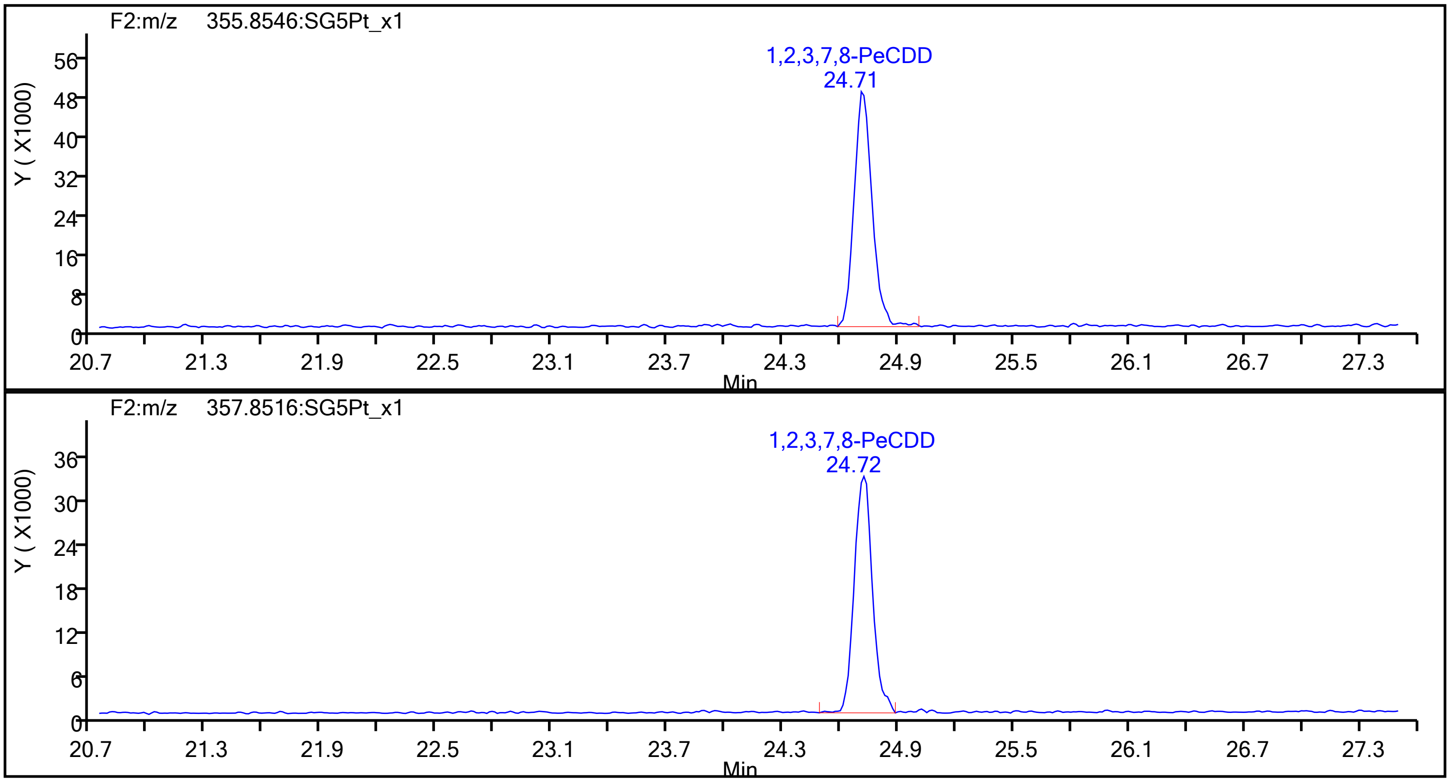

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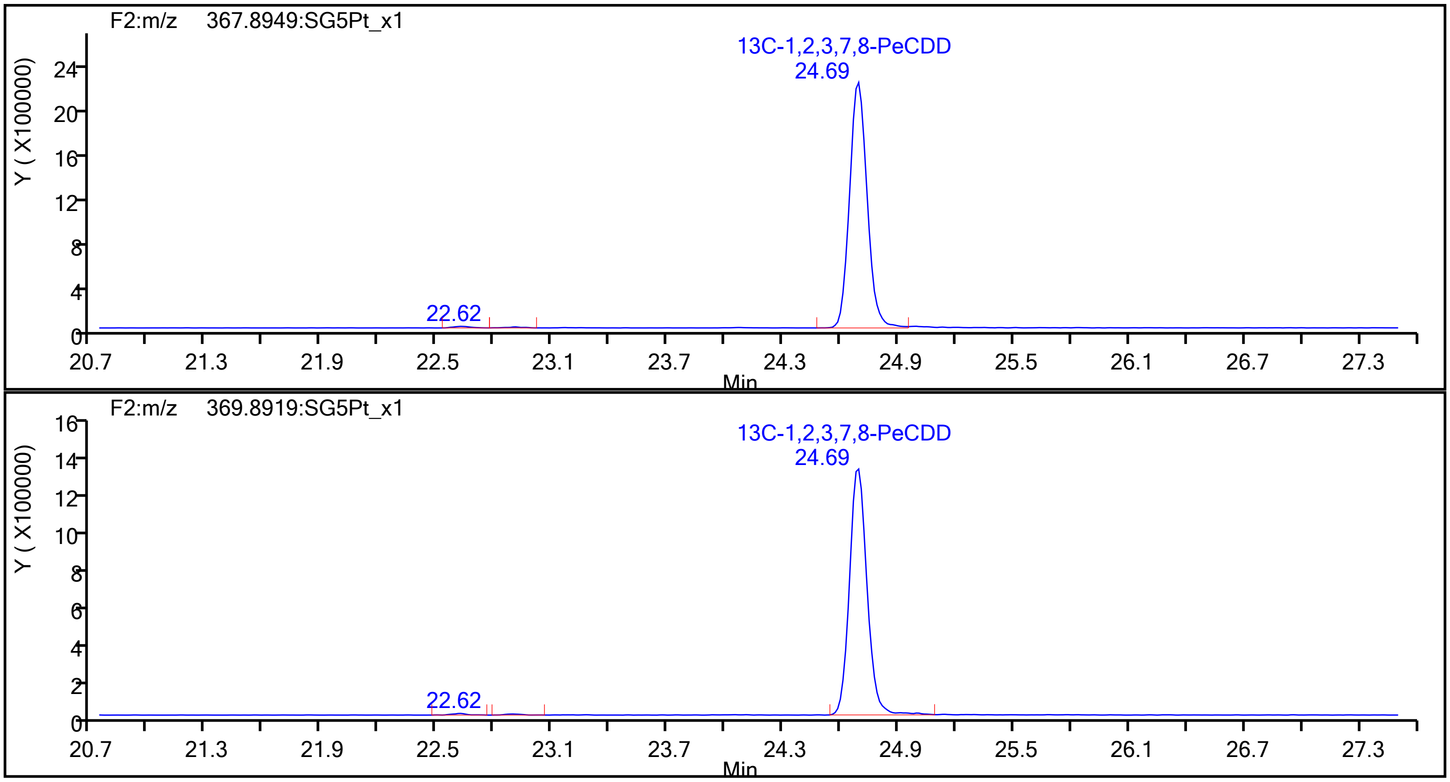

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Eurofins TestAmerica, Sacramento

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HxCDF

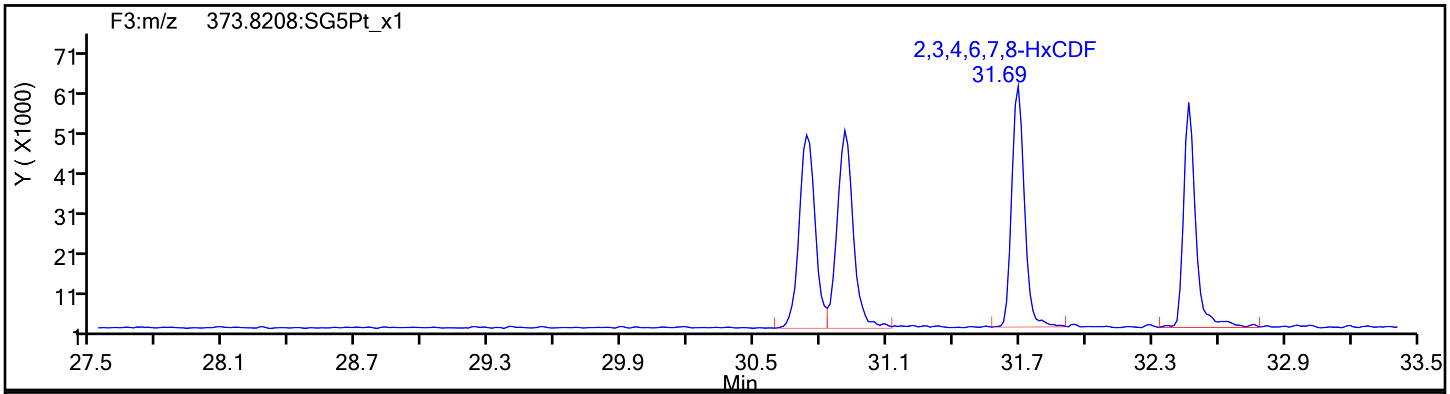

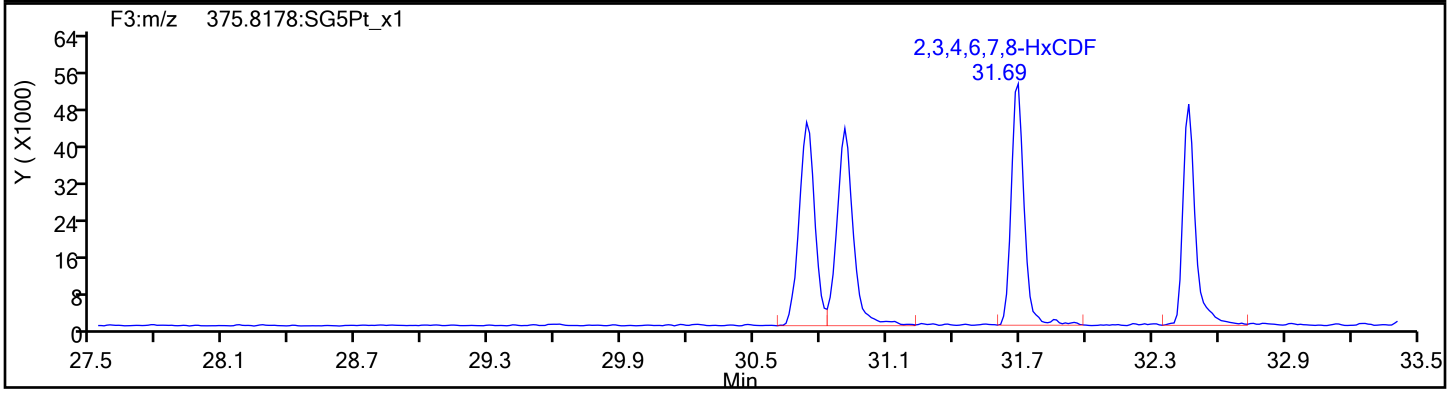

HxCDF Standards

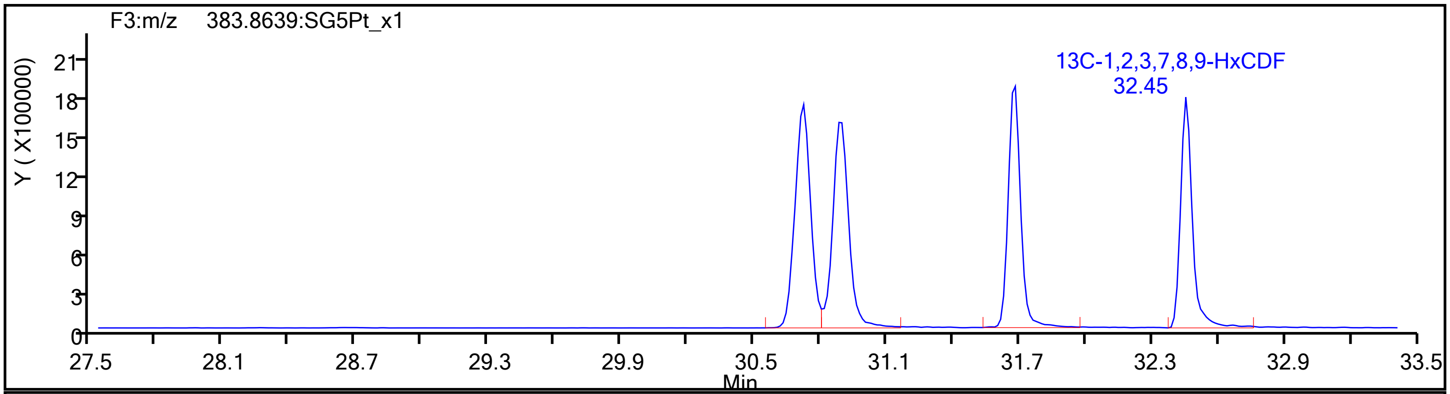

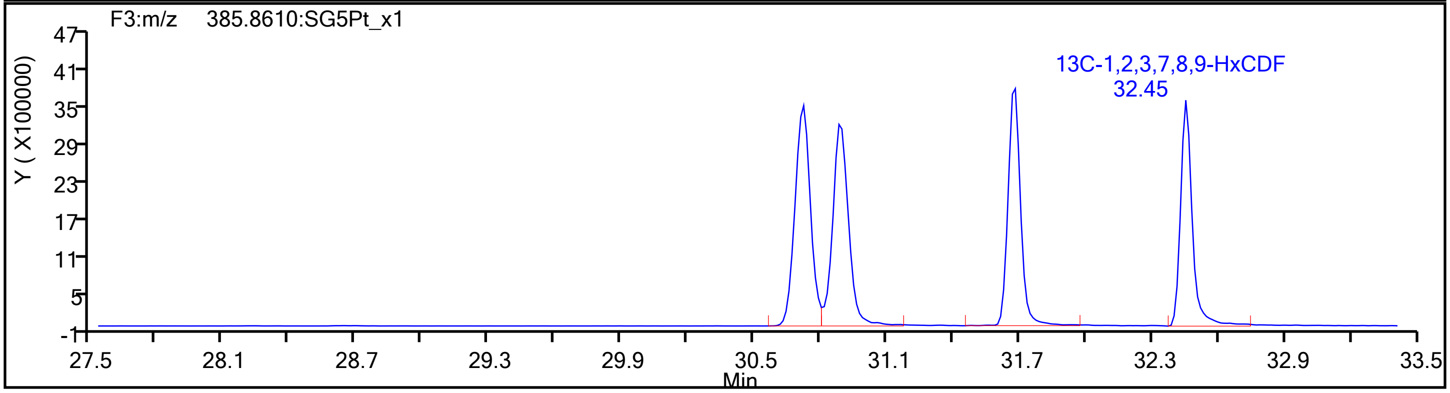

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Eurofins TestAmerica, Sacramento

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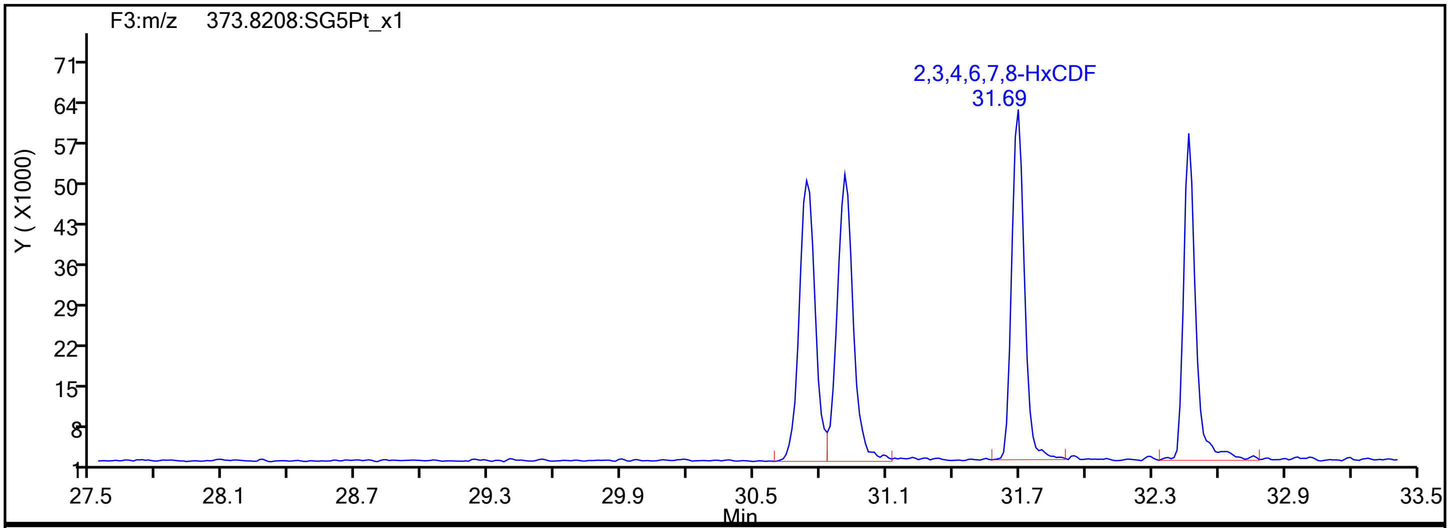

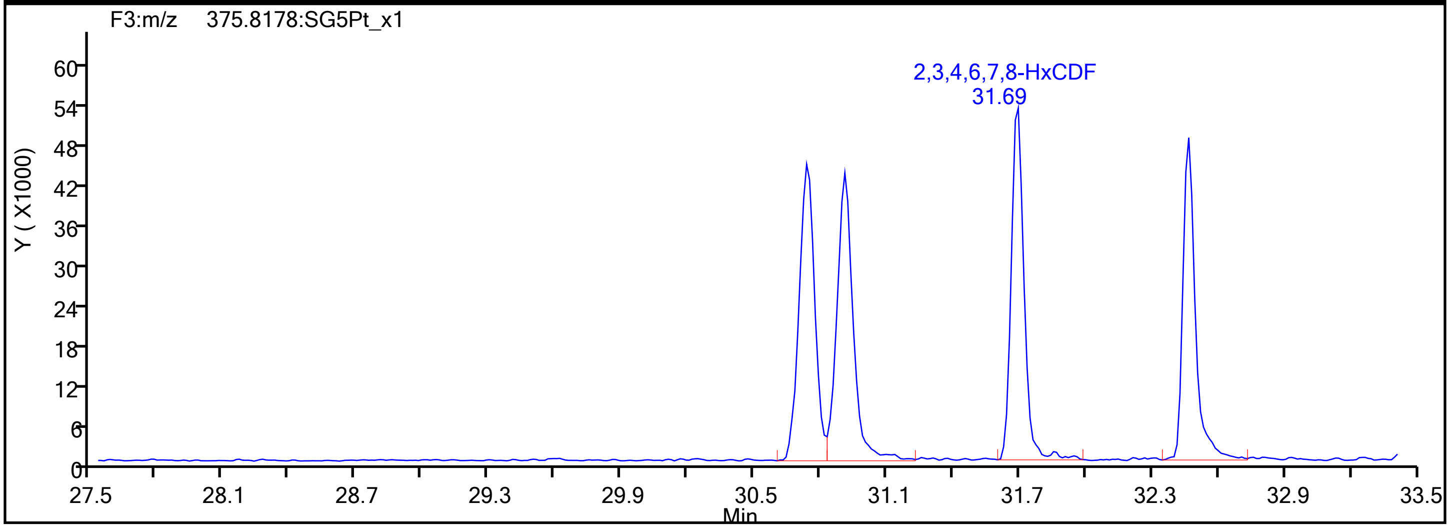

HxCDF Interference Mass

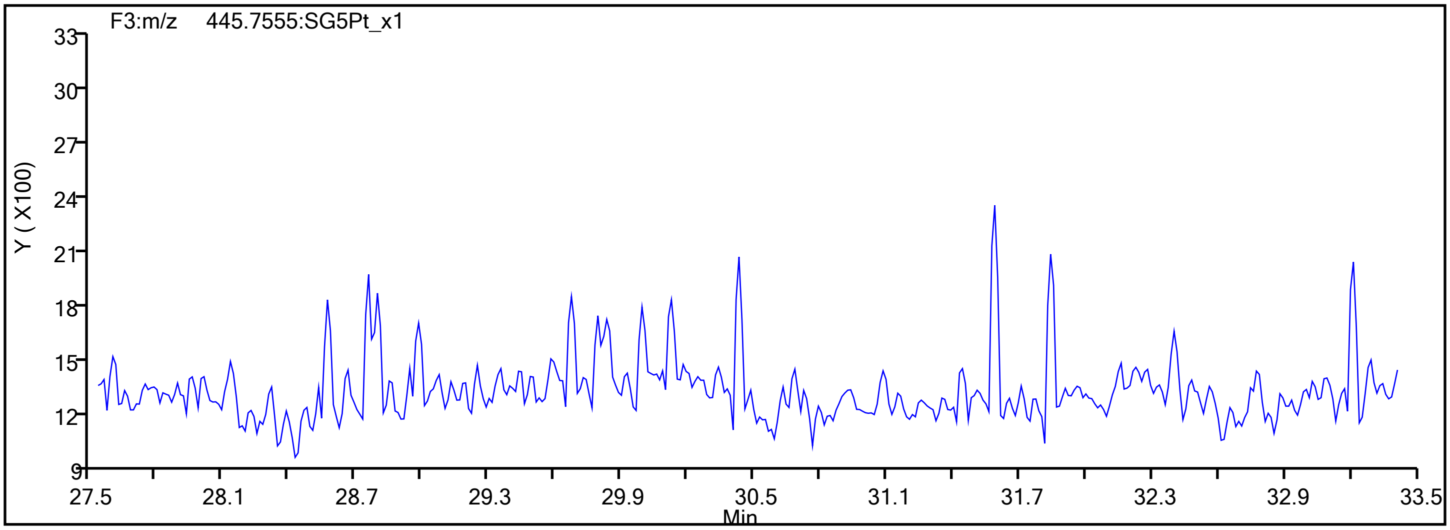

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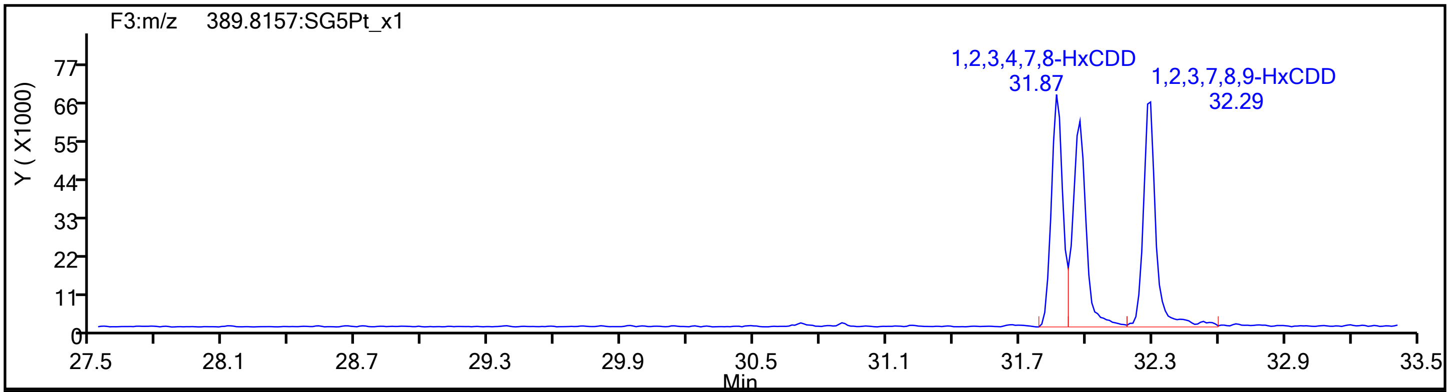

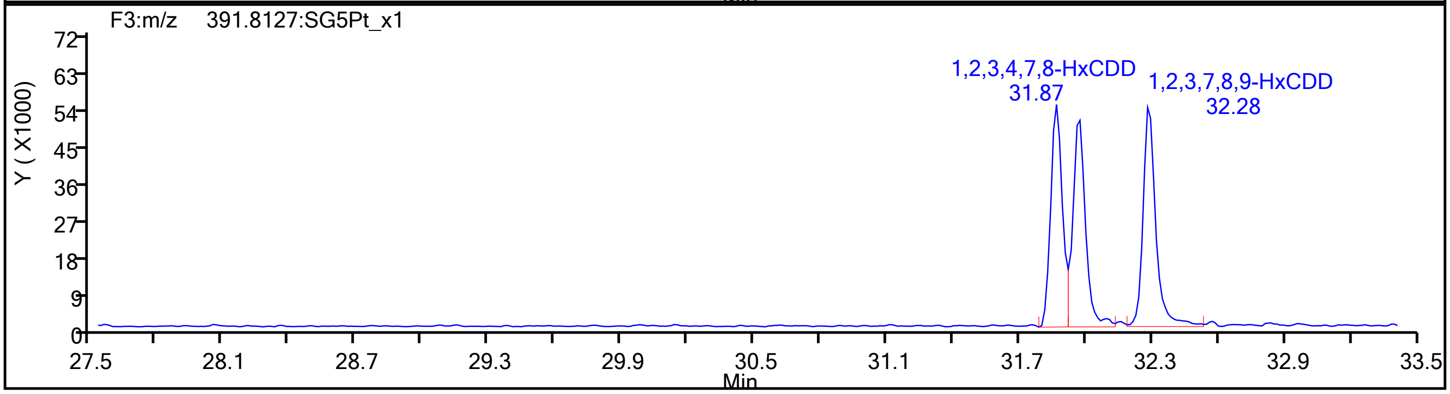

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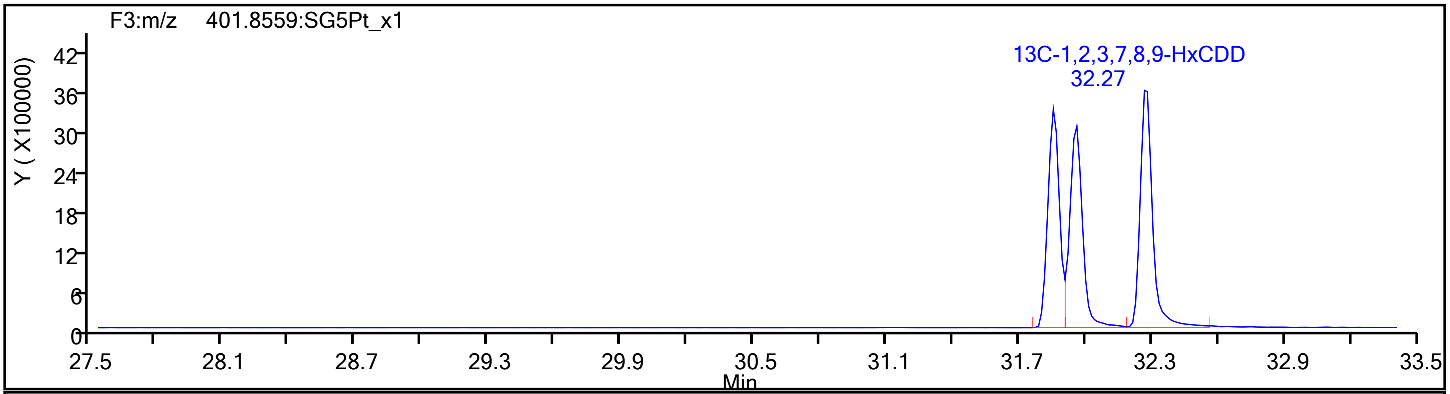

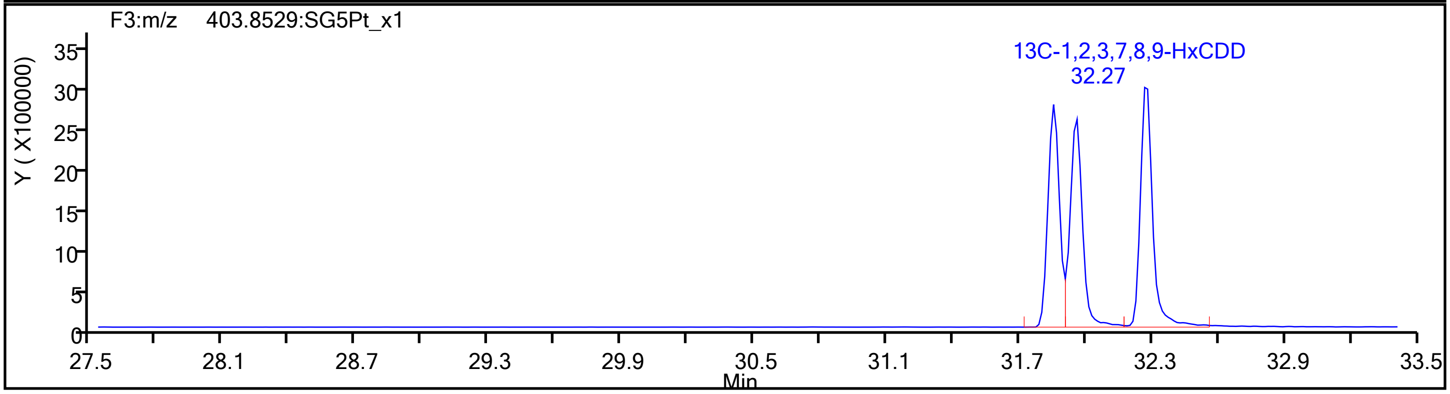

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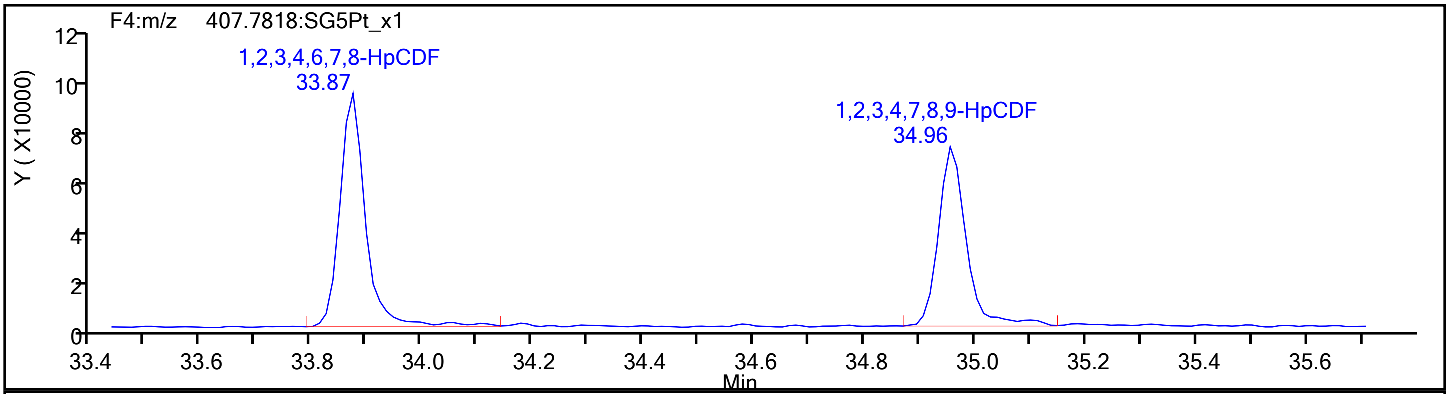

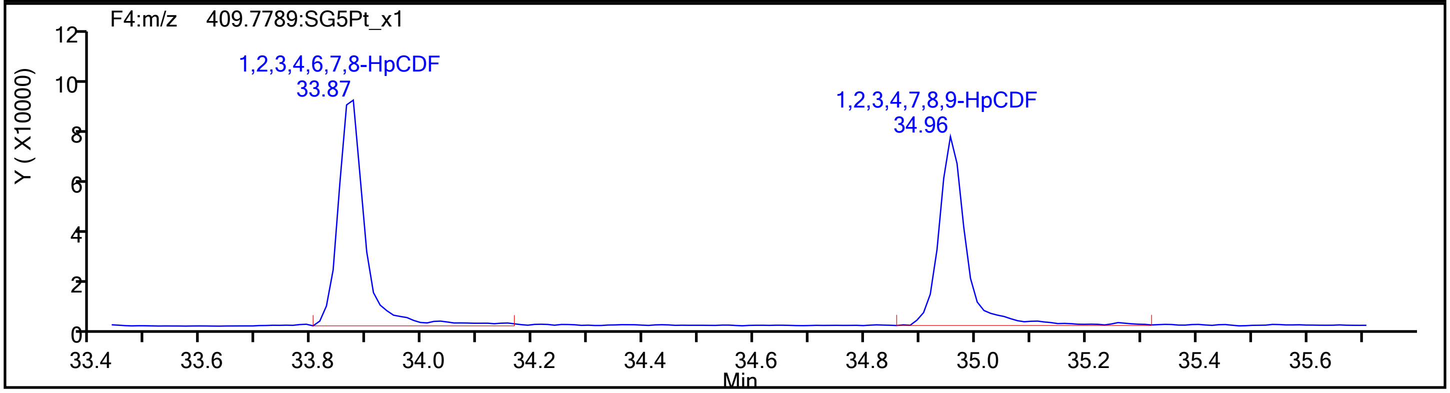

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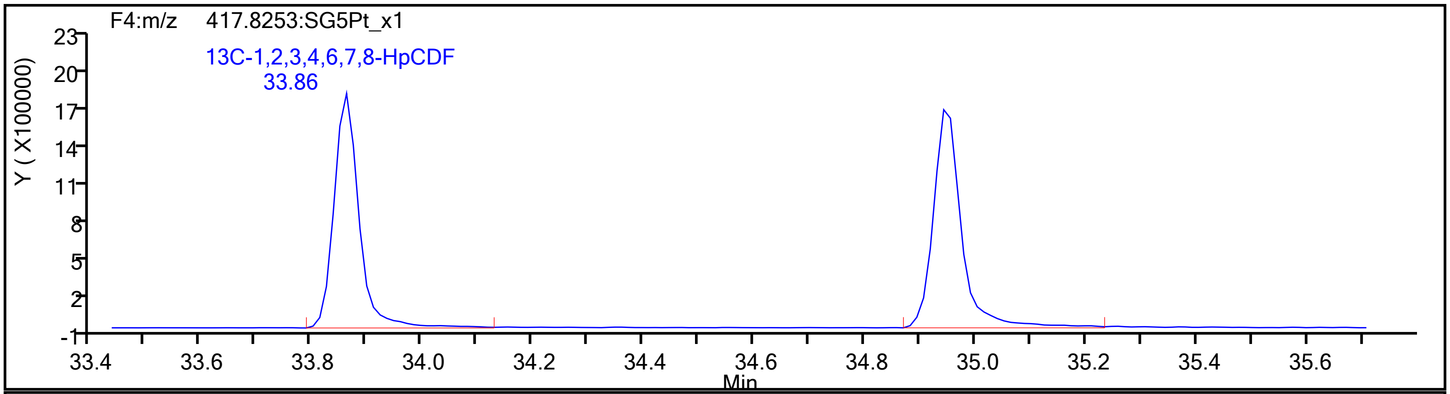

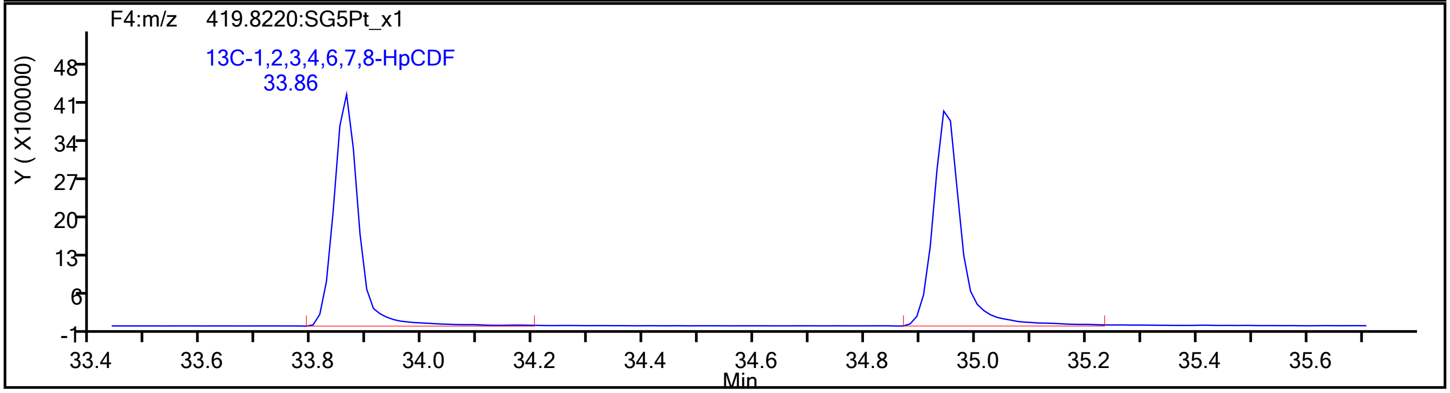

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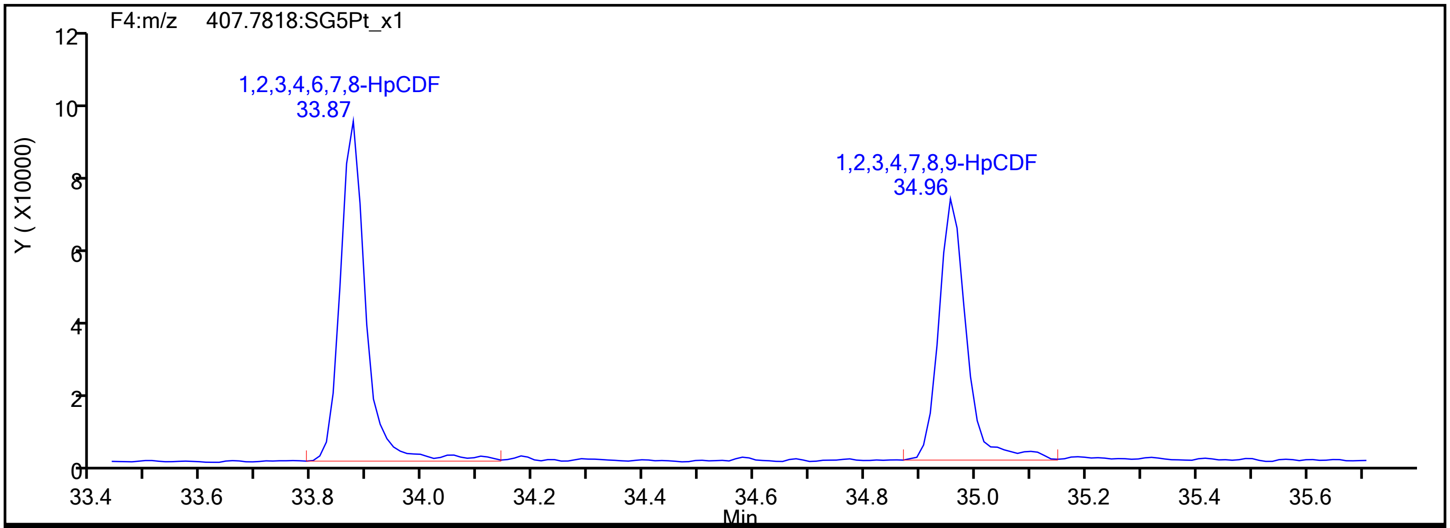

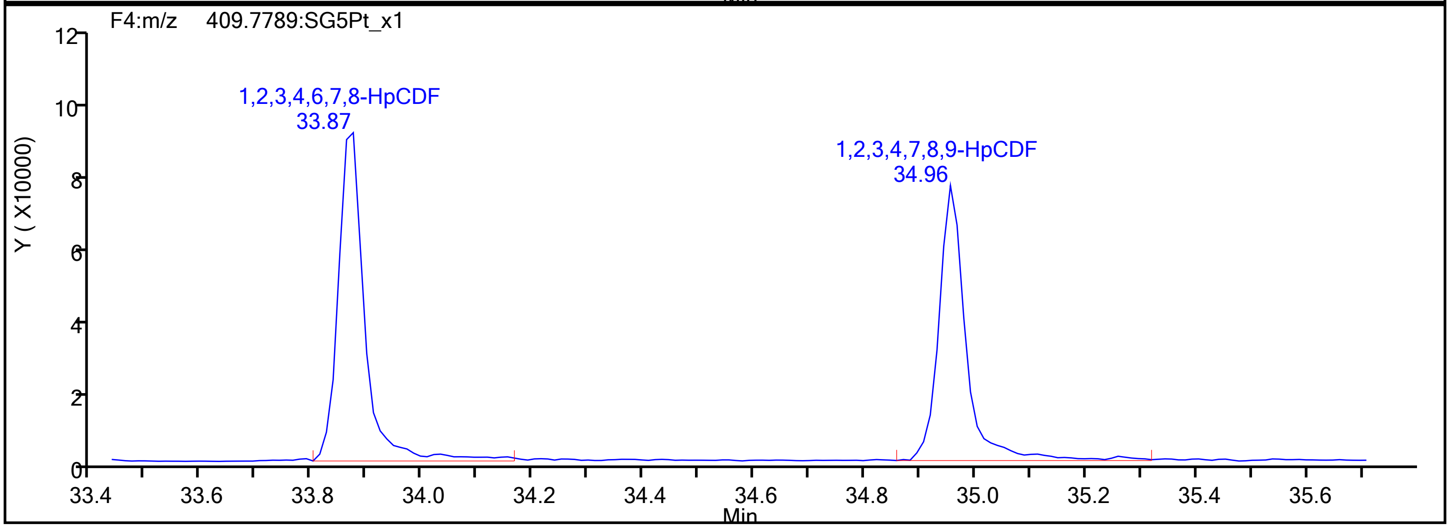

HpCDF Interference Mass

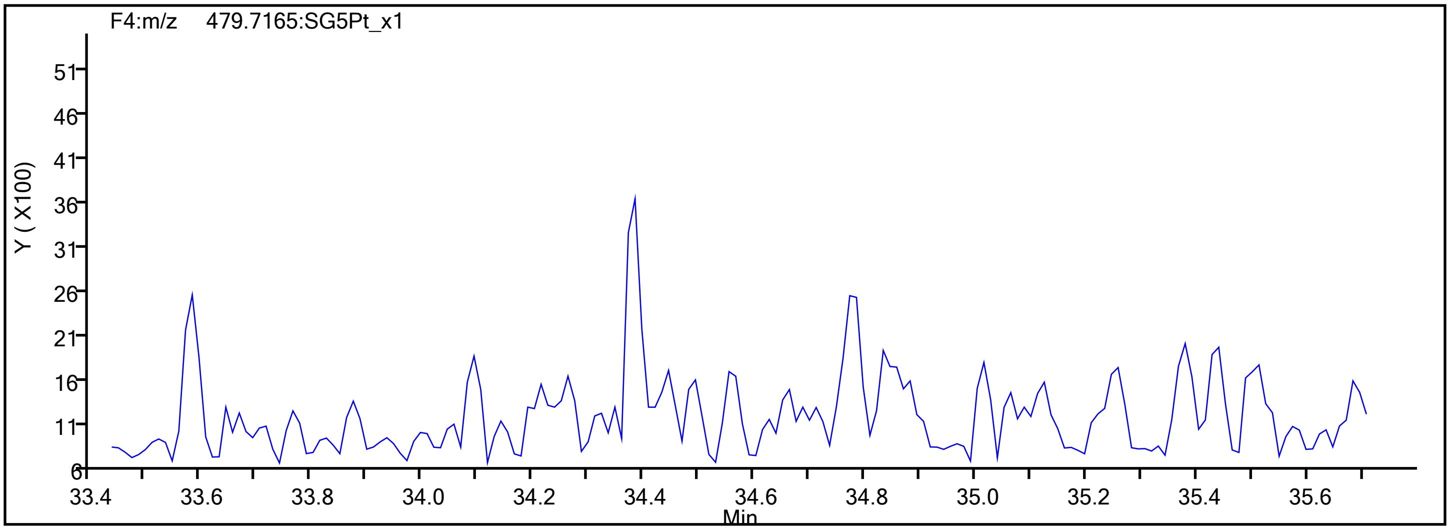

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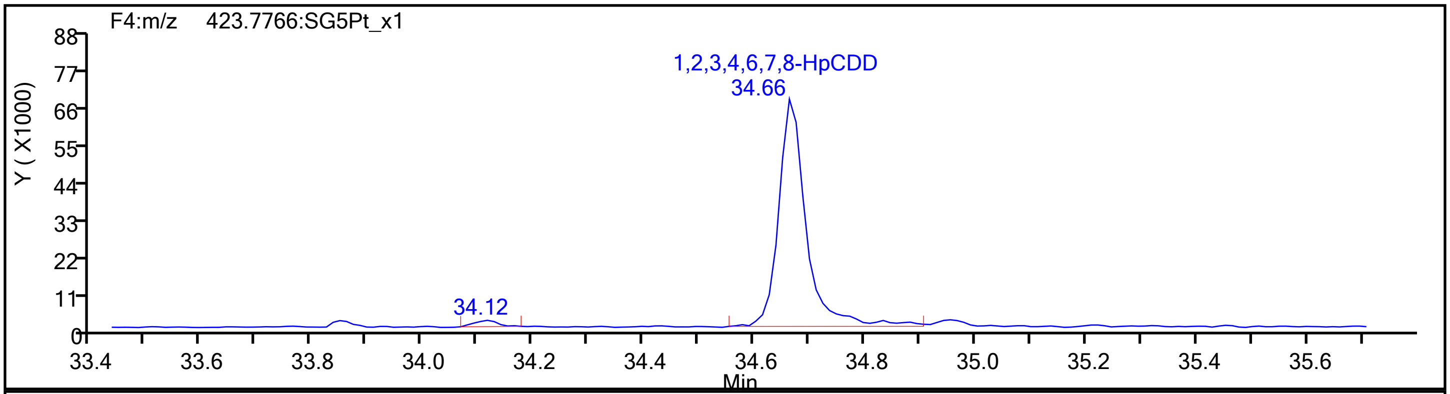

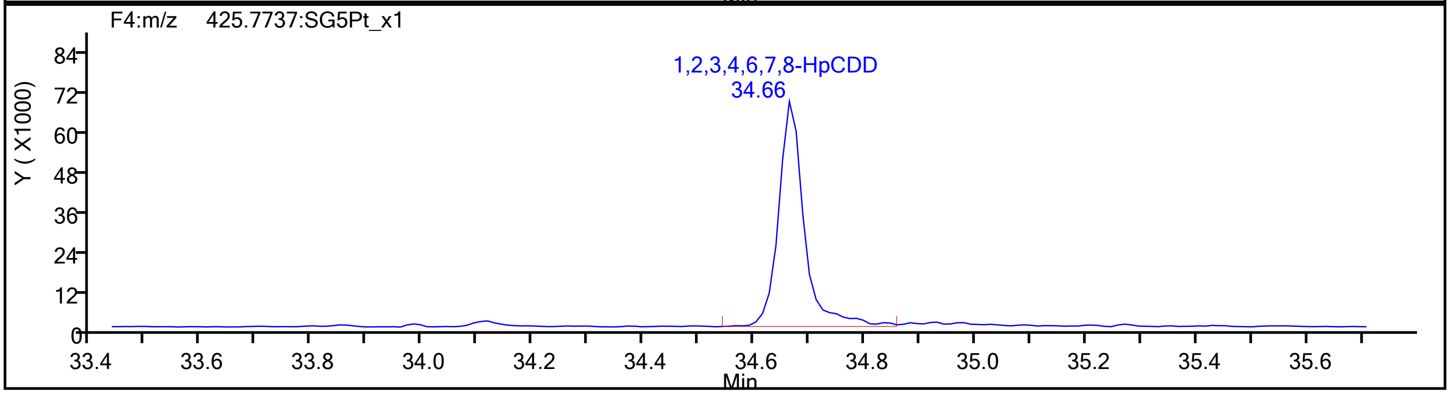

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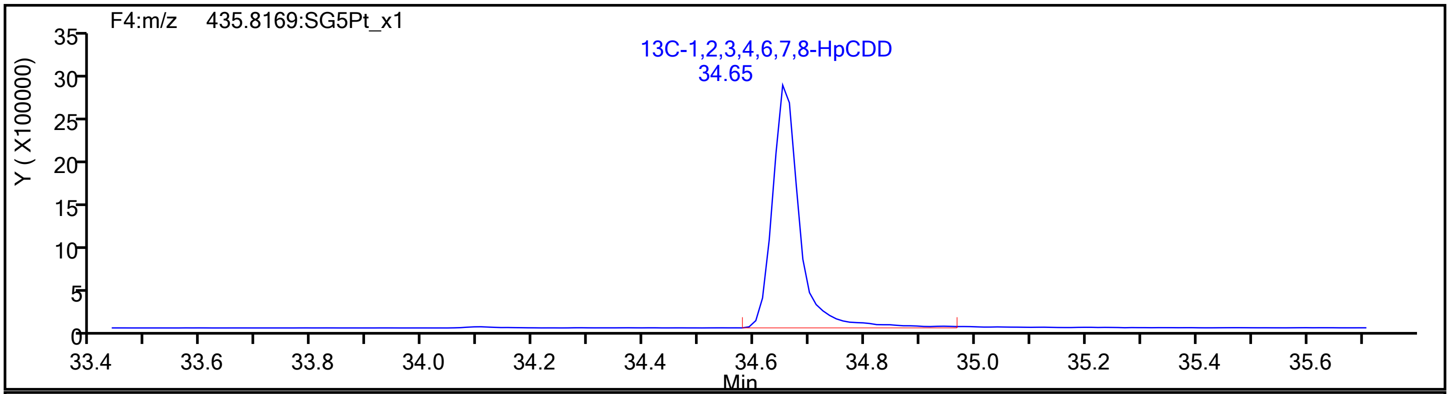

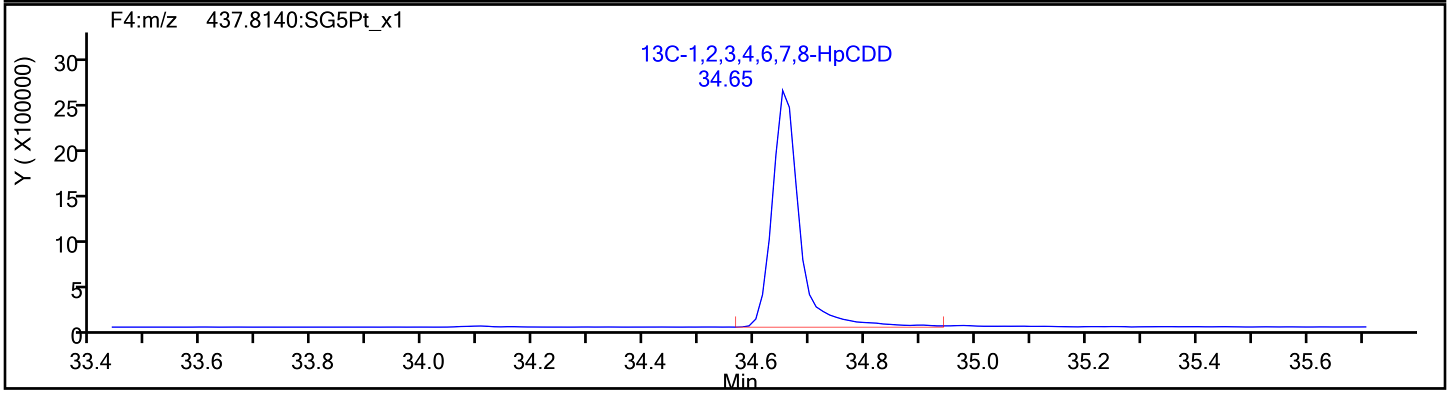

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Column Type: DB-5 Column Dia: 0.32 mm

OCDF

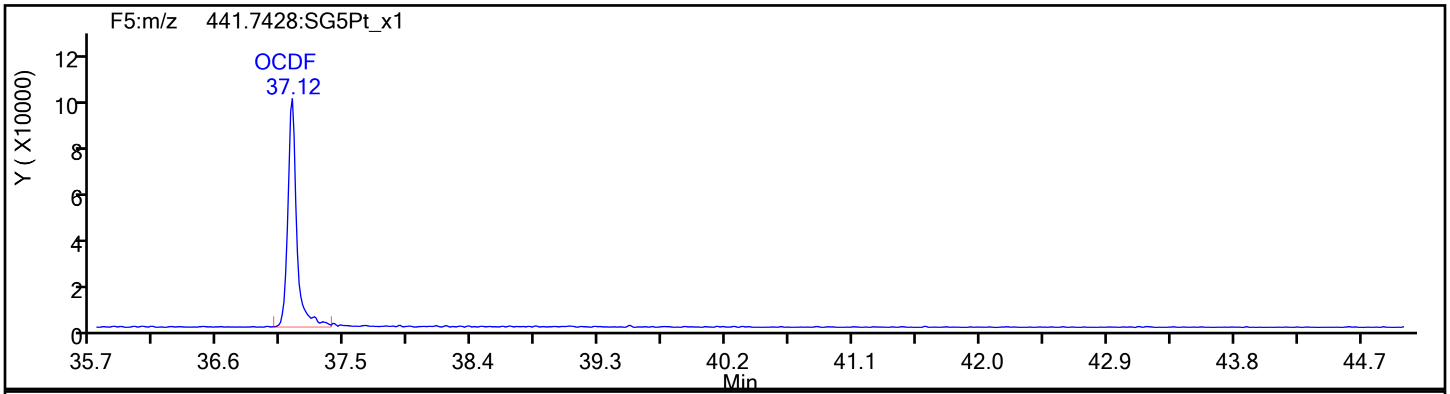

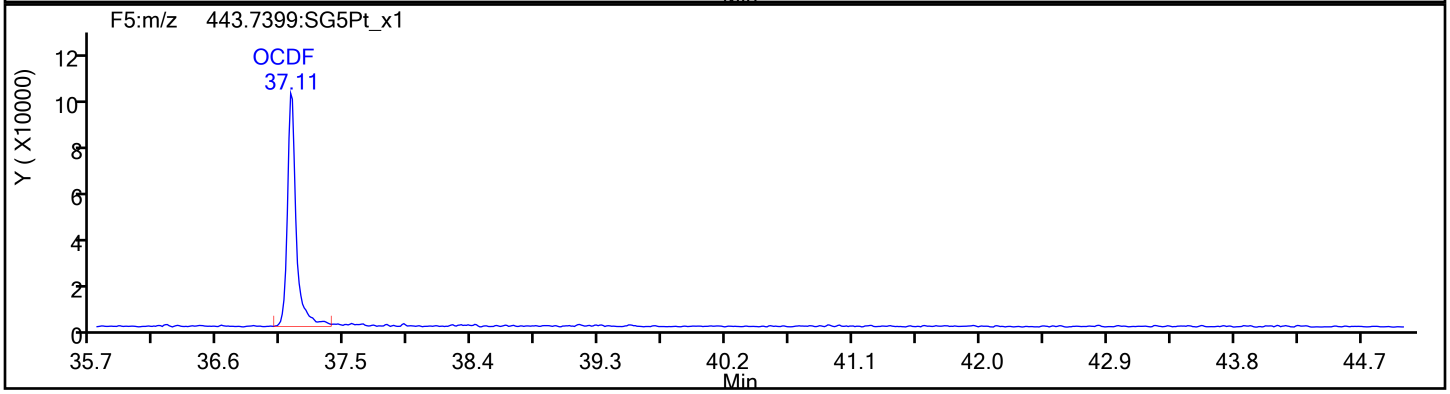

OCDF Standards

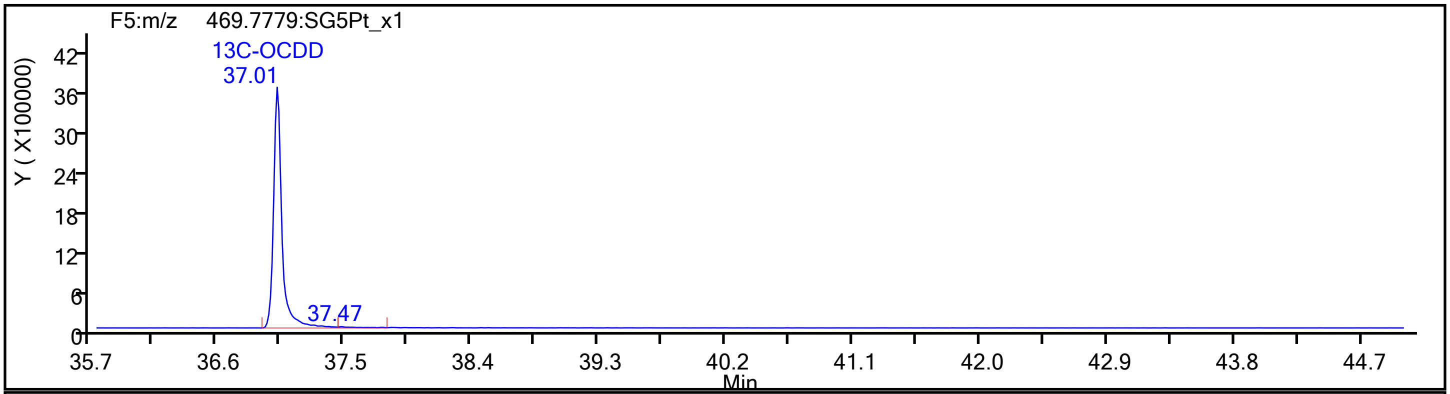

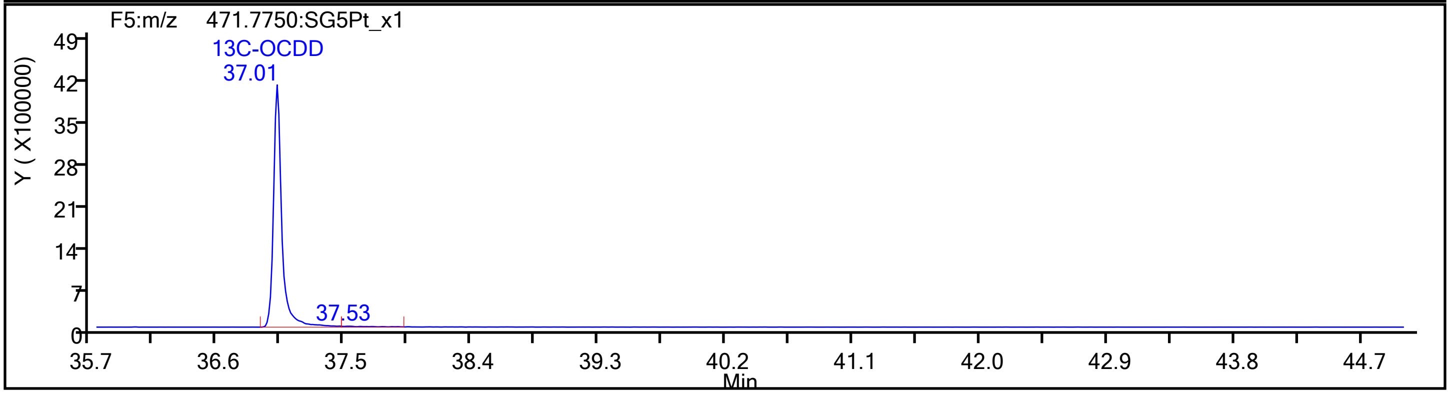

Report Date: 06-Mar-2020 10:12:55 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d

Injection Date: 05-Mar-2020 17:01:58 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

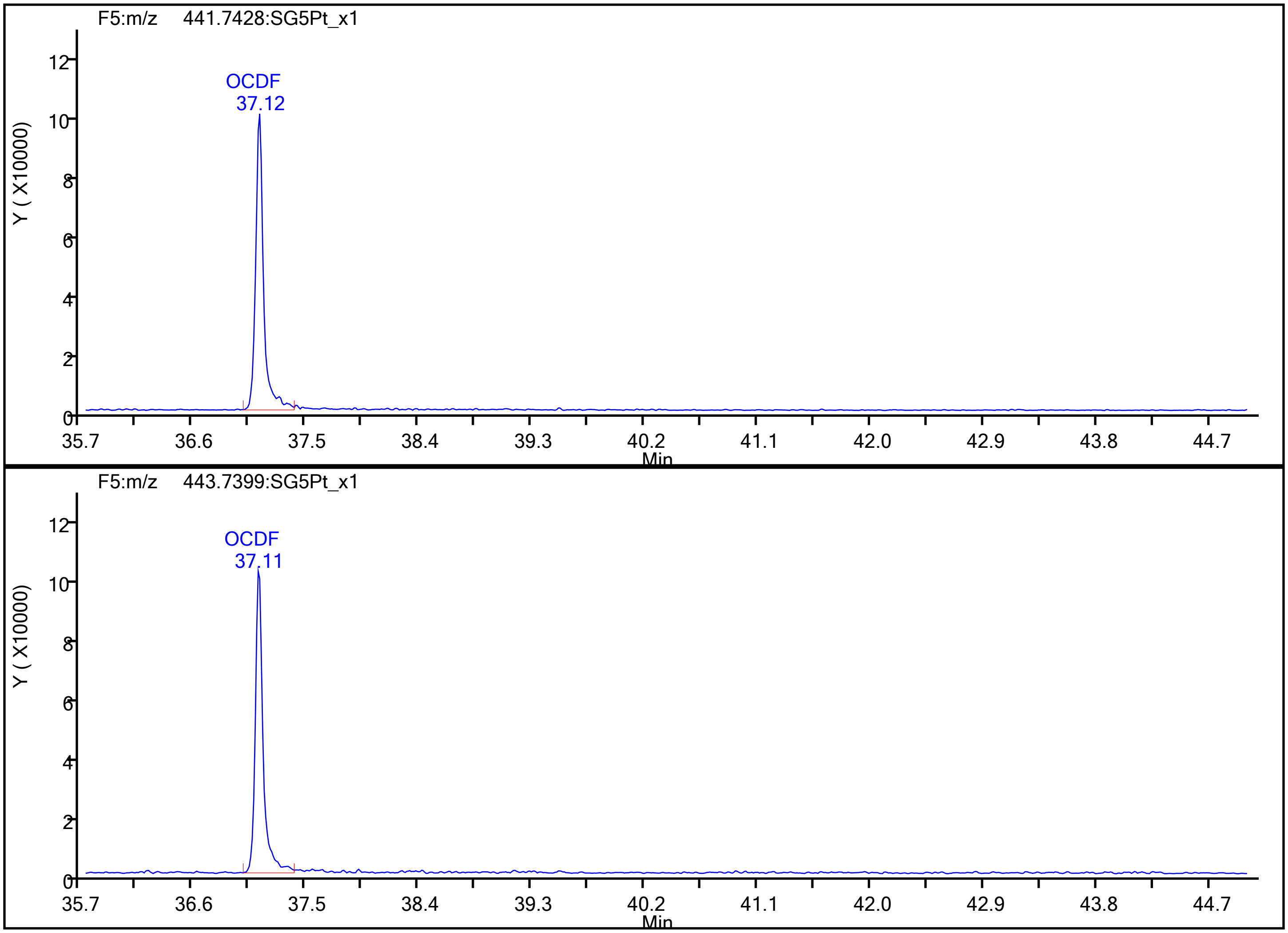

OCDF Interference Mass

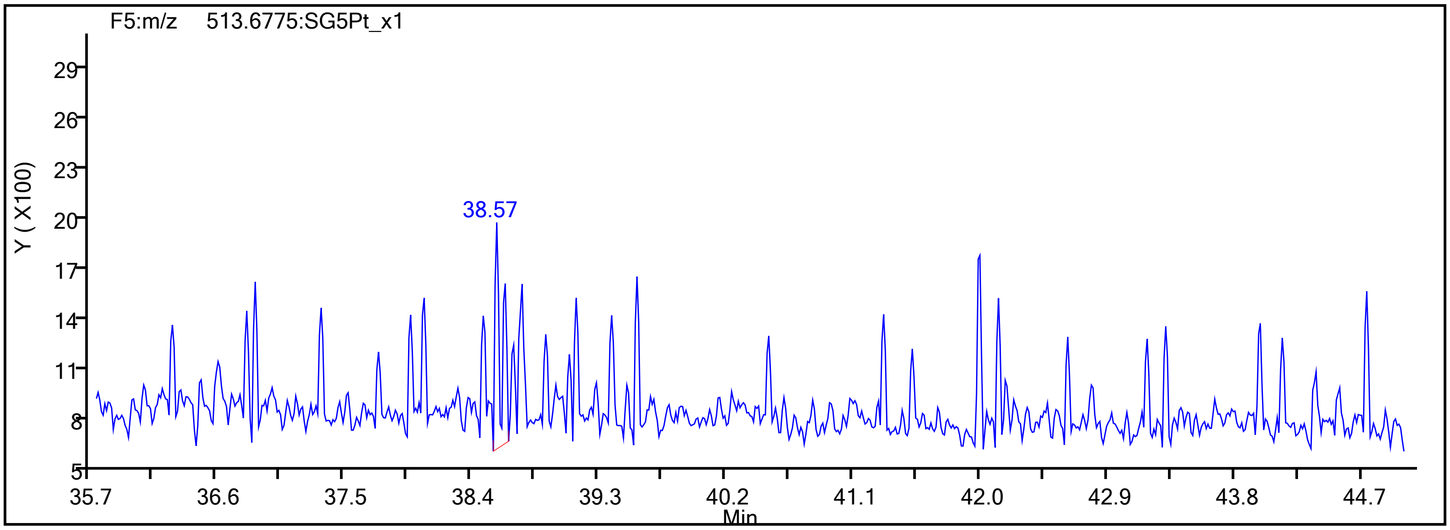

Report Date: 06-Mar-2020 10:12:55 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d

Injection Date: 05-Mar-2020 17:01:58 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 3

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

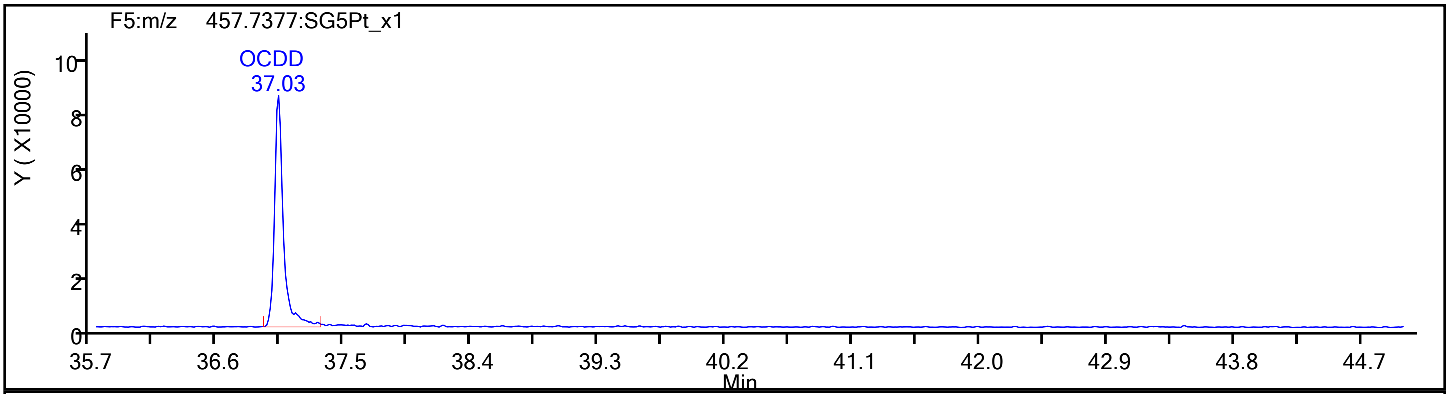

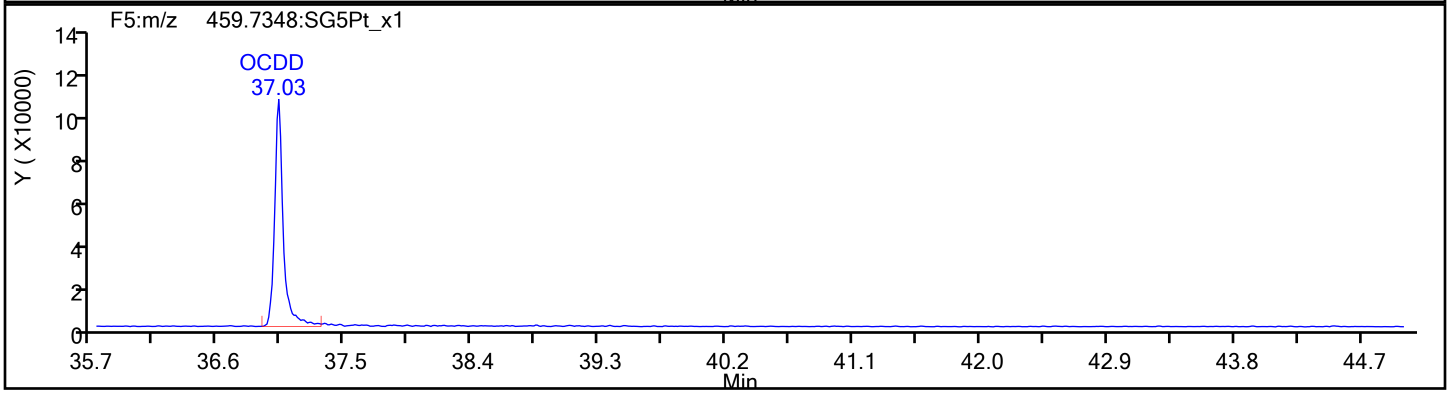

OCDD Standards

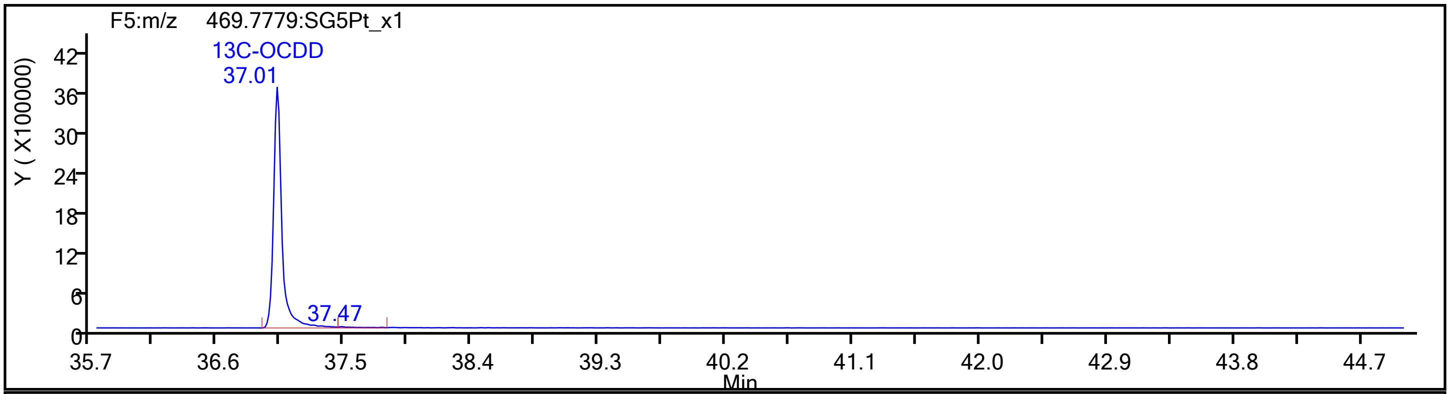

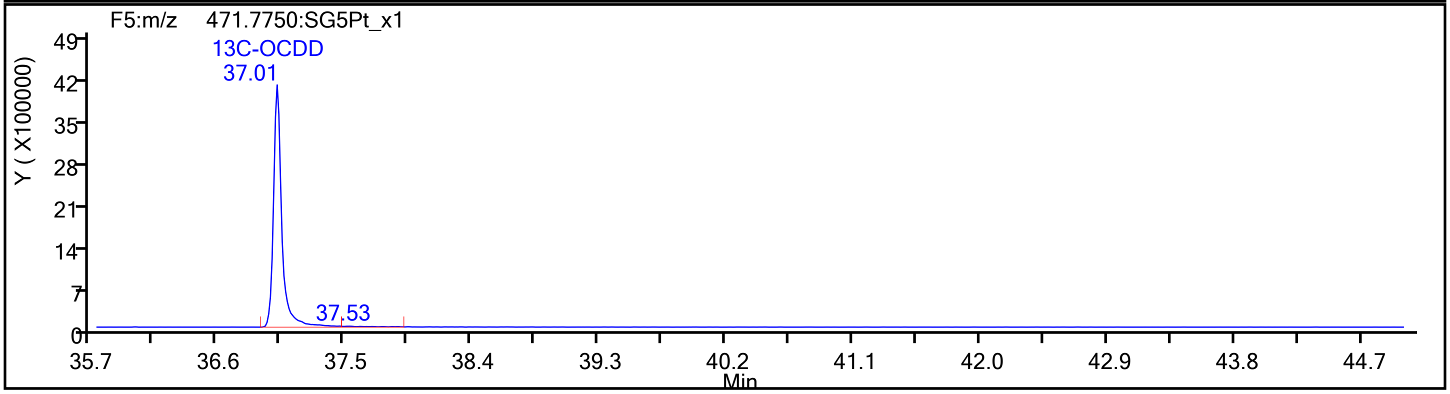

Report Date: 06-Mar-2020 10:12:55 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d		
Injection Date:	05-Mar-2020 17:01:58	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

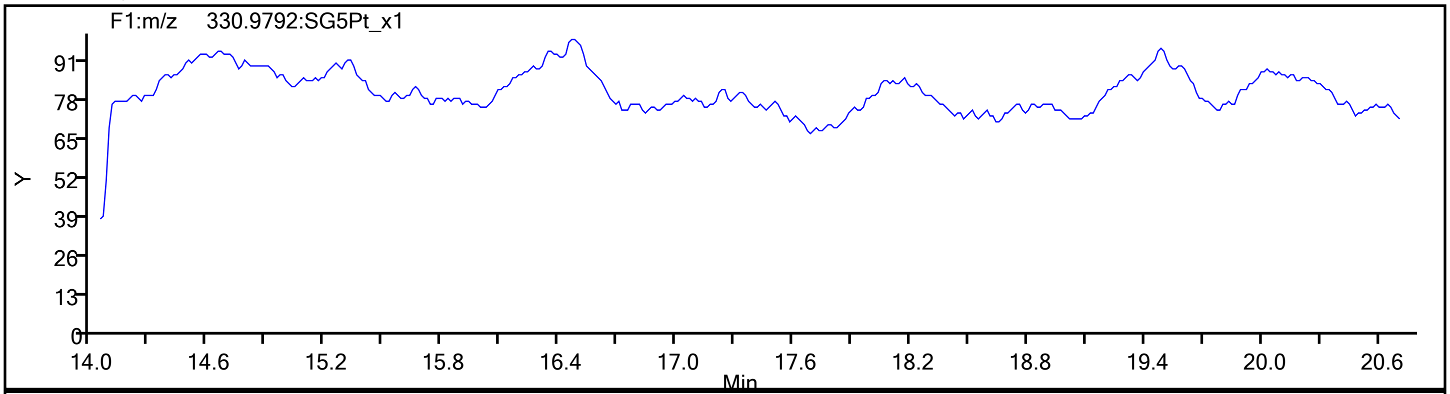

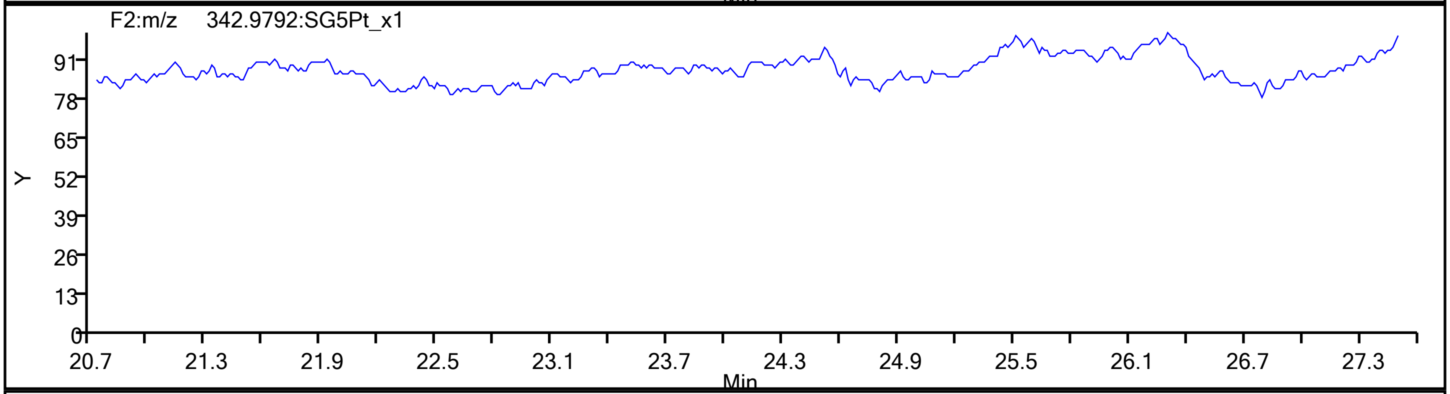

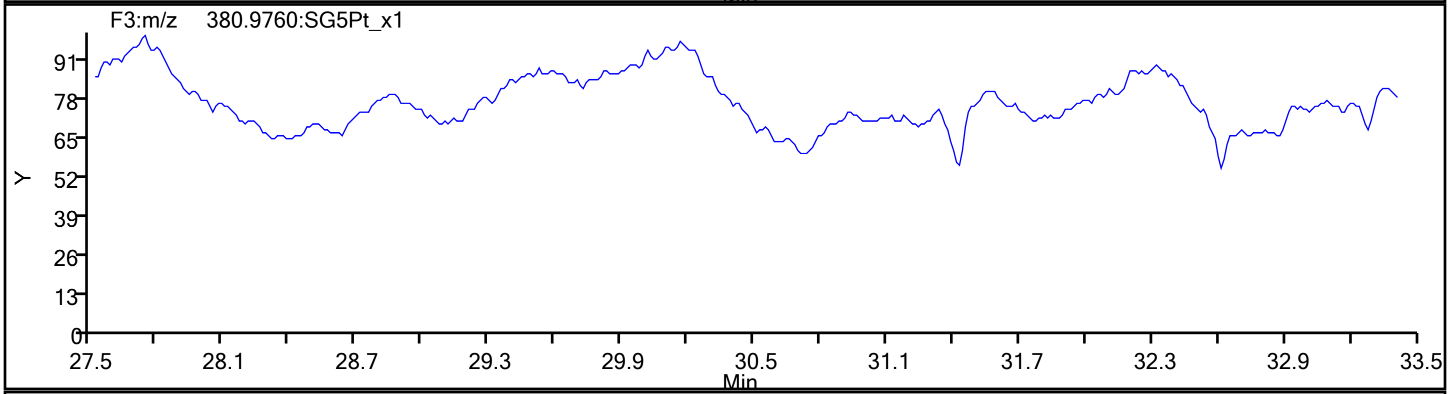

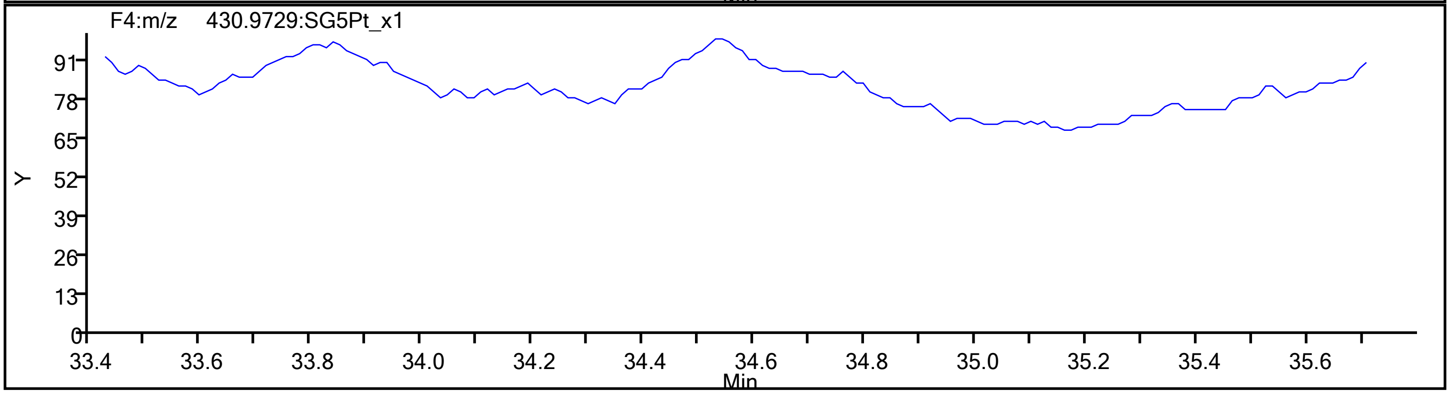

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_3.d		
Injection Date:	05-Mar-2020 17:01:58	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	3
Column Type:	DB-5	Column Dia:	0.32 mm

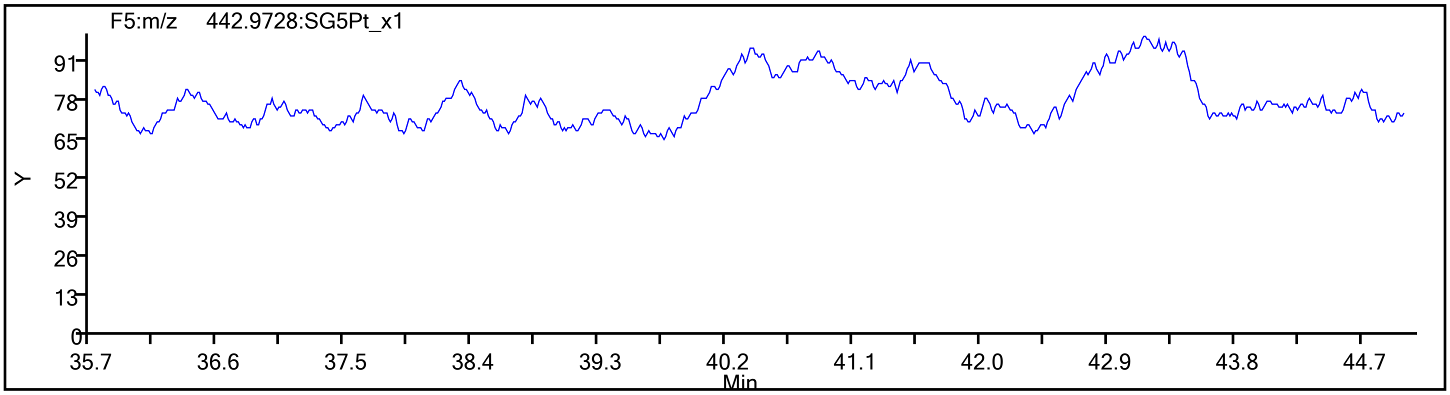

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 05-Mar-2020 17:47:56 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 030520A CS-3 HRDXNL3_00026
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:12:59 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.005	36816676	0.79	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.491	42340173	0.74	1.1970	96.1	96.1	0.2329	0.2329	96.08	
2,3,7,8-TCDF	17.506	608638	0.71	0.7672	1.874	1.874	0.0205	0.0205	93.69	
S Total TCDF					1.874	1.874	0.0205	0.0205		
D 13C-2,3,7,8-TCDD	18.201	33170661	0.79	0.8773	102.7	102.7	0.1901	0.1901	103	
2,3,7,8-TCDD	18.232	627029	0.79	1.0000	1.890	1.890	0.0386	0.0386	94.51	
$ 37Cl4-2,3,7,8-TCDD	18.232	649436		0.9515	1.854	1.854	0.0128	0.0128	92.70	
S Total TCDD					1.890	1.890	0.0386	0.0386		
D 13C-1,2,3,7,8-PeCDF	22.579	34681341	1.54	0.9904	95.1	95.1	0.1959	0.1959	95.11	
1,2,3,7,8-PeCDF	22.607	3009562	1.56	0.9019	9.622	9.622	0.0482	0.0482	96.22	
D 13C-2,3,4,7,8-PeCDF	23.957	38473439	1.53	1.0797	96.8	96.8	0.1797	0.1797	96.78	
2,3,4,7,8-PeCDF	23.970	3118181	1.52	0.8307	9.756	9.756	0.0501	0.0501	97.56	
S Total PeCDF					19.4	19.4	0.0491	0.0491		
D 13C-1,2,3,7,8-PeCDD	24.679	24502857	1.63	0.6904	96.4	96.4	0.1165	0.1165	96.39	
1,2,3,7,8-PeCDD	24.707	2393975	1.56	1.0145	9.631	9.631	0.0351	0.0351	96.31	
S Total PeCDD					9.631	9.631	0.0351	0.0351		
D 13C-1,2,3,4,7,8-HxCDF	30.723	26188806	0.49	0.9076	99.1	99.1	0.3754	0.3754	99.09	
1,2,3,4,7,8-HxCDF	30.736	2007538	1.17	0.7928	9.669	9.669	0.0707	0.0707	96.69	
D 13C-1,2,3,6,7,8-HxCDF	30.896	25545397	0.50	0.8671	101.2	101.2	0.3929	0.3929	101	
1,2,3,6,7,8-HxCDF	30.910	2057258	1.18	0.8592	9.373	9.373	0.0666	0.0666	93.73	
D 13C-2,3,4,6,7,8-HxCDF	31.681	24035131	0.50	0.8287	99.6	99.6	0.4112	0.4112	99.61	
2,3,4,6,7,8-HxCDF	31.695	2020258	1.16	0.8896	9.449	9.449	0.0539	0.0539	94.49	
D 13C-1,2,3,7,8,9-HxCDF	32.453	21106563	0.49	0.7391	98.1	98.1	0.4610	0.4610	98.07	
1,2,3,7,8,9-HxCDF	32.467	1780461	1.22	0.8941	9.434	9.434	0.0572	0.0572	94.34	
S Total HxCDF					37.9	37.9	0.0621	0.0621		
* 13C-1,2,3,7,8,9-HxCDD	32.280	29118424	1.19	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.854	23419559	1.23	0.8335	96.5	96.5	0.2838	0.2838	96.49	
1,2,3,4,7,8-HxCDD	31.868	1901863	1.21	0.8332	9.747	9.747	0.0408	0.0408	97.47	
D 13C-1,2,3,6,7,8-HxCDD	31.961	24295909	1.22	0.8228	101.4	101.4	0.2874	0.2874	101	
1,2,3,6,7,8-HxCDD	31.974	2084279	1.22	0.8944	9.591	9.591	0.0390	0.0390	95.91	
1,2,3,7,8,9-HxCDD	32.294	2214257	1.16	0.9449	9.823	9.823	0.0364	0.0364	98.23	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDD					29.2	29.2	0.0387	0.0387		
D 13C-1,2,3,4,6,7,8-HpCDF	33.861	20820567	0.41	0.7009	102.0	102.0	0.9533	0.9533	102	
1,2,3,4,6,7,8-HpCDF	33.874	2668090	1.03	1.3295	9.639	9.639	0.0853	0.0853	96.39	
D 13C-1,2,3,4,7,8,9-HpCDF	34.955	19782829	0.42	0.7244	93.8	93.8	0.9224	0.9224	93.79	
1,2,3,4,7,8,9-HpCDF	34.967	2091882	1.01	1.0803	9.788	9.788	0.1217	0.1217	97.88	
S Total HpCDF					19.4	19.4	0.1035	0.1035		
D 13C-1,2,3,4,6,7,8-HpCDD	34.663	20148239	1.05	0.7026	98.5	98.5	0.4783	0.4783	98.48	
1,2,3,4,6,7,8-HpCDD	34.675	1957807	1.01	1.0040	9.678	9.678	0.0663	0.0663	96.78	
S Total HpCDD					9.678	9.678	0.0663	0.0663		
D 13C-OCDD	37.014	33795734	0.87	0.6184	187.7	187.7	0.2348	0.2348	93.85	
OCDF	37.122	3597124	0.89	1.1076	19.2	19.2	0.0441	0.0441	96.10	
OCDD	37.027	3345250	0.86	1.0175	19.5	19.5	0.0492	0.0492	97.28	

Reagents:

HRDXNL3_00026 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 05-Mar-2020 17:47:56 ALS Bottle#: 5 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 030520A CS-3 HRDXNL3_00026
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:12:59 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.005	18.008	0		16192106	3942908	3714	9285	1062		
333.9339	18.005	18.008	0		20624570	5073031	2302	5755	2204	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.491	17.491	0	0.971	18049731	4656391	5240	13100	889		
317.9389	17.491	17.491	0	0.971	24290442	6191481	4812	12030	1287	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.506	17.509	0	1.001	252430	61007	230	575	265		
305.8987	17.506	17.509	0	1.001	356208	88643	453	1132	196	0.71(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.201	18.204	0	1.011	14590317	3380377	3714	9285	910		
333.9339	18.201	18.204	0	1.011	18580344	4375646	2302	5755	1901	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.232	18.225	0	1.002	277634	64152	839	2097	76		
321.8936	18.232	18.225	0	1.002	349395	85410	357	892	239	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.232	18.225	0	1.013	649436	158927	441	1102	360		
13C-1,2,3,7,8-PeCDF											
351.9000	22.579	22.585	0	1.254	21004824	3725155	4183	10457	891		
353.8970	22.579	22.585	0	1.254	13676517	2430232	2816	7040	863	1.54(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.607	22.607	0	1.001	1832916	325037	548	1370	593		
341.8567	22.607	22.607	0	1.001	1176646	212924	522	1305	408	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.957	23.951	0	1.331	23275900	3918808	4183	10457	937		
353.8970	23.943	23.951	0	1.330	15197539	2507088	2816	7040	890	1.53(1.32-1.78)	

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46
Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	23.970	23.976	0	1.001	1878482	307507	548	1370	561		
341.8567	23.984	23.976	0	1.001	1239699	204391	522	1305	392	1.52(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.679	24.685	0	1.371	15175024	2410975	1731	4327	1393		
369.8919	24.679	24.685	0	1.371	9327833	1506142	1171	2927	1286	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.707	24.709	0	1.001	1458952	223156	357	892	625		
357.8516	24.707	24.709	0	1.001	935023	142834	201	502	711	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.723	30.718	0	0.952	8557951	1699798	3437	8592	495		
385.8610	30.723	30.718	0	0.952	17630855	3456262	6930	17325	499	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.736	30.736	0	1.000	1082493	216070	601	1502	360		
375.8178	30.736	30.736	0	1.000	925045	179049	555	1387	323	1.17(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.896	30.888	0	0.957	8488813	1685615	3437	8592	490		
385.8610	30.896	30.888	0	0.957	17056584	3368636	6930	17325	486	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.910	30.907	0	1.000	1111990	226256	601	1502	376		
375.8178	30.910	30.907	0	1.000	945268	190043	555	1387	342	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.681	31.676	0	0.981	7994914	2004477	3437	8592	583		
385.8610	31.681	31.676	0	0.981	16040217	4027026	6930	17325	581	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.695	31.689	0	1.000	1085586	267920	601	1502	446		
375.8178	31.695	31.689	0	1.000	934672	235735	555	1387	425	1.16(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.453	32.456	0	1.005	6938469	1880993	3437	8592	547		
385.8610	32.453	32.456	0	1.005	14168094	3766676	6930	17325	544	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.467	32.467	0	1.000	979392	256478	601	1502	427		
375.8178	32.467	32.467	0	1.000	801069	210437	555	1387	379	1.22(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.280	32.272	0		15828556	4145711	3738	9345	1109		
403.8529	32.280	32.272	0		13289868	3460698	3458	8645	1001	1.19(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.854	31.855	0	0.987	12927210	3474219	3738	9345	929		
403.8529	31.854	31.855	0	0.987	10492349	2830886	3458	8645	819	1.23(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.868	31.871	0	1.000	1040549	279788	433	1082	646		
391.8127	31.868	31.871	0	1.000	861314	233758	424	1060	551	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.961	31.956	0	0.990	13368049	3406445	3738	9345	911		
403.8529	31.961	31.956	0	0.990	10927860	2732571	3458	8645	790	1.22(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8157	31.974	31.972	0	1.000	1145164	288117	433	1082	665		
391.8127	31.974	31.972	0	1.000	939115	228793	424	1060	540	1.22(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.294	32.288	0	1.014	1189099	316064	433	1082	730		
391.8127	32.294	32.288	0	1.014	1025158	260634	424	1060	615	1.16(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.861	33.864	0	1.049	6018188	1926383	6244	15610	309		
419.8220	33.861	33.864	0	1.049	14802379	4661863	14084	35210	331	0.41(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.874	33.869	0	1.000	1354879	426055	1520	3800	280		
409.7789	33.874	33.869	0	1.000	1313211	413895	1468	3670	282	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.955	34.948	0	1.083	5842163	1675647	6244	15610	268		
419.8220	34.955	34.948	0	1.083	13940666	4007170	14084	35210	285	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.967	34.960	0	1.000	1052562	294918	1520	3800	194		
409.7789	34.955	34.960	0	1.000	1039320	289719	1468	3670	197	1.01(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.663	34.656	0	1.074	10318827	3030006	5436	13590	557		
437.8140	34.663	34.656	0	1.074	9829412	2903018	4789	11972	606	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.675	34.668	0	1.000	984992	285477	823	2057	347		
425.7737	34.675	34.668	0	1.000	972815	266503	757	1892	352	1.01(0.88-1.20)	
13C-OCDD											
469.7779	37.014	37.017	0	1.147	15755158	3718967	2318	5795	1604		
471.7750	37.014	37.017	0	1.147	18040576	4282257	2099	5247	2040	0.87(0.76-1.02)	
OCDF											
441.7428	37.122	37.120	0	1.003	1695893	423106	294	735	1439		
443.7399	37.122	37.120	0	1.003	1901231	471152	488	1220	965	0.89(0.76-1.02)	
OCDD											
457.7377	37.027	37.029	0	1.000	1551480	371799	389	972	956		
459.7348	37.027	37.029	0	1.000	1793770	420190	412	1030	1020	0.86(0.76-1.02)	

Reagents:

HRDXNL3_00026 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d		
Injection Date:	05-Mar-2020 17:47:56	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

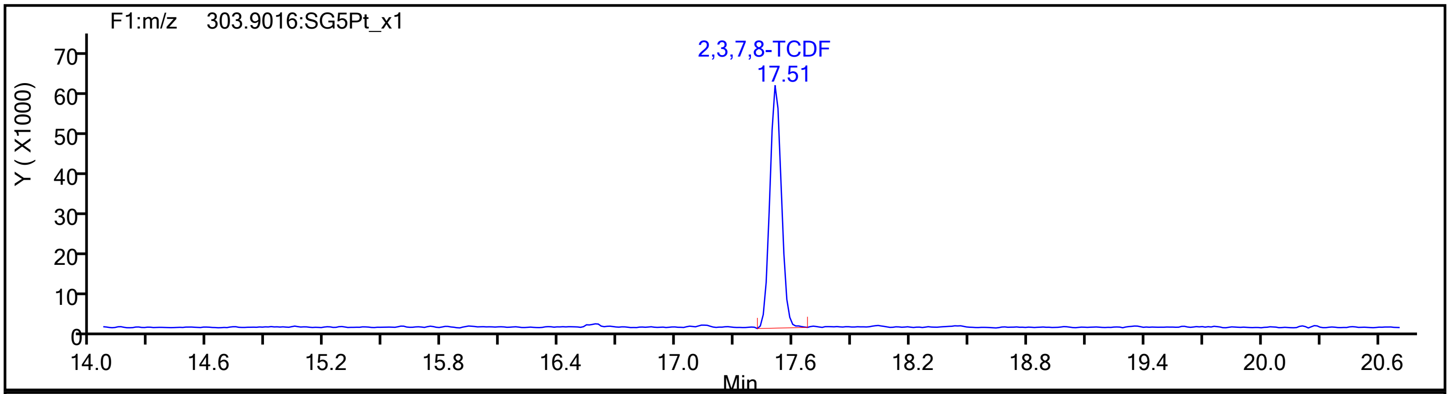

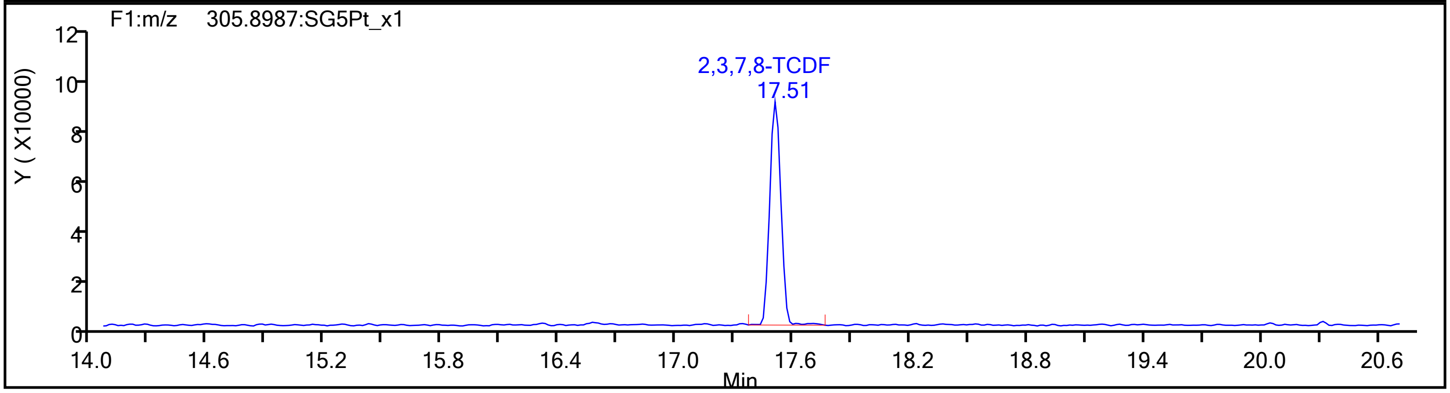

TCDF Standards

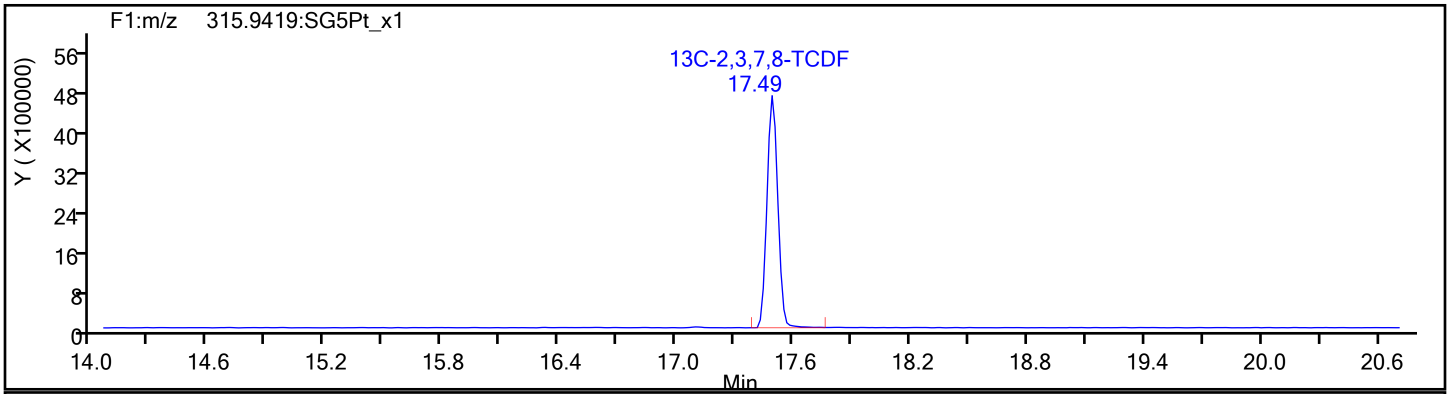

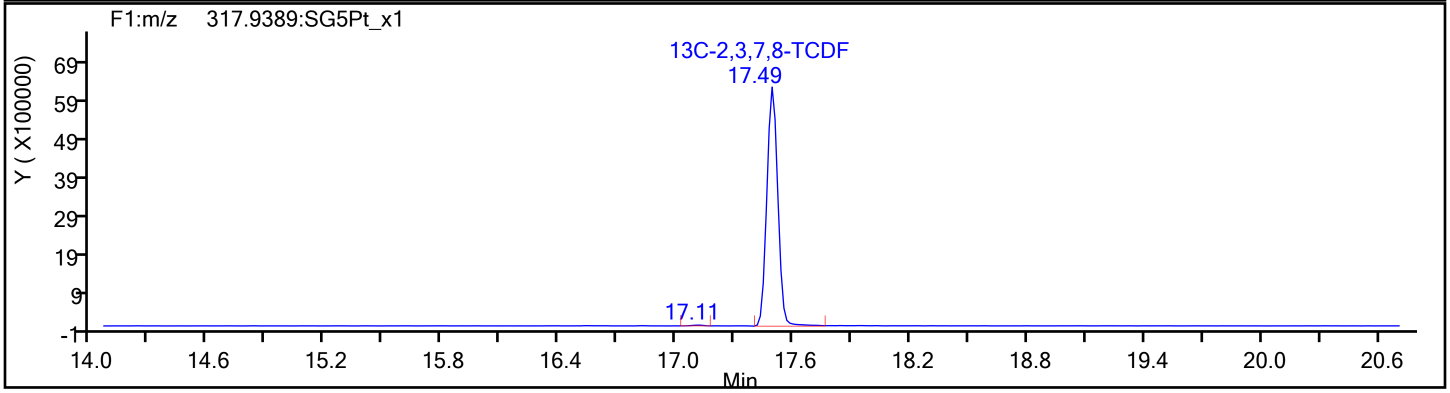

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 17:47:56 Injection Vol: 2.0 ul
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Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

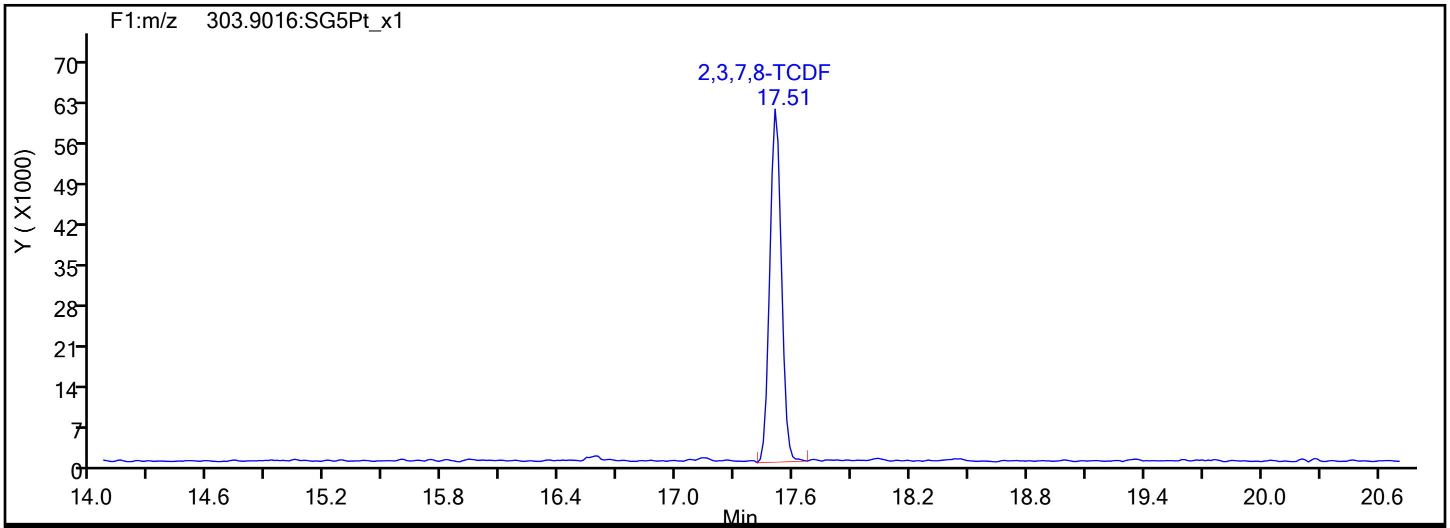

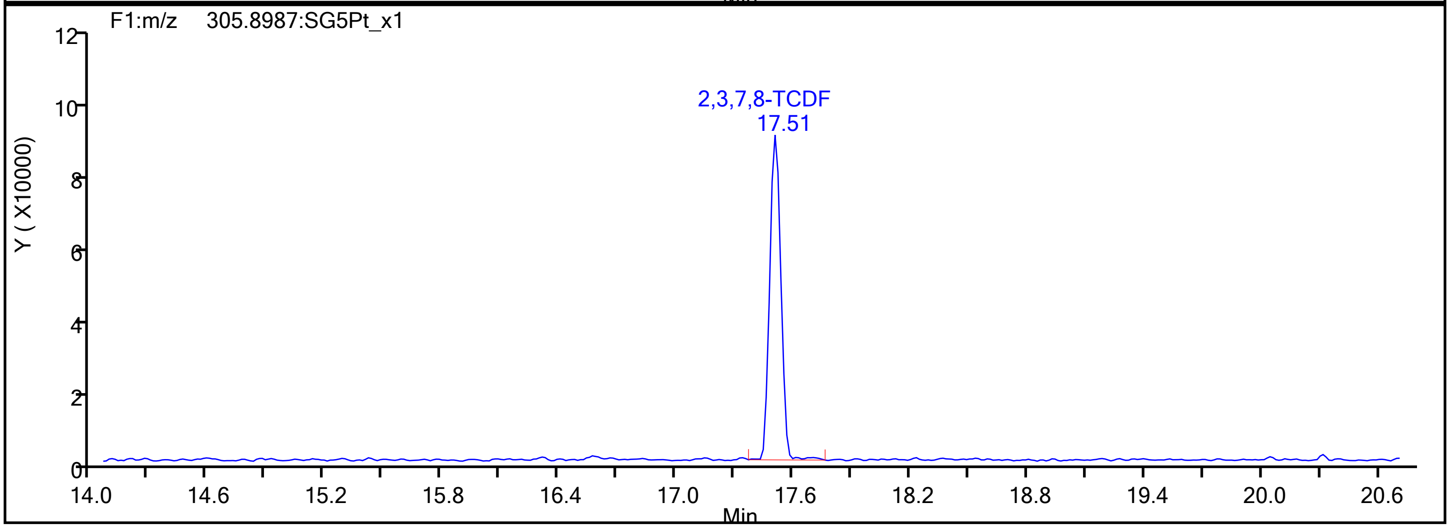

TCDF Interference Mass

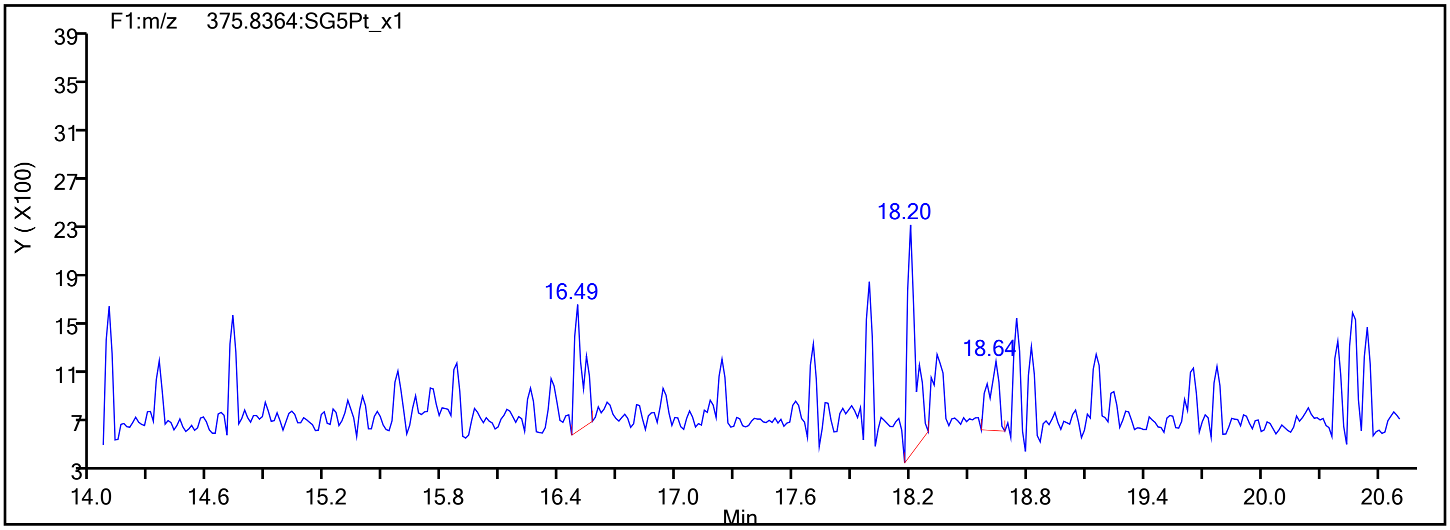

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

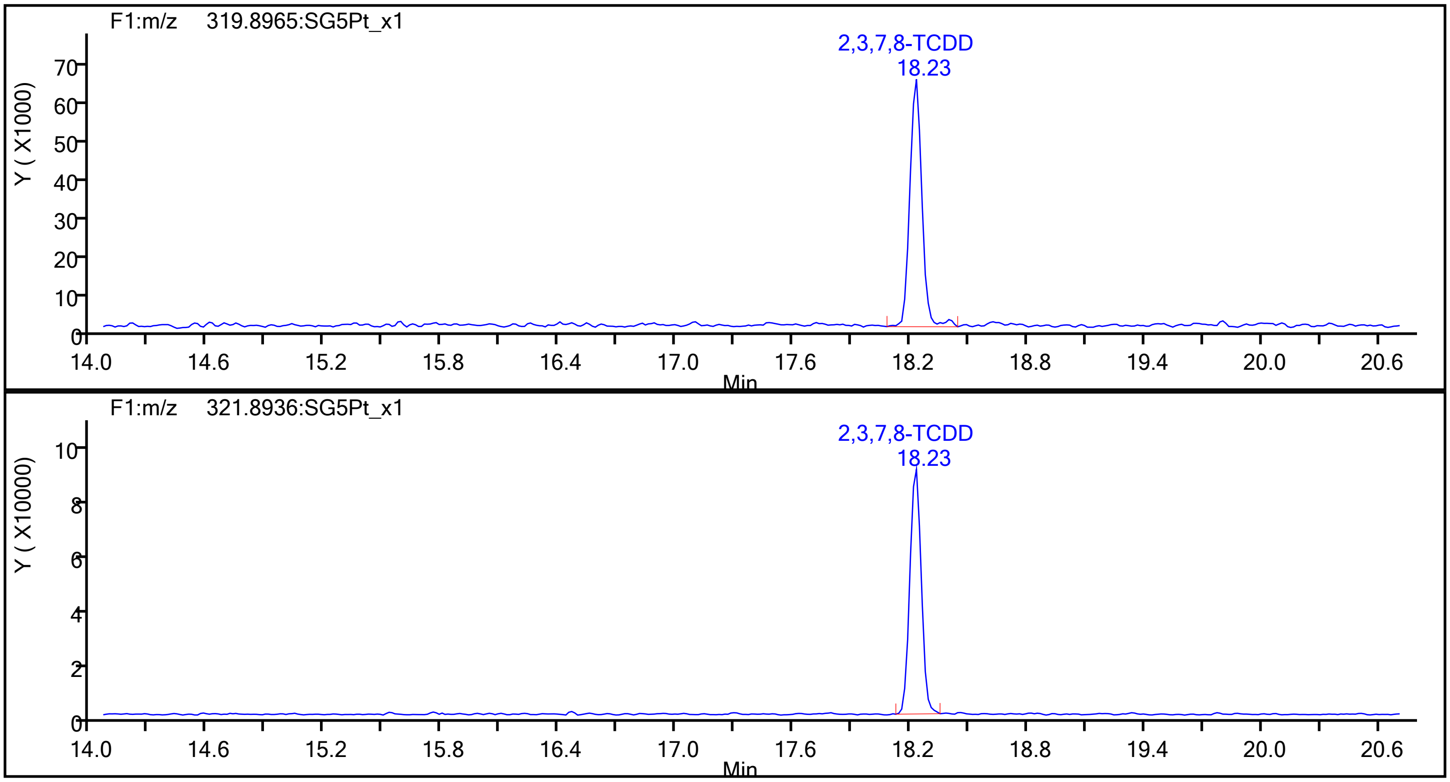

TCDD Standards

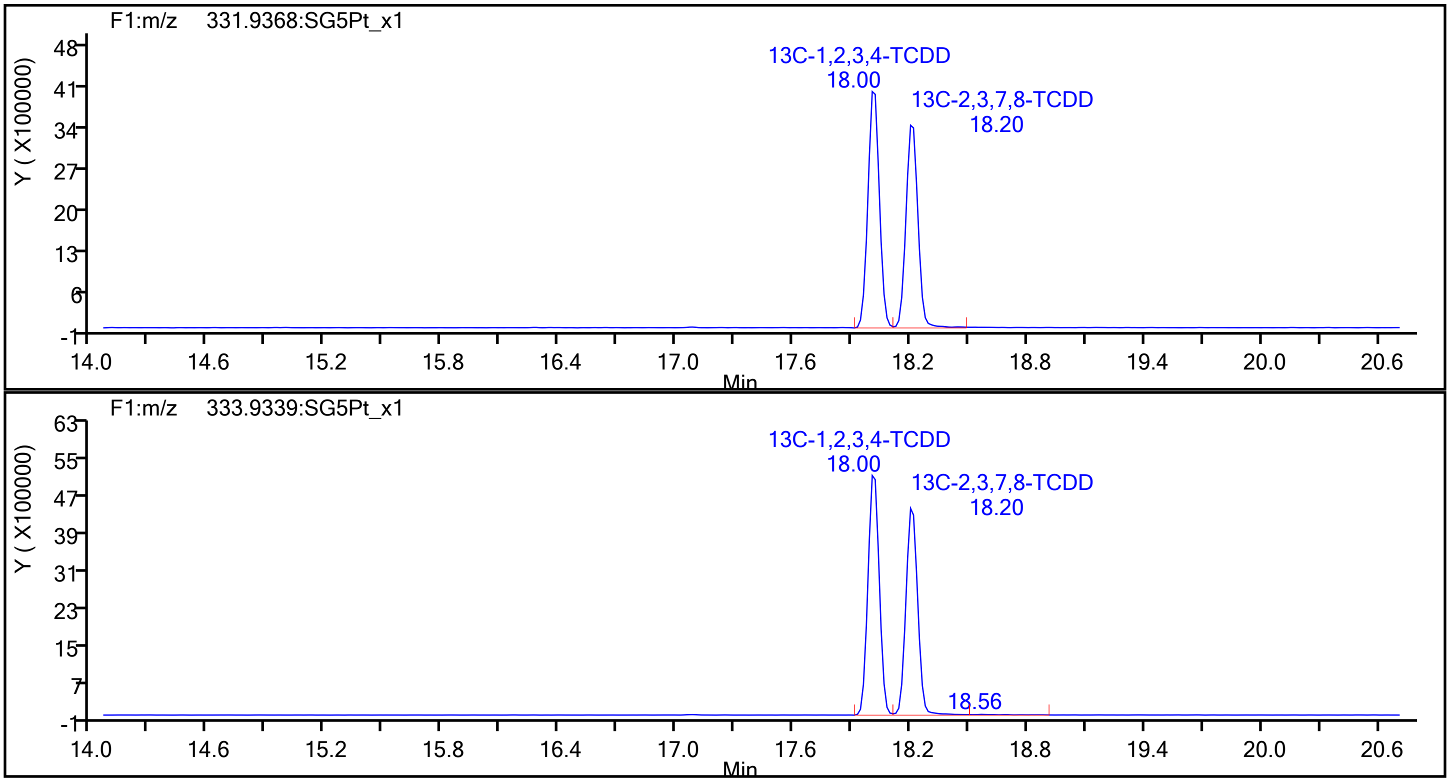

Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

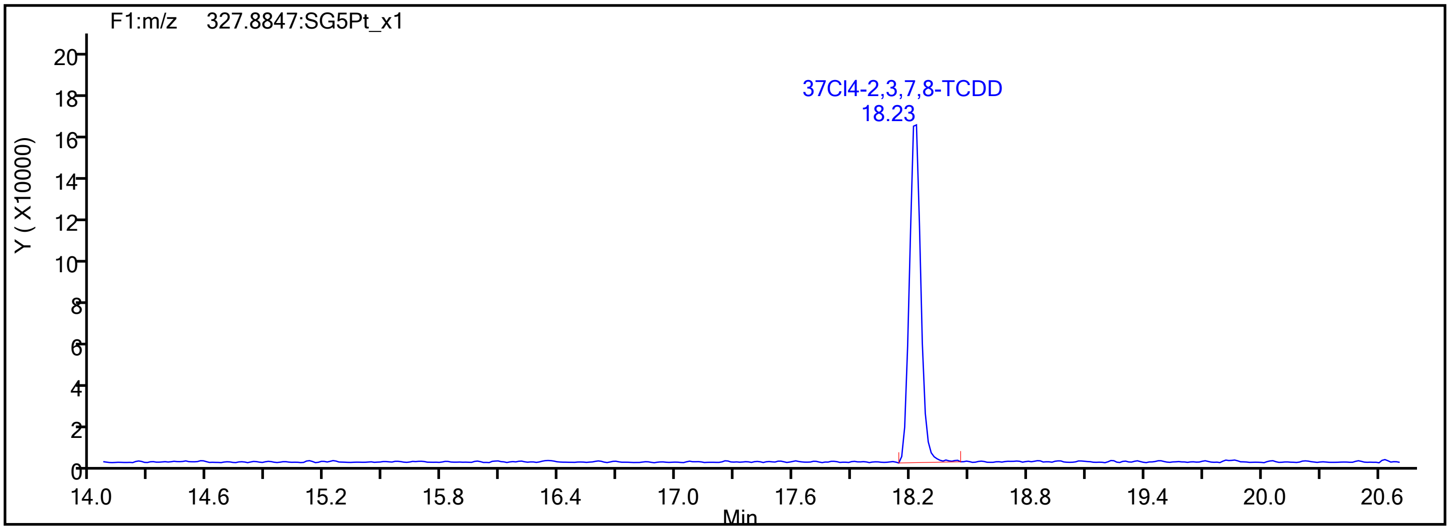

37Cl4-TCDD Standards

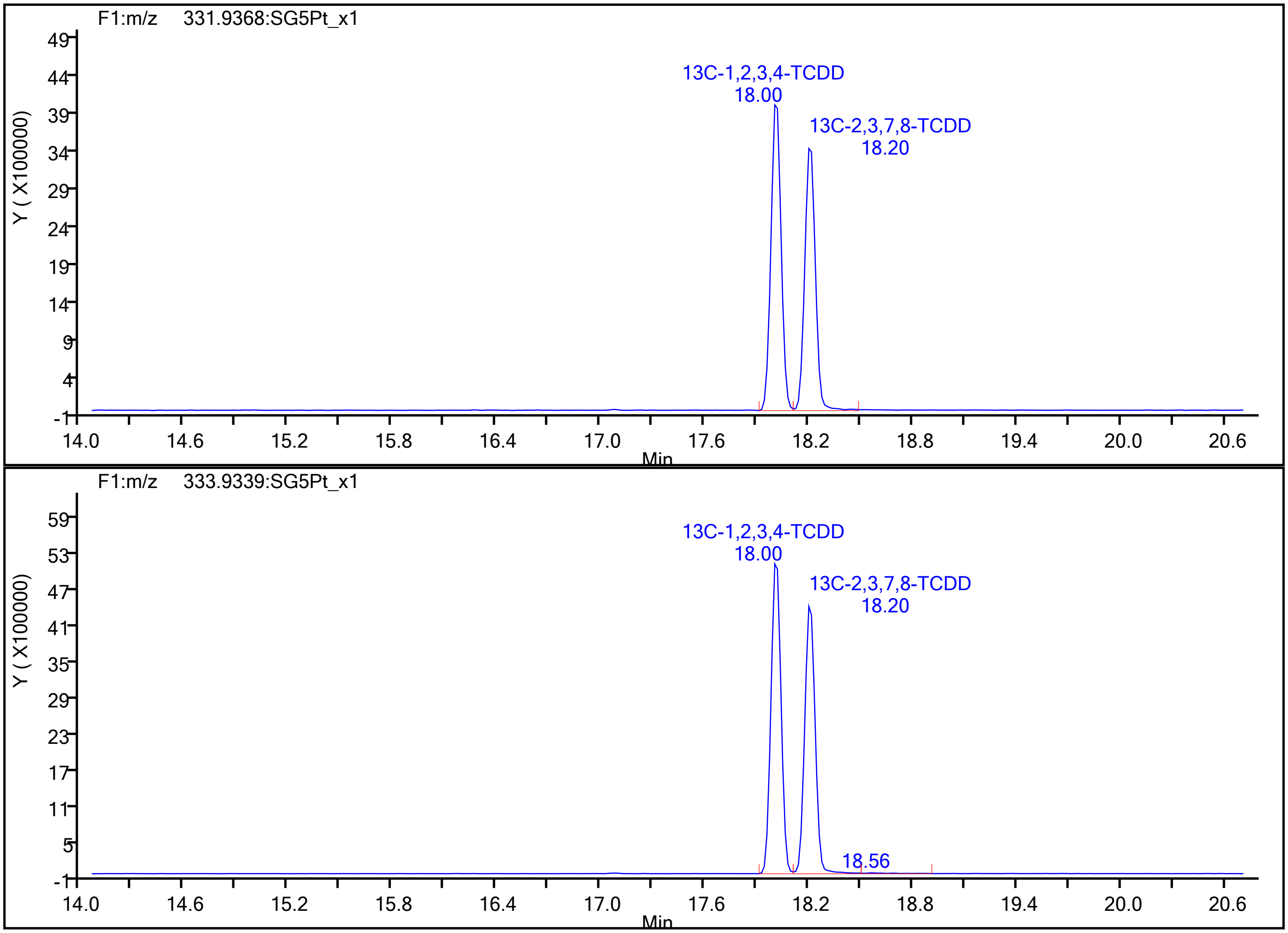

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Method: Dioxin_10D5
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Client ID:

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Sample Line#: 4

Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

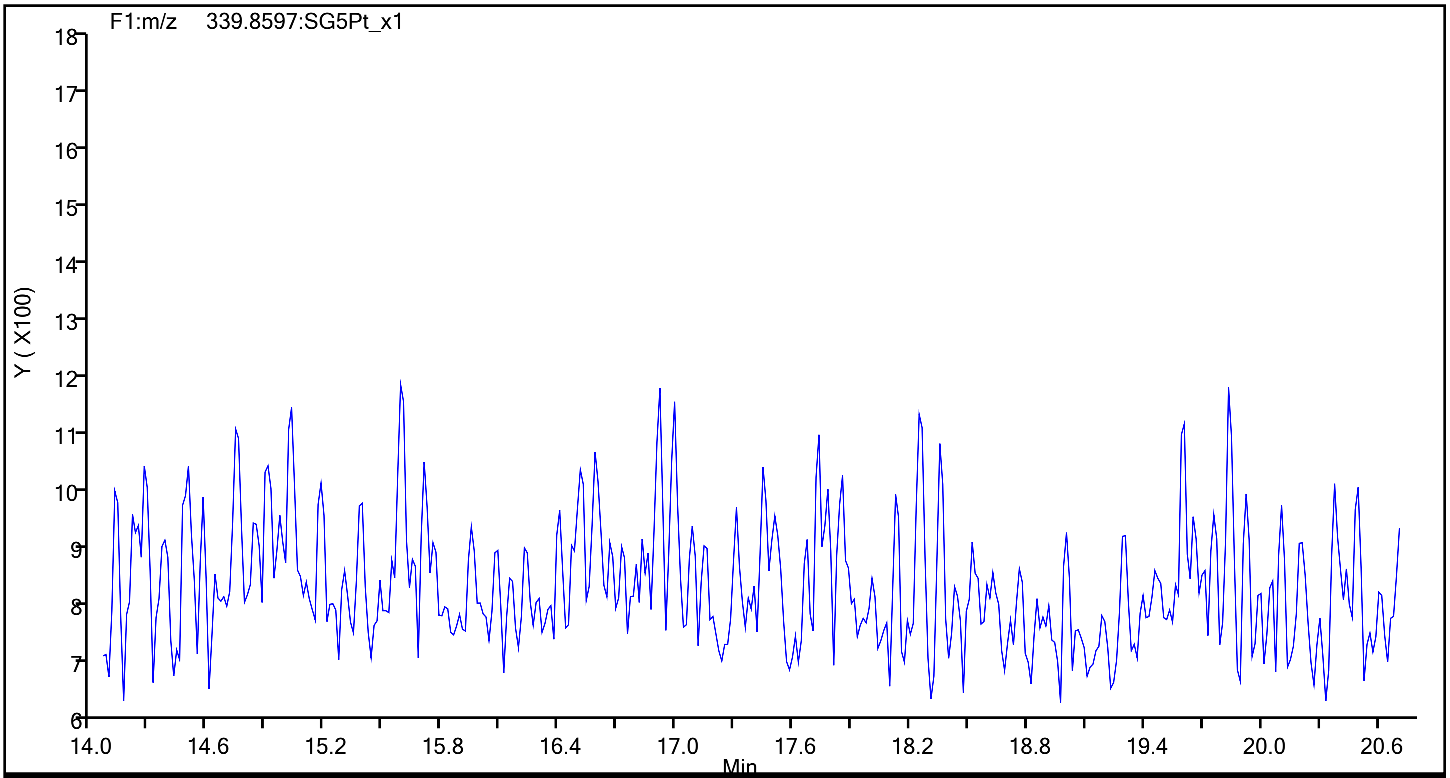

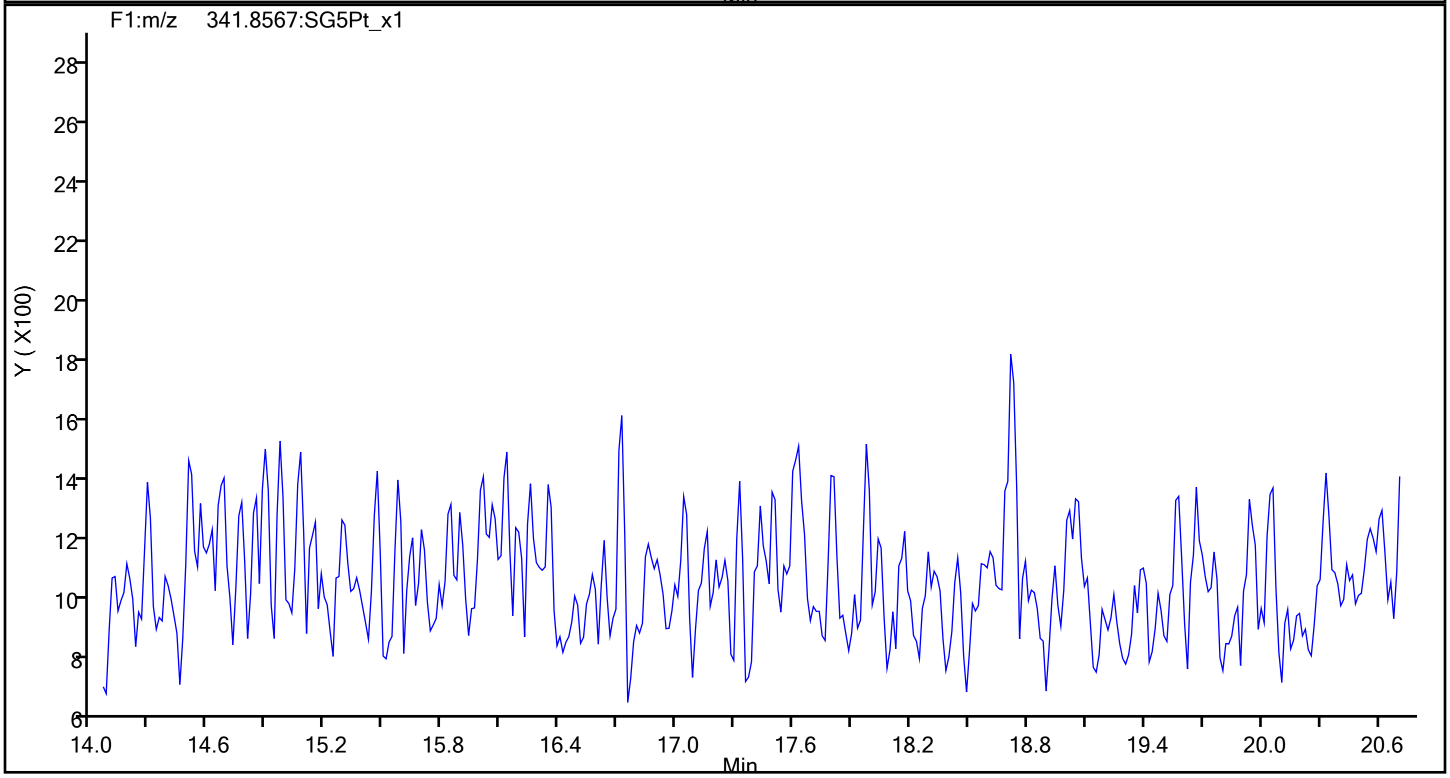

Eurofins TestAmerica, Sacramento

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Injection Date:	05-Mar-2020 17:47:56	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

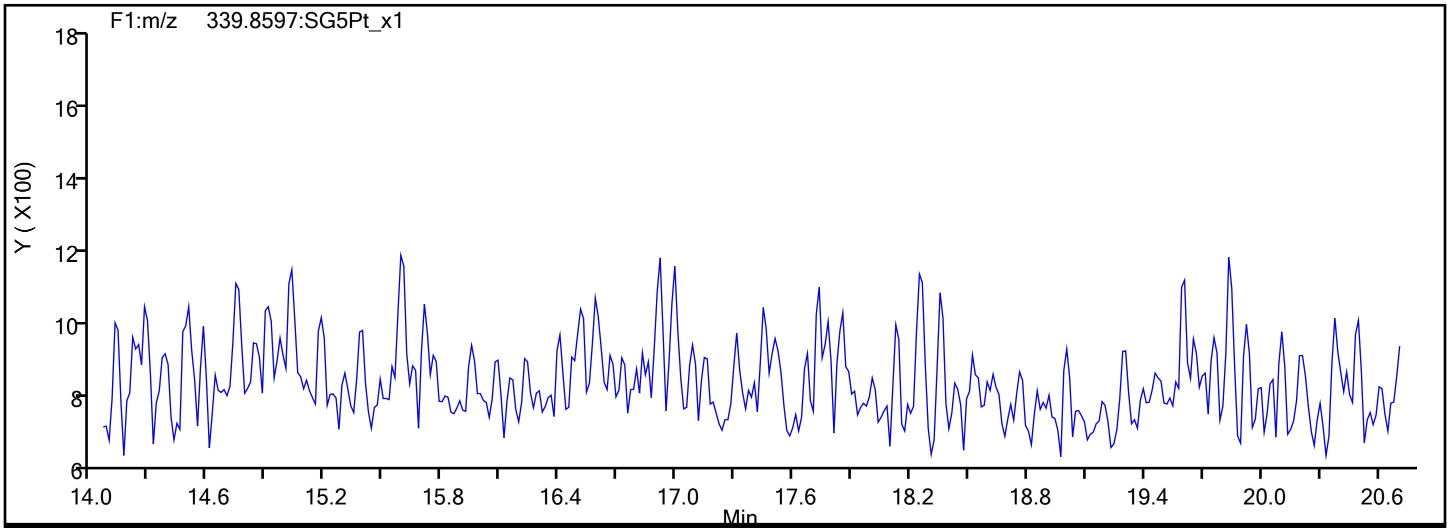

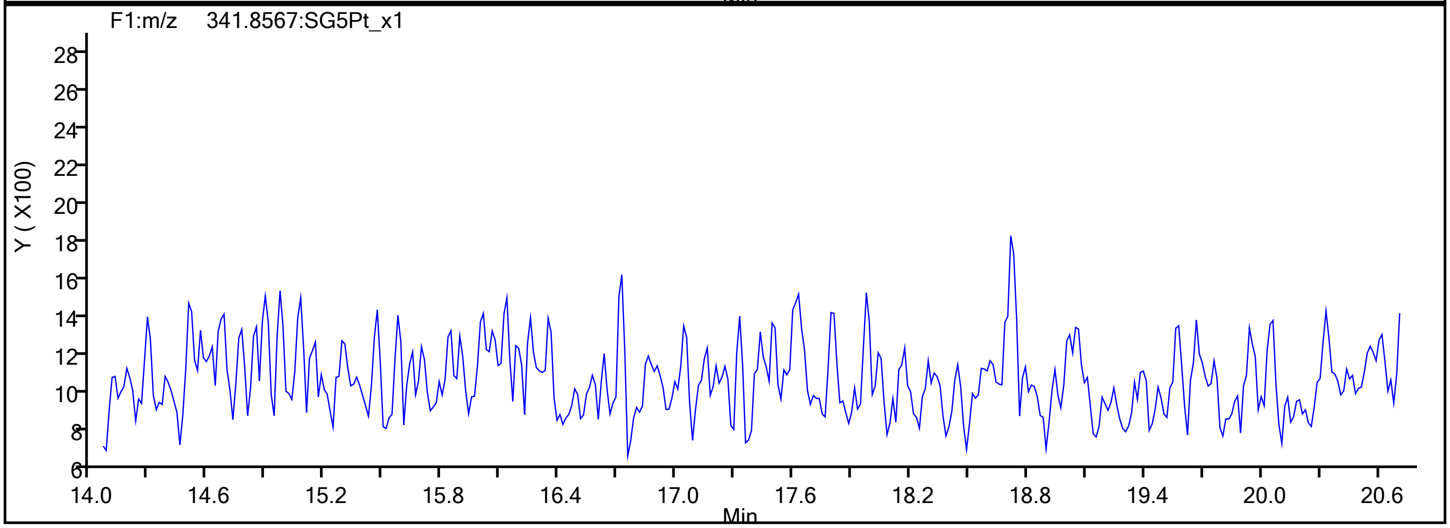

F1 PeCDFs Interference Mass

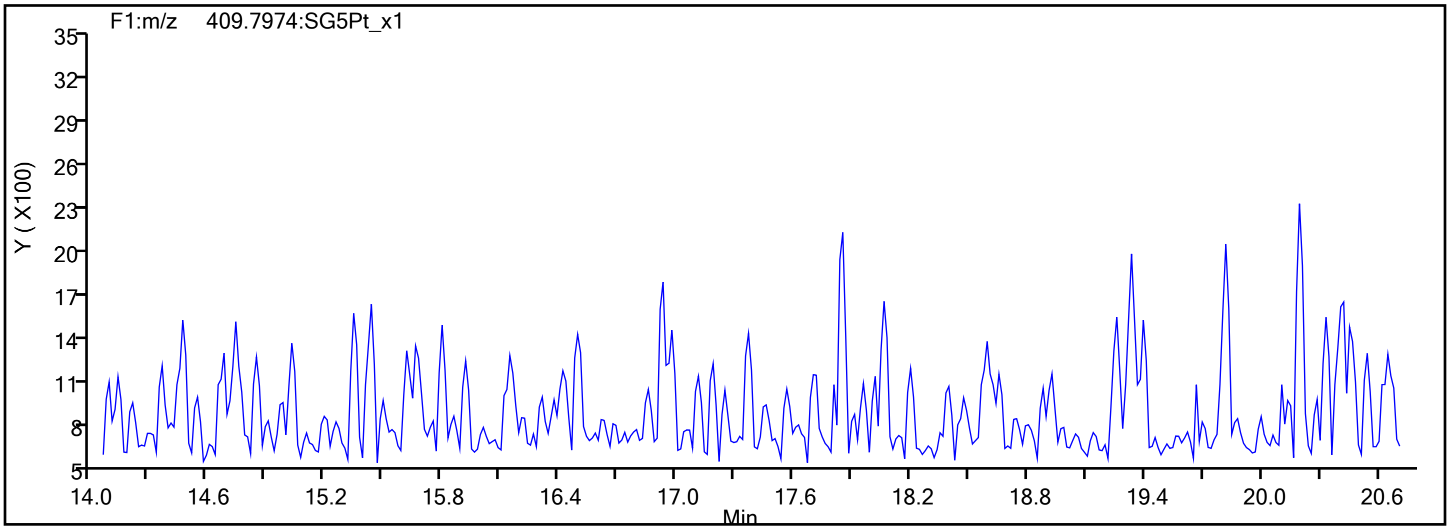

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Sample Line#: 4
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PeCDF

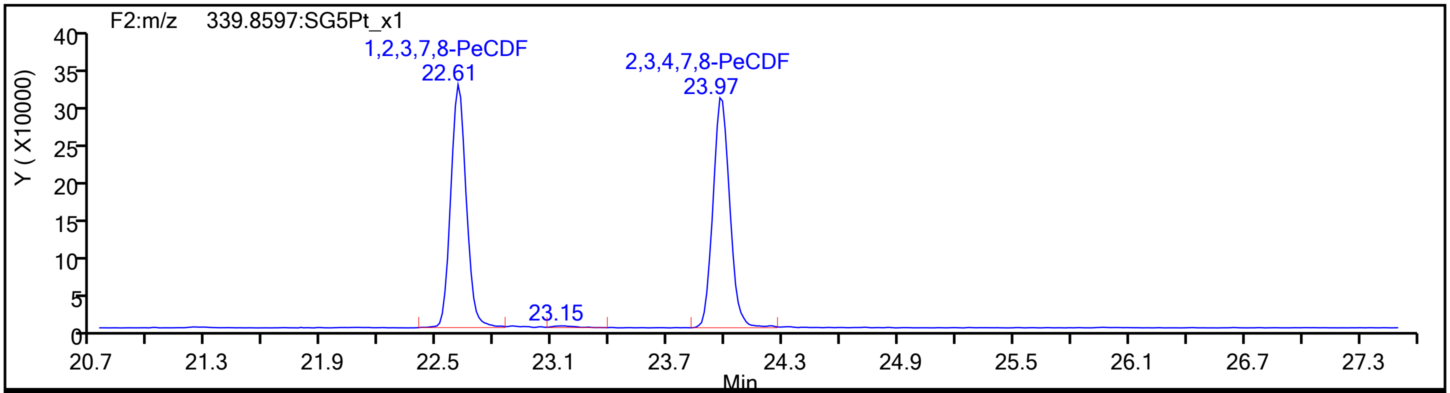

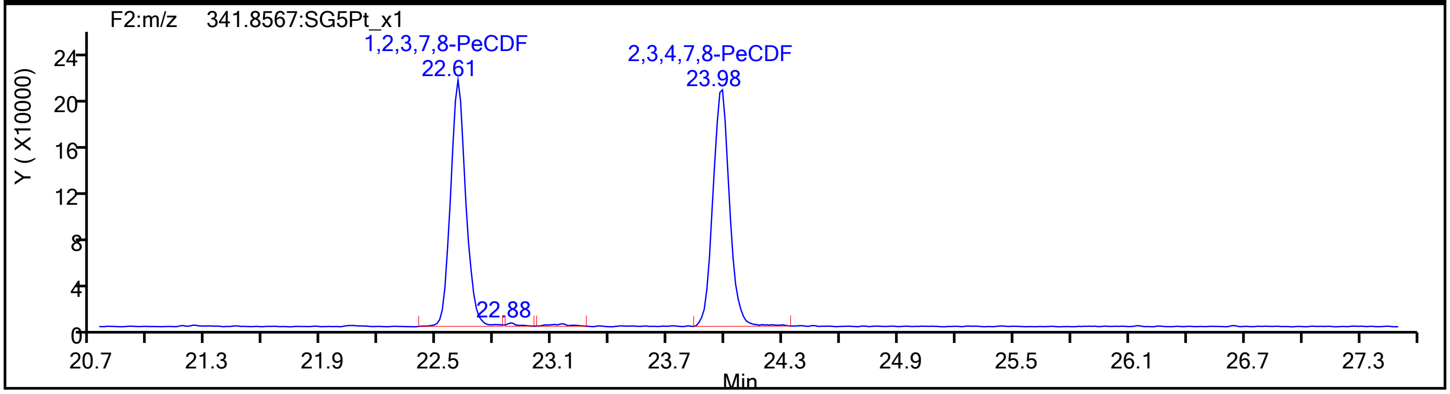

PeCDF Standards

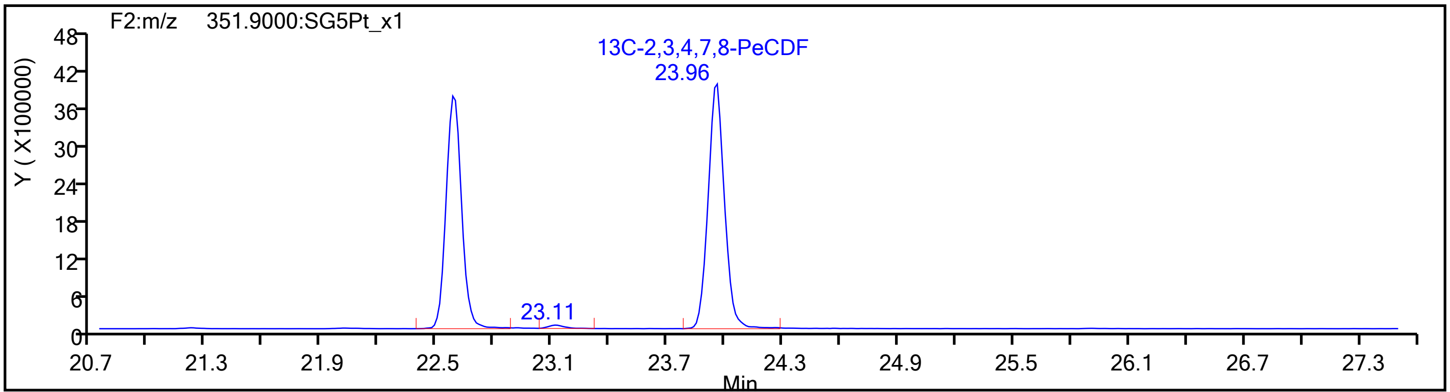

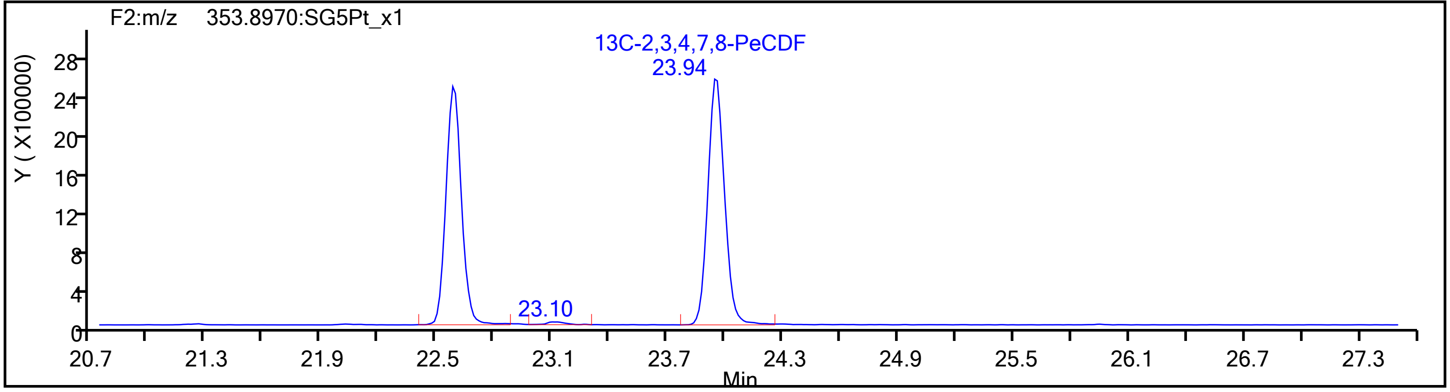

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Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

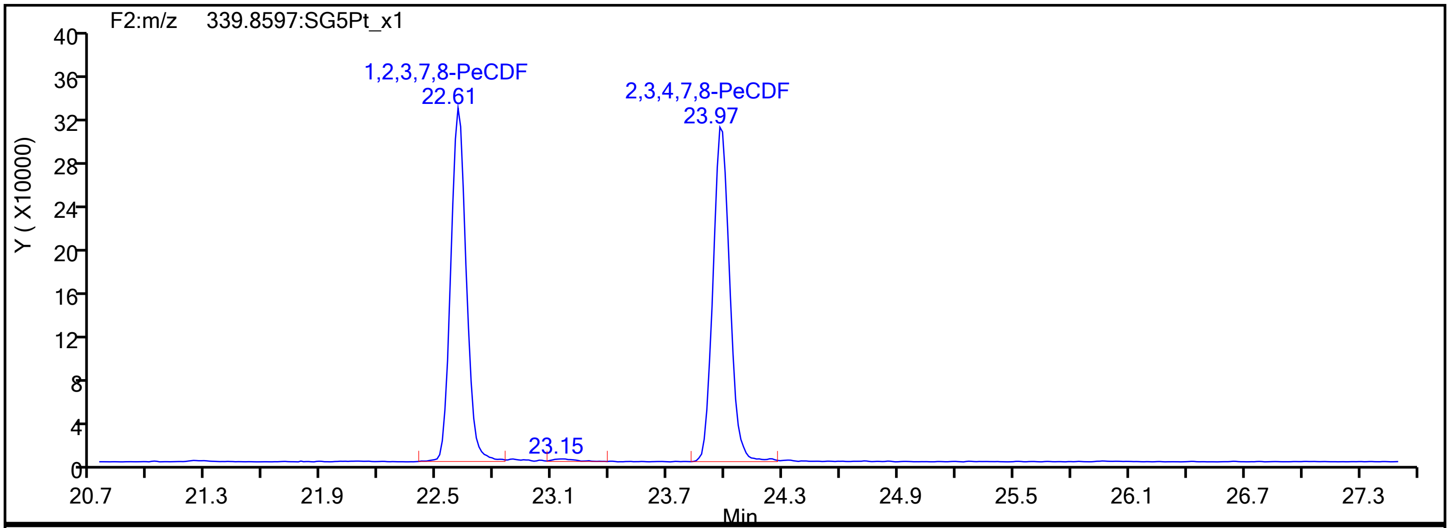

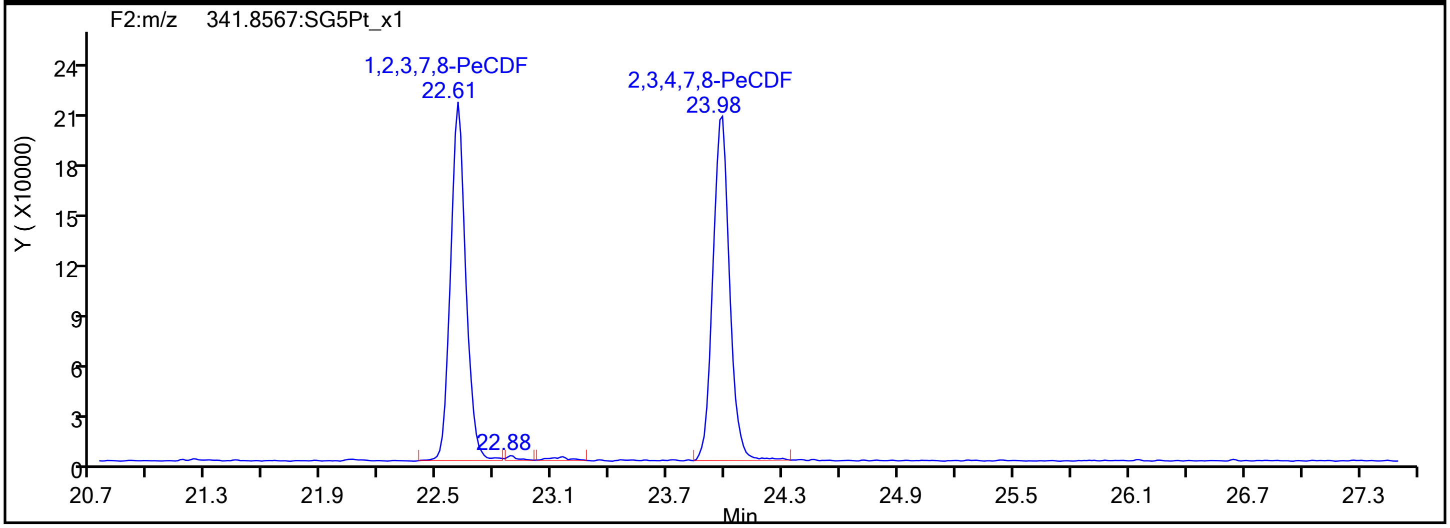

PeCDF Interference Mass

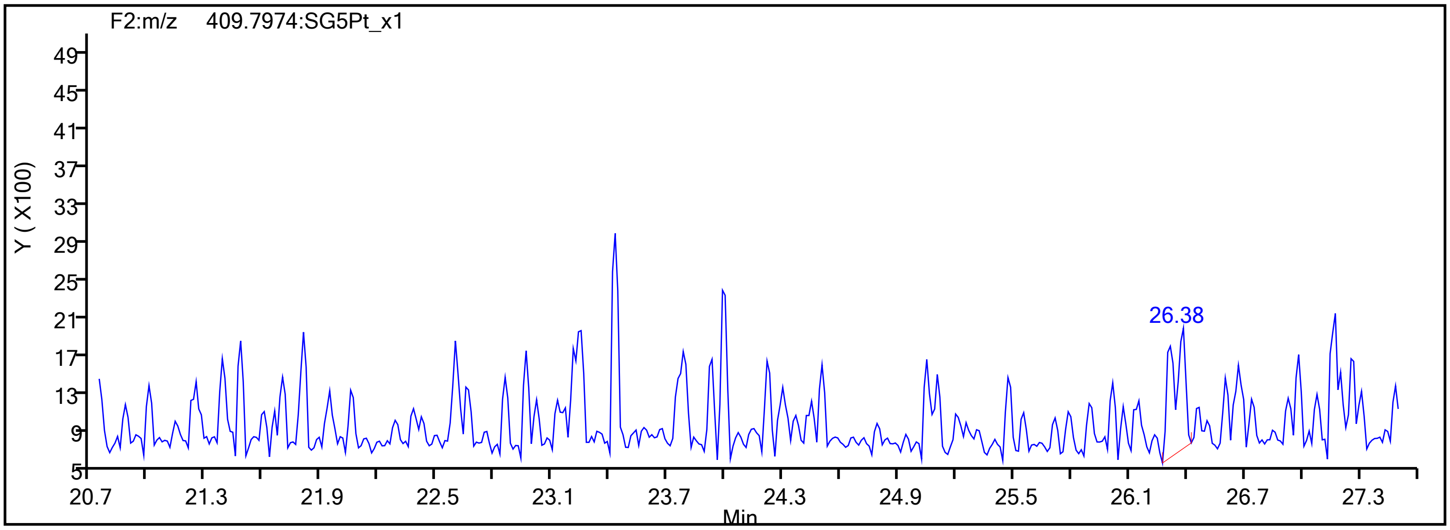

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 17:47:56
Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
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Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

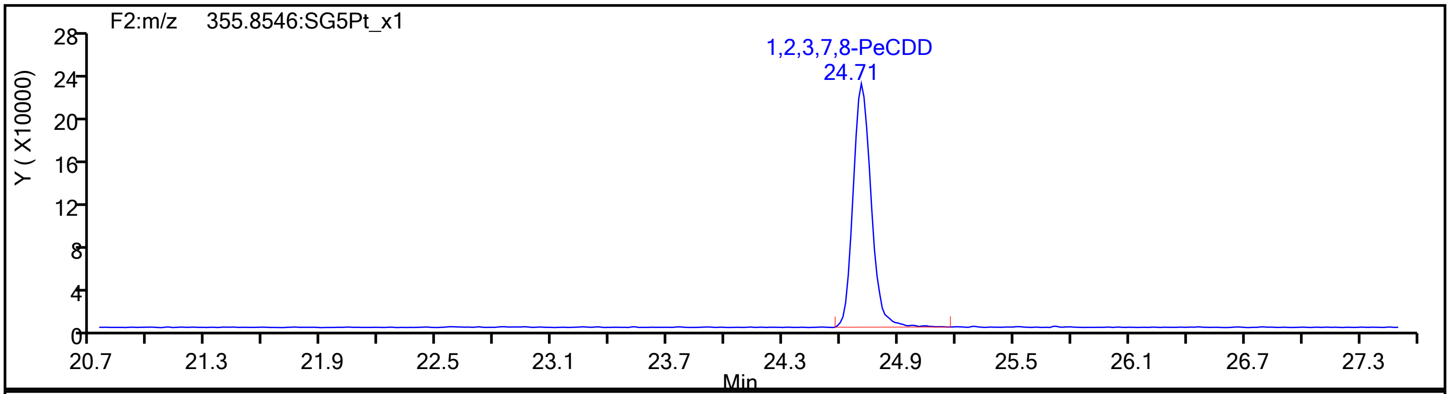

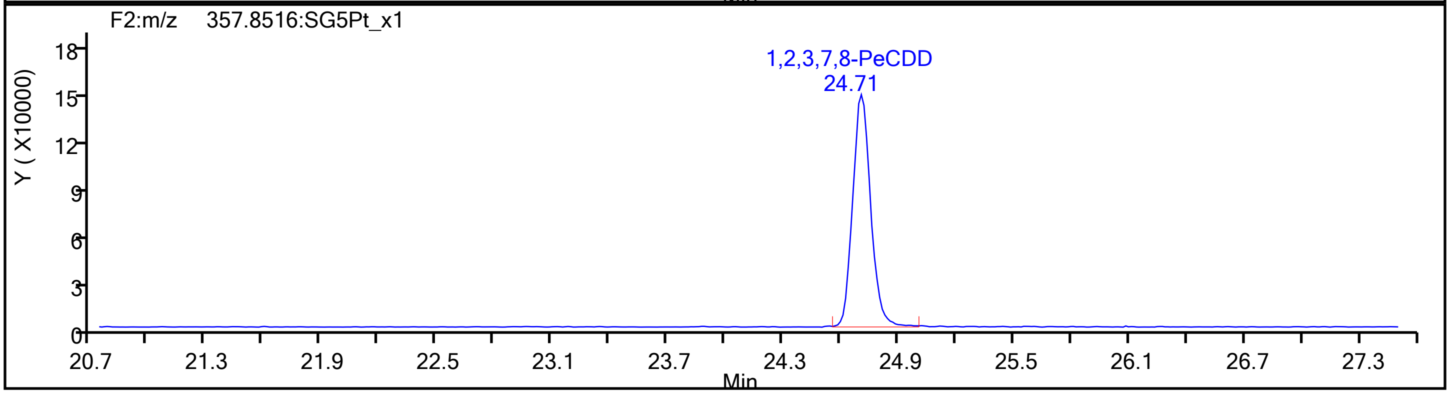

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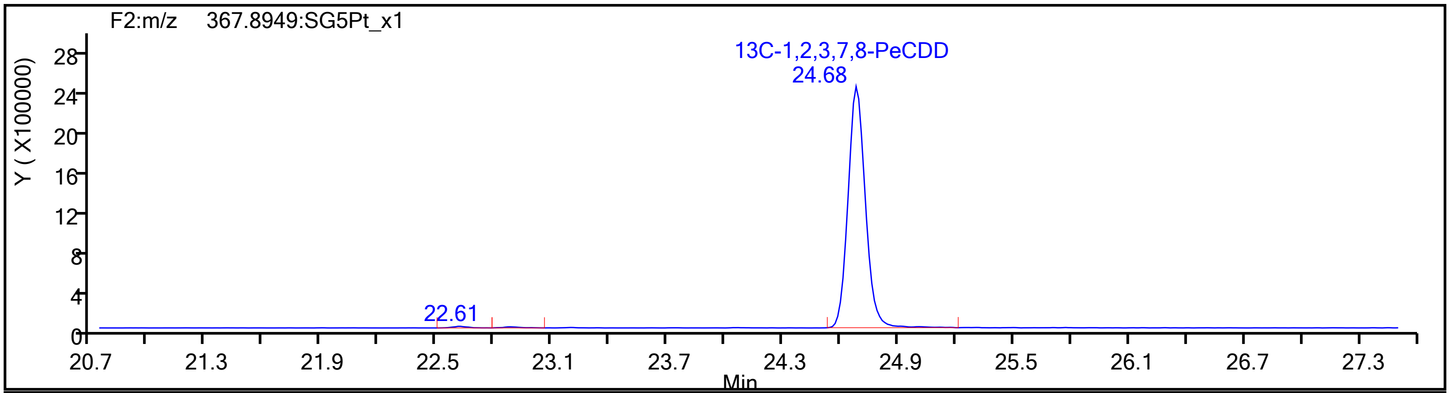

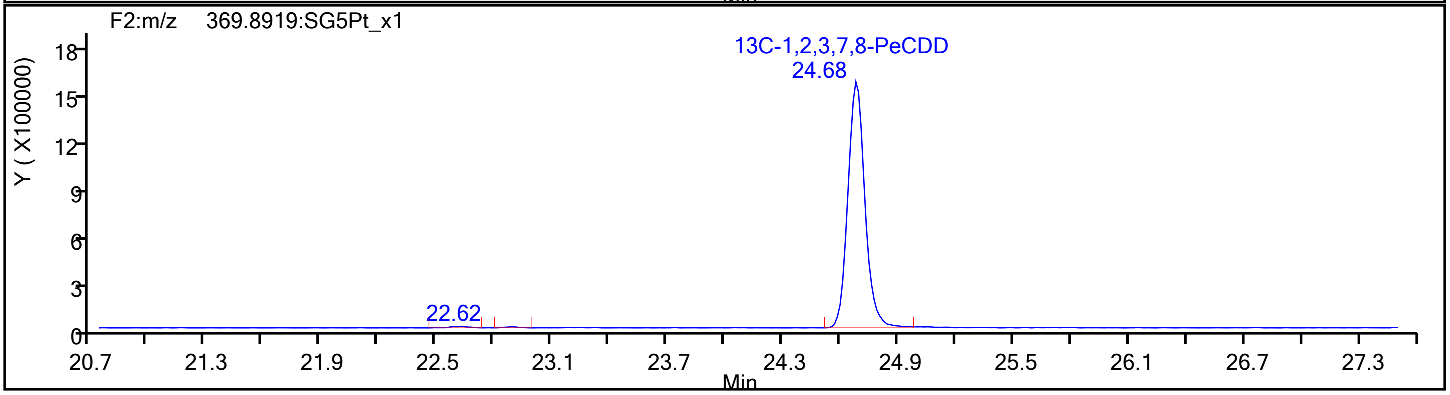

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 17:47:56
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Operator ID: AJS
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Client ID:
Worklist#: 362307
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

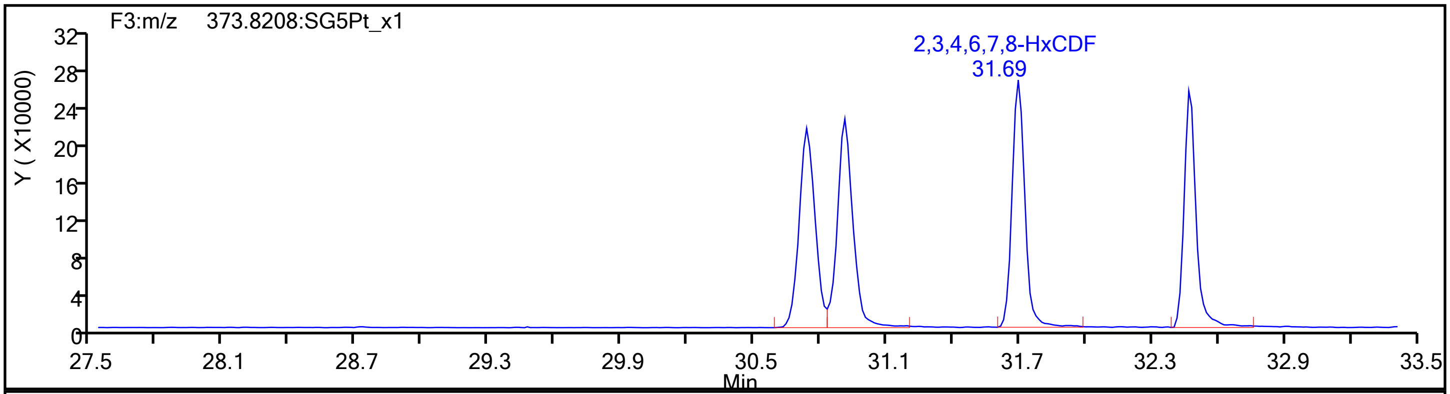

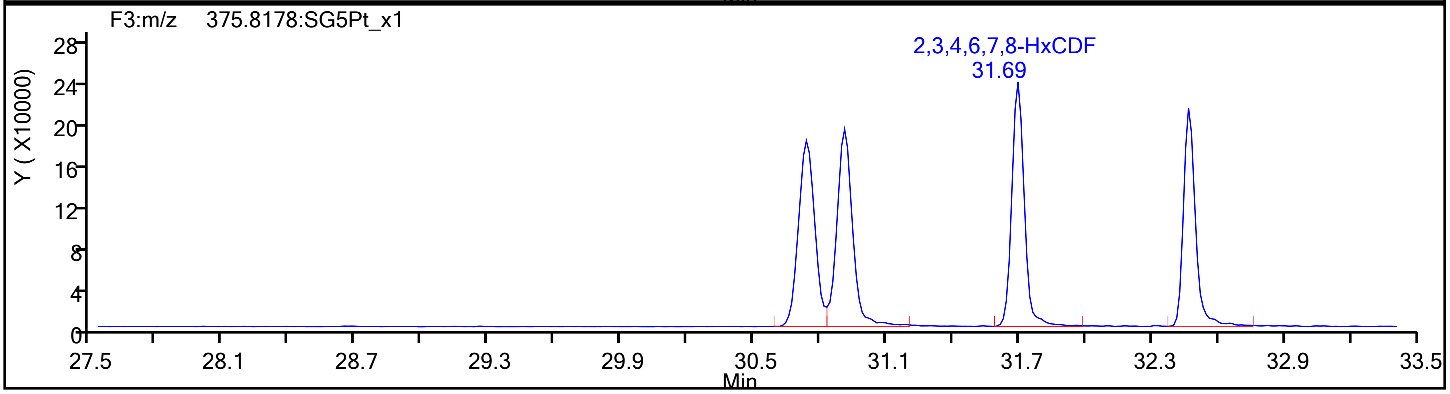

HxCDF Standards

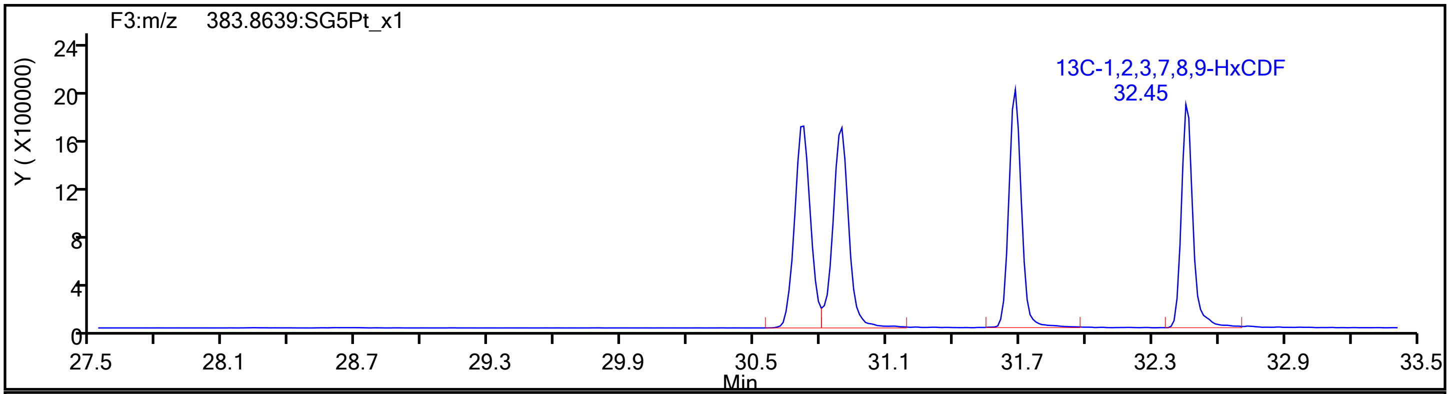

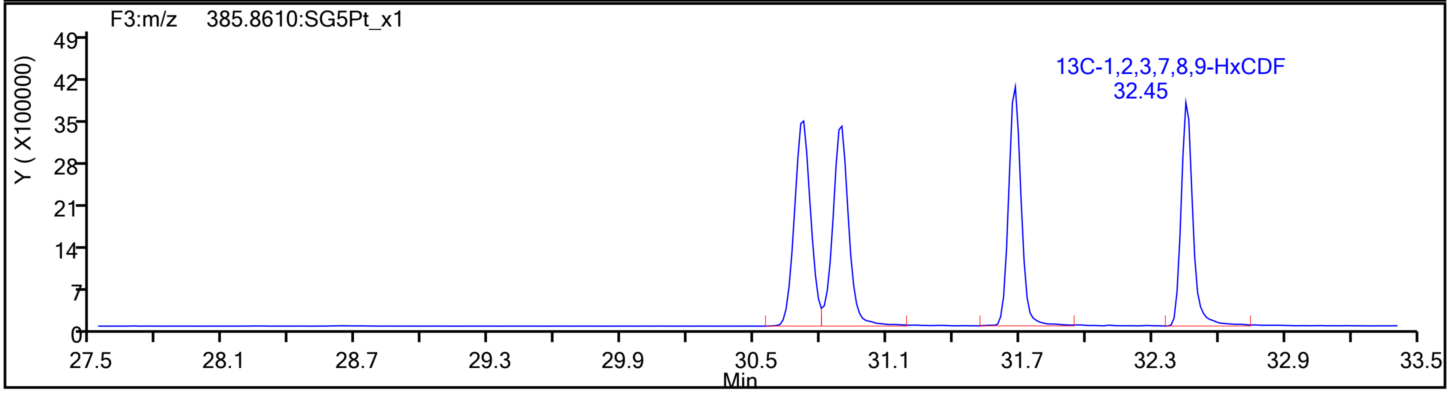

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HxCDF

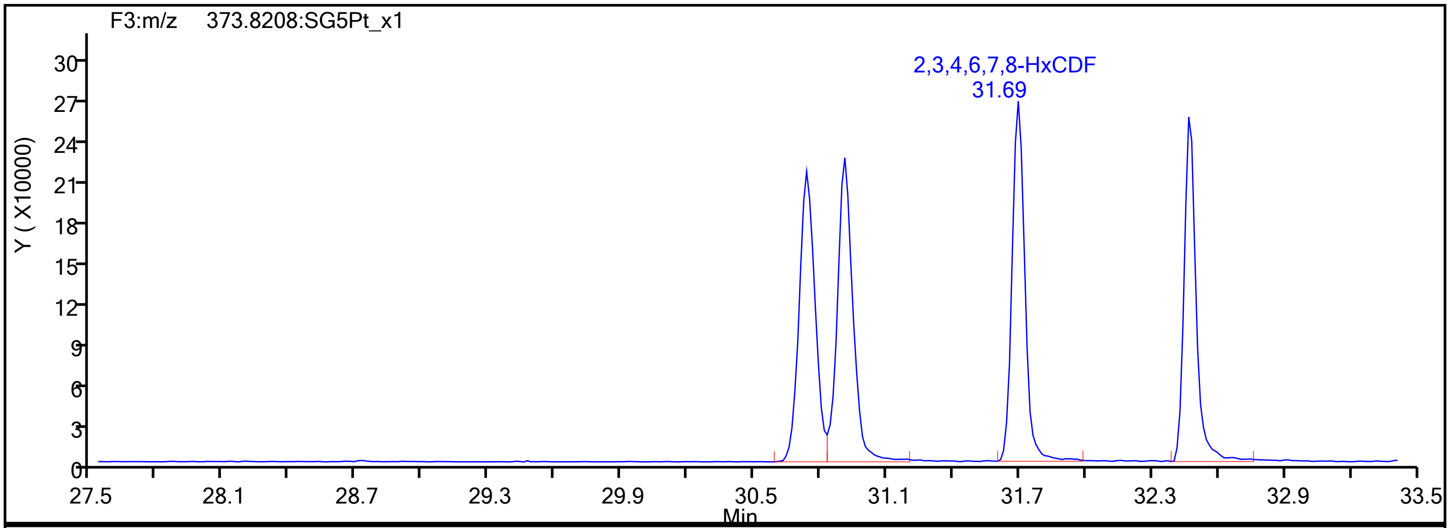

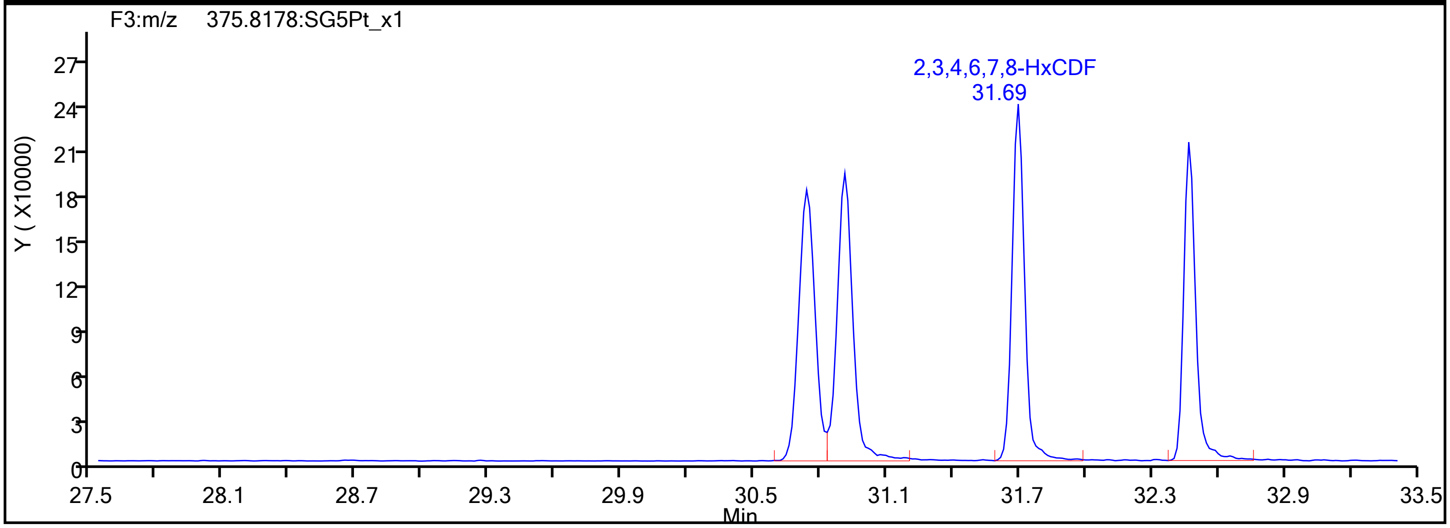

HxCDF Interference Mass

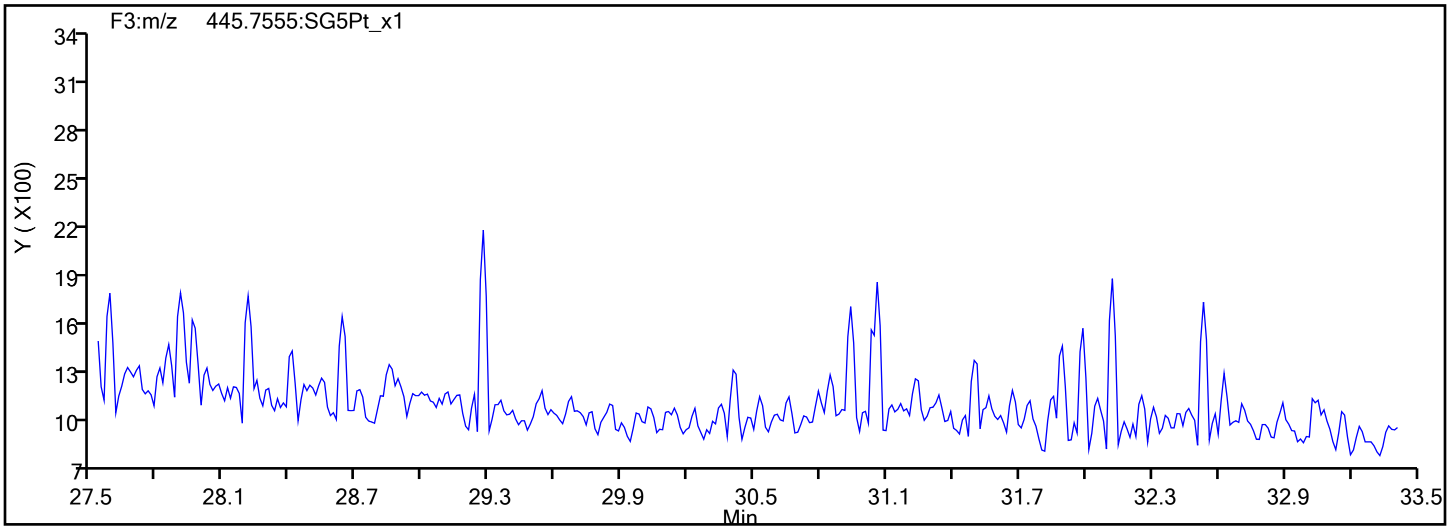

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Eurofins TestAmerica, Sacramento

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HxCDD

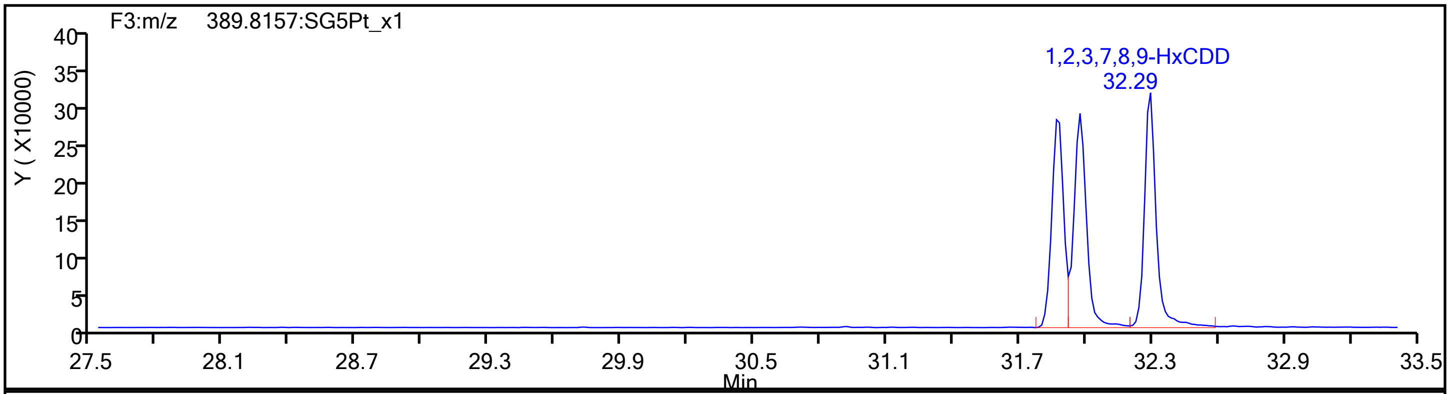

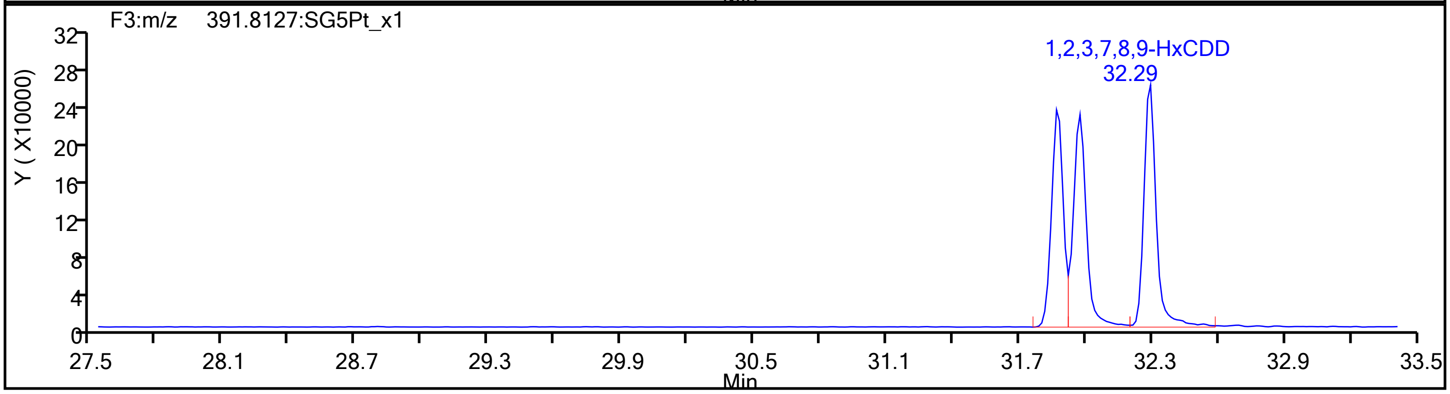

HxCDD Standards

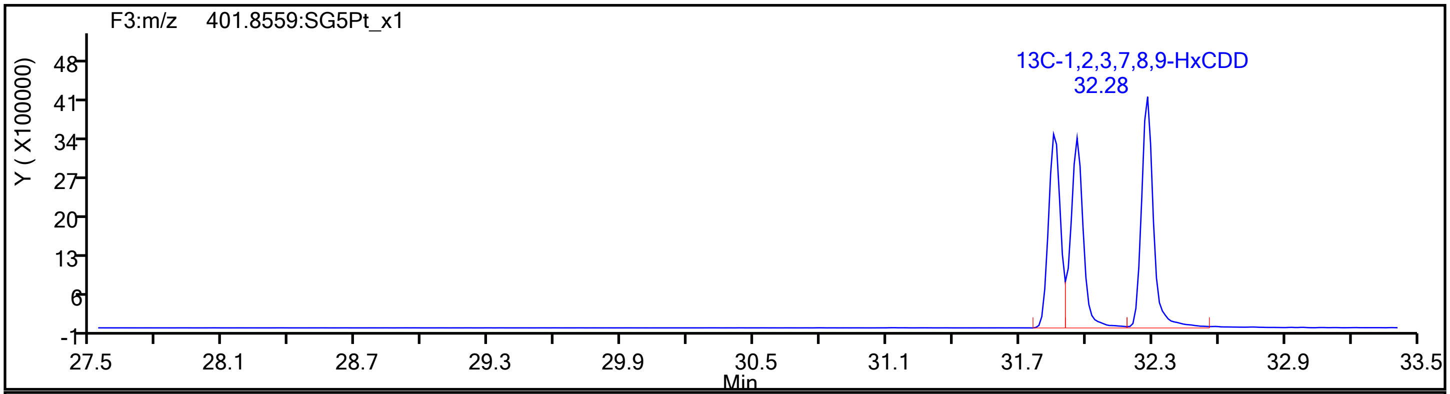

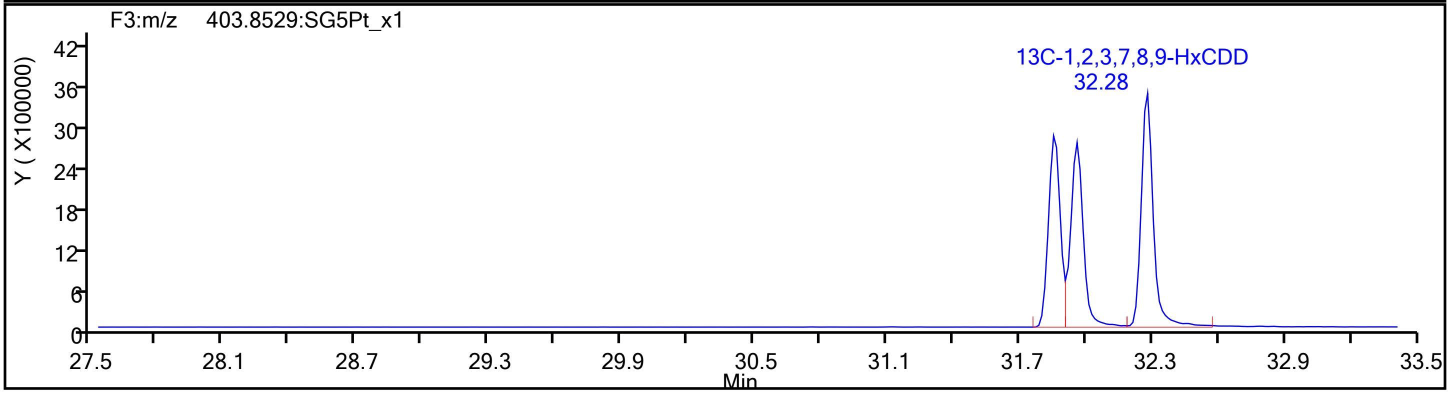

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul
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Operator ID: AJS
Method: Dioxin_10D5
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Column Dia: 0.32 mm

HpCDF

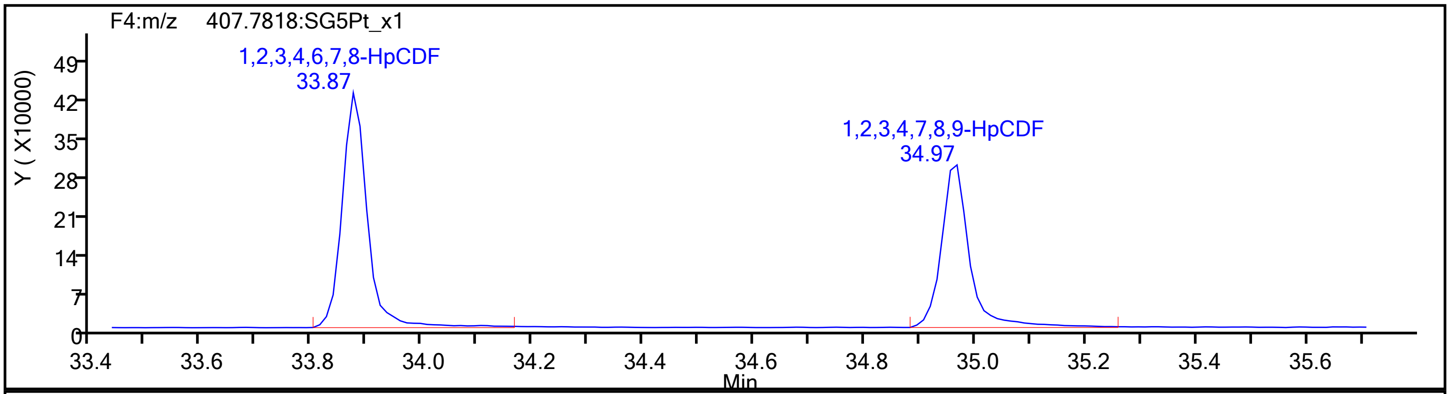

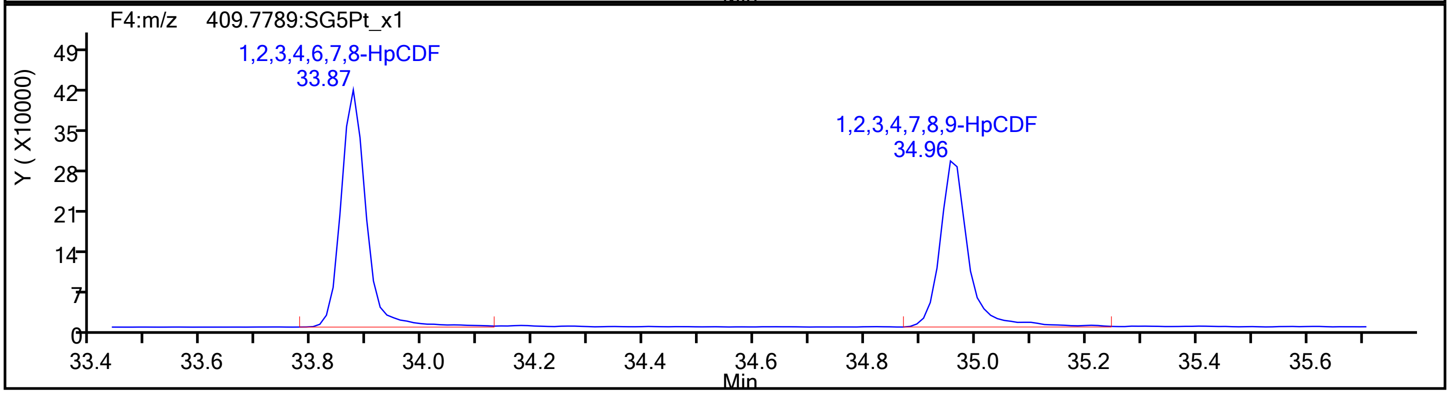

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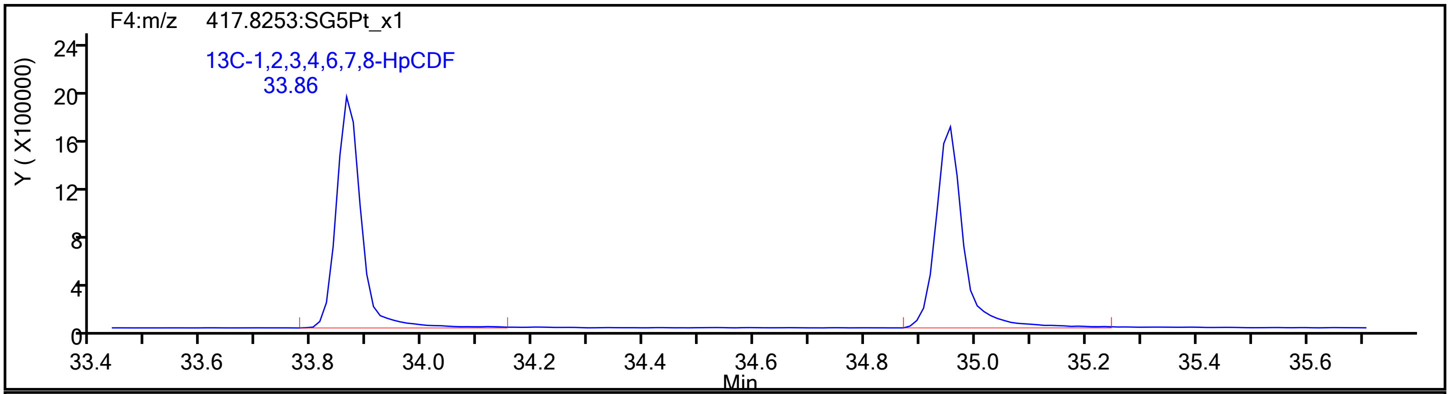

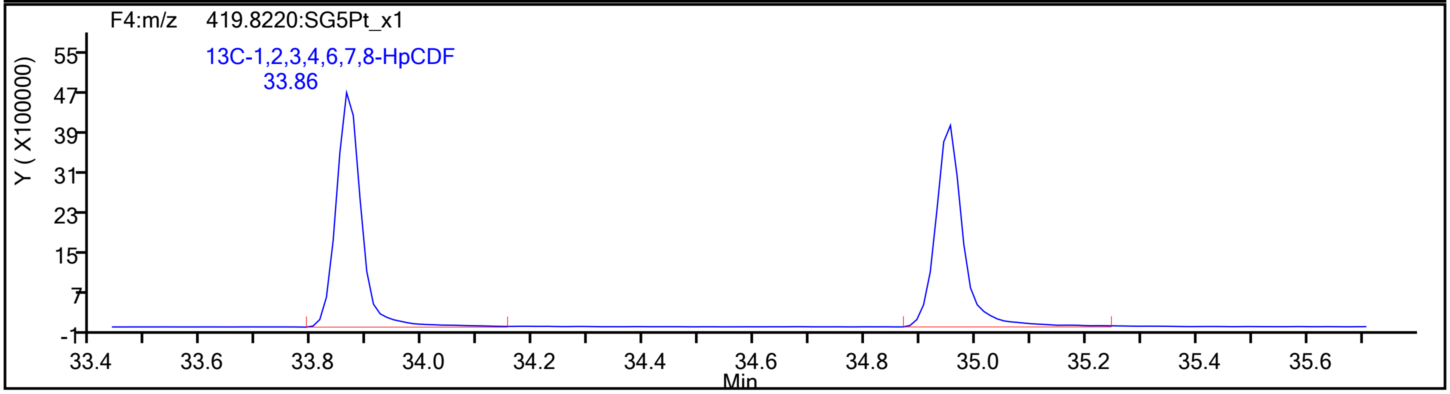

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d		
Injection Date:	05-Mar-2020 17:47:56	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

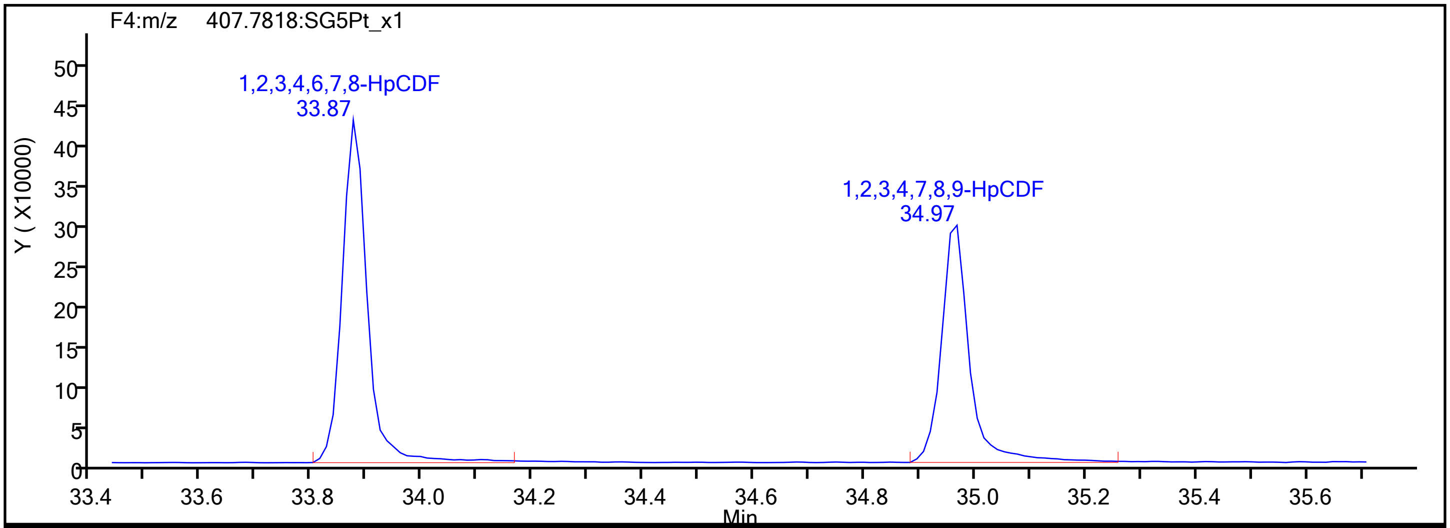

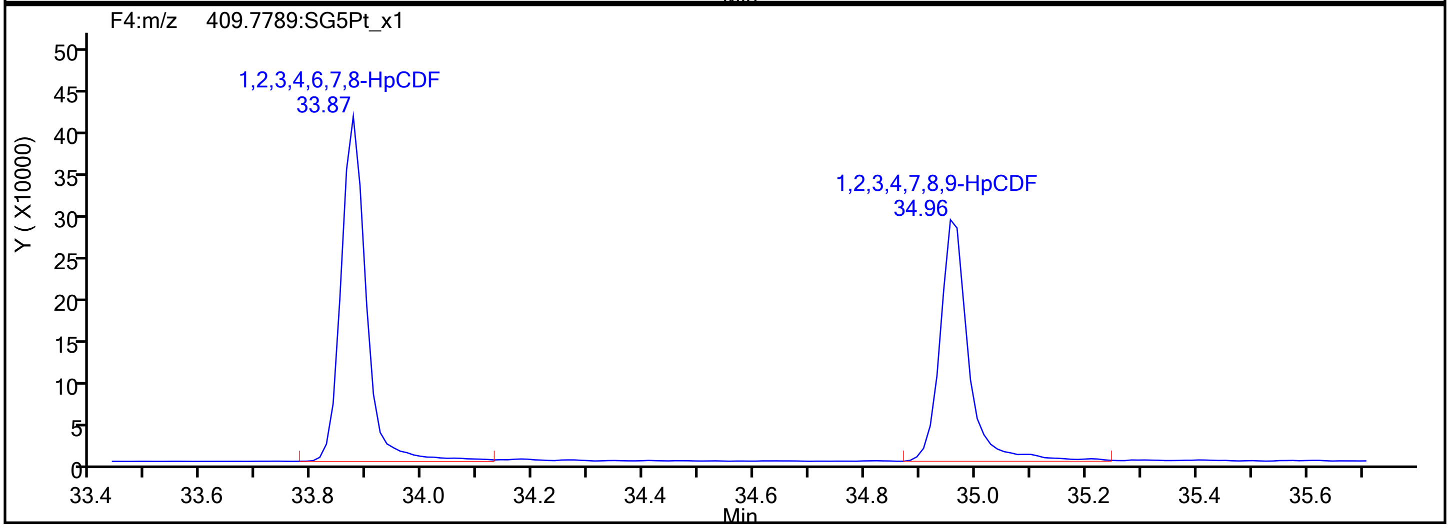

HpCDF Interference Mass

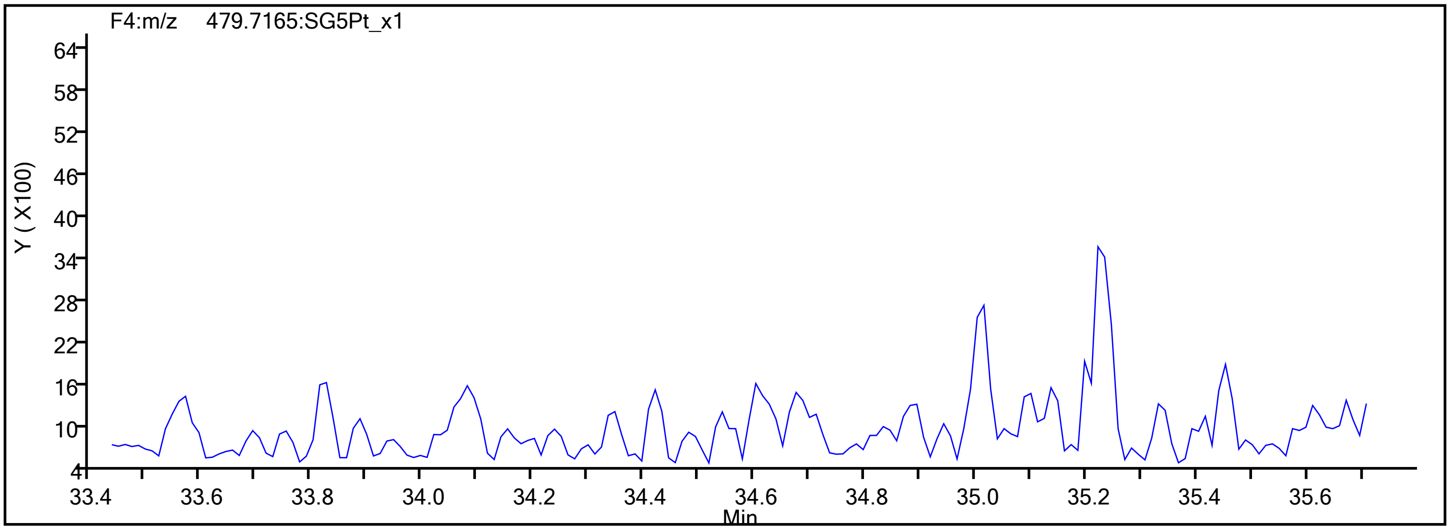

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d		
Injection Date:	05-Mar-2020 17:47:56	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

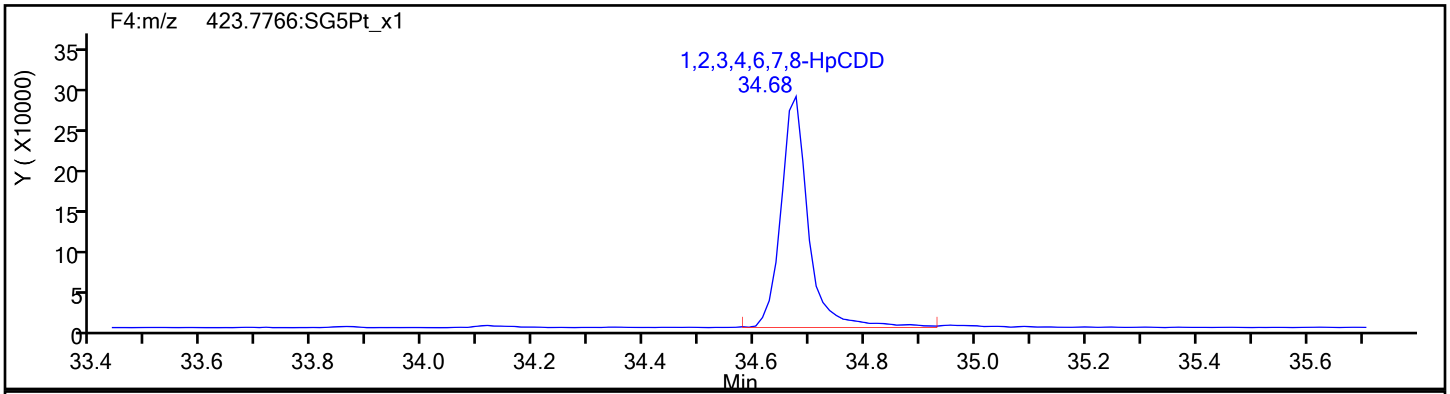

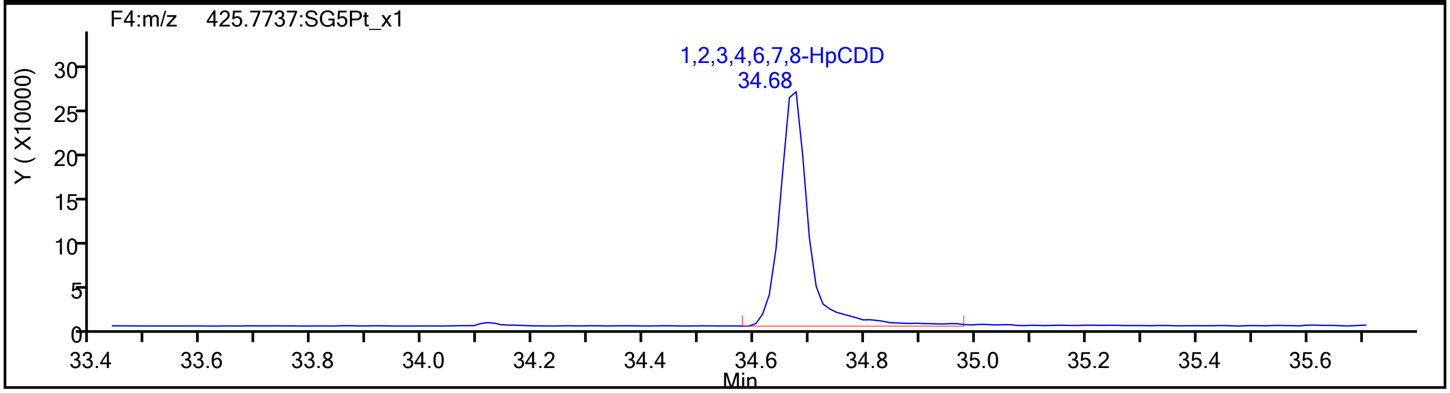

HpCDD Standards

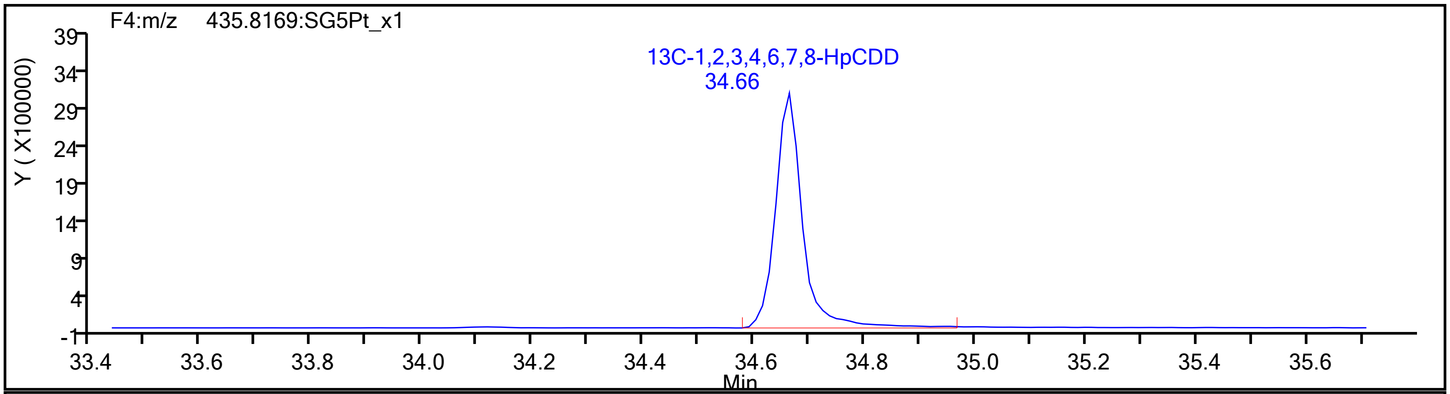

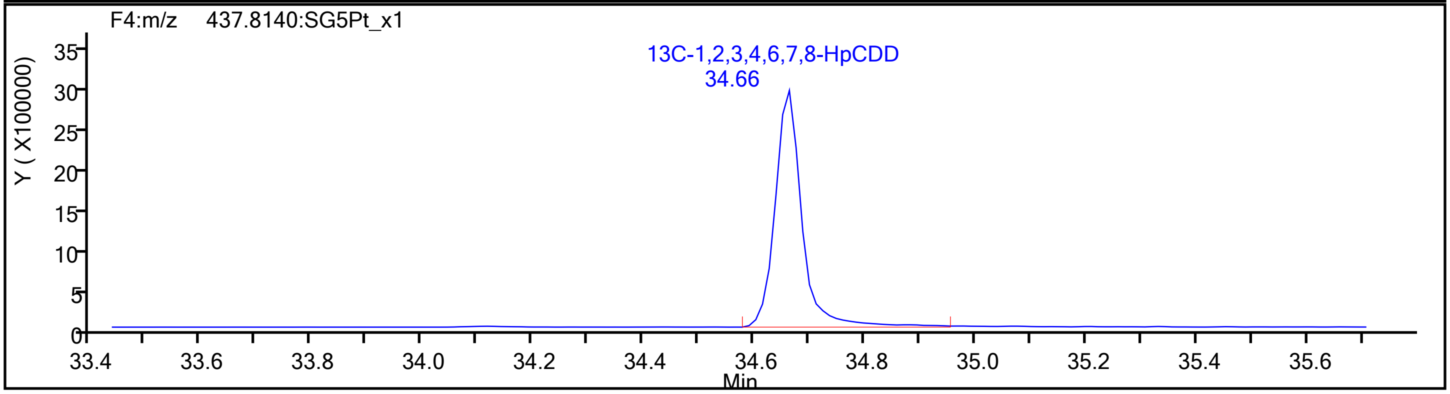

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d
Injection Date: 05-Mar-2020 17:47:56 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

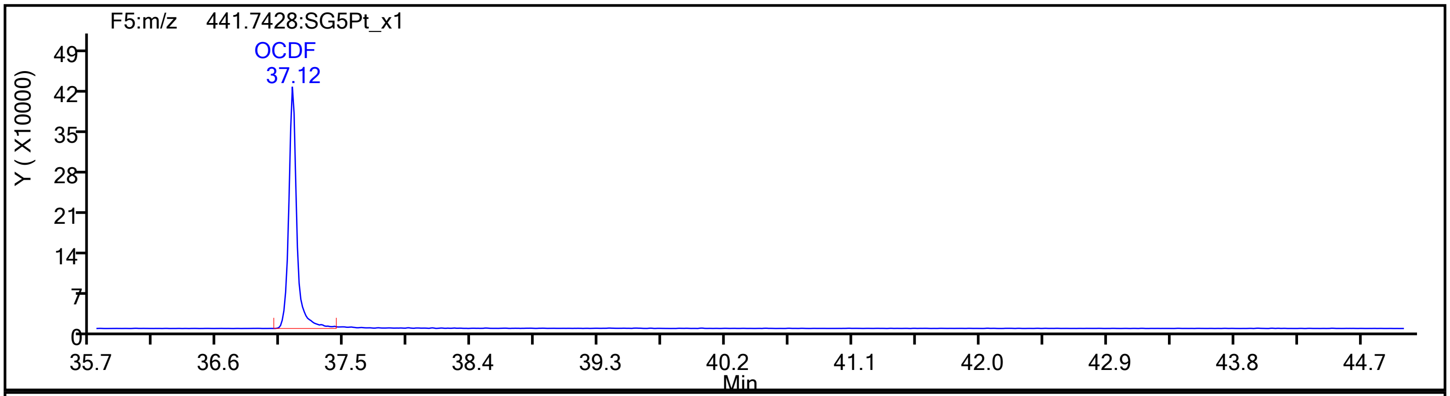

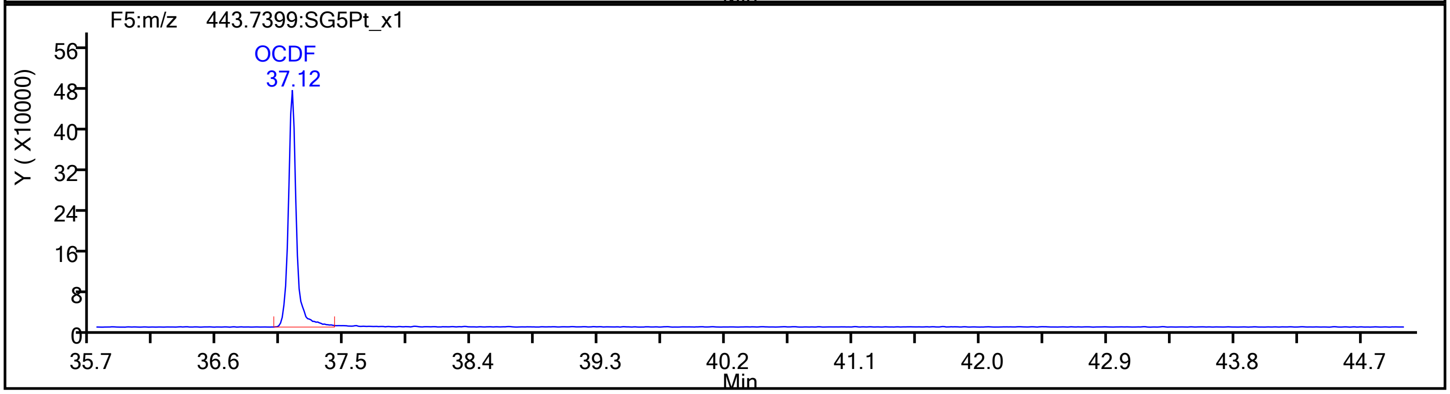

OCDF Standards

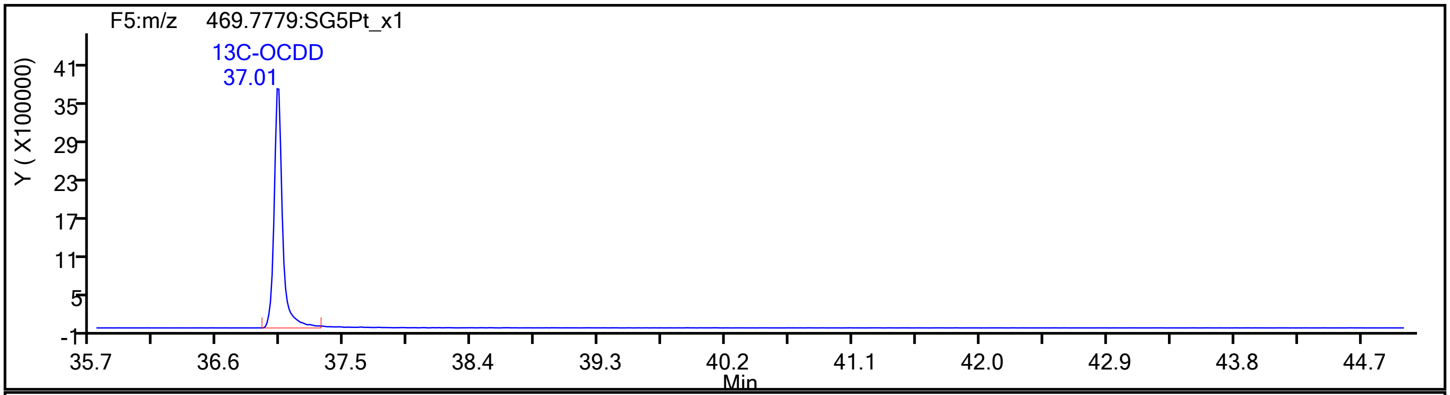

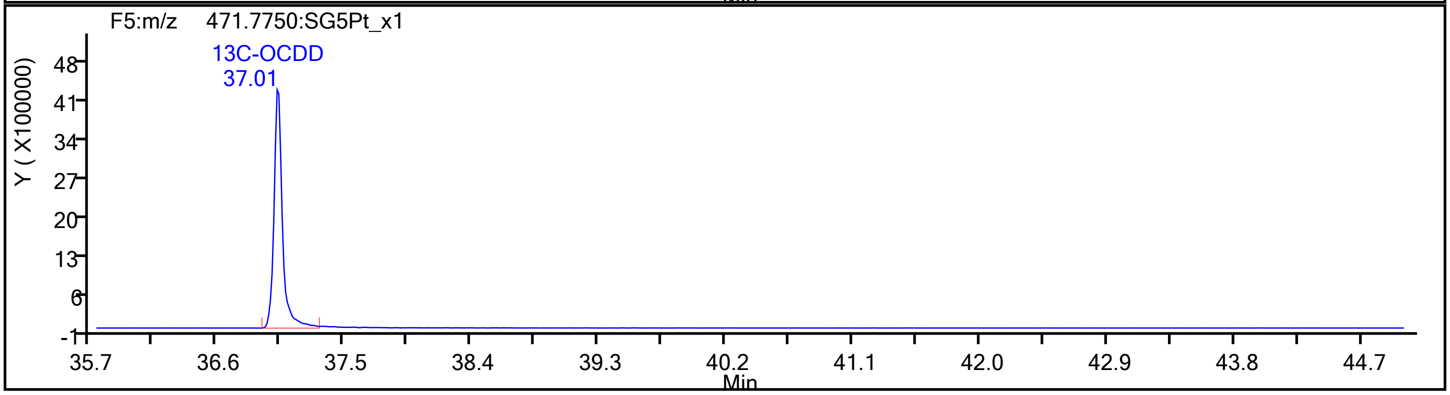

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d		
Injection Date:	05-Mar-2020 17:47:56	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

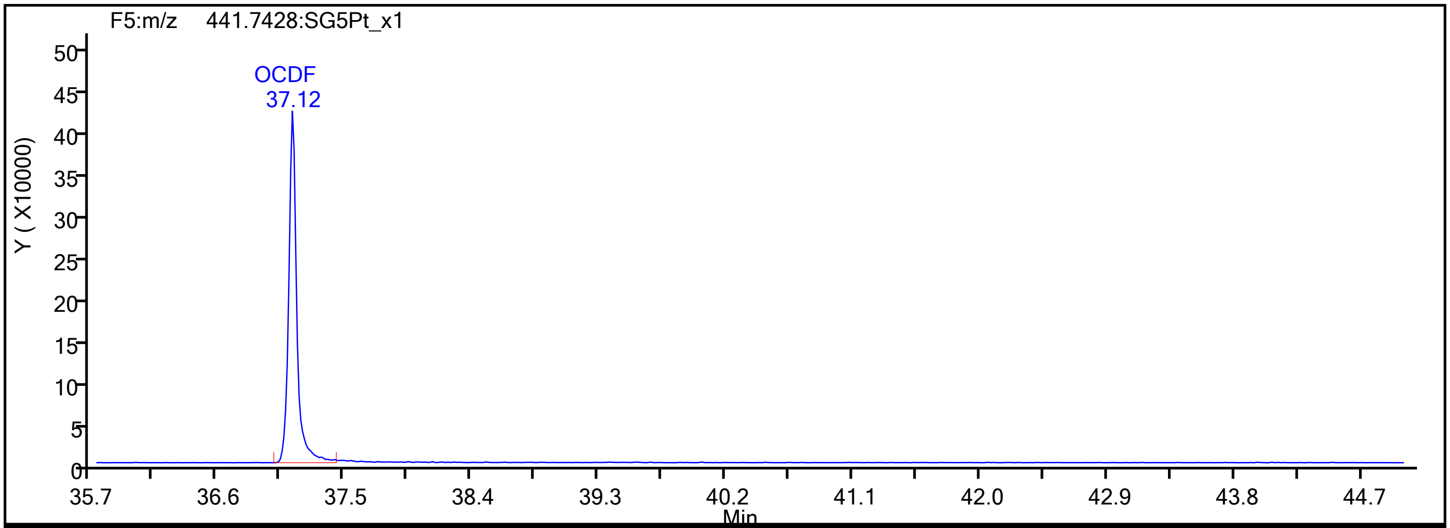

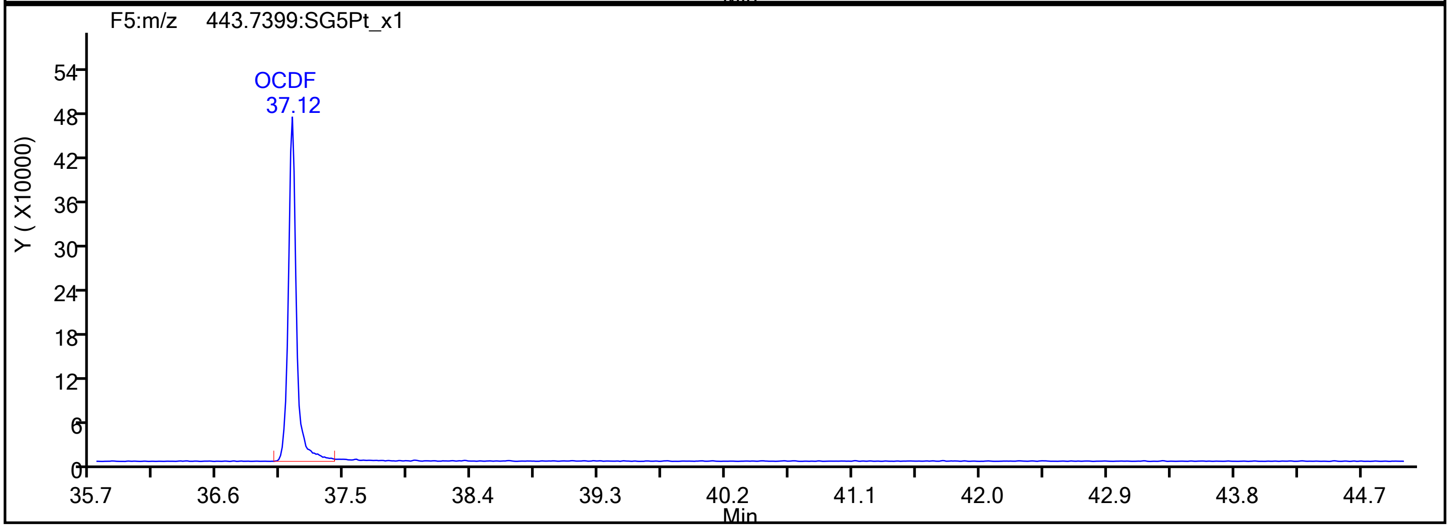

OCDF Interference Mass

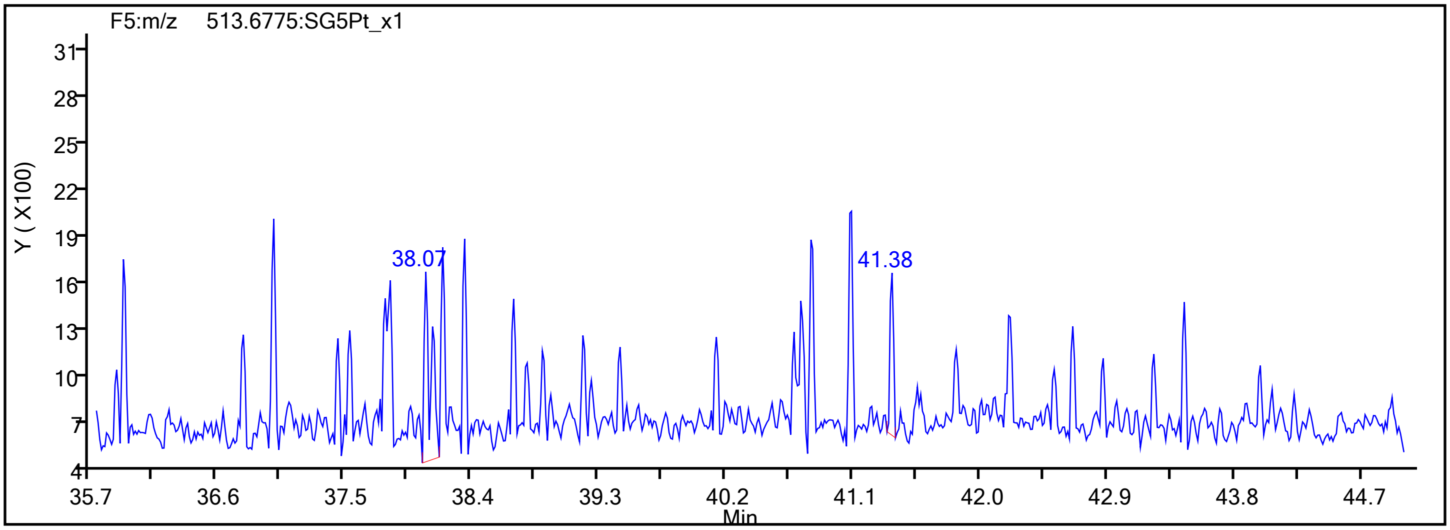

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d		
Injection Date:	05-Mar-2020 17:47:56	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

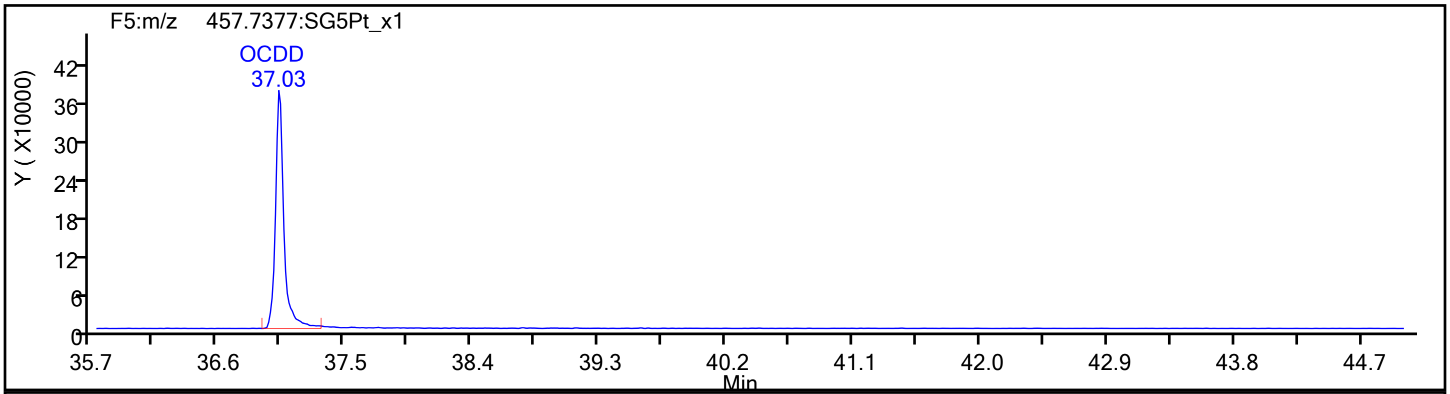

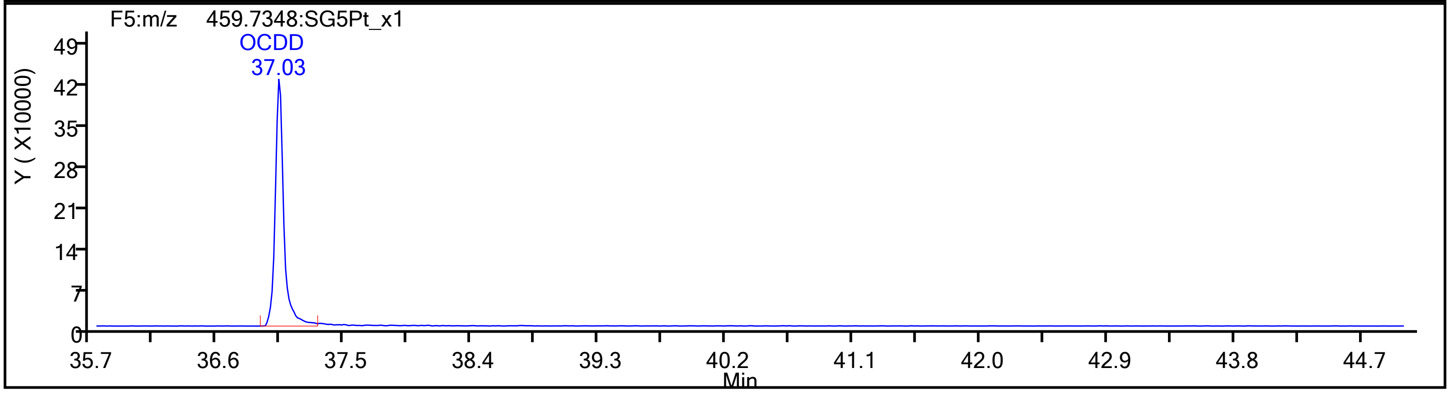

OCDD Standards

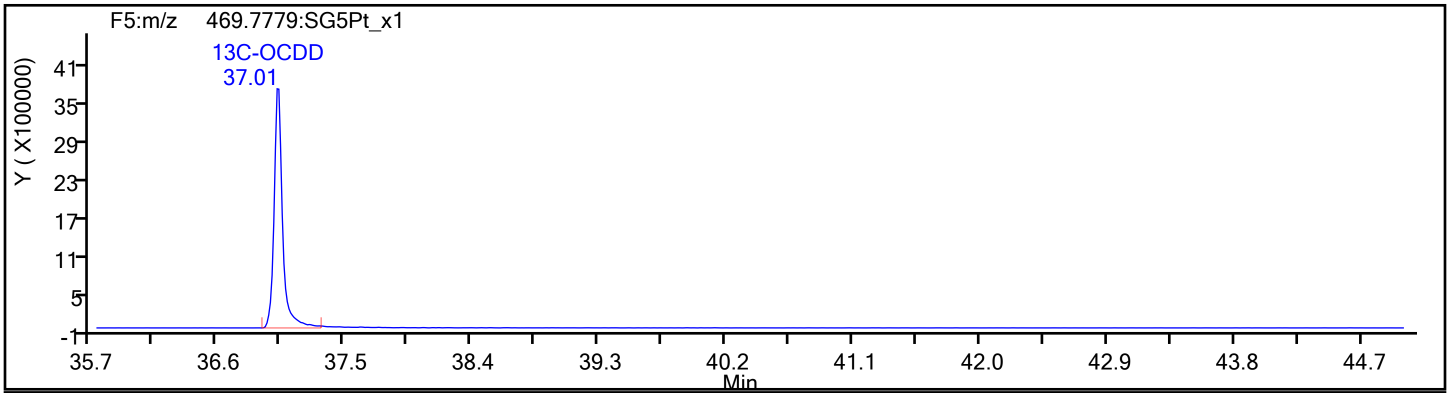

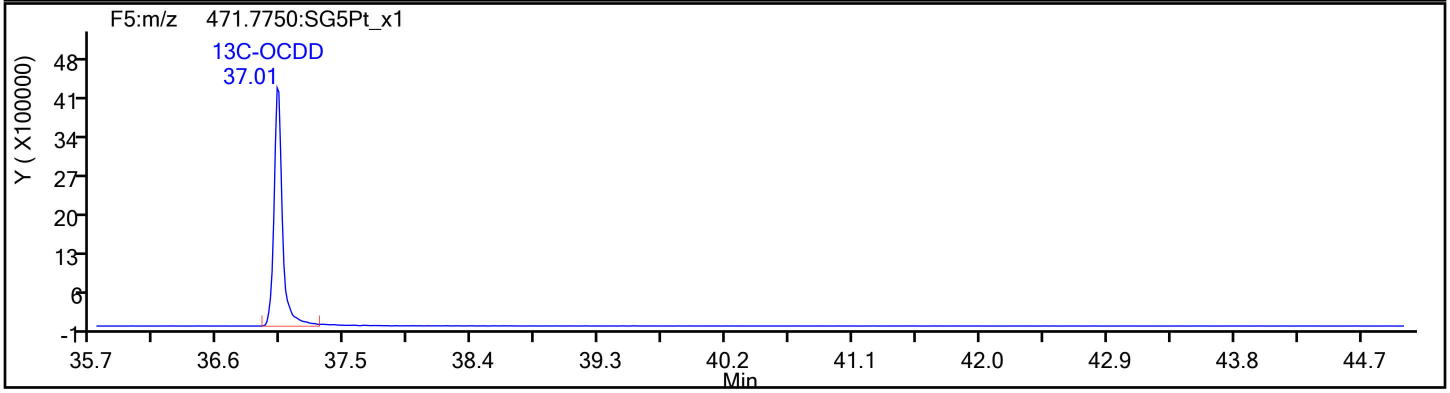

Report Date: 06-Mar-2020 10:13:05 Chrom Revision: 2.3 19-Feb-2020 16:45:46
Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d
Injection Date: 05-Mar-2020 17:47:56
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

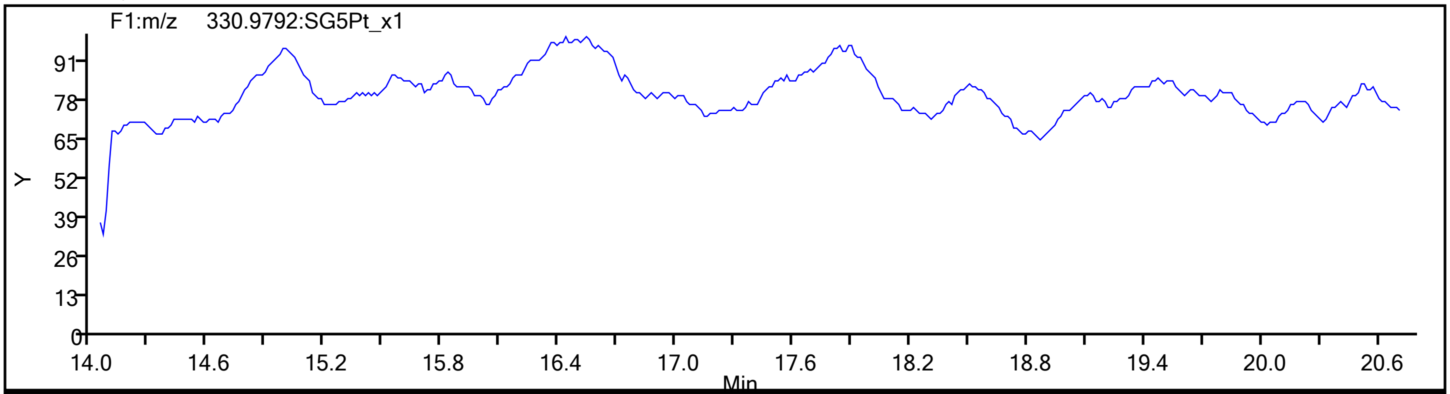

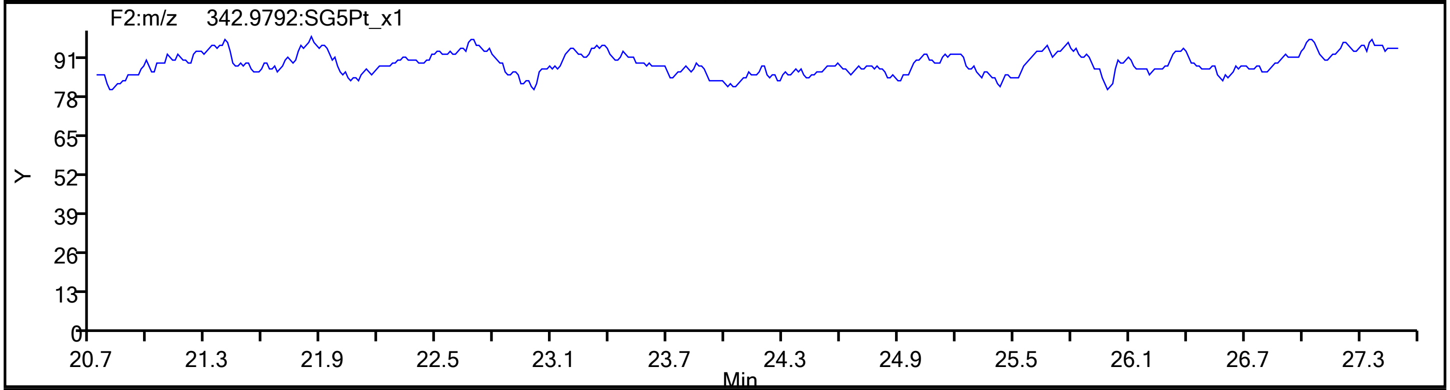

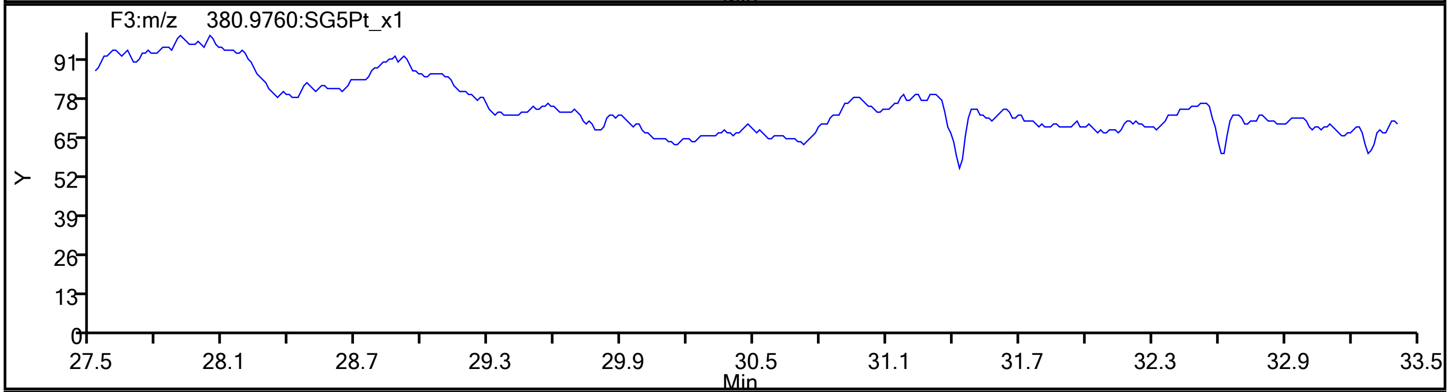

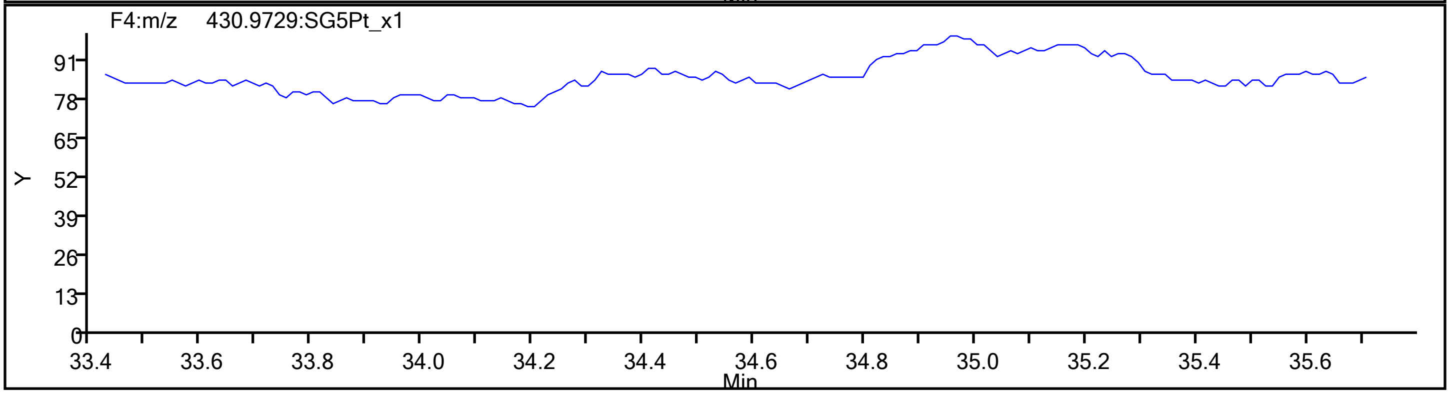

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_4.d

Injection Date: 05-Mar-2020 17:47:56
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

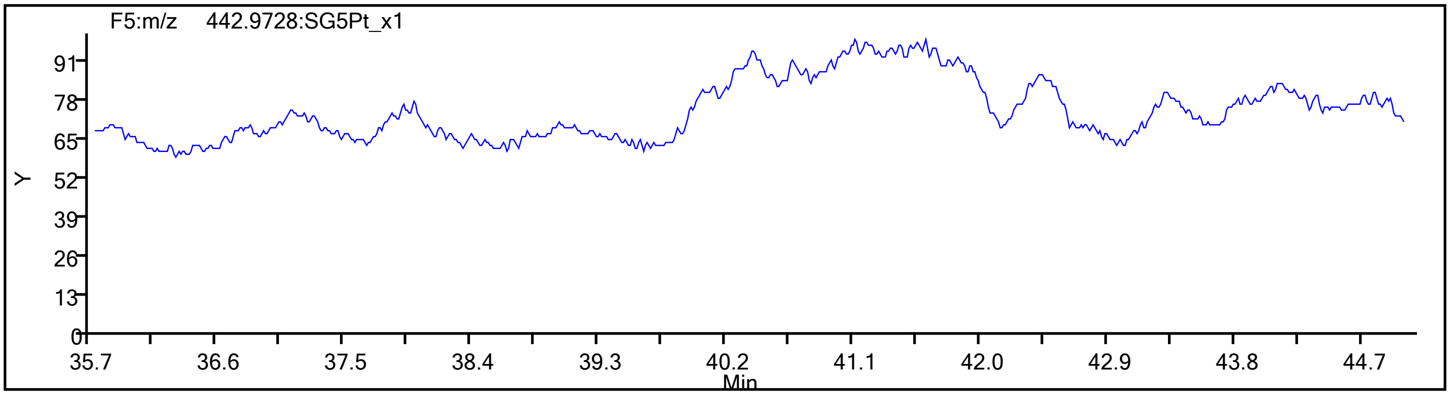

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 05-Mar-2020 18:33:54 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 030520B CS-4 HRDXNL4_00091
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:13:09 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

First Level Reviewer: stephensk Date: 06-Mar-2020 10:09:03

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.005	33876051	0.79	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.491	41927619	0.74	1.1970	103.4	103.4	0.1575	0.1575	103	
2,3,7,8-TCDF	17.506	3119918	0.71	0.7672	9.699	9.699	0.0263	0.0263	96.99	
S Total TCDF					9.699	9.699	0.0263	0.0263		
D 13C-2,3,7,8-TCDD	18.201	29010882	0.79	0.8773	97.6	97.6	0.1823	0.1823	97.61	
2,3,7,8-TCDD	18.216	2733310	0.77	1.0000	9.422	9.422	0.0383	0.0383	94.22	
$ 37Cl4-2,3,7,8-TCDD	18.216	3111185		0.9515	9.653	9.653	0.0146	0.0146	96.53	
S Total TCDD					9.422	9.422	0.0383	0.0383		
D 13C-1,2,3,7,8-PeCDF	22.579	33844214	1.55	0.9904	100.9	100.9	0.1939	0.1939	101	
1,2,3,7,8-PeCDF	22.607	14831783	1.54	0.9019	48.6	48.6	0.1313	0.1313	97.19	
D 13C-2,3,4,7,8-PeCDF	23.943	36204391	1.57	1.0797	99.0	99.0	0.1779	0.1779	98.98	
2,3,4,7,8-PeCDF	23.970	14879406	1.57	0.8307	49.5	49.5	0.1434	0.1434	98.95	
S Total PeCDF					98.1	98.1	0.1373	0.1373		
D 13C-1,2,3,7,8-PeCDD	24.679	23759706	1.66	0.6904	101.6	101.6	0.1103	0.1103	102	
1,2,3,7,8-PeCDD	24.706	11822415	1.56	1.0145	49.0	49.0	0.0693	0.0693	98.10	
S Total PeCDD					49.0	49.0	0.0693	0.0693		
D 13C-1,2,3,4,7,8-HxCDF	30.710	25359317	0.49	0.9076	100.8	100.8	0.3126	0.3126	101	
1,2,3,4,7,8-HxCDF	30.736	9942036	1.21	0.7928	49.5	49.5	0.2254	0.2254	98.90	
D 13C-1,2,3,6,7,8-HxCDF	30.883	23632216	0.49	0.8671	98.4	98.4	0.3272	0.3272	98.36	
1,2,3,6,7,8-HxCDF	30.896	10041646	1.20	0.8592	49.5	49.5	0.2205	0.2205	98.91	
D 13C-2,3,4,6,7,8-HxCDF	31.668	23859710	0.51	0.8287	103.9	103.9	0.3424	0.3424	104	
2,3,4,6,7,8-HxCDF	31.681	10464048	1.19	0.8896	49.3	49.3	0.1675	0.1675	98.60	
D 13C-1,2,3,7,8,9-HxCDF	32.453	19999975	0.49	0.7391	97.7	97.7	0.3839	0.3839	97.66	
1,2,3,7,8,9-HxCDF	32.467	8800442	1.21	0.8941	49.2	49.2	0.1906	0.1906	98.42	
S Total HxCDF					197.4	197.4	0.2010	0.2010		
* 13C-1,2,3,7,8,9-HxCDD	32.267	27707135	1.23	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.854	23856514	1.24	0.8335	103.3	103.3	0.2806	0.2806	103	
1,2,3,4,7,8-HxCDD	31.868	9621231	1.30	0.8332	48.4	48.4	0.1411	0.1411	96.81	
D 13C-1,2,3,6,7,8-HxCDD	31.948	23002096	1.22	0.8228	100.9	100.9	0.2842	0.2842	101	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,3,6,7,8-HxCDD	31.961	10234254	1.16	0.8944	49.7	49.7	0.1372	0.1372	99.49	
1,2,3,7,8,9-HxCDD	32.280	10596086	1.25	0.9449	47.9	47.9	0.1271	0.1271	95.73	
S Total HxCDD					146.0	146.0	0.1351	0.1351		
D 13C-1,2,3,4,6,7,8-HpCDF	33.861	19649806	0.42	0.7009	101.2	101.2	0.8912	0.8912	101	
1,2,3,4,6,7,8-HpCDF	33.861	13059237	1.03	1.3295	50.0	50.0	0.3805	0.3805	99.98	
D 13C-1,2,3,4,7,8,9-HpCDF	34.943	19910498	0.42	0.7244	99.2	99.2	0.8623	0.8623	99.21	
1,2,3,4,7,8,9-HpCDF	34.955	10693661	1.04	1.0803	49.7	49.7	0.4842	0.4842	99.43	
S Total HpCDF					99.7	99.7	0.4323	0.4323		
D 13C-1,2,3,4,6,7,8-HpCDD	34.651	19169977	1.05	0.7026	98.5	98.5	0.4075	0.4075	98.48	
1,2,3,4,6,7,8-HpCDD	34.664	9453339	1.05	1.0040	49.1	49.1	0.1859	0.1859	98.23	
S Total HpCDD					49.1	49.1	0.1859	0.1859		
D 13C-OCDD	37.014	33003160	0.89	0.6184	192.6	192.6	0.1579	0.1579	96.31	
OCDF	37.110	18218734	0.90	1.1076	99.7	99.7	0.0864	0.0864	99.68	
OCDD	37.027	16473634	0.88	1.0175	98.1	98.1	0.0891	0.0891	98.11	

Reagents:

HRDXNL4_00091 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:13:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	05-Mar-2020 18:33:54	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 030520B CS-4 HRDXNL4_00091				
Misc. Info.:	05MR20A10D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Mar-2020 10:13:09	Calib Date:	05-Mar-2020 20:05:51		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX0319				
First Level Reviewer: stephensk		Date:	06-Mar-2020 10:09:03		

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.005	18.008	0		14963409	3817111	3471	8677	1100		
333.9339	18.005	18.008	0		18912642	4756016	2015	5037	2360	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.491	17.491	0	0.971	17826907	4461694	3781	9452	1180		
317.9389	17.491	17.491	0	0.971	24100712	5963111	2684	6710	2222	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.506	17.509	0	1.001	1296538	324714	327	817	993		
305.8987	17.506	17.509	0	1.001	1823380	452625	513	1282	882	0.71(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.201	18.204	0	1.011	12848220	3084421	3471	8677	889		
333.9339	18.201	18.204	0	1.011	16162662	3859455	2015	5037	1915	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.216	18.225	-1	1.001	1193115	286939	665	1662	431		
321.8936	18.216	18.225	-1	1.001	1540195	368970	400	1000	922	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.216	18.225	-1	1.012	3111185	752429	478	1195	1574		
13C-1,2,3,7,8-PeCDF											
351.9000	22.579	22.585	0	1.254	20577056	3715051	3840	9600	967		
353.8970	22.579	22.585	0	1.254	13267158	2381667	2746	6865	867	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.607	22.607	0	1.001	8991159	1621952	1572	3930	1032		
341.8567	22.607	22.607	0	1.001	5840624	1029764	1316	3290	782	1.54(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,4,7,8-PeCDF											
351.9000	23.943	23.951	0	1.330	22090671	3700700	3840	9600	964		
353.8970	23.943	23.951	0	1.330	14113720	2361915	2746	6865	860	1.57(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.970	23.976	0	1.001	9082800	1505142	1572	3930	957		
341.8567	23.970	23.976	0	1.001	5796606	964289	1316	3290	733	1.57(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.679	24.685	0	1.371	14811054	2308285	1441	3602	1602		
369.8919	24.679	24.685	0	1.371	8948652	1437888	1170	2925	1229	1.66(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.706	24.709	0	1.001	7204784	1149036	621	1552	1850		
357.8516	24.706	24.709	0	1.001	4617631	735762	433	1082	1699	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.710	30.718	0	0.952	8284870	1698001	2868	7170	592		
385.8610	30.710	30.718	0	0.952	17074447	3460966	5717	14292	605	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.736	30.736	0	1.001	5437743	1073508	2049	5122	524		
375.8178	30.723	30.736	-1	1.000	4504293	923502	1638	4095	564	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.883	30.888	0	0.957	7788992	1625274	2868	7170	567		
385.8610	30.883	30.888	0	0.957	15843224	3240185	5717	14292	567	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.896	30.907	-1	1.000	5486837	1124566	2049	5122	549		
375.8178	30.896	30.907	-1	1.000	4554809	924722	1638	4095	565	1.20(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.668	31.676	0	0.981	8020020	2106726	2868	7170	735		
385.8610	31.668	31.676	0	0.981	15839690	4079967	5717	14292	714	0.51(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.681	31.689	0	1.000	5681623	1458873	2049	5122	712		
375.8178	31.681	31.689	0	1.000	4782425	1234770	1638	4095	754	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.453	32.456	0	1.006	6588406	1777368	2868	7170	620		
385.8610	32.453	32.456	0	1.006	13411569	3630263	5717	14292	635	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.467	32.467	0	1.000	4814543	1314080	2049	5122	641		
375.8178	32.467	32.467	0	1.000	3985899	1076655	1638	4095	657	1.21(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.267	32.272	0		15309989	4176423	4160	10400	1004		
403.8529	32.267	32.272	0		12397146	3388268	2917	7292	1162	1.23(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.854	31.855	0	0.987	13183685	3561445	4160	10400	856		
403.8529	31.854	31.855	0	0.987	10672829	2834014	2917	7292	972	1.24(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.868	31.871	0	1.000	5443805	1516498	1867	4667	812		
391.8127	31.868	31.871	0	1.000	4177426	1201870	1140	2850	1054	1.30(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.948	31.956	0	0.990	12624236	3400508	4160	10400	817		
403.8529	31.948	31.956	0	0.990	10377860	2725014	2917	7292	934	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.961	31.972	-1	1.000	5488096	1435327	1867	4667	769		
391.8127	31.961	31.972	-1	1.000	4746158	1201330	1140	2850	1054	1.16(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.280	32.288	0	1.013	5884084	1614730	1867	4667	865		
391.8127	32.280	32.288	0	1.013	4712002	1290219	1140	2850	1132	1.25(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.861	33.864	0	1.049	5823276	1846191	5808	14520	318		
419.8220	33.861	33.864	0	1.049	13826530	4356574	13093	32732	333	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.861	33.869	0	1.000	6623850	2136727	6860	17150	311		
409.7789	33.861	33.869	0	1.000	6435387	2101588	5690	14225	369	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.943	34.948	0	1.083	5865227	1770179	5808	14520	305		
419.8220	34.943	34.948	0	1.083	14045271	4228265	13093	32732	323	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.955	34.960	0	1.000	5456371	1662748	6860	17150	242		
409.7789	34.955	34.960	0	1.000	5237290	1572481	5690	14225	276	1.04(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.651	34.656	0	1.074	9811727	3038709	4235	10587	718		
437.8140	34.651	34.656	0	1.074	9358250	2879710	4429	11072	650	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.664	34.668	0	1.000	4846447	1504136	2322	5805	648		
425.7737	34.664	34.668	0	1.000	4606892	1420319	2096	5240	678	1.05(0.88-1.20)	
13C-OCDD											
469.7779	37.014	37.017	0	1.147	15503936	3954996	1627	4067	2431		
471.7750	37.014	37.017	0	1.147	17499224	4337279	1327	3317	3268	0.89(0.76-1.02)	
OCDF											
441.7428	37.110	37.120	-1	1.003	8647439	2227702	702	1755	3173		
443.7399	37.110	37.120	-1	1.003	9571295	2490618	885	2212	2814	0.90(0.76-1.02)	
OCDD											
457.7377	37.027	37.029	0	1.000	7690594	1937042	892	2230	2172		
459.7348	37.014	37.029	-1	1.000	8783040	2182232	611	1527	3572	0.88(0.76-1.02)	

Reagents:

HRDXNL4_00091 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:13:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d

Injection Date: 05-Mar-2020 18:33:54 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

TCDF

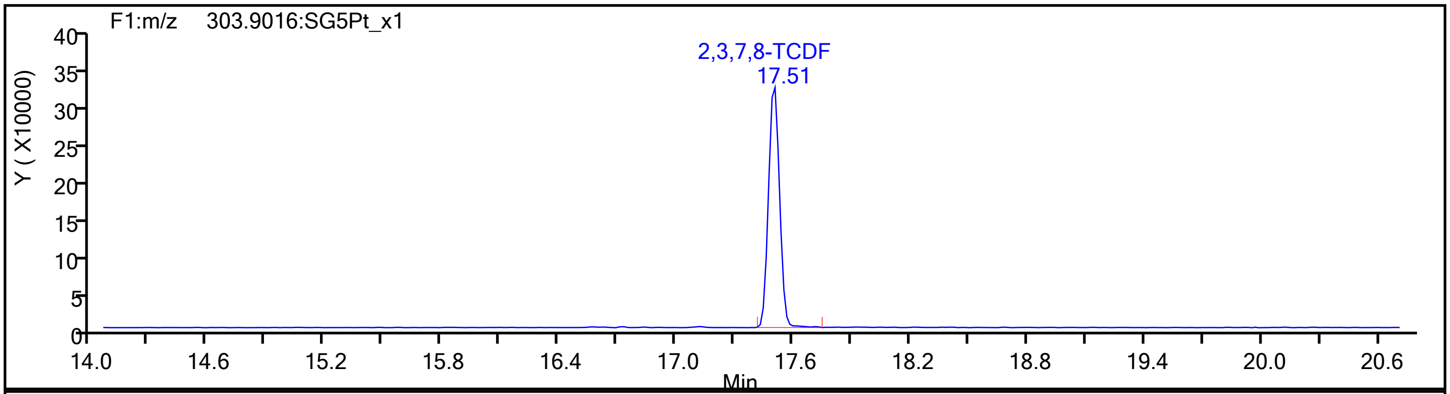

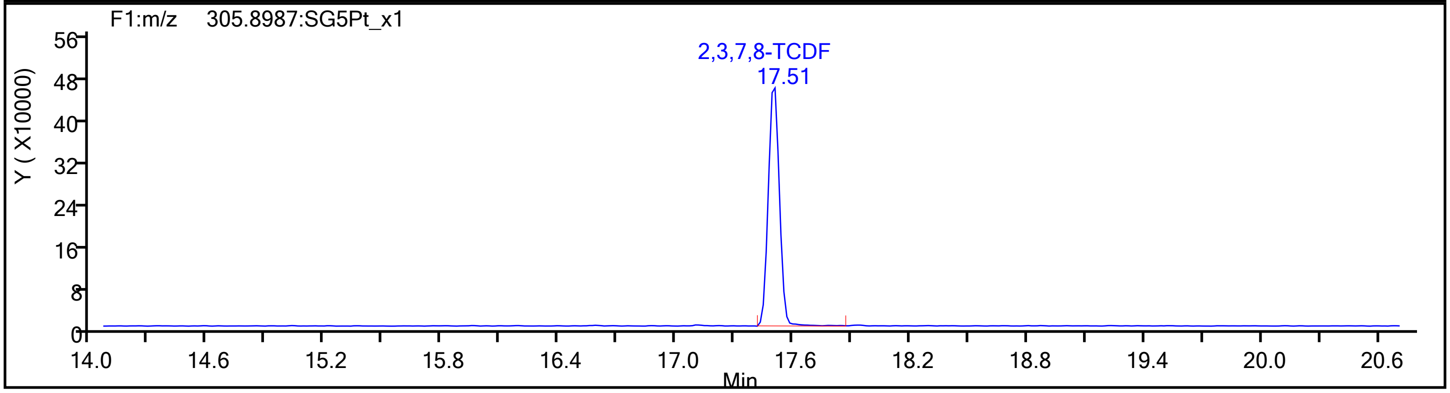

TCDF Standards

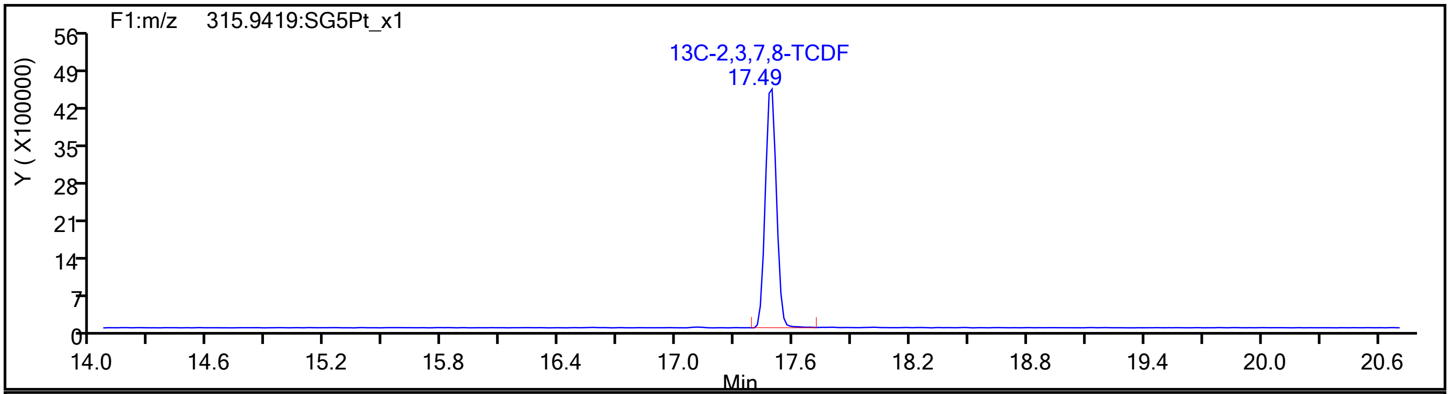

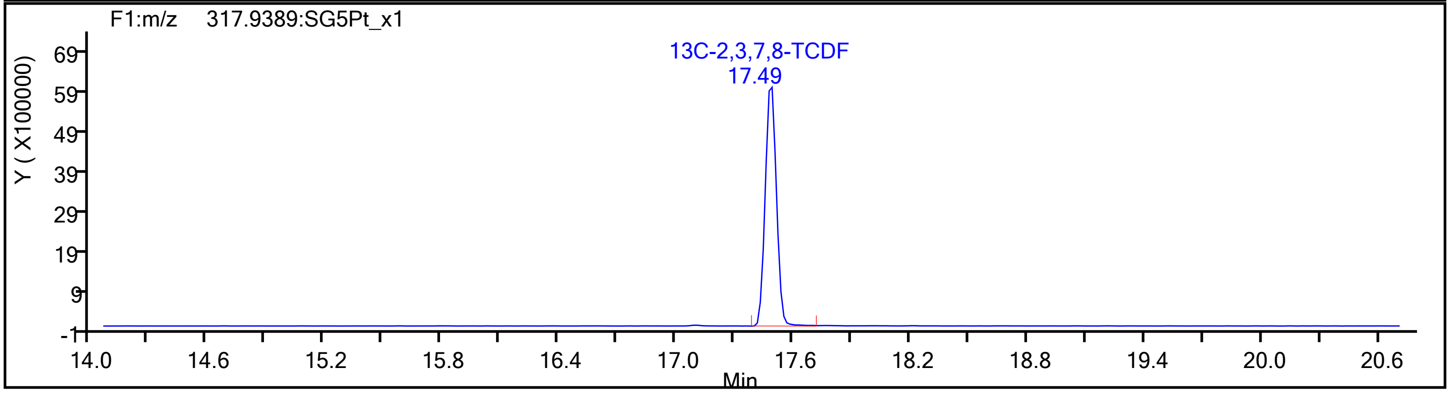

Report Date: 06-Mar-2020 10:13:15　　Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d
Injection Date: 05-Mar-2020 18:33:54　　Injection Vol: 2.0 ul
Instrument ID: 10D5　　Operator ID: AJS
Method: Dioxin_10D5　　Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307　　Sample Line#: 5
Column Type: DB-5　　Column Dia: 0.32 mm

TCDF

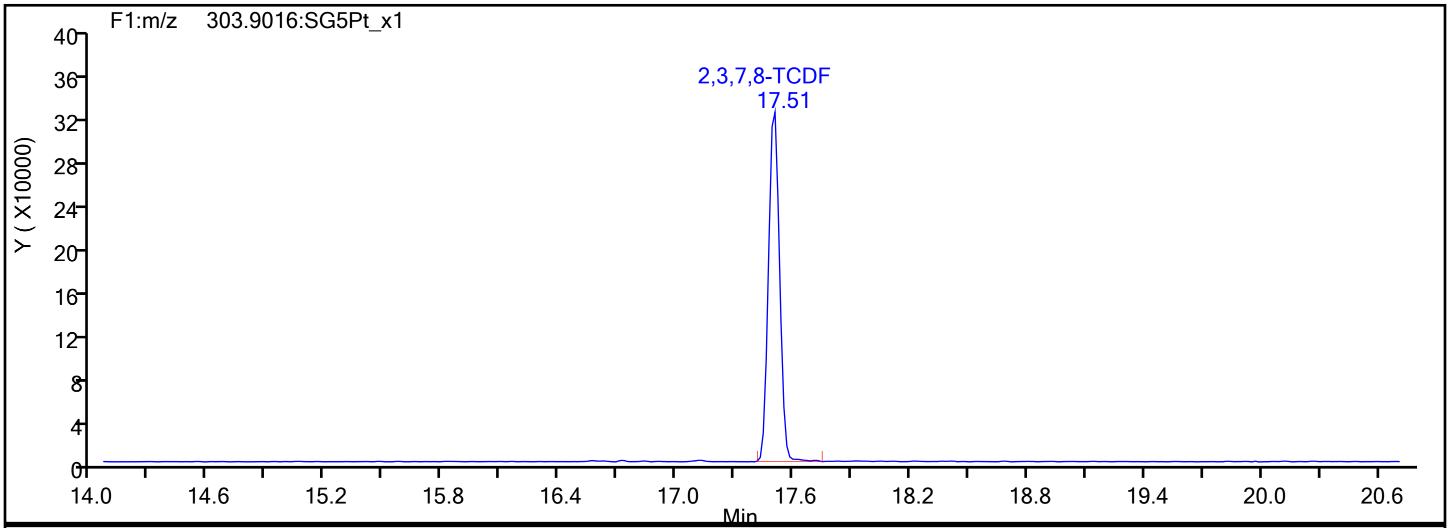

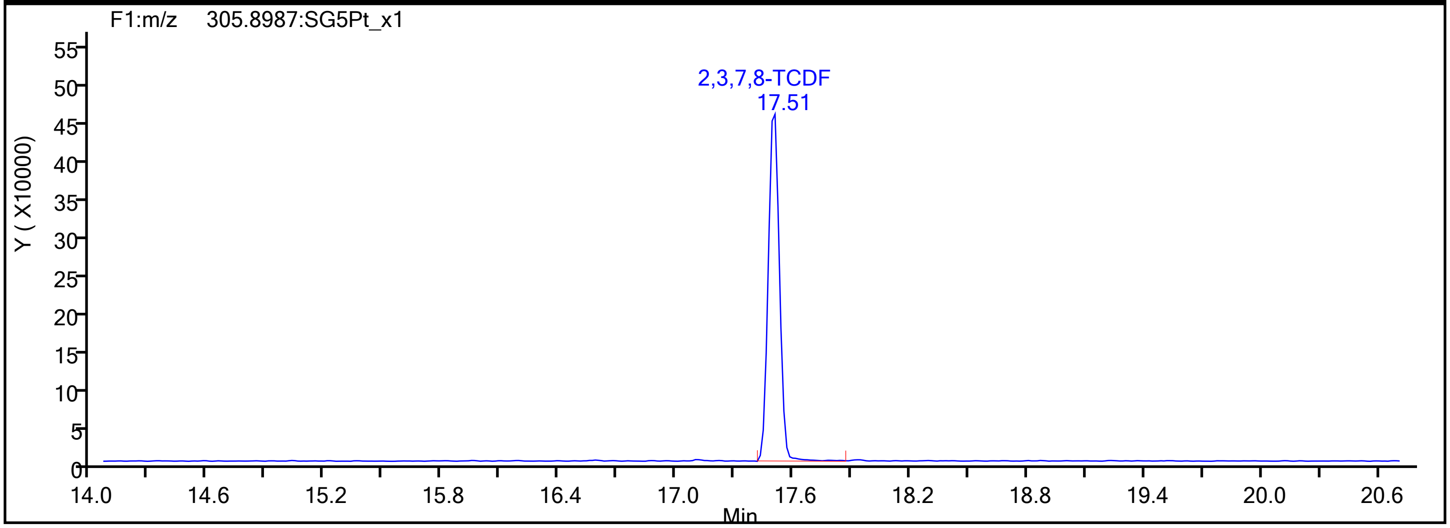

TCDF Interference Mass

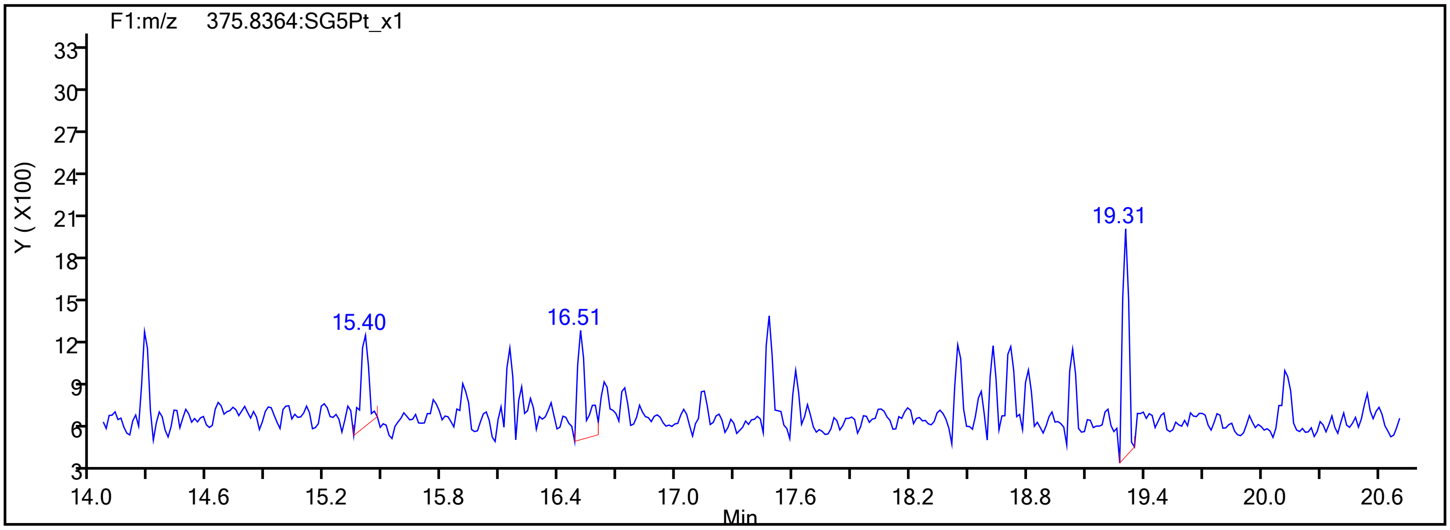

Report Date: 06-Mar-2020 10:13:15   Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

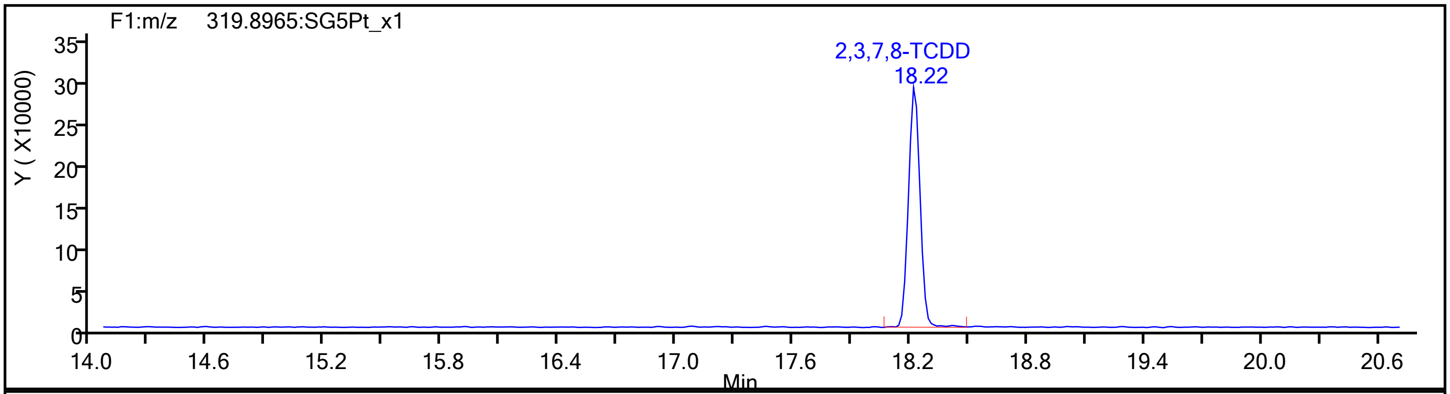

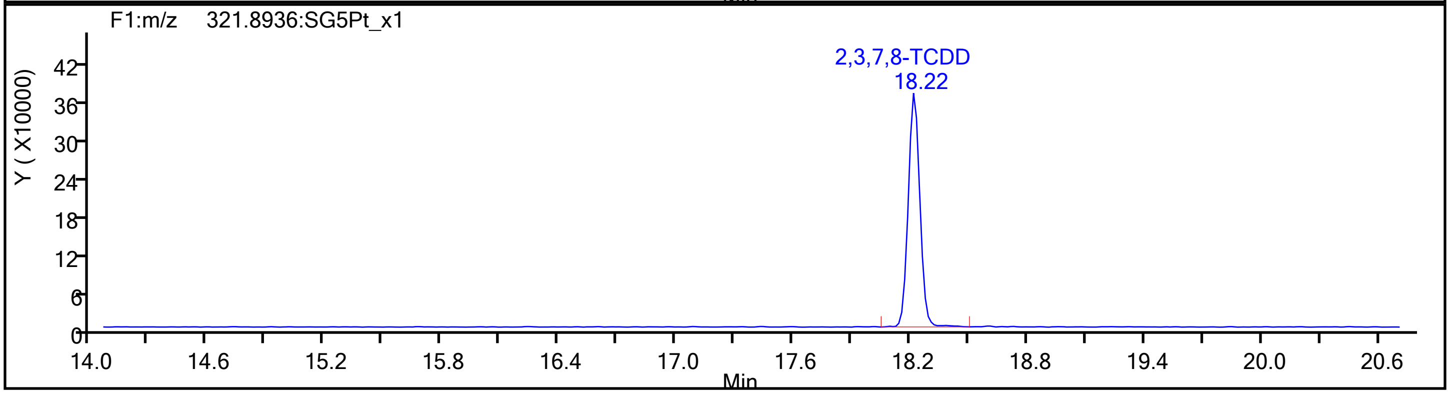

TCDD Standards

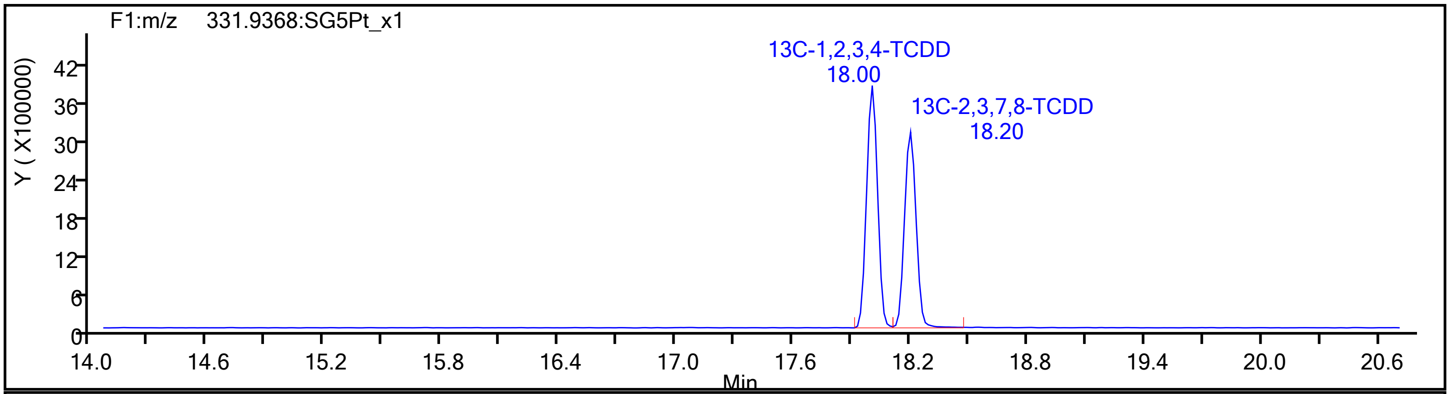

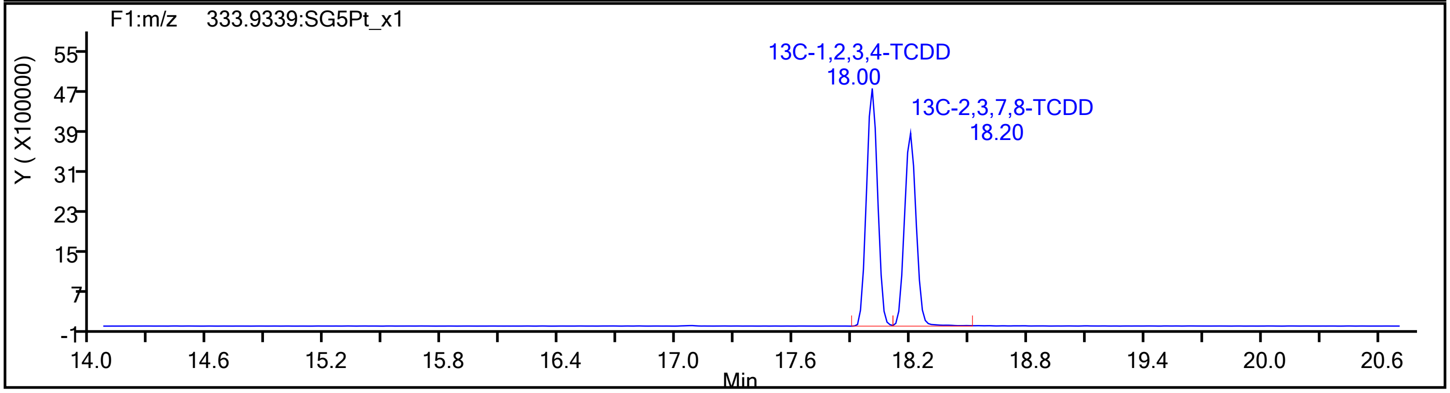

Report Date: 06-Mar-2020 10:13:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

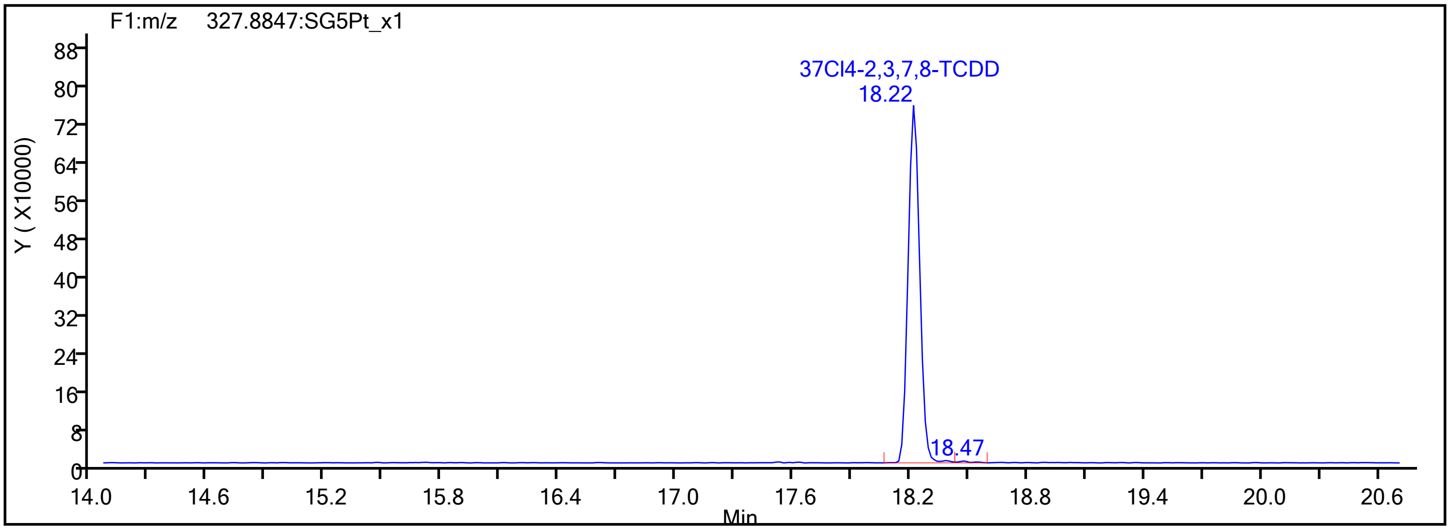

37Cl4-TCDD Standards

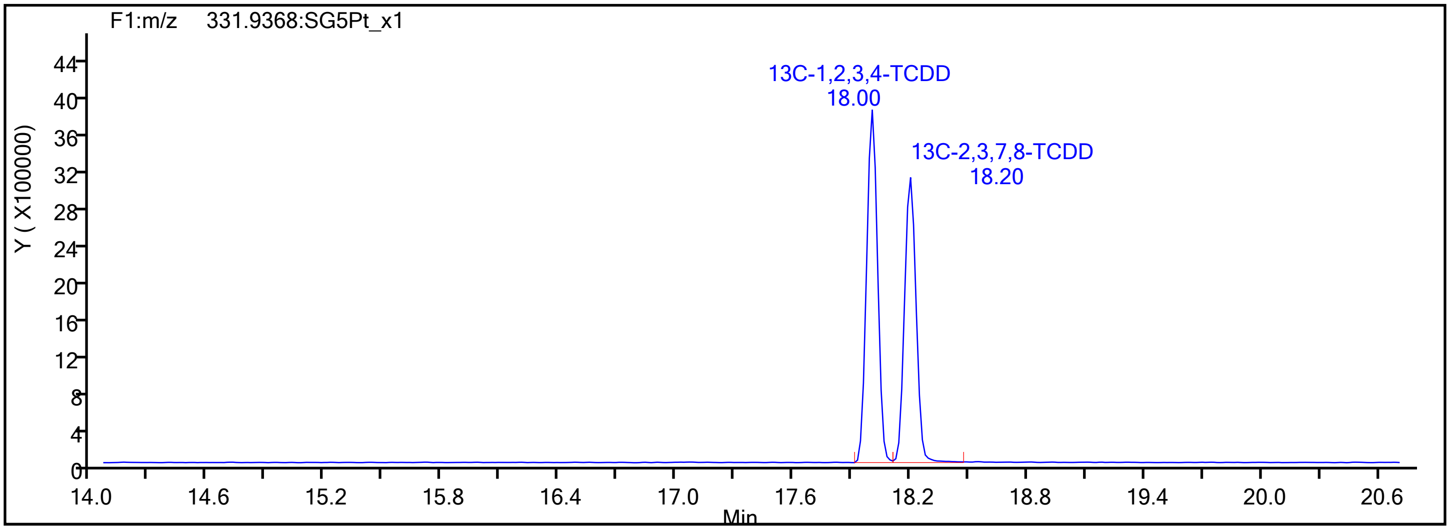

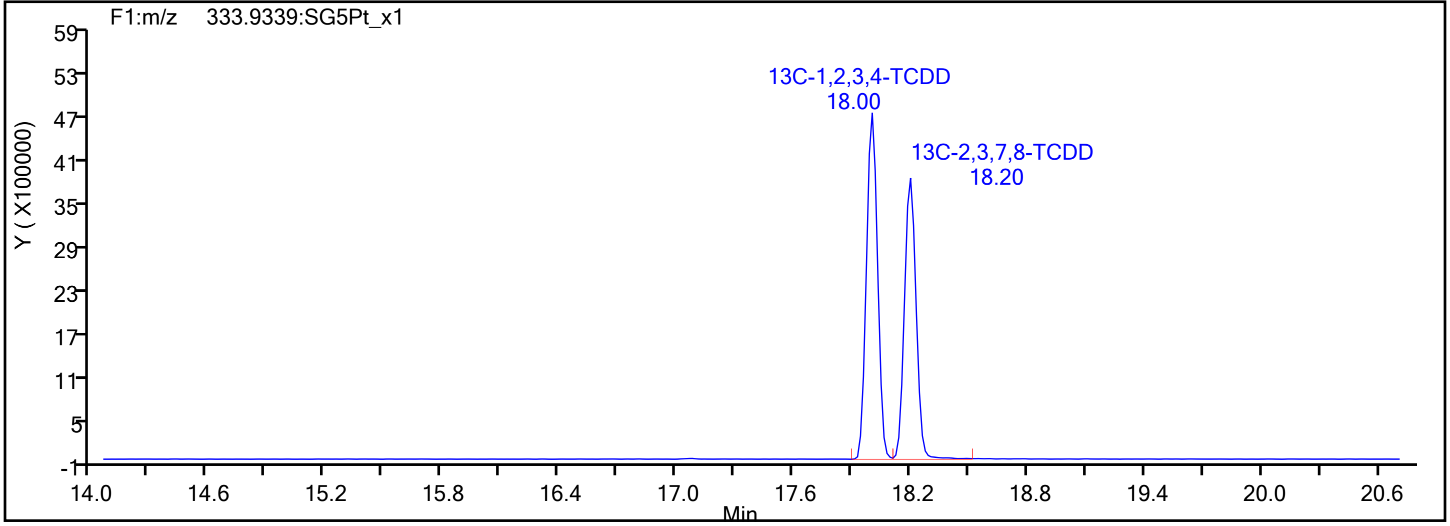

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

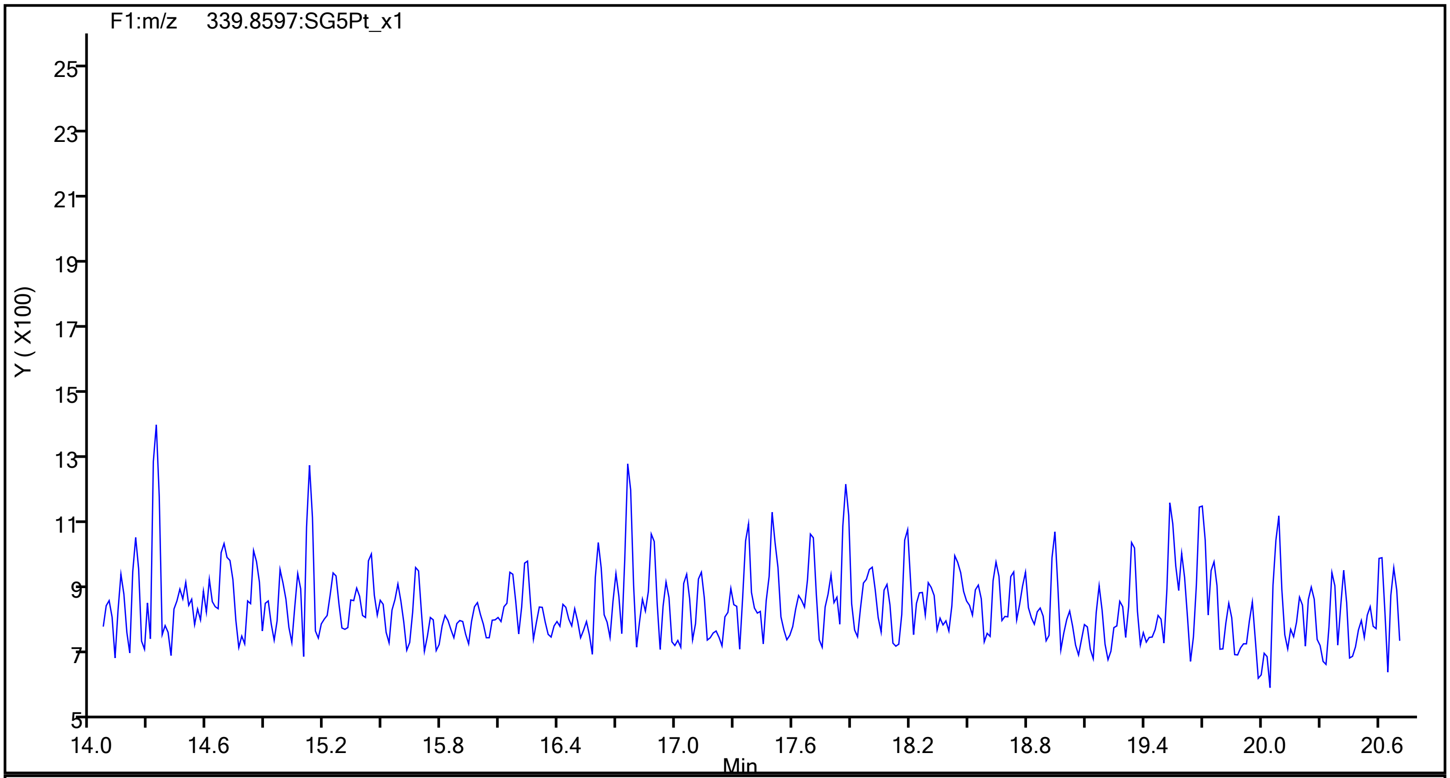

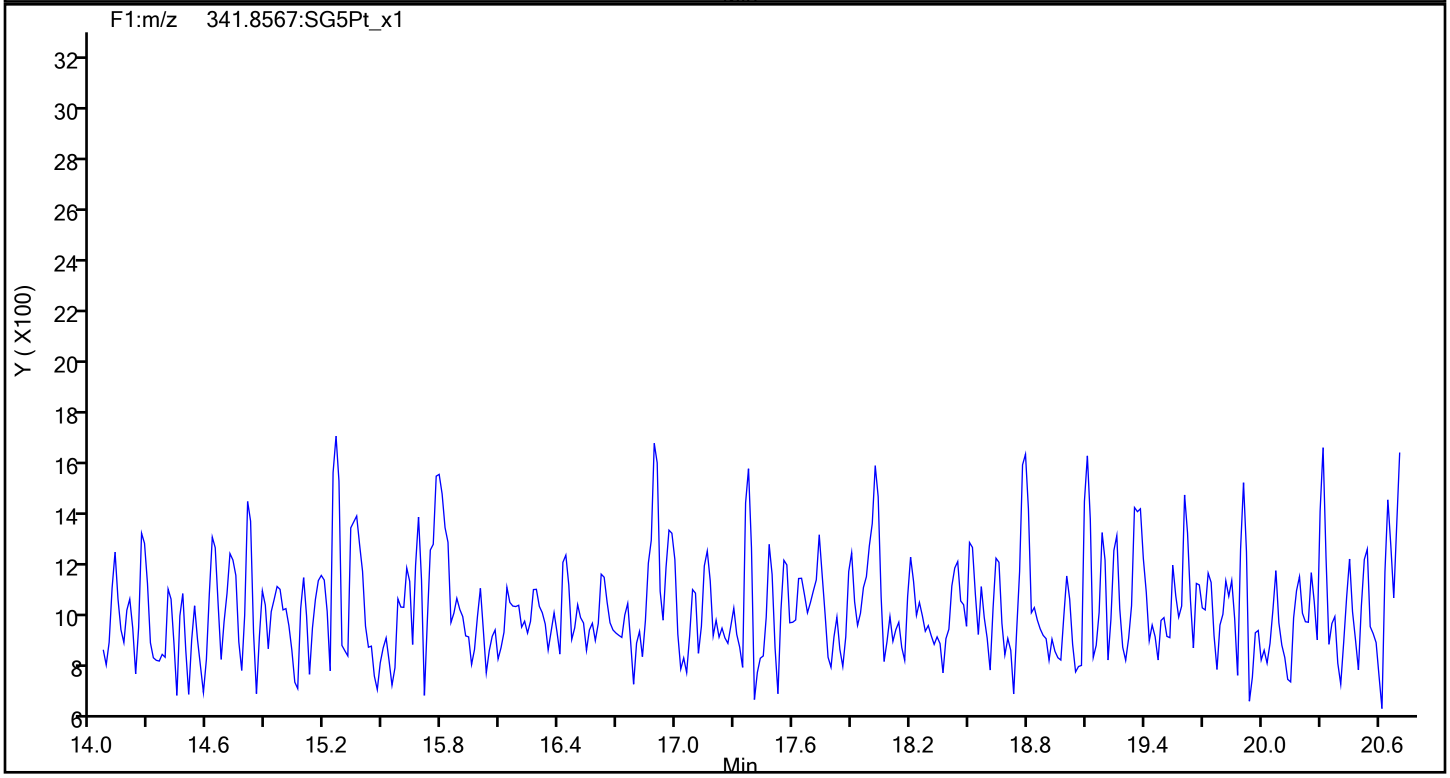

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

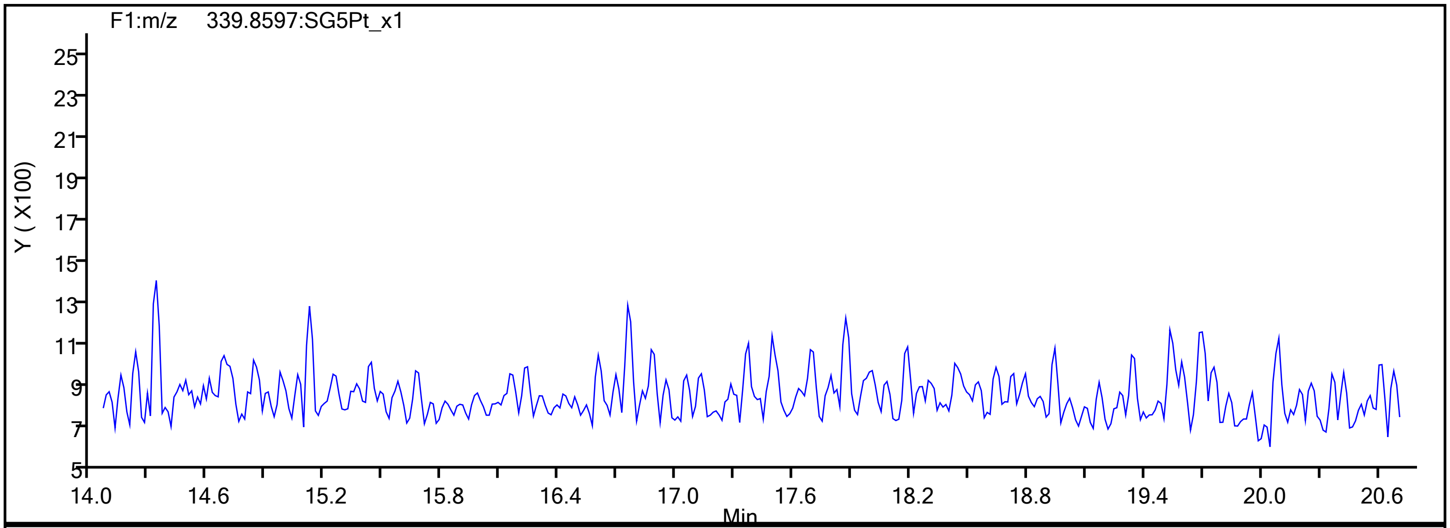

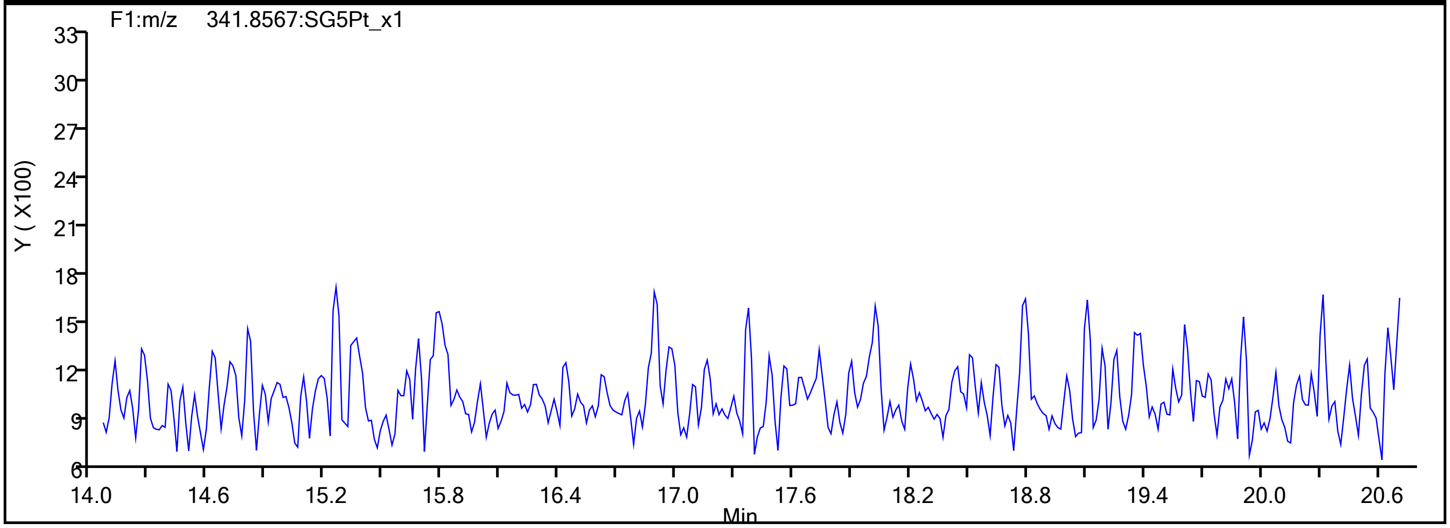

F1 PeCDFs Interference Mass

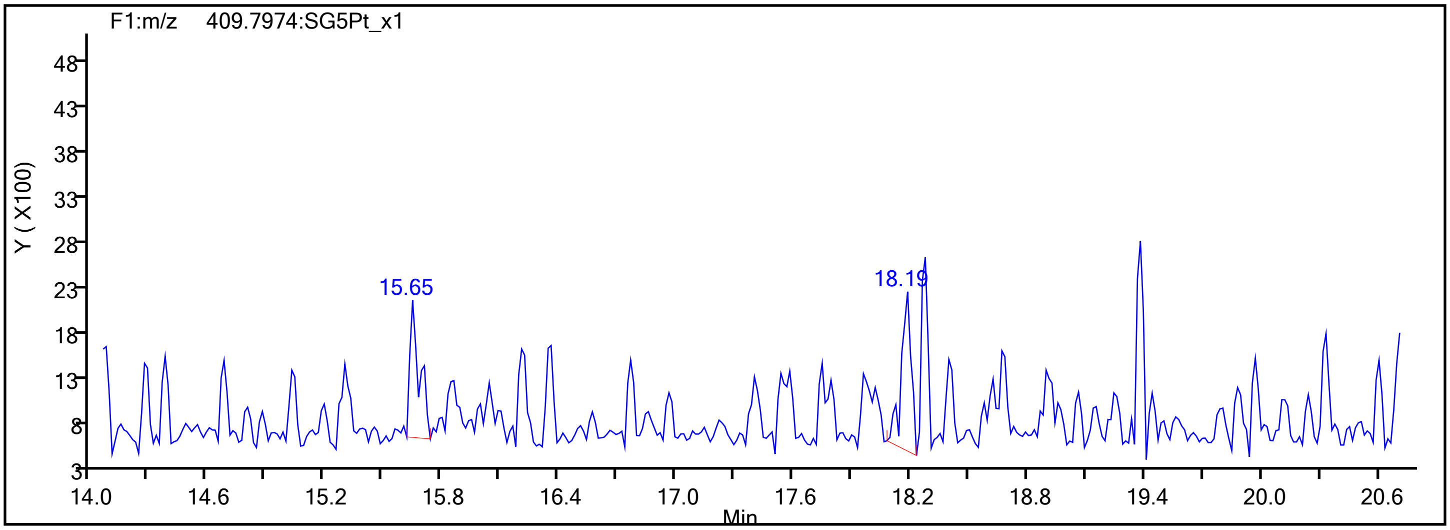

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d
Injection Date: 05-Mar-2020 18:33:54 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

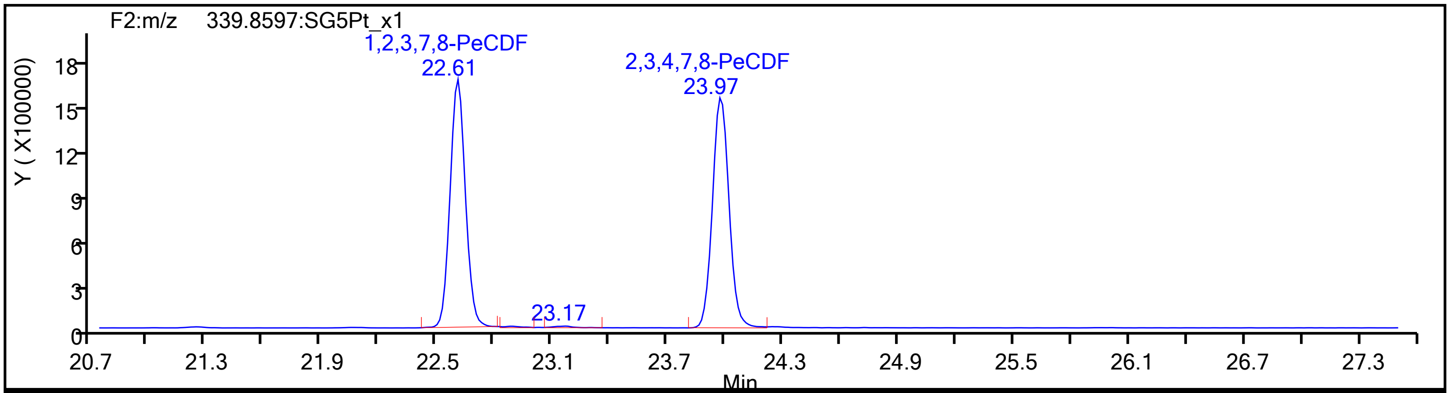

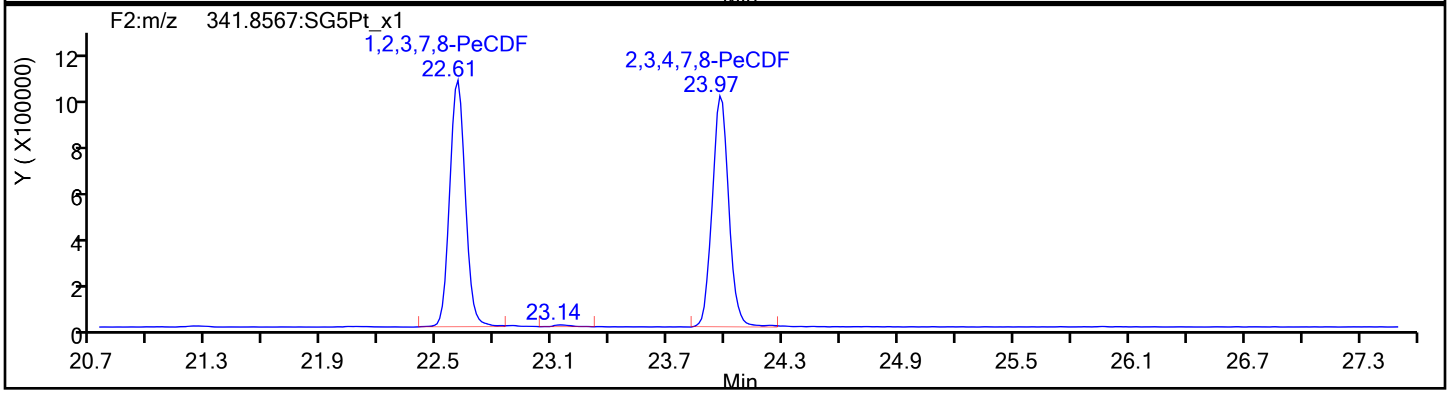

PeCDF Standards

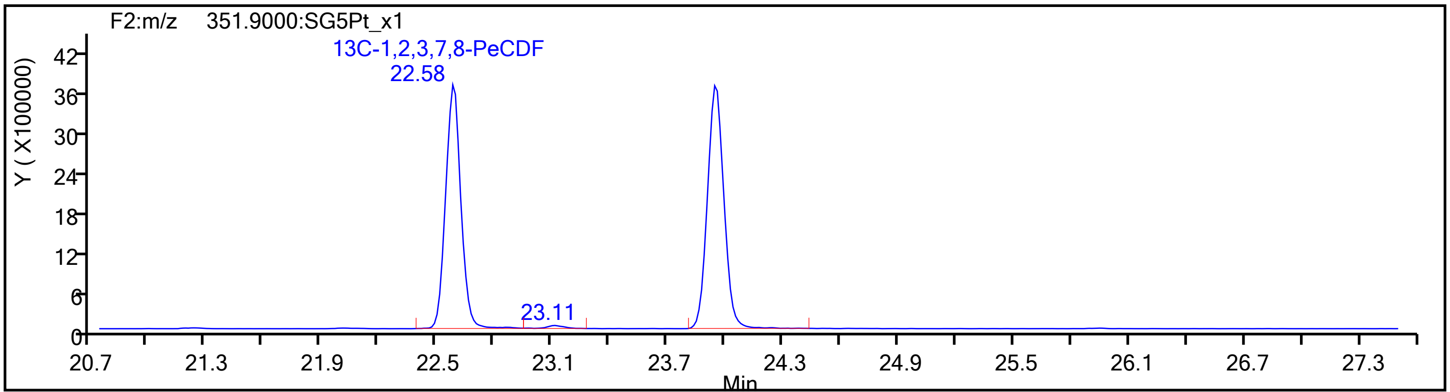

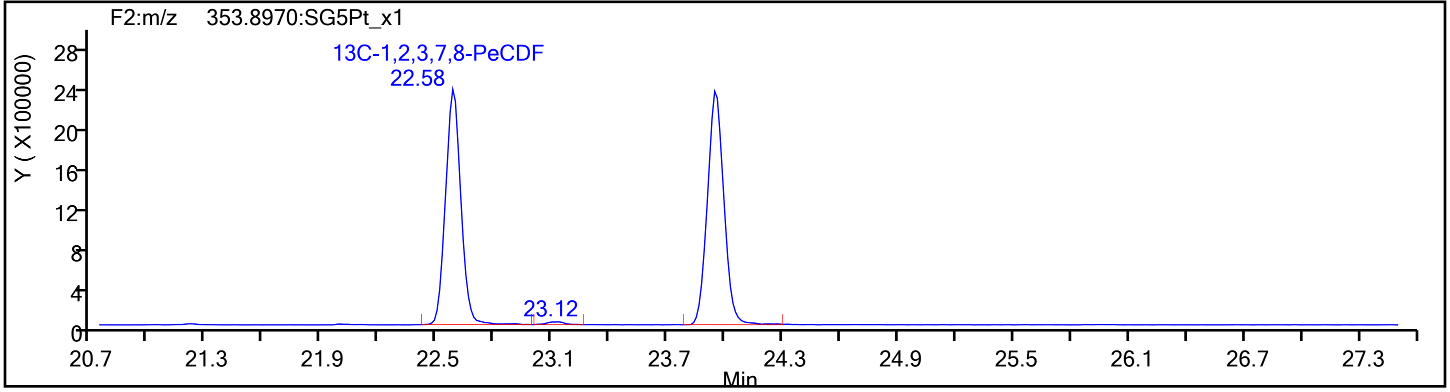

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

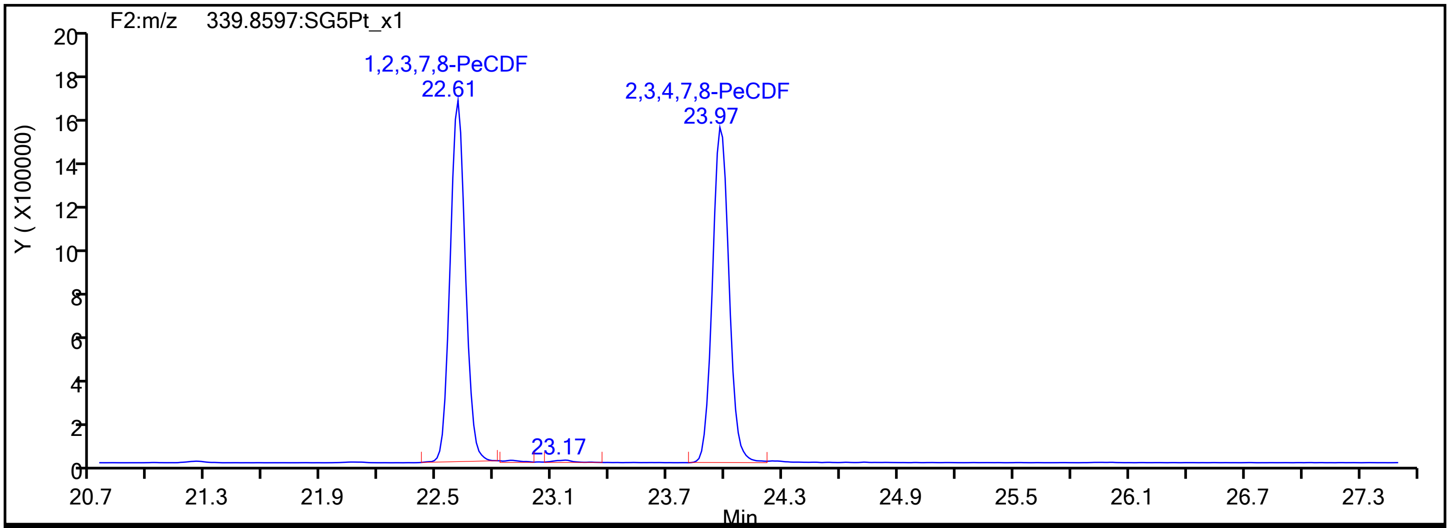

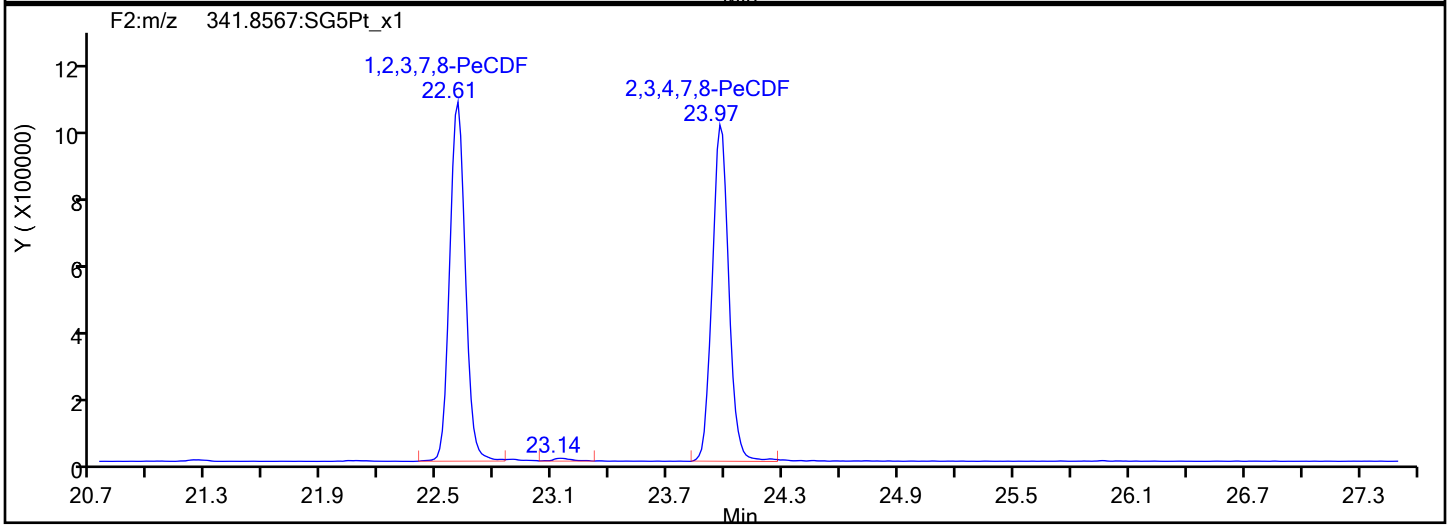

PeCDF Interference Mass

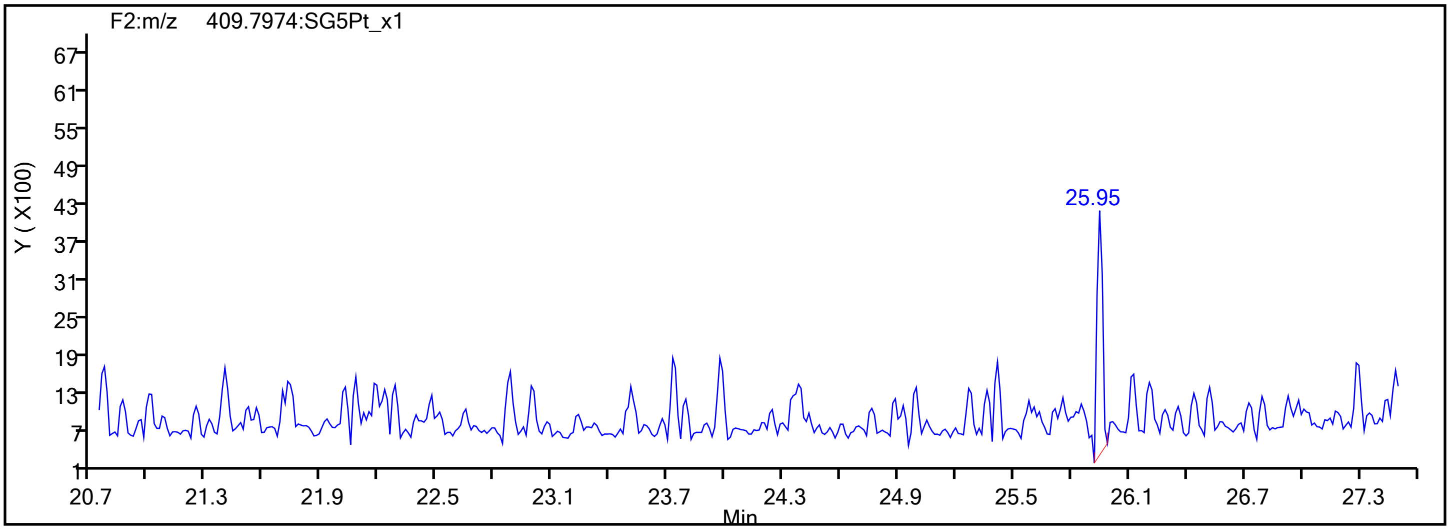

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Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d
Injection Date: 05-Mar-2020 18:33:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

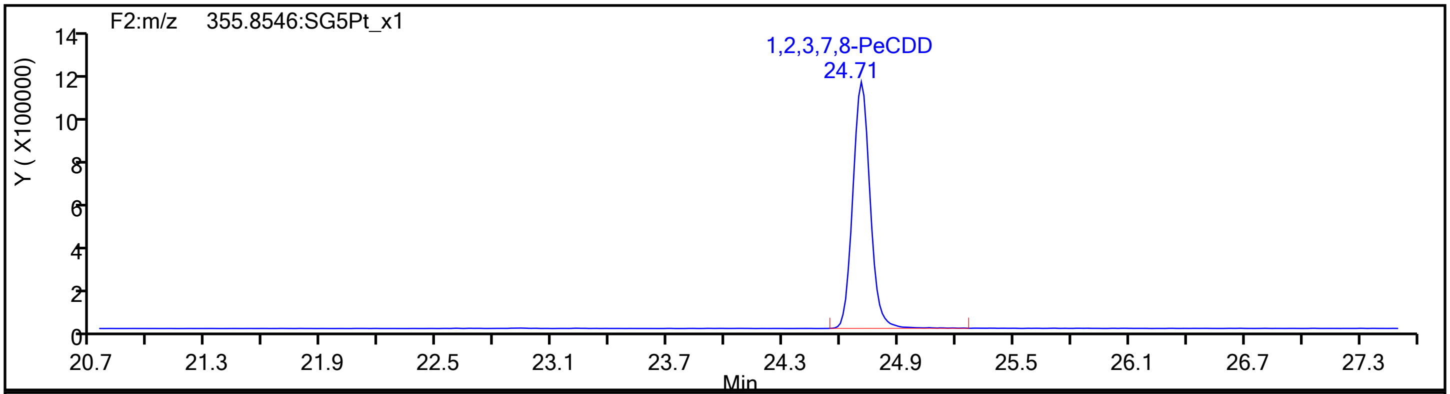

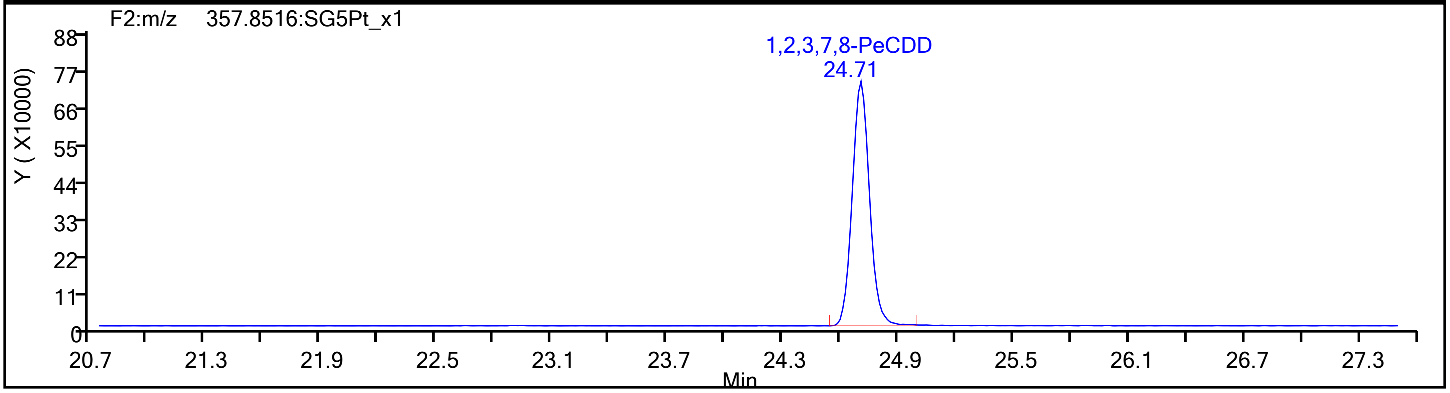

PeCDD Standards

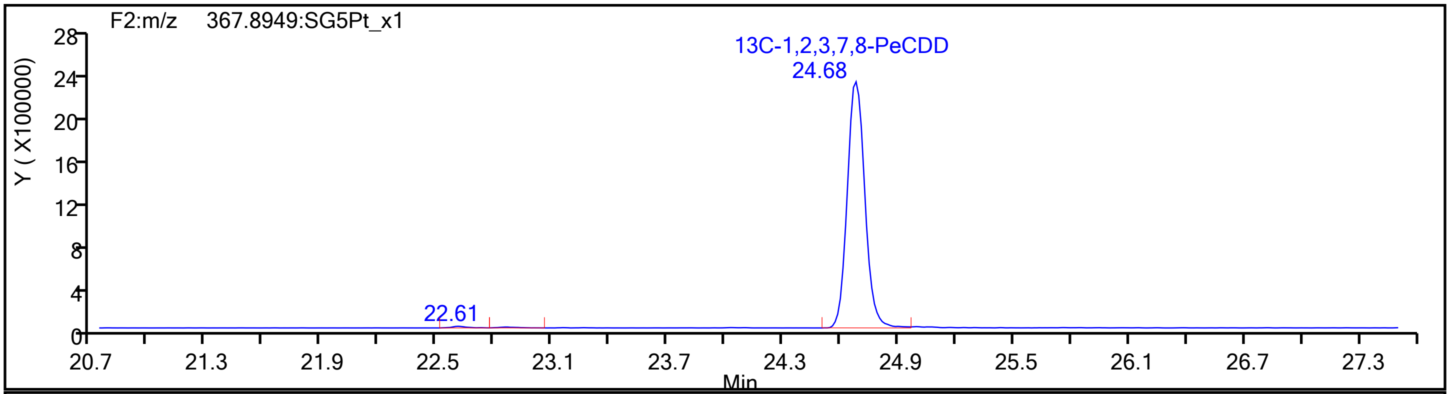

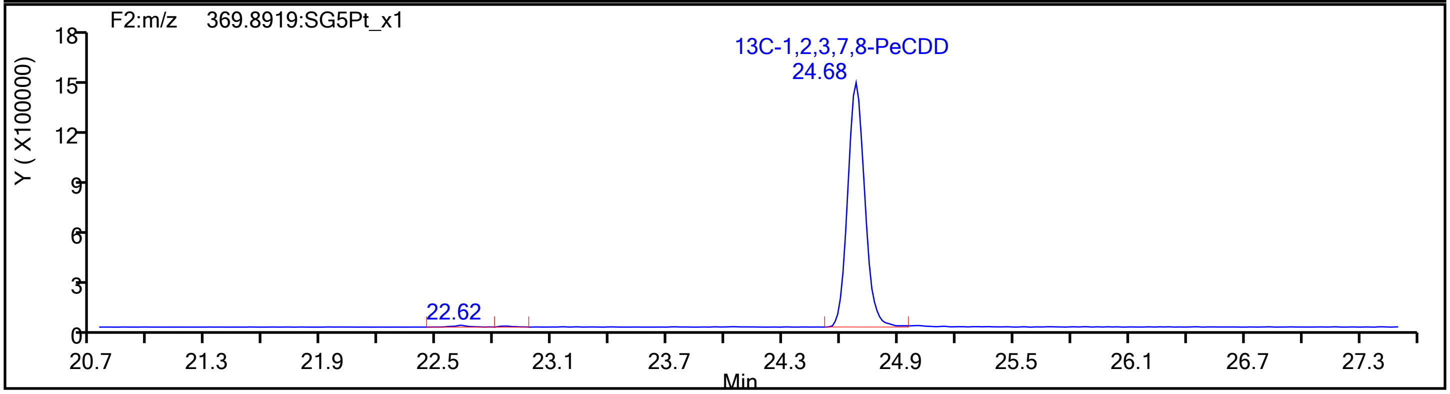

Report Date: 06-Mar-2020 10:13:16　Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d
Injection Date: 05-Mar-2020 18:33:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

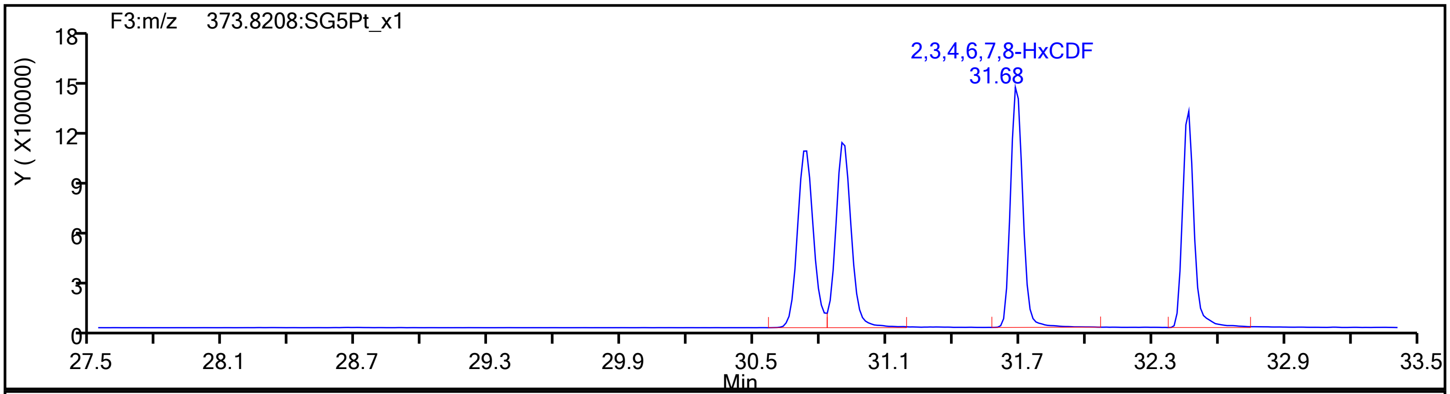

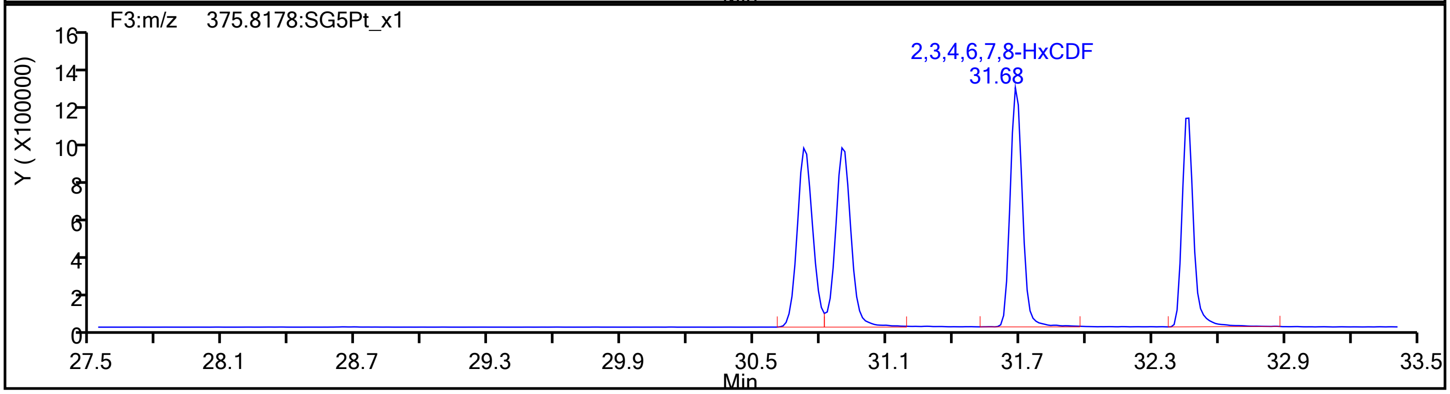

HxCDF Standards

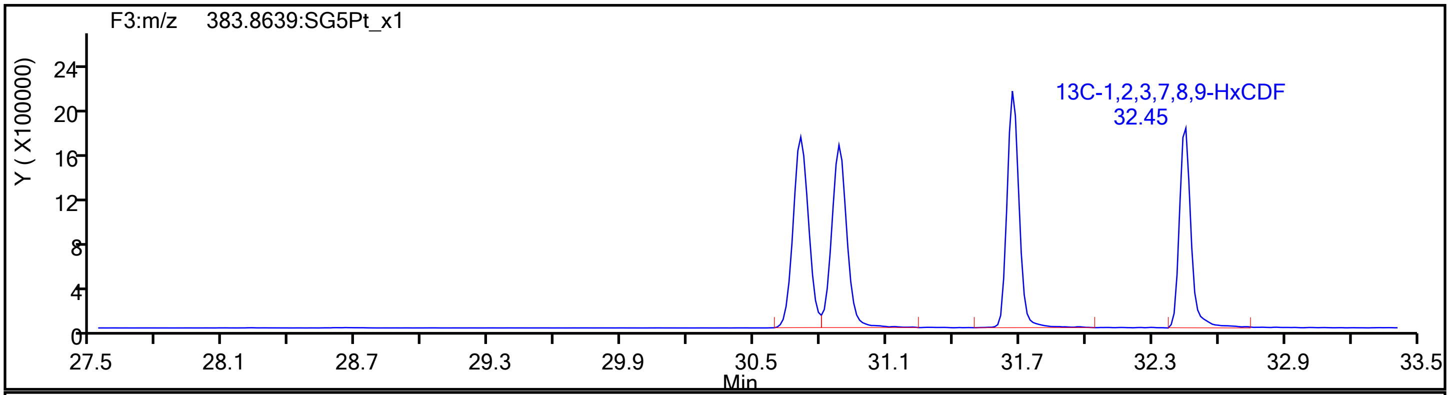

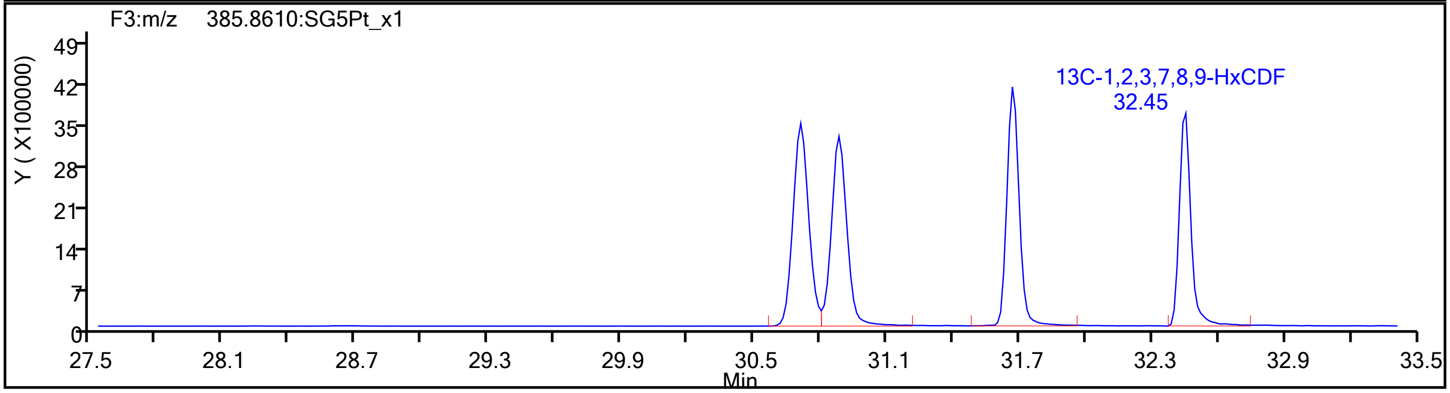

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d
Injection Date: 05-Mar-2020 18:33:54
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

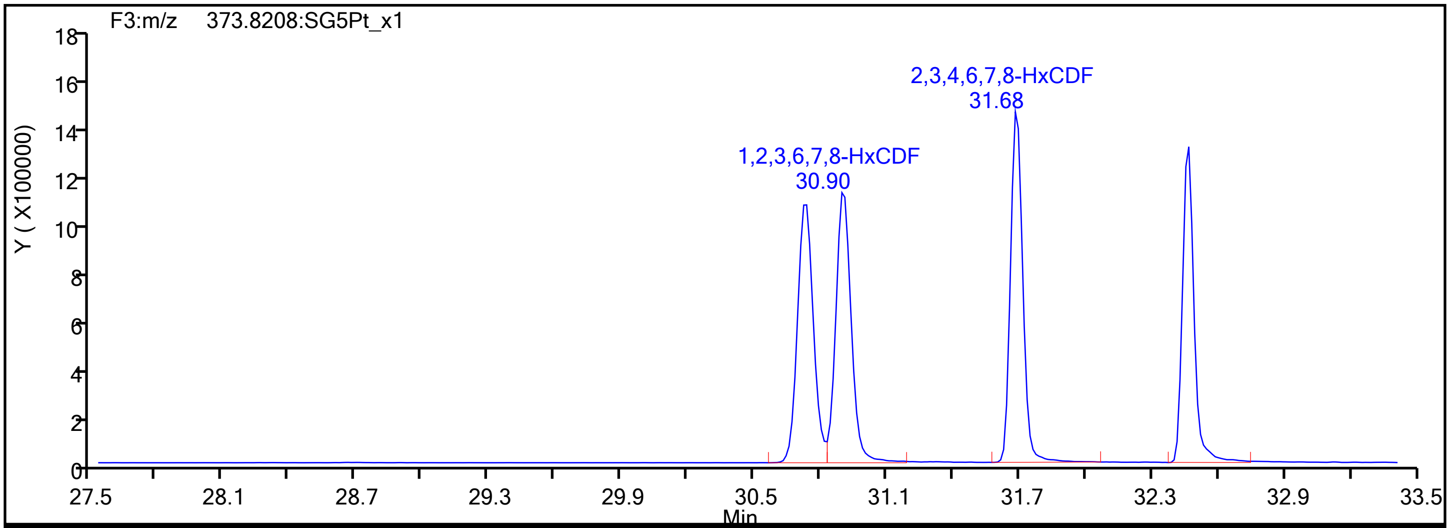

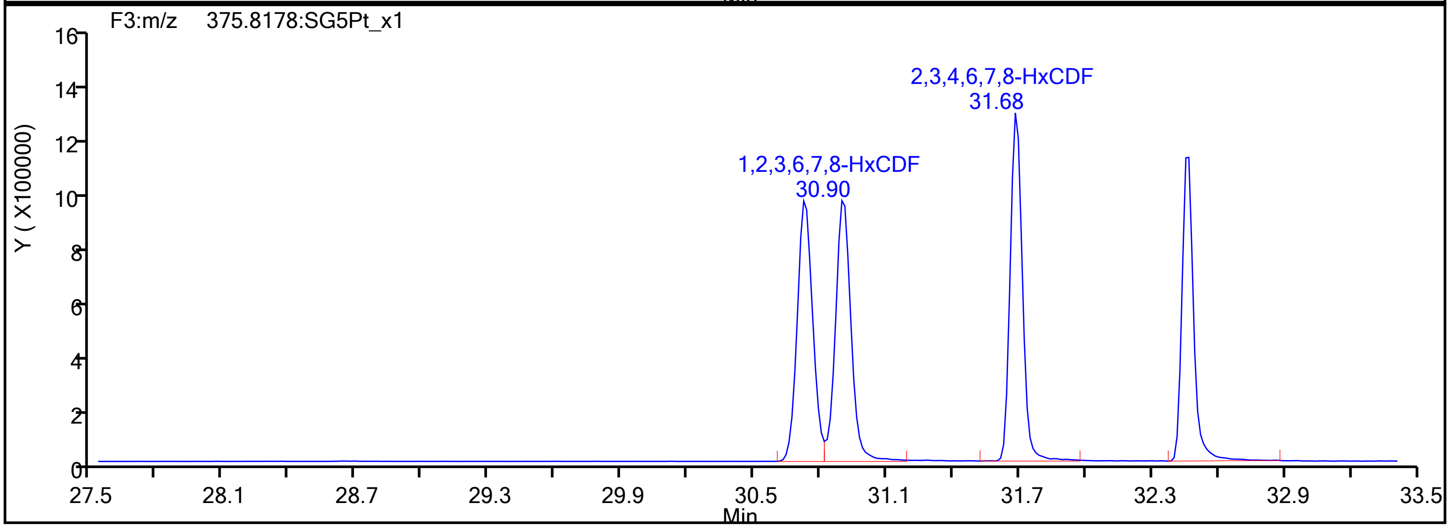

HxCDF Interference Mass

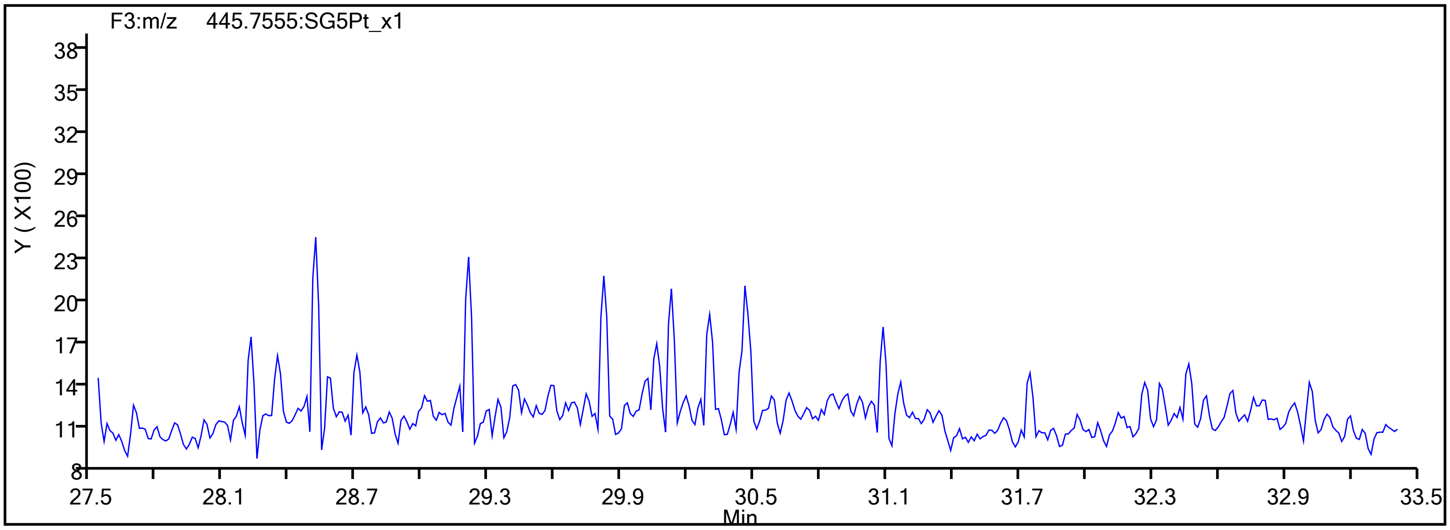

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d

Injection Date: 05-Mar-2020 18:33:54

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307

Sample Line#: 5

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

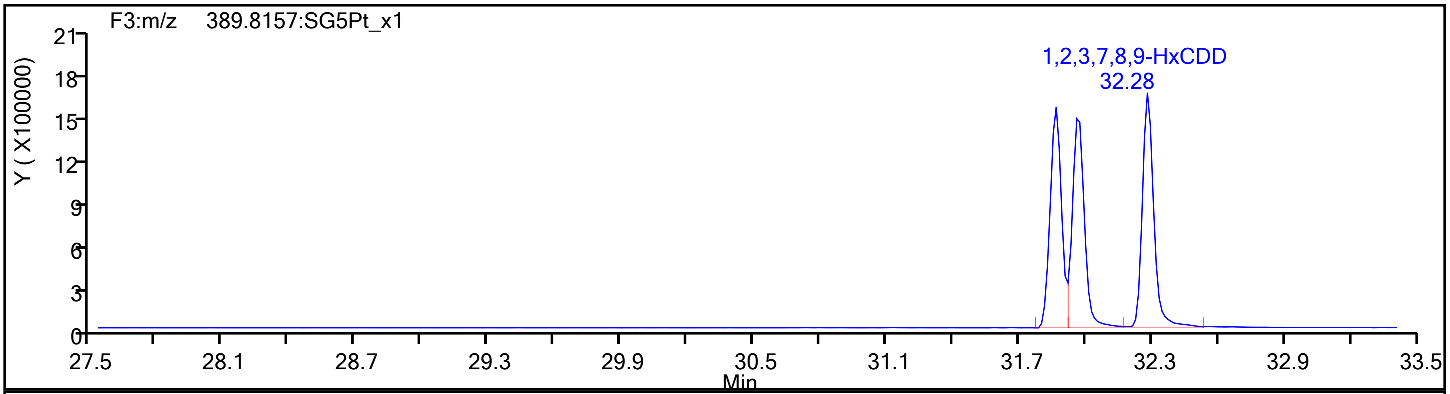

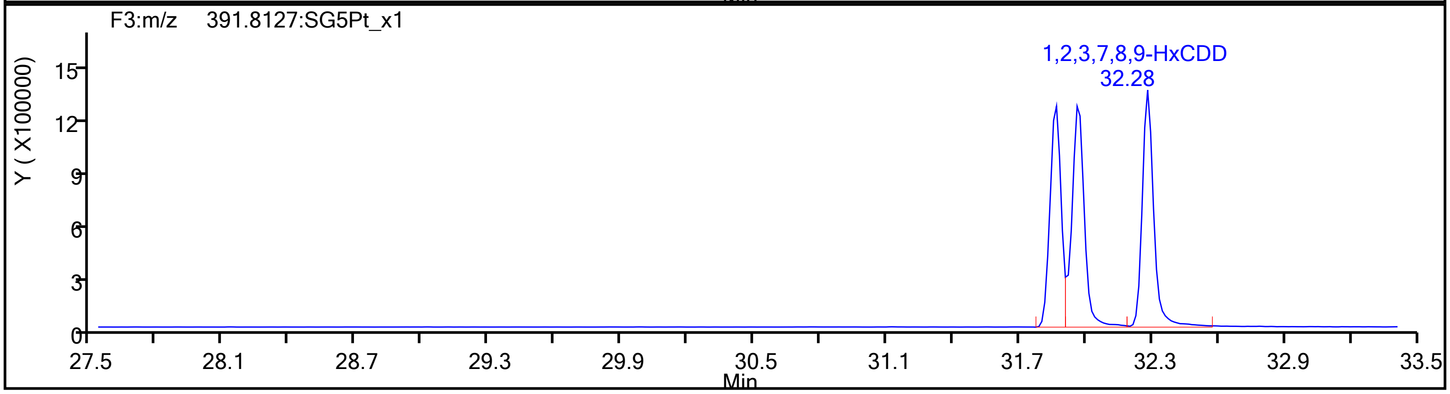

HxCDD Standards

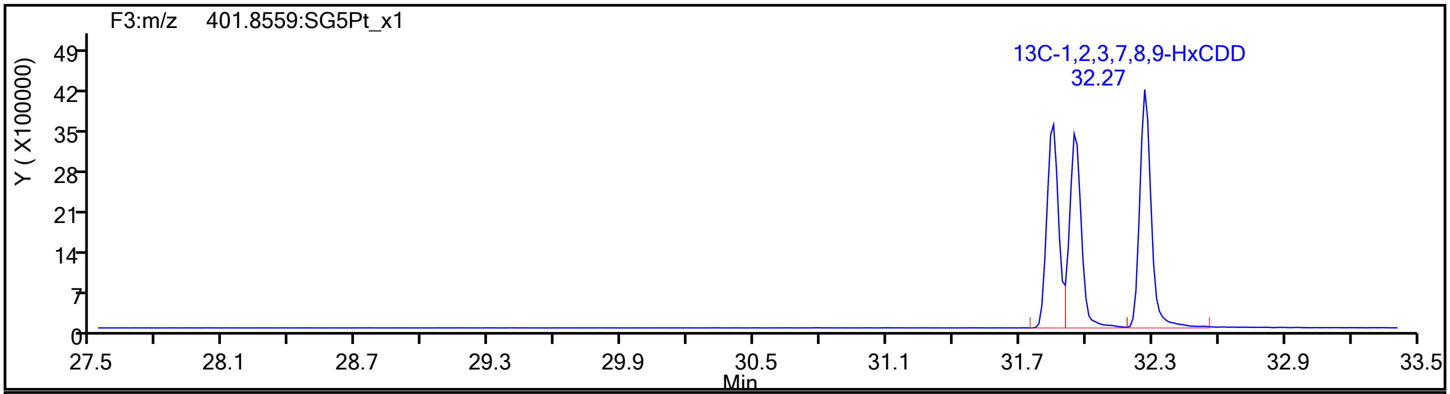

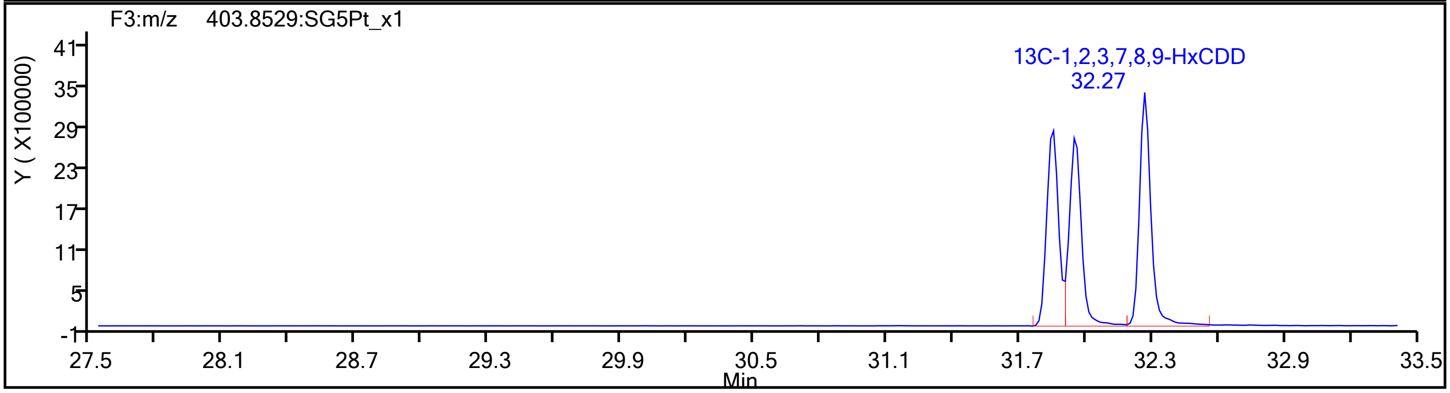

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

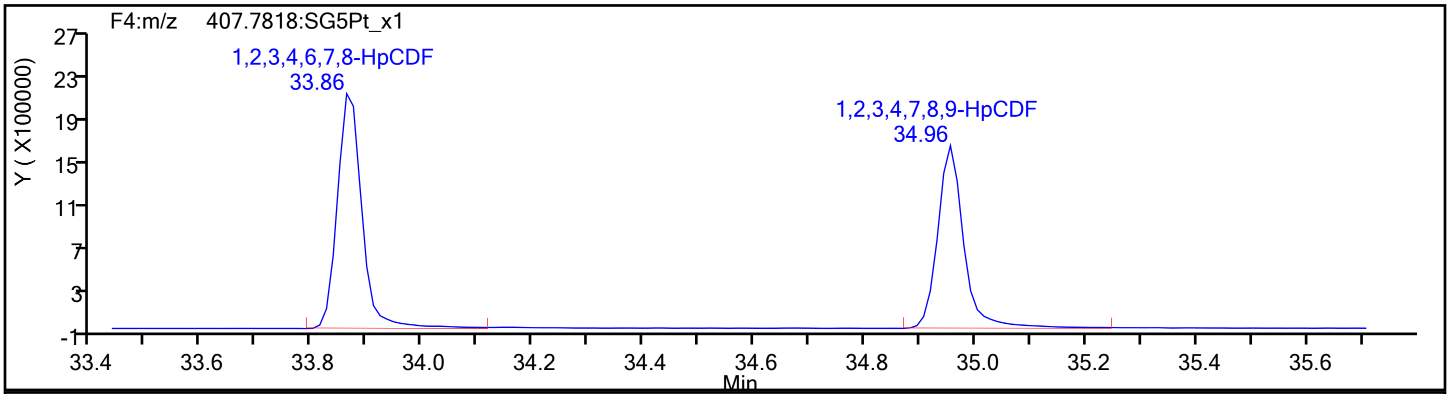

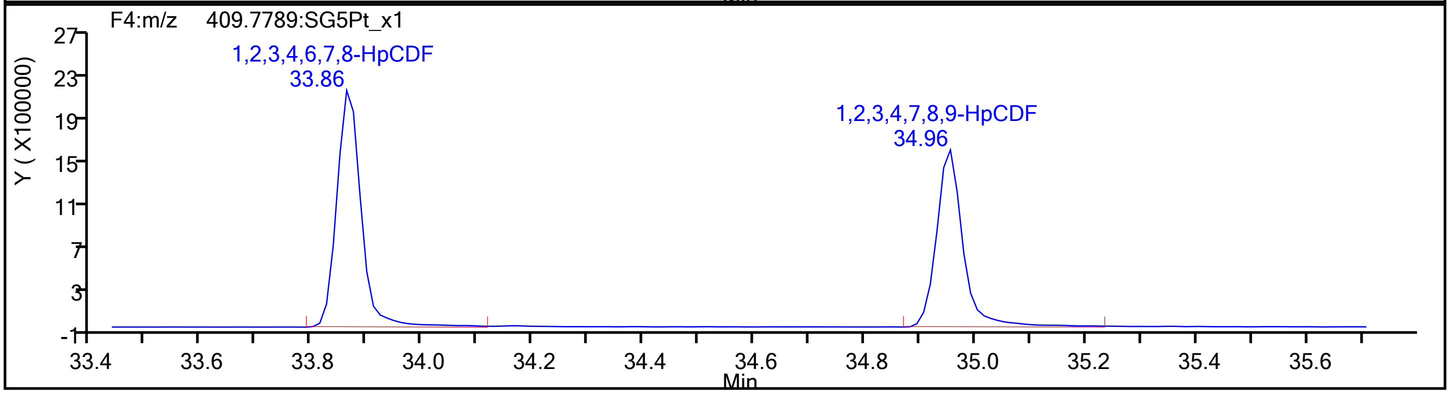

HpCDF Standards

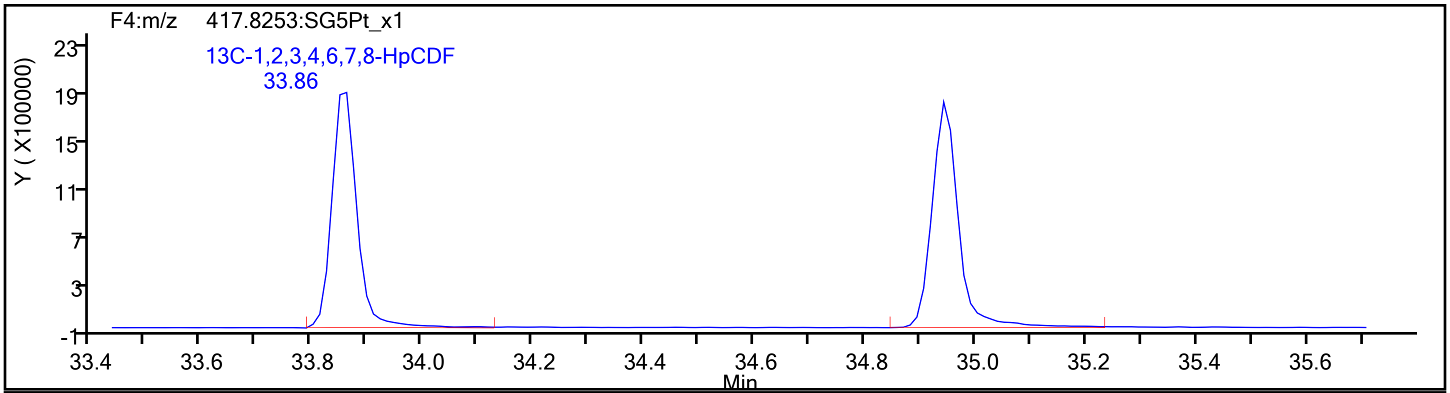

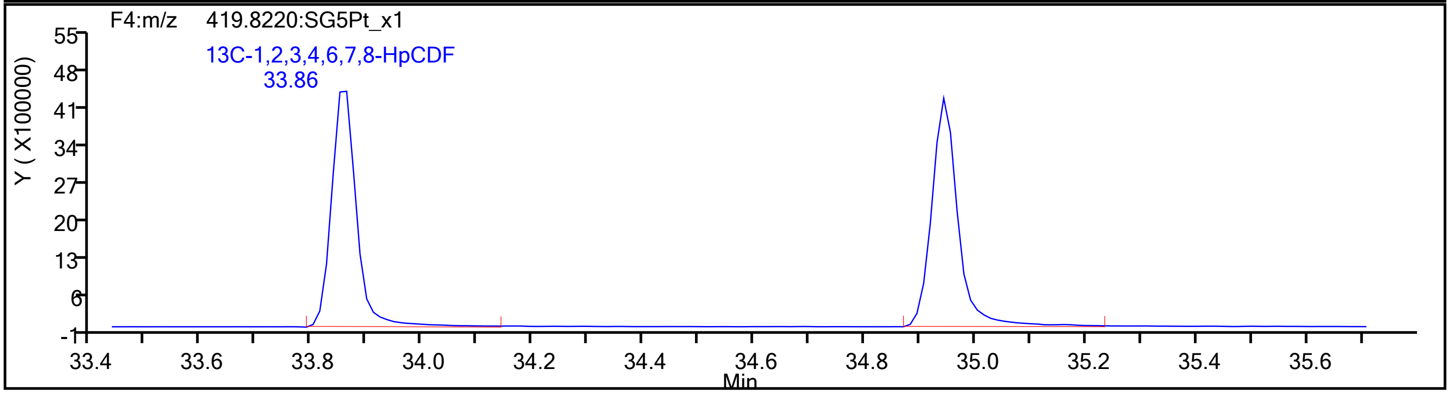

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d

Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

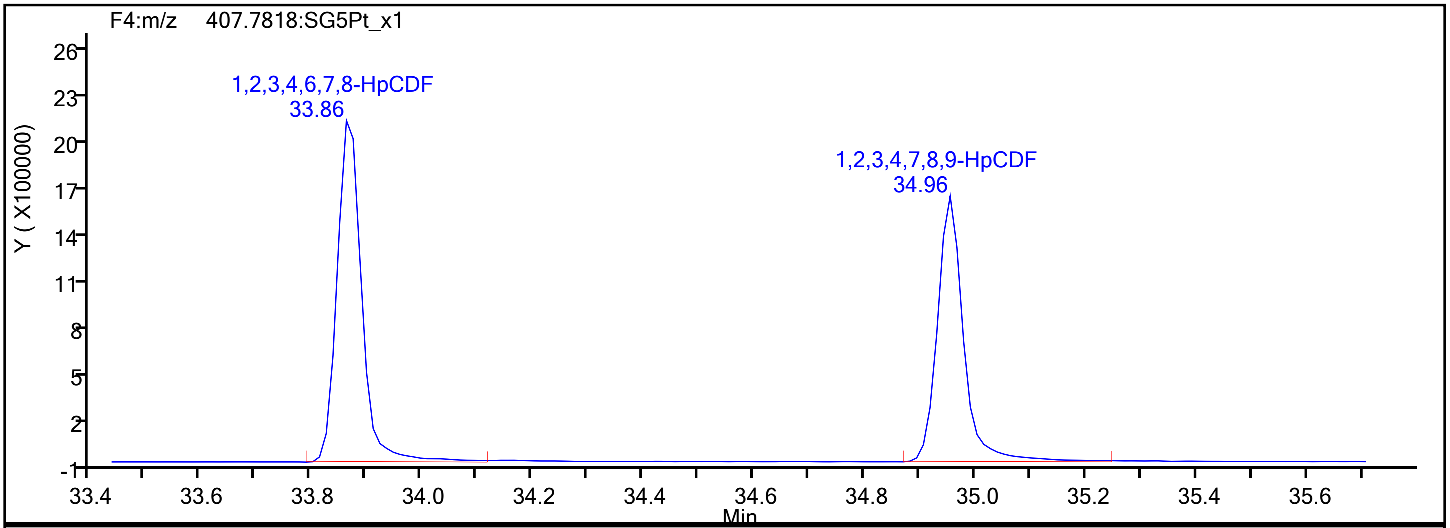

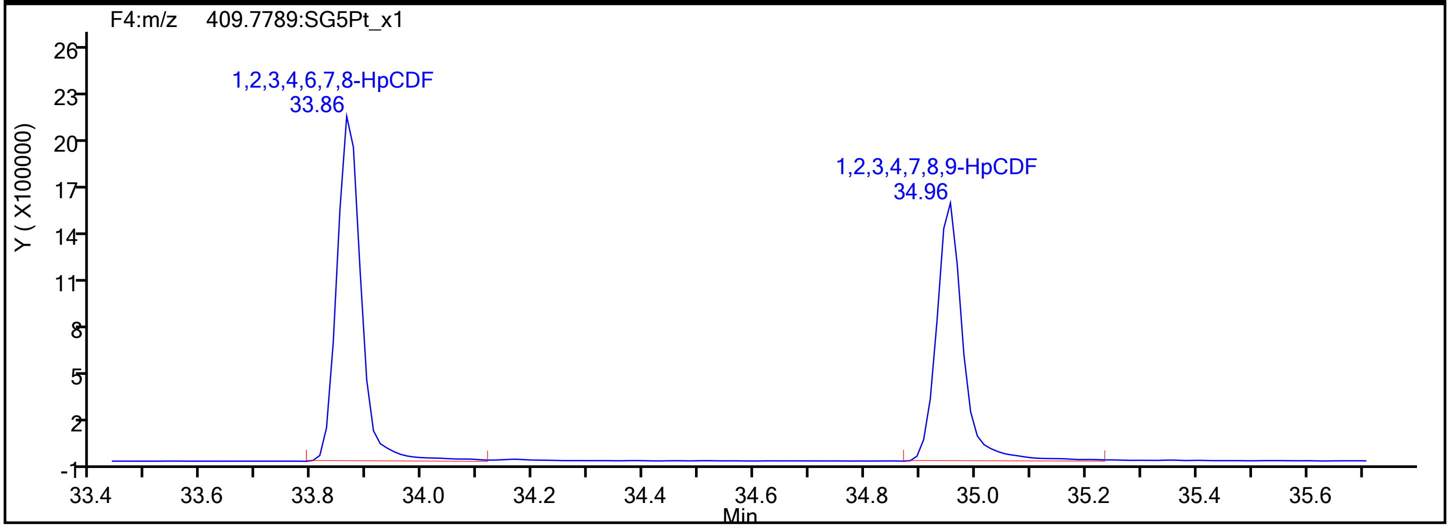

HpCDF Interference Mass

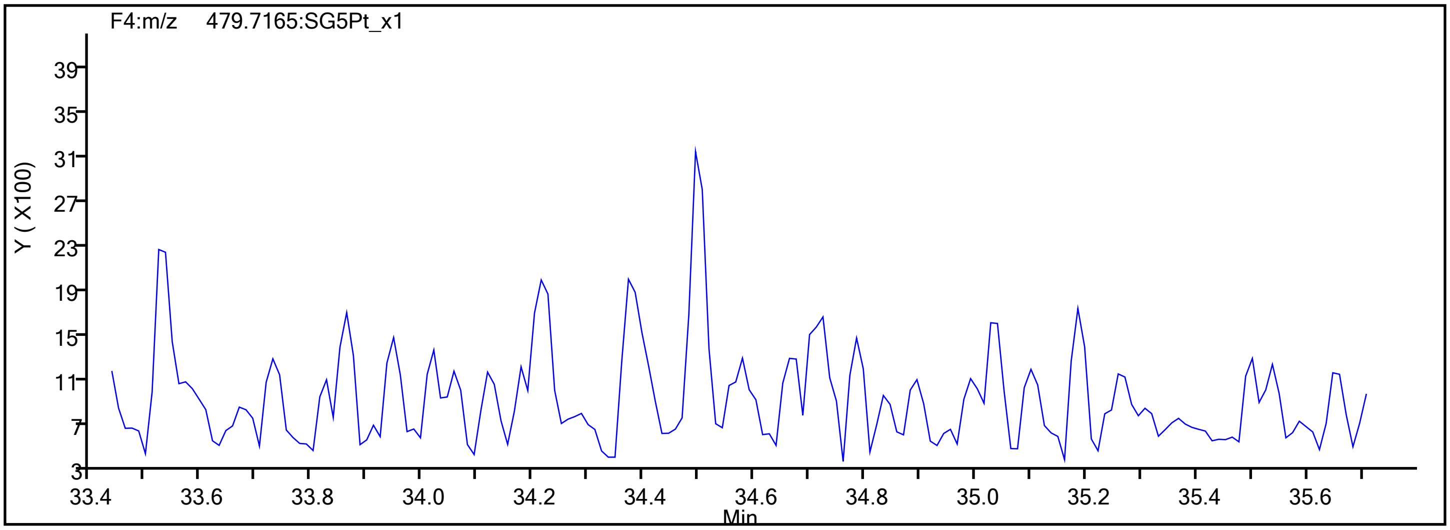

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

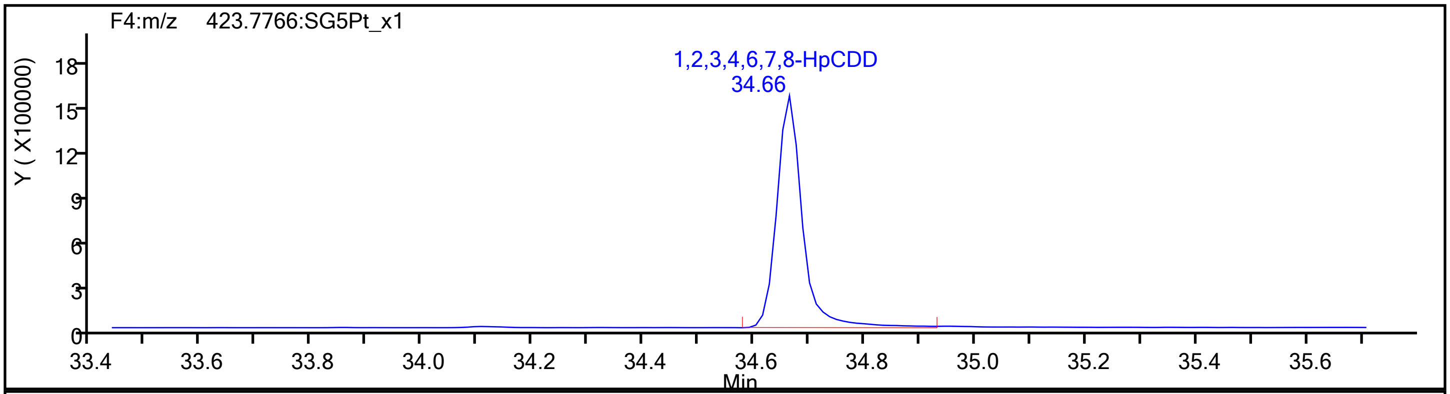

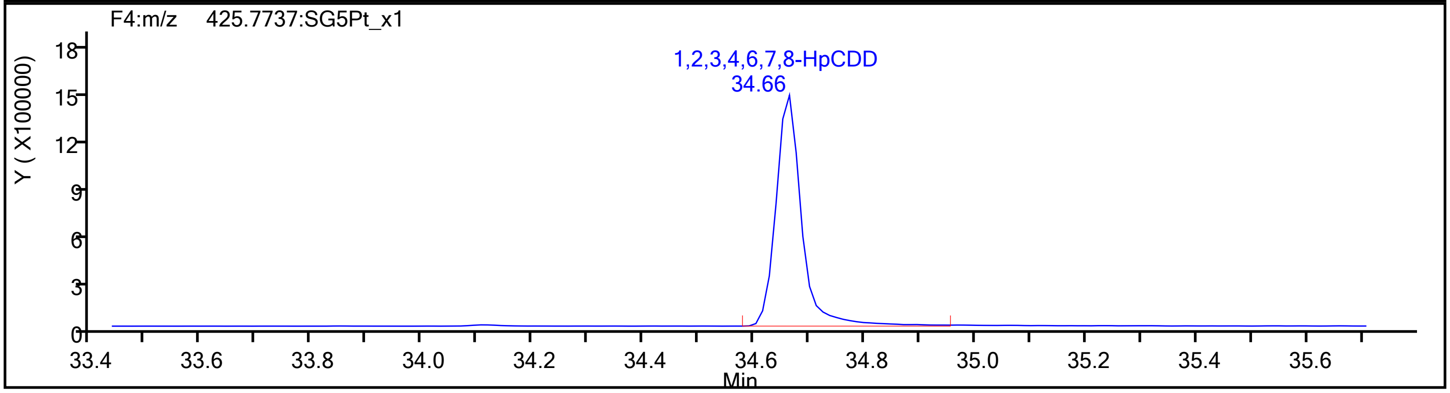

HpCDD Standards

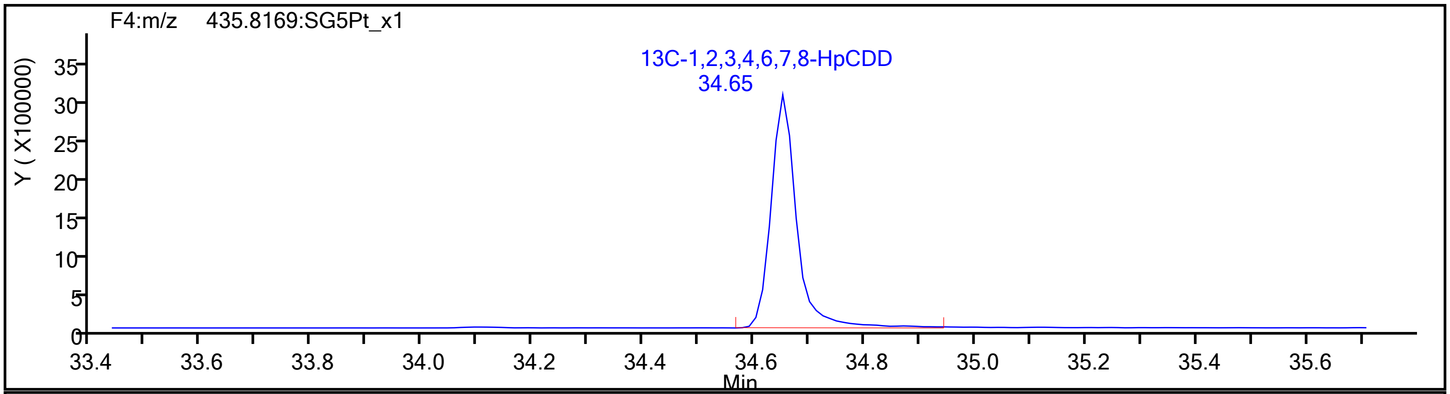

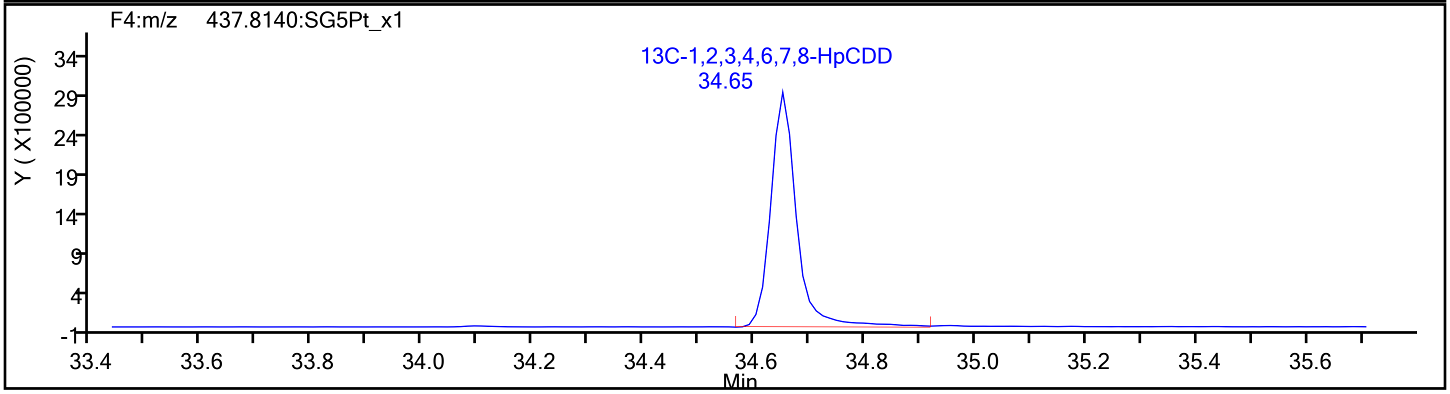

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

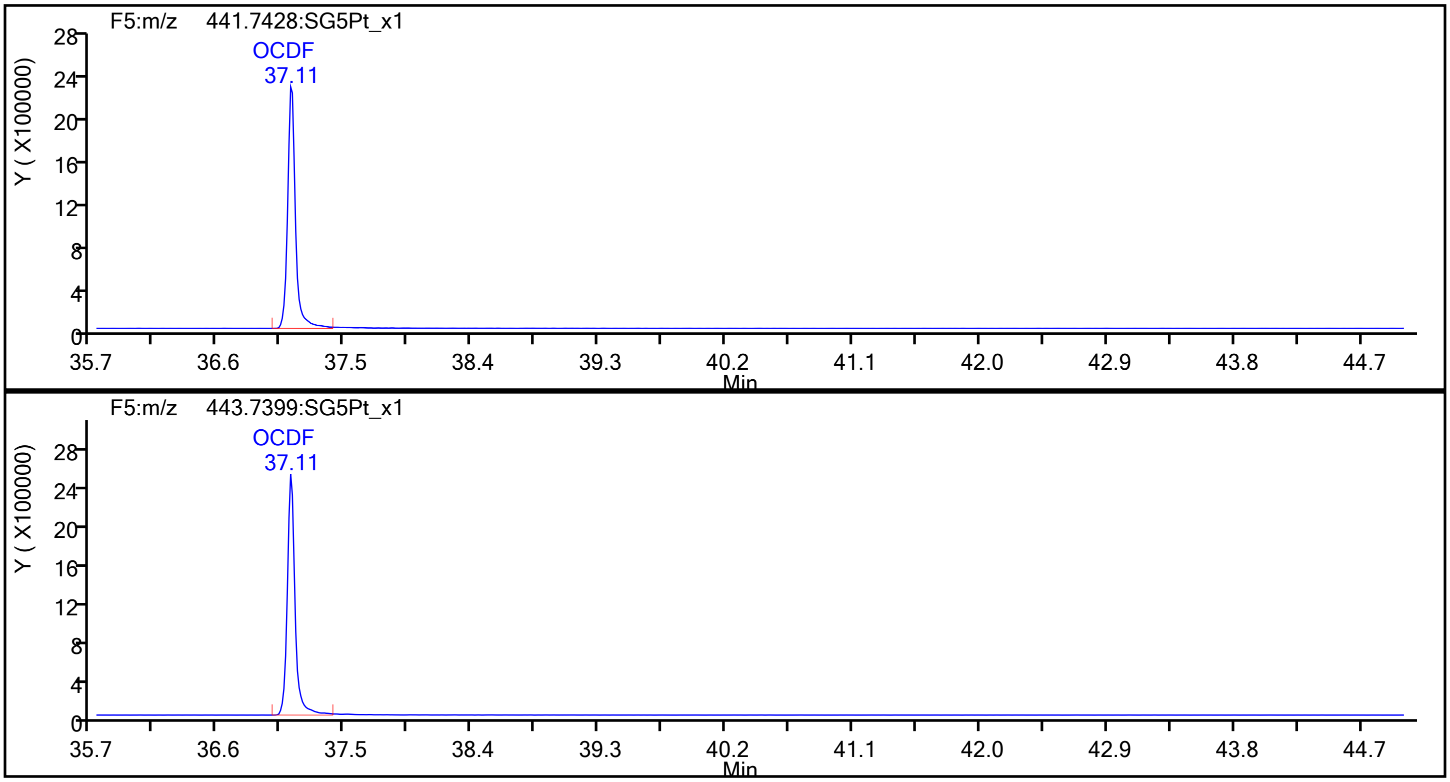

OCDF Standards

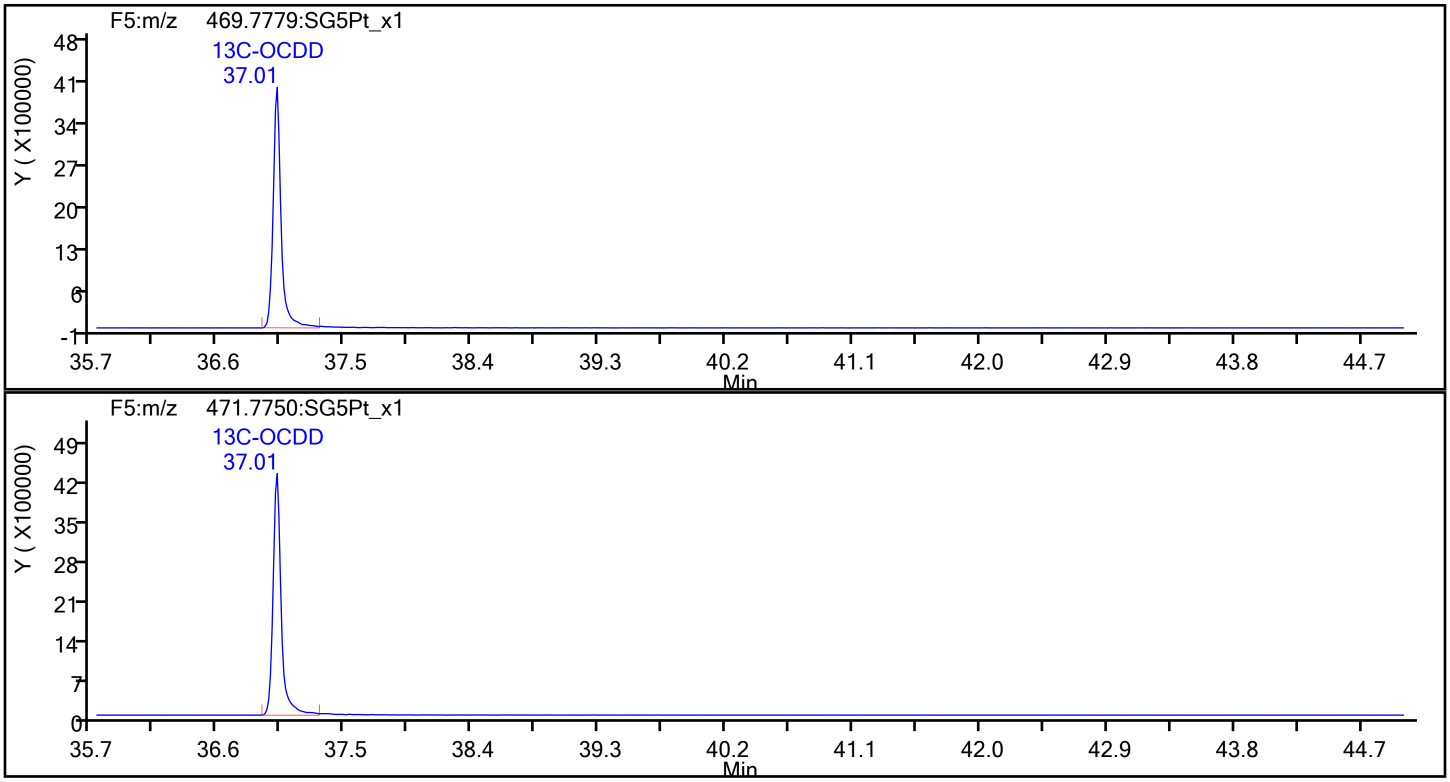

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

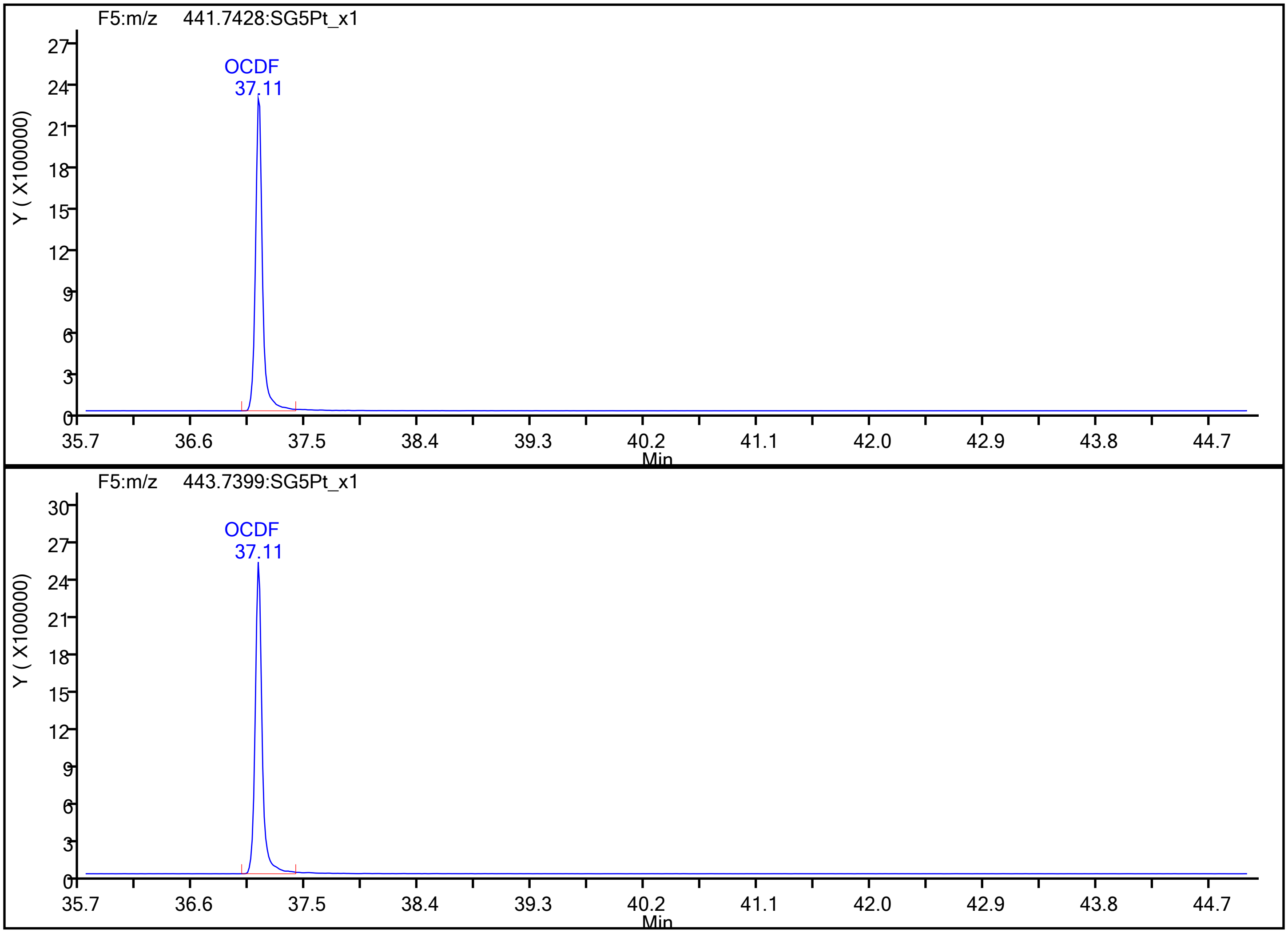

OCDF Interference Mass

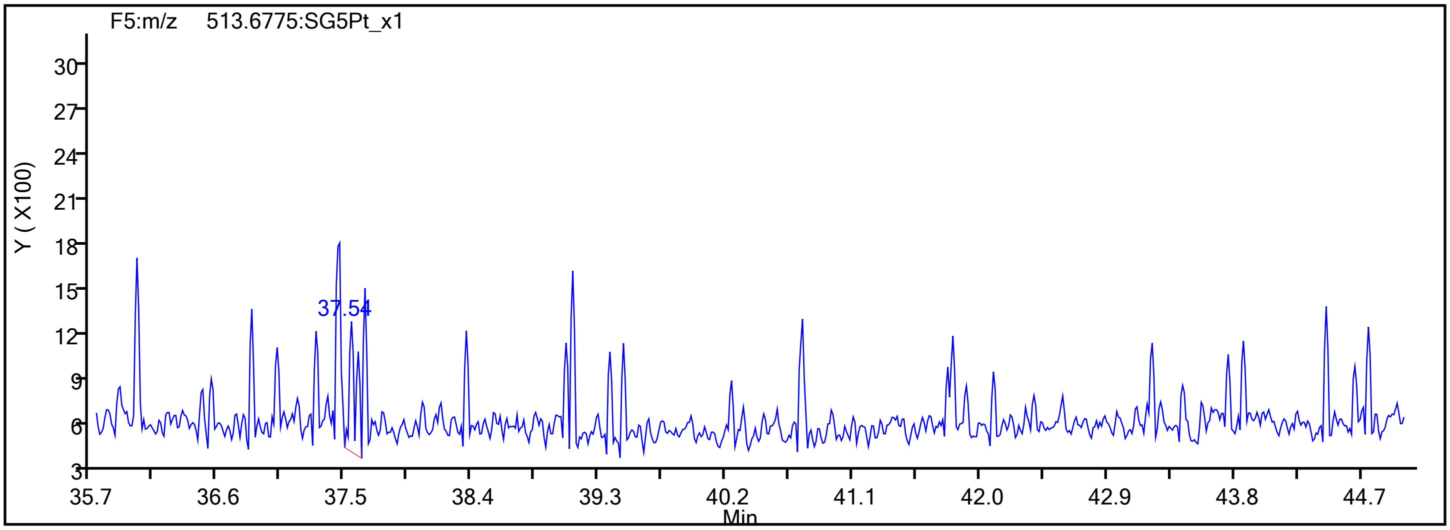

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d

Injection Date: 05-Mar-2020 18:33:54 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 5

Column Type: DB-5 Column Dia: 0.32 mm

OCDD

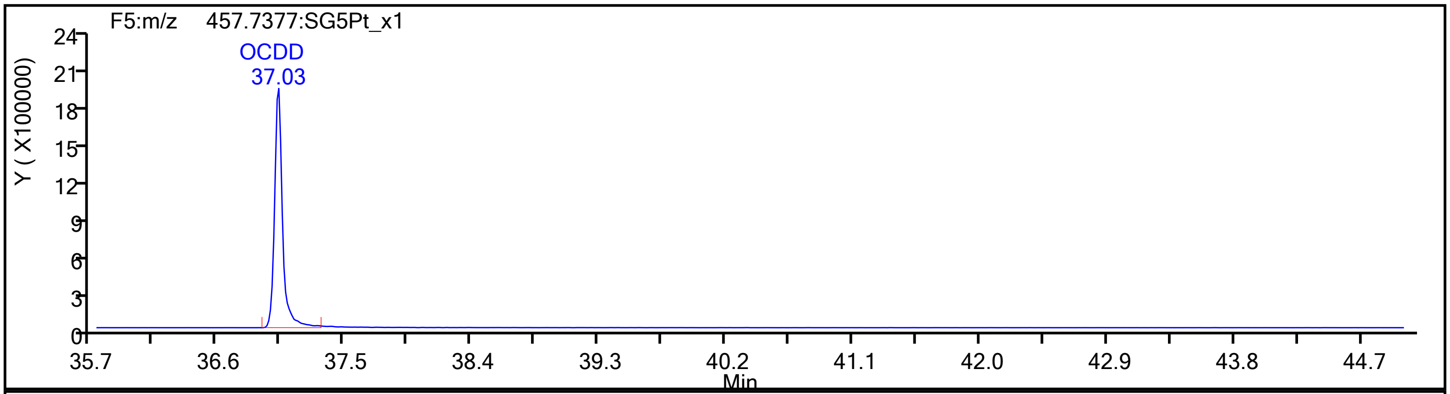

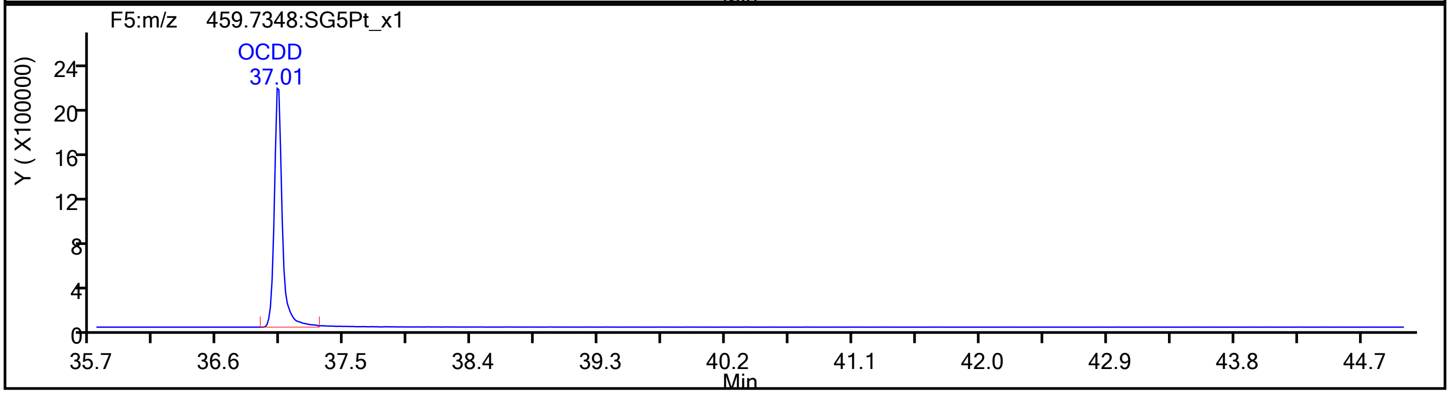

OCDD Standards

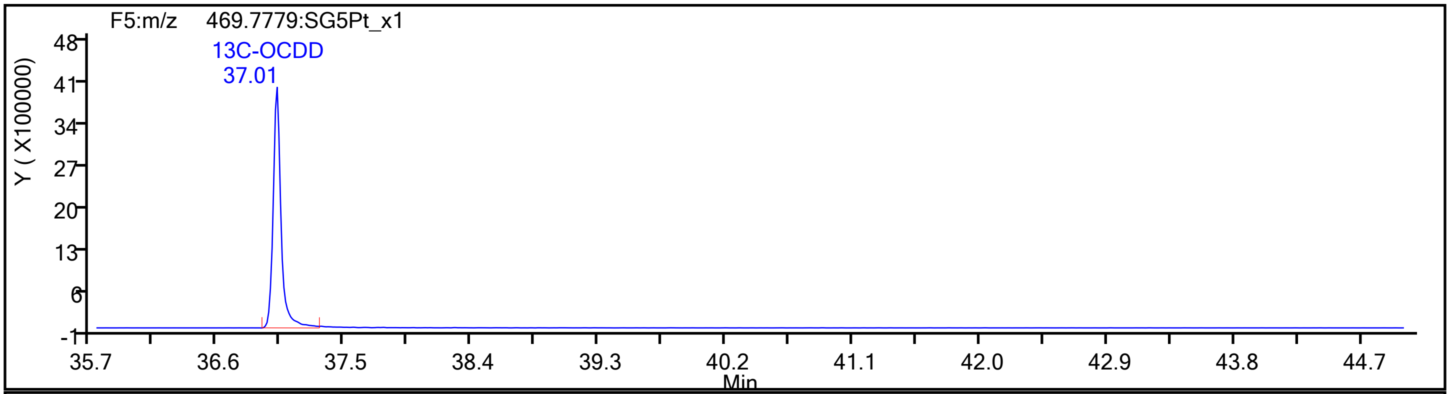

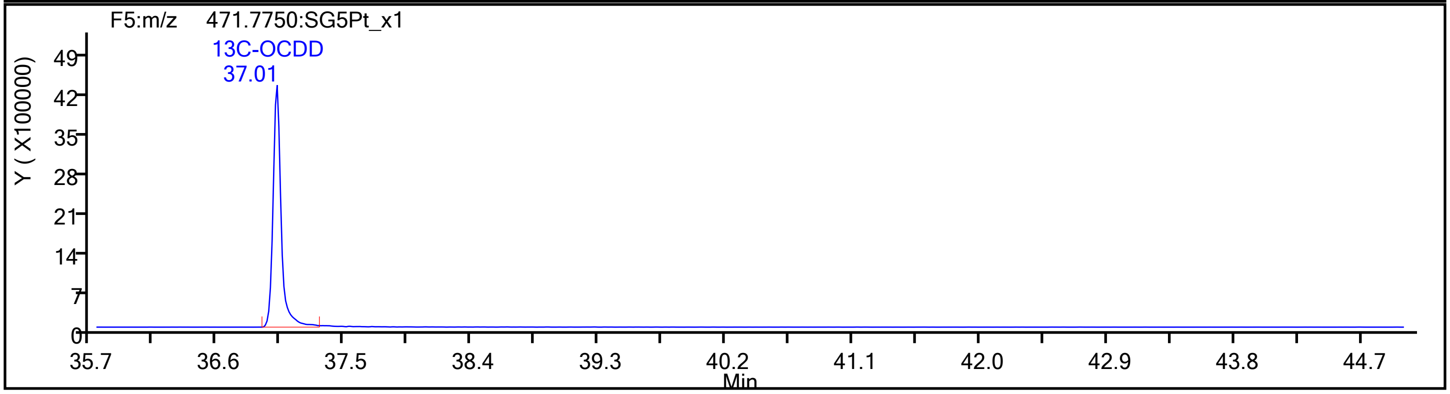

Report Date: 06-Mar-2020 10:13:16 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

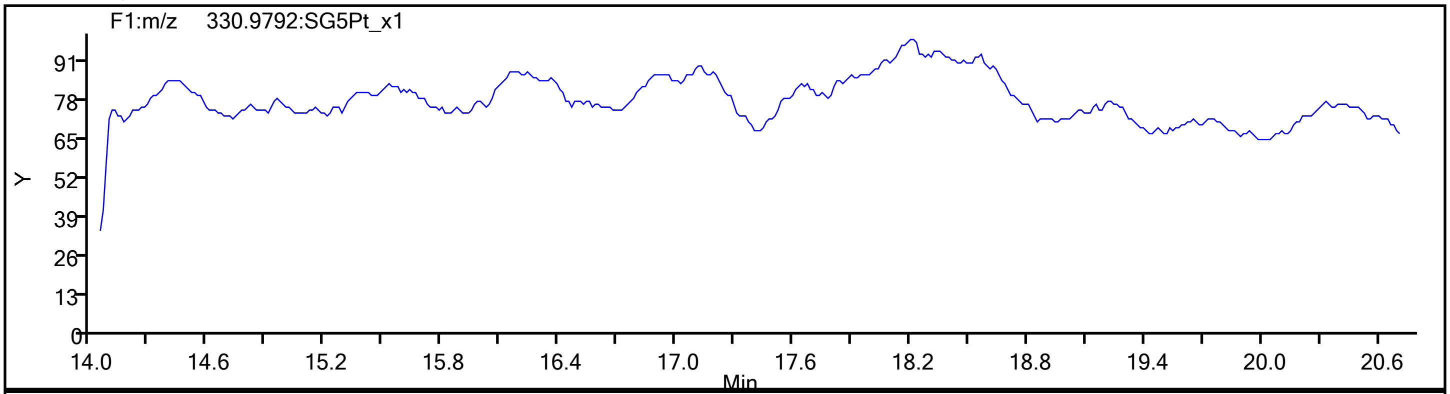

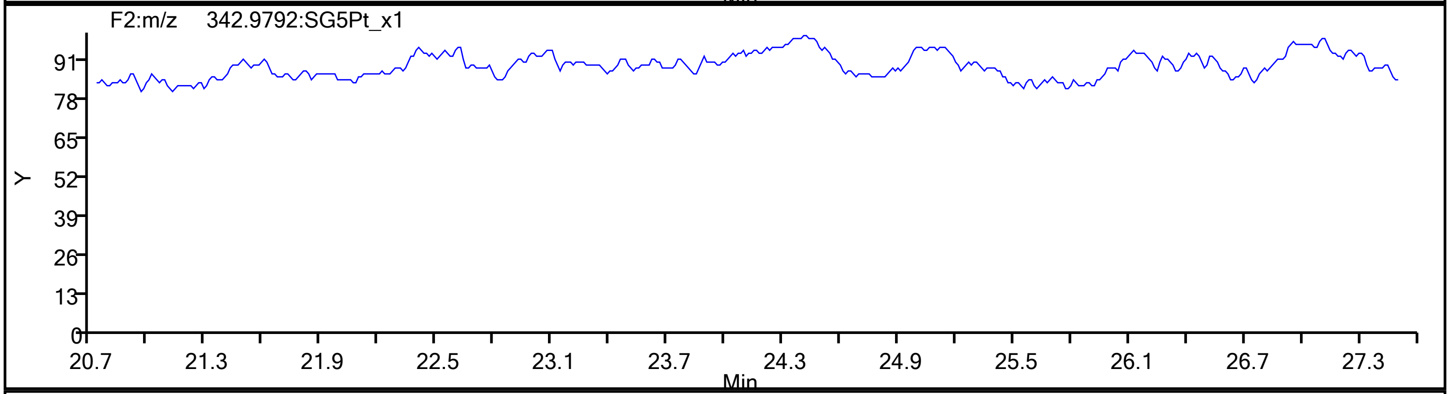

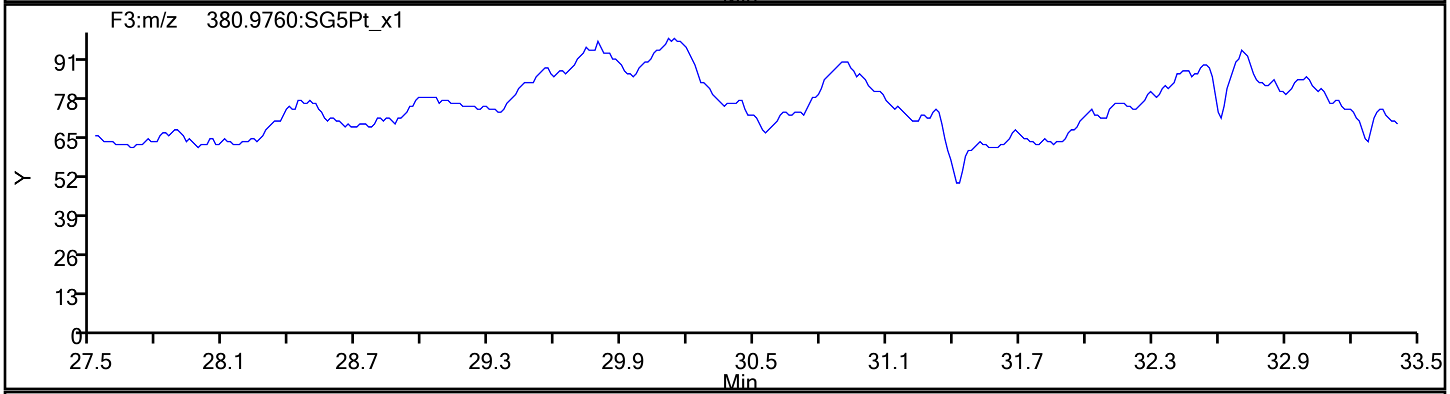

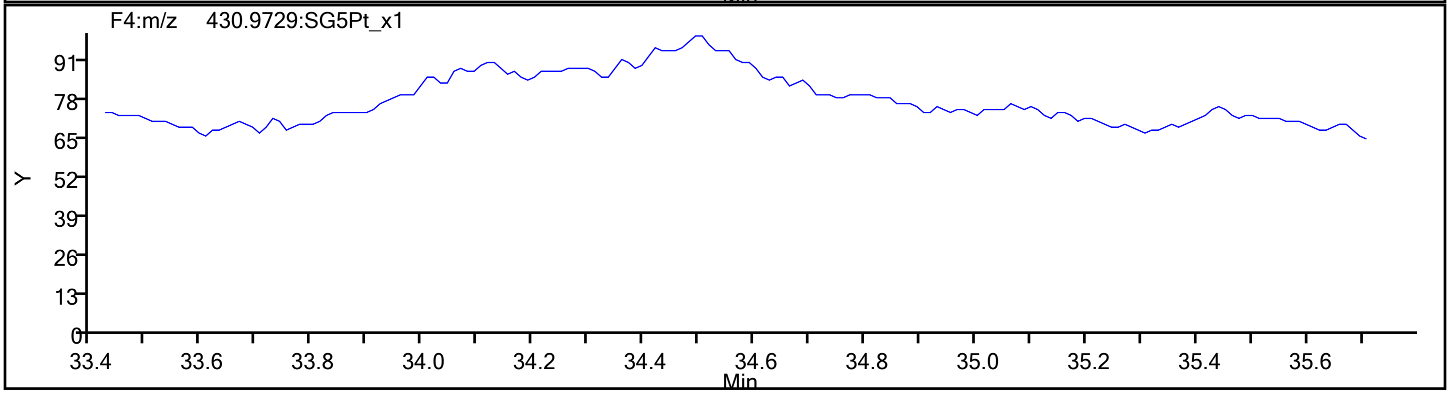

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_5.d		
Injection Date:	05-Mar-2020 18:33:54	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

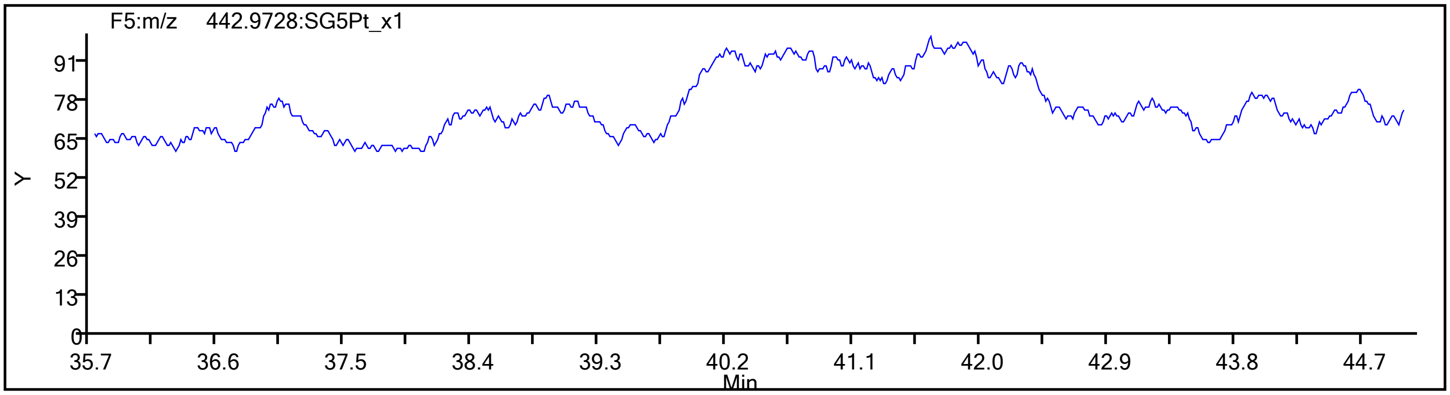

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d
Lims ID: IC
Client ID:
Sample Type: IC   Calib Level: 5
Inject. Date: 05-Mar-2020 19:19:53   ALS Bottle#: 6   Worklist Smp#: 6
Injection Vol: 2.0 ul   Dil. Factor: 1.0000
Sample Info: IC 030520C CS-5 HRDXNL5_00029
Misc. Info.: 05MR20A10D5
Operator ID: AJS   Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:13:19   Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution   Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm)   Det: F1:HRSIR
Process Host: CTX0319

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.020	39006404	0.79	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.490	48279358	0.74	1.1970	103.4	103.4	0.1372	0.1372	103	
2,3,7,8-TCDF	17.521	15619331	0.71	0.7672	42.2	42.2	0.0490	0.0490	105	
S Total TCDF					42.2	42.2	0.0490	0.0490		
D 13C-2,3,7,8-TCDD	18.216	34361684	0.79	0.8773	100.4	100.4	0.1572	0.1572	100	
2,3,7,8-TCDD	18.231	14056949	0.76	1.0000	40.9	40.9	0.0473	0.0473	102	
$ 37Cl4-2,3,7,8-TCDD	18.231	16421778		0.9515	44.2	44.2	0.0236	0.0236	111	
S Total TCDD					40.9	40.9	0.0473	0.0473		
D 13C-1,2,3,7,8-PeCDF	22.593	39496543	1.55	0.9904	102.2	102.2	0.2041	0.2041	102	
1,2,3,7,8-PeCDF	22.607	75180488	1.56	0.9019	211.1	211.1	0.4540	0.4540	106	
D 13C-2,3,4,7,8-PeCDF	23.956	45053810	1.55	1.0797	107.0	107.0	0.1872	0.1872	107	
2,3,4,7,8-PeCDF	23.984	77440753	1.54	0.8307	206.9	206.9	0.4726	0.4726	103	
S Total PeCDF					418.0	418.0	0.4633	0.4633		
D 13C-1,2,3,7,8-PeCDD	24.693	27344566	1.61	0.6904	101.5	101.5	0.1134	0.1134	102	
1,2,3,7,8-PeCDD	24.720	58830905	1.59	1.0145	212.1	212.1	0.1900	0.1900	106	
S Total PeCDD					212.1	212.1	0.1900	0.1900		
D 13C-1,2,3,4,7,8-HxCDF	30.723	28927620	0.50	0.9076	93.1	93.1	0.3020	0.3020	93.12	
1,2,3,4,7,8-HxCDF	30.737	48307405	1.19	0.7928	210.6	210.6	0.8560	0.8560	105	
D 13C-1,2,3,6,7,8-HxCDF	30.896	28289692	0.49	0.8671	95.3	95.3	0.3161	0.3161	95.32	
1,2,3,6,7,8-HxCDF	30.910	52053352	1.18	0.8592	214.2	214.2	0.7831	0.7831	107	
D 13C-2,3,4,6,7,8-HxCDF	31.682	28268533	0.50	0.8287	99.7	99.7	0.3308	0.3308	99.67	
2,3,4,6,7,8-HxCDF	31.695	53234487	1.18	0.8896	211.7	211.7	0.5995	0.5995	106	
D 13C-1,2,3,7,8,9-HxCDF	32.467	25769921	0.48	0.7391	101.9	101.9	0.3708	0.3708	102	
1,2,3,7,8,9-HxCDF	32.467	48982025	1.19	0.8941	212.6	212.6	0.6417	0.6417	106	
S Total HxCDF					849.1	849.1	0.7201	0.7201		
* 13C-1,2,3,7,8,9-HxCDD	32.281	34225921	1.22	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.855	27789324	1.22	0.8335	97.4	97.4	0.2351	0.2351	97.41	
1,2,3,4,7,8-HxCDD	31.882	47998413	1.22	0.8332	207.3	207.3	0.4696	0.4696	104	
D 13C-1,2,3,6,7,8-HxCDD	31.961	27979920	1.21	0.8228	99.4	99.4	0.2381	0.2381	99.36	
1,2,3,6,7,8-HxCDD	31.975	53479505	1.23	0.8944	213.7	213.7	0.4668	0.4668	107	
1,2,3,7,8,9-HxCDD	32.294	56539265	1.23	0.9449	214.6	214.6	0.4275	0.4275	107	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDD					635.6	635.6	0.4546	0.4546		
D 13C-1,2,3,4,6,7,8-HpCDF	33.874	22853818	0.42	0.7009	95.3	95.3	0.7566	0.7566	95.27	
1,2,3,4,6,7,8-HpCDF	33.874	63471435	1.04	1.3295	208.9	208.9	1.474	1.474	104	
D 13C-1,2,3,4,7,8,9-HpCDF	34.955	24687268	0.42	0.7244	99.6	99.6	0.7321	0.7321	99.58	
1,2,3,4,7,8,9-HpCDF	34.967	55504167	1.01	1.0803	208.1	208.1	1.766	1.766	104	
S Total HpCDF					417.0	417.0	1.620	1.620		
D 13C-1,2,3,4,6,7,8-HpCDD	34.664	24022160	1.06	0.7026	99.9	99.9	0.3934	0.3934	99.90	
1,2,3,4,6,7,8-HpCDD	34.676	49946913	1.04	1.0040	207.1	207.1	0.6292	0.6292	104	
S Total HpCDD					207.1	207.1	0.6292	0.6292		
D 13C-OCDD	37.027	43935149	0.88	0.6184	207.6	207.6	0.1433	0.1433	104	
OCDF	37.123	100207446	0.90	1.1076	411.8	411.8	0.2345	0.2345	103	
OCDD	37.039	91155553	0.87	1.0175	407.8	407.8	0.3022	0.3022	102	

Reagents:

HRDXNL5_00029 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	05-Mar-2020 19:19:53	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 030520C CS-5 HRDXNL5_00029				
Misc. Info.:	05MR20A10D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Mar-2020 10:13:19	Calib Date:	05-Mar-2020 20:05:51		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX0319				

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.020	18.008	1		17178227	4305995	3426	8565	1257		
333.9339	18.020	18.008	1		21828177	5376959	1917	4792	2805	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.490	17.491	0	0.971	20476339	5073143	4006	10015	1266		
317.9389	17.490	17.491	0	0.971	27803019	6970763	2353	5882	2963	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.521	17.509	1	1.002	6505093	1613388	737	1842	2189		
305.8987	17.506	17.509	0	1.001	9114238	2272436	1073	2682	2118	0.71(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.216	18.204	1	1.011	15191715	3636517	3426	8565	1061		
333.9339	18.216	18.204	1	1.011	19169969	4585427	1917	4792	2392	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.231	18.225	0	1.001	6090230	1490090	854	2135	1745		
321.8936	18.231	18.225	0	1.001	7966719	1959780	700	1750	2800	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.231	18.225	0	1.012	16421778	3948782	869	2172	4544		
13C-1,2,3,7,8-PeCDF											
351.9000	22.593	22.585	0	1.254	23992285	4382366	4843	12107	905		
353.8970	22.593	22.585	0	1.254	15504258	2837361	2986	7465	950	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.607	22.607	0	1.001	45801571	8220023	7007	17517	1173		
341.8567	22.607	22.607	0	1.001	29378917	5327352	4817	12042	1106	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.956	23.951	0	1.329	27363128	4571303	4843	12107	944		
353.8970	23.956	23.951	0	1.329	17690682	2957613	2986	7465	990	1.55(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	23.984	23.976	0	1.001	46993516	7910546	7007	17517	1129		
341.8567	23.984	23.976	0	1.001	30447237	5144509	4817	12042	1068	1.54(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.693	24.685	0	1.370	16858700	2698388	1787	4467	1510		
369.8919	24.679	24.685	0	1.370	10485866	1652661	1245	3112	1327	1.61(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.720	24.709	1	1.001	36104307	5720174	2023	5057	2828		
357.8516	24.706	24.709	0	1.001	22726598	3647315	1331	3327	2740	1.59(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.723	30.718	0	0.952	9592407	1893314	3537	8842	535		
385.8610	30.723	30.718	0	0.952	19335213	3877071	6581	16452	589	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.737	30.736	0	1.000	26274615	5281445	8447	21117	625		
375.8178	30.737	30.736	0	1.000	22032790	4420623	7217	18042	613	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.896	30.888	0	0.957	9324495	1870861	3537	8842	529		
385.8610	30.896	30.888	0	0.957	18965197	3948942	6581	16452	600	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.910	30.907	0	1.000	28220094	5916207	8447	21117	700		
375.8178	30.910	30.907	0	1.000	23833258	5048459	7217	18042	700	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.682	31.676	0	0.981	9407992	2462317	3537	8842	696		
385.8610	31.682	31.676	0	0.981	18860541	4880214	6581	16452	742	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.695	31.689	0	1.000	28764664	7382648	8447	21117	874		
375.8178	31.695	31.689	0	1.000	24469823	6332126	7217	18042	877	1.18(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.467	32.456	1	1.006	8412473	2256970	3537	8842	638		
385.8610	32.467	32.456	1	1.006	17357448	4568391	6581	16452	694	0.48(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.467	32.467	0	1.000	26616756	7117306	8447	21117	843		
375.8178	32.467	32.467	0	1.000	22365269	6109588	7217	18042	847	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.281	32.272	1		18814642	5059227	4014	10035	1260		
403.8529	32.281	32.272	1		15411279	4169697	3219	8047	1295	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.855	31.855	0	0.987	15257408	4255023	4014	10035	1060		
403.8529	31.855	31.855	0	0.987	12531916	3478180	3219	8047	1081	1.22(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.882	31.871	1	1.001	26393599	7212860	6667	16667	1082		
391.8127	31.868	31.871	0	1.000	21604814	6064831	5435	13587	1116	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.961	31.956	0	0.990	15323350	3971817	4014	10035	989		
403.8529	31.961	31.956	0	0.990	12656570	3274255	3219	8047	1017	1.21(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8157	31.975	31.972	0	1.000	29505062	7603773	6667	16667	1141		
391.8127	31.975	31.972	0	1.000	23974443	6289208	5435	13587	1157	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.294	32.288	0	1.014	31224637	8533365	6667	16667	1280		
391.8127	32.294	32.288	0	1.014	25314628	6878751	5435	13587	1266	1.23(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.874	33.864	1	1.049	6748224	2096268	6590	16475	318		
419.8220	33.862	33.864	0	1.049	16105594	5066107	12987	32467	390	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.874	33.869	0	1.000	32349161	10378909	28660	71650	362		
409.7789	33.874	33.869	0	1.000	31122274	10047980	27482	68705	366	1.04(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.955	34.948	0	1.083	7356113	2185470	6590	16475	332		
419.8220	34.955	34.948	0	1.083	17331155	5171885	12987	32467	398	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.967	34.960	0	1.000	27930419	8148907	28660	71650	284		
409.7789	34.967	34.960	0	1.000	27573748	7956653	27482	68705	290	1.01(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.664	34.656	0	1.074	12363003	3713479	5518	13795	673		
437.8140	34.664	34.656	0	1.074	11659157	3499969	4686	11715	747	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.676	34.668	0	1.000	25434658	7635909	9254	23135	825		
425.7737	34.676	34.668	0	1.000	24512255	7318049	8974	22435	815	1.04(0.88-1.20)	
13C-OCDD											
469.7779	37.027	37.017	1	1.147	20591714	5223049	1381	3452	3782		
471.7750	37.027	37.017	1	1.147	23343435	6021202	1890	4725	3186	0.88(0.76-1.02)	
OCDF											
441.7428	37.123	37.120	0	1.003	47553617	12058789	2670	6675	4516		
443.7399	37.123	37.120	0	1.003	52653829	13488625	3170	7925	4255	0.90(0.76-1.02)	
OCDD											
457.7377	37.039	37.029	1	1.000	42449315	10729082	3257	8142	3294		
459.7348	37.027	37.029	0	1.000	48706238	12076524	3659	9147	3300	0.87(0.76-1.02)	

Reagents:

HRDXNL5_00029 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

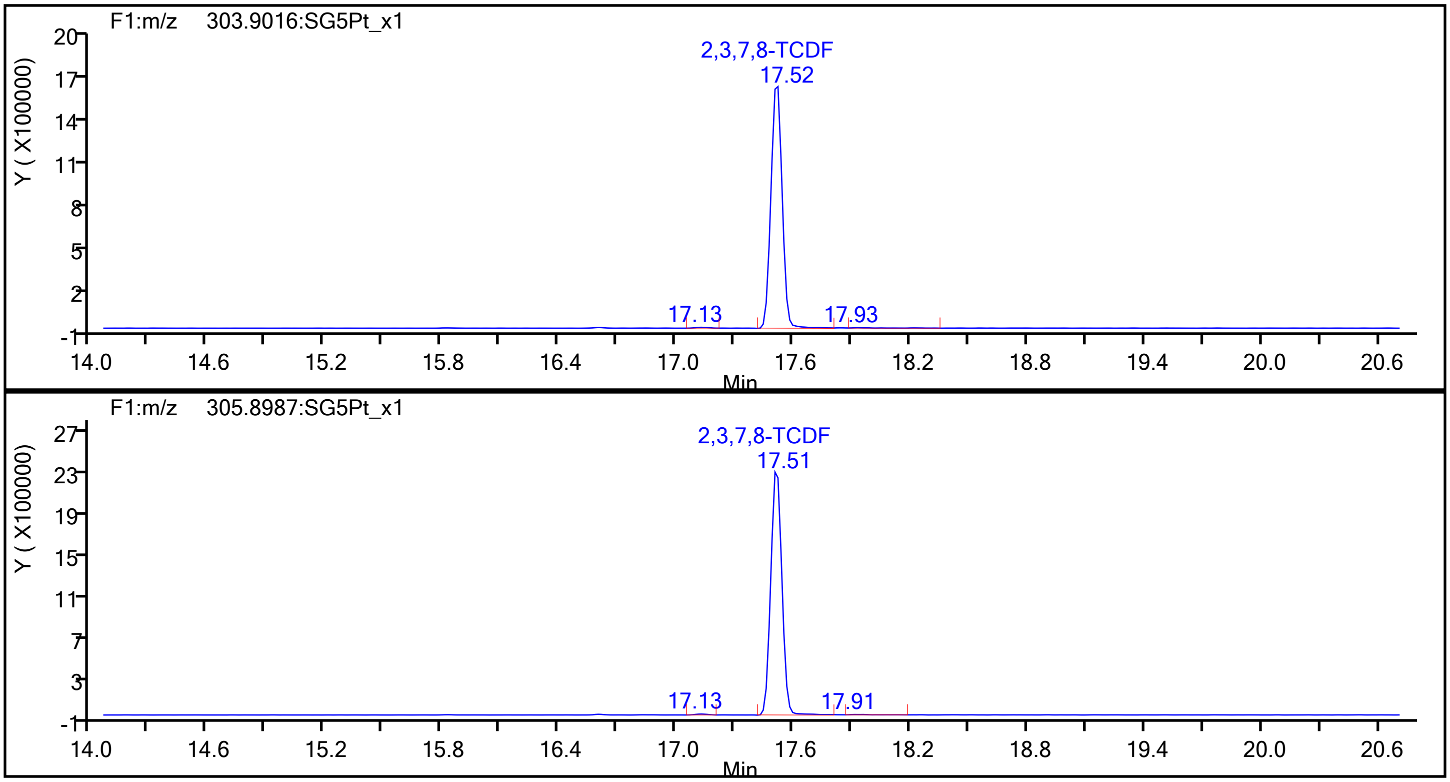

TCDF Standards

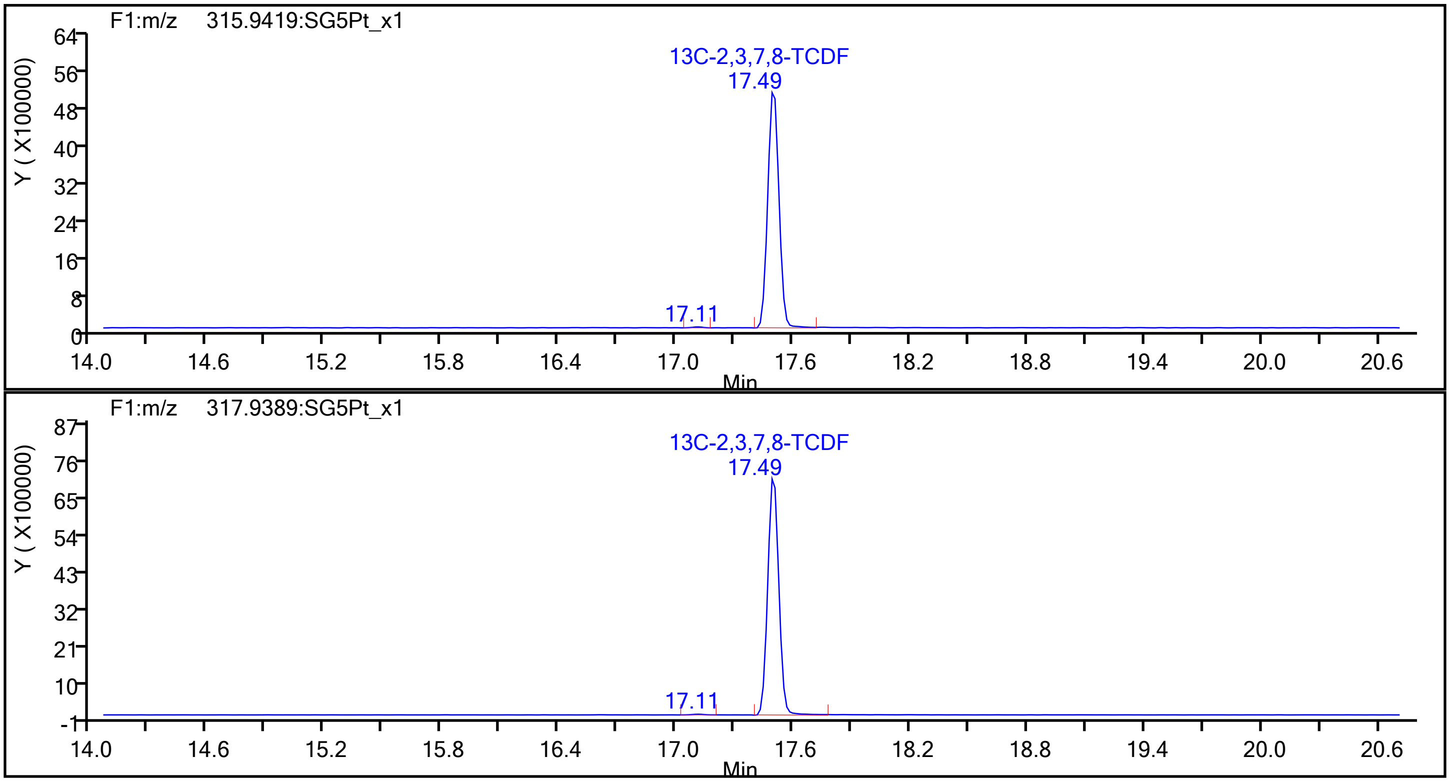

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

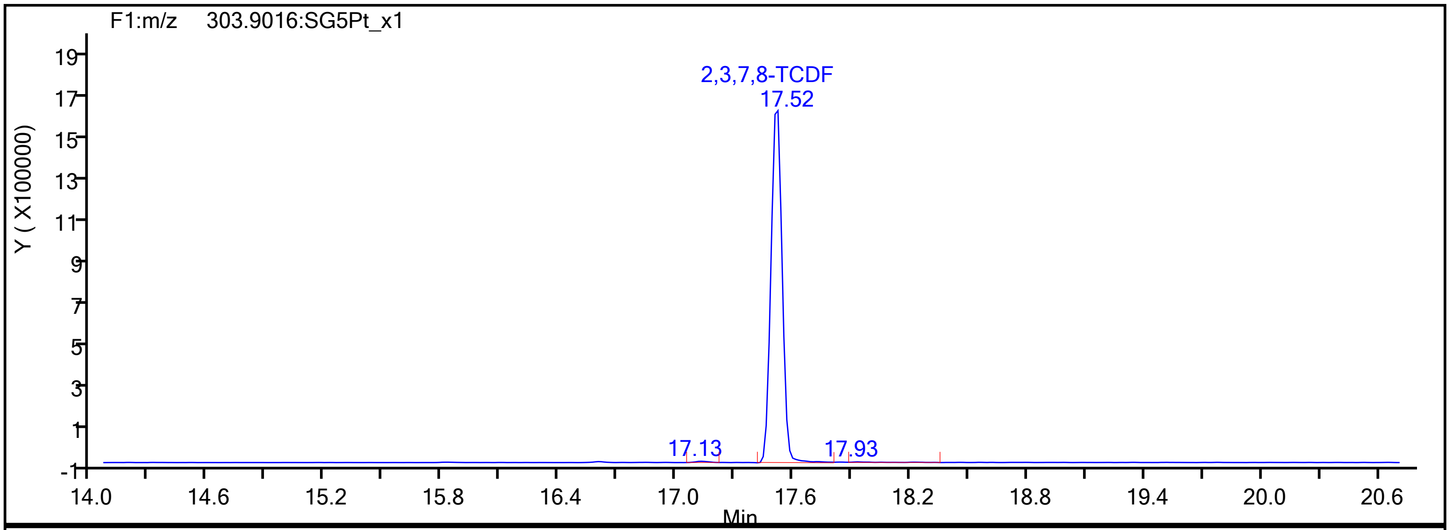

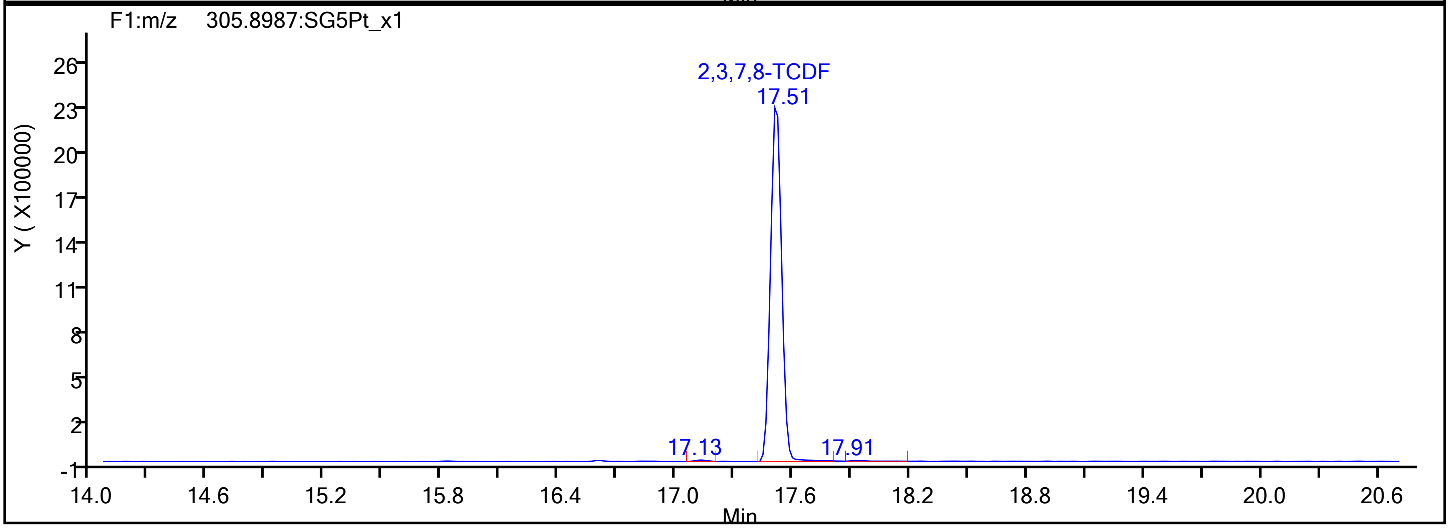

TCDF Interference Mass

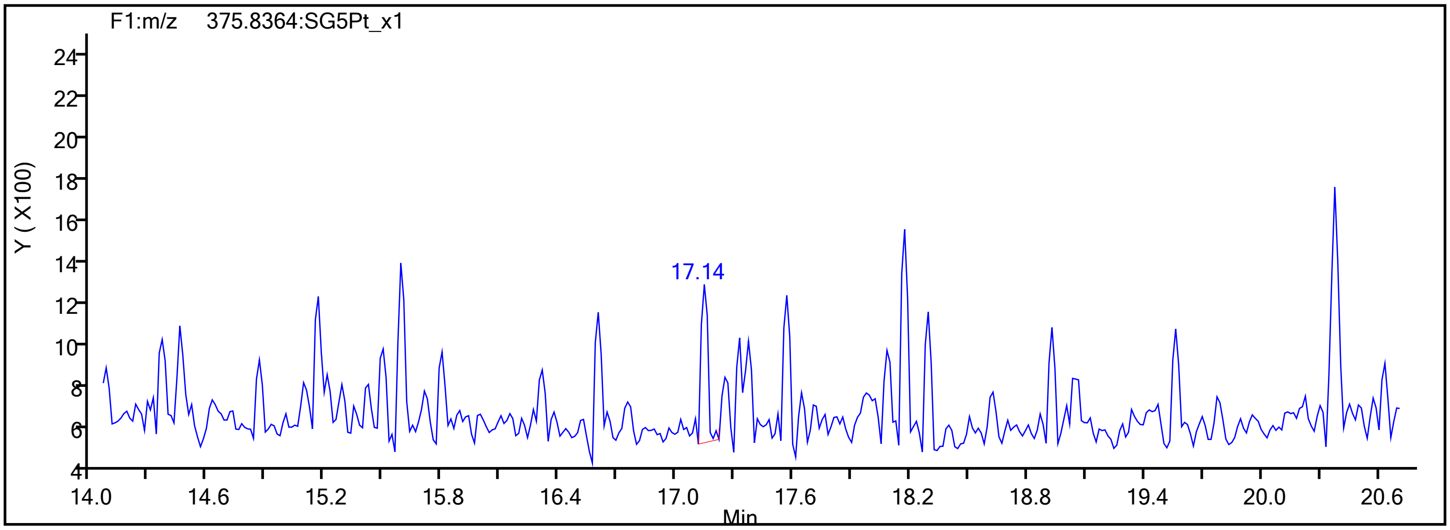

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46
Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

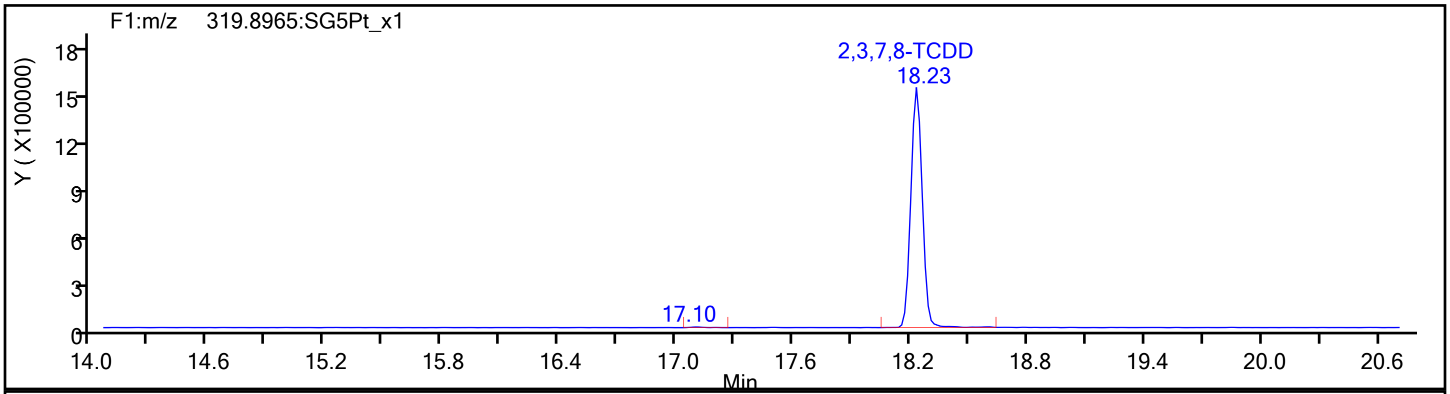

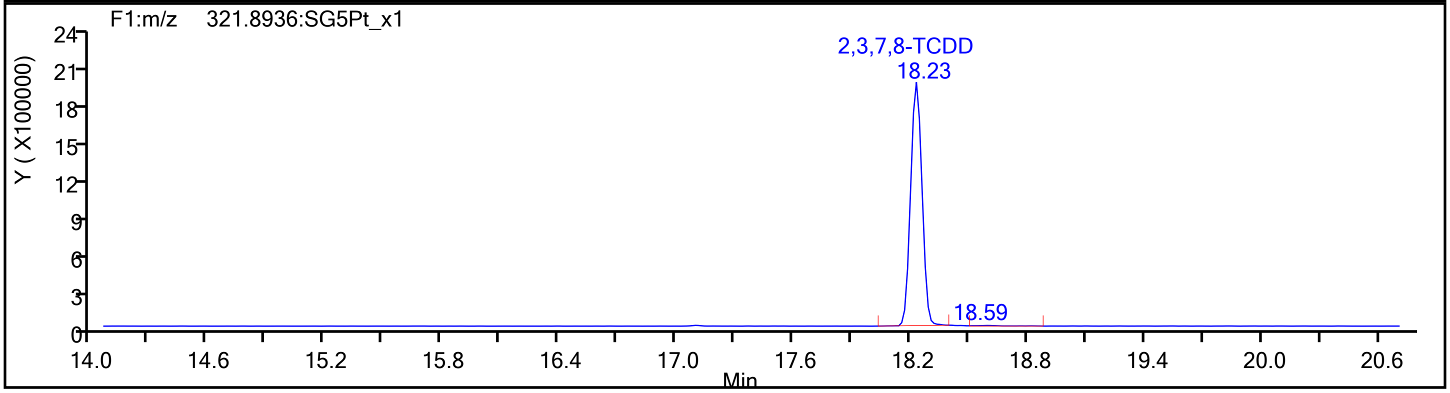

TCDD Standards

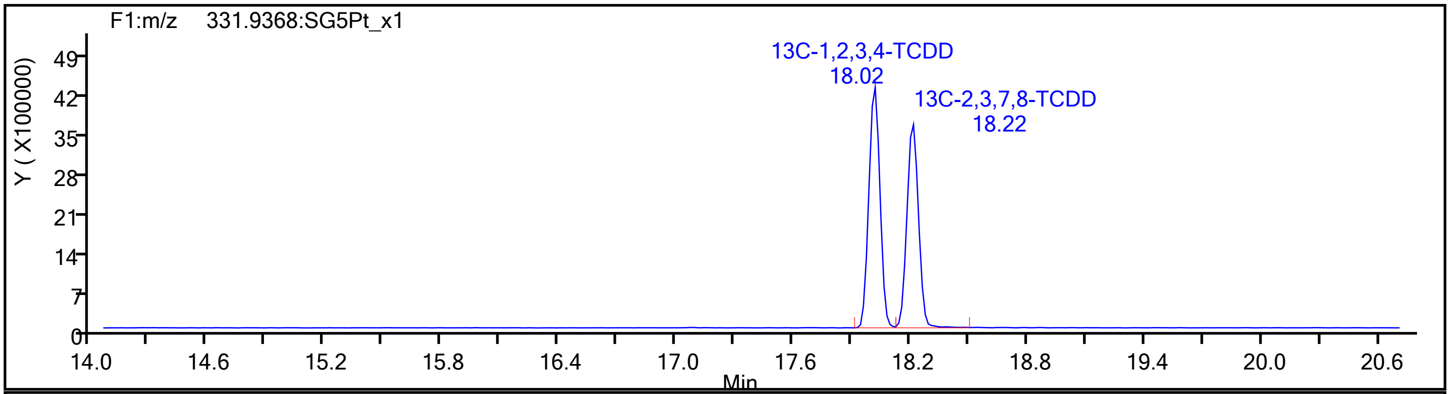

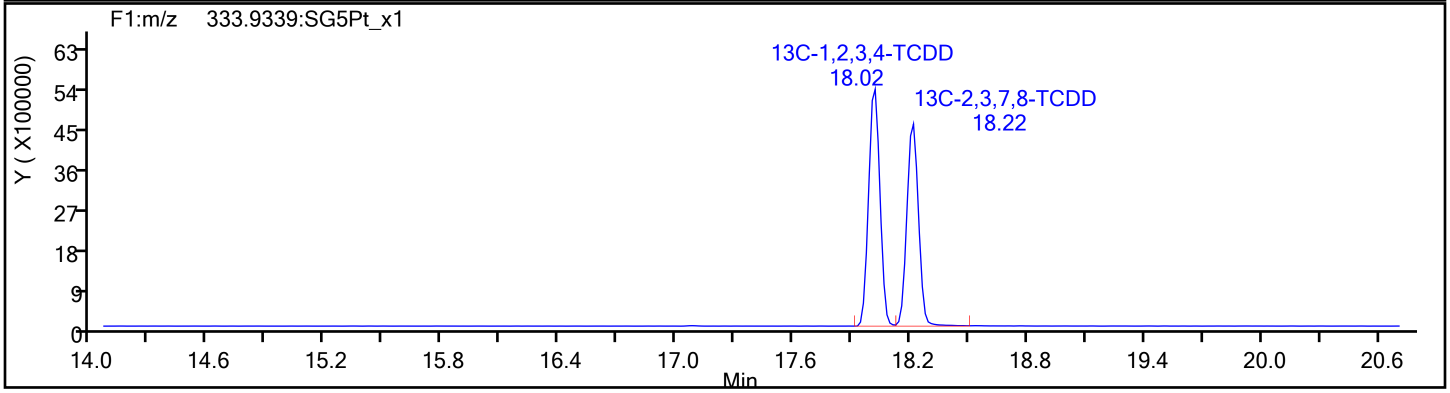

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

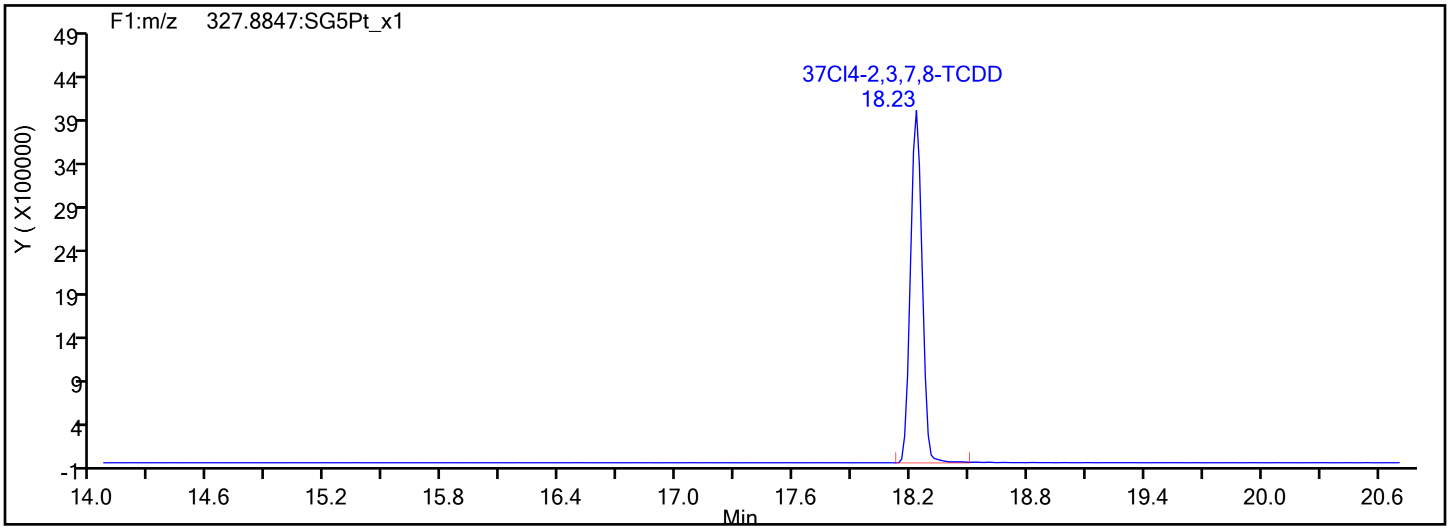

37Cl4-TCDD Standards

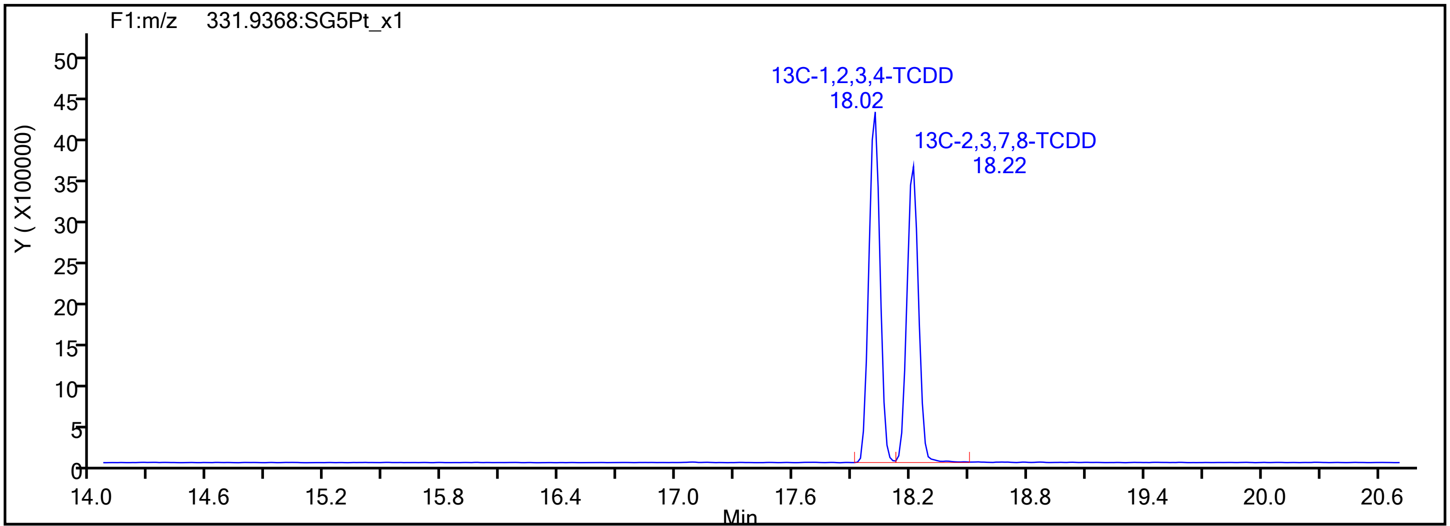

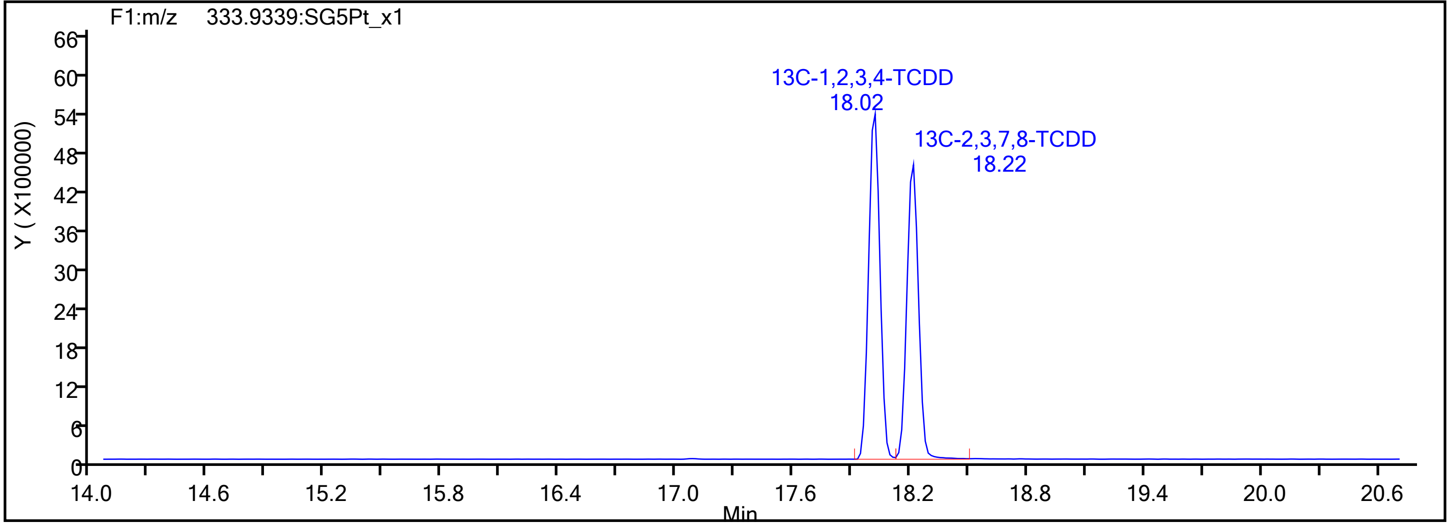

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

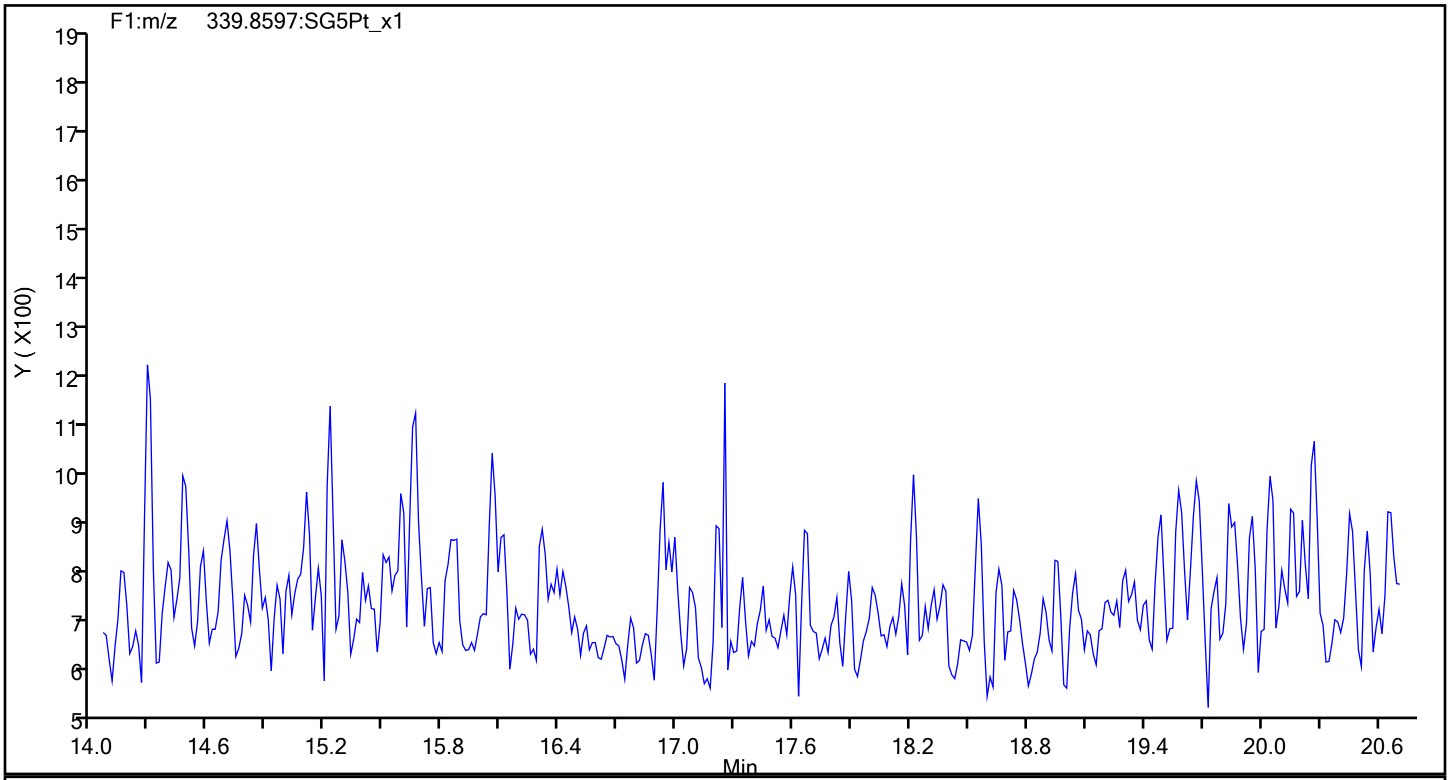

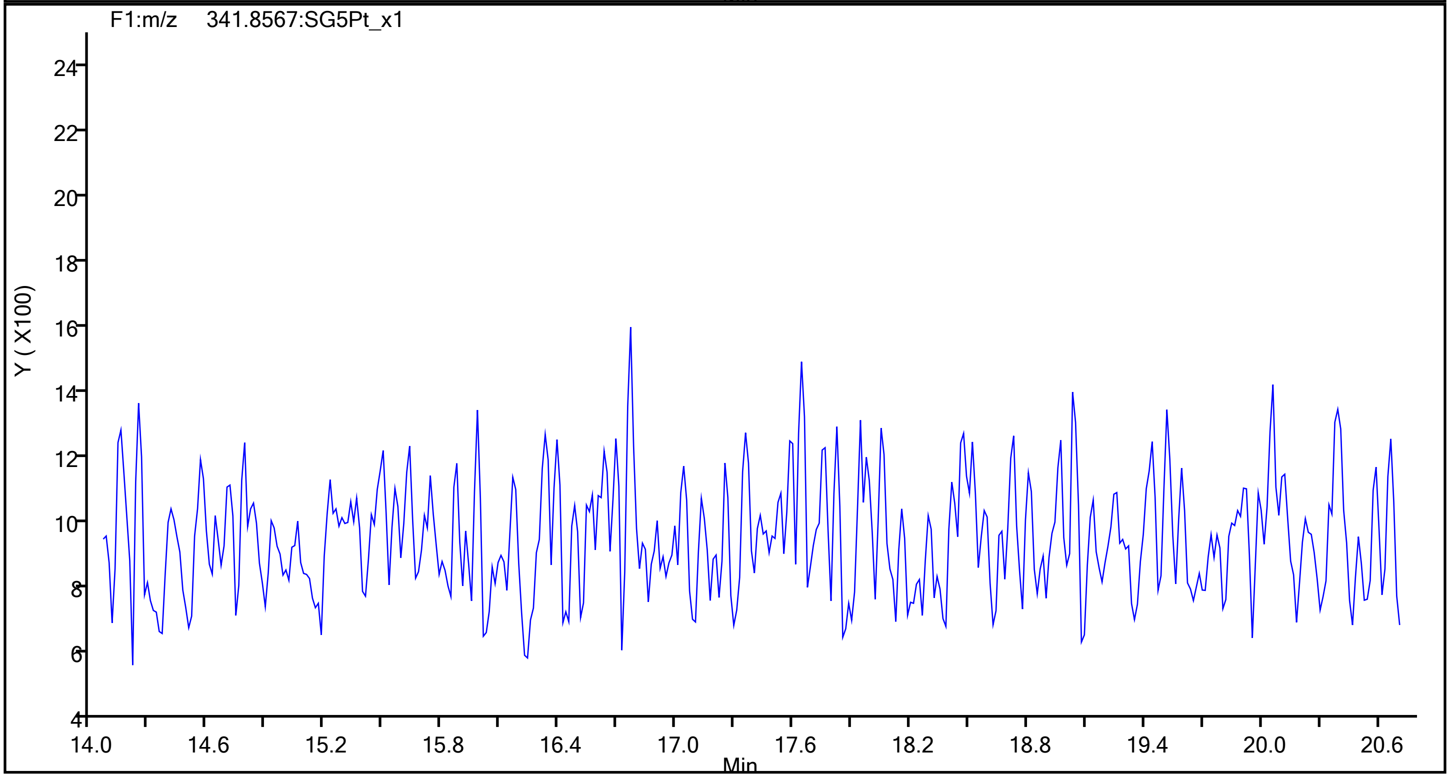

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

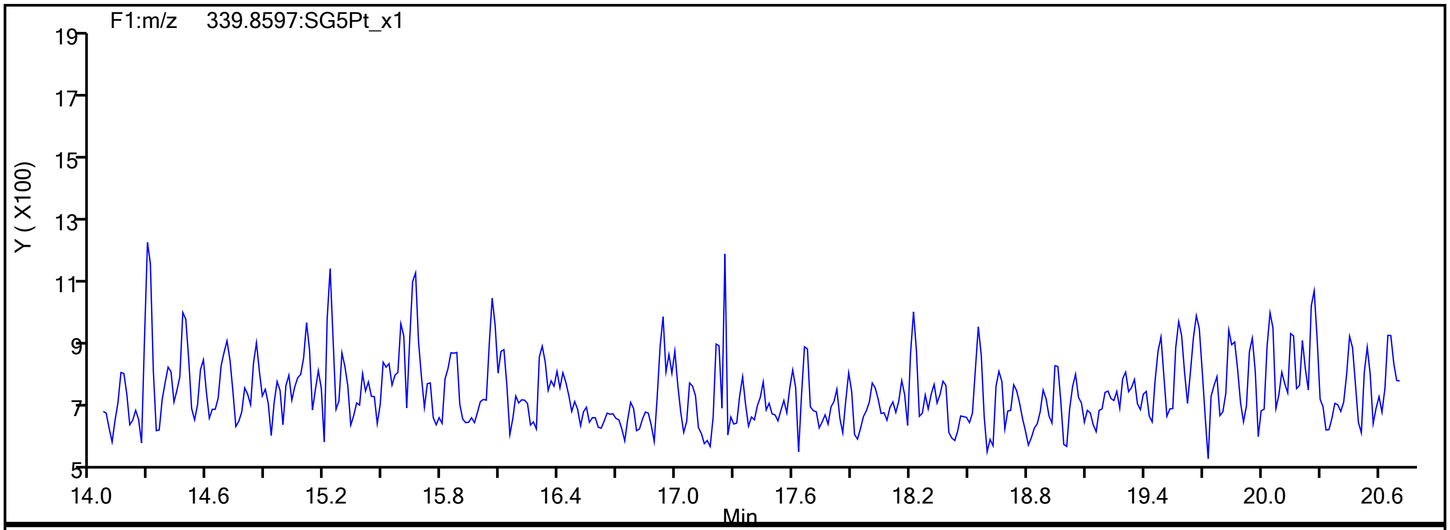

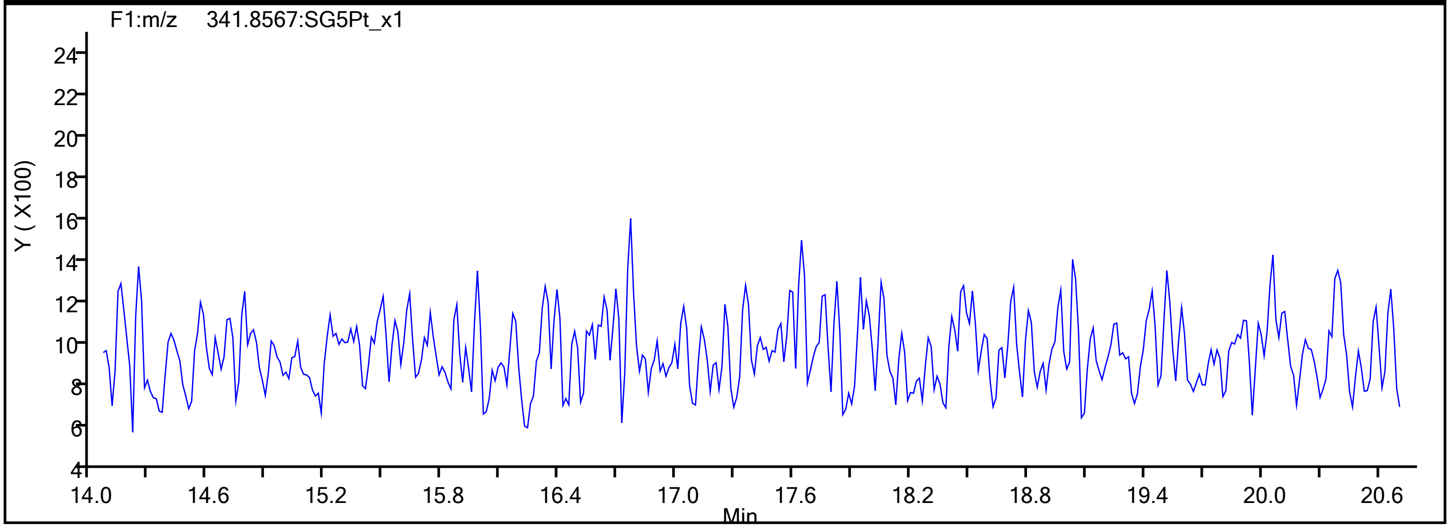

F1 PeCDFs Interference Mass

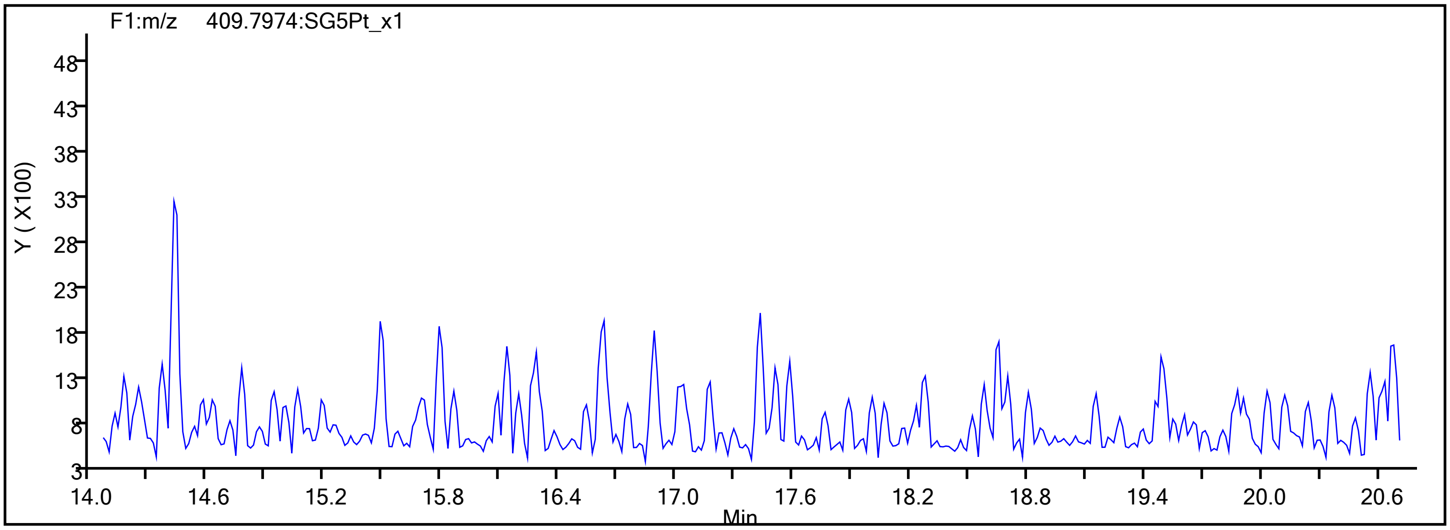

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d
Injection Date: 05-Mar-2020 19:19:53
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

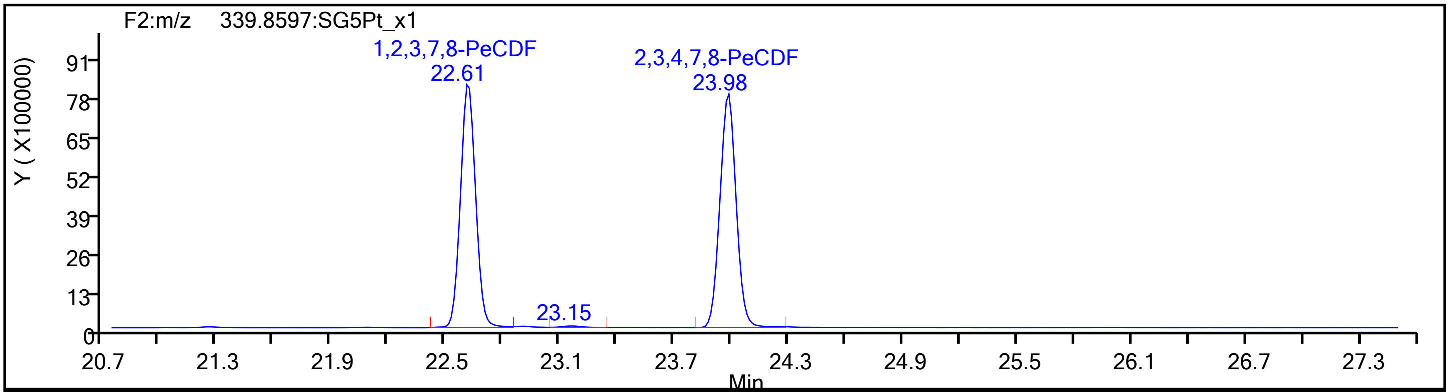

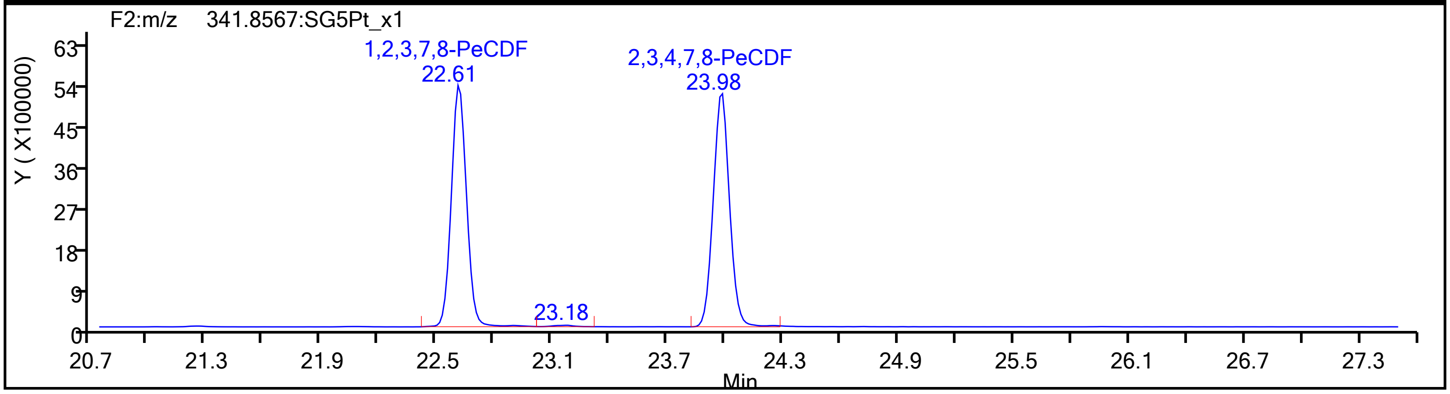

PeCDF Standards

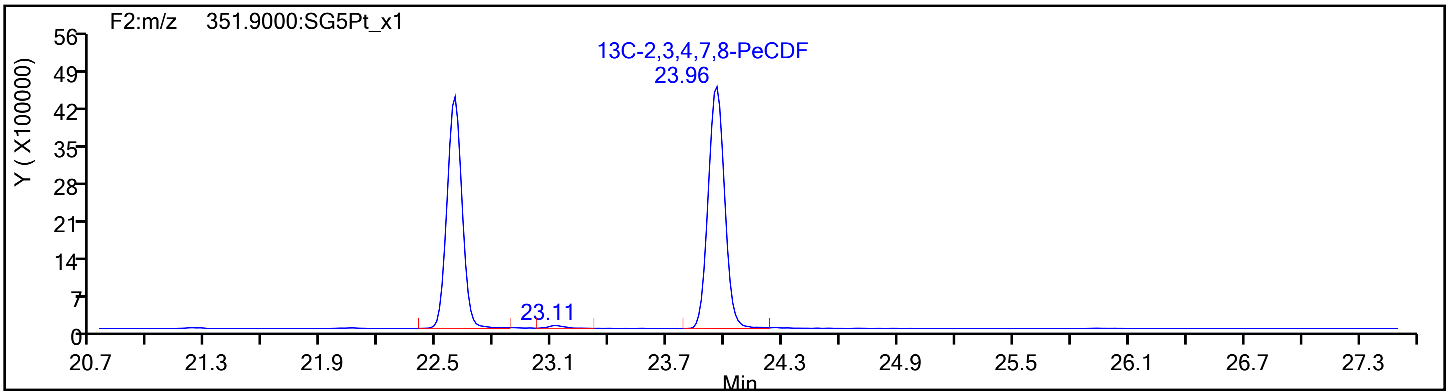

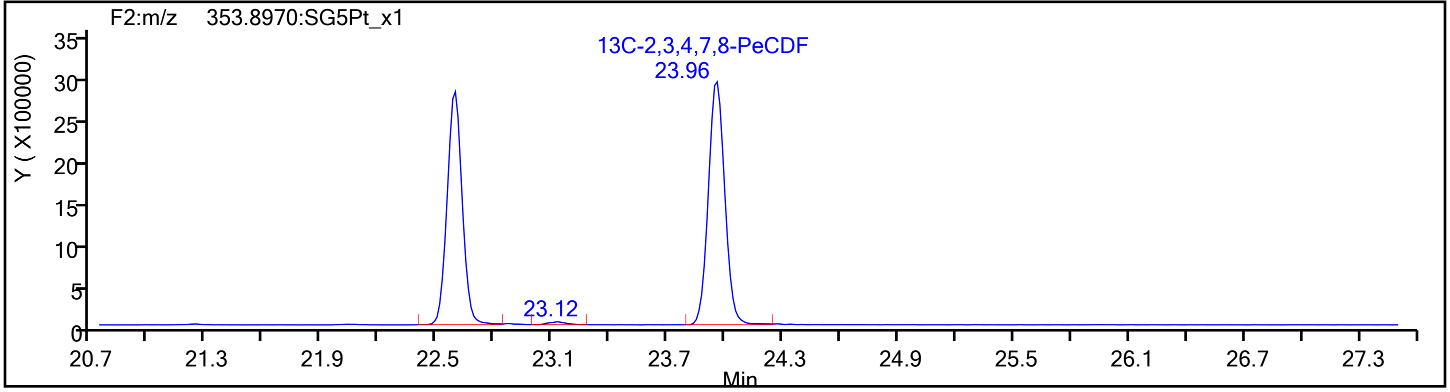

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

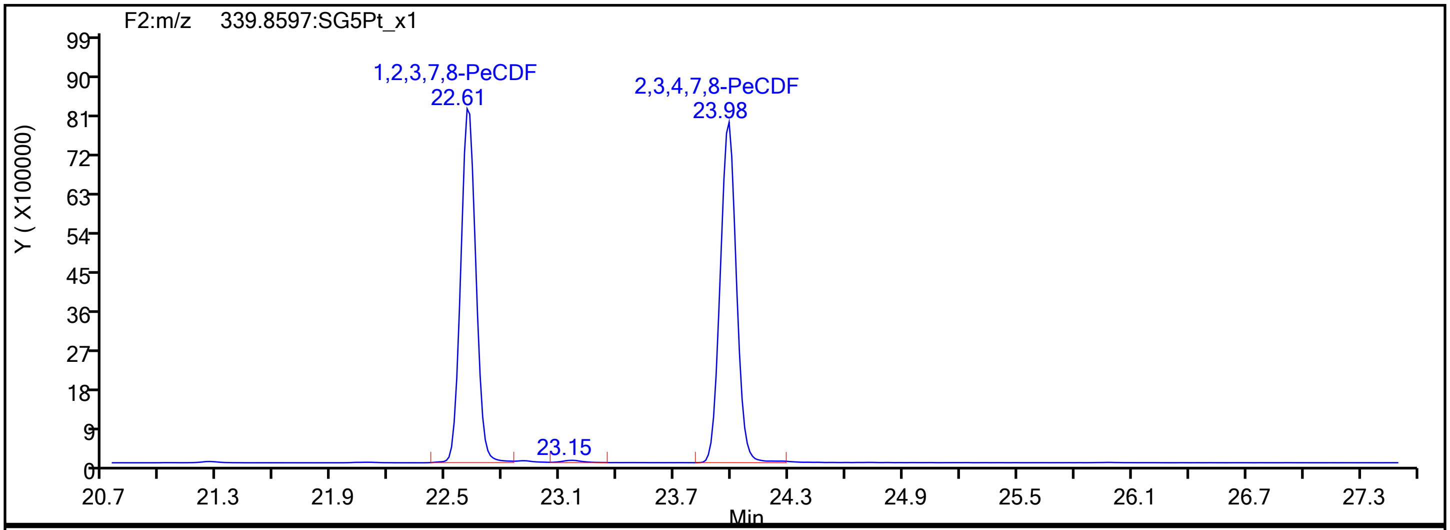

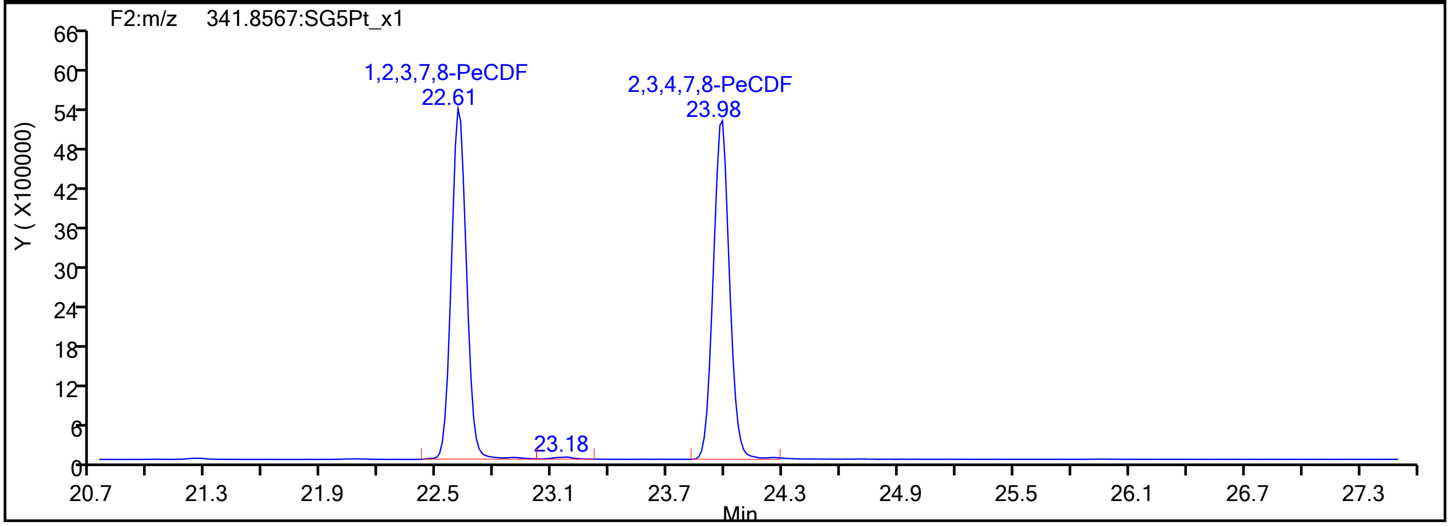

PeCDF Interference Mass

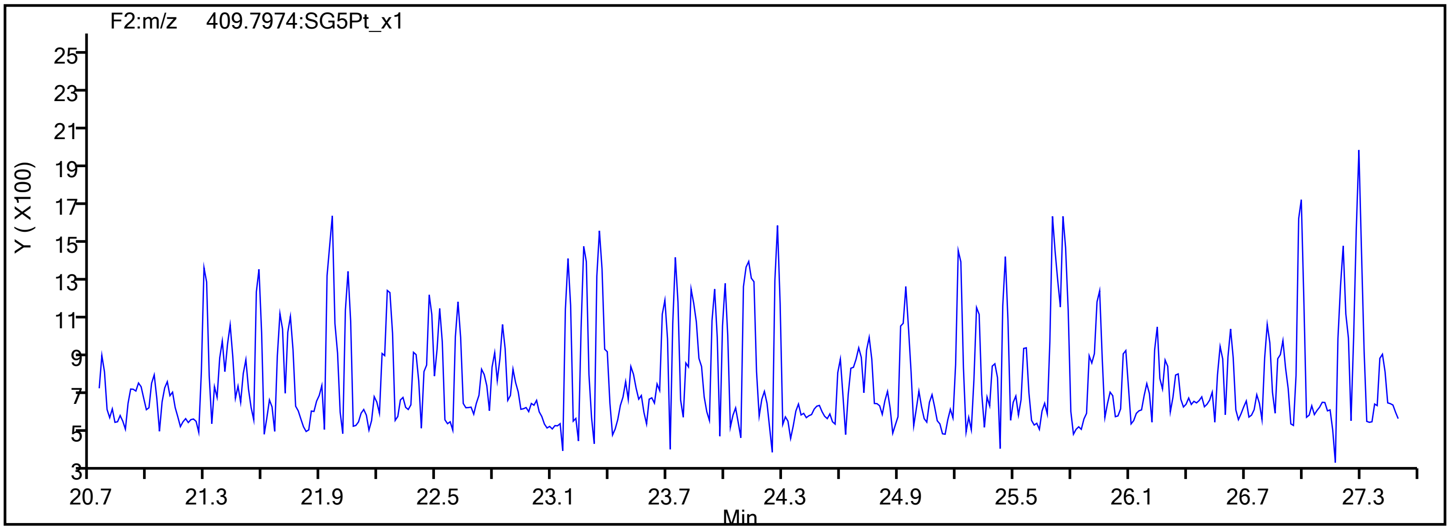

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date: 05-Mar-2020 19:19:53

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

PeCDD

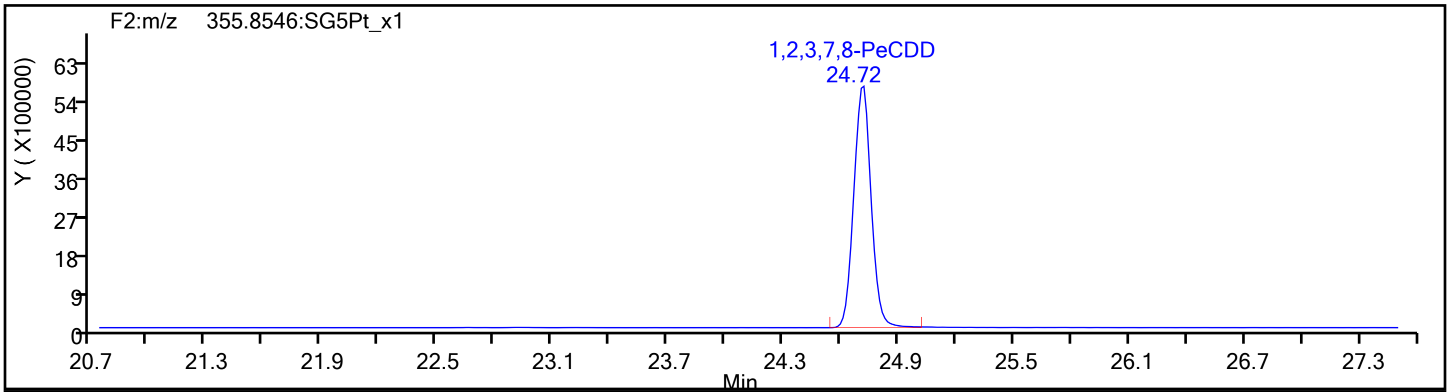

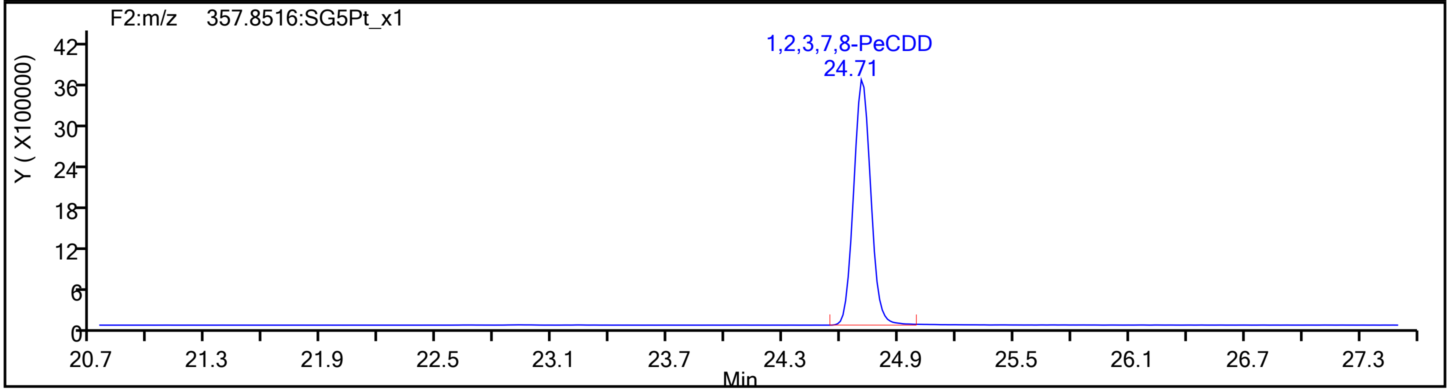

PeCDD Standards

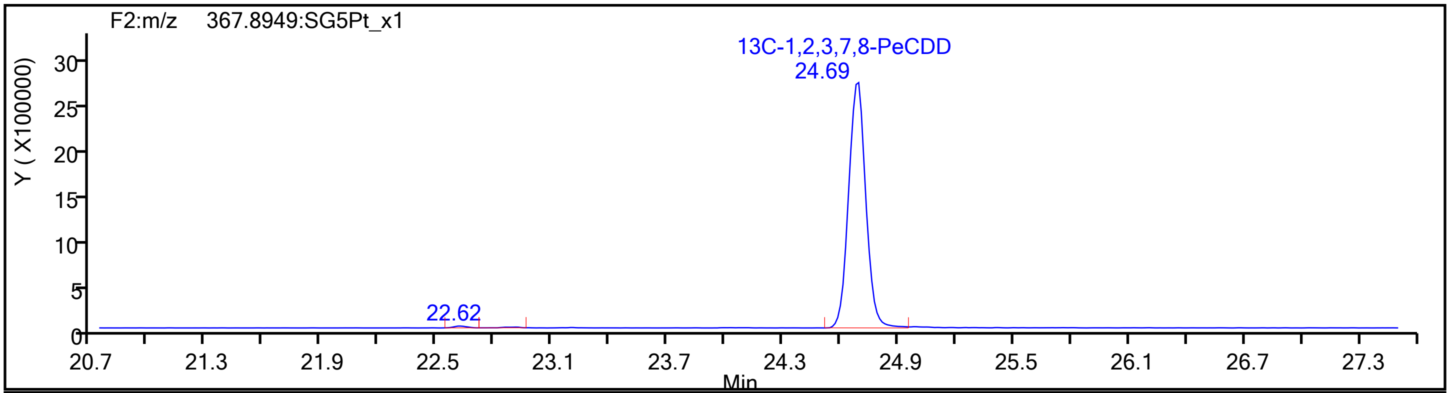

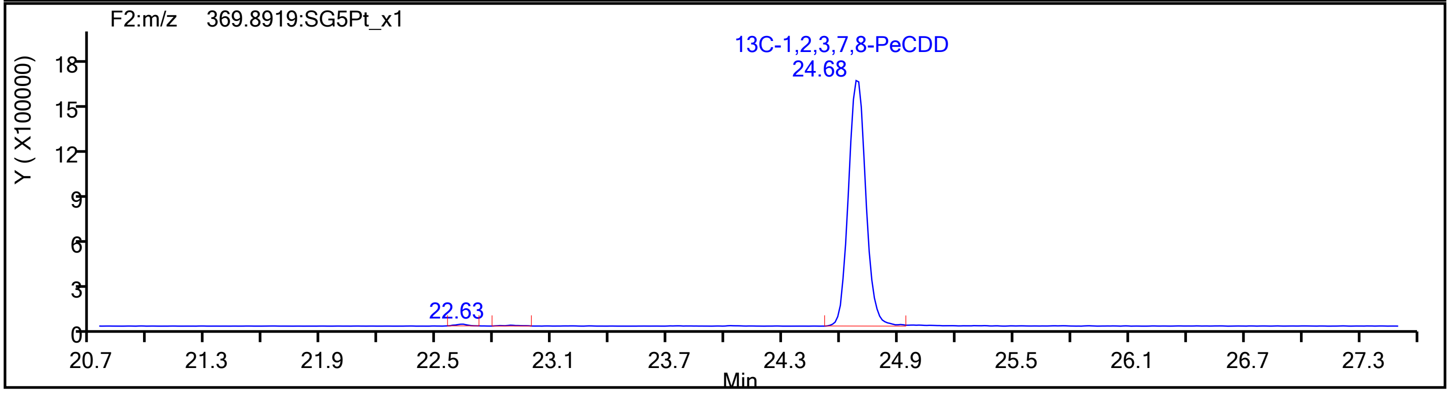

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 19:19:53
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

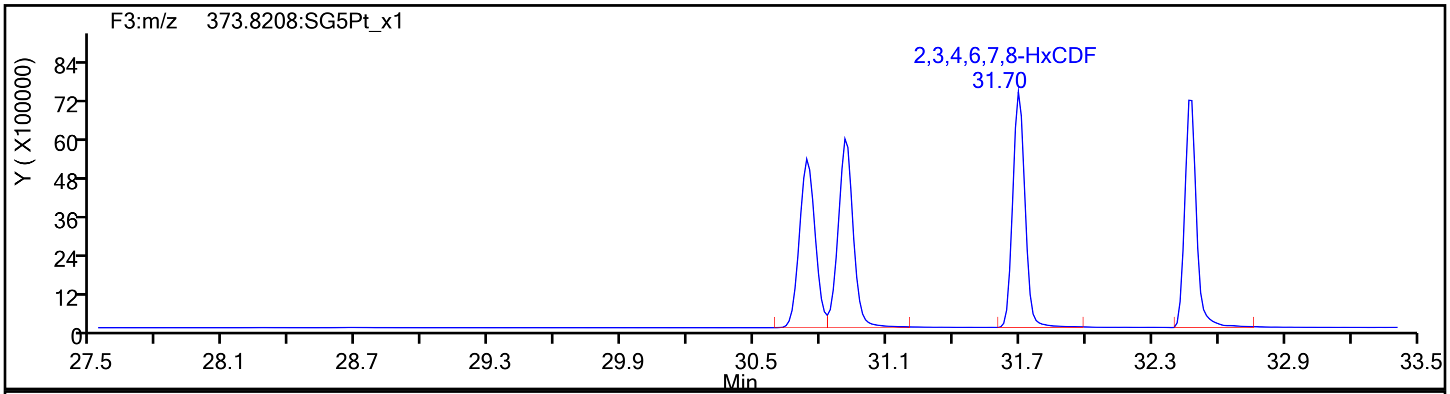

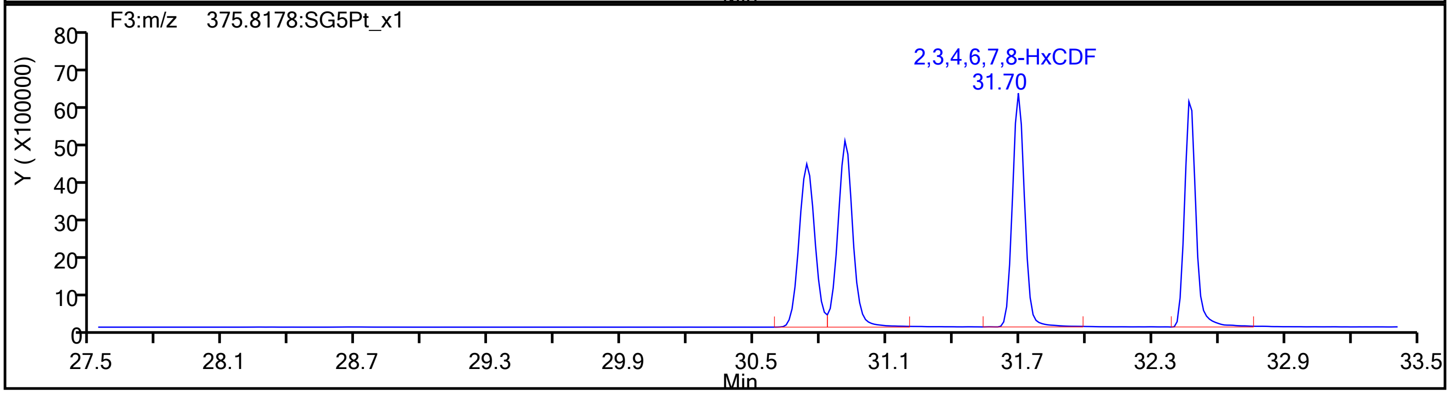

HxCDF Standards

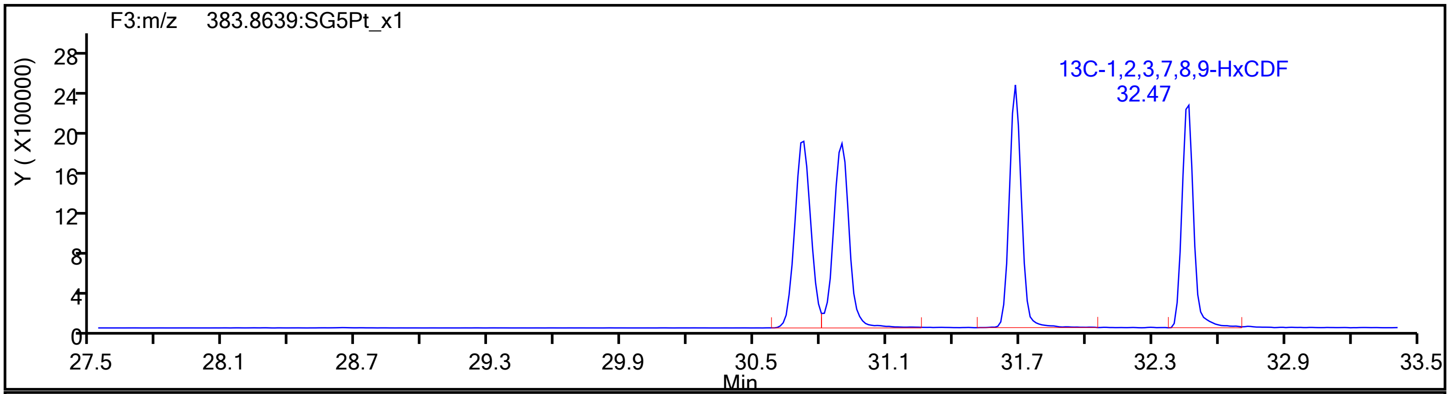

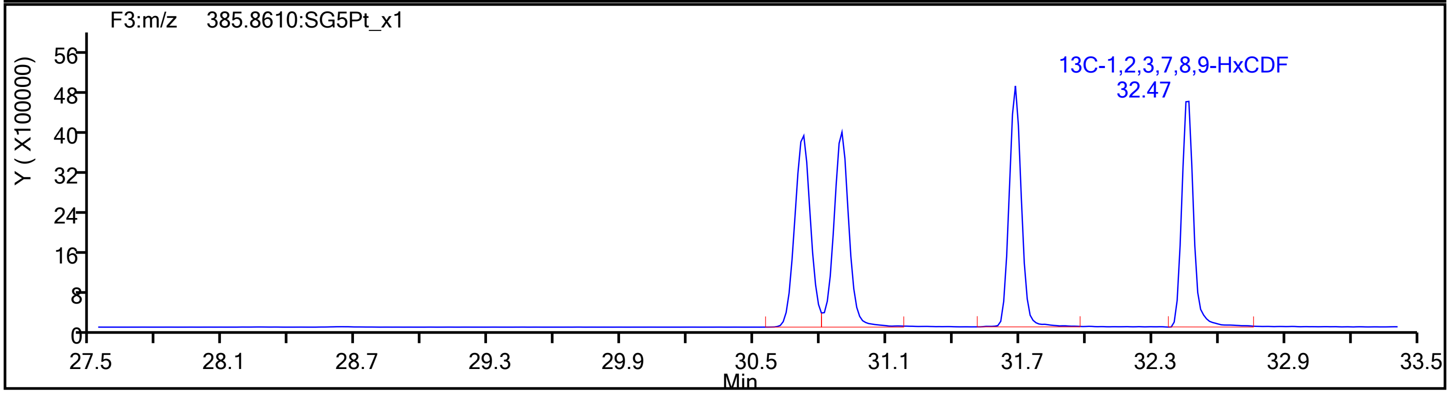

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 19:19:53
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

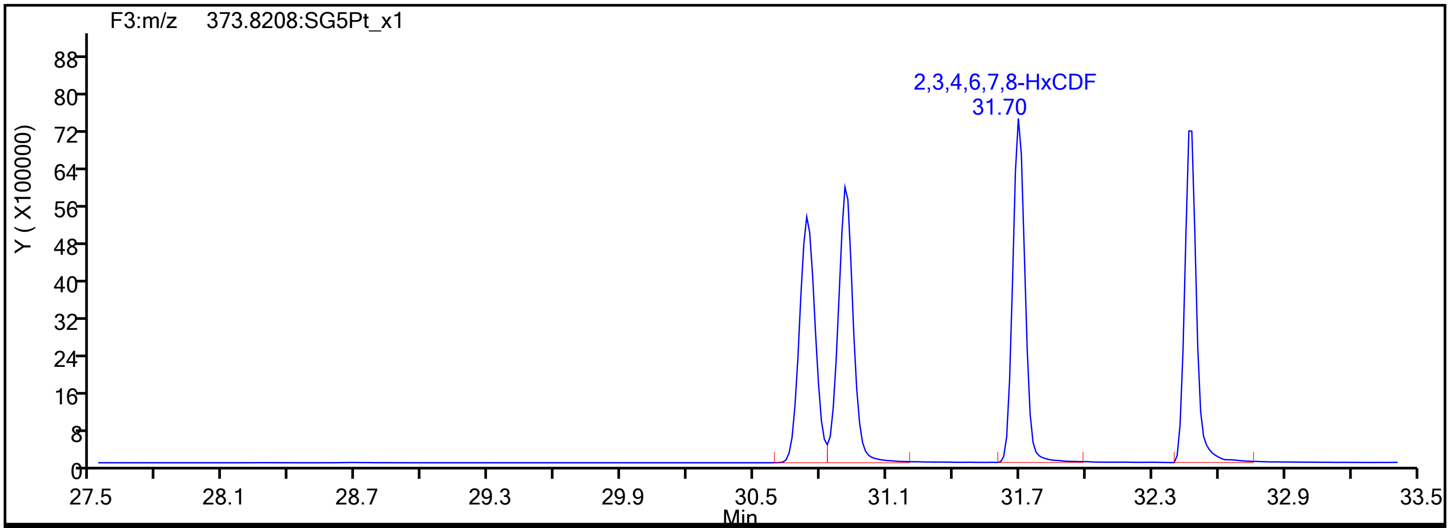

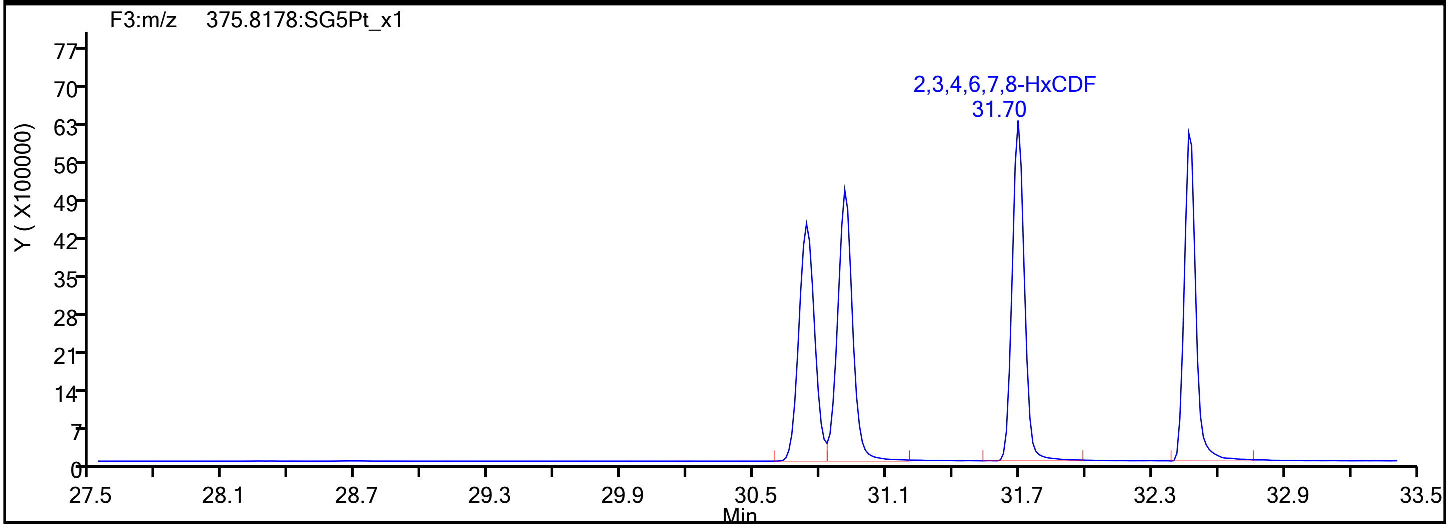

HxCDF Interference Mass

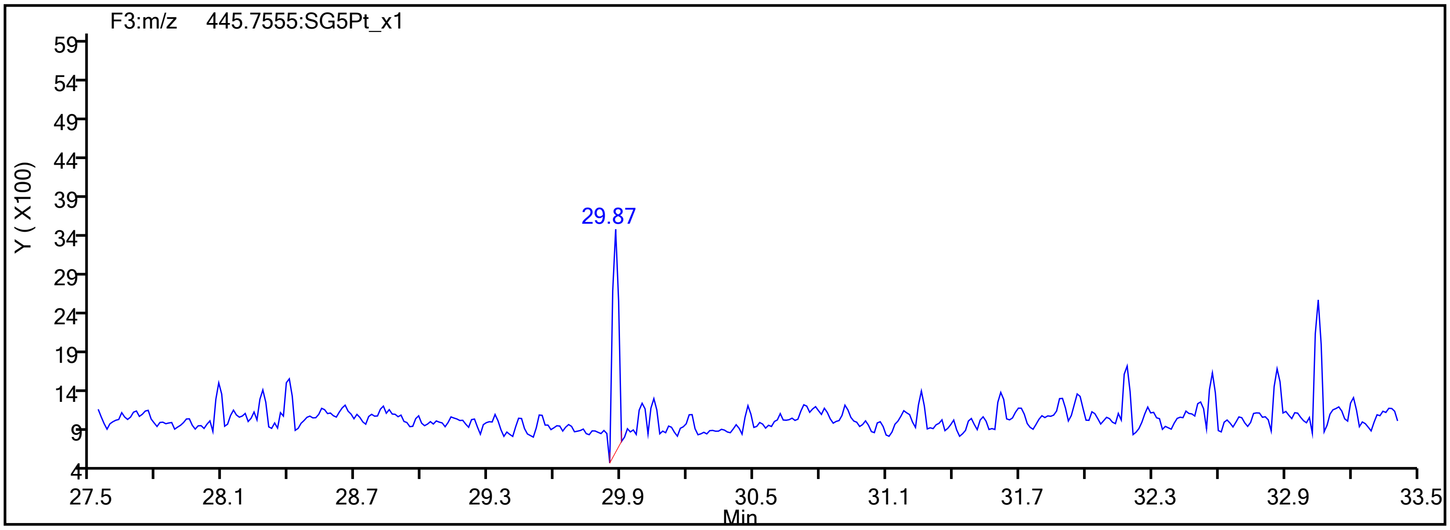

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

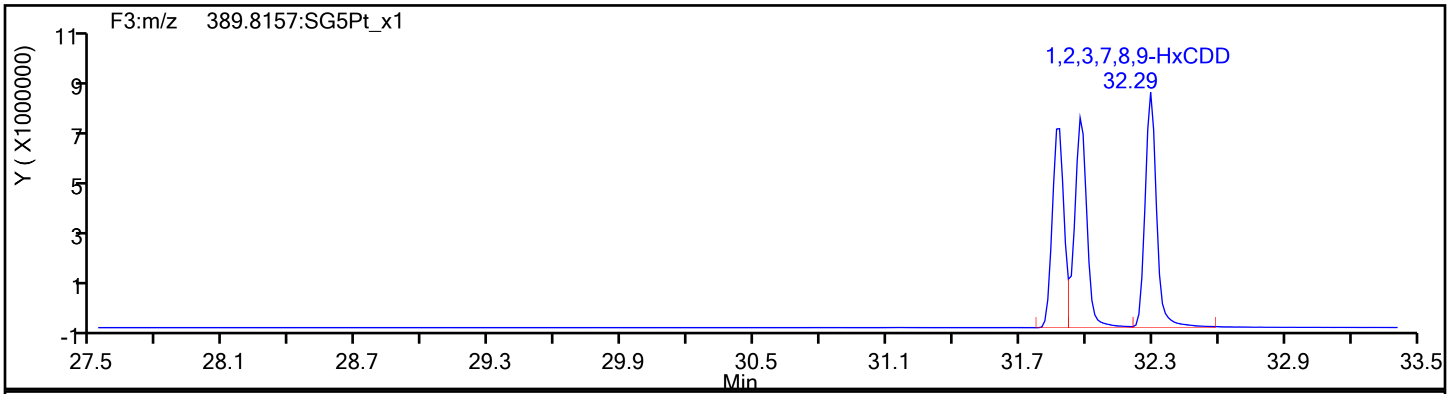

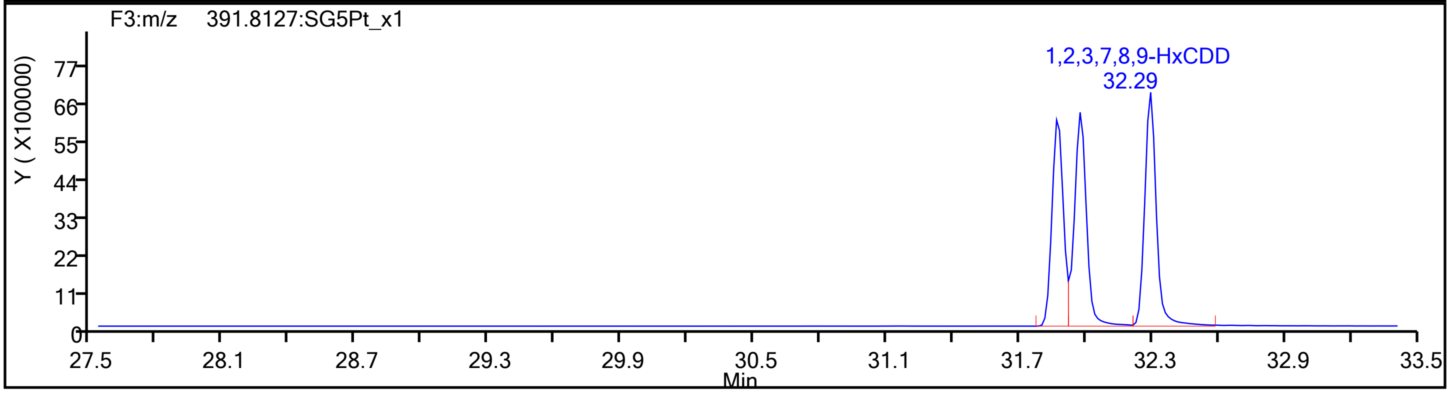

HxCDD Standards

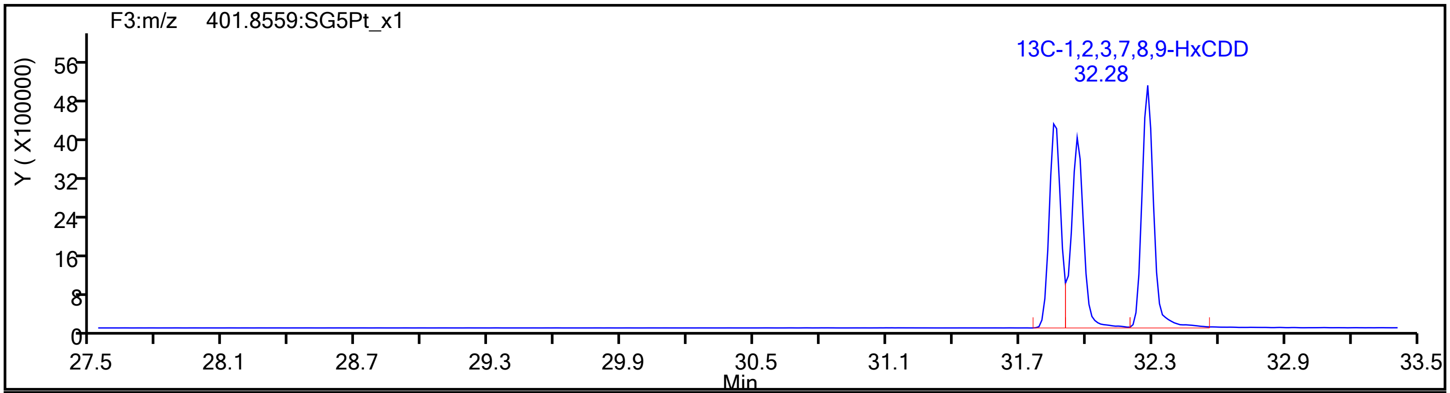

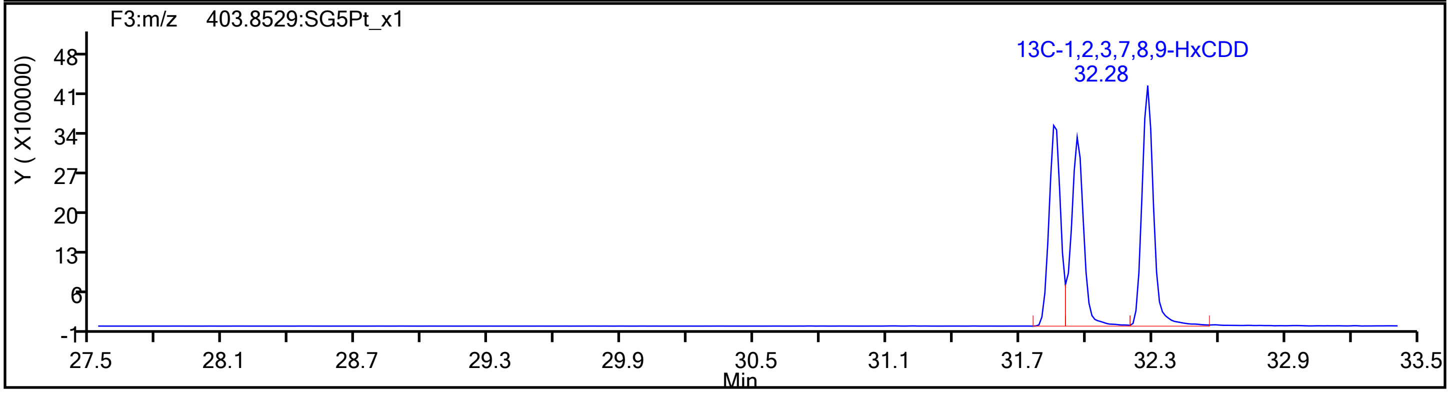

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date: 05-Mar-2020 19:19:53
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

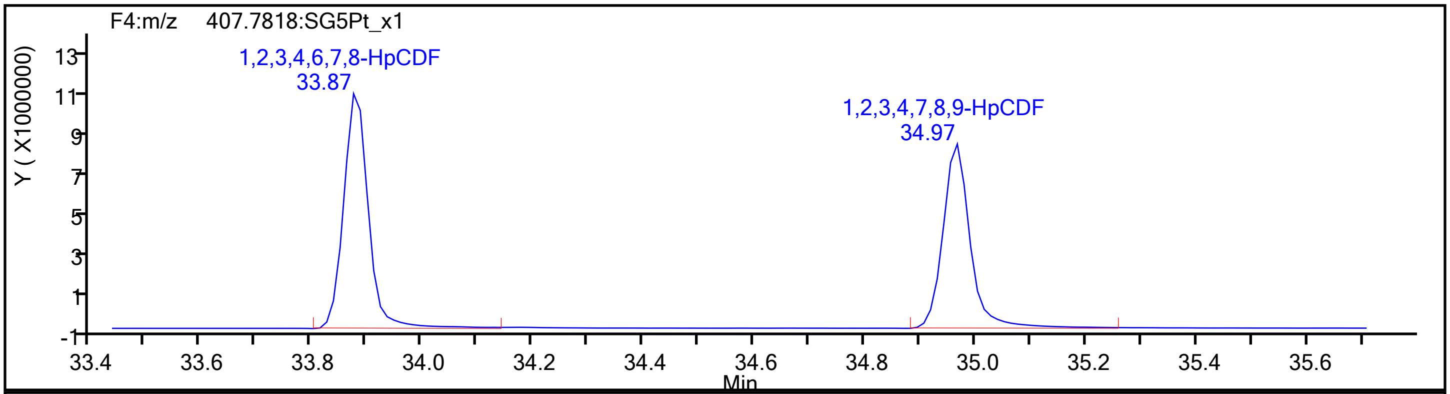

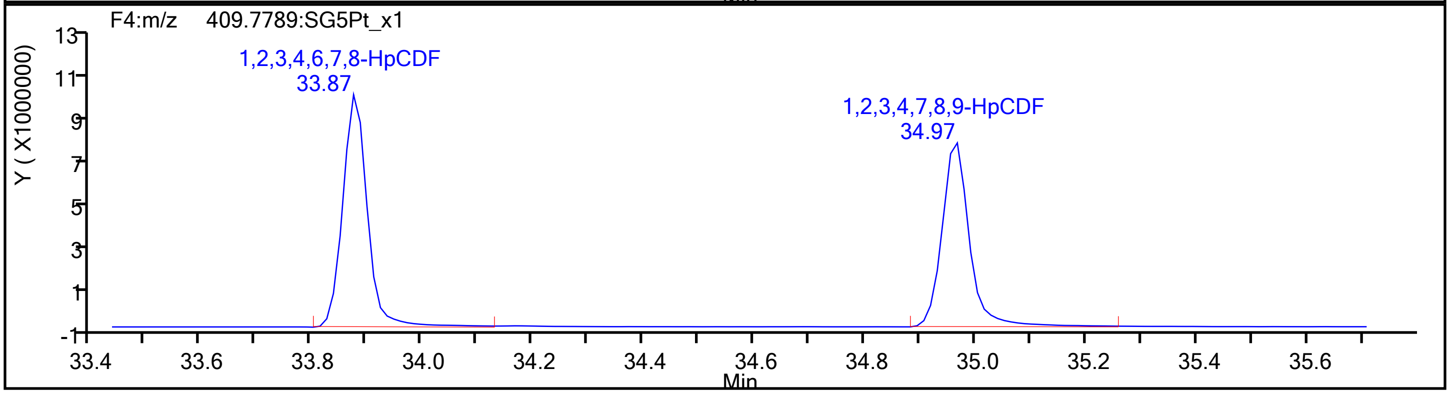

HpCDF Standards

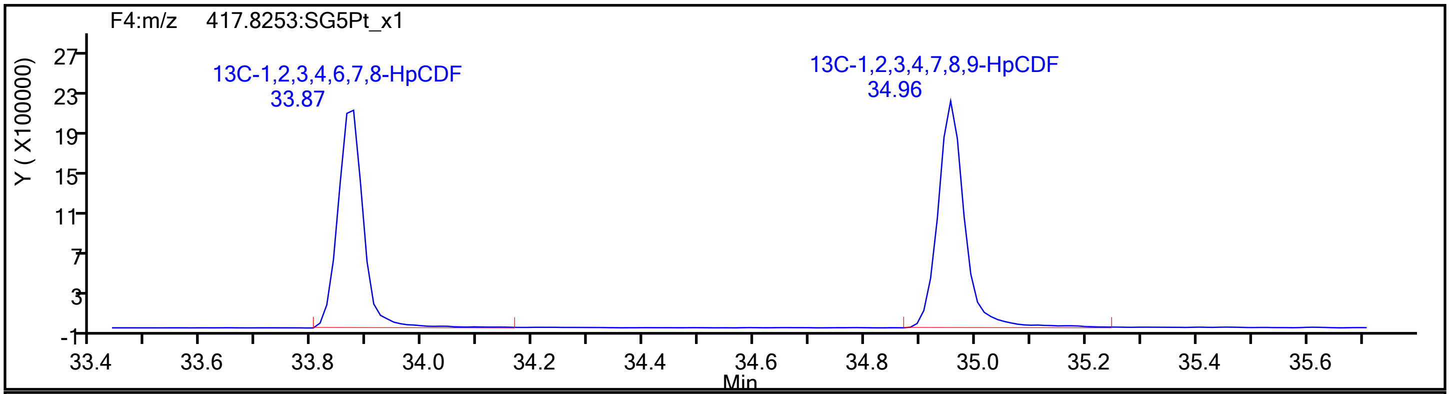

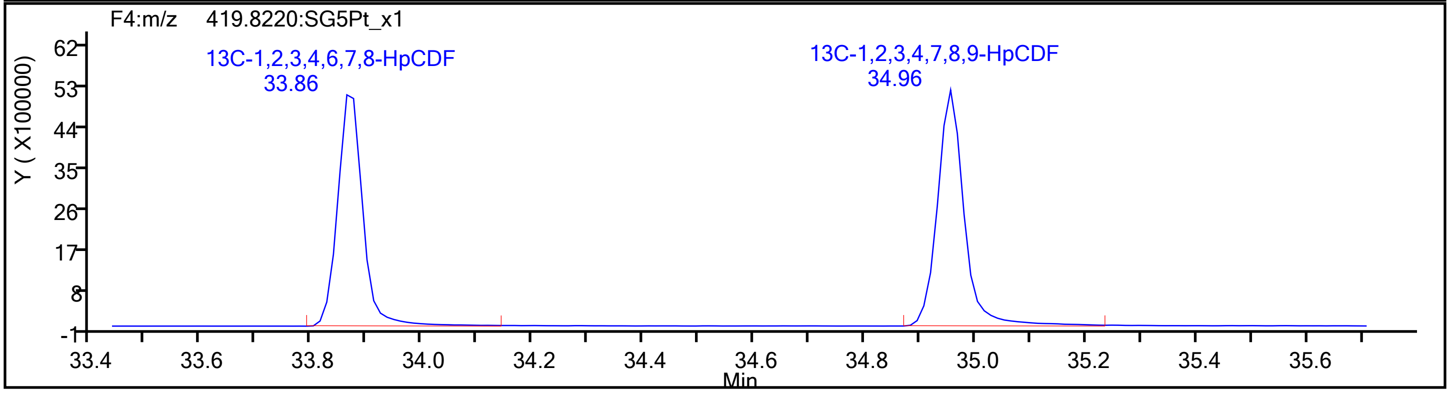

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Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

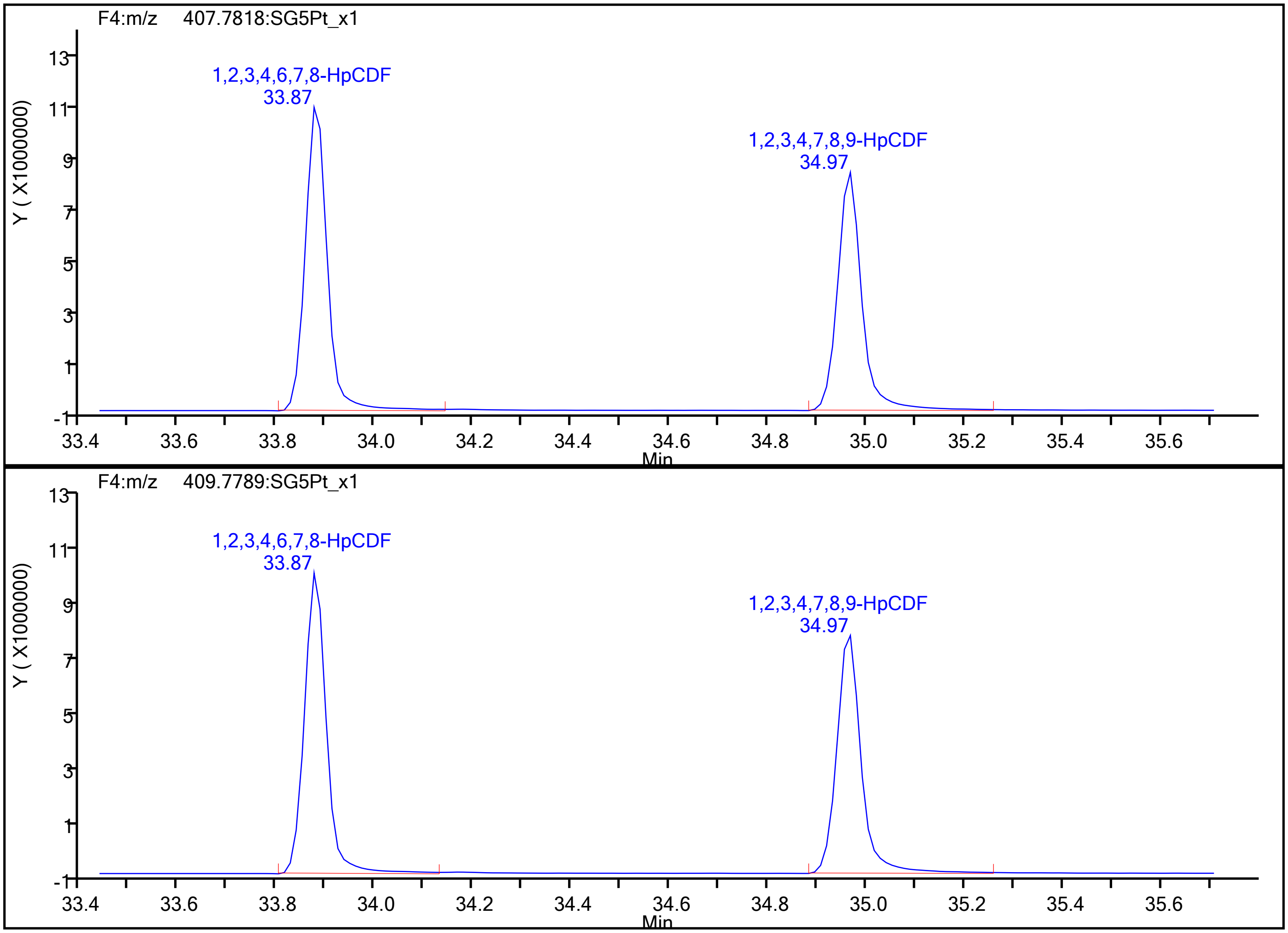

HpCDF Interference Mass

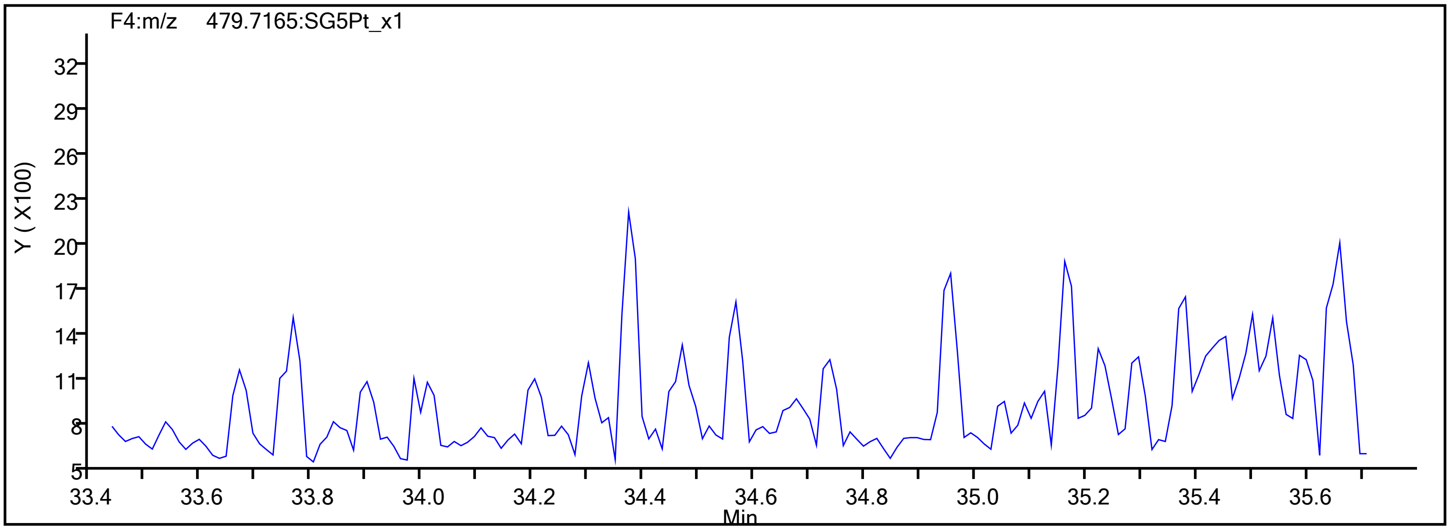

Report Date: 06-Mar-2020 10:13:26 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date: 05-Mar-2020 19:19:53 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 6

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

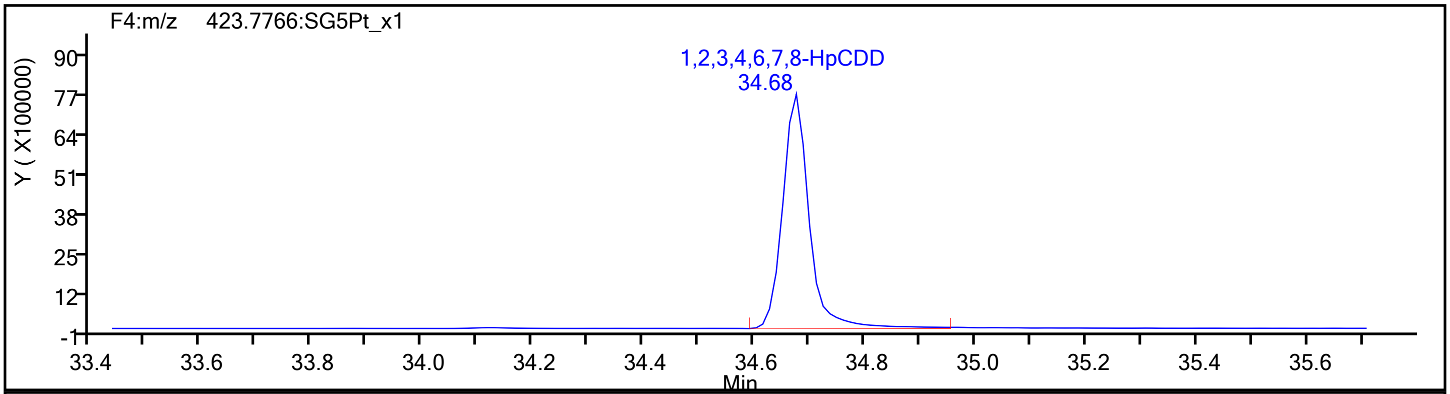

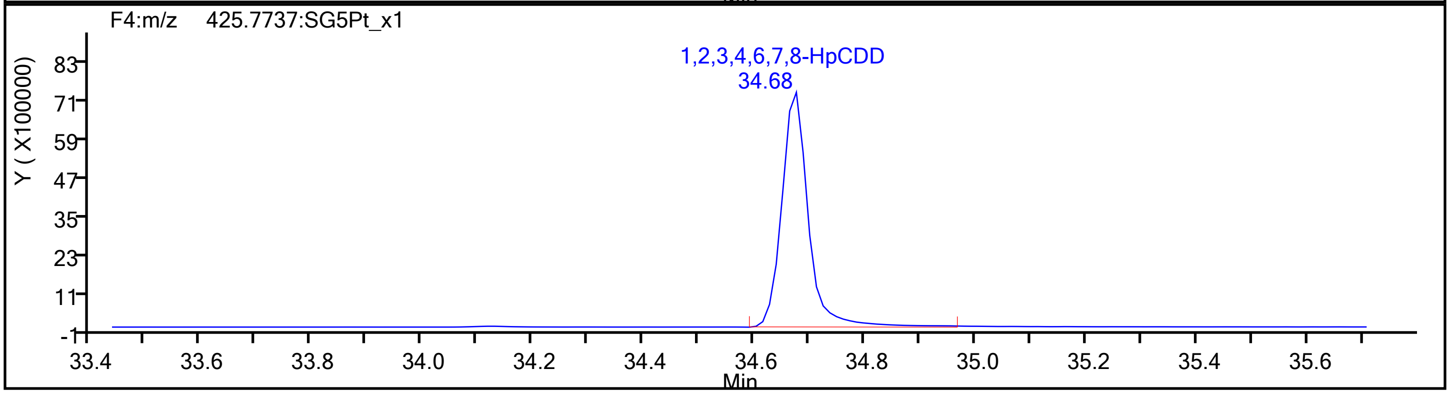

HpCDD Standards

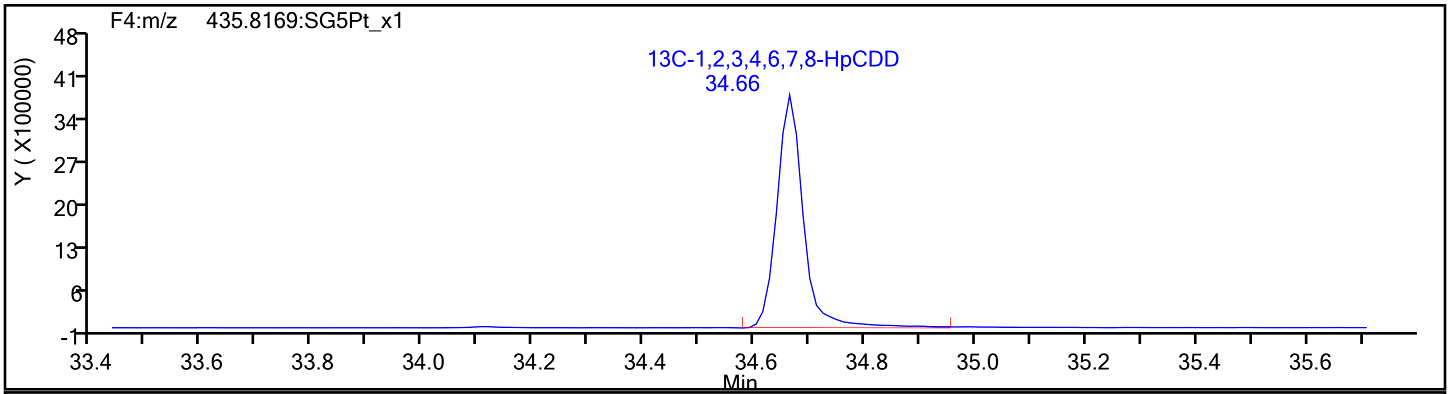

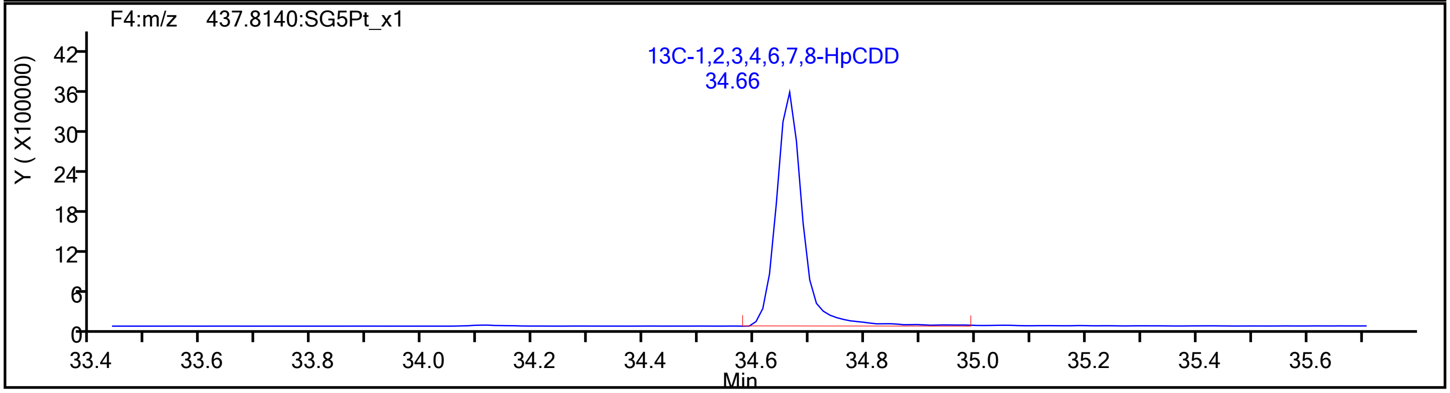

Report Date: 06-Mar-2020 10:13:27 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d
Injection Date: 05-Mar-2020 19:19:53 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

OCDF

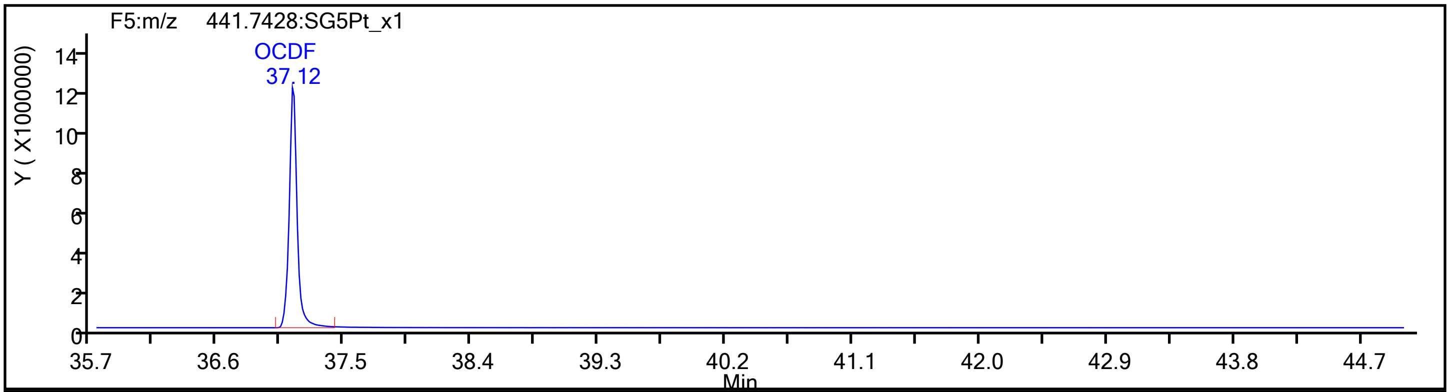

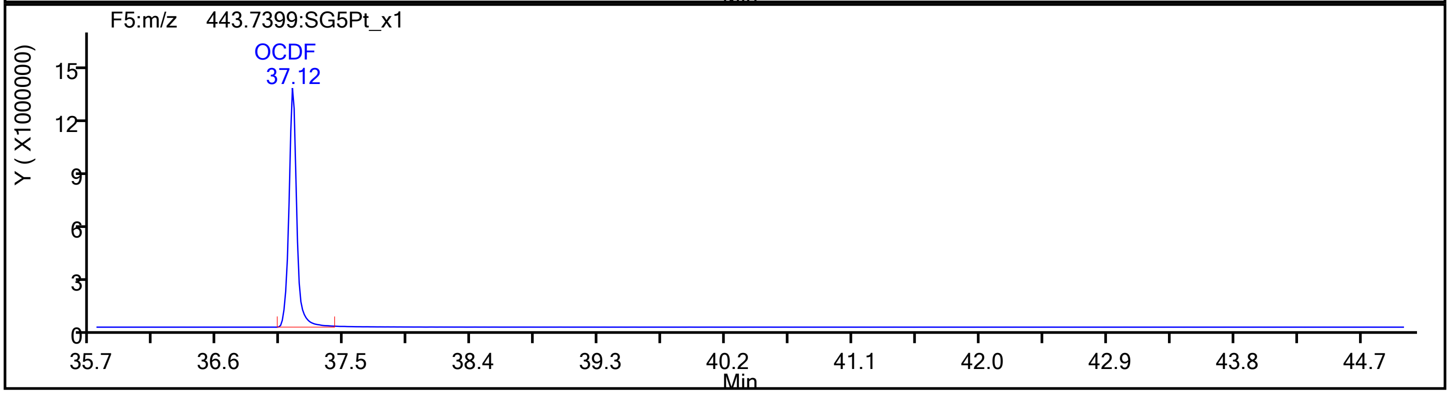

OCDF Standards

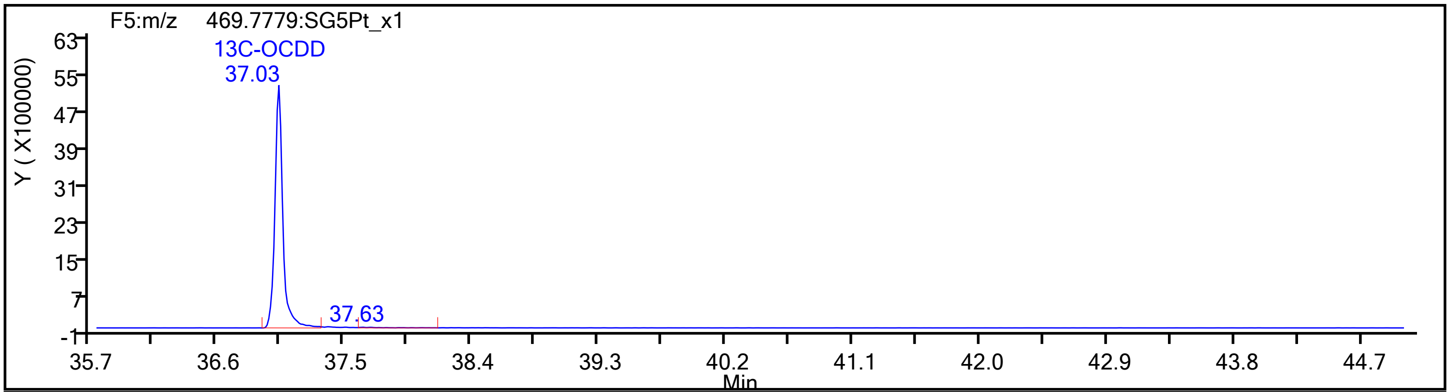

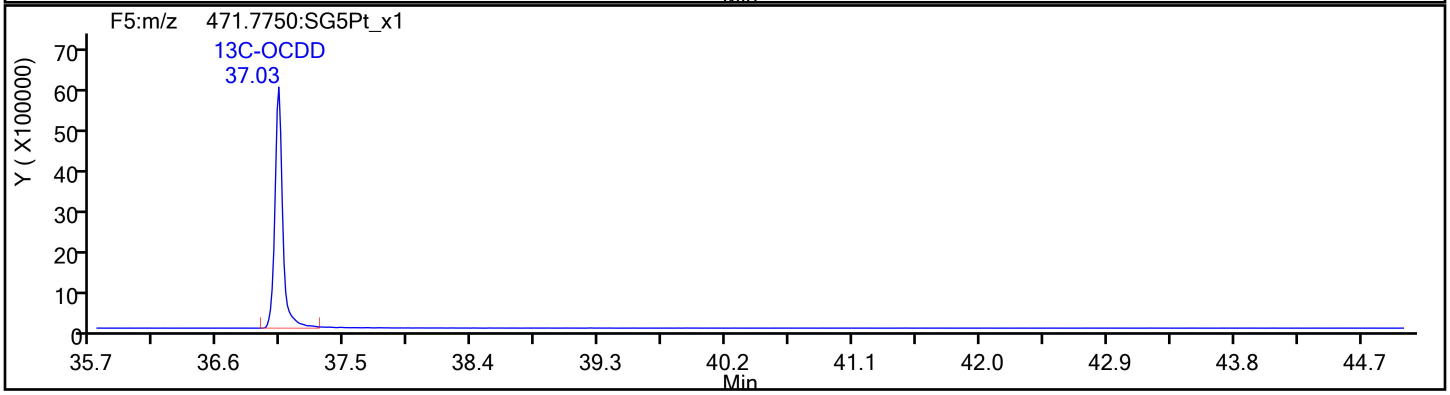

Report Date: 06-Mar-2020 10:13:27 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

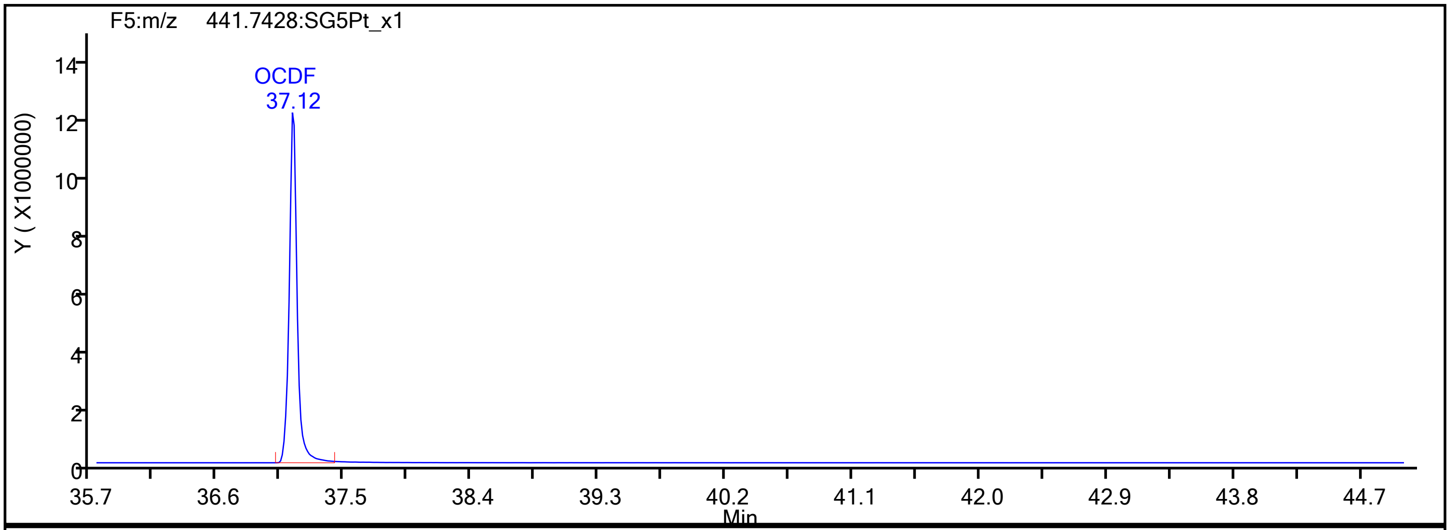

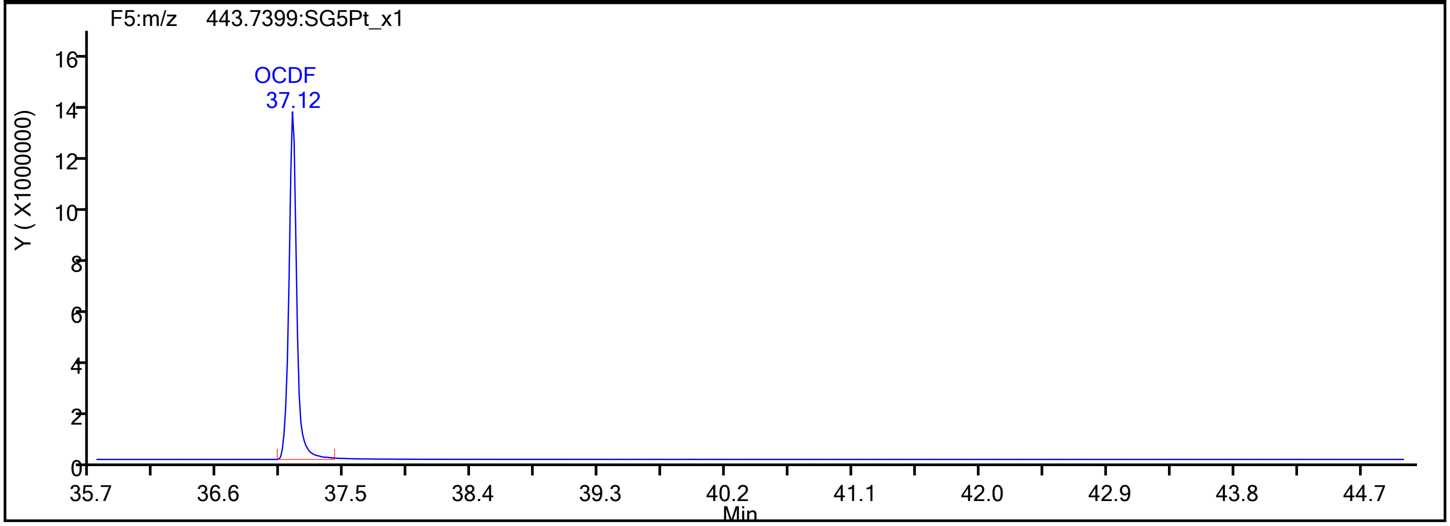

OCDF Interference Mass

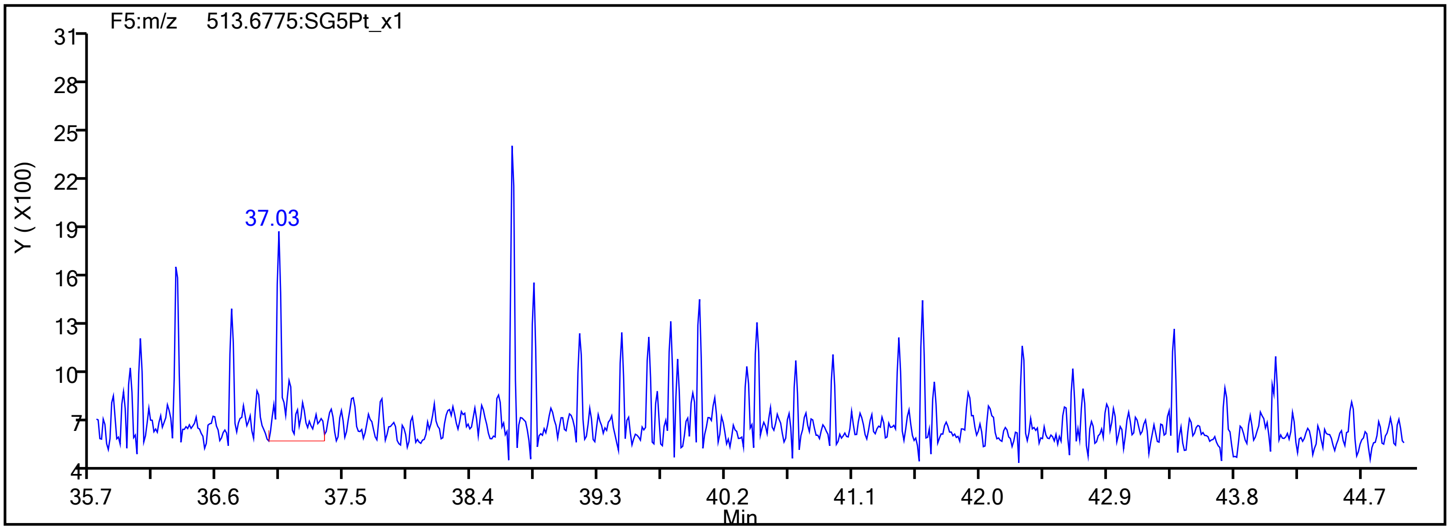

Report Date: 06-Mar-2020 10:13:27 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date: 05-Mar-2020 19:19:53

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

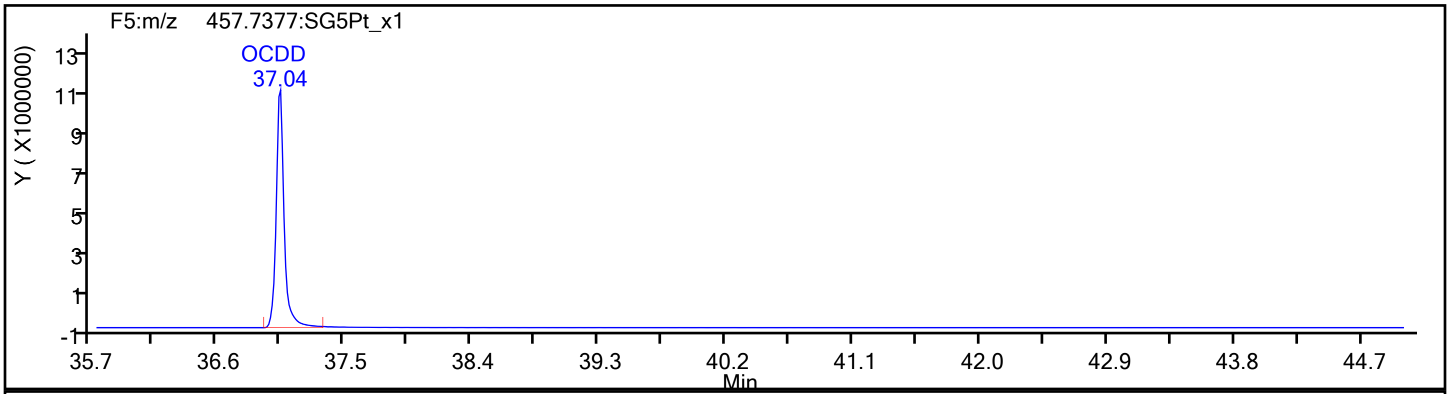

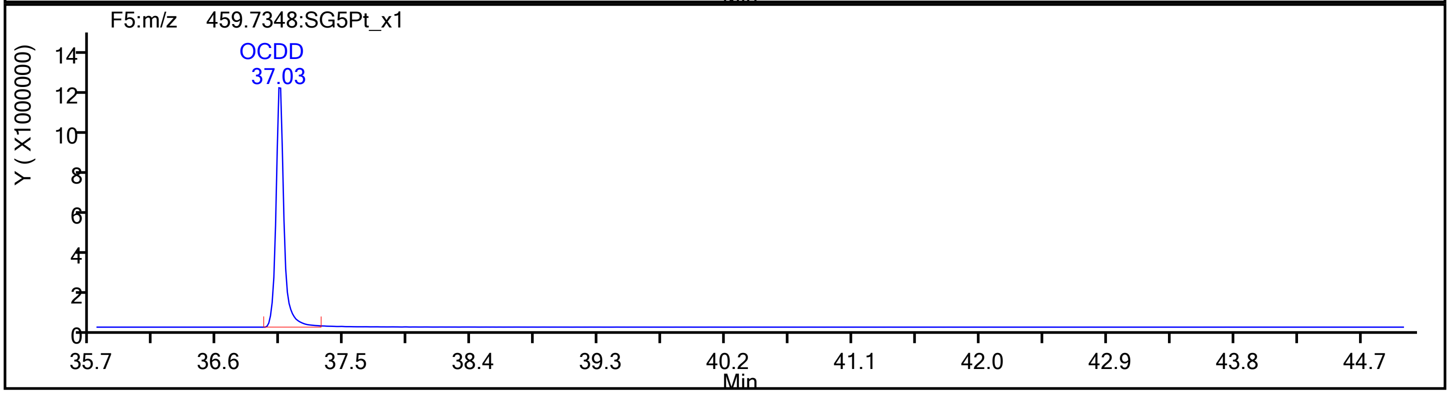

OCDD Standards

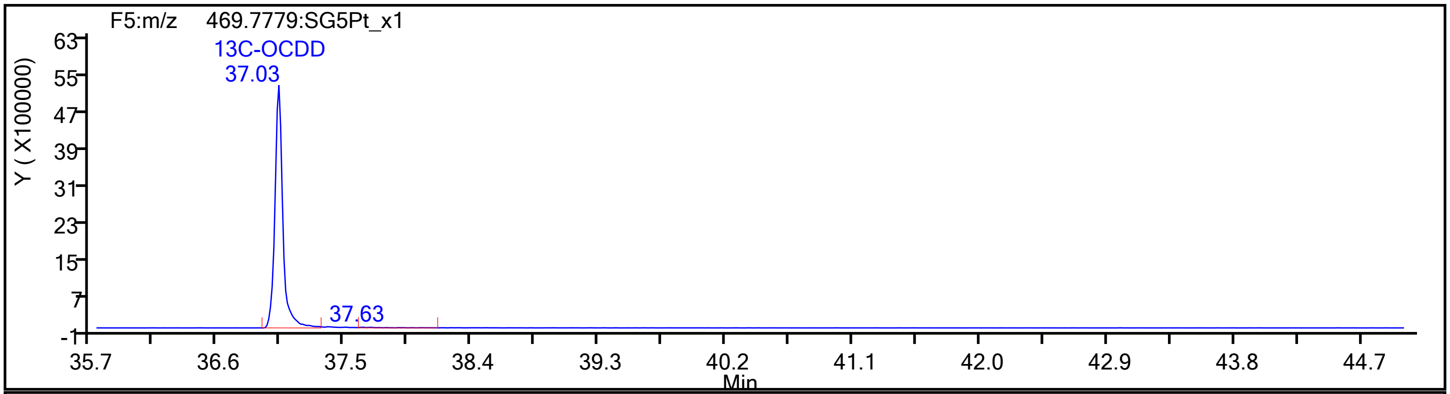

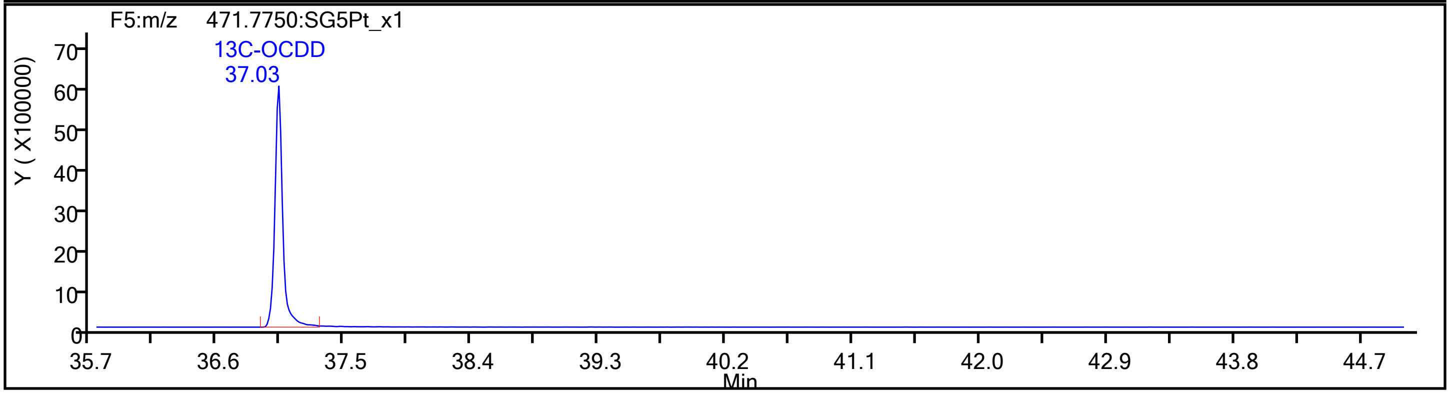

Report Date: 06-Mar-2020 10:13:27 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date: 05-Mar-2020 19:19:53

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

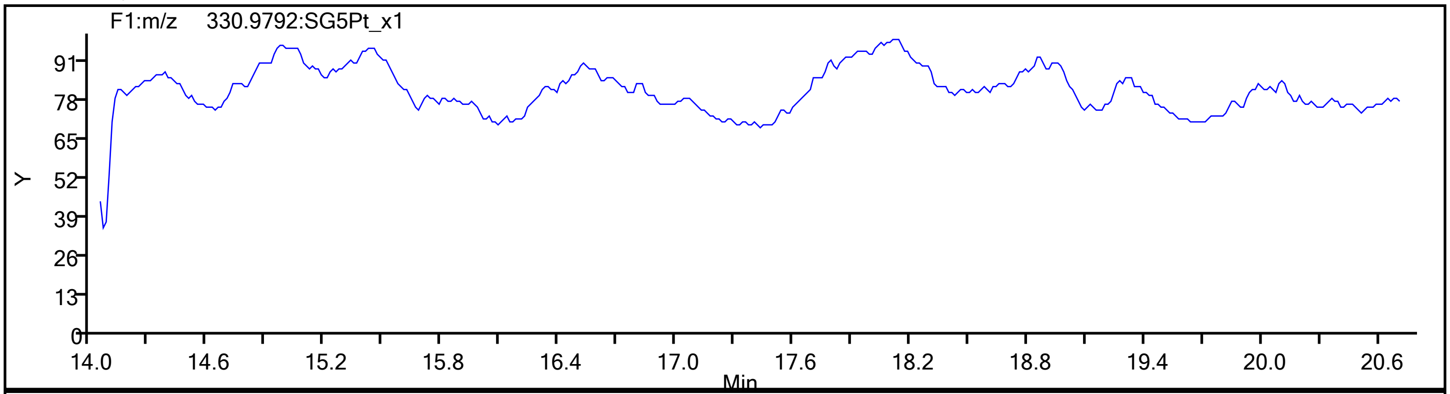

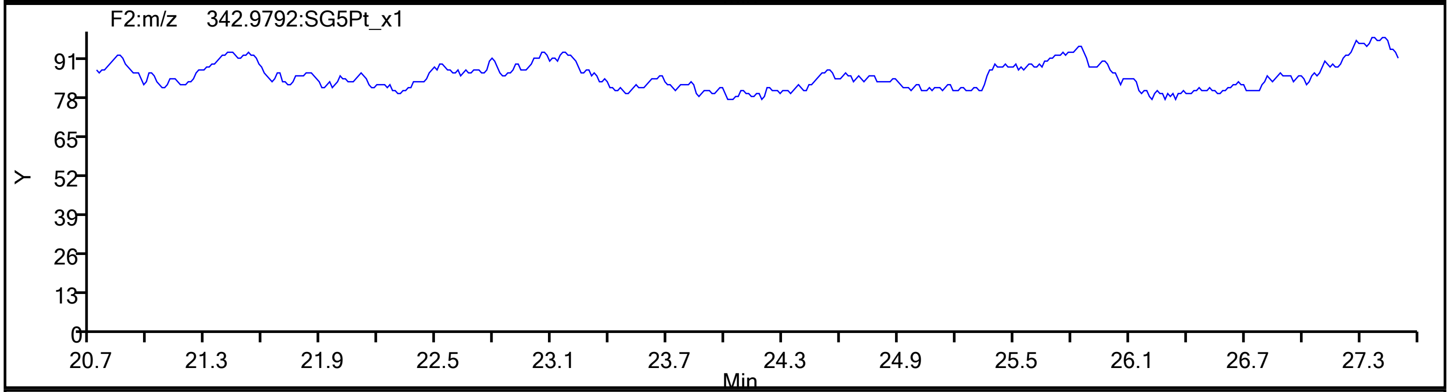

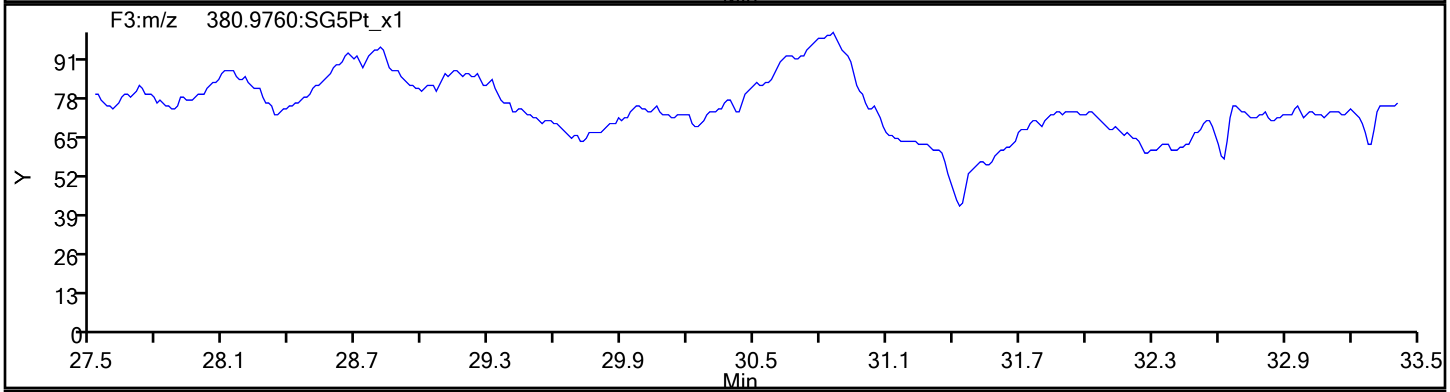

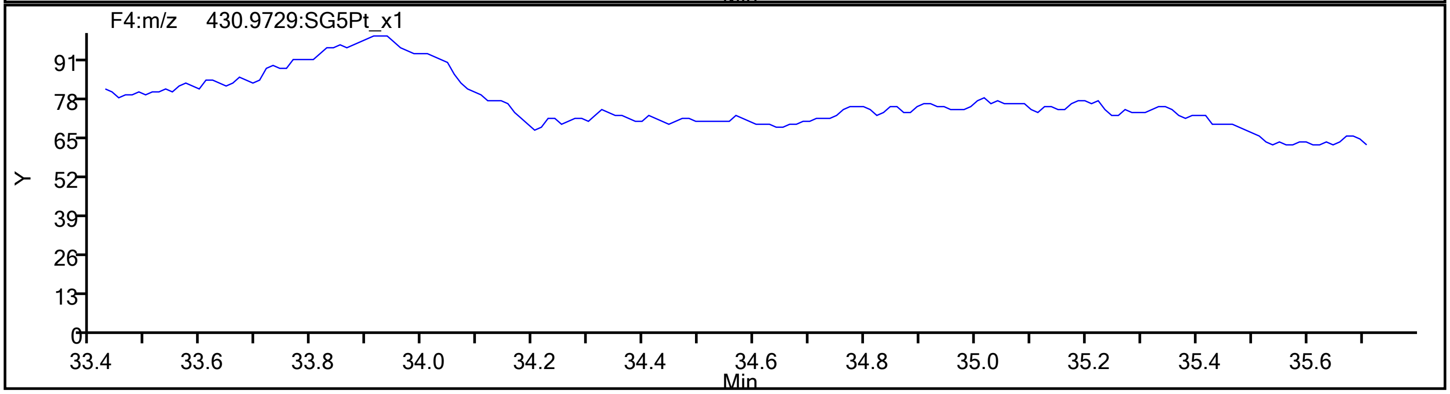

Report Date: 06-Mar-2020 10:13:27 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_6.d

Injection Date:	05-Mar-2020 19:19:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

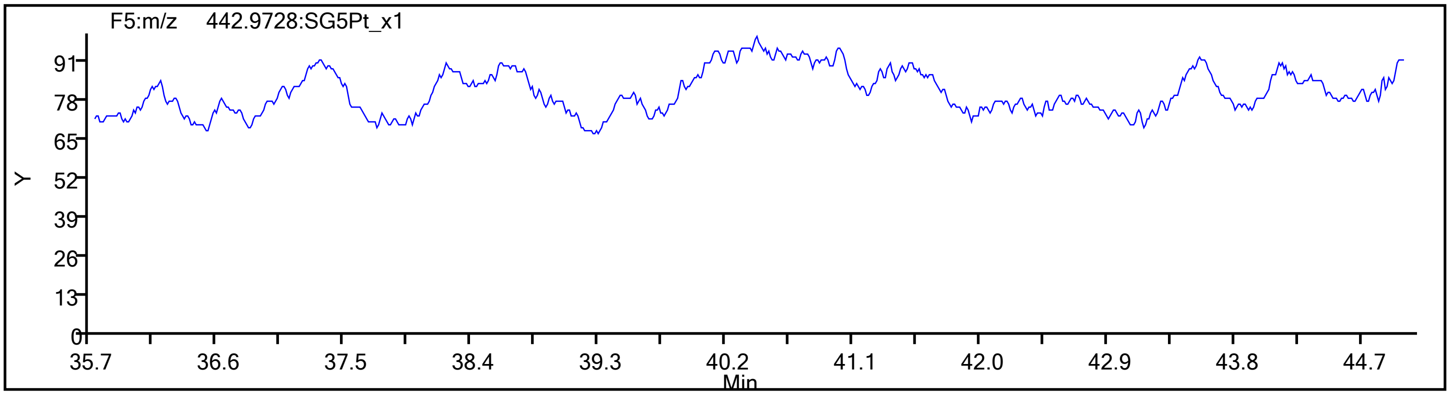

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 05-Mar-2020 20:05:51 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC 030520D CS-6 HRDXNL6_00025
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:13:30 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	18.005	38980233	0.78	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.490	46480707	0.76	1.1970	99.6	99.6	0.1225	0.1225	99.62	
2,3,7,8-TCDF	17.506	78405317	0.73	0.7672	219.9	219.9	0.3834	0.3834	110	
S Total TCDF					219.9	219.9	0.3834	0.3834		
D 13C-2,3,7,8-TCDD	18.201	34717344	0.79	0.8773	101.5	101.5	0.1634	0.1634	102	
2,3,7,8-TCDD	18.216	73397084	0.78	1.0000	211.4	211.4	0.1209	0.1209	106	
$ 37Cl4-2,3,7,8-TCDD	18.216	84339150		0.9515	227.4	227.4	0.2765	0.2765	114	
S Total TCDD					211.4	211.4	0.1209	0.1209		
D 13C-1,2,3,7,8-PeCDF	22.579	39171830	1.55	0.9904	101.5	101.5	0.1731	0.1731	101	
1,2,3,7,8-PeCDF	22.607	378365760	1.53	0.9019	1071.0	1071.0	2.024	2.024	107	
D 13C-2,3,4,7,8-PeCDF	23.943	43100234	1.56	1.0797	102.4	102.4	0.1588	0.1588	102	
2,3,4,7,8-PeCDF	23.970	375438875	1.52	0.8307	1048.6	1048.6	2.149	2.149	105	
S Total PeCDF					2119.6	2119.6	2.086	2.086		
D 13C-1,2,3,7,8-PeCDD	24.679	27642555	1.63	0.6904	102.7	102.7	0.1053	0.1053	103	
1,2,3,7,8-PeCDD	24.706	298739216	1.56	1.0145	1065.3	1065.3	0.7381	0.7381	107	
S Total PeCDD					1065.3	1065.3	0.7381	0.7381		
D 13C-1,2,3,4,7,8-HxCDF	30.710	31549179	0.49	0.9076	100.8	100.8	0.2507	0.2507	101	
1,2,3,4,7,8-HxCDF	30.736	264411389	1.19	0.7928	1057.1	1057.1	3.318	3.318	106	
D 13C-1,2,3,6,7,8-HxCDF	30.883	29793327	0.49	0.8671	99.6	99.6	0.2624	0.2624	99.60	
1,2,3,6,7,8-HxCDF	30.909	276477770	1.18	0.8592	1080.1	1080.1	3.042	3.042	108	
D 13C-2,3,4,6,7,8-HxCDF	31.668	27111178	0.48	0.8287	94.8	94.8	0.2746	0.2746	94.84	
2,3,4,6,7,8-HxCDF	31.681	258733732	1.18	0.8896	1072.8	1072.8	2.614	2.614	107	
D 13C-1,2,3,7,8,9-HxCDF	32.453	25561442	0.50	0.7391	100.2	100.2	0.3079	0.3079	100	
1,2,3,7,8,9-HxCDF	32.467	246005828	1.19	0.8941	1076.4	1076.4	2.538	2.538	108	
S Total HxCDF					4286.4	4286.4	2.878	2.878		
* 13C-1,2,3,7,8,9-HxCDD	32.267	34497403	1.22	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.854	28984636	1.23	0.8335	100.8	100.8	0.2154	0.2154	101	
1,2,3,4,7,8-HxCDD	31.868	256976076	1.21	0.8332	1064.1	1064.1	2.186	2.186	106	
D 13C-1,2,3,6,7,8-HxCDD	31.948	26715501	1.20	0.8228	94.1	94.1	0.2182	0.2182	94.12	
1,2,3,6,7,8-HxCDD	31.974	256949982	1.21	0.8944	1075.3	1075.3	2.179	2.179	108	
1,2,3,7,8,9-HxCDD	32.280	281246053	1.22	0.9449	1068.8	1068.8	1.993	1.993	107	

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDD					3208.2	3208.2	2.119	2.119		
D 13C-1,2,3,4,6,7,8-HpCDF	33.861	23613576	0.41	0.7009	97.7	97.7	0.6932	0.6932	97.66	
1,2,3,4,6,7,8-HpCDF	33.861	328302698	1.02	1.3295	1045.8	1045.8	5.848	5.848	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.943	25499985	0.43	0.7244	102.0	102.0	0.6707	0.6707	102	
1,2,3,4,7,8,9-HpCDF	34.955	288960080	1.03	1.0803	1048.9	1048.9	6.944	6.944	105	
S Total HpCDF					2094.7	2094.7	6.396	6.396		
D 13C-1,2,3,4,6,7,8-HpCDD	34.651	24711481	1.08	0.7026	102.0	102.0	0.3099	0.3099	102	
1,2,3,4,6,7,8-HpCDD	34.663	257083793	1.04	1.0040	1036.2	1036.2	2.614	2.614	104	
S Total HpCDD					1036.2	1036.2	2.614	2.614		
D 13C-OCDD	37.014	45682693	0.88	0.6184	214.1	214.1	0.1395	0.1395	107	
OCDF	37.122	529837588	0.90	1.1076	2094.3	2094.3	0.8156	0.8156	105	
OCDD	37.026	478495714	0.88	1.0175	2058.8	2058.8	1.357	1.357	103	

Reagents:

HRDXNL6_00025 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d				
Lims ID:	IC				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	05-Mar-2020 20:05:51	ALS Bottle#:	7	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	IC 030520D CS-6 HRDXNL6_00025				
Misc. Info.:	05MR20A10D5				
Operator ID:	AJS	Instrument ID:	10D5		
Sublist:	chrom-Dioxin_10D5*sub1				
Method:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	06-Mar-2020 10:13:30	Calib Date:	05-Mar-2020 20:05:51		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d				
Column 1 :	DB-5 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX0319				

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	18.005	18.008	0		17134496	4410808	3603	9007	1224		
333.9339	18.005	18.008	0		21845737	5612086	2143	5357	2619	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.490	17.491	0	0.971	20024971	5034683	3488	8720	1443		
317.9389	17.476	17.491	-1	0.971	26455736	6554758	2392	5980	2740	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.506	17.509	0	1.001	33013116	8255881	4472	11180	1846		
305.8987	17.490	17.509	-1	1.000	45392201	11199268	9165	22912	1222	0.73(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.201	18.204	0	1.011	15321830	3778268	3603	9007	1049		
333.9339	18.201	18.204	0	1.011	19395514	4807682	2143	5357	2243	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.216	18.225	-1	1.001	32277636	7896627	2004	5010	3940		
321.8936	18.216	18.225	-1	1.001	41119448	10045257	2148	5370	4677	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.216	18.225	-1	1.012	84339150	20714445	10547	26367	1964		
13C-1,2,3,7,8-PeCDF											
351.9000	22.579	22.585	0	1.254	23837646	4287794	4051	10127	1058		
353.8970	22.579	22.585	0	1.254	15334184	2793299	2823	7057	989	1.55(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.607	22.607	0	1.001	228711601	41107007	31409	78522	1309		
341.8567	22.593	22.607	-1	1.001	149654159	26751902	20291	50727	1318	1.53(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.943	23.951	0	1.330	26244727	4402068	4051	10127	1087		
353.8970	23.943	23.951	0	1.330	16855507	2838623	2823	7057	1006	1.56(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,4,7,8-PeCDF											
339.8597	23.970	23.976	0	1.001	226621808	38146836	31409	78522	1215		
341.8567	23.970	23.976	0	1.001	148817067	24801242	20291	50727	1222	1.52(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.679	24.685	0	1.371	17135482	2719441	1751	4377	1553		
369.8919	24.679	24.685	0	1.371	10507073	1685082	1165	2912	1446	1.63(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.706	24.709	0	1.001	182180685	29209774	7966	19915	3667		
357.8516	24.706	24.709	0	1.001	116558531	18800833	5227	13067	3597	1.56(1.32-1.78)	
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.710	30.718	0	0.952	10398111	2108836	3063	7657	688		
385.8610	30.710	30.718	0	0.952	21151068	4218551	5680	14200	743	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.736	30.736	0	1.001	143403120	28963900	36392	90980	796		
375.8178	30.736	30.736	0	1.001	121008269	24153512	30186	75465	800	1.19(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.883	30.888	0	0.957	9790254	2098925	3063	7657	685		
385.8610	30.883	30.888	0	0.957	20003073	4269824	5680	14200	752	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.909	30.907	0	1.001	149921719	30845531	36392	90980	848		
375.8178	30.896	30.907	-1	1.000	126556051	26255999	30186	75465	870	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.668	31.676	0	0.981	8850313	2325822	3063	7657	759		
385.8610	31.668	31.676	0	0.981	18260865	4833186	5680	14200	851	0.48(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.681	31.689	0	1.000	140064585	35868410	36392	90980	986		
375.8178	31.681	31.689	0	1.000	118669147	30782609	30186	75465	1020	1.18(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.453	32.456	0	1.006	8554523	2477735	3063	7657	809		
385.8610	32.453	32.456	0	1.006	17006919	4858018	5680	14200	855	0.50(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.467	32.467	0	1.000	133660667	37743660	36392	90980	1037		
375.8178	32.467	32.467	0	1.000	112345161	31198077	30186	75465	1034	1.19(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.267	32.272	0		18980592	5268912	3873	9682	1360		
403.8529	32.267	32.272	0		15516811	4336476	3025	7562	1434	1.22(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.854	31.855	0	0.987	15965918	4274062	3873	9682	1104		
403.8529	31.854	31.855	0	0.987	13018718	3488401	3025	7562	1153	1.23(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.868	31.871	0	1.000	140867566	38761561	31175	77937	1243		
391.8127	31.868	31.871	0	1.000	116108510	31247449	25366	63415	1232	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.948	31.956	0	0.990	14574432	3939540	3873	9682	1017		
403.8529	31.948	31.956	0	0.990	12141069	3313363	3025	7562	1095	1.20(1.05-1.43)	

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46
Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,6,7,8-HxCDD											
389.8157	31.974	31.972	0	1.001	140836020	37869389	31175	77937	1215		
391.8127	31.961	31.972	-1	1.000	116113962	31369844	25366	63415	1237	1.21(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.280	32.288	0	1.013	154391221	42598392	31175	77937	1366		
391.8127	32.280	32.288	0	1.013	126854832	35266862	25366	63415	1390	1.22(1.05-1.43)	
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.861	33.864	0	1.049	6918949	2322172	5335	13337	435		
419.8220	33.861	33.864	0	1.049	16694627	5461307	13331	33327	410	0.41(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.861	33.869	0	1.000	165913600	53717552	120734	301835	445		
409.7789	33.861	33.869	0	1.000	162389098	53832220	121310	303275	444	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.943	34.948	0	1.083	7633558	2449752	5335	13337	459		
419.8220	34.943	34.948	0	1.083	17866427	5616264	13331	33327	421	0.43(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.955	34.960	0	1.000	146419414	45415348	120734	301835	376		
409.7789	34.955	34.960	0	1.000	142540666	43728073	121310	303275	360	1.03(0.88-1.20)	
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.651	34.656	0	1.074	12816433	4021935	4497	11242	894		
437.8140	34.651	34.656	0	1.074	11895048	3756581	3870	9675	971	1.08(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.663	34.668	0	1.000	130764354	40833581	40798	101995	1001		
425.7737	34.663	34.668	0	1.000	126319439	39353485	40872	102180	963	1.04(0.88-1.20)	
13C-OCDD											
469.7779	37.014	37.017	0	1.147	21336995	5619584	1600	4000	3512		
471.7750	37.014	37.017	0	1.147	24345698	6356822	1714	4285	3709	0.88(0.76-1.02)	
OCDF											
441.7428	37.122	37.120	0	1.003	250659671	67099611	10348	25870	6484		
443.7399	37.122	37.120	0	1.003	279177917	73787612	11291	28227	6535	0.90(0.76-1.02)	
OCDD											
457.7377	37.026	37.029	0	1.000	223580025	59081257	15360	38400	3846		
459.7348	37.026	37.029	0	1.000	254915689	68207825	17707	44267	3852	0.88(0.76-1.02)	

Reagents:

HRDXNL6_00025 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d
Injection Date: 05-Mar-2020 20:05:51 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307 Sample Line#: 7
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

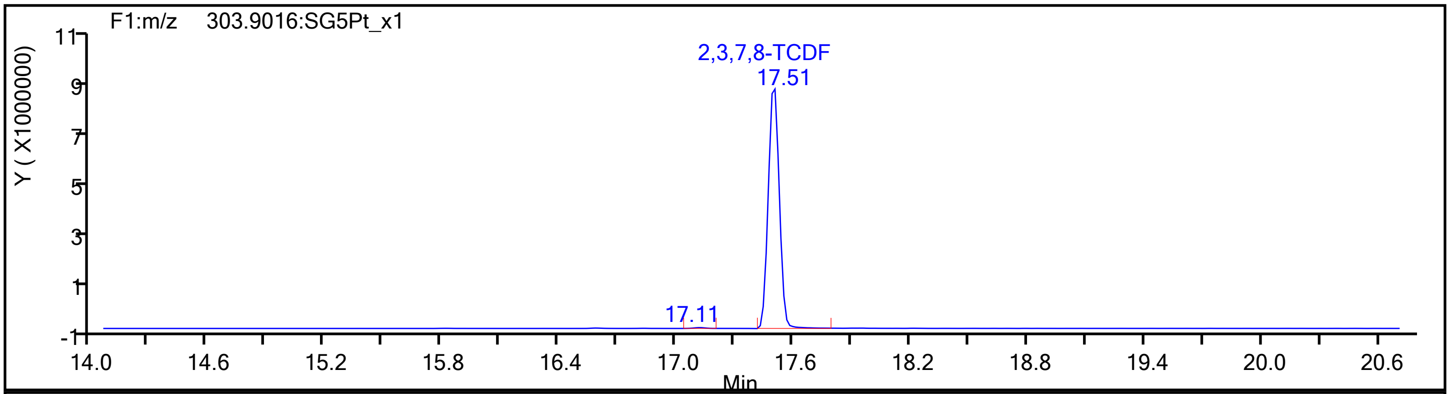

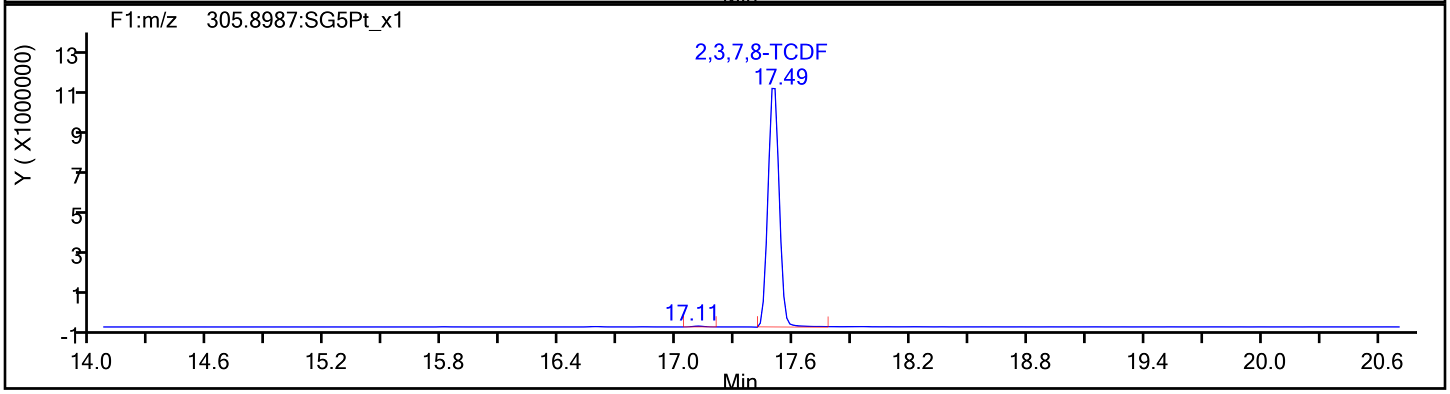

TCDF Standards

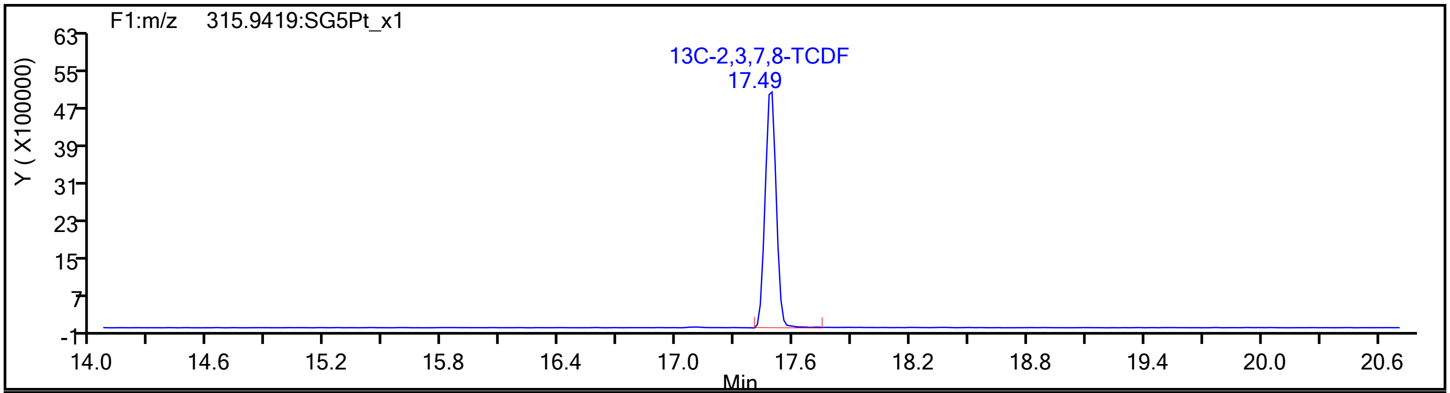

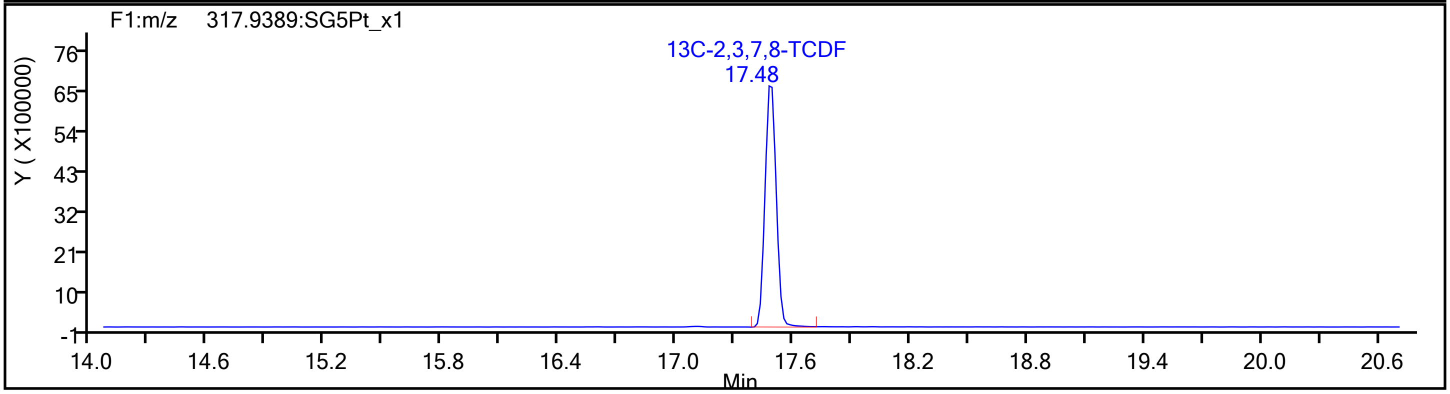

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

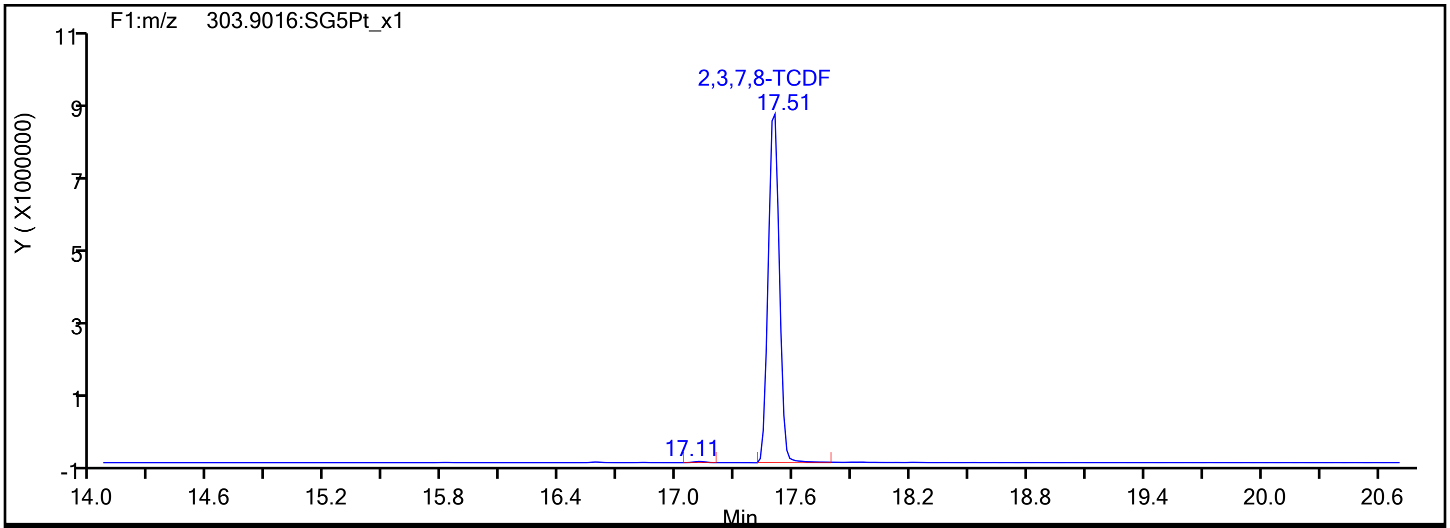

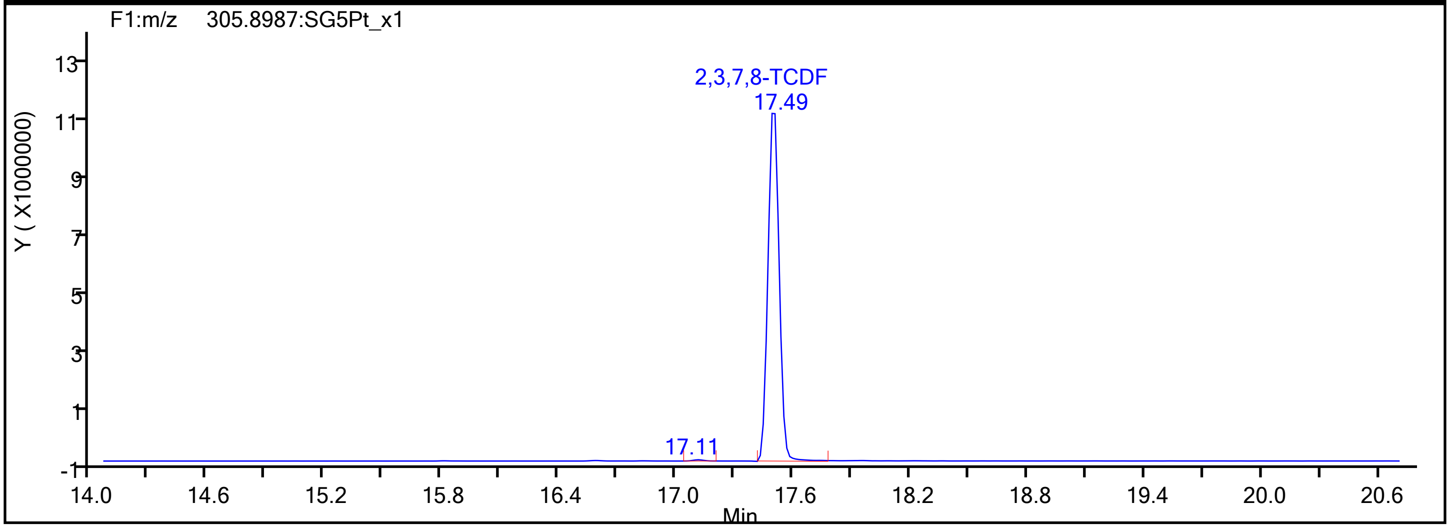

TCDF Interference Mass

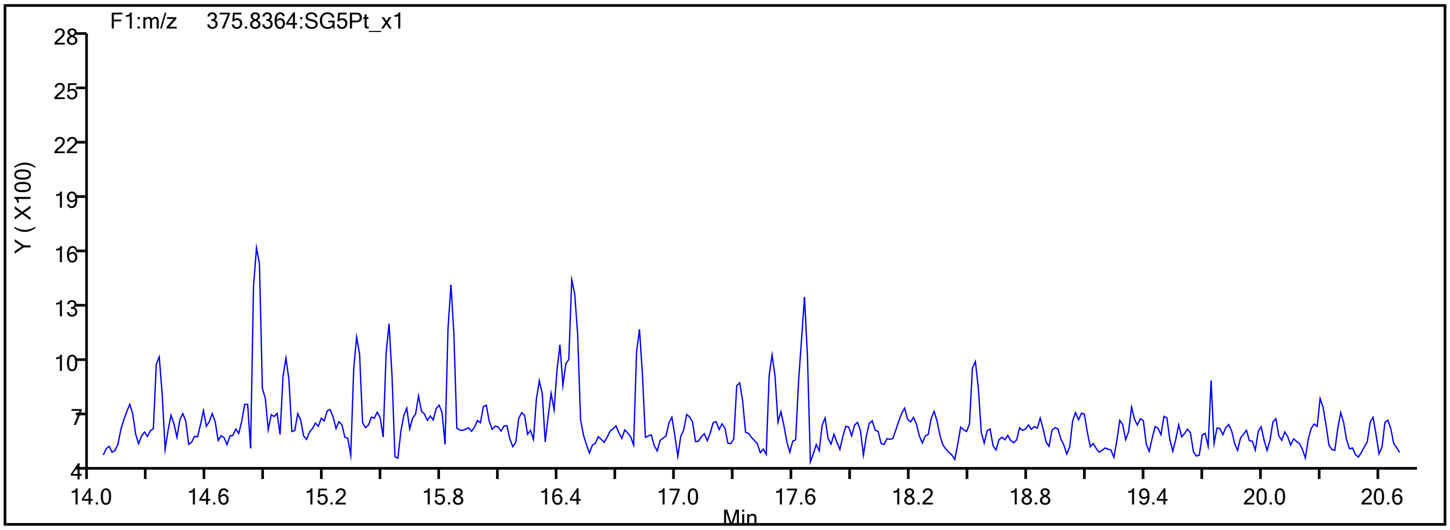

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Injection Date:	05-Mar-2020 20:05:51	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

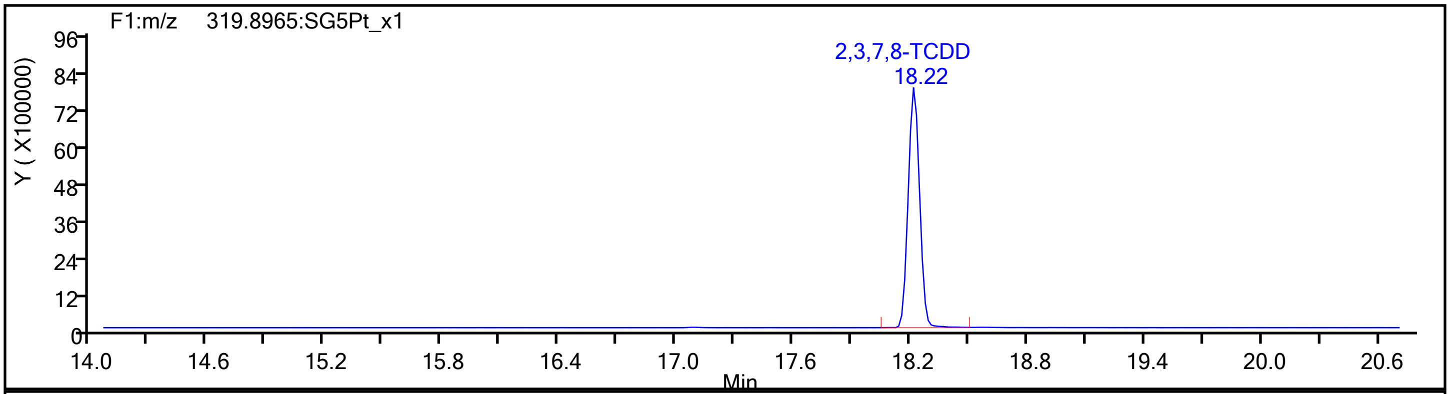

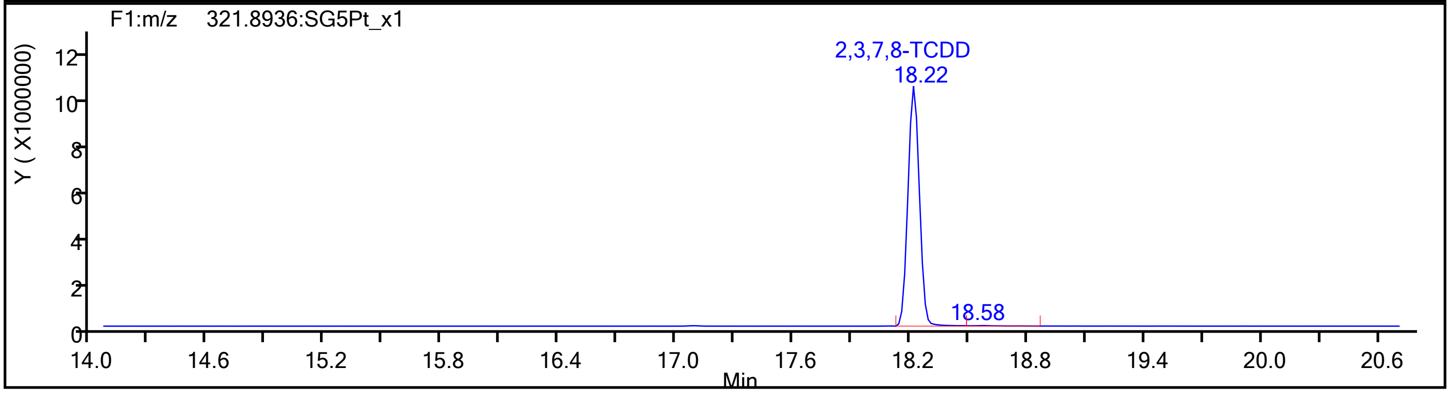

TCDD Standards

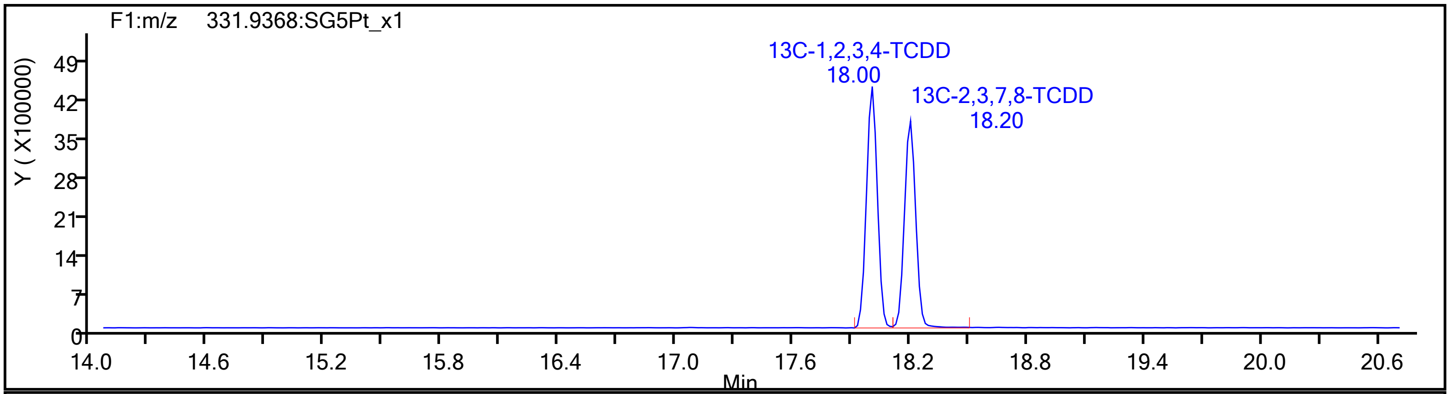

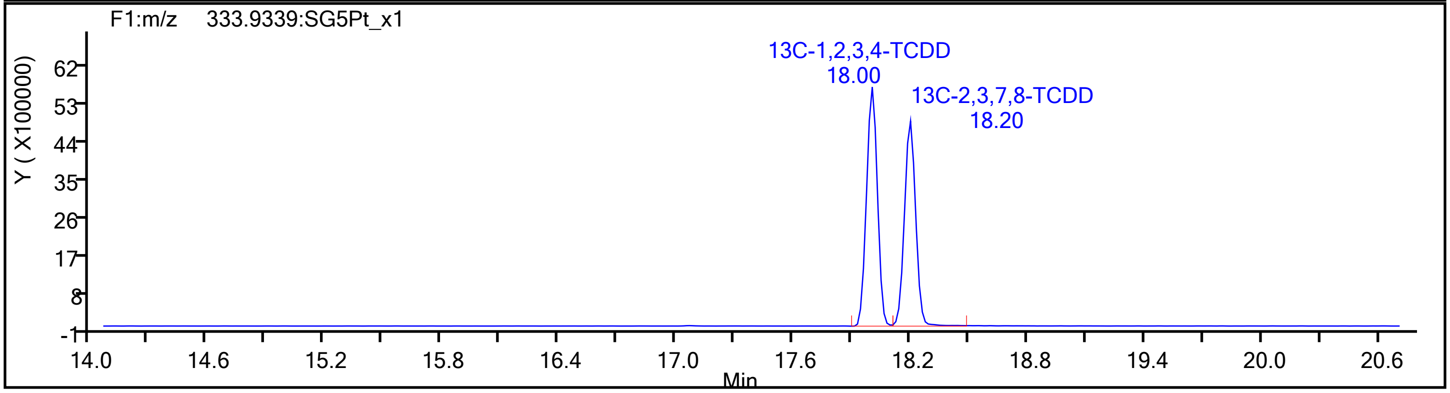

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d		
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Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

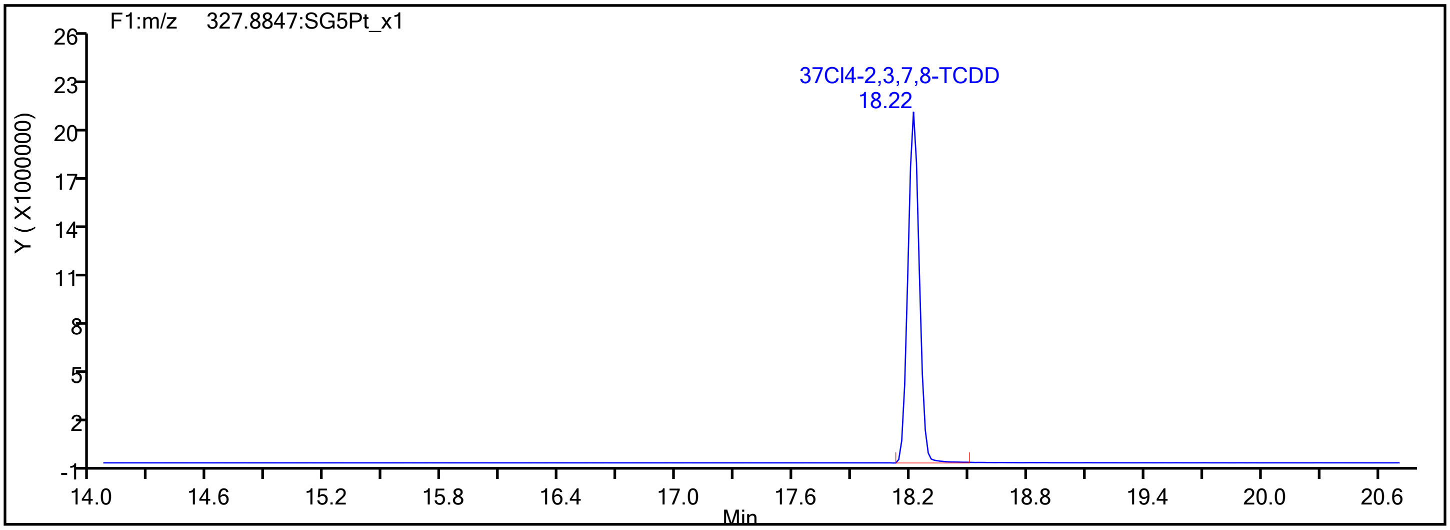

37Cl4-TCDD Standards

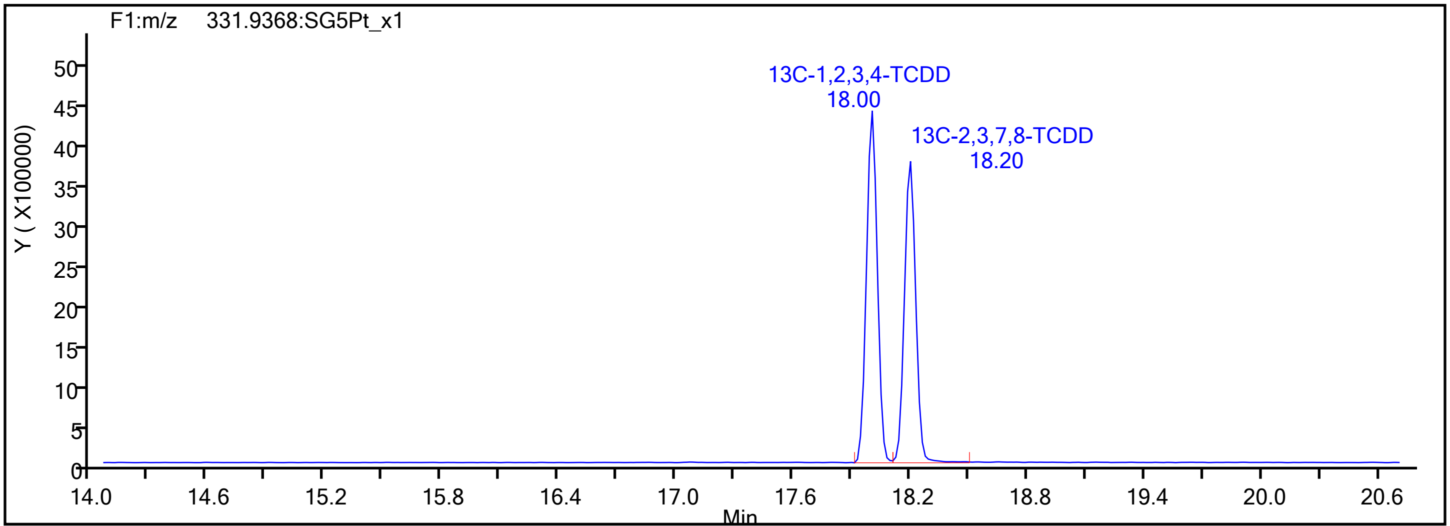

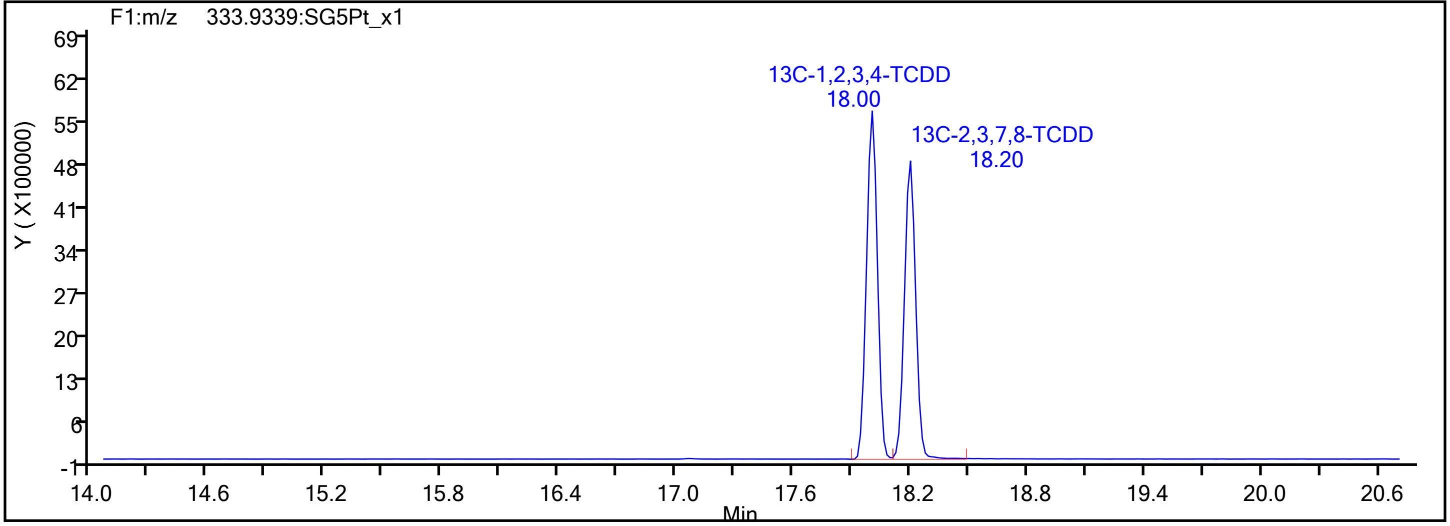

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F1 PeCDFs

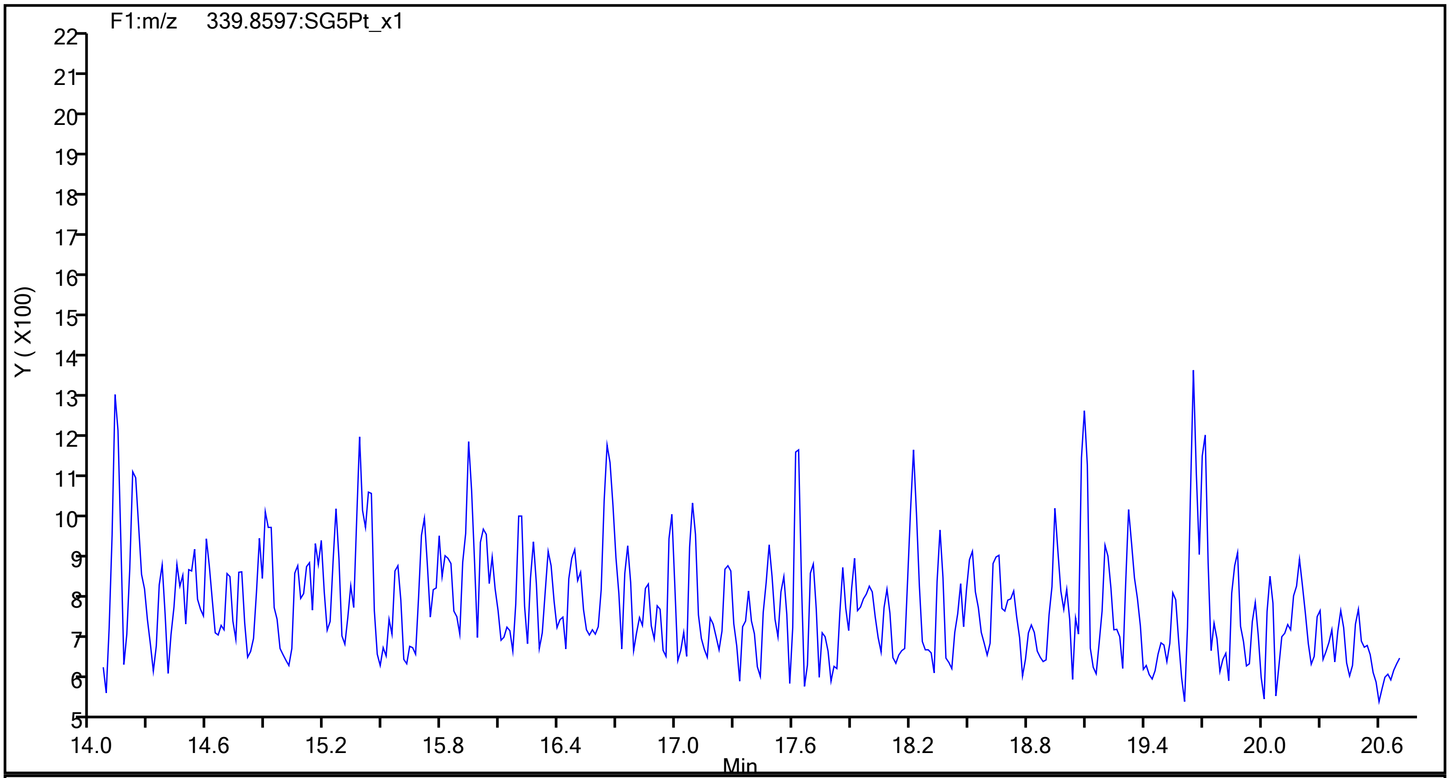

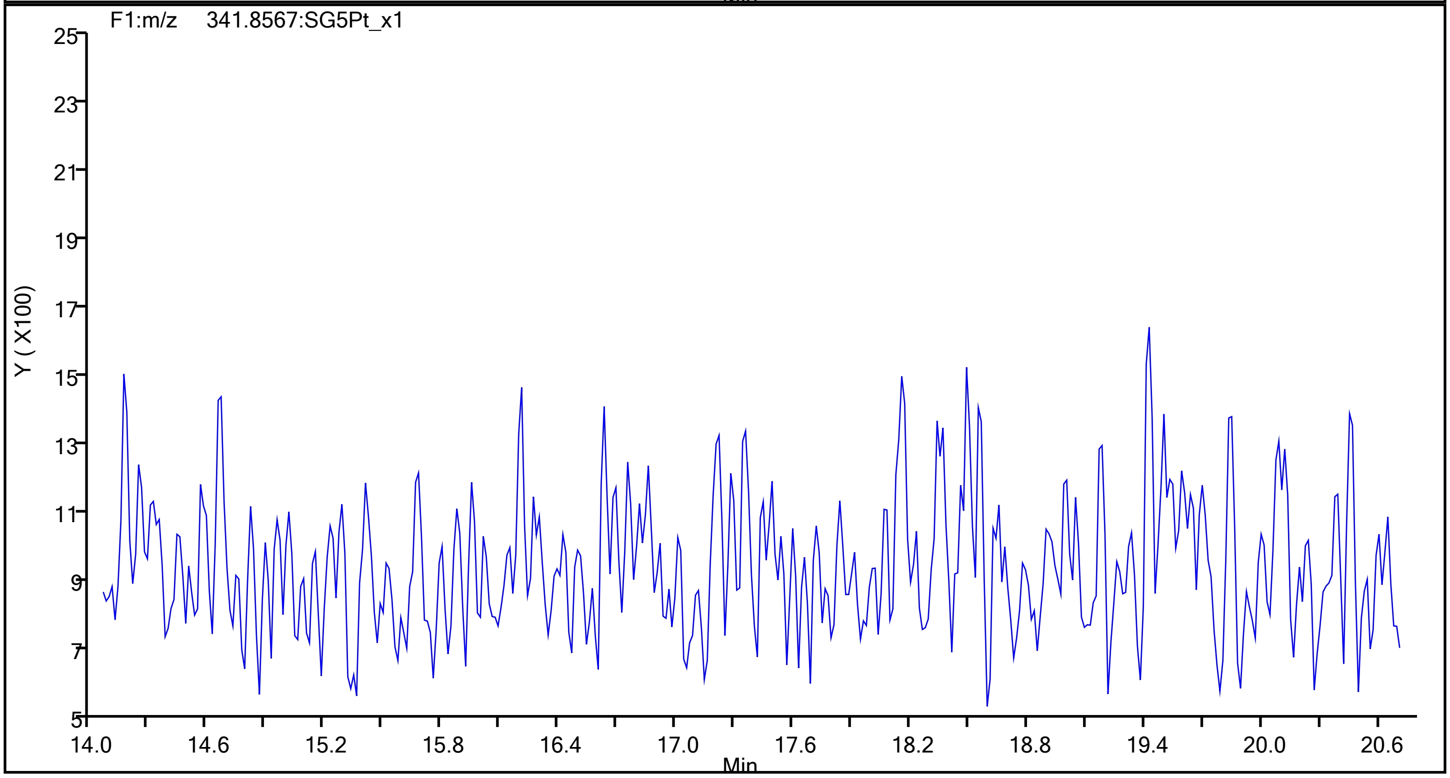

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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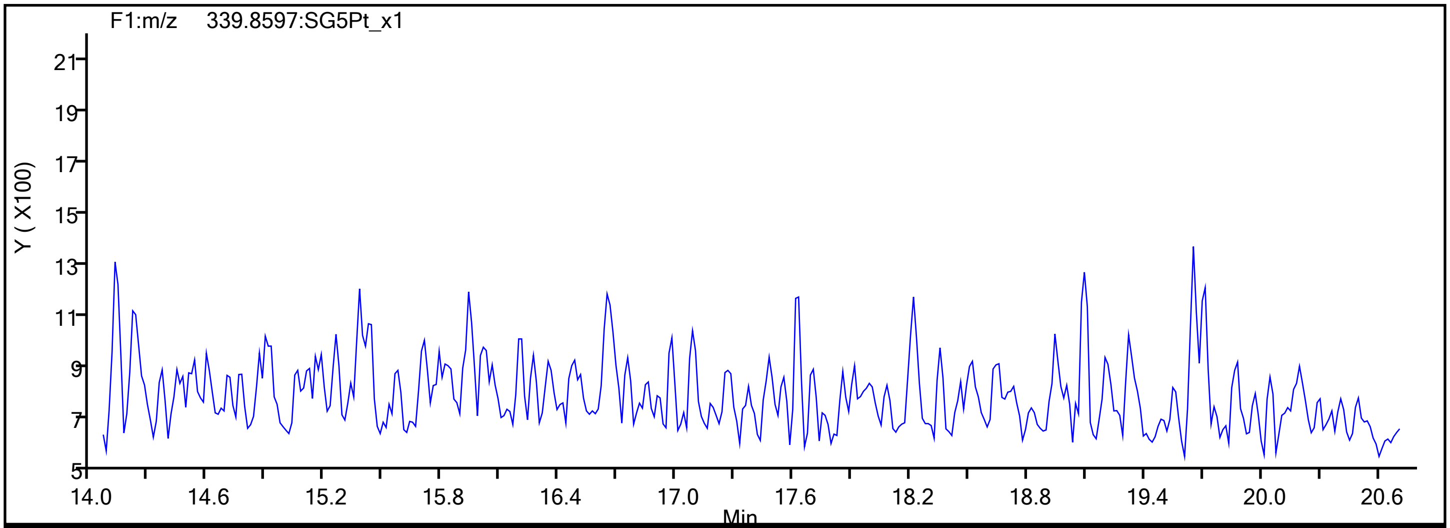

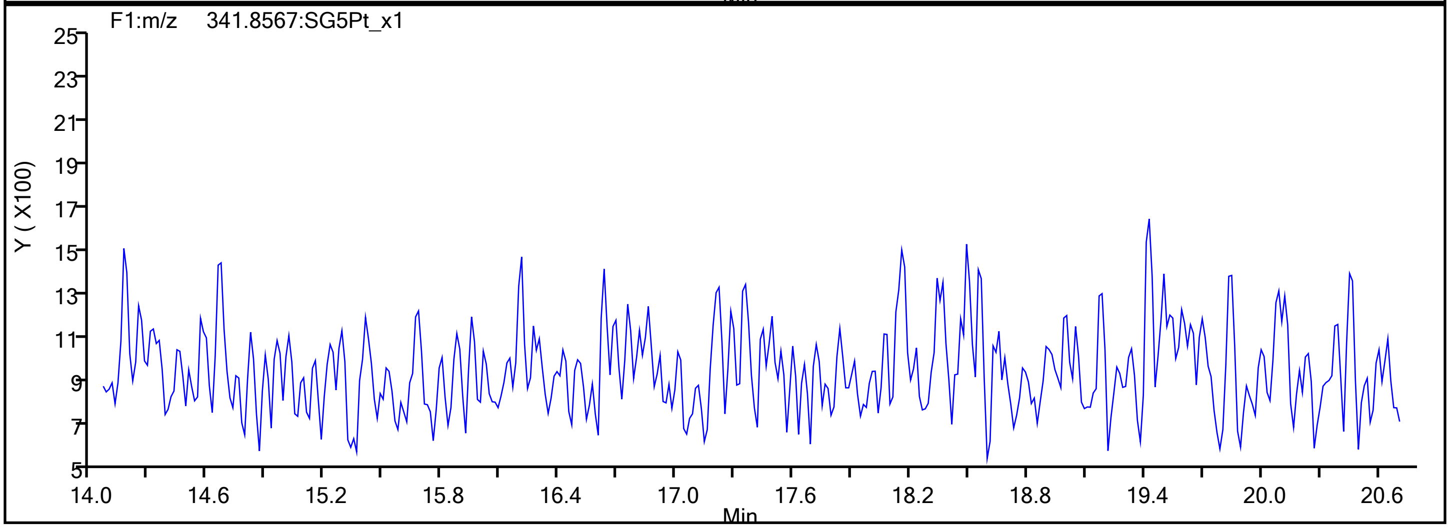

F1 PeCDFs Interference Mass

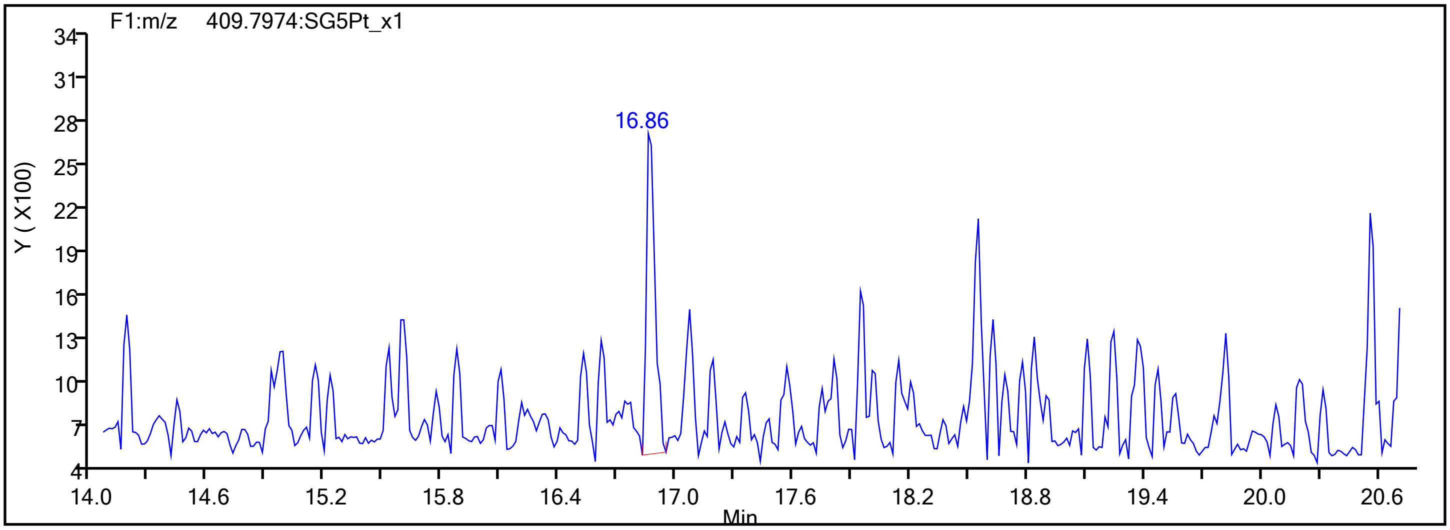

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Eurofins TestAmerica, Sacramento

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PeCDF

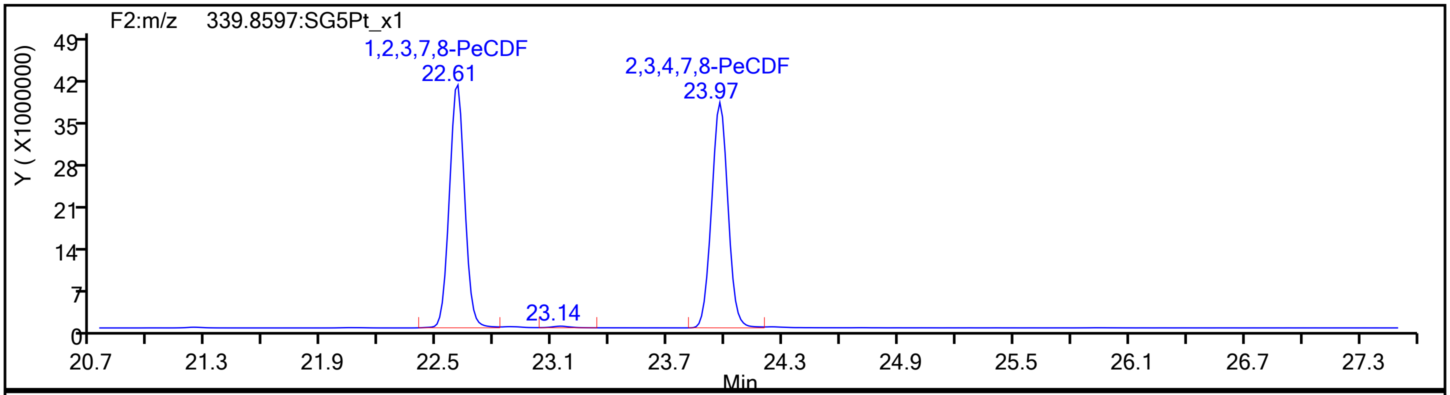

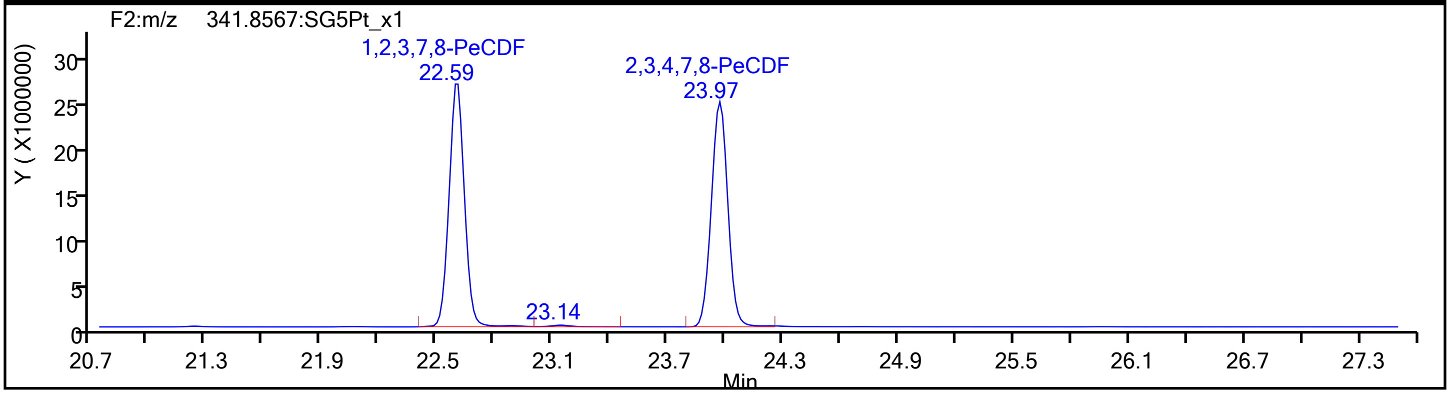

PeCDF Standards

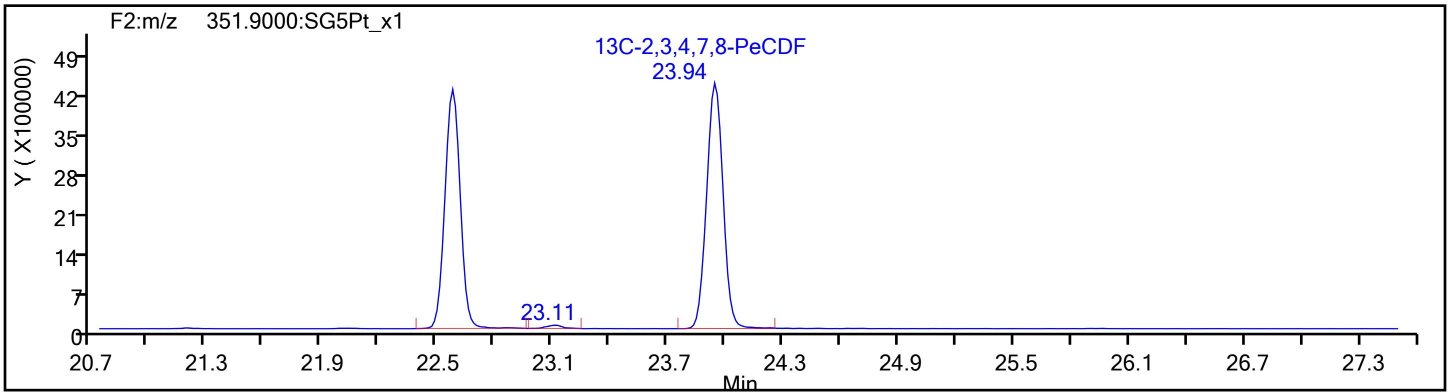

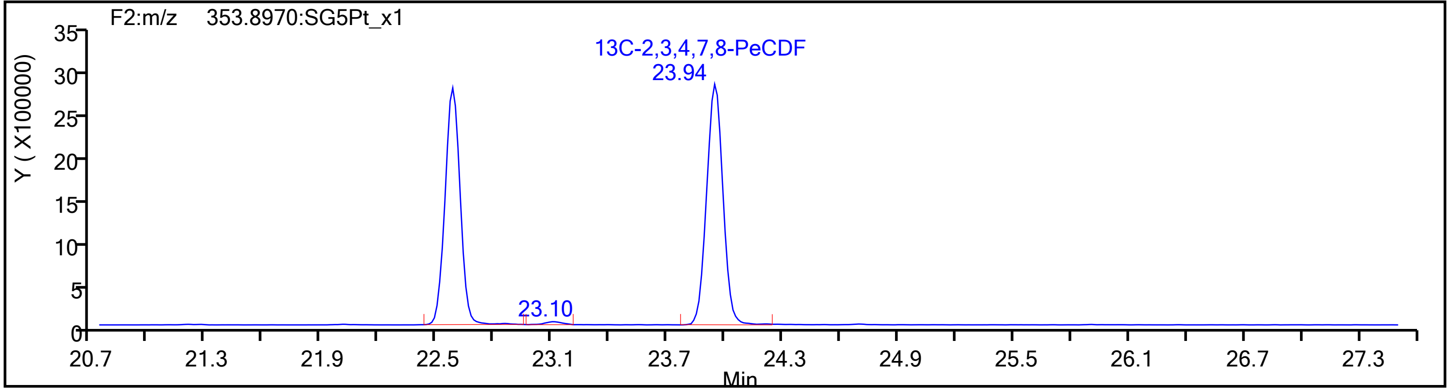

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Eurofins TestAmerica, Sacramento

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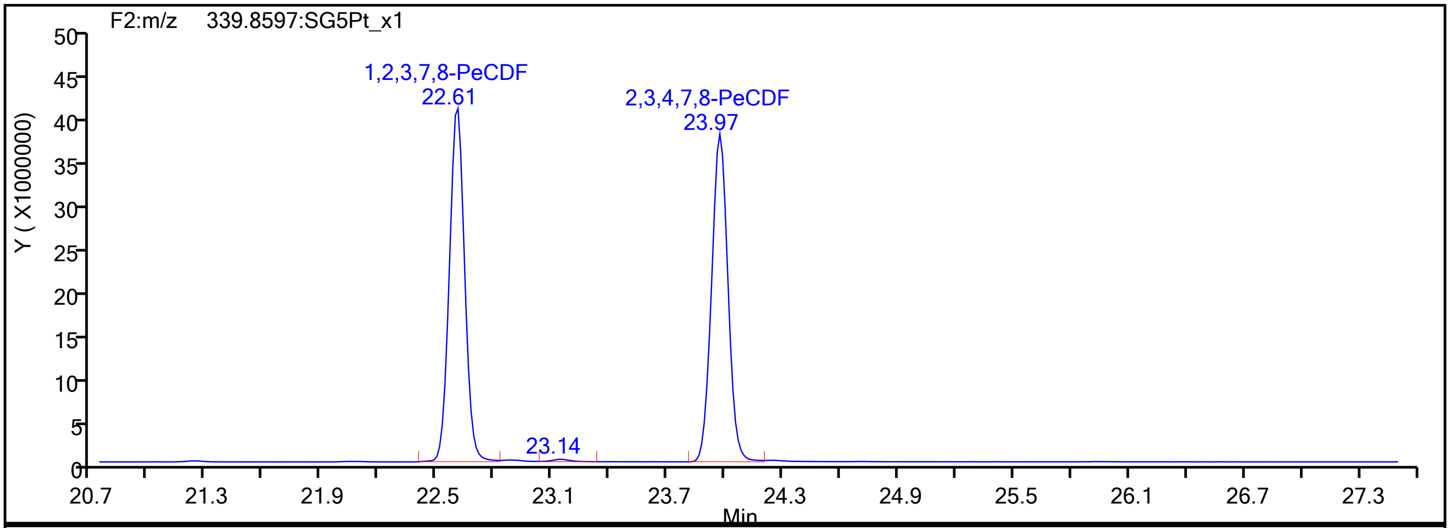

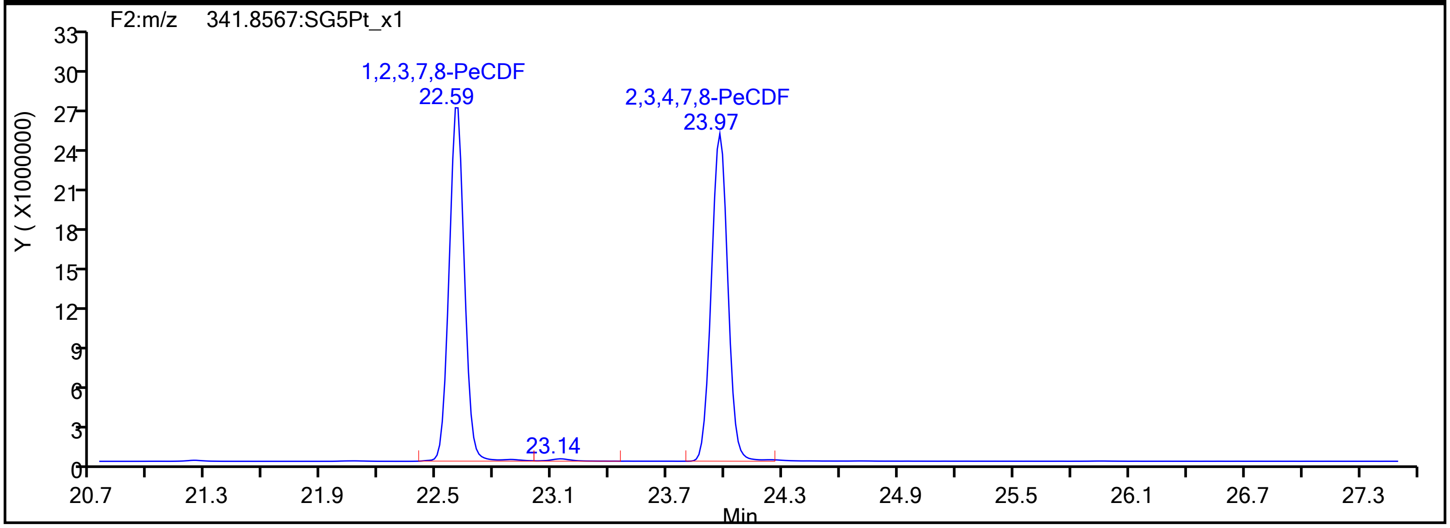

PeCDF Interference Mass

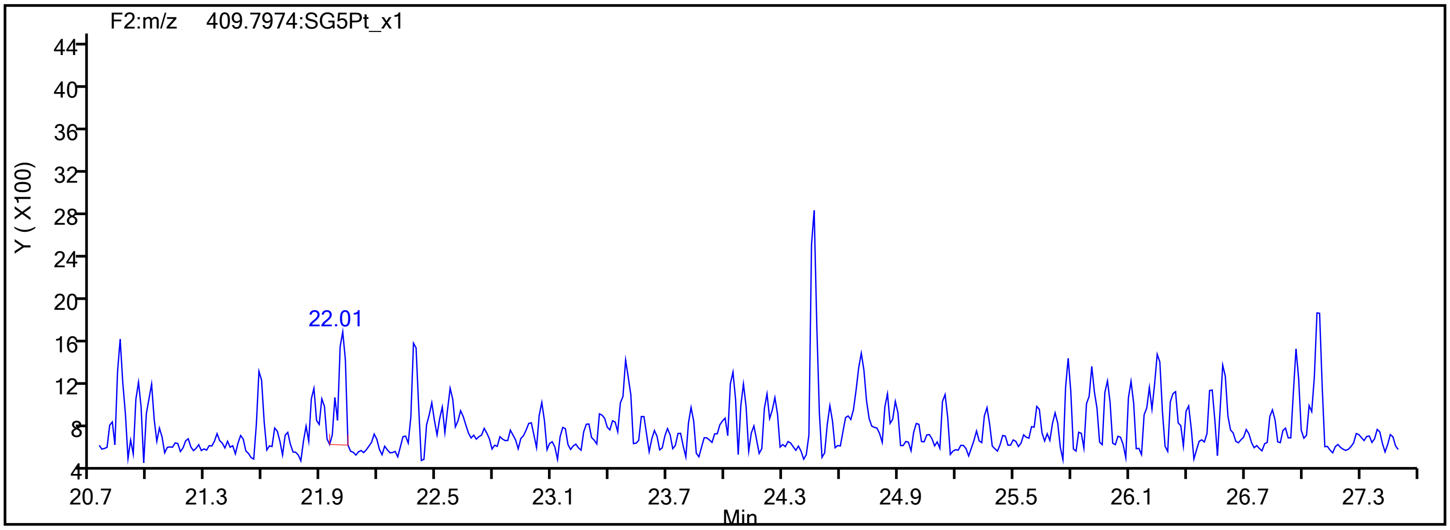

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Eurofins TestAmerica, Sacramento

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PeCDD

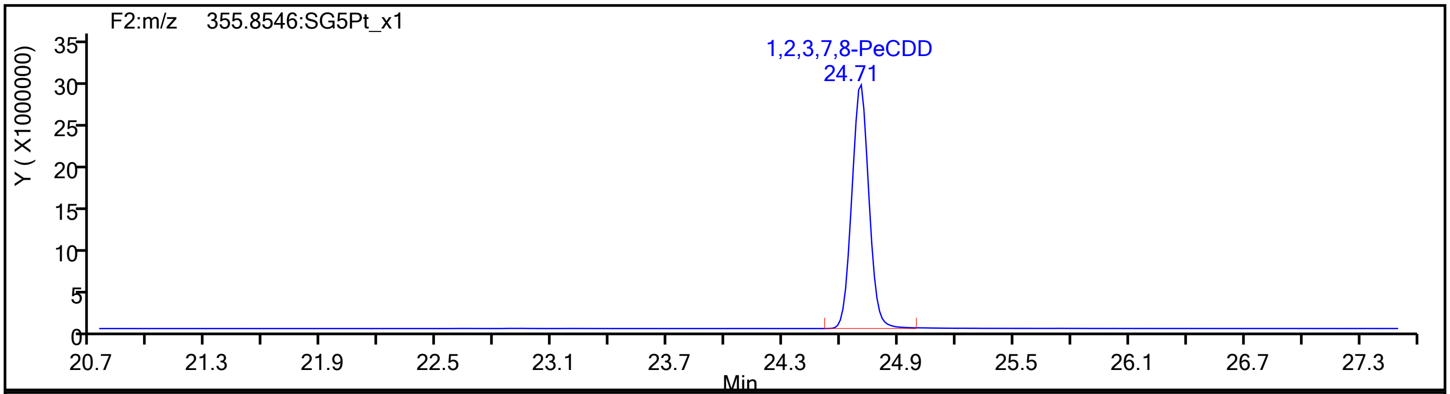

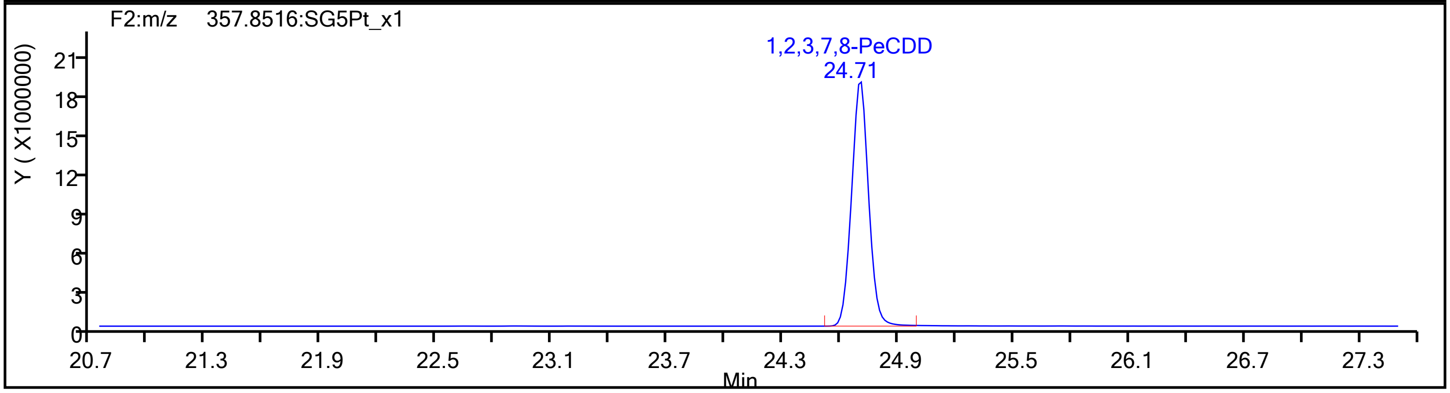

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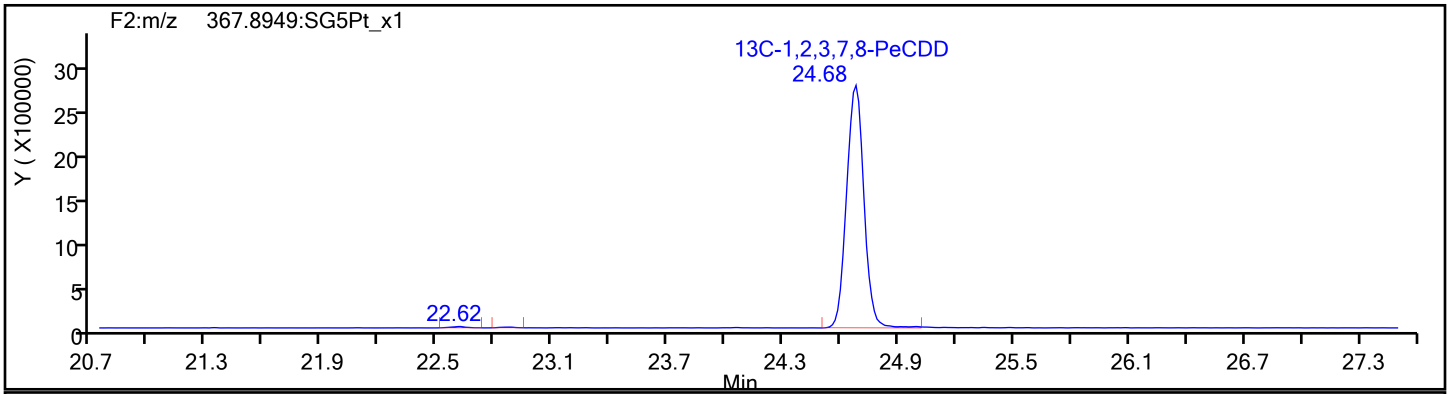

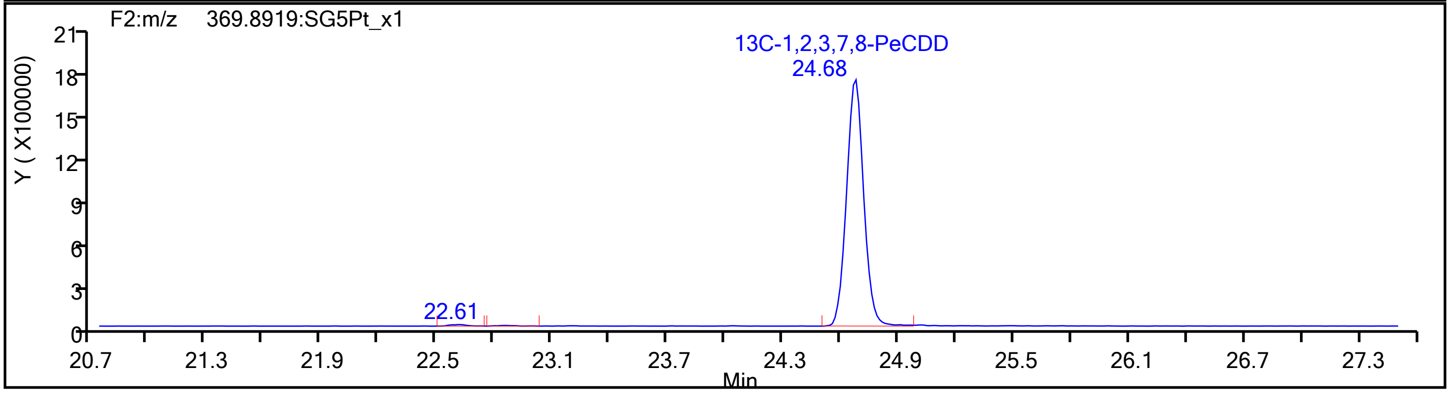

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Eurofins TestAmerica, Sacramento

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HxCDF

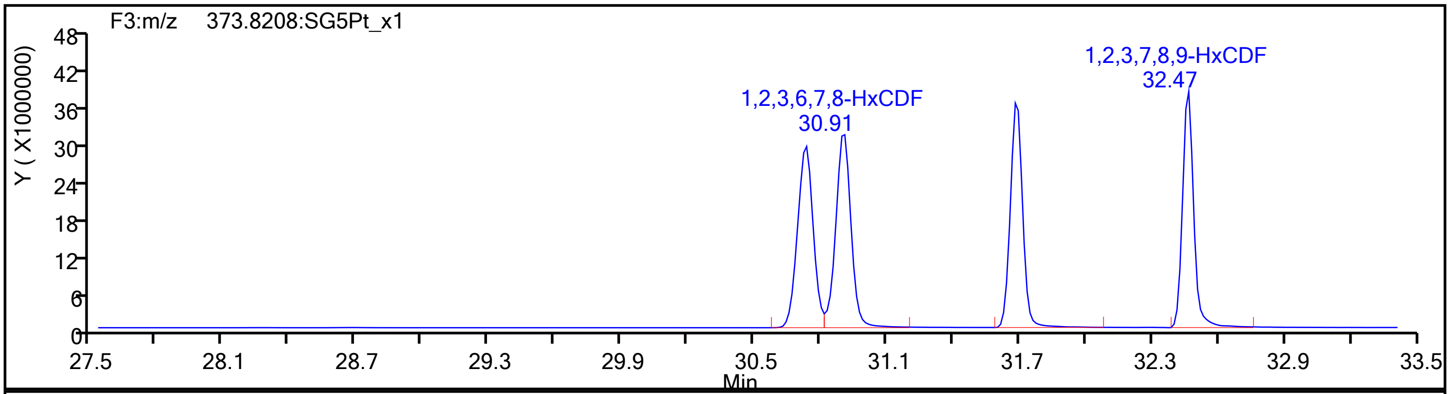

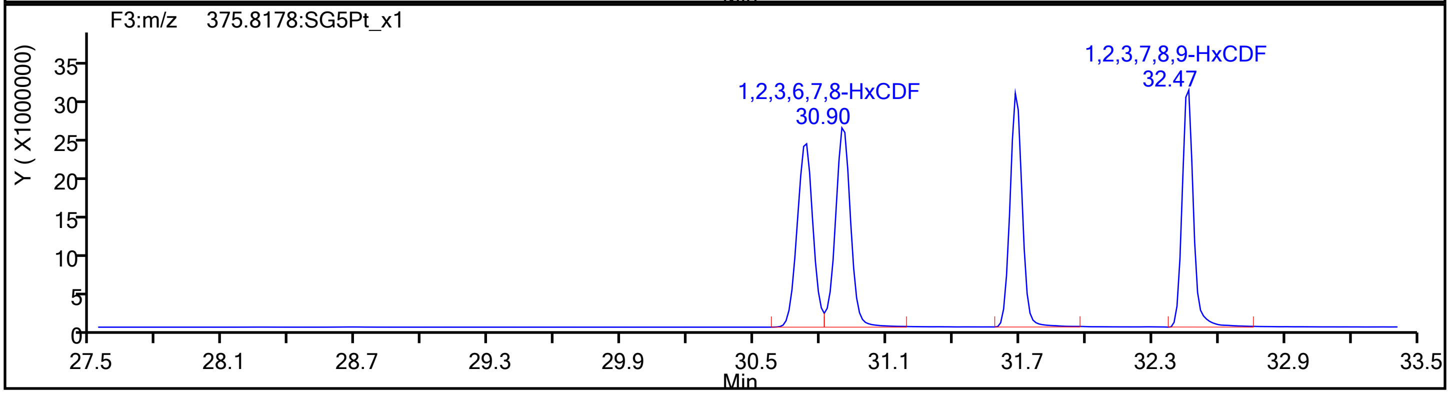

HxCDF Standards

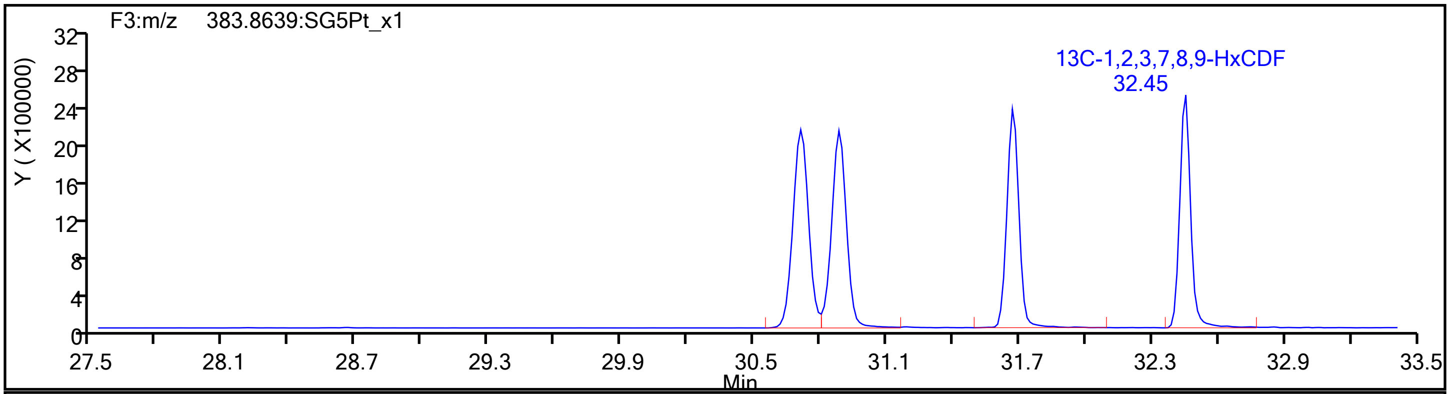

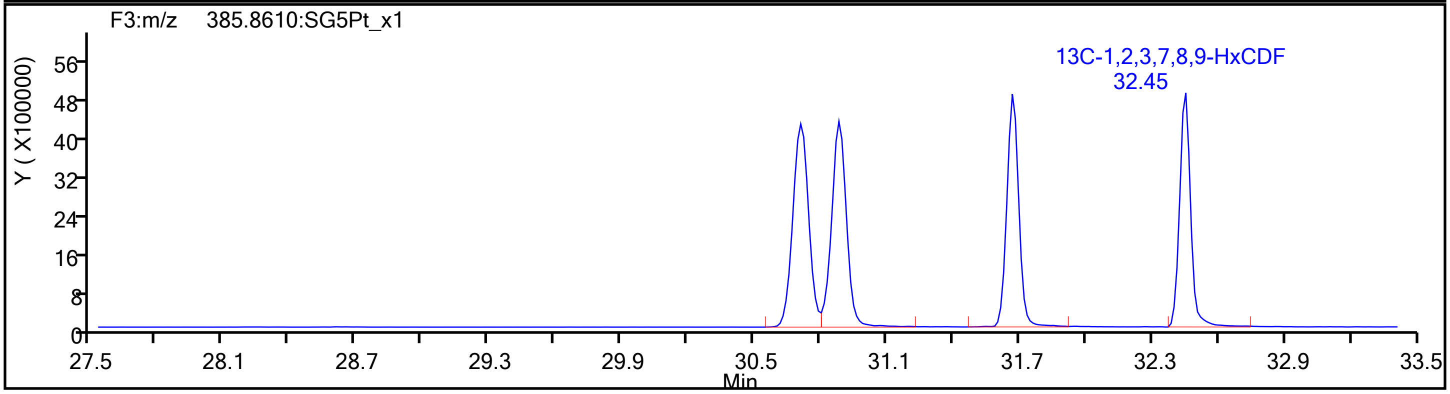

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Eurofins TestAmerica, Sacramento

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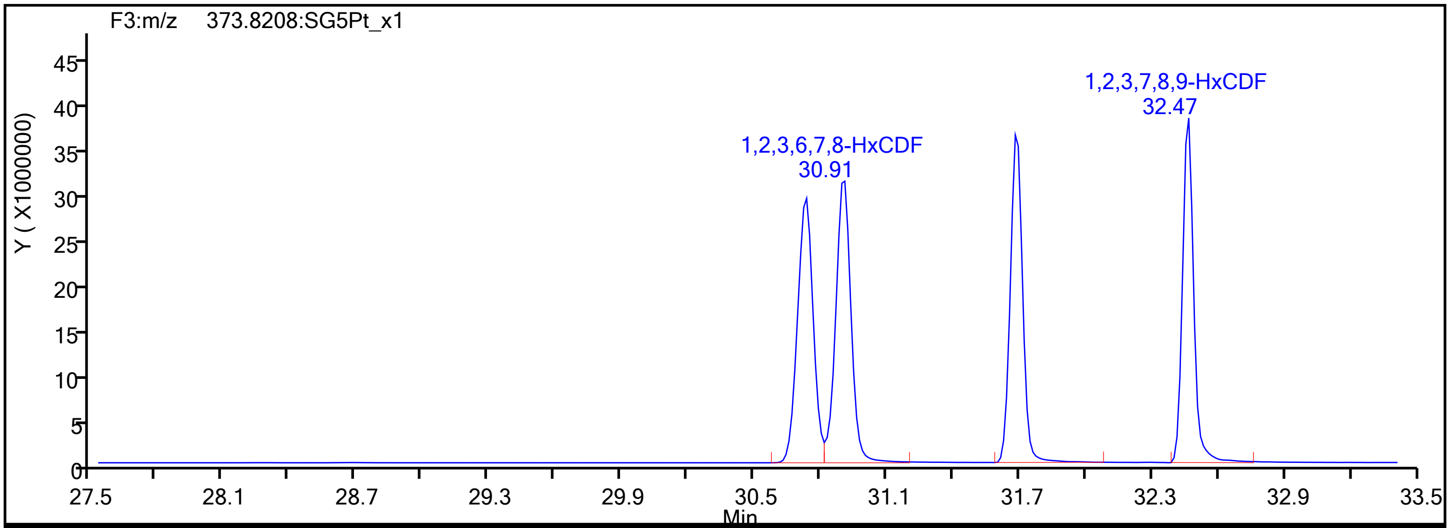

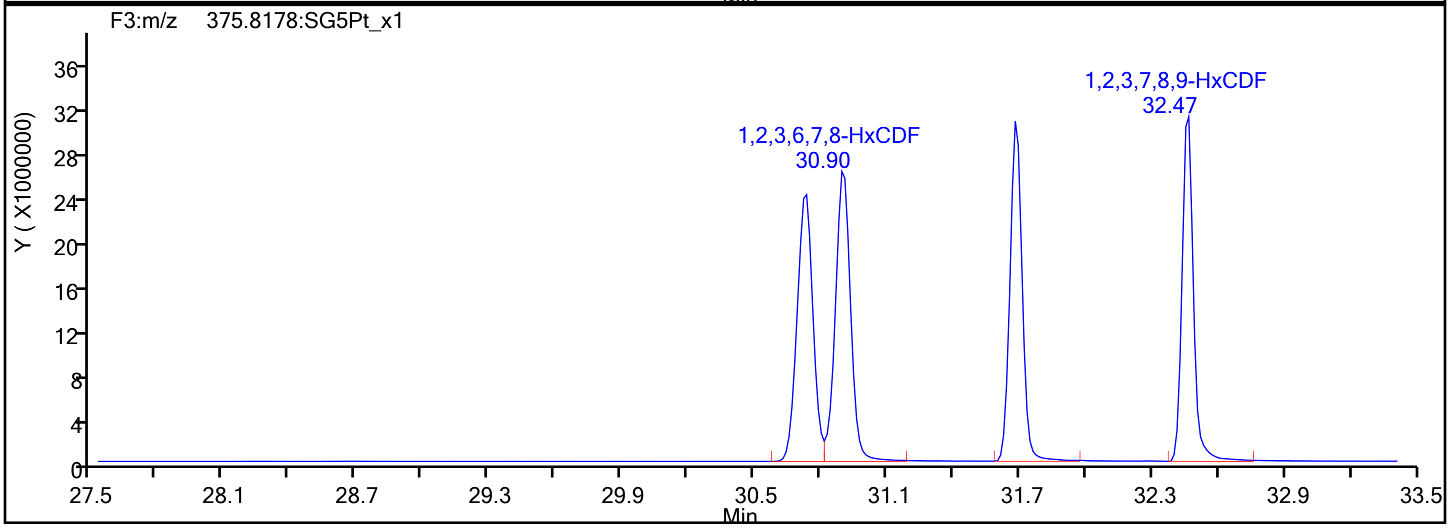

HxCDF Interference Mass

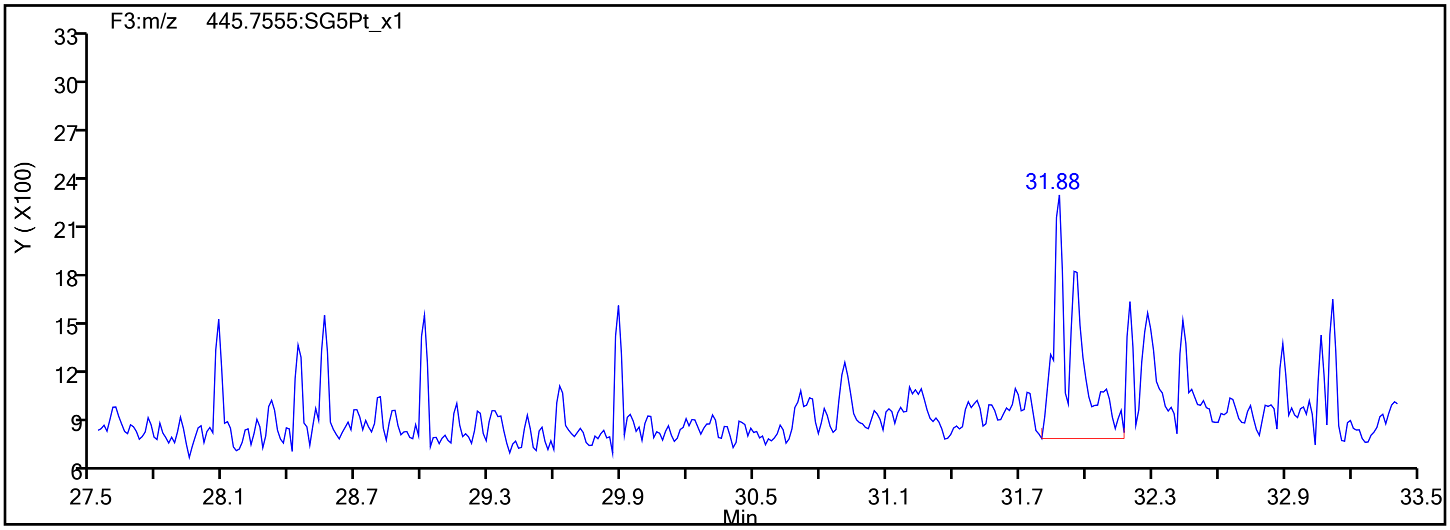

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HxCDD

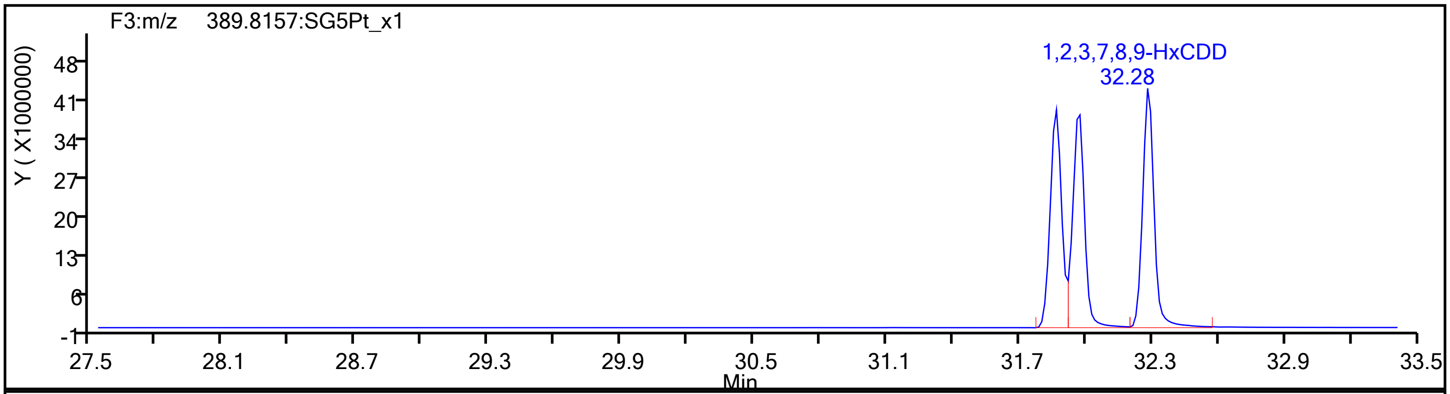

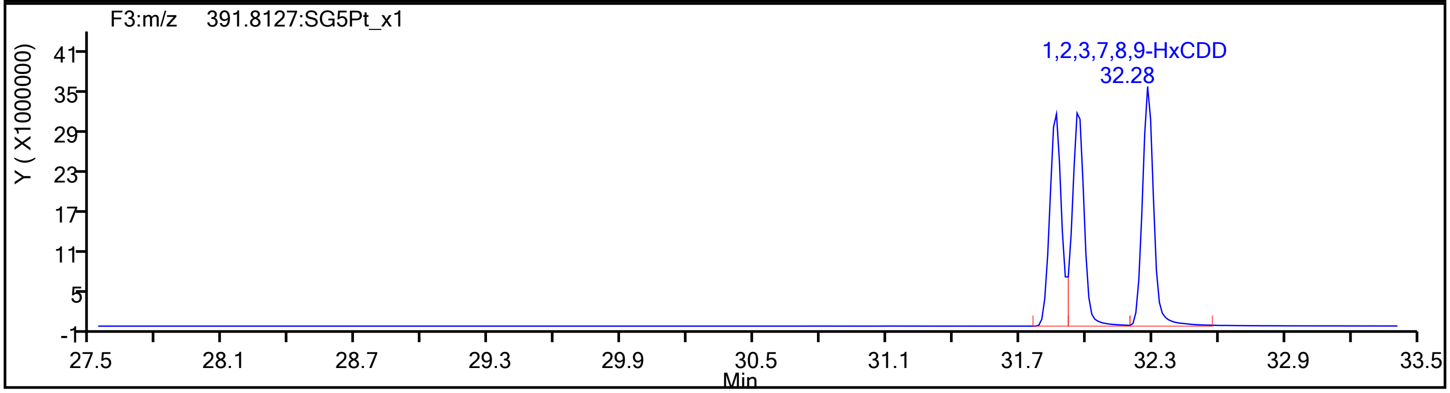

HxCDD Standards

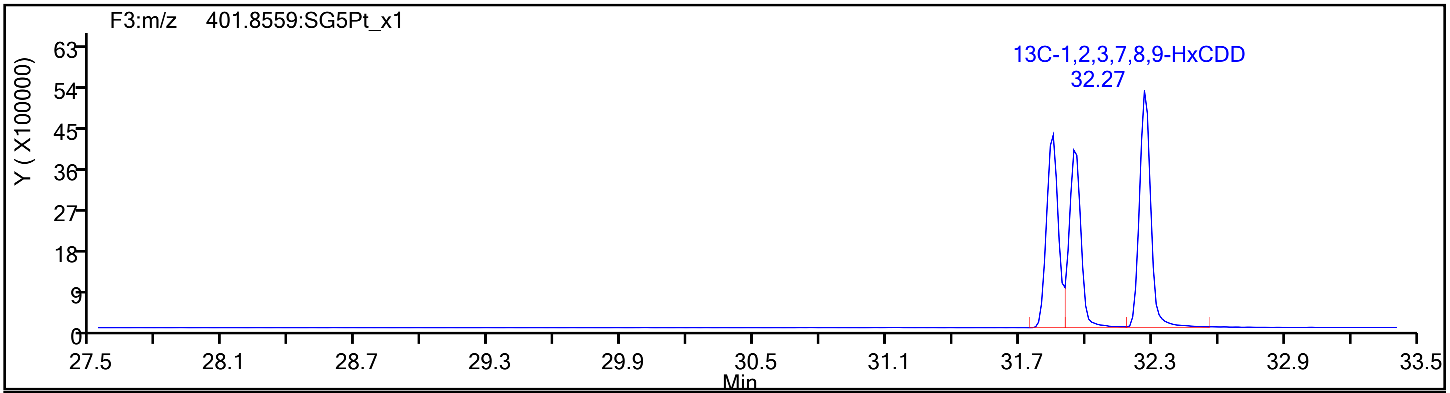

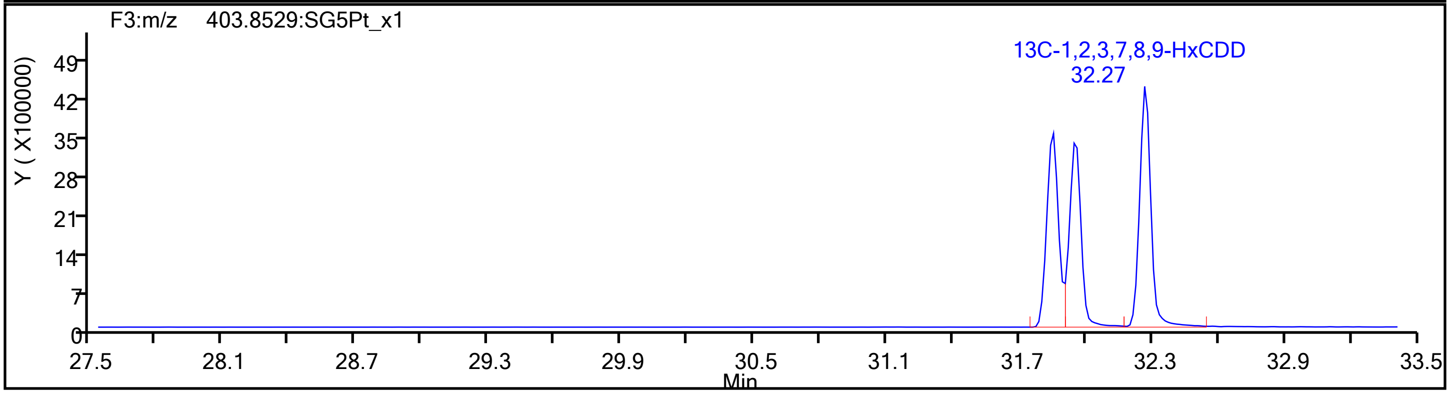

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Eurofins TestAmerica, Sacramento

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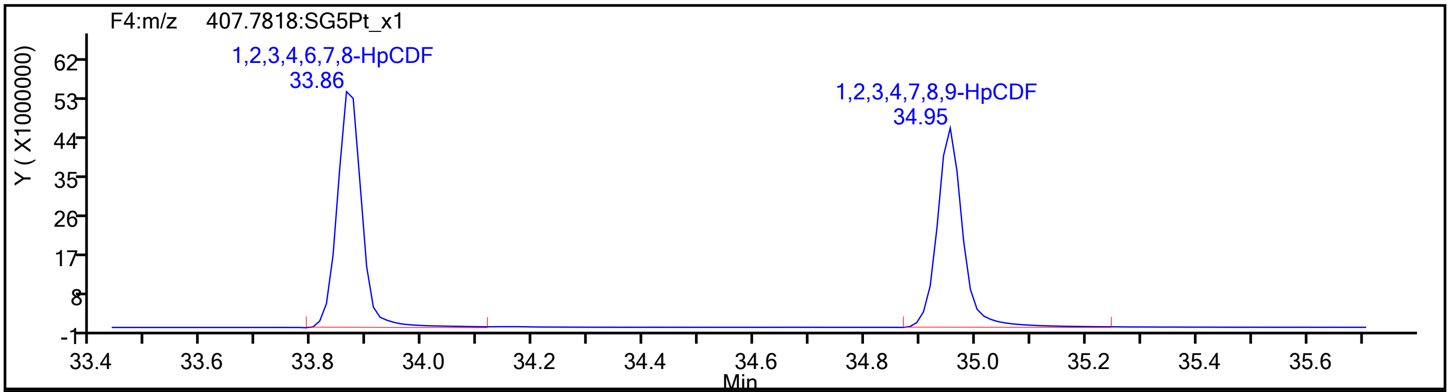

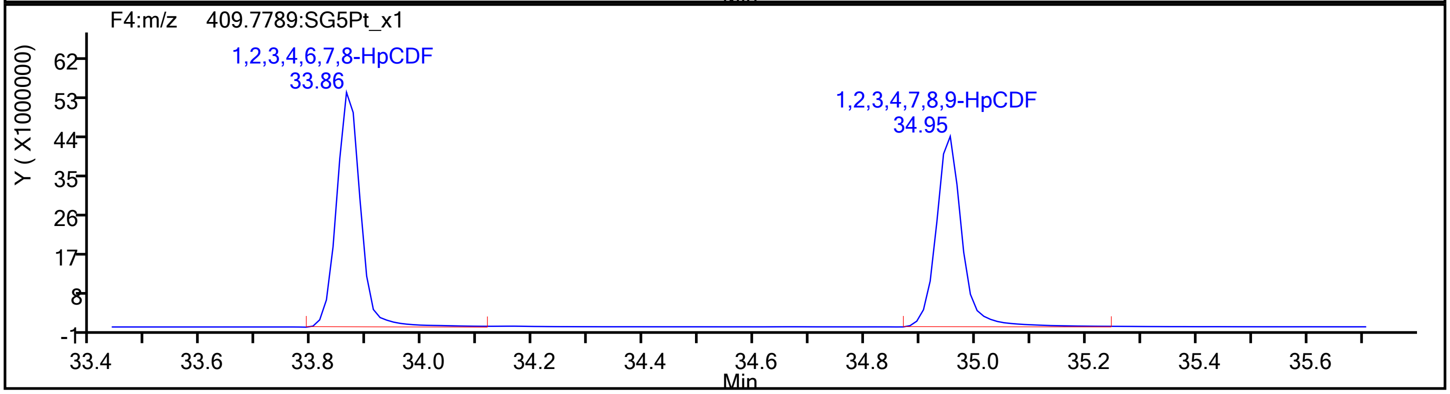

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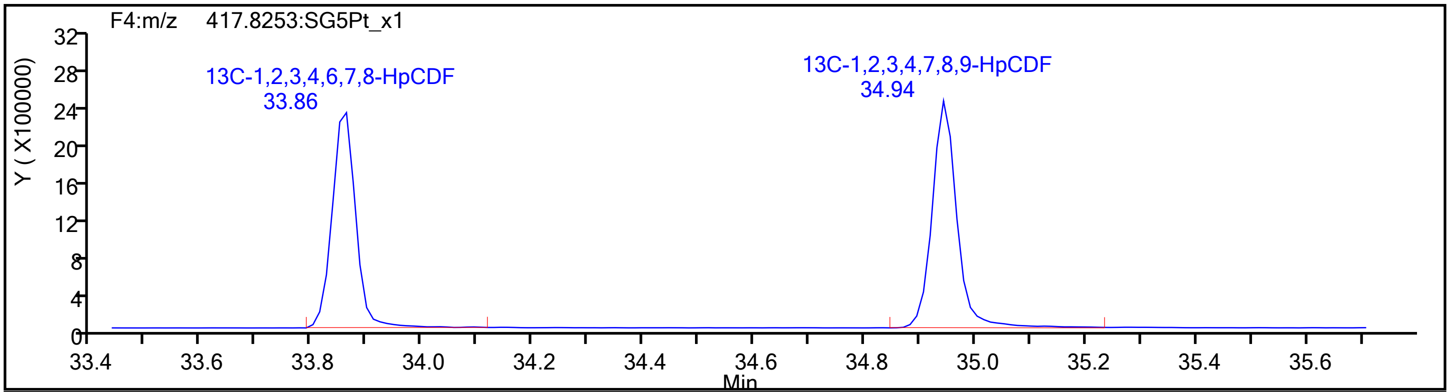

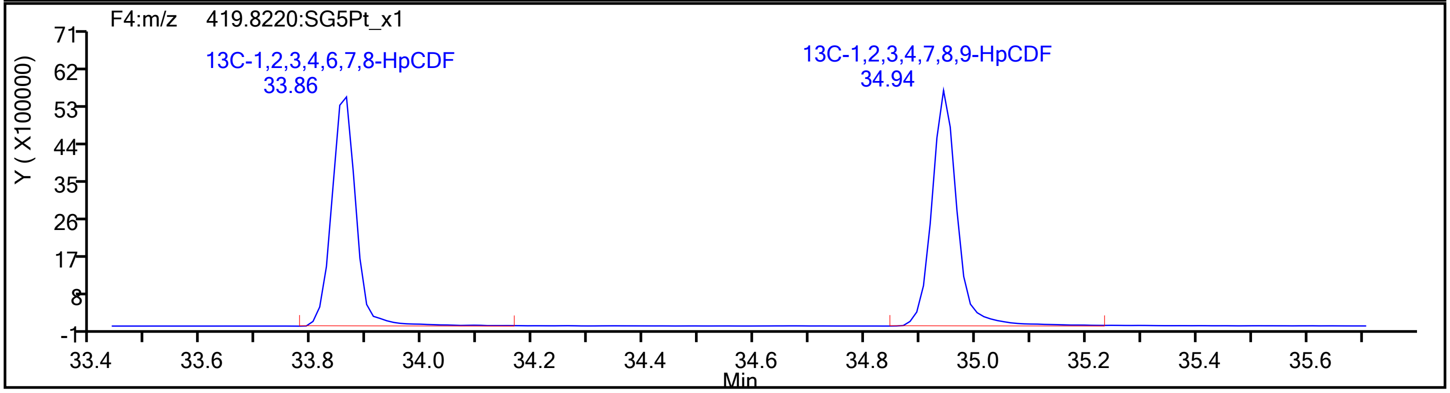

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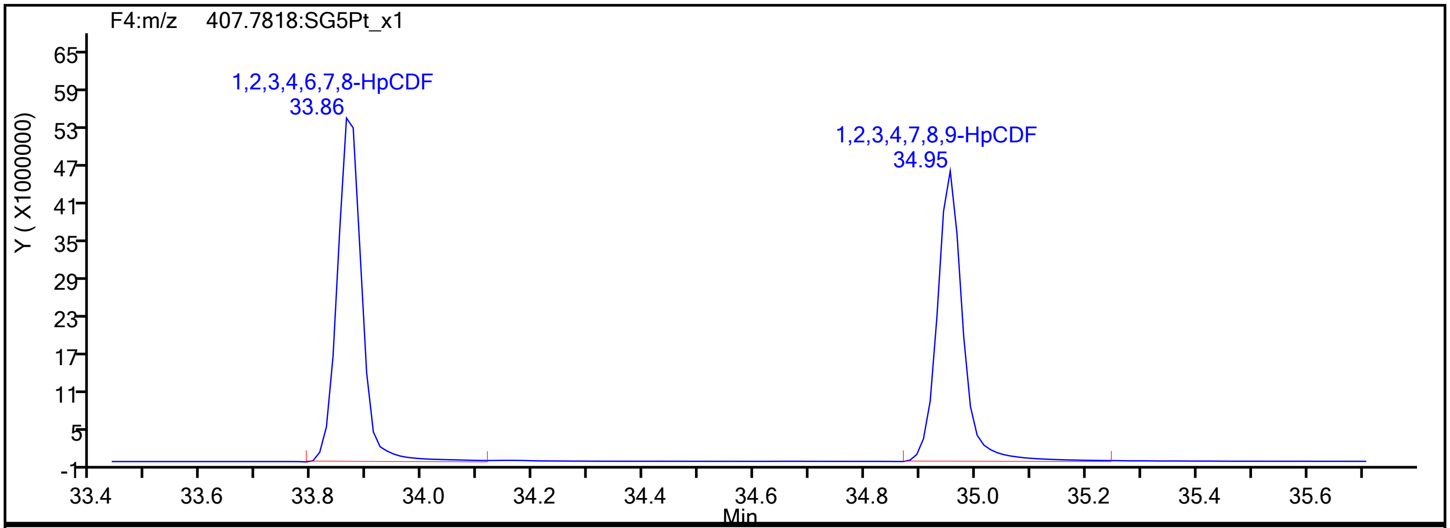

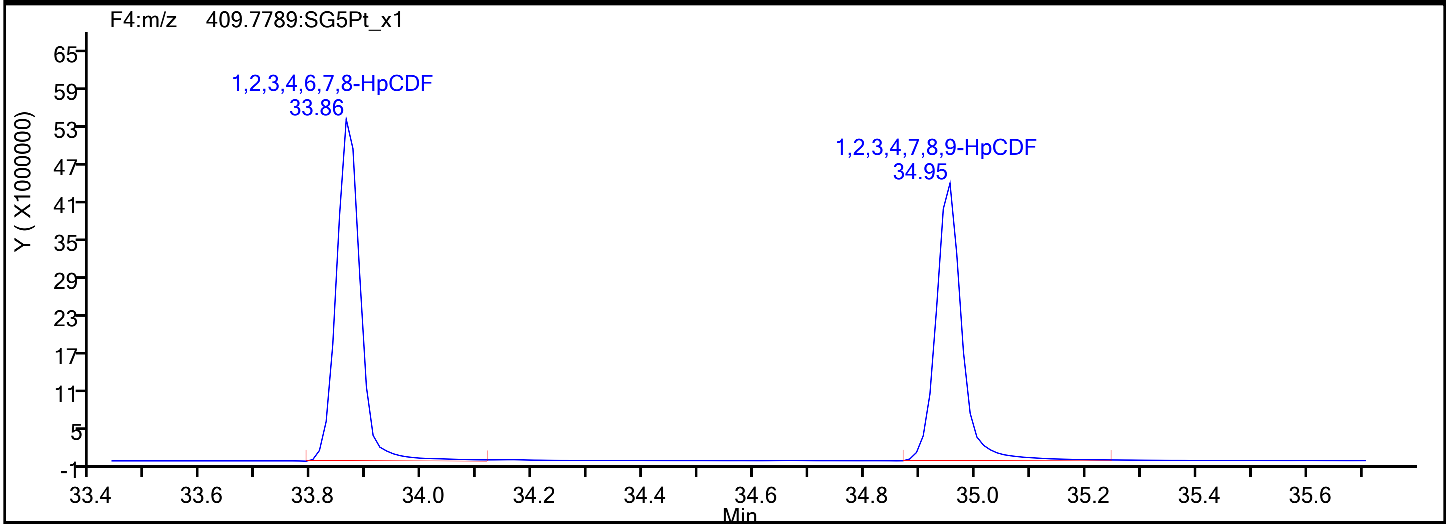

HpCDF Interference Mass

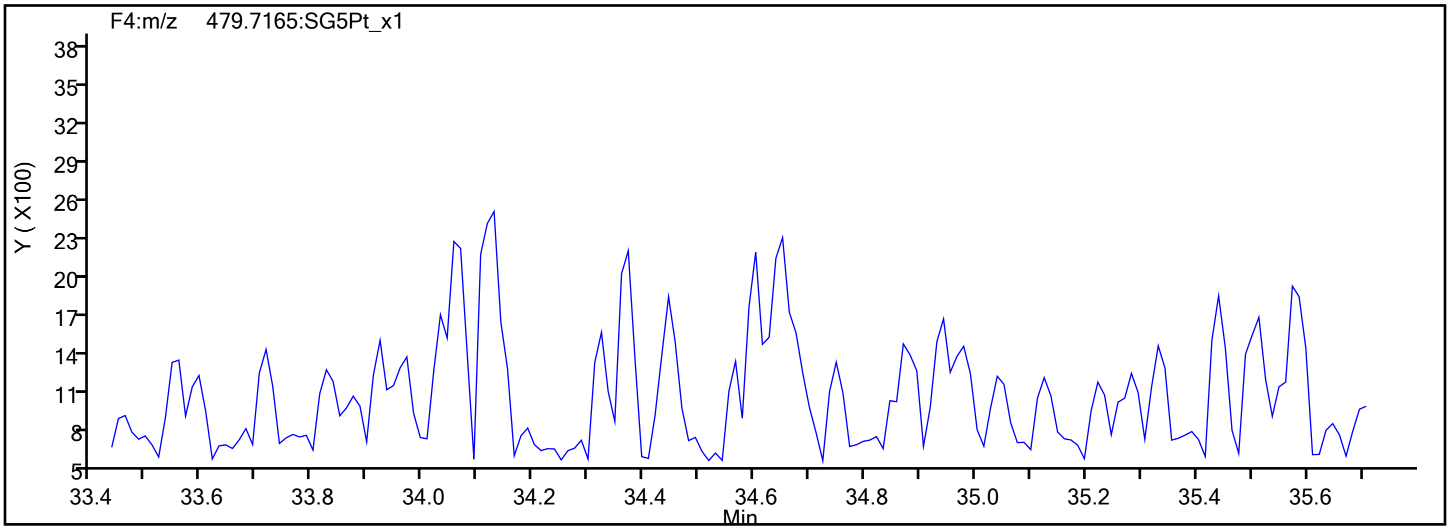

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Eurofins TestAmerica, Sacramento

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HpCDD

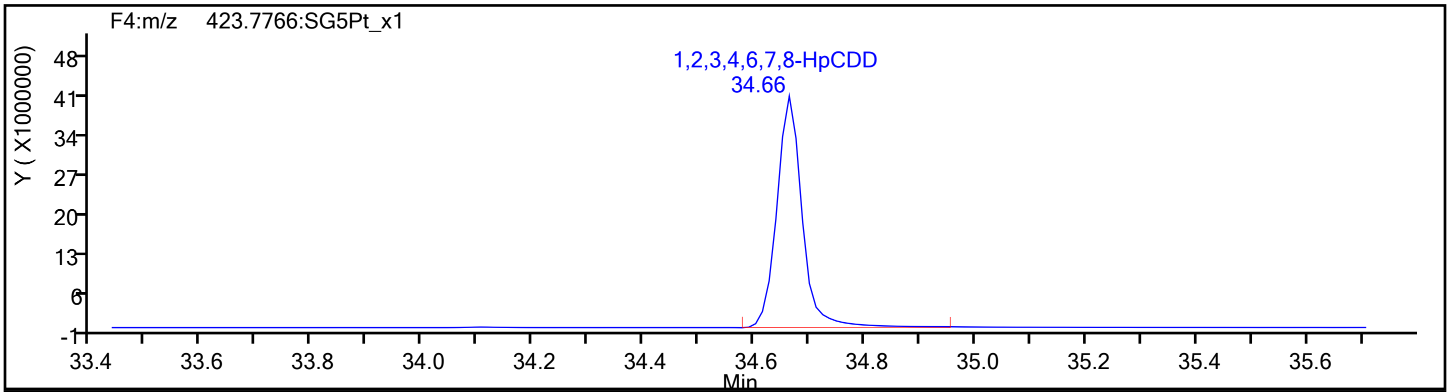

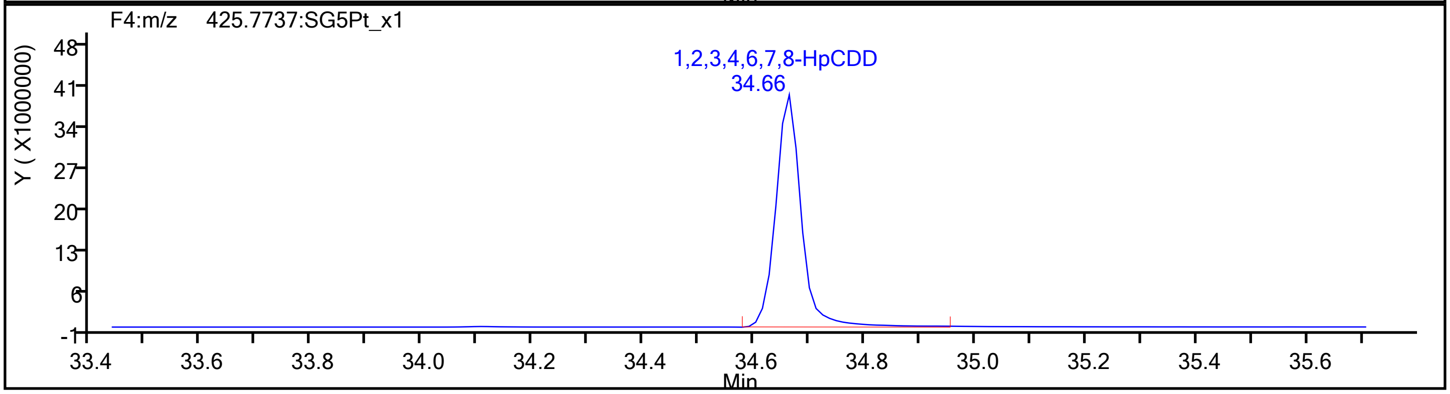

HpCDD Standards

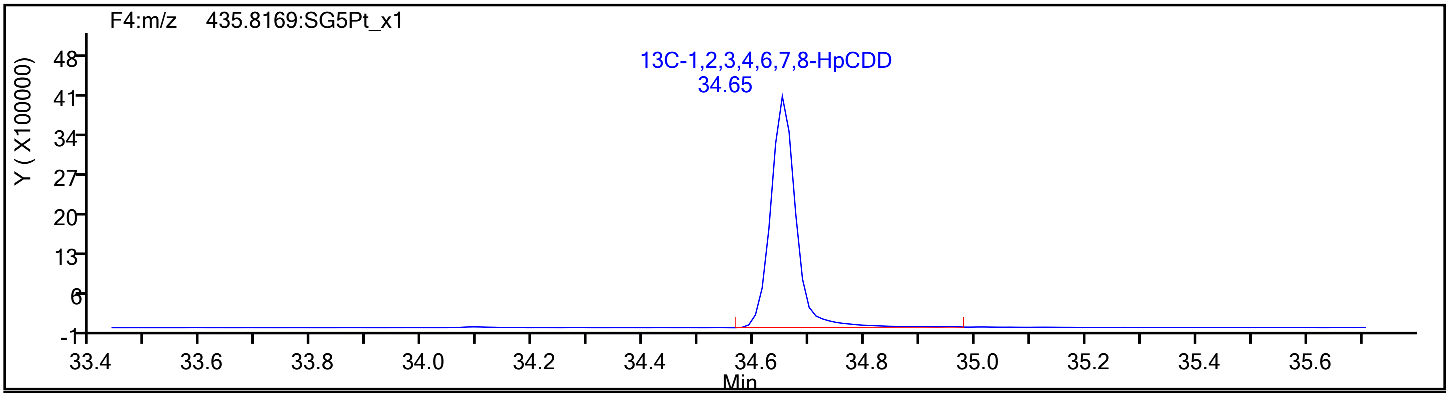

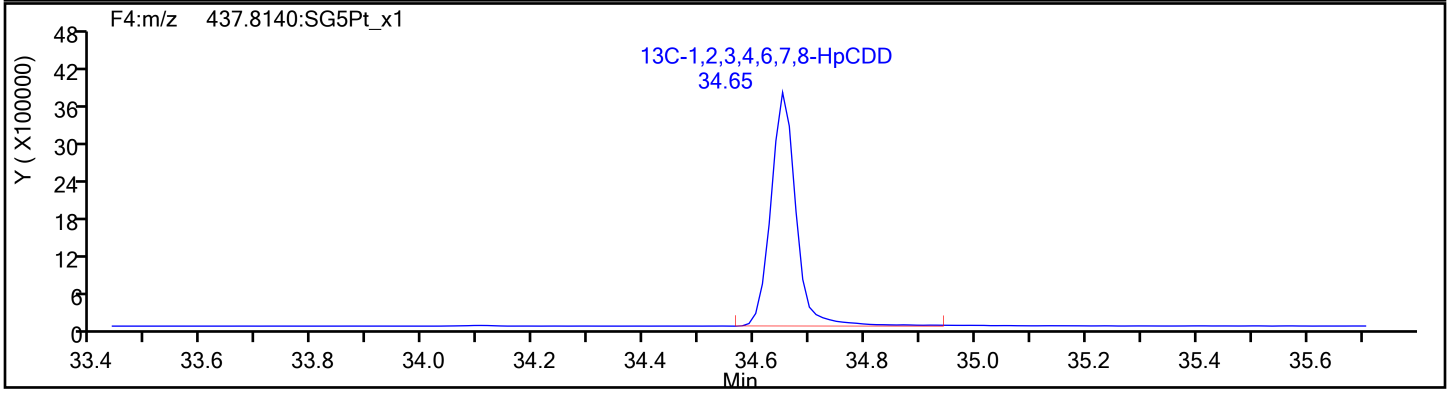

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Eurofins TestAmerica, Sacramento

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OCDF

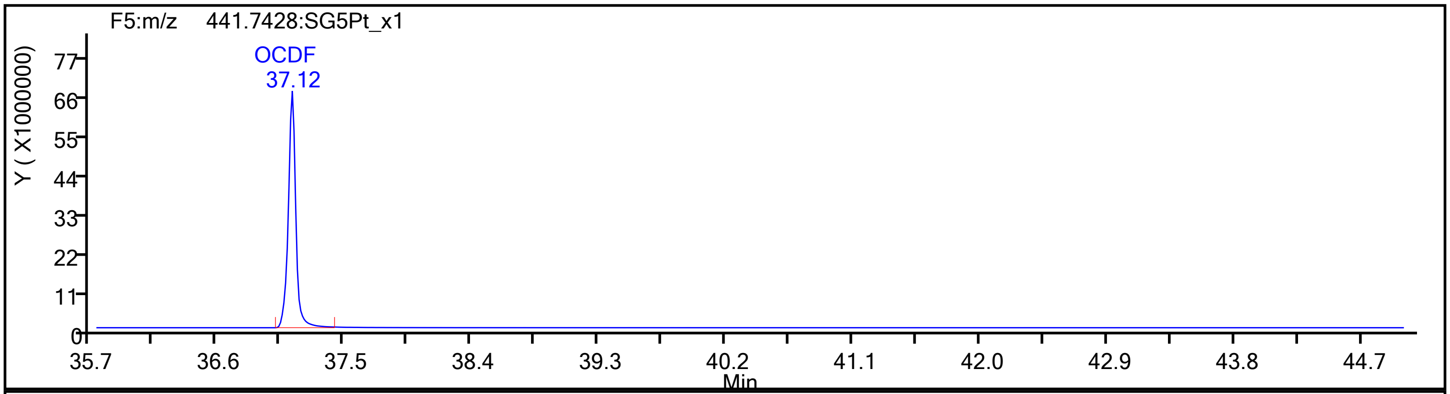

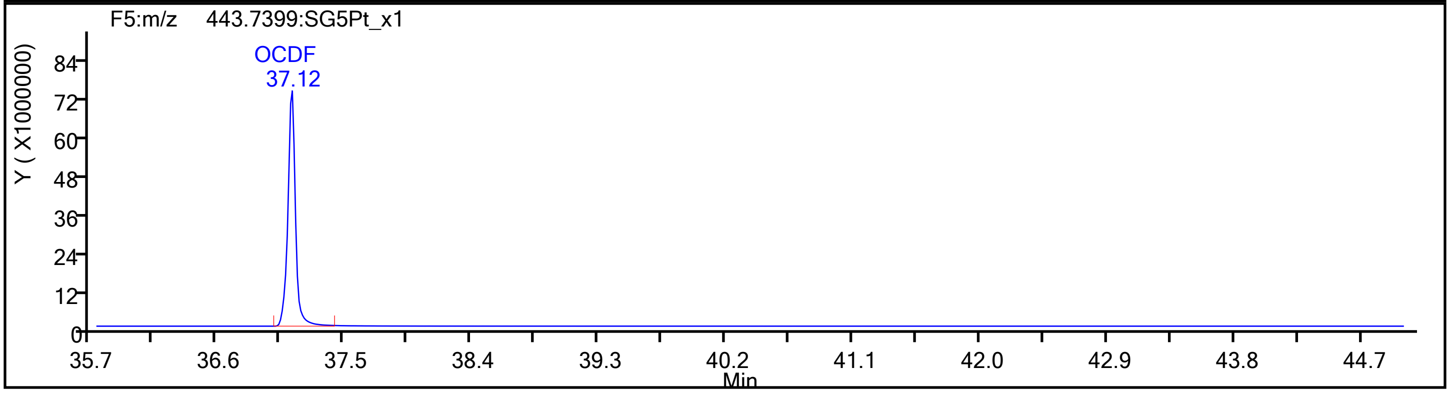

OCDF Standards

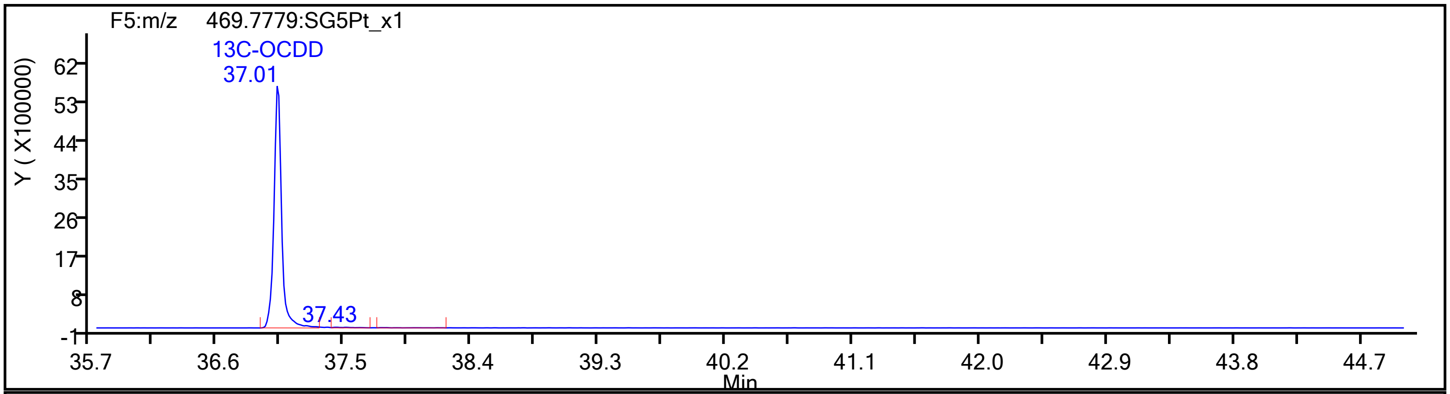

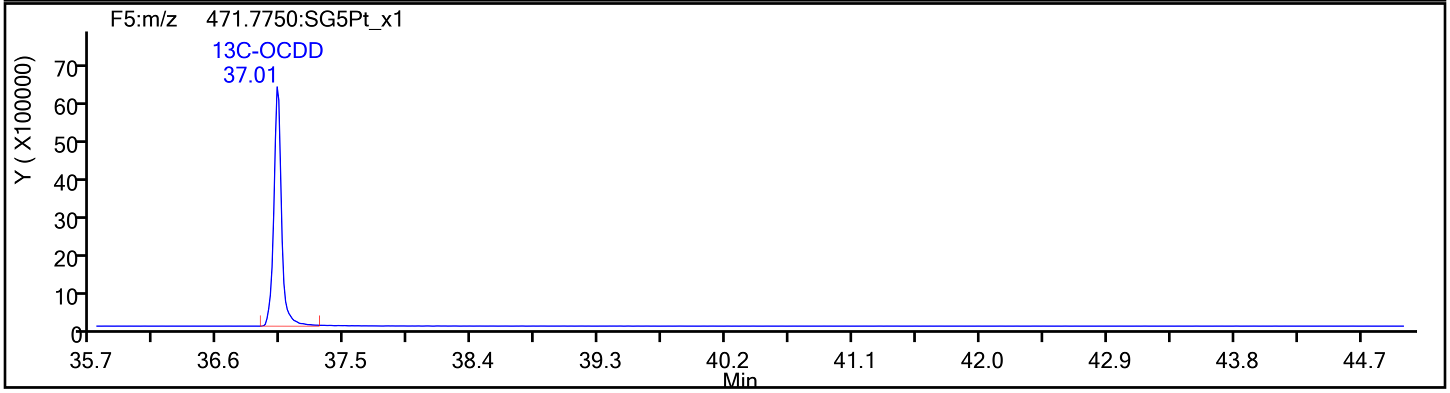

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Eurofins TestAmerica, Sacramento

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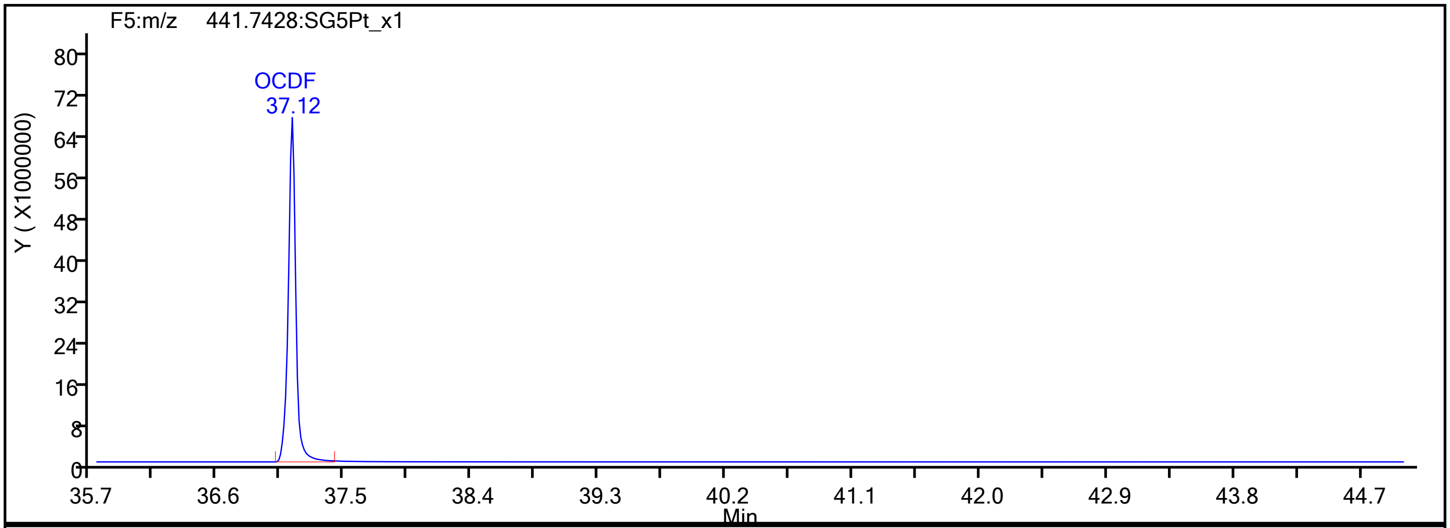

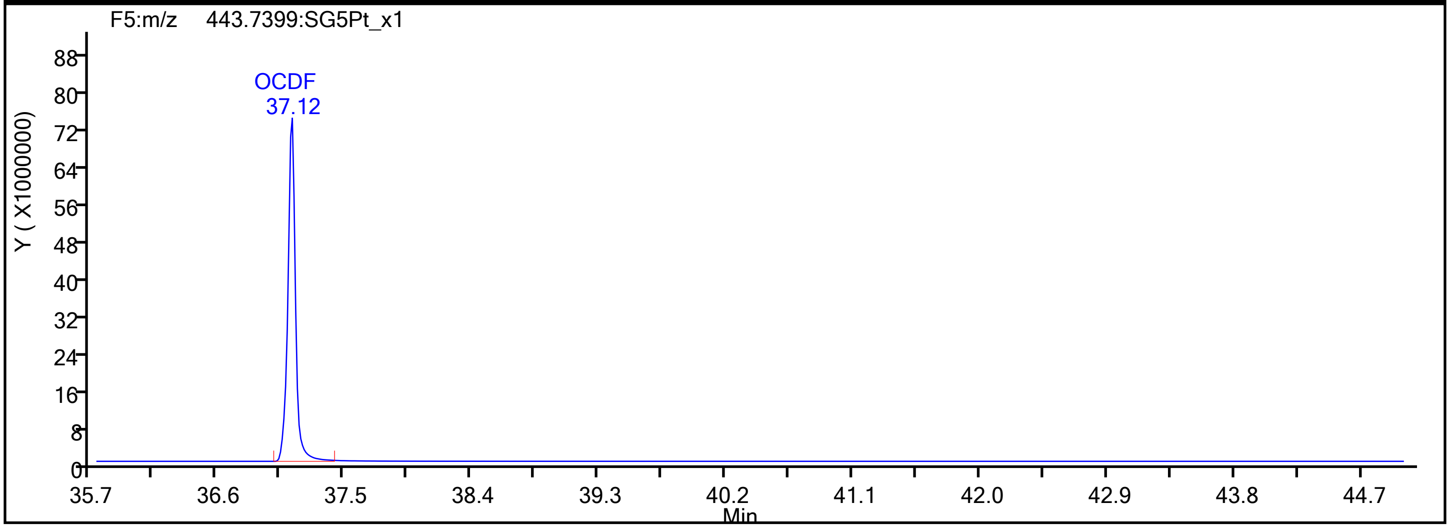

OCDF Interference Mass

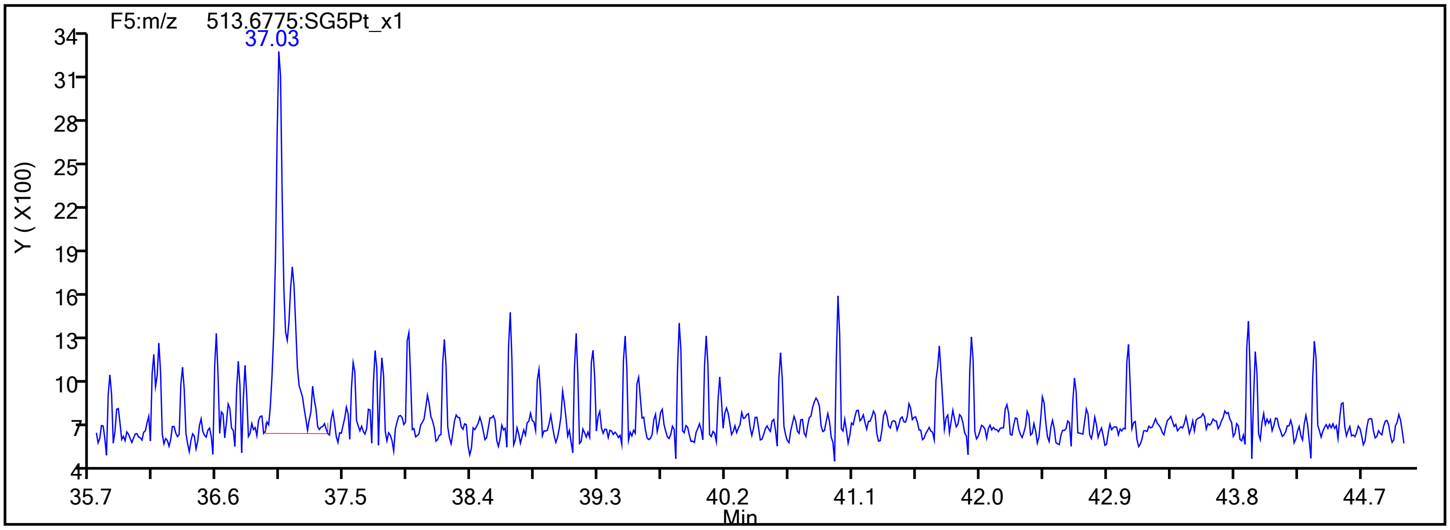

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 20:05:51

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

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Client ID:

Worklist#: 362307

Sample Line#: 7

Column Type: DB-5

Column Dia: 0.32 mm

OCDD

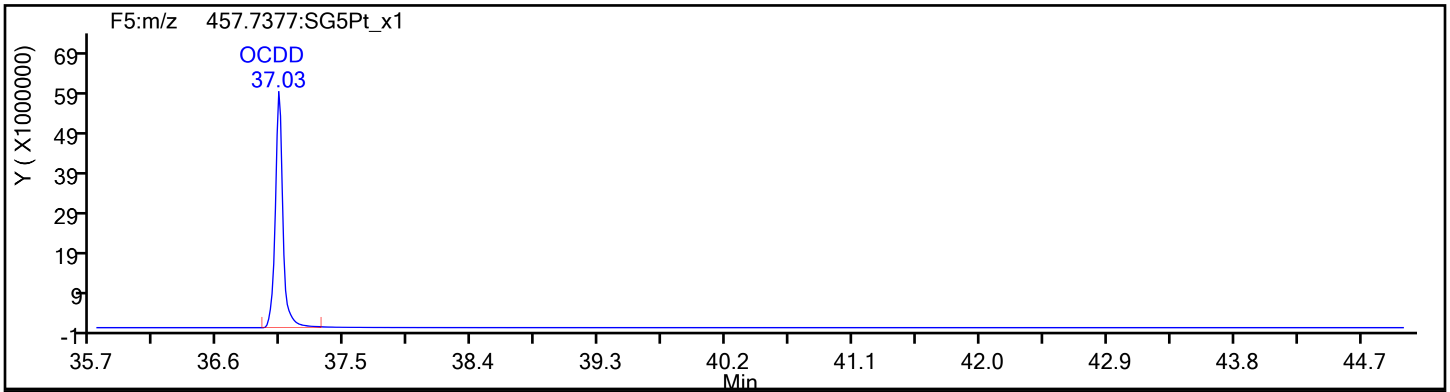

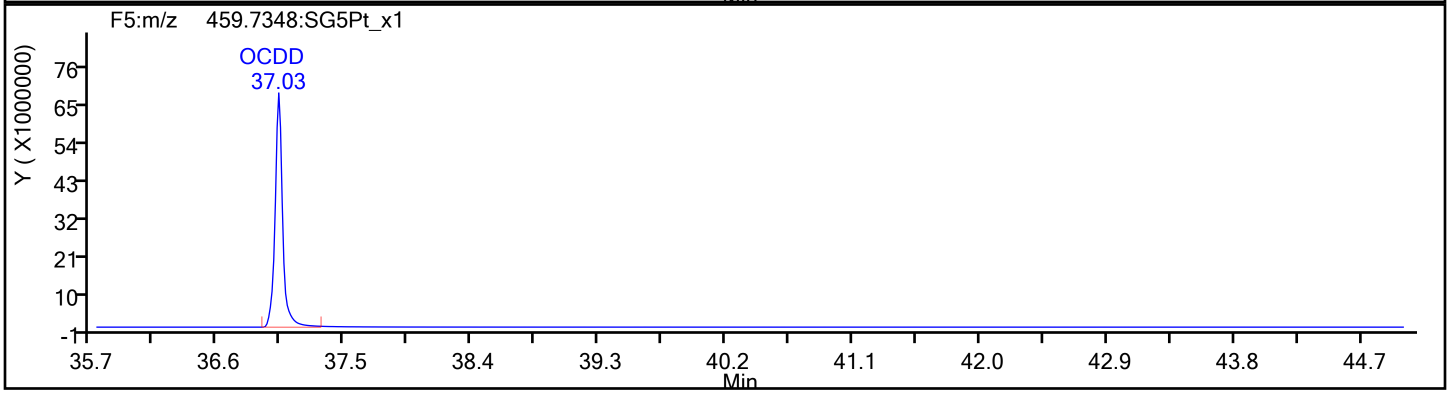

OCDD Standards

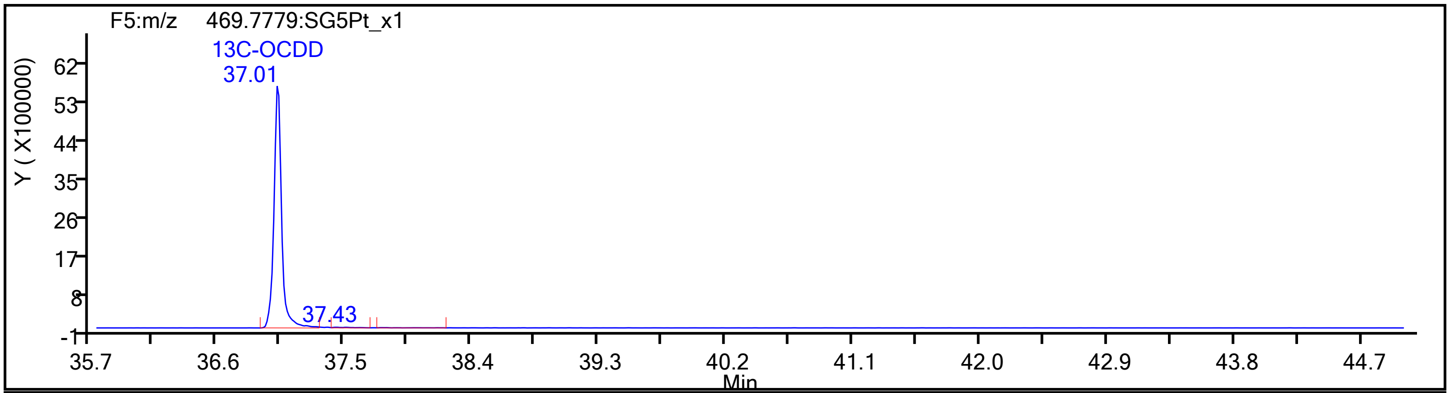

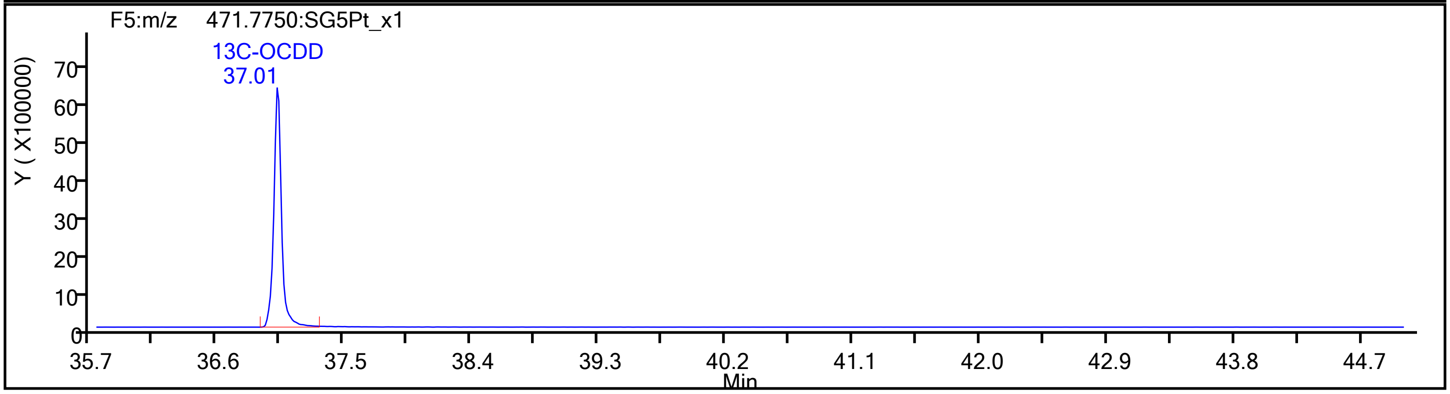

Report Date: 06-Mar-2020 10:13:37 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Injection Date: 05-Mar-2020 20:05:51 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 7

Column Type: DB-5 Column Dia: 0.32 mm

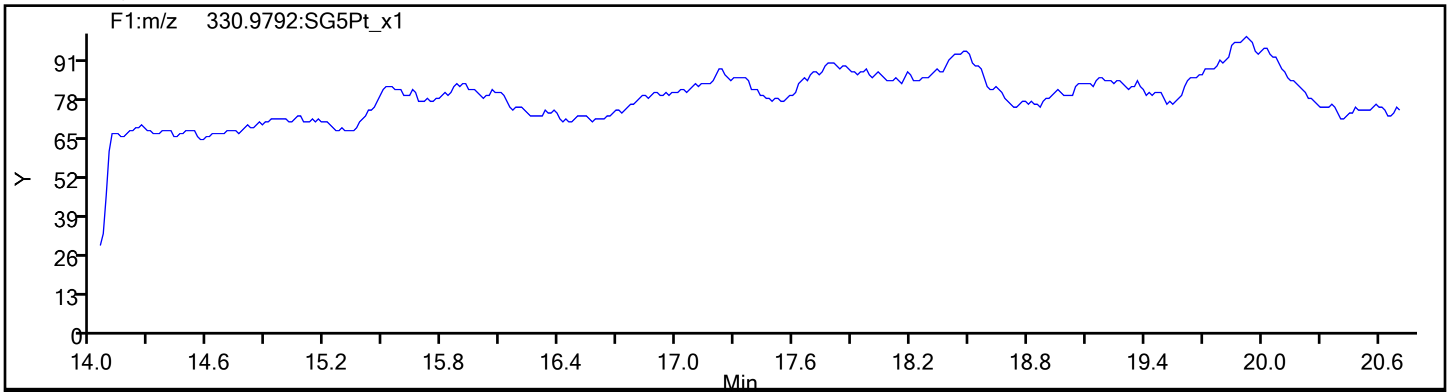

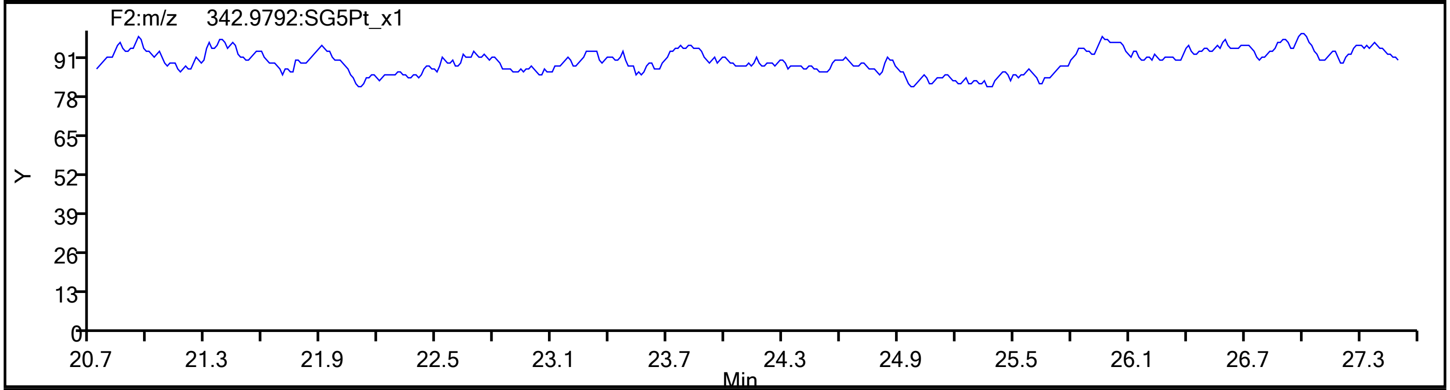

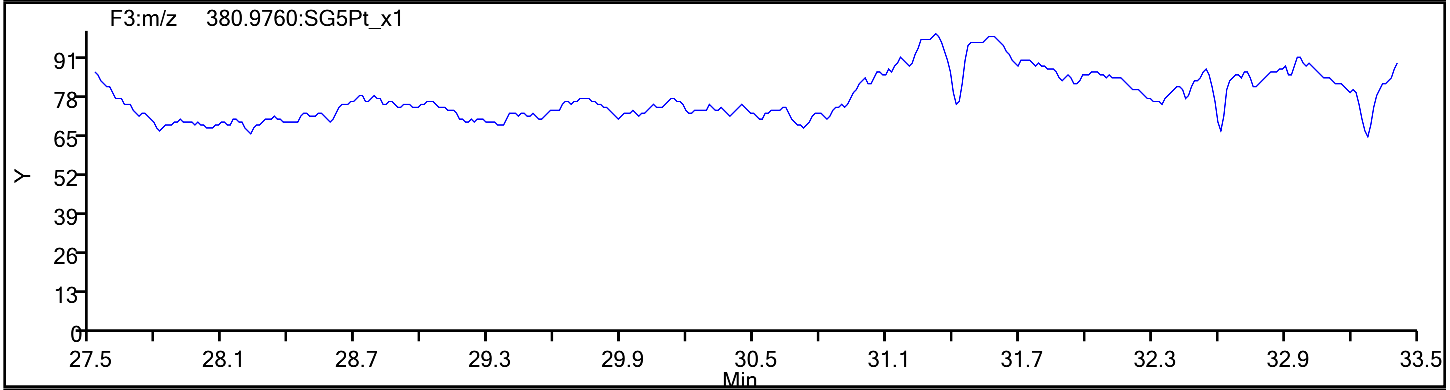

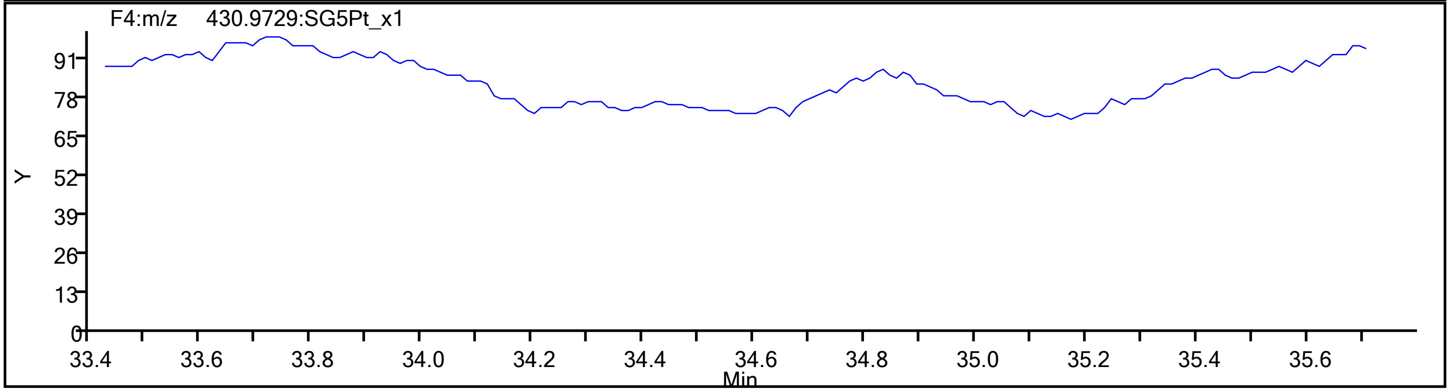

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Injection Date:	05-Mar-2020 20:05:51	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	7
Column Type:	DB-5	Column Dia:	0.32 mm

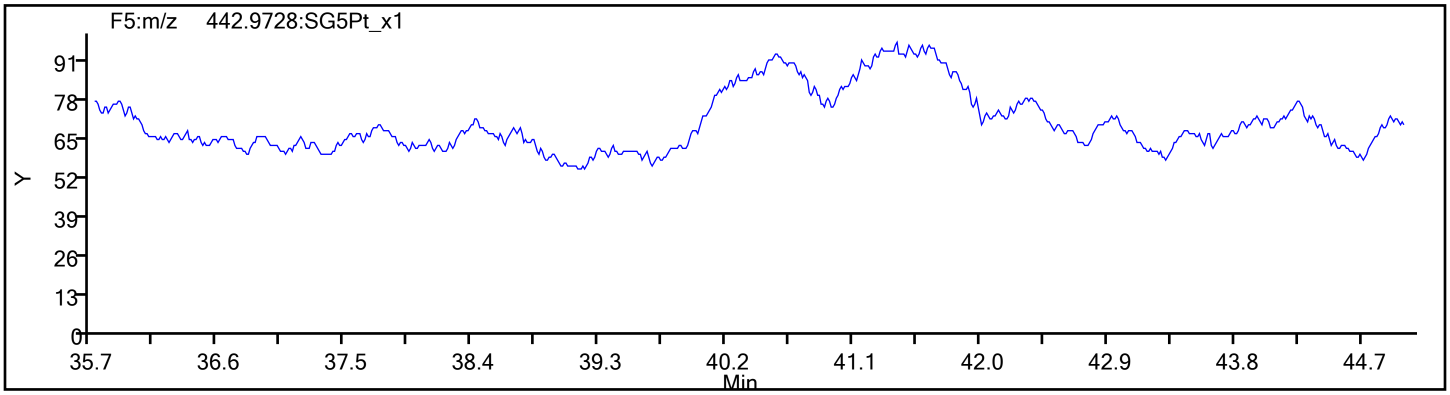

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1 Analy Batch No.: 380959

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/27/2020 10:39 Calibration End Date: 05/27/2020 13:12 Calibration ID: 50195

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-380959/3	27MY20A11D2_003.d
Level 2	IC 320-380959/4	27MY20A11D2_004.d
Level 3	IC 320-380959/5	27MY20A11D2_005.d
Level 4	IC 320-380959/6	27MY20A11D2_006.d
Level 5	IC 320-380959/7	27MY20A11D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.5665	1.1951	1.0938	1.1153	1.1270	AveID		1.2196				16.2		20.0			
2,3,7,8-TCDF	1.2106	1.0903	0.9997	1.0469	1.0570	AveID		1.0809				7.3		20.0			
13C-2,3,7,8-TCDD	0.9547	1.0328	0.9793	0.9771	0.9719	Ave		0.9832				3.0		35.0			
13C-2,3,7,8-TCDF	1.4271	1.6281	1.4184	1.5238	1.4576	Ave		1.4910				5.8		35.0			
37Cl4-2,3,7,8-TCDD	0.8618	0.9073	1.0086	0.9454	0.9871	Ave		0.9421				6.3					

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1 Analy Batch No.: 380959

SDG No.:

Instrument ID: 11D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/27/2020 10:39 Calibration End Date: 05/27/2020 13:12 Calibration ID: 50195

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-380959/3	27MY20A11D2_003.d
Level 2	IC 320-380959/4	27MY20A11D2_004.d
Level 3	IC 320-380959/5	27MY20A11D2_005.d
Level 4	IC 320-380959/6	27MY20A11D2_006.d
Level 5	IC 320-380959/7	27MY20A11D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	755214	2332190	10540877	59176496	286999130	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	872375	3354294	13953335	86624457	403659671	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTC	Ave	96417698	97576683	96367123	132643690	127323363	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTC	Ave	144121939	153826092	139580721	206853943	190940098	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTC	Ave	435180	1714476	9925556	51333489	258622089	0.500	2.00	10.0	40.0	200

Curve Type Legend:

Ave = Average ISTD

AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
27MY20A11D2	1	CPS 052720A	CPS HRDXNCP_00040		Dioxin		1.00000	
27MY20A11D2	2	SB 052720B	SB Solvent Blank C-14				1.00000	
27MY20A11D2	3	IC 052720	CS-2 HRDXNL2_00029		Dioxin	ICAL	1.00000	
27MY20A11D2	4	IC 052720A	CS-3 HRDXNL3_00027		Dioxin		1.00000	
27MY20A11D2	5	IC 052720B	CS-4 HRDXNL4_00093		Dioxin		1.00000	
27MY20A11D2	6	IC 052720C	CS-5 HRDXNL5_00030		Dioxin		1.00000	
27MY20A11D2	7	IC 052720D	CS-6 HRDXNL6_00026		Dioxin		1.00000	
27MY20A11D2	8	SB 052720C	SB Solvent Blank C-14				1.00000	
27MY20A11D2	9	ICV 052720	ICV HRDXNIC_00045		Dioxin	ICAL	1.00000	
27MY20A11D2	10						1.00000	
27MY20A11D2	11						1.00000	
27MY20A11D2	12						1.00000	
27MY20A11D2	13						1.00000	
27MY20A11D2	14						1.00000	
27MY20A11D2	15						1.00000	
27MY20A11D2	16						1.00000	
27MY20A11D2	17						1.00000	
27MY20A11D2	18		KSS 05-27-2020				1.00000	
27MY20A11D2	19						1.00000	

logfile √'d 5/27/20

Peak Locate Examination:27-MAY-2020:09:21 File:27MY20A11D2
Experiment:DB225RES Function:1 Reference:PFK

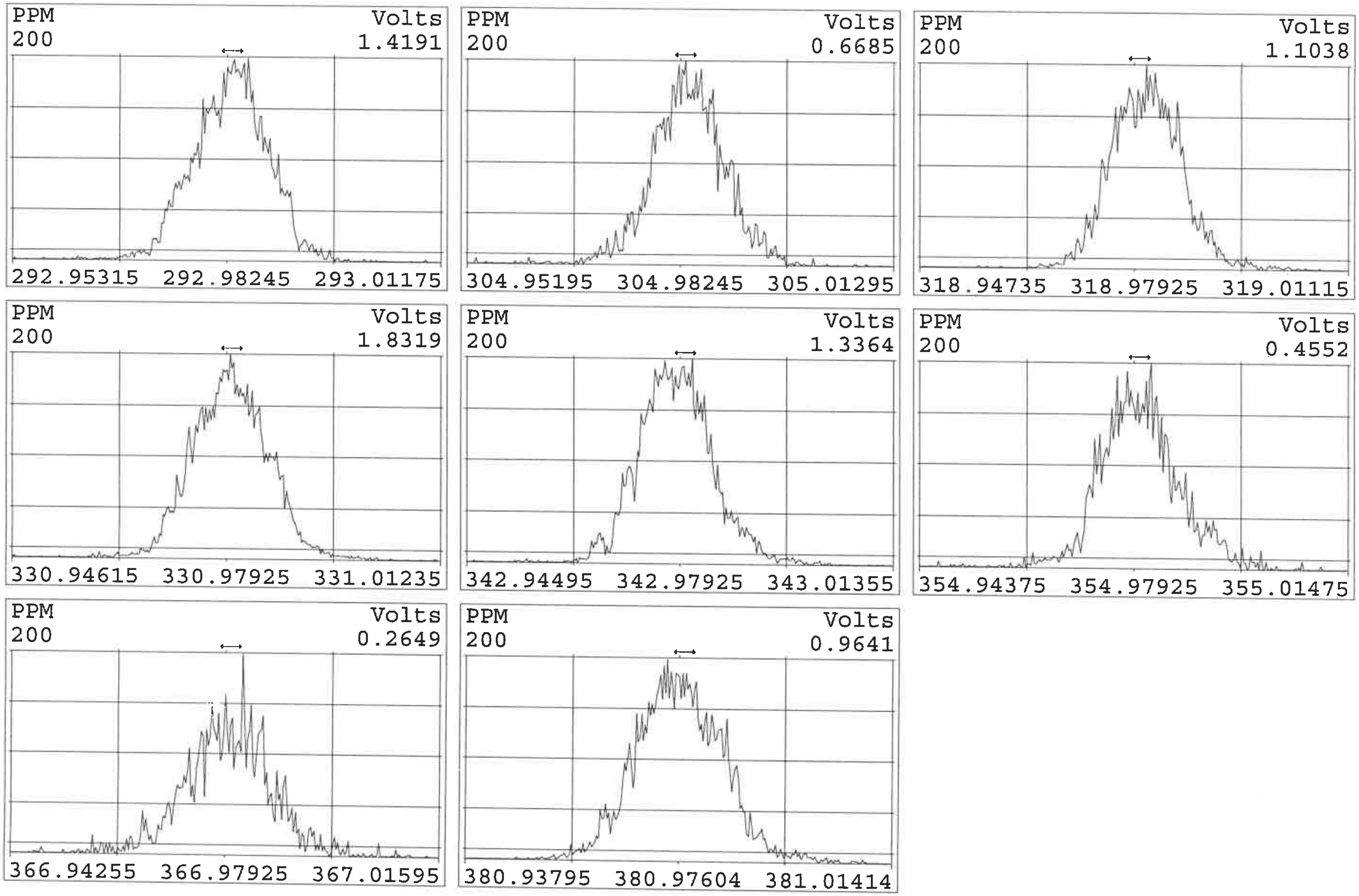

Peak Locate Examination:27-MAY-2020:15:08 File:27MY20A11D2ENDRESCK
Experiment:DB225RES Function:1 Reference:PFK

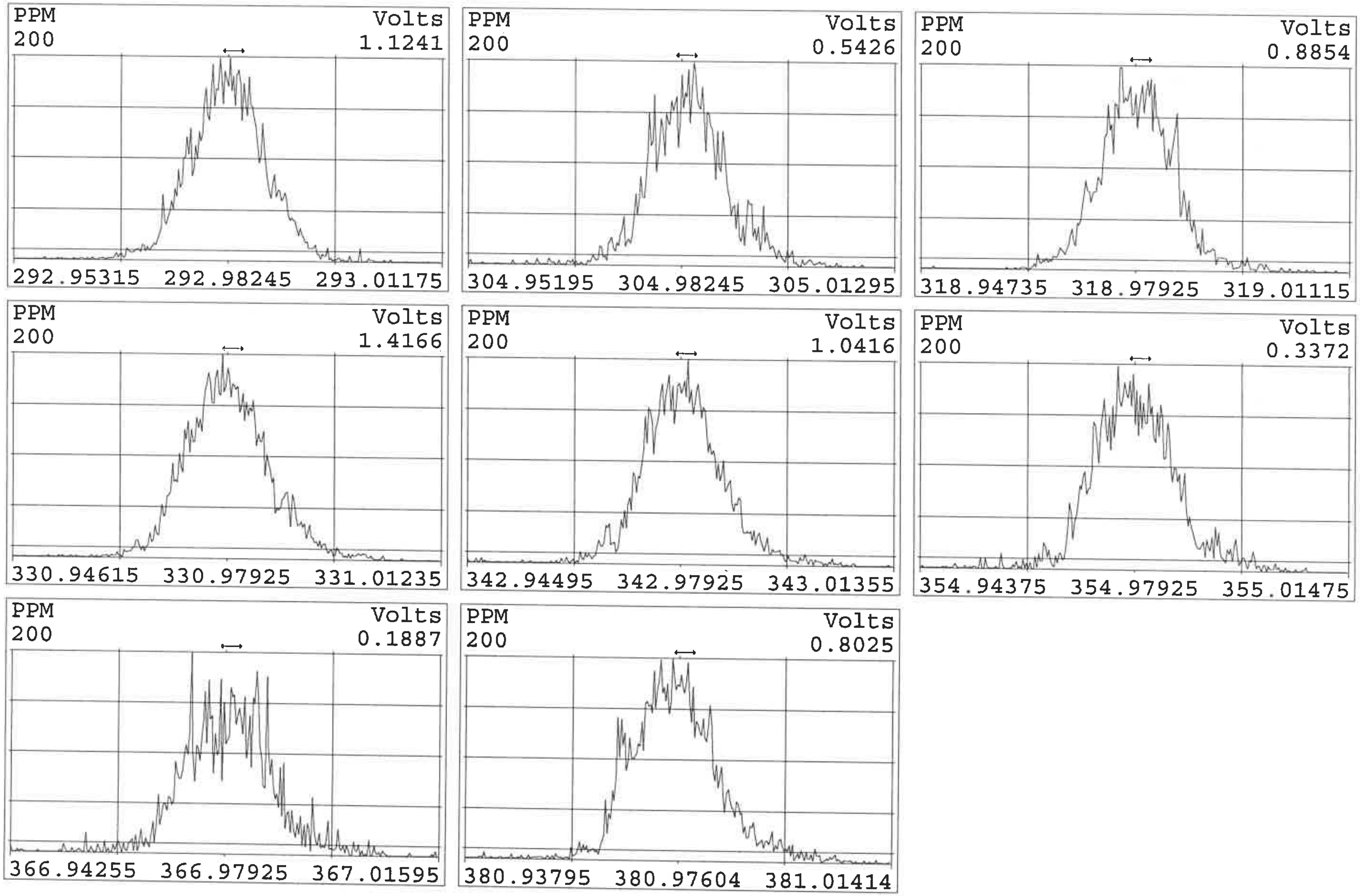

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d				
Lims ID:	IC 2				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	27-May-2020 10:39:04	ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-2 HRDXNL2_00029				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 10:19:13	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				

First Level Reviewer: stephensk Date: 27-May-2020 15:32:17

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.282	100992700	0.76	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.461	144121939	0.81	1.4910	95.7	95.7	0.3019	0.3019	95.71	
2,3,7,8-TCDF	16.461	872375	0.66	1.0809	0.5600	0.5600	0.0263	0.0263	112	
D 13C-2,3,7,8-TCDD	15.076	96417698	0.77	0.9832	97.1	97.1	0.2739	0.2739	97.10	
$ 37Cl4-2,3,7,8-TCDD	15.103	435180		0.9421	0.4574	0.4574	0.0214	0.0214	91.48	
2,3,7,8-TCDD	15.090	755214	0.80	1.2196	0.6423	0.6423	0.0500	0.0500	128	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:15 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 27-May-2020 10:39:04 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-2 HRDXNL2_00029
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-May-2020 10:19:13 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: stephensk Date: 27-May-2020 15:32:17

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.282	15.279	0		43718096	9120176	16603	41507	549		
333.9339	15.282	15.279	0		57274604	12193527	6356	15890	1918	0.76(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.461	16.456	0	1.077	64501541	12401546	20198	50495	614		
317.9389	16.448	16.456	0	1.076	79620398	15100188	18175	45437	831	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.461	16.467	0	1.000	346184	65027	931	2327	70		
305.8987	16.461	16.467	0	1.000	526191	85634	2202	5505	39	0.66(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.076	15.071	0	0.987	41995943	9096898	16603	41507	548		
333.9339	15.076	15.071	0	0.987	54421755	11934321	6356	15890	1878	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.103	15.084	1	0.988	435180	115632	1720	4300	67		
2,3,7,8-TCDD											
319.8965	15.090	15.087	0	1.001	334836	68156	3739	9347	18		
321.8936	15.103	15.087	1	1.002	420378	78967	1386	3465	57	0.80(0.65-0.89)	

Reagents:

HRDXNL2_00029 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:15 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d
Injection Date: 27-May-2020 10:39:04 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959 Sample Line#: 3
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

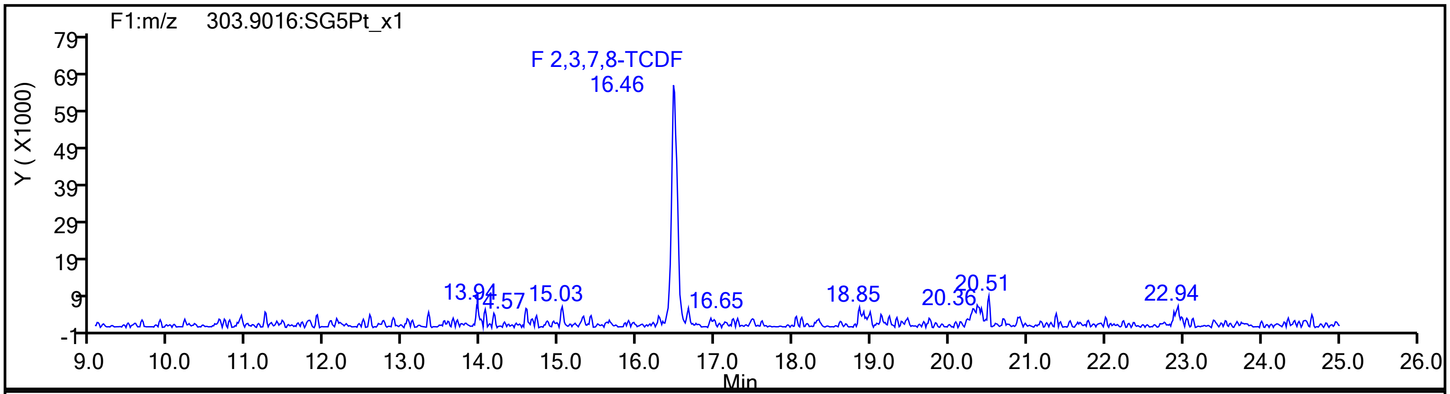

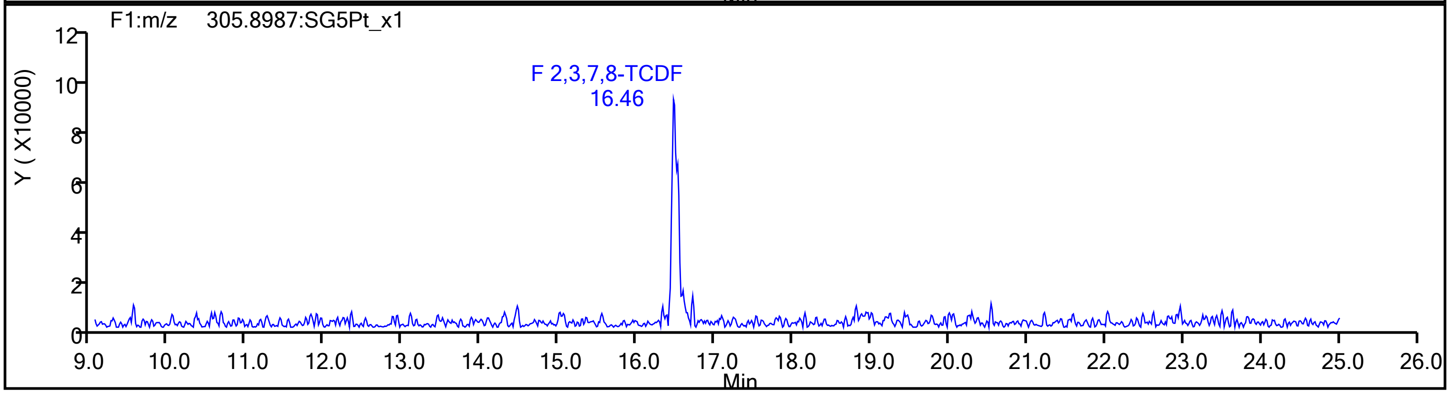

TCDF Standards

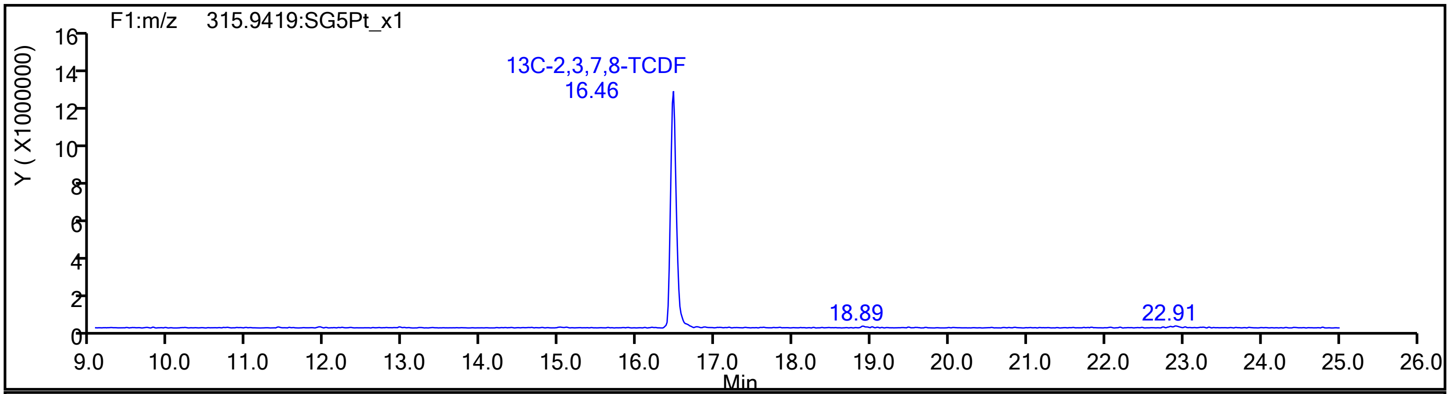

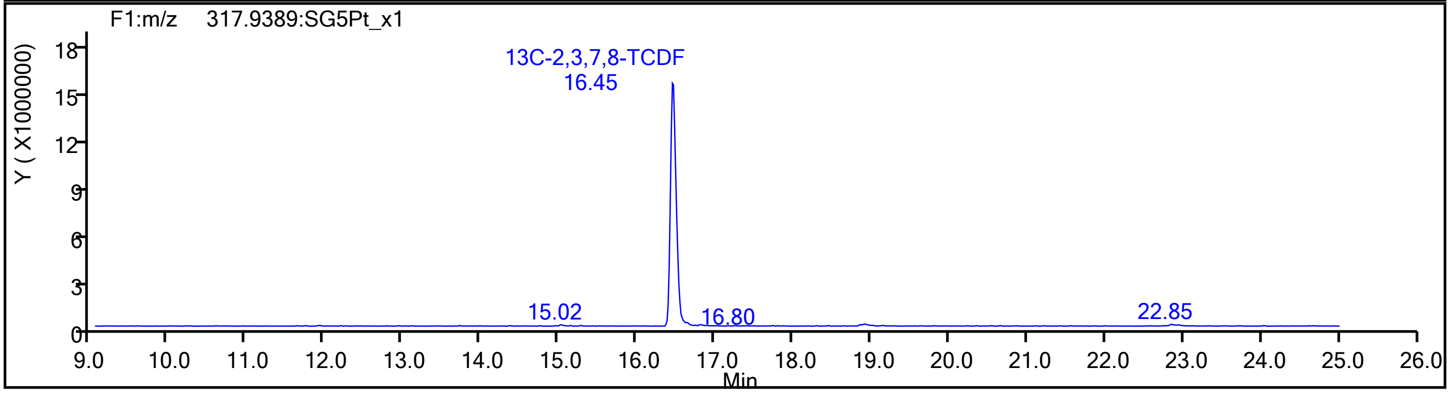

Report Date: 28-May-2020 10:19:15 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d		
Injection Date:	27-May-2020 10:39:04	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

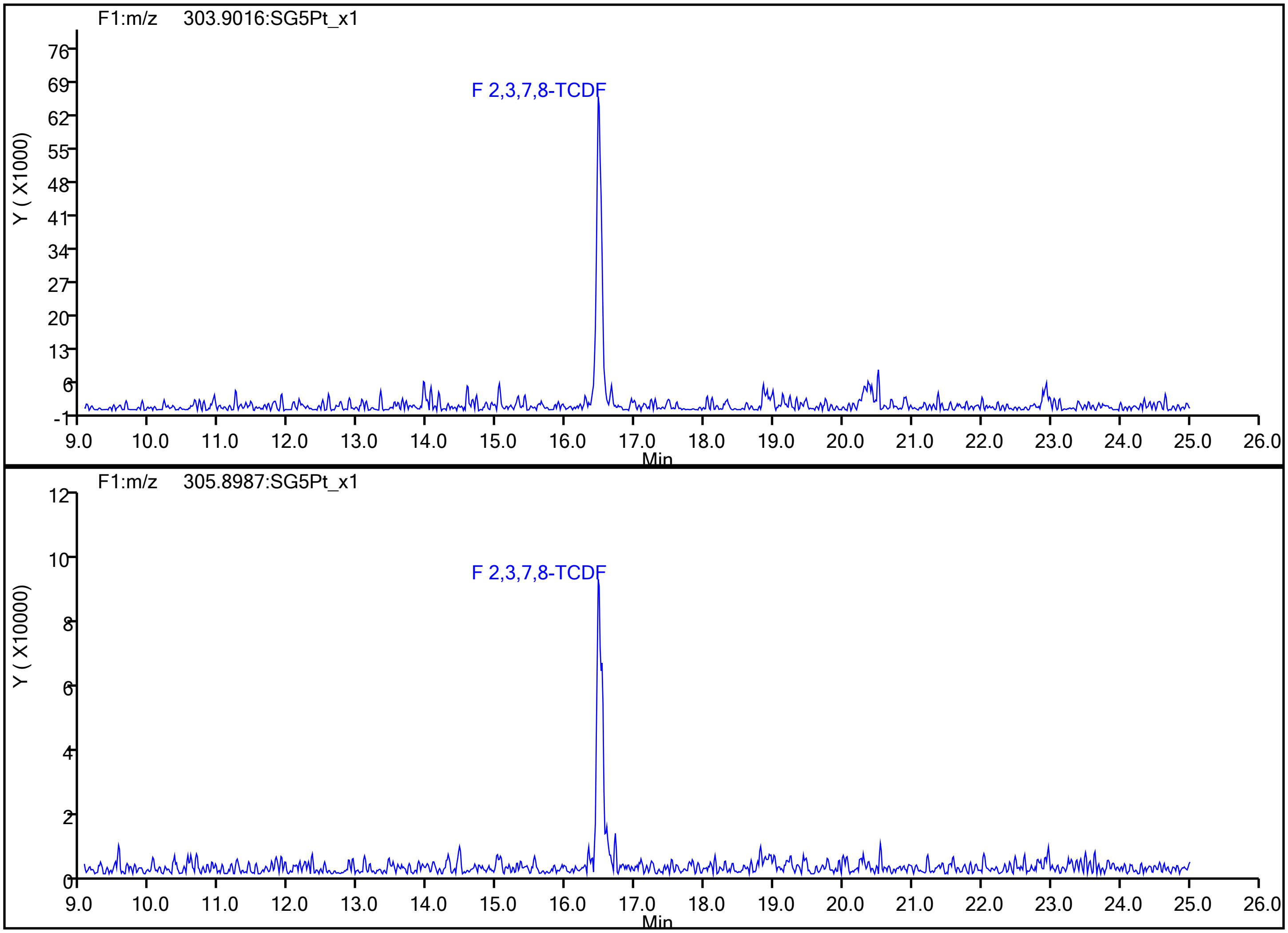

TCDF Interference Mass

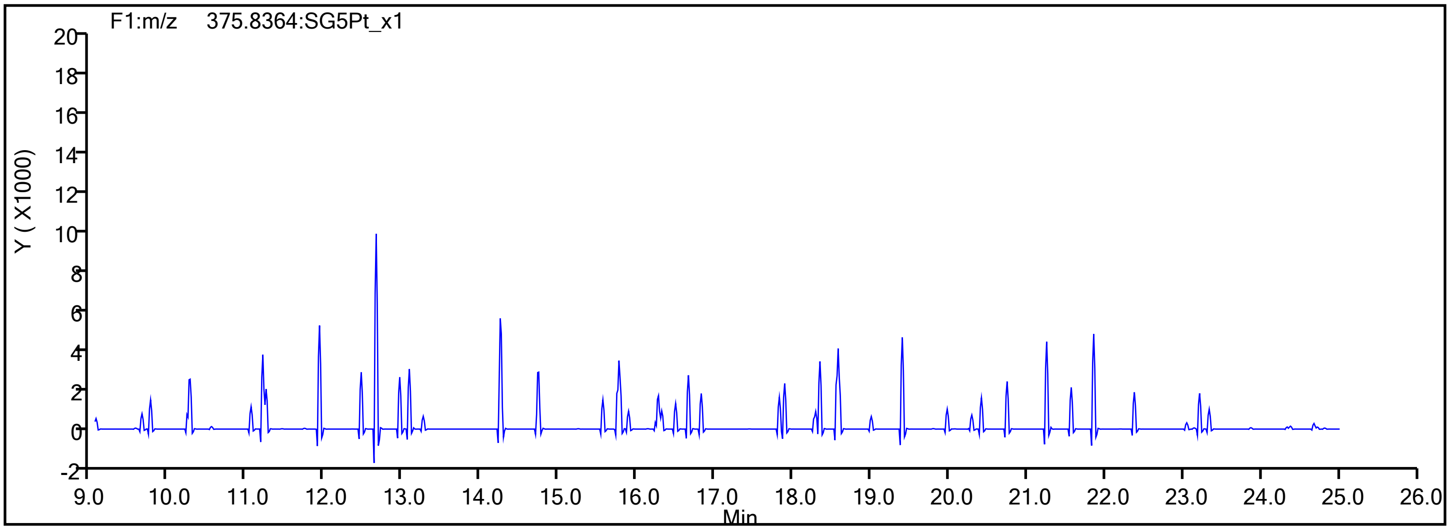

Report Date: 28-May-2020 10:19:15 Chrom Revision: 2.3 12-May-2020 19:48:58
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d
Injection Date: 27-May-2020 10:39:04
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

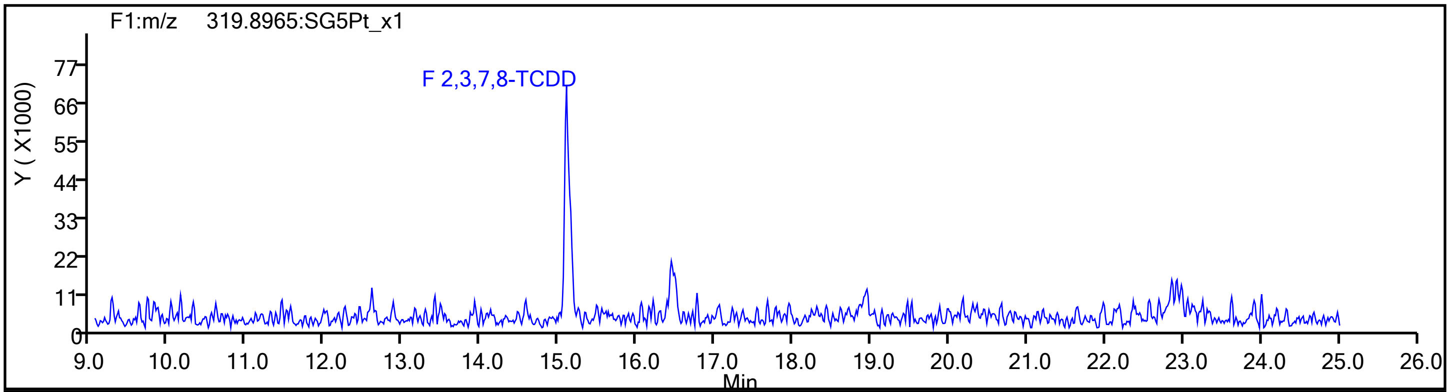

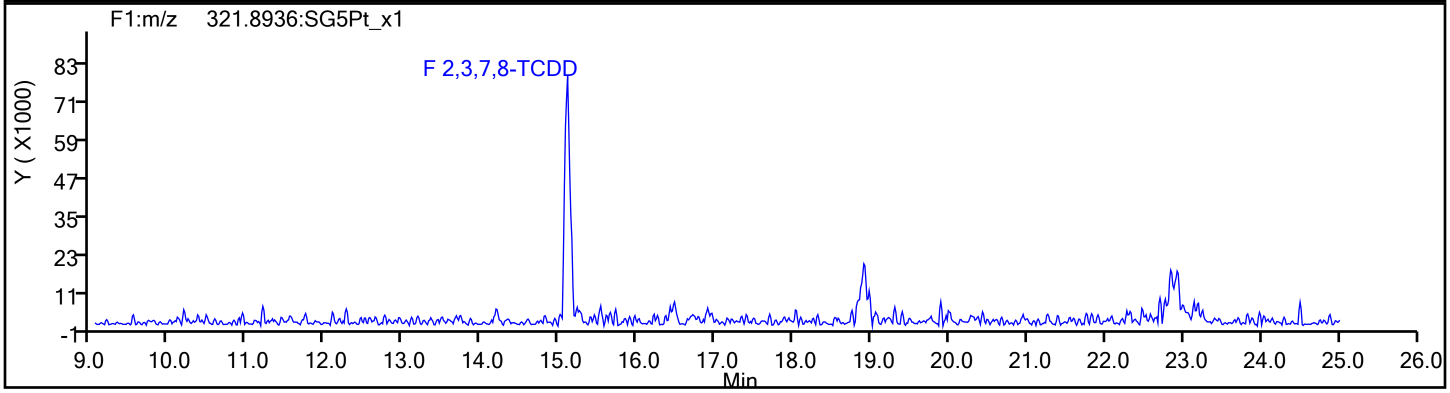

TCDD Standards

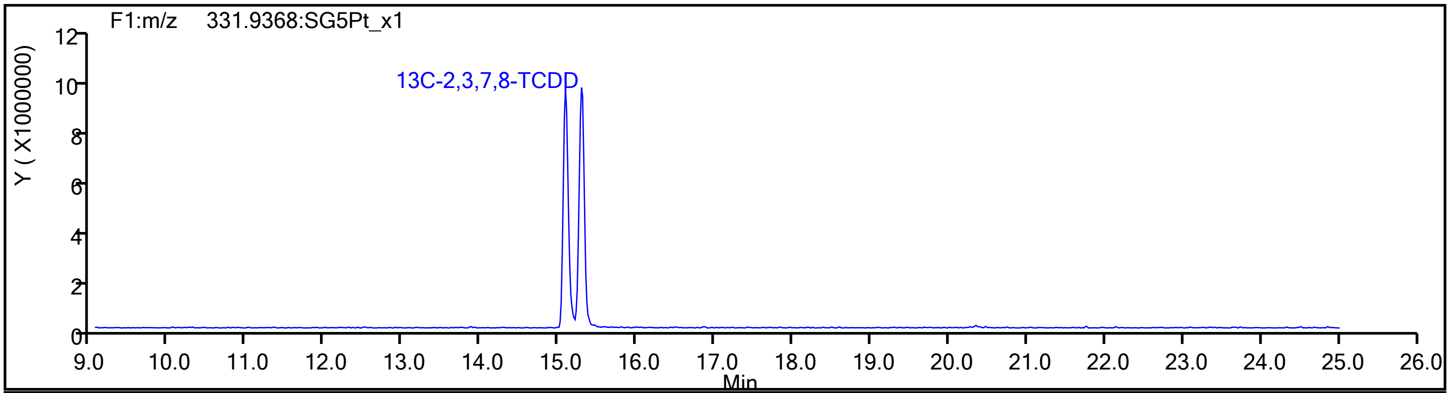

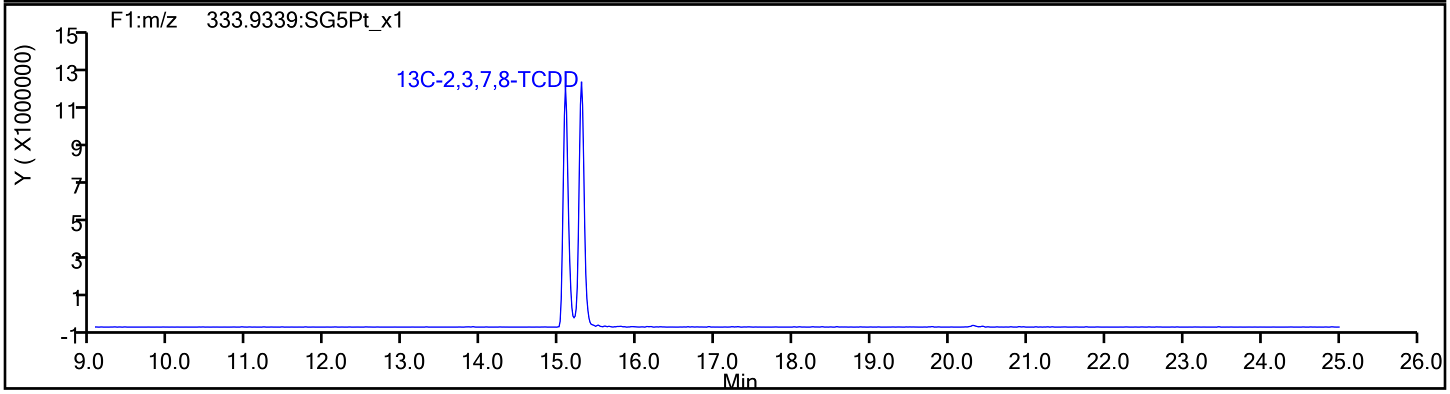

Report Date: 28-May-2020 10:19:15 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d		
Injection Date:	27-May-2020 10:39:04	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	3
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

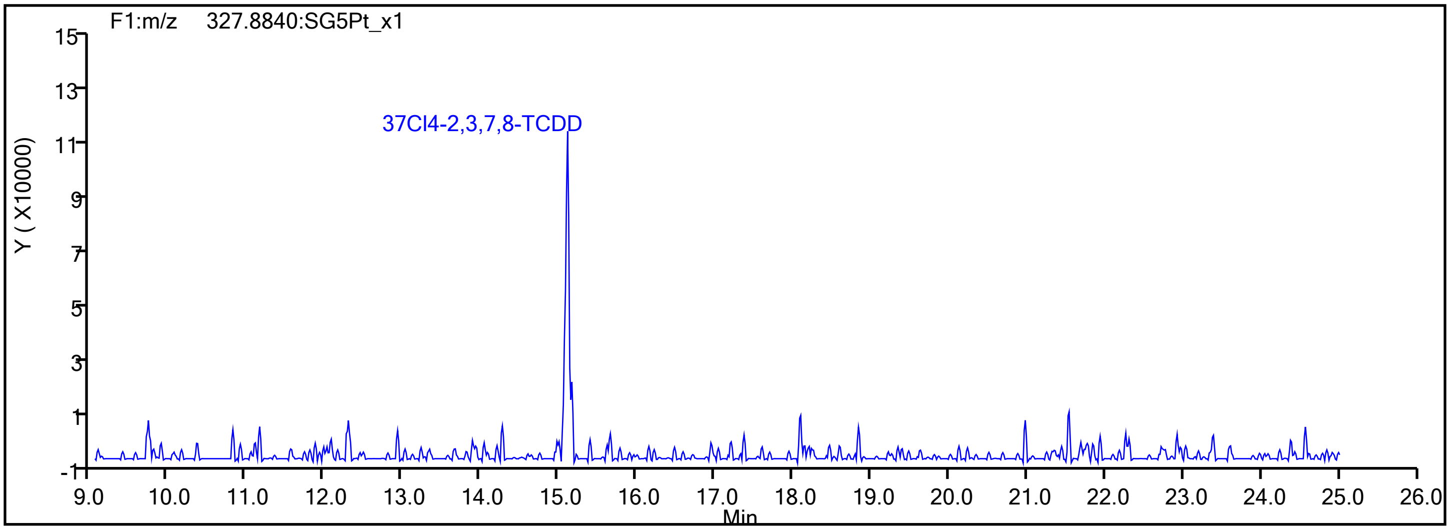

37Cl4-TCDD Standards

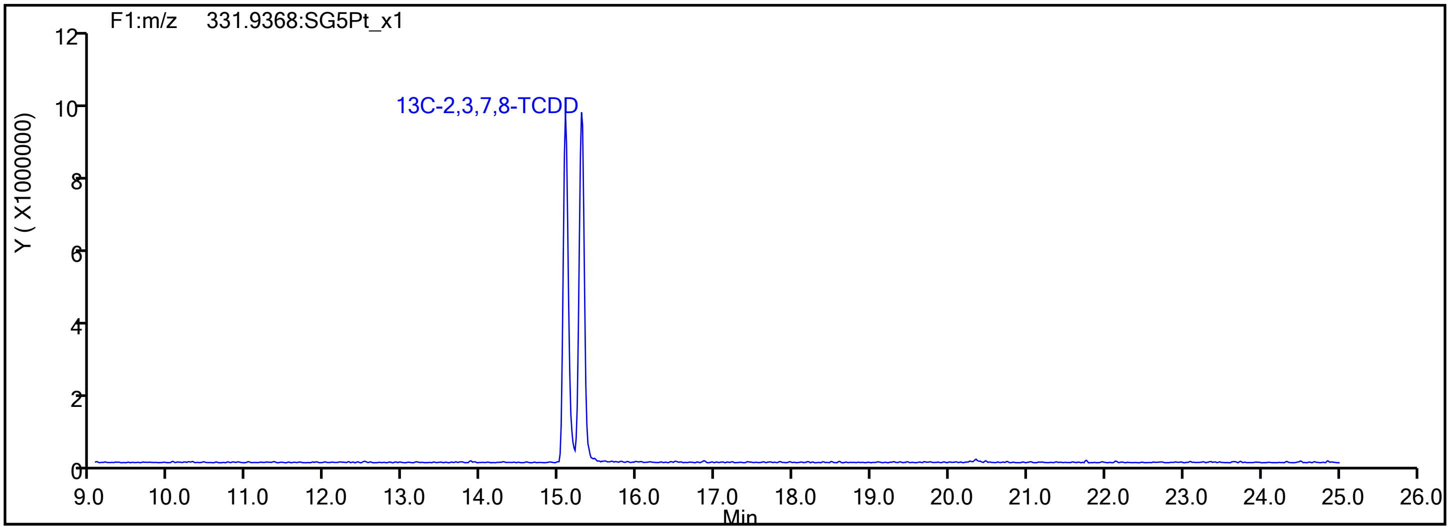

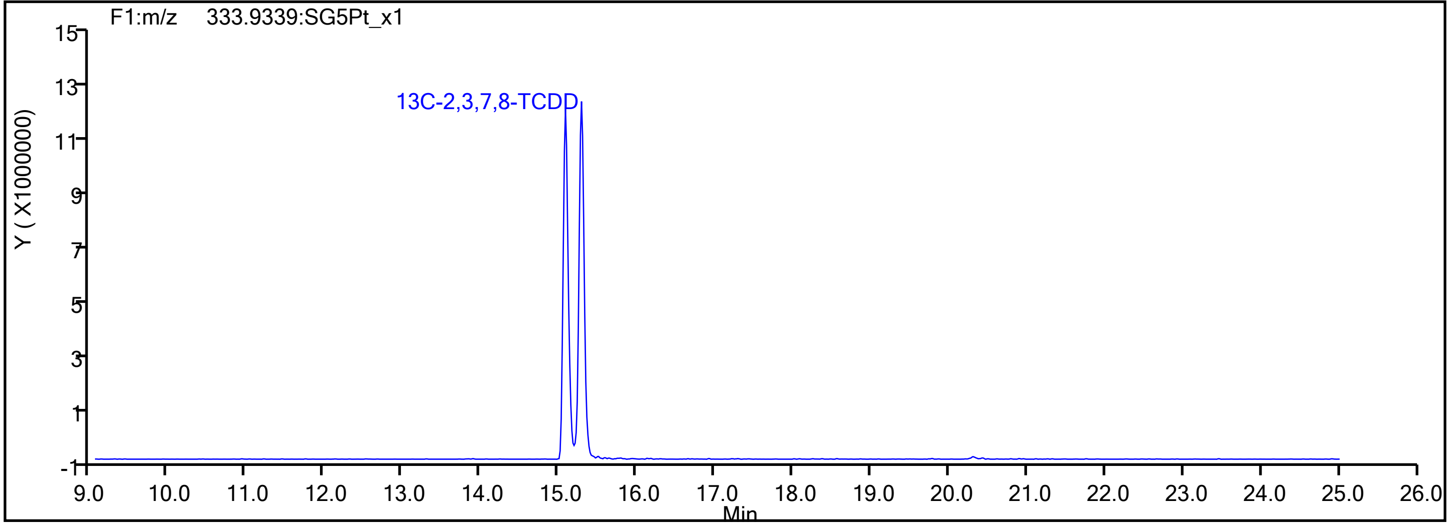

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_003.d

Injection Date: 27-May-2020 10:39:04
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959
Sample Line#: 3
Column Type: DB-225
Column Dia: 0.32 mm

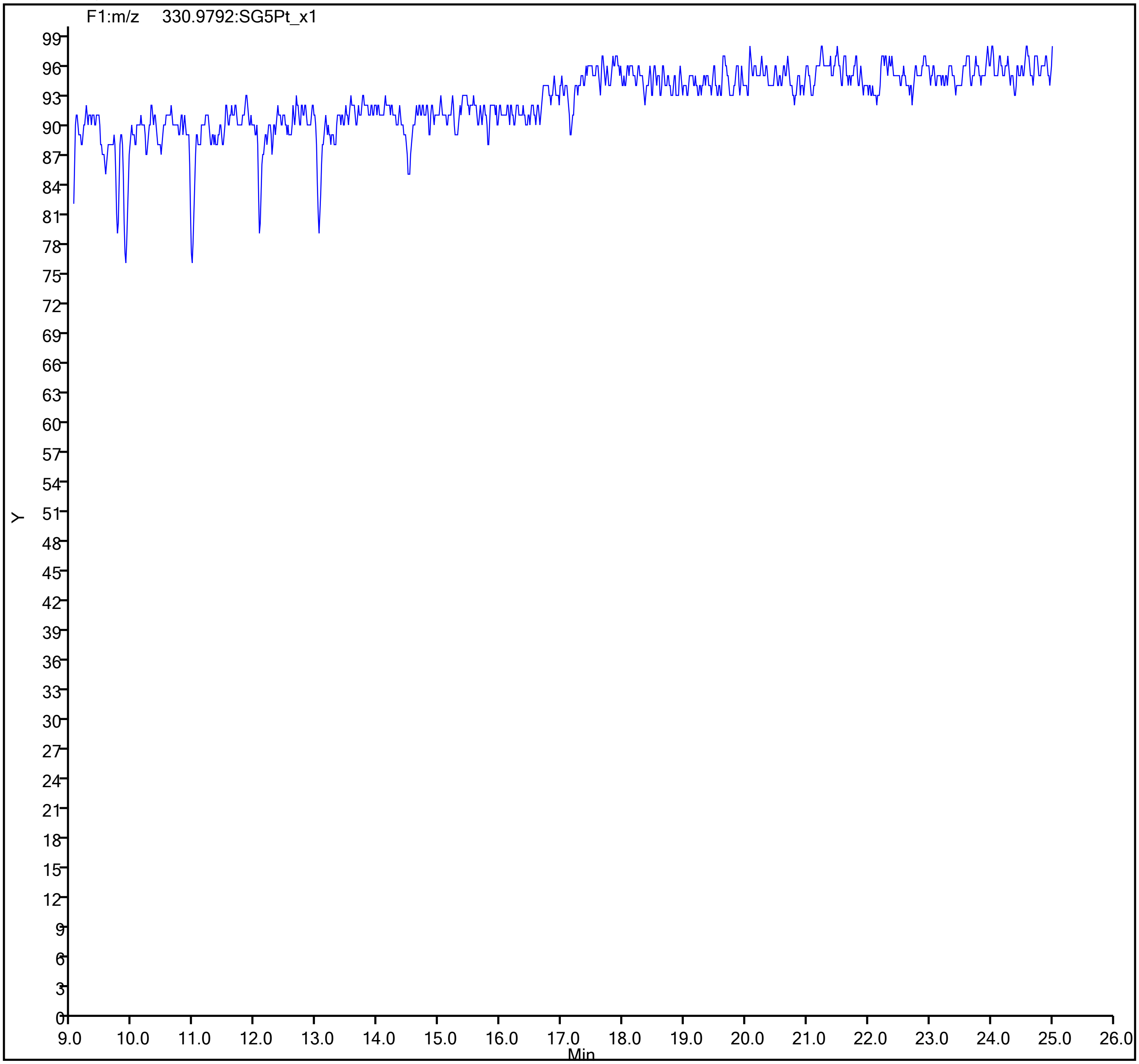

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	27-May-2020 11:17:22	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 10:19:16	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: stephensk		Date:	27-May-2020 15:32:35		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.269	94479799	0.66	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.462	153826092	0.79	1.4910	109.2	109.2	0.2379	0.2379	109	
2,3,7,8-TCDF	16.476	3354294	0.78	1.0809	2.017	2.017	0.0293	0.0293	101	
D 13C-2,3,7,8-TCDD	15.077	97576683	0.76	0.9832	105.0	105.0	0.2901	0.2901	105	
$ 37Cl4-2,3,7,8-TCDD	15.077	1714476		0.9421	1.926	1.926	0.0327	0.0327	96.31	
2,3,7,8-TCDD	15.090	2332190	0.79	1.2196	1.960	1.960	0.0542	0.0542	97.99	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL3_00027 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d				
Lims ID:	IC 3				
Client ID:					
Sample Type:	IC	Calib Level:	3		
Inject. Date:	27-May-2020 11:17:22	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-3 HRDXNL3_00027				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 10:19:16	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: stephensk		Date:	27-May-2020 15:32:35		

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.269	15.279	-1		37610303	9118817	16517	41292	552		
333.9339	15.282	15.279	0		56869496	12020177	7597	18992	1582	0.66(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.462	16.456	0	1.078	68121518	12965003	18073	45182	717		
317.9389	16.448	16.456	0	1.077	85704574	16329001	11914	29785	1371	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.476	16.467	1	1.001	1467151	271196	1373	3432	198		
305.8987	16.476	16.467	1	1.001	1887143	334774	2342	5855	143	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.077	15.071	0	0.987	42027672	8741258	16517	41292	529		
333.9339	15.077	15.071	0	0.987	55549011	12147724	7597	18992	1599	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.077	15.084	0	0.987	1714476	362151	2607	6517	139		
2,3,7,8-TCDD											
319.8965	15.090	15.087	0	1.001	1029490	196841	3445	8612	57		
321.8936	15.090	15.087	0	1.001	1302700	243771	2082	5205	117	0.79(0.65-0.89)	

Reagents:

HRDXNL3_00027	Amount Added: 2.00	Units: uL

Report Date: 28-May-2020 10:19:18 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d		
Injection Date:	27-May-2020 11:17:22	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

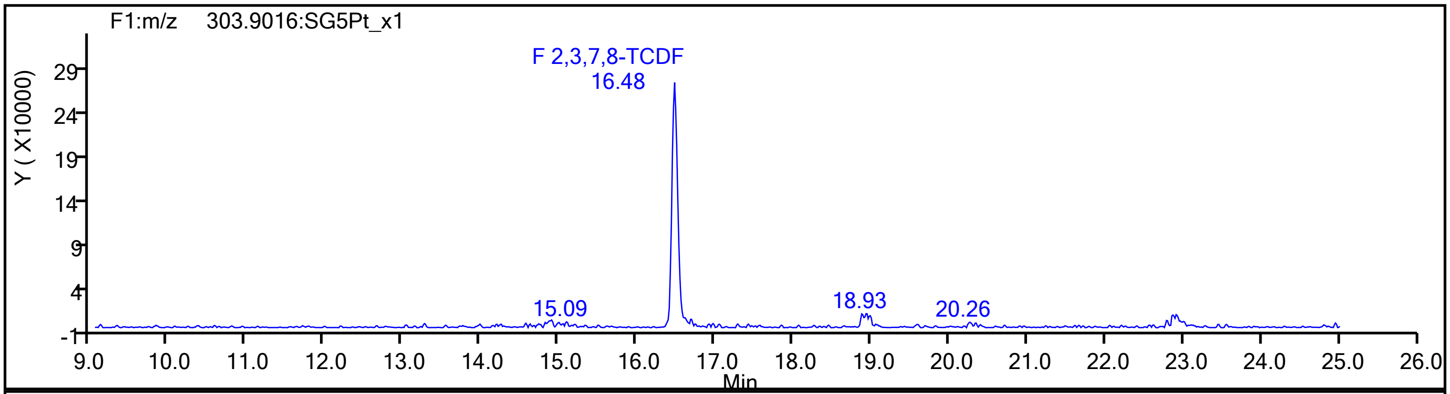

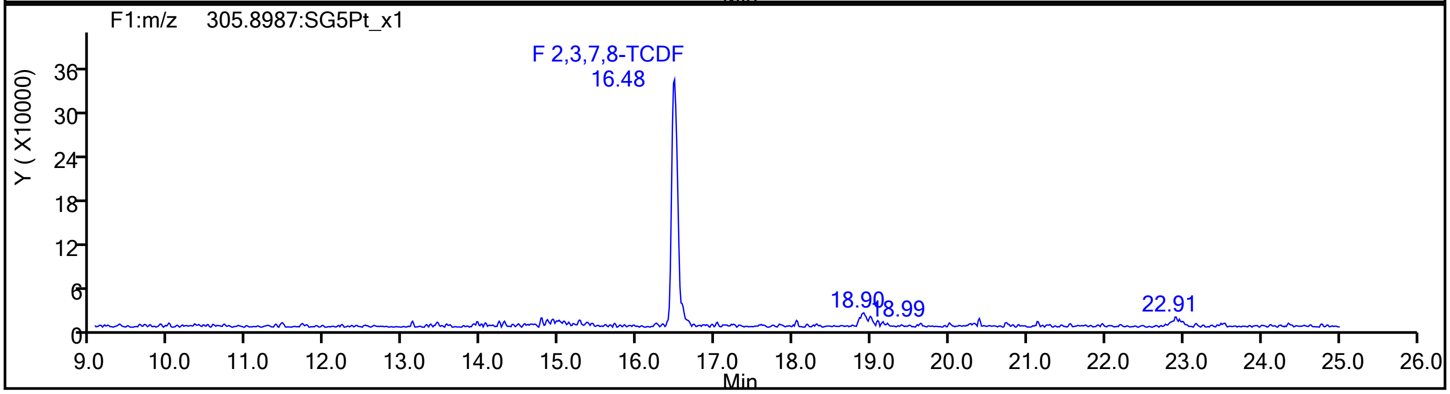

TCDF Standards

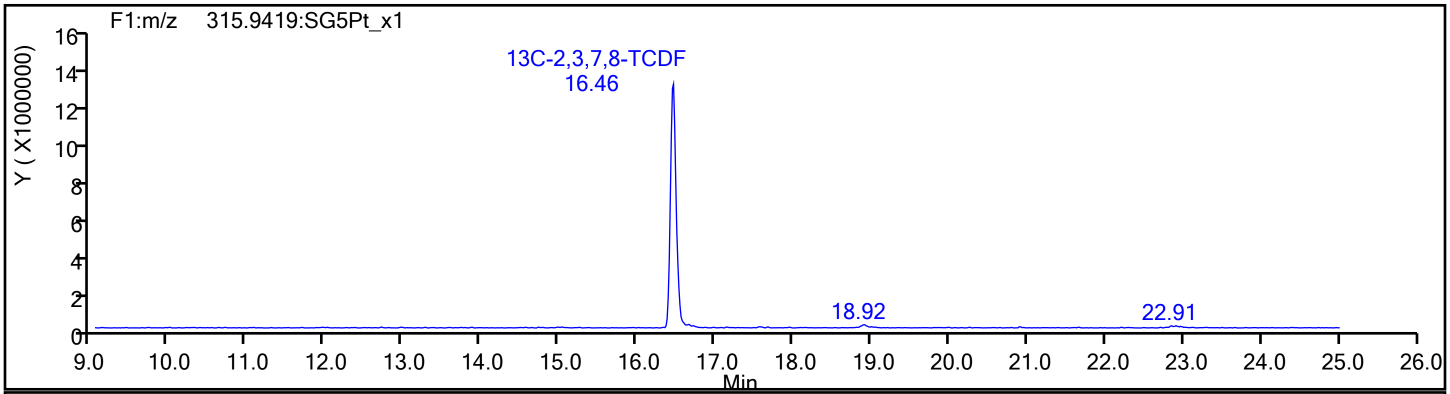

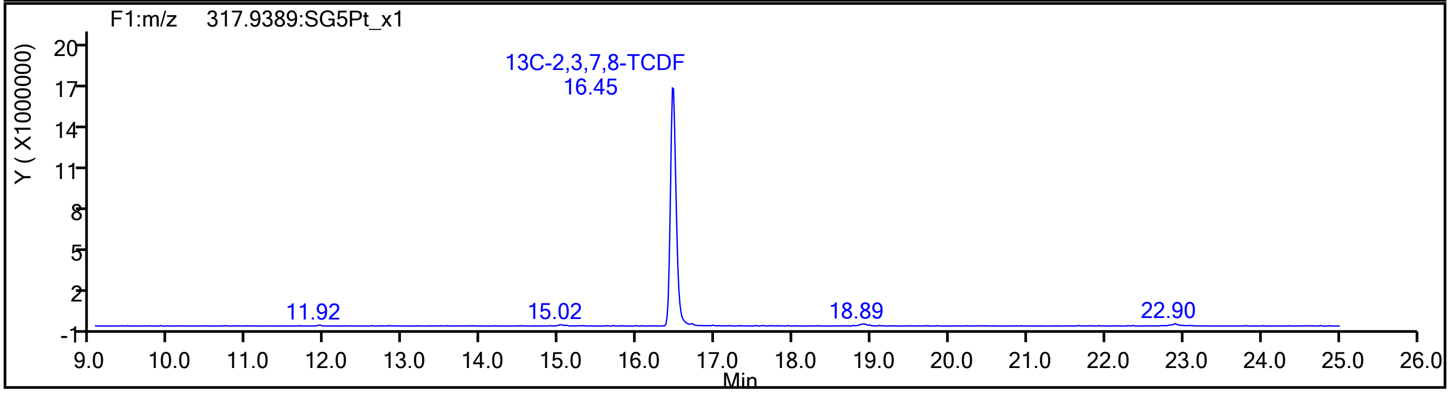

Report Date: 28-May-2020 10:19:18 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d

Injection Date:	27-May-2020 11:17:22	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

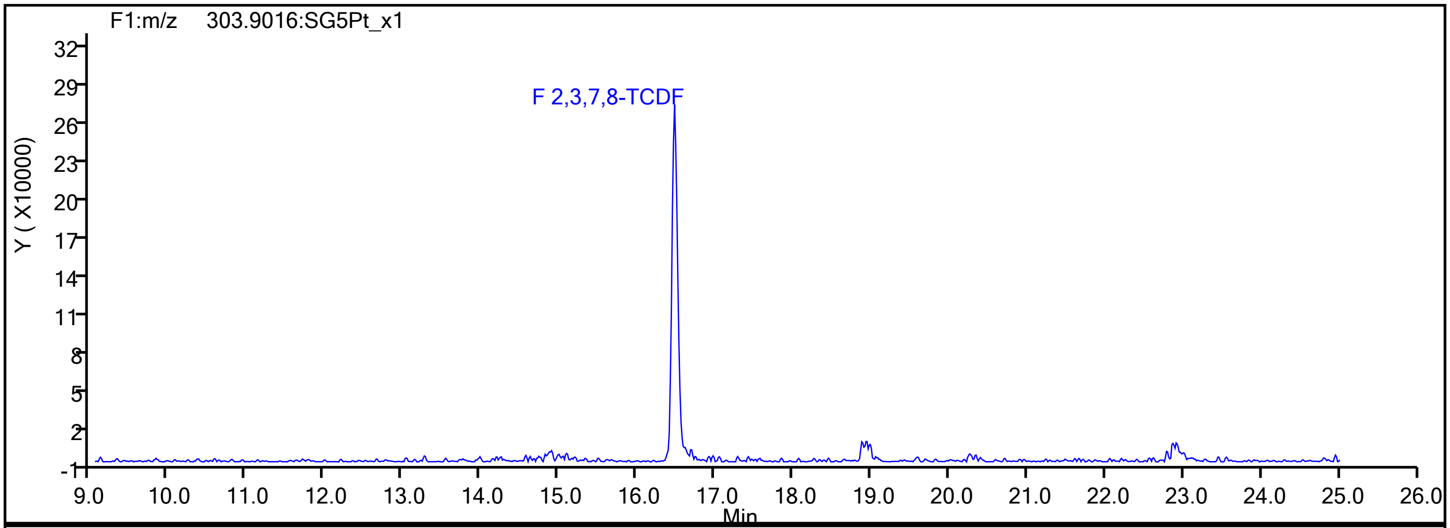

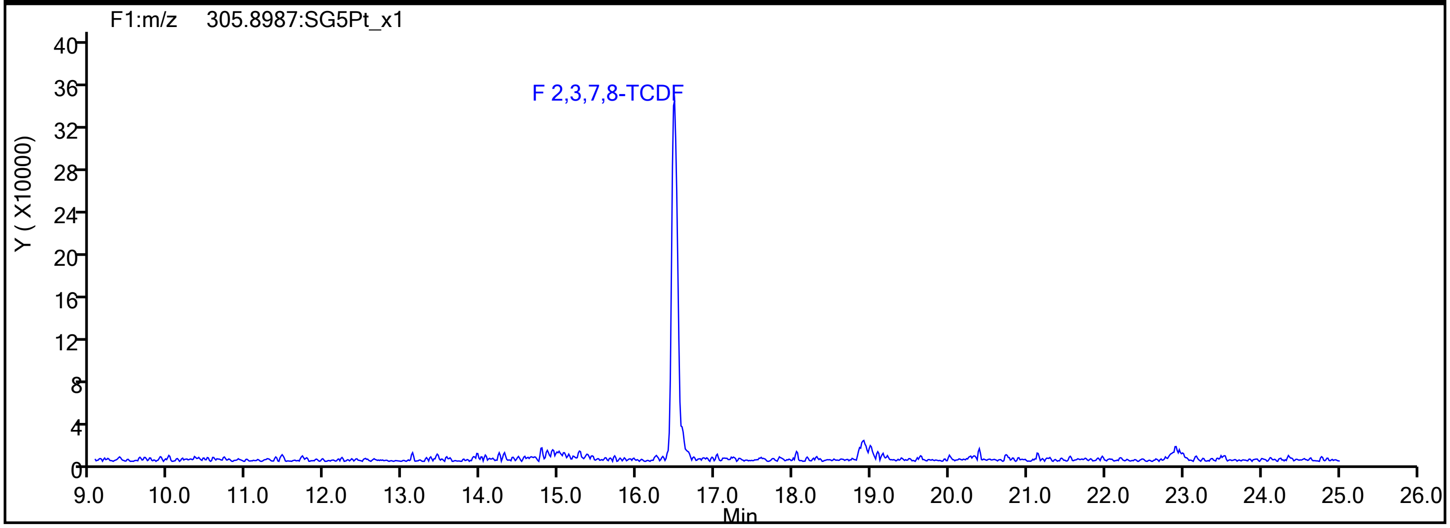

TCDF Interference Mass

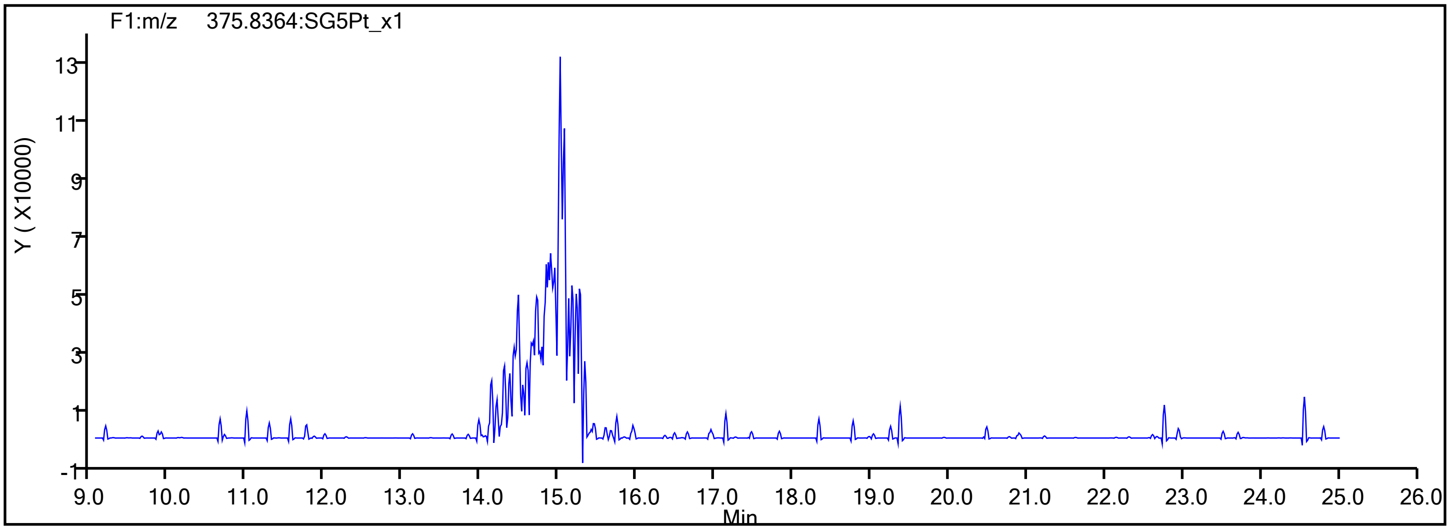

Report Date: 28-May-2020 10:19:18 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d
Injection Date: 27-May-2020 11:17:22
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959
Sample Line#: 4
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

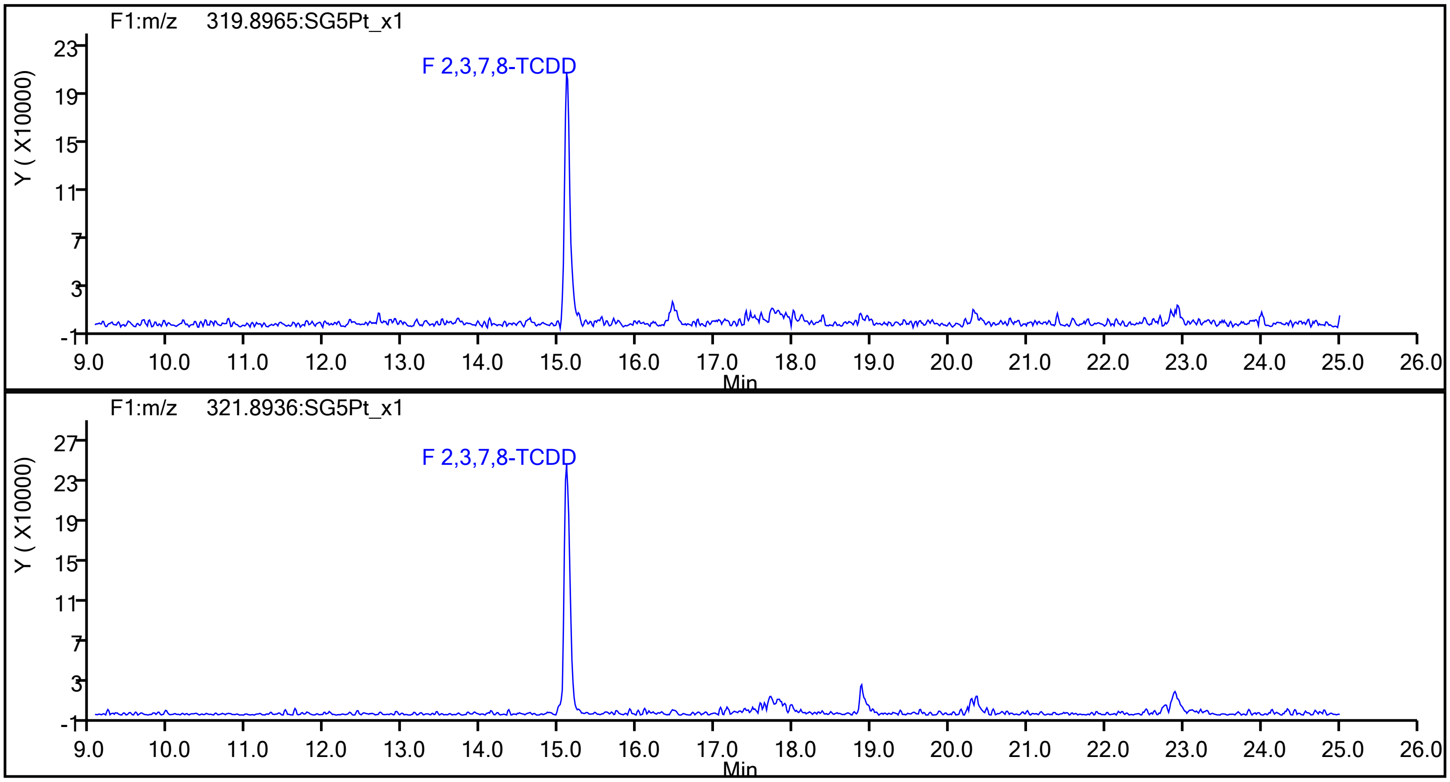

TCDD Standards

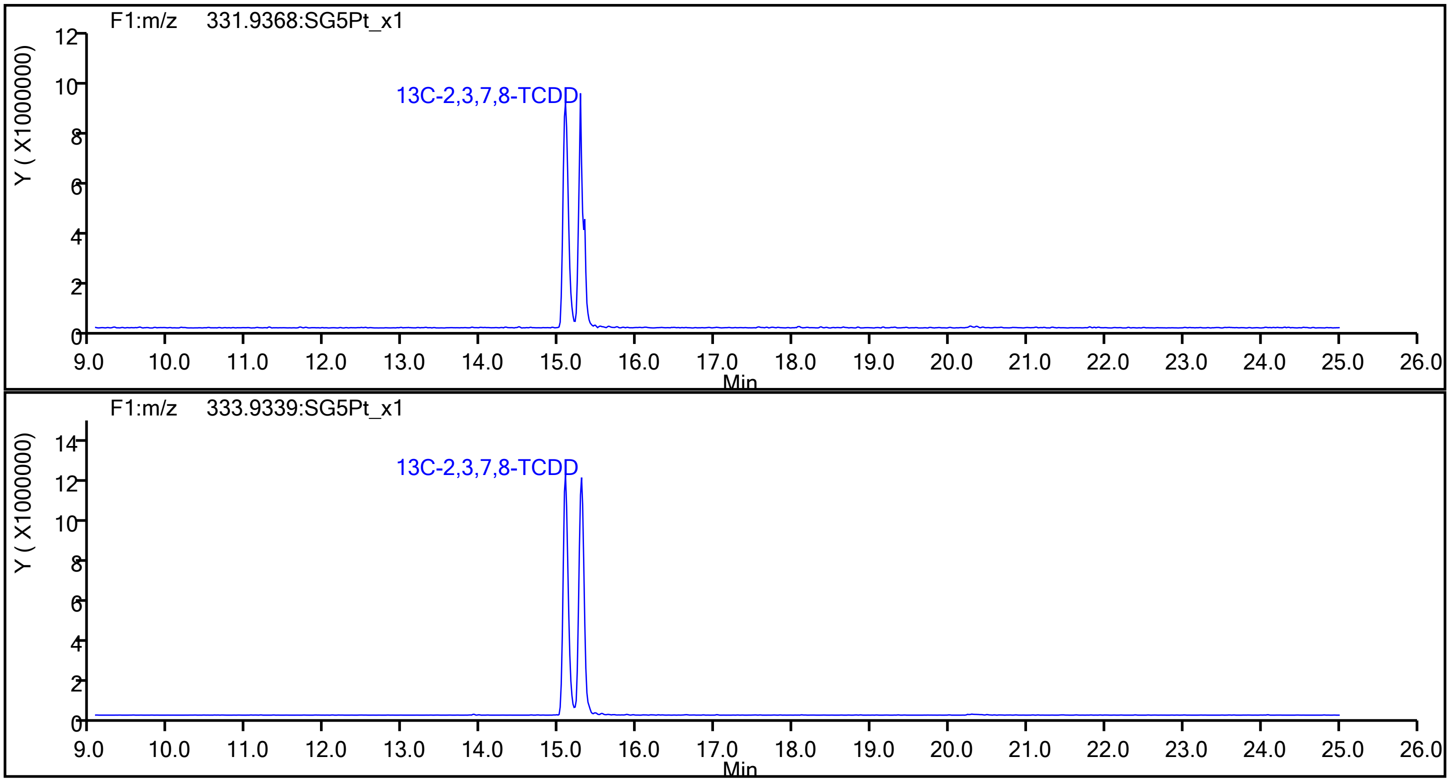

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d		
Injection Date:	27-May-2020 11:17:22	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	4
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

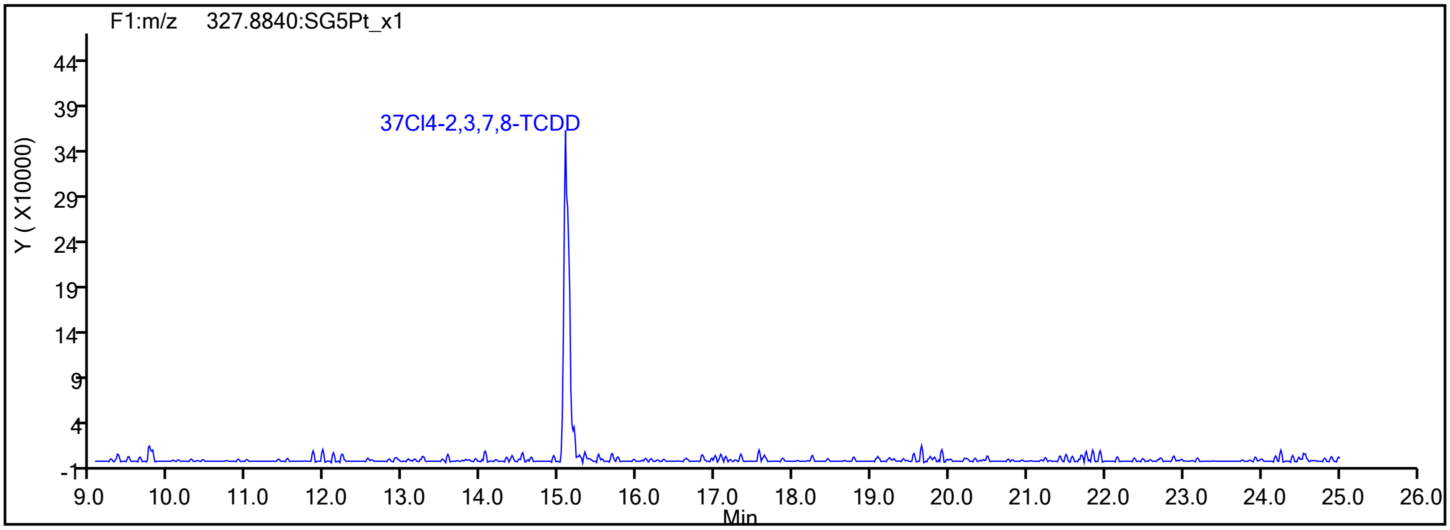

37Cl4-TCDD Standards

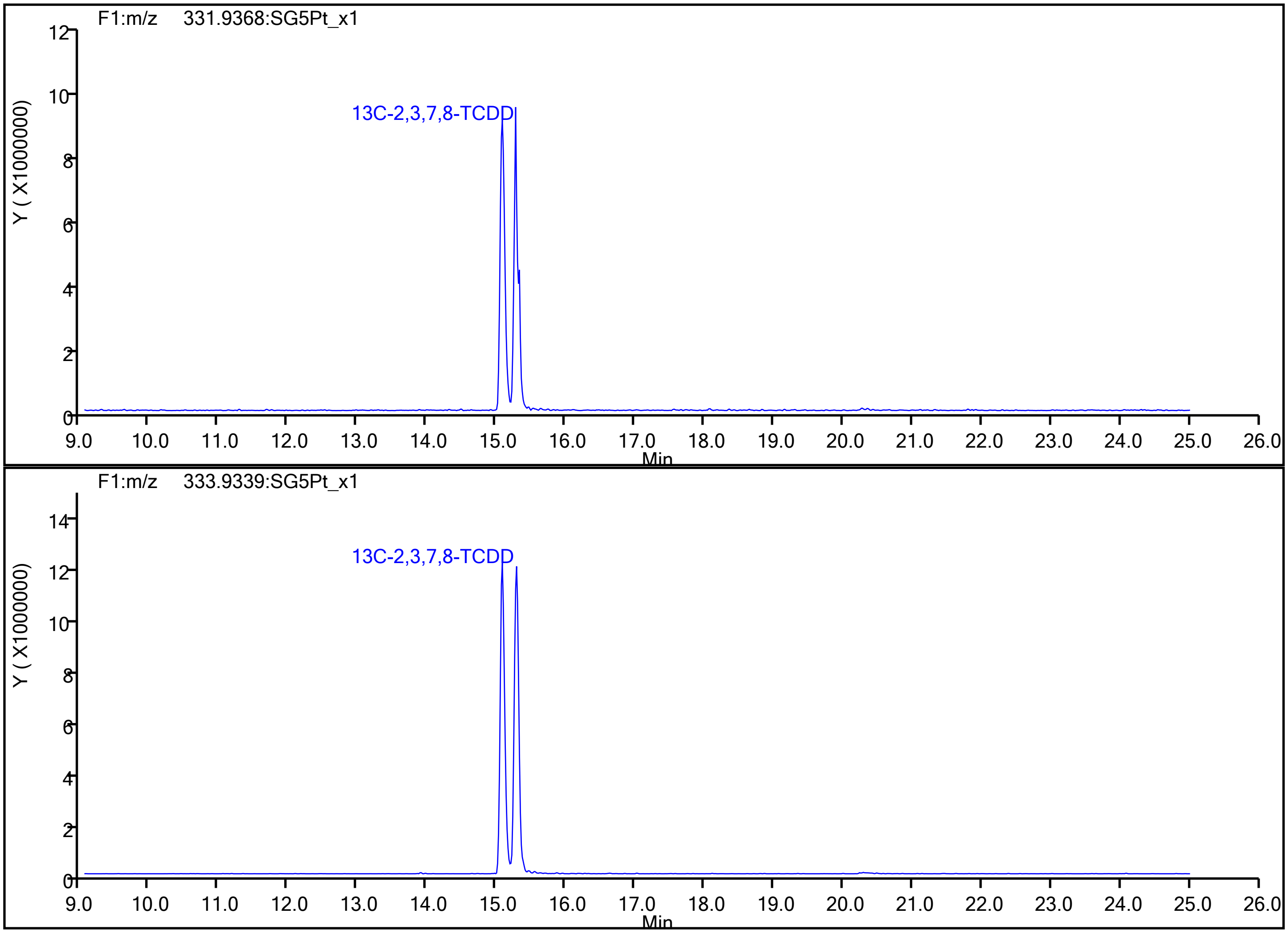

Report Date: 28-May-2020 10:19:19 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_004.d

Injection Date: 27-May-2020 11:17:22 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 380959 Sample Line#: 4

Column Type: DB-225 Column Dia: 0.32 mm

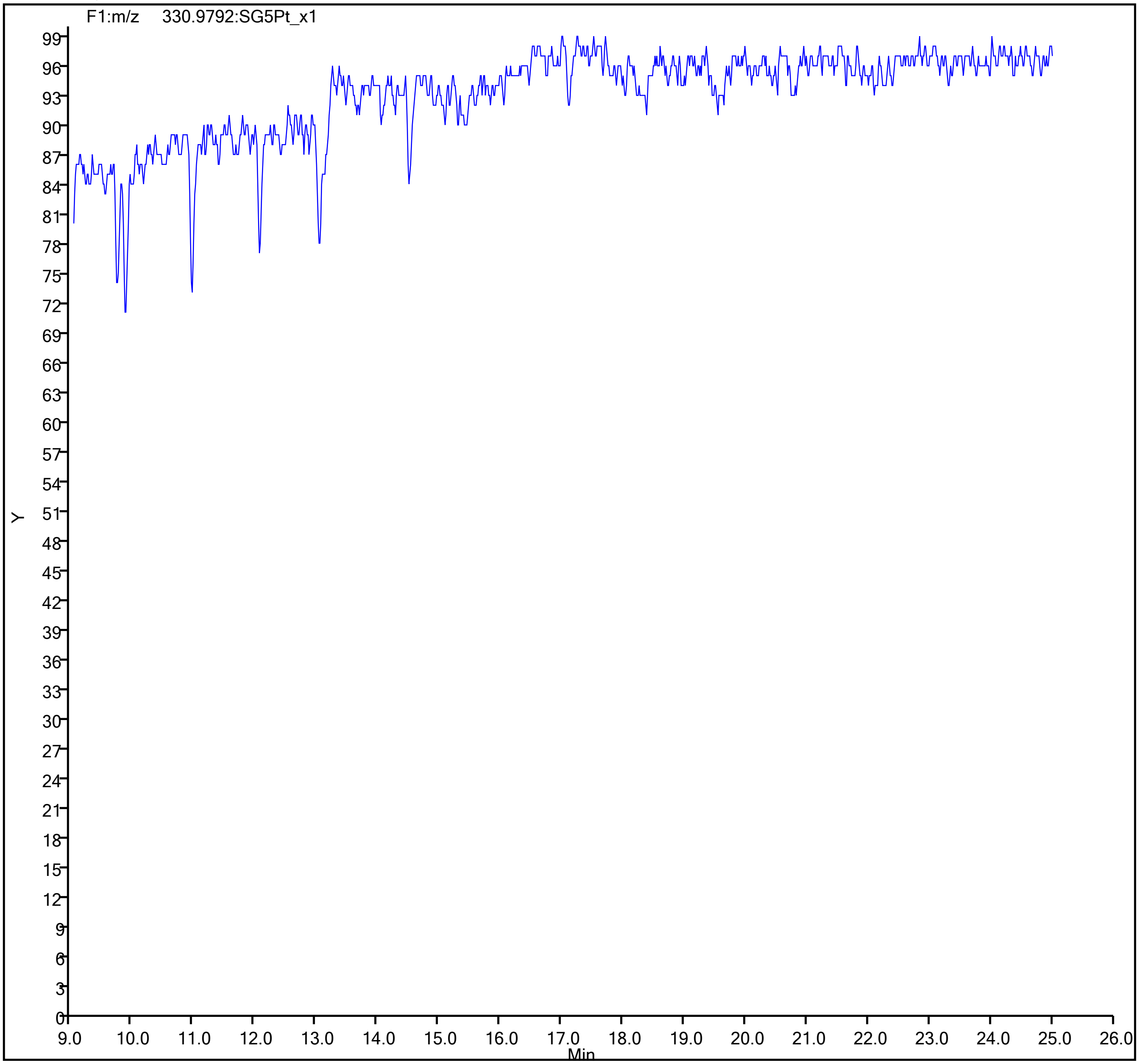

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d				
Lims ID:	IC 4				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	27-May-2020 11:55:41	ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-4 HRDXNL4_00093				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 10:19:20	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: stephensk		Date:	27-May-2020 15:32:49		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.269	98404536	0.77	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.449	139580721	0.79	1.4910	95.1	95.1	0.2652	0.2652	95.13	
2,3,7,8-TCDF	16.463	13953335	0.78	1.0809	9.248	9.248	0.0408	0.0408	92.48	
D 13C-2,3,7,8-TCDD	15.064	96367123	0.78	0.9832	99.6	99.6	0.3043	0.3043	99.61	
$ 37Cl4-2,3,7,8-TCDD	15.077	9925556		0.9421	10.7	10.7	0.0313	0.0313	107	
2,3,7,8-TCDD	15.077	10540877	0.80	1.2196	8.969	8.969	0.0682	0.0682	89.69	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:22 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 27-May-2020 11:55:41 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-4 HRDXNL4_00093
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-May-2020 10:19:20 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: stephensk Date: 27-May-2020 15:32:49

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.269	15.279	-1		42942210	9133486	16452	41130	555		
333.9339	15.269	15.279	-1		55462326	11589929	8347	20867	1389	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.449	16.456	0	1.077	61796319	11839067	17687	44217	669		
317.9389	16.449	16.456	0	1.077	77784402	14672094	15093	37732	972	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.463	16.467	0	1.001	6114152	1100636	2026	5065	543		
305.8987	16.463	16.467	0	1.001	7839183	1487195	2651	6627	561	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.064	15.071	0	0.987	42265206	9467292	16452	41130	575		
333.9339	15.064	15.071	0	0.987	54101917	12037368	8347	20867	1442	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.077	15.084	0	0.987	9925556	2022307	2443	6107	828		
2,3,7,8-TCDD											
319.8965	15.077	15.087	-1	1.001	4668844	902079	4217	10542	214		
321.8936	15.091	15.087	0	1.002	5872033	1162030	2940	7350	395	0.80(0.65-0.89)	

Reagents:

HRDXNL4_00093 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:22 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d		
Injection Date:	27-May-2020 11:55:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

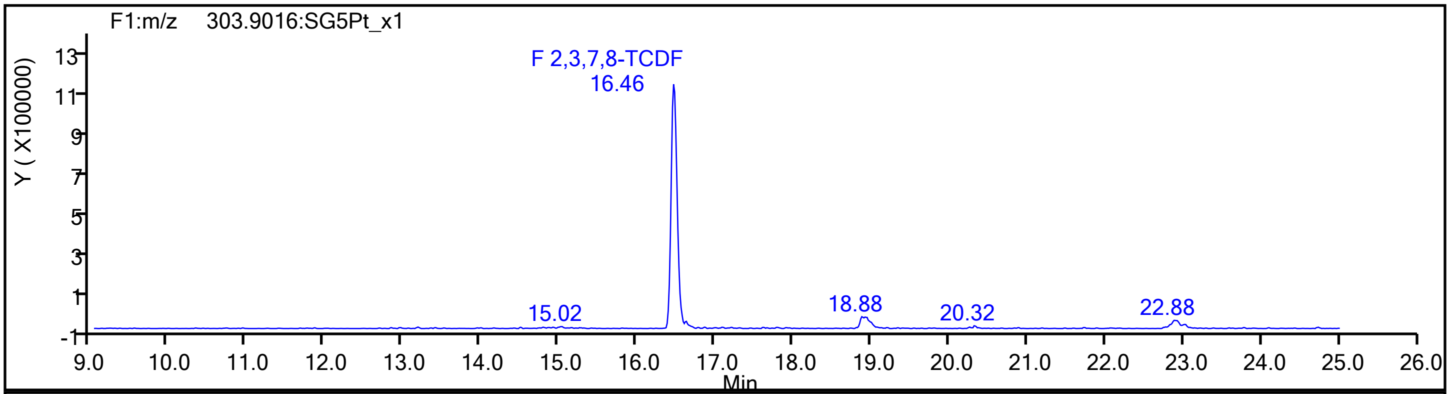

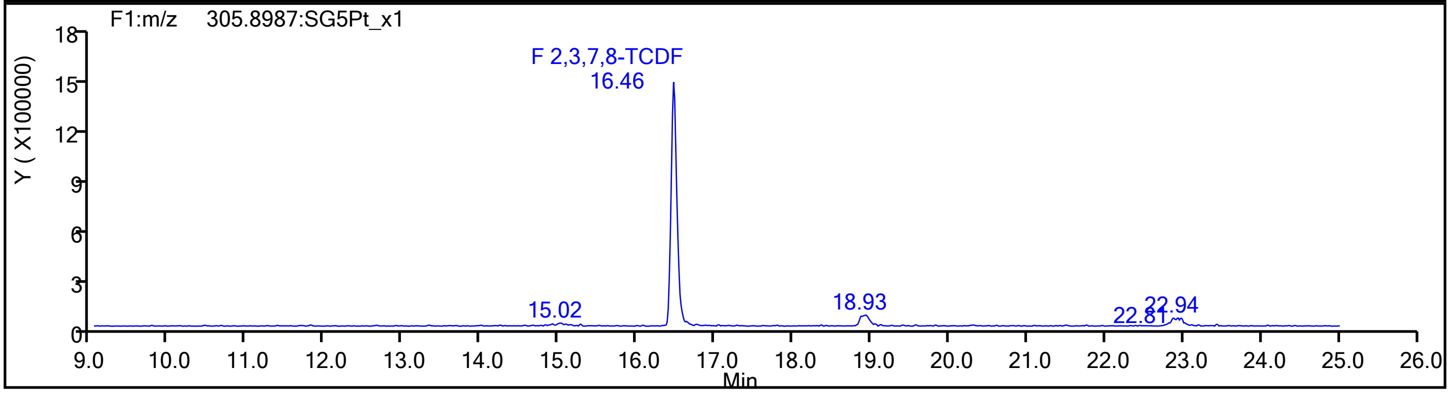

TCDF Standards

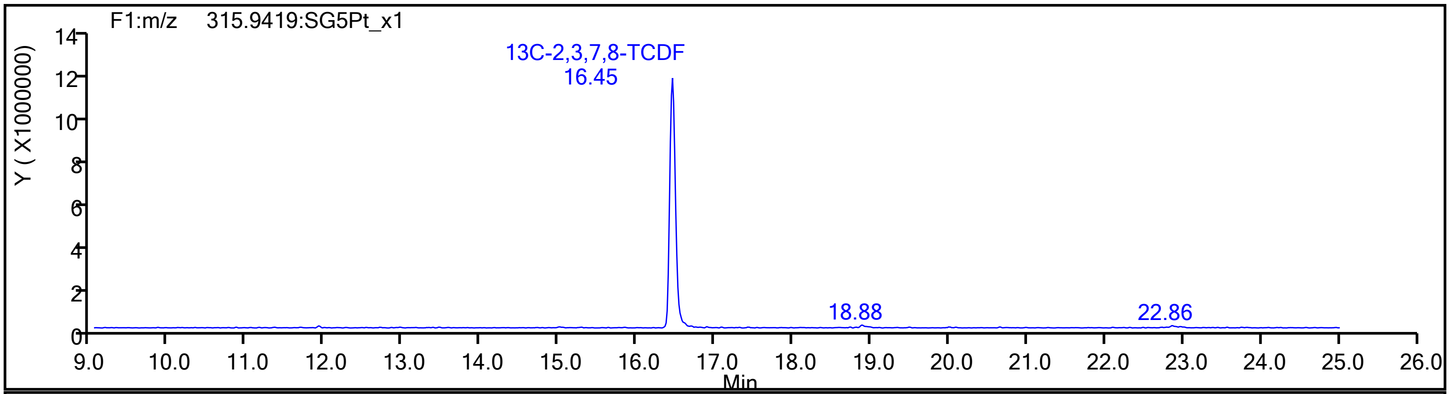

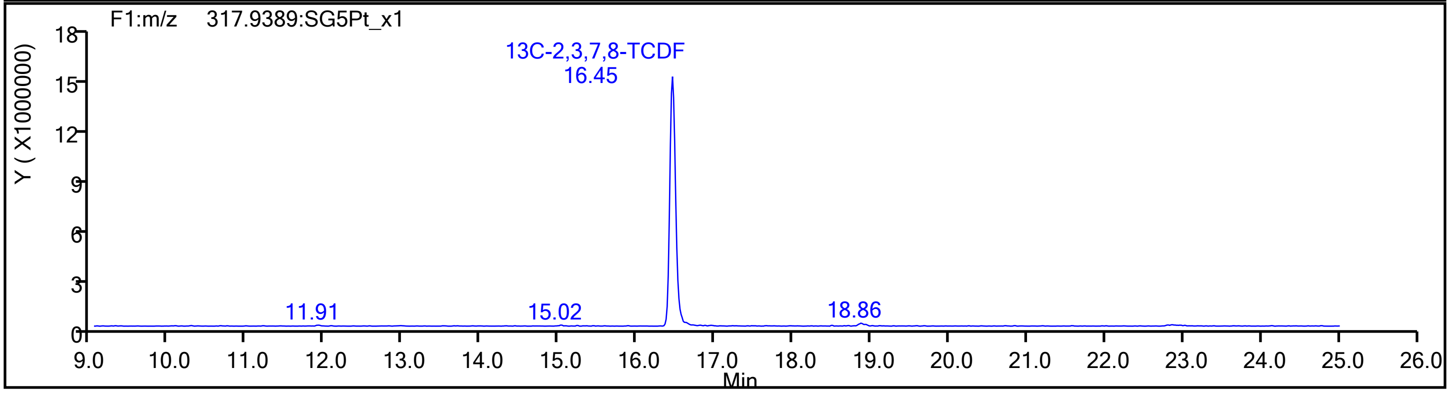

Report Date: 28-May-2020 10:19:22 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d		
Injection Date:	27-May-2020 11:55:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

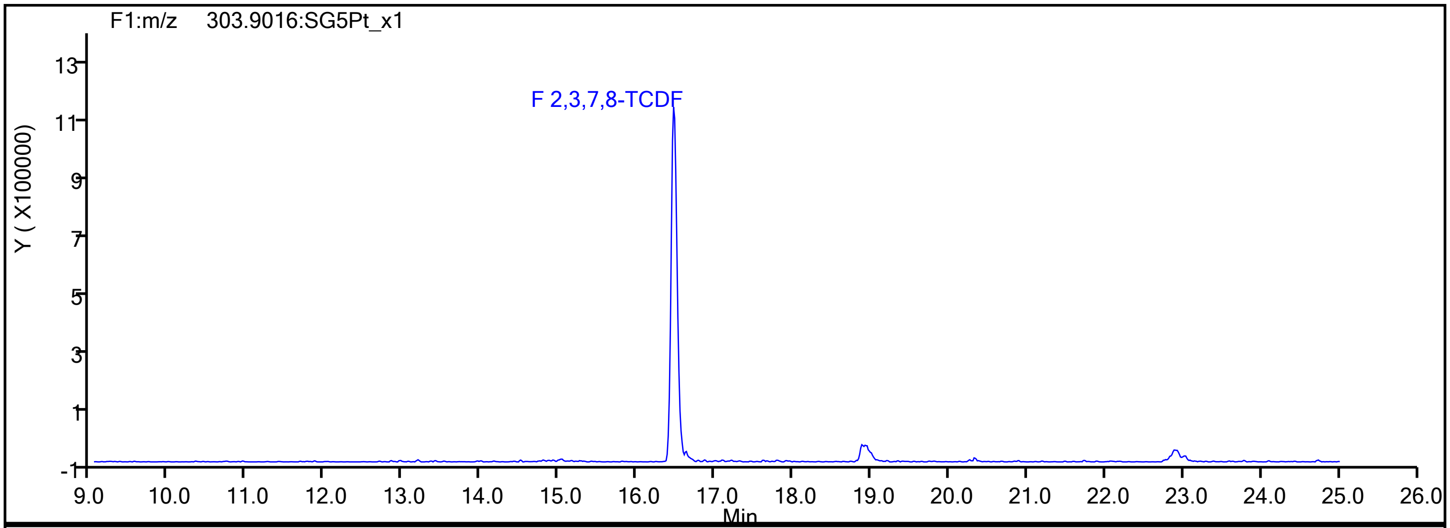

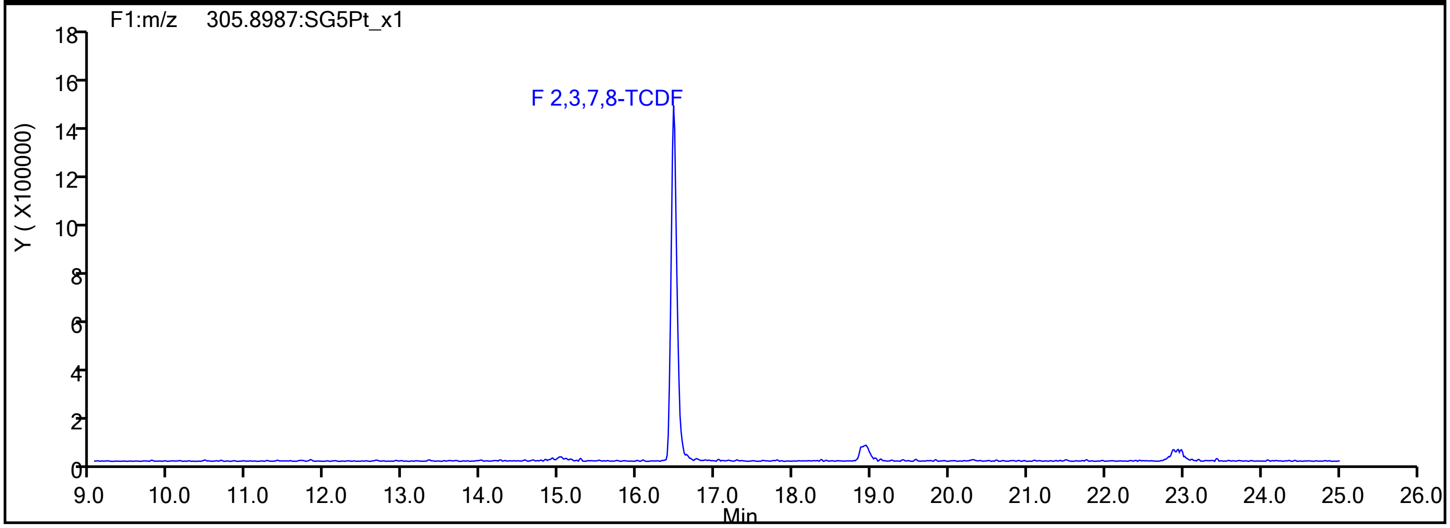

TCDF Interference Mass

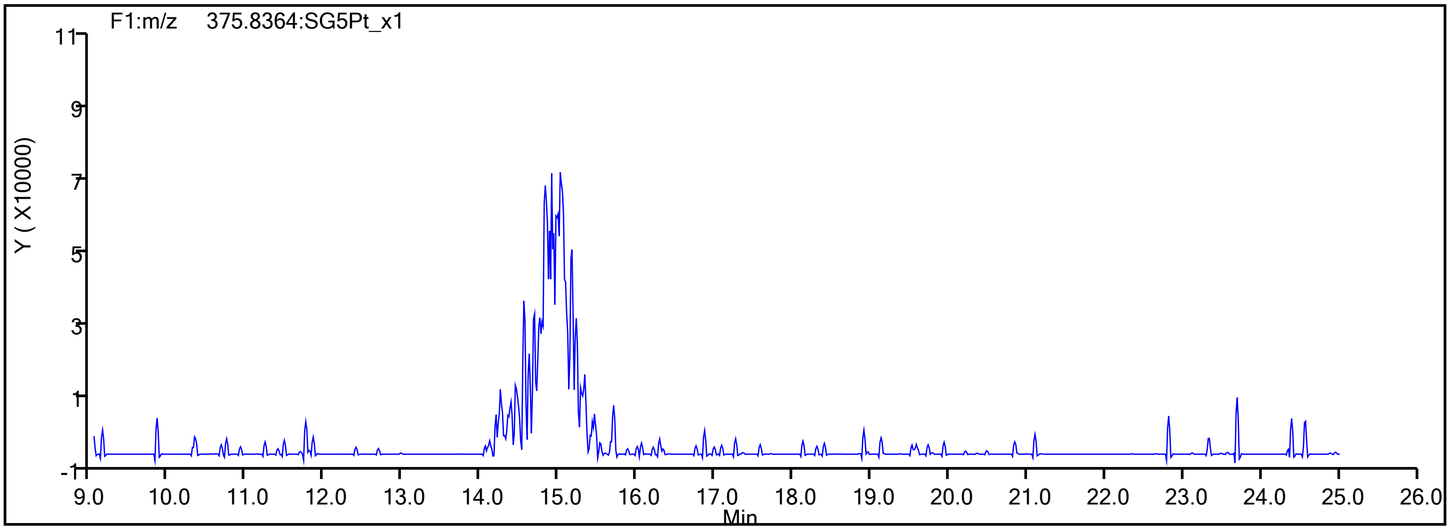

Report Date: 28-May-2020 10:19:22 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d
Injection Date: 27-May-2020 11:55:41 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959 Sample Line#: 5
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

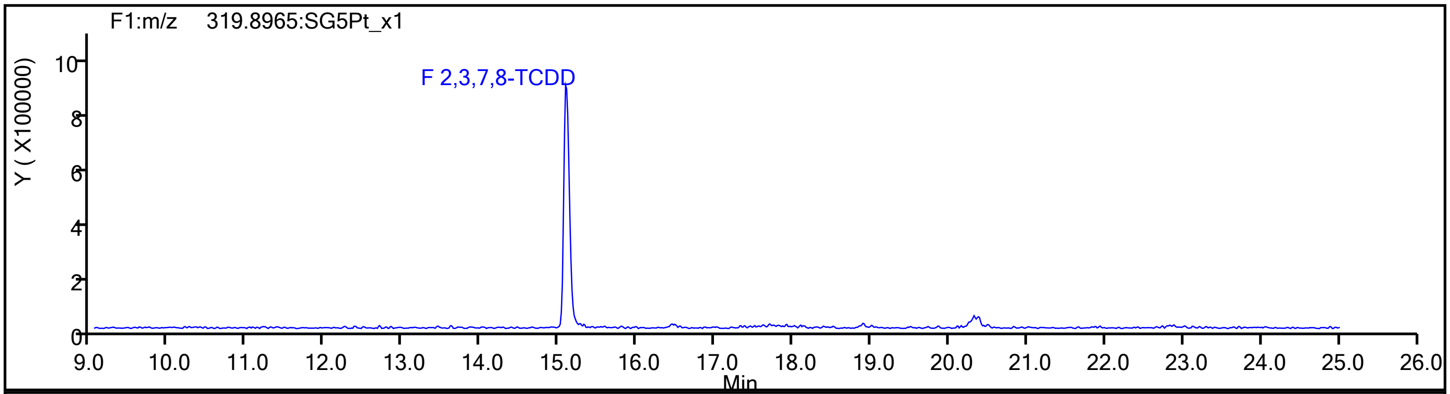

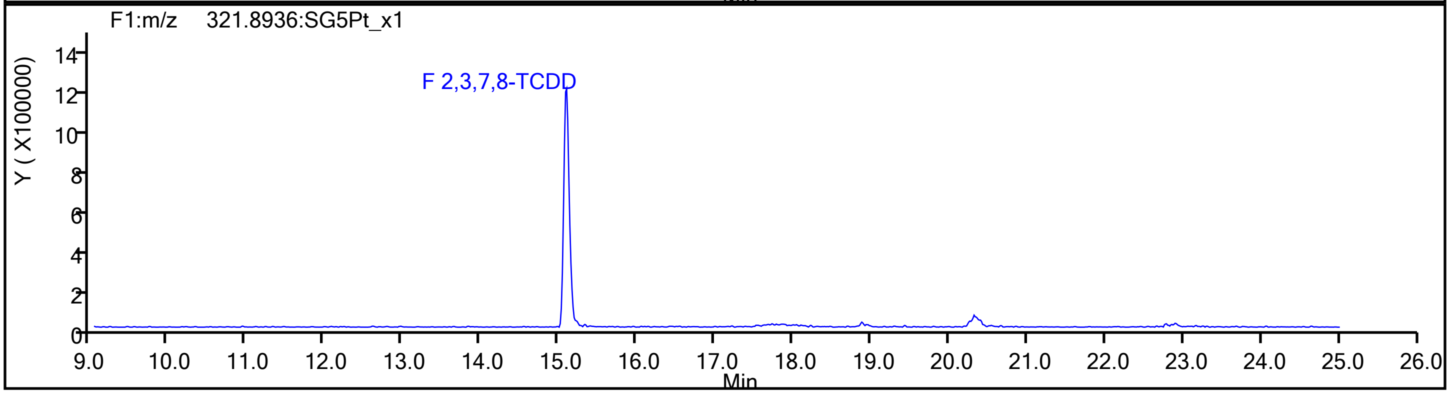

TCDD Standards

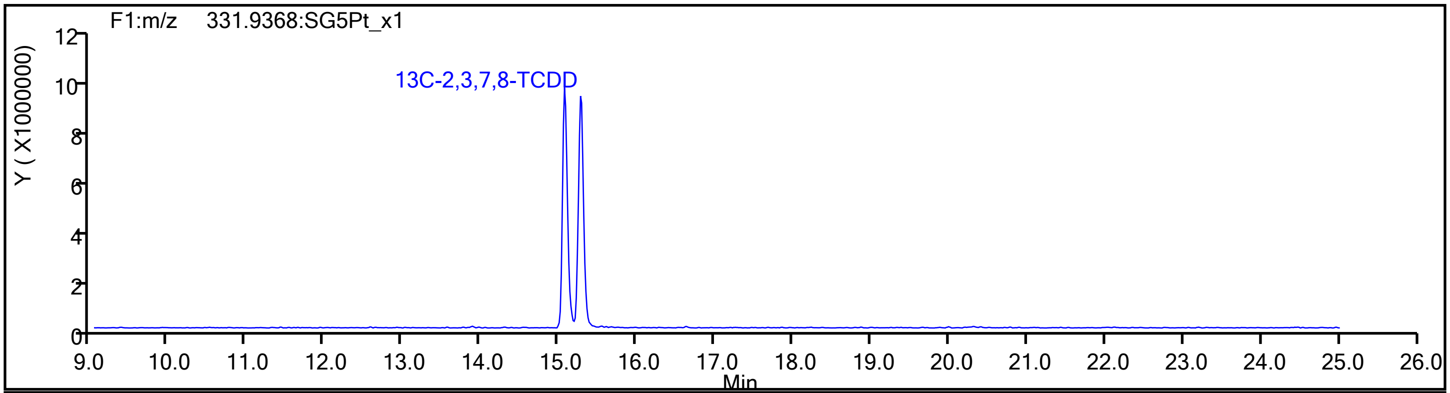

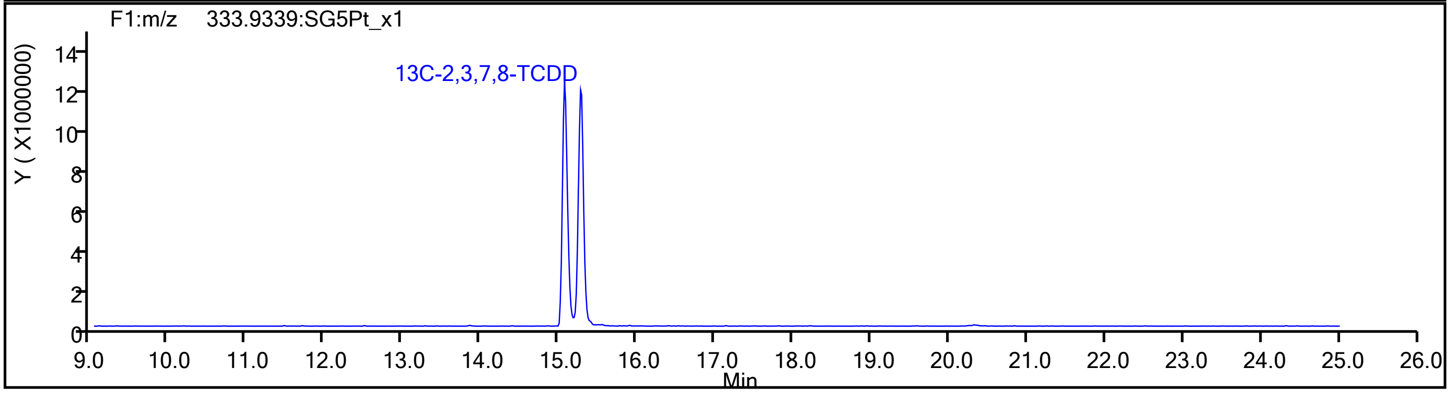

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d		
Injection Date:	27-May-2020 11:55:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

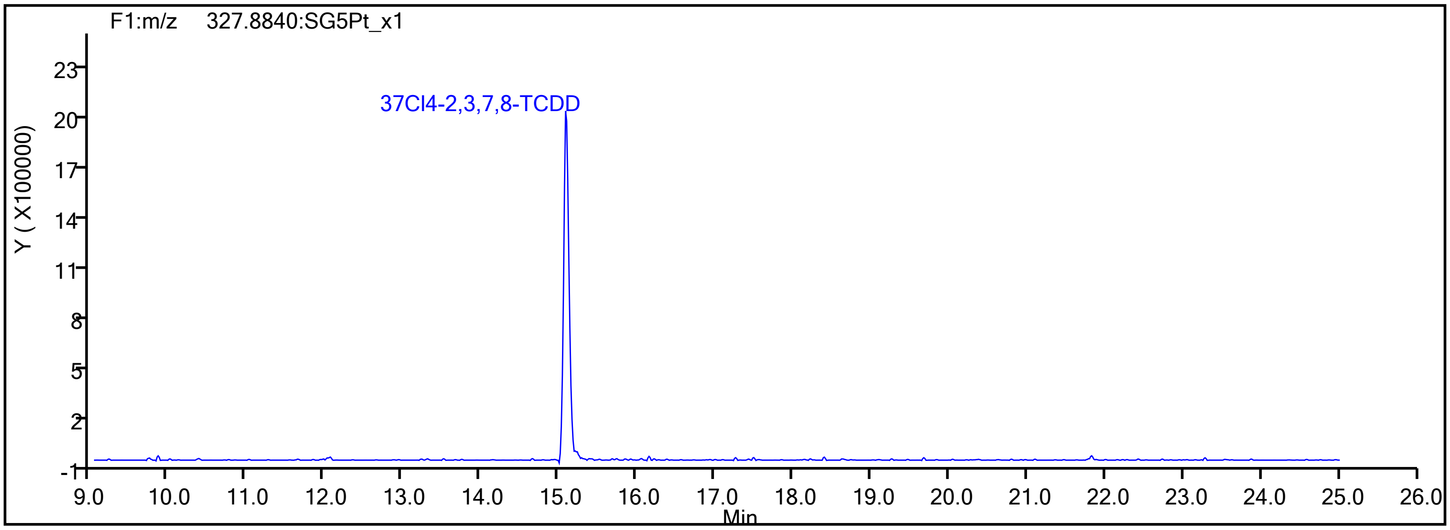

37Cl4-TCDD Standards

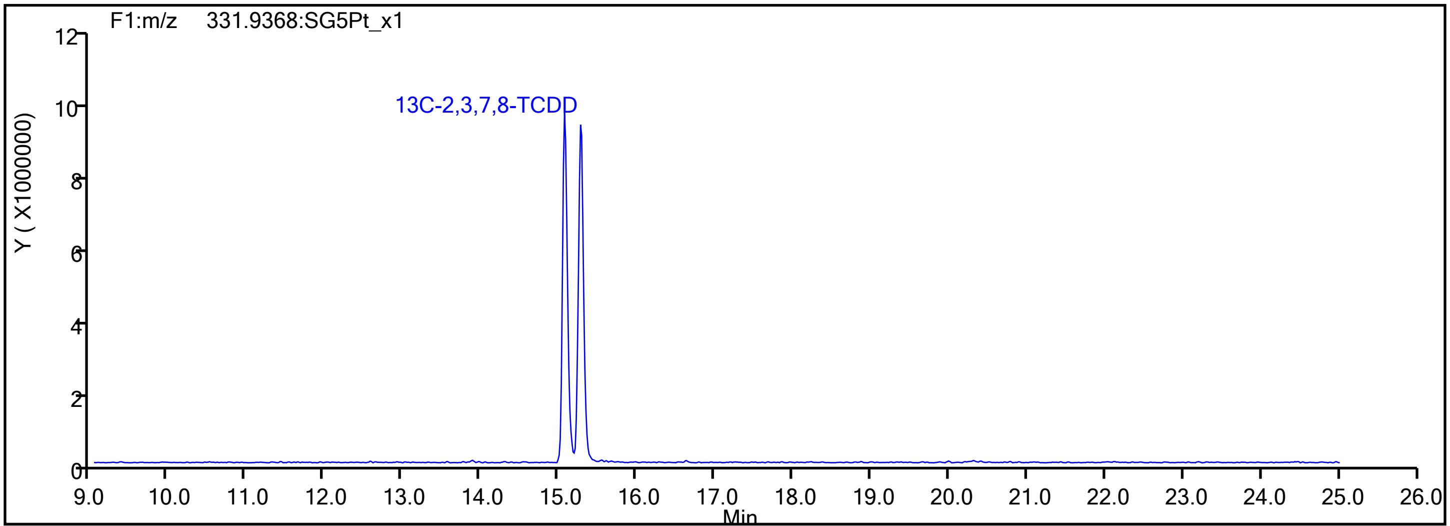

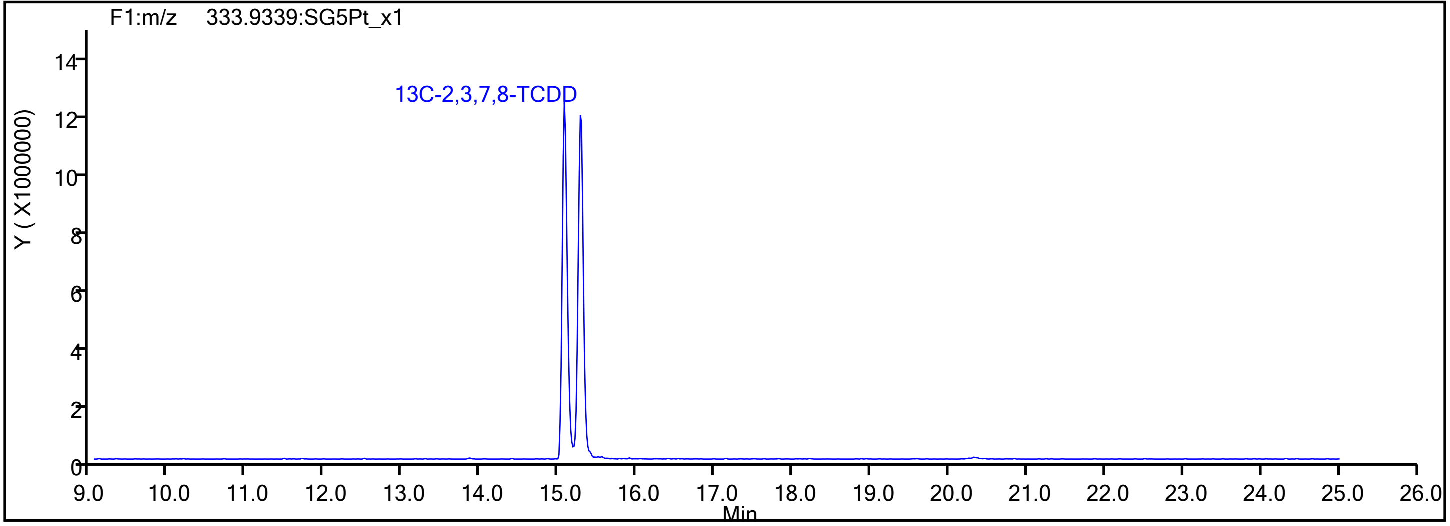

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_005.d		
Injection Date:	27-May-2020 11:55:41	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	5
Column Type:	DB-225	Column Dia:	0.32 mm

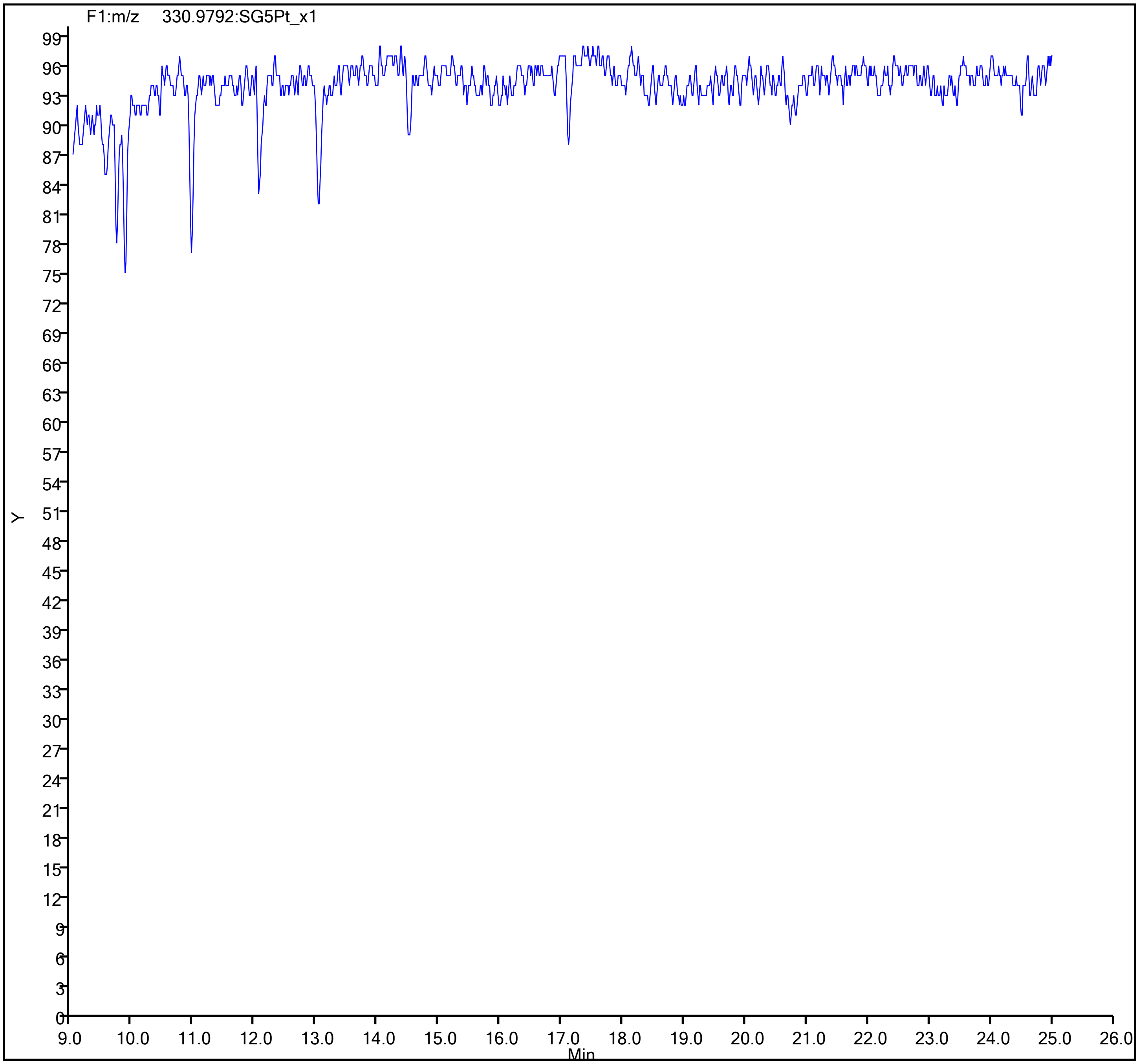

Report Date: 28-May-2020 10:19:26 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d				
Lims ID:	IC 5				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	27-May-2020 12:33:58	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-5 HRDXNL5_00030				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 10:19:23	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: stephensk		Date:	27-May-2020 15:33:05		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.282	135749177	0.78	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.448	206853943	0.79	1.4910	102.2	102.2	0.2200	0.2200	102	
2,3,7,8-TCDF	16.461	86624457	0.78	1.0809	38.7	38.7	0.0454	0.0454	96.86	
D 13C-2,3,7,8-TCDD	15.062	132643690	0.77	0.9832	99.4	99.4	0.2022	0.2022	99.39	
$ 37Cl4-2,3,7,8-TCDD	15.076	51333489		0.9421	40.1	40.1	0.0634	0.0634	100	
2,3,7,8-TCDD	15.090	59176496	0.79	1.2196	36.6	36.6	0.0650	0.0650	91.45	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:26 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d
Lims ID: IC 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 27-May-2020 12:33:58 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-5 HRDXNL5_00030
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-May-2020 10:19:23 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: stephensk Date: 27-May-2020 15:33:05

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.282	15.279	0		59275393	12775846	14546	36365	878		
333.9339	15.268	15.279	-1		76473784	15899785	8255	20637	1926	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.448	16.456	-1	1.076	91572396	18246468	19819	49547	921		
317.9389	16.448	16.456	-1	1.076	115281547	22519596	17804	44510	1265	0.79(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.461	16.467	0	1.001	37918648	6949005	3444	8610	2018		
305.8987	16.461	16.467	0	1.001	48705809	8998304	4557	11392	1975	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.062	15.071	0	0.986	57517832	12635187	14546	36365	869		
333.9339	15.062	15.071	0	0.986	75125858	16707154	8255	20637	2024	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.076	15.084	0	0.987	51333489	10627323	6848	17120	1552		
2,3,7,8-TCDD											
319.8965	15.090	15.087	0	1.002	26069410	5369566	5343	13357	1005		
321.8936	15.090	15.087	0	1.002	33107086	6835985	3967	9917	1723	0.79(0.65-0.89)	

Reagents:

HRDXNL5_00030 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d		
Injection Date:	27-May-2020 12:33:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

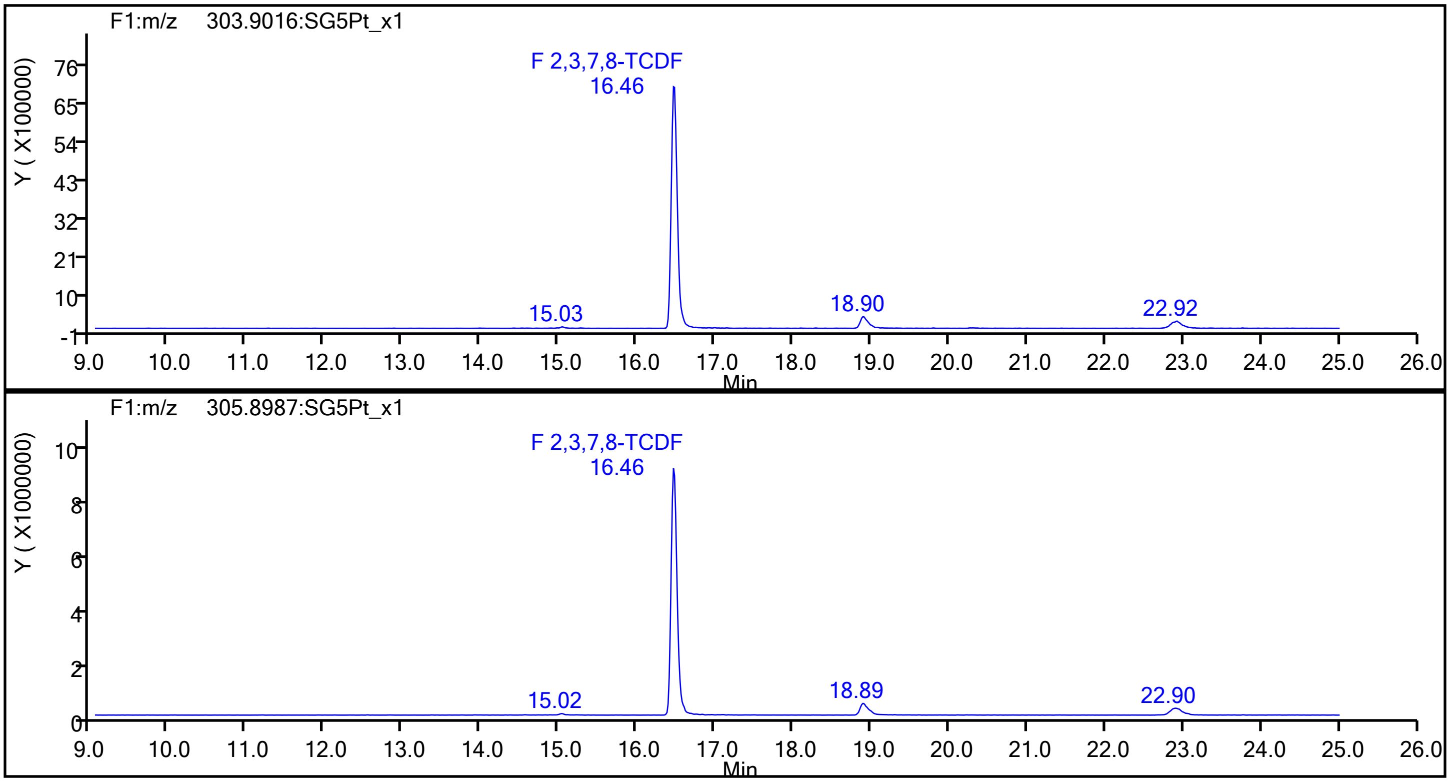

TCDF Standards

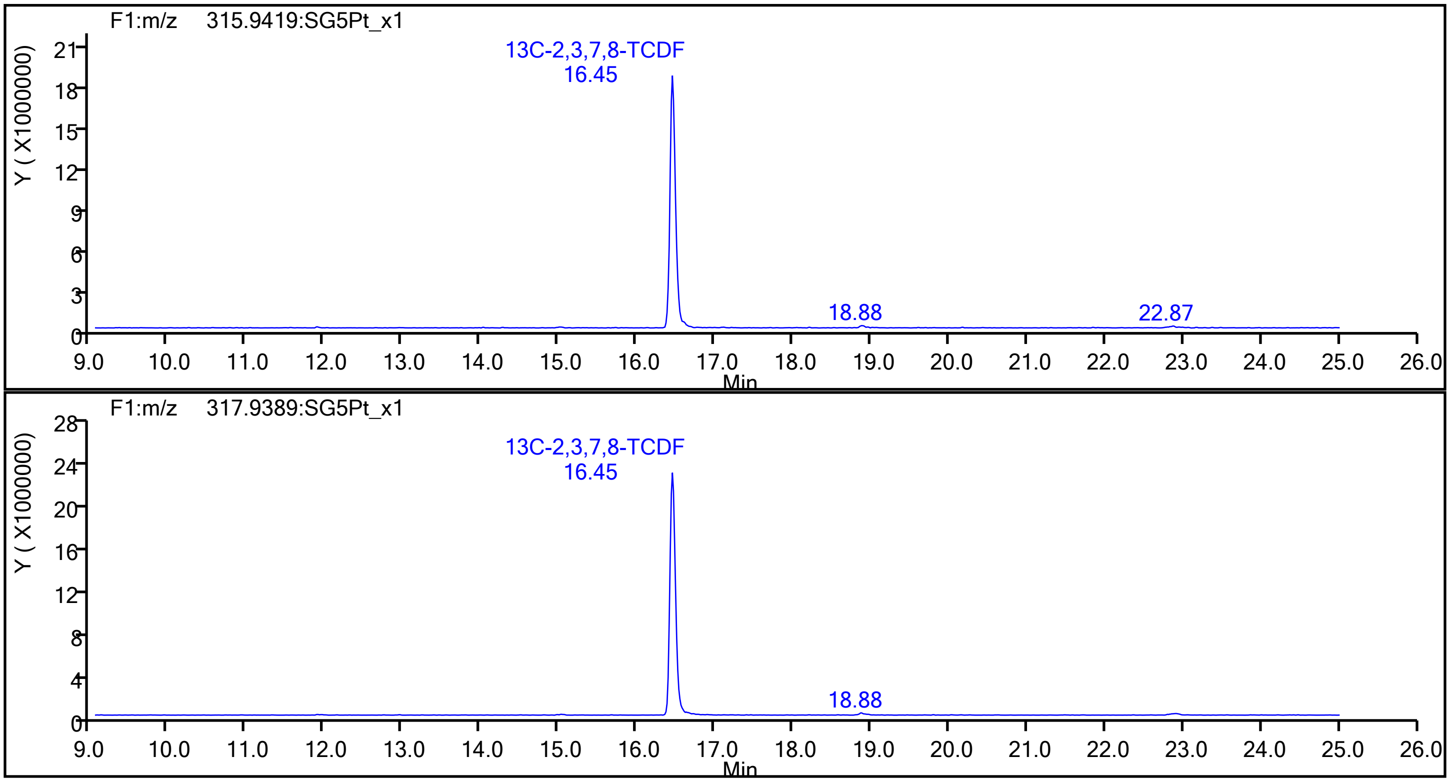

Report Date: 28-May-2020 10:19:26 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d		
Injection Date:	27-May-2020 12:33:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

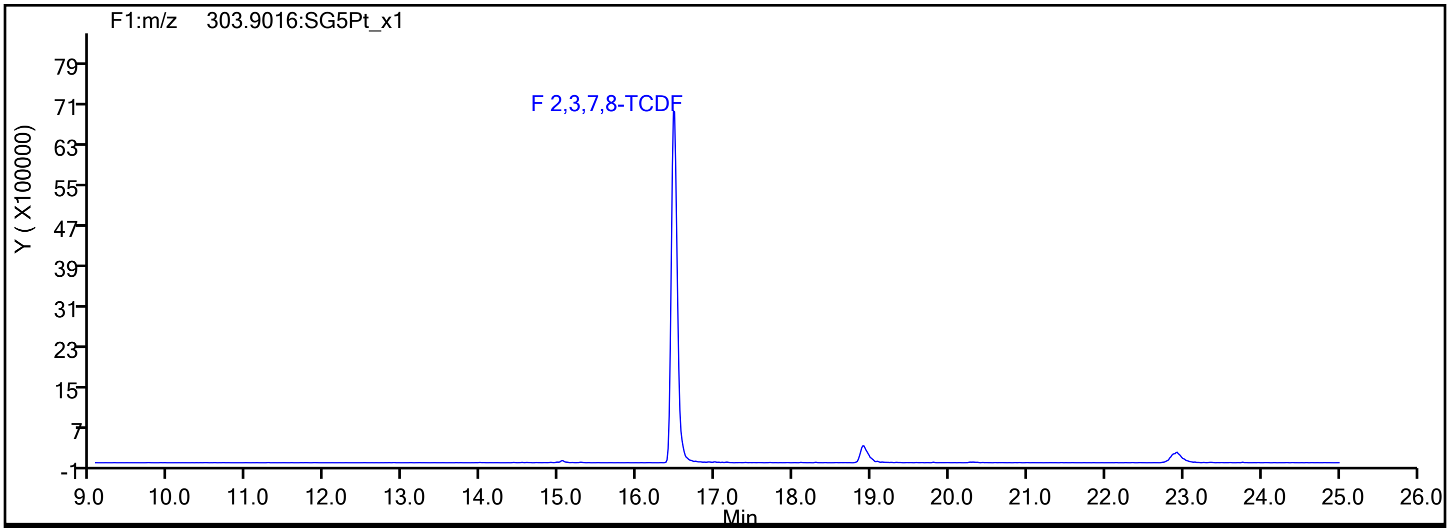

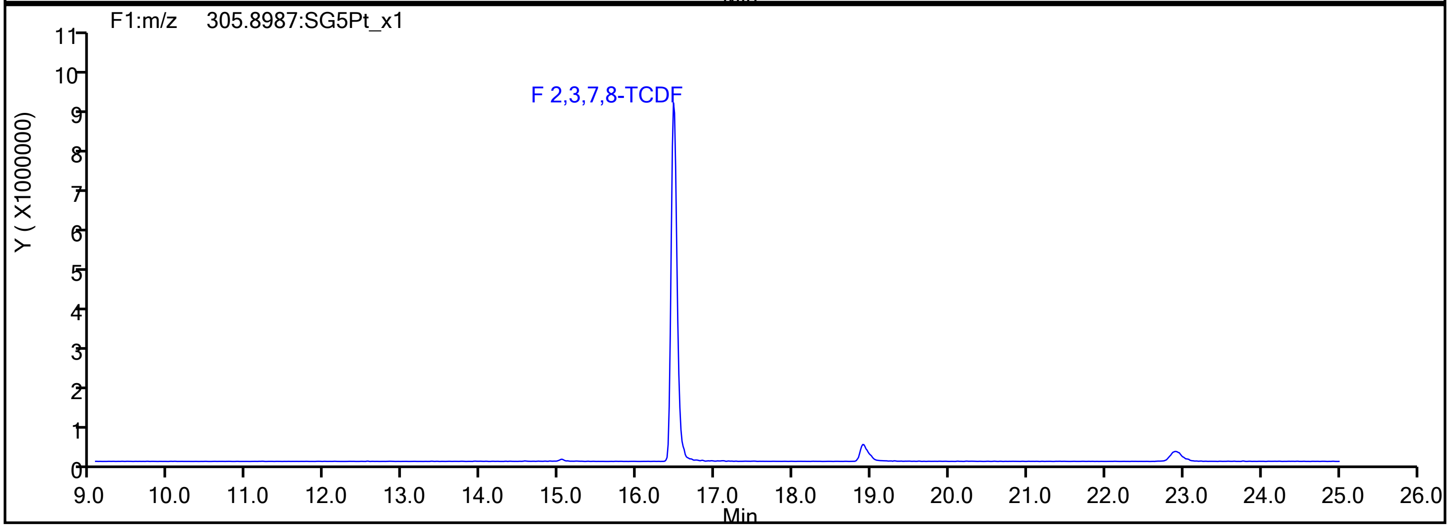

TCDF Interference Mass

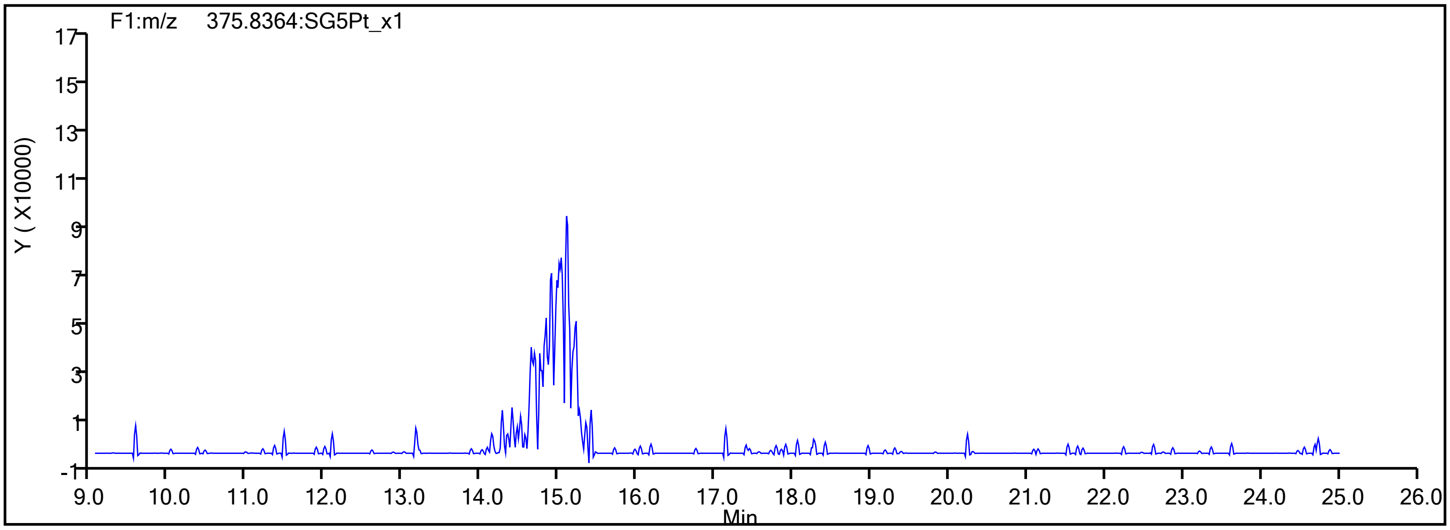

Report Date: 28-May-2020 10:19:26 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d		
Injection Date:	27-May-2020 12:33:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

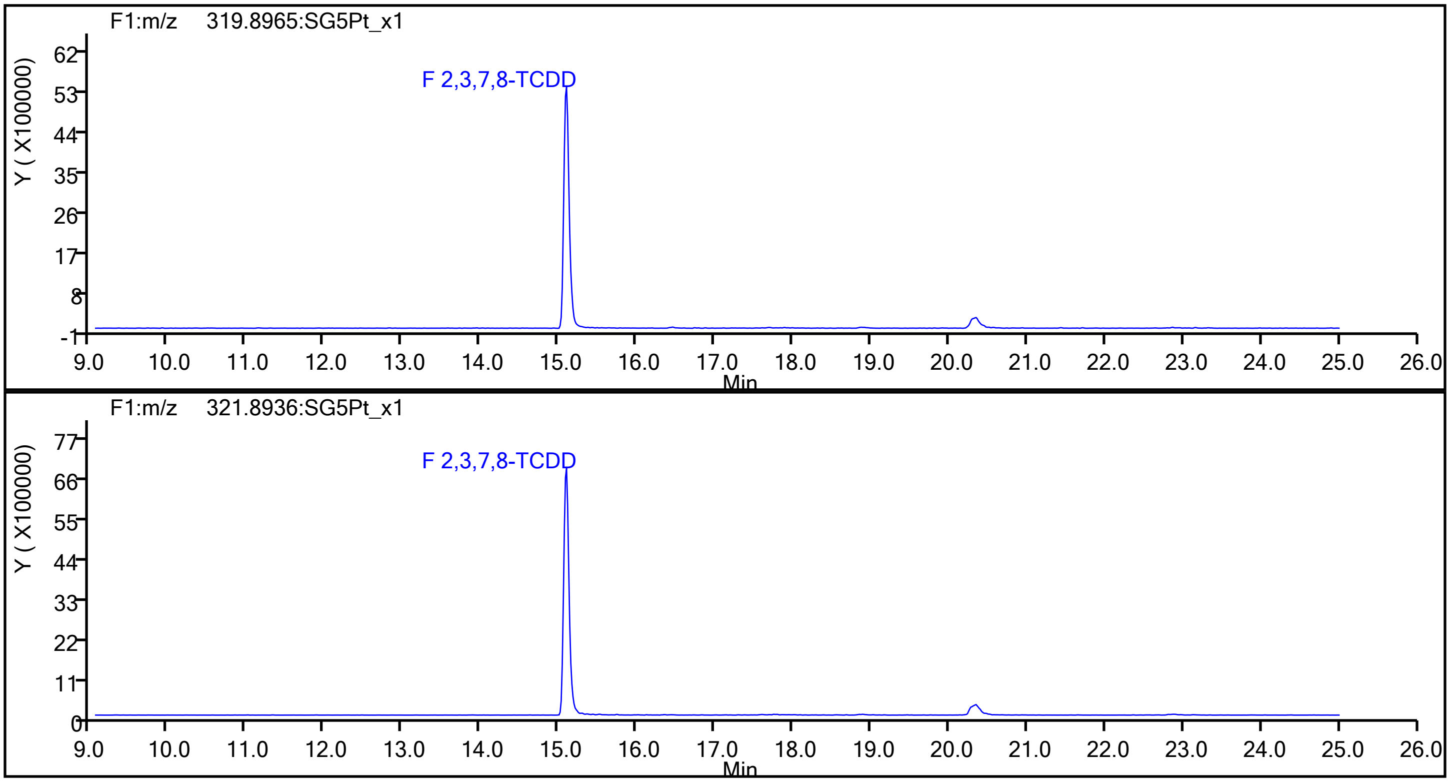

TCDD Standards

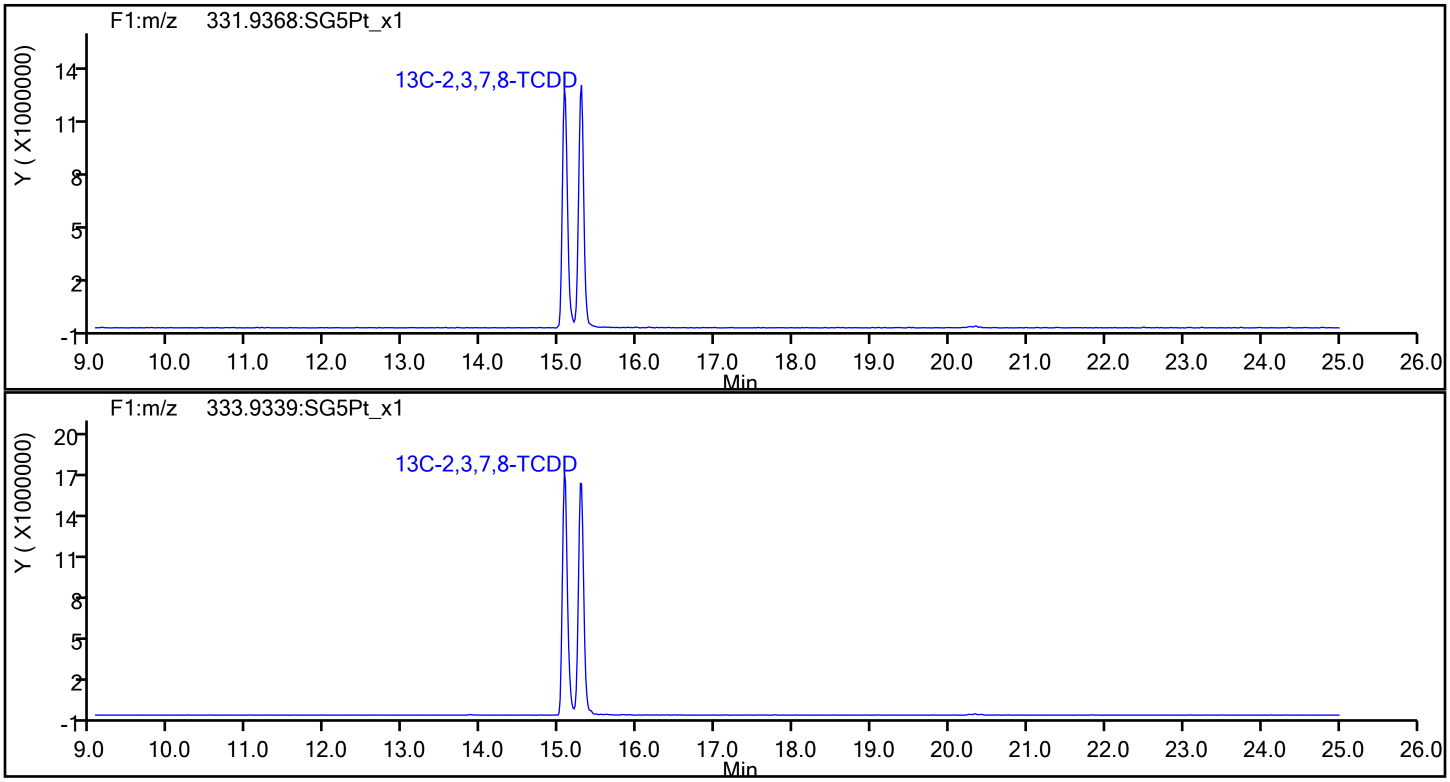

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d		
Injection Date:	27-May-2020 12:33:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

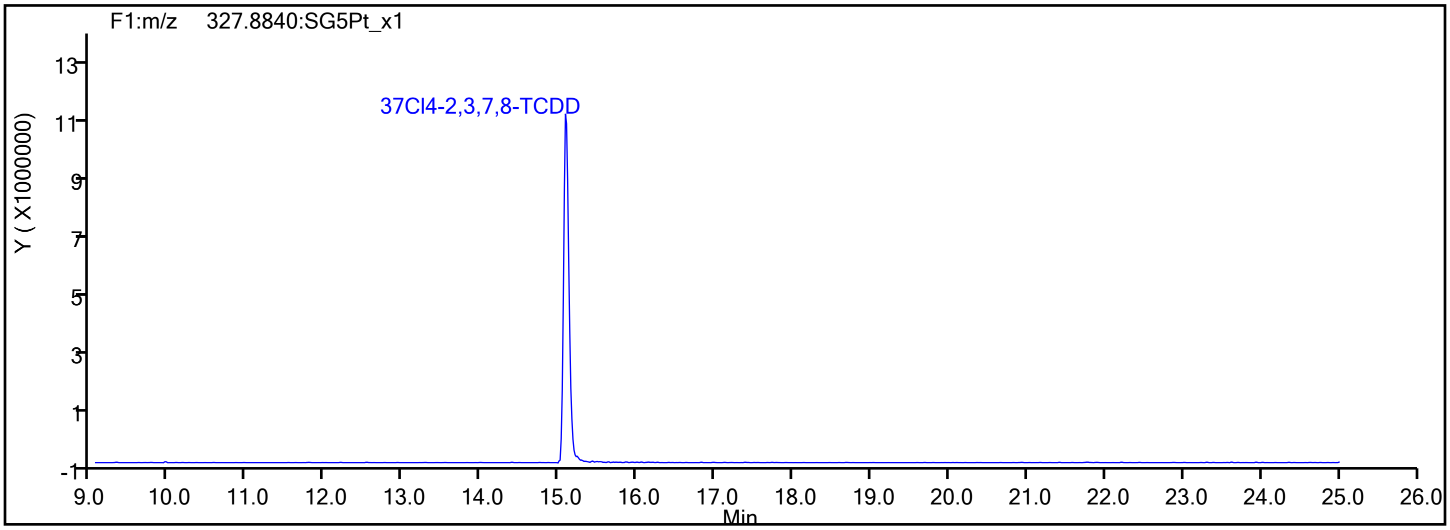

37Cl4-TCDD Standards

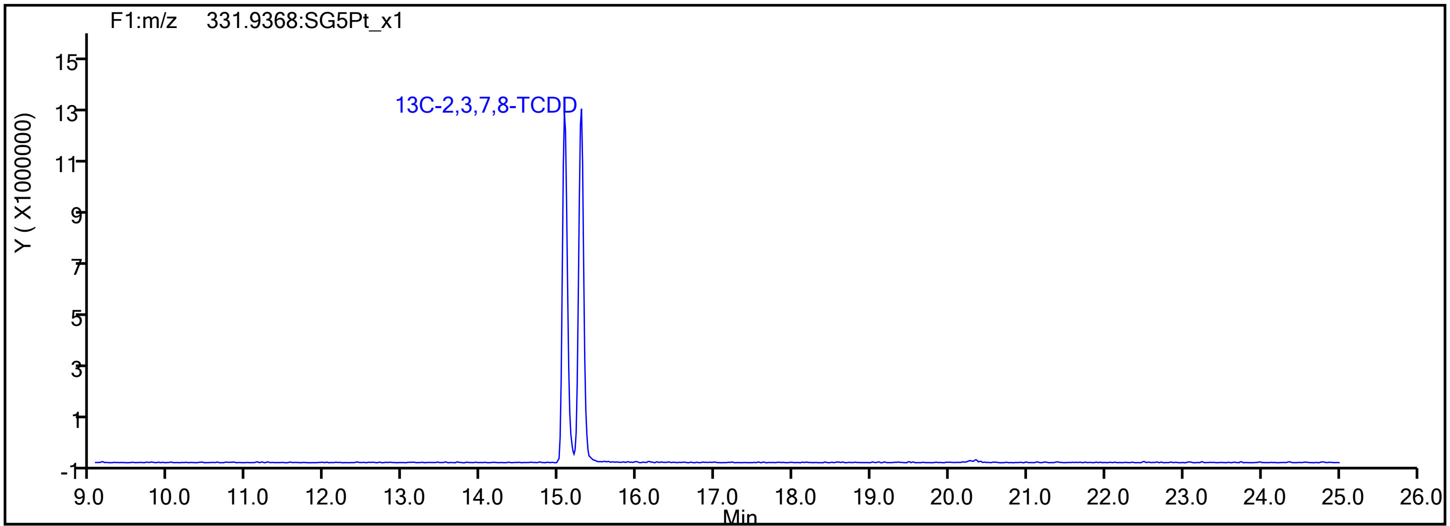

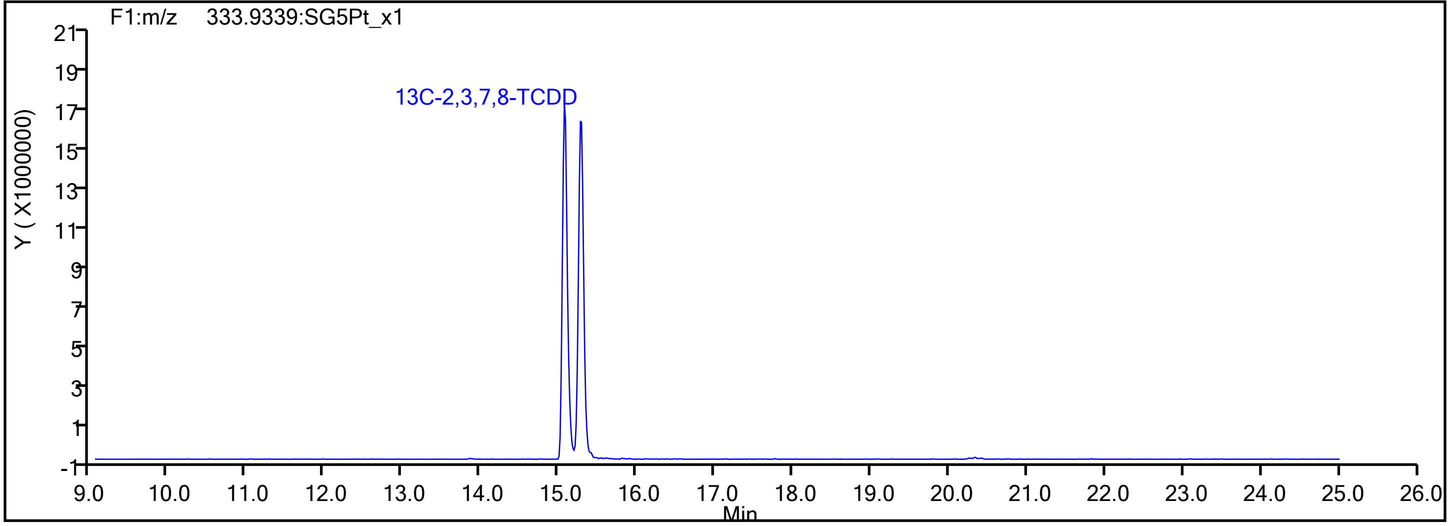

Report Date: 28-May-2020 10:19:26 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_006.d		
Injection Date:	27-May-2020 12:33:58	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	6
Column Type:	DB-225	Column Dia:	0.32 mm

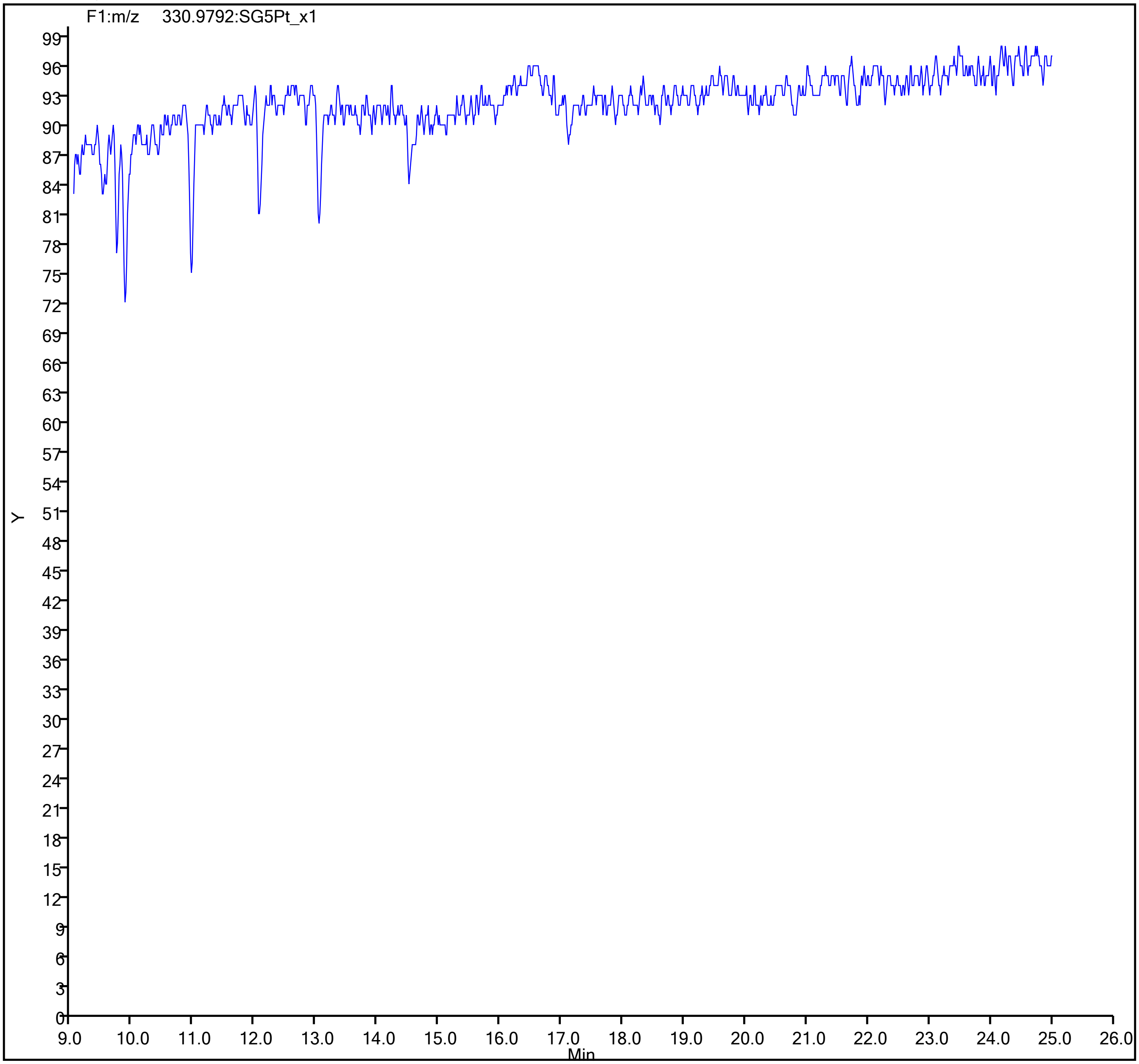

Report Date: 28-May-2020 10:19:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Lims ID:	IC 6				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	27-May-2020 13:12:17	ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CS-6 HRDXNL6_00026				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 10:19:27	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				

First Level Reviewer: stephensk Date: 27-May-2020 15:33:44

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.294	130998238	0.75	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.460	190940098	0.82	1.4910	97.8	97.8	0.2009	0.2009	97.76	
2,3,7,8-TCDF	16.474	403659671	0.78	1.0809	195.6	195.6	0.1405	0.1405	97.79	
D 13C-2,3,7,8-TCDD	15.074	127323363	0.77	0.9832	98.9	98.9	0.2377	0.2377	98.86	
$ 37Cl4-2,3,7,8-TCDD	15.088	258622089		0.9421	209.6	209.6	0.2070	0.2070	105	
2,3,7,8-TCDD	15.088	286999130	0.78	1.2196	184.8	184.8	0.1244	0.1244	92.41	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 27-May-2020 13:12:17 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CS-6 HRDXNL6_00026
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-May-2020 10:19:27 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: stephensk Date: 27-May-2020 15:33:44

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.294	15.279	1		56227623	11937665	15166	37915	787		
333.9339	15.294	15.279	1		74770615	15770841	10733	26832	1469	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.460	16.456	0	1.076	85761977	16508692	19114	47785	864		
317.9389	16.460	16.456	0	1.076	105178121	20963302	14088	35220	1488	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.474	16.467	0	1.001	177410007	33778453	7374	18435	4581		
305.8987	16.474	16.467	0	1.001	226249664	42394084	15387	38467	2755	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.074	15.071	0	0.986	55369461	12977160	15166	37915	856		
333.9339	15.074	15.071	0	0.986	71953902	16544893	10733	26832	1541	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.088	15.084	0	0.987	258622089	54963721	21618	54045	2542		
2,3,7,8-TCDD											
319.8965	15.088	15.087	0	1.001	126029830	26814793	10249	25622	2616		
321.8936	15.088	15.087	0	1.001	160969300	34465463	7669	19172	4494	0.78(0.65-0.89)	

Reagents:

HRDXNL6_00026 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 10:19:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d		
Injection Date:	27-May-2020 13:12:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

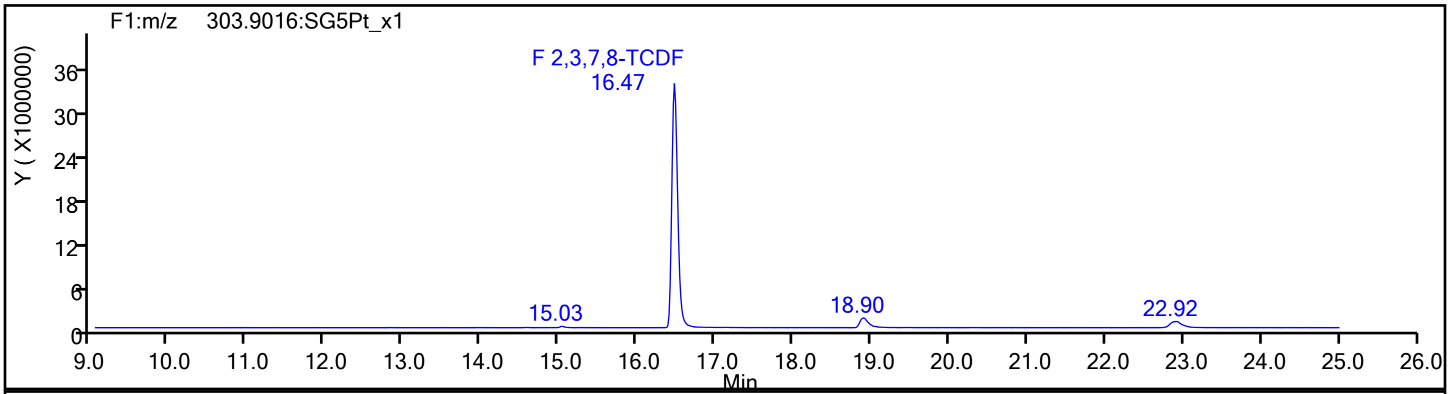

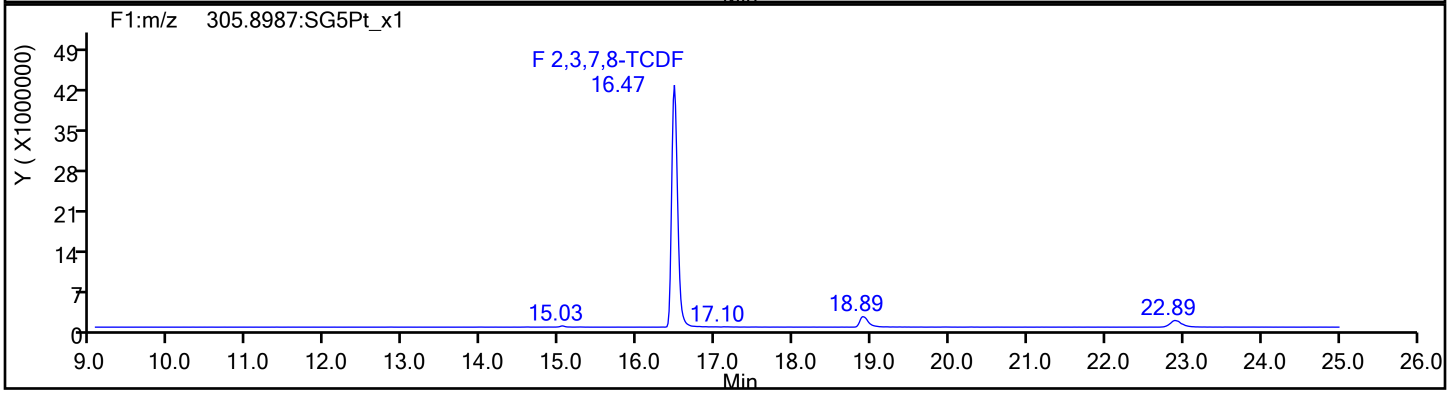

TCDF Standards

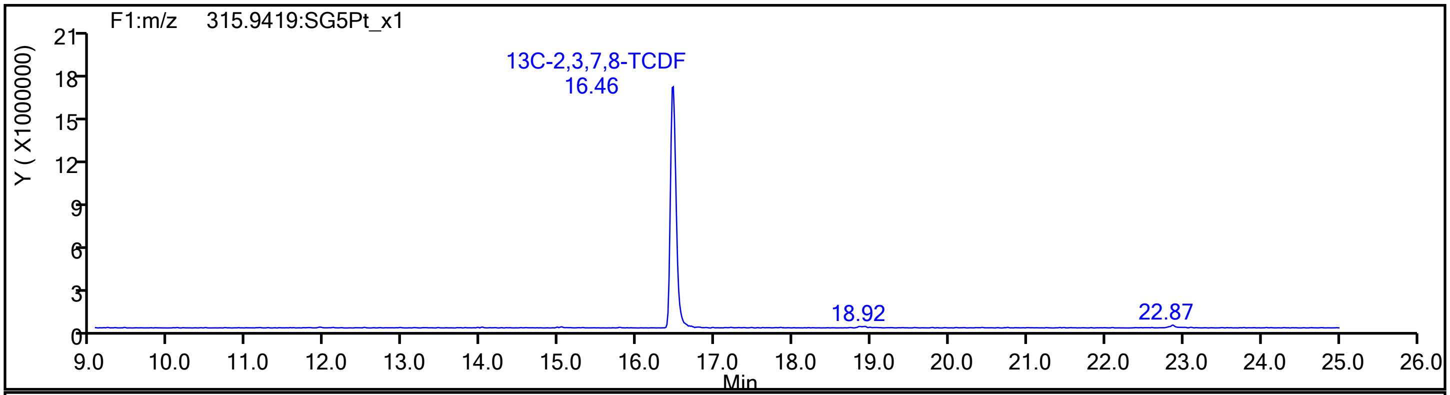

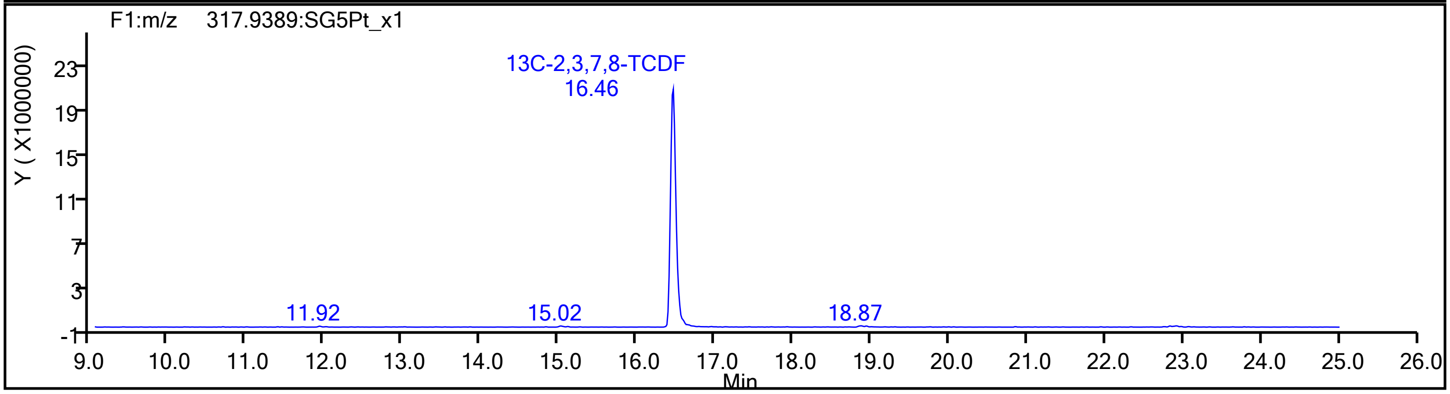

Report Date: 28-May-2020 10:19:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Injection Date:	27-May-2020 13:12:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

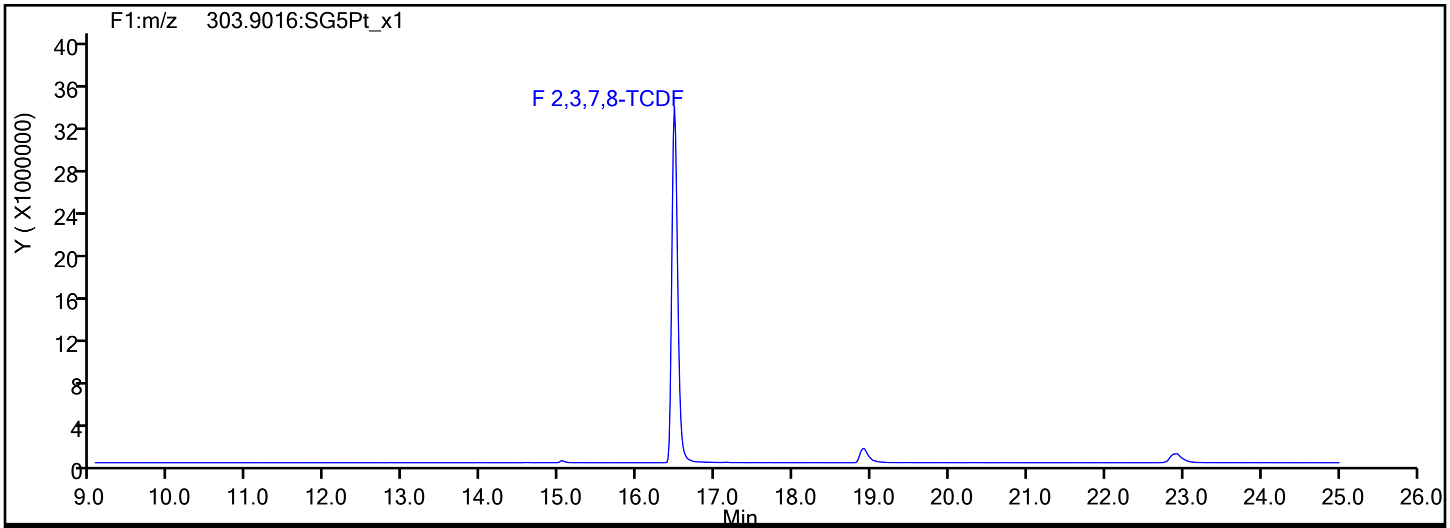

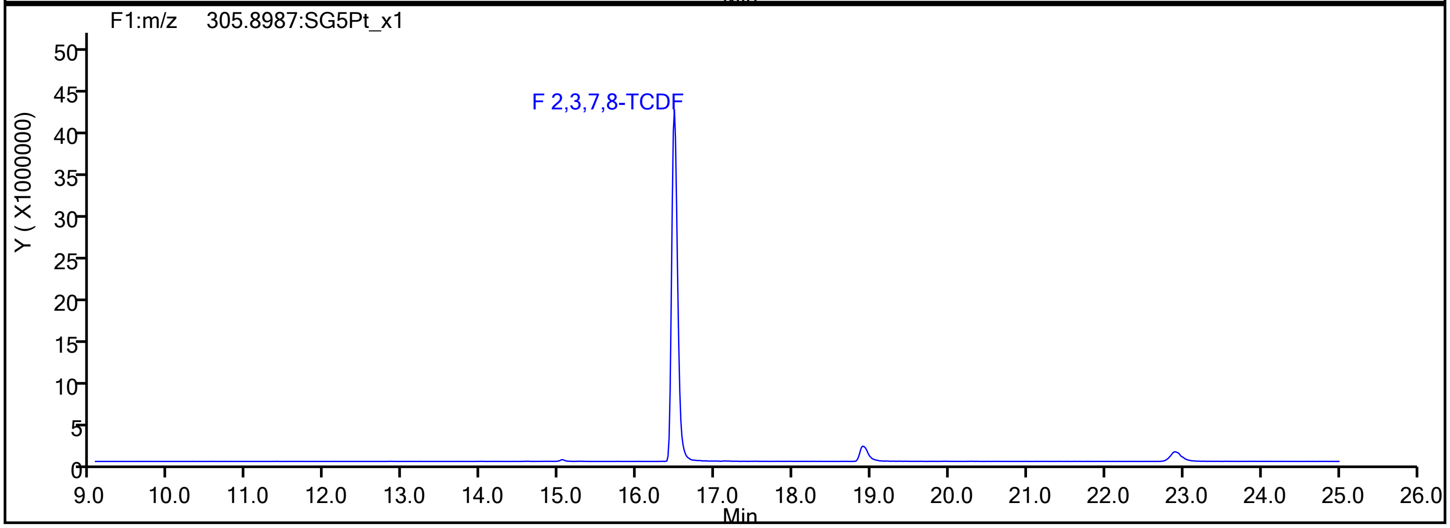

TCDF Interference Mass

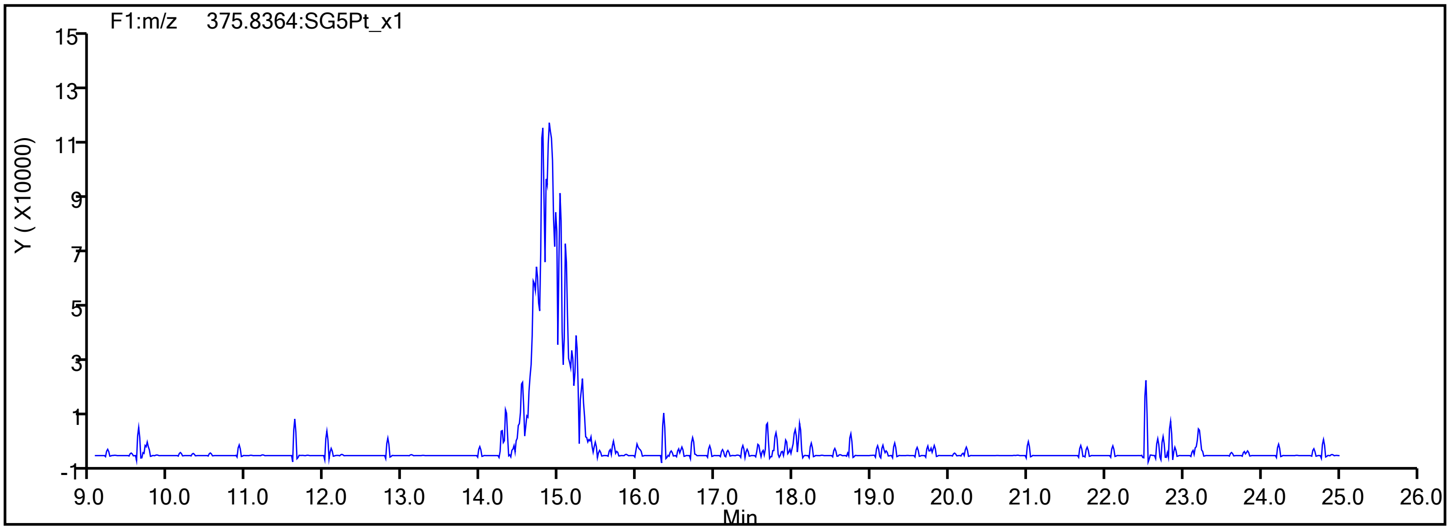

Report Date: 28-May-2020 10:19:30 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d
Injection Date: 27-May-2020 13:12:17 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959 Sample Line#: 7
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

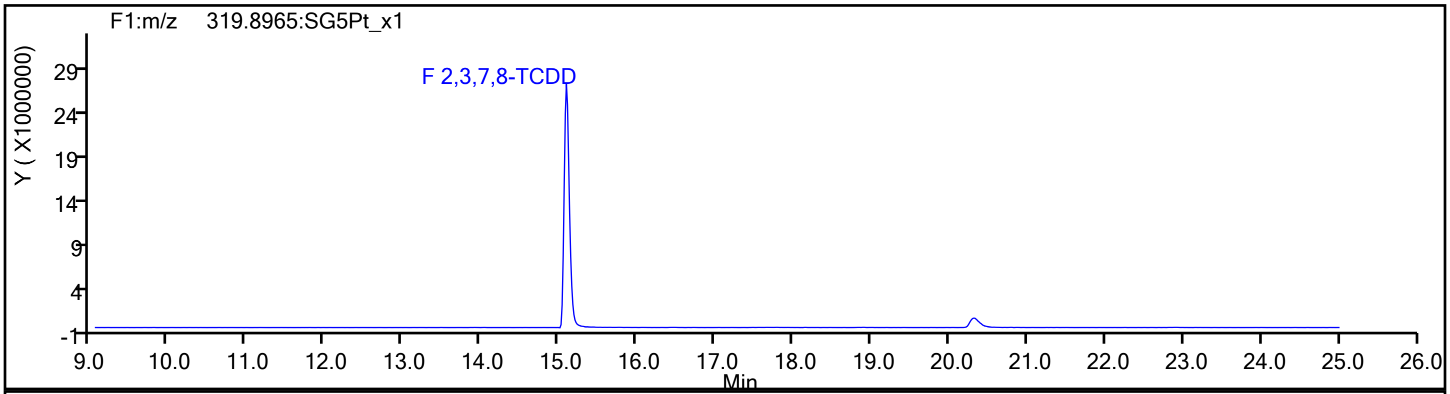

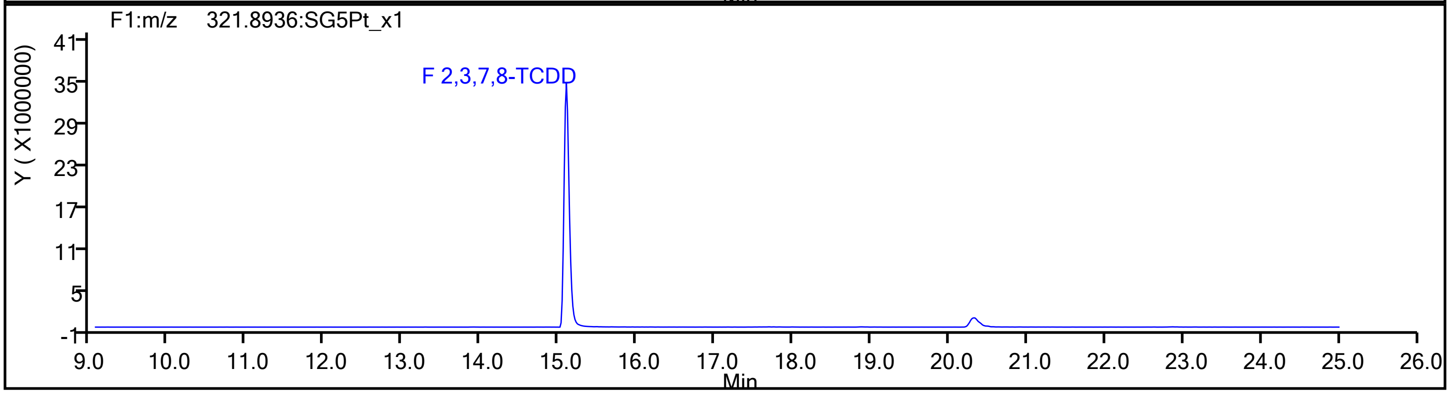

TCDD Standards

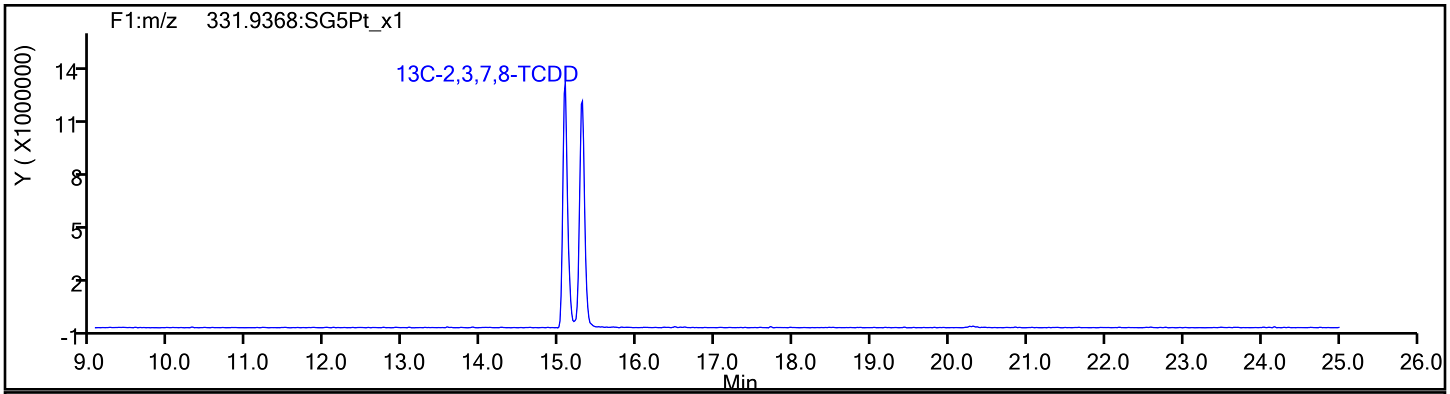

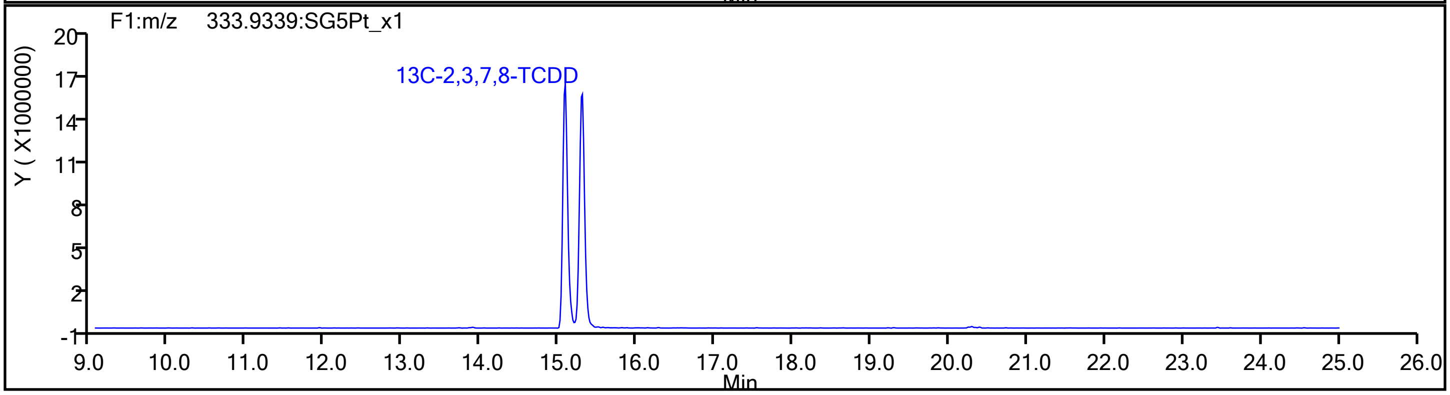

Report Date: 28-May-2020 10:19:30 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d		
Injection Date:	27-May-2020 13:12:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

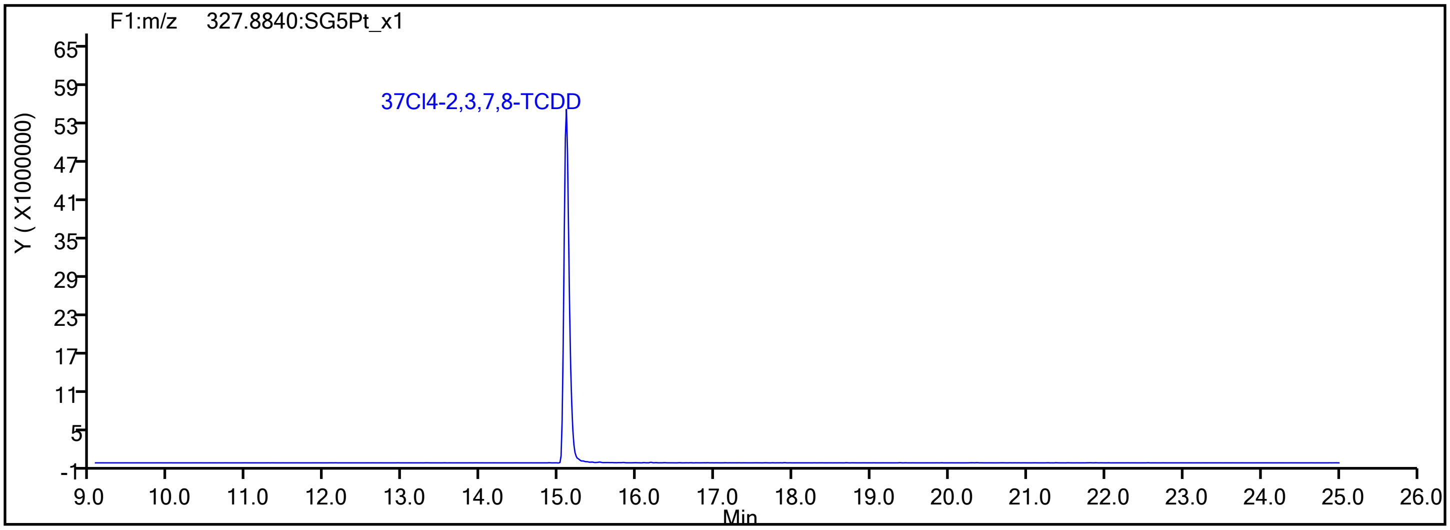

37Cl4-TCDD Standards

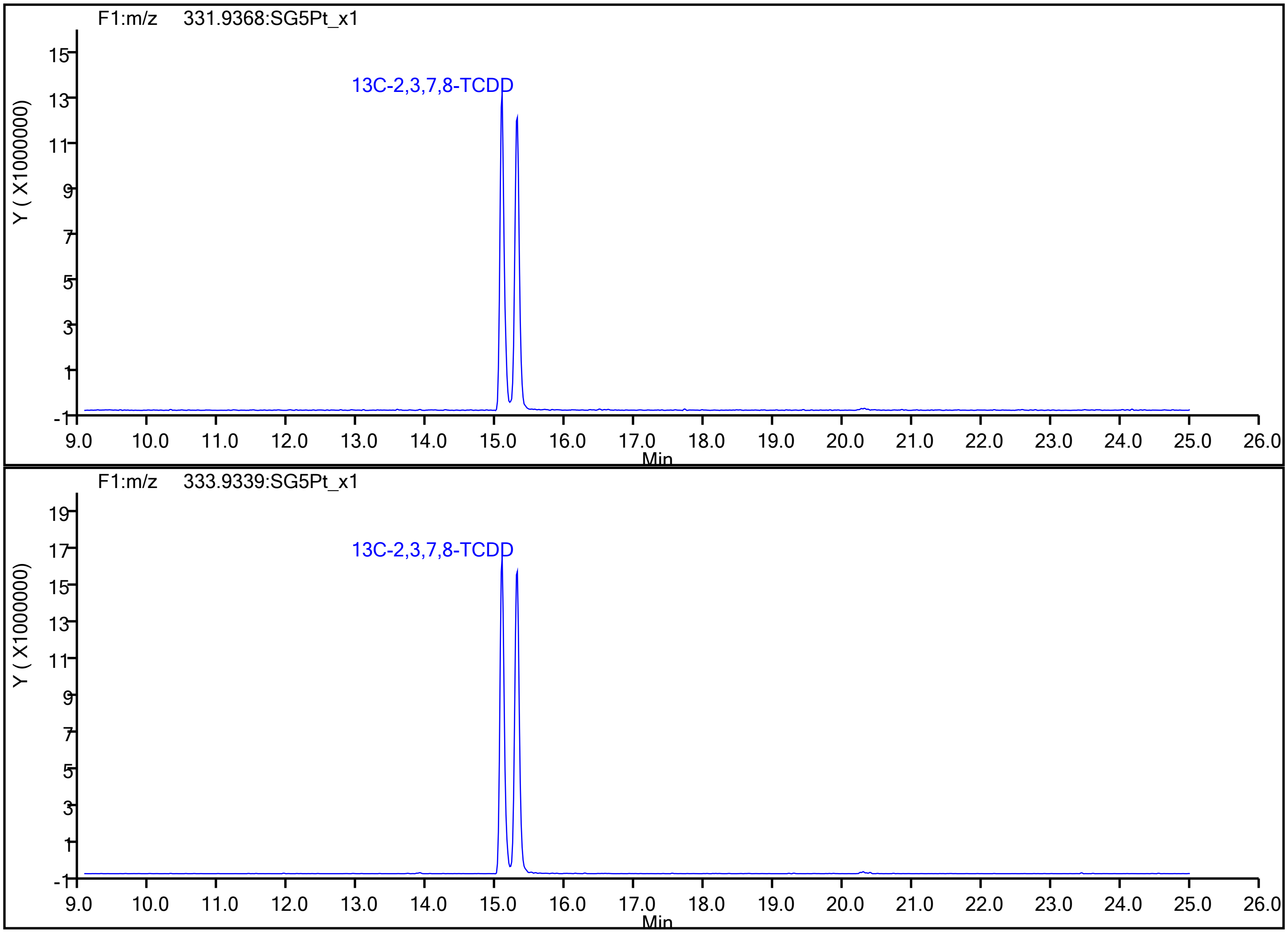

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d		
Injection Date:	27-May-2020 13:12:17	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	7
Column Type:	DB-225	Column Dia:	0.32 mm

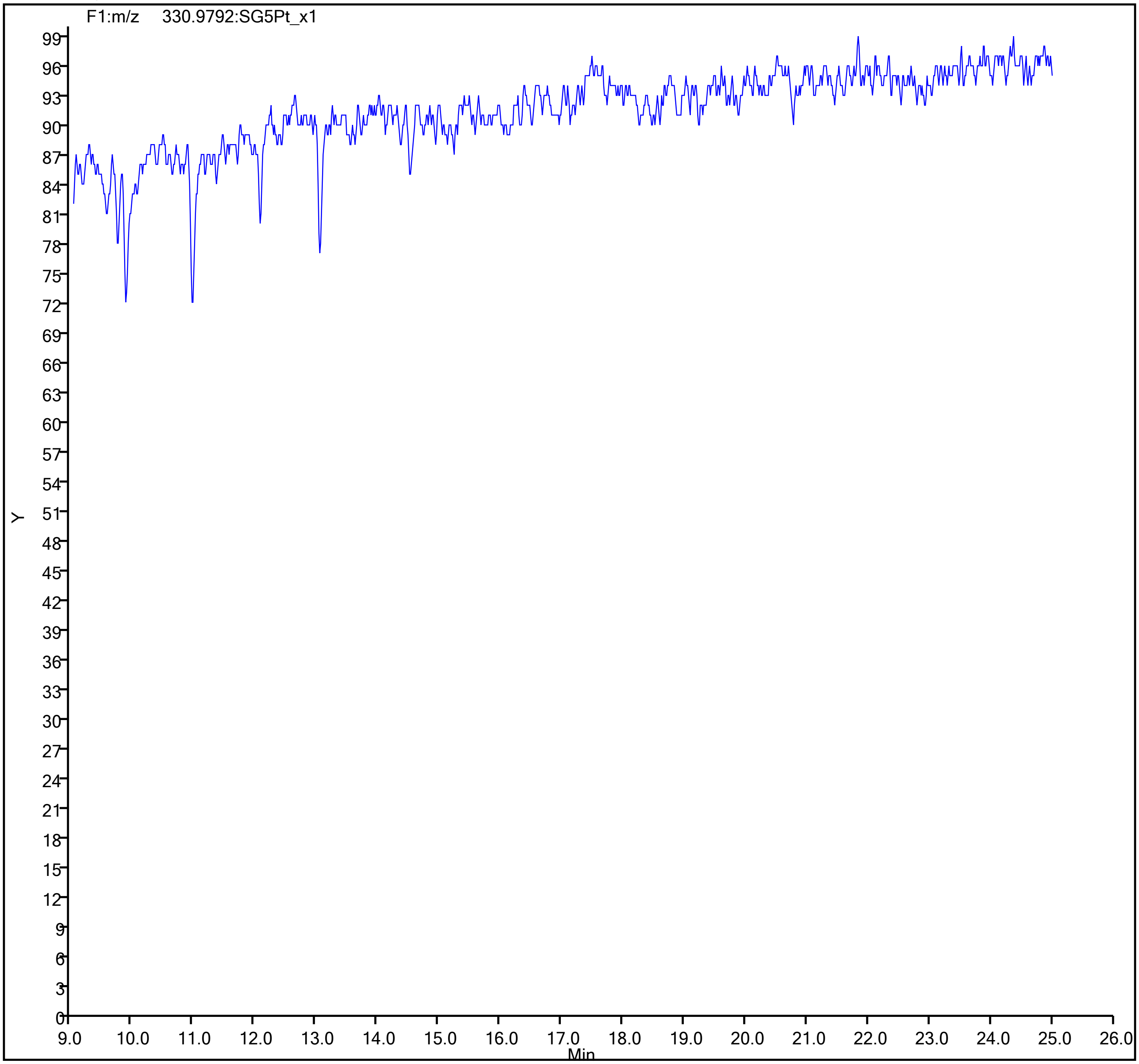

Calibration

/ 2,3,7,8-TCDD

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.22

Error Coefficients

Standard Error:	147000000
Relative Standard Error:	16.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.962

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-380959/3	0.5	0.783273	100.0	96417698.0	1.566546	Y
2	IC 320-380959/4	2.0	2.39011	100.0	97576683.0	1.195055	Y
3	IC 320-380959/5	10.0	10.93825	100.0	96367123.0	1.093825	Y
4	IC 320-380959/6	40.0	44.613126	100.0	132643690.0	1.115328	Y
5	IC 320-380959/7	200.0	225.409637	100.0	127323363.0	1.127048	Y

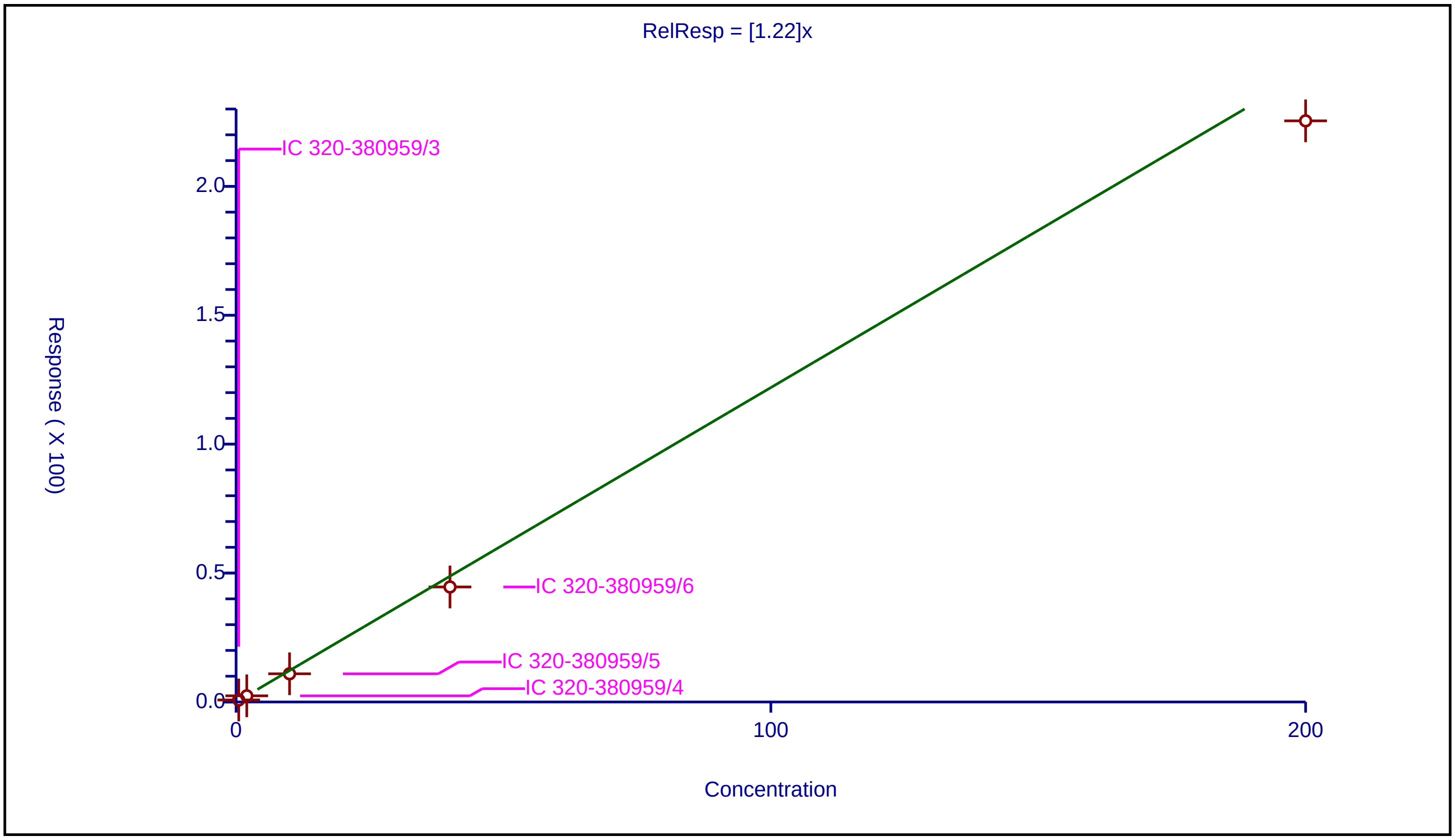

Calibration

/ 2,3,7,8-TCDF

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	1.081

Error Coefficients

Standard Error:	207000000
Relative Standard Error:	7.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-380959/3	0.5	0.605303	100.0	144121939.0	1.210607	Y
2	IC 320-380959/4	2.0	2.180575	100.0	153826092.0	1.090288	Y
3	IC 320-380959/5	10.0	9.996606	100.0	139580721.0	0.999661	Y
4	IC 320-380959/6	40.0	41.877112	100.0	206853943.0	1.046928	Y
5	IC 320-380959/7	200.0	211.406444	100.0	190940098.0	1.057032	Y

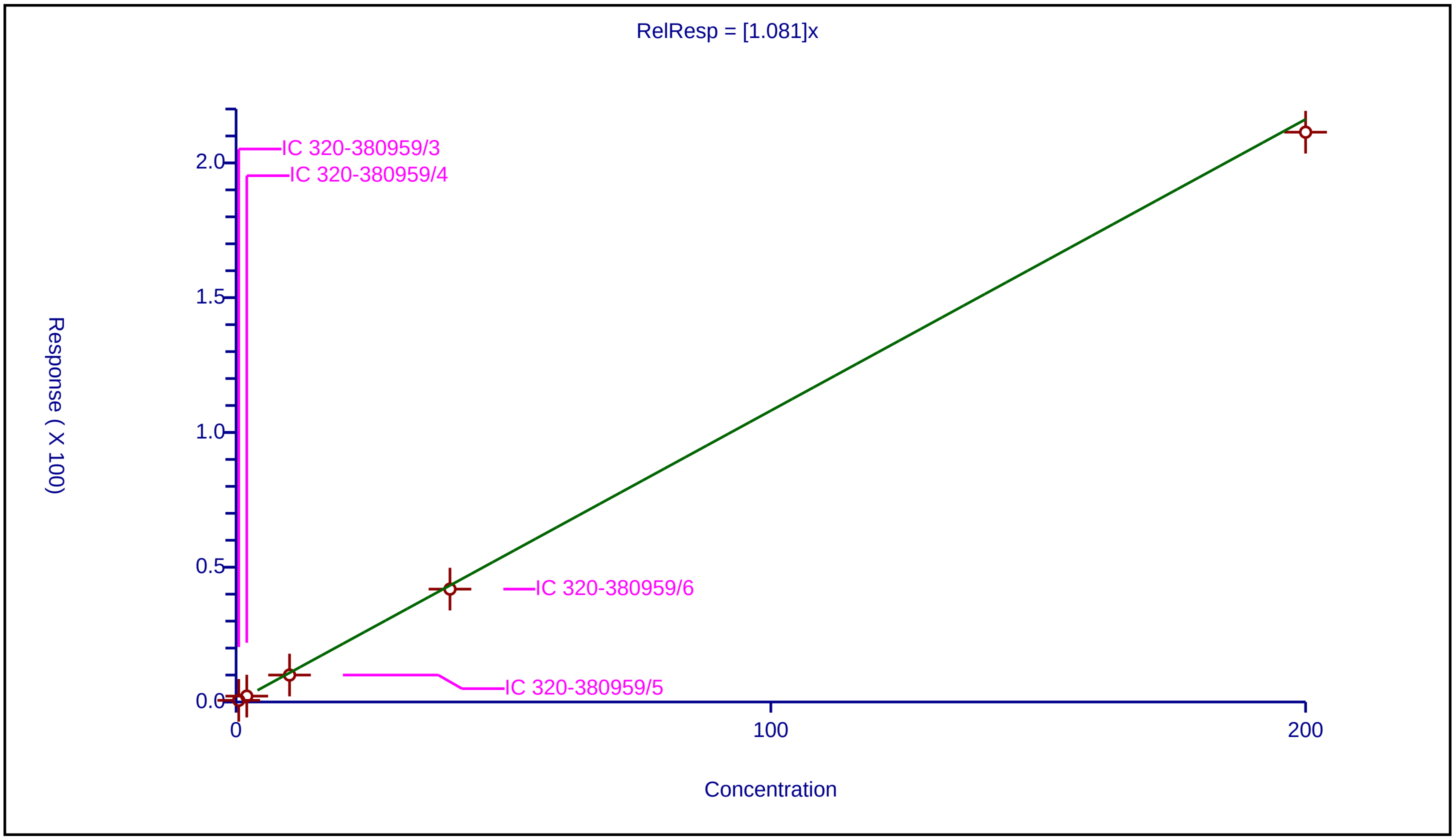

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients

Intercept:	0
Slope:	0.9421

Error Coefficients

Standard Error:	132000000
Relative Standard Error:	6.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 320-380959/3	0.5	0.430902	100.0	100992700.0	0.861805	Y
2	IC 320-380959/4	2.0	1.814648	100.0	94479799.0	0.907324	Y
3	IC 320-380959/5	10.0	10.086482	100.0	98404536.0	1.008648	Y
4	IC 320-380959/6	40.0	37.814954	100.0	135749177.0	0.945374	Y
5	IC 320-380959/7	200.0	197.424097	100.0	130998238.0	0.98712	Y

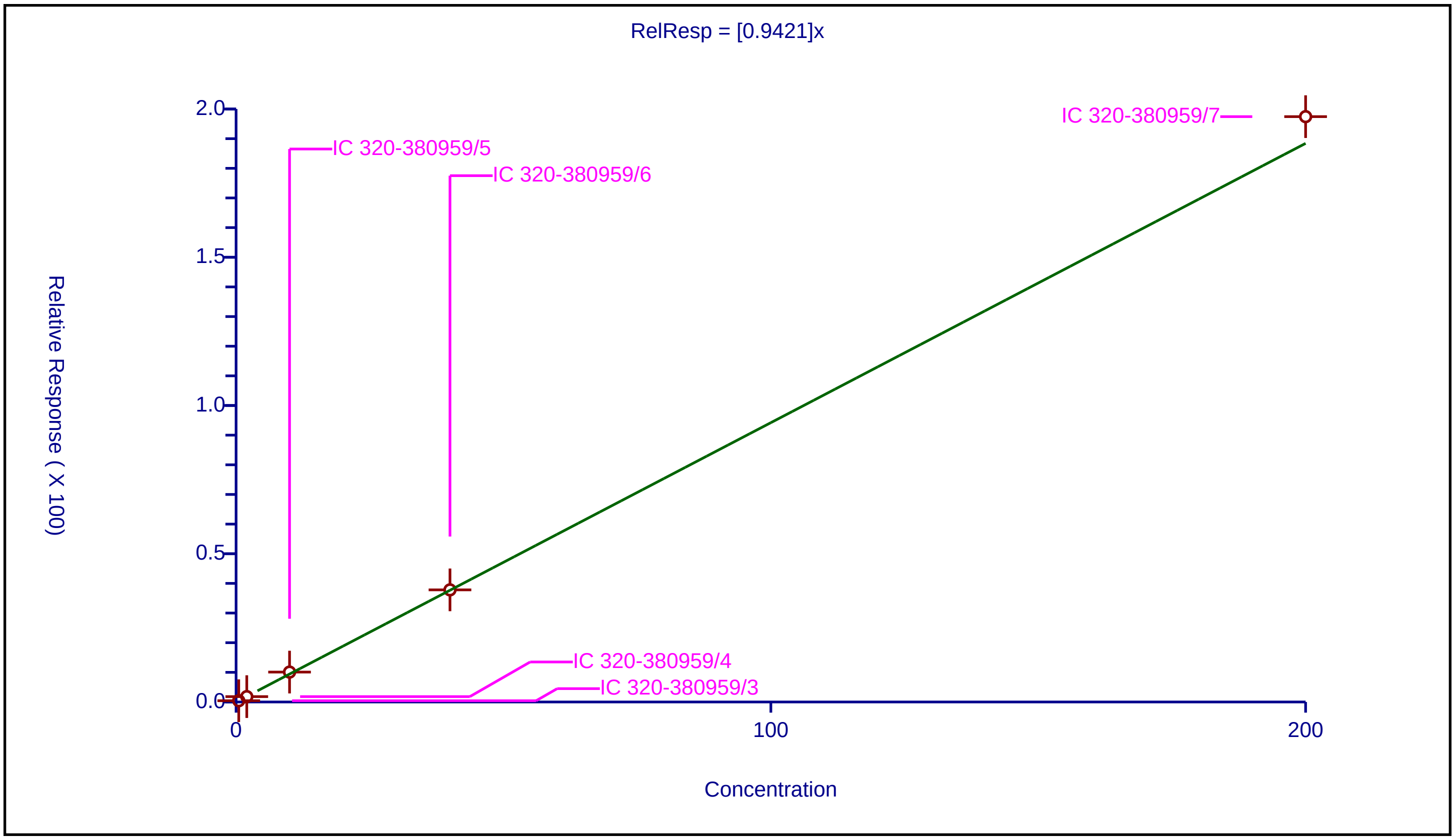

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Lab Sample ID (1): WDM 320-362307/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 03/05/2020 15:30

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.23	17

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d				
Injection Date:	05-Mar-2020 15:30:00	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 308926
H (Peak Height) = 1814777

%R = 17 <= 25
Passed

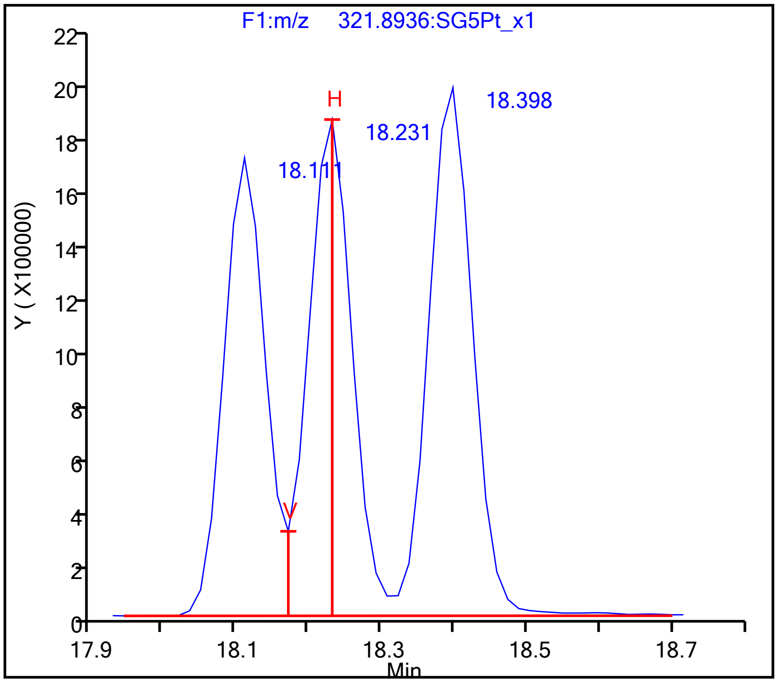

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Lab Sample ID (1): CPS 320-380959/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 05/27/2020 09:22

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.48	23

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d				
Injection Date:	27-May-2020 09:22:29	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2301074
H (Peak Height) = 10092237

%R = 23 <= 25
Passed

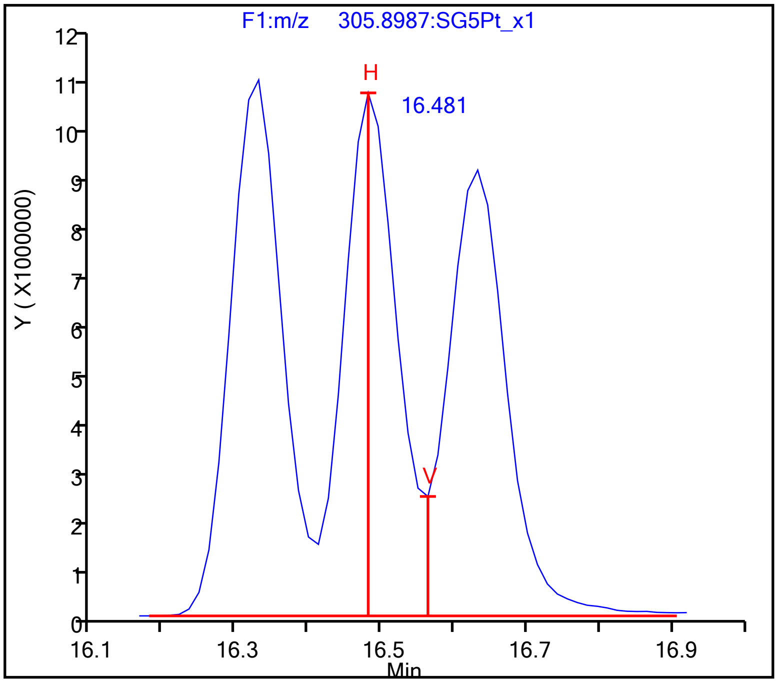

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d				
Injection Date:	27-May-2020 09:22:29	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Lab Sample ID (1): WDM 320-389621/1 Instrument ID (1): 10D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 06/25/2020 17:43

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	17.81	24

FORM VI 1613B

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d				
Injection Date:	25-Jun-2020 17:43:00	Instrument ID:	10D5		
Lims ID:	WDM				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-5 (0.32 mm)		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		

2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 489644
H (Peak Height) = 2065226

%R = 24 <= 25
Passed

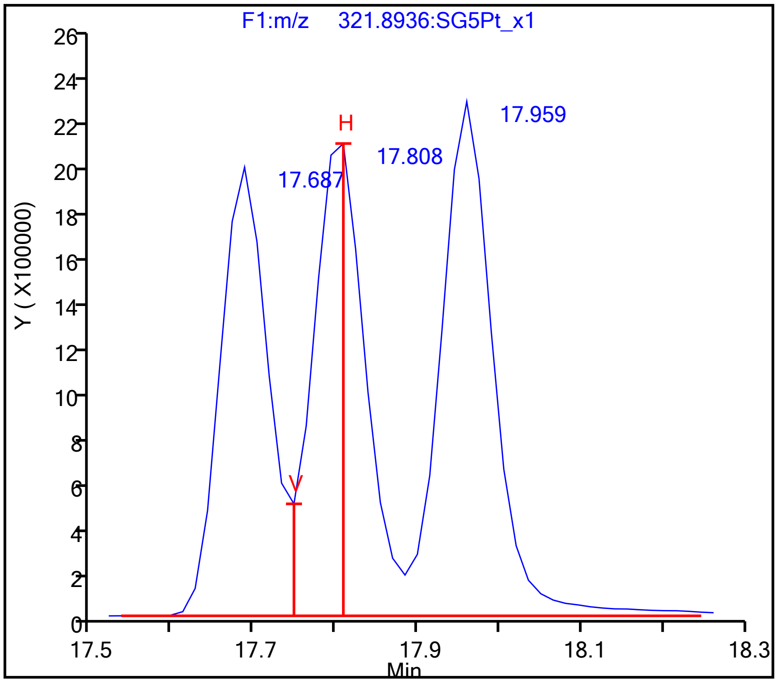

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Lab Sample ID (1): CPS 320-390059/1 Instrument ID (1): 11D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 06/26/2020 14:05

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.01	19

FORM VI 1613B

Resolution Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d
Injection Date: 26-Jun-2020 14:05:15
Instrument ID: 11D2
Lims ID: CPS
Client ID:
Operator ID:
ALS Bottle#: 0
Worklist Smp#: 1
Injection Vol: 2.0 ul
Column: DB-225 (0.32 mm)
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL

2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 5022165
H (Peak Height) = 26430848

%R = 19 <= 25
Passed

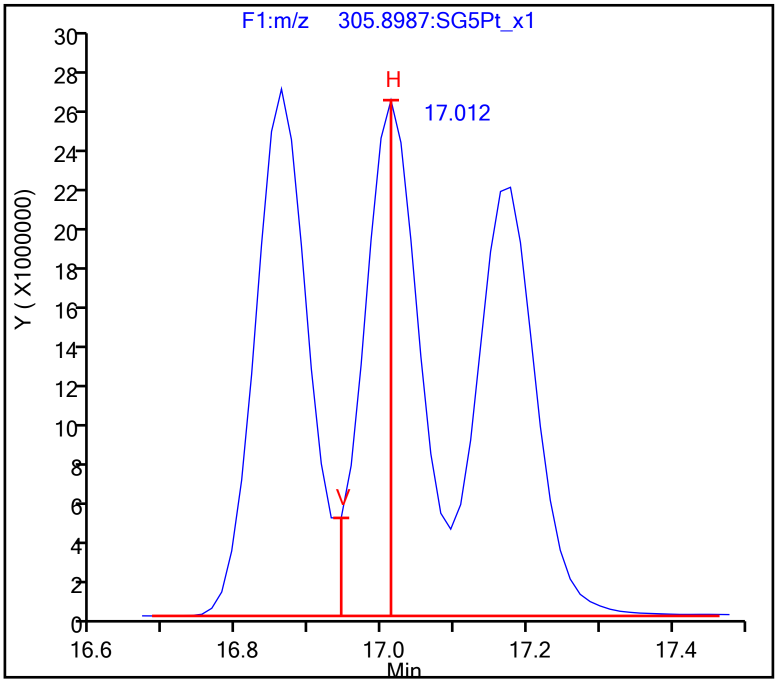

Resolution Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d				
Injection Date:	26-Jun-2020 14:05:15	Instrument ID:	11D2		
Lims ID:	CPS				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Column:	DB-225 (0.32 mm)		
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL		

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Lab Sample ID: ICV 320-362307/9 Calibration Date: 03/05/2020 21:47

Instrument ID: 10D5 Calib Start Date: 03/05/2020 17:01

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 03/05/2020 20:05

Lab File ID: 05MR20A10D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.7672	0.8591		44.8	40.0	112	70-130
2,3,7,8-TCDD	AveID	1.000	1.125		45.0	40.0	112	70-130
1,2,3,7,8-PeCDF	AveID	0.9019	0.9758		216	200	108	70-130
2,3,4,7,8-PeCDF	AveID	0.8307	0.9623		232	200	116	70-130
1,2,3,7,8-PeCDD	AveID	1.014	1.077		212	200	106	70-130
1,2,3,4,7,8-HxCDF	AveID	0.7928	0.8439		213	200	106	70-130
1,2,3,6,7,8-HxCDF	AveID	0.8592	0.9689		226	200	113	70-130
2,3,4,6,7,8-HxCDF	AveID	0.8896	1.028		231	200	116	70-130
1,2,3,4,7,8-HxCDD	AveID	0.8332	0.8888		213	200	107	70-130
1,2,3,6,7,8-HxCDD	AveID	0.8944	1.066		238	200	119	70-130
1,2,3,7,8,9-HxCDD	AveID	0.9449	0.9942		210	200	105	70-130
1,2,3,7,8,9-HxCDF	AveID	0.8941	0.9682		217	200	108	70-130
1,2,3,4,6,7,8-HpCDF	AveID	1.329	1.512		228	200	114	70-130
1,2,3,4,6,7,8-HpCDD	AveID	1.004	1.113		222	200	111	70-130
1,2,3,4,7,8,9-HpCDF	AveID	1.080	1.112		206	200	103	70-130
OCDD	AveID	1.018	1.165		458	400	115	70-130
OCDF	AveID	1.108	1.246		450	400	113	70-130
13C-2,3,7,8-TCDF	Ave	1.197	1.118		93.4	100	93	71-140
13C-2,3,7,8-TCDD	Ave	0.8773	0.8433		96.1	100	96	82-121
13C-1,2,3,7,8-PeCDF	Ave	0.9904	0.9198		92.9	100	93	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.080	1.002		92.8	100	93	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.6904	0.6304		91.3	100	91	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9076	0.9549		105	100	105	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	0.8671	0.8596		99.1	100	99	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.8287	0.8168		98.6	100	99	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8335	0.8794		106	100	106	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8228	0.7851		95.4	100	95	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.7391	0.7322		99.1	100	99	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7009	0.6874		98.1	100	98	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7026	0.6808		96.9	100	97	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7244	0.7592		105	100	105	77-129
13C-OCDD	Ave	0.6184	0.5805		188	200	94	48-208
37Cl4-2,3,7,8-TCDD	Ave	0.9515	0.9805		41.2	40.0	103	79-127

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 05-Mar-2020 21:47:52 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 030520 ICV HRDXNIC_00044
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 13:39:59 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0328

First Level Reviewer: shardaa Date: 06-Mar-2020 13:39:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.975	27778255	0.79	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.460	31055165	0.75	1.1970	93.4	93.4	0.1372	0.1372	93.40	
2,3,7,8-TCDF	17.476	10671811	0.71	0.7672	44.8	44.8	0.0653	0.0653	112	
A Non-2,3,7,8-sub-TCDF	17.211	137425	0.74	0.7672	0.5768	0.5768	0.0653	0.3299		
S Total TCDF					45.4	45.4	0.0653	0.0653		
D 13C-2,3,7,8-TCDD	18.171	23426167	0.78	0.8773	96.1	96.1	0.1690	0.1690	96.13	
2,3,7,8-TCDD	18.186	10538920	0.76	1.0000	45.0	45.0	0.0544	0.0544	112	
$ 37Cl4-2,3,7,8-TCDD	18.186	10894581		0.9515	41.2	41.2	0.0322	0.0322	103	
A Non-2,3,7,8-sub-TCDD	17.664	194930	0.74	1.0000	0.8321	0.8321	0.0544	0.8321		
S Total TCDD					45.8	45.8	0.0544	0.0544		
D 13C-1,2,3,7,8-PeCDF	22.566	25549221	1.58	0.9904	92.9	92.9	0.1753	0.1753	92.86	
1,2,3,7,8-PeCDF	22.579	49860218	1.54	0.9019	216.4	216.4	0.6431	0.6431	108	
D 13C-2,3,4,7,8-PeCDF	23.929	27821674	1.55	1.0797	92.8	92.8	0.1608	0.1608	92.76	
2,3,4,7,8-PeCDF	23.956	53545721	1.55	0.8307	231.7	231.7	0.6640	0.6640	116	
A F1 PeCDFs	20.159						0.0343	0.0343		
A Non-2,3,7,8-sub-PeCDF	23.358	1056309	1.66	0.8663	4.569	4.569	0.6527	4.569		
S Total PeCDF					452.6	452.6	0.6536	0.6536		
D 13C-1,2,3,7,8-PeCDD	24.666	17510083	1.64	0.6904	91.3	91.3	0.1001	0.1001	91.30	
1,2,3,7,8-PeCDD	24.693	37731482	1.56	1.0145	212.4	212.4	0.1822	0.1822	106	
A Non-2,3,7,8-sub-PeCDD	23.582						0.1822	0.1822		
S Total PeCDD					212.4	212.4	0.1822	0.1822		
D 13C-1,2,3,4,7,8-HxCDF	30.710	20817075	0.50	0.9076	105.2	105.2	0.2783	0.2783	105	
1,2,3,4,7,8-HxCDF	30.723	35133033	1.18	0.7928	212.9	212.9	0.7502	0.7502	106	
D 13C-1,2,3,6,7,8-HxCDF	30.883	18739696	0.48	0.8671	99.1	99.1	0.2913	0.2913	99.13	
1,2,3,6,7,8-HxCDF	30.896	36312421	1.18	0.8592	225.5	225.5	0.7604	0.7604	113	
D 13C-2,3,4,6,7,8-HxCDF	31.668	17807446	0.48	0.8287	98.6	98.6	0.3048	0.3048	98.57	
2,3,4,6,7,8-HxCDF	31.682	36601095	1.19	0.8896	231.1	231.1	0.5845	0.5845	116	
D 13C-1,2,3,7,8,9-HxCDF	32.454	15962207	0.51	0.7391	99.1	99.1	0.3418	0.3418	99.06	
1,2,3,7,8,9-HxCDF	32.467	30909438	1.19	0.8941	216.6	216.6	0.6251	0.6251	108	

Report Date: 06-Mar-2020 13:40:07 Chrom Revision: 2.3 19-Feb-2020 16:45:46
Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
A Non-2,3,7,8-sub-HxCDF	30.417						0.6725	0.6725		
S Total HxCDF					886.0	886.0	0.6800	0.6800		
* 13C-1,2,3,7,8,9-HxCDD	32.267	21801013	1.24	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.841	19170779	1.21	0.8335	105.5	105.5	0.2331	0.2331	106	
1,2,3,4,7,8-HxCDD	31.868	34076167	1.25	0.8332	213.3	213.3	0.4810	0.4810	107	
D 13C-1,2,3,6,7,8-HxCDD	31.948	17115228	1.22	0.8228	95.4	95.4	0.2362	0.2362	95.41	
1,2,3,6,7,8-HxCDD	31.961	36502030	1.17	0.8944	238.4	238.4	0.4885	0.4885	119	
1,2,3,7,8,9-HxCDD	32.281	36074952	1.23	0.9449	210.4	210.4	0.4425	0.4425	105	
A Non-2,3,7,8-sub-HxCDD	31.056						0.4693	0.4693		
S Total HxCDD					662.2	662.2	0.4707	0.4707		
D 13C-1,2,3,4,6,7,8-HpCDF	33.862	14986014	0.43	0.7009	98.1	98.1	0.7622	0.7622	98.08	
1,2,3,4,6,7,8-HpCDF	33.874	45326549	1.03	1.3295	227.5	227.5	1.571	1.571	114	
D 13C-1,2,3,4,7,8,9-HpCDF	34.943	16551743	0.42	0.7244	104.8	104.8	0.7375	0.7375	105	
1,2,3,4,7,8,9-HpCDF	34.955	36812973	1.03	1.0803	205.9	205.9	1.844	1.844	103	
A Non-2,3,7,8-sub-HpCDF	34.530						1.692	1.692		
S Total HpCDF					433.4	433.4	1.707	1.707		
D 13C-1,2,3,4,6,7,8-HpCDD	34.652	14841910	1.05	0.7026	96.9	96.9	0.3347	0.3347	96.90	
1,2,3,4,6,7,8-HpCDD	34.664	33028428	1.04	1.0040	221.6	221.6	0.7072	0.7072	111	
A Non-2,3,7,8-sub-HpCDD	34.517						0.7072	0.7072		
S Total HpCDD					221.6	221.6	0.7072	0.7072		
D 13C-OCDD	37.015	25312525	0.86	0.6184	187.8	187.8	0.1593	0.1593	93.88	
OCDF	37.123	63084927	0.90	1.1076	450.0	450.0	0.2244	0.2244	113	
OCDD	37.027	58983951	0.88	1.0175	458.0	458.0	0.3213	0.3213	115	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNIC_00044 Amount Added: 2.00 Units: uL

Report Date: 06-Mar-2020 13:40:07 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 05-Mar-2020 21:47:52 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV 030520 ICV HRDXNIC_00044
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 13:39:59 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0328

First Level Reviewer: shardaa Date: 06-Mar-2020 13:39:59

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.975	18.005	-2		12302848	3103188	2702	6755	1148		a
333.9339	17.975	18.005	-2		15475407	3955723	1484	3710	2666	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.460	17.490	-2	0.971	13297297	3368035	2868	7170	1174		
317.9389	17.460	17.490	-2	0.971	17757868	4345635	1769	4422	2457	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.476	17.506	-2	1.001	4448835	1135665	609	1522	1865		
305.8987	17.476	17.506	-2	1.001	6222976	1566291	936	2340	1673	0.71(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.795	17.211	-25	0.962	32546	9789	609	1522	16		
305.8987	16.795	17.211	-25	0.962	46049	12912	936	2340	14	0.71(0.65-0.89)	
303.9016	17.097	17.211	-7	0.979	25719	6418	609	1522	11		
305.8987	17.082	17.211	-8	0.978	33111	8895	936	2340	10	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	18.171	18.201	-2	1.011	10261663	2537970	2702	6755	939		
333.9339	18.171	18.201	-2	1.011	13164504	3252190	1484	3710	2192	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.186	18.216	-2	1.001	4547996	1080146	740	1850	1460		
321.8936	18.186	18.216	-2	1.001	5990924	1458440	519	1297	2810	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	18.186	18.216	-2	1.012	10894581	2657232	865	2162	3072		
A Non-2,3,7,8-sub-TCDD											

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
319.8965	18.080	17.664	25	0.995	82846	20442	740	1850	28		
321.8936	18.080	17.664	25	0.995	112084	28914	519	1297	56	0.74(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	22.566	22.579	-1	1.255	15655569	2791755	2838	7095	984		
353.8970	22.566	22.579	-1	1.255	9893652	1736693	2065	5162	841	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.579	22.607	-2	1.001	30226955	5351526	6273	15682	853		
341.8567	22.579	22.607	-2	1.001	19633263	3527831	4233	10582	833	1.54(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.929	23.943	-1	1.331	16927830	2911254	2838	7095	1026		
353.8970	23.929	23.943	-1	1.331	10893844	1850341	2065	5162	896	1.55(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.956	23.970	-1	1.001	32507688	5462257	6273	15682	871		
341.8567	23.956	23.970	-1	1.001	21038033	3485753	4233	10582	823	1.55(1.32-1.78)	
A F1 PeCDFs											
339.8597	20.159						202	505			
341.8567	20.159						350	875			
A Non-2,3,7,8-sub-PeCDF											
339.8597	23.125	23.358	-14	1.025	659580	114135	6273	15682	18		
341.8567	23.111	23.358	-15	1.024	396729	68250	4233	10582	16	1.66(1.32-1.78)	
13C-1,2,3,7,8-PeCDD											
367.8949	24.666	24.679	-1	1.372	10883056	1739459	1148	2870	1515		
369.8919	24.666	24.679	-1	1.372	6627027	1059980	804	2010	1318	1.64(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.693	24.706	-1	1.001	23003609	3668260	1147	2867	3198		
357.8516	24.693	24.706	-1	1.001	14727873	2317762	923	2307	2511	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.582						1147	2867			
357.8516	23.582						923	2307			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.710	30.710	0	0.952	6958960	1433915	2097	5242	684		
385.8610	30.710	30.710	0	0.952	13858115	2762836	4100	10250	674	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.723	30.736	-1	1.000	19025679	3940982	5405	13512	729		
375.8178	30.723	30.736	-1	1.000	16107354	3338929	4579	11447	729	1.18(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.883	30.883	0	0.957	6076258	1246341	2097	5242	594		
385.8610	30.883	30.883	0	0.957	12663438	2573964	4100	10250	628	0.48(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.896	30.909	-1	1.000	19688952	4157883	5405	13512	769		
375.8178	30.896	30.909	-1	1.000	16623469	3529882	4579	11447	771	1.18(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.668	31.668	0	0.981	5762627	1564605	2097	5242	746		
385.8610	31.668	31.668	0	0.981	12044819	3236120	4100	10250	789	0.48(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.682	31.681	0	1.000	19898943	5215798	5405	13512	965		
375.8178	31.682	31.681	0	1.000	16702152	4442098	4579	11447	970	1.19(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.454	32.453	0	1.006	5356871	1496012	2097	5242	713		
385.8610	32.454	32.453	0	1.006	10605336	2969957	4100	10250	724	0.51(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.467	32.467	0	1.000	16814866	4674996	5405	13512	865		
375.8178	32.454	32.467	-1	1.000	14094572	3870112	4579	11447	845	1.19(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.417						5405	13512			
375.8178	30.417						4579	11447			
13C-1,2,3,7,8,9-HxCDD											
401.8559	32.267	32.267	0		12048121	3383629	2603	6507	1300		
403.8529	32.267	32.267	0		9752892	2749076	2164	5410	1270	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.841	31.854	-1	0.987	10505310	2824818	2603	6507	1085		
403.8529	31.841	31.854	-1	0.987	8665469	2316176	2164	5410	1070	1.21(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.868	31.868	0	1.001	18955395	5158600	4213	10532	1224		
391.8127	31.868	31.868	0	1.001	15120772	4222376	4028	10070	1048	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.948	31.948	0	0.990	9404487	2553294	2603	6507	981		
403.8529	31.948	31.948	0	0.990	7710741	2161572	2164	5410	999	1.22(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.961	31.974	-1	1.000	19711782	5502078	4213	10532	1306		
391.8127	31.961	31.974	-1	1.000	16790248	4451534	4028	10070	1105	1.17(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	32.281	32.280	0	1.014	19926869	5651978	4213	10532	1342		
391.8127	32.281	32.280	0	1.014	16148083	4559570	4028	10070	1132	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.056						4213	10532			
391.8127	31.056						4028	10070			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.862	33.861	0	1.049	4503936	1512744	3855	9637	392		
419.8220	33.862	33.861	0	1.049	10482078	3477087	9250	23125	376	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.874	33.861	1	1.000	23047236	7475503	20289	50722	368		
409.7789	33.862	33.861	0	1.000	22279313	7397289	21393	53482	346	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.943	34.943	0	1.083	4886486	1538976	3855	9637	399		
419.8220	34.943	34.943	0	1.083	11665257	3693201	9250	23125	399	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.955	34.955	0	1.000	18637909	5899578	20289	50722	291		
409.7789	34.955	34.955	0	1.000	18175064	5735790	21393	53482	268	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.530						20289	50722			
409.7789	34.530						21393	53482			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.652	34.651	0	1.074	7590804	2474767	3091	7727	801		
437.8140	34.652	34.651	0	1.074	7251106	2278408	2678	6695	851	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.664	34.663	0	1.000	16823134	5379653	7074	17685	760		
425.7737	34.664	34.663	0	1.000	16205294	5169992	6427	16067	804	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.517						7074	17685			
425.7737	34.517						6427	16067			
13C-OCDD											
469.7779	37.015	37.014	0	1.147	11714658	3217790	1240	3100	2595		
471.7750	37.015	37.014	0	1.147	13597867	3723148	1177	2942	3163	0.86(0.76-1.02)	
OCDF											
441.7428	37.123	37.122	0	1.003	29833722	7962492	1603	4007	4967		
443.7399	37.111	37.122	-1	1.003	33251205	8992808	1847	4617	4869	0.90(0.76-1.02)	
OCDD											
457.7377	37.027	37.026	0	1.000	27624428	7367633	2046	5115	3601		
459.7348	37.027	37.026	0	1.000	31359523	8286541	2492	6230	3325	0.88(0.76-1.02)	

QC Flag Legend

Processing Flags
- n - Failed Sig-To-Noise Test

Review Flags
- a - User Assigned ID

Reagents:

HRDXNIC_00044 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d		
Lims ID:	ICV		
Client ID:			
Inject. Date:	05-Mar-2020 21:47:52	Dil. Factor:	1.0000
Sample Type:	ICV, ICal Verification		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	362307	Lims Sample ID:	9
Sublist:	chrom-Dioxin_10D5*sub1		

Non-2,3,7,8-sub-TCDF, RT: 17.211

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.767	D 13C-2,3,7,8-TCDF	100.000	31055165	7713670

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.767		100.000	31055165	7713670

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.795	32546	9789	46049	12912	0.3299	0.71	
17.097	25719	6418	33111	8895	0.2469	0.78	n
Signal Totals:							
	58265	16207	79160	21807			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	137425	38014				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.5768 = (137425 * 100.000) / (31055165 * 0.767)

QC Flag Legend

Processing Flags
n - Failed Sig-To-Noise Test

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 05-Mar-2020 21:47:52 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 362307 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-TCDD, RT: 17.664

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	23426167	5790160

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	23426167	5790160

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
18.080	82846	20442	112084	28914	0.8321	0.74	
Signal Totals:							
	82846	20442	112084	28914			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	194930	49356				0.74	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.8321 = (194930 * 100.000) / (23426167 * 1.000)

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d
Lims ID: ICV
Client ID:
Inject. Date: 05-Mar-2020 21:47:52 Dil. Factor: 1.0000
Sample Type: ICV, ICal Verification
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 362307 Lims Sample ID: 9
Sublist: chrom-Dioxin_10D5*sub1

Non-2,3,7,8-sub-PeCDF, RT: 23.358

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902	D 13C-1,2,3,7,8-PeCDF	100.000	25549221	4528448
2,3,4,7,8-PeCDF	0.831	D 13C-2,3,4,7,8-PeCDF	100.000	27821674	4761595

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.866		100.000	26685447	4645021

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
23.125	659580	114135	396729	68250	4.57	1.66	
Signal Totals:							
	659580	114135	396729	68250			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	1056309	182385				1.66	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 4.569 = (1056309 * 100.000) / (26685447 * 0.866)

Report Date: 06-Mar-2020 13:40:07 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d				
Injection Date:	05-Mar-2020 21:47:52	Instrument ID:	10D5		
Lims ID:	ICV				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected

Expected RT: 18.00

Processing Integration Results

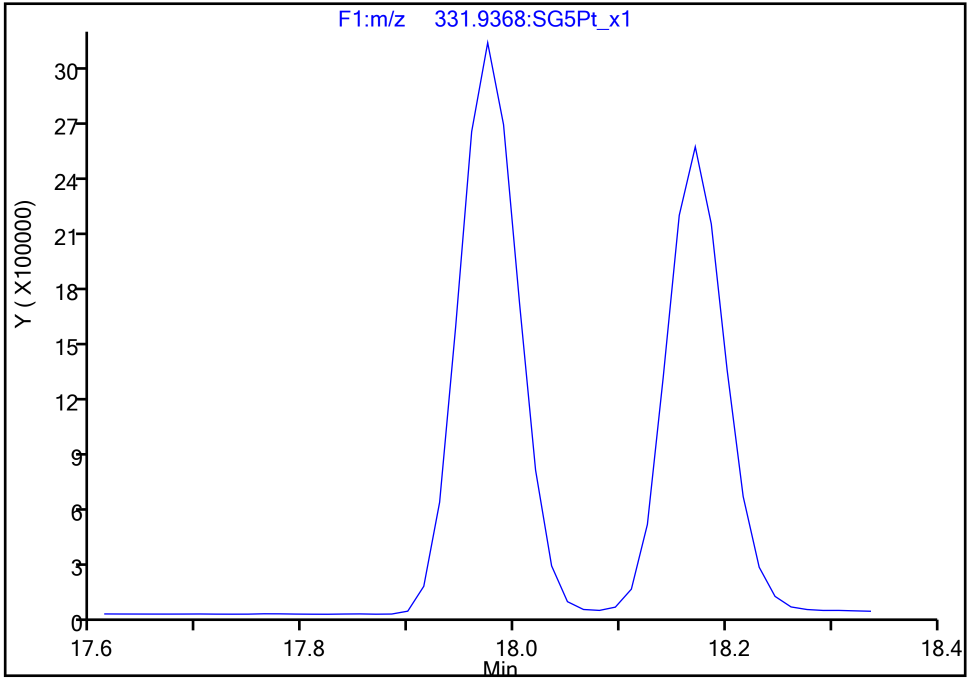

RT: 17.97

Area: 12302848

Amount: 100.0000

Amount Units: pg/ul

Manual Integration Results

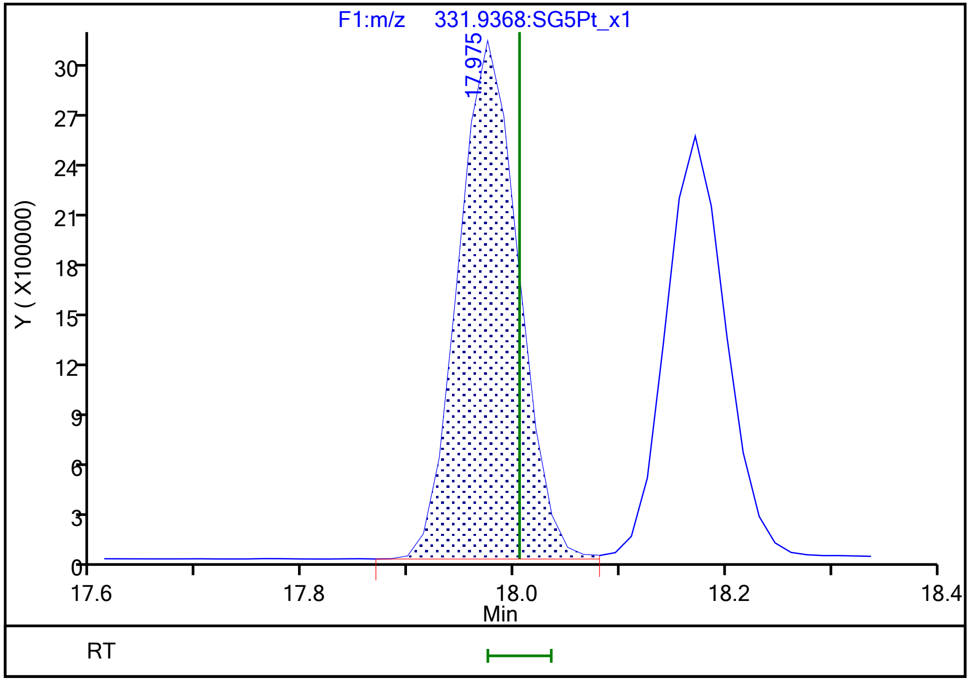

Reviewer: messecara, 05-Mar-2020 22:47:07

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 06-Mar-2020 13:40:07 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d		
Injection Date:	05-Mar-2020 21:47:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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TCDF

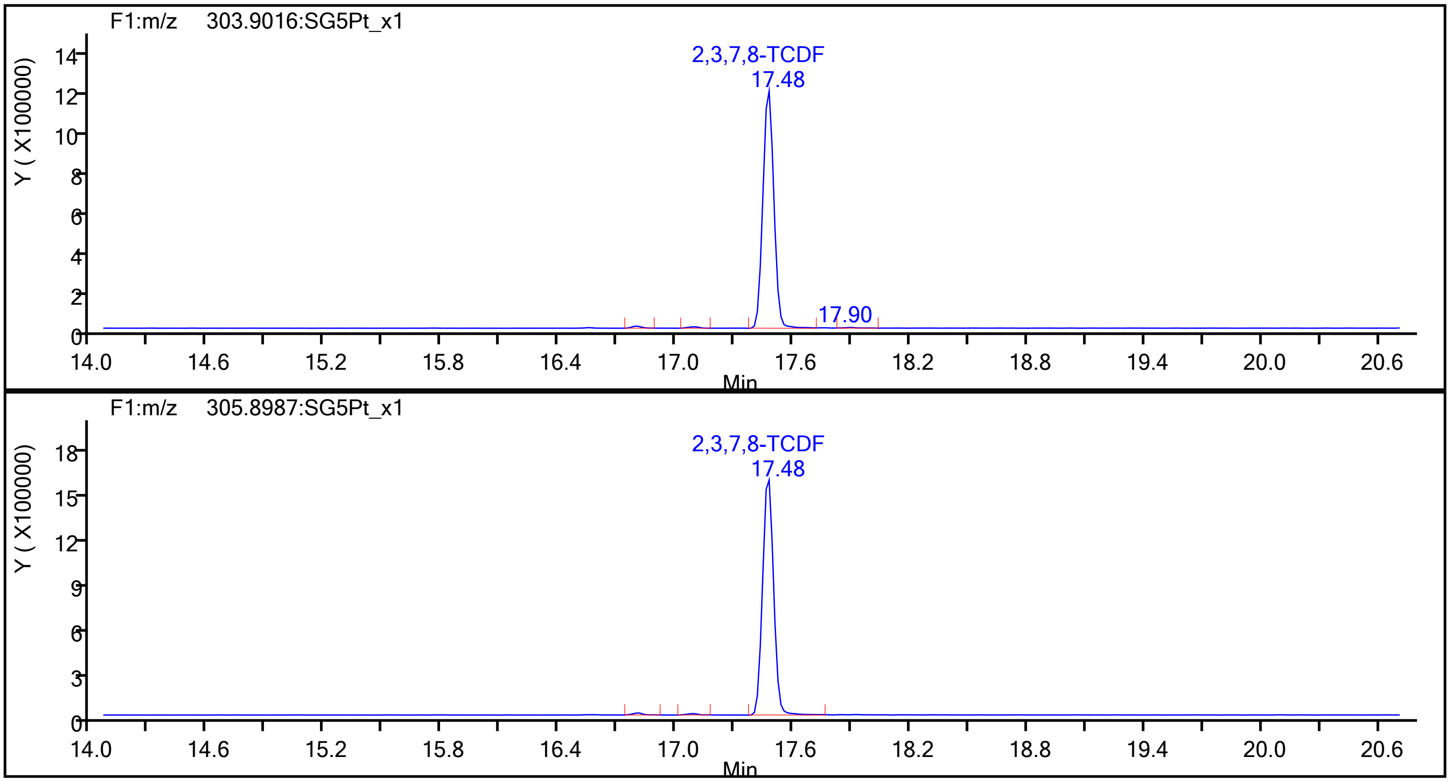

TCDF Standards

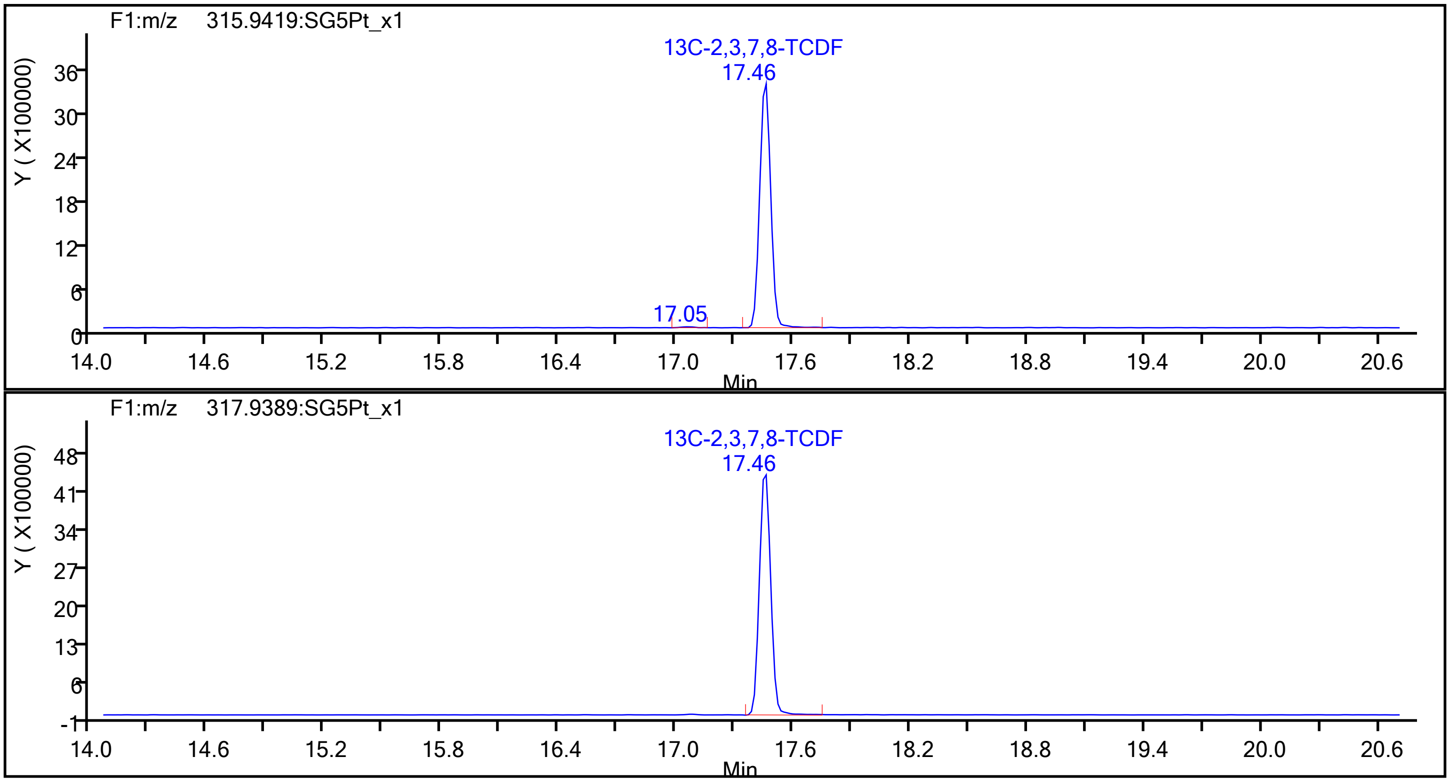

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Eurofins TestAmerica, Sacramento

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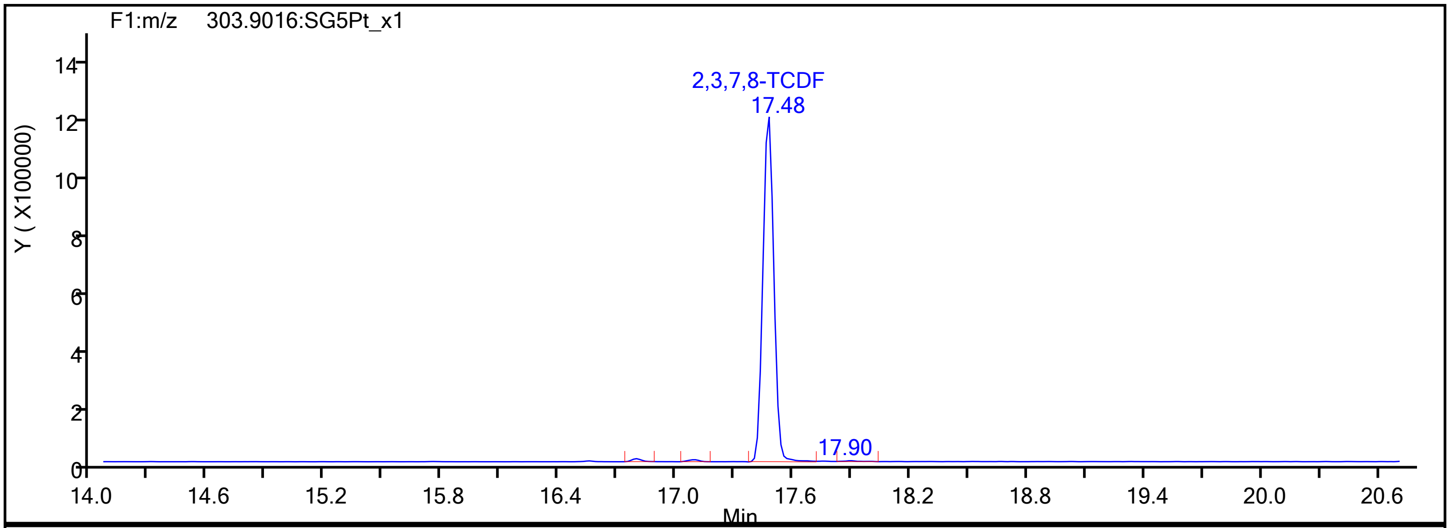

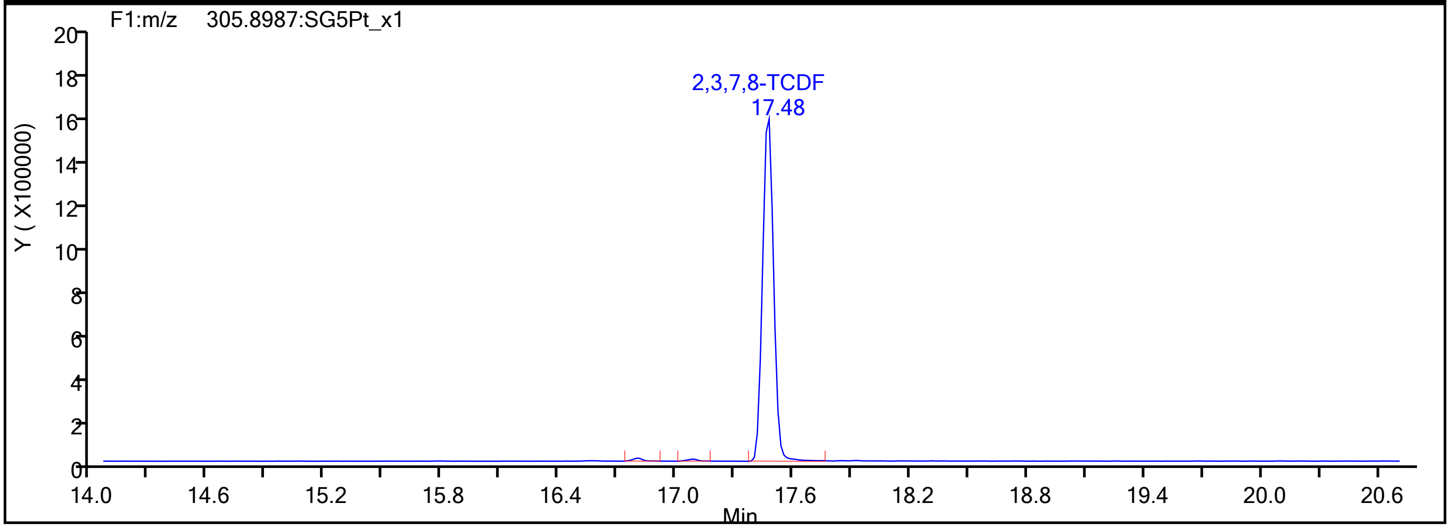

TCDF Interference Mass

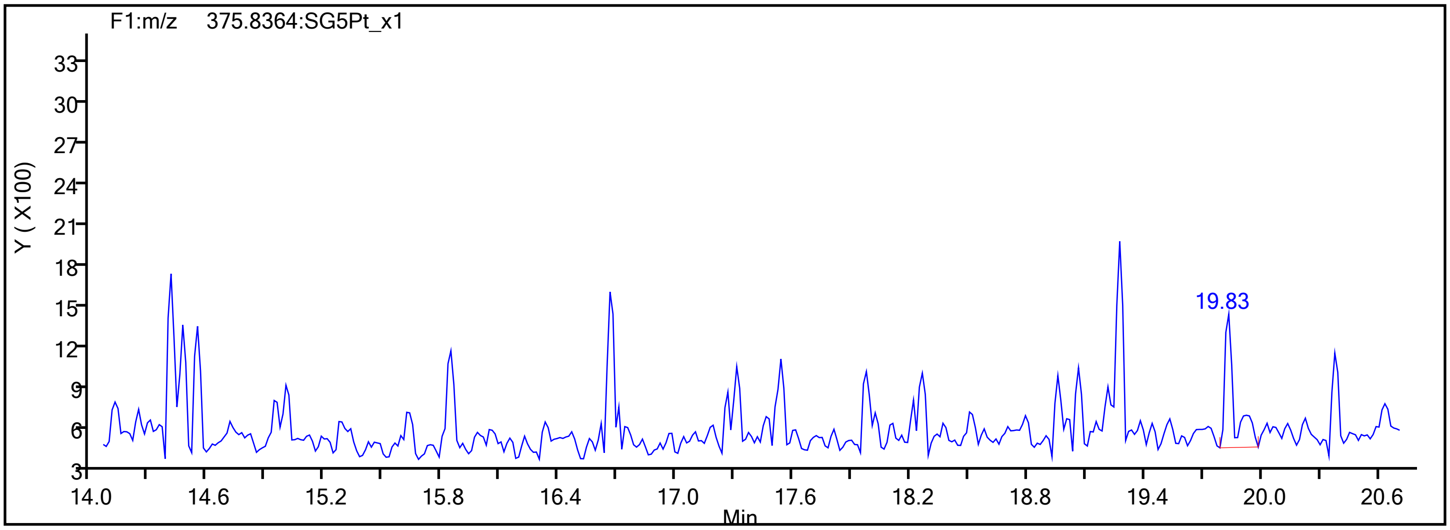

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 21:47:52 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

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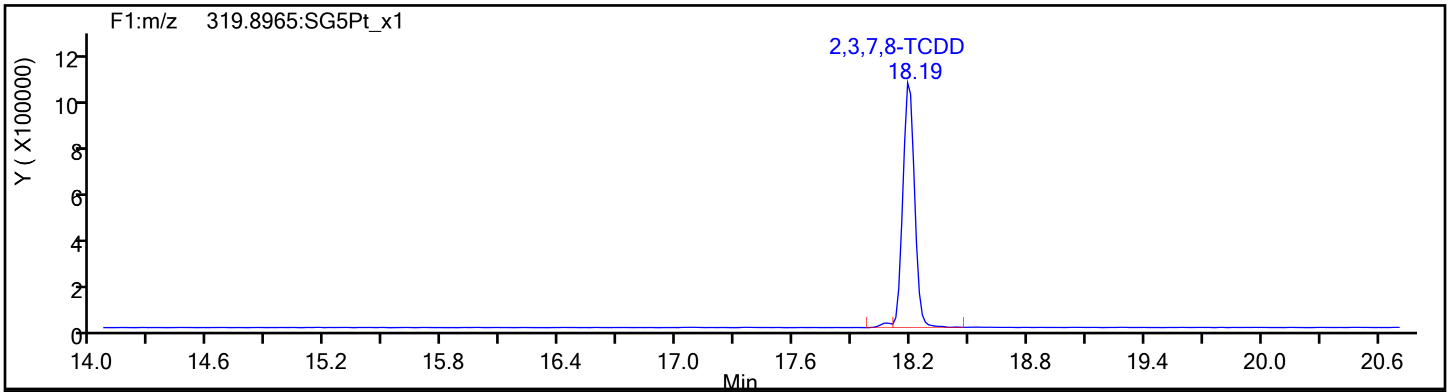

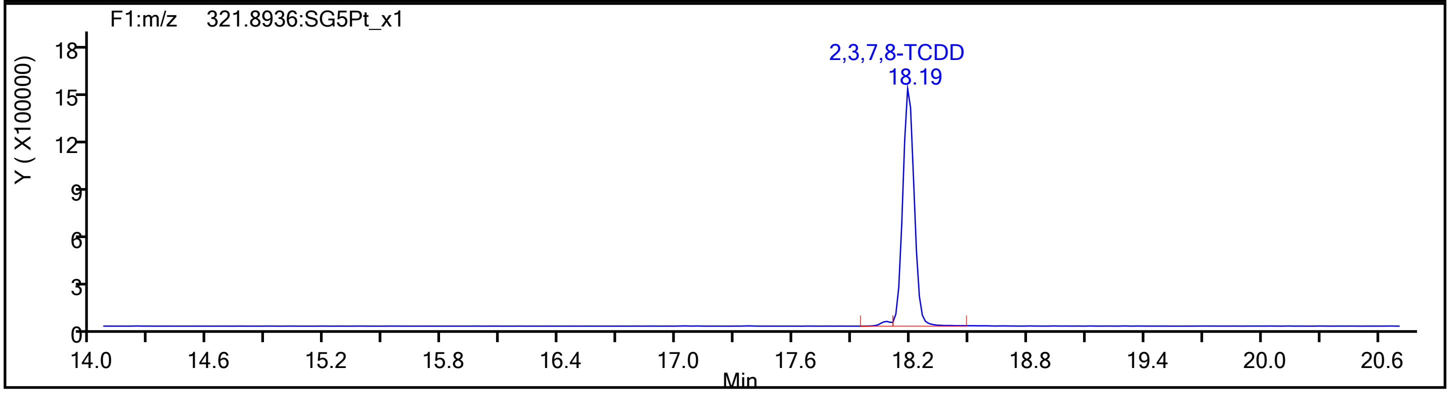

TCDD Standards

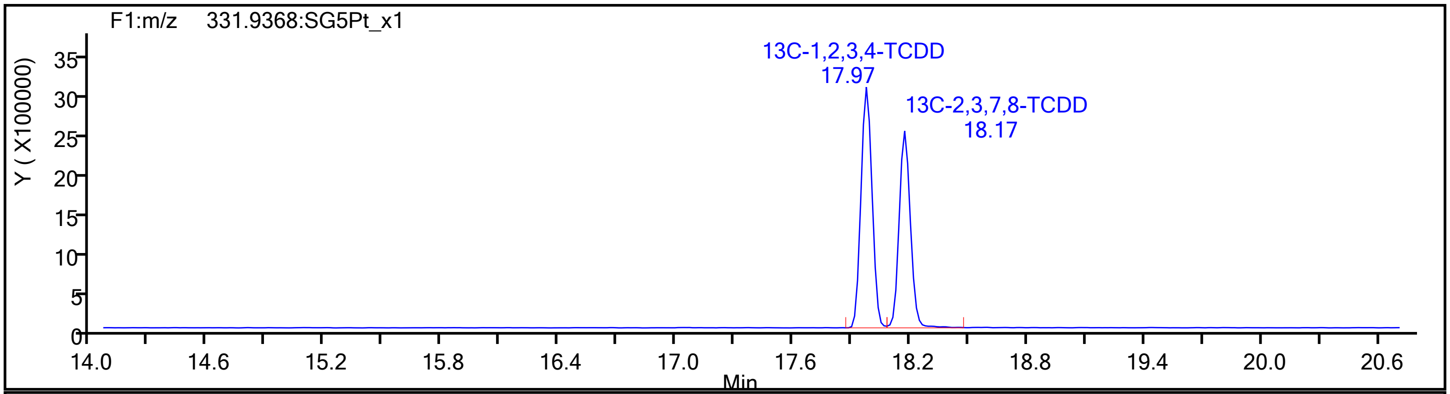

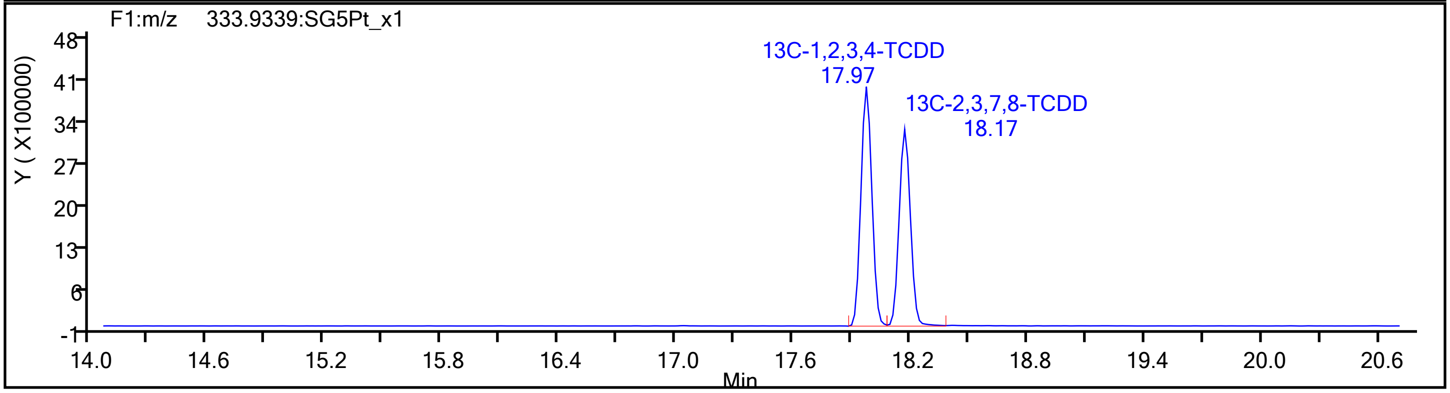

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Eurofins TestAmerica, Sacramento

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37Cl4-TCDD

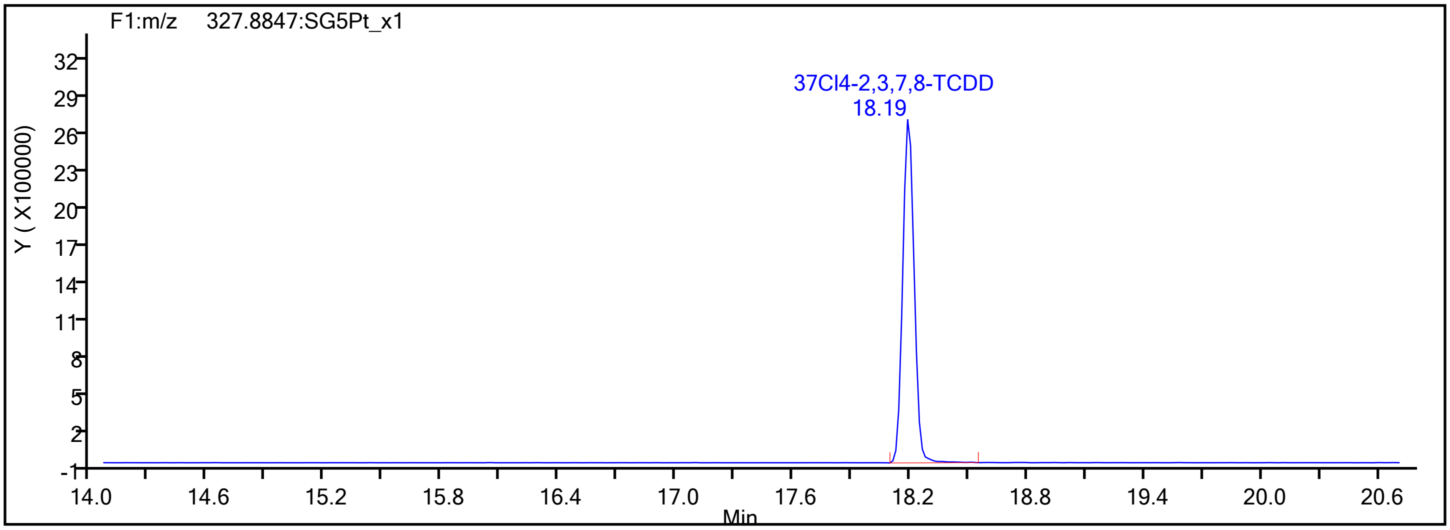

37Cl4-TCDD Standards

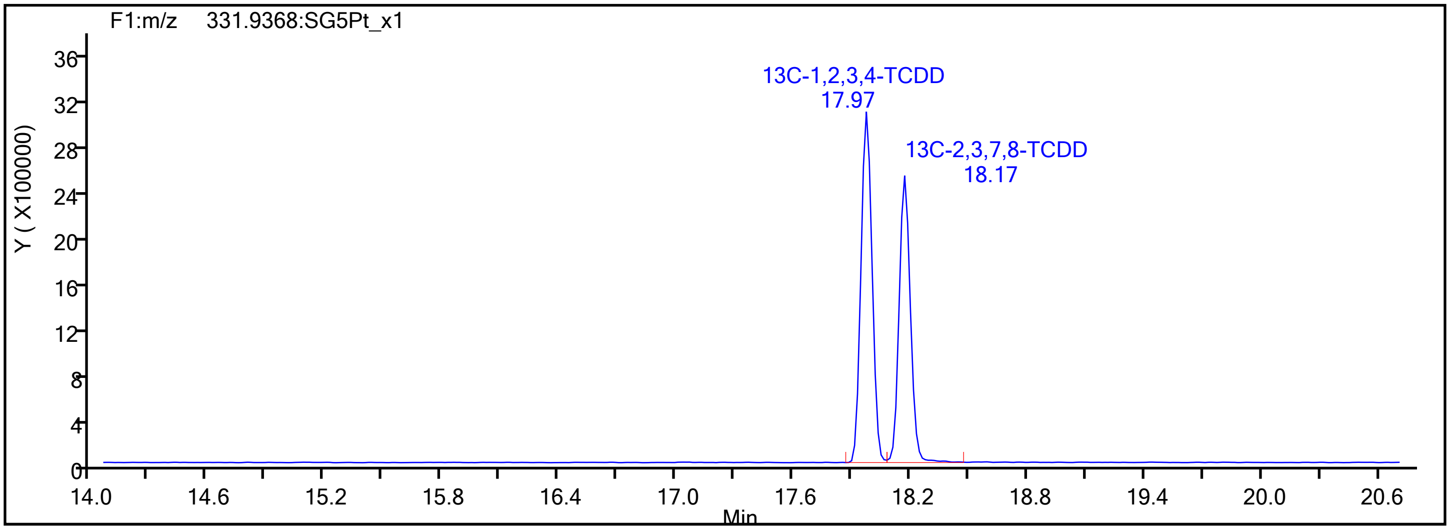

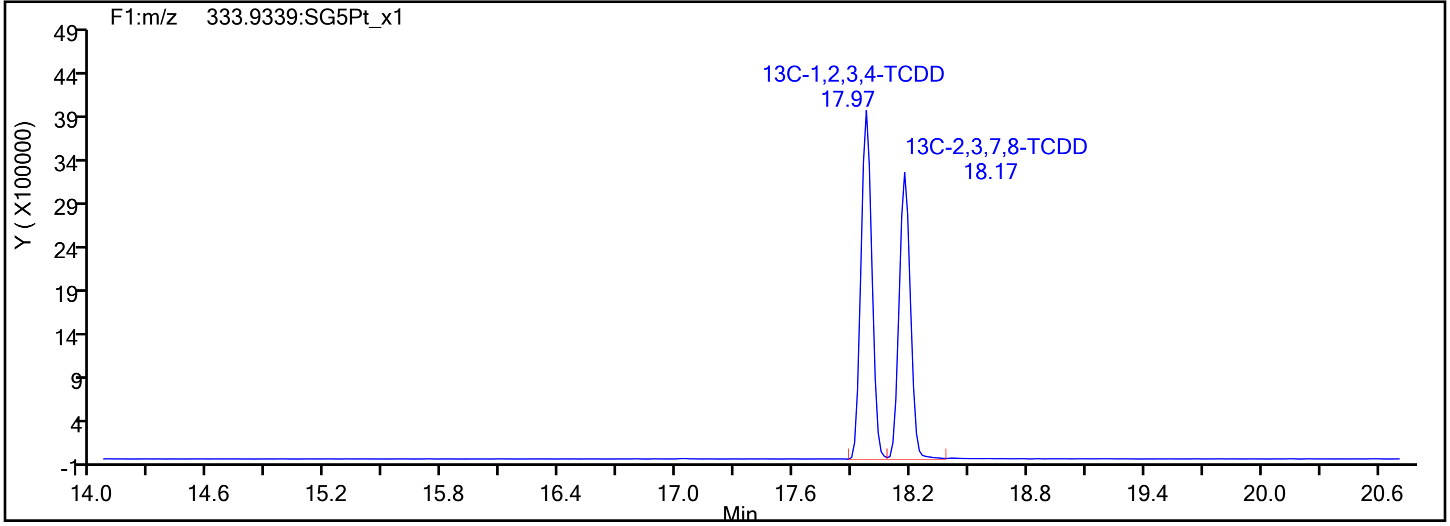

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F1 PeCDFs

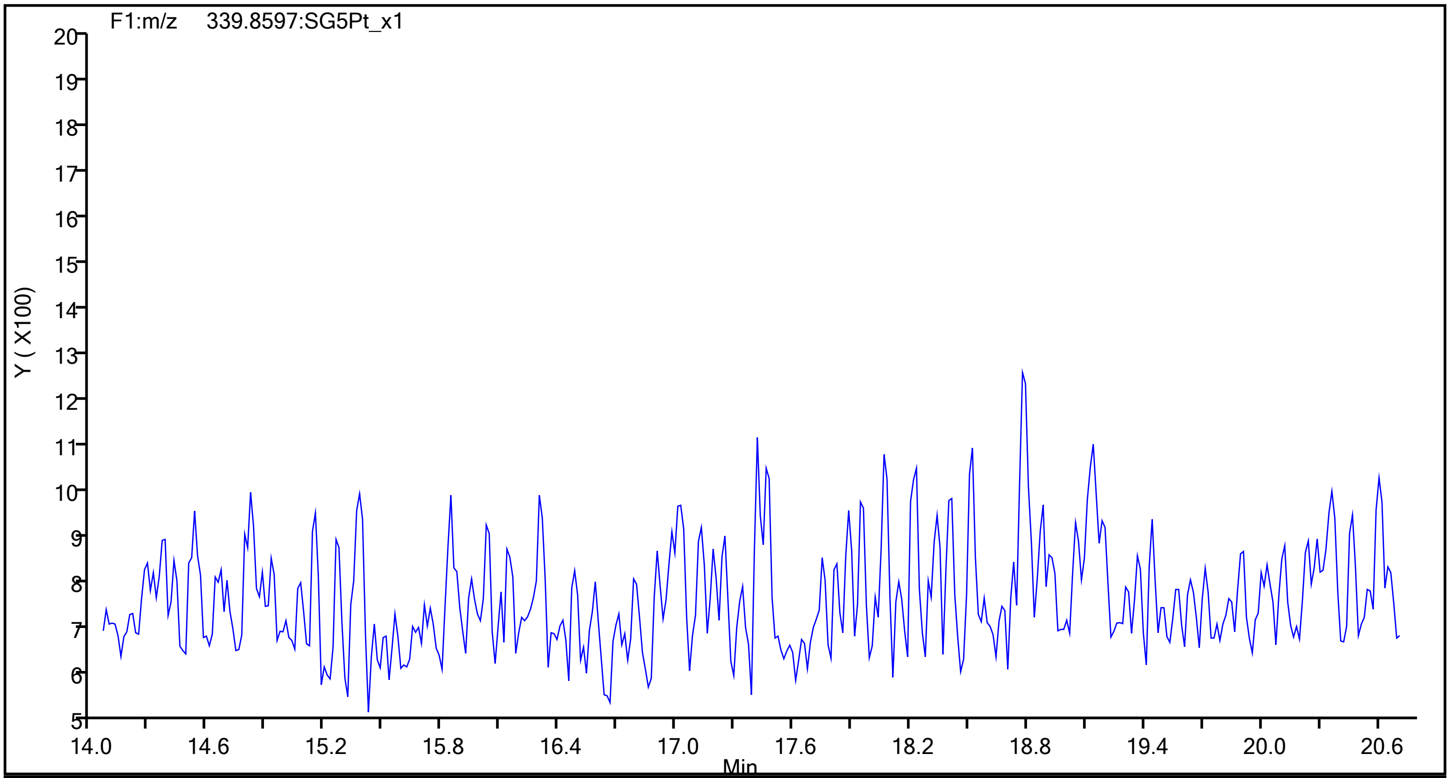

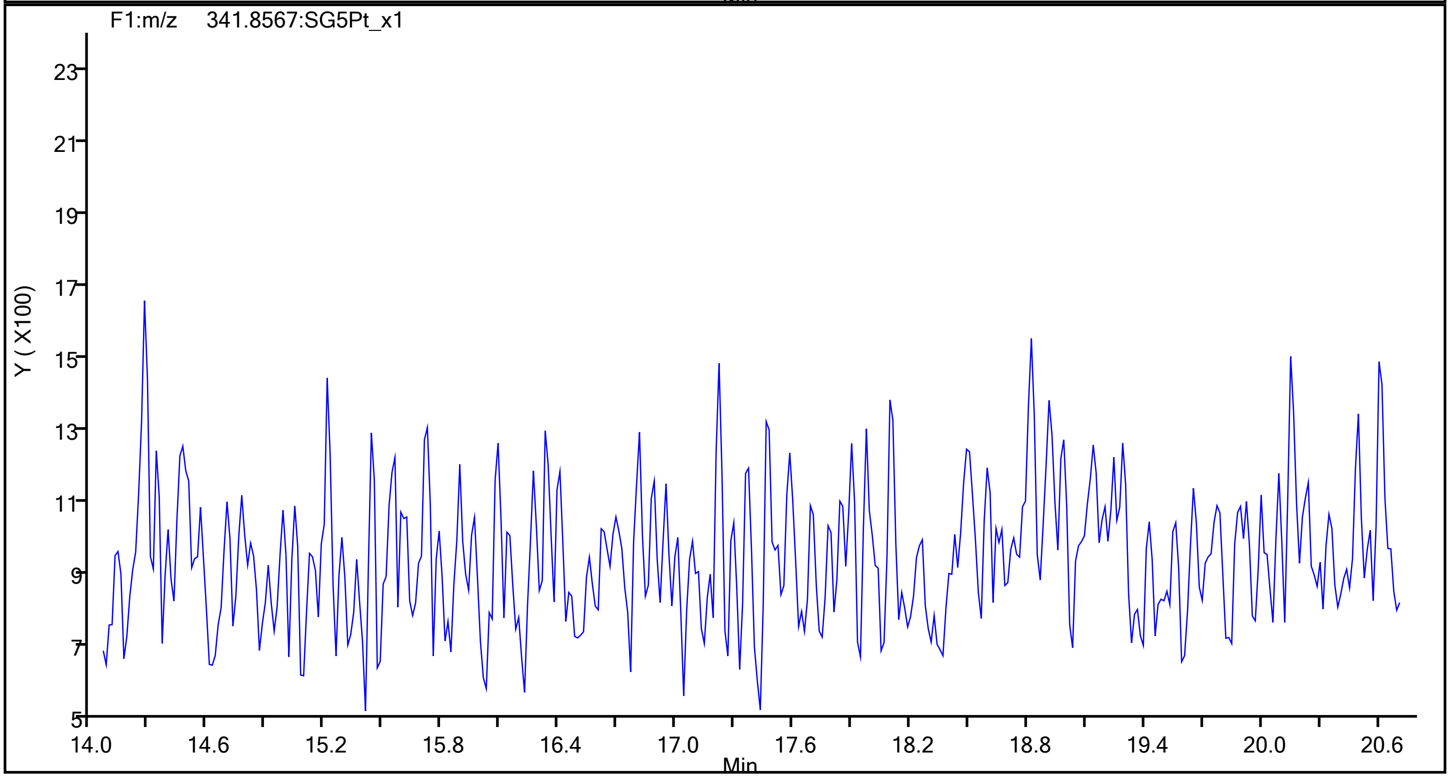

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Eurofins TestAmerica, Sacramento

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F1 PeCDFs

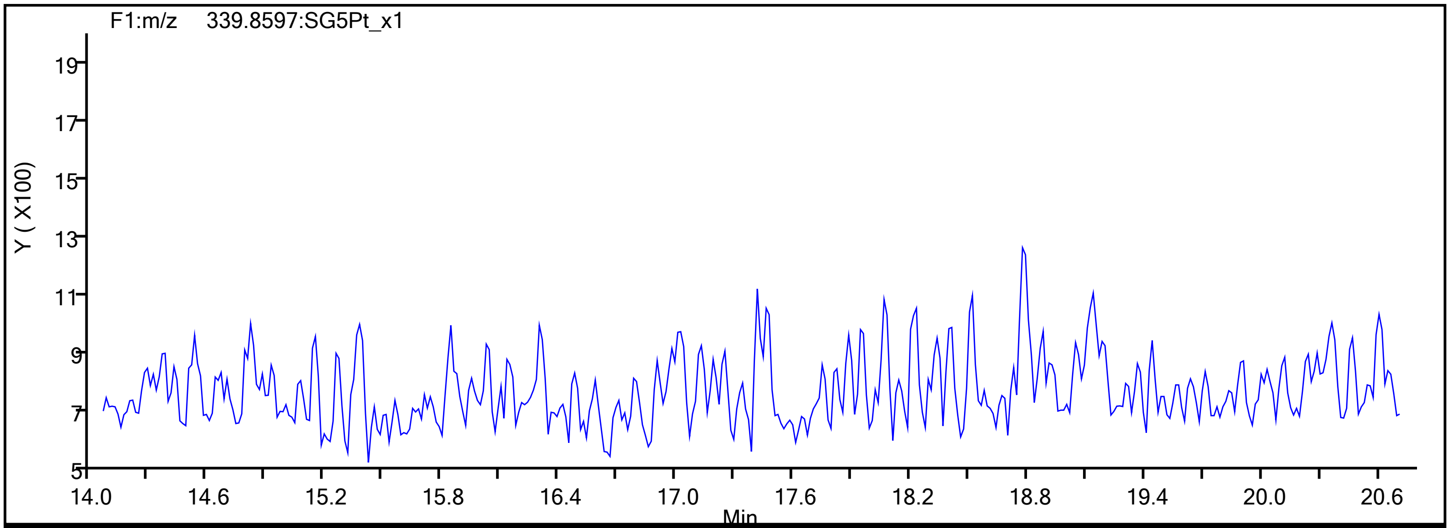

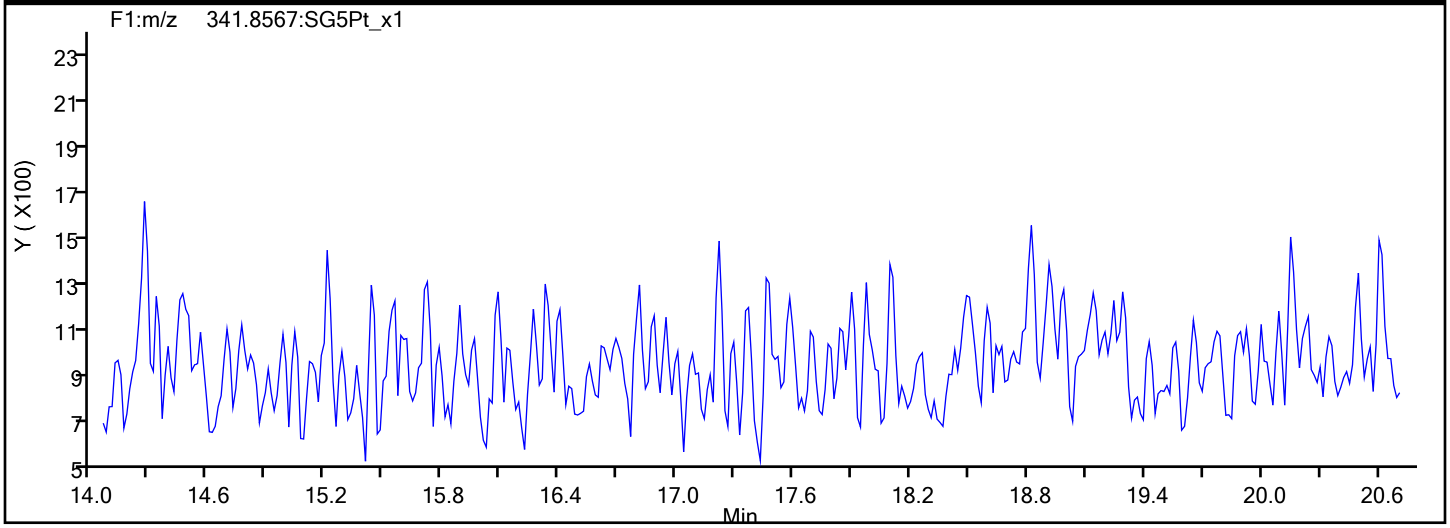

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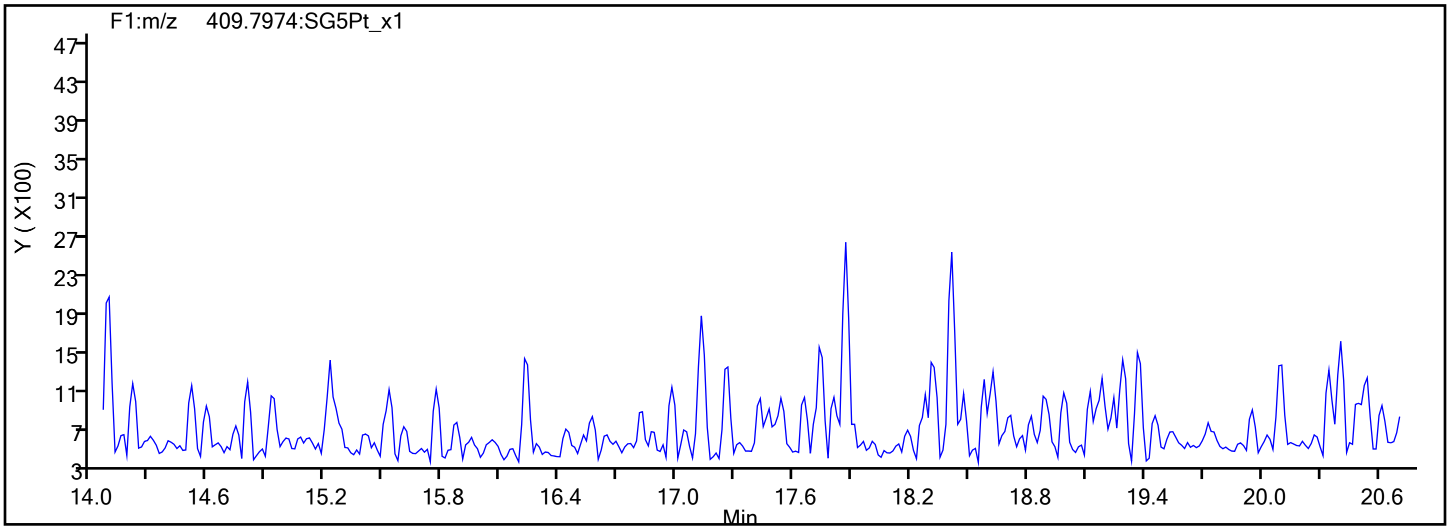

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Eurofins TestAmerica, Sacramento

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PeCDF

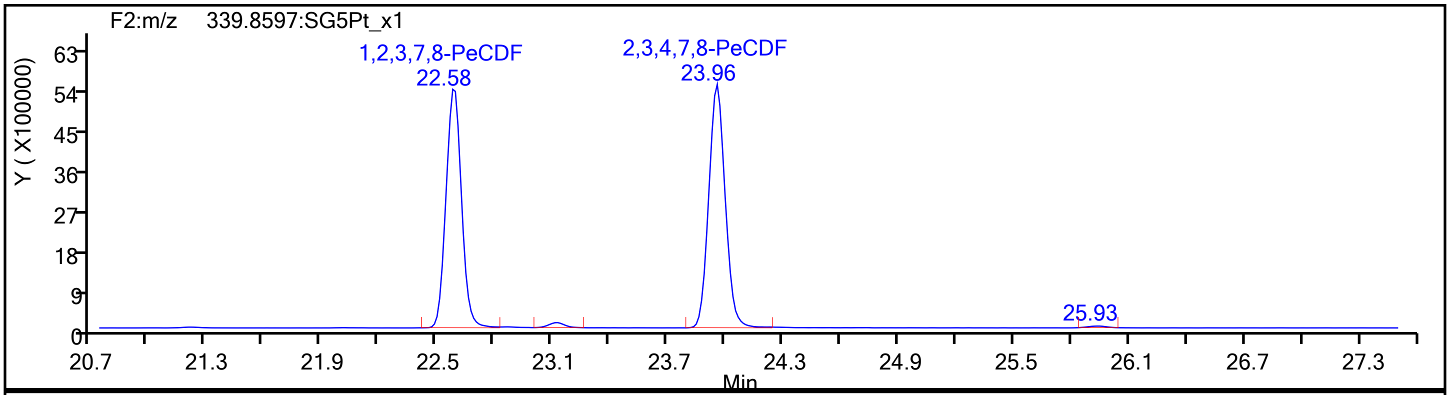

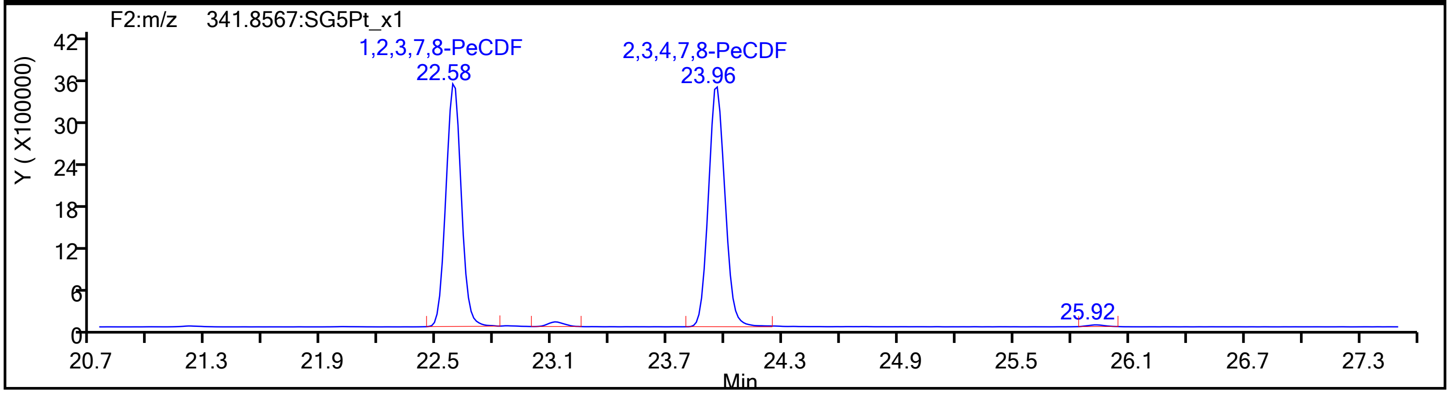

PeCDF Standards

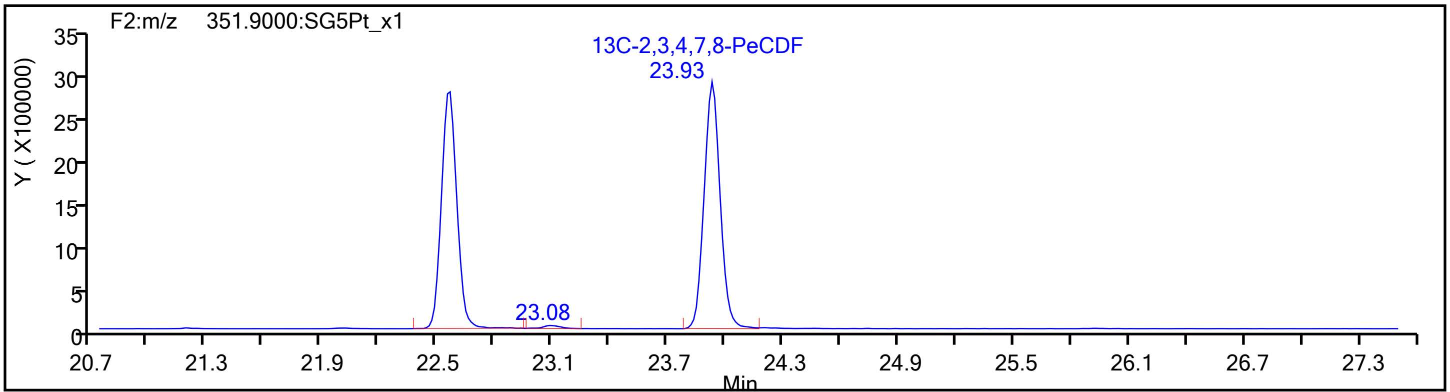

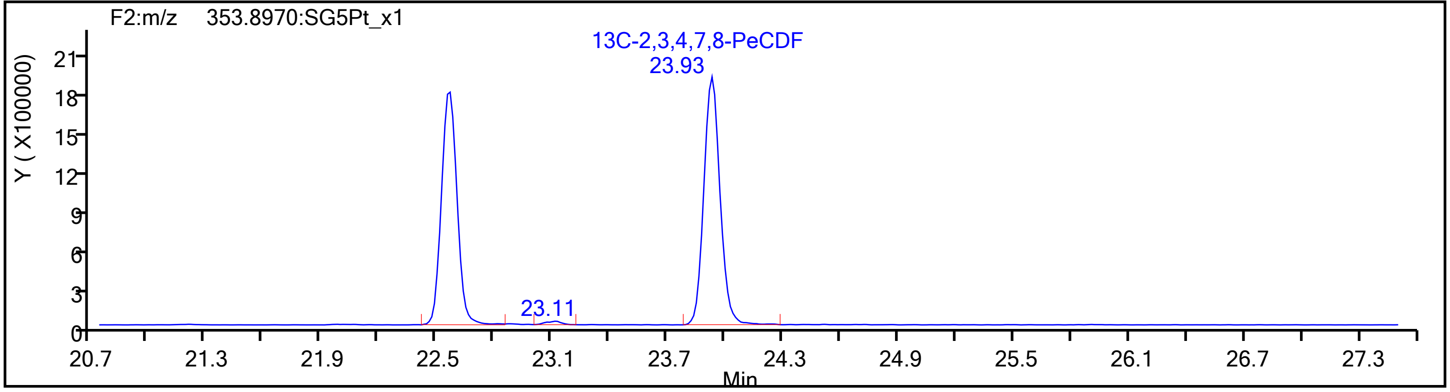

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Eurofins TestAmerica, Sacramento

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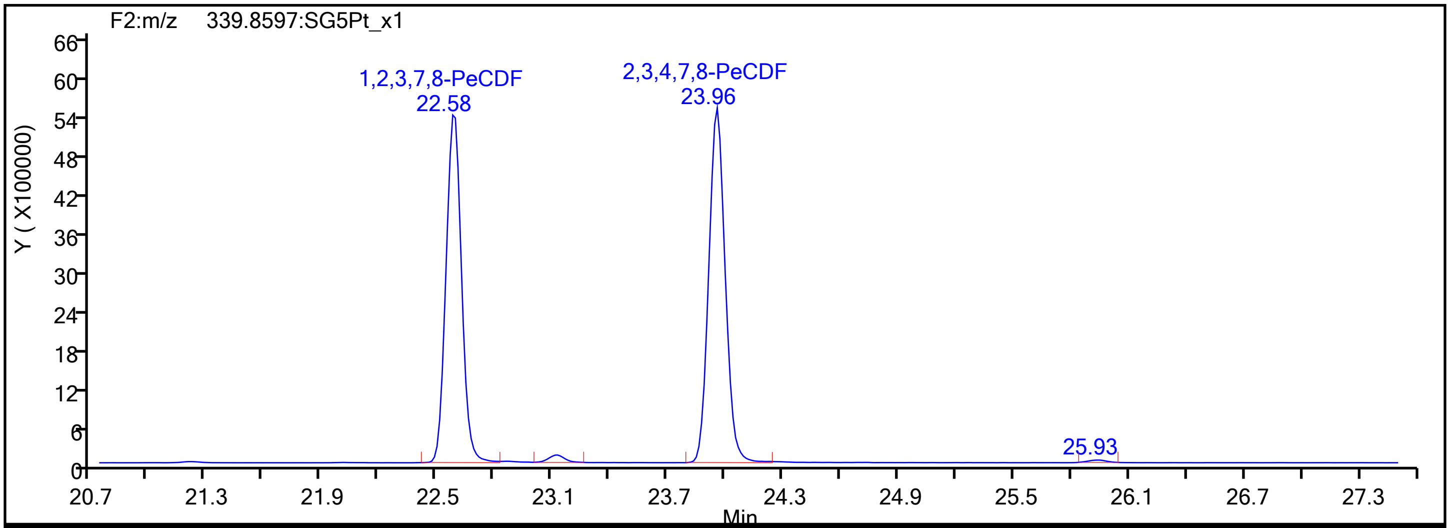

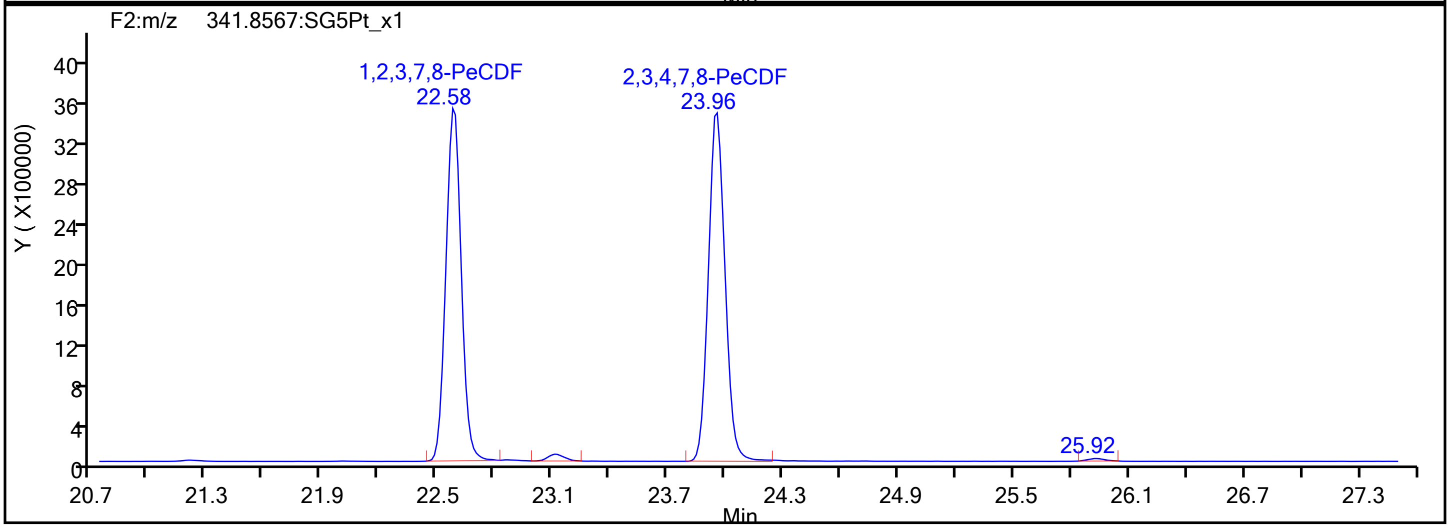

PeCDF Interference Mass

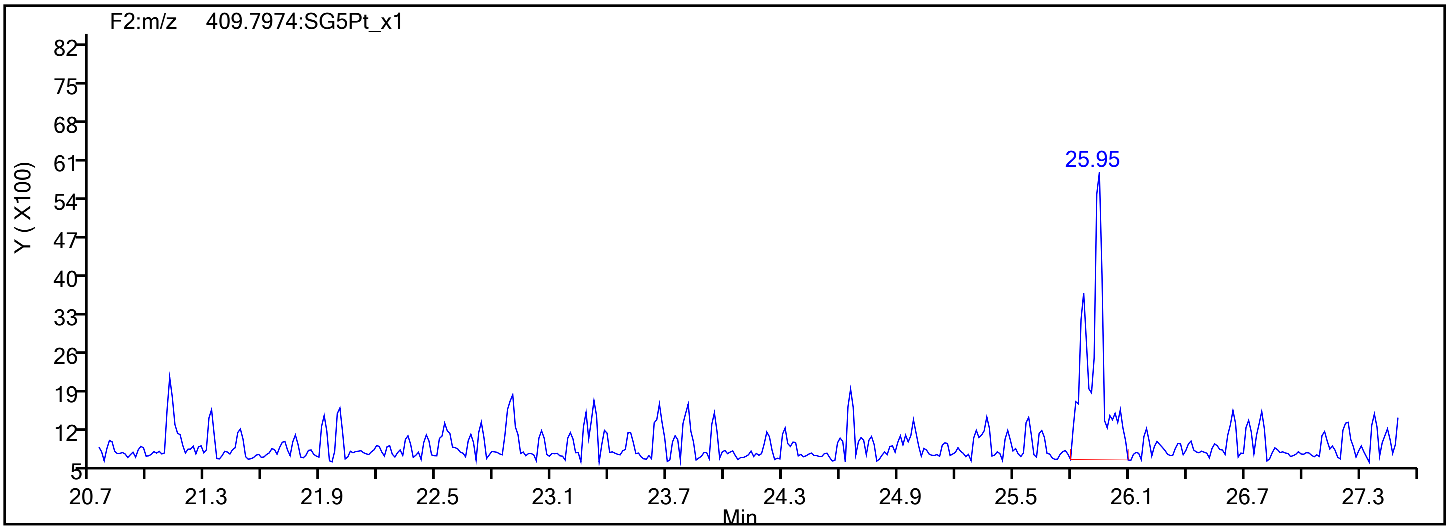

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Eurofins TestAmerica, Sacramento

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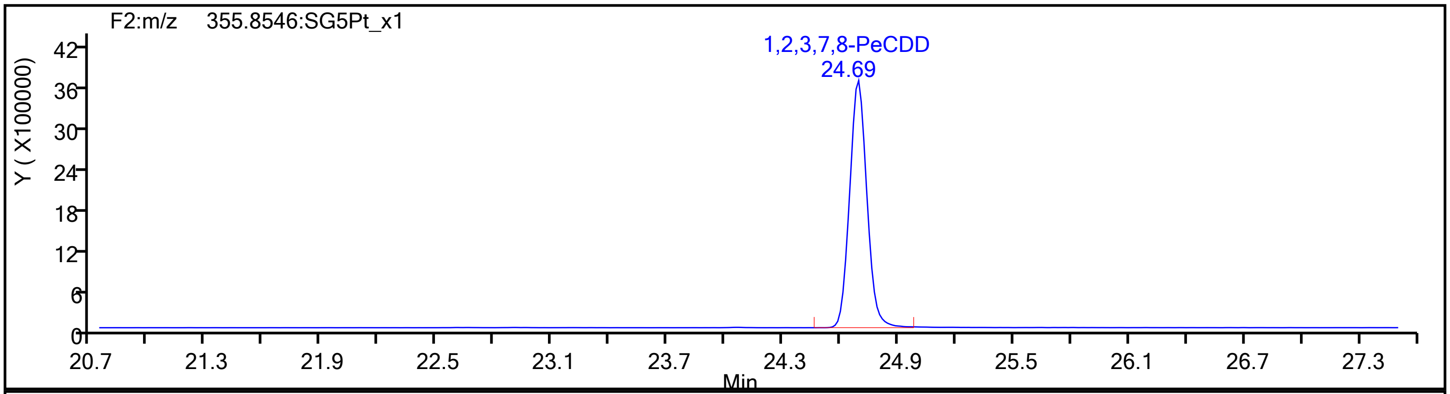

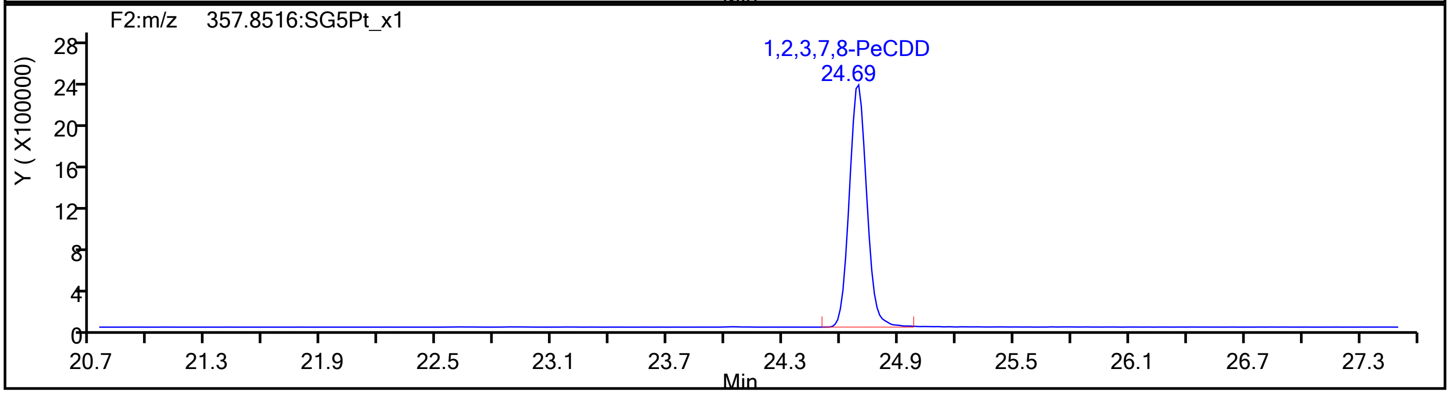

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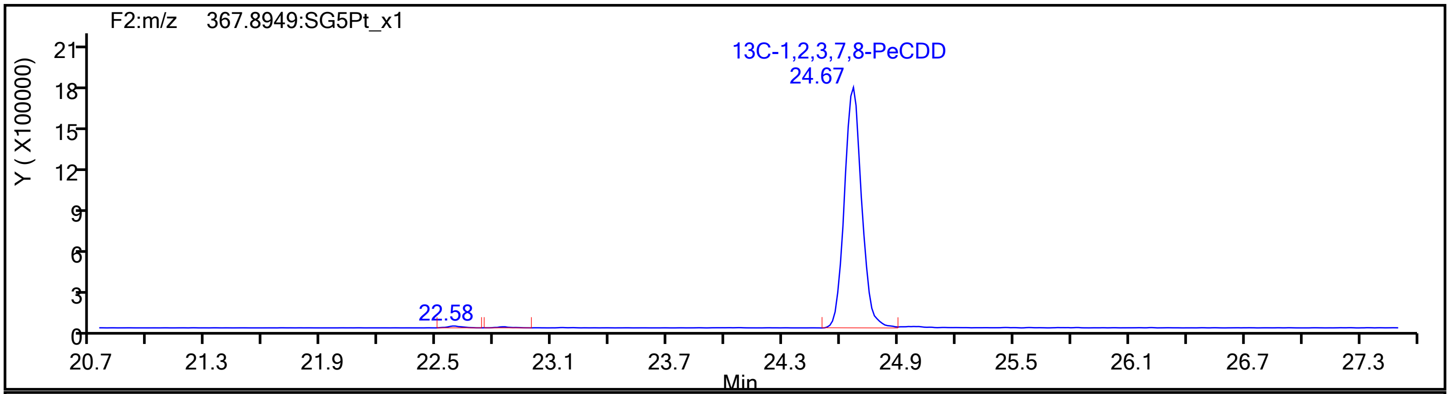

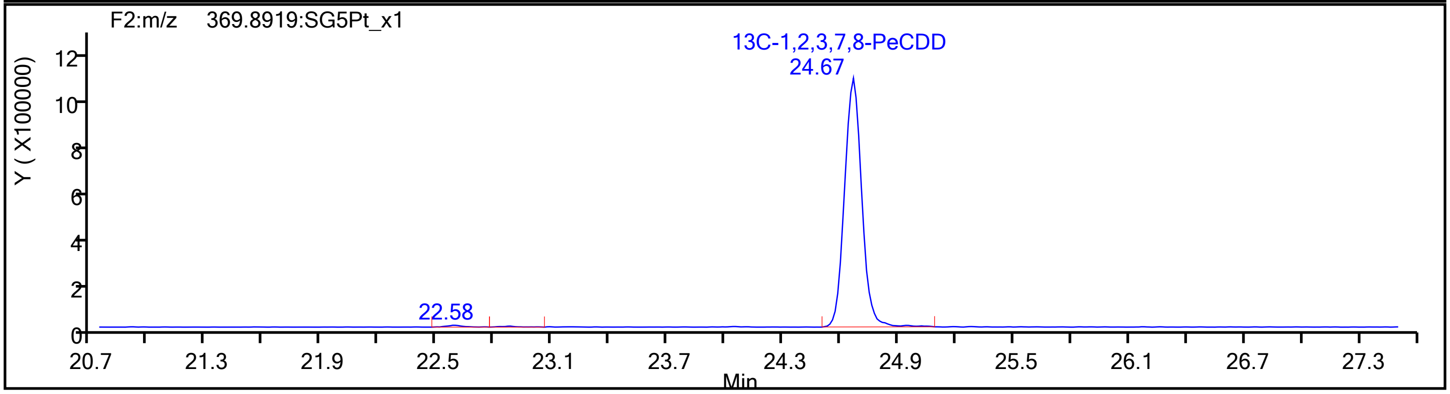

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Eurofins TestAmerica, Sacramento

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HxCDF

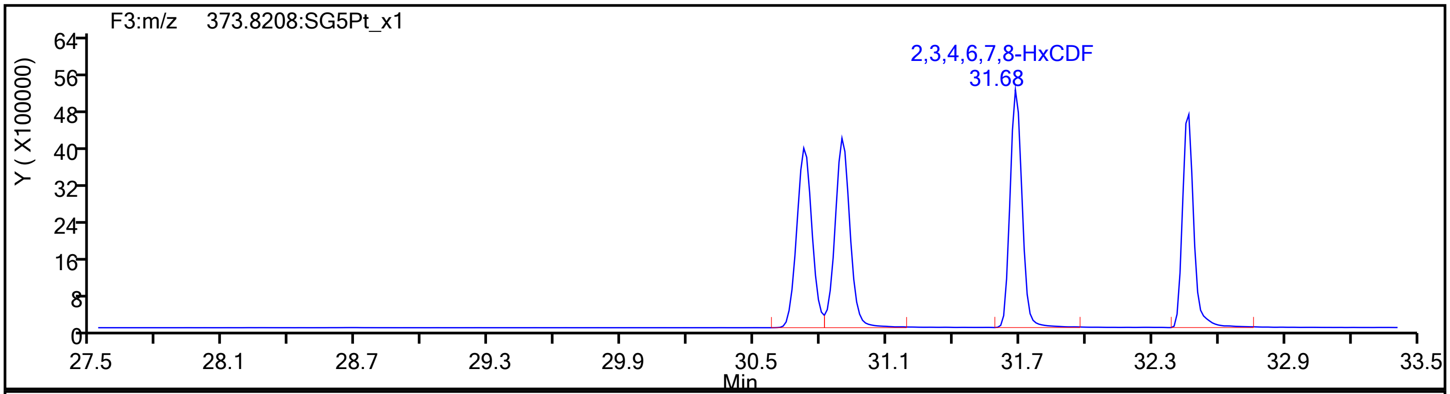

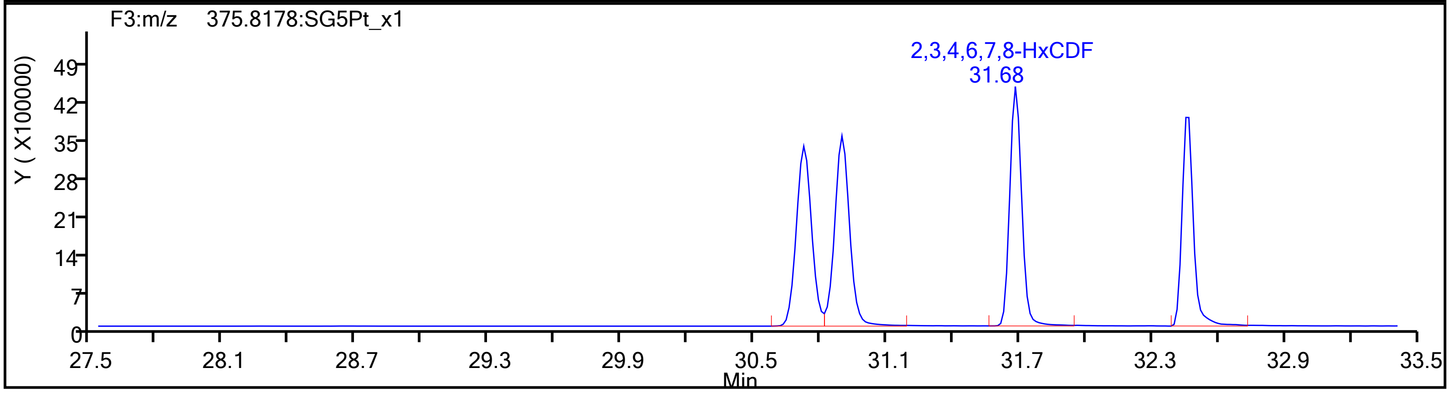

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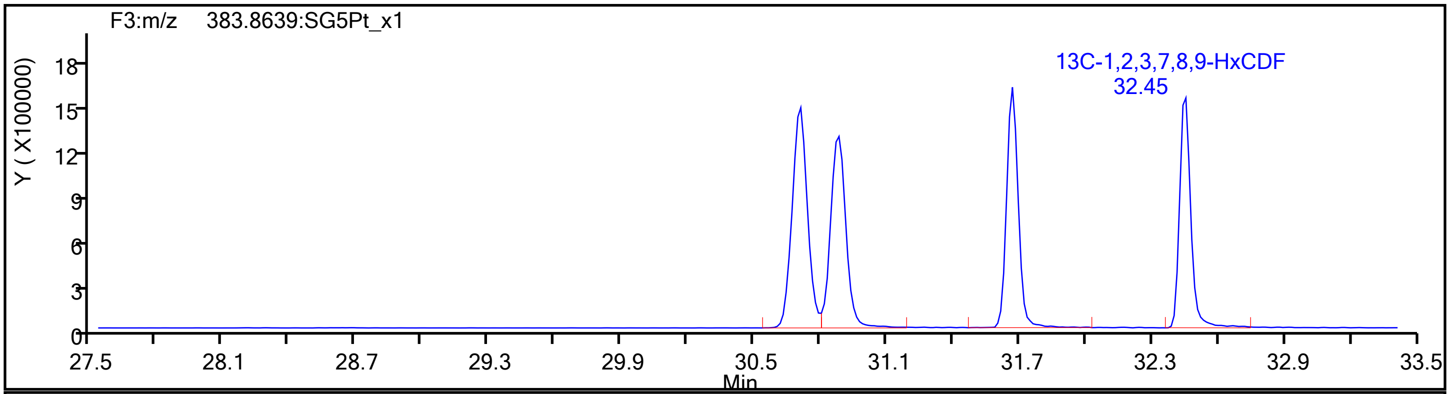

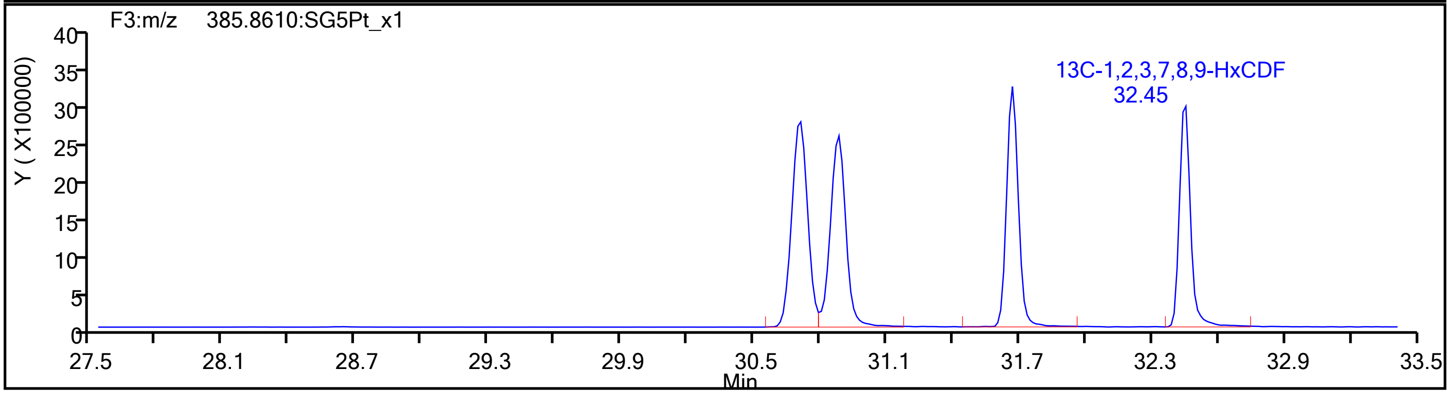

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Eurofins TestAmerica, Sacramento

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HxCDF

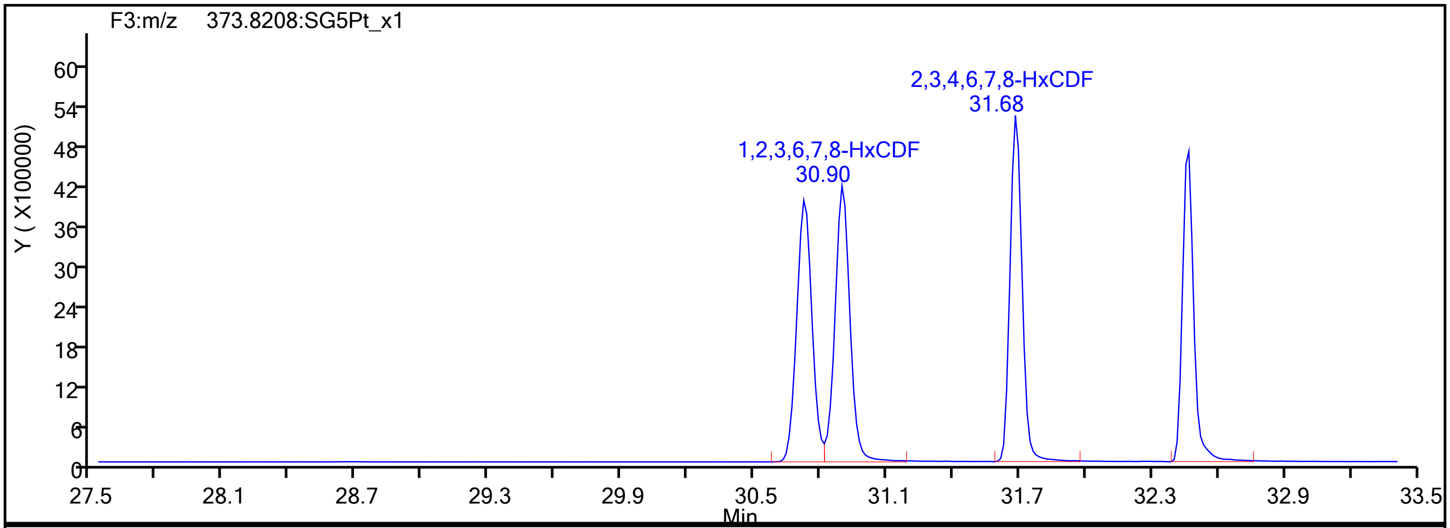

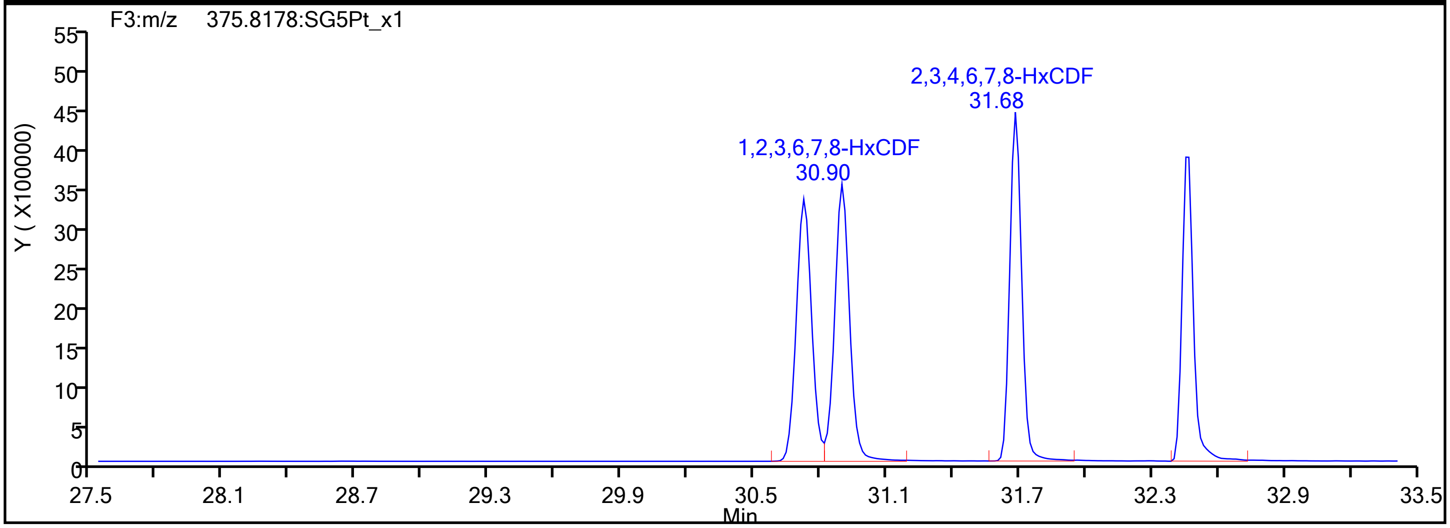

HxCDF Interference Mass

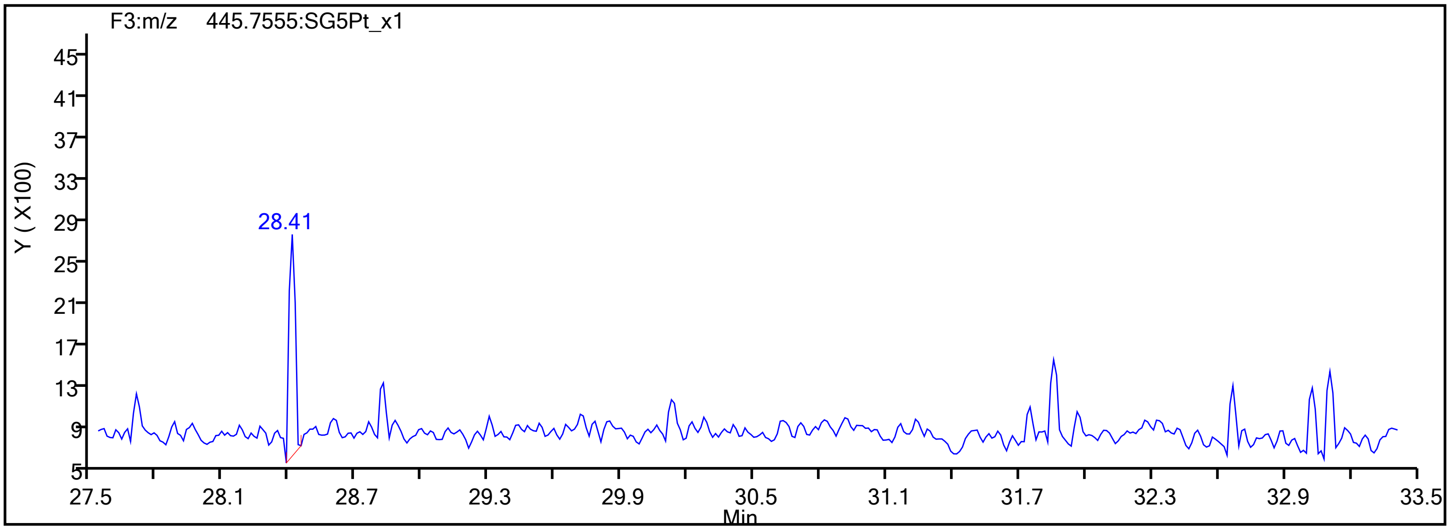

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HxCDD

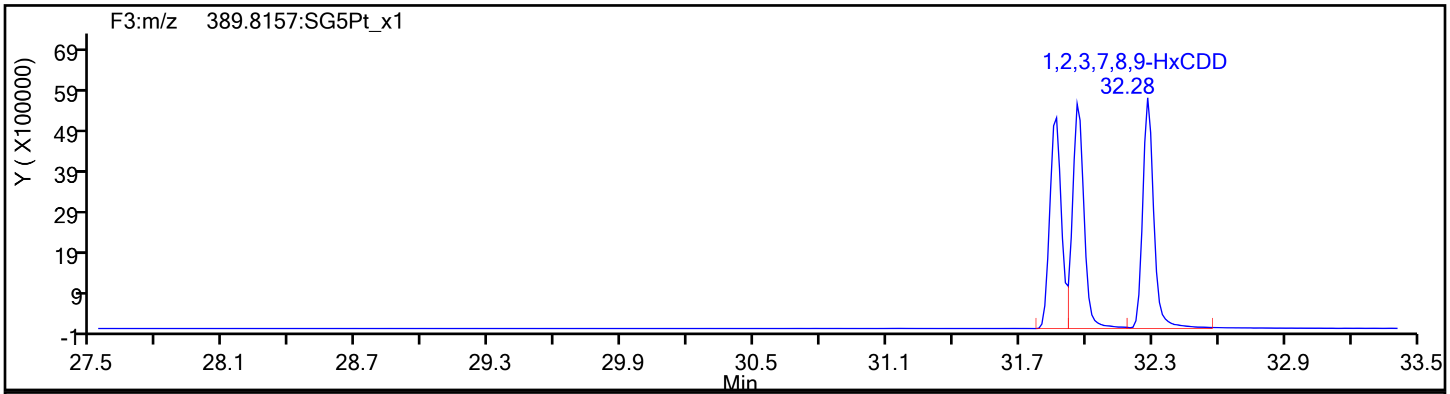

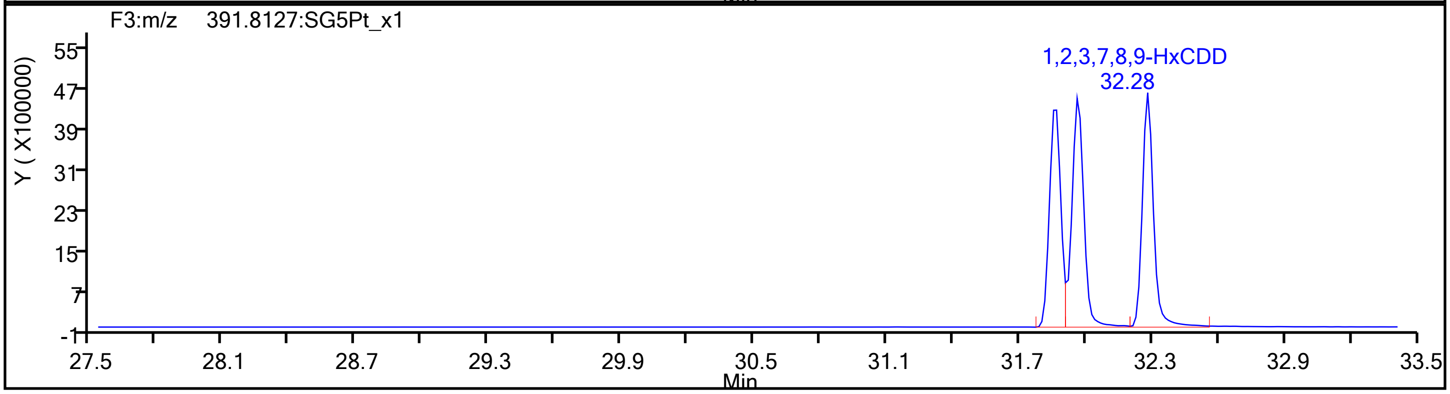

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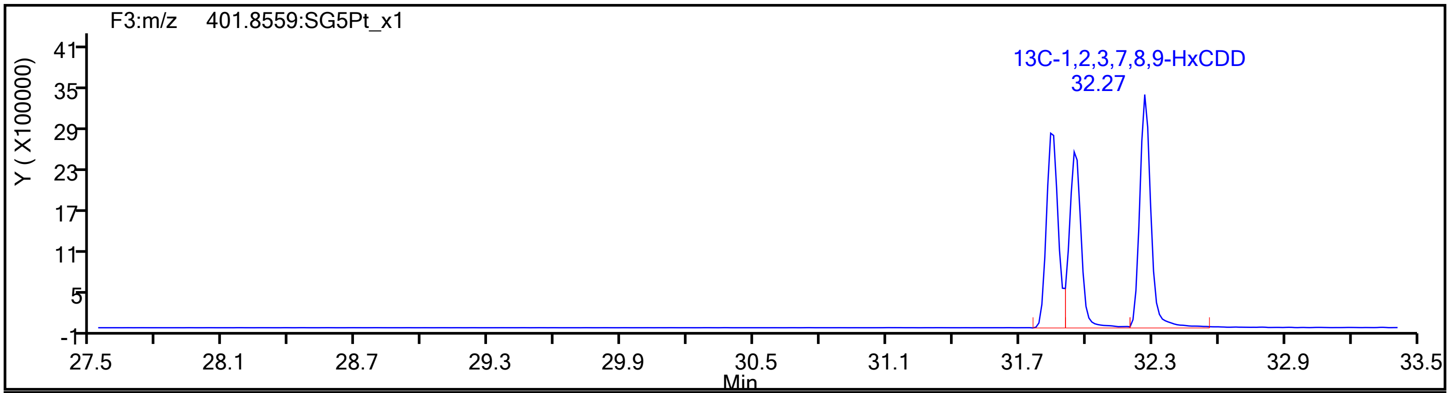

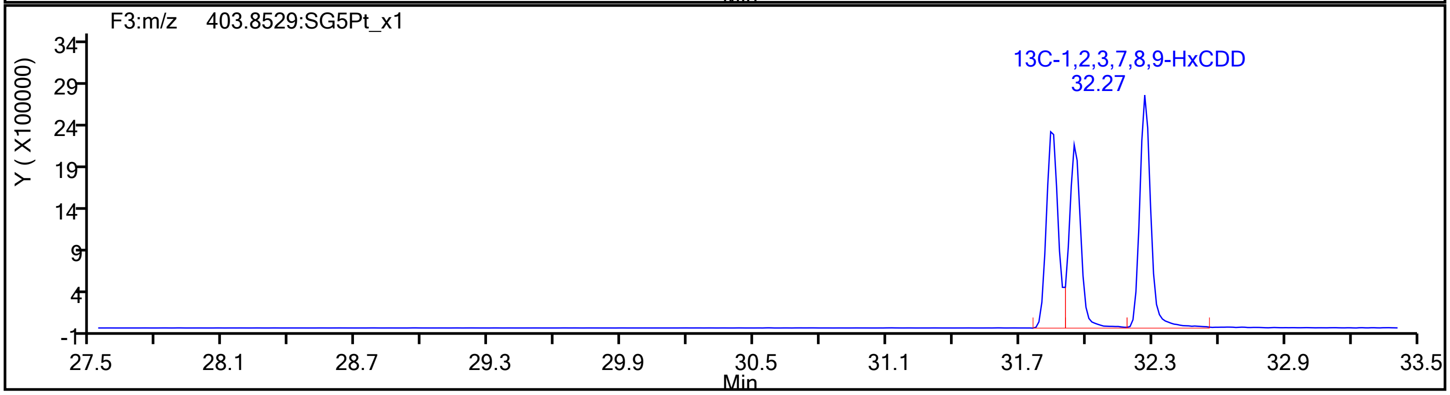

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Eurofins TestAmerica, Sacramento

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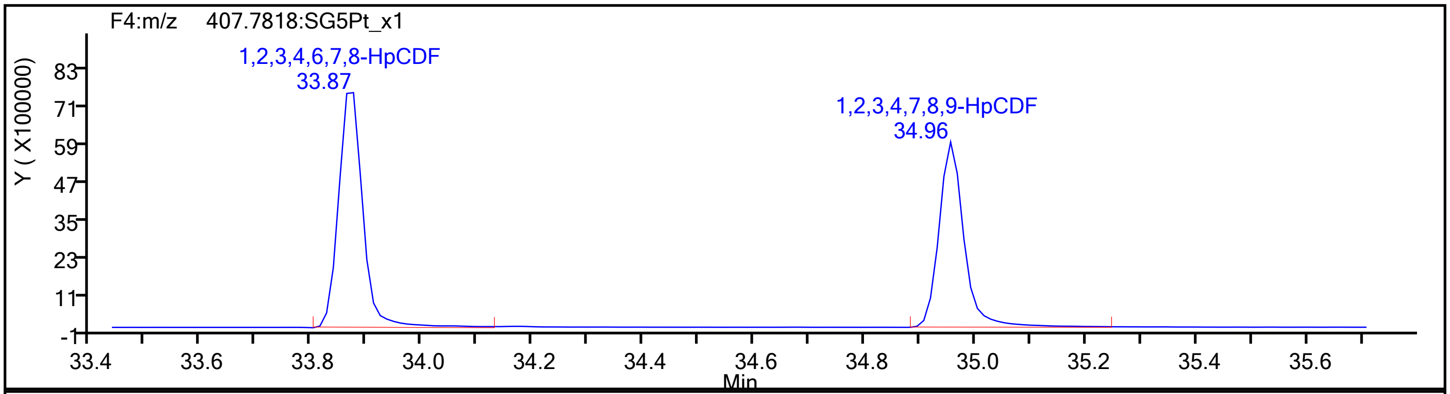

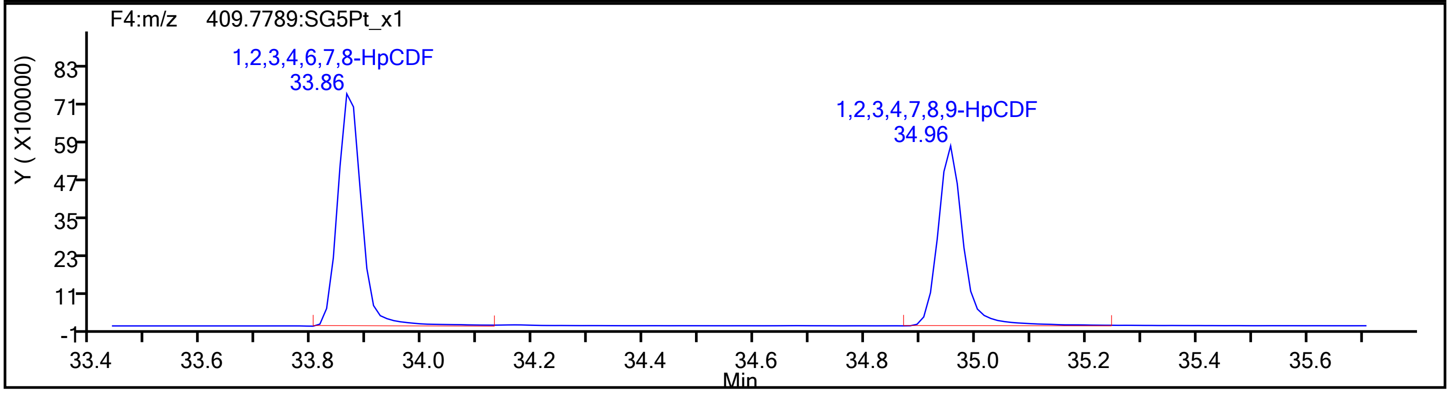

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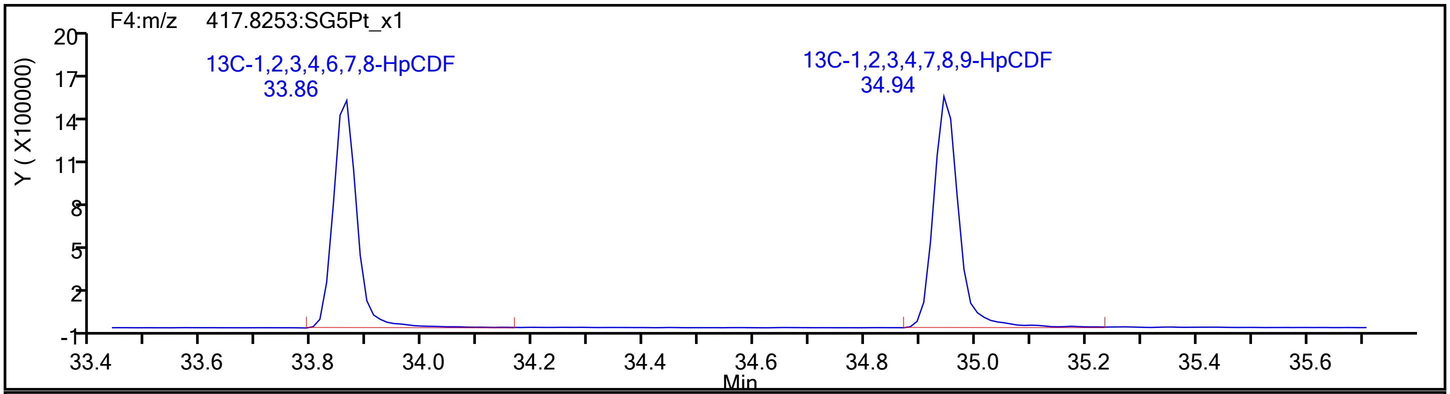

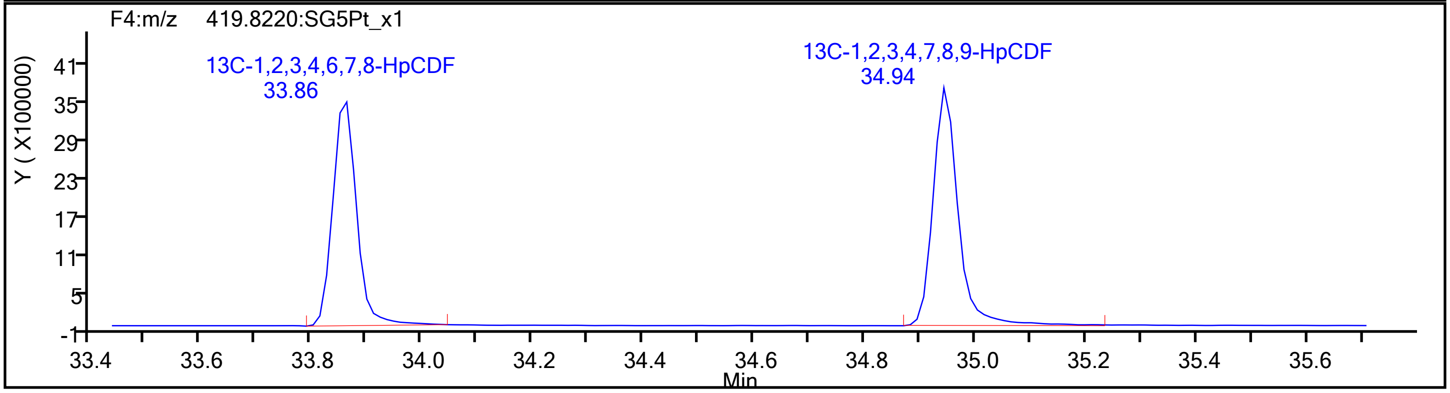

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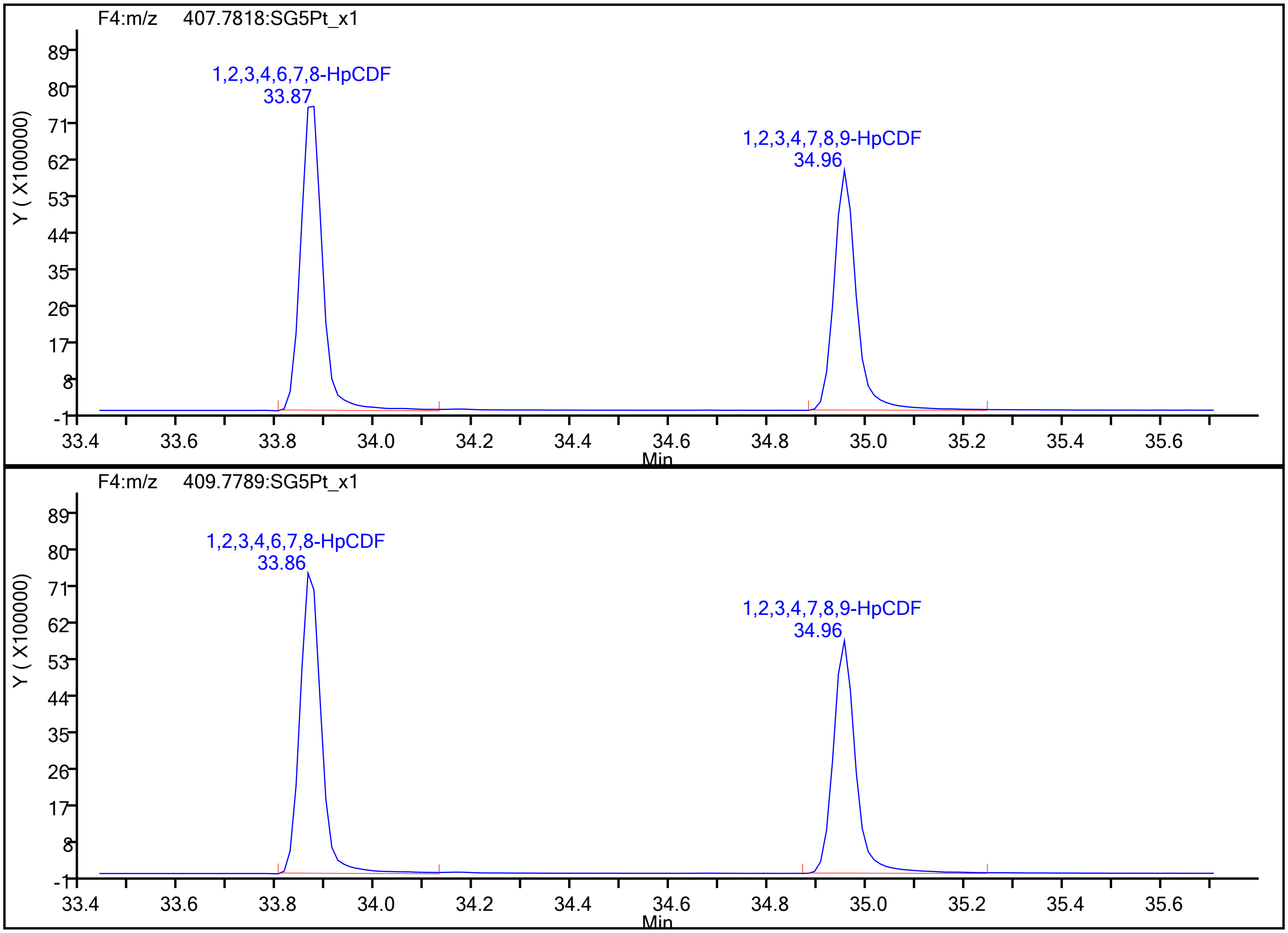

HpCDF Interference Mass

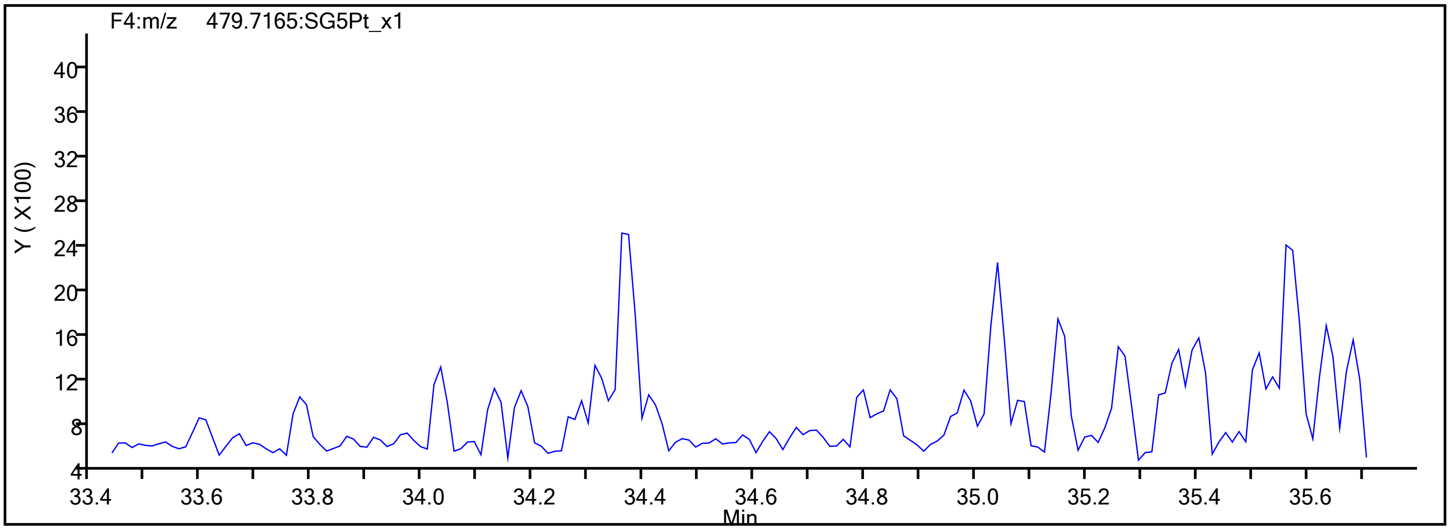

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HpCDD

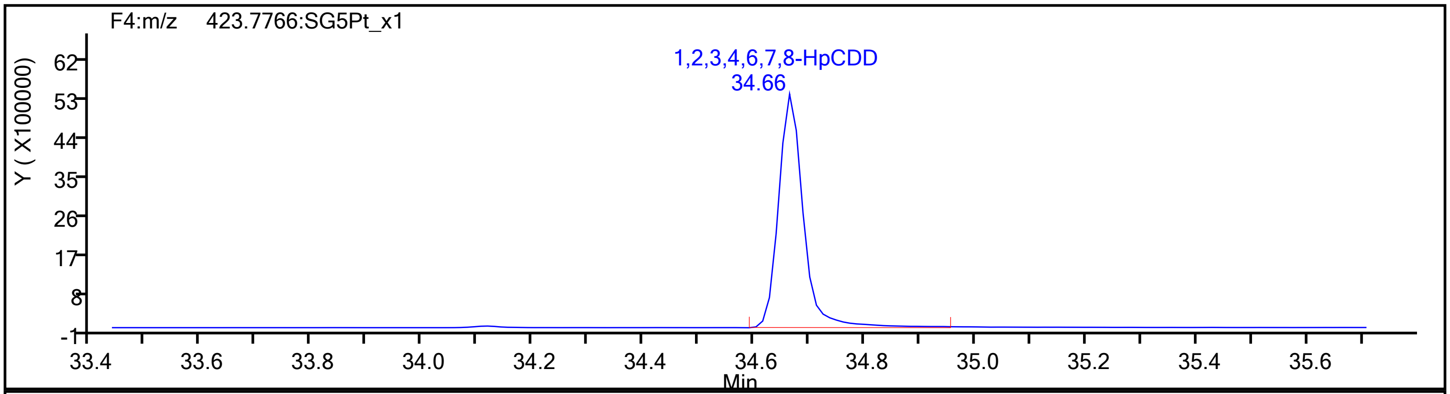

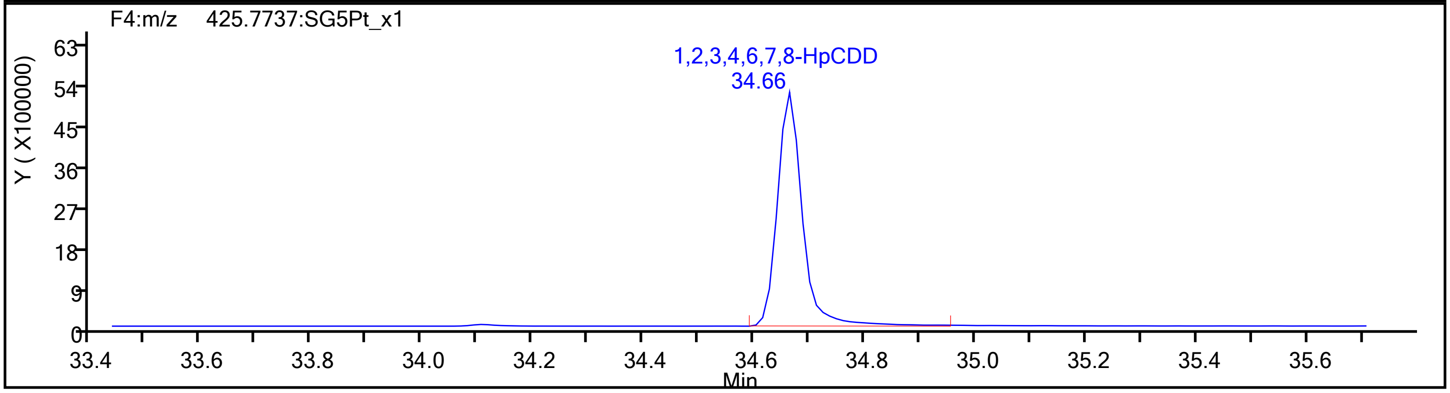

HpCDD Standards

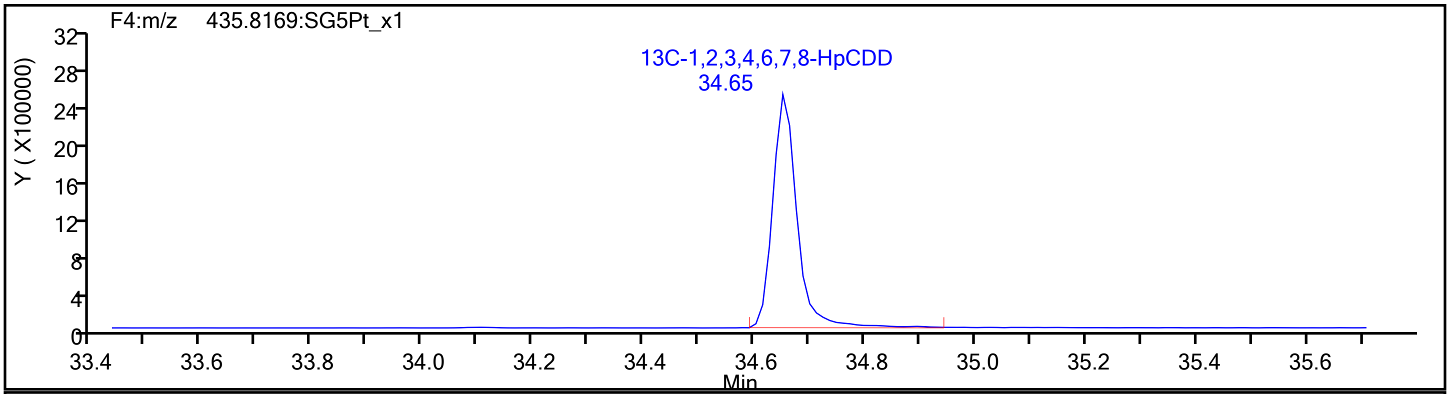

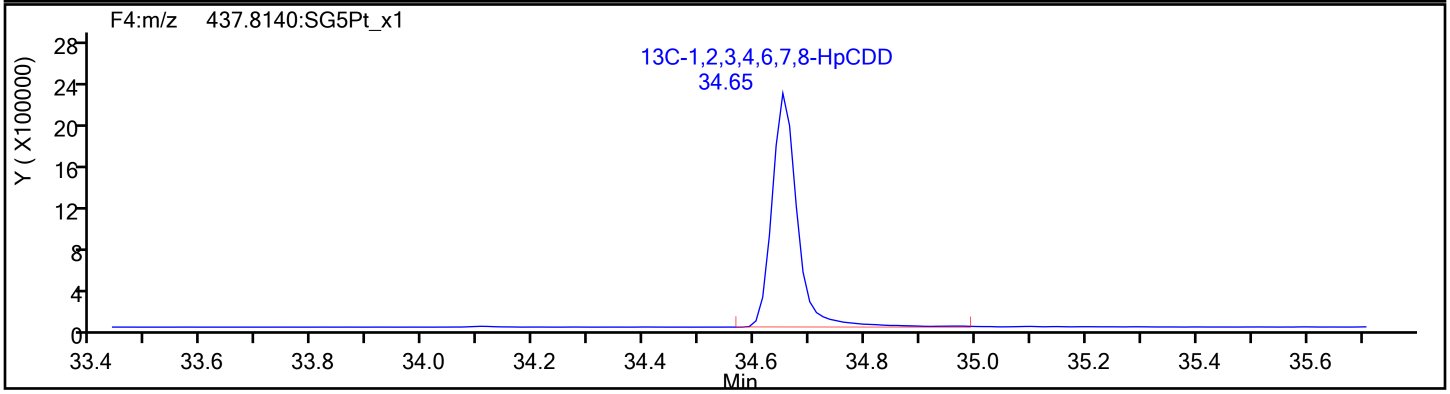

Report Date: 06-Mar-2020 13:40:07
Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d		
Injection Date:	05-Mar-2020 21:47:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

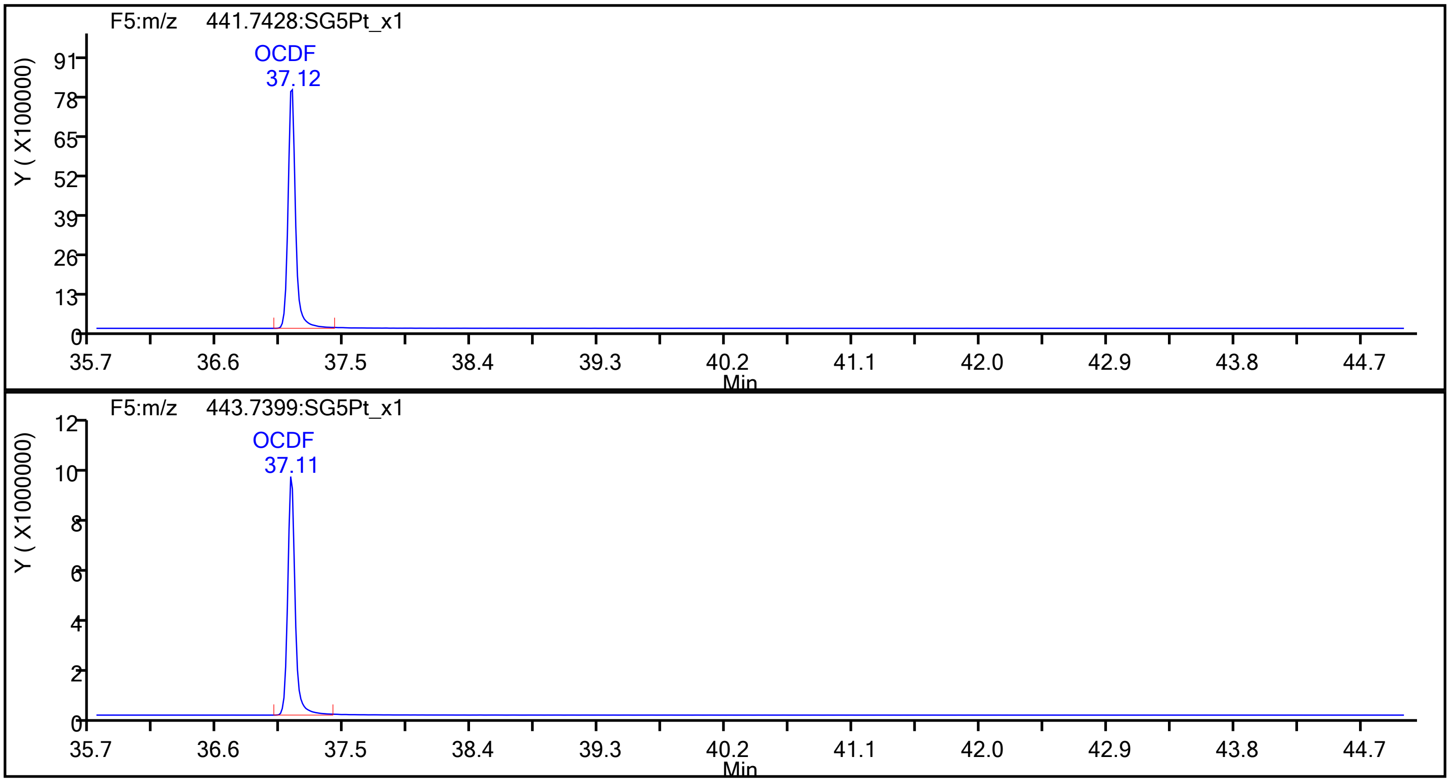

OCDF Standards

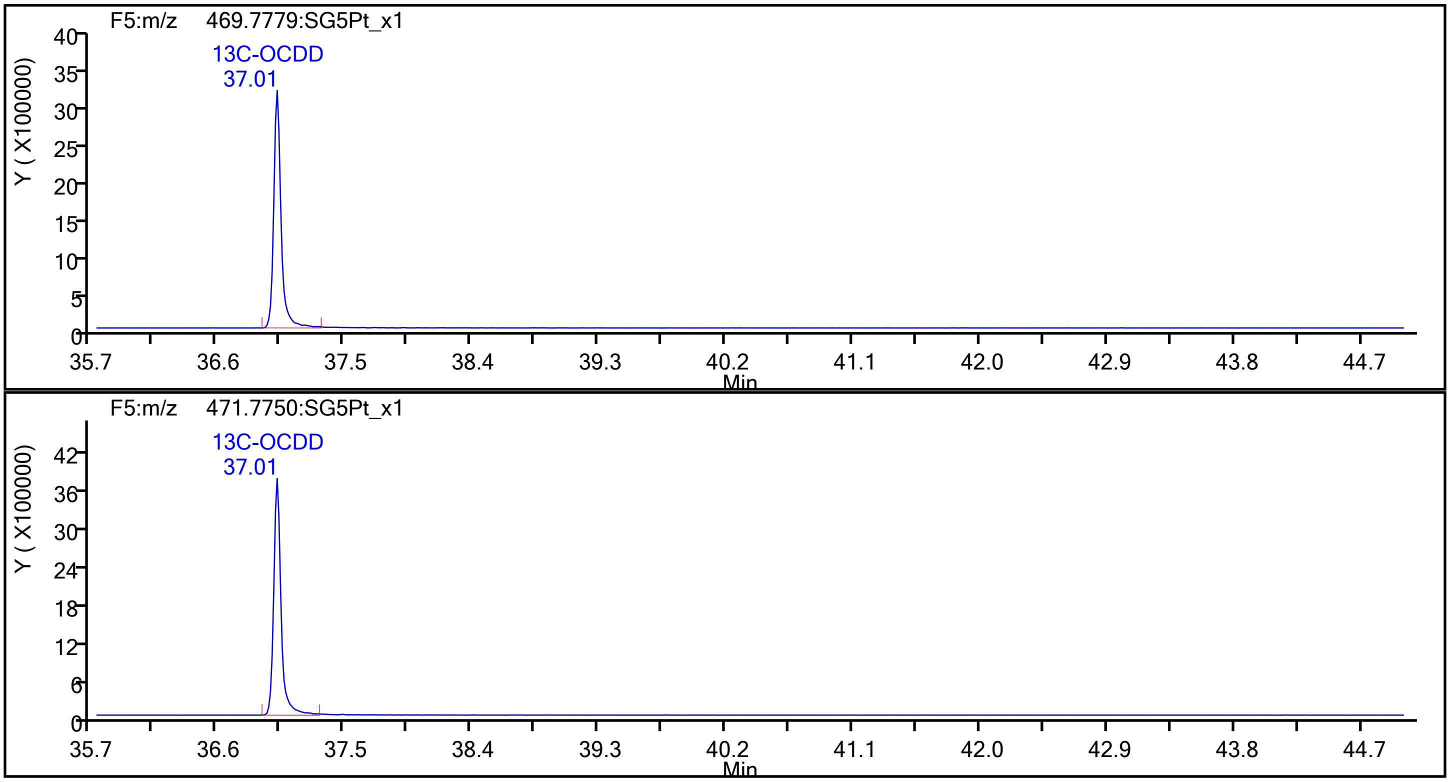

Report Date: 06-Mar-2020 13:40:07 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

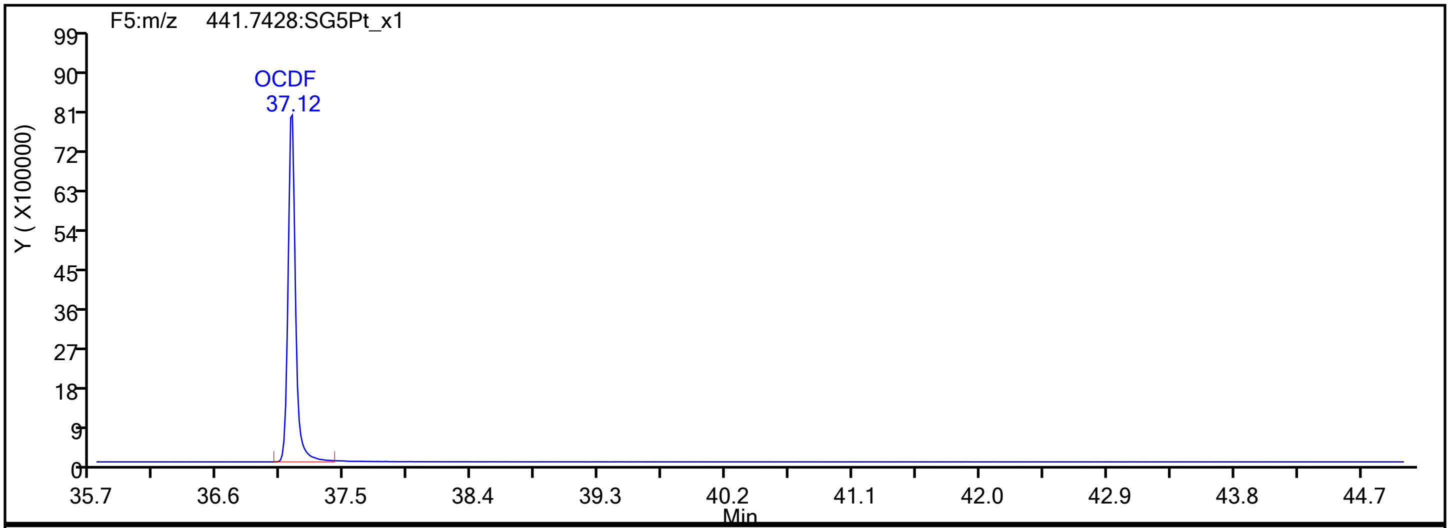

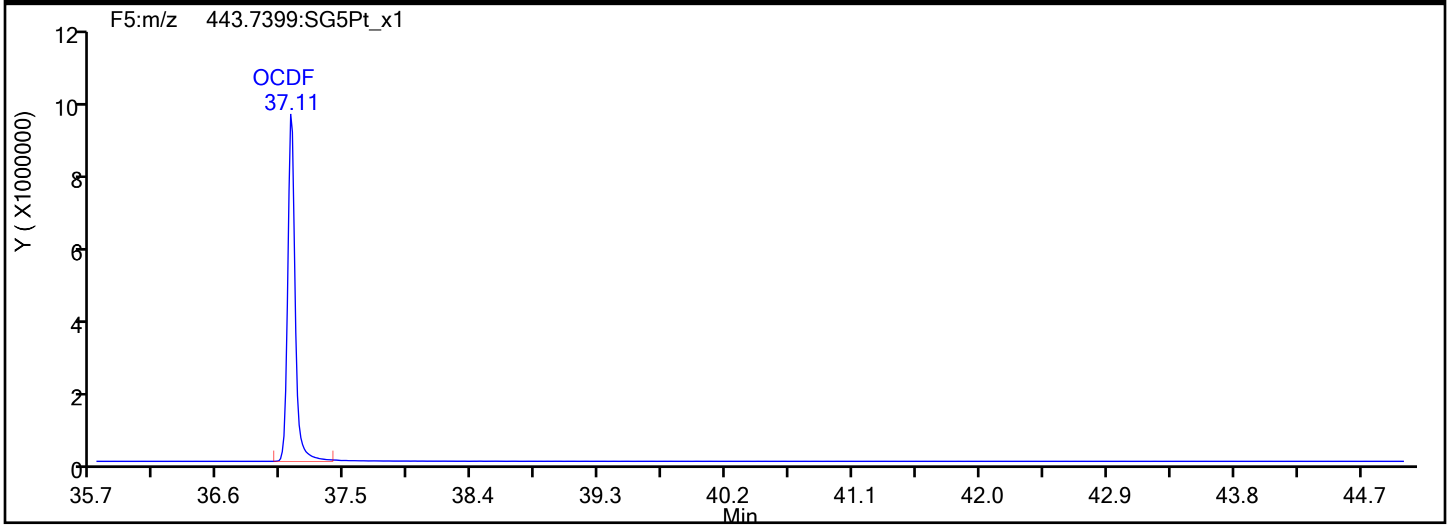

OCDF Interference Mass

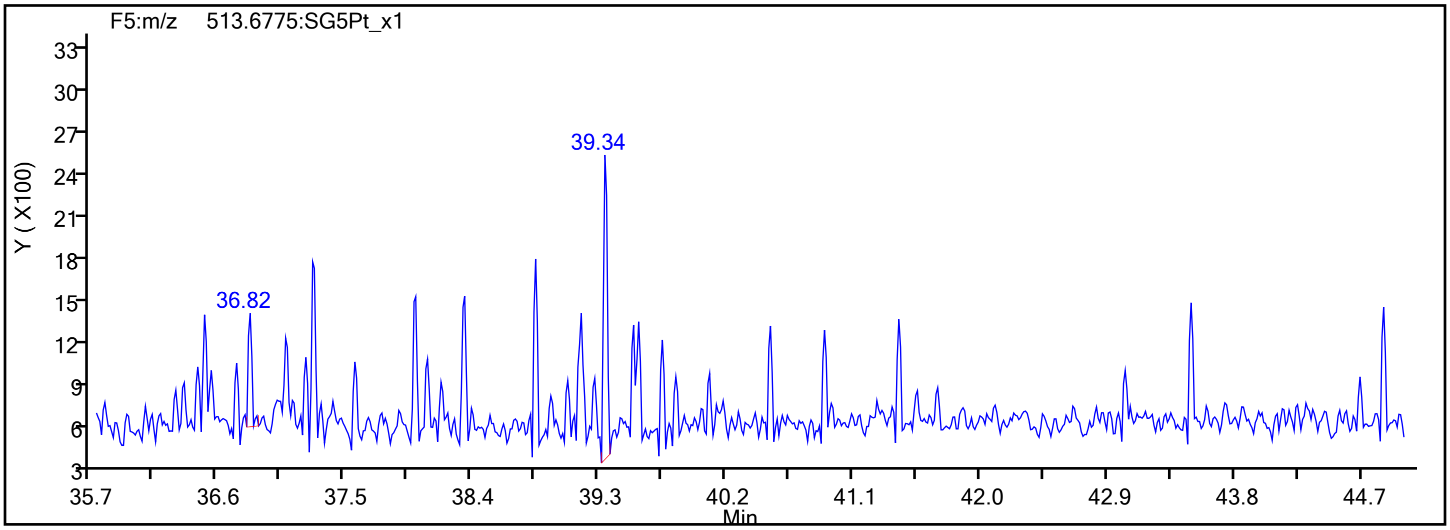

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

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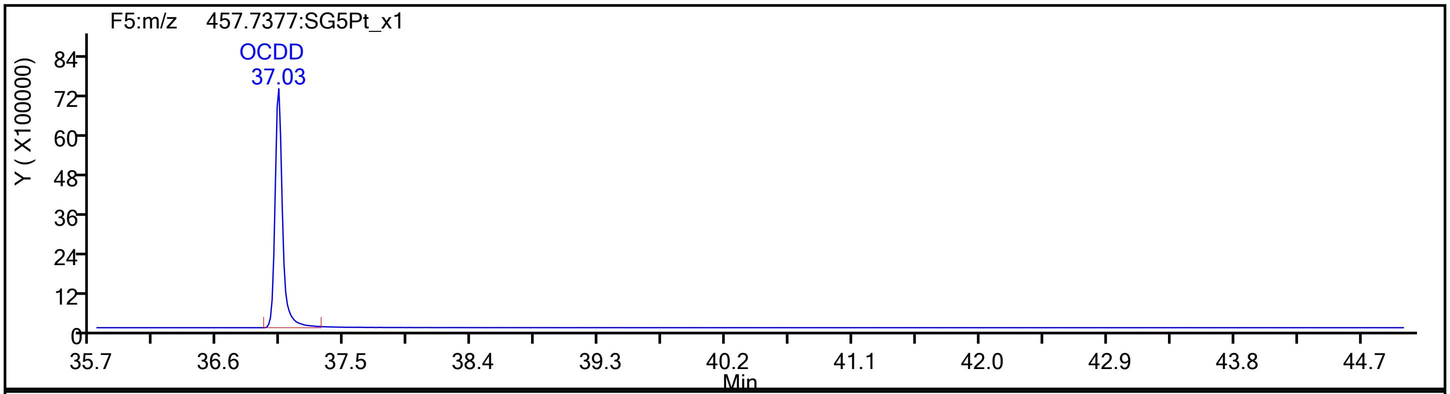

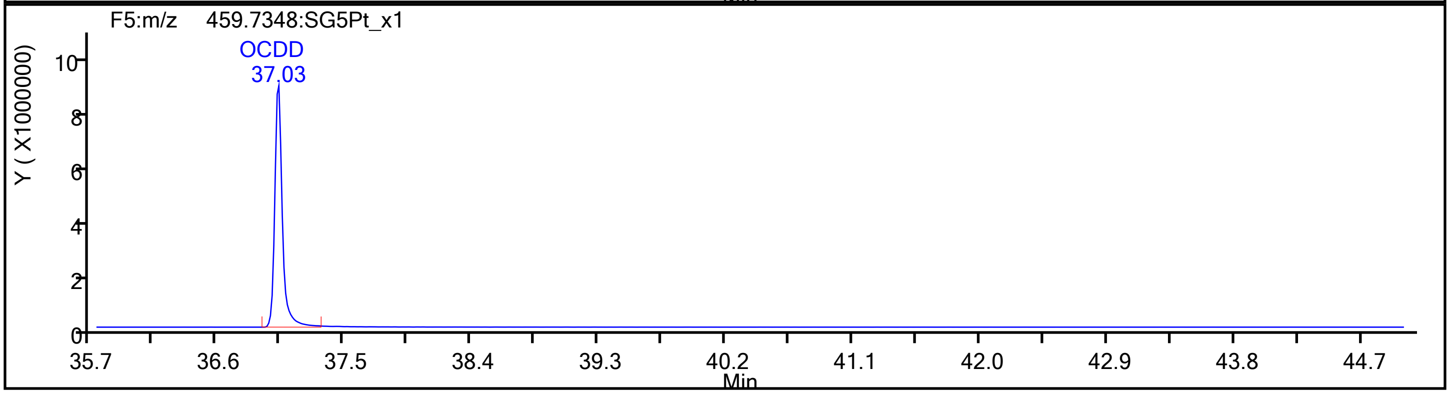

OCDD Standards

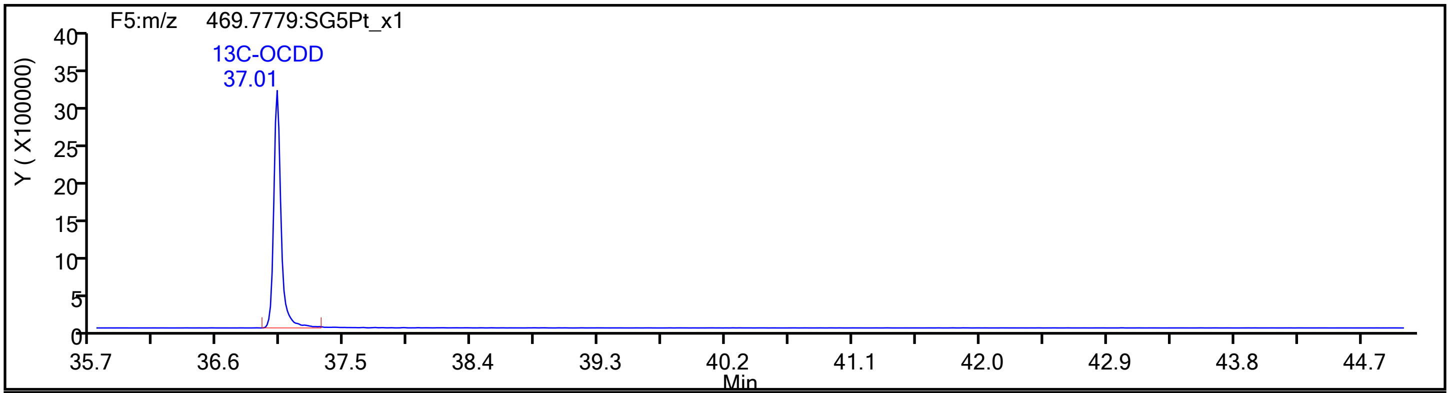

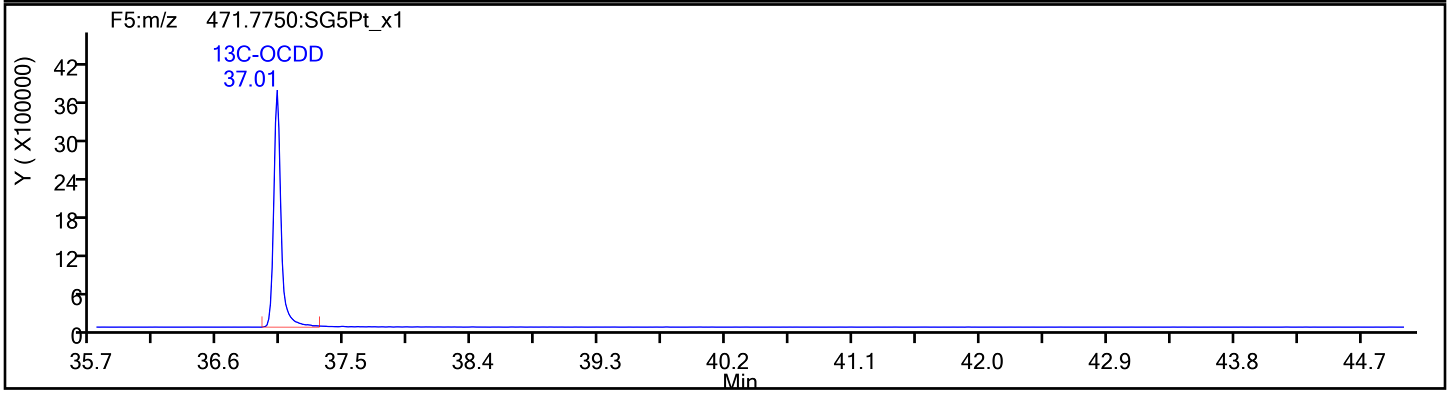

Report Date: 06-Mar-2020 13:40:07		Chrom Revision: 2.3 19-Feb-2020 16:45:46	

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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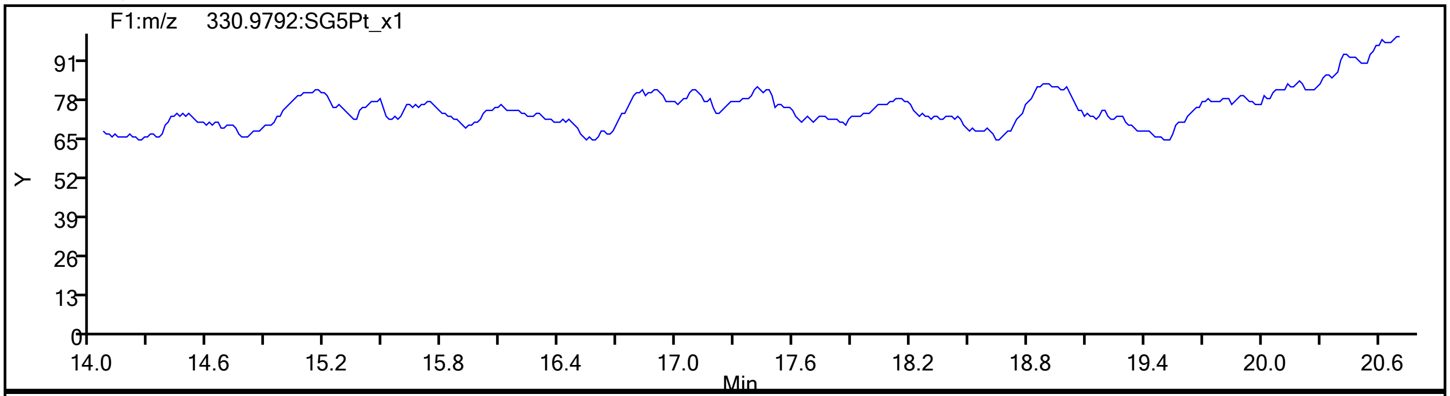

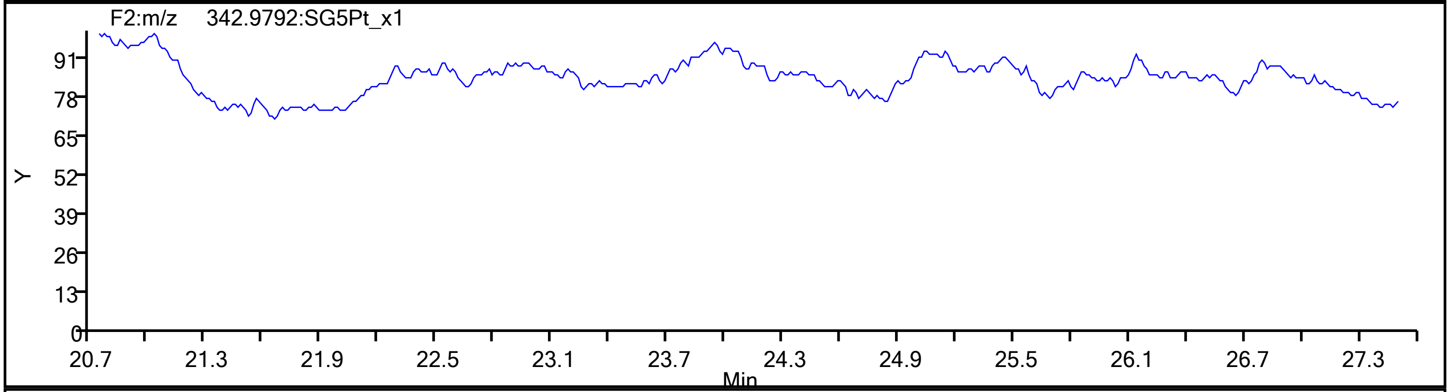

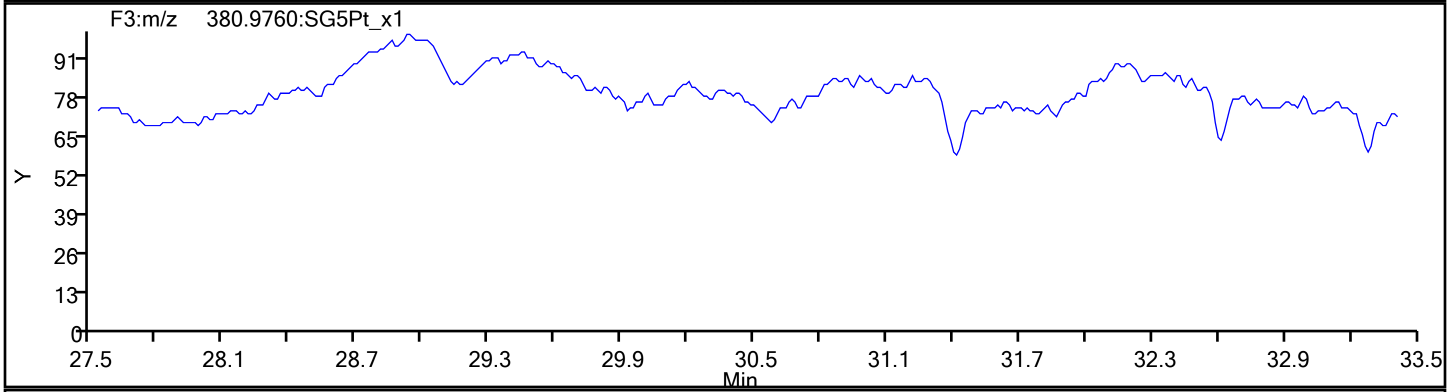

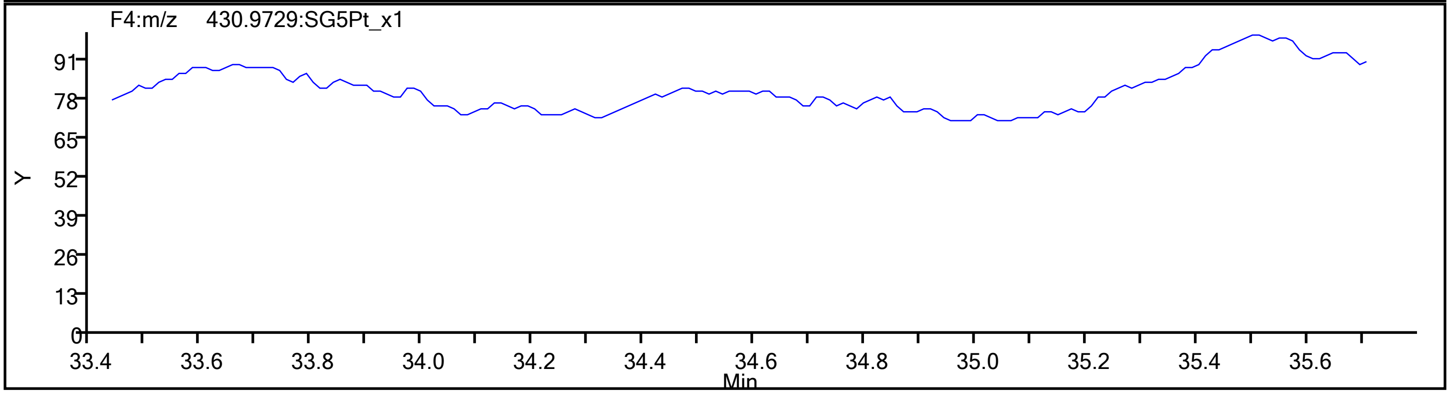

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_9.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	9
Column Type:	DB-5	Column Dia:	0.32 mm

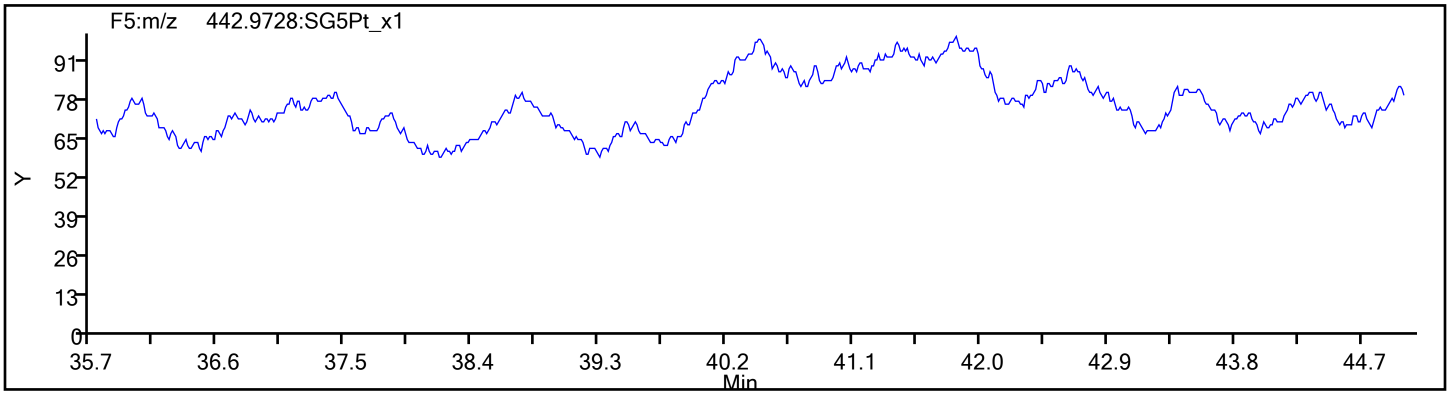

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Lab Sample ID: CCV 320-389621/2   Calibration Date: 06/25/2020 18:28

Instrument ID: 10D5   Calib Start Date: 03/05/2020 17:01

GC Column: DB-5   ID: 0.32(mm)   Calib End Date: 03/05/2020 20:05

Lab File ID: 25JN2010D5_2.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDF	AveID	0.7672	0.7470		9.74	10.0	97	84-120
2,3,7,8-TCDD	AveID	1.000	0.8967		8.97	10.0	90	78-129
1,2,3,7,8-PeCDF	AveID	0.9019	0.8572		47.5	50.0	95	82-120
2,3,4,7,8-PeCDF	AveID	0.8307	0.7767		46.8	50.0	94	82-122
1,2,3,7,8-PeCDD	AveID	1.014	0.9019		44.5	50.0	89	78-130
1,2,3,4,7,8-HxCDF	AveID	0.7928	0.8025		50.6	50.0	101	90-112
1,2,3,6,7,8-HxCDF	AveID	0.8592	0.8921		51.9	50.0	104	88-114
2,3,4,6,7,8-HxCDF	AveID	0.8896	0.9450		53.1	50.0	106	88-114
1,2,3,4,7,8-HxCDD	AveID	0.8332	0.7806		46.8	50.0	94	78-128
1,2,3,6,7,8-HxCDD	AveID	0.8944	0.8721		48.8	50.0	98	78-128
1,2,3,7,8,9-HxCDD	AveID	0.9449	0.8982		47.5	50.0	95	82-122
1,2,3,7,8,9-HxCDF	AveID	0.8941	0.9377		52.4	50.0	105	90-112
1,2,3,4,6,7,8-HpCDF	AveID	1.329	1.312		49.3	50.0	99	90-110
1,2,3,4,6,7,8-HpCDD	AveID	1.004	0.9187		45.8	50.0	92	86-116
1,2,3,4,7,8,9-HpCDF	AveID	1.080	1.049		48.6	50.0	97	86-116
OCDD	AveID	1.018	1.034		102	100	102	79-126
OCDF	AveID	1.108	1.088		98.2	100	98	63-159
13C-2,3,7,8-TCDF	Ave	1.197	1.068		89.3	100	89	71-140
13C-2,3,7,8-TCDD	Ave	0.8773	0.8749		99.7	100	100	82-121
13C-1,2,3,7,8-PeCDF	Ave	0.9904	0.8509		85.9	100	86	76-130
13C-2,3,4,7,8-PeCDF	Ave	1.080	0.9293		86.1	100	86	77-130
13C-1,2,3,7,8-PeCDD	Ave	0.6904	0.6591		95.5	100	95	62-160
13C-1,2,3,4,7,8-HxCDF	Ave	0.9076	0.8098		89.2	100	89	76-131
13C-1,2,3,6,7,8-HxCDF	Ave	0.8671	0.8651		99.8	100	100	70-143
13C-2,3,4,6,7,8-HxCDF	Ave	0.8287	0.7410		89.4	100	89	73-137
13C-1,2,3,4,7,8-HxCDD	Ave	0.8335	0.7259		87.1	100	87	85-117
13C-1,2,3,6,7,8-HxCDD	Ave	0.8228	0.9296		113	100	113	85-118
13C-1,2,3,7,8,9-HxCDF	Ave	0.7391	0.6615		89.5	100	89	74-135
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.7009	0.6500		92.7	100	93	78-129
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7026	0.7012		99.8	100	100	72-138
13C-1,2,3,4,7,8,9-HpCDF	Ave	0.7244	0.6672		92.1	100	92	77-129
13C-OCDD	Ave	0.6184	0.6162		199	200	100	48-208
37Cl4-2,3,7,8-TCDD	Ave	0.9515	0.9727		10.2	10.0	102	79-127

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\Data 2020.PRO\SampleDB\25JN2010D5.SPL Page 1 of 3
Last Modified: Friday, June 26, 2020 10:26:28 Pacific Daylight Time
Printed: Friday, June 26, 2020 10:26:39 Pacific Daylight Time Page Position (1, 1)

	File Name	File Text	Sample ID	Bottle	Method/Matrix	Box #	User
1	25JN2010D5_1	WDM HRDXNCP_00040	WDM 062520	Tray01:1	Dioxin		AJS
2	25JN2010D5_2	CS-4 HRDXNL4_00090	CCV 062520	Tray01:2	Dioxin		AJS
3	25JN2010D5_3	Solvent Blank C-14	SB 062520	Tray01:3	---		AJS
4	25JN2010D5_4	MB 320-389032/1-A	MB 320-389032/1-A	Tray01:4	1613B/Water	D163	AJS
5	25JN2010D5_5	LCS 320-389032/2-A	LCS 320-389032/2-A	Tray01:5	1613B/Water		AJS
6	25JN2010D5_6	LCSD 320-389032/3-A	LCSD 320-389032/3-A	Tray01:6	1613B/Water		AJS
7	25JN2010D5_7	600-205895-B-1-A	600-205895-B-1-A	Tray01:7	1613B/Water		AJS
8	25JN2010D5_8	600-205895-B-2-A	600-205895-B-2-A	Tray01:8	1613B/Water		AJS
9	25JN2010D5_9	600-205895-C-3-C	600-205895-C-3-C	Tray01:9	1613B/Water		AJS
10	25JN2010D5_10	600-205895-B-3-A MS	600-205895-B-3-A MS	Tray01:10	1613B/Water		AJS
11	25JN2010D5_11	600-205895-B-3-B MSD	600-205895-B-3-B MSD	Tray01:11	1613B/Water		AJS
12	25JN2010D5_12	600-205895-B-4-A	600-205895-B-4-A	Tray01:12	1613B/Water		AJS
13	25JN2010D5_13	WDM HRDXNCP_00040	WDM 062520A	Tray01:1	Dioxin		AJS
14	25JN2010D5_14	CS-4 HRDXNL4_00090	CCV 062520A	Tray01:2	Dioxin		AJS
15	25JN2010D5_15	Solvent Blank C-14	SB 062520A	Tray01:3	---		AJS
16	25JN2010D5_16	320-61622-A-11-A	320-61622-A-11-A	Tray01:15	8290A_D5/Water	D159	AJS
17	25JN2010D5_17	320-61622-B-12-A	320-61622-B-12-A	Tray01:16	8290A_D5/Water		AJS
18	25JN2010D5_18	320-61563-A-2-A RA	320-61563-A-2-A	Tray01:17	8290A_D5/Solid	D159	AJS
19	25JN2010D5_19	320-61563-A-3-A RA	320-61563-A-3-A	Tray01:18	8290A_D5/Solid		AJS
20	25JN2010D5_20	320-61563-A-4-A RA	320-61563-A-4-A	Tray01:19	8290A_D5/Solid		AJS
21	25JN2010D5_21	320-61563-A-5-A RA	320-61563-A-5-A	Tray01:20	8290A_D5/Solid		AJS
22	25JN2010D5_22	320-61563-A-6-A RA	320-61563-A-6-A	Tray01:21	8290A_D5/Solid		AJS
23	25JN2010D5_23	320-61688-A-8-A RI	320-61688-A-8-A RI	Tray01:22	1613B/Solid	D161	AJS
24	25JN2010D5_24	Solvent Blank C-14	SB 062520B	Tray01:3	---		AJS
25	25JN2010D5_25	CS-4 HRDXNL4_00090	CCV 062520B	Tray01:2	Dioxin		AJS

Logfile checked
06/26/20 SMA

Sample Size	Units	MS File	Inlet File	Inject Volume	Process
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
1.000000		DIOXIN10D5NEW	DIOXINNOGC	2.000000	ResolutionCheck
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1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
1.000000	L	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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10.000000	g	DIOXIN10D5NEW	DIOXINNOGC	2.000000	FBAT_ML_FileMover
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Process Options	Action On Error	s5
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---	---	C:\CHROM
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---	---	C:\CHROM
---	---	C:\CHROM
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---
---	---	C:\CHROM
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---	---	C:\CHROM
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---	---	C:\CHROM
---	---	C:\CHROM
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C:\Masslynx\Autospec\dioxinrescheck.dat	Ignore Error	---

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Thursday, June 25, 2020 17:39:22 Pacific Daylight Time

M 292.9824 R 12134

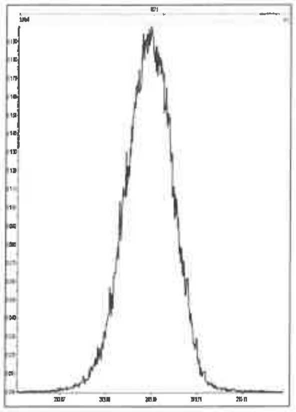

M 304.9824 R 12197

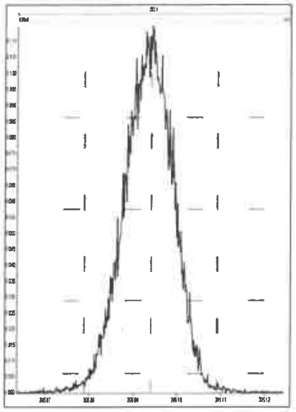

M 318.9792 R 12685

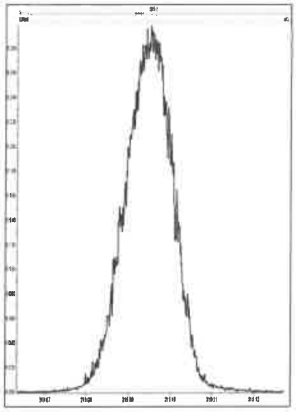

M 330.9792 R 12625

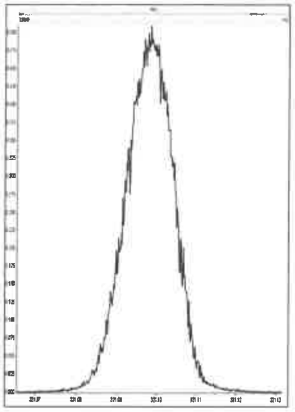

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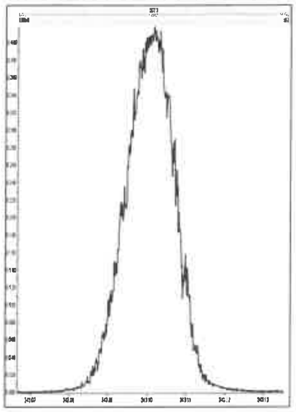

M 354.9792 R 11683

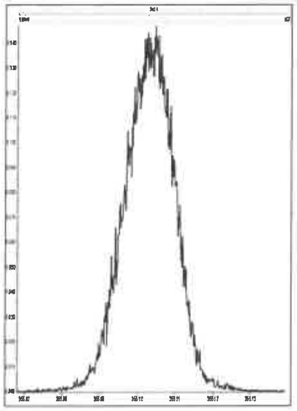

M 366.9792 R 11520

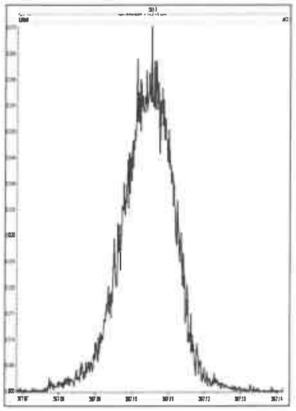

M 380.9760 R 12252

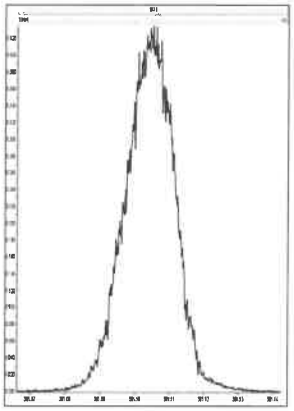

M 392.9760 R 11962

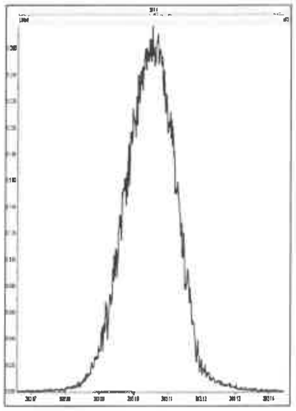

M 404.9760 R 11577

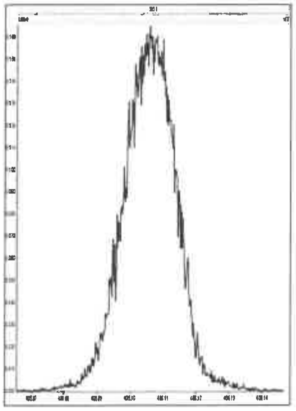

M 416.9760 R 11902

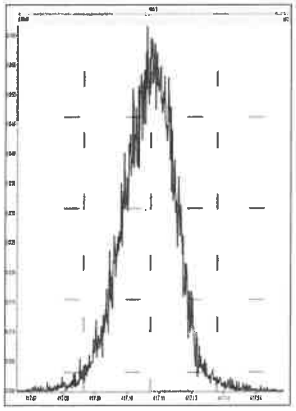

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 2 @ 200 (ppm)

Printed: Thursday, June 25, 2020 17:40:03 Pacific Daylight Time

M 318.9792 R 12559

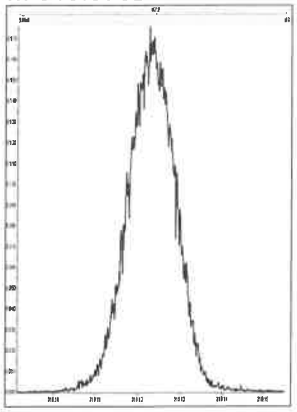

M 330.9792 R 12136

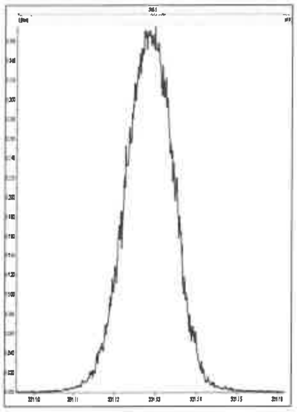

M 342.9792 R 12081

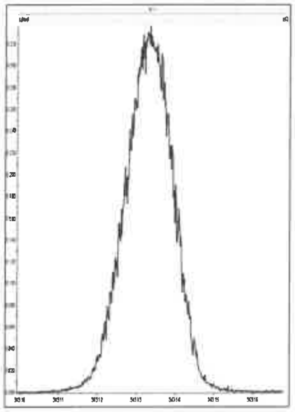

M 354.9792 R 12502

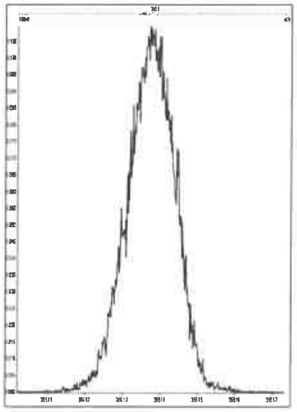

M 366.9792 R 11737

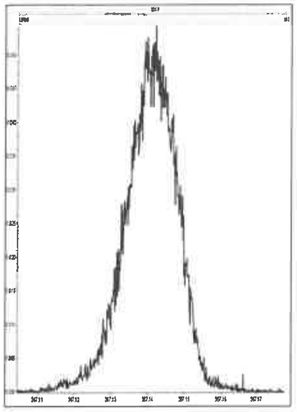

M 380.9760 R 12140

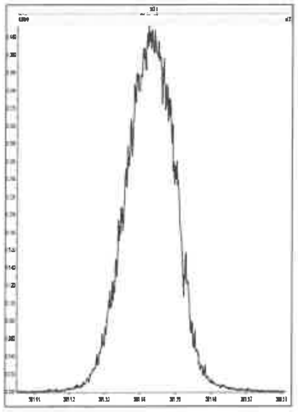

M 392.9760 R 12133

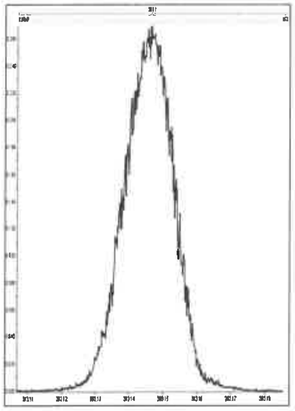

M 404.9760 R 11849

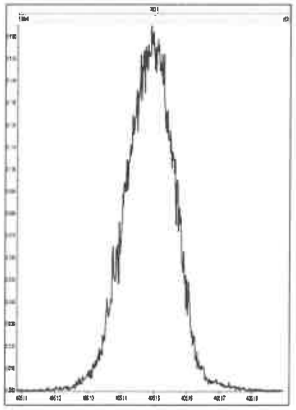

M 416.9760 R 12018

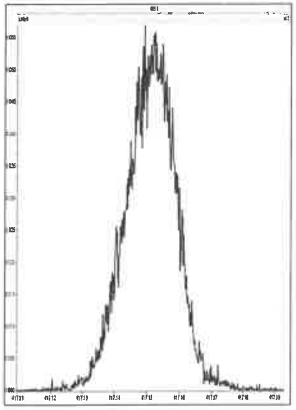

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 3 @ 200 (ppm)

Printed: Thursday, June 25, 2020 17:40:21 Pacific Daylight Time

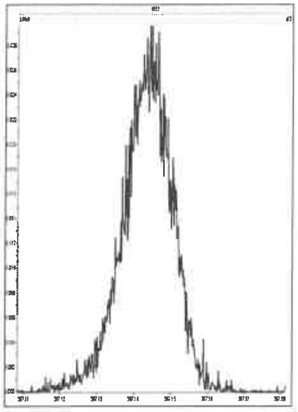
M 366.9792 R 11574

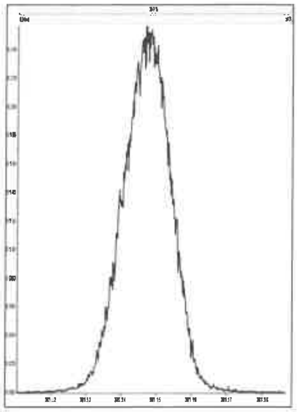
M 380.9760 R 12562

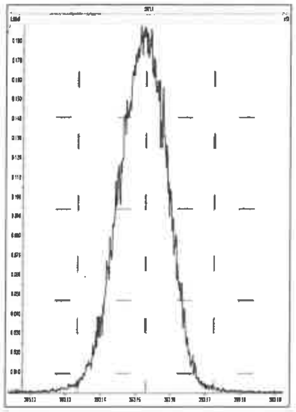
M 392.9760 R 12565

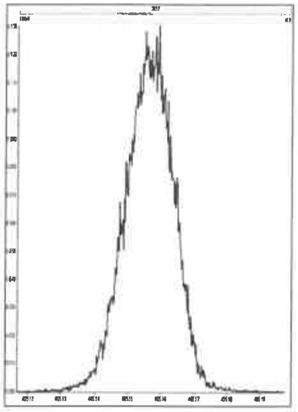
M 404.9760 R 12377

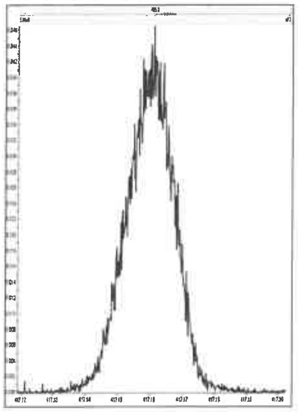
M 416.9760 R 13020

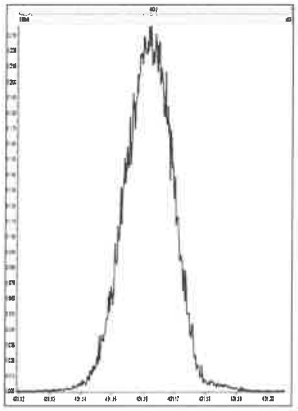
M 430.9728 R 12502

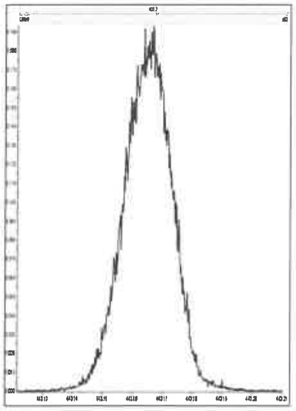
M 442.9728 R 12137

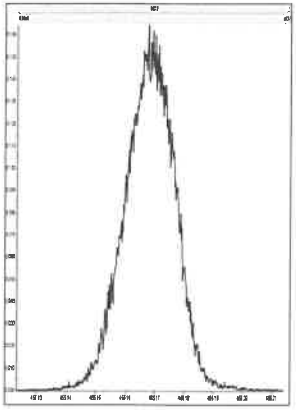
M 454.9728 R 11737

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 4 @ 200 (ppm)

Printed: Thursday, June 25, 2020 17:40:57 Pacific Daylight Time

M 380.9760 R 12627

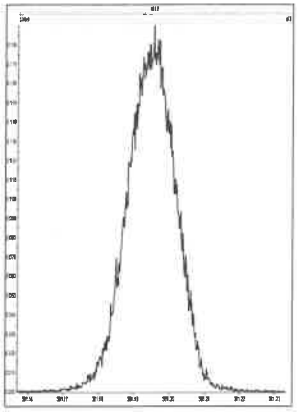

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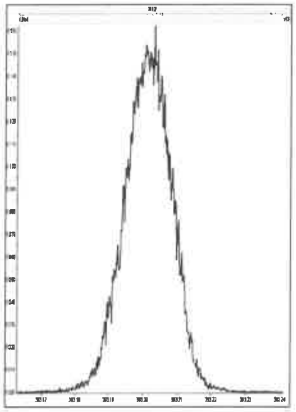

M 404.9760 R 13023

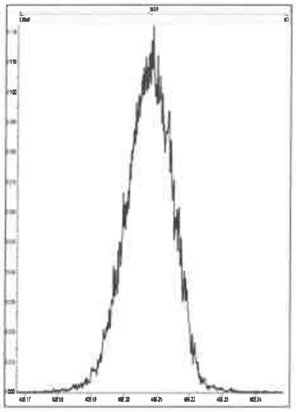

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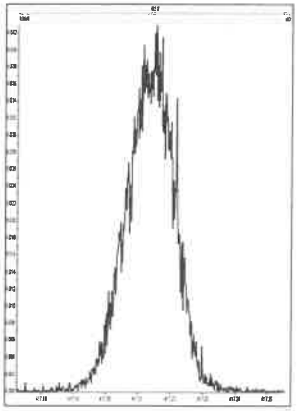

M 430.9728 R 12626

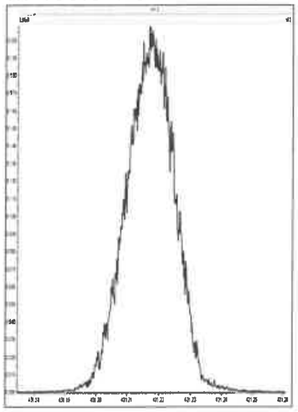

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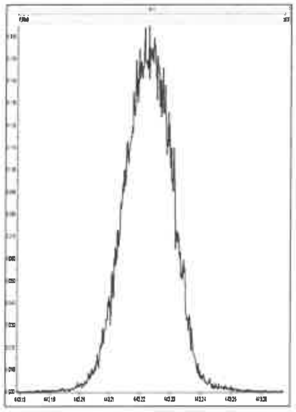

M 454.9728 R 12377

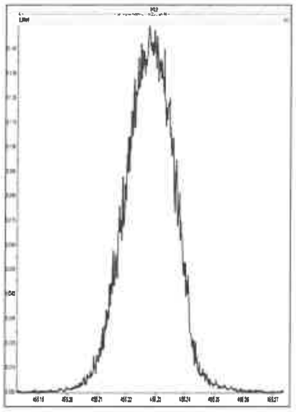

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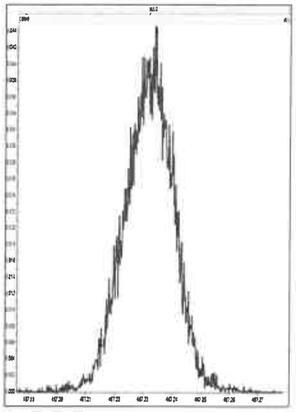

M 480.9696 R 11961

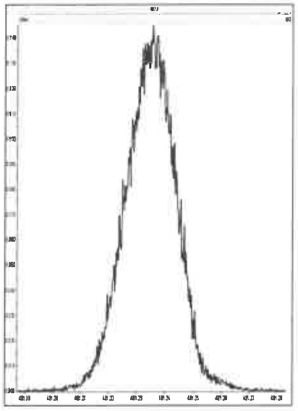

Experiment Calibration Report **MassLynx 4.1** Page 1 of 1

File: Experiment: DIOXIN10D5NEW.exp Reference: Pfk.ref Function: 5 @ 200 (ppm)

Printed: Thursday, June 25, 2020 17:41:27 Pacific Daylight Time

M 380.9760 R 12627

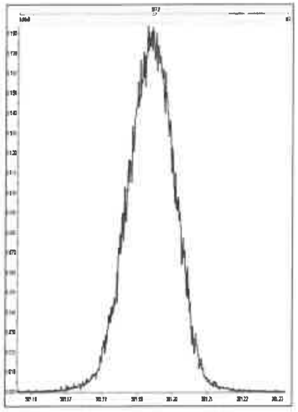

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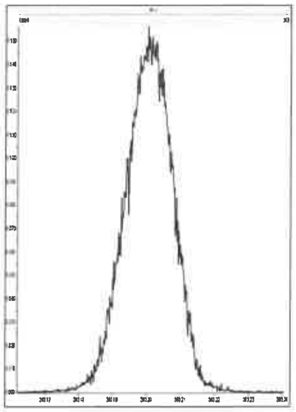

M 404.9760 R 12823

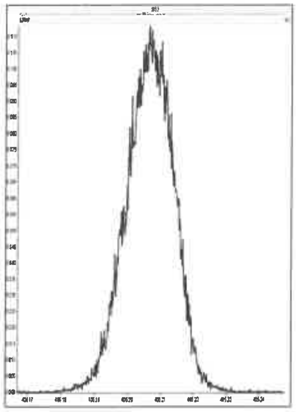

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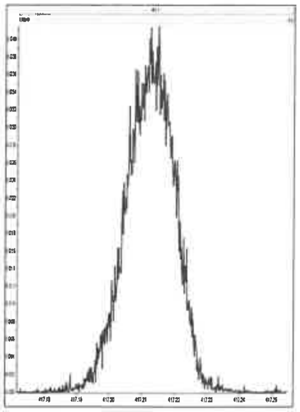

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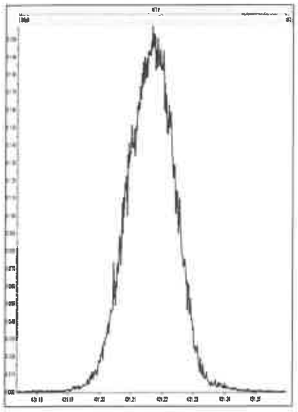

M 442.9728 R 12693

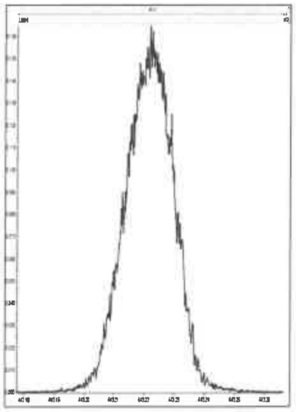

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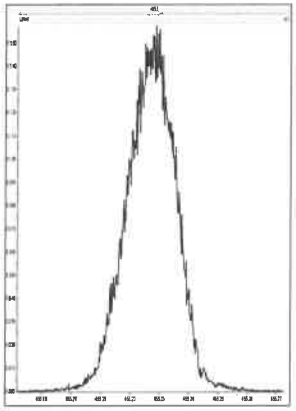

M 466.9728 R 11961

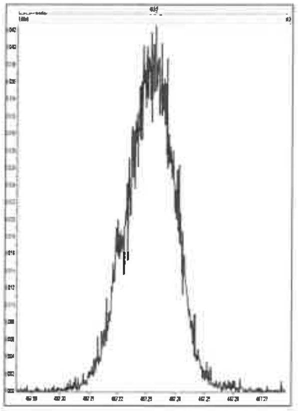

M 480.9696 R 11736

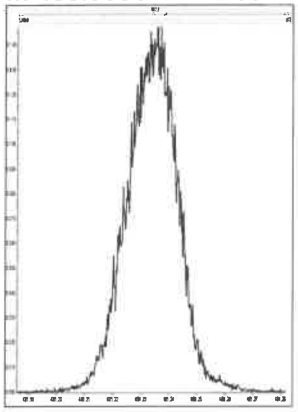

M 492.9696 R 12378

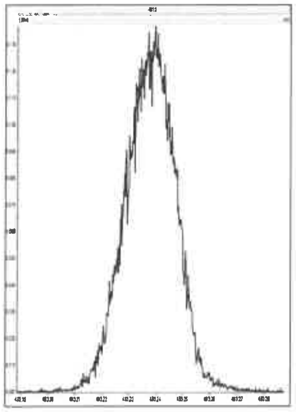

M 504.9696 R 11737

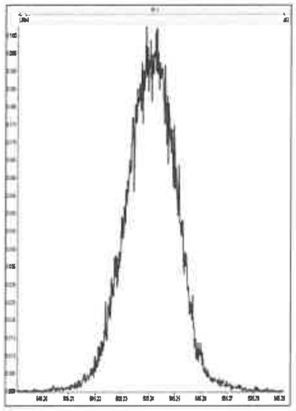

M 516.9697 R 12076

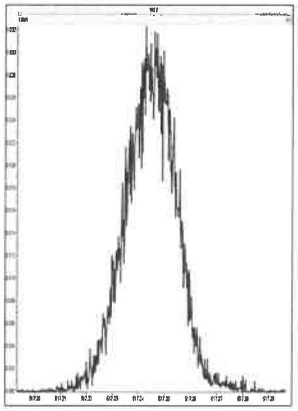

M 292.9824 R 11767

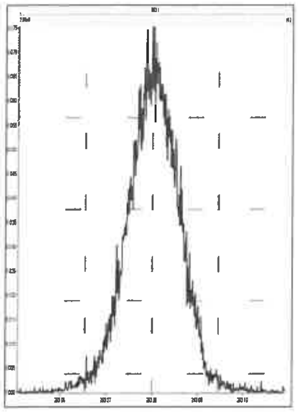

M 304.9824 R 12377

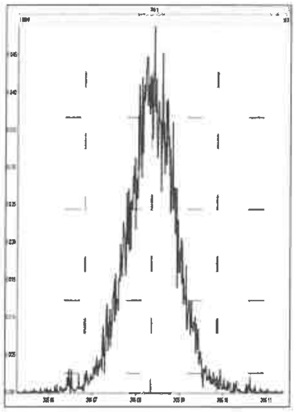

M 318.9792 R 12257

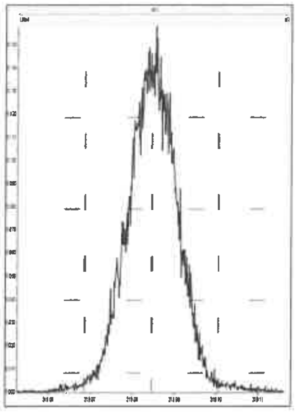

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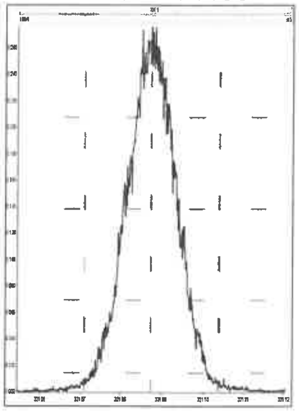

M 342.9792 R 11796

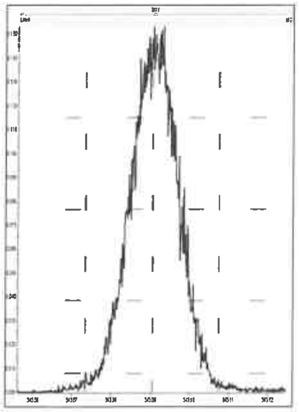

M 354.9792 R 12565

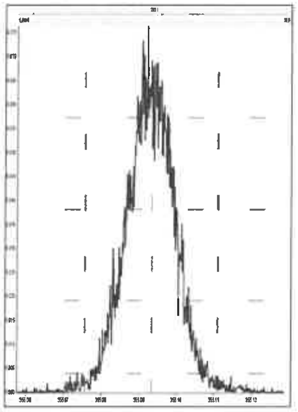

M 366.9792 R 12726

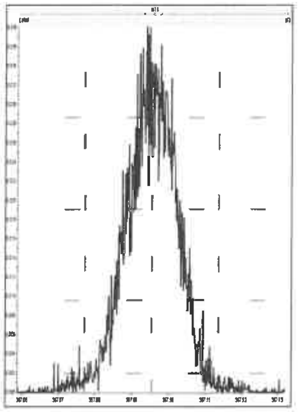

M 380.9760 R 12290

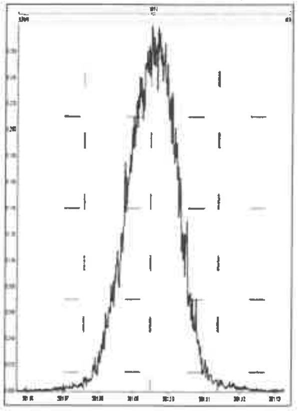

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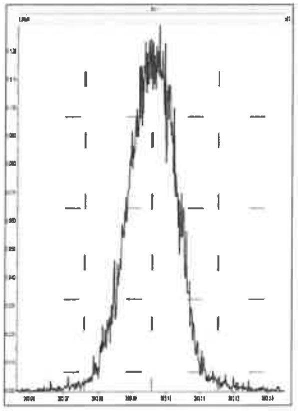

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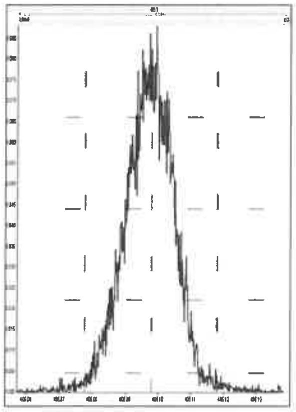

M 416.9760 R 12820

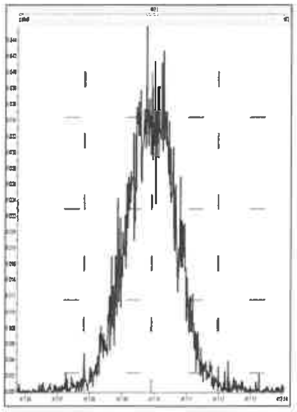

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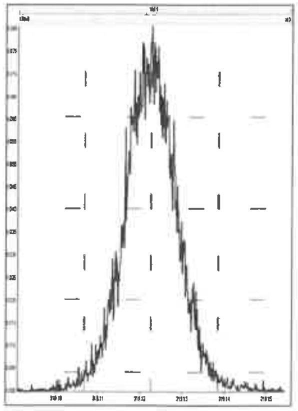

M 330.9792 R 11576

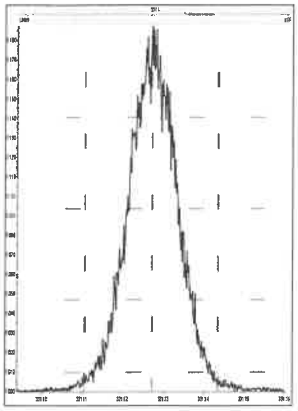

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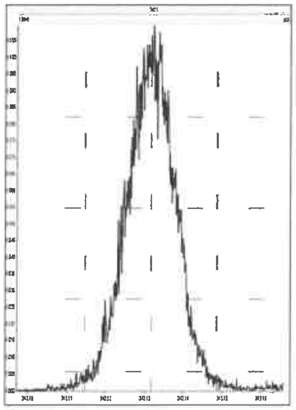

M 354.9792 R 12023

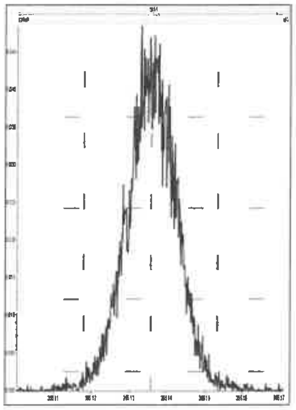

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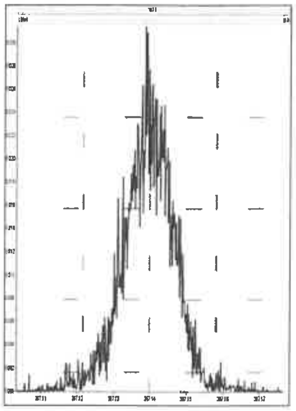

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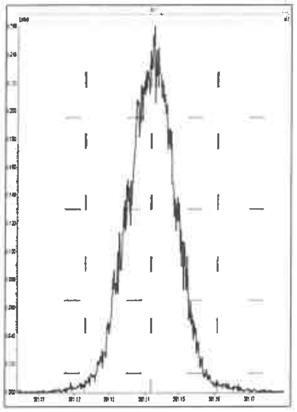

M 392.9760 R 12224

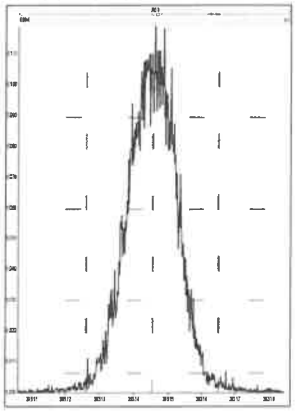

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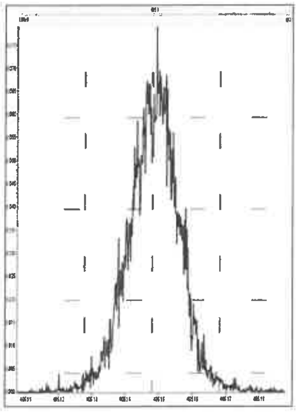

M 416.9760 R 13514

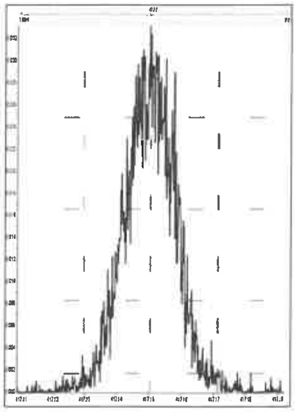

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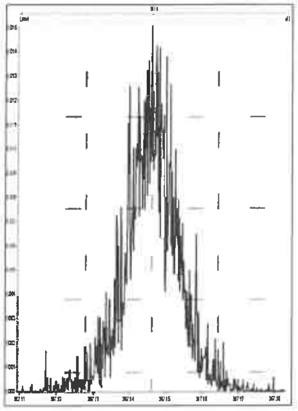

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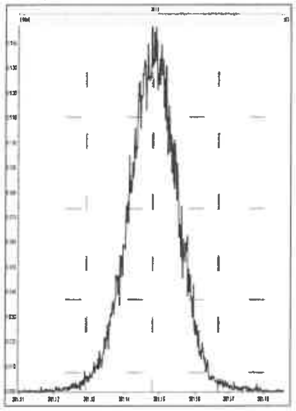

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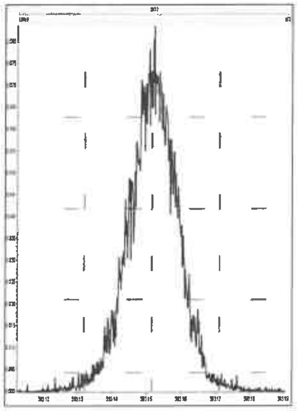

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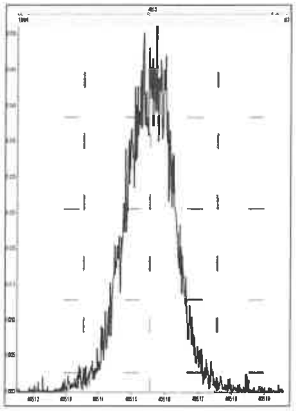

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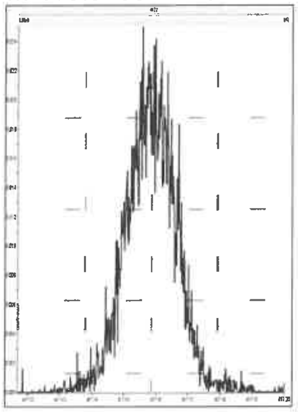

M 430.9728 R 12077

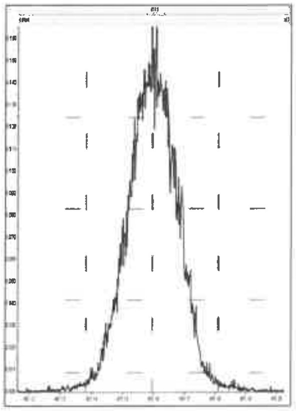

M 442.9728 R 12828

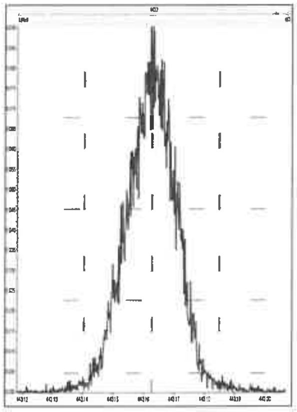

M 454.9728 R 12490

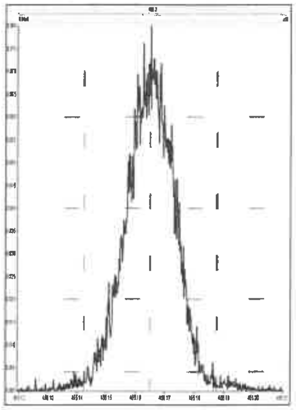

M 380.9760 R 11849

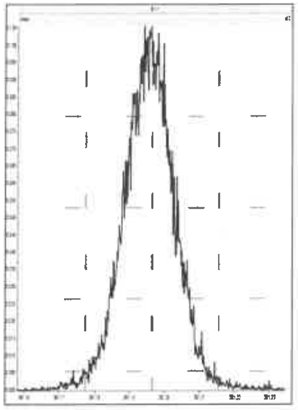

M 392.9760 R 12278

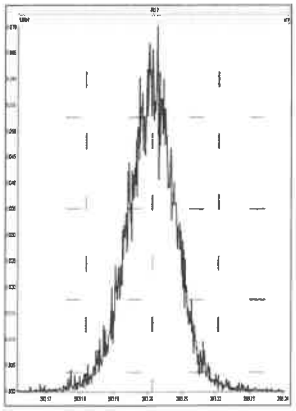

M 404.9760 R 12723

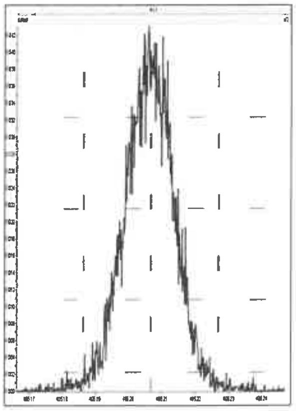

M 416.9760 R 13940

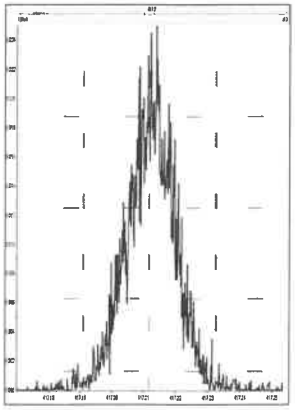

M 430.9728 R 12140

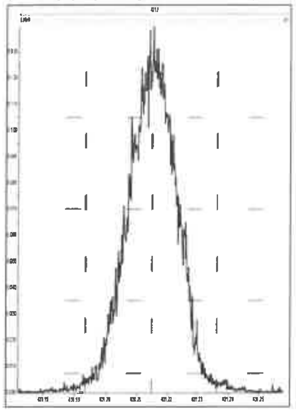

M 442.9728 R 12565

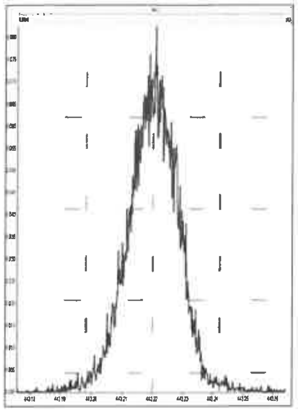

M 454.9728 R 12628

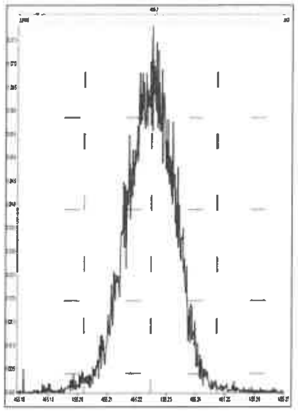

M 466.9728 R 12600

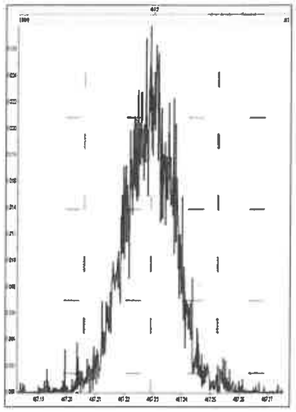

M 480.9696 R 11737

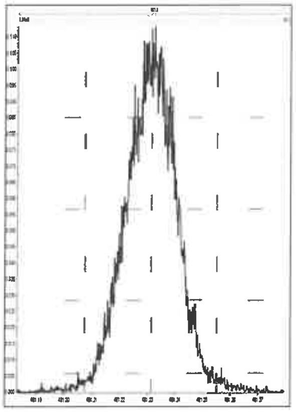

M 380.9760 R 11557

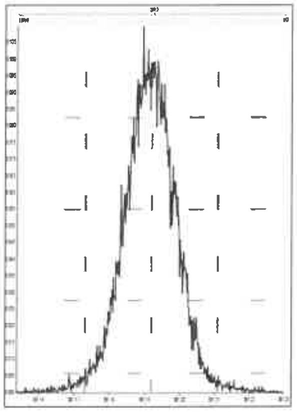

M 392.9760 R 12565

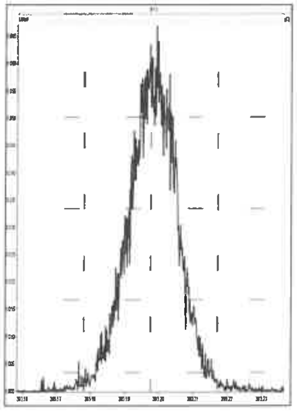

M 404.9760 R 14029

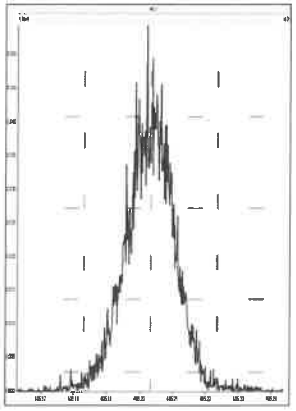

M 416.9760 R 13262

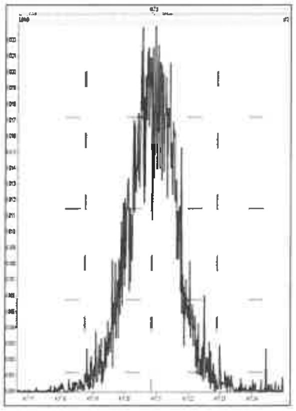

M 430.9728 R 11904

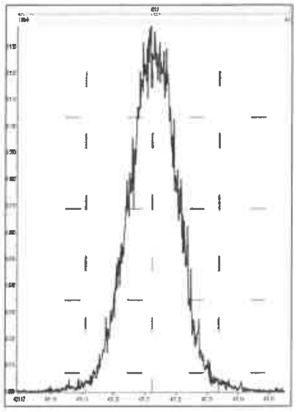

M 442.9728 R 12661

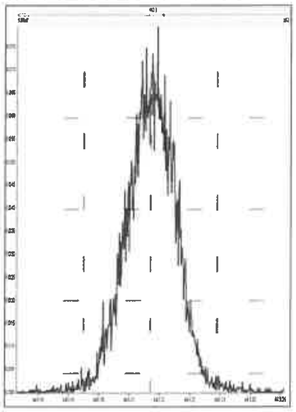

M 454.9728 R 12351

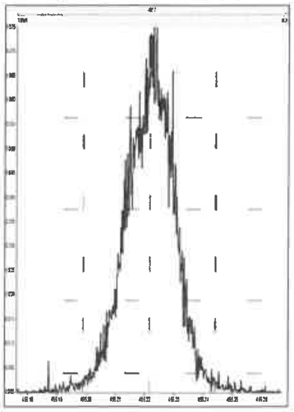

M 466.9728 R 13600

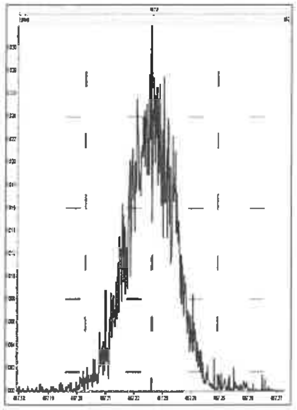

M 480.9696 R 12122

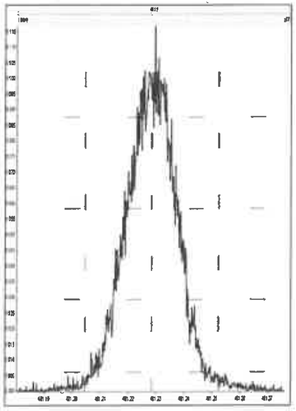

M 492.9696 R 11801

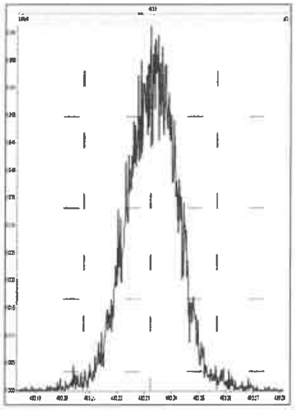

M 504.9696 R 12100

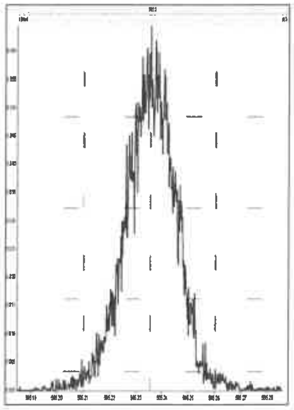

M 516.9697 R 14183

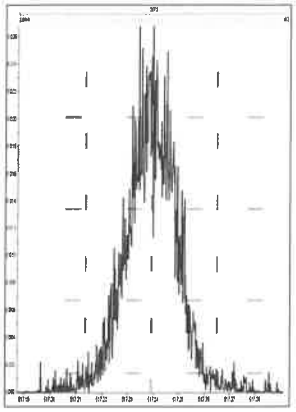

Report Date: 26-Jun-2020 13:15:56 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Jun-2020 18:28:15 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 062520 CS-4 HRDXNL4_00090
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:26:58

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.581	48016988	0.77	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.082	51305488	0.76	1.1970	89.3	89.3	0.2348	0.2348	89.27	
2,3,7,8-TCDF	17.097	3832422	0.74	0.7672	9.737	9.737	0.0382	0.0382	97.37	
A Non-2,3,7,8-sub-TCDF	16.810						0.0382	0.0382		
S Total TCDF					9.737	9.737	0.0382	0.0382		
D 13C-2,3,7,8-TCDD	17.778	42010845	0.77	0.8773	99.7	99.7	0.2715	0.2715	99.73	
2,3,7,8-TCDD	17.793	3767232	0.77	1.0000	8.967	8.967	0.0456	0.0456	89.67	
$ 37Cl4-2,3,7,8-TCDD	17.793	4670709		0.9515	10.2	10.2	0.0234	0.0234	102	
A Non-2,3,7,8-sub-TCDD	17.256						0.0456	0.0456		
S Total TCDD					8.967	8.967	0.0456	0.0456		
D 13C-1,2,3,7,8-PeCDF	21.999	40858829	1.58	0.9904	85.9	85.9	0.3336	0.3336	85.91	
1,2,3,7,8-PeCDF	22.012	17512962	1.54	0.9019	47.5	47.5	0.2776	0.2776	95.05	
D 13C-2,3,4,7,8-PeCDF	23.308	44624238	1.58	1.0797	86.1	86.1	0.3060	0.3060	86.07	
2,3,4,7,8-PeCDF	23.321	17330357	1.56	0.8307	46.8	46.8	0.2817	0.2817	93.50	
A F1 PeCDFs	19.675						0.0249	0.0249		
A Non-2,3,7,8-sub-PeCDF	22.743						0.2793	0.2793		
S Total PeCDF					94.3	94.3	0.2797	0.2797		
D 13C-1,2,3,7,8-PeCDD	24.017	31647766	1.57	0.6904	95.5	95.5	0.1733	0.1733	95.46	
1,2,3,7,8-PeCDD	24.044	14271802	1.59	1.0145	44.5	44.5	0.1013	0.1013	88.90	
A Non-2,3,7,8-sub-PeCDD	22.953						0.1013	0.1013		
S Total PeCDD					44.5	44.5	0.1013	0.1013		
D 13C-1,2,3,4,7,8-HxCDF	30.140	25426034	0.50	0.9076	89.2	89.2	0.9608	0.9608	89.22	
1,2,3,4,7,8-HxCDF	30.153	10202115	1.21	0.7928	50.6	50.6	0.7885	0.7885	101	
D 13C-1,2,3,6,7,8-HxCDF	30.340	27162618	0.49	0.8671	99.8	99.8	1.006	1.006	99.76	
1,2,3,6,7,8-HxCDF	30.366	12115673	1.21	0.8592	51.9	51.9	0.7111	0.7111	104	
D 13C-2,3,4,6,7,8-HxCDF	31.258	23266657	0.50	0.8287	89.4	89.4	1.052	1.052	89.42	
2,3,4,6,7,8-HxCDF	31.285	10993770	1.20	0.8896	53.1	53.1	0.5804	0.5804	106	
D 13C-1,2,3,7,8,9-HxCDF	32.123	20769717	0.49	0.7391	89.5	89.5	1.180	1.180	89.49	
1,2,3,7,8,9-HxCDF	32.137	9738148	1.22	0.8941	52.4	52.4	0.6253	0.6253	105	
A Non-2,3,7,8-sub-HxCDF	29.847						0.6690	0.6690		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
S Total HxCDF					208.1	208.1	0.6764	0.6764		
* 13C-1,2,3,7,8,9-HxCDD	31.924	31399198	1.24	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.471	22791269	1.28	0.8335	87.1	87.1	0.7803	0.7803	87.08	
1,2,3,4,7,8-HxCDD	31.484	8894966	1.21	0.8332	46.8	46.8	0.3054	0.3054	93.68	
D 13C-1,2,3,6,7,8-HxCDD	31.577	29189326	1.25	0.8228	113.0	113.0	0.7904	0.7904	113	
1,2,3,6,7,8-HxCDD	31.604	12728066	1.25	0.8944	48.8	48.8	0.2930	0.2930	97.50	
1,2,3,7,8,9-HxCDD	31.950	11672264	1.23	0.9449	47.5	47.5	0.2733	0.2733	95.06	
A Non-2,3,7,8-sub-HxCDD	30.499						0.2898	0.2898		
S Total HxCDD					143.1	143.1	0.2905	0.2905		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	20410809	0.42	0.7009	92.7	92.7	3.209	3.209	92.75	
1,2,3,4,6,7,8-HpCDF	33.602	13390011	1.01	1.3295	49.3	49.3	1.059	1.059	98.69	
D 13C-1,2,3,4,7,8,9-HpCDF	34.659	20950774	0.44	0.7244	92.1	92.1	3.105	3.105	92.12	
1,2,3,4,7,8,9-HpCDF	34.659	10990187	1.02	1.0803	48.6	48.6	1.416	1.416	97.11	
A Non-2,3,7,8-sub-HpCDF	34.143						1.217	1.217		
S Total HpCDF					97.9	97.9	1.237	1.237		
D 13C-1,2,3,4,6,7,8-HpCDD	34.380	22017089	1.04	0.7026	99.8	99.8	1.207	1.207	99.80	
1,2,3,4,6,7,8-HpCDD	34.380	10113532	1.04	1.0040	45.8	45.8	0.5473	0.5473	91.50	
A Non-2,3,7,8-sub-HpCDD	34.119						0.5473	0.5473		
S Total HpCDD					45.8	45.8	0.5473	0.5473		
D 13C-OCDD	36.676	38695535	0.90	0.6184	199.3	199.3	0.6614	0.6614	99.65	
OCDF	36.772	21050721	0.89	1.1076	98.2	98.2	0.2205	0.2205	98.23	
OCDD	36.688	20006444	0.88	1.0175	101.6	101.6	0.2626	0.2626	102	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00090 Amount Added: 2.00 Units: uL

Report Date: 26-Jun-2020 13:15:56 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Jun-2020 18:28:15 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 062520 CS-4 HRDXNL4_00090
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5
Sublist: chrom-Dioxin_10D5*sub1

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:26:58

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.581	17.581	0		20881354	5196621	6665	16662	780		a
333.9339	17.581	17.581	0		27135634	6675476	4648	11620	1436	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	22179221	5328763	5592	13980	953		
317.9389	17.082	17.082	0	0.972	29126267	6861657	7752	19380	885	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097	17.097	0	1.001	1630625	387172	599	1497	646		
305.8987	17.097	17.097	0	1.001	2201797	510931	829	2072	616	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						599	1497			
305.8987	16.810						829	2072			
13C-2,3,7,8-TCDD											
331.9368	17.778	17.778	0	1.011	18315138	4077340	6665	16662	612		
333.9339	17.778	17.778	0	1.011	23695707	5165068	4648	11620	1111	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793	17.793	0	1.001	1637733	360305	1047	2617	344		
321.8936	17.793	17.793	0	1.001	2129499	469965	640	1600	734	0.77(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.793	17.793	0	1.012	4670709	1026231	1056	2640	972		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.256						1047	2617			
321.8936	17.256						640	1600			

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	21.999	21.999	0	1.251	24996679	4043394	9499	23747	426		
353.8970	21.999	21.999	0	1.251	15862150	2560045	6194	15485	413	1.58(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	22.012	22.012	0	1.001	10631190	1741708	3743	9357	465		
341.8567	22.012	22.012	0	1.001	6881772	1130745	2871	7177	394	1.54(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.308	23.308	0	1.326	27297146	4309513	9499	23747	454		
353.8970	23.294	23.308	-1	1.325	17327092	2755250	6194	15485	445	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.321	23.321	0	1.001	10568659	1686095	3743	9357	450		
341.8567	23.321	23.321	0	1.001	6761698	1067459	2871	7177	372	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.675						228	570			
341.8567	19.675						362	905			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						3743	9357			
341.8567	22.743						2871	7177			
13C-1,2,3,7,8-PeCDD											
367.8949	24.017	24.017	0	1.366	19343882	2788796	3652	9130	764		
369.8919	24.017	24.017	0	1.366	12303884	1750972	2031	5077	862	1.57(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.044	24.044	0	1.001	8761653	1283228	1180	2950	1087		
357.8516	24.030	24.044	-1	1.001	5510149	787927	687	1717	1147	1.59(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						1180	2950			
357.8516	22.953						687	1717			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.140	30.140	0	0.944	8429500	1251970	7043	17607	178		
385.8610	30.127	30.140	-1	0.944	16996534	2548486	14196	35490	180	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.153	30.153	0	1.000	5594612	859924	5186	12965	166		
375.8178	30.153	30.153	0	1.000	4607503	716695	4317	10792	166	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.340	30.340	0	0.950	8926125	1260580	7043	17607	179		
385.8610	30.340	30.340	0	0.950	18236493	2627581	14196	35490	185	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.366	30.366	0	1.001	6627169	959827	5186	12965	185		
375.8178	30.366	30.366	0	1.001	5488504	807371	4317	10792	187	1.21(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.258	31.258	0	0.979	7712930	1535861	7043	17607	218		
385.8610	31.258	31.258	0	0.979	15553727	3065201	14196	35490	216	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.285	31.285	0	1.001	5997626	1209965	5186	12965	233		
375.8178	31.285	31.285	0	1.001	4996144	974298	4317	10792	226	1.20(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.123	32.123	0	1.006	6810669	1403413	7043	17607	199		
385.8610	32.123	32.123	0	1.006	13959048	2845390	14196	35490	200	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.137	32.137	0	1.000	5343573	1096761	5186	12965	211		
375.8178	32.137	32.137	0	1.000	4394575	898777	4317	10792	208	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						5186	12965			
375.8178	29.847						4317	10792			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.924	31.924	0		17397610	3358515	8670	21675	387		
403.8529	31.924	31.924	0		14001588	2729932	7169	17922	381	1.24(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.471	31.471	0	0.986	12793734	3120697	8670	21675	360		
403.8529	31.471	31.471	0	0.986	9997535	2468058	7169	17922	344	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.484	31.484	0	1.000	4873071	1232272	3053	7632	404		
391.8127	31.484	31.484	0	1.000	4021895	1021158	2635	6587	388	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.577	31.577	0	0.989	16212504	3002506	8670	21675	346		
403.8529	31.577	31.577	0	0.989	12976822	2423688	7169	17922	338	1.25(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.604	31.604	0	1.001	7077270	1369056	3053	7632	448		
391.8127	31.591	31.604	-1	1.000	5650796	1088227	2635	6587	413	1.25(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.950	31.950	0	1.015	6430215	1260552	3053	7632	413		
391.8127	31.937	31.950	-1	1.015	5242049	1031226	2635	6587	391	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						3053	7632			
391.8127	30.499						2635	6587			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.052	6051480	1584810	16977	42442	93		
419.8220	33.590	33.590	0	1.052	14359329	3712858	37792	94480	98	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.602	33.602	0	1.000	6738213	1800799	14864	37160	121		
409.7789	33.602	33.602	0	1.000	6651798	1810531	14964	37410	121	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.659	34.659	0	1.086	6369080	1484115	16977	42442	87		
419.8220	34.659	34.659	0	1.086	14581694	3391885	37792	94480	90	0.44(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659	34.659	0	1.000	5558192	1274440	14864	37160	86		
409.7789	34.659	34.659	0	1.000	5431995	1274925	14964	37410	85	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						14864	37160			
409.7789	34.143						14964	37410			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.380	34.380	0	1.077	11209596	2606027	10577	26442	246		
437.8140	34.368	34.380	-1	1.077	10807493	2503015	10084	25210	248	1.04(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.380	34.380	0	1.000	5146212	1240032	5457	13642	227		
425.7737	34.380	34.380	0	1.000	4967320	1206960	5772	14430	209	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						5457	13642			
425.7737	34.119						5772	14430			
13C-OCDD											
469.7779	36.676	36.676	0	1.149	18333806	3492792	4893	12232	714		
471.7750	36.676	36.676	0	1.149	20361729	3955840	5068	12670	781	0.90(0.76-1.02)	
OCDF											
441.7428	36.772	36.772	0	1.003	9927885	2050210	1845	4612	1111		
443.7399	36.760	36.772	-1	1.002	11122836	2245634	1793	4482	1252	0.89(0.76-1.02)	
OCDD											
457.7377	36.688	36.688	0	1.000	9359321	1844449	1797	4492	1026		
459.7348	36.688	36.688	0	1.000	10647123	2042808	2183	5457	936	0.88(0.76-1.02)	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

HRDXNL4_00090 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d				
Injection Date:	25-Jun-2020 18:28:15	Instrument ID:	10D5		
Lims ID:	CCV				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	2	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F1:HRSIR		

13C-1,2,3,4-TCDD, CAS: 114423-99-3

Signal: 1

Not Detected
Expected RT: 17.58

Processing Integration Results

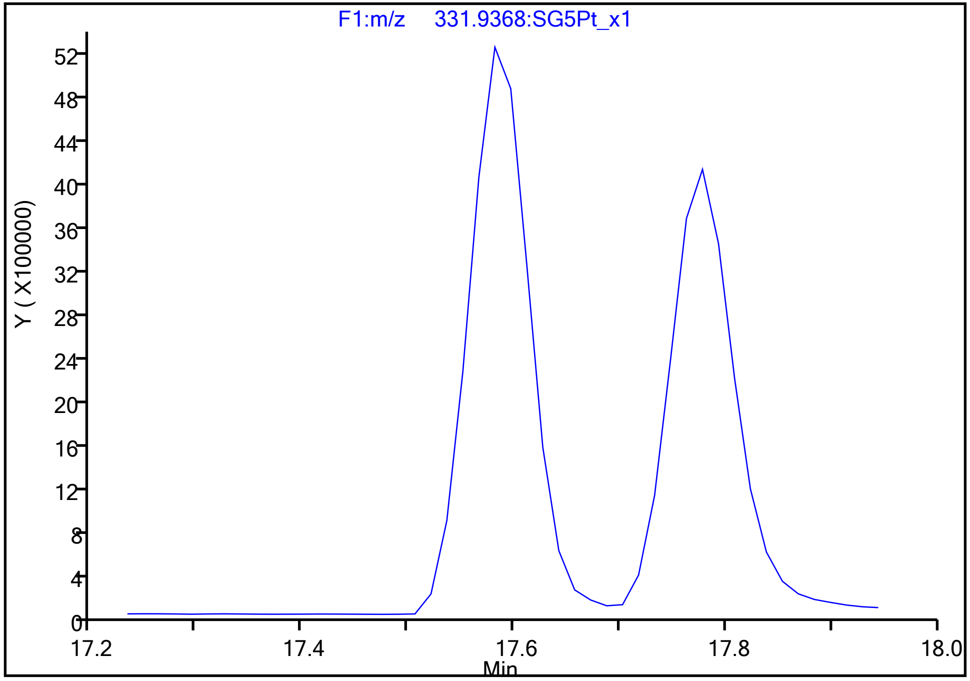

RT: 17.58
Area: 20881354
Amount: 100.0000
Amount Units: pg/ul

Manual Integration Results

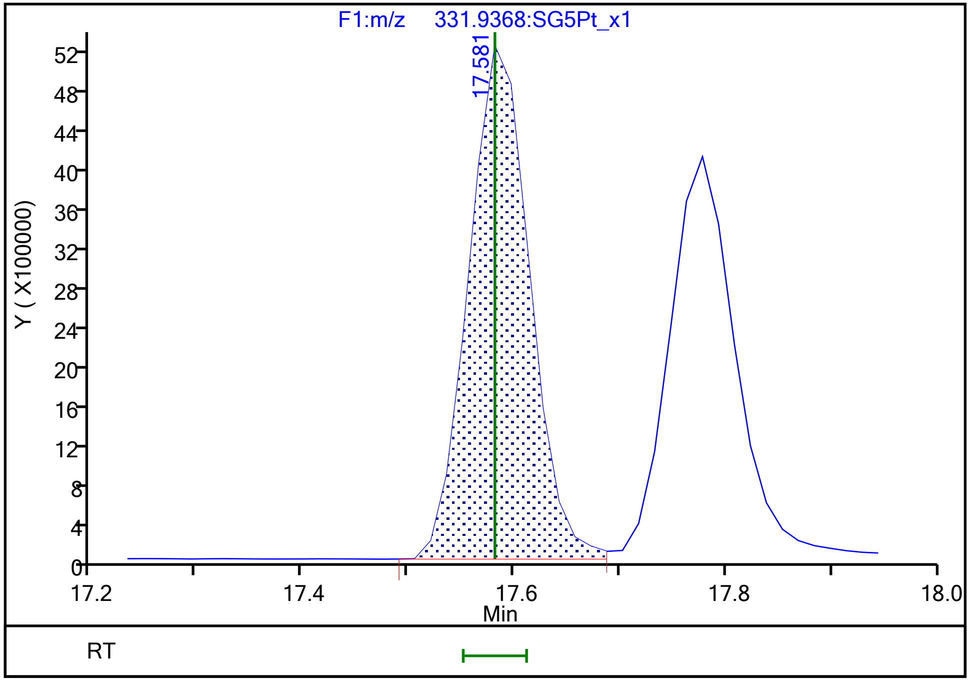

Reviewer: arghestanis, 26-Jun-2020 11:42:27
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

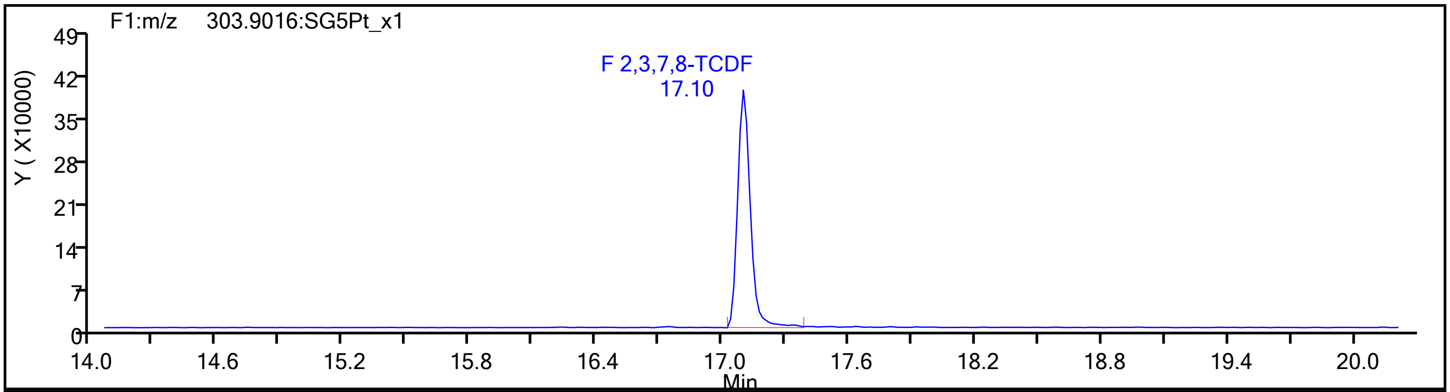

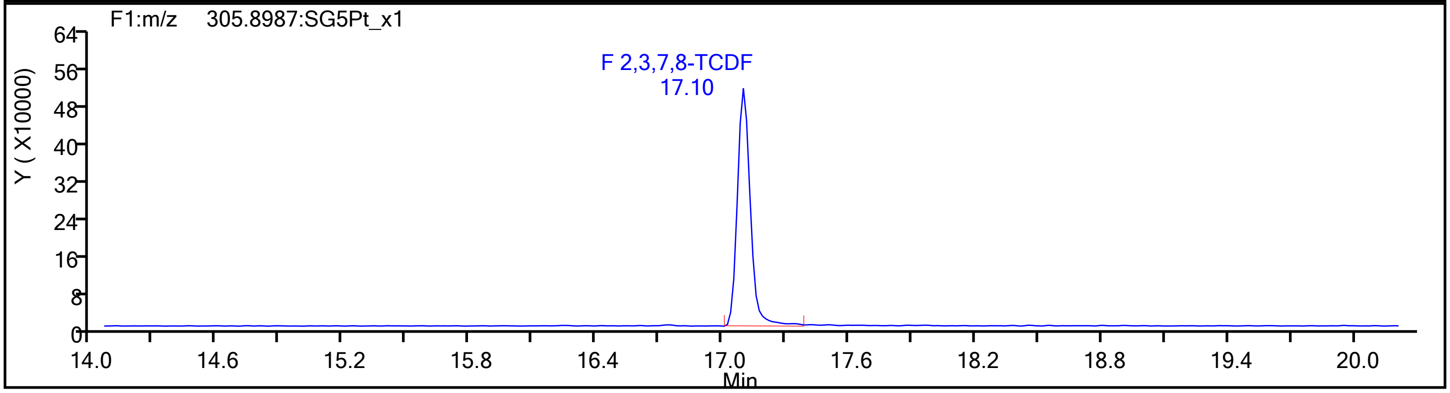

TCDF Standards

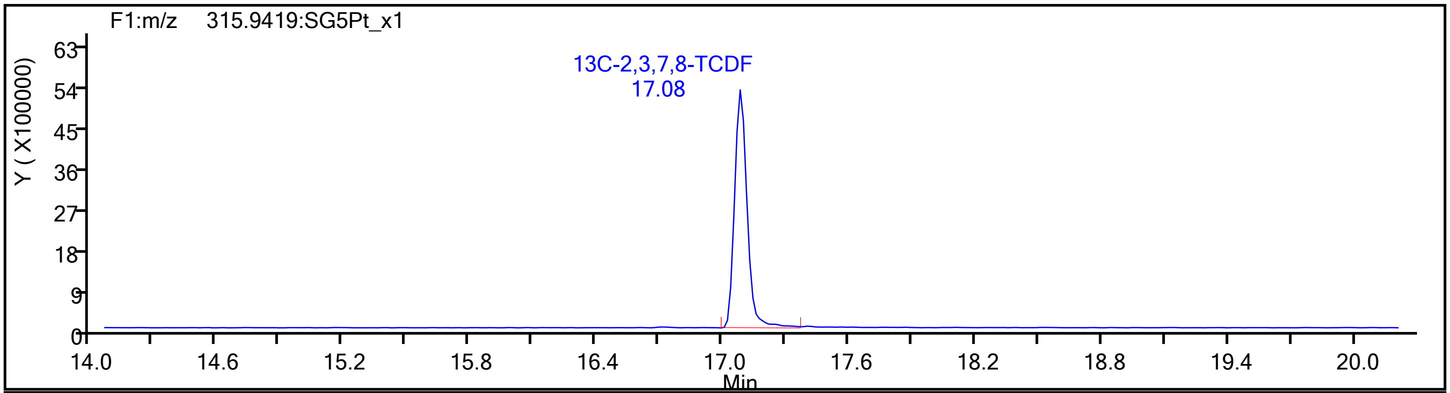

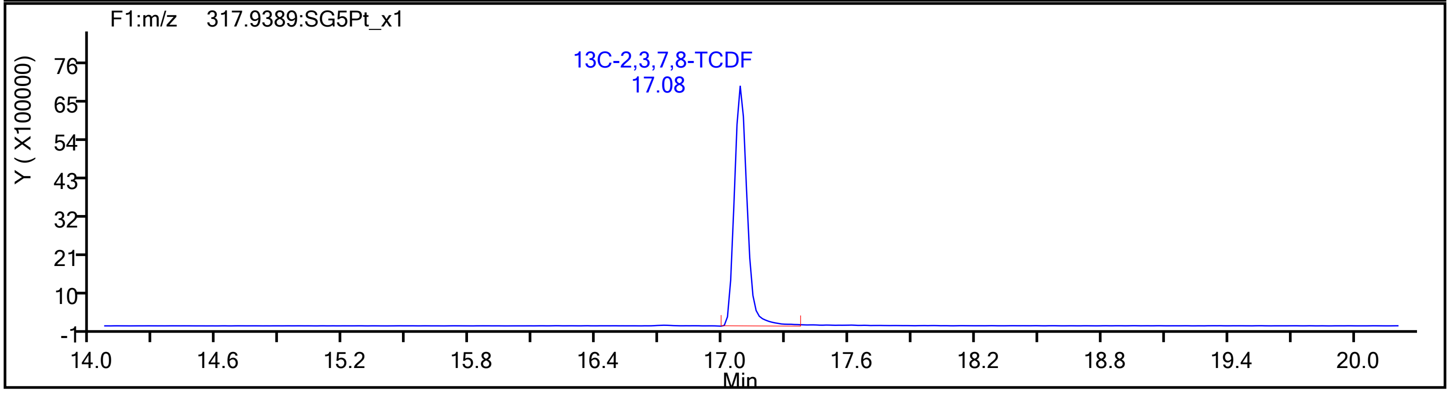

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d

Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

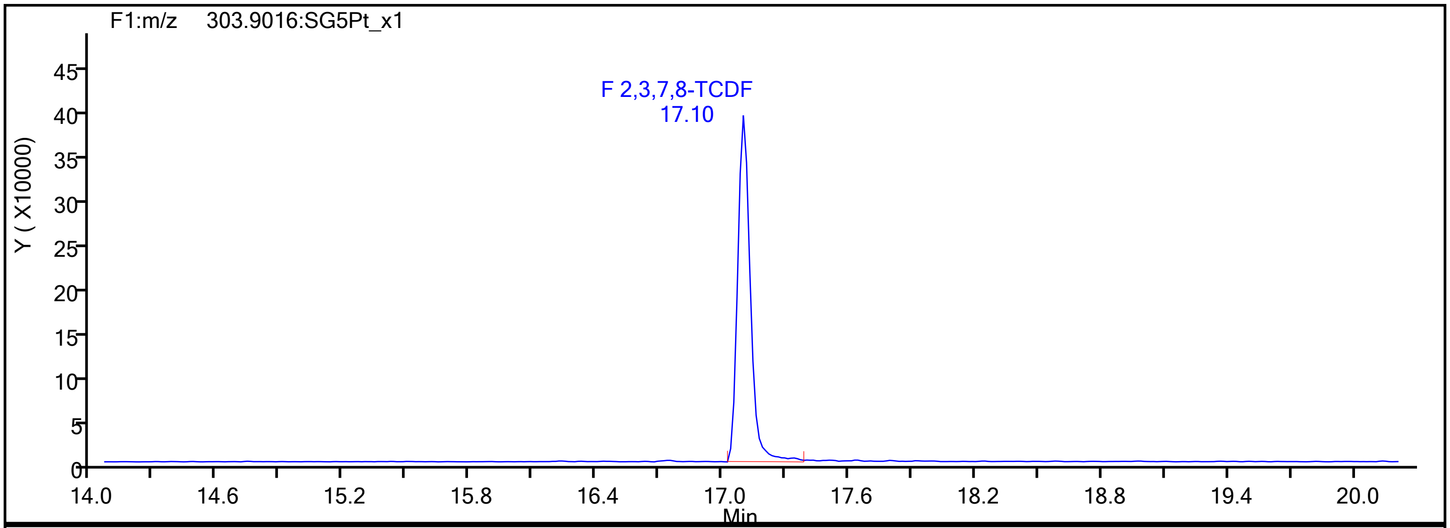

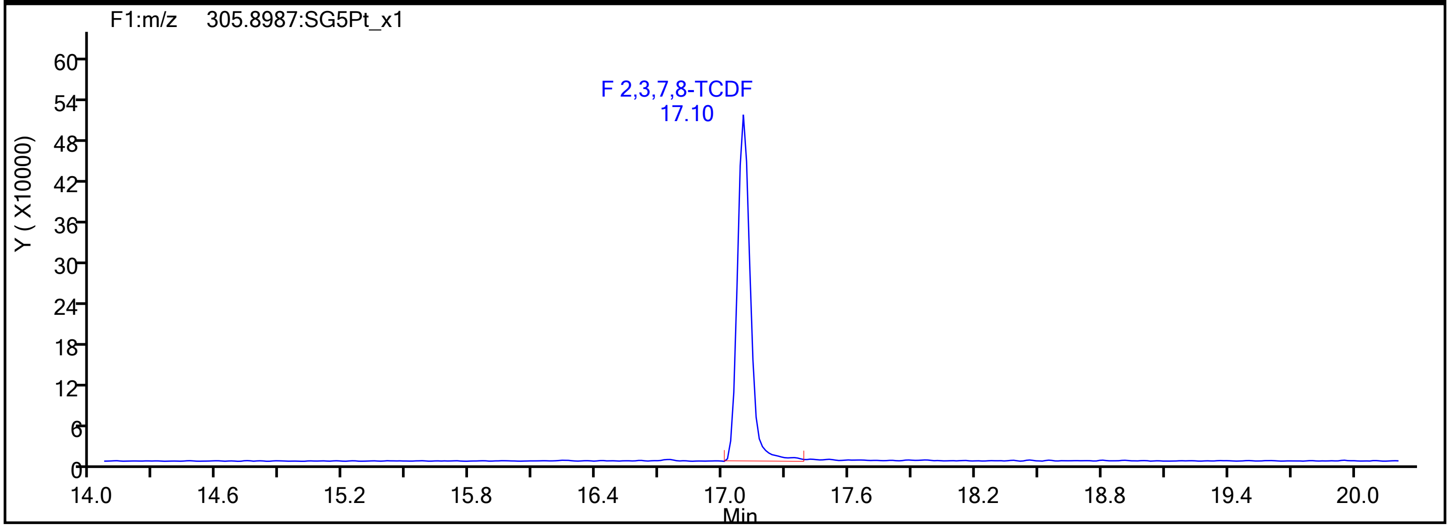

TCDF Interference Mass

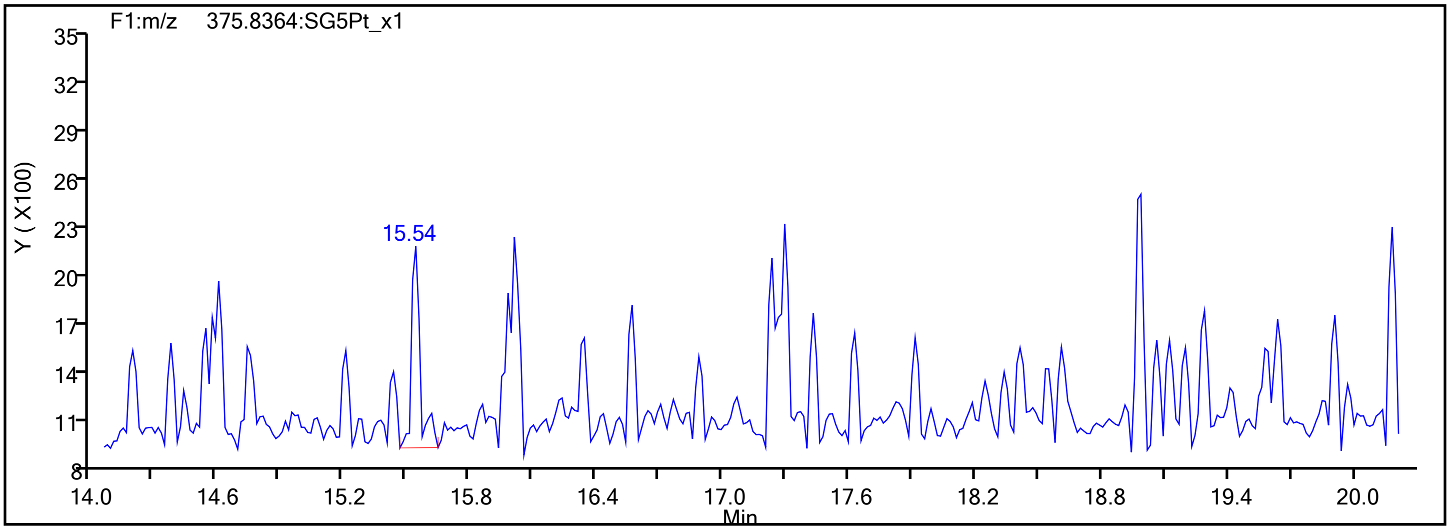

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

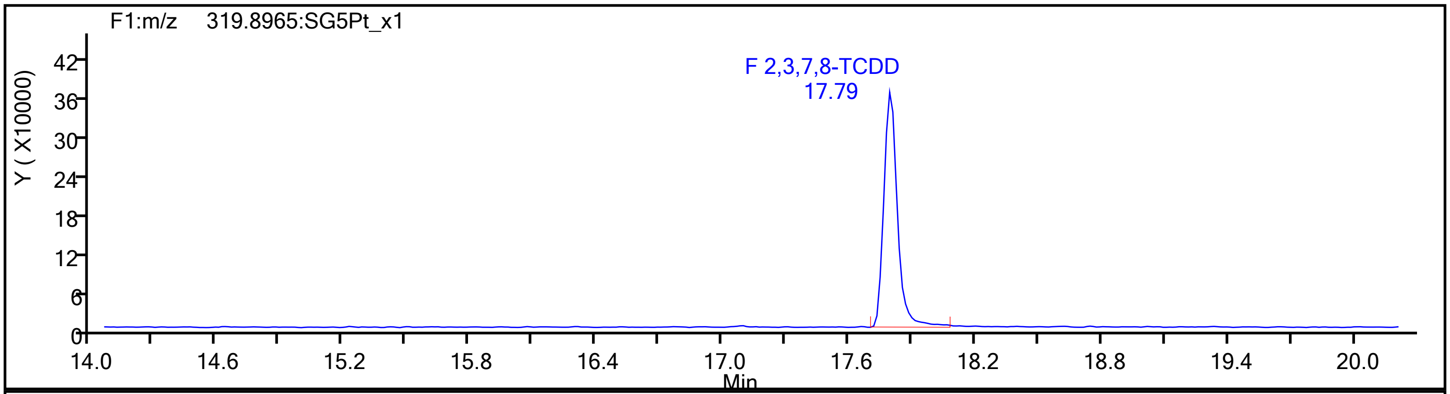

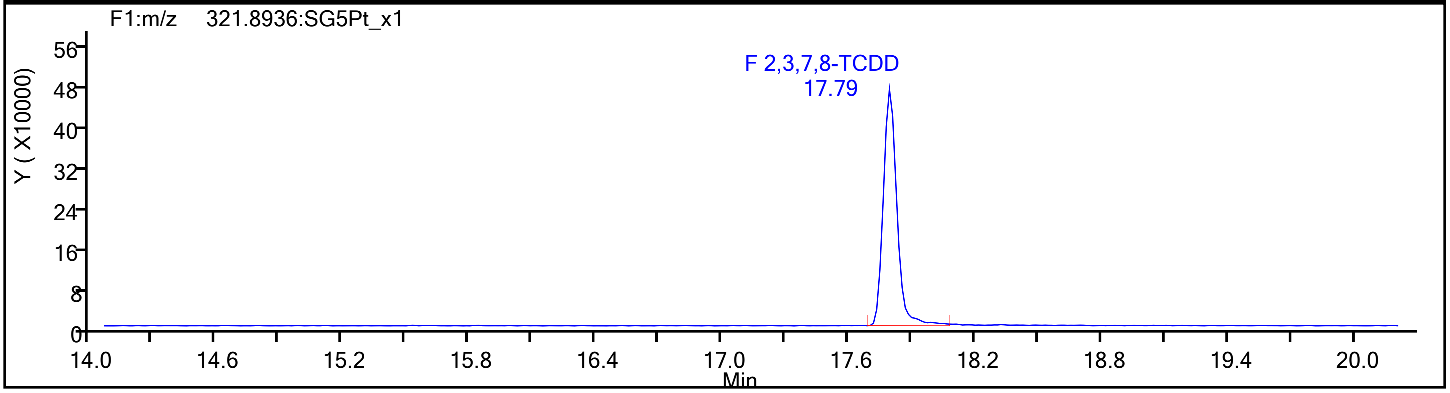

TCDD Standards

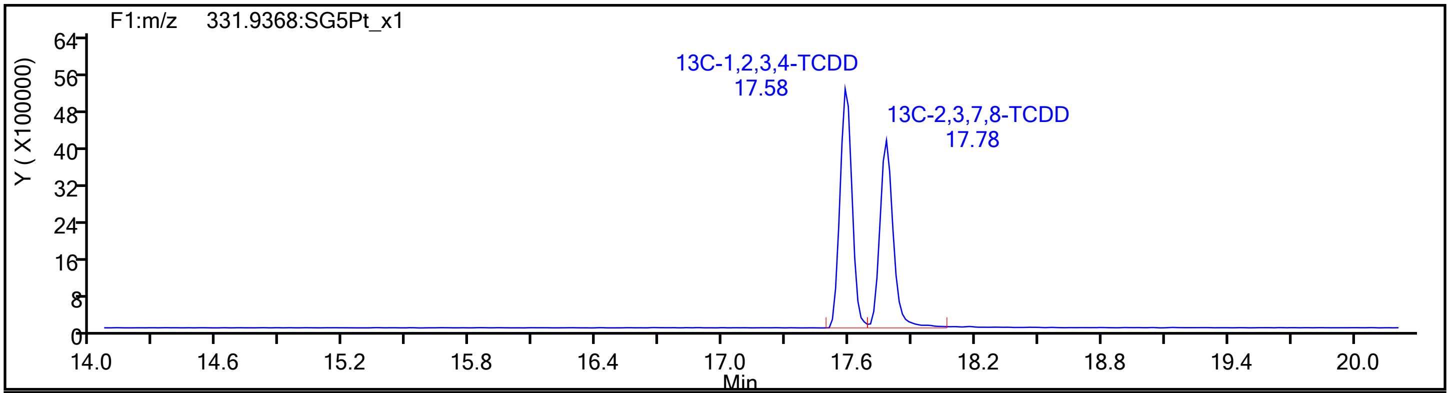

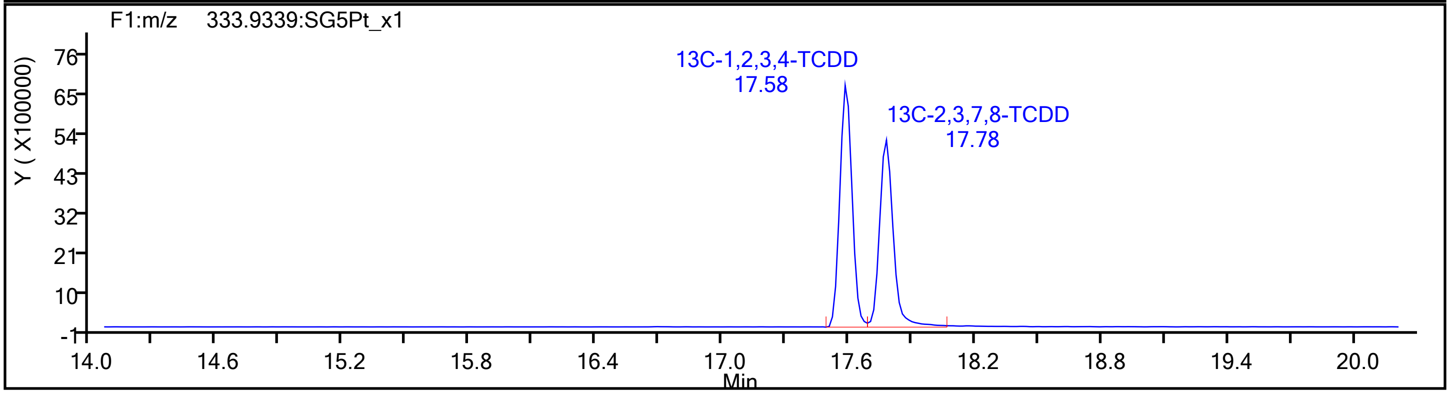

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

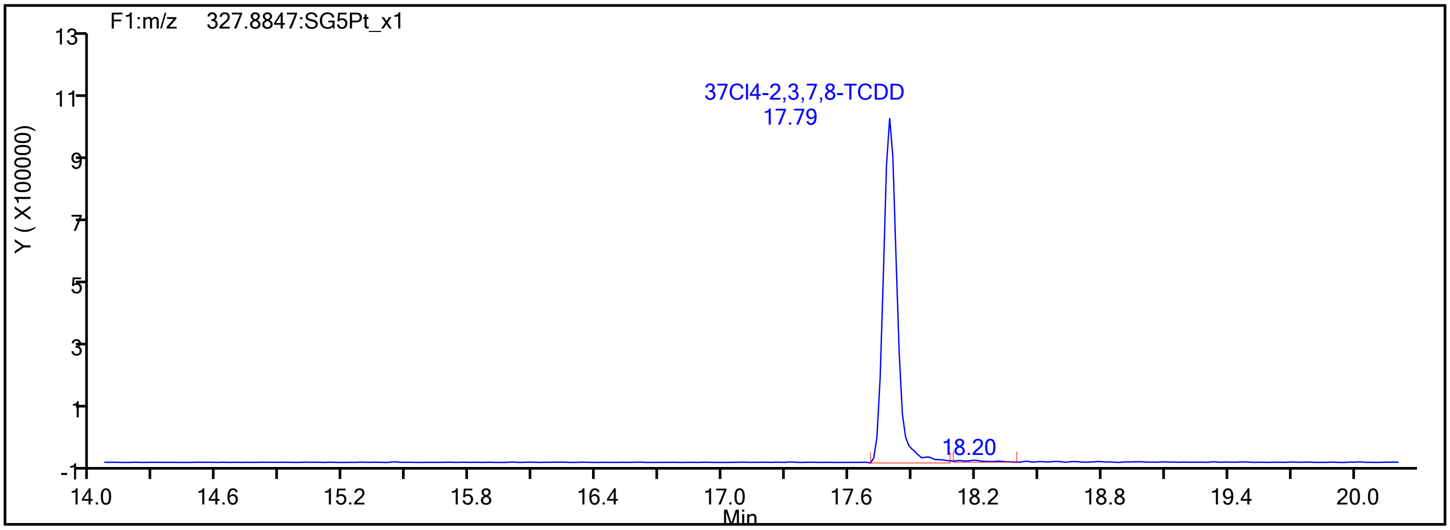

37Cl4-TCDD Standards

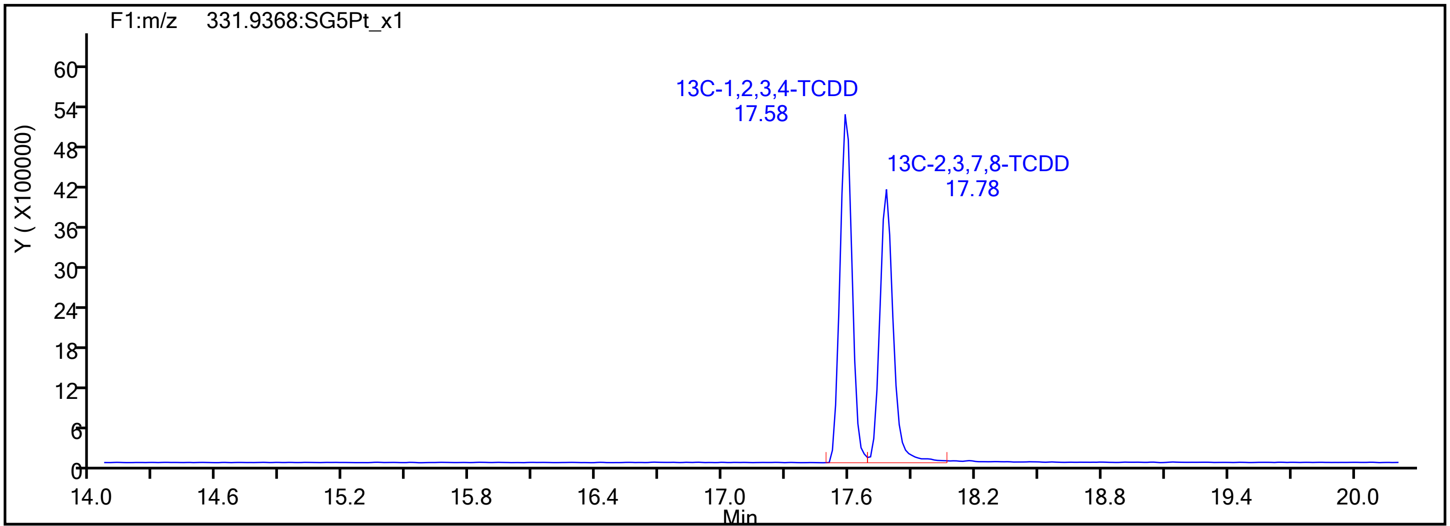

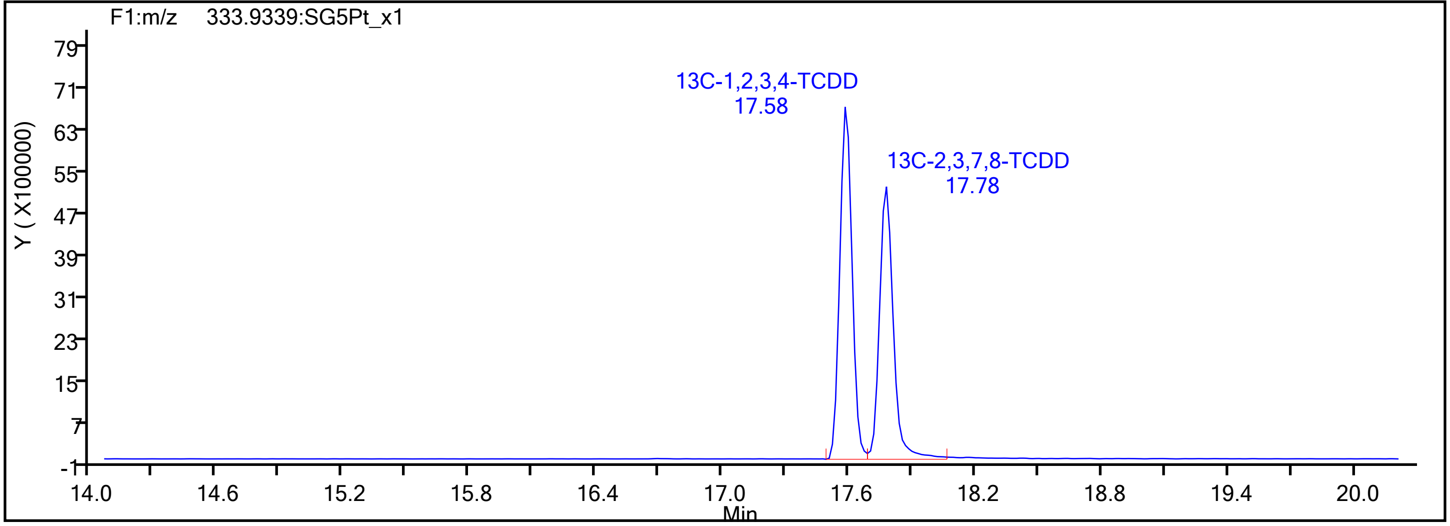

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

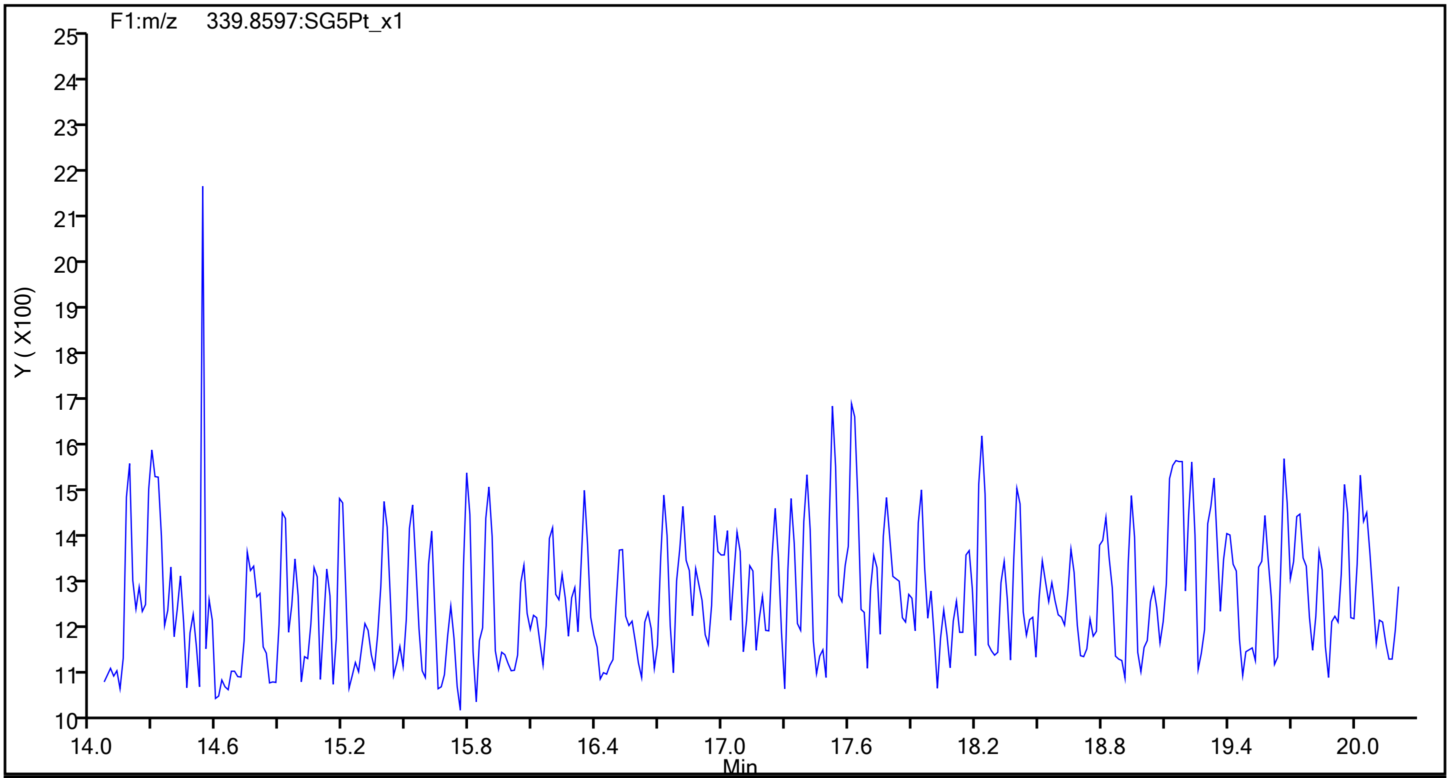

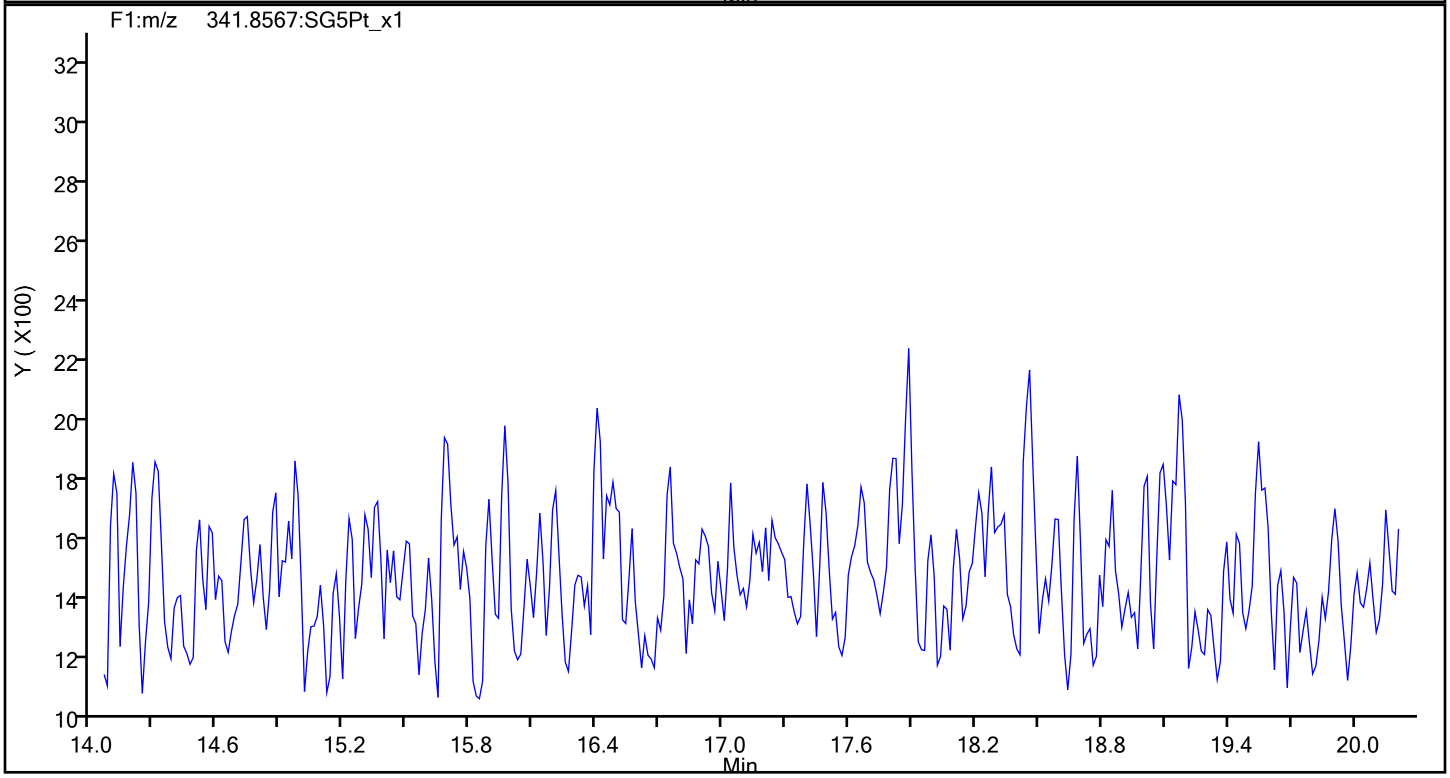

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

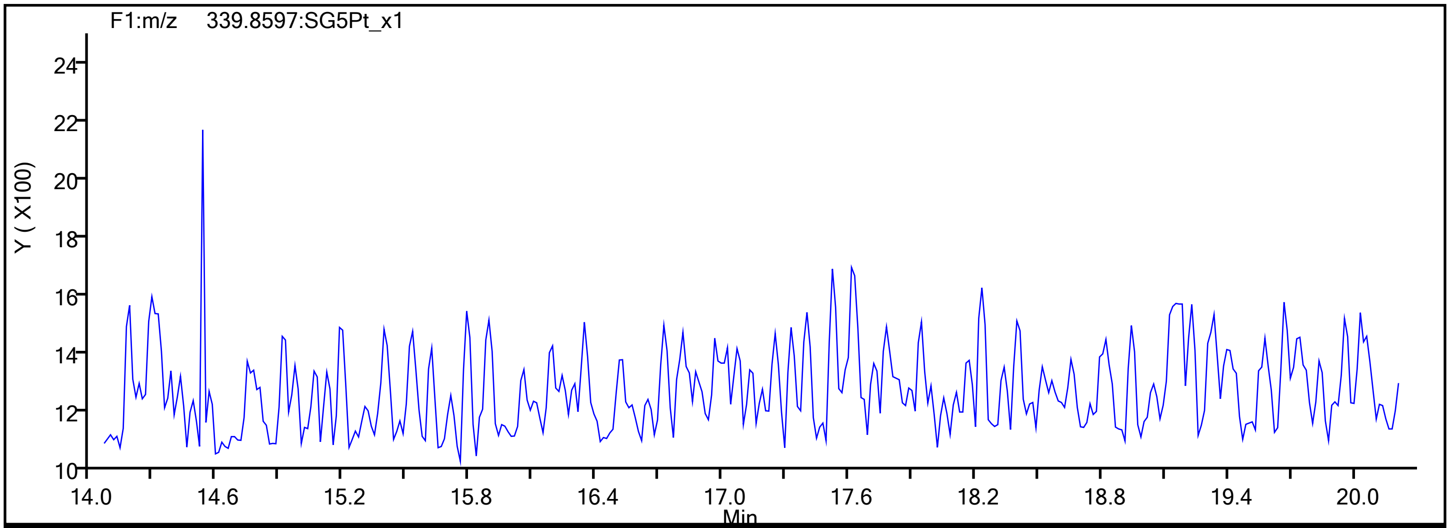

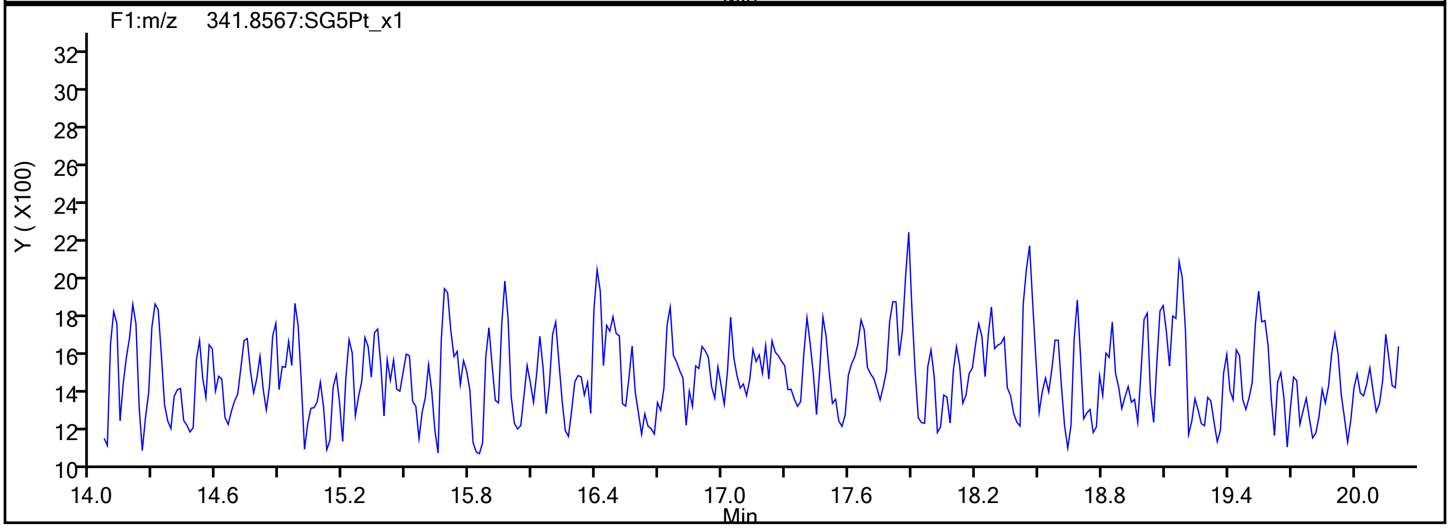

F1 PeCDFs Interference Mass

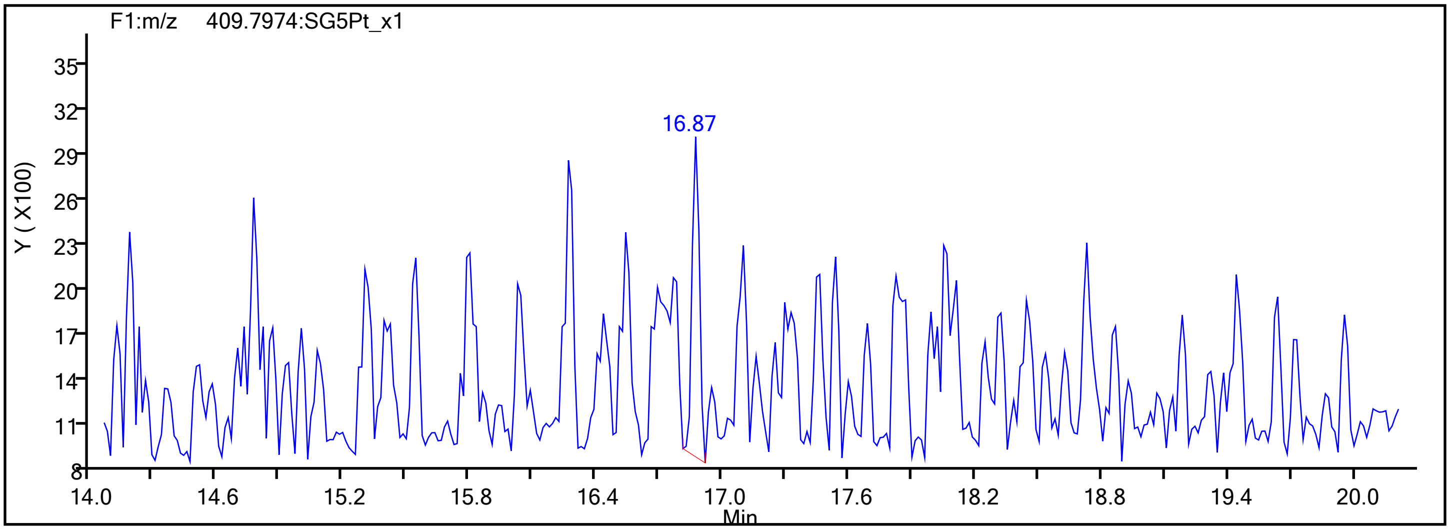

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

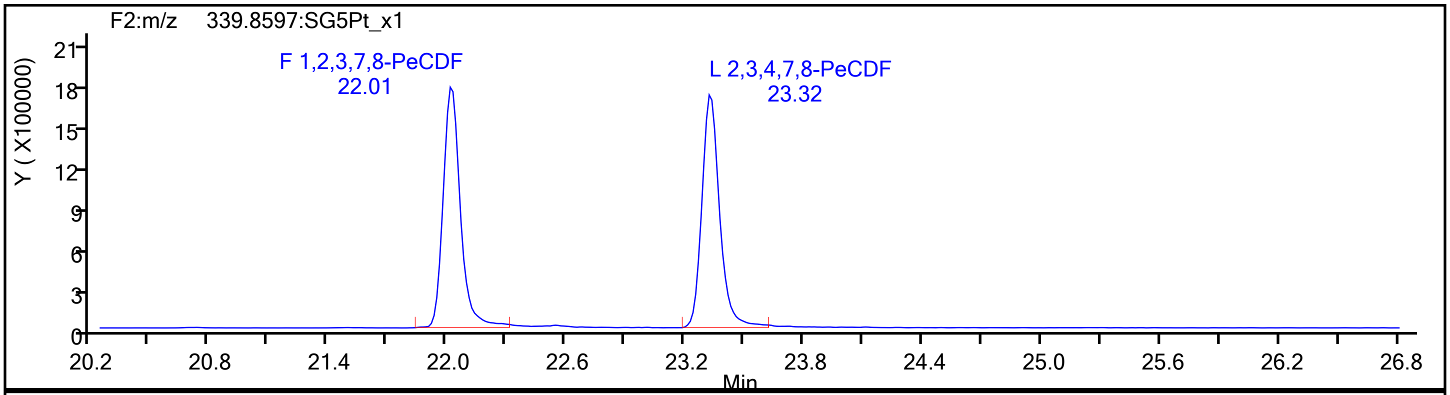

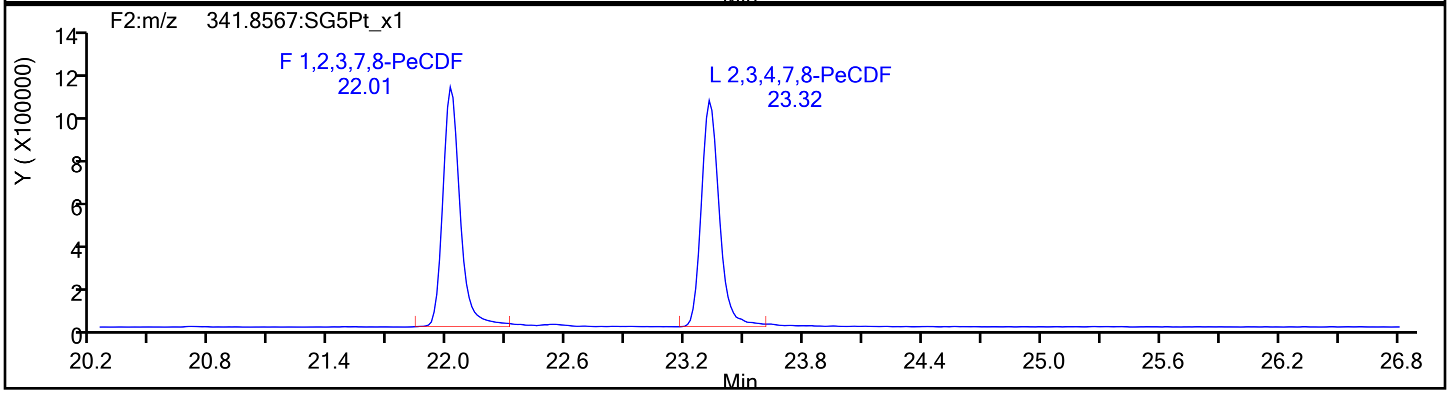

PeCDF Standards

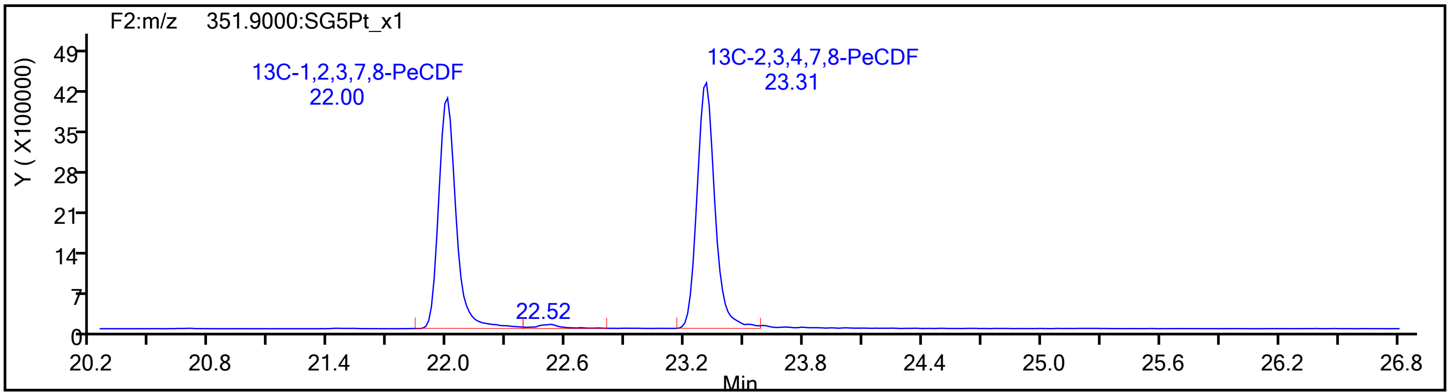

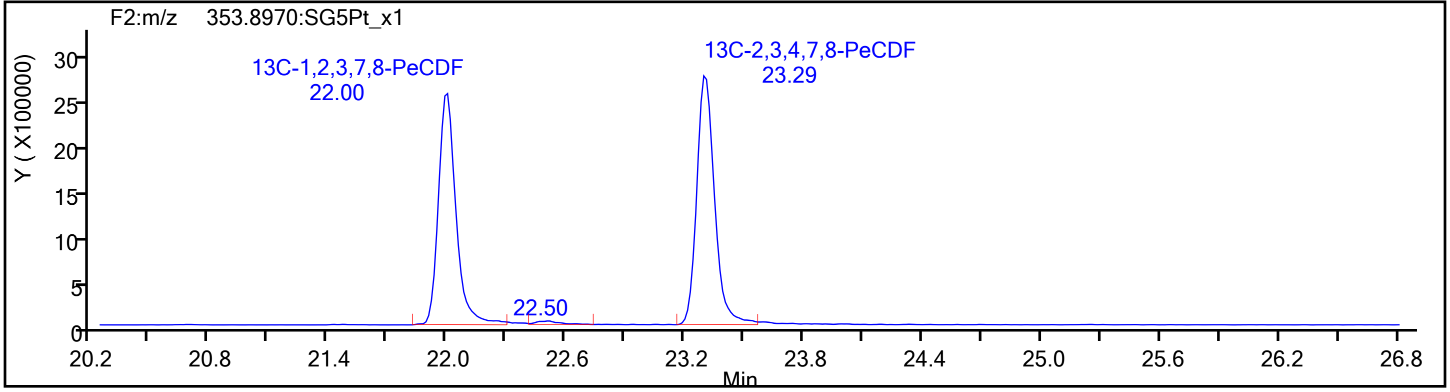

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

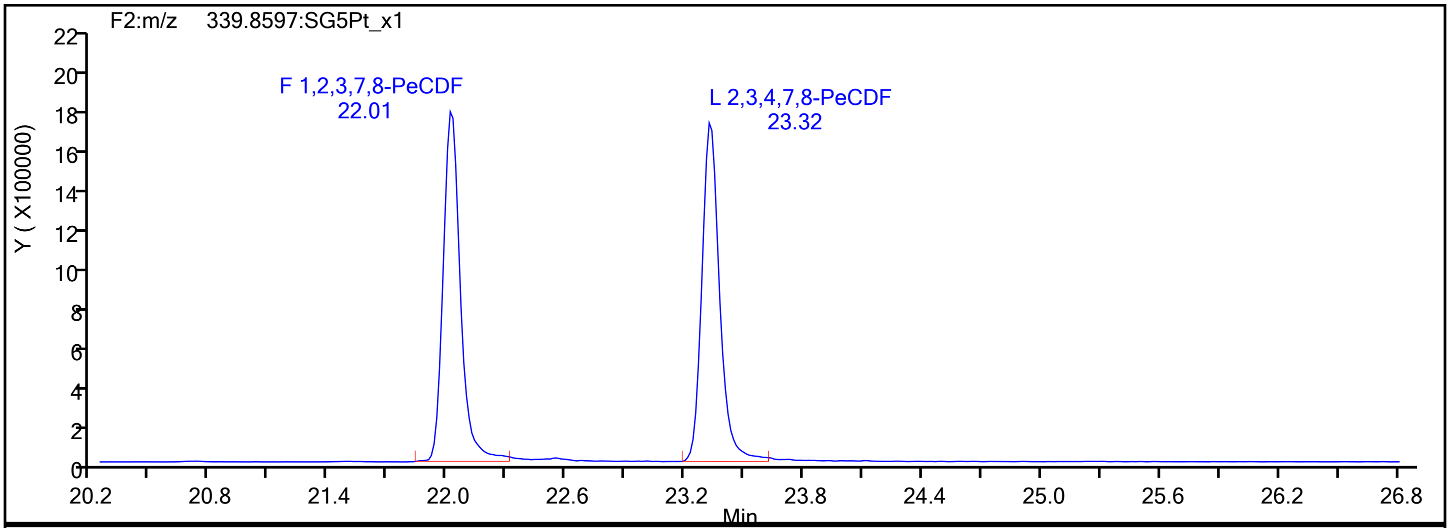

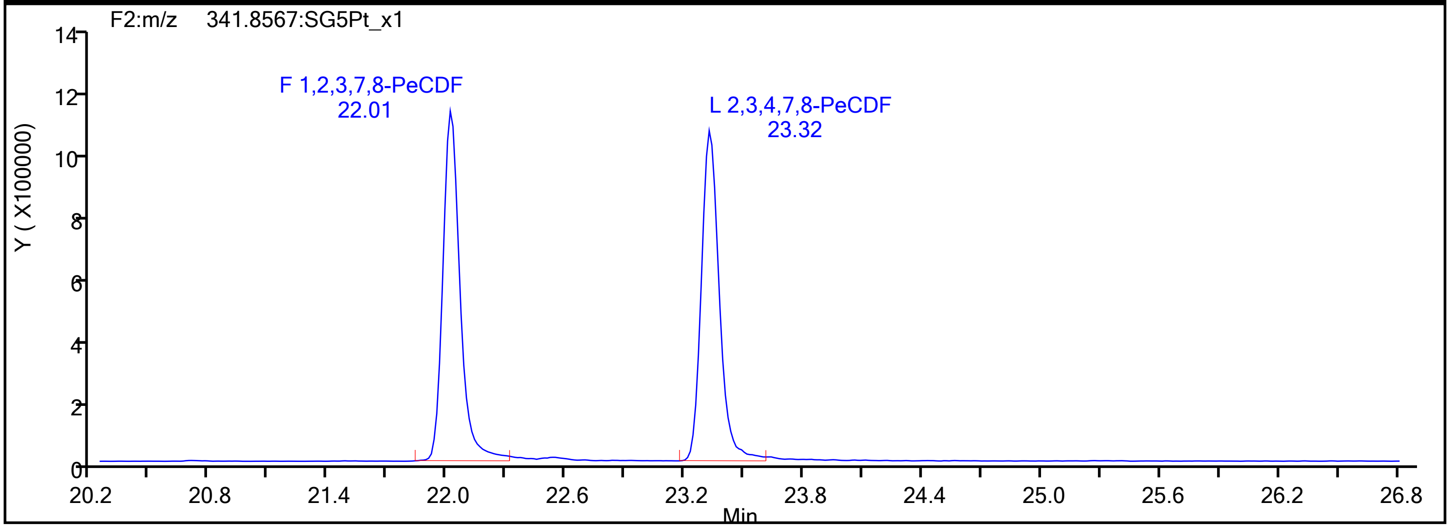

PeCDF Interference Mass

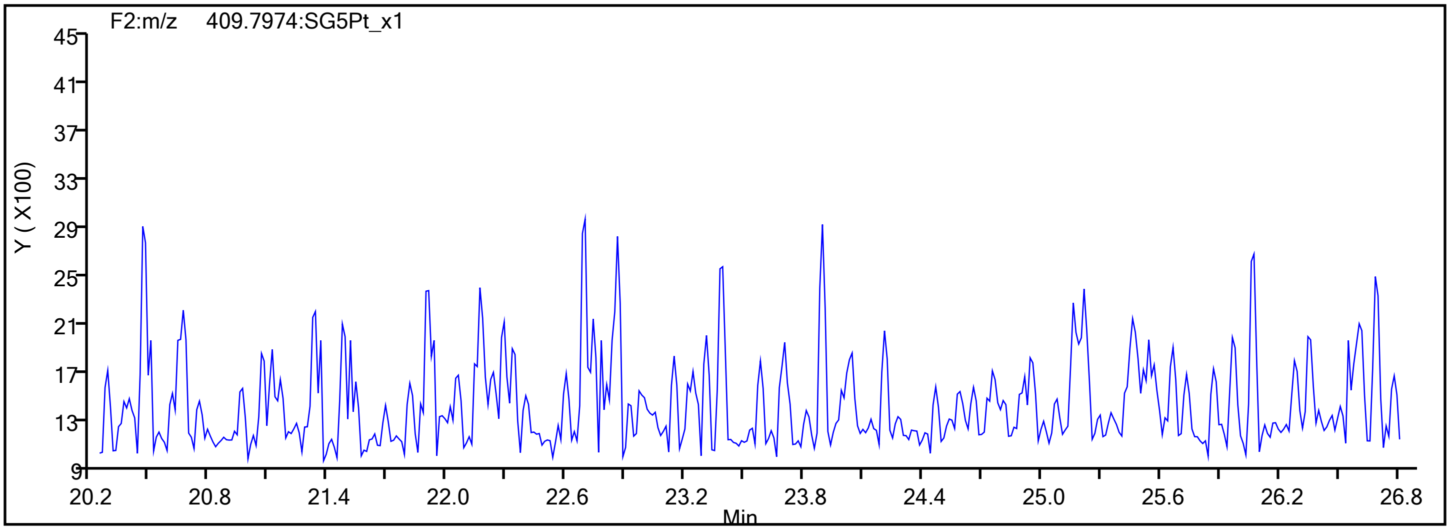

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d
Injection Date: 25-Jun-2020 18:28:15
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5
Column Dia: 0.32 mm

PeCDD

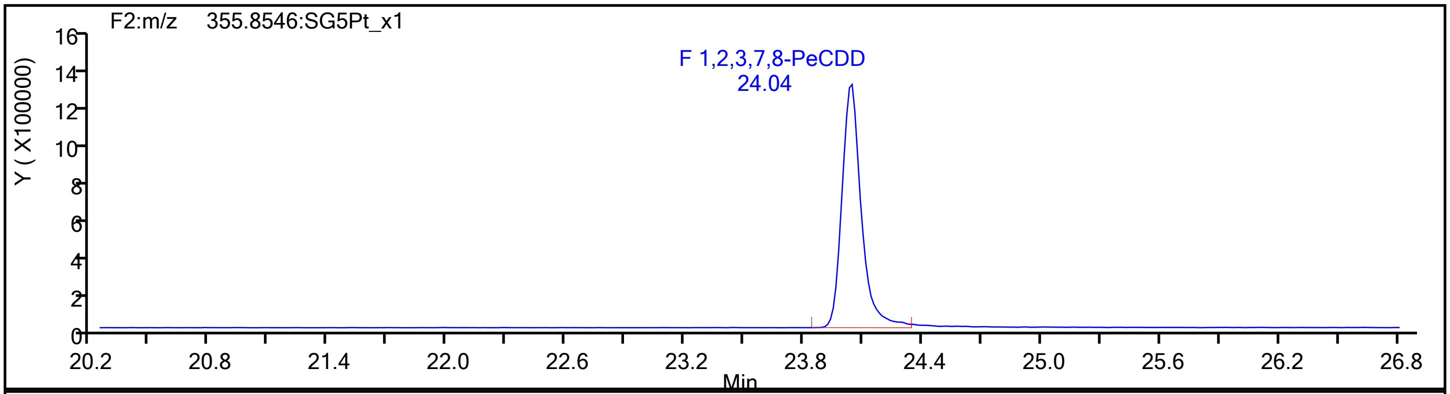

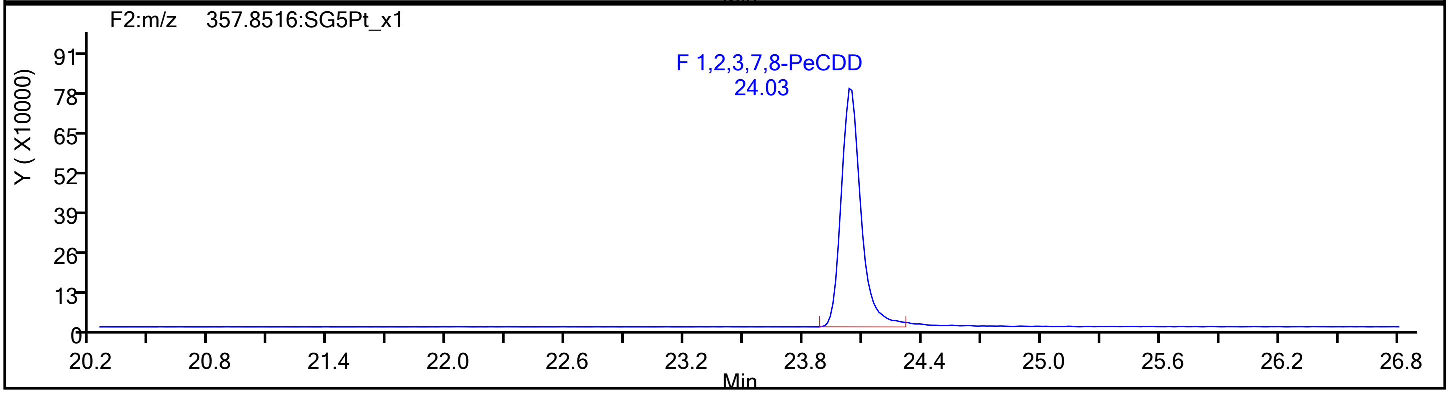

PeCDD Standards

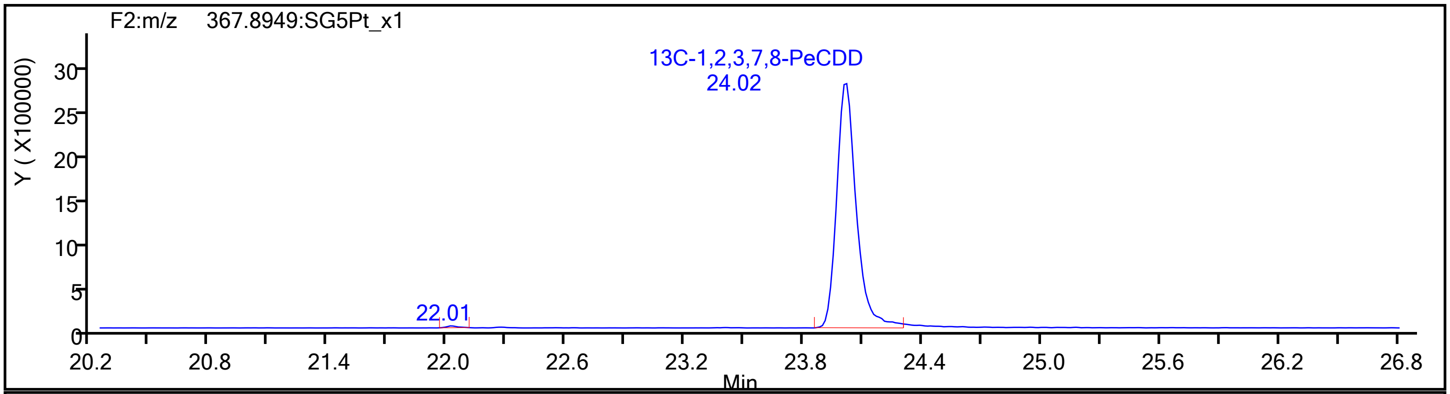

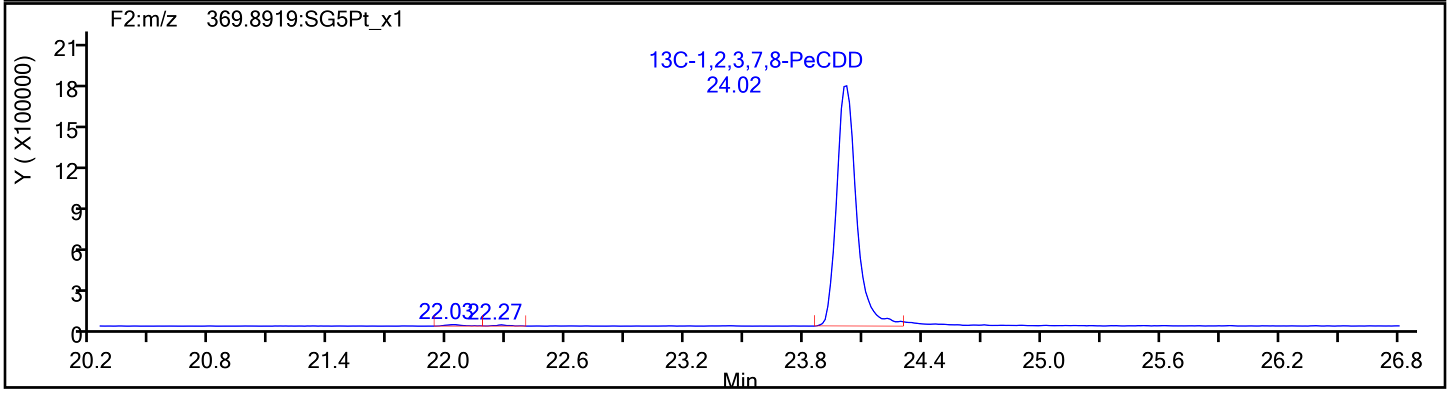

Report Date: 26-Jun-2020 13:15:57
Chrom Revision: 2.3 21-Jun-2020 18:30:46
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

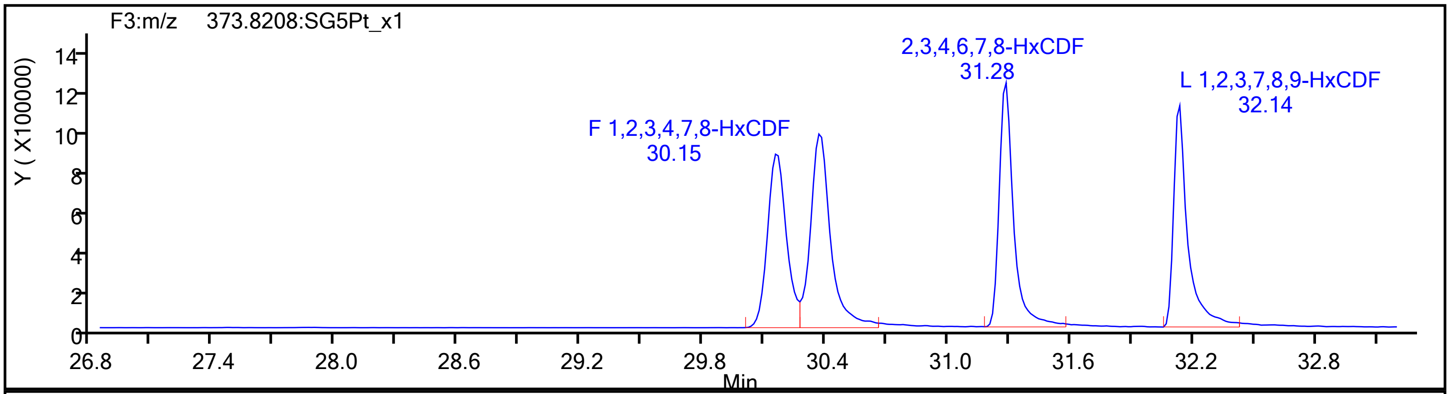

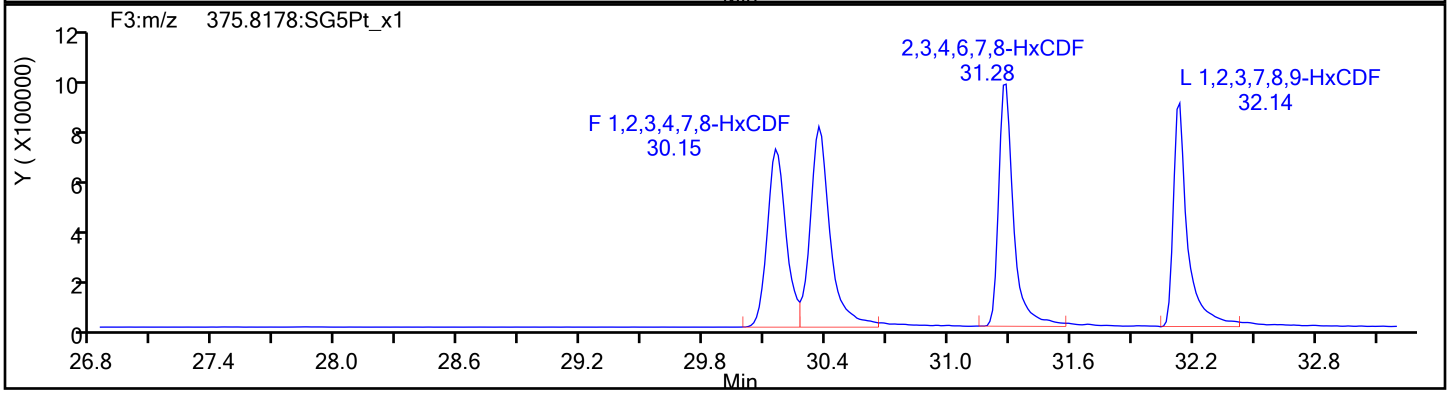

HxCDF Standards

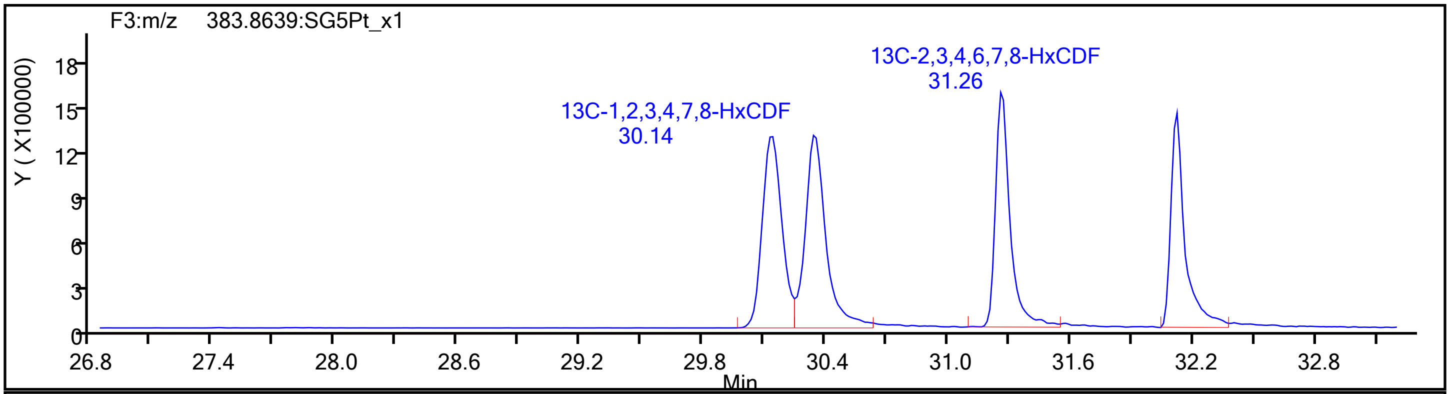

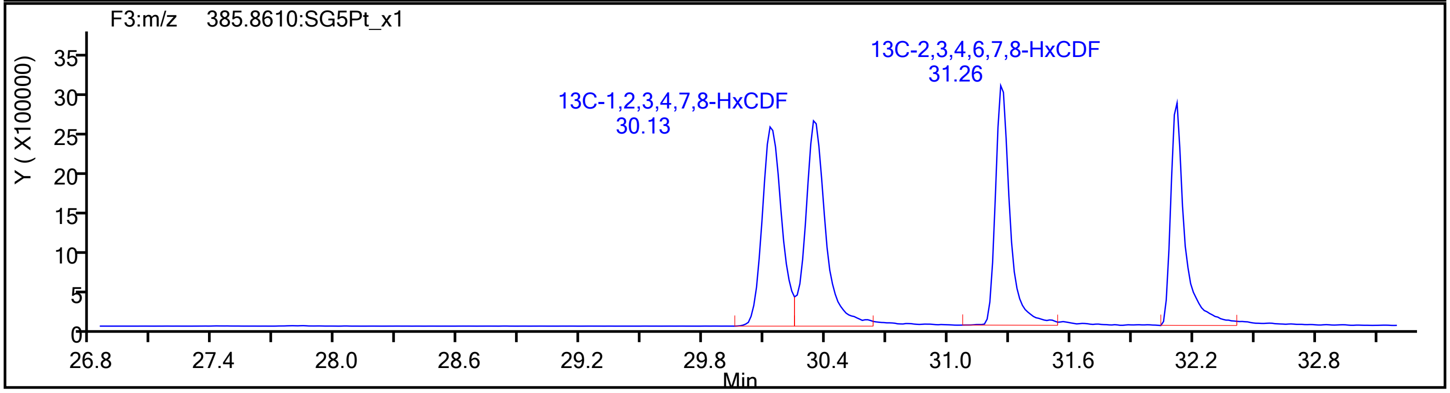

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d
Injection Date: 25-Jun-2020 18:28:15 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621 Sample Line#: 2
Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

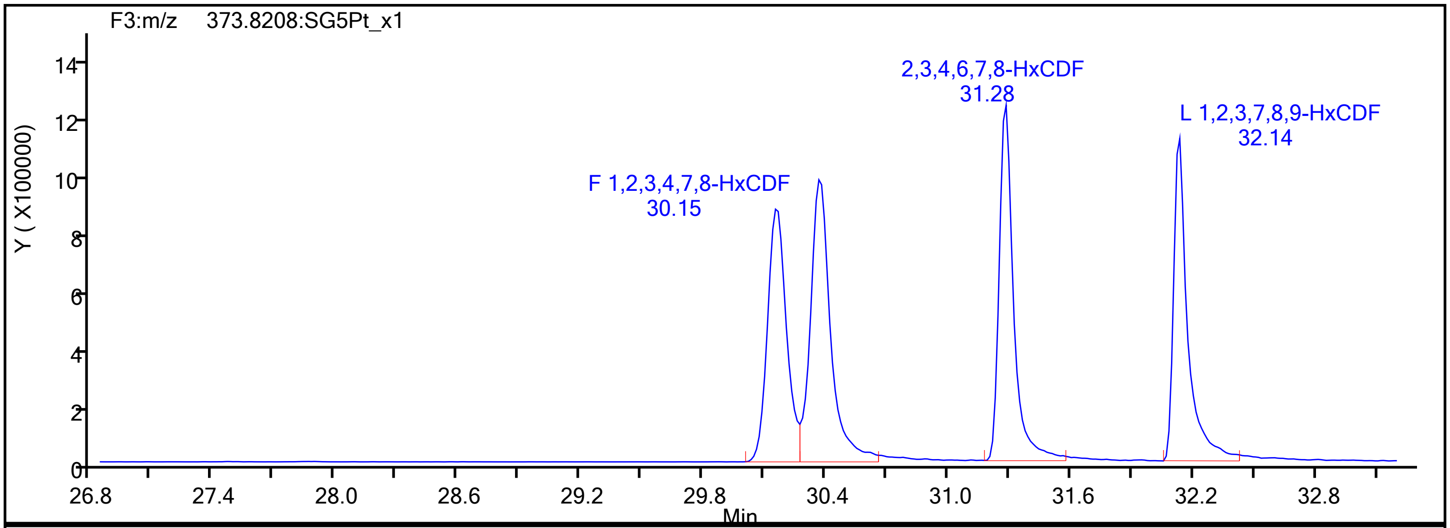

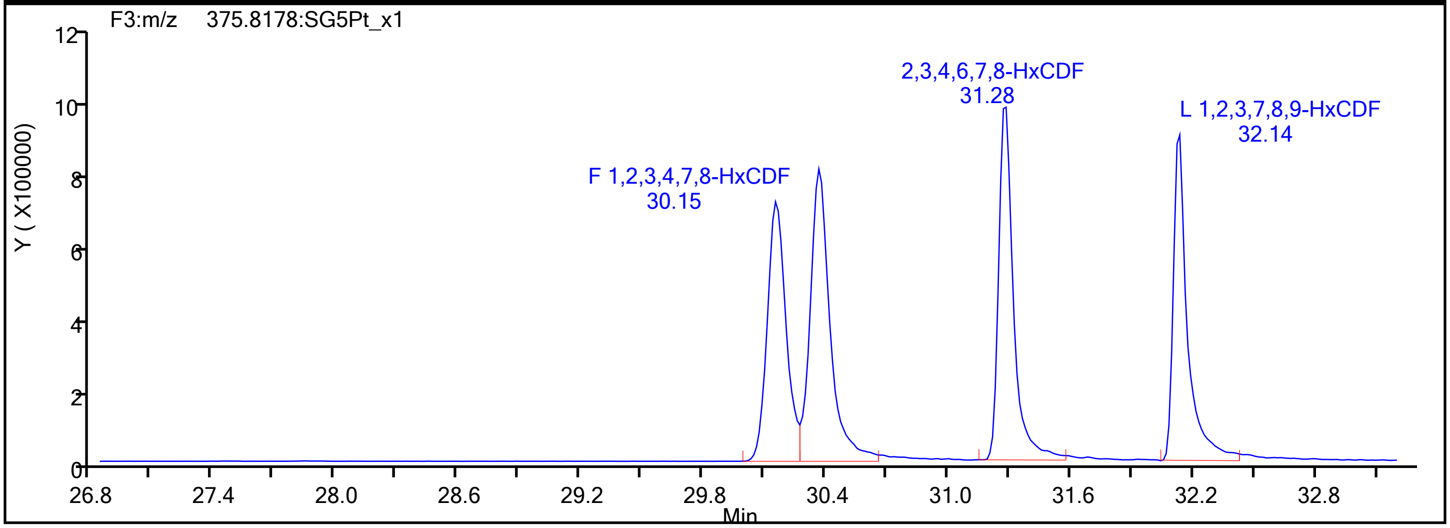

HxCDF Interference Mass

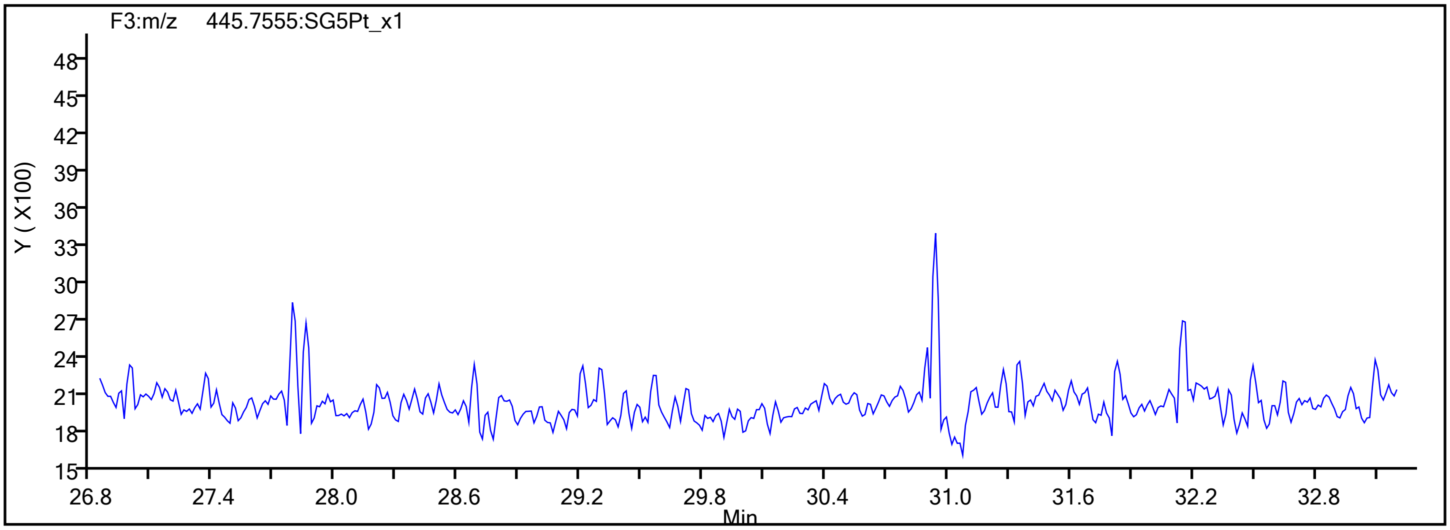

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

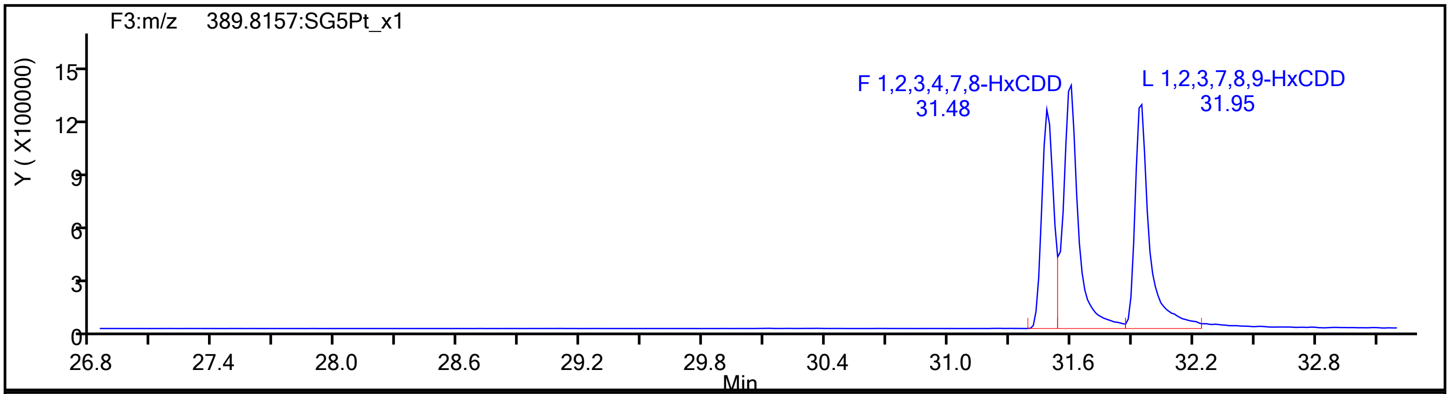

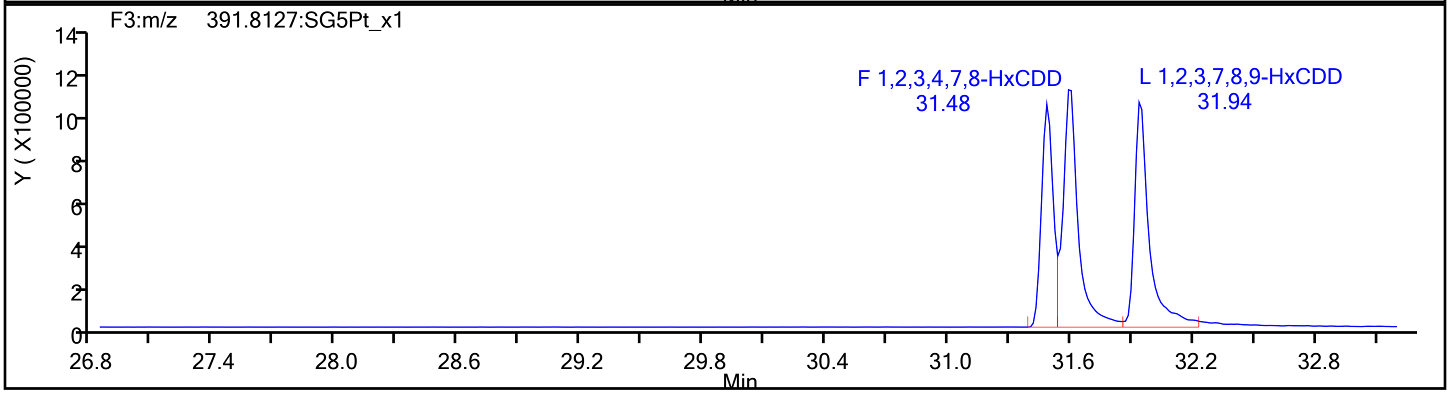

HxCDD Standards

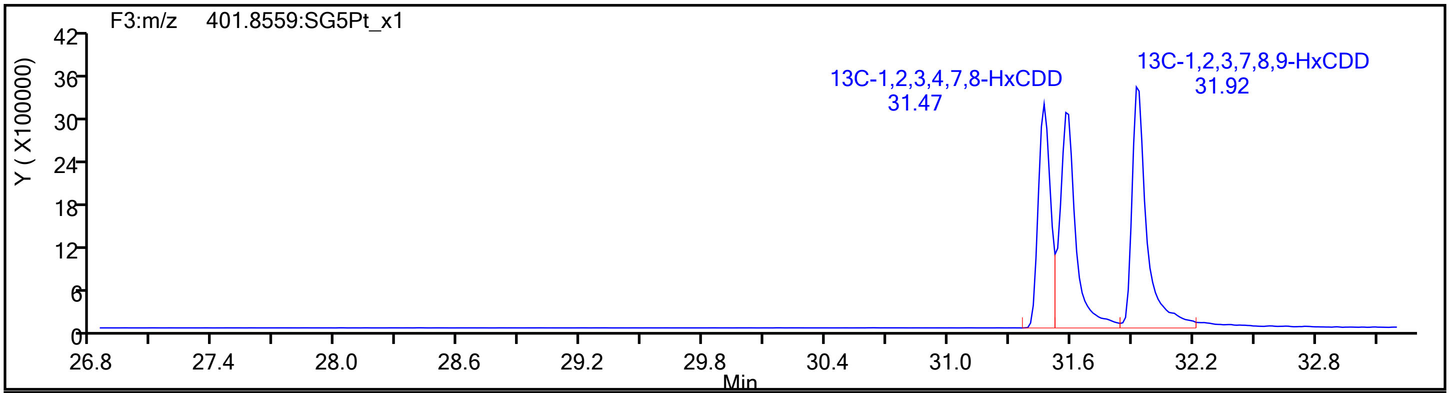

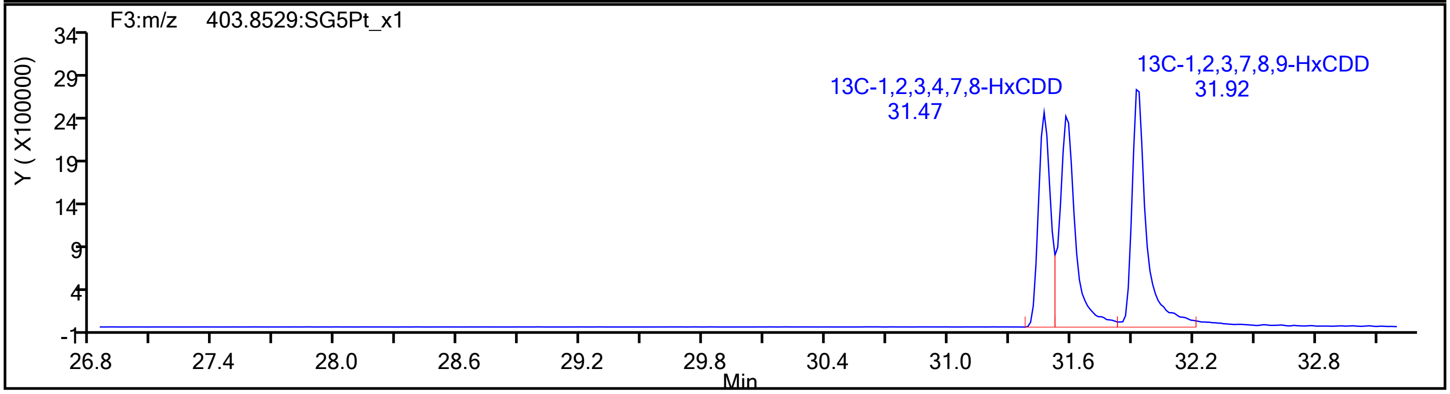

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

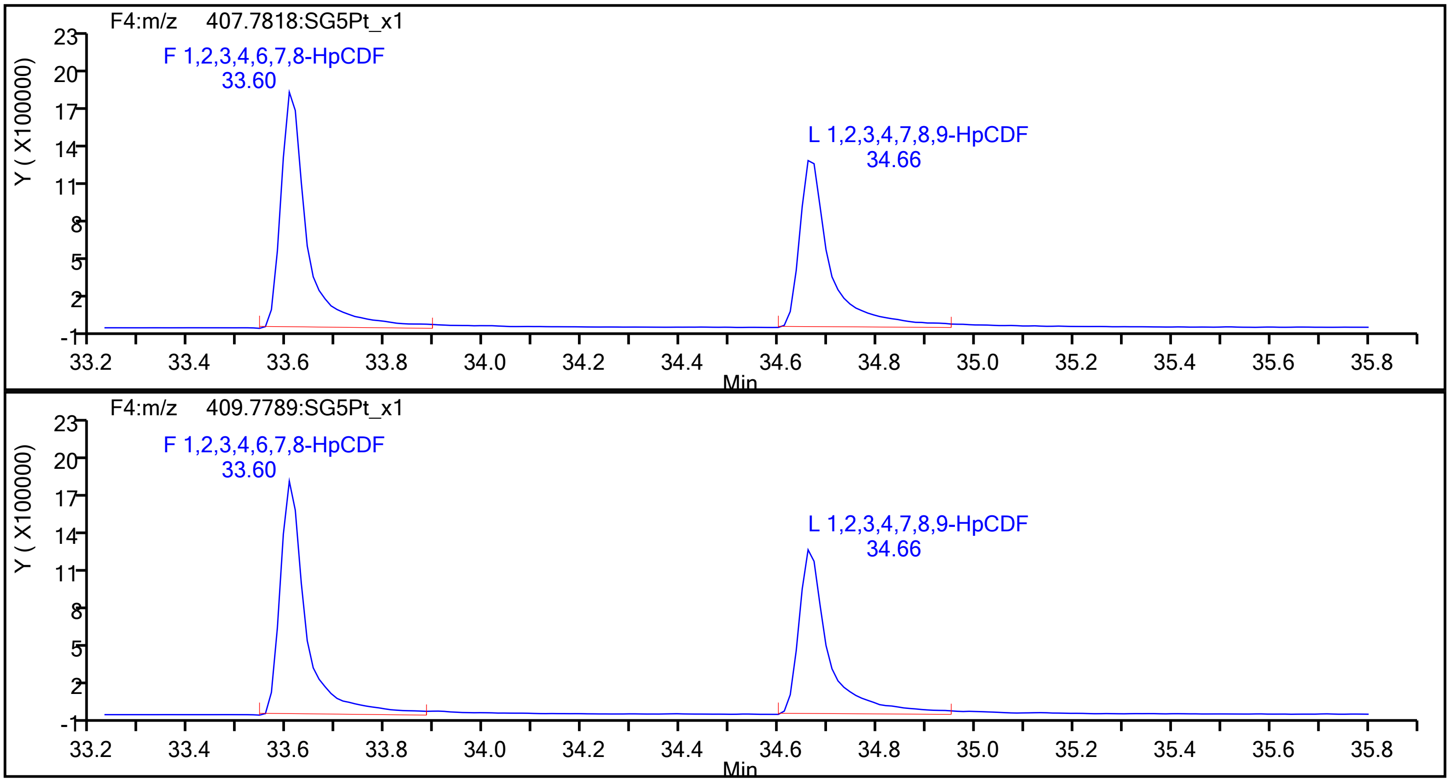

HpCDF Standards

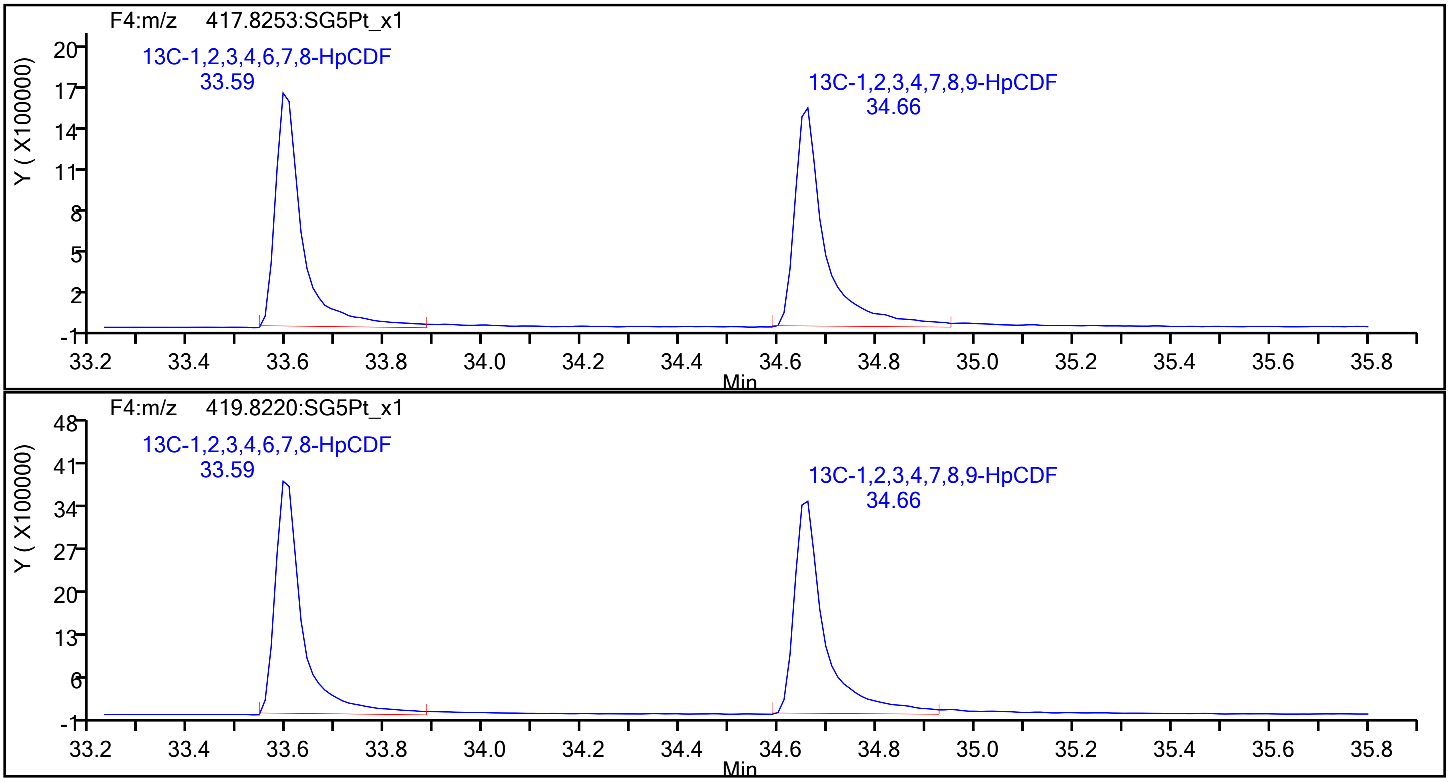

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d

Injection Date: 25-Jun-2020 18:28:15 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621 Sample Line#: 2

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

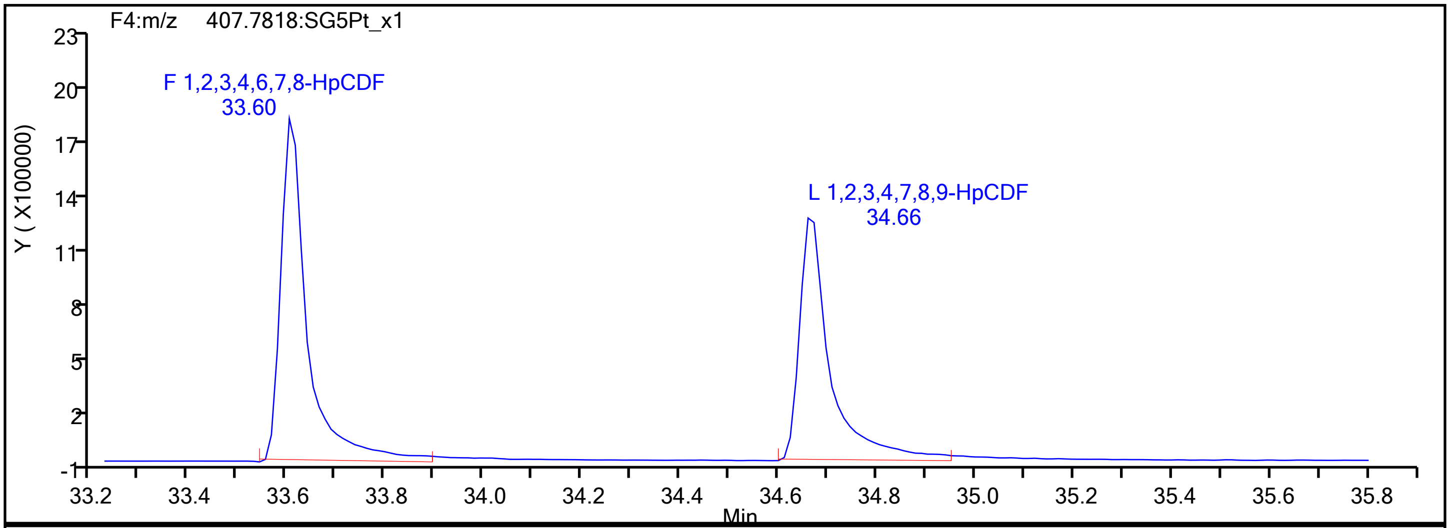

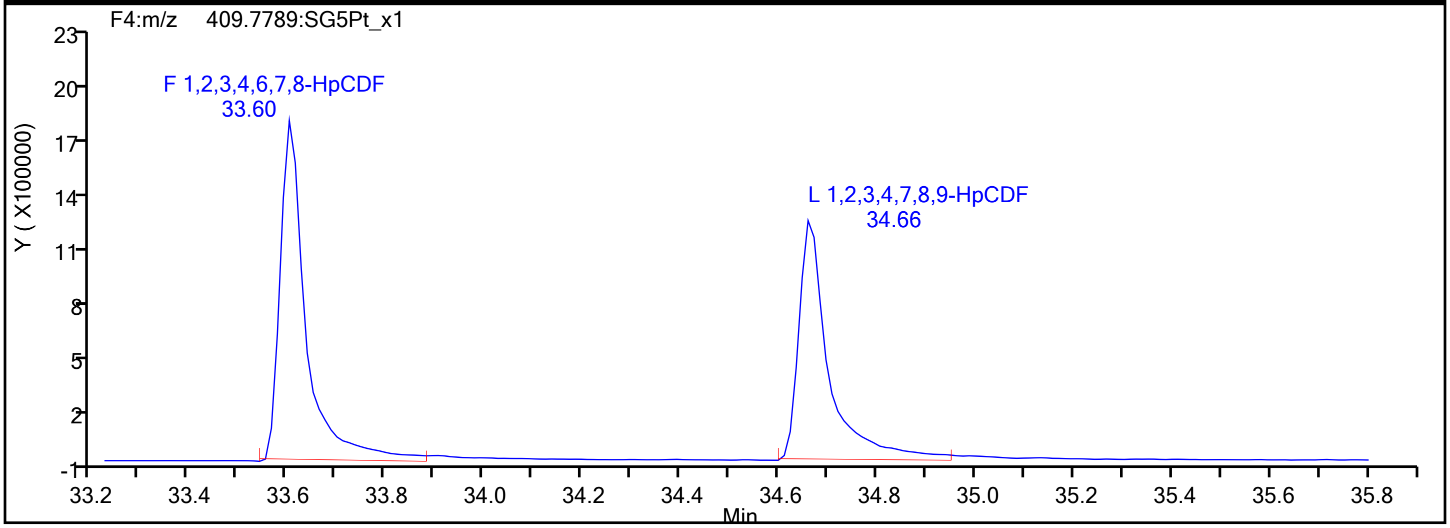

HpCDF Interference Mass

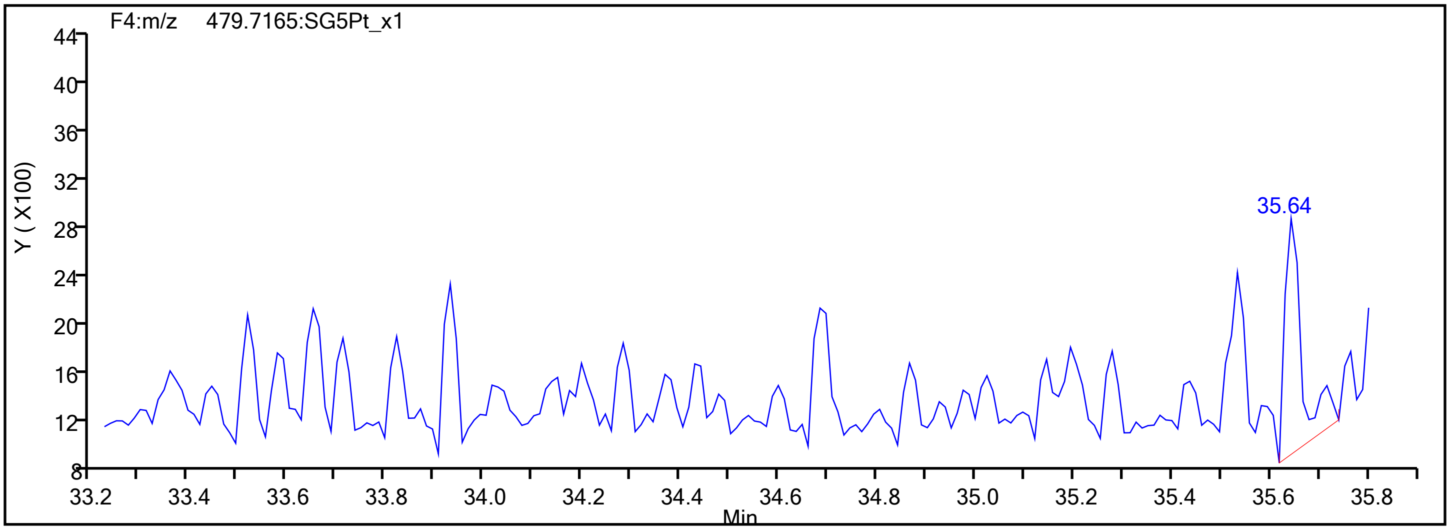

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d
Injection Date: 25-Jun-2020 18:28:15
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

HpCDD

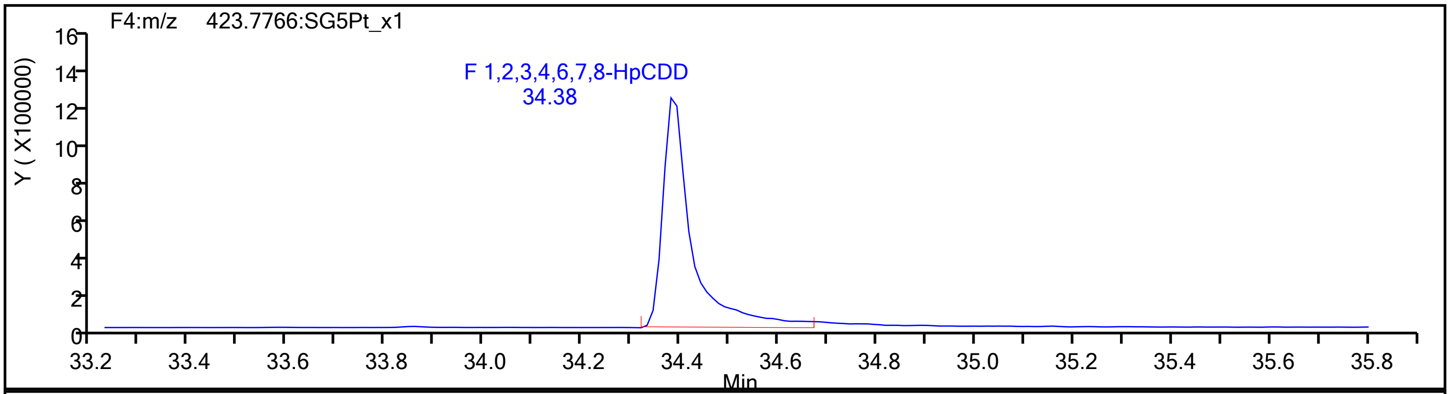

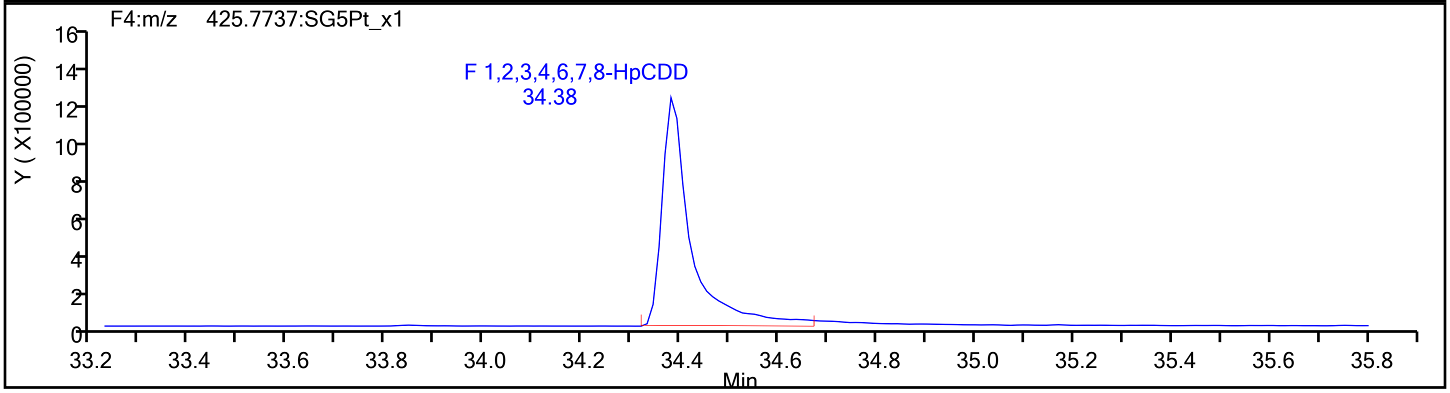

HpCDD Standards

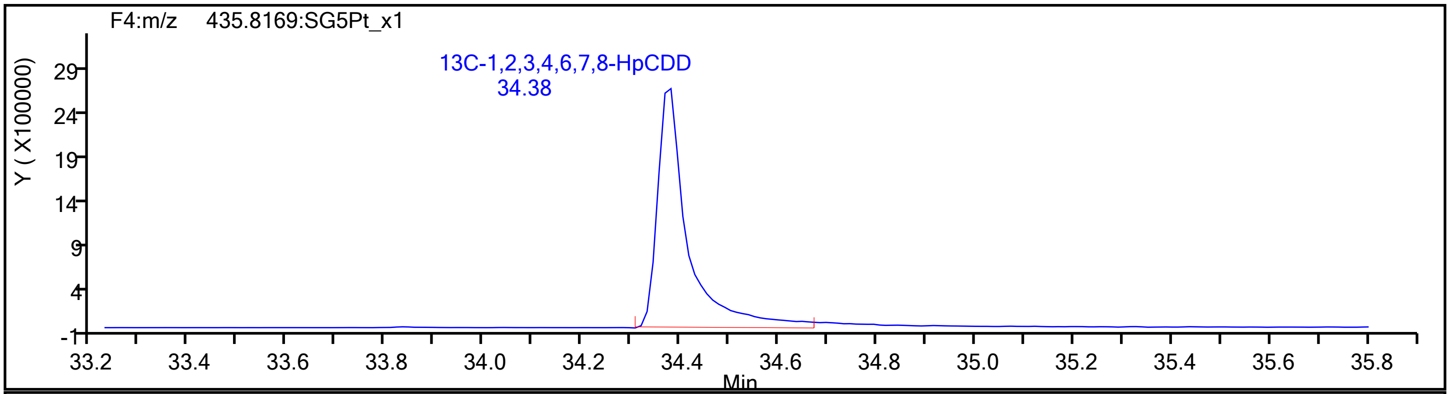

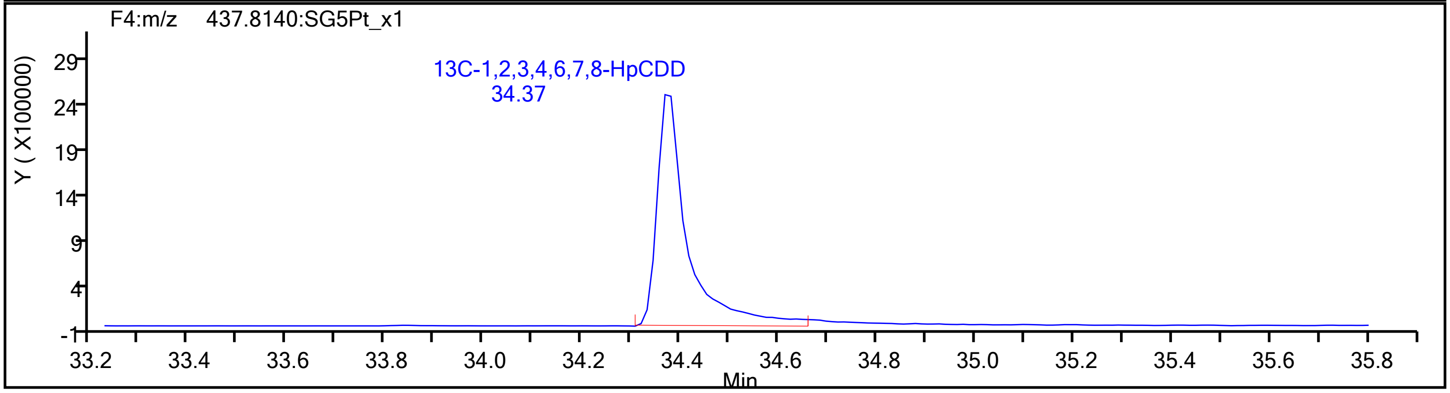

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

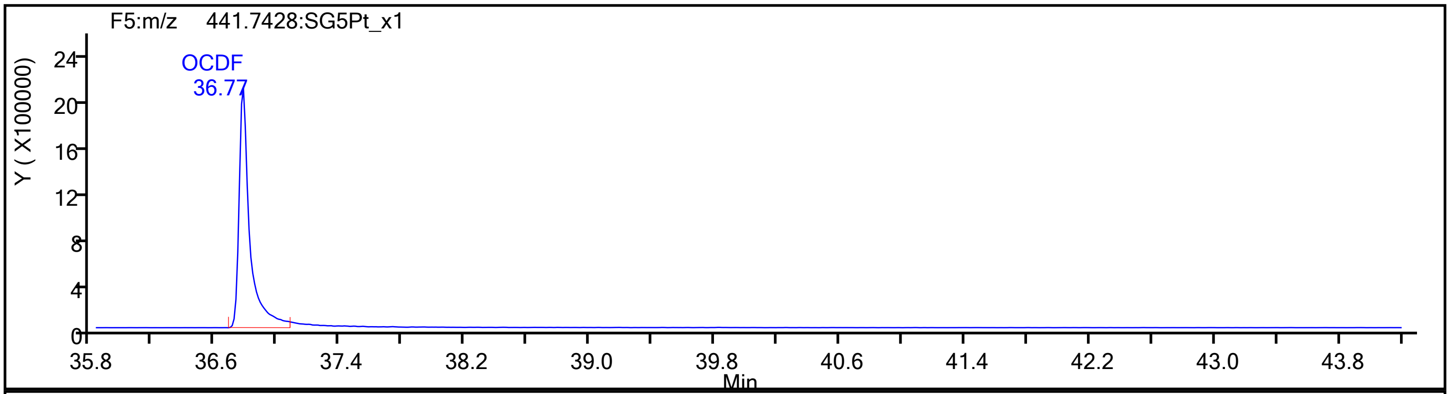

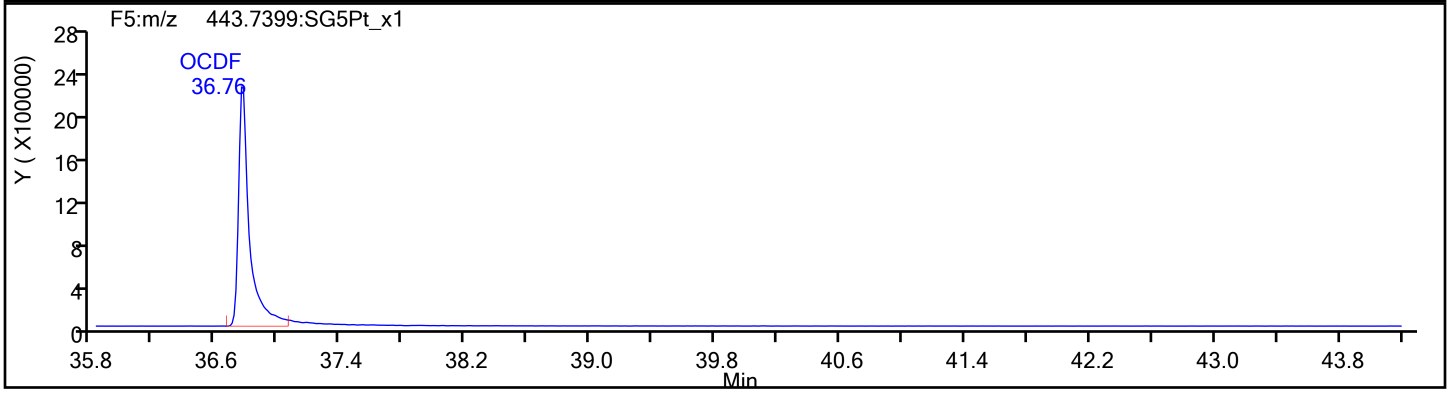

OCDF Standards

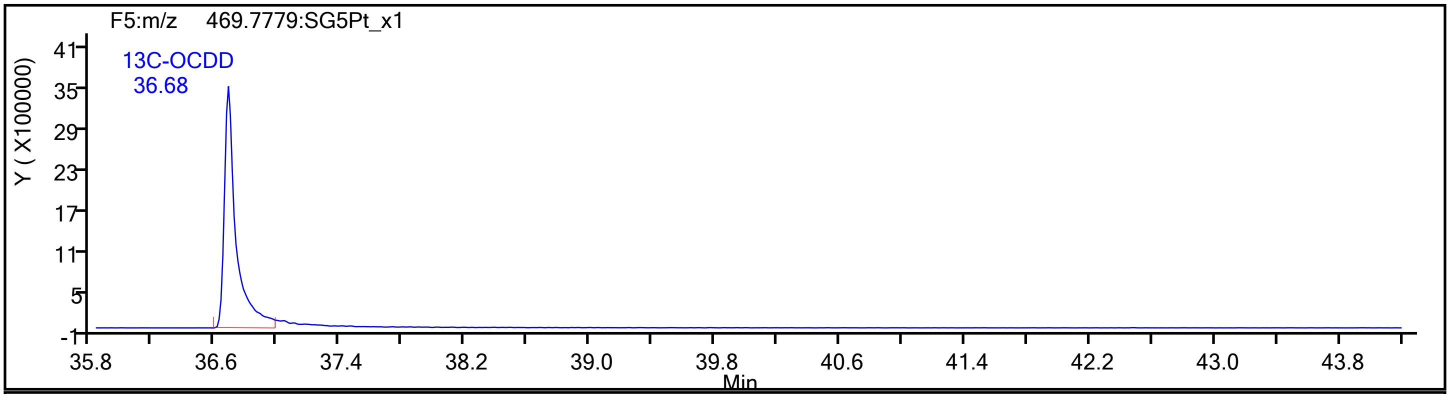

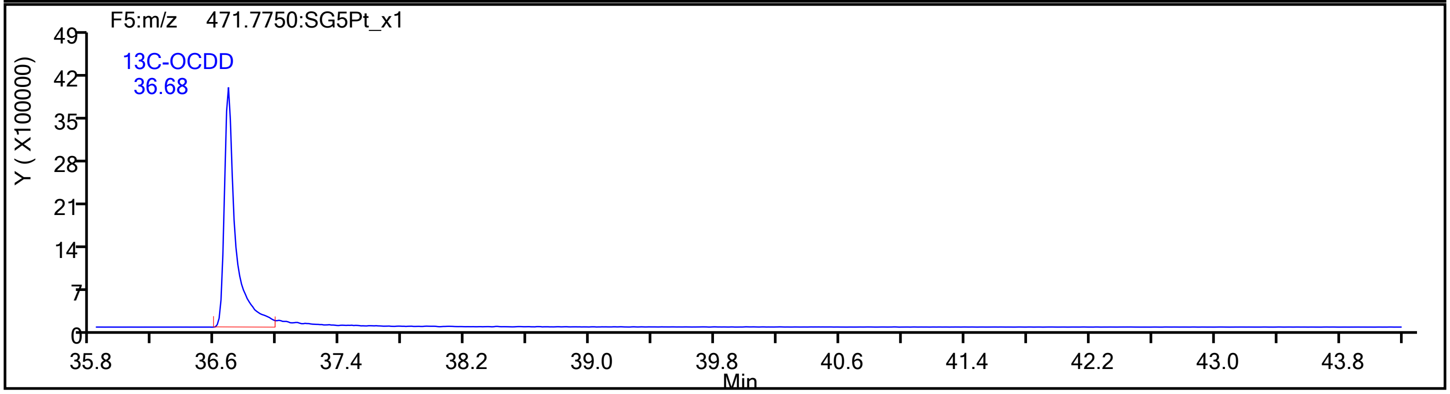

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

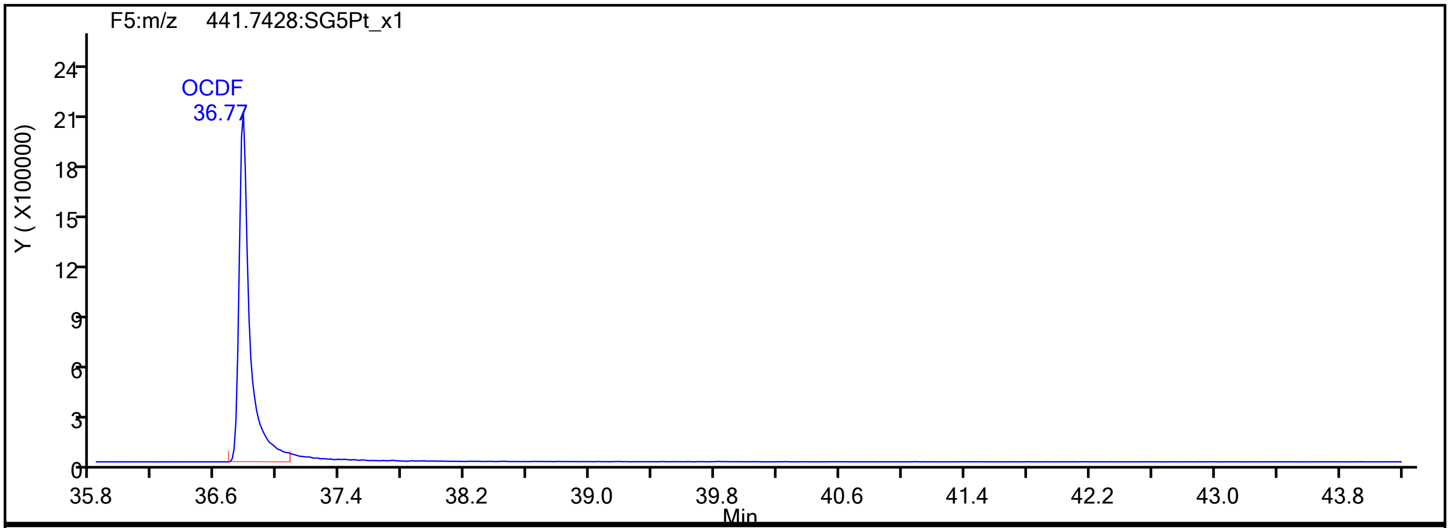

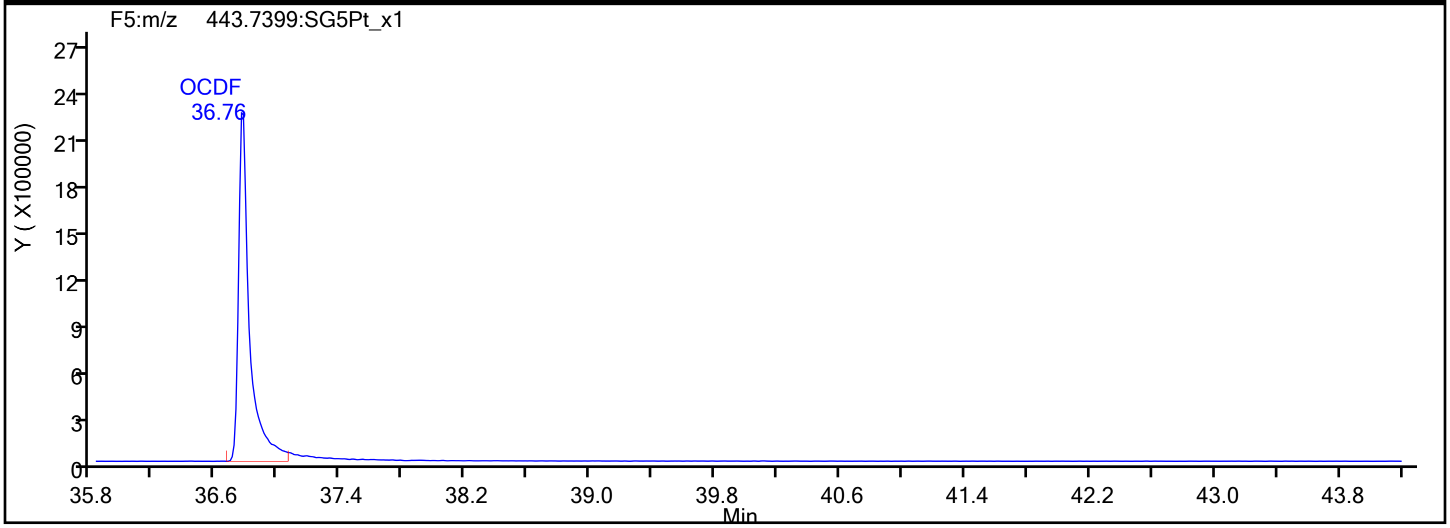

OCDF Interference Mass

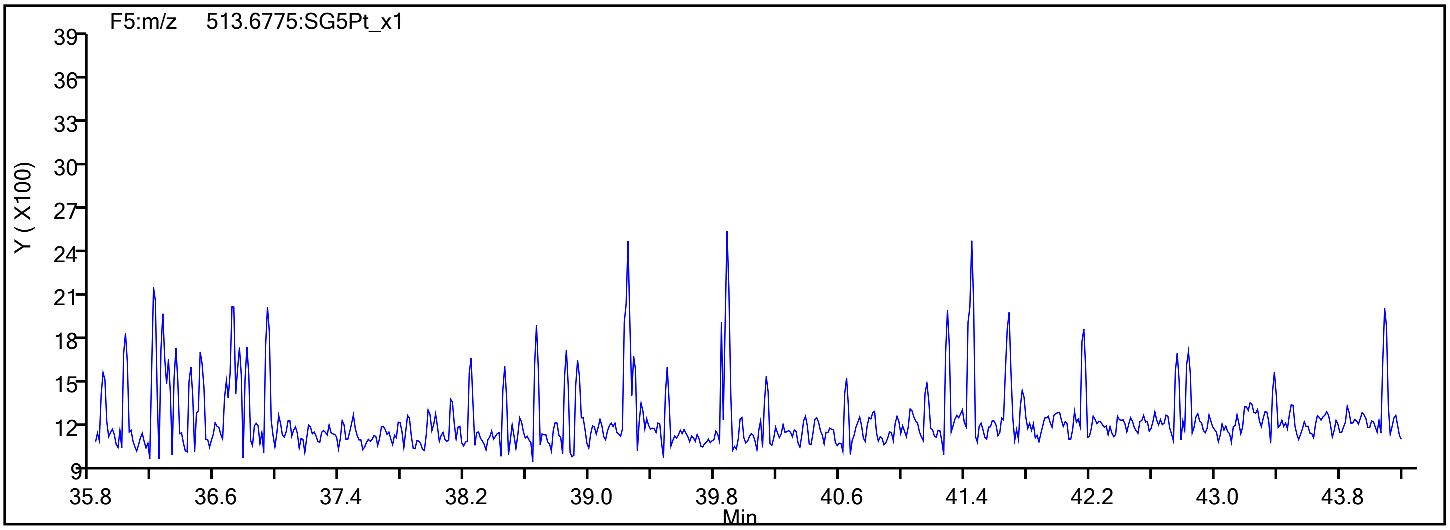

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

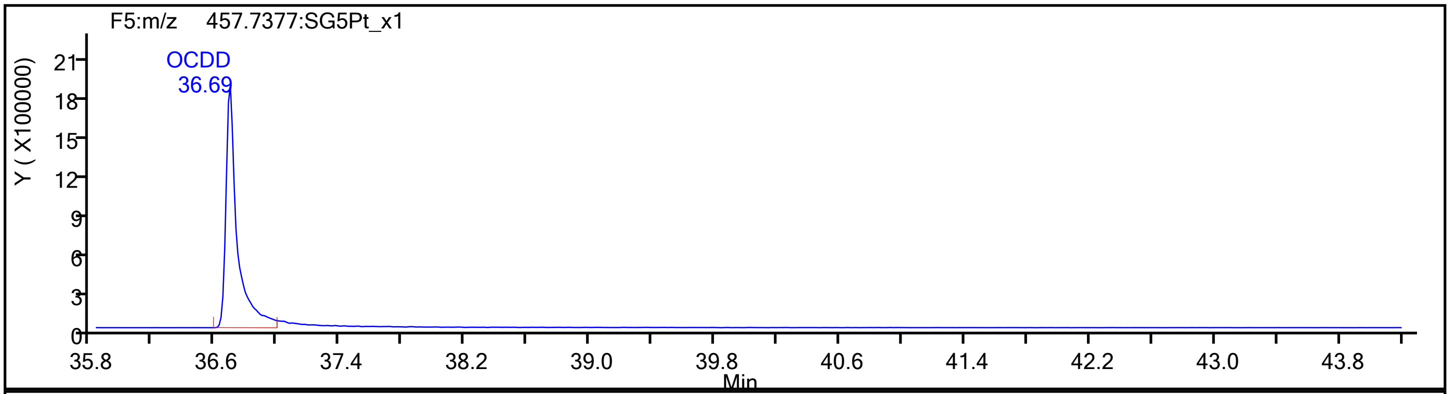

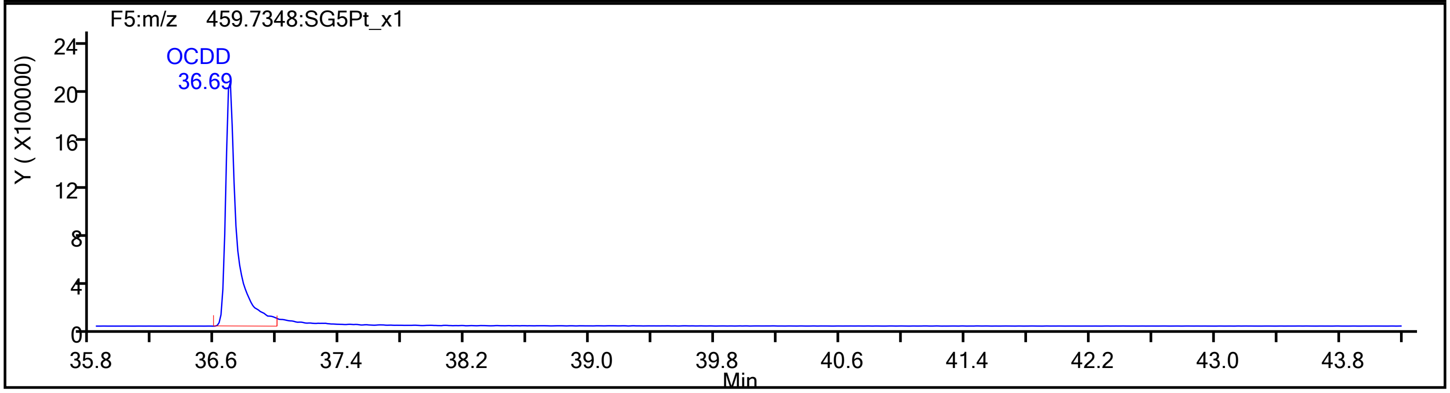

OCDD Standards

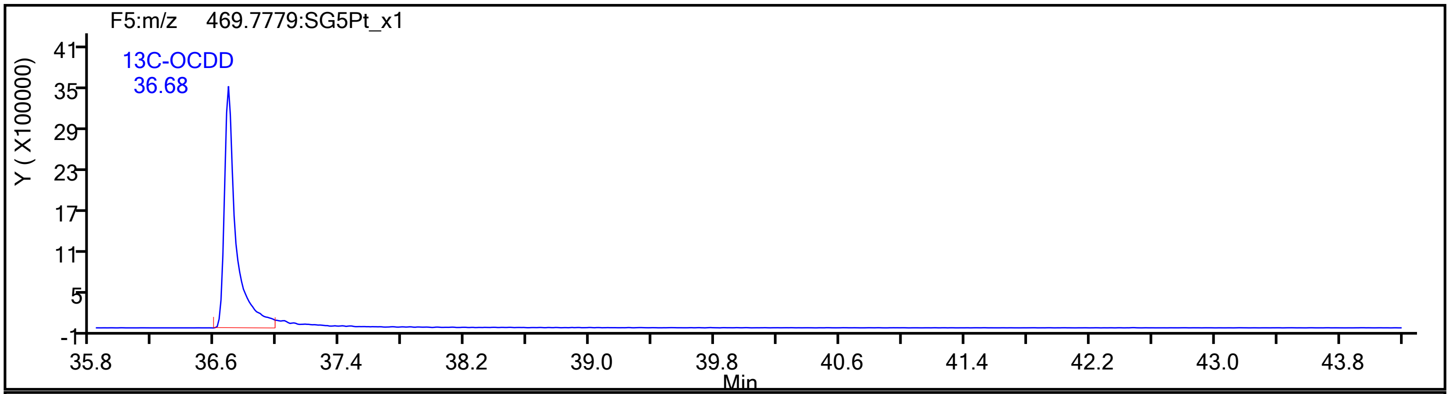

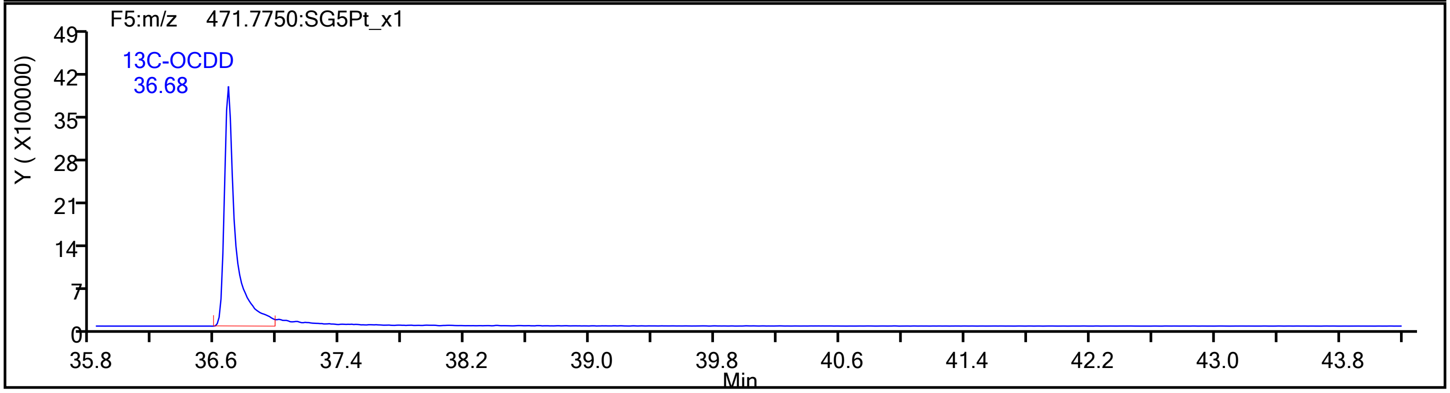

Report Date: 26-Jun-2020 13:15:57 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d		
Injection Date:	25-Jun-2020 18:28:15	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	2
Column Type:	DB-5	Column Dia:	0.32 mm

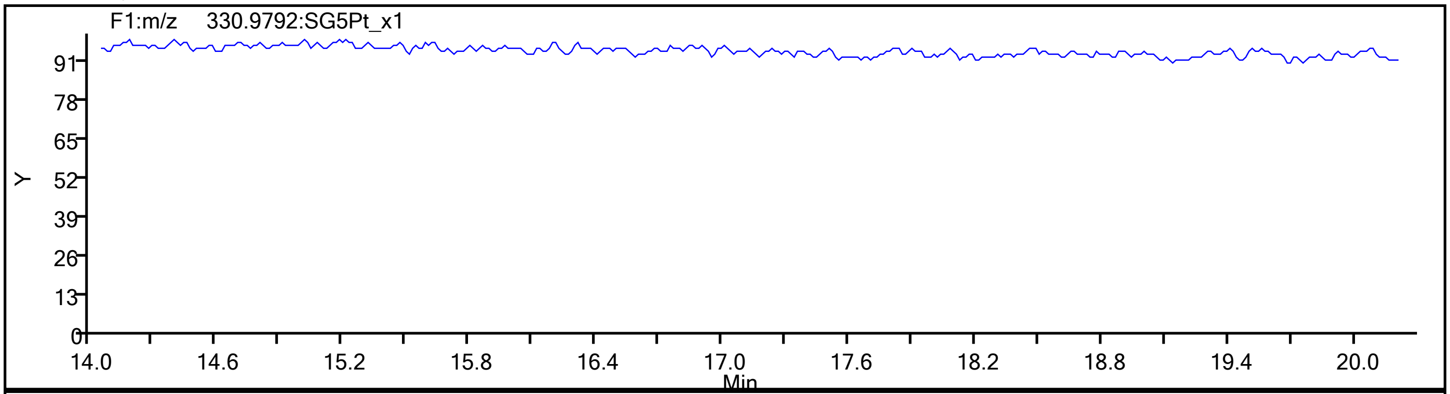

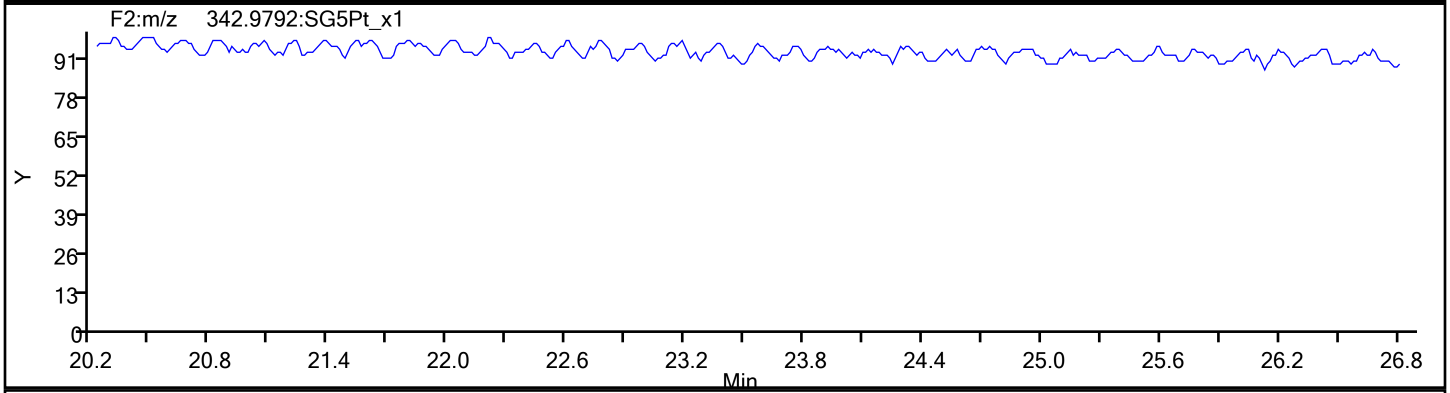

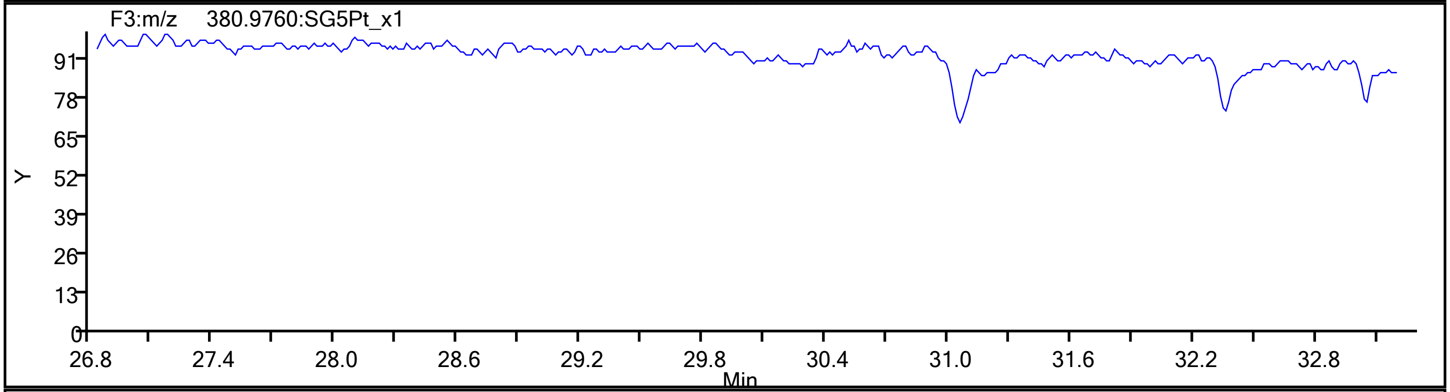

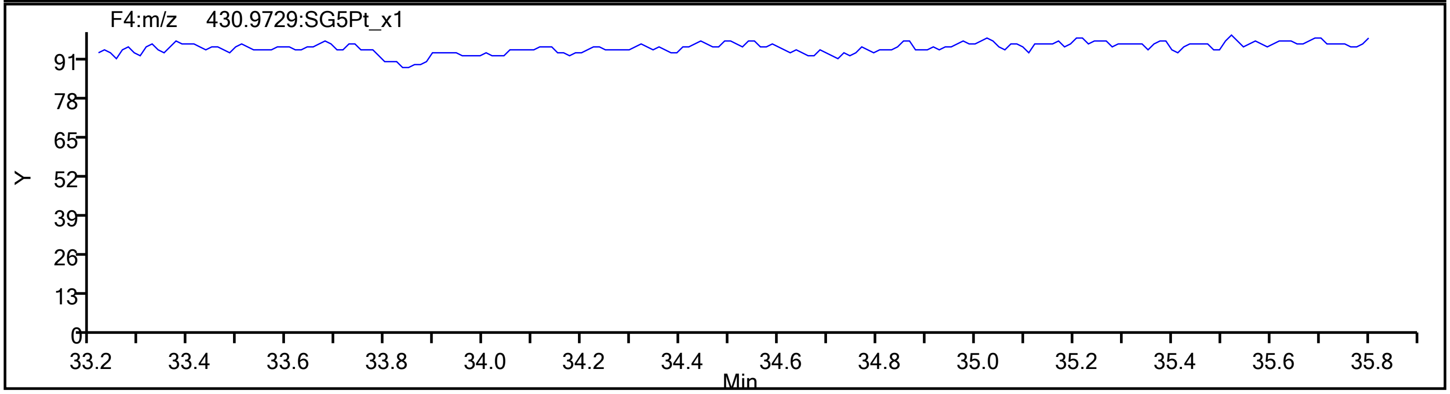

Report Date: 26-Jun-2020 13:15:57
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_2.d
Injection Date: 25-Jun-2020 18:28:15
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 2
Column Type: DB-5
Column Dia: 0.32 mm

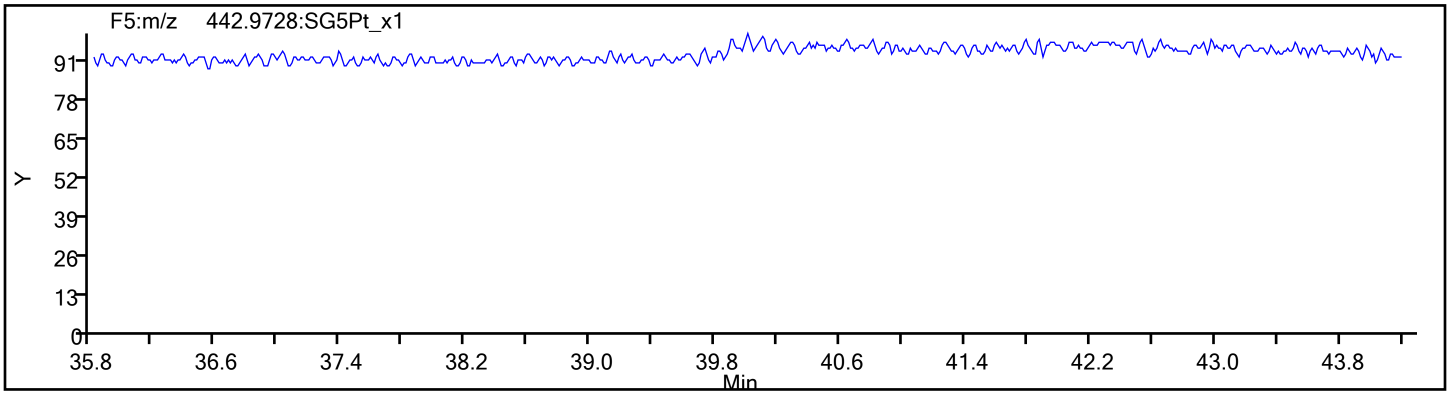

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Lab Sample ID: ICV 320-380959/9   Calibration Date: 05/27/2020 14:29

Instrument ID: 11D2   Calib Start Date: 05/27/2020 10:39

GC Column: DB-225   ID: 0.32(mm)   Calib End Date: 05/27/2020 13:12

Lab File ID: 27MY20A11D2_009.d   Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.220	1.229		40.3	40.0	101	70-130
2,3,7,8-TCDF	AveID	1.081	1.079		39.9	40.0	100	70-130
13C-2,3,7,8-TCDD	Ave	0.9832	0.9595		97.6	100	98	82-121
13C-2,3,7,8-TCDF	Ave	1.491	1.497		100	100	100	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9421	0.9625		40.9	40.0	102	79-127

Report Date: 28-May-2020 09:54:50 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d				
Lims ID:	ICV				
Client ID:					
Sample Type:	ICV				
Inject. Date:	27-May-2020 14:29:01	ALS Bottle#:	0	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	ICV HRDXNIC_00045				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:					

Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m		
Limit Group:	HR - 1613B - ICAL		
Last Update:	28-May-2020 09:54:48	Calib Date:	27-May-2020 13:12:17
Integrator:	Picker		
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d		
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR
Process Host:	CTX1014		

First Level Reviewer: stephensk Date: 27-May-2020 15:35:02

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.286	79502550	0.75	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.466	119044731	0.77	1.4910	100.4	100.4	0.3169	0.3169	100	
2,3,7,8-TCDF	16.493	51373224	0.77	1.0809	39.9	39.9	0.0805	0.0805	99.81	
D 13C-2,3,7,8-TCDD	15.080	76284985	0.74	0.9832	97.6	97.6	0.3546	0.3546	97.60	
2,3,7,8-TCDD	15.094	37499128	0.79	1.2196	40.3	40.3	0.1015	0.1015	101	
$ 37Cl4-2,3,7,8-TCDD	15.094	30608018		0.9421	40.9	40.9	0.0716	0.0716	102	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 27-May-2020 14:29:01 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV HRDXNIC_00045
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist:

Method: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 28-May-2020 09:54:48 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1014

First Level Reviewer: stephensk Date: 27-May-2020 15:35:02

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.286	15.294	0		34007836	7311620	14151	35377	517		
333.9339	15.286	15.294	0		45494714	9540658	9353	23382	1020	0.75(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.466	16.460	0	1.077	51935630	9756891	17091	42727	571		
317.9389	16.466	16.460	0	1.077	67109101	12805289	14764	36910	867	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	16.493	16.474	1	1.002	22305282	4029545	2351	5877	1714		
305.8987	16.493	16.474	1	1.002	29067942	5247816	5499	13747	954	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.080	15.074	0	0.987	32437882	7293417	14151	35377	515		
333.9339	15.080	15.074	0	0.987	43847103	9581070	9353	23382	1024	0.74(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.094	15.088	0	1.001	16581438	3258623	4223	10557	772		
321.8936	15.094	15.088	0	1.001	20917690	4107597	4136	10340	993	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.094	15.088	0	0.987	30608018	6176512	4548	11370	1358		

Reagents:

HRDXNIC_00045 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 09:54:50 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d

Injection Date: 27-May-2020 14:29:01
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959
Sample Line#: 9
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

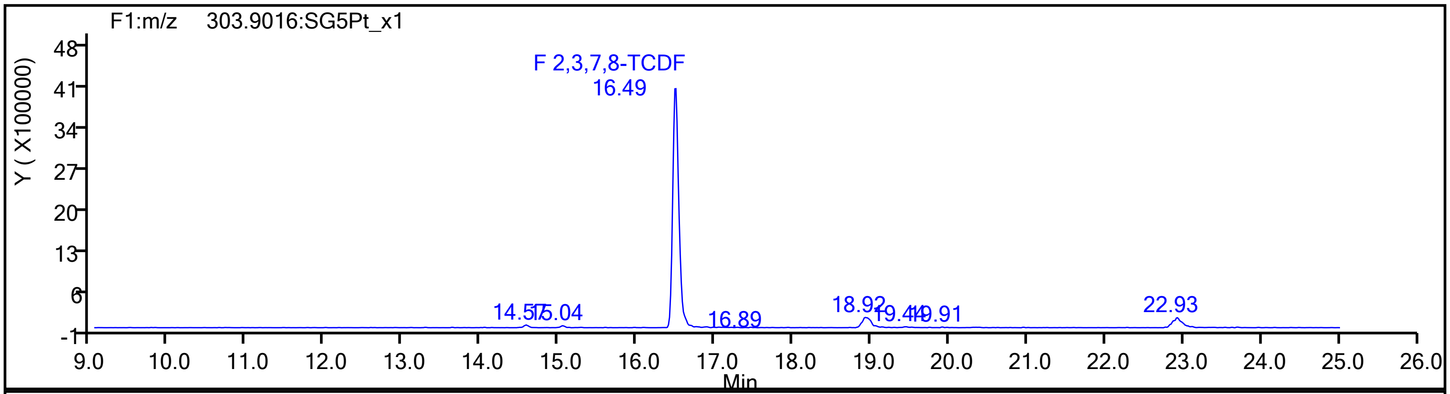

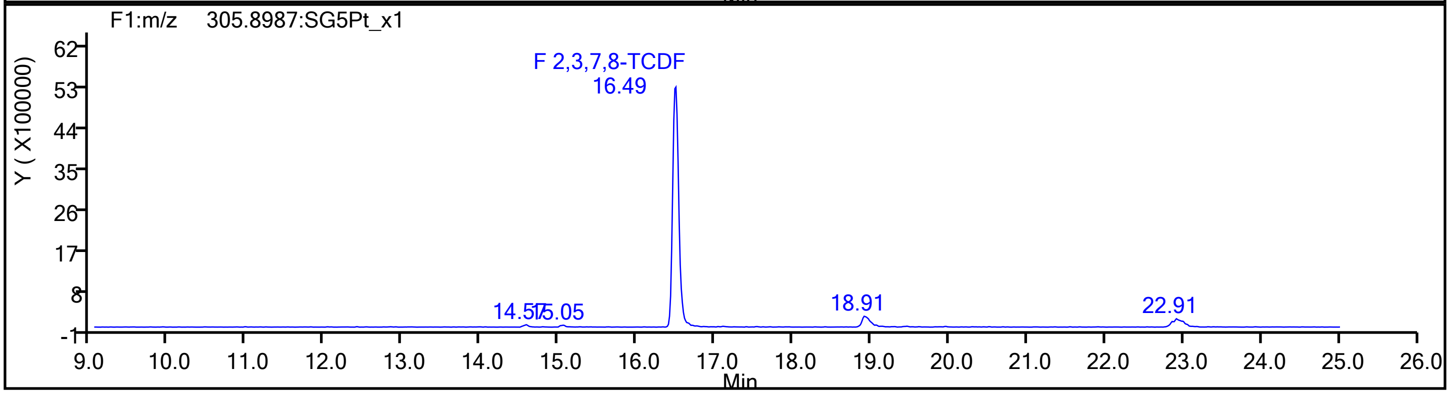

TCDF Standards

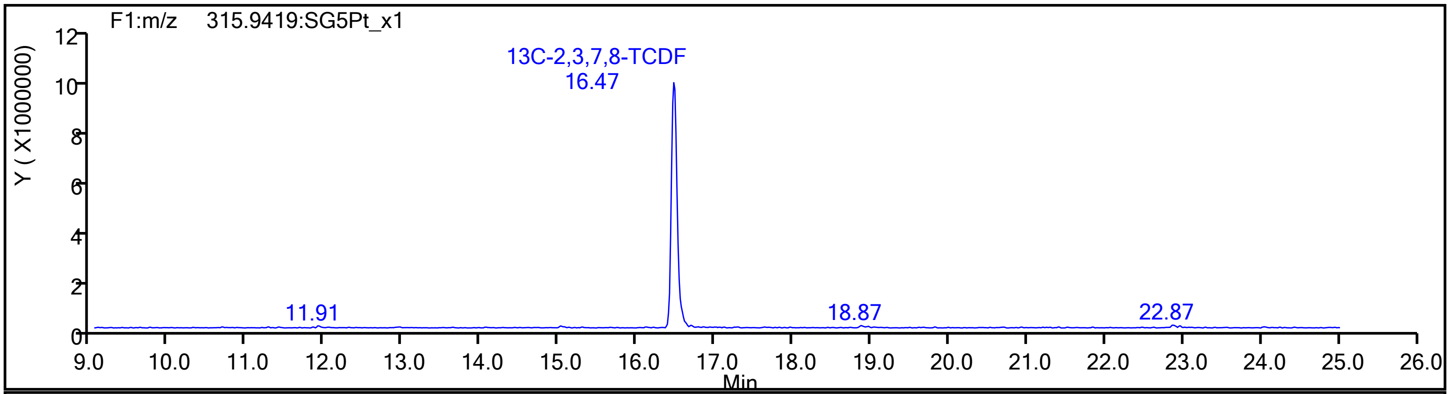

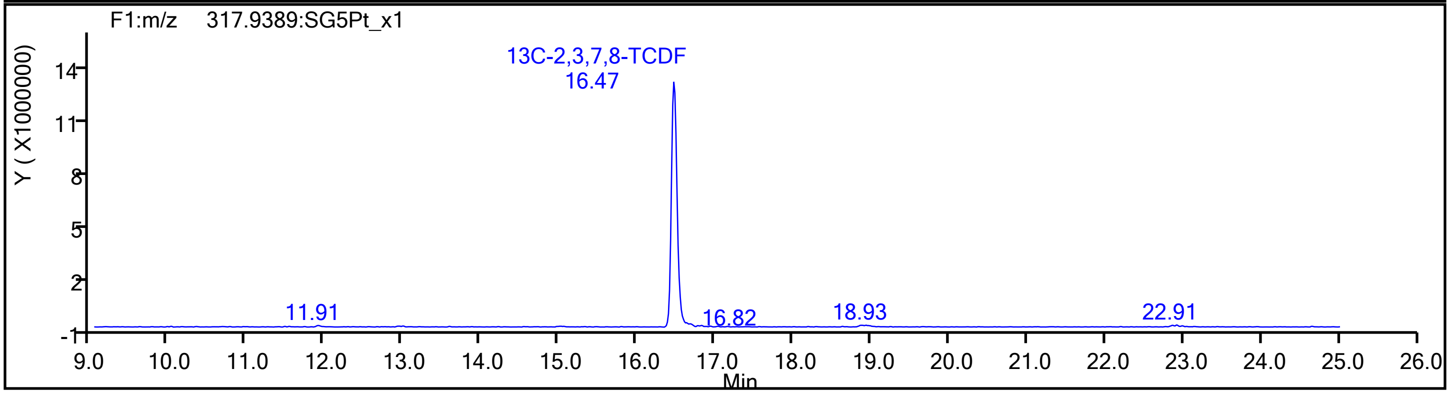

Report Date: 28-May-2020 09:54:50　　Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d

Injection Date: 27-May-2020 14:29:01　　Injection Vol: 2.0 ul

Instrument ID: 11D2　　Operator ID:

Method: DXN_DB225_11D2　　Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 380959　　Sample Line#: 9

Column Type: DB-225　　Column Dia: 0.32 mm

TCDF

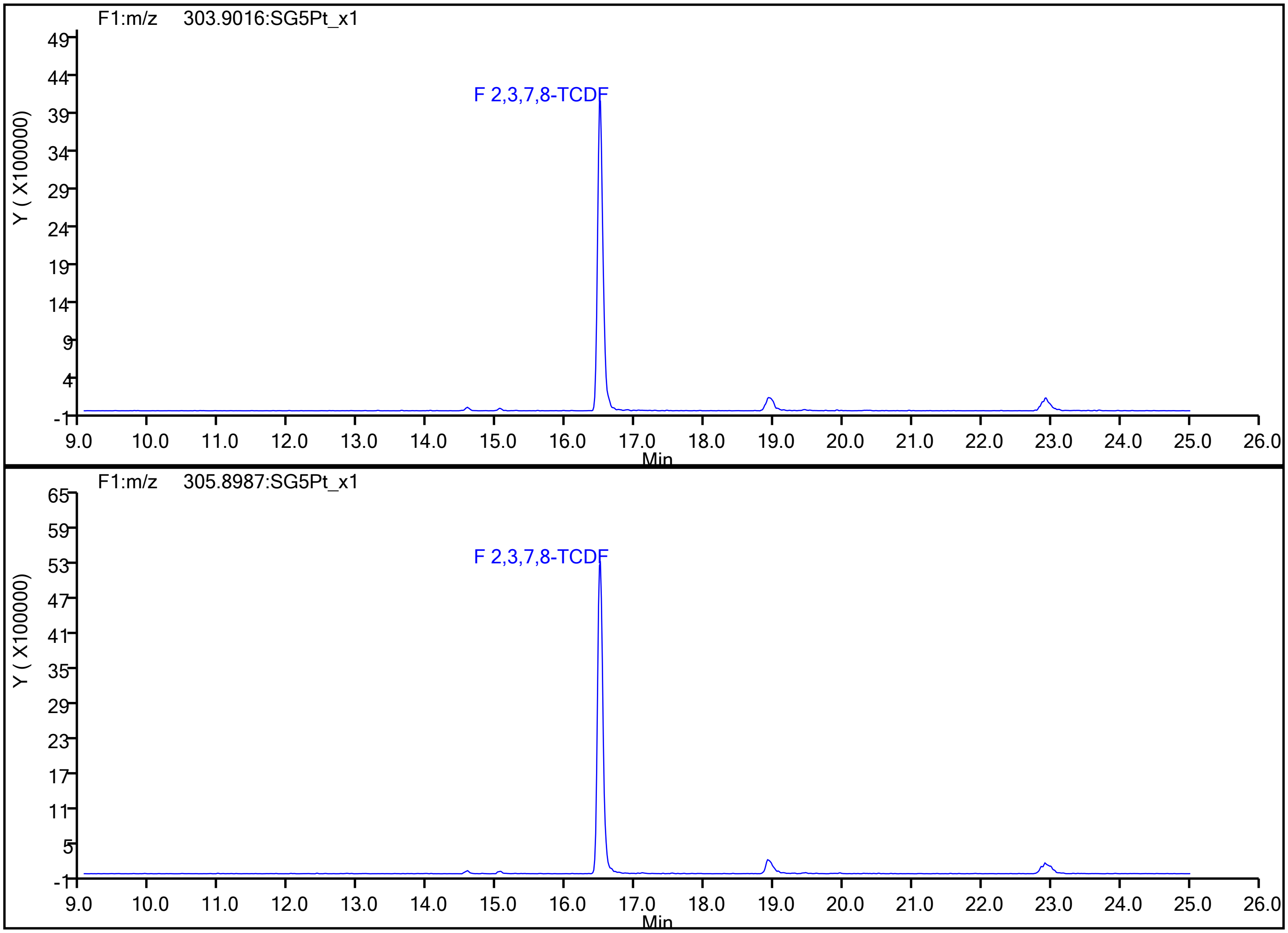

TCDF Interference Mass

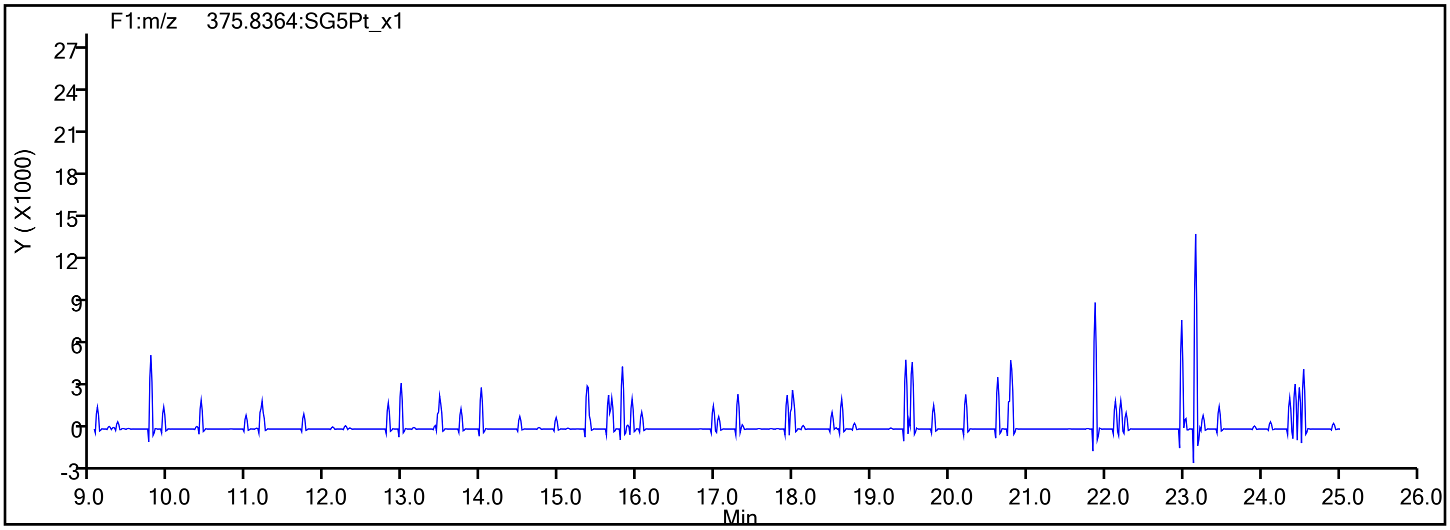

Report Date: 28-May-2020 09:54:50 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d

Injection Date: 27-May-2020 14:29:01 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 380959 Sample Line#: 9

Column Type: DB-225 Column Dia: 0.32 mm

TCDD

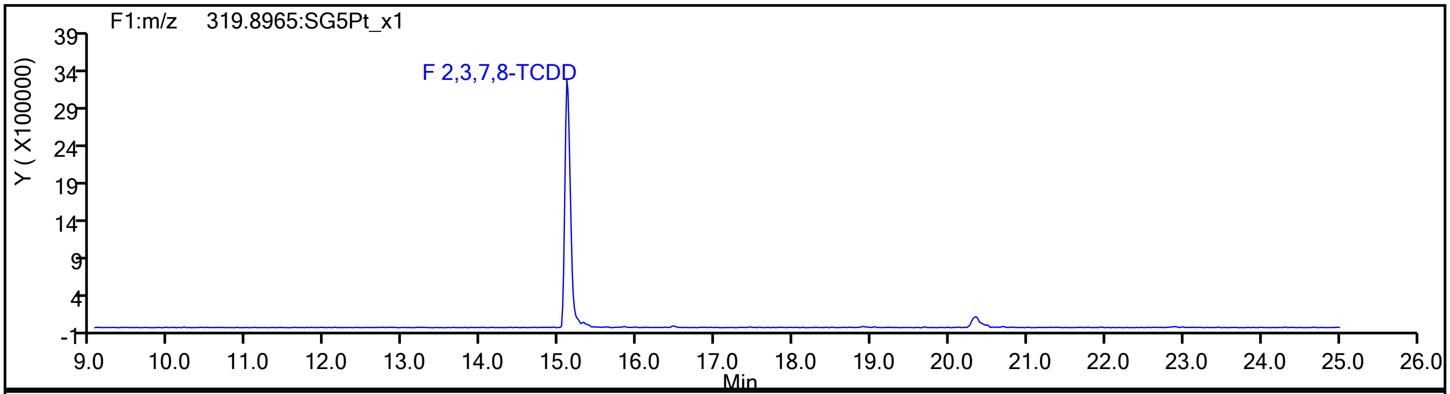

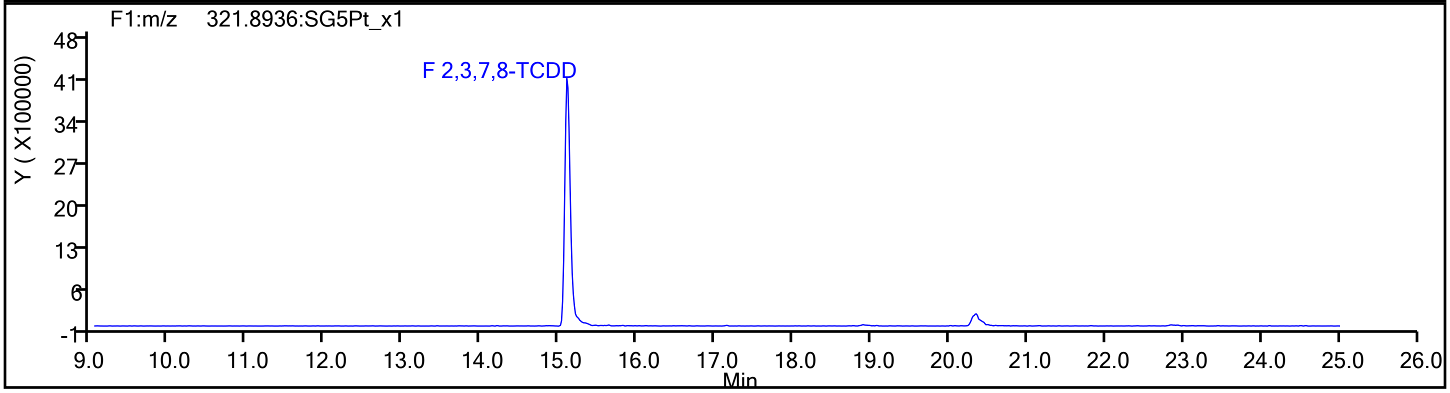

TCDD Standards

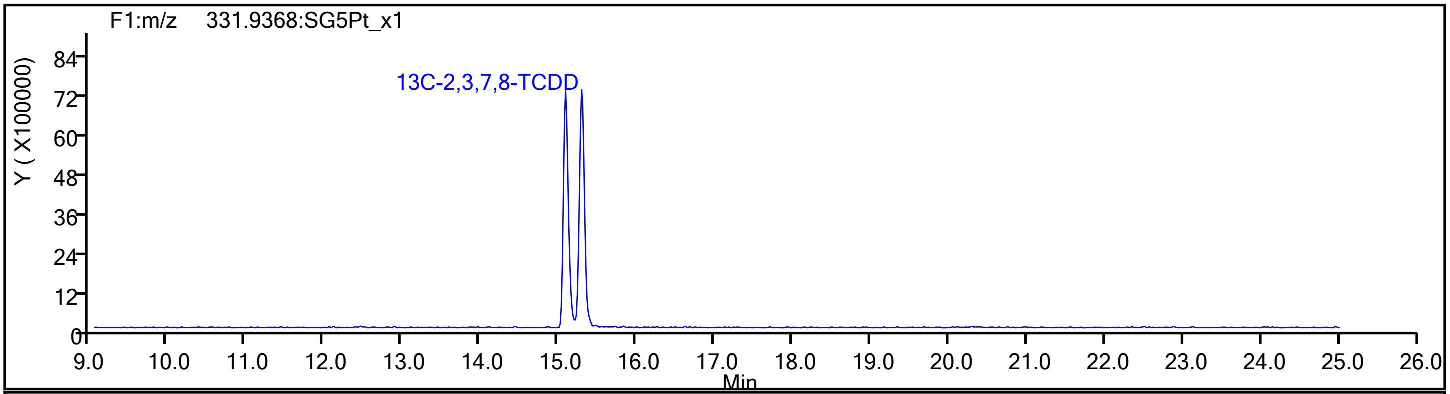

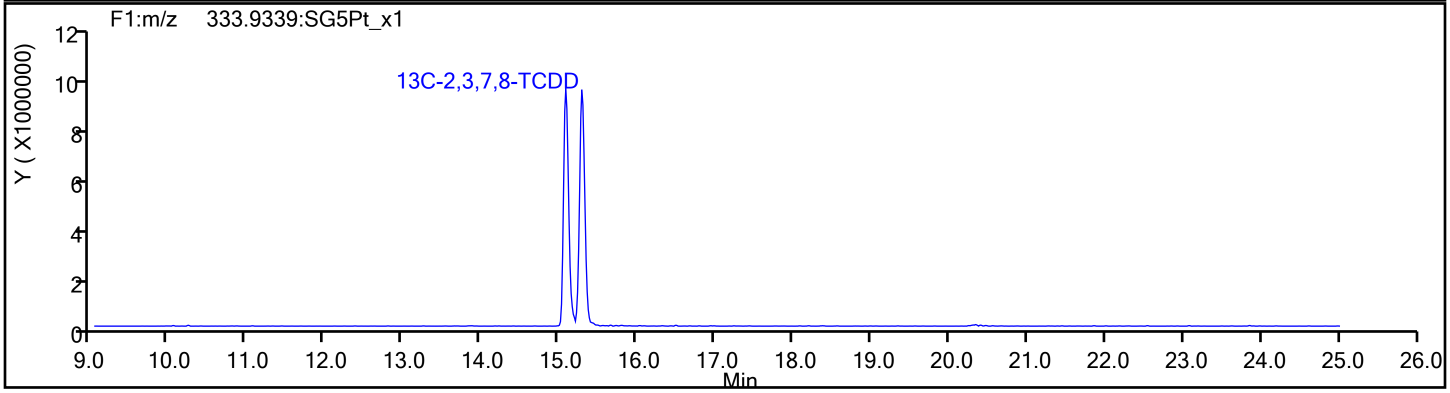

Report Date: 28-May-2020 09:54:50 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d		
Injection Date:	27-May-2020 14:29:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

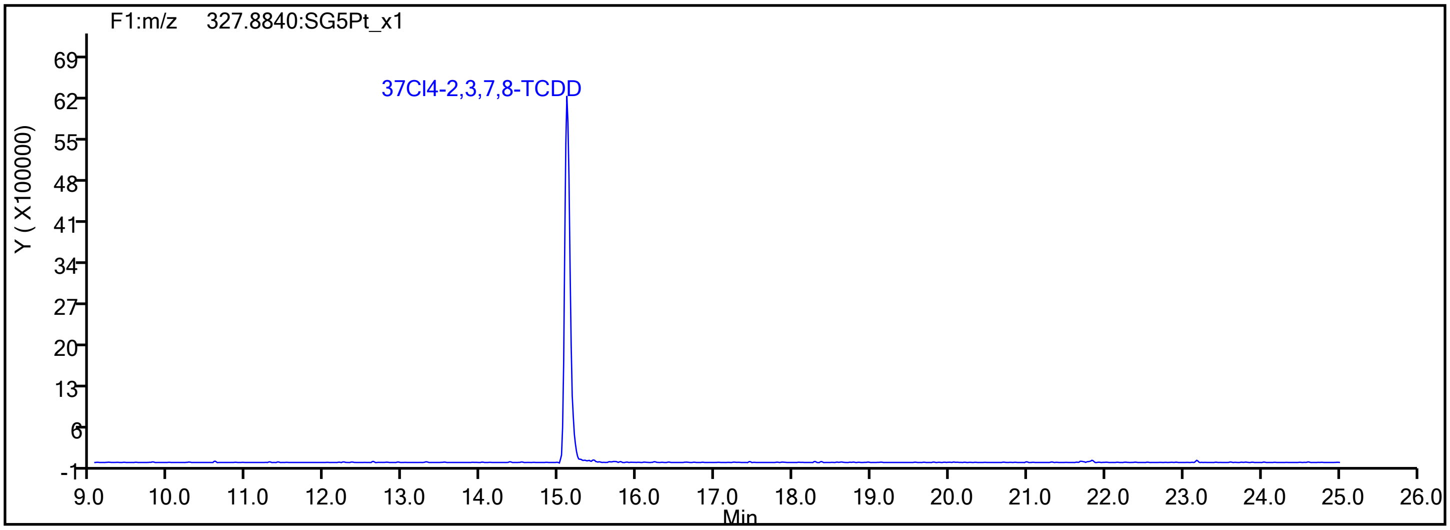

37Cl4-TCDD Standards

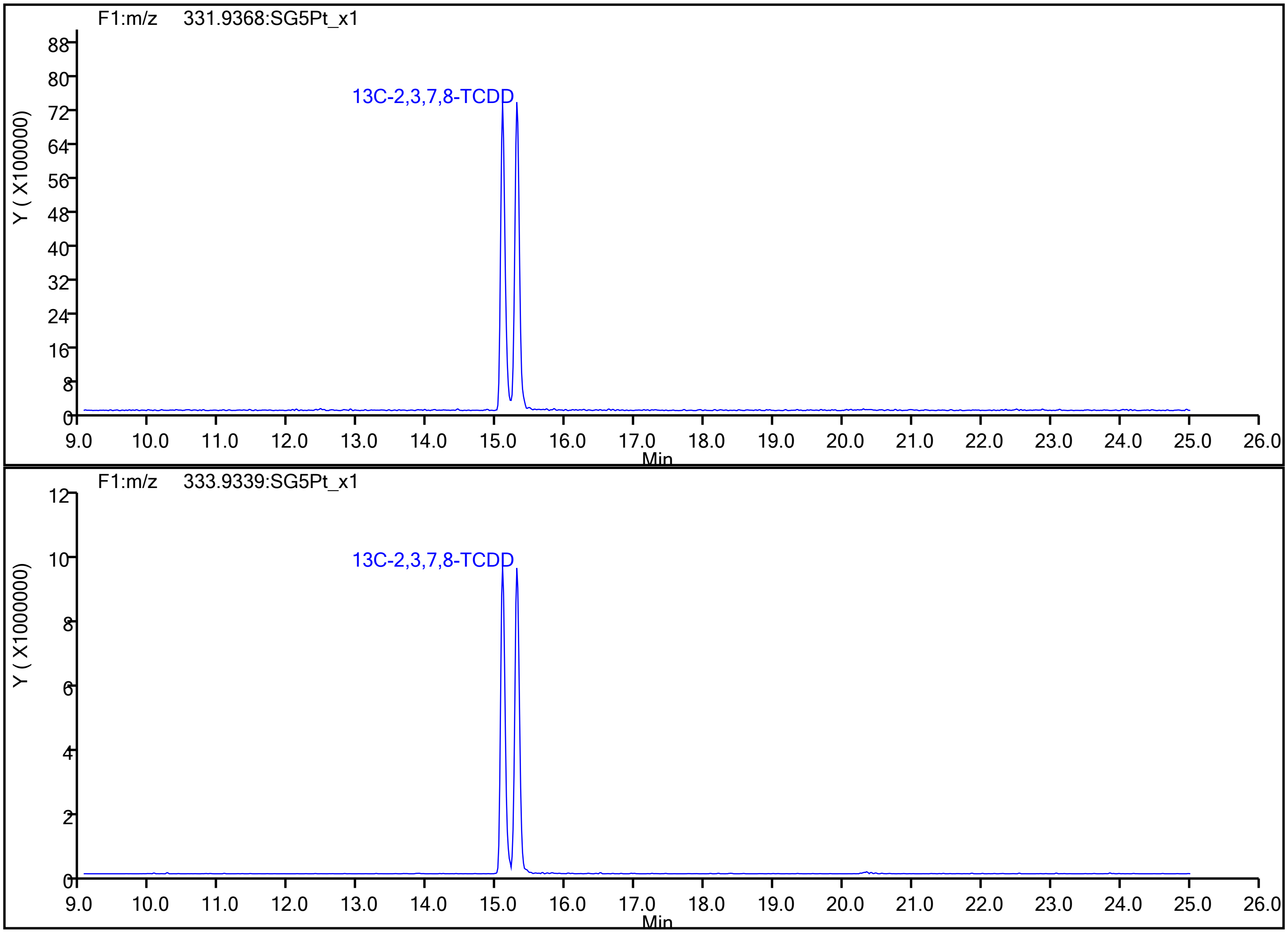

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_009.d		
Injection Date:	27-May-2020 14:29:01	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	9
Column Type:	DB-225	Column Dia:	0.32 mm

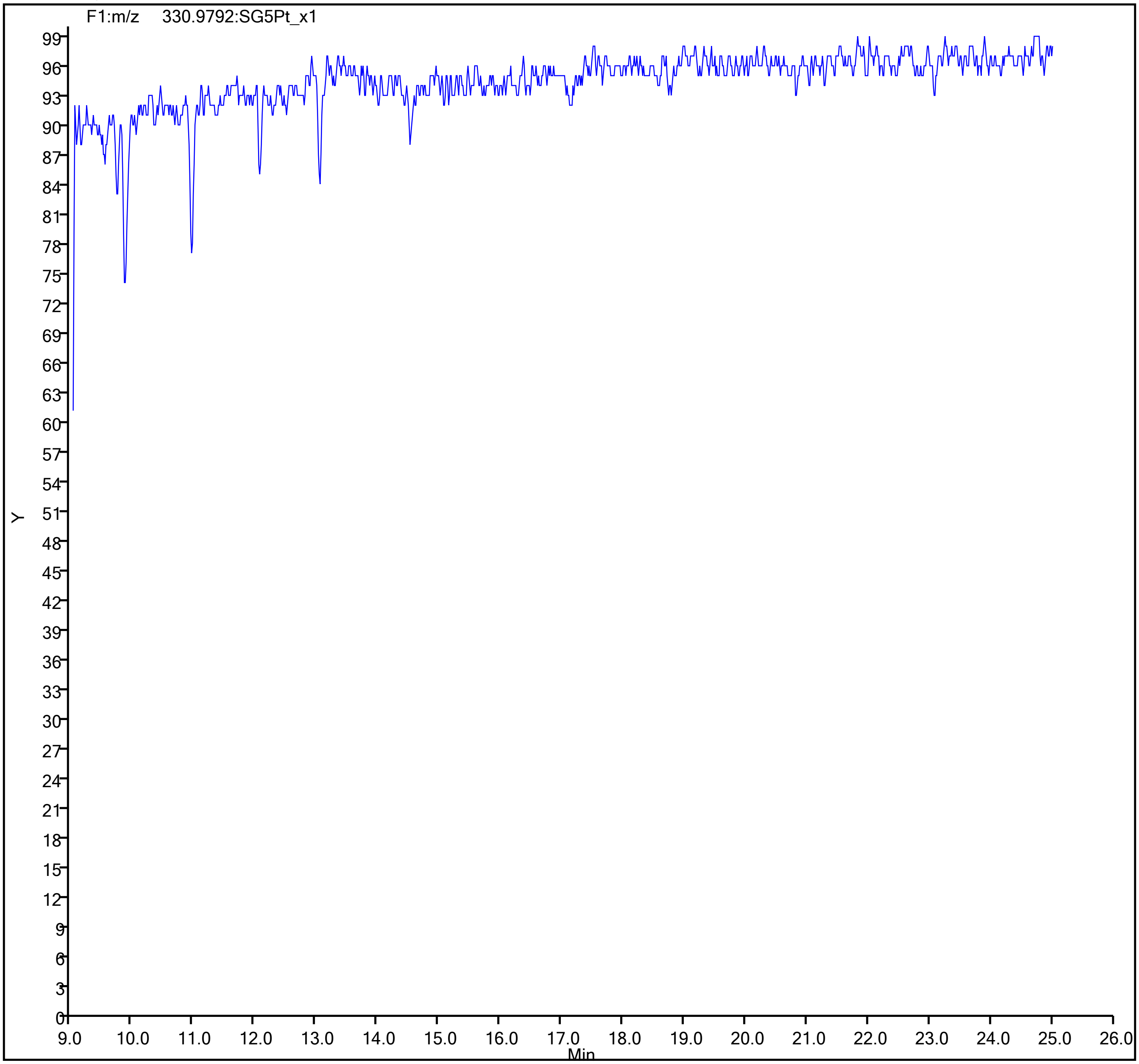

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Lab Sample ID: CCV 320-390059/2 Calibration Date: 06/26/2020 14:43

Instrument ID: 11D2 Calib Start Date: 05/27/2020 10:39

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 05/27/2020 13:12

Lab File ID: 26JN2011D2T_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%REC	%REC LIMITS
2,3,7,8-TCDD	AveID	1.220	1.098		9.00	10.0	90	78-129
2,3,7,8-TCDF	AveID	1.081	0.9463		8.76	10.0	88	84-120
13C-2,3,7,8-TCDD	Ave	0.9832	1.003		102	100	102	82-121
13C-2,3,7,8-TCDF	Ave	1.491	1.547		104	100	104	71-140
37Cl4-2,3,7,8-TCDD	Ave	0.9421	1.023		10.9	10.0	109	79-127

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
26JN2011D2	1	CPS 062620	CPS HRDXNCP_00040				1.00000	
26JN2011D2	2	CCV 062620	CCV CS-4 HRDXNL4_00092				1.00000	
26JN2011D2	3	SB 062620	SB Solvent Blank C-14				1.00000	
26JN2011D2	4	320-389032	600-205895-B-1-A	20	1613B/Water	D163	1.00000	L
26JN2011D2	5						1.00000	
26JN2011D2	6						1.00000	
26JN2011D2	7						1.00000	
26JN2011D2	8						1.00000	
26JN2011D2	9						1.00000	
26JN2011D2	10						1.00000	
26JN2011D2	11						1.00000	
26JN2011D2	12		KSS, AJS 06-26-20				1.00000	
26JN2011D2	13						1.00000	

Log file checked

AJS

06-26-20

Peak Locate Examination:26-JUN-2020:14:04 File:26JN2011D2
Experiment:DB225RES Function:1 Reference:PFK

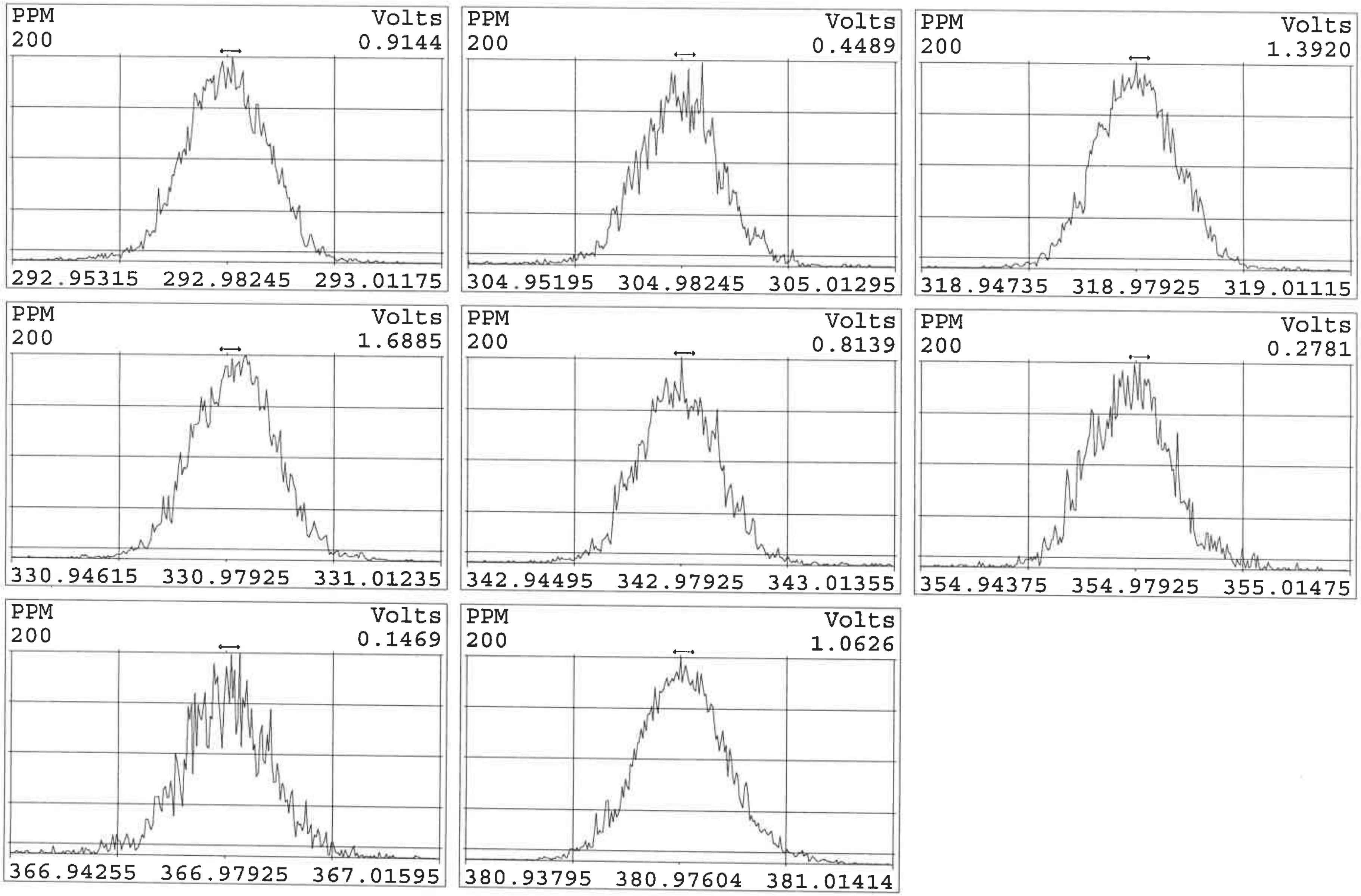

Peak Locate Examination:26-JUN-2020:17:03 File:26JN2011D2ENDRES
Experiment:DB225RES Function:1 Reference:PFK

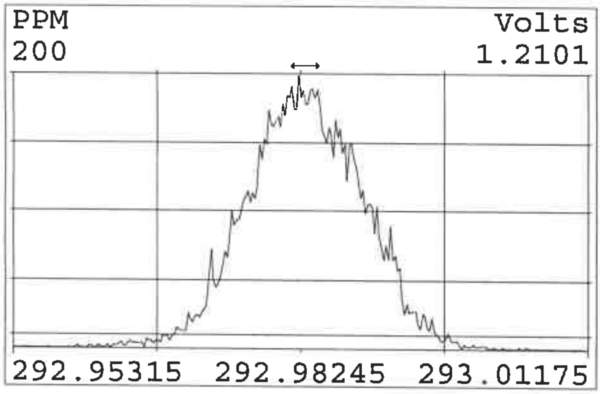

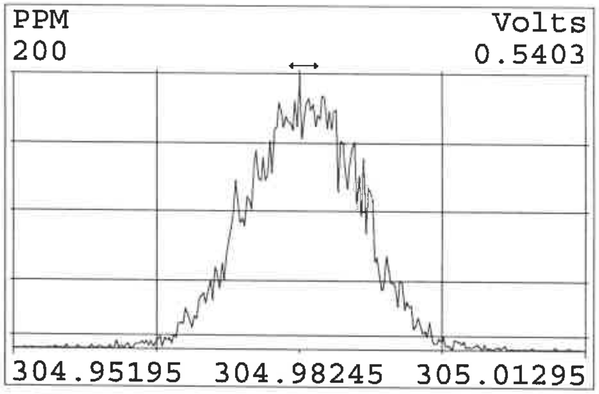

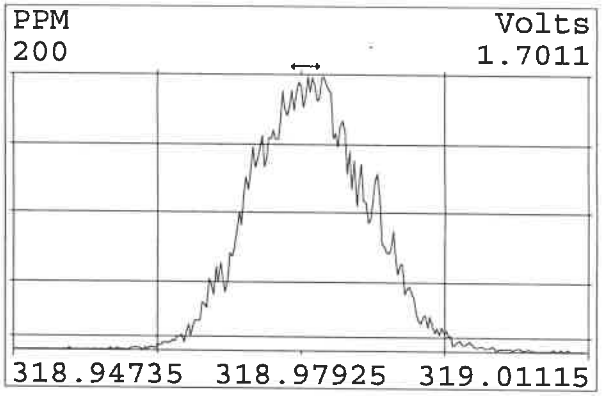

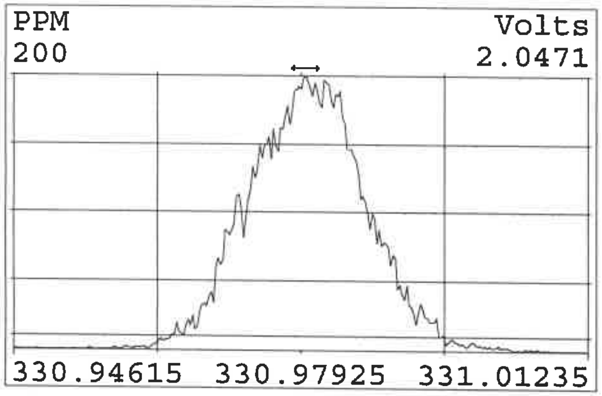

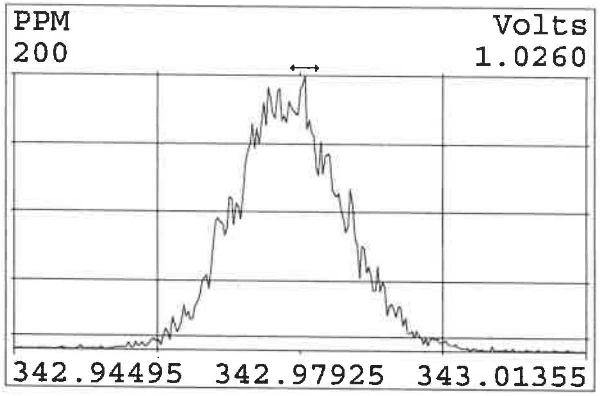

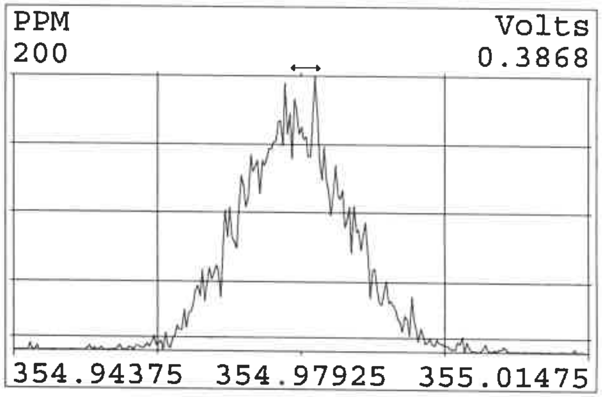

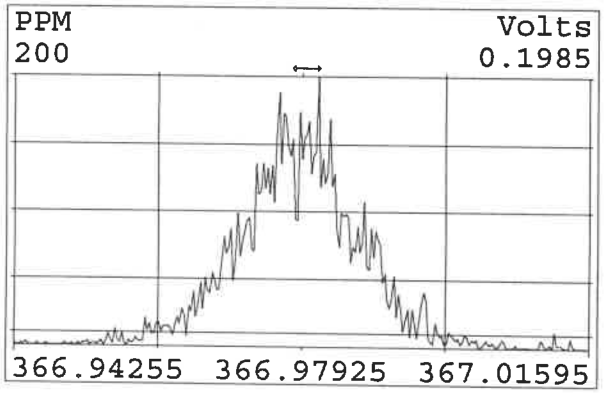

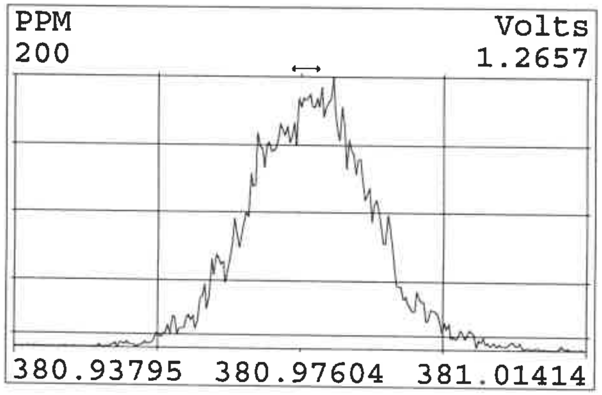

Report Date: 26-Jun-2020 17:16:29 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d				
Lims ID:	CCV				
Client ID:					
Sample Type:	CCV				
Inject. Date:	26-Jun-2020 14:43:32	ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:	CCV CS-4 HRDXNL4_00092				
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Sublist:	chrom-DXN_DB225_11D2*sub1				
Method:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	26-Jun-2020 17:16:29	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1024				

First Level Reviewer: shardaa Date: 26-Jun-2020 17:01:59

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.792	317541200	0.80	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.986	491152514	0.81	1.4910	103.7	103.7	0.1667	0.1667	104	
2,3,7,8-TCDF	17.013	46479809	0.77	1.0809	8.755	8.755	0.0189	0.0189	87.55	
D 13C-2,3,7,8-TCDD	15.532	318351222	0.79	0.9832	102.0	102.0	0.1290	0.1290	102	
2,3,7,8-TCDD	15.545	34948269	0.78	1.2196	9.002	9.002	0.0287	0.0287	90.02	
$ 37Cl4-2,3,7,8-TCDD	15.545	32478095		0.9421	10.9	10.9	0.0325	0.0325	109	
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNL4_00092	Amount Added: 2.00	Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 26-Jun-2020 14:43:32 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV CS-4 HRDXNL4_00092
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2
Sublist: chrom-DXN_DB225_11D2*sub1

Method: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 17:16:29 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 26-Jun-2020 17:01:59

Signal	RT (min.)	Adj RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	15.792	15.792	0		141054334	30256913	21397	53492	1414		
333.9339	15.792	15.792	0		176486866	37779150	13130	32825	2877	0.80(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.986	16.986	0	1.076	219348523	41613525	32820	82050	1268		
317.9389	16.986	16.986	0	1.076	271803991	51283619	34814	87035	1473	0.81(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.013	17.013	0	1.002	20183911	3787248	3555	8887	1065		
305.8987	17.000	17.013	-1	1.001	26295898	4857749	4049	10122	1200	0.77(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.532	15.532	0	0.983	140077615	30937580	21397	53492	1446		
333.9339	15.532	15.532	0	0.983	178273607	39455840	13130	32825	3005	0.79(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.545	15.545	0	1.001	15359310	3354237	5678	14195	591		
321.8936	15.545	15.545	0	1.001	19588959	4396325	4193	10482	1048	0.78(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8840	15.545	15.545	0	0.984	32478095	7447430	8327	20817	894		

Reagents:

HRDXNL4_00092 Amount Added: 2.00 Units: uL

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d

Injection Date: 26-Jun-2020 14:43:32 Injection Vol: 2.0 ul

Instrument ID: 11D2 Operator ID:

Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 390059 Sample Line#: 2

Column Type: DB-225 Column Dia: 0.32 mm

TCDF

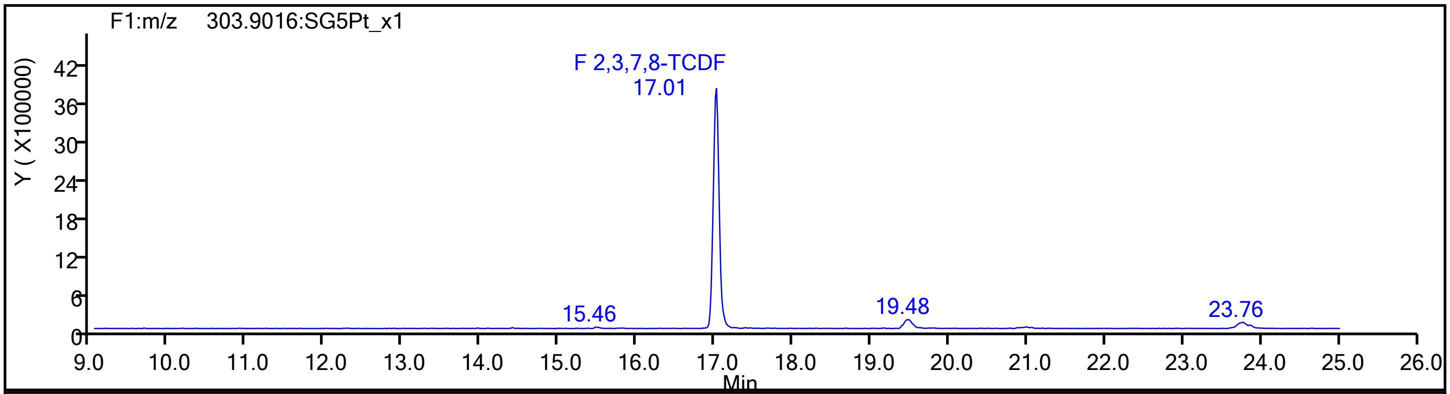

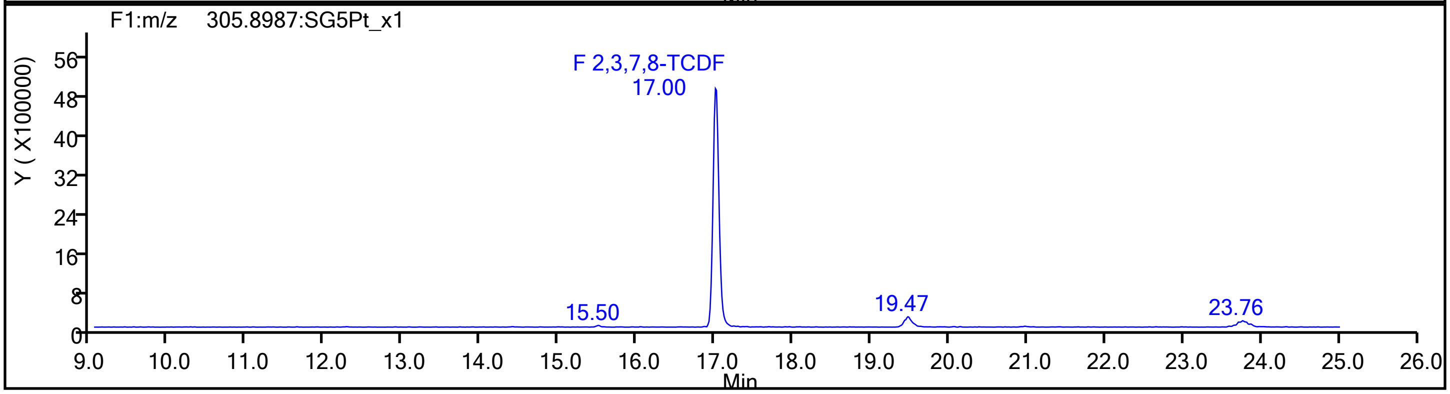

TCDF Standards

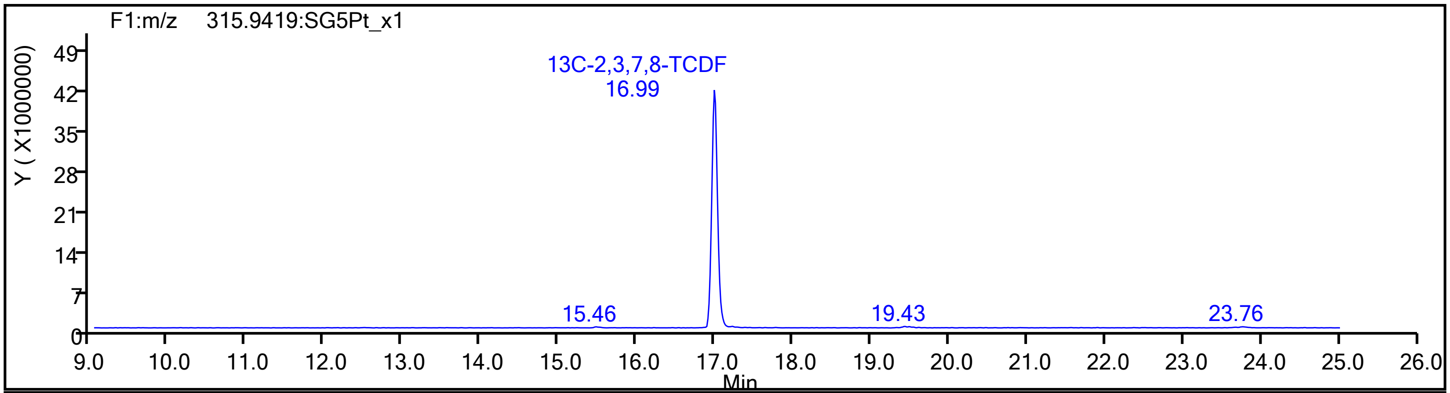

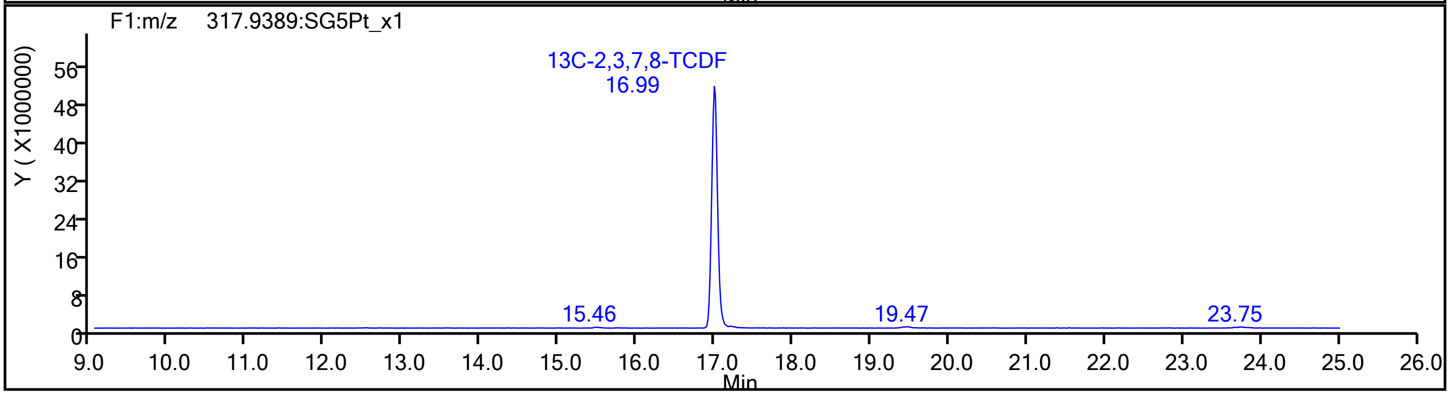

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d

Injection Date:	26-Jun-2020 14:43:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390059	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

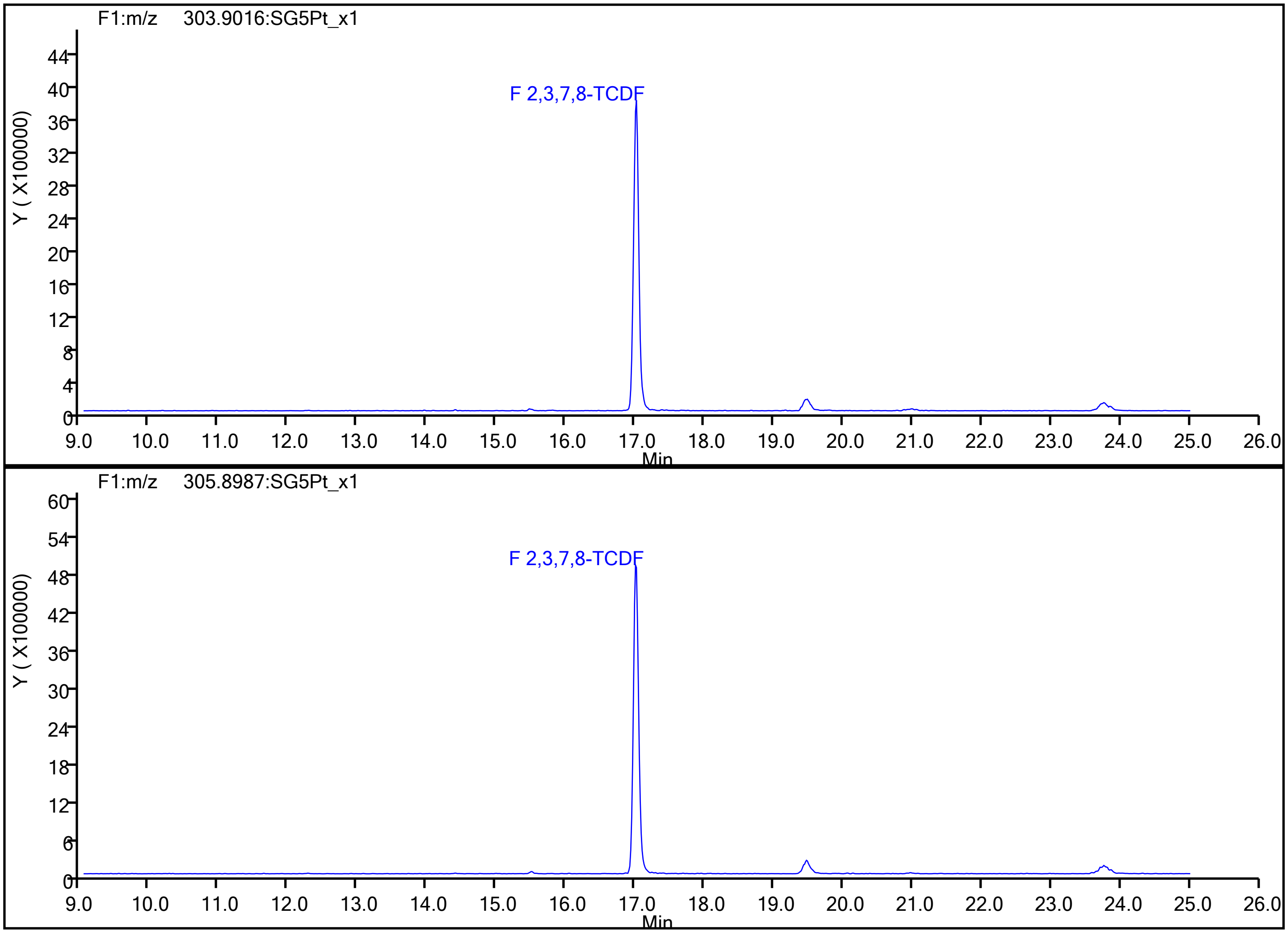

TCDF Interference Mass

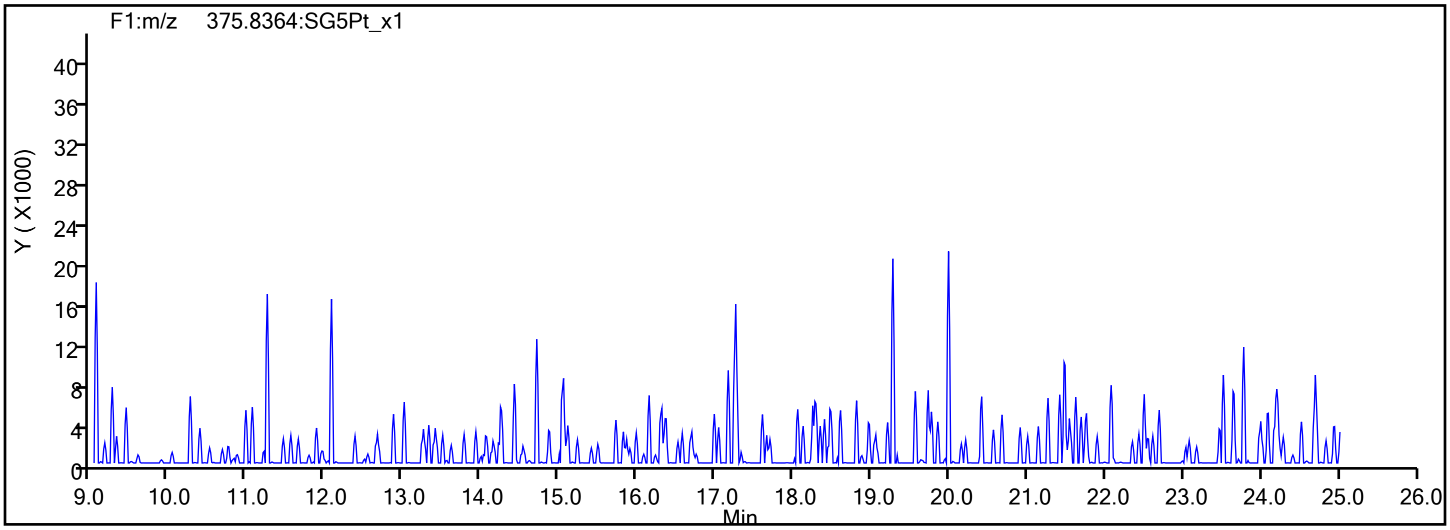

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Eurofins TestAmerica, Sacramento
Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d
Injection Date: 26-Jun-2020 14:43:32 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390059 Sample Line#: 2
Column Type: DB-225 Column Dia: 0.32 mm

TCDD

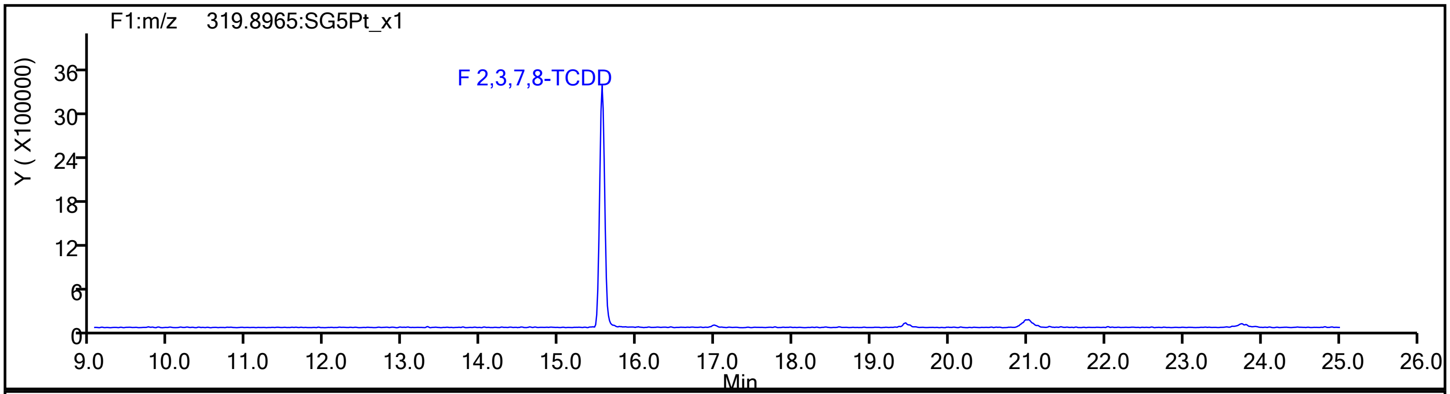

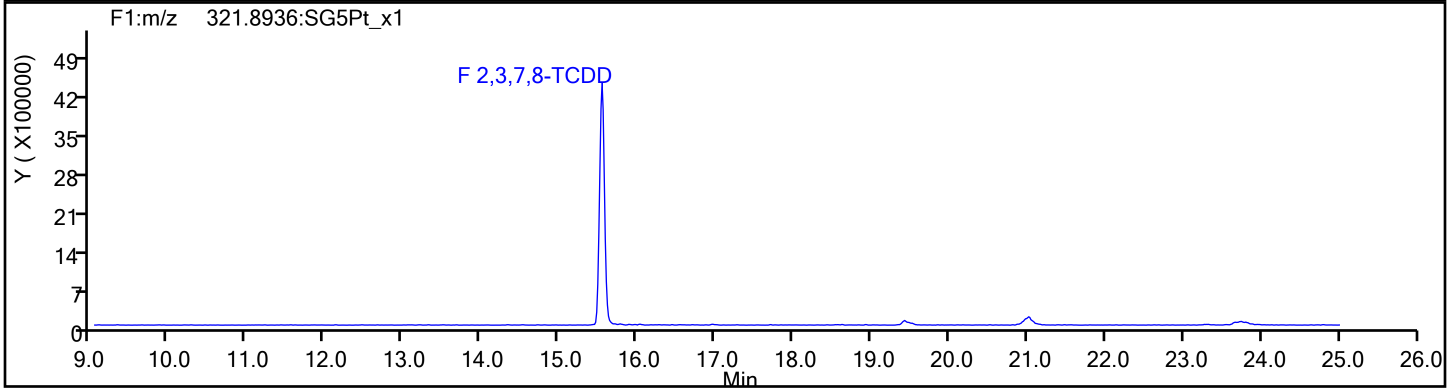

TCDD Standards

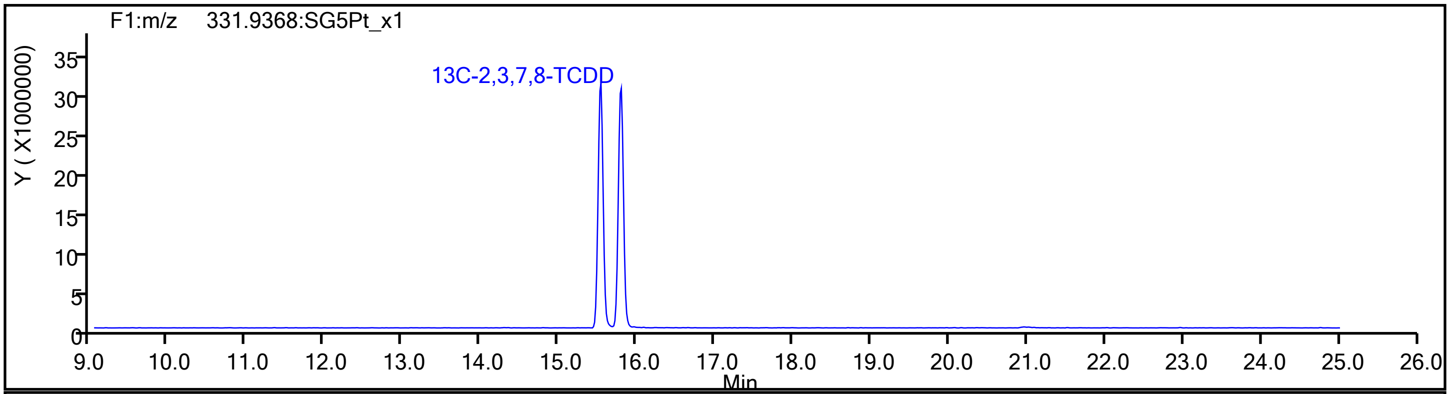

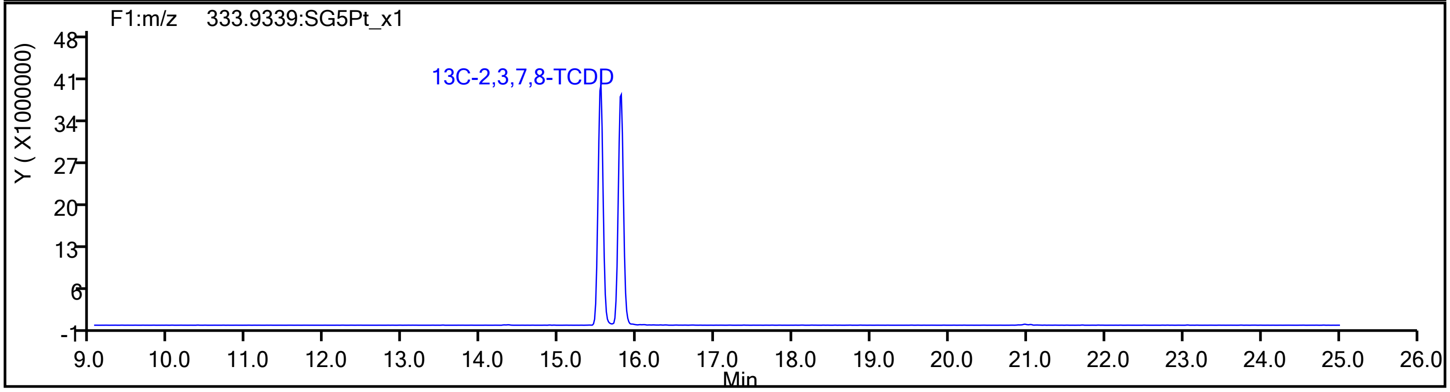

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d
Injection Date: 26-Jun-2020 14:43:32 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390059 Sample Line#: 2
Column Type: DB-225 Column Dia: 0.32 mm

37Cl4-TCDD

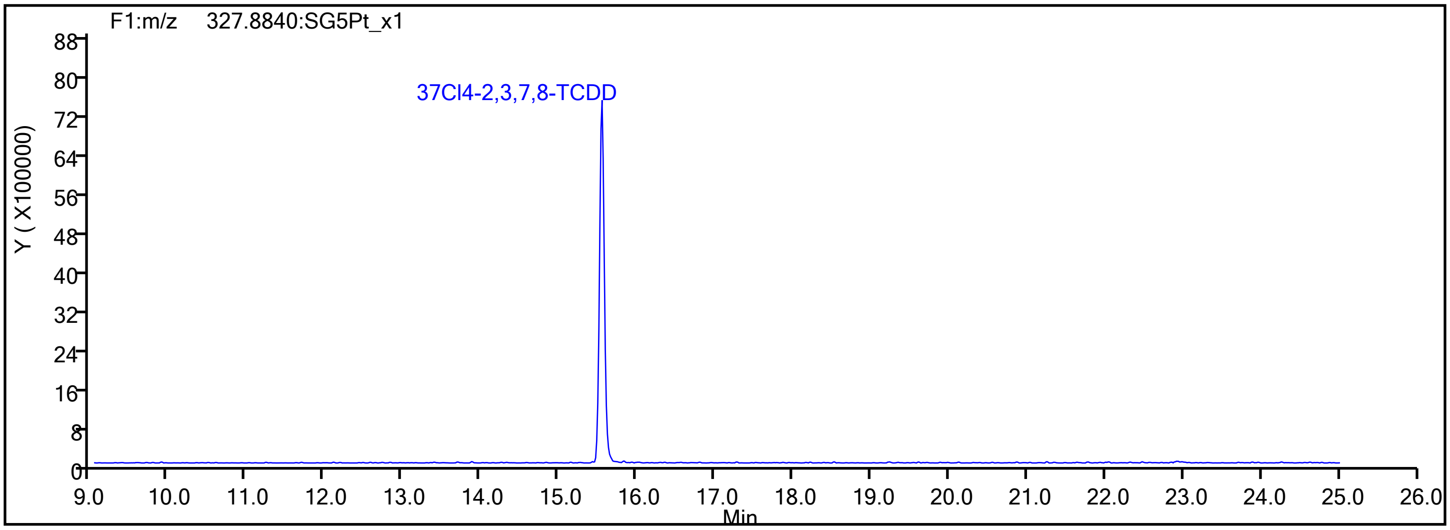

37Cl4-TCDD Standards

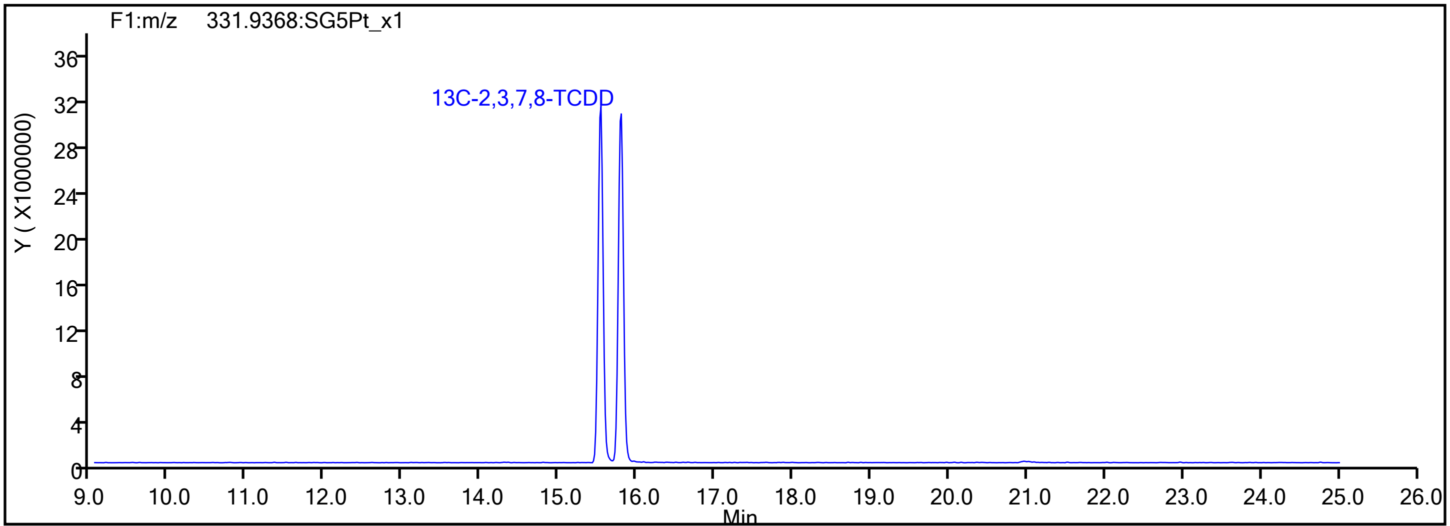

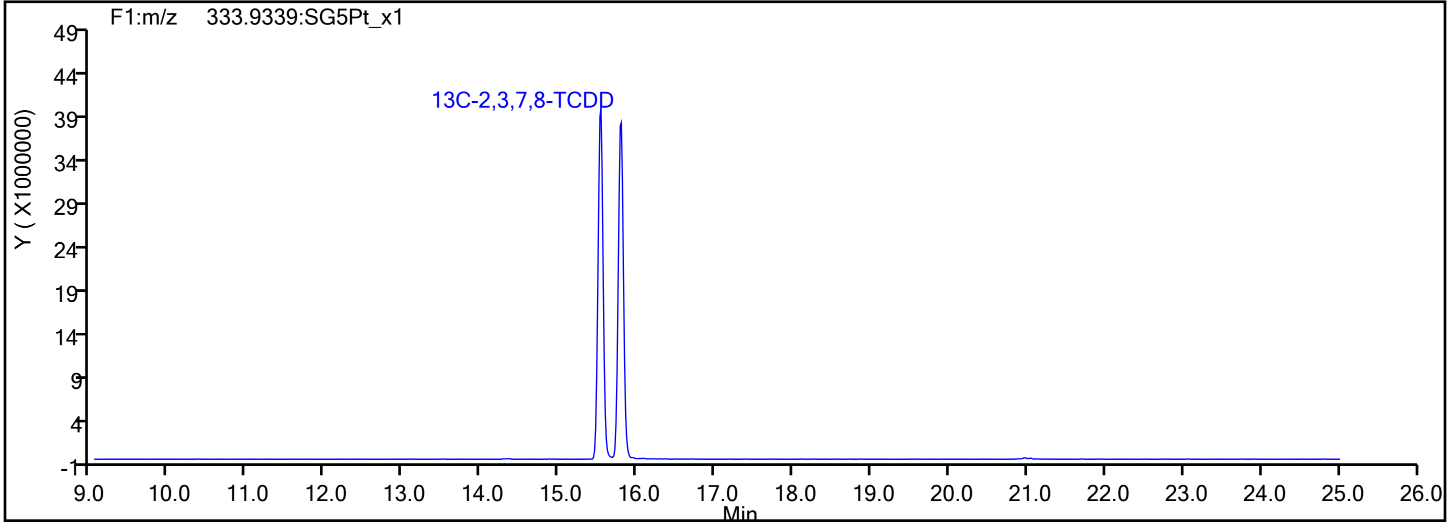

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_002.d		
Injection Date:	26-Jun-2020 14:43:32	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390059	Sample Line#:	2
Column Type:	DB-225	Column Dia:	0.32 mm

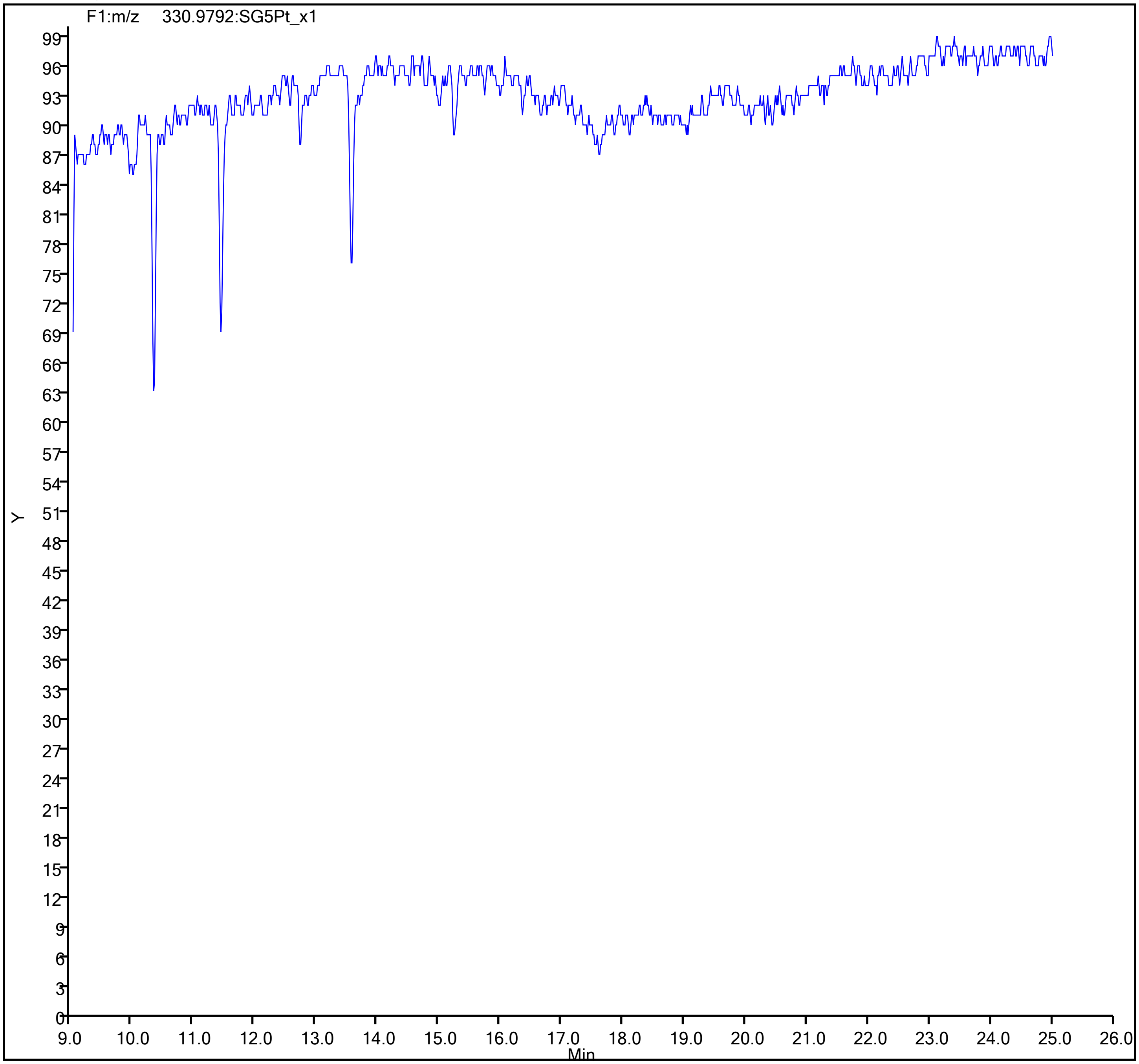

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 05-Mar-2020 15:30:00 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 030520 WDM HRDXNCP_00040
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:12:10 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

First Level Reviewer: shardaa Date: 05-Mar-2020 18:02:29

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.490	17837997	0.74	1.1970					0.00	
2,3,7,8-TCDF	17.521	30788627	0.72	0.7672	90.0	90.0	0.2189	0.2189		
A Non-2,3,7,8-sub-TCDF	17.211						0.2189	0.2189		
S Total TCDF					90.0	90.0	0.2189	0.2189		
D 13C-2,3,7,8-TCDD	18.216	12507929	0.81	0.8773					0.00	
2,3,7,8-TCDD	18.231	13316610	0.78	1.0000	42.6	42.6	0.1957	0.1957		
A Non-2,3,7,8-sub-TCDD	17.664						0.1957	0.1957		
S Total TCDD					42.6	42.6	0.1957	0.1957		
A F1 PeCDFs	20.159						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	23.358	214449	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	23.582						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	30.417						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	31.056	110114	1.30	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.874	11404294	1.03	1.3295						
1,2,3,4,7,8,9-HpCDF	34.967	9496991	1.01	1.0803						
A Non-2,3,7,8-sub-HpCDF	34.530						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.675	8460123	1.04	1.0040						
A Non-2,3,7,8-sub-HpCDD	34.517						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	15.056	16677264	0.73							
1,3,6,8-TCDD	15.979	13787437	0.77							
2,3,4,7-TCDF	17.521	30788627	0.72							
1,2,3,7-TCDD	18.111	11577148	0.74							
1,2,3,9-TCDF	18.398	13207406	0.73							
1,2,3,9-TCDD	18.398	14485676	0.76							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDD	19.350	5487946								
1,2,8,9-TCDF	19.365	13042756	0.72							
1,3,4,6,8-PeCDF	19.638	17805996	1.57							
1,2,4,7,9-PeCDD	21.434	11202512	1.58							
1,2,3,8,9-PeCDD	25.729	10615420	1.60							
1,2,3,8,9-PeCDF	25.961	11679396	1.56							
1,2,3,4,6,8-HxCDF	28.274	8851238	1.20							
1,2,4,6,7,9-HxCDD	29.858	8973185	1.23							
1,2,3,4,6,7-HxCDD	32.254	9451023	1.23							
1,2,3,4,8,9-HxCDF	32.560	8217519	1.20							
1,2,3,4,6,7,9-HpCDD	34.117	9665454	1.04							

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 05-Mar-2020 15:30:00 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 030520 WDM HRDXNCP_00040
Misc. Info.: 05MR20A10D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 06-Mar-2020 10:12:10 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX0319

First Level Reviewer: shardaa Date: 05-Mar-2020 18:02:29

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.490	17.490	0	1.000	7574228	1938356	5244	13110	370		
317.9389	17.490	17.490	0	1.000	10263769	2625826	2189	5472	1200	0.74(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.521	17.509	1	1.002	12901918	3056992	3004	7510	1018		
305.8987	17.521	17.509	1	1.002	17886709	4221059	4660	11650	906	0.72(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	17.211						3004	7510			
305.8987	17.211						4660	11650			
13C-2,3,7,8-TCDD											
331.9368	18.216	18.216	0	1.000	5613155	1323778	2694	6735	491		
333.9339	18.216	18.216	0	1.000	6894774	1631415	1445	3612	1129	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	18.231	18.225	0	1.001	5827297	1390582	2561	6402	543		
321.8936	18.231	18.225	0	1.001	7489313	1814625	3222	8055	563	0.78(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.664						2561	6402			
321.8936	17.664						3222	8055			
A F1 PeCDFs											
339.8597	20.159						431	1077			
341.8567	20.159						610	1525			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	22.047	23.358	-78	1.000	36181	6637	1112	2780	6		
341.8567	22.034	23.358	-79	1.000	22393	4627	996	2490	5	1.62(1.32-1.78)	
339.8597	22.620	23.358	-44	1.000	55326	7389	1112	2780	7		
341.8567	22.607	23.358	-45	1.000	32150	5162	996	2490	5	1.72(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
339.8597	23.193	23.358	-10	1.000	41576	5189	1112	2780	5		
341.8567	23.179	23.358	-11	1.000	32879	4519	996	2490	5	1.26(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	23.582						1209	3022			
357.8516	23.582						745	1862			
A Non-2,3,7,8-sub-HxCDF											
373.8208	30.417						1557	3892			
375.8178	30.417						1385	3462			
A Non-2,3,7,8-sub-HxCDD											
389.8157	31.149	31.056	6	1.000	62217	10345	1865	4662	6		
391.8127	31.136	31.056	5	1.000	47897	7317	1476	3690	5	1.30(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.874	33.869	0	1.000	5773230	1782735	5631	14077	317		
409.7789	33.874	33.869	0	1.000	5631064	1743706	5929	14822	294	1.03(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.967	34.960	0	1.000	4777034	1363789	5631	14077	242		
409.7789	34.967	34.960	0	1.000	4719957	1325632	5929	14822	224	1.01(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.530						5631	14077			
409.7789	34.530						5929	14822			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.675	34.668	0	1.000	4308236	1246523	5623	14057	222		
425.7737	34.675	34.668	0	1.000	4151887	1172632	4988	12470	235	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.517						5623	14057			
425.7737	34.517						4988	12470			
1,3,6,8-TCDF											
303.9016	15.056	15.056	0		7042672	2239137	3004	7510	745		
305.8987	15.056	15.056	0		9634592	3033843	4660	11650	651	0.73(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.979	15.979	0		5993981	1767816	2561	6402	690		
321.8936	15.979	15.979	0		7793456	2249319	3222	8055	698	0.77(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	17.521	17.521	0		12901918	3056992	3004	7510	1018		
305.8987	17.521	17.521	0		17886709	4221059	4660	11650	906	0.72(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	18.111	18.111	0		4907688	1236872	2561	6402	483		
321.8936	18.111	18.111	0		6669460	1674646	3222	8055	520	0.74(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	18.398	18.398	0		5584200	1357094	3004	7510	452		
305.8987	18.398	18.398	0		7623206	1851828	4660	11650	397	0.73(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	18.398	18.398	0		6246253	1483227	2561	6402	579		
321.8936	18.398	18.398	0		8239423	1931367	3222	8055	599	0.76(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	19.350	19.350	0		5487946	1243356	2561	6402	485		

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,8,9-TCDF											
303.9016	19.365	19.365	0		5452873	1236373	3004	7510	412		
305.8987	19.365	19.365	0		7589883	1726988	4660	11650	371	0.72(0.65-0.89)	
1,3,4,6,8-PeCDF											
339.8597	19.638	19.638	0		10873914	2431077	431	1077	5641		
341.8567	19.638	19.638	0		6932082	1571834	610	1525	2577	1.57(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	21.434	21.434	0		6855088	1204892	1209	3022	997		
357.8516	21.434	21.434	0		4347424	764836	745	1862	1027	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.729	25.729	0		6526111	969318	1209	3022	802		
357.8516	25.729	25.729	0		4089309	608536	745	1862	817	1.60(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.961	25.961	0		7113359	1035747	1112	2780	931		
341.8567	25.961	25.961	0		4566037	661744	996	2490	664	1.56(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	28.274	28.274	0		4833760	625804	1557	3892	402		
375.8178	28.274	28.274	0		4017478	525753	1385	3462	380	1.20(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.858	29.858	0		4953259	702157	1865	4662	376		
391.8127	29.858	29.858	0		4019926	556447	1476	3690	377	1.23(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	32.254	32.254	0		5209124	1371658	1865	4662	735		
391.8127	32.254	32.254	0		4241899	1110541	1476	3690	752	1.23(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.560	32.560	0		4488774	1263808	1557	3892	812		
375.8178	32.560	32.560	0		3728745	1025432	1385	3462	740	1.20(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	34.117	34.117	0		4928784	1508747	5623	14057	268		
425.7737	34.117	34.117	0		4736670	1443294	4988	12470	289	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 05-Mar-2020 15:30:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 362307 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 23.358

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902				
2,3,4,7,8-PeCDF	0.831				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.047	36181	6637	22393	4627		1.62	
22.620	55326	7389	32150	5162		1.72	
23.193	41576	5189	32879	4519		1.26	R
Signal Totals:							
	133083	19215	87422	14308			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	220505	33523				1.52	RQ
	214449	32351					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (220505 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (214449 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	05-Mar-2020 15:30:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	362307	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 31.056

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.833				
1,2,3,6,7,8-HxCDD	0.894				
1,2,3,7,8,9-HxCDD	0.945				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
31.149	62217	10345	47897	7317		1.30	
Signal Totals:							
	62217	10345	47897	7317			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	110114	17662				1.30	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (110114 * 0.0) / (0 * 0.000)

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d		
Injection Date:	05-Mar-2020 15:30:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

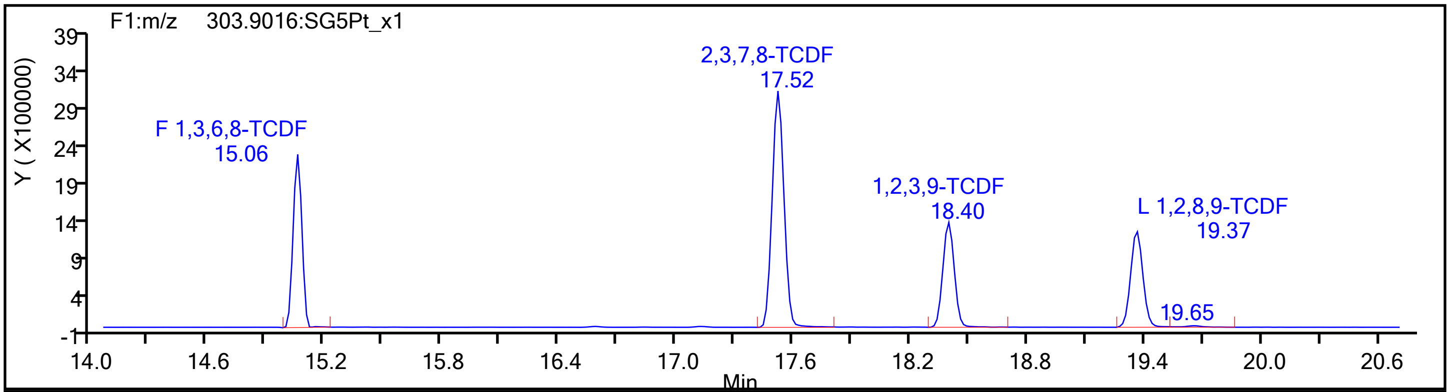

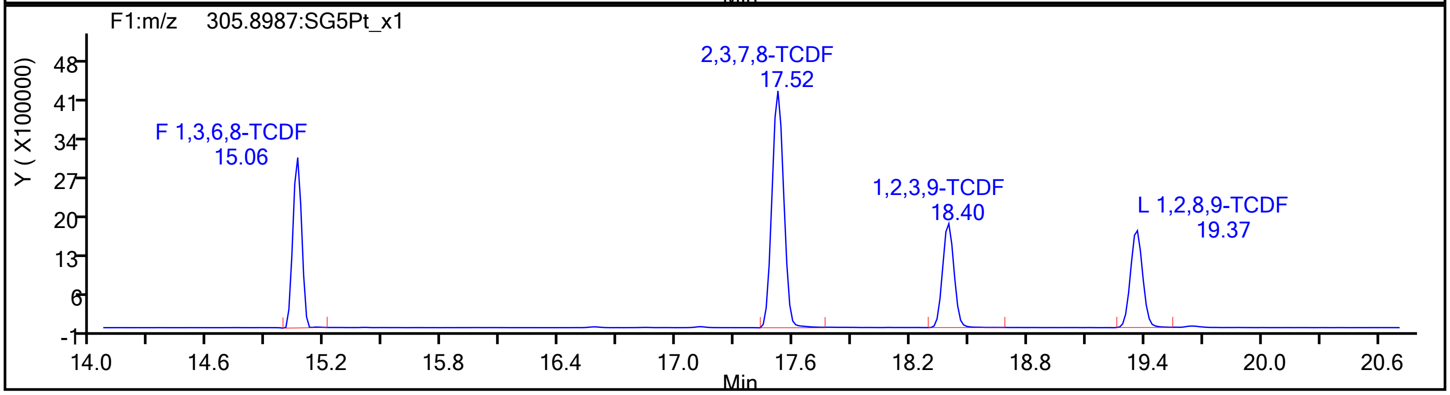

TCDF Standards

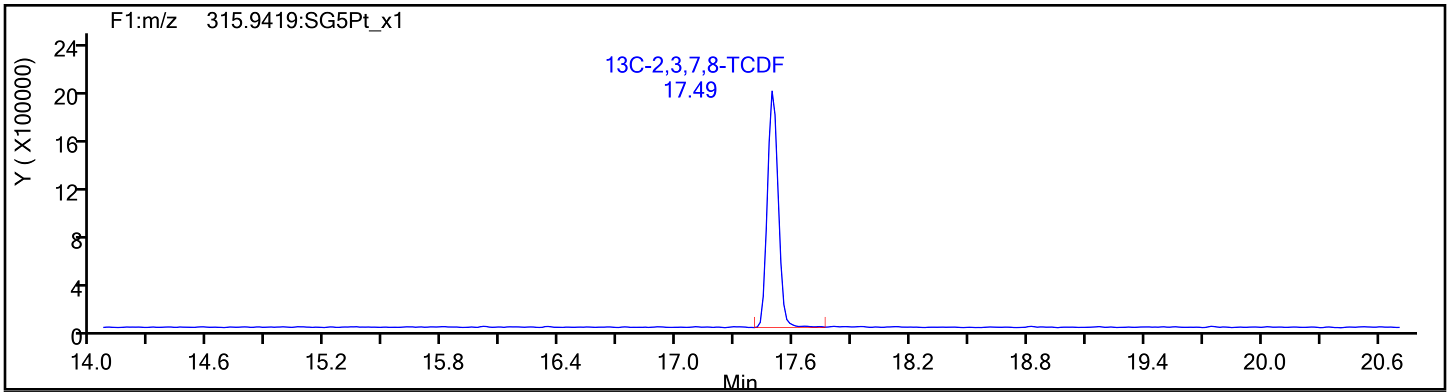

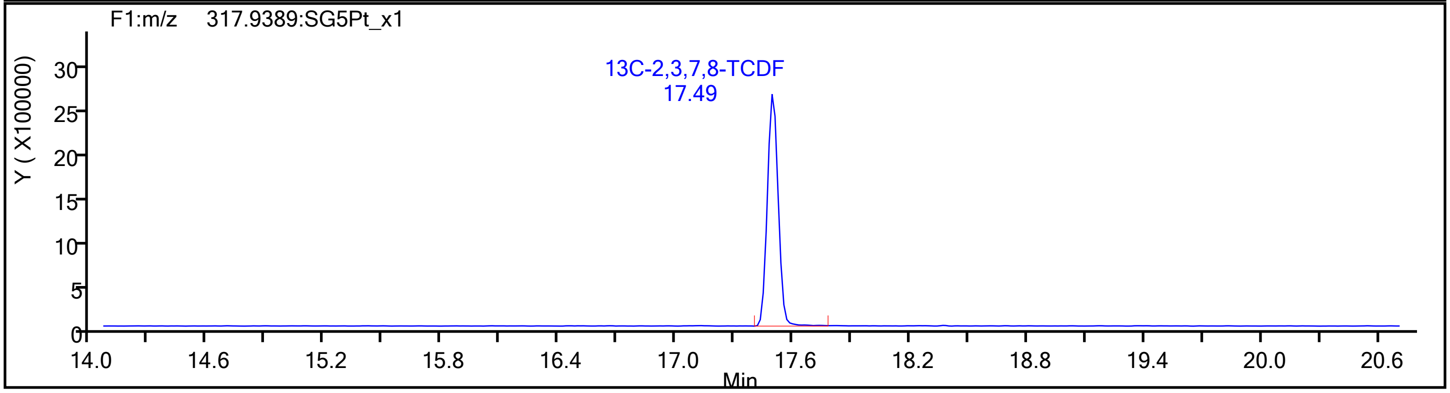

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d
Injection Date: 05-Mar-2020 15:30:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

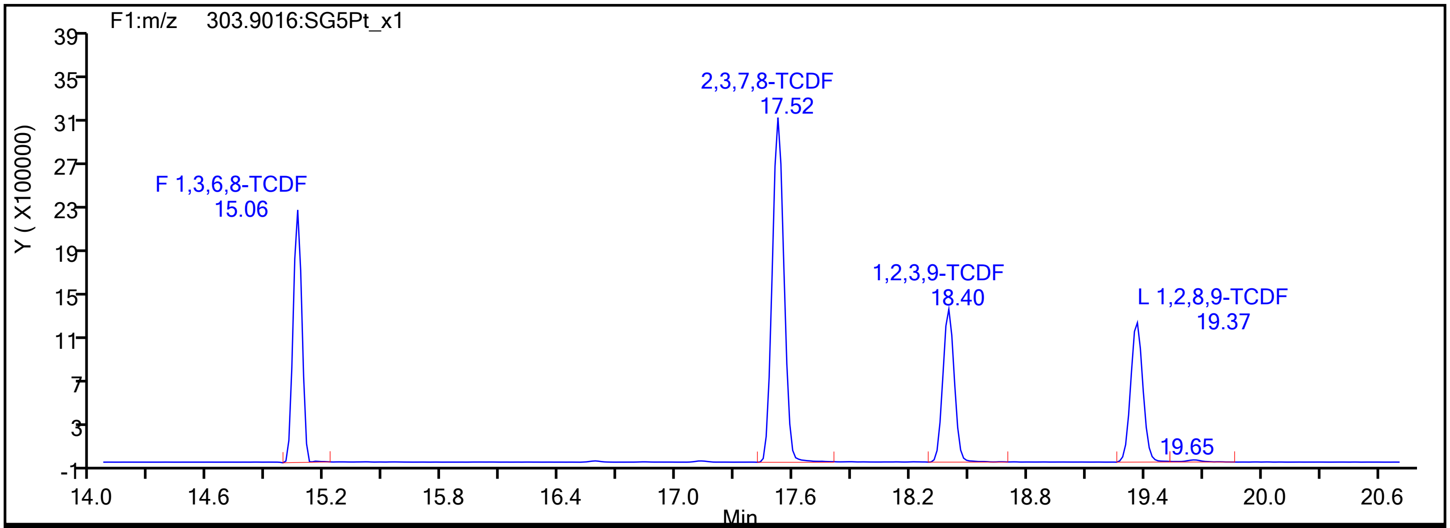

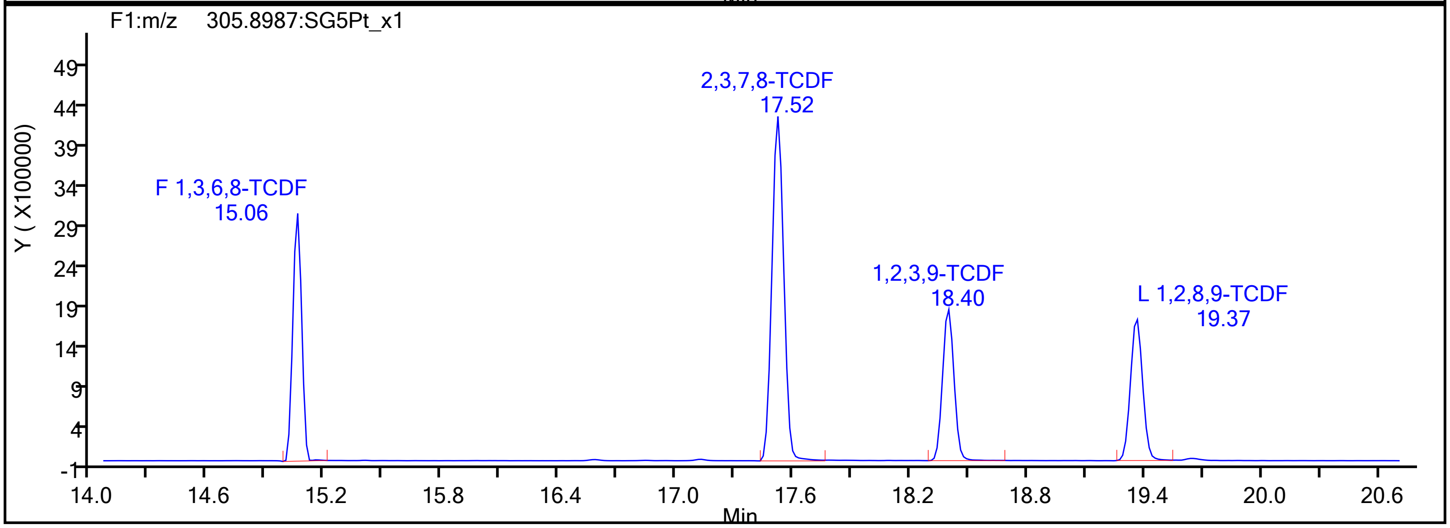

TCDF Interference Mass

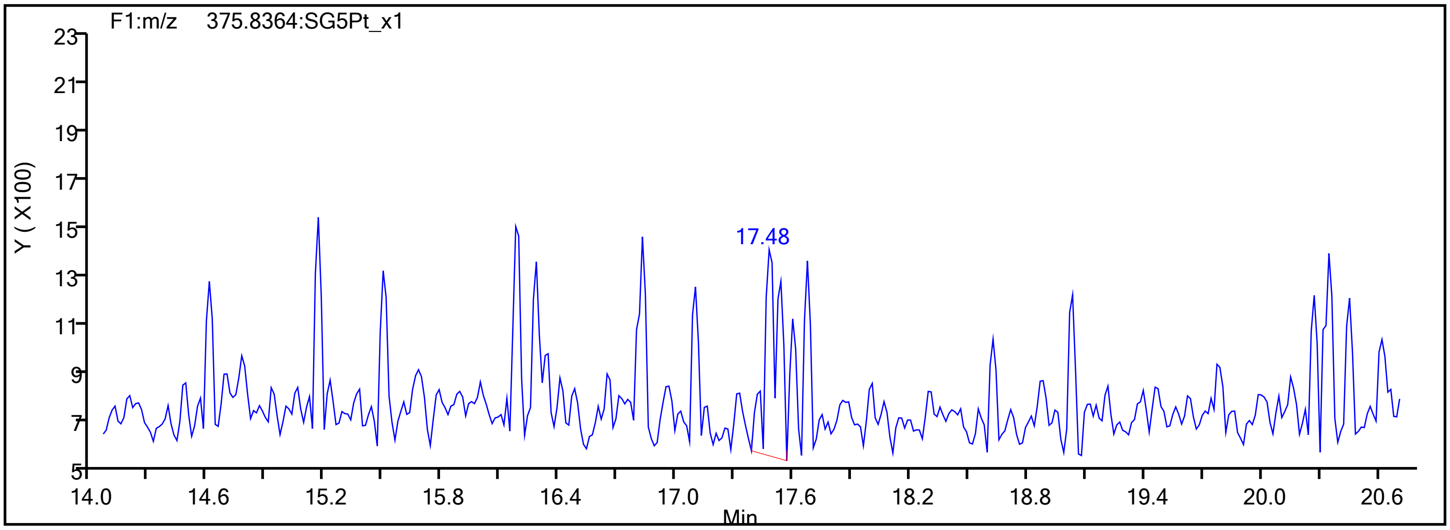

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_1.d

Injection Date: 05-Mar-2020 15:30:00 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

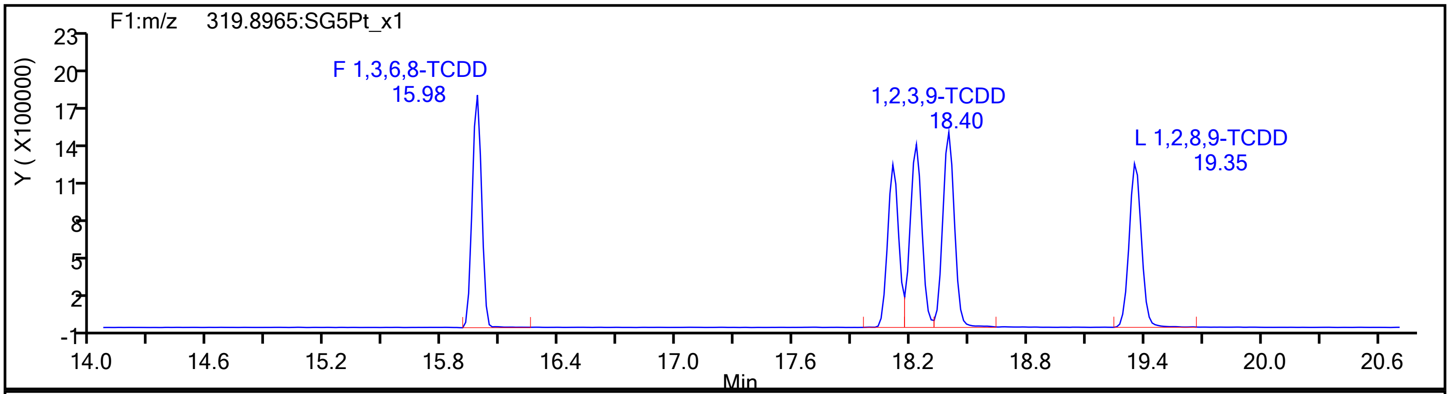

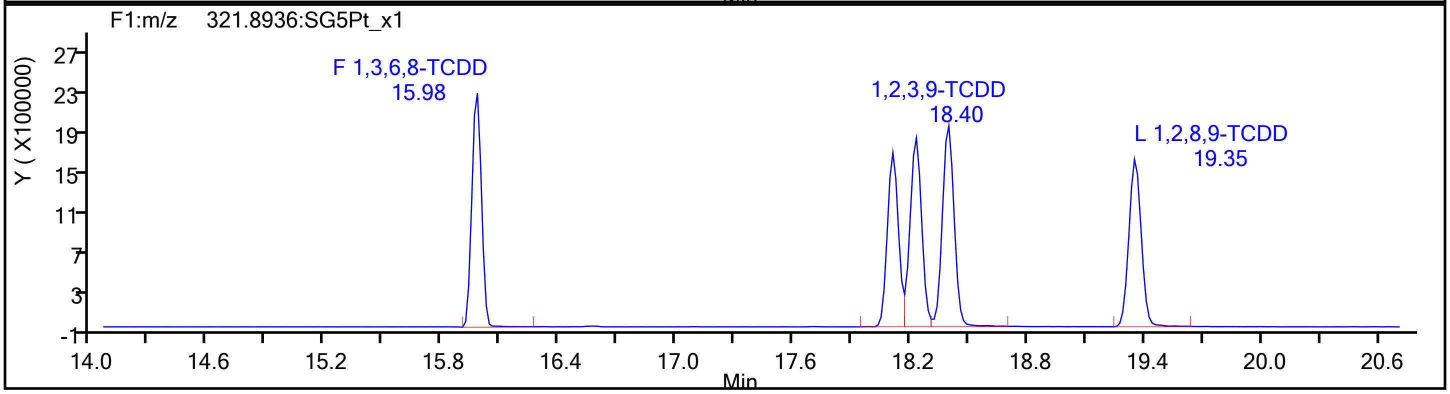

TCDD Standards

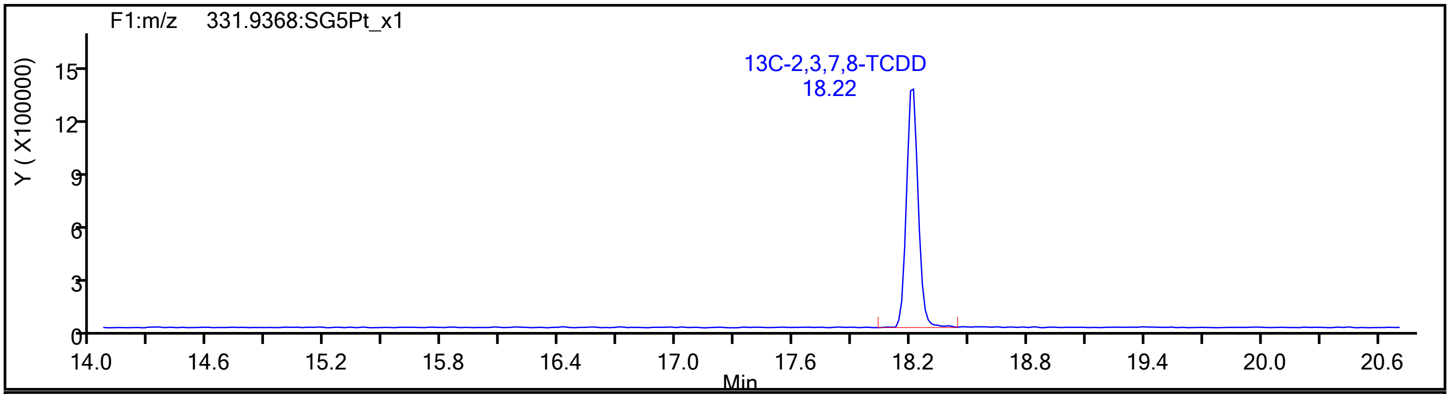

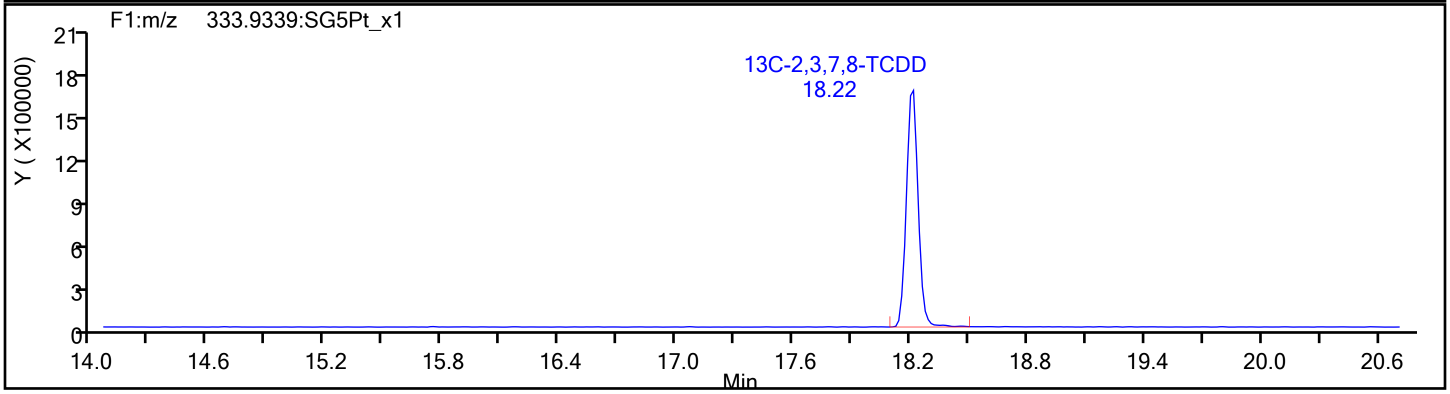

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date:	05-Mar-2020 15:30:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	362307	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

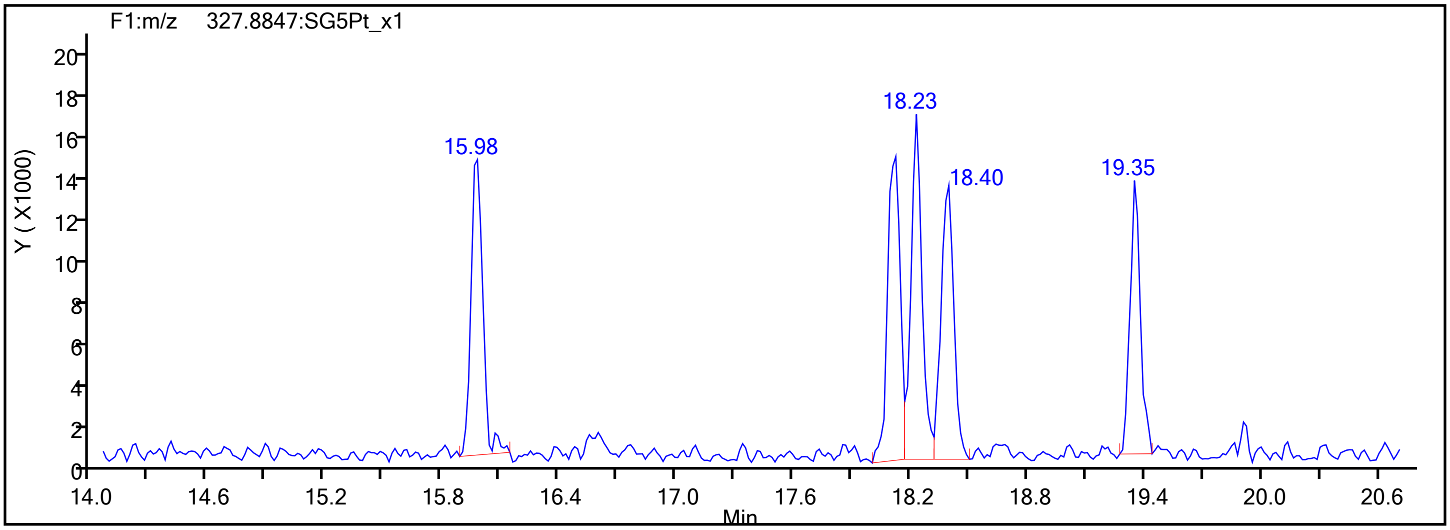

37Cl4-TCDD Standards

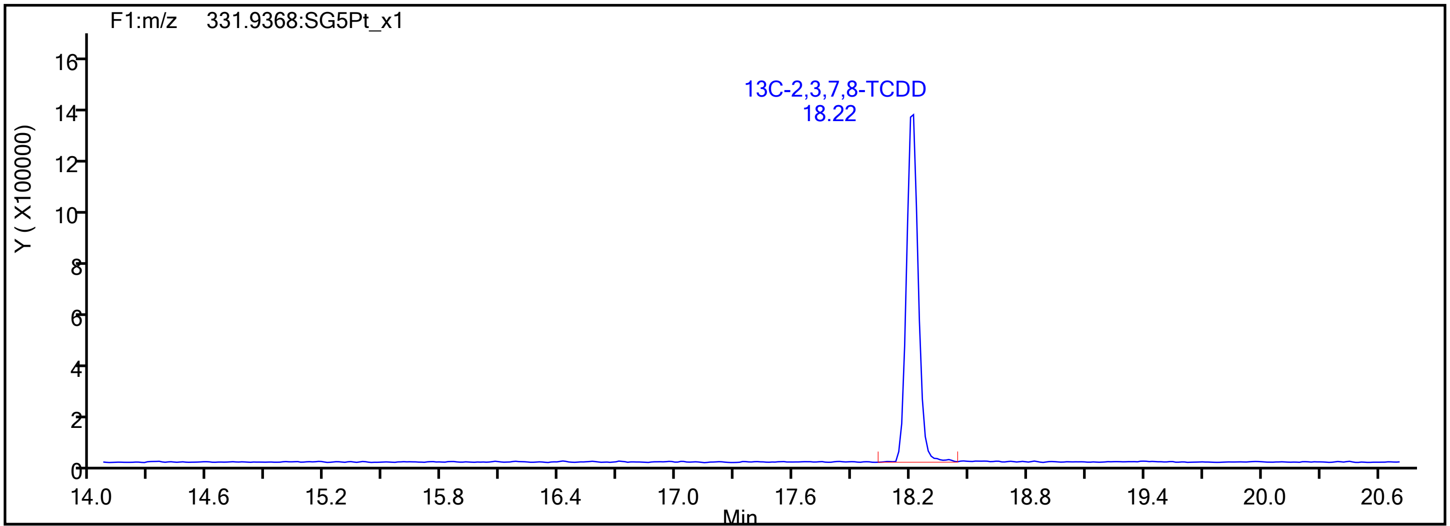

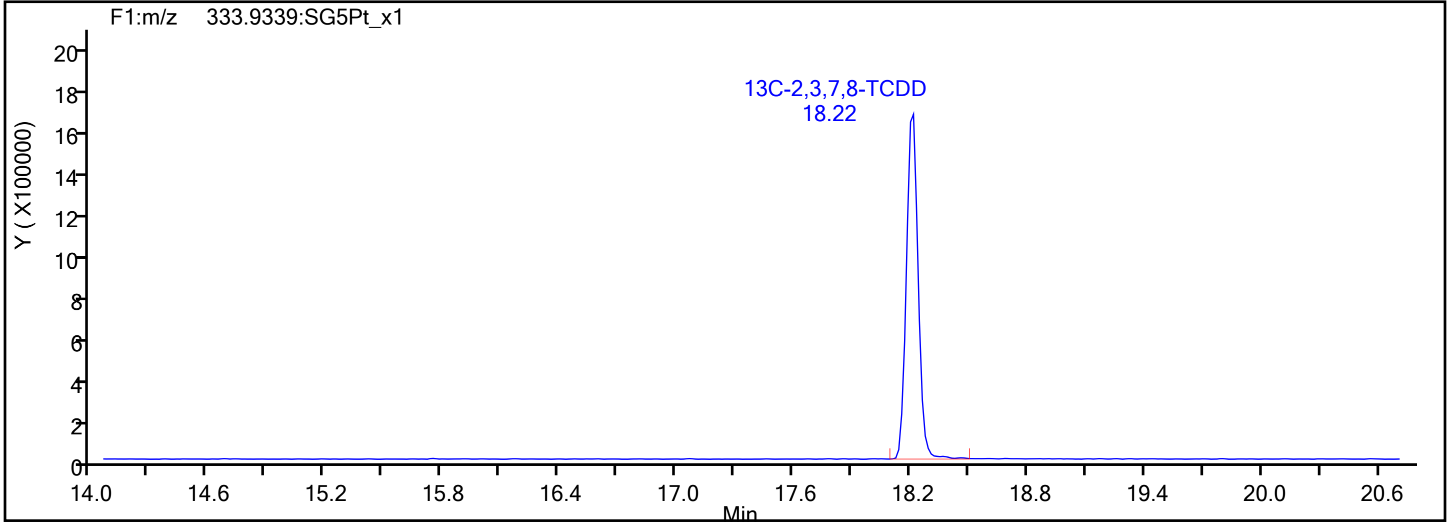

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Eurofins TestAmerica, Sacramento

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Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

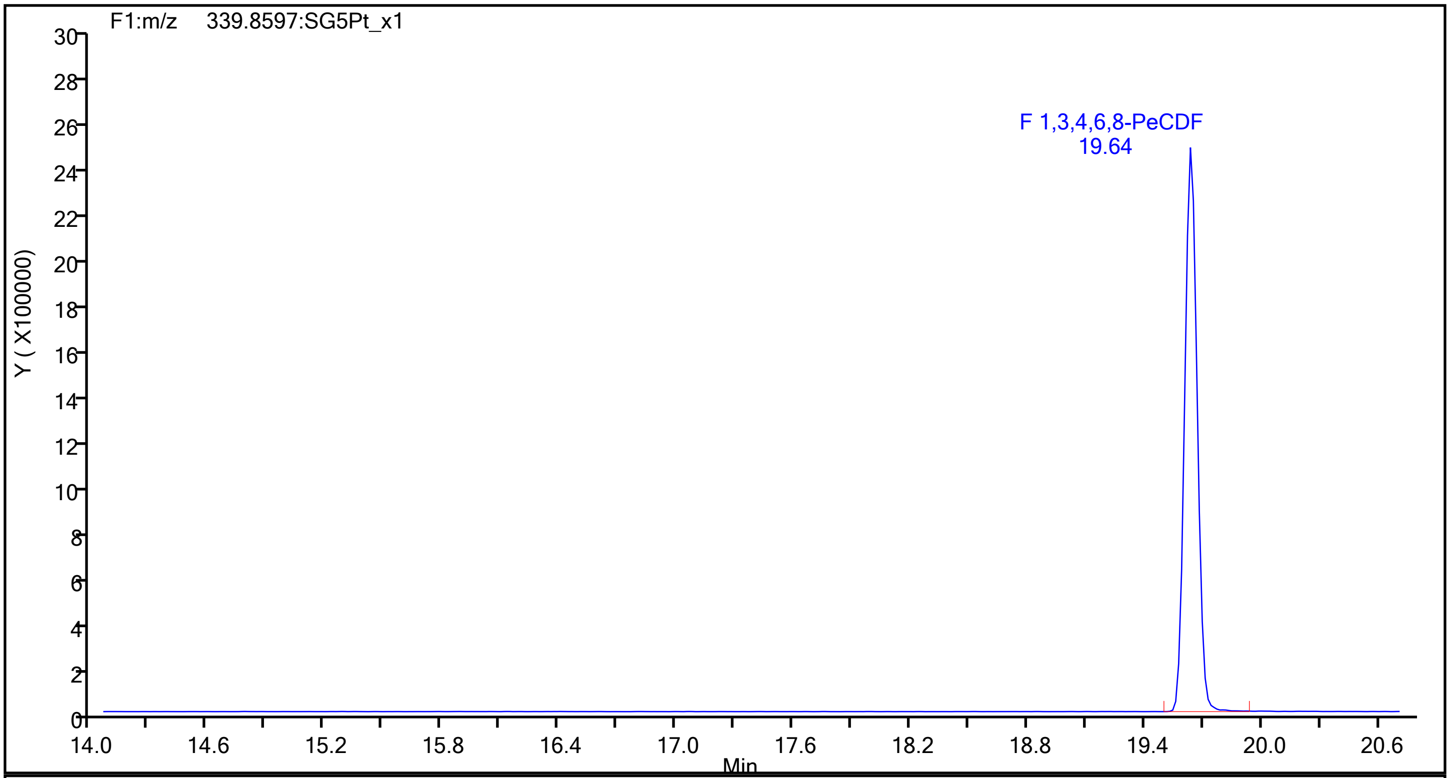

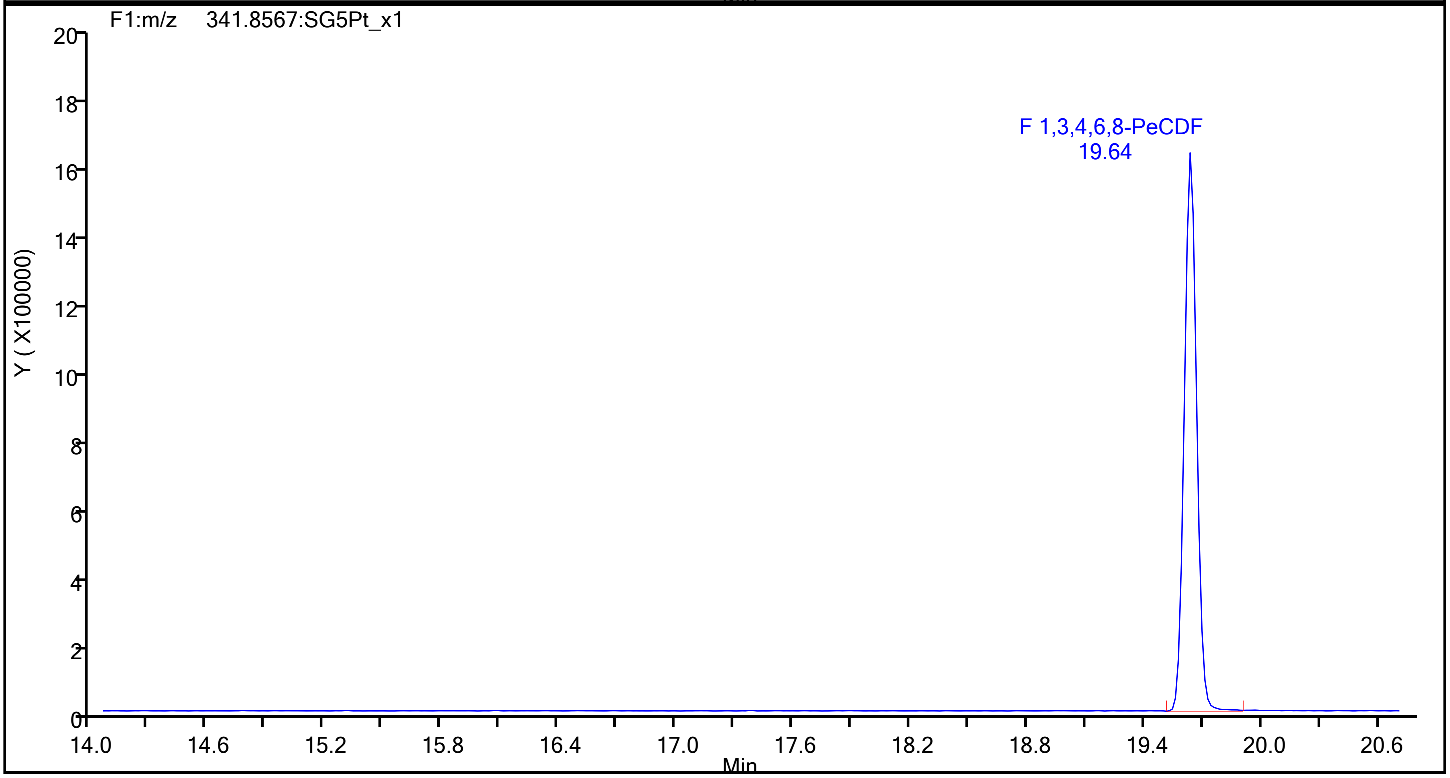

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Eurofins TestAmerica, Sacramento

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Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

F1 PeCDFs

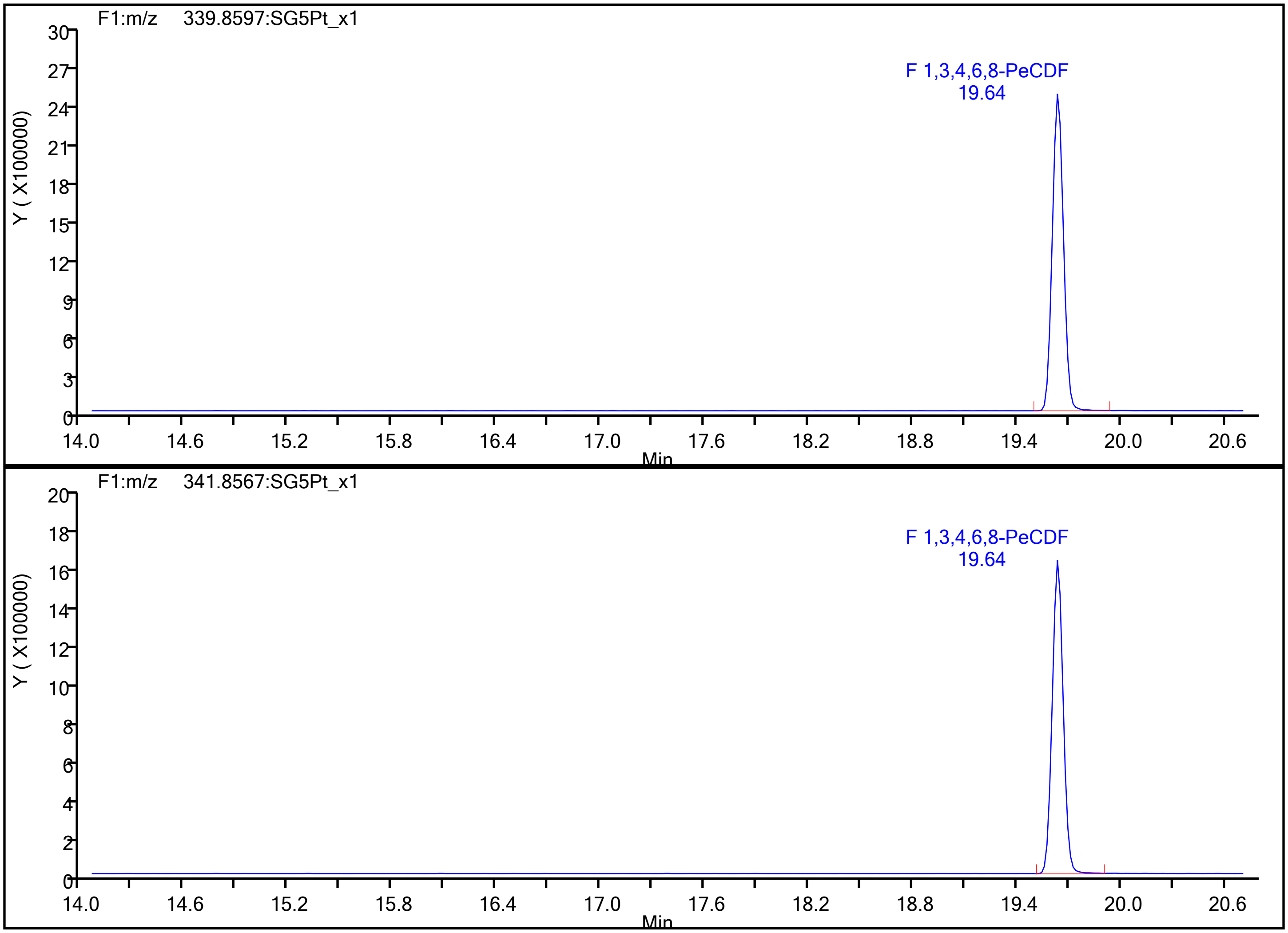

F1 PeCDFs Interference Mass

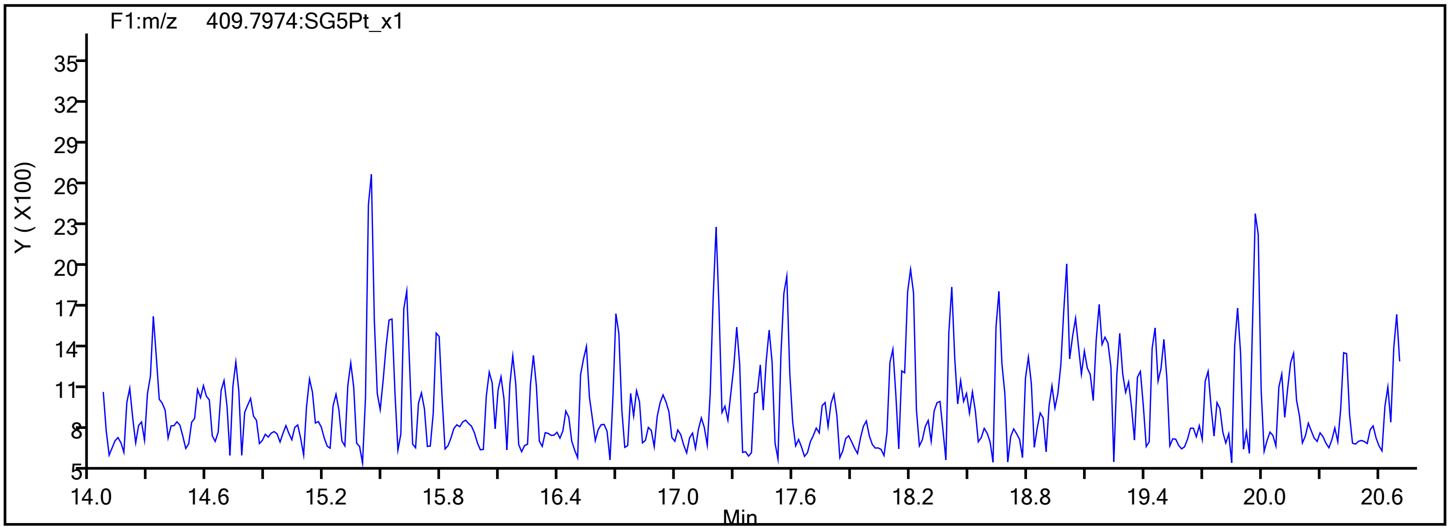

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Operator ID: AJS
Method: Dioxin_10D5
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Client ID:
Worklist#: 362307
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

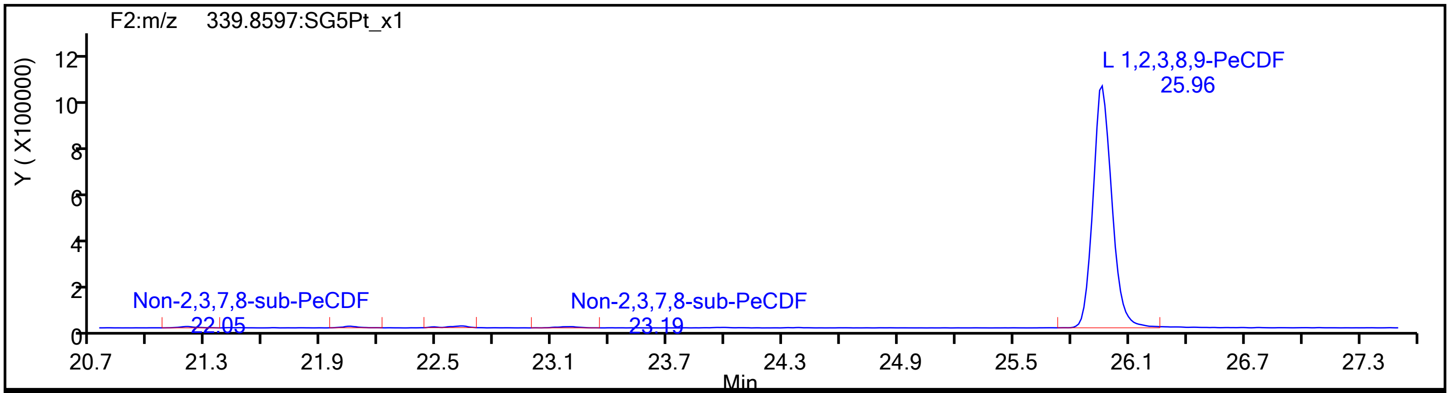

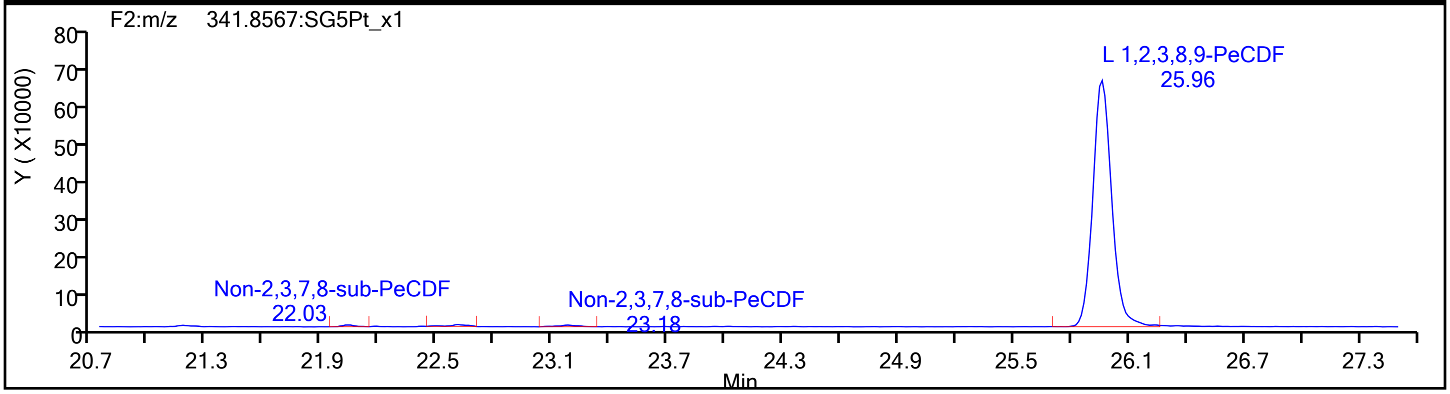

PeCDF Standards

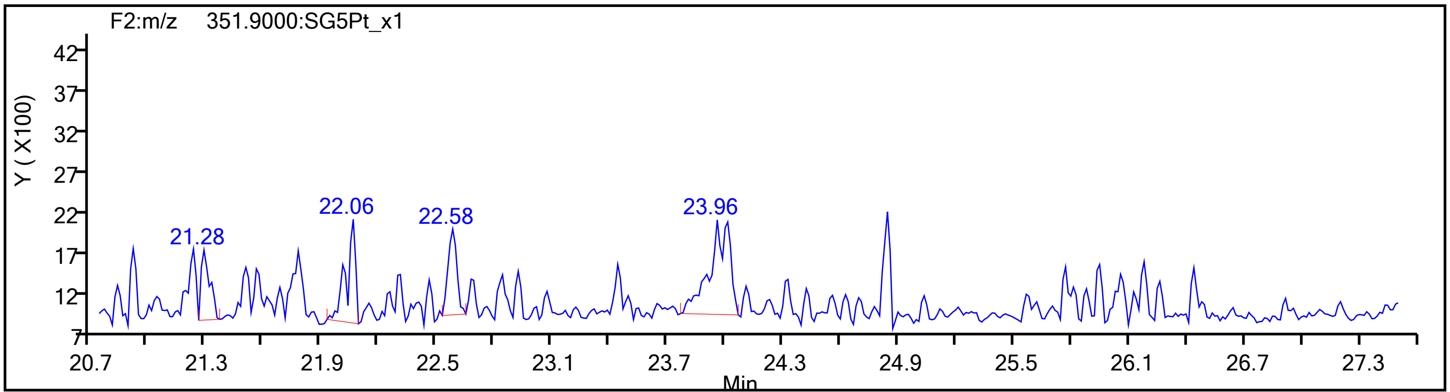

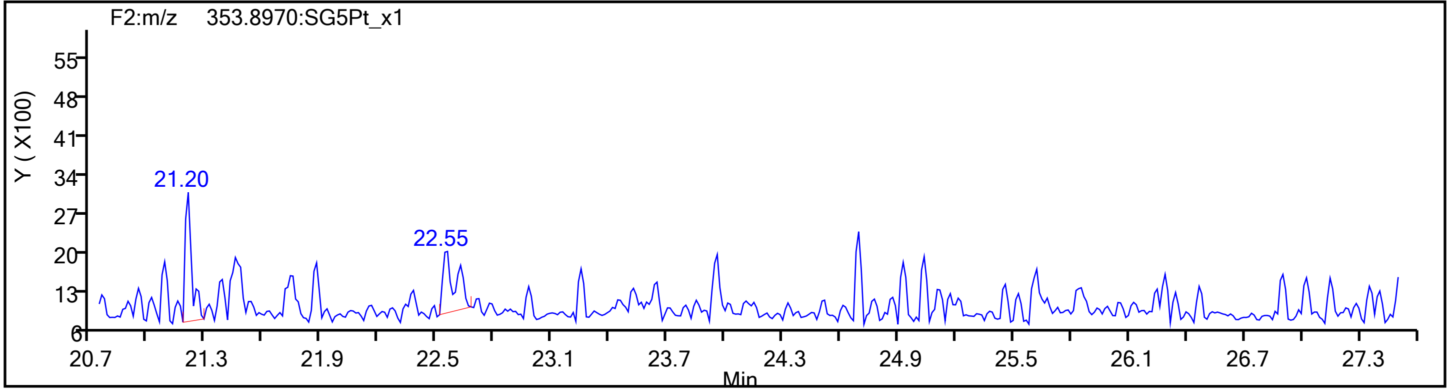

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Eurofins TestAmerica, Sacramento

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Operator ID: AJS
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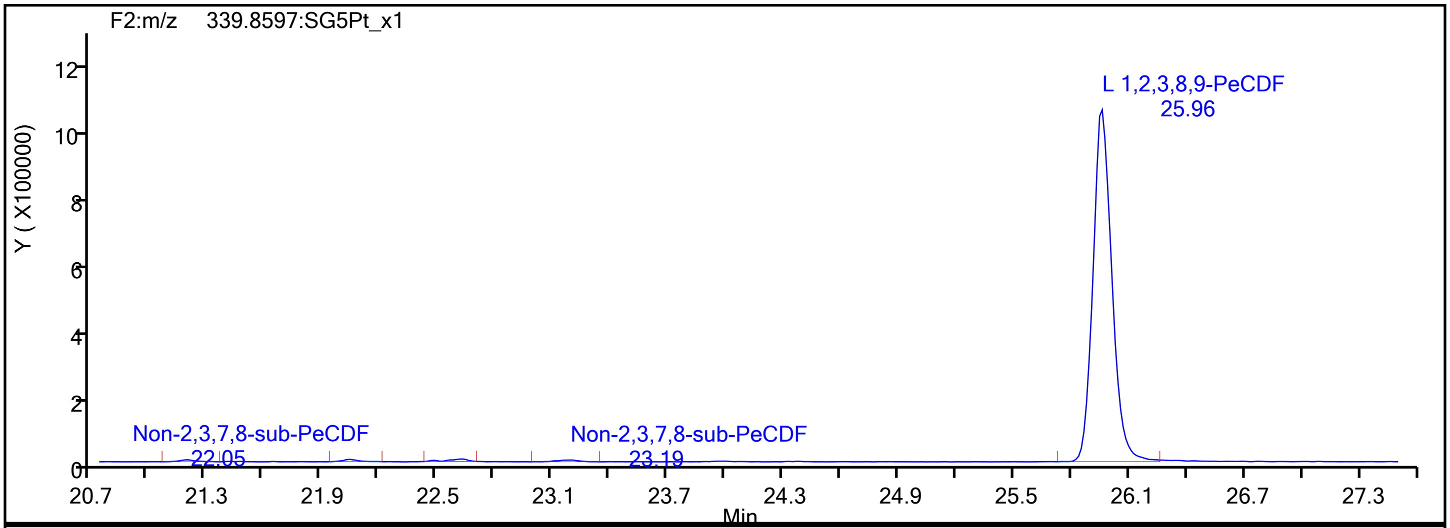

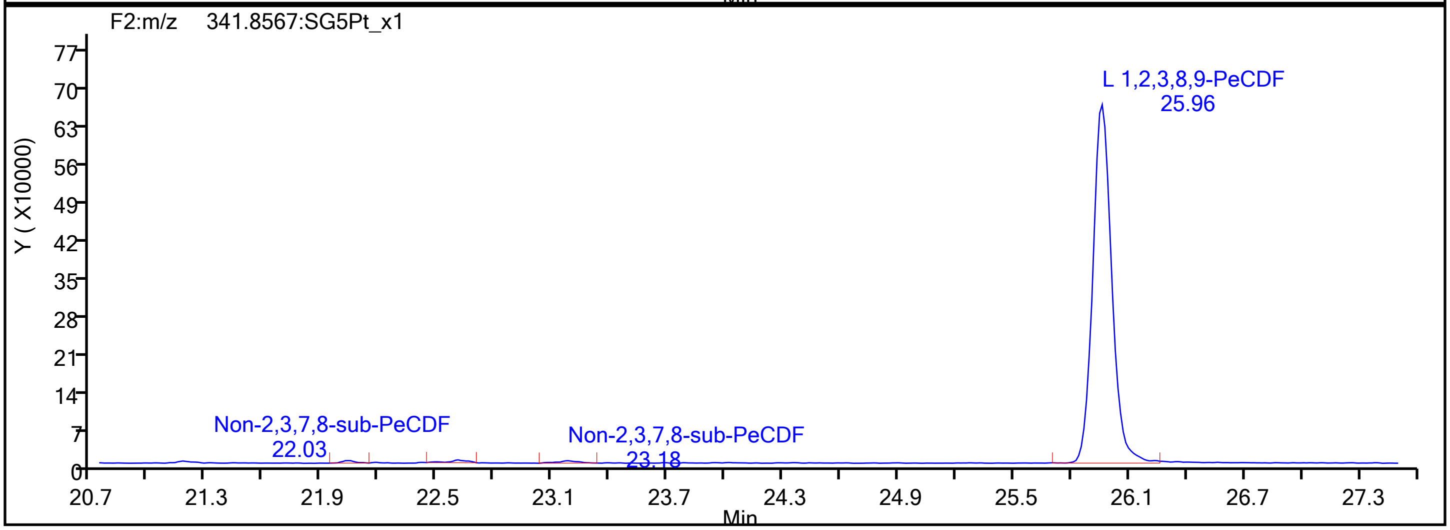

PeCDF Interference Mass

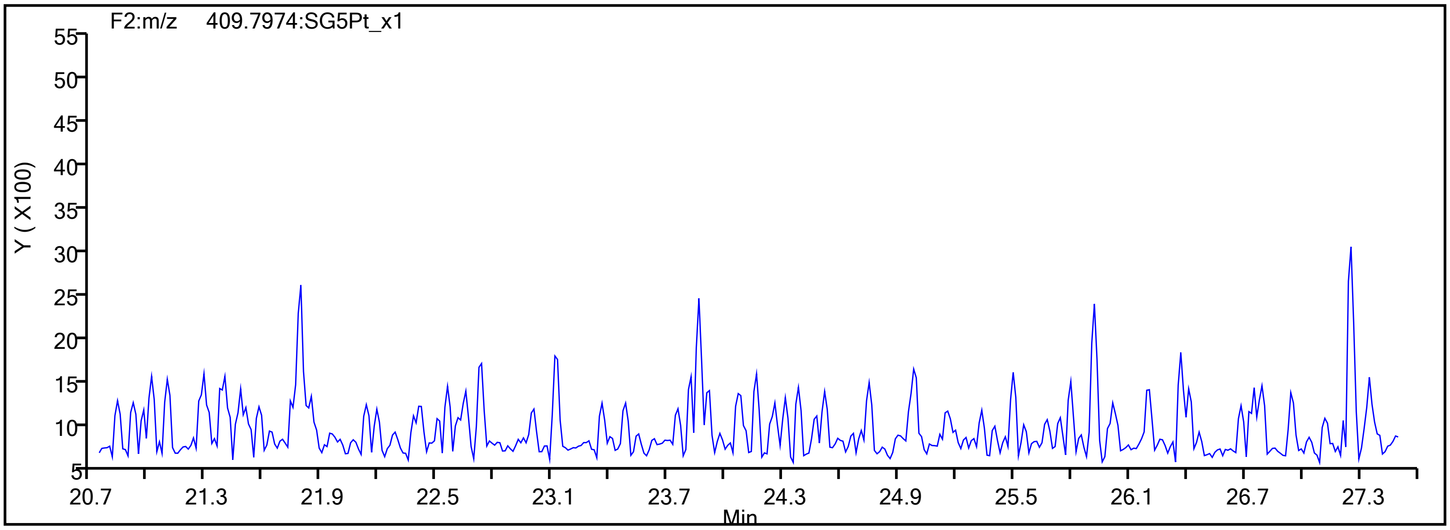

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 15:30:00 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 362307 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

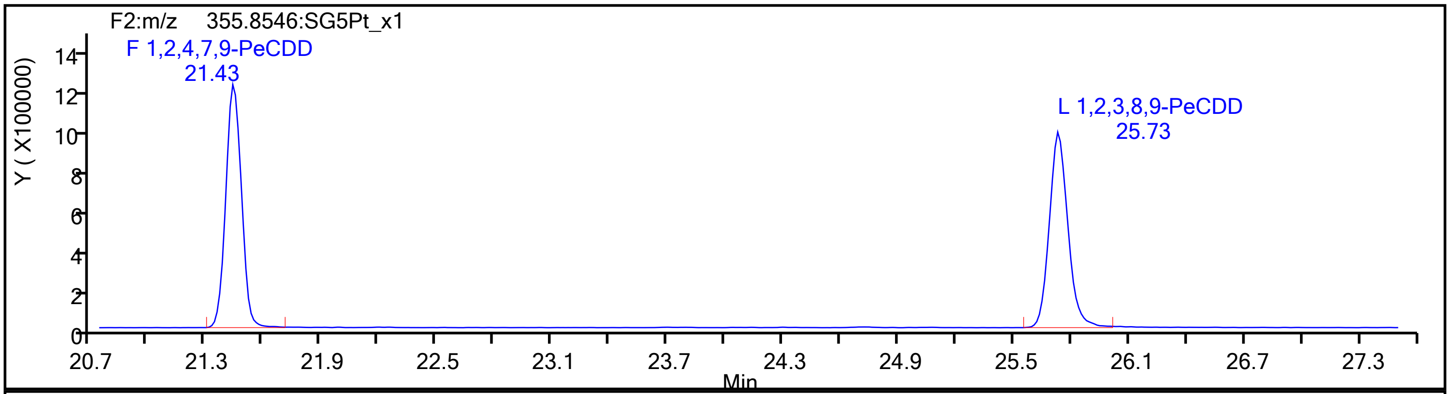

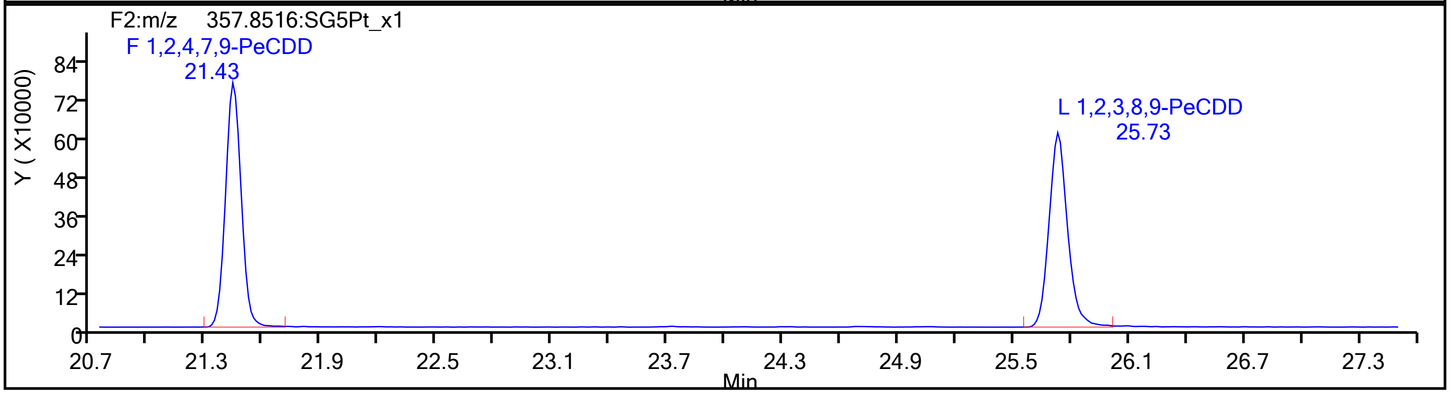

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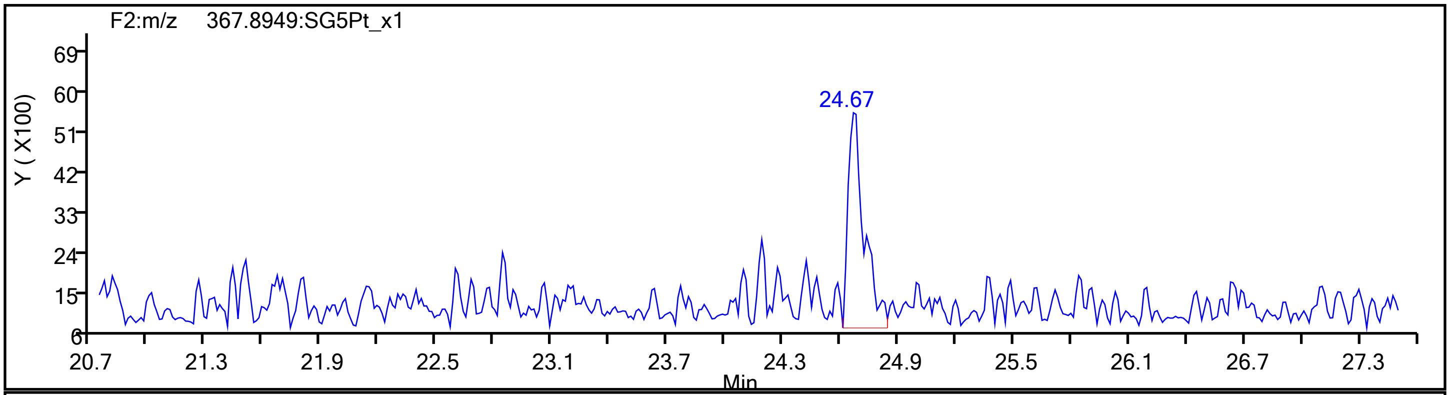

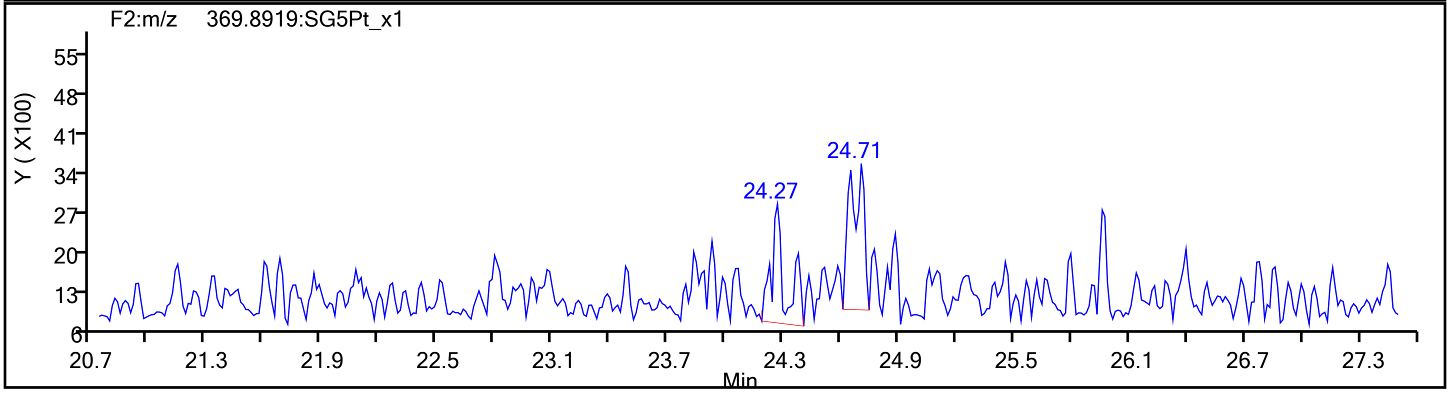

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Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 15:30:00 Injection Vol: 2.0 ul
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Client ID:
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HxCDF

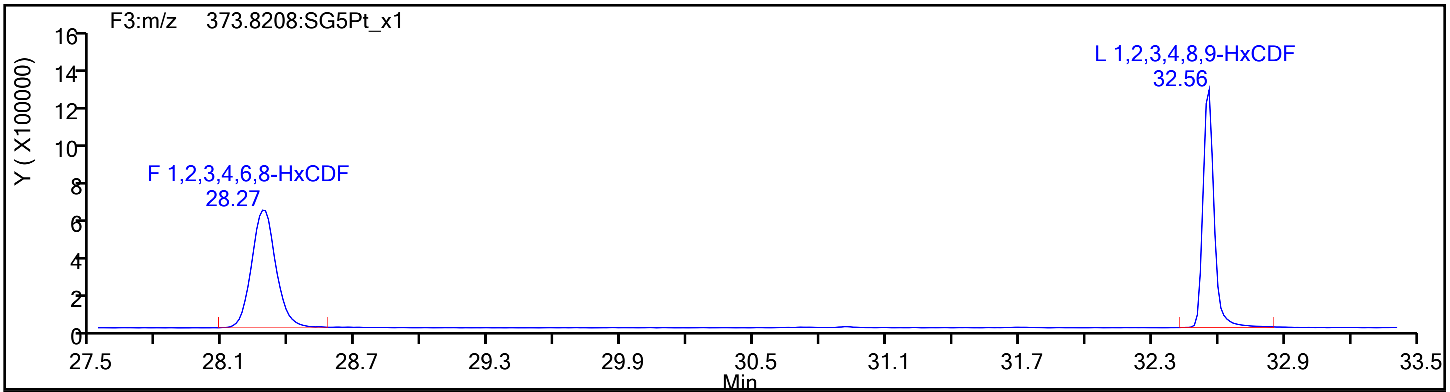

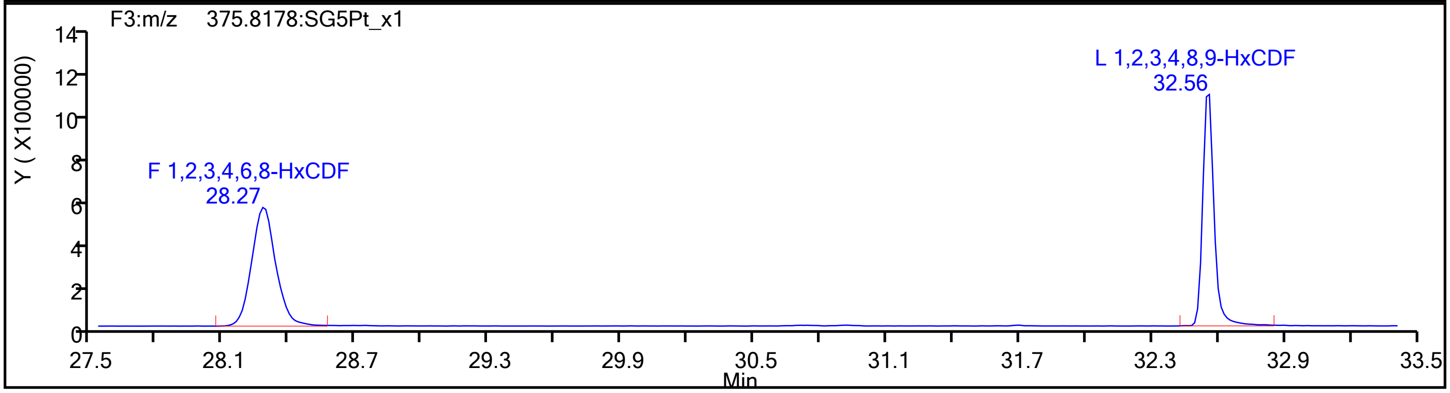

HxCDF Standards

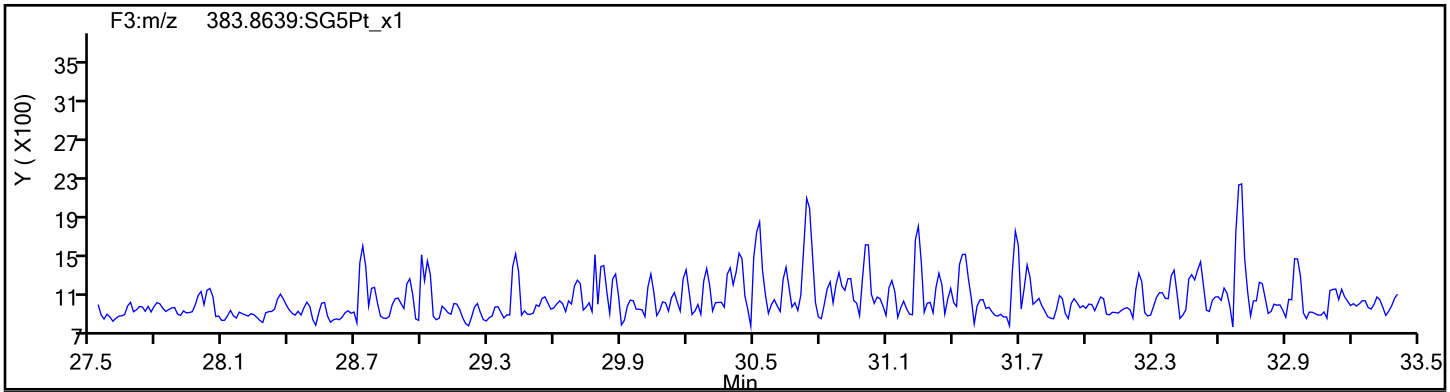

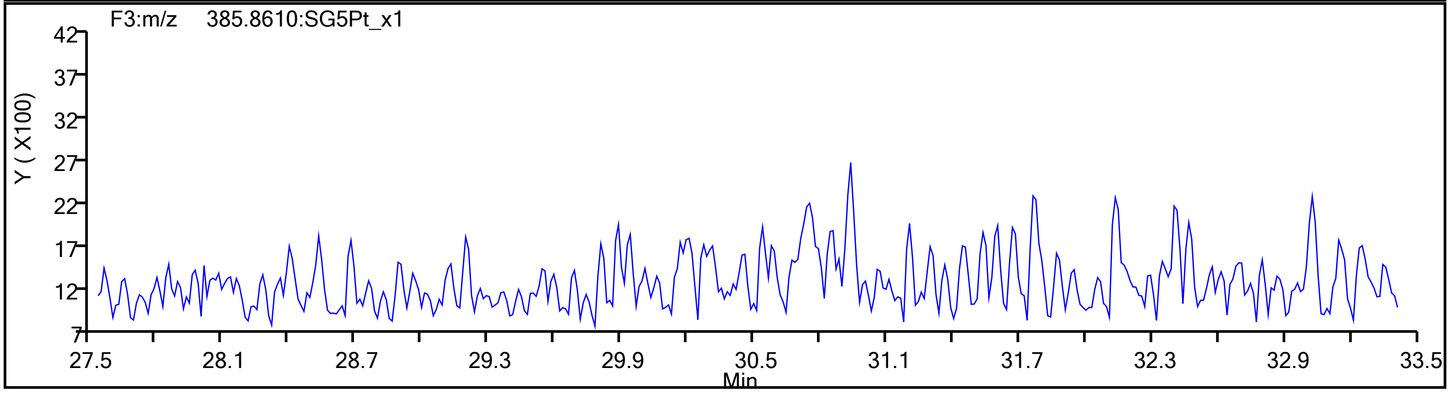

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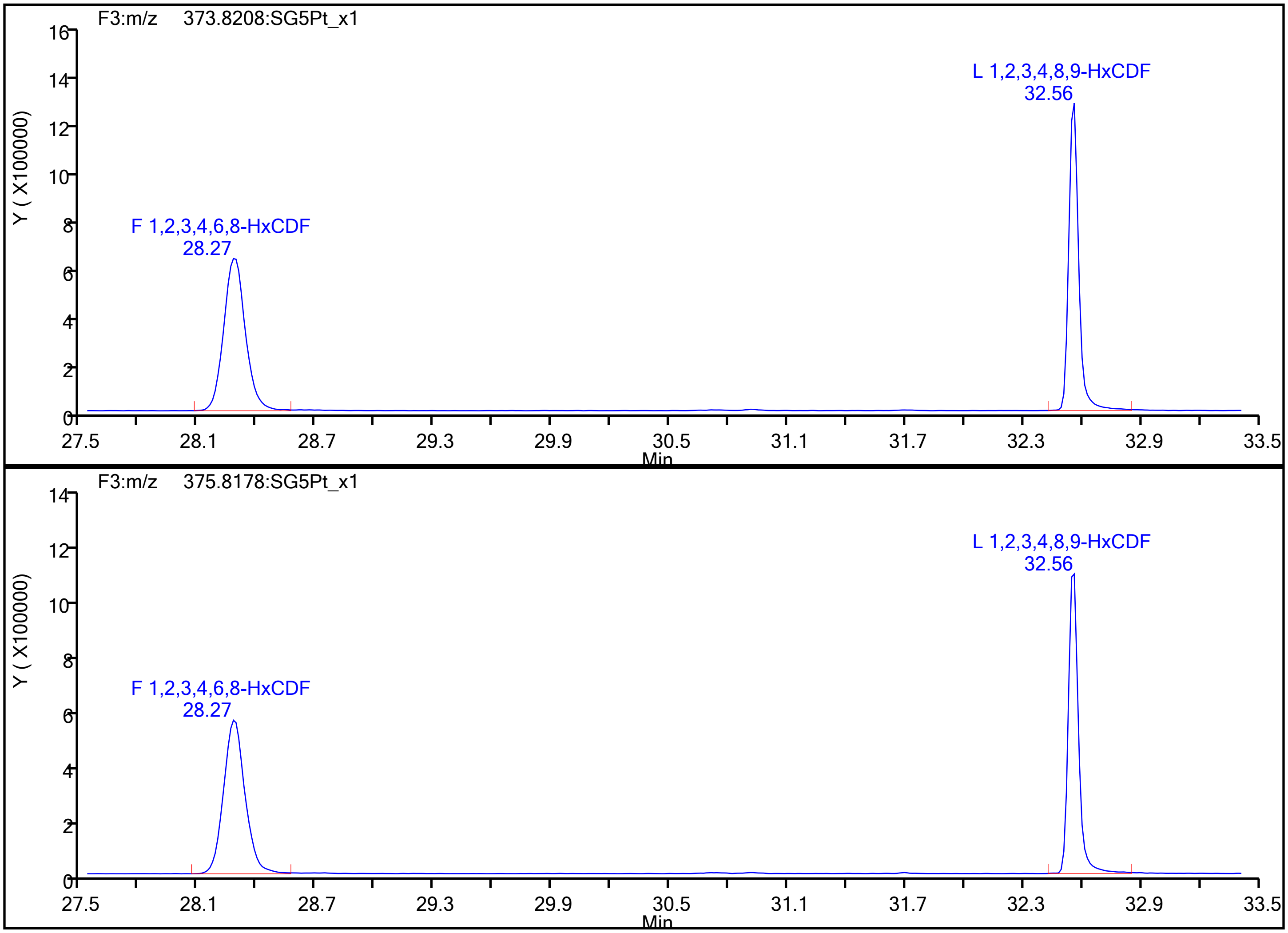

HxCDF Interference Mass

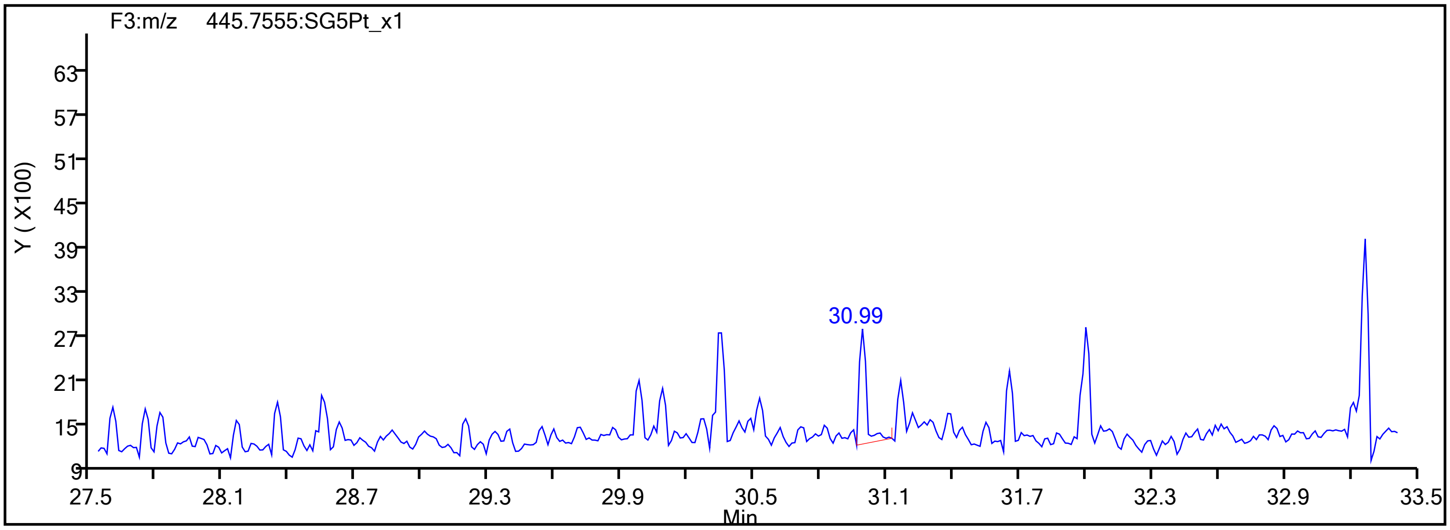

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Eurofins TestAmerica, Sacramento

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Client ID:			
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Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

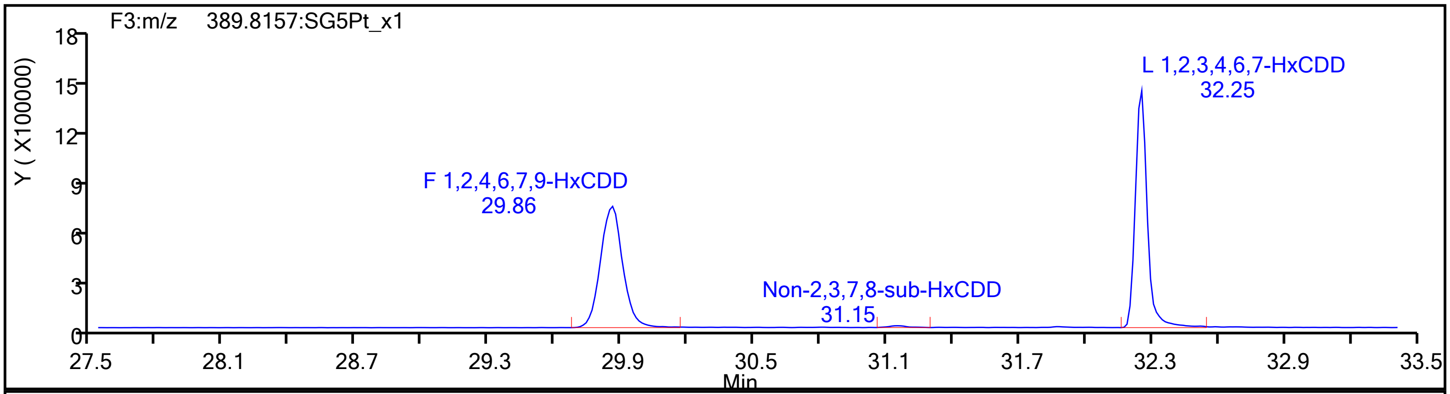

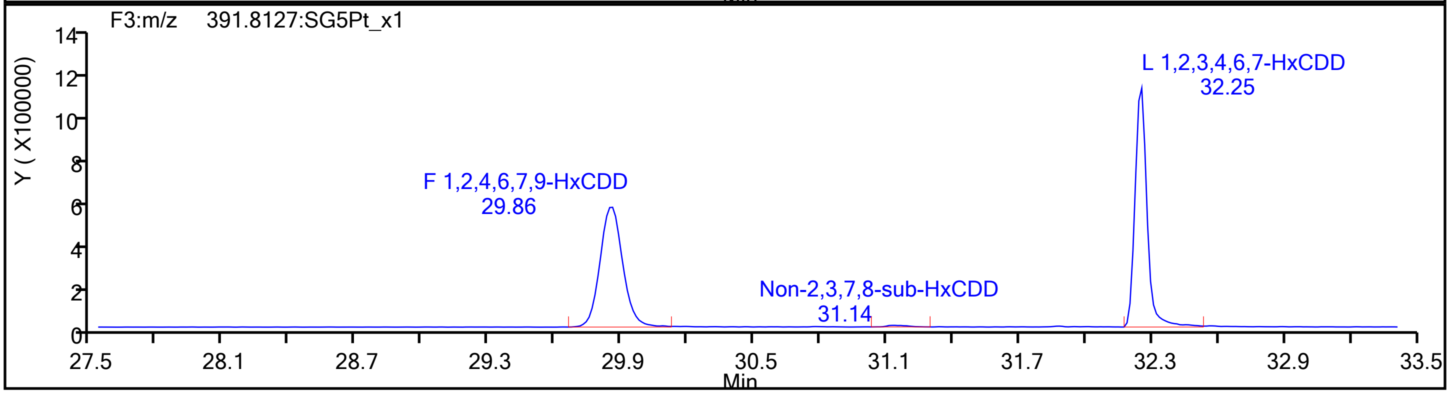

HxCDD Standards

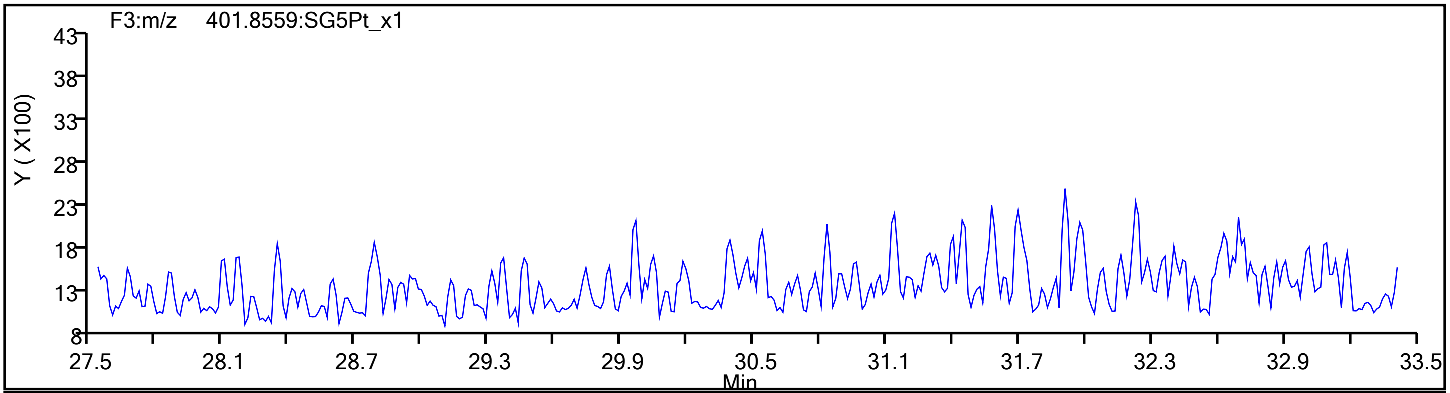

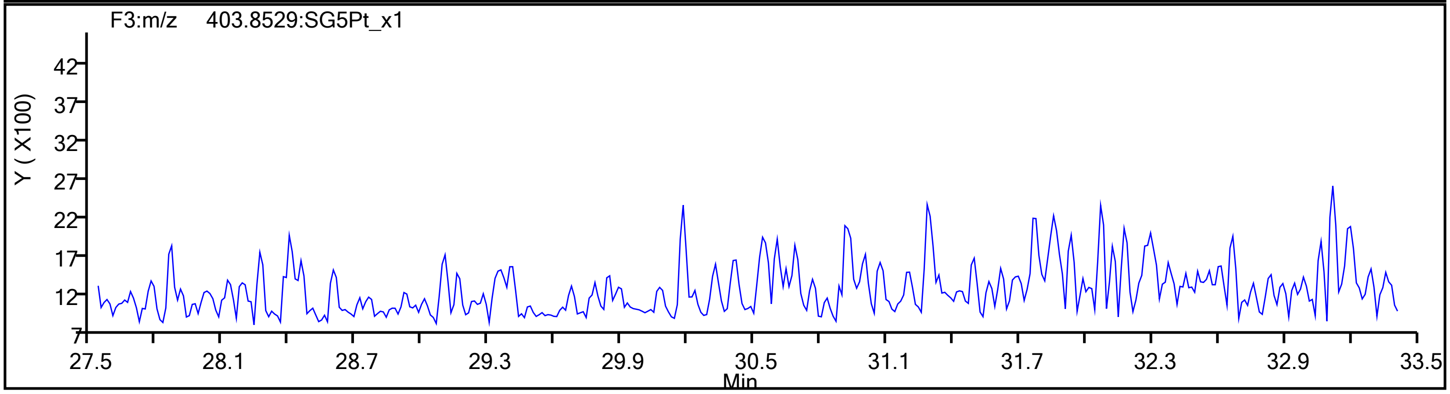

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

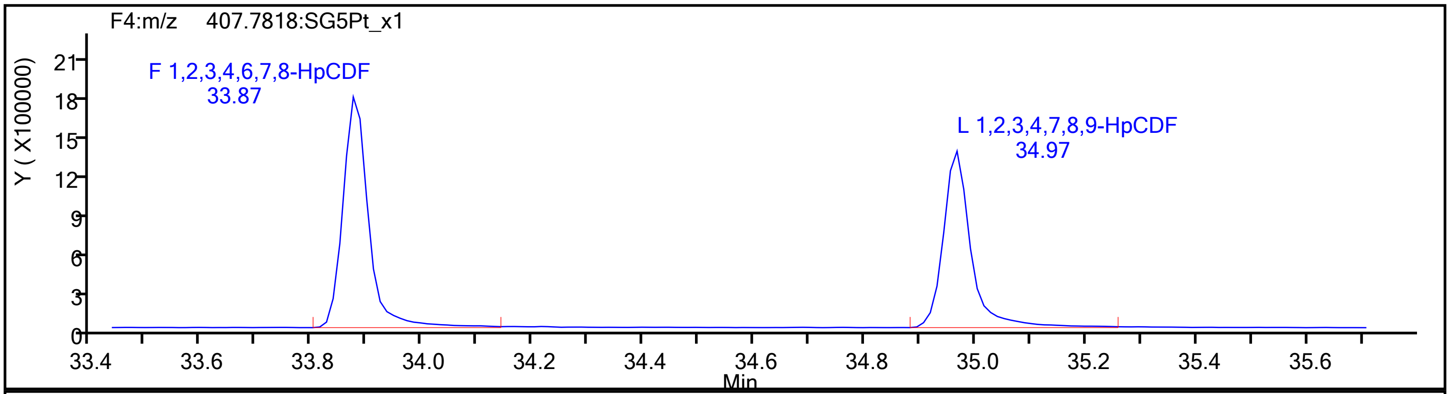

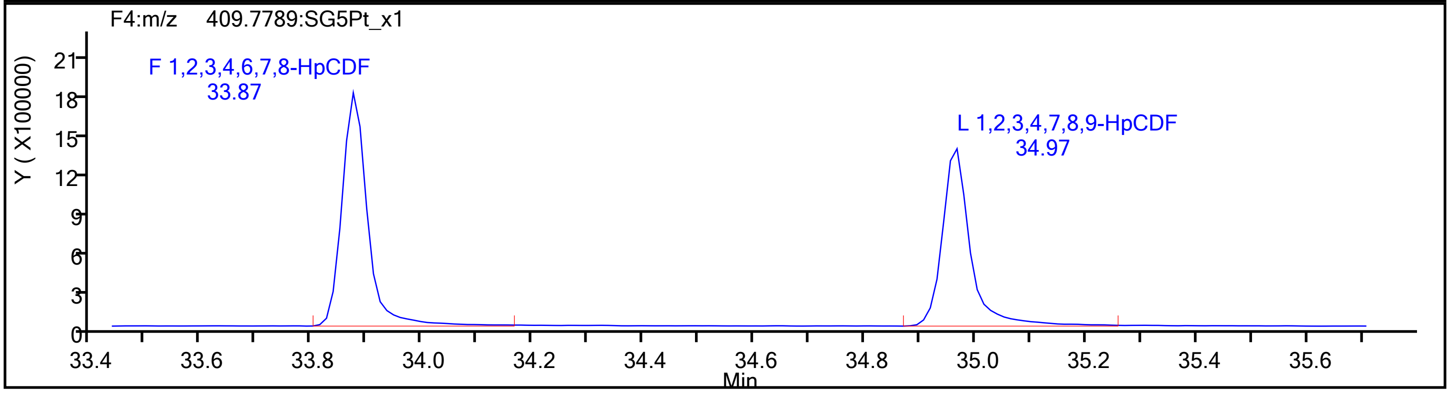

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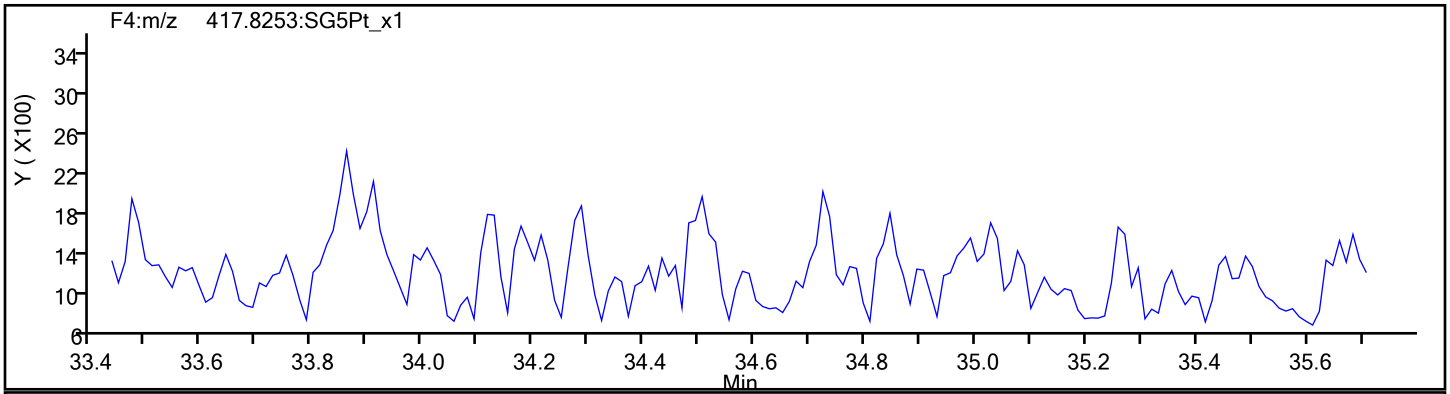

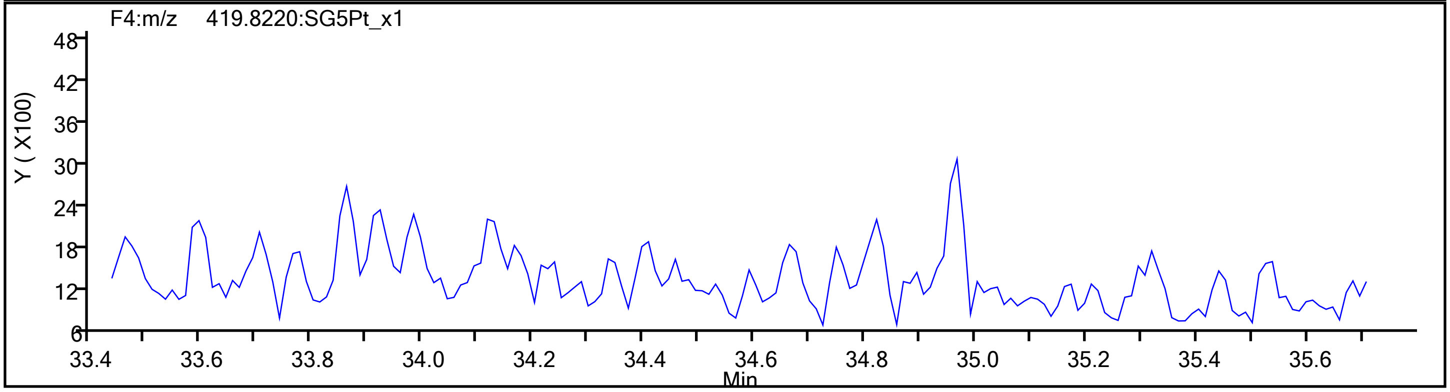

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Eurofins TestAmerica, Sacramento

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HpCDF

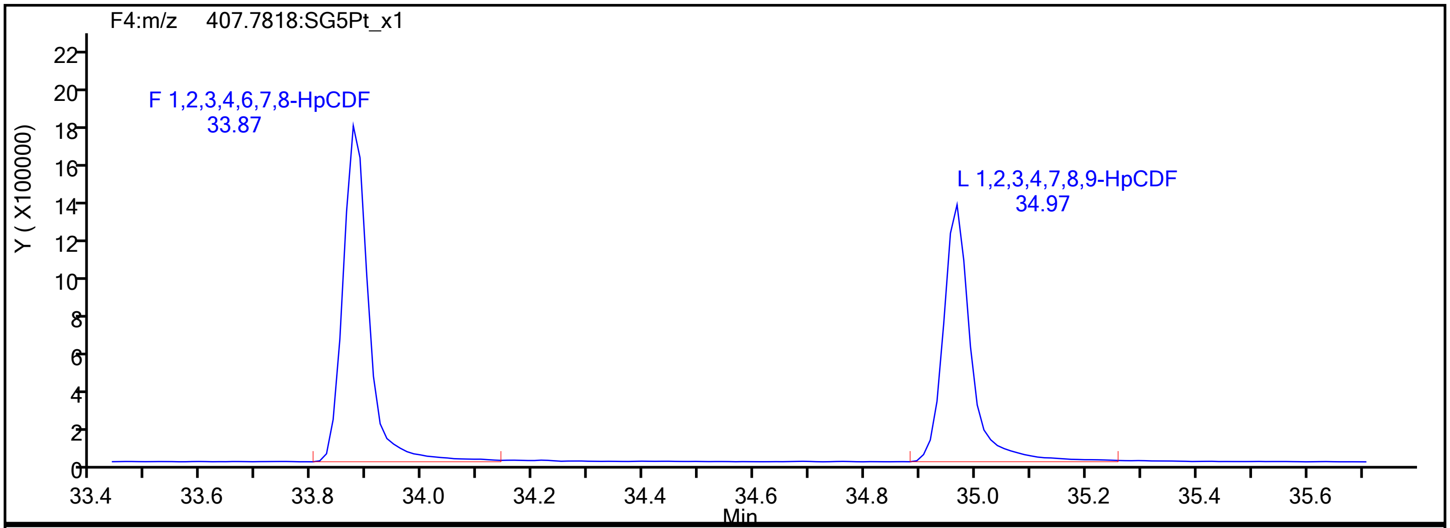

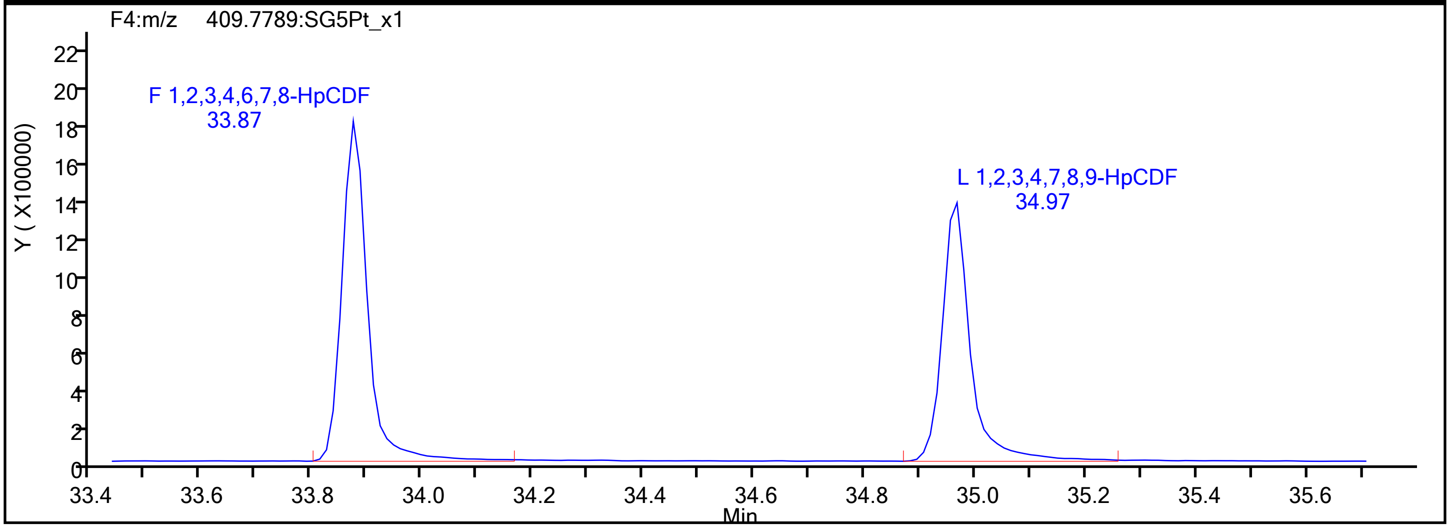

HpCDF Interference Mass

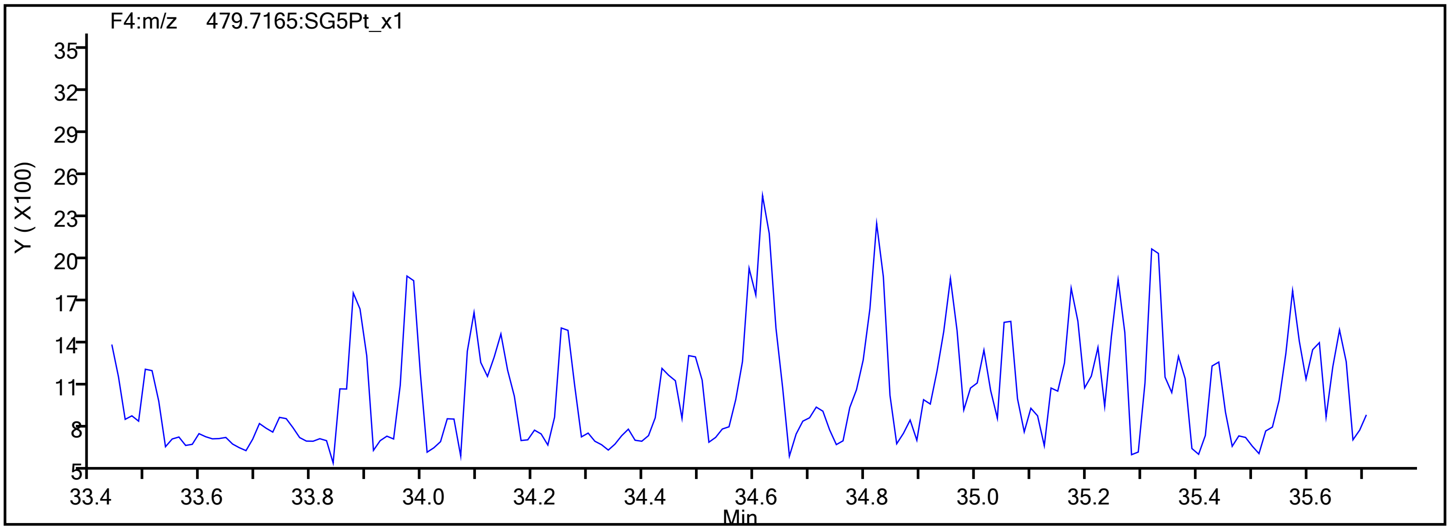

Eurofins TestAmerica, Sacramento

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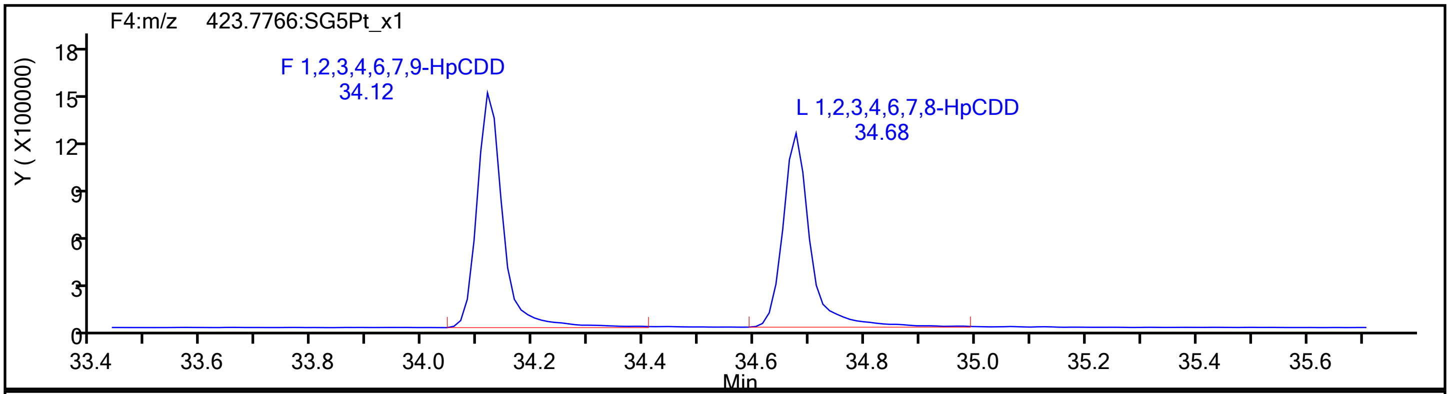

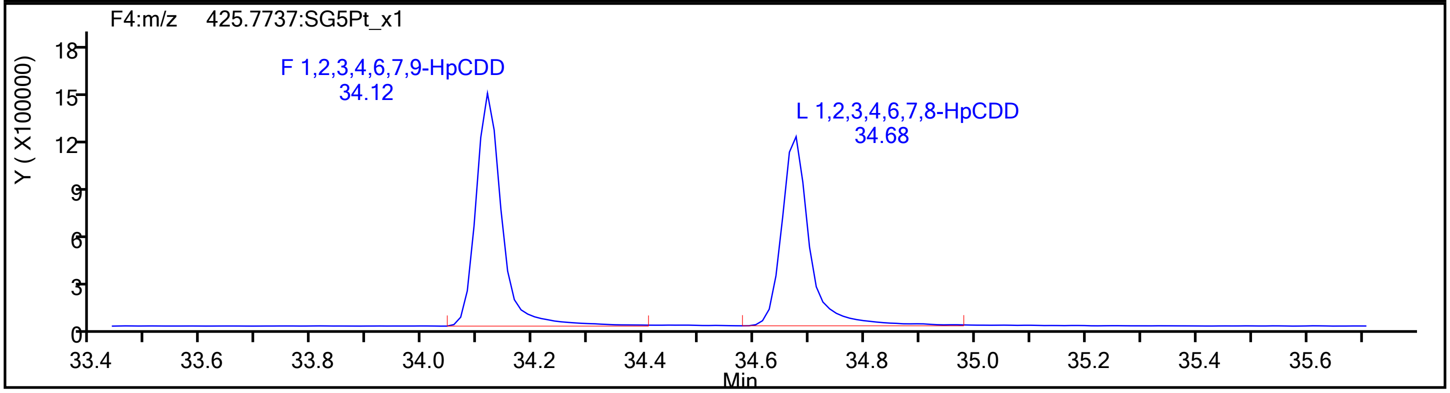

HpCDD Standards

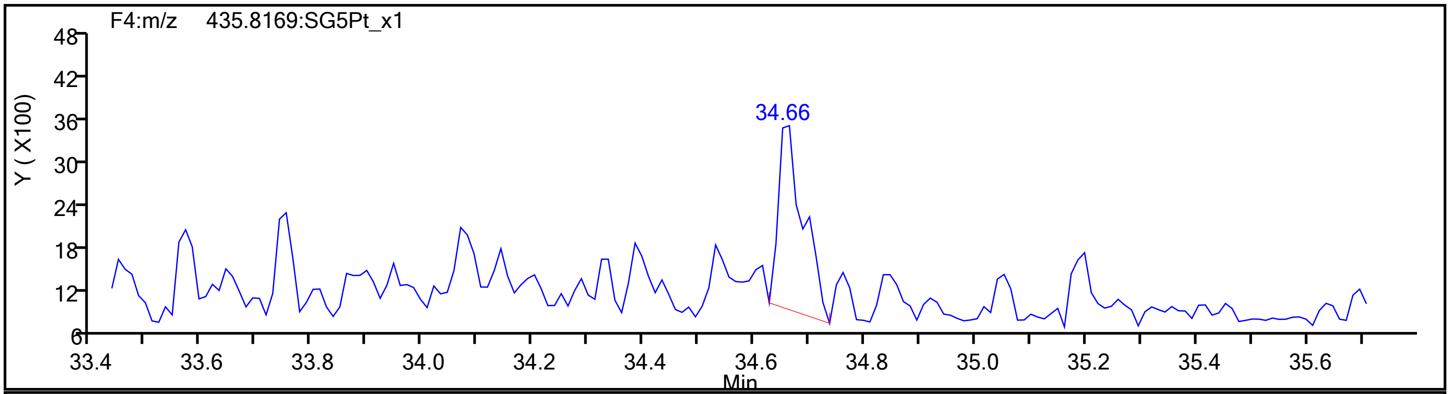

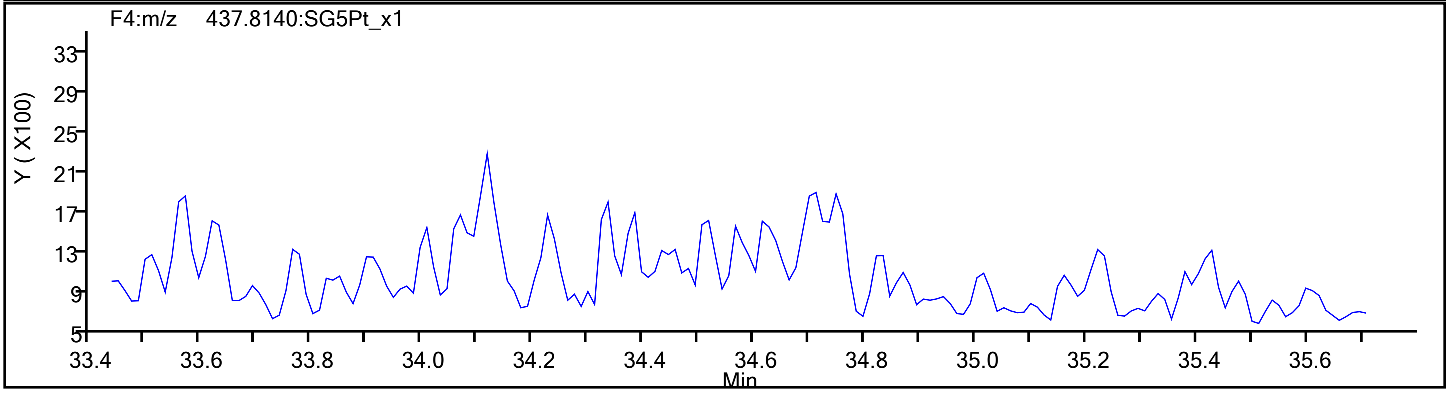

Report Date: 06-Mar-2020 10:12:15 Chrom Revision: 2.3 19-Feb-2020 16:45:46

Eurofins TestAmerica, Sacramento

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Injection Date: 05-Mar-2020 15:30:00 Injection Vol: 2.0 ul
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Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
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Column Type: DB-5 Column Dia: 0.32 mm

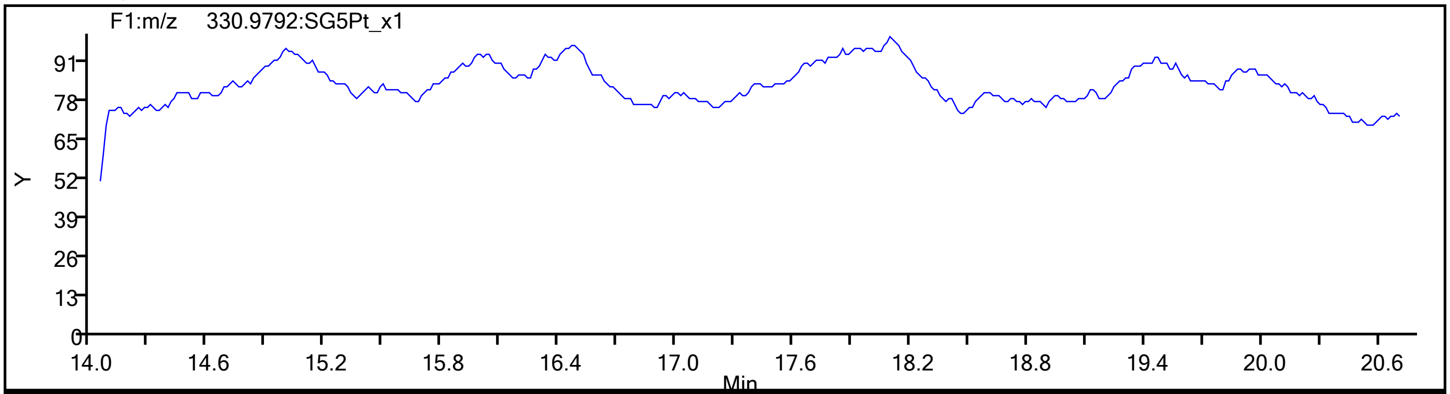

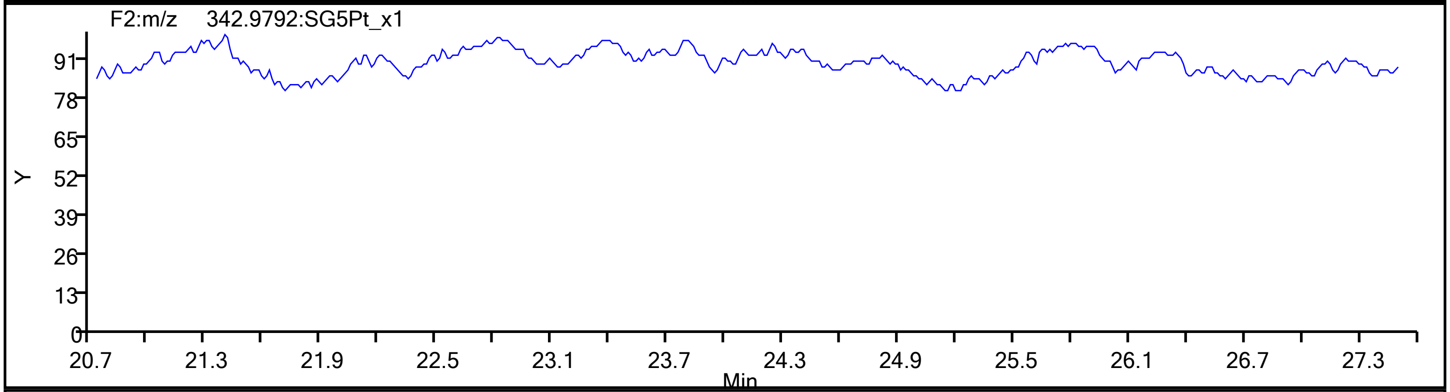

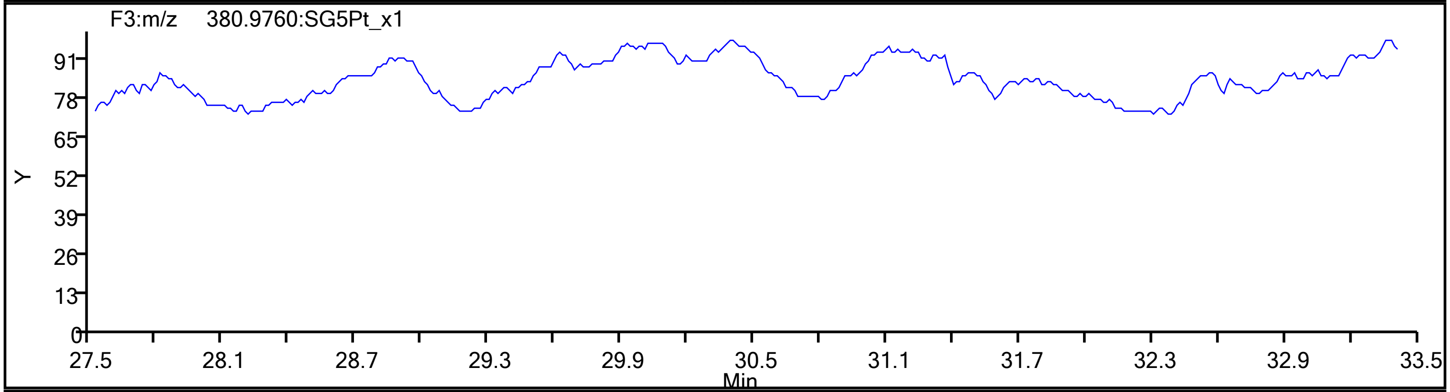

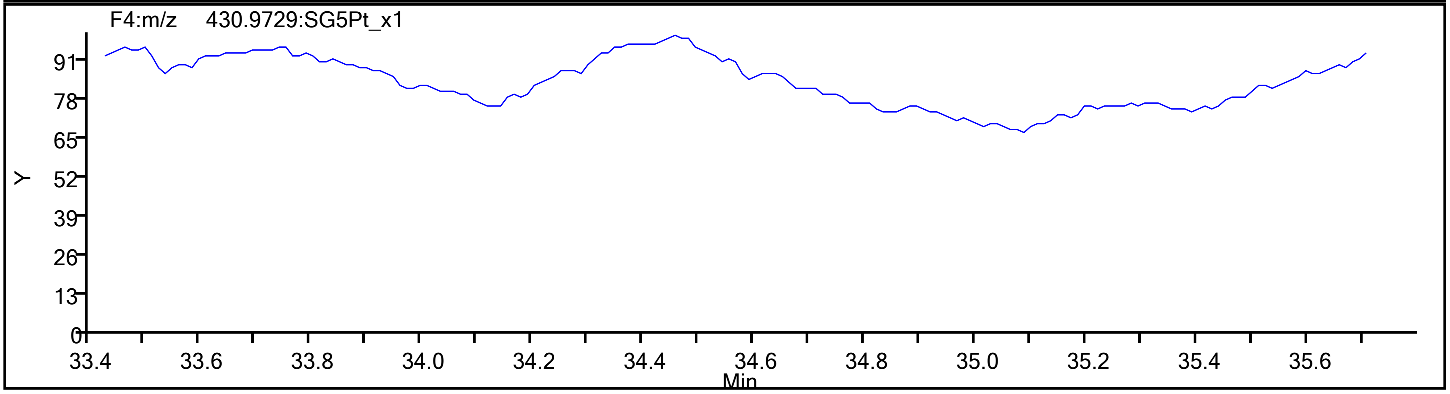

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Injection Vol: 2.0 ul
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Operator ID: AJS
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Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 362307
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

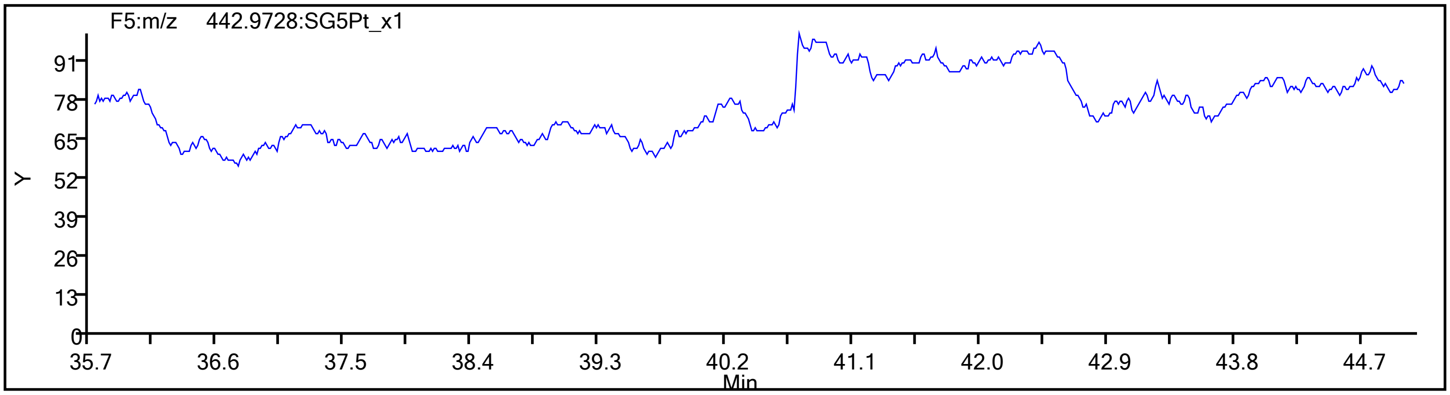

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

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Client ID:
Sample Type: WDM
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Injection Vol: 2.0 ul Dil. Factor: 1.0000
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Misc. Info.: 25JN2010D5
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Limit Group: HR - 1613B - ICAL
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Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
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Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:30:05

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	17.097	20948758	0.76	1.1970					0.00	
2,3,7,8-TCDF	17.113	36138007	0.74	0.7672	89.9	89.9	0.5665	0.5665		
A Non-2,3,7,8-sub-TCDF	16.810						0.5665	0.5665		
S Total TCDF					89.9	89.9	0.5665	0.5665		
D 13C-2,3,7,8-TCDD	17.778	15761563	0.78	0.8773					0.00	
2,3,7,8-TCDD	17.808	16137099	0.77	1.0000	41.0	41.0	0.2619	0.2619		
A Non-2,3,7,8-sub-TCDD	17.256						0.2619	0.2619		
S Total TCDD					41.0	41.0	0.2619	0.2619		
A F1 PeCDFs	19.675						0.0	0.0		
A Non-2,3,7,8-sub-PeCDF	22.743	71658	1.55	0.0000						RQ
S Total PeCDF										RQ
A Non-2,3,7,8-sub-PeCDD	22.953						0.0	0.0		
S Total PeCDD										
A Non-2,3,7,8-sub-HxCDF	29.847						0.0	0.0		
S Total HxCDF										
A Non-2,3,7,8-sub-HxCDD	30.499	55824	1.16	0.0000						
S Total HxCDD										
1,2,3,4,6,7,8-HpCDF	33.614	9288170	1.02	1.3295						
1,2,3,4,7,8,9-HpCDF	34.671	7298121	1.03	1.0803						
A Non-2,3,7,8-sub-HpCDF	34.143						0.0	0.0		
S Total HpCDF										
1,2,3,4,6,7,8-HpCDD	34.392	6724472	0.99	1.0040						
A Non-2,3,7,8-sub-HpCDD	34.119						0.0	0.0		
S Total HpCDD										
1,3,6,8-TCDF	14.739	20214951	0.75							
2,3,4,7-TCDF	14.739	20214951	0.75							
1,3,6,8-TCDD	15.631	16973636	0.78							
1,2,3,7-TCDD	17.687	14232913	0.76							
1,2,3,9-TCDD	17.959	17878312	0.76							
1,2,3,9-TCDF	17.959	15496826	0.74							

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
1,2,8,9-TCDF	18.882	16023311	0.72							
1,2,8,9-TCDD	18.882	6725203								
1,3,4,6,8-PeCDF	19.169	22668827	1.53							
1,2,4,7,9-PeCDD	20.894	13367576	1.58							
1,2,3,8,9-PeCDD	25.012	11708383	1.55							
1,2,3,8,9-PeCDF	25.230	12290845	1.54							
1,2,3,4,6,8-HxCDF	27.465	9093246	1.23							
1,2,4,6,7,9-HxCDD	29.008	9208994	1.22							
1,2,3,4,6,7-HxCDD	31.897	8247784	1.22							
1,2,3,4,8,9-HxCDF	32.229	7679795	1.19							
1,2,3,4,6,7,9-HpCDD	33.845	8530539	1.04							

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 25-Jun-2020 17:43:00 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM 062520 WDM HRDXNCP_00040
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:54 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:30:05

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	17.097	17.097	0	1.000	9013177	2100006	5756	14390	365		
317.9389	17.097	17.097	0	1.000	11935581	2777659	4235	10587	656	0.76(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.113	17.113	0	1.001	15338206	3379752	7993	19982	423		
305.8987	17.113	17.113	0	1.001	20799801	4612564	13206	33015	349	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						7993	19982			
305.8987	16.810						13206	33015			
13C-2,3,7,8-TCDD											
331.9368	17.778	17.778	0	1.000	6891568	1476723	2990	7475	494		
333.9339	17.778	17.778	0	1.000	8869995	1944724	1888	4720	1030	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.808	17.808	0	1.002	7027571	1585266	4185	10462	379		
321.8936	17.808	17.808	0	1.002	9109528	2064013	4777	11942	432	0.77(0.65-0.89)	
A Non-2,3,7,8-sub-TCDD											
319.8965	17.256						4185	10462			
321.8936	17.256						4777	11942			
A F1 PeCDFs											
339.8597	19.675						992	2480			
341.8567	19.675						887	2217			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	22.026	22.743	-43	1.000	43557	6759	1386	3465	5		
341.8567	22.026	22.743	-43	1.000	41812	5504	1084	2710	5	1.04(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						2880	7200			
357.8516	22.953						1310	3275			

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						2242	5605			
375.8178	29.847						2080	5200			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.659	30.499	10	1.000	29999	6549	2106	5265	3		
391.8127	30.659	30.499	10	1.000	25825	5699	1815	4537	3	1.16(1.05-1.43)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.614	33.614	0	1.000	4697792	1127488	15300	38250	74		
409.7789	33.602	33.614	-1	1.000	4590378	1115044	16792	41980	66	1.02(0.88-1.20)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.671	34.671	0	1.000	3705555	784835	15300	38250	51		
409.7789	34.671	34.671	0	1.000	3592566	771958	16792	41980	46	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						15300	38250			
409.7789	34.143						16792	41980			
1,2,3,4,6,7,8-HpCDD											
423.7766	34.392	34.392	0	1.000	3340787	773208	12196	30490	63		
425.7737	34.392	34.392	0	1.000	3383685	736032	12973	32432	57	0.99(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						12196	30490			
425.7737	34.119						12973	32432			
1,3,6,8-TCDF											
303.9016	14.739	14.739	0		8654375	2615856	7993	19982	327		
305.8987	14.739	14.739	0		11560576	3540468	13206	33015	268	0.75(0.65-0.89)	
2,3,4,7-TCDF											
303.9016	14.739	14.739	0		8654375	2615856	7993	19982	327		
305.8987	14.739	14.739	0		11560576	3540468	13206	33015	268	0.75(0.65-0.89)	
1,3,6,8-TCDD											
319.8965	15.631	15.631	0		7412511	2142251	4185	10462	512		
321.8936	15.631	15.631	0		9561125	2779381	4777	11942	582	0.78(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.687	17.687	0		6161096	1499331	4185	10462	358		
321.8936	17.687	17.687	0		8071817	1961559	4777	11942	411	0.76(0.65-0.89)	
1,2,3,9-TCDD											
319.8965	17.959	17.959	0		7721720	1708867	4185	10462	408		
321.8936	17.959	17.959	0		10156592	2248686	4777	11942	471	0.76(0.65-0.89)	
1,2,3,9-TCDF											
303.9016	17.959	17.959	0		6611638	1541450	7993	19982	193		
305.8987	17.959	17.959	0		8885188	2054259	13206	33015	156	0.74(0.65-0.89)	
1,2,8,9-TCDF											
303.9016	18.882	18.882	0		6698215	1432136	7993	19982	179		
305.8987	18.882	18.882	0		9325096	1994107	13206	33015	151	0.72(0.65-0.89)	
1,2,8,9-TCDD											
319.8965	18.882	18.882	0		6725203	1420908	4185	10462	340		
1,3,4,6,8-PeCDF											
339.8597	19.169	19.169	0		13720129	2928401	992	2480	2952		
341.8567	19.169	19.169	0		8948698	1881652	887	2217	2121	1.53(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,4,7,9-PeCDD											
355.8546	20.894	20.894	0		8181195	1388726	2880	7200	482		
357.8516	20.894	20.894	0		5186381	880786	1310	3275	672	1.58(1.32-1.78)	
1,2,3,8,9-PeCDD											
355.8546	25.012	25.012	0		7109406	944668	2880	7200	328		
357.8516	25.012	25.012	0		4598977	580547	1310	3275	443	1.55(1.32-1.78)	
1,2,3,8,9-PeCDF											
339.8597	25.230	25.230	0		7443978	978018	1386	3465	706		
341.8567	25.230	25.230	0		4846867	635107	1084	2710	586	1.54(1.32-1.78)	
1,2,3,4,6,8-HxCDF											
373.8208	27.465	27.465	0		5011058	613187	2242	5605	274		
375.8178	27.451	27.465	-1		4082188	498430	2080	5200	240	1.23(1.05-1.43)	
1,2,4,6,7,9-HxCDD											
389.8157	29.008	29.008	0		5064689	558189	2106	5265	265		
391.8127	28.995	29.008	-1		4144305	456767	1815	4537	252	1.22(1.05-1.43)	
1,2,3,4,6,7-HxCDD											
389.8157	31.897	31.897	0		4535427	921104	2106	5265	437		
391.8127	31.897	31.897	0		3712357	765371	1815	4537	422	1.22(1.05-1.43)	
1,2,3,4,8,9-HxCDF											
373.8208	32.229	32.229	0		4172725	898260	2242	5605	401		
375.8178	32.229	32.229	0		3507070	751194	2080	5200	361	1.19(1.05-1.43)	
1,2,3,4,6,7,9-HpCDD											
423.7766	33.845	33.845	0		4351812	1016309	12196	30490	83		
425.7737	33.845	33.845	0		4178727	977280	12973	32432	75	1.04(0.88-1.20)	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Lims ID: WDM
Client ID:
Inject. Date: 25-Jun-2020 17:43:00 Dil. Factor: 1.0000
Sample Type: WDM, Window Defining Mix
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 389621 Lims Sample ID: 1

Non-2,3,7,8-sub-PeCDF, RT: 22.743

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902				
2,3,4,7,8-PeCDF	0.831				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
22.026	43557	6759	41812	5504		1.04	R
Signal Totals:							
	43557	6759	41812	5504			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	85369	12263				1.04	RQ
	71658	11119					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (85369 * 0.0) / (0 * 0.000)
Empc Amount: 0.0 = (71658 * 0.0) / (0 * 0.000)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Lims ID:	WDM		
Client ID:			
Inject. Date:	25-Jun-2020 17:43:00	Dil. Factor:	1.0000
Sample Type:	WDM, Window Defining Mix		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	1

Non-2,3,7,8-sub-HxCDD, RT: 30.499

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,7,8-HxCDD	0.833				
1,2,3,6,7,8-HxCDD	0.894				
1,2,3,7,8,9-HxCDD	0.945				

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.000		0.0	0	0

Sum the Uncalibrated Results

RT	389.8157 Area	389.8157 Height	391.8127 Area	391.8127 Height	Amount	Ratio	Flags
30.659	29999	6549	25825	5699		1.16	
Signal Totals:							
	29999	6549	25825	5699			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	55824	12248				1.16	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0 = (55824 * 0.0) / (0 * 0.000)

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

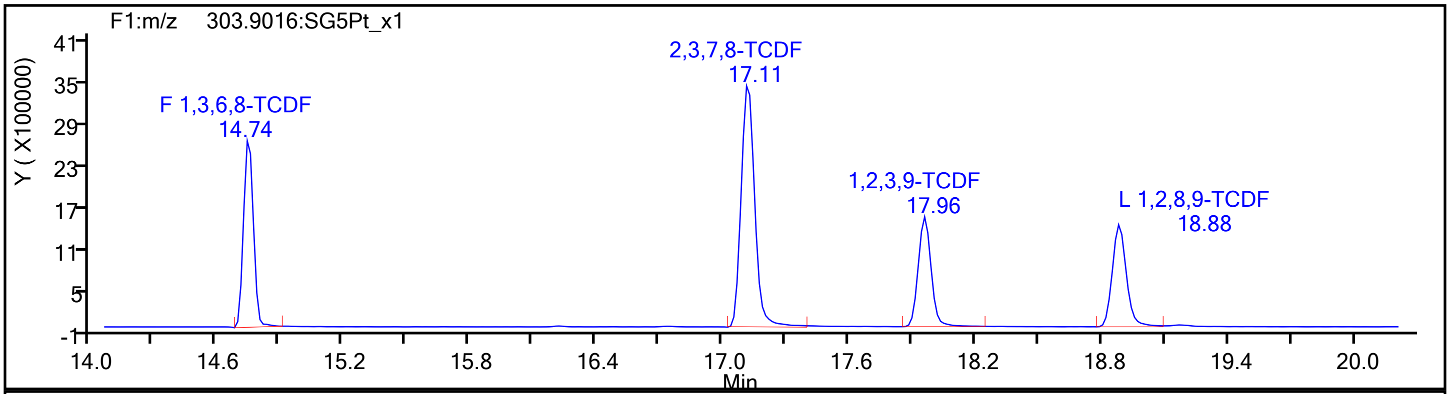

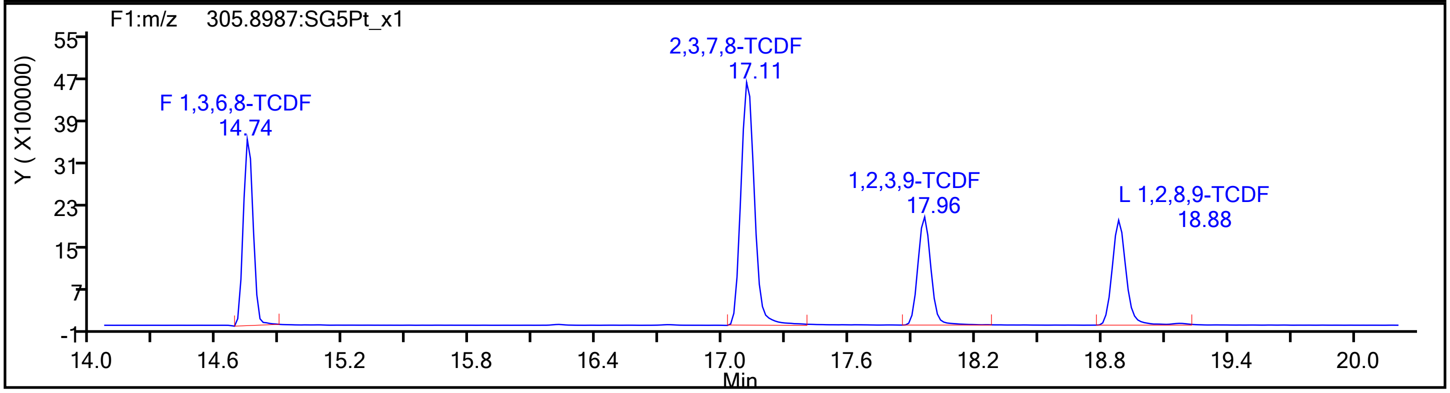

TCDF Standards

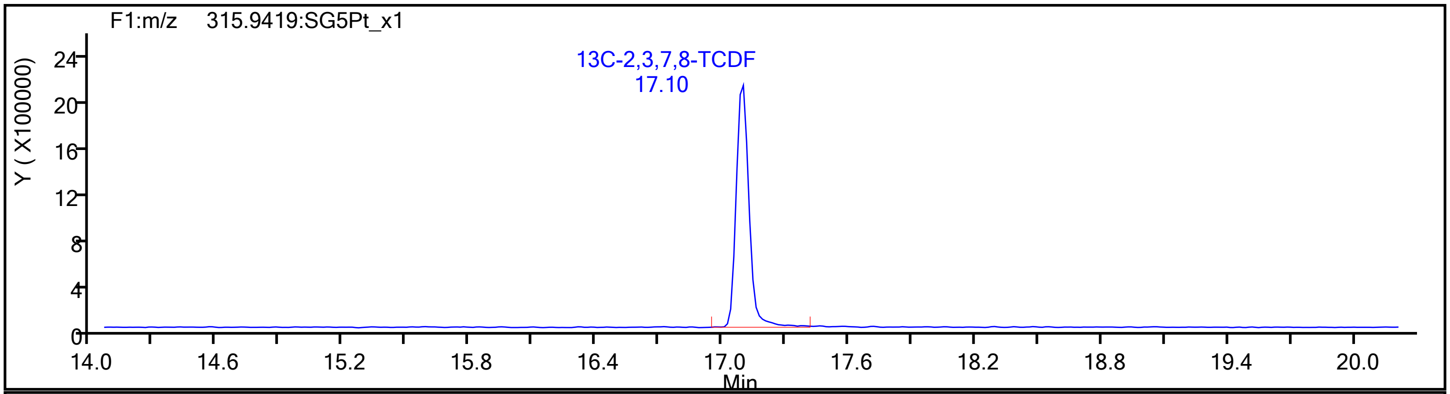

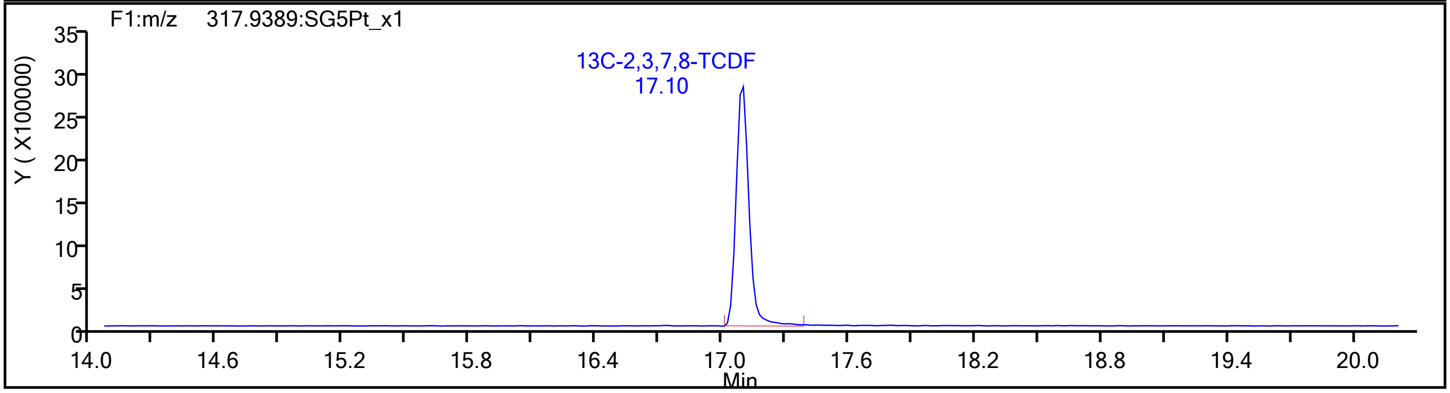

Report Date: 26-Jun-2020 13:15:55
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

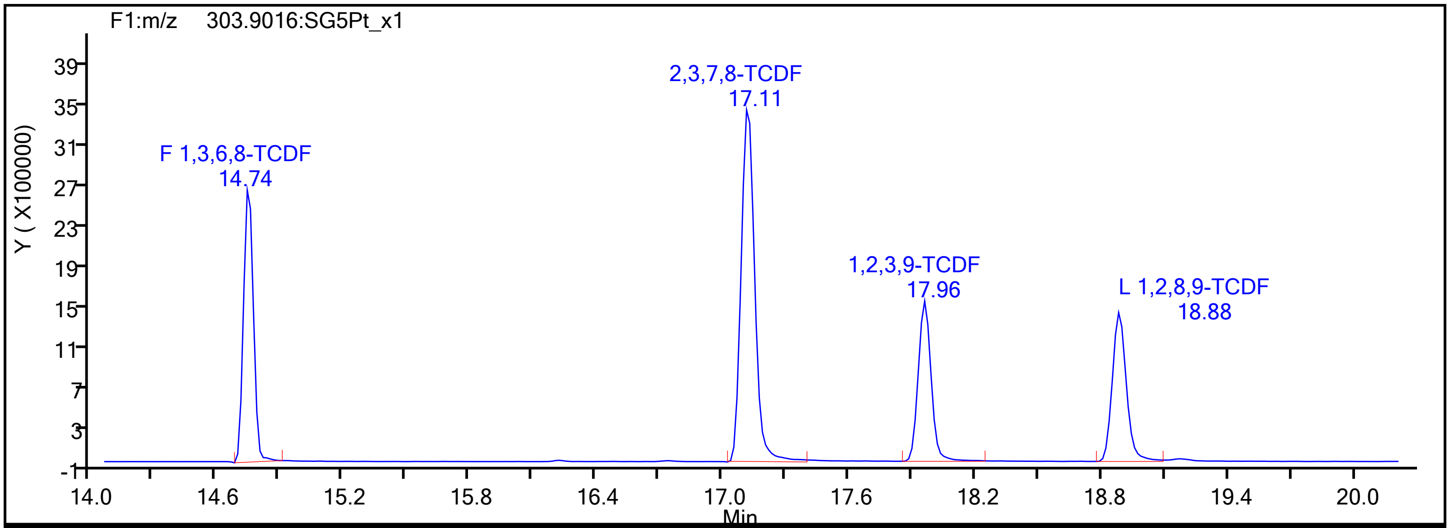

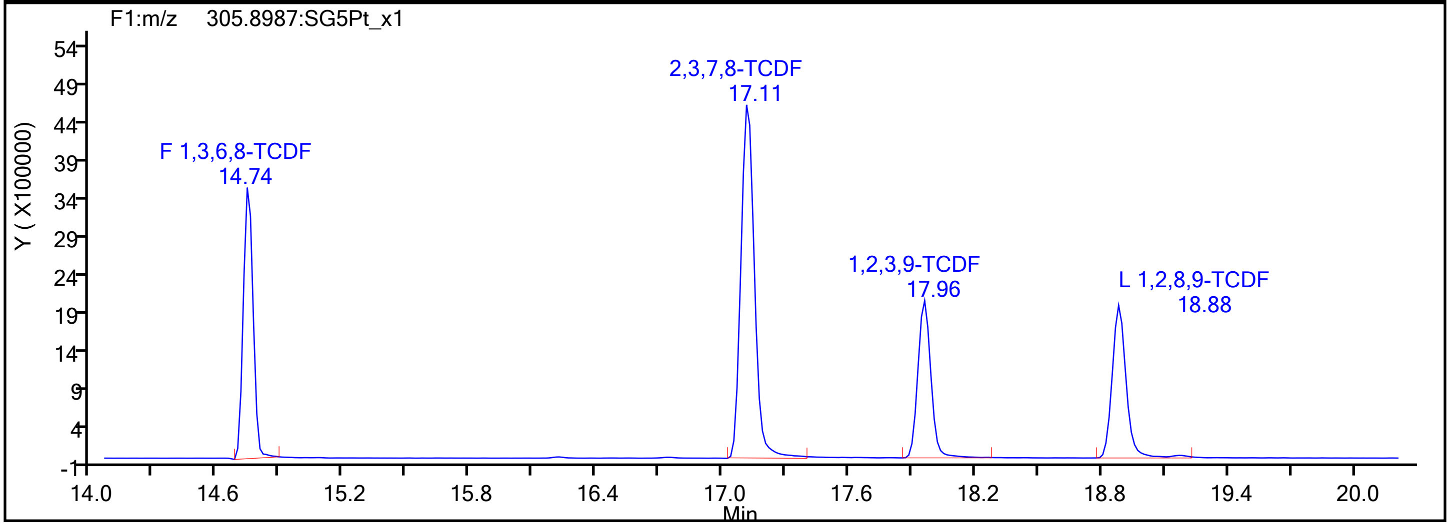

TCDF Interference Mass

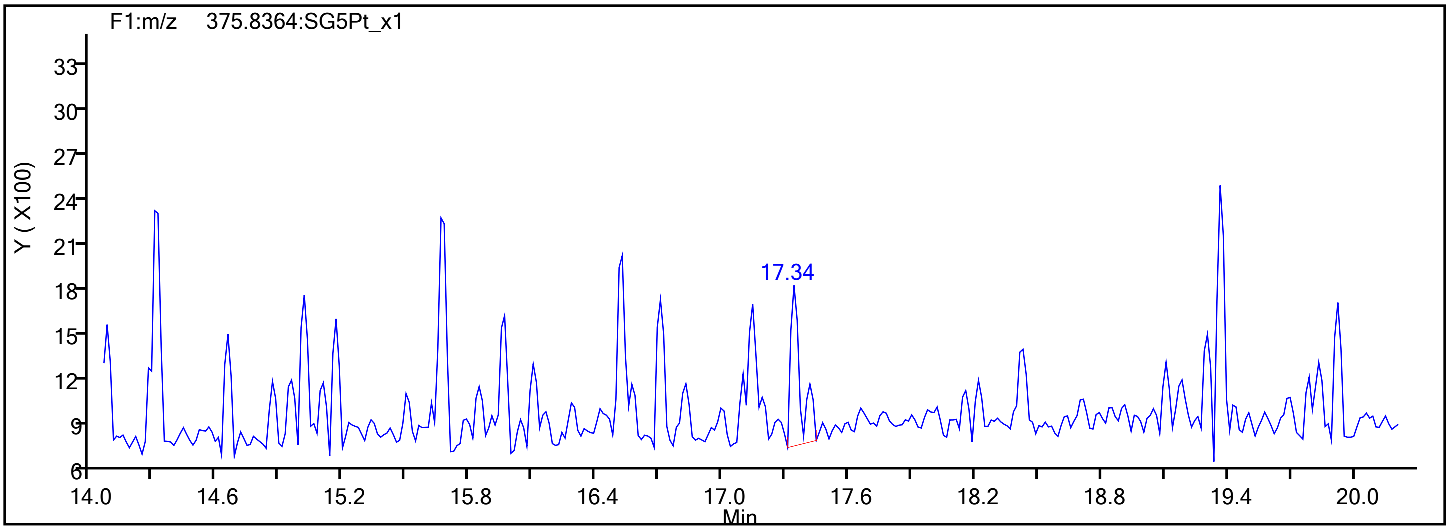

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Injection Date: 25-Jun-2020 17:43:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

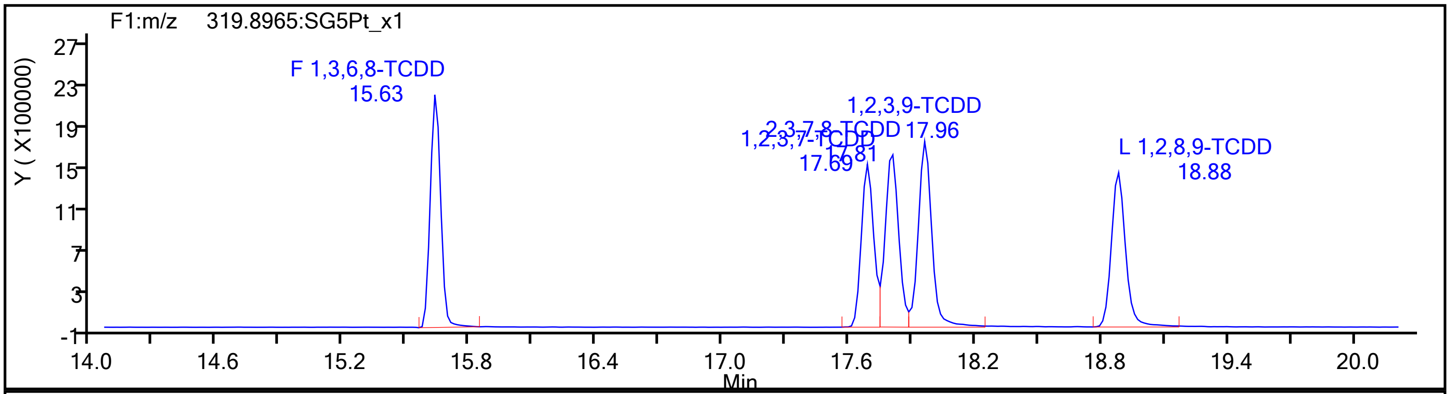

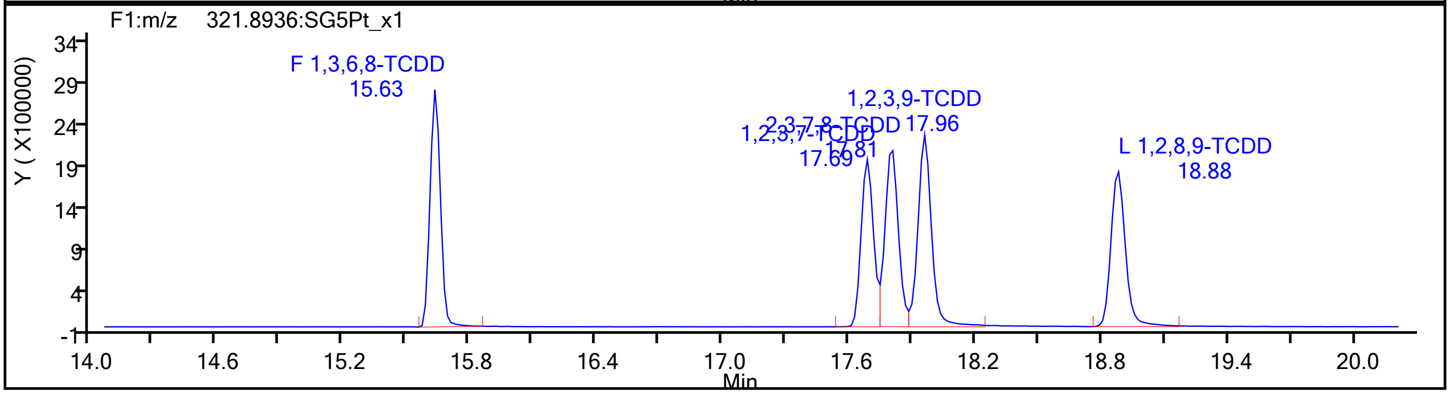

TCDD Standards

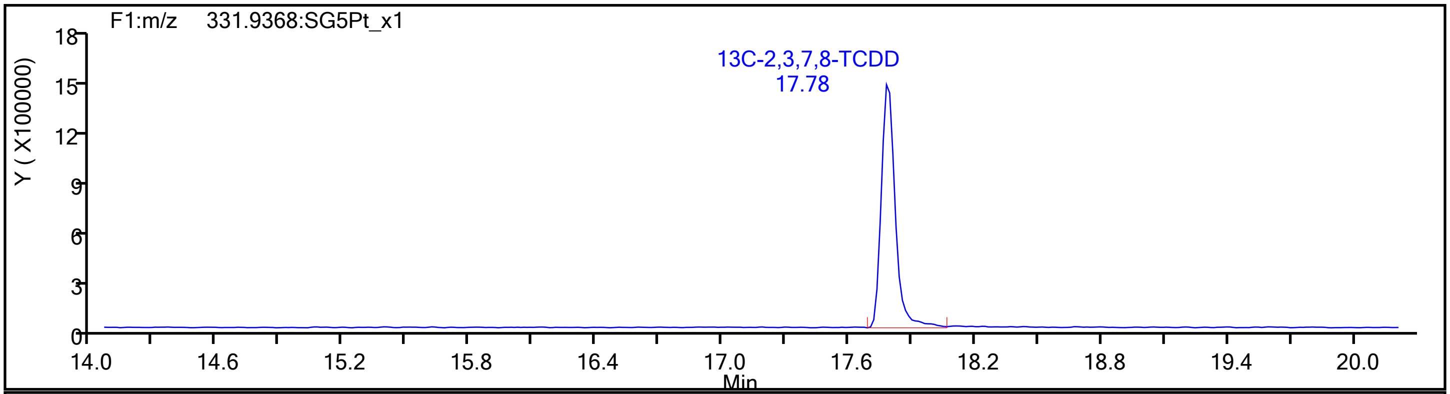

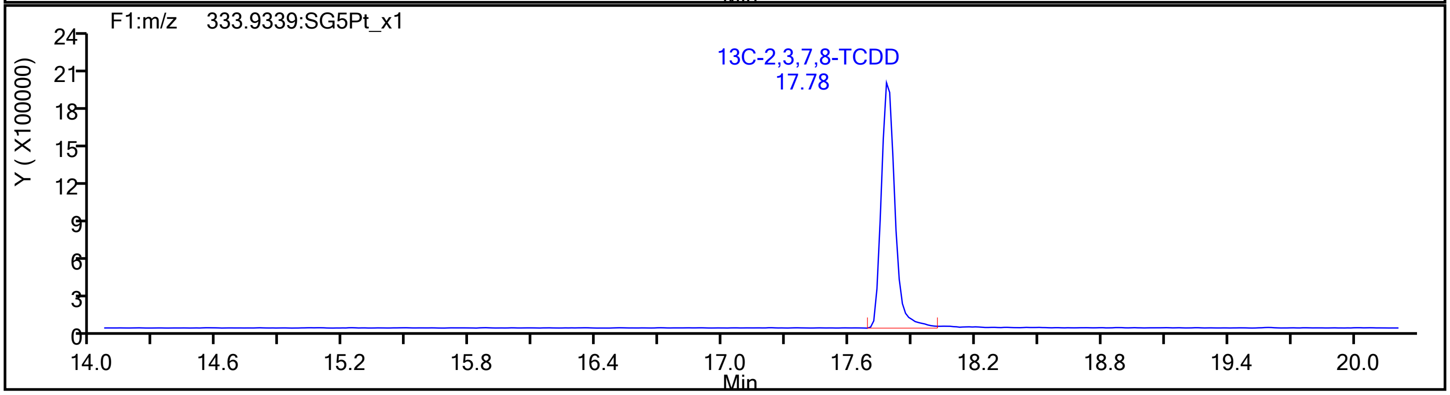

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

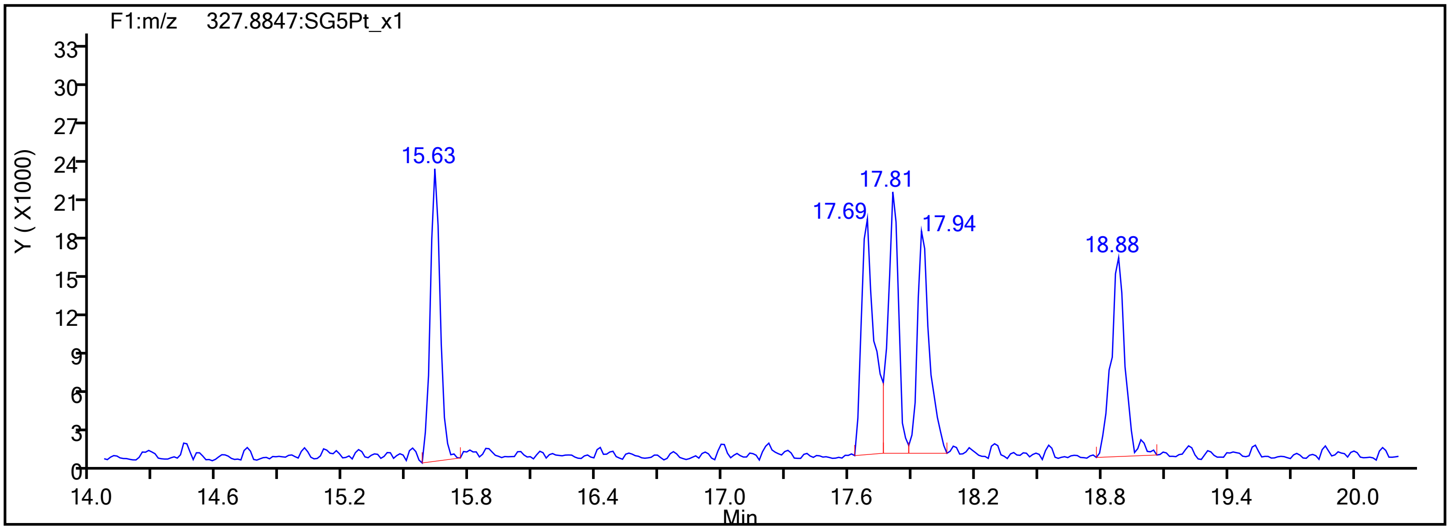

37Cl4-TCDD Standards

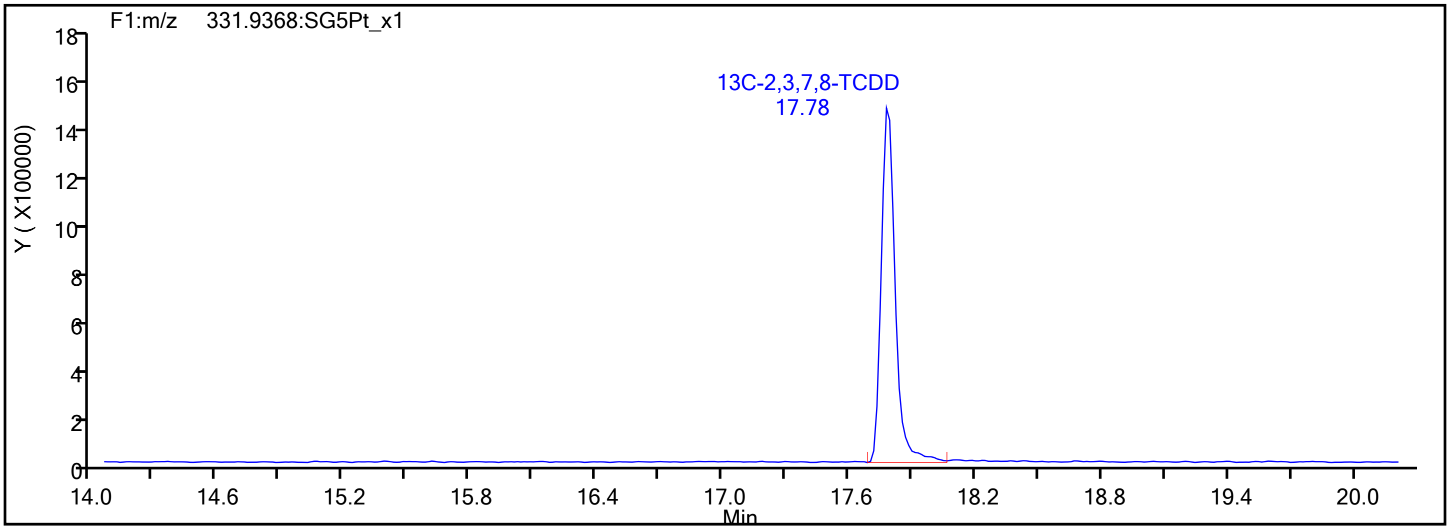

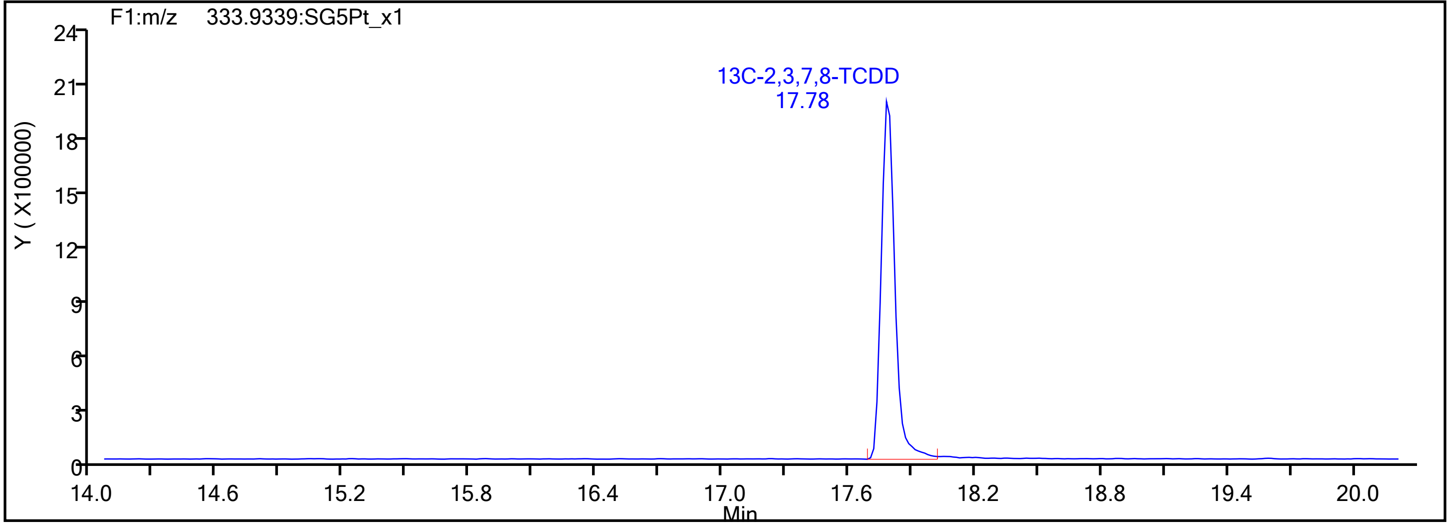

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

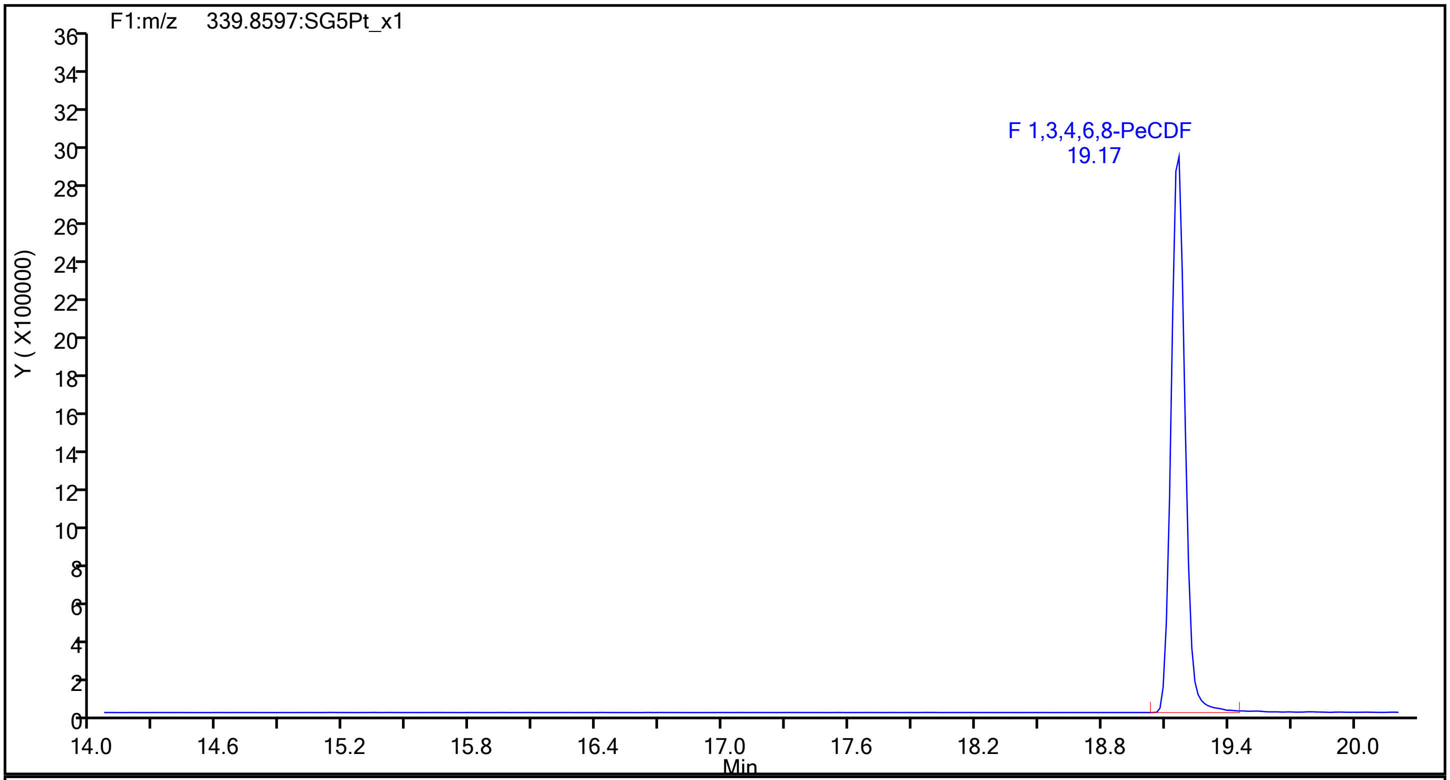

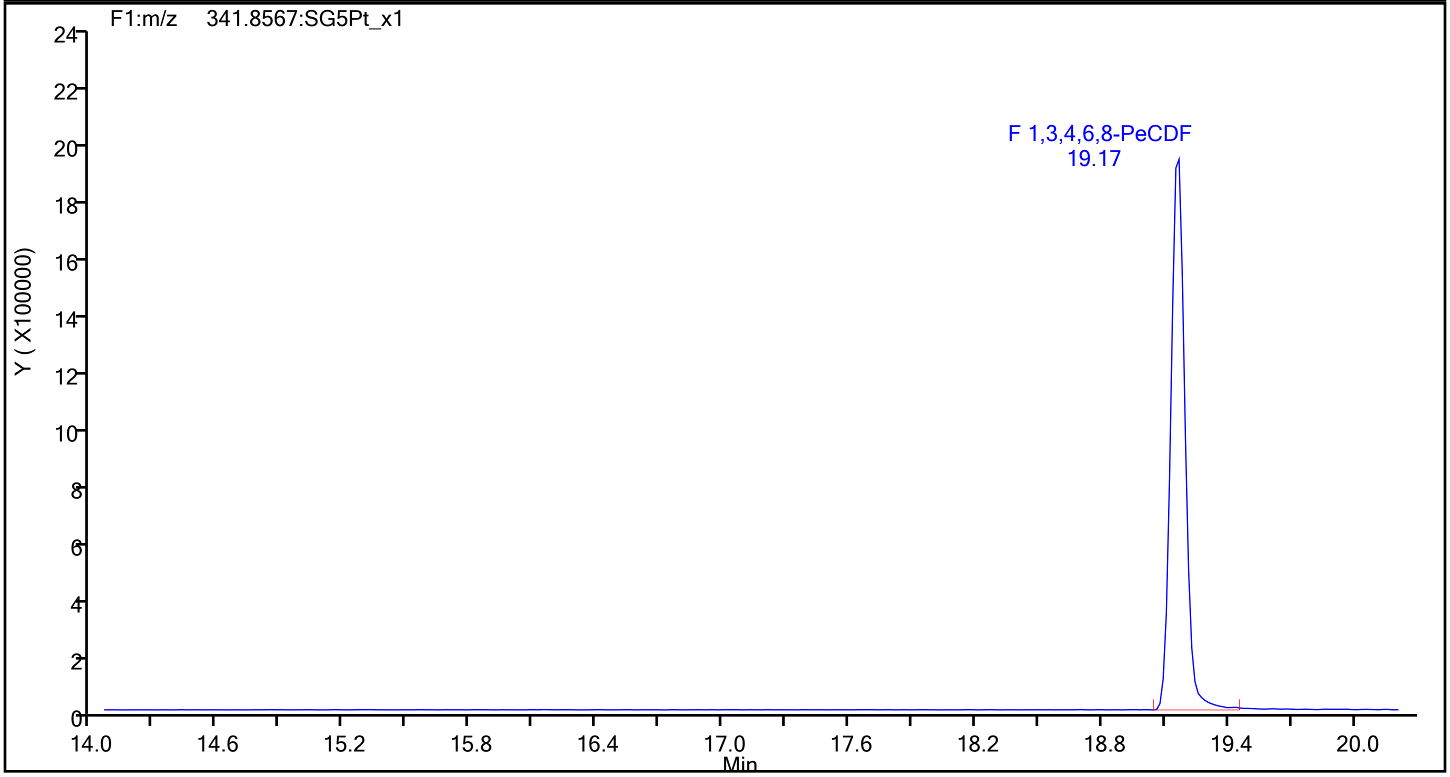

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Injection Date: 25-Jun-2020 17:43:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

F1 PeCDFs

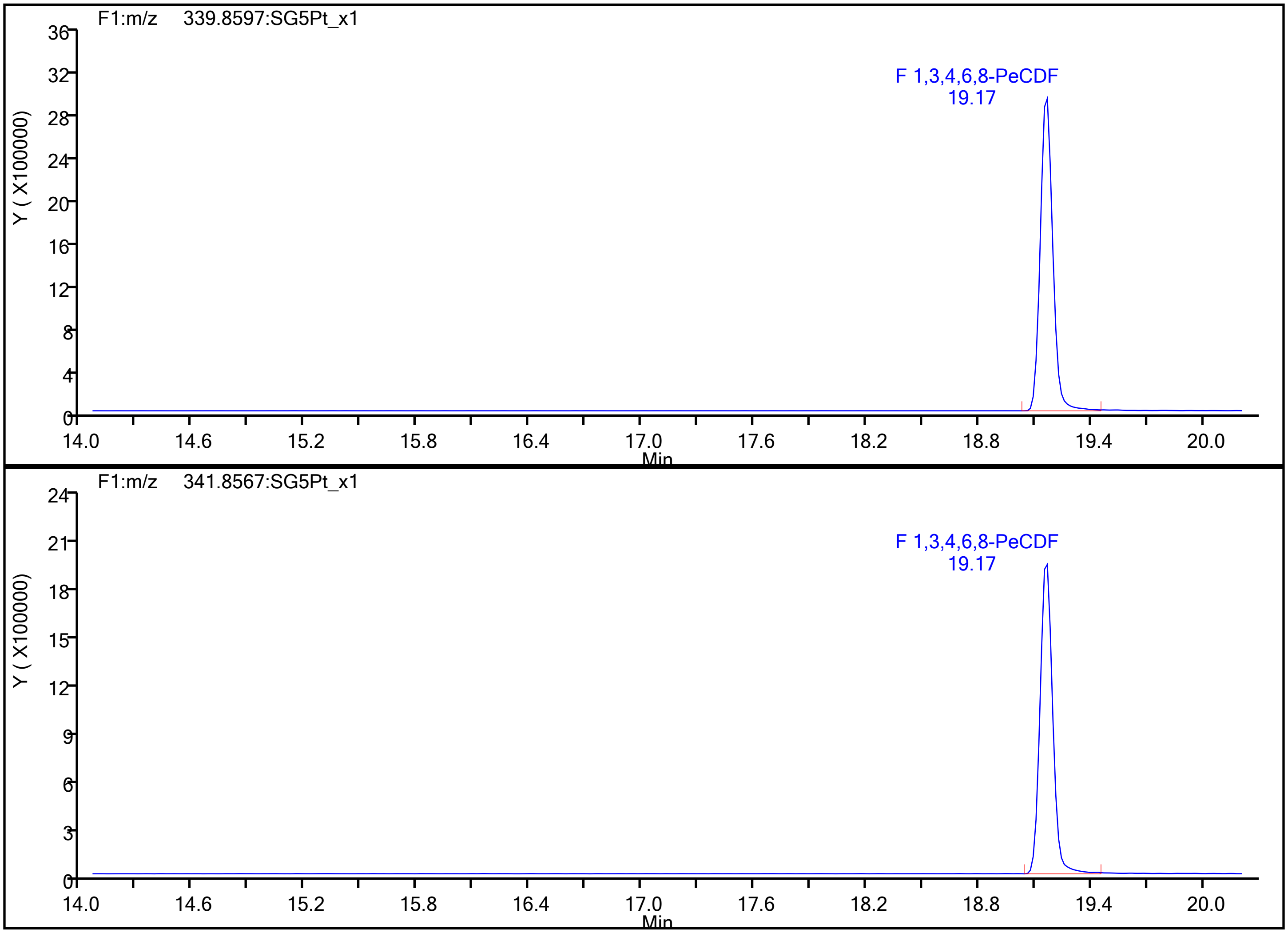

F1 PeCDFs Interference Mass

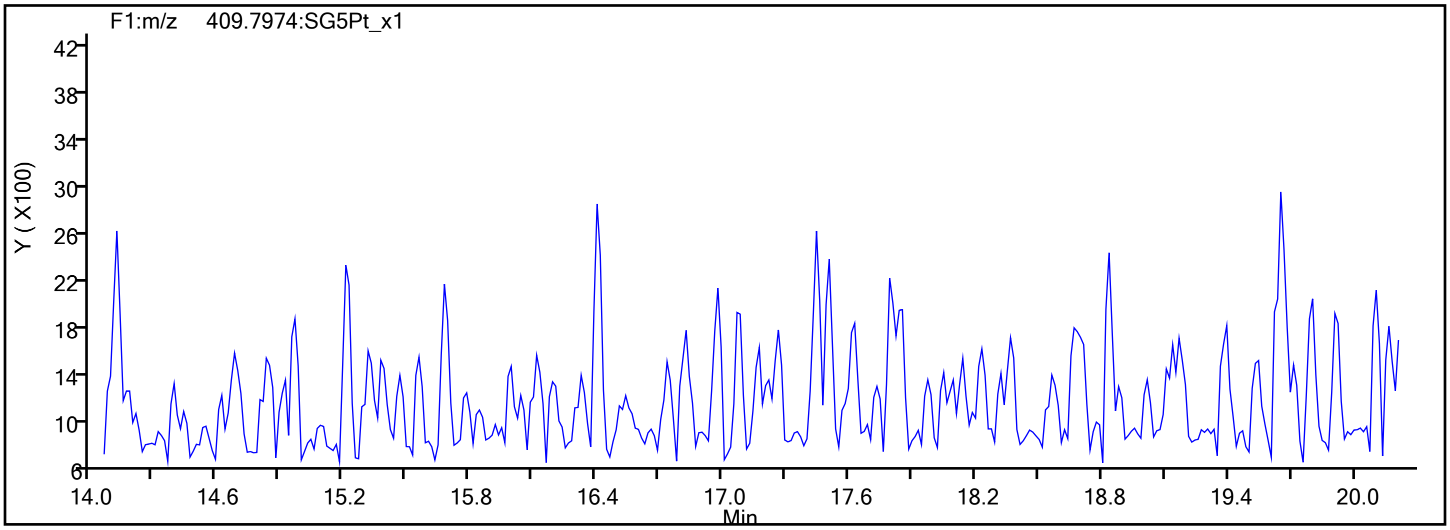

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

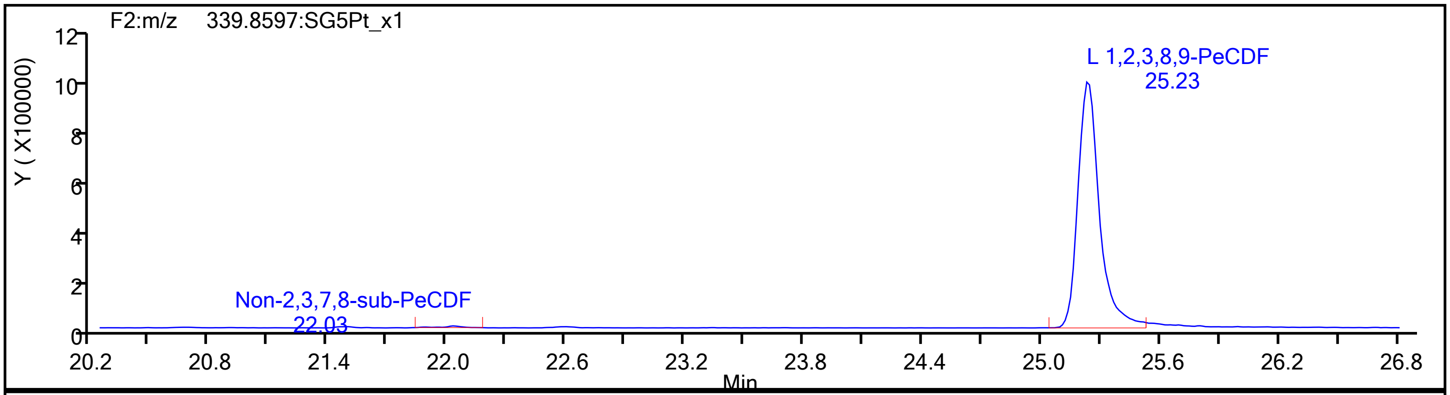

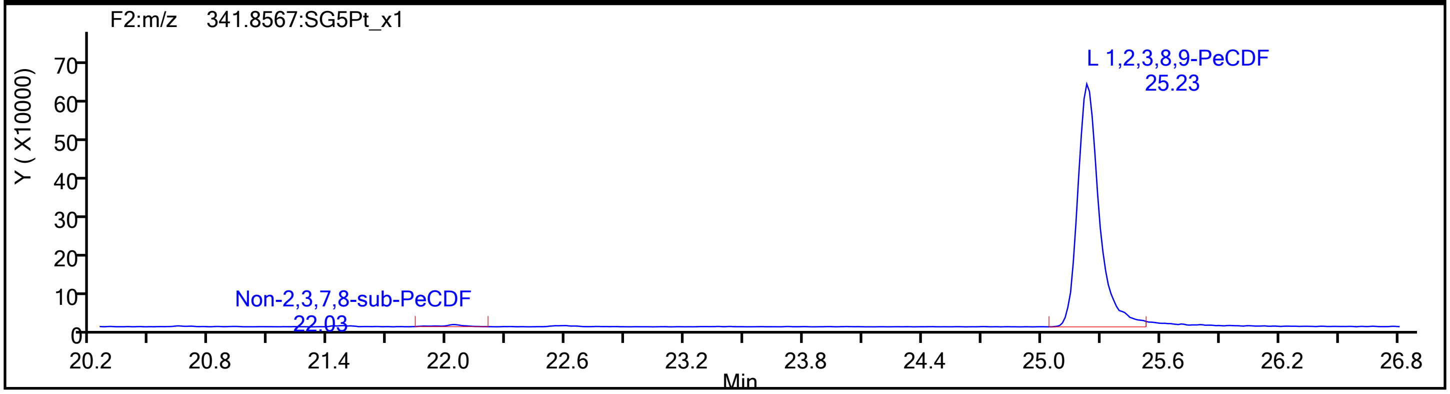

PeCDF Standards

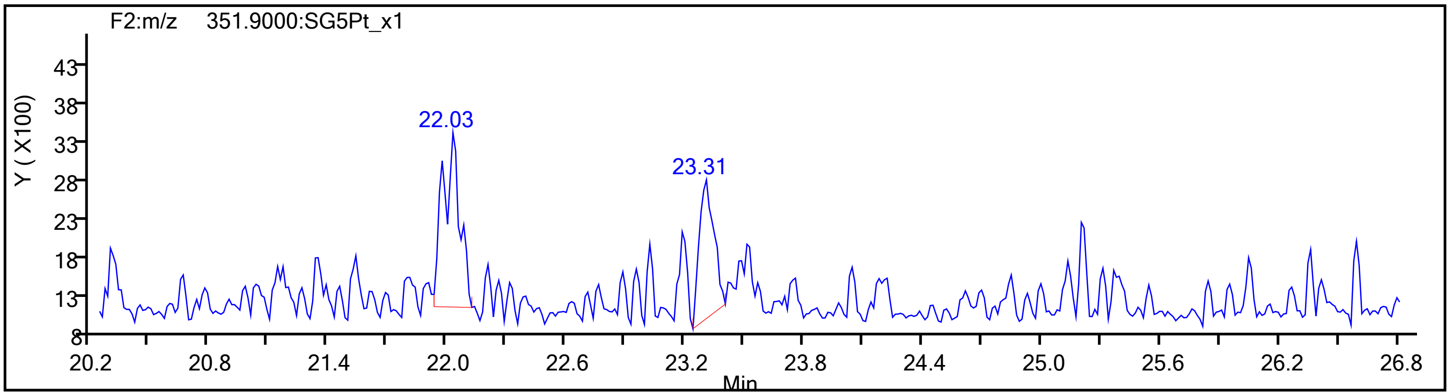

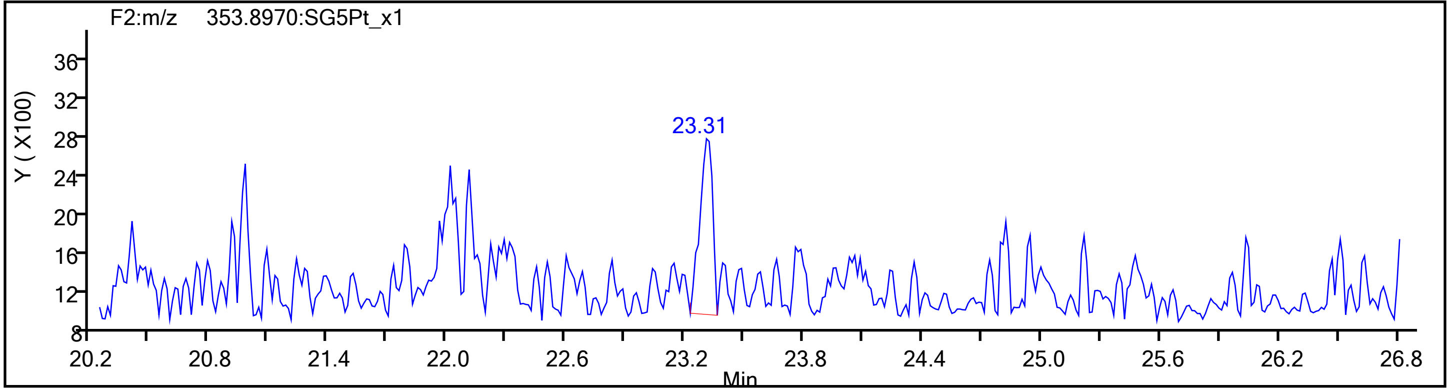

Report Date: 26-Jun-2020 13:15:55
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

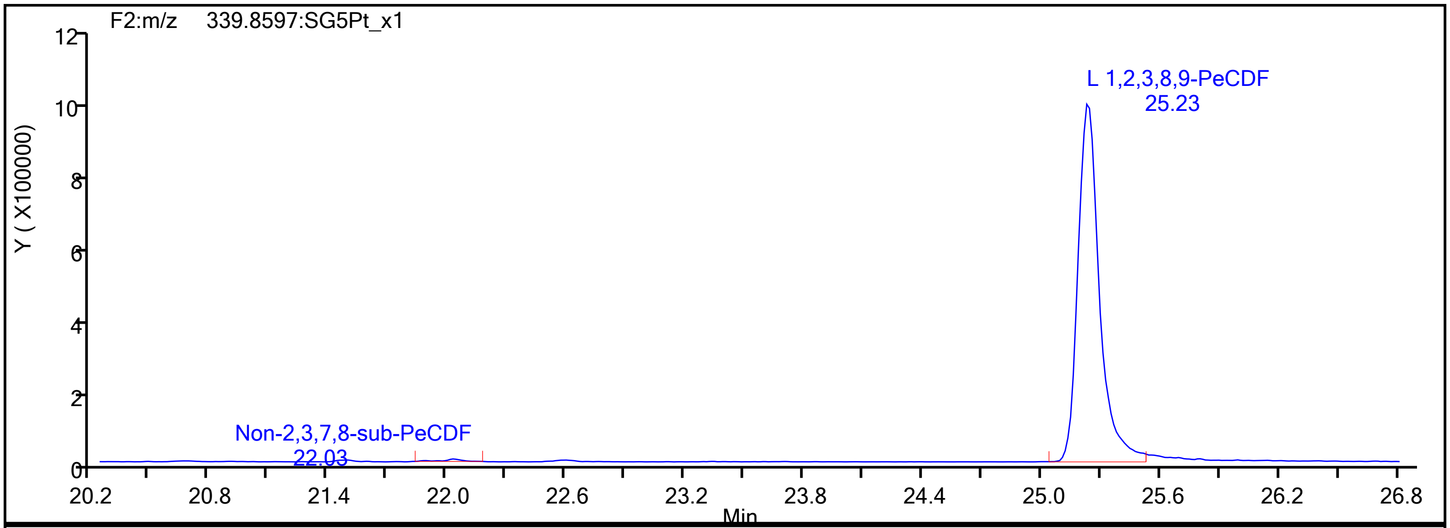

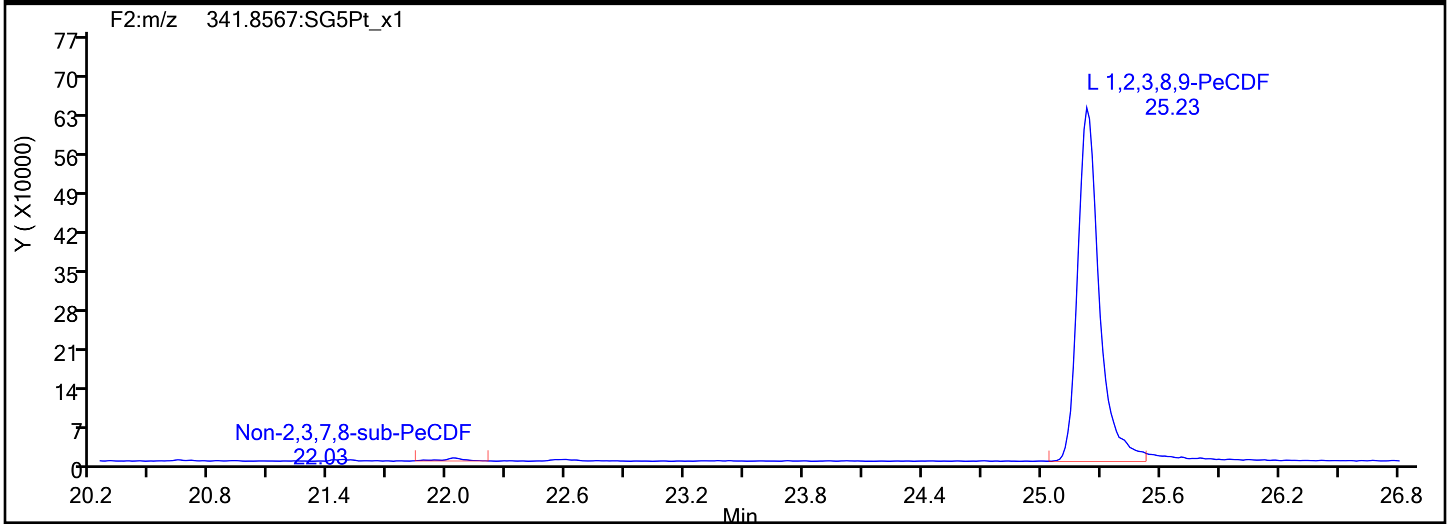

PeCDF Interference Mass

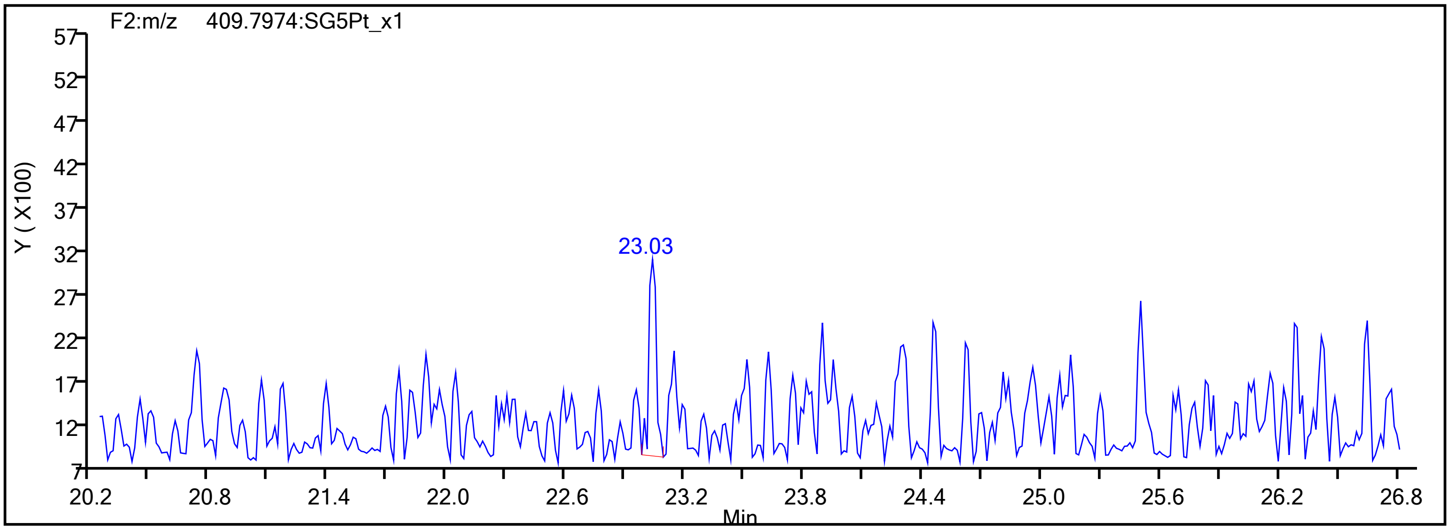

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Injection Date: 25-Jun-2020 17:43:00 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621 Sample Line#: 1
Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

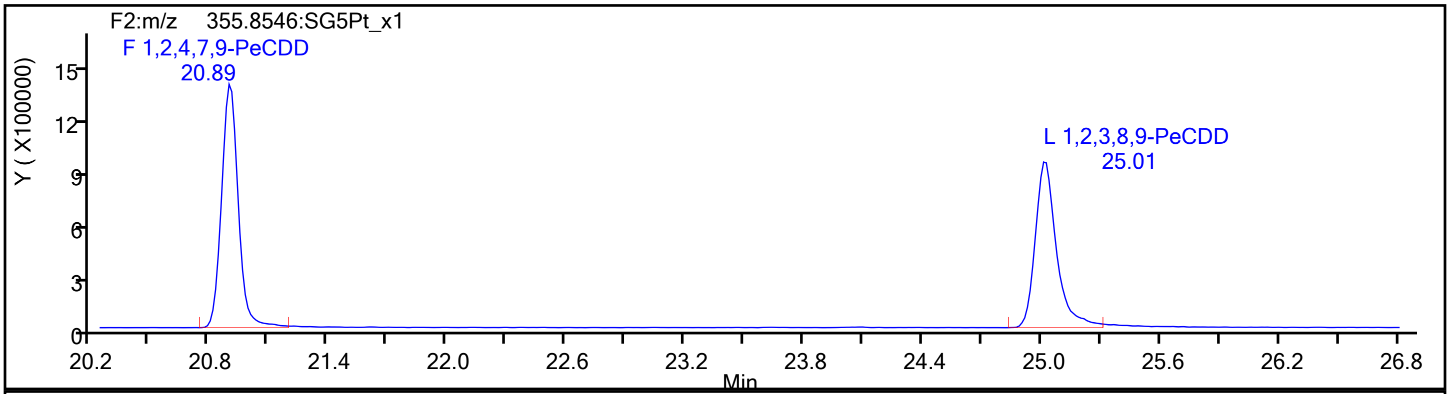

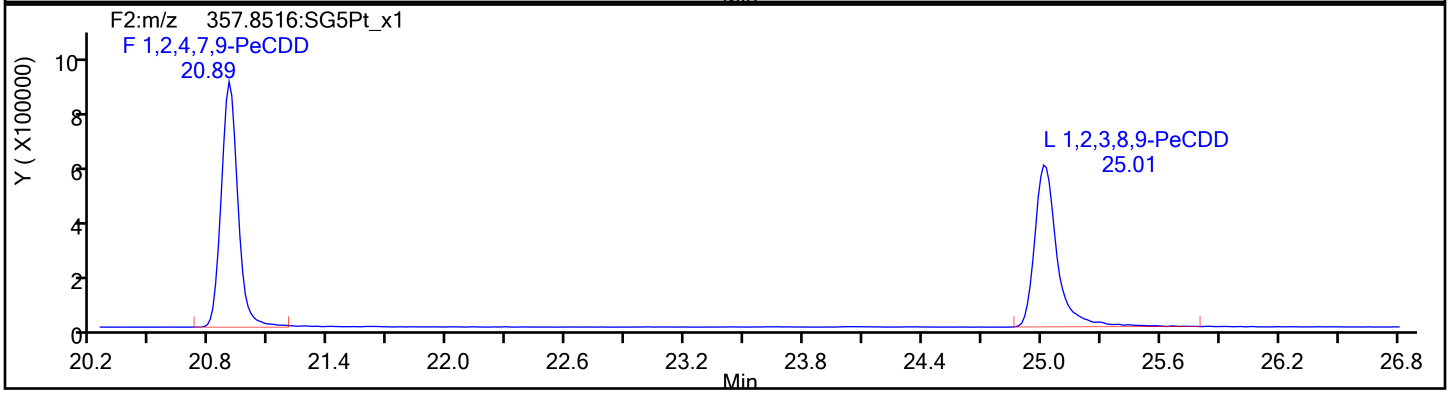

PeCDD Standards

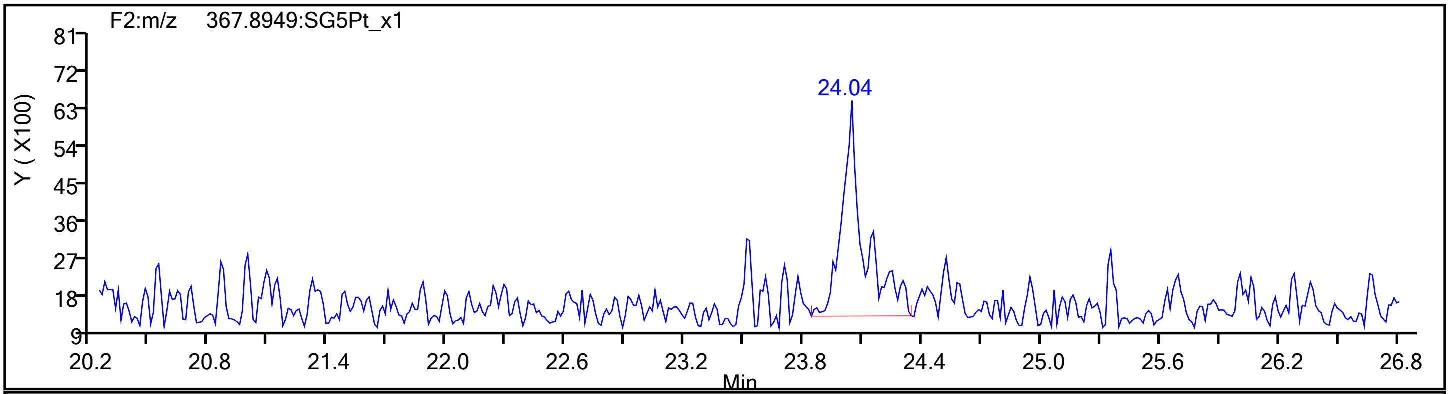

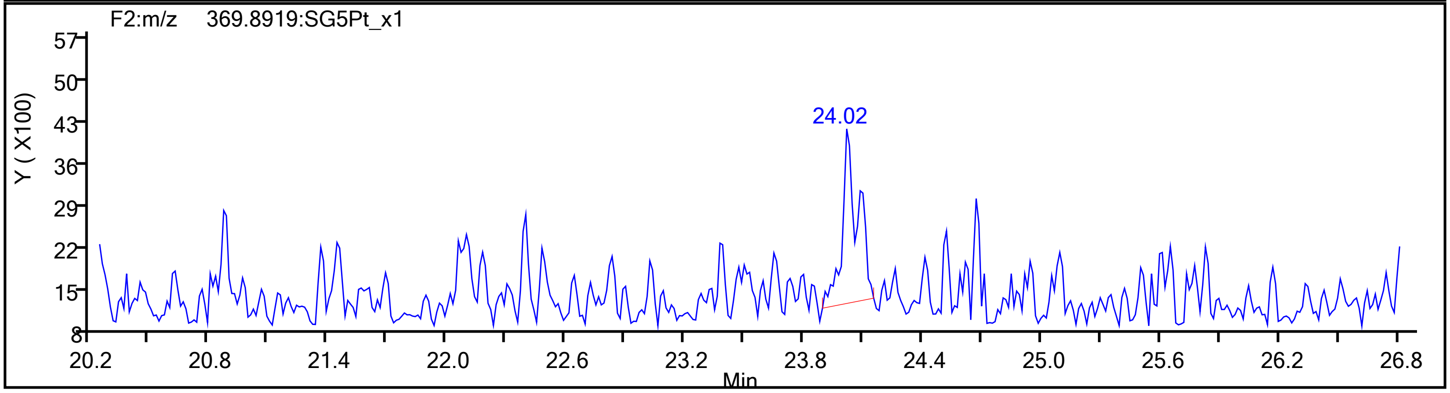

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d

Injection Date: 25-Jun-2020 17:43:00 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621 Sample Line#: 1

Column Type: DB-5 Column Dia: 0.32 mm

HxCDF

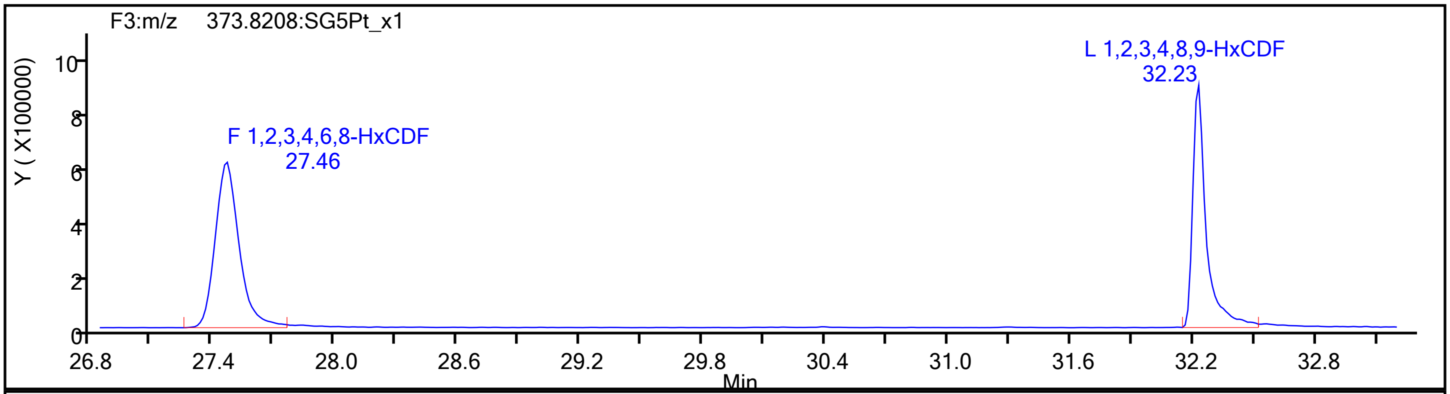

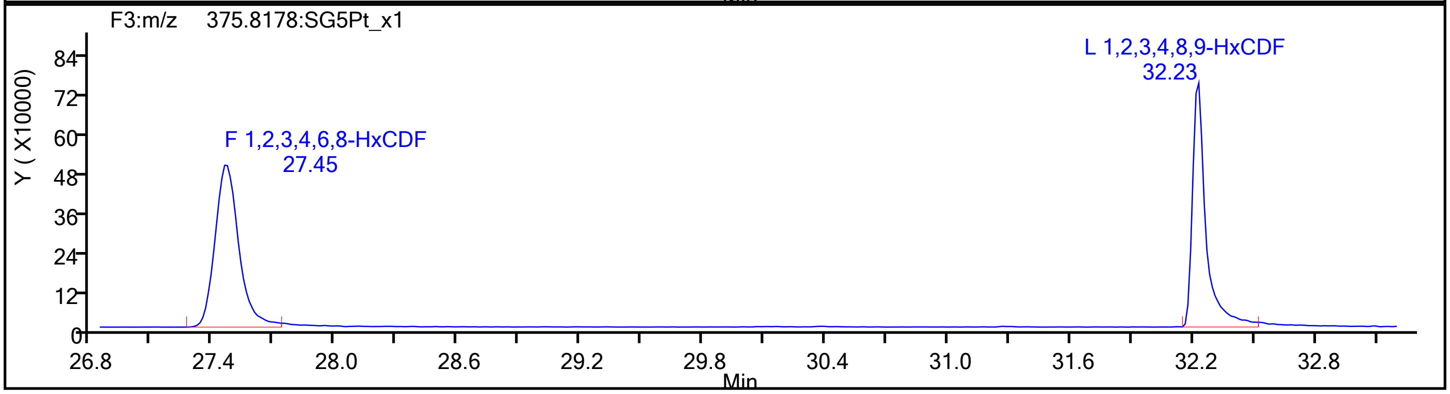

HxCDF Standards

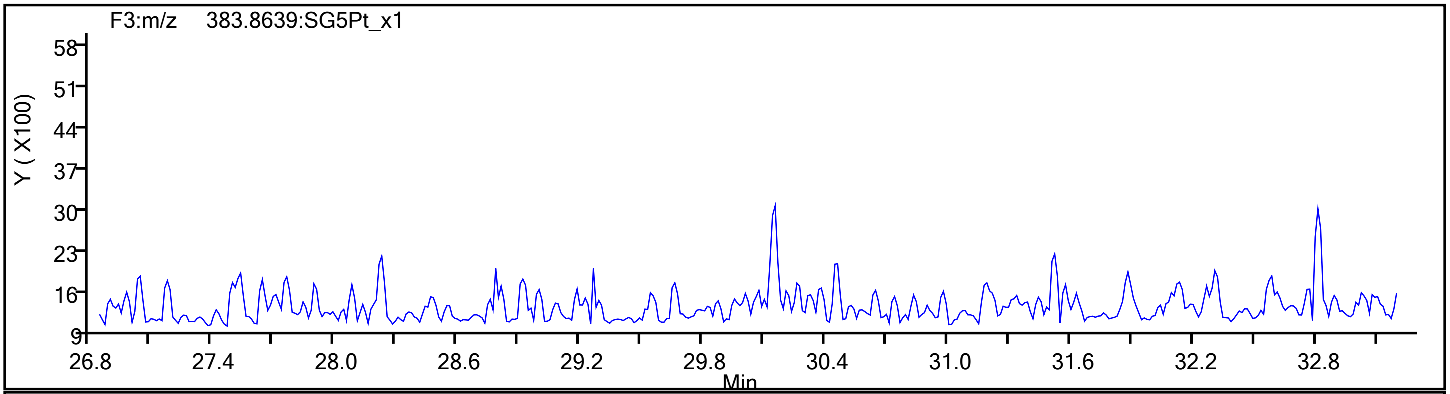

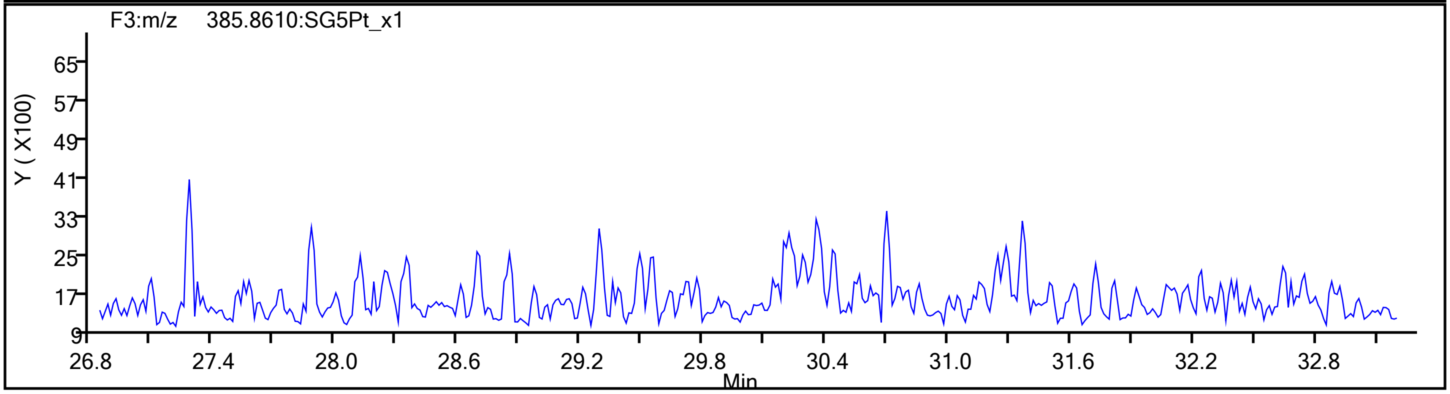

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

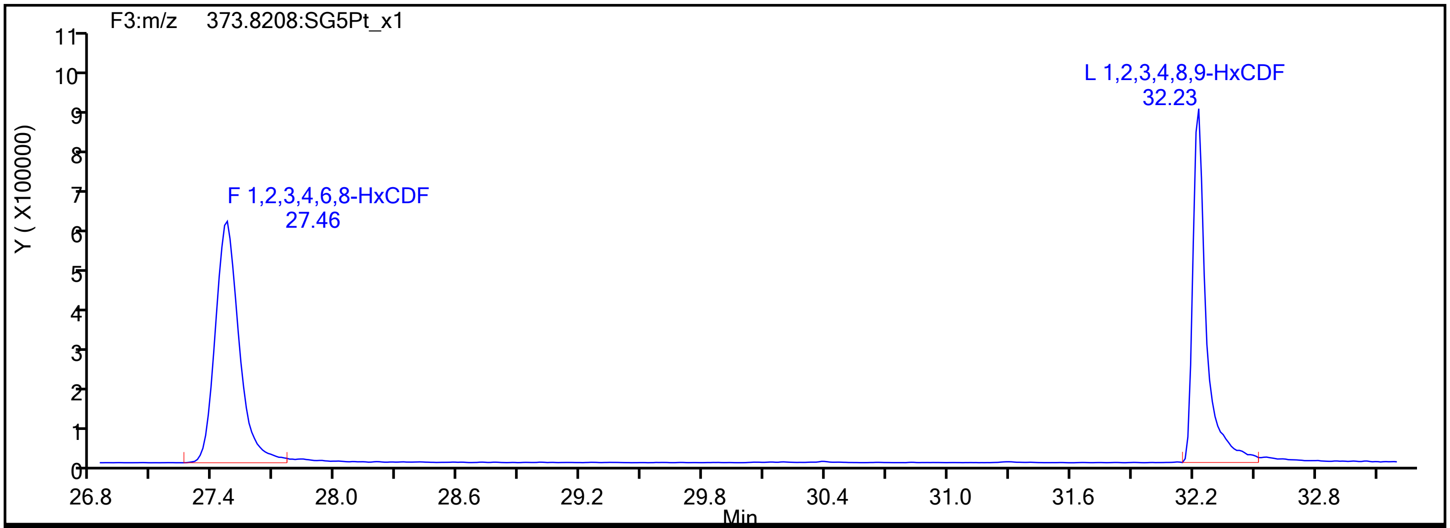

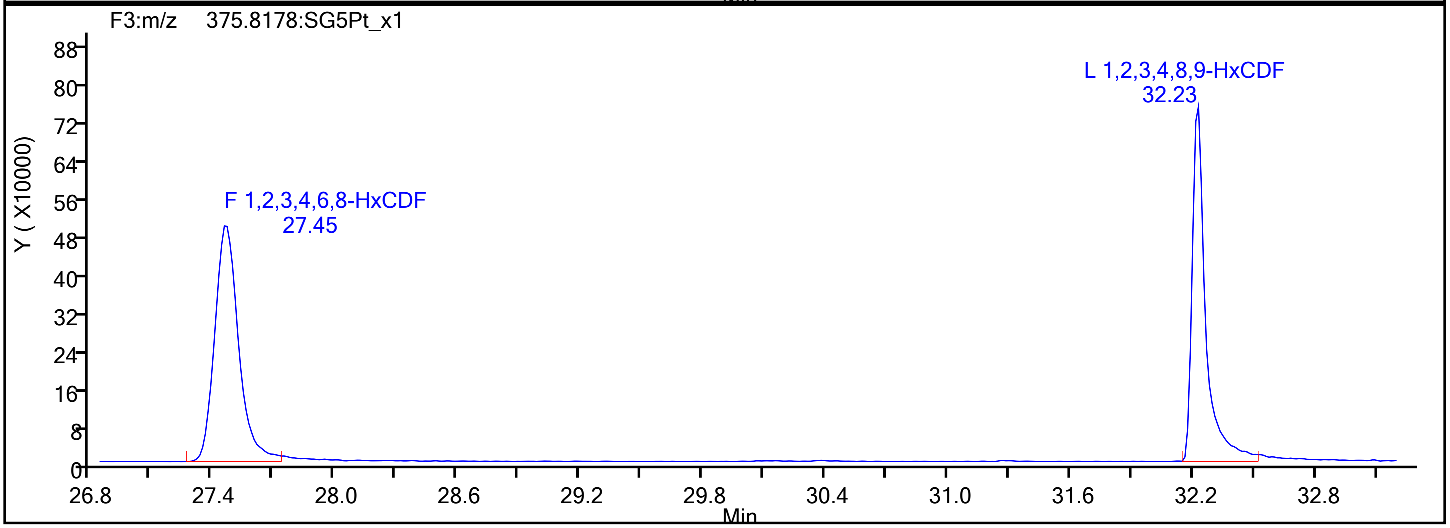

HxCDF Interference Mass

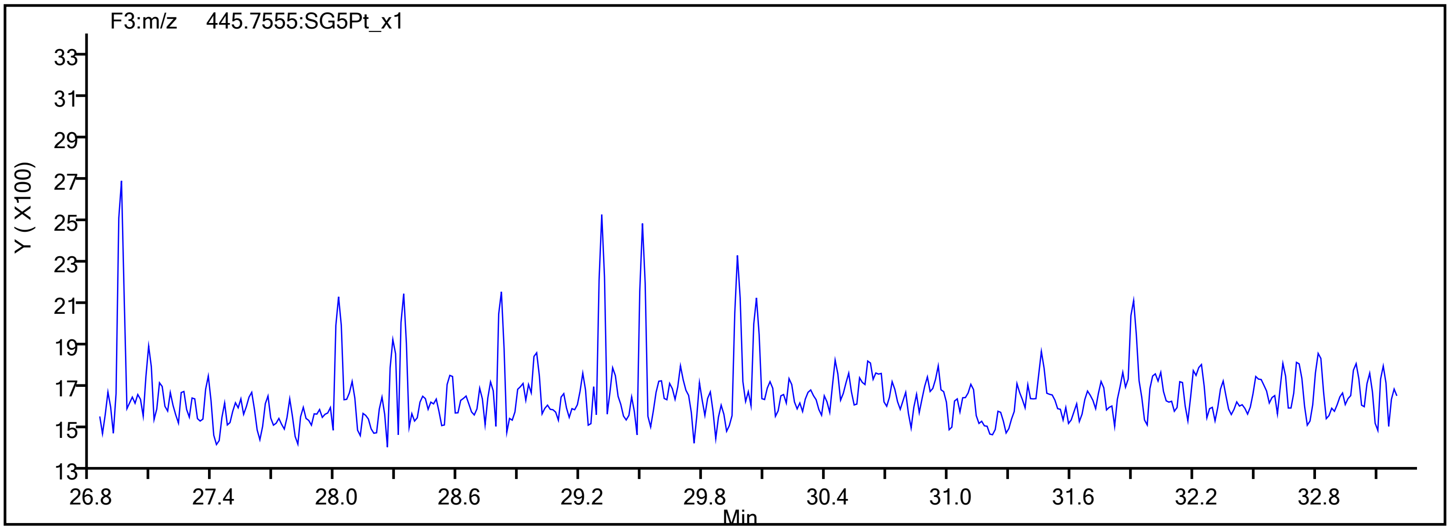

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Injection Date: 25-Jun-2020 17:43:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

HpCDF

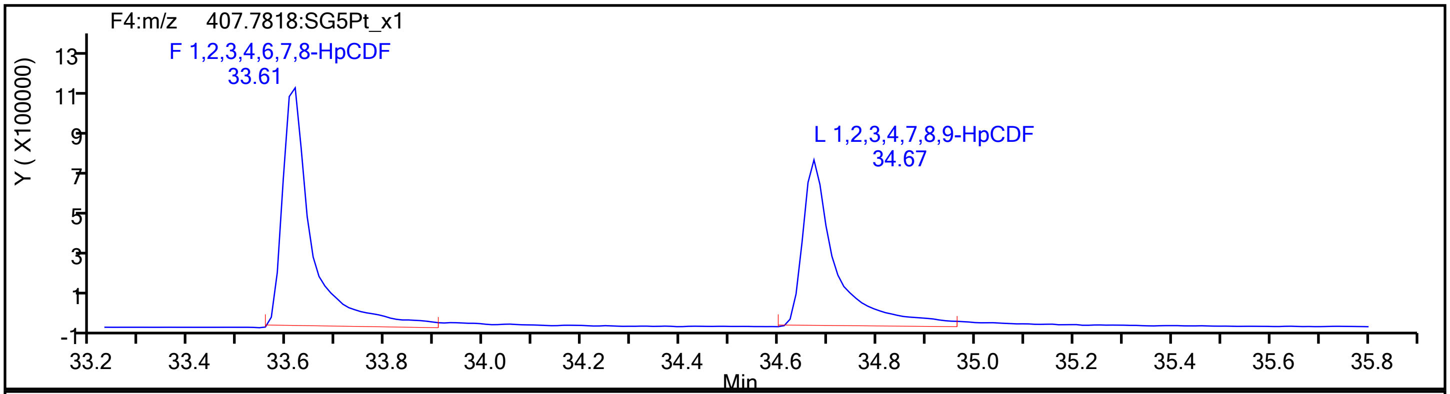

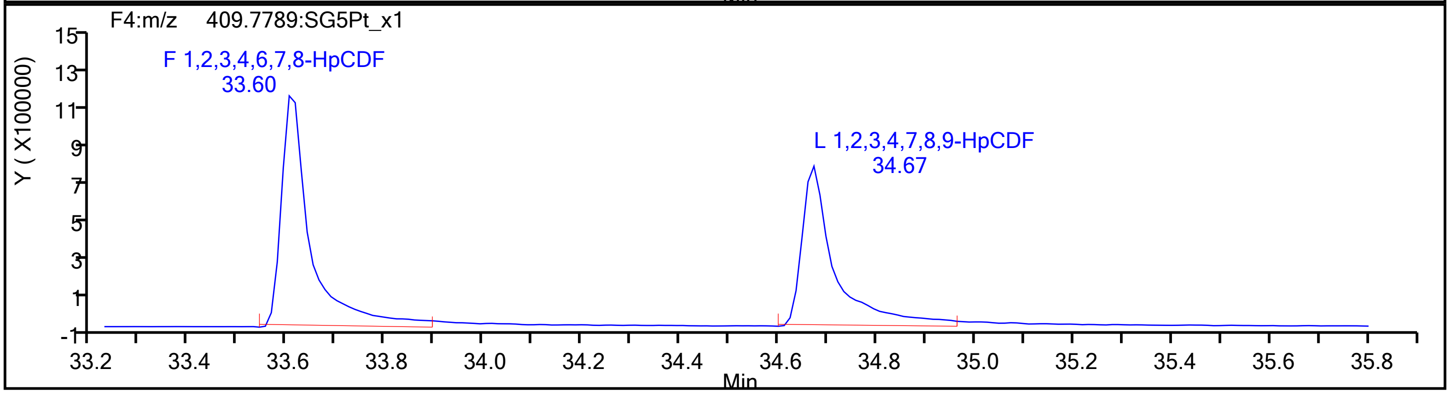

HpCDF Standards

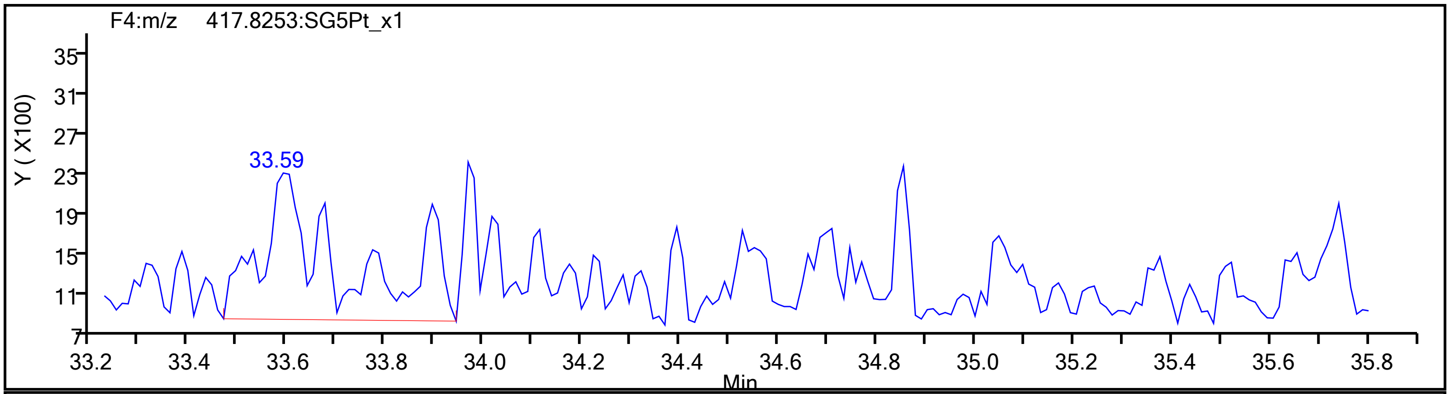

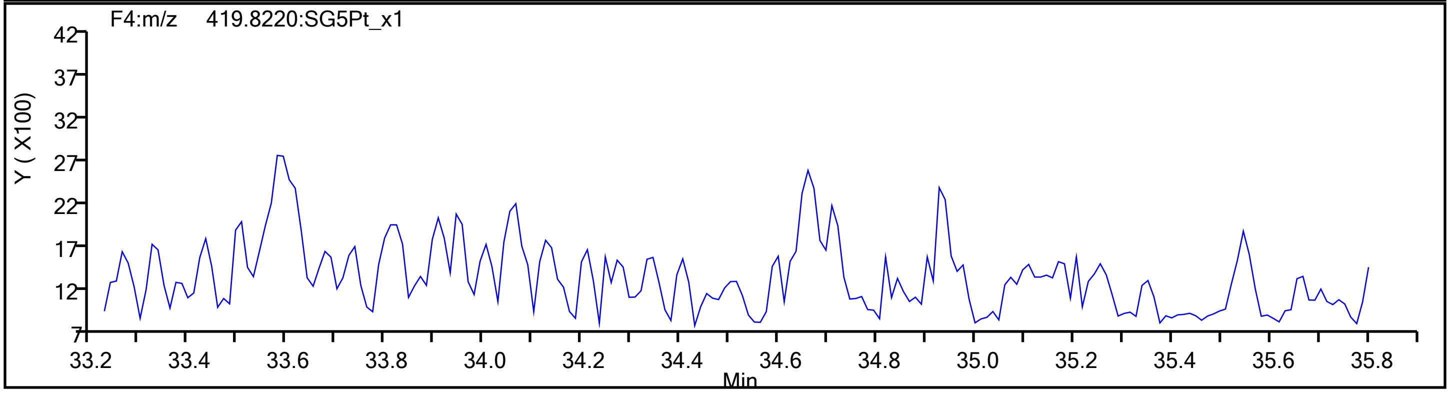

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d		
Injection Date:	25-Jun-2020 17:43:00	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	1
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

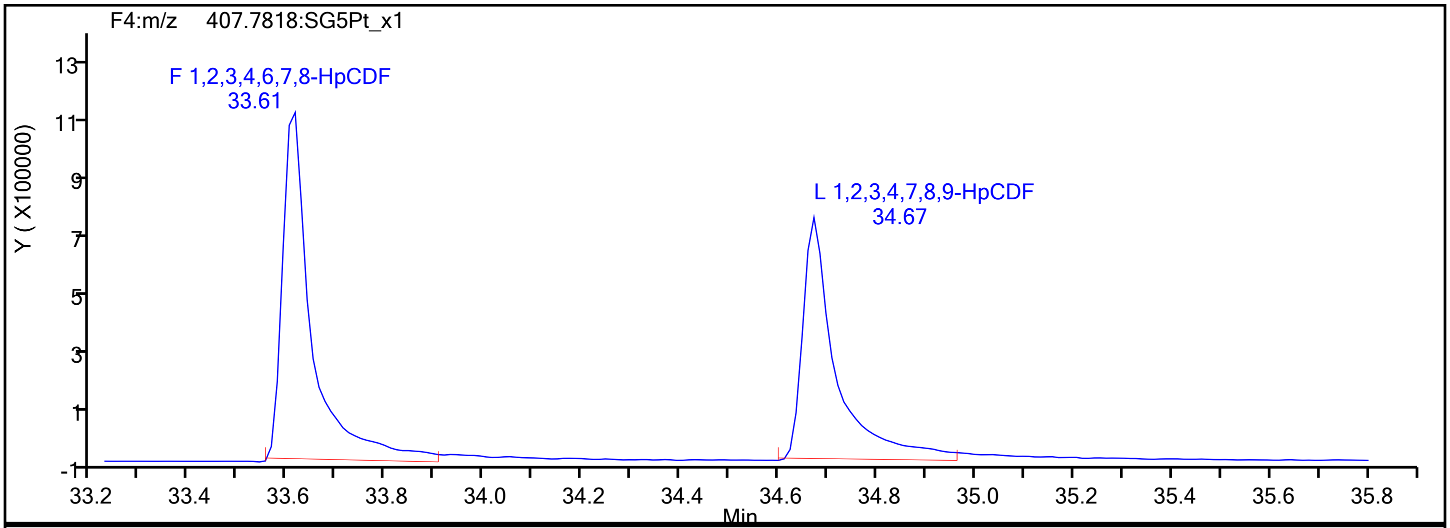

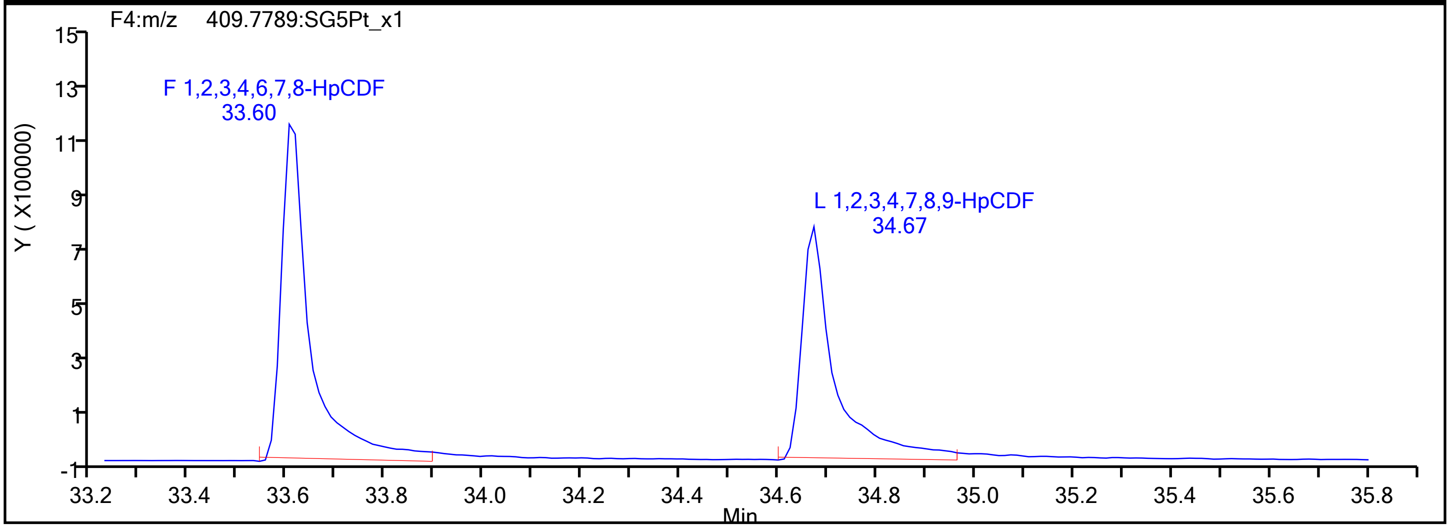

HpCDF Interference Mass

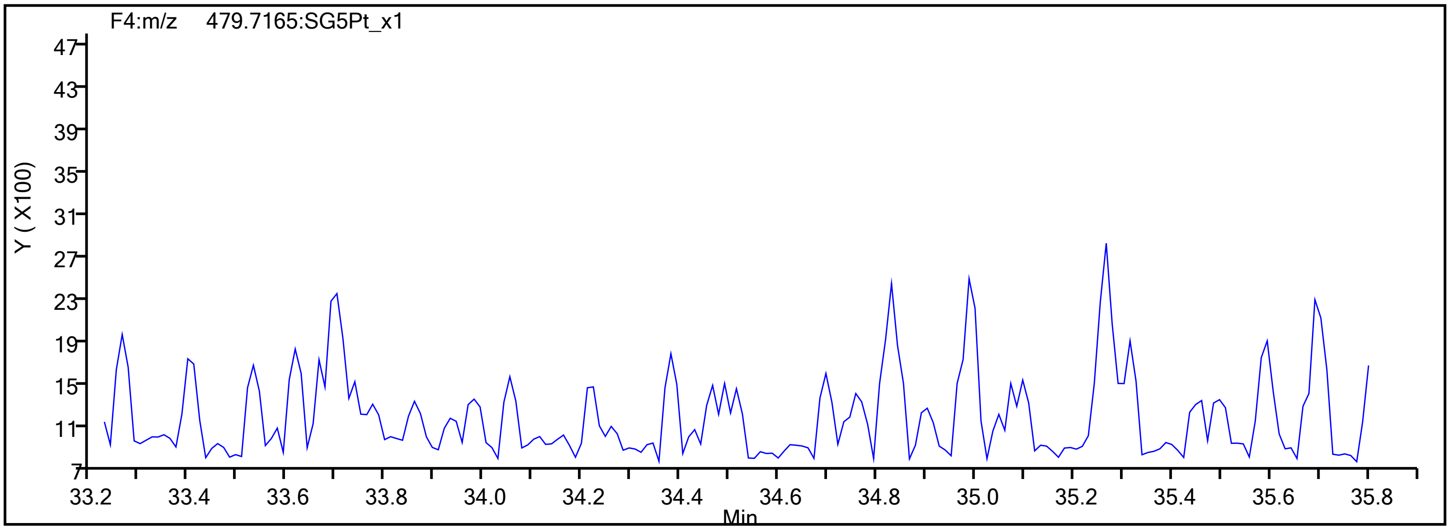

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d

Injection Date: 25-Jun-2020 17:43:00

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621

Sample Line#: 1

Column Type: DB-5

Column Dia: 0.32 mm

HpCDD

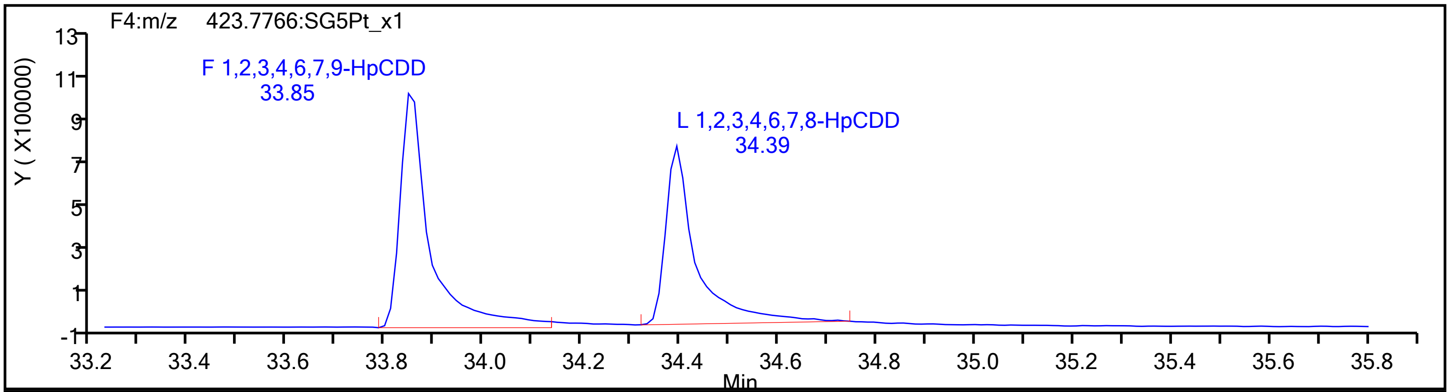

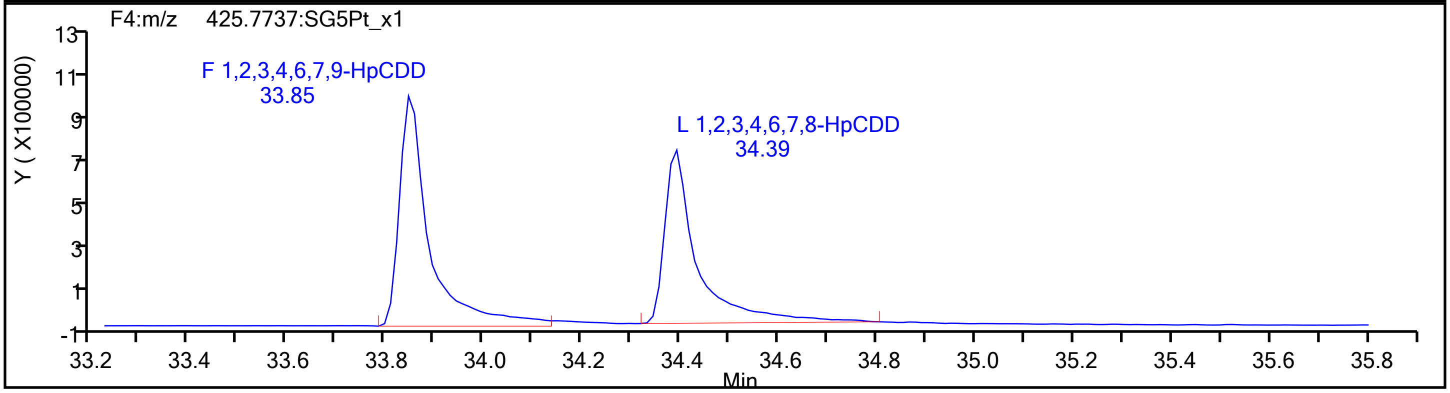

HpCDD Standards

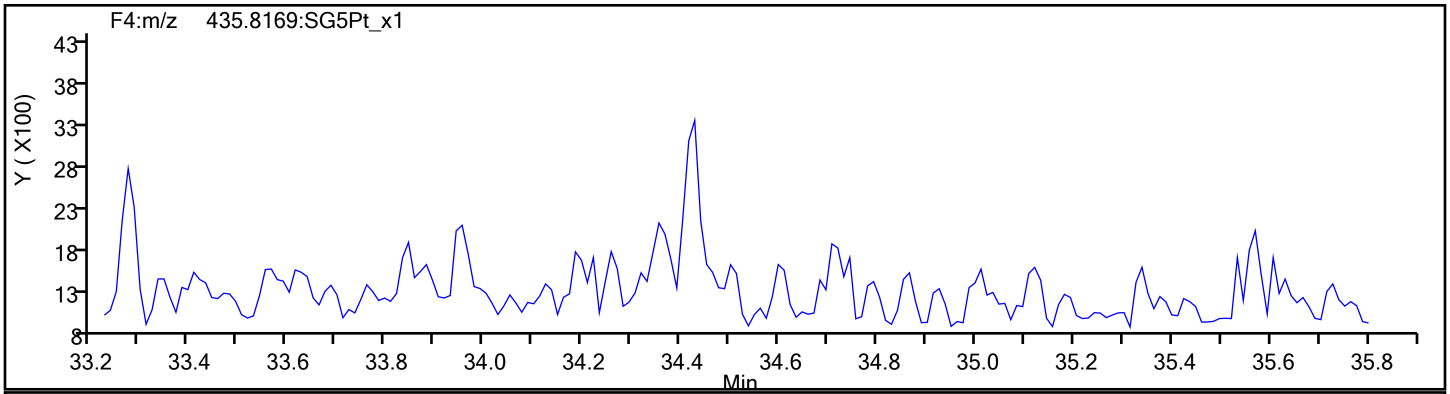

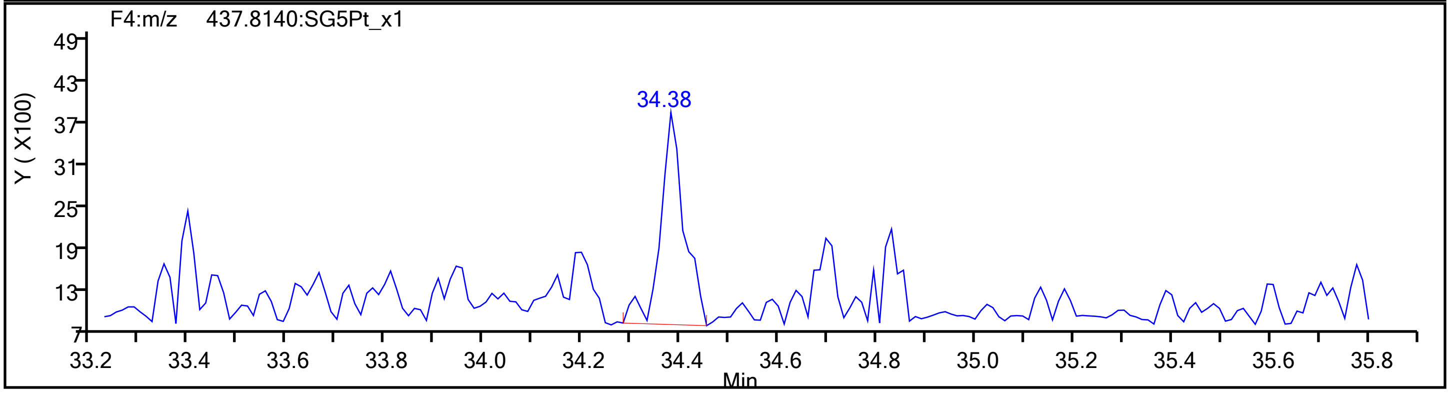

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Injection Date: 25-Jun-2020 17:43:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

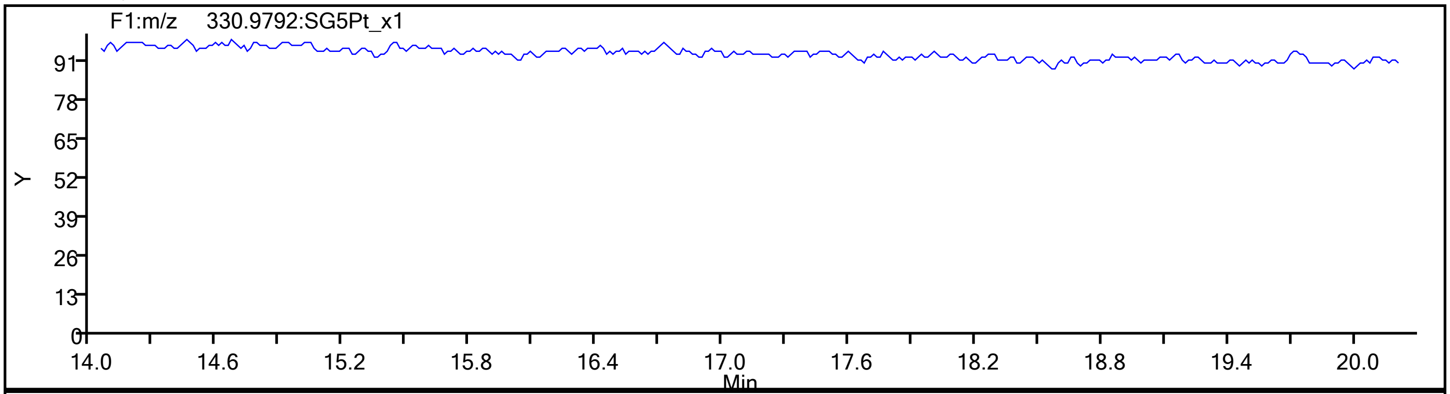

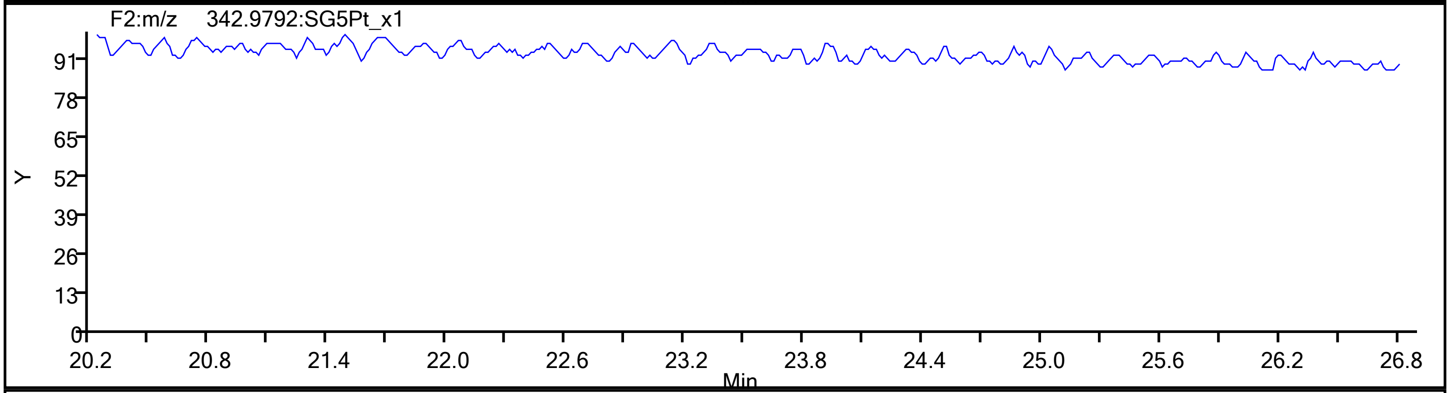

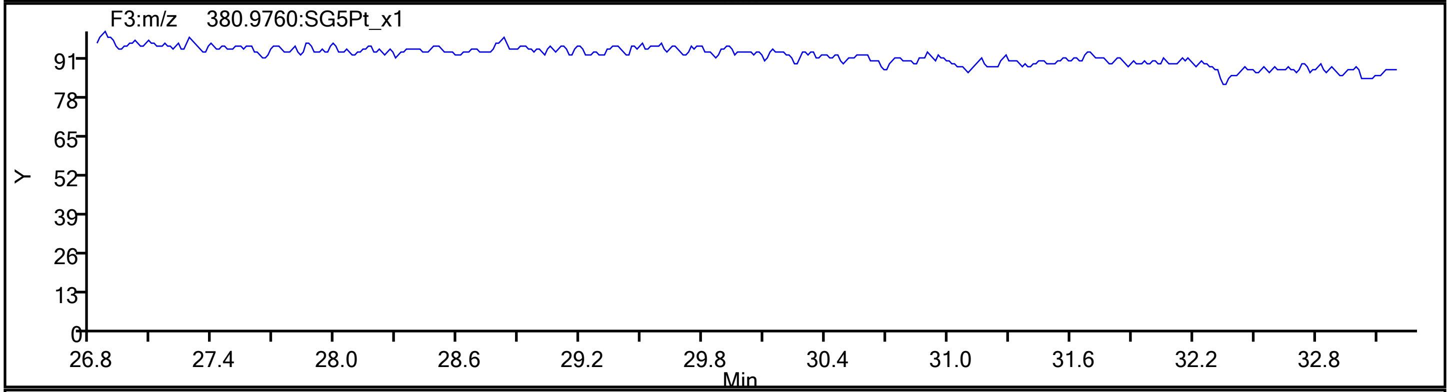

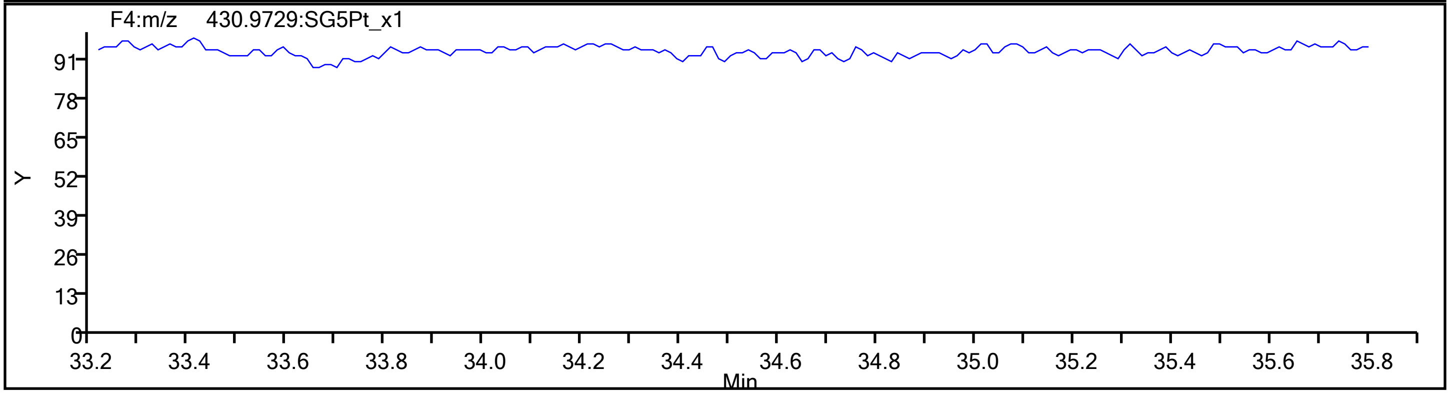

Report Date: 26-Jun-2020 13:15:55 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_1.d
Injection Date: 25-Jun-2020 17:43:00
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 1
Column Type: DB-5
Column Dia: 0.32 mm

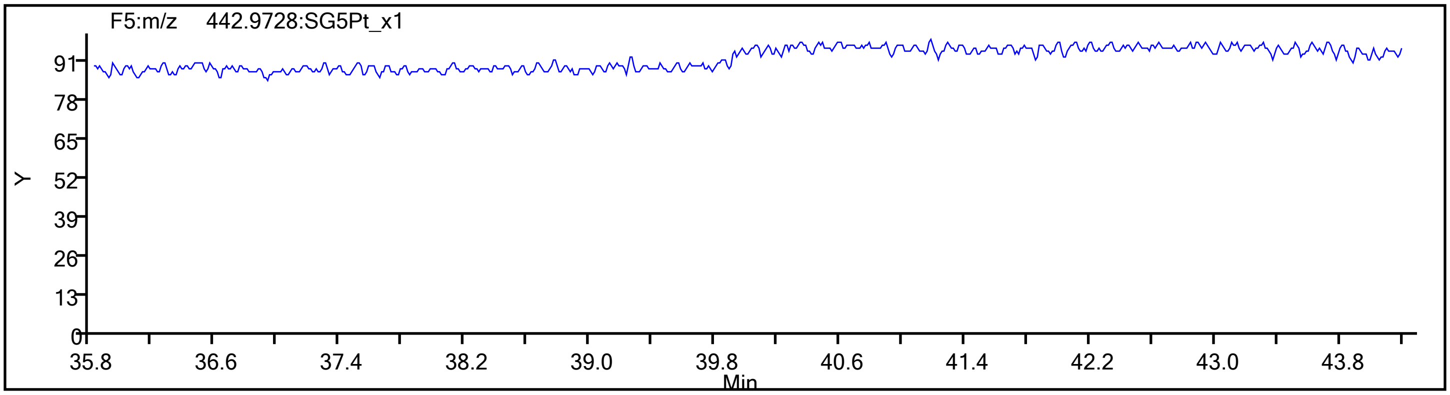

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d				
Lims ID:	CPS				
Client ID:					
Sample Type:	CPS				
Inject. Date:	27-May-2020 09:22:29	ALS Bottle#:	0	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	DB225RES				
Operator ID:		Instrument ID:	11D2		
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m				
Limit Group:	HR - 1613B - ICAL				
Last Update:	28-May-2020 09:54:27	Calib Date:	27-May-2020 13:12:17		
Integrator:	Picker				
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d				
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR		
Process Host:	CTX1014				
First Level Reviewer: stephensk		Date:	28-May-2020 09:43:58		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
2,3,7,8-TCDF	16.481	92299019	0.78	1.0809	37.4	37.4	0.0919	0.0919		
D 13C-2,3,7,8-TCDF	16.467	91242559	0.79	1.4910					0.00	
D 13C-2,3,7,8-TCDD	15.082	57738065	0.76	0.9832					0.00	
2,3,7,8-TCDD	15.109	59375587	0.79	1.2196	33.7	33.7	0.0919	0.0919		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040	Amount Added: 2.00	Units: uL

Report Date: 28-May-2020 09:54:28 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d			
Lims ID:	CPS			
Client ID:				
Sample Type:	CPS			
Inject. Date:	27-May-2020 09:22:29	ALS Bottle#:	0	Worklist Smp#: 1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000	
Sample Info:				
Misc. Info.:	DB225RES			
Operator ID:		Instrument ID:	11D2	
Method:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\DXN_DB225_11D2.m			
Limit Group:	HR - 1613B - ICAL			
Last Update:	28-May-2020 09:54:27	Calib Date:	27-May-2020 13:12:17	
Integrator:	Picker			
Quant Method:	Isotopic Dilution	Quant By:	Initial Calibration	
Last ICal File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d			
Column 1 :	DB-225 (0.32 mm)		Det: F1:HRSIR	
Process Host:	CTX1014			

First Level Reviewer: stephensk Date: 28-May-2020 09:43:58

Signal	RT (min.)	Adj RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
2,3,7,8-TCDF											
303.9016	16.481	16.467	1	1.001	40564373	7876037	6998	17495	1125		
305.8987	16.481	16.467	1	1.001	51734646	10094556	11367	28417	888	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	16.467	16.467	0	1.000	40314602	8252700	18673	46682	442		
317.9389	16.467	16.467	0	1.000	50927957	10240733	11430	28575	896	0.79(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.082	15.082	0	1.000	24855843	5379673	14968	37420	359		
333.9339	15.082	15.082	0	1.000	32882222	7136084	6903	17257	1034	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.109	15.087	1	1.002	26250703	5627803	7137	17842	789		
321.8936	15.109	15.087	1	1.002	33124884	7099327	6890	17225	1030	0.79(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 28-May-2020 09:54:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d		
Injection Date:	27-May-2020 09:22:29	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

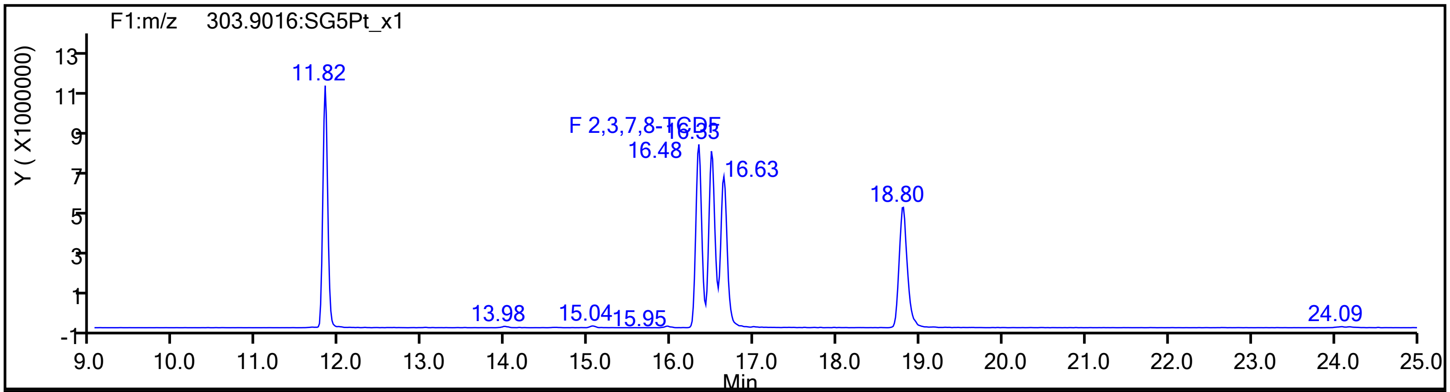

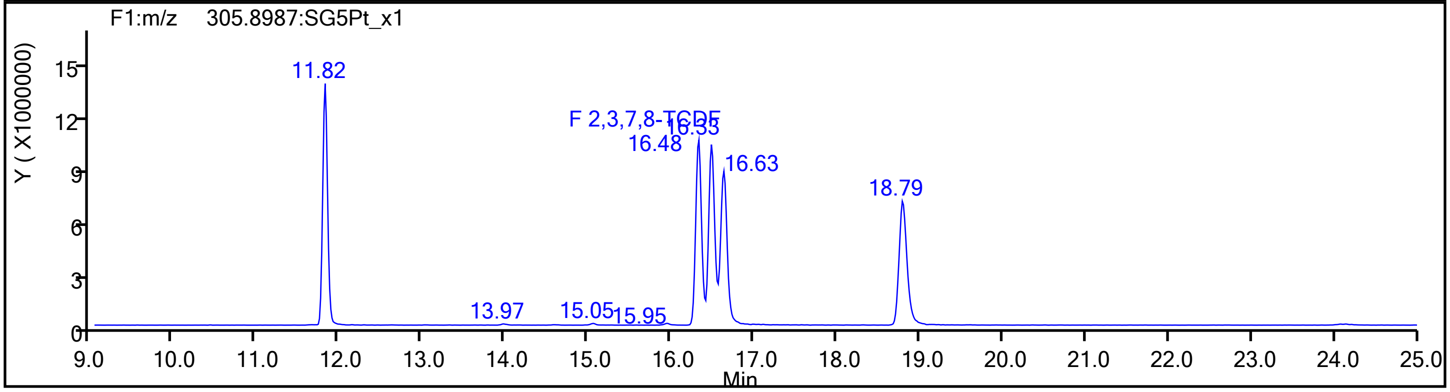

TCDF Standards

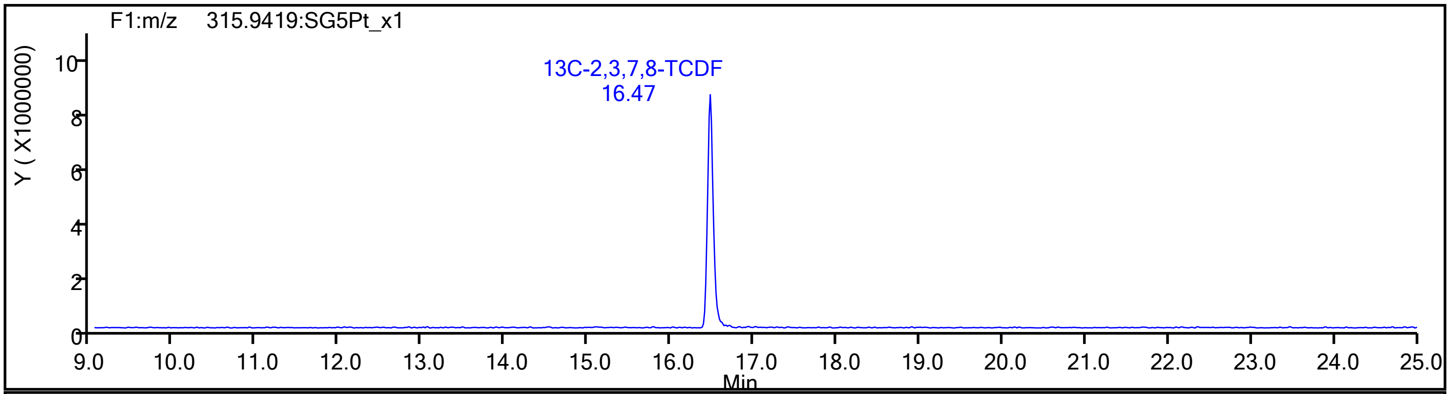

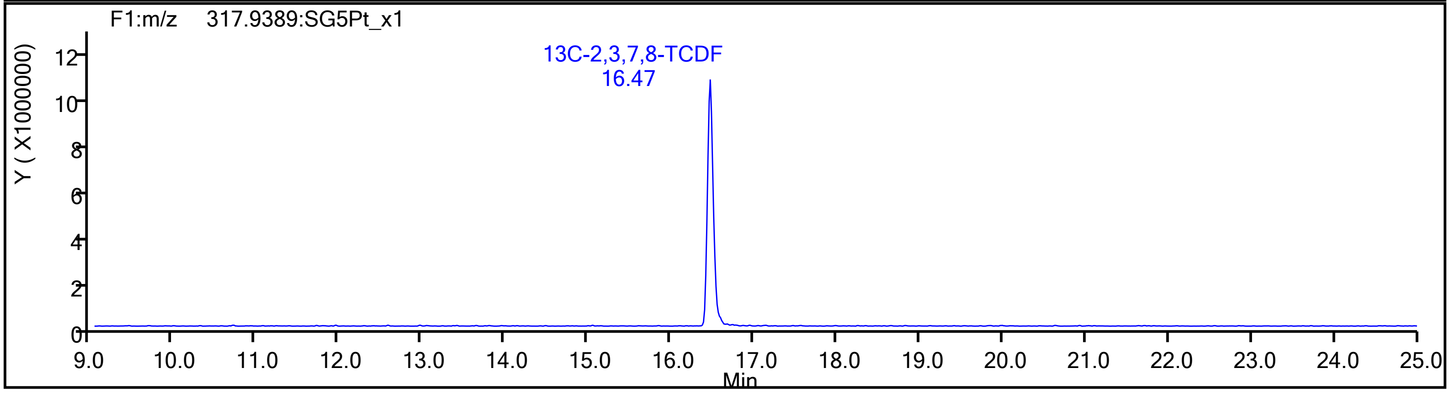

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d
Injection Date: 27-May-2020 09:22:29
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 380959
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDF

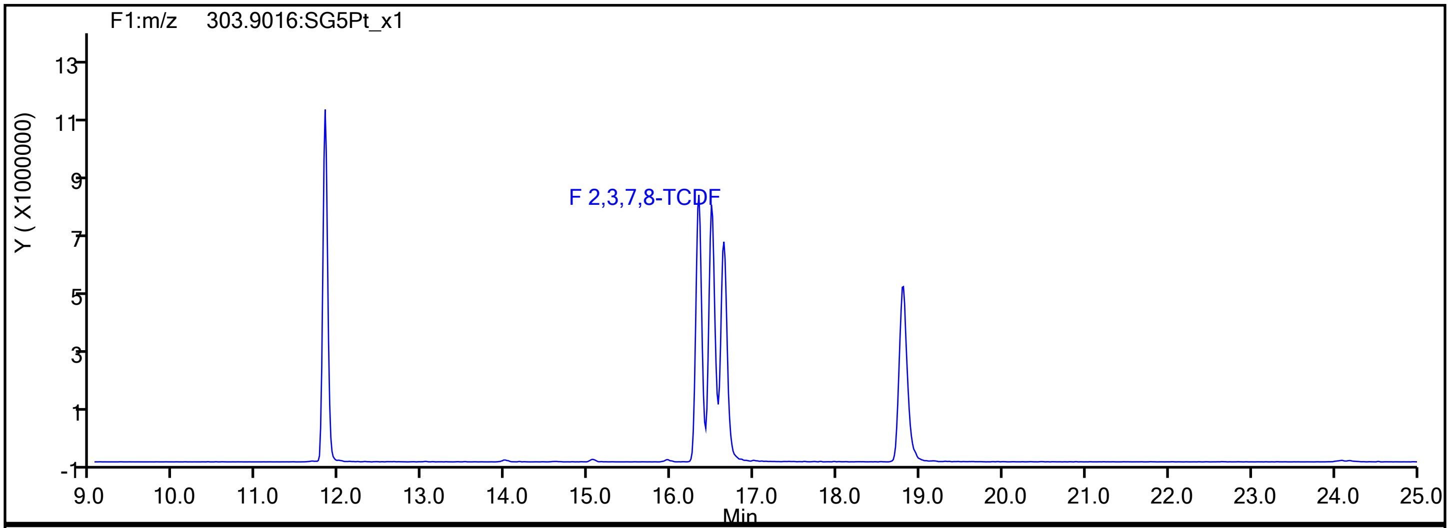

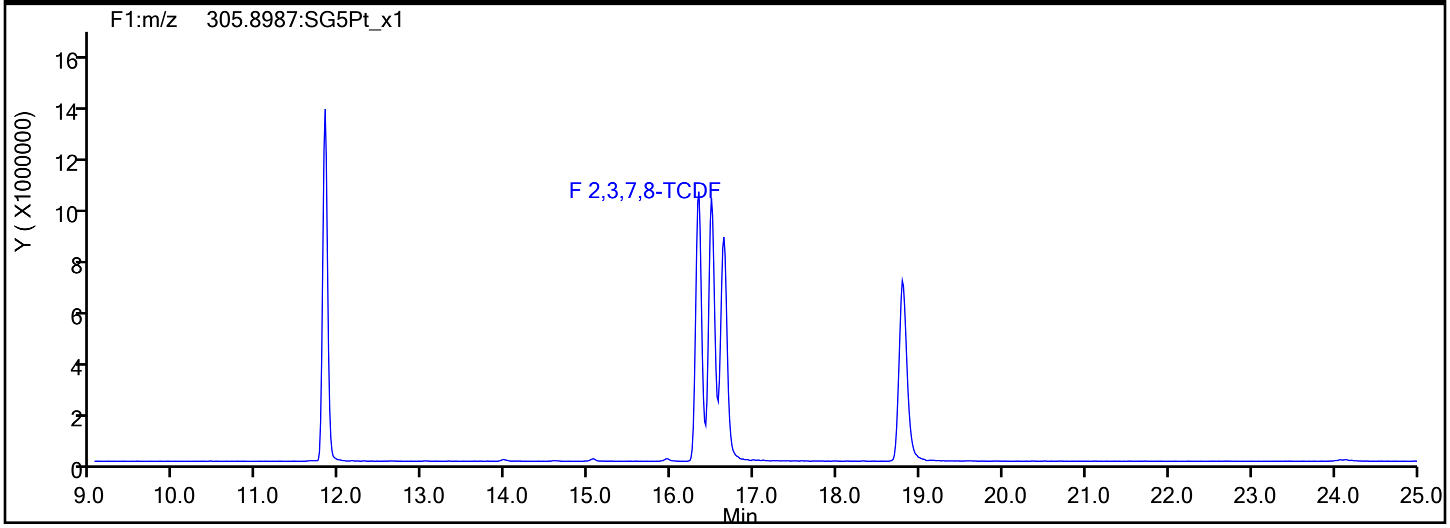

TCDF Interference Mass

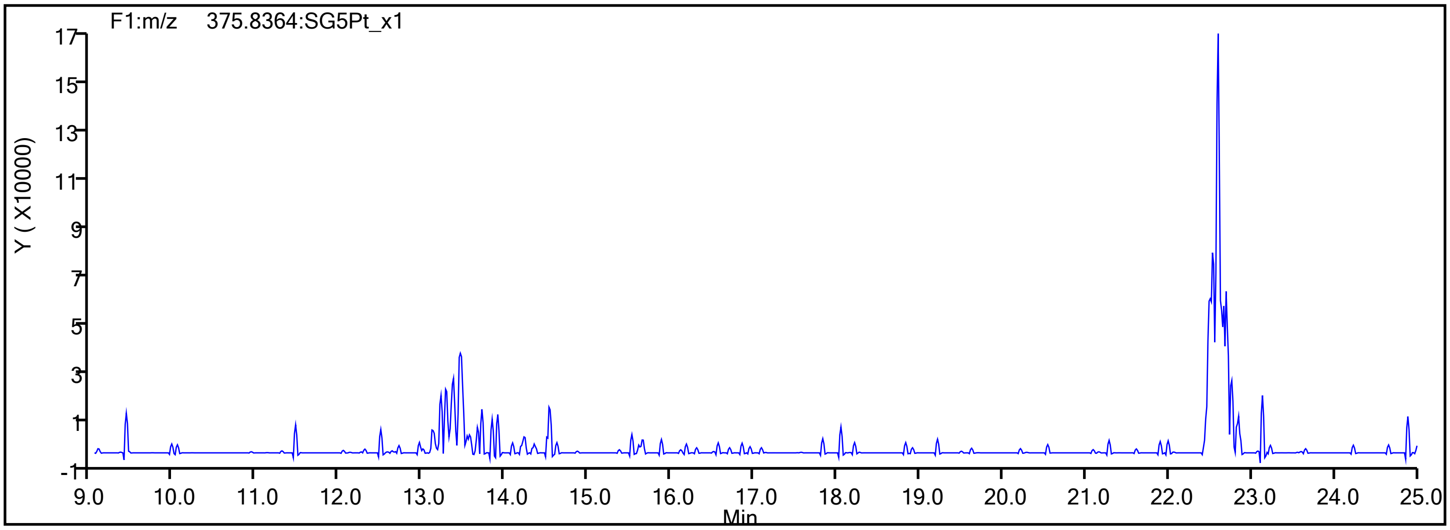

Report Date: 28-May-2020 09:54:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d		
Injection Date:	27-May-2020 09:22:29	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDD

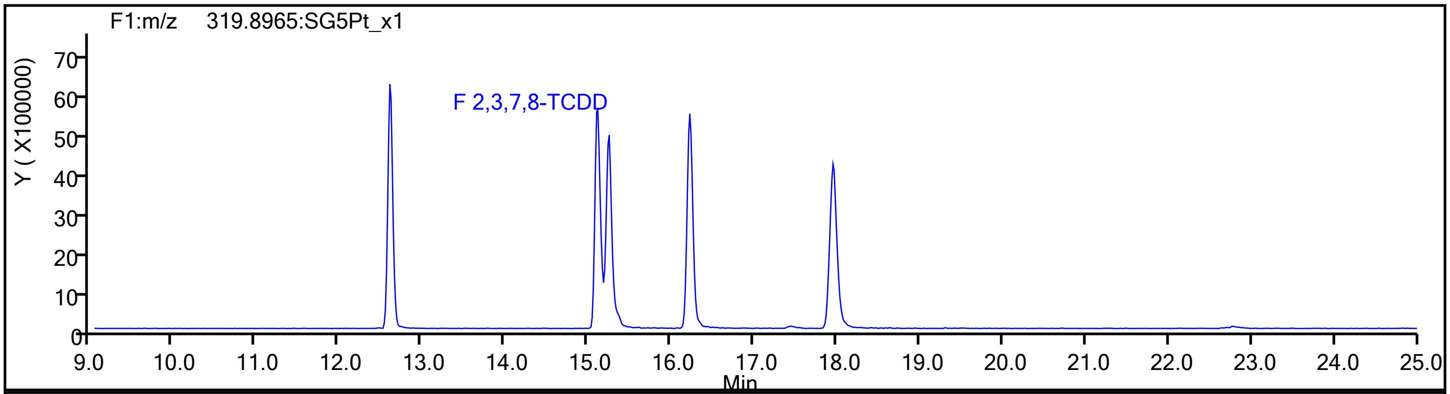

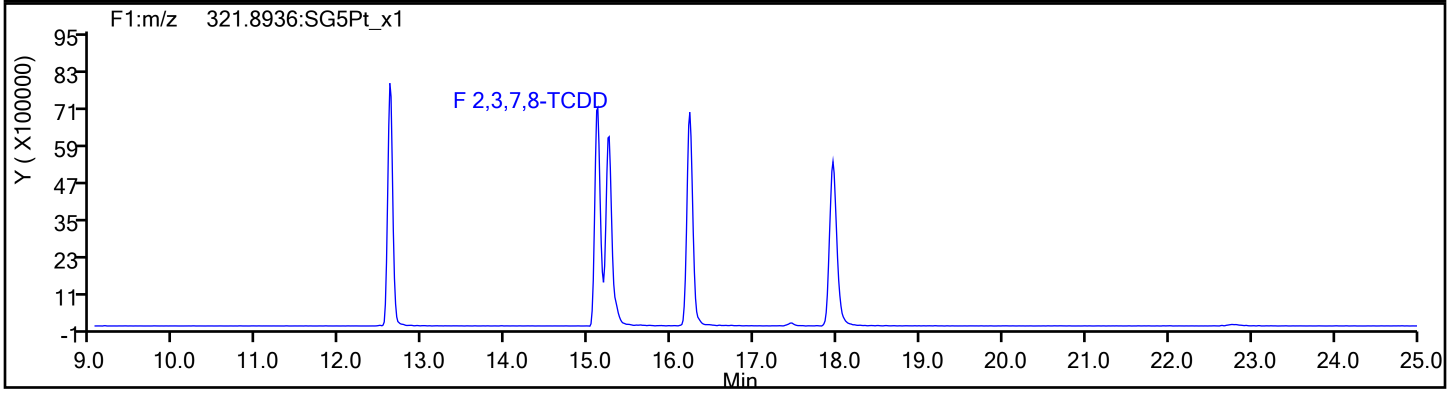

TCDD Standards

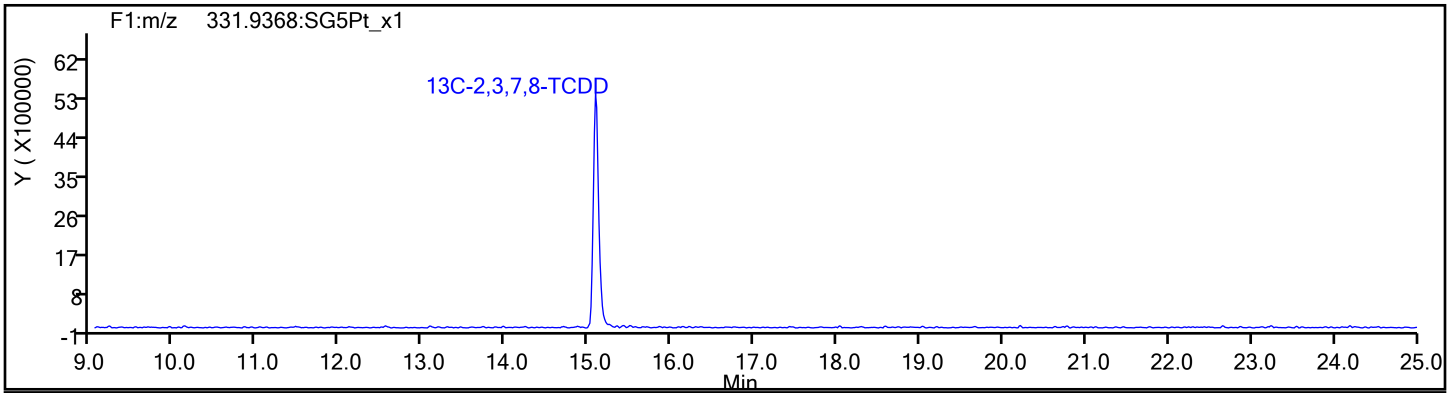

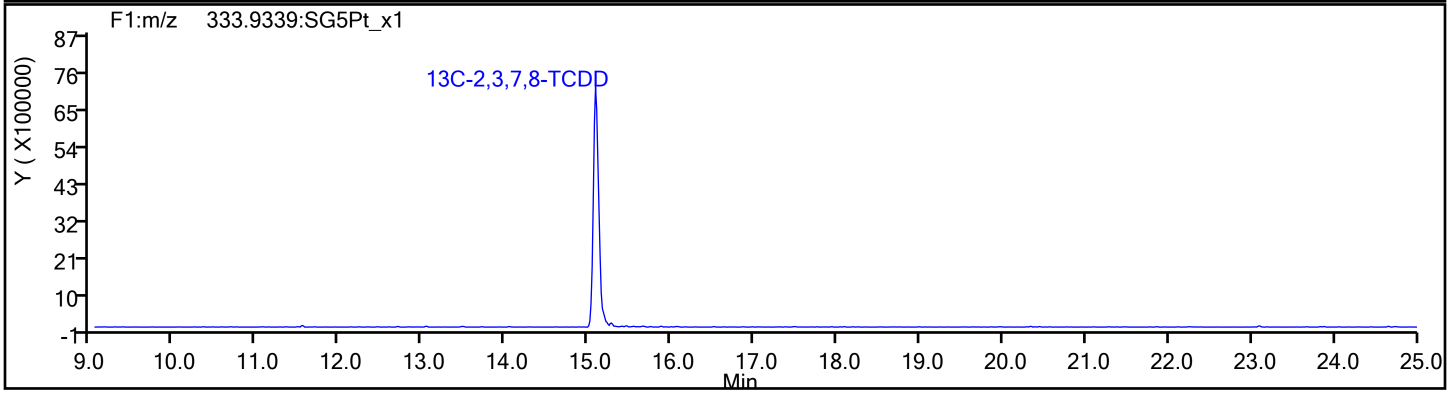

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d		
Injection Date:	27-May-2020 09:22:29	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

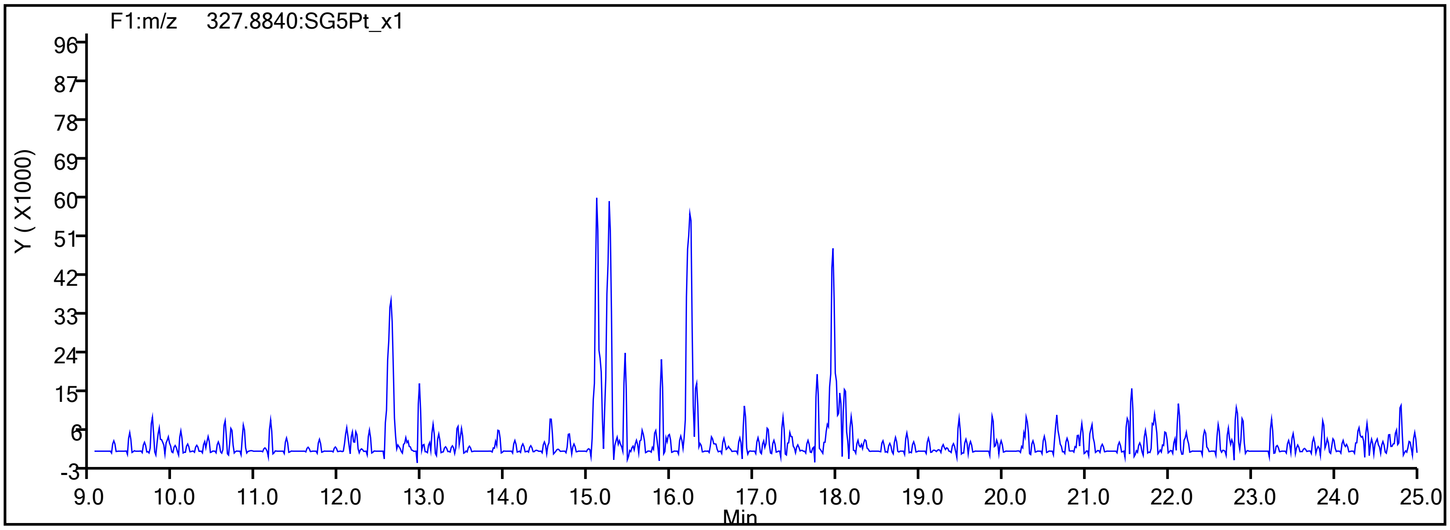

37Cl4-TCDD Standards

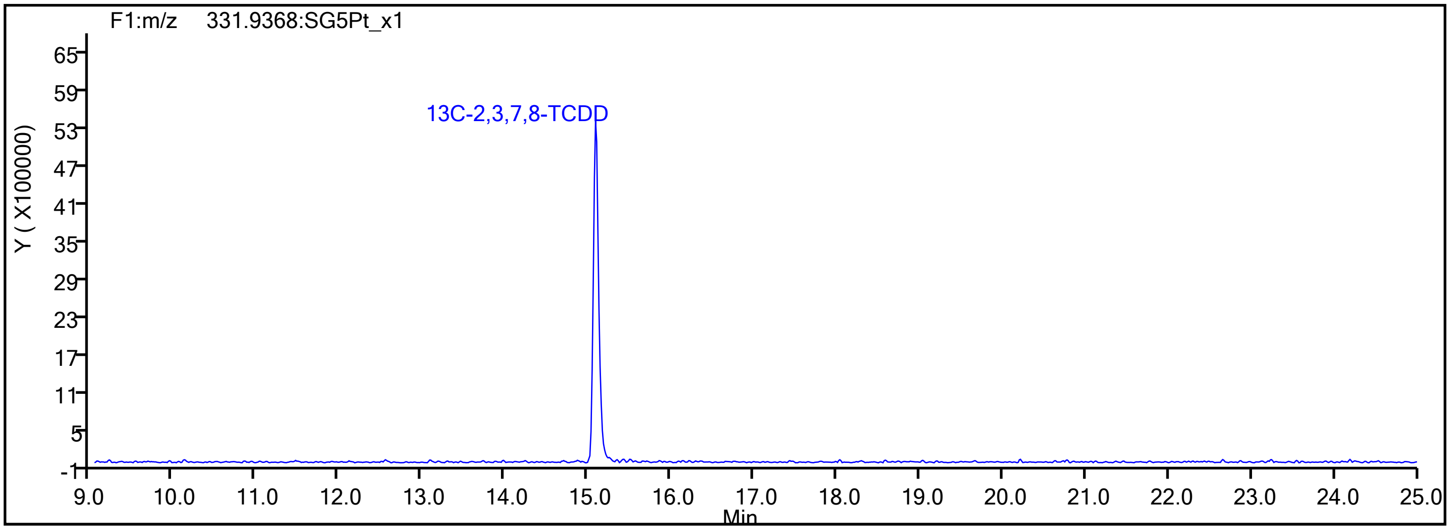

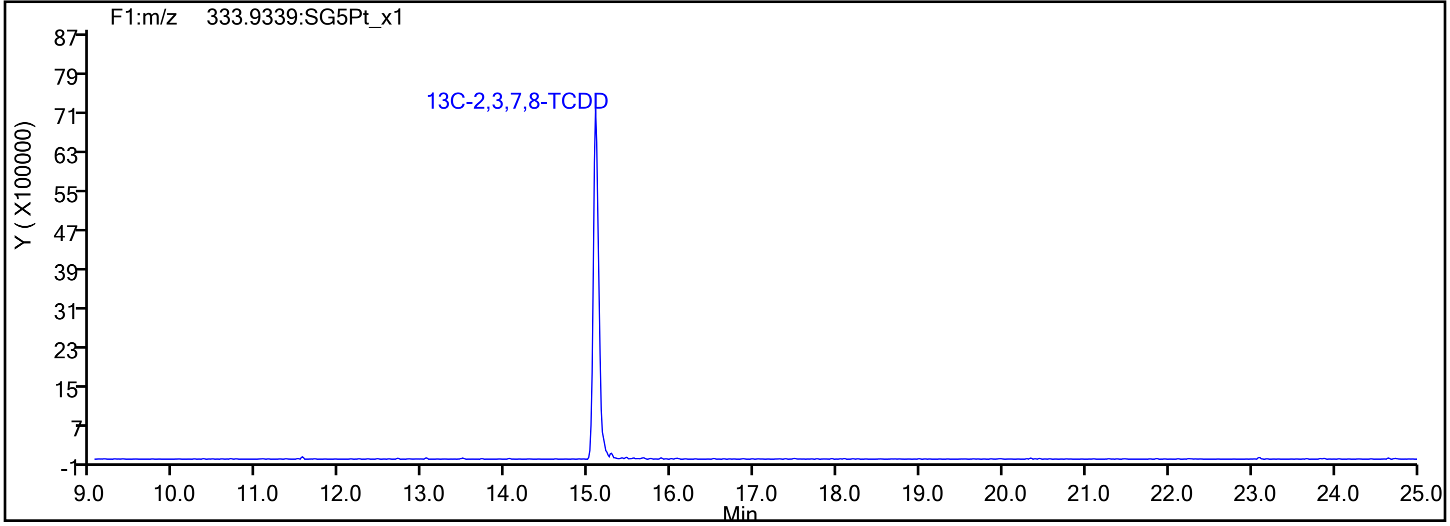

Report Date: 28-May-2020 09:54:29 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_001.d		
Injection Date:	27-May-2020 09:22:29	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	380959	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

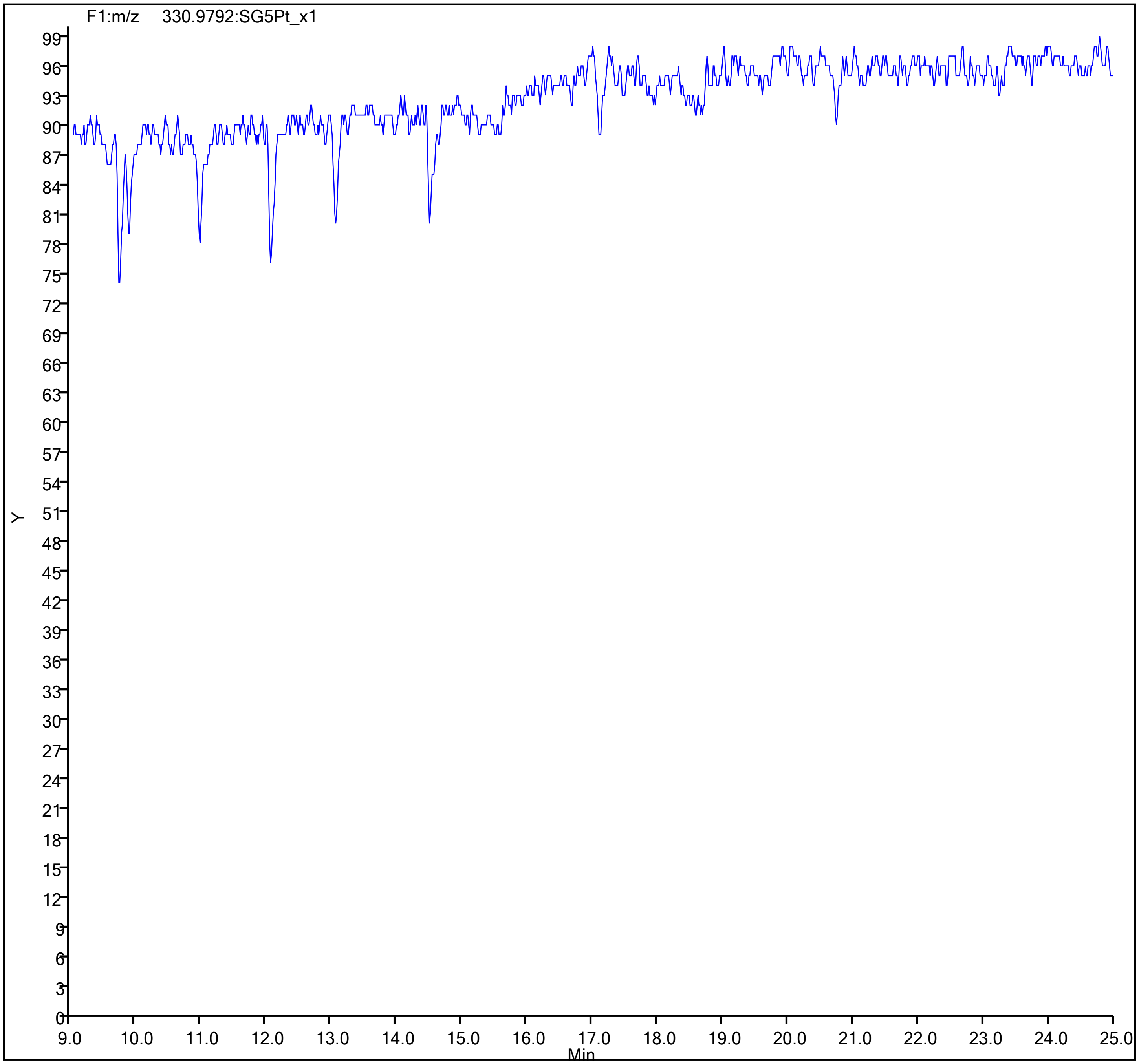

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 26-Jun-2020 14:05:15 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 17:16:30 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 26-Jun-2020 17:01:42

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
D 13C-2,3,7,8-TCDF	16.999	235395205	0.82	1.4910					0.00	
2,3,7,8-TCDF	17.012	243265694	0.78	1.0809	38.2	38.2	0.0577	0.0577		
D 13C-2,3,7,8-TCDD	15.531	142397874	0.81	0.9832					0.00	
2,3,7,8-TCDD	15.544	167804473	0.79	1.2196	38.7	38.7	0.0605	0.0605		
S Total 2378-Chlorinated Dioxins &							0.000100	0.000100		

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d
Lims ID: CPS
Client ID:
Sample Type: CPS
Inject. Date: 26-Jun-2020 14:05:15 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info:
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D2

Method: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\DXN_DB225_11D2.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 17:16:30 Calib Date: 27-May-2020 13:12:17
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\11D2\20200527-96454.b\27MY20A11D2_007.d

Column 1 : DB-225 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1024

First Level Reviewer: shardaa Date: 26-Jun-2020 17:01:42

Signal	RT (min.)	Adj RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-2,3,7,8-TCDF											
315.9419	16.999	16.999	0	1.000	105750103	20124818	34693	86732	580		
317.9389	16.999	16.999	0	1.000	129645102	25196126	26290	65725	958	0.82(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.012	17.012	0	1.001	106747643	20884447	12353	30882	1691		
305.8987	17.012	17.012	0	1.001	136518051	26426112	15925	39812	1659	0.78(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	15.531	15.531	0	1.000	63510913	13931564	17117	42792	814		
333.9339	15.531	15.531	0	1.000	78886961	17184287	6994	17485	2457	0.81(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	15.544	15.544	0	1.001	74120613	16368800	11458	28645	1429		
321.8936	15.544	15.544	0	1.001	93683860	20762659	11484	28710	1808	0.79(0.65-0.89)	

Reagents:

HRDXNCP_00040 Amount Added: 2.00 Units: uL

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d
Injection Date: 26-Jun-2020 14:05:15 Injection Vol: 2.0 ul
Instrument ID: 11D2 Operator ID:
Method: DXN_DB225_11D2 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390059 Sample Line#: 1
Column Type: DB-225 Column Dia: 0.32 mm

TCDF

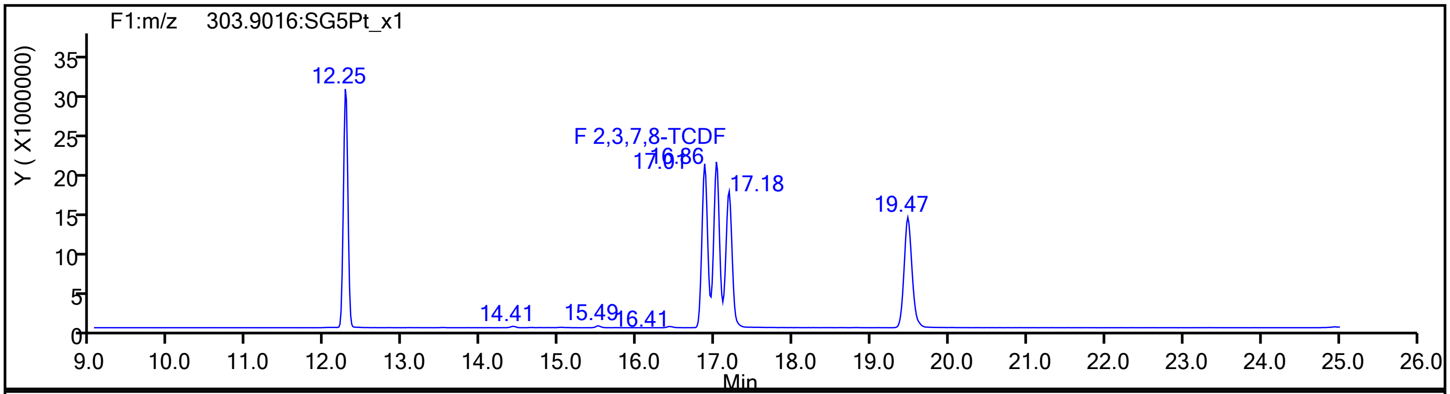

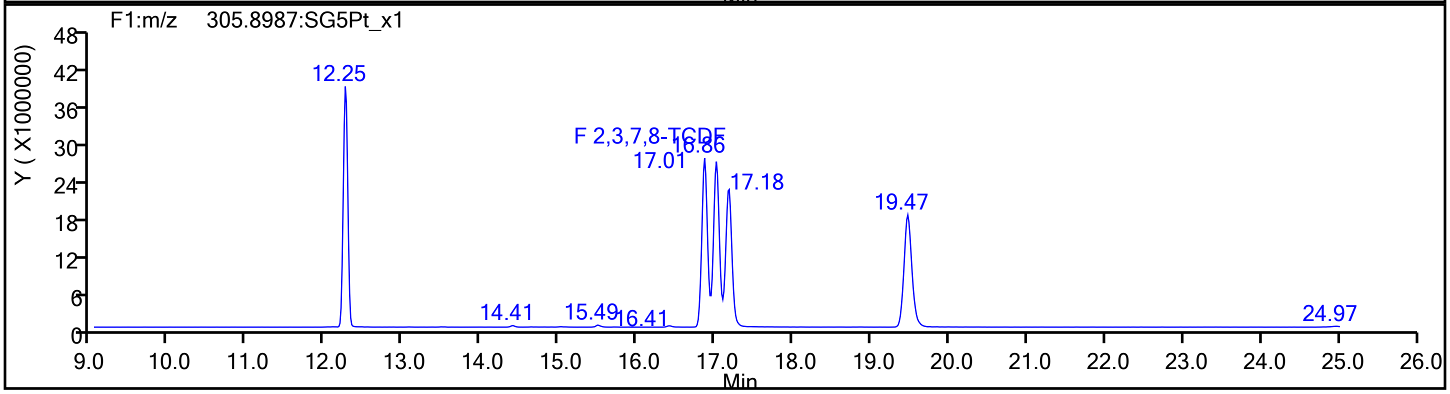

TCDF Standards

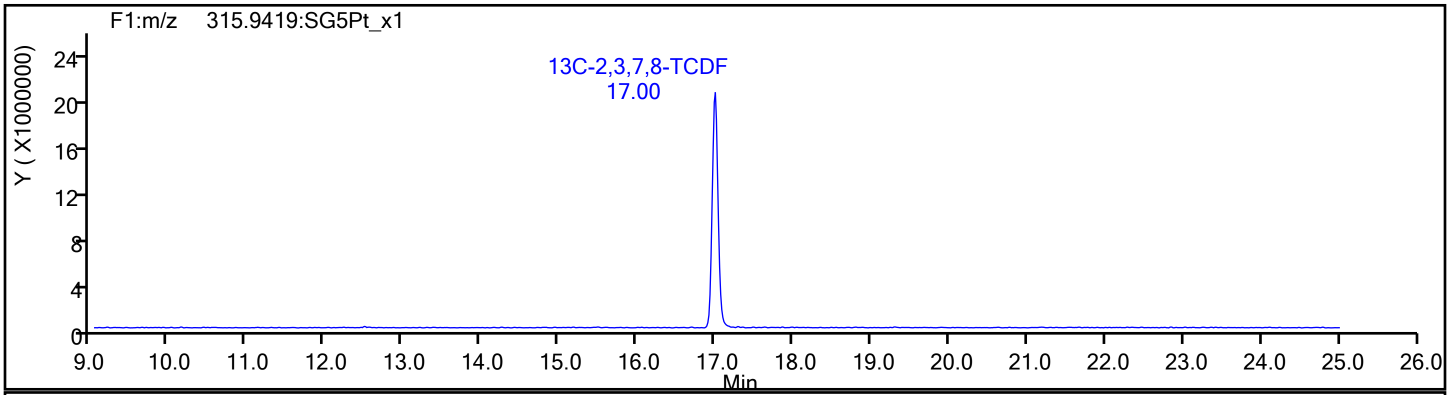

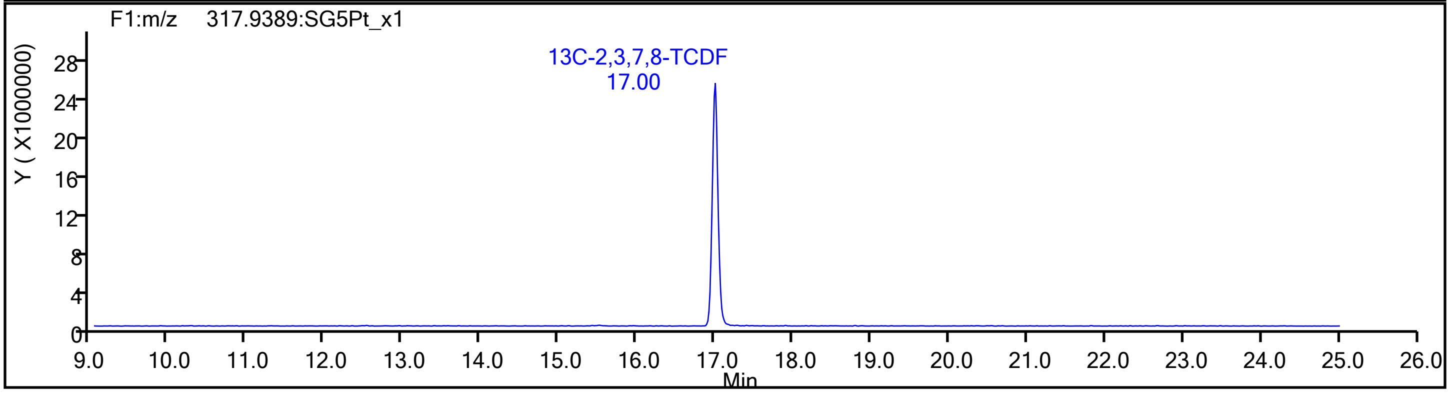

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d		
Injection Date:	26-Jun-2020 14:05:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390059	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

TCDF

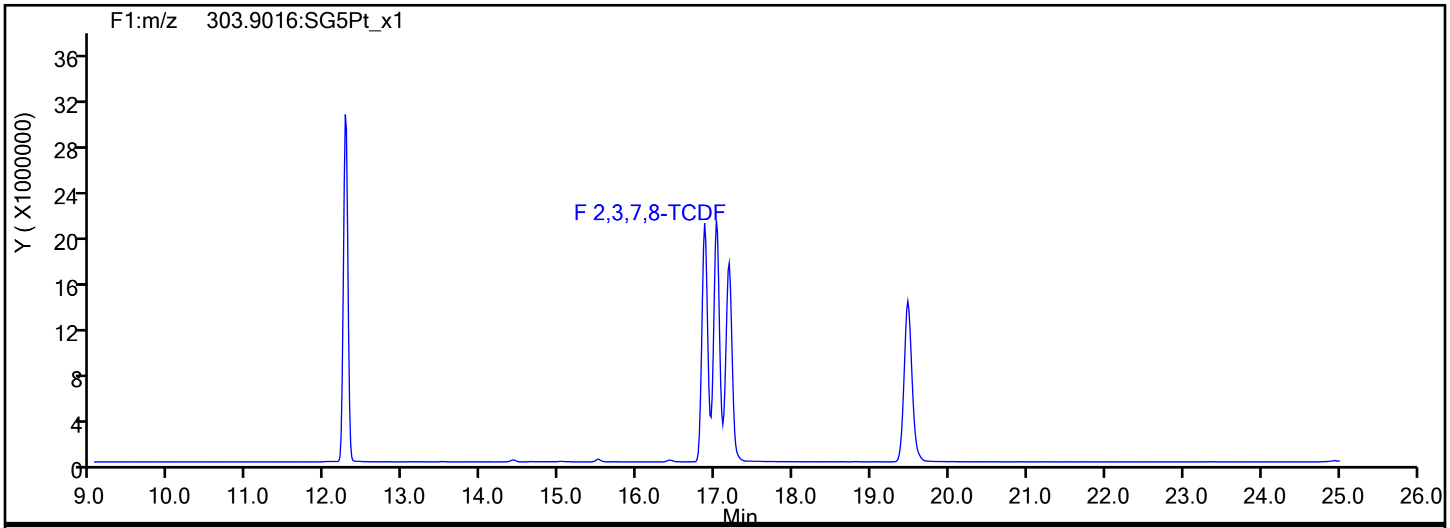

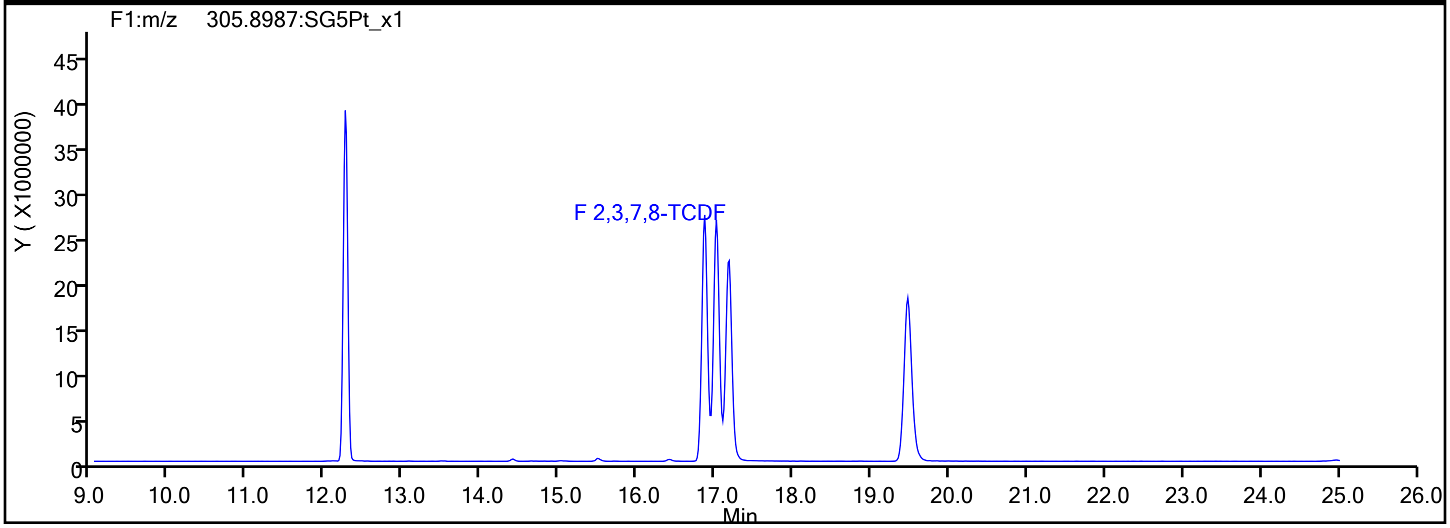

TCDF Interference Mass

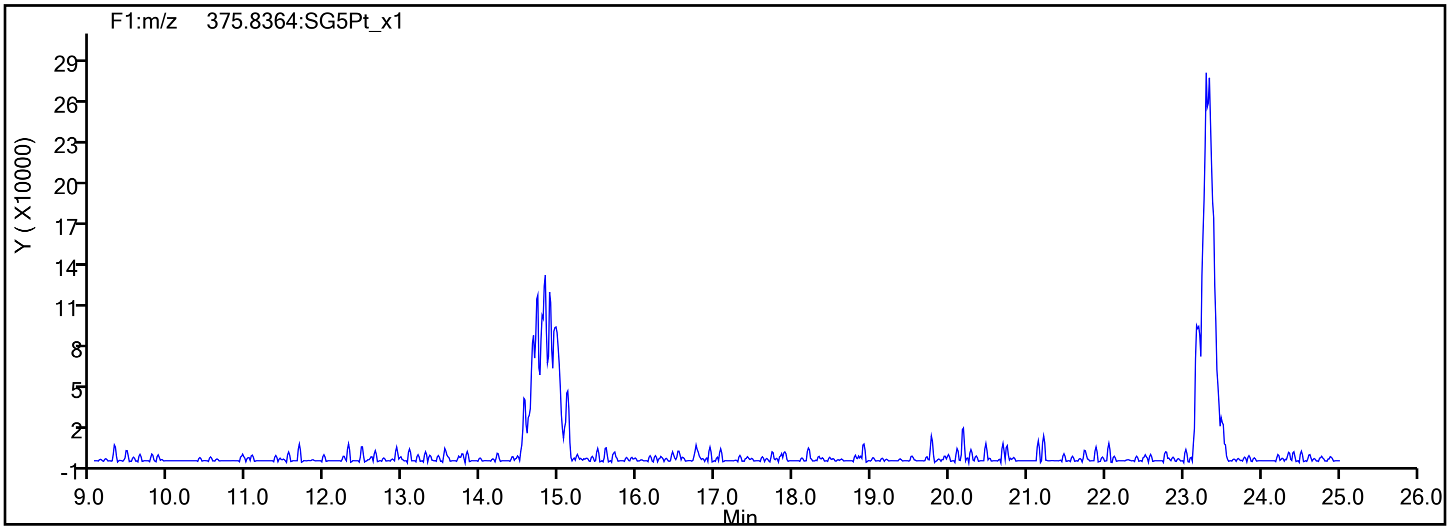

Report Date: 26-Jun-2020 17:16:30
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d
Injection Date: 26-Jun-2020 14:05:15
Injection Vol: 2.0 ul
Instrument ID: 11D2
Operator ID:
Method: DXN_DB225_11D2
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 390059
Sample Line#: 1
Column Type: DB-225
Column Dia: 0.32 mm

TCDD

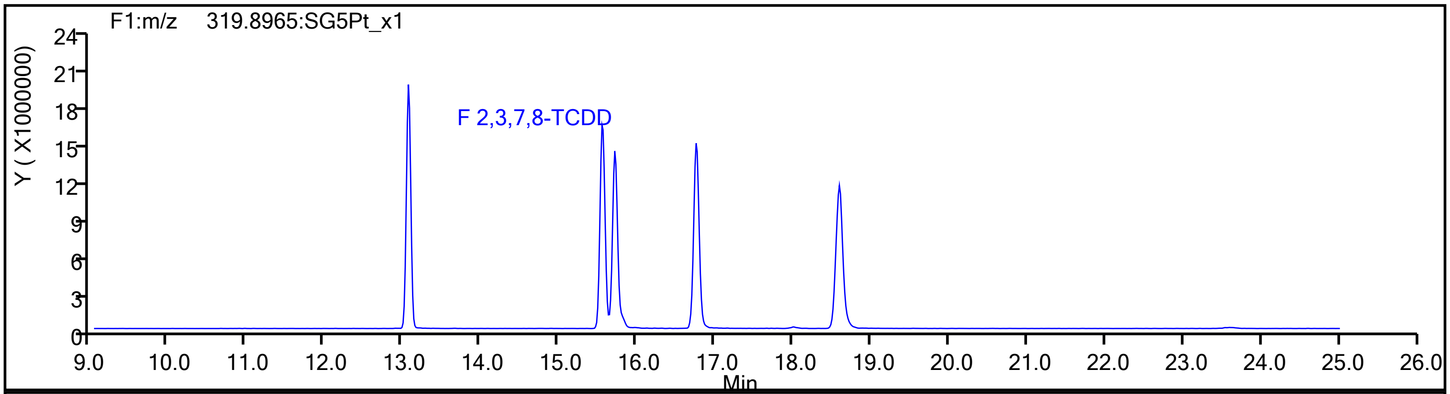

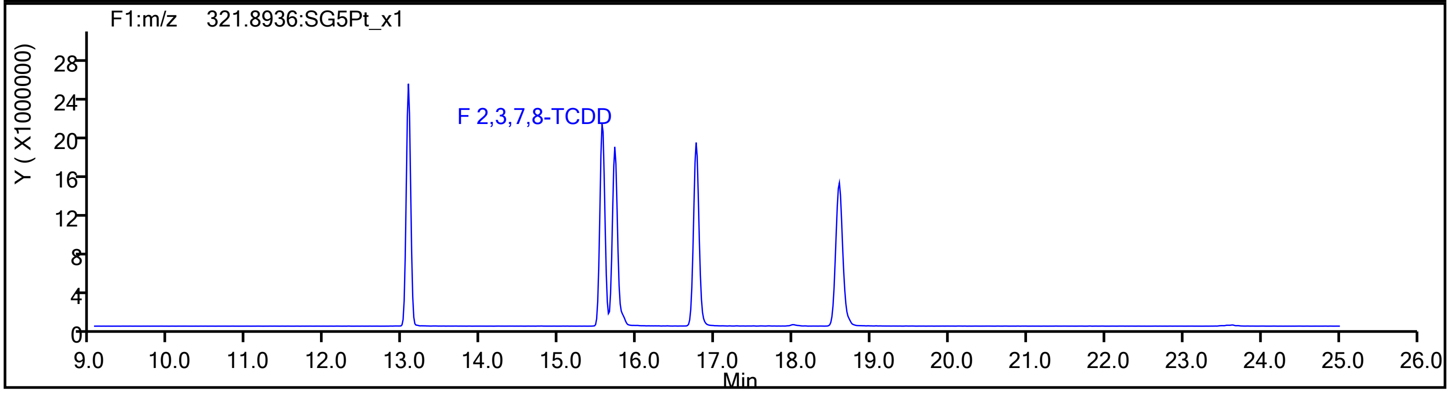

TCDD Standards

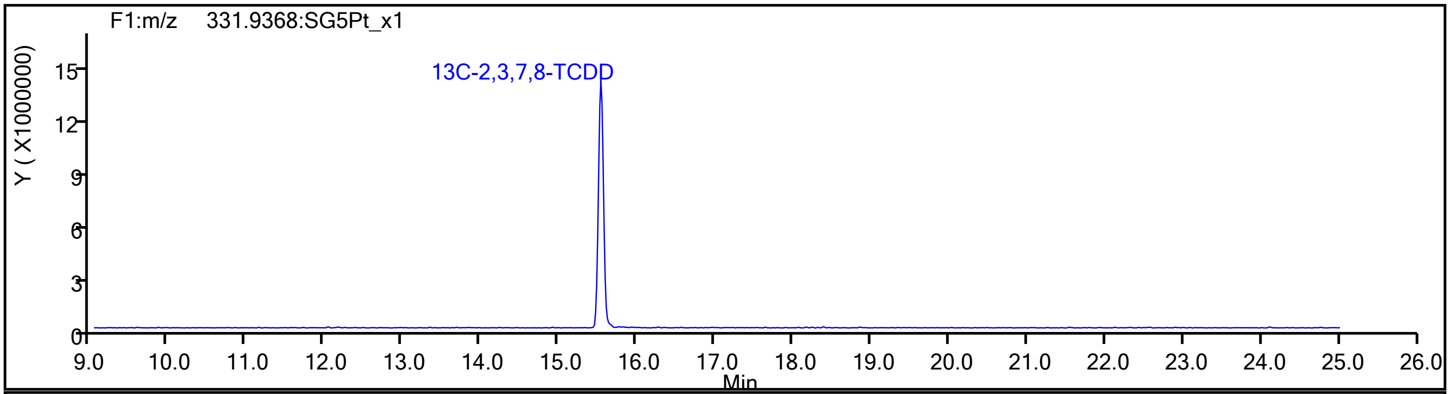

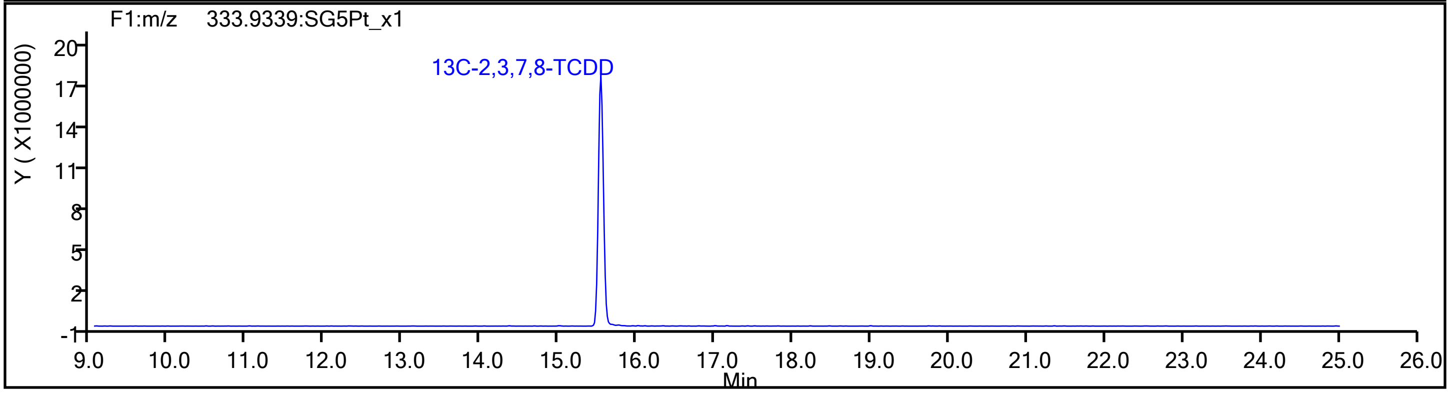

Report Date: 26-Jun-2020 17:16:30 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d		
Injection Date:	26-Jun-2020 14:05:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390059	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

37Cl4-TCDD

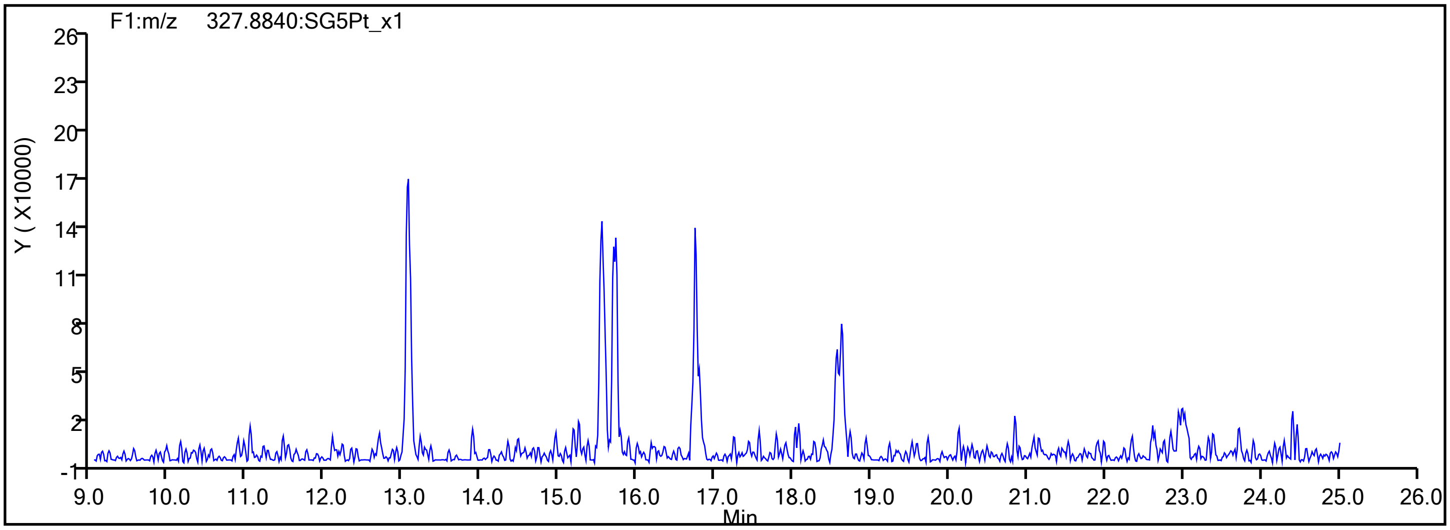

37Cl4-TCDD Standards

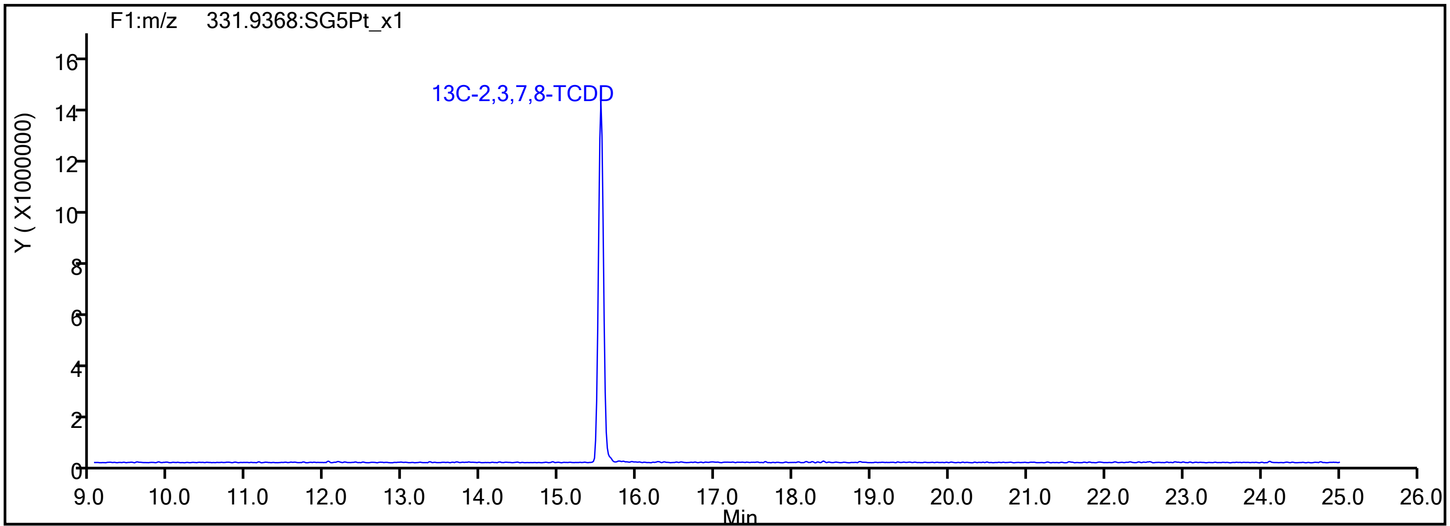

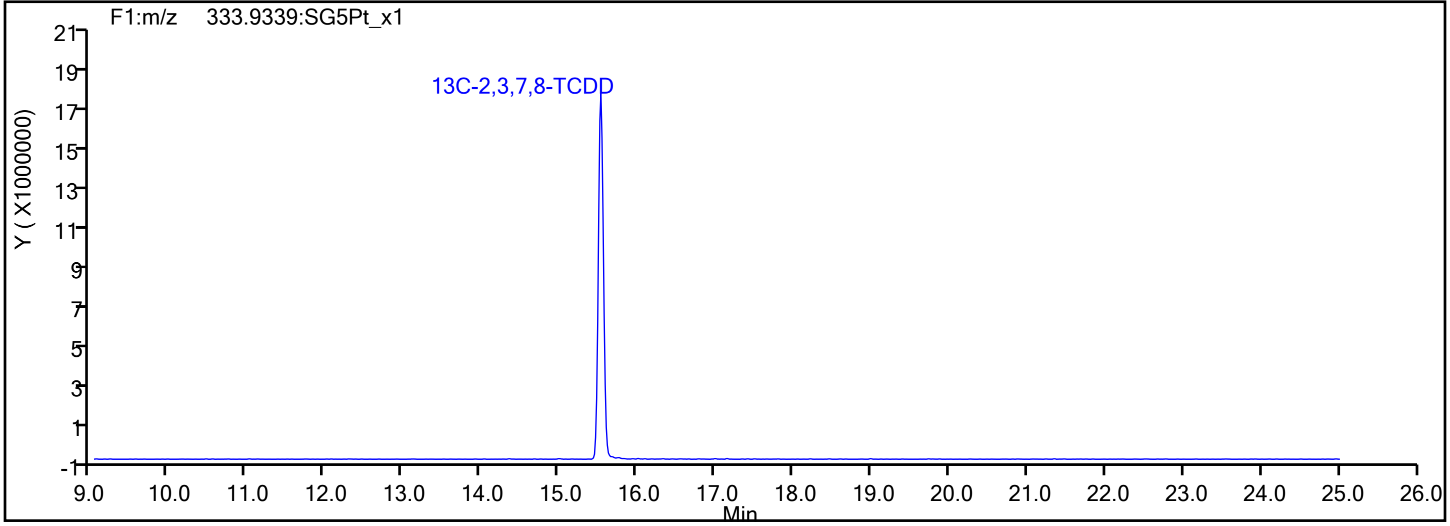

Data File:	\\chromfs\Sacramento\ChromData\11D2\20200626-98407.b\26JN2011D2T_001.d		
Injection Date:	26-Jun-2020 14:05:15	Injection Vol:	2.0 ul
Instrument ID:	11D2	Operator ID:	
Method:	DXN_DB225_11D2	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	390059	Sample Line#:	1
Column Type:	DB-225	Column Dia:	0.32 mm

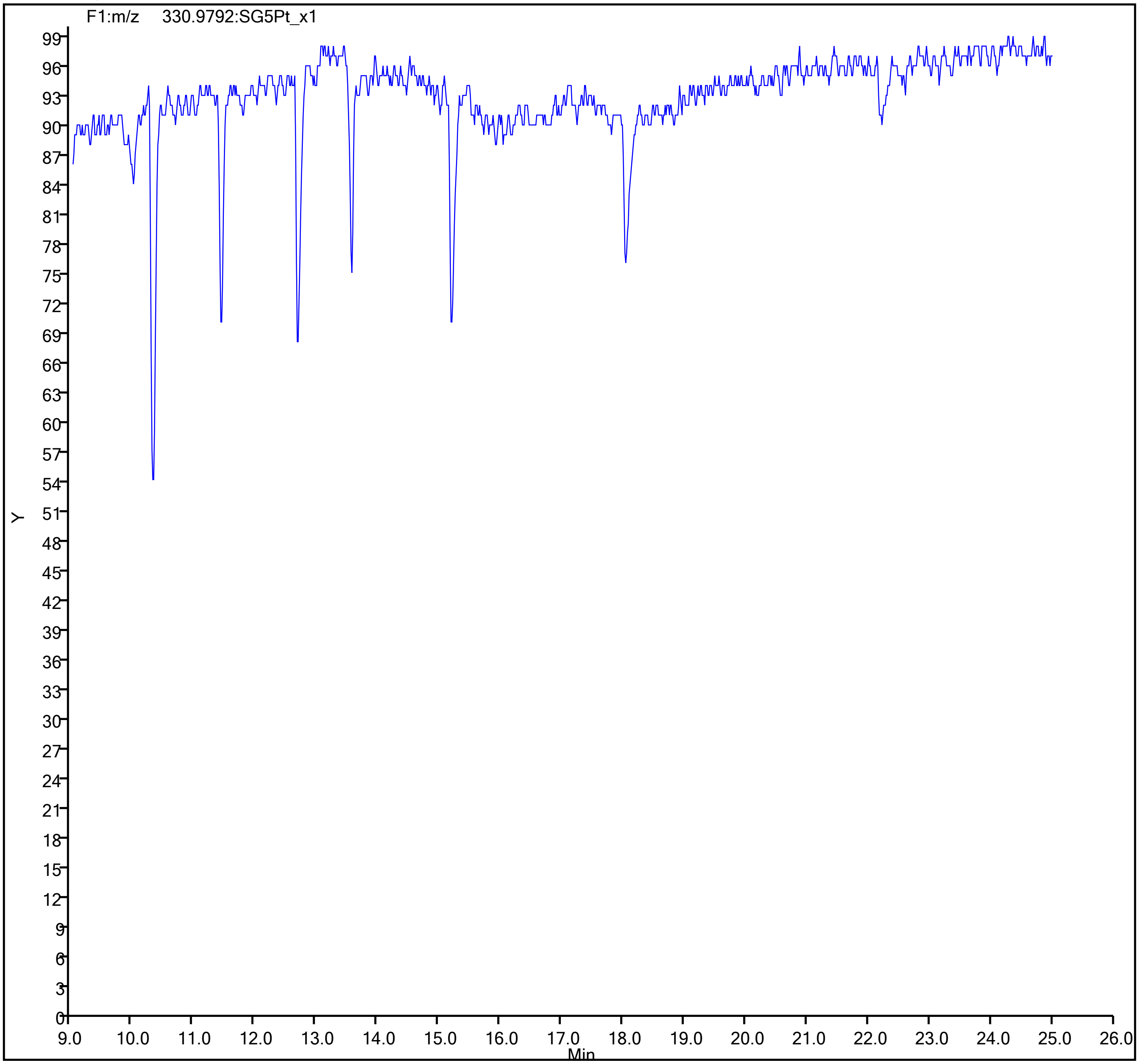

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-389032/1-A
Matrix: Water	Lab File ID: 25JN2010D5_4.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1000(mL)	Date Analyzed: 06/25/2020 20:09
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.90
51207-31-9	2,3,7,8-TCDF	ND		10	0.68
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.77
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.66
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.59
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.70
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.73
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.65
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	1.0
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	1.1
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.95
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.85
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.72
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.81	J	50	0.58
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.67
3268-87-9	OCDD	7.37	J	100	1.2
39001-02-0	OCDF	2.57	J	100	1.3
41903-57-5	Total TCDD	2.47	J	10	0.90
30402-14-3	Total TCDF	ND		10	0.68
36088-22-9	Total PeCDD	ND		50	0.77
30402-15-4	Total PeCDF	0.722	J	50	0.63
34465-46-8	Total HxCDD	ND		50	0.73
55684-94-1	Total HxCDF	ND		50	1.1
37871-00-4	Total HpCDD	ND		50	0.72
38998-75-3	Total HpCDF	3.81	J	50	0.62

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID:	Lab Sample ID: MB 320-389032/1-A
Matrix: Water	Lab File ID: 25JN2010D5_4.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1000(mL)	Date Analyzed: 06/25/2020 20:09
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		25-164
89059-46-1	13C-2,3,7,8-TCDF	46		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	50		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	43		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	49		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	47		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	51		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	52		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	46		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	48		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	47		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	54		26-138
114423-97-1	13C-OCDD	48		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	61		35-197

Report Date: 26-Jun-2020 13:16:00 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d
Lims ID: MB 320-389032/1-A
Client ID:
Sample Type: MB
Inject. Date: 25-Jun-2020 20:09:52 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-389032/1-A MB 320-389032/1-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:46:21

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.581	59454780	0.78	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.082	32473546	0.77	1.1970	45.6	45.6	0.1271	0.1271	45.63	
2,3,7,8-TCDF	17.097						0.0338	0.0338		
A Non-2,3,7,8-sub-TCDF	16.810						0.0338	0.0338		
S Total TCDF							0.0338	0.0338		
D 13C-2,3,7,8-TCDD	17.778	27622225	0.77	0.8773	53.0	53.0	0.2197	0.2197	52.96	
2,3,7,8-TCDD	17.793						0.0448	0.0448		
$ 37Cl4-2,3,7,8-TCDD	17.793	13819448		0.9515	24.4	24.4	0.0342	0.0342	61.07	
A Non-2,3,7,8-sub-TCDD	17.256	34132	0.81	1.0000	0.1236	0.1236	0.0448	0.1236		M
S Total TCDD					0.1236	0.1236	0.0448	0.0448		
D 13C-1,2,3,7,8-PeCDF	21.985	25232179	1.58	0.9904	42.8	42.8	0.1851	0.1851	42.85	
1,2,3,7,8-PeCDF	22.012						0.0329	0.0329		
D 13C-2,3,4,7,8-PeCDF	23.294	31241440	1.58	1.0797	48.7	48.7	0.1697	0.1697	48.67	
2,3,4,7,8-PeCDF	23.321						0.0296	0.0296		
A F1 PeCDFs	19.675						0.0341	0.0341		
A Non-2,3,7,8-sub-PeCDF	22.743	8832	1.55	0.8663	0.0581	0.0361	0.0311	0.0361		RQ
S Total PeCDF					0.0581	0.0361	0.0313	0.0313		RQ
D 13C-1,2,3,7,8-PeCDD	24.003	20341639	1.53	0.6904	49.6	49.6	0.0983	0.0983	49.55	
1,2,3,7,8-PeCDD	24.044						0.0387	0.0387		
A Non-2,3,7,8-sub-PeCDD	22.953						0.0387	0.0387		
S Total PeCDD							0.0387	0.0387		
D 13C-1,2,3,4,7,8-HxCDF	30.113	16420218	0.49	0.9076	50.5	50.5	0.5849	0.5849	50.55	
1,2,3,4,7,8-HxCDF	30.153						0.0521	0.0521		
D 13C-1,2,3,6,7,8-HxCDF	30.326	16124425	0.49	0.8671	52.0	52.0	0.6122	0.6122	51.96	
1,2,3,6,7,8-HxCDF	30.366						0.0539	0.0539		
D 13C-2,3,4,6,7,8-HxCDF	31.245	14112667	0.49	0.8287	47.6	47.6	0.6406	0.6406	47.59	
2,3,4,6,7,8-HxCDF	31.285						0.0424	0.0424		
D 13C-1,2,3,7,8,9-HxCDF	32.110	12277697	0.48	0.7391	46.4	46.4	0.7182	0.7182	46.41	
1,2,3,7,8,9-HxCDF	32.137						0.0477	0.0477		
A Non-2,3,7,8-sub-HxCDF	29.847						0.0486	0.0486		
S Total HxCDF							0.0539	0.0539		

Report Date: 26-Jun-2020 13:16:00 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.924	35788588	1.26	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	14079331	1.31	0.8335	47.2	47.2	0.6246	0.6246	47.20	
1,2,3,4,7,8-HxCDD	31.484						0.0351	0.0351		
D 13C-1,2,3,6,7,8-HxCDD	31.577	17882098	1.28	0.8228	60.7	60.7	0.6327	0.6327	60.73	
1,2,3,6,7,8-HxCDD	31.604						0.0363	0.0363		
1,2,3,7,8,9-HxCDD	31.950						0.0326	0.0326		
A Non-2,3,7,8-sub-HxCDD	30.499						0.0346	0.0346		
S Total HxCDD							0.0363	0.0363		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	11733145	0.42	0.7009	46.8	46.8	1.870	1.870	46.78	
1,2,3,4,6,7,8-HpCDF	33.602	29709	1.17	1.3295	0.1905	0.1905	0.0288	0.0288		M
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	13947103	0.41	0.7244	53.8	53.8	1.810	1.810	53.80	
1,2,3,4,7,8,9-HpCDF	34.659						0.0336	0.0336		
A Non-2,3,7,8-sub-HpCDF	34.143						0.0309	0.0309		
S Total HpCDF					0.1905	0.1905	0.0312	0.0312		
D 13C-1,2,3,4,6,7,8-HpCDD	34.368	12830628	1.04	0.7026	51.0	51.0	0.8232	0.8232	51.03	
1,2,3,4,6,7,8-HpCDD	34.380						0.0359	0.0359		
A Non-2,3,7,8-sub-HpCDD	34.119						0.0359	0.0359		U
S Total HpCDD							0.0359	0.0359		
D 13C-OCDD	36.665	21242757	0.89	0.6184	96.0	96.0	0.2457	0.2457	47.99	
OCDF	36.772	15093	0.88	1.1076	0.1283	0.1283	0.0655	0.0655		
OCDD	36.677	39835	0.98	1.0175	0.3686	0.3686	0.0619	0.0619		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.
Review Flags
M - Manually Integrated
U - Marked Undetected
a - User Assigned ID

Report Date: 26-Jun-2020 13:16:00 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d
Lims ID: MB 320-389032/1-A
Client ID:
Sample Type: MB
Inject. Date: 25-Jun-2020 20:09:52 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-389032/1-A MB 320-389032/1-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:46:21

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.581	17.581	0		26108996	6543101	5065	12662	1292		a
333.9339	17.581	17.581	0		33345784	8331212	6401	16002	1302	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	14087990	3332868	4946	12365	674		
317.9389	17.082	17.082	0	0.972	18385556	4368936	4105	10262	1064	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097						213	532			
305.8987	17.097						586	1465			
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						213	532			
305.8987	16.810						586	1465			
13C-2,3,7,8-TCDD											
331.9368	17.778	17.778	0	1.011	12026388	2572961	5065	12662	508		
333.9339	17.778	17.778	0	1.011	15595837	3270042	6401	16002	511	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793						699	1747			
321.8936	17.793						349	872			
37Cl4-2,3,7,8-TCDD											
327.8847	17.793	17.793	0	1.012	13819448	3067965	1939	4847	1582		
A Non-2,3,7,8-sub-TCDD											M
319.8965	15.616	17.256	-98	0.878	15298	3778	699	1747	5		
321.8936	15.631	17.256	-97	0.879	18834	4820	349	872	14	0.81(0.65-0.89)	M
13C-1,2,3,7,8-PeCDF											
351.9000	21.985	21.999	-1	1.250	15451830	2464737	6580	16450	375		
353.8970	21.985	21.999	-1	1.250	9780349	1596232	4325	10812	369	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.012						170	425			
341.8567	22.012						312	780			
13C-2,3,4,7,8-PeCDF											
351.9000	23.294	23.308	-1	1.325	19143261	3001819	6580	16450	456		
353.8970	23.294	23.308	-1	1.325	12098179	1896871	4325	10812	439	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.321						170	425			
341.8567	23.321						312	780			
A F1 PeCDFs											
339.8597	19.675						170	425			
341.8567	19.675						360	900			
A Non-2,3,7,8-sub-PeCDF											RQ
339.8597	20.676	22.743	-124	0.940	5369	915	170	425	5		
341.8567	20.676	22.743	-124	0.940	8854	1336	312	780	4	0.61(1.32-1.78)	
	Empc Correction				3463	590	312	780	2		
13C-1,2,3,7,8-PeCDD											
367.8949	24.003	24.017	-1	1.365	12309183	1775032	2701	6752	657		
369.8919	24.003	24.017	-1	1.365	8032456	1170069	1338	3345	874	1.53(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.044						309	772			
357.8516	24.044						153	382			
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						309	772			
357.8516	22.953						153	382			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.943	5397142	809379	4924	12310	164		
385.8610	30.113	30.140	-2	0.943	11023076	1684042	9963	24907	169	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.153						195	487			
375.8178	30.153						217	542			
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.326	30.340	-1	0.950	5331809	730815	4924	12310	148		
385.8610	30.340	30.340	0	0.950	10792616	1491907	9963	24907	150	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.366						195	487			
375.8178	30.366						217	542			
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.245	31.258	-1	0.979	4642579	881406	4924	12310	179		
385.8610	31.245	31.258	-1	0.979	9470088	1852148	9963	24907	186	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.285						195	487			
375.8178	31.285						217	542			
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.110	32.123	-1	1.006	3993918	781171	4924	12310	159		
385.8610	32.110	32.123	-1	1.006	8283779	1634635	9963	24907	164	0.48(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.137						195	487			
375.8178	32.137						217	542			
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						195	487			
375.8178	29.847						217	542			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.924	31.924	0		19926797	3914534	8168	20420	479		
403.8529	31.924	31.924	0		15861791	3096073	6431	16077	481	1.26(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.985	7993435	2007456	8168	20420	246		
403.8529	31.458	31.471	-1	0.985	6085896	1545306	6431	16077	240	1.31(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.484						210	525			
391.8127	31.484						206	515			
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.577	31.577	0	0.989	10050075	1781955	8168	20420	218		
403.8529	31.564	31.577	-1	0.989	7832023	1416919	6431	16077	220	1.28(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.604						210	525			
391.8127	31.604						206	515			
1,2,3,7,8,9-HxCDD											
389.8157	31.950						210	525			
391.8127	31.950						206	515			
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						210	525			
391.8127	30.499						206	515			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.052	3488404	899460	10794	26985	83		
419.8220	33.590	33.590	0	1.052	8244741	2055142	25962	64905	79	0.42(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											M
407.7818	33.602	33.602	0	1.000	15991	5580	265	662	21		M
409.7789	33.590	33.602	-1	1.000	13718	3747	187	467	20	1.17(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.085	4090220	939647	10794	26985	87		
419.8220	34.647	34.659	-1	1.085	9856883	2170490	25962	64905	84	0.41(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659						265	662			
409.7789	34.659						187	467			
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						265	662			
409.7789	34.143						187	467			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.368	34.380	-1	1.077	6555178	1537213	7797	19492	197		
437.8140	34.368	34.380	-1	1.077	6275450	1465927	8422	21055	174	1.04(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.380						237	592			
425.7737	34.380						196	490			
A Non-2,3,7,8-sub-HpCDD											U
423.7766	34.119						237	592			
425.7737	34.119						196	490			
13C-OCDD											
469.7779	36.665	36.676	-1	1.149	10021285	1852398	1868	4670	992		
471.7750	36.665	36.676	-1	1.149	11221472	2092038	2392	5980	875	0.89(0.76-1.02)	
OCDF											
441.7428	36.772	36.772	0	1.003	7083	1661	231	577	7		
443.7399	36.749	36.772	-1	1.002	8010	1719	341	852	5	0.88(0.76-1.02)	
OCDD											
457.7377	36.677	36.688	-1	1.000	19731	3551	268	670	13		
459.7348	36.677	36.688	-1	1.000	20104	2880	229	572	13	0.98(0.76-1.02)	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- M - Manually Integrated
- U - Marked Undetected
- a - User Assigned ID

Report Date: 26-Jun-2020 13:16:00 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Lims ID:	MB 320-389032/1-A		
Client ID:			
Inject. Date:	25-Jun-2020 20:09:52	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	4

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	27622225	5843003

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	27622225	5843003

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	15298	3778	18834	4820	0.1236	0.81	M
Signal Totals:							
	15298	3778	18834	4820			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	34132	8598				0.81	M

On-Column Amount = (Rx * Qis) / (Ris * RRFn)

Quant By: Area

Amount: 0.1236 = (34132 * 100.000) / (27622225 * 1.000)

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Jun-2020 13:16:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Lims ID:	MB 320-389032/1-A		
Client ID:			
Inject. Date:	25-Jun-2020 20:09:52	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	4

Non-2,3,7,8-sub-PeCDF, RT: 22.743

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,7,8-PeCDF	0.902	D 13C-1,2,3,7,8-PeCDF	100.000	25232179	4060969
2,3,4,7,8-PeCDF	0.831	D 13C-2,3,4,7,8-PeCDF	100.000	31241440	4898690

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.866		100.000	28236809	4479829

Sum the Uncalibrated Results

RT	339.8597 Area	339.8597 Height	341.8567 Area	341.8567 Height	Amount	Ratio	Flags
20.676	5369	915	8854	1336	0.0581	0.61	RQ
20.676	5369	915	3463	590	0.0361		Empc Correction
Signal Totals:							
	5369	915	3463	590			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	14223	2251				0.61	RQ
	8832	1505					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.0581 = (14223 * 100.000) / (28236809 * 0.866)
Empc Amount: 0.0361 = (8832 * 100.000) / (28236809 * 0.866)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Lims ID:	MB 320-389032/1-A		
Client ID:			
Inject. Date:	25-Jun-2020 20:09:52	Dil. Factor:	1.0000
Sample Type:	MB, Method Blank		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	4

Non-2,3,7,8-sub-HpCDD, RT: 34.119

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
1,2,3,4,6,7,8-HpCDD	1.004	D 13C-1,2,3,4,6,7,8-HpCDD	100.000	12830628	3003140

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.004		100.000	12830628	3003140

Sum the Uncalibrated Results

RT	423.7766 Area	423.7766 Height	425.7737 Area	425.7737 Height	Amount	Ratio	Flags

Compound is Marked ND

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d

Injection Date: 25-Jun-2020 20:09:52 Instrument ID: 10D5

Lims ID: MB 320-389032/1-A

Client ID:

Operator ID: AJS ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Column: DB-5 (0.32 mm) Detector F1:HRSIR

Non-2,3,7,8-sub-TCDD, Signal: 2, m/z: 321.8936, RT: (15.60- 18.91)

Signal: 2

Processing Integration Results

RT = 15.631 Area = 20077

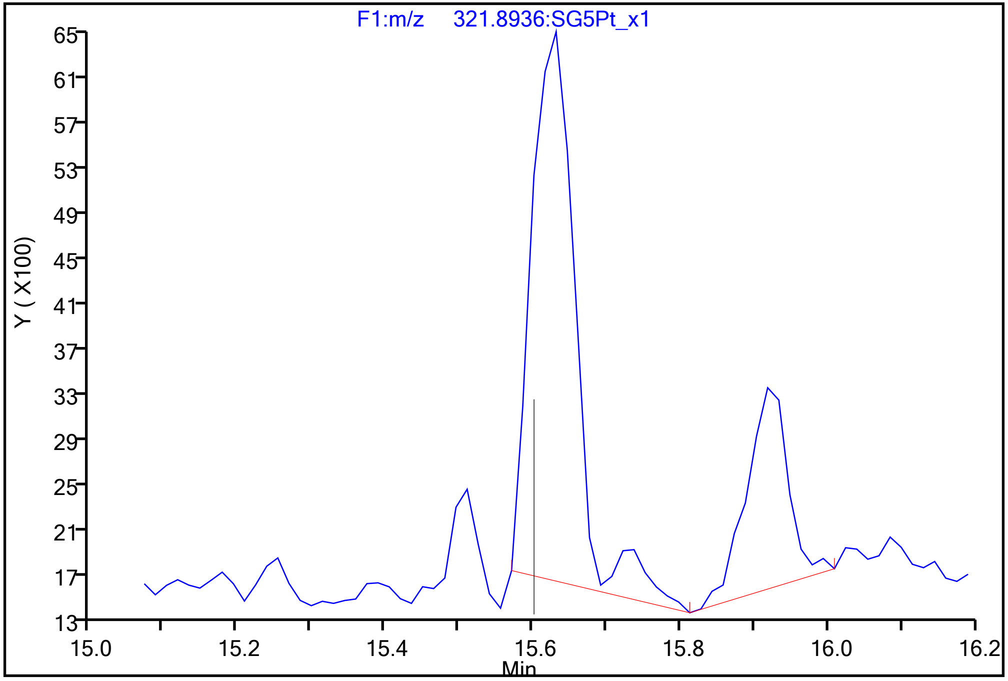

Manual Integration Results

RT = 15.631 Area = 18834 M

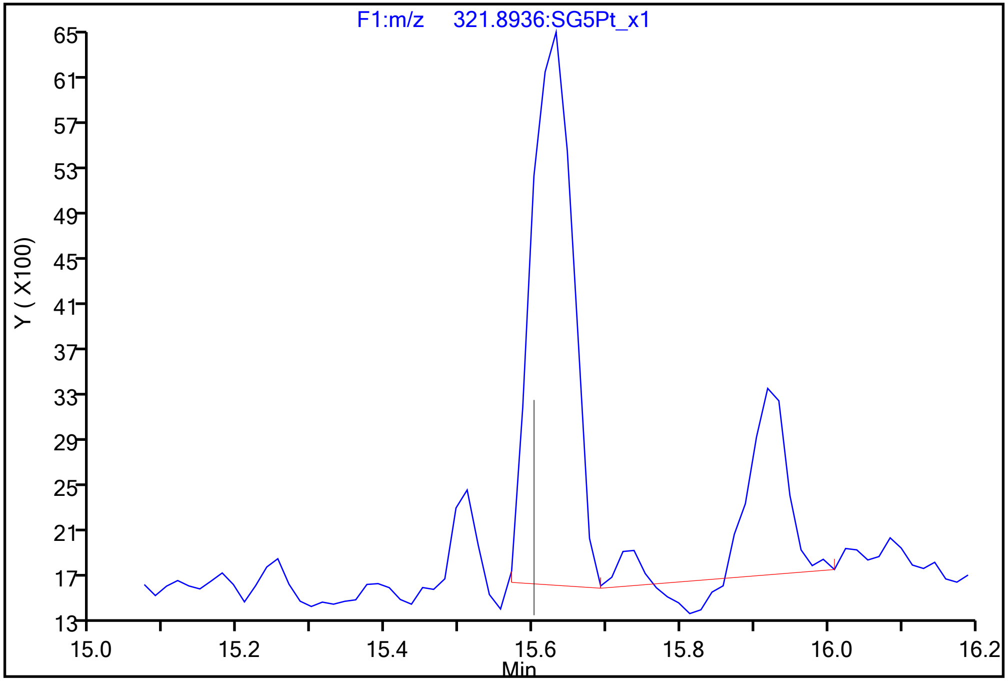

Reviewer: arghestanis, 26-Jun-2020 11:50:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d				
Injection Date:	25-Jun-2020 20:09:52	Instrument ID:	10D5		
Lims ID:	MB 320-389032/1-A				
Client ID:					
Operator ID:	AJS	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL		
Column:	DB-5 (0.32 mm)	Detector	F4:HRSIR		

1,2,3,4,6,7,8-HpCDF, CAS: 67562-39-4

Signal: 1

RT: 33.60
Area: 20628
Amount: 0.220182
Amount Units: pg/ul

Processing Integration Results

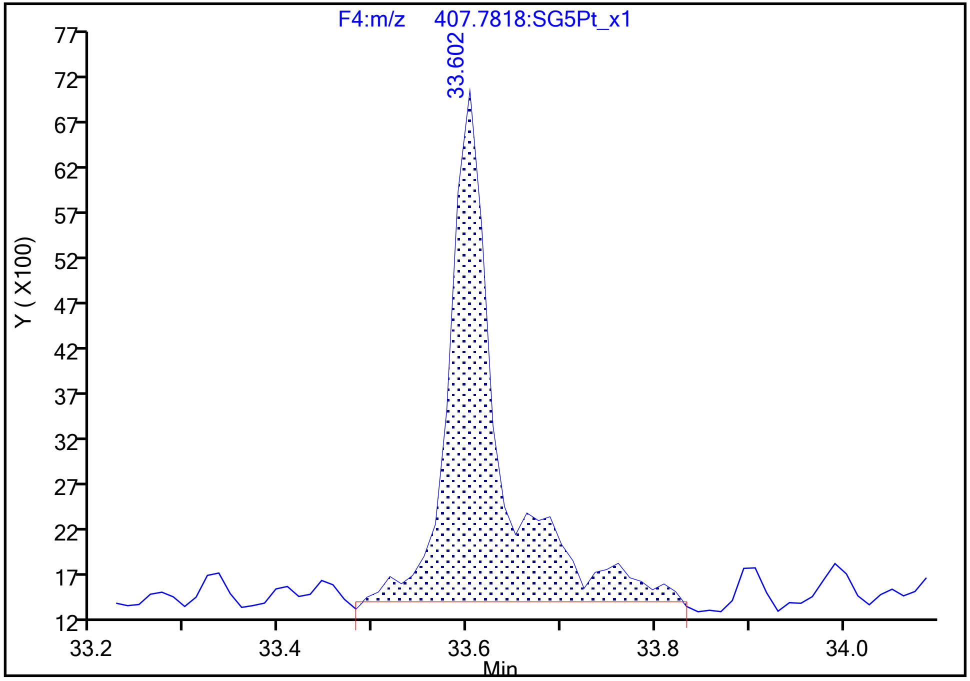

RT: 33.60
Area: 15991
Amount: 0.190456
Amount Units: pg/ul

Manual Integration Results

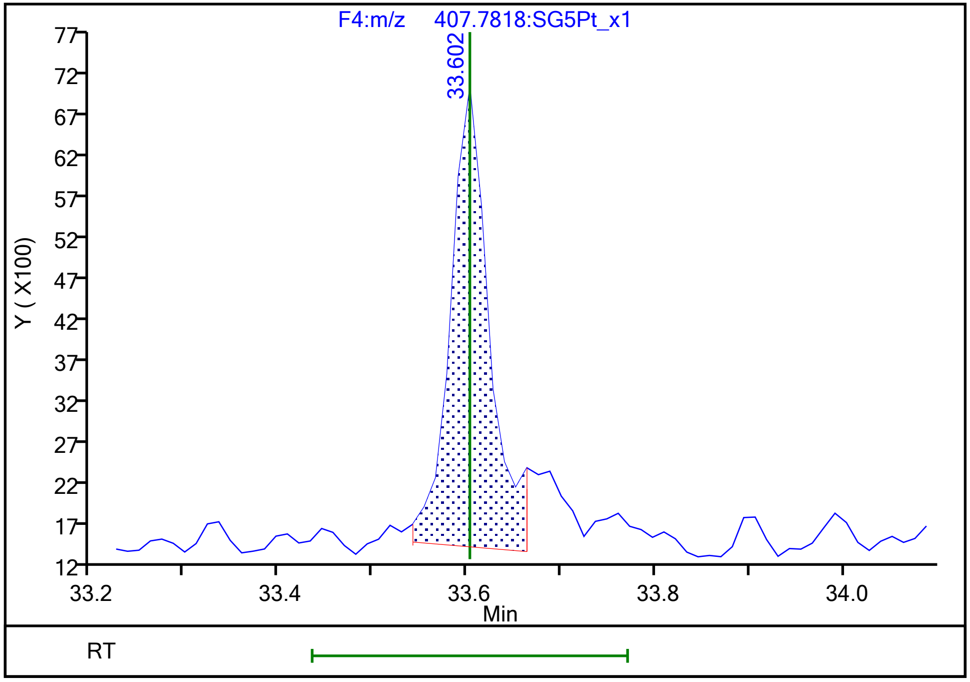

Reviewer: arghestanis, 26-Jun-2020 11:52:12

Audit Action: Manually Integrated Audit Reason: Baseline

Report Date: 26-Jun-2020 13:16:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d
Injection Date: 25-Jun-2020 20:09:52
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDF

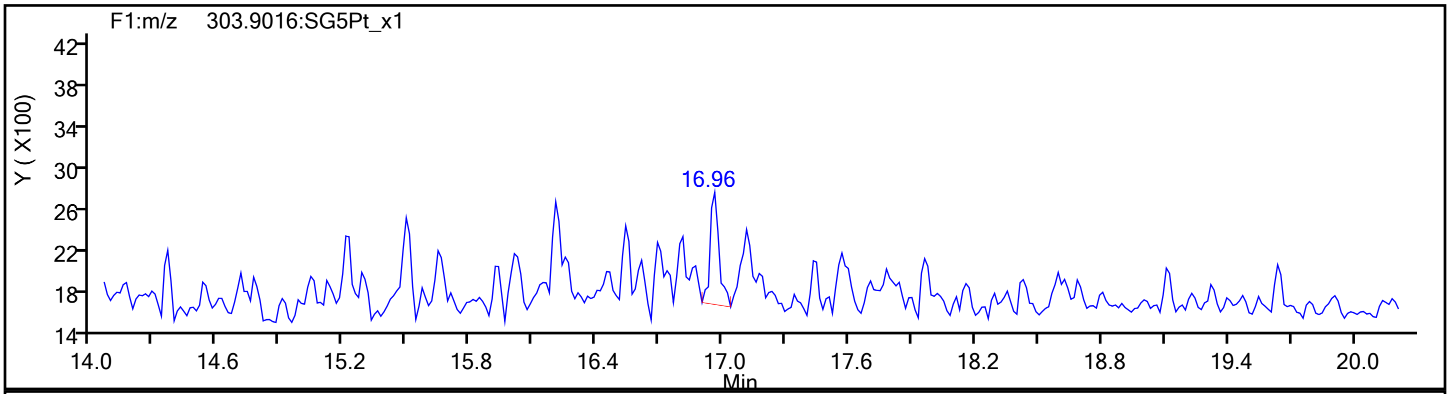

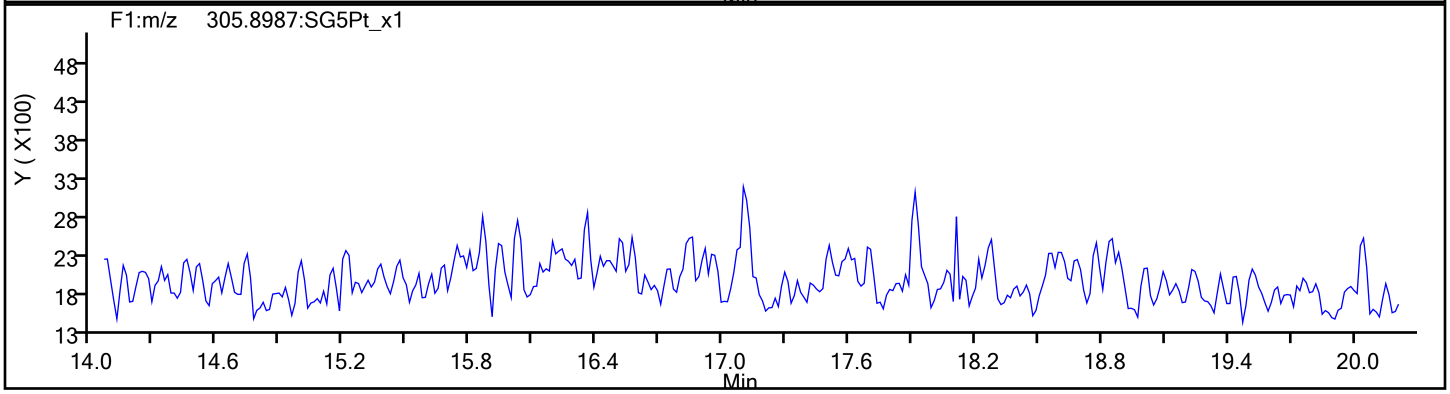

TCDF Standards

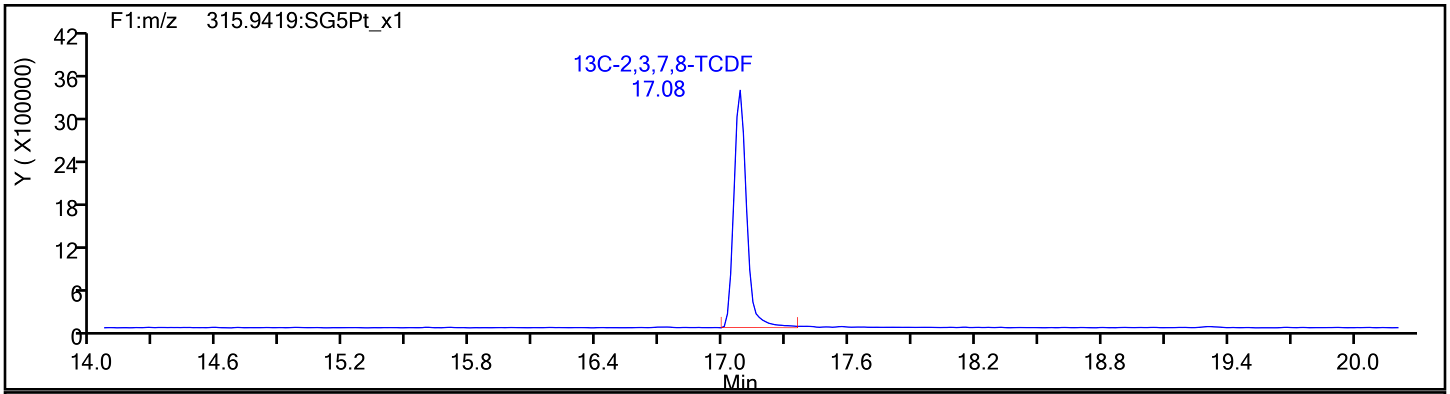

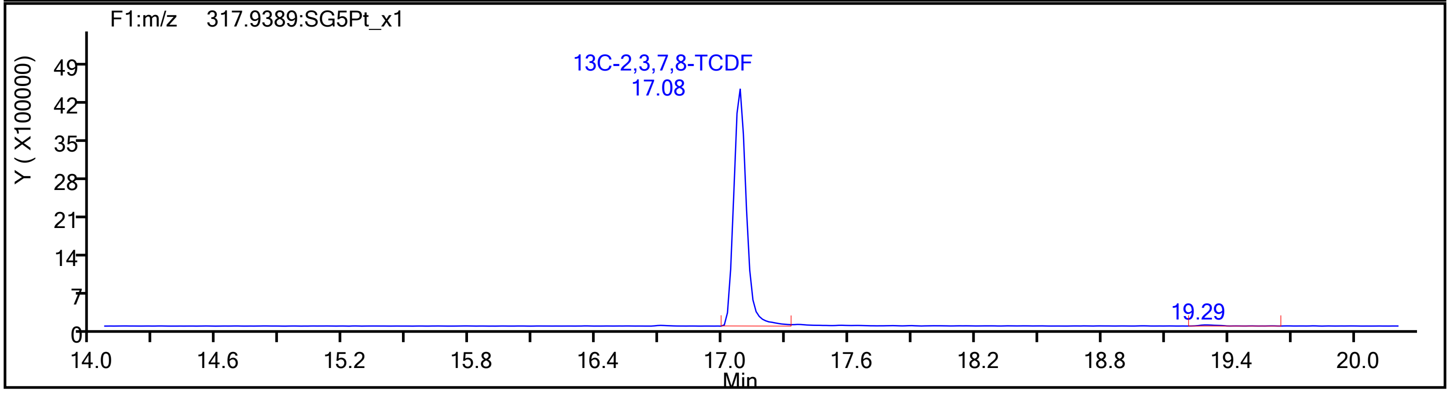

Report Date: 26-Jun-2020 13:16:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d

Injection Date: 25-Jun-2020 20:09:52

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

TCDF

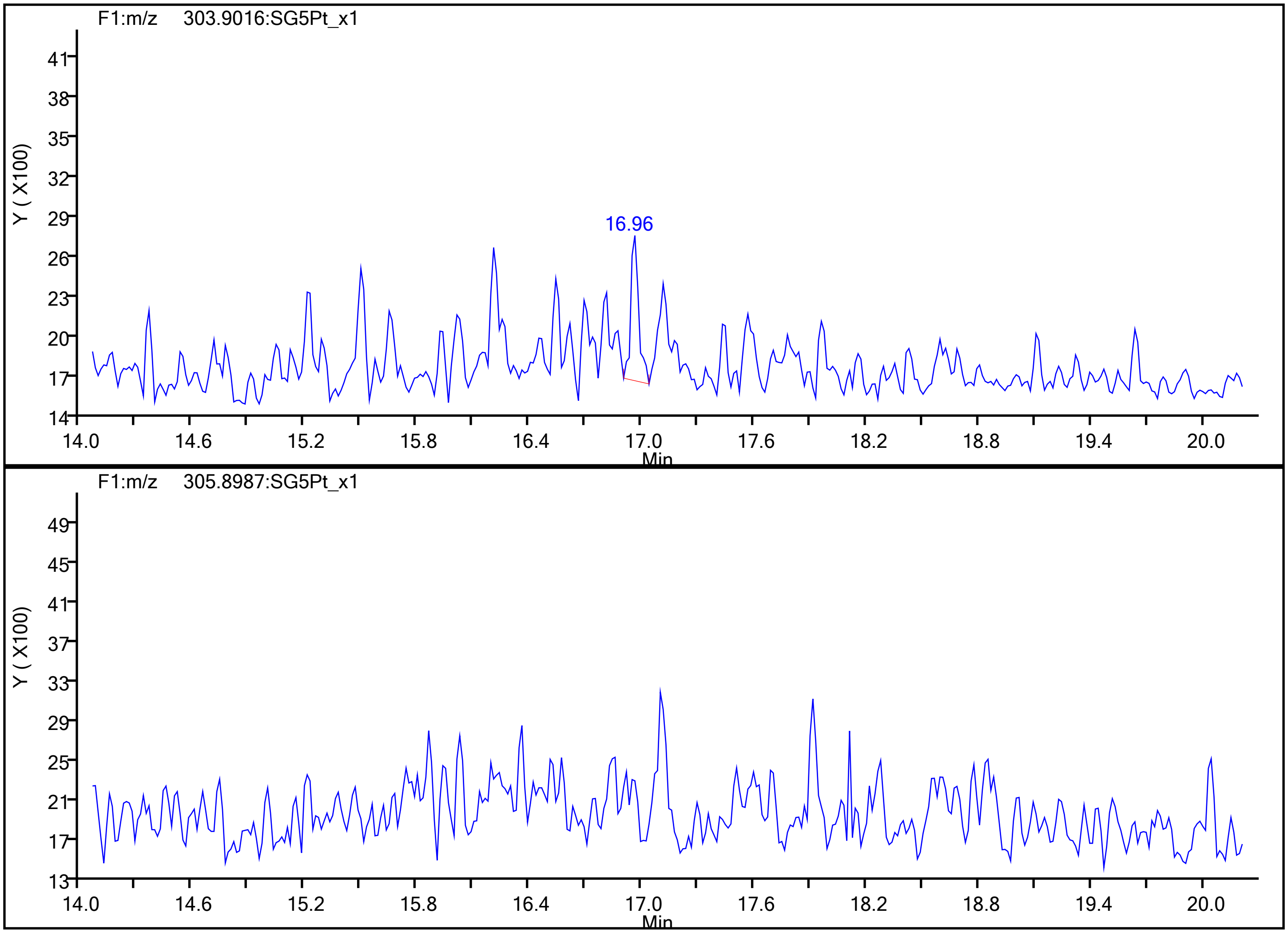

TCDF Interference Mass

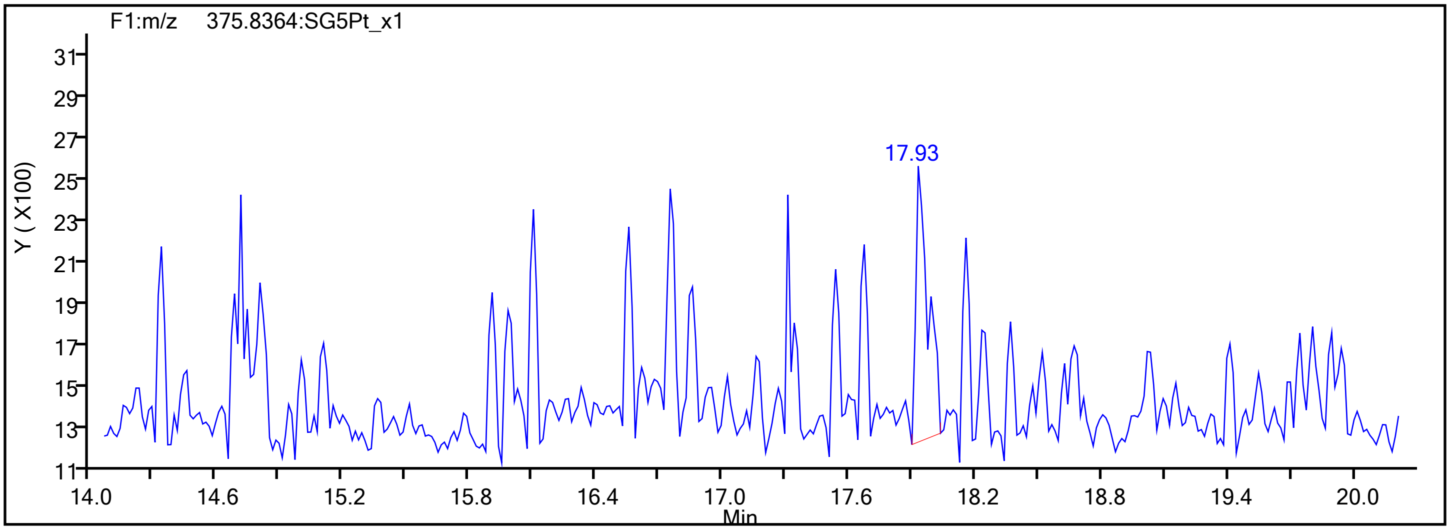

Report Date: 26-Jun-2020 13:16:01 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d
Injection Date: 25-Jun-2020 20:09:52
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

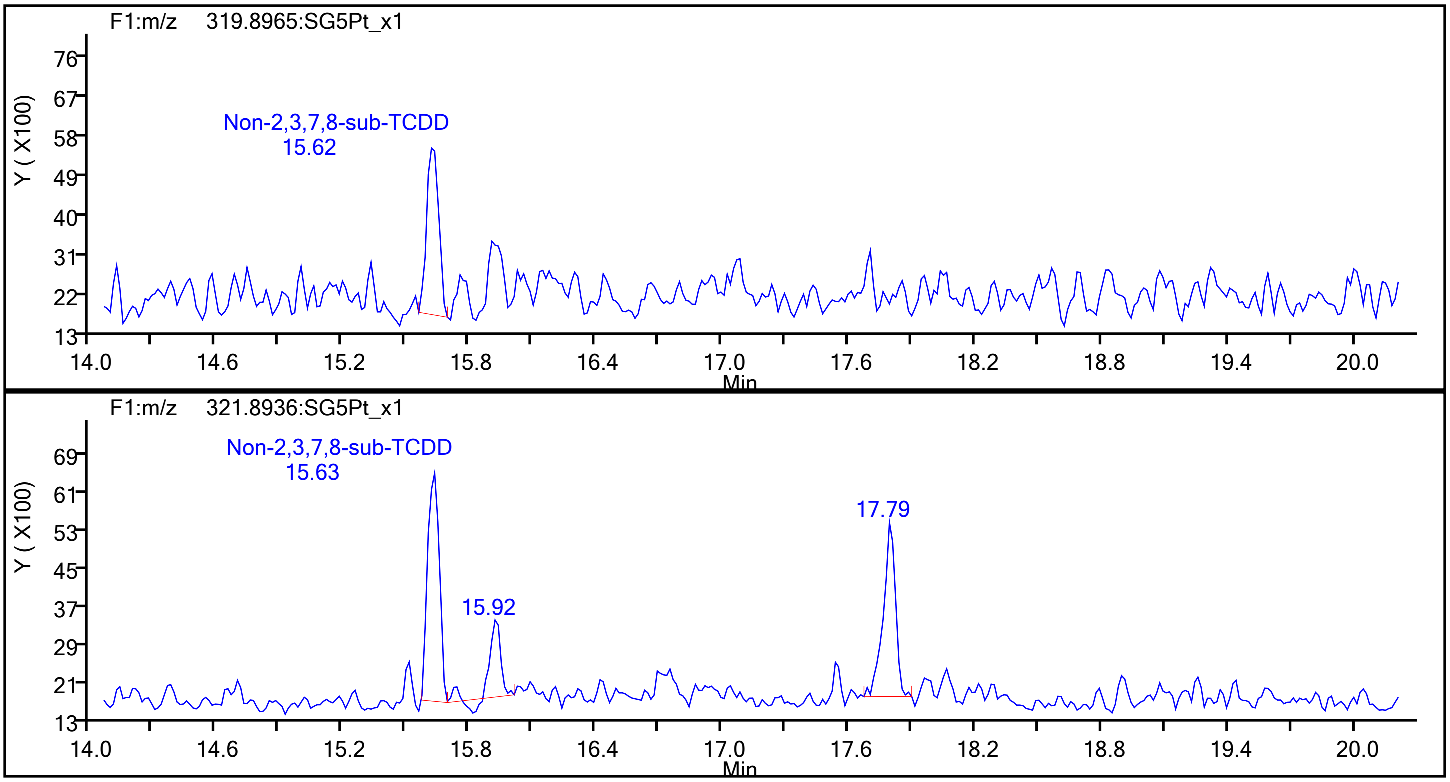

TCDD Standards

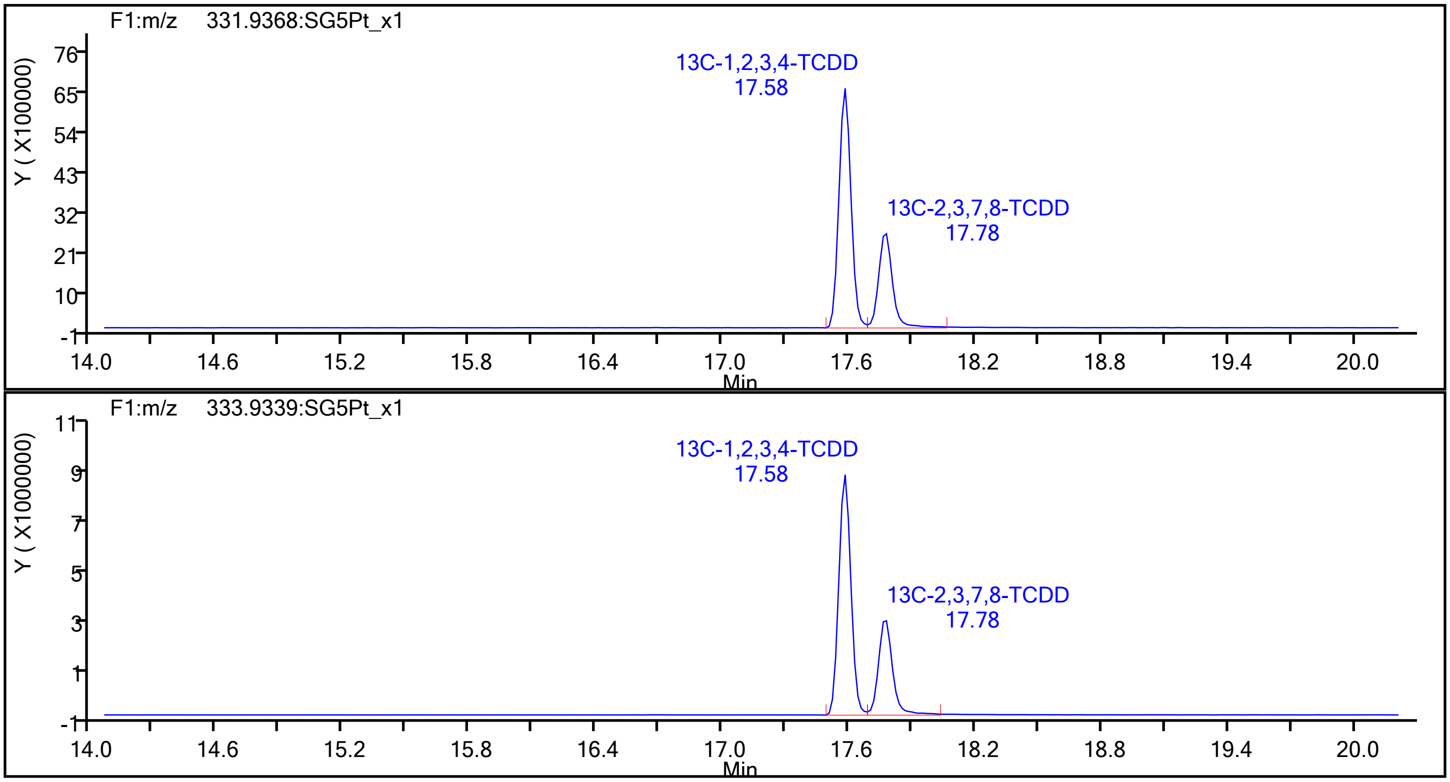

Report Date: 26-Jun-2020 13:16:02
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d
Injection Date: 25-Jun-2020 20:09:52
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 4
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

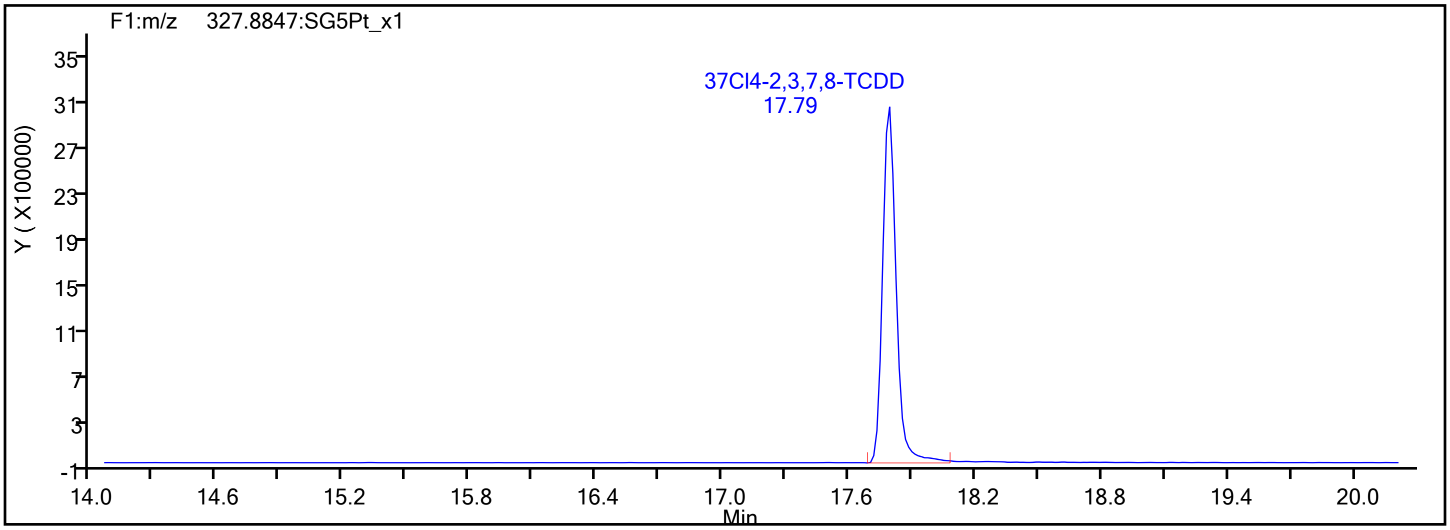

37Cl4-TCDD Standards

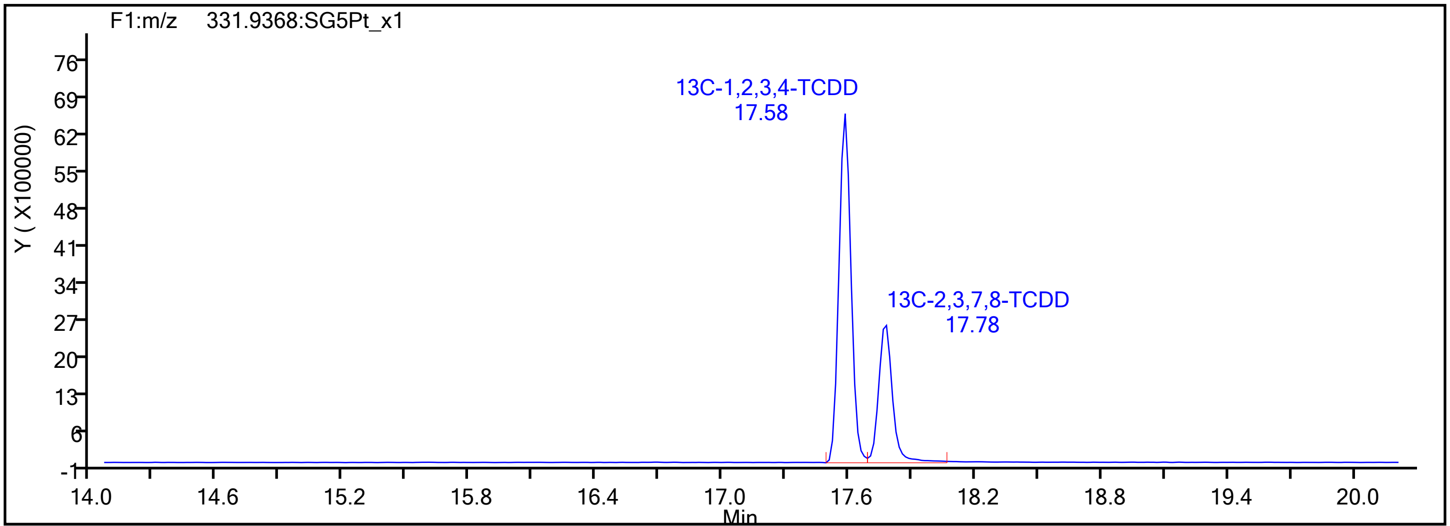

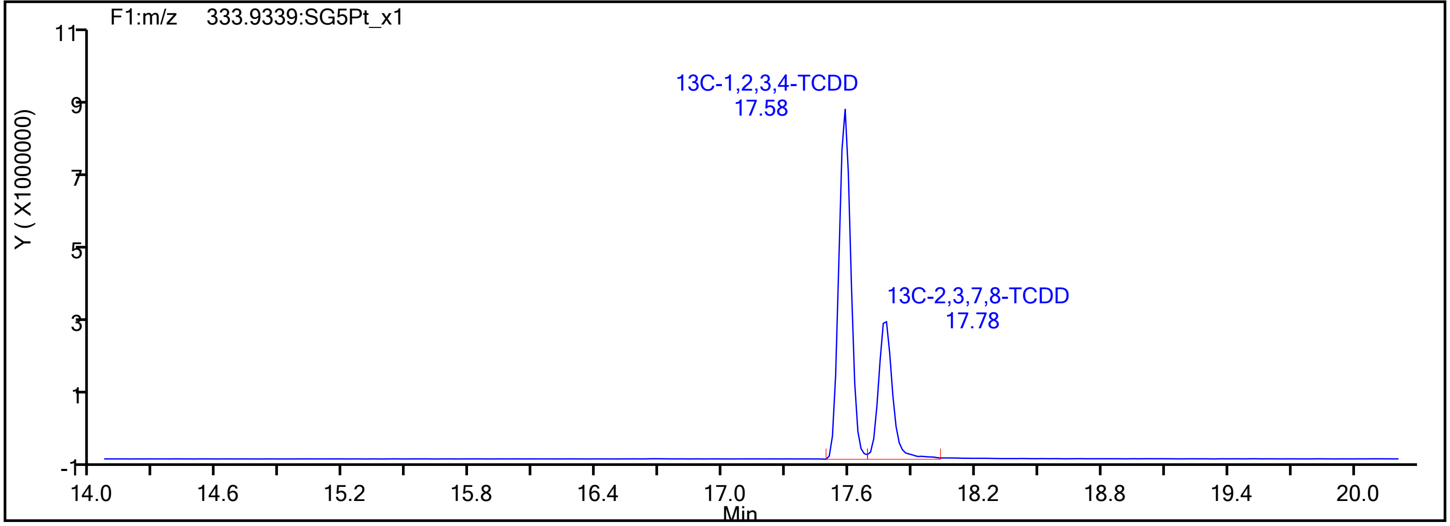

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

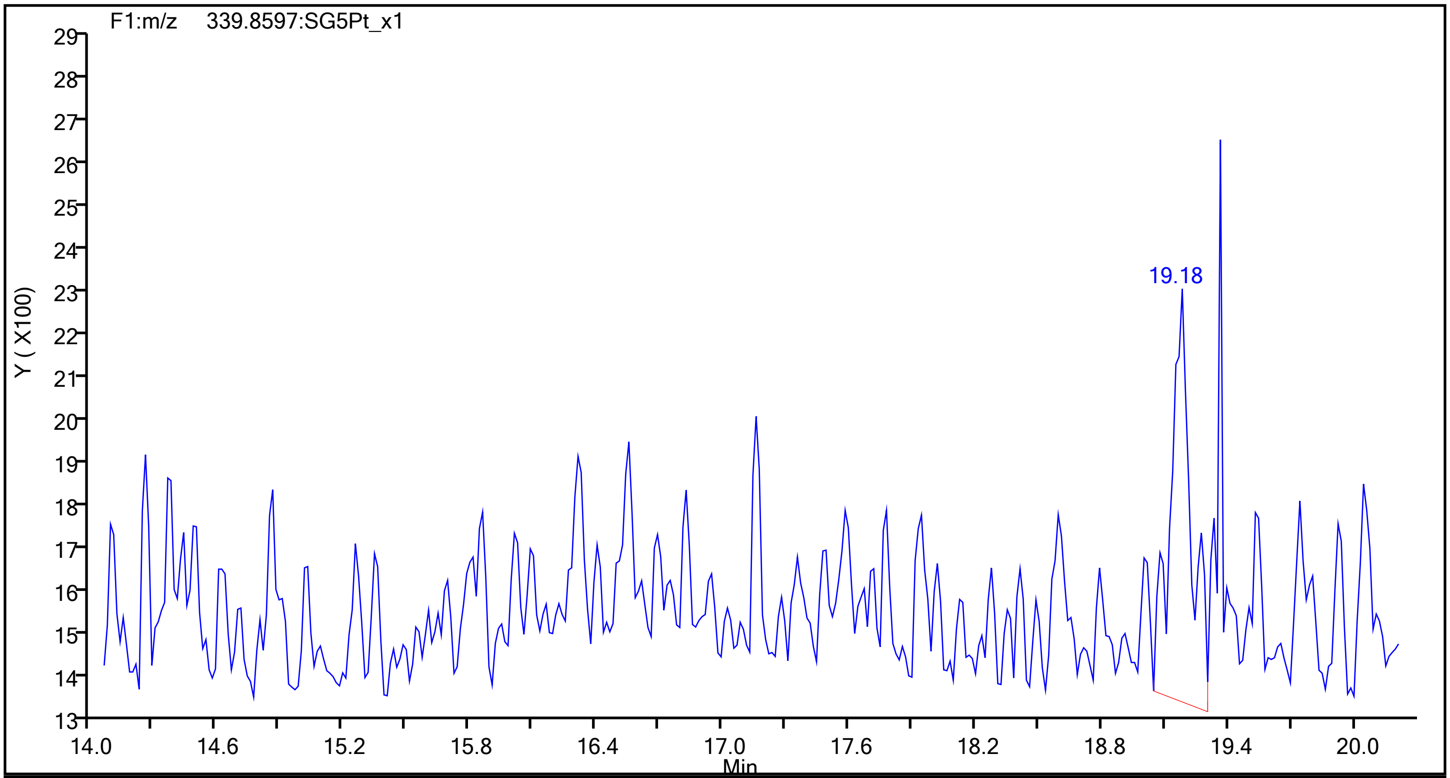

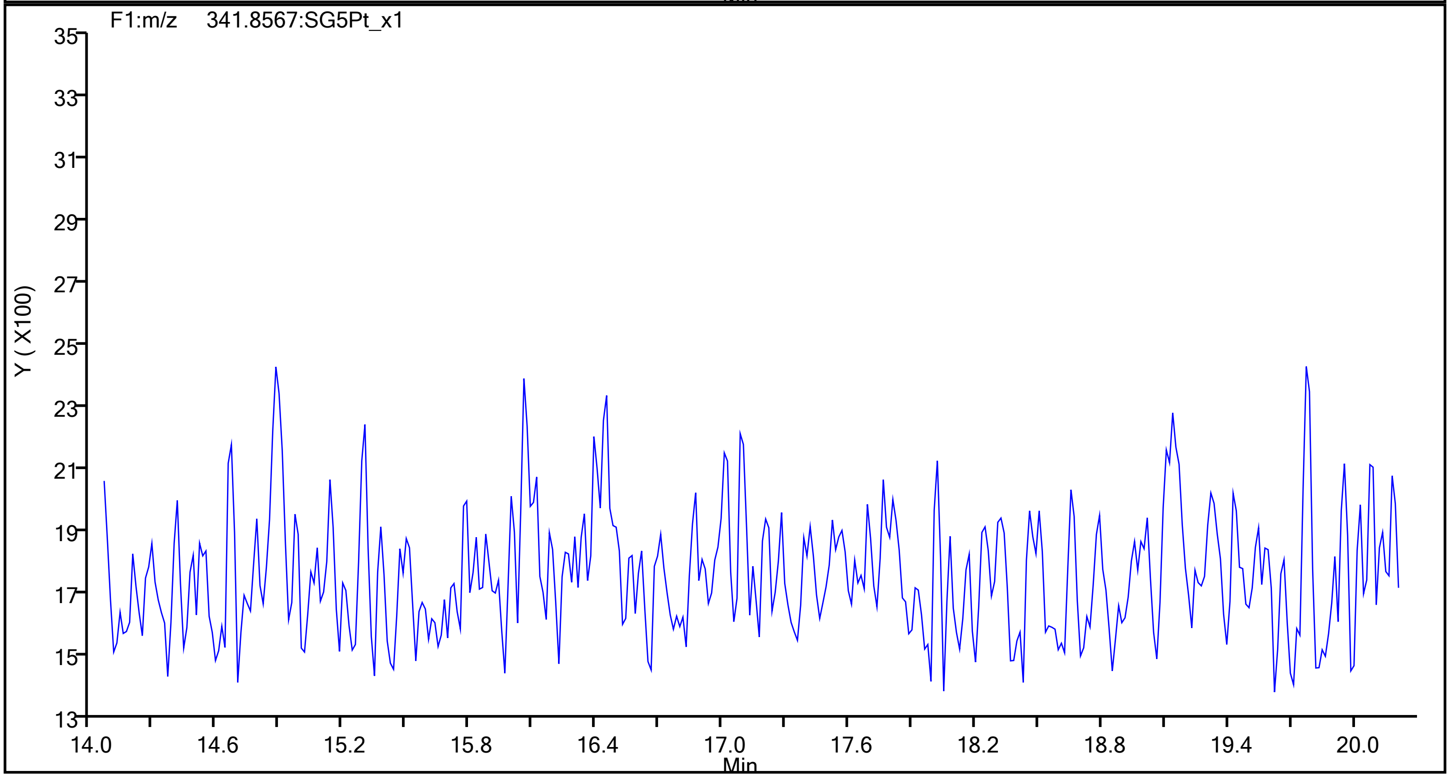

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

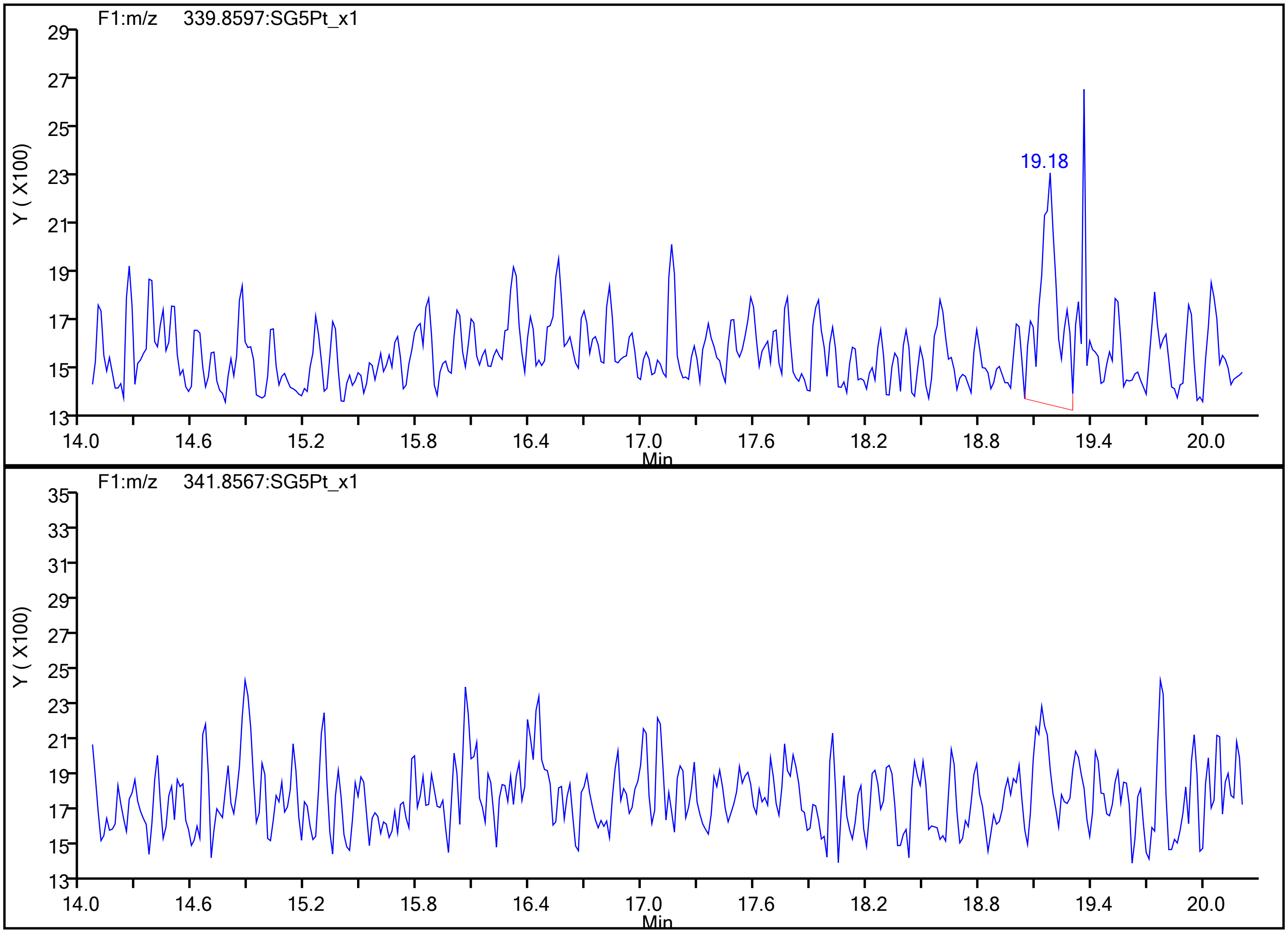

F1 PeCDFs Interference Mass

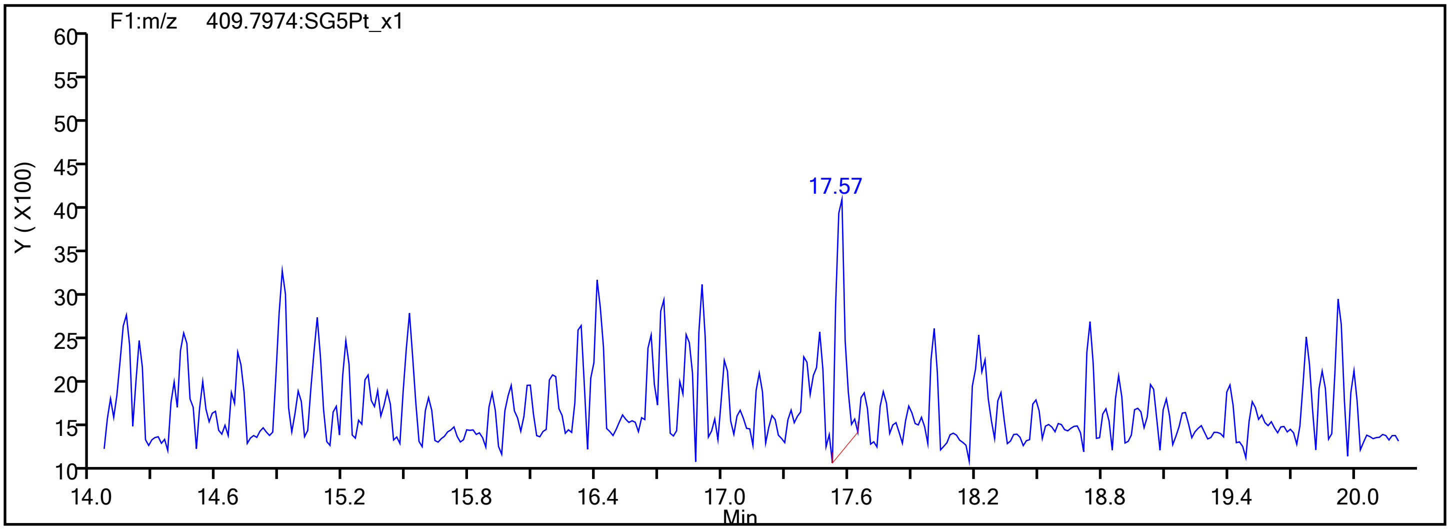

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Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

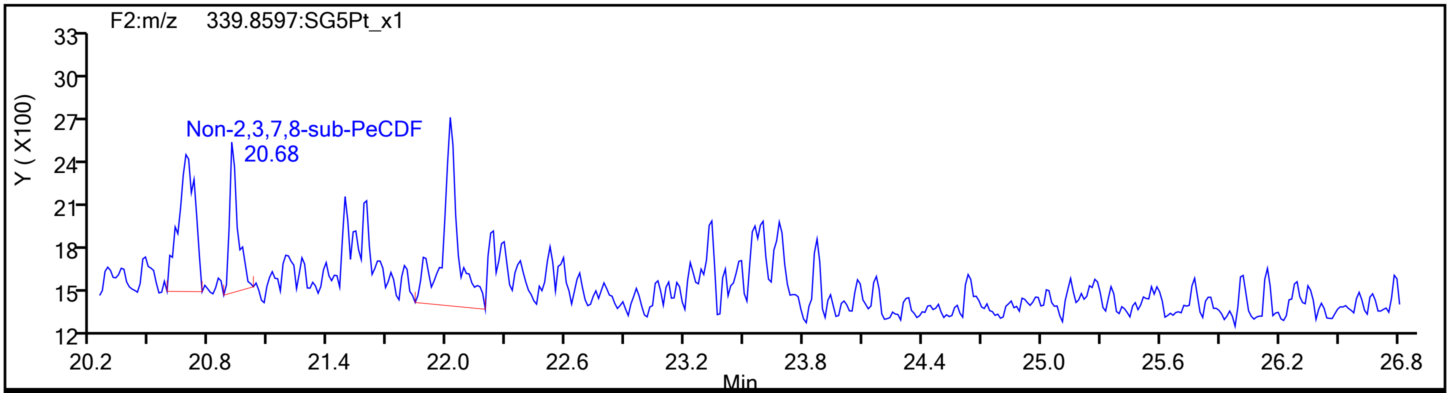

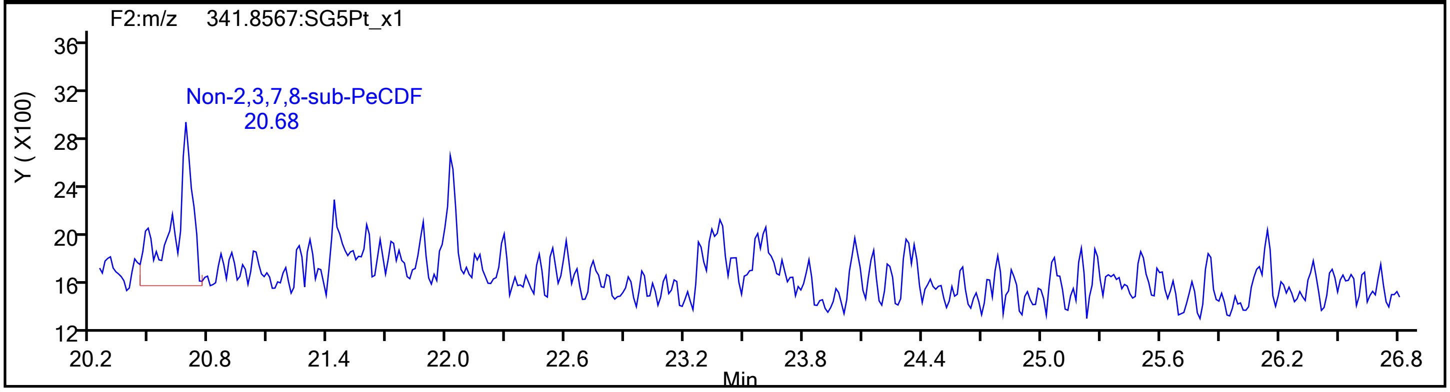

PeCDF Standards

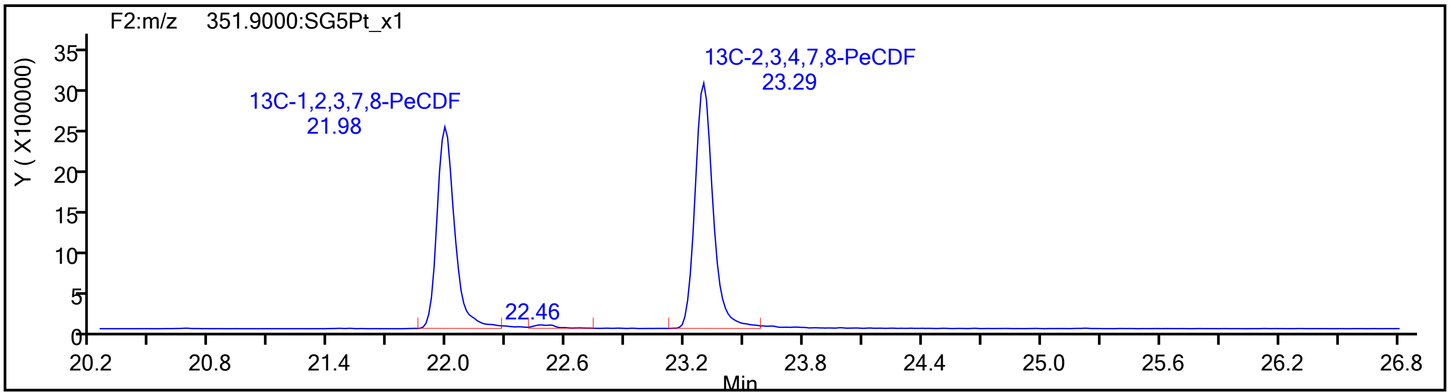

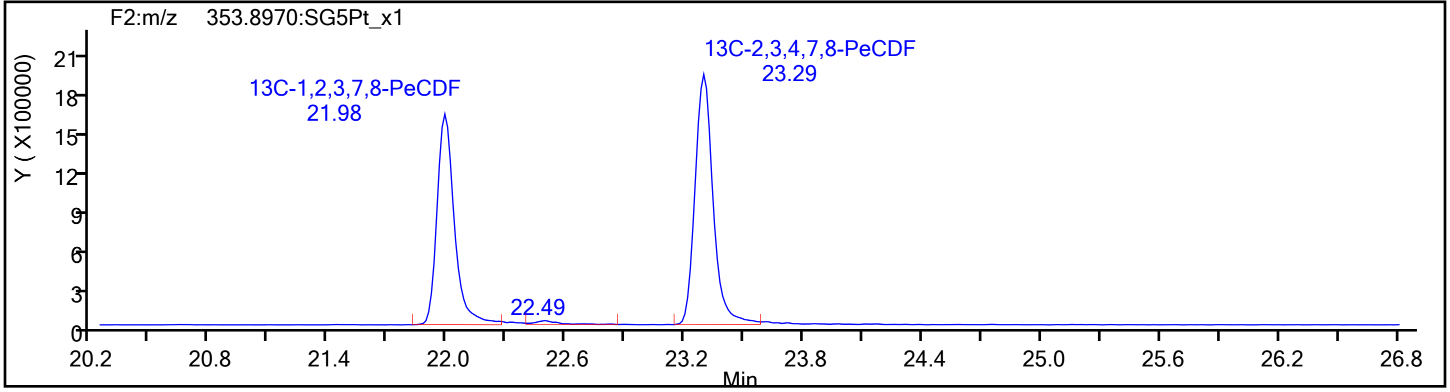

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

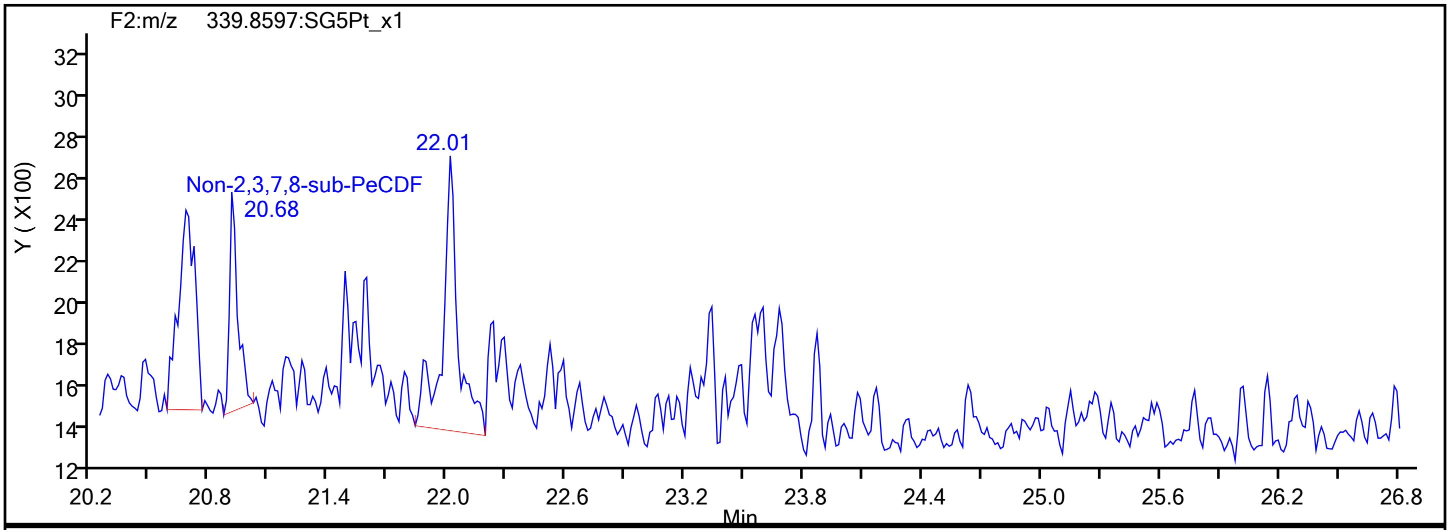

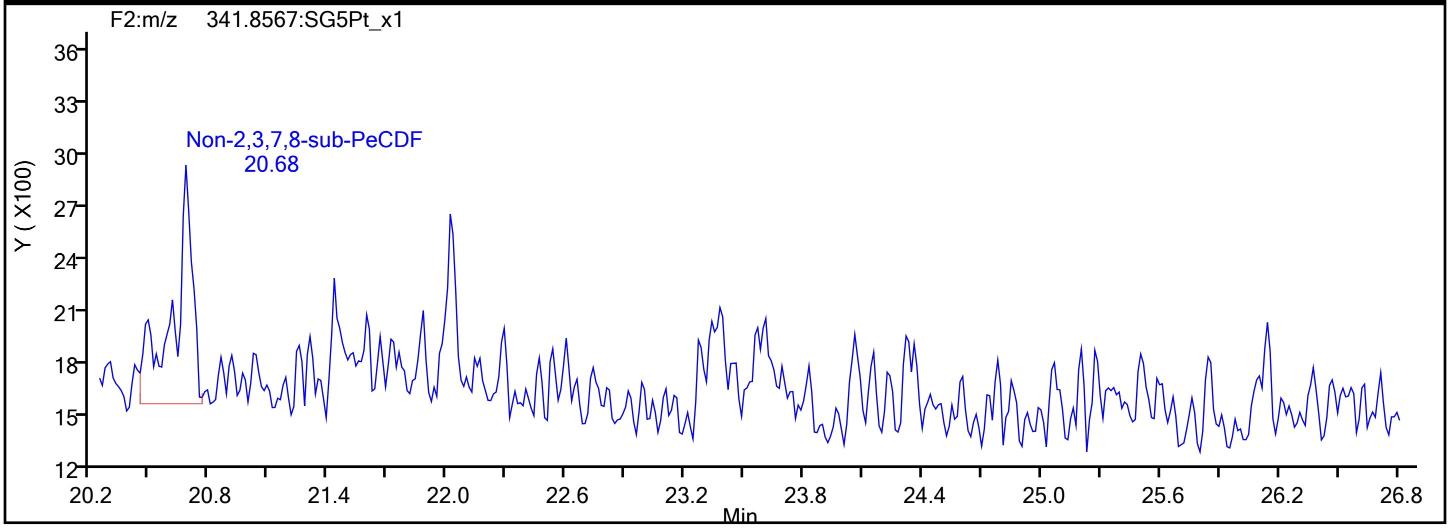

PeCDF Interference Mass

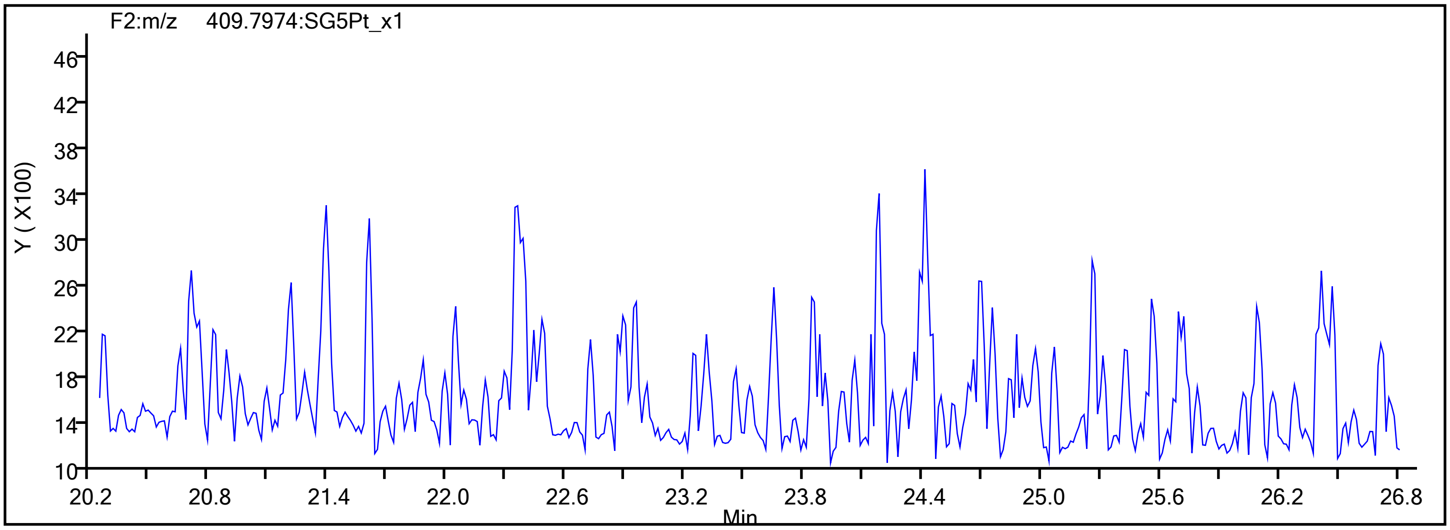

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

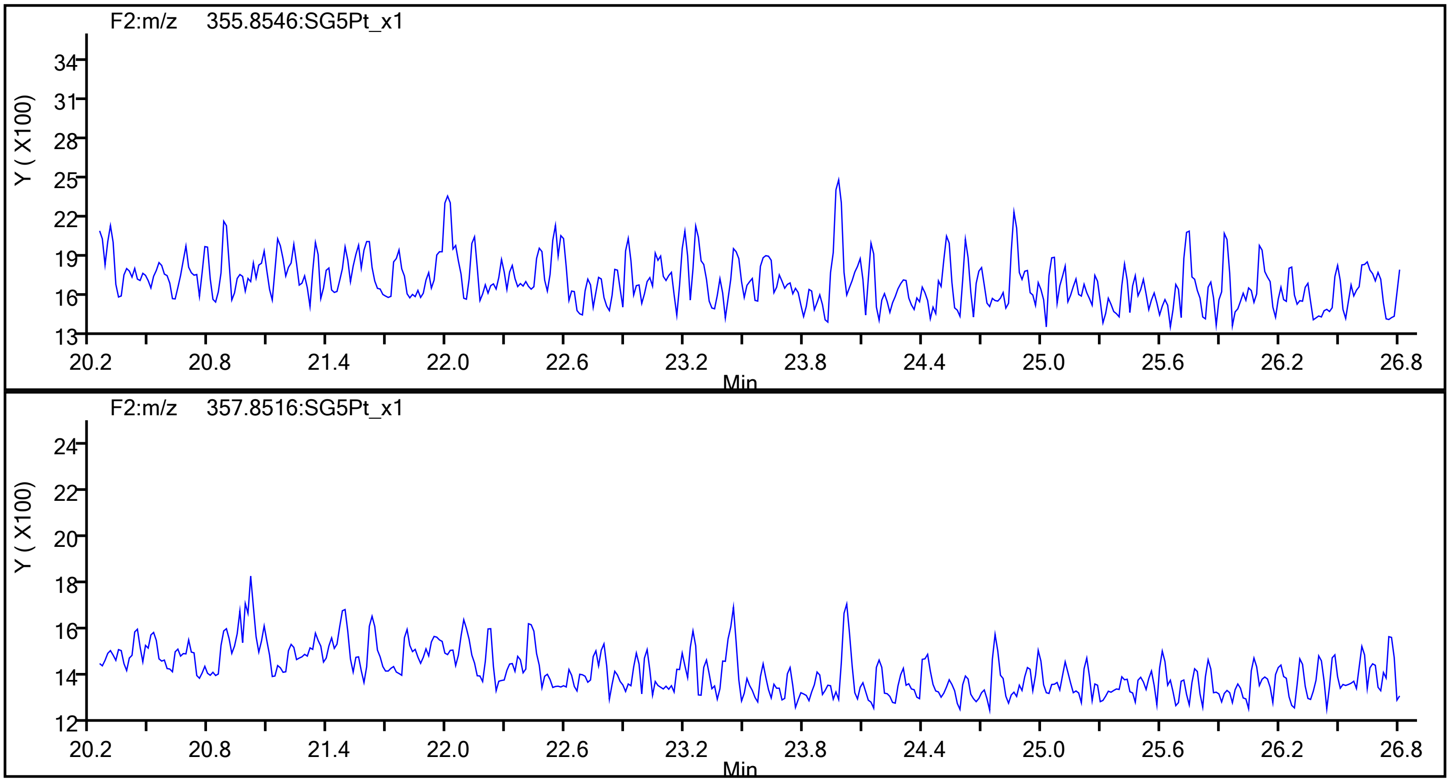

PeCDD Standards

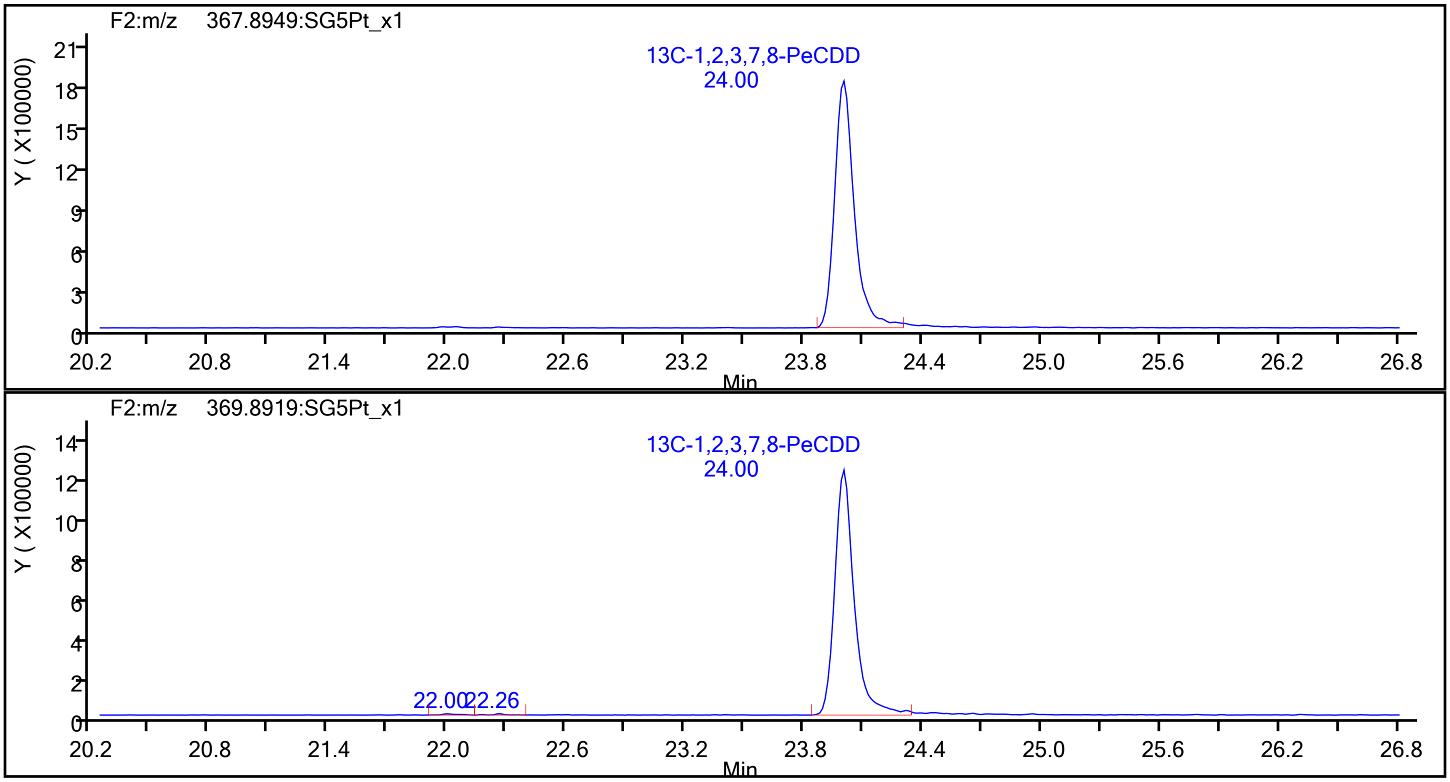

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

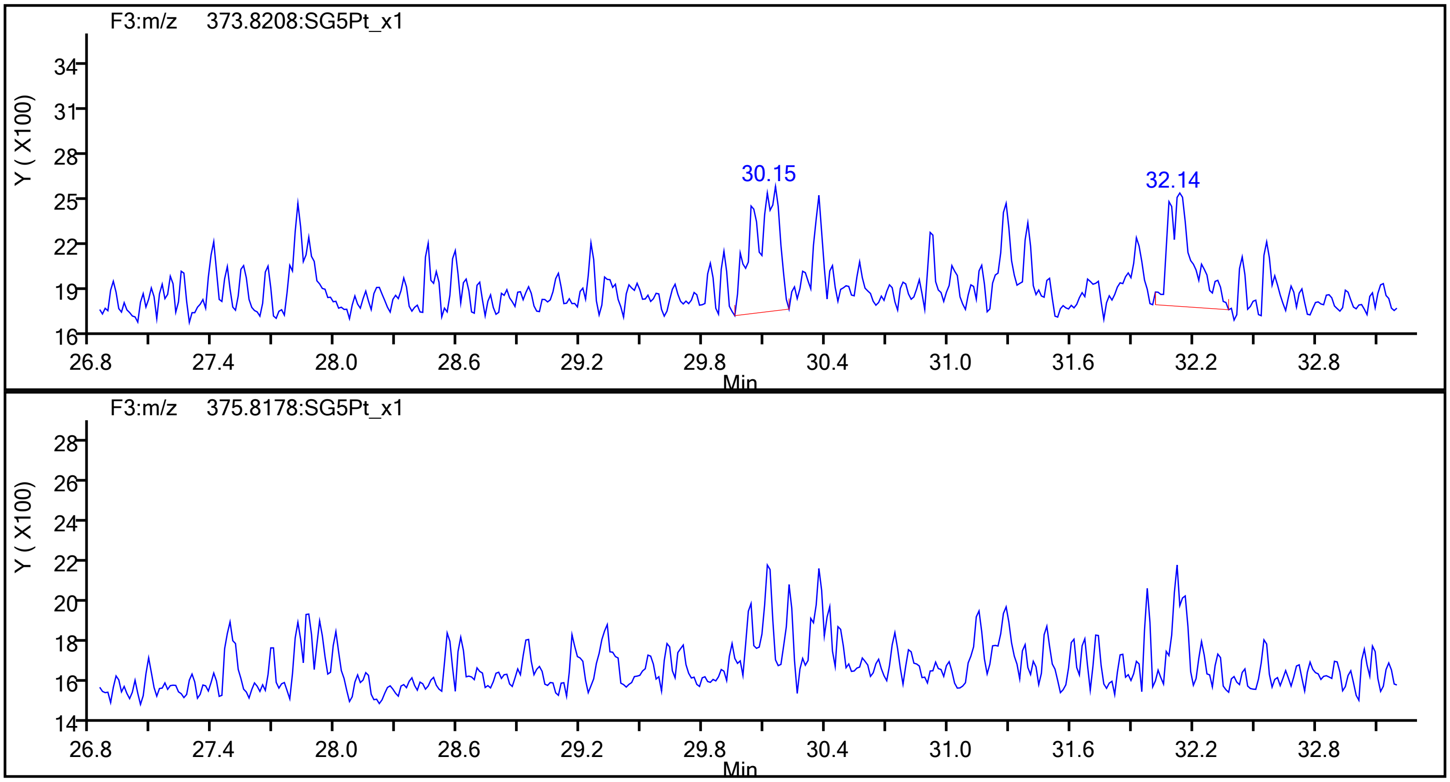

HxCDF Standards

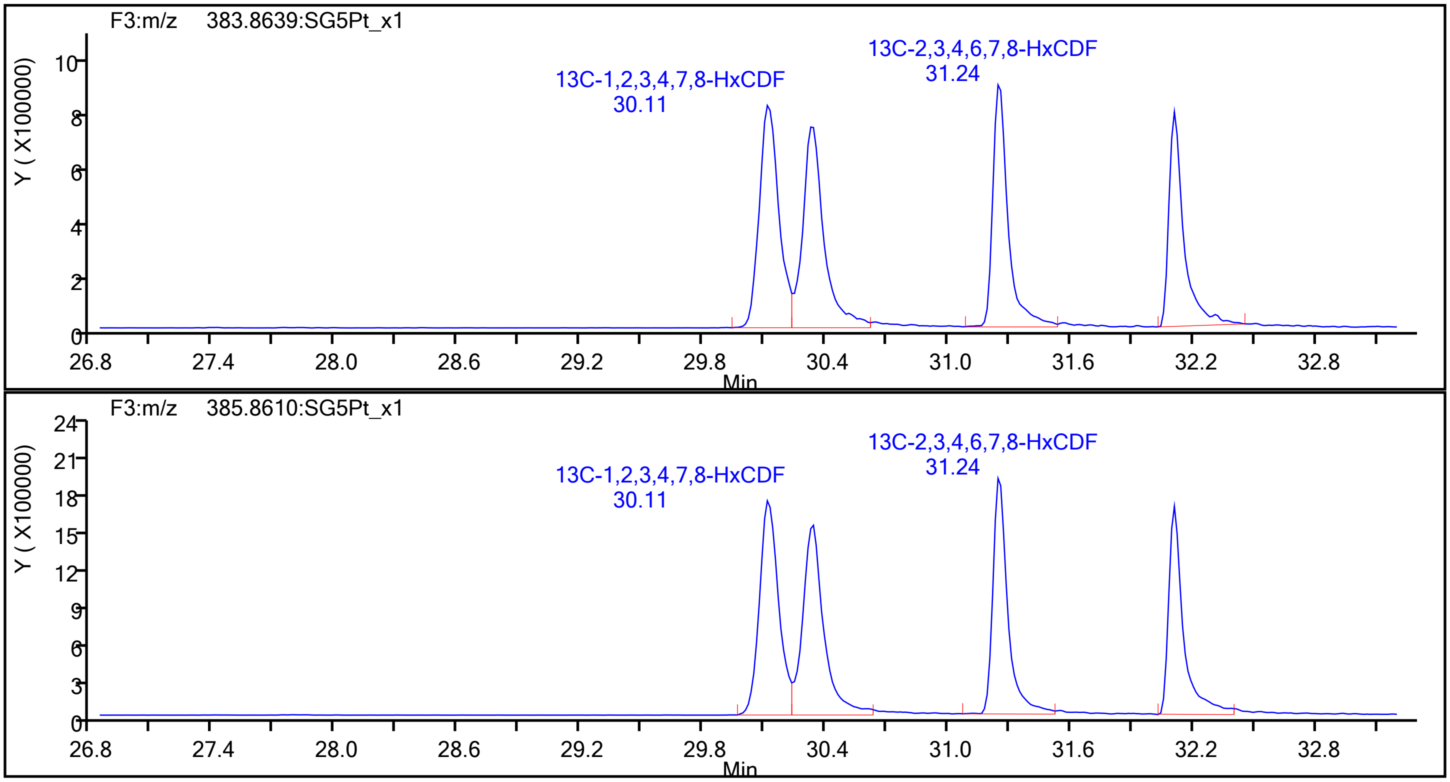

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

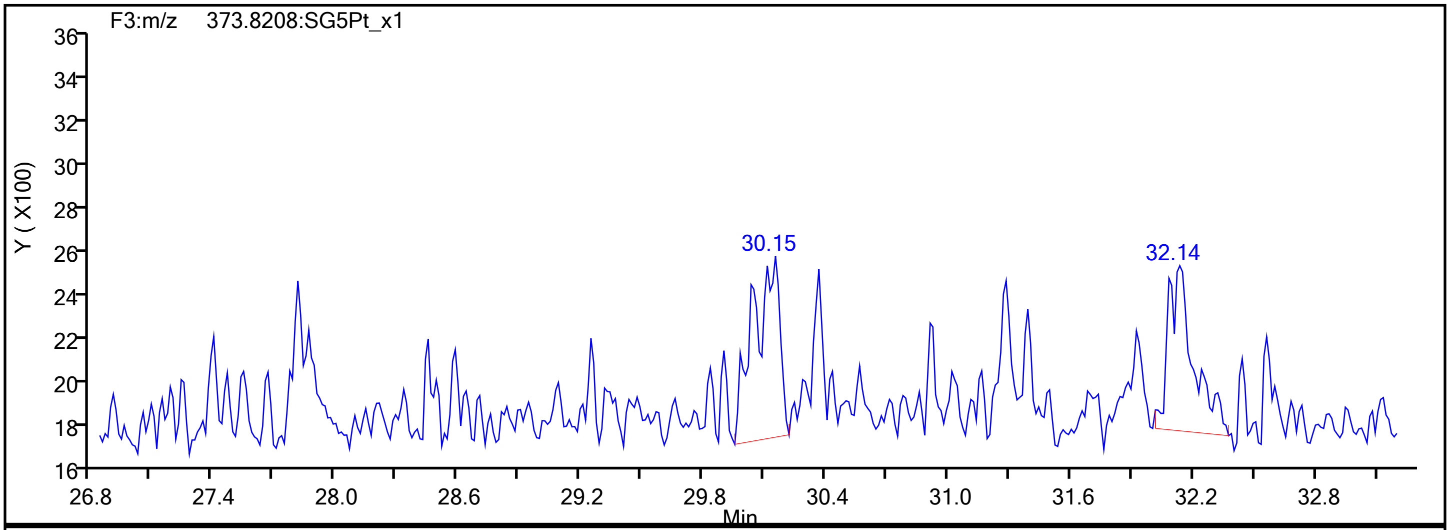

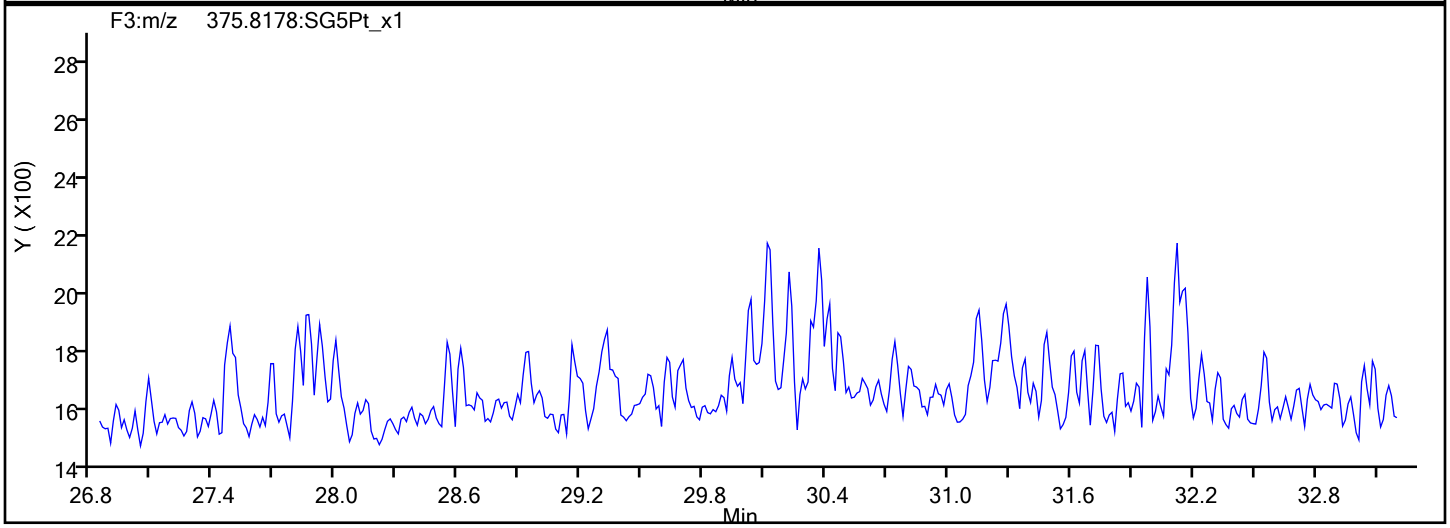

HxCDF Interference Mass

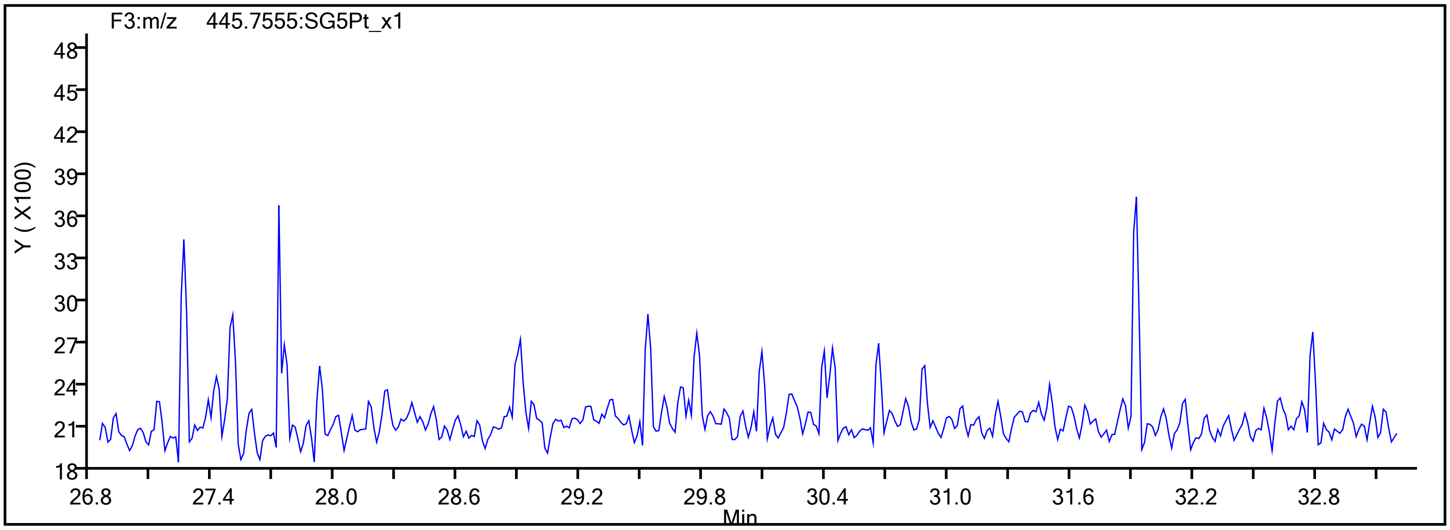

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d

Injection Date: 25-Jun-2020 20:09:52

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621

Sample Line#: 4

Column Type: DB-5

Column Dia: 0.32 mm

HxCDD

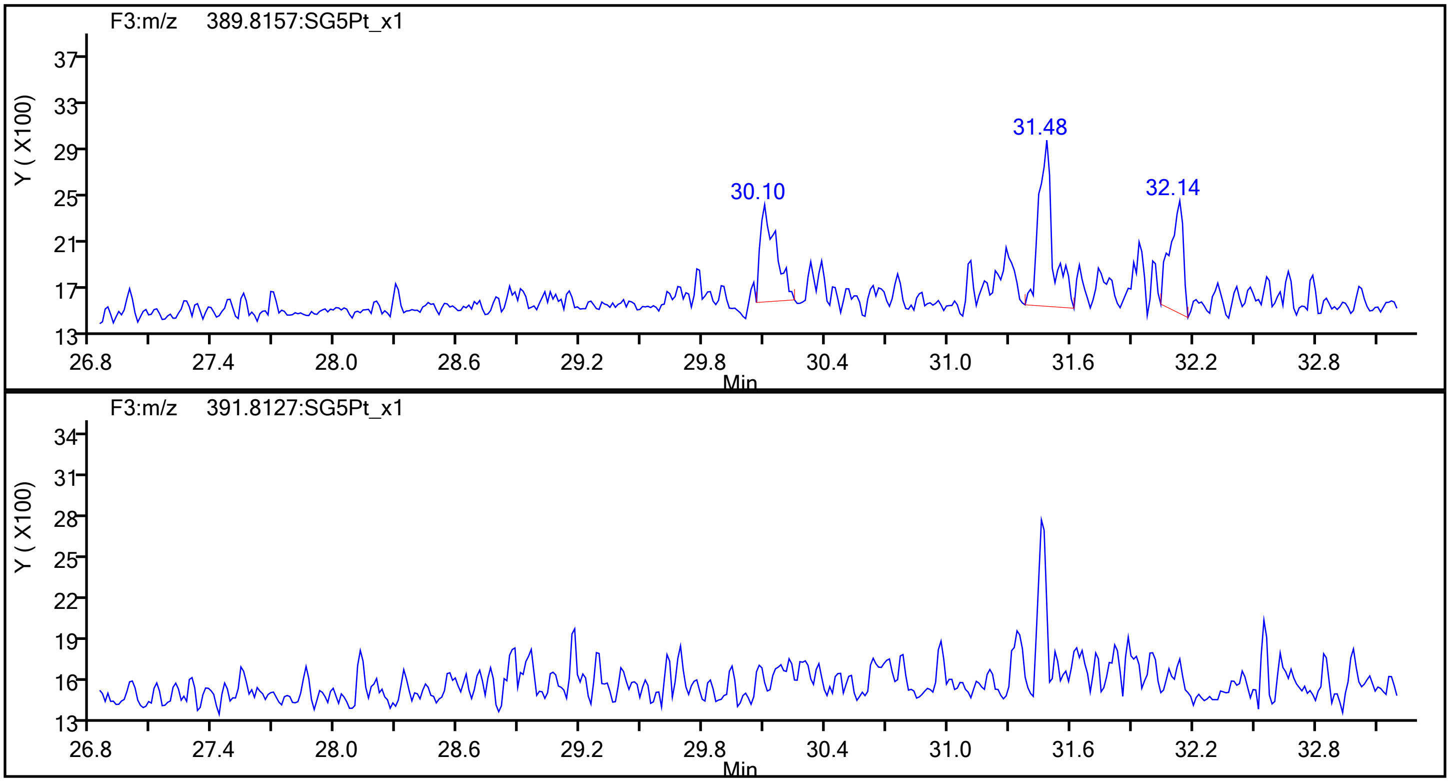

HxCDD Standards

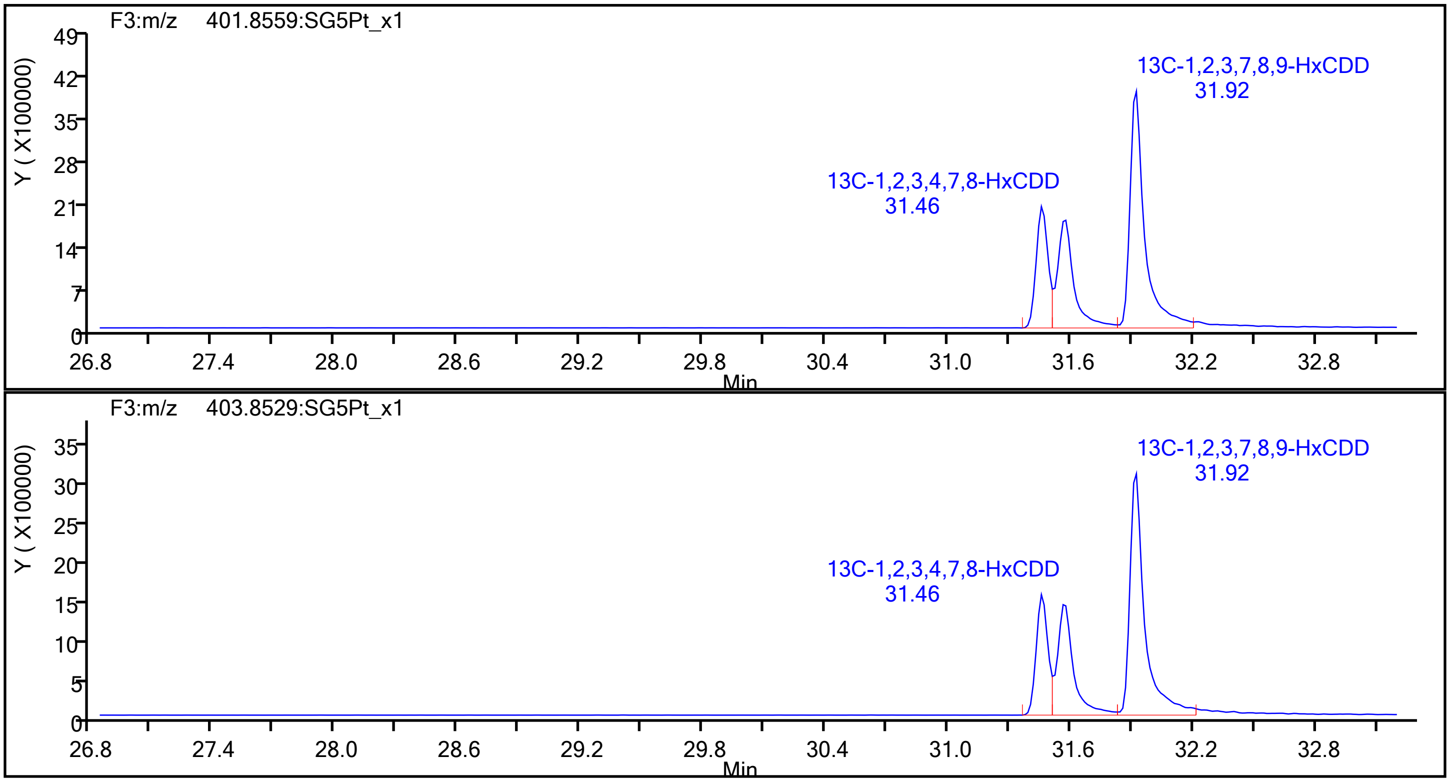

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

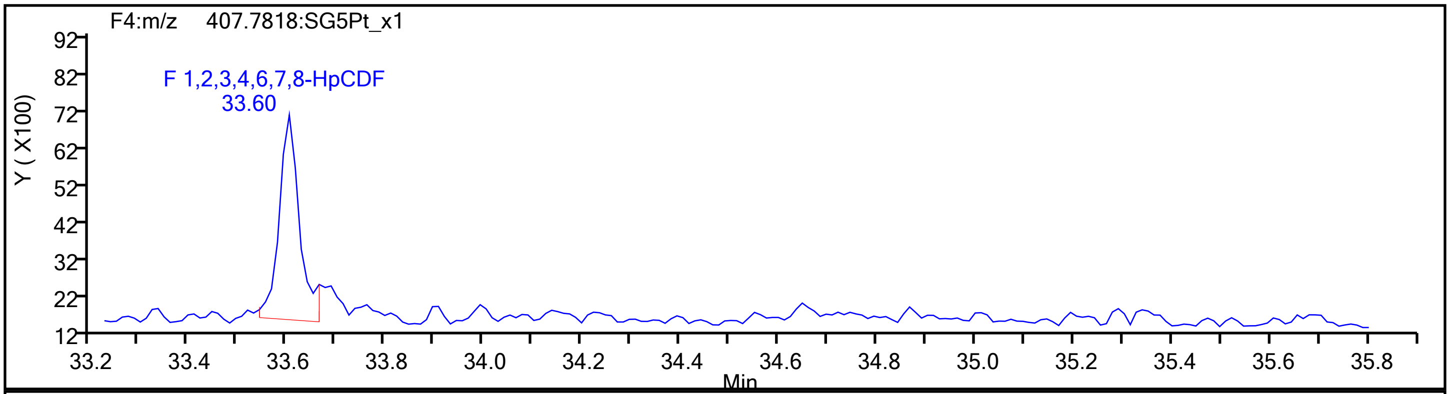

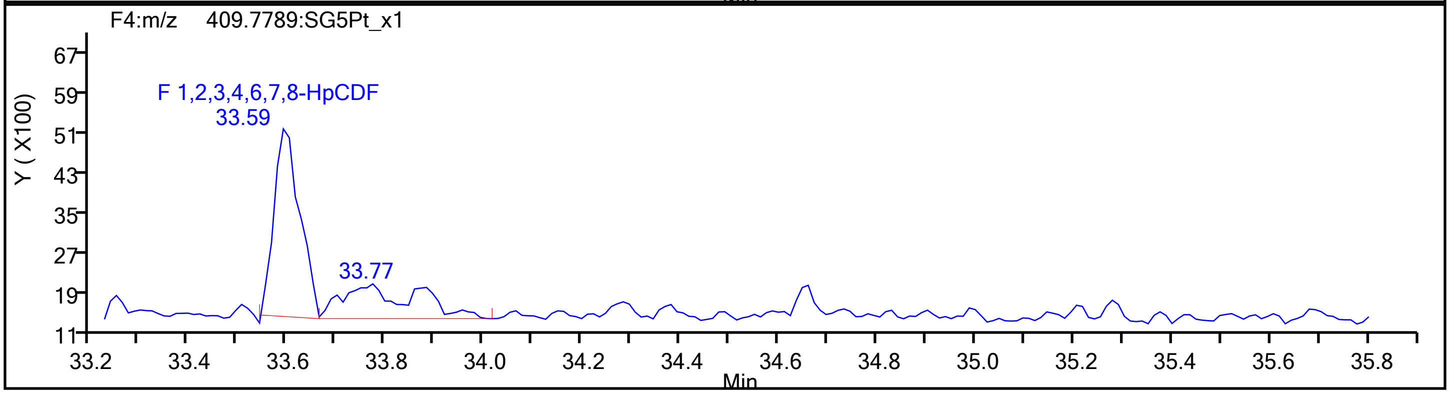

HpCDF Standards

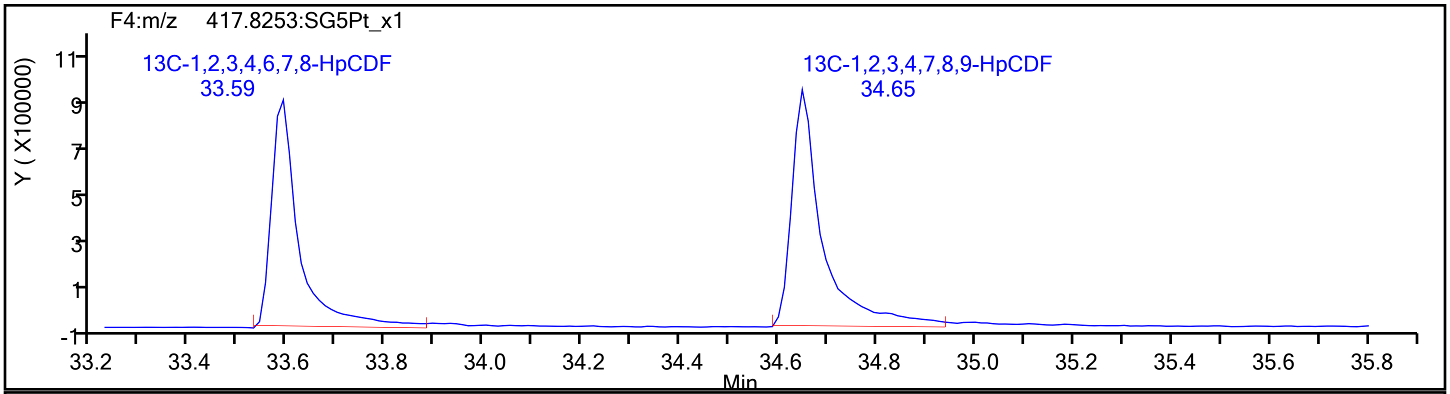

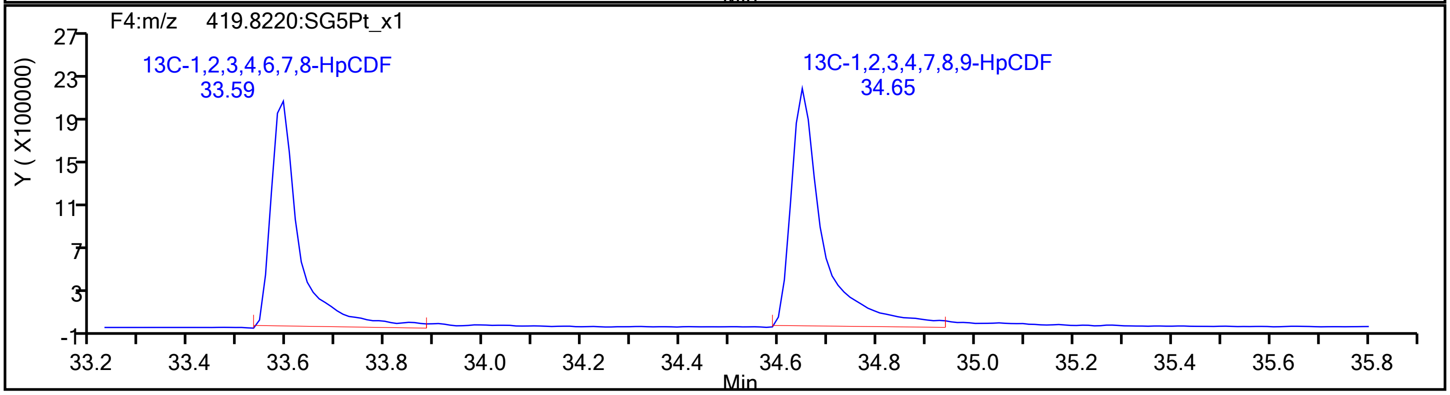

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d

Injection Date: 25-Jun-2020 20:09:52 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621 Sample Line#: 4

Column Type: DB-5 Column Dia: 0.32 mm

HpCDF

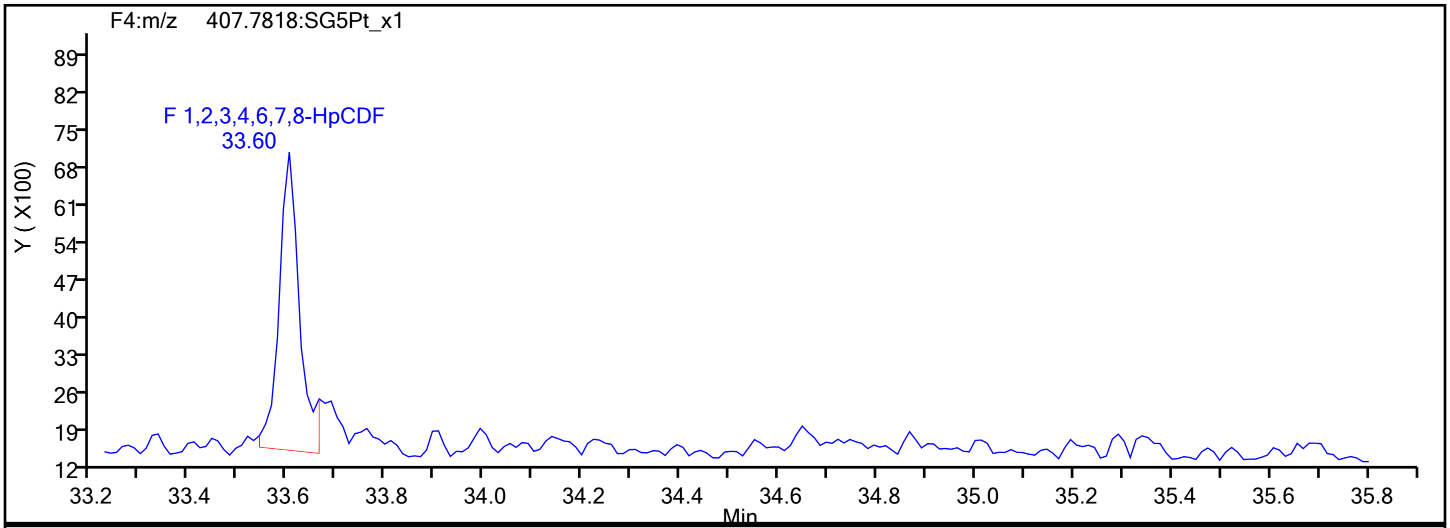

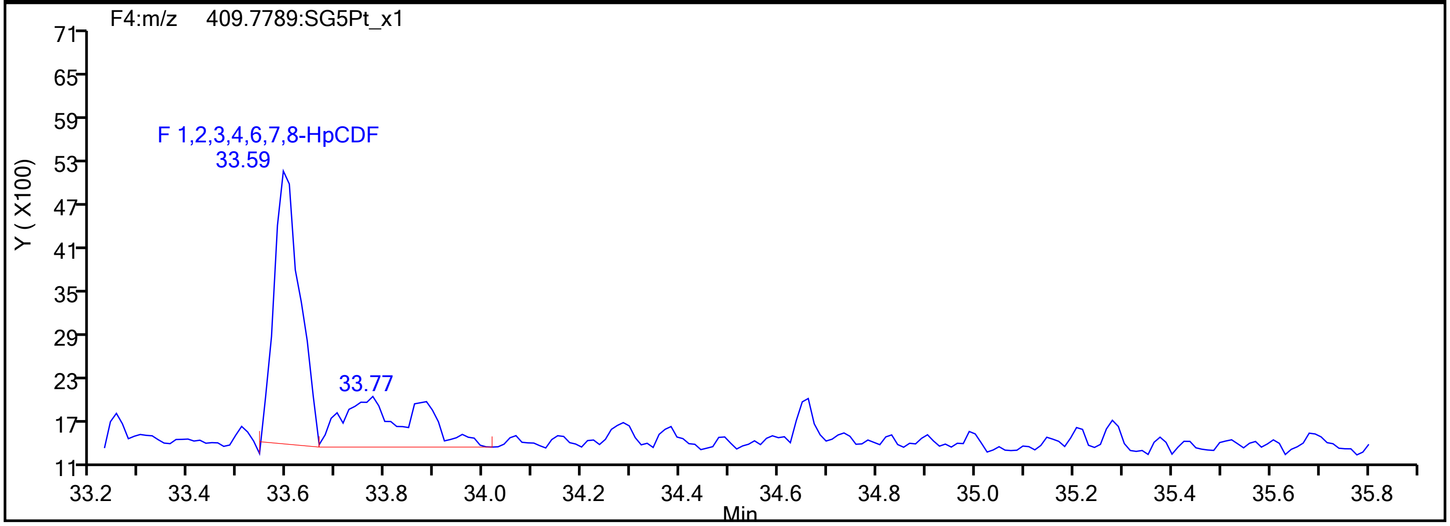

HpCDF Interference Mass

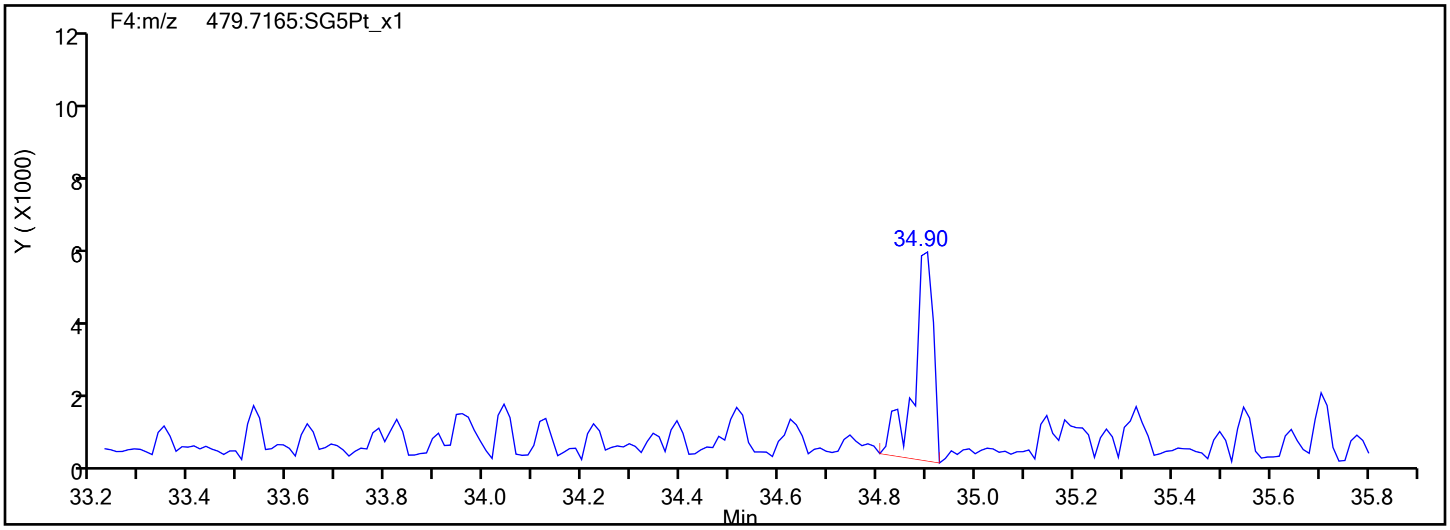

Report Date: 26-Jun-2020 13:16:02 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

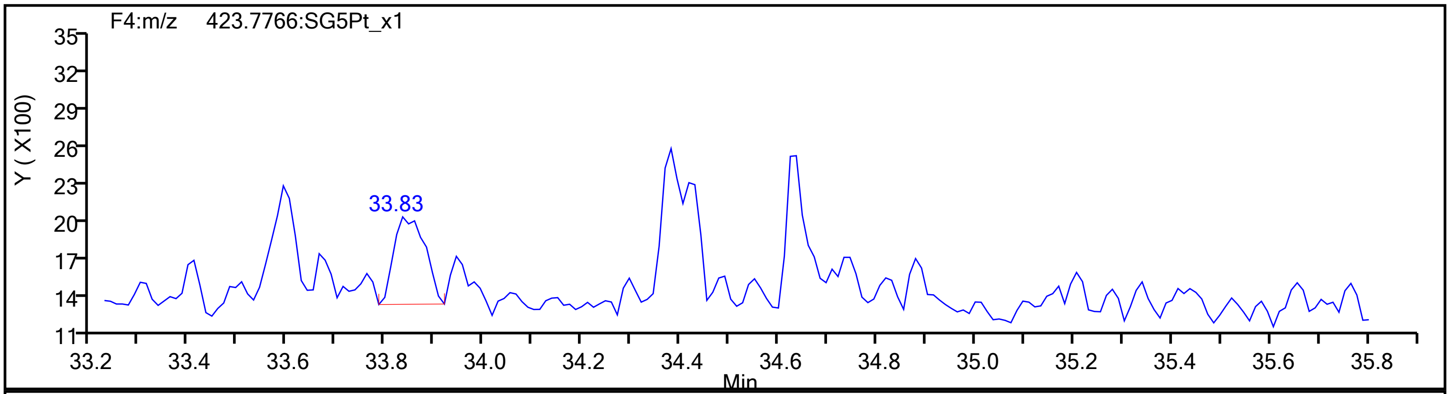

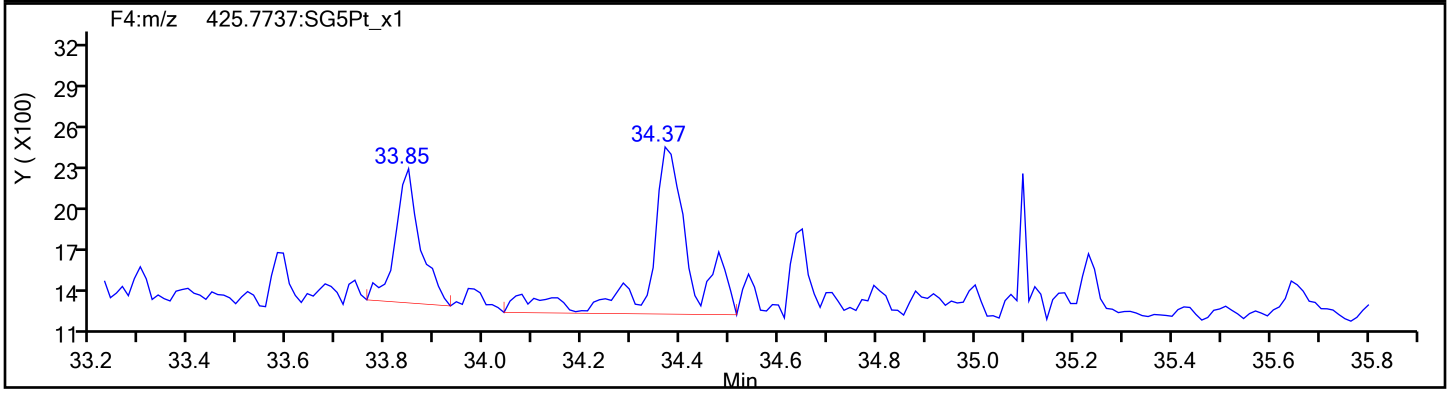

HpCDD Standards

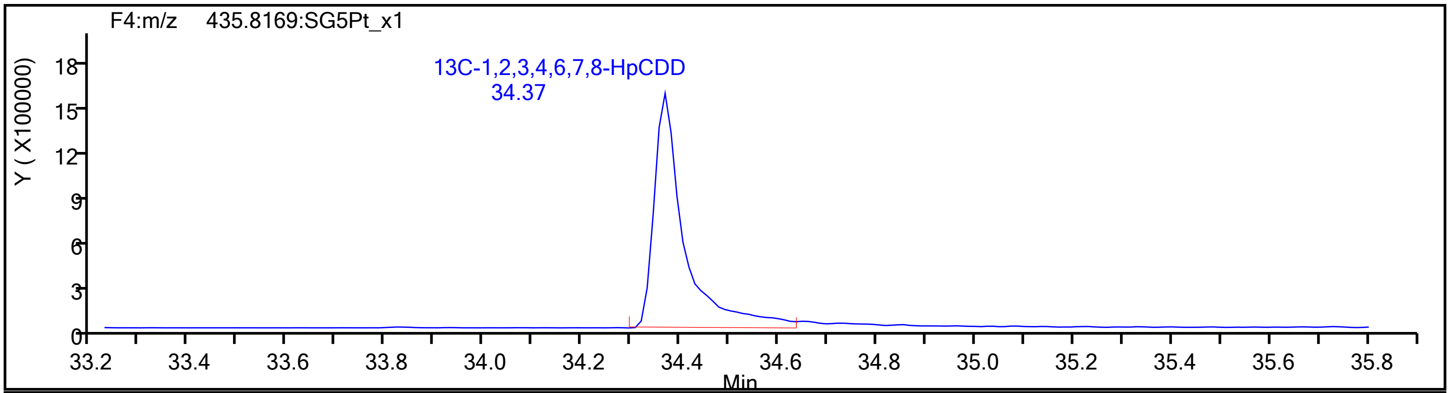

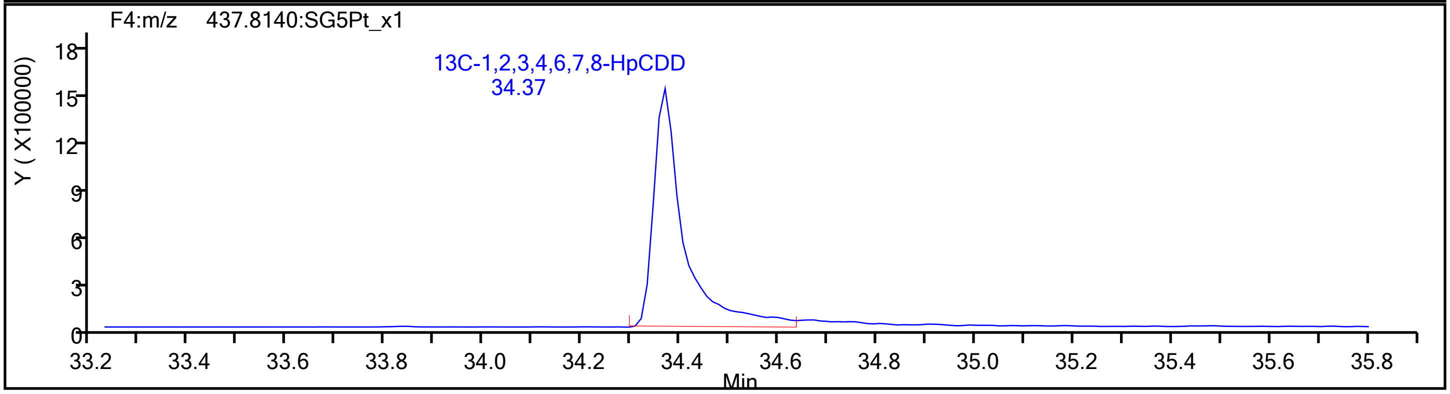

Report Date: 26-Jun-2020 13:16:03 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d

Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

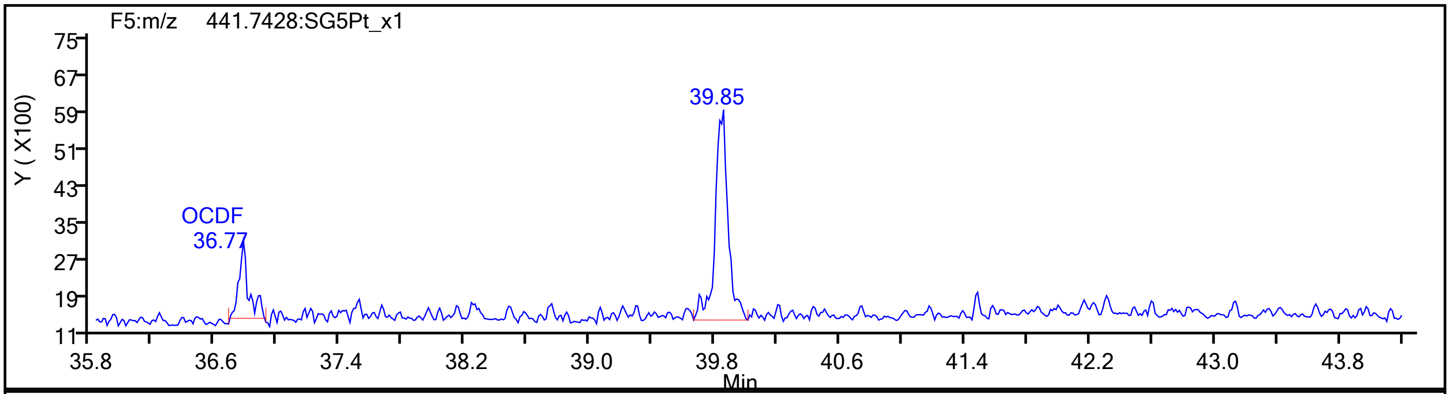

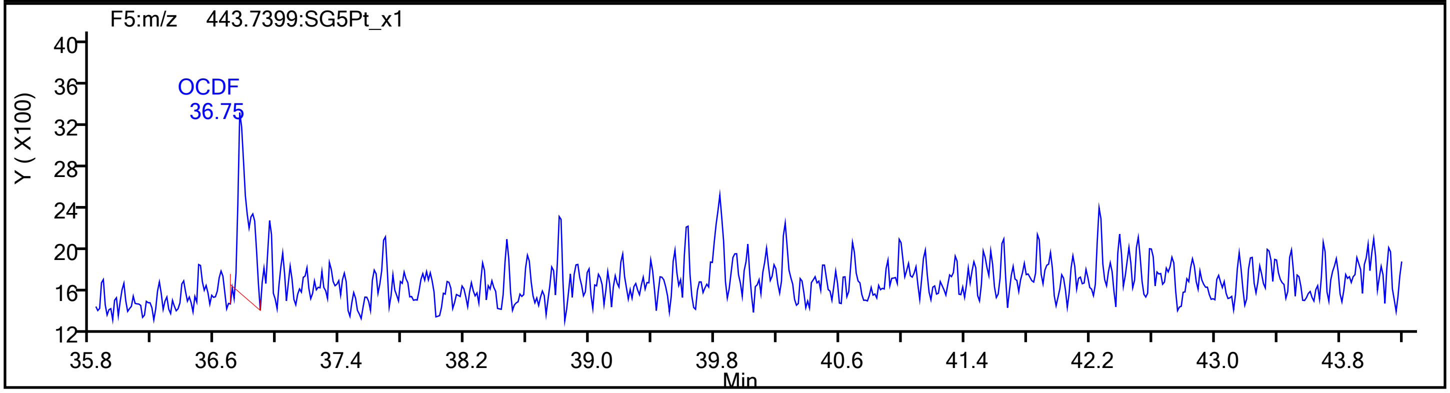

OCDF Standards

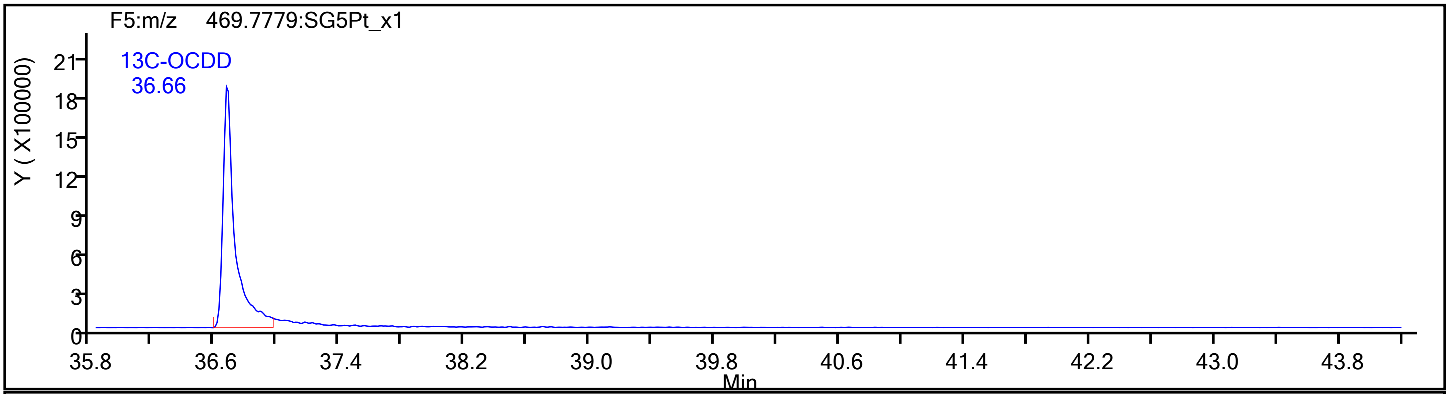

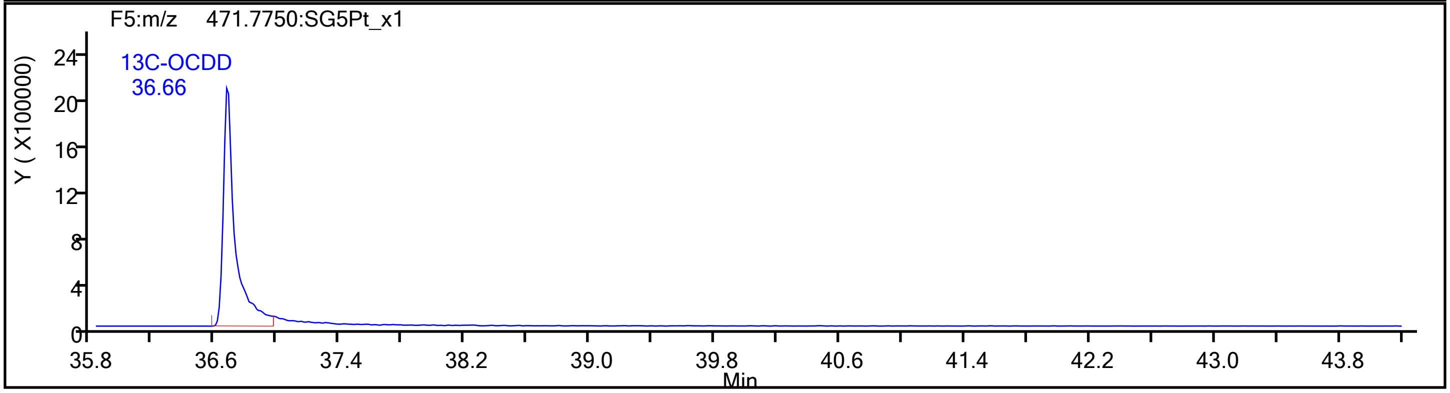

Report Date: 26-Jun-2020 13:16:03 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

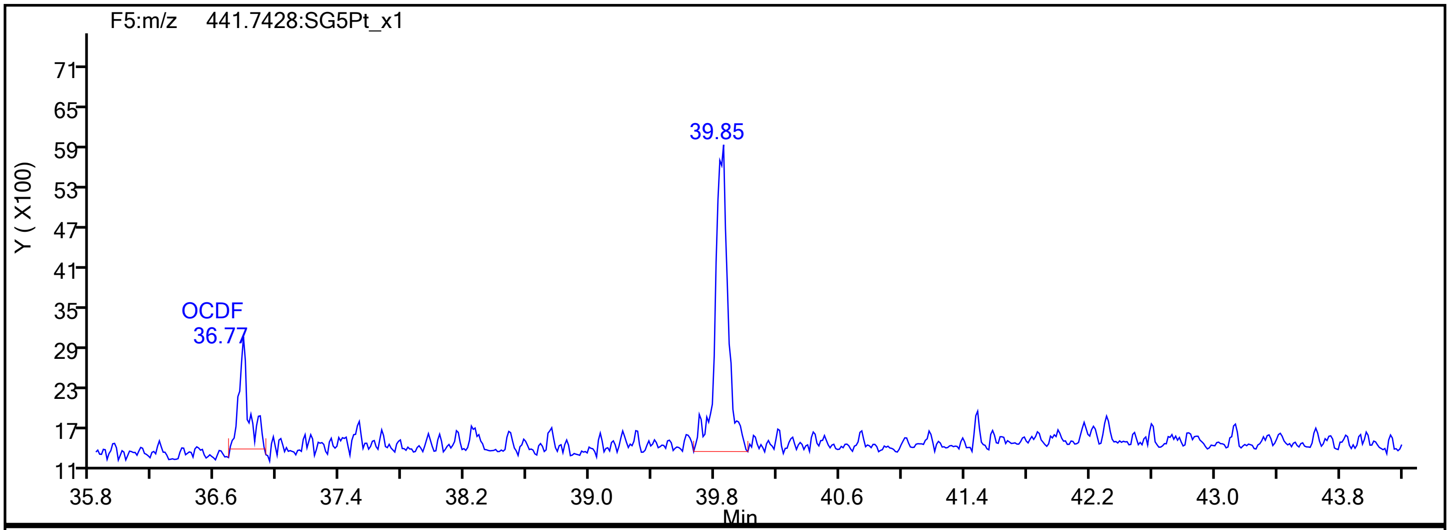

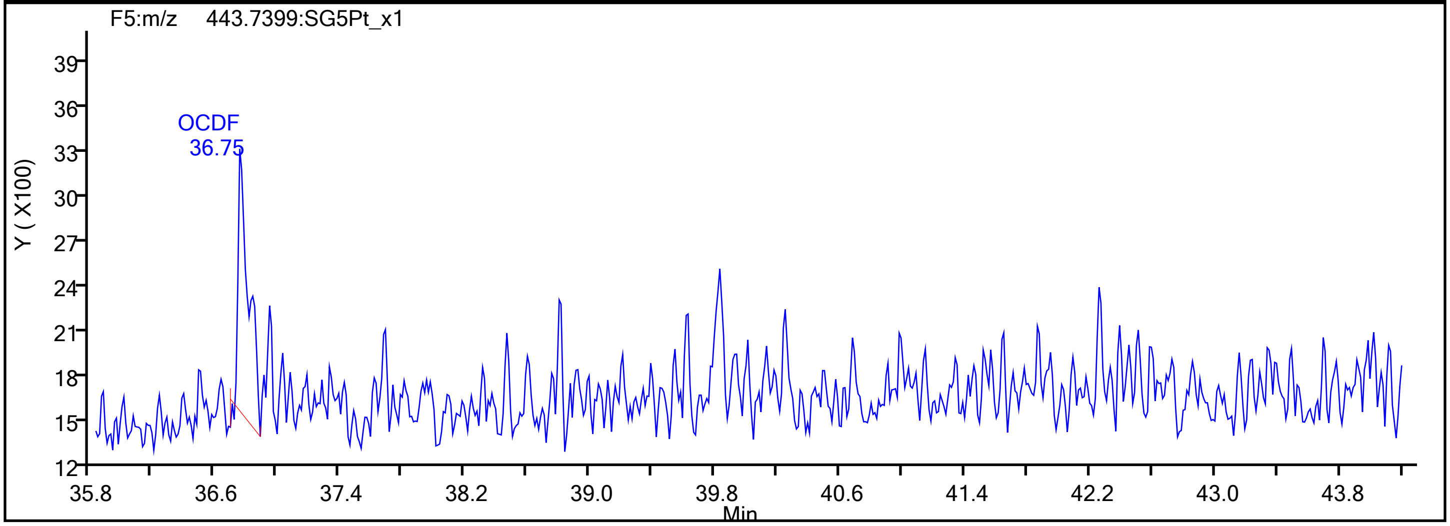

OCDF Interference Mass

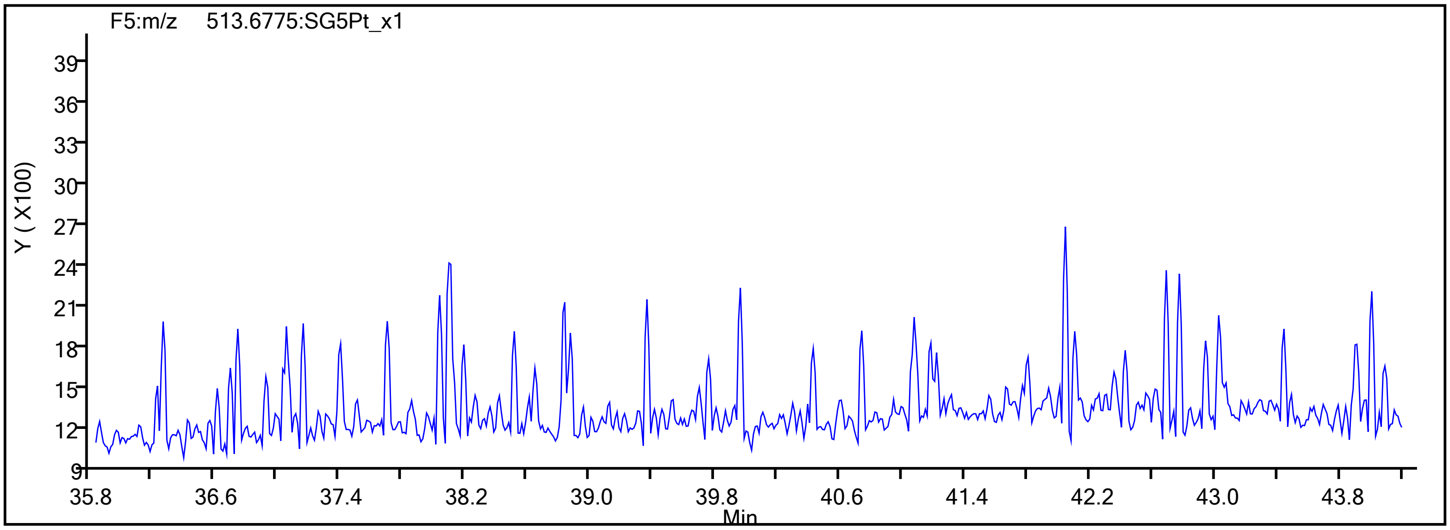

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d		
Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

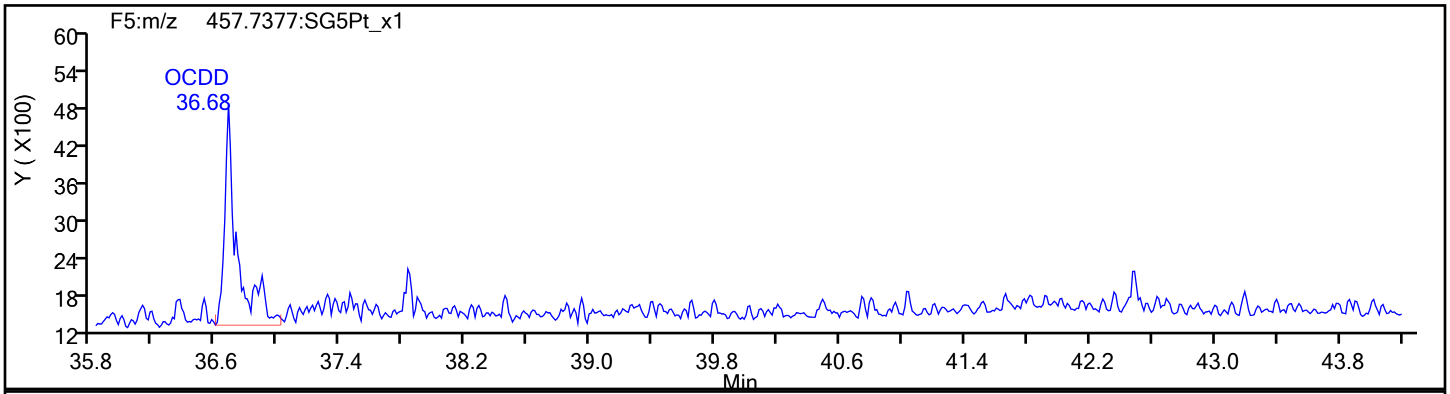

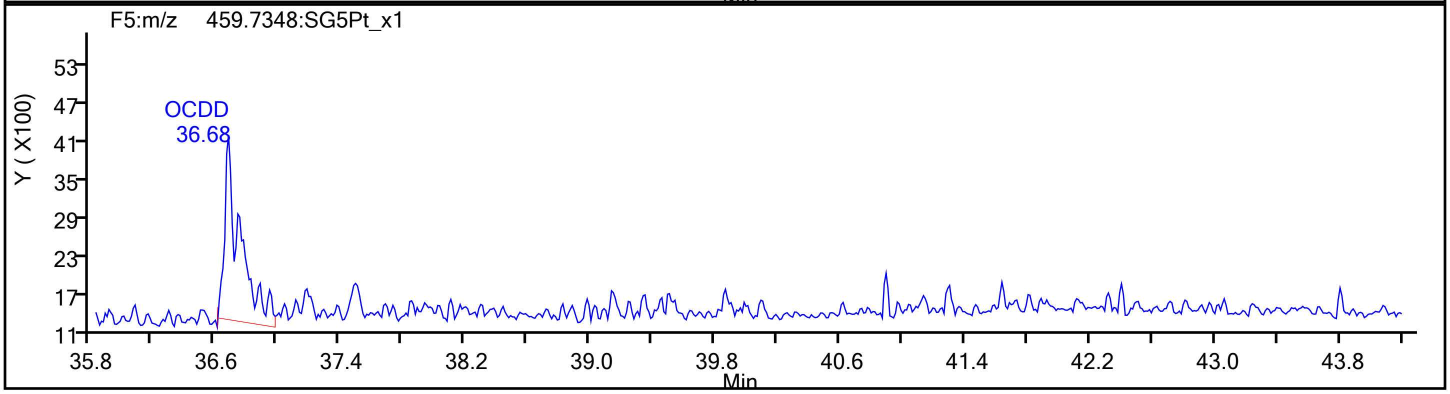

OCDD Standards

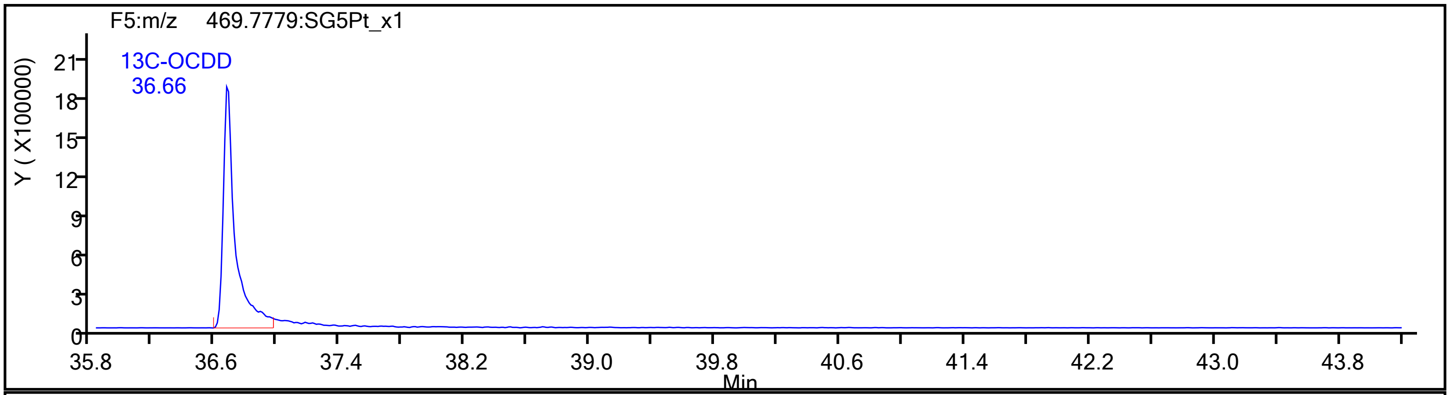

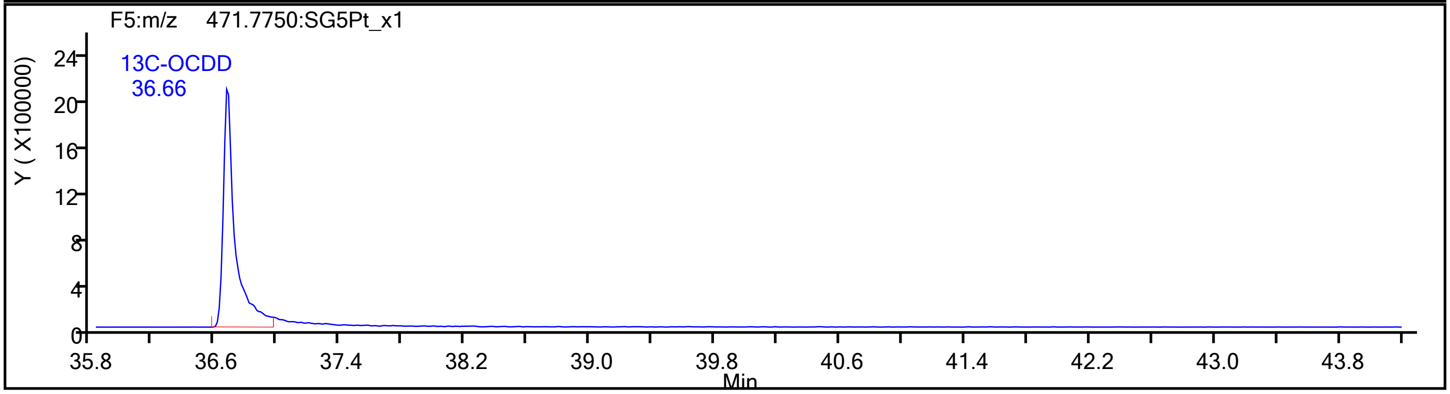

Report Date: 26-Jun-2020 13:16:03 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_4.d
Injection Date: 25-Jun-2020 20:09:52 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621 Sample Line#: 4
Column Type: DB-5 Column Dia: 0.32 mm

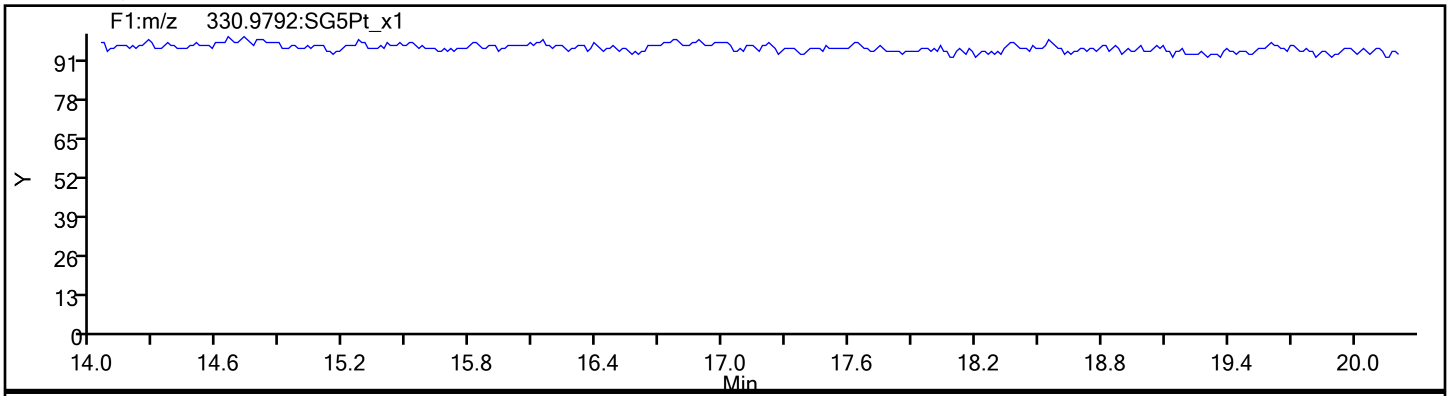

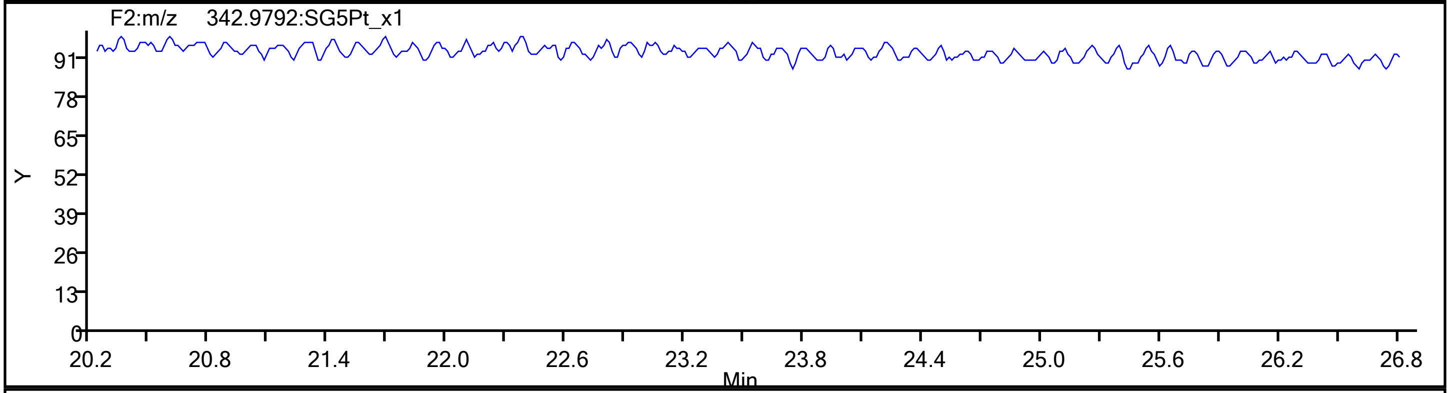

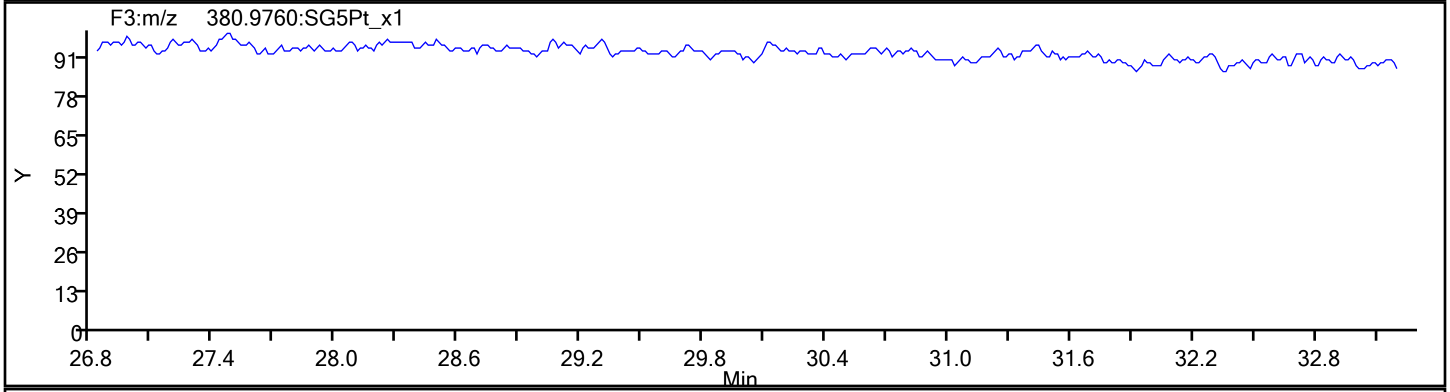

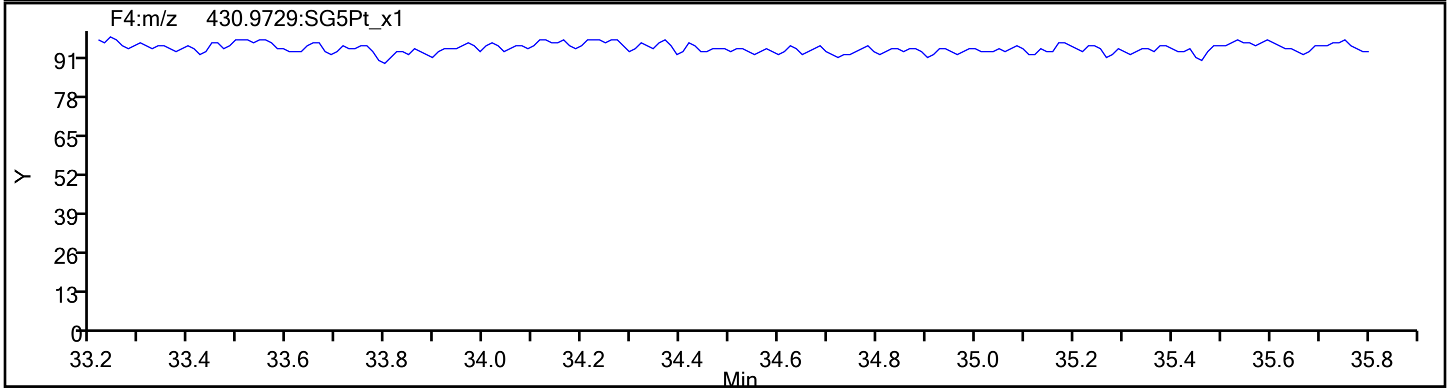

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Injection Date:	25-Jun-2020 20:09:52	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	4
Column Type:	DB-5	Column Dia:	0.32 mm

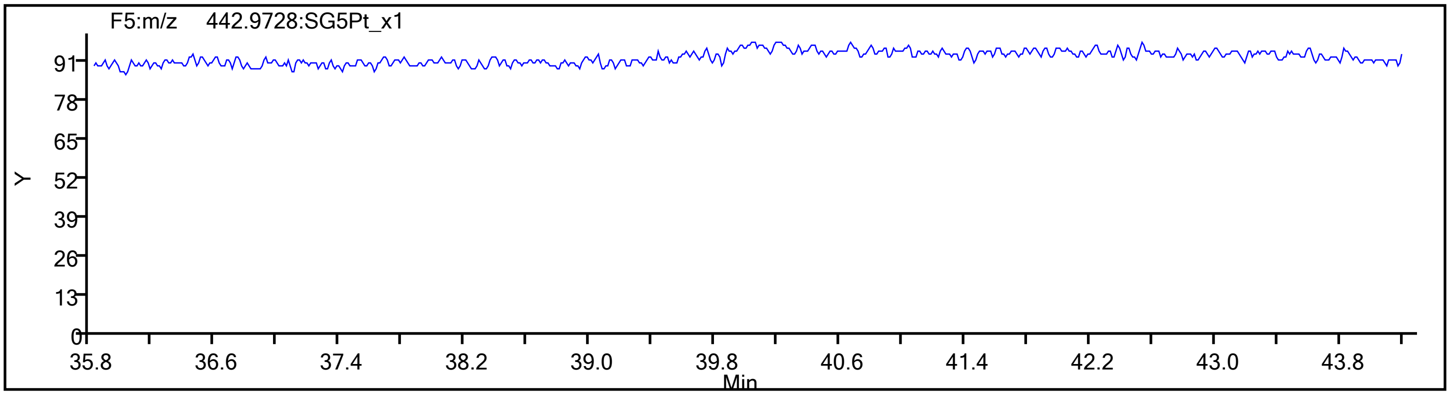

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-389032/2-A
Matrix: Water	Lab File ID: 25JN2010D5_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1000(mL)	Date Analyzed: 06/25/2020 20:55
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	172		10	1.2
51207-31-9	2,3,7,8-TCDF	191		10	0.84
40321-76-4	1,2,3,7,8-PeCDD	848		50	2.2
57117-41-6	1,2,3,7,8-PeCDF	914		50	4.9
57117-31-4	2,3,4,7,8-PeCDF	780		50	4.4
39227-28-6	1,2,3,4,7,8-HxCDD	802		50	6.4
57653-85-7	1,2,3,6,7,8-HxCDD	887		50	6.6
19408-74-3	1,2,3,7,8,9-HxCDD	862		50	5.9
70648-26-9	1,2,3,4,7,8-HxCDF	851		50	14
57117-44-9	1,2,3,6,7,8-HxCDF	967		50	15
72918-21-9	1,2,3,7,8,9-HxCDF	1000		50	13
60851-34-5	2,3,4,6,7,8-HxCDF	995		50	12
35822-46-9	1,2,3,4,6,7,8-HpCDD	859		50	10
67562-39-4	1,2,3,4,6,7,8-HpCDF	897		50	25
55673-89-7	1,2,3,4,7,8,9-HpCDF	779		50	30
3268-87-9	OCDD	1870		100	5.3
39001-02-0	OCDF	1800		100	5.0
41903-57-5	Total TCDD	175		10	1.2
30402-14-3	Total TCDF	191		10	0.84
36088-22-9	Total PeCDD	848		50	2.2
30402-15-4	Total PeCDF	1690		50	4.7
34465-46-8	Total HxCDD	2550		50	6.3
55684-94-1	Total HxCDF	3810		50	13
37871-00-4	Total HpCDD	859		50	10
38998-75-3	Total HpCDF	1680		50	27

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCS 320-389032/2-A
Matrix: Water	Lab File ID: 25JN2010D5_5.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1000(mL)	Date Analyzed: 06/25/2020 20:55
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		20-175
89059-46-1	13C-2,3,7,8-TCDF	45		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	51		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	44		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	51		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	53		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	55		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	54		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	47		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	48		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	51		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	58		20-186
114423-97-1	13C-OCDD	53		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	63		31-191

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d
Lims ID: LCS 320-389032/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Jun-2020 20:55:03 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-389032/2-A LCS 320-389032/2-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:55:06

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.581	61175666	0.79	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.082	33226713	0.77	1.1970	45.4	45.4	0.1397	0.1397	45.38	
2,3,7,8-TCDF	17.097	2429741	0.72	0.7672	9.532	9.532	0.0419	0.0419	95.32	
A Non-2,3,7,8-sub-TCDF	16.810						0.0419	0.0419		
S Total TCDF					9.532	9.532	0.0419	0.0419		
D 13C-2,3,7,8-TCDD	17.778	28359893	0.78	0.8773	52.8	52.8	0.2010	0.2010	52.84	
2,3,7,8-TCDD	17.793	2434672	0.73	1.0000	8.585	8.585	0.0591	0.0591	85.85	
$ 37Cl4-2,3,7,8-TCDD	17.793	14688255		0.9515	25.2	25.2	0.0357	0.0357	63.09	
A Non-2,3,7,8-sub-TCDD	17.256	40708	0.80	1.0000	0.1435	0.1435	0.0591	0.1435	0.00	
S Total TCDD					8.728	8.728	0.0591	0.0591		
D 13C-1,2,3,7,8-PeCDF	21.985	26849149	1.58	0.9904	44.3	44.3	0.1801	0.1801	44.31	
1,2,3,7,8-PeCDF	22.012	11060811	1.55	0.9019	45.7	45.7	0.2450	0.2450	91.36	
D 13C-2,3,4,7,8-PeCDF	23.294	33927988	1.59	1.0797	51.4	51.4	0.1652	0.1652	51.36	
2,3,4,7,8-PeCDF	23.321	10985371	1.56	0.8307	39.0	39.0	0.2215	0.2215	77.95	
A F1 PeCDFs	19.675						0.0291	0.0291		
A Non-2,3,7,8-sub-PeCDF	22.743						0.2318	0.2318		
S Total PeCDF					84.7	84.7	0.2332	0.2332		
D 13C-1,2,3,7,8-PeCDD	24.003	21584211	1.53	0.6904	51.1	51.1	0.1018	0.1018	51.10	
1,2,3,7,8-PeCDD	24.030	9289090	1.61	1.0145	42.4	42.4	0.1079	0.1079	84.84	
A Non-2,3,7,8-sub-PeCDD	22.953						0.1079	0.1079		
S Total PeCDD					42.4	42.4	0.1079	0.1079		
D 13C-1,2,3,4,7,8-HxCDF	30.113	18600236	0.50	0.9076	54.8	54.8	0.5654	0.5654	54.84	
1,2,3,4,7,8-HxCDF	30.140	6276673	1.20	0.7928	42.6	42.6	0.6911	0.6911	85.13	
D 13C-1,2,3,6,7,8-HxCDF	30.340	17592972	0.50	0.8671	54.3	54.3	0.5919	0.5919	54.29	
1,2,3,6,7,8-HxCDF	30.353	7305469	1.19	0.8592	48.3	48.3	0.7293	0.7293	96.66	
D 13C-2,3,4,6,7,8-HxCDF	31.258	14929362	0.50	0.8287	48.2	48.2	0.6193	0.6193	48.21	
2,3,4,6,7,8-HxCDF	31.271	6608379	1.18	0.8896	49.8	49.8	0.5849	0.5849	99.52	
D 13C-1,2,3,7,8,9-HxCDF	32.110	13069246	0.49	0.7391	47.3	47.3	0.6944	0.6944	47.32	
1,2,3,7,8,9-HxCDF	32.123	5848432	1.20	0.8941	50.0	50.0	0.6352	0.6352	100	
A Non-2,3,7,8-sub-HxCDF	29.847						0.6556	0.6556		
S Total HxCDF					190.7	190.7	0.6601	0.6601		

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.924	37368239	1.27	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	16588292	1.25	0.8335	53.3	53.3	0.6518	0.6518	53.26	
1,2,3,4,7,8-HxCDD	31.471	5545730	1.23	0.8332	40.1	40.1	0.3216	0.3216	80.25	
D 13C-1,2,3,6,7,8-HxCDD	31.577	18760057	1.23	0.8228	61.0	61.0	0.6603	0.6603	61.01	
1,2,3,6,7,8-HxCDD	31.591	7442588	1.26	0.8944	44.4	44.4	0.3297	0.3297	88.71	
1,2,3,7,8,9-HxCDD	31.937	7198705	1.21	0.9449	43.1	43.1	0.2972	0.2972	86.21	
A Non-2,3,7,8-sub-HxCDD	30.499						0.3152	0.3152		
S Total HxCDD					127.6	127.6	0.3161	0.3161		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	13295649	0.43	0.7009	50.8	50.8	1.808	1.808	50.77	
1,2,3,4,6,7,8-HpCDF	33.602	7928278	1.01	1.3295	44.9	44.9	1.241	1.241	89.71	
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	15620492	0.42	0.7244	57.7	57.7	1.749	1.749	57.71	
1,2,3,4,7,8,9-HpCDF	34.659	6575699	1.03	1.0803	39.0	39.0	1.492	1.492	77.93	
A Non-2,3,7,8-sub-HpCDF	34.143						1.353	1.353		
S Total HpCDF					83.8	83.8	1.366	1.366		
D 13C-1,2,3,4,6,7,8-HpCDD	34.368	14471333	1.05	0.7026	55.1	55.1	0.8735	0.8735	55.12	
1,2,3,4,6,7,8-HpCDD	34.380	6242546	1.03	1.0040	43.0	43.0	0.5240	0.5240	85.93	
A Non-2,3,7,8-sub-HpCDD	34.119						0.5240	0.5240		
S Total HpCDD					43.0	43.0	0.5240	0.5240		
D 13C-OCDD	36.676	24698264	0.89	0.6184	106.9	106.9	0.3722	0.3722	53.44	
OCDF	36.760	12341792	0.88	1.1076	90.2	90.2	0.2502	0.2502	90.23	
OCDD	36.688	11749031	0.88	1.0175	93.5	93.5	0.2660	0.2660	93.50	

QC Flag Legend

Review Flags

a - User Assigned ID

Report Date: 26-Jun-2020 13:16:04 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d
Lims ID: LCS 320-389032/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Jun-2020 20:55:03 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-389032/2-A LCS 320-389032/2-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:55:06

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.581	17.581	0		26987967	6737554	5393	13482	1249		a
333.9339	17.581	17.581	0		34187699	8597610	5423	13557	1585	0.79(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	14426299	3458708	5406	13515	640		
317.9389	17.082	17.082	0	0.972	18800414	4390178	4852	12130	905	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097	17.097	0	1.001	1019442	252496	400	1000	631		
305.8987	17.097	17.097	0	1.001	1410299	342126	609	1522	562	0.72(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						400	1000			
305.8987	16.810						609	1522			
13C-2,3,7,8-TCDD											
331.9368	17.778	17.778	0	1.011	12427519	2710060	5393	13482	503		
333.9339	17.778	17.778	0	1.011	15932374	3380274	5423	13557	623	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793	17.793	0	1.001	1025886	228493	881	2202	259		
321.8936	17.793	17.793	0	1.001	1408786	318680	558	1395	571	0.73(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.793	17.793	0	1.012	14688255	3326401	2082	5205	1598		
A Non-2,3,7,8-sub-TCDD											
319.8965	15.616	17.256	-98	0.878	18097	4373	881	2202	5		
321.8936	15.631	17.256	-97	0.879	22611	6220	558	1395	11	0.80(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.985	21.999	-1	1.250	16445519	2710843	6546	16365	414		
353.8970	21.985	21.999	-1	1.250	10403630	1741616	4398	10995	396	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	22.012	22.012	0	1.001	6728294	1107959	2479	6197	447		
341.8567	22.012	22.012	0	1.001	4332517	710244	1456	3640	488	1.55(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.294	23.308	-1	1.325	20824649	3273632	6546	16365	500		
353.8970	23.294	23.308	-1	1.325	13103339	2072955	4398	10995	471	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.321	23.321	0	1.001	6694567	1060408	2479	6197	428		
341.8567	23.308	23.321	-1	1.001	4290804	660359	1456	3640	454	1.56(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.675						163	407			
341.8567	19.675						332	830			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						2479	6197			
341.8567	22.743						1456	3640			
13C-1,2,3,7,8-PeCDD											
367.8949	24.003	24.017	-1	1.365	13068945	1864210	2160	5400	863		
369.8919	24.003	24.017	-1	1.365	8515266	1239344	2151	5377	576	1.53(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.030	24.044	-1	1.001	5724718	803740	851	2127	944		
357.8516	24.030	24.044	-1	1.001	3564372	509602	508	1270	1003	1.61(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						851	2127			
357.8516	22.953						508	1270			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.943	6162226	944441	5119	12797	184		
385.8610	30.113	30.140	-2	0.943	12438010	1882666	10278	25695	183	0.50(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.140	30.153	-1	1.001	3420323	523505	3429	8572	153		
375.8178	30.140	30.153	-1	1.001	2856350	439603	2767	6917	159	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.340	30.340	0	0.950	5871336	823735	5119	12797	161		
385.8610	30.326	30.340	-1	0.950	11721636	1648307	10278	25695	160	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.353	30.366	-1	1.000	3963535	575345	3429	8572	168		
375.8178	30.353	30.366	-1	1.000	3341934	477399	2767	6917	173	1.19(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.258	31.258	0	0.979	4968192	964217	5119	12797	188		
385.8610	31.258	31.258	0	0.979	9961170	2013104	10278	25695	196	0.50(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.271	31.285	-1	1.000	3577708	735392	3429	8572	214		
375.8178	31.271	31.285	-1	1.000	3030671	614578	2767	6917	222	1.18(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.110	32.123	-1	1.006	4315462	891171	5119	12797	174		
385.8610	32.110	32.123	-1	1.006	8753784	1836351	10278	25695	179	0.49(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.123	32.137	-1	1.000	3188019	670070	3429	8572	195		
375.8178	32.123	32.137	-1	1.000	2660413	553220	2767	6917	200	1.20(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						3429	8572			
375.8178	29.847						2767	6917			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.924	31.924	0		20914061	4171869	9120	22800	457		
403.8529	31.924	31.924	0		16454178	3328218	7178	17945	464	1.27(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.985	9205729	2211309	9120	22800	242		
403.8529	31.458	31.471	-1	0.985	7382563	1780600	7178	17945	248	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.471	31.484	-1	1.000	3054228	712473	2445	6112	291		
391.8127	31.471	31.484	-1	1.000	2491502	600370	1834	4585	327	1.23(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.577	31.577	0	0.989	10352170	2009055	9120	22800	220		
403.8529	31.577	31.577	0	0.989	8407887	1618938	7178	17945	226	1.23(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.591	31.604	-1	1.000	4147754	821933	2445	6112	336		
391.8127	31.591	31.604	-1	1.000	3294834	650139	1834	4585	354	1.26(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.937	31.950	-1	1.015	3948411	798003	2445	6112	326		
391.8127	31.937	31.950	-1	1.015	3250294	645487	1834	4585	352	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						2445	6112			
391.8127	30.499						1834	4585			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.052	3999431	1037408	11399	28497	91		
419.8220	33.590	33.590	0	1.052	9296218	2402175	26619	66547	90	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.602	33.602	0	1.000	3992707	1041050	10772	26930	97		
409.7789	33.602	33.602	0	1.000	3935571	1014651	11930	29825	85	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.085	4630916	1041098	11399	28497	91		
419.8220	34.647	34.659	-1	1.085	10989576	2480870	26619	66547	93	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659	34.659	0	1.000	3334196	760679	10772	26930	71		
409.7789	34.659	34.659	0	1.000	3241503	733656	11930	29825	61	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						10772	26930			
409.7789	34.143						11930	29825			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.368	34.380	-1	1.077	7403705	1713253	9661	24152	177		
437.8140	34.368	34.380	-1	1.077	7067628	1609232	8750	21875	184	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.380	34.380	0	1.000	3167242	736826	3524	8810	209		
425.7737	34.380	34.380	0	1.000	3075304	713702	3468	8670	206	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						3524	8810			
425.7737	34.119						3468	8670			
13C-OCDD											
469.7779	36.676	36.676	0	1.149	11604650	2176614	3588	8970	607		
471.7750	36.676	36.676	0	1.149	13093614	2450120	3316	8290	739	0.89(0.76-1.02)	
OCDF											
441.7428	36.760	36.772	-1	1.002	5784960	1147650	1098	2745	1045		
443.7399	36.760	36.772	-1	1.002	6556832	1321245	1467	3667	901	0.88(0.76-1.02)	
OCDD											
457.7377	36.688	36.688	0	1.000	5510107	1021611	1237	3092	826		
459.7348	36.676	36.688	-1	1.000	6238924	1207682	1268	3170	952	0.88(0.76-1.02)	

QC Flag Legend

Review Flags

a - User Assigned ID

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d
Lims ID:	LCS 320-389032/2-A
Client ID:	
Inject. Date:	25-Jun-2020 20:55:03
Sample Type:	LCS, Lab Control Sample
Instrument ID:	10D5
Lims Batch ID:	389621

Dil. Factor: 1.0000

Operator: AJS

Lims Sample ID: 5

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	28359893	6090334

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	28359893	6090334

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	18097	4373	22611	6220	0.1435	0.80	
Signal Totals:							
	18097	4373	22611	6220			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	40708	10593				0.80	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1435 = (40708 * 100.000) / (28359893 * 1.000)

Report Date: 26-Jun-2020 13:16:04 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d
Injection Date: 25-Jun-2020 20:55:03 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621 Sample Line#: 5
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

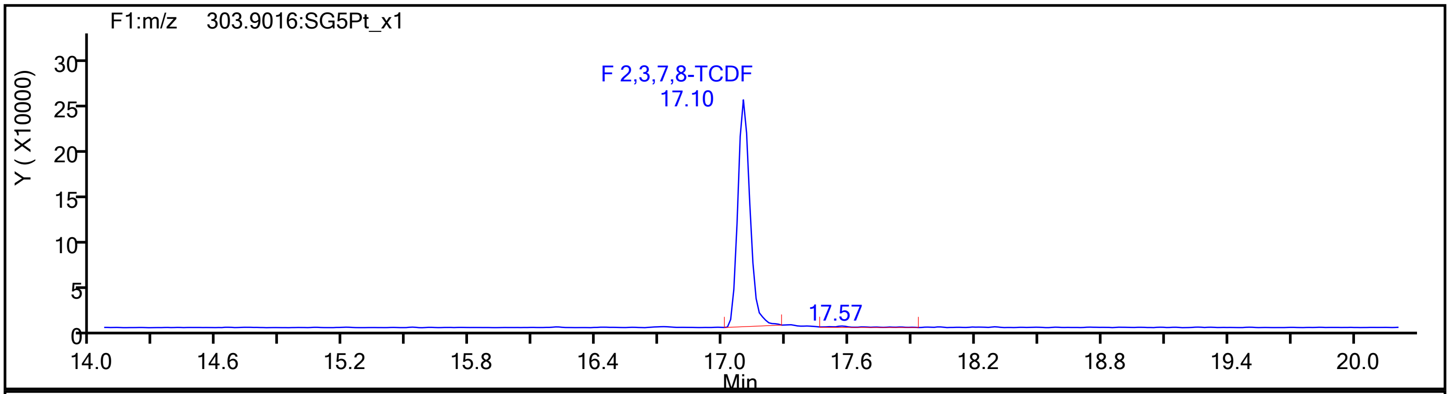

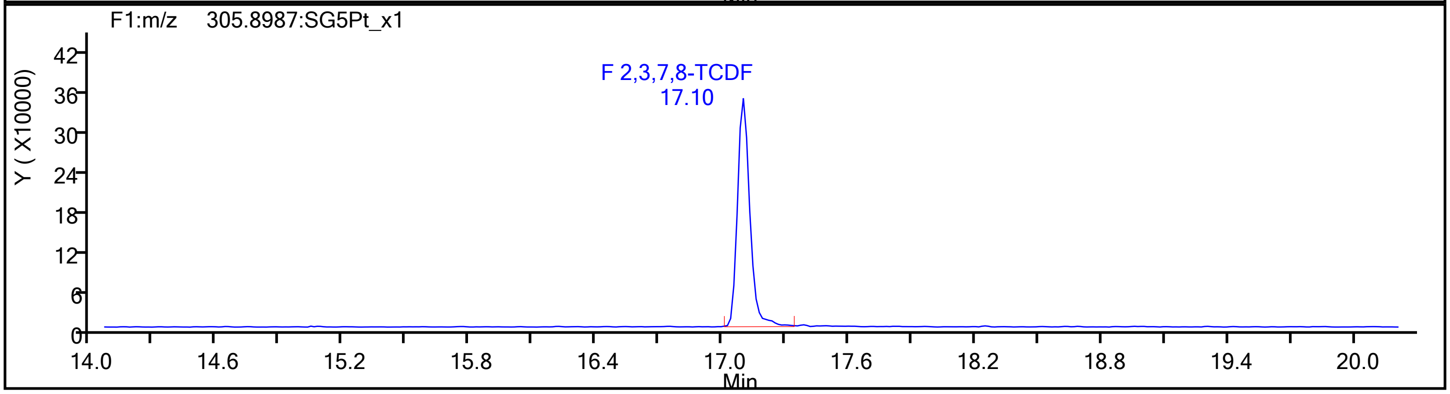

TCDF Standards

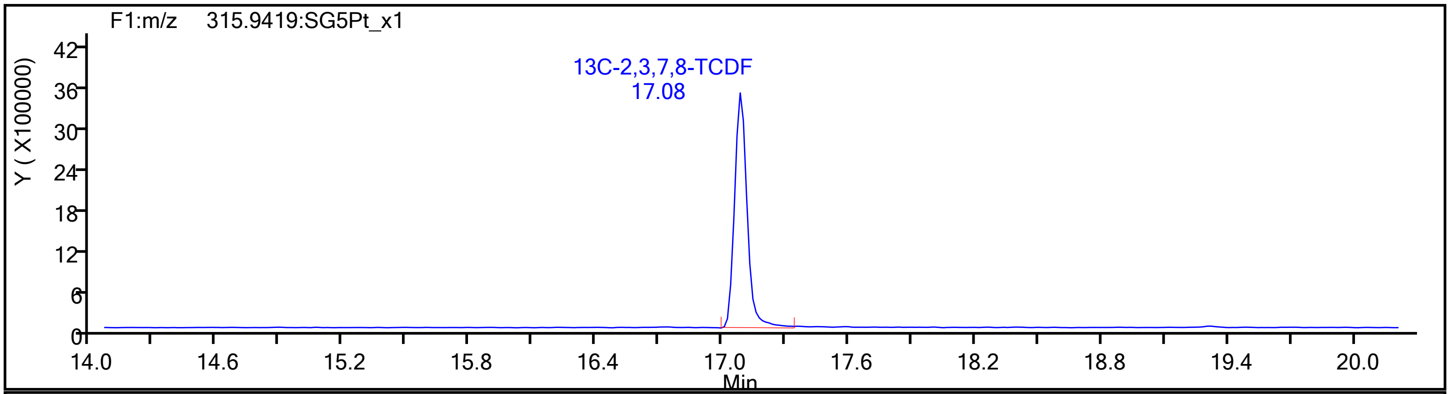

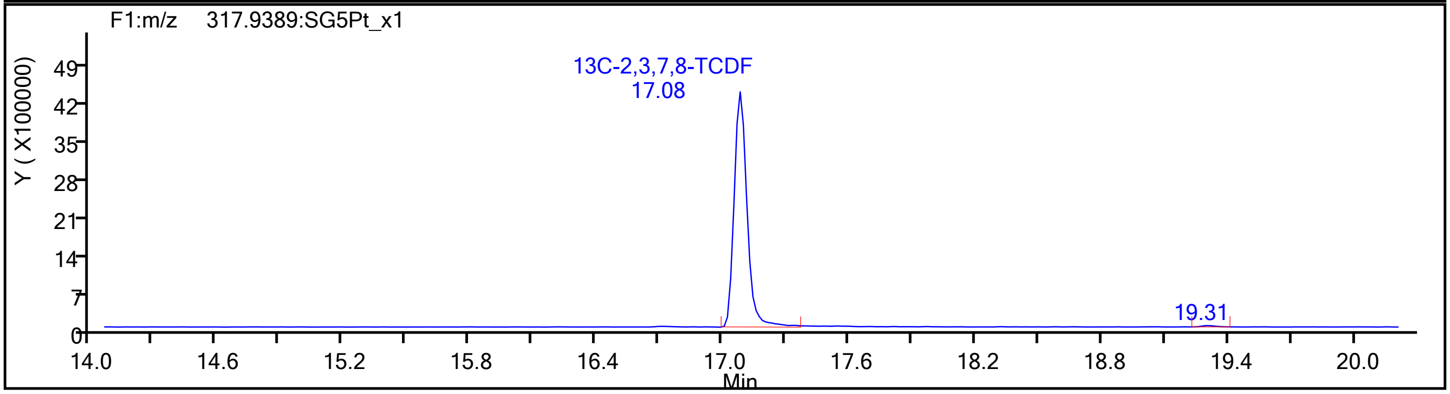

Report Date: 26-Jun-2020 13:16:04 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d		
Injection Date:	25-Jun-2020 20:55:03	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

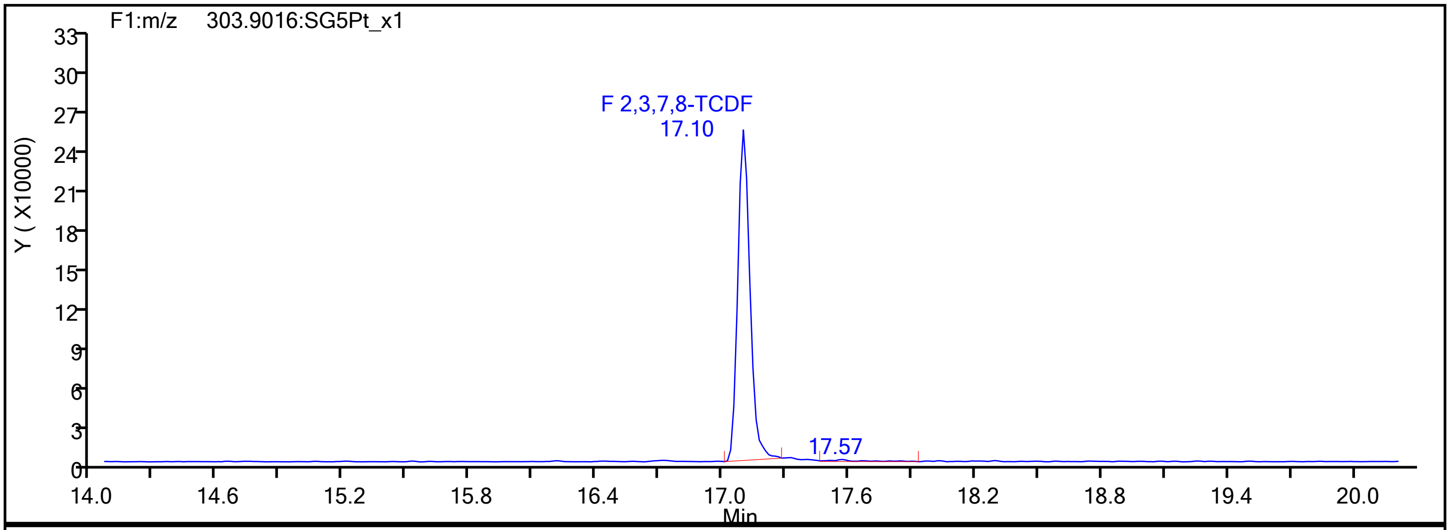

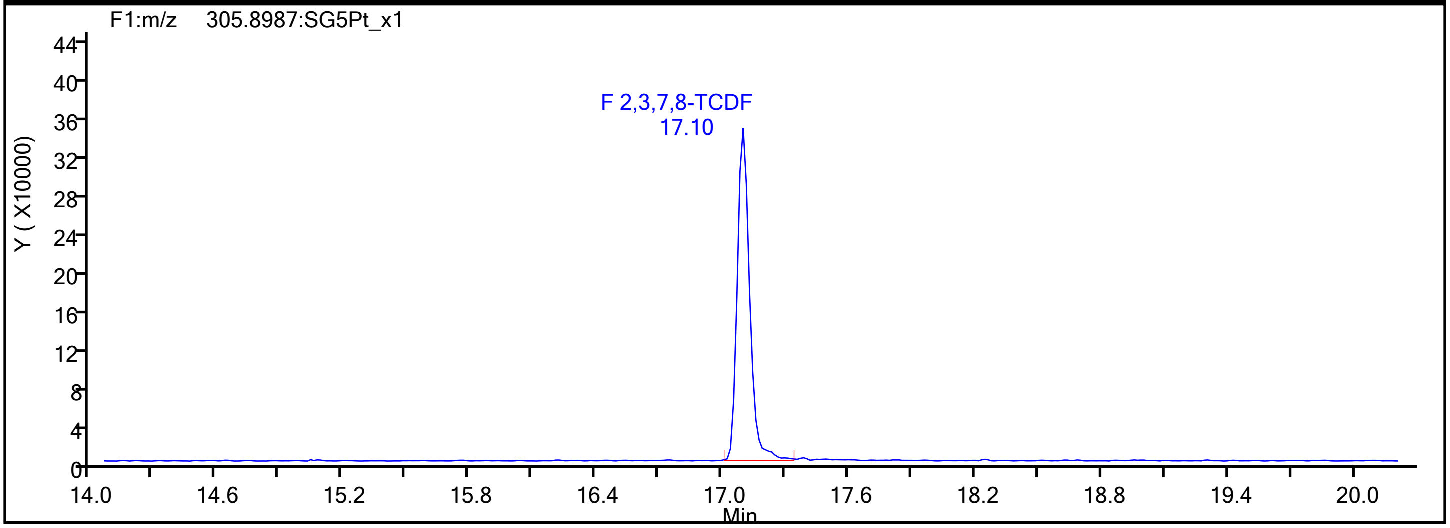

TCDF Interference Mass

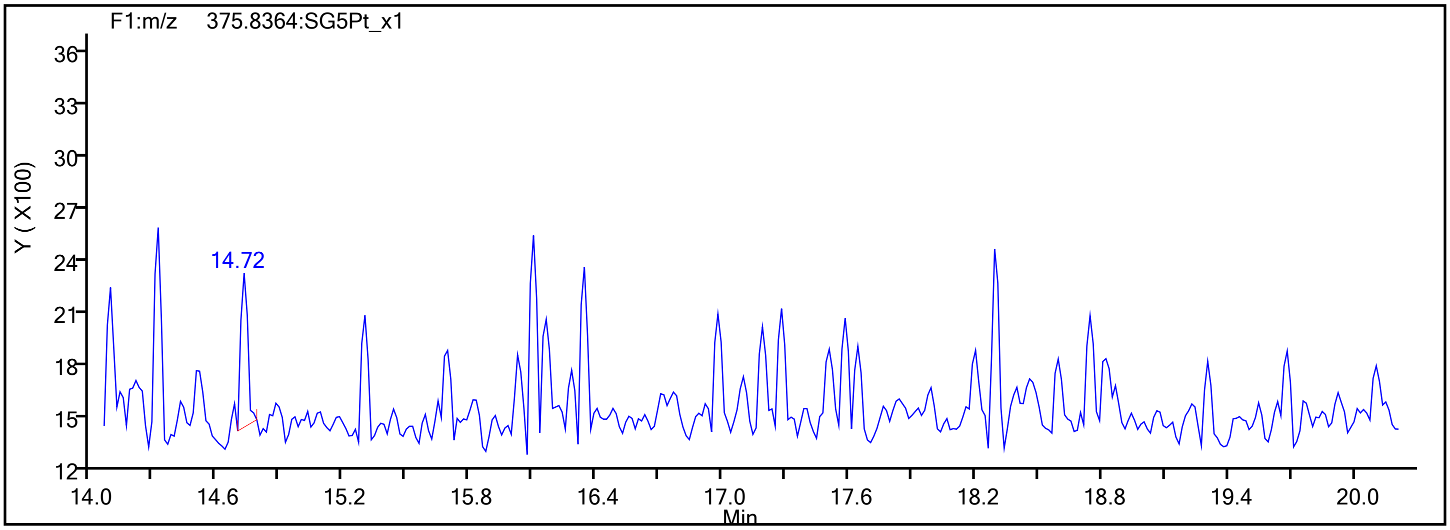

Report Date: 26-Jun-2020 13:16:04
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d
Injection Date: 25-Jun-2020 20:55:03
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

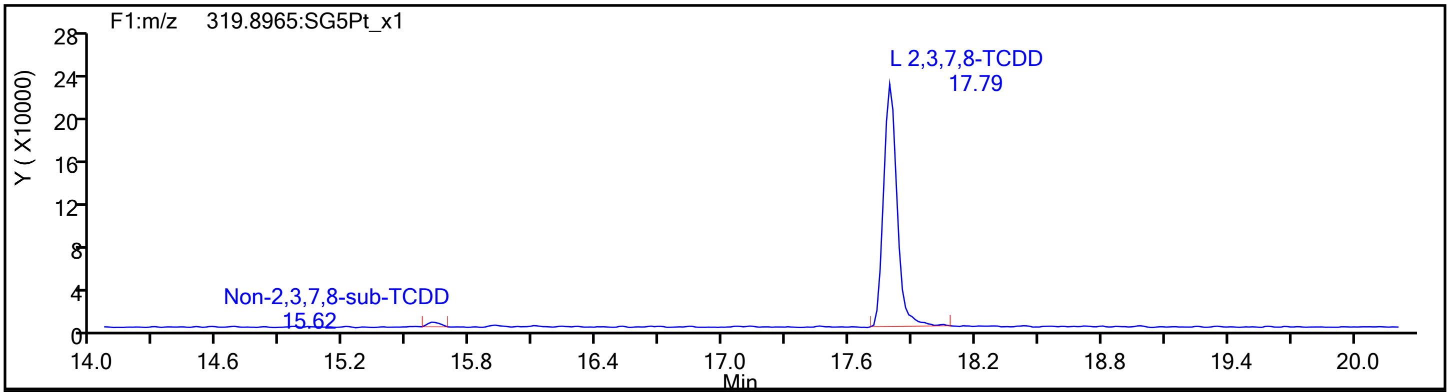

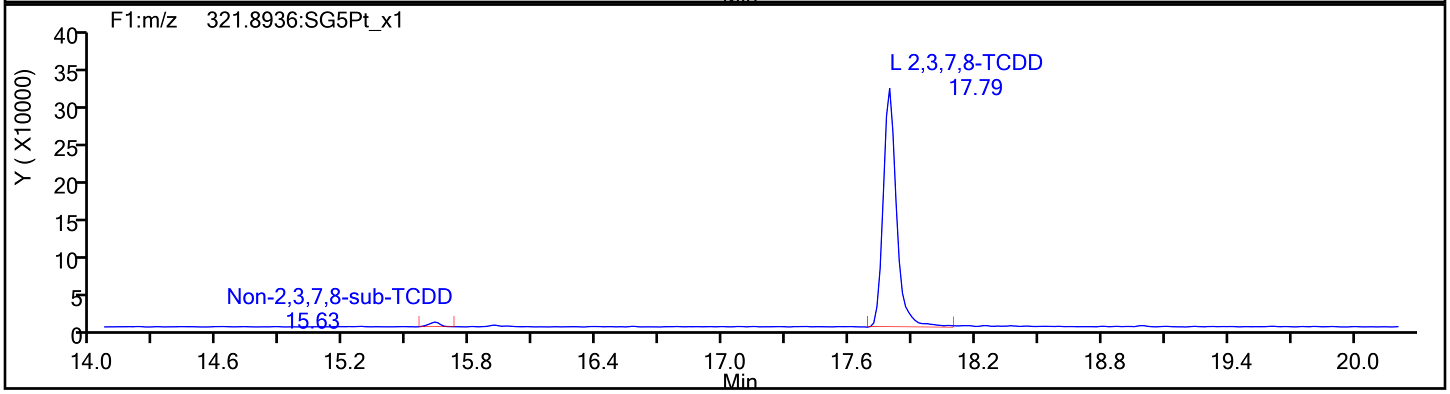

TCDD Standards

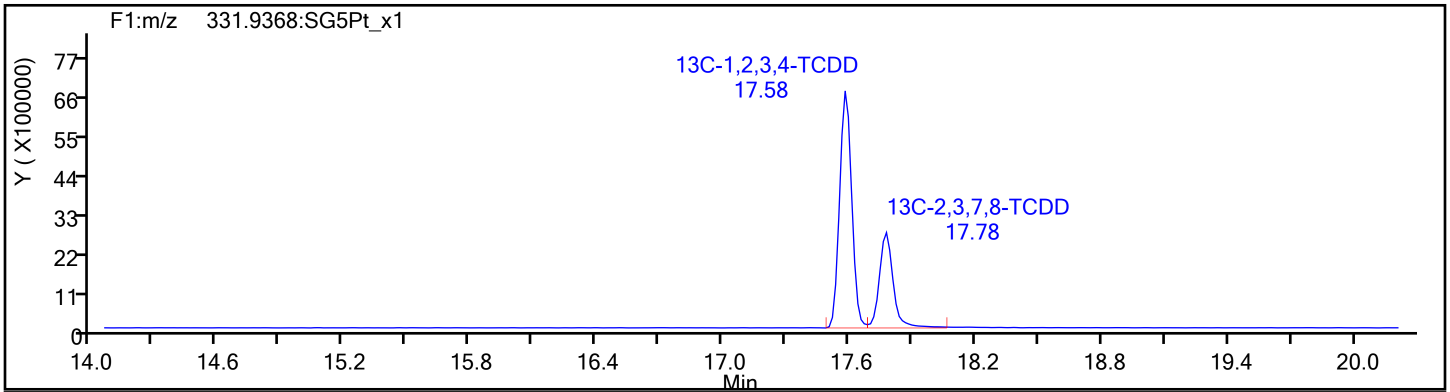

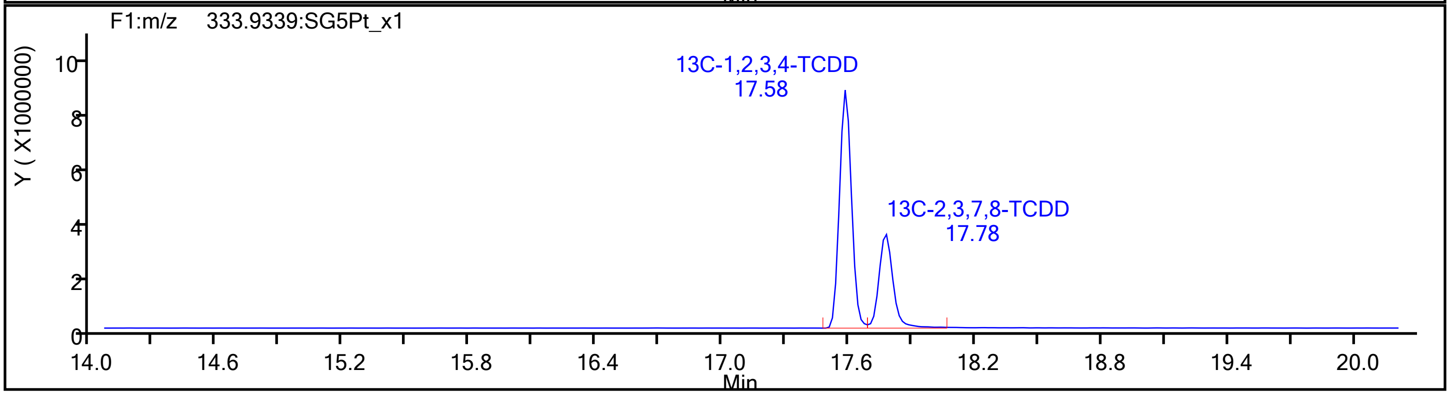

Report Date: 26-Jun-2020 13:16:04 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d
Injection Date: 25-Jun-2020 20:55:03
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 5
Column Type: DB-5
Column Dia: 0.32 mm

37Cl4-TCDD

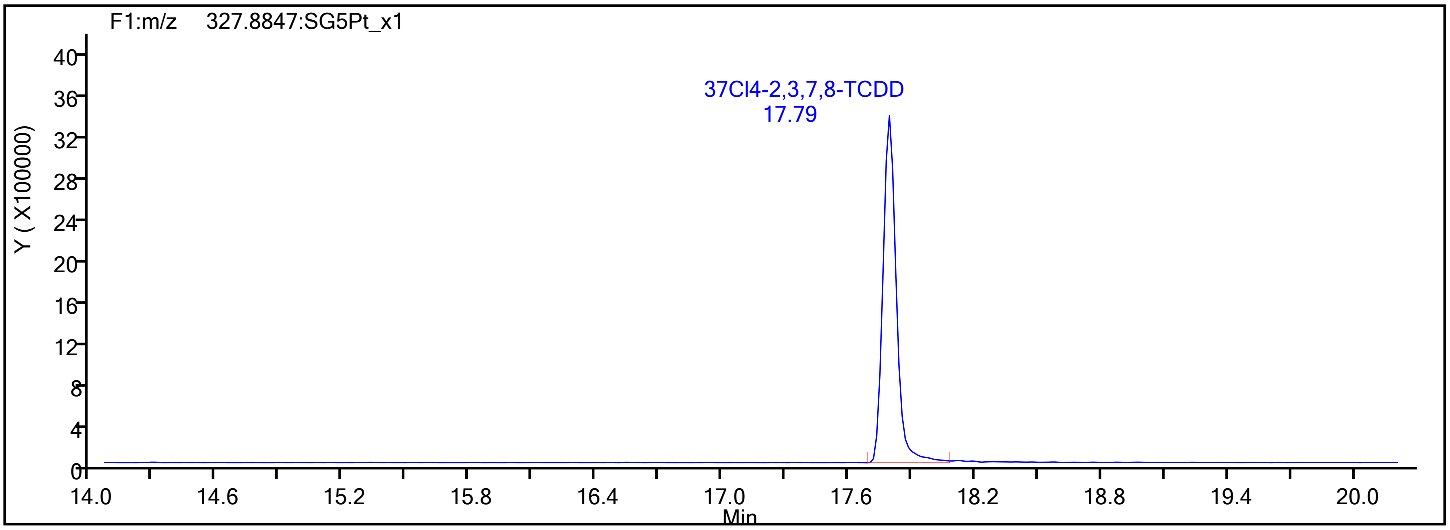

37Cl4-TCDD Standards

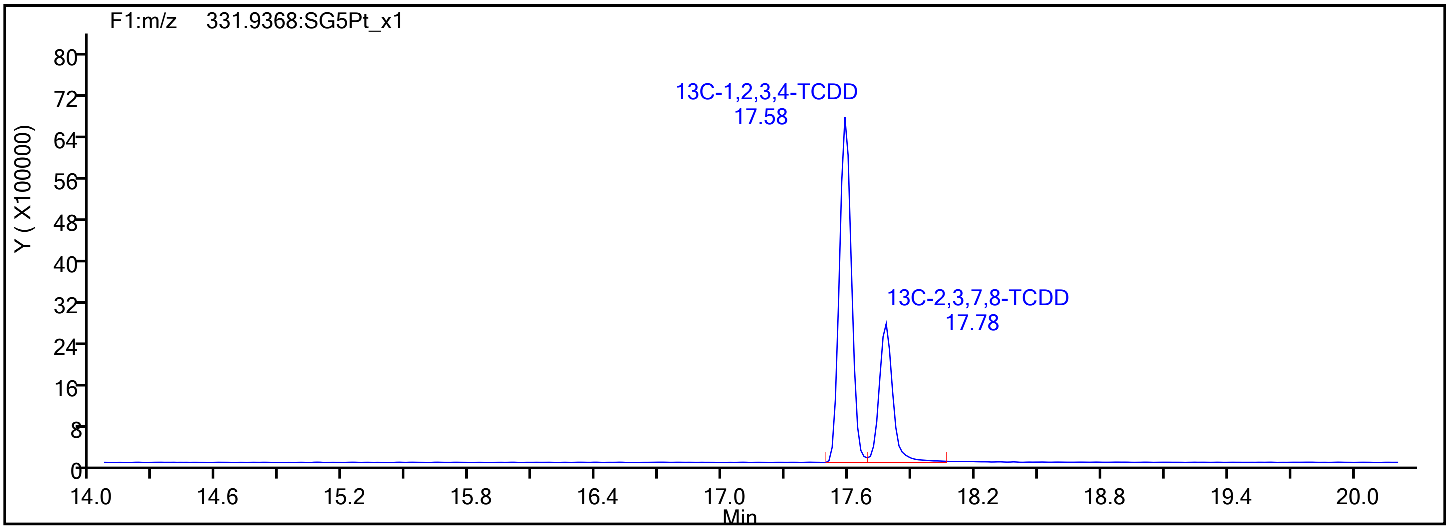

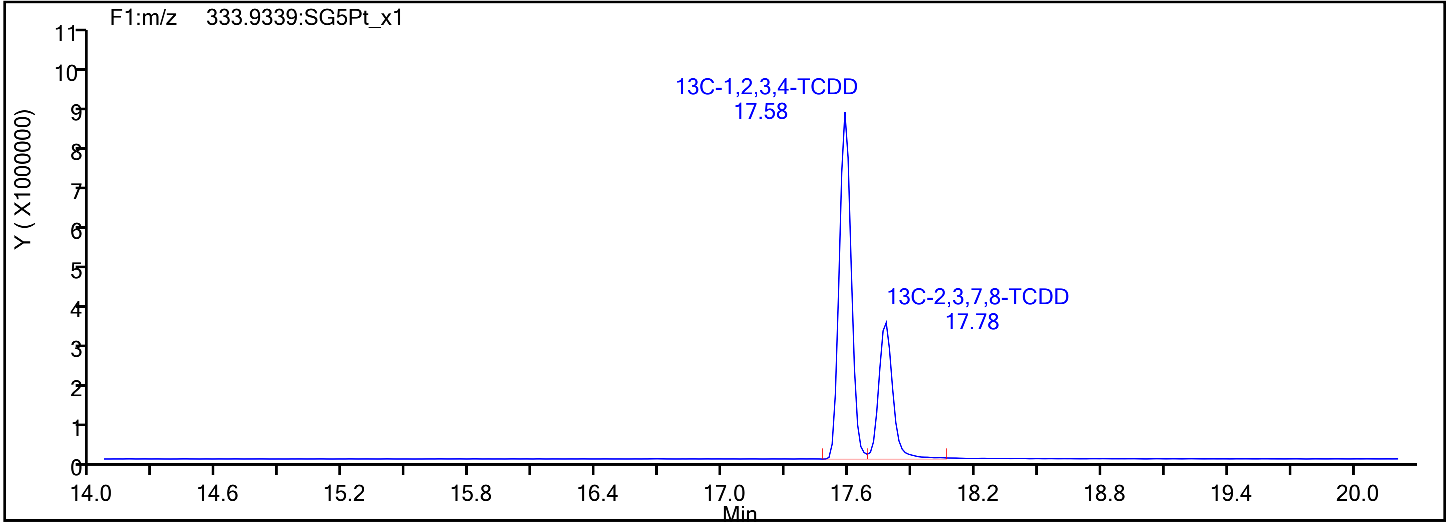

Report Date: 26-Jun-2020 13:16:04 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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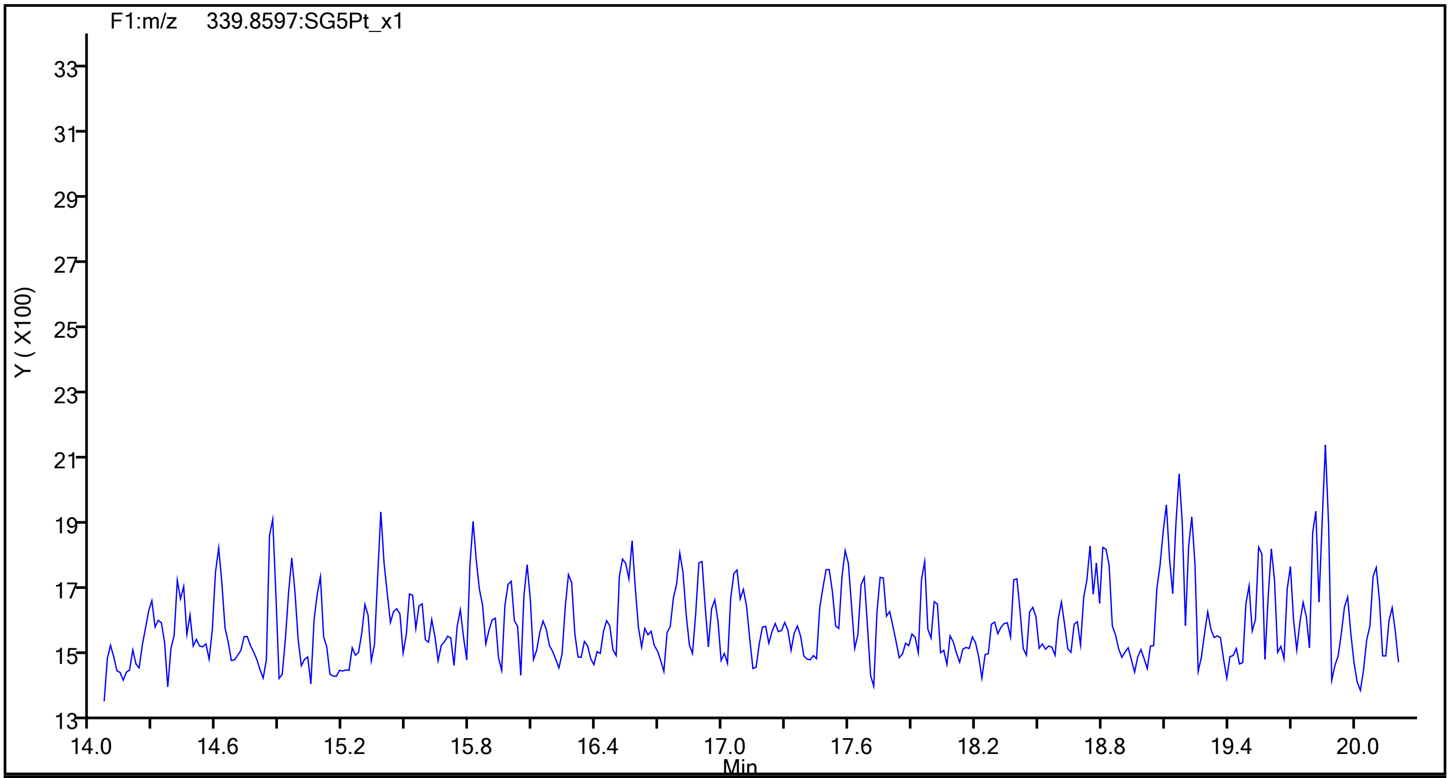

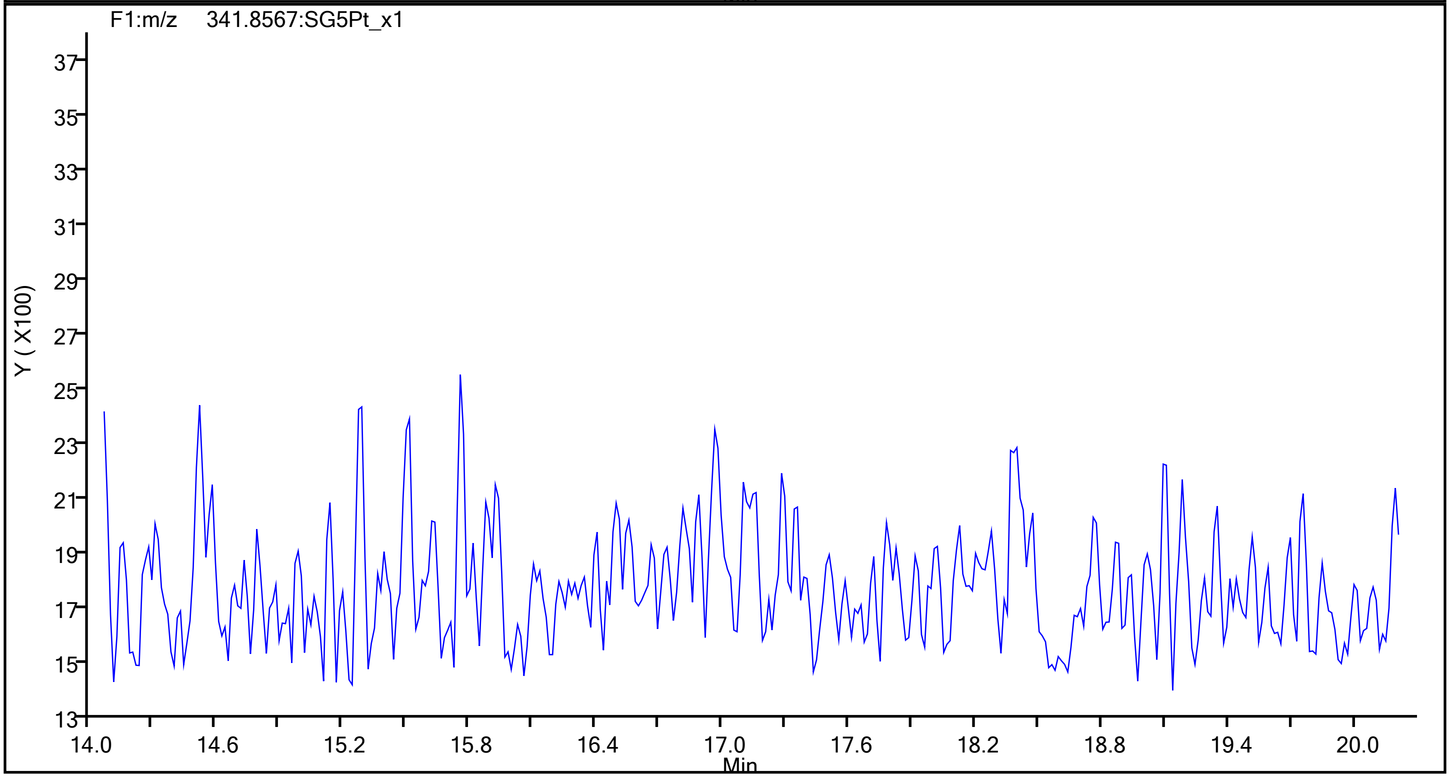

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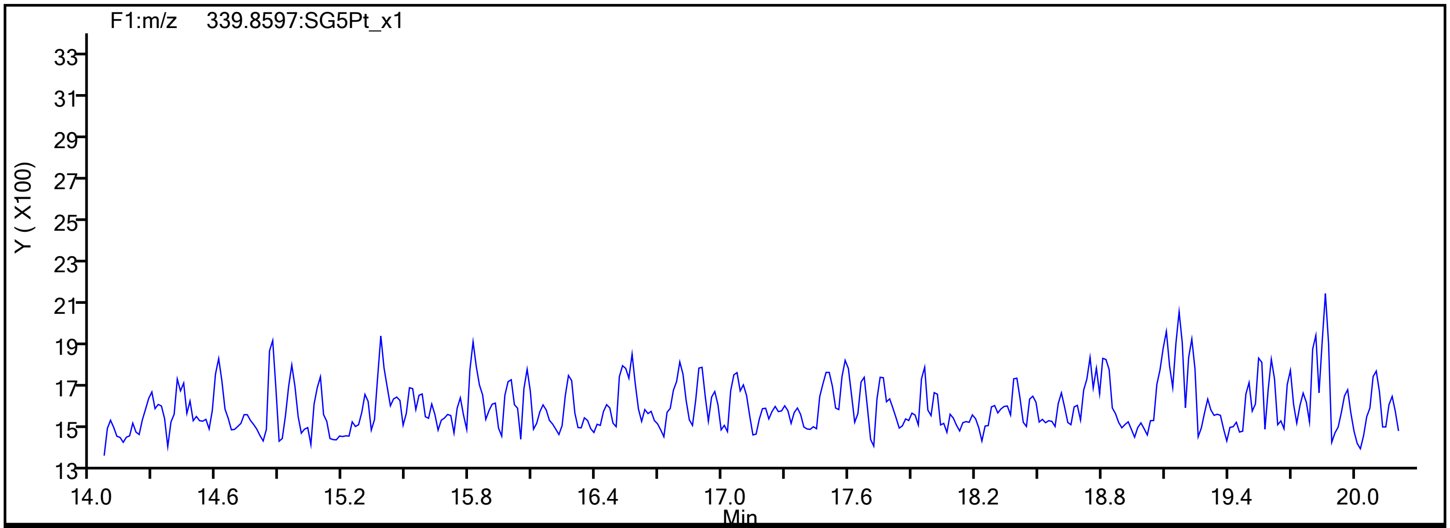

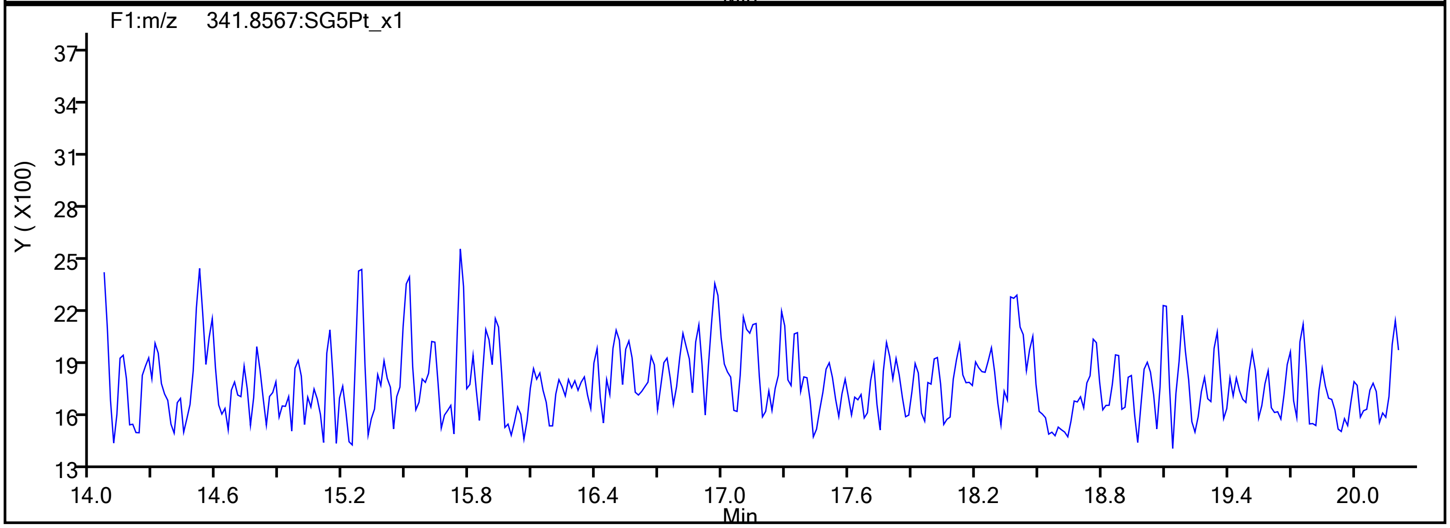

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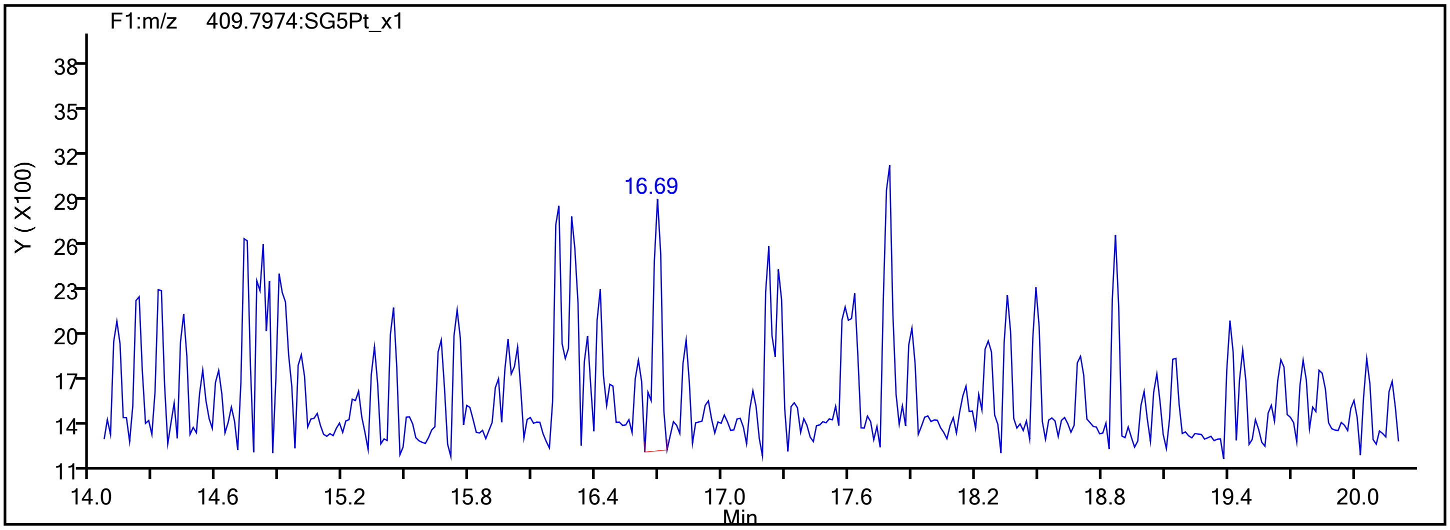

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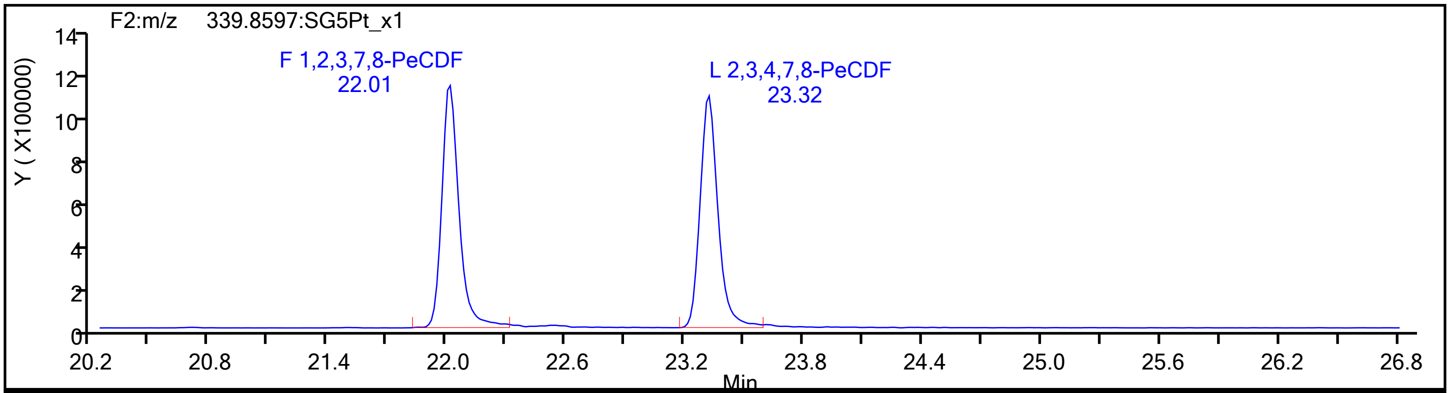

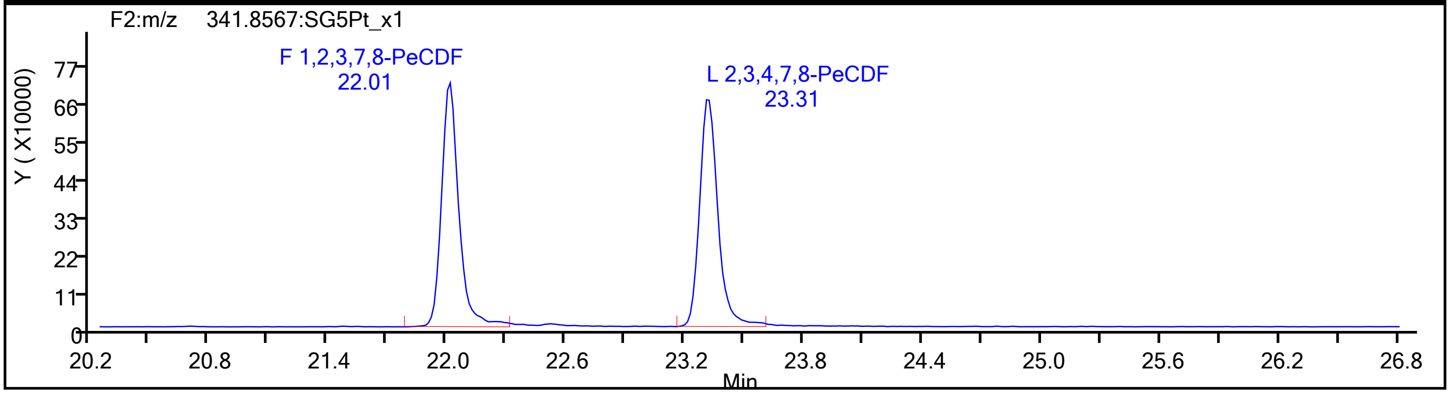

PeCDF Standards

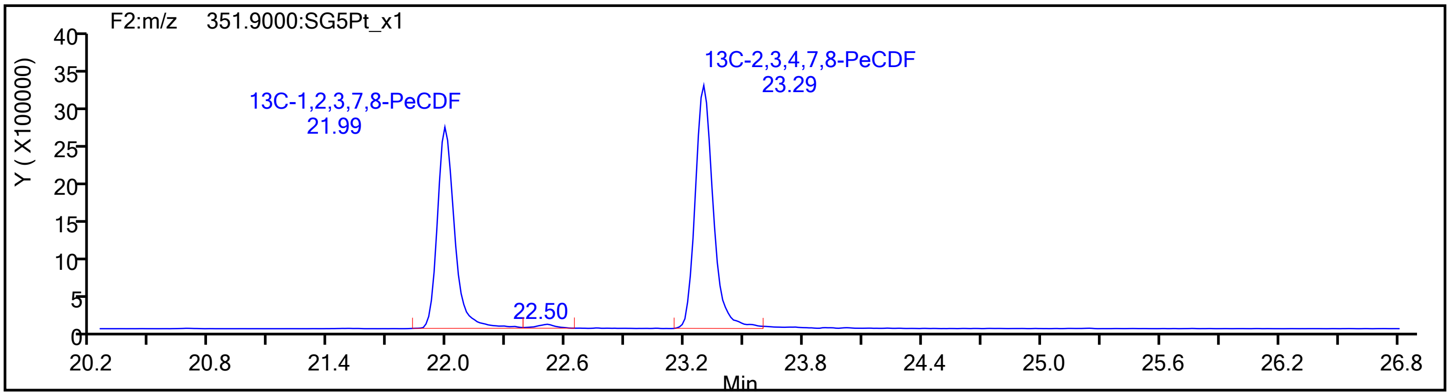

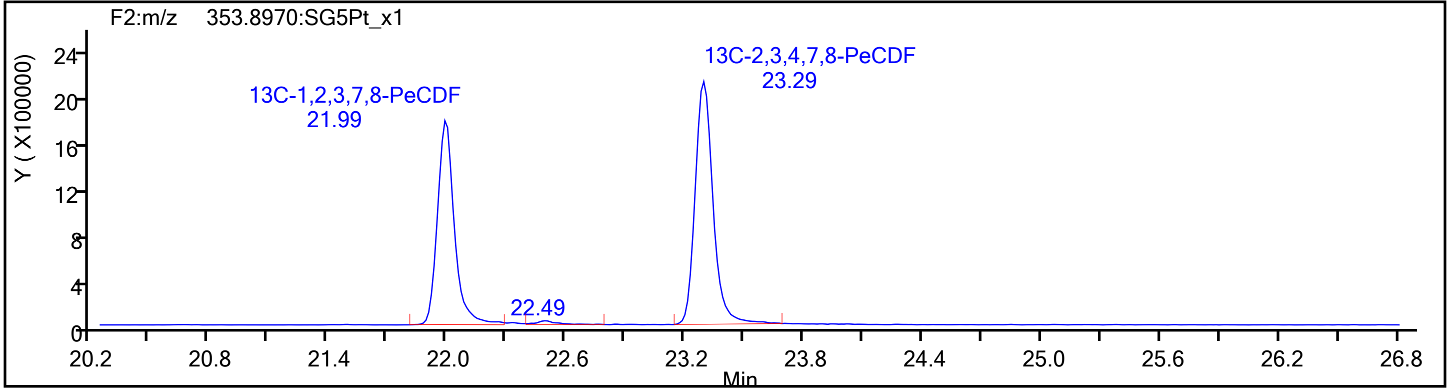

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Eurofins TestAmerica, Sacramento

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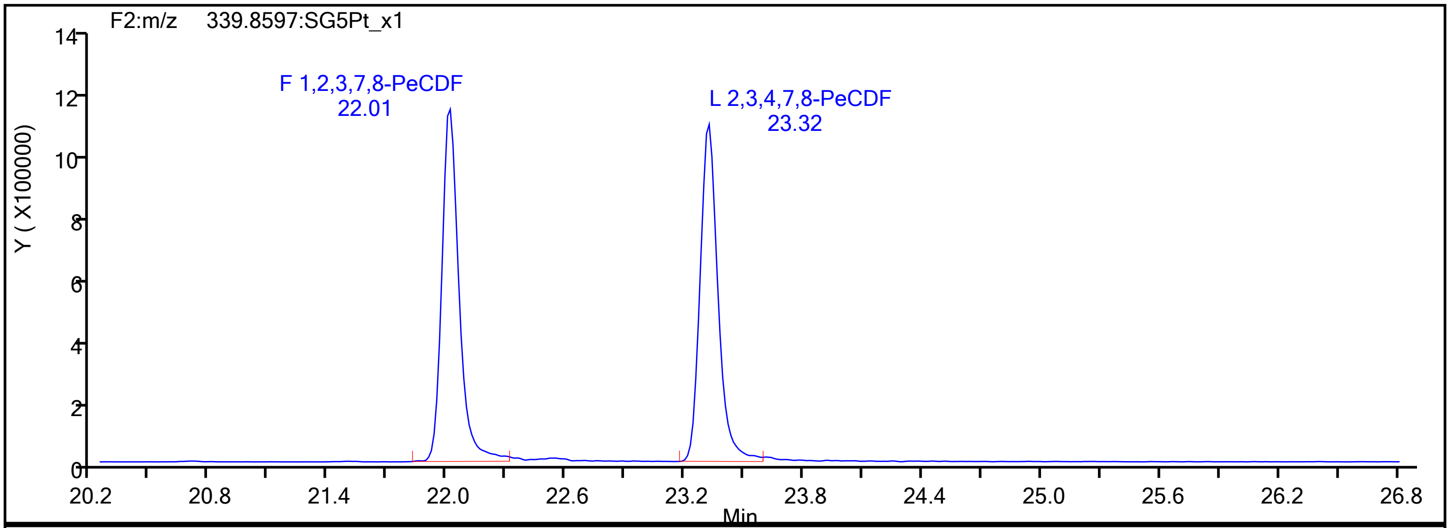

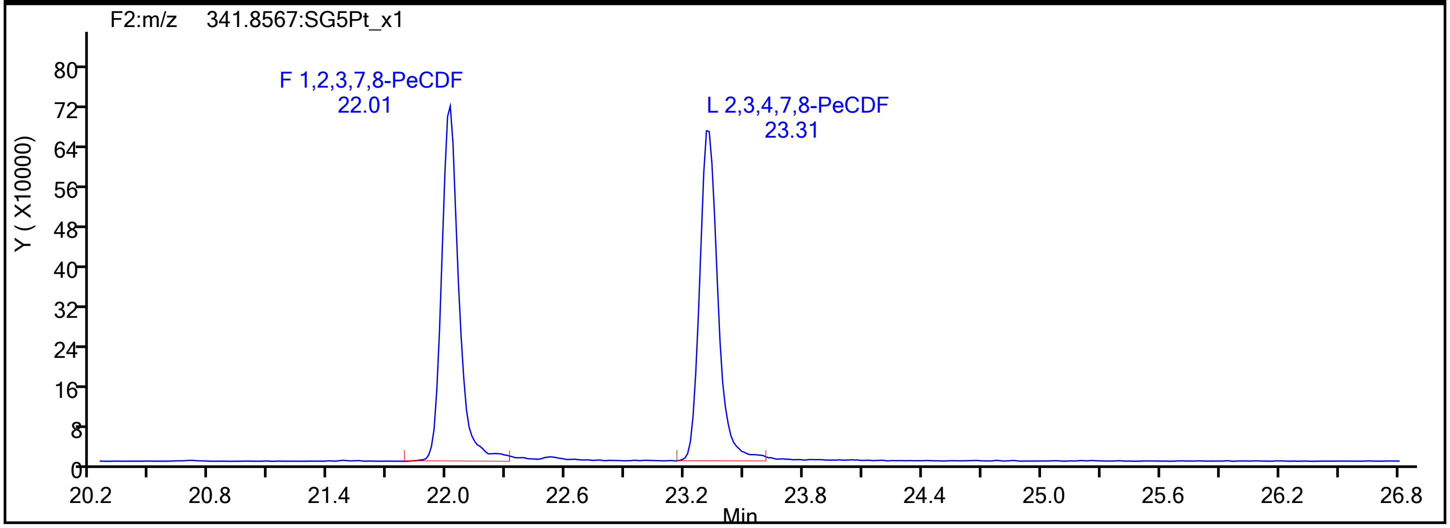

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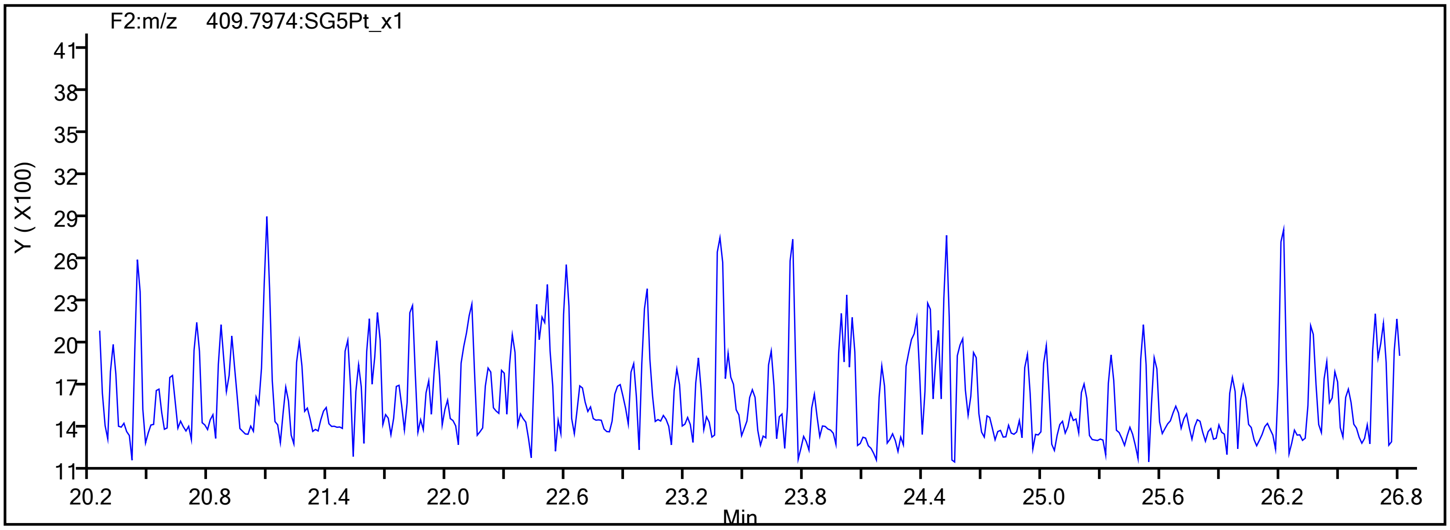

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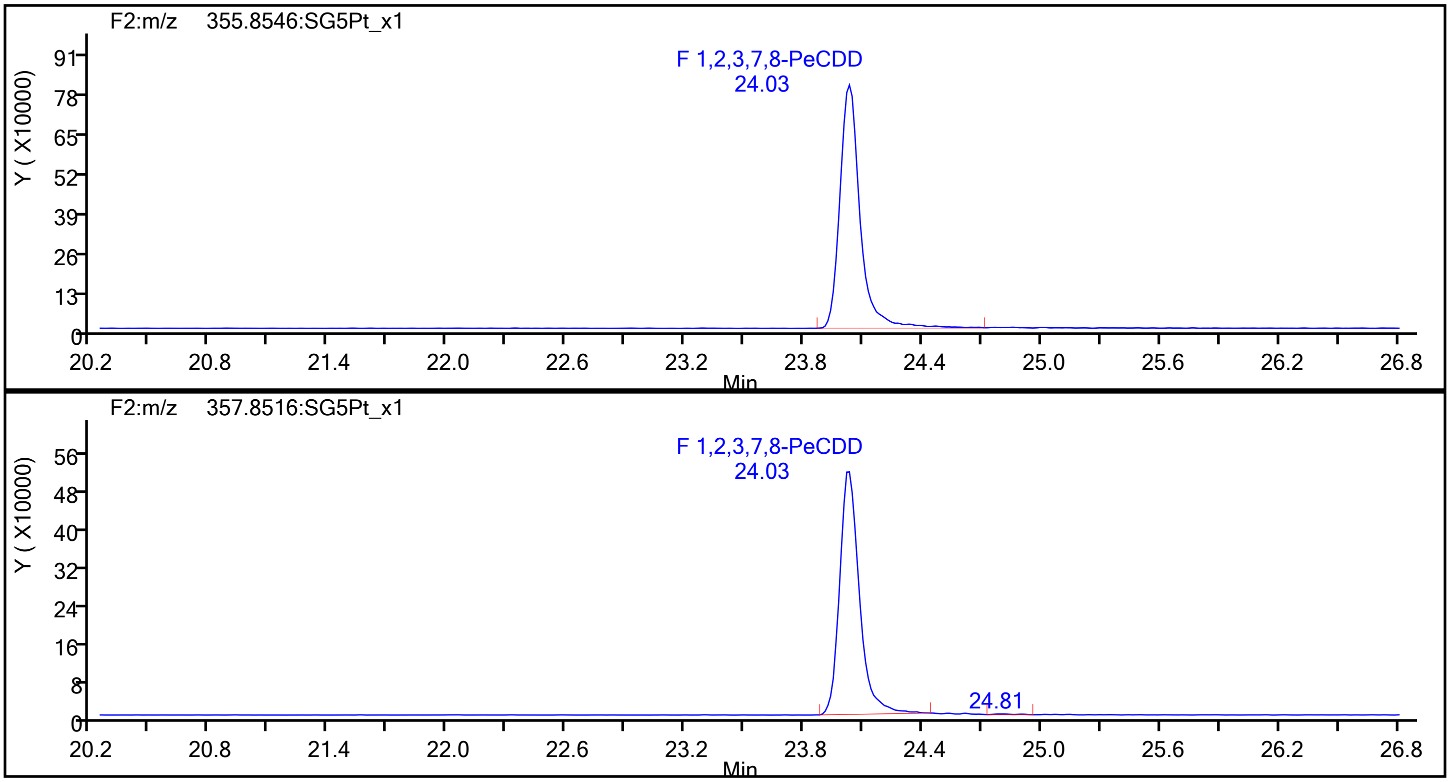

PeCDD Standards

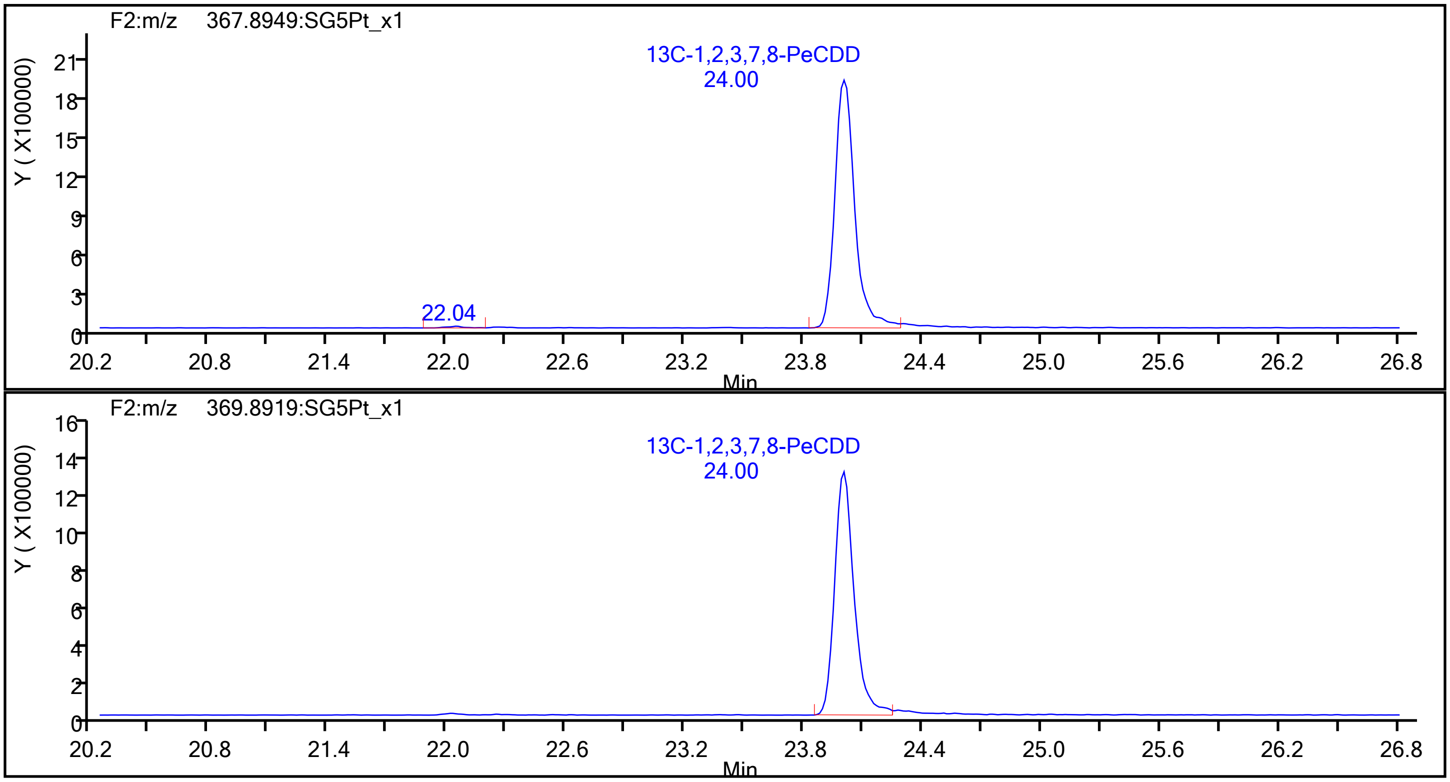

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Eurofins TestAmerica, Sacramento

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Injection Vol: 2.0 ul

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Method: Dioxin_10D5

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Client ID:

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Sample Line#: 5

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HxCDF

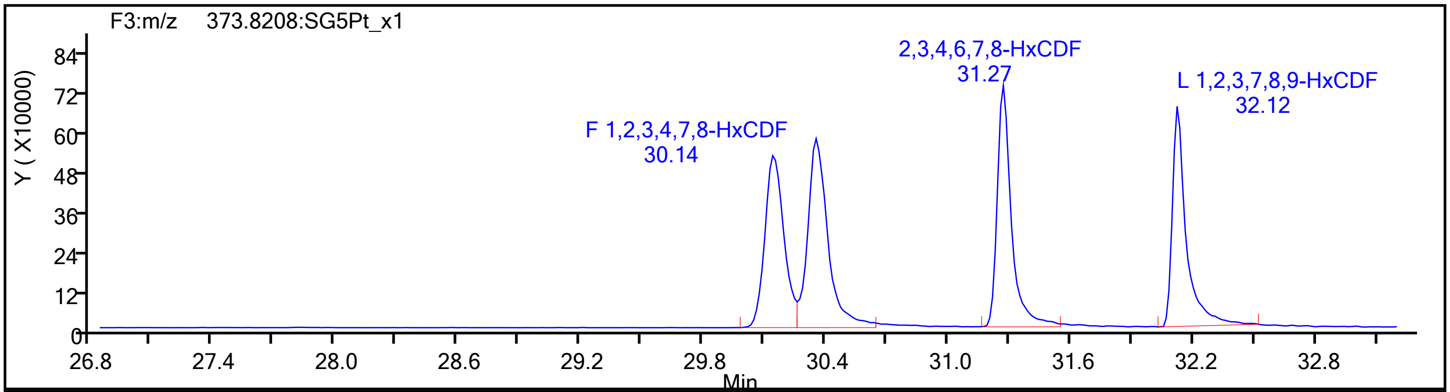

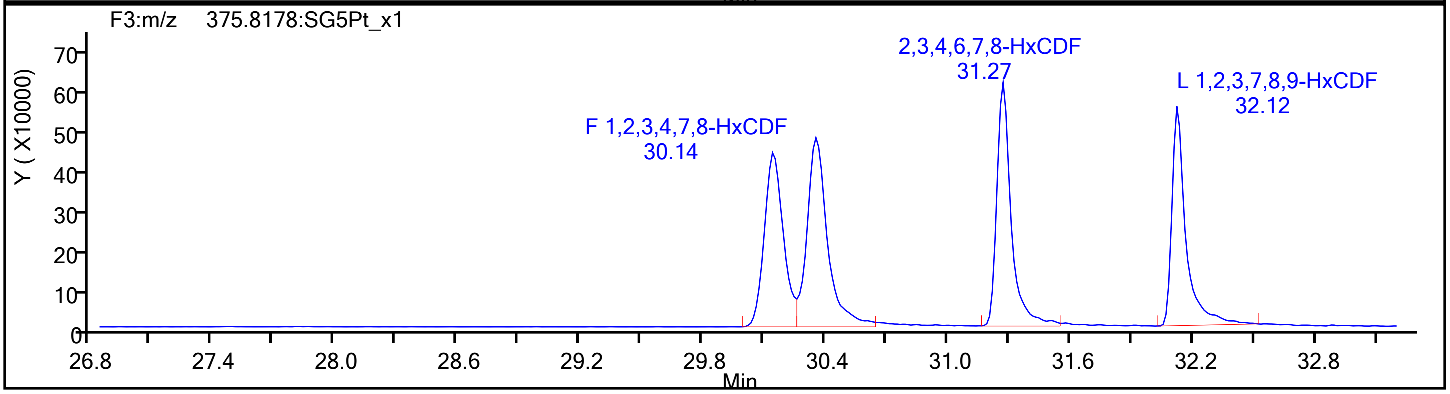

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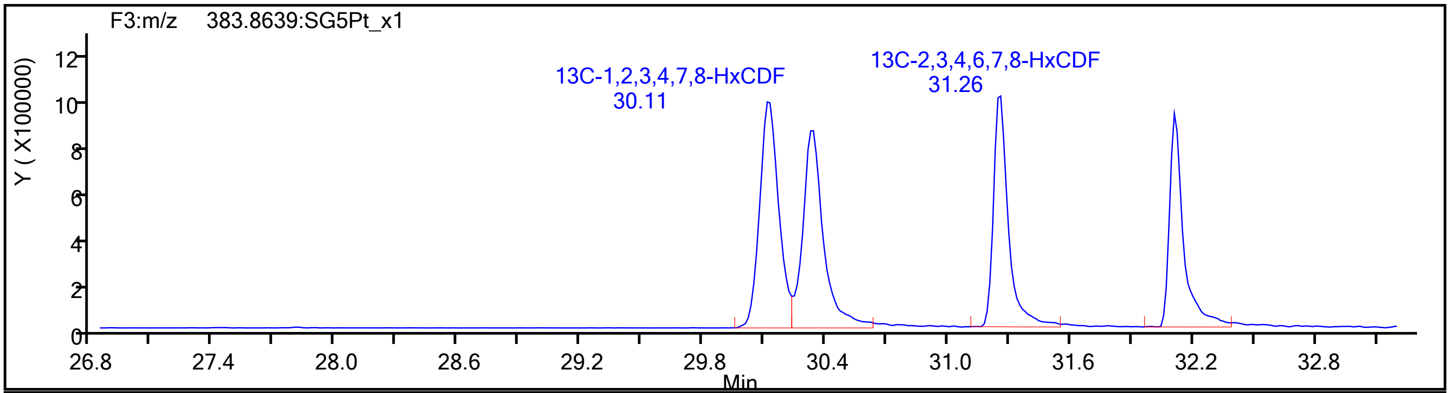

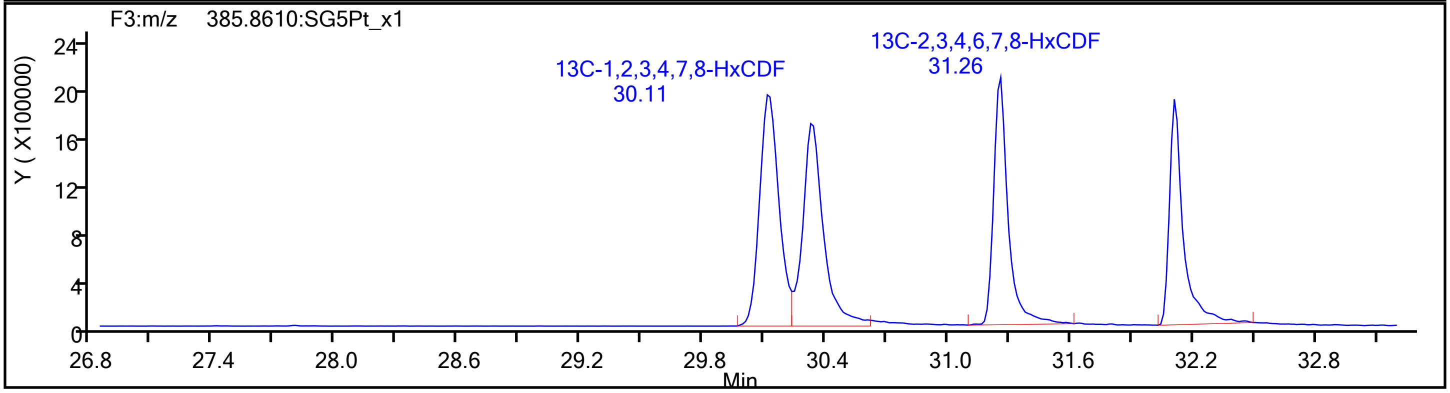

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Eurofins TestAmerica, Sacramento

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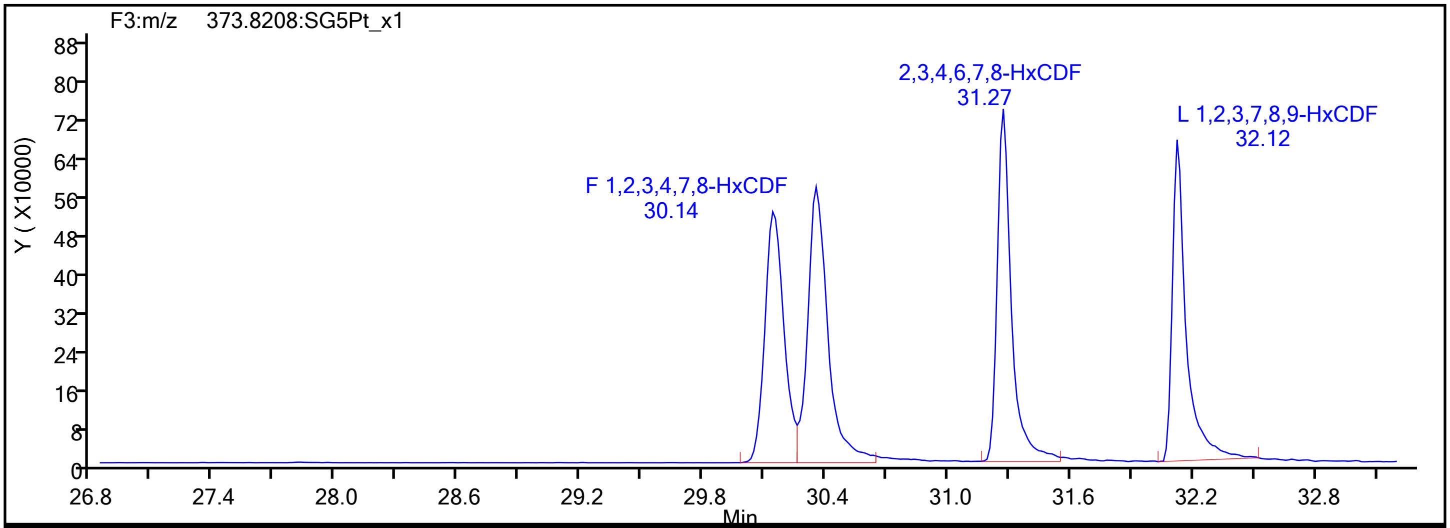

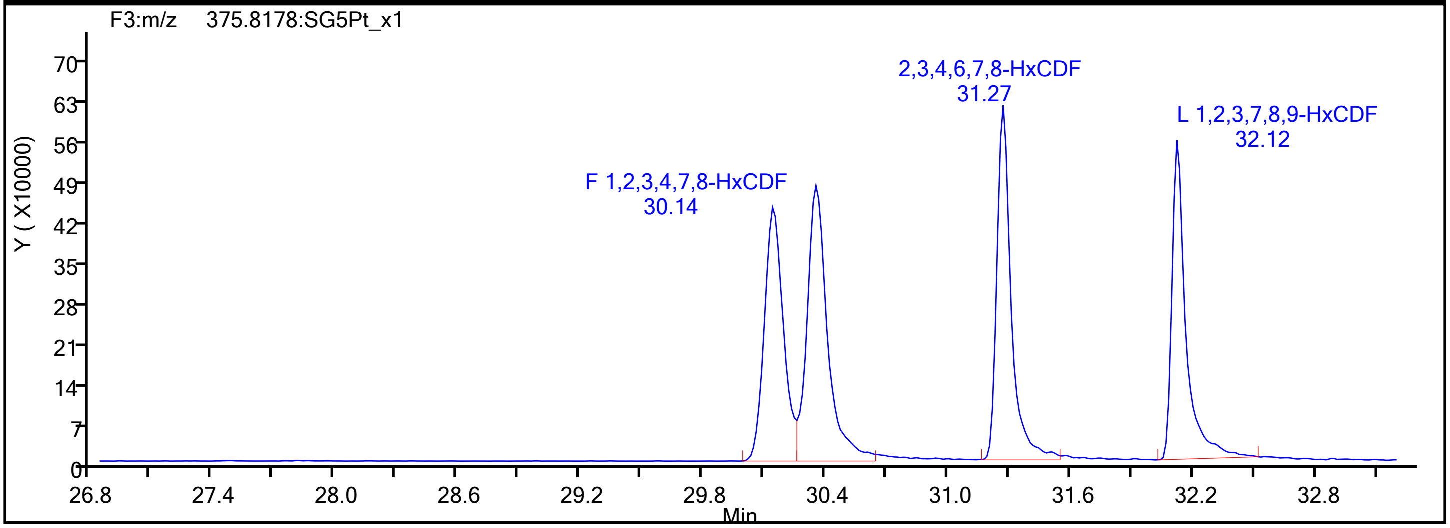

HxCDF Interference Mass

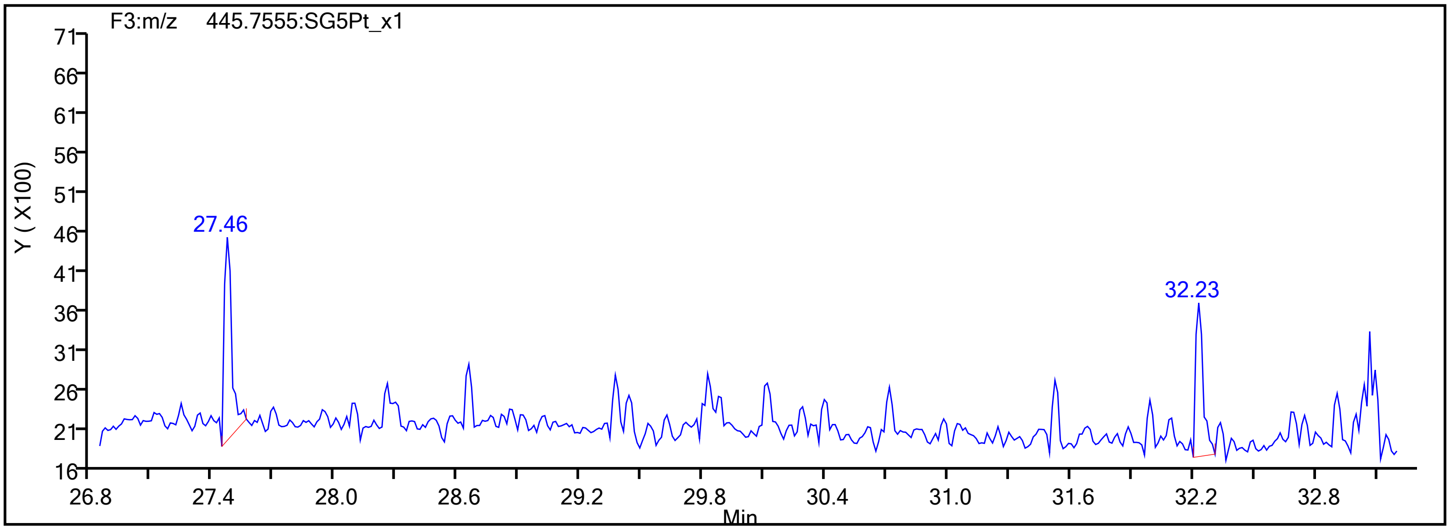

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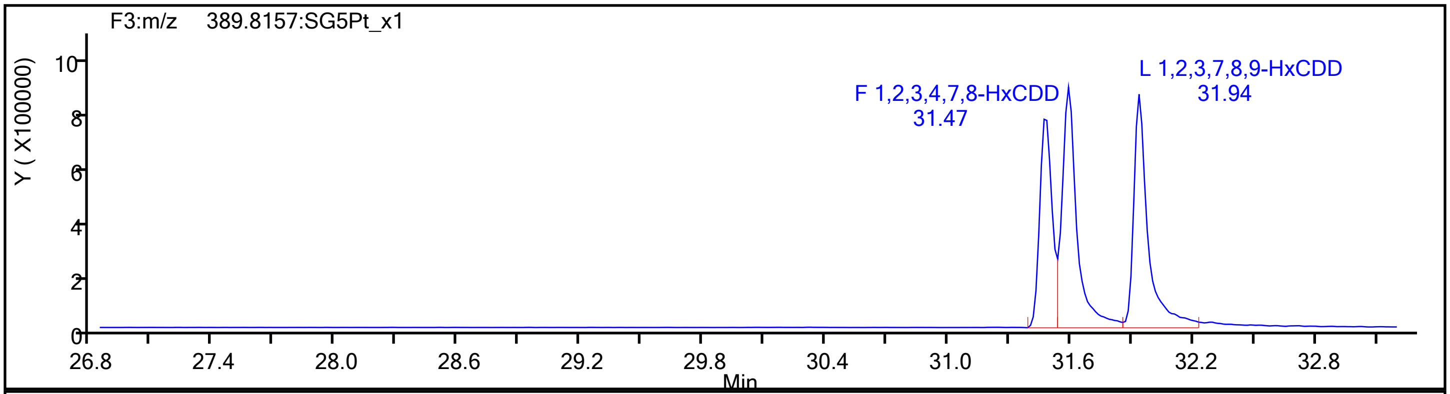

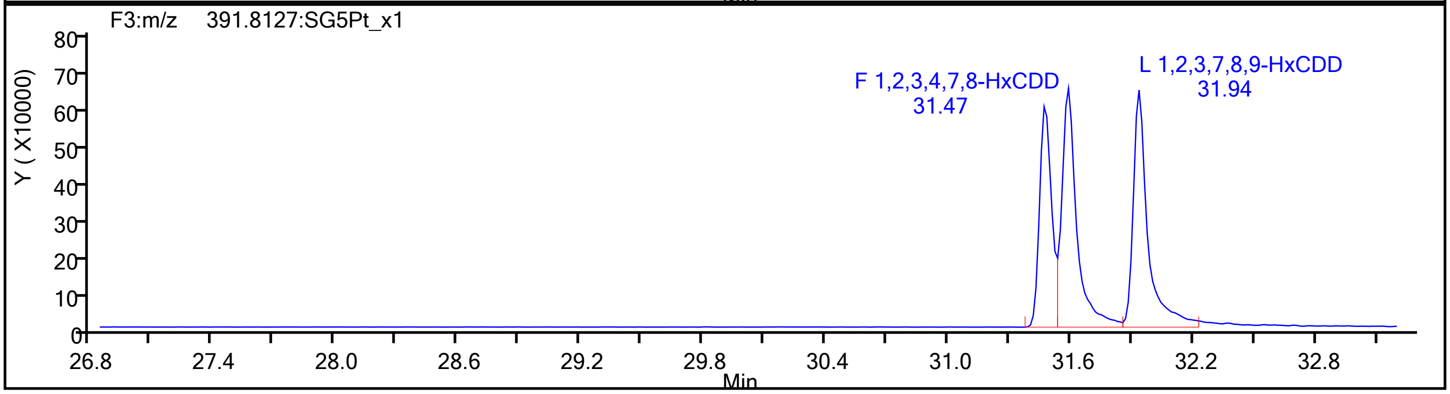

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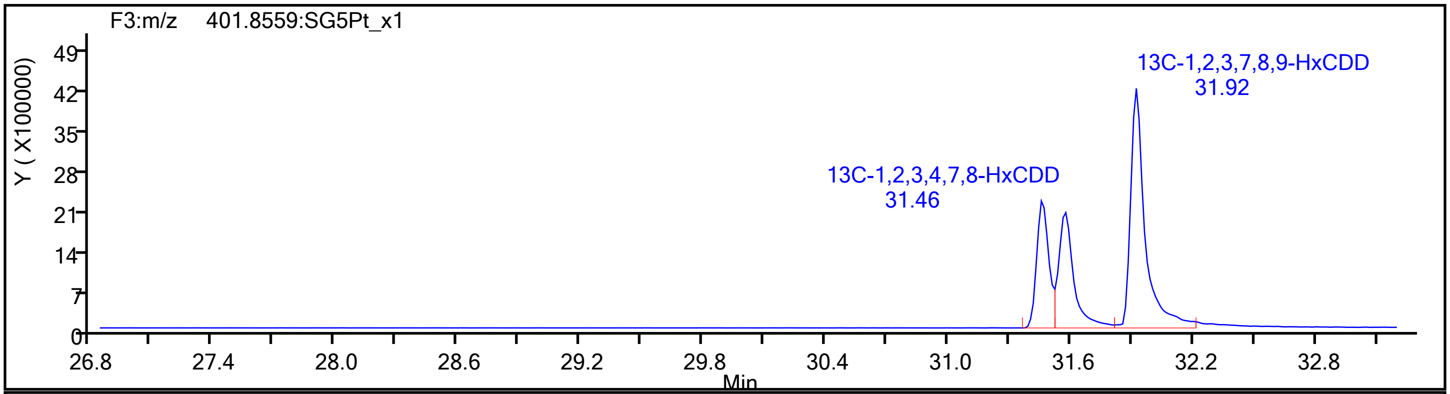

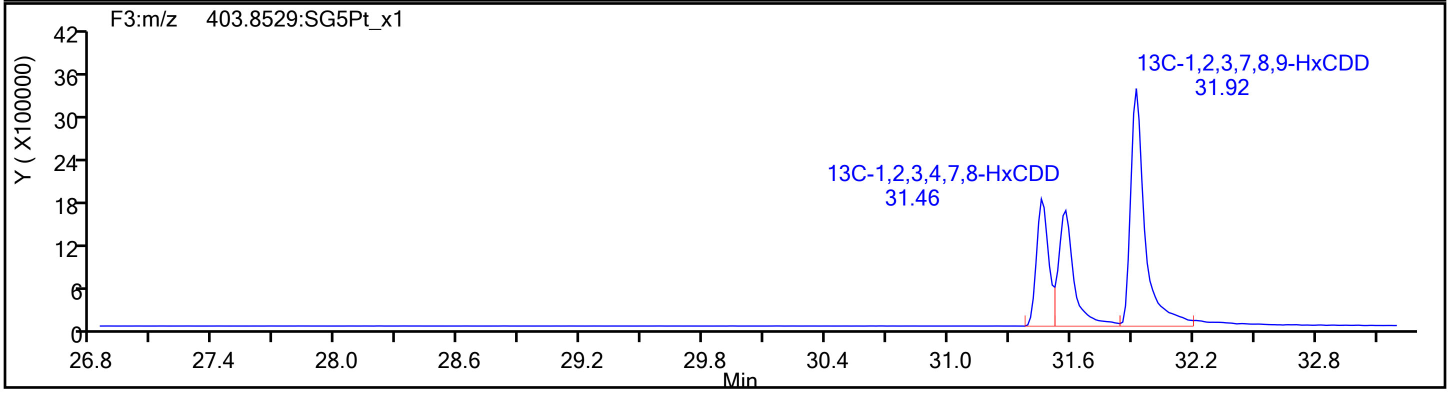

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HpCDF

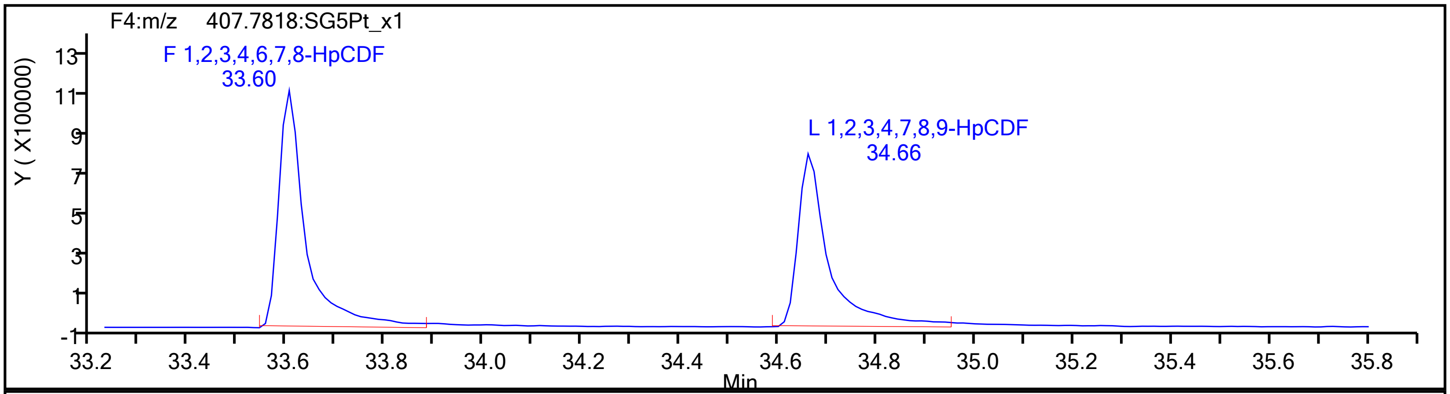

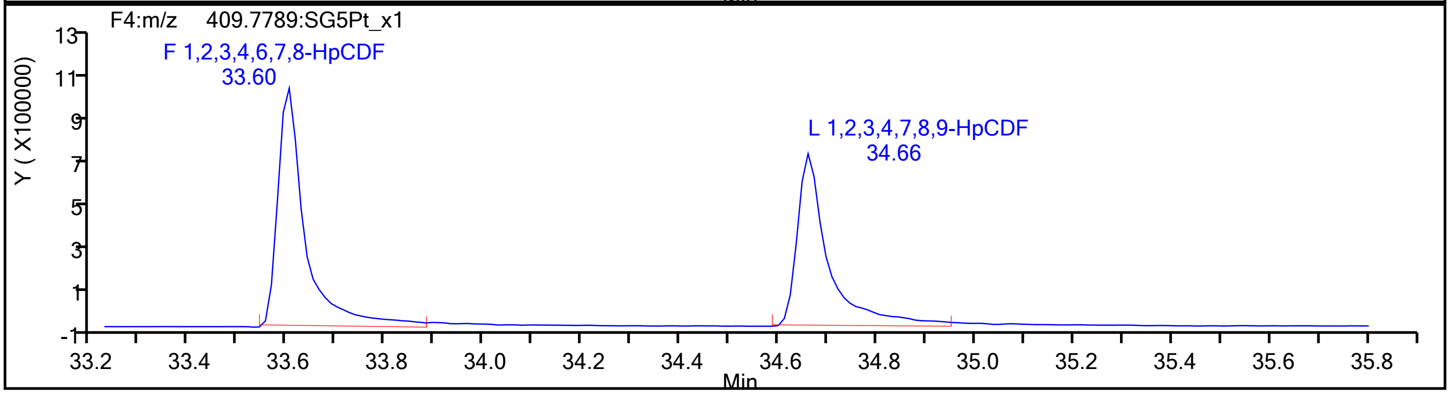

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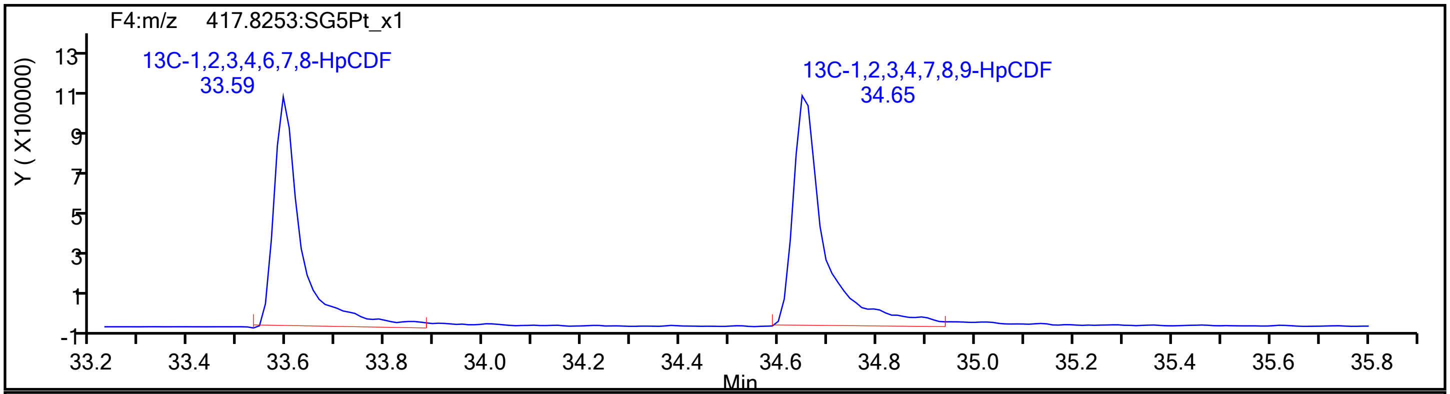

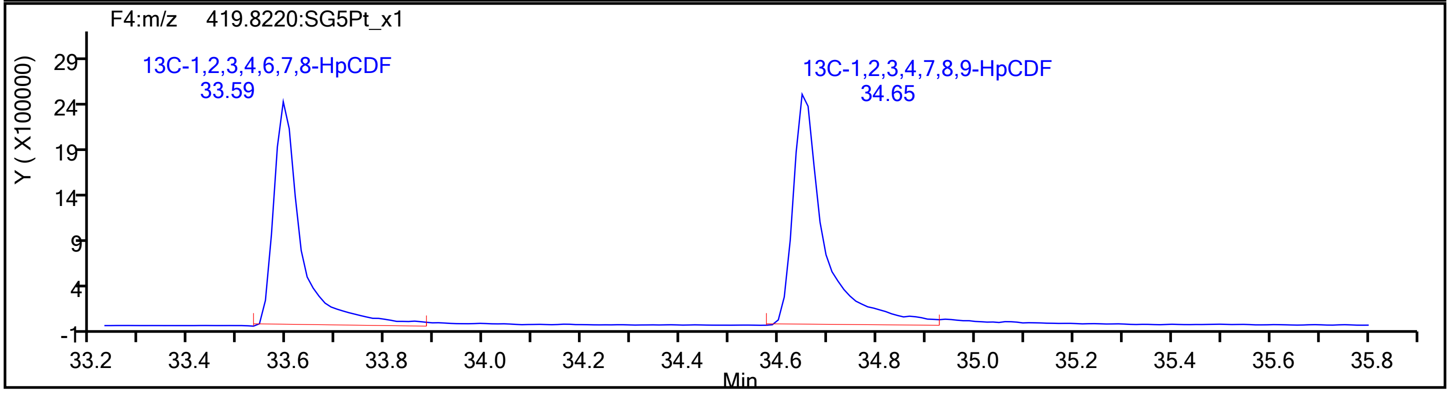

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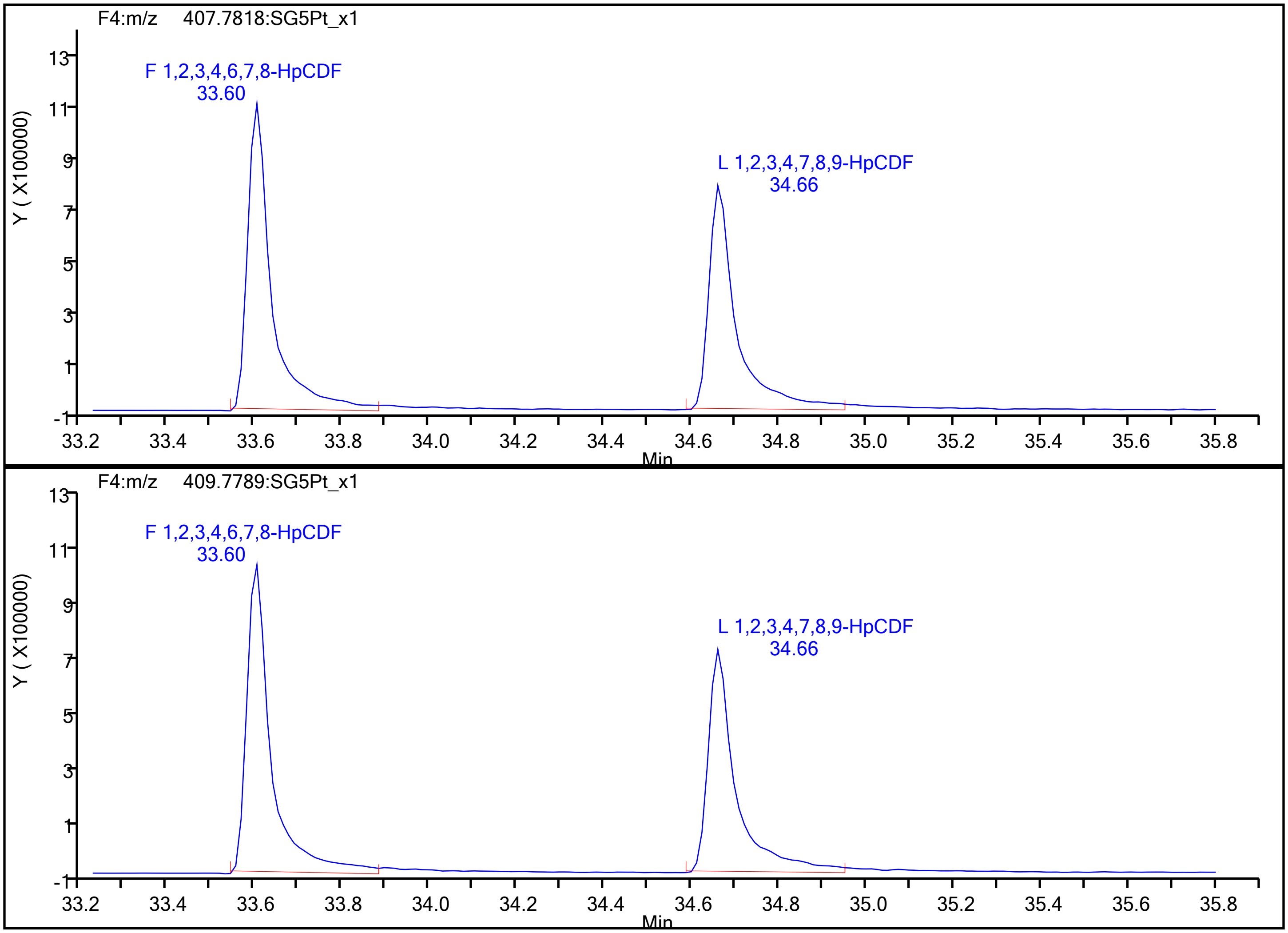

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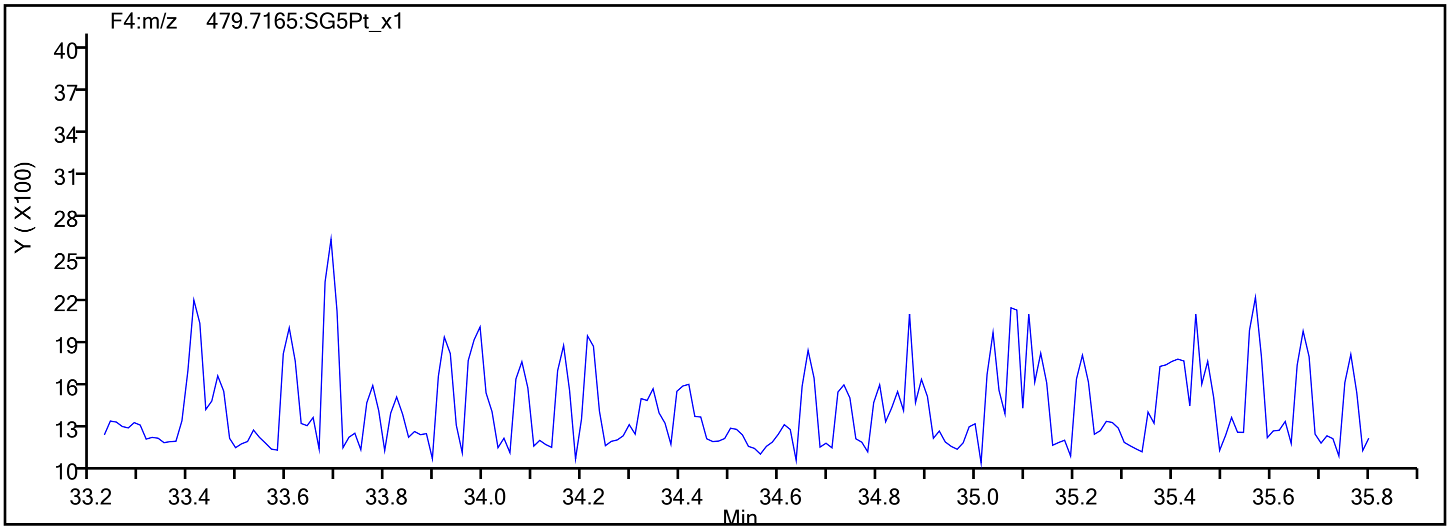

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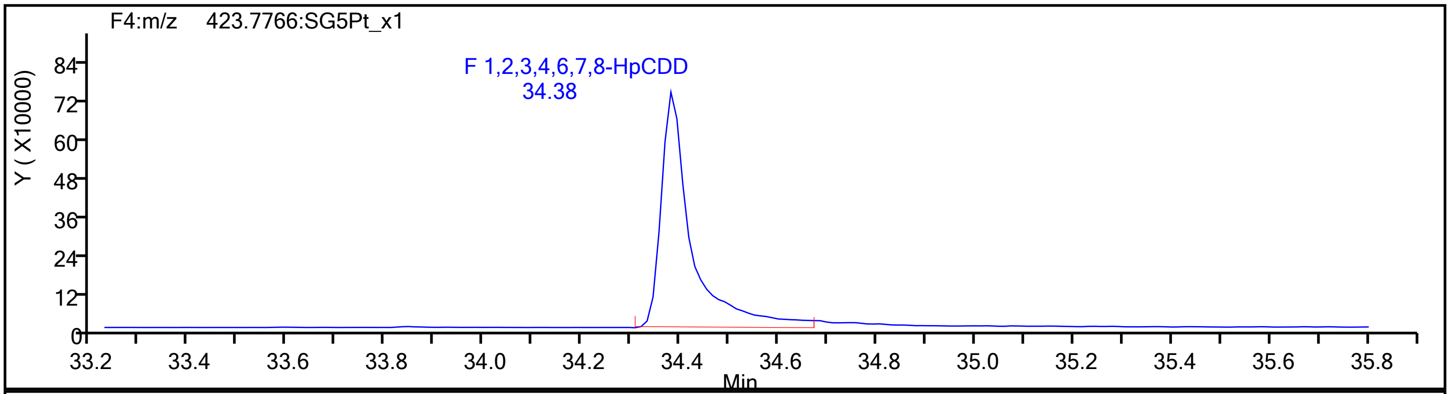

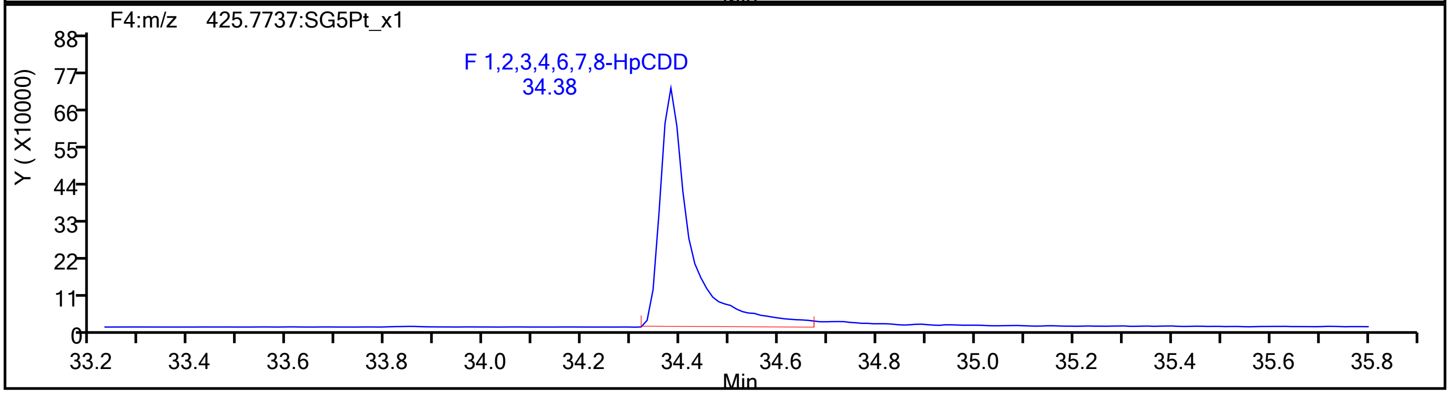

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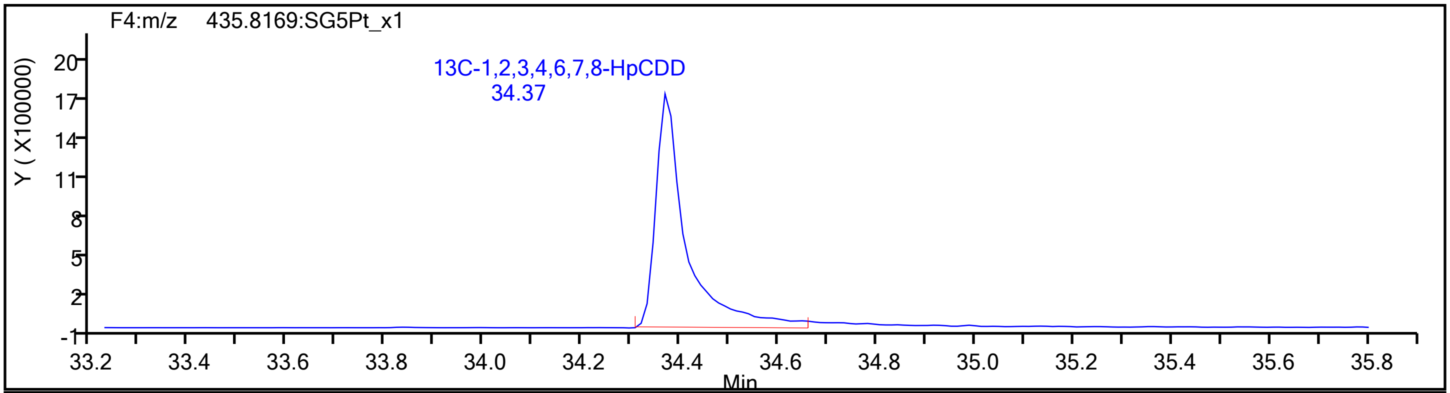

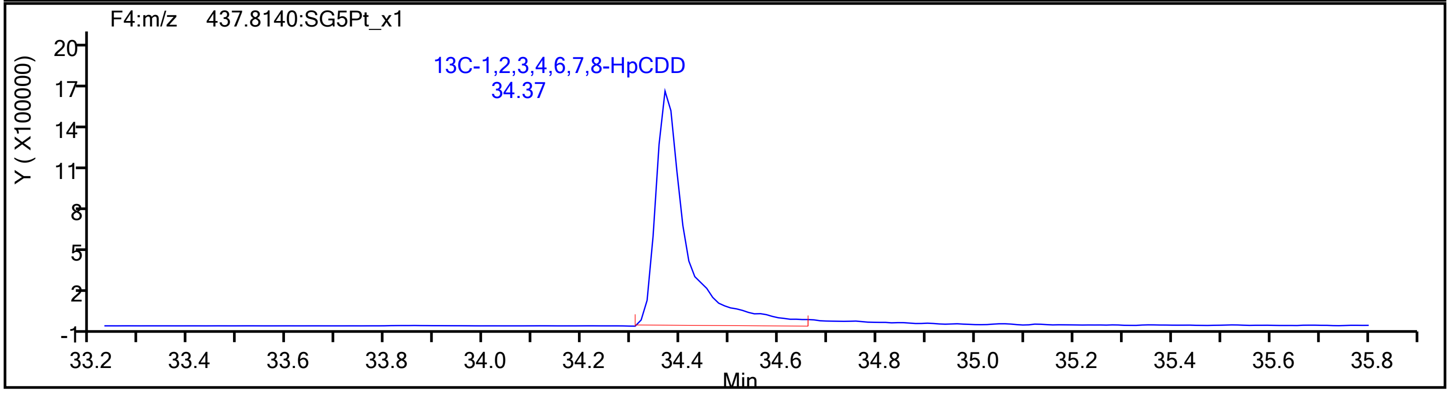

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Eurofins TestAmerica, Sacramento

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Client ID:

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OCDF

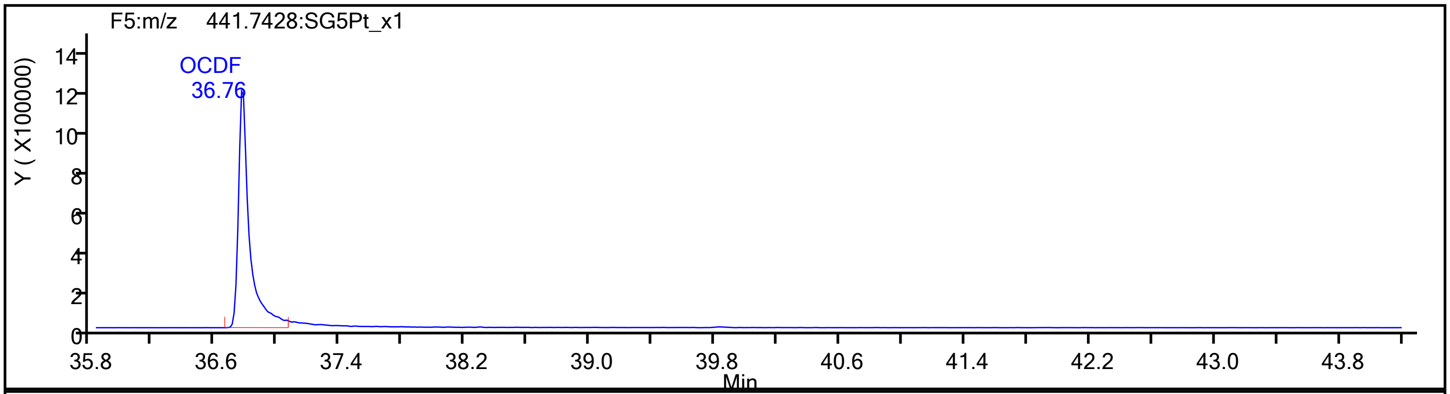

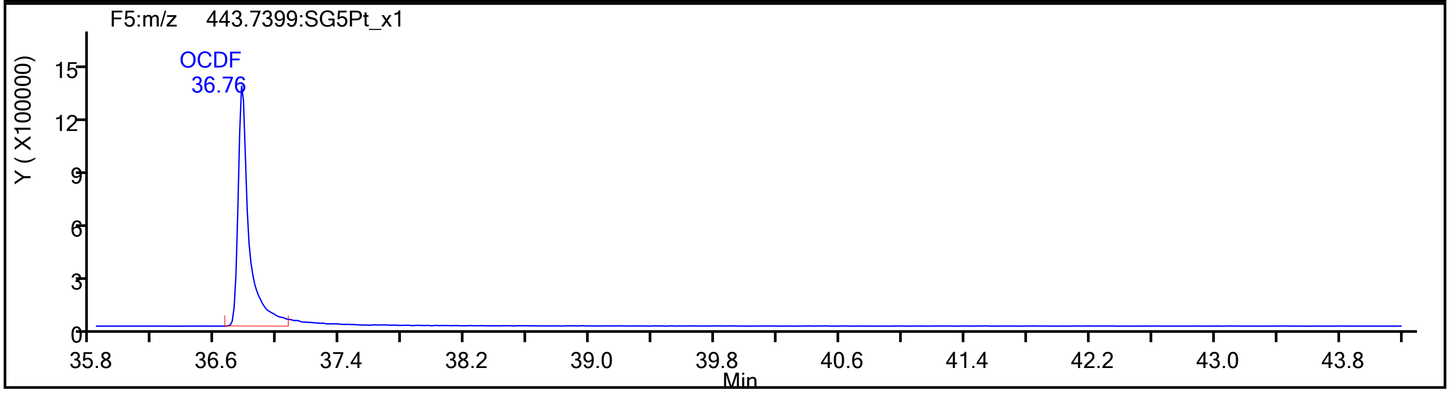

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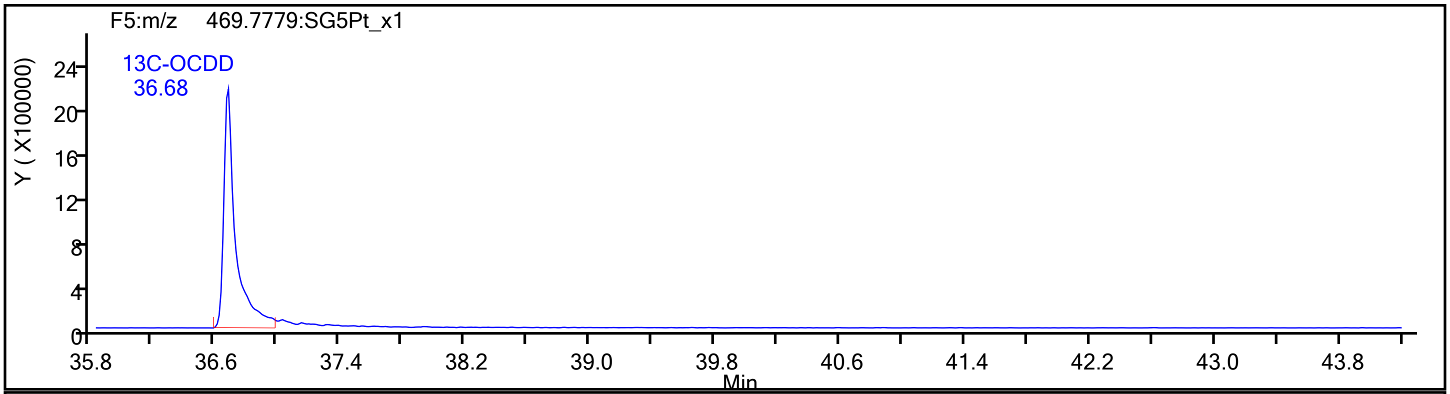

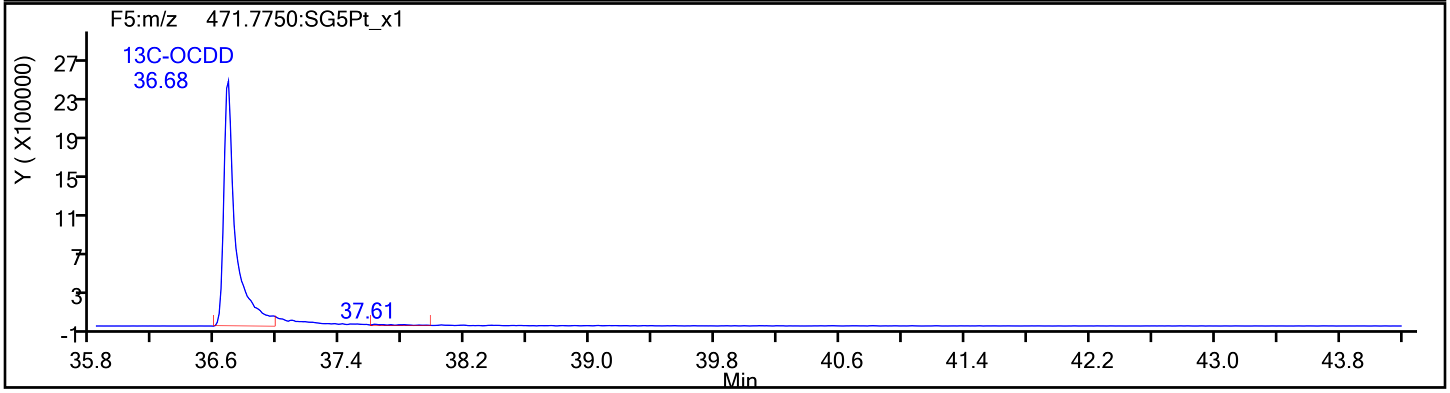

Eurofins TestAmerica, Sacramento

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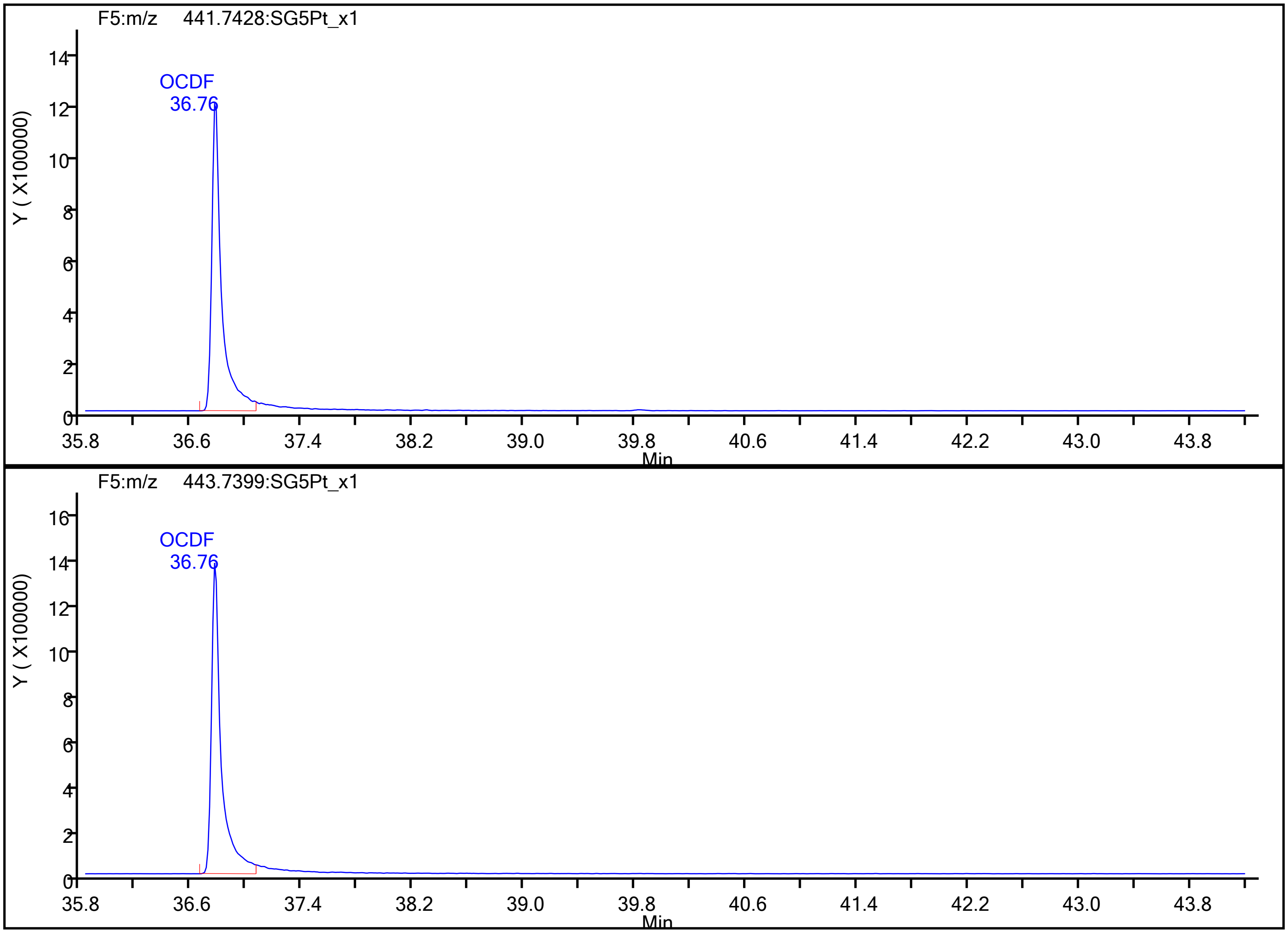

OCDF Interference Mass

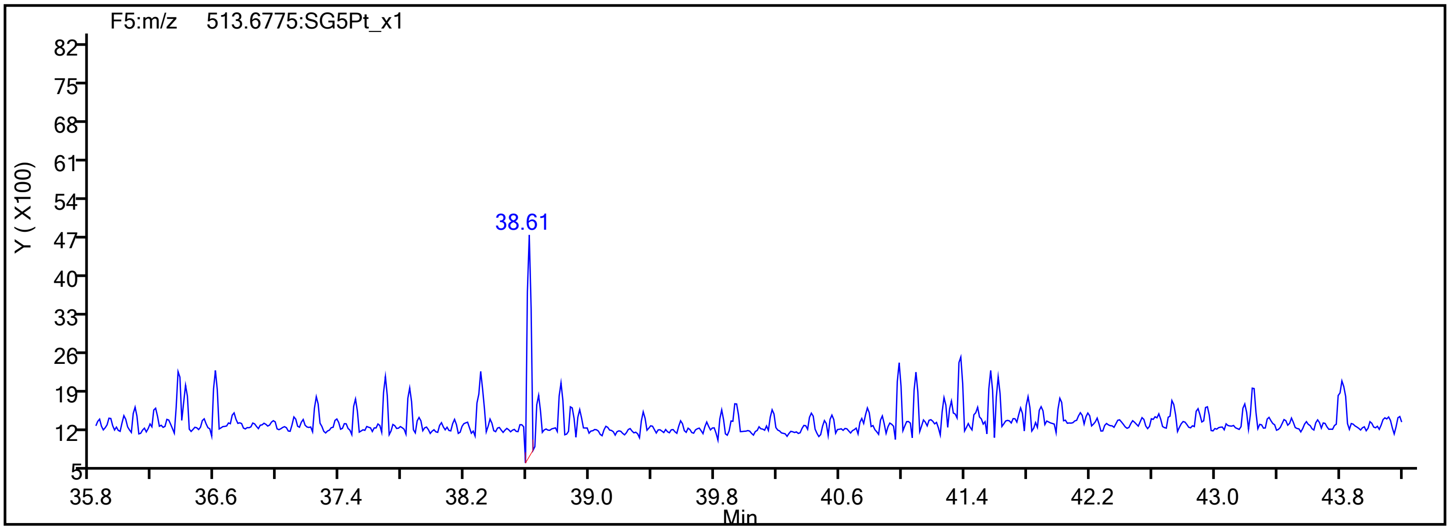

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Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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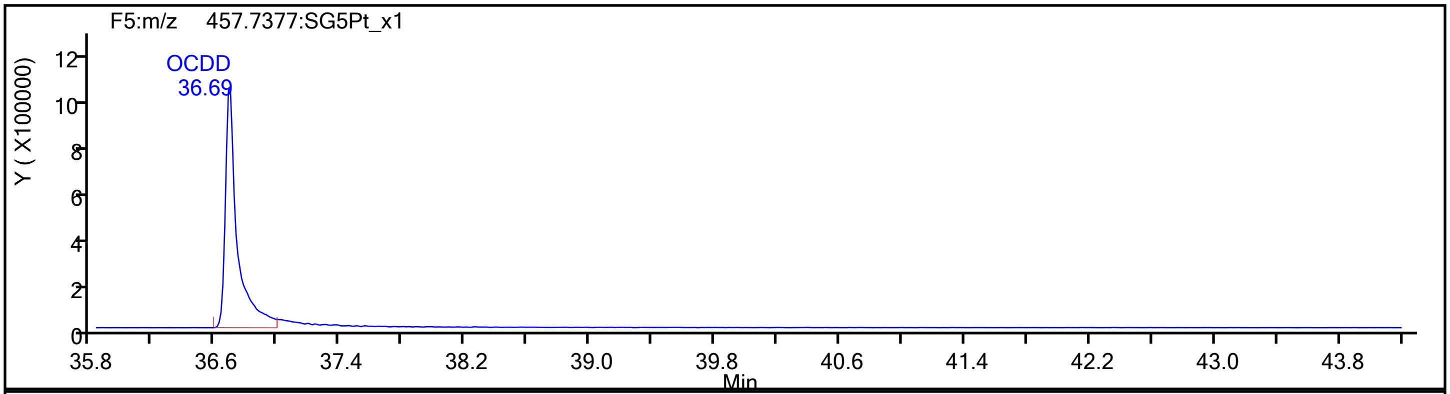

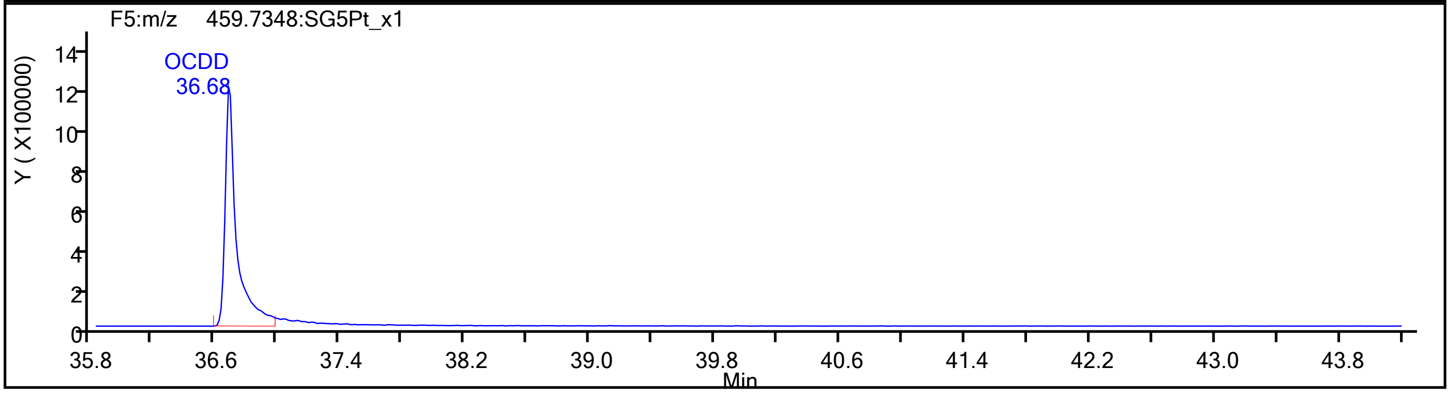

OCDD Standards

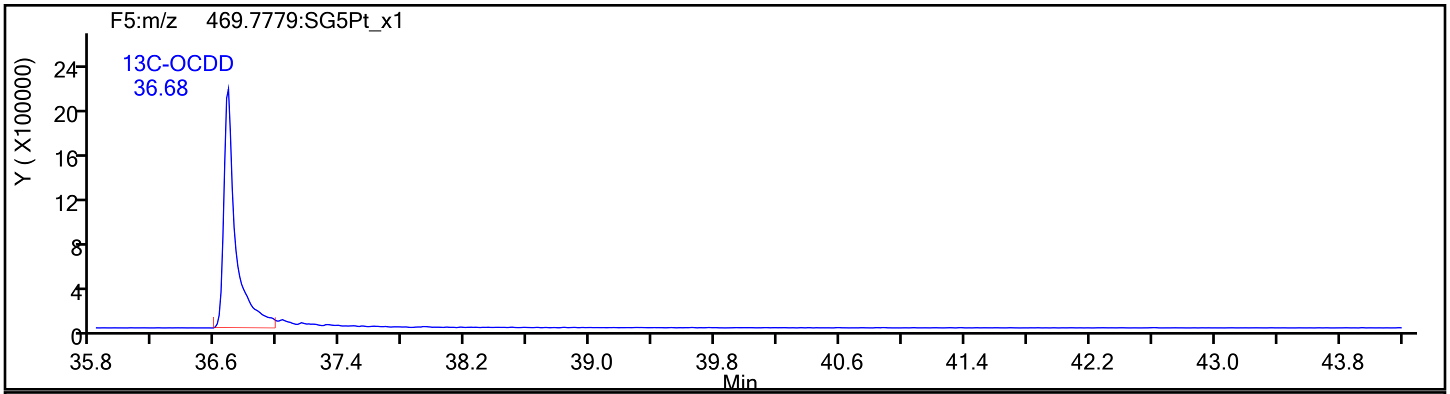

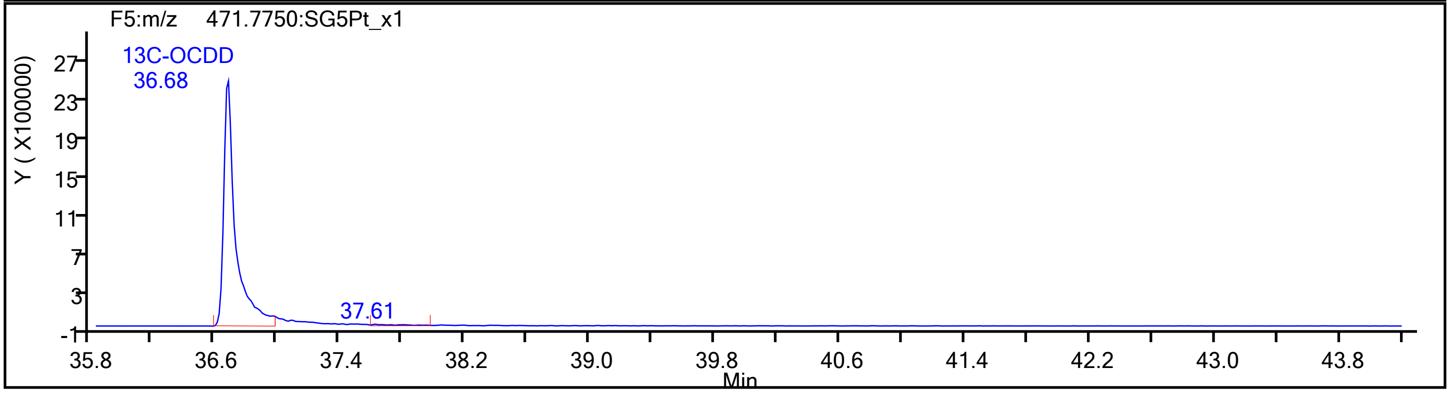

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Eurofins TestAmerica, Sacramento

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Column Type:	DB-5	Column Dia:	0.32 mm

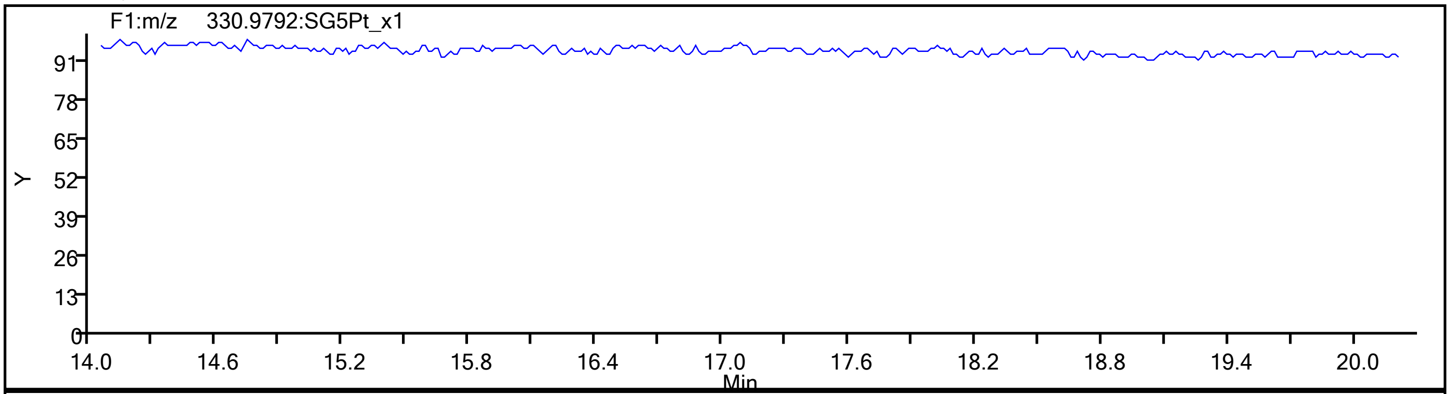

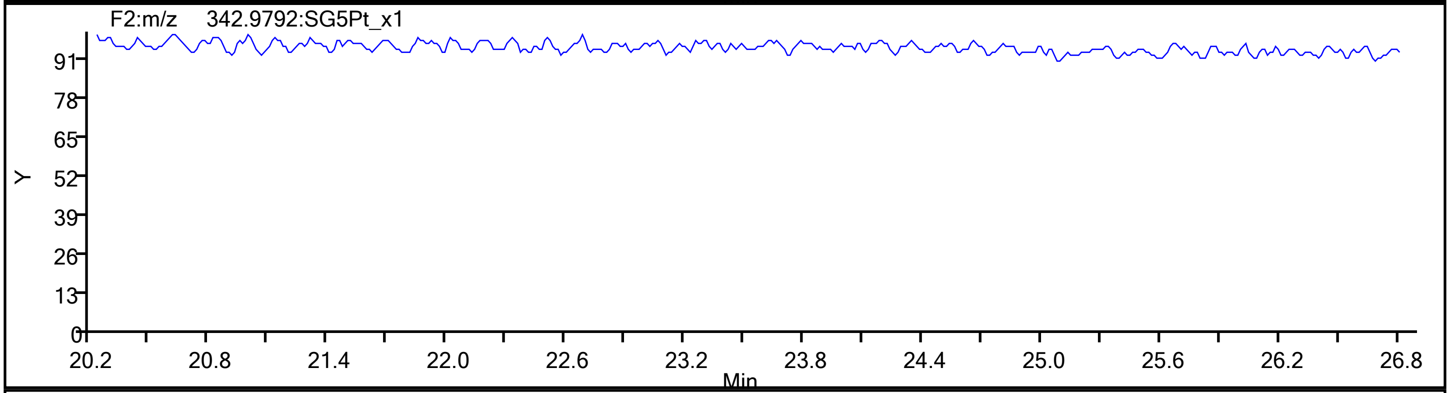

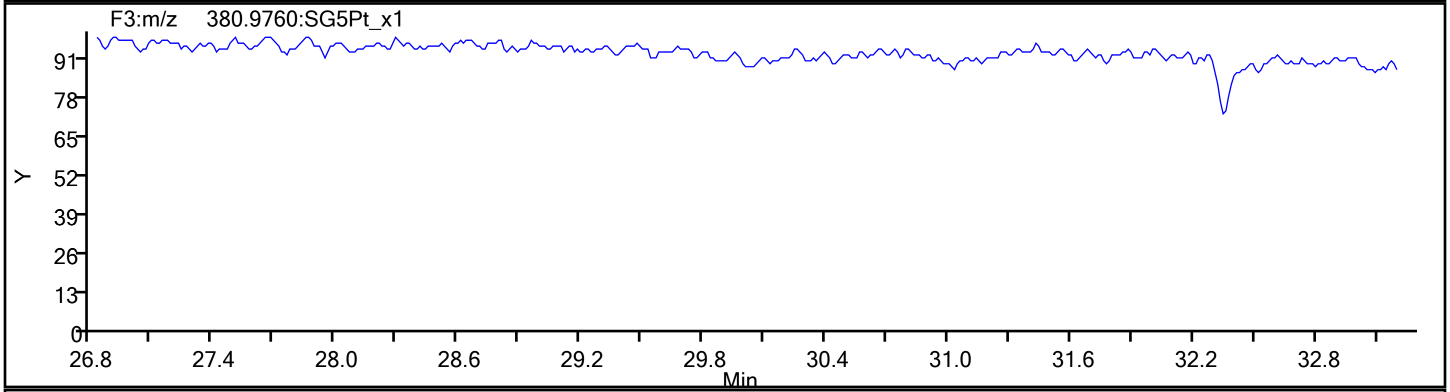

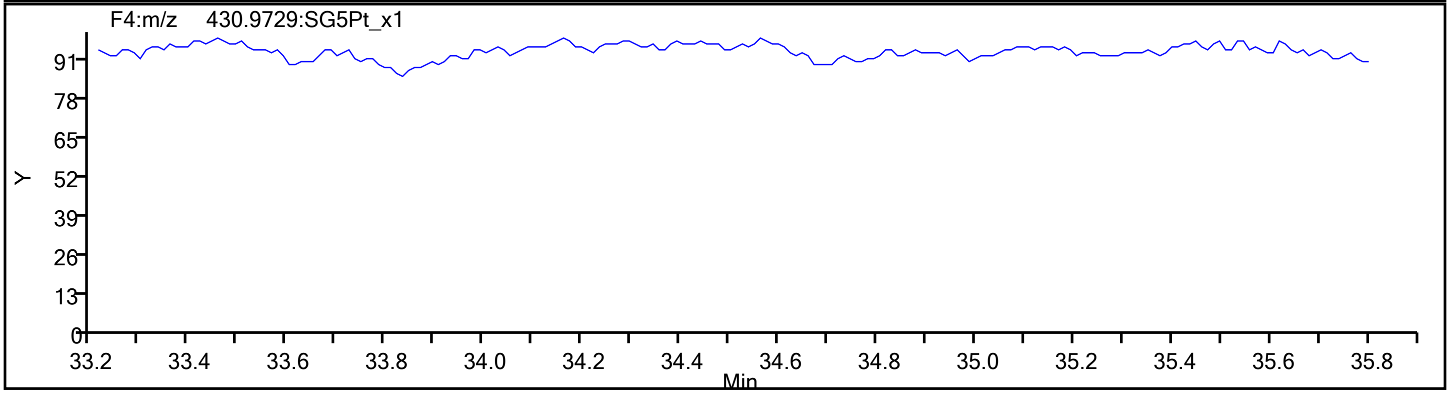

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_5.d		
Injection Date:	25-Jun-2020 20:55:03	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	5
Column Type:	DB-5	Column Dia:	0.32 mm

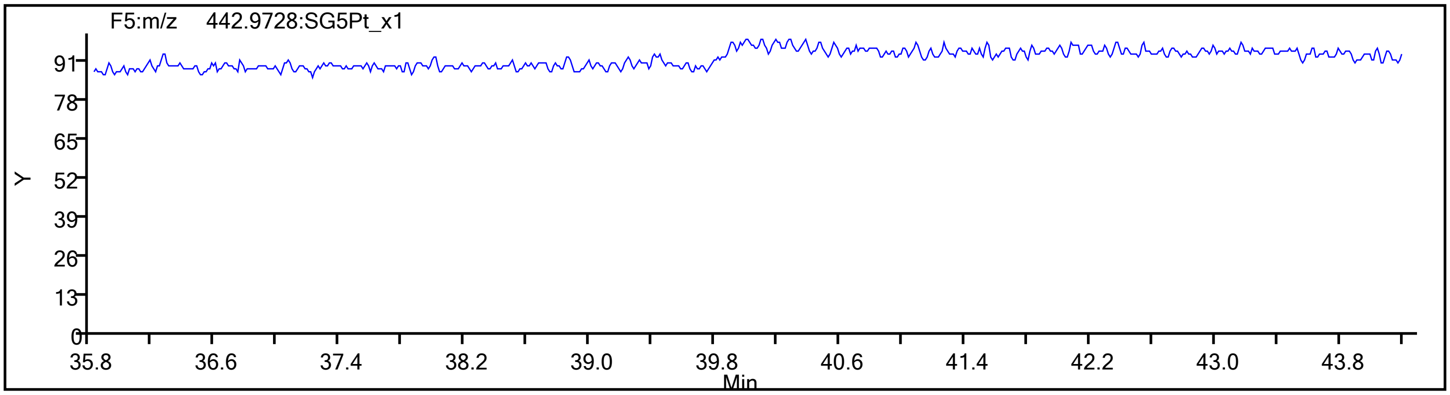

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-389032/3-A
Matrix: Water	Lab File ID: 25JN2010D5_6.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1000(mL)	Date Analyzed: 06/25/2020 21:40
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	198		10	0.98
51207-31-9	2,3,7,8-TCDF	222		10	0.96
40321-76-4	1,2,3,7,8-PeCDD	922		50	2.3
57117-41-6	1,2,3,7,8-PeCDF	1040		50	6.1
57117-31-4	2,3,4,7,8-PeCDF	900		50	5.6
39227-28-6	1,2,3,4,7,8-HxCDD	918		50	7.3
57653-85-7	1,2,3,6,7,8-HxCDD	980		50	7.2
19408-74-3	1,2,3,7,8,9-HxCDD	999		50	6.6
70648-26-9	1,2,3,4,7,8-HxCDF	936		50	19
57117-44-9	1,2,3,6,7,8-HxCDF	1110		50	19
72918-21-9	1,2,3,7,8,9-HxCDF	1130		50	17
60851-34-5	2,3,4,6,7,8-HxCDF	1140		50	15
35822-46-9	1,2,3,4,6,7,8-HpCDD	961		50	13
67562-39-4	1,2,3,4,6,7,8-HpCDF	1030		50	27
55673-89-7	1,2,3,4,7,8,9-HpCDF	898		50	34
3268-87-9	OCDD	2080		100	6.5
39001-02-0	OCDF	2030		100	6.9
41903-57-5	Total TCDD	201		10	0.98
30402-14-3	Total TCDF	222		10	0.96
36088-22-9	Total PeCDD	922		50	2.3
30402-15-4	Total PeCDF	1940		50	5.9
34465-46-8	Total HxCDD	2900		50	7.0
55684-94-1	Total HxCDF	4320		50	17
37871-00-4	Total HpCDD	961		50	13
38998-75-3	Total HpCDF	1920		50	31

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID:	Lab Sample ID: LCSD 320-389032/3-A
Matrix: Water	Lab File ID: 25JN2010D5_6.d
Analysis Method: 1613B	Date Collected:
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1000(mL)	Date Analyzed: 06/25/2020 21:40
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	51		20-175
89059-46-1	13C-2,3,7,8-TCDF	43		22-152
109719-79-1	13C-1,2,3,7,8-PeCDD	49		21-227
109719-77-9	13C-1,2,3,7,8-PeCDF	41		21-192
116843-02-8	13C-2,3,4,7,8-PeCDF	47		13-328
109719-80-4	13C-1,2,3,4,7,8-HxCDD	46		21-193
109719-81-5	13C-1,2,3,6,7,8-HxCDD	55		25-163
114423-98-2	13C-1,2,3,4,7,8-HxCDF	47		19-202
116843-03-9	13C-1,2,3,6,7,8-HxCDF	47		21-159
116843-04-0	13C-1,2,3,7,8,9-HxCDF	44		17-205
116843-05-1	13C-2,3,4,6,7,8-HxCDF	44		22-176
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	52		26-166
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	48		21-158
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	53		20-186
114423-97-1	13C-OCDD	51		13-199

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	63		31-191

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Lims ID: LCSD 320-389032/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 25-Jun-2020 21:40:12 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-389032/3-A LCSD 320-389032/3-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:56:10

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.566	61223599	0.77	3.6E+05	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.082	31257543	0.77	1.1970	42.7	42.7	0.1386	0.1386	42.65	
2,3,7,8-TCDF	17.097	2660430	0.75	0.7672	11.1	11.1	0.0480	0.0480	111	
A Non-2,3,7,8-sub-TCDF	16.810						0.0480	0.0480		
S Total TCDF					11.1	11.1	0.0480	0.0480		
D 13C-2,3,7,8-TCDD	17.763	27179001	0.76	0.8773	50.6	50.6	0.1850	0.1850	50.60	
2,3,7,8-TCDD	17.778	2692792	0.75	1.0000	9.908	9.908	0.0491	0.0491	99.08	
$ 37Cl4-2,3,7,8-TCDD	17.778	14638896		0.9515	25.1	25.1	0.0557	0.0557	62.83	
A Non-2,3,7,8-sub-TCDD	17.256	40729	0.72	1.0000	0.1499	0.1499	0.0491	0.1499	0.00	
S Total TCDD					10.1	10.1	0.0491	0.0491		
D 13C-1,2,3,7,8-PeCDF	21.985	25027425	1.58	0.9904	41.3	41.3	0.1841	0.1841	41.27	
1,2,3,7,8-PeCDF	21.999	11782117	1.53	0.9019	52.2	52.2	0.3065	0.3065	104	
D 13C-2,3,4,7,8-PeCDF	23.280	31203433	1.61	1.0797	47.2	47.2	0.1689	0.1689	47.20	
2,3,4,7,8-PeCDF	23.308	11660004	1.57	0.8307	45.0	45.0	0.2824	0.2824	89.97	
A F1 PeCDFs	19.675						0.0354	0.0354		
A Non-2,3,7,8-sub-PeCDF	22.743						0.2930	0.2930		
S Total PeCDF					97.2	97.2	0.2945	0.2945		
D 13C-1,2,3,7,8-PeCDD	23.990	20903779	1.59	0.6904	49.5	49.5	0.0858	0.0858	49.45	
1,2,3,7,8-PeCDD	24.017	9777280	1.55	1.0145	46.1	46.1	0.1174	0.1174	92.21	
A Non-2,3,7,8-sub-PeCDD	22.953						0.1174	0.1174		
S Total PeCDD					46.1	46.1	0.1174	0.1174		
D 13C-1,2,3,4,7,8-HxCDF	30.113	16981695	0.49	0.9076	47.3	47.3	0.5469	0.5469	47.25	
1,2,3,4,7,8-HxCDF	30.140	6303313	1.22	0.7928	46.8	46.8	0.9277	0.9277	93.64	
D 13C-1,2,3,6,7,8-HxCDF	30.326	16113935	0.48	0.8671	46.9	46.9	0.5725	0.5725	46.93	
1,2,3,6,7,8-HxCDF	30.340	7687171	1.22	0.8592	55.5	55.5	0.9445	0.9445	111	
D 13C-2,3,4,6,7,8-HxCDF	31.245	14297196	0.49	0.8287	43.6	43.6	0.5991	0.5991	43.58	
2,3,4,6,7,8-HxCDF	31.258	7233537	1.20	0.8896	56.9	56.9	0.7262	0.7262	114	
D 13C-1,2,3,7,8,9-HxCDF	32.097	12740879	0.49	0.7391	43.5	43.5	0.6716	0.6716	43.54	
1,2,3,7,8,9-HxCDF	32.110	6440517	1.19	0.8941	56.5	56.5	0.8363	0.8363	113	
A Non-2,3,7,8-sub-HxCDF	29.847						0.8502	0.8502		
S Total HxCDF					215.8	215.8	0.8587	0.8587		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.910	39594317	1.25	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	15200668	1.28	0.8335	46.1	46.1	0.5939	0.5939	46.06	
1,2,3,4,7,8-HxCDD	31.471	5814223	1.20	0.8332	45.9	45.9	0.3648	0.3648	91.82	
D 13C-1,2,3,6,7,8-HxCDD	31.564	17933436	1.26	0.8228	55.0	55.0	0.6016	0.6016	55.05	
1,2,3,6,7,8-HxCDD	31.577	7863046	1.23	0.8944	49.0	49.0	0.3578	0.3578	98.04	
1,2,3,7,8,9-HxCDD	31.924	7819383	1.24	0.9449	50.0	50.0	0.3300	0.3300	99.91	
A Non-2,3,7,8-sub-HxCDD	30.499						0.3500	0.3500		
S Total HxCDD					144.9	144.9	0.3508	0.3508		
D 13C-1,2,3,4,6,7,8-HpCDF	33.578	13204300	0.43	0.7009	47.6	47.6	1.928	1.928	47.58	
1,2,3,4,6,7,8-HpCDF	33.590	9000172	1.02	1.3295	51.3	51.3	1.363	1.363	103	
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	15245098	0.45	0.7244	53.2	53.2	1.865	1.865	53.16	
1,2,3,4,7,8,9-HpCDF	34.647	7395292	1.03	1.0803	44.9	44.9	1.710	1.710	89.81	
A Non-2,3,7,8-sub-HpCDF	34.143						1.518	1.518		
S Total HpCDF					96.2	96.2	1.536	1.536		
D 13C-1,2,3,4,6,7,8-HpCDD	34.355	14515189	1.05	0.7026	52.2	52.2	0.8679	0.8679	52.18	
1,2,3,4,6,7,8-HpCDD	34.368	7000772	1.03	1.0040	48.0	48.0	0.6352	0.6352	96.07	
A Non-2,3,7,8-sub-HpCDD	34.119						0.6352	0.6352		
S Total HpCDD					48.0	48.0	0.6352	0.6352		
D 13C-OCDD	36.664	24825468	0.91	0.6184	101.4	101.4	0.3518	0.3518	50.70	
OCDF	36.760	13928808	0.90	1.1076	101.3	101.3	0.3453	0.3453	101	
OCDD	36.676	13118838	0.87	1.0175	103.9	103.9	0.3253	0.3253	104	

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Lims ID: LCSD 320-389032/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 25-Jun-2020 21:40:12 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 320-389032/3-A LCSD 320-389032/3-A
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 11:56:10

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											
331.9368	17.566	17.581	-1		26604933	6356122	5416	13540	1174		
333.9339	17.581	17.581	0		34618666	8200556	4033	10082	2033	0.77(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	13559126	3096927	4544	11360	682		
317.9389	17.082	17.082	0	0.972	17698417	3975953	5113	12782	778	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097	17.097	0	1.001	1143453	271801	382	955	712		
305.8987	17.097	17.097	0	1.001	1516977	345298	660	1650	523	0.75(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											
303.9016	16.810						382	955			
305.8987	16.810						660	1650			
13C-2,3,7,8-TCDD											
331.9368	17.763	17.778	-1	1.011	11702964	2542159	5416	13540	469		
333.9339	17.763	17.778	-1	1.011	15476037	3393521	4033	10082	841	0.76(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.778	17.793	-1	1.001	1155802	242541	720	1800	337		
321.8936	17.778	17.793	-1	1.001	1536990	336226	446	1115	754	0.75(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.778	17.793	-1	1.012	14638896	3197207	3085	7712	1036		
A Non-2,3,7,8-sub-TCDD											
319.8965	15.616	17.256	-98	0.879	17082	4666	720	1800	6		
321.8936	15.616	17.256	-98	0.879	23647	6339	446	1115	14	0.72(0.65-0.89)	
13C-1,2,3,7,8-PeCDF											
351.9000	21.985	21.999	-1	1.252	15318182	2509862	6314	15785	398		
353.8970	21.985	21.999	-1	1.252	9709243	1625193	4305	10762	378	1.58(1.32-1.78)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8-PeCDF											
339.8597	21.999	22.012	-1	1.001	7126883	1198493	2750	6875	436		
341.8567	21.999	22.012	-1	1.001	4655234	789574	1822	4555	433	1.53(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.280	23.308	-2	1.325	19267383	3058946	6314	15785	484		
353.8970	23.280	23.308	-2	1.325	11936050	1812477	4305	10762	421	1.61(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.308	23.321	-1	1.001	7126319	1130582	2750	6875	411		
341.8567	23.308	23.321	-1	1.001	4533685	691098	1822	4555	379	1.57(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.675						194	485			
341.8567	19.675						359	897			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						2750	6875			
341.8567	22.743						1822	4555			
13C-1,2,3,7,8-PeCDD											
367.8949	23.990	24.017	-2	1.366	12844758	1789922	2053	5132	872		
369.8919	23.990	24.017	-2	1.366	8059021	1149561	1398	3495	822	1.59(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.017	24.044	-2	1.001	5949894	861563	759	1897	1135		
357.8516	24.017	24.044	-2	1.001	3827386	550570	641	1602	859	1.55(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						759	1897			
357.8516	22.953						641	1602			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.944	5603918	835037	5092	12730	164		
385.8610	30.113	30.140	-2	0.944	11377777	1693991	10686	26715	159	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.140	30.153	-1	1.001	3462794	527819	4014	10035	131		
375.8178	30.126	30.153	-2	1.000	2840519	443453	3426	8565	129	1.22(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.326	30.340	-1	0.950	5259482	729285	5092	12730	143		
385.8610	30.326	30.340	-1	0.950	10854453	1562785	10686	26715	146	0.48(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.340	30.366	-2	1.000	4223314	594116	4014	10035	148		
375.8178	30.340	30.366	-2	1.000	3463857	500238	3426	8565	146	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.245	31.258	-1	0.979	4681738	921339	5092	12730	181		
385.8610	31.245	31.258	-1	0.979	9615458	1957868	10686	26715	183	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.258	31.285	-2	1.000	3942849	789801	4014	10035	197		
375.8178	31.258	31.285	-2	1.000	3290688	660865	3426	8565	193	1.20(1.05-1.43)	
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.097	32.123	-2	1.006	4206406	820069	5092	12730	161		
385.8610	32.097	32.123	-2	1.006	8534473	1667486	10686	26715	156	0.49(0.43-0.59)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,7,8,9-HxCDF											
373.8208	32.110	32.137	-2	1.000	3499143	699669	4014	10035	174		
375.8178	32.110	32.137	-2	1.000	2941374	581042	3426	8565	170	1.19(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						4014	10035			
375.8178	29.847						3426	8565			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.910	31.924	-1		22017336	4437821	9058	22645	490		
403.8529	31.910	31.924	-1		17576981	3508164	6676	16690	525	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.986	8543319	2038554	9058	22645	225		
403.8529	31.444	31.471	-2	0.985	6657349	1579587	6676	16690	237	1.28(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.471	31.484	-1	1.000	3176063	776900	2315	5787	336		
391.8127	31.471	31.484	-1	1.000	2638160	633133	2084	5210	304	1.20(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.564	31.577	-1	0.989	9987463	1890806	9058	22645	209		
403.8529	31.564	31.577	-1	0.989	7945973	1545814	6676	16690	232	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.577	31.604	-2	1.000	4330259	821872	2315	5787	355		
391.8127	31.577	31.604	-2	1.000	3532787	687752	2084	5210	330	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.924	31.950	-2	1.015	4325137	877336	2315	5787	379		
391.8127	31.924	31.950	-2	1.015	3494246	688119	2084	5210	330	1.24(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						2315	5787			
391.8127	30.499						2084	5210			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.578	33.590	-1	1.052	3978964	1006439	11912	29780	84		
419.8220	33.578	33.590	-1	1.052	9225336	2382072	31032	77580	77	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.590	33.602	-1	1.000	4540574	1184620	12171	30427	97		
409.7789	33.590	33.602	-1	1.000	4459598	1166457	12383	30957	94	1.02(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.086	4706816	1039853	11912	29780	87		
419.8220	34.635	34.659	-1	1.085	10538282	2283526	31032	77580	74	0.45(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.647	34.659	-1	1.000	3750029	822956	12171	30427	68		
409.7789	34.647	34.659	-1	1.000	3645263	806891	12383	30957	65	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						12171	30427			
409.7789	34.143						12383	30957			
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.355	34.380	-1	1.077	7441224	1652487	10275	25687	161		
437.8140	34.355	34.380	-1	1.077	7073965	1573291	9106	22765	173	1.05(0.88-1.20)	

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,4,6,7,8-HpCDD											
423.7766	34.368	34.380	-1	1.000	3544363	809986	3741	9352	217		
425.7737	34.368	34.380	-1	1.000	3456409	793643	4488	11220	177	1.03(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						3741	9352			
425.7737	34.119						4488	11220			
13C-OCDD											
469.7779	36.664	36.676	-1	1.149	11839350	2240555	3057	7642	733		
471.7750	36.664	36.676	-1	1.149	12986118	2461736	3858	9645	638	0.91(0.76-1.02)	
OCDF											
441.7428	36.760	36.772	-1	1.003	6589341	1306382	1546	3865	845		
443.7399	36.760	36.772	-1	1.003	7339467	1437264	2051	5127	701	0.90(0.76-1.02)	
OCDD											
457.7377	36.676	36.688	-1	1.000	6091934	1129489	1955	4887	578		
459.7348	36.664	36.688	-1	1.000	7026904	1292687	1158	2895	1116	0.87(0.76-1.02)	

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Lims ID: LCSD 320-389032/3-A
Client ID:
Inject. Date: 25-Jun-2020 21:40:12
Dil. Factor: 1.0000
Sample Type: LCSD, LCS Duplicate
Instrument ID: 10D5
Operator: AJS
Lims Batch ID: 389621
Lims Sample ID: 6

Non-2,3,7,8-sub-TCDD, RT: 17.256

Initial Calibration RRF

IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDD	1.000	D 13C-2,3,7,8-TCDD	100.000	27179001	5935680

Averages:

	RRFn		Qis	Ris Area	Ris Height
	1.000		100.000	27179001	5935680

Sum the Uncalibrated Results

RT	319.8965 Area	319.8965 Height	321.8936 Area	321.8936 Height	Amount	Ratio	Flags
15.616	17082	4666	23647	6339	0.1499	0.72	
Signal Totals:							
	17082	4666	23647	6339			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	40729	11005				0.72	

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1499 = (40729 * 100.000) / (27179001 * 1.000)

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Injection Date: 25-Jun-2020 21:40:12 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

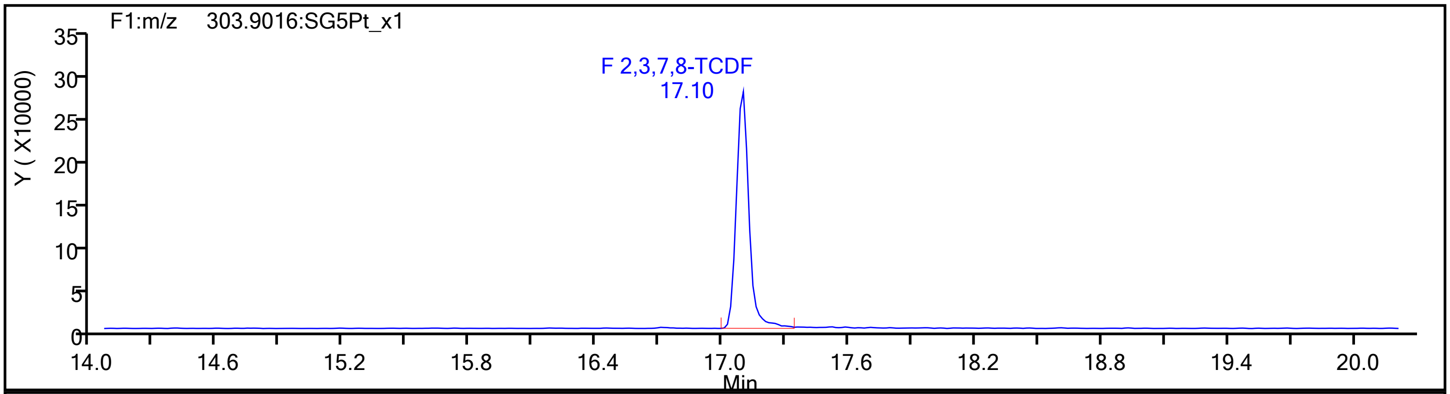

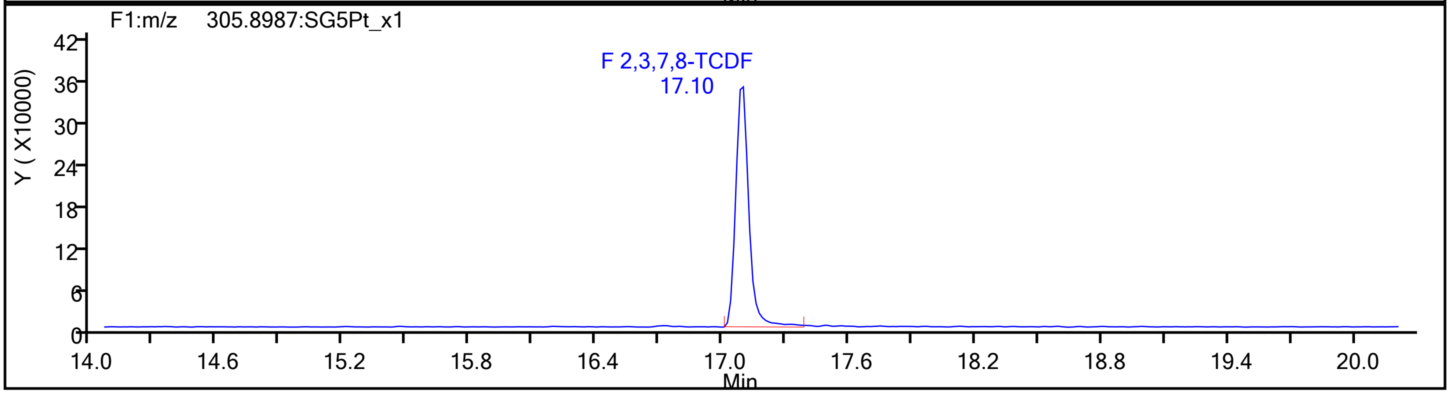

TCDF Standards

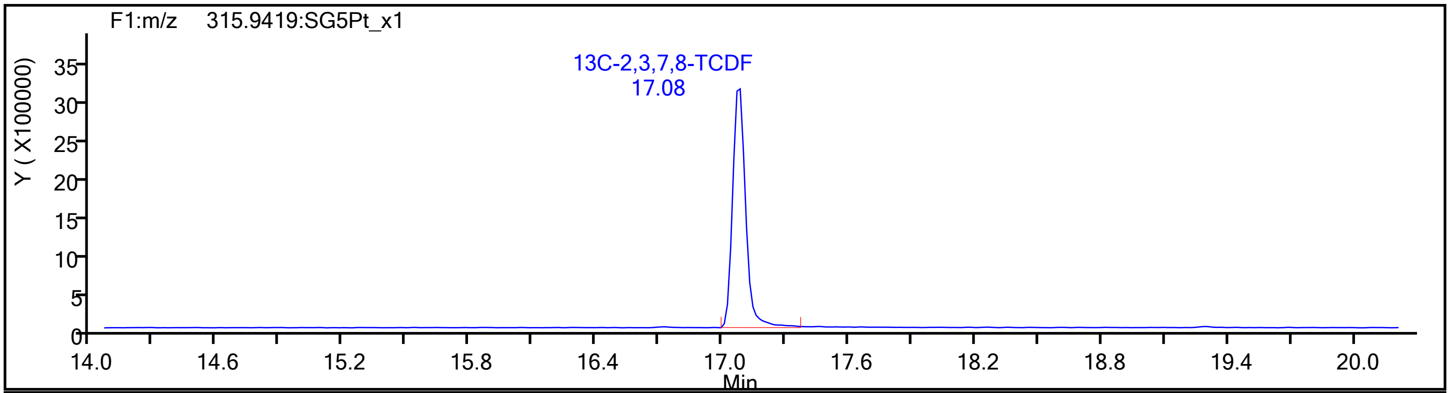

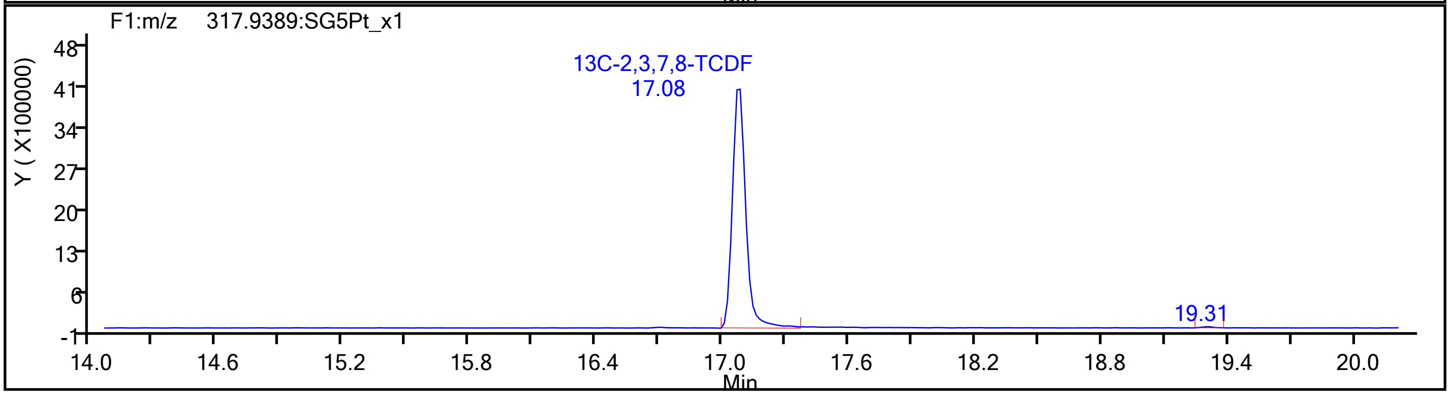

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Injection Date: 25-Jun-2020 21:40:12 Injection Vol: 2.0 ul
Instrument ID: 10D5 Operator ID: AJS
Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621 Sample Line#: 6
Column Type: DB-5 Column Dia: 0.32 mm

TCDF

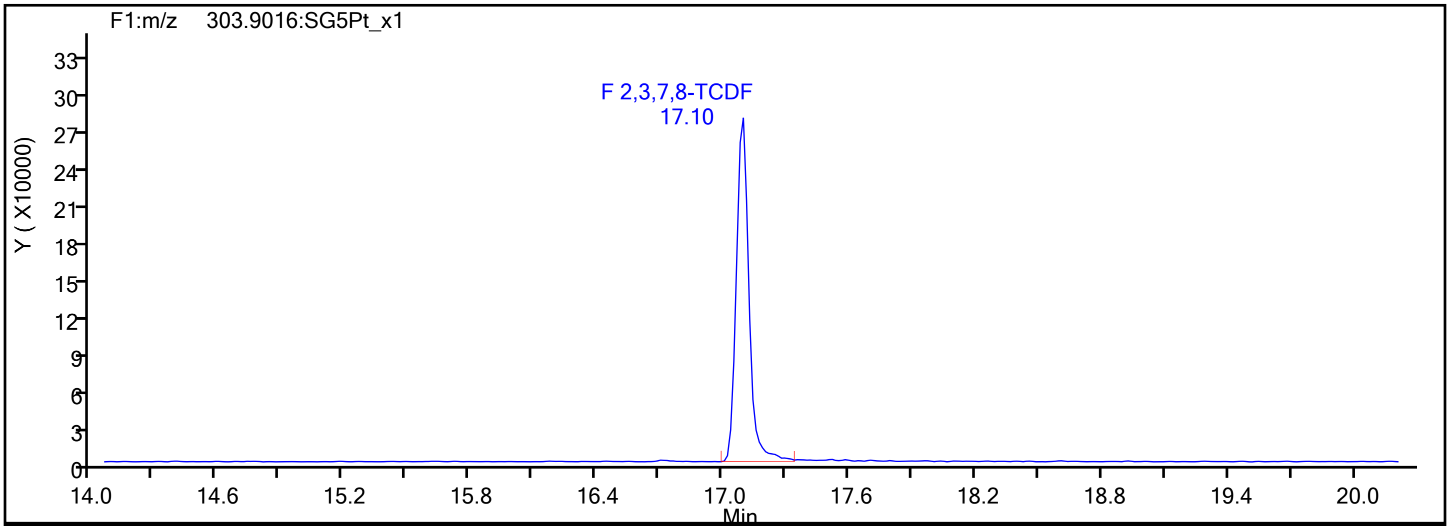

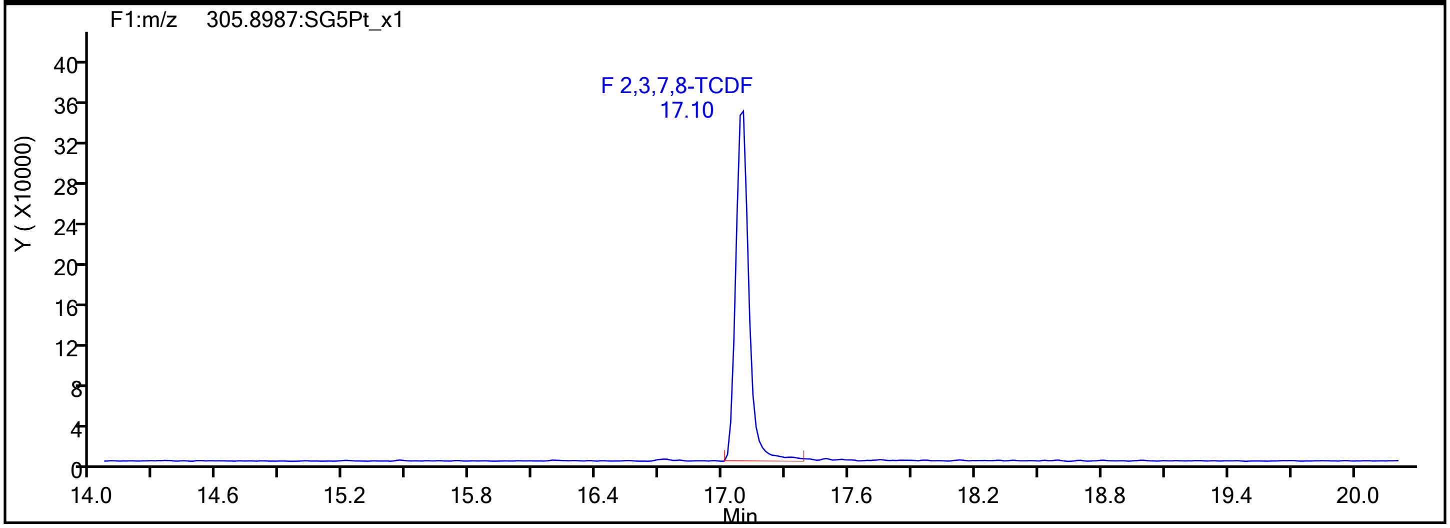

TCDF Interference Mass

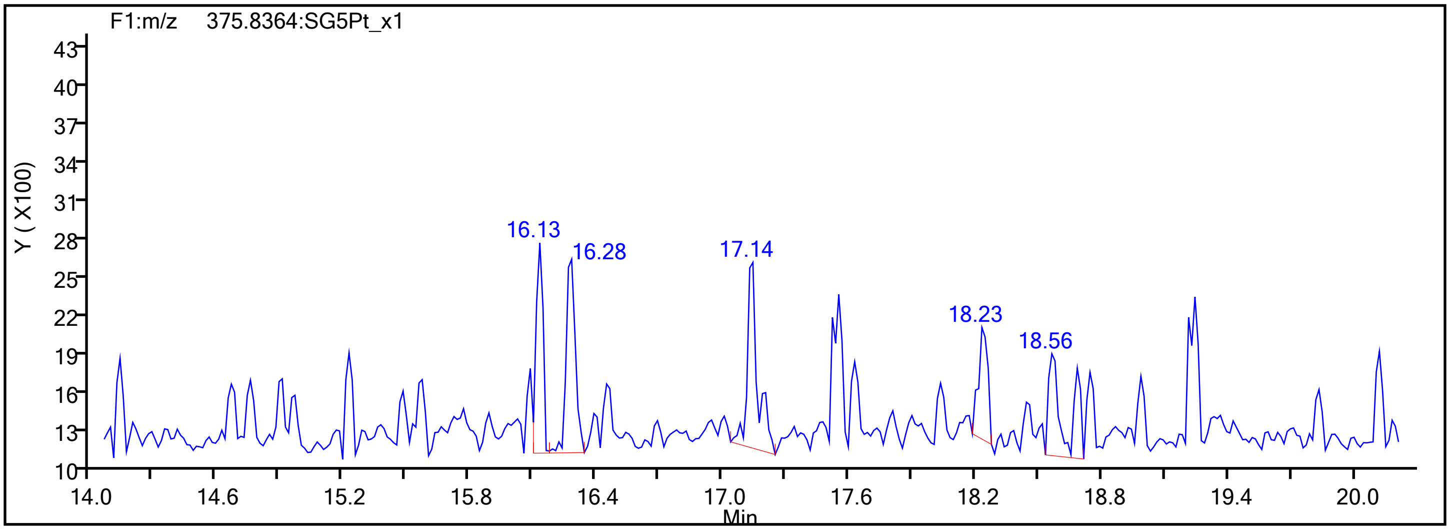

Report Date: 26-Jun-2020 13:16:06
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Injection Date: 25-Jun-2020 21:40:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

TCDD

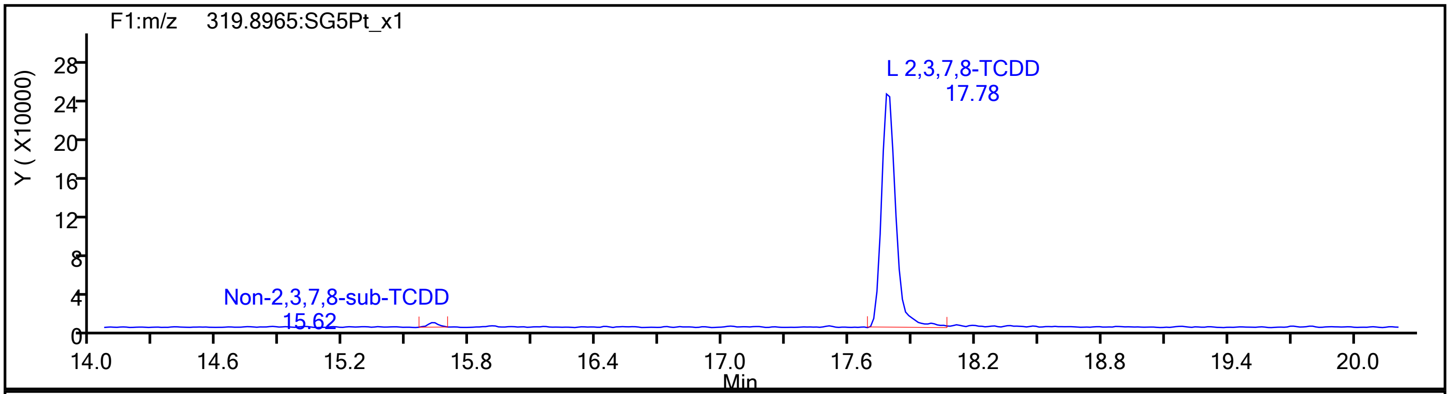

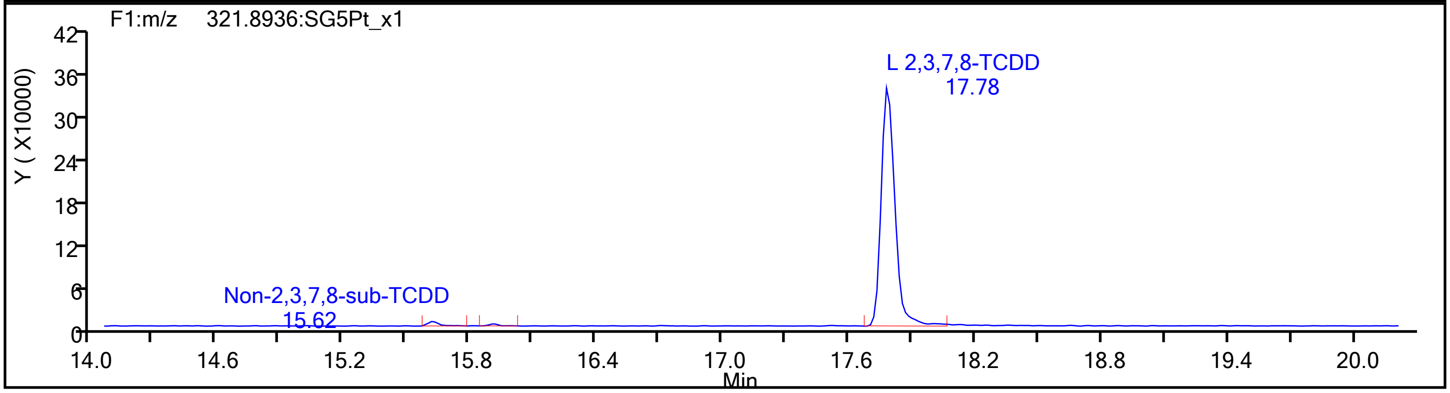

TCDD Standards

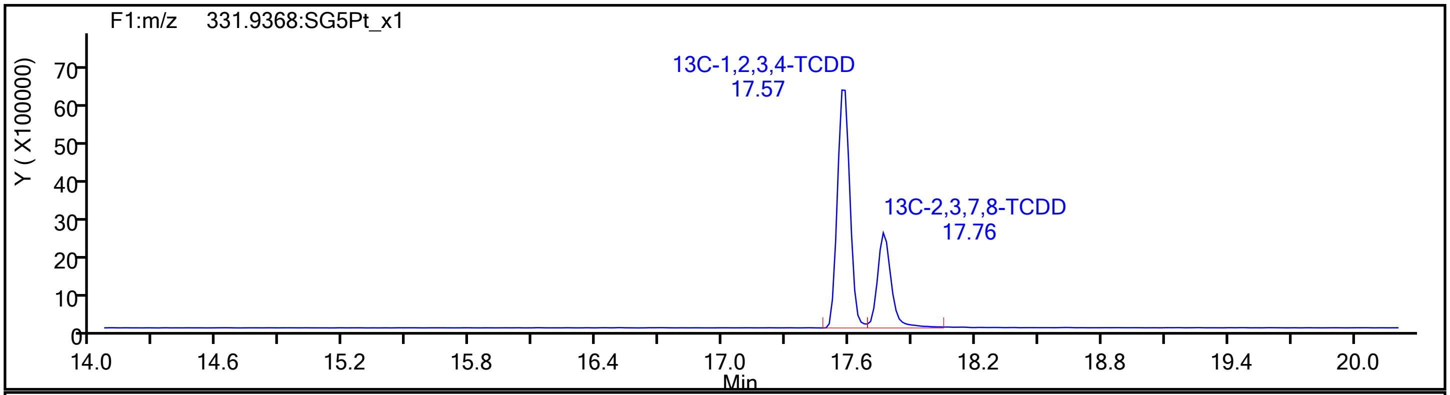

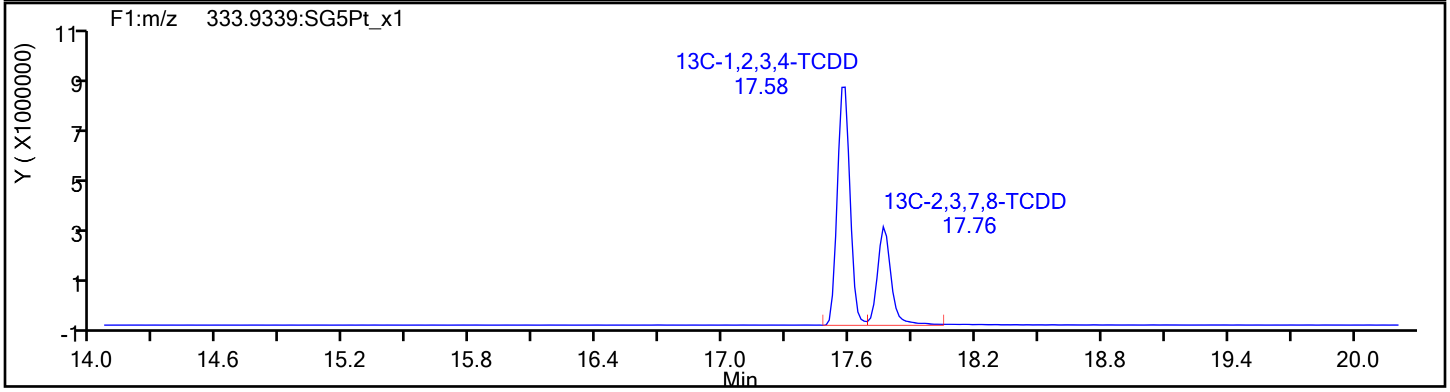

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d

Injection Date: 25-Jun-2020 21:40:12

Injection Vol: 2.0 ul

Instrument ID: 10D5

Operator ID: AJS

Method: Dioxin_10D5

Limit Group: HR - 1613B - ICAL

Client ID:

Worklist#: 389621

Sample Line#: 6

Column Type: DB-5

Column Dia: 0.32 mm

37Cl4-TCDD

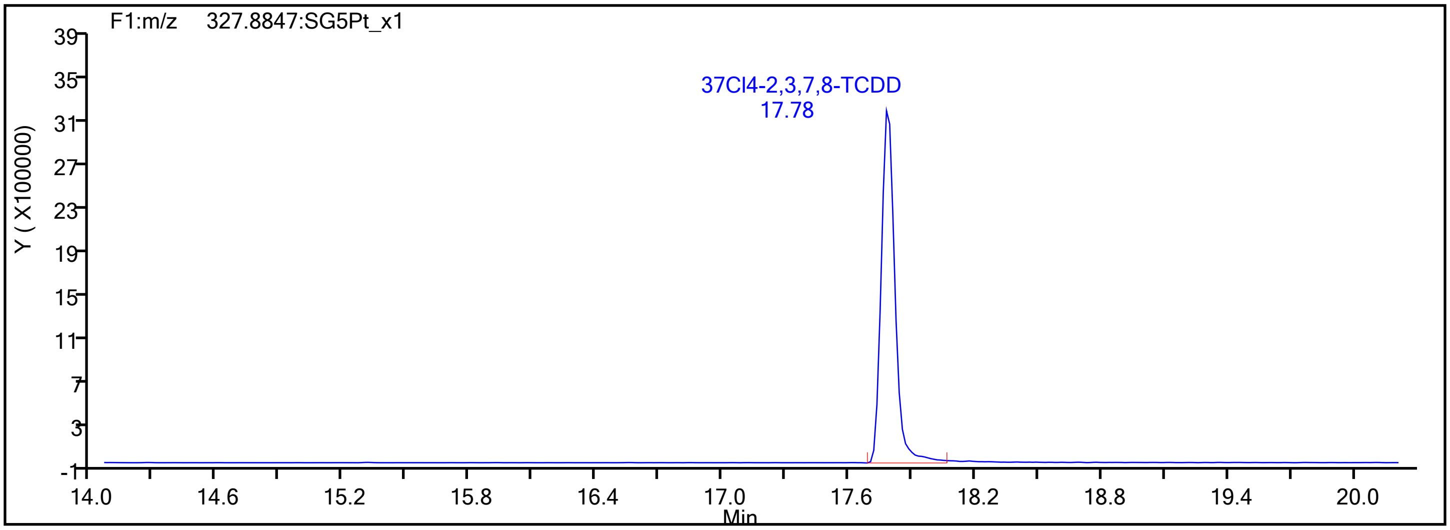

37Cl4-TCDD Standards

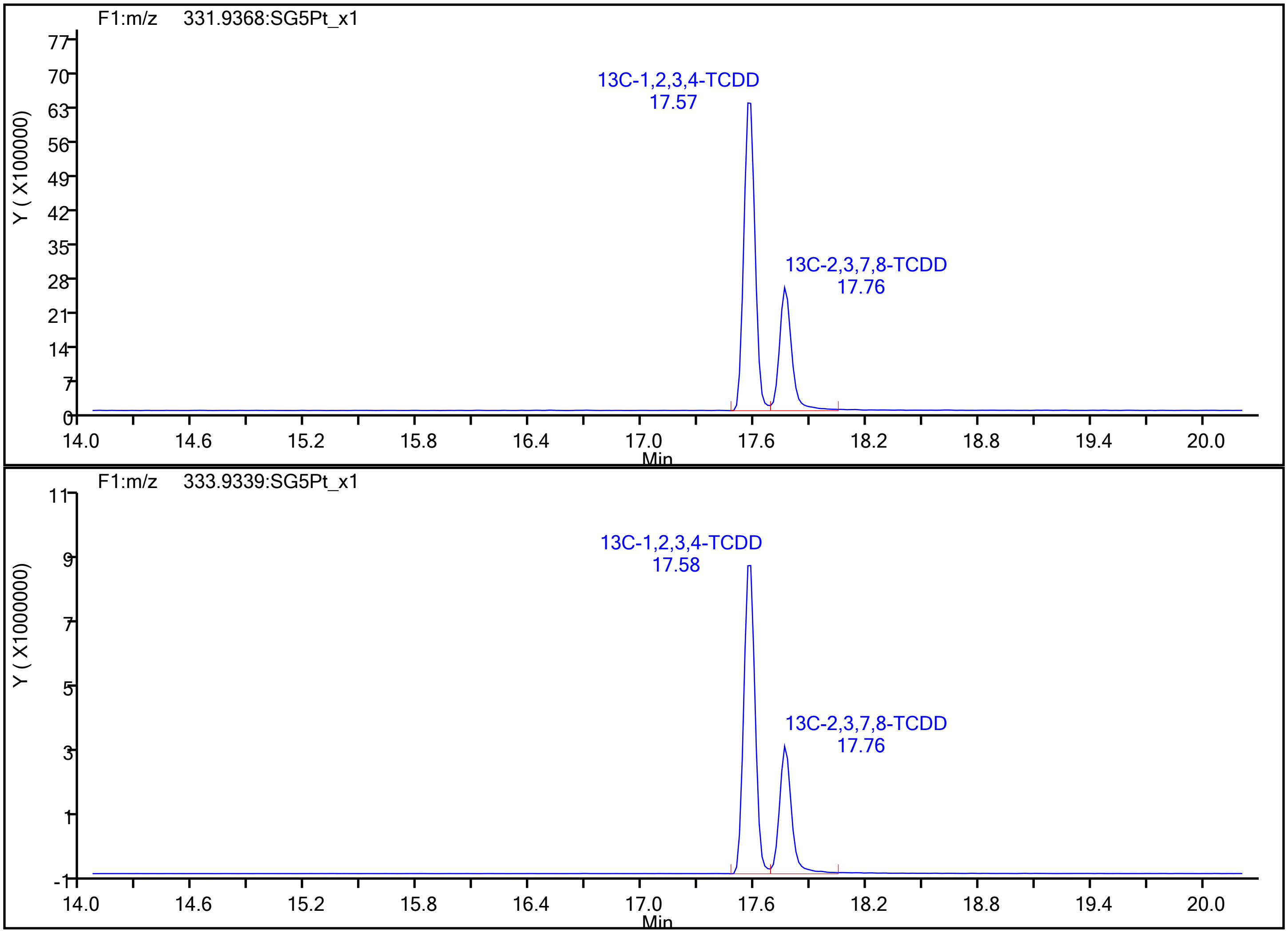

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Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

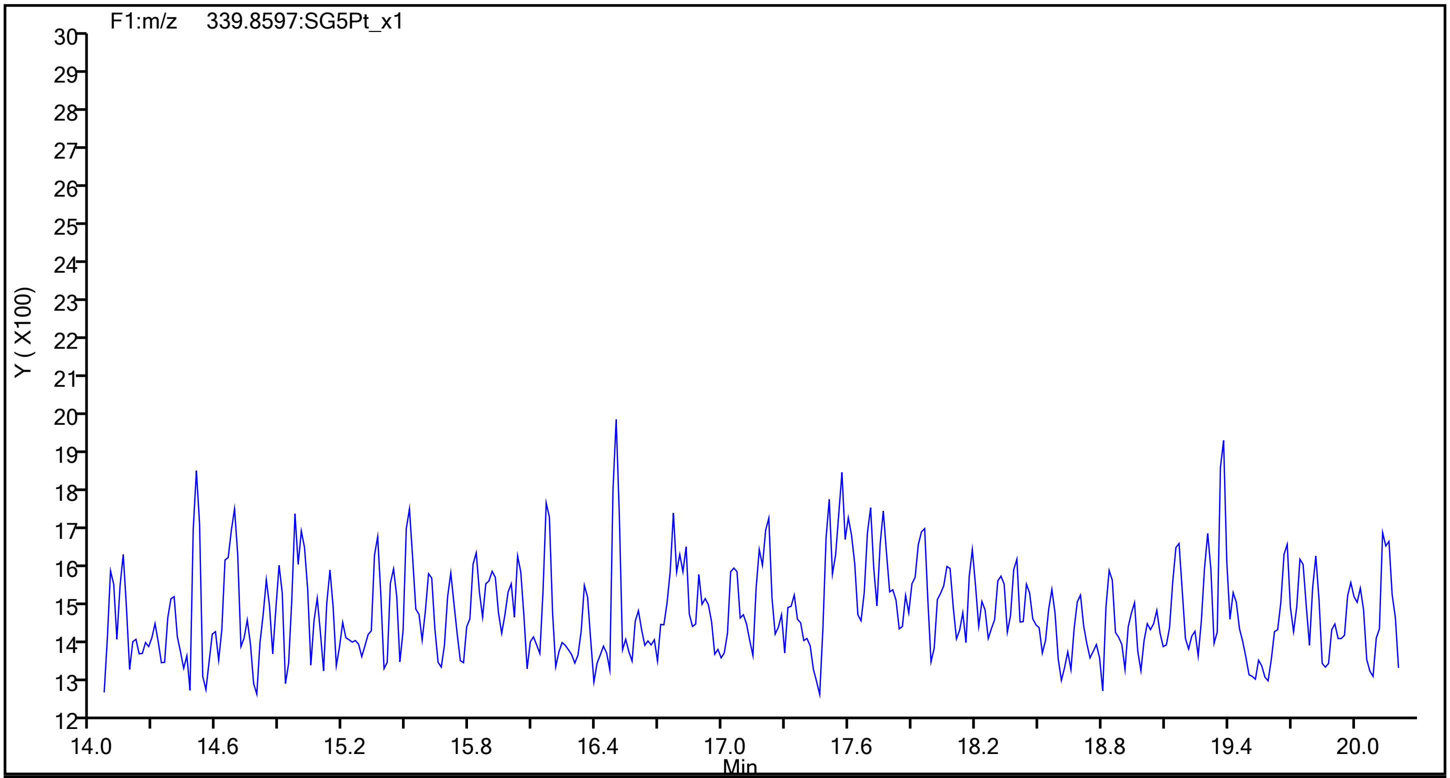

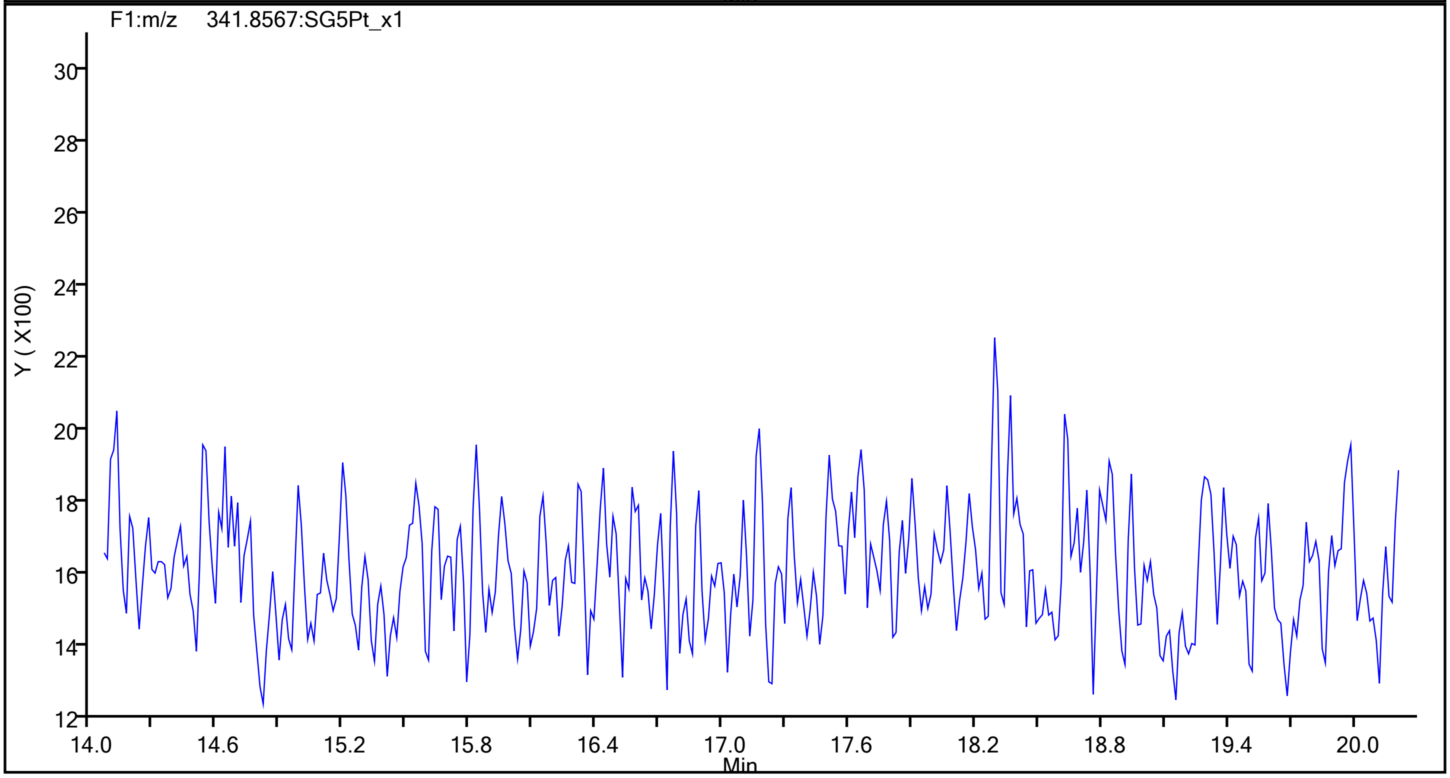

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

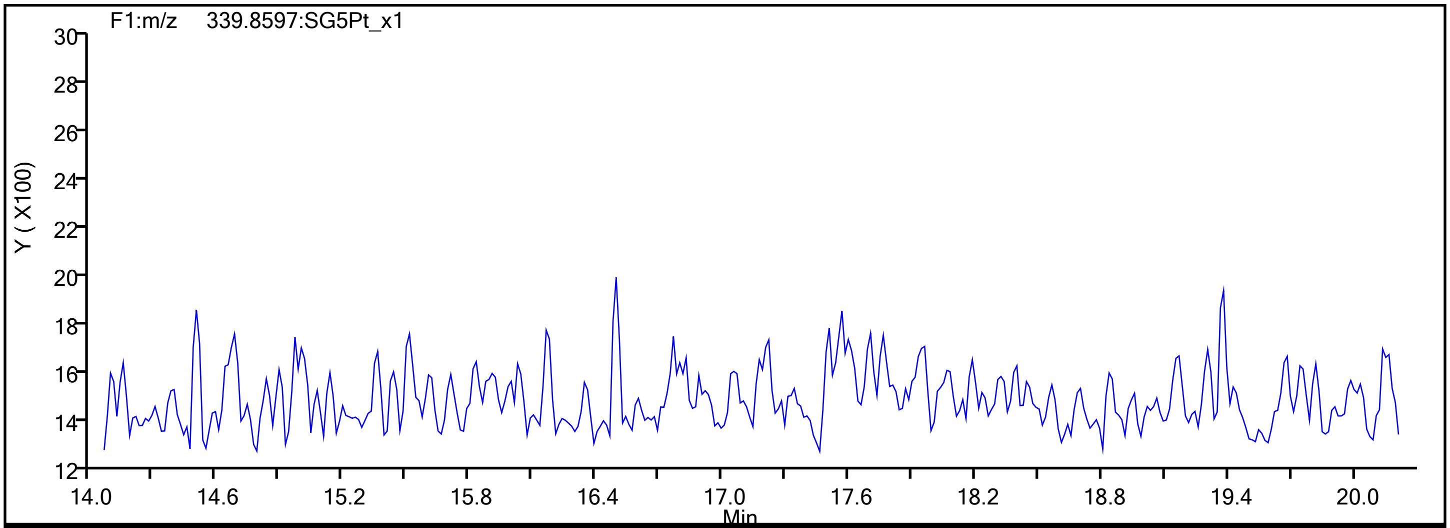

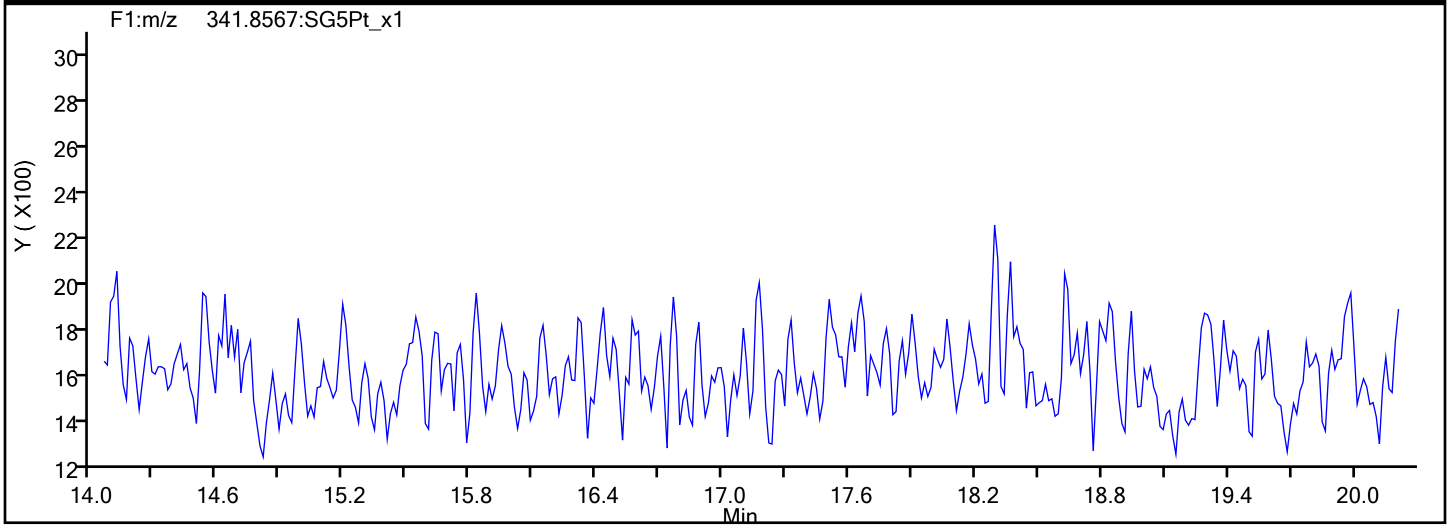

F1 PeCDFs Interference Mass

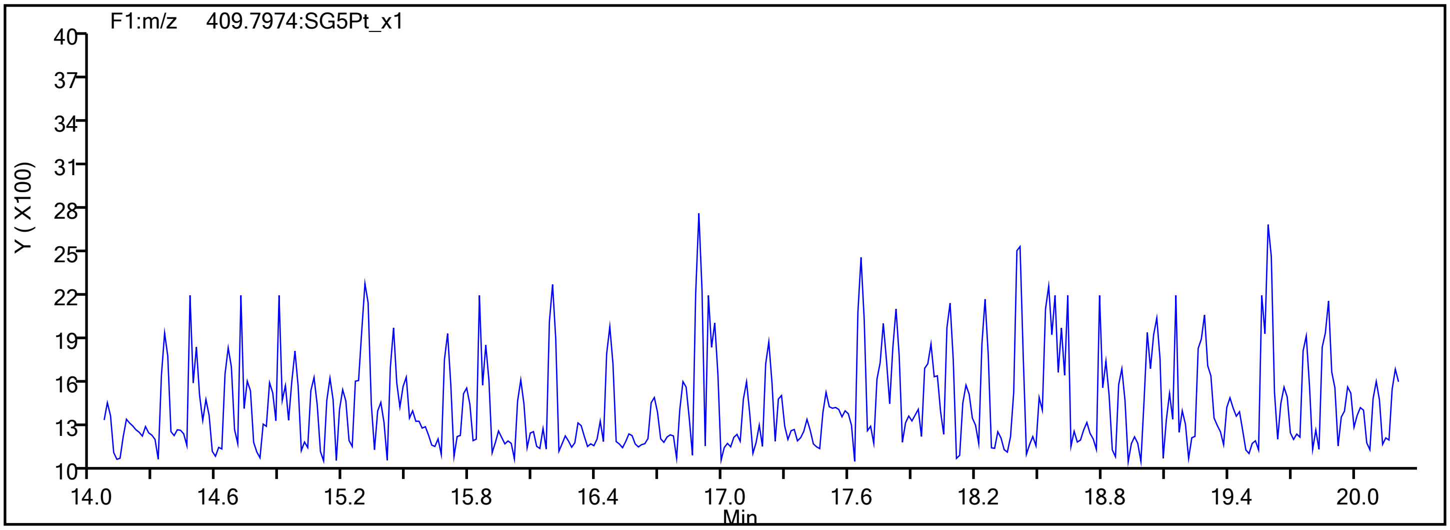

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Injection Date: 25-Jun-2020 21:40:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

PeCDF

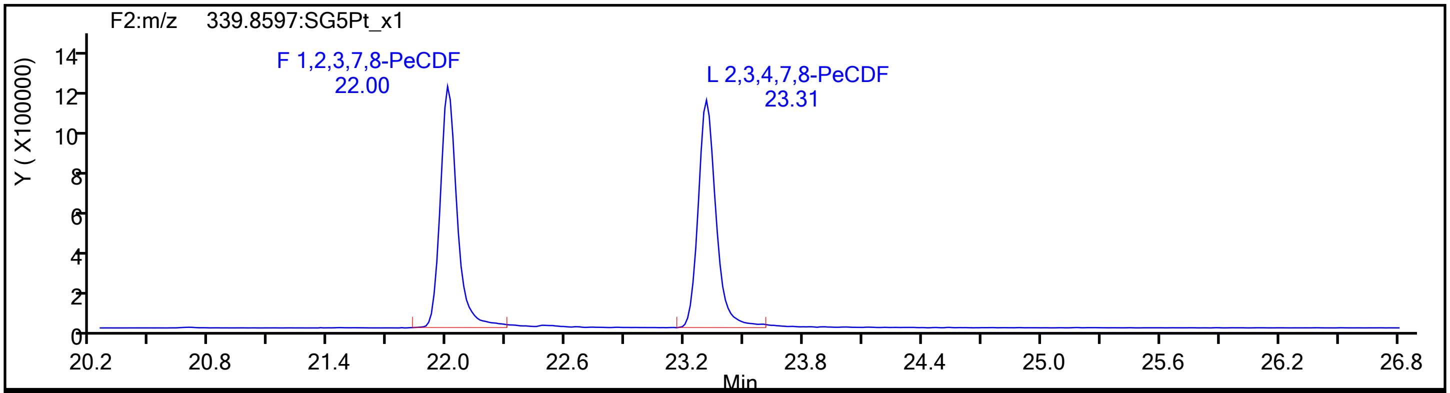

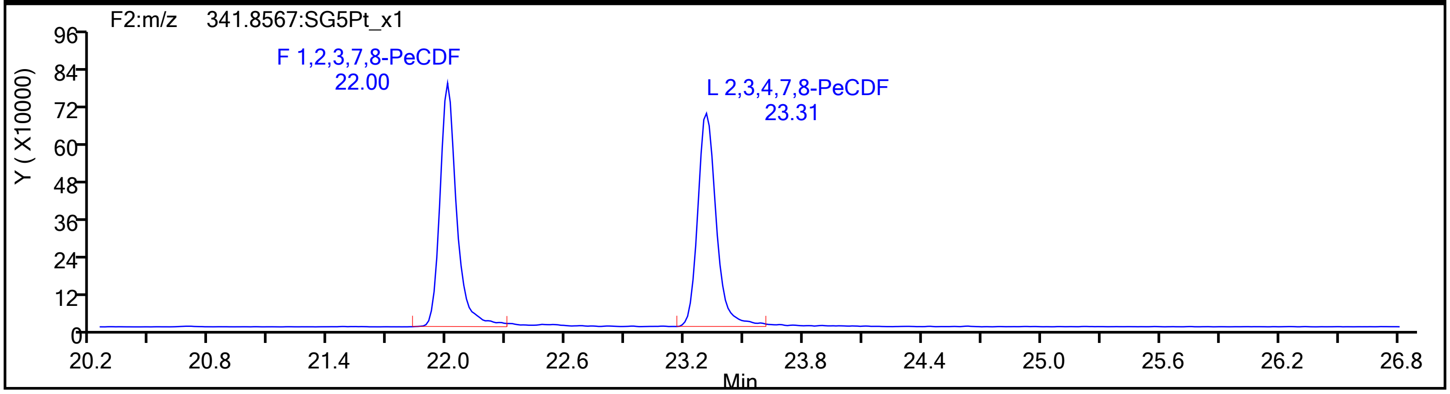

PeCDF Standards

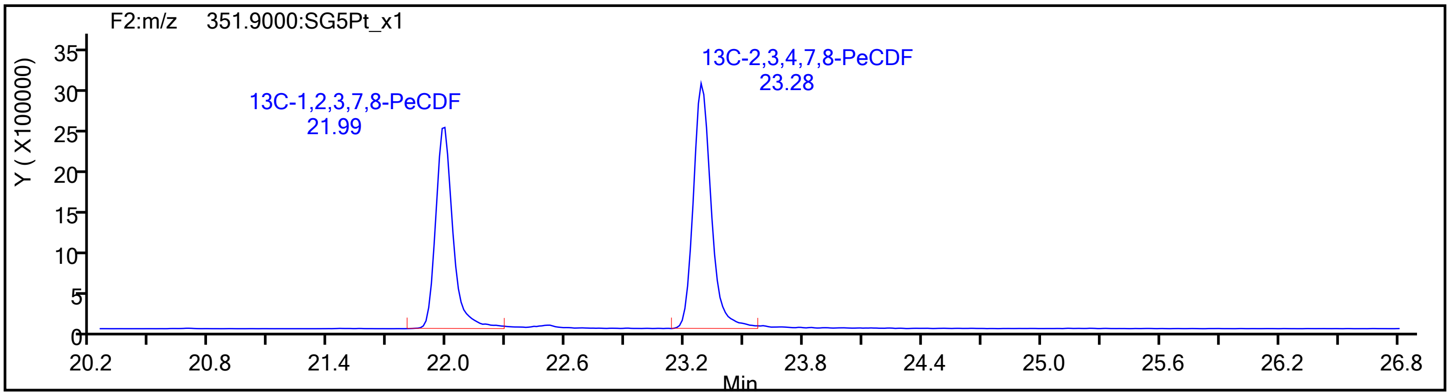

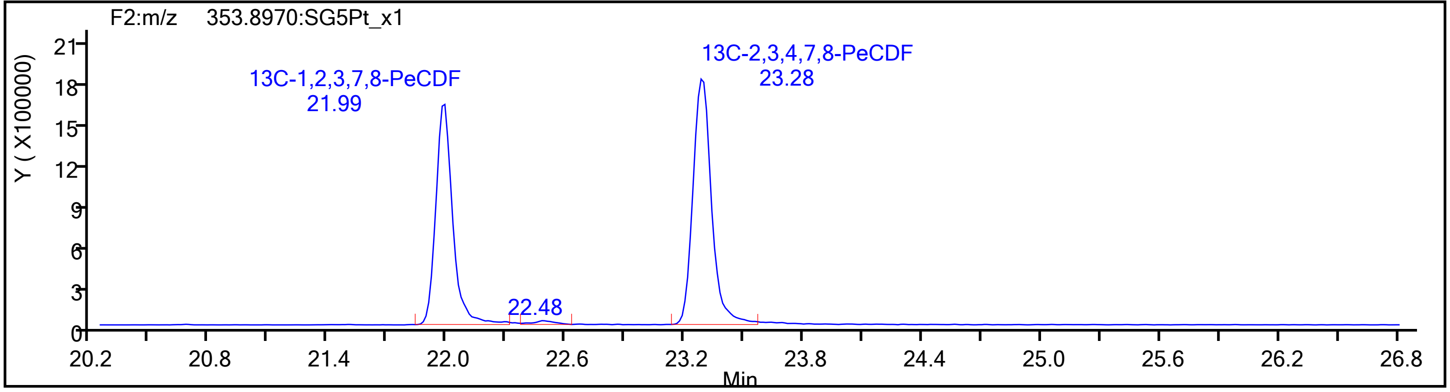

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

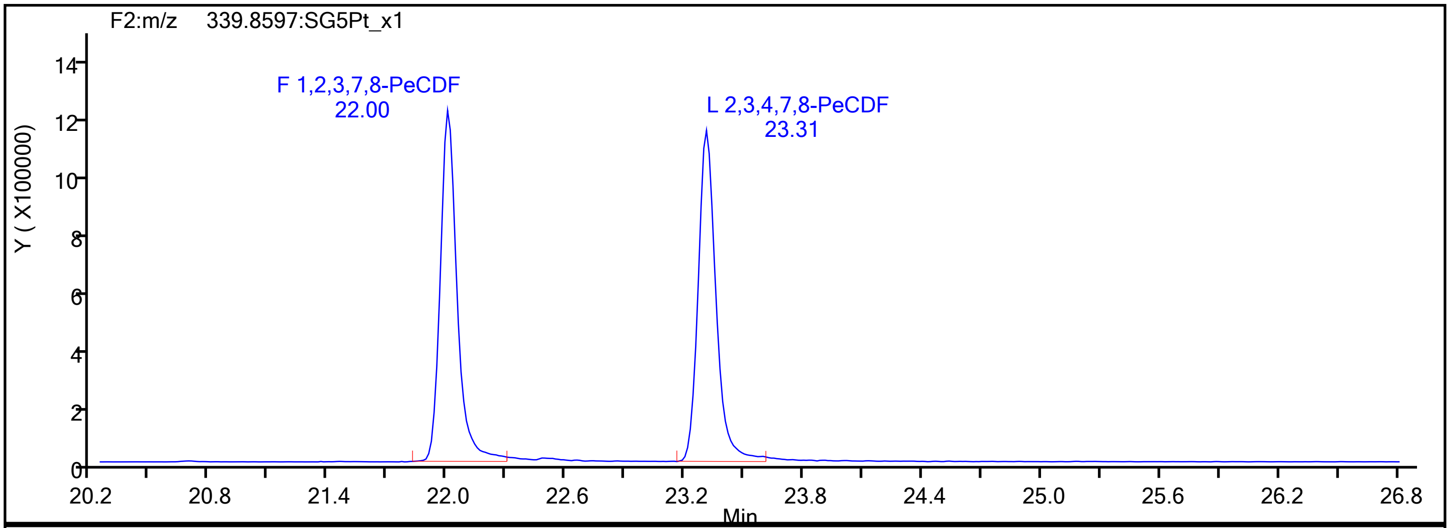

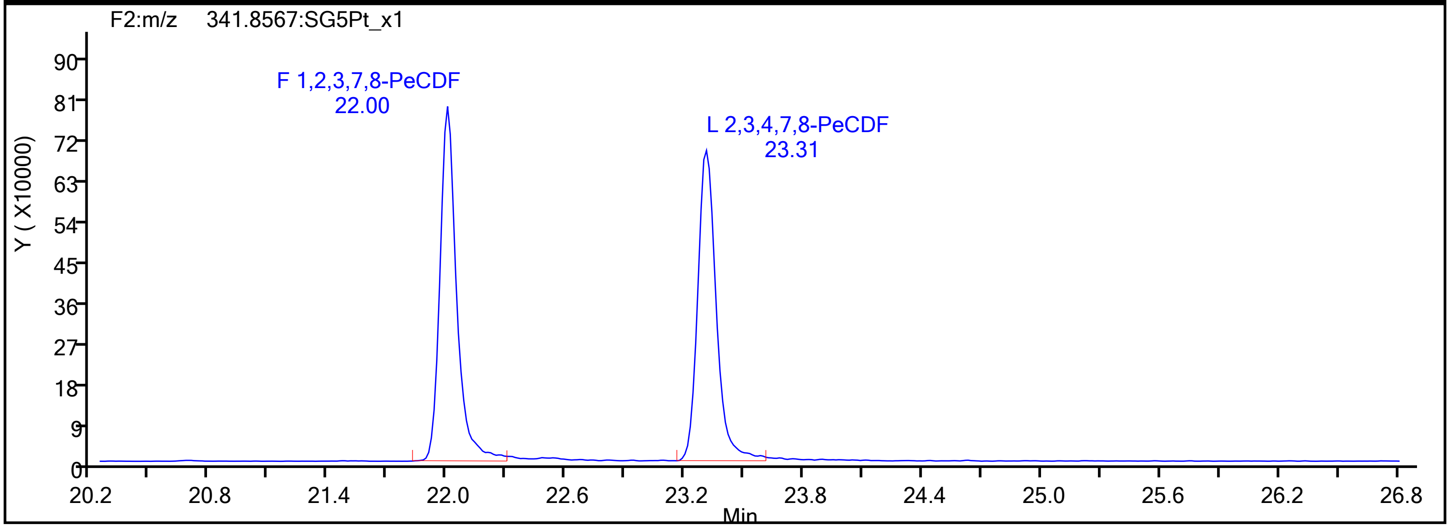

PeCDF Interference Mass

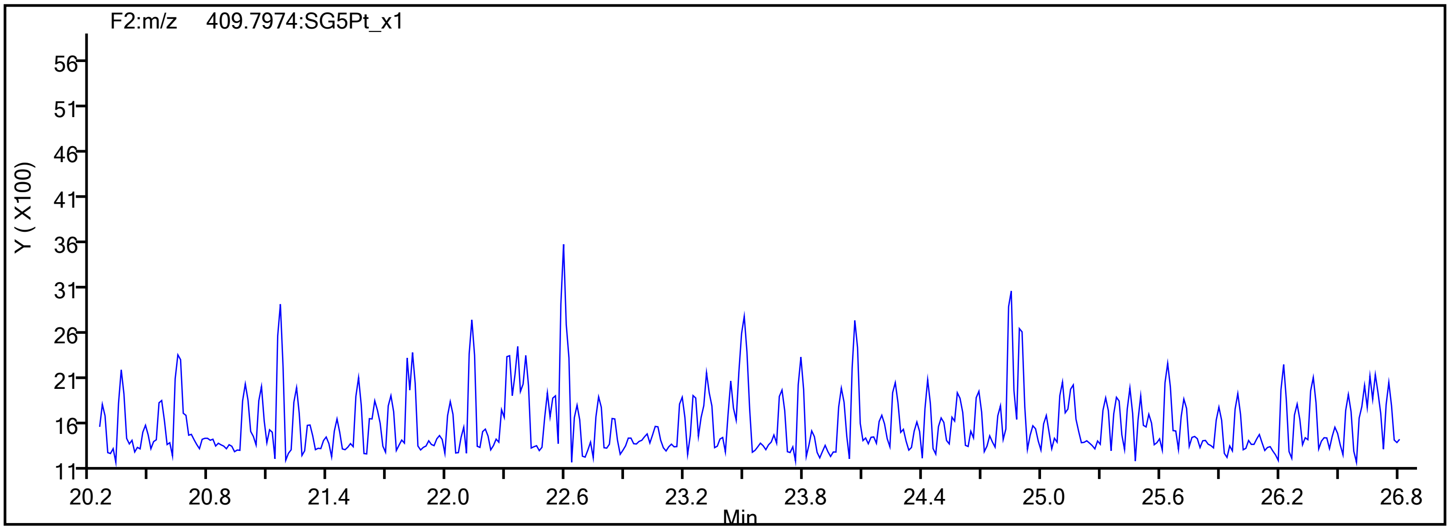

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDD

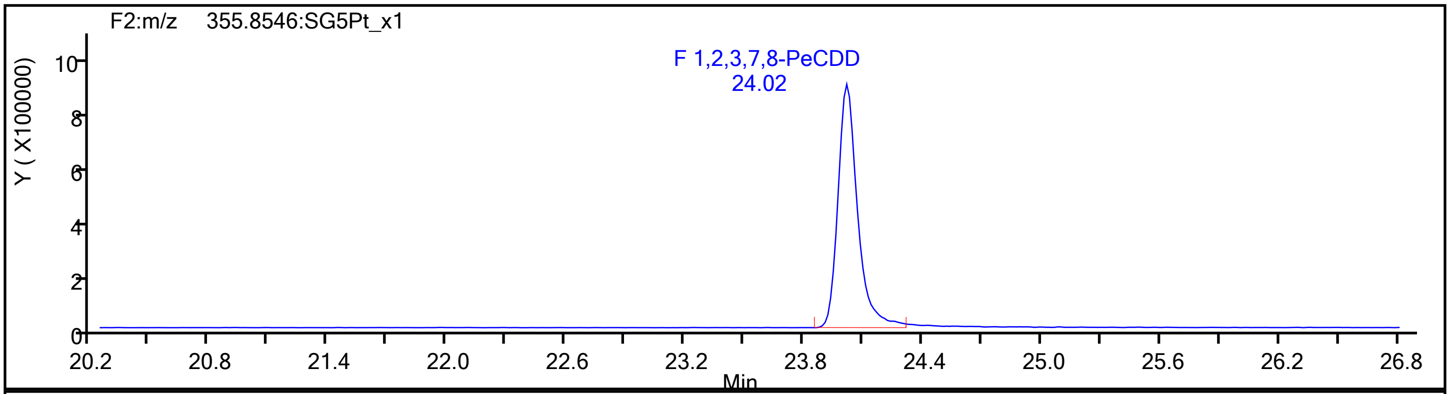

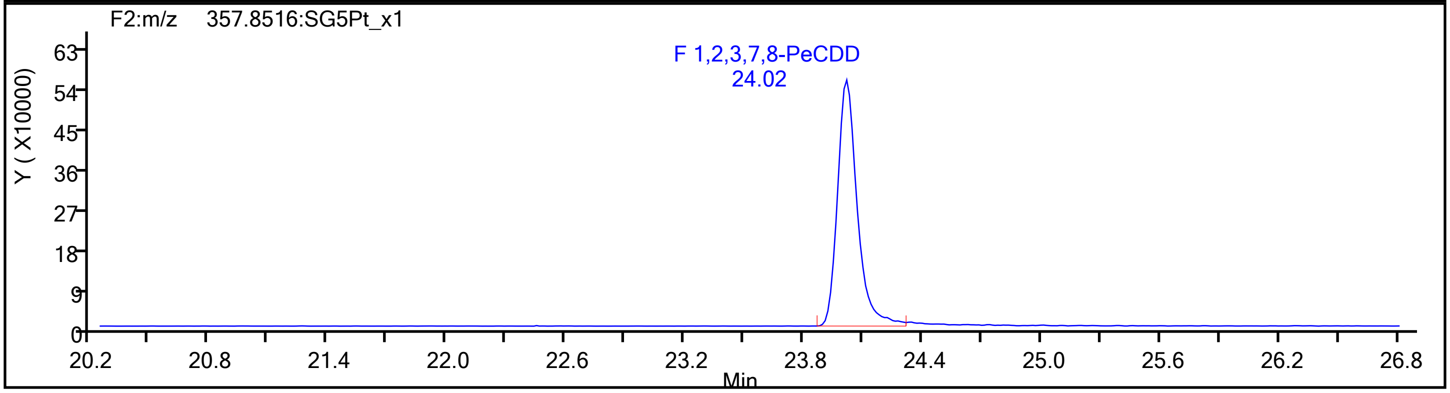

PeCDD Standards

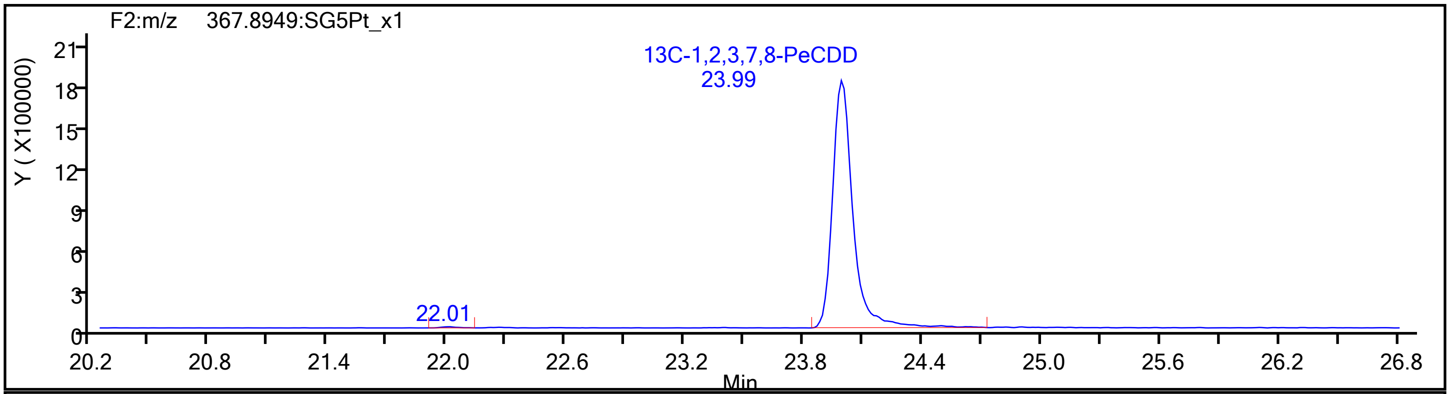

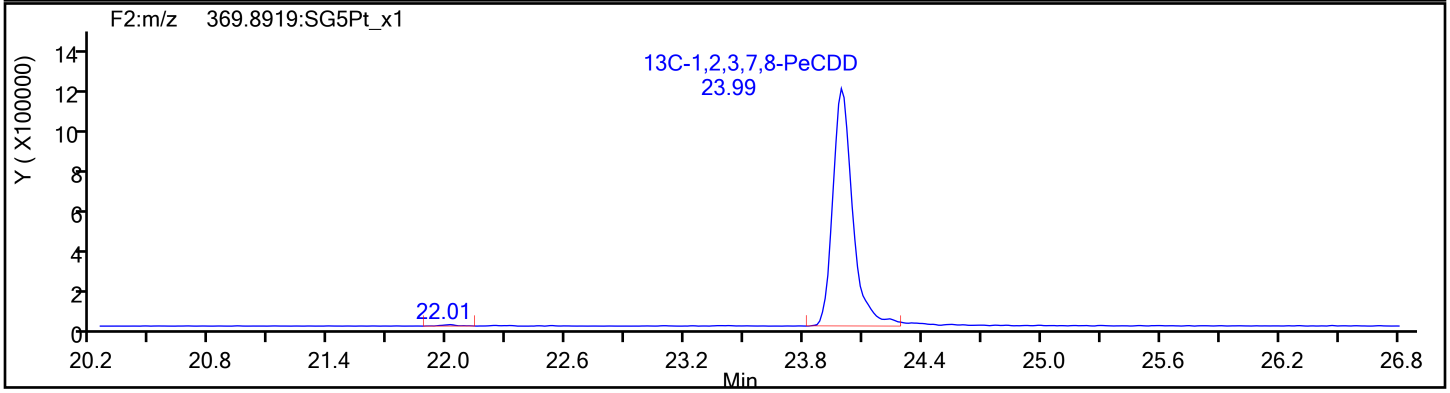

Report Date: 26-Jun-2020 13:16:06 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

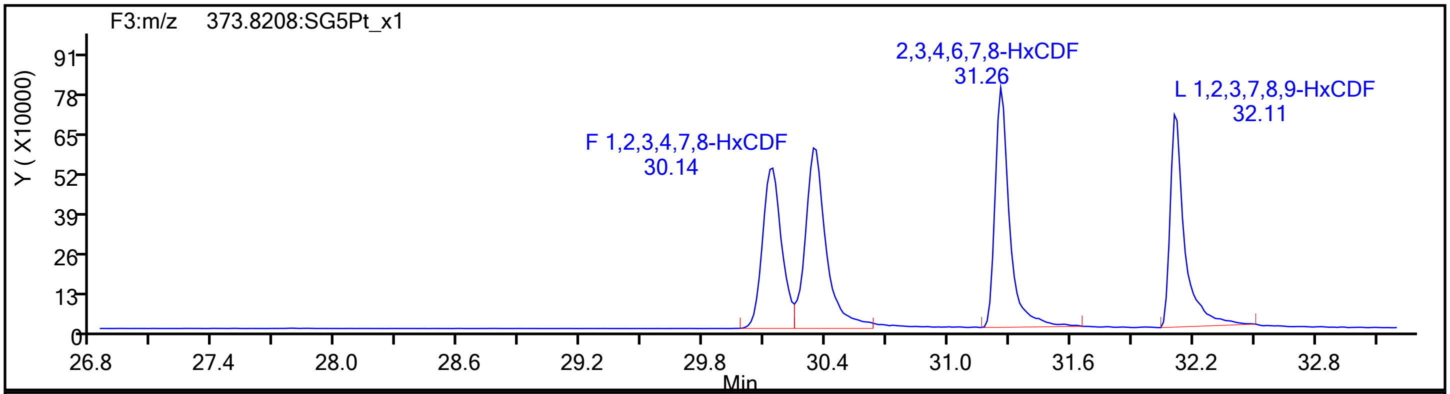

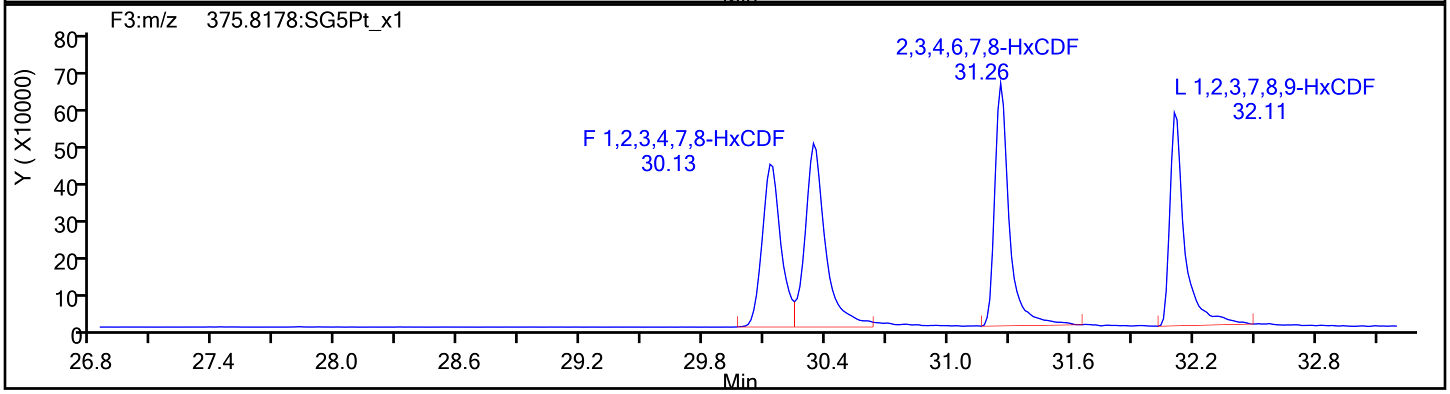

HxCDF Standards

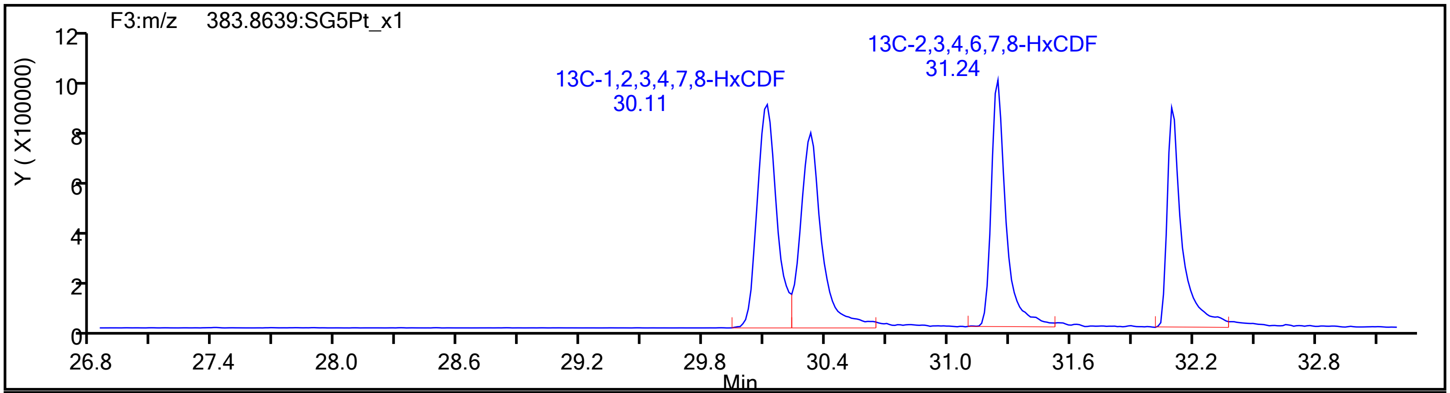

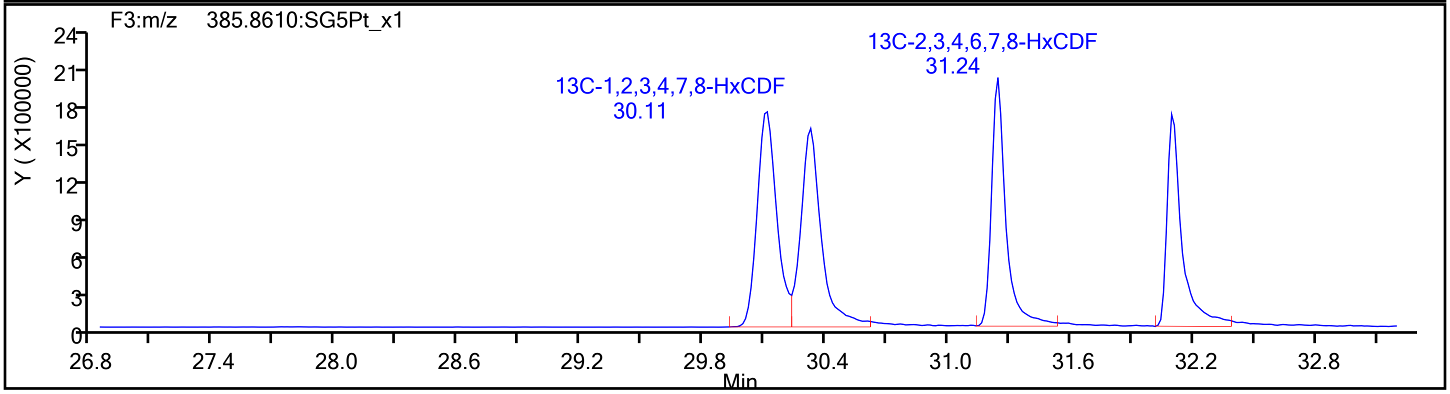

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d
Injection Date: 25-Jun-2020 21:40:12
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 6
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

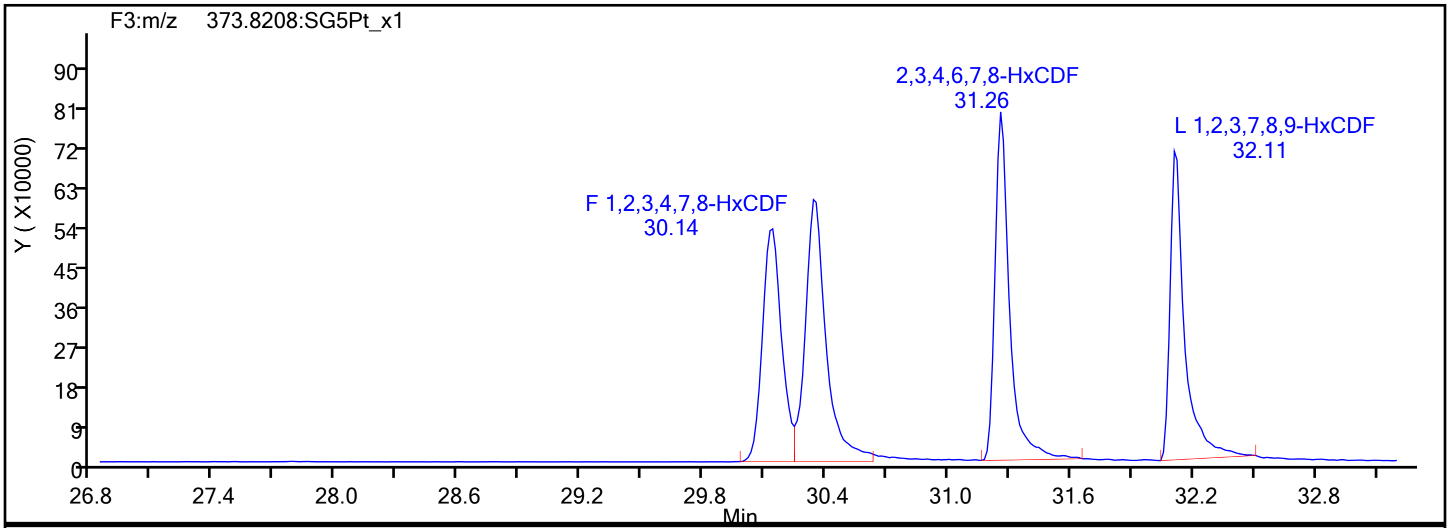

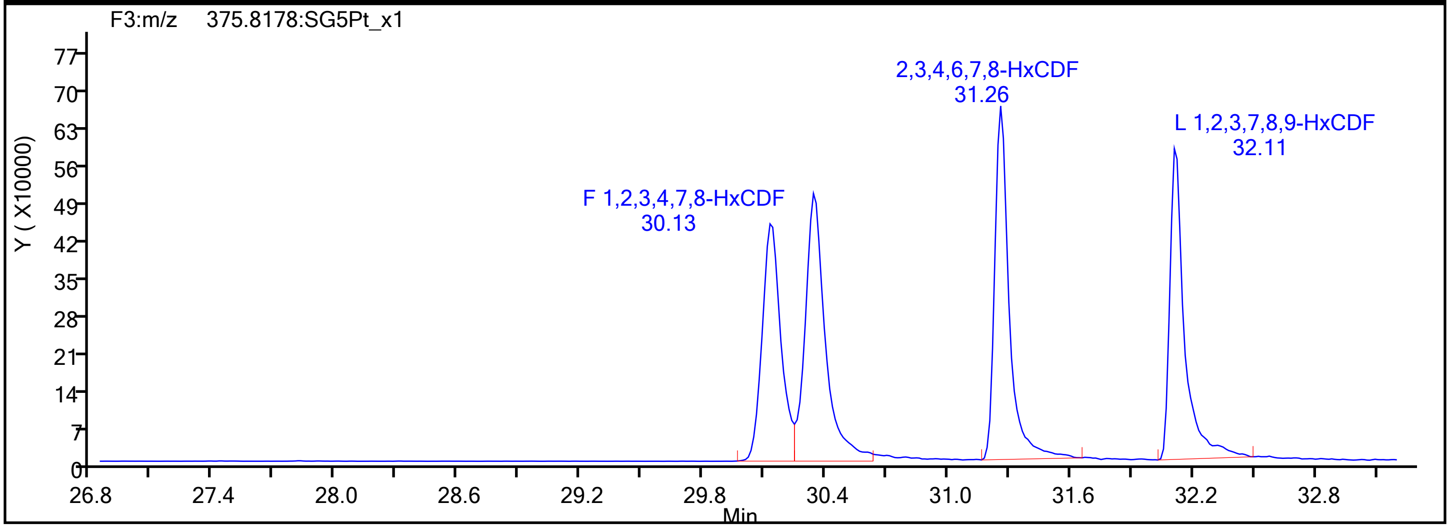

HxCDF Interference Mass

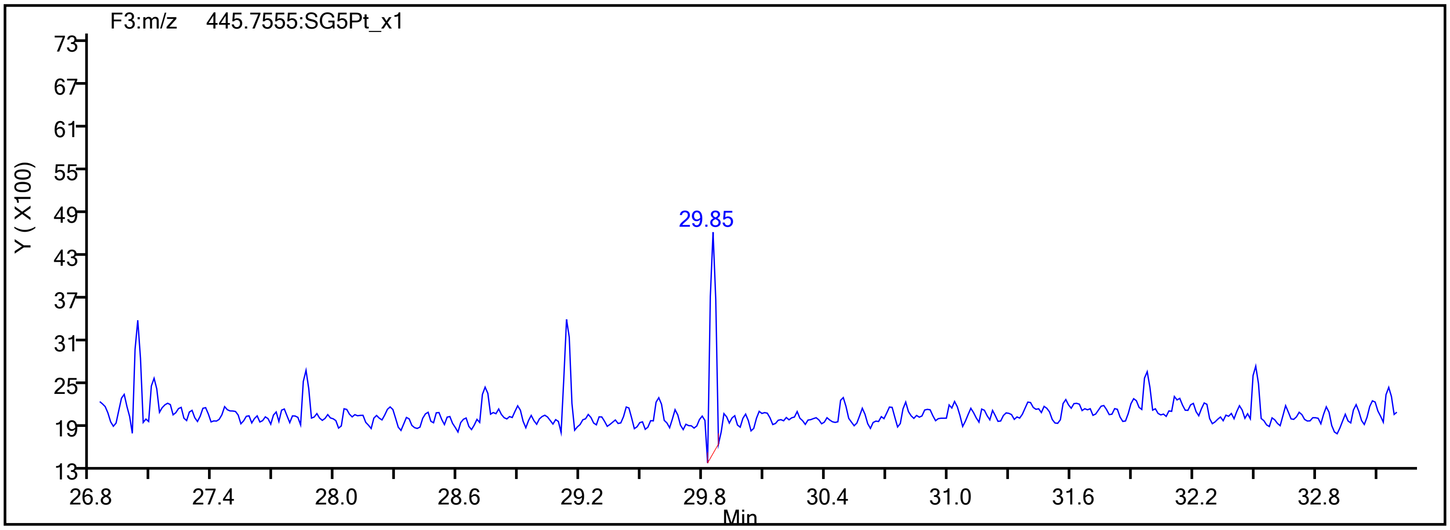

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

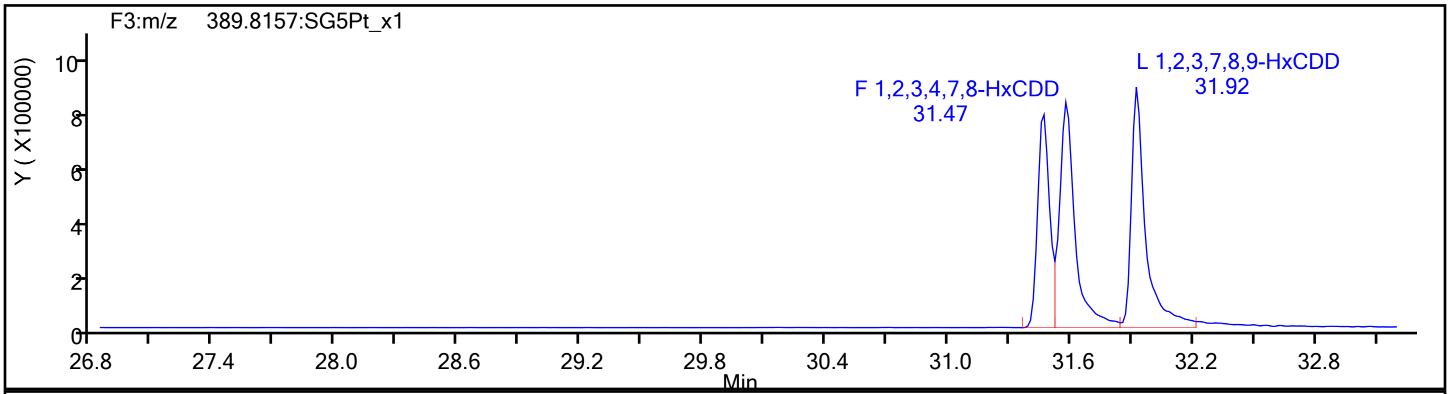

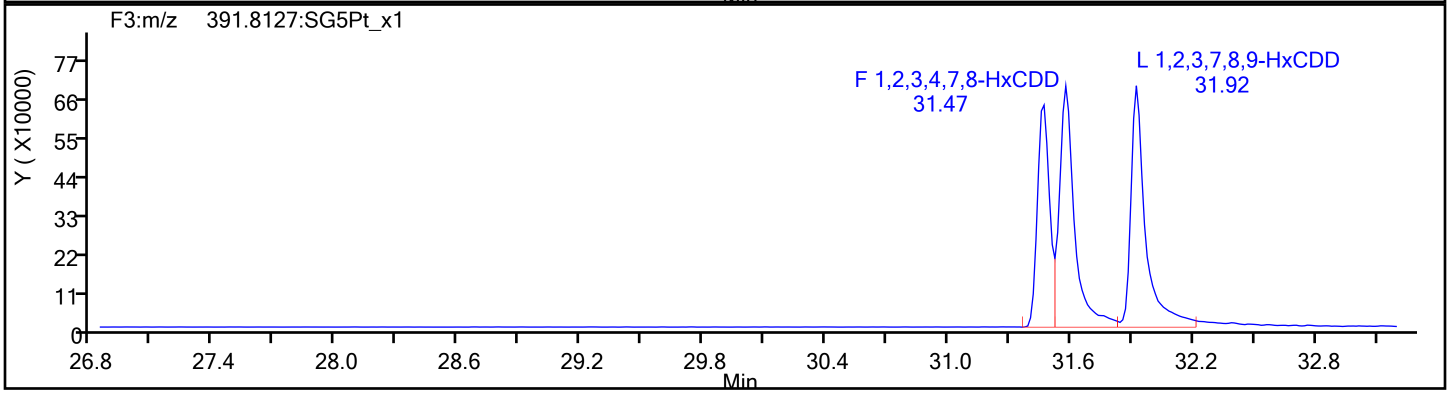

HxCDD Standards

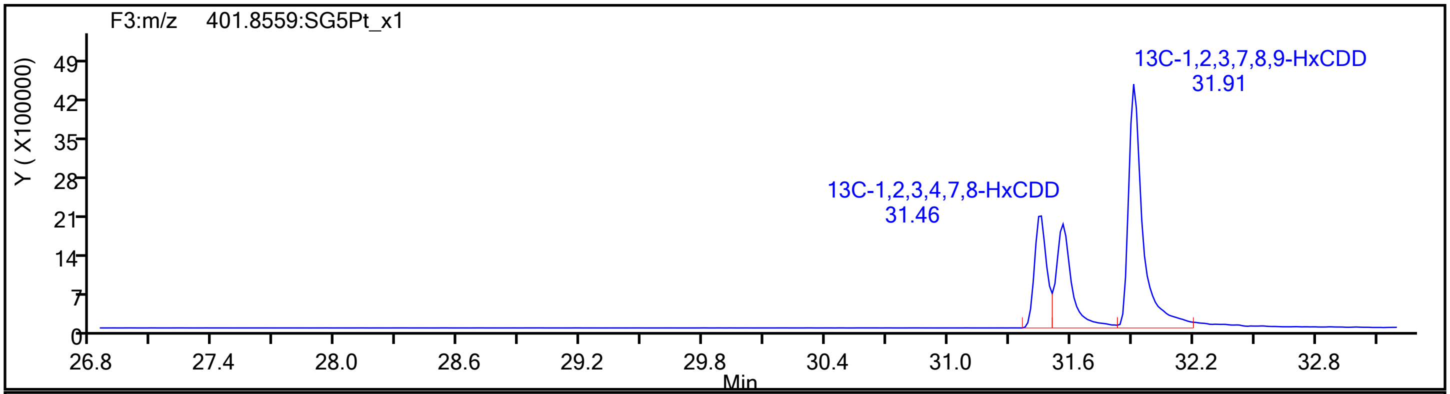

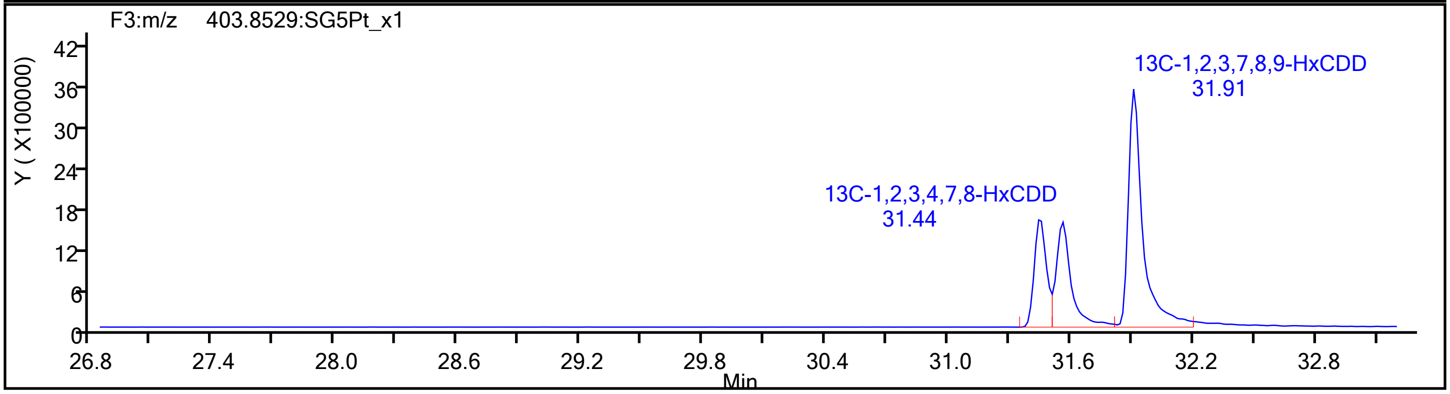

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

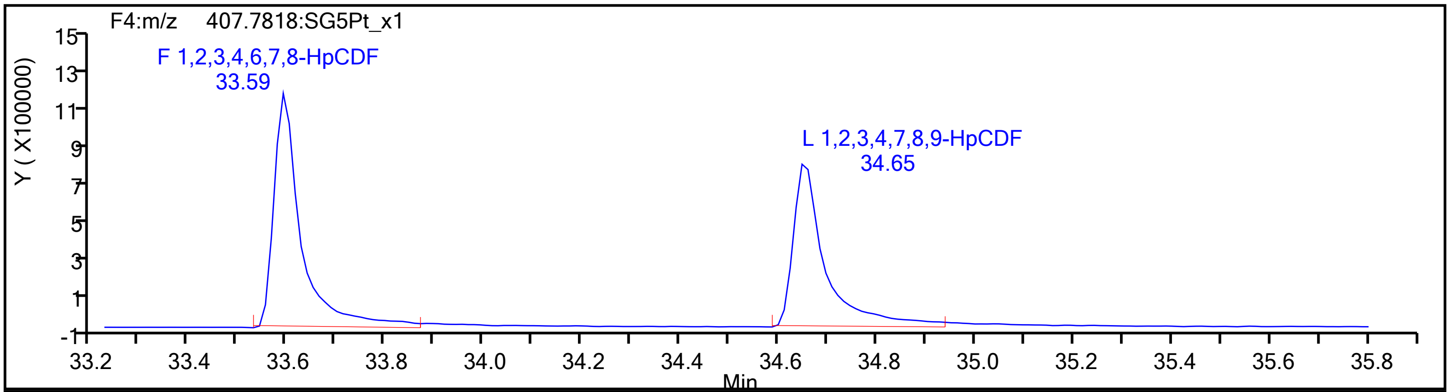

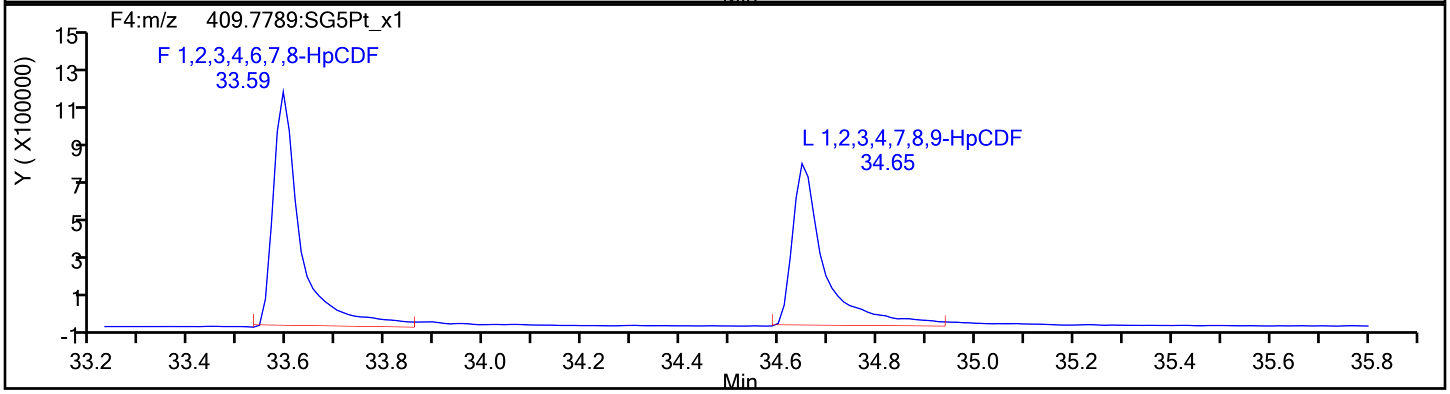

HpCDF Standards

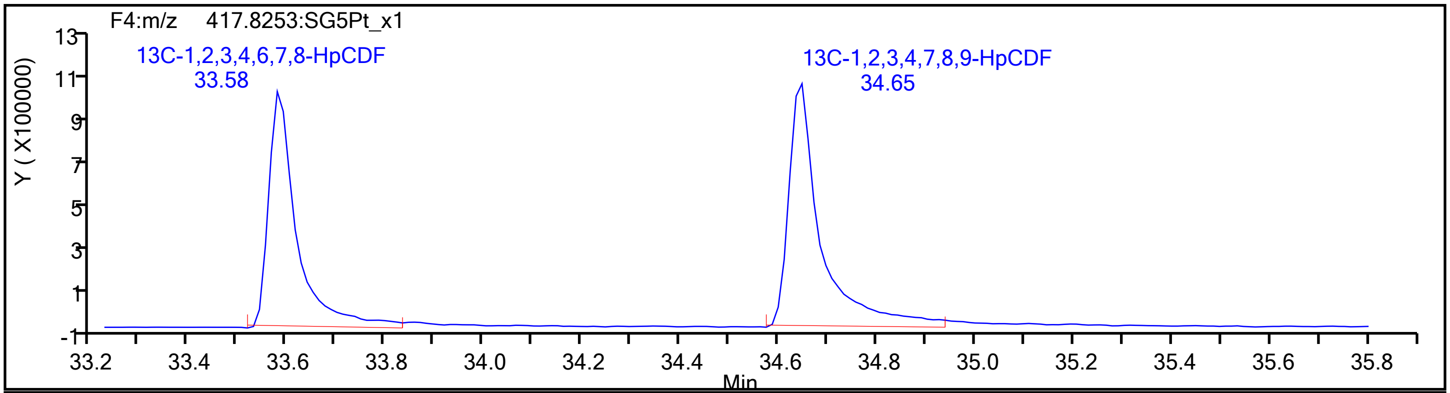

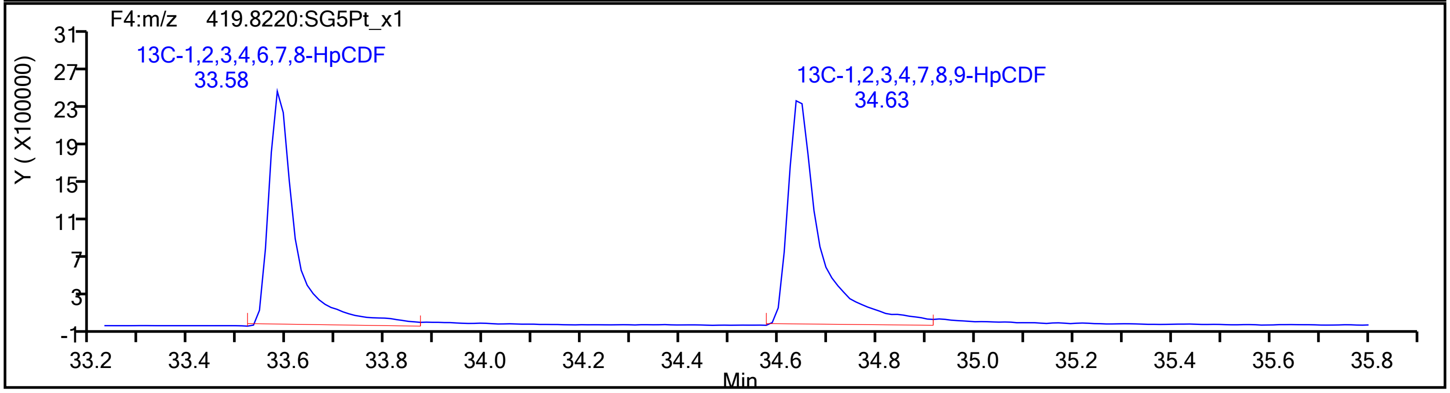

Report Date: 26-Jun-2020 13:16:07		Chrom Revision: 2.3 21-Jun-2020 18:30:46	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

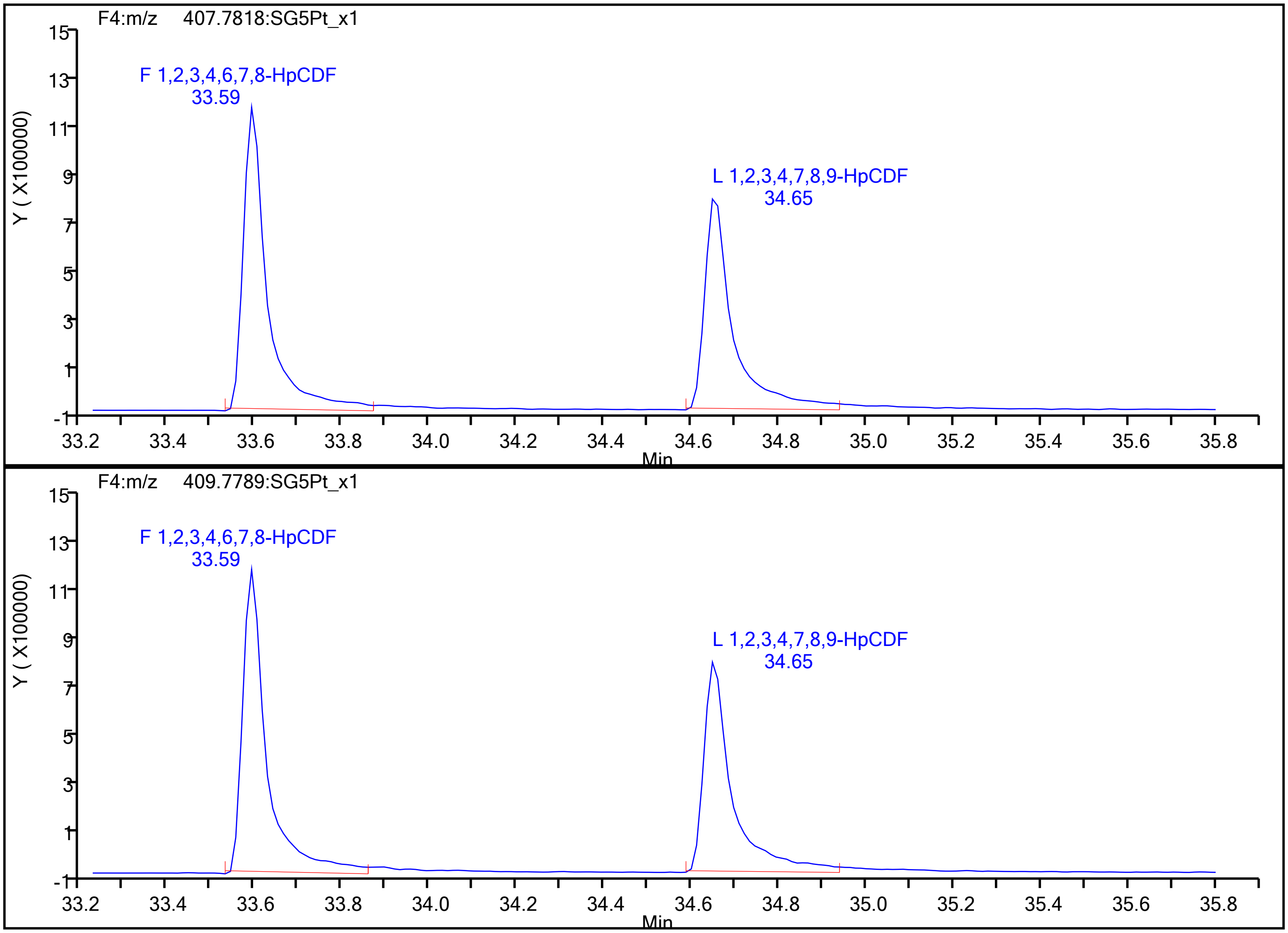

HpCDF Interference Mass

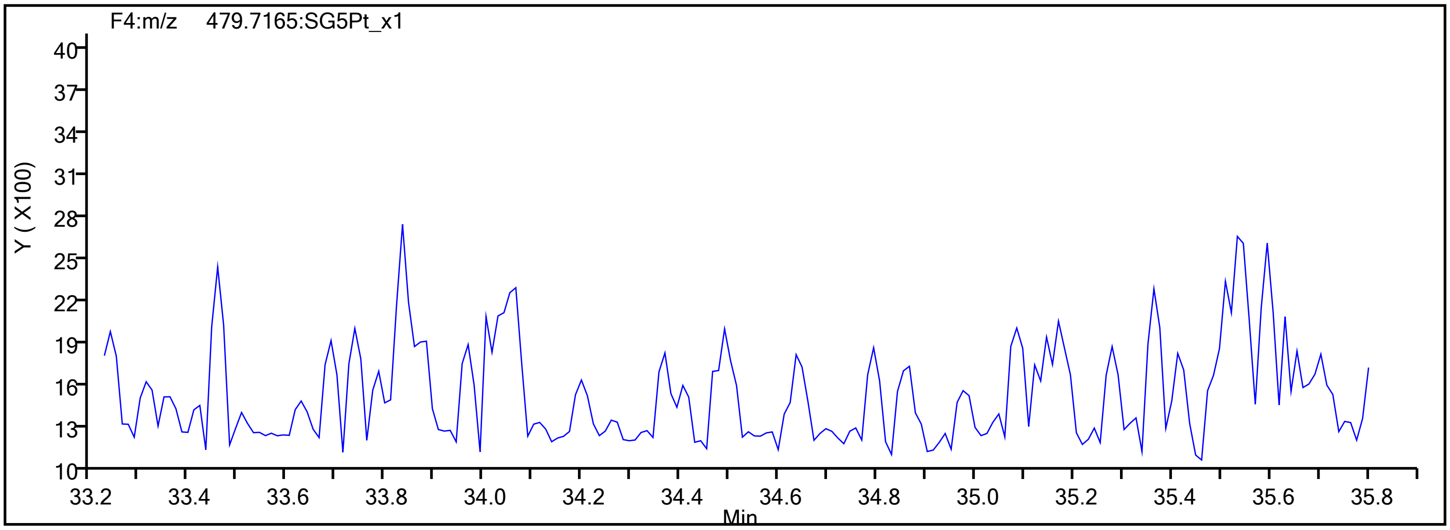

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d		
Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

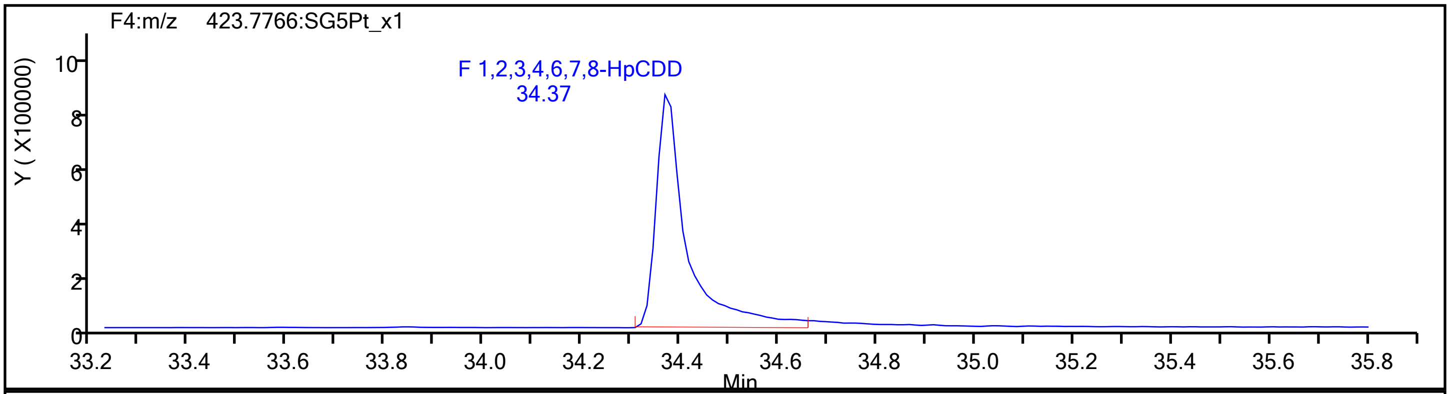

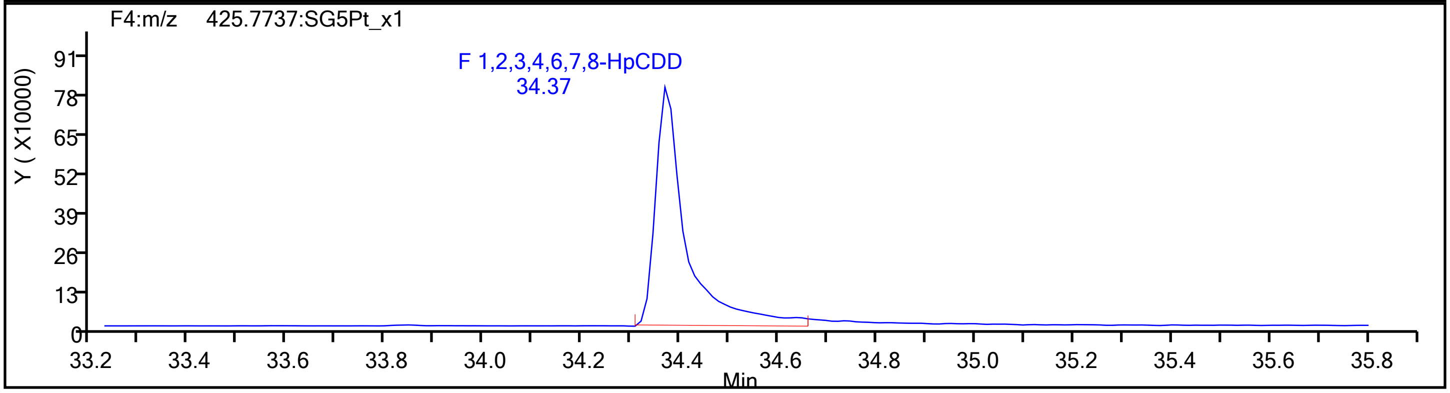

HpCDD Standards

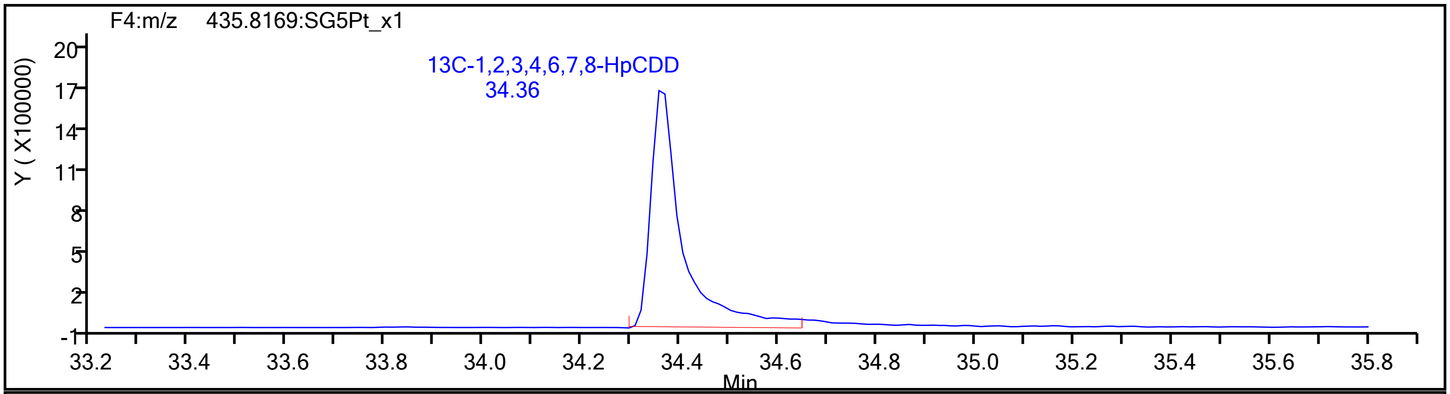

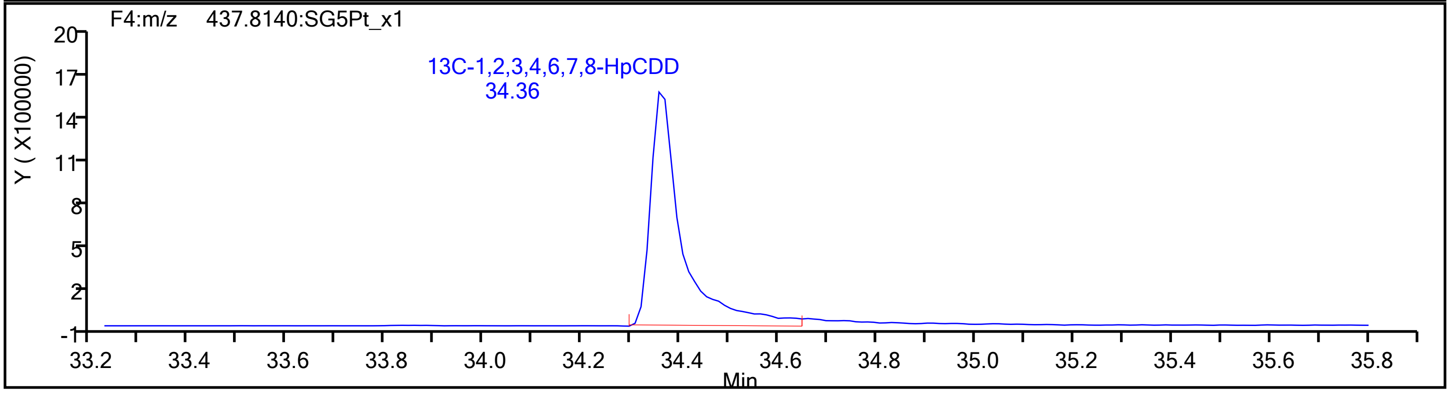

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

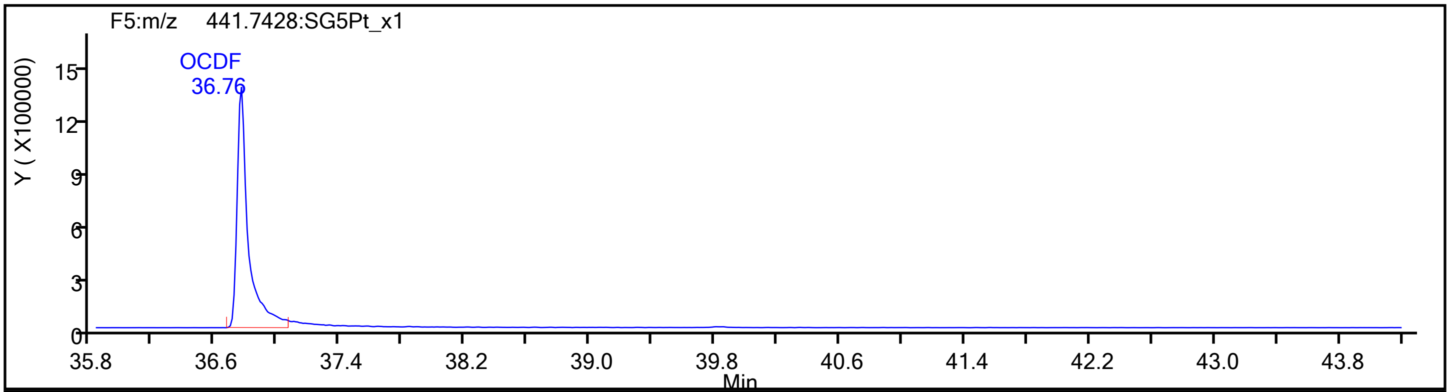

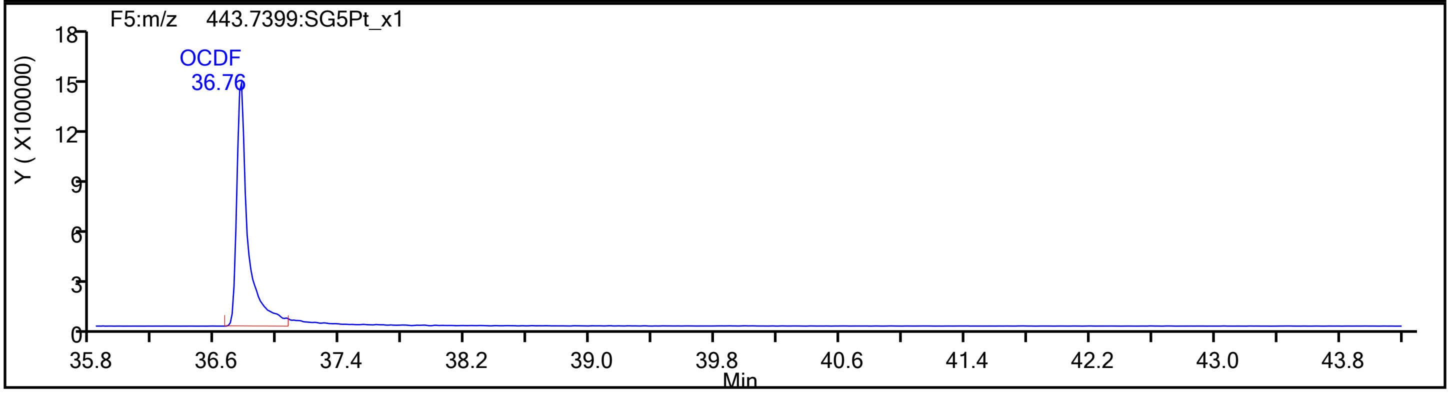

OCDF Standards

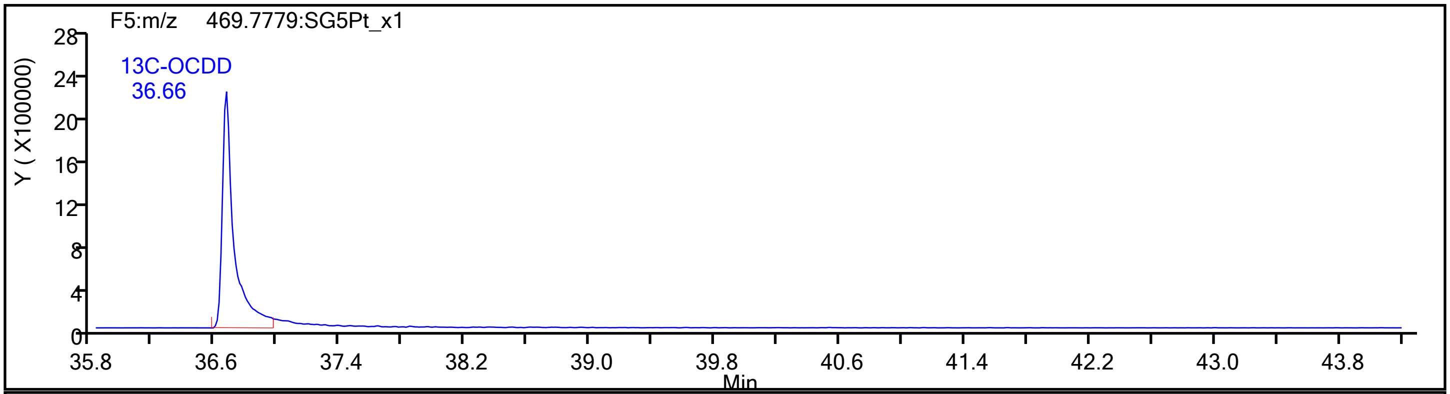

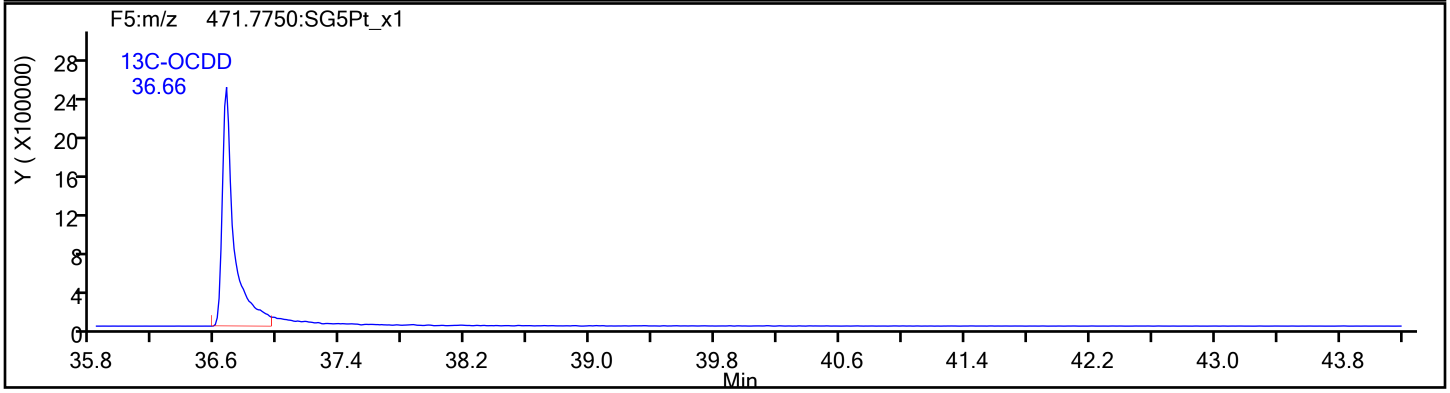

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

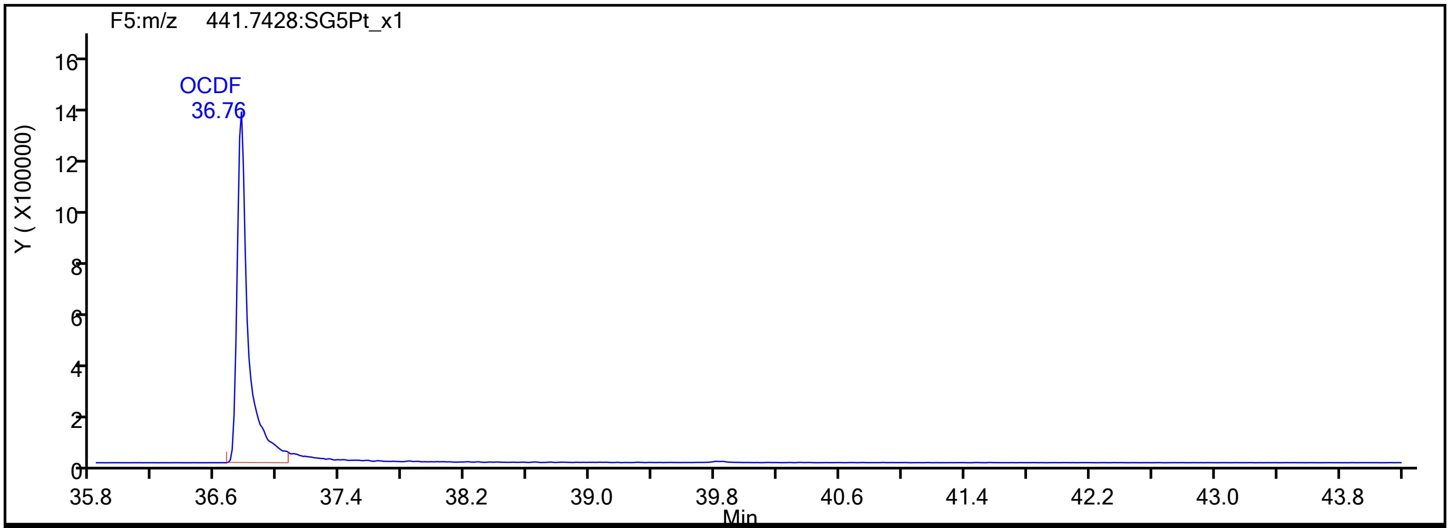

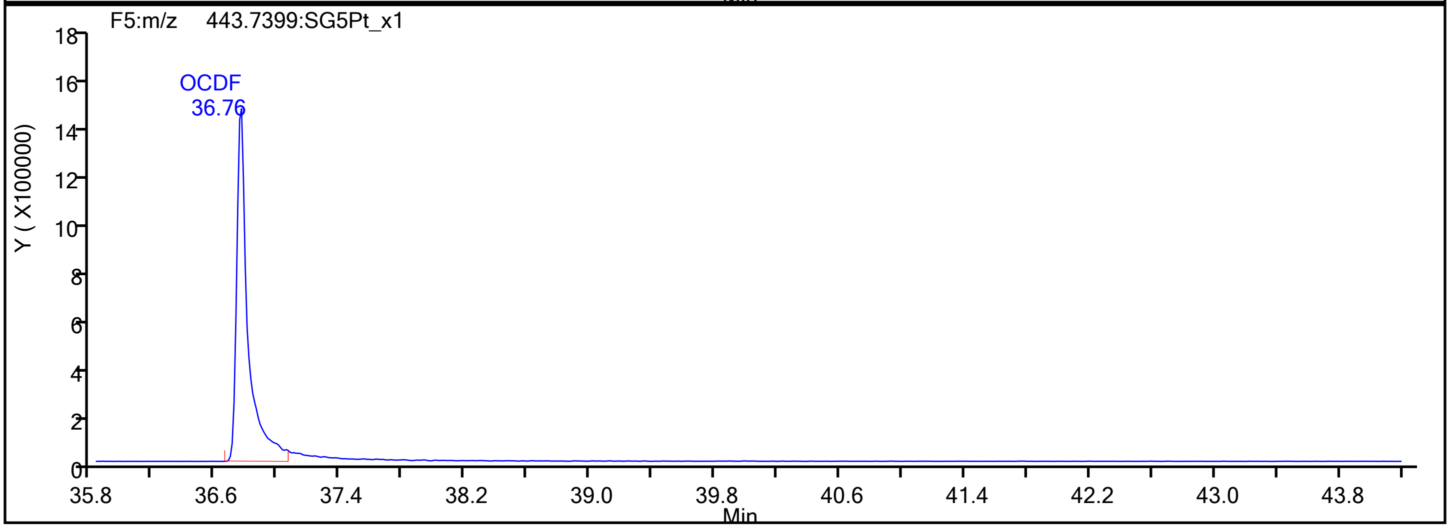

OCDF Interference Mass

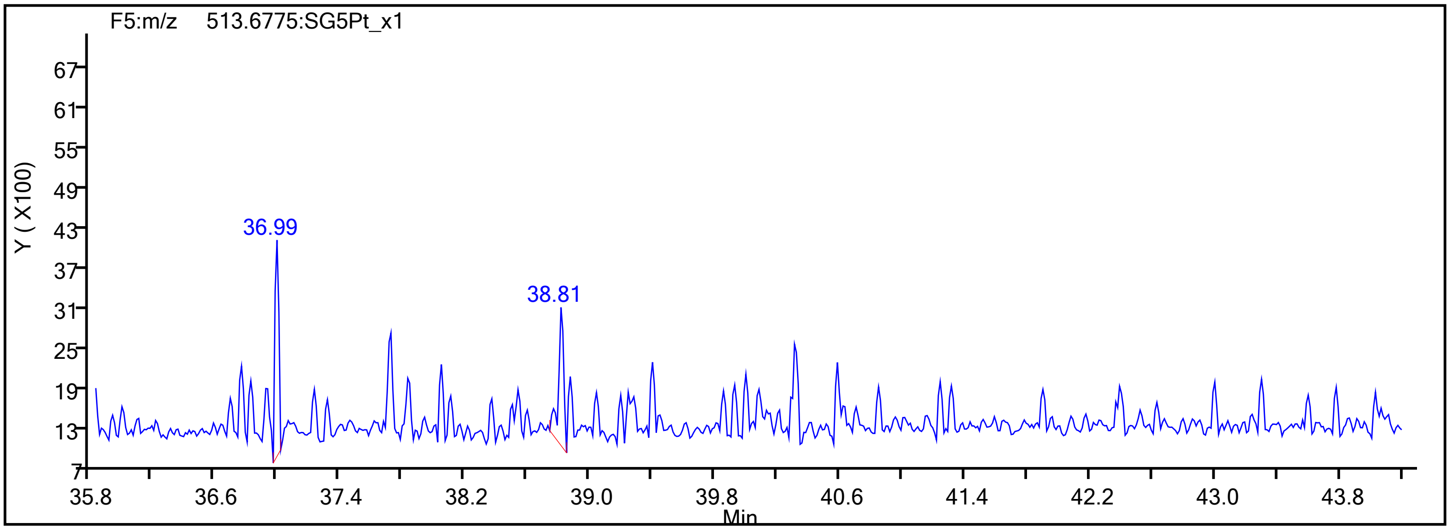

Report Date: 26-Jun-2020 13:16:07 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
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OCDD

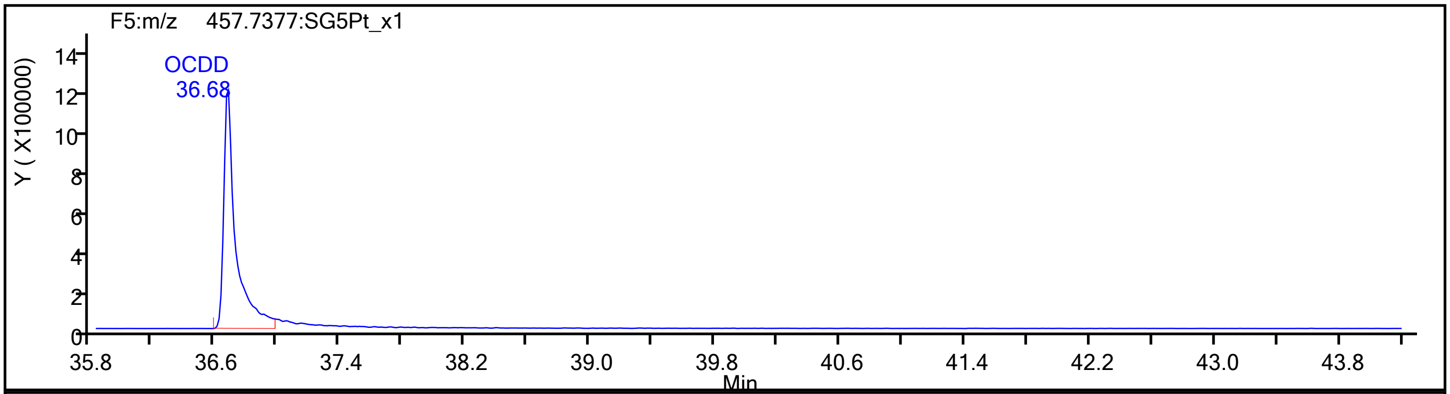

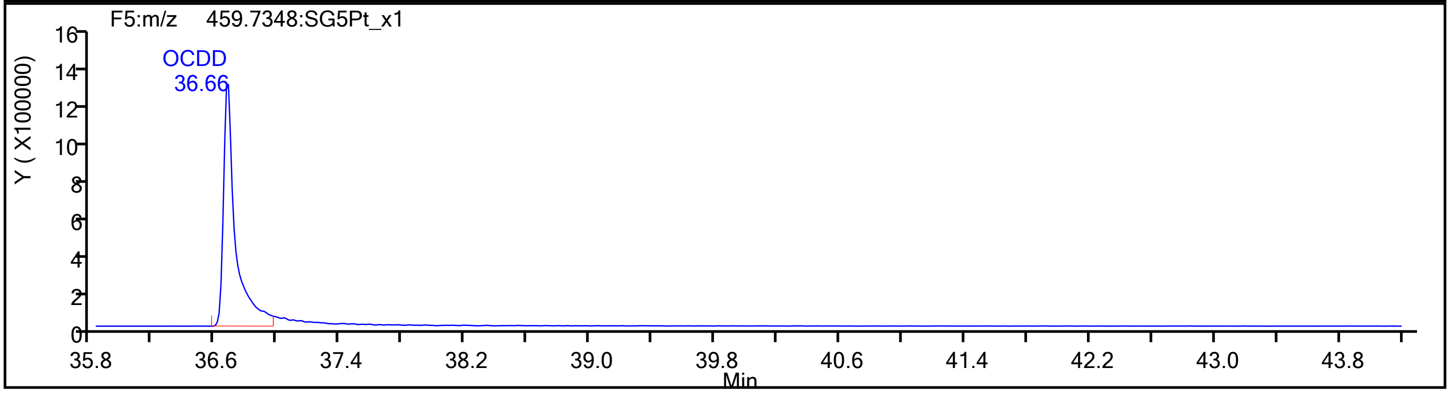

OCDD Standards

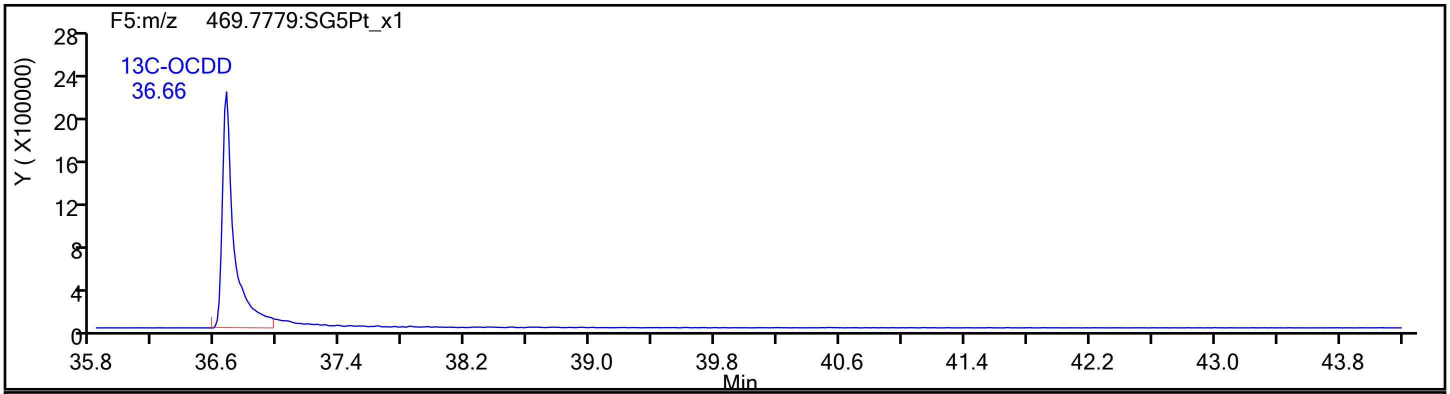

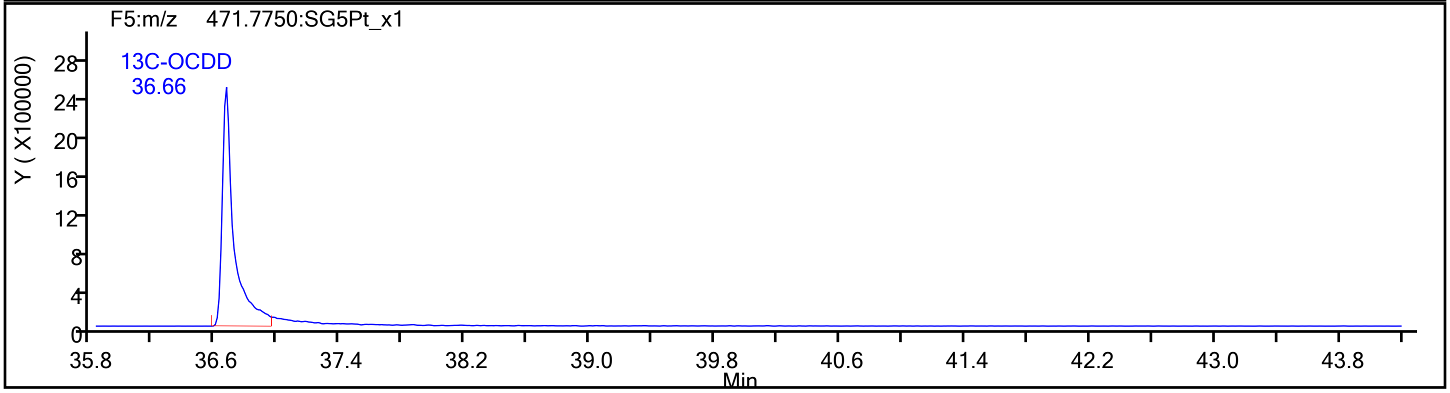

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Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID:
Worklist#: 389621
Sample Line#: 6
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Column Dia: 0.32 mm

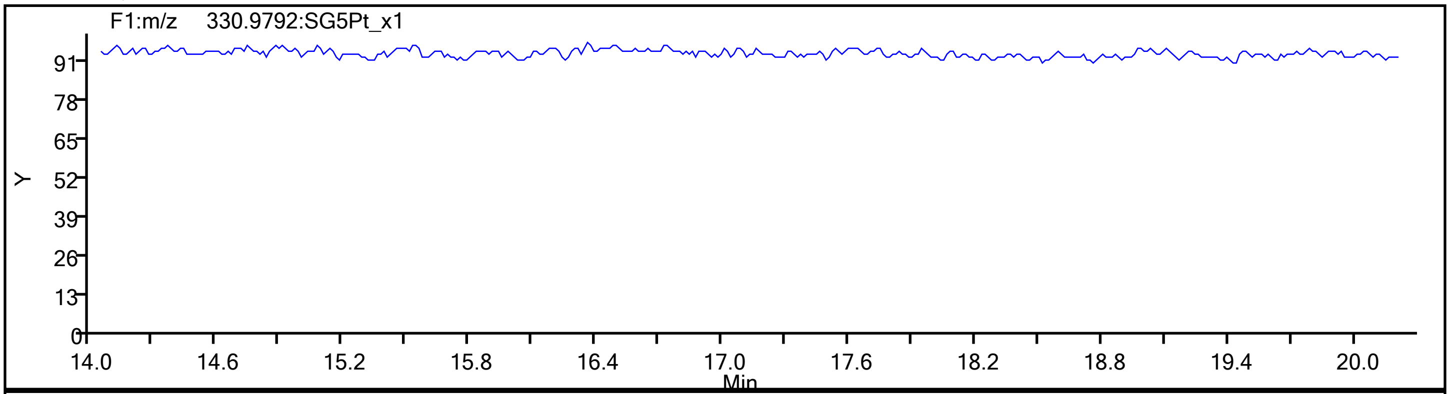

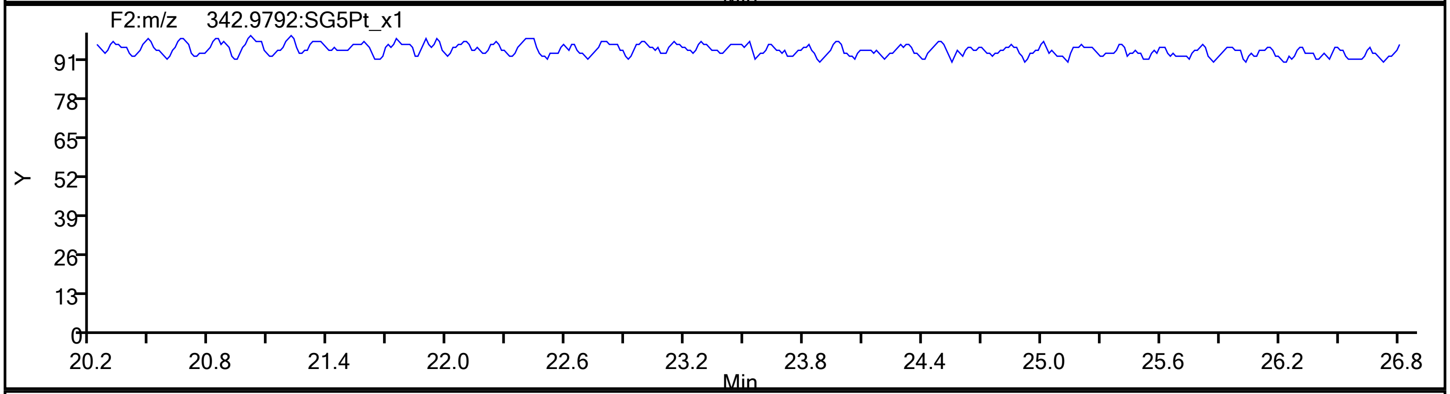

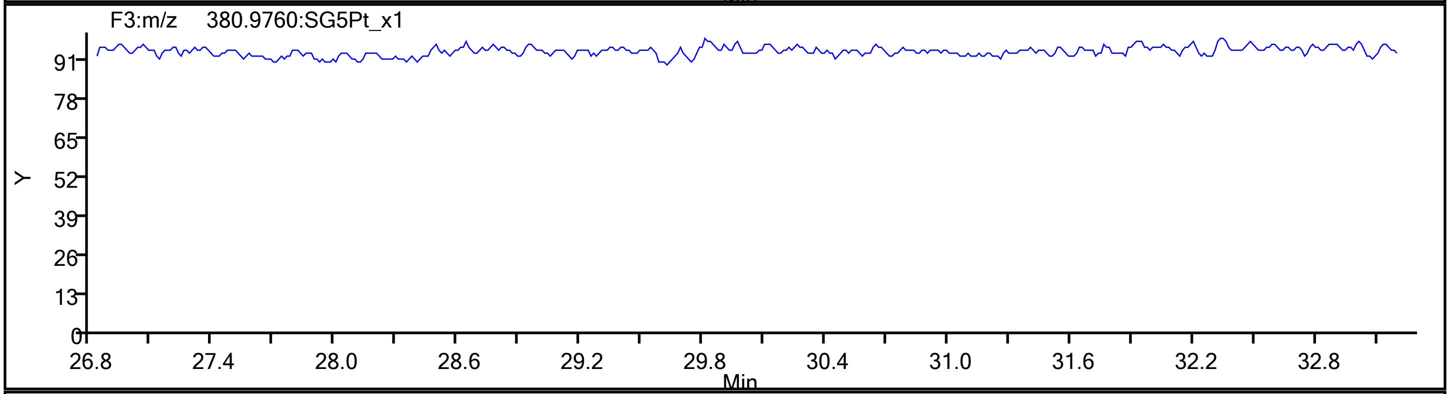

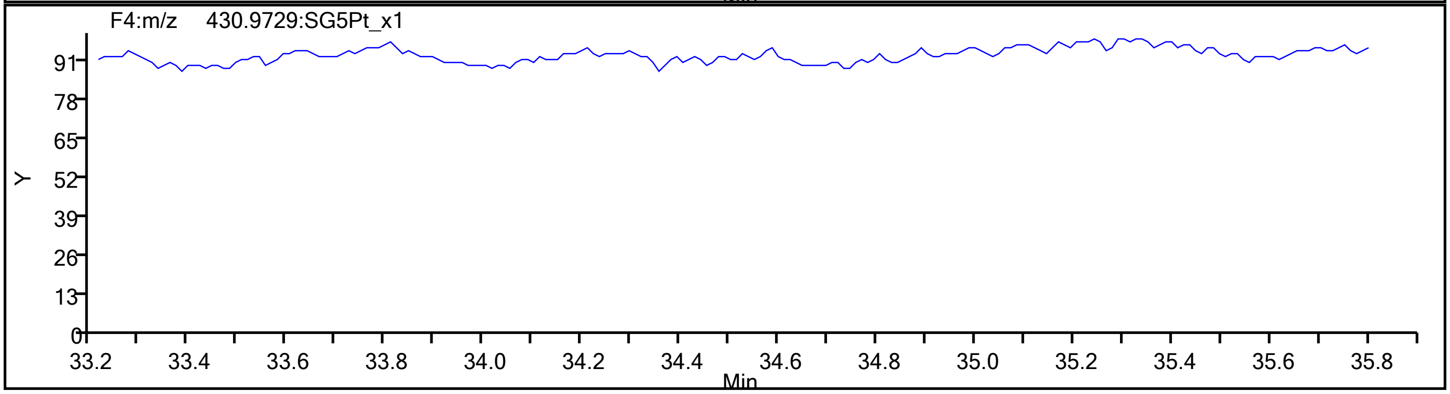

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_6.d

Injection Date:	25-Jun-2020 21:40:12	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:			
Worklist#:	389621	Sample Line#:	6
Column Type:	DB-5	Column Dia:	0.32 mm

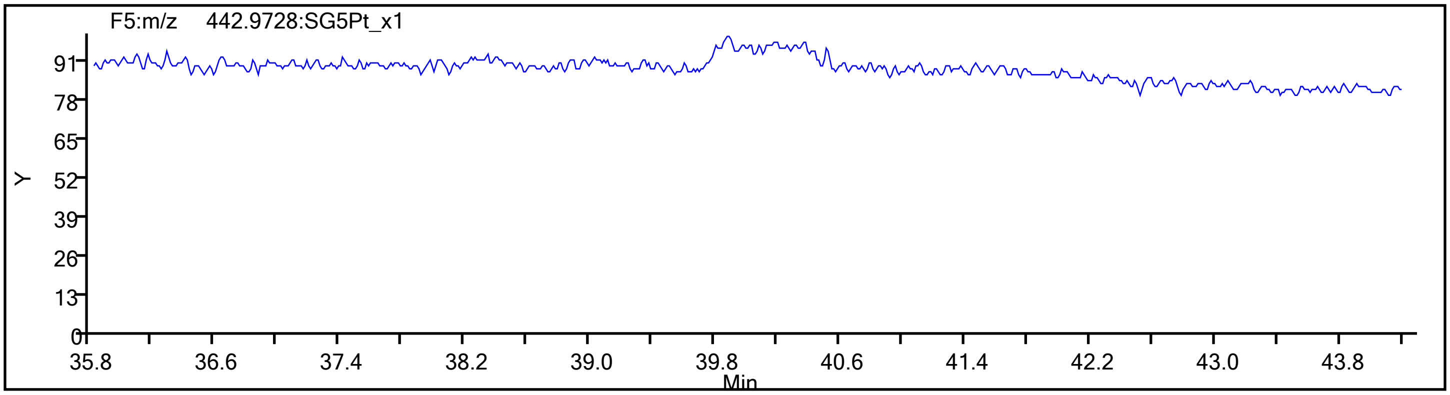

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	600-205895-1
SDG No.:			
Client Sample ID:	AFEFF10 MS	Lab Sample ID:	600-205895-3 MS
Matrix:	Water	Lab File ID:	25JN2010D5_10.d
Analysis Method:	1613B	Date Collected:	05/28/2020 16:00
Extract. Method:	1613B	Date Extracted:	06/24/2020 12:40
Sample wt/vol:	1024.3(mL)	Date Analyzed:	06/26/2020 00:40
Con. Extract Vol.:	20.0(uL)	Dilution Factor:	1
Injection Volume:	2(uL)	Level: (low/med)	Low
% Moisture:		GPC Cleanup:(Y/N)	N
Analysis Batch No.:	389621	Units:	pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	184		9.8	0.94
51207-31-9	2,3,7,8-TCDF	214		9.8	0.80
40321-76-4	1,2,3,7,8-PeCDD	897		49	2.3
57117-41-6	1,2,3,7,8-PeCDF	1010		49	6.0
57117-31-4	2,3,4,7,8-PeCDF	855		49	5.7
39227-28-6	1,2,3,4,7,8-HxCDD	896		49	4.7
57653-85-7	1,2,3,6,7,8-HxCDD	931		49	4.8
19408-74-3	1,2,3,7,8,9-HxCDD	977		49	4.3
70648-26-9	1,2,3,4,7,8-HxCDF	959		49	16
57117-44-9	1,2,3,6,7,8-HxCDF	1090		49	16
72918-21-9	1,2,3,7,8,9-HxCDF	1130		49	14
60851-34-5	2,3,4,6,7,8-HxCDF	1090		49	12
35822-46-9	1,2,3,4,6,7,8-HpCDD	950		49	12
67562-39-4	1,2,3,4,6,7,8-HpCDF	1020		49	26
55673-89-7	1,2,3,4,7,8,9-HpCDF	898		49	33
3268-87-9	OCDD	2130		98	5.8
39001-02-0	OCDF	2040		98	5.6
41903-57-5	Total TCDD	184		9.8	0.94
30402-14-3	Total TCDF	215		9.8	0.80
36088-22-9	Total PeCDD	897		49	2.3
30402-15-4	Total PeCDF	1860		49	5.9
34465-46-8	Total HxCDD	2800		49	4.6
55684-94-1	Total HxCDF	4270		49	15
37871-00-4	Total HpCDD	950		49	12
38998-75-3	Total HpCDF	1920		49	29

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: AFEFF10 MS	Lab Sample ID: 600-205895-3 MS
Matrix: Water	Lab File ID: 25JN2010D5_10.d
Analysis Method: 1613B	Date Collected: 05/28/2020 16:00
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1024.3(mL)	Date Analyzed: 06/26/2020 00:40
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		25-164
89059-46-1	13C-2,3,7,8-TCDF	49		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	57		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	48		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	54		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	56		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	57		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	54		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	54		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	69		26-138
114423-97-1	13C-OCDD	69		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	68		35-197

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d
Lims ID: 600-205895-B-3-A MS
Client ID: AFEFF10
Sample Type: MS
Inject. Date: 26-Jun-2020 00:40:53 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-3-A MS 600-205895-B-3-A MS
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:08:47

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.581	53712517	0.78	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.082	31527906	0.77	1.1970	49.0	49.0	0.1246	0.1246	49.04	
2,3,7,8-TCDF	17.097	2648405	0.74	0.7672	10.9	10.9	0.0410	0.0410	109	
A Non-2,3,7,8-sub-TCDF	16.810	19925	0.77	0.7672	0.1100	0.0824	0.0410	0.0824	0.00	RQ
S Total TCDF					11.1	11.0	0.0410	0.0410		RQ
D 13C-2,3,7,8-TCDD	17.778	27629466	0.78	0.8773	58.6	58.6	0.2715	0.2715	58.63	
2,3,7,8-TCDD	17.793	2600927	0.76	1.0000	9.413	9.413	0.0480	0.0480	94.13	
$ 37Cl4-2,3,7,8-TCDD	17.793	13899210		0.9515	27.2	27.2	0.0348	0.0348	67.99	
A Non-2,3,7,8-sub-TCDD	17.256						0.0480	0.0480		
S Total TCDD					9.413	9.413	0.0480	0.0480		
D 13C-1,2,3,7,8-PeCDF	21.985	25384773	1.56	0.9904	47.7	47.7	0.1864	0.1864	47.72	
1,2,3,7,8-PeCDF	21.998	11821335	1.58	0.9019	51.6	51.6	0.3097	0.3097	103	
D 13C-2,3,4,7,8-PeCDF	23.280	31590826	1.58	1.0797	54.5	54.5	0.1710	0.1710	54.47	
2,3,4,7,8-PeCDF	23.308	11493247	1.52	0.8307	43.8	43.8	0.2896	0.2896	87.59	
A F1 PeCDFs	19.675						0.0261	0.0261		
A Non-2,3,7,8-sub-PeCDF	22.743						0.2984	0.2984		
S Total PeCDF					95.4	95.4	0.2997	0.2997		
D 13C-1,2,3,7,8-PeCDD	23.989	20981297	1.55	0.6904	56.6	56.6	0.0814	0.0814	56.58	
1,2,3,7,8-PeCDD	24.017	9776542	1.56	1.0145	45.9	45.9	0.1173	0.1173	91.86	
A Non-2,3,7,8-sub-PeCDD	22.953						0.1173	0.1173		
S Total PeCDD					45.9	45.9	0.1173	0.1173		
D 13C-1,2,3,4,7,8-HxCDF	30.113	17844768	0.49	0.9076	57.3	57.3	0.6243	0.6243	57.30	
1,2,3,4,7,8-HxCDF	30.140	6950920	1.21	0.7928	49.1	49.1	0.8140	0.8140	98.26	
D 13C-1,2,3,6,7,8-HxCDF	30.326	16962075	0.49	0.8671	57.0	57.0	0.6535	0.6535	57.01	
1,2,3,6,7,8-HxCDF	30.353	8155525	1.24	0.8592	56.0	56.0	0.8294	0.8294	112	
D 13C-2,3,4,6,7,8-HxCDF	31.244	15326929	0.49	0.8287	53.9	53.9	0.6838	0.6838	53.91	
2,3,4,6,7,8-HxCDF	31.271	7636871	1.20	0.8896	56.0	56.0	0.6378	0.6378	112	
D 13C-1,2,3,7,8,9-HxCDF	32.110	13710190	0.49	0.7391	54.1	54.1	0.7667	0.7667	54.07	
1,2,3,7,8,9-HxCDF	32.123	7078196	1.21	0.8941	57.7	57.7	0.6958	0.6958	115	
A Non-2,3,7,8-sub-HxCDF	29.847						0.7366	0.7366		
S Total HxCDF					218.8	218.8	0.7443	0.7443		

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.923	34309039	1.25	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	16051391	1.25	0.8335	56.1	56.1	0.6039	0.6039	56.13	
1,2,3,4,7,8-HxCDD	31.471	6140259	1.29	0.8332	45.9	45.9	0.2385	0.2385	91.82	
D 13C-1,2,3,6,7,8-HxCDD	31.564	19404539	1.26	0.8228	68.7	68.7	0.6117	0.6117	68.74	
1,2,3,6,7,8-HxCDD	31.591	8276558	1.20	0.8944	47.7	47.7	0.2473	0.2473	95.38	
1,2,3,7,8,9-HxCDD	31.937	8380702	1.21	0.9449	50.0	50.0	0.2216	0.2216	100	
A Non-2,3,7,8-sub-HxCDD	30.499						0.2350	0.2350		
S Total HxCDD					143.6	143.6	0.2358	0.2358		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	14783798	0.43	0.7009	61.5	61.5	2.244	2.244	61.48	
1,2,3,4,6,7,8-HpCDF	33.602	10298237	1.03	1.3295	52.4	52.4	1.343	1.343	105	
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	17125760	0.42	0.7244	68.9	68.9	2.172	2.172	68.91	
1,2,3,4,7,8,9-HpCDF	34.659	8507770	1.02	1.0803	46.0	46.0	1.675	1.675	91.97	
A Non-2,3,7,8-sub-HpCDF	34.143						1.492	1.492		
S Total HpCDF					98.4	98.4	1.509	1.509		
D 13C-1,2,3,4,6,7,8-HpCDD	34.368	16133667	1.05	0.7026	66.9	66.9	0.9858	0.9858	66.93	
1,2,3,4,6,7,8-HpCDD	34.380	7881759	1.04	1.0040	48.7	48.7	0.5945	0.5945	97.31	
A Non-2,3,7,8-sub-HpCDD	34.119						0.5945	0.5945		
S Total HpCDD					48.7	48.7	0.5945	0.5945		
D 13C-OCDD	36.664	29194634	0.90	0.6184	137.6	137.6	0.5605	0.5605	68.80	
OCDF	36.760	16901093	0.89	1.1076	104.5	104.5	0.2885	0.2885	105	
OCDD	36.676	16176917	0.89	1.0175	108.9	108.9	0.2951	0.2951	109	
1,3,6,8-TCDF	14.739						0.0	0.0		
2,3,4,7-TCDF	14.739						0.0	0.0		
1,3,6,8-TCDD	15.631	34890	0.94							R
1,2,3,7-TCDD	17.687						0.0	0.0		
1,2,3,9-TCDD	17.959						0.0	0.0		
1,2,3,9-TCDF	17.959						0.0	0.0		
1,2,8,9-TCDF	18.882						0.0	0.0		
1,2,8,9-TCDD	18.882						0.0	0.0		
1,3,4,6,8-PeCDF	19.184	21358	0.23							R
1,2,4,7,9-PeCDD	20.894						0.0	0.0		
1,2,3,8,9-PeCDD	25.012						0.0	0.0		
1,2,3,8,9-PeCDF	25.230						0.0	0.0		
1,2,3,4,6,8-HxCDF	27.465						0.0	0.0		
1,2,4,6,7,9-HxCDD	29.008						0.0	0.0		
1,2,3,4,6,7-HxCDD	31.897						0.0	0.0		U
1,2,3,4,8,9-HxCDF	32.229						0.0	0.0		
1,2,3,4,6,7,9-HpCDD	33.845						0.0	0.0		U
1,2,3,4,6,7,9-HpCDF	33.931						0.0	0.0		U
1,2,3,8-TCDD	0.0						0.0	0.0		
1,3,7,9-TCDD	0.0						0.0	0.0		
1,2,3,4,7-PeCDD	0.0						0.0	0.0		
1,4,7,8-TCDD	0.0						0.0	0.0		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
U - Marked Undetected
a - User Assigned ID

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d
Lims ID: 600-205895-B-3-A MS
Client ID: AFEFF10
Sample Type: MS
Inject. Date: 26-Jun-2020 00:40:53 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-3-A MS 600-205895-B-3-A MS
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:08:47

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.581	17.581	0		23584558	5876389	6577	16442	893		a
333.9339	17.581	17.581	0		30127959	7458008	6126	15315	1217	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	13709898	3258516	4521	11302	721		
317.9389	17.082	17.082	0	0.972	17818008	4214433	3435	8587	1227	0.77(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097	17.097	0	1.001	1125915	270494	394	985	687		
305.8987	17.097	17.097	0	1.001	1522490	357078	546	1365	654	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.735	16.810	-5	0.980	8668	2475	394	985	6		
305.8987	16.735	16.810	-5	0.980	17939	5250	546	1365	10	0.48(0.65-0.89)	
	Empc Correction				11257	3214	546	1365	6		
13C-2,3,7,8-TCDD											
331.9368	17.778	17.778	0	1.011	12069643	2568988	6577	16442	391		
333.9339	17.778	17.778	0	1.011	15559823	3314901	6126	15315	541	0.78(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793	17.793	0	1.001	1120366	245422	624	1560	393		
321.8936	17.793	17.793	0	1.001	1480561	331853	505	1262	657	0.76(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.793	17.793	0	1.012	13899210	3099818	1766	4415	1755		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.256						624	1560			
321.8936	17.256						505	1262			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	21.985	21.999	-1	1.250	15458427	2557482	6288	15720	407		
353.8970	21.985	21.999	-1	1.250	9926346	1663076	3558	8895	467	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.998	22.012	-1	1.001	7232893	1182329	2781	6952	425		
341.8567	21.998	22.012	-1	1.001	4588442	750019	1934	4835	388	1.58(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.280	23.308	-2	1.324	19325066	2994893	6288	15720	476		
353.8970	23.294	23.308	-1	1.325	12265760	1903913	3558	8895	535	1.58(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.308	23.321	-1	1.001	6930393	1090812	2781	6952	392		
341.8567	23.308	23.321	-1	1.001	4562854	724817	1934	4835	375	1.52(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.675						139	347			
341.8567	19.675						273	682			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						2781	6952			
341.8567	22.743						1934	4835			
13C-1,2,3,7,8-PeCDD											
367.8949	23.989	24.017	-2	1.364	12756429	1862053	1683	4207	1106		
369.8919	23.989	24.017	-2	1.364	8224868	1206565	1316	3290	917	1.55(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.017	24.044	-2	1.001	5950325	862199	807	2017	1068		
357.8516	24.017	24.044	-2	1.001	3826217	551796	654	1635	844	1.56(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						807	2017			
357.8516	22.953						654	1635			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.943	5899656	879864	5506	13765	160		
385.8610	30.113	30.140	-2	0.943	11945112	1788367	9817	24542	182	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.140	30.153	-1	1.001	3801654	583797	4032	10080	145		
375.8178	30.126	30.153	-2	1.000	3149266	479071	2856	7140	168	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.326	30.340	-1	0.950	5604617	787881	5506	13765	143		
385.8610	30.326	30.340	-1	0.950	11357458	1628490	9817	24542	166	0.49(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.353	30.366	-1	1.001	4514957	661151	4032	10080	164		
375.8178	30.340	30.366	-2	1.000	3640568	534200	2856	7140	187	1.24(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.244	31.258	-1	0.979	5070993	1024739	5506	13765	186		
385.8610	31.244	31.258	-1	0.979	10255936	2010260	9817	24542	205	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.271	31.285	-1	1.001	4172954	844275	4032	10080	209		
375.8178	31.271	31.285	-1	1.001	3463917	682692	2856	7140	239	1.20(1.05-1.43)	

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Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d

Signal	RT (min.)	Exp RT (min.)	□ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.110	32.123	-1	1.006	4523982	918298	5506	13765	167		
385.8610	32.110	32.123	-1	1.006	9186208	1849394	9817	24542	188	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.123	32.137	-1	1.000	3880111	787320	4032	10080	195		
375.8178	32.123	32.137	-1	1.000	3198085	641856	2856	7140	225	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						4032	10080			
375.8178	29.847						2856	7140			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.923	31.924	0		19066831	3762578	7625	19062	493		
403.8529	31.923	31.924	0		15242208	2997461	5985	14962	501	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.985	8925096	2214108	7625	19062	290		
403.8529	31.458	31.471	-1	0.985	7126295	1769091	5985	14962	296	1.25(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.471	31.484	-1	1.000	3458282	825446	1559	3897	529		
391.8127	31.471	31.484	-1	1.000	2681977	680519	1607	4017	423	1.29(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.564	31.577	-1	0.989	10803595	1996377	7625	19062	262		
403.8529	31.564	31.577	-1	0.989	8600944	1581489	5985	14962	264	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.591	31.604	-1	1.001	4522090	898072	1559	3897	576		
391.8127	31.577	31.604	-2	1.000	3754468	716348	1607	4017	446	1.20(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.937	31.950	-1	1.015	4593814	926869	1559	3897	595		
391.8127	31.937	31.950	-1	1.015	3786888	743402	1607	4017	463	1.21(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						1559	3897			
391.8127	30.499						1607	4017			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.052	4447002	1171081	12438	31095	94		
419.8220	33.590	33.590	0	1.052	10336796	2706390	30095	75237	90	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.602	33.602	0	1.000	5223288	1360524	13961	34902	97		
409.7789	33.602	33.602	0	1.000	5074949	1299987	13735	34337	95	1.03(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.085	5073611	1145738	12438	31095	92		
419.8220	34.647	34.659	-1	1.085	12052149	2679969	30095	75237	89	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659	34.659	0	1.000	4296754	972003	13961	34902	70		
409.7789	34.659	34.659	0	1.000	4211016	955766	13735	34337	70	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						13961	34902			
409.7789	34.143						13735	34337			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.368	34.380	-1	1.077	8261692	1922700	9310	23275	207		
437.8140	34.368	34.380	-1	1.077	7871975	1832513	9418	23545	195	1.05(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.380	34.380	0	1.000	4013508	947832	4748	11870	200		
425.7737	34.380	34.380	0	1.000	3868251	918028	4218	10545	218	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						4748	11870			
425.7737	34.119						4218	10545			
13C-OCDD											
469.7779	36.664	36.676	-1	1.149	13794585	2556705	3352	8380	763		
471.7750	36.664	36.676	-1	1.149	15400049	2893117	6020	15050	481	0.90(0.76-1.02)	
OCDF											
441.7428	36.760	36.772	-1	1.003	7948935	1552153	1558	3895	996		
443.7399	36.760	36.772	-1	1.003	8952158	1798214	1925	4812	934	0.89(0.76-1.02)	
OCDD											
457.7377	36.676	36.688	-1	1.000	7597544	1441857	1705	4262	846		
459.7348	36.676	36.688	-1	1.000	8579373	1625740	1568	3920	1037	0.89(0.76-1.02)	
1,3,6,8-TCDF											
303.9016	14.739						394	985			
305.8987	14.739						546	1365			
2,3,4,7-TCDF											
303.9016	14.739						394	985			
305.8987	14.739						546	1365			
1,3,6,8-TCDD											R
319.8965	15.631	15.631	0		16916	3828	624	1560	6		
321.8936	15.631	15.631	0		17974	4039	505	1262	8	0.94(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.687						624	1560			
321.8936	17.687						505	1262			
1,2,3,9-TCDD											
319.8965	17.959						624	1560			
321.8936	17.959						505	1262			
1,2,3,9-TCDF											
303.9016	17.959						394	985			
305.8987	17.959						546	1365			
1,2,8,9-TCDF											
303.9016	18.882						394	985			
305.8987	18.882						546	1365			
1,2,8,9-TCDD											
319.8965	18.882						624	1560			
1,3,4,6,8-PeCDF											R
339.8597	19.184	19.169	1		4005	621	139	347	4		
341.8567	19.169	19.169	0		17353	1512	273	682	6	0.23(1.32-1.78)	
1,2,4,7,9-PeCDD											
355.8546	20.894						807	2017			
357.8516	20.894						654	1635			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,8,9-PeCDD											
355.8546	25.012						807	2017			
357.8516	25.012						654	1635			
1,2,3,8,9-PeCDF											
339.8597	25.230						2781	6952			
341.8567	25.230						1934	4835			
1,2,3,4,6,8-HxCDF											
373.8208	27.465						4032	10080			
375.8178	27.465						2856	7140			
1,2,4,6,7,9-HxCDD											
389.8157	29.008						1559	3897			
391.8127	29.008						1607	4017			
1,2,3,4,6,7-HxCDD											U
389.8157	31.897						1559	3897			
391.8127	31.897						1607	4017			
1,2,3,4,8,9-HxCDF											
373.8208	32.229						4032	10080			
375.8178	32.229						2856	7140			
1,2,3,4,6,7,9-HpCDD											U
423.7766	33.845						4748	11870			
425.7737	33.845						4218	10545			
1,2,3,4,6,7,9-HpCDF											U
407.7818	33.931						13961	34902			
409.7789	33.931						13735	34337			
1,2,3,8-TCDD											
319.8965	0.0						624	1560			
321.8936	0.0						505	1262			
1,3,7,9-TCDD											
319.8965	0.0						624	1560			
321.8936	0.0						505	1262			
1,2,3,4,7-PeCDD											
355.8546	0.0						807	2017			
357.8516	0.0						654	1635			
1,4,7,8-TCDD											
319.8965	0.0						624	1560			
321.8936	0.0						505	1262			

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags

U - Marked Undetected
a - User Assigned ID

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

AreaSum WorkSheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d
Lims ID: 600-205895-B-3-A MS
Client ID: AFEFF10
Inject. Date: 26-Jun-2020 00:40:53 Dil. Factor: 1.0000
Sample Type: MS, Matrix Spike
Instrument ID: 10D5 Operator: AJS
Lims Batch ID: 389621 Lims Sample ID: 10

Non-2,3,7,8-sub-TCDF, RT: 16.810

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.767	D 13C-2,3,7,8-TCDF	100.000	31527906	7472949

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.767		100.000	31527906	7472949

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.735	8668	2475	17939	5250	0.1100	0.48	RQ
16.735	8668	2475	11257	3214	0.0824		Empc Correction
Signal Totals:							
	8668	2475	11257	3214			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	26607	7725				0.48	RQ
	19925	5689					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1100 = (26607 * 100.000) / (31527906 * 0.767)
Empc Amount: 0.0824 = (19925 * 100.000) / (31527906 * 0.767)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 26-Jun-2020 13:16:15　Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d

Injection Date: 26-Jun-2020 00:40:53　Injection Vol: 2.0 ul

Instrument ID: 10D5　Operator ID: AJS

Method: Dioxin_10D5　Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621　Sample Line#: 10

Column Type: DB-5　Column Dia: 0.32 mm

TCDF

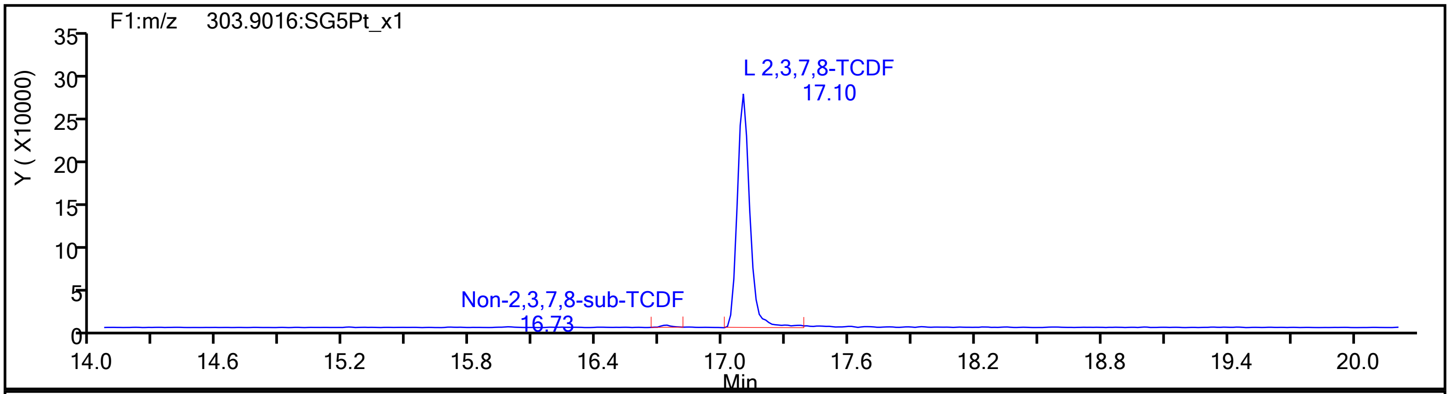

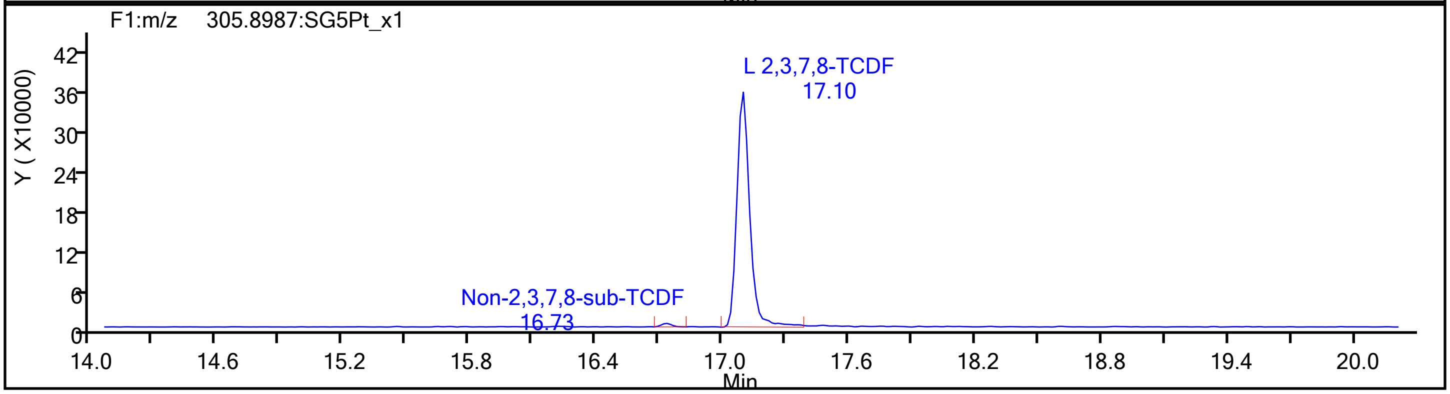

TCDF Standards

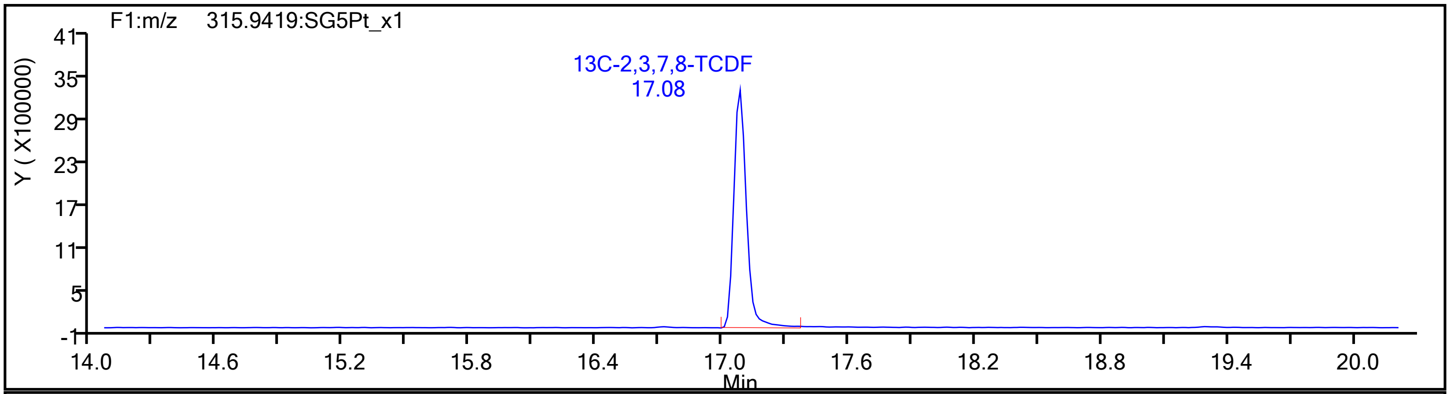

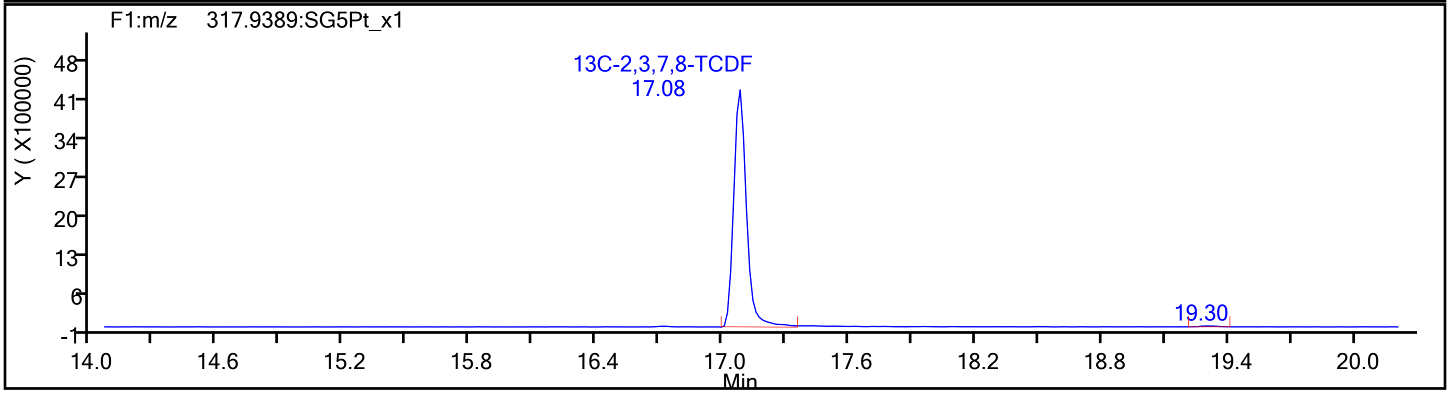

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

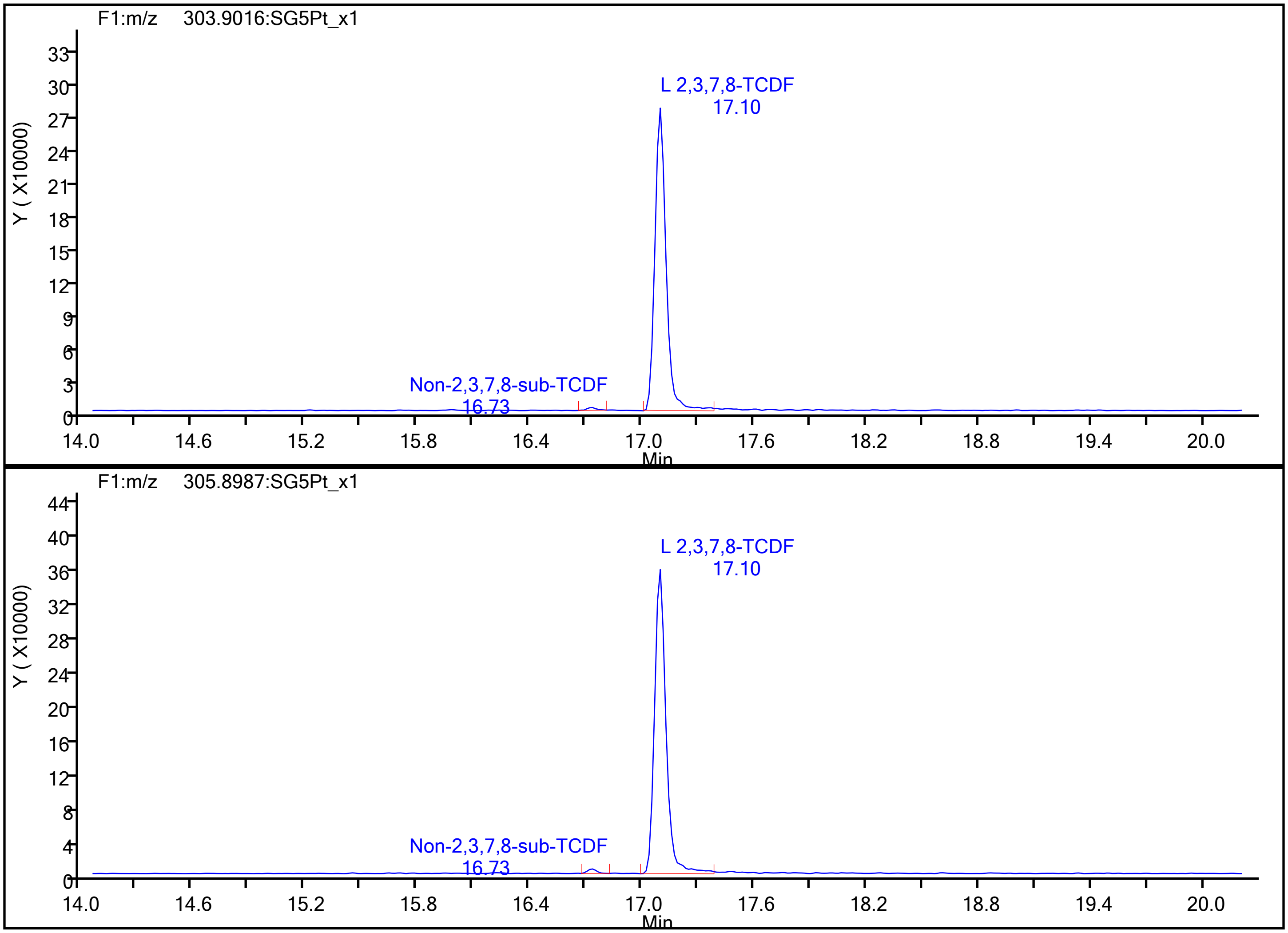

TCDF Interference Mass

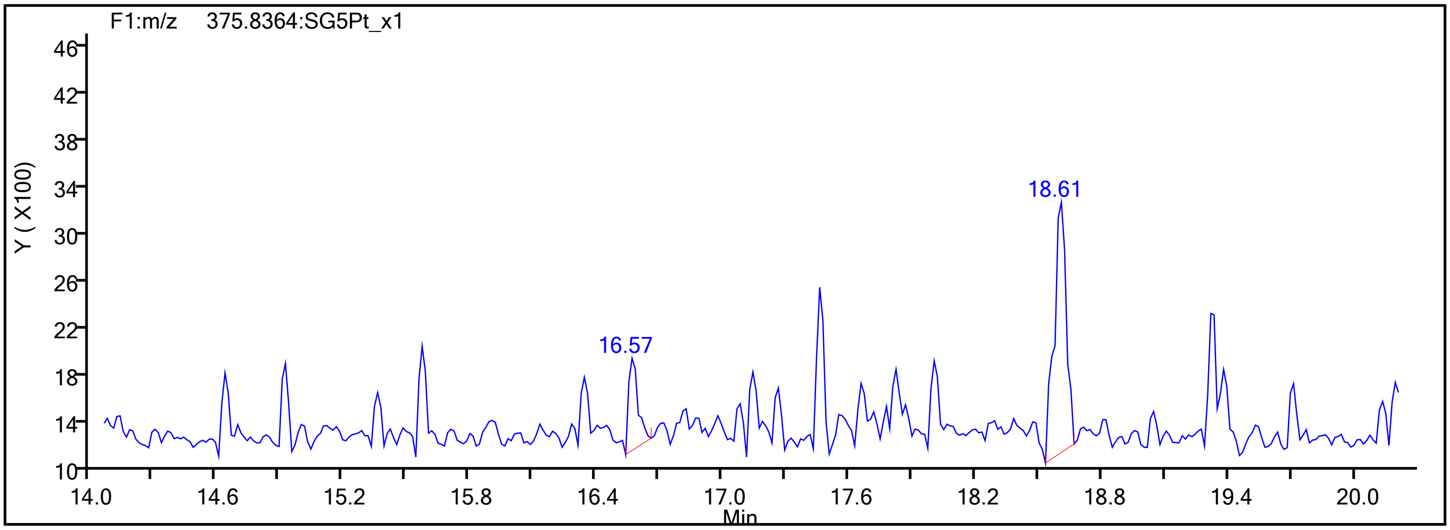

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

TCDD

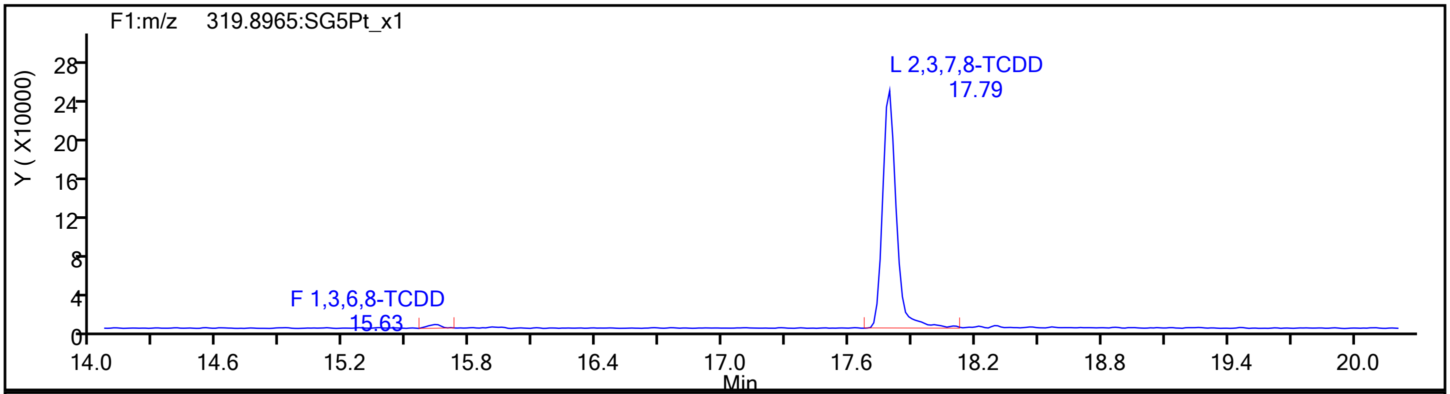

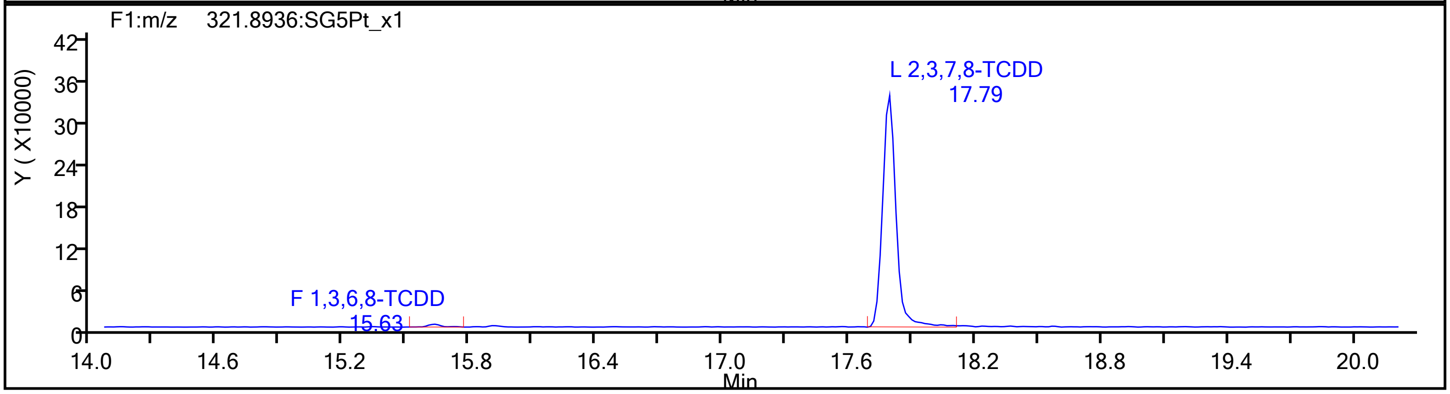

TCDD Standards

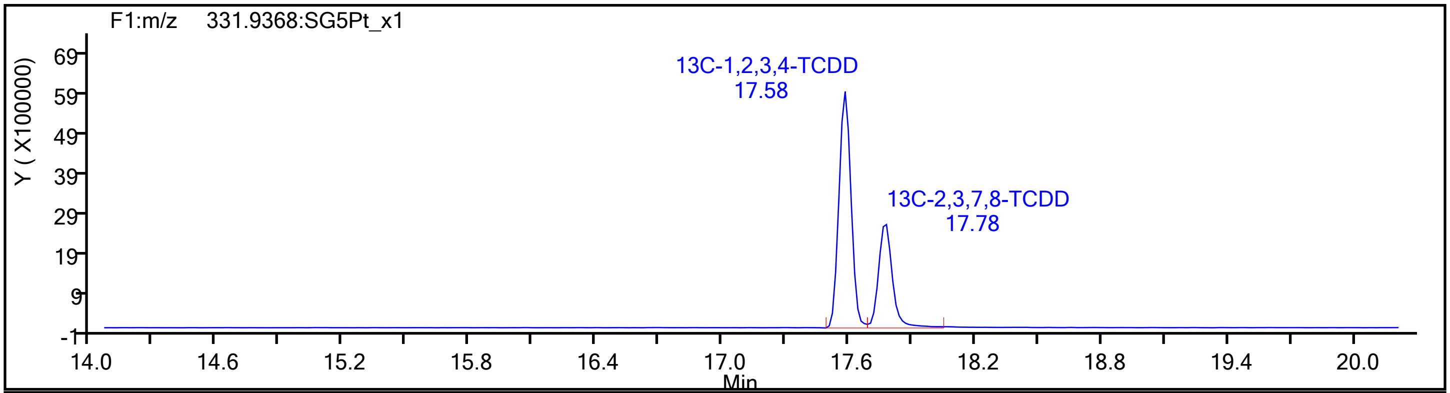

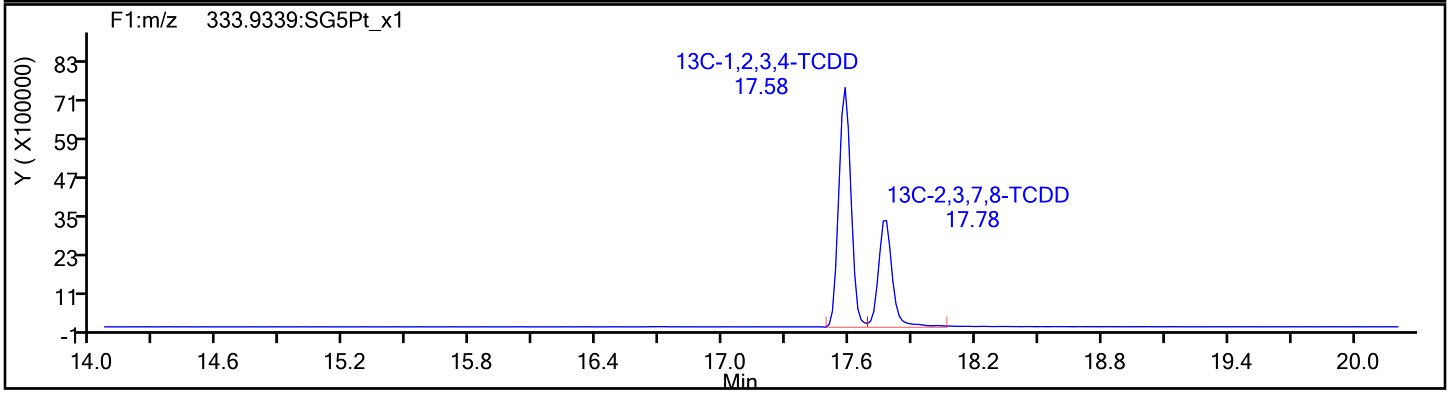

Report Date: 26-Jun-2020 13:16:15
Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

37Cl4-TCDD

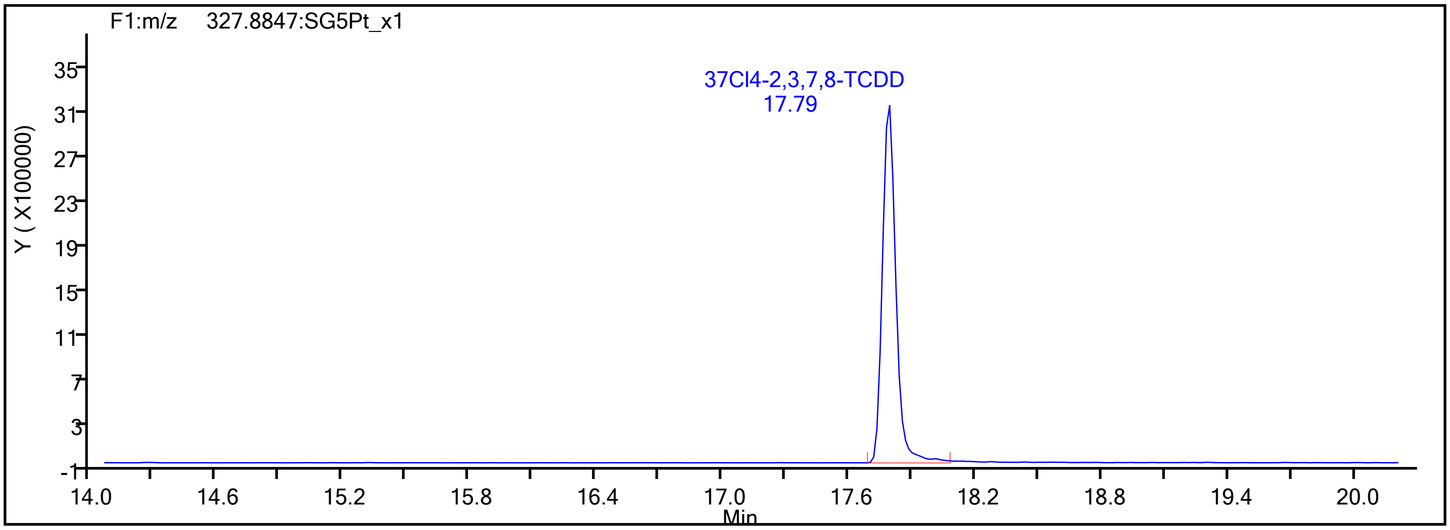

37Cl4-TCDD Standards

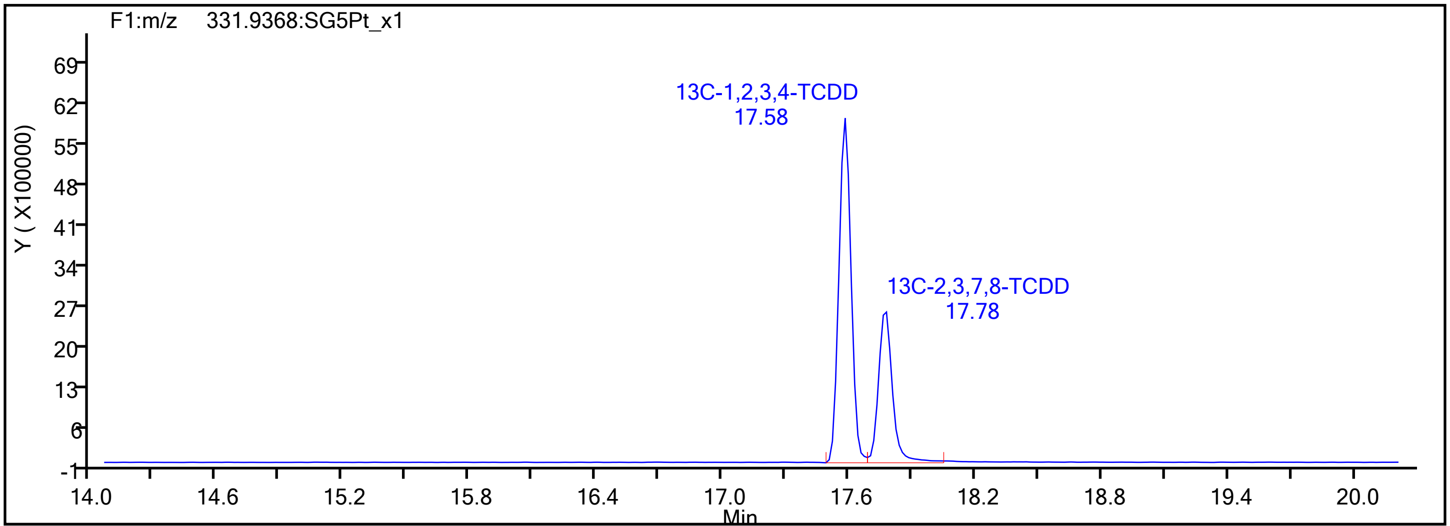

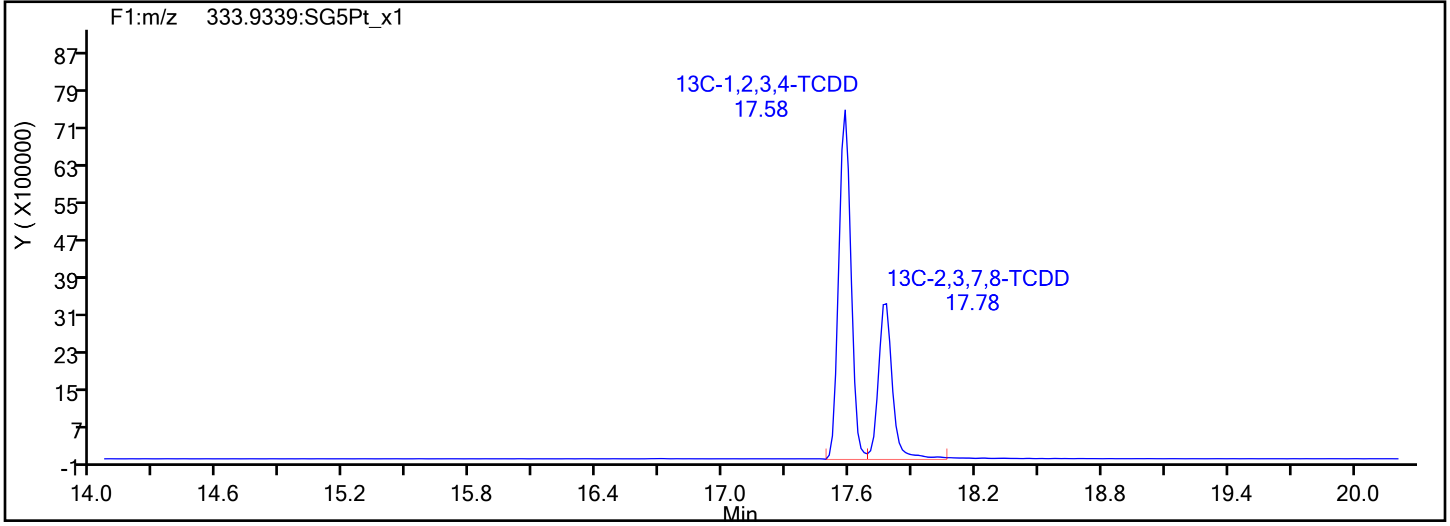

Report Date: 26-Jun-2020 13:16:15		Chrom Revision: 2.3 21-Jun-2020 18:30:46	

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

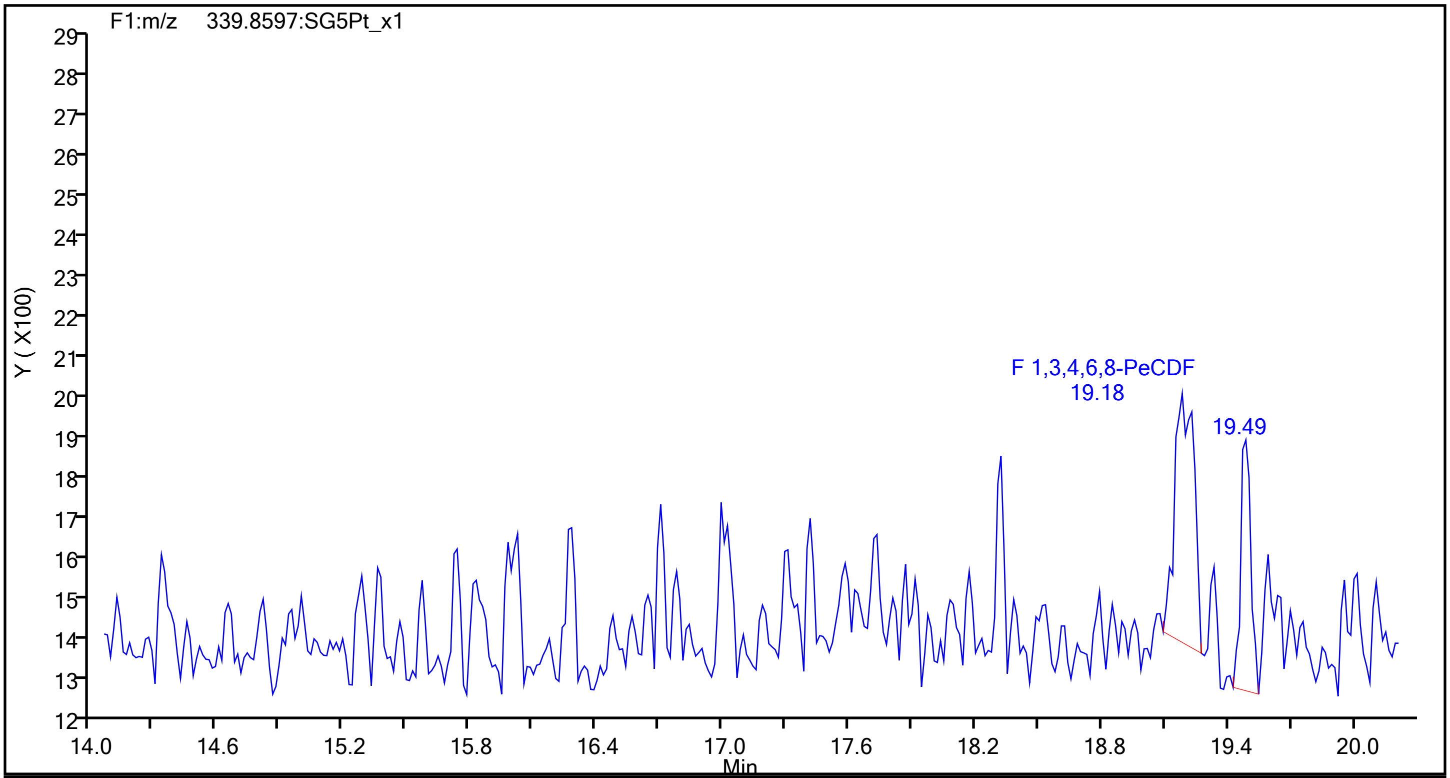

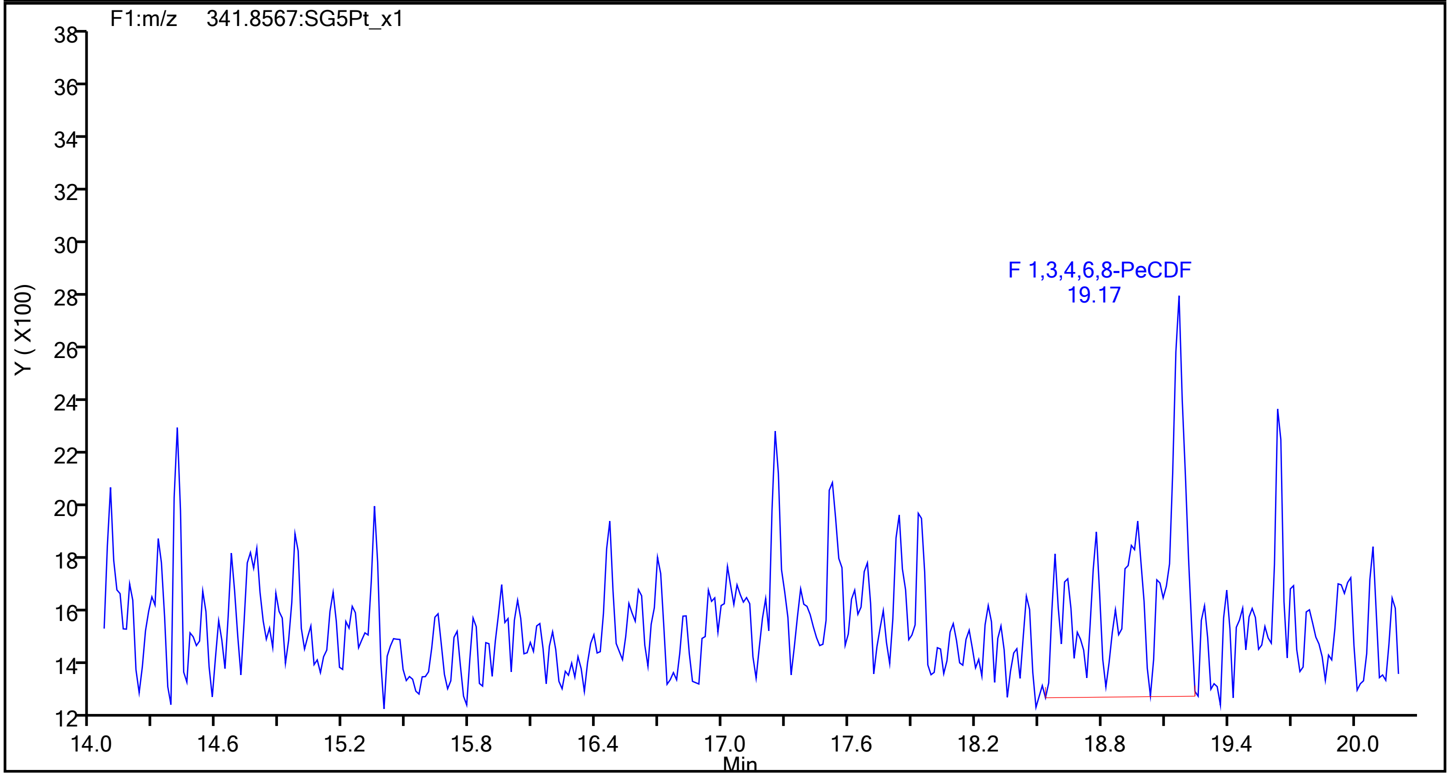

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
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Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

F1 PeCDFs

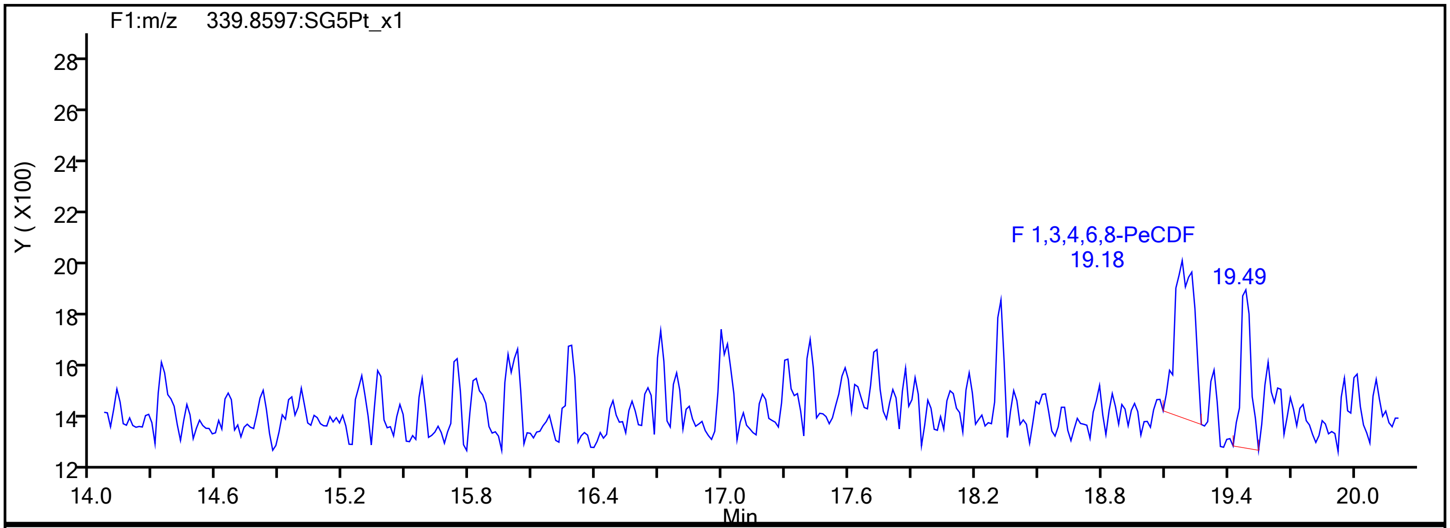

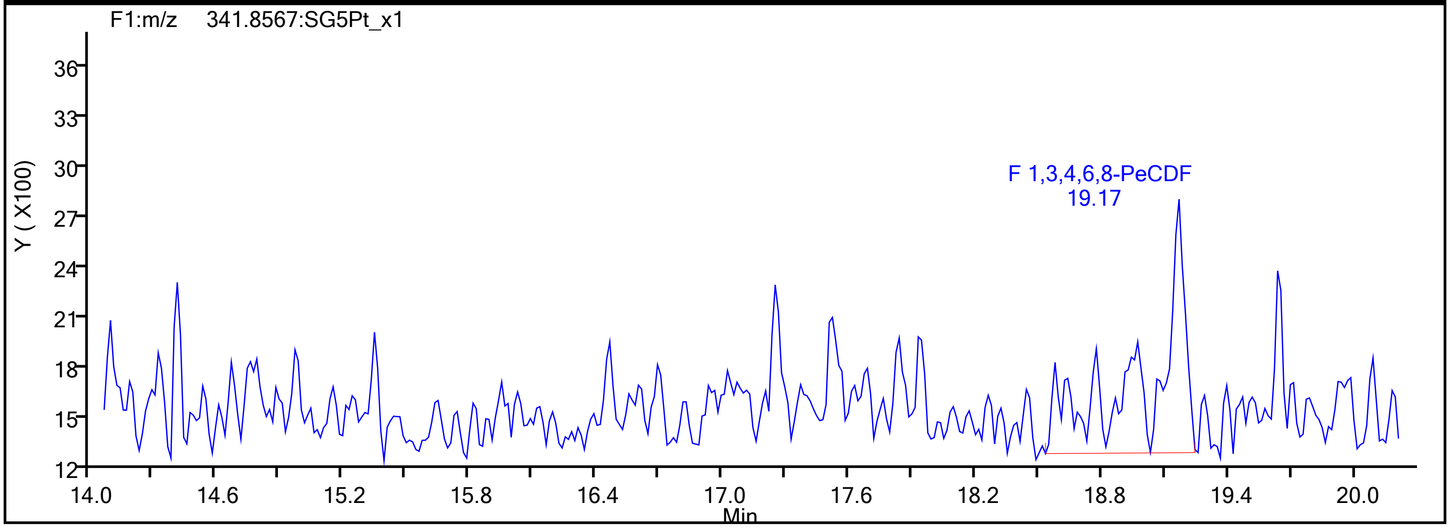

F1 PeCDFs Interference Mass

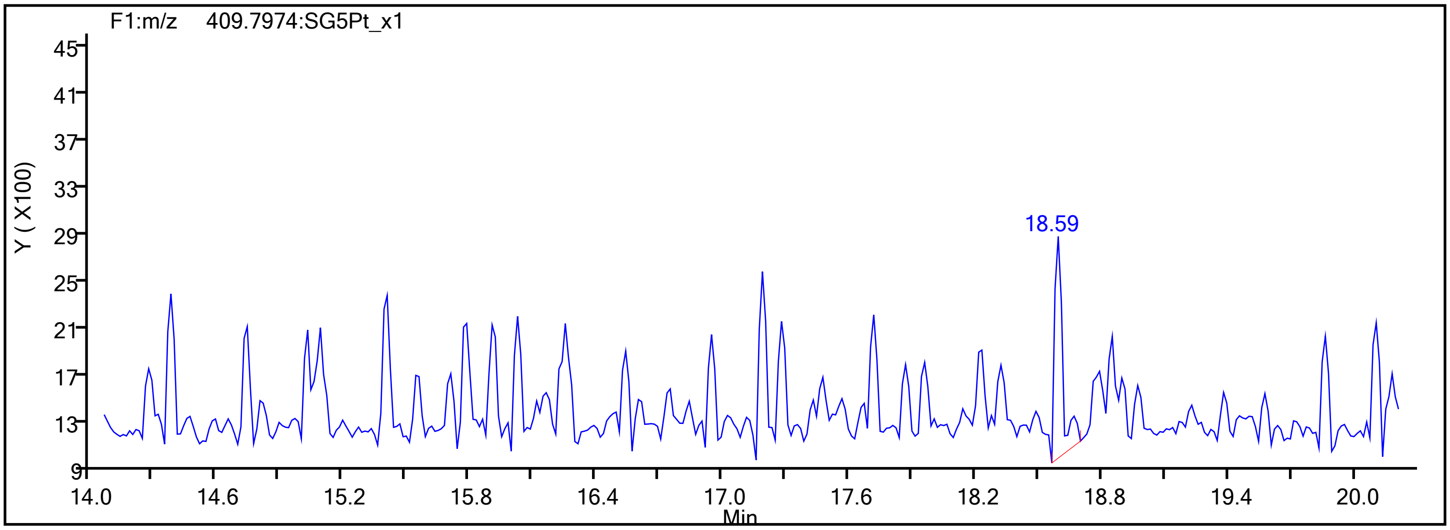

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d

Injection Date: 26-Jun-2020 00:40:53 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

PeCDF

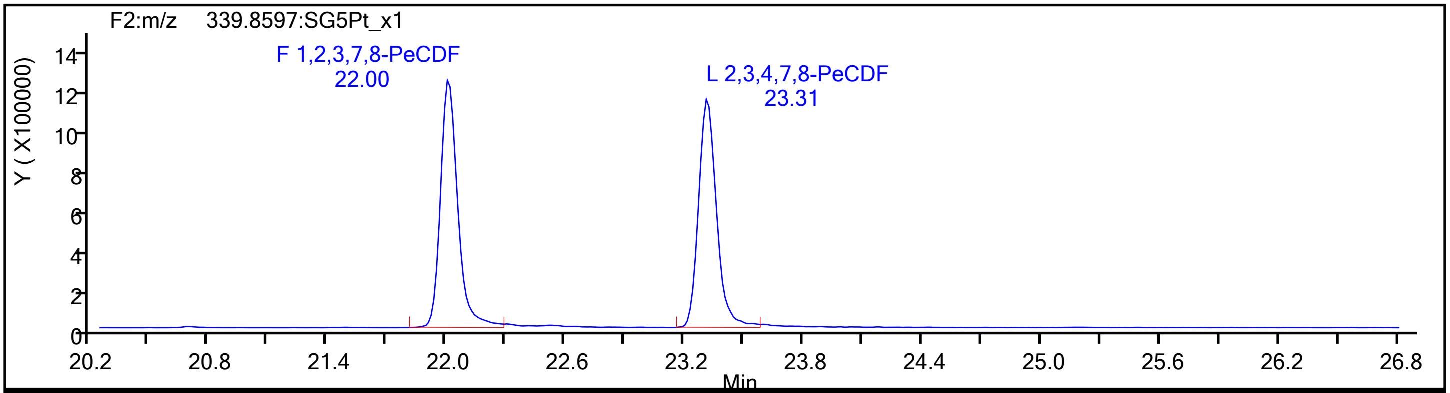

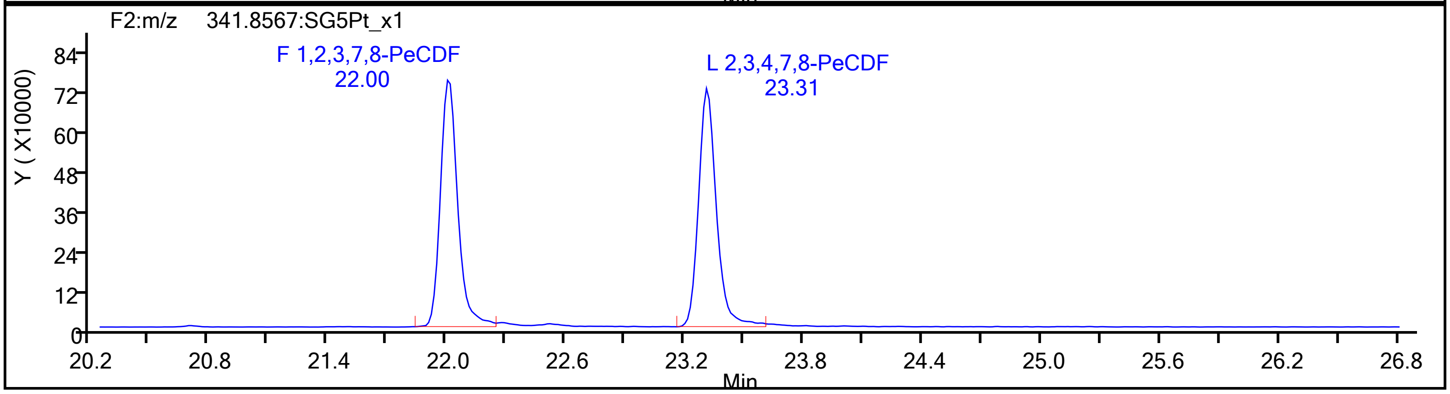

PeCDF Standards

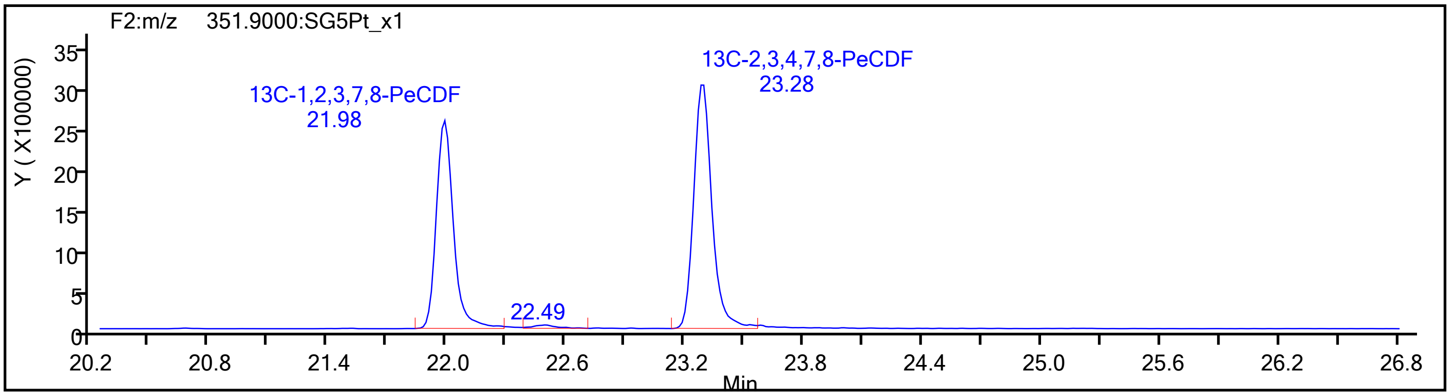

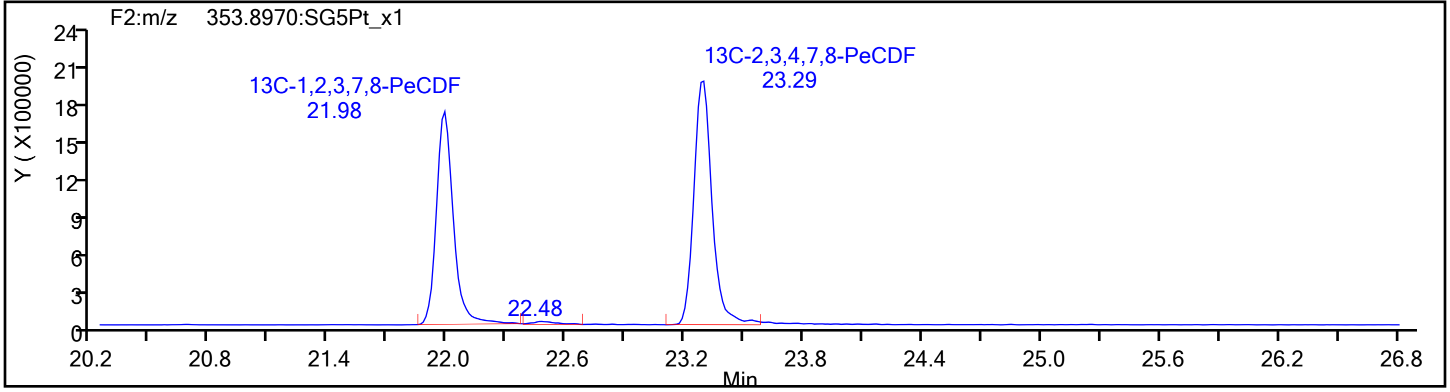

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

PeCDF

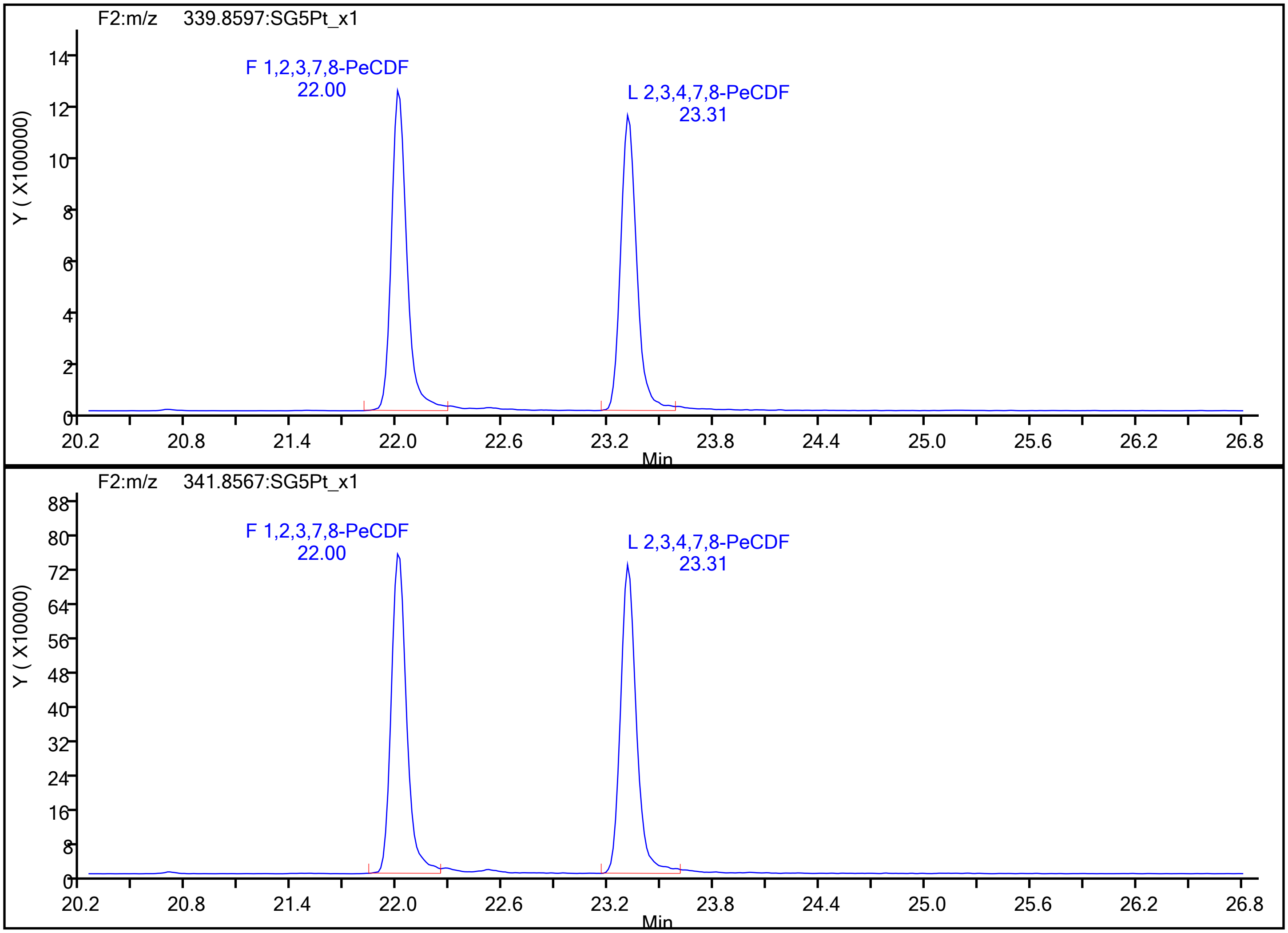

PeCDF Interference Mass

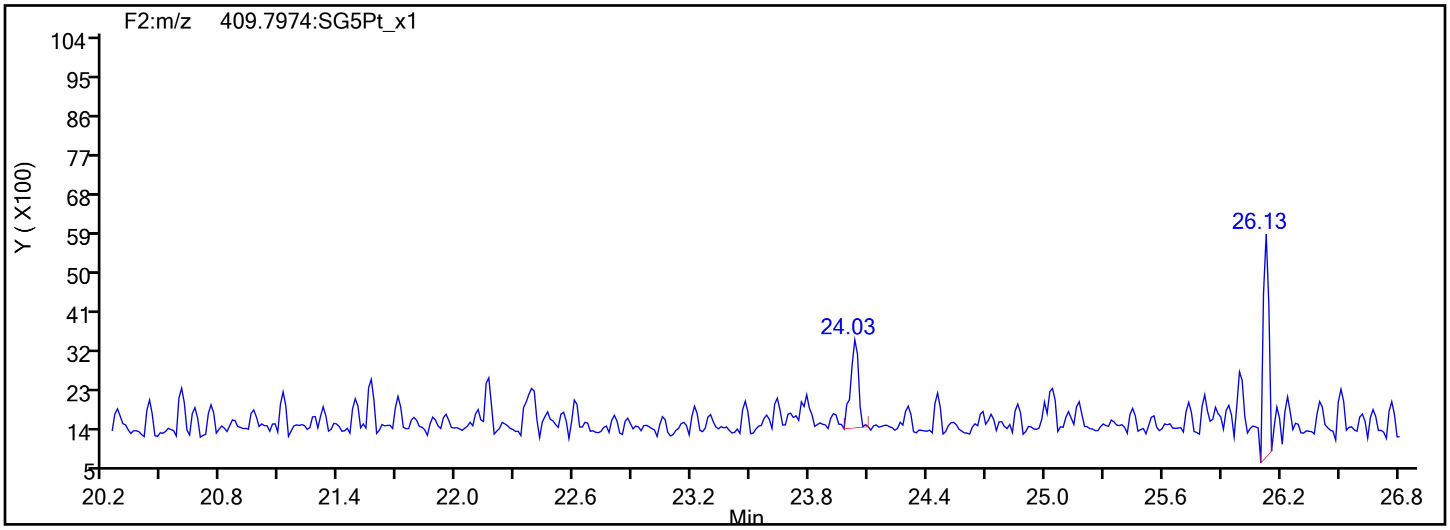

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d

Injection Date: 26-Jun-2020 00:40:53 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 10

Column Type: DB-5 Column Dia: 0.32 mm

PeCDD

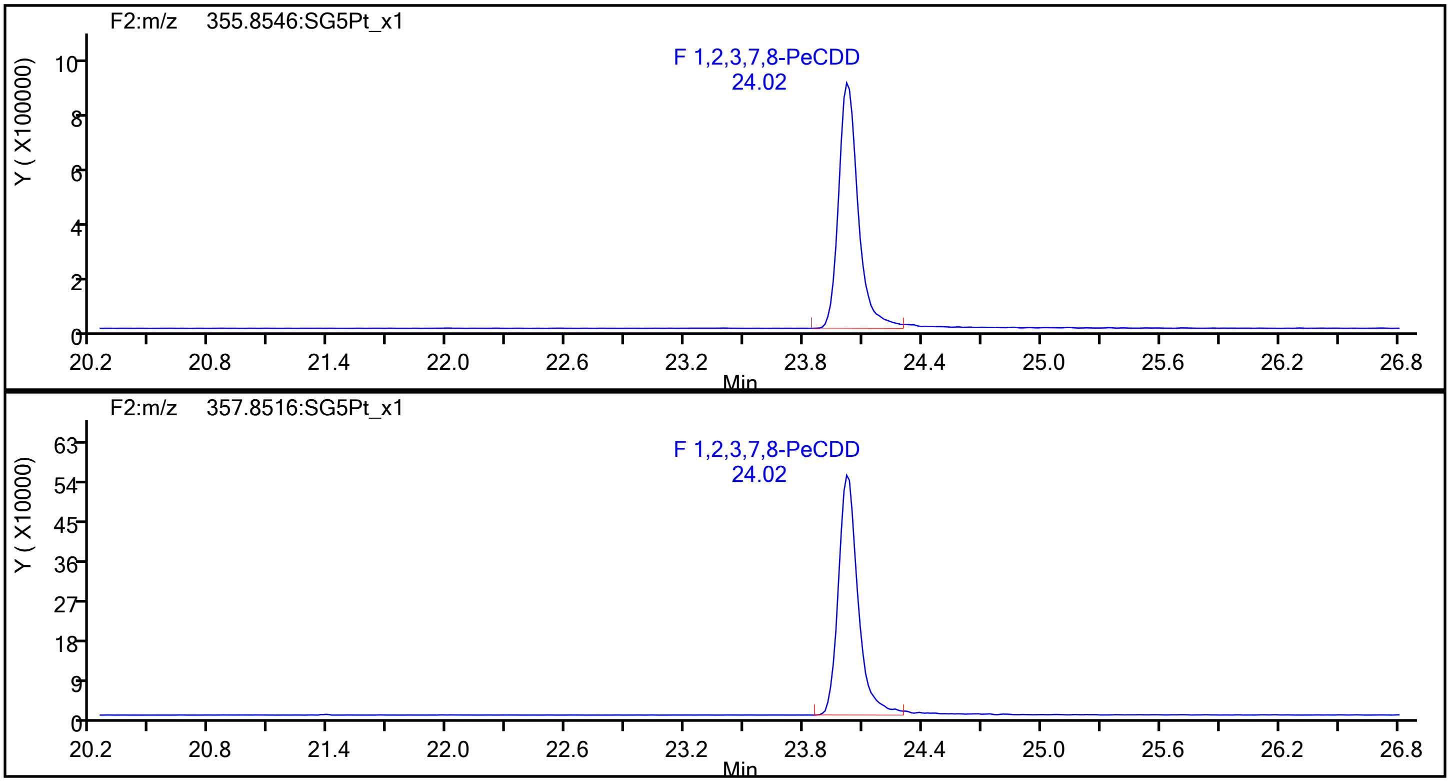

PeCDD Standards

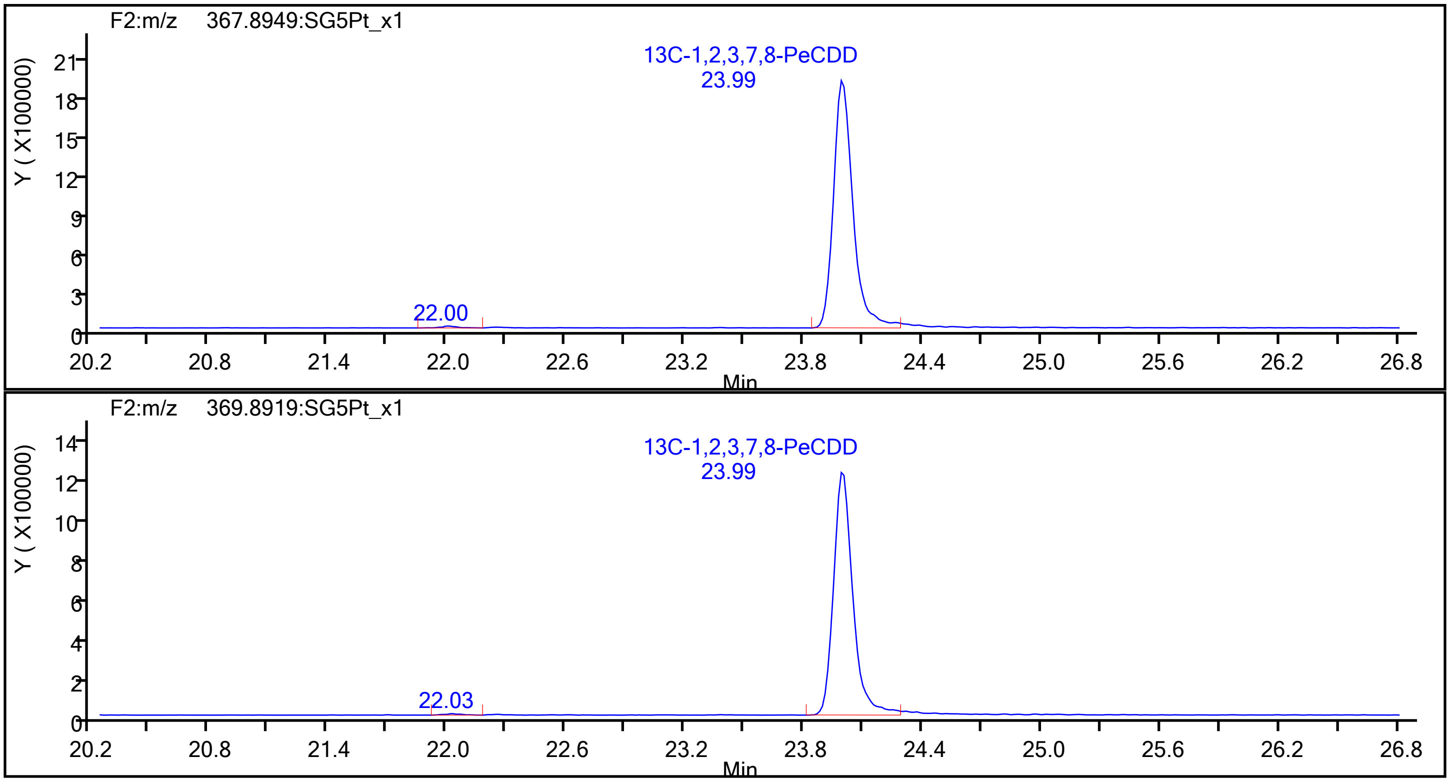

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

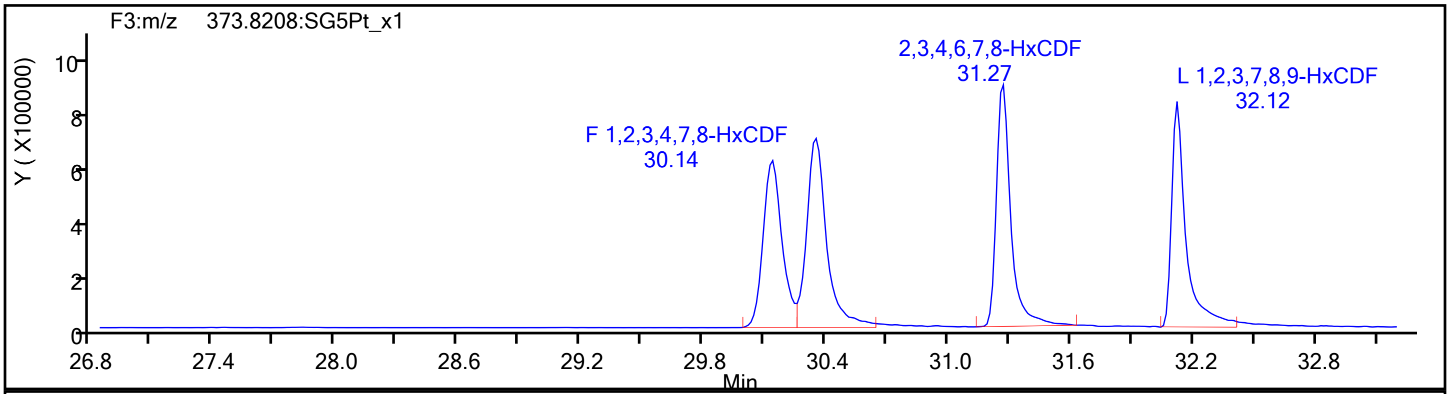

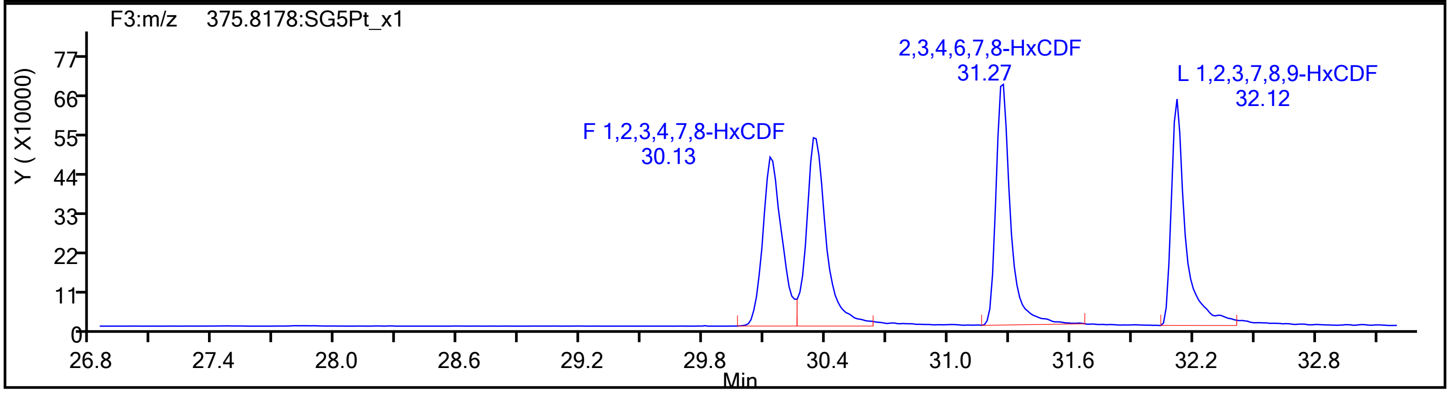

HxCDF Standards

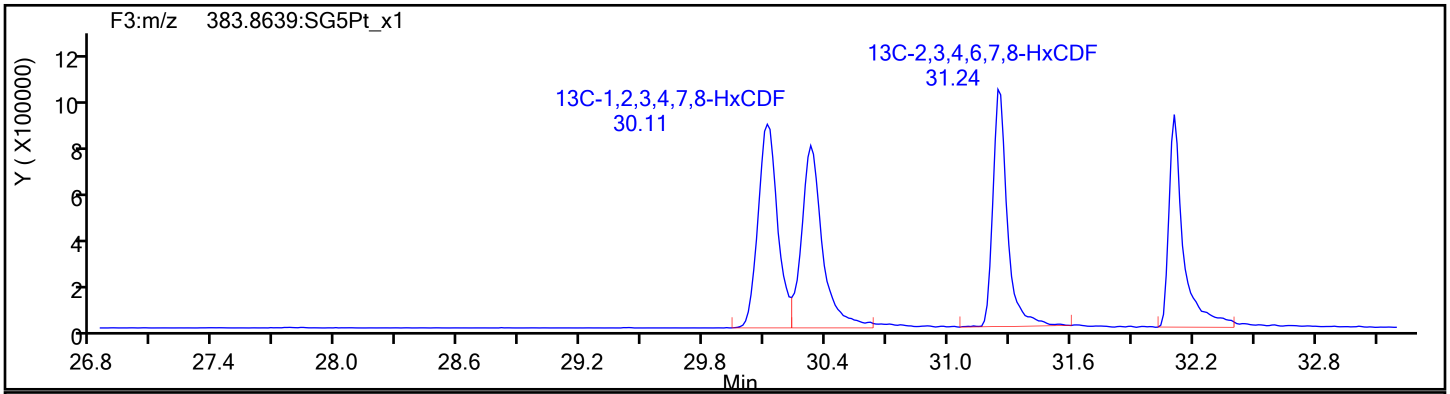

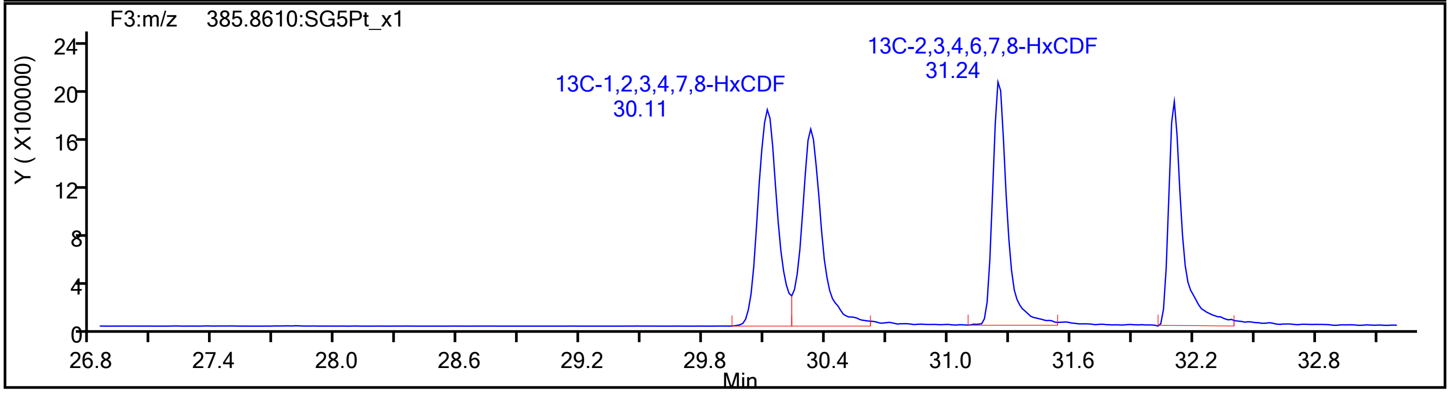

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDF

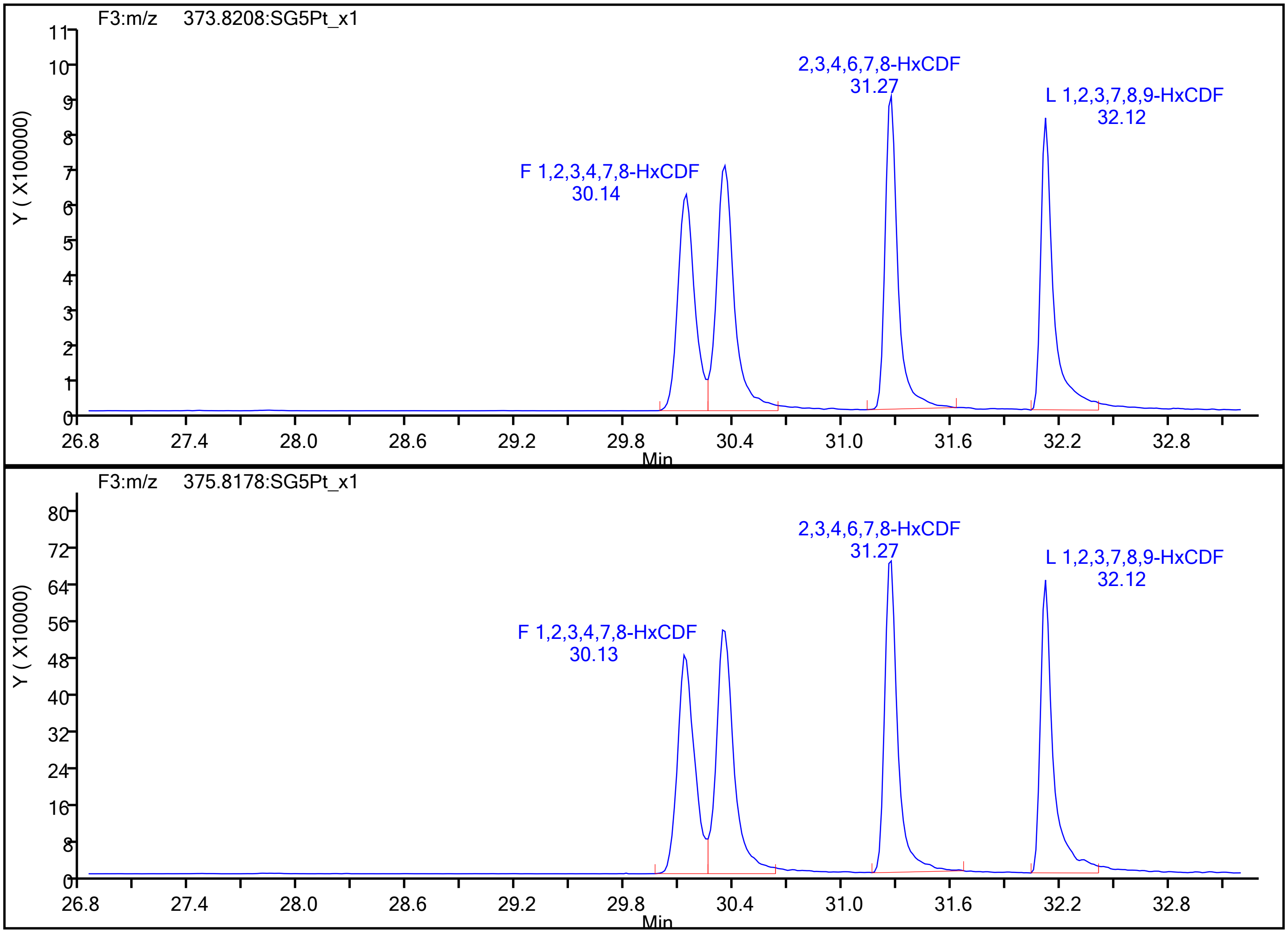

HxCDF Interference Mass

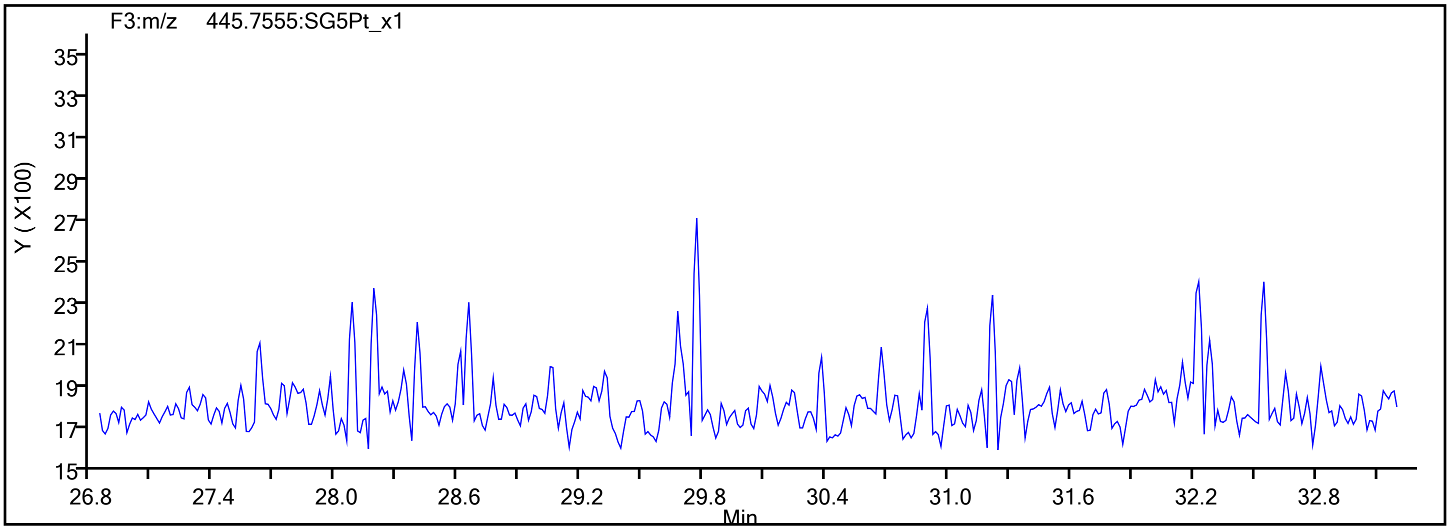

Report Date: 26-Jun-2020 13:16:15 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HxCDD

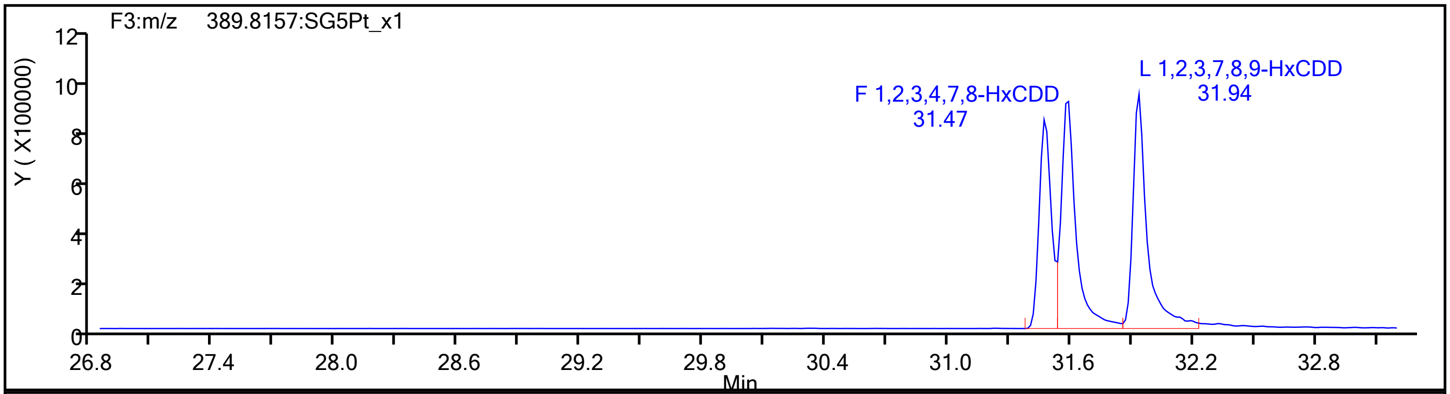

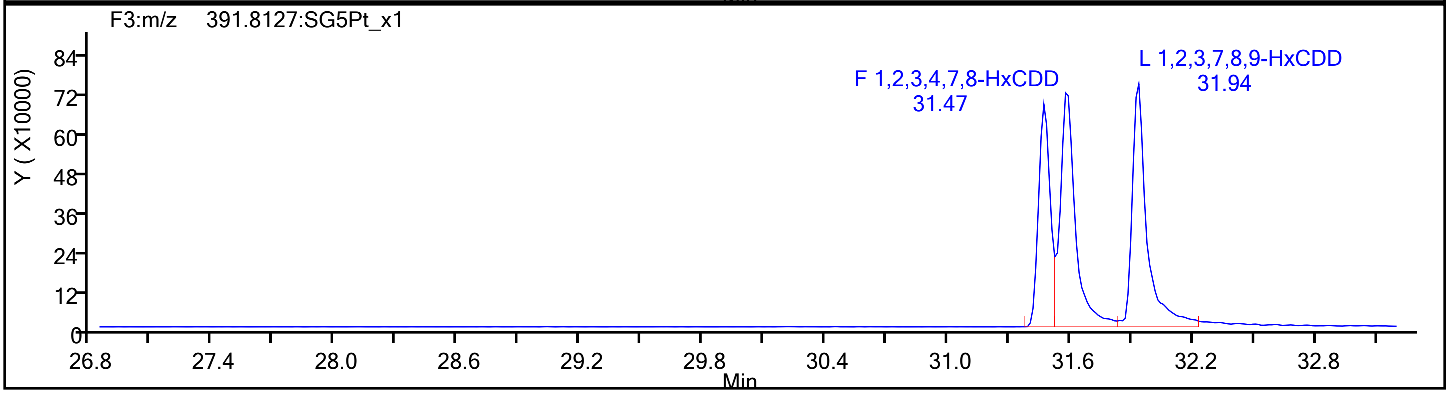

HxCDD Standards

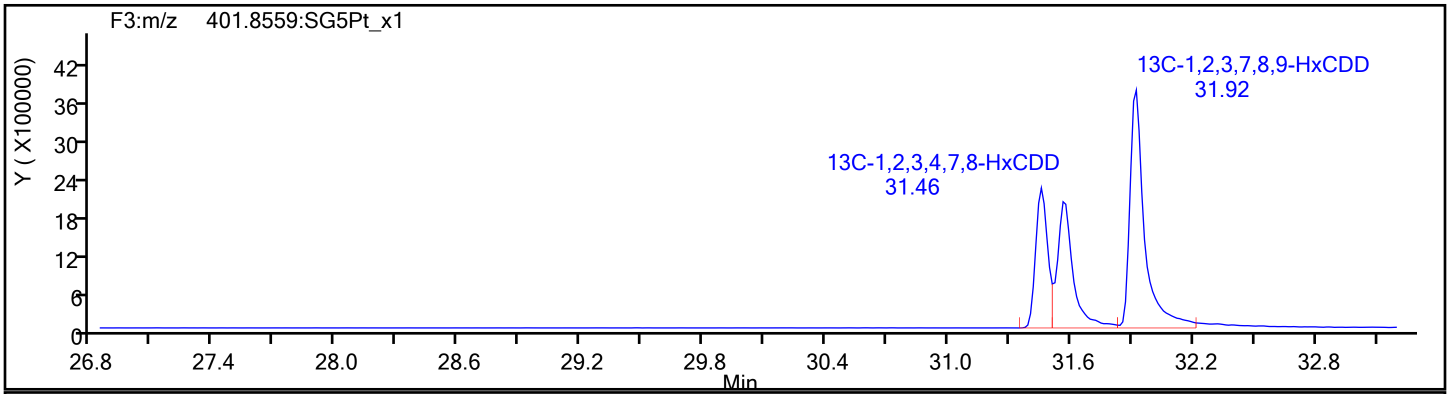

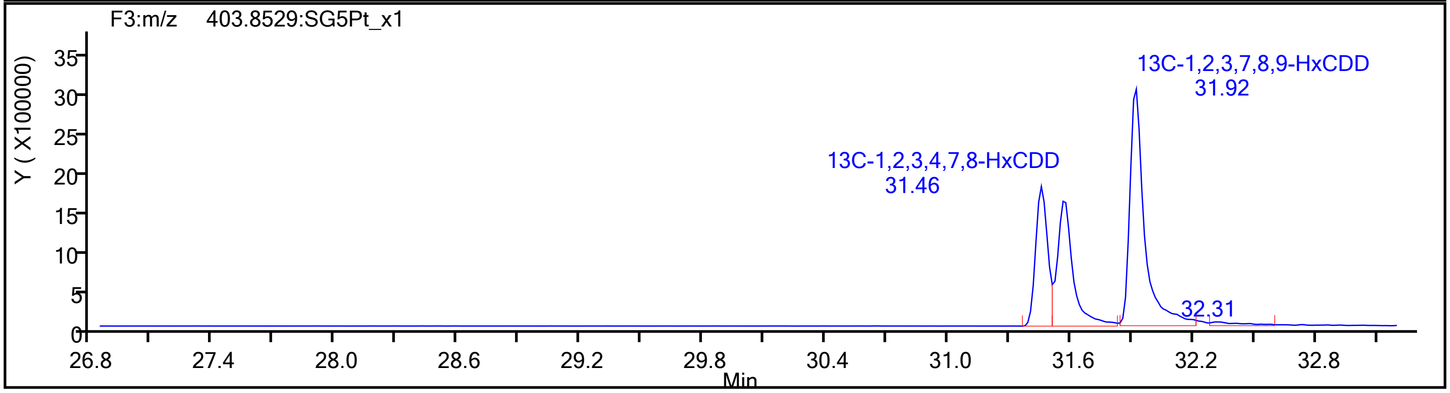

Report Date: 26-Jun-2020 13:16:16 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

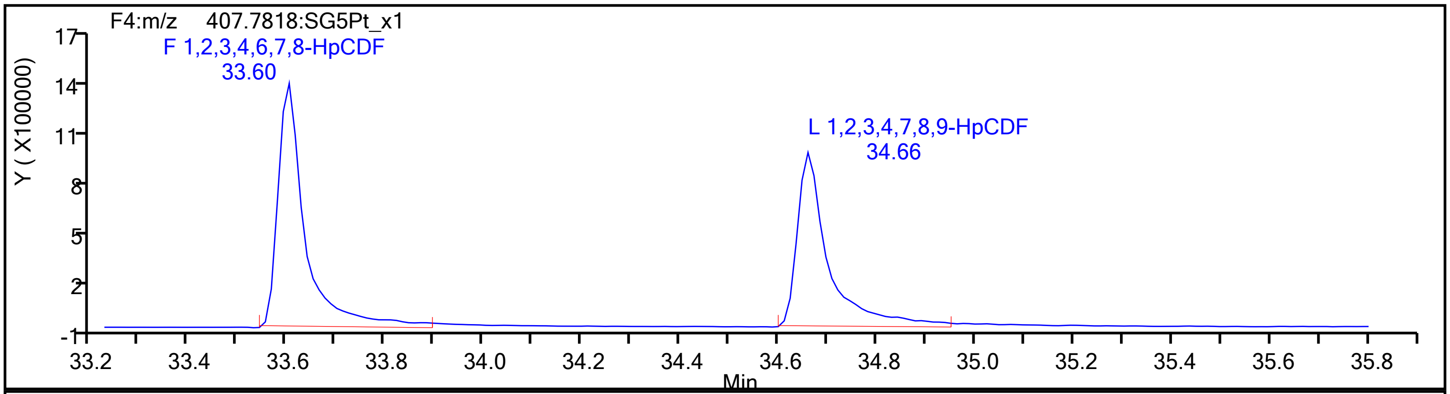

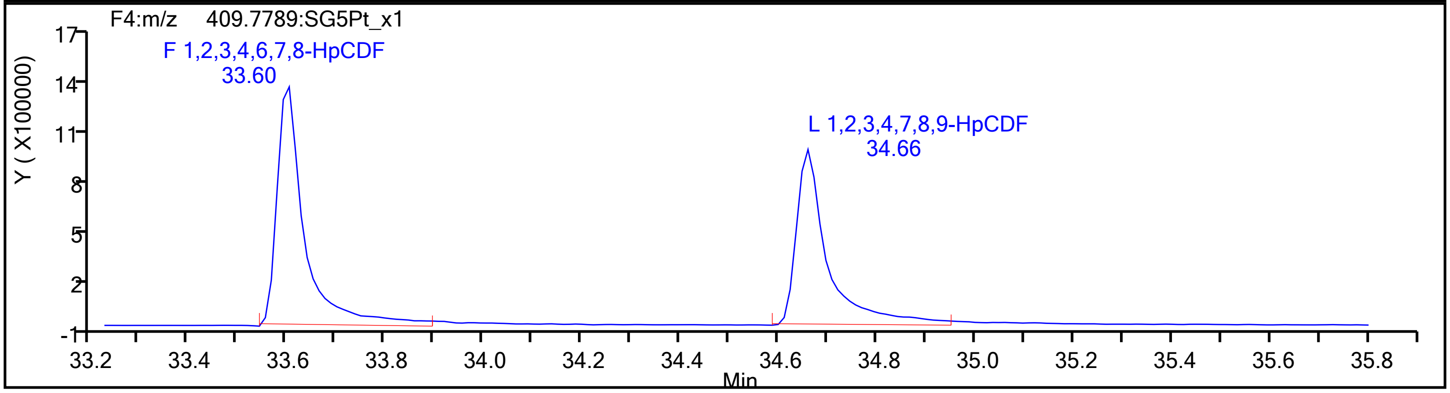

HpCDF Standards

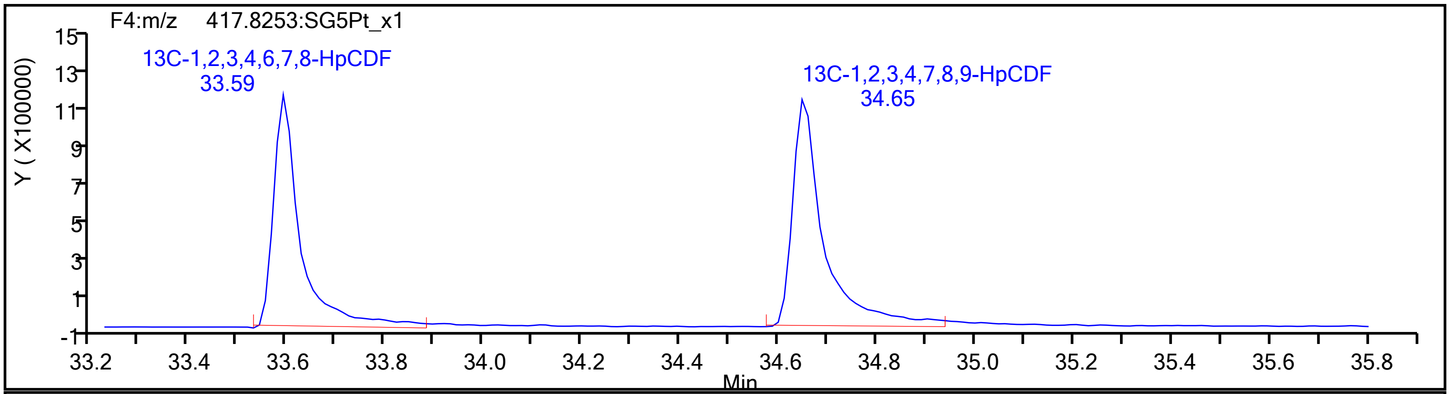

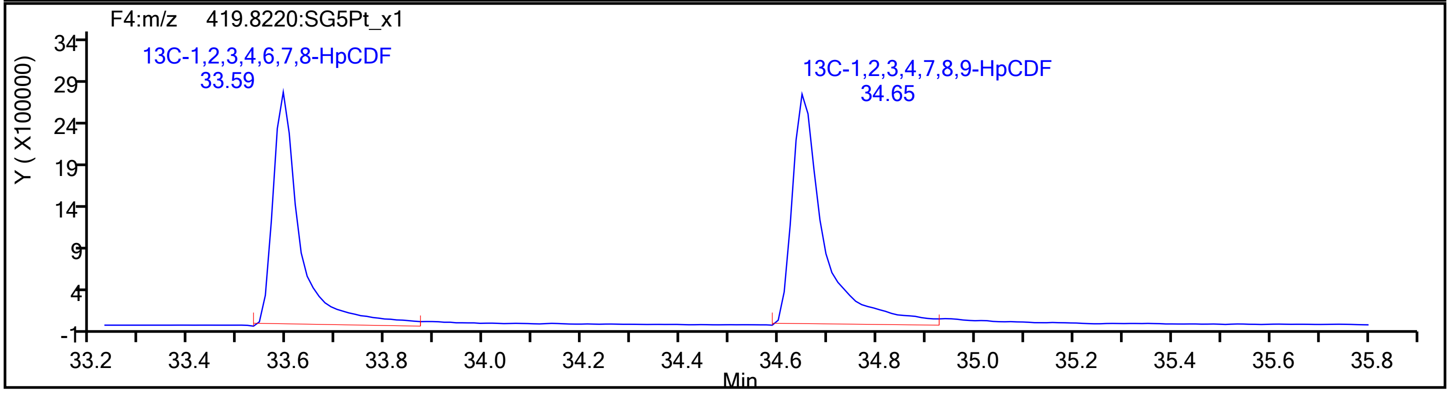

Report Date: 26-Jun-2020 13:16:16 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDF

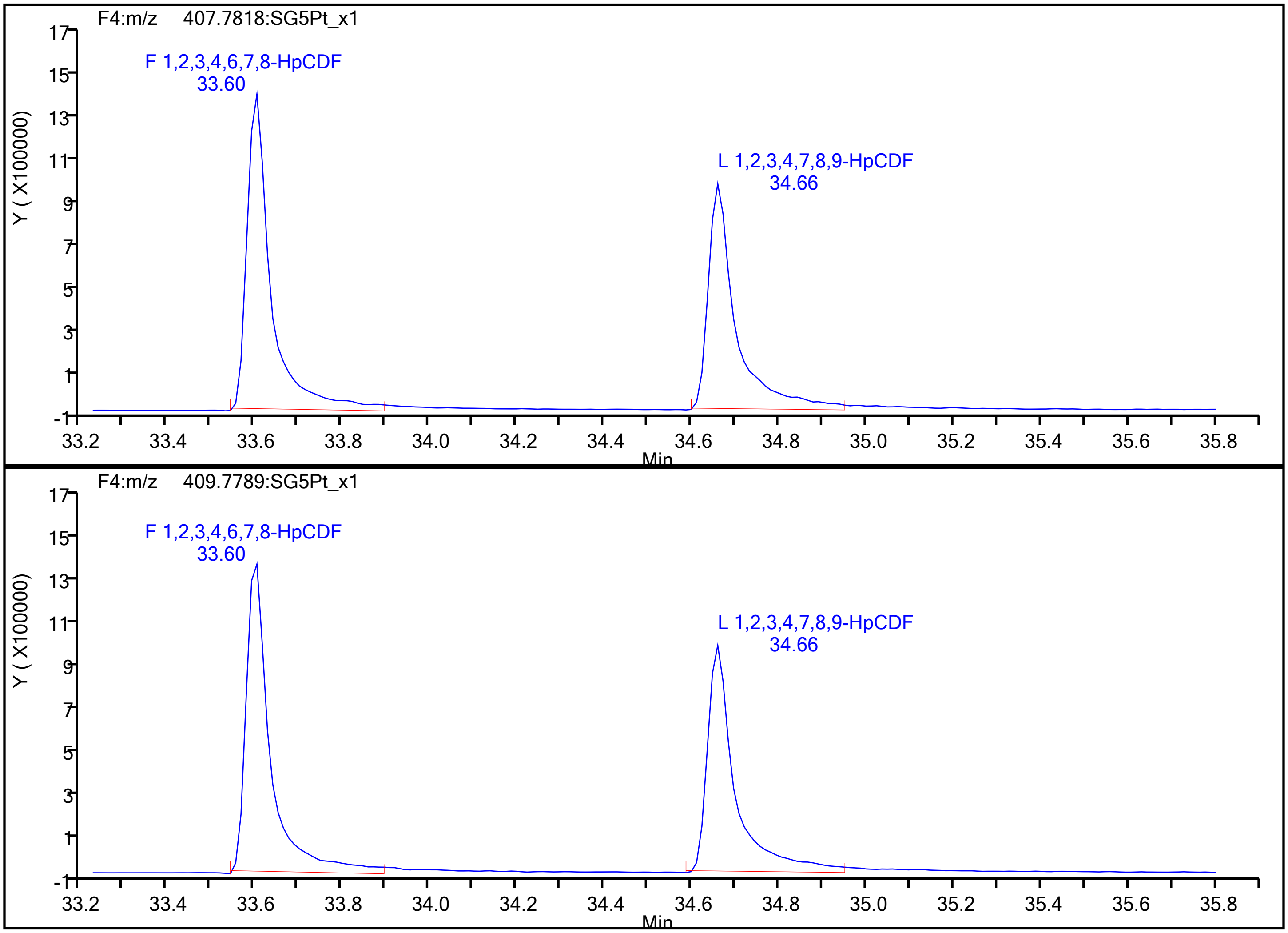

HpCDF Interference Mass

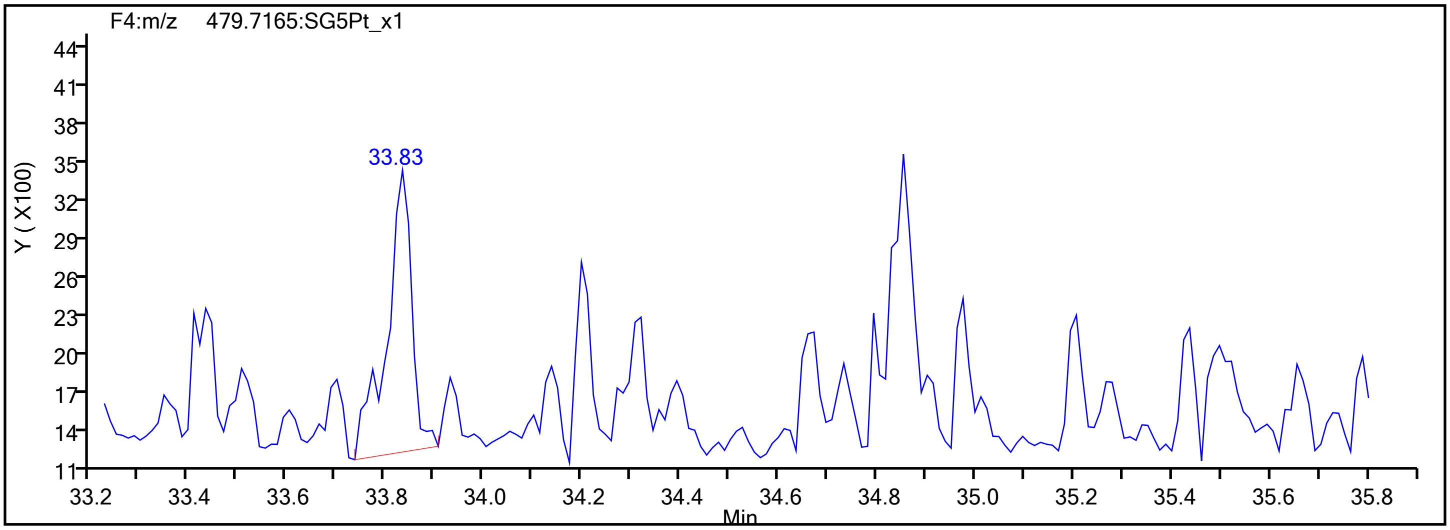

Report Date: 26-Jun-2020 13:16:16 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

HpCDD

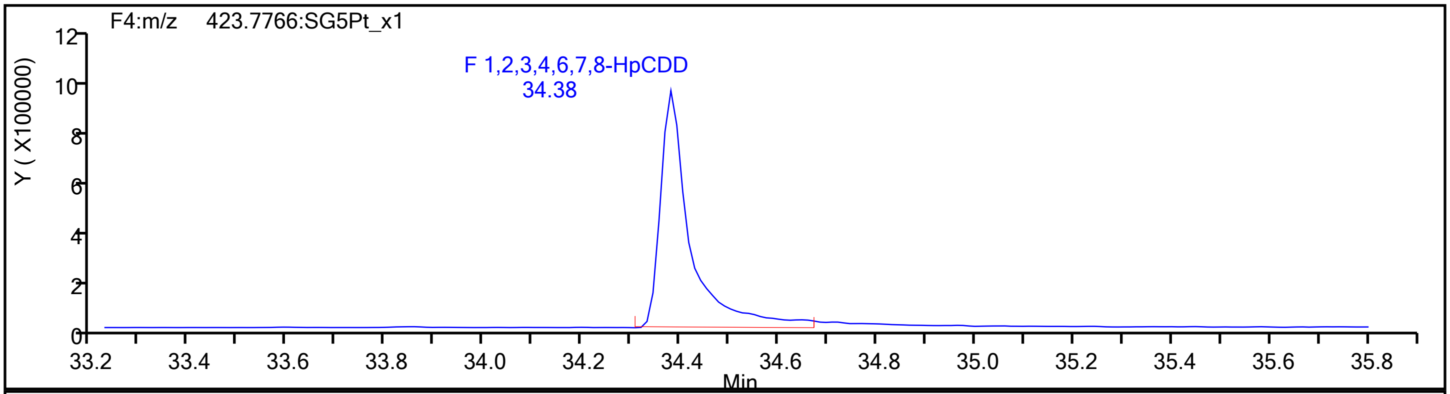

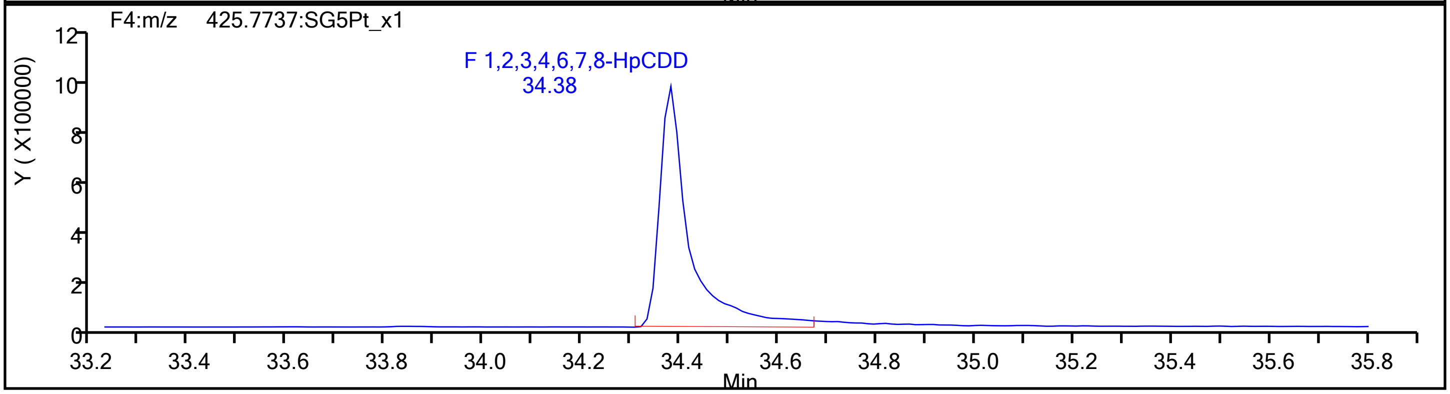

HpCDD Standards

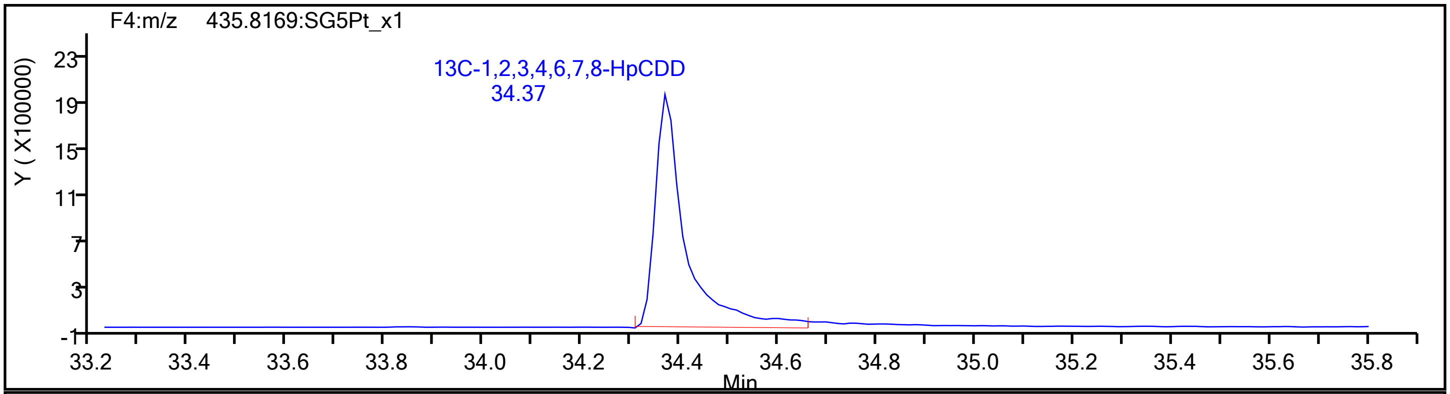

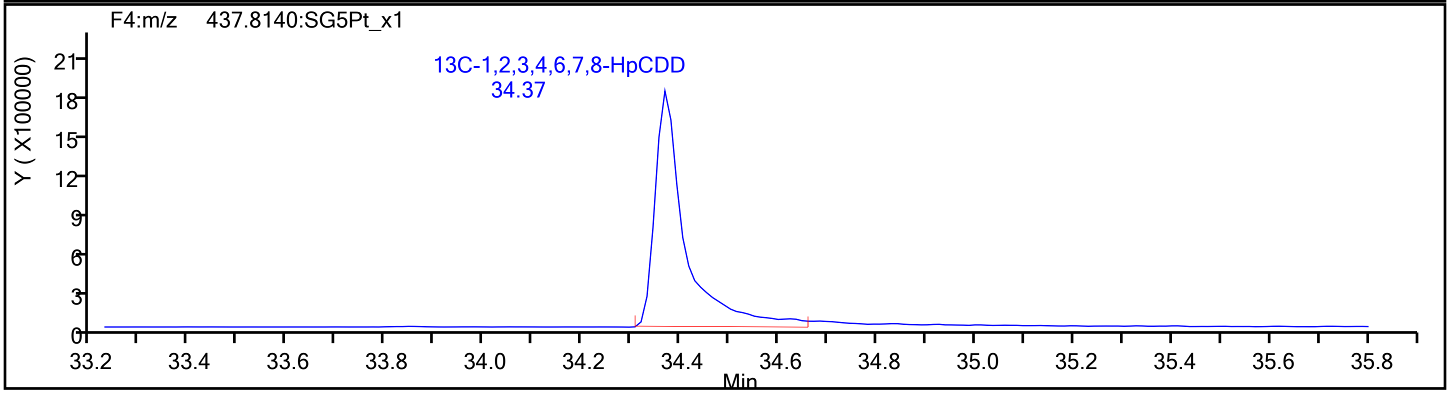

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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

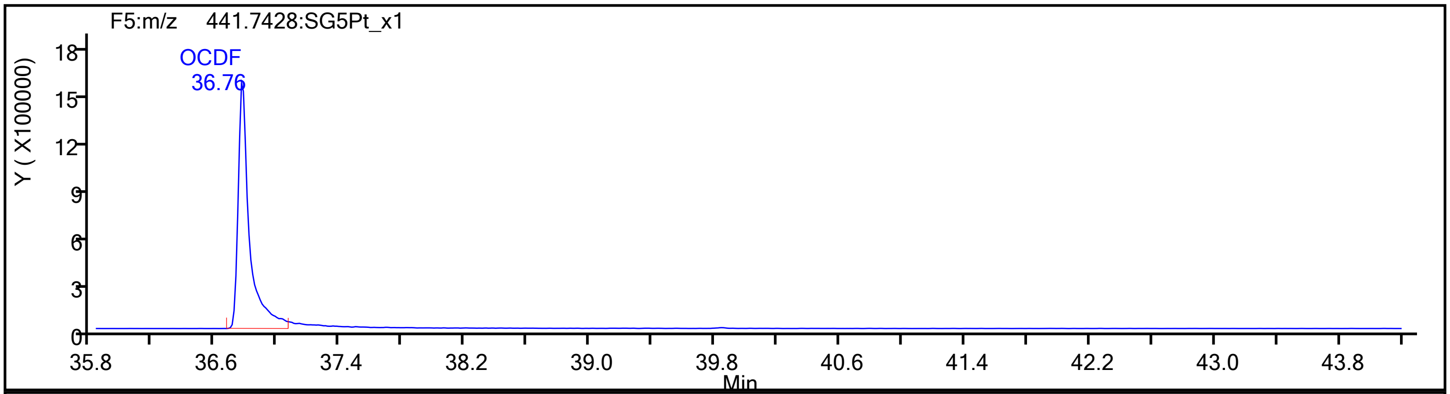

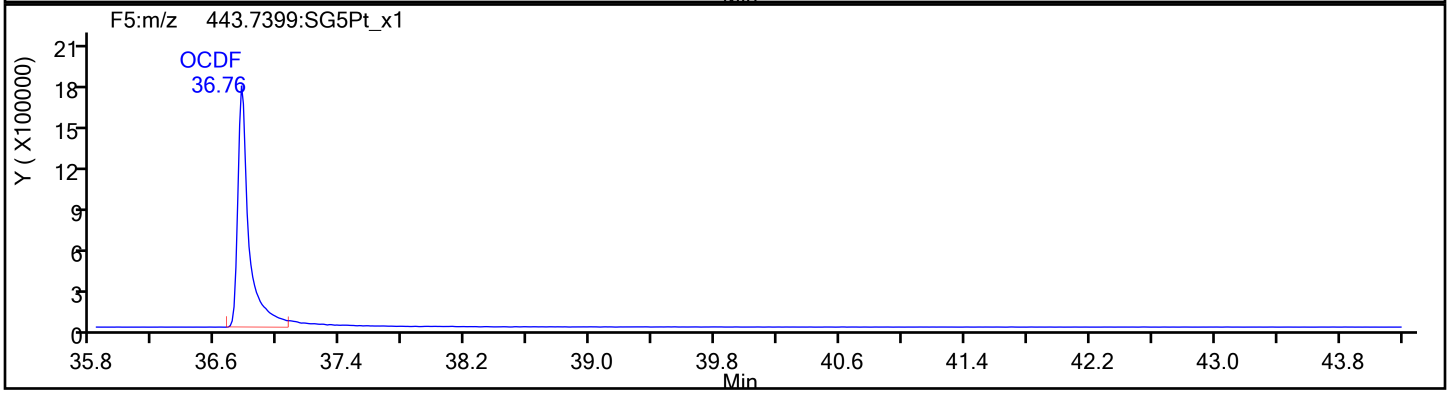

OCDF Standards

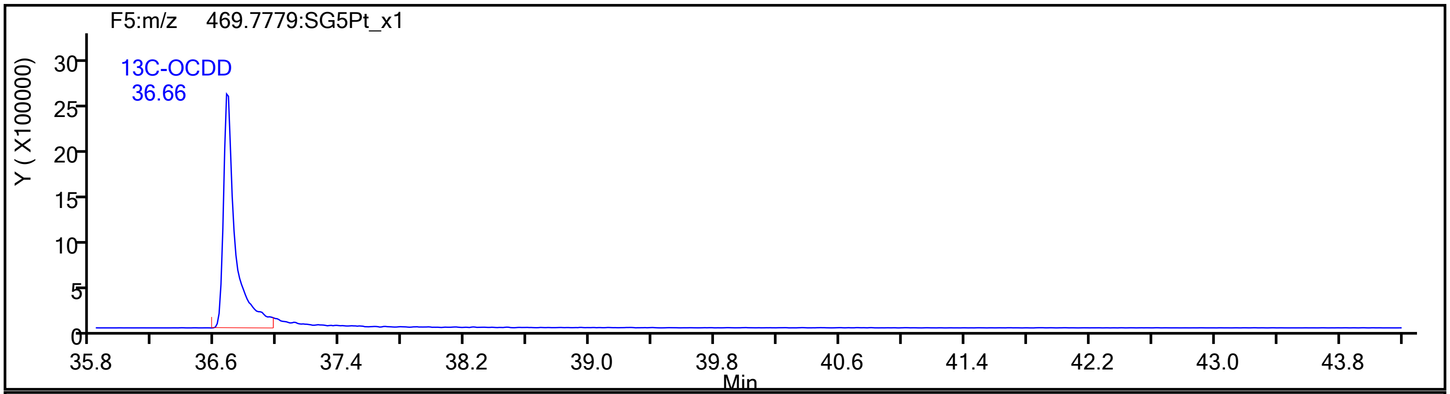

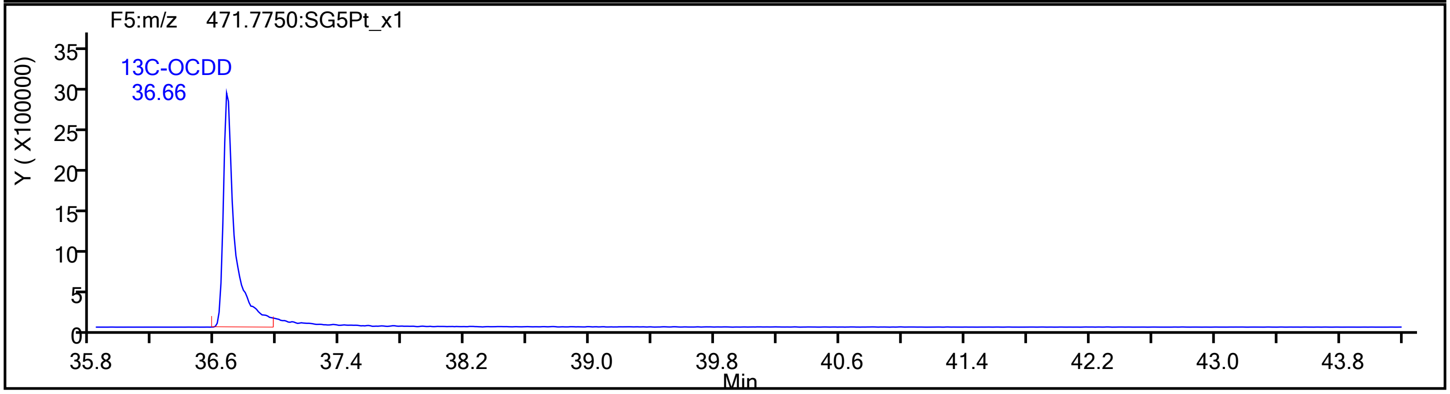

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

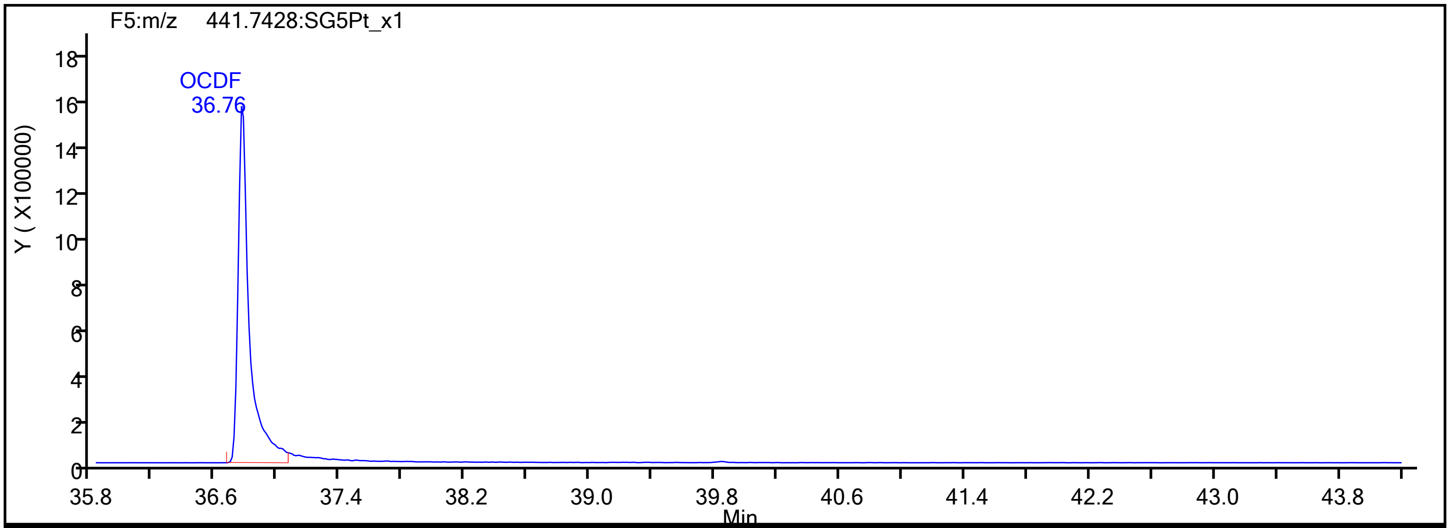

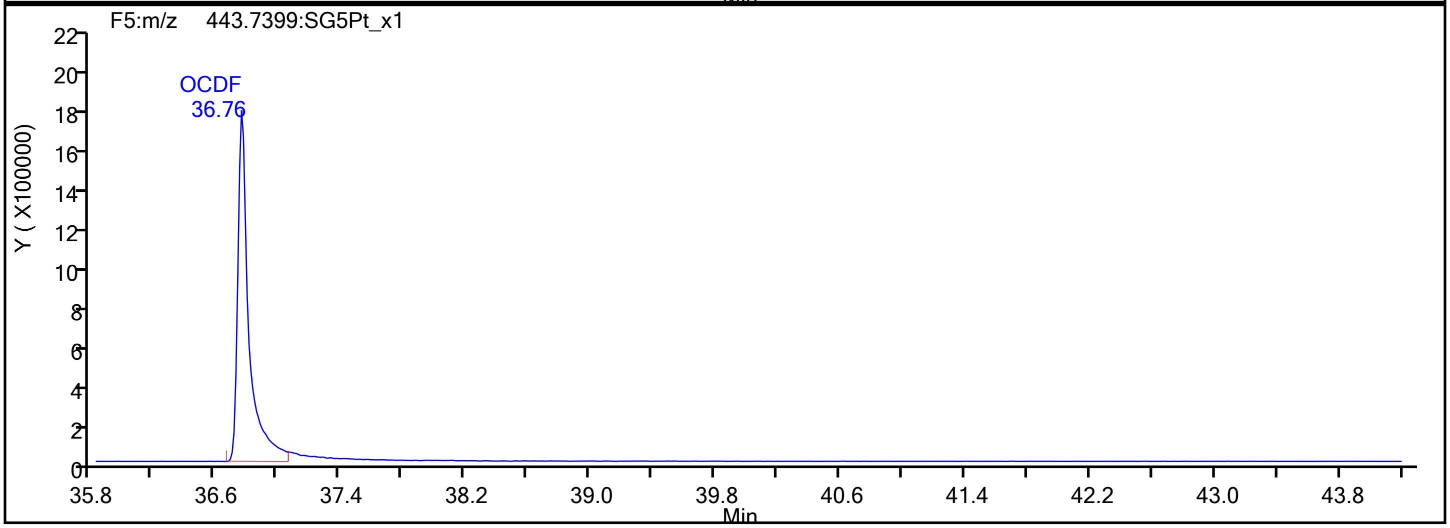

OCDF Interference Mass

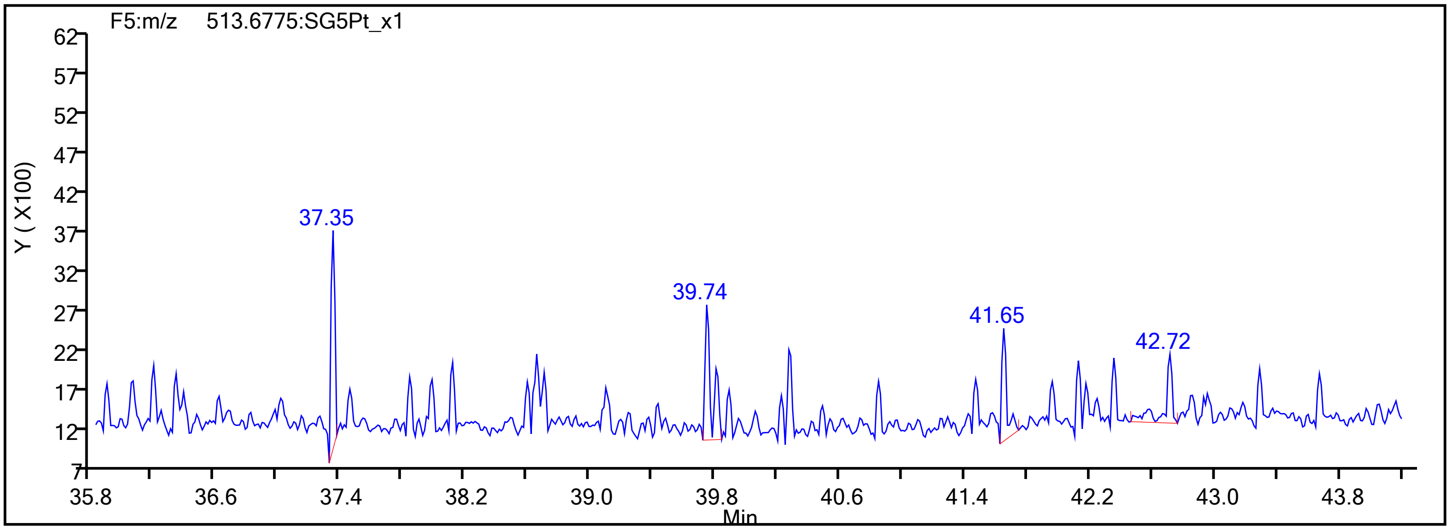

Report Date: 26-Jun-2020 13:16:16 Chrom Revision: 2.3 21-Jun-2020 18:30:46
Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
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Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

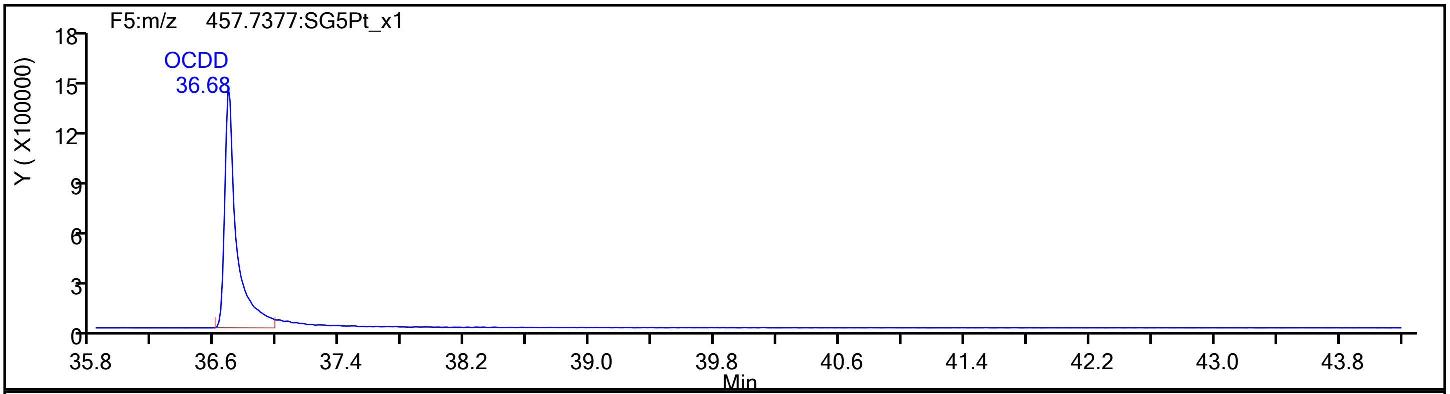

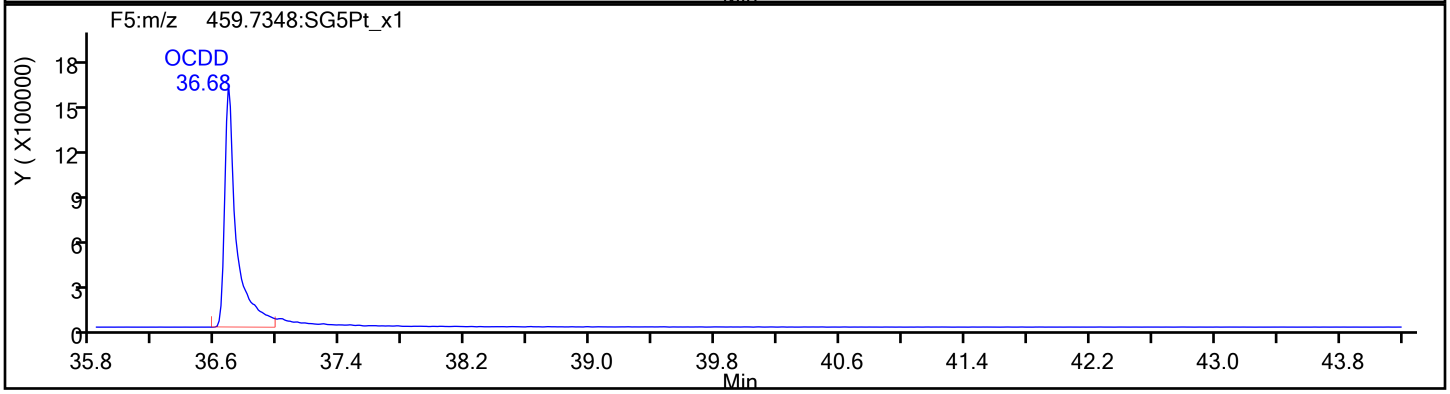

OCDD Standards

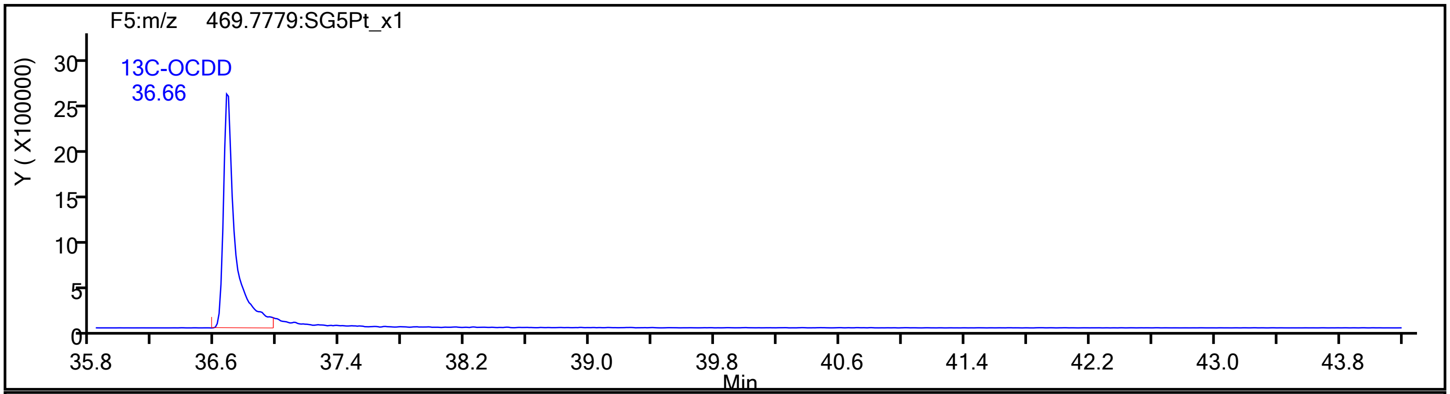

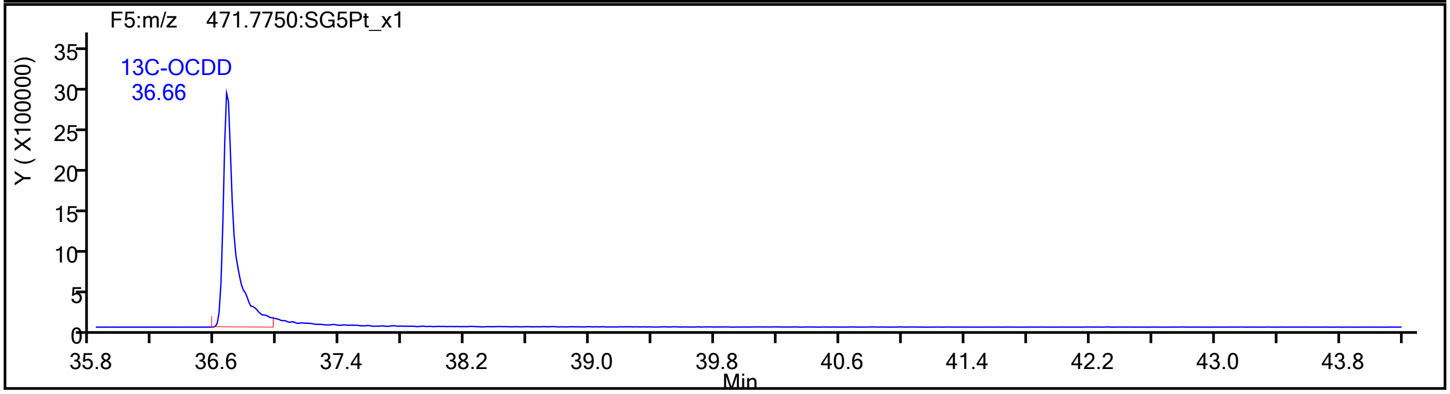

Report Date: 26-Jun-2020 13:16:16 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d
Injection Date: 26-Jun-2020 00:40:53
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: AFEFF10
Worklist#: 389621
Sample Line#: 10
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Column Dia: 0.32 mm

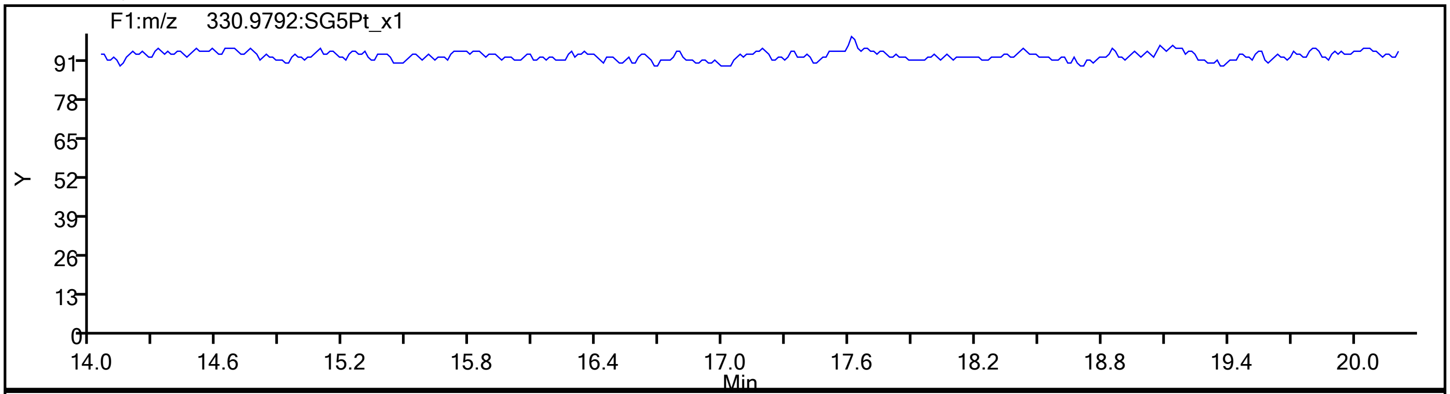

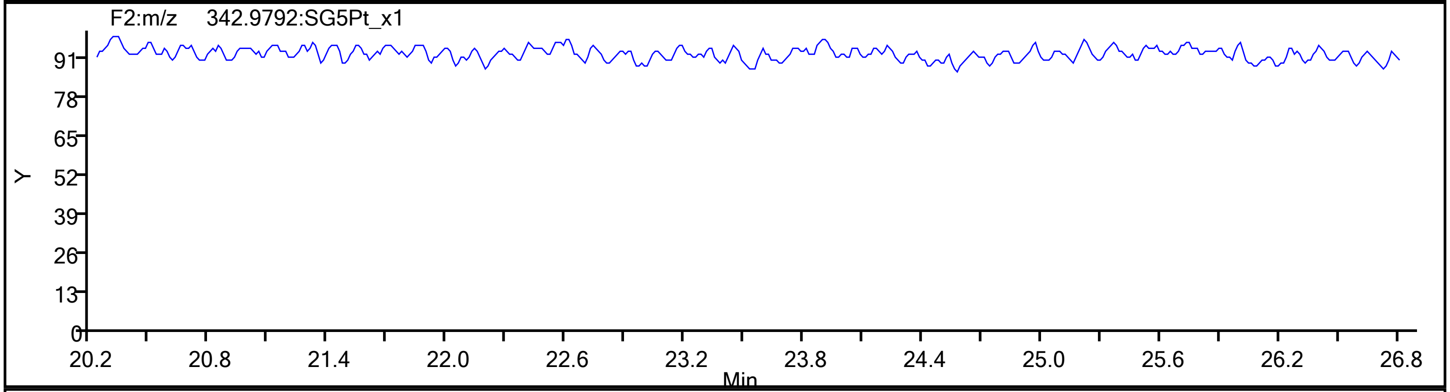

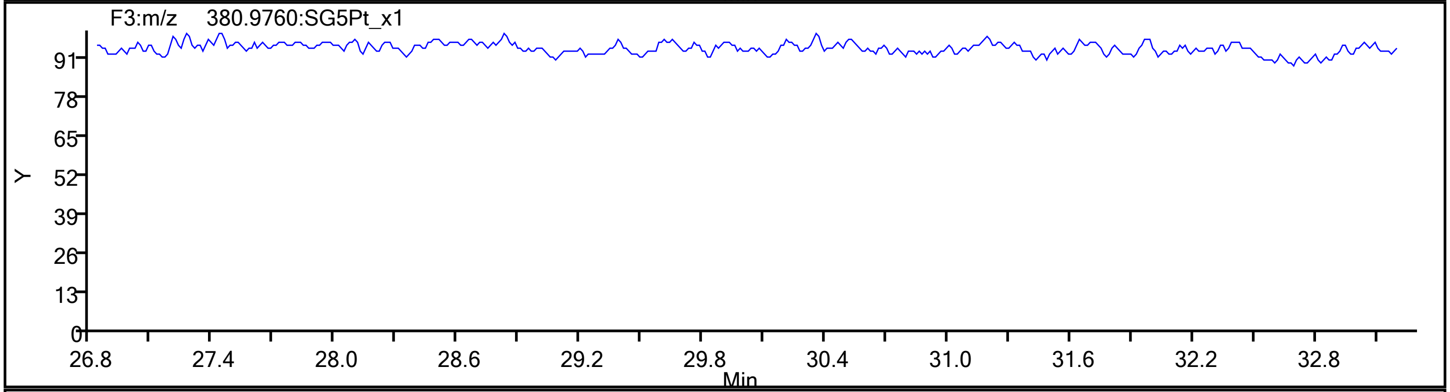

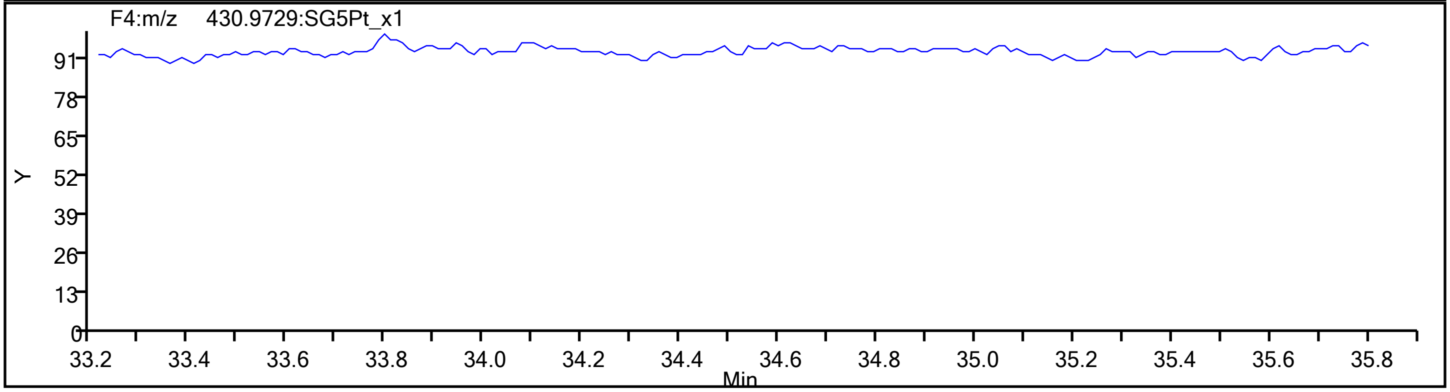

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_10.d		
Injection Date:	26-Jun-2020 00:40:53	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	10
Column Type:	DB-5	Column Dia:	0.32 mm

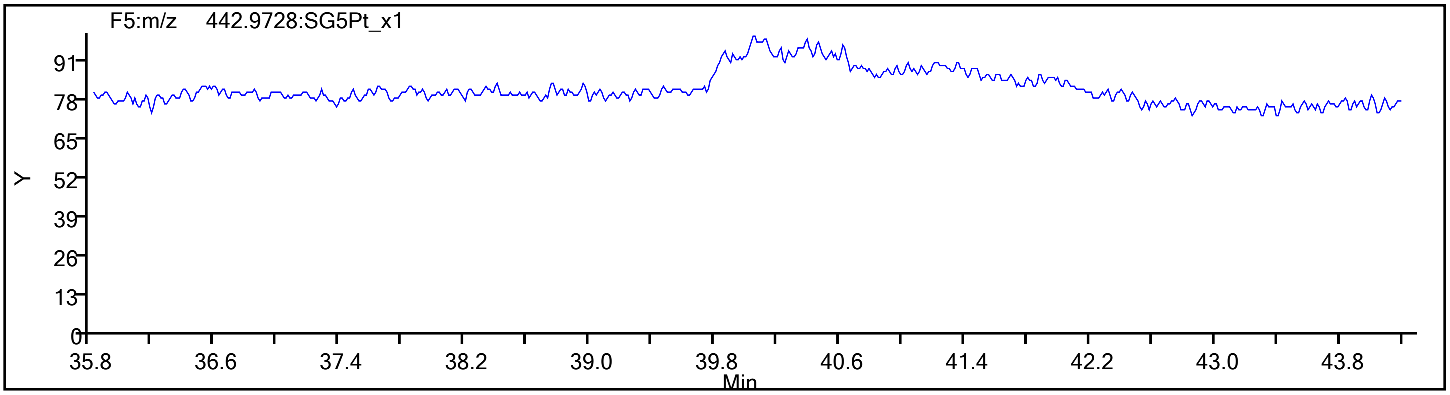

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 600-205895-1
SDG No.:
Client Sample ID: AFEFF10 MSD
Lab Sample ID: 600-205895-3 MSD
Matrix: Water
Lab File ID: 25JN2010D5_11.d
Analysis Method: 1613B
Date Collected: 05/28/2020 16:00
Extract. Method: 1613B
Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1019.3(mL)
Date Analyzed: 06/26/2020 01:26
Con. Extract Vol.: 20.0(uL)
Dilution Factor: 1
Injection Volume: 2(uL)
Level: (low/med) Low
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621
Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	182		9.8	1.1
51207-31-9	2,3,7,8-TCDF	220		9.8	0.94
40321-76-4	1,2,3,7,8-PeCDD	918		49	2.4
57117-41-6	1,2,3,7,8-PeCDF	1030		49	6.2
57117-31-4	2,3,4,7,8-PeCDF	882		49	5.5
39227-28-6	1,2,3,4,7,8-HxCDD	900		49	6.6
57653-85-7	1,2,3,6,7,8-HxCDD	970		49	6.6
19408-74-3	1,2,3,7,8,9-HxCDD	1020		49	6.0
70648-26-9	1,2,3,4,7,8-HxCDF	968		49	16
57117-44-9	1,2,3,6,7,8-HxCDF	1160		49	17
72918-21-9	1,2,3,7,8,9-HxCDF	1150		49	14
60851-34-5	2,3,4,6,7,8-HxCDF	1130		49	13
35822-46-9	1,2,3,4,6,7,8-HpCDD	984		49	13
67562-39-4	1,2,3,4,6,7,8-HpCDF	1050		49	29
55673-89-7	1,2,3,4,7,8,9-HpCDF	898		49	35
3268-87-9	OCDD	2110		98	7.4
39001-02-0	OCDF	1920		98	6.2
41903-57-5	Total TCDD	182		9.8	1.1
30402-14-3	Total TCDF	222		9.8	0.94
36088-22-9	Total PeCDD	918		49	2.4
30402-15-4	Total PeCDF	1910		49	5.8
34465-46-8	Total HxCDD	2890		49	6.4
55684-94-1	Total HxCDF	4410		49	15
37871-00-4	Total HpCDD	984		49	13
38998-75-3	Total HpCDF	1940		49	32

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento	Job No.: 600-205895-1
SDG No.:	
Client Sample ID: AFEFF10 MSD	Lab Sample ID: 600-205895-3 MSD
Matrix: Water	Lab File ID: 25JN2010D5_11.d
Analysis Method: 1613B	Date Collected: 05/28/2020 16:00
Extract. Method: 1613B	Date Extracted: 06/24/2020 12:40
Sample wt/vol: 1019.3(mL)	Date Analyzed: 06/26/2020 01:26
Con. Extract Vol.: 20.0(uL)	Dilution Factor: 1
Injection Volume: 2(uL)	Level: (low/med) Low
% Moisture:	GPC Cleanup:(Y/N) N
Analysis Batch No.: 389621	Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	50		25-164
89059-46-1	13C-2,3,7,8-TCDF	43		24-169
109719-79-1	13C-1,2,3,7,8-PeCDD	48		25-181
109719-77-9	13C-1,2,3,7,8-PeCDF	41		24-185
116843-02-8	13C-2,3,4,7,8-PeCDF	48		21-178
109719-80-4	13C-1,2,3,4,7,8-HxCDD	47		32-141
109719-81-5	13C-1,2,3,6,7,8-HxCDD	57		28-130
114423-98-2	13C-1,2,3,4,7,8-HxCDF	48		26-152
116843-03-9	13C-1,2,3,6,7,8-HxCDF	46		26-123
116843-04-0	13C-1,2,3,7,8,9-HxCDF	44		29-147
116843-05-1	13C-2,3,4,6,7,8-HxCDF	44		28-136
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	52		23-140
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	49		28-143
109719-94-0	13C-1,2,3,4,7,8,9-HpCDF	55		26-138
114423-97-1	13C-OCDD	59		17-157

CAS NO.	SURROGATE	%REC	Q	LIMITS
85508-50-5	37Cl4-2,3,7,8-TCDD	64		35-197

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d
Lims ID: 600-205895-B-3-B MSD
Client ID: AFEFF10
Sample Type: MSD
Inject. Date: 26-Jun-2020 01:26:03 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-3-B MSD 600-205895-B-3-B MSD
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:11:13

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	17.581	56455231	0.78	3.6E+05	100.0	100.0				a
D 13C-2,3,7,8-TCDF	17.082	29153758	0.75	1.1970	43.1	43.1	0.1243	0.1243	43.14	
2,3,7,8-TCDF	17.097	2505219	0.74	0.7672	11.2	11.2	0.0480	0.0480	112	
A Non-2,3,7,8-sub-TCDF	16.810	21746	0.77	0.7672	0.1313	0.0972	0.0480	0.0972	0.00	RQ
S Total TCDF					11.3	11.3	0.0480	0.0480		RQ
D 13C-2,3,7,8-TCDD	17.763	24905096	0.77	0.8773	50.3	50.3	0.2061	0.2061	50.28	
2,3,7,8-TCDD	17.793	2315720	0.79	1.0000	9.298	9.298	0.0550	0.0550	92.98	
$ 37Cl4-2,3,7,8-TCDD	17.793	13828332		0.9515	25.7	25.7	0.0354	0.0354	64.36	
A Non-2,3,7,8-sub-TCDD	17.256						0.0550	0.0550		
S Total TCDD					9.298	9.298	0.0550	0.0550		
D 13C-1,2,3,7,8-PeCDF	21.985	22949686	1.56	0.9904	41.0	41.0	0.1724	0.1724	41.04	
1,2,3,7,8-PeCDF	21.998	10853695	1.56	0.9019	52.4	52.4	0.3136	0.3136	105	
D 13C-2,3,4,7,8-PeCDF	23.280	29013557	1.59	1.0797	47.6	47.6	0.1581	0.1581	47.60	
2,3,4,7,8-PeCDF	23.308	10828239	1.53	0.8307	44.9	44.9	0.2804	0.2804	89.85	
A F1 PeCDFs	19.675						0.0346	0.0346		
A Non-2,3,7,8-sub-PeCDF	22.743						0.2949	0.2949		
S Total PeCDF					97.4	97.4	0.2970	0.2970		
D 13C-1,2,3,7,8-PeCDD	23.989	18787167	1.53	0.6904	48.2	48.2	0.0776	0.0776	48.20	
1,2,3,7,8-PeCDD	24.017	8920707	1.57	1.0145	46.8	46.8	0.1220	0.1220	93.61	
A Non-2,3,7,8-sub-PeCDD	22.953						0.1220	0.1220		
S Total PeCDD					46.8	46.8	0.1220	0.1220		
D 13C-1,2,3,4,7,8-HxCDF	30.113	16360249	0.49	0.9076	48.1	48.1	0.4836	0.4836	48.08	
1,2,3,4,7,8-HxCDF	30.126	6400001	1.21	0.7928	49.3	49.3	0.8380	0.8380	98.69	
D 13C-1,2,3,6,7,8-HxCDF	30.326	14877007	0.50	0.8671	45.8	45.8	0.5062	0.5062	45.77	
1,2,3,6,7,8-HxCDF	30.353	7561675	1.22	0.8592	59.2	59.2	0.8826	0.8826	118	
D 13C-2,3,4,6,7,8-HxCDF	31.244	13598242	0.49	0.8287	43.8	43.8	0.5297	0.5297	43.78	
2,3,4,6,7,8-HxCDF	31.258	6958566	1.23	0.8896	57.5	57.5	0.6646	0.6646	115	
D 13C-1,2,3,7,8,9-HxCDF	32.110	12112921	0.49	0.7391	43.7	43.7	0.5939	0.5939	43.72	
1,2,3,7,8,9-HxCDF	32.123	6372421	1.22	0.8941	58.8	58.8	0.7374	0.7374	118	
A Non-2,3,7,8-sub-HxCDF	29.847						0.7721	0.7721		
S Total HxCDF					224.9	224.9	0.7807	0.7807		

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,7,8,9-HxCDD	31.923	37486410	1.25	3E+05	100.0	100.0				
D 13C-1,2,3,4,7,8-HxCDD	31.458	14537718	1.27	0.8335	46.5	46.5	0.5450	0.5450	46.53	
1,2,3,4,7,8-HxCDD	31.471	5557107	1.25	0.8332	45.9	45.9	0.3360	0.3360	91.76	
D 13C-1,2,3,6,7,8-HxCDD	31.564	17559249	1.26	0.8228	56.9	56.9	0.5521	0.5521	56.93	
1,2,3,6,7,8-HxCDD	31.591	7766751	1.23	0.8944	49.5	49.5	0.3355	0.3355	98.91	
1,2,3,7,8,9-HxCDD	31.937	7882718	1.23	0.9449	52.0	52.0	0.3065	0.3065	104	
A Non-2,3,7,8-sub-HxCDD	30.499						0.3251	0.3251		
S Total HxCDD					147.3	147.3	0.3260	0.3260		
D 13C-1,2,3,4,6,7,8-HpCDF	33.590	12944509	0.43	0.7009	49.3	49.3	1.837	1.837	49.27	
1,2,3,4,6,7,8-HpCDF	33.602	9175311	1.01	1.3295	53.3	53.3	1.453	1.453	107	
D 13C-1,2,3,4,7,8,9-HpCDF	34.647	14887613	0.42	0.7244	54.8	54.8	1.777	1.777	54.83	
1,2,3,4,7,8,9-HpCDF	34.659	7359092	1.02	1.0803	45.8	45.8	1.787	1.787	91.51	
A Non-2,3,7,8-sub-HpCDF	34.143						1.603	1.603		
S Total HpCDF					99.1	99.1	1.620	1.620		
D 13C-1,2,3,4,6,7,8-HpCDD	34.368	13810187	1.06	0.7026	52.4	52.4	0.7677	0.7677	52.44	
1,2,3,4,6,7,8-HpCDD	34.380	6952449	1.04	1.0040	50.1	50.1	0.6750	0.6750	100	
A Non-2,3,7,8-sub-HpCDD	34.119						0.6750	0.6750		
S Total HpCDD					50.1	50.1	0.6750	0.6750		
D 13C-OCDD	36.664	27236081	0.92	0.6184	117.5	117.5	0.3281	0.3281	58.75	
OCDF	36.760	14728657	0.89	1.1076	97.6	97.6	0.3182	0.3182	97.65	
OCDD	36.676	14896599	0.95	1.0175	107.5	107.5	0.3753	0.3753	108	
1,3,6,8-TCDF	14.739						0.0	0.0		
2,3,4,7-TCDF	14.739						0.0	0.0		
1,3,6,8-TCDD	15.616	26134	0.74							
1,2,3,7-TCDD	17.687						0.0	0.0		
1,2,3,9-TCDD	17.959						0.0	0.0		
1,2,3,9-TCDF	17.959						0.0	0.0		
1,2,8,9-TCDF	18.882						0.0	0.0		
1,2,8,9-TCDD	18.882						0.0	0.0		
1,3,4,6,8-PeCDF	19.169						0.0	0.0		
1,2,4,7,9-PeCDD	20.894						0.0	0.0		
1,2,3,8,9-PeCDD	25.012						0.0	0.0		
1,2,3,8,9-PeCDF	25.230						0.0	0.0		
1,2,3,4,6,8-HxCDF	27.465						0.0	0.0		
1,2,4,6,7,9-HxCDD	29.008						0.0	0.0		
1,2,3,4,6,7-HxCDD	31.897						0.0	0.0		U
1,2,3,4,8,9-HxCDF	32.229						0.0	0.0		
1,2,3,4,6,7,9-HpCDD	33.845						0.0	0.0		U
1,2,3,4,6,7,9-HpCDF	33.931						0.0	0.0		U
1,2,3,8-TCDD	0.0						0.0	0.0		
1,3,7,9-TCDD	0.0						0.0	0.0		
1,2,3,4,7-PeCDD	0.0						0.0	0.0		
1,4,7,8-TCDD	0.0						0.0	0.0		

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Review Flags
 U - Marked Undetected
 a - User Assigned ID

Report Date: 26-Jun-2020 13:16:17 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d
Lims ID: 600-205895-B-3-B MSD
Client ID: AFEFF10
Sample Type: MSD
Inject. Date: 26-Jun-2020 01:26:03 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 600-205895-B-3-B MSD 600-205895-B-3-B MSD
Misc. Info.: 25JN2010D5
Operator ID: AJS Instrument ID: 10D5

Method: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\Dioxin_10D5.m
Limit Group: HR - 1613B - ICAL
Last Update: 26-Jun-2020 13:15:56 Calib Date: 05-Mar-2020 20:05:51
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\10D5\20200305-92257.b\05MR20A10D5_7.d

Column 1 : DB-5 (0.32 mm) Det: F1:HRSIR
Process Host: CTX1061

First Level Reviewer: arghestanis Date: 26-Jun-2020 13:11:13

Signal	RT (min.)	Exp RT (min.)	Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD											a
331.9368	17.581	17.581	0		24802180	6061522	4435	11087	1367		a
333.9339	17.581	17.581	0		31653051	7751218	5553	13882	1396	0.78(0.65-0.89)	
13C-2,3,7,8-TCDF											
315.9419	17.082	17.082	0	0.972	12509581	2968916	4207	10517	706		
317.9389	17.082	17.082	0	0.972	16644177	3934357	4013	10032	980	0.75(0.65-0.89)	
2,3,7,8-TCDF											
303.9016	17.097	17.097	0	1.001	1064656	247256	353	882	700		
305.8987	17.097	17.097	0	1.001	1440563	337233	663	1657	509	0.74(0.65-0.89)	
A Non-2,3,7,8-sub-TCDF											RQ
303.9016	16.735	16.810	-5	0.980	17081	2683	353	882	8		
	Empc Correction				9460	2827	353	882	8		
305.8987	16.719	16.810	-5	0.979	12286	3672	663	1657	6	1.39(0.65-0.89)	
13C-2,3,7,8-TCDD											
331.9368	17.763	17.778	-1	1.010	10807491	2411785	4435	11087	544		
333.9339	17.763	17.778	-1	1.010	14097605	3050632	5553	13882	549	0.77(0.65-0.89)	
2,3,7,8-TCDD											
319.8965	17.793	17.793	0	1.002	1019496	219423	714	1785	307		
321.8936	17.793	17.793	0	1.002	1296224	294978	487	1217	606	0.79(0.65-0.89)	
37Cl4-2,3,7,8-TCDD											
327.8847	17.793	17.793	0	1.012	13828332	2979745	1860	4650	1602		
A Non-2,3,7,8-sub-TCDD											
319.8965	17.256						714	1785			
321.8936	17.256						487	1217			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8-PeCDF											
351.9000	21.985	21.999	-1	1.250	13986157	2323138	5711	14277	407		
353.8970	21.985	21.999	-1	1.250	8963529	1484477	3721	9302	399	1.56(1.32-1.78)	
1,2,3,7,8-PeCDF											
339.8597	21.998	22.012	-1	1.001	6614885	1103078	2681	6702	411		
341.8567	21.998	22.012	-1	1.001	4238810	706779	1627	4067	434	1.56(1.32-1.78)	
13C-2,3,4,7,8-PeCDF											
351.9000	23.280	23.308	-2	1.324	17795760	2826302	5711	14277	495		
353.8970	23.280	23.308	-2	1.324	11217797	1797453	3721	9302	483	1.59(1.32-1.78)	
2,3,4,7,8-PeCDF											
339.8597	23.308	23.321	-1	1.001	6549693	1057903	2681	6702	395		
341.8567	23.308	23.321	-1	1.001	4278546	670543	1627	4067	412	1.53(1.32-1.78)	
A F1 PeCDFs											
339.8597	19.675						186	465			
341.8567	19.675						320	800			
A Non-2,3,7,8-sub-PeCDF											
339.8597	22.743						2681	6702			
341.8567	22.743						1627	4067			
13C-1,2,3,7,8-PeCDD											
367.8949	23.989	24.017	-2	1.364	11370270	1694794	1777	4442	954		
369.8919	23.989	24.017	-2	1.364	7416897	1057963	1182	2955	895	1.53(1.32-1.78)	
1,2,3,7,8-PeCDD											
355.8546	24.017	24.044	-2	1.001	5451141	803956	715	1787	1124		
357.8516	24.017	24.044	-2	1.001	3469566	500133	648	1620	772	1.57(1.32-1.78)	
A Non-2,3,7,8-sub-PeCDD											
355.8546	22.953						715	1787			
357.8516	22.953						648	1620			
13C-1,2,3,4,7,8-HxCDF											
383.8639	30.113	30.140	-2	0.943	5398592	819037	4255	10637	192		
385.8610	30.113	30.140	-2	0.943	10961657	1624795	8931	22327	182	0.49(0.43-0.59)	
1,2,3,4,7,8-HxCDF											
373.8208	30.126	30.153	-2	1.000	3503701	530319	3605	9012	147		
375.8178	30.126	30.153	-2	1.000	2896300	450073	2890	7225	156	1.21(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDF											
383.8639	30.326	30.340	-1	0.950	4954963	746144	4255	10637	175		
385.8610	30.326	30.340	-1	0.950	9922044	1395069	8931	22327	156	0.50(0.43-0.59)	
1,2,3,6,7,8-HxCDF											
373.8208	30.353	30.366	-1	1.001	4154998	603352	3605	9012	167		
375.8178	30.353	30.366	-1	1.001	3406677	485714	2890	7225	168	1.22(1.05-1.43)	
13C-2,3,4,6,7,8-HxCDF											
383.8639	31.244	31.258	-1	0.979	4467869	907142	4255	10637	213		
385.8610	31.244	31.258	-1	0.979	9130373	1839442	8931	22327	206	0.49(0.43-0.59)	
2,3,4,6,7,8-HxCDF											
373.8208	31.258	31.285	-2	1.000	3836482	762832	3605	9012	212		
375.8178	31.258	31.285	-2	1.000	3122084	624237	2890	7225	216	1.23(1.05-1.43)	

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,7,8,9-HxCDF											
383.8639	32.110	32.123	-1	1.006	3965419	809704	4255	10637	190		
385.8610	32.110	32.123	-1	1.006	8147502	1652782	8931	22327	185	0.49(0.43-0.59)	
1,2,3,7,8,9-HxCDF											
373.8208	32.123	32.137	-1	1.000	3497070	703430	3605	9012	195		
375.8178	32.123	32.137	-1	1.000	2875351	574028	2890	7225	199	1.22(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDF											
373.8208	29.847						3605	9012			
375.8178	29.847						2890	7225			
13C-1,2,3,7,8,9-HxCDD											
401.8559	31.923	31.924	0		20815448	4181849	6910	17275	605		
403.8529	31.910	31.924	-1		16670962	3328054	6736	16840	494	1.25(1.05-1.43)	
13C-1,2,3,4,7,8-HxCDD											
401.8559	31.458	31.471	-1	0.985	8138480	2015010	6910	17275	292		
403.8529	31.458	31.471	-1	0.985	6399238	1575919	6736	16840	234	1.27(1.05-1.43)	
1,2,3,4,7,8-HxCDD											
389.8157	31.471	31.484	-1	1.000	3083822	776054	2036	5090	381		
391.8127	31.471	31.484	-1	1.000	2473285	605500	1985	4962	305	1.25(1.05-1.43)	
13C-1,2,3,6,7,8-HxCDD											
401.8559	31.564	31.577	-1	0.989	9800842	1860095	6910	17275	269		
403.8529	31.564	31.577	-1	0.989	7758407	1489964	6736	16840	221	1.26(1.05-1.43)	
1,2,3,6,7,8-HxCDD											
389.8157	31.591	31.604	-1	1.001	4285086	822085	2036	5090	404		
391.8127	31.577	31.604	-2	1.000	3481665	674234	1985	4962	340	1.23(1.05-1.43)	
1,2,3,7,8,9-HxCDD											
389.8157	31.937	31.950	-1	1.015	4343918	869208	2036	5090	427		
391.8127	31.923	31.950	-2	1.015	3538800	715553	1985	4962	360	1.23(1.05-1.43)	
A Non-2,3,7,8-sub-HxCDD											
389.8157	30.499						2036	5090			
391.8127	30.499						1985	4962			
13C-1,2,3,4,6,7,8-HpCDF											
417.8253	33.590	33.590	0	1.052	3865985	1025750	12093	30232	85		
419.8220	33.590	33.590	0	1.052	9078524	2360763	26576	66440	89	0.43(0.37-0.51)	
1,2,3,4,6,7,8-HpCDF											
407.7818	33.602	33.602	0	1.000	4600943	1181297	13061	32652	90		
409.7789	33.602	33.602	0	1.000	4574368	1146027	13114	32785	87	1.01(0.88-1.20)	
13C-1,2,3,4,7,8,9-HpCDF											
417.8253	34.647	34.659	-1	1.085	4419133	999844	12093	30232	83		
419.8220	34.647	34.659	-1	1.085	10468480	2389294	26576	66440	90	0.42(0.37-0.51)	
1,2,3,4,7,8,9-HpCDF											
407.7818	34.659	34.659	0	1.000	3721968	846613	13061	32652	65		
409.7789	34.659	34.659	0	1.000	3637124	826617	13114	32785	63	1.02(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDF											
407.7818	34.143						13061	32652			
409.7789	34.143						13114	32785			

Signal	RT (min.)	Exp RT (min.)	▯ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4,6,7,8-HpCDD											
435.8169	34.368	34.380	-1	1.077	7104345	1652447	8062	20155	205		
437.8140	34.368	34.380	-1	1.077	6705842	1622393	8141	20352	199	1.06(0.88-1.20)	
1,2,3,4,6,7,8-HpCDD											
423.7766	34.380	34.380	0	1.000	3548476	833859	3843	9607	217		
425.7737	34.380	34.380	0	1.000	3403973	795481	5035	12587	158	1.04(0.88-1.20)	
A Non-2,3,7,8-sub-HpCDD											
423.7766	34.119						3843	9607			
425.7737	34.119						5035	12587			
13C-OCDD											
469.7779	36.664	36.676	-1	1.149	13031892	2269409	2204	5510	1030		
471.7750	36.664	36.676	-1	1.149	14204189	2514629	3890	9725	646	0.92(0.76-1.02)	
OCDF											
441.7428	36.760	36.772	-1	1.003	6921318	1377293	1620	4050	850		
443.7399	36.760	36.772	-1	1.003	7807339	1553747	1752	4380	887	0.89(0.76-1.02)	
OCDD											
457.7377	36.676	36.688	-1	1.000	7259915	1239954	1743	4357	711		
459.7348	36.676	36.688	-1	1.000	7636684	1477196	1911	4777	773	0.95(0.76-1.02)	
1,3,6,8-TCDF											
303.9016	14.739						353	882			
305.8987	14.739						663	1657			
2,3,4,7-TCDF											
303.9016	14.739						353	882			
305.8987	14.739						663	1657			
1,3,6,8-TCDD											
319.8965	15.616	15.631	-1		11149	3556	714	1785	5		
321.8936	15.616	15.631	-1		14985	4584	487	1217	9	0.74(0.65-0.89)	
1,2,3,7-TCDD											
319.8965	17.687						714	1785			
321.8936	17.687						487	1217			
1,2,3,9-TCDD											
319.8965	17.959						714	1785			
321.8936	17.959						487	1217			
1,2,3,9-TCDF											
303.9016	17.959						353	882			
305.8987	17.959						663	1657			
1,2,8,9-TCDF											
303.9016	18.882						353	882			
305.8987	18.882						663	1657			
1,2,8,9-TCDD											
319.8965	18.882						714	1785			
1,3,4,6,8-PeCDF											
339.8597	19.169						186	465			
341.8567	19.169						320	800			
1,2,4,7,9-PeCDD											
355.8546	20.894						715	1787			
357.8516	20.894						648	1620			

Signal	RT (min.)	Exp RT (min.)	Δ Sec.	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
1,2,3,8,9-PeCDD											
355.8546	25.012						715	1787			
357.8516	25.012						648	1620			
1,2,3,8,9-PeCDF											
339.8597	25.230						2681	6702			
341.8567	25.230						1627	4067			
1,2,3,4,6,8-HxCDF											
373.8208	27.465						3605	9012			
375.8178	27.465						2890	7225			
1,2,4,6,7,9-HxCDD											
389.8157	29.008						2036	5090			
391.8127	29.008						1985	4962			
1,2,3,4,6,7-HxCDD											U
389.8157	31.897						2036	5090			
391.8127	31.897						1985	4962			
1,2,3,4,8,9-HxCDF											
373.8208	32.229						3605	9012			
375.8178	32.229						2890	7225			
1,2,3,4,6,7,9-HpCDD											U
423.7766	33.845						3843	9607			
425.7737	33.845						5035	12587			
1,2,3,4,6,7,9-HpCDF											U
407.7818	33.931						13061	32652			
409.7789	33.931						13114	32785			
1,2,3,8-TCDD											
319.8965	0.0						714	1785			
321.8936	0.0						487	1217			
1,3,7,9-TCDD											
319.8965	0.0						714	1785			
321.8936	0.0						487	1217			
1,2,3,4,7-PeCDD											
355.8546	0.0						715	1787			
357.8516	0.0						648	1620			
1,4,7,8-TCDD											
319.8965	0.0						714	1785			
321.8936	0.0						487	1217			

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- Q - EMPC-Estimated Max. Possible Conc.

Review Flags
- U - Marked Undetected
- a - User Assigned ID

Eurofins TestAmerica, Sacramento
AreaSum WorkSheet Report

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d		
Lims ID:	600-205895-B-3-B MSD		
Client ID:	AFEFF10		
Inject. Date:	26-Jun-2020 01:26:03	Dil. Factor:	1.0000
Sample Type:	MSD, Matrix Spike Duplicate		
Instrument ID:	10D5	Operator:	AJS
Lims Batch ID:	389621	Lims Sample ID:	11

Non-2,3,7,8-sub-TCDF, RT: 16.810

Initial Calibration RRF IsoDil Std Amount Added and Responses

Target Compound	RRF	Iso Dil Std Compound	Amount pg/ul	Area	Height
2,3,7,8-TCDF	0.767	D 13C-2,3,7,8-TCDF	100.000	29153758	6903273

Averages:

	RRFn		Qis	Ris Area	Ris Height
	0.767		100.000	29153758	6903273

Sum the Uncalibrated Results

RT	303.9016 Area	303.9016 Height	305.8987 Area	305.8987 Height	Amount	Ratio	Flags
16.735	17081	2683	12286	3672	0.1313	1.39	RQ
16.735	9460	2827	12286	3672	0.0972		Empc Correction
Signal Totals:							
	9460	2827	12286	3672			

Total Responses:

	Rx Area	Rx Height			Amount	Ratio	Flags
	29367	6355				1.39	RQ
	21746	6499					Empc Correction

On-Column Amount = (Rx * Qis) / (Ris * RRFn)
Quant By: Area

Amount: 0.1313 = (29367 * 100.000) / (29153758 * 0.767)
Empc Amount: 0.0972 = (21746 * 100.000) / (29153758 * 0.767)

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Report Date: 26-Jun-2020 13:16:17 Chrom Revision: 2.3 21-Jun-2020 18:30:46

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Injection Date:	26-Jun-2020 01:26:03	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

TCDF

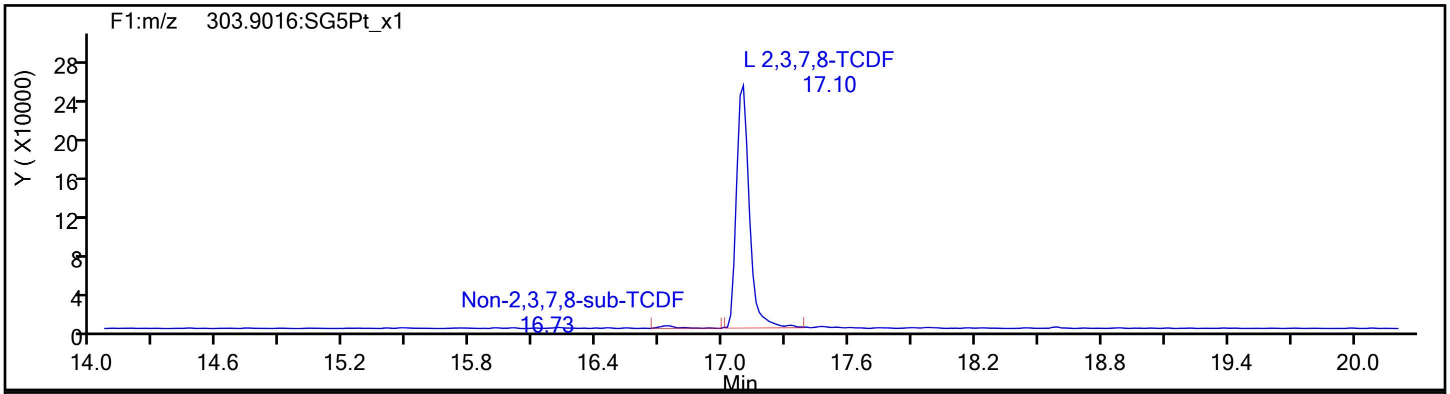

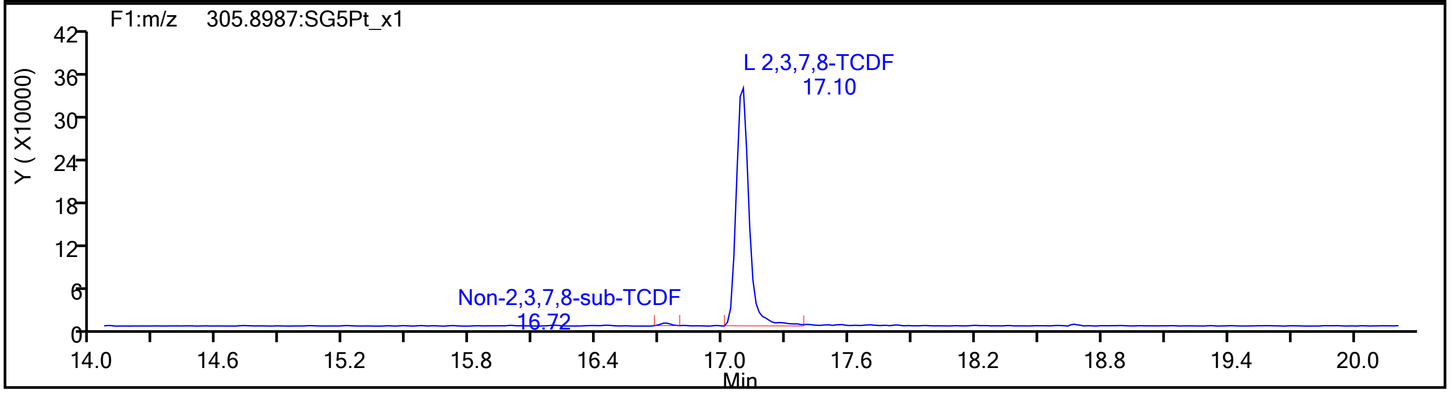

TCDF Standards

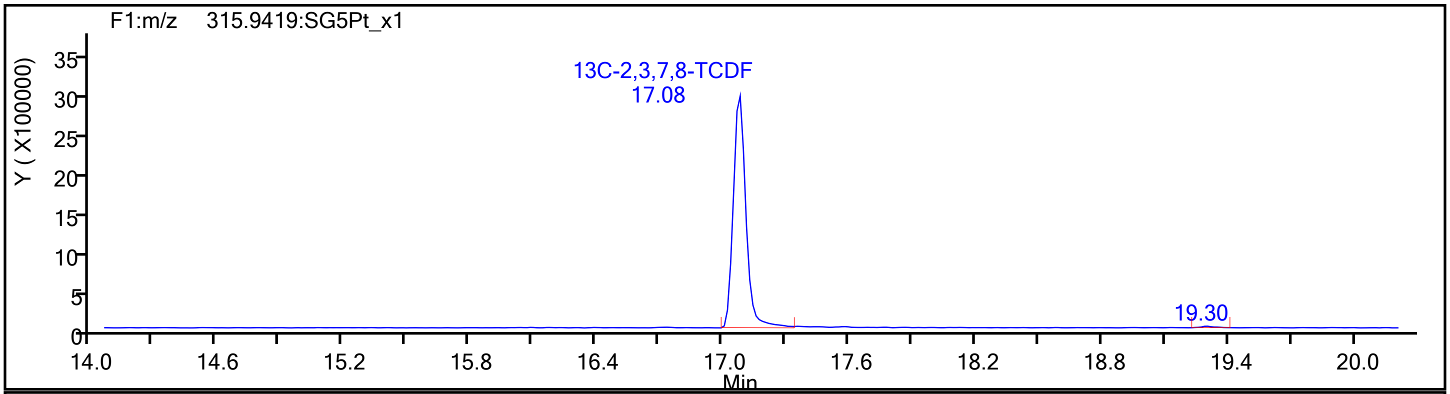

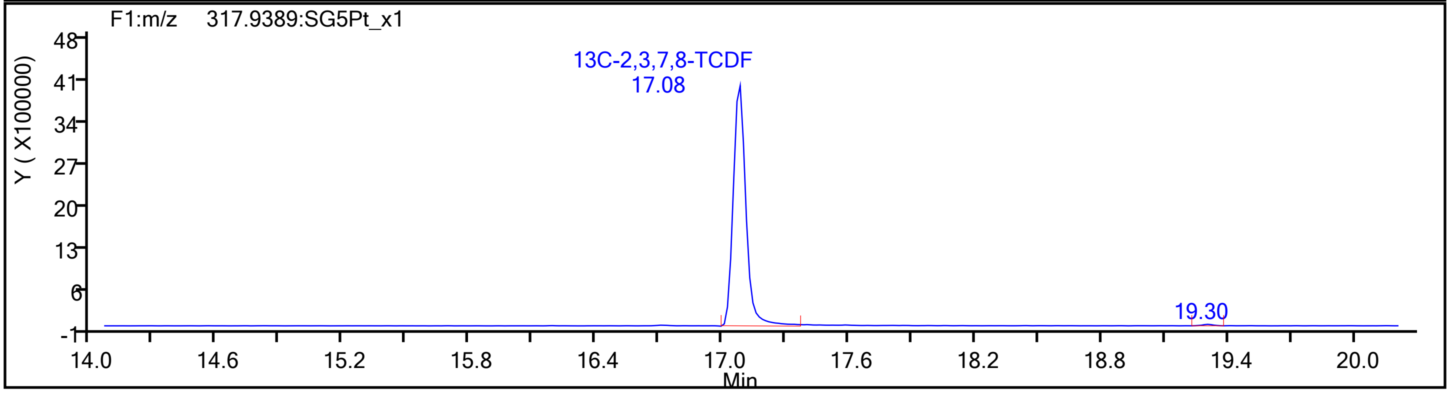

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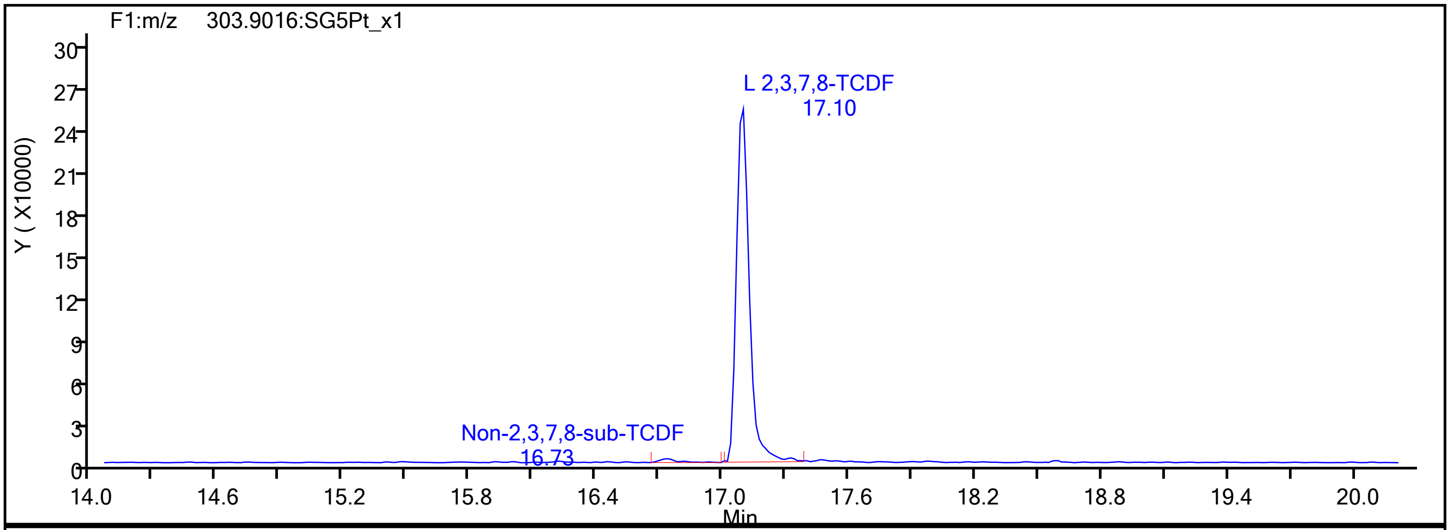

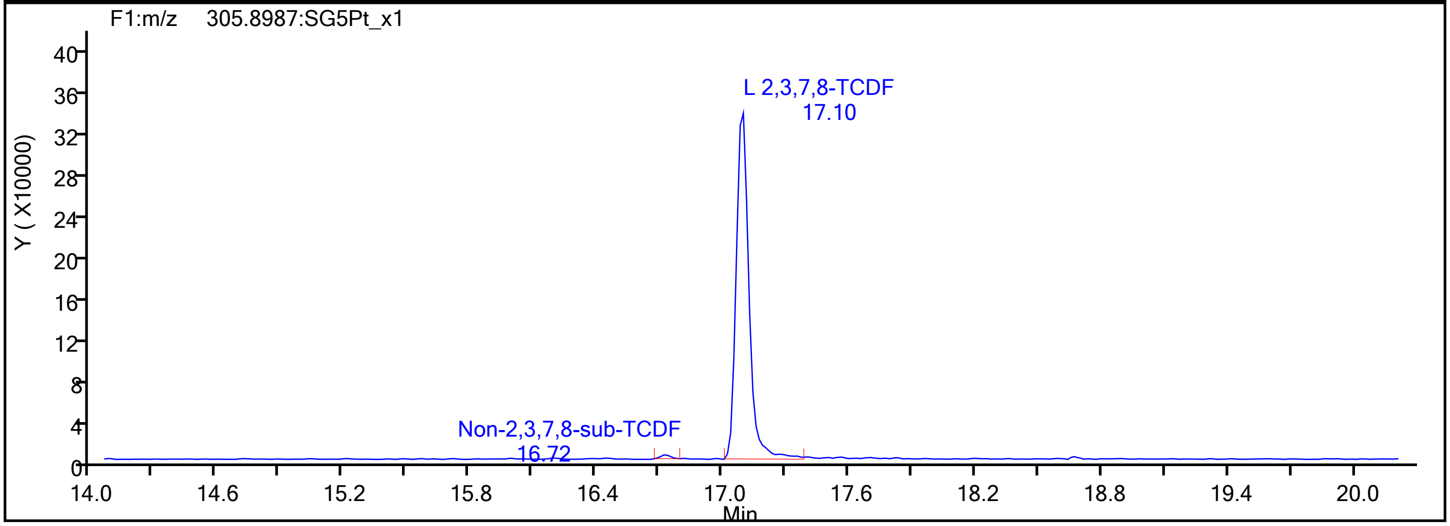

TCDF Interference Mass

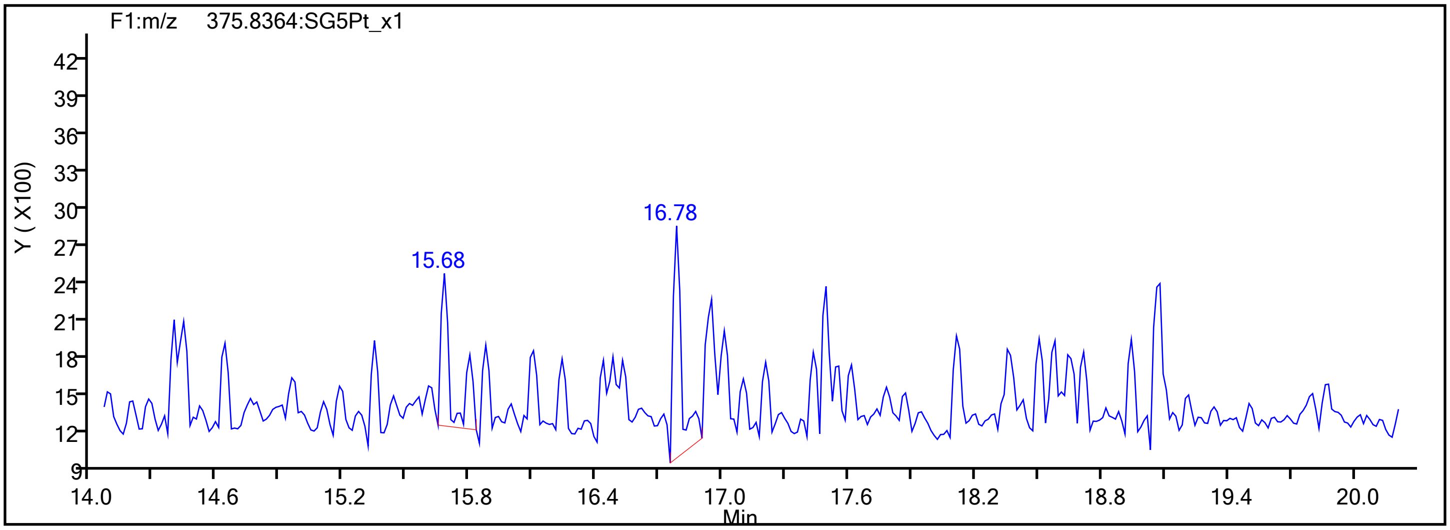

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Injection Date: 26-Jun-2020 01:26:03 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

TCDD

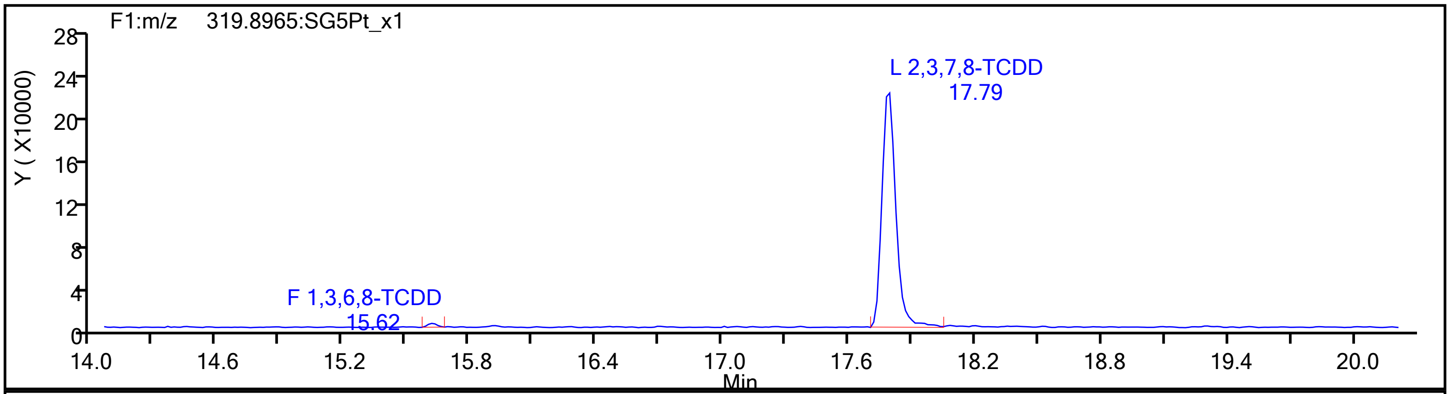

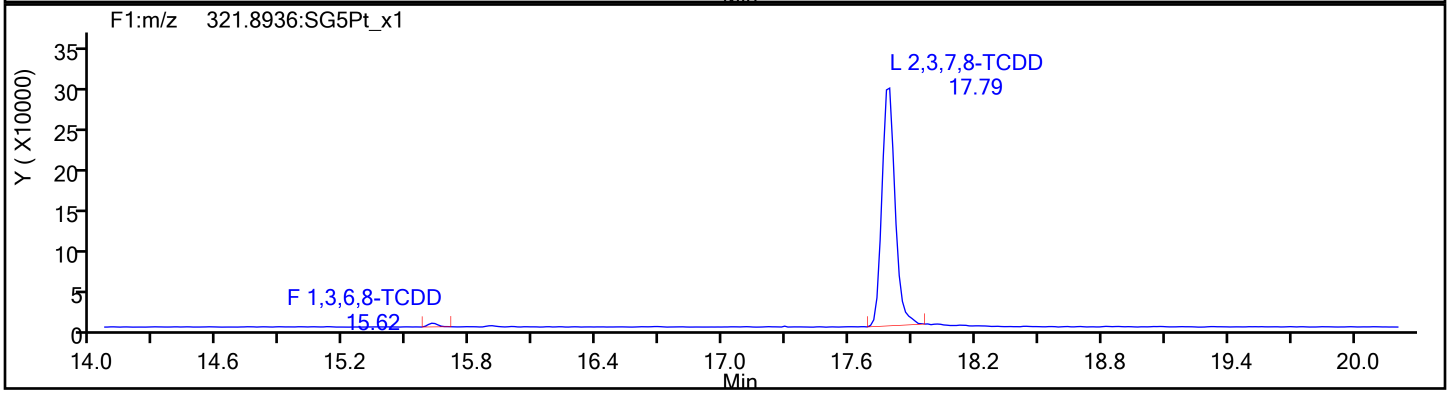

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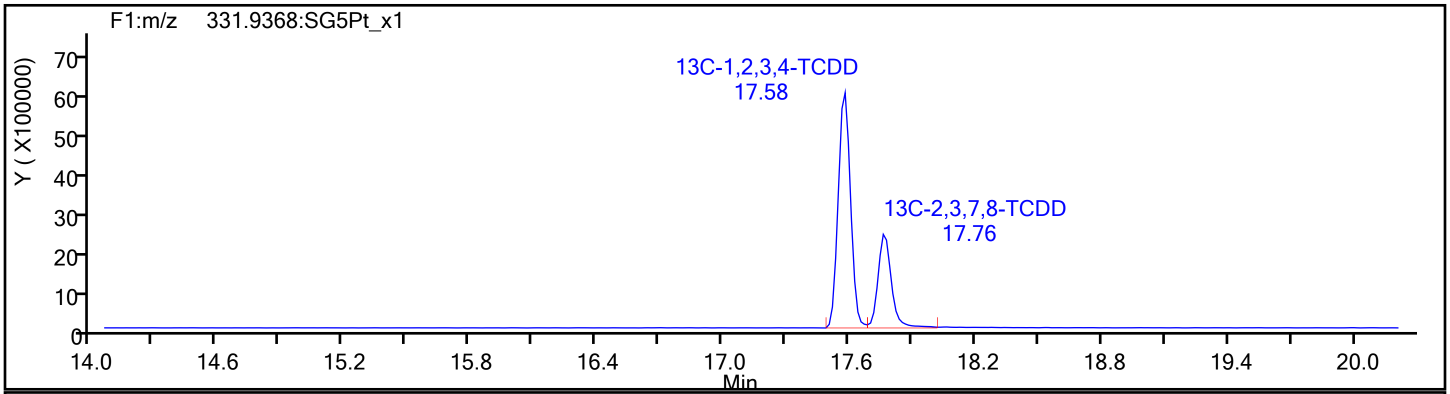

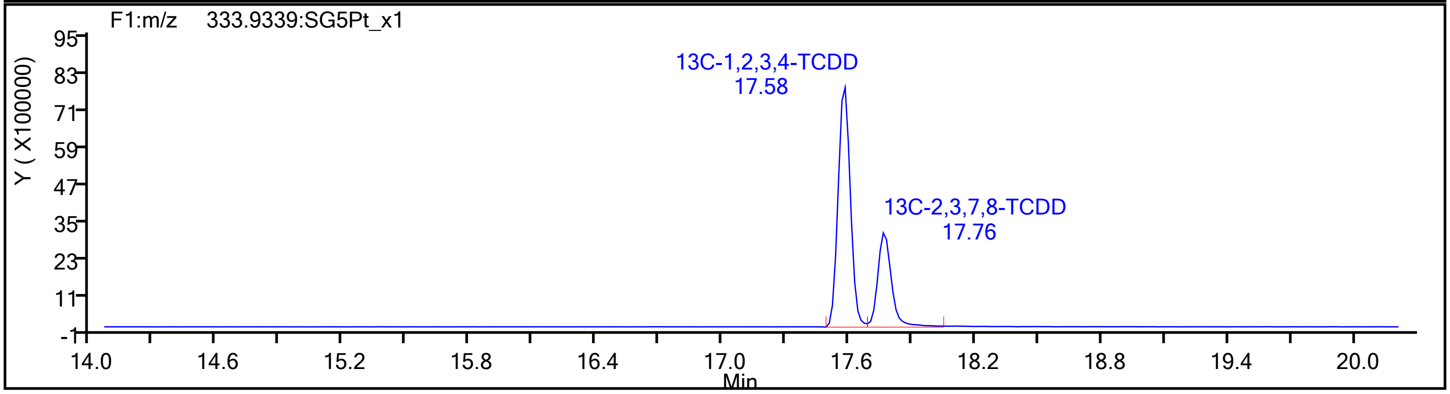

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37Cl4-TCDD

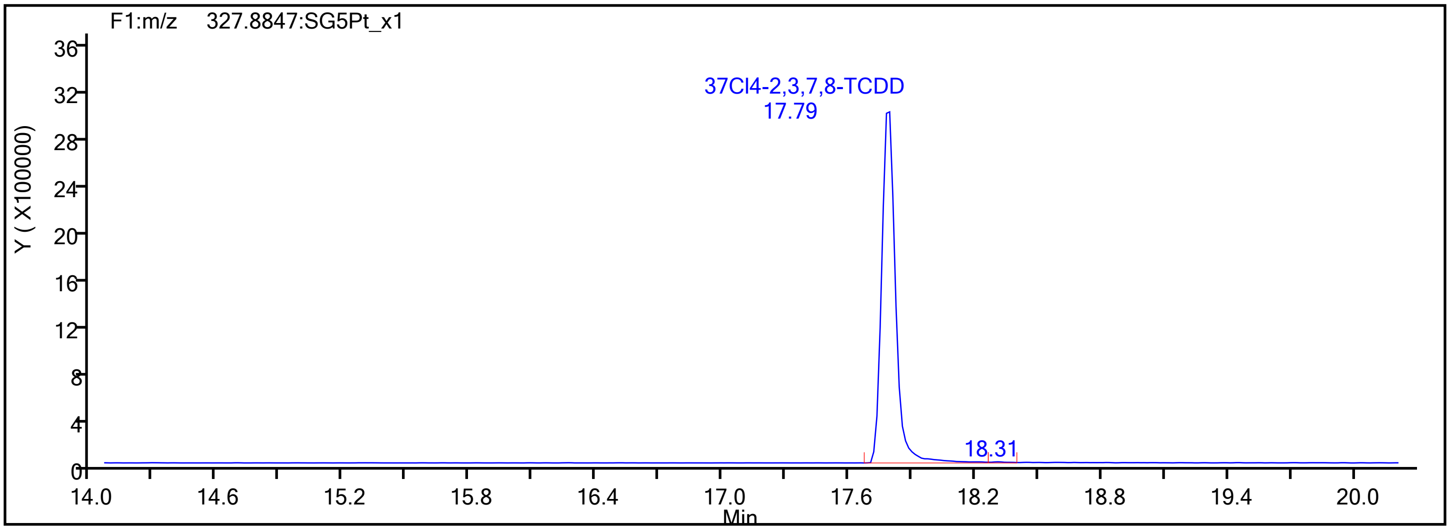

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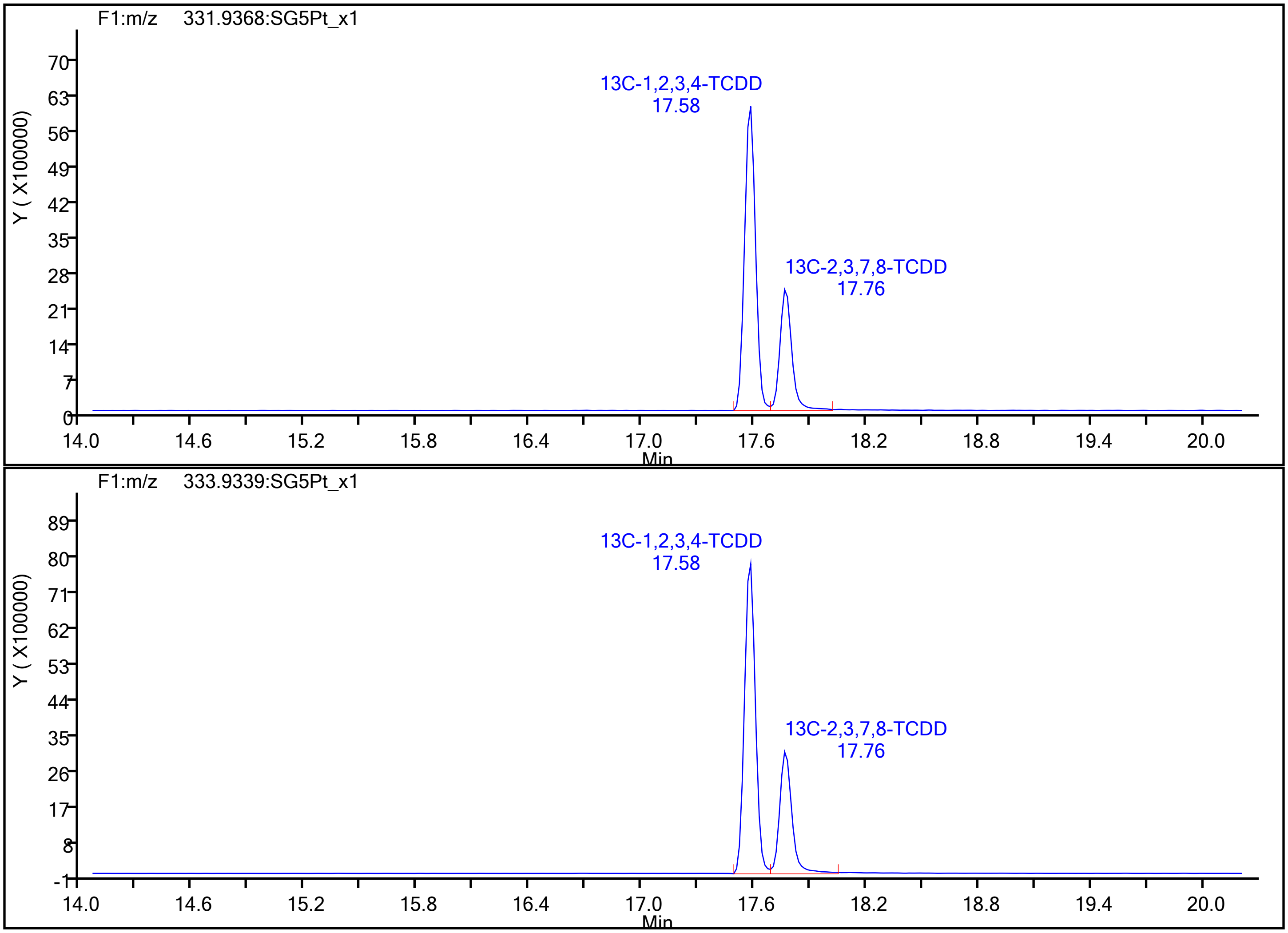

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F1 PeCDFs

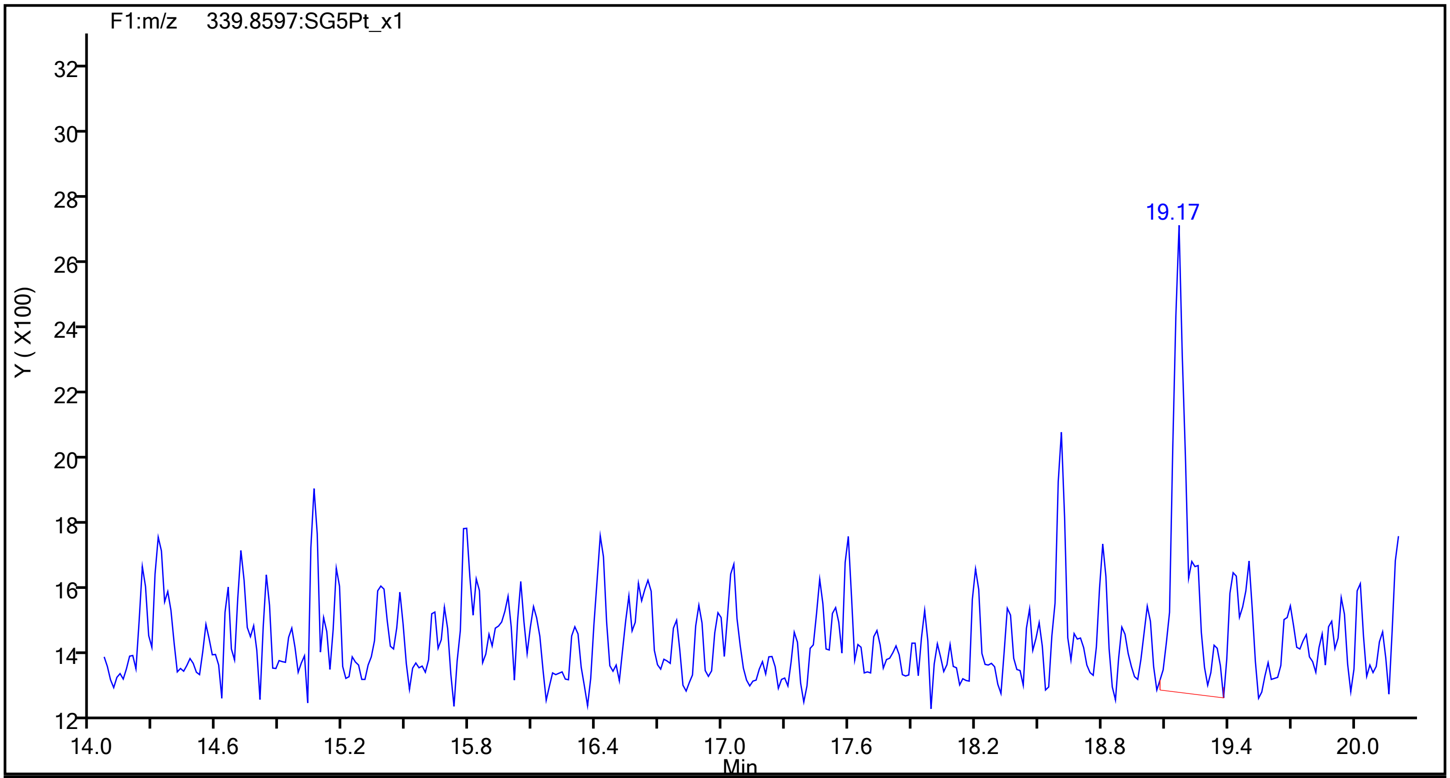

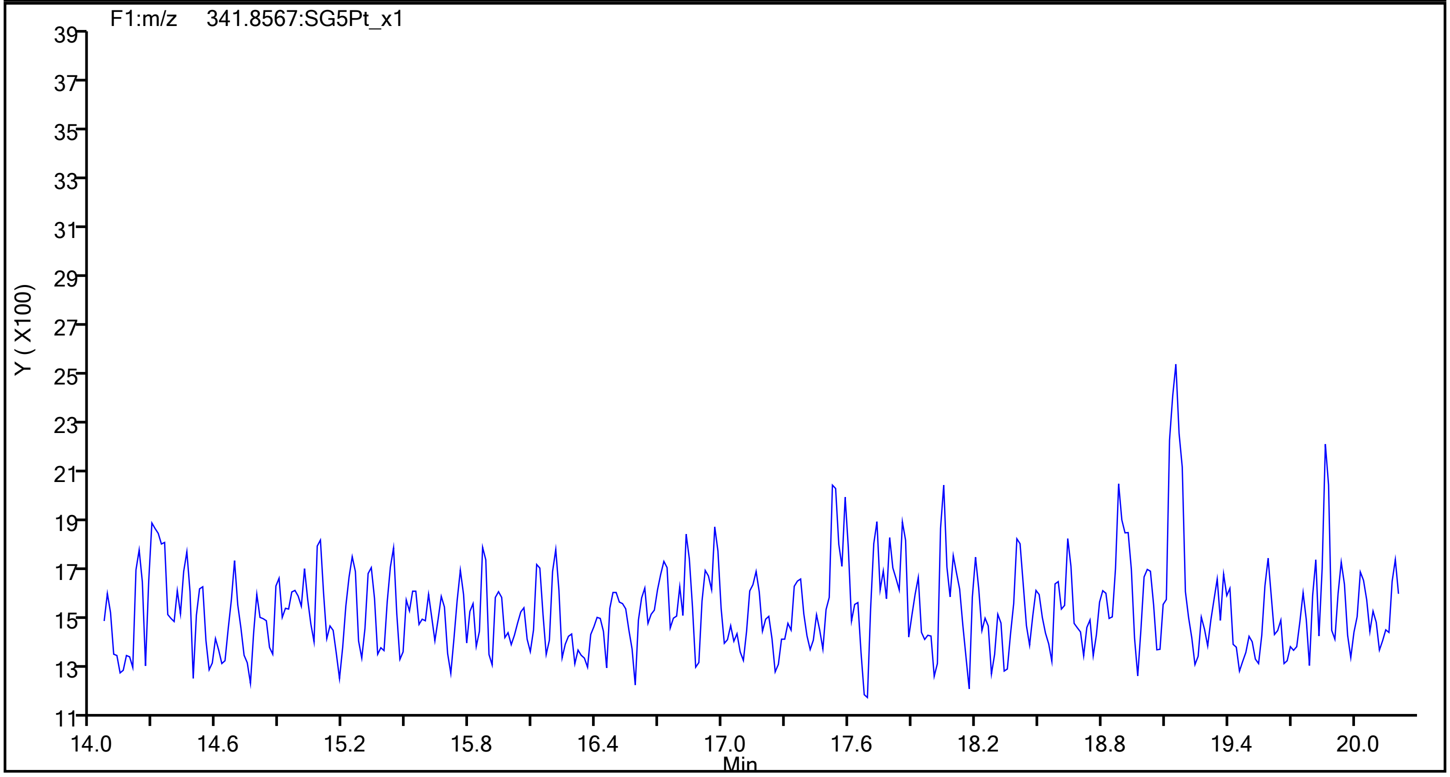

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F1 PeCDFs

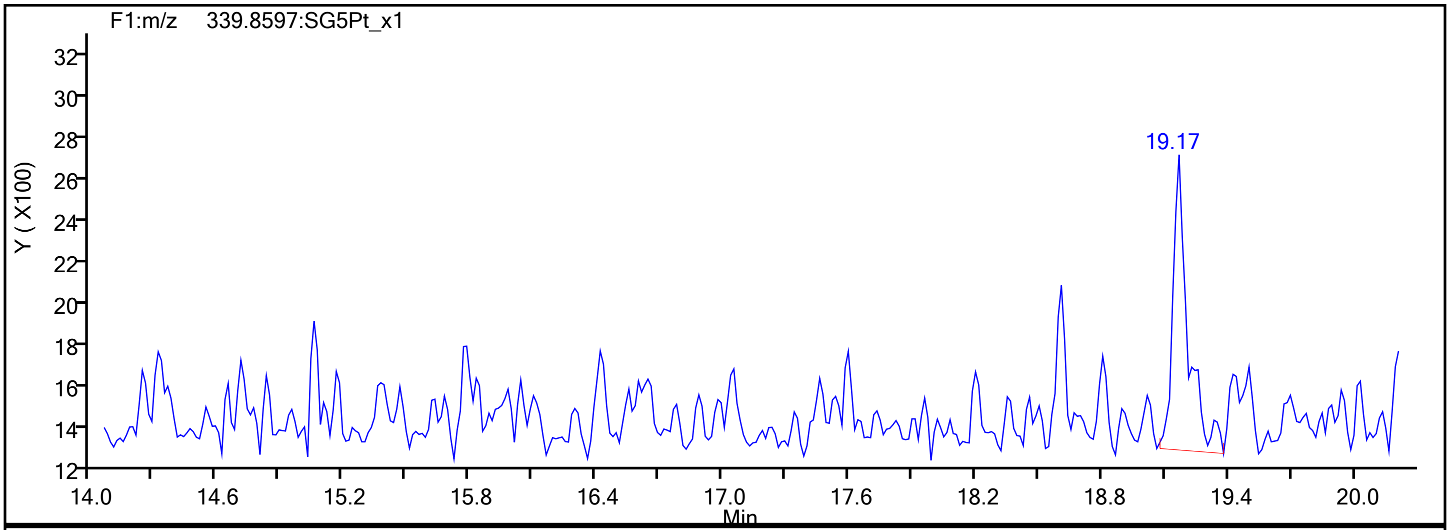

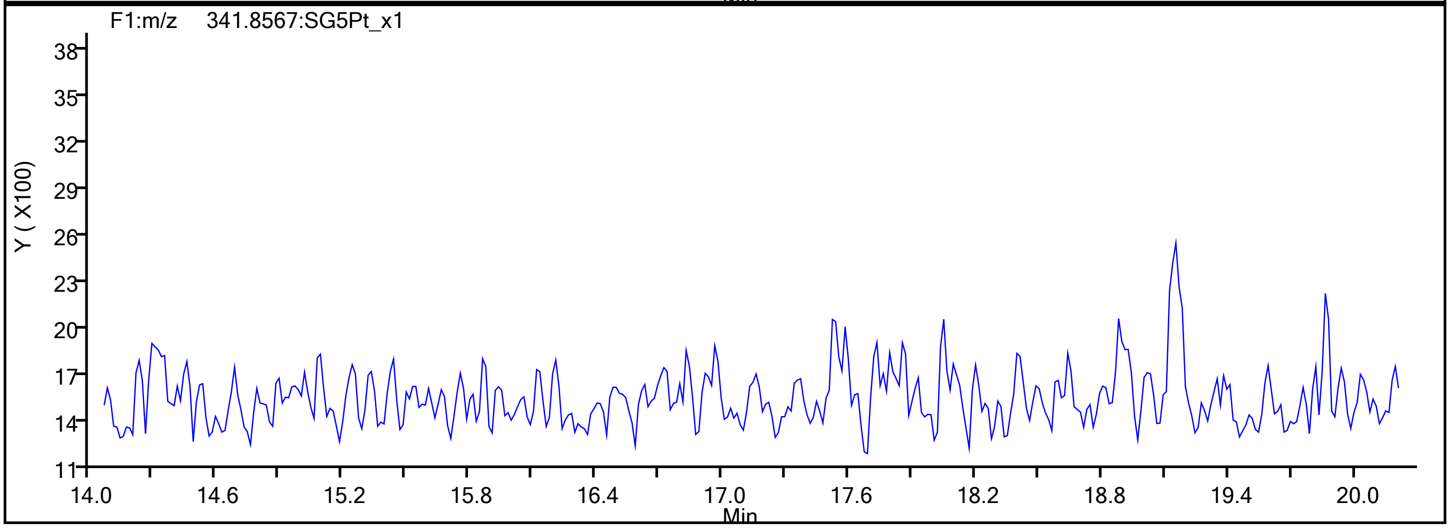

F1 PeCDFs Interference Mass

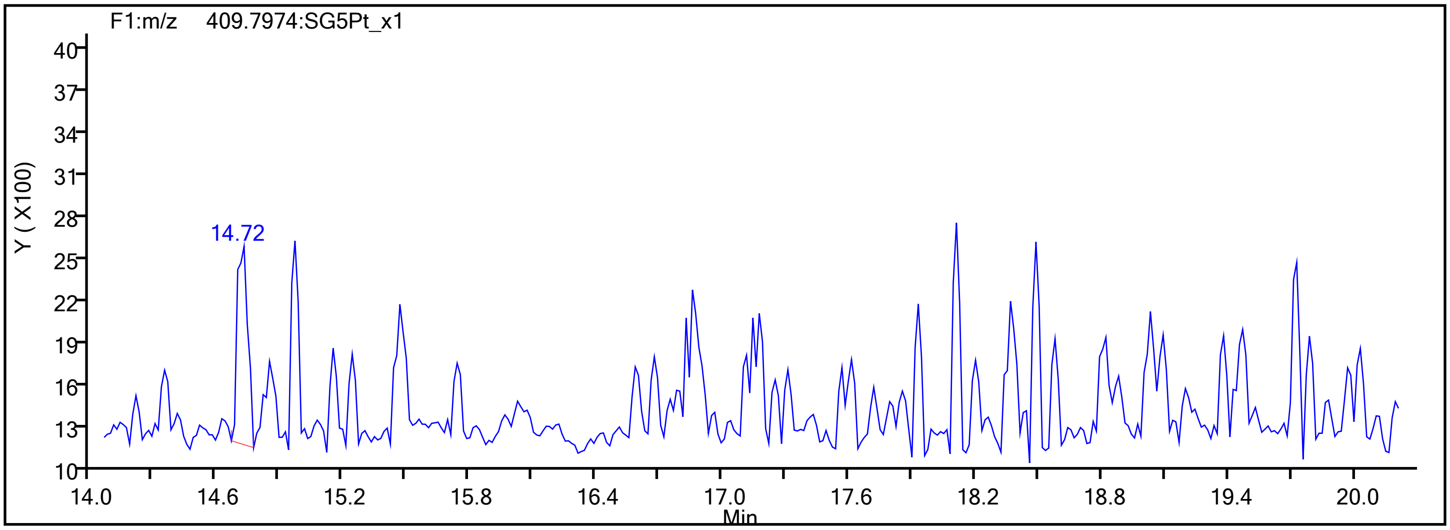

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Worklist#: 389621
Sample Line#: 11
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PeCDF

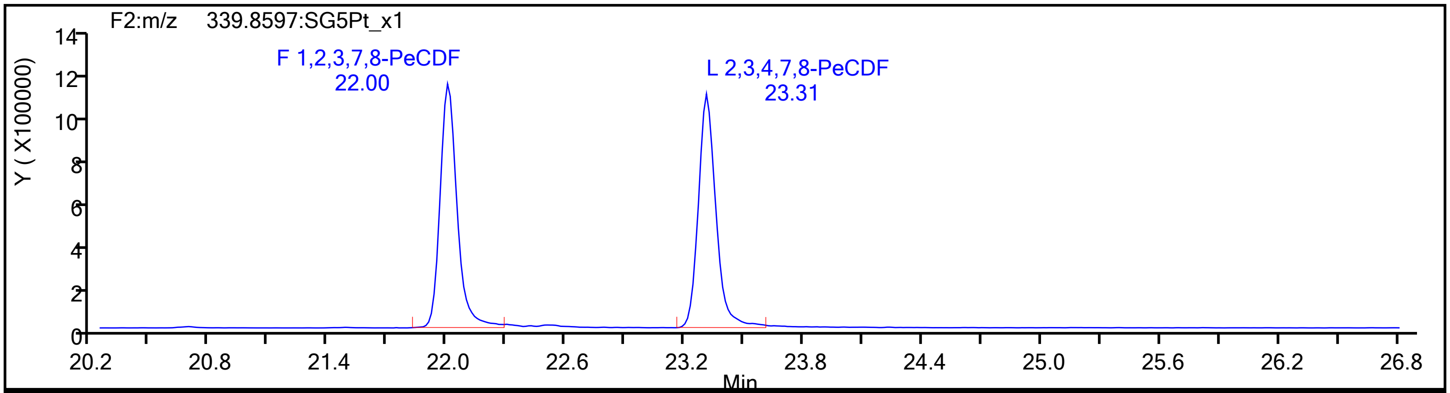

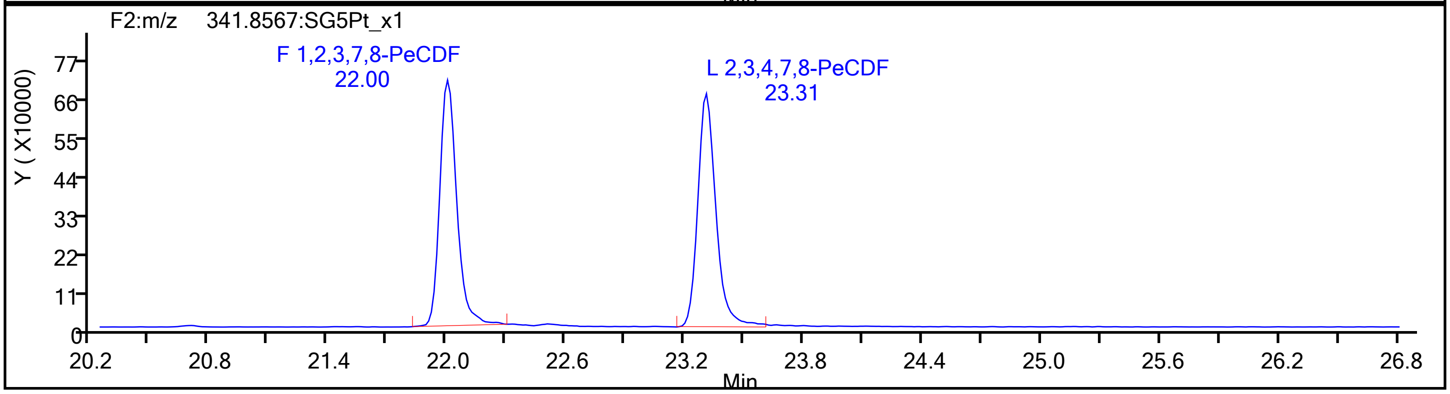

PeCDF Standards

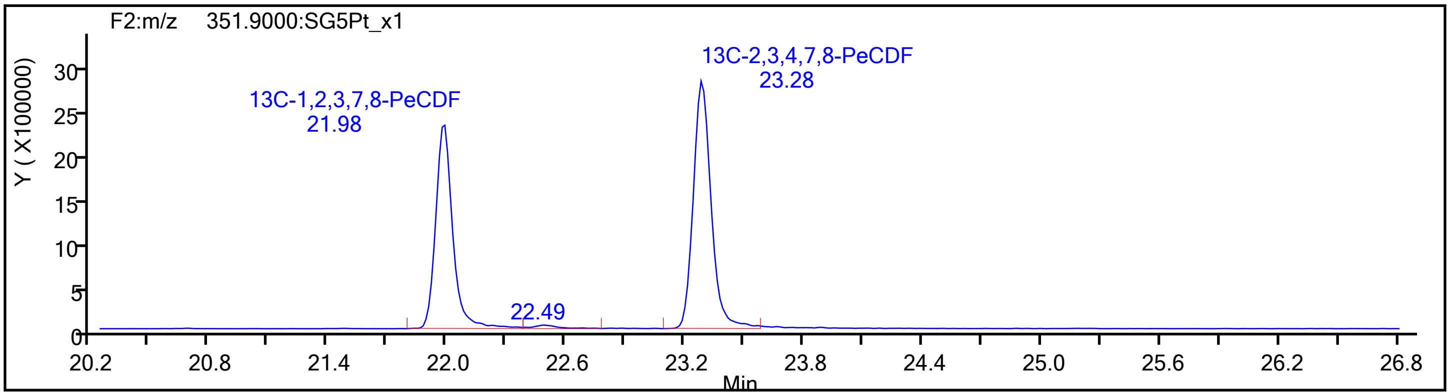

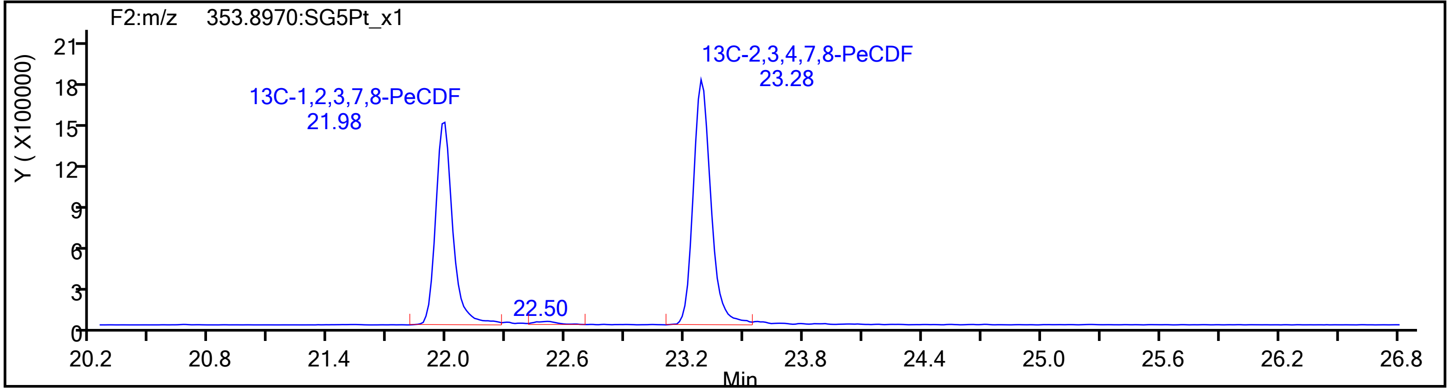

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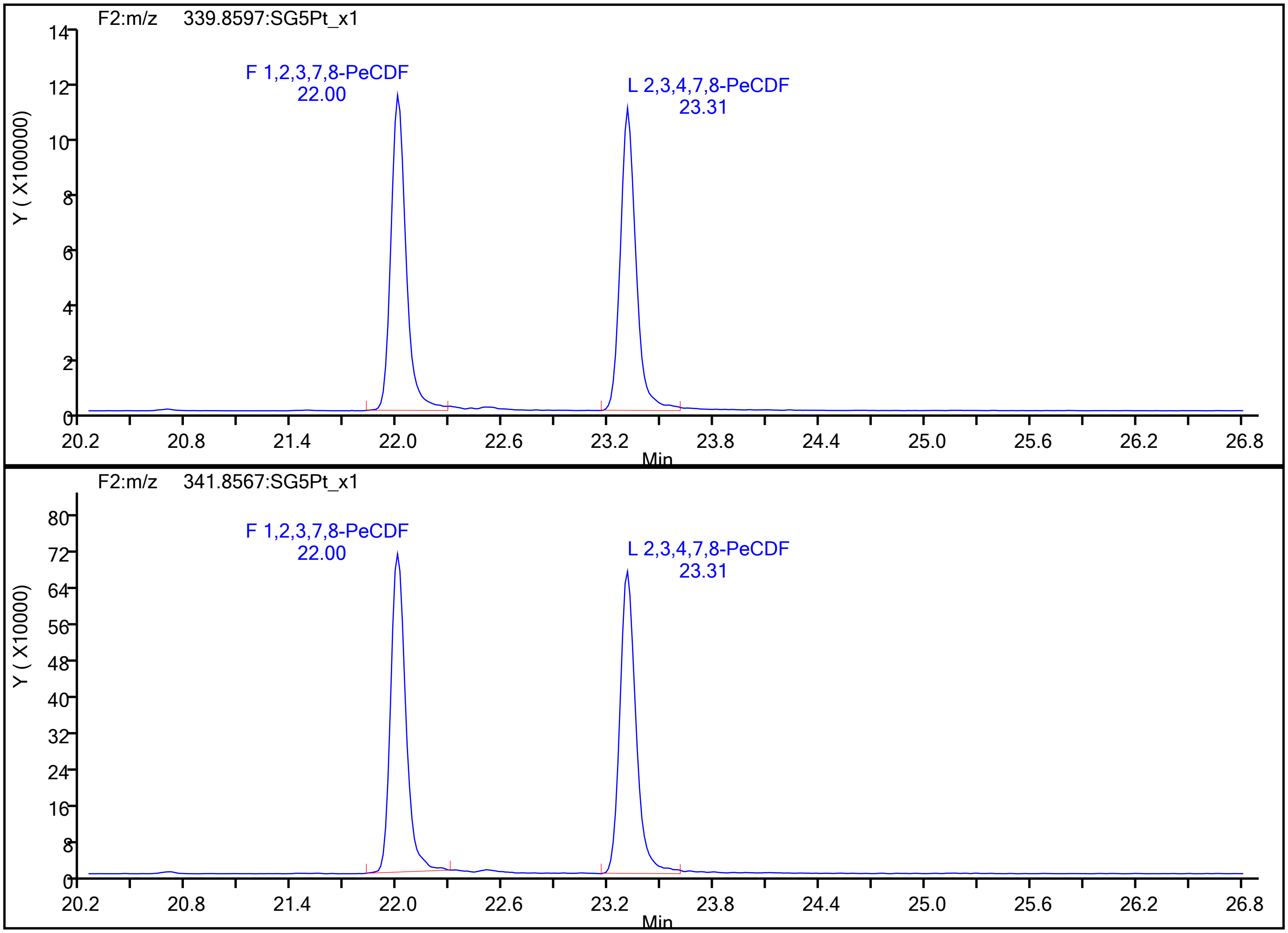

PeCDF Interference Mass

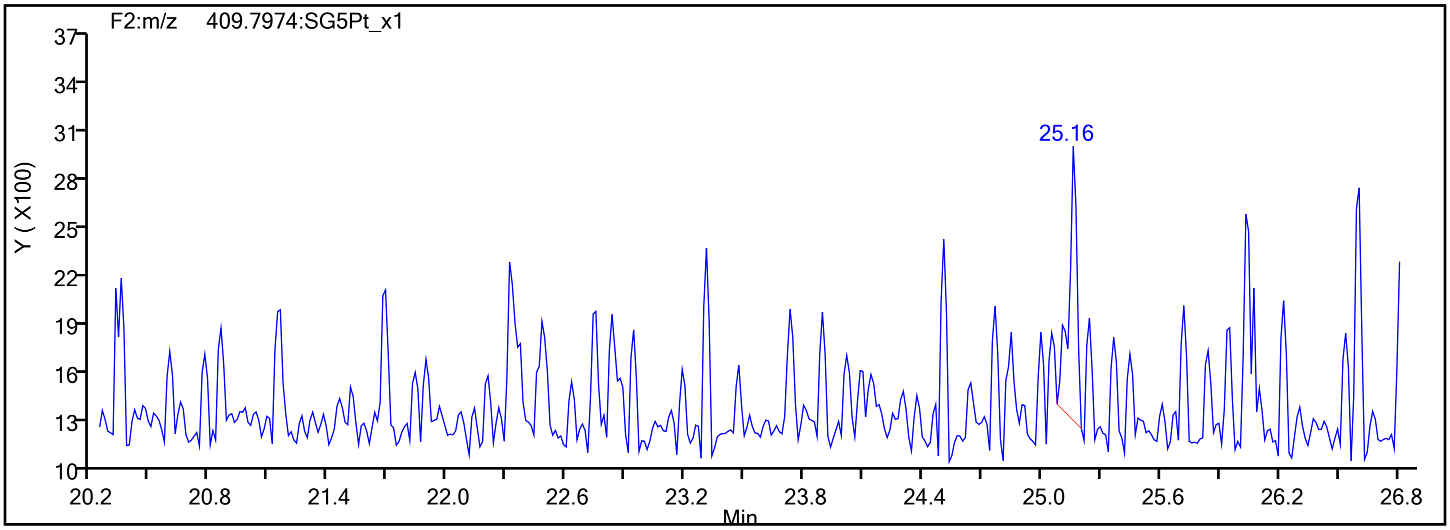

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Injection Date: 26-Jun-2020 01:26:03 Injection Vol: 2.0 ul
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Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL
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PeCDD

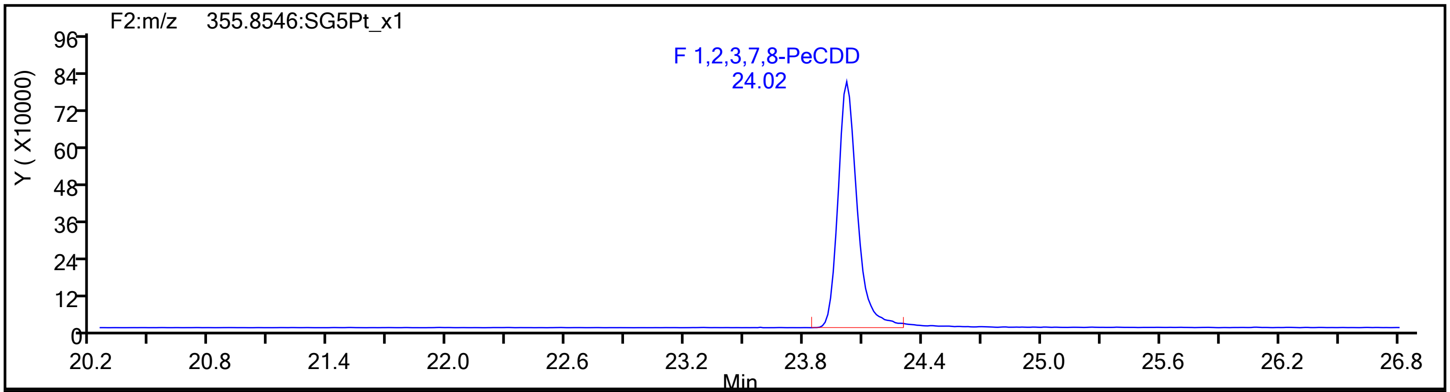

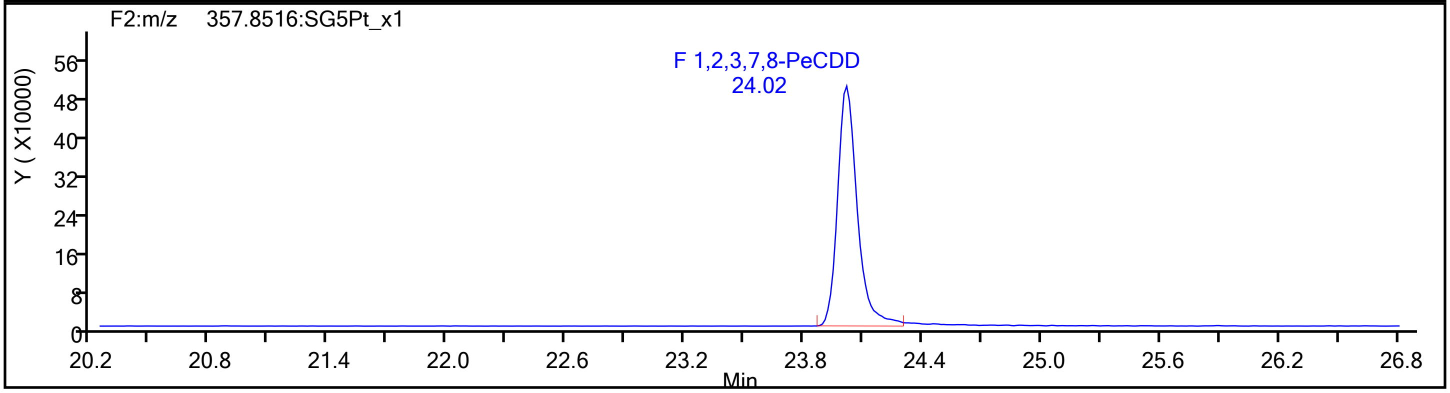

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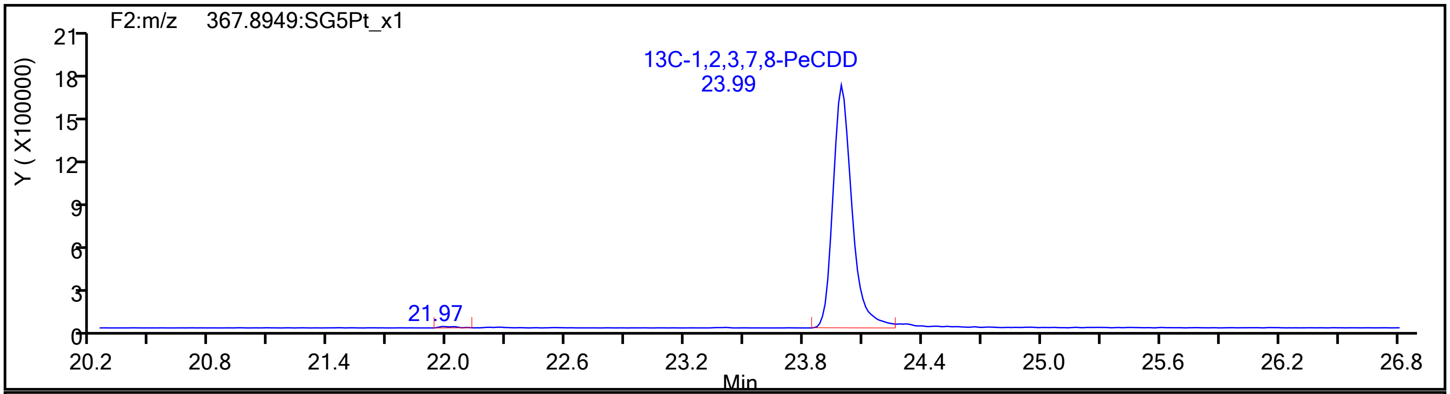

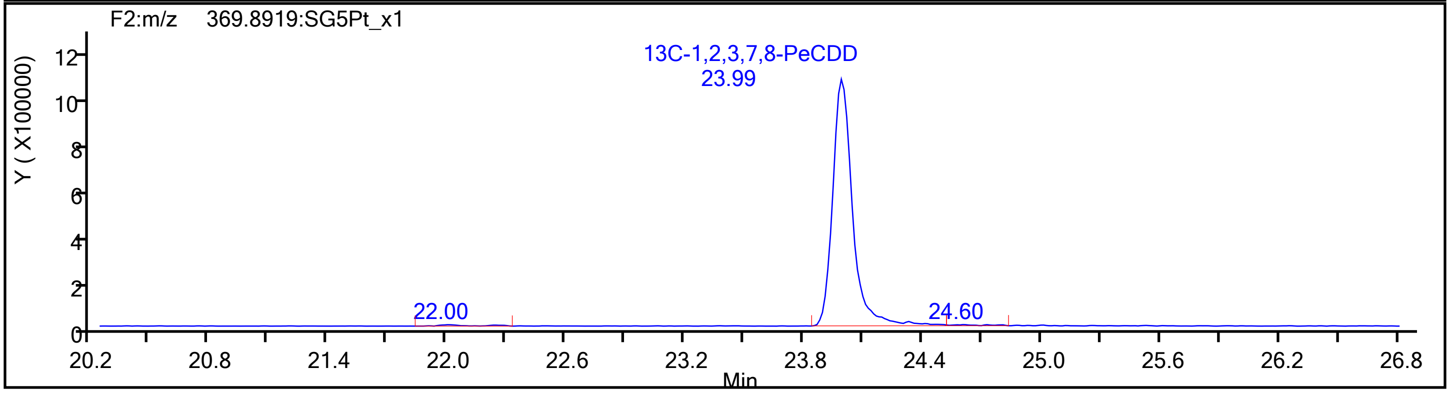

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Chrom Revision: 2.3 21-Jun-2020 18:30:46
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Limit Group: HR - 1613B - ICAL
Client ID: AFEFF10
Worklist#: 389621
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

HxCDF

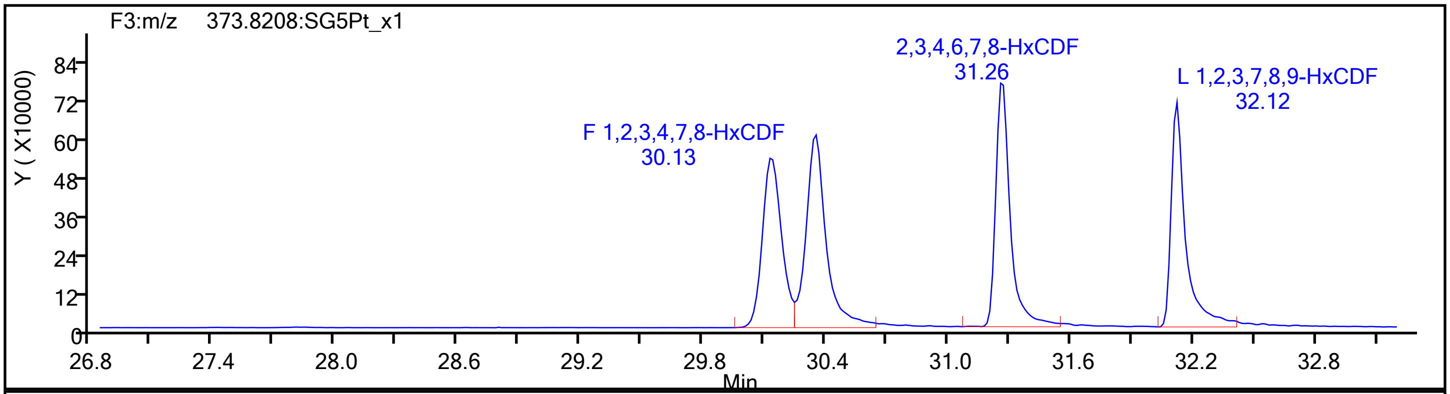

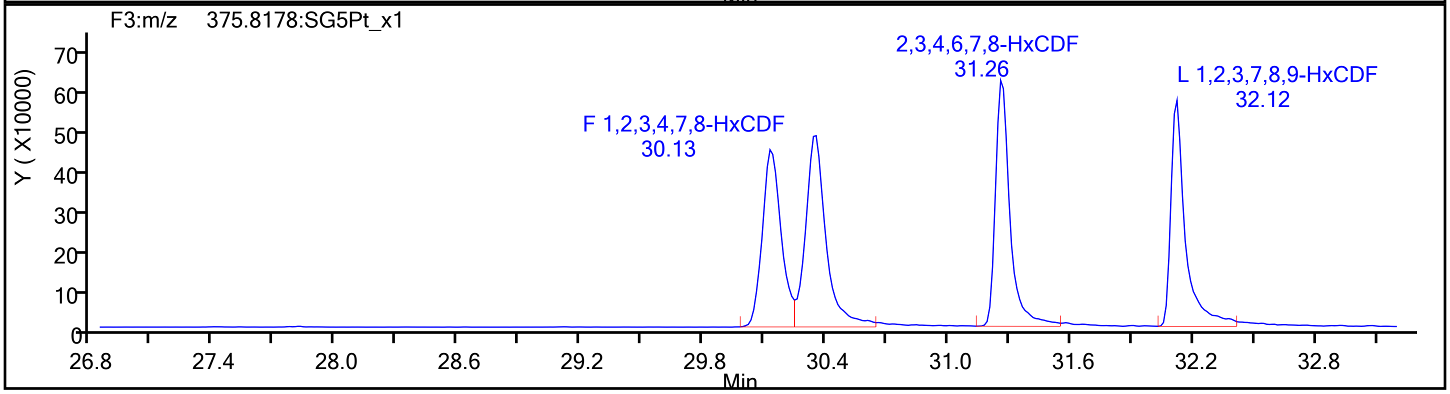

HxCDF Standards

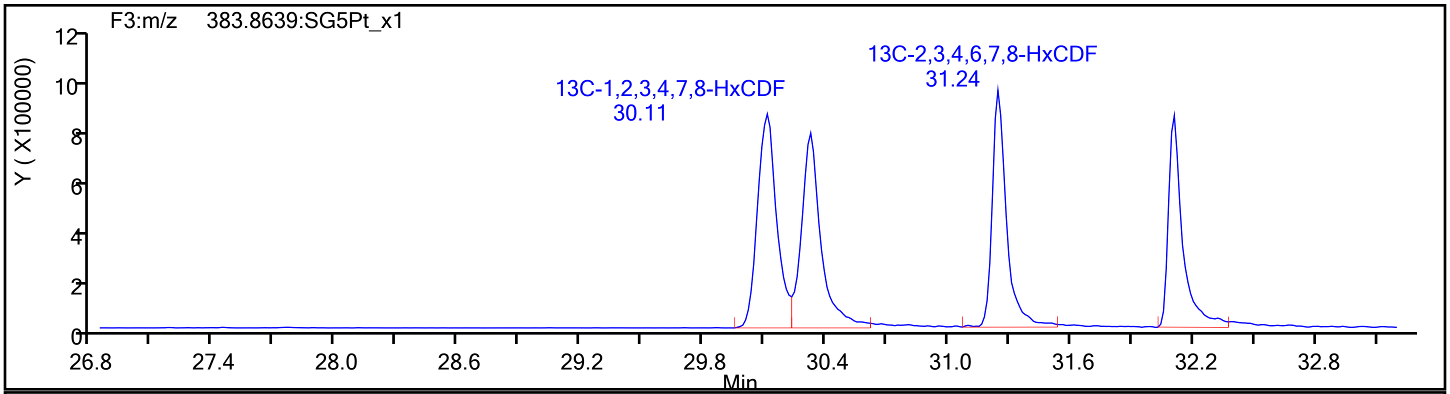

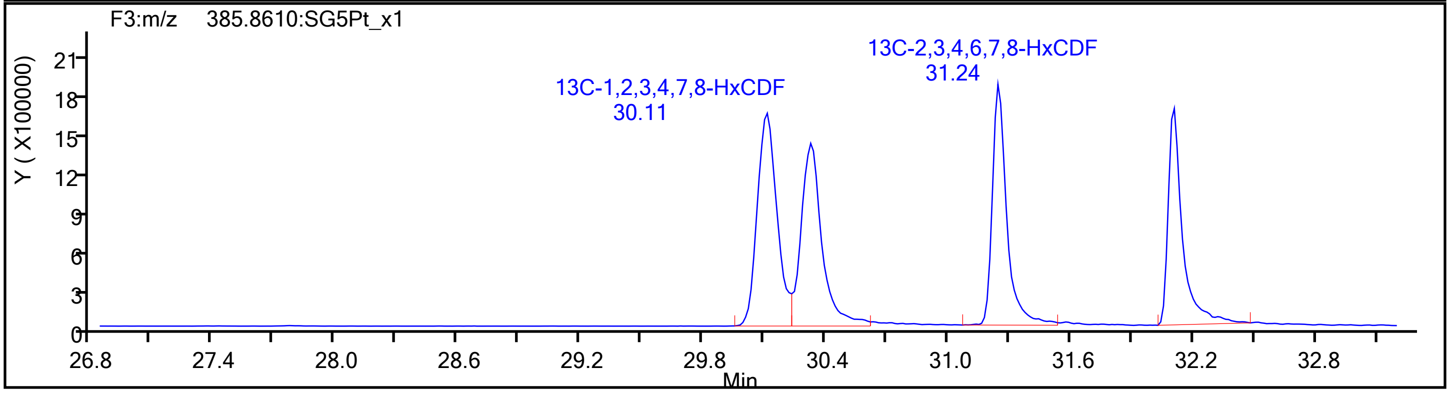

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HxCDF

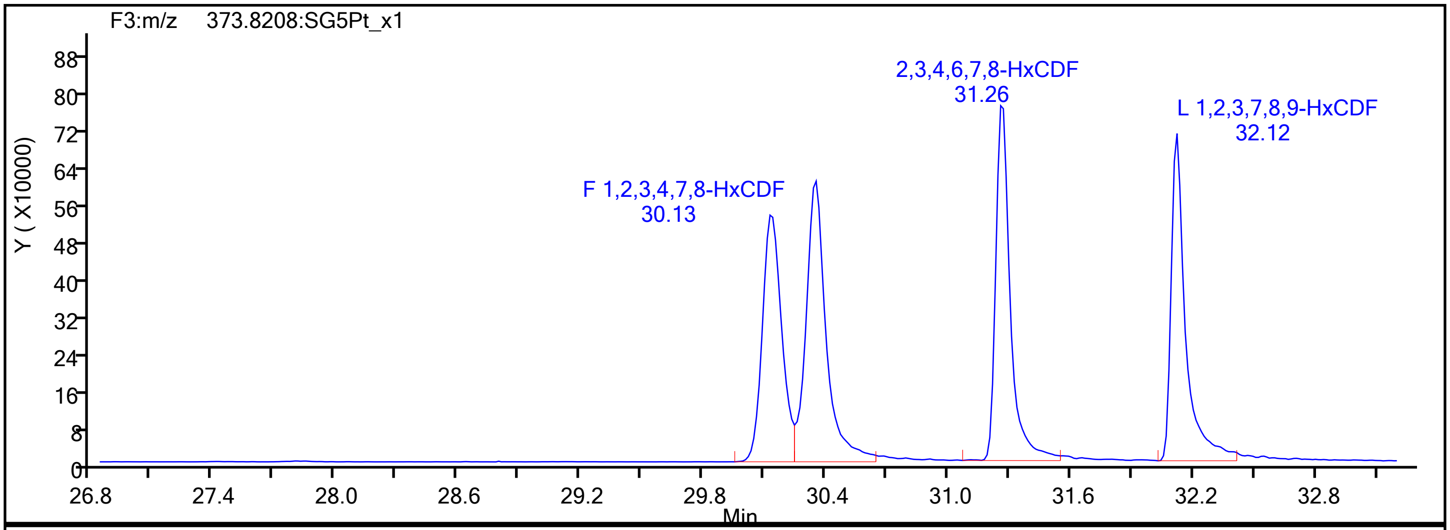

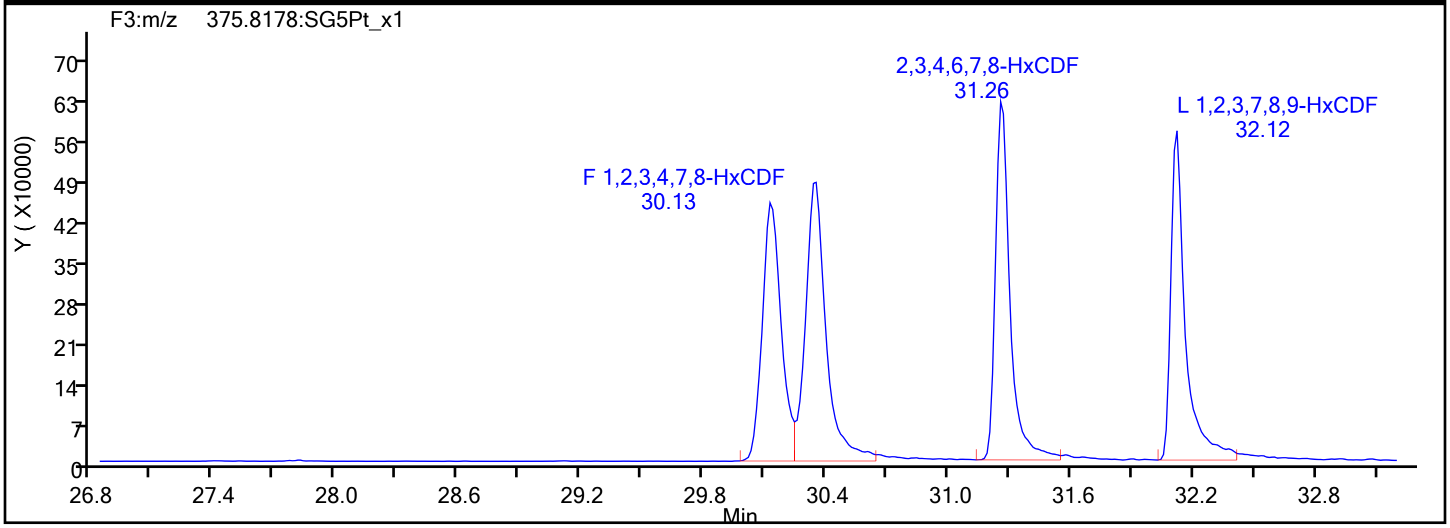

HxCDF Interference Mass

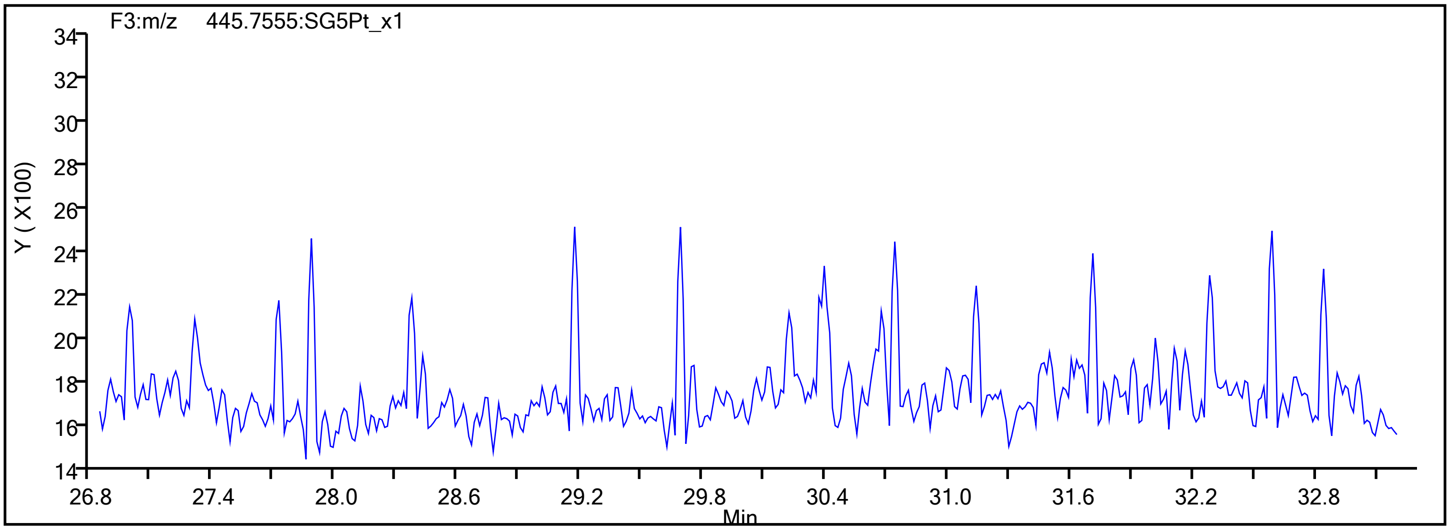

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HxCDD

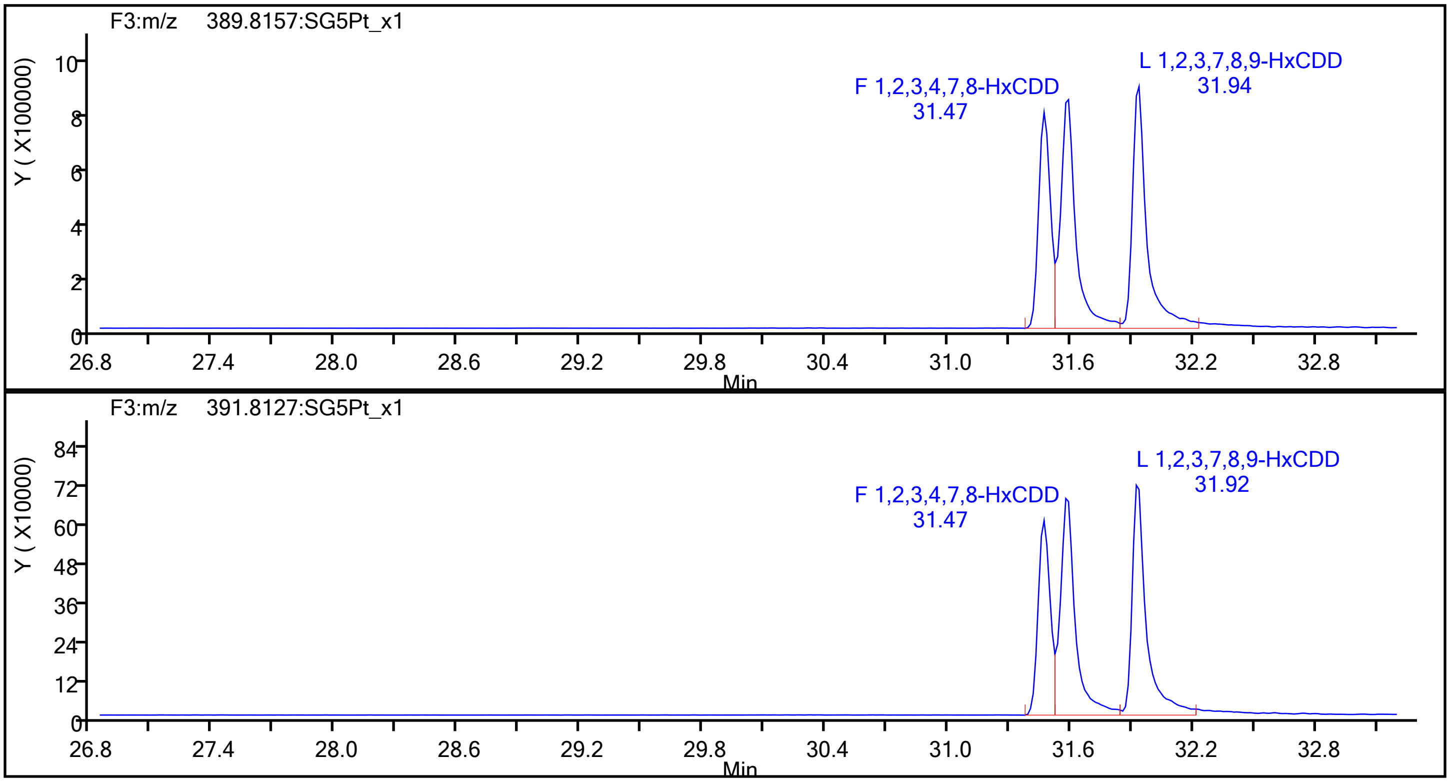

HxCDD Standards

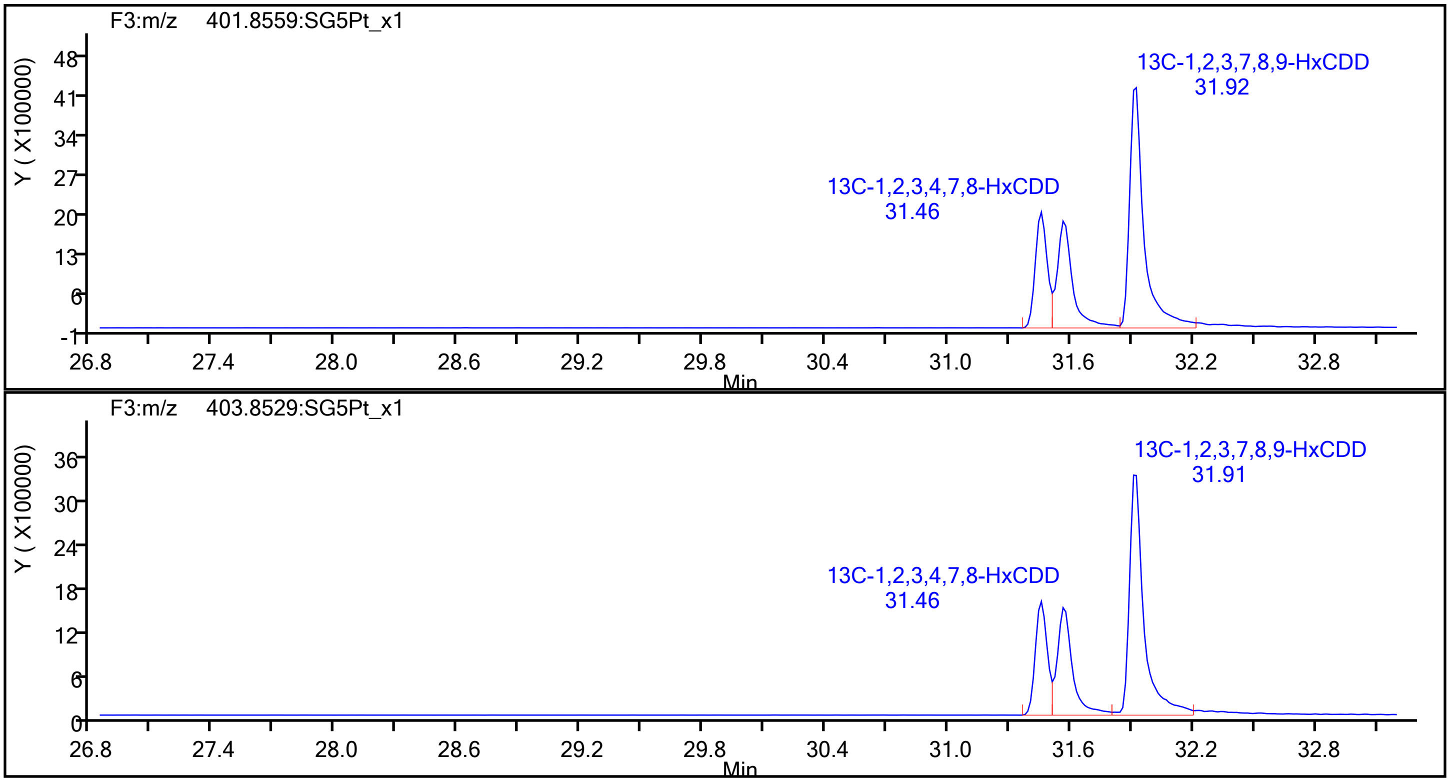

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HpCDF

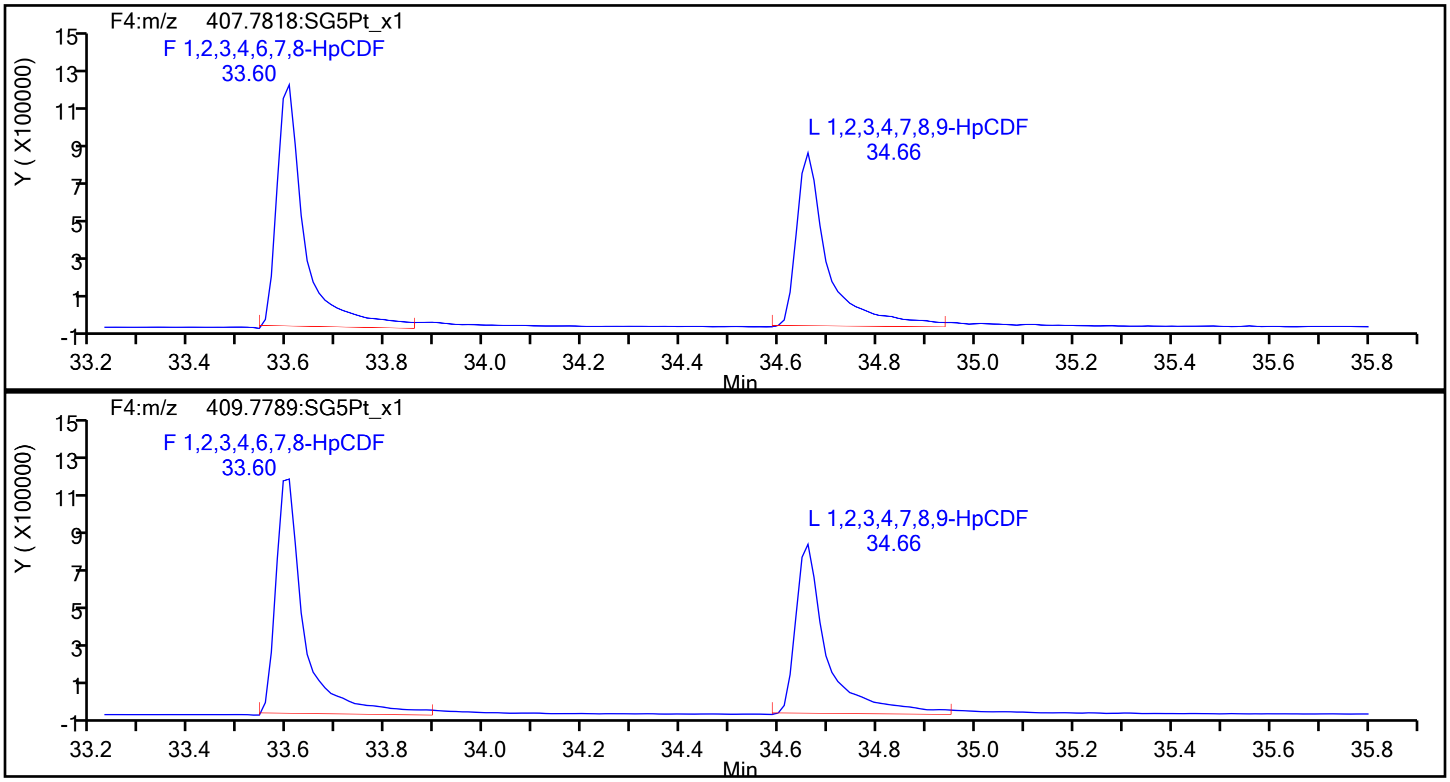

HpCDF Standards

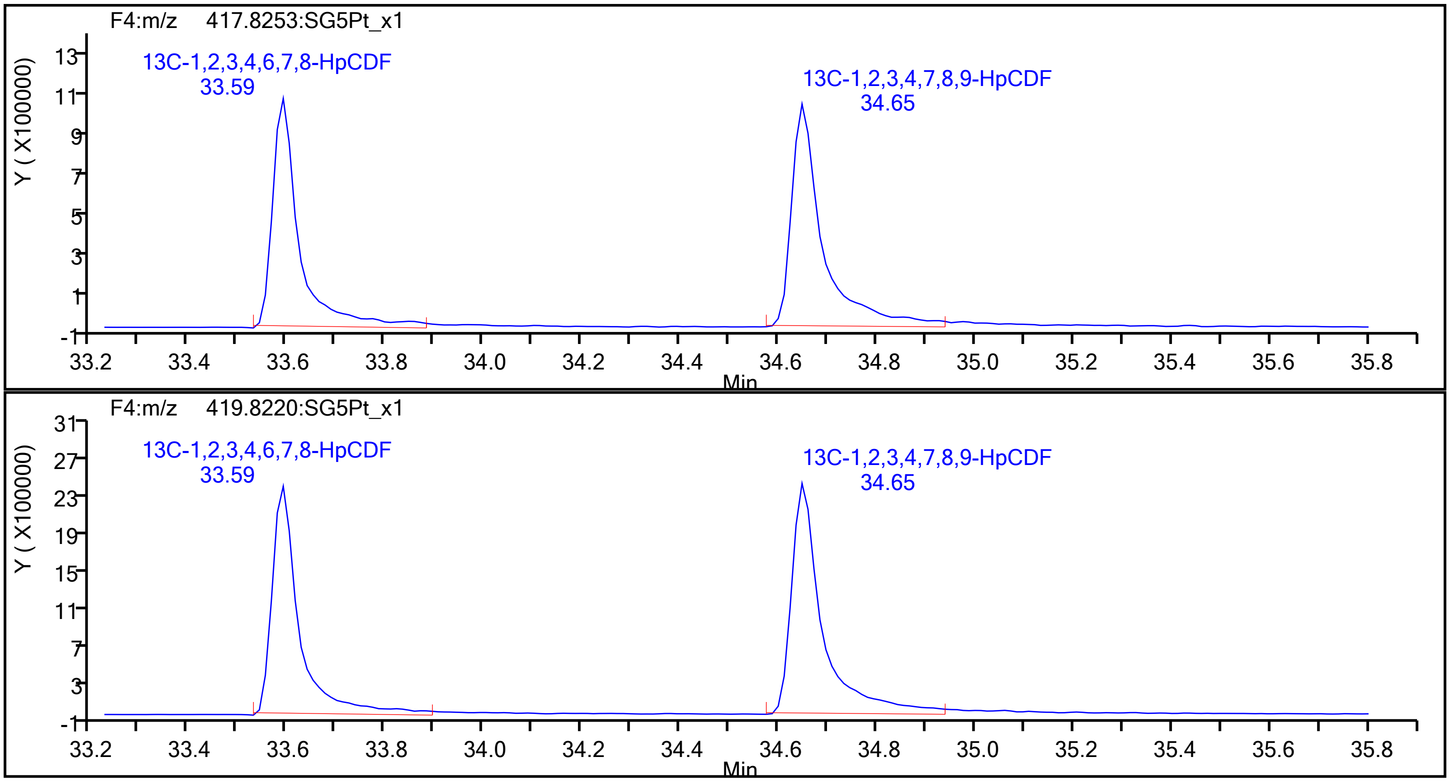

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Operator ID: AJS
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HpCDF

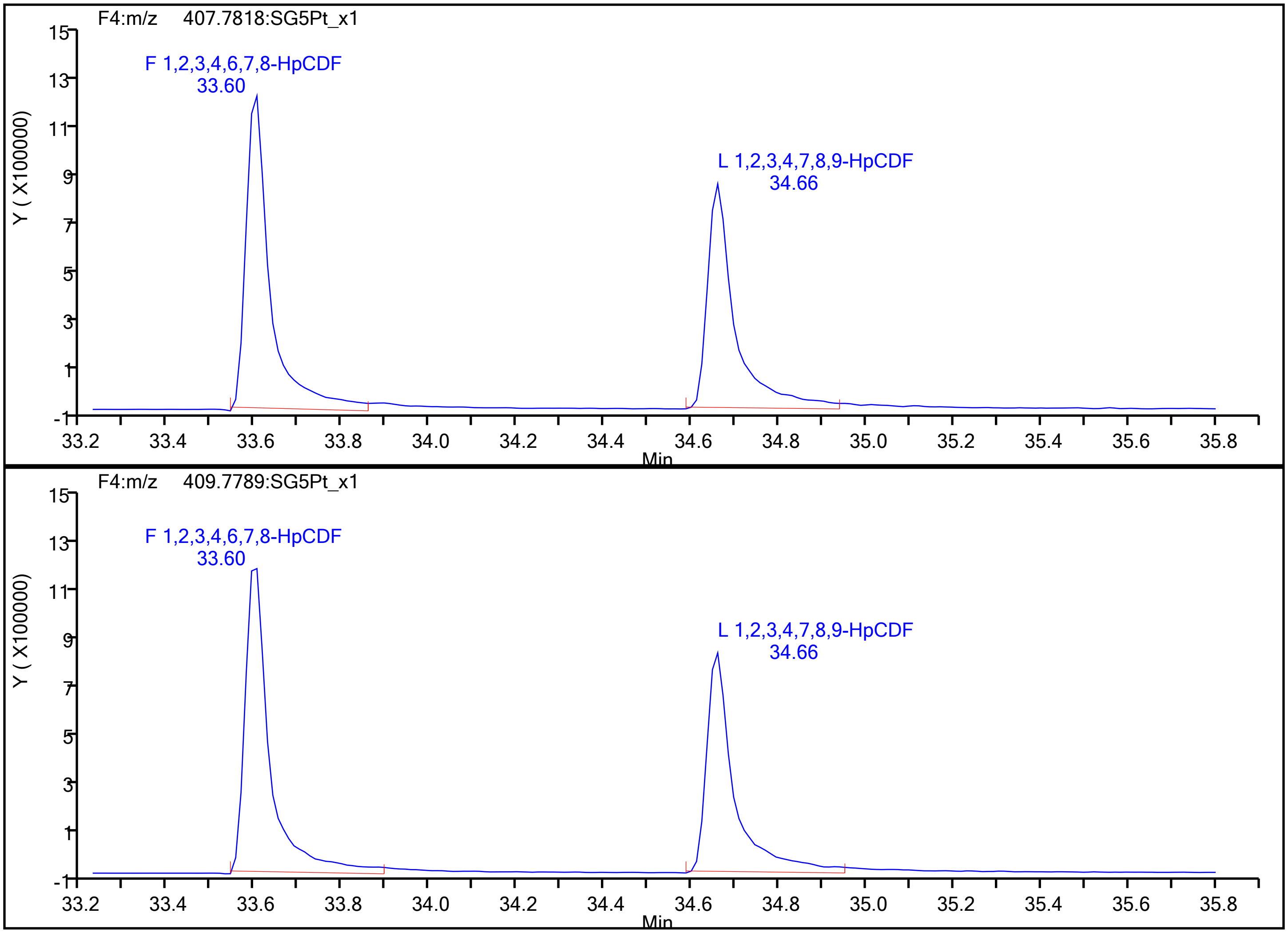

HpCDF Interference Mass

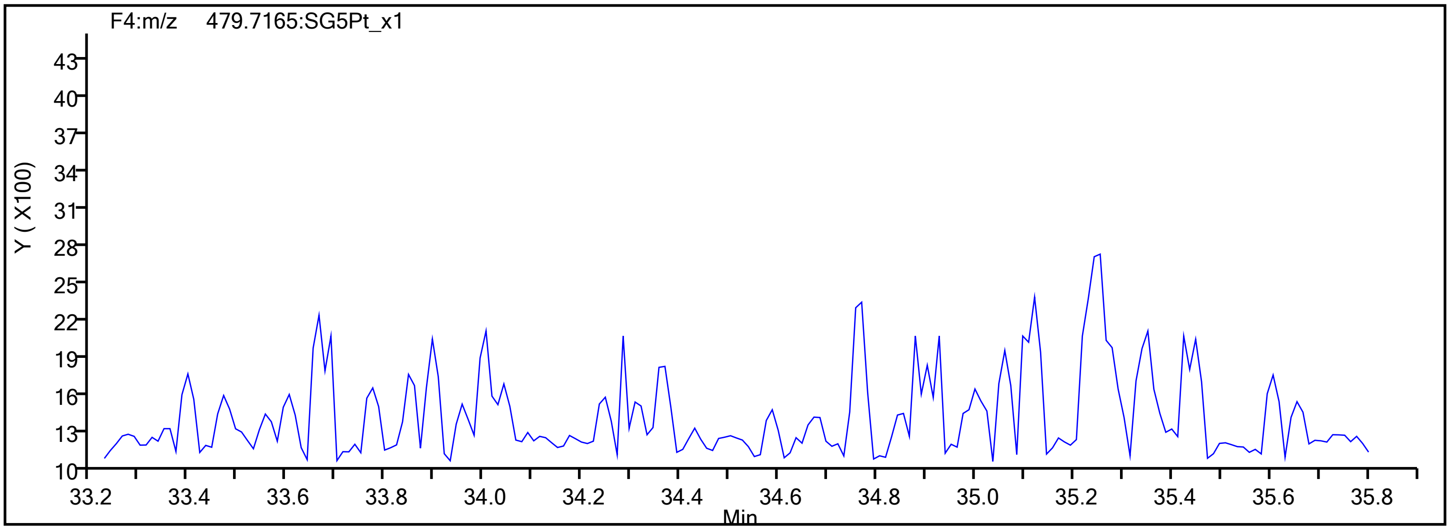

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Injection Date: 26-Jun-2020 01:26:03 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

HpCDD

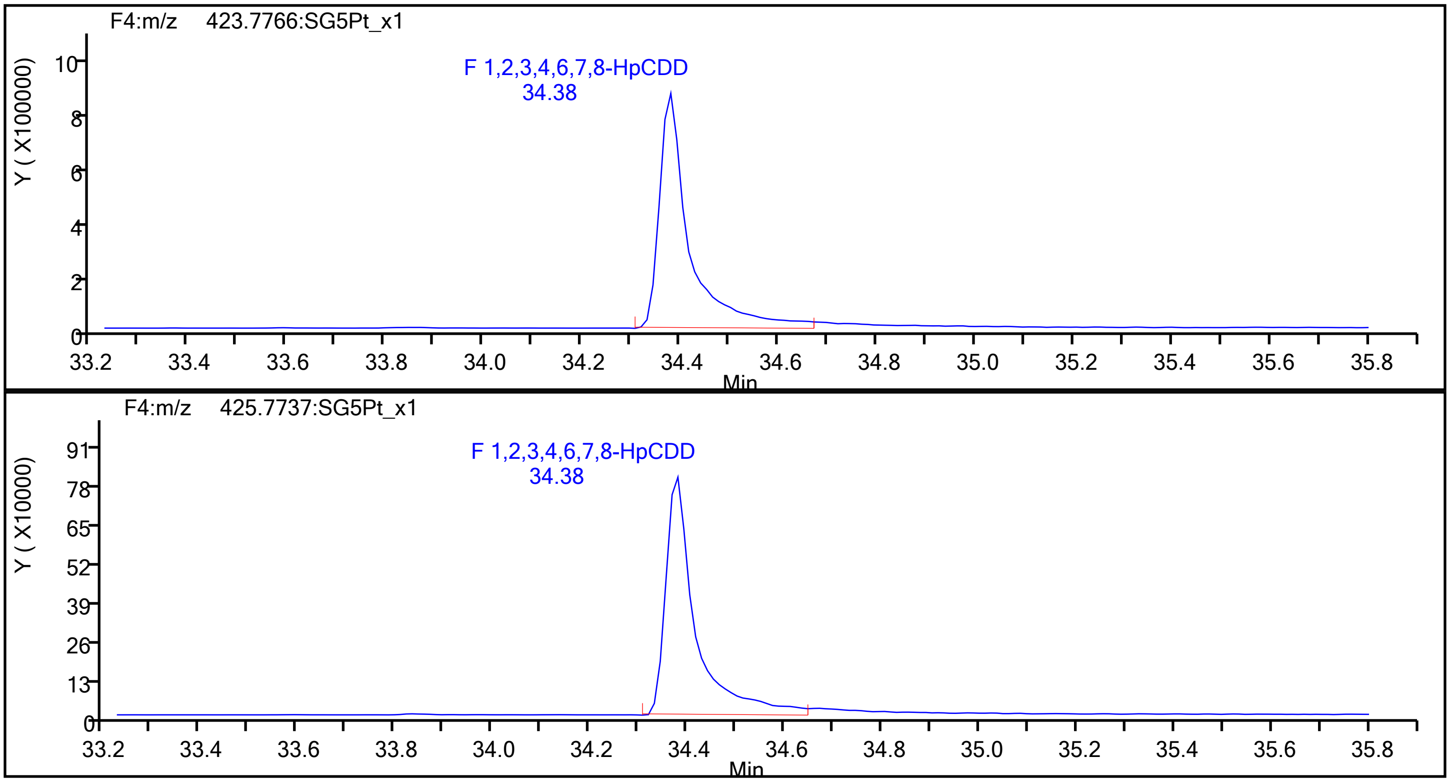

HpCDD Standards

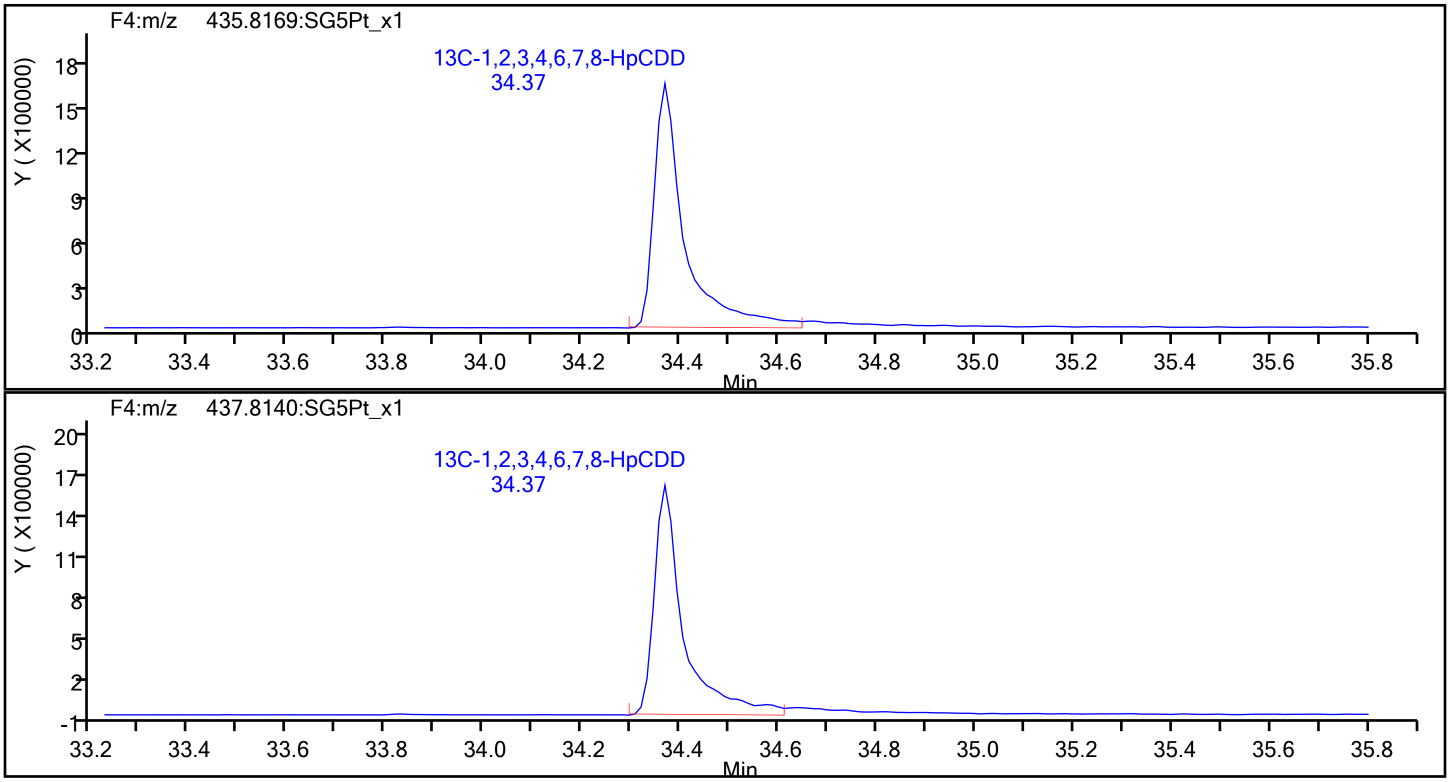

Report Date: 26-Jun-2020 13:16:17 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d

Injection Date: 26-Jun-2020 01:26:03 Injection Vol: 2.0 ul

Instrument ID: 10D5 Operator ID: AJS

Method: Dioxin_10D5 Limit Group: HR - 1613B - ICAL

Client ID: AFEFF10

Worklist#: 389621 Sample Line#: 11

Column Type: DB-5 Column Dia: 0.32 mm

OCDF

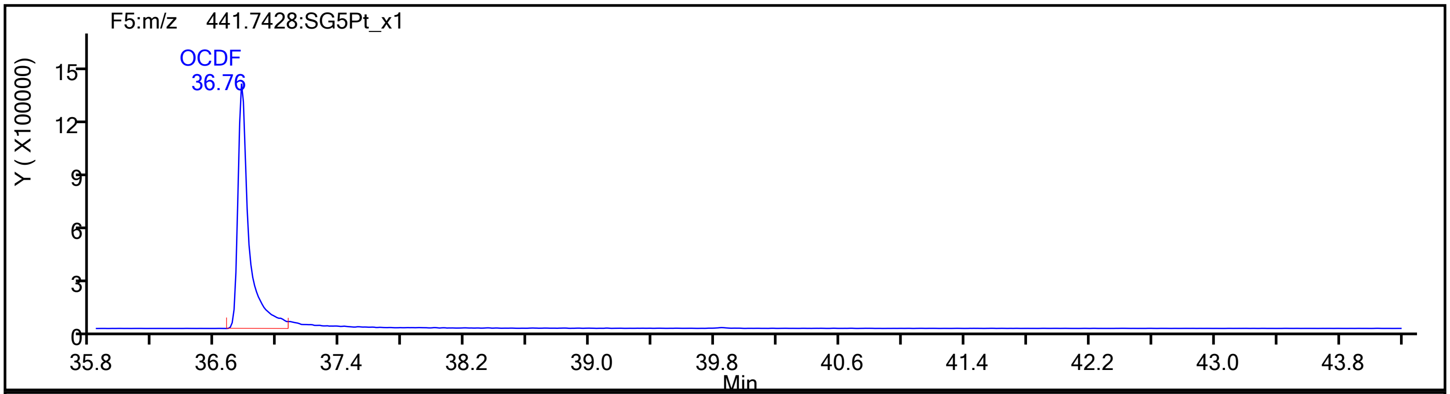

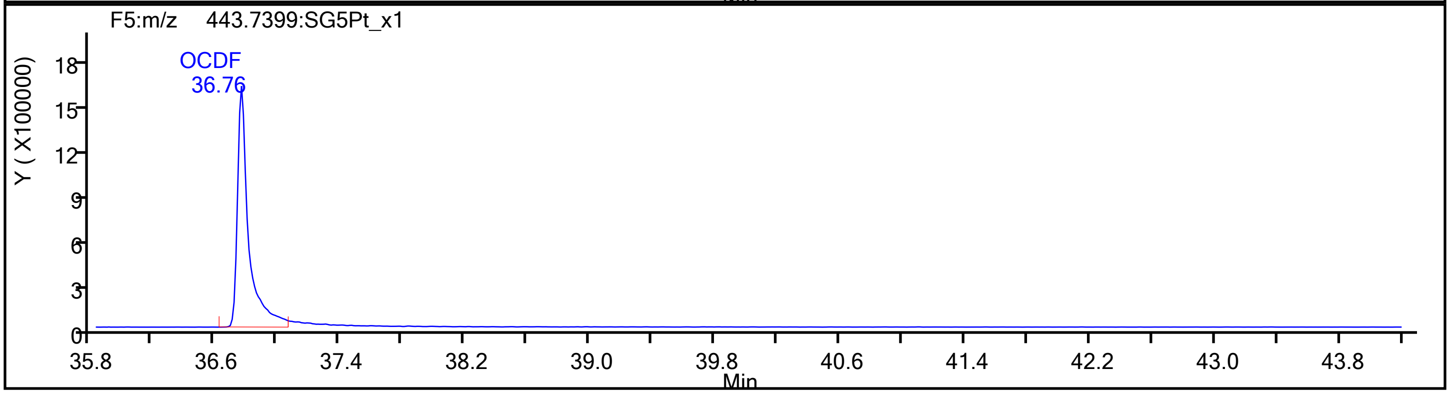

OCDF Standards

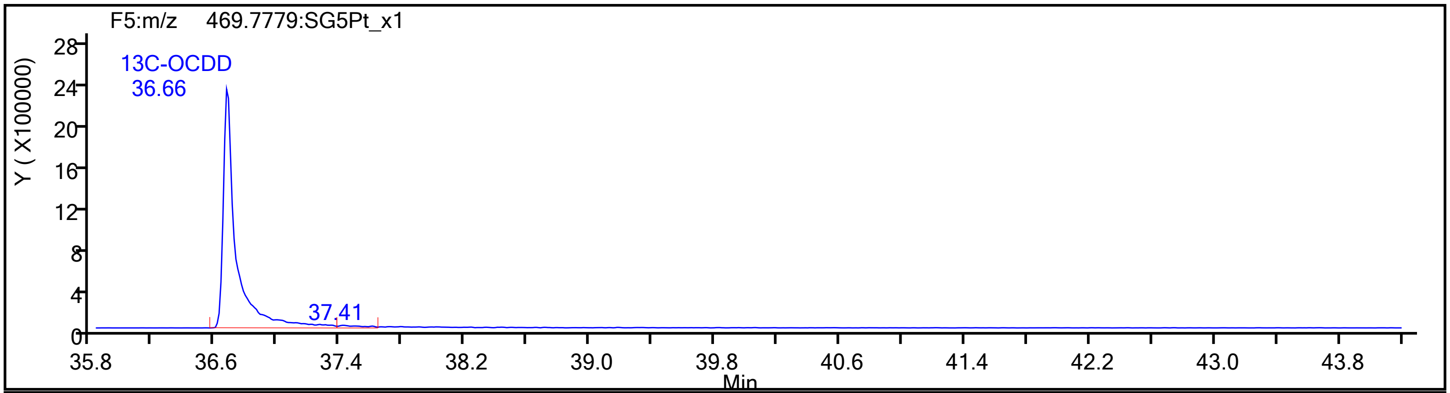

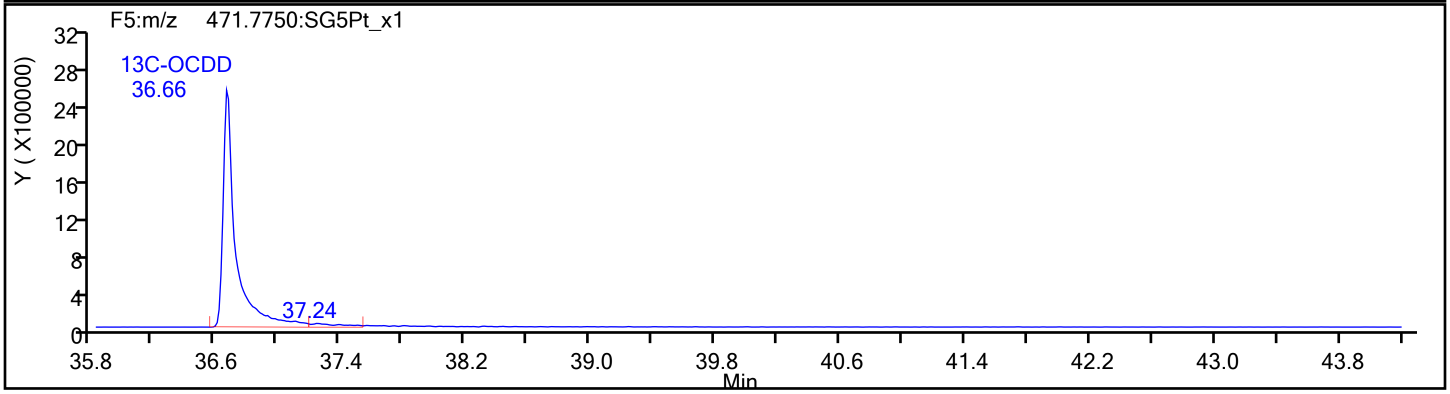

Report Date: 26-Jun-2020 13:16:17 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d		
Injection Date:	26-Jun-2020 01:26:03	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDF

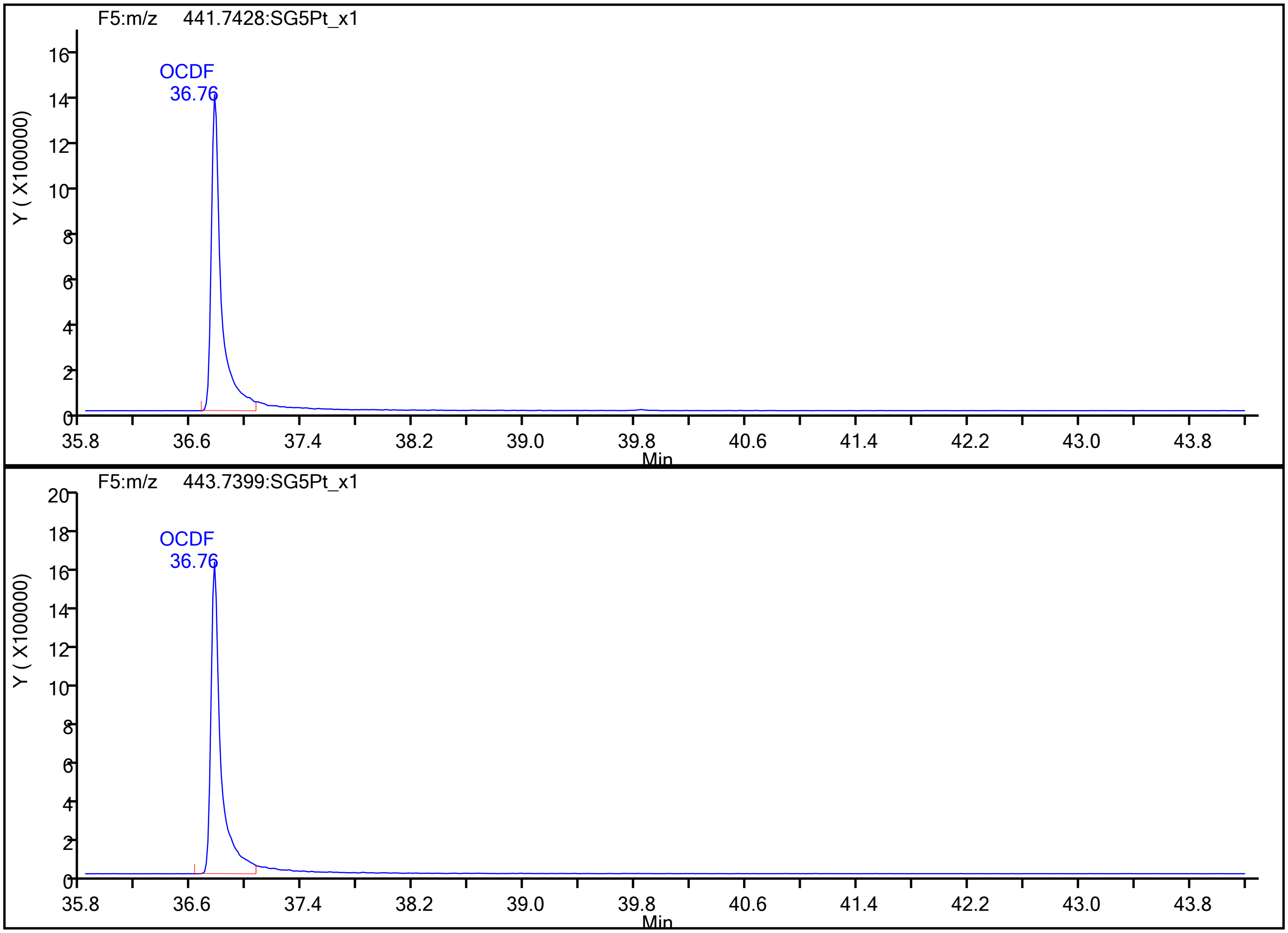

OCDF Interference Mass

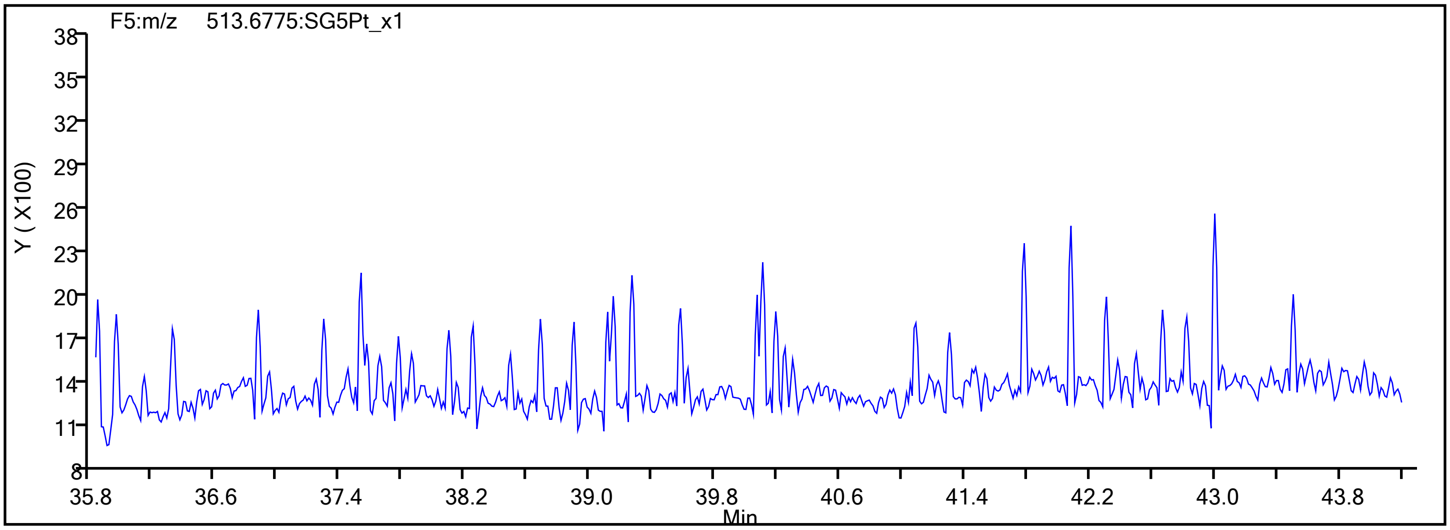

Report Date: 26-Jun-2020 13:16:17 Chrom Revision: 2.3 21-Jun-2020 18:30:46

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d		
Injection Date:	26-Jun-2020 01:26:03	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

OCDD

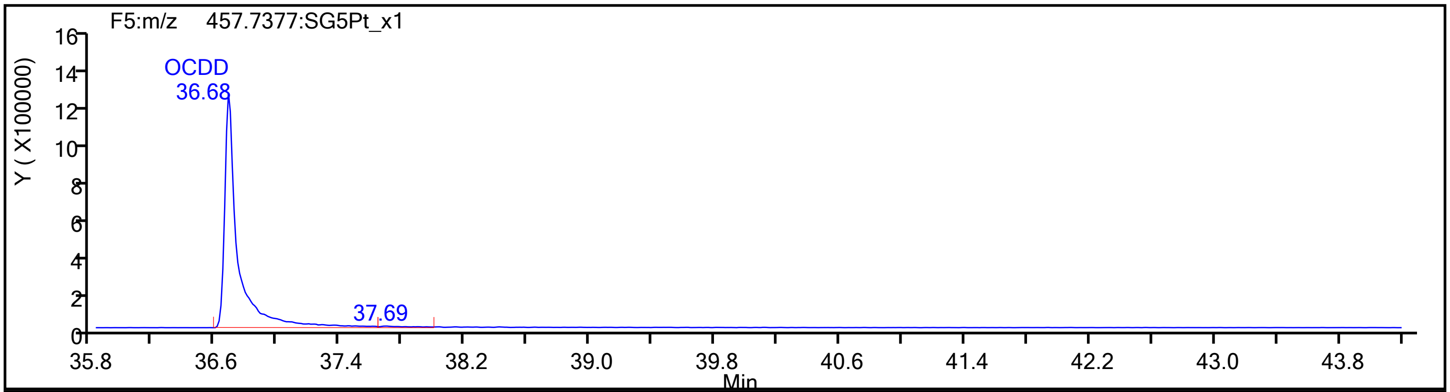

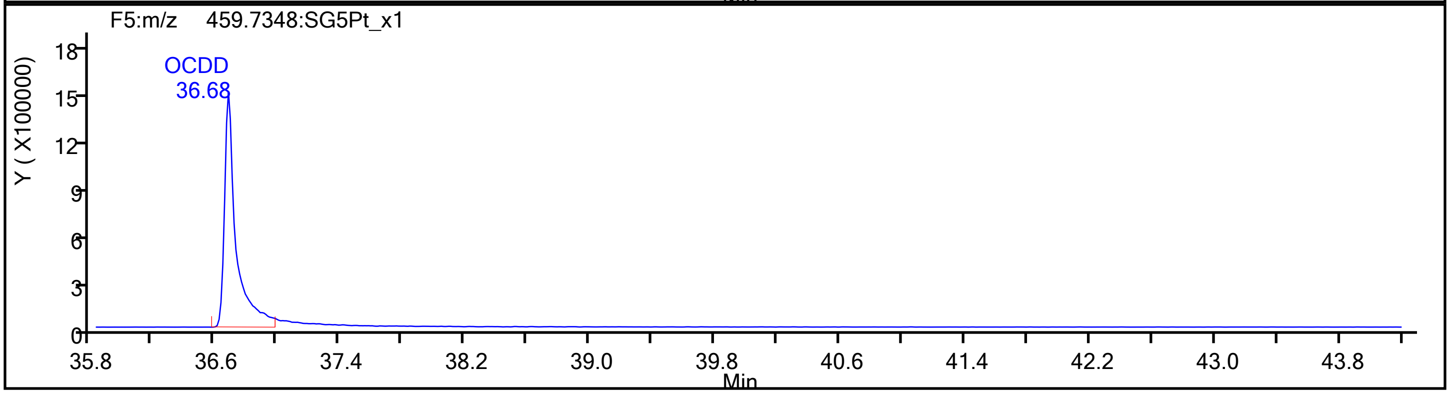

OCDD Standards

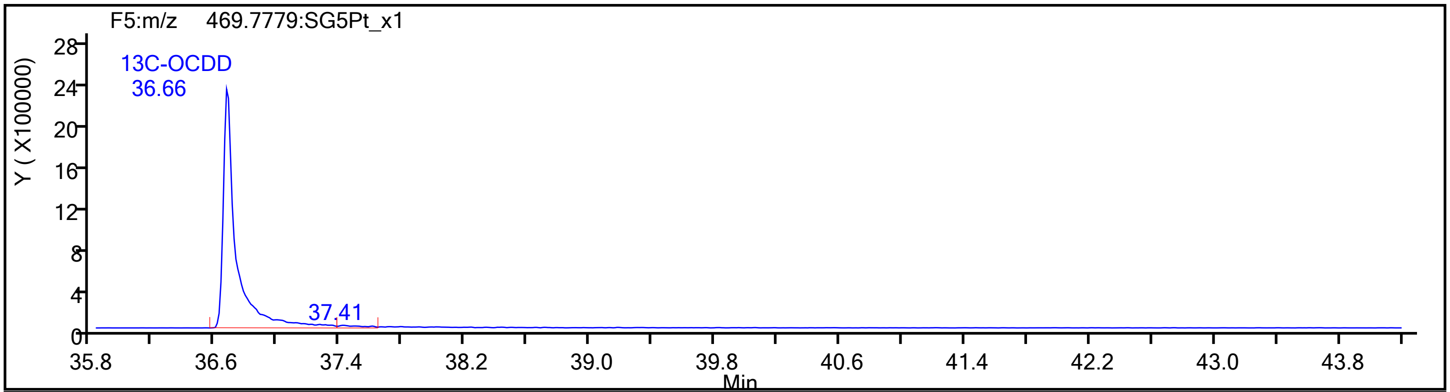

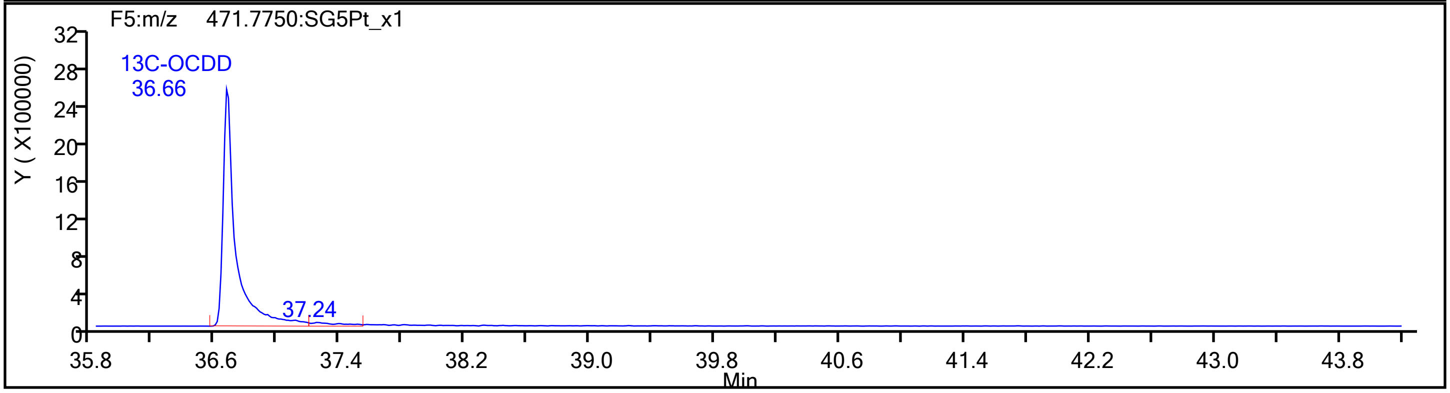

Eurofins TestAmerica, Sacramento

Data File:	\\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d		
Injection Date:	26-Jun-2020 01:26:03	Injection Vol:	2.0 ul
Instrument ID:	10D5	Operator ID:	AJS
Method:	Dioxin_10D5	Limit Group:	HR - 1613B - ICAL
Client ID:	AFEFF10		
Worklist#:	389621	Sample Line#:	11
Column Type:	DB-5	Column Dia:	0.32 mm

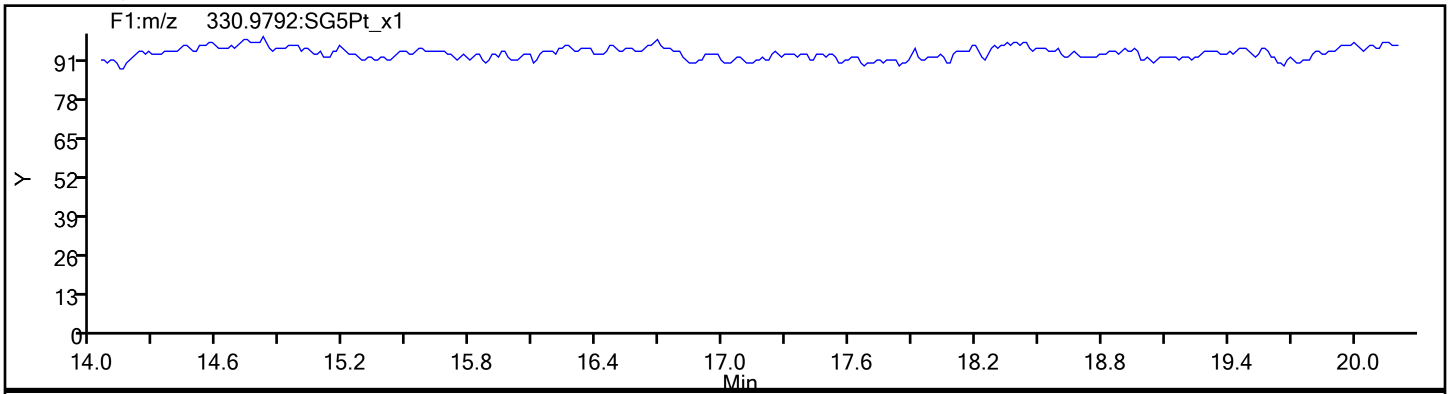

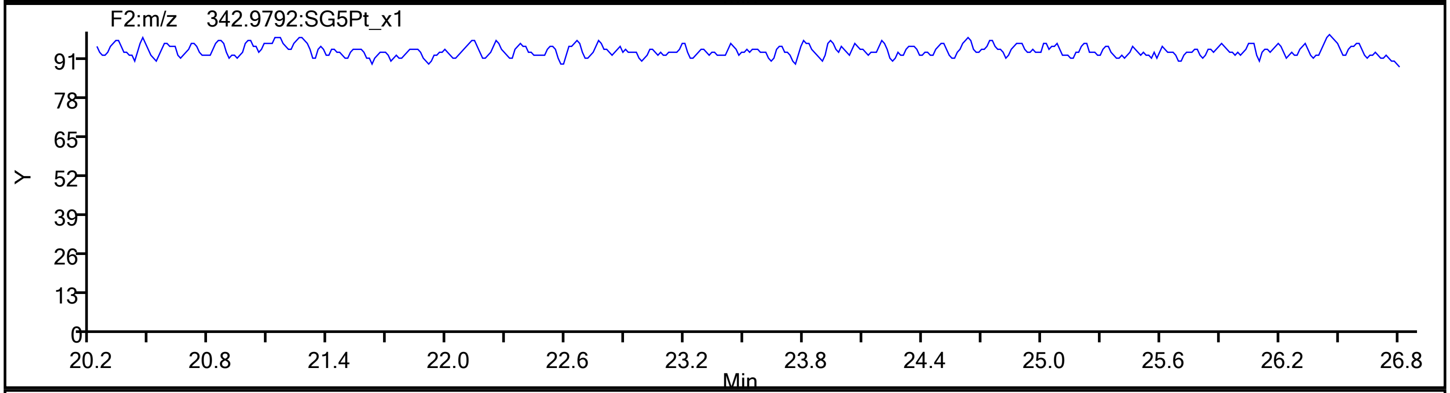

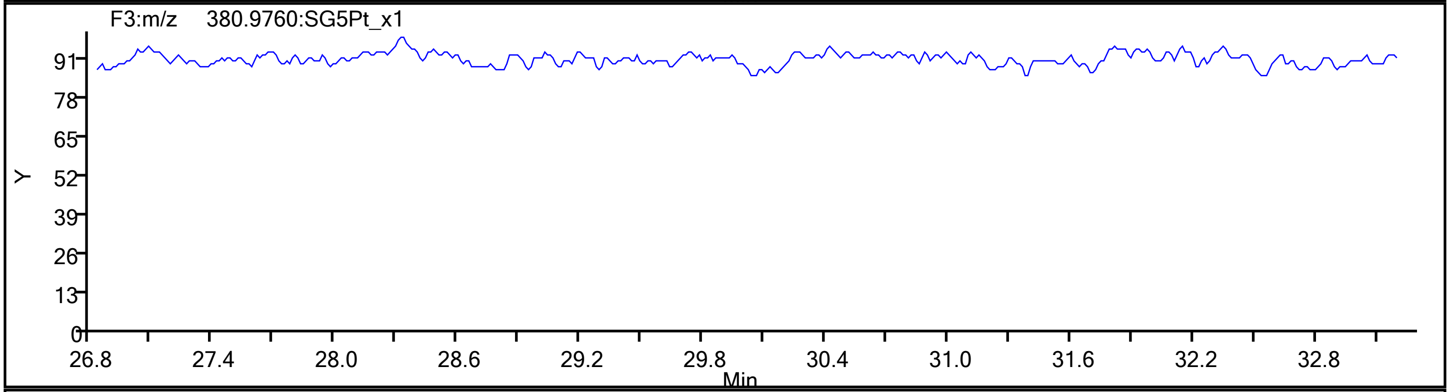

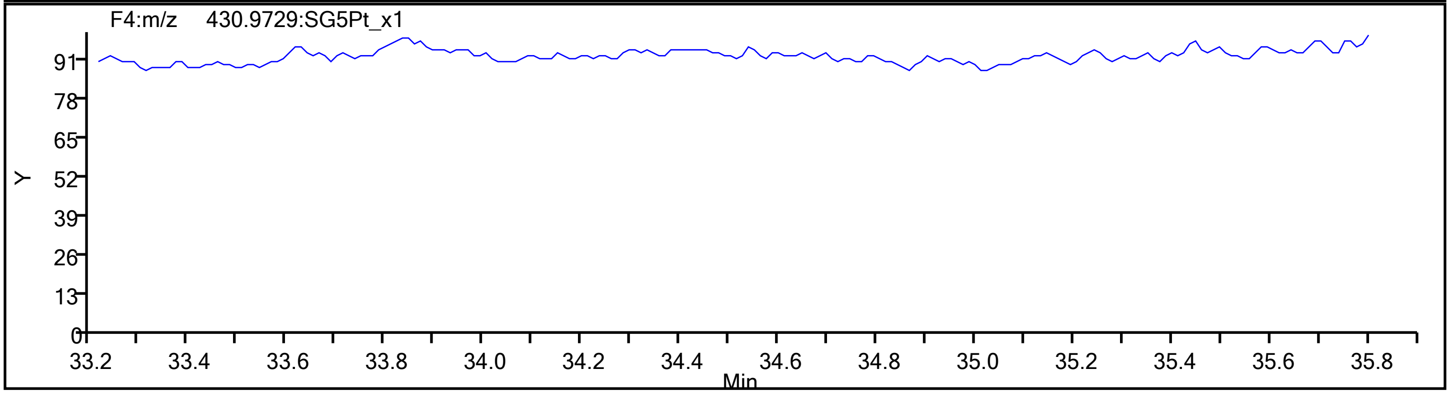

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\10D5\20200625-98311.b\25JN2010D5_11.d
Injection Date: 26-Jun-2020 01:26:03
Injection Vol: 2.0 ul
Instrument ID: 10D5
Operator ID: AJS
Method: Dioxin_10D5
Limit Group: HR - 1613B - ICAL
Client ID: AFEFF10
Worklist#: 389621
Sample Line#: 11
Column Type: DB-5
Column Dia: 0.32 mm

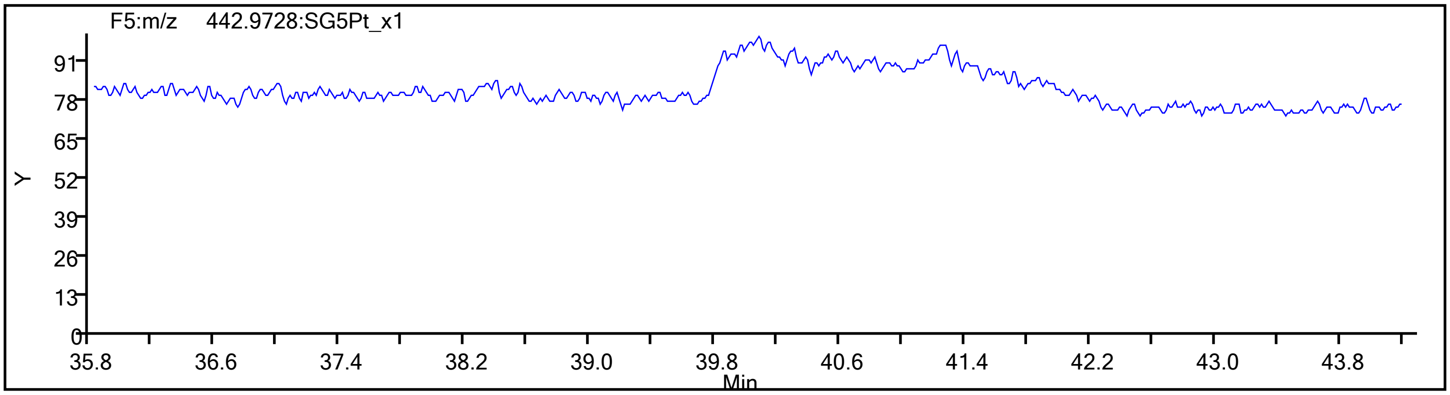

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: 10D5 Start Date: 03/05/2020 15:30

Analysis Batch Number: 362307 End Date: 03/05/2020 21:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-362307/1		03/05/2020 15:30	1	05MR20A10D5_1.d	DB-5 0.32(mm)
IC 320-362307/3		03/05/2020 17:01	1	05MR20A10D5_3.d	DB-5 0.32(mm)
IC 320-362307/4		03/05/2020 17:47	1	05MR20A10D5_4.d	DB-5 0.32(mm)
IC 320-362307/5		03/05/2020 18:33	1	05MR20A10D5_5.d	DB-5 0.32(mm)
IC 320-362307/6		03/05/2020 19:19	1	05MR20A10D5_6.d	DB-5 0.32(mm)
IC 320-362307/7		03/05/2020 20:05	1	05MR20A10D5_7.d	DB-5 0.32(mm)
ICV 320-362307/9		03/05/2020 21:47	1	05MR20A10D5_9.d	DB-5 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: 11D2 Start Date: 05/27/2020 09:22

Analysis Batch Number: 380959 End Date: 05/27/2020 14:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-380959/1		05/27/2020 09:22	1	27MY20A11D2_001.d	DB-225 0.32(mm)
IC 320-380959/3		05/27/2020 10:39	1	27MY20A11D2_003.d	DB-225 0.32(mm)
IC 320-380959/4		05/27/2020 11:17	1	27MY20A11D2_004.d	DB-225 0.32(mm)
IC 320-380959/5		05/27/2020 11:55	1	27MY20A11D2_005.d	DB-225 0.32(mm)
IC 320-380959/6		05/27/2020 12:33	1	27MY20A11D2_006.d	DB-225 0.32(mm)
IC 320-380959/7		05/27/2020 13:12	1	27MY20A11D2_007.d	DB-225 0.32(mm)
ICV 320-380959/9		05/27/2020 14:29	1	27MY20A11D2_009.d	DB-225 0.32(mm)

1613B

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Instrument ID: 10D5   Start Date: 06/25/2020 17:43

Analysis Batch Number: 389621   End Date: 06/26/2020 02:11

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
WDM 320-389621/1		06/25/2020 17:43	1	25JN2010D5_1.d	DB-5 0.32(mm)
CCV 320-389621/2		06/25/2020 18:28	1	25JN2010D5_2.d	DB-5 0.32(mm)
ZZZZZ		06/25/2020 19:24	1		DB-5 0.32(mm)
MB 320-389032/1-A		06/25/2020 20:09	1	25JN2010D5_4.d	DB-5 0.32(mm)
LCS 320-389032/2-A		06/25/2020 20:55	1	25JN2010D5_5.d	DB-5 0.32(mm)
LCSD 320-389032/3-A		06/25/2020 21:40	1	25JN2010D5_6.d	DB-5 0.32(mm)
600-205895-1		06/25/2020 22:25	1	25JN2010D5_7.d	DB-5 0.32(mm)
600-205895-2		06/25/2020 23:10	1	25JN2010D5_8.d	DB-5 0.32(mm)
600-205895-3		06/25/2020 23:55	1	25JN2010D5_9.d	DB-5 0.32(mm)
600-205895-3 MS		06/26/2020 00:40	1	25JN2010D5_10.d	DB-5 0.32(mm)
600-205895-3 MSD		06/26/2020 01:26	1	25JN2010D5_11.d	DB-5 0.32(mm)
600-205895-4		06/26/2020 02:11	1	25JN2010D5_12.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: 11D2 Start Date: 06/26/2020 14:05

Analysis Batch Number: 390059 End Date: 06/26/2020 16:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-390059/1		06/26/2020 14:05	1	26JN2011D2T_001.d	DB-225 0.32(mm)
CCV 320-390059/2		06/26/2020 14:43	1	26JN2011D2T_002.d	DB-225 0.32(mm)
600-205895-1 RA		06/26/2020 16:00	1	26JN2011D2T_004.d	DB-225 0.32(mm)

1613B

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 600-205895-1

SDG No.:

Batch Number: 389032 Batch Start Date: 06/24/20 12:40 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 06/25/20 08:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ExtractionID	RoundBottomID
MB 320-389032/1		1613B, 1613B				1000 mL	20.0 uL	SS1-1	N/A
LCS 320-389032/2		1613B, 1613B				1000 mL	20.0 uL	SS1-2	N/A
LCSD 320-389032/3		1613B, 1613B				1000 mL	20.0 uL	SS1-3	N/A
600-205895-B-1	AFINF	1613B, 1613B	T	1565.3 g	512.63 g	1052.7 mL	20.0 uL	SS1-4	N/A
600-205895-B-2	AFEFF5	1613B, 1613B	T	1519.3 g	512.52 g	1006.8 mL	20.0 uL	SS1-5	N/A
600-205895-C-3	AFEFF10	1613B, 1613B	T	1505.2 g	511.55 g	993.7 mL	20.0 uL	SS1-6	N/A
600-205895-B-3 MS	AFEFF10	1613B, 1613B	T	1533.3 g	509.01 g	1024.3 mL	20.0 uL	SS2-1	N/A
600-205895-B-3 MSD	AFEFF10	1613B, 1613B	T	1530.3 g	511.00 g	1019.3 mL	20.0 uL	SS2-2	N/A
600-205895-B-4	DUP	1613B, 1613B	T	1562.1 g	511.23 g	1050.9 mL	20.0 uL	SS2-3	N/A

Lab Sample ID	Client Sample ID	Method Chain	Basis	RotoVapID	HRDXNIDA 00430	HRDXNIS 00125	HRDXNSU 00239	HRDXNTA 00121	AnalysisComment
MB 320-389032/1		1613B, 1613B		4	1 mL	20 uL	1 mL		
LCS 320-389032/2		1613B, 1613B		6	1 mL	20 uL	1 mL	50 uL	
LCSD 320-389032/3		1613B, 1613B		8	1 mL	20 uL	1 mL	50 uL	
600-205895-B-1	AFINF	1613B, 1613B	T	4	1 mL	20 uL	1 mL		RX
600-205895-B-2	AFEFF5	1613B, 1613B	T	6	1 mL	20 uL	1 mL		RX
600-205895-C-3	AFEFF10	1613B, 1613B	T	8	1 mL	20 uL	1 mL		RX
600-205895-B-3 MS	AFEFF10	1613B, 1613B	T	4	1 mL	20 uL	1 mL	50 uL	RX
600-205895-B-3 MSD	AFEFF10	1613B, 1613B	T	6	1 mL	20 uL	1 mL	50 uL	RX
600-205895-B-4	DUP	1613B, 1613B	T	8	1 mL	20 uL	1 mL		RX

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 600-205895-1

SDG No.:

Batch Number: 389032 Batch Start Date: 06/24/20 12:40 Batch Analyst: Ruiz, Noe I

Batch Method: 1613B Batch End Date: 06/25/20 08:00

Batch Notes	
20% DCM:Hexane ID	1980203 mL
65% DCM:Hexane ID	2029436 mL
Acid Silica Gel ID	2043831
Acid Alumina ID	2030392
Balance ID	QA-070
Batch Comment	RX
C14 ID	1983669
Hexane ID	1989592 mL
IFB Clean Up	GLB 6-25-20
MeCL2 ID	2043912 mL
Na2SO4 ID	1833800
Analyst ID - IDA Reagent Drop	NR 06/24/2020 HRDXNIDA_00430 B-4/4 AG15143 (1.00 mL)
Analyst ID - IDA Reagent Drop Witness	RDR 06/24/20
Analyst ID - IS Reagent Drop	GLB 6-25-20 20uL HRDXNIS00125 B 2/4 CN15436
Analyst ID - IS Reagent Drop Witness	FC 6-25-20
Analyst ID - SU Reagent Drop	GLB 6-25-20 1.0mL HRXNSU00239 AG15134
Analyst ID - SU Reagent Drop Witness	FC 6-25-20
Analyst ID - TA Reagent Drop	NR 06/24/2020 HRDXNTA_00121 B-2/10 CN15436 (50.0 uL)
Analyst ID - TA Reagent Drop Witness	RDR 06/24/20
Silica Gel ID	2033439
Soxhlet/Soxtherm End	NR 06/24/2020 16:00
Soxhlet/Soxtherm Start	NR 06/24/2020 13:00
Storage Box ID	DXN 163
Toluene ID	Toluene_00065 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job Number: 600-205895-1

SDG No.:

Project: San Jacinto River Waste Pits Superfund

Client Sample ID	Lab Sample ID
AFINF	600-205895-1
AFEFF5	600-205895-2
AFEFF10	600-205895-3
DUP	600-205895-4

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: AFINF

Lab Sample ID: 600-205895-1

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 10:30

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.28	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.22	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	55	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.0071	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	2.7	0.10	0.020	mg/L			1	6010C
7440-09-7	Potassium	15	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	35	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.15	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0086	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	380	1.0	0.25	mg/L			1	6010C
7440-02-0	Nickel	0.0049	0.0050	0.0024	mg/L	J		1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	0.0037	0.0050	0.0019	mg/L	J		1	6010C
7440-66-6	Zinc	0.034	0.010	0.0030	mg/L			1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.50	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: AFINF

Lab Sample ID: 600-205895-1

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 10:30

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.26	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.22	0.10	0.021	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	53	0.50	0.050	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-50-8	Copper	ND	0.010	0.0021	mg/L			1	6010C
7439-89-6	Iron	0.025	0.10	0.020	mg/L	J		1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7439-95-4	Magnesium	35	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.0038	0.0050	0.0025	mg/L	J		1	6010C
7439-98-7	Molybdenum	0.0094	0.020	0.0027	mg/L	J		1	6010C
7440-02-0	Nickel	ND	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7440-09-7	Potassium	14	1.0	0.093	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-23-5	Sodium	380	1.0	0.25	mg/L			1	6010C
7440-24-6	Strontium	0.49	0.050	0.0050	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.0065	0.010	0.0030	mg/L	J		1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: AFEFF5

Lab Sample ID: 600-205895-2

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 11:15

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.25	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.20	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	52	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	ND	0.010	0.0021	mg/L			1	6010C
7439-89-6	Iron	0.13	0.10	0.020	mg/L			1	6010C
7440-09-7	Potassium	14	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	34	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.0094	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0085	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	370	1.0	0.25	mg/L			1	6010C
7440-02-0	Nickel	ND	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.0076	0.010	0.0030	mg/L	J		1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.48	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: AFEFF5

Lab Sample ID: 600-205895-2

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 11:15

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.25	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.21	0.10	0.021	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	51	0.50	0.050	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-50-8	Copper	ND	0.010	0.0021	mg/L			1	6010C
7439-89-6	Iron	0.13	0.10	0.020	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7439-95-4	Magnesium	33	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.0092	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0094	0.020	0.0027	mg/L	J		1	6010C
7440-02-0	Nickel	0.0026	0.0050	0.0024	mg/L	J		1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7440-09-7	Potassium	14	1.0	0.093	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-23-5	Sodium	360	1.0	0.25	mg/L			1	6010C
7440-24-6	Strontium	0.47	0.050	0.0050	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.0086	0.010	0.0030	mg/L	J		1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: AFEFF10

Lab Sample ID: 600-205895-3

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 16:00

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.25	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.20	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	51	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	0.0029	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	0.80	0.10	0.020	mg/L			1	6010C
7440-09-7	Potassium	14	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	33	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.050	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0078	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	360	1.0	0.25	mg/L			1	6010C
7440-02-0	Nickel	ND	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.0094	0.010	0.0030	mg/L	J		1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.47	0.050	0.0050	mg/L			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: AFEFF10

Lab Sample ID: 600-205895-3

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 16:00

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.25	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.21	0.10	0.021	mg/L			1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-70-2	Calcium	51	0.50	0.050	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-50-8	Copper	0.0029	0.010	0.0021	mg/L	J		1	6010C
7439-89-6	Iron	0.82	0.10	0.020	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7439-95-4	Magnesium	34	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.050	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0084	0.020	0.0027	mg/L	J		1	6010C
7440-02-0	Nickel	0.0036	0.0050	0.0024	mg/L	J		1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7440-09-7	Potassium	14	1.0	0.093	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-23-5	Sodium	370	1.0	0.25	mg/L			1	6010C
7440-24-6	Strontium	0.47	0.050	0.0050	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.0096	0.010	0.0030	mg/L	J		1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID:	DUP	Lab Sample ID:	600-205895-4
Lab Name:	Eurofins TestAmerica, Sacramento	Job No.:	600-205895-1
SDG ID.:			
Matrix:	Water	Date Sampled:	05/28/2020 00:00
Reporting Basis:	WET	Date Received:	05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-22-4	Silver	ND	0.0050	0.00084	mg/L			1	6010C
7440-38-2	Arsenic	ND	0.020	0.012	mg/L			1	6010C
7440-39-3	Barium	0.25	0.0050	0.0025	mg/L			1	6010C
7440-41-7	Beryllium	ND	0.0020	0.00030	mg/L			1	6010C
7440-42-8	Boron	0.21	0.10	0.021	mg/L			1	6010C
7440-70-2	Calcium	51	0.50	0.050	mg/L		B	1	6010C
7440-43-9	Cadmium	ND	0.0020	0.00050	mg/L			1	6010C
7440-48-4	Cobalt	ND	0.0050	0.0030	mg/L			1	6010C
7440-47-3	Chromium	ND	0.0080	0.0012	mg/L			1	6010C
7440-50-8	Copper	ND	0.010	0.0021	mg/L			1	6010C
7439-89-6	Iron	0.12	0.10	0.020	mg/L			1	6010C
7440-09-7	Potassium	14	1.0	0.093	mg/L			1	6010C
7439-95-4	Magnesium	33	0.50	0.040	mg/L			1	6010C
7439-96-5	Manganese	0.0081	0.0050	0.0025	mg/L			1	6010C
7439-98-7	Molybdenum	0.0095	0.020	0.0027	mg/L	J		1	6010C
7440-23-5	Sodium	360	1.0	0.25	mg/L			1	6010C
7440-02-0	Nickel	ND	0.0050	0.0024	mg/L			1	6010C
7723-14-0	Phosphorus	ND	0.50	0.050	mg/L			1	6010C
7439-92-1	Lead	ND	0.0050	0.0025	mg/L			1	6010C
7782-49-2	Selenium	ND	0.020	0.013	mg/L			1	6010C
7440-62-2	Vanadium	ND	0.0050	0.0019	mg/L			1	6010C
7440-66-6	Zinc	0.0055	0.010	0.0030	mg/L	J		1	6010C
7440-36-0	Antimony	ND	0.020	0.0098	mg/L			1	6010C
7440-28-0	Thallium	ND	0.020	0.0090	mg/L			1	6010C
7440-31-5	Tin	ND	0.020	0.0050	mg/L			1	6010C
7440-32-6	Titanium	ND	0.010	0.0021	mg/L			1	6010C
7440-24-6	Strontium	0.47	0.050	0.0050	mg/L			1	6010C

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

ICV Source: MT6010ICV_00050 Concentration Units: mg/L

CCV Source: MT6010CCV_00093

Analyte	ICV 320-383213/9 06/03/2020 09:29				CCV 320-383213/81 06/03/2020 14:09				CCV 320-383213/93 06/03/2020 14:56			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.985		1.00	99	0.513		0.498	103	0.510		0.498	102
Arsenic	0.974		1.00	97	0.516		0.500	103	0.516		0.500	103
Barium	1.02		1.00	102	2.57		2.50	103	2.56		2.50	102
Beryllium	1.03		1.00	103	0.523		0.498	105	0.521		0.498	105
Boron	0.519		0.501	104	1.04		1.00	104	1.05		1.00	105
Cadmium	1.03		1.00	103	0.521		0.500	104	0.517		0.500	103
Calcium	10.5		10.0	105	26.5		25.0	106	26.4		25.0	106
Chromium	1.02		1.00	102	2.55		2.51	102	2.54		2.51	101
Cobalt	1.04		1.00	104	2.60		2.49	104	2.60		2.49	104
Copper	1.02		1.00	102	2.48		2.48	100	2.45		2.48	99
Iron	10.7		10.0	107	26.8		25.0	107	26.8		25.0	107
Lead	1.05		1.00	105	0.527		0.505	104	0.529		0.505	105
Magnesium	10.3		10.0	103	25.8		25.0	103	25.9		25.0	103
Manganese	1.05		1.00	105	2.60		2.50	104	2.60		2.50	104
Molybdenum	1.02		1.00	102	1.04		0.999	104	1.04		0.999	104
Nickel	1.05		1.00	105	2.62		2.51	105	2.61		2.51	104
Phosphorus	1.93		2.00	96	2.52		2.51	101	2.50		2.51	100
Potassium	10.0		10.0	100	25.6		25.0	102	25.7		25.0	103
Selenium	1.03		1.00	103	0.515		0.502	103	0.512		0.502	102
Silver	0.247		0.251	99	0.507		0.498	102	0.508		0.498	102
Sodium	10.1		10.0	101	25.7		25.0	103	25.7		25.0	103
Strontium	1.03		1.00	103	2.59		2.49	104	2.58		2.49	103
Thallium	1.07		1.00	107	0.529		0.501	106	0.530		0.501	106
Tin	1.04		1.00	104	2.60		2.50	104	2.60		2.50	104
Titanium	1.02		1.00	102	1.03		0.998	103	1.03		0.998	103
Vanadium	1.01		1.00	101	2.54		2.51	101	2.54		2.51	101
Zinc	1.01		1.00	101	2.58		2.51	103	2.57		2.51	102
Aluminum	10.1		10.0	101	25.4		25.0	102	25.1		25.0	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

ICV Source: MT6010ICV_00050 Concentration Units: mg/L

CCV Source: MT6010CCV_00093

Analyte	CCV 320-383213/117 06/03/2020 16:30				CCV 320-383213/129 06/03/2020 17:18				CCV 320-383213/141 06/03/2020 18:05			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.513		0.498	103	0.511		0.498	103	0.516		0.498	104
Arsenic	0.517		0.500	103	0.513		0.500	103	0.515		0.500	103
Barium	2.58		2.50	103	2.58		2.50	103	2.58		2.50	103
Beryllium	0.522		0.498	105	0.524		0.498	105	0.524		0.498	105
Boron	1.06		1.00	106	1.04		1.00	104	1.04		1.00	104
Cadmium	0.524		0.500	105	0.527		0.500	105	0.524		0.500	105
Calcium	26.6		25.0	106	26.6		25.0	106	26.4		25.0	106
Chromium	2.56		2.51	102	2.57		2.51	103	2.54		2.51	101
Cobalt	2.61		2.49	105	2.60		2.49	104	2.59		2.49	104
Copper	2.47		2.48	100	2.48		2.48	100	2.50		2.48	101
Iron	26.9		25.0	108	26.8		25.0	107	26.9		25.0	107
Lead	0.528		0.505	105	0.519		0.505	103	0.519		0.505	103
Magnesium	26.0		25.0	104	26.0		25.0	104	25.7		25.0	103
Manganese	2.61		2.50	104	2.61		2.50	104	2.58		2.50	103
Molybdenum	1.04		0.999	104	1.04		0.999	104	1.03		0.999	103
Nickel	2.63		2.51	105	2.64		2.51	105	2.63		2.51	105
Phosphorus	2.51		2.51	100	2.51		2.51	100	2.52		2.51	100
Potassium	25.7		25.0	103	25.7		25.0	103	25.6		25.0	102
Selenium	0.520		0.502	103	0.520		0.502	104	0.517		0.502	103
Silver	0.510		0.498	102	0.508		0.498	102	0.508		0.498	102
Sodium	25.9		25.0	104	25.8		25.0	103	25.9		25.0	104
Strontium	2.59		2.49	104	2.59		2.49	104	2.60		2.49	104
Thallium	0.532		0.501	106	0.526		0.501	105	0.526		0.501	105
Tin	2.62		2.50	105	2.61		2.50	104	2.60		2.50	104
Titanium	1.03		0.998	103	1.04		0.998	104	1.02		0.998	103
Vanadium	2.56		2.51	102	2.56		2.51	102	2.54		2.51	101
Zinc	2.60		2.51	104	2.64		2.51	105	2.59		2.51	103
Aluminum	25.5		25.0	102	25.7		25.0	103	25.6		25.0	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

ICV Source: MT6010ICV_00050 Concentration Units: mg/L

CCV Source: MT6010CCV_00093

Analyte	CCV 320-383213/148 06/03/2020 18:32											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.502		0.498	101								
Arsenic	0.500		0.500	100								
Barium	2.51		2.50	100								
Beryllium	0.508		0.498	102								
Boron	1.01		1.00	101								
Cadmium	0.511		0.500	102								
Calcium	25.7		25.0	103								
Chromium	2.49		2.51	99								
Cobalt	2.52		2.49	101								
Copper	2.44		2.48	98								
Iron	26.0		25.0	104								
Lead	0.504		0.505	100								
Magnesium	25.1		25.0	100								
Manganese	2.52		2.50	101								
Molybdenum	1.00		0.999	100								
Nickel	2.56		2.51	102								
Phosphorus	2.44		2.51	97								
Potassium	24.9		25.0	99								
Selenium	0.508		0.502	101								
Silver	0.498		0.498	100								
Sodium	25.1		25.0	100								
Strontium	2.52		2.49	101								
Thallium	0.511		0.501	102								
Tin	2.53		2.50	101								
Titanium	1.00		0.998	100								
Vanadium	2.48		2.51	99								
Zinc	2.54		2.51	101								
Aluminum	24.9		25.0	100								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

ICV Source: MT6010ICV_00050 Concentration Units: mg/L

CCV Source: MT6010CRI_QSM_00046

Analyte	ICV 320-383213/9 06/03/2020 09:29				CCVL 320-383213/150 06/03/2020 18:40							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	0.985		1.00	99	0.0302		0.0300	101				
Arsenic	0.974		1.00	97	0.0385		0.0400	96				
Barium	1.02		1.00	102	0.0219		0.0200	110				
Beryllium	1.03		1.00	103	0.00320		0.00300	107				
Boron	0.519		0.501	104	0.206		0.200	103				
Cadmium	1.03		1.00	103	0.00312		0.00300	104				
Calcium	10.5		10.0	105	0.539		0.500	108				
Chromium	1.02		1.00	102	0.0106		0.0100	106				
Cobalt	1.04		1.00	104	0.0102		0.0100	101				
Copper	1.02		1.00	102	0.0135		0.0150	90				
Iron	10.7		10.0	107	0.0963	J	0.100	96				
Lead	1.05		1.00	105	0.0117		0.0100	117				
Magnesium	10.3		10.0	103	0.531		0.500	106				
Manganese	1.05		1.00	105	0.0110		0.0100	110				
Molybdenum	1.02		1.00	102	0.0205		0.0200	102				
Nickel	1.05		1.00	105	0.0107		0.0100	107				
Phosphorus	1.93		2.00	96	0.500		0.500	100				
Potassium	10.0		10.0	100	1.07		1.00	107				
Selenium	1.03		1.00	103	0.0363		0.0400	91				
Silver	0.247		0.251	99	0.00543		0.00500	109				
Sodium	10.1		10.0	101	0.579	J	0.500	116				
Strontium	1.03		1.00	103	0.0528		0.0500	106				
Thallium	1.07		1.00	107	0.0286		0.0300	95				
Tin	1.04		1.00	104	0.0231		0.0200	115				
Titanium	1.02		1.00	102	0.0105		0.0100	105				
Vanadium	1.01		1.00	101	0.0203		0.0200	101				
Zinc	1.01		1.00	101	0.0223		0.0200	111				
Aluminum	10.1		10.0	101	0.237		0.200	119				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Method: 6010C Instrument ID: T01

Lab Sample ID: CRI 320-383213/12 Concentration Units: mg/L

CRQL Check Standard Source: MT6010CRI_STD_00039

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Arsenic	0.0200	0.0189	J	95	70-130
Barium	0.00500	0.00541		108	70-130
Beryllium	0.00200	0.00227		114	70-130
Boron	0.100	0.0953	J	95	70-130
Cadmium	0.00200	0.00197	J	99	70-130
Calcium	0.500	0.520		104	70-130
Chromium	0.00501	0.00421	J	84	70-130
Cobalt	0.00499	0.00447	J	90	70-130
Copper	0.0100	0.0102		102	70-130
Iron	0.100	0.0960	J	96	70-130
Magnesium	0.500	0.497	J	99	70-130
Manganese	0.00500	0.00523		105	70-130
Molybdenum	0.0200	0.0228		114	70-130
Nickel	0.00500	0.00429	J	86	70-130
Phosphorus	0.500	0.466	J	93	70-130
Potassium	0.999	0.893	J	89	70-130
Lead	0.00500	0.00424	J	85	70-130
Selenium	0.0200	0.0167	J	84	70-130
Silver	0.00500	0.00521		104	70-130
Sodium	0.500	0.488	J	97	70-130
Antimony	0.0200	0.0210		105	70-130
Thallium	0.0200	0.0192	J	96	70-130
Tin	0.0200	0.0210		105	70-130
Titanium	0.0100	0.0127		127	70-130
Vanadium	0.00500	0.00513		103	70-130
Strontium	0.0500	0.0505		101	70-130
Zinc	0.0100	0.0103		103	70-130

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICBIS 320-383213/10 06/03/2020 09:32		CCB 320-383213/82 06/03/2020 14:13		CCB 320-383213/94 06/03/2020 15:00		CCB 320-383213/118 06/03/2020 16:34	
		Found	C	Found	C	Found	C	Found	C
Antimony	0.020	ND		ND		ND		ND	
Arsenic	0.020	ND		ND		ND		ND	
Barium	0.0050	ND		ND		ND		ND	
Beryllium	0.0020	ND		ND		0.000320	J	ND	
Boron	0.10	ND		ND		ND		0.0214	J
Cadmium	0.0020	ND		ND		ND		ND	
Calcium	0.50	ND		ND		ND		ND	
Chromium	0.0080	ND		ND		ND		ND	
Cobalt	0.0050	ND		ND		ND		ND	
Copper	0.010	0.00262	J	ND		ND		ND	
Iron	0.10	0.0222	J	0.0927	J	0.0281	J	0.0393	J
Lead	0.0050	ND		ND		ND		ND	
Magnesium	0.50	ND		ND		ND		ND	
Manganese	0.0050	ND		0.00399	J	ND		ND	
Molybdenum	0.020	0.00422	J	0.00347	J	0.00323	J	0.00334	J
Nickel	0.0050	ND		ND		ND		ND	
Phosphorus	0.50	ND		ND		ND		ND	
Potassium	1.0	ND		ND		ND		ND	
Selenium	0.020	ND		ND		ND		ND	
Silver	0.0050	ND		ND		ND		ND	
Sodium	1.0	ND		ND		ND		ND	
Strontium	0.050	ND		ND		ND		ND	
Thallium	0.020	ND		ND		ND		ND	
Tin	0.020	ND		ND		ND		ND	
Titanium	0.010	0.00358	J	0.00503	J	0.00420	J	0.00379	J
Vanadium	0.0050	ND		ND		ND		ND	
Zinc	0.010	ND		ND		ND		ND	
Aluminum	0.20	ND		0.0539	J	ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Concentration Units: mg/L

		CCB 320-383213/130 06/03/2020 17:21		CCB 320-383213/142 06/03/2020 18:09		CCB 320-383213/149 06/03/2020 18:36			
Analyte	RL	Found	C	Found	C	Found	C	Found	C
Antimony	0.020	ND		ND		ND			
Arsenic	0.020	ND		ND		ND			
Barium	0.0050	ND		ND		ND			
Beryllium	0.0020	ND		ND		0.000410	J		
Boron	0.10	ND		ND		ND			
Cadmium	0.0020	ND		ND		ND			
Calcium	0.50	ND		ND		ND			
Chromium	0.0080	ND		ND		ND			
Cobalt	0.0050	ND		ND		ND			
Copper	0.010	ND		ND		ND			
Iron	0.10	0.0297	J	0.0272	J	0.0373	J		
Lead	0.0050	ND		ND		ND			
Magnesium	0.50	ND		ND		ND			
Manganese	0.0050	ND		ND		ND			
Molybdenum	0.020	0.00355	J	0.00373	J	0.00328	J		
Nickel	0.0050	ND		ND		ND			
Phosphorus	0.50	ND		ND		ND			
Potassium	1.0	ND		ND		ND			
Selenium	0.020	ND		ND		ND			
Silver	0.0050	0.00119	J	0.000990	J	0.00156	J		
Sodium	1.0	ND		ND		ND			
Strontium	0.050	ND		ND		ND			
Thallium	0.020	ND		ND		ND			
Tin	0.020	ND		ND		ND			
Titanium	0.010	0.00356	J	0.00346	J	0.00362	J		
Vanadium	0.0050	ND		ND		ND			
Zinc	0.010	ND		ND		ND			
Aluminum	0.20	ND		ND		ND			

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-382787/1-A

Instrument Code: T01 Batch No.: 383213

CAS No.	Analyte	Concentration	C	Q	Method
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	0.0597	J		6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7440-09-7	Potassium	ND			6010C
7439-92-1	Lead	ND			6010C
7782-49-2	Selenium	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-31-5	Tin	0.0142	J		6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-24-6	Strontium	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-382794/1-A

Instrument Code: T01 Batch No.: 383213

CAS No.	Analyte	Concentration	C	Q	Method
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-42-8	Boron	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-70-2	Calcium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-48-4	Cobalt	ND			6010C
7440-50-8	Copper	ND			6010C
7439-89-6	Iron	ND			6010C
7439-95-4	Magnesium	ND			6010C
7439-96-5	Manganese	ND			6010C
7439-98-7	Molybdenum	ND			6010C
7440-02-0	Nickel	ND			6010C
7723-14-0	Phosphorus	ND			6010C
7440-09-7	Potassium	ND			6010C
7439-92-1	Lead	ND			6010C
7782-49-2	Selenium	ND			6010C
7440-22-4	Silver	ND			6010C
7440-23-5	Sodium	ND			6010C
7440-36-0	Antimony	ND			6010C
7440-28-0	Thallium	ND			6010C
7440-31-5	Tin	ND			6010C
7440-32-6	Titanium	ND			6010C
7440-62-2	Vanadium	ND			6010C
7440-24-6	Strontium	ND			6010C
7440-66-6	Zinc	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Concentration Units: mg/L Lab Sample ID: MB 320-382787/1-A

Instrument Code: T01 Batch No.: 383649

CAS No.	Analyte	Concentration	C	Q	Method
7440-66-6	Zinc	ND			6010C

FORM III-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job No.: 600-205895-1

SDG No.:

Lab Sample ID: ICSA 320-383213/13   Instrument ID: T01

Lab File ID: 06032020.asc   ICS Source: MT6010ICSA_00053

Concentration Units: mg/L

Analyte	True	Found	
	Solution A	Solution A	Percent Recovery
Antimony		**-0.0074**	
Arsenic		**0.0006**	
Barium		**0.0010**	
Beryllium		**-0.0005**	
Boron		**0.0045**	
Cadmium		**-0.0006**	
Calcium	**500**	**493**	**99**
Chromium		**-0.0030**	
Cobalt		**-0.0010**	
Copper		**-0.0012**	
Iron	**200**	**195**	**97**
Lead		**-0.0027**	
Magnesium	**500**	**487**	**97**
Manganese		**-0.0004**	
Molybdenum		**-0.0002**	
Nickel		**-0.0022**	
Phosphorus		**0.0129**	
Potassium		**-0.157**	
Selenium		**-0.0068**	
Silver		**-0.0006**	
Sodium		**0.0869**	
Strontium		**0.0051**	
Thallium		**-0.0080**	
Tin		**-0.0036**	
Titanium		**-0.0011**	
Vanadium		**-0.0009**	
Zinc		**-0.0014**	
Aluminum	*500*	*501*	*100*
Silicon		*0.0057*	
Sulfur		*-0.297*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job No.: 600-205895-1

SDG No.:

Lab Sample ID: ICSAB 320-383213/14 Instrument ID: T01

Lab File ID: 06032020.asc ICS Source: MT6010ICSAB_00039

Concentration Units: mg/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Antimony		**-0.0056**	
Arsenic	**1.00**	**0.976**	**98**
Barium	**1.00**	**0.999**	**100**
Beryllium	**0.500**	**0.495**	**99**
Boron	**10.0**	**9.50**	**95**
Cadmium	**1.00**	**0.934**	**93**
Calcium	**500**	**488**	**98**
Chromium	**1.00**	**0.983**	**98**
Cobalt	**1.00**	**0.908**	**91**
Copper	**1.00**	**0.988**	**99**
Iron	**200**	**194**	**97**
Lead	**1.00**	**0.940**	**94**
Magnesium	**500**	**490**	**98**
Manganese	**1.00**	**1.00**	**100**
Molybdenum		**-0.0009**	
Nickel	**1.00**	**0.891**	**89**
Phosphorus	**10.0**	**9.78**	**98**
Potassium	**10.0**	**10.3**	**103**
Selenium	**1.00**	**0.983**	**98**
Silver	**1.00**	**1.07**	**107**
Sodium	**10.0**	**10.4**	**104**
Strontium	**1.00**	**1.01**	**101**
Thallium	**1.00**	**0.898**	**90**
Tin		**-0.0026**	
Titanium		**-0.0014**	
Vanadium	**1.00**	**1.01**	**101**
Zinc	**1.00**	**0.938**	**94**
Aluminum	*500*	*498*	*100*
Silicon		*0.0238*	
Sulfur		*-0.305*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: AFINF MS

Lab ID: 600-205895-1 MS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Arsenic	0.473		ND		0.500	95	75-125		6010C
Barium	0.722		0.26		0.500	93	75-125		6010C
Beryllium	0.240		ND		0.250	96	75-125		6010C
Boron	4.59		0.22		4.98	88	75-125		6010C
Cadmium	0.234		ND		0.250	94	75-125		6010C
Calcium	75.4		53		25.0	89	75-125		6010C
Chromium	0.237		ND		0.250	95	75-125		6010C
Cobalt	0.230		ND		0.250	92	75-125		6010C
Copper	0.235		ND		0.250	94	75-125		6010C
Iron	4.94		0.025	J	5.00	98	75-125		6010C
Magnesium	57.7		35		25.0	92	75-125		6010C
Manganese	0.243		0.0038	J	0.250	96	75-125		6010C
Molybdenum	0.250		0.0094	J	0.250	96	75-125		6010C
Nickel	0.228		ND		0.250	91	75-125		6010C
Phosphorus	5.06		ND		5.00	101	75-125		6010C
Potassium	38.7		14		25.0	97	75-125		6010C
Lead	0.229		ND		0.250	92	75-125		6010C
Selenium	0.463		ND		0.500	93	75-125		6010C
Silver	0.0462		ND		0.0498	93	75-125		6010C
Sodium	388		380		25.0	31	75-125	4	6010C
Antimony	0.443		ND		0.498	89	75-125		6010C
Thallium	0.443		ND		0.500	89	75-125		6010C
Tin	0.487		ND		0.500	97	75-125		6010C
Titanium	0.241		ND		0.250	96	75-125		6010C
Vanadium	0.240		ND		0.250	96	75-125		6010C
Strontium	0.715		0.49		0.250	90	75-125		6010C
Zinc	0.495		0.0065	J	0.503	97	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: AFEFF10 MS

Lab ID: 600-205895-3 MS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Silver	0.0472		ND		0.0498	95	75-125		6010C
Arsenic	0.487		ND		0.500	97	75-125		6010C
Barium	0.737		0.25		0.500	97	75-125		6010C
Beryllium	0.245		ND		0.250	98	75-125		6010C
Boron	4.72		0.20		4.98	91	75-125		6010C
Calcium	76.0		51		25.0	100	75-125		6010C
Cadmium	0.239		ND		0.250	96	75-125		6010C
Cobalt	0.235		ND		0.250	94	75-125		6010C
Chromium	0.240		ND		0.250	96	75-125		6010C
Copper	0.244		0.0029	J	0.250	96	75-125		6010C
Iron	5.76		0.80		5.00	99	75-125		6010C
Potassium	38.8		14		25.0	100	75-125		6010C
Magnesium	57.7		33		25.0	97	75-125		6010C
Manganese	0.294		0.050		0.250	98	75-125		6010C
Molybdenum	0.253		0.0078	J	0.250	98	75-125		6010C
Sodium	393		360		25.0	120	75-125	4	6010C
Nickel	0.235		ND		0.250	94	75-125		6010C
Phosphorus	5.20		ND		5.00	104	75-125		6010C
Lead	0.231		ND		0.250	92	75-125		6010C
Selenium	0.481		ND		0.500	96	75-125		6010C
Vanadium	0.245		ND		0.250	98	75-125		6010C
Zinc	0.509		0.0094	J	0.503	99	75-125		6010C
Antimony	0.459		ND		0.498	92	75-125		6010C
Thallium	0.449		ND		0.500	90	75-125		6010C
Tin	0.497		ND		0.500	99	75-125		6010C
Titanium	0.245		ND		0.250	98	75-125		6010C
Strontium	0.721		0.47		0.250	100	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: AFINF MSD

Lab ID: 600-205895-1 MSD

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Arsenic	0.490		0.500	98	75-125	4	20		6010C
Barium	0.752		0.500	98	75-125	4	20		6010C
Beryllium	0.252		0.250	101	75-125	5	20		6010C
Boron	4.75		4.98	91	75-125	3	20		6010C
Cadmium	0.244		0.250	98	75-125	4	20		6010C
Calcium	78.7		25.0	102	75-125	4	20		6010C
Chromium	0.245		0.250	98	75-125	4	20		6010C
Cobalt	0.239		0.250	96	75-125	4	20		6010C
Copper	0.245		0.250	98	75-125	4	20		6010C
Iron	5.17		5.00	103	75-125	4	20		6010C
Magnesium	60.0		25.0	101	75-125	4	20		6010C
Manganese	0.254		0.250	100	75-125	4	20		6010C
Molybdenum	0.261		0.250	101	75-125	4	20		6010C
Nickel	0.239		0.250	95	75-125	5	20		6010C
Phosphorus	5.24		5.00	105	75-125	3	20		6010C
Potassium	40.1		25.0	103	75-125	4	20		6010C
Lead	0.235		0.250	94	75-125	2	20		6010C
Selenium	0.484		0.500	97	75-125	4	20		6010C
Silver	0.0487		0.0498	98	75-125	5	20		6010C
Sodium	404		25.0	97	75-125	4	20	4	6010C
Antimony	0.465		0.498	93	75-125	5	20		6010C
Thallium	0.463		0.500	93	75-125	4	20		6010C
Tin	0.508		0.500	102	75-125	4	20		6010C
Titanium	0.253		0.250	101	75-125	5	20		6010C
Vanadium	0.251		0.250	100	75-125	4	20		6010C
Strontium	0.742		0.250	101	75-125	4	20		6010C
Zinc	0.519		0.503	102	75-125	5	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: AFEFF10 MSD
Lab ID: 600-205895-3 MSD
Lab Name: Eurofins TestAmerica, Sacramento
Job No.: 600-205895-1
SDG No.:
Matrix: Water
Concentration Units: mg/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Silver	0.0463		0.0498	93	75-125	2	20		6010C
Arsenic	0.477		0.500	95	75-125	2	20		6010C
Barium	0.724		0.500	94	75-125	2	20		6010C
Beryllium	0.240		0.250	96	75-125	2	20		6010C
Boron	4.62		4.98	89	75-125	2	20		6010C
Calcium	74.5		25.0	94	75-125	2	20		6010C
Cadmium	0.235		0.250	94	75-125	2	20		6010C
Cobalt	0.230		0.250	92	75-125	2	20		6010C
Chromium	0.237		0.250	95	75-125	1	20		6010C
Copper	0.241		0.250	95	75-125	1	20		6010C
Iron	5.76		5.00	99	75-125	0	20		6010C
Potassium	38.3		25.0	97	75-125	1	20		6010C
Magnesium	56.7		25.0	93	75-125	2	20		6010C
Manganese	0.289		0.250	96	75-125	2	20		6010C
Molybdenum	0.249		0.250	96	75-125	2	20		6010C
Sodium	384		25.0	83	75-125	2	20	4	6010C
Nickel	0.232		0.250	93	75-125	1	20		6010C
Phosphorus	5.06		5.00	101	75-125	3	20		6010C
Lead	0.225		0.250	90	75-125	3	20		6010C
Selenium	0.464		0.500	93	75-125	3	20		6010C
Vanadium	0.243		0.250	97	75-125	1	20		6010C
Zinc	0.499		0.503	97	75-125	2	20		6010C
Antimony	0.446		0.498	90	75-125	3	20		6010C
Thallium	0.445		0.500	89	75-125	1	20		6010C
Tin	0.489		0.500	98	75-125	2	20		6010C
Titanium	0.243		0.250	97	75-125	1	20		6010C
Strontium	0.707		0.250	94	75-125	2	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - DISSOLVED

Client ID: AFINF PDS

Lab ID: 600-205895-1 PDS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Arsenic	0.101		ND		0.100	101	75-125		6010C
Barium	0.347		0.26		0.100	87	75-125		6010C
Beryllium	0.0496		ND		0.0500	99	75-125		6010C
Boron	1.12		0.22		1.00	90	75-125		6010C
Cadmium	0.0966		ND		0.100	97	75-125		6010C
Calcium	61.1		53		10.0	78	75-125		6010C
Chromium	0.0978		ND		0.100	98	75-125		6010C
Cobalt	0.0957		ND		0.100	96	75-125		6010C
Copper	0.0984		ND		0.100	98	75-125		6010C
Iron	4.02		0.025	J	4.00	100	75-125		6010C
Magnesium	43.6		35		10.0	89	75-125		6010C
Manganese	0.103		0.0038	J	0.100	100	75-125		6010C
Molybdenum	0.106		0.0094	J	0.100	97	75-125		6010C
Nickel	0.0965		ND		0.100	96	75-125		6010C
Phosphorus	0.995		ND		1.00	100	75-125		6010C
Potassium	24.0		14		9.97	96	75-125		6010C
Lead	0.0957		ND		0.100	96	75-125		6010C
Selenium	0.0938		ND		0.100	94	75-125		6010C
Silver	0.0957		ND		0.100	96	75-125		6010C
Sodium	378		380		10.1	NC	75-125		6010C
Antimony	0.0927		ND		0.100	93	75-125		6010C
Thallium	0.0881		ND		0.100	88	75-125		6010C
Tin	0.0983		ND		0.100	98	75-125		6010C
Titanium	0.0974		ND		0.100	97	75-125		6010C
Vanadium	0.0994		ND		0.100	99	75-125		6010C
Strontium	0.572		0.49		0.100	82	75-125		6010C
Zinc	0.107		0.0065	J	0.100	100	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: AFEFF10 PDS

Lab ID: 600-205895-3 PDS

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

SDG No.:

Matrix: Water

Concentration Units: mg/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Arsenic	0.0990		ND		0.100	99	75-125		6010C
Barium	0.342		0.25		0.100	88	75-125		6010C
Beryllium	0.0492		ND		0.0500	98	75-125		6010C
Boron	1.11		0.20		1.00	91	75-125		6010C
Cadmium	0.0967		ND		0.100	97	75-125		6010C
Calcium	58.9		51		10.0	79	75-125		6010C
Chromium	0.0952		ND		0.100	95	75-125		6010C
Cobalt	0.0954		ND		0.100	95	75-125		6010C
Copper	0.0999		0.0029	J	0.100	97	75-125		6010C
Iron	4.79		0.80		4.00	100	75-125		6010C
Magnesium	41.5		33		10.0	81	75-125		6010C
Manganese	0.147		0.050		0.100	97	75-125		6010C
Molybdenum	0.105		0.0078	J	0.100	97	75-125		6010C
Nickel	0.0978		ND		0.100	98	75-125		6010C
Phosphorus	0.999		ND		1.00	100	75-125		6010C
Potassium	23.3		14		9.97	94	75-125		6010C
Lead	0.0950		ND		0.100	95	75-125		6010C
Selenium	0.0963		ND		0.100	96	75-125		6010C
Silver	0.0953		ND		0.100	95	75-125		6010C
Sodium	353		360		10.1	NC	75-125		6010C
Antimony	0.0855		ND		0.100	86	75-125		6010C
Thallium	0.0876		ND		0.100	88	75-125		6010C
Tin	0.0980		ND		0.100	98	75-125		6010C
Titanium	0.0975		ND		0.100	97	75-125		6010C
Vanadium	0.0990		ND		0.100	99	75-125		6010C
Strontium	0.554		0.47		0.100	83	75-125		6010C
Zinc	0.108		0.0094	J	0.100	98	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-382794/2-A

Lab Name: Eurofins TestAmerica, Sacramento

Job No.: 600-205895-1

Sample Matrix: Water

LCS Source: MT6010LCS1_00015

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Arsenic	0.500	0.478		96	80	120		6010C
Barium	0.500	0.493		99	80	120		6010C
Beryllium	0.250	0.250		100	80	120		6010C
Boron	4.98	4.75		95	80	120		6010C
Cadmium	0.250	0.243		97	80	120		6010C
Calcium	25.0	25.4		102	80	120		6010C
Chromium	0.250	0.242		97	80	120		6010C
Cobalt	0.250	0.243		97	80	120		6010C
Copper	0.250	0.236		95	80	120		6010C
Iron	5.00	5.16		103	80	120		6010C
Magnesium	25.0	24.9		100	80	120		6010C
Manganese	0.250	0.251		100	80	120		6010C
Molybdenum	0.250	0.248		99	80	120		6010C
Nickel	0.250	0.240		96	80	120		6010C
Phosphorus	5.00	5.02		100	80	120		6010C
Potassium	25.0	24.6		98	80	120		6010C
Lead	0.250	0.248		99	80	120		6010C
Selenium	0.500	0.481		96	80	120		6010C
Silver	0.0498	0.0488		98	80	120		6010C
Sodium	25.0	24.7		99	80	120		6010C
Antimony	0.498	0.465		93	80	120		6010C
Thallium	0.500	0.496		99	80	120		6010C
Tin	0.500	0.504		101	80	120		6010C
Titanium	0.250	0.245		98	80	120		6010C
Vanadium	0.250	0.244		98	80	120		6010C
Strontium	0.250	0.248		99	80	120		6010C
Zinc	0.503	0.493		98	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 320-382787/2-A

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

Sample Matrix: Water   LCS Source: MT6010LCS1_00015

Analyte	Water(mg/L)							
	True	Found	C	%R	Limits		Q	Method
Arsenic	0.500	0.479		96	80	120		6010C
Barium	0.500	0.494		99	80	120		6010C
Beryllium	0.250	0.250		100	80	120		6010C
Boron	4.98	4.77		96	80	120		6010C
Cadmium	0.250	0.245		98	80	120		6010C
Calcium	25.0	25.3		101	80	120		6010C
Chromium	0.250	0.243		97	80	120		6010C
Cobalt	0.250	0.242		97	80	120		6010C
Copper	0.250	0.240		96	80	120		6010C
Iron	5.00	5.13		103	80	120		6010C
Magnesium	25.0	24.9		100	80	120		6010C
Manganese	0.250	0.251		100	80	120		6010C
Molybdenum	0.250	0.247		99	80	120		6010C
Nickel	0.250	0.240		96	80	120		6010C
Phosphorus	5.00	5.02		100	80	120		6010C
Potassium	25.0	24.5		98	80	120		6010C
Lead	0.250	0.246		98	80	120		6010C
Selenium	0.500	0.481		96	80	120		6010C
Silver	0.0498	0.0485		97	80	120		6010C
Sodium	25.0	24.6		99	80	120		6010C
Antimony	0.498	0.465		93	80	120		6010C
Thallium	0.500	0.494		99	80	120		6010C
Tin	0.500	0.506		101	80	120		6010C
Titanium	0.250	0.246		98	80	120		6010C
Vanadium	0.250	0.244		98	80	120		6010C
Strontium	0.250	0.248		99	80	120		6010C
Zinc	0.503	0.497		99	80	120		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - DISSOLVED

Lab ID: 600-205895-1

SDG No:

Lab Name: Eurofins TestAmerica, Sacramento Job No: 600-205895-1

Matrix: Water Concentration Units: mg/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Arsenic	ND		ND		NC		6010C
Barium	0.26		0.265		1.8		6010C
Beryllium	ND		ND		NC		6010C
Boron	0.22		0.280	J	NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	53		54.0		1.5		6010C
Chromium	ND		ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Copper	ND		ND		NC		6010C
Iron	0.025	J	ND		NC		6010C
Magnesium	35		35.3		1.7		6010C
Manganese	0.0038	J	ND		NC		6010C
Molybdenum	0.0094	J	ND		NC		6010C
Nickel	ND		ND		NC		6010C
Phosphorus	ND		ND		NC		6010C
Potassium	14		13.8		4.1		6010C
Lead	ND		ND		NC		6010C
Selenium	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	380		392		3.1		6010C
Antimony	ND		ND		NC		6010C
Thallium	ND		ND		NC		6010C
Tin	ND		ND		NC		6010C
Titanium	ND		ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Strontium	0.49		0.493		0.66		6010C
Zinc	0.0065	J	ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 600-205895-3

SDG No:

Lab Name: Eurofins TestAmerica, Sacramento   Job No: 600-205895-1

Matrix: Water   Concentration Units: mg/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Arsenic	ND		ND		NC		6010C
Barium	0.25		0.253		0.49		6010C
Beryllium	ND		ND		NC		6010C
Boron	0.20		0.226	J	NC		6010C
Cadmium	ND		ND		NC		6010C
Calcium	51		51.6		0.97		6010C
Chromium	ND		ND		NC		6010C
Cobalt	ND		ND		NC		6010C
Copper	0.0029	J	ND		NC		6010C
Iron	0.80		0.803		NC		6010C
Magnesium	33		33.9		1.5		6010C
Manganese	0.050		0.0496		NC		6010C
Molybdenum	0.0078	J	ND		NC		6010C
Nickel	ND		ND		NC		6010C
Phosphorus	ND		ND		NC		6010C
Potassium	14		13.7		1.5		6010C
Lead	ND		ND		NC		6010C
Selenium	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Sodium	360		376		3.6		6010C
Antimony	ND		ND		NC		6010C
Thallium	ND		ND		NC		6010C
Tin	ND		ND		NC		6010C
Titanium	ND		ND		NC		6010C
Vanadium	ND		ND		NC		6010C
Strontium	0.47		0.476		0.96		6010C
Zinc	0.0094	J	ND		NC		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG Number:

Matrix: Water Instrument ID: T01

Method: 6010C MDL Date: 01/01/2013 18:18

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

9-IN

CALIBRATION BLANK DETECTION LIMITS

METALS

Lab Name: Eurofins TestAmerica, Sacrament
Job Number: 600-205895-1

SDG Number:

Matrix: Water
Instrument ID: T01

Method: 6010C
XMDL Date: 01/01/2013 18:04

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

9-IN
DETECTION LIMITS
METALS - DISSOLVED

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG Number:

Matrix: Water Instrument ID: T01

Method: 6010C MDL Date: 01/01/2013 18:18

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - DISSOLVED

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 600-205895-1

SDG Number:

Matrix: Water   Instrument ID: T01

Method: 6010C   XMDL Date: 01/01/2013 18:04

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Antimony	2068	0.02	0.0098
Arsenic	1890	0.02	0.012
Barium	4554	0.005	0.0025
Beryllium	3130	0.002	0.0003
Boron	2089	0.1	0.021
Cadmium	2144	0.002	0.0005
Calcium	3179	0.5	0.05
Chromium	2677	0.008	0.0012
Cobalt	2286	0.005	0.003
Copper	3247	0.01	0.0021
Iron	2599	0.1	0.02
Lead	2203	0.005	0.0025
Magnesium	2790	0.5	0.04
Manganese	2576	0.005	0.0025
Molybdenum	2020	0.02	0.0027
Nickel	2316	0.005	0.0024
Phosphorus	1782	0.5	0.05
Potassium	7664	1	0.093
Selenium	1960	0.02	0.013
Silver	3280	0.005	0.00084
Sodium	5895	1	0.25
Strontium	4077	0.05	0.005
Thallium	1908	0.02	0.009
Tin	1899	0.02	0.005
Titanium	3349	0.01	0.0021
Vanadium	2924	0.005	0.0019
Zinc	2062	0.01	0.003

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 09/19/2019

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	-0.000009		0.000005		0.017200		0.000061	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.000043			0.000800				
Barium	455.403														
Beryllium	313.042			-0.000000											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000000	0.000001	-0.000006				0.000028	0.000002						
Calcium	317.938														
Chromium	267.716	0.000008		-0.000000				0.000005	0.000001					0.000021	
Cobalt	228.616		0.000020					0.000024			-0.000484		0.000090		
Copper	324.754	0.000004						-0.000089			0.000680				
Iron	259.940														
Lead	220.353	-0.000108		-0.000002	-0.000200		0.000280	0.000031	0.000002		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610			0.000001				-0.000008	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	-0.000003			0.000200			0.000023			-0.000150				-0.000100
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000006		0.000005				-0.000155	0.000004	0.000468	0.000140				
Silicon	288.158	0.000013				-0.003000					-0.001890				
Silver	328.068	-0.000001		-0.000000				-0.000060	-0.000002		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		-0.00100				0.002061	0.000100	0.005840	-0.003350				
Thallium	190.856	0.000000		0.000005	0.002300	0.000241		-0.000014	-0.000003	0.000500	-0.000136				
Tin	189.989	0.000014													
Titanium	334.904					0.000169			-0.000003		0.000449				
Vanadium	292.402					-0.005500		-0.000037		-0.000570	-0.000200				
Zinc	206.200	0.000002		0.000001		0.000420		-0.0000043	-0.000002		-0.000200				

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01   Date: 09/19/2019

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000087		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01   Date: 12/17/2019

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum											0.040000				
Antimony		-0.000004		0.000002		0.009800		-0.000039	-0.000004		-0.004000		-0.000160		
Arsenic		-0.000002				-0.005350		-0.000026			-0.000300				
Barium															
Beryllium															
Boron								-0.000016			0.054500				
Cadmium		-0.000002						0.000024							
Calcium															
Chromium		0.000001		0.000001				-0.000007	0.000001					0.000021	
Cobalt			-0.000070					0.000001			-0.001084		0.000090		
Copper		0.000004						0.000008			0.000700				
Iron															
Lead		-0.000131		-0.000004			-0.000280	0.000035	0.000003		-0.001900		0.000180		
Magnesium								-0.000300			-0.012500				
Manganese								0.000009	0.000001						
Molybdenum								-0.000006							
Nickel					-0.000130			0.000011			-0.000150				-0.000100
Phosphorus															
Potassium		-0.000031		-0.000099				-0.000379	-0.000058						
Selenium		-0.000024		0.000003				-0.000001	0.000001	0.000468	0.000140				
Silicon						-0.004000					-0.001890				
Silver								-0.000001			-0.000008				
Sodium															
Strontium				0.000008											
Sulfur										0.005840	-0.003350				
Thallium		0.000029		0.000007	0.005300	0.000241		-0.000014	-0.000000	0.000500	-0.000136				
Tin															
Titanium						0.000169			0.000010		0.000449				
Vanadium						-0.006370		0.000010		-0.000470	-0.000200				
Zinc				0.000004		-0.000920		0.000010	0.000002		-0.000200				

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 12/17/2019

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum															
Antimony					0.000170										
Arsenic			-0.000036				0.000000								
Barium															
Beryllium					-0.000313		0.000300								
Boron			0.000016												
Cadmium															
Calcium															
Chromium															
Cobalt			-0.000012		0.002450										
Copper					-0.000250		-0.000270								
Iron															
Lead		0.000013	0.000047		-0.000725		-0.000100								
Magnesium															
Manganese															
Molybdenum															
Nickel						0.000270									
Phosphorus															
Potassium															
Selenium			0.000020												
Silicon				0.002050	0.010000		0.007750								
Silver															
Sodium															
Strontium															
Sulfur															
Thallium					-0.000408		0.003000								
Tin					-0.003150										
Titanium			0.000007												
Vanadium					0.000750										
Zinc															

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 06/03/2020

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	0.000011		0.000005		0.017200		0.000056	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.0000090			0.000800				
Barium	455.403														
Beryllium	313.042	0.000009		-0.000003											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000001	0.000001	0.000000				0.000038	0.000002						
Calcium	317.938														
Chromium	267.716	0.000014		-0.000002				-0.000009	0.000001					0.000021	
Cobalt	228.616		0.000020					0.000003			-0.000484		0.000090		
Copper	324.754	0.000003		0.000000				-0.000036	-0.000002		0.000680				
Iron	259.940														
Lead	220.353	-0.000111		0.000001	-0.000200		0.000280	0.0000033	0.0000002		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610	0.000007		0.000004				-0.000087	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	0.000001		0.000002	0.000200			-0.000003	-0.000000		-0.000150				-0.000100
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000001		0.000001				-0.000320	0.000004	0.000468	0.000140				
Silicon	288.158	0.000010		-0.000027		-0.003000		-0.000110			-0.001890				
Silver	328.068	-0.000004		0.000002				-0.0000003	-0.000001		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		0.00014				0.001980	0.000100	0.005840	-0.003350				
Thallium	190.856	0.000013		0.000005	0.002300	0.000241		-0.000006	-0.000003	0.000500	-0.000136				
Tin	189.989	0.000014													
Titanium	334.904	-0.000004				0.000169			-0.000003		0.000449				
Vanadium	292.402	0.000008				-0.005500		0.000021		-0.000570	-0.000200				
Zinc	206.200	-0.000001		0.000001		0.000420		0.000001	-0.000001		-0.000200				

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament   Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01   Date: 06/03/2020

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000087		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 06/04/2020

Analyte	Wave Length	Al	Ba	Ca	Co	Cr	Cu	Fe	Mg	Mn	Mo	Na	Ni	P	Sb
Aluminum	309.271										0.030000				
Antimony	206.833	0.000011		0.000005		0.017200		0.000056	-0.000000		-0.000000		-0.000460		
Arsenic	189.042	0.000005				-0.006600		-0.0000090			0.000800				
Barium	455.403														
Beryllium	313.042	0.000009		-0.000003											
Boron	208.959							-0.000059			0.019500				
Cadmium	214.438	-0.000001	0.000001	0.000000				0.000036	0.000002						
Calcium	317.938														
Chromium	267.716	0.000014		-0.000002				-0.000009	0.000001					0.000021	
Cobalt	228.616		0.000020					0.000003			-0.000484		0.000090		
Copper	324.754	0.000003		0.000000				-0.000036	-0.000002		0.000680				
Iron	259.940														
Lead	220.353	-0.000075		0.000001	-0.000200		0.000280	0.0000033	0.0000002		-0.002300		0.000180		
Magnesium	279.079							0.000010			-0.012500				
Manganese	257.610	0.000007		0.000004				-0.000087	0.000003						
Molybdenum	202.030							-0.000006							
Nickel	231.601	0.000001		0.000002	0.000200			-0.000003	-0.000000		-0.000150				-0.000100
Phosphorus	178.284														
Potassium	766.496	0.000118		-0.000007				-0.000092	0.000093						
Selenium	196.090	0.000001		0.000001				-0.000320	0.000004	0.000468	0.000140				
Silicon	288.158	0.000010		-0.000027		-0.003000		-0.000110			-0.001890				
Silver	328.068	-0.000004		0.000002				-0.0000003	-0.000001		-0.000008				
Sodium	589.592														
Strontium	407.771			0.000020											
Sulfur	182.034	-0.000100		0.00014				0.001980	0.000100	0.005840	-0.003350				
Thallium	190.856	0.000013		0.000005	0.002300	0.000241		-0.000006	-0.000003	0.000500	-0.000136				
Tin	189.989	0.000014													
Titanium	334.904	-0.000004				0.000169			-0.000003		0.000449				
Vanadium	292.402	0.000008				-0.005500		0.000021		-0.000570	-0.000200				
Zinc	206.200	-0.000001		0.000001		0.000420		-0.000009	-0.000001		-0.000200				

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Sacrament Job Number: 600-205895-1

SDG No.:

ICP-AES Instrument ID: T01 Date: 06/04/2020

Analyte	Wave Length	Se	Si	Sn	Ti	Tl	V								
Aluminum	309.271														
Antimony	206.833			-0.017336	0.000270		-0.002224								
Arsenic	189.042		-0.000036				0.000000								
Barium	455.403														
Beryllium	313.042				-0.000073		0.000830								
Boron	208.959		0.000016												
Cadmium	214.438														
Calcium	317.938														
Chromium	267.716														
Cobalt	228.616		-0.000012		0.002050										
Copper	324.754				-0.000250		-0.000270								
Iron	259.940														
Lead	220.353	0.000013	0.000087		-0.000825		-0.000100								
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.601					0.000270									
Phosphorus	178.284														
Potassium	766.496														
Selenium	196.090		0.000020												
Silicon	288.158			0.002050	0.010000		0.003750								
Silver	328.068						0.000067								
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856				-0.000408		0.000701								
Tin	189.989				-0.003450										
Titanium	334.904		0.000007												
Vanadium	292.402				0.000650										
Zinc	206.200														

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Sacramen   Job No: 600-205895-1

SDG No.:

Instrument ID: T01   Date: 09/06/2018 17:40

Analyte	Integ. Time (Sec.)	Concentration (ug/mL)	Method
Arsenic		75	6010C
Barium		100	6010C
Beryllium		25	6010C
Boron		100	6010C
Cadmium		40	6010C
Calcium		2500	6010C
Chromium		100	6010C
Cobalt		100	6010C
Copper		75	6010C
Iron		1000	6010C
Magnesium		2500	6010C
Manganese		30	6010C
Molybdenum		40	6010C
Nickel		100	6010C
Phosphorus		100	6010C
Potassium		1000	6010C
Lead		50	6010C
Selenium		100	6010C
Silver		2.0	6010C
Sodium		500	6010C
Antimony		100	6010C
Thallium		5.0	6010C
Tin		100	6010C
Titanium		100	6010C
Vanadium		100	6010C
Strontium		25	6010C
Zinc		60	6010C

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 320-382787/1-A	06/03/2020 06:45	382787		50	50
LCS 320-382787/2-A	06/03/2020 06:45	382787		50	50
600-205895-1	06/03/2020 06:45	382787		50	50
600-205895-2	06/03/2020 06:45	382787		50	50
600-205895-3	06/03/2020 06:45	382787		50	50
600-205895-3 MS	06/03/2020 06:45	382787		50	50
600-205895-3 MSD	06/03/2020 06:45	382787		50	50
600-205895-4	06/03/2020 06:45	382787		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 320-382794/1-A	06/03/2020 06:45	382794		50	50
LCS 320-382794/2-A	06/03/2020 06:45	382794		50	50
600-205895-1	06/03/2020 06:45	382794		50	50
600-205895-1 MS	06/03/2020 06:45	382794		50	50
600-205895-1 MSD	06/03/2020 06:45	382794		50	50
600-205895-2	06/03/2020 06:45	382794		50	50
600-205895-3	06/03/2020 06:45	382794		50	50

FORM XII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sn	Sr	Ti	Tl	V
RINSE 320-383213/1			08:57																										
RINSE 320-383213/2			09:01																										
RINSE 320-383213/3			09:05																										
CALSTD0 320-383213/4 IC			09:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALSTD1 320-383213/5 IC			09:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CALSTD2 320-383213/6 IC			09:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LRA 320-383213/7			09:21																										
RINSE 320-383213/8			09:25																										
ICV 320-383213/9	1		09:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICBIS 320-383213/10	1		09:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRI 320-383213/11			09:36																										
CRI 320-383213/12	1		09:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA 320-383213/13	1		09:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB 320-383213/14	1		09:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			09:52																										
ZZZZZZ			09:56																										
ZZZZZZ			10:00																										
ZZZZZZ			10:04																										
ZZZZZZ			10:08																										
ZZZZZZ			10:12																										
CCV 320-383213/21			10:16																										
CCB 320-383213/22			10:20																										
ZZZZZZ			10:24																										
ZZZZZZ			10:28																										
ZZZZZZ			10:32																										
ZZZZZZ			10:35																										
ZZZZZZ			10:39																										
ZZZZZZ			10:43																										
ZZZZZZ			10:47																										
ZZZZZZ			10:51																										
ZZZZZZ			10:54																										
ZZZZZZ			10:58																										
CCV 320-383213/33			11:02																										
CCB 320-383213/34			11:06																										
ZZZZZZ			11:10																										
ZZZZZZ			11:14																										
ZZZZZZ			11:18																										
ZZZZZZ			11:22																										
ZZZZZZ			11:26																										
ZZZZZZ			11:29																										
ZZZZZZ			11:33																										
ZZZZZZ			11:37																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sn	Sr	Ti	Tl	V
ZZZZZZ			11:41																										
ZZZZZZ			11:45																										
CCV 320-383213/45			11:49																										
CCB 320-383213/46			11:53																										
ZZZZZZ			11:57																										
ZZZZZZ			12:01																										
ZZZZZZ			12:05																										
ZZZZZZ			12:09																										
ZZZZZZ			12:12																										
ZZZZZZ			12:16																										
ZZZZZZ			12:20																										
ZZZZZZ			12:24																										
ZZZZZZ			12:28																										
ZZZZZZ			12:32																										
CCV 320-383213/57			12:36																										
CCB 320-383213/58			12:40																										
ZZZZZZ			12:44																										
ZZZZZZ			12:48																										
ZZZZZZ			12:51																										
ZZZZZZ			12:55																										
ZZZZZZ			12:59																										
ZZZZZZ			13:03																										
ZZZZZZ			13:07																										
ZZZZZZ			13:11																										
ZZZZZZ			13:15																										
ZZZZZZ			13:19																										
CCV 320-383213/69			13:23																										
CCB 320-383213/70			13:26																										
ZZZZZZ			13:30																										
ZZZZZZ			13:34																										
ZZZZZZ			13:38																										
ZZZZZZ			13:42																										
ZZZZZZ			13:46																										
ZZZZZZ			13:50																										
ZZZZZZ			13:53																										
ZZZZZZ			13:57																										
ZZZZZZ			14:01																										
ZZZZZZ			14:05																										
CCV 320-383213/81	1		14:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 320-383213/82	1		14:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			14:17																										
ZZZZZZ			14:21																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sn	Sr	Ti	Tl	V
ZZZZZZ			14:25																										
ZZZZZZ			14:29																										
ZZZZZZ			14:33																										
ZZZZZZ			14:37																										
ZZZZZZ			14:41																										
ZZZZZZ			14:45																										
MB 320-382794/1-A	1	T	14:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 320-382794/2-A	1	T	14:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 320-383213/93	1		14:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 320-383213/94	1		15:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			15:04																										
ZZZZZZ			15:08																										
ZZZZZZ			15:12																										
ZZZZZZ			15:16																										
ZZZZZZ			15:20																										
ZZZZZZ			15:24																										
ZZZZZZ			15:28																										
ZZZZZZ			15:32																										
ZZZZZZ			15:36																										
ZZZZZZ			15:39																										
CCV 320-383213/105			15:43																										
CCB 320-383213/106			15:47																										
ZZZZZZ			15:51																										
ZZZZZZ			15:55																										
ZZZZZZ			15:59																										
ZZZZZZ			16:03																										
ZZZZZZ			16:06																										
ZZZZZZ			16:10																										
ZZZZZZ			16:14																										
ZZZZZZ			16:18																										
ZZZZZZ			16:22																										
ZZZZZZ			16:26																										
CCV 320-383213/117	1		16:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 320-383213/118	1		16:34	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			16:38																										
600-205895-1	1	D	16:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-1 SD	5	D	16:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-1 PDS	1	D	16:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-1 MS	1	D	16:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-1 MSD	1	D	16:58	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-2	1	D	17:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-3	1	D	17:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes																									
				Ag	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sn	Sr	Ti	Tl	V
ZZZZZZ			17:10																										
ZZZZZZ			17:13																										
CCV 320-383213/129	1		17:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 320-383213/130	1		17:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			17:25																										
ZZZZZZ			17:29																										
ZZZZZZ			17:33																										
MB 320-382787/1-A	1	T	17:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LCS 320-382787/2-A	1	T	17:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-1	1	T	17:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-2	1	T	17:49	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-3	1	T	17:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-3 SD	5	T	17:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-3 PDS	1	T	18:01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV 320-383213/141	1		18:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 320-383213/142	1		18:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-3 MS	1	T	18:13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-3 MSD	1	T	18:16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600-205895-4	1	T	18:20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ			18:24																										
ZZZZZZ			18:28																										
CCV 320-383213/148	1		18:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB 320-383213/149	1		18:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCVL 320-383213/150	1		18:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RINSE 320-383213/151			18:44																										
RINSE 320-383213/152			18:48																										
RINSE 320-383213/153			18:52																										
RINSE 320-383213/154			18:56																										

Prep Types:

D = Dissolved

T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento   Job No.: 600-205895-1

SDG No.:

Instrument ID: T01   Analysis Method: 6010C

Start Date: 06/03/2020 08:57   End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes
				Zn
RINSE 320-383213/1			08:57	
RINSE 320-383213/2			09:01	
RINSE 320-383213/3			09:05	
CALSTD0 320-383213/4 IC			09:09	X
CALSTD1 320-383213/5 IC			09:13	X
CALSTD2 320-383213/6 IC			09:17	X
LRA 320-383213/7			09:21	
RINSE 320-383213/8			09:25	
ICV 320-383213/9	1		09:29	X
ICBIS 320-383213/10	1		09:32	X
CRI 320-383213/11			09:36	
CRI 320-383213/12	1		09:40	X
ICSA 320-383213/13	1		09:44	X
ICSAB 320-383213/14	1		09:48	X
ZZZZZZ			09:52	
ZZZZZZ			09:56	
ZZZZZZ			10:00	
ZZZZZZ			10:04	
ZZZZZZ			10:08	
ZZZZZZ			10:12	
CCV 320-383213/21			10:16	
CCB 320-383213/22			10:20	
ZZZZZZ			10:24	
ZZZZZZ			10:28	
ZZZZZZ			10:32	
ZZZZZZ			10:35	
ZZZZZZ			10:39	
ZZZZZZ			10:43	
ZZZZZZ			10:47	
ZZZZZZ			10:51	
ZZZZZZ			10:54	
ZZZZZZ			10:58	
CCV 320-383213/33			11:02	
CCB 320-383213/34			11:06	
ZZZZZZ			11:10	
ZZZZZZ			11:14	
ZZZZZZ			11:18	
ZZZZZZ			11:22	
ZZZZZZ			11:26	
ZZZZZZ			11:29	
ZZZZZZ			11:33	
ZZZZZZ			11:37	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes
				Zn
ZZZZZZ			11:41	
ZZZZZZ			11:45	
CCV 320-383213/45			11:49	
CCB 320-383213/46			11:53	
ZZZZZZ			11:57	
ZZZZZZ			12:01	
ZZZZZZ			12:05	
ZZZZZZ			12:09	
ZZZZZZ			12:12	
ZZZZZZ			12:16	
ZZZZZZ			12:20	
ZZZZZZ			12:24	
ZZZZZZ			12:28	
ZZZZZZ			12:32	
CCV 320-383213/57			12:36	
CCB 320-383213/58			12:40	
ZZZZZZ			12:44	
ZZZZZZ			12:48	
ZZZZZZ			12:51	
ZZZZZZ			12:55	
ZZZZZZ			12:59	
ZZZZZZ			13:03	
ZZZZZZ			13:07	
ZZZZZZ			13:11	
ZZZZZZ			13:15	
ZZZZZZ			13:19	
CCV 320-383213/69			13:23	
CCB 320-383213/70			13:26	
ZZZZZZ			13:30	
ZZZZZZ			13:34	
ZZZZZZ			13:38	
ZZZZZZ			13:42	
ZZZZZZ			13:46	
ZZZZZZ			13:50	
ZZZZZZ			13:53	
ZZZZZZ			13:57	
ZZZZZZ			14:01	
ZZZZZZ			14:05	
CCV 320-383213/81	1		14:09	X
CCB 320-383213/82	1		14:13	X
ZZZZZZ			14:17	
ZZZZZZ			14:21	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes
				Zn
ZZZZZZ			14:25	
ZZZZZZ			14:29	
ZZZZZZ			14:33	
ZZZZZZ			14:37	
ZZZZZZ			14:41	
ZZZZZZ			14:45	
MB 320-382794/1-A	1	T	14:48	X
LCS 320-382794/2-A	1	T	14:52	X
CCV 320-383213/93	1		14:56	X
CCB 320-383213/94	1		15:00	X
ZZZZZZ			15:04	
ZZZZZZ			15:08	
ZZZZZZ			15:12	
ZZZZZZ			15:16	
ZZZZZZ			15:20	
ZZZZZZ			15:24	
ZZZZZZ			15:28	
ZZZZZZ			15:32	
ZZZZZZ			15:36	
ZZZZZZ			15:39	
CCV 320-383213/105			15:43	
CCB 320-383213/106			15:47	
ZZZZZZ			15:51	
ZZZZZZ			15:55	
ZZZZZZ			15:59	
ZZZZZZ			16:03	
ZZZZZZ			16:06	
ZZZZZZ			16:10	
ZZZZZZ			16:14	
ZZZZZZ			16:18	
ZZZZZZ			16:22	
ZZZZZZ			16:26	
CCV 320-383213/117	1		16:30	X
CCB 320-383213/118	1		16:34	X
ZZZZZZ			16:38	
600-205895-1	1	D	16:42	X
600-205895-1 SD	5	D	16:46	X
600-205895-1 PDS	1	D	16:50	X
600-205895-1 MS	1	D	16:54	X
600-205895-1 MSD	1	D	16:58	X
600-205895-2	1	D	17:02	X
600-205895-3	1	D	17:05	X

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/03/2020 08:57 End Date: 06/03/2020 18:56

Lab Sample Id	D/F	Type	Time	Analytes																									
				Zn																									
ZZZZZZ			17:10																										
ZZZZZZ			17:13																										
CCV 320-383213/129	1		17:18	X																									
CCB 320-383213/130	1		17:21	X																									
ZZZZZZ			17:25																										
ZZZZZZ			17:29																										
ZZZZZZ			17:33																										
MB 320-382787/1-A	1	T	17:37																										
LCS 320-382787/2-A	1	T	17:41	X																									
600-205895-1	1	T	17:45	X																									
600-205895-2	1	T	17:49	X																									
600-205895-3	1	T	17:53	X																									
600-205895-3 SD	5	T	17:57	X																									
600-205895-3 PDS	1	T	18:01	X																									
CCV 320-383213/141	1		18:05	X																									
CCB 320-383213/142	1		18:09	X																									
600-205895-3 MS	1	T	18:13	X																									
600-205895-3 MSD	1	T	18:16	X																									
600-205895-4	1	T	18:20	X																									
ZZZZZZ			18:24																										
ZZZZZZ			18:28																										
CCV 320-383213/148	1		18:32	X																									
CCB 320-383213/149	1		18:36	X																									
CCVL 320-383213/150	1		18:40	X																									
RINSE 320-383213/151			18:44																										
RINSE 320-383213/152			18:48																										
RINSE 320-383213/153			18:52																										
RINSE 320-383213/154			18:56																										

Prep Types:
D = Dissolved
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/04/2020 11:16 End Date: 06/04/2020 18:01

Lab Sample Id	D/F	Type	Time	Analytes																									
				Zn																									
RINSE 320-383649/1			11:16																										
RINSE 320-383649/2			11:20																										
RINSE 320-383649/3			11:24																										
CALSTD0 320-383649/4 IC			11:28	X																									
CALSTD1 320-383649/5 IC			11:32	X																									
CALSTD2 320-383649/6 IC			11:36	X																									
LRA 320-383649/7			11:40																										
RINSE 320-383649/8			11:43																										
ICV 320-383649/9			11:47																										
ICBIS 320-383649/10			11:51																										
CRI 320-383649/11			11:55																										
CRI 320-383649/12			11:59																										
ICSA 320-383649/13			12:03																										
ICSAB 320-383649/14			12:07																										
ZZZZZZ			12:11																										
ZZZZZZ			12:15																										
ZZZZZZ			12:19																										
ZZZZZZ			12:23																										
ZZZZZZ			12:27																										
ZZZZZZ			12:31																										
CCV 320-383649/21			12:35																										
CCB 320-383649/22			12:39																										
MB 320-382787/1-A	1	T	12:43	X																									
ZZZZZZ			12:47																										
ZZZZZZ			12:50																										
ZZZZZZ			12:54																										
ZZZZZZ			12:58																										
ZZZZZZ			13:02																										
ZZZZZZ			13:06																										
ZZZZZZ			13:10																										
ZZZZZZ			13:13																										
ZZZZZZ			13:17																										
CCV 320-383649/33			13:21																										
CCB 320-383649/34			13:25																										
ZZZZZZ			13:29																										
ZZZZZZ			13:32																										
ZZZZZZ			13:36																										
ZZZZZZ			13:40																										
ZZZZZZ			13:44																										
ZZZZZZ			13:48																										
ZZZZZZ			13:52																										
ZZZZZZ			13:56																										

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/04/2020 11:16 End Date: 06/04/2020 18:01

Lab Sample Id	D/F	Type	Time	Analytes
				Zn
ZZZZZZ			14:00	
ZZZZZZ			14:04	
CCV 320-383649/45			14:08	
CCB 320-383649/46			14:12	
ZZZZZZ			14:16	
ZZZZZZ			14:20	
ZZZZZZ			14:24	
ZZZZZZ			14:28	
ZZZZZZ			14:32	
ZZZZZZ			14:36	
ZZZZZZ			14:40	
ZZZZZZ			14:44	
ZZZZZZ			14:48	
ZZZZZZ			14:52	
CCV 320-383649/57			14:56	
CCB 320-383649/58			15:00	
ZZZZZZ			15:04	
ZZZZZZ			15:08	
ZZZZZZ			15:12	
ZZZZZZ			15:16	
ZZZZZZ			15:20	
ZZZZZZ			15:24	
ZZZZZZ			15:28	
ZZZZZZ			15:32	
ZZZZZZ			15:36	
ZZZZZZ			15:40	
CCV 320-383649/69			15:44	
CCB 320-383649/70			15:47	
ZZZZZZ			15:51	
ZZZZZZ			15:55	
ZZZZZZ			15:59	
ZZZZZZ			16:03	
ZZZZZZ			16:07	
ZZZZZZ			16:11	
ZZZZZZ			16:15	
ZZZZZZ			16:19	
ZZZZZZ			16:23	
ZZZZZZ			16:27	
CCV 320-383649/81			16:30	
CCB 320-383649/82			16:34	
ZZZZZZ			16:38	
ZZZZZZ			16:42	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

Instrument ID: T01 Analysis Method: 6010C

Start Date: 06/04/2020 11:16 End Date: 06/04/2020 18:01

				Analytes
Lab Sample Id	D/F	Type	Time	Zn
ZZZZZZ			16:46	
ZZZZZZ			16:50	
ZZZZZZ			16:54	
ZZZZZZ			16:58	
ZZZZZZ			17:02	
ZZZZZZ			17:06	
ZZZZZZ			17:10	
ZZZZZZ			17:14	
CCV 320-383649/93			17:18	
CCB 320-383649/94			17:21	
ZZZZZZ			17:25	
ZZZZZZ			17:29	
ZZZZZZ			17:33	
CCV 320-383649/98			17:37	
CCB 320-383649/99			17:41	
CCVL 320-383649/100			17:45	
RINSE 320-383649/101			17:49	
RINSE 320-383649/102			17:53	
RINSE 320-383649/103			17:57	
RINSE 320-383649/104			18:01	

Prep Types:
T = Total/NA

ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

ICP Instrument ID: T01 Start Date: 06/03/2020 End Date: 06/03/2020

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICV 320-383213/9	09:29										
ICBIS 320-383213/10	09:32										
CRI 320-383213/12	09:40	101		101		100					
ICSA 320-383213/13	09:44	88		86		96					
ICSAB 320-383213/14	09:48	88		85		96					
CCV 320-383213/81	14:09	96		95		97					
CCB 320-383213/82	14:13	98		97		95					
MB 320-382794/1-A	14:48	97		97		95					
LCS 320-382794/2-A	14:52	95		94		95					
CCV 320-383213/93	14:56	95		94		95					
CCB 320-383213/94	15:00	98		98		96					
CCV 320-383213/117	16:30	94		93		93					
CCB 320-383213/118	16:34	97		96		93					
600-205895-1	16:42	90		87		91					
600-205895-1 SD	16:46	92		91		89					
600-205895-1 PDS	16:50	89		85		88					
600-205895-1 MS	16:54	88		85		89					
600-205895-1 MSD	16:58	88		84		86					
600-205895-2	17:02	88		85		88					
600-205895-3	17:05	89		86		89					
CCV 320-383213/129	17:18	94		91		91					
CCB 320-383213/130	17:21	94		93		90					
MB 320-382787/1-A	17:37	100		100		98					
LCS 320-382787/2-A	17:41	97		96		97					
600-205895-1	17:45	93		90		95					
600-205895-2	17:49	93		90		95					
600-205895-3	17:53	93		90		95					
600-205895-3 SD	17:57	96		95		96					
600-205895-3 PDS	18:01	94		91		97					
CCV 320-383213/141	18:05	96		95		96					
CCB 320-383213/142	18:09	100		99		97					
600-205895-3 MS	18:13	92		90		95					
600-205895-3 MSD	18:16	92		90		95					
600-205895-4	18:20	92		89		93					
CCV 320-383213/148	18:32	95		93		93					
CCB 320-383213/149	18:36	99		99		96					
CCVL 320-383213/150	18:40	99		99		97					

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 600-205895-1

SDG No.:

ICP Instrument ID: T01 Start Date: 06/04/2020 End Date: 06/04/2020

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
MB 320-382787/1-A	12:43	100		99		100					

FORM XV - IN

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 600-205895-1

SDG No.:

Batch Number: 382787 Batch Start Date: 06/03/20 06:45 Batch Analyst: Merritt, Nataliya

Batch Method: 3010A Batch End Date: 06/03/20 12:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MT6010LCS1 00015	MT6010LCS2 00014	MT6010LCS3 00035
MB 320-382787/1		3010A, 6010C		<2 SU	50 mL	50 mL			
LCS 320-382787/2		3010A, 6010C		<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
600-205895-E-1	AFINF	3010A, 6010C	T	<2 SU	50 mL	50 mL			
600-205895-E-2	AFEFF5	3010A, 6010C	T	<2 SU	50 mL	50 mL			
600-205895-E-3	AFEFF10	3010A, 6010C	T	<2 SU	50 mL	50 mL			
600-205895-C-3 MS	AFEFF10	3010A, 6010C	T	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
600-205895-C-3 MSD	AFEFF10	3010A, 6010C	T	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
600-205895-E-4	DUP	3010A, 6010C	T	<2 SU	50 mL	50 mL			

Batch Notes	
Batch Comment	HB cell 5B
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	06/03/2020 12:00
Digestion Start Time	06/03/2020 06:45
Digestion Unit ID	5
Hydrochloric Acid ID	1904377
Nitric Acid ID	2012699
pH Indicator ID	1119
Pipette/Syringe/Dispenser ID	M39512G
Analyst ID - Spike Analyst	NIM
Analyst ID - Spike Witness Analyst	TGL
Thermometer ID	BT-16
Digestion Tube/Cup ID	2001329

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 600-205895-1

SDG No.:

Batch Number: 382794 Batch Start Date: 06/03/20 06:45 Batch Analyst: Merritt, Nataliya

Batch Method: 3010A Batch End Date: 06/03/20 12:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MT6010LCS1 00015	MT6010LCS2 00014	MT6010LCS3 00035
MB 320-382794/1		3010A, 6010C		<2 SU	50 mL	50 mL			
LCS 320-382794/2		3010A, 6010C		<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
600-205895-F-1	AFINF	3010A, 6010C	D	<2 SU	50 mL	50 mL			
600-205895-F-1 MS	AFINF	3010A, 6010C	D	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
600-205895-F-1 MSD	AFINF	3010A, 6010C	D	<2 SU	50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
600-205895-F-2	AFEFF5	3010A, 6010C	D	<2 SU	50 mL	50 mL			
600-205895-F-3	AFEFF10	3010A, 6010C	D	<2 SU	50 mL	50 mL			

Batch Notes	
Batch Comment	HB cell 5B
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	06/03/2020 12:00
Digestion Start Time	06/03/2020 06:45
Digestion Unit ID	5
Hydrochloric Acid ID	1904377
Nitric Acid ID	2012699
pH Indicator ID	1119
Pipette/Syringe/Dispenser ID	M39512G
Analyst ID - Spike Analyst	NIM
Analyst ID - Spike Witness Analyst	TGL
Thermometer ID	BT-16
Digestion Tube/Cup ID	2001329

Basis	Basis Description
D	Dissolved

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Test America-West Sacramento methods 6010b and 200.7

Author: SP
Published: 6/4/2020 7:38:25AM
Notes:

RINSE BLANK

Acquire Date: 6/3/2020 8:57:30AM   Sample Type: QC
Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1   Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00026400	ppm	0.000042000	15.899	.00000	Abs	Pass	
Al3961		0.0052280	ppm	0.017514	335.02	.00000	Abs	Pass	
As1890		-0.00068100	ppm	0.00085600	125.66	.00000	Abs	Pass	
B_2089		0.0025150	ppm	0.00080000	31.798	.00000	Abs	Pass	
Ba4554		-0.00025100	ppm	0.000023000	9.2563	.00000	Abs	Pass	
Be3130		0.00010700	ppm	0.000057000	53.034	.00000	Abs	Pass	
Ca3179		0.0078760	ppm	0.0044580	56.595	.00000	Abs	Pass	
Cd2144		0.000078000	ppm	0.00010300	132.26	.00000	Abs	Pass	
Co2286		0.0010370	ppm	0.000071000	6.8279	.00000	Abs	Pass	
Cr2677	**F**	**0.022710**	**ppm**	**0.00045100**	**1.9866**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247	**F**	**-0.021675**	**ppm**	**0.000024000**	**0.11119**	**.00000**	**Abs**	**Fail Low**	**-.01500**
Fe2599	**F**	**0.14010**	**ppm**	**0.014999**	**10.706**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.0053720	ppm	0.023882	444.52	.00000	Abs	Pass	
Mg2790		-0.0013540	ppm	0.0057510	424.67	.00000	Abs	Pass	
Mn2576		0.0022520	ppm	0.000026000	1.1443	.00000	Abs	Pass	
Mo2020		0.0027850	ppm	0.00027400	9.8292	.00000	Abs	Pass	
Na5895		0.012497	ppm	0.015715	125.74	.00000	Abs	Pass	
Ni2316	**F**	**0.012950**	**ppm**	**0.00042700**	**3.2948**	**.00000**	**Abs**	**Fail High**	**.01000**
P_1782		0.0022250	ppm	0.0020510	92.152	.00000	Abs	Pass	
Pb2203		-0.00051600	ppm	0.00027000	52.282	.00000	Abs	Pass	
S_1820		0.00045000	ppm	0.0017000	377.99	.00000	Abs	Pass	
Sb2068		0.0022110	ppm	0.00076900	34.779	.00000	Abs	Pass	
Se1960		0.0012550	ppm	0.0028650	228.37	.00000	Abs	Pass	
Si2881		0.013371	ppm	0.017730	132.60	.00000	Abs	Pass	
Sn1899		0.00077800	ppm	0.00037400	48.106	.00000	Abs	Pass	
Sr4077		-0.00042300	ppm	0.0000070000	1.6900	.00000	Abs	Pass	
Ti3349		0.00062900	ppm	0.000064000	10.208	.00000	Abs	Pass	
Tl1908		-0.00041400	ppm	0.00095200	230.19	.00000	Abs	Pass	
V_2924		0.000096000	ppm	0.000060000	62.218	.00000	Abs	Pass	
Zn2062		0.00037100	ppm	0.00013400	35.991	.00000	Abs	Pass	
Y_2243		7,316.6	Cts/S	5.4714	0.074780				
Y_3600		72,407	Cts/S	56.948	0.078650				
Y_3774		4,521.7	Cts/S	6.6784	0.14770				

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Acquire Date: 6/3/2020 9:01:31AM   Sample Type: QC
Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1   Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0019120	ppm	0.000092000	4.8326	.00000	Abs	Pass	
Al3961		-0.0076900	ppm	0.036703	477.26	.00000	Abs	Pass	
As1890		-0.00021100	ppm	0.00029100	137.97	.00000	Abs	Pass	
B_2089		0.0023220	ppm	0.00014700	6.3451	.00000	Abs	Pass	
Ba4554		0.00026200	ppm	0.00011100	42.483	.00000	Abs	Pass	

RINSE BLANK

Acquire Date: 6/3/2020 9:01:31AM Sample Type: QC
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Be3130		-0.00013200	ppm	0.00024600	185.96	.00000	Abs	Pass	
Ca3179		-0.0018860	ppm	0.013171	698.45	.00000	Abs	Pass	
Cd2144		0.000022000	ppm	0.00012100	540.95	.00000	Abs	Pass	
Co2286		0.0010500	ppm	0.000077000	7.3725	.00000	Abs	Pass	
Cr2677	**F**	**0.021084**	**ppm**	**0.00090400**	**4.2864**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247	**F**	**-0.022467**	**ppm**	**0.00010400**	**0.46331**	**.00000**	**Abs**	**Fail Low**	**-.01500**
Fe2599	**F**	**0.12542**	**ppm**	**0.0057880**	**4.6153**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.0043950	ppm	0.067239	1,529.8	.00000	Abs	Pass	
Mg2790		0.00081100	ppm	0.00089000	109.66	.00000	Abs	Pass	
Mn2576		0.0020420	ppm	0.00010200	4.9975	.00000	Abs	Pass	
Mo2020		0.0024310	ppm	0.000064000	2.6502	.00000	Abs	Pass	
Na5895		-0.022905	ppm	0.0069500	30.345	.00000	Abs	Pass	
Ni2316	**F**	**0.012069**	**ppm**	**0.0013170**	**10.910**	**.00000**	**Abs**	**Fail High**	**.01000**
P_1782		-0.00085800	ppm	0.0012920	150.57	.00000	Abs	Pass	
Pb2203		0.00042300	ppm	0.00081600	193.13	.00000	Abs	Pass	
S_1820		0.0022880	ppm	0.00045300	19.820	.00000	Abs	Pass	
Sb2068		-0.00031200	ppm	0.0013240	423.98	.00000	Abs	Pass	
Se1960		0.0036750	ppm	0.00087100	23.704	.00000	Abs	Pass	
Si2881		-0.019002	ppm	0.028524	150.11	.00000	Abs	Pass	
Sn1899		0.00023200	ppm	0.00021500	92.808	.00000	Abs	Pass	
Sr4077		-0.00012300	ppm	0.00039100	317.00	.00000	Abs	Pass	
Ti3349		0.000026000	ppm	0.00029200	1,123.3	.00000	Abs	Pass	
Tl1908		-0.00065200	ppm	0.0016080	246.73	.00000	Abs	Pass	
V_2924		0.000052000	ppm	0.00037800	734.02	.00000	Abs	Pass	
Zn2062		0.00016100	ppm	0.000025000	15.635	.00000	Abs	Pass	
Y_2243		7,348.0	Cts/S	7.4171	0.10094				
Y_3600		72,444	Cts/S	242.77	0.33511				
Y_3774		4,514.6	Cts/S	20.369	0.45118				

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Acquire Date: 6/3/2020 9:05:31AM Sample Type: QC
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000096000	ppm	0.00021400	222.04	.00000	Abs	Pass	
Al3961		-0.013199	ppm	0.00079700	6.0357	.00000	Abs	Pass	
As1890		-0.0015930	ppm	0.0010450	65.601	.00000	Abs	Pass	
B_2089		0.0014090	ppm	0.00010400	7.3614	.00000	Abs	Pass	
Ba4554		-0.00034400	ppm	0.00057200	166.34	.00000	Abs	Pass	
Be3130		0.00017100	ppm	0.00013300	77.817	.00000	Abs	Pass	
Ca3179		0.0023430	ppm	0.0045020	192.12	.00000	Abs	Pass	
Cd2144		0.000092000	ppm	0.000020000	21.474	.00000	Abs	Pass	
Co2286		0.00074800	ppm	0.000065000	8.7288	.00000	Abs	Pass	
Cr2677	**F**	**0.022188**	**ppm**	**0.00057200**	**2.5779**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247	**F**	**-0.023296**	**ppm**	**0.00037700**	**1.6188**	**.00000**	**Abs**	**Fail Low**	**-.01500**
Fe2599	**F**	**0.11449**	**ppm**	**0.0010420**	**0.91017**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		-0.063760	ppm	0.034783	54.554	.00000	Abs	Pass	
Mg2790		-0.00011500	ppm	0.0022950	1,994.9	.00000	Abs	Pass	
Mn2576		0.0019100	ppm	0.000083000	4.3462	.00000	Abs	Pass	

RINSE BLANK

Acquire Date: 6/3/2020 9:05:31AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Mo2020		0.0022450	ppm	0.000024000	1.0693	.00000	Abs	Pass	
Na5895		-0.048552	ppm	0.0015180	3.1262	.00000	Abs	Pass	
Ni2316	F	0.013421	ppm	0.00063100	4.7045	.00000	Abs	Fail High	.01000
P_1782		-0.0011400	ppm	0.0016340	143.36	.00000	Abs	Pass	
Pb2203		-0.00083500	ppm	0.0016720	200.25	.00000	Abs	Pass	
S_1820		0.0018250	ppm	0.0031640	173.40	.00000	Abs	Pass	
Sb2068		0.0025350	ppm	0.0018630	73.480	.00000	Abs	Pass	
Se1960		-0.0012600	ppm	0.00080100	63.590	.00000	Abs	Pass	
Si2881		0.024172	ppm	0.011136	46.069	.00000	Abs	Pass	
Sn1899		0.00060400	ppm	0.00092400	152.79	.00000	Abs	Pass	
Sr4077		0.000057000	ppm	0.000055000	95.622	.00000	Abs	Pass	
Ti3349		0.00010700	ppm	0.00018000	167.50	.00000	Abs	Pass	
Tl1908		-0.00073500	ppm	0.00062300	84.763	.00000	Abs	Pass	
V_2924		0.000015000	ppm	0.00011100	739.26	.00000	Abs	Pass	
Zn2062		0.00016500	ppm	0.00017800	107.72	.00000	Abs	Pass	
Y_2243		7,303.2	Cts/S	0.69320	0.0094920				
Y_3600		72,256	Cts/S	291.53	0.40347				
Y_3774		4,480.0	Cts/S	20.595	0.45972				

CALSTD0 1815536

Acquire Date: 6/3/2020 9:09:32AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011650	Cts/S	0.000056000	4.8066
Al3961		-0.00018900	Cts/S	0.00087300	462.35
As1890		-0.00021200	Cts/S	0.000055000	26.188
B_2089		0.00095400	Cts/S	0.000021000	2.1553
Ba4554		0.010270	Cts/S	0.00024500	2.3898
Be3130		-0.0012160	Cts/S	0.000082000	6.7336
Ca3179		0.0042360	Cts/S	0.000037000	0.87944
Cd2144		0.00019900	Cts/S	0.0000010000	0.36733
Co2286		0.00019400	Cts/S	0.00018100	93.291
Cr2677		0.000063000	Cts/S	0.0000030000	4.6454
Cu3247		0.00088800	Cts/S	0.000023000	2.5409
Fe2599		0.00039700	Cts/S	0.00014600	36.642
K_7664		0.0010860	Cts/S	0.00033400	30.777
Mg2790		.0000070000	Cts/S	0.0000090000	136.07
Mn2576		0.000054000	Cts/S	0.000015000	27.045
Mo2020		0.000055000	Cts/S	0.000023000	41.616
Na5895		0.0047550	Cts/S	0.0029400	61.829
Ni2316		0.00032800	Cts/S	0.000072000	21.930
P_1782		0.00015000	Cts/S	0.000020000	13.123
Pb2203		0.00017100	Cts/S	0.000094000	55.318
S_1820		0.00010500	Cts/S	0.000036000	34.261
Sb2068		0.00014800	Cts/S	0.00015500	104.67
Se1960		0.00017200	Cts/S	0.00013200	76.722
Si2881		0.00068600	Cts/S	0.000089000	13.013
Sn1899		0.00017700	Cts/S	0.000014000	7.8469

CALSTD0 1815536

Acquire Date: 6/3/2020 9:09:32AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Sr4077		-0.0021780	Cts/S	0.00066600	30.594
Ti3349		.0000080000	Cts/S	0.0000070000	93.105
Tl1908		0.00011200	Cts/S	0.00010900	97.786
V_2924		0.000054000	Cts/S	0.0000010000	2.4571
Zn2062		0.000018000	Cts/S	0.000012000	65.985
Y_2243		7,308.3	Cts/S	31.212	0.42707
Y_3600		72,186	Cts/S	173.14	0.23985
Y_3774		4,483.1	Cts/S	22.024	0.49126

CALSTD1 1977311

Acquire Date: 6/3/2020 9:13:32AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.066437	Cts/S	0.00012400	0.18628
Al3961		2.5336	Cts/S	0.0057360	0.22641
As1890		0.038898	Cts/S	0.000031000	0.079229
B_2089		0.33480	Cts/S	0.00067800	0.20265
Ba4554		15.224	Cts/S	0.023506	0.15440
Be3130		1.3355	Cts/S	0.0043650	0.32684
Ca3179		2.5248	Cts/S	0.0027750	0.10991
Cd2144		1.5017	Cts/S	0.0012950	0.086228
Co2286		2.2017	Cts/S	0.00065500	0.029745
Cr2677		0.34420	Cts/S	0.00044900	0.13035
Cu3247		0.50209	Cts/S	0.0010600	0.21116
Fe2599		1.0343	Cts/S	0.0022960	0.22196
K_7664		2.5943	Cts/S	0.0050190	0.19347
Mg2790		0.35133	Cts/S	0.00057700	0.16435
Mn2576		2.1583	Cts/S	0.0037120	0.17199
Mo2020		0.56068	Cts/S	0.0015270	0.27237
Na5895		8.4483	Cts/S	0.0068200	0.080728
Ni2316		0.68918	Cts/S	0.00018500	0.026882
P_1782		0.14730	Cts/S	0.00024400	0.16578
Pb2203		0.10286	Cts/S	0.00033100	0.32138
S_1820		0.091036	Cts/S	0.00012900	0.14194
Sb2068		0.036722	Cts/S	0.000047000	0.12848
Se1960		0.024542	Cts/S	0.000061000	0.25050
Si2881		0.047725	Cts/S	0.00028000	0.58577
Sn1899		0.49015	Cts/S	0.00050900	0.10379
Sr4077		17.367	Cts/S	0.031403	0.18082
Ti3349		0.24309	Cts/S	0.00056700	0.23320
Tl1908		0.032501	Cts/S	0.00015200	0.46663
V_2924		0.54592	Cts/S	0.0013610	0.24925
Zn2062		0.20306	Cts/S	0.00042000	0.20700
Y_2243		7,081.1	Cts/S	3.1361	0.044289
Y_3600		69,350	Cts/S	43.576	0.062835
Y_3774		4,563.6	Cts/S	20.806	0.45591

CALSTD2 2016210

Acquire Date: 6/3/2020 9:17:16AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Al3961		12.887	Cts/S	0.013696	0.10628
Ca3179		12.381	Cts/S	0.026756	0.21610
Fe2599		5.0260	Cts/S	0.013755	0.27368
K_7664		13.213	Cts/S	0.042591	0.32235
Mg2790		1.7518	Cts/S	0.0054150	0.30913
Na5895		42.697	Cts/S	0.043204	0.10119
P_1782		1.5025	Cts/S	0.0014560	0.096920
S_1820		4.6115	Cts/S	0.0041360	0.089700
Y_2243		6,653.2	Cts/S	5.4796	0.082361
Y_3600		63,721	Cts/S	287.16	0.45065
Y_3774		4,449.3	Cts/S	3.5799	0.080460

LRA 2003178

Acquire Date: 6/3/2020 9:21:12AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.9991	ppm	0.0051320	0.25669	2.0000	Rel(%)	Pass	
Al3961		98.964	ppm	0.44269	0.44733	100.00	Rel(%)	Pass	
As1890		2.0250	ppm	0.0058320	0.28801	2.0000	Rel(%)	Pass	
B_2089		3.9381	ppm	0.0057020	0.14480	4.0000	Rel(%)	Pass	
Ba4554		9.9789	ppm	0.057022	0.57143	10.000	Rel(%)	Pass	
Be3130		1.9931	ppm	0.017697	0.88793	2.0000	Rel(%)	Pass	
Ca3179		101.24	ppm	0.76993	0.76046	100.00	Rel(%)	Pass	
Cd2144		1.9493	ppm	0.0028560	0.14654	2.0000	Rel(%)	Pass	
Co2286		9.7768	ppm	0.019329	0.19770	10.000	Rel(%)	Pass	
Cr2677		9.8170	ppm	0.044220	0.45045	10.000	Rel(%)	Pass	
Cu3247		9.8745	ppm	0.034635	0.35075	10.000	Rel(%)	Pass	
Fe2599		102.08	ppm	0.86693	0.84930	100.00	Rel(%)	Pass	
K_7664		100.03	ppm	0.59301	0.59285	100.00	Rel(%)	Pass	
Mg2790		100.22	ppm	0.41229	0.41138	100.00	Rel(%)	Pass	
Mn2576		9.6731	ppm	0.16999	1.7573	10.000	Rel(%)	Pass	
Mo2020		3.9783	ppm	0.011480	0.28856	4.0000	Rel(%)	Pass	
Na5895		99.636	ppm	0.55747	0.55951	100.00	Rel(%)	Pass	
Ni2316		9.7740	ppm	0.018743	0.19177	10.000	Rel(%)	Pass	
P_1782		9.8296	ppm	0.00014300	0.0014580	10.000	Rel(%)	Pass	
Pb2203		1.9601	ppm	0.0034300	0.17498	2.0000	Rel(%)	Pass	
S_1820		9.8111	ppm	0.012509	0.12750	10.000	Rel(%)	Pass	
Sb2068		1.9664	ppm	0.0054360	0.27642	2.0000	Rel(%)	Pass	
Se1960		1.9640	ppm	0.0082320	0.41916	2.0000	Rel(%)	Pass	
Si2881		9.8762	ppm	0.017812	0.18035	10.000	Rel(%)	Pass	
Sn1899		9.8084	ppm	0.020386	0.20785	10.000	Rel(%)	Pass	
Sr4077		9.9296	ppm	0.059256	0.59676	10.000	Rel(%)	Pass	
Ti3349		3.9626	ppm	0.011654	0.29409	4.0000	Rel(%)	Pass	
Tl1908		1.9279	ppm	0.0064220	0.33312	2.0000	Rel(%)	Pass	
V_2924		9.8969	ppm	0.043084	0.43533	10.000	Rel(%)	Pass	
Zn2062		9.6460	ppm	0.046563	0.48272	10.000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LRA 2003178

Acquire Date: 6/3/2020 9:21:12AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		6,835.4	Cts/S	4.3245	0.063267				
Y_3600		67,240	Cts/S	326.01	0.48485				
Y_3774		4,471.4	Cts/S	24.501	0.54795				

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Acquire Date: 6/3/2020 9:25:00AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00039200	ppm	0.00032000	81.676	.00000	Abs	Pass	
Al3961	**W**	**0.053354**	**ppm**	**0.024536**	**45.987**	**.00000**	**Abs**	**Warn High**	**0.05000**
As1890		0.0058480	ppm	0.00065700	11.230	.00000	Abs	Pass	
B_2089		0.0079640	ppm	0.0019830	24.904	.00000	Abs	Pass	
Ba4554		0.0026480	ppm	0.00090500	34.182	.00000	Abs	Pass	
Be3130		0.00084500	ppm	0.00036400	43.074	.00000	Abs	Pass	
Ca3179		0.033776	ppm	0.0067040	19.848	.00000	Abs	Pass	
Cd2144		0.00017100	ppm	0.000084000	49.211	.00000	Abs	Pass	
Co2286		0.00089900	ppm	0.00011600	12.908	.00000	Abs	Pass	
Cr2677	**F**	**0.023248**	**ppm**	**0.00073800**	**3.1761**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247	**W**	**0.013351**	**ppm**	**0.00010400**	**0.77545**	**.00000**	**Abs**	**Warn High**	**0.01000**
Fe2599	**F**	**0.20720**	**ppm**	**0.0015470**	**0.74672**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.068318	ppm	0.012267	17.955	.00000	Abs	Pass	
Mg2790		0.018596	ppm	0.0016960	9.1226	.00000	Abs	Pass	
Mn2576		0.0034580	ppm	0.000097000	2.8032	.00000	Abs	Pass	
Mo2020	**W**	**0.016601**	**ppm**	**0.0017210**	**10.368**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.10954	ppm	0.0010540	0.96240	.00000	Abs	Pass	
Ni2316	**F**	**0.014713**	**ppm**	**0.00072300**	**4.9128**	**.00000**	**Abs**	**Fail High**	**.01000**
P_1782		0.0062510	ppm	0.0014350	22.964	.00000	Abs	Pass	
Pb2203		0.00060300	ppm	0.0029350	487.11	.00000	Abs	Pass	
S_1820		0.014618	ppm	0.0054380	37.202	.00000	Abs	Pass	
Sb2068		0.00094000	ppm	0.00050100	53.323	.00000	Abs	Pass	
Se1960		0.00080100	ppm	0.0011790	147.23	.00000	Abs	Pass	
Si2881		0.023185	ppm	0.053897	232.46	.00000	Abs	Pass	
Sn1899		0.0082980	ppm	0.00023800	2.8737	.00000	Abs	Pass	
Sr4077		0.0018840	ppm	0.00073500	38.997	.00000	Abs	Pass	
Ti3349		0.0083900	ppm	0.00027500	3.2833	.00000	Abs	Pass	
Tl1908		0.0011930	ppm	0.0000090000	0.78872	.00000	Abs	Pass	
V_2924		0.0024230	ppm	0.00022400	9.2509	.00000	Abs	Pass	
Zn2062		0.0048800	ppm	0.00027800	5.7058	.00000	Abs	Pass	
Y_2243		7,421.1	Cts/S	14.988	0.20197				
Y_3600		73,693	Cts/S	163.31	0.22160				
Y_3774		4,580.8	Cts/S	8.1782	0.17853				

ICV 2008810

Acquire Date: 6/3/2020 9:29:01AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.24736	ppm	0.00049900	0.20174	.25000	Rel(%)	Pass	
Al3961		10.090	ppm	0.049636	0.49192	10.000	Rel(%)	Pass	
As1890		0.97378	ppm	0.00074700	0.076712	1.0000	Rel(%)	Pass	
B_2089		0.51922	ppm	0.0029180	0.56207	.50000	Rel(%)	Pass	
Ba4554		1.0209	ppm	0.000076000	0.0074250	1.0000	Rel(%)	Pass	
Be3130		1.0257	ppm	0.00092400	0.090074	1.0000	Rel(%)	Pass	
Ca3179		10.479	ppm	0.025186	0.24035	10.000	Rel(%)	Pass	
Cd2144		1.0304	ppm	0.00026800	0.026017	1.0000	Rel(%)	Pass	
Co2286		1.0397	ppm	0.00086700	0.083424	1.0000	Rel(%)	Pass	
Cr2677		1.0196	ppm	0.0024590	0.24118	1.0000	Rel(%)	Pass	
Cu3247		1.0192	ppm	0.0013210	0.12957	1.0000	Rel(%)	Pass	
Fe2599	**W**	**10.662**	**ppm**	**0.0077700**	**0.072879**	**10.000**	**Rel(%)**	**Warn High**	**5.0000**
K_7664		10.026	ppm	0.026174	0.26107	10.000	Rel(%)	Pass	
Mg2790		10.283	ppm	0.040441	0.39327	10.000	Rel(%)	Pass	
Mn2576		1.0479	ppm	0.0044500	0.42466	1.0000	Rel(%)	Pass	
Mo2020		1.0249	ppm	0.0033460	0.32648	1.0000	Rel(%)	Pass	
Na5895		10.120	ppm	0.060303	0.59586	10.000	Rel(%)	Pass	
Ni2316		1.0493	ppm	0.00087900	0.083734	1.0000	Rel(%)	Pass	
P_1782		1.9263	ppm	0.0050450	0.26191	2.0000	Rel(%)	Pass	
Pb2203		1.0453	ppm	0.0039950	0.38221	1.0000	Rel(%)	Pass	
S_1820		1.9637	ppm	0.013067	0.66539	2.0000	Rel(%)	Pass	
Sb2068		0.98501	ppm	0.00012300	0.012535	1.0000	Rel(%)	Pass	
Se1960		1.0270	ppm	0.0034500	0.33596	1.0000	Rel(%)	Pass	
Si2881		10.218	ppm	0.0050050	0.048988	10.000	Rel(%)	Pass	
Sn1899		1.0385	ppm	0.0021470	0.20673	1.0000	Rel(%)	Pass	
Sr4077		1.0305	ppm	0.00093700	0.090970	1.0000	Rel(%)	Pass	
Ti3349		1.0222	ppm	0.0022510	0.22017	1.0000	Rel(%)	Pass	
Tl1908	**W**	**1.0651**	**ppm**	**0.0027160**	**0.25501**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
V_2924		1.0080	ppm	0.0042770	0.42429	1.0000	Rel(%)	Pass	
Zn2062		1.0108	ppm	0.0030370	0.30045	1.0000	Rel(%)	Pass	
Y_2243		7,307.9	Cts/S	9.8289	0.13450				
Y_3600		72,402	Cts/S	437.19	0.60383				
Y_3774		4,560.1	Cts/S	1.9957	0.043765				

ICBIS 1815536

Acquire Date: 6/3/2020 9:32:46AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00052200	ppm	0.000078000	14.961	.00000	Abs	Pass	
Al3961		0.035074	ppm	0.0040850	11.646	.00000	Abs	Pass	
As1890		0.0018440	ppm	0.00086600	46.957	.00000	Abs	Pass	
B_2089		0.0040230	ppm	0.00066700	16.571	.00000	Abs	Pass	
Ba4554		0.00073700	ppm	0.00036000	48.813	.00000	Abs	Pass	
Be3130		0.00011800	ppm	0.00022700	192.74	.00000	Abs	Pass	
Ca3179		0.0018710	ppm	0.0055580	297.07	.00000	Abs	Pass	
Cd2144		0.000067000	ppm	0.000019000	28.372	.00000	Abs	Pass	
Co2286		-0.00031500	ppm	0.00051700	163.98	.00000	Abs	Pass	
Cr2677		0.00013300	ppm	0.0013140	989.49	.00000	Abs	Pass	

ICBIS 1815536

Acquire Date: 6/3/2020 9:32:46AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0026190	ppm	0.00061300	23.388	.00000	Abs	Pass	
Fe2599		0.022212	ppm	0.0016670	7.5051	.00000	Abs	Pass	
K_7664		0.048453	ppm	0.014286	29.484	.00000	Abs	Pass	
Mg2790		-0.0026210	ppm	0.0060400	230.49	.00000	Abs	Pass	
Mn2576		0.00042600	ppm	0.000022000	5.1396	.00000	Abs	Pass	
Mo2020		0.0042240	ppm	0.00059500	14.093	.00000	Abs	Pass	
Na5895		0.038152	ppm	0.014775	38.726	.00000	Abs	Pass	
Ni2316		0.00060300	ppm	0.00037700	62.580	.00000	Abs	Pass	
P_1782		-0.00080900	ppm	0.00062300	77.019	.00000	Abs	Pass	
Pb2203		-0.0012680	ppm	0.0021940	173.11	.00000	Abs	Pass	
S_1820		0.0070770	ppm	0.0000060000	0.088118	.00000	Abs	Pass	
Sb2068		0.0071520	ppm	0.0033060	46.223	.00000	Abs	Pass	
Se1960		-0.0030640	ppm	0.00035500	11.584	.00000	Abs	Pass	
Si2881		-0.0066990	ppm	0.019616	292.80	.00000	Abs	Pass	
Sn1899		0.0011930	ppm	0.0010620	89.054	.00000	Abs	Pass	
Sr4077		0.00031800	ppm	0.000061000	19.073	.00000	Abs	Pass	
Ti3349		0.0035760	ppm	0.000029000	0.81059	.00000	Abs	Pass	
Tl1908		0.0029100	ppm	0.00030400	10.442	.00000	Abs	Pass	
V_2924		-0.00050300	ppm	0.00014500	28.812	.00000	Abs	Pass	
Zn2062		0.0011530	ppm	0.00087400	75.775	.00000	Abs	Pass	
Y_2243		7,379.9	Cts/S	10.079	0.13658				
Y_3600		73,560	Cts/S	602.09	0.81851				
Y_3774		4,576.9	Cts/S	23.914	0.52249				

CRI 2011780

Acquire Date: 6/3/2020 9:36:46AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0051550	ppm	0.00087400	16.956	.00500	Rel(%)	Pass	
Al3961		0.22200	ppm	0.023478	10.576	.20000	Rel(%)	Pass	
As1890		0.039885	ppm	0.0032180	8.0677	.04000	Rel(%)	Pass	
B_2089		0.19926	ppm	0.000036000	0.018066	.20000	Rel(%)	Pass	
Ba4554		0.020903	ppm	0.00043800	2.0945	.02000	Rel(%)	Pass	
Be3130		0.0033990	ppm	0.000043000	1.2519	.00300	Rel(%)	Pass	
Ca3179		0.53239	ppm	0.0063120	1.1856	.50000	Rel(%)	Pass	
Cd2144		0.0030180	ppm	0.0000050000	0.16685	.00300	Rel(%)	Pass	
Co2286		0.0096750	ppm	0.00029800	3.0758	.01000	Rel(%)	Pass	
Cr2677		0.010278	ppm	0.00040000	3.8909	.01000	Rel(%)	Pass	
Cu3247		0.016222	ppm	0.00010000	0.61906	.01500	Rel(%)	Pass	
Fe2599		0.10315	ppm	0.011501	11.150	.10000	Rel(%)	Pass	
K_7664		0.95752	ppm	0.025939	2.7090	1.0000	Rel(%)	Pass	
Mg2790		0.52016	ppm	0.0041610	0.79999	.50000	Rel(%)	Pass	
Mn2576		0.011042	ppm	0.000054000	0.48973	.01000	Rel(%)	Pass	
Mo2020		0.020584	ppm	0.000033000	0.15948	.02000	Rel(%)	Pass	
Na5895		0.51444	ppm	0.010492	2.0394	.50000	Rel(%)	Pass	
Ni2316		0.0093170	ppm	0.00027100	2.9055	.01000	Rel(%)	Pass	
P_1782		0.48189	ppm	0.00078300	0.16253	.50000	Rel(%)	Pass	
Pb2203		0.0080340	ppm	0.0019110	23.780	.01000	Rel(%)	Pass	

CRI 2011780

Acquire Date: 6/3/2020 9:36:46AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.48420	ppm	0.00074800	0.15452	.50000	Rel(%)	Pass	
Sb2068		0.027628	ppm	0.0041670	15.081	.03000	Rel(%)	Pass	
Se1960		0.041850	ppm	0.00092200	2.2034	.04000	Rel(%)	Pass	
Si2881		0.50500	ppm	0.018591	3.6815	.50000	Rel(%)	Pass	
Sn1899		0.022851	ppm	0.00035100	1.5372	.02000	Rel(%)	Pass	
Sr4077		0.051383	ppm	0.000015000	0.030022	.05000	Rel(%)	Pass	
Ti3349		0.010081	ppm	0.00032900	3.2670	.01000	Rel(%)	Pass	
Tl1908		0.030876	ppm	0.00028600	0.92555	.03000	Rel(%)	Pass	
V_2924		0.019639	ppm	0.00089600	4.5625	.02000	Rel(%)	Pass	
Zn2062		0.022209	ppm	0.000076000	0.34046	.02000	Rel(%)	Pass	
Y_2243		7,383.6	Cts/S	5.6422	0.076416				
Y_3600		73,046	Cts/S	34.660	0.047451				
Y_3774		4,587.4	Cts/S	0.43265	0.0094310				

CRI 2012849

Acquire Date: 6/3/2020 9:40:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0052140	ppm	0.000060000	1.1504	.00500	Rel(%)	Pass	
Al3961		0.20763	ppm	0.013905	6.6970	.20000	Rel(%)	Pass	
As1890		0.018935	ppm	0.0039590	20.910	.02000	Rel(%)	Pass	
B_2089		0.095274	ppm	0.00060700	0.63737	.10000	Rel(%)	Pass	
Ba4554		0.0054110	ppm	0.00086100	15.903	.00500	Rel(%)	Pass	
Be3130		0.0022680	ppm	0.00027500	12.115	.00200	Rel(%)	Pass	
Ca3179		0.51989	ppm	0.0029910	0.57538	.50000	Rel(%)	Pass	
Cd2144		0.0019740	ppm	0.000056000	2.8440	.00200	Rel(%)	Pass	
Co2286		0.0044710	ppm	0.00022300	4.9900	.00500	Rel(%)	Pass	
Cr2677		0.0042070	ppm	0.000030000	0.71516	.00500	Rel(%)	Pass	
Cu3247		0.010204	ppm	0.00065500	6.4209	.01000	Rel(%)	Pass	
Fe2599		0.095967	ppm	0.0056530	5.8904	.10000	Rel(%)	Pass	
K_7664		0.89306	ppm	0.073372	8.2158	1.0000	Rel(%)	Pass	
Mg2790		0.49715	ppm	0.0044360	0.89224	.50000	Rel(%)	Pass	
Mn2576		0.0052330	ppm	0.000034000	0.64205	.00500	Rel(%)	Pass	
Mo2020		0.022837	ppm	0.000080000	0.35005	.02000	Rel(%)	Pass	
Na5895		0.48762	ppm	0.0036880	0.75630	.50000	Rel(%)	Pass	
Ni2316		0.0042910	ppm	0.00036800	8.5774	.00500	Rel(%)	Pass	
P_1782		0.46596	ppm	0.0012760	0.27387	.50000	Rel(%)	Pass	
Pb2203		0.0042410	ppm	0.0016880	39.801	.00500	Rel(%)	Pass	
S_1820		0.46563	ppm	0.0033490	0.71930	.50000	Rel(%)	Pass	
Sb2068		0.021000	ppm	0.0036620	17.436	.02000	Rel(%)	Pass	
Se1960		0.016724	ppm	0.0014400	8.6119	.02000	Rel(%)	Pass	
Si2881		0.49141	ppm	0.0083270	1.6945	.50000	Rel(%)	Pass	
Sn1899		0.020996	ppm	0.00020000	0.95122	.02000	Rel(%)	Pass	
Sr4077		0.050543	ppm	0.00020300	0.40233	.05000	Rel(%)	Pass	
Ti3349	**W**	**0.012653**	**ppm**	**0.00072800**	**5.7550**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
Tl1908		0.019163	ppm	0.00047200	2.4611	.02000	Rel(%)	Pass	
V_2924		0.0051290	ppm	0.00018600	3.6194	.00500	Rel(%)	Pass	
Zn2062		0.010250	ppm	0.00038500	3.7580	.01000	Rel(%)	Pass	

CRI 2012849

Acquire Date: 6/3/2020 9:40:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,419.8	Cts/S	18.726	0.25237				
Y_3600		74,183	Cts/S	186.58	0.25151				
Y_3774		4,591.8	Cts/S	9.3035	0.20261				

ICSA 2002127

Acquire Date: 6/3/2020 9:44:43AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00056300	ppm	0.000086000	15.299	.00000	Abs	Pass	
Al3961		501.18	ppm	0.52303	0.10436	500.00	Abs	Pass	
As1890		0.00063000	ppm	0.00031900	50.633	.00000	Abs	Pass	
B_2089		0.0044940	ppm	0.00013100	2.9191	.00000	Abs	Pass	
Ba4554		0.0010370	ppm	0.00024500	23.609	.00000	Abs	Pass	
Be3130		-0.00052700	ppm	0.000044000	8.3578	.00000	Abs	Pass	
Ca3179		493.27	ppm	0.77123	0.15635	500.00	Abs	Pass	
Cd2144		-0.00059200	ppm	0.000044000	7.5005	.00000	Abs	Pass	
Co2286		-0.0010210	ppm	0.00037700	36.882	.00000	Abs	Pass	
Cr2677		-0.0030350	ppm	0.00011100	3.6463	.00000	Abs	Pass	
Cu3247		-0.0012220	ppm	0.00017000	13.906	.00000	Abs	Pass	
Fe2599		194.99	ppm	0.50951	0.26130	200.00	Abs	Pass	
K_7664		-0.15655	ppm	0.027533	17.587	.00000	Abs	Pass	
Mg2790		487.11	ppm	3.5687	0.73264	500.00	Abs	Pass	
Mn2576		-0.00041700	ppm	0.00013000	31.274	.00000	Abs	Pass	
Mo2020		-0.00015900	ppm	0.00047300	296.41	.00000	Abs	Pass	
Na5895		0.086849	ppm	0.015035	17.311	.00000	Abs	Pass	
Ni2316		-0.0021680	ppm	0.00024600	11.356	.00000	Abs	Pass	
P_1782		0.012932	ppm	0.0041640	32.196	.00000	Abs	Pass	
Pb2203		-0.0027130	ppm	0.0046550	171.57	.00000	Abs	Pass	
S_1820		-0.29685	ppm	0.0081560	2.7475	.00000	Abs	Pass	
Sb2068		-0.0074440	ppm	0.0087230	117.17	.00000	Abs	Pass	
Se1960		-0.0067560	ppm	0.00092800	13.740	.00000	Abs	Pass	
Si2881		0.0057080	ppm	0.073150	1,281.6	.00000	Abs	Pass	
Sn1899		-0.0035740	ppm	0.00018500	5.1680	.00000	Abs	Pass	
Sr4077		0.0050780	ppm	0.000023000	0.45066	.00000	Abs	Pass	
Ti3349		-0.0010510	ppm	0.00056500	53.732	.00000	Abs	Pass	
Tl1908		-0.0079640	ppm	0.00086400	10.844	.00000	Abs	Pass	
V_2924		-0.00086900	ppm	0.00012100	13.872	.00000	Abs	Pass	
Zn2062		-0.0014210	ppm	0.00017800	12.497	.00000	Abs	Pass	
Y_2243		6,501.6	Cts/S	13.002	0.19998				
Y_3600		62,963	Cts/S	53.463	0.084913				
Y_3774		4,396.6	Cts/S	22.350	0.50835				

ICSAB 2007695

Acquire Date: 6/3/2020 9:48:43AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.0690	ppm	0.0038120	0.35664	1.0000	Rel(%)	Pass	
Al3961		497.99	ppm	2.0942	0.42052	500.00	Rel(%)	Pass	
As1890		0.97559	ppm	0.00011700	0.012039				
B_2089		9.5042	ppm	0.0030580	0.032178				
Ba4554		0.99859	ppm	0.0046530	0.46598	1.0000	Rel(%)	Pass	
Be3130		0.49540	ppm	0.0027290	0.55096	.50000	Rel(%)	Pass	
Ca3179		488.28	ppm	2.5998	0.53244	500.00	Rel(%)	Pass	
Cd2144		0.93373	ppm	0.0012590	0.13481	1.0000	Rel(%)	Pass	
Co2286		0.90806	ppm	0.0012170	0.13407	1.0000	Rel(%)	Pass	
Cr2677		0.98258	ppm	0.0020050	0.20408	1.0000	Rel(%)	Pass	
Cu3247		0.98843	ppm	0.0032630	0.33007	1.0000	Rel(%)	Pass	
Fe2599		193.66	ppm	0.93427	0.48242	200.00	Rel(%)	Pass	
K_7664		10.285	ppm	0.019486	0.18946				
Mg2790		490.43	ppm	0.39438	0.080414	500.00	Rel(%)	Pass	
Mn2576		1.0015	ppm	0.0021960	0.21927	1.0000	Rel(%)	Pass	
Mo2020		-0.00091600	ppm	0.000036000	3.9234				
Na5895		10.438	ppm	0.027392	0.26243				
Ni2316		0.89128	ppm	0.00021000	0.023506	1.0000	Rel(%)	Pass	
P_1782		9.7831	ppm	0.016520	0.16886				
Pb2203		0.94037	ppm	0.0023700	0.25201	1.0000	Rel(%)	Pass	
S_1820		-0.30507	ppm	0.0059130	1.9383				
Sb2068		-0.0055600	ppm	0.0035500	63.849				
Se1960		0.98327	ppm	0.0034470	0.35055				
Si2881		0.023832	ppm	0.0024410	10.241				
Sn1899		-0.0026130	ppm	0.00020600	7.8764				
Sr4077		1.0110	ppm	0.0041490	0.41040				
Ti3349		-0.0014090	ppm	0.00017700	12.529				
Tl1908		0.89765	ppm	0.011043	1.2302				
V_2924		1.0087	ppm	0.0041660	0.41299	1.0000	Rel(%)	Pass	
Zn2062		0.93755	ppm	0.0062060	0.66192	1.0000	Rel(%)	Pass	
Y_2243		6,473.9	Cts/S	12.793	0.19762				
Y_3600		62,522	Cts/S	121.66	0.19458				
Y_3774		4,412.8	Cts/S	16.083	0.36448				

AI 2012851

Acquire Date: 6/3/2020 9:52:33AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0027740	ppm	0.00068700	24.766	.00000	Abs	Pass	
Al3961		981.06	ppm	1.9104	0.19473				
As1890		0.00011200	ppm	0.0017050	1,519.2	.00000	Abs	Pass	
B_2089		0.023179	ppm	0.0023630	10.196	.00000	Abs	Pass	
Ba4554		0.00079000	ppm	0.00030400	38.473	.00000	Abs	Pass	
Be3130		0.00045200	ppm	0.0000060000	1.2295	.00000	Abs	Pass	
Ca3179		0.17084	ppm	0.098429	57.617				
Cd2144		-0.00039900	ppm	0.00016300	40.762	.00000	Abs	Pass	
Co2286		-0.00069400	ppm	0.000042000	6.1163	.00000	Abs	Pass	
Cr2677		0.000014000	ppm	0.00066100	4,628.1	.00000	Abs	Pass	

Al 2012851

Acquire Date: 6/3/2020 9:52:33AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		-0.0014510	ppm	0.00027800	19.169	.00000	Abs	Pass	
Fe2599		0.23506	ppm	0.042890	18.247				
K_7664		-0.11783	ppm	0.0025900	2.1979	.00000	Abs	Pass	
Mg2790		0.068993	ppm	0.0091720	13.294				
Mn2576		-0.00021400	ppm	0.00017400	81.579	.00000	Abs	Pass	
Mo2020		-0.0015810	ppm	0.00077400	48.970	.00000	Abs	Pass	
Na5895		0.35867	ppm	0.012675	3.5340	.00000	Abs	Pass	
Ni2316		-0.00025200	ppm	0.00028600	113.57	.00000	Abs	Pass	
P_1782		0.010671	ppm	0.0027690	25.953	.00000	Abs	Pass	
Pb2203		-0.0012780	ppm	0.0059010	461.70	.00000	Abs	Pass	
S_1820		0.013905	ppm	0.0037330	26.844	.00000	Abs	Pass	
Sb2068		-0.0078550	ppm	0.010145	129.15	.00000	Abs	Pass	
Se1960		0.0033200	ppm	0.0025690	77.380	.00000	Abs	Pass	
Si2881		0.0090860	ppm	0.021708	238.92	.00000	Abs	Pass	
Sn1899		-0.010707	ppm	0.0015570	14.542	.00000	Abs	Pass	
Sr4077		0.00034900	ppm	0.000079000	22.553	.00000	Abs	Pass	
Ti3349		0.0027300	ppm	0.00021600	7.9120	.00000	Abs	Pass	
Tl1908		-0.00044900	ppm	0.0015440	343.99	.00000	Abs	Pass	
V_2924		-0.00041000	ppm	0.000057000	13.840	.00000	Abs	Pass	
Zn2062		0.0043580	ppm	0.0013270	30.438	.00000	Abs	Pass	
Y_2243		6,923.3	Cts/S	13.664	0.19736				
Y_3600		64,826	Cts/S	50.614	0.078078				
Y_3774		4,530.1	Cts/S	33.112	0.73092				

Ca 1996387

Acquire Date: 6/3/2020 9:56:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0021070	ppm	0.00037800	17.926	.00000	Abs	Pass	
Al3961		0.26370	ppm	0.095648	36.272				
As1890		0.0032740	ppm	0.0013370	40.837	.00000	Abs	Pass	
B_2089		0.0098970	ppm	0.00046700	4.7203	.00000	Abs	Pass	
Ba4554		0.0012450	ppm	0.00015300	12.269	.00000	Abs	Pass	
Be3130		-0.00077800	ppm	0.0000020000	0.23474	.00000	Abs	Pass	
Ca3179		982.87	ppm	7.0184	0.71407				
Cd2144		0.000066000	ppm	0.00011800	179.40	.00000	Abs	Pass	
Co2286		-0.00010100	ppm	0.00018900	186.92	.00000	Abs	Pass	
Cr2677		0.0019110	ppm	0.00049900	26.089	.00000	Abs	Pass	
Cu3247		0.00050400	ppm	0.00052300	103.87	.00000	Abs	Pass	
Fe2599		0.022840	ppm	0.00088300	3.8671				
K_7664		-0.0071460	ppm	0.0054610	76.419	.00000	Abs	Pass	
Mg2790		0.017290	ppm	0.0021420	12.391				
Mn2576		-0.0029320	ppm	0.0000010000	0.042720	.00000	Abs	Pass	
Mo2020		-0.00063200	ppm	0.00029600	46.775	.00000	Abs	Pass	
Na5895		0.0090530	ppm	0.015733	173.78	.00000	Abs	Pass	
Ni2316		0.0036870	ppm	0.00042800	11.607	.00000	Abs	Pass	
P_1782		0.014109	ppm	0.0012760	9.0439	.00000	Abs	Pass	
Pb2203		-0.0037090	ppm	0.0016720	45.092	.00000	Abs	Pass	

Ca 1996387

Acquire Date: 6/3/2020 9:56:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.072361	ppm	0.00083700	1.1572	.00000	Abs	Pass	
Sb2068		-0.010637	ppm	0.0012050	11.327	.00000	Abs	Pass	
Se1960		-0.0018290	ppm	0.0016470	90.046	.00000	Abs	Pass	
Si2881		0.031244	ppm	0.036385	116.46	.00000	Abs	Pass	
Sn1899		0.0038330	ppm	0.00068200	17.792	.00000	Abs	Pass	
Sr4077		-0.0026360	ppm	0.00049300	18.700	.00000	Abs	Pass	
Ti3349		-0.0038440	ppm	0.00063100	16.426	.00000	Abs	Pass	
Tl1908		-0.0046580	ppm	0.00098800	21.218	.00000	Abs	Pass	
V_2924		0.0013310	ppm	0.000027000	2.0156	.00000	Abs	Pass	
Zn2062		0.0013910	ppm	0.00022800	16.376	.00000	Abs	Pass	
Y_2243		6,651.0	Cts/S	13.061	0.19637				
Y_3600		65,487	Cts/S	134.69	0.20567				
Y_3774		4,404.8	Cts/S	12.909	0.29305				

Fe 2002062

Acquire Date: 6/3/2020 10:00:33AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0020110	ppm	0.00036300	18.048	.00000	Abs	Pass	
Al3961		0.042575	ppm	0.023962	56.282				
As1890		0.00089700	ppm	0.0010020	111.60	.00000	Abs	Pass	
B_2089		0.017543	ppm	0.000010000	0.055164	.00000	Abs	Pass	
Ba4554		0.00055300	ppm	0.00067000	121.09	.00000	Abs	Pass	
Be3130		0.000049000	ppm	0.00010800	220.22	.00000	Abs	Pass	
Ca3179		-0.070593	ppm	0.037497	53.116				
Cd2144		-0.00021400	ppm	0.00012100	56.368	.00000	Abs	Pass	
Co2286		-0.0014740	ppm	0.00024400	16.517	.00000	Abs	Pass	
Cr2677		0.00057900	ppm	0.000046000	7.9829	.00000	Abs	Pass	
Cu3247		-0.00071000	ppm	0.00026300	36.972	.00000	Abs	Pass	
Fe2599		960.18	ppm	2.4296	0.25304				
K_7664		-0.098809	ppm	0.074877	75.780	.00000	Abs	Pass	
Mg2790		-0.040575	ppm	0.0046000	11.338				
Mn2576		0.00033500	ppm	0.00018900	56.474	.00000	Abs	Pass	
Mo2020		0.0011440	ppm	0.00030200	26.358	.00000	Abs	Pass	
Na5895		0.10612	ppm	0.0055120	5.1945	.00000	Abs	Pass	
Ni2316		-0.0043290	ppm	0.0012700	29.335	.00000	Abs	Pass	
P_1782		0.010372	ppm	0.00012400	1.1947	.00000	Abs	Pass	
Pb2203		0.0028330	ppm	0.00031600	11.138	.00000	Abs	Pass	
S_1820		-0.021647	ppm	0.014676	67.794	.00000	Abs	Pass	
Sb2068		0.0044380	ppm	0.00066400	14.972	.00000	Abs	Pass	
Se1960		0.00028200	ppm	0.0022500	796.79	.00000	Abs	Pass	
Si2881		0.048569	ppm	0.019563	40.279	.00000	Abs	Pass	
Sn1899		0.0070640	ppm	0.0000050000	0.066862	.00000	Abs	Pass	
Sr4077		0.00063200	ppm	0.000066000	10.363	.00000	Abs	Pass	
Ti3349		-0.00018100	ppm	0.00029000	160.70	.00000	Abs	Pass	
Tl1908		-0.015254	ppm	0.0022390	14.681	.00000	Abs	Pass	
V_2924		-0.0026490	ppm	0.00034000	12.826	.00000	Abs	Pass	
Zn2062		-0.0043410	ppm	0.00038700	8.9128	.00000	Abs	Pass	

Fe 2002062

Acquire Date: 6/3/2020 10:00:33AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,069.0	Cts/S	6.0257	0.085241				
Y_3600		69,588	Cts/S	45.849	0.065887				
Y_3774		4,467.3	Cts/S	14.722	0.32954				

Mg 2016211

Acquire Date: 6/3/2020 10:04:28AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00072600	ppm	0.0010480	144.31	.00000	Abs	Pass	
Al3961		0.018491	ppm	0.0083850	45.347				
As1890		0.0026520	ppm	0.0017540	66.139	.00000	Abs	Pass	
B_2089		0.0056820	ppm	0.000037000	0.64794	.00000	Abs	Pass	
Ba4554		0.0011320	ppm	0.00069700	61.626	.00000	Abs	Pass	
Be3130		0.000086000	ppm	0.00023100	267.69	.00000	Abs	Pass	
Ca3179		0.090041	ppm	0.012271	13.628				
Cd2144		-0.0015720	ppm	0.000030000	1.9138	.00000	Abs	Pass	
Co2286		-0.00035600	ppm	0.00020100	56.519	.00000	Abs	Pass	
Cr2677		-0.0013830	ppm	0.0014130	102.17	.00000	Abs	Pass	
Cu3247		0.0025760	ppm	0.00052200	20.245	.00000	Abs	Pass	
Fe2599		0.36340	ppm	0.10592	29.146				
K_7664		-0.12247	ppm	0.035569	29.042	.00000	Abs	Pass	
Mg2790		998.74	ppm	11.016	1.1030				
Mn2576		0.0031760	ppm	0.000068000	2.1521	.00000	Abs	Pass	
Mo2020		0.000086000	ppm	0.000028000	33.257	.00000	Abs	Pass	
Na5895		0.037595	ppm	0.015014	39.936	.00000	Abs	Pass	
Ni2316		-0.00087200	ppm	0.00073900	84.757	.00000	Abs	Pass	
P_1782		-0.00046200	ppm	0.0029200	632.24	.00000	Abs	Pass	
Pb2203		-0.0013570	ppm	0.0019970	147.13	.00000	Abs	Pass	
S_1820		0.083846	ppm	0.0065860	7.8554	.00000	Abs	Pass	
Sb2068		0.0073460	ppm	0.0036310	49.425	.00000	Abs	Pass	
Se1960		-0.0090930	ppm	0.0038920	42.805	.00000	Abs	Pass	
Si2881		-0.047774	ppm	0.012884	26.969	.00000	Abs	Pass	
Sn1899		0.0016480	ppm	0.0000060000	0.36629	.00000	Abs	Pass	
Sr4077		0.00017400	ppm	0.00027400	156.88	.00000	Abs	Pass	
Ti3349		0.0024430	ppm	0.0011700	47.884	.00000	Abs	Pass	
Tl1908		0.00048400	ppm	0.0012340	255.08	.00000	Abs	Pass	
V_2924		0.00024300	ppm	0.00092600	380.60	.00000	Abs	Pass	
Zn2062		0.0023560	ppm	0.00017300	7.3599	.00000	Abs	Pass	
Y_2243		6,699.5	Cts/S	0.22365	0.0033380				
Y_3600		65,326	Cts/S	514.09	0.78695				
Y_3774		4,384.1	Cts/S	9.9208	0.22629				

rinse1

Acquire Date: 6/3/2020 10:08:31AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0013390	ppm	0.00024900	18.599
Al3961		0.038865	ppm	0.033259	85.576
As1890		0.0037630	ppm	0.0024680	65.592
B_2089		0.0026220	ppm	0.00018500	7.0645
Ba4554		0.00031300	ppm	0.000021000	6.7798
Be3130		0.000050000	ppm	0.00032900	653.30
Ca3179		0.020018	ppm	0.0062540	31.241
Cd2144		-0.00010700	ppm	0.000035000	32.574
Co2286		-0.00044600	ppm	0.00010500	23.575
Cr2677		0.0039150	ppm	0.000093000	2.3650
Cu3247		-0.00017100	ppm	0.00012700	74.407
Fe2599		0.077111	ppm	0.030089	39.020
K_7664		0.011496	ppm	0.024394	212.20
Mg2790		0.10364	ppm	0.016400	15.824
Mn2576		0.00050900	ppm	0.00016600	32.611
Mo2020		-0.00024900	ppm	0.00050100	200.92
Na5895		0.023203	ppm	0.0011630	5.0134
Ni2316		0.0037490	ppm	0.00037400	9.9679
P_1782		-0.0017230	ppm	0.0014870	86.297
Pb2203		0.0016160	ppm	0.0031680	195.99
S_1820		0.00088000	ppm	0.0018680	212.36
Sb2068		-0.0017530	ppm	0.00086500	49.349
Se1960		-0.0044860	ppm	0.0044420	99.016
Si2881		-0.023789	ppm	0.00072100	3.0292
Sn1899		0.000084000	ppm	0.00097200	1,152.8
Sr4077		.0000090000	ppm	0.00015800	1,678.7
Ti3349		-0.00055600	ppm	0.0010180	183.23
Tl1908		-0.0030770	ppm	0.00026200	8.5279
V_2924		-0.00064300	ppm	0.000015000	2.4034
Zn2062		0.00078100	ppm	0.000018000	2.3073
Y_2243		7,286.2	Cts/S	0.23073	0.0031670
Y_3600		72,792	Cts/S	235.15	0.32304
Y_3774		4,517.7	Cts/S	4.2754	0.094637

rinse2

Acquire Date: 6/3/2020 10:12:29AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00065100	ppm	0.00085200	130.78
Al3961		0.035367	ppm	0.010018	28.326
As1890		0.0020950	ppm	0.0012670	60.496
B_2089		0.0014880	ppm	0.00071600	48.097
Ba4554		0.00046600	ppm	0.00029600	63.499
Be3130		0.000089000	ppm	0.00016900	190.14
Ca3179		0.010068	ppm	0.0028350	28.158
Cd2144		0.000046000	ppm	0.000013000	28.951
Co2286		-0.00044700	ppm	0.00048800	109.09

rinse2

Acquire Date: 6/3/2020 10:12:29AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0046410	ppm	0.000068000	1.4565
Cu3247		-0.00035600	ppm	0.00036200	101.73
Fe2599		0.046305	ppm	0.0013090	2.8279
K_7664		-0.044048	ppm	0.0032870	7.4616
Mg2790		0.014671	ppm	0.0000080000	0.054900
Mn2576		0.00045300	ppm	0.000098000	21.649
Mo2020		-0.00033300	ppm	0.00036200	108.57
Na5895		0.0021720	ppm	0.0073890	340.18
Ni2316		0.0034280	ppm	0.00053400	15.568
P_1782		-0.0026640	ppm	0.00014800	5.5442
Pb2203		0.00052500	ppm	0.0041880	798.03
S_1820		0.0078510	ppm	0.0021610	27.531
Sb2068		-0.0012440	ppm	0.0031300	251.69
Se1960		-0.0043210	ppm	0.00029500	6.8221
Si2881		0.0083470	ppm	0.022592	270.67
Sn1899		-0.0011990	ppm	0.000060000	4.9717
Sr4077		-0.00014600	ppm	0.00024700	169.62
Ti3349		-0.00037900	ppm	0.00028100	74.100
Tl1908		-0.00068400	ppm	0.0015170	221.80
V_2924		-0.00027400	ppm	0.00013600	49.679
Zn2062		0.00031000	ppm	0.00014700	47.497
Y_2243		7,308.2	Cts/S	12.304	0.16835
Y_3600		72,802	Cts/S	479.14	0.65814
Y_3774		4,487.8	Cts/S	0.18687	0.0041640

CCV 2010278

Acquire Date: 6/3/2020 10:16:27AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51281	ppm	0.00089700	0.17490	.50000	Rel(%)	Pass	
Al3961		25.236	ppm	0.086005	0.34081	25.000	Rel(%)	Pass	
As1890		0.51590	ppm	0.0021750	0.42154	.50000	Rel(%)	Pass	
B_2089		1.0329	ppm	0.0027250	0.26381	1.0000	Rel(%)	Pass	
Ba4554		2.5561	ppm	0.0051020	0.19960	2.5000	Rel(%)	Pass	
Be3130		0.52205	ppm	0.00095400	0.18275	.50000	Rel(%)	Pass	
Ca3179		26.490	ppm	0.042530	0.16055	25.000	Rel(%)	Pass	
Cd2144		0.51728	ppm	0.0014020	0.27099	.50000	Rel(%)	Pass	
Co2286		2.6016	ppm	0.0030090	0.11567	2.5000	Rel(%)	Pass	
Cr2677		2.5472	ppm	0.0029640	0.11636	2.5000	Rel(%)	Pass	
Cu3247		2.4799	ppm	0.00044100	0.017775	2.5000	Rel(%)	Pass	
Fe2599		26.899	ppm	0.082208	0.30562	25.000	Rel(%)	Pass	
K_7664		25.492	ppm	0.10227	0.40119	25.000	Rel(%)	Pass	
Mg2790		25.825	ppm	0.10832	0.41942	25.000	Rel(%)	Pass	
Mn2576		2.5936	ppm	0.0077190	0.29761	2.5000	Rel(%)	Pass	
Mo2020		1.0380	ppm	0.0038350	0.36945	1.0000	Rel(%)	Pass	
Na5895		25.560	ppm	0.070380	0.27536	25.000	Rel(%)	Pass	
Ni2316		2.6152	ppm	0.0036600	0.13995	2.5000	Rel(%)	Pass	
P_1782		2.4869	ppm	0.0031620	0.12714	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/3/2020 10:16:27AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.52942	ppm	0.0022270	0.42061	.50000	Rel(%)	Pass	
S_1820		2.4334	ppm	0.0082340	0.33837	2.5000	Rel(%)	Pass	
Sb2068		0.51167	ppm	0.0042020	0.82132	.50000	Rel(%)	Pass	
Se1960		0.51492	ppm	0.0013250	0.25725	.50000	Rel(%)	Pass	
Si2881		2.5025	ppm	0.016481	0.65856	2.5000	Rel(%)	Pass	
Sn1899		2.5928	ppm	0.0041300	0.15927	2.5000	Rel(%)	Pass	
Sr4077		2.5824	ppm	0.0076810	0.29744	2.5000	Rel(%)	Pass	
Ti3349		1.0216	ppm	0.0042380	0.41483	1.0000	Rel(%)	Pass	
Tl1908		0.52784	ppm	0.0046920	0.88889	.50000	Rel(%)	Pass	
V_2924		2.5381	ppm	0.0053030	0.20895	2.5000	Rel(%)	Pass	
Zn2062		2.5595	ppm	0.010603	0.41424	2.5000	Rel(%)	Pass	
Y_2243		7,092.4	Cts/S	30.823	0.43460				
Y_3600		69,836	Cts/S	79.349	0.11362				
Y_3774		4,446.1	Cts/S	10.244	0.23040				

CCB 1815536

Acquire Date: 6/3/2020 10:20:13AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00054900	ppm	0.000020000	3.5894	.00000	Abs	Pass	
Al3961		0.00024900	ppm	0.0053150	2,136.4	.00000	Abs	Pass	
As1890		0.0021810	ppm	0.00051600	23.660	.00000	Abs	Pass	
B_2089		0.0030340	ppm	0.00017200	5.6553	.00000	Abs	Pass	
Ba4554		0.0011270	ppm	0.000020000	1.7364	.00000	Abs	Pass	
Be3130		0.00036500	ppm	0.000030000	8.2295	.00000	Abs	Pass	
Ca3179		0.013683	ppm	0.017263	126.16	.00000	Abs	Pass	
Cd2144		0.000031000	ppm	0.000074000	239.43	.00000	Abs	Pass	
Co2286		-0.00028600	ppm	0.00021200	74.196	.00000	Abs	Pass	
Cr2677		0.00021000	ppm	0.00010800	51.686	.00000	Abs	Pass	
Cu3247		0.00031600	ppm	0.00054000	171.20	.00000	Abs	Pass	
Fe2599		0.041390	ppm	0.0074370	17.968	.00000	Abs	Pass	
K_7664		-0.012236	ppm	0.018631	152.26	.00000	Abs	Pass	
Mg2790		-0.0016210	ppm	0.0034200	211.04	.00000	Abs	Pass	
Mn2576		0.00019000	ppm	0.000041000	21.471	.00000	Abs	Pass	
Mo2020		0.0036680	ppm	0.00052400	14.287	.00000	Abs	Pass	
Na5895		-0.013482	ppm	0.028035	207.94	.00000	Abs	Pass	
Ni2316		-0.00059900	ppm	0.0013250	221.14	.00000	Abs	Pass	
P_1782		0.00010800	ppm	0.0012790	1,188.9	.00000	Abs	Pass	
Pb2203		0.00015500	ppm	0.0024090	1,550.0	.00000	Abs	Pass	
S_1820		0.0078560	ppm	0.0035540	45.241	.00000	Abs	Pass	
Sb2068		-0.0027580	ppm	0.00095400	34.597	.00000	Abs	Pass	
Se1960		0.00012300	ppm	0.00016200	132.05	.00000	Abs	Pass	
Si2881		0.036721	ppm	0.013662	37.204	.00000	Abs	Pass	
Sn1899		0.0019450	ppm	0.00052700	27.084	.00000	Abs	Pass	
Sr4077		0.00045300	ppm	0.00010500	23.110	.00000	Abs	Pass	
Ti3349		0.0035170	ppm	0.00046600	13.251	.00000	Abs	Pass	
Tl1908		-0.00050300	ppm	0.00060300	119.82	.00000	Abs	Pass	
V_2924		0.000042000	ppm	0.000037000	89.086	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 1815536

Acquire Date: 6/3/2020 10:20:13AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0013800	ppm	0.00015200	11.022	.00000	Abs	Pass	
Y_2243		7,346.2	Cts/S	27.648	0.37636				
Y_3600		73,853	Cts/S	385.50	0.52198				
Y_3774		4,541.7	Cts/S	40.620	0.89438				

MB 320-380151/1-A

Acquire Date: 6/3/2020 10:24:13AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00071200	ppm	0.00013400	18.876
Al3961		0.014593	ppm	0.0023050	15.798
As1890		0.0032600	ppm	0.000082000	2.5035
B_2089		0.0025210	ppm	0.0010070	39.941
Ba4554		0.00046700	ppm	0.00041000	87.849
Be3130		0.000075000	ppm	0.00029900	401.14
Ca3179		0.0069930	ppm	0.00062900	9.0013
Cd2144		-0.00015600	ppm	0.0000030000	2.0108
Co2286		-0.00048600	ppm	0.00010000	20.497
Cr2677		-0.00056600	ppm	0.000026000	4.6817
Cu3247		-0.00019100	ppm	0.00041300	215.83
Fe2599		0.0081630	ppm	0.010553	129.29
K_7664		-0.0067760	ppm	0.034646	511.34
Mg2790		-0.0025730	ppm	0.00020400	7.9287
Mn2576		0.000096000	ppm	0.00011100	116.08
Mo2020		0.000011000	ppm	0.00043300	3,766.8
Na5895		-0.0073990	ppm	0.0058690	79.315
Ni2316		0.00010400	ppm	0.0012500	1,198.2
P_1782		-0.0018350	ppm	0.00010700	5.8286
Pb2203		0.00051500	ppm	0.0011450	222.27
S_1820		0.0068320	ppm	0.0017990	26.335
Sb2068		-0.0028600	ppm	0.000010000	0.34594
Se1960		-0.0058120	ppm	0.0022040	37.921
Si2881		0.0039010	ppm	0.042553	1,090.9
Sn1899		0.00021100	ppm	0.00045400	214.95
Sr4077		0.000042000	ppm	0.000089000	214.80
Ti3349		0.00026900	ppm	0.00041600	154.56
Tl1908		-0.00057600	ppm	0.00071800	124.65
V_2924		0.00063700	ppm	0.00057000	89.476
Zn2062		0.00060200	ppm	0.000052000	8.5828
Y_2243		7,396.2	Cts/S	1.4626	0.019775
Y_3600		73,919	Cts/S	178.37	0.24130
Y_3774		4,618.5	Cts/S	37.110	0.80350

320-60656-A-15-A

Acquire Date: 6/3/2020 10:28:14AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048728	ppm	0.000048000	0.098010
Al3961		5.2041	ppm	0.012150	0.23347
As1890	**W**	**0.49448**	**ppm**	**0.00074800**	**0.15131**
B_2089		5.0127	ppm	0.0055700	0.11112
Ba4554	**W**	**0.50523**	**ppm**	**0.0022870**	**0.45275**
Be3130		0.25809	ppm	0.0012800	0.49607
Ca3179		26.553	ppm	0.098028	0.36918
Cd2144	**W**	**0.24985**	**ppm**	**0.00011100**	**0.044559**
Co2286		0.24928	ppm	0.0010070	0.40392
Cr2677	**W**	**0.25144**	**ppm**	**0.00088400**	**0.35147**
Cu3247		0.24820	ppm	0.00099300	0.39995
Fe2599		5.3222	ppm	0.021900	0.41148
K_7664		25.140	ppm	0.13034	0.51843
Mg2790		25.650	ppm	0.079297	0.30915
Mn2576		0.25804	ppm	0.0010000	0.38769
Mo2020		0.25574	ppm	0.00044100	0.17248
Na5895		25.209	ppm	0.11095	0.44012
Ni2316		0.24620	ppm	0.00043600	0.17727
P_1782		5.2576	ppm	0.0088250	0.16786
Pb2203	**W**	**0.25494**	**ppm**	**0.00054900**	**0.21544**
S_1820		5.0615	ppm	0.019238	0.38009
Sb2068		0.48614	ppm	0.0027920	0.57439
Se1960	**W**	**0.49466**	**ppm**	**0.0011200**	**0.22646**
Si2881	**W**	**5.2077**	**ppm**	**0.067287**	**1.2921**
Sn1899		0.51811	ppm	0.0015000	0.28958
Sr4077		0.26936	ppm	0.00093800	0.34823
Ti3349	**W**	**0.25307**	**ppm**	**0.00035800**	**0.14146**
Tl1908		0.51156	ppm	0.00027900	0.054610
V_2924		0.25129	ppm	0.00032600	0.12992
Zn2062		0.52939	ppm	0.0015540	0.29348
Y_2243		7,233.5	Cts/S	13.450	0.18594
Y_3600		71,596	Cts/S	137.52	0.19208
Y_3774		4,568.0	Cts/S	6.9154	0.15139

320-60656-A-15-A

Acquire Date: 6/3/2020 10:32:01AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049356	ppm	0.00017400	0.35324
Al3961		5.1861	ppm	0.015796	0.30458
As1890	**W**	**0.49448**	**ppm**	**0.0013090**	**0.26467**
B_2089		5.0217	ppm	0.011726	0.23350
Ba4554	**W**	**0.50482**	**ppm**	**0.0016120**	**0.31940**
Be3130		0.25758	ppm	0.00014400	0.055900
Ca3179		26.671	ppm	0.038016	0.14254
Cd2144	**W**	**0.24880**	**ppm**	**0.00070800**	**0.28472**
Co2286		0.24970	ppm	0.00035300	0.14125

320-60656-A-15-A

Acquire Date: 6/3/2020 10:32:01AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677	**W**	**0.24911**	**ppm**	**0.0023770**	**0.95422**
Cu3247		0.24377	ppm	0.0013820	0.56674
Fe2599		5.3663	ppm	0.011936	0.22242
K_7664		25.183	ppm	0.080938	0.32140
Mg2790		25.687	ppm	0.11701	0.45553
Mn2576		0.25829	ppm	0.00067400	0.26098
Mo2020		0.25673	ppm	0.0018420	0.71747
Na5895		25.234	ppm	0.11395	0.45157
Ni2316		0.24679	ppm	0.0017150	0.69483
P_1782		5.2377	ppm	0.017343	0.33111
Pb2203	**W**	**0.25864**	**ppm**	**0.0025410**	**0.98255**
S_1820		5.0310	ppm	0.010829	0.21524
Sb2068		0.48404	ppm	0.0017210	0.35555
Se1960	**W**	**0.49720**	**ppm**	**0.0038640**	**0.77725**
Si2881	**W**	**5.1695**	**ppm**	**0.00044200**	**0.0085430**
Sn1899		0.51760	ppm	0.0014500	0.28007
Sr4077		0.26924	ppm	0.0010760	0.39962
Ti3349	**W**	**0.25438**	**ppm**	**0.00064100**	**0.25187**
Tl1908		0.50887	ppm	0.0044640	0.87720
V_2924		0.25132	ppm	0.00081300	0.32369
Zn2062		0.51472	ppm	0.0048990	0.95171
Y_2243		7,228.3	Cts/S	17.639	0.24403
Y_3600		70,856	Cts/S	217.68	0.30722
Y_3774		4,517.6	Cts/S	6.6814	0.14790

320-60656-A-15-A

Acquire Date: 6/3/2020 10:35:48AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048317	ppm	0.00011900	0.24613
Al3961		5.1881	ppm	0.015036	0.28982
As1890	**W**	**0.49677**	**ppm**	**0.0026420**	**0.53190**
B_2089		5.0331	ppm	0.012580	0.24995
Ba4554	**W**	**0.50488**	**ppm**	**0.00090400**	**0.17904**
Be3130		0.25738	ppm	0.0011750	0.45634
Ca3179		26.567	ppm	0.11435	0.43041
Cd2144	**W**	**0.24893**	**ppm**	**0.00056600**	**0.22745**
Co2286		0.24987	ppm	0.00016500	0.066060
Cr2677	**W**	**0.24910**	**ppm**	**0.00068100**	**0.27346**
Cu3247		0.24490	ppm	0.000091000	0.037158
Fe2599		5.3492	ppm	0.027580	0.51559
K_7664		25.134	ppm	0.089756	0.35711
Mg2790		25.588	ppm	0.053648	0.20966
Mn2576		0.25753	ppm	0.00050400	0.19565
Mo2020		0.25645	ppm	0.0011610	0.45291
Na5895		25.184	ppm	0.12962	0.51470
Ni2316		0.24642	ppm	0.0015050	0.61080

320-60656-A-15-A

Acquire Date: 6/3/2020 10:35:48AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.2383	ppm	0.0044770	0.085460
Pb2203	**W**	**0.25701**	**ppm**	**0.00067800**	**0.26399**
S_1820		5.0400	ppm	0.019909	0.39502
Sb2068		0.49016	ppm	0.0059350	1.2109
Se1960	**W**	**0.49429**	**ppm**	**0.0015650**	**0.31664**
Si2881	**W**	**5.1977**	**ppm**	**0.022226**	**0.42761**
Sn1899		0.52004	ppm	0.0020030	0.38524
Sr4077		0.26843	ppm	0.0017120	0.63768
Ti3349	**W**	**0.25407**	**ppm**	**0.00061100**	**0.24030**
Tl1908		0.50816	ppm	0.0021980	0.43255
V_2924		0.24980	ppm	0.0018550	0.74265
Zn2062		0.51054	ppm	0.0013670	0.26783
Y_2243		7,242.6	Cts/S	19.166	0.26463
Y_3600		71,997	Cts/S	195.43	0.27144
Y_3774		4,574.7	Cts/S	9.8266	0.21480

320-60656-A-15-A

Acquire Date: 6/3/2020 10:39:36AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048003	ppm	0.00014400	0.30011
Al3961		5.1935	ppm	0.0012660	0.024385
As1890	**W**	**0.49376**	**ppm**	**0.00092900**	**0.18809**
B_2089		5.0342	ppm	0.00091900	0.018250
Ba4554	**W**	**0.50527**	**ppm**	**0.0010480**	**0.20732**
Be3130		0.25805	ppm	0.0020860	0.80822
Ca3179		26.731	ppm	0.10873	0.40676
Cd2144	**W**	**0.24862**	**ppm**	**0.00021400**	**0.086118**
Co2286		0.24983	ppm	0.00017900	0.071782
Cr2677	**W**	**0.24976**	**ppm**	**0.0018750**	**0.75065**
Cu3247		0.24420	ppm	0.00089700	0.36731
Fe2599		5.3738	ppm	0.011707	0.21785
K_7664		25.245	ppm	0.15596	0.61776
Mg2790		25.623	ppm	0.045570	0.17785
Mn2576		0.25763	ppm	0.00075900	0.29468
Mo2020		0.25678	ppm	0.00031700	0.12340
Na5895		25.211	ppm	0.12147	0.48181
Ni2316		0.24625	ppm	0.0013820	0.56140
P_1782		5.2351	ppm	0.011207	0.21408
Pb2203	**W**	**0.25479**	**ppm**	**0.0030090**	**1.1812**
S_1820		5.0339	ppm	0.028021	0.55665
Sb2068		0.48754	ppm	0.0014100	0.28920
Se1960	**W**	**0.49502**	**ppm**	**0.0024980**	**0.50459**
Si2881	**W**	**5.1950**	**ppm**	**0.026721**	**0.51436**
Sn1899		0.51813	ppm	0.00010200	0.019759
Sr4077		0.26926	ppm	0.0010160	0.37751
Ti3349	**W**	**0.25455**	**ppm**	**0.0012770**	**0.50168**

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-60656-A-15-A

Acquire Date: 6/3/2020 10:39:36AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.50857	ppm	0.00077900	0.15323
V_2924		0.25096	ppm	0.00050100	0.19980
Zn2062		0.51317	ppm	0.00091500	0.17821
Y_2243		7,205.6	Cts/S	29.007	0.40256
Y_3600		71,679	Cts/S	77.037	0.10748
Y_3774		4,536.9	Cts/S	24.233	0.53413

MB 320-380152/1-A

Acquire Date: 6/3/2020 10:43:24AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010900	ppm	0.00020800	19.050
Al3961		0.027728	ppm	0.0022850	8.2389
As1890		0.0045070	ppm	0.0011380	25.241
B_2089		0.021261	ppm	0.0012310	5.7898
Ba4554		0.00026200	ppm	0.0000010000	0.35949
Be3130		0.000013000	ppm	0.00031100	2,333.5
Ca3179		0.0085420	ppm	0.00015300	1.7917
Cd2144		0.000063000	ppm	0.000018000	29.351
Co2286		-0.00052000	ppm	0.0000070000	1.2752
Cr2677		0.000054000	ppm	0.00013200	242.63
Cu3247		-0.00035600	ppm	0.00022900	64.424
Fe2599		-0.00060500	ppm	0.0049030	811.12
K_7664		-0.014858	ppm	0.0034290	23.078
Mg2790		0.0075180	ppm	0.0076000	101.08
Mn2576		0.000077000	ppm	0.00014800	191.05
Mo2020		0.00069700	ppm	0.000011000	1.6067
Na5895		-0.0053960	ppm	0.019447	360.43
Ni2316		-0.00026000	ppm	0.0010880	417.86
P_1782		0.0051580	ppm	0.00082200	15.941
Pb2203		-0.0020480	ppm	0.0011690	57.084
S_1820		0.0025680	ppm	0.00045000	17.529
Sb2068		-0.00023400	ppm	0.00020600	88.257
Se1960		-0.0031120	ppm	0.0023080	74.151
Si2881		-0.016457	ppm	0.018675	113.48
Sn1899		0.0051940	ppm	0.00036700	7.0649
Sr4077		-0.00018100	ppm	0.00025700	142.25
Ti3349		0.0015820	ppm	0.00011600	7.3010
Tl1908		-0.0013240	ppm	0.0010580	79.939
V_2924		-0.00036800	ppm	0.00033800	91.842
Zn2062		0.000039000	ppm	0.000028000	73.105
Y_2243		7,499.5	Cts/S	2.9866	0.039824
Y_3600		74,864	Cts/S	202.20	0.27009
Y_3774		4,605.7	Cts/S	9.0561	0.19663

320-60656-A-16-A

Acquire Date: 6/3/2020 10:47:24AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047371	ppm	0.00022000	0.46372
Al3961		4.8165	ppm	0.043300	0.89899
As1890	**W**	**0.47461**	**ppm**	**0.00025100**	**0.052820**
B_2089		4.7366	ppm	0.0052410	0.11065
Ba4554	**W**	**0.48613**	**ppm**	**0.00034600**	**0.071176**
Be3130		0.24688	ppm	0.00063000	0.25515
Ca3179		25.129	ppm	0.084457	0.33609
Cd2144	**W**	**0.23998**	**ppm**	**0.00011600**	**0.048404**
Co2286		0.24057	ppm	0.00053800	0.22361
Cr2677	**W**	**0.23898**	**ppm**	**0.0015010**	**0.62808**
Cu3247		0.22786	ppm	0.00017700	0.077563
Fe2599		5.0904	ppm	0.00059400	0.011663
K_7664		24.367	ppm	0.13204	0.54187
Mg2790		24.617	ppm	0.073112	0.29700
Mn2576		0.24829	ppm	0.00062300	0.25084
Mo2020		0.24351	ppm	0.0014590	0.59910
Na5895		24.245	ppm	0.058120	0.23972
Ni2316		0.23534	ppm	0.00050100	0.21301
P_1782		4.9872	ppm	0.0022610	0.045328
Pb2203	**W**	**0.24510**	**ppm**	**0.0031500**	**1.2850**
S_1820		4.8319	ppm	0.0012590	0.026046
Sb2068		0.46398	ppm	0.0015520	0.33445
Se1960	**W**	**0.47665**	**ppm**	**0.00061000**	**0.12804**
Si2881	**W**	**4.9739**	**ppm**	**0.027629**	**0.55548**
Sn1899		0.50259	ppm	0.00020800	0.041470
Sr4077		0.24549	ppm	0.00084700	0.34522
Ti3349	**W**	**0.23881**	**ppm**	**0.0014380**	**0.60231**
Tl1908		0.48954	ppm	0.0028570	0.58356
V_2924		0.24145	ppm	0.0011710	0.48511
Zn2062		0.48875	ppm	0.00099900	0.20440
Y_2243		7,269.1	Cts/S	19.518	0.26850
Y_3600		71,816	Cts/S	113.23	0.15767
Y_3774		4,547.8	Cts/S	3.2272	0.070962

320-60656-A-16-A

Acquire Date: 6/3/2020 10:51:11AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046333	ppm	0.0017160	3.7029
Al3961		4.8273	ppm	0.014642	0.30332
As1890	**W**	**0.47402**	**ppm**	**0.00063700**	**0.13444**
B_2089		4.7424	ppm	0.0044420	0.093673
Ba4554	**W**	**0.48649**	**ppm**	**0.0026280**	**0.54022**
Be3130		0.24706	ppm	0.00053400	0.21607
Ca3179		25.301	ppm	0.12576	0.49706
Cd2144	**W**	**0.23963**	**ppm**	**0.0000030000**	**0.0012730**
Co2286		0.24059	ppm	0.00011100	0.046042

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-60656-A-16-A

Acquire Date: 6/3/2020 10:51:11AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677	**W**	**0.23952**	**ppm**	**0.0019390**	**0.80941**
Cu3247		0.22710	ppm	0.00052200	0.22982
Fe2599		5.1090	ppm	0.021292	0.41676
K_7664		24.521	ppm	0.038852	0.15845
Mg2790		24.690	ppm	0.072439	0.29339
Mn2576		0.24860	ppm	0.0013170	0.52961
Mo2020		0.24610	ppm	0.00052400	0.21300
Na5895		24.279	ppm	0.091586	0.37722
Ni2316		0.23631	ppm	0.00086500	0.36624
P_1782		4.9660	ppm	0.0054830	0.11041
Pb2203	**W**	**0.25046**	**ppm**	**0.0020680**	**0.82552**
S_1820		4.8318	ppm	0.0016110	0.033348
Sb2068		0.46426	ppm	0.00061700	0.13291
Se1960	**W**	**0.47817**	**ppm**	**0.0035180**	**0.73565**
Si2881	**W**	**4.9531**	**ppm**	**0.029923**	**0.60412**
Sn1899		0.50862	ppm	0.000089000	0.017564
Sr4077		0.24533	ppm	0.0011610	0.47312
Ti3349	**W**	**0.24293**	**ppm**	**0.0018270**	**0.75222**
Tl1908		0.49121	ppm	0.0019790	0.40283
V_2924		0.24116	ppm	0.00060900	0.25263
Zn2062		0.48722	ppm	0.0043040	0.88334
Y_2243		7,180.7	Cts/S	10.567	0.14716
Y_3600		71,262	Cts/S	224.65	0.31525
Y_3774		4,501.3	Cts/S	24.420	0.54252

320-60656-A-16-A

Acquire Date: 6/3/2020 10:54:59AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046929	ppm	0.00091200	1.9427
Al3961		4.7664	ppm	0.017922	0.37600
As1890	**W**	**0.47525**	**ppm**	**0.00035800**	**0.075226**
B_2089		4.7500	ppm	0.010897	0.22941
Ba4554	**W**	**0.48687**	**ppm**	**0.0019250**	**0.39536**
Be3130		0.24670	ppm	0.00087100	0.35305
Ca3179		25.370	ppm	0.022566	0.088946
Cd2144	**W**	**0.23882**	**ppm**	**0.00045900**	**0.19208**
Co2286		0.24094	ppm	0.0011050	0.45869
Cr2677	**W**	**0.23990**	**ppm**	**0.00046000**	**0.19160**
Cu3247		0.22762	ppm	0.0013390	0.58817
Fe2599		5.1529	ppm	0.00023100	0.0044750
K_7664		24.590	ppm	0.11531	0.46893
Mg2790		24.763	ppm	0.075185	0.30363
Mn2576		0.24937	ppm	0.00050100	0.20080
Mo2020		0.24661	ppm	0.00060200	0.24411
Na5895		24.298	ppm	0.056226	0.23140
Ni2316		0.23507	ppm	0.0011070	0.47074

320-60656-A-16-A

Acquire Date: 6/3/2020 10:54:59AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.9603	ppm	0.040427	0.81501
Pb2203	**W**	**0.24905**	**ppm**	**0.00039600**	**0.15919**
S_1820		4.8045	ppm	0.028067	0.58418
Sb2068		0.46315	ppm	0.0020580	0.44425
Se1960	**W**	**0.48108**	**ppm**	**0.0030380**	**0.63153**
Si2881	**W**	**4.9316**	**ppm**	**0.021161**	**0.42909**
Sn1899		0.51023	ppm	0.00027400	0.053747
Sr4077		0.24487	ppm	0.00089500	0.36558
Ti3349	**W**	**0.24341**	**ppm**	**0.00075600**	**0.31058**
Tl1908		0.49352	ppm	0.000079000	0.016015
V_2924		0.24100	ppm	0.0019380	0.80426
Zn2062		0.48738	ppm	0.0021220	0.43532
Y_2243		7,157.8	Cts/S	6.4225	0.089728
Y_3600		70,914	Cts/S	37.182	0.052432
Y_3774		4,437.0	Cts/S	9.6090	0.21656

320-60656-A-16-A

Acquire Date: 6/3/2020 10:58:45AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046540	ppm	0.00023900	0.51432
Al3961		4.6917	ppm	0.088269	1.8814
As1890	**W**	**0.47829**	**ppm**	**0.0013000**	**0.27185**
B_2089		4.7505	ppm	0.0016690	0.035133
Ba4554	**W**	**0.48049**	**ppm**	**0.0091650**	**1.9074**
Be3130		0.24401	ppm	0.0055190	2.2617
Ca3179		24.934	ppm	0.50010	2.0057
Cd2144	**W**	**0.23900**	**ppm**	**0.00028400**	**0.11877**
Co2286		0.24073	ppm	0.00048100	0.19983
Cr2677	**W**	**0.23923**	**ppm**	**0.00051200**	**0.21412**
Cu3247		0.22734	ppm	0.00080900	0.35593
Fe2599		5.0786	ppm	0.12469	2.4553
K_7664		24.356	ppm	0.48761	2.0020
Mg2790		24.763	ppm	0.020576	0.083094
Mn2576		0.24955	ppm	0.00019200	0.076803
Mo2020		0.24611	ppm	0.00049800	0.20245
Na5895		24.091	ppm	0.46756	1.9408
Ni2316		0.23525	ppm	0.0012930	0.54965
P_1782		5.0046	ppm	0.0047600	0.095106
Pb2203	**W**	**0.24848**	**ppm**	**0.000084000**	**0.033819**
S_1820		4.8381	ppm	0.0077610	0.16042
Sb2068		0.46650	ppm	0.0036850	0.78994
Se1960	**W**	**0.47924**	**ppm**	**0.0029640**	**0.61850**
Si2881	**W**	**4.8738**	**ppm**	**0.19536**	**4.0083**
Sn1899		0.51252	ppm	0.0015670	0.30578
Sr4077		0.24214	ppm	0.0038530	1.5914
Ti3349	**W**	**0.24208**	**ppm**	**0.0010520**	**0.43439**

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-60656-A-16-A

Acquire Date: 6/3/2020 10:58:45AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.49814	ppm	0.0021830	0.43818
V_2924		0.24192	ppm	0.00015800	0.065286
Zn2062		0.48690	ppm	0.0014640	0.30059
Y_2243		7,100.9	Cts/S	4.7309	0.066625
Y_3600		70,518	Cts/S	231.93	0.32889
Y_3774		4,464.1	Cts/S	54.748	1.2264

CCV 2010278

Acquire Date: 6/3/2020 11:02:33AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50922	ppm	0.0016540	0.32486	.50000	Rel(%)	Pass	
Al3961		24.913	ppm	0.054840	0.22012	25.000	Rel(%)	Pass	
As1890		0.51397	ppm	0.00099200	0.19302	.50000	Rel(%)	Pass	
B_2089		1.0659	ppm	0.00020200	0.018961	1.0000	Rel(%)	Pass	
Ba4554		2.5504	ppm	0.0093680	0.36730	2.5000	Rel(%)	Pass	
Be3130		0.52002	ppm	0.0018060	0.34721	.50000	Rel(%)	Pass	
Ca3179		26.422	ppm	0.051330	0.19427	25.000	Rel(%)	Pass	
Cd2144		0.51311	ppm	0.0014610	0.28483	.50000	Rel(%)	Pass	
Co2286		2.6034	ppm	0.0043900	0.16863	2.5000	Rel(%)	Pass	
Cr2677		2.5212	ppm	0.0024090	0.095548	2.5000	Rel(%)	Pass	
Cu3247		2.4409	ppm	0.015015	0.61514	2.5000	Rel(%)	Pass	
Fe2599		26.875	ppm	0.017302	0.064379	25.000	Rel(%)	Pass	
K_7664		25.682	ppm	0.042053	0.16375	25.000	Rel(%)	Pass	
Mg2790		25.744	ppm	0.091004	0.35350	25.000	Rel(%)	Pass	
Mn2576		2.5853	ppm	0.010527	0.40719	2.5000	Rel(%)	Pass	
Mo2020		1.0458	ppm	0.0029270	0.27988	1.0000	Rel(%)	Pass	
Na5895		25.555	ppm	0.073552	0.28782	25.000	Rel(%)	Pass	
Ni2316		2.6006	ppm	0.0061430	0.23619	2.5000	Rel(%)	Pass	
P_1782		2.4994	ppm	0.0012240	0.048986	2.5000	Rel(%)	Pass	
Pb2203		0.53273	ppm	0.0022760	0.42731	.50000	Rel(%)	Pass	
S_1820		2.4522	ppm	0.0012410	0.050607	2.5000	Rel(%)	Pass	
Sb2068		0.51319	ppm	0.00059000	0.11499	.50000	Rel(%)	Pass	
Se1960		0.51454	ppm	0.0021430	0.41642	.50000	Rel(%)	Pass	
Si2881		2.5698	ppm	0.045282	1.7621	2.5000	Rel(%)	Pass	
Sn1899		2.5982	ppm	0.0062800	0.24171	2.5000	Rel(%)	Pass	
Sr4077		2.5753	ppm	0.0088930	0.34532	2.5000	Rel(%)	Pass	
Ti3349		1.0231	ppm	0.0037780	0.36924	1.0000	Rel(%)	Pass	
Tl1908		0.53329	ppm	0.000090000	0.016830	.50000	Rel(%)	Pass	
V_2924		2.5253	ppm	0.0094530	0.37433	2.5000	Rel(%)	Pass	
Zn2062		2.5243	ppm	0.012475	0.49419	2.5000	Rel(%)	Pass	
Y_2243		7,069.9	Cts/S	9.8556	0.13940				
Y_3600		70,279	Cts/S	189.54	0.26969				
Y_3774		4,484.3	Cts/S	13.807	0.30790				

CCB 1815536

Acquire Date: 6/3/2020 11:06:19AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0011310	ppm	0.0012590	111.33	.00000	Abs	Pass	
Al3961		0.016782	ppm	0.014307	85.254	.00000	Abs	Pass	
As1890		0.0057180	ppm	0.00032100	5.6164	.00000	Abs	Pass	
B_2089		0.022350	ppm	0.00023200	1.0393	.00000	Abs	Pass	
Ba4554		0.00046400	ppm	0.00014200	30.563	.00000	Abs	Pass	
Be3130		0.00058300	ppm	0.000080000	13.721	.00000	Abs	Pass	
Ca3179		0.0052880	ppm	0.013675	258.59	.00000	Abs	Pass	
Cd2144		0.000035000	ppm	0.000091000	259.23	.00000	Abs	Pass	
Co2286		-0.00060000	ppm	0.000048000	7.9261	.00000	Abs	Pass	
Cr2677		-0.0010170	ppm	0.00052500	51.649	.00000	Abs	Pass	
Cu3247		0.0021010	ppm	0.00063500	30.244	.00000	Abs	Pass	
Fe2599		0.033107	ppm	0.0063610	19.213	.00000	Abs	Pass	
K_7664		0.013543	ppm	0.010049	74.199	.00000	Abs	Pass	
Mg2790		0.0020450	ppm	0.0028400	138.87	.00000	Abs	Pass	
Mn2576		0.00033900	ppm	0.0000070000	2.1589	.00000	Abs	Pass	
Mo2020		0.0037690	ppm	0.00022600	5.9867	.00000	Abs	Pass	
Na5895		0.0045670	ppm	0.0097640	213.80	.00000	Abs	Pass	
Ni2316		-0.00022600	ppm	0.00059000	261.64	.00000	Abs	Pass	
P_1782		-0.0011870	ppm	0.0010080	84.976	.00000	Abs	Pass	
Pb2203		0.00021900	ppm	0.0019290	881.87	.00000	Abs	Pass	
S_1820		0.0055160	ppm	0.00064000	11.604	.00000	Abs	Pass	
Sb2068		0.000050000	ppm	0.0016660	3,362.3	.00000	Abs	Pass	
Se1960		-0.0017700	ppm	0.00073700	41.645	.00000	Abs	Pass	
Si2881		-0.032162	ppm	0.024102	74.941	.00000	Abs	Pass	
Sn1899		0.0045520	ppm	0.00086500	19.002	.00000	Abs	Pass	
Sr4077		0.00028500	ppm	0.00041700	146.26	.00000	Abs	Pass	
Ti3349		0.0028890	ppm	0.000097000	3.3623	.00000	Abs	Pass	
Tl1908		0.00074300	ppm	0.0017750	239.04	.00000	Abs	Pass	
V_2924		0.00032400	ppm	0.00050300	155.19	.00000	Abs	Pass	
Zn2062		0.0022460	ppm	0.00030100	13.392	.00000	Abs	Pass	
Y_2243		7,303.5	Cts/S	24.250	0.33203				
Y_3600		73,148	Cts/S	437.06	0.59750				
Y_3774		4,501.9	Cts/S	2.9186	0.064830				

MB 320-382496/1-A

Acquire Date: 6/3/2020 11:10:19AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0014720	ppm	0.00043300	29.436
Al3961		0.015407	ppm	0.0039810	25.837
As1890		0.0038760	ppm	0.00035500	9.1654
B_2089		0.016823	ppm	0.00017900	1.0660
Ba4554		0.000042000	ppm	0.00017600	421.85
Be3130		0.00018700	ppm	0.000035000	18.637
Ca3179		0.0048470	ppm	0.0016490	34.022
Cd2144		0.000043000	ppm	0.000023000	54.180
Co2286		-0.00030200	ppm	0.000031000	10.395
Cr2677		-0.00047900	ppm	0.00067000	139.67

MB 320-382496/1-A

Acquire Date: 6/3/2020 11:10:19AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.00070500	ppm	0.00054700	77.487
Fe2599		-0.0045470	ppm	0.010748	236.37
K_7664		0.022907	ppm	0.071071	310.26
Mg2790		-0.0057810	ppm	0.0039470	68.282
Mn2576		0.00013900	ppm	0.000033000	23.609
Mo2020		0.00021000	ppm	0.00046400	220.69
Na5895		-0.0068700	ppm	0.0081110	118.06
Ni2316		0.00036000	ppm	0.000071000	19.735
P_1782		0.0010650	ppm	0.00084300	79.171
Pb2203		0.00042800	ppm	0.0024420	570.66
S_1820		0.0042480	ppm	0.0045780	107.77
Sb2068		-0.00042600	ppm	0.000048000	11.354
Se1960		-0.0014880	ppm	0.0069910	469.85
Si2881		0.0018110	ppm	0.017858	986.38
Sn1899		0.0020580	ppm	0.00028800	13.976
Sr4077		0.000069000	ppm	0.000085000	122.59
Ti3349		0.000097000	ppm	0.00043200	446.27
Tl1908		-0.0027250	ppm	0.0020090	73.702
V_2924		-0.00081900	ppm	0.00036500	44.547
Zn2062		0.0019640	ppm	0.000036000	1.8427
Y_2243		7,290.3	Cts/S	3.7729	0.051752
Y_3600		72,882	Cts/S	219.79	0.30157
Y_3774		4,468.3	Cts/S	16.053	0.35927

LCS 320-382496/2-A

Acquire Date: 6/3/2020 11:14:19AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046731	ppm	0.00084900	1.8159
Al3961		4.7907	ppm	0.012058	0.25169
As1890	**W**	**0.47793**	**ppm**	**0.0016390**	**0.34287**
B_2089		4.7666	ppm	0.0096120	0.20165
Ba4554	**W**	**0.48498**	**ppm**	**0.0016000**	**0.32983**
Be3130		0.24779	ppm	0.00087200	0.35186
Ca3179		25.100	ppm	0.064014	0.25503
Cd2144	**W**	**0.23943**	**ppm**	**0.00066700**	**0.27859**
Co2286		0.24005	ppm	0.00020800	0.086833
Cr2677	**W**	**0.24014**	**ppm**	**0.00083500**	**0.34773**
Cu3247		0.23709	ppm	0.0013330	0.56206
Fe2599		5.0802	ppm	0.026388	0.51942
K_7664		24.159	ppm	0.088995	0.36838
Mg2790		24.612	ppm	0.078343	0.31831
Mn2576		0.24806	ppm	0.00049000	0.19744
Mo2020		0.24606	ppm	0.00066400	0.26969
Na5895		24.249	ppm	0.020959	0.086434
Ni2316		0.23730	ppm	0.00052400	0.22091
P_1782		5.0147	ppm	0.011054	0.22043

LCS 320-382496/2-A

Acquire Date: 6/3/2020 11:14:19AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203	**W**	**0.24761**	**ppm**	**0.00018400**	**0.074274**
S_1820		4.8102	ppm	0.0061510	0.12788
Sb2068		0.46380	ppm	0.0033570	0.72390
Se1960	**W**	**0.47373**	**ppm**	**0.0030620**	**0.64633**
Si2881	**W**	**4.9272**	**ppm**	**0.072966**	**1.4809**
Sn1899		0.49789	ppm	0.00086500	0.17380
Sr4077		0.24455	ppm	0.00061800	0.25269
Ti3349	**W**	**0.24272**	**ppm**	**0.00099200**	**0.40855**
Tl1908		0.49147	ppm	0.00020600	0.042004
V_2924		0.24152	ppm	0.000013000	0.0051920
Zn2062		0.48976	ppm	0.0016960	0.34621
Y_2243		7,213.2	Cts/S	16.394	0.22728
Y_3600		71,547	Cts/S	40.581	0.056720
Y_3774		4,536.2	Cts/S	12.237	0.26976

LB 320-381566/1-B

Acquire Date: 6/3/2020 11:18:05AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013660	ppm	0.00016300	11.930
Al3961		0.0052380	ppm	0.0080230	153.15
As1890		0.0024720	ppm	0.0039010	157.78
B_2089		0.039435	ppm	0.0014810	3.7568
Ba4554		0.020823	ppm	0.00018300	0.88041
Be3130		0.00014500	ppm	0.000047000	32.234
Ca3179		0.055101	ppm	0.0021690	3.9364
Cd2144		0.000090000	ppm	0.000080000	89.715
Co2286		-0.00022200	ppm	0.00014200	64.064
Cr2677		-0.00073200	ppm	0.00045900	62.658
Cu3247		0.0016080	ppm	0.0013750	85.530
Fe2599		0.017870	ppm	0.0037880	21.195
K_7664		0.028297	ppm	0.038202	135.01
Mg2790		0.0082650	ppm	0.0068690	83.100
Mn2576		0.00018500	ppm	0.000034000	18.535
Mo2020		0.00060600	ppm	0.00015200	25.145
Na5895	**W**	**312.06**	**ppm**	**0.55461**	**0.17773**
Ni2316		0.00053500	ppm	0.00027100	50.579
P_1782		0.0024680	ppm	0.00037400	15.145
Pb2203		0.00063400	ppm	0.0012840	202.57
S_1820		0.010613	ppm	0.00071300	6.7137
Sb2068		0.0016740	ppm	0.0044290	264.62
Se1960		-0.0013320	ppm	0.0034480	258.88
Si2881		0.013765	ppm	0.027431	199.28
Sn1899		0.00085200	ppm	0.00075400	88.583
Sr4077		0.00029300	ppm	0.00014900	50.963
Ti3349		0.0016030	ppm	0.00059800	37.304
Tl1908		-0.0015690	ppm	0.0025490	162.46

LB 320-381566/1-B

Acquire Date: 6/3/2020 11:18:05AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		-0.00015900	ppm	0.00033000	207.76
Zn2062		0.026412	ppm	0.00043100	1.6313
Y_2243		6,949.9	Cts/S	21.489	0.30920
Y_3600		67,601	Cts/S	9.8963	0.014639
Y_3774		4,432.9	Cts/S	26.054	0.58775

MB 320-382502/1-A

Acquire Date: 6/3/2020 11:22:04AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000038000	ppm	0.0010210	2,705.3
Al3961		0.033839	ppm	0.0077610	22.935
As1890		0.0036120	ppm	0.0013080	36.202
B_2089		0.013101	ppm	0.00094700	7.2255
Ba4554		0.00032100	ppm	0.00059800	186.19
Be3130		0.00019700	ppm	0.00018800	95.443
Ca3179		0.029490	ppm	0.0088540	30.024
Cd2144		-0.00013900	ppm	0.000027000	19.067
Co2286		-0.00023900	ppm	0.00034100	142.84
Cr2677		0.00021300	ppm	0.00010000	46.912
Cu3247		0.00030500	ppm	0.00011400	37.387
Fe2599		-0.0015790	ppm	0.0025990	164.63
K_7664		0.024462	ppm	0.069038	282.22
Mg2790		0.00053300	ppm	0.0033320	624.86
Mn2576		0.00025500	ppm	0.0000070000	2.6557
Mo2020		-0.00035600	ppm	0.00029800	83.757
Na5895		0.13273	ppm	0.024304	18.310
Ni2316		-0.00027300	ppm	0.00027900	102.42
P_1782		-0.0023810	ppm	0.00029100	12.223
Pb2203		-0.0010130	ppm	0.00024500	24.189
S_1820		0.014467	ppm	0.0068490	47.341
Sb2068		0.0020930	ppm	0.00091300	43.620
Se1960		-0.00071700	ppm	0.0016010	223.37
Si2881		-0.0033120	ppm	0.023415	707.08
Sn1899		0.0031120	ppm	0.00052800	16.964
Sr4077		.0000020000	ppm	0.000066000	3,178.1
Ti3349		-0.00010700	ppm	0.00040300	376.82
Tl1908		-0.0013570	ppm	0.00061600	45.388
V_2924		0.00023400	ppm	0.00081900	350.40
Zn2062		0.0035080	ppm	0.000069000	1.9705
Y_2243		7,345.5	Cts/S	14.327	0.19504
Y_3600		73,213	Cts/S	274.81	0.37536
Y_3774		4,504.8	Cts/S	0.50208	0.011145

LCS 320-382502/2-A

Acquire Date: 6/3/2020 11:26:04AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046129	ppm	0.00015700	0.33951
Al3961		4.7916	ppm	0.029408	0.61374
As1890	**W**	**0.47620**	**ppm**	**0.00053500**	**0.11243**
B_2089		4.7581	ppm	0.0055800	0.11728
Ba4554	**W**	**0.48609**	**ppm**	**0.0025430**	**0.52313**
Be3130		0.24780	ppm	0.0016470	0.66466
Ca3179		25.228	ppm	0.12933	0.51267
Cd2144	**W**	**0.23954**	**ppm**	**0.000089000**	**0.037163**
Co2286		0.24043	ppm	0.000078000	0.032483
Cr2677	**W**	**0.24005**	**ppm**	**0.00059100**	**0.24627**
Cu3247		0.23532	ppm	0.00039200	0.16660
Fe2599		5.1294	ppm	0.036261	0.70693
K_7664		24.326	ppm	0.070466	0.28967
Mg2790		24.662	ppm	0.049352	0.20011
Mn2576		0.24819	ppm	0.00049200	0.19839
Mo2020		0.24590	ppm	0.000074000	0.030085
Na5895		24.326	ppm	0.13330	0.54794
Ni2316		0.23713	ppm	0.0010940	0.46132
P_1782		5.0333	ppm	0.0065430	0.12999
Pb2203	**W**	**0.24697**	**ppm**	**0.0018310**	**0.74146**
S_1820		4.8090	ppm	0.0043130	0.089679
Sb2068		0.46405	ppm	0.00033600	0.072498
Se1960	**W**	**0.47940**	**ppm**	**0.0047760**	**0.99614**
Si2881	**W**	**4.9269**	**ppm**	**0.0082230**	**0.16690**
Sn1899		0.49738	ppm	0.00039700	0.079769
Sr4077		0.24437	ppm	0.0016540	0.67703
Ti3349	**W**	**0.24216**	**ppm**	**0.0014510**	**0.59937**
Tl1908		0.49457	ppm	0.0010320	0.20860
V_2924		0.24182	ppm	0.00028300	0.11706
Zn2062		0.49197	ppm	0.0010640	0.21621
Y_2243		7,072.8	Cts/S	7.3528	0.10396
Y_3600		70,500	Cts/S	4.7693	0.0067650
Y_3774		4,456.8	Cts/S	8.2760	0.18570

LB 320-382487/1-B

Acquire Date: 6/3/2020 11:29:50AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011160	ppm	0.00072700	65.173
Al3961		0.021815	ppm	0.0097980	44.913
As1890		0.0034370	ppm	0.0029360	85.402
B_2089		0.036111	ppm	0.00043900	1.2165
Ba4554		0.021472	ppm	0.00044100	2.0536
Be3130		.0000010000	ppm	0.000085000	13,043
Ca3179		0.061522	ppm	0.0051570	8.3830
Cd2144		0.000017000	ppm	0.00021000	1,242.7
Co2286		-0.00024300	ppm	0.00040100	164.76

LB 320-382487/1-B

Acquire Date: 6/3/2020 11:29:50AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00021900	ppm	0.00027900	127.36
Cu3247		0.0013560	ppm	0.00019000	13.985
Fe2599		0.0012040	ppm	0.0078040	648.10
K_7664		0.062206	ppm	0.026071	41.911
Mg2790		0.0081090	ppm	0.0012770	15.748
Mn2576		0.00011000	ppm	0.000066000	60.481
Mo2020		0.00074500	ppm	0.00024700	33.183
Na5895	**W**	**313.32**	**ppm**	**0.32530**	**0.10382**
Ni2316		0.0011680	ppm	0.000016000	1.3517
P_1782		0.00080600	ppm	0.0014720	182.60
Pb2203		-0.0019270	ppm	0.0000010000	0.029702
S_1820		0.0090420	ppm	0.0039680	43.882
Sb2068		0.0031320	ppm	0.0023510	75.060
Se1960		-0.0043280	ppm	0.0079200	183.01
Si2881		0.0039530	ppm	0.014447	365.46
Sn1899		0.00069200	ppm	0.00065700	94.925
Sr4077		0.00020500	ppm	0.000014000	6.6320
Ti3349		0.0011980	ppm	0.000047000	3.9274
Tl1908		-0.00079900	ppm	0.000096000	12.051
V_2924		-0.00054900	ppm	0.00044500	81.027
Zn2062		0.026448	ppm	0.00014700	0.55567
Y_2243		6,926.3	Cts/S	20.001	0.28876
Y_3600		66,953	Cts/S	157.02	0.23452
Y_3774		4,411.3	Cts/S	10.731	0.24327

MB 320-382573/1-A

Acquire Date: 6/3/2020 11:33:51AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00033400	ppm	0.0012330	369.63
Al3961		0.0064550	ppm	0.013464	208.56
As1890		0.0029260	ppm	0.00048000	16.419
B_2089		0.012027	ppm	0.0010380	8.6272
Ba4554		0.00064500	ppm	0.00017000	26.375
Be3130		0.00028200	ppm	0.000087000	31.004
Ca3179		0.11720	ppm	0.0018180	1.5510
Cd2144		0.000025000	ppm	0.00012900	516.92
Co2286		-0.00043400	ppm	0.000071000	16.421
Cr2677		0.00033500	ppm	0.00048200	143.83
Cu3247		-0.0013310	ppm	0.00060200	45.241
Fe2599		-0.0088250	ppm	0.013303	150.74
K_7664		0.047611	ppm	0.041745	87.681
Mg2790		0.035023	ppm	0.0043360	12.381
Mn2576		0.00010600	ppm	0.00012600	119.61
Mo2020		-0.00013800	ppm	0.00015500	112.54
Na5895		0.22899	ppm	0.013052	5.6996
Ni2316		-0.00041300	ppm	0.00053500	129.60

MB 320-382573/1-A

Acquire Date: 6/3/2020 11:33:51AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.011045	ppm	0.0015560	14.092
Pb2203		0.00074900	ppm	0.00073800	98.573
S_1820		0.0091240	ppm	0.000076000	0.83457
Sb2068		-0.0023460	ppm	0.0019160	81.668
Se1960		-0.0016430	ppm	0.0011570	70.436
Si2881		-0.013058	ppm	0.019061	145.98
Sn1899	**W**	**0.015193**	**ppm**	**0.00074500**	**4.9037**
Sr4077		0.00049500	ppm	0.000057000	11.515
Ti3349		-0.00029000	ppm	0.00035100	121.16
Tl1908		-0.00056900	ppm	0.0026660	468.82
V_2924		-0.00017100	ppm	0.00010200	59.584
Zn2062		0.00081200	ppm	0.00023700	29.166
Y_2243		7,350.6	Cts/S	9.0676	0.12336
Y_3600		73,833	Cts/S	441.64	0.59816
Y_3774		4,509.3	Cts/S	1.7781	0.039432

LCS 320-382573/2-A

Acquire Date: 6/3/2020 11:37:52AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280	**F**	**0.038487**	**ppm**	**0.00016500**	**0.42877**
Al3961	**F**	**3.9943**	**ppm**	**0.029103**	**0.72860**
As1890	**F**	**0.38363**	**ppm**	**0.0017460**	**0.45518**
B_2089	**F**	**3.6943**	**ppm**	**0.0012850**	**0.034791**
Ba4554	**W**	**0.40278**	**ppm**	**0.0028310**	**0.70276**
Be3130		0.20309	ppm	0.00021900	0.10762
Ca3179		20.816	ppm	0.10628	0.51056
Cd2144	**W**	**0.19783**	**ppm**	**0.00020000**	**0.10100**
Co2286	**F**	**0.19711**	**ppm**	**0.00013100**	**0.066612**
Cr2677	**F**	**0.19856**	**ppm**	**0.00079900**	**0.40229**
Cu3247	**F**	**0.19099**	**ppm**	**0.00046900**	**0.24566**
Fe2599		4.2860	ppm	0.023242	0.54228
K_7664	**F**	**19.903**	**ppm**	**0.083643**	**0.42026**
Mg2790		20.015	ppm	0.049812	0.24887
Mn2576		0.20415	ppm	0.00054800	0.26852
Mo2020		0.20121	ppm	0.00061700	0.30679
Na5895		20.187	ppm	0.079955	0.39607
Ni2316	**F**	**0.19477**	**ppm**	**0.00096000**	**0.49269**
P_1782		4.0749	ppm	0.0031010	0.076112
Pb2203	**W**	**0.20077**	**ppm**	**0.0016090**	**0.80158**
S_1820	**F**	**3.9087**	**ppm**	**0.0050730**	**0.12979**
Sb2068	**F**	**0.37525**	**ppm**	**0.0089310**	**2.3801**
Se1960	**F**	**0.36929**	**ppm**	**0.00036100**	**0.097688**
Si2881	**F**	**2.9894**	**ppm**	**0.10418**	**3.4849**
Sn1899		0.43888	ppm	0.0015900	0.36229
Sr4077		0.20340	ppm	0.0014270	0.70154
Ti3349	**F**	**0.19978**	**ppm**	**0.00012400**	**0.062082**

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-382573/2-A

Acquire Date: 6/3/2020 11:37:52AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.40636	ppm	0.00067300	0.16559
V_2924	**F**	**0.19812**	**ppm**	**0.00018200**	**0.091790**
Zn2062	**F**	**0.39746**	**ppm**	**0.00033700**	**0.084797**
Y_2243		7,180.5	Cts/S	3.9382	0.054845
Y_3600		71,142	Cts/S	116.41	0.16363
Y_3774		4,417.5	Cts/S	47.664	1.0790

MB 320-380803/1-A

Acquire Date: 6/3/2020 11:41:40AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00051600	ppm	0.00018200	35.286
Al3961		0.024241	ppm	0.013825	57.032
As1890		0.0052570	ppm	0.0010850	20.641
B_2089		0.016457	ppm	0.0021180	12.867
Ba4554		0.00019600	ppm	0.00052700	268.09
Be3130		0.00022900	ppm	0.00012500	54.889
Ca3179		0.012079	ppm	0.0020550	17.012
Cd2144		0.000055000	ppm	0.000061000	111.09
Co2286		-0.00017200	ppm	0.00047300	274.59
Cr2677		0.00029300	ppm	0.00095600	326.09
Cu3247		-0.00031500	ppm	0.00091200	289.18
Fe2599		-0.0010940	ppm	0.0088140	806.02
K_7664		0.014163	ppm	0.036689	259.05
Mg2790		0.0047420	ppm	0.0016830	35.487
Mn2576		0.000027000	ppm	0.000016000	58.049
Mo2020		0.00034800	ppm	0.00022500	64.654
Na5895		0.025202	ppm	0.016311	64.722
Ni2316		.0000030000	ppm	0.00073700	22,318
P_1782		0.0019440	ppm	0.0022860	117.63
Pb2203		-0.00041200	ppm	0.0031420	762.26
S_1820		0.0033220	ppm	0.0032430	97.641
Sb2068		.0000080000	ppm	0.0026820	33,545
Se1960		-0.0051320	ppm	0.0041280	80.448
Si2881		0.013693	ppm	0.024345	177.79
Sn1899		0.0012800	ppm	0.00025500	19.887
Sr4077		-0.00012500	ppm	0.00033800	269.39
Ti3349		0.0011930	ppm	0.0010160	85.117
Tl1908		0.0010760	ppm	0.0015390	143.05
V_2924		-0.00036000	ppm	0.00031500	87.568
Zn2062		0.0033030	ppm	0.000020000	0.61921
Y_2243		7,389.3	Cts/S	6.7947	0.091953
Y_3600		74,075	Cts/S	62.376	0.084207
Y_3774		4,585.2	Cts/S	8.1449	0.17764

LCS 320-380803/2-A

Acquire Date: 6/3/2020 11:45:41AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048563	ppm	0.00097300	2.0042
Al3961		4.9491	ppm	0.014966	0.30240
As1890	**W**	**0.49107**	**ppm**	**0.0011730**	**0.23890**
B_2089		4.8456	ppm	0.011300	0.23320
Ba4554	**W**	**0.50062**	**ppm**	**0.0013000**	**0.25977**
Be3130		0.25503	ppm	0.00010900	0.042720
Ca3179		25.932	ppm	0.046044	0.17756
Cd2144	**W**	**0.24790**	**ppm**	**0.00085400**	**0.34447**
Co2286		0.24774	ppm	0.00011200	0.045305
Cr2677	**W**	**0.24674**	**ppm**	**0.00019400**	**0.078533**
Cu3247		0.24346	ppm	0.00039800	0.16350
Fe2599		5.2313	ppm	0.00035000	0.0066920
K_7664		24.852	ppm	0.072054	0.28993
Mg2790		25.286	ppm	0.032354	0.12795
Mn2576		0.25647	ppm	0.00046700	0.18202
Mo2020		0.25367	ppm	0.00032000	0.12603
Na5895		24.933	ppm	0.041193	0.16522
Ni2316		0.24453	ppm	0.00091600	0.37444
P_1782		5.1249	ppm	0.013621	0.26579
Pb2203	**W**	**0.25531**	**ppm**	**0.0024820**	**0.97228**
S_1820		4.9011	ppm	0.0087420	0.17836
Sb2068		0.47394	ppm	0.0016750	0.35350
Se1960	**W**	**0.49575**	**ppm**	**0.011827**	**2.3857**
Si2881	**W**	**5.0576**	**ppm**	**0.0093950**	**0.18575**
Sn1899		0.51441	ppm	0.0017910	0.34810
Sr4077		0.25299	ppm	0.00039100	0.15450
Ti3349	**W**	**0.25090**	**ppm**	**0.00034500**	**0.13752**
Tl1908		0.50716	ppm	0.00052600	0.10381
V_2924		0.24859	ppm	0.0013210	0.53145
Zn2062		0.50270	ppm	0.00086200	0.17152
Y_2243		7,157.4	Cts/S	23.348	0.32622
Y_3600		70,807	Cts/S	61.000	0.086150
Y_3774		4,494.1	Cts/S	6.3700	0.14174

CCV 2010278

Acquire Date: 6/3/2020 11:49:29AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51439	ppm	0.0014560	0.28302	.50000	Rel(%)	Pass	
Al3961		25.294	ppm	0.026443	0.10454	25.000	Rel(%)	Pass	
As1890		0.51936	ppm	0.0038680	0.74471	.50000	Rel(%)	Pass	
B_2089		1.0557	ppm	0.00052800	0.050059	1.0000	Rel(%)	Pass	
Ba4554		2.5505	ppm	0.0049820	0.19533	2.5000	Rel(%)	Pass	
Be3130		0.52036	ppm	0.00060200	0.11577	.50000	Rel(%)	Pass	
Ca3179		26.253	ppm	0.10562	0.40230	25.000	Rel(%)	Pass	
Cd2144		0.51888	ppm	0.00093000	0.17920	.50000	Rel(%)	Pass	
Co2286		2.5977	ppm	0.0025940	0.099876	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/3/2020 11:49:29AM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.5700	ppm	0.0046250	0.17994	2.5000	Rel(%)	Pass	
Cu3247		2.5082	ppm	0.0069810	0.27833	2.5000	Rel(%)	Pass	
Fe2599		26.558	ppm	0.18545	0.69829	25.000	Rel(%)	Pass	
K_7664		25.562	ppm	0.16882	0.66043	25.000	Rel(%)	Pass	
Mg2790		25.910	ppm	0.059716	0.23047	25.000	Rel(%)	Pass	
Mn2576		2.6023	ppm	0.0052970	0.20357	2.5000	Rel(%)	Pass	
Mo2020		1.0380	ppm	0.0042700	0.41136	1.0000	Rel(%)	Pass	
Na5895		25.680	ppm	0.058199	0.22663	25.000	Rel(%)	Pass	
Ni2316		2.6187	ppm	0.0060880	0.23249	2.5000	Rel(%)	Pass	
P_1782		2.5076	ppm	0.0066770	0.26626	2.5000	Rel(%)	Pass	
Pb2203		0.52609	ppm	0.00010400	0.019685	.50000	Rel(%)	Pass	
S_1820		2.4390	ppm	0.015965	0.65455	2.5000	Rel(%)	Pass	
Sb2068		0.51282	ppm	0.0035220	0.68676	.50000	Rel(%)	Pass	
Se1960		0.51919	ppm	0.00016900	0.032564	.50000	Rel(%)	Pass	
Si2881		2.5415	ppm	0.020795	0.81819	2.5000	Rel(%)	Pass	
Sn1899		2.5953	ppm	0.0058220	0.22433	2.5000	Rel(%)	Pass	
Sr4077		2.5796	ppm	0.0044740	0.17345	2.5000	Rel(%)	Pass	
Ti3349		1.0298	ppm	0.0048960	0.47545	1.0000	Rel(%)	Pass	
Tl1908		0.52917	ppm	0.0015660	0.29588	.50000	Rel(%)	Pass	
V_2924		2.5591	ppm	0.0076410	0.29858	2.5000	Rel(%)	Pass	
Zn2062		2.5770	ppm	0.0081310	0.31551	2.5000	Rel(%)	Pass	
Y_2243		7,077.8	Cts/S	0.28546	0.0040330				
Y_3600		69,655	Cts/S	171.17	0.24575				
Y_3774		4,441.6	Cts/S	23.694	0.53347				

CCB 1815536

Acquire Date: 6/3/2020 11:53:14AM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0013320	ppm	0.0013110	98.405	.00000	Abs	Pass	
Al3961		0.018710	ppm	0.018079	96.626	.00000	Abs	Pass	
As1890		0.0045390	ppm	0.00045500	10.028	.00000	Abs	Pass	
B_2089		0.014453	ppm	0.00018600	1.2896	.00000	Abs	Pass	
Ba4554		0.00097600	ppm	0.000049000	5.0420	.00000	Abs	Pass	
Be3130		0.00020800	ppm	0.00017100	82.182	.00000	Abs	Pass	
Ca3179		0.015038	ppm	0.0041600	27.664	.00000	Abs	Pass	
Cd2144		.0000080000	ppm	0.000064000	796.55	.00000	Abs	Pass	
Co2286		-0.00027800	ppm	0.000028000	10.178	.00000	Abs	Pass	
Cr2677		0.00035800	ppm	0.00040100	111.89	.00000	Abs	Pass	
Cu3247		0.00093600	ppm	0.00045800	48.919	.00000	Abs	Pass	
Fe2599		0.027839	ppm	0.022470	80.715	.00000	Abs	Pass	
K_7664		-0.037130	ppm	0.012951	34.879	.00000	Abs	Pass	
Mg2790		-0.00046200	ppm	0.00090200	195.32	.00000	Abs	Pass	
Mn2576		0.00035000	ppm	0.00017100	48.800	.00000	Abs	Pass	
Mo2020		0.0037440	ppm	0.000070000	1.8616	.00000	Abs	Pass	
Na5895		0.015683	ppm	0.010802	68.879	.00000	Abs	Pass	
Ni2316		0.000060000	ppm	0.00046600	776.26	.00000	Abs	Pass	
P_1782		-0.00059900	ppm	0.00067900	113.40	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/3/2020 11:53:14AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.0013770	ppm	0.0027550	200.03	.00000	Abs	Pass	
S_1820		0.0065280	ppm	0.0019000	29.102	.00000	Abs	Pass	
Sb2068		0.000044000	ppm	0.0033780	7,720.9	.00000	Abs	Pass	
Se1960		0.00049300	ppm	0.000054000	10.944	.00000	Abs	Pass	
Si2881		-0.018120	ppm	0.0072700	40.121	.00000	Abs	Pass	
Sn1899		0.0023590	ppm	0.00048600	20.619	.00000	Abs	Pass	
Sr4077		0.00068300	ppm	0.00037700	55.174	.00000	Abs	Pass	
Ti3349		0.0030150	ppm	0.00030300	10.062	.00000	Abs	Pass	
Tl1908		0.0041060	ppm	0.0025900	63.069	.00000	Abs	Pass	
V_2924		0.000099000	ppm	0.00080700	813.51	.00000	Abs	Pass	
Zn2062		0.0017560	ppm	0.00011500	6.5714	.00000	Abs	Pass	
Y_2243		7,276.2	Cts/S	4.8668	0.066887				
Y_3600		72,565	Cts/S	59.100	0.081444				
Y_3774		4,477.1	Cts/S	1.3207	0.029498				

720-98632-A-1-I

Acquire Date: 6/3/2020 11:57:15AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00052100	ppm	0.00031100	59.702
Al3961		0.035075	ppm	0.011562	32.965
As1890		0.0047370	ppm	0.0039630	83.665
B_2089		0.053947	ppm	0.000015000	0.028566
Ba4554		0.067050	ppm	0.00059700	0.89081
Be3130		0.000028000	ppm	0.00017000	611.47
Ca3179		150.18	ppm	0.82636	0.55023
Cd2144		0.000089000	ppm	0.0000030000	3.3328
Co2286		0.000049000	ppm	0.000052000	105.89
Cr2677		0.016901	ppm	0.00046700	2.7619
Cu3247		0.0021080	ppm	0.00010900	5.1778
Fe2599		-0.013343	ppm	0.00018100	1.3582
K_7664		4.2031	ppm	0.0020910	0.049746
Mg2790		1.8032	ppm	0.0061910	0.34334
Mn2576		0.018709	ppm	0.00025200	1.3457
Mo2020		0.0018890	ppm	0.00013200	6.9643
Na5895	**W**	**277.26**	**ppm**	**1.1149**	**0.40211**
Ni2316		0.0022680	ppm	0.0012330	54.381
P_1782		0.0028530	ppm	0.00058400	20.486
Pb2203		-0.0013360	ppm	0.0023120	173.07
S_1820		9.5912	ppm	0.059284	0.61811
Sb2068		-0.0012510	ppm	0.00021100	16.878
Se1960		0.0016630	ppm	0.0022580	135.73
Si2881		3.5685	ppm	0.049181	1.3782
Sn1899		0.00037100	ppm	0.00077600	208.93
Sr4077		0.31589	ppm	0.0011780	0.37297
Ti3349		-0.00066600	ppm	0.00037100	55.675
Tl1908		-0.00095500	ppm	0.00095100	99.534

720-98632-A-1-I

Acquire Date: 6/3/2020 11:57:15AM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.0038240	ppm	0.000092000	2.4127
Zn2062		0.041791	ppm	0.00062400	1.4924
Y_2243		6,771.3	Cts/S	43.505	0.64248
Y_3600		66,744	Cts/S	22.127	0.033152
Y_3774		4,370.5	Cts/S	26.879	0.61501

sd 720-98632-A-1-I@5

Acquire Date: 6/3/2020 12:01:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0017490	ppm	0.00049600	28.347
Al3961		0.031935	ppm	0.0040910	12.812
As1890		0.0037730	ppm	0.0018340	48.609
B_2089		0.016568	ppm	0.00039700	2.3959
Ba4554		0.013333	ppm	0.00025400	1.9067
Be3130		0.00017100	ppm	0.00043800	255.35
Ca3179		30.362	ppm	0.12233	0.40289
Cd2144		0.000012000	ppm	0.000034000	289.39
Co2286		-0.00021200	ppm	0.00037500	177.01
Cr2677		0.0034820	ppm	0.00065500	18.809
Cu3247		0.00071100	ppm	0.00010300	14.529
Fe2599		-0.017830	ppm	0.0062940	35.300
K_7664		0.85829	ppm	0.039590	4.6126
Mg2790		0.37362	ppm	0.00076800	0.20568
Mn2576		0.0039230	ppm	0.000086000	2.1989
Mo2020		0.000012000	ppm	0.000041000	340.61
Na5895		56.730	ppm	0.25457	0.44874
Ni2316		0.000038000	ppm	0.00027200	714.67
P_1782		-0.00046100	ppm	0.00014100	30.522
Pb2203		0.00034500	ppm	0.0019340	560.70
S_1820		1.8883	ppm	0.010063	0.53292
Sb2068		-0.00016800	ppm	0.0015930	945.95
Se1960		-0.0041040	ppm	0.0026970	65.715
Si2881		0.72619	ppm	0.045288	6.2364
Sn1899		0.00057500	ppm	0.0010260	178.34
Sr4077		0.064159	ppm	0.00026900	0.41992
Ti3349		-0.0012270	ppm	0.00032800	26.693
Tl1908		-0.0013990	ppm	0.00084500	60.412
V_2924		0.00017300	ppm	0.00031000	179.68
Zn2062		0.010555	ppm	0.00023600	2.2392
Y_2243		7,141.6	Cts/S	2.6850	0.037596
Y_3600		70,552	Cts/S	172.46	0.24445
Y_3774		4,444.8	Cts/S	2.8184	0.063409

pds 720-98632-A-1-I

Acquire Date: 6/3/2020 12:05:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.096000	ppm	0.00079900	0.83255
Al3961		9.6230	ppm	0.039920	0.41484
As1890		0.10130	ppm	0.0055270	5.4558
B_2089		0.96913	ppm	0.00028800	0.029706
Ba4554		0.16949	ppm	0.0014190	0.83739
Be3130		0.049489	ppm	0.00050800	1.0268
Ca3179		170.03	ppm	1.2632	0.74291
Cd2144		0.095624	ppm	0.00014200	0.14842
Co2286		0.097147	ppm	0.00034900	0.35882
Cr2677		0.11528	ppm	0.00088200	0.76500
Cu3247		0.099765	ppm	0.00075800	0.75998
Fe2599		3.9871	ppm	0.031214	0.78289
K_7664		14.600	ppm	0.11603	0.79473
Mg2790		11.306	ppm	0.023662	0.20928
Mn2576		0.11958	ppm	0.00025500	0.21320
Mo2020		0.099968	ppm	0.00043100	0.43070
Na5895	**W**	**308.93**	**ppm**	**1.9212**	**0.62189**
Ni2316		0.097821	ppm	0.00071300	0.72873
P_1782		1.0068	ppm	0.0028520	0.28330
Pb2203		0.097343	ppm	0.0015420	1.5836
S_1820		10.498	ppm	0.020357	0.19392
Sb2068		0.087898	ppm	0.0030310	3.4482
Se1960		0.095002	ppm	0.0015340	1.6152
Si2881		7.3160	ppm	0.13904	1.9005
Sn1899		0.099275	ppm	0.00055500	0.55890
Sr4077		0.43864	ppm	0.0047500	1.0828
Ti3349		0.097612	ppm	0.00068400	0.70056
Tl1908		0.090480	ppm	0.000083000	0.091598
V_2924		0.10400	ppm	0.00014800	0.14239
Zn2062		0.13937	ppm	0.00068100	0.48856
Y_2243		6,861.9	Cts/S	7.9154	0.11535
Y_3600		66,866	Cts/S	140.47	0.21008
Y_3774		4,469.2	Cts/S	30.829	0.68981

720-98632-A-1-G MS

Acquire Date: 6/3/2020 12:09:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047797	ppm	0.0012240	2.5614
Al3961		4.8850	ppm	0.0013600	0.027837
As1890		0.49240	ppm	0.00036200	0.073499
B_2089		4.6015	ppm	0.0012270	0.026668
Ba4554		0.56016	ppm	0.00053700	0.095857
Be3130		0.24984	ppm	0.00046900	0.18762
Ca3179		196.55	ppm	0.087488	0.044511
Cd2144		0.23698	ppm	0.000047000	0.019755
Co2286		0.23902	ppm	0.00010200	0.042599

720-98632-A-1-G MS

Acquire Date: 6/3/2020 12:09:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.26139	ppm	0.00048500	0.18563
Cu3247		0.24264	ppm	0.00091800	0.37838
Fe2599		5.0825	ppm	0.0084560	0.16638
K_7664		30.160	ppm	0.073486	0.24365
Mg2790		25.731	ppm	0.0042480	0.016509
Mn2576		0.26777	ppm	0.00010300	0.038415
Mo2020		0.25327	ppm	0.00010900	0.042876
Na5895	**W**	**339.53**	**ppm**	**0.48588**	**0.14311**
Ni2316		0.23731	ppm	0.0011370	0.47926
P_1782		5.2365	ppm	0.0062560	0.11948
Pb2203		0.23766	ppm	0.0051470	2.1656
S_1820		15.970	ppm	0.0056570	0.035422
Sb2068		0.45868	ppm	0.0013150	0.28663
Se1960		0.46971	ppm	0.0016540	0.35216
Si2881		9.4042	ppm	0.0062060	0.065991
Sn1899		0.50364	ppm	0.0010850	0.21538
Sr4077		0.60849	ppm	0.00045200	0.074326
Ti3349		0.24788	ppm	0.00010500	0.042304
Tl1908		0.45654	ppm	0.0027340	0.59875
V_2924		0.25337	ppm	0.00065500	0.25832
Zn2062		0.53662	ppm	0.0014830	0.27629
Y_2243		6,824.3	Cts/S	26.729	0.39168
Y_3600		66,488	Cts/S	187.96	0.28270
Y_3774		4,431.5	Cts/S	23.990	0.54134

720-98632-A-1-J MSD

Acquire Date: 6/3/2020 12:12:51PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.043485	ppm	0.0017110	3.9343
Al3961		4.3999	ppm	0.0032970	0.074923
As1890		0.44925	ppm	0.0034010	0.75705
B_2089		4.2137	ppm	0.0063550	0.15083
Ba4554		0.50645	ppm	0.0021700	0.42857
Be3130		0.22691	ppm	0.00031500	0.13866
Ca3179		172.65	ppm	0.96790	0.56060
Cd2144		0.21672	ppm	0.00034300	0.15806
Co2286		0.21814	ppm	0.00048000	0.22003
Cr2677		0.23764	ppm	0.00055100	0.23184
Cu3247		0.22045	ppm	0.0015290	0.69353
Fe2599		4.6084	ppm	0.039533	0.85786
K_7664		27.159	ppm	0.14752	0.54316
Mg2790		23.436	ppm	0.085488	0.36476
Mn2576		0.24307	ppm	0.00015300	0.062850
Mo2020		0.23094	ppm	0.00039300	0.17028
Na5895	**W**	**298.21**	**ppm**	**1.3146**	**0.44085**
Ni2316		0.21741	ppm	0.000096000	0.044053

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-98632-A-1-J MSD

Acquire Date:	6/3/2020 12:12:51PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.7855	ppm	0.023106	0.48282
Pb2203		0.22184	ppm	0.0010180	0.45908
S_1820		14.202	ppm	0.019556	0.13770
Sb2068		0.41730	ppm	0.0042330	1.0145
Se1960		0.42980	ppm	0.00041800	0.097187
Si2881		8.4282	ppm	0.021880	0.25961
Sn1899		0.46223	ppm	0.0026880	0.58154
Sr4077		0.54029	ppm	0.0025560	0.47307
Ti3349		0.22567	ppm	0.0018510	0.82008
Tl1908		0.42125	ppm	0.0026200	0.62206
V_2924		0.22973	ppm	0.00088200	0.38371
Zn2062		0.48929	ppm	0.0026340	0.53839
Y_2243		6,824.9	Cts/S	23.141	0.33906
Y_3600		66,815	Cts/S	231.37	0.34628
Y_3774		4,447.8	Cts/S	4.8787	0.10969

720-98632-A-2-H

Acquire Date:	6/3/2020 12:16:39PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0020270	ppm	0.0012030	59.370
Al3961		0.064668	ppm	0.0046770	7.2325
As1890		0.0039390	ppm	0.0032600	82.772
B_2089		0.075696	ppm	0.0013320	1.7596
Ba4554		0.082075	ppm	0.000018000	0.022466
Be3130		0.00016200	ppm	0.00014800	91.251
Ca3179		178.25	ppm	0.81961	0.45981
Cd2144		0.000045000	ppm	0.000022000	47.933
Co2286		-0.00025100	ppm	0.00010300	41.172
Cr2677		0.022429	ppm	0.0000060000	0.026275
Cu3247		0.0017670	ppm	0.00066400	37.563
Fe2599		0.0093520	ppm	0.0061990	66.291
K_7664		5.2287	ppm	0.11015	2.1067
Mg2790		2.0710	ppm	0.0031650	0.15285
Mn2576		0.019350	ppm	0.000026000	0.13180
Mo2020		0.0025280	ppm	0.00050000	19.778
Na5895	**W**	**331.64**	**ppm**	**1.0826**	**0.32644**
Ni2316		0.0021410	ppm	0.00031300	14.599
P_1782		0.0039850	ppm	0.00051100	12.832
Pb2203		-0.0011110	ppm	0.00085200	76.689
S_1820		11.237	ppm	0.0019150	0.017041
Sb2068		-0.0022720	ppm	0.0049280	216.88
Se1960		-0.0020970	ppm	0.0050610	241.36
Si2881		4.1903	ppm	0.10616	2.5334
Sn1899		0.0010570	ppm	0.00070300	66.476
Sr4077		0.36526	ppm	0.00086700	0.23748
Ti3349		-0.00032000	ppm	0.00032600	102.00

720-98632-A-2-H

Acquire Date: 6/3/2020 12:16:39PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0046680	ppm	0.0032730	70.109
V_2924		0.0047770	ppm	0.00093700	19.617
Zn2062		0.048077	ppm	0.00054100	1.1257
Y_2243		6,784.6	Cts/S	28.392	0.41848
Y_3600		66,379	Cts/S	84.261	0.12694
Y_3774		4,396.4	Cts/S	3.9660	0.090211

720-98632-A-3-H

Acquire Date: 6/3/2020 12:20:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0020080	ppm	0.0014290	71.160
Al3961		0.062179	ppm	0.016189	26.036
As1890		0.0056650	ppm	0.0033910	59.855
B_2089		0.049374	ppm	0.00019200	0.38981
Ba4554		0.067376	ppm	0.00053200	0.79011
Be3130		-0.00015900	ppm	0.00015000	94.703
Ca3179		166.19	ppm	0.42751	0.25723
Cd2144		-0.00017200	ppm	0.000030000	17.657
Co2286		.000056000	ppm	0.000075000	132.53
Cr2677		0.016458	ppm	0.00017400	1.0596
Cu3247		0.0015400	ppm	0.0013140	85.307
Fe2599		-0.012808	ppm	0.0016640	12.993
K_7664		4.1916	ppm	0.023664	0.56457
Mg2790		1.8977	ppm	0.0023180	0.12214
Mn2576		0.027426	ppm	0.00027400	0.99979
Mo2020		0.0010510	ppm	0.00031100	29.564
Na5895	**W**	**291.65**	**ppm**	**0.90434**	**0.31007**
Ni2316		0.0031660	ppm	0.00053700	16.954
P_1782		-0.0016640	ppm	0.0016590	99.721
Pb2203		-0.00044900	ppm	0.00078000	173.80
S_1820		9.6939	ppm	0.081302	0.83870
Sb2068		-0.0056380	ppm	0.00010800	1.9192
Se1960		-0.0013540	ppm	0.0012560	92.762
Si2881		3.8370	ppm	0.064341	1.6769
Sn1899		0.00091100	ppm	0.00060100	65.934
Sr4077		0.34305	ppm	0.0015750	0.45922
Ti3349		-0.00082500	ppm	0.00079400	96.276
Tl1908		-0.0028520	ppm	0.0026190	91.832
V_2924		0.0039710	ppm	0.00064900	16.346
Zn2062		0.035515	ppm	0.000077000	0.21700
Y_2243		6,878.7	Cts/S	26.304	0.38240
Y_3600		66,694	Cts/S	88.554	0.13278
Y_3774		4,415.3	Cts/S	9.0839	0.20574

720-98632-A-4-F

Acquire Date: 6/3/2020 12:24:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0017730	ppm	0.00037200	21.008
Al3961		0.037387	ppm	0.019418	51.939
As1890		0.0039410	ppm	0.00015000	3.8032
B_2089		0.047806	ppm	0.000083000	0.17446
Ba4554		0.064602	ppm	0.00029300	0.45291
Be3130		-0.00019000	ppm	0.00034000	178.71
Ca3179		164.89	ppm	0.16060	0.097400
Cd2144		-0.00011400	ppm	0.000024000	21.445
Co2286		0.00029400	ppm	0.00042100	142.97
Cr2677		0.015160	ppm	0.00039000	2.5746
Cu3247		0.00099900	ppm	0.0011600	116.06
Fe2599		-0.014975	ppm	0.00051500	3.4365
K_7664		4.2671	ppm	0.032254	0.75588
Mg2790		1.9123	ppm	0.021744	1.1371
Mn2576		0.027248	ppm	0.000012000	0.044636
Mo2020		0.00088300	ppm	0.0000060000	0.63526
Na5895	**W**	**289.02**	**ppm**	**0.47770**	**0.16528**
Ni2316		0.0025710	ppm	0.000068000	2.6370
P_1782		0.0038800	ppm	0.0027620	71.193
Pb2203		-0.0010790	ppm	0.00093800	86.956
S_1820		9.6383	ppm	0.040689	0.42216
Sb2068		-0.0021350	ppm	0.00049000	22.951
Se1960		-0.00082300	ppm	0.0011250	136.73
Si2881		3.9130	ppm	0.057880	1.4792
Sn1899		0.00071400	ppm	0.00099500	139.29
Sr4077		0.34483	ppm	0.0010920	0.31657
Ti3349		-0.0015150	ppm	0.00017300	11.403
Tl1908		-0.0022530	ppm	0.00034900	15.495
V_2924		0.0044920	ppm	0.000036000	0.80333
Zn2062		0.028268	ppm	0.00031000	1.0954
Y_2243		6,892.1	Cts/S	7.2425	0.10509
Y_3600		67,415	Cts/S	67.282	0.099803
Y_3774		4,426.6	Cts/S	44.211	0.99877

320-60840-A-1-S

Acquire Date: 6/3/2020 12:28:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0013070	ppm	0.0020760	158.82
Al3961		0.057011	ppm	0.014547	25.517
As1890		0.0011060	ppm	0.0017380	157.16
B_2089		0.047192	ppm	0.00011900	0.25145
Ba4554		0.13245	ppm	0.00087600	0.66159
Be3130		0.000082000	ppm	0.000017000	20.459
Ca3179		139.19	ppm	0.48369	0.34751
Cd2144		.0000070000	ppm	0.00013300	1,977.8
Co2286		-0.00049600	ppm	0.000061000	12.255

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-60840-A-1-S

Acquire Date: 6/3/2020 12:28:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0011820	ppm	0.00053900	45.561
Cu3247		0.000075000	ppm	0.00062300	828.46
Fe2599		-0.0024410	ppm	0.012015	492.20
K_7664		0.79679	ppm	0.012821	1.6091
Mg2790		6.3415	ppm	0.024070	0.37957
Mn2576		0.0035820	ppm	0.00011200	3.1401
Mo2020		-0.00035300	ppm	0.000017000	4.9023
Na5895	**W**	**262.87**	**ppm**	**0.85460**	**0.32510**
Ni2316		0.00069200	ppm	0.00063000	91.082
P_1782		0.0094610	ppm	0.0032350	34.191
Pb2203		0.0013630	ppm	0.0044150	323.83
S_1820		0.29834	ppm	0.0027650	0.92668
Sb2068		-0.0032690	ppm	0.0035200	107.68
Se1960		0.00042500	ppm	0.0034980	823.78
Si2881		1.3049	ppm	0.030868	2.3655
Sn1899		.0000030000	ppm	0.0020280	66,497
Sr4077		0.42579	ppm	0.0014140	0.33207
Ti3349		-0.00095300	ppm	0.00057200	60.011
Tl1908		-0.0030970	ppm	0.0037790	122.02
V_2924		0.00083400	ppm	0.00017500	20.957
Zn2062		0.042517	ppm	0.000073000	0.17253
Y_2243		6,922.0	Cts/S	8.7310	0.12613
Y_3600		68,050	Cts/S	207.06	0.30428
Y_3774		4,467.4	Cts/S	3.9992	0.089520

sd 320-60840-A-1-S@5

Acquire Date: 6/3/2020 12:32:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0016380	ppm	0.0018410	112.41
Al3961		0.027742	ppm	0.0028400	10.236
As1890		0.0057080	ppm	0.00095800	16.781
B_2089		0.015370	ppm	0.000071000	0.46380
Ba4554		0.027209	ppm	0.00081100	2.9810
Be3130		0.00012600	ppm	0.000062000	49.351
Ca3179		28.288	ppm	0.13563	0.47944
Cd2144		0.000056000	ppm	0.00013000	230.79
Co2286		-0.00062500	ppm	0.000069000	11.086
Cr2677		-0.0013170	ppm	0.00038900	29.520
Cu3247		0.00010400	ppm	0.000052000	50.102
Fe2599		-0.0097680	ppm	0.012589	128.89
K_7664		0.16700	ppm	0.023162	13.869
Mg2790		1.3231	ppm	0.0049470	0.37386
Mn2576		0.00065900	ppm	0.00014200	21.532
Mo2020		-0.00050700	ppm	0.00014400	28.502
Na5895		53.858	ppm	0.24510	0.45509
Ni2316		0.00083000	ppm	0.000021000	2.5572

sd 320-60840-A-1-S@5

Acquire Date: 6/3/2020 12:32:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.0015760	ppm	0.00061400	38.972
Pb2203		-0.00023100	ppm	0.000034000	14.561
S_1820		0.069034	ppm	0.0039810	5.7665
Sb2068		-0.0023070	ppm	0.0025630	111.12
Se1960		-0.00062400	ppm	0.0015160	243.03
Si2881		0.22338	ppm	0.026826	12.009
Sn1899		-0.00026200	ppm	0.000089000	33.836
Sr4077		0.086417	ppm	0.00063500	0.73524
Ti3349		-0.0011310	ppm	0.000014000	1.2099
Tl1908		-0.0014360	ppm	0.00096800	67.446
V_2924		0.000025000	ppm	0.00063200	2,567.7
Zn2062		0.010601	ppm	0.00079500	7.4999
Y_2243		7,136.4	Cts/S	31.201	0.43722
Y_3600		70,516	Cts/S	205.26	0.29109
Y_3774		4,447.3	Cts/S	25.633	0.57637

CCV 2010278

Acquire Date: 6/3/2020 12:36:26PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50924	ppm	0.0011850	0.23278	.50000	Rel(%)	Pass	
Al3961		25.072	ppm	0.041592	0.16589	25.000	Rel(%)	Pass	
As1890		0.51801	ppm	0.00080500	0.15550	.50000	Rel(%)	Pass	
B_2089		1.0342	ppm	0.0044910	0.43428	1.0000	Rel(%)	Pass	
Ba4554		2.5600	ppm	0.0013050	0.050990	2.5000	Rel(%)	Pass	
Be3130		0.52130	ppm	0.00018800	0.036004	.50000	Rel(%)	Pass	
Ca3179		26.518	ppm	0.083068	0.31325	25.000	Rel(%)	Pass	
Cd2144		0.51703	ppm	0.00049400	0.095454	.50000	Rel(%)	Pass	
Co2286		2.6046	ppm	0.0016180	0.062128	2.5000	Rel(%)	Pass	
Cr2677		2.5393	ppm	0.0026730	0.10527	2.5000	Rel(%)	Pass	
Cu3247		2.4548	ppm	0.0049410	0.20127	2.5000	Rel(%)	Pass	
Fe2599		26.734	ppm	0.086917	0.32512	25.000	Rel(%)	Pass	
K_7664		25.717	ppm	0.061548	0.23933	25.000	Rel(%)	Pass	
Mg2790		25.886	ppm	0.028477	0.11001	25.000	Rel(%)	Pass	
Mn2576		2.5954	ppm	0.0064850	0.24986	2.5000	Rel(%)	Pass	
Mo2020		1.0444	ppm	0.0041280	0.39526	1.0000	Rel(%)	Pass	
Na5895		25.756	ppm	0.0062520	0.024276	25.000	Rel(%)	Pass	
Ni2316		2.6098	ppm	0.0029650	0.11362	2.5000	Rel(%)	Pass	
P_1782		2.5177	ppm	0.0086890	0.34512	2.5000	Rel(%)	Pass	
Pb2203		0.52757	ppm	0.00089300	0.16920	.50000	Rel(%)	Pass	
S_1820		2.4546	ppm	0.014683	0.59819	2.5000	Rel(%)	Pass	
Sb2068		0.51075	ppm	0.0015820	0.30968	.50000	Rel(%)	Pass	
Se1960		0.51563	ppm	0.00044600	0.086569	.50000	Rel(%)	Pass	
Si2881		2.5332	ppm	0.057404	2.2660	2.5000	Rel(%)	Pass	
Sn1899		2.6060	ppm	0.0066300	0.25439	2.5000	Rel(%)	Pass	
Sr4077		2.5816	ppm	0.00019600	0.0076040	2.5000	Rel(%)	Pass	
Ti3349		1.0222	ppm	0.0040240	0.39369	1.0000	Rel(%)	Pass	
Tl1908		0.53124	ppm	0.0025930	0.48817	.50000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCV 2010278

Acquire Date: 6/3/2020 12:36:26PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5418	ppm	0.0056860	0.22368	2.5000	Rel(%)	Pass	
Zn2062		2.5580	ppm	0.000024000	0.00094700	2.5000	Rel(%)	Pass	
Y_2243		7,064.9	Cts/S	15.794	0.22355				
Y_3600		69,749	Cts/S	61.662	0.088406				
Y_3774		4,415.6	Cts/S	23.780	0.53855				

CCB 1815536

Acquire Date: 6/3/2020 12:40:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0011280	ppm	0.0010000	88.608	.00000	Abs	Pass	
Al3961		0.017649	ppm	0.016438	93.137	.00000	Abs	Pass	
As1890		0.0035780	ppm	0.0018050	50.460	.00000	Abs	Pass	
B_2089		0.0072670	ppm	0.000029000	0.39580	.00000	Abs	Pass	
Ba4554		0.00090800	ppm	0.00060200	66.332	.00000	Abs	Pass	
Be3130		0.00028200	ppm	0.00019000	67.443	.00000	Abs	Pass	
Ca3179		0.014497	ppm	0.013971	96.370	.00000	Abs	Pass	
Cd2144		-0.00014000	ppm	0.0000080000	5.5412	.00000	Abs	Pass	
Co2286		-0.00025300	ppm	0.000083000	32.913	.00000	Abs	Pass	
Cr2677		0.00022100	ppm	0.00043800	198.18	.00000	Abs	Pass	
Cu3247		0.0012530	ppm	0.00039200	31.272	.00000	Abs	Pass	
Fe2599		0.034777	ppm	0.0045780	13.164	.00000	Abs	Pass	
K_7664		-0.00010200	ppm	0.0025210	2,479.2	.00000	Abs	Pass	
Mg2790		0.0038050	ppm	0.013655	358.89	.00000	Abs	Pass	
Mn2576		0.00028300	ppm	0.00010400	36.913	.00000	Abs	Pass	
Mo2020		0.0033970	ppm	0.00045300	13.338	.00000	Abs	Pass	
Na5895		0.094529	ppm	0.023611	24.978	.00000	Abs	Pass	
Ni2316		-0.00070700	ppm	0.00096000	135.81	.00000	Abs	Pass	
P_1782		0.0012020	ppm	0.0035950	299.11	.00000	Abs	Pass	
Pb2203		0.000016000	ppm	0.00036500	2,248.9	.00000	Abs	Pass	
S_1820		0.0058010	ppm	0.0010850	18.711	.00000	Abs	Pass	
Sb2068		-0.0020130	ppm	0.0051040	253.60	.00000	Abs	Pass	
Se1960		0.0024270	ppm	0.0052200	215.06	.00000	Abs	Pass	
Si2881		-0.031977	ppm	0.020873	65.276	.00000	Abs	Pass	
Sn1899		0.0021800	ppm	0.00068400	31.400	.00000	Abs	Pass	
Sr4077		0.00051800	ppm	0.000052000	9.9641	.00000	Abs	Pass	
Ti3349		0.0033040	ppm	0.00029200	8.8426	.00000	Abs	Pass	
Tl1908		0.000057000	ppm	0.000096000	169.19	.00000	Abs	Pass	
V_2924		0.00046600	ppm	0.00019800	42.477	.00000	Abs	Pass	
Zn2062		0.0014760	ppm	0.00019900	13.505	.00000	Abs	Pass	
Y_2243		7,236.0	Cts/S	13.958	0.19289				
Y_3600		71,316	Cts/S	330.18	0.46299				
Y_3774		4,378.4	Cts/S	20.375	0.46535				

pds 320-60840-A-1-S

Acquire Date: 6/3/2020 12:44:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.096123	ppm	0.00098600	1.0261
Al3961		9.6228	ppm	0.0049220	0.051150
As1890		0.098562	ppm	0.0047160	4.7845
B_2089		0.96075	ppm	0.00015900	0.016544
Ba4554		0.23803	ppm	0.00092500	0.38863
Be3130		0.049364	ppm	0.000046000	0.093994
Ca3179		157.76	ppm	0.74901	0.47479
Cd2144		0.095634	ppm	0.000050000	0.052498
Co2286		0.096153	ppm	0.00036400	0.37847
Cr2677		0.097719	ppm	0.0012680	1.2973
Cu3247		0.097608	ppm	0.00037200	0.38152
Fe2599		3.9885	ppm	0.0036820	0.092321
K_7664		10.917	ppm	0.071176	0.65195
Mg2790		16.160	ppm	0.10081	0.62383
Mn2576		0.10205	ppm	0.00029200	0.28643
Mo2020		0.098954	ppm	0.000045000	0.045588
Na5895	**W**	**291.34**	**ppm**	**1.3150**	**0.45136**
Ni2316		0.096324	ppm	0.00083800	0.87024
P_1782		1.0107	ppm	0.0025240	0.24976
Pb2203		0.094452	ppm	0.0025880	2.7400
S_1820		0.30966	ppm	0.0036510	1.1789
Sb2068		0.084639	ppm	0.0021780	2.5729
Se1960		0.096070	ppm	0.0068850	7.1670
Si2881		4.4887	ppm	0.0081390	0.18131
Sn1899		0.099087	ppm	0.0011050	1.1148
Sr4077		0.55225	ppm	0.0027080	0.49041
Ti3349		0.098317	ppm	0.000056000	0.057220
Tl1908		0.088374	ppm	0.00080600	0.91210
V_2924		0.099195	ppm	0.00060400	0.60912
Zn2062		0.14437	ppm	0.00085000	0.58893
Y_2243		6,861.0	Cts/S	19.790	0.28845
Y_3600		67,069	Cts/S	32.522	0.048491
Y_3774		4,415.6	Cts/S	3.8415	0.086999

320-60840-A-1-T MS

Acquire Date: 6/3/2020 12:48:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046858	ppm	0.00018400	0.39289
Al3961		4.9515	ppm	0.011687	0.23603
As1890		0.48761	ppm	0.0056550	1.1598
B_2089		4.5766	ppm	0.0039040	0.085298
Ba4554		0.64494	ppm	0.0019140	0.29674
Be3130		0.25076	ppm	0.00084400	0.33643
Ca3179		192.39	ppm	0.54518	0.28337
Cd2144		0.23821	ppm	0.00015900	0.066654
Co2286		0.23925	ppm	0.00080300	0.33544

320-60840-A-1-T MS

Acquire Date: 6/3/2020 12:48:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.24377	ppm	0.0013920	0.57117
Cu3247		0.23975	ppm	0.0012530	0.52261
Fe2599		5.0942	ppm	0.0019540	0.038350
K_7664		26.519	ppm	0.047136	0.17774
Mg2790		31.512	ppm	0.078046	0.24767
Mn2576		0.25097	ppm	0.00051100	0.20353
Mo2020		0.25183	ppm	0.00073000	0.28982
Na5895	**W**	**339.16**	**ppm**	**0.98244**	**0.28967**
Ni2316		0.23710	ppm	0.0012430	0.52421
P_1782		5.2919	ppm	0.028681	0.54197
Pb2203		0.24012	ppm	0.0012030	0.50116
S_1820		5.3364	ppm	0.023441	0.43927
Sb2068		0.45616	ppm	0.0052260	1.1457
Se1960		0.47116	ppm	0.00091300	0.19377
Si2881		6.6799	ppm	0.0074920	0.11217
Sn1899		0.50428	ppm	0.0016610	0.32936
Sr4077		0.76130	ppm	0.0031430	0.41286
Ti3349		0.24865	ppm	0.00042600	0.17116
Tl1908		0.46054	ppm	0.0058920	1.2794
V_2924		0.25013	ppm	0.0013540	0.54139
Zn2062		0.54681	ppm	0.00044300	0.081069
Y_2243		6,778.5	Cts/S	17.898	0.26404
Y_3600		66,087	Cts/S	168.74	0.25534
Y_3774		4,389.2	Cts/S	15.610	0.35564

320-60840-A-1-U MSD

Acquire Date: 6/3/2020 12:51:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.044502	ppm	0.0015550	3.4936
Al3961		4.7010	ppm	0.025772	0.54822
As1890		0.46753	ppm	0.0018530	0.39635
B_2089		4.4254	ppm	0.0033840	0.076474
Ba4554		0.62679	ppm	0.0020680	0.33001
Be3130		0.24071	ppm	0.00012100	0.050301
Ca3179		191.67	ppm	0.066800	0.034852
Cd2144		0.22967	ppm	0.000071000	0.031129
Co2286		0.23058	ppm	0.000062000	0.026942
Cr2677		0.23628	ppm	0.00035300	0.14959
Cu3247		0.23168	ppm	0.0013290	0.57381
Fe2599		4.8729	ppm	0.0092770	0.19038
K_7664		25.569	ppm	0.13518	0.52870
Mg2790		30.705	ppm	0.087082	0.28361
Mn2576		0.24243	ppm	0.00041500	0.17098
Mo2020		0.24377	ppm	0.00026800	0.11000
Na5895	**W**	**339.09**	**ppm**	**0.64760**	**0.19098**
Ni2316		0.22747	ppm	0.00045600	0.20035

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-60840-A-1-U MSD

Acquire Date: 6/3/2020 12:51:55PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		5.1112	ppm	0.00053800	0.010521
Pb2203		0.23098	ppm	0.0010120	0.43798
S_1820		5.1759	ppm	0.0037560	0.072567
Sb2068		0.44665	ppm	0.0014060	0.31488
Se1960		0.45938	ppm	0.00083600	0.18198
Si2881		6.5545	ppm	0.023667	0.36109
Sn1899		0.48708	ppm	0.00067900	0.13944
Sr4077		0.75346	ppm	0.0027100	0.35968
Ti3349		0.24174	ppm	0.0022650	0.93698
Tl1908		0.44358	ppm	0.00028300	0.063700
V_2924		0.24132	ppm	0.0015770	0.65351
Zn2062		0.53077	ppm	0.0016940	0.31915
Y_2243		6,789.6	Cts/S	3.0750	0.045291
Y_3600		65,937	Cts/S	83.208	0.12619
Y_3774		4,385.9	Cts/S	21.629	0.49314

320-60840-A-2-W

Acquire Date: 6/3/2020 12:55:43PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0019080	ppm	0.00080900	42.380
Al3961		0.091259	ppm	0.0054620	5.9853
As1890		0.0049850	ppm	0.0014060	28.204
B_2089		0.072169	ppm	0.00077200	1.0696
Ba4554		0.087632	ppm	0.00084600	0.96507
Be3130		0.000097000	ppm	0.0000020000	1.7448
Ca3179		166.57	ppm	0.10899	0.065429
Cd2144		0.000014000	ppm	0.000046000	326.11
Co2286		-0.00019300	ppm	0.00011000	56.848
Cr2677		0.0016480	ppm	0.000053000	3.2356
Cu3247		0.00032100	ppm	0.000088000	27.410
Fe2599		0.017856	ppm	0.0023680	13.263
K_7664		0.64004	ppm	0.0031210	0.48762
Mg2790		6.0953	ppm	0.021233	0.34835
Mn2576		0.0019120	ppm	0.000050000	2.5899
Mo2020		0.00040400	ppm	0.00052600	130.32
Na5895	**W**	**312.21**	**ppm**	**0.25262**	**0.080916**
Ni2316		0.0010960	ppm	0.00064600	58.966
P_1782		0.0048900	ppm	0.0015530	31.756
Pb2203		-0.0021690	ppm	0.0024330	112.19
S_1820		0.83495	ppm	0.00098700	0.11822
Sb2068		-0.0053670	ppm	0.0020690	38.550
Se1960		-0.00079100	ppm	0.0023640	298.79
Si2881		1.5578	ppm	0.036356	2.3337
Sn1899		0.00036600	ppm	0.00065100	178.18
Sr4077		0.49333	ppm	0.00019800	0.040134
Ti3349		0.00059500	ppm	0.000031000	5.2870

320-60840-A-2-W

Acquire Date: 6/3/2020 12:55:43PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00088200	ppm	0.00014300	16.227
V_2924		0.000013000	ppm	0.00058200	4,493.7
Zn2062		0.051004	ppm	0.00082000	1.6074
Y_2243		6,813.4	Cts/S	1.3843	0.020317
Y_3600		66,528	Cts/S	467.49	0.70269
Y_3774		4,440.5	Cts/S	4.2031	0.094653

320-60840-A-4-S

Acquire Date: 6/3/2020 12:59:41PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0018590	ppm	0.0010730	57.695
Al3961		0.055569	ppm	0.013708	24.669
As1890		0.0048740	ppm	0.0039790	81.642
B_2089		0.050914	ppm	0.0010120	1.9882
Ba4554		0.068852	ppm	0.000051000	0.073360
Be3130		0.000029000	ppm	0.00027300	929.14
Ca3179		169.47	ppm	0.31480	0.18575
Cd2144		-0.00012700	ppm	0.000044000	34.587
Co2286		-0.00085300	ppm	0.00065700	77.080
Cr2677		0.00065900	ppm	0.00062800	95.315
Cu3247		-0.00090000	ppm	0.00035900	39.925
Fe2599		-0.0089720	ppm	0.0053020	59.091
K_7664		0.64579	ppm	0.00099000	0.15338
Mg2790		2.4659	ppm	0.0081850	0.33194
Mn2576		0.00041500	ppm	0.000068000	16.322
Mo2020		-0.00020200	ppm	0.00047900	237.07
Na5895	**W**	**306.45**	**ppm**	**0.73291**	**0.23916**
Ni2316		0.00095400	ppm	0.00063600	66.668
P_1782		0.0060030	ppm	0.0020820	34.680
Pb2203		-0.0013100	ppm	0.00015000	11.473
S_1820		0.15009	ppm	0.0028100	1.8722
Sb2068		-0.0023390	ppm	0.0048410	207.02
Se1960		-0.0049430	ppm	0.0023650	47.851
Si2881		0.70561	ppm	0.010086	1.4294
Sn1899		0.000096000	ppm	0.00057200	595.04
Sr4077		0.33979	ppm	0.00074700	0.21987
Ti3349		-0.0016450	ppm	0.00091600	55.659
Tl1908		-0.0035120	ppm	0.0034690	98.788
V_2924		0.00031200	ppm	0.00054200	174.08
Zn2062		0.043936	ppm	0.0011210	2.5512
Y_2243		6,758.9	Cts/S	2.1709	0.032120
Y_3600		65,759	Cts/S	35.385	0.053810
Y_3774		4,337.2	Cts/S	4.0813	0.094098

720-98122-A-4-H

Acquire Date: 6/3/2020 1:03:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010870	ppm	0.0031830	292.92
Al3961		0.38016	ppm	0.013491	3.5487
As1890		0.0051870	ppm	0.000076000	1.4588
B_2089		0.036946	ppm	0.00096700	2.6167
Ba4554		0.14941	ppm	0.00010700	0.071766
Be3130		0.00024900	ppm	0.00013400	53.915
Ca3179		11.108	ppm	0.036516	0.32873
Cd2144		0.000045000	ppm	0.000078000	174.46
Co2286		-0.00029400	ppm	0.00017900	60.887
Cr2677		0.00047900	ppm	0.00037300	77.747
Cu3247		0.0015660	ppm	0.00013100	8.3356
Fe2599		0.19241	ppm	0.011855	6.1615
K_7664		1.0364	ppm	0.015809	1.5253
Mg2790		2.3339	ppm	0.015860	0.67955
Mn2576		0.031201	ppm	0.000053000	0.16944
Mo2020		-0.00052800	ppm	0.00013100	24.764
Na5895		229.05	ppm	0.31130	0.13591
Ni2316		0.0033820	ppm	0.0013040	38.545
P_1782		0.42012	ppm	0.00099000	0.23564
Pb2203		0.0015200	ppm	0.0032930	216.68
S_1820		0.12797	ppm	0.0057750	4.5132
Sb2068		-0.0032090	ppm	0.0032900	102.53
Se1960		-0.0022030	ppm	0.0049090	222.87
Si2881		1.1995	ppm	0.038543	3.2132
Sn1899		0.00034300	ppm	0.0010950	319.62
Sr4077		0.066607	ppm	0.00047000	0.70509
Ti3349		0.0039490	ppm	0.00042400	10.744
Tl1908		-0.0025060	ppm	0.00057500	22.931
V_2924		0.00053000	ppm	0.00054500	102.81
Zn2062		0.10639	ppm	0.00088300	0.83018
Y_2243		6,939.9	Cts/S	13.540	0.19511
Y_3600		67,796	Cts/S	499.75	0.73714
Y_3774		4,336.1	Cts/S	22.025	0.50794

720-98122-A-9-J

Acquire Date: 6/3/2020 1:07:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00086900	ppm	0.00037500	43.166
Al3961		0.28897	ppm	0.010091	3.4921
As1890		0.0015560	ppm	0.0012420	79.851
B_2089		0.040015	ppm	0.00089600	2.2394
Ba4554		0.17230	ppm	0.00051200	0.29692
Be3130		0.000016000	ppm	0.00018100	1,131.3
Ca3179		12.191	ppm	0.047133	0.38662
Cd2144		0.00042500	ppm	0.000049000	11.494
Co2286		-0.00027700	ppm	0.000072000	26.036

720-98122-A-9-J

Acquire Date: 6/3/2020 1:07:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00051300	ppm	0.00046300	90.241
Cu3247		0.00070500	ppm	0.00023000	32.692
Fe2599		0.11956	ppm	0.013011	10.882
K_7664		0.46852	ppm	0.0040080	0.85552
Mg2790		2.4103	ppm	0.0019940	0.082739
Mn2576		0.031255	ppm	0.00023500	0.75268
Mo2020		-0.00071700	ppm	0.00012000	16.790
Na5895	**W**	**267.59**	**ppm**	**1.0101**	**0.37747**
Ni2316		0.0049490	ppm	0.00026000	5.2548
P_1782		0.11170	ppm	0.0013840	1.2392
Pb2203		0.0063430	ppm	0.00099700	15.712
S_1820		0.097526	ppm	0.00051300	0.52560
Sb2068		-0.00039600	ppm	0.00081000	204.84
Se1960		-0.0010580	ppm	0.0062120	587.32
Si2881		0.99914	ppm	0.018209	1.8225
Sn1899		-0.00053300	ppm	0.00032700	61.391
Sr4077		0.067984	ppm	0.00038100	0.56058
Ti3349		0.0031240	ppm	0.00020500	6.5761
Tl1908		-0.0012580	ppm	0.0013640	108.43
V_2924		0.00024300	ppm	0.000039000	16.042
Zn2062		0.18401	ppm	0.00087400	0.47484
Y_2243		6,872.0	Cts/S	20.908	0.30425
Y_3600		66,731	Cts/S	49.187	0.073709
Y_3774		4,316.3	Cts/S	28.902	0.66960

720-98625-A-1-I

Acquire Date: 6/3/2020 1:11:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0011110	ppm	0.000088000	7.9158
Al3961		0.13986	ppm	0.0074190	5.3047
As1890		0.026806	ppm	0.000058000	0.21513
B_2089		0.042518	ppm	0.00080900	1.9038
Ba4554		0.25520	ppm	0.0010190	0.39911
Be3130		0.000082000	ppm	0.00030500	370.54
Ca3179		37.964	ppm	0.17144	0.45160
Cd2144		0.041364	ppm	0.00010000	0.24086
Co2286		0.018308	ppm	0.00028600	1.5608
Cr2677		0.0032850	ppm	0.00030400	9.2657
Cu3247		0.14190	ppm	0.000092000	0.064800
Fe2599		0.0023340	ppm	0.0026990	115.61
K_7664		0.98539	ppm	0.0014040	0.14253
Mg2790		0.67512	ppm	0.00014900	0.022114
Mn2576		0.15216	ppm	0.00039300	0.25858
Mo2020		-0.00066000	ppm	0.00035200	53.247
Na5895	**W**	**323.53**	**ppm**	**1.3138**	**0.40607**
Ni2316		0.0021920	ppm	0.00068700	31.325

720-98625-A-1-I

Acquire Date: 6/3/2020 1:11:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.28704	ppm	0.0032190	1.1213
Pb2203		1.7698	ppm	0.0024570	0.13881
S_1820		1.9522	ppm	0.0095820	0.49081
Sb2068		0.000031000	ppm	0.0016610	5,435.4
Se1960		-0.0022400	ppm	0.0015900	70.965
Si2881		0.33280	ppm	0.026239	7.8842
Sn1899		-0.00031700	ppm	0.00050200	158.36
Sr4077		0.041367	ppm	0.000070000	0.16958
Ti3349		-0.00019400	ppm	0.000092000	47.421
Tl1908		0.00078300	ppm	0.0026260	335.51
V_2924		0.00080000	ppm	0.00036800	46.053
Zn2062	**W**	**30.555**	**ppm**	**0.044357**	**0.14517**
Y_2243		6,913.0	Cts/S	6.9876	0.10108
Y_3600		67,345	Cts/S	137.23	0.20378
Y_3774		4,404.6	Cts/S	10.569	0.23996

320-61317-A-1-A

Acquire Date: 6/3/2020 1:15:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0022290	ppm	0.000095000	4.2758
Al3961		237.83	ppm	0.46948	0.19741
As1890		0.081615	ppm	0.0026360	3.2296
B_2089		0.30108	ppm	0.00058600	0.19453
Ba4554		1.8494	ppm	0.0034090	0.18432
Be3130		0.0057470	ppm	0.000055000	0.96538
Ca3179		50.775	ppm	0.068044	0.13401
Cd2144		0.0029900	ppm	0.000057000	1.8942
Co2286		0.16348	ppm	0.00048600	0.29728
Cr2677		0.79300	ppm	0.0015220	0.19193
Cu3247		0.51758	ppm	0.00059000	0.11392
Fe2599		349.65	ppm	0.48205	0.13787
K_7664		15.935	ppm	0.025048	0.15719
Mg2790		126.58	ppm	0.19847	0.15679
Mn2576		4.7184	ppm	0.0077610	0.16449
Mo2020		0.0056830	ppm	0.0011710	20.598
Na5895		6.8592	ppm	0.022020	0.32102
Ni2316		1.0525	ppm	0.0018360	0.17442
P_1782		4.8261	ppm	0.020897	0.43300
Pb2203		0.14616	ppm	0.000028000	0.019442
S_1820		5.5272	ppm	0.010889	0.19701
Sb2068		0.0071650	ppm	0.0088230	123.14
Se1960		0.00023900	ppm	0.0024750	1,034.0
Si2881		2.0463	ppm	0.043160	2.1092
Sn1899		0.037546	ppm	0.00013400	0.35618
Sr4077		0.60458	ppm	0.0018140	0.30001
Ti3349		4.6469	ppm	0.0095280	0.20505

320-61317-A-1-A

Acquire Date: 6/3/2020 1:15:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0094490	ppm	0.0017550	18.576
V_2924		0.73541	ppm	0.0032870	0.44702
Zn2062		1.1796	ppm	0.0010260	0.086958
Y_2243		7,135.1	Cts/S	11.457	0.16058
Y_3600		69,325	Cts/S	141.07	0.20349
Y_3774		4,598.7	Cts/S	33.083	0.71940

sd 320-61317-A-1-A@5

Acquire Date: 6/3/2020 1:19:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00037000	ppm	0.00025000	67.414
Al3961		49.503	ppm	0.016776	0.033890
As1890		0.022019	ppm	0.00039800	1.8085
B_2089		0.069519	ppm	0.00043600	0.62722
Ba4554		0.38755	ppm	0.00075700	0.19530
Be3130		0.0014340	ppm	0.00021400	14.924
Ca3179		10.869	ppm	0.027212	0.25036
Cd2144		0.00058300	ppm	0.00013500	23.126
Co2286		0.034813	ppm	0.00017200	0.49371
Cr2677		0.16454	ppm	0.00033700	0.20495
Cu3247		0.10713	ppm	0.0018190	1.6979
Fe2599		75.757	ppm	0.15049	0.19865
K_7664		3.2458	ppm	0.0052760	0.16255
Mg2790		26.471	ppm	0.0020640	0.0077990
Mn2576		0.99947	ppm	0.0024120	0.24128
Mo2020		0.00044000	ppm	0.000070000	15.971
Na5895		1.5114	ppm	0.019236	1.2727
Ni2316		0.22977	ppm	0.00099400	0.43271
P_1782		1.0083	ppm	0.0016270	0.16134
Pb2203		0.034576	ppm	0.0019430	5.6197
S_1820		1.1624	ppm	0.012940	1.1132
Sb2068		0.0010890	ppm	0.0011100	101.86
Se1960		-0.0016040	ppm	0.0017500	109.10
Si2881		0.40926	ppm	0.038957	9.5190
Sn1899		0.0075970	ppm	0.00030600	4.0272
Sr4077		0.12697	ppm	0.00025600	0.20198
Ti3349		0.96404	ppm	0.0039910	0.41404
Tl1908		-0.0013390	ppm	0.00052000	38.811
V_2924		0.14941	ppm	0.00041200	0.27584
Zn2062		0.25802	ppm	0.00067500	0.26173
Y_2243		7,261.5	Cts/S	21.121	0.29086
Y_3600		71,351	Cts/S	11.282	0.015811
Y_3774		4,469.0	Cts/S	8.6490	0.19353

CCV 2010278

Acquire Date: 6/3/2020 1:23:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51095	ppm	0.0020970	0.41039	.50000	Rel(%)	Pass	
Al3961		25.459	ppm	0.29243	1.1486	25.000	Rel(%)	Pass	
As1890		0.51726	ppm	0.00063500	0.12269	.50000	Rel(%)	Pass	
B_2089		1.0391	ppm	0.000079000	0.0075910	1.0000	Rel(%)	Pass	
Ba4554		2.5784	ppm	0.024420	0.94710	2.5000	Rel(%)	Pass	
Be3130		0.52404	ppm	0.0041170	0.78561	.50000	Rel(%)	Pass	
Ca3179		26.577	ppm	0.28577	1.0752	25.000	Rel(%)	Pass	
Cd2144		0.51994	ppm	0.0017350	0.33363	.50000	Rel(%)	Pass	
Co2286		2.6109	ppm	0.0085220	0.32639	2.5000	Rel(%)	Pass	
Cr2677		2.5613	ppm	0.0074240	0.28987	2.5000	Rel(%)	Pass	
Cu3247		2.4824	ppm	0.0057080	0.22996	2.5000	Rel(%)	Pass	
Fe2599		27.025	ppm	0.29870	1.1052	25.000	Rel(%)	Pass	
K_7664		25.751	ppm	0.27002	1.0486	25.000	Rel(%)	Pass	
Mg2790		25.898	ppm	0.058680	0.22658	25.000	Rel(%)	Pass	
Mn2576		2.6022	ppm	0.0052660	0.20235	2.5000	Rel(%)	Pass	
Mo2020		1.0440	ppm	0.0021400	0.20498	1.0000	Rel(%)	Pass	
Na5895		25.857	ppm	0.22888	0.88519	25.000	Rel(%)	Pass	
Ni2316		2.6206	ppm	0.0066320	0.25306	2.5000	Rel(%)	Pass	
P_1782		2.5133	ppm	0.015233	0.60609	2.5000	Rel(%)	Pass	
Pb2203		0.52649	ppm	0.00085600	0.16258	.50000	Rel(%)	Pass	
S_1820		2.4536	ppm	0.024572	1.0015	2.5000	Rel(%)	Pass	
Sb2068		0.51337	ppm	0.0031110	0.60597	.50000	Rel(%)	Pass	
Se1960		0.51737	ppm	0.00082600	0.15961	.50000	Rel(%)	Pass	
Si2881		2.5548	ppm	0.10215	3.9985	2.5000	Rel(%)	Pass	
Sn1899		2.6070	ppm	0.0096270	0.36928	2.5000	Rel(%)	Pass	
Sr4077		2.6026	ppm	0.023643	0.90843	2.5000	Rel(%)	Pass	
Ti3349		1.0353	ppm	0.0057390	0.55433	1.0000	Rel(%)	Pass	
Tl1908		0.52891	ppm	0.00083100	0.15717	.50000	Rel(%)	Pass	
V_2924		2.5535	ppm	0.0044950	0.17605	2.5000	Rel(%)	Pass	
Zn2062		2.5735	ppm	0.0086320	0.33541	2.5000	Rel(%)	Pass	
Y_2243		7,080.4	Cts/S	10.294	0.14540				
Y_3600		69,775	Cts/S	43.633	0.062533				
Y_3774		4,402.1	Cts/S	46.030	1.0456				

CCB 1815536

Acquire Date: 6/3/2020 1:26:58PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00069300	ppm	0.00037600	54.209	.00000	Abs	Pass	
Al3961		0.033878	ppm	0.023670	69.868	.00000	Abs	Pass	
As1890		0.0039340	ppm	0.00052000	13.208	.00000	Abs	Pass	
B_2089		0.0058940	ppm	0.00053700	9.1073	.00000	Abs	Pass	
Ba4554		0.0010840	ppm	0.00052200	48.157	.00000	Abs	Pass	
Be3130		0.00070800	ppm	0.00010000	14.086	.00000	Abs	Pass	
Ca3179		0.0067130	ppm	0.0096960	144.43	.00000	Abs	Pass	
Cd2144		-0.00011800	ppm	0.000023000	19.603	.00000	Abs	Pass	
Co2286		-0.00024900	ppm	0.000044000	17.836	.00000	Abs	Pass	
Cr2677		-0.00038300	ppm	0.00090400	236.19	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/3/2020 1:26:58PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00039900	ppm	0.00019600	49.060	.00000	Abs	Pass	
Fe2599	**W**	**0.060029**	**ppm**	**0.0067860**	**11.305**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		-0.014866	ppm	0.031326	210.72	.00000	Abs	Pass	
Mg2790		-0.0013270	ppm	0.0038170	287.66	.00000	Abs	Pass	
Mn2576		0.00050300	ppm	0.000067000	13.254	.00000	Abs	Pass	
Mo2020		0.0036220	ppm	0.00065900	18.187	.00000	Abs	Pass	
Na5895		0.061697	ppm	0.011791	19.111	.00000	Abs	Pass	
Ni2316		-0.00020900	ppm	0.0010270	490.88	.00000	Abs	Pass	
P_1782		-0.00050100	ppm	0.0026990	538.94	.00000	Abs	Pass	
Pb2203		-0.0014410	ppm	0.0015620	108.41	.00000	Abs	Pass	
S_1820		0.0063920	ppm	0.0023640	36.993	.00000	Abs	Pass	
Sb2068		-0.0017240	ppm	0.0013960	80.974	.00000	Abs	Pass	
Se1960		-0.0035870	ppm	0.0021680	60.441	.00000	Abs	Pass	
Si2881		0.011074	ppm	0.080797	729.60	.00000	Abs	Pass	
Sn1899		0.0014130	ppm	0.00021400	15.138	.00000	Abs	Pass	
Sr4077		0.00074600	ppm	0.00054100	72.502	.00000	Abs	Pass	
Ti3349		0.0035410	ppm	0.00066900	18.886	.00000	Abs	Pass	
Tl1908		0.0021050	ppm	0.0012560	59.681	.00000	Abs	Pass	
V_2924		0.00016000	ppm	0.00014100	88.176	.00000	Abs	Pass	
Zn2062		0.0024910	ppm	0.00050500	20.261	.00000	Abs	Pass	
Y_2243		7,269.9	Cts/S	11.722	0.16124				
Y_3600		71,892	Cts/S	28.168	0.039181				
Y_3774		4,416.0	Cts/S	5.1976	0.11770				

pds 320-61317-A-1-A

Acquire Date: 6/3/2020 1:30:58PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095440	ppm	0.00046000	0.48214
Al3961		237.46	ppm	1.3273	0.55897
As1890		0.16829	ppm	0.0039390	2.3405
B_2089		1.1451	ppm	0.0014050	0.12273
Ba4554		1.8797	ppm	0.011833	0.62954
Be3130		0.052343	ppm	0.00013600	0.25976
Ca3179		58.629	ppm	0.34171	0.58283
Cd2144		0.093038	ppm	0.000071000	0.075990
Co2286		0.24875	ppm	0.00035500	0.14279
Cr2677		0.84257	ppm	0.00031000	0.036780
Cu3247		0.57716	ppm	0.0010160	0.17601
Fe2599		343.24	ppm	2.0545	0.59855
K_7664		24.966	ppm	0.11379	0.45577
Mg2790		130.12	ppm	0.21073	0.16195
Mn2576		4.5988	ppm	0.0088690	0.19286
Mo2020		0.099331	ppm	0.00059400	0.59804
Na5895		15.922	ppm	0.099368	0.62410
Ni2316		1.0971	ppm	0.00075100	0.068445
P_1782		5.5053	ppm	0.015524	0.28198
Pb2203		0.23783	ppm	0.00021500	0.090360

pds 320-61317-A-1-A

Acquire Date: 6/3/2020 1:30:58PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		5.3228	ppm	0.015000	0.28182
Sb2068		0.085622	ppm	0.0029040	3.3917
Se1960		0.092385	ppm	0.0011230	1.2151
Si2881		4.9120	ppm	0.015878	0.32326
Sn1899		0.13138	ppm	0.00053400	0.40634
Sr4077		0.67690	ppm	0.0044100	0.65154
Ti3349		4.5576	ppm	0.0048650	0.10676
Tl1908		0.081994	ppm	0.00018900	0.23010
V_2924		0.79352	ppm	0.00039600	0.049938
Zn2062		1.2089	ppm	0.0019420	0.16067
Y_2243		7,165.6	Cts/S	6.9384	0.096829
Y_3600		69,854	Cts/S	406.62	0.58211
Y_3774		4,631.1	Cts/S	6.1229	0.13221

320-61317-A-1-B MS

Acquire Date: 6/3/2020 1:34:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046730	ppm	0.00077000	1.6481
Al3961		310.65	ppm	0.52256	0.16822
As1890		0.51055	ppm	0.0055880	1.0945
B_2089		4.1967	ppm	0.0046640	0.11113
Ba4554		2.4883	ppm	0.0045970	0.18475
Be3130		0.23839	ppm	0.000014000	0.0058060
Ca3179		73.794	ppm	0.12795	0.17338
Cd2144		0.22348	ppm	0.00034300	0.15359
Co2286		0.39397	ppm	0.00034300	0.086993
Cr2677		1.1067	ppm	0.000068000	0.0061530
Cu3247		0.75639	ppm	0.0037670	0.49802
Fe2599		368.44	ppm	0.10907	0.029603
K_7664		40.811	ppm	0.053895	0.13206
Mg2790		157.47	ppm	0.15377	0.097650
Mn2576		5.2199	ppm	0.011252	0.21555
Mo2020		0.21794	ppm	0.0018950	0.86936
Na5895		30.713	ppm	0.10766	0.35053
Ni2316		1.3246	ppm	0.0010420	0.078646
P_1782		9.7625	ppm	0.021781	0.22311
Pb2203		0.36637	ppm	0.0023770	0.64891
S_1820		9.2339	ppm	0.013557	0.14682
Sb2068		0.14295	ppm	0.0015270	1.0684
Se1960		0.41868	ppm	0.00075400	0.18006
Si2881		3.1555	ppm	0.040982	1.2988
Sn1899		0.44668	ppm	0.0011380	0.25483
Sr4077		0.82322	ppm	0.0012460	0.15131
Ti3349	**W**	**6.4137**	**ppm**	**0.013981**	**0.21798**
Tl1908		0.42704	ppm	0.00055900	0.13090
V_2924		1.0533	ppm	0.0029420	0.27931

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61317-A-1-B MS

Acquire Date: 6/3/2020 1:34:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		1.5483	ppm	0.00060500	0.039059
Y_2243		7,055.9	Cts/S	10.307	0.14608
Y_3600		68,138	Cts/S	185.56	0.27234
Y_3774		4,540.0	Cts/S	46.450	1.0231

320-61317-A-1-C MSD

Acquire Date: 6/3/2020 1:38:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048808	ppm	0.00027600	0.56499
Al3961		309.65	ppm	0.98517	0.31815
As1890		0.50953	ppm	0.0012160	0.23871
B_2089		4.2149	ppm	0.0031390	0.074465
Ba4554		2.4566	ppm	0.0099900	0.40664
Be3130		0.23623	ppm	0.0012830	0.54296
Ca3179		71.509	ppm	0.32361	0.45254
Cd2144		0.22287	ppm	0.000040000	0.017897
Co2286		0.38785	ppm	0.00056700	0.14630
Cr2677		1.0923	ppm	0.0018260	0.16718
Cu3247		0.75197	ppm	0.0066700	0.88704
Fe2599		368.74	ppm	1.7354	0.47064
K_7664		40.795	ppm	0.11817	0.28966
Mg2790		154.37	ppm	0.18711	0.12121
Mn2576		5.0245	ppm	0.0036380	0.072405
Mo2020		0.21522	ppm	0.00078500	0.36474
Na5895		30.456	ppm	0.10009	0.32865
Ni2316		1.2908	ppm	0.0017970	0.13923
P_1782		9.5792	ppm	0.017761	0.18541
Pb2203		0.36524	ppm	0.00087800	0.24035
S_1820		10.778	ppm	0.0068290	0.063359
Sb2068		0.14248	ppm	0.0078220	5.4899
Se1960		0.41833	ppm	0.0017770	0.42487
Si2881		2.8547	ppm	0.014329	0.50196
Sn1899		0.44377	ppm	0.0023260	0.52425
Sr4077		0.81500	ppm	0.0030850	0.37856
Ti3349	**W**	**6.2593**	**ppm**	**0.0089020**	**0.14223**
Tl1908		0.42755	ppm	0.00054900	0.12845
V_2924		1.0792	ppm	0.00044500	0.041227
Zn2062		1.5548	ppm	0.0062190	0.40000
Y_2243		7,028.0	Cts/S	10.607	0.15092
Y_3600		67,850	Cts/S	543.23	0.80063
Y_3774		4,538.1	Cts/S	7.0337	0.15499

320-61317-A-2-A

Acquire Date: 6/3/2020 1:42:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00073200	ppm	0.000024000	3.2570
Al3961		221.70	ppm	0.29703	0.13398
As1890		0.080180	ppm	0.0010150	1.2664
B_2089		0.22008	ppm	0.0021300	0.96781
Ba4554		1.6246	ppm	0.00081900	0.050411
Be3130		0.0060330	ppm	0.00018300	3.0281
Ca3179		37.806	ppm	0.048009	0.12699
Cd2144		0.0012720	ppm	0.00010000	7.8630
Co2286		0.13135	ppm	0.00045100	0.34346
Cr2677		0.66364	ppm	0.0012170	0.18334
Cu3247		0.45762	ppm	0.0016550	0.36176
Fe2599		271.47	ppm	0.27595	0.10165
K_7664		10.452	ppm	0.014403	0.13780
Mg2790		81.944	ppm	0.21121	0.25774
Mn2576		3.3118	ppm	0.0051350	0.15505
Mo2020		0.0077040	ppm	0.000084000	1.0848
Na5895		5.2271	ppm	0.0032010	0.061245
Ni2316		0.68061	ppm	0.0020630	0.30306
P_1782		3.4682	ppm	0.0019470	0.056143
Pb2203		0.12289	ppm	0.0021160	1.7217
S_1820		1.4290	ppm	0.0082570	0.57780
Sb2068		0.0033700	ppm	0.0020920	62.084
Se1960		0.0019090	ppm	0.0053230	278.86
Si2881		1.8466	ppm	0.019013	1.0296
Sn1899		0.019980	ppm	0.00013800	0.68997
Sr4077		0.43731	ppm	0.00053800	0.12301
Ti3349		3.9978	ppm	0.010202	0.25519
Tl1908		-0.0065500	ppm	0.0047820	73.015
V_2924		0.73056	ppm	0.00067100	0.091807
Zn2062		0.62776	ppm	0.0019650	0.31302
Y_2243		7,340.0	Cts/S	12.660	0.17247
Y_3600		71,634	Cts/S	126.64	0.17679
Y_3774		4,696.8	Cts/S	50.050	1.0656

320-61256-D-4-A@5

Acquire Date: 6/3/2020 1:46:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0012570	ppm	0.00045800	36.447
Al3961		0.22152	ppm	0.0027420	1.2378
As1890		0.0059770	ppm	0.0013470	22.544
B_2089		0.022344	ppm	0.000016000	0.073043
Ba4554		0.10275	ppm	0.00049600	0.48275
Be3130		0.00019500	ppm	0.00017800	91.400
Ca3179		20.802	ppm	0.12950	0.62257
Cd2144		0.000032000	ppm	0.000076000	234.55
Co2286		0.000054000	ppm	0.00027400	505.67

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61256-D-4-A@5

Acquire Date: 6/3/2020 1:46:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.059146	ppm	0.000025000	0.042208
Cu3247		0.0014580	ppm	0.00052300	35.840
Fe2599		0.40326	ppm	0.046599	11.556
K_7664		4.5802	ppm	0.082654	1.8046
Mg2790		1.9649	ppm	0.0047590	0.24218
Mn2576		6.9169	ppm	0.0082630	0.11946
Mo2020		-0.00075100	ppm	0.00041200	54.909
Na5895		7.9341	ppm	0.053623	0.67586
Ni2316		0.00083600	ppm	0.00090200	107.85
P_1782		0.015436	ppm	0.00028200	1.8244
Pb2203		0.00062500	ppm	0.000050000	8.0765
S_1820		1.5323	ppm	0.0072460	0.47289
Sb2068		-0.00078100	ppm	0.0022470	287.57
Se1960		0.000055000	ppm	0.0039280	7,126.6
Si2881		4.6716	ppm	0.050494	1.0809
Sn1899		-0.00035200	ppm	0.00073800	209.40
Sr4077		0.090985	ppm	0.00045700	0.50177
Ti3349		0.011189	ppm	0.00064900	5.7992
Tl1908		0.011052	ppm	0.0035770	32.366
V_2924		0.013727	ppm	0.00074900	5.4565
Zn2062		0.0090780	ppm	0.00026100	2.8706
Y_2243		7,283.4	Cts/S	2.1494	0.029511
Y_3600		72,164	Cts/S	135.79	0.18817
Y_3774		4,491.3	Cts/S	5.1170	0.11393

sd 320-61256-D4A@25

Acquire Date: 6/3/2020 1:50:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00049400	ppm	0.0013700	277.49
Al3961		0.15223	ppm	0.0099280	6.5219
As1890		0.0013320	ppm	0.00059000	44.305
B_2089		0.011031	ppm	0.000053000	0.48277
Ba4554		0.020125	ppm	0.00034400	1.7086
Be3130		0.000039000	ppm	0.000070000	178.03
Ca3179		3.9344	ppm	0.0040470	0.10287
Cd2144		0.000042000	ppm	0.000084000	199.50
Co2286		0.000049000	ppm	0.00033900	694.95
Cr2677		0.011028	ppm	0.00066000	5.9824
Cu3247		0.00056000	ppm	0.000082000	14.712
Fe2599		0.20347	ppm	0.0058660	2.8832
K_7664		0.89164	ppm	0.058784	6.5928
Mg2790		0.41789	ppm	0.0038160	0.91323
Mn2576		1.3165	ppm	0.0029480	0.22390
Mo2020		-0.00064900	ppm	0.00040200	61.870
Na5895		1.5320	ppm	0.0011900	0.077707
Ni2316		0.00088500	ppm	0.00046100	52.111

sd 320-61256-D4A@25

Acquire Date: 6/3/2020 1:50:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.0016050	ppm	0.00030800	19.212
Pb2203		0.00098400	ppm	0.0028730	292.01
S_1820		0.29325	ppm	0.00014700	0.050229
Sb2068		-0.0040060	ppm	0.00078800	19.669
Se1960		-0.00050900	ppm	0.0024720	485.62
Si2881		0.84443	ppm	0.019496	2.3088
Sn1899		-0.00067600	ppm	0.0011640	172.10
Sr4077		0.017549	ppm	0.00023800	1.3551
Ti3349		0.0041900	ppm	0.000014000	0.33193
Tl1908		0.00037900	ppm	0.00031300	82.614
V_2924		0.0031150	ppm	0.000083000	2.6616
Zn2062		0.0063260	ppm	0.00024700	3.9120
Y_2243		7,257.7	Cts/S	16.378	0.22567
Y_3600		72,230	Cts/S	426.03	0.58982
Y_3774		4,431.7	Cts/S	0.76492	0.017260

320-61256-D-4-A@5

Acquire Date: 6/3/2020 1:53:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095212	ppm	0.00070700	0.74235
Al3961		9.6228	ppm	0.057382	0.59632
As1890		0.098003	ppm	0.0019700	2.0105
B_2089		0.97705	ppm	0.0046640	0.47740
Ba4554		0.19933	ppm	0.0010460	0.52493
Be3130		0.049469	ppm	0.00013500	0.27375
Ca3179		30.695	ppm	0.069860	0.22759
Cd2144		0.097450	ppm	0.000025000	0.025526
Co2286		0.097166	ppm	0.00018300	0.18831
Cr2677		0.15497	ppm	0.0018110	1.1688
Cu3247		0.094182	ppm	0.00086700	0.92040
Fe2599		4.0297	ppm	0.0056000	0.13897
K_7664		14.430	ppm	0.042048	0.29140
Mg2790		11.722	ppm	0.012488	0.10654
Mn2576		6.9630	ppm	0.019718	0.28318
Mo2020		0.096031	ppm	0.000032000	0.033312
Na5895		17.770	ppm	0.053933	0.30352
Ni2316		0.097346	ppm	0.00057500	0.59024
P_1782		0.96617	ppm	0.0047470	0.49133
Pb2203		0.10089	ppm	0.00061600	0.61034
S_1820		1.5226	ppm	0.0027460	0.18037
Sb2068		0.090945	ppm	0.00029300	0.32236
Se1960		0.098082	ppm	0.0074190	7.5645
Si2881		7.6343	ppm	0.10487	1.3736
Sn1899		0.099809	ppm	0.00027900	0.27978
Sr4077		0.18866	ppm	0.00061200	0.32428
Ti3349		0.097994	ppm	0.00095300	0.97228

320-61256-D-4-A@5

Acquire Date: 6/3/2020 1:53:59PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.099211	ppm	0.0018640	1.8793
V_2924		0.11130	ppm	0.00081300	0.73079
Zn2062		0.10033	ppm	0.000059000	0.059251
Y_2243		7,117.3	Cts/S	1.3684	0.019226
Y_3600		69,974	Cts/S	56.468	0.080698
Y_3774		4,414.6	Cts/S	11.356	0.25723

320-61256-D-4-B MS@5

Acquire Date: 6/3/2020 1:57:52PM Sample Type: Unknown
Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000
Analyst Name: admin
Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0096980	ppm	0.0013690	14.114
Al3961		0.94620	ppm	0.0012110	0.12795
As1890		0.092369	ppm	0.0018840	2.0394
B_2089		0.93187	ppm	0.0012050	0.12931
Ba4554		0.19244	ppm	0.00071500	0.37148
Be3130		0.046953	ppm	0.00011500	0.24598
Ca3179		23.719	ppm	0.015690	0.066148
Cd2144		0.046633	ppm	0.00017200	0.36789
Co2286		0.045608	ppm	0.00047900	1.0493
Cr2677		0.093497	ppm	0.0012550	1.3427
Cu3247		0.045037	ppm	0.00031600	0.70233
Fe2599		1.0030	ppm	0.010192	1.0161
K_7664		9.1212	ppm	0.13112	1.4376
Mg2790		6.4284	ppm	0.013394	0.20836
Mn2576		5.5552	ppm	0.018224	0.32805
Mo2020		0.045991	ppm	0.00050600	1.0997
Na5895		12.384	ppm	0.021752	0.17565
Ni2316		0.047001	ppm	0.0010390	2.2116
P_1782		0.96271	ppm	0.0015970	0.16586
Pb2203		0.046637	ppm	0.0010970	2.3514
S_1820		2.3946	ppm	0.0045430	0.18973
Sb2068		0.089461	ppm	0.0018900	2.1124
Se1960		0.090880	ppm	0.0022270	2.4508
Si2881		5.4287	ppm	0.024184	0.44548
Sn1899		0.099118	ppm	0.00080800	0.81522
Sr4077		0.13065	ppm	0.00047300	0.36241
Ti3349		0.046423	ppm	0.00040900	0.88145
Tl1908		0.098758	ppm	0.0011560	1.1708
V_2924		0.057026	ppm	0.0015450	2.7100
Zn2062		0.097380	ppm	0.00042400	0.43518
Y_2243		7,160.8	Cts/S	18.359	0.25638
Y_3600		70,894	Cts/S	426.33	0.60136
Y_3774		4,420.3	Cts/S	3.8982	0.088189

320-61256-D-4CMSD@5

Acquire Date: 6/3/2020 2:01:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0099640	ppm	0.0010840	10.881
Al3961		1.0285	ppm	0.0070710	0.68747
As1890		0.10015	ppm	0.0044290	4.4222
B_2089		0.97941	ppm	0.00041800	0.042665
Ba4554		0.20011	ppm	0.00029300	0.14623
Be3130		0.049675	ppm	0.00021800	0.43803
Ca3179		25.936	ppm	0.082857	0.31947
Cd2144		0.049263	ppm	0.000024000	0.048475
Co2286		0.048678	ppm	0.000078000	0.16110
Cr2677		0.10448	ppm	0.00062600	0.59912
Cu3247		0.046890	ppm	0.00067500	1.4393
Fe2599		1.0563	ppm	0.0062690	0.59351
K_7664		9.6188	ppm	0.12084	1.2562
Mg2790		6.8379	ppm	0.022839	0.33401
Mn2576		6.0650	ppm	0.011571	0.19079
Mo2020		0.048161	ppm	0.00018700	0.38828
Na5895		12.977	ppm	0.023987	0.18484
Ni2316		0.049466	ppm	0.00034500	0.69687
P_1782		1.0204	ppm	0.0017200	0.16852
Pb2203		0.050133	ppm	0.0022440	4.4761
S_1820		2.5249	ppm	0.0057910	0.22935
Sb2068		0.090439	ppm	0.0016200	1.7914
Se1960		0.097151	ppm	0.0016800	1.7290
Si2881		5.8065	ppm	0.043260	0.74503
Sn1899		0.10417	ppm	0.0014340	1.3767
Sr4077		0.14104	ppm	0.00055200	0.39106
Ti3349		0.049579	ppm	0.00062600	1.2616
Tl1908		0.10267	ppm	0.0030080	2.9294
V_2924		0.059835	ppm	0.0011710	1.9573
Zn2062		0.10275	ppm	0.00013000	0.12650
Y_2243		7,206.5	Cts/S	9.5016	0.13185
Y_3600		71,174	Cts/S	188.05	0.26421
Y_3774		4,475.6	Cts/S	4.6813	0.10460

blank1

Acquire Date: 6/3/2020 2:05:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000057000	ppm	0.00055900	979.65
Al3961		0.093796	ppm	0.029553	31.507
As1890		0.0054380	ppm	0.0014240	26.187
B_2089		0.0079310	ppm	0.000037000	0.46474
Ba4554		0.0010540	ppm	0.00045800	43.498
Be3130		0.00019300	ppm	0.000010000	5.4041
Ca3179		0.055573	ppm	0.00063900	1.1500
Cd2144		0.000059000	ppm	0.0000070000	12.170
Co2286		-0.00055500	ppm	0.00014700	26.480

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

blank1

Acquire Date: 6/3/2020 2:05:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00074500	ppm	0.00017000	22.785
Cu3247		-0.00055600	ppm	0.000056000	10.070
Fe2599		0.087841	ppm	0.018736	21.330
K_7664		-0.0063110	ppm	0.038238	605.87
Mg2790		0.026418	ppm	0.0019220	7.2745
Mn2576		0.0053410	ppm	0.000067000	1.2527
Mo2020		-0.00034000	ppm	0.00061100	179.79
Na5895		0.031290	ppm	0.00014200	0.45472
Ni2316		0.00065300	ppm	0.000046000	7.0583
P_1782		0.0013370	ppm	0.0025770	192.75
Pb2203		0.00029400	ppm	0.00021500	73.243
S_1820		0.013152	ppm	0.0014330	10.897
Sb2068		0.0010790	ppm	0.000070000	6.4793
Se1960		-0.00031600	ppm	0.00039700	125.80
Si2881		-0.012564	ppm	0.010505	83.610
Sn1899		-0.00040800	ppm	0.000089000	21.846
Sr4077		0.00036800	ppm	0.00010700	28.944
Ti3349		0.00072300	ppm	0.000038000	5.1958
Tl1908		-0.00094200	ppm	0.0013030	138.30
V_2924		0.000091000	ppm	0.00021600	237.93
Zn2062		0.0018850	ppm	0.00046100	24.466
Y_2243		7,248.7	Cts/S	11.113	0.15331
Y_3600		72,011	Cts/S	195.25	0.27114
Y_3774		4,430.8	Cts/S	11.323	0.25556

CCV 2010278

Acquire Date: 6/3/2020 2:09:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50672	ppm	0.00063700	0.12572	.50000	Rel(%)	Pass	
Al3961		25.394	ppm	0.11026	0.43420	25.000	Rel(%)	Pass	
As1890		0.51606	ppm	0.0024510	0.47487	.50000	Rel(%)	Pass	
B_2089		1.0378	ppm	0.00019200	0.018537	1.0000	Rel(%)	Pass	
Ba4554		2.5739	ppm	0.010877	0.42261	2.5000	Rel(%)	Pass	
Be3130		0.52260	ppm	0.0029930	0.57275	.50000	Rel(%)	Pass	
Ca3179		26.463	ppm	0.13638	0.51536	25.000	Rel(%)	Pass	
Cd2144		0.52073	ppm	0.000085000	0.016361	.50000	Rel(%)	Pass	
Co2286		2.5994	ppm	0.0038370	0.14762	2.5000	Rel(%)	Pass	
Cr2677		2.5494	ppm	0.011047	0.43333	2.5000	Rel(%)	Pass	
Cu3247		2.4761	ppm	0.0040870	0.16506	2.5000	Rel(%)	Pass	
Fe2599		26.811	ppm	0.14780	0.55127	25.000	Rel(%)	Pass	
K_7664		25.592	ppm	0.054218	0.21186	25.000	Rel(%)	Pass	
Mg2790		25.802	ppm	0.12891	0.49961	25.000	Rel(%)	Pass	
Mn2576		2.5980	ppm	0.0074120	0.28529	2.5000	Rel(%)	Pass	
Mo2020		1.0411	ppm	0.0032060	0.30792	1.0000	Rel(%)	Pass	
Na5895		25.689	ppm	0.12199	0.47487	25.000	Rel(%)	Pass	
Ni2316		2.6209	ppm	0.0034820	0.13285	2.5000	Rel(%)	Pass	
P_1782		2.5197	ppm	0.0043090	0.17100	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/3/2020 2:09:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.52719	ppm	0.00043400	0.082232	.50000	Rel(%)	Pass	
S_1820		2.4564	ppm	0.0030170	0.12281	2.5000	Rel(%)	Pass	
Sb2068		0.51318	ppm	0.0020540	0.40035	.50000	Rel(%)	Pass	
Se1960		0.51543	ppm	0.0015850	0.30742	.50000	Rel(%)	Pass	
Si2881		2.5517	ppm	0.0080910	0.31707	2.5000	Rel(%)	Pass	
Sn1899		2.6033	ppm	0.0032870	0.12627	2.5000	Rel(%)	Pass	
Sr4077		2.5891	ppm	0.012089	0.46692	2.5000	Rel(%)	Pass	
Ti3349		1.0307	ppm	0.0055640	0.53977	1.0000	Rel(%)	Pass	
Tl1908		0.52904	ppm	0.00013500	0.025579	.50000	Rel(%)	Pass	
V_2924		2.5445	ppm	0.0017620	0.069239	2.5000	Rel(%)	Pass	
Zn2062		2.5815	ppm	0.0037190	0.14405	2.5000	Rel(%)	Pass	
Y_2243		7,098.9	Cts/S	21.843	0.30770				
Y_3600		70,159	Cts/S	69.189	0.098617				
Y_3774		4,452.8	Cts/S	12.124	0.27228				

CCB 1815536

Acquire Date: 6/3/2020 2:13:25PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0010920	ppm	0.000046000	4.2243	.00000	Abs	Pass	
Al3961	**W**	**0.053939**	**ppm**	**0.0073150**	**13.562**	**.00000**	**Abs**	**Warn High**	**0.05000**
As1890		0.0048960	ppm	0.0012090	24.704	.00000	Abs	Pass	
B_2089		0.0074420	ppm	0.00026700	3.5914	.00000	Abs	Pass	
Ba4554		0.0010980	ppm	0.00021800	19.835	.00000	Abs	Pass	
Be3130		0.000039000	ppm	0.000063000	160.49	.00000	Abs	Pass	
Ca3179		0.028661	ppm	0.00064600	2.2545	.00000	Abs	Pass	
Cd2144		0.000024000	ppm	0.000045000	186.56	.00000	Abs	Pass	
Co2286		-0.00025900	ppm	0.00063800	246.85	.00000	Abs	Pass	
Cr2677		0.00031700	ppm	0.00016700	52.598	.00000	Abs	Pass	
Cu3247		0.0018240	ppm	0.00092700	50.828	.00000	Abs	Pass	
Fe2599	**W**	**0.092701**	**ppm**	**0.0049620**	**5.3531**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		-0.012036	ppm	0.050842	422.40	.00000	Abs	Pass	
Mg2790		0.024988	ppm	0.0011790	4.7190	.00000	Abs	Pass	
Mn2576		0.0039860	ppm	0.000039000	0.97379	.00000	Abs	Pass	
Mo2020		0.0034690	ppm	0.00012200	3.5305	.00000	Abs	Pass	
Na5895		0.026192	ppm	0.012937	49.394	.00000	Abs	Pass	
Ni2316		0.00077000	ppm	0.000012000	1.5600	.00000	Abs	Pass	
P_1782		0.00087400	ppm	0.000064000	7.3026	.00000	Abs	Pass	
Pb2203		0.00024100	ppm	0.00055200	229.65	.00000	Abs	Pass	
S_1820		0.0037220	ppm	0.00019000	5.1135	.00000	Abs	Pass	
Sb2068		0.0022690	ppm	0.0032510	143.27	.00000	Abs	Pass	
Se1960		-0.0016800	ppm	0.0059830	356.09	.00000	Abs	Pass	
Si2881		-0.045059	ppm	0.045918	101.91	.00000	Abs	Pass	
Sn1899		0.0028990	ppm	0.0012250	42.242	.00000	Abs	Pass	
Sr4077		0.00069400	ppm	0.000065000	9.3934	.00000	Abs	Pass	
Ti3349		0.0050260	ppm	0.00090900	18.085	.00000	Abs	Pass	
Tl1908		0.0011520	ppm	0.0015090	131.00	.00000	Abs	Pass	
V_2924		0.00014300	ppm	0.00019400	135.82	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 1815536

Acquire Date: 6/3/2020 2:13:25PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0023400	ppm	0.00033600	14.364	.00000	Abs	Pass	
Y_2243		7,211.5	Cts/S	17.437	0.24180				
Y_3600		71,424	Cts/S	84.429	0.11821				
Y_3774		4,370.8	Cts/S	2.2254	0.050915				

MB 320-382824/1-A

Acquire Date: 6/3/2020 2:17:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00058400	ppm	0.00084800	145.28
Al3961		0.023069	ppm	0.0054330	23.552
As1890		0.0039910	ppm	0.0027840	69.749
B_2089		0.0047280	ppm	0.0010150	21.475
Ba4554		0.00014300	ppm	0.00029800	208.41
Be3130		-0.00026500	ppm	0.000045000	16.968
Ca3179		0.013834	ppm	0.012618	91.210
Cd2144		0.000023000	ppm	0.0000060000	27.595
Co2286		-0.00047300	ppm	0.00016700	35.342
Cr2677		-0.00018500	ppm	0.000034000	18.223
Cu3247		0.00014200	ppm	0.0012750	900.95
Fe2599		-0.0034700	ppm	0.0080580	232.24
K_7664		-0.0066100	ppm	0.029368	444.27
Mg2790		0.0042610	ppm	0.0054050	126.86
Mn2576		0.00050900	ppm	0.00013300	26.210
Mo2020		0.000041000	ppm	0.00029500	710.39
Na5895		-0.019866	ppm	0.0011300	5.6870
Ni2316		-0.00027400	ppm	0.00018900	69.101
P_1782		-0.00061000	ppm	0.0053220	872.36
Pb2203		0.00068100	ppm	0.00038300	56.218
S_1820		0.0090510	ppm	0.0087340	96.496
Sb2068		-0.0026810	ppm	0.0013550	50.539
Se1960		-0.0023800	ppm	0.0019360	81.321
Si2881		-0.049077	ppm	0.021177	43.150
Sn1899		0.00099000	ppm	0.000095000	9.6069
Sr4077		0.00010100	ppm	0.00018400	181.12
Ti3349		-0.00046500	ppm	0.00018800	40.315
Tl1908		0.00072000	ppm	0.0019530	271.16
V_2924		0.000031000	ppm	0.00037900	1,236.7
Zn2062		0.0017360	ppm	0.000020000	1.1431
Y_2243		7,240.7	Cts/S	33.241	0.45909
Y_3600		71,986	Cts/S	84.043	0.11675
Y_3774		4,356.5	Cts/S	6.1772	0.14179

LCS 320-382824/2-A

Acquire Date: 6/3/2020 2:21:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047160	ppm	0.00018900	0.40111
Al3961		4.8496	ppm	0.029238	0.60289
As1890	**W**	**0.47622**	**ppm**	**0.0020020**	**0.42033**
B_2089		4.7372	ppm	0.0010260	0.021657
Ba4554	**W**	**0.48838**	**ppm**	**0.00051200**	**0.10485**
Be3130		0.24778	ppm	0.0011960	0.48249
Ca3179		25.167	ppm	0.0052260	0.020764
Cd2144	**W**	**0.24237**	**ppm**	**0.00015200**	**0.062731**
Co2286		0.24006	ppm	0.00085300	0.35547
Cr2677	**W**	**0.24192**	**ppm**	**0.00028100**	**0.11605**
Cu3247		0.23712	ppm	0.0014780	0.62333
Fe2599		5.1219	ppm	0.024865	0.48547
K_7664		24.403	ppm	0.051429	0.21074
Mg2790		24.815	ppm	0.062842	0.25324
Mn2576		0.24991	ppm	0.00046900	0.18755
Mo2020		0.24590	ppm	0.0010950	0.44537
Na5895		24.553	ppm	0.12399	0.50498
Ni2316		0.23802	ppm	0.000083000	0.034909
P_1782		5.0077	ppm	0.012870	0.25701
Pb2203	**W**	**0.24425**	**ppm**	**0.0053390**	**2.1860**
S_1820		4.8099	ppm	0.0095000	0.19751
Sb2068		0.46486	ppm	0.0031560	0.67882
Se1960	**W**	**0.47732**	**ppm**	**0.00011400**	**0.023892**
Si2881	**W**	**4.9839**	**ppm**	**0.073889**	**1.4825**
Sn1899		0.50103	ppm	0.0022510	0.44923
Sr4077		0.24647	ppm	0.00075200	0.30497
Ti3349	**W**	**0.24403**	**ppm**	**0.0012030**	**0.49288**
Tl1908		0.49448	ppm	0.00086100	0.17419
V_2924		0.24246	ppm	0.0016020	0.66067
Zn2062		0.49293	ppm	0.00091000	0.18469
Y_2243		7,131.5	Cts/S	4.1790	0.058599
Y_3600		70,165	Cts/S	128.77	0.18352
Y_3774		4,418.8	Cts/S	15.040	0.34038

LB 320-381783/1-B

Acquire Date: 6/3/2020 2:25:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0018300	ppm	0.0010860	59.332
Al3961		0.021284	ppm	0.015986	75.112
As1890		0.0029150	ppm	0.0014340	49.183
B_2089		0.053330	ppm	0.00077800	1.4592
Ba4554		0.046296	ppm	0.00030300	0.65541
Be3130		0.000040000	ppm	0.000091000	229.70
Ca3179		0.17866	ppm	0.014217	7.9574
Cd2144		0.000085000	ppm	0.00011300	132.78
Co2286		-0.00037300	ppm	0.00016300	43.716

LB 320-381783/1-B

Acquire Date: 6/3/2020 2:25:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0011220	ppm	0.00034600	30.878
Cu3247		0.0011310	ppm	0.00083700	73.972
Fe2599		0.025109	ppm	0.015074	60.033
K_7664		0.30312	ppm	0.017582	5.8006
Mg2790		0.021020	ppm	0.00064300	3.0578
Mn2576		0.00092000	ppm	0.00012300	13.428
Mo2020		0.00079400	ppm	0.00024100	30.418
Na5895	**F**	**1,214.4**	**ppm**	**5.6710**	**0.46699**
Ni2316		0.010304	ppm	0.0015990	15.515
P_1782		0.0033590	ppm	0.000074000	2.1904
Pb2203		0.0013140	ppm	0.00049100	37.372
S_1820		0.030818	ppm	0.00085800	2.7852
Sb2068		-0.0018400	ppm	0.0049500	268.98
Se1960		0.0025450	ppm	0.00027900	10.943
Si2881		-0.034348	ppm	0.039910	116.19
Sn1899		0.00040700	ppm	0.0015560	382.30
Sr4077		0.0017710	ppm	0.000037000	2.0939
Ti3349		0.0011940	ppm	0.00018000	15.097
Tl1908		-0.0024720	ppm	0.0012590	50.908
V_2924		-0.00013500	ppm	0.00049800	369.64
Zn2062		0.062047	ppm	0.00063200	1.0190
Y_2243		6,491.1	Cts/S	1.9239	0.029639
Y_3600		61,238	Cts/S	3.1519	0.0051470
Y_3774		4,228.2	Cts/S	14.035	0.33194

MB 320-382818/1-A

Acquire Date: 6/3/2020 2:29:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00053600	ppm	0.00034100	63.598
Al3961		0.031911	ppm	0.0034190	10.716
As1890		0.0048680	ppm	0.0027330	56.148
B_2089		0.0090610	ppm	0.0012680	13.992
Ba4554		0.00042300	ppm	0.00074000	174.90
Be3130		0.000020000	ppm	0.00025100	1,227.8
Ca3179		0.0082380	ppm	0.00024100	2.9220
Cd2144		0.000093000	ppm	0.0000030000	2.8192
Co2286		-0.00036000	ppm	0.000016000	4.4022
Cr2677		0.00078000	ppm	0.00034700	44.489
Cu3247		-0.00042100	ppm	0.00062600	148.69
Fe2599		-0.0035480	ppm	0.0088790	250.27
K_7664		0.020847	ppm	0.020542	98.539
Mg2790		-0.00039700	ppm	0.00043800	110.19
Mn2576		0.00030500	ppm	0.000054000	17.720
Mo2020		-0.00084400	ppm	0.00019500	23.055
Na5895	**W**	**0.56979**	**ppm**	**0.12656**	**22.212**
Ni2316		-0.00083600	ppm	0.00073900	88.398

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-382818/1-A

Acquire Date: 6/3/2020 2:29:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.00023300	ppm	0.0023150	992.44
Pb2203		0.00066300	ppm	0.0011520	173.89
S_1820		0.0072770	ppm	0.0022580	31.028
Sb2068		-0.00075800	ppm	0.00022800	30.129
Se1960		-0.0038750	ppm	0.0038430	99.156
Si2881		-0.0046490	ppm	0.020254	435.65
Sn1899		0.00058100	ppm	0.00026400	45.378
Sr4077		0.000036000	ppm	0.00017300	479.24
Ti3349		0.00010200	ppm	0.00048600	476.33
Tl1908		-0.0028180	ppm	0.0010330	36.664
V_2924		-0.00030200	ppm	0.000067000	22.199
Zn2062		0.0012630	ppm	0.00020200	15.964
Y_2243		7,173.8	Cts/S	58.695	0.81818
Y_3600		70,736	Cts/S	280.28	0.39623
Y_3774		4,313.8	Cts/S	9.5648	0.22173

LCS 320-382818/2-A

Acquire Date: 6/3/2020 2:33:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.045616	ppm	0.00018700	0.40905
Al3961		4.8436	ppm	0.018633	0.38470
As1890	**W**	**0.47678**	**ppm**	**0.00098600**	**0.20690**
B_2089		4.7301	ppm	0.0016300	0.034464
Ba4554	**W**	**0.48654**	**ppm**	**0.00039300**	**0.080859**
Be3130		0.24645	ppm	0.00096600	0.39180
Ca3179		25.043	ppm	0.066670	0.26622
Cd2144	**W**	**0.24076**	**ppm**	**0.00044200**	**0.18343**
Co2286		0.24040	ppm	0.00054900	0.22824
Cr2677	**W**	**0.24115**	**ppm**	**0.00061700**	**0.25594**
Cu3247		0.23428	ppm	0.00010400	0.044336
Fe2599		5.0943	ppm	0.013610	0.26716
K_7664		24.351	ppm	0.0047830	0.019641
Mg2790		24.728	ppm	0.077793	0.31460
Mn2576		0.24872	ppm	0.00042200	0.16966
Mo2020		0.24663	ppm	0.000036000	0.014655
Na5895		24.490	ppm	0.027917	0.11399
Ni2316		0.23874	ppm	0.00065300	0.27362
P_1782		4.9783	ppm	0.0031470	0.063210
Pb2203	**W**	**0.24669**	**ppm**	**0.00042500**	**0.17217**
S_1820		4.7974	ppm	0.015445	0.32195
Sb2068		0.46299	ppm	0.0037050	0.80027
Se1960	**W**	**0.47969**	**ppm**	**0.0025880**	**0.53958**
Si2881	**W**	**4.9191**	**ppm**	**0.028401**	**0.57736**
Sn1899		0.49828	ppm	0.00062600	0.12555
Sr4077		0.24486	ppm	0.00056400	0.23025
Ti3349	**W**	**0.24371**	**ppm**	**0.00022400**	**0.092114**

LCS 320-382818/2-A

Acquire Date: 6/3/2020 2:33:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.49145	ppm	0.00021700	0.044178
V_2924		0.24351	ppm	0.00081500	0.33478
Zn2062		0.49063	ppm	0.0019810	0.40381
Y_2243		7,173.2	Cts/S	25.508	0.35560
Y_3600		70,571	Cts/S	236.91	0.33571
Y_3774		4,457.0	Cts/S	11.523	0.25855

LB 320-381574/1-C

Acquire Date: 6/3/2020 2:37:05PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00092100	ppm	0.00060200	65.388
Al3961		0.033020	ppm	0.014194	42.987
As1890		0.0025640	ppm	0.000044000	1.7139
B_2089		0.036397	ppm	0.00052100	1.4328
Ba4554		0.016055	ppm	0.00019800	1.2356
Be3130		0.00038300	ppm	0.00041700	108.86
Ca3179		0.022026	ppm	0.0019800	8.9896
Cd2144		.0000020000	ppm	0.00010500	4,778.4
Co2286		-0.00043600	ppm	0.00019200	44.068
Cr2677		-0.00094500	ppm	0.00021500	22.795
Cu3247		-0.00045400	ppm	0.00028700	63.258
Fe2599		0.022445	ppm	0.0035330	15.741
K_7664		-0.033256	ppm	0.0089650	26.959
Mg2790		0.00054800	ppm	0.0016300	297.68
Mn2576		0.00041700	ppm	0.0000020000	0.45228
Mo2020		0.00033900	ppm	0.00064500	190.06
Na5895		0.15774	ppm	0.0056780	3.5996
Ni2316		-0.00075400	ppm	0.00041600	55.150
P_1782		0.00046600	ppm	0.00012500	26.808
Pb2203		-0.00017700	ppm	0.0020700	1,167.6
S_1820		0.0063550	ppm	0.00031400	4.9469
Sb2068		-0.0041440	ppm	0.0029830	71.984
Se1960		-0.0024260	ppm	0.0018600	76.692
Si2881		0.010157	ppm	0.037668	370.87
Sn1899		0.0011160	ppm	0.00061500	55.129
Sr4077		0.00021400	ppm	0.00013500	63.322
Ti3349		0.0018000	ppm	0.00000	0.017961
Tl1908		-0.0014660	ppm	0.0056110	382.67
V_2924		-0.00050600	ppm	0.00036700	72.480
Zn2062		0.016740	ppm	0.000063000	0.37850
Y_2243		7,293.8	Cts/S	10.916	0.14966
Y_3600		72,762	Cts/S	289.75	0.39822
Y_3774		4,453.2	Cts/S	18.960	0.42577

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-382493/1-B

Acquire Date: 6/3/2020 2:41:06PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00022000	ppm	0.00043000	195.39
Al3961		0.031914	ppm	0.0080780	25.313
As1890		0.0045350	ppm	0.00075500	16.646
B_2089		0.0096820	ppm	0.00013100	1.3562
Ba4554		0.00012100	ppm	0.00044100	363.69
Be3130		.0000080000	ppm	0.00036900	4,684.4
Ca3179		0.0062610	ppm	0.013491	215.46
Cd2144		-0.00011600	ppm	0.000030000	26.248
Co2286		-0.00051100	ppm	0.00015600	30.437
Cr2677		.0000020000	ppm	0.00071600	34,709
Cu3247		-0.00063800	ppm	0.00068400	107.26
Fe2599		-0.0078950	ppm	0.0034580	43.797
K_7664		-0.033039	ppm	0.035013	105.97
Mg2790		0.0020400	ppm	0.00075600	37.071
Mn2576		0.00026900	ppm	0.000026000	9.4983
Mo2020		-0.00039100	ppm	0.00030200	77.112
Na5895		0.045914	ppm	0.00050800	1.1055
Ni2316		-0.00086600	ppm	0.00015500	17.848
P_1782		-0.00011000	ppm	0.0010180	923.68
Pb2203		-0.00019300	ppm	0.00066200	342.17
S_1820		0.0027360	ppm	0.000068000	2.4758
Sb2068		-0.0021030	ppm	0.00030900	14.698
Se1960		-0.0062280	ppm	0.0025320	40.665
Si2881		0.0036560	ppm	0.0015230	41.649
Sn1899		0.0011840	ppm	0.00013300	11.245
Sr4077		0.00024100	ppm	0.00018900	78.402
Ti3349		-0.00059300	ppm	0.00071400	120.41
Tl1908		-0.0015500	ppm	0.0018730	120.85
V_2924		0.000088000	ppm	0.0000080000	9.5134
Zn2062		0.0014590	ppm	0.00028200	19.362
Y_2243		7,261.7	Cts/S	22.320	0.30736
Y_3600		72,014	Cts/S	613.84	0.85239
Y_3774		4,385.5	Cts/S	47.392	1.0807

LCS 320-382493/2-B

Acquire Date: 6/3/2020 2:45:05PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047514	ppm	0.00010800	0.22735
Al3961		4.8282	ppm	0.029730	0.61576
As1890	**W**	**0.48179**	**ppm**	**0.0018640**	**0.38690**
B_2089		4.7599	ppm	0.0017130	0.035983
Ba4554	**W**	**0.48924**	**ppm**	**0.0054340**	**1.1106**
Be3130		0.24886	ppm	0.0036510	1.4671
Ca3179		25.233	ppm	0.16269	0.64474
Cd2144	**W**	**0.24359**	**ppm**	**0.000034000**	**0.013798**
Co2286		0.24248	ppm	0.00052600	0.21688

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-382493/2-B

Acquire Date:	6/3/2020 2:45:05PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677	**W**	**0.24133**	**ppm**	**0.0019650**	**0.81416**
Cu3247		0.23598	ppm	0.0010890	0.46142
Fe2599		5.1563	ppm	0.032163	0.62376
K_7664		24.411	ppm	0.15585	0.63844
Mg2790		24.875	ppm	0.025448	0.10230
Mn2576		0.25010	ppm	0.000087000	0.034779
Mo2020		0.24814	ppm	0.00085900	0.34630
Na5895		24.518	ppm	0.19132	0.78033
Ni2316		0.24005	ppm	0.00097400	0.40593
P_1782		5.0153	ppm	0.0019620	0.039116
Pb2203	**W**	**0.24874**	**ppm**	**0.0029770**	**1.1969**
S_1820		4.8235	ppm	0.019614	0.40662
Sb2068		0.46474	ppm	0.0030960	0.66627
Se1960	**W**	**0.47792**	**ppm**	**0.0014260**	**0.29833**
Si2881	**W**	**5.0337**	**ppm**	**0.058895**	**1.1700**
Sn1899		0.50405	ppm	0.000095000	0.018937
Sr4077		0.24560	ppm	0.0021850	0.88983
Ti3349	**W**	**0.24428**	**ppm**	**0.00090800**	**0.37190**
Tl1908		0.49779	ppm	0.00043600	0.087522
V_2924		0.24351	ppm	0.0015770	0.64746
Zn2062		0.49304	ppm	0.0022380	0.45395
Y_2243		7,076.4	Cts/S	6.8384	0.096638
Y_3600		70,104	Cts/S	261.24	0.37265
Y_3774		4,416.7	Cts/S	7.1107	0.16099

MB 320-382794/1-A

Acquire Date:	6/3/2020 2:48:53PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0014040	ppm	0.0013280	94.649
Al3961		0.014744	ppm	0.0028840	19.561
As1890		0.0057180	ppm	0.00024500	4.2929
B_2089		0.017789	ppm	0.00020400	1.1463
Ba4554		0.000045000	ppm	0.00012400	273.79
Be3130		0.00010200	ppm	0.00026900	262.72
Ca3179		0.020743	ppm	0.00067800	3.2682
Cd2144		0.000043000	ppm	0.000073000	167.82
Co2286		-0.00061500	ppm	0.00022800	37.072
Cr2677		0.00017700	ppm	0.000079000	44.462
Cu3247		-0.00080900	ppm	0.000051000	6.3510
Fe2599		0.015441	ppm	0.0094840	61.417
K_7664		0.0022580	ppm	0.0029400	130.25
Mg2790		0.0016170	ppm	0.00051100	31.592
Mn2576		0.00030000	ppm	0.0000080000	2.7160
Mo2020		0.000047000	ppm	0.00028700	615.48
Na5895		0.019984	ppm	0.029947	149.86
Ni2316		-0.00015700	ppm	0.00033200	211.56

MB 320-382794/1-A

Acquire Date: 6/3/2020 2:48:53PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0021940	ppm	0.0015440	70.345
Pb2203		0.00012100	ppm	0.0010910	900.91
S_1820		0.0037310	ppm	0.0031510	84.452
Sb2068		-0.0026130	ppm	0.00099500	38.077
Se1960		-0.0022440	ppm	0.0024960	111.24
Si2881		-0.031807	ppm	0.017179	54.010
Sn1899		0.00083300	ppm	0.00050300	60.415
Sr4077		0.000051000	ppm	0.00014100	277.93
Ti3349		0.0013920	ppm	0.0000080000	0.58731
Tl1908		-0.00015500	ppm	0.0014920	965.35
V_2924		0.000036000	ppm	0.0010210	2,808.8
Zn2062		0.0015790	ppm	0.000068000	4.2879
Y_2243		7,168.6	Cts/S	3.7512	0.052328
Y_3600		71,230	Cts/S	282.17	0.39614
Y_3774		4,357.6	Cts/S	1.2413	0.028486

LCS 320-382794/2-A

Acquire Date: 6/3/2020 2:52:53PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048818	ppm	0.00045800	0.93779
Al3961		4.8880	ppm	0.015769	0.32261
As1890	**W**	**0.47779**	**ppm**	**0.0031170**	**0.65232**
B_2089		4.7530	ppm	0.0085220	0.17929
Ba4554	**W**	**0.49320**	**ppm**	**0.00018000**	**0.036515**
Be3130		0.25028	ppm	0.0014320	0.57228
Ca3179		25.438	ppm	0.039455	0.15510
Cd2144	**W**	**0.24274**	**ppm**	**0.00020600**	**0.084936**
Co2286		0.24325	ppm	0.00070800	0.29100
Cr2677	**W**	**0.24169**	**ppm**	**0.0014480**	**0.59923**
Cu3247		0.23633	ppm	0.00056000	0.23677
Fe2599		5.1585	ppm	0.024752	0.47983
K_7664		24.604	ppm	0.12451	0.50604
Mg2790		24.947	ppm	0.034935	0.14003
Mn2576		0.25054	ppm	0.000056000	0.022191
Mo2020		0.24822	ppm	0.00067200	0.27061
Na5895		24.676	ppm	0.10185	0.41274
Ni2316		0.24026	ppm	0.00058400	0.24301
P_1782		5.0178	ppm	0.016911	0.33701
Pb2203	**W**	**0.24844**	**ppm**	**0.0019770**	**0.79580**
S_1820		4.8144	ppm	0.010313	0.21420
Sb2068		0.46525	ppm	0.0018410	0.39563
Se1960	**W**	**0.48127**	**ppm**	**0.0032610**	**0.67756**
Si2881	**W**	**4.9655**	**ppm**	**0.0095680**	**0.19270**
Sn1899		0.50437	ppm	0.0010680	0.21174
Sr4077		0.24789	ppm	0.00086200	0.34756
Ti3349	**W**	**0.24515**	**ppm**	**0.00059700**	**0.24352**

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-382794/2-A

Acquire Date: 6/3/2020 2:52:53PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.49594	ppm	0.00098800	0.19927
V_2924		0.24411	ppm	0.00050900	0.20839
Zn2062		0.49290	ppm	0.0012050	0.24448
Y_2243		6,996.9	Cts/S	8.5915	0.12279
Y_3600		69,337	Cts/S	115.78	0.16698
Y_3774		4,325.8	Cts/S	17.639	0.40776

CCV 2010278

Acquire Date: 6/3/2020 2:56:40PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50760	ppm	0.0024010	0.47297	.50000	Rel(%)	Pass	
Al3961		25.092	ppm	0.24838	0.98988	25.000	Rel(%)	Pass	
As1890		0.51585	ppm	0.00057800	0.11213	.50000	Rel(%)	Pass	
B_2089		1.0464	ppm	0.0010240	0.097813	1.0000	Rel(%)	Pass	
Ba4554		2.5572	ppm	0.027905	1.0913	2.5000	Rel(%)	Pass	
Be3130		0.52057	ppm	0.0060040	1.1533	.50000	Rel(%)	Pass	
Ca3179		26.389	ppm	0.26006	0.98547	25.000	Rel(%)	Pass	
Cd2144		0.51692	ppm	0.00035500	0.068749	.50000	Rel(%)	Pass	
Co2286		2.6002	ppm	0.00044700	0.017201	2.5000	Rel(%)	Pass	
Cr2677		2.5395	ppm	0.0073870	0.29088	2.5000	Rel(%)	Pass	
Cu3247		2.4455	ppm	0.011409	0.46653	2.5000	Rel(%)	Pass	
Fe2599		26.775	ppm	0.33918	1.2668	25.000	Rel(%)	Pass	
K_7664		25.673	ppm	0.16516	0.64333	25.000	Rel(%)	Pass	
Mg2790		25.868	ppm	0.036324	0.14042	25.000	Rel(%)	Pass	
Mn2576		2.5951	ppm	0.0044640	0.17200	2.5000	Rel(%)	Pass	
Mo2020		1.0432	ppm	0.0016410	0.15729	1.0000	Rel(%)	Pass	
Na5895		25.695	ppm	0.23124	0.89994	25.000	Rel(%)	Pass	
Ni2316		2.6123	ppm	0.0015210	0.058226	2.5000	Rel(%)	Pass	
P_1782		2.5002	ppm	0.0029570	0.11829	2.5000	Rel(%)	Pass	
Pb2203		0.52854	ppm	0.0018500	0.35000	.50000	Rel(%)	Pass	
S_1820		2.4495	ppm	0.0085500	0.34906	2.5000	Rel(%)	Pass	
Sb2068		0.51022	ppm	0.0051850	1.0161	.50000	Rel(%)	Pass	
Se1960		0.51211	ppm	0.0039320	0.76783	.50000	Rel(%)	Pass	
Si2881		2.5189	ppm	0.062079	2.4646	2.5000	Rel(%)	Pass	
Sn1899		2.6004	ppm	0.0028770	0.11065	2.5000	Rel(%)	Pass	
Sr4077		2.5751	ppm	0.025972	1.0086	2.5000	Rel(%)	Pass	
Ti3349		1.0270	ppm	0.0010200	0.099284	1.0000	Rel(%)	Pass	
Tl1908		0.53047	ppm	0.0054610	1.0295	.50000	Rel(%)	Pass	
V_2924		2.5390	ppm	0.0066270	0.26101	2.5000	Rel(%)	Pass	
Zn2062		2.5672	ppm	0.00057700	0.022479	2.5000	Rel(%)	Pass	
Y_2243		7,006.9	Cts/S	7.8047	0.11139				
Y_3600		68,949	Cts/S	98.852	0.14337				
Y_3774		4,333.1	Cts/S	17.564	0.40534				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 1815536

Acquire Date: 6/3/2020 3:00:27PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0011350	ppm	0.00078000	68.742	.00000	Abs	Pass	
Al3961		0.021403	ppm	0.0023410	10.939	.00000	Abs	Pass	
As1890		0.0042110	ppm	0.0022280	52.915	.00000	Abs	Pass	
B_2089		0.013156	ppm	0.0012480	9.4861	.00000	Abs	Pass	
Ba4554		0.00042700	ppm	0.00051600	120.78	.00000	Abs	Pass	
Be3130		0.00032200	ppm	0.00033700	104.49	.00000	Abs	Pass	
Ca3179		0.0080970	ppm	0.015875	196.06	.00000	Abs	Pass	
Cd2144		0.000021000	ppm	0.000029000	140.92	.00000	Abs	Pass	
Co2286		-0.00027100	ppm	0.00041100	151.83	.00000	Abs	Pass	
Cr2677		0.00031200	ppm	0.00056200	179.99	.00000	Abs	Pass	
Cu3247		0.00016700	ppm	0.00087100	521.01	.00000	Abs	Pass	
Fe2599		0.028135	ppm	0.0077180	27.432	.00000	Abs	Pass	
K_7664		0.013672	ppm	0.00074000	5.4137	.00000	Abs	Pass	
Mg2790		0.0013830	ppm	0.0044080	318.64	.00000	Abs	Pass	
Mn2576		0.00040300	ppm	0.000022000	5.4434	.00000	Abs	Pass	
Mo2020		0.0032260	ppm	0.00026400	8.1716	.00000	Abs	Pass	
Na5895		0.013645	ppm	0.014009	102.67	.00000	Abs	Pass	
Ni2316		0.00058200	ppm	0.00053300	91.661	.00000	Abs	Pass	
P_1782		0.0020120	ppm	0.00016800	8.3395	.00000	Abs	Pass	
Pb2203		-0.0016980	ppm	0.0019630	115.61	.00000	Abs	Pass	
S_1820		0.0034900	ppm	0.0036750	105.31	.00000	Abs	Pass	
Sb2068		0.0029010	ppm	0.00077700	26.797	.00000	Abs	Pass	
Se1960		-0.0037050	ppm	0.0029340	79.179	.00000	Abs	Pass	
Si2881		-0.013157	ppm	0.0081850	62.208	.00000	Abs	Pass	
Sn1899		0.0017730	ppm	0.00057100	32.213	.00000	Abs	Pass	
Sr4077		0.00038100	ppm	0.00015800	41.551	.00000	Abs	Pass	
Ti3349		0.0041990	ppm	0.00021700	5.1589	.00000	Abs	Pass	
Tl1908		0.0020500	ppm	0.0038820	189.36	.00000	Abs	Pass	
V_2924		0.00057000	ppm	0.00078300	137.34	.00000	Abs	Pass	
Zn2062		0.0012310	ppm	0.00024000	19.524	.00000	Abs	Pass	
Y_2243		7,247.1	Cts/S	26.440	0.36483				
Y_3600		72,406	Cts/S	98.142	0.13554				
Y_3774		4,416.2	Cts/S	4.4462	0.10068				

320-61149-A-1-E

Acquire Date: 6/3/2020 3:04:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0024180	ppm	0.00051000	21.087
Al3961		0.16027	ppm	0.012600	7.8617
As1890		0.0016480	ppm	0.00022100	13.411
B_2089		0.22531	ppm	0.0012260	0.54419
Ba4554		0.15312	ppm	0.0010090	0.65888
Be3130		-0.00012800	ppm	0.00037700	294.10
Ca3179		447.49	ppm	0.14021	0.031332
Cd2144		0.0014160	ppm	0.0000010000	0.069281
Co2286		0.010742	ppm	0.00016600	1.5445
Cr2677		0.0043720	ppm	0.00044400	10.161

320-61149-A-1-E

Acquire Date: 6/3/2020 3:04:28PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.0060160	ppm	0.000087000	1.4396
Fe2599		1.4440	ppm	0.018453	1.2779
K_7664		3.5060	ppm	0.057281	1.6338
Mg2790		40.916	ppm	0.093333	0.22811
Mn2576		1.6905	ppm	0.0025600	0.15142
Mo2020		0.00030800	ppm	0.00029300	95.169
Na5895	**F**	**1,264.9**	**ppm**	**18.283**	**1.4454**
Ni2316		0.12717	ppm	0.00056100	0.44086
P_1782		0.0038980	ppm	0.0016910	43.382
Pb2203		0.010872	ppm	0.0029740	27.357
S_1820		9.9439	ppm	0.000025000	0.00025100
Sb2068		-0.00020500	ppm	0.0068450	3,338.2
Se1960		-0.0030040	ppm	0.0013830	46.043
Si2881		2.3400	ppm	0.022681	0.96927
Sn1899		0.0011990	ppm	0.00074300	61.937
Sr4077		3.6468	ppm	0.00040200	0.011036
Ti3349		-0.0022590	ppm	0.00038000	16.810
Tl1908		-0.0040630	ppm	0.000031000	0.77122
V_2924		0.0036460	ppm	0.00042300	11.613
Zn2062	**W**	**13.684**	**ppm**	**0.0074190**	**0.054215**
Y_2243		6,299.0	Cts/S	9.5565	0.15172
Y_3600		60,157	Cts/S	0.44468	0.00073900
Y_3774		4,229.6	Cts/S	14.859	0.35131

sd 320-61149-A-1-E@5

Acquire Date: 6/3/2020 3:08:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00095900	ppm	0.0012730	132.79
Al3961		0.049667	ppm	0.015510	31.228
As1890		0.0031360	ppm	0.000059000	1.8789
B_2089		0.051815	ppm	0.00043200	0.83404
Ba4554		0.030617	ppm	0.00050300	1.6414
Be3130		0.000054000	ppm	0.00033600	622.54
Ca3179		89.818	ppm	0.64199	0.71477
Cd2144		0.00024100	ppm	0.000021000	8.8912
Co2286		0.0015300	ppm	0.000015000	0.98653
Cr2677		0.00097500	ppm	0.00097900	100.39
Cu3247		0.0013450	ppm	0.00086300	64.143
Fe2599		0.28337	ppm	0.0049560	1.7490
K_7664		0.69180	ppm	0.029019	4.1948
Mg2790		8.2804	ppm	0.017963	0.21693
Mn2576		0.33590	ppm	0.00073500	0.21880
Mo2020		0.00011800	ppm	0.000024000	20.448
Na5895	**W**	**267.43**	**ppm**	**1.9792**	**0.74008**
Ni2316		0.025801	ppm	0.00043300	1.6800
P_1782		-0.00050900	ppm	0.00098000	192.54

sd 320-61149-A-1-E@5

Acquire Date: 6/3/2020 3:08:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		0.0026220	ppm	0.0012510	47.728
S_1820		1.9073	ppm	0.0030060	0.15759
Sb2068		-0.0012940	ppm	0.00053700	41.479
Se1960		-0.00089700	ppm	0.0011880	132.42
Si2881		0.45133	ppm	0.022158	4.9095
Sn1899		0.00070600	ppm	0.00067100	94.945
Sr4077		0.71824	ppm	0.0035950	0.50056
Ti3349		-0.0014110	ppm	0.00048700	34.525
Tl1908		-0.0023080	ppm	0.00012700	5.4996
V_2924		0.00074400	ppm	0.00035500	47.720
Zn2062		2.7779	ppm	0.0071700	0.25809
Y_2243		6,852.6	Cts/S	12.731	0.18578
Y_3600		66,883	Cts/S	142.81	0.21352
Y_3774		4,307.7	Cts/S	3.2527	0.075510

pds 320-61149-A-1-E

Acquire Date: 6/3/2020 3:12:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095179	ppm	0.00027700	0.29075
Al3961		9.7587	ppm	0.011067	0.11340
As1890		0.10505	ppm	0.00019500	0.18536
B_2089		1.0810	ppm	0.00017700	0.016327
Ba4554		0.24329	ppm	0.0016770	0.68911
Be3130		0.048000	ppm	0.00047200	0.98361
Ca3179		440.67	ppm	2.7074	0.61439
Cd2144		0.095261	ppm	0.00020800	0.21825
Co2286		0.10243	ppm	0.00063900	0.62350
Cr2677		0.099854	ppm	0.00070800	0.70895
Cu3247		0.10083	ppm	0.00019000	0.18880
Fe2599		5.2959	ppm	0.060047	1.1339
K_7664		14.140	ppm	0.10271	0.72638
Mg2790		48.563	ppm	0.080485	0.16573
Mn2576		1.7171	ppm	0.0039430	0.22965
Mo2020		0.097748	ppm	0.00011300	0.11547
Na5895	**F**	**1,202.6**	**ppm**	**4.3484**	**0.36157**
Ni2316		0.21311	ppm	0.00090200	0.42317
P_1782		1.0251	ppm	0.0030850	0.30099
Pb2203		0.10354	ppm	0.00091300	0.88177
S_1820		9.6296	ppm	0.031979	0.33210
Sb2068		0.084287	ppm	0.0081790	9.7042
Se1960		0.098649	ppm	0.0019190	1.9454
Si2881		5.4109	ppm	0.050986	0.94229
Sn1899		0.095676	ppm	0.000039000	0.040733
Sr4077		3.6202	ppm	0.020956	0.57887
Ti3349		0.097013	ppm	0.000023000	0.023393
Tl1908		0.079501	ppm	0.0045370	5.7070

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 320-61149-A-1-E

Acquire Date:	6/3/2020 3:12:29PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.10351	ppm	0.0012890	1.2451
Zn2062	**W**	**13.260**	**ppm**	**0.034771**	**0.26222**
Y_2243		6,321.2	Cts/S	9.8519	0.15586
Y_3600		60,534	Cts/S	346.02	0.57162
Y_3774		4,210.7	Cts/S	21.283	0.50545

320-61149-A-1-F MS

Acquire Date:	6/3/2020 3:16:25PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.043674	ppm	0.00072100	1.6513
Al3961		4.6321	ppm	0.012389	0.26746
As1890		0.46391	ppm	0.00038200	0.082356
B_2089		4.1926	ppm	0.00024600	0.0058640
Ba4554		0.59911	ppm	0.0017500	0.29208
Be3130		0.22507	ppm	0.00059200	0.26308
Ca3179		469.78	ppm	2.4337	0.51805
Cd2144		0.21934	ppm	0.00039900	0.18185
Co2286		0.22556	ppm	0.00018000	0.079812
Cr2677		0.22681	ppm	0.00059400	0.26168
Cu3247		0.22496	ppm	0.0010040	0.44635
Fe2599		6.0295	ppm	0.058271	0.96643
K_7664		28.645	ppm	0.10170	0.35505
Mg2790		62.818	ppm	0.12641	0.20123
Mn2576		1.9132	ppm	0.0043390	0.22679
Mo2020		0.23147	ppm	0.000049000	0.020968
Na5895	**F**	**1,213.6**	**ppm**	**3.2336**	**0.26645**
Ni2316		0.34076	ppm	0.0026200	0.76877
P_1782		4.9072	ppm	0.011262	0.22951
Pb2203		0.22199	ppm	0.00016500	0.074553
S_1820		14.766	ppm	0.0030870	0.020908
Sb2068		0.42019	ppm	0.0023270	0.55373
Se1960		0.44981	ppm	0.0044080	0.97993
Si2881		7.0798	ppm	0.038689	0.54648
Sn1899		0.45274	ppm	0.00095200	0.21019
Sr4077		3.8942	ppm	0.015150	0.38904
Ti3349		0.22994	ppm	0.0010920	0.47507
Tl1908		0.39496	ppm	0.0026480	0.67045
V_2924		0.23499	ppm	0.00076600	0.32588
Zn2062	**W**	**13.982**	**ppm**	**0.023179**	**0.16578**
Y_2243		6,308.2	Cts/S	9.7085	0.15390
Y_3600		60,519	Cts/S	61.043	0.10087
Y_3774		4,217.1	Cts/S	9.2651	0.21970

320-61149-A-1-G MSD

Acquire Date: 6/3/2020 3:20:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046260	ppm	0.00033100	0.71586
Al3961		4.8880	ppm	0.011357	0.23235
As1890		0.48228	ppm	0.00077800	0.16126
B_2089		4.3958	ppm	0.0054820	0.12470
Ba4554		0.62384	ppm	0.0027840	0.44632
Be3130		0.23852	ppm	0.0017820	0.74705
Ca3179		474.93	ppm	1.7504	0.36855
Cd2144		0.22988	ppm	0.00010700	0.046601
Co2286		0.23685	ppm	0.00059700	0.25210
Cr2677		0.23888	ppm	0.00093900	0.39328
Cu3247		0.23719	ppm	0.00047800	0.20173
Fe2599		6.3246	ppm	0.0014770	0.023351
K_7664		29.906	ppm	0.22498	0.75227
Mg2790		64.315	ppm	0.043255	0.067254
Mn2576		1.9397	ppm	0.0036240	0.18681
Mo2020		0.24290	ppm	0.00053500	0.22020
Na5895	**F**	**1,216.3**	**ppm**	**0.49289**	**0.040526**
Ni2316		0.34863	ppm	0.0014850	0.42596
P_1782		5.1574	ppm	0.010154	0.19688
Pb2203		0.23084	ppm	0.0036460	1.5793
S_1820		15.067	ppm	0.025396	0.16855
Sb2068		0.43837	ppm	0.0053640	1.2237
Se1960		0.47500	ppm	0.0010210	0.21485
Si2881		7.3794	ppm	0.032698	0.44309
Sn1899		0.47478	ppm	0.00054900	0.11570
Sr4077		3.9326	ppm	0.018423	0.46846
Ti3349		0.24368	ppm	0.000083000	0.034053
Tl1908		0.41537	ppm	0.0029410	0.70801
V_2924		0.24795	ppm	0.0021300	0.85916
Zn2062	**W**	**14.090**	**ppm**	**0.031119**	**0.22087**
Y_2243		6,298.6	Cts/S	12.779	0.20288
Y_3600		60,214	Cts/S	17.019	0.028264
Y_3774		4,206.2	Cts/S	11.526	0.27401

320-60840-A-3-O

Acquire Date: 6/3/2020 3:24:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010890	ppm	0.00081200	74.511
Al3961		0.060301	ppm	0.0082880	13.744
As1890		0.0034970	ppm	0.0033260	95.097
B_2089		0.048916	ppm	0.00077600	1.5864
Ba4554		0.041755	ppm	0.00049500	1.1849
Be3130		-0.00012400	ppm	0.000041000	33.155
Ca3179		399.29	ppm	1.6328	0.40893
Cd2144		-0.00011600	ppm	0.000016000	13.346
Co2286		-0.00020400	ppm	0.00025600	125.57

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-60840-A-3-O

Acquire Date: 6/3/2020 3:24:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0010960	ppm	0.00054000	49.254
Cu3247		0.00045600	ppm	0.000076000	16.585
Fe2599		0.011942	ppm	0.014573	122.03
K_7664		0.43381	ppm	0.012604	2.9054
Mg2790		5.6852	ppm	0.0036740	0.064619
Mn2576		0.029117	ppm	0.00010700	0.36614
Mo2020		0.00025300	ppm	0.00022900	90.730
Na5895		6.4305	ppm	0.19748	3.0710
Ni2316		0.0016120	ppm	0.00023500	14.587
P_1782		0.013066	ppm	0.00023800	1.8235
Pb2203		-0.0010640	ppm	0.0017540	164.76
S_1820		1.1988	ppm	0.0077540	0.64681
Sb2068		-0.0045520	ppm	0.0032250	70.842
Se1960		-0.0045010	ppm	0.0016230	36.062
Si2881		0.71826	ppm	0.058626	8.1623
Sn1899		0.00038400	ppm	0.00036100	93.942
Sr4077		0.38325	ppm	0.0017310	0.45156
Ti3349		-0.00037900	ppm	0.000094000	24.729
Tl1908		-0.0021250	ppm	0.00083700	39.400
V_2924		0.00054900	ppm	0.0000080000	1.3844
Zn2062		0.022712	ppm	0.00052000	2.2902
Y_2243		6,790.2	Cts/S	7.8439	0.11552
Y_3600		67,214	Cts/S	57.678	0.085812
Y_3774		4,322.5	Cts/S	11.132	0.25753

sd 320-60840-A-3-O@5

Acquire Date: 6/3/2020 3:28:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0015930	ppm	0.00076300	47.897
Al3961		0.034729	ppm	0.0038660	11.133
As1890		0.0042360	ppm	0.0042390	100.07
B_2089		0.018788	ppm	0.00015500	0.82422
Ba4554		0.0089490	ppm	0.00035200	3.9372
Be3130		-0.00014100	ppm	0.00038700	274.26
Ca3179		80.950	ppm	0.44938	0.55513
Cd2144		0.000053000	ppm	0.000029000	55.353
Co2286		-0.00038900	ppm	0.000087000	22.325
Cr2677		-0.00057400	ppm	0.00019400	33.709
Cu3247		-0.00036200	ppm	0.00012700	35.021
Fe2599		-0.021548	ppm	0.0042700	19.817
K_7664		0.062205	ppm	0.043647	70.167
Mg2790		1.1752	ppm	0.0039980	0.34022
Mn2576		0.0063450	ppm	0.00014200	2.2423
Mo2020		-0.00014800	ppm	0.000025000	16.667
Na5895		1.4083	ppm	0.051479	3.6555
Ni2316		-0.00073000	ppm	0.00023000	31.553

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

sd 320-60840-A-3-O@5

Acquire Date: 6/3/2020 3:28:11PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.00045200	ppm	0.0016400	363.33
Pb2203		-0.00091800	ppm	0.00079300	86.387
S_1820		0.24023	ppm	0.0039370	1.6388
Sb2068		0.0015110	ppm	0.0049070	324.75
Se1960		-0.0066160	ppm	0.00023700	3.5815
Si2881		0.13786	ppm	0.019276	13.982
Sn1899		-0.00034100	ppm	0.00099500	292.00
Sr4077		0.077427	ppm	0.00063500	0.82071
Ti3349		-0.0012360	ppm	0.00078300	63.352
Tl1908		-0.0013370	ppm	0.0010260	76.715
V_2924		0.000076000	ppm	0.00032800	430.73
Zn2062		0.0059600	ppm	0.00023400	3.9198
Y_2243		7,134.1	Cts/S	1.6637	0.023321
Y_3600		70,753	Cts/S	167.41	0.23661
Y_3774		4,367.7	Cts/S	8.3280	0.19067

pds 320-60840-A-3-O

Acquire Date: 6/3/2020 3:32:10PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.096748	ppm	0.0011040	1.1414
Al3961		9.8322	ppm	0.066405	0.67539
As1890		0.093811	ppm	0.0013100	1.3963
B_2089		0.97122	ppm	0.0013240	0.13631
Ba4554		0.13827	ppm	0.0013920	1.0064
Be3130		0.048608	ppm	0.00012800	0.26287
Ca3179		397.59	ppm	2.2448	0.56461
Cd2144		0.094991	ppm	0.00020800	0.21923
Co2286		0.093983	ppm	0.00022400	0.23883
Cr2677		0.094851	ppm	0.00038600	0.40694
Cu3247		0.092223	ppm	0.00018200	0.19716
Fe2599		3.9000	ppm	0.056007	1.4361
K_7664		10.516	ppm	0.15426	1.4669
Mg2790		14.881	ppm	0.032557	0.21878
Mn2576		0.12644	ppm	0.00010500	0.082876
Mo2020		0.097970	ppm	0.00019800	0.20181
Na5895		15.598	ppm	0.082409	0.52832
Ni2316		0.094645	ppm	0.00065300	0.68988
P_1782		1.0016	ppm	0.0048070	0.47992
Pb2203		0.094662	ppm	0.0051810	5.4733
S_1820		1.1541	ppm	0.00023900	0.020708
Sb2068		0.086060	ppm	0.0035750	4.1544
Se1960		0.094447	ppm	0.00057300	0.60713
Si2881		3.7696	ppm	0.076456	2.0282
Sn1899		0.099534	ppm	0.0017050	1.7131
Sr4077		0.47109	ppm	0.0017520	0.37197
Ti3349		0.096473	ppm	0.00023300	0.24122

pds 320-60840-A-3-O

Acquire Date: 6/3/2020 3:32:10PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.092031	ppm	0.0023870	2.5940
V_2924		0.098403	ppm	0.00094900	0.96398
Zn2062		0.11020	ppm	0.00061500	0.55841
Y_2243		6,686.9	Cts/S	6.5370	0.097757
Y_3600		65,740	Cts/S	249.02	0.37879
Y_3774		4,205.4	Cts/S	15.261	0.36288

320-60840-A-3-R MS

Acquire Date: 6/3/2020 3:36:03PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.042960	ppm	0.0013060	3.0394
Al3961		4.6892	ppm	0.028613	0.61019
As1890		0.45311	ppm	0.0065560	1.4470
B_2089		4.3899	ppm	0.0057660	0.13135
Ba4554		0.50351	ppm	0.0025230	0.50112
Be3130		0.23321	ppm	0.0023150	0.99262
Ca3179		434.22	ppm	1.5637	0.36013
Cd2144		0.22281	ppm	0.00030700	0.13792
Co2286		0.21842	ppm	0.00028000	0.12816
Cr2677		0.22427	ppm	0.0011910	0.53086
Cu3247		0.21597	ppm	0.0018180	0.84156
Fe2599		4.7642	ppm	0.024417	0.51250
K_7664		24.300	ppm	0.13679	0.56294
Mg2790		28.003	ppm	0.077977	0.27847
Mn2576		0.25910	ppm	0.00095900	0.36994
Mo2020		0.23567	ppm	0.000062000	0.026180
Na5895		29.495	ppm	0.15217	0.51592
Ni2316		0.21811	ppm	0.00091500	0.41968
P_1782		4.8388	ppm	0.018242	0.37699
Pb2203		0.22397	ppm	0.0030980	1.3831
S_1820		5.8356	ppm	0.021856	0.37453
Sb2068		0.42767	ppm	0.0030830	0.72096
Se1960		0.44197	ppm	0.0037290	0.84363
Si2881		5.4937	ppm	0.0031730	0.057750
Sn1899		0.47398	ppm	0.0014230	0.30032
Sr4077		0.62589	ppm	0.0026290	0.42010
Ti3349		0.23131	ppm	0.000079000	0.034360
Tl1908		0.44139	ppm	0.0021040	0.47673
V_2924		0.23053	ppm	0.00045200	0.19587
Zn2062		0.45970	ppm	0.00051200	0.11136
Y_2243		6,735.2	Cts/S	3.2733	0.048600
Y_3600		66,478	Cts/S	130.50	0.19630
Y_3774		4,289.0	Cts/S	7.9342	0.18499

320-60840-A-3-S MSD

Acquire Date: 6/3/2020 3:39:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.042130	ppm	0.00057300	1.3609
Al3961		4.4164	ppm	0.080176	1.8154
As1890		0.43641	ppm	0.0032930	0.75467
B_2089		4.2580	ppm	0.0089060	0.20917
Ba4554		0.47654	ppm	0.0082790	1.7373
Be3130		0.22167	ppm	0.0037870	1.7085
Ca3179		392.24	ppm	6.4450	1.6431
Cd2144		0.21494	ppm	0.00022100	0.10303
Co2286		0.21094	ppm	0.00028200	0.13360
Cr2677		0.21741	ppm	0.00077600	0.35686
Cu3247		0.21030	ppm	0.00038400	0.18240
Fe2599		4.5046	ppm	0.086225	1.9141
K_7664		23.081	ppm	0.36210	1.5688
Mg2790		26.948	ppm	0.067696	0.25120
Mn2576		0.24904	ppm	0.0011980	0.48103
Mo2020		0.22698	ppm	0.00047700	0.21020
Na5895		27.846	ppm	0.42957	1.5427
Ni2316		0.20895	ppm	0.0017370	0.83149
P_1782		4.6775	ppm	0.016809	0.35937
Pb2203		0.21979	ppm	0.0072460	3.2969
S_1820		5.5681	ppm	0.0099110	0.17799
Sb2068		0.41106	ppm	0.0019220	0.46763
Se1960		0.42623	ppm	0.0042270	0.99167
Si2881		5.1580	ppm	0.10185	1.9746
Sn1899		0.45725	ppm	0.0013060	0.28552
Sr4077		0.57636	ppm	0.010217	1.7726
Ti3349		0.22380	ppm	0.000056000	0.025185
Tl1908		0.43058	ppm	0.0036540	0.84873
V_2924		0.22328	ppm	0.00046200	0.20671
Zn2062		0.44514	ppm	0.00087600	0.19687
Y_2243		6,765.1	Cts/S	10.541	0.15582
Y_3600		66,375	Cts/S	186.96	0.28167
Y_3774		4,317.4	Cts/S	27.646	0.64035

CCV 2010278

Acquire Date: 6/3/2020 3:43:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51104	ppm	0.00016200	0.031784	.50000	Rel(%)	Pass	
Al3961		25.380	ppm	0.023720	0.093459	25.000	Rel(%)	Pass	
As1890		0.51356	ppm	0.00031500	0.061404	.50000	Rel(%)	Pass	
B_2089		1.0513	ppm	0.0020870	0.19847	1.0000	Rel(%)	Pass	
Ba4554		2.5668	ppm	0.0036230	0.14114	2.5000	Rel(%)	Pass	
Be3130		0.52143	ppm	0.0016940	0.32481	.50000	Rel(%)	Pass	
Ca3179		26.572	ppm	0.016690	0.062811	25.000	Rel(%)	Pass	
Cd2144		0.52052	ppm	0.00067600	0.12990	.50000	Rel(%)	Pass	
Co2286		2.5986	ppm	0.0021880	0.084211	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/3/2020 3:43:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.5633	ppm	0.0043270	0.16880	2.5000	Rel(%)	Pass	
Cu3247		2.4793	ppm	0.0092820	0.37438	2.5000	Rel(%)	Pass	
Fe2599		26.750	ppm	0.069207	0.25872	25.000	Rel(%)	Pass	
K_7664		25.728	ppm	0.16854	0.65508	25.000	Rel(%)	Pass	
Mg2790		26.005	ppm	0.042892	0.16494	25.000	Rel(%)	Pass	
Mn2576		2.6035	ppm	0.0057470	0.22075	2.5000	Rel(%)	Pass	
Mo2020		1.0400	ppm	0.0025130	0.24160	1.0000	Rel(%)	Pass	
Na5895		25.805	ppm	0.031638	0.12261	25.000	Rel(%)	Pass	
Ni2316		2.6208	ppm	0.0036130	0.13788	2.5000	Rel(%)	Pass	
P_1782		2.5065	ppm	0.019560	0.78037	2.5000	Rel(%)	Pass	
Pb2203		0.52482	ppm	0.0037890	0.72196	.50000	Rel(%)	Pass	
S_1820		2.4476	ppm	0.015795	0.64535	2.5000	Rel(%)	Pass	
Sb2068		0.51192	ppm	0.000011000	0.0021110	.50000	Rel(%)	Pass	
Se1960		0.51897	ppm	0.0017570	0.33856	.50000	Rel(%)	Pass	
Si2881		2.5313	ppm	0.029712	1.1738	2.5000	Rel(%)	Pass	
Sn1899		2.6052	ppm	0.00042200	0.016191	2.5000	Rel(%)	Pass	
Sr4077		2.5891	ppm	0.0043420	0.16771	2.5000	Rel(%)	Pass	
Ti3349		1.0300	ppm	0.0031220	0.30315	1.0000	Rel(%)	Pass	
Tl1908		0.52875	ppm	0.0072880	1.3783	.50000	Rel(%)	Pass	
V_2924		2.5544	ppm	0.0036960	0.14468	2.5000	Rel(%)	Pass	
Zn2062		2.5968	ppm	0.0064870	0.24981	2.5000	Rel(%)	Pass	
Y_2243		6,982.2	Cts/S	11.124	0.15932				
Y_3600		68,422	Cts/S	85.674	0.12521				
Y_3774		4,292.0	Cts/S	7.7116	0.17967				

CCB 1815536

Acquire Date: 6/3/2020 3:47:25PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0010400	ppm	0.00041200	39.657	.00000	Abs	Pass	
Al3961		0.0029280	ppm	0.016329	557.70	.00000	Abs	Pass	
As1890		0.0039140	ppm	0.00076200	19.461	.00000	Abs	Pass	
B_2089		0.015641	ppm	0.00024100	1.5398	.00000	Abs	Pass	
Ba4554		0.0012800	ppm	0.00033200	25.946	.00000	Abs	Pass	
Be3130		0.00024400	ppm	0.00017200	70.546	.00000	Abs	Pass	
Ca3179		0.028938	ppm	0.017006	58.767	.00000	Abs	Pass	
Cd2144		0.000037000	ppm	0.000062000	167.65	.00000	Abs	Pass	
Co2286		-0.00031500	ppm	0.00033800	107.42	.00000	Abs	Pass	
Cr2677		-0.00026800	ppm	0.000083000	30.825	.00000	Abs	Pass	
Cu3247		0.00046200	ppm	0.00083900	181.58	.00000	Abs	Pass	
Fe2599		0.026252	ppm	0.00020700	0.78996	.00000	Abs	Pass	
K_7664		0.015703	ppm	0.0085060	54.167	.00000	Abs	Pass	
Mg2790		0.0060360	ppm	0.0014770	24.466	.00000	Abs	Pass	
Mn2576		0.00053000	ppm	0.000092000	17.322	.00000	Abs	Pass	
Mo2020		0.0032580	ppm	0.00027400	8.4255	.00000	Abs	Pass	
Na5895		0.077516	ppm	0.014227	18.353	.00000	Abs	Pass	
Ni2316		0.00051900	ppm	0.00023400	44.998	.00000	Abs	Pass	
P_1782		.0000090000	ppm	0.000016000	176.33	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/3/2020 3:47:25PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.0011530	ppm	0.0032040	277.82	.00000	Abs	Pass	
S_1820		0.0018910	ppm	0.0016430	86.909	.00000	Abs	Pass	
Sb2068		-0.0024320	ppm	0.0010790	44.384	.00000	Abs	Pass	
Se1960		0.0018170	ppm	0.00014200	7.8058	.00000	Abs	Pass	
Si2881		-0.023914	ppm	0.0027520	11.507	.00000	Abs	Pass	
Sn1899		0.0021720	ppm	0.00071900	33.114	.00000	Abs	Pass	
Sr4077		0.00035000	ppm	0.00028700	82.005	.00000	Abs	Pass	
Ti3349		0.0035000	ppm	0.000083000	2.3809	.00000	Abs	Pass	
Tl1908		0.00072600	ppm	0.00028700	39.573	.00000	Abs	Pass	
V_2924		0.00017900	ppm	0.000021000	12.000	.00000	Abs	Pass	
Zn2062		0.0028490	ppm	0.00018100	6.3550	.00000	Abs	Pass	
Y_2243		7,191.2	Cts/S	4.9617	0.068997				
Y_3600		71,076	Cts/S	416.18	0.58554				
Y_3774		4,324.9	Cts/S	5.7920	0.13392				

320-61326-A-1-D

Acquire Date: 6/3/2020 3:51:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010160	ppm	0.000041000	4.0313
Al3961		0.032687	ppm	0.023533	71.996
As1890		0.0050260	ppm	0.000066000	1.3177
B_2089		3.1895	ppm	0.0061010	0.19129
Ba4554		0.23240	ppm	0.00025400	0.10945
Be3130		0.00011500	ppm	0.00011300	98.331
Ca3179		61.555	ppm	0.31202	0.50690
Cd2144		-0.00023500	ppm	0.000075000	31.776
Co2286		-0.00034700	ppm	0.00027100	78.068
Cr2677		0.020289	ppm	0.000057000	0.28155
Cu3247		0.00082600	ppm	0.0017190	208.01
Fe2599		-0.011415	ppm	0.0099230	86.929
K_7664		1.0434	ppm	0.0071600	0.68620
Mg2790		108.84	ppm	0.29794	0.27375
Mn2576		0.0010980	ppm	0.000021000	1.9300
Mo2020		0.00073100	ppm	0.00038400	52.588
Na5895		87.498	ppm	0.29876	0.34145
Ni2316		0.0023060	ppm	0.00084000	36.442
P_1782		0.035722	ppm	0.0025260	7.0701
Pb2203		-0.0042620	ppm	0.00094100	22.071
S_1820		34.588	ppm	0.016508	0.047727
Sb2068		-0.0013240	ppm	0.00018700	14.142
Se1960		0.0099420	ppm	0.0013900	13.985
Si2881		10.511	ppm	0.038767	0.36884
Sn1899		0.0047220	ppm	0.0014630	30.986
Sr4077		0.96556	ppm	0.0024900	0.25789
Ti3349		-0.00031500	ppm	0.00027600	87.462
Tl1908		-0.0016810	ppm	0.0031110	185.07

320-61326-A-1-D

Acquire Date: 6/3/2020 3:51:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.0023590	ppm	0.0014730	62.458
Zn2062		0.0056120	ppm	0.00065600	11.693
Y_2243		6,885.2	Cts/S	11.824	0.17173
Y_3600		68,166	Cts/S	450.92	0.66151
Y_3774		4,351.5	Cts/S	3.5540	0.081673

sd 320-61326-A-1-D@5

Acquire Date: 6/3/2020 3:55:23PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00059500	ppm	0.00013500	22.637
Al3961		0.019005	ppm	0.000022000	0.11457
As1890		0.0027110	ppm	0.0016570	61.100
B_2089		0.64374	ppm	0.00098900	0.15369
Ba4554		0.046920	ppm	0.00012100	0.25840
Be3130		0.000090000	ppm	0.000038000	42.359
Ca3179		12.468	ppm	0.058443	0.46875
Cd2144		-0.00020800	ppm	0.000022000	10.448
Co2286		-0.00057900	ppm	0.000053000	9.0807
Cr2677		0.0040590	ppm	0.00014600	3.5855
Cu3247		-0.00063600	ppm	0.00021100	33.134
Fe2599		-0.015724	ppm	0.015567	99.005
K_7664		0.17368	ppm	0.048000	27.637
Mg2790		21.956	ppm	0.060393	0.27507
Mn2576		0.00036400	ppm	0.00025300	69.546
Mo2020		-0.00013200	ppm	0.00012900	97.890
Na5895		17.459	ppm	0.079281	0.45411
Ni2316		0.0010460	ppm	0.00024600	23.523
P_1782		0.0022100	ppm	0.0028320	128.13
Pb2203		0.00076700	ppm	0.0024340	317.23
S_1820		6.7688	ppm	0.033510	0.49506
Sb2068		0.0022490	ppm	0.0046520	206.90
Se1960		0.0010470	ppm	0.0032800	313.34
Si2881		2.0720	ppm	0.0081440	0.39305
Sn1899		0.00094100	ppm	0.0012780	135.80
Sr4077		0.19445	ppm	0.0011150	0.57337
Ti3349		-0.00068800	ppm	0.00015000	21.753
Tl1908		0.00010900	ppm	0.0012040	1,108.6
V_2924		0.00082400	ppm	0.000083000	10.059
Zn2062		0.0013600	ppm	0.00054900	40.389
Y_2243		6,993.0	Cts/S	3.6545	0.052260
Y_3600		68,711	Cts/S	217.95	0.31720
Y_3774		4,269.3	Cts/S	54.935	1.2868

pds 320-61326-A-1-D

Acquire Date: 6/3/2020 3:59:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.097425	ppm	0.00046400	0.47668
Al3961		9.7830	ppm	0.031152	0.31843
As1890		0.097977	ppm	0.0012550	1.2811
B_2089		4.0112	ppm	0.0012140	0.030263
Ba4554		0.32300	ppm	0.0012360	0.38264
Be3130		0.049407	ppm	0.00022200	0.44949
Ca3179		69.206	ppm	0.30120	0.43522
Cd2144		0.096125	ppm	0.00022200	0.23120
Co2286		0.092205	ppm	0.00045800	0.49654
Cr2677		0.11675	ppm	0.00066200	0.56743
Cu3247		0.093796	ppm	0.0010420	1.1107
Fe2599		3.9923	ppm	0.022036	0.55196
K_7664		10.966	ppm	0.065733	0.59940
Mg2790		115.58	ppm	0.078766	0.068151
Mn2576		0.10014	ppm	0.000030000	0.029937
Mo2020		0.098661	ppm	0.00090300	0.91531
Na5895		94.337	ppm	0.47163	0.49994
Ni2316		0.093218	ppm	0.0014930	1.6014
P_1782		1.0234	ppm	0.0021640	0.21150
Pb2203		0.092869	ppm	0.0021950	2.3632
S_1820		33.360	ppm	0.023029	0.069030
Sb2068		0.092388	ppm	0.00072900	0.78902
Se1960		0.10840	ppm	0.00089900	0.82908
Si2881		13.171	ppm	0.16949	1.2868
Sn1899		0.10217	ppm	0.0014790	1.4472
Sr4077		1.0315	ppm	0.0038070	0.36907
Ti3349		0.097994	ppm	0.00074300	0.75770
Tl1908		0.093166	ppm	0.0029060	3.1193
V_2924		0.10186	ppm	0.00048300	0.47456
Zn2062		0.10152	ppm	0.00085800	0.84527
Y_2243		6,801.0	Cts/S	29.339	0.43139
Y_3600		66,174	Cts/S	374.29	0.56562
Y_3774		4,200.2	Cts/S	34.255	0.81555

320-61326-A-1-E MS

Acquire Date: 6/3/2020 4:03:10PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047719	ppm	0.00085600	1.7948
Al3961		4.9449	ppm	0.011688	0.23636
As1890		0.48849	ppm	0.0010390	0.21272
B_2089	**W**	**8.1878**	**ppm**	**0.012984**	**0.15858**
Ba4554		0.73432	ppm	0.0037220	0.50685
Be3130		0.24924	ppm	0.00042700	0.17138
Ca3179		89.837	ppm	0.25508	0.28394
Cd2144		0.23839	ppm	0.00010700	0.045089
Co2286		0.22930	ppm	0.000013000	0.0055730

320-61326-A-1-E MS

Acquire Date: 6/3/2020 4:03:10PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.26319	ppm	0.00073300	0.27863
Cu3247		0.23372	ppm	0.0031250	1.3371
Fe2599		5.0821	ppm	0.048532	0.95496
K_7664		26.119	ppm	0.13179	0.50459
Mg2790		140.51	ppm	0.30145	0.21454
Mn2576		0.24647	ppm	0.00050100	0.20321
Mo2020		0.25029	ppm	0.0013640	0.54478
Na5895		117.26	ppm	0.44215	0.37705
Ni2316		0.23034	ppm	0.00038600	0.16761
P_1782		5.1671	ppm	0.016845	0.32600
Pb2203		0.23286	ppm	0.0011380	0.48852
S_1820		43.069	ppm	0.12243	0.28427
Sb2068		0.46572	ppm	0.0029790	0.63962
Se1960		0.48849	ppm	0.0045510	0.93158
Si2881		16.528	ppm	0.11408	0.69024
Sn1899		0.50263	ppm	0.0021990	0.43755
Sr4077		1.2693	ppm	0.0032860	0.25889
Ti3349		0.24801	ppm	0.0018280	0.73707
Tl1908		0.46757	ppm	0.00031200	0.066790
V_2924		0.24886	ppm	0.0016200	0.65097
Zn2062		0.48846	ppm	0.0012140	0.24856
Y_2243		6,808.0	Cts/S	51.794	0.76079
Y_3600		66,153	Cts/S	57.789	0.087357
Y_3774		4,265.9	Cts/S	5.8409	0.13692

320-61326-A-1-F MSD

Acquire Date: 6/3/2020 4:06:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.041923	ppm	0.00092500	2.2060
Al3961		4.2388	ppm	0.033449	0.78911
As1890		0.42078	ppm	0.0025190	0.59867
B_2089	**W**	**7.0838**	**ppm**	**0.034556**	**0.48782**
Ba4554		0.63725	ppm	0.00076600	0.12022
Be3130		0.21454	ppm	0.00042200	0.19652
Ca3179		78.284	ppm	0.21050	0.26889
Cd2144		0.20657	ppm	0.0011350	0.54963
Co2286		0.19855	ppm	0.0018010	0.90683
Cr2677		0.22664	ppm	0.00010200	0.044813
Cu3247		0.20130	ppm	0.000053000	0.026285
Fe2599		4.3764	ppm	0.026391	0.60303
K_7664		22.581	ppm	0.074585	0.33030
Mg2790		122.47	ppm	0.21525	0.17576
Mn2576		0.21333	ppm	0.00052400	0.24577
Mo2020		0.21537	ppm	0.0010100	0.46888
Na5895		102.41	ppm	0.20796	0.20306
Ni2316		0.19839	ppm	0.0023550	1.1869

320-61326-A-1-F MSD

Acquire Date: 6/3/2020 4:06:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.4508	ppm	0.015762	0.35414
Pb2203		0.20447	ppm	0.00017400	0.085107
S_1820		37.168	ppm	0.11461	0.30835
Sb2068		0.39787	ppm	0.0047330	1.1897
Se1960		0.42676	ppm	0.0015860	0.37162
Si2881		14.274	ppm	0.042544	0.29806
Sn1899		0.43709	ppm	0.0021390	0.48936
Sr4077		1.1074	ppm	0.0017230	0.15559
Ti3349		0.21403	ppm	0.00010500	0.048882
Tl1908		0.40667	ppm	0.00093800	0.23072
V_2924		0.21533	ppm	0.000041000	0.019264
Zn2062		0.42318	ppm	0.00088400	0.20884
Y_2243		6,858.2	Cts/S	8.4257	0.12286
Y_3600		67,249	Cts/S	185.61	0.27600
Y_3774		4,305.6	Cts/S	0.16818	0.0039060

320-61326-A-2-B

Acquire Date: 6/3/2020 4:10:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0022880	ppm	0.00044600	19.493
Al3961		0.033393	ppm	0.011099	33.237
As1890		0.0042400	ppm	0.0020450	48.233
B_2089		3.8331	ppm	0.00042300	0.011030
Ba4554		0.24091	ppm	0.00027000	0.11189
Be3130		0.00023500	ppm	0.00018500	78.973
Ca3179		61.558	ppm	0.072247	0.11736
Cd2144		-0.00022500	ppm	0.00013100	58.203
Co2286		-0.00037900	ppm	0.000026000	6.7929
Cr2677		0.020439	ppm	0.00047500	2.3224
Cu3247		0.00049100	ppm	0.00013500	27.557
Fe2599		0.0071330	ppm	0.0058550	82.089
K_7664		1.0218	ppm	0.023577	2.3074
Mg2790		109.23	ppm	0.29137	0.26675
Mn2576		0.00023100	ppm	0.000036000	15.537
Mo2020		0.0015020	ppm	0.000032000	2.1078
Na5895		99.836	ppm	0.26620	0.26664
Ni2316		0.0019780	ppm	0.0014740	74.507
P_1782		0.036876	ppm	0.00037100	1.0065
Pb2203		0.000072000	ppm	0.0024020	3,346.8
S_1820		29.855	ppm	0.025856	0.086603
Sb2068		-0.00097400	ppm	0.0074070	760.48
Se1960		0.014214	ppm	0.0035770	25.164
Si2881		11.360	ppm	0.013027	0.11467
Sn1899		0.0035790	ppm	0.00038200	10.663
Sr4077		0.96788	ppm	0.0021380	0.22087
Ti3349		0.00038500	ppm	0.00052300	135.79

320-61326-A-2-B

Acquire Date: 6/3/2020 4:10:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00014100	ppm	0.0028940	2,058.3
V_2924		0.0043190	ppm	0.00022300	5.1608
Zn2062		0.0053140	ppm	0.0000030000	0.053911
Y_2243		6,739.9	Cts/S	1.9698	0.029225
Y_3600		66,442	Cts/S	178.18	0.26817
Y_3774		4,244.6	Cts/S	0.22501	0.0053010

390-61326-A-3-B

Acquire Date: 6/3/2020 4:14:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0011780	ppm	0.0011380	96.596
Al3961		0.013796	ppm	0.010429	75.594
As1890		0.0063730	ppm	0.0019530	30.645
B_2089		3.3359	ppm	0.0052130	0.15627
Ba4554		0.20547	ppm	0.00017900	0.086997
Be3130		0.000087000	ppm	0.00017000	196.26
Ca3179		56.395	ppm	0.28791	0.51052
Cd2144		-0.00013900	ppm	0.000050000	35.756
Co2286		-0.00052900	ppm	0.000047000	8.8264
Cr2677		0.017358	ppm	0.00012500	0.71924
Cu3247		0.00042300	ppm	0.00081300	192.18
Fe2599		-0.0019500	ppm	0.015609	800.54
K_7664		1.0265	ppm	0.023425	2.2821
Mg2790		99.032	ppm	0.20924	0.21128
Mn2576		0.00022600	ppm	0.00011800	52.280
Mo2020		0.00065400	ppm	0.00019400	29.662
Na5895		94.553	ppm	0.48799	0.51610
Ni2316		0.0023670	ppm	0.00089700	37.901
P_1782		0.039584	ppm	0.0016210	4.0945
Pb2203		-0.0010070	ppm	0.0025600	254.21
S_1820		28.726	ppm	0.035549	0.12375
Sb2068		-0.0019760	ppm	0.00025700	13.029
Se1960		0.0076100	ppm	0.0012100	15.896
Si2881		10.509	ppm	0.073495	0.69937
Sn1899		0.0011420	ppm	0.00097100	85.015
Sr4077		0.84830	ppm	0.0032640	0.38472
Ti3349		-0.00097900	ppm	0.000044000	4.5460
Tl1908		-0.0027950	ppm	0.00010300	3.6952
V_2924		0.0034510	ppm	0.00056900	16.485
Zn2062		0.0035940	ppm	0.00015300	4.2633
Y_2243		6,760.4	Cts/S	62.161	0.91949
Y_3600		66,485	Cts/S	95.509	0.14365
Y_3774		4,212.6	Cts/S	9.6098	0.22812

320-61326-A-4-B

Acquire Date: 6/3/2020 4:18:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00058500	ppm	0.0011070	189.18
Al3961		0.015312	ppm	0.022076	144.17
As1890		0.0050060	ppm	0.0031500	62.934
B_2089		4.2999	ppm	0.00066800	0.015546
Ba4554		0.22837	ppm	0.000026000	0.011173
Be3130		0.000044000	ppm	0.00046400	1,052.0
Ca3179		75.268	ppm	0.30237	0.40173
Cd2144		-0.00030000	ppm	0.00011500	38.327
Co2286		-0.00053200	ppm	0.000043000	8.0561
Cr2677		0.010996	ppm	0.00040100	3.6502
Cu3247		0.00024100	ppm	0.00092300	383.67
Fe2599		-0.017659	ppm	0.0031980	18.108
K_7664		0.85111	ppm	0.088215	10.365
Mg2790		137.95	ppm	0.35760	0.25922
Mn2576		0.00073500	ppm	0.000066000	8.9150
Mo2020		0.00061700	ppm	0.00019100	30.995
Na5895		124.83	ppm	0.59452	0.47627
Ni2316		0.0029350	ppm	0.00064100	21.827
P_1782		0.038512	ppm	0.0011890	3.0878
Pb2203		-0.0019500	ppm	0.000042000	2.1391
S_1820		35.964	ppm	0.089289	0.24827
Sb2068		0.00040900	ppm	0.0022730	555.67
Se1960		0.017902	ppm	0.0010030	5.6004
Si2881		11.042	ppm	0.00027500	0.0024900
Sn1899		0.0015400	ppm	0.0010110	65.635
Sr4077		1.1463	ppm	0.0038190	0.33318
Ti3349		-0.0015320	ppm	0.00074800	48.873
Tl1908		0.0016480	ppm	0.0013540	82.160
V_2924		0.0062580	ppm	0.00049400	7.8887
Zn2062		0.0080070	ppm	0.00029300	3.6611
Y_2243		6,691.1	Cts/S	34.988	0.52291
Y_3600		65,421	Cts/S	173.66	0.26545
Y_3774		4,191.7	Cts/S	5.8216	0.13888

320-61326-A-5-B

Acquire Date: 6/3/2020 4:22:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0015890	ppm	0.00080000	50.334
Al3961		0.044431	ppm	0.0053690	12.085
As1890		0.0042330	ppm	0.00069400	16.397
B_2089		3.1138	ppm	0.0013770	0.044225
Ba4554		0.46429	ppm	0.00029000	0.062553
Be3130		0.00022700	ppm	0.00011400	50.145
Ca3179		63.906	ppm	0.00044300	0.00069300
Cd2144		-0.00027200	ppm	0.000074000	27.041
Co2286		.0000010000	ppm	0.00012900	16,056

320-61326-A-5-B

Acquire Date: 6/3/2020 4:22:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00055700	ppm	0.00069100	124.19
Cu3247		0.000036000	ppm	0.00049500	1,390.7
Fe2599		-0.019713	ppm	0.012242	62.102
K_7664		1.2507	ppm	0.029326	2.3448
Mg2790		92.426	ppm	0.15540	0.16814
Mn2576		0.20624	ppm	0.00043400	0.21067
Mo2020		-0.00014400	ppm	0.00023000	159.86
Na5895		88.320	ppm	0.20544	0.23261
Ni2316		0.0044880	ppm	0.000036000	0.79678
P_1782		0.015080	ppm	0.0026680	17.693
Pb2203		-0.0028130	ppm	0.0012490	44.397
S_1820		26.665	ppm	0.079242	0.29717
Sb2068		-0.0021430	ppm	0.0023670	110.44
Se1960		0.016326	ppm	0.0033450	20.488
Si2881		10.194	ppm	0.052422	0.51425
Sn1899		0.0018580	ppm	0.00011600	6.2388
Sr4077		0.90764	ppm	0.0012460	0.13726
Ti3349		-0.00069800	ppm	0.00055200	79.085
Tl1908		-0.0029560	ppm	0.0030880	104.49
V_2924		0.0022350	ppm	0.00027100	12.139
Zn2062		0.0023370	ppm	0.00016000	6.8298
Y_2243		6,824.0	Cts/S	0.059291	0.00086900
Y_3600		66,470	Cts/S	78.546	0.11817
Y_3774		4,212.7	Cts/S	21.938	0.52077

320-61326-A-6-B

Acquire Date: 6/3/2020 4:26:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00067200	ppm	0.000061000	9.0369
Al3961		0.041086	ppm	0.0087710	21.347
As1890		0.0026940	ppm	0.0018820	69.889
B_2089		3.5977	ppm	0.0011070	0.030759
Ba4554		0.39052	ppm	0.00072100	0.18472
Be3130		0.000074000	ppm	0.00010500	141.41
Ca3179		76.608	ppm	0.094359	0.12317
Cd2144		-0.00021700	ppm	0.000067000	31.059
Co2286		0.00084900	ppm	0.000028000	3.2964
Cr2677		0.00065800	ppm	0.00019200	29.103
Cu3247		-0.00021400	ppm	0.00017600	82.365
Fe2599		1.9923	ppm	0.0045500	0.22838
K_7664		1.3449	ppm	0.022446	1.6689
Mg2790		118.95	ppm	0.14880	0.12510
Mn2576		0.94092	ppm	0.00064300	0.068371
Mo2020		0.0020200	ppm	0.00063800	31.606
Na5895		110.33	ppm	0.40204	0.36441
Ni2316		0.012086	ppm	0.00094100	7.7855

320-61326-A-6-B

Acquire Date: 6/3/2020 4:26:38PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.00044000	ppm	0.00017000	38.685
Pb2203		-0.00076500	ppm	0.0020120	262.86
S_1820		29.923	ppm	0.097669	0.32640
Sb2068		0.0015170	ppm	0.0012710	83.810
Se1960		0.0010130	ppm	0.00071500	70.581
Si2881		8.7635	ppm	0.0043020	0.049086
Sn1899		-0.00023600	ppm	0.00043000	182.45
Sr4077		1.0453	ppm	0.0038530	0.36860
Ti3349		-0.0015430	ppm	0.00067100	43.478
Tl1908		0.00022800	ppm	0.0035740	1,570.2
V_2924		0.0031010	ppm	0.00020600	6.6394
Zn2062		0.31518	ppm	0.000080000	0.025353
Y_2243		6,731.8	Cts/S	6.1057	0.090698
Y_3600		66,115	Cts/S	129.10	0.19527
Y_3774		4,163.3	Cts/S	0.50819	0.012207

CCV 2010278

Acquire Date: 6/3/2020 4:30:35PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50979	ppm	0.0029490	0.57845	.50000	Rel(%)	Pass	
Al3961		25.506	ppm	0.096781	0.37944	25.000	Rel(%)	Pass	
As1890		0.51663	ppm	0.0010460	0.20240	.50000	Rel(%)	Pass	
B_2089		1.0600	ppm	0.0014730	0.13897	1.0000	Rel(%)	Pass	
Ba4554		2.5810	ppm	0.011292	0.43750	2.5000	Rel(%)	Pass	
Be3130		0.52236	ppm	0.0017670	0.33829	.50000	Rel(%)	Pass	
Ca3179		26.581	ppm	0.053694	0.20200	25.000	Rel(%)	Pass	
Cd2144		0.52350	ppm	0.00032500	0.062053	.50000	Rel(%)	Pass	
Co2286		2.6075	ppm	0.00058500	0.022450	2.5000	Rel(%)	Pass	
Cr2677		2.5646	ppm	0.012015	0.46850	2.5000	Rel(%)	Pass	
Cu3247		2.4730	ppm	0.0054840	0.22177	2.5000	Rel(%)	Pass	
Fe2599		26.891	ppm	0.085328	0.31732	25.000	Rel(%)	Pass	
K_7664		25.717	ppm	0.023953	0.093141	25.000	Rel(%)	Pass	
Mg2790		26.009	ppm	0.097159	0.37355	25.000	Rel(%)	Pass	
Mn2576		2.6083	ppm	0.0062250	0.23865	2.5000	Rel(%)	Pass	
Mo2020		1.0415	ppm	0.0046200	0.44356	1.0000	Rel(%)	Pass	
Na5895		25.916	ppm	0.12511	0.48277	25.000	Rel(%)	Pass	
Ni2316		2.6304	ppm	0.00062000	0.023570	2.5000	Rel(%)	Pass	
P_1782		2.5134	ppm	0.0099520	0.39594	2.5000	Rel(%)	Pass	
Pb2203		0.52807	ppm	0.0016060	0.30417	.50000	Rel(%)	Pass	
S_1820		2.4714	ppm	0.00041500	0.016807	2.5000	Rel(%)	Pass	
Sb2068		0.51347	ppm	0.0053860	1.0490	.50000	Rel(%)	Pass	
Se1960		0.51955	ppm	0.0020480	0.39428	.50000	Rel(%)	Pass	
Si2881		2.5774	ppm	0.011619	0.45081	2.5000	Rel(%)	Pass	
Sn1899		2.6170	ppm	0.010026	0.38313	2.5000	Rel(%)	Pass	
Sr4077		2.5945	ppm	0.0066810	0.25752	2.5000	Rel(%)	Pass	
Ti3349		1.0309	ppm	0.00098500	0.095556	1.0000	Rel(%)	Pass	
Tl1908		0.53185	ppm	0.00039800	0.074741	.50000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/3/2020 4:30:35PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5588	ppm	0.0063050	0.24641	2.5000	Rel(%)	Pass	
Zn2062		2.6033	ppm	0.0078640	0.30209	2.5000	Rel(%)	Pass	
Y_2243		6,931.0	Cts/S	15.897	0.22937				
Y_3600		68,057	Cts/S	74.619	0.10964				
Y_3774		4,252.9	Cts/S	0.50619	0.011902				

CCB 1815536

Acquire Date: 6/3/2020 4:34:22PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00019700	ppm	0.00033100	168.07	.00000	Abs	Pass	
Al3961		0.034278	ppm	0.0038520	11.239	.00000	Abs	Pass	
As1890		0.0043410	ppm	0.000082000	1.8943	.00000	Abs	Pass	
B_2089		0.021427	ppm	0.000012000	0.055678	.00000	Abs	Pass	
Ba4554		0.00050600	ppm	0.00040700	80.470	.00000	Abs	Pass	
Be3130		0.00014800	ppm	0.00022200	150.21	.00000	Abs	Pass	
Ca3179		0.0092290	ppm	0.00078600	8.5196	.00000	Abs	Pass	
Cd2144		0.000017000	ppm	0.0000050000	26.687	.00000	Abs	Pass	
Co2286		-0.00048300	ppm	0.00014400	29.800	.00000	Abs	Pass	
Cr2677		-0.00049400	ppm	0.00015500	31.379	.00000	Abs	Pass	
Cu3247		0.00075500	ppm	0.000060000	7.9059	.00000	Abs	Pass	
Fe2599		0.039331	ppm	0.0016710	4.2477	.00000	Abs	Pass	
K_7664		-0.022398	ppm	0.047885	213.79	.00000	Abs	Pass	
Mg2790		0.0095730	ppm	0.0036860	38.507	.00000	Abs	Pass	
Mn2576		0.00040800	ppm	0.000092000	22.522	.00000	Abs	Pass	
Mo2020		0.0033440	ppm	0.00045600	13.640	.00000	Abs	Pass	
Na5895		0.079712	ppm	0.0082810	10.388	.00000	Abs	Pass	
Ni2316		0.00075700	ppm	0.00023700	31.378	.00000	Abs	Pass	
P_1782		0.00062300	ppm	0.00094800	152.17	.00000	Abs	Pass	
Pb2203		-0.0016240	ppm	0.0019590	120.65	.00000	Abs	Pass	
S_1820		0.011382	ppm	0.0019390	17.037	.00000	Abs	Pass	
Sb2068		0.0016770	ppm	0.0045640	272.08	.00000	Abs	Pass	
Se1960		0.0034670	ppm	0.0035510	102.40	.00000	Abs	Pass	
Si2881		-0.018474	ppm	0.055607	301.00	.00000	Abs	Pass	
Sn1899		0.0024340	ppm	0.00084600	34.744	.00000	Abs	Pass	
Sr4077		0.00071500	ppm	0.00011200	15.677	.00000	Abs	Pass	
Ti3349		0.0037930	ppm	0.00075500	19.913	.00000	Abs	Pass	
Tl1908		0.0013290	ppm	0.0012020	90.438	.00000	Abs	Pass	
V_2924		0.00051700	ppm	0.00037700	72.823	.00000	Abs	Pass	
Zn2062		0.0017680	ppm	0.00037400	21.182	.00000	Abs	Pass	
Y_2243		7,143.8	Cts/S	6.9443	0.097207				
Y_3600		70,820	Cts/S	120.83	0.17061				
Y_3774		4,271.8	Cts/S	18.046	0.42245				

320-61326-A-7-B

Acquire Date: 6/3/2020 4:38:23PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00072800	ppm	0.00040400	55.512
Al3961		0.045247	ppm	0.00053700	1.1857
As1890		0.013949	ppm	0.00017900	1.2847
B_2089		2.7974	ppm	0.0014530	0.051958
Ba4554		0.23037	ppm	0.00010400	0.045149
Be3130		0.000091000	ppm	0.00052500	576.01
Ca3179		45.175	ppm	0.30611	0.67759
Cd2144		-0.00011500	ppm	0.000069000	60.058
Co2286		0.0064120	ppm	0.00015800	2.4692
Cr2677		0.00041100	ppm	0.00019800	48.134
Cu3247		-0.00074900	ppm	0.00099700	133.04
Fe2599		6.9143	ppm	0.019952	0.28856
K_7664		0.57189	ppm	0.098220	17.175
Mg2790		72.919	ppm	0.29290	0.40168
Mn2576		2.8687	ppm	0.011279	0.39319
Mo2020		0.00091000	ppm	0.00040900	44.906
Na5895		79.495	ppm	0.39665	0.49896
Ni2316		0.0073300	ppm	0.00048900	6.6753
P_1782		-0.0093300	ppm	0.0016130	17.289
Pb2203		-0.0036520	ppm	0.00041500	11.369
S_1820		37.183	ppm	0.065079	0.17502
Sb2068		0.0023590	ppm	0.0045380	192.34
Se1960		-0.00074400	ppm	0.0025720	345.80
Si2881		15.273	ppm	0.032368	0.21193
Sn1899		0.0014080	ppm	0.00056100	39.847
Sr4077		0.66104	ppm	0.0036710	0.55532
Ti3349		-0.00050600	ppm	0.00033100	65.373
Tl1908		0.00018200	ppm	0.0013750	756.74
V_2924		0.0054210	ppm	0.00039900	7.3675
Zn2062		0.0053500	ppm	0.00026900	5.0310
Y_2243		6,843.8	Cts/S	7.7481	0.11321
Y_3600		66,954	Cts/S	195.71	0.29230
Y_3774		4,234.4	Cts/S	29.908	0.70631

600-205895-F-1-A

Acquire Date: 6/3/2020 4:42:20PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00015300	ppm	0.0017330	1,130.0
Al3961		0.032063	ppm	0.0096120	29.978
As1890		0.0030390	ppm	0.00069100	22.742
B_2089		0.21707	ppm	0.000036000	0.016638
Ba4554		0.25995	ppm	0.00018200	0.069832
Be3130		0.00021600	ppm	0.000019000	8.8942
Ca3179		53.213	ppm	0.13577	0.25515
Cd2144		0.000039000	ppm	0.000020000	51.622
Co2286		-0.00040500	ppm	0.000029000	7.0741

600-205895-F-1-A

Acquire Date: 6/3/2020 4:42:20PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00020800	ppm	0.00059100	283.69
Cu3247		0.0017000	ppm	0.00059600	35.036
Fe2599		0.025039	ppm	0.0045750	18.270
K_7664		14.432	ppm	0.10610	0.73519
Mg2790		34.691	ppm	0.23413	0.67492
Mn2576		0.0038280	ppm	0.000078000	2.0365
Mo2020		0.0093660	ppm	0.0000010000	0.0075070
Na5895	**W**	**379.85**	**ppm**	**0.33060**	**0.087034**
Ni2316		0.0010700	ppm	0.000039000	3.6084
P_1782		-0.0084680	ppm	0.00090100	10.645
Pb2203		-0.00099400	ppm	0.00043800	44.097
S_1820		19.925	ppm	0.043207	0.21685
Sb2068		0.000025000	ppm	0.0014530	5,765.2
Se1960		-0.0028430	ppm	0.0022460	78.988
Si2881		2.0033	ppm	0.022386	1.1174
Sn1899		0.00043900	ppm	0.00061900	140.97
Sr4077		0.49015	ppm	0.00023300	0.047626
Ti3349		-0.0010450	ppm	0.00024200	23.138
Tl1908		0.00088200	ppm	0.0026180	296.87
V_2924		0.00042600	ppm	0.00061500	144.14
Zn2062		0.0064670	ppm	0.000080000	1.2378
Y_2243		6,629.6	Cts/S	4.1745	0.062967
Y_3600		64,088	Cts/S	385.28	0.60118
Y_3774		4,177.7	Cts/S	10.368	0.24818

sd 600-205895-F-1A@5

Acquire Date: 6/3/2020 4:46:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.000045000	ppm	0.0010260	2,264.9
Al3961		0.0073140	ppm	0.0098300	134.39
As1890		0.0020840	ppm	0.00063900	30.667
B_2089		0.055981	ppm	0.0011410	2.0384
Ba4554		0.052924	ppm	0.00042500	0.80289
Be3130		0.000026000	ppm	0.00033500	1,290.1
Ca3179		10.800	ppm	0.016550	0.15324
Cd2144		0.000084000	ppm	0.000016000	19.130
Co2286		-0.00023200	ppm	0.00019800	85.091
Cr2677		0.00022100	ppm	0.00028600	129.25
Cu3247		-0.0012460	ppm	0.00015000	12.051
Fe2599		-0.012450	ppm	0.0046520	37.369
K_7664		2.7678	ppm	0.014039	0.50723
Mg2790		7.0561	ppm	0.038285	0.54258
Mn2576		0.00080200	ppm	0.000071000	8.8436
Mo2020		0.0013890	ppm	0.00040700	29.277
Na5895		78.336	ppm	0.19935	0.25448
Ni2316		0.00034700	ppm	0.00035100	101.26

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

sd 600-205895-F-1A@5

Acquire Date: 6/3/2020 4:46:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0042250	ppm	0.00075100	17.779
Pb2203		0.0016620	ppm	0.0018540	111.55
S_1820		3.8654	ppm	0.016694	0.43188
Sb2068		0.00055500	ppm	0.0020600	371.10
Se1960		-0.0057040	ppm	0.0070520	123.63
Si2881		0.39228	ppm	0.0029150	0.74306
Sn1899		-0.00038700	ppm	0.0011870	306.44
Sr4077		0.098682	ppm	0.000040000	0.040338
Ti3349		-0.00096900	ppm	0.00071100	73.354
Tl1908		-0.0036590	ppm	0.0021650	59.170
V_2924		-0.00069400	ppm	0.00042400	61.178
Zn2062		0.0023990	ppm	0.000010000	0.43054
Y_2243		6,806.9	Cts/S	16.161	0.23743
Y_3600		66,599	Cts/S	124.98	0.18766
Y_3774		4,069.0	Cts/S	3.5632	0.087568

pds 600-205895-F-1-A

Acquire Date: 6/3/2020 4:50:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095716	ppm	0.0016580	1.7317
Al3961		9.6704	ppm	0.014705	0.15206
As1890		0.10068	ppm	0.0023470	2.3307
B_2089		1.1152	ppm	0.0028830	0.25854
Ba4554		0.34681	ppm	0.00090800	0.26188
Be3130		0.049556	ppm	0.00010700	0.21529
Ca3179		61.051	ppm	0.10524	0.17238
Cd2144		0.096616	ppm	0.00018900	0.19531
Co2286		0.095663	ppm	0.00095500	0.99873
Cr2677		0.097832	ppm	0.0016790	1.7160
Cu3247		0.098403	ppm	0.00068100	0.69255
Fe2599		4.0156	ppm	0.00098600	0.024542
K_7664		23.997	ppm	0.036172	0.15074
Mg2790		43.640	ppm	0.35398	0.81114
Mn2576		0.10334	ppm	0.00063800	0.61729
Mo2020		0.10637	ppm	0.000050000	0.046759
Na5895	**W**	**378.16**	**ppm**	**0.91276**	**0.24137**
Ni2316		0.096462	ppm	0.00054400	0.56384
P_1782		0.99508	ppm	0.0024040	0.24162
Pb2203		0.095687	ppm	0.0018290	1.9118
S_1820		19.175	ppm	0.0064590	0.033687
Sb2068		0.092657	ppm	0.0029630	3.1982
Se1960		0.093812	ppm	0.00051700	0.55066
Si2881		5.0021	ppm	0.052274	1.0451
Sn1899		0.098313	ppm	0.00086500	0.87970
Sr4077		0.57167	ppm	0.00027100	0.047318
Ti3349		0.097425	ppm	0.00046700	0.47939

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

pds 600-205895-F-1-A

Acquire Date: 6/3/2020 4:50:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.088093	ppm	0.0014140	1.6049
V_2924		0.099417	ppm	0.00062600	0.62997
Zn2062		0.10661	ppm	0.000089000	0.083073
Y_2243		6,570.2	Cts/S	63.718	0.96981
Y_3600		62,710	Cts/S	575.90	0.91835
Y_3774		4,049.3	Cts/S	6.8385	0.16888

600-205895-F-1-B MS

Acquire Date: 6/3/2020 4:54:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046183	ppm	0.000048000	0.10308
Al3961		4.7533	ppm	0.0041280	0.086846
As1890		0.47258	ppm	0.00049600	0.10506
B_2089		4.5909	ppm	0.00089100	0.019402
Ba4554		0.72248	ppm	0.0027530	0.38108
Be3130		0.24034	ppm	0.0016030	0.66707
Ca3179		75.444	ppm	0.22795	0.30215
Cd2144		0.23389	ppm	0.000027000	0.011662
Co2286		0.22955	ppm	0.00029100	0.12686
Cr2677		0.23663	ppm	0.00061300	0.25915
Cu3247		0.23481	ppm	0.00068100	0.29006
Fe2599		4.9427	ppm	0.0071560	0.14478
K_7664		38.721	ppm	0.084340	0.21782
Mg2790		57.744	ppm	0.095270	0.16499
Mn2576		0.24335	ppm	0.00024500	0.10070
Mo2020		0.24954	ppm	0.00029800	0.11932
Na5895	**W**	**387.64**	**ppm**	**0.50989**	**0.13154**
Ni2316		0.22774	ppm	0.00031900	0.14017
P_1782		5.0604	ppm	0.014495	0.28645
Pb2203		0.22938	ppm	0.0040510	1.7660
S_1820		24.201	ppm	0.057761	0.23867
Sb2068		0.44334	ppm	0.0039560	0.89226
Se1960		0.46300	ppm	0.00060200	0.12996
Si2881		6.9108	ppm	0.094184	1.3628
Sn1899		0.48661	ppm	0.00017400	0.035700
Sr4077		0.71476	ppm	0.00025700	0.035919
Ti3349		0.24119	ppm	0.0014450	0.59912
Tl1908		0.44327	ppm	0.0031660	0.71419
V_2924		0.24045	ppm	0.00010800	0.045037
Zn2062		0.49519	ppm	0.0016600	0.33521
Y_2243		6,517.4	Cts/S	5.2766	0.080961
Y_3600		62,806	Cts/S	161.61	0.25732
Y_3774		4,092.4	Cts/S	6.6408	0.16227

600-205895-F-1-C MSD

Acquire Date: 6/3/2020 4:58:07PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048744	ppm	0.00027900	0.57299
Al3961		4.9444	ppm	0.0087550	0.17707
As1890		0.49049	ppm	0.0018920	0.38578
B_2089		4.7524	ppm	0.0034140	0.071835
Ba4554		0.75235	ppm	0.0011910	0.15837
Be3130		0.25202	ppm	0.00096200	0.38176
Ca3179		78.674	ppm	0.070934	0.090162
Cd2144		0.24388	ppm	0.00062500	0.25621
Co2286		0.23936	ppm	0.00094600	0.39525
Cr2677		0.24542	ppm	0.0011760	0.47909
Cu3247		0.24504	ppm	0.00026600	0.10846
Fe2599		5.1681	ppm	0.0045370	0.087790
K_7664		40.104	ppm	0.11862	0.29578
Mg2790		60.007	ppm	0.12433	0.20720
Mn2576		0.25404	ppm	0.000076000	0.029964
Mo2020		0.26068	ppm	0.00075800	0.29089
Na5895	**W**	**404.08**	**ppm**	**3.1827**	**0.78766**
Ni2316		0.23862	ppm	0.0011990	0.50238
P_1782		5.2361	ppm	0.014490	0.27673
Pb2203		0.23471	ppm	0.0014420	0.61435
S_1820		25.087	ppm	0.032720	0.13043
Sb2068		0.46511	ppm	0.011292	2.4278
Se1960		0.48395	ppm	0.0033250	0.68712
Si2881		7.1813	ppm	0.0012460	0.017349
Sn1899		0.50772	ppm	0.0025880	0.50968
Sr4077		0.74154	ppm	0.0022220	0.29966
Ti3349		0.25259	ppm	0.00046200	0.18297
Tl1908		0.46317	ppm	0.00010900	0.023625
V_2924		0.25113	ppm	0.00058300	0.23197
Zn2062		0.51937	ppm	0.00096100	0.18505
Y_2243		6,481.2	Cts/S	16.152	0.24922
Y_3600		61,757	Cts/S	144.80	0.23447
Y_3774		3,947.3	Cts/S	6.1855	0.15670

600-205895-F-2-A

Acquire Date: 6/3/2020 5:02:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0014330	ppm	0.00040200	28.054
Al3961		0.048594	ppm	0.0025640	5.2762
As1890		0.0027920	ppm	0.0019420	69.544
B_2089		0.21338	ppm	0.00046800	0.21954
Ba4554		0.24728	ppm	0.00072900	0.29468
Be3130		-0.00033000	ppm	0.00017100	51.748
Ca3179		50.820	ppm	0.15506	0.30512
Cd2144		0.000069000	ppm	0.000030000	44.166
Co2286		-0.00052000	ppm	0.00033800	65.057

600-205895-F-2-A

Acquire Date: 6/3/2020 5:02:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00069100	ppm	0.00086900	125.65
Cu3247		0.0016960	ppm	0.0010910	64.331
Fe2599		0.13015	ppm	0.0079400	6.1008
K_7664		13.800	ppm	0.060610	0.43921
Mg2790		33.238	ppm	0.033216	0.099934
Mn2576		0.0092350	ppm	0.000054000	0.58741
Mo2020		0.0093630	ppm	0.00022900	2.4421
Na5895	**W**	**363.36**	**ppm**	**1.0733**	**0.29539**
Ni2316		0.0026150	ppm	0.00099800	38.151
P_1782		-0.0045620	ppm	0.0013890	30.445
Pb2203		0.0013850	ppm	0.00075600	54.563
S_1820		18.936	ppm	0.070119	0.37029
Sb2068		0.0012130	ppm	0.0012920	106.52
Se1960		0.00080800	ppm	0.0013160	162.94
Si2881		1.9491	ppm	0.0090640	0.46502
Sn1899		0.00078400	ppm	0.00074800	95.491
Sr4077		0.46795	ppm	0.00092500	0.19775
Ti3349		0.00058000	ppm	0.00067900	117.22
Tl1908		0.000043000	ppm	0.0017390	4,084.5
V_2924		-0.00028300	ppm	0.00058100	204.97
Zn2062		0.0085880	ppm	0.00056100	6.5331
Y_2243		6,521.6	Cts/S	1.3919	0.021342
Y_3600		62,886	Cts/S	32.670	0.051951
Y_3774		4,024.0	Cts/S	9.5753	0.23795

600-205895-F-3-A

Acquire Date: 6/3/2020 5:05:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00051800	ppm	0.0011520	222.66
Al3961		0.067052	ppm	0.048263	71.978
As1890		0.0040760	ppm	0.00064100	15.723
B_2089		0.20644	ppm	0.00024300	0.11753
Ba4554		0.25444	ppm	0.00012100	0.047640
Be3130		0.00011300	ppm	0.000060000	52.959
Ca3179		51.219	ppm	0.11749	0.22940
Cd2144		-0.00014500	ppm	0.000023000	16.146
Co2286		-0.00082100	ppm	0.00012600	15.382
Cr2677		-0.00014600	ppm	0.00075100	513.49
Cu3247		0.0029110	ppm	0.00072400	24.867
Fe2599		0.81865	ppm	0.0026740	0.32661
K_7664		13.939	ppm	0.035906	0.25760
Mg2790		33.775	ppm	0.020147	0.059651
Mn2576		0.050364	ppm	0.000060000	0.11947
Mo2020		0.0084150	ppm	0.00026100	3.0959
Na5895	**W**	**366.86**	**ppm**	**2.4330**	**0.66319**
Ni2316		0.0035640	ppm	0.00075000	21.033

600-205895-F-3-A

Acquire Date: 6/3/2020 5:05:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0052320	ppm	0.0019940	38.111
Pb2203		0.0023030	ppm	0.00029700	12.886
S_1820		19.343	ppm	0.039744	0.20547
Sb2068		-0.0019810	ppm	0.0019850	100.21
Se1960		-0.0016100	ppm	0.0013250	82.323
Si2881		2.0615	ppm	0.00056400	0.027353
Sn1899		0.00016700	ppm	0.00035400	212.52
Sr4077		0.47330	ppm	0.00017100	0.036025
Ti3349		-0.00039900	ppm	0.00027200	68.047
Tl1908		0.0016610	ppm	0.00053600	32.281
V_2924		0.0014180	ppm	0.00064700	45.604
Zn2062		0.0095760	ppm	0.00081500	8.5134
Y_2243		6,590.8	Cts/S	27.927	0.42373
Y_3600		63,286	Cts/S	146.31	0.23119
Y_3774		4,081.8	Cts/S	0.77700	0.019036

blank1

Acquire Date: 6/3/2020 5:10:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00023700	ppm	0.00085400	360.11
Al3961		0.031489	ppm	0.0072170	22.920
As1890		0.0030180	ppm	0.00048900	16.200
B_2089		0.013005	ppm	0.00030700	2.3612
Ba4554		0.0010430	ppm	0.00010400	10.020
Be3130		0.00016200	ppm	0.00020400	126.19
Ca3179		0.0056620	ppm	0.0022580	39.884
Cd2144		0.000049000	ppm	0.000063000	127.44
Co2286		-0.00025300	ppm	0.00033700	133.30
Cr2677		-0.00075000	ppm	0.00048900	65.129
Cu3247		-0.0013140	ppm	0.00025100	19.121
Fe2599		-0.016492	ppm	0.0011840	7.1817
K_7664		0.021981	ppm	0.031383	142.77
Mg2790		0.0033320	ppm	0.0023040	69.152
Mn2576		0.000088000	ppm	0.000014000	15.332
Mo2020		-0.00015000	ppm	0.00016200	108.17
Na5895		0.31459	ppm	0.044996	14.303
Ni2316		0.000087000	ppm	0.0010090	1,163.4
P_1782		-0.0012110	ppm	0.0023660	195.33
Pb2203		0.0028060	ppm	0.0043910	156.48
S_1820		0.0048110	ppm	0.0057860	120.28
Sb2068		-0.00027500	ppm	0.0017710	643.92
Se1960		-0.0015830	ppm	0.0040890	258.23
Si2881		-0.0048420	ppm	0.044055	909.77
Sn1899		-0.00050100	ppm	0.000022000	4.3168
Sr4077		0.00020200	ppm	0.00038700	191.36
Ti3349		-0.00033700	ppm	0.00040100	119.27

blank1

Acquire Date: 6/3/2020 5:10:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0019390	ppm	0.00096100	49.550
V_2924		0.00025600	ppm	0.00060200	234.86
Zn2062		0.00063100	ppm	0.00072700	115.25
Y_2243		7,047.7	Cts/S	2.5052	0.035547
Y_3600		69,042	Cts/S	183.50	0.26578
Y_3774		4,153.4	Cts/S	12.644	0.30444

blank2

Acquire Date: 6/3/2020 5:13:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00053700	ppm	0.00037200	69.308
Al3961		0.0056420	ppm	0.012841	227.59
As1890		0.0036460	ppm	0.00017900	4.9189
B_2089		0.010005	ppm	0.00078300	7.8237
Ba4554		0.00070400	ppm	0.00024900	35.320
Be3130		-0.00011800	ppm	0.00022400	189.58
Ca3179		-0.0038140	ppm	0.0059810	156.81
Cd2144		0.000062000	ppm	0.00012400	200.80
Co2286		-0.00055800	ppm	0.00048500	86.891
Cr2677		-0.00057600	ppm	0.00069600	120.86
Cu3247		-0.00087000	ppm	0.00013400	15.375
Fe2599		-0.019532	ppm	0.0097560	49.948
K_7664		0.0039300	ppm	0.030081	765.50
Mg2790		0.0037480	ppm	0.0010440	27.857
Mn2576		0.000056000	ppm	0.000060000	107.29
Mo2020		-0.00044500	ppm	0.00021500	48.458
Na5895		0.14681	ppm	0.028844	19.647
Ni2316		0.00064100	ppm	0.00028400	44.298
P_1782		-0.0036450	ppm	0.0030810	84.529
Pb2203		-0.00080400	ppm	0.00075300	93.619
S_1820		0.0030880	ppm	0.0055880	180.95
Sb2068		-0.0027890	ppm	0.0016190	58.043
Se1960		-0.0040150	ppm	0.0031960	79.607
Si2881		-0.034306	ppm	0.025821	75.265
Sn1899		0.00029500	ppm	0.0017020	576.30
Sr4077		0.00028100	ppm	0.00015800	56.363
Ti3349		0.000073000	ppm	0.00028800	395.44
Tl1908		-0.0031040	ppm	0.0066310	213.66
V_2924		0.00025900	ppm	0.00013300	51.451
Zn2062		0.00023000	ppm	0.00016300	70.796
Y_2243		6,952.4	Cts/S	8.5556	0.12306
Y_3600		68,206	Cts/S	54.559	0.079992
Y_3774		4,092.4	Cts/S	18.136	0.44317

CCV 2010278

Acquire Date: 6/3/2020 5:18:00PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50832	ppm	0.0020670	0.40667	.50000	Rel(%)	Pass	
Al3961		25.746	ppm	0.11658	0.45282	25.000	Rel(%)	Pass	
As1890		0.51307	ppm	0.0019920	0.38823	.50000	Rel(%)	Pass	
B_2089		1.0365	ppm	0.0041200	0.39745	1.0000	Rel(%)	Pass	
Ba4554		2.5827	ppm	0.0099990	0.38716	2.5000	Rel(%)	Pass	
Be3130		0.52419	ppm	0.0023630	0.45078	.50000	Rel(%)	Pass	
Ca3179		26.559	ppm	0.085636	0.32244	25.000	Rel(%)	Pass	
Cd2144		0.52672	ppm	0.00090000	0.17090	.50000	Rel(%)	Pass	
Co2286		2.5959	ppm	0.0035370	0.13626	2.5000	Rel(%)	Pass	
Cr2677		2.5749	ppm	0.0041500	0.16117	2.5000	Rel(%)	Pass	
Cu3247		2.4816	ppm	0.0045830	0.18468	2.5000	Rel(%)	Pass	
Fe2599		26.832	ppm	0.13123	0.48909	25.000	Rel(%)	Pass	
K_7664		25.657	ppm	0.047936	0.18684	25.000	Rel(%)	Pass	
Mg2790		26.042	ppm	0.066415	0.25504	25.000	Rel(%)	Pass	
Mn2576		2.6101	ppm	0.0060200	0.23065	2.5000	Rel(%)	Pass	
Mo2020		1.0352	ppm	0.0045090	0.43552	1.0000	Rel(%)	Pass	
Na5895		25.807	ppm	0.092720	0.35928	25.000	Rel(%)	Pass	
Ni2316		2.6384	ppm	0.0046280	0.17540	2.5000	Rel(%)	Pass	
P_1782		2.5077	ppm	0.012181	0.48574	2.5000	Rel(%)	Pass	
Pb2203		0.51873	ppm	0.0029290	0.56457	.50000	Rel(%)	Pass	
S_1820		2.4557	ppm	0.018887	0.76911	2.5000	Rel(%)	Pass	
Sb2068		0.51124	ppm	0.0016920	0.33098	.50000	Rel(%)	Pass	
Se1960		0.51990	ppm	0.0031610	0.60807	.50000	Rel(%)	Pass	
Si2881		2.6367	ppm	0.0020330	0.077110	2.5000	Rel(%)	Pass	
Sn1899		2.6091	ppm	0.0082170	0.31495	2.5000	Rel(%)	Pass	
Sr4077		2.5938	ppm	0.0091860	0.35415	2.5000	Rel(%)	Pass	
Ti3349		1.0350	ppm	0.0059660	0.57641	1.0000	Rel(%)	Pass	
Tl1908		0.52640	ppm	0.00010300	0.019567	.50000	Rel(%)	Pass	
V_2924		2.5586	ppm	0.0044720	0.17480	2.5000	Rel(%)	Pass	
Zn2062		2.6403	ppm	0.0067040	0.25392	2.5000	Rel(%)	Pass	
Y_2243		6,911.1	Cts/S	27.908	0.40382				
Y_3600		66,699	Cts/S	477.27	0.71556				
Y_3774		4,164.5	Cts/S	12.371	0.29705				

CCB 1815536

Acquire Date: 6/3/2020 5:21:46PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0011920	ppm	0.0015370	128.99	.00000	Abs	Pass	
Al3961		0.0070030	ppm	0.018312	261.48	.00000	Abs	Pass	
As1890		0.0035170	ppm	0.0019670	55.935	.00000	Abs	Pass	
B_2089		0.010252	ppm	0.00095800	9.3493	.00000	Abs	Pass	
Ba4554		0.00056600	ppm	0.00021900	38.686	.00000	Abs	Pass	
Be3130		-0.00013700	ppm	0.0000050000	3.4488	.00000	Abs	Pass	
Ca3179		-0.0058330	ppm	0.0067720	116.09	.00000	Abs	Pass	
Cd2144		-0.00013100	ppm	0.000024000	18.128	.00000	Abs	Pass	
Co2286		-0.00018700	ppm	0.000062000	33.273	.00000	Abs	Pass	
Cr2677		0.00061500	ppm	0.00050700	82.458	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/3/2020 5:21:46PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		-0.00072700	ppm	0.0015380	211.51	.00000	Abs	Pass	
Fe2599		0.029696	ppm	0.0033540	11.294	.00000	Abs	Pass	
K_7664		0.0064180	ppm	0.046800	729.18	.00000	Abs	Pass	
Mg2790		0.0058350	ppm	0.00029000	4.9616	.00000	Abs	Pass	
Mn2576		0.00023800	ppm	0.00017600	74.056	.00000	Abs	Pass	
Mo2020		0.0035520	ppm	0.000076000	2.1519	.00000	Abs	Pass	
Na5895		0.086328	ppm	0.0028120	3.2573	.00000	Abs	Pass	
Ni2316		0.00011400	ppm	0.00066700	587.14	.00000	Abs	Pass	
P_1782		-0.00086500	ppm	0.00039600	45.754	.00000	Abs	Pass	
Pb2203		0.00022500	ppm	0.0028740	1,275.1	.00000	Abs	Pass	
S_1820		0.0054890	ppm	0.0037890	69.025	.00000	Abs	Pass	
Sb2068		0.0046410	ppm	0.0012580	27.113	.00000	Abs	Pass	
Se1960		-0.00025900	ppm	0.00022300	86.135	.00000	Abs	Pass	
Si2881		-0.020299	ppm	0.0081450	40.127	.00000	Abs	Pass	
Sn1899		0.0023330	ppm	0.00037700	16.144	.00000	Abs	Pass	
Sr4077		0.00067400	ppm	0.00019600	29.116	.00000	Abs	Pass	
Ti3349		0.0035560	ppm	0.00046400	13.044	.00000	Abs	Pass	
Tl1908		-0.00054600	ppm	0.0025710	470.83	.00000	Abs	Pass	
V_2924		0.000080000	ppm	0.00071800	893.63	.00000	Abs	Pass	
Zn2062		0.0014670	ppm	0.00037200	25.365	.00000	Abs	Pass	
Y_2243		6,965.0	Cts/S	18.478	0.26530				
Y_3600		68,740	Cts/S	217.13	0.31587				
Y_3774		4,131.1	Cts/S	6.0089	0.14546				

MB 320-382846/1-A

Acquire Date: 6/3/2020 5:25:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00043600	ppm	0.00054300	124.41
Al3961		0.0032220	ppm	0.017936	556.69
As1890		0.0033320	ppm	0.00088400	26.521
B_2089		0.0074510	ppm	0.00051500	6.9154
Ba4554		0.00072500	ppm	0.00023500	32.400
Be3130		-0.00010800	ppm	0.000027000	25.067
Ca3179		-0.0047690	ppm	0.010257	215.09
Cd2144		0.000084000	ppm	0.000046000	55.068
Co2286		-0.00047800	ppm	0.00016400	34.239
Cr2677		-0.00075200	ppm	0.00049900	66.333
Cu3247		-0.0011200	ppm	0.00050700	45.256
Fe2599		-0.021257	ppm	0.0070570	33.199
K_7664		-0.027507	ppm	0.0057160	20.782
Mg2790		-0.00023300	ppm	0.0012840	550.87
Mn2576		0.000077000	ppm	0.0000060000	7.8971
Mo2020		.0000070000	ppm	0.00010300	1,575.8
Na5895		0.063317	ppm	0.011871	18.749
Ni2316		0.00092600	ppm	0.00061900	66.768
P_1782		-0.0019310	ppm	0.00020900	10.842
Pb2203		-0.0015190	ppm	0.0018880	124.28

MB 320-382846/1-A

Acquire Date: 6/3/2020 5:25:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		0.0014930	ppm	0.00061200	40.980
Sb2068		-0.00092500	ppm	0.0016830	181.83
Se1960		-0.00019800	ppm	0.0028070	1,414.5
Si2881		0.0012630	ppm	0.021423	1,696.0
Sn1899		0.00074000	ppm	0.0011920	160.95
Sr4077		0.000022000	ppm	0.000062000	277.04
Ti3349		0.00032500	ppm	0.00078900	242.76
Tl1908		0.00056200	ppm	0.0015870	282.52
V_2924		-0.00051200	ppm	0.00057400	112.13
Zn2062		0.000016000	ppm	0.00034500	2,202.0
Y_2243		7,041.0	Cts/S	9.4215	0.13381
Y_3600		69,557	Cts/S	32.487	0.046706
Y_3774		4,171.6	Cts/S	5.0484	0.12102

320-61226-A-3-A MDLV

Acquire Date: 6/3/2020 5:29:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0024280	ppm	0.000095000	3.9048
Al3961		0.14951	ppm	0.012022	8.0408
As1890		0.030286	ppm	0.00074600	2.4627
B_2089		0.054564	ppm	0.00058900	1.0802
Ba4554		0.0054570	ppm	0.00052200	9.5646
Be3130		0.0011340	ppm	0.0000010000	0.089767
Ca3179		0.25040	ppm	0.0051240	2.0461
Cd2144		0.00099800	ppm	0.000048000	4.8354
Co2286		0.0070430	ppm	0.000091000	1.2881
Cr2677		0.0047000	ppm	0.00021300	4.5312
Cu3247		0.0043100	ppm	0.00090200	20.929
Fe2599		0.039655	ppm	0.0075960	19.155
K_7664		0.19878	ppm	0.010568	5.3161
Mg2790		0.10517	ppm	0.0056090	5.3338
Mn2576		0.0051040	ppm	0.000032000	0.62846
Mo2020		0.014495	ppm	0.00050100	3.4551
Na5895		0.54348	ppm	0.0056000	1.0303
Ni2316		0.0045210	ppm	0.00098800	21.845
P_1782		0.19305	ppm	0.0018010	0.93271
Pb2203		0.0052360	ppm	0.0025240	48.213
S_1820		0.38318	ppm	0.000012000	0.0032240
Sb2068		0.018046	ppm	0.00020500	1.1372
Se1960		0.026448	ppm	0.0035200	13.309
Si2881		0.083716	ppm	0.010890	13.008
Sn1899		0.060922	ppm	0.0017030	2.7957
Sr4077		0.020321	ppm	0.00033900	1.6670
Ti3349		0.0040520	ppm	0.00050700	12.513
Tl1908		0.018736	ppm	0.0018030	9.6227
V_2924		0.0049340	ppm	0.00087300	17.693

320-61226-A-3-A MDLV

Acquire Date: 6/3/2020 5:29:46PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		0.010041	ppm	0.000024000	0.23992
Y_2243		7,320.6	Cts/S	3.5280	0.048193
Y_3600		72,812	Cts/S	209.31	0.28747
Y_3774		4,391.8	Cts/S	27.659	0.62977

320-61226-A-4-A LOQV

Acquire Date: 6/3/2020 5:33:45PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0054730	ppm	0.00052700	9.6257
Al3961		0.23173	ppm	0.0070540	3.0441
As1890		0.041703	ppm	0.0021490	5.1532
B_2089		0.10321	ppm	0.0012550	1.2162
Ba4554		0.021515	ppm	0.00023900	1.1093
Be3130		0.0029430	ppm	0.00020900	7.1122
Ca3179		0.52943	ppm	0.0034620	0.65398
Cd2144		0.0030310	ppm	0.00011600	3.8343
Co2286		0.010227	ppm	0.00033700	3.2916
Cr2677		0.0092380	ppm	0.000012000	0.13114
Cu3247		0.013849	ppm	0.00055600	4.0142
Fe2599		0.080761	ppm	0.0030830	3.8171
K_7664		0.96051	ppm	0.015747	1.6394
Mg2790		0.52284	ppm	0.0075770	1.4493
Mn2576		0.010515	ppm	0.000098000	0.92827
Mo2020		0.019681	ppm	0.00017000	0.86543
Na5895		1.0672	ppm	0.014227	1.3331
Ni2316		0.010436	ppm	0.00092100	8.8228
P_1782		0.49367	ppm	0.0017670	0.35802
Pb2203		0.011215	ppm	0.00023500	2.0941
S_1820		0.49358	ppm	0.0029020	0.58803
Sb2068		0.030175	ppm	0.0016090	5.3320
Se1960		0.038053	ppm	0.0051090	13.427
Si2881		0.49538	ppm	0.027315	5.5140
Sn1899		0.073740	ppm	0.0014750	1.9999
Sr4077		0.051446	ppm	0.00011600	0.22531
Ti3349		0.013715	ppm	0.00057400	4.1824
Tl1908		0.029114	ppm	0.0018690	6.4194
V_2924		0.019627	ppm	0.00020600	1.0510
Zn2062		0.021581	ppm	0.00044900	2.0816
Y_2243		7,292.6	Cts/S	5.4622	0.074900
Y_3600		72,784	Cts/S	13.509	0.018561
Y_3774		4,401.5	Cts/S	1.7171	0.039012

MB 320-382787/1-A

Acquire Date: 6/3/2020 5:37:44PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00033000	ppm	0.00022600	68.580
Al3961		0.029749	ppm	0.0026540	8.9201
As1890		0.0051430	ppm	0.000030000	0.58420
B_2089		0.0055430	ppm	0.00070600	12.733
Ba4554		0.00068200	ppm	0.000027000	3.9406
Be3130		.0000080000	ppm	0.000044000	547.97
Ca3179		0.059693	ppm	0.00080800	1.3531
Cd2144		0.000055000	ppm	0.00016800	306.78
Co2286		-0.00034400	ppm	0.00024200	70.353
Cr2677		0.00061700	ppm	0.00016100	26.150
Cu3247		-0.00037700	ppm	0.00024100	63.835
Fe2599		0.0021510	ppm	0.0015250	70.893
K_7664		-0.050650	ppm	0.022947	45.306
Mg2790		0.010425	ppm	0.0037690	36.152
Mn2576		0.00056900	ppm	0.000032000	5.6647
Mo2020		-0.00033700	ppm	0.000053000	15.647
Na5895		0.086714	ppm	0.021647	24.964
Ni2316		0.00070300	ppm	0.00092000	130.82
P_1782		-0.00062000	ppm	0.0021070	339.85
Pb2203		0.00052700	ppm	0.00078500	149.04
S_1820		0.017745	ppm	0.0023180	13.063
Sb2068		0.00051100	ppm	0.0038000	743.31
Se1960		-0.0013870	ppm	0.0024060	173.46
Si2881		-0.084130	ppm	0.0073830	8.7752
Sn1899	**W**	**0.014199**	**ppm**	**0.00057400**	**4.0410**
Sr4077		0.00030900	ppm	0.00030700	99.406
Ti3349		0.00045700	ppm	0.00010000	21.819
Tl1908		-0.0014030	ppm	0.00089100	63.505
V_2924		0.000024000	ppm	0.00050500	2,114.7
Zn2062	**W**	**0.011057**	**ppm**	**0.00040500**	**3.6584**
Y_2243		7,355.5	Cts/S	5.2729	0.071687
Y_3600		73,357	Cts/S	356.30	0.48571
Y_3774		4,481.8	Cts/S	1.7261	0.038514

LCS 320-382787/2-A

Acquire Date: 6/3/2020 5:41:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048451	ppm	0.00037500	0.77328
Al3961		4.8997	ppm	0.023978	0.48938
As1890	**W**	**0.47880**	**ppm**	**0.00025100**	**0.052482**
B_2089		4.7681	ppm	0.010312	0.21627
Ba4554	**W**	**0.49387**	**ppm**	**0.0016330**	**0.33071**
Be3130		0.25048	ppm	0.000022000	0.0086710
Ca3179		25.302	ppm	0.10311	0.40752
Cd2144	**W**	**0.24476**	**ppm**	**0.00021200**	**0.086589**
Co2286		0.24152	ppm	0.0010030	0.41527

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-382787/2-A

Acquire Date: 6/3/2020 5:41:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677	**W**	**0.24294**	**ppm**	**0.0011070**	**0.45579**
Cu3247		0.24044	ppm	0.000068000	0.028082
Fe2599		5.1340	ppm	0.014408	0.28065
K_7664		24.470	ppm	0.18590	0.75968
Mg2790		24.880	ppm	0.054693	0.21983
Mn2576		0.25071	ppm	0.00016500	0.065748
Mo2020		0.24733	ppm	0.00035100	0.14183
Na5895		24.643	ppm	0.085106	0.34536
Ni2316		0.24029	ppm	0.00035600	0.14799
P_1782		5.0206	ppm	0.0053370	0.10629
Pb2203	**W**	**0.24567**	**ppm**	**0.0022030**	**0.89685**
S_1820		4.8524	ppm	0.0032280	0.066529
Sb2068		0.46472	ppm	0.0056390	1.2135
Se1960	**W**	**0.48079**	**ppm**	**0.0027790**	**0.57794**
Si2881	**W**	**5.0065**	**ppm**	**0.015514**	**0.30988**
Sn1899		0.50617	ppm	0.00078000	0.15418
Sr4077		0.24755	ppm	0.0011410	0.46104
Ti3349	**W**	**0.24593**	**ppm**	**0.000083000**	**0.033939**
Tl1908		0.49371	ppm	0.00011300	0.022851
V_2924		0.24424	ppm	0.00016900	0.069026
Zn2062		0.49748	ppm	0.00011600	0.023255
Y_2243		7,178.0	Cts/S	16.386	0.22828
Y_3600		70,726	Cts/S	338.55	0.47869
Y_3774		4,449.5	Cts/S	10.833	0.24346

600-205895-E-1-A

Acquire Date: 6/3/2020 5:45:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00031600	ppm	0.00075600	239.06
Al3961		0.19511	ppm	0.0081750	4.1898
As1890		0.0054830	ppm	0.0040150	73.231
B_2089		0.21717	ppm	0.0000070000	0.0031260
Ba4554		0.28485	ppm	0.00065900	0.23139
Be3130		-0.00013500	ppm	0.0000060000	4.4571
Ca3179		55.235	ppm	0.089517	0.16207
Cd2144		0.000010000	ppm	0.000056000	553.77
Co2286		0.000013000	ppm	0.000059000	468.86
Cr2677		0.00055500	ppm	0.00059500	107.10
Cu3247		0.0071400	ppm	0.00055900	7.8264
Fe2599		2.7447	ppm	0.0017580	0.064067
K_7664		14.654	ppm	0.017331	0.11827
Mg2790		35.171	ppm	0.17918	0.50947
Mn2576		0.14715	ppm	0.00090500	0.61477
Mo2020		0.0085510	ppm	0.000063000	0.73201
Na5895	**W**	**382.03**	**ppm**	**4.1170**	**1.0777**
Ni2316		0.0048720	ppm	0.00071400	14.651

600-205895-E-1-A

Acquire Date: 6/3/2020 5:45:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.0013150	ppm	0.0049720	378.24
Pb2203		0.0021410	ppm	0.0032980	154.05
S_1820		20.415	ppm	0.012687	0.062146
Sb2068		0.0018530	ppm	0.0050090	270.28
Se1960		-0.0025420	ppm	0.0043220	170.02
Si2881		2.2545	ppm	0.019696	0.87366
Sn1899		-0.00014300	ppm	0.0018060	1,261.6
Sr4077		0.50099	ppm	0.0018540	0.36999
Ti3349		0.0018890	ppm	0.00050200	26.600
Tl1908		-0.00081100	ppm	0.0014860	183.17
V_2924		0.0036530	ppm	0.00049600	13.571
Zn2062		0.034454	ppm	0.00029100	0.84540
Y_2243		6,828.9	Cts/S	3.7166	0.054424
Y_3600		66,084	Cts/S	303.53	0.45931
Y_3774		4,339.3	Cts/S	17.058	0.39311

600-205895-E-2-A

Acquire Date: 6/3/2020 5:49:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00047200	ppm	0.0015370	325.71
Al3961		0.023581	ppm	0.025344	107.48
As1890		0.0017830	ppm	0.000074000	4.1349
B_2089		0.20395	ppm	0.0014230	0.69784
Ba4554		0.25480	ppm	0.00099500	0.39059
Be3130		-0.00045200	ppm	0.00016200	35.761
Ca3179		52.196	ppm	0.27345	0.52389
Cd2144		-0.00010900	ppm	0.00011200	102.73
Co2286		-0.00029400	ppm	0.00014400	48.851
Cr2677		-0.00027100	ppm	0.00037300	137.76
Cu3247		0.0018420	ppm	0.00027400	14.872
Fe2599		0.12998	ppm	0.0053610	4.1242
K_7664		14.131	ppm	0.019797	0.14010
Mg2790		33.850	ppm	0.13225	0.39068
Mn2576		0.0094430	ppm	0.000086000	0.91595
Mo2020		0.0084920	ppm	0.00015400	1.8095
Na5895	**W**	**370.36**	**ppm**	**7.1807**	**1.9388**
Ni2316		0.0011410	ppm	0.00030800	26.959
P_1782		-0.011134	ppm	0.00023300	2.0933
Pb2203		0.00065700	ppm	0.00089100	135.51
S_1820		19.726	ppm	0.010537	0.053414
Sb2068		-0.0023330	ppm	0.0062150	266.36
Se1960		0.0011270	ppm	0.0037260	330.58
Si2881		2.0123	ppm	0.00028800	0.014314
Sn1899		-0.00018600	ppm	0.00098300	529.65
Sr4077		0.48128	ppm	0.0025000	0.51951
Ti3349		-0.00064400	ppm	0.00079900	124.14

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

600-205895-E-2-A

Acquire Date: 6/3/2020 5:49:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0030600	ppm	0.0017010	55.577
V_2924		0.00035900	ppm	0.00034700	96.611
Zn2062		0.0075680	ppm	0.00016000	2.1131
Y_2243		6,854.8	Cts/S	21.383	0.31195
Y_3600		66,450	Cts/S	397.58	0.59832
Y_3774		4,338.5	Cts/S	12.392	0.28564

600-205895-E-3-A

Acquire Date: 6/3/2020 5:53:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00015600	ppm	0.0013510	868.67
Al3961		0.083466	ppm	0.00031800	0.38067
As1890		0.0033970	ppm	0.0013740	40.459
B_2089		0.19927	ppm	0.00051300	0.25741
Ba4554		0.25405	ppm	0.0023890	0.94025
Be3130		0.00011700	ppm	0.00020300	173.86
Ca3179		51.069	ppm	0.47878	0.93752
Cd2144		-0.00014000	ppm	0.000091000	65.252
Co2286		-0.00043700	ppm	0.0000030000	0.67040
Cr2677		0.000099000	ppm	0.00045100	457.97
Cu3247		0.0028480	ppm	0.000047000	1.6385
Fe2599		0.80189	ppm	0.012950	1.6149
K_7664		13.932	ppm	0.15390	1.1047
Mg2790		33.390	ppm	0.0090160	0.027003
Mn2576		0.050028	ppm	0.000046000	0.091597
Mo2020		0.0077990	ppm	0.00014900	1.9121
Na5895	**W**	**363.19**	**ppm**	**0.072832**	**0.020053**
Ni2316		0.0022340	ppm	0.0011380	50.956
P_1782		-0.0069490	ppm	0.0012340	17.764
Pb2203		0.000094000	ppm	0.000031000	33.116
S_1820		19.356	ppm	0.057159	0.29530
Sb2068		0.00077900	ppm	0.0028000	359.22
Se1960		0.000010000	ppm	0.0011660	11,547
Si2881		2.0098	ppm	0.025351	1.2614
Sn1899		-0.00028000	ppm	0.00055800	199.38
Sr4077		0.47101	ppm	0.0043400	0.92134
Ti3349		-0.0012130	ppm	0.00013100	10.801
Tl1908		-0.0015680	ppm	0.00058000	36.976
V_2924		0.0014790	ppm	0.00040300	27.260
Zn2062		0.0094270	ppm	0.00056400	5.9825
Y_2243		6,839.4	Cts/S	0.59308	0.0086720
Y_3600		66,451	Cts/S	125.29	0.18854
Y_3774		4,352.6	Cts/S	0.40257	0.0092490

sd 600-205895-E-3A@5

Acquire Date: 6/3/2020 5:57:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00057300	ppm	0.00069400	121.24
Al3961		0.040470	ppm	0.0025650	6.3382
As1890		0.0042320	ppm	0.00045800	10.827
B_2089		0.045160	ppm	0.00022600	0.49936
Ba4554		0.050557	ppm	0.00018500	0.36495
Be3130		0.000080000	ppm	0.000051000	64.022
Ca3179		10.313	ppm	0.080955	0.78499
Cd2144		-0.00011900	ppm	0.000030000	25.578
Co2286		-0.00028700	ppm	0.00033000	115.00
Cr2677		-0.00047500	ppm	0.000028000	5.9656
Cu3247		-0.0011750	ppm	0.00053600	45.598
Fe2599		0.16054	ppm	0.0024930	1.5531
K_7664		2.7442	ppm	0.0099360	0.36206
Mg2790		6.7793	ppm	0.0052960	0.078127
Mn2576		0.0099120	ppm	0.0000070000	0.068461
Mo2020		0.0010310	ppm	0.00021000	20.359
Na5895		75.255	ppm	0.45153	0.59999
Ni2316		0.00025800	ppm	0.000072000	27.944
P_1782		-0.0023640	ppm	0.00062100	26.261
Pb2203		0.00033300	ppm	0.000078000	23.381
S_1820		3.7645	ppm	0.010080	0.26775
Sb2068		-0.0041000	ppm	0.0015730	38.366
Se1960		-0.0054680	ppm	0.0022710	41.520
Si2881		0.37992	ppm	0.037630	9.9047
Sn1899		-0.00090400	ppm	0.00027000	29.831
Sr4077		0.095111	ppm	0.00030700	0.32277
Ti3349		-0.0013550	ppm	0.00014900	10.991
Tl1908		0.0012720	ppm	0.0011300	88.807
V_2924		0.00061800	ppm	0.000069000	11.117
Zn2062		0.0028640	ppm	0.00016000	5.5937
Y_2243		7,093.7	Cts/S	19.802	0.27915
Y_3600		70,141	Cts/S	2.7164	0.0038730
Y_3774		4,374.2	Cts/S	3.1563	0.072157

pds 600-205895-E-3-A

Acquire Date: 6/3/2020 6:01:23PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095310	ppm	0.0017690	1.8558
Al3961		9.6524	ppm	0.089934	0.93172
As1890		0.099000	ppm	0.00086900	0.87799
B_2089		1.1062	ppm	0.0020310	0.18361
Ba4554		0.34195	ppm	0.0030330	0.88706
Be3130		0.049195	ppm	0.00032200	0.65478
Ca3179		58.927	ppm	0.40942	0.69480
Cd2144		0.096700	ppm	0.00033200	0.34284
Co2286		0.095378	ppm	0.00034200	0.35889

pds 600-205895-E-3-A

Acquire Date: 6/3/2020 6:01:23PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.095187	ppm	0.0015040	1.5795
Cu3247		0.099940	ppm	0.00040300	0.40328
Fe2599		4.7856	ppm	0.042023	0.87813
K_7664		23.329	ppm	0.18566	0.79583
Mg2790		41.491	ppm	0.054623	0.13165
Mn2576		0.14660	ppm	0.00031200	0.21311
Mo2020		0.10450	ppm	0.00053600	0.51283
Na5895	**W**	**352.63**	**ppm**	**3.0333**	**0.86021**
Ni2316		0.097834	ppm	0.00079900	0.81672
P_1782		0.99856	ppm	0.0065950	0.66050
Pb2203		0.095027	ppm	0.0017220	1.8124
S_1820		18.816	ppm	0.018961	0.10077
Sb2068		0.085523	ppm	0.00089800	1.0498
Se1960		0.096274	ppm	0.0059850	6.2166
Si2881		5.0079	ppm	0.059909	1.1963
Sn1899		0.097958	ppm	0.00055600	0.56804
Sr4077		0.55375	ppm	0.0032550	0.58789
Ti3349		0.097478	ppm	0.00060800	0.62368
Tl1908		0.087607	ppm	0.00042800	0.48810
V_2924		0.099020	ppm	0.00039500	0.39917
Zn2062		0.10791	ppm	0.00025400	0.23577
Y_2243		6,905.1	Cts/S	8.9567	0.12971
Y_3600		67,167	Cts/S	69.500	0.10347
Y_3774		4,433.4	Cts/S	9.7972	0.22099

CCV 2010278

Acquire Date: 6/3/2020 6:05:19PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.50839	ppm	0.0024110	0.47430	.50000	Rel(%)	Pass	
Al3961		25.602	ppm	0.047530	0.18565	25.000	Rel(%)	Pass	
As1890		0.51499	ppm	0.00094800	0.18400	.50000	Rel(%)	Pass	
B_2089		1.0364	ppm	0.000067000	0.0064500	1.0000	Rel(%)	Pass	
Ba4554		2.5836	ppm	0.0057120	0.22108	2.5000	Rel(%)	Pass	
Be3130		0.52420	ppm	0.00039300	0.074882	.50000	Rel(%)	Pass	
Ca3179		26.419	ppm	0.050914	0.19272	25.000	Rel(%)	Pass	
Cd2144		0.52431	ppm	0.00038100	0.072593	.50000	Rel(%)	Pass	
Co2286		2.5873	ppm	0.0031200	0.12060	2.5000	Rel(%)	Pass	
Cr2677		2.5428	ppm	0.0057950	0.22789	2.5000	Rel(%)	Pass	
Cu3247		2.4991	ppm	0.013141	0.52581	2.5000	Rel(%)	Pass	
Fe2599		26.873	ppm	0.10805	0.40207	25.000	Rel(%)	Pass	
K_7664		25.586	ppm	0.098587	0.38531	25.000	Rel(%)	Pass	
Mg2790		25.670	ppm	0.10187	0.39685	25.000	Rel(%)	Pass	
Mn2576		2.5835	ppm	0.0057410	0.22220	2.5000	Rel(%)	Pass	
Mo2020		1.0321	ppm	0.0017420	0.16880	1.0000	Rel(%)	Pass	
Na5895		25.907	ppm	0.11915	0.45990	25.000	Rel(%)	Pass	
Ni2316		2.6274	ppm	0.0050160	0.19092	2.5000	Rel(%)	Pass	
P_1782		2.5168	ppm	0.0049780	0.19781	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/3/2020 6:05:19PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.51852	ppm	0.0042450	0.81876	.50000	Rel(%)	Pass	
S_1820		2.4691	ppm	0.0062270	0.25218	2.5000	Rel(%)	Pass	
Sb2068		0.51593	ppm	0.0049930	0.96776	.50000	Rel(%)	Pass	
Se1960		0.51714	ppm	0.000050000	0.0096710	.50000	Rel(%)	Pass	
Si2881		2.5458	ppm	0.053302	2.0937	2.5000	Rel(%)	Pass	
Sn1899		2.6032	ppm	0.0047360	0.18193	2.5000	Rel(%)	Pass	
Sr4077		2.5959	ppm	0.0065160	0.25101	2.5000	Rel(%)	Pass	
Ti3349		1.0243	ppm	0.0033150	0.32361	1.0000	Rel(%)	Pass	
Tl1908		0.52558	ppm	0.0044560	0.84785	.50000	Rel(%)	Pass	
V_2924		2.5410	ppm	0.0038630	0.15203	2.5000	Rel(%)	Pass	
Zn2062		2.5929	ppm	0.0040420	0.15590	2.5000	Rel(%)	Pass	
Y_2243		7,085.2	Cts/S	22.112	0.31209				
Y_3600		69,973	Cts/S	418.83	0.59855				
Y_3774		4,400.8	Cts/S	43.708	0.99318				

CCB 1815536

Acquire Date: 6/3/2020 6:09:04PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00098700	ppm	0.0014060	142.52	.00000	Abs	Pass	
Al3961		0.032294	ppm	0.0074260	22.994	.00000	Abs	Pass	
As1890		0.0037810	ppm	0.0026350	69.687	.00000	Abs	Pass	
B_2089		0.0067940	ppm	0.00058200	8.5724	.00000	Abs	Pass	
Ba4554		0.0011010	ppm	0.00028500	25.855	.00000	Abs	Pass	
Be3130		0.00016800	ppm	0.00035600	211.59	.00000	Abs	Pass	
Ca3179		0.0035520	ppm	0.0053530	150.71	.00000	Abs	Pass	
Cd2144		.0000040000	ppm	0.000022000	591.32	.00000	Abs	Pass	
Co2286		-0.00037700	ppm	0.00031800	84.305	.00000	Abs	Pass	
Cr2677		0.000063000	ppm	0.0014230	2,250.4	.00000	Abs	Pass	
Cu3247		0.00016100	ppm	0.00025300	156.91	.00000	Abs	Pass	
Fe2599		0.027215	ppm	0.0025630	9.4178	.00000	Abs	Pass	
K_7664		-0.039000	ppm	0.0070830	18.161	.00000	Abs	Pass	
Mg2790		0.0034850	ppm	0.0013790	39.572	.00000	Abs	Pass	
Mn2576		0.00039000	ppm	0.000042000	10.647	.00000	Abs	Pass	
Mo2020		0.0037340	ppm	0.00071500	19.157	.00000	Abs	Pass	
Na5895		0.10750	ppm	0.012707	11.820	.00000	Abs	Pass	
Ni2316		0.00057100	ppm	0.000059000	10.261	.00000	Abs	Pass	
P_1782		-0.0017640	ppm	0.00061200	34.708	.00000	Abs	Pass	
Pb2203		0.0015970	ppm	0.0057750	361.70	.00000	Abs	Pass	
S_1820		0.011419	ppm	0.0029870	26.156	.00000	Abs	Pass	
Sb2068		0.0016610	ppm	0.0031020	186.69	.00000	Abs	Pass	
Se1960		-0.0037840	ppm	0.00075400	19.913	.00000	Abs	Pass	
Si2881		-0.033038	ppm	0.058275	176.39	.00000	Abs	Pass	
Sn1899		0.0025190	ppm	0.0011940	47.392	.00000	Abs	Pass	
Sr4077		0.00029400	ppm	0.00014800	50.172	.00000	Abs	Pass	
Ti3349		0.0034590	ppm	0.00076400	22.089	.00000	Abs	Pass	
Tl1908		-0.00065800	ppm	0.0011350	172.52	.00000	Abs	Pass	
V_2924		-0.00032500	ppm	0.00065400	201.57	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/3/2020 6:09:04PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.00093400	ppm	0.00014100	15.054	.00000	Abs	Pass	
Y_2243		7,356.7	Cts/S	20.111	0.27337				
Y_3600		73,128	Cts/S	30.889	0.042240				
Y_3774		4,432.0	Cts/S	13.105	0.29570				

600-205895-C-3-A MS

Acquire Date: 6/3/2020 6:13:03PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047151	ppm	0.00098900	2.0973
Al3961		4.8205	ppm	0.042521	0.88207
As1890		0.48689	ppm	0.0023610	0.48488
B_2089		4.7217	ppm	0.00013200	0.0027950
Ba4554		0.73710	ppm	0.0041660	0.56515
Be3130		0.24537	ppm	0.00070900	0.28886
Ca3179		76.020	ppm	0.60706	0.79856
Cd2144		0.23936	ppm	0.00056500	0.23602
Co2286		0.23520	ppm	0.00036000	0.15318
Cr2677		0.24028	ppm	0.00051700	0.21527
Cu3247		0.24373	ppm	0.0016890	0.69279
Fe2599		5.7605	ppm	0.046122	0.80066
K_7664		38.828	ppm	0.31368	0.80787
Mg2790		57.688	ppm	0.056321	0.097631
Mn2576		0.29431	ppm	0.00037300	0.12681
Mo2020		0.25327	ppm	0.00047100	0.18596
Na5895	**W**	**393.16**	**ppm**	**1.1067**	**0.28150**
Ni2316		0.23486	ppm	0.000069000	0.029510
P_1782		5.2013	ppm	0.019740	0.37952
Pb2203		0.23133	ppm	0.0019710	0.85186
S_1820		24.911	ppm	0.071927	0.28874
Sb2068		0.45920	ppm	0.0030430	0.66271
Se1960		0.48096	ppm	0.000058000	0.011999
Si2881		7.0719	ppm	0.037285	0.52723
Sn1899		0.49679	ppm	0.00031400	0.063204
Sr4077		0.72055	ppm	0.0042560	0.59064
Ti3349		0.24526	ppm	0.00075000	0.30585
Tl1908		0.44859	ppm	0.00039000	0.086907
V_2924		0.24522	ppm	0.0011510	0.46935
Zn2062		0.50929	ppm	0.00088900	0.17461
Y_2243		6,818.1	Cts/S	22.668	0.33247
Y_3600		66,152	Cts/S	155.80	0.23551
Y_3774		4,369.9	Cts/S	26.961	0.61697

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

600-205895-C-3-B MSD

Acquire Date: 6/3/2020 6:16:53PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.046335	ppm	0.00022000	0.47404
Al3961		4.8000	ppm	0.057141	1.1904
As1890		0.47736	ppm	0.0014120	0.29588
B_2089		4.6215	ppm	0.0018690	0.040440
Ba4554		0.72375	ppm	0.0026230	0.36238
Be3130		0.24015	ppm	0.0010750	0.44764
Ca3179		74.486	ppm	0.27098	0.36381
Cd2144		0.23490	ppm	0.00036800	0.15668
Co2286		0.23036	ppm	0.00071700	0.31127
Cr2677		0.23737	ppm	0.00040600	0.17114
Cu3247		0.24062	ppm	0.0014040	0.58344
Fe2599		5.7640	ppm	0.046313	0.80350
K_7664		38.272	ppm	0.27463	0.71757
Mg2790		56.662	ppm	0.22198	0.39177
Mn2576		0.28913	ppm	0.00077500	0.26803
Mo2020		0.24881	ppm	0.00021900	0.088097
Na5895	**W**	**383.94**	**ppm**	**3.1186**	**0.81227**
Ni2316		0.23178	ppm	0.00023500	0.10150
P_1782		5.0610	ppm	0.011413	0.22552
Pb2203		0.22549	ppm	0.0073280	3.2500
S_1820		24.204	ppm	0.030590	0.12638
Sb2068		0.44630	ppm	0.0042720	0.95722
Se1960		0.46442	ppm	0.0020130	0.43344
Si2881		6.9001	ppm	0.0081130	0.11757
Sn1899		0.48868	ppm	0.0020060	0.41057
Sr4077		0.70659	ppm	0.0045420	0.64287
Ti3349		0.24257	ppm	0.00069100	0.28473
Tl1908		0.44523	ppm	0.0025090	0.56347
V_2924		0.24255	ppm	0.00077100	0.31767
Zn2062		0.49896	ppm	0.00068800	0.13792
Y_2243		6,819.8	Cts/S	9.1900	0.13476
Y_3600		65,909	Cts/S	154.51	0.23443
Y_3774		4,330.5	Cts/S	5.2167	0.12046

600-205895-E-4-A

Acquire Date: 6/3/2020 6:20:43PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00021600	ppm	0.00063400	293.73
Al3961		0.044276	ppm	0.039550	89.327
As1890		0.0016680	ppm	0.0010240	61.418
B_2089		0.21072	ppm	0.00044800	0.21268
Ba4554		0.24874	ppm	0.0014310	0.57535
Be3130		.0000020000	ppm	0.00011700	5,183.8
Ca3179		50.956	ppm	0.14534	0.28523
Cd2144		0.000054000	ppm	0.000017000	31.041
Co2286		-0.00031900	ppm	0.00019900	62.284

600-205895-E-4-A

Acquire Date: 6/3/2020 6:20:43PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		-0.00034100	ppm	0.00039700	116.54
Cu3247		0.0014190	ppm	0.00027600	19.480
Fe2599		0.11805	ppm	0.016615	14.075
K_7664		13.868	ppm	0.028767	0.20744
Mg2790		33.101	ppm	0.11195	0.33820
Mn2576		0.0080880	ppm	0.000082000	1.0097
Mo2020		0.0095020	ppm	0.00019500	2.0551
Na5895	**W**	**358.17**	**ppm**	**7.9454**	**2.2183**
Ni2316		0.0015630	ppm	0.0018860	120.68
P_1782		-0.0061530	ppm	0.00037400	6.0769
Pb2203		0.00051100	ppm	0.0011970	234.17
S_1820		19.173	ppm	0.024196	0.12620
Sb2068		0.00021500	ppm	0.0028660	1,332.6
Se1960		-0.00092400	ppm	0.0038180	413.12
Si2881		1.9113	ppm	0.039147	2.0482
Sn1899		-0.00023000	ppm	0.00079400	344.76
Sr4077		0.46873	ppm	0.0014830	0.31642
Ti3349		.0000050000	ppm	0.00029300	6,050.6
Tl1908		0.00027100	ppm	0.00017000	62.527
V_2924		0.00030300	ppm	0.00031200	103.17
Zn2062		0.0054970	ppm	0.00066200	12.043
Y_2243		6,770.2	Cts/S	6.0682	0.089630
Y_3600		65,600	Cts/S	27.127	0.041352
Y_3774		4,262.3	Cts/S	19.129	0.44880

320-61226-A-1-A MDLV

Acquire Date: 6/3/2020 6:24:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0027780	ppm	0.00015000	5.3828
Al3961		0.17797	ppm	0.012110	6.8041
As1890		0.030914	ppm	0.0018410	5.9561
B_2089		0.059683	ppm	0.00045600	0.76420
Ba4554		0.0062050	ppm	0.00030700	4.9531
Be3130		0.00082600	ppm	0.00016400	19.845
Ca3179		0.29371	ppm	0.010912	3.7151
Cd2144		0.00096100	ppm	0.00013700	14.297
Co2286		0.0072730	ppm	0.00040000	5.4996
Cr2677		0.0051190	ppm	0.00097400	19.029
Cu3247		0.0040960	ppm	0.00084200	20.549
Fe2599		0.029512	ppm	0.0032530	11.023
K_7664		0.21648	ppm	0.0018680	0.86299
Mg2790		0.10763	ppm	0.0012880	1.1971
Mn2576		0.0051970	ppm	0.000080000	1.5424
Mo2020		0.014886	ppm	0.000040000	0.26868
Na5895		0.79487	ppm	0.044191	5.5595
Ni2316		0.0046060	ppm	0.00079500	17.269

320-61226-A-1-A MDLV

Acquire Date: 6/3/2020 6:24:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.19509	ppm	0.00034600	0.17739
Pb2203		0.0074430	ppm	0.0023620	31.740
S_1820		0.39278	ppm	0.00020000	0.051041
Sb2068		0.016532	ppm	0.00095400	5.7698
Se1960		0.027220	ppm	0.0017080	6.2748
Si2881		0.084047	ppm	0.031125	37.033
Sn1899		0.061971	ppm	0.00021500	0.34624
Sr4077		0.020368	ppm	0.000043000	0.21223
Ti3349		0.0049950	ppm	0.00024700	4.9393
Tl1908		0.016706	ppm	0.0035440	21.213
V_2924		0.0047070	ppm	0.00072900	15.479
Zn2062		0.015635	ppm	0.00021700	1.3864
Y_2243		7,188.2	Cts/S	24.803	0.34505
Y_3600		71,430	Cts/S	37.869	0.053016
Y_3774		4,319.3	Cts/S	9.6365	0.22310

320-61226-A-2-A LOQV

Acquire Date: 6/3/2020 6:28:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0045570	ppm	0.00062700	13.751
Al3961		0.23670	ppm	0.017730	7.4904
As1890		0.041466	ppm	0.00023800	0.57282
B_2089		0.10572	ppm	0.00013000	0.12253
Ba4554		0.020889	ppm	0.00019100	0.91264
Be3130		0.0029510	ppm	0.00041600	14.087
Ca3179		0.56659	ppm	0.00034000	0.060082
Cd2144		0.0031010	ppm	0.000079000	2.5531
Co2286		0.010231	ppm	0.00031200	3.0516
Cr2677		0.0098240	ppm	0.000054000	0.54727
Cu3247		0.014193	ppm	0.000081000	0.57389
Fe2599		0.097185	ppm	0.000020000	0.021051
K_7664		0.99233	ppm	0.039562	3.9868
Mg2790		0.51299	ppm	0.0027490	0.53590
Mn2576		0.010804	ppm	0.00011500	1.0688
Mo2020		0.019887	ppm	0.00033000	1.6613
Na5895		1.1241	ppm	0.00011900	0.010624
Ni2316		0.010317	ppm	0.00010600	1.0254
P_1782		0.49728	ppm	0.0032260	0.64865
Pb2203		0.0077900	ppm	0.00092800	11.914
S_1820		0.49249	ppm	0.0015050	0.30559
Sb2068		0.027281	ppm	0.000018000	0.065921
Se1960		0.036969	ppm	0.00062000	1.6770
Si2881		0.47278	ppm	0.035208	7.4470
Sn1899		0.074245	ppm	0.00073500	0.99012
Sr4077		0.051518	ppm	0.000087000	0.16871
Ti3349		0.014038	ppm	0.00052600	3.7457

320-61226-A-2-A LOQV

Acquire Date: 6/3/2020 6:28:40PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.031636	ppm	0.0017320	5.4757
V_2924		0.019100	ppm	0.000053000	0.27843
Zn2062		0.023539	ppm	0.00077800	3.3045
Y_2243		7,169.8	Cts/S	17.116	0.23873
Y_3600		72,332	Cts/S	243.10	0.33609
Y_3774		4,380.5	Cts/S	5.1192	0.11686

CCV 2010278

Acquire Date: 6/3/2020 6:32:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.49767	ppm	0.00019300	0.038804	.50000	Rel(%)	Pass	
Al3961		24.926	ppm	0.062154	0.24935	25.000	Rel(%)	Pass	
As1890		0.50005	ppm	0.0042700	0.85386	.50000	Rel(%)	Pass	
B_2089		1.0088	ppm	0.0019460	0.19287	1.0000	Rel(%)	Pass	
Ba4554		2.5084	ppm	0.0082020	0.32698	2.5000	Rel(%)	Pass	
Be3130		0.50831	ppm	0.00020900	0.041162	.50000	Rel(%)	Pass	
Ca3179		25.658	ppm	0.068699	0.26775	25.000	Rel(%)	Pass	
Cd2144		0.51120	ppm	0.0010350	0.20249	.50000	Rel(%)	Pass	
Co2286		2.5186	ppm	0.0050210	0.19934	2.5000	Rel(%)	Pass	
Cr2677		2.4909	ppm	0.0066150	0.26558	2.5000	Rel(%)	Pass	
Cu3247		2.4361	ppm	0.0082690	0.33944	2.5000	Rel(%)	Pass	
Fe2599		26.009	ppm	0.015573	0.059874	25.000	Rel(%)	Pass	
K_7664		24.874	ppm	0.062179	0.24998	25.000	Rel(%)	Pass	
Mg2790		25.083	ppm	0.077686	0.30972	25.000	Rel(%)	Pass	
Mn2576		2.5229	ppm	0.0089060	0.35302	2.5000	Rel(%)	Pass	
Mo2020		1.0031	ppm	0.0034180	0.34077	1.0000	Rel(%)	Pass	
Na5895		25.096	ppm	0.058973	0.23499	25.000	Rel(%)	Pass	
Ni2316		2.5572	ppm	0.0022900	0.089535	2.5000	Rel(%)	Pass	
P_1782		2.4402	ppm	0.0014500	0.059429	2.5000	Rel(%)	Pass	
Pb2203		0.50406	ppm	0.00070300	0.13950	.50000	Rel(%)	Pass	
S_1820		2.3845	ppm	0.0067260	0.28206	2.5000	Rel(%)	Pass	
Sb2068		0.50153	ppm	0.0034480	0.68759	.50000	Rel(%)	Pass	
Se1960		0.50785	ppm	0.0010240	0.20156	.50000	Rel(%)	Pass	
Si2881		2.5229	ppm	0.022783	0.90302	2.5000	Rel(%)	Pass	
Sn1899		2.5292	ppm	0.0078690	0.31112	2.5000	Rel(%)	Pass	
Sr4077		2.5176	ppm	0.0064290	0.25536	2.5000	Rel(%)	Pass	
Ti3349		1.0006	ppm	0.0025210	0.25198	1.0000	Rel(%)	Pass	
Tl1908		0.51137	ppm	0.00061100	0.11955	.50000	Rel(%)	Pass	
V_2924		2.4772	ppm	0.0062760	0.25337	2.5000	Rel(%)	Pass	
Zn2062		2.5436	ppm	0.0012390	0.048700	2.5000	Rel(%)	Pass	
Y_2243		6,979.5	Cts/S	16.000	0.22924				
Y_3600		68,633	Cts/S	54.303	0.079121				
Y_3774		4,279.2	Cts/S	13.314	0.31114				

CCB 1815536

Acquire Date: 6/3/2020 6:36:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0015630	ppm	0.0013700	87.638	.00000	Abs	Pass	
Al3961		0.023919	ppm	0.0011400	4.7644	.00000	Abs	Pass	
As1890		0.0026770	ppm	0.00061000	22.783	.00000	Abs	Pass	
B_2089		0.0077820	ppm	0.00090500	11.632	.00000	Abs	Pass	
Ba4554		0.0014330	ppm	0.000035000	2.4271	.00000	Abs	Pass	
Be3130		0.00040800	ppm	0.00016900	41.380	.00000	Abs	Pass	
Ca3179		-0.0034180	ppm	0.0012450	36.431	.00000	Abs	Pass	
Cd2144		0.000017000	ppm	0.00014700	858.02	.00000	Abs	Pass	
Co2286		-0.00031500	ppm	0.000017000	5.4269	.00000	Abs	Pass	
Cr2677		.0000010000	ppm	0.00010600	10,619	.00000	Abs	Pass	
Cu3247		-0.00039400	ppm	0.00036900	93.734	.00000	Abs	Pass	
Fe2599		0.037337	ppm	0.0045580	12.206	.00000	Abs	Pass	
K_7664		-0.0082450	ppm	0.0083080	100.77	.00000	Abs	Pass	
Mg2790		-0.0057520	ppm	0.0036760	63.915	.00000	Abs	Pass	
Mn2576		0.00038800	ppm	0.000051000	13.144	.00000	Abs	Pass	
Mo2020		0.0032750	ppm	0.00035900	10.946	.00000	Abs	Pass	
Na5895		0.057813	ppm	0.0036170	6.2570	.00000	Abs	Pass	
Ni2316		0.00021600	ppm	0.00018800	86.817	.00000	Abs	Pass	
P_1782		-0.00050600	ppm	0.00076600	151.57	.00000	Abs	Pass	
Pb2203		-0.00085500	ppm	0.0014320	167.38	.00000	Abs	Pass	
S_1820		0.0016430	ppm	0.00010300	6.2651	.00000	Abs	Pass	
Sb2068		-0.0022960	ppm	0.00074400	32.403	.00000	Abs	Pass	
Se1960		-0.0018480	ppm	0.00067000	36.238	.00000	Abs	Pass	
Si2881		-0.039979	ppm	0.014094	35.254	.00000	Abs	Pass	
Sn1899		0.0030130	ppm	0.00039800	13.212	.00000	Abs	Pass	
Sr4077		0.00069300	ppm	0.00037700	54.436	.00000	Abs	Pass	
Ti3349		0.0036190	ppm	0.00021300	5.8986	.00000	Abs	Pass	
Tl1908		-0.0030310	ppm	0.0024450	80.666	.00000	Abs	Pass	
V_2924		-0.00023100	ppm	0.00049900	216.26	.00000	Abs	Pass	
Zn2062		0.0012310	ppm	0.00014500	11.770	.00000	Abs	Pass	
Y_2243		7,289.6	Cts/S	0.31581	0.0043320				
Y_3600		72,670	Cts/S	83.425	0.11480				
Y_3774		4,408.9	Cts/S	21.058	0.47762				

CCVL 1827892

Acquire Date: 6/3/2020 6:40:24PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0054310	ppm	0.0018670	34.372	.00500	Rel(%)	Pass	
Al3961		0.23731	ppm	0.014906	6.2811	.20000	Rel(%)	Pass	
As1890		0.038496	ppm	0.0011830	3.0729	.04000	Rel(%)	Pass	
B_2089		0.20553	ppm	0.0012730	0.61928	.20000	Rel(%)	Pass	
Ba4554		0.021923	ppm	0.000057000	0.25992	.02000	Rel(%)	Pass	
Be3130		0.0032010	ppm	0.000075000	2.3557	.00300	Rel(%)	Pass	
Ca3179		0.53939	ppm	0.0082910	1.5371	.50000	Rel(%)	Pass	
Cd2144		0.0031240	ppm	0.000011000	0.34216	.00300	Rel(%)	Pass	
Co2286		0.010162	ppm	0.00011400	1.1199	.01000	Rel(%)	Pass	
Cr2677		0.010619	ppm	0.00099200	9.3437	.01000	Rel(%)	Pass	

CCVL 1827892

Acquire Date: 6/3/2020 6:40:24PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.013534	ppm	0.00038100	2.8171	.01500	Rel(%)	Pass	
Fe2599		0.096299	ppm	0.0090600	9.4079	.10000	Rel(%)	Pass	
K_7664		1.0678	ppm	0.012514	1.1720	1.0000	Rel(%)	Pass	
Mg2790		0.53091	ppm	0.0072250	1.3608	.50000	Rel(%)	Pass	
Mn2576		0.011015	ppm	0.000088000	0.79855	.01000	Rel(%)	Pass	
Mo2020		0.020453	ppm	0.00041800	2.0432	.02000	Rel(%)	Pass	
Na5895		0.57936	ppm	0.0012140	0.20962	.50000	Rel(%)	Pass	
Ni2316		0.010683	ppm	0.0015210	14.241	.01000	Rel(%)	Pass	
P_1782		0.49957	ppm	0.0039550	0.79165	.50000	Rel(%)	Pass	
Pb2203		0.011735	ppm	0.0010270	8.7540	.01000	Rel(%)	Pass	
S_1820		0.49753	ppm	0.0045850	0.92149	.50000	Rel(%)	Pass	
Sb2068		0.030206	ppm	0.0049420	16.361	.03000	Rel(%)	Pass	
Se1960		0.036332	ppm	0.00079600	2.1915	.04000	Rel(%)	Pass	
Si2881		0.50082	ppm	0.0066050	1.3188	.50000	Rel(%)	Pass	
Sn1899		0.023086	ppm	0.00012600	0.54556	.02000	Rel(%)	Pass	
Sr4077		0.052836	ppm	0.00031500	0.59699	.05000	Rel(%)	Pass	
Ti3349		0.010524	ppm	0.00020600	1.9589	.01000	Rel(%)	Pass	
Tl1908		0.028572	ppm	0.0012630	4.4207	.03000	Rel(%)	Pass	
V_2924		0.020292	ppm	0.00029200	1.4375	.02000	Rel(%)	Pass	
Zn2062		0.022306	ppm	0.000023000	0.10213	.02000	Rel(%)	Pass	
Y_2243		7,281.9	Cts/S	17.592	0.24159				
Y_3600		72,565	Cts/S	181.92	0.25071				
Y_3774		4,447.0	Cts/S	19.728	0.44362				

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Acquire Date: 6/3/2020 6:44:22PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00080300	ppm	0.0014290	177.96	.00000	Abs	Pass	
Al3961		0.020207	ppm	0.00047600	2.3557	.00000	Abs	Pass	
As1890		0.0064980	ppm	0.0017190	26.452	.00000	Abs	Pass	
B_2089		0.0051890	ppm	0.00094500	18.218	.00000	Abs	Pass	
Ba4554		0.00033600	ppm	0.00035600	105.90	.00000	Abs	Pass	
Be3130		0.000089000	ppm	0.00016200	182.49	.00000	Abs	Pass	
Ca3179		-0.013085	ppm	0.0052870	40.404	.00000	Abs	Pass	
Cd2144		-0.00010500	ppm	0.000040000	37.781	.00000	Abs	Pass	
Co2286		-0.00024000	ppm	0.00054600	227.88	.00000	Abs	Pass	
Cr2677	**W**	**0.0096680**	**ppm**	**0.00057100**	**5.9071**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.0021170	ppm	0.000055000	2.5890	.00000	Abs	Pass	
Fe2599		0.035877	ppm	0.013386	37.312	.00000	Abs	Pass	
K_7664		-0.056595	ppm	0.056809	100.38	.00000	Abs	Pass	
Mg2790		-0.0038570	ppm	0.0051550	133.64	.00000	Abs	Pass	
Mn2576		0.00081900	ppm	0.0000030000	0.42136	.00000	Abs	Pass	
Mo2020		0.00065700	ppm	0.00034200	52.057	.00000	Abs	Pass	
Na5895		0.051733	ppm	0.0064620	12.492	.00000	Abs	Pass	
Ni2316	**W**	**0.0062770**	**ppm**	**0.00014500**	**2.3087**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.00090700	ppm	0.00019800	21.872	.00000	Abs	Pass	
Pb2203		0.00048100	ppm	0.0017530	364.32	.00000	Abs	Pass	

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Acquire Date: 6/3/2020 6:44:22PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.0063590	ppm	0.0067810	106.63	.00000	Abs	Pass	
Sb2068		-0.0033350	ppm	0.0016920	50.731	.00000	Abs	Pass	
Se1960		-0.0023490	ppm	0.00047600	20.270	.00000	Abs	Pass	
Si2881		-0.034636	ppm	0.017002	49.087	.00000	Abs	Pass	
Sn1899		0.00040300	ppm	0.000021000	5.1165	.00000	Abs	Pass	
Sr4077		0.00014200	ppm	0.00011800	82.881	.00000	Abs	Pass	
Ti3349		0.000013000	ppm	0.00023000	1,812.7	.00000	Abs	Pass	
Tl1908		-0.0021680	ppm	0.0015500	71.496	.00000	Abs	Pass	
V_2924		0.00071700	ppm	0.00014900	20.770	.00000	Abs	Pass	
Zn2062		0.00021100	ppm	0.000076000	35.886	.00000	Abs	Pass	
Y_2243		7,267.3	Cts/S	19.812	0.27262				
Y_3600		71,966	Cts/S	208.12	0.28919				
Y_3774		4,391.4	Cts/S	8.4827	0.19317				

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Acquire Date: 6/3/2020 6:48:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0015590	ppm	0.00070100	44.946	.00000	Abs	Pass	
Al3961		-0.014770	ppm	0.010903	73.817	.00000	Abs	Pass	
As1890		0.0050460	ppm	0.0019610	38.865	.00000	Abs	Pass	
B_2089		0.0040090	ppm	0.00010900	2.7230	.00000	Abs	Pass	
Ba4554		-0.00025000	ppm	0.00020100	80.263	.00000	Abs	Pass	
Be3130		0.00022500	ppm	0.00022700	100.93	.00000	Abs	Pass	
Ca3179		0.0025860	ppm	0.000039000	1.5124	.00000	Abs	Pass	
Cd2144		0.000021000	ppm	0.00010000	464.23	.00000	Abs	Pass	
Co2286		-0.00035500	ppm	0.00038800	109.49	.00000	Abs	Pass	
Cr2677	**W**	**0.0089860**	**ppm**	**0.00045400**	**5.0499**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.00082000	ppm	0.000062000	7.5843	.00000	Abs	Pass	
Fe2599		0.042362	ppm	0.0015180	3.5825	.00000	Abs	Pass	
K_7664		-0.027103	ppm	0.025019	92.314	.00000	Abs	Pass	
Mg2790		-0.0081030	ppm	0.0024990	30.840	.00000	Abs	Pass	
Mn2576		0.00080600	ppm	0.000081000	10.037	.00000	Abs	Pass	
Mo2020		0.00039700	ppm	0.00030500	76.791	.00000	Abs	Pass	
Na5895		0.040416	ppm	0.010058	24.887	.00000	Abs	Pass	
Ni2316	**W**	**0.0056970**	**ppm**	**0.0013000**	**22.812**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0017450	ppm	0.0013430	76.958	.00000	Abs	Pass	
Pb2203		0.00026200	ppm	0.0021260	812.76	.00000	Abs	Pass	
S_1820		0.0069920	ppm	0.00059400	8.4886	.00000	Abs	Pass	
Sb2068		-0.00087300	ppm	0.00096200	110.21	.00000	Abs	Pass	
Se1960		-0.0061950	ppm	0.0057750	93.230	.00000	Abs	Pass	
Si2881		-0.0017560	ppm	0.018229	1,038.2	.00000	Abs	Pass	
Sn1899		0.0010660	ppm	0.0012990	121.78	.00000	Abs	Pass	
Sr4077		-0.00010900	ppm	0.00015500	142.63	.00000	Abs	Pass	
Ti3349		0.000070000	ppm	0.000078000	112.27	.00000	Abs	Pass	
Tl1908		-0.0022440	ppm	0.00066100	29.475	.00000	Abs	Pass	
V_2924		0.00011400	ppm	0.00021600	189.44	.00000	Abs	Pass	
Zn2062		0.00023400	ppm	0.00042100	179.86	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 6/3/2020 6:48:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,213.5	Cts/S	7.7418	0.10732				
Y_3600		71,865	Cts/S	31.249	0.043483				
Y_3774		4,344.1	Cts/S	22.655	0.52151				

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Acquire Date: 6/3/2020 6:52:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.00026500	ppm	0.0014650	552.90	.00000	Abs	Pass	
Al3961		0.014796	ppm	0.022500	152.08	.00000	Abs	Pass	
As1890		0.0046740	ppm	0.0010230	21.885	.00000	Abs	Pass	
B_2089		0.0033330	ppm	0.00088200	26.468	.00000	Abs	Pass	
Ba4554		0.00020600	ppm	0.00040800	197.62	.00000	Abs	Pass	
Be3130		0.000015000	ppm	0.00018100	1,209.2	.00000	Abs	Pass	
Ca3179		-0.0076840	ppm	0.0035640	46.383	.00000	Abs	Pass	
Cd2144		-0.00010100	ppm	0.000027000	26.991	.00000	Abs	Pass	
Co2286		-0.00038800	ppm	0.00028900	74.469	.00000	Abs	Pass	
Cr2677	**F**	**0.010110**	**ppm**	**0.00057200**	**5.6614**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247		-0.00059000	ppm	0.00049800	84.485	.00000	Abs	Pass	
Fe2599		0.032361	ppm	0.0025020	7.7321	.00000	Abs	Pass	
K_7664		-0.028415	ppm	0.037527	132.07	.00000	Abs	Pass	
Mg2790		0.0031460	ppm	0.0075190	238.98	.00000	Abs	Pass	
Mn2576		0.0011280	ppm	0.000092000	8.1737	.00000	Abs	Pass	
Mo2020		0.00049100	ppm	0.000028000	5.6686	.00000	Abs	Pass	
Na5895		0.024255	ppm	0.023602	97.311	.00000	Abs	Pass	
Ni2316	**W**	**0.0064000**	**ppm**	**0.00092200**	**14.404**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0031850	ppm	0.000092000	2.8964	.00000	Abs	Pass	
Pb2203		0.0013920	ppm	0.0010000	71.840	.00000	Abs	Pass	
S_1820		0.0062920	ppm	0.0049470	78.628	.00000	Abs	Pass	
Sb2068		-0.00050800	ppm	0.0014600	287.33	.00000	Abs	Pass	
Se1960		-0.00083600	ppm	0.00011800	14.090	.00000	Abs	Pass	
Si2881		-0.0015800	ppm	0.027869	1,764.4	.00000	Abs	Pass	
Sn1899		-0.0010560	ppm	0.00082000	77.630	.00000	Abs	Pass	
Sr4077		0.00027600	ppm	0.000011000	3.9709	.00000	Abs	Pass	
Ti3349		0.00018500	ppm	0.00038500	207.97	.00000	Abs	Pass	
Tl1908		-0.0018970	ppm	0.0031940	168.37	.00000	Abs	Pass	
V_2924		0.00054400	ppm	0.00039200	72.136	.00000	Abs	Pass	
Zn2062		0.00035600	ppm	0.00072100	202.38	.00000	Abs	Pass	
Y_2243		7,235.5	Cts/S	2.2393	0.030948				
Y_3600		71,392	Cts/S	67.319	0.094295				
Y_3774		4,355.1	Cts/S	4.4769	0.10280				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 6/4/2020 7:38:25AM

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Acquire Date: 6/3/2020 6:56:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 774

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.000067000	ppm	0.00049900	740.93	.00000	Abs	Pass	
Al3961		0.0019210	ppm	0.020988	1,092.5	.00000	Abs	Pass	
As1890		0.0046500	ppm	0.0014070	30.263	.00000	Abs	Pass	
B_2089		0.0025110	ppm	0.000051000	2.0180	.00000	Abs	Pass	
Ba4554		0.00030400	ppm	0.00050600	166.19	.00000	Abs	Pass	
Be3130		-0.00012700	ppm	0.000059000	46.883	.00000	Abs	Pass	
Ca3179		-0.0053700	ppm	0.0034520	64.285	.00000	Abs	Pass	
Cd2144		0.000042000	ppm	0.000046000	109.03	.00000	Abs	Pass	
Co2286		-0.00025800	ppm	0.00050000	193.85	.00000	Abs	Pass	
Cr2677	**W**	**0.0093480**	**ppm**	**0.00054900**	**5.8706**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.00069800	ppm	0.00059400	85.106	.00000	Abs	Pass	
Fe2599		0.029064	ppm	0.0014670	5.0469	.00000	Abs	Pass	
K_7664		-0.010452	ppm	0.030405	290.90	.00000	Abs	Pass	
Mg2790		-0.0056260	ppm	0.0065040	115.60	.00000	Abs	Pass	
Mn2576		0.00081700	ppm	0.000052000	6.3147	.00000	Abs	Pass	
Mo2020		0.00046800	ppm	0.00048500	103.52	.00000	Abs	Pass	
Na5895		0.033441	ppm	0.017102	51.142	.00000	Abs	Pass	
Ni2316	**W**	**0.0060370**	**ppm**	**0.000029000**	**0.48592**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0023100	ppm	0.0010430	45.144	.00000	Abs	Pass	
Pb2203		0.000097000	ppm	0.00092500	950.66	.00000	Abs	Pass	
S_1820		0.0064050	ppm	0.00044800	6.9973	.00000	Abs	Pass	
Sb2068		-0.0022300	ppm	0.0044010	197.32	.00000	Abs	Pass	
Se1960		0.0023150	ppm	0.00069000	29.809	.00000	Abs	Pass	
Si2881		-0.0012340	ppm	0.043605	3,532.9	.00000	Abs	Pass	
Sn1899		-0.00098600	ppm	0.00050400	51.091	.00000	Abs	Pass	
Sr4077		0.00022000	ppm	0.000049000	22.113	.00000	Abs	Pass	
Ti3349		-0.0011010	ppm	0.00011400	10.361	.00000	Abs	Pass	
Tl1908		-0.00076400	ppm	0.00076300	99.834	.00000	Abs	Pass	
V_2924		0.00020700	ppm	0.00015100	72.995	.00000	Abs	Pass	
Zn2062		0.00030700	ppm	0.00065300	212.97	.00000	Abs	Pass	
Y_2243		7,178.3	Cts/S	5.0801	0.070769				
Y_3600		71,510	Cts/S	52.252	0.073069				
Y_3774		4,339.7	Cts/S	15.097	0.34787				

Test America-West Sacramento methods 6010b and 200.7

Author: SP
Published: 6/5/2020 7:37:41AM
Notes:

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Acquire Date: 6/4/2020 11:16:24AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0020150	ppm	0.0010990	54.520	.00000	Abs	Pass	
Al3961		0.0050400	ppm	0.0053750	106.65	.00000	Abs	Pass	
As1890		0.0017260	ppm	0.0020310	117.67	.00000	Abs	Pass	
B_2089		-0.00068800	ppm	0.0010460	151.94	.00000	Abs	Pass	
Ba4554		0.00046300	ppm	0.00019000	41.138	.00000	Abs	Pass	
Be3130		-0.00012500	ppm	0.00023600	188.58	.00000	Abs	Pass	
Ca3179		-0.0049140	ppm	0.0088940	180.98	.00000	Abs	Pass	
Cd2144		0.000092000	ppm	0.0000040000	4.8292	.00000	Abs	Pass	
Co2286		0.0012300	ppm	0.000098000	7.9966	.00000	Abs	Pass	
Cr2677	**F**	**0.071236**	**ppm**	**0.0066530**	**9.3397**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247		-0.0048840	ppm	0.00087100	17.835	.00000	Abs	Pass	
Fe2599	**F**	**0.49178**	**ppm**	**0.0022040**	**0.44809**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.11396	ppm	0.013952	12.243	.00000	Abs	Pass	
Mg2790		-0.0041280	ppm	0.0021080	51.057	.00000	Abs	Pass	
Mn2576	**W**	**0.0076660**	**ppm**	**0.00085400**	**11.141**	**.00000**	**Abs**	**Warn High**	**0.00500**
Mo2020		0.0017570	ppm	0.00079700	45.391	.00000	Abs	Pass	
Na5895		0.037269	ppm	0.0044830	12.029	.00000	Abs	Pass	
Ni2316	**F**	**0.027121**	**ppm**	**0.010306**	**38.002**	**.00000**	**Abs**	**Fail High**	**.01000**
P_1782		-0.00074300	ppm	0.0016730	225.03	.00000	Abs	Pass	
Pb2203		-0.0010030	ppm	0.000056000	5.5620	.00000	Abs	Pass	
S_1820		0.00013100	ppm	0.0044430	3,400.0	.00000	Abs	Pass	
Sb2068		-0.0013730	ppm	0.00023400	17.070	.00000	Abs	Pass	
Se1960		0.000028000	ppm	0.00070300	2,515.5	.00000	Abs	Pass	
Si2881		0.042176	ppm	0.0045250	10.729	.00000	Abs	Pass	
Sn1899		-0.00032000	ppm	0.000088000	27.649	.00000	Abs	Pass	
Sr4077		0.000099000	ppm	0.000067000	67.747	.00000	Abs	Pass	
Ti3349		0.00048900	ppm	0.00054900	112.28	.00000	Abs	Pass	
Tl1908		-0.0018820	ppm	0.00073700	39.177	.00000	Abs	Pass	
V_2924		0.0012960	ppm	0.0010220	78.852	.00000	Abs	Pass	
Zn2062		-0.00046600	ppm	0.00040300	86.581	.00000	Abs	Pass	
Y_2243		7,256.8	Cts/S	29.659	0.40870				
Y_3600		72,129	Cts/S	212.84	0.29508				
Y_3774		4,304.1	Cts/S	5.6403	0.13104				

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Acquire Date: 6/4/2020 11:20:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0020930	ppm	0.00024900	11.915	.00000	Abs	Pass	
Al3961		-0.017800	ppm	0.010702	60.122	.00000	Abs	Pass	
As1890		0.00054700	ppm	0.0015120	276.45	.00000	Abs	Pass	
B_2089		-0.0015490	ppm	0.00032100	20.744	.00000	Abs	Pass	
Ba4554		0.00065000	ppm	0.00023600	36.302	.00000	Abs	Pass	

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Acquire Date: 6/4/2020 11:20:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Be3130		0.000085000	ppm	0.000012000	14.197	.00000	Abs	Pass	
Ca3179		-0.011574	ppm	0.0015860	13.704	.00000	Abs	Pass	
Cd2144		0.000018000	ppm	0.00011100	617.68	.00000	Abs	Pass	
Co2286		0.00048200	ppm	0.00027600	57.266	.00000	Abs	Pass	
Cr2677	**W**	**0.0098230**	**ppm**	**0.00095300**	**9.6986**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.0067400	ppm	0.00010200	1.5181	.00000	Abs	Pass	
Fe2599	**W**	**0.054120**	**ppm**	**0.00086900**	**1.6050**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.010765	ppm	0.028453	264.31	.00000	Abs	Pass	
Mg2790		-0.0019780	ppm	0.0027070	136.87	.00000	Abs	Pass	
Mn2576		0.00055300	ppm	0.00012100	21.842	.00000	Abs	Pass	
Mo2020		-0.00032700	ppm	0.000069000	21.278	.00000	Abs	Pass	
Na5895		-0.0037780	ppm	0.0053750	142.28	.00000	Abs	Pass	
Ni2316	**W**	**0.0058790**	**ppm**	**0.00040100**	**6.8147**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0015380	ppm	0.00012900	8.4099	.00000	Abs	Pass	
Pb2203		-0.0029750	ppm	0.00067000	22.510	.00000	Abs	Pass	
S_1820		0.0037900	ppm	0.0012450	32.845	.00000	Abs	Pass	
Sb2068		-0.00060200	ppm	0.0010740	178.27	.00000	Abs	Pass	
Se1960		-0.00081000	ppm	0.0017550	216.59	.00000	Abs	Pass	
Si2881		0.0067460	ppm	0.0092850	137.64	.00000	Abs	Pass	
Sn1899		-0.0011050	ppm	0.0010780	97.512	.00000	Abs	Pass	
Sr4077		0.000025000	ppm	0.00010900	436.68	.00000	Abs	Pass	
Ti3349		-0.00066700	ppm	0.00064100	96.081	.00000	Abs	Pass	
Tl1908		0.0013410	ppm	0.0021360	159.32	.00000	Abs	Pass	
V_2924		0.000075000	ppm	0.00015700	210.71	.00000	Abs	Pass	
Zn2062		-0.0010110	ppm	0.00022300	22.061	.00000	Abs	Pass	
Y_2243		7,362.8	Cts/S	49.217	0.66846				
Y_3600		72,352	Cts/S	101.47	0.14024				
Y_3774		4,309.2	Cts/S	18.841	0.43724				

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Acquire Date: 6/4/2020 11:24:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0018730	ppm	0.00055100	29.410	.00000	Abs	Pass	
Al3961		-0.019010	ppm	0.040185	211.39	.00000	Abs	Pass	
As1890		-0.00091400	ppm	0.000056000	6.1669	.00000	Abs	Pass	
B_2089		-0.0024450	ppm	0.000025000	1.0414	.00000	Abs	Pass	
Ba4554		0.00041300	ppm	0.00069800	169.07	.00000	Abs	Pass	
Be3130		-0.00035000	ppm	0.00033200	94.729	.00000	Abs	Pass	
Ca3179		-0.013680	ppm	0.012678	92.672	.00000	Abs	Pass	
Cd2144		0.000059000	ppm	0.000074000	126.57	.00000	Abs	Pass	
Co2286		0.00018000	ppm	0.00026800	148.51	.00000	Abs	Pass	
Cr2677	**W**	**0.0097620**	**ppm**	**0.00045200**	**4.6256**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.0072970	ppm	0.00077100	10.569	.00000	Abs	Pass	
Fe2599		0.048846	ppm	0.013582	27.806	.00000	Abs	Pass	
K_7664		0.037537	ppm	0.0022230	5.9232	.00000	Abs	Pass	
Mg2790		0.0015880	ppm	0.00091900	57.881	.00000	Abs	Pass	
Mn2576		0.00037100	ppm	0.000066000	17.663	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 6/4/2020 11:24:30AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Mo2020		-0.00033900	ppm	0.00029600	87.168	.00000	Abs	Pass	
Na5895		0.0058360	ppm	0.0076350	130.84	.00000	Abs	Pass	
Ni2316	**W**	**0.0062250**	**ppm**	**0.0010340**	**16.611**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.00087800	ppm	0.0019690	224.19	.00000	Abs	Pass	
Pb2203		-0.0046290	ppm	0.00048900	10.558	.00000	Abs	Pass	
S_1820		-0.0012930	ppm	0.00031600	24.463	.00000	Abs	Pass	
Sb2068		0.0041540	ppm	0.0024410	58.761	.00000	Abs	Pass	
Se1960		0.0025650	ppm	0.00031200	12.167	.00000	Abs	Pass	
Si2881		-0.0093540	ppm	0.033577	358.96	.00000	Abs	Pass	
Sn1899		-0.00096400	ppm	0.00081400	84.464	.00000	Abs	Pass	
Sr4077		0.000035000	ppm	0.00013700	396.12	.00000	Abs	Pass	
Ti3349		-0.00052100	ppm	0.00011600	22.241	.00000	Abs	Pass	
Tl1908		-0.00072000	ppm	0.0013970	193.99	.00000	Abs	Pass	
V_2924		0.000099000	ppm	0.00034000	343.45	.00000	Abs	Pass	
Zn2062		-0.00093400	ppm	0.00056500	60.505	.00000	Abs	Pass	
Y_2243		7,368.9	Cts/S	31.691	0.43007				
Y_3600		73,273	Cts/S	317.62	0.43347				
Y_3774		4,377.3	Cts/S	6.8390	0.15624				

CALSTD0 1815536

Acquire Date: 6/4/2020 11:28:30AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.0010610	Cts/S	0.00012600	11.902
Al3961		0.00020500	Cts/S	0.0011590	566.35
As1890		-0.00013000	Cts/S	0.000055000	42.710
B_2089		0.00080700	Cts/S	0.000088000	10.859
Ba4554		0.012330	Cts/S	0.0010380	8.4150
Be3130		-0.0011660	Cts/S	0.00024100	20.699
Ca3179		0.0043790	Cts/S	0.00036100	8.2523
Cd2144		.0000030000	Cts/S	0.00021600	8,093.7
Co2286		0.000099000	Cts/S	0.000062000	62.906
Cr2677		0.000023000	Cts/S	0.000028000	119.47
Cu3247		0.0029600	Cts/S	0.000052000	1.7610
Fe2599		0.00030400	Cts/S	0.00017700	58.368
K_7664		0.0012670	Cts/S	0.0030750	242.65
Mg2790		0.000011000	Cts/S	0.0000090000	78.373
Mn2576		0.00011700	Cts/S	0.000017000	14.292
Mo2020		0.000074000	Cts/S	0.00031600	427.79
Na5895		0.00085700	Cts/S	0.0041140	479.81
Ni2316		0.00020800	Cts/S	0.000020000	9.6444
P_1782		0.00013500	Cts/S	0.0000060000	4.1784
Pb2203		0.000043000	Cts/S	0.000075000	175.11
S_1820		0.00015800	Cts/S	0.000042000	26.571
Sb2068		0.000048000	Cts/S	0.00011100	229.03
Se1960		0.000016000	Cts/S	0.000044000	274.38
Si2881		0.00071600	Cts/S	0.00025900	36.191
Sn1899		0.000076000	Cts/S	0.00010300	135.82

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CALSTD0 1815536

Acquire Date: 6/4/2020 11:28:30AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Sr4077		-0.0016190	Cts/S	0.0010640	65.707
Ti3349		0.000019000	Cts/S	0.000018000	93.030
Tl1908		0.000020000	Cts/S	0.000028000	139.06
V_2924		0.00010000	Cts/S	0.000088000	88.738
Zn2062		0.000013000	Cts/S	0.000010000	76.257
Y_2243		7,464.7	Cts/S	29.728	0.39825
Y_3600		74,661	Cts/S	399.72	0.53538
Y_3774		4,459.4	Cts/S	35.093	0.78695

CALSTD1 1977311

Acquire Date: 6/4/2020 11:32:30AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.062743	Cts/S	0.00013600	0.21676
Al3961		1.9915	Cts/S	0.0053430	0.26828
As1890		0.038443	Cts/S	0.00014400	0.37564
B_2089		0.32979	Cts/S	0.00068100	0.20639
Ba4554		15.544	Cts/S	0.064506	0.41499
Be3130		1.3666	Cts/S	0.0055940	0.40936
Ca3179		2.6223	Cts/S	0.010245	0.39070
Cd2144		1.5175	Cts/S	0.00067300	0.044370
Co2286		2.1901	Cts/S	0.0020680	0.094424
Cr2677		0.32996	Cts/S	0.00080900	0.24525
Cu3247		0.58811	Cts/S	0.0023470	0.39908
Fe2599		1.0843	Cts/S	0.0041990	0.38728
K_7664		2.6075	Cts/S	0.014746	0.56553
Mg2790		0.34292	Cts/S	0.00084500	0.24649
Mn2576		2.1112	Cts/S	0.0058130	0.27531
Mo2020		0.55700	Cts/S	0.0019520	0.35040
Na5895		8.4187	Cts/S	0.048920	0.58108
Ni2316		0.69548	Cts/S	0.00041900	0.060253
P_1782		0.14408	Cts/S	0.00014400	0.099636
Pb2203		0.082845	Cts/S	0.00016900	0.20455
S_1820		0.091469	Cts/S	0.00015300	0.16732
Sb2068		0.036014	Cts/S	0.000094000	0.26096
Se1960		0.024234	Cts/S	0.000096000	0.39625
Si2881		0.048929	Cts/S	0.00028200	0.57690
Sn1899		0.48743	Cts/S	0.00056800	0.11646
Sr4077		17.525	Cts/S	0.068584	0.39135
Ti3349		0.24154	Cts/S	0.00080100	0.33155
Tl1908		0.030685	Cts/S	0.00012900	0.42172
V_2924		0.52855	Cts/S	0.0017930	0.33926
Zn2062		0.20194	Cts/S	0.00038100	0.18854
Y_2243		7,156.6	Cts/S	9.2718	0.12956
Y_3600		70,767	Cts/S	128.66	0.18181
Y_3774		4,429.4	Cts/S	19.089	0.43097

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CALSTD2 2016210

Acquire Date: 6/4/2020 11:36:13AM Sample Type: Standard

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	**Flags**	**Avg**	**Units**	**Stddev**	**%RSD**
Al3961		10.014	Cts/S	0.013814	0.13795
Ca3179		12.766	Cts/S	0.015698	0.12297
Fe2599		5.2281	Cts/S	0.0017390	0.033258
K_7664		13.160	Cts/S	0.042279	0.32126
Mg2790		1.6989	Cts/S	0.00086200	0.050725
Na5895		42.071	Cts/S	0.11655	0.27704
P_1782		1.4579	Cts/S	0.0021740	0.14912
S_1820		4.5395	Cts/S	0.0021900	0.048236
Y_2243		6,633.9	Cts/S	3.8611	0.058202
Y_3600		64,225	Cts/S	396.44	0.61727
Y_3774		4,242.5	Cts/S	12.867	0.30330

LRA 2003178

Acquire Date: 6/4/2020 11:40:12AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	**Flags**	**Avg**	**Units**	**Stddev**	**%RSD**	**Check Value**	**Units**	**Outcome**	**Flag Value**
Ag3280		2.0159	ppm	0.017741	0.88003	2.0000	Rel(%)	Pass	
Al3961		99.597	ppm	0.091179	0.091548	100.00	Rel(%)	Pass	
As1890		2.0101	ppm	0.0051870	0.25804	2.0000	Rel(%)	Pass	
B_2089		3.9310	ppm	0.0032370	0.082339	4.0000	Rel(%)	Pass	
Ba4554		9.8673	ppm	0.010998	0.11146	10.000	Rel(%)	Pass	
Be3130		1.9696	ppm	0.0058340	0.29619	2.0000	Rel(%)	Pass	
Ca3179		100.87	ppm	0.068087	0.067503	100.00	Rel(%)	Pass	
Cd2144		1.9365	ppm	0.0048090	0.24832	2.0000	Rel(%)	Pass	
Co2286		9.7309	ppm	0.013584	0.13960	10.000	Rel(%)	Pass	
Cr2677		9.8753	ppm	0.10543	1.0676	10.000	Rel(%)	Pass	
Cu3247		9.8514	ppm	0.069246	0.70290	10.000	Rel(%)	Pass	
Fe2599		101.34	ppm	0.17222	0.16995	100.00	Rel(%)	Pass	
K_7664		99.956	ppm	0.087983	0.088022	100.00	Rel(%)	Pass	
Mg2790		100.93	ppm	0.96893	0.96003	100.00	Rel(%)	Pass	
Mn2576		9.6805	ppm	0.010866	0.11225	10.000	Rel(%)	Pass	
Mo2020		3.9537	ppm	0.015952	0.40346	4.0000	Rel(%)	Pass	
Na5895		99.867	ppm	0.18962	0.18987	100.00	Rel(%)	Pass	
Ni2316		9.6990	ppm	0.019484	0.20089	10.000	Rel(%)	Pass	
P_1782		9.9040	ppm	0.020949	0.21152	10.000	Rel(%)	Pass	
Pb2203		1.9496	ppm	0.0032090	0.16461	2.0000	Rel(%)	Pass	
S_1820		9.9235	ppm	0.025740	0.25938	10.000	Rel(%)	Pass	
Sb2068		1.9587	ppm	0.0091900	0.46919	2.0000	Rel(%)	Pass	
Se1960		1.9386	ppm	0.010043	0.51803	2.0000	Rel(%)	Pass	
Si2881		9.8505	ppm	0.071333	0.72416	10.000	Rel(%)	Pass	
Sn1899		9.7513	ppm	0.024190	0.24807	10.000	Rel(%)	Pass	
Sr4077		9.8221	ppm	0.017253	0.17566	10.000	Rel(%)	Pass	
Ti3349		3.9637	ppm	0.042599	1.0747	4.0000	Rel(%)	Pass	
Tl1908		1.9262	ppm	0.012626	0.65550	2.0000	Rel(%)	Pass	
V_2924		9.9406	ppm	0.099110	0.99703	10.000	Rel(%)	Pass	
Zn2062		9.6580	ppm	0.092311	0.95580	10.000	Rel(%)	Pass	

LRA 2003178

Acquire Date: 6/4/2020 11:40:12AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		6,775.8	Cts/S	29.494	0.43529				
Y_3600		67,481	Cts/S	461.04	0.68321				
Y_3774		4,337.5	Cts/S	20.443	0.47132				

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Acquire Date: 6/4/2020 11:43:59AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00095800	ppm	0.00067900	70.938	.00000	Abs	Pass	
Al3961		0.045696	ppm	0.019576	42.839	.00000	Abs	Pass	
As1890		0.0027680	ppm	0.00032700	11.814	.00000	Abs	Pass	
B_2089		0.010527	ppm	0.00041700	3.9657	.00000	Abs	Pass	
Ba4554		0.0020210	ppm	0.0011680	57.783	.00000	Abs	Pass	
Be3130		0.00054300	ppm	0.00014600	26.906	.00000	Abs	Pass	
Ca3179		0.027560	ppm	0.0034970	12.689	.00000	Abs	Pass	
Cd2144		0.00016100	ppm	0.000071000	44.149	.00000	Abs	Pass	
Co2286		0.0010540	ppm	0.00012800	12.157	.00000	Abs	Pass	
Cr2677	**F**	**0.010430**	**ppm**	**0.00072200**	**6.9255**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247	**W**	**0.014789**	**ppm**	**0.00064000**	**4.3252**	**.00000**	**Abs**	**Warn High**	**0.01000**
Fe2599	**F**	**0.15484**	**ppm**	**0.017864**	**11.538**	**.00000**	**Abs**	**Fail High**	**.10000**
K_7664		0.045991	ppm	0.00017500	0.37970	.00000	Abs	Pass	
Mg2790		0.010399	ppm	0.0059190	56.924	.00000	Abs	Pass	
Mn2576		0.0019830	ppm	0.00010500	5.3064	.00000	Abs	Pass	
Mo2020	**W**	**0.015104**	**ppm**	**0.0012530**	**8.2934**	**.00000**	**Abs**	**Warn High**	**0.01000**
Na5895		0.11259	ppm	0.038423	34.125	.00000	Abs	Pass	
Ni2316	**W**	**0.0072610**	**ppm**	**0.00069000**	**9.5057**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		0.0032700	ppm	0.0015070	46.083	.00000	Abs	Pass	
Pb2203		-0.00065500	ppm	0.0042680	652.11	.00000	Abs	Pass	
S_1820		0.0066250	ppm	0.0017720	26.746	.00000	Abs	Pass	
Sb2068		0.0049850	ppm	0.0025890	51.922	.00000	Abs	Pass	
Se1960		0.0026720	ppm	0.000055000	2.0644	.00000	Abs	Pass	
Si2881		0.018001	ppm	0.018059	100.32	.00000	Abs	Pass	
Sn1899		0.0079940	ppm	0.0013060	16.334	.00000	Abs	Pass	
Sr4077		0.0017820	ppm	0.00074200	41.637	.00000	Abs	Pass	
Ti3349		0.0092600	ppm	0.000022000	0.23342	.00000	Abs	Pass	
Tl1908		0.0071860	ppm	0.0010510	14.627	.00000	Abs	Pass	
V_2924		0.00064000	ppm	0.00015700	24.494	.00000	Abs	Pass	
Zn2062	**W**	**0.0050410**	**ppm**	**0.00081100**	**16.090**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		7,319.0	Cts/S	9.4554	0.12919				
Y_3600		73,440	Cts/S	229.88	0.31301				
Y_3774		4,354.6	Cts/S	52.032	1.1949				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

ICV 2008810

Acquire Date: 6/4/2020 11:47:59AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.24740	ppm	0.0012440	0.50280	.25000	Rel(%)	Pass	
Al3961		10.154	ppm	0.0047540	0.046822	10.000	Rel(%)	Pass	
As1890		0.96431	ppm	0.0027930	0.28963	1.0000	Rel(%)	Pass	
B_2089		0.51873	ppm	0.0026930	0.51925	.50000	Rel(%)	Pass	
Ba4554		1.0097	ppm	0.0043860	0.43437	1.0000	Rel(%)	Pass	
Be3130		1.0126	ppm	0.0041170	0.40659	1.0000	Rel(%)	Pass	
Ca3179		10.426	ppm	0.043348	0.41578	10.000	Rel(%)	Pass	
Cd2144		1.0252	ppm	0.00055000	0.053604	1.0000	Rel(%)	Pass	
Co2286		1.0313	ppm	0.0022830	0.22138	1.0000	Rel(%)	Pass	
Cr2677		1.0166	ppm	0.0015560	0.15309	1.0000	Rel(%)	Pass	
Cu3247		1.0362	ppm	0.0019380	0.18701	1.0000	Rel(%)	Pass	
Fe2599	**W**	**10.538**	**ppm**	**0.082809**	**0.78584**	**10.000**	**Rel(%)**	**Warn High**	**5.0000**
K_7664		9.9508	ppm	0.039388	0.39583	10.000	Rel(%)	Pass	
Mg2790		10.308	ppm	0.0051200	0.049672	10.000	Rel(%)	Pass	
Mn2576		1.0430	ppm	0.0026880	0.25776	1.0000	Rel(%)	Pass	
Mo2020		1.0162	ppm	0.00069200	0.068100	1.0000	Rel(%)	Pass	
Na5895		10.079	ppm	0.072933	0.72365	10.000	Rel(%)	Pass	
Ni2316		1.0431	ppm	0.0010240	0.098201	1.0000	Rel(%)	Pass	
P_1782		1.9281	ppm	0.0010420	0.054067	2.0000	Rel(%)	Pass	
Pb2203		1.0382	ppm	0.00069500	0.066908	1.0000	Rel(%)	Pass	
S_1820		1.9859	ppm	0.0034150	0.17198	2.0000	Rel(%)	Pass	
Sb2068		0.99145	ppm	0.00099400	0.10023	1.0000	Rel(%)	Pass	
Se1960		1.0232	ppm	0.00035300	0.034464	1.0000	Rel(%)	Pass	
Si2881		10.145	ppm	0.048436	0.47743	10.000	Rel(%)	Pass	
Sn1899		1.0301	ppm	0.00074700	0.072524	1.0000	Rel(%)	Pass	
Sr4077		1.0177	ppm	0.0028330	0.27835	1.0000	Rel(%)	Pass	
Ti3349		1.0146	ppm	0.0025610	0.25240	1.0000	Rel(%)	Pass	
Tl1908	**W**	**1.0911**	**ppm**	**0.0027850**	**0.25522**	**1.0000**	**Rel(%)**	**Warn High**	**5.0000**
V_2924		1.0074	ppm	0.0031210	0.30983	1.0000	Rel(%)	Pass	
Zn2062		1.0075	ppm	0.00074600	0.074023	1.0000	Rel(%)	Pass	
Y_2243		7,393.6	Cts/S	11.130	0.15054				
Y_3600		73,603	Cts/S	309.60	0.42063				
Y_3774		4,484.8	Cts/S	3.1714	0.070713				

ICBIS 1815536

Acquire Date: 6/4/2020 11:51:45AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0010630	ppm	0.000070000	6.5832	.00000	Abs	Pass	
Al3961		0.013066	ppm	0.021599	165.30	.00000	Abs	Pass	
As1890		-0.00012100	ppm	0.00054200	446.58	.00000	Abs	Pass	
B_2089		0.0052580	ppm	0.00083300	15.839	.00000	Abs	Pass	
Ba4554		0.00043800	ppm	0.0000070000	1.5538	.00000	Abs	Pass	
Be3130		0.00020900	ppm	0.000084000	40.229	.00000	Abs	Pass	
Ca3179		0.010288	ppm	0.0063620	61.841	.00000	Abs	Pass	
Cd2144		0.00018800	ppm	0.000063000	33.638	.00000	Abs	Pass	
Co2286		0.00061400	ppm	0.00018900	30.797	.00000	Abs	Pass	
Cr2677		0.00019600	ppm	0.00029100	148.32	.00000	Abs	Pass	

ICBIS 1815536

Acquire Date: 6/4/2020 11:51:45AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.0031750	ppm	0.00020300	6.4080	.00000	Abs	Pass	
Fe2599		0.027817	ppm	0.0081910	29.446	.00000	Abs	Pass	
K_7664		0.022893	ppm	0.023204	101.36	.00000	Abs	Pass	
Mg2790		0.0042500	ppm	0.00086100	20.264	.00000	Abs	Pass	
Mn2576		0.00041000	ppm	0.000017000	4.1789	.00000	Abs	Pass	
Mo2020		0.0046710	ppm	0.00067800	14.507	.00000	Abs	Pass	
Na5895		0.026874	ppm	0.0065550	24.391	.00000	Abs	Pass	
Ni2316		0.00056900	ppm	0.0013880	243.71	.00000	Abs	Pass	
P_1782		.0000020000	ppm	0.0021930	96,897	.00000	Abs	Pass	
Pb2203		0.0023650	ppm	0.00058500	24.716	.00000	Abs	Pass	
S_1820		0.0065770	ppm	0.0029800	45.304	.00000	Abs	Pass	
Sb2068		0.0047490	ppm	0.0022330	47.015	.00000	Abs	Pass	
Se1960		0.0046590	ppm	0.0035430	76.041	.00000	Abs	Pass	
Si2881		0.0087170	ppm	0.025346	290.77	.00000	Abs	Pass	
Sn1899		0.0023590	ppm	0.00036300	15.398	.00000	Abs	Pass	
Sr4077		0.00020900	ppm	0.00032800	157.25	.00000	Abs	Pass	
Ti3349		0.0038830	ppm	0.00026400	6.8040	.00000	Abs	Pass	
Tl1908		0.0041430	ppm	0.0022020	53.165	.00000	Abs	Pass	
V_2924		-0.00021100	ppm	0.00059500	282.15	.00000	Abs	Pass	
Zn2062		0.0017730	ppm	0.00040200	22.654	.00000	Abs	Pass	
Y_2243		7,357.8	Cts/S	46.576	0.63302				
Y_3600		73,875	Cts/S	222.55	0.30126				
Y_3774		4,410.8	Cts/S	3.4910	0.079147				

CRI 2011780

Acquire Date: 6/4/2020 11:55:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280	**W**	**0.0063410**	**ppm**	**0.00018500**	**2.9224**	**.00500**	**Rel(%)**	**Warn High**	**20.000**
Al3961		0.20528	ppm	0.0051260	2.4974	.20000	Rel(%)	Pass	
As1890		0.036426	ppm	0.0029780	8.1766	.04000	Rel(%)	Pass	
B_2089		0.19835	ppm	0.00068900	0.34717	.20000	Rel(%)	Pass	
Ba4554		0.020114	ppm	0.00047900	2.3820	.02000	Rel(%)	Pass	
Be3130		0.0032990	ppm	0.000065000	1.9711	.00300	Rel(%)	Pass	
Ca3179		0.51789	ppm	0.0052210	1.0081	.50000	Rel(%)	Pass	
Cd2144		0.0030700	ppm	0.000059000	1.9150	.00300	Rel(%)	Pass	
Co2286		0.010497	ppm	0.00013000	1.2396	.01000	Rel(%)	Pass	
Cr2677		0.010272	ppm	0.00038900	3.7890	.01000	Rel(%)	Pass	
Cu3247		0.016865	ppm	0.00099800	5.9165	.01500	Rel(%)	Pass	
Fe2599		0.10957	ppm	0.0056500	5.1560	.10000	Rel(%)	Pass	
K_7664		0.96157	ppm	0.030738	3.1967	1.0000	Rel(%)	Pass	
Mg2790		0.51543	ppm	0.0046120	0.89477	.50000	Rel(%)	Pass	
Mn2576		0.010805	ppm	0.00028700	2.6591	.01000	Rel(%)	Pass	
Mo2020		0.020519	ppm	0.00097600	4.7581	.02000	Rel(%)	Pass	
Na5895		0.50936	ppm	0.0099280	1.9492	.50000	Rel(%)	Pass	
Ni2316	**W**	**0.012763**	**ppm**	**0.0000030000**	**0.026307**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
P_1782		0.48453	ppm	0.0013390	0.27627	.50000	Rel(%)	Pass	
Pb2203		0.0087090	ppm	0.00019300	2.2186	.01000	Rel(%)	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CRI 2011780

Acquire Date: 6/4/2020 11:55:44AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.49070	ppm	0.0032260	0.65752	.50000	Rel(%)	Pass	
Sb2068		0.031200	ppm	0.00094300	3.0217	.03000	Rel(%)	Pass	
Se1960		0.045626	ppm	0.0035430	7.7654	.04000	Rel(%)	Pass	
Si2881		0.50017	ppm	0.0023120	0.46221	.50000	Rel(%)	Pass	
Sn1899	**W**	**0.024067**	**ppm**	**0.00011300**	**0.46886**	**.02000**	**Rel(%)**	**Warn High**	**20.000**
Sr4077		0.050275	ppm	0.00021300	0.42400	.05000	Rel(%)	Pass	
Ti3349		0.010753	ppm	0.000010000	0.090759	.01000	Rel(%)	Pass	
Tl1908	**W**	**0.036066**	**ppm**	**0.0030680**	**8.5077**	**.03000**	**Rel(%)**	**Warn High**	**20.000**
V_2924		0.019484	ppm	0.00022800	1.1709	.02000	Rel(%)	Pass	
Zn2062		0.021898	ppm	0.00041600	1.8990	.02000	Rel(%)	Pass	
Y_2243		7,395.1	Cts/S	20.119	0.27206				
Y_3600		73,858	Cts/S	62.347	0.084415				
Y_3774		4,406.5	Cts/S	1.0778	0.024458				

CRI 2012849

Acquire Date: 6/4/2020 11:59:41AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0064880	ppm	0.00089400	13.785	.00500	Rel(%)	Pass	
Al3961		0.25459	ppm	0.027074	10.635	.20000	Rel(%)	Pass	
As1890		0.017695	ppm	0.0011400	6.4444	.02000	Rel(%)	Pass	
B_2089		0.095518	ppm	0.00080300	0.84066	.10000	Rel(%)	Pass	
Ba4554		0.0055760	ppm	0.0010600	19.013	.00500	Rel(%)	Pass	
Be3130	**W**	**0.0026710**	**ppm**	**0.00036400**	**13.646**	**.00200**	**Rel(%)**	**Warn High**	**20.000**
Ca3179		0.53007	ppm	0.026996	5.0929	.50000	Rel(%)	Pass	
Cd2144		0.0020960	ppm	0.000031000	1.4708	.00200	Rel(%)	Pass	
Co2286		0.0054240	ppm	0.00014300	2.6360	.00500	Rel(%)	Pass	
Cr2677		0.0057440	ppm	0.00013300	2.3078	.00500	Rel(%)	Pass	
Cu3247		0.010265	ppm	0.00039800	3.8761	.01000	Rel(%)	Pass	
Fe2599	**W**	**0.12901**	**ppm**	**0.024189**	**18.750**	**.10000**	**Rel(%)**	**Warn High**	**20.000**
K_7664		0.97100	ppm	0.032920	3.3903	1.0000	Rel(%)	Pass	
Mg2790		0.49730	ppm	0.0090490	1.8196	.50000	Rel(%)	Pass	
Mn2576		0.0051120	ppm	0.000059000	1.1482	.00500	Rel(%)	Pass	
Mo2020		0.023575	ppm	0.0000040000	0.017190	.02000	Rel(%)	Pass	
Na5895		0.49956	ppm	0.0057330	1.1477	.50000	Rel(%)	Pass	
Ni2316	**W**	**0.0060870**	**ppm**	**0.00059500**	**9.7683**	**.00500**	**Rel(%)**	**Warn High**	**20.000**
P_1782		0.46869	ppm	0.0015810	0.33728	.50000	Rel(%)	Pass	
Pb2203		0.0053900	ppm	0.0020380	37.809	.00500	Rel(%)	Pass	
S_1820		0.46396	ppm	0.0065470	1.4110	.50000	Rel(%)	Pass	
Sb2068		0.020417	ppm	0.00087000	4.2606	.02000	Rel(%)	Pass	
Se1960		0.023560	ppm	0.0017180	7.2922	.02000	Rel(%)	Pass	
Si2881		0.51821	ppm	0.00027900	0.053904	.50000	Rel(%)	Pass	
Sn1899		0.022847	ppm	0.000076000	0.33429	.02000	Rel(%)	Pass	
Sr4077		0.050452	ppm	0.00072500	1.4361	.05000	Rel(%)	Pass	
Ti3349	**W**	**0.012720**	**ppm**	**0.00080900**	**6.3611**	**.01000**	**Rel(%)**	**Warn High**	**20.000**
Tl1908		0.022053	ppm	0.0030150	13.673	.02000	Rel(%)	Pass	
V_2924		0.0044050	ppm	0.00042000	9.5283	.00500	Rel(%)	Pass	
Zn2062		0.010656	ppm	0.0000070000	0.065974	.01000	Rel(%)	Pass	

CRI 2012849

Acquire Date: 6/4/2020 11:59:41AM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,415.3	Cts/S	0.44766	0.0060370				
Y_3600		74,364	Cts/S	128.12	0.17228				
Y_3774		4,430.3	Cts/S	17.461	0.39413				

ICSA 2002127

Acquire Date: 6/4/2020 12:03:39PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0018080	ppm	0.00080100	44.292	.00000	Abs	Pass	
Al3961		508.10	ppm	0.52353	0.10304	500.00	Abs	Pass	
As1890		0.0039370	ppm	0.0048790	123.93	.00000	Abs	Pass	
B_2089		0.0072280	ppm	0.00081200	11.240	.00000	Abs	Pass	
Ba4554		0.00074900	ppm	0.00073400	97.962	.00000	Abs	Pass	
Be3130		-0.00037700	ppm	0.00016100	42.840	.00000	Abs	Pass	
Ca3179		490.06	ppm	0.14703	0.030001	500.00	Abs	Pass	
Cd2144		-0.00040300	ppm	0.00016200	40.195	.00000	Abs	Pass	
Co2286		0.00020800	ppm	0.00045500	218.88	.00000	Abs	Pass	
Cr2677		-0.0021670	ppm	0.00086200	39.766	.00000	Abs	Pass	
Cu3247		-0.0014040	ppm	0.00076900	54.762	.00000	Abs	Pass	
Fe2599		193.57	ppm	0.35718	0.18453	200.00	Abs	Pass	
K_7664		-0.13792	ppm	0.044158	32.016	.00000	Abs	Pass	
Mg2790		495.49	ppm	3.3148	0.66899	500.00	Abs	Pass	
Mn2576		-0.00051900	ppm	0.000018000	3.5497	.00000	Abs	Pass	
Mo2020		-0.00018400	ppm	0.00010400	56.422	.00000	Abs	Pass	
Na5895		0.073367	ppm	0.011400	15.538	.00000	Abs	Pass	
Ni2316		0.00023700	ppm	0.00094200	398.10	.00000	Abs	Pass	
P_1782		0.014668	ppm	0.0015380	10.488	.00000	Abs	Pass	
Pb2203		-0.0041350	ppm	0.0011500	27.815	.00000	Abs	Pass	
S_1820		-0.30795	ppm	0.0091660	2.9764	.00000	Abs	Pass	
Sb2068		-0.0075070	ppm	0.000022000	0.28723	.00000	Abs	Pass	
Se1960		-0.0039990	ppm	0.0024090	60.242	.00000	Abs	Pass	
Si2881		-0.020311	ppm	0.030741	151.35	.00000	Abs	Pass	
Sn1899		-0.0026590	ppm	0.00028200	10.588	.00000	Abs	Pass	
Sr4077		0.0047990	ppm	0.00024200	5.0448	.00000	Abs	Pass	
Ti3349		-0.00046000	ppm	0.000038000	8.3609	.00000	Abs	Pass	
Tl1908		-0.0016290	ppm	0.0011030	67.718	.00000	Abs	Pass	
V_2924		-0.0010900	ppm	0.000053000	4.8310	.00000	Abs	Pass	
Zn2062		-0.00011200	ppm	0.00047200	420.98	.00000	Abs	Pass	
Y_2243		6,488.5	Cts/S	8.7282	0.13452				
Y_3600		63,118	Cts/S	225.74	0.35764				
Y_3774		4,240.2	Cts/S	29.300	0.69099				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

ICSAB 2007695

Acquire Date: 6/4/2020 12:07:38PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		1.0769	ppm	0.0015980	0.14843	1.0000	Rel(%)	Pass	
Al3961		505.43	ppm	2.4167	0.47815	500.00	Rel(%)	Pass	
As1890		0.97690	ppm	0.00053900	0.055197				
B_2089		9.5113	ppm	0.0071560	0.075237				
Ba4554		0.99040	ppm	0.0052110	0.52616	1.0000	Rel(%)	Pass	
Be3130		0.49243	ppm	0.0022210	0.45109	.50000	Rel(%)	Pass	
Ca3179		487.18	ppm	2.1121	0.43353	500.00	Rel(%)	Pass	
Cd2144		0.93234	ppm	0.0020920	0.22435	1.0000	Rel(%)	Pass	
Co2286		0.90684	ppm	0.0021100	0.23270	1.0000	Rel(%)	Pass	
Cr2677		0.98809	ppm	0.0011650	0.11792	1.0000	Rel(%)	Pass	
Cu3247		1.0067	ppm	0.0011900	0.11826	1.0000	Rel(%)	Pass	
Fe2599		193.19	ppm	0.73803	0.38203	200.00	Rel(%)	Pass	
K_7664		10.244	ppm	0.18038	1.7608				
Mg2790		496.17	ppm	3.2261	0.65020	500.00	Rel(%)	Pass	
Mn2576		1.0039	ppm	0.0032910	0.32778	1.0000	Rel(%)	Pass	
Mo2020		0.00014600	ppm	0.00021400	146.37				
Na5895		10.454	ppm	0.072775	0.69614				
Ni2316		0.88969	ppm	0.0019000	0.21356	1.0000	Rel(%)	Pass	
P_1782		9.8519	ppm	0.019649	0.19945				
Pb2203		0.94010	ppm	0.0088000	0.93611	1.0000	Rel(%)	Pass	
S_1820		-0.30829	ppm	0.0082810	2.6860				
Sb2068		-0.00075900	ppm	0.0037110	489.18				
Se1960		0.97070	ppm	0.0011530	0.11877				
Si2881		-0.0087640	ppm	0.00045700	5.2161				
Sn1899		-0.0034450	ppm	0.00015000	4.3583				
Sr4077		1.0040	ppm	0.0056900	0.56671				
Ti3349		-0.0010660	ppm	0.000028000	2.6523				
Tl1908		0.92824	ppm	0.0038300	0.41260				
V_2924		1.0147	ppm	0.0047910	0.47212	1.0000	Rel(%)	Pass	
Zn2062		0.94077	ppm	0.0033970	0.36105	1.0000	Rel(%)	Pass	
Y_2243		6,460.0	Cts/S	22.582	0.34956				
Y_3600		62,727	Cts/S	114.22	0.18210				
Y_3774		4,257.0	Cts/S	1.2337	0.028980				

AI 2012851

Acquire Date: 6/4/2020 12:11:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0047750	ppm	0.0019420	40.676	.00000	Abs	Pass	
Al3961		995.79	ppm	4.2060	0.42238				
As1890		0.0018980	ppm	0.00055100	29.033	.00000	Abs	Pass	
B_2089		0.026681	ppm	0.0020440	7.6621	.00000	Abs	Pass	
Ba4554		0.00072100	ppm	0.000067000	9.3651	.00000	Abs	Pass	
Be3130		0.000045000	ppm	0.00020000	444.55	.00000	Abs	Pass	
Ca3179		0.16874	ppm	0.032522	19.273				
Cd2144		-0.00025000	ppm	0.000091000	36.495	.00000	Abs	Pass	
Co2286		0.000019000	ppm	0.00023000	1,179.2	.00000	Abs	Pass	
Cr2677		0.00072600	ppm	0.0014400	198.44	.00000	Abs	Pass	

Al 2012851

Acquire Date: 6/4/2020 12:11:29PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00087700	ppm	0.00044500	50.758	.00000	Abs	Pass	
Fe2599		0.22820	ppm	0.023953	10.497				
K_7664		-0.13537	ppm	0.021900	16.179	.00000	Abs	Pass	
Mg2790		0.070612	ppm	0.020091	28.453				
Mn2576		-0.00034400	ppm	0.00015100	44.000	.00000	Abs	Pass	
Mo2020		-0.0013990	ppm	0.00048900	34.974	.00000	Abs	Pass	
Na5895		0.37459	ppm	0.018173	4.8513	.00000	Abs	Pass	
Ni2316		0.00066100	ppm	0.00054400	82.342	.00000	Abs	Pass	
P_1782		0.011022	ppm	0.0012180	11.048	.00000	Abs	Pass	
Pb2203		0.00064800	ppm	0.0013130	202.61	.00000	Abs	Pass	
S_1820		0.013336	ppm	0.0065010	48.744	.00000	Abs	Pass	
Sb2068		-0.013958	ppm	0.010312	73.875	.00000	Abs	Pass	
Se1960		0.00044300	ppm	0.0089780	2,025.4	.00000	Abs	Pass	
Si2881		0.050846	ppm	0.023202	45.632	.00000	Abs	Pass	
Sn1899		-0.011468	ppm	0.00039600	3.4513	.00000	Abs	Pass	
Sr4077		0.00044200	ppm	0.00013800	31.240	.00000	Abs	Pass	
Ti3349		0.0016780	ppm	0.00033500	19.956	.00000	Abs	Pass	
Tl1908		0.0027210	ppm	0.00055100	20.257	.00000	Abs	Pass	
V_2924		-0.00036000	ppm	0.00024200	67.234	.00000	Abs	Pass	
Zn2062		0.0041530	ppm	0.000014000	0.33337	.00000	Abs	Pass	
Y_2243		6,941.2	Cts/S	17.553	0.25288				
Y_3600		65,857	Cts/S	55.766	0.084677				
Y_3774		4,428.7	Cts/S	26.558	0.59968				

Ca 1996387

Acquire Date: 6/4/2020 12:15:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		-0.0016910	ppm	0.0016480	97.445	.00000	Abs	Pass	
Al3961		0.27628	ppm	0.088361	31.982				
As1890		0.0023820	ppm	0.00080500	33.804	.00000	Abs	Pass	
B_2089		0.011698	ppm	0.00089200	7.6228	.00000	Abs	Pass	
Ba4554		0.00059500	ppm	0.00065800	110.72	.00000	Abs	Pass	
Be3130		-0.0010040	ppm	0.00019100	19.042	.00000	Abs	Pass	
Ca3179		997.99	ppm	4.7972	0.48069				
Cd2144		0.000031000	ppm	0.000016000	53.357	.00000	Abs	Pass	
Co2286		0.00046300	ppm	0.00024800	53.456	.00000	Abs	Pass	
Cr2677		0.0029230	ppm	0.00024300	8.3024	.00000	Abs	Pass	
Cu3247		0.0031060	ppm	0.0014960	48.184	.00000	Abs	Pass	
Fe2599		0.030607	ppm	0.026918	87.947				
K_7664		-0.0070510	ppm	0.010660	151.19	.00000	Abs	Pass	
Mg2790		0.029848	ppm	0.0015380	5.1531				
Mn2576		-0.0032110	ppm	0.0000060000	0.19050	.00000	Abs	Pass	
Mo2020		-0.00016000	ppm	0.00018300	114.34	.00000	Abs	Pass	
Na5895		0.033069	ppm	0.0052180	15.778	.00000	Abs	Pass	
Ni2316		0.0043710	ppm	0.00077600	17.760	.00000	Abs	Pass	
P_1782		0.017748	ppm	0.0011090	6.2471	.00000	Abs	Pass	
Pb2203		-0.0030550	ppm	0.00031800	10.411	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Ca 1996387

Acquire Date: 6/4/2020 12:15:23PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.079007	ppm	0.00085300	1.0802	.00000	Abs	Pass	
Sb2068		-0.0026900	ppm	0.0024890	92.517	.00000	Abs	Pass	
Se1960		0.0016070	ppm	0.0062090	386.31	.00000	Abs	Pass	
Si2881		0.026437	ppm	0.037320	141.17	.00000	Abs	Pass	
Sn1899		0.0045610	ppm	0.00088600	19.434	.00000	Abs	Pass	
Sr4077		-0.0031980	ppm	0.00015600	4.8745	.00000	Abs	Pass	
Ti3349		-0.0028590	ppm	0.00055300	19.355	.00000	Abs	Pass	
Tl1908		0.00096500	ppm	0.0026440	273.84	.00000	Abs	Pass	
V_2924		-0.00022300	ppm	0.000019000	8.5848	.00000	Abs	Pass	
Zn2062		0.0015860	ppm	0.000017000	1.0667	.00000	Abs	Pass	
Y_2243		6,647.7	Cts/S	13.131	0.19753				
Y_3600		65,765	Cts/S	163.57	0.24872				
Y_3774		4,304.3	Cts/S	5.6928	0.13226				

Fe 2002062

Acquire Date: 6/4/2020 12:19:25PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0019760	ppm	0.00031500	15.949	.00000	Abs	Pass	
Al3961		0.075221	ppm	0.040163	53.393				
As1890		0.0023000	ppm	0.0011790	51.267	.00000	Abs	Pass	
B_2089		0.019413	ppm	0.00053900	2.7780	.00000	Abs	Pass	
Ba4554		0.00026500	ppm	0.00056800	213.83	.00000	Abs	Pass	
Be3130		-0.00021200	ppm	0.00018900	88.993	.00000	Abs	Pass	
Ca3179		0.010243	ppm	0.097863	955.40				
Cd2144		-0.00035400	ppm	0.00022000	62.084	.00000	Abs	Pass	
Co2286		-0.0015810	ppm	0.00059900	37.892	.00000	Abs	Pass	
Cr2677		0.0048360	ppm	0.00040100	8.2974	.00000	Abs	Pass	
Cu3247		-0.0020270	ppm	0.00065600	32.353	.00000	Abs	Pass	
Fe2599		944.58	ppm	0.98030	0.10378				
K_7664		-0.059528	ppm	0.020315	34.126	.00000	Abs	Pass	
Mg2790		-0.079600	ppm	0.00019400	0.24382				
Mn2576		0.000024000	ppm	0.00021400	888.24	.00000	Abs	Pass	
Mo2020		0.0014510	ppm	0.00015700	10.809	.00000	Abs	Pass	
Na5895		0.12264	ppm	0.010156	8.2808	.00000	Abs	Pass	
Ni2316		0.0042890	ppm	0.00061300	14.299	.00000	Abs	Pass	
P_1782		0.0099430	ppm	0.0053610	53.914	.00000	Abs	Pass	
Pb2203		-0.0024910	ppm	0.0025240	101.32	.00000	Abs	Pass	
S_1820		-0.012407	ppm	0.0089550	72.176	.00000	Abs	Pass	
Sb2068		0.0085160	ppm	0.00085100	9.9899	.00000	Abs	Pass	
Se1960		0.0064880	ppm	0.0040830	62.938	.00000	Abs	Pass	
Si2881		0.016531	ppm	0.015851	95.888	.00000	Abs	Pass	
Sn1899		0.0073740	ppm	0.00070600	9.5739	.00000	Abs	Pass	
Sr4077		0.00059000	ppm	0.000085000	14.450	.00000	Abs	Pass	
Ti3349		-0.00070400	ppm	0.00039200	55.669	.00000	Abs	Pass	
Tl1908		-0.0049160	ppm	0.00050100	10.193	.00000	Abs	Pass	
V_2924		-0.0026510	ppm	0.00038000	14.335	.00000	Abs	Pass	
Zn2062		0.00020100	ppm	0.00049500	246.58	.00000	Abs	Pass	

Fe 2002062

Acquire Date: 6/4/2020 12:19:25PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,090.0	Cts/S	9.1458	0.12900				
Y_3600		70,444	Cts/S	243.54	0.34572				
Y_3774		4,414.3	Cts/S	21.534	0.48783				

Mg 2016211

Acquire Date: 6/4/2020 12:23:19PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00086200	ppm	0.00086000	99.699	.00000	Abs	Pass	
Al3961		0.012759	ppm	0.011973	93.836				
As1890		-0.00044700	ppm	0.000071000	15.978	.00000	Abs	Pass	
B_2089		0.0073070	ppm	0.00017300	2.3690	.00000	Abs	Pass	
Ba4554		0.00021100	ppm	0.00017900	84.518	.00000	Abs	Pass	
Be3130		0.000094000	ppm	0.00038400	410.24	.00000	Abs	Pass	
Ca3179		0.074738	ppm	0.0066060	8.8382				
Cd2144		-0.0016220	ppm	0.000085000	5.2623	.00000	Abs	Pass	
Co2286		0.00041000	ppm	0.00012400	30.317	.00000	Abs	Pass	
Cr2677		-0.00085400	ppm	0.00067100	78.589	.00000	Abs	Pass	
Cu3247		0.0047170	ppm	0.000040000	0.84315	.00000	Abs	Pass	
Fe2599		0.35484	ppm	0.0078940	2.2247				
K_7664		-0.090581	ppm	0.072382	79.908	.00000	Abs	Pass	
Mg2790		1,015.8	ppm	1.8646	0.18356				
Mn2576		0.0030000	ppm	0.000050000	1.6798	.00000	Abs	Pass	
Mo2020		0.00034600	ppm	0.00014700	42.520	.00000	Abs	Pass	
Na5895		0.028371	ppm	0.015331	54.039	.00000	Abs	Pass	
Ni2316		0.0017860	ppm	0.000078000	4.3786	.00000	Abs	Pass	
P_1782		0.0010450	ppm	0.000075000	7.1572	.00000	Abs	Pass	
Pb2203		0.0018110	ppm	0.00070800	39.102	.00000	Abs	Pass	
S_1820		0.084906	ppm	0.00073400	0.86401	.00000	Abs	Pass	
Sb2068		0.013097	ppm	0.00085900	6.5616	.00000	Abs	Pass	
Se1960		-0.0059570	ppm	0.0044190	74.189	.00000	Abs	Pass	
Si2881		-0.071804	ppm	0.062393	86.894	.00000	Abs	Pass	
Sn1899		0.0020620	ppm	0.00048100	23.336	.00000	Abs	Pass	
Sr4077		0.000074000	ppm	0.00018500	250.19	.00000	Abs	Pass	
Ti3349		0.0029920	ppm	0.00049300	16.476	.00000	Abs	Pass	
Tl1908		0.0065010	ppm	0.0041350	63.598	.00000	Abs	Pass	
V_2924		-0.0010250	ppm	0.00016800	16.389	.00000	Abs	Pass	
Zn2062		0.0024820	ppm	0.00018600	7.4962	.00000	Abs	Pass	
Y_2243		6,591.3	Cts/S	7.3263	0.11115				
Y_3600		64,818	Cts/S	34.015	0.052478				
Y_3774		4,171.3	Cts/S	41.739	1.0006				

RINSE1

Acquire Date: 6/4/2020 12:27:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00093500	ppm	0.00095100	101.76
Al3961		0.0030780	ppm	0.017812	578.65
As1890		0.0017640	ppm	0.0027340	154.95
B_2089		0.0042770	ppm	0.00038600	9.0244
Ba4554		-0.00059200	ppm	0.00049500	83.594
Be3130		0.00021200	ppm	0.00020800	98.105
Ca3179		0.0060580	ppm	0.0035800	59.091
Cd2144		0.000067000	ppm	0.000073000	109.68
Co2286		0.00037600	ppm	0.00012800	33.923
Cr2677		0.000065000	ppm	0.00075500	1,155.2
Cu3247		0.00055500	ppm	0.00084000	151.30
Fe2599		0.015157	ppm	0.010744	70.887
K_7664		-0.011400	ppm	0.048967	429.54
Mg2790		0.080262	ppm	0.0029260	3.6455
Mn2576		-0.00025300	ppm	0.000072000	28.582
Mo2020		.0000070000	ppm	0.000086000	1,183.4
Na5895		-0.0039890	ppm	0.0011470	28.753
Ni2316		0.00086200	ppm	0.00026600	30.821
P_1782		-0.0018840	ppm	0.00027300	14.495
Pb2203		0.0015430	ppm	0.0017730	114.89
S_1820		0.0036070	ppm	0.0011220	31.097
Sb2068		0.0044240	ppm	0.0021100	47.700
Se1960		0.0042590	ppm	0.0034960	82.087
Si2881		-0.040744	ppm	0.0045520	11.173
Sn1899		0.0010450	ppm	0.00090400	86.511
Sr4077		0.000055000	ppm	0.00016500	299.74
Ti3349		-0.00014300	ppm	0.00035000	245.13
Tl1908		0.00055500	ppm	0.0011760	212.08
V_2924		-0.00035600	ppm	0.00087000	243.97
Zn2062		0.00038100	ppm	0.00027400	71.861
Y_2243		7,349.6	Cts/S	30.638	0.41687
Y_3600		72,574	Cts/S	39.569	0.054523
Y_3774		4,304.3	Cts/S	6.8688	0.15958

RINSE2

Acquire Date: 6/4/2020 12:31:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00092700	ppm	0.00024700	26.614
Al3961		0.0064150	ppm	0.0074340	115.89
As1890		0.0012930	ppm	0.00015100	11.642
B_2089		0.0030450	ppm	0.00022100	7.2438
Ba4554		0.00020400	ppm	0.00048900	240.22
Be3130		0.000051000	ppm	0.000093000	182.99
Ca3179		-0.0048080	ppm	0.0083410	173.49
Cd2144		0.000039000	ppm	0.000068000	173.47
Co2286		0.00033000	ppm	0.00038300	115.98

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

RINSE2

Acquire Date: 6/4/2020 12:31:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00014600	ppm	0.00075600	519.23
Cu3247		0.00093500	ppm	0.00085700	91.712
Fe2599		0.010055	ppm	0.011035	109.74
K_7664		-0.019809	ppm	0.041991	211.98
Mg2790		0.019962	ppm	0.00082800	4.1491
Mn2576		-0.00025000	ppm	0.000077000	30.752
Mo2020		-0.00024200	ppm	0.00011600	48.101
Na5895		0.015253	ppm	0.0061410	40.263
Ni2316		0.00066100	ppm	0.00052700	79.767
P_1782		-0.0011870	ppm	0.0011990	101.05
Pb2203		-0.0019120	ppm	0.00038800	20.299
S_1820		-0.00057200	ppm	0.0039490	690.64
Sb2068		0.0011950	ppm	0.0037420	313.03
Se1960		0.0025840	ppm	0.0017180	66.476
Si2881		-0.034715	ppm	0.015751	45.373
Sn1899		0.00020900	ppm	0.00016300	77.844
Sr4077		-0.00011800	ppm	0.00014400	122.03
Ti3349		-0.00030300	ppm	0.00013600	44.900
Tl1908		0.0028210	ppm	0.0011290	40.014
V_2924		-0.00065000	ppm	0.00016700	25.670
Zn2062		0.00010500	ppm	0.00039300	374.80
Y_2243		7,345.0	Cts/S	4.5947	0.062556
Y_3600		73,728	Cts/S	6.2165	0.0084320
Y_3774		4,434.9	Cts/S	12.416	0.27997

CCV 2010278

Acquire Date: 6/4/2020 12:35:18PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51966	ppm	0.00080400	0.15471	.50000	Rel(%)	Pass	
Al3961		25.440	ppm	0.046511	0.18282	25.000	Rel(%)	Pass	
As1890		0.51034	ppm	0.00050700	0.099423	.50000	Rel(%)	Pass	
B_2089		1.0332	ppm	0.0023530	0.22773	1.0000	Rel(%)	Pass	
Ba4554		2.5149	ppm	0.011139	0.44291	2.5000	Rel(%)	Pass	
Be3130		0.51362	ppm	0.0025770	0.50177	.50000	Rel(%)	Pass	
Ca3179		25.936	ppm	0.062490	0.24094	25.000	Rel(%)	Pass	
Cd2144		0.51546	ppm	0.0000040000	0.00070800	.50000	Rel(%)	Pass	
Co2286		2.5700	ppm	0.00093800	0.036501	2.5000	Rel(%)	Pass	
Cr2677		2.5792	ppm	0.011110	0.43077	2.5000	Rel(%)	Pass	
Cu3247		2.5388	ppm	0.012667	0.49894	2.5000	Rel(%)	Pass	
Fe2599		26.314	ppm	0.10997	0.41793	25.000	Rel(%)	Pass	
K_7664		25.108	ppm	0.10778	0.42925	25.000	Rel(%)	Pass	
Mg2790		25.814	ppm	0.10156	0.39344	25.000	Rel(%)	Pass	
Mn2576		2.5882	ppm	0.0064960	0.25097	2.5000	Rel(%)	Pass	
Mo2020		1.0215	ppm	0.0018370	0.17987	1.0000	Rel(%)	Pass	
Na5895		25.534	ppm	0.12984	0.50849	25.000	Rel(%)	Pass	
Ni2316		2.5925	ppm	0.0030780	0.11872	2.5000	Rel(%)	Pass	
P_1782		2.5017	ppm	0.0044510	0.17791	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/4/2020 12:35:18PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.51688	ppm	0.0056730	1.0974	.50000	Rel(%)	Pass	
S_1820		2.4712	ppm	0.0039900	0.16147	2.5000	Rel(%)	Pass	
Sb2068		0.51642	ppm	0.00017300	0.033489	.50000	Rel(%)	Pass	
Se1960		0.52089	ppm	0.00059700	0.11466	.50000	Rel(%)	Pass	
Si2881		2.5608	ppm	0.020513	0.80104	2.5000	Rel(%)	Pass	
Sn1899		2.5676	ppm	0.0025900	0.10087	2.5000	Rel(%)	Pass	
Sr4077		2.5485	ppm	0.011252	0.44152	2.5000	Rel(%)	Pass	
Ti3349		1.0199	ppm	0.0056570	0.55471	1.0000	Rel(%)	Pass	
Tl1908		0.52433	ppm	0.0019550	0.37283	.50000	Rel(%)	Pass	
V_2924		2.5558	ppm	0.010250	0.40103	2.5000	Rel(%)	Pass	
Zn2062		2.5674	ppm	0.011187	0.43574	2.5000	Rel(%)	Pass	
Y_2243		7,120.6	Cts/S	17.631	0.24760				
Y_3600		70,682	Cts/S	286.57	0.40544				
Y_3774		4,387.2	Cts/S	3.3179	0.075627				

CCB 1815536

Acquire Date: 6/4/2020 12:39:02PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.00062600	ppm	0.00025800	41.236	.00000	Abs	Pass	
Al3961		0.021314	ppm	0.037741	177.07	.00000	Abs	Pass	
As1890		0.0015110	ppm	0.0015570	103.05	.00000	Abs	Pass	
B_2089		0.0049730	ppm	0.00037900	7.6159	.00000	Abs	Pass	
Ba4554		0.00089900	ppm	0.00014200	15.752	.00000	Abs	Pass	
Be3130		0.000045000	ppm	0.000055000	122.25	.00000	Abs	Pass	
Ca3179		-0.0085610	ppm	0.00082200	9.5985	.00000	Abs	Pass	
Cd2144		0.000088000	ppm	0.0000020000	1.7403	.00000	Abs	Pass	
Co2286		0.00046300	ppm	0.00053100	114.75	.00000	Abs	Pass	
Cr2677		0.0010360	ppm	0.00028000	27.010	.00000	Abs	Pass	
Cu3247		0.0022710	ppm	0.00013200	5.8111	.00000	Abs	Pass	
Fe2599		0.042343	ppm	0.0081480	19.243	.00000	Abs	Pass	
K_7664		-0.026690	ppm	0.055703	208.71	.00000	Abs	Pass	
Mg2790		0.0087460	ppm	0.0013910	15.905	.00000	Abs	Pass	
Mn2576		0.000017000	ppm	0.0000030000	17.481	.00000	Abs	Pass	
Mo2020		0.0033620	ppm	0.00037200	11.062	.00000	Abs	Pass	
Na5895		0.011467	ppm	0.0051400	44.829	.00000	Abs	Pass	
Ni2316		0.0010380	ppm	0.00067500	64.981	.00000	Abs	Pass	
P_1782		-0.0027530	ppm	0.0024090	87.513	.00000	Abs	Pass	
Pb2203		-0.0015840	ppm	0.00059100	37.288	.00000	Abs	Pass	
S_1820		0.00032300	ppm	0.000040000	12.380	.00000	Abs	Pass	
Sb2068		0.0023970	ppm	0.00030000	12.530	.00000	Abs	Pass	
Se1960		0.0043270	ppm	0.0037630	86.970	.00000	Abs	Pass	
Si2881		-0.020395	ppm	0.055555	272.39	.00000	Abs	Pass	
Sn1899		0.0022290	ppm	0.00017500	7.8616	.00000	Abs	Pass	
Sr4077		0.00050200	ppm	0.00038100	75.843	.00000	Abs	Pass	
Ti3349		0.0025970	ppm	0.0000090000	0.33614	.00000	Abs	Pass	
Tl1908		0.0025380	ppm	0.0030880	121.69	.00000	Abs	Pass	
V_2924		-0.00017500	ppm	0.000054000	31.181	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/4/2020 12:39:02PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0015380	ppm	0.00078900	51.304	.00000	Abs	Pass	
Y_2243		7,298.0	Cts/S	6.4657	0.088595				
Y_3600		72,723	Cts/S	218.89	0.30099				
Y_3774		4,382.2	Cts/S	2.1142	0.048245				

MB 320-382787/1-A

Acquire Date: 6/4/2020 12:43:03PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0014170	ppm	0.00044900	31.732
Al3961		0.0081980	ppm	0.015975	194.86
As1890		0.00041400	ppm	0.0022240	536.82
B_2089		0.0025210	ppm	0.00025600	10.152
Ba4554		0.00018100	ppm	0.00029000	159.65
Be3130		0.000042000	ppm	0.00043000	1,011.8
Ca3179		-0.0020190	ppm	0.0032390	160.43
Cd2144		0.000077000	ppm	0.0000060000	8.0258
Co2286		0.00055300	ppm	0.00019900	36.088
Cr2677		0.00012300	ppm	0.00054600	444.66
Cu3247		0.0012910	ppm	0.000061000	4.7582
Fe2599		0.0028420	ppm	0.021445	754.62
K_7664		-0.011219	ppm	0.00034300	3.0598
Mg2790		0.013969	ppm	0.0066700	47.747
Mn2576		-0.00011100	ppm	0.000084000	75.658
Mo2020		0.00058000	ppm	0.00066000	113.80
Na5895		0.010125	ppm	0.0035000	34.563
Ni2316		0.00089700	ppm	0.00014500	16.174
P_1782		0.0012940	ppm	0.00068700	53.096
Pb2203		-0.00071600	ppm	0.0010990	153.60
S_1820		0.0046610	ppm	0.0010890	23.366
Sb2068		0.0017100	ppm	0.00039700	23.208
Se1960		0.0038740	ppm	0.0028270	72.974
Si2881		-0.038591	ppm	0.017350	44.958
Sn1899		0.00041900	ppm	0.000036000	8.6662
Sr4077		0.00015600	ppm	0.00022600	144.49
Ti3349		0.000019000	ppm	0.00065000	3,415.5
Tl1908		0.0038850	ppm	0.0031410	80.852
V_2924		-0.00045700	ppm	0.0013370	292.82
Zn2062		0.00091600	ppm	0.000069000	7.5793
Y_2243		7,361.2	Cts/S	1.0832	0.014714
Y_3600		73,441	Cts/S	133.28	0.18147
Y_3774		4,424.4	Cts/S	2.4143	0.054566

LCS 320-382573/2-A

Acquire Date: 6/4/2020 12:47:02PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.047649	ppm	0.00012700	0.26641
Al3961		4.6972	ppm	0.070481	1.5005
As1890	**W**	**0.43688**	**ppm**	**0.0063680**	**1.4575**
B_2089		4.2172	ppm	0.010068	0.23874
Ba4554	**W**	**0.46037**	**ppm**	**0.0044010**	**0.95597**
Be3130		0.23246	ppm	0.0022340	0.96119
Ca3179		23.817	ppm	0.22659	0.95140
Cd2144	**W**	**0.22724**	**ppm**	**0.00023600**	**0.10377**
Co2286		0.22768	ppm	0.00065100	0.28595
Cr2677	**W**	**0.23561**	**ppm**	**0.0012760**	**0.54169**
Cu3247		0.22901	ppm	0.00090300	0.39415
Fe2599		4.9025	ppm	0.039189	0.79935
K_7664		22.791	ppm	0.20986	0.92079
Mg2790		23.327	ppm	0.011614	0.049787
Mn2576		0.23836	ppm	0.00023000	0.096549
Mo2020		0.23026	ppm	0.00077300	0.33574
Na5895		23.291	ppm	0.23081	0.99102
Ni2316		0.22675	ppm	0.00054800	0.24186
P_1782		4.6820	ppm	0.0096000	0.20503
Pb2203	**W**	**0.23294**	**ppm**	**0.0014950**	**0.64185**
S_1820		4.4645	ppm	0.0054780	0.12271
Sb2068		0.43777	ppm	0.00031500	0.071942
Se1960	**W**	**0.42438**	**ppm**	**0.0031830**	**0.74998**
Si2881	**F**	**3.4309**	**ppm**	**0.013740**	**0.40049**
Sn1899		0.50294	ppm	0.0029810	0.59266
Sr4077		0.23233	ppm	0.0023780	1.0236
Ti3349	**W**	**0.23477**	**ppm**	**0.00080900**	**0.34463**
Tl1908		0.47672	ppm	0.0012310	0.25831
V_2924		0.23199	ppm	0.0010330	0.44537
Zn2062		0.46682	ppm	0.0013070	0.28001
Y_2243		7,074.7	Cts/S	13.865	0.19598
Y_3600		69,958	Cts/S	14.695	0.021005
Y_3774		4,284.7	Cts/S	22.972	0.53614

MB 320-382937/1-A

Acquire Date: 6/4/2020 12:50:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0011780	ppm	0.00082200	69.744
Al3961		0.023949	ppm	0.018273	76.301
As1890		0.0032680	ppm	0.00079700	24.390
B_2089		0.013041	ppm	0.00032600	2.5022
Ba4554		0.0010100	ppm	0.00017300	17.109
Be3130		0.00023600	ppm	0.000037000	15.755
Ca3179		0.11460	ppm	0.011056	9.6473
Cd2144		0.000082000	ppm	0.000030000	37.354
Co2286		0.00051500	ppm	0.00019100	37.141

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-382937/1-A

Acquire Date: 6/4/2020 12:50:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00075000	ppm	0.00021500	28.660
Cu3247		0.0013260	ppm	0.00079200	59.744
Fe2599		0.0082850	ppm	0.0024290	29.314
K_7664		0.038606	ppm	0.057702	149.47
Mg2790		0.044254	ppm	0.00089100	2.0135
Mn2576		0.00069000	ppm	0.000053000	7.7357
Mo2020		0.00091500	ppm	0.000056000	6.1322
Na5895		0.12749	ppm	0.019744	15.487
Ni2316		0.0017460	ppm	0.00086200	49.388
P_1782		0.015939	ppm	0.00093500	5.8644
Pb2203		-0.0016630	ppm	0.00032300	19.432
S_1820		0.0068190	ppm	0.0042160	61.831
Sb2068		0.0045430	ppm	0.00094400	20.784
Se1960		0.0066090	ppm	0.0022330	33.782
Si2881		-0.042916	ppm	0.044015	102.56
Sn1899	**W**	**0.019975**	**ppm**	**0.00026900**	**1.3444**
Sr4077		0.00036600	ppm	0.000025000	6.8776
Ti3349		0.00094500	ppm	0.000058000	6.1804
Tl1908		0.0061550	ppm	0.00028000	4.5500
V_2924		-0.0011250	ppm	0.00057400	51.023
Zn2062		0.0010380	ppm	0.000061000	5.8775
Y_2243		7,330.6	Cts/S	12.226	0.16678
Y_3600		73,735	Cts/S	399.82	0.54224
Y_3774		4,360.3	Cts/S	42.555	0.97598

LCS 320-382937/2-A

Acquire Date: 6/4/2020 12:54:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.048584	ppm	0.0020390	4.1962
Al3961		4.8490	ppm	0.021808	0.44973
As1890	**W**	**0.44947**	**ppm**	**0.00020100**	**0.044811**
B_2089		4.3024	ppm	0.0033640	0.078196
Ba4554	**W**	**0.47386**	**ppm**	**0.0031560**	**0.66596**
Be3130		0.23881	ppm	0.0013930	0.58321
Ca3179		24.407	ppm	0.10531	0.43147
Cd2144	**W**	**0.23369**	**ppm**	**0.000084000**	**0.035929**
Co2286		0.23392	ppm	0.00072500	0.31013
Cr2677	**W**	**0.24191**	**ppm**	**0.00089300**	**0.36907**
Cu3247		0.23545	ppm	0.0027450	1.1658
Fe2599		5.0778	ppm	0.029433	0.57964
K_7664		23.456	ppm	0.10061	0.42891
Mg2790		23.875	ppm	0.21826	0.91415
Mn2576		0.24461	ppm	0.0025830	1.0561
Mo2020		0.23624	ppm	0.00025900	0.10952
Na5895		23.973	ppm	0.10664	0.44483
Ni2316		0.23294	ppm	0.00091300	0.39179

LCS 320-382937/2-A

Acquire Date: 6/4/2020 12:54:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		4.7419	ppm	0.021153	0.44608
Pb2203	**W**	**0.24071**	**ppm**	**0.0019400**	**0.80587**
S_1820		4.5423	ppm	0.0095240	0.20967
Sb2068		0.44085	ppm	0.00095400	0.21631
Se1960	**W**	**0.43909**	**ppm**	**0.0022140**	**0.50413**
Si2881	**F**	**3.3302**	**ppm**	**0.011435**	**0.34338**
Sn1899		0.51791	ppm	0.00081600	0.15751
Sr4077		0.23939	ppm	0.0015180	0.63409
Ti3349	**W**	**0.24070**	**ppm**	**0.0015100**	**0.62737**
Tl1908		0.48448	ppm	0.0013640	0.28149
V_2924		0.23762	ppm	0.0029340	1.2348
Zn2062		0.47212	ppm	0.0040490	0.85757
Y_2243		7,094.9	Cts/S	6.7314	0.094877
Y_3600		70,633	Cts/S	457.80	0.64814
Y_3774		4,279.3	Cts/S	45.556	1.0646

320-61373-A-1-A

Acquire Date: 6/4/2020 12:58:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.015759	ppm	0.00071400	4.5288
Al3961		164.17	ppm	0.033274	0.020268
As1890		0.13133	ppm	0.0014750	1.1232
B_2089		0.23722	ppm	0.0012260	0.51701
Ba4554		2.8216	ppm	0.0029430	0.10431
Be3130		0.0038840	ppm	0.000061000	1.5656
Ca3179		123.32	ppm	0.21623	0.17534
Cd2144		0.044779	ppm	0.00013200	0.29374
Co2286		0.18078	ppm	0.00053500	0.29571
Cr2677		0.70122	ppm	0.0027960	0.39871
Cu3247		2.1889	ppm	0.0073130	0.33410
Fe2599		584.37	ppm	0.75850	0.12980
K_7664		15.504	ppm	0.14023	0.90446
Mg2790		76.017	ppm	0.092186	0.12127
Mn2576		6.5336	ppm	0.0065760	0.10065
Mo2020		0.030805	ppm	0.00064900	2.1072
Na5895		5.1729	ppm	0.026784	0.51777
Ni2316		0.93706	ppm	0.0023510	0.25089
P_1782		9.6821	ppm	0.051138	0.52817
Pb2203		10.200	ppm	0.0015800	0.015486
S_1820		4.5209	ppm	0.023947	0.52970
Sb2068		0.086391	ppm	0.0026180	3.0306
Se1960		0.0090940	ppm	0.0056470	62.096
Si2881		2.5712	ppm	0.025413	0.98839
Sn1899		0.87830	ppm	0.00049500	0.056330
Sr4077		0.66237	ppm	0.0016650	0.25132
Ti3349		4.2126	ppm	0.0082980	0.19698

320-61373-A-1-A

Acquire Date: 6/4/2020 12:58:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0031620	ppm	0.0023610	74.677
V_2924		0.50686	ppm	0.0027250	0.53761
Zn2062	**W**	**12.661**	**ppm**	**0.014776**	**0.11670**
Y_2243		6,975.6	Cts/S	10.361	0.14853
Y_3600		68,762	Cts/S	88.066	0.12807
Y_3774		4,397.7	Cts/S	19.918	0.45292

sd 320-61373-A-1-A@5

Acquire Date: 6/4/2020 1:02:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0047540	ppm	0.00057100	12.021
Al3961		33.197	ppm	0.025234	0.076010
As1890		0.029921	ppm	0.00033000	1.1032
B_2089		0.057692	ppm	0.00050700	0.87939
Ba4554		0.57589	ppm	0.00037900	0.065823
Be3130		0.00086400	ppm	0.000013000	1.5512
Ca3179		25.595	ppm	0.032137	0.12556
Cd2144		0.0093970	ppm	0.00012200	1.2984
Co2286		0.038662	ppm	0.000043000	0.11006
Cr2677		0.14454	ppm	0.00038900	0.26916
Cu3247		0.44704	ppm	0.00035600	0.079569
Fe2599		124.56	ppm	0.068636	0.055103
K_7664		3.0790	ppm	0.069016	2.2415
Mg2790		15.868	ppm	0.029353	0.18498
Mn2576		1.3665	ppm	0.0039220	0.28701
Mo2020		0.0061200	ppm	0.00051400	8.3994
Na5895		1.0267	ppm	0.017796	1.7334
Ni2316		0.20048	ppm	0.0011270	0.56209
P_1782		1.9961	ppm	0.0040460	0.20270
Pb2203		2.1748	ppm	0.0016390	0.075341
S_1820		0.92549	ppm	0.0019540	0.21108
Sb2068		0.021183	ppm	0.0044660	21.083
Se1960		0.0029240	ppm	0.0048030	164.29
Si2881		0.55020	ppm	0.019319	3.5112
Sn1899		0.18593	ppm	0.00067200	0.36149
Sr4077		0.13534	ppm	0.00054200	0.40045
Ti3349		0.86191	ppm	0.0029800	0.34575
Tl1908		0.000047000	ppm	0.0015680	3,327.0
V_2924		0.10203	ppm	0.00026900	0.26402
Zn2062		2.7390	ppm	0.0028960	0.10572
Y_2243		7,270.5	Cts/S	9.1882	0.12638
Y_3600		71,924	Cts/S	57.283	0.079644
Y_3774		4,423.7	Cts/S	21.534	0.48680

pds 320-61373-A-1-A

Acquire Date: 6/4/2020 1:06:14PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.11417	ppm	0.00011800	0.10298
Al3961		168.77	ppm	0.49516	0.29340
As1890		0.21954	ppm	0.00088300	0.40216
B_2089		1.1107	ppm	0.00029000	0.026081
Ba4554		2.8345	ppm	0.0054590	0.19260
Be3130		0.051578	ppm	0.00023200	0.44957
Ca3179		128.87	ppm	0.22867	0.17745
Cd2144		0.13708	ppm	0.00039800	0.29067
Co2286		0.26894	ppm	0.00030400	0.11287
Cr2677		0.77583	ppm	0.0042040	0.54192
Cu3247		2.1975	ppm	0.0059330	0.26998
Fe2599		569.98	ppm	1.4219	0.24946
K_7664		24.759	ppm	0.037556	0.15168
Mg2790		82.965	ppm	0.26778	0.32277
Mn2576		6.4054	ppm	0.016334	0.25500
Mo2020		0.12303	ppm	0.00090000	0.73133
Na5895		14.902	ppm	0.0042300	0.028387
Ni2316		0.99610	ppm	0.0012390	0.12442
P_1782		10.284	ppm	0.010180	0.098994
Pb2203		9.8763	ppm	0.0074980	0.075915
S_1820		4.3771	ppm	0.0049250	0.11251
Sb2068		0.17166	ppm	0.00091400	0.53235
Se1960		0.098729	ppm	0.0045070	4.5649
Si2881		5.6574	ppm	0.0038360	0.067811
Sn1899		0.94280	ppm	0.0011610	0.12316
Sr4077		0.73987	ppm	0.00034600	0.046722
Ti3349		4.1945	ppm	0.017113	0.40799
Tl1908		0.091983	ppm	0.0024220	2.6331
V_2924		0.58714	ppm	0.0024490	0.41718
Zn2062	**W**	**12.357**	**ppm**	**0.038627**	**0.31259**
Y_2243		6,911.4	Cts/S	18.297	0.26474
Y_3600		68,129	Cts/S	0.0063290	0.0000090000
Y_3774		4,367.4	Cts/S	23.483	0.53768

320-61373-A-1-B MS

Acquire Date: 6/4/2020 1:10:00PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.059570	ppm	0.0024770	4.1576
Al3961		216.71	ppm	0.67960	0.31360
As1890		0.65980	ppm	0.0027720	0.42011
B_2089		4.2156	ppm	0.00033000	0.0078350
Ba4554		3.6992	ppm	0.0092610	0.25036
Be3130		0.23389	ppm	0.00061400	0.26234
Ca3179		142.77	ppm	0.46975	0.32903
Cd2144		0.24519	ppm	0.00026300	0.10726
Co2286		0.39020	ppm	0.00016800	0.042992

320-61373-A-1-B MS

Acquire Date:	6/4/2020 1:10:00PM			Sample Type:	Unknown					
Correction Factor:	1.0000	SW:	1.0000	NW:	1.0000	IV:	1.0000	FV:	1.0000	AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.95938	ppm	0.0054100	0.56391
Cu3247		1.9368	ppm	0.0077180	0.39849
Fe2599		507.35	ppm	0.72532	0.14296
K_7664		40.501	ppm	0.17146	0.42335
Mg2790		110.40	ppm	0.62910	0.56986
Mn2576		8.9932	ppm	0.060317	0.67069
Mo2020		0.23982	ppm	0.000050000	0.021006
Na5895		29.187	ppm	0.14155	0.48497
Ni2316		1.2424	ppm	0.0011680	0.094054
P_1782		13.391	ppm	0.00041200	0.0030780
Pb2203		17.161	ppm	0.011977	0.069795
S_1820		9.6043	ppm	0.027628	0.28766
Sb2068		0.21984	ppm	0.0014060	0.63947
Se1960		0.41641	ppm	0.00075900	0.18231
Si2881		6.2487	ppm	0.017770	0.28437
Sn1899		1.4660	ppm	0.00095300	0.065004
Sr4077		0.97562	ppm	0.0031190	0.31972
Ti3349	**W**	**5.8563**	**ppm**	**0.013854**	**0.23657**
Tl1908		0.44491	ppm	0.0012470	0.28022
V_2924		0.84415	ppm	0.0031440	0.37240
Zn2062		8.9927	ppm	0.042439	0.47193
Y_2243		6,903.8	Cts/S	23.296	0.33743
Y_3600		67,759	Cts/S	316.98	0.46782
Y_3774		4,412.7	Cts/S	12.295	0.27863

320-61373-A-1-C MSD

Acquire Date:	6/4/2020 1:13:50PM			Sample Type:	Unknown					
Correction Factor:	1.0000	SW:	1.0000	NW:	1.0000	IV:	1.0000	FV:	1.0000	AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.060033	ppm	0.00031000	0.51671
Al3961		231.17	ppm	0.51859	0.22433
As1890		0.54573	ppm	0.0034340	0.62923
B_2089		4.2148	ppm	0.0011660	0.027664
Ba4554		3.9537	ppm	0.0067050	0.16958
Be3130		0.23476	ppm	0.00068300	0.29082
Ca3179		115.08	ppm	0.16067	0.13962
Cd2144		0.24724	ppm	0.00021900	0.088438
Co2286		0.37620	ppm	0.00044200	0.11757
Cr2677		1.1092	ppm	0.0037540	0.33847
Cu3247		2.0444	ppm	0.0047940	0.23450
Fe2599		407.21	ppm	0.41042	0.10079
K_7664		41.598	ppm	0.12565	0.30205
Mg2790		113.88	ppm	0.38496	0.33803
Mn2576		5.5720	ppm	0.018437	0.33088
Mo2020		0.23520	ppm	0.00047500	0.20215
Na5895		29.350	ppm	0.089878	0.30623
Ni2316		1.2590	ppm	0.00060600	0.048118

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61373-A-1-C MSD

Acquire Date: 6/4/2020 1:13:50PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		13.357	ppm	0.0080180	0.060027
Pb2203	**W**	**22.884**	**ppm**	**0.026092**	**0.11402**
S_1820		8.8916	ppm	0.0010420	0.011717
Sb2068		0.21318	ppm	0.0061010	2.8621
Se1960		0.42631	ppm	0.0046750	1.0965
Si2881		5.8512	ppm	0.060927	1.0413
Sn1899		1.0855	ppm	0.00021000	0.019342
Sr4077		0.91010	ppm	0.00076400	0.083948
Ti3349	**W**	**6.2239**	**ppm**	**0.017752**	**0.28523**
Tl1908		0.44595	ppm	0.0020120	0.45115
V_2924		0.86427	ppm	0.0039810	0.46063
Zn2062		9.2394	ppm	0.029146	0.31545
Y_2243		6,997.8	Cts/S	7.7316	0.11049
Y_3600		68,831	Cts/S	83.070	0.12069
Y_3774		4,457.8	Cts/S	28.368	0.63636

320-61373-A-2-A

Acquire Date: 6/4/2020 1:17:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.010436	ppm	0.00083400	7.9888
Al3961		196.10	ppm	0.53842	0.27456
As1890		0.13628	ppm	0.0024480	1.7963
B_2089		0.22382	ppm	0.0015890	0.70984
Ba4554		3.5256	ppm	0.010624	0.30134
Be3130		0.0043440	ppm	0.00015100	3.4762
Ca3179		125.77	ppm	0.51373	0.40847
Cd2144		0.030144	ppm	0.000096000	0.31966
Co2286		0.17527	ppm	0.0010380	0.59239
Cr2677		0.78230	ppm	0.00062100	0.079420
Cu3247		2.1010	ppm	0.0024940	0.11872
Fe2599		574.58	ppm	2.1810	0.37959
K_7664		17.458	ppm	0.14185	0.81251
Mg2790		95.155	ppm	0.35589	0.37401
Mn2576		6.4398	ppm	0.027586	0.42836
Mo2020		0.028733	ppm	0.00053800	1.8726
Na5895		5.7373	ppm	0.019180	0.33431
Ni2316		1.2182	ppm	0.0035850	0.29432
P_1782		8.8388	ppm	0.024770	0.28025
Pb2203		6.3042	ppm	0.0014520	0.023034
S_1820		4.6348	ppm	0.0095540	0.20614
Sb2068		0.050533	ppm	0.0030920	6.1183
Se1960		0.010327	ppm	0.0011530	11.168
Si2881		2.1598	ppm	0.034881	1.6150
Sn1899		1.1613	ppm	0.0063140	0.54366
Sr4077		0.77231	ppm	0.0026310	0.34071
Ti3349		4.6650	ppm	0.019309	0.41392

320-61373-A-2-A

Acquire Date: 6/4/2020 1:17:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00032800	ppm	0.0027660	843.98
V_2924		0.59725	ppm	0.0023600	0.39517
Zn2062		8.3558	ppm	0.027218	0.32574
Y_2243		7,043.4	Cts/S	1.1597	0.016465
Y_3600		69,347	Cts/S	39.686	0.057228
Y_3774		4,477.0	Cts/S	33.072	0.73871

CCV 2010278

Acquire Date: 6/4/2020 1:21:20PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51977	ppm	0.0015010	0.28882	.50000	Rel(%)	Pass	
Al3961		25.676	ppm	0.046152	0.17975	25.000	Rel(%)	Pass	
As1890		0.51335	ppm	0.0023400	0.45593	.50000	Rel(%)	Pass	
B_2089		1.0472	ppm	0.00091800	0.087654	1.0000	Rel(%)	Pass	
Ba4554		2.5435	ppm	0.0016890	0.066406	2.5000	Rel(%)	Pass	
Be3130		0.51642	ppm	0.0015500	0.30019	.50000	Rel(%)	Pass	
Ca3179		26.256	ppm	0.040792	0.15536	25.000	Rel(%)	Pass	
Cd2144		0.52287	ppm	0.00057300	0.10954	.50000	Rel(%)	Pass	
Co2286		2.5890	ppm	0.0012180	0.047061	2.5000	Rel(%)	Pass	
Cr2677		2.6041	ppm	0.0088450	0.33967	2.5000	Rel(%)	Pass	
Cu3247		2.5586	ppm	0.00013800	0.0053840	2.5000	Rel(%)	Pass	
Fe2599		27.066	ppm	0.061425	0.22695	25.000	Rel(%)	Pass	
K_7664		25.258	ppm	0.043784	0.17335	25.000	Rel(%)	Pass	
Mg2790		26.083	ppm	0.086794	0.33276	25.000	Rel(%)	Pass	
Mn2576		2.6148	ppm	0.0055890	0.21373	2.5000	Rel(%)	Pass	
Mo2020		1.0268	ppm	0.0011530	0.11224	1.0000	Rel(%)	Pass	
Na5895		25.690	ppm	0.048364	0.18826	25.000	Rel(%)	Pass	
Ni2316		2.6229	ppm	0.0029280	0.11162	2.5000	Rel(%)	Pass	
P_1782		2.5224	ppm	0.010728	0.42530	2.5000	Rel(%)	Pass	
Pb2203		0.53035	ppm	0.0012700	0.23939	.50000	Rel(%)	Pass	
S_1820		2.4825	ppm	0.013447	0.54168	2.5000	Rel(%)	Pass	
Sb2068		0.51568	ppm	0.0059380	1.1515	.50000	Rel(%)	Pass	
Se1960		0.52054	ppm	0.00014100	0.027019	.50000	Rel(%)	Pass	
Si2881		2.5706	ppm	0.035437	1.3785	2.5000	Rel(%)	Pass	
Sn1899		2.5921	ppm	0.0048400	0.18671	2.5000	Rel(%)	Pass	
Sr4077		2.5710	ppm	0.0039510	0.15369	2.5000	Rel(%)	Pass	
Ti3349		1.0472	ppm	0.0012500	0.11941	1.0000	Rel(%)	Pass	
Tl1908		0.52812	ppm	0.0040470	0.76636	.50000	Rel(%)	Pass	
V_2924		2.5776	ppm	0.0049820	0.19329	2.5000	Rel(%)	Pass	
Zn2062		2.6570	ppm	0.0054240	0.20412	2.5000	Rel(%)	Pass	
Y_2243		7,144.1	Cts/S	8.0029	0.11202				
Y_3600		70,041	Cts/S	198.25	0.28305				
Y_3774		4,327.6	Cts/S	20.628	0.47665				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 1815536

Acquire Date: 6/4/2020 1:25:04PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0024680	ppm	0.00028500	11.549	.00000	Abs	Pass	
Al3961		0.021468	ppm	0.038035	177.17	.00000	Abs	Pass	
As1890		0.0022560	ppm	0.00029500	13.076	.00000	Abs	Pass	
B_2089		0.011397	ppm	0.0013510	11.851	.00000	Abs	Pass	
Ba4554		0.00088500	ppm	0.00044100	49.821	.00000	Abs	Pass	
Be3130		0.000085000	ppm	0.00036600	432.88	.00000	Abs	Pass	
Ca3179		-0.0069260	ppm	0.0062020	89.544	.00000	Abs	Pass	
Cd2144		0.00014600	ppm	0.0000040000	2.4995	.00000	Abs	Pass	
Co2286		0.00054800	ppm	0.00010000	18.232	.00000	Abs	Pass	
Cr2677		0.00083200	ppm	0.000036000	4.3187	.00000	Abs	Pass	
Cu3247		0.0031010	ppm	0.00041600	13.427	.00000	Abs	Pass	
Fe2599	**W**	**0.094838**	**ppm**	**0.020397**	**21.508**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.0061070	ppm	0.081311	1,331.5	.00000	Abs	Pass	
Mg2790		0.0056380	ppm	0.00027600	4.8867	.00000	Abs	Pass	
Mn2576		0.00087700	ppm	0.0000080000	0.90888	.00000	Abs	Pass	
Mo2020		0.0038660	ppm	0.00021900	5.6744	.00000	Abs	Pass	
Na5895		0.0052100	ppm	0.011062	212.33	.00000	Abs	Pass	
Ni2316		0.00029300	ppm	0.000027000	9.2333	.00000	Abs	Pass	
P_1782		-0.00028700	ppm	0.0019250	670.93	.00000	Abs	Pass	
Pb2203		0.0010700	ppm	0.00015300	14.269	.00000	Abs	Pass	
S_1820		0.0016160	ppm	0.0036030	222.94	.00000	Abs	Pass	
Sb2068		0.0043750	ppm	0.0010750	24.577	.00000	Abs	Pass	
Se1960		0.0058950	ppm	0.0012560	21.307	.00000	Abs	Pass	
Si2881		-0.037011	ppm	0.0078540	21.219	.00000	Abs	Pass	
Sn1899		0.0030470	ppm	0.00041000	13.467	.00000	Abs	Pass	
Sr4077		0.00064800	ppm	0.00058900	90.796	.00000	Abs	Pass	
Ti3349		0.0047120	ppm	0.0011450	24.297	.00000	Abs	Pass	
Tl1908		0.0037260	ppm	0.00028500	7.6469	.00000	Abs	Pass	
V_2924		-0.00010900	ppm	0.00013700	125.89	.00000	Abs	Pass	
Zn2062	**W**	**0.017019**	**ppm**	**0.00026600**	**1.5646**	**.00000**	**Abs**	**Warn High**	**0.00500**
Y_2243		7,272.2	Cts/S	16.683	0.22941				
Y_3600		72,849	Cts/S	11.916	0.016357				
Y_3774		4,342.8	Cts/S	5.9957	0.13806				

320-61373-A-3-A

Acquire Date: 6/4/2020 1:29:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0089460	ppm	0.00022200	2.4782
Al3961		158.84	ppm	0.54116	0.34070
As1890		0.13323	ppm	0.0011000	0.82577
B_2089		0.18975	ppm	0.00034800	0.18359
Ba4554		3.0989	ppm	0.013119	0.42334
Be3130		0.0033930	ppm	0.00018800	5.5510
Ca3179		133.02	ppm	0.49221	0.37001
Cd2144		0.025754	ppm	0.000076000	0.29691
Co2286		0.15633	ppm	0.00042700	0.27331
Cr2677		0.63652	ppm	0.0028410	0.44637

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61373-A-3-A

Acquire Date: 6/4/2020 1:29:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		1.7467	ppm	0.0099560	0.56998
Fe2599		498.89	ppm	1.9212	0.38510
K_7664		16.787	ppm	0.019115	0.11387
Mg2790		77.574	ppm	0.15911	0.20511
Mn2576		6.0908	ppm	0.0085730	0.14076
Mo2020		0.024113	ppm	0.00045900	1.9049
Na5895		5.2615	ppm	0.014298	0.27176
Ni2316		0.98802	ppm	0.0056610	0.57295
P_1782		25.504	ppm	0.020591	0.080735
Pb2203		8.7620	ppm	0.0085880	0.098015
S_1820		3.7947	ppm	0.015282	0.40272
Sb2068		0.044757	ppm	0.0047540	10.622
Se1960		0.0071170	ppm	0.0018350	25.787
Si2881		2.2534	ppm	0.011090	0.49214
Sn1899		0.96809	ppm	0.0041670	0.43044
Sr4077		0.64010	ppm	0.0022570	0.35258
Ti3349		3.8353	ppm	0.0097420	0.25401
Tl1908		0.0014170	ppm	0.00028000	19.758
V_2924		0.51998	ppm	0.0031400	0.60381
Zn2062		9.4175	ppm	0.0087860	0.093295
Y_2243		7,026.9	Cts/S	11.910	0.16949
Y_3600		68,954	Cts/S	192.11	0.27861
Y_3774		4,436.8	Cts/S	26.292	0.59259

320-61373-A-4-A

Acquire Date: 6/4/2020 1:32:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.014619	ppm	0.00026100	1.7859
Al3961		153.79	ppm	0.54792	0.35629
As1890		0.16110	ppm	0.00016900	0.10488
B_2089		0.18809	ppm	0.00014300	0.075947
Ba4554		3.2345	ppm	0.013607	0.42068
Be3130		0.0034860	ppm	0.00028600	8.2032
Ca3179		83.580	ppm	0.28396	0.33975
Cd2144		0.018605	ppm	0.000053000	0.28402
Co2286		0.20786	ppm	0.00066400	0.31951
Cr2677		0.88734	ppm	0.00021500	0.024215
Cu3247		1.9940	ppm	0.0037630	0.18872
Fe2599		635.08	ppm	1.8591	0.29274
K_7664		14.428	ppm	0.12435	0.86183
Mg2790		103.24	ppm	0.21263	0.20596
Mn2576		6.0384	ppm	0.0087840	0.14547
Mo2020		0.034071	ppm	0.00013300	0.39016
Na5895		5.1825	ppm	0.014978	0.28901
Ni2316		1.3334	ppm	0.0041140	0.30851
P_1782		10.127	ppm	0.0066620	0.065779

320-61373-A-4-A

Acquire Date: 6/4/2020 1:32:49PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		9.3610	ppm	0.0067290	0.071888
S_1820		3.2133	ppm	0.0058540	0.18219
Sb2068		0.068671	ppm	0.0046700	6.8013
Se1960		0.0053100	ppm	0.00025400	4.7750
Si2881		2.3963	ppm	0.011447	0.47769
Sn1899		1.2472	ppm	0.0024140	0.19354
Sr4077		0.55113	ppm	0.0014450	0.26228
Ti3349		3.7585	ppm	0.0088890	0.23650
Tl1908		0.00055800	ppm	0.00021200	37.936
V_2924		0.50662	ppm	0.0038190	0.75381
Zn2062		8.1697	ppm	0.014116	0.17279
Y_2243		7,032.9	Cts/S	2.4940	0.035462
Y_3600		69,137	Cts/S	265.77	0.38440
Y_3774		4,400.5	Cts/S	27.519	0.62537

blank1

Acquire Date: 6/4/2020 1:36:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00058400	ppm	0.0015220	260.42
Al3961		0.086161	ppm	0.036775	42.682
As1890		0.0019580	ppm	0.00089800	45.866
B_2089		0.0054620	ppm	0.00053200	9.7317
Ba4554		0.0012380	ppm	0.00084900	68.594
Be3130		0.00015100	ppm	0.000087000	57.711
Ca3179		0.031933	ppm	0.0063230	19.800
Cd2144		0.000054000	ppm	0.0000090000	16.926
Co2286		0.00043600	ppm	0.00058800	134.98
Cr2677		0.00067400	ppm	0.00029400	43.632
Cu3247		0.0028120	ppm	0.00050400	17.932
Fe2599		0.43435	ppm	0.13890	31.978
K_7664		-0.016874	ppm	0.020906	123.89
Mg2790		0.023082	ppm	0.013401	58.058
Mn2576		0.0016440	ppm	0.00061100	37.183
Mo2020		0.00020300	ppm	0.00029300	144.64
Na5895		0.010150	ppm	0.0068840	67.822
Ni2316		0.00082400	ppm	0.00034100	41.407
P_1782		0.0054650	ppm	0.00077300	14.150
Pb2203		0.0022270	ppm	0.0010200	45.793
S_1820		-0.0024700	ppm	0.0011560	46.805
Sb2068		0.0050630	ppm	0.0023260	45.945
Se1960		0.0032420	ppm	0.0019480	60.105
Si2881		-0.029108	ppm	0.017057	58.600
Sn1899		0.0018240	ppm	0.0013190	72.296
Sr4077		0.00030800	ppm	0.00051500	167.10
Ti3349		0.0071940	ppm	0.000058000	0.80739
Tl1908		0.0038750	ppm	0.0012230	31.555

blank1

Acquire Date: 6/4/2020 1:36:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		-0.00036700	ppm	0.00034900	94.905
Zn2062		0.032930	ppm	0.0023060	7.0016
Y_2243		7,333.3	Cts/S	22.710	0.30969
Y_3600		73,170	Cts/S	122.76	0.16778
Y_3774		4,360.4	Cts/S	11.962	0.27433

blank2

Acquire Date: 6/4/2020 1:40:33PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0011840	ppm	0.0011410	96.392
Al3961		0.000016000	ppm	0.032500	205,270
As1890		0.0017000	ppm	0.00033000	19.413
B_2089		0.0036970	ppm	0.00014200	3.8465
Ba4554		0.00029400	ppm	0.00059100	200.81
Be3130		-0.00014000	ppm	0.000088000	62.828
Ca3179		-0.0016960	ppm	0.0022140	130.55
Cd2144		.0000070000	ppm	0.000020000	282.31
Co2286		0.000028000	ppm	0.00059300	2,117.7
Cr2677		0.00057200	ppm	0.00040200	70.281
Cu3247		0.0017180	ppm	0.00023700	13.787
Fe2599		0.041351	ppm	0.0053080	12.837
K_7664		0.0084980	ppm	0.038861	457.32
Mg2790		-0.00019700	ppm	0.00074800	380.62
Mn2576		0.00026800	ppm	0.000012000	4.5411
Mo2020		-0.00039700	ppm	0.00053700	135.38
Na5895		-0.0094370	ppm	0.0096800	102.58
Ni2316		0.0013960	ppm	0.00020000	14.366
P_1782		0.0018420	ppm	0.00073900	40.122
Pb2203		0.00094300	ppm	0.0046970	498.29
S_1820		-0.00056800	ppm	0.0028910	508.74
Sb2068		0.0047410	ppm	0.0028260	59.598
Se1960		0.0037670	ppm	0.0052280	138.78
Si2881		-0.031522	ppm	0.054055	171.49
Sn1899		0.00069800	ppm	0.00016000	22.876
Sr4077		0.00031800	ppm	0.000035000	11.111
Ti3349		0.00095700	ppm	0.00017200	18.002
Tl1908		0.0044880	ppm	0.0039050	87.000
V_2924		-0.00025700	ppm	0.00038400	149.24
Zn2062		0.013326	ppm	0.00020700	1.5497
Y_2243		7,304.4	Cts/S	13.066	0.17887
Y_3600		72,830	Cts/S	260.34	0.35747
Y_3774		4,305.8	Cts/S	2.2440	0.052117

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 6/5/2020 7:37:41AM

LB4 320-382529/1A@10

Acquire Date: 6/4/2020 1:44:32PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0024250	ppm	0.0016860	69.545
Al3961		-0.0017000	ppm	0.016510	971.42
As1890		0.00092300	ppm	0.000047000	5.0951
B_2089		0.0033840	ppm	0.00044500	13.138
Ba4554		0.00082400	ppm	0.00048800	59.248
Be3130		-0.00015200	ppm	0.00021500	141.69
Ca3179		-0.0089020	ppm	0.010134	113.83
Cd2144		0.000094000	ppm	0.0000090000	9.7790
Co2286		.0000070000	ppm	0.00024700	3,495.2
Cr2677		0.00016400	ppm	0.00041300	252.21
Cu3247		0.0029830	ppm	0.0010700	35.888
Fe2599		0.016050	ppm	0.018511	115.33
K_7664		0.18259	ppm	0.031195	17.084
Mg2790		0.0050770	ppm	0.0045840	90.286
Mn2576		0.00026700	ppm	0.000062000	23.188
Mo2020		0.00017300	ppm	0.00018100	104.64
Na5895	**F**	**881.49**	**ppm**	**1.7737**	**0.20122**
Ni2316		0.00070100	ppm	0.00027400	39.101
P_1782		0.0059940	ppm	0.0016880	28.169
Pb2203		0.0016680	ppm	0.00054000	32.342
S_1820		0.030510	ppm	0.0013260	4.3448
Sb2068		0.0039190	ppm	0.0069040	176.18
Se1960		0.0088100	ppm	0.0046130	52.360
Si2881		-0.024975	ppm	0.034229	137.05
Sn1899		0.093844	ppm	0.000097000	0.10378
Sr4077		0.00028600	ppm	0.00026700	93.338
Ti3349		0.000057000	ppm	0.00026800	471.31
Tl1908		0.0010490	ppm	0.00036300	34.559
V_2924		0.000024000	ppm	0.000060000	254.07
Zn2062		0.0064150	ppm	0.00059400	9.2536
Y_2243		6,758.6	Cts/S	5.6118	0.083032
Y_3600		64,365	Cts/S	6.1910	0.0096190
Y_3774		4,242.9	Cts/S	0.065375	0.0015410

LCS 320-382529/2A@10

Acquire Date: 6/4/2020 1:48:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.095076	ppm	0.00017500	0.18365
Al3961		9.7551	ppm	0.092356	0.94675
As1890		0.094659	ppm	0.0014720	1.5556
B_2089		0.93768	ppm	0.00027200	0.028960
Ba4554		0.097923	ppm	0.00027300	0.27868
Be3130		0.048338	ppm	0.00039100	0.80837
Ca3179		9.9427	ppm	0.034026	0.34222
Cd2144		0.097869	ppm	0.00028300	0.28957
Co2286		0.097230	ppm	0.00022300	0.22985

LCS 320-382529/2A@10

Acquire Date: 6/4/2020 1:48:37PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.10201	ppm	0.00040100	0.39284
Cu3247		0.10269	ppm	0.00087800	0.85533
Fe2599		3.9717	ppm	0.045774	1.1525
K_7664		10.602	ppm	0.014546	0.13720
Mg2790		9.5587	ppm	0.0029970	0.031353
Mn2576		0.10038	ppm	0.000074000	0.073544
Mo2020		0.097591	ppm	0.00030000	0.30741
Na5895	**F**	**865.20**	**ppm**	**13.740**	**1.5881**
Ni2316		0.096063	ppm	0.00049900	0.51987
P_1782		1.0074	ppm	0.00098400	0.097713
Pb2203		0.092609	ppm	0.0015380	1.6608
S_1820		0.019460	ppm	0.0070220	36.084
Sb2068		0.094192	ppm	0.00066500	0.70573
Se1960		0.10709	ppm	0.0045360	4.2356
Si2881		2.8883	ppm	0.020463	0.70848
Sn1899		0.18885	ppm	0.00083300	0.44108
Sr4077		0.099101	ppm	0.00074200	0.74824
Ti3349		0.099959	ppm	0.00018800	0.18820
Tl1908		0.091881	ppm	0.00082500	0.89802
V_2924		0.10127	ppm	0.0010960	1.0827
Zn2062		0.10958	ppm	0.00045700	0.41715
Y_2243		6,733.7	Cts/S	0.41998	0.0062370
Y_3600		64,546	Cts/S	202.21	0.31328
Y_3774		4,262.4	Cts/S	22.019	0.51659

320-61304-B-1-E@10

Acquire Date: 6/4/2020 1:52:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00055600	ppm	0.00052000	93.528
Al3961		1.6651	ppm	0.015849	0.95184
As1890		0.0071610	ppm	0.0011470	16.024
B_2089		0.0046390	ppm	0.0017070	36.795
Ba4554		0.96124	ppm	0.0032100	0.33393
Be3130		0.00056400	ppm	0.00025600	45.390
Ca3179		11.191	ppm	0.035092	0.31356
Cd2144		0.00020500	ppm	0.00013800	67.503
Co2286		0.075270	ppm	0.00032700	0.43454
Cr2677		0.0088640	ppm	0.00020600	2.3235
Cu3247		0.020562	ppm	0.00010000	0.48429
Fe2599		4.3972	ppm	0.037417	0.85094
K_7664		0.31546	ppm	0.026150	8.2894
Mg2790		13.525	ppm	0.017450	0.12902
Mn2576		1.9783	ppm	0.00078200	0.039549
Mo2020		0.00028200	ppm	0.000087000	30.935
Na5895	**F**	**788.87**	**ppm**	**0.80089**	**0.10152**
Ni2316		0.051277	ppm	0.000059000	0.11491

320-61304-B-1-E@10

Acquire Date: 6/4/2020 1:52:35PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.054900	ppm	0.00015900	0.29035
Pb2203		0.0048780	ppm	0.0047630	97.652
S_1820		0.12465	ppm	0.0012470	1.0008
Sb2068		0.0050220	ppm	0.0011570	23.031
Se1960		0.0091700	ppm	0.0075010	81.794
Si2881		2.0664	ppm	0.0089690	0.43403
Sn1899		0.035147	ppm	0.0011180	3.1823
Sr4077		0.12181	ppm	0.00056200	0.46112
Ti3349		0.16903	ppm	0.00010800	0.063645
Tl1908		0.0029500	ppm	0.00097800	33.162
V_2924		0.033988	ppm	0.00012800	0.37585
Zn2062		0.0096690	ppm	0.00027600	2.8502
Y_2243		6,946.1	Cts/S	14.975	0.21559
Y_3600		66,330	Cts/S	264.29	0.39845
Y_3774		4,377.1	Cts/S	23.733	0.54221

sd 320-61304-B-1E@50

Acquire Date: 6/4/2020 1:56:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00038500	ppm	0.0016220	421.40
Al3961		0.34713	ppm	0.011007	3.1707
As1890		0.0026100	ppm	0.00015600	5.9636
B_2089		0.0043040	ppm	0.00076900	17.859
Ba4554		0.19900	ppm	0.00069700	0.35011
Be3130		.0000070000	ppm	0.00013900	2,045.3
Ca3179		2.3105	ppm	0.0091700	0.39689
Cd2144		0.00010200	ppm	0.00012900	127.36
Co2286		0.016047	ppm	0.00047100	2.9370
Cr2677		0.0017750	ppm	0.000026000	1.4915
Cu3247		0.0045440	ppm	0.00037700	8.3051
Fe2599		0.92090	ppm	0.0048900	0.53097
K_7664		0.14226	ppm	0.047557	33.430
Mg2790		2.8429	ppm	0.010583	0.37226
Mn2576		0.41135	ppm	0.00098500	0.23939
Mo2020		0.000042000	ppm	0.00018100	433.31
Na5895		173.79	ppm	0.33952	0.19536
Ni2316		0.011487	ppm	0.0010450	9.0933
P_1782		0.0096940	ppm	0.0017180	17.722
Pb2203		0.0010970	ppm	0.00074900	68.309
S_1820		0.028145	ppm	0.0024810	8.8148
Sb2068		0.0035500	ppm	0.0015350	43.236
Se1960		0.0064090	ppm	0.0045210	70.553
Si2881		0.42711	ppm	0.015398	3.6051
Sn1899		0.0081430	ppm	0.000082000	1.0109
Sr4077		0.025415	ppm	0.000095000	0.37535
Ti3349		0.034531	ppm	0.00044400	1.2853

sd 320-61304-B-1E@50

Acquire Date: 6/4/2020 1:56:36PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00039000	ppm	0.0024450	627.32
V_2924		0.0069400	ppm	0.00066800	9.6182
Zn2062		0.0047420	ppm	0.00048400	10.203
Y_2243		7,096.6	Cts/S	9.0910	0.12810
Y_3600		69,282	Cts/S	60.977	0.088012
Y_3774		4,344.7	Cts/S	19.820	0.45619

320-61304-B-1-FMS@10

Acquire Date: 6/4/2020 2:00:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.091733	ppm	0.0016300	1.7769
Al3961		11.223	ppm	0.0083810	0.074681
As1890		0.098344	ppm	0.0062290	6.3339
B_2089		0.92763	ppm	0.0015020	0.16197
Ba4554		1.0433	ppm	0.0019880	0.19059
Be3130		0.048277	ppm	0.000027000	0.055408
Ca3179		20.733	ppm	0.089864	0.43344
Cd2144		0.095295	ppm	0.00042700	0.44783
Co2286		0.16930	ppm	0.00047100	0.27801
Cr2677		0.10740	ppm	0.00088600	0.82504
Cu3247		0.11941	ppm	0.00073900	0.61846
Fe2599		8.1848	ppm	0.070028	0.85559
K_7664		10.364	ppm	0.026925	0.25980
Mg2790		22.714	ppm	0.13797	0.60741
Mn2576		2.0406	ppm	0.0055870	0.27378
Mo2020		0.095067	ppm	0.00056700	0.59665
Na5895	**F**	**799.10**	**ppm**	**3.9209**	**0.49066**
Ni2316		0.14434	ppm	0.0016260	1.1267
P_1782		1.0360	ppm	0.0056020	0.54075
Pb2203		0.092886	ppm	0.00098900	1.0647
S_1820		0.10881	ppm	0.0051490	4.7320
Sb2068		0.086050	ppm	0.00029500	0.34310
Se1960		0.10400	ppm	0.0014250	1.3701
Si2881		4.9285	ppm	0.033971	0.68928
Sn1899		0.12782	ppm	0.00050000	0.39112
Sr4077		0.21725	ppm	0.00065000	0.29919
Ti3349		0.26394	ppm	0.00038500	0.14568
Tl1908		0.093201	ppm	0.0031760	3.4074
V_2924		0.13284	ppm	0.0014360	1.0807
Zn2062		0.10965	ppm	0.00035000	0.31934
Y_2243		6,892.6	Cts/S	3.3191	0.048155
Y_3600		66,421	Cts/S	167.34	0.25194
Y_3774		4,370.9	Cts/S	14.202	0.32491

320-61304-B-1GMSD@10

Acquire Date: 6/4/2020 2:04:31PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.092715	ppm	0.00023600	0.25505
Al3961		11.187	ppm	0.036488	0.32615
As1890		0.098056	ppm	0.0013490	1.3761
B_2089		0.92810	ppm	0.0000070000	0.00078100
Ba4554		1.0460	ppm	0.0026230	0.25079
Be3130		0.048322	ppm	0.00017700	0.36549
Ca3179		20.760	ppm	0.076696	0.36944
Cd2144		0.095296	ppm	0.00017100	0.17893
Co2286		0.16895	ppm	0.00035900	0.21222
Cr2677		0.10841	ppm	0.0010530	0.97141
Cu3247		0.11830	ppm	0.00070000	0.59142
Fe2599		8.1876	ppm	0.0090580	0.11063
K_7664		10.361	ppm	0.043110	0.41609
Mg2790		22.767	ppm	0.059664	0.26206
Mn2576		2.0442	ppm	0.0019680	0.096253
Mo2020		0.095376	ppm	0.00026300	0.27526
Na5895	**F**	**782.56**	**ppm**	**6.7478**	**0.86227**
Ni2316		0.14411	ppm	0.00089400	0.62017
P_1782		1.0327	ppm	0.00020700	0.020005
Pb2203		0.095262	ppm	0.0022440	2.3552
S_1820		0.11277	ppm	0.0035940	3.1871
Sb2068		0.088906	ppm	0.0021270	2.3928
Se1960		0.10329	ppm	0.0024440	2.3662
Si2881		4.9643	ppm	0.062687	1.2627
Sn1899		0.12835	ppm	0.00023800	0.18564
Sr4077		0.21706	ppm	0.00084900	0.39091
Ti3349		0.26600	ppm	0.00046200	0.17351
Tl1908		0.094846	ppm	0.0016070	1.6939
V_2924		0.13423	ppm	0.00030600	0.22831
Zn2062		0.10907	ppm	0.00072000	0.65976
Y_2243		6,923.5	Cts/S	16.347	0.23611
Y_3600		66,181	Cts/S	25.907	0.039145
Y_3774		4,363.0	Cts/S	23.113	0.52975

CCV 2010278

Acquire Date: 6/4/2020 2:08:28PM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52239	ppm	0.0029710	0.56866	.50000	Rel(%)	Pass	
Al3961		25.615	ppm	0.10225	0.39916	25.000	Rel(%)	Pass	
As1890		0.51519	ppm	0.00031000	0.060098	.50000	Rel(%)	Pass	
B_2089		1.0463	ppm	0.00078200	0.074717	1.0000	Rel(%)	Pass	
Ba4554		2.5506	ppm	0.0095830	0.37570	2.5000	Rel(%)	Pass	
Be3130		0.51680	ppm	0.0019780	0.38271	.50000	Rel(%)	Pass	
Ca3179		26.161	ppm	0.069147	0.26432	25.000	Rel(%)	Pass	
Cd2144		0.52483	ppm	0.00073400	0.13979	.50000	Rel(%)	Pass	
Co2286		2.5892	ppm	0.0064020	0.24726	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/4/2020 2:08:28PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cr2677		2.6107	ppm	0.0089530	0.34295	2.5000	Rel(%)	Pass	
Cu3247		2.5885	ppm	0.0098520	0.38060	2.5000	Rel(%)	Pass	
Fe2599		26.566	ppm	0.11135	0.41912	25.000	Rel(%)	Pass	
K_7664		25.403	ppm	0.12134	0.47765	25.000	Rel(%)	Pass	
Mg2790		26.053	ppm	0.11541	0.44298	25.000	Rel(%)	Pass	
Mn2576		2.6155	ppm	0.0083340	0.31865	2.5000	Rel(%)	Pass	
Mo2020		1.0304	ppm	0.0037020	0.35926	1.0000	Rel(%)	Pass	
Na5895		25.981	ppm	0.022921	0.088223	25.000	Rel(%)	Pass	
Ni2316		2.6292	ppm	0.0052100	0.19817	2.5000	Rel(%)	Pass	
P_1782		2.5444	ppm	0.0012300	0.048351	2.5000	Rel(%)	Pass	
Pb2203		0.52230	ppm	0.0019760	0.37831	.50000	Rel(%)	Pass	
S_1820		2.5098	ppm	0.00081200	0.032360	2.5000	Rel(%)	Pass	
Sb2068		0.51808	ppm	0.0015650	0.30204	.50000	Rel(%)	Pass	
Se1960		0.52512	ppm	0.0023040	0.43872	.50000	Rel(%)	Pass	
Si2881		2.5996	ppm	0.023598	0.90775	2.5000	Rel(%)	Pass	
Sn1899		2.6000	ppm	0.0068990	0.26536	2.5000	Rel(%)	Pass	
Sr4077		2.5791	ppm	0.0093680	0.36323	2.5000	Rel(%)	Pass	
Ti3349		1.0350	ppm	0.0053170	0.51378	1.0000	Rel(%)	Pass	
Tl1908		0.52718	ppm	0.0026930	0.51086	.50000	Rel(%)	Pass	
V_2924		2.5866	ppm	0.011686	0.45178	2.5000	Rel(%)	Pass	
Zn2062		2.6200	ppm	0.010632	0.40580	2.5000	Rel(%)	Pass	
Y_2243		7,126.0	Cts/S	26.332	0.36952				
Y_3600		70,447	Cts/S	97.215	0.13800				
Y_3774		4,367.6	Cts/S	8.4615	0.19373				

CCB 1815536

Acquire Date: 6/4/2020 2:12:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0019900	ppm	0.00066000	33.152	.00000	Abs	Pass	
Al3961		0.023691	ppm	0.0037000	15.616	.00000	Abs	Pass	
As1890		-0.00070600	ppm	0.00036200	51.263	.00000	Abs	Pass	
B_2089		0.0058810	ppm	0.00058000	9.8541	.00000	Abs	Pass	
Ba4554		0.00052000	ppm	0.000053000	10.104	.00000	Abs	Pass	
Be3130		-0.00025200	ppm	0.00019400	76.915	.00000	Abs	Pass	
Ca3179		0.0035160	ppm	0.0033030	93.963	.00000	Abs	Pass	
Cd2144		0.00016600	ppm	0.000077000	46.517	.00000	Abs	Pass	
Co2286		0.00024200	ppm	0.00037700	155.98	.00000	Abs	Pass	
Cr2677		0.00031200	ppm	0.00030800	98.687	.00000	Abs	Pass	
Cu3247		0.0025400	ppm	0.00045800	18.041	.00000	Abs	Pass	
Fe2599		0.036912	ppm	0.010011	27.122	.00000	Abs	Pass	
K_7664		0.066144	ppm	0.059983	90.685	.00000	Abs	Pass	
Mg2790		0.0071480	ppm	0.0022040	30.837	.00000	Abs	Pass	
Mn2576		0.00035100	ppm	0.000088000	24.946	.00000	Abs	Pass	
Mo2020		0.0038160	ppm	0.00045700	11.975	.00000	Abs	Pass	
Na5895		0.24085	ppm	0.029628	12.302	.00000	Abs	Pass	
Ni2316		0.00082000	ppm	0.000096000	11.688	.00000	Abs	Pass	
P_1782		-0.0013290	ppm	0.0015050	113.27	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/4/2020 2:12:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.00062000	ppm	0.00022400	36.146	.00000	Abs	Pass	
S_1820		0.0045280	ppm	0.0012220	26.997	.00000	Abs	Pass	
Sb2068		0.0067170	ppm	0.00077900	11.596	.00000	Abs	Pass	
Se1960		0.0055170	ppm	0.0043250	78.394	.00000	Abs	Pass	
Si2881		0.021142	ppm	0.0092920	43.951	.00000	Abs	Pass	
Sn1899		0.0019580	ppm	0.00052400	26.787	.00000	Abs	Pass	
Sr4077		0.00076100	ppm	0.00021600	28.345	.00000	Abs	Pass	
Ti3349		0.0033410	ppm	0.00071800	21.479	.00000	Abs	Pass	
Tl1908		0.0064980	ppm	0.00061000	9.3927	.00000	Abs	Pass	
V_2924		0.00015800	ppm	0.00011000	69.369	.00000	Abs	Pass	
Zn2062		0.0027860	ppm	0.00054600	19.602	.00000	Abs	Pass	
Y_2243		7,305.5	Cts/S	2.0851	0.028542				
Y_3600		72,903	Cts/S	93.266	0.12793				
Y_3774		4,344.3	Cts/S	10.345	0.23812				

320-61304-B-2-E@10

Acquire Date: 6/4/2020 2:16:12PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010930	ppm	0.000061000	5.5754
Al3961		8.6301	ppm	0.021565	0.24989
As1890		0.0038100	ppm	0.00045000	11.812
B_2089		0.0045530	ppm	0.00068500	15.050
Ba4554		0.24735	ppm	0.00059300	0.23989
Be3130		0.00045700	ppm	0.00014100	30.839
Ca3179		11.583	ppm	0.079064	0.68257
Cd2144		0.000034000	ppm	0.000011000	31.637
Co2286		0.027007	ppm	0.000036000	0.13507
Cr2677		0.012035	ppm	0.0011630	9.6658
Cu3247		0.0083100	ppm	0.00038400	4.6192
Fe2599		7.6271	ppm	0.0052590	0.068956
K_7664		1.8263	ppm	0.050486	2.7644
Mg2790		0.74306	ppm	0.0010970	0.14766
Mn2576		2.3949	ppm	0.0029900	0.12485
Mo2020		0.0010980	ppm	0.00046000	41.858
Na5895	**F**	**825.85**	**ppm**	**9.9647**	**1.2066**
Ni2316		0.0091870	ppm	0.0010130	11.026
P_1782		0.49648	ppm	0.00047000	0.094592
Pb2203		0.0049250	ppm	0.0027000	54.828
S_1820		0.23678	ppm	0.0052590	2.2211
Sb2068		0.00017300	ppm	0.0016980	980.41
Se1960		0.0076550	ppm	0.00021100	2.7570
Si2881		1.3267	ppm	0.055922	4.2151
Sn1899		0.051571	ppm	0.00066600	1.2921
Sr4077		0.096067	ppm	0.00092400	0.96196
Ti3349		0.24067	ppm	0.0013760	0.57180
Tl1908		0.0052650	ppm	0.00095900	18.207

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61304-B-2-E@10

Acquire Date: 6/4/2020 2:16:12PM　Sample Type: Unknown

Correction Factor: 1.0000　SW: 1.0000　NW: 1.0000　IV: 1.0000　FV: 1.0000　AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1　Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.038968	ppm	0.000095000	0.24498
Zn2062		0.0046450	ppm	0.00033500	7.2068
Y_2243		6,860.2	Cts/S	1.9984	0.029130
Y_3600		65,370	Cts/S	189.57	0.28999
Y_3774		4,336.2	Cts/S	18.546	0.42771

320-61304-B-3-C@10

Acquire Date: 6/4/2020 2:20:14PM　Sample Type: Unknown

Correction Factor: 1.0000　SW: 1.0000　NW: 1.0000　IV: 1.0000　FV: 1.0000　AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1　Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010340	ppm	0.00024700	23.862
Al3961		2.4967	ppm	0.00094500	0.037860
As1890		0.0088520	ppm	0.0018870	21.321
B_2089		0.0031390	ppm	0.00035700	11.388
Ba4554		0.60129	ppm	0.0082610	1.3738
Be3130		0.00049300	ppm	0.00022800	46.294
Ca3179		7.2403	ppm	0.090524	1.2503
Cd2144		.0000060000	ppm	0.000031000	566.90
Co2286		0.015705	ppm	0.00027700	1.7656
Cr2677		0.023390	ppm	0.000091000	0.38914
Cu3247		0.0085570	ppm	0.00038800	4.5322
Fe2599		14.016	ppm	0.13684	0.97628
K_7664		0.69610	ppm	0.056753	8.1530
Mg2790		4.1870	ppm	0.0094520	0.22575
Mn2576		0.49622	ppm	0.00064600	0.13022
Mo2020		0.00031500	ppm	0.00052800	167.72
Na5895	**F**	**791.71**	**ppm**	**6.6717**	**0.84269**
Ni2316		0.0081280	ppm	0.00025100	3.0938
P_1782		0.25285	ppm	0.00023300	0.092254
Pb2203		0.0084480	ppm	0.00039900	4.7209
S_1820		0.10704	ppm	0.0022940	2.1433
Sb2068		0.0051660	ppm	0.0010180	19.709
Se1960		0.011236	ppm	0.0025490	22.689
Si2881		1.0081	ppm	0.020177	2.0014
Sn1899		0.054064	ppm	0.00018500	0.34153
Sr4077		0.064471	ppm	0.00095000	1.4738
Ti3349		0.26844	ppm	0.00024000	0.089436
Tl1908		-0.00057700	ppm	0.0017610	305.26
V_2924		0.044705	ppm	0.00050900	1.1375
Zn2062		0.0060600	ppm	0.000046000	0.75759
Y_2243		6,915.9	Cts/S	8.1869	0.11838
Y_3600		65,868	Cts/S	0.41927	0.00063700
Y_3774		4,355.0	Cts/S	13.613	0.31258

320-61304-B-4-C@10

Acquire Date: 6/4/2020 2:24:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0019810	ppm	0.0012030	60.726
Al3961		2.8951	ppm	0.032617	1.1266
As1890		0.0079090	ppm	0.000097000	1.2315
B_2089		0.0021990	ppm	0.00053300	24.229
Ba4554		0.93072	ppm	0.0044000	0.47272
Be3130		0.00071700	ppm	0.000061000	8.5055
Ca3179		9.2834	ppm	0.042678	0.45972
Cd2144		0.00033000	ppm	0.00013300	40.214
Co2286		0.31183	ppm	0.000059000	0.018838
Cr2677		0.014926	ppm	0.000097000	0.65212
Cu3247		0.022512	ppm	0.00011700	0.52104
Fe2599		8.0451	ppm	0.040479	0.50316
K_7664		0.40331	ppm	0.038745	9.6066
Mg2790		8.0965	ppm	0.024383	0.30116
Mn2576		15.477	ppm	0.020563	0.13286
Mo2020		-0.0013200	ppm	0.00012500	9.4842
Na5895	**F**	**770.79**	**ppm**	**1.1495**	**0.14914**
Ni2316		0.18032	ppm	0.00058400	0.32372
P_1782		0.11516	ppm	0.0016620	1.4435
Pb2203		0.0044750	ppm	0.0015150	33.853
S_1820		0.18113	ppm	0.00029500	0.16291
Sb2068		-0.00093900	ppm	0.0016700	177.90
Se1960		0.016223	ppm	0.0052580	32.413
Si2881		1.8371	ppm	0.025855	1.4073
Sn1899		0.028773	ppm	0.00034100	1.1861
Sr4077		0.082745	ppm	0.00030100	0.36344
Ti3349		0.13669	ppm	0.00036500	0.26715
Tl1908		0.025537	ppm	0.0016850	6.5996
V_2924		0.066747	ppm	0.00068000	1.0188
Zn2062		0.015503	ppm	0.00016800	1.0818
Y_2243		6,990.3	Cts/S	14.452	0.20674
Y_3600		66,784	Cts/S	107.88	0.16153
Y_3774		4,395.8	Cts/S	3.1620	0.071934

320-61304-B-5-C@10

Acquire Date: 6/4/2020 2:28:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0016230	ppm	0.0011100	68.415
Al3961		4.7004	ppm	0.00031000	0.0065850
As1890		0.010746	ppm	0.00013600	1.2659
B_2089		0.0020570	ppm	0.00076400	37.134
Ba4554		0.61031	ppm	0.0019550	0.32030
Be3130		0.00059400	ppm	0.00015900	26.734
Ca3179		5.2947	ppm	0.030763	0.58101
Cd2144		0.00012800	ppm	0.000062000	48.677
Co2286		0.094694	ppm	0.00041100	0.43439

320-61304-B-5-C@10

Acquire Date: 6/4/2020 2:28:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0048780	ppm	0.00079000	16.189
Cu3247		0.0043450	ppm	0.00041300	9.5146
Fe2599		5.4685	ppm	0.053437	0.97719
K_7664		0.78619	ppm	0.012131	1.5430
Mg2790		6.8601	ppm	0.027218	0.39676
Mn2576		2.4525	ppm	0.0020410	0.083214
Mo2020		0.000040000	ppm	0.000088000	217.49
Na5895	**F**	**758.69**	**ppm**	**0.50388**	**0.066415**
Ni2316		0.010578	ppm	0.00063400	5.9956
P_1782		0.29890	ppm	0.0044040	1.4734
Pb2203		0.0029280	ppm	0.00072900	24.886
S_1820		0.14085	ppm	0.0043360	3.0787
Sb2068		0.0023010	ppm	0.00038200	16.588
Se1960		0.010983	ppm	0.0013760	12.529
Si2881		1.6154	ppm	0.029762	1.8424
Sn1899		0.039603	ppm	0.0014860	3.7531
Sr4077		0.078493	ppm	0.00020100	0.25618
Ti3349		0.12175	ppm	0.0012680	1.0415
Tl1908		0.0041200	ppm	0.0022230	53.948
V_2924		0.058901	ppm	0.00047200	0.80173
Zn2062		0.0036220	ppm	0.00020800	5.7561
Y_2243		7,093.6	Cts/S	7.2788	0.10261
Y_3600		68,048	Cts/S	44.814	0.065857
Y_3774		4,485.2	Cts/S	19.843	0.44240

320-61304-B-6-C@10

Acquire Date: 6/4/2020 2:32:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00090600	ppm	0.00077500	85.534
Al3961		4.7591	ppm	0.034599	0.72701
As1890		0.0089550	ppm	0.00086000	9.6049
B_2089		0.0014180	ppm	0.00060500	42.667
Ba4554		0.35166	ppm	0.0016510	0.46946
Be3130		0.00068100	ppm	0.00037800	55.424
Ca3179		6.0462	ppm	0.042558	0.70389
Cd2144		0.00014300	ppm	0.000088000	61.716
Co2286		0.044010	ppm	0.000056000	0.12712
Cr2677		0.010183	ppm	0.00039100	3.8350
Cu3247		0.0097980	ppm	0.00081000	8.2666
Fe2599		6.9639	ppm	0.028674	0.41176
K_7664		0.91296	ppm	0.033498	3.6692
Mg2790		2.3630	ppm	0.019092	0.80797
Mn2576		1.9751	ppm	0.0053490	0.27083
Mo2020		0.00010500	ppm	0.00015300	145.94
Na5895	**F**	**789.26**	**ppm**	**7.1226**	**0.90243**
Ni2316		0.0059480	ppm	0.00052100	8.7611

320-61304-B-6-C@10

Acquire Date: 6/4/2020 2:32:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.30955	ppm	0.00032300	0.10434
Pb2203		0.0027030	ppm	0.0015650	57.888
S_1820		0.21379	ppm	0.00080600	0.37700
Sb2068		0.0037040	ppm	0.0017300	46.698
Se1960		0.0083780	ppm	0.0017640	21.058
Si2881		0.92728	ppm	0.016815	1.8133
Sn1899		0.048437	ppm	0.00048100	0.99312
Sr4077		0.050003	ppm	0.00030900	0.61843
Ti3349		0.15673	ppm	0.00051600	0.32945
Tl1908		0.00084500	ppm	0.0026310	311.50
V_2924		0.042328	ppm	0.0030870	7.2939
Zn2062		0.0068930	ppm	0.00011400	1.6531
Y_2243		6,891.1	Cts/S	7.9051	0.11472
Y_3600		65,682	Cts/S	7.0819	0.010782
Y_3774		4,348.1	Cts/S	0.68983	0.015865

320-61304-B-7-C@10

Acquire Date: 6/4/2020 2:36:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0011360	ppm	0.00041600	36.618
Al3961		10.390	ppm	0.049117	0.47276
As1890		0.016586	ppm	0.0023000	13.868
B_2089		0.0018710	ppm	0.0010110	54.019
Ba4554		0.49217	ppm	0.0010010	0.20334
Be3130		0.0016400	ppm	0.00017700	10.826
Ca3179		6.4266	ppm	0.0028210	0.043898
Cd2144		-0.00014200	ppm	0.000049000	34.468
Co2286		0.038543	ppm	0.00016100	0.41867
Cr2677		0.071610	ppm	0.00027800	0.38825
Cu3247		0.012242	ppm	0.00026800	2.1872
Fe2599		73.424	ppm	0.16854	0.22955
K_7664		0.74131	ppm	0.078274	10.559
Mg2790		2.7483	ppm	0.011126	0.40483
Mn2576		1.5140	ppm	0.0031240	0.20634
Mo2020		0.00061100	ppm	0.00038900	63.656
Na5895	**F**	**768.20**	**ppm**	**14.107**	**1.8364**
Ni2316		0.025771	ppm	0.00083300	3.2304
P_1782		1.4166	ppm	0.0047330	0.33410
Pb2203		0.011888	ppm	0.0021760	18.308
S_1820		0.0077090	ppm	0.0020200	26.199
Sb2068		0.0029260	ppm	0.0024820	84.809
Se1960		0.010463	ppm	0.00049900	4.7646
Si2881		1.5095	ppm	0.000078000	0.0051720
Sn1899		0.040541	ppm	0.000038000	0.093505
Sr4077		0.061664	ppm	0.000078000	0.12638
Ti3349		0.54921	ppm	0.010455	1.9037

320-61304-B-7-C@10

Acquire Date: 6/4/2020 2:36:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		-0.0019900	ppm	0.0025860	129.94
V_2924		0.17278	ppm	0.00096100	0.55611
Zn2062		0.015333	ppm	0.00021500	1.4047
Y_2243		6,842.2	Cts/S	3.7534	0.054857
Y_3600		65,365	Cts/S	304.93	0.46651
Y_3774		4,302.4	Cts/S	11.753	0.27319

320-61308-B-1-C@10

Acquire Date: 6/4/2020 2:40:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0021470	ppm	0.00089000	41.466
Al3961		6.1509	ppm	0.032050	0.52106
As1890		0.022753	ppm	0.00032500	1.4302
B_2089		0.0039870	ppm	0.00039200	9.8391
Ba4554		0.80135	ppm	0.0014420	0.17996
Be3130		0.0013610	ppm	0.000044000	3.2018
Ca3179		15.575	ppm	0.029457	0.18912
Cd2144		-0.00017700	ppm	0.000038000	21.185
Co2286		0.072182	ppm	0.0000040000	0.0055380
Cr2677		0.10517	ppm	0.0011960	1.1371
Cu3247		0.0098560	ppm	0.00023400	2.3727
Fe2599		66.890	ppm	0.064557	0.096512
K_7664		0.56486	ppm	0.047313	8.3762
Mg2790		5.0311	ppm	0.00098800	0.019643
Mn2576		2.3994	ppm	0.0065760	0.27406
Mo2020		0.0011470	ppm	0.00028900	25.214
Na5895	**F**	**773.27**	**ppm**	**2.7490**	**0.35550**
Ni2316		0.12526	ppm	0.0014350	1.1455
P_1782		1.8517	ppm	0.014697	0.79372
Pb2203		0.012958	ppm	0.00038500	2.9696
S_1820		0.070276	ppm	0.0023170	3.2971
Sb2068		0.0053210	ppm	0.0035000	65.767
Se1960		0.011434	ppm	0.0045340	39.650
Si2881		2.2461	ppm	0.034624	1.5415
Sn1899		0.047399	ppm	0.00028900	0.60991
Sr4077		0.14291	ppm	0.00066600	0.46579
Ti3349		1.3051	ppm	0.0044490	0.34089
Tl1908		-0.0011970	ppm	0.0027070	226.10
V_2924		0.12200	ppm	0.00054200	0.44447
Zn2062		0.019333	ppm	0.00075000	3.8794
Y_2243		6,853.3	Cts/S	27.490	0.40112
Y_3600		65,711	Cts/S	410.28	0.62436
Y_3774		4,315.3	Cts/S	16.999	0.39393

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61308-B-2-C@10

Acquire Date: 6/4/2020 2:44:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0015710	ppm	0.0013050	83.080
Al3961		3.7536	ppm	0.011205	0.29851
As1890		0.0084310	ppm	0.00042600	5.0575
B_2089		0.0032720	ppm	0.00030300	9.2469
Ba4554		0.66173	ppm	0.0028360	0.42865
Be3130		0.00034300	ppm	0.00014800	43.008
Ca3179		19.587	ppm	0.033074	0.16886
Cd2144		0.00014000	ppm	0.000017000	12.148
Co2286		0.052124	ppm	0.000048000	0.091418
Cr2677		0.043838	ppm	0.00012100	0.27714
Cu3247		0.015555	ppm	0.00086400	5.5552
Fe2599		12.305	ppm	0.069842	0.56757
K_7664		1.4828	ppm	0.0076300	0.51459
Mg2790		7.5693	ppm	0.019057	0.25176
Mn2576		1.4659	ppm	0.0048910	0.33365
Mo2020		0.00030000	ppm	0.000082000	27.231
Na5895	**F**	**745.28**	**ppm**	**7.3208**	**0.98229**
Ni2316		0.14087	ppm	0.00042200	0.29985
P_1782		1.7681	ppm	0.0039360	0.22264
Pb2203		0.0054870	ppm	0.0036640	66.778
S_1820		0.54805	ppm	0.00086400	0.15766
Sb2068		0.0022050	ppm	0.0046840	212.41
Se1960		0.010811	ppm	0.0026960	24.936
Si2881		1.1937	ppm	0.030190	2.5292
Sn1899		0.045717	ppm	0.000048000	0.10394
Sr4077		0.18286	ppm	0.00071700	0.39192
Ti3349		0.22470	ppm	0.0041910	1.8653
Tl1908		0.0032060	ppm	0.0016860	52.596
V_2924		0.023769	ppm	0.00040300	1.6947
Zn2062		0.013780	ppm	0.00050100	3.6343
Y_2243		6,899.9	Cts/S	8.5086	0.12332
Y_3600		65,994	Cts/S	62.074	0.094060
Y_3774		4,315.8	Cts/S	3.2576	0.075481

320-61308-B-3-C@10

Acquire Date: 6/4/2020 2:48:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0023340	ppm	0.00093900	40.230
Al3961		2.2534	ppm	0.023308	1.0343
As1890		0.0077260	ppm	0.0013010	16.837
B_2089		0.0013610	ppm	0.00097500	71.644
Ba4554		0.79913	ppm	0.0023360	0.29232
Be3130		0.00027800	ppm	0.000089000	31.926
Ca3179		16.591	ppm	0.036221	0.21832
Cd2144		0.00025200	ppm	0.00018200	72.285
Co2286		0.040515	ppm	0.000023000	0.057654

320-61308-B-3-C@10

Acquire Date: 6/4/2020 2:48:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.033989	ppm	0.00017300	0.50888
Cu3247		0.016791	ppm	0.00023800	1.4198
Fe2599		7.8170	ppm	0.0037150	0.047522
K_7664		0.75398	ppm	0.010071	1.3358
Mg2790		7.4445	ppm	0.000039000	0.00053000
Mn2576		0.86692	ppm	0.0016820	0.19403
Mo2020		-0.00017500	ppm	0.00036100	205.70
Na5895	**F**	**778.05**	**ppm**	**4.2750**	**0.54945**
Ni2316		0.10377	ppm	0.00036300	0.34956
P_1782		0.66927	ppm	0.0076810	1.1476
Pb2203		0.0040150	ppm	0.00040100	9.9803
S_1820		0.15380	ppm	0.0090000	5.8515
Sb2068		0.0037070	ppm	0.00037700	10.172
Se1960		0.0096200	ppm	0.00033400	3.4673
Si2881		1.0745	ppm	0.032141	2.9912
Sn1899		0.049409	ppm	0.00054100	1.0948
Sr4077		0.15254	ppm	0.00026800	0.17554
Ti3349		0.19837	ppm	0.00033800	0.17043
Tl1908		0.0013850	ppm	0.00020600	14.878
V_2924		0.021354	ppm	0.00044000	2.0622
Zn2062		0.0077040	ppm	0.000057000	0.73593
Y_2243		6,875.0	Cts/S	25.352	0.36876
Y_3600		65,649	Cts/S	72.837	0.11095
Y_3774		4,324.7	Cts/S	23.533	0.54415

320-61308-B-4-C@10

Acquire Date: 6/4/2020 2:52:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		-0.00038200	ppm	0.0019600	512.49
Al3961		2.1938	ppm	0.011594	0.52847
As1890		0.0045960	ppm	0.0018960	41.252
B_2089		0.0019470	ppm	0.0015360	78.896
Ba4554		0.76273	ppm	0.0016920	0.22185
Be3130		0.00013400	ppm	0.00034300	255.53
Ca3179		13.993	ppm	0.073065	0.52216
Cd2144		0.00012000	ppm	0.000040000	33.434
Co2286		0.052451	ppm	0.00019700	0.37496
Cr2677		0.020227	ppm	0.00053100	2.6249
Cu3247		0.015534	ppm	0.00078100	5.0267
Fe2599		4.4059	ppm	0.0052170	0.11842
K_7664		0.35049	ppm	0.064993	18.544
Mg2790		7.5796	ppm	0.043710	0.57668
Mn2576		1.2015	ppm	0.0031930	0.26579
Mo2020		-0.00023900	ppm	0.00058100	243.40
Na5895	**F**	**779.79**	**ppm**	**1.0567**	**0.13551**
Ni2316		0.069612	ppm	0.00076100	1.0925

320-61308-B-4-C@10

Acquire Date: 6/4/2020 2:52:27PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.46016	ppm	0.0011710	0.25448
Pb2203		-0.00067400	ppm	0.00070600	104.83
S_1820		0.16983	ppm	0.00017500	0.10313
Sb2068		0.0038330	ppm	0.0019420	50.675
Se1960		0.0077280	ppm	0.0030860	39.937
Si2881		0.84731	ppm	0.022308	2.6328
Sn1899		0.050021	ppm	0.00087000	1.7391
Sr4077		0.14089	ppm	0.00054800	0.38921
Ti3349		0.21196	ppm	0.000099000	0.046878
Tl1908		0.0016440	ppm	0.0016530	100.51
V_2924		0.016009	ppm	0.00046200	2.8860
Zn2062		0.0053520	ppm	0.00013100	2.4570
Y_2243		6,821.1	Cts/S	12.300	0.18033
Y_3600		65,471	Cts/S	84.545	0.12913
Y_3774		4,316.4	Cts/S	12.910	0.29910

CCV 2010278

Acquire Date: 6/4/2020 2:56:28PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52141	ppm	0.00058800	0.11287	.50000	Rel(%)	Pass	
Al3961		25.660	ppm	0.036581	0.14256	25.000	Rel(%)	Pass	
As1890		0.51452	ppm	0.0015910	0.30918	.50000	Rel(%)	Pass	
B_2089		1.0374	ppm	0.0015930	0.15356	1.0000	Rel(%)	Pass	
Ba4554		2.5573	ppm	0.012707	0.49689	2.5000	Rel(%)	Pass	
Be3130		0.51887	ppm	0.00068800	0.13260	.50000	Rel(%)	Pass	
Ca3179		26.251	ppm	0.15340	0.58434	25.000	Rel(%)	Pass	
Cd2144		0.52636	ppm	0.00046900	0.089013	.50000	Rel(%)	Pass	
Co2286		2.5881	ppm	0.0049990	0.19317	2.5000	Rel(%)	Pass	
Cr2677		2.6088	ppm	0.0048590	0.18627	2.5000	Rel(%)	Pass	
Cu3247		2.5883	ppm	0.0097060	0.37502	2.5000	Rel(%)	Pass	
Fe2599		26.608	ppm	0.082863	0.31142	25.000	Rel(%)	Pass	
K_7664		25.429	ppm	0.16794	0.66042	25.000	Rel(%)	Pass	
Mg2790		26.028	ppm	0.12529	0.48137	25.000	Rel(%)	Pass	
Mn2576		2.6122	ppm	0.010800	0.41343	2.5000	Rel(%)	Pass	
Mo2020		1.0256	ppm	0.00086300	0.084162	1.0000	Rel(%)	Pass	
Na5895		26.284	ppm	0.020599	0.078372	25.000	Rel(%)	Pass	
Ni2316		2.6304	ppm	0.0027040	0.10280	2.5000	Rel(%)	Pass	
P_1782		2.5294	ppm	0.0095970	0.37942	2.5000	Rel(%)	Pass	
Pb2203		0.52468	ppm	0.0040920	0.77986	.50000	Rel(%)	Pass	
S_1820		2.5024	ppm	0.0026950	0.10768	2.5000	Rel(%)	Pass	
Sb2068		0.51757	ppm	0.0041300	0.79798	.50000	Rel(%)	Pass	
Se1960		0.52327	ppm	0.0013080	0.25000	.50000	Rel(%)	Pass	
Si2881		2.6479	ppm	0.021693	0.81927	2.5000	Rel(%)	Pass	
Sn1899		2.5984	ppm	0.0039420	0.15169	2.5000	Rel(%)	Pass	
Sr4077		2.5840	ppm	0.014388	0.55680	2.5000	Rel(%)	Pass	
Ti3349		1.0347	ppm	0.0034460	0.33301	1.0000	Rel(%)	Pass	
Tl1908		0.52071	ppm	0.00039200	0.075327	.50000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/4/2020 2:56:28PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
V_2924		2.5804	ppm	0.0098170	0.38044	2.5000	Rel(%)	Pass	
Zn2062		2.6251	ppm	0.010266	0.39108	2.5000	Rel(%)	Pass	
Y_2243		7,048.5	Cts/S	26.073	0.36991				
Y_3600		69,792	Cts/S	31.720	0.045449				
Y_3774		4,278.6	Cts/S	32.256	0.75390				

CCB 1815536

Acquire Date: 6/4/2020 3:00:13PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0027810	ppm	0.00024600	8.8574	.00000	Abs	Pass	
Al3961		0.017659	ppm	0.027014	152.98	.00000	Abs	Pass	
As1890		0.0022210	ppm	0.0022010	99.134	.00000	Abs	Pass	
B_2089		0.0027810	ppm	0.00092600	33.302	.00000	Abs	Pass	
Ba4554		0.00060800	ppm	0.00030500	50.233	.00000	Abs	Pass	
Be3130		0.000024000	ppm	0.000074000	300.95	.00000	Abs	Pass	
Ca3179		-0.010585	ppm	0.0053040	50.109	.00000	Abs	Pass	
Cd2144		0.00011700	ppm	0.000017000	14.191	.00000	Abs	Pass	
Co2286		0.00071400	ppm	0.0000010000	0.19233	.00000	Abs	Pass	
Cr2677		0.00021200	ppm	0.00080600	380.37	.00000	Abs	Pass	
Cu3247		0.0017020	ppm	0.00066300	38.947	.00000	Abs	Pass	
Fe2599	**W**	**0.054261**	**ppm**	**0.0083410**	**15.373**	**.00000**	**Abs**	**Warn High**	**0.05000**
K_7664		0.031266	ppm	0.044098	141.04	.00000	Abs	Pass	
Mg2790		0.0048520	ppm	0.0010960	22.578	.00000	Abs	Pass	
Mn2576		0.00065000	ppm	0.000090000	13.894	.00000	Abs	Pass	
Mo2020		0.0037530	ppm	0.000085000	2.2775	.00000	Abs	Pass	
Na5895		0.34108	ppm	0.049450	14.498	.00000	Abs	Pass	
Ni2316		0.0014830	ppm	0.00081100	54.653	.00000	Abs	Pass	
P_1782		-0.0016460	ppm	0.00027400	16.671	.00000	Abs	Pass	
Pb2203		-0.0018410	ppm	0.000049000	2.6496	.00000	Abs	Pass	
S_1820		0.0018130	ppm	0.0013960	77.020	.00000	Abs	Pass	
Sb2068		0.0039090	ppm	0.0018630	47.662	.00000	Abs	Pass	
Se1960		0.0068810	ppm	0.0044140	64.149	.00000	Abs	Pass	
Si2881		-0.048458	ppm	0.014167	29.236	.00000	Abs	Pass	
Sn1899		0.0028980	ppm	0.00031300	10.807	.00000	Abs	Pass	
Sr4077		0.00043200	ppm	0.00019200	44.329	.00000	Abs	Pass	
Ti3349		0.0043580	ppm	0.00028800	6.6168	.00000	Abs	Pass	
Tl1908		0.0064330	ppm	0.0033470	52.034	.00000	Abs	Pass	
V_2924		0.00035900	ppm	0.0000030000	0.92737	.00000	Abs	Pass	
Zn2062		0.0018150	ppm	0.00020300	11.168	.00000	Abs	Pass	
Y_2243		7,394.0	Cts/S	19.407	0.26247				
Y_3600		73,685	Cts/S	753.43	1.0225				
Y_3774		4,343.2	Cts/S	12.290	0.28297				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61308-B-5-C@10

Acquire Date: 6/4/2020 3:04:13PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0020740	ppm	0.00025300	12.207
Al3961		2.6562	ppm	0.013772	0.51848
As1890		0.0081000	ppm	0.0037470	46.264
B_2089		0.0019320	ppm	0.00059400	30.743
Ba4554		0.84095	ppm	0.0044180	0.52536
Be3130		0.00075100	ppm	0.00020700	27.523
Ca3179		14.432	ppm	0.099780	0.69137
Cd2144		0.000099000	ppm	0.000021000	20.899
Co2286		0.052712	ppm	0.00038800	0.73673
Cr2677		0.023711	ppm	0.00024300	1.0235
Cu3247		0.017194	ppm	0.00045200	2.6289
Fe2599		5.3398	ppm	0.052758	0.98801
K_7664		0.49712	ppm	0.024709	4.9706
Mg2790		10.021	ppm	0.0041420	0.041332
Mn2576		1.5356	ppm	0.0035240	0.22952
Mo2020		0.00058800	ppm	0.000013000	2.1860
Na5895	**F**	**778.36**	**ppm**	**0.78631**	**0.10102**
Ni2316		0.085062	ppm	0.00052700	0.61962
P_1782		0.39744	ppm	0.0012790	0.32169
Pb2203		0.0039920	ppm	0.0020180	50.550
S_1820		0.25000	ppm	0.0033590	1.3435
Sb2068		0.0037750	ppm	0.0018610	49.296
Se1960		0.012397	ppm	0.00053100	4.2851
Si2881		1.0692	ppm	0.035501	3.3203
Sn1899		0.041229	ppm	0.0015930	3.8637
Sr4077		0.15226	ppm	0.00080500	0.52878
Ti3349		0.26374	ppm	0.000073000	0.027664
Tl1908		0.0019790	ppm	0.0026090	131.79
V_2924		0.020815	ppm	0.000032000	0.15166
Zn2062		0.0064420	ppm	0.00047300	7.3402
Y_2243		6,906.6	Cts/S	27.343	0.39590
Y_3600		66,085	Cts/S	319.84	0.48399
Y_3774		4,346.9	Cts/S	17.897	0.41172

720-98680-A-1-B@10

Acquire Date: 6/4/2020 3:08:15PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0016630	ppm	0.0015410	92.667
Al3961		1.4403	ppm	0.051167	3.5524
As1890		0.0044900	ppm	0.0023610	52.584
B_2089		0.0060130	ppm	0.00035100	5.8452
Ba4554		0.41535	ppm	0.0024980	0.60153
Be3130		-0.00033000	ppm	0.000036000	11.059
Ca3179		237.07	ppm	2.0171	0.85087
Cd2144		0.00055900	ppm	0.000093000	16.668
Co2286		0.0063090	ppm	0.000049000	0.77428

720-98680-A-1-B@10

Acquire Date:	6/4/2020 3:08:15PM			Sample Type:	Unknown		
Correction Factor: 1.0000	SW: 1.0000	NW: 1.0000	IV: 1.0000	FV: 1.0000	AF: 1.0000		
Analyst Name:	admin						
Method Name:	Thermo6010_EK1			Method Revision:	776		

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.065196	ppm	0.00091400	1.4025
Cu3247		0.027854	ppm	0.00014000	0.50351
Fe2599		4.8286	ppm	0.077189	1.5986
K_7664		1.0513	ppm	0.026752	2.5446
Mg2790		2.7228	ppm	0.0031020	0.11393
Mn2576		0.69069	ppm	0.00058500	0.084665
Mo2020		0.00050000	ppm	0.00047800	95.754
Na5895	**F**	**805.08**	**ppm**	**10.492**	**1.3032**
Ni2316		0.017278	ppm	0.00047200	2.7340
P_1782		0.11601	ppm	0.00057500	0.49526
Pb2203		0.041923	ppm	0.00097800	2.3334
S_1820		0.96834	ppm	0.0029030	0.29982
Sb2068		-0.0026940	ppm	0.00098900	36.718
Se1960		0.0080610	ppm	0.0037660	46.714
Si2881		1.9735	ppm	0.018333	0.92894
Sn1899		0.046263	ppm	0.0010490	2.2667
Sr4077		0.19478	ppm	0.0013270	0.68118
Ti3349		0.020620	ppm	0.00010800	0.52220
Tl1908		0.0035360	ppm	0.0012690	35.898
V_2924		0.012167	ppm	0.0016080	13.212
Zn2062		0.18162	ppm	0.00038200	0.21019
Y_2243		6,573.9	Cts/S	5.9616	0.090686
Y_3600		63,092	Cts/S	15.101	0.023935
Y_3774		4,228.2	Cts/S	26.219	0.62010

720-98680-A-2-B@10

Acquire Date:	6/4/2020 3:12:17PM			Sample Type:	Unknown		
Correction Factor: 1.0000	SW: 1.0000	NW: 1.0000	IV: 1.0000	FV: 1.0000	AF: 1.0000		
Analyst Name:	admin						
Method Name:	Thermo6010_EK1			Method Revision:	776		

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0010690	ppm	0.00033700	31.510
Al3961		1.4339	ppm	0.017700	1.2344
As1890		0.0038970	ppm	0.0012970	33.292
B_2089		0.0067650	ppm	0.00079000	11.674
Ba4554		0.42877	ppm	0.0025000	0.58300
Be3130		-0.00022900	ppm	0.00023700	103.66
Ca3179		237.31	ppm	1.2680	0.53432
Cd2144		0.00050700	ppm	0.000020000	3.9405
Co2286		0.014712	ppm	0.00043500	2.9599
Cr2677		0.087823	ppm	0.00059200	0.67442
Cu3247		0.034549	ppm	0.00068300	1.9769
Fe2599		6.8334	ppm	0.050937	0.74540
K_7664		1.1319	ppm	0.013002	1.1486
Mg2790		2.7352	ppm	0.00026100	0.0095430
Mn2576		0.73650	ppm	0.0011470	0.15575
Mo2020		0.0024870	ppm	0.00028400	11.431
Na5895	**F**	**814.34**	**ppm**	**0.65549**	**0.080494**
Ni2316		0.10292	ppm	0.00053200	0.51692

720-98680-A-2-B@10

Acquire Date: 6/4/2020 3:12:17PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.11463	ppm	0.0021870	1.9083
Pb2203		0.050859	ppm	0.00093500	1.8388
S_1820		1.0148	ppm	0.00096600	0.095223
Sb2068		-0.0012080	ppm	0.00067900	56.206
Se1960		0.0073800	ppm	0.000057000	0.77441
Si2881		1.9763	ppm	0.053605	2.7124
Sn1899		0.045117	ppm	0.00038000	0.84126
Sr4077		0.19338	ppm	0.0015640	0.80891
Ti3349		0.019634	ppm	0.00068400	3.4860
Tl1908		-0.00063900	ppm	0.0043830	685.70
V_2924		0.011900	ppm	0.00068800	5.7776
Zn2062		0.18408	ppm	0.0014100	0.76620
Y_2243		6,526.4	Cts/S	7.2467	0.11104
Y_3600		63,063	Cts/S	62.424	0.098987
Y_3774		4,132.9	Cts/S	14.259	0.34502

720-98680-A-3-B@10

Acquire Date: 6/4/2020 3:16:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00045500	ppm	0.00023800	52.211
Al3961		1.4458	ppm	0.030067	2.0796
As1890		0.0031960	ppm	0.00053500	16.755
B_2089		0.0054360	ppm	0.000078000	1.4402
Ba4554		0.41568	ppm	0.00037000	0.089042
Be3130		0.000018000	ppm	0.00021000	1,168.3
Ca3179		236.98	ppm	0.10433	0.044025
Cd2144		0.00044900	ppm	0.000051000	11.327
Co2286		0.0060680	ppm	0.000020000	0.33777
Cr2677		0.065735	ppm	0.00064500	0.98081
Cu3247		0.029994	ppm	0.00093500	3.1178
Fe2599		5.1471	ppm	0.0096030	0.18657
K_7664		1.1710	ppm	0.013140	1.1222
Mg2790		2.6949	ppm	0.018050	0.66979
Mn2576		0.67803	ppm	0.0017330	0.25552
Mo2020		0.00059400	ppm	0.00017100	28.809
Na5895	**F**	**818.59**	**ppm**	**10.409**	**1.2716**
Ni2316		0.017181	ppm	0.00057700	3.3578
P_1782		0.11460	ppm	0.0021560	1.8815
Pb2203		0.041969	ppm	0.0013060	3.1114
S_1820		0.92700	ppm	0.0063260	0.68245
Sb2068		0.0032650	ppm	0.00061600	18.883
Se1960		0.0083210	ppm	0.0013920	16.728
Si2881		2.0141	ppm	0.021012	1.0432
Sn1899		0.047190	ppm	0.00065500	1.3871
Sr4077		0.18607	ppm	0.00077600	0.41681
Ti3349		0.019980	ppm	0.000051000	0.25396

720-98680-A-3-B@10

Acquire Date: 6/4/2020 3:16:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.00093500	ppm	0.00092300	98.747
V_2924		0.011143	ppm	0.0010170	9.1229
Zn2062		0.22004	ppm	0.00037700	0.17142
Y_2243		6,539.6	Cts/S	4.9416	0.075565
Y_3600		63,088	Cts/S	12.360	0.019591
Y_3774		4,162.2	Cts/S	7.7887	0.18713

720-98680-A-4-B@10

Acquire Date: 6/4/2020 3:20:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0015370	ppm	0.00076700	49.878
Al3961		1.4242	ppm	0.032423	2.2766
As1890		0.0045600	ppm	0.0011550	25.319
B_2089		0.0053720	ppm	0.00022600	4.2047
Ba4554		0.41751	ppm	0.0036280	0.86888
Be3130		-0.00035100	ppm	0.00020500	58.376
Ca3179		239.23	ppm	1.8617	0.77824
Cd2144		0.00060300	ppm	0.00011900	19.714
Co2286		0.0053630	ppm	0.000031000	0.58282
Cr2677		0.063272	ppm	0.00024700	0.39067
Cu3247		0.027079	ppm	0.00067600	2.4977
Fe2599		4.8330	ppm	0.039335	0.81389
K_7664		1.1502	ppm	0.063077	5.4842
Mg2790		2.7066	ppm	0.0059310	0.21912
Mn2576		0.66325	ppm	0.0019380	0.29215
Mo2020		0.00023200	ppm	0.00038800	167.20
Na5895	**F**	**815.12**	**ppm**	**0.14322**	**0.017571**
Ni2316		0.016935	ppm	0.00054600	3.2217
P_1782		0.11550	ppm	0.0052190	4.5188
Pb2203		0.039718	ppm	0.0018800	4.7330
S_1820		0.92674	ppm	0.0056630	0.61104
Sb2068		0.0033730	ppm	0.0031130	92.315
Se1960		0.0094570	ppm	0.0031650	33.465
Si2881		2.0203	ppm	0.049107	2.4306
Sn1899		0.046538	ppm	0.00051900	1.1144
Sr4077		0.19047	ppm	0.0014500	0.76145
Ti3349		0.020792	ppm	0.0010590	5.0914
Tl1908		0.000035000	ppm	0.00026900	776.52
V_2924		0.011490	ppm	0.00011500	1.0006
Zn2062		0.18137	ppm	0.00010000	0.055052
Y_2243		6,576.0	Cts/S	3.1343	0.047662
Y_3600		63,827	Cts/S	335.35	0.52541
Y_3774		4,231.2	Cts/S	30.667	0.72479

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

Published: 6/5/2020 7:37:41AM

blank1

Acquire Date: 6/4/2020 3:24:23PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00019800	ppm	0.000022000	11.330
Al3961		0.0045630	ppm	0.025438	557.53
As1890		-0.0024070	ppm	0.00023900	9.9205
B_2089		0.00000	ppm	0.00079300	647,630
Ba4554		0.00021300	ppm	0.000065000	30.523
Be3130		-0.00023100	ppm	0.000048000	20.887
Ca3179		0.22641	ppm	0.025403	11.220
Cd2144		0.000063000	ppm	0.000044000	69.642
Co2286		0.00018600	ppm	0.00016200	86.857
Cr2677		0.00028300	ppm	0.00012000	42.205
Cu3247		-0.00013500	ppm	0.00027000	199.08
Fe2599		0.022191	ppm	0.0011440	5.1544
K_7664		0.0021570	ppm	0.00076100	35.287
Mg2790		0.0040480	ppm	0.0010190	25.160
Mn2576		0.0010460	ppm	0.000018000	1.6886
Mo2020		-0.00037900	ppm	0.00012000	31.632
Na5895		1.4967	ppm	0.15963	10.666
Ni2316		0.0011790	ppm	0.00013800	11.692
P_1782		-0.0014030	ppm	0.0017720	126.32
Pb2203		-0.0027250	ppm	0.0031550	115.75
S_1820		0.0048660	ppm	0.00014900	3.0571
Sb2068		0.0030440	ppm	0.00021000	6.9056
Se1960		0.0040140	ppm	0.0035870	89.358
Si2881		-0.031758	ppm	0.039759	125.19
Sn1899		0.0013820	ppm	0.00013800	9.9696
Sr4077		0.00044200	ppm	0.00033200	75.144
Ti3349		0.000026000	ppm	0.00020500	778.06
Tl1908		0.0018640	ppm	0.0017810	95.496
V_2924		-0.00098400	ppm	0.00063400	64.416
Zn2062		0.00086200	ppm	0.00033600	38.977
Y_2243		7,160.7	Cts/S	23.513	0.32837
Y_3600		71,496	Cts/S	1.6302	0.0022800
Y_3774		4,210.3	Cts/S	38.479	0.91392

blank2

Acquire Date: 6/4/2020 3:28:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0032660	ppm	0.00025300	7.7412
Al3961		0.0089440	ppm	0.0052350	58.537
As1890		-0.00043000	ppm	0.0012470	289.76
B_2089		0.00019100	ppm	0.00084100	440.96
Ba4554		0.00037700	ppm	0.00010300	27.371
Be3130		0.000096000	ppm	0.00037000	385.60
Ca3179		0.010463	ppm	0.014814	141.58
Cd2144		0.000081000	ppm	0.000021000	25.950
Co2286		0.000037000	ppm	0.00049200	1,323.6

blank2

Acquire Date: 6/4/2020 3:28:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00083200	ppm	0.00086500	103.98
Cu3247		-0.00039800	ppm	0.00062100	155.84
Fe2599		-0.015500	ppm	0.0024840	16.028
K_7664		0.038409	ppm	0.042914	111.73
Mg2790		-0.0028000	ppm	0.0011110	39.682
Mn2576		0.00028300	ppm	0.00010400	36.932
Mo2020		-0.00017800	ppm	0.000063000	35.394
Na5895		0.34073	ppm	0.053383	15.667
Ni2316		0.0014790	ppm	0.000077000	5.2227
P_1782		-0.0022210	ppm	0.0020260	91.237
Pb2203		-0.00029700	ppm	0.00076700	258.63
S_1820		0.0019980	ppm	0.000011000	0.53041
Sb2068		0.0047970	ppm	0.0028190	58.773
Se1960		0.0023950	ppm	0.0030860	128.87
Si2881		-0.035139	ppm	0.060305	171.62
Sn1899		0.0010190	ppm	0.00076300	74.901
Sr4077		0.000047000	ppm	0.000027000	57.948
Ti3349		-0.00033200	ppm	0.00011500	34.646
Tl1908		0.0038400	ppm	0.0038670	100.71
V_2924		0.00012900	ppm	0.00018900	146.38
Zn2062		0.000041000	ppm	0.000088000	215.33
Y_2243		7,169.9	Cts/S	3.9756	0.055449
Y_3600		71,524	Cts/S	7.6382	0.010679
Y_3774		4,213.7	Cts/S	0.74853	0.017764

MB 320-383207/1-A

Acquire Date: 6/4/2020 3:32:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0022900	ppm	0.00038300	16.720
Al3961		0.0071430	ppm	0.0063720	89.214
As1890		0.00022500	ppm	0.00013200	58.482
B_2089		0.000028000	ppm	0.00099400	3,520.6
Ba4554		0.000015000	ppm	0.00030200	2,030.4
Be3130		-0.00032100	ppm	0.00023700	73.967
Ca3179		0.00040900	ppm	0.0099790	2,442.5
Cd2144		0.000027000	ppm	0.000094000	345.28
Co2286		0.00021100	ppm	0.00033000	156.54
Cr2677		0.00063000	ppm	0.00043100	68.425
Cu3247		-0.00074900	ppm	0.00050700	67.709
Fe2599		-0.011169	ppm	0.0076290	68.301
K_7664		-0.033941	ppm	0.024191	71.274
Mg2790		0.0064890	ppm	0.00072100	11.108
Mn2576		0.00034700	ppm	0.00012100	34.740
Mo2020		-0.00022800	ppm	0.000079000	34.696
Na5895		0.23779	ppm	0.018934	7.9626
Ni2316		0.00087500	ppm	0.00071100	81.274

MB 320-383207/1-A

Acquire Date: 6/4/2020 3:32:21PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		-0.0035530	ppm	0.00022000	6.2003
Pb2203		-0.0024130	ppm	0.00084300	34.920
S_1820		0.0012860	ppm	0.0042280	328.76
Sb2068		0.0031020	ppm	0.0023610	76.110
Se1960		0.0046010	ppm	0.00096300	20.929
Si2881		-0.030091	ppm	0.019636	65.255
Sn1899		0.000050000	ppm	0.00048100	960.56
Sr4077		0.000065000	ppm	0.00012200	187.74
Ti3349		0.00025100	ppm	0.00042900	171.03
Tl1908		0.0040580	ppm	0.0010210	25.168
V_2924		-0.0011390	ppm	0.00054300	47.700
Zn2062		0.0011470	ppm	0.00012300	10.763
Y_2243		7,268.8	Cts/S	5.6392	0.077581
Y_3600		72,476	Cts/S	96.258	0.13281
Y_3774		4,307.2	Cts/S	13.495	0.31330

320-61235-A-1-A MDLV

Acquire Date: 6/4/2020 3:36:19PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0046900	ppm	0.0012690	27.050
Al3961		0.16841	ppm	0.020907	12.414
As1890		0.028414	ppm	0.00036200	1.2736
B_2089		0.047538	ppm	0.00053000	1.1149
Ba4554		0.0051720	ppm	0.00010500	2.0358
Be3130		0.00066600	ppm	0.00019600	29.382
Ca3179		0.27543	ppm	0.0080970	2.9398
Cd2144		0.0011210	ppm	0.000020000	1.8245
Co2286		0.0078080	ppm	0.00015400	1.9764
Cr2677		0.0053760	ppm	0.00020000	3.7226
Cu3247		0.0049120	ppm	0.00031500	6.4063
Fe2599		0.045138	ppm	0.0016070	3.5594
K_7664		0.22523	ppm	0.0086250	3.8293
Mg2790		0.10446	ppm	0.0019130	1.8315
Mn2576		0.0056930	ppm	0.000056000	0.98249
Mo2020		0.014642	ppm	0.00035000	2.3899
Na5895		0.68365	ppm	0.046016	6.7309
Ni2316		0.0066030	ppm	0.00013200	1.9947
P_1782		0.20270	ppm	0.0039600	1.9536
Pb2203		0.0051140	ppm	0.00024300	4.7553
S_1820		0.40069	ppm	0.0053140	1.3261
Sb2068		0.023114	ppm	0.00011800	0.51008
Se1960		0.033960	ppm	0.0011310	3.3317
Si2881		0.097332	ppm	0.0083150	8.5426
Sn1899		0.062868	ppm	0.0012810	2.0371
Sr4077		0.020661	ppm	0.00024600	1.1894
Ti3349		0.0050620	ppm	0.00028000	5.5222

320-61235-A-1-A MDLV

Acquire Date:	6/4/2020 3:36:19PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.023083	ppm	0.00082100	3.5579
V_2924		0.0041600	ppm	0.00061600	14.811
Zn2062		0.013827	ppm	0.00052000	3.7576
Y_2243		7,415.6	Cts/S	2.5316	0.034139
Y_3600		74,284	Cts/S	417.57	0.56213
Y_3774		4,417.0	Cts/S	48.478	1.0975

320-61235-A-2-A LOQV

Acquire Date:	6/4/2020 3:40:17PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0077910	ppm	0.0019740	25.340
Al3961		0.22659	ppm	0.039447	17.409
As1890		0.039941	ppm	0.0022490	5.6317
B_2089		0.096894	ppm	0.000071000	0.073163
Ba4554		0.020688	ppm	0.00024400	1.1790
Be3130		0.0028340	ppm	0.0000080000	0.27562
Ca3179		0.51833	ppm	0.0070110	1.3527
Cd2144		0.0032940	ppm	0.000026000	0.78168
Co2286		0.011150	ppm	0.00021000	1.8797
Cr2677		0.010463	ppm	0.00031100	2.9742
Cu3247		0.015042	ppm	0.00053900	3.5825
Fe2599		0.10189	ppm	0.0030230	2.9673
K_7664		1.0082	ppm	0.023621	2.3430
Mg2790		0.52572	ppm	0.0033190	0.63129
Mn2576		0.010840	ppm	0.000085000	0.78194
Mo2020		0.019636	ppm	0.00027600	1.4049
Na5895		1.1664	ppm	0.020834	1.7862
Ni2316		0.012162	ppm	0.00029500	2.4247
P_1782		0.50725	ppm	0.0027640	0.54490
Pb2203		0.011629	ppm	0.0024240	20.843
S_1820		0.50387	ppm	0.0027550	0.54682
Sb2068		0.030319	ppm	0.0010310	3.4010
Se1960		0.043693	ppm	0.00089300	2.0432
Si2881		0.48406	ppm	0.0038980	0.80523
Sn1899		0.073976	ppm	0.0010270	1.3887
Sr4077		0.050912	ppm	0.000073000	0.14290
Ti3349		0.014653	ppm	0.00013500	0.91847
Tl1908		0.034502	ppm	0.000085000	0.24696
V_2924		0.018579	ppm	0.000080000	0.43206
Zn2062		0.022405	ppm	0.00028400	1.2672
Y_2243		7,303.7	Cts/S	9.8356	0.13467
Y_3600		72,840	Cts/S	217.23	0.29823
Y_3774		4,337.8	Cts/S	11.216	0.25856

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCV 2010278

Acquire Date: 6/4/2020 3:44:15PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52557	ppm	0.0023620	0.44936	.50000	Rel(%)	Pass	
Al3961		25.673	ppm	0.082866	0.32278	25.000	Rel(%)	Pass	
As1890		0.51658	ppm	0.0027790	0.53789	.50000	Rel(%)	Pass	
B_2089		1.0400	ppm	0.0016590	0.15953	1.0000	Rel(%)	Pass	
Ba4554		2.5628	ppm	0.010289	0.40150	2.5000	Rel(%)	Pass	
Be3130		0.51852	ppm	0.0018920	0.36483	.50000	Rel(%)	Pass	
Ca3179		26.300	ppm	0.061375	0.23337	25.000	Rel(%)	Pass	
Cd2144		0.52969	ppm	0.00064900	0.12244	.50000	Rel(%)	Pass	
Co2286		2.5957	ppm	0.00074900	0.028838	2.5000	Rel(%)	Pass	
Cr2677		2.6208	ppm	0.013790	0.52617	2.5000	Rel(%)	Pass	
Cu3247		2.6085	ppm	0.0082050	0.31455	2.5000	Rel(%)	Pass	
Fe2599		26.620	ppm	0.039036	0.14664	25.000	Rel(%)	Pass	
K_7664		25.423	ppm	0.14522	0.57121	25.000	Rel(%)	Pass	
Mg2790		26.167	ppm	0.11141	0.42576	25.000	Rel(%)	Pass	
Mn2576		2.6215	ppm	0.0079140	0.30191	2.5000	Rel(%)	Pass	
Mo2020		1.0284	ppm	0.0035240	0.34269	1.0000	Rel(%)	Pass	
Na5895		25.841	ppm	0.089166	0.34506	25.000	Rel(%)	Pass	
Ni2316		2.6429	ppm	0.0024160	0.091415	2.5000	Rel(%)	Pass	
P_1782		2.5451	ppm	0.0056860	0.22341	2.5000	Rel(%)	Pass	
Pb2203		0.52668	ppm	0.0039830	0.75616	.50000	Rel(%)	Pass	
S_1820		2.5069	ppm	0.00029100	0.011600	2.5000	Rel(%)	Pass	
Sb2068		0.52447	ppm	0.0015770	0.30070	.50000	Rel(%)	Pass	
Se1960		0.52124	ppm	0.0053400	1.0244	.50000	Rel(%)	Pass	
Si2881		2.5761	ppm	0.015665	0.60810	2.5000	Rel(%)	Pass	
Sn1899		2.6110	ppm	0.0078200	0.29950	2.5000	Rel(%)	Pass	
Sr4077		2.5866	ppm	0.0090750	0.35083	2.5000	Rel(%)	Pass	
Ti3349		1.0334	ppm	0.0046750	0.45242	1.0000	Rel(%)	Pass	
Tl1908		0.52617	ppm	0.00024700	0.046993	.50000	Rel(%)	Pass	
V_2924		2.5936	ppm	0.0094690	0.36510	2.5000	Rel(%)	Pass	
Zn2062		2.6463	ppm	0.010162	0.38401	2.5000	Rel(%)	Pass	
Y_2243		6,972.8	Cts/S	17.324	0.24845				
Y_3600		69,293	Cts/S	30.279	0.043698				
Y_3774		4,213.9	Cts/S	11.569	0.27454				

CCB 1815536

Acquire Date: 6/4/2020 3:47:59PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0022920	ppm	0.0010150	44.304	.00000	Abs	Pass	
Al3961		0.021812	ppm	0.012234	56.088	.00000	Abs	Pass	
As1890		0.0026320	ppm	0.0027190	103.29	.00000	Abs	Pass	
B_2089		0.0019030	ppm	0.00067300	35.352	.00000	Abs	Pass	
Ba4554		0.0015120	ppm	0.0011670	77.195	.00000	Abs	Pass	
Be3130		0.000091000	ppm	0.00060700	669.32	.00000	Abs	Pass	
Ca3179		0.0099040	ppm	0.014531	146.72	.00000	Abs	Pass	
Cd2144		0.00011500	ppm	0.000031000	27.186	.00000	Abs	Pass	
Co2286		0.00011500	ppm	0.00016600	144.37	.00000	Abs	Pass	
Cr2677		0.00062900	ppm	0.00083500	132.77	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/4/2020 3:47:59PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.00056900	ppm	0.00014600	25.730	.00000	Abs	Pass	
Fe2599		0.041355	ppm	0.0098320	23.775	.00000	Abs	Pass	
K_7664		0.0079830	ppm	0.032847	411.45	.00000	Abs	Pass	
Mg2790		-0.0025470	ppm	0.0015200	59.681	.00000	Abs	Pass	
Mn2576		0.00066500	ppm	0.000012000	1.7692	.00000	Abs	Pass	
Mo2020		0.0039430	ppm	0.00056500	14.335	.00000	Abs	Pass	
Na5895		0.13779	ppm	0.026920	19.537	.00000	Abs	Pass	
Ni2316		0.00067500	ppm	0.00043900	64.951	.00000	Abs	Pass	
P_1782		-0.00038600	ppm	0.00059800	155.12	.00000	Abs	Pass	
Pb2203		-0.00089500	ppm	0.0021100	235.70	.00000	Abs	Pass	
S_1820		0.0042470	ppm	0.00082700	19.480	.00000	Abs	Pass	
Sb2068		0.0045050	ppm	0.0025470	56.547	.00000	Abs	Pass	
Se1960		0.0029940	ppm	0.0021880	73.062	.00000	Abs	Pass	
Si2881		-0.011086	ppm	0.050373	454.37	.00000	Abs	Pass	
Sn1899		0.0023840	ppm	0.00084600	35.499	.00000	Abs	Pass	
Sr4077		0.0013120	ppm	0.0013920	106.09	.00000	Abs	Pass	
Ti3349		0.0039850	ppm	0.00048400	12.156	.00000	Abs	Pass	
Tl1908		0.0036070	ppm	0.0020480	56.782	.00000	Abs	Pass	
V_2924		-0.00024200	ppm	0.00073600	304.51	.00000	Abs	Pass	
Zn2062		0.0020650	ppm	0.00021400	10.380	.00000	Abs	Pass	
Y_2243		7,232.5	Cts/S	21.198	0.29310				
Y_3600		72,244	Cts/S	264.55	0.36620				
Y_3774		4,239.0	Cts/S	48.656	1.1478				

MB 320-382770/1-B

Acquire Date: 6/4/2020 3:51:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0023360	ppm	0.0014210	60.832
Al3961		0.024802	ppm	0.0083290	33.583
As1890		0.0029970	ppm	0.0021360	71.285
B_2089		0.00041800	ppm	0.00069700	166.64
Ba4554		-0.00017400	ppm	0.00034300	197.22
Be3130		0.000045000	ppm	0.00017800	393.57
Ca3179		-0.0077900	ppm	0.0038790	49.787
Cd2144		0.00013200	ppm	0.000049000	36.902
Co2286		0.00022300	ppm	0.0000070000	2.9611
Cr2677		0.00046800	ppm	0.00036800	78.505
Cu3247		-0.00031200	ppm	0.00033400	107.02
Fe2599		0.0015760	ppm	0.012465	790.89
K_7664		-0.012867	ppm	0.037387	290.56
Mg2790		0.0016680	ppm	0.00010900	6.5071
Mn2576		0.00038700	ppm	0.00011100	28.648
Mo2020		0.00045100	ppm	0.00047300	104.96
Na5895		0.10025	ppm	0.0078710	7.8513
Ni2316		0.0011820	ppm	0.00067100	56.780
P_1782		-0.00073100	ppm	0.0013410	183.44
Pb2203		0.00086100	ppm	0.000069000	8.0473

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

MB 320-382770/1-B

Acquire Date: 6/4/2020 3:51:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
S_1820		0.00011500	ppm	0.00045300	393.47
Sb2068		0.0053330	ppm	0.00067000	12.563
Se1960		0.0042360	ppm	0.00014000	3.3158
Si2881		-0.020075	ppm	0.0060110	29.944
Sn1899		0.0020260	ppm	0.000069000	3.4004
Sr4077		0.00020900	ppm	0.00016700	79.713
Ti3349		0.00038500	ppm	0.00053700	139.55
Tl1908		0.0049490	ppm	0.0011350	22.928
V_2924		-0.0010750	ppm	0.00010100	9.4143
Zn2062		0.0016970	ppm	0.000058000	3.4391
Y_2243		7,309.4	Cts/S	4.7876	0.065498
Y_3600		72,654	Cts/S	186.82	0.25714
Y_3774		4,298.8	Cts/S	28.557	0.66431

LCS 320-382770/2-B

Acquire Date: 6/4/2020 3:55:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.051769	ppm	0.0016540	3.1955
Al3961		4.9807	ppm	0.014050	0.28208
As1890	**W**	**0.48525**	**ppm**	**0.0034820**	**0.71767**
B_2089		4.8740	ppm	0.0029260	0.060035
Ba4554	**W**	**0.49450**	**ppm**	**0.0023310**	**0.47142**
Be3130		0.24984	ppm	0.00066400	0.26595
Ca3179		25.336	ppm	0.086555	0.34162
Cd2144	**W**	**0.25191**	**ppm**	**0.00032100**	**0.12761**
Co2286		0.24385	ppm	0.0010660	0.43714
Cr2677	**W**	**0.25111**	**ppm**	**0.00079300**	**0.31577**
Cu3247		0.25354	ppm	0.0015340	0.60488
Fe2599		5.1339	ppm	0.010467	0.20388
K_7664		24.440	ppm	0.085018	0.34787
Mg2790		25.399	ppm	0.11048	0.43499
Mn2576		0.25480	ppm	0.0011530	0.45253
Mo2020		0.24586	ppm	0.0015580	0.63378
Na5895		24.839	ppm	0.10937	0.44034
Ni2316		0.24554	ppm	0.0019530	0.79547
P_1782		5.1642	ppm	0.015356	0.29736
Pb2203	**W**	**0.25175**	**ppm**	**0.0024730**	**0.98240**
S_1820		5.0609	ppm	0.00073400	0.014496
Sb2068		0.47974	ppm	0.0017490	0.36460
Se1960	**W**	**0.51223**	**ppm**	**0.00091200**	**0.17809**
Si2881	**W**	**5.0479**	**ppm**	**0.084228**	**1.6686**
Sn1899		0.50780	ppm	0.0025350	0.49914
Sr4077		0.24877	ppm	0.0018950	0.76184
Ti3349	**W**	**0.24846**	**ppm**	**0.00031200**	**0.12564**
Tl1908		0.52391	ppm	0.00066100	0.12622
V_2924		0.24963	ppm	0.0010490	0.42007

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

LCS 320-382770/2-B

Acquire Date: 6/4/2020 3:55:57PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Zn2062		0.51397	ppm	0.0020170	0.39252
Y_2243		7,166.1	Cts/S	7.3814	0.10300
Y_3600		70,976	Cts/S	107.18	0.15101
Y_3774		4,321.7	Cts/S	3.4773	0.080462

MB 320-383206/1-A

Acquire Date: 6/4/2020 3:59:42PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0028630	ppm	0.000018000	0.63989
Al3961		0.020815	ppm	0.00063400	3.0436
As1890		0.00066800	ppm	0.0033970	508.11
B_2089		0.012265	ppm	0.000094000	0.76530
Ba4554		0.00015300	ppm	0.00037900	248.21
Be3130		-0.00014400	ppm	0.000063000	43.458
Ca3179		0.013527	ppm	0.0061060	45.143
Cd2144		0.00013900	ppm	0.000065000	46.420
Co2286		0.00024000	ppm	0.00025900	107.95
Cr2677		0.00091600	ppm	0.00029800	32.488
Cu3247		0.000059000	ppm	0.00068500	1,164.6
Fe2599		0.023706	ppm	0.0086760	36.599
K_7664		0.016870	ppm	0.044881	266.03
Mg2790		0.0043780	ppm	0.0054320	124.09
Mn2576		0.00041900	ppm	0.000059000	14.101
Mo2020		0.0012410	ppm	0.00023100	18.606
Na5895		0.079329	ppm	0.019323	24.358
Ni2316		0.00095900	ppm	0.00060800	63.402
P_1782		0.0018310	ppm	0.00030900	16.882
Pb2203		0.00084000	ppm	0.00042300	50.319
S_1820		0.0084140	ppm	0.0020700	24.601
Sb2068		0.0039260	ppm	0.0015470	39.400
Se1960		0.0022650	ppm	0.00091300	40.324
Si2881		-0.010915	ppm	0.020386	186.77
Sn1899		0.0019300	ppm	0.0010620	55.042
Sr4077		0.00018100	ppm	0.00019300	106.54
Ti3349		0.0016050	ppm	0.00067900	42.289
Tl1908		0.0046660	ppm	0.0021340	45.728
V_2924		-0.00025200	ppm	0.00032900	130.64
Zn2062		0.0025920	ppm	0.00019500	7.5119
Y_2243		7,288.9	Cts/S	14.925	0.20477
Y_3600		72,104	Cts/S	354.84	0.49212
Y_3774		4,287.7	Cts/S	11.229	0.26190

LCS 320-383206/2-A

Acquire Date: 6/4/2020 4:03:41PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.051073	ppm	0.00026800	0.52456
Al3961		4.9138	ppm	0.0092050	0.18733
As1890	**W**	**0.48294**	**ppm**	**0.0025780**	**0.53377**
B_2089		4.8463	ppm	0.0064250	0.13259
Ba4554	**W**	**0.49124**	**ppm**	**0.0026510**	**0.53967**
Be3130		0.24782	ppm	0.0012240	0.49375
Ca3179		25.341	ppm	0.10263	0.40499
Cd2144	**W**	**0.24923**	**ppm**	**0.00016100**	**0.064462**
Co2286		0.24164	ppm	0.00055000	0.22770
Cr2677	**W**	**0.24821**	**ppm**	**0.0000090000**	**0.0034730**
Cu3247		0.25052	ppm	0.0011600	0.46293
Fe2599		5.1360	ppm	0.065360	1.2726
K_7664		24.265	ppm	0.13310	0.54850
Mg2790		25.215	ppm	0.12290	0.48741
Mn2576		0.25188	ppm	0.00058100	0.23060
Mo2020		0.24378	ppm	0.00055200	0.22652
Na5895		24.654	ppm	0.12256	0.49712
Ni2316		0.24335	ppm	0.00063200	0.25976
P_1782		5.1193	ppm	0.0064190	0.12538
Pb2203	**W**	**0.24894**	**ppm**	**0.0059280**	**2.3813**
S_1820		5.0289	ppm	0.00047200	0.0093860
Sb2068		0.48114	ppm	0.0020990	0.43631
Se1960	**W**	**0.50958**	**ppm**	**0.00089300**	**0.17515**
Si2881	**W**	**5.0834**	**ppm**	**0.0023290**	**0.045818**
Sn1899		0.50159	ppm	0.00047000	0.093778
Sr4077		0.24686	ppm	0.00045300	0.18342
Ti3349	**W**	**0.24652**	**ppm**	**0.00094400**	**0.38277**
Tl1908		0.51791	ppm	0.0030630	0.59139
V_2924		0.24705	ppm	0.0017530	0.70953
Zn2062		0.51249	ppm	0.0022060	0.43051
Y_2243		7,223.3	Cts/S	16.308	0.22576
Y_3600		71,056	Cts/S	107.34	0.15107
Y_3774		4,334.1	Cts/S	15.582	0.35952

LB 320-382622/1-B

Acquire Date: 6/4/2020 4:07:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0024270	ppm	0.00064100	26.420
Al3961		0.039905	ppm	0.0038880	9.7431
As1890		0.0013820	ppm	0.00085300	61.731
B_2089		0.048773	ppm	0.00030800	0.63197
Ba4554		0.052619	ppm	0.00037200	0.70604
Be3130		.0000070000	ppm	0.00010700	1,435.7
Ca3179		0.011828	ppm	0.0060320	50.998
Cd2144		0.000081000	ppm	0.00013500	166.11
Co2286		0.00026600	ppm	0.00026400	98.999

LB 320-382622/1-B

Acquire Date: 6/4/2020 4:07:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.0014490	ppm	0.00010800	7.4896
Cu3247		0.0012350	ppm	0.00093600	75.767
Fe2599		0.016197	ppm	0.0028410	17.538
K_7664		0.31060	ppm	0.036736	11.827
Mg2790		-0.00075000	ppm	0.0021840	291.33
Mn2576		0.00015100	ppm	0.00013700	90.771
Mo2020		0.0011210	ppm	0.00086100	76.788
Na5895	**F**	**1,459.0**	**ppm**	**6.0599**	**0.41536**
Ni2316		0.015518	ppm	0.00021500	1.3861
P_1782		0.0010610	ppm	0.00049800	46.930
Pb2203		.0000020000	ppm	0.0017410	91,129
S_1820		0.018538	ppm	0.0077440	41.773
Sb2068		0.0043560	ppm	0.0028790	66.100
Se1960		0.011177	ppm	0.00017500	1.5619
Si2881		-0.056499	ppm	0.049154	87.001
Sn1899		0.0034050	ppm	0.00067600	19.867
Sr4077		0.00054100	ppm	0.00019400	35.826
Ti3349		0.00094300	ppm	0.00020900	22.132
Tl1908		0.0069000	ppm	0.00013300	1.9252
V_2924		-0.00027200	ppm	0.00015400	56.805
Zn2062		0.042143	ppm	0.000016000	0.037564
Y_2243		6,619.3	Cts/S	17.897	0.27038
Y_3600		62,021	Cts/S	26.819	0.043241
Y_3774		4,174.7	Cts/S	3.2484	0.077811

320-61333-B-1-D

Acquire Date: 6/4/2020 4:11:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0019100	ppm	0.00084500	44.251
Al3961		0.0038480	ppm	0.022525	585.39
As1890		0.015683	ppm	0.000016000	0.10269
B_2089		4.5632	ppm	0.0046910	0.10281
Ba4554		0.55600	ppm	0.0013560	0.24389
Be3130		-0.00025200	ppm	0.00026300	104.25
Ca3179		88.859	ppm	0.17879	0.20121
Cd2144		-0.00011700	ppm	0.000033000	27.948
Co2286		0.0012140	ppm	0.000022000	1.8497
Cr2677		0.0034210	ppm	0.000093000	2.7323
Cu3247		-0.00031800	ppm	0.0011110	349.28
Fe2599		3.5676	ppm	0.0078540	0.22015
K_7664		1.2649	ppm	0.037200	2.9409
Mg2790		155.53	ppm	0.61897	0.39799
Mn2576		6.1853	ppm	0.018551	0.29993
Mo2020		0.0017220	ppm	0.00012000	6.9947
Na5895		104.50	ppm	0.30461	0.29148
Ni2316		0.0087130	ppm	0.00099200	11.388

320-61333-B-1-D

Acquire Date: 6/4/2020 4:11:30PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	**Flags**	**Avg**	**Units**	**Stddev**	**%RSD**
P_1782		-0.018625	ppm	0.0021550	11.571
Pb2203		0.0029570	ppm	0.00081200	27.470
S_1820		25.280	ppm	0.0076420	0.030231
Sb2068		0.0012610	ppm	0.0029950	237.55
Se1960		0.0039920	ppm	0.0025280	63.334
Si2881		17.041	ppm	0.029397	0.17251
Sn1899		0.0032070	ppm	0.000097000	3.0211
Sr4077		1.5269	ppm	0.0036020	0.23588
Ti3349		-0.00073200	ppm	0.000023000	3.1226
Tl1908		0.015297	ppm	0.0037800	24.714
V_2924		0.011473	ppm	0.000050000	0.43469
Zn2062		0.0077220	ppm	0.00019700	2.5516
Y_2243		6,930.2	Cts/S	22.310	0.32192
Y_3600		68,309	Cts/S	132.52	0.19400
Y_3774		4,294.3	Cts/S	18.037	0.42002

sd 320-61333-B-1-D@5

Acquire Date: 6/4/2020 4:15:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	**Flags**	**Avg**	**Units**	**Stddev**	**%RSD**
Ag3280		0.0014360	ppm	0.00044800	31.229
Al3961		0.038186	ppm	0.016595	43.460
As1890		0.0042330	ppm	0.00091400	21.602
B_2089		0.87276	ppm	0.0014960	0.17139
Ba4554		0.10694	ppm	0.000097000	0.090641
Be3130		0.000099000	ppm	0.000047000	47.355
Ca3179		17.273	ppm	0.017576	0.10175
Cd2144		-0.00012200	ppm	0.000033000	26.826
Co2286		0.00032000	ppm	0.00013100	40.969
Cr2677		0.0011040	ppm	0.00053600	48.591
Cu3247		-0.00025100	ppm	0.00080700	321.59
Fe2599		0.70451	ppm	0.016831	2.3890
K_7664		0.25457	ppm	0.078006	30.643
Mg2790		29.733	ppm	0.058338	0.19621
Mn2576		1.2126	ppm	0.00093000	0.076728
Mo2020		0.00037500	ppm	0.00046900	124.91
Na5895		20.342	ppm	0.010040	0.049355
Ni2316		0.0022400	ppm	0.00088100	39.320
P_1782		-0.0065590	ppm	0.000017000	0.25436
Pb2203		-0.00040500	ppm	0.00024100	59.544
S_1820		4.6989	ppm	0.0027830	0.059219
Sb2068		0.0040480	ppm	0.0029570	73.031
Se1960		0.0030420	ppm	0.00033400	10.977
Si2881		3.1605	ppm	0.0075800	0.23983
Sn1899		0.00028200	ppm	0.00015700	55.878
Sr4077		0.29452	ppm	0.00057100	0.19399
Ti3349		-0.00063600	ppm	0.00091900	144.39

sd 320-61333-B-1-D@5

Acquire Date: 6/4/2020 4:15:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0041610	ppm	0.000093000	2.2360
V_2924		0.0020860	ppm	0.00011200	5.3692
Zn2062		0.0016340	ppm	0.00013700	8.3781
Y_2243		7,214.3	Cts/S	4.7575	0.065946
Y_3600		71,528	Cts/S	419.64	0.58669
Y_3774		4,280.2	Cts/S	33.009	0.77121

pds 320-61333-B-1-D

Acquire Date: 6/4/2020 4:19:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0032590	ppm	0.00050000	15.339
Al3961		0.0037040	ppm	0.011454	309.26
As1890		0.015685	ppm	0.0014330	9.1359
B_2089		4.5898	ppm	0.0067490	0.14705
Ba4554		0.56004	ppm	0.00049600	0.088581
Be3130		-0.00053900	ppm	0.00011700	21.742
Ca3179		89.331	ppm	0.23383	0.26176
Cd2144		-0.00019600	ppm	0.000019000	9.5542
Co2286		0.0015360	ppm	0.00015700	10.217
Cr2677		0.0025930	ppm	0.000026000	1.0033
Cu3247		0.000043000	ppm	0.00010700	248.90
Fe2599		3.5953	ppm	0.0071100	0.19776
K_7664		1.2456	ppm	0.017085	1.3716
Mg2790		156.69	ppm	0.48736	0.31104
Mn2576		6.2318	ppm	0.016167	0.25943
Mo2020		0.0012490	ppm	0.00029100	23.335
Na5895		107.08	ppm	0.24177	0.22579
Ni2316		0.0090330	ppm	0.00029700	3.2844
P_1782		-0.020110	ppm	0.00043800	2.1763
Pb2203		-0.0018290	ppm	0.0021130	115.50
S_1820		25.459	ppm	0.026425	0.10380
Sb2068		0.0023040	ppm	0.0015860	68.848
Se1960		0.0056500	ppm	0.0021930	38.805
Si2881		17.368	ppm	0.068087	0.39202
Sn1899		0.0034990	ppm	0.00092300	26.371
Sr4077		1.5413	ppm	0.0020090	0.13037
Ti3349		-0.0011730	ppm	0.00037500	31.970
Tl1908		0.016003	ppm	0.0025740	16.082
V_2924		0.011886	ppm	0.00043600	3.6702
Zn2062		0.0078010	ppm	0.000059000	0.74992
Y_2243		6,967.0	Cts/S	10.819	0.15529
Y_3600		68,772	Cts/S	201.95	0.29365
Y_3774		4,282.9	Cts/S	30.787	0.71883

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61333-B-1-E MS

Acquire Date: 6/4/2020 4:23:18PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.050727	ppm	0.00016900	0.33234
Al3961		4.7013	ppm	0.0013820	0.029399
As1890		0.47331	ppm	0.00083300	0.17603
B_2089	**W**	**9.0223**	**ppm**	**0.0019050**	**0.021115**
Ba4554		1.0152	ppm	0.0039150	0.38562
Be3130		0.23481	ppm	0.00076800	0.32719
Ca3179		111.17	ppm	0.43468	0.39102
Cd2144		0.22954	ppm	0.000054000	0.023591
Co2286		0.21888	ppm	0.00044400	0.20291
Cr2677		0.24234	ppm	0.00016100	0.066543
Cu3247		0.23361	ppm	0.00084000	0.35956
Fe2599		8.3638	ppm	0.042593	0.50925
K_7664		24.800	ppm	0.10032	0.40453
Mg2790		177.56	ppm	0.49753	0.28020
Mn2576		6.3356	ppm	0.016847	0.26591
Mo2020		0.23423	ppm	0.00080100	0.34200
Na5895		128.15	ppm	0.49184	0.38379
Ni2316		0.22890	ppm	0.00018100	0.078966
P_1782		4.9179	ppm	0.013631	0.27717
Pb2203		0.22691	ppm	0.0010180	0.44847
S_1820		29.908	ppm	0.057053	0.19077
Sb2068		0.44951	ppm	0.0025380	0.56462
Se1960		0.46374	ppm	0.0053350	1.1504
Si2881	**W**	**21.721**	**ppm**	**0.072041**	**0.33167**
Sn1899		0.48616	ppm	0.0011690	0.24049
Sr4077		1.7486	ppm	0.0055940	0.31993
Ti3349		0.23610	ppm	0.0017750	0.75164
Tl1908		0.47125	ppm	0.0020360	0.43206
V_2924		0.24931	ppm	0.00012500	0.049981
Zn2062		0.47466	ppm	0.0044430	0.93601
Y_2243		6,897.4	Cts/S	3.7329	0.054120
Y_3600		67,649	Cts/S	31.288	0.046251
Y_3774		4,279.9	Cts/S	1.3270	0.031005

320-61333-B-1-F MSD

Acquire Date: 6/4/2020 4:27:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.053090	ppm	0.00035200	0.66236
Al3961		5.0520	ppm	0.064177	1.2703
As1890		0.51013	ppm	0.0021900	0.42928
B_2089	**W**	**9.6916**	**ppm**	**0.00070000**	**0.0072190**
Ba4554		1.0899	ppm	0.0043290	0.39717
Be3130		0.25098	ppm	0.0012930	0.51500
Ca3179		118.90	ppm	0.47871	0.40263
Cd2144		0.24464	ppm	0.00068400	0.27954
Co2286		0.23310	ppm	0.000028000	0.011838

320-61333-B-1-F MSD

Acquire Date: 6/4/2020 4:27:04PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.25320	ppm	0.0010200	0.40277
Cu3247		0.24763	ppm	0.00062700	0.25315
Fe2599		8.9483	ppm	0.045672	0.51040
K_7664		26.534	ppm	0.077129	0.29068
Mg2790		190.47	ppm	0.17668	0.092758
Mn2576		6.8030	ppm	0.011282	0.16584
Mo2020		0.25070	ppm	0.000095000	0.038050
Na5895		137.77	ppm	0.58637	0.42561
Ni2316		0.24133	ppm	0.00088800	0.36807
P_1782		5.2670	ppm	0.0049080	0.093179
Pb2203		0.24276	ppm	0.0027590	1.1365
S_1820		32.175	ppm	0.021192	0.065865
Sb2068		0.48097	ppm	0.0033050	0.68715
Se1960		0.49675	ppm	0.0028440	0.57245
Si2881	**W**	**23.307**	**ppm**	**0.093308**	**0.40034**
Sn1899		0.50856	ppm	0.00076300	0.15005
Sr4077		1.8831	ppm	0.0071230	0.37825
Ti3349		0.25469	ppm	0.0000050000	0.0017780
Tl1908		0.50169	ppm	0.00065800	0.13117
V_2924		0.26639	ppm	0.00095900	0.35993
Zn2062		0.50094	ppm	0.0010580	0.21122
Y_2243		6,906.0	Cts/S	6.1050	0.088402
Y_3600		67,843	Cts/S	41.948	0.061831
Y_3774		4,308.2	Cts/S	11.114	0.25796

CCV 2010278

Acquire Date: 6/4/2020 4:30:49PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.52188	ppm	0.0032360	0.62015	.50000	Rel(%)	Pass	
Al3961		25.709	ppm	0.081421	0.31670	25.000	Rel(%)	Pass	
As1890		0.51661	ppm	0.0012740	0.24660	.50000	Rel(%)	Pass	
B_2089		1.0830	ppm	0.00043900	0.040501	1.0000	Rel(%)	Pass	
Ba4554		2.5787	ppm	0.012218	0.47379	2.5000	Rel(%)	Pass	
Be3130		0.52055	ppm	0.00066200	0.12709	.50000	Rel(%)	Pass	
Ca3179		26.418	ppm	0.072171	0.27319	25.000	Rel(%)	Pass	
Cd2144		0.53153	ppm	0.000041000	0.0077410	.50000	Rel(%)	Pass	
Co2286		2.5949	ppm	0.000096000	0.0037150	2.5000	Rel(%)	Pass	
Cr2677		2.6186	ppm	0.0076210	0.29105	2.5000	Rel(%)	Pass	
Cu3247		2.6126	ppm	0.0084940	0.32510	2.5000	Rel(%)	Pass	
Fe2599		26.817	ppm	0.0027730	0.010340	25.000	Rel(%)	Pass	
K_7664		25.409	ppm	0.023649	0.093075	25.000	Rel(%)	Pass	
Mg2790		26.162	ppm	0.077748	0.29717	25.000	Rel(%)	Pass	
Mn2576		2.6244	ppm	0.0074640	0.28440	2.5000	Rel(%)	Pass	
Mo2020		1.0285	ppm	0.0025980	0.25258	1.0000	Rel(%)	Pass	
Na5895		25.872	ppm	0.051876	0.20051	25.000	Rel(%)	Pass	
Ni2316		2.6539	ppm	0.0064370	0.24254	2.5000	Rel(%)	Pass	
P_1782		2.5431	ppm	0.0046040	0.18106	2.5000	Rel(%)	Pass	

CCV 2010278

Acquire Date: 6/4/2020 4:30:49PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Pb2203		0.52676	ppm	0.0046350	0.87999	.50000	Rel(%)	Pass	
S_1820		2.5282	ppm	0.0024970	0.098774	2.5000	Rel(%)	Pass	
Sb2068		0.52304	ppm	0.0033180	0.63439	.50000	Rel(%)	Pass	
Se1960		0.52588	ppm	0.0030030	0.57100	.50000	Rel(%)	Pass	
Si2881		2.6412	ppm	0.035609	1.3482	2.5000	Rel(%)	Pass	
Sn1899		2.6137	ppm	0.0046350	0.17732	2.5000	Rel(%)	Pass	
Sr4077		2.5993	ppm	0.0096550	0.37146	2.5000	Rel(%)	Pass	
Ti3349		1.0426	ppm	0.0034270	0.32868	1.0000	Rel(%)	Pass	
Tl1908		0.52359	ppm	0.0034150	0.65229	.50000	Rel(%)	Pass	
V_2924		2.5958	ppm	0.0053630	0.20660	2.5000	Rel(%)	Pass	
Zn2062		2.6660	ppm	0.0087050	0.32654	2.5000	Rel(%)	Pass	
Y_2243		7,162.6	Cts/S	0.97813	0.013656				
Y_3600		70,518	Cts/S	41.803	0.059280				
Y_3774		4,335.7	Cts/S	13.757	0.31729				

CCB 1815536

Acquire Date: 6/4/2020 4:34:34PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0035120	ppm	0.00073600	20.963	.00000	Abs	Pass	
Al3961		0.037769	ppm	0.0017790	4.7096	.00000	Abs	Pass	
As1890		0.0022410	ppm	0.0019750	88.140	.00000	Abs	Pass	
B_2089		0.025939	ppm	0.0011550	4.4515	.00000	Abs	Pass	
Ba4554		0.00030400	ppm	0.00038100	125.55	.00000	Abs	Pass	
Be3130		-0.00026300	ppm	0.00035200	133.96	.00000	Abs	Pass	
Ca3179		0.0032390	ppm	0.0095920	296.11	.00000	Abs	Pass	
Cd2144		0.000043000	ppm	0.00011300	263.90	.00000	Abs	Pass	
Co2286		0.00053500	ppm	0.000041000	7.6220	.00000	Abs	Pass	
Cr2677		0.00056800	ppm	0.00037300	65.613	.00000	Abs	Pass	
Cu3247		-0.00051800	ppm	0.00024300	46.868	.00000	Abs	Pass	
Fe2599		0.031845	ppm	0.013662	42.900	.00000	Abs	Pass	
K_7664		0.025087	ppm	0.0063550	25.332	.00000	Abs	Pass	
Mg2790		-0.0022910	ppm	0.00029800	13.027	.00000	Abs	Pass	
Mn2576		0.00071200	ppm	0.000064000	8.9959	.00000	Abs	Pass	
Mo2020		0.0041100	ppm	0.00024900	6.0526	.00000	Abs	Pass	
Na5895		0.12484	ppm	0.010522	8.4286	.00000	Abs	Pass	
Ni2316		0.0013090	ppm	0.00032800	25.070	.00000	Abs	Pass	
P_1782		-0.00051200	ppm	0.0013870	271.17	.00000	Abs	Pass	
Pb2203		0.00043400	ppm	0.0010440	240.38	.00000	Abs	Pass	
S_1820		0.0039610	ppm	0.0017460	44.087	.00000	Abs	Pass	
Sb2068		0.0052010	ppm	0.0012870	24.737	.00000	Abs	Pass	
Se1960		0.0068710	ppm	0.00019400	2.8172	.00000	Abs	Pass	
Si2881		-0.024571	ppm	0.054268	220.86	.00000	Abs	Pass	
Sn1899		0.0033920	ppm	0.00082100	24.197	.00000	Abs	Pass	
Sr4077		0.00055100	ppm	0.00015200	27.562	.00000	Abs	Pass	
Ti3349		0.0035990	ppm	0.00018800	5.2342	.00000	Abs	Pass	
Tl1908		0.0051350	ppm	0.00061100	11.907	.00000	Abs	Pass	
V_2924		-0.00037800	ppm	0.00031700	83.709	.00000	Abs	Pass	

CCB 1815536

Acquire Date: 6/4/2020 4:34:34PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Zn2062		0.0014040	ppm	0.00020200	14.414	.00000	Abs	Pass	
Y_2243		7,376.1	Cts/S	16.242	0.22020				
Y_3600		73,455	Cts/S	310.24	0.42235				
Y_3774		4,349.6	Cts/S	25.519	0.58669				

320-61333-B-2-B

Acquire Date: 6/4/2020 4:38:34PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0017010	ppm	0.00063700	37.426
Al3961		0.028056	ppm	0.027167	96.831
As1890		0.013965	ppm	0.00091400	6.5422
B_2089		4.6807	ppm	0.00019300	0.0041190
Ba4554		0.43894	ppm	0.0021030	0.47919
Be3130		0.00011400	ppm	0.00010200	89.660
Ca3179		89.550	ppm	0.46225	0.51620
Cd2144		-0.00032600	ppm	0.000065000	20.030
Co2286		0.0063300	ppm	0.00020800	3.2784
Cr2677		0.0017900	ppm	0.00017200	9.6324
Cu3247		-0.00039200	ppm	0.00090900	231.78
Fe2599		1.5851	ppm	0.0037200	0.23467
K_7664		1.2138	ppm	0.038926	3.2069
Mg2790		170.24	ppm	0.45066	0.26471
Mn2576		3.8099	ppm	0.010095	0.26496
Mo2020		0.0020950	ppm	0.00024400	11.637
Na5895		115.78	ppm	0.66469	0.57412
Ni2316		0.016232	ppm	0.0000090000	0.055529
P_1782		-0.023850	ppm	0.0015010	6.2943
Pb2203		0.00050500	ppm	0.0012400	245.46
S_1820		30.832	ppm	0.046698	0.15146
Sb2068		0.0032950	ppm	0.0032570	98.857
Se1960		0.0018040	ppm	0.0017430	96.627
Si2881		16.477	ppm	0.14420	0.87518
Sn1899		0.0035770	ppm	0.00052600	14.713
Sr4077		1.6359	ppm	0.0084590	0.51710
Ti3349		.0000090000	ppm	0.00047100	4,972.0
Tl1908		0.0088470	ppm	0.0037010	41.831
V_2924		0.0068000	ppm	0.00060900	8.9492
Zn2062		0.0042150	ppm	0.00057600	13.663
Y_2243		6,931.2	Cts/S	6.2411	0.090045
Y_3600		68,297	Cts/S	285.75	0.41839
Y_3774		4,293.5	Cts/S	6.5277	0.15204

320-61333-B-3-B

Acquire Date: 6/4/2020 4:42:29PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0012490	ppm	0.00027900	22.336
Al3961		0.013022	ppm	0.017629	135.37
As1890		0.010971	ppm	0.000021000	0.19123
B_2089	**W**	**5.0171**	**ppm**	**0.013357**	**0.26623**
Ba4554		0.65095	ppm	0.0032330	0.49671
Be3130		-0.00026600	ppm	0.00049800	187.09
Ca3179		101.38	ppm	0.45006	0.44392
Cd2144		-0.00019700	ppm	0.000096000	48.633
Co2286		0.0030990	ppm	0.00032000	10.342
Cr2677		0.0026120	ppm	0.00014900	5.6854
Cu3247		-0.00082700	ppm	0.00045200	54.604
Fe2599		0.98228	ppm	0.034107	3.4722
K_7664		1.4695	ppm	0.086719	5.9014
Mg2790		183.06	ppm	0.59449	0.32475
Mn2576		5.9941	ppm	0.016239	0.27092
Mo2020		0.0010170	ppm	0.00010300	10.149
Na5895		126.42	ppm	0.51344	0.40615
Ni2316		0.010115	ppm	0.000031000	0.30355
P_1782		-0.033816	ppm	0.00074600	2.2048
Pb2203		-0.0016660	ppm	0.0017320	103.96
S_1820		25.952	ppm	0.00046600	0.0017970
Sb2068		0.000025000	ppm	0.0075470	29,875
Se1960		0.00058800	ppm	0.0036510	621.10
Si2881		17.263	ppm	0.022904	0.13268
Sn1899		0.00073400	ppm	0.00020500	27.926
Sr4077		1.7849	ppm	0.0080130	0.44896
Ti3349		-0.00074400	ppm	0.000062000	8.3825
Tl1908		0.013744	ppm	0.0031460	22.888
V_2924		0.011291	ppm	0.00023200	2.0580
Zn2062		0.014110	ppm	0.00033800	2.3949
Y_2243		6,931.1	Cts/S	4.4238	0.063825
Y_3600		67,957	Cts/S	157.85	0.23228
Y_3774		4,256.8	Cts/S	1.6835	0.039548

320-61333-B-4-B

Acquire Date: 6/4/2020 4:46:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0025740	ppm	0.00048100	18.680
Al3961		0.020219	ppm	0.012039	59.544
As1890		0.0053970	ppm	0.0018880	34.980
B_2089		3.8216	ppm	0.00061200	0.016027
Ba4554		0.41217	ppm	0.0011140	0.27018
Be3130		0.00013600	ppm	0.000069000	50.545
Ca3179		84.775	ppm	0.21352	0.25187
Cd2144		-0.00012400	ppm	0.000064000	51.425
Co2286		0.0012910	ppm	0.000050000	3.9019

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

320-61333-B-4-B

Acquire Date:	6/4/2020 4:46:24PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.00085300	ppm	0.00055100	64.602
Cu3247		0.00048100	ppm	0.00055500	115.49
Fe2599		0.0096180	ppm	0.012444	129.39
K_7664		1.1786	ppm	0.057081	4.8431
Mg2790		147.67	ppm	0.65662	0.44466
Mn2576		1.1814	ppm	0.0059090	0.50018
Mo2020		0.0040180	ppm	0.000088000	2.1980
Na5895		115.25	ppm	0.14839	0.12875
Ni2316		0.010845	ppm	0.000081000	0.74391
P_1782		0.0062370	ppm	0.00019100	3.0571
Pb2203		0.00021200	ppm	0.0017400	819.70
S_1820		30.595	ppm	0.068476	0.22382
Sb2068		0.00099800	ppm	0.000043000	4.3247
Se1960		0.011182	ppm	0.0015710	14.051
Si2881		8.5375	ppm	0.021351	0.25009
Sn1899		0.0017900	ppm	0.00062400	34.880
Sr4077		1.2854	ppm	0.0043080	0.33519
Ti3349		-0.00045100	ppm	0.00011400	25.296
Tl1908		0.0076760	ppm	0.0030440	39.661
V_2924		0.0050320	ppm	0.00010600	2.1068
Zn2062		0.066467	ppm	0.00026500	0.39818
Y_2243		6,972.9	Cts/S	2.5010	0.035868
Y_3600		68,364	Cts/S	168.64	0.24668
Y_3774		4,291.2	Cts/S	32.102	0.74808

720-98680-A-1-D

Acquire Date:	6/4/2020 4:50:20PM	Sample Type:	Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00050000	ppm	0.00061400	122.83
Al3961		0.38554	ppm	0.0047580	1.2342
As1890		0.0047010	ppm	0.0041060	87.344
B_2089		0.057213	ppm	0.000068000	0.11813
Ba4554		0.46845	ppm	0.0018340	0.39156
Be3130		-0.00021400	ppm	0.00026300	122.78
Ca3179		382.51	ppm	0.83058	0.21714
Cd2144		0.00075200	ppm	0.0000080000	1.0876
Co2286		0.0030930	ppm	0.0000060000	0.20904
Cr2677		0.021465	ppm	0.00043300	2.0155
Cu3247		0.013310	ppm	0.00025400	1.9082
Fe2599		0.89747	ppm	0.011882	1.3239
K_7664		1.4495	ppm	0.015894	1.0965
Mg2790		2.2442	ppm	0.010292	0.45862
Mn2576		0.52854	ppm	0.00060500	0.11448
Mo2020		0.00041600	ppm	0.0000010000	0.31641
Na5895	**F**	**1,599.9**	**ppm**	**10.641**	**0.66508**
Ni2316		0.025199	ppm	0.00033700	1.3358

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-98680-A-1-D

Acquire Date: 6/4/2020 4:50:20PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.026345	ppm	0.00033400	1.2697
Pb2203		0.070461	ppm	0.0015030	2.1324
S_1820		0.88908	ppm	0.0092630	1.0419
Sb2068		-0.0019690	ppm	0.00027800	14.111
Se1960		0.0089390	ppm	0.0063650	71.205
Si2881		0.52870	ppm	0.082680	15.638
Sn1899		0.0019090	ppm	0.0013300	69.644
Sr4077		0.41840	ppm	0.0017820	0.42601
Ti3349		-0.0013050	ppm	0.00090600	69.378
Tl1908		0.0068460	ppm	0.0014270	20.847
V_2924		0.0023170	ppm	0.00033100	14.300
Zn2062		0.15967	ppm	0.00011000	0.069139
Y_2243		6,423.7	Cts/S	6.5203	0.10150
Y_3600		60,866	Cts/S	93.879	0.15424
Y_3774		4,188.3	Cts/S	20.846	0.49773

sd 720-98680-A-1-D@5

Acquire Date: 6/4/2020 4:54:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0030830	ppm	0.0000030000	0.10564
Al3961		0.11007	ppm	0.017636	16.022
As1890		0.00079600	ppm	0.0032600	409.58
B_2089		0.025643	ppm	0.00054700	2.1316
Ba4554		0.096653	ppm	0.00045800	0.47354
Be3130		-0.00010700	ppm	0.00026700	249.84
Ca3179		79.093	ppm	0.44837	0.56689
Cd2144		0.00031200	ppm	0.000031000	9.9988
Co2286		0.00089200	ppm	0.00016900	18.996
Cr2677		0.0050310	ppm	0.0011530	22.925
Cu3247		0.0017820	ppm	0.00022700	12.720
Fe2599		0.18226	ppm	0.0032520	1.7843
K_7664		0.33383	ppm	0.055008	16.478
Mg2790		0.52746	ppm	0.0049830	0.94478
Mn2576		0.10930	ppm	0.00018300	0.16772
Mo2020		0.000099000	ppm	0.00018500	187.27
Na5895	**W**	**356.39**	**ppm**	**9.0472**	**2.5386**
Ni2316		0.0058630	ppm	0.00021100	3.6017
P_1782		0.0011950	ppm	0.0028240	236.33
Pb2203		0.015341	ppm	0.0011870	7.7365
S_1820		0.18868	ppm	0.00031100	0.16464
Sb2068		0.0040990	ppm	0.00091000	22.198
Se1960		0.0054180	ppm	0.0011940	22.032
Si2881		0.096177	ppm	0.025371	26.380
Sn1899		0.00073600	ppm	0.00051900	70.500
Sr4077		0.086085	ppm	0.00017100	0.19916
Ti3349		-0.0013250	ppm	0.000021000	1.6106

sd 720-98680-A-1-D@5

Acquire Date: 6/4/2020 4:54:22PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0041970	ppm	0.0015960	38.018
V_2924		0.00049900	ppm	0.00042300	84.868
Zn2062		0.032405	ppm	0.00051500	1.5895
Y_2243		6,933.3	Cts/S	5.3802	0.077600
Y_3600		67,506	Cts/S	2.0085	0.0029750
Y_3774		4,274.2	Cts/S	17.821	0.41695

pds 720-98680-A-1-D

Acquire Date: 6/4/2020 4:58:24PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.00099900	ppm	0.0027440	274.60
Al3961		0.39321	ppm	0.017272	4.3926
As1890		0.00082800	ppm	0.0017340	209.53
B_2089		0.044819	ppm	0.00061700	1.3770
Ba4554		0.47593	ppm	0.0010220	0.21472
Be3130		-0.00042700	ppm	0.00031000	72.549
Ca3179		388.21	ppm	0.34964	0.090066
Cd2144		0.00073900	ppm	0.000056000	7.6355
Co2286		0.0037920	ppm	0.00022300	5.8724
Cr2677		0.021903	ppm	0.00045100	2.0611
Cu3247		0.013172	ppm	0.00015500	1.1790
Fe2599		0.91196	ppm	0.0032950	0.36128
K_7664		1.4623	ppm	0.049286	3.3705
Mg2790		2.2740	ppm	0.00063600	0.027966
Mn2576		0.53664	ppm	0.00046400	0.086436
Mo2020		0.00044400	ppm	0.00065100	146.68
Na5895	**F**	**1,556.8**	**ppm**	**3.3285**	**0.21380**
Ni2316		0.024397	ppm	0.0016700	6.8453
P_1782		0.028204	ppm	0.00047200	1.6723
Pb2203		0.074494	ppm	0.0074090	9.9453
S_1820		0.91033	ppm	0.0075040	0.82428
Sb2068		0.0022150	ppm	0.0011360	51.260
Se1960		0.0045120	ppm	0.0023120	51.243
Si2881		0.57367	ppm	0.031563	5.5020
Sn1899		0.0027510	ppm	0.00041000	14.890
Sr4077		0.42583	ppm	0.00042400	0.099597
Ti3349		-0.0017030	ppm	0.00034700	20.358
Tl1908		0.0020440	ppm	0.0020720	101.36
V_2924		0.0027800	ppm	0.000037000	1.3272
Zn2062		0.16333	ppm	0.00067800	0.41492
Y_2243		6,447.0	Cts/S	0.94871	0.014716
Y_3600		61,131	Cts/S	135.06	0.22094
Y_3774		4,226.4	Cts/S	0.74856	0.017711

720-98680-A-1-E MS

Acquire Date: 6/4/2020 5:02:26PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.049404	ppm	0.0000020000	0.0040700
Al3961		5.1616	ppm	0.029970	0.58063
As1890		0.48570	ppm	0.0019110	0.39353
B_2089		4.2189	ppm	0.0041780	0.099042
Ba4554		0.90895	ppm	0.0037040	0.40746
Be3130		0.23552	ppm	0.00029600	0.12564
Ca3179		382.18	ppm	1.2340	0.32287
Cd2144		0.23938	ppm	0.00025900	0.10840
Co2286		0.22738	ppm	0.00030200	0.13271
Cr2677		0.26111	ppm	0.00021300	0.081603
Cu3247		0.26004	ppm	0.0025480	0.97997
Fe2599		5.6143	ppm	0.051667	0.92028
K_7664		27.303	ppm	0.12523	0.45868
Mg2790		24.655	ppm	0.067737	0.27473
Mn2576		0.73630	ppm	0.0010660	0.14484
Mo2020		0.23657	ppm	0.0017820	0.75323
Na5895	**F**	**1,424.3**	**ppm**	**34.818**	**2.4445**
Ni2316		0.24980	ppm	0.00027200	0.10899
P_1782		5.3022	ppm	0.014656	0.27642
Pb2203		0.29296	ppm	0.0010150	0.34649
S_1820		5.9813	ppm	0.0088140	0.14736
Sb2068		0.44711	ppm	0.0025210	0.56376
Se1960		0.49384	ppm	0.0049850	1.0094
Si2881		5.5343	ppm	0.10547	1.9058
Sn1899		0.47417	ppm	0.0010430	0.22005
Sr4077		0.63251	ppm	0.0023400	0.36989
Ti3349		0.24248	ppm	0.0010630	0.43856
Tl1908		0.43076	ppm	0.0020640	0.47913
V_2924		0.25092	ppm	0.0020310	0.80945
Zn2062		0.66656	ppm	0.00061400	0.092176
Y_2243		6,439.5	Cts/S	5.6917	0.088388
Y_3600		61,084	Cts/S	94.333	0.15443
Y_3774		4,208.8	Cts/S	6.5653	0.15599

720-98680-A-1-F MSD

Acquire Date: 6/4/2020 5:06:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.050580	ppm	0.00064800	1.2806
Al3961		5.2553	ppm	0.011004	0.20940
As1890		0.49226	ppm	0.0015090	0.30664
B_2089		4.2832	ppm	0.0017770	0.041490
Ba4554		0.92771	ppm	0.0035990	0.38799
Be3130		0.23963	ppm	0.00045400	0.18961
Ca3179		392.04	ppm	0.36013	0.091862
Cd2144		0.24289	ppm	0.00023700	0.097540
Co2286		0.23169	ppm	0.00056900	0.24541

720-98680-A-1-F MSD

Acquire Date: 6/4/2020 5:06:16PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cr2677		0.26419	ppm	0.0028270	1.0700
Cu3247		0.26434	ppm	0.0021330	0.80685
Fe2599		5.7571	ppm	0.0073970	0.12848
K_7664		27.754	ppm	0.12899	0.46477
Mg2790		24.953	ppm	0.079024	0.31669
Mn2576		0.74648	ppm	0.00071200	0.095435
Mo2020		0.24135	ppm	0.00050000	0.20697
Na5895	**F**	**1,442.3**	**ppm**	**9.6644**	**0.67008**
Ni2316		0.25290	ppm	0.00035900	0.14206
P_1782		5.3809	ppm	0.0072730	0.13517
Pb2203		0.29537	ppm	0.0031200	1.0563
S_1820		6.0660	ppm	0.0010390	0.017126
Sb2068		0.45330	ppm	0.0090650	1.9998
Se1960		0.49476	ppm	0.0044700	0.90348
Si2881		5.7071	ppm	0.012001	0.21028
Sn1899		0.48165	ppm	0.000040000	0.0083370
Sr4077		0.64479	ppm	0.0010670	0.16552
Ti3349		0.24956	ppm	0.00034000	0.13613
Tl1908		0.43839	ppm	0.0041950	0.95694
V_2924		0.25579	ppm	0.0011020	0.43074
Zn2062		0.67657	ppm	0.0043570	0.64394
Y_2243		6,422.8	Cts/S	23.162	0.36062
Y_3600		61,259	Cts/S	402.99	0.65784
Y_3774		4,164.2	Cts/S	3.6321	0.087222

720-98680-A-2-D

Acquire Date: 6/4/2020 5:10:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0019920	ppm	0.00046600	23.401
Al3961		0.35821	ppm	0.0012640	0.35283
As1890		0.0020760	ppm	0.00048400	23.306
B_2089		0.053323	ppm	0.00022300	0.41785
Ba4554		0.45847	ppm	0.0027480	0.59933
Be3130		0.000039000	ppm	0.00029500	762.29
Ca3179		380.61	ppm	1.6805	0.44153
Cd2144		0.00079000	ppm	0.000068000	8.6049
Co2286		0.0032400	ppm	0.000043000	1.3307
Cr2677		0.022499	ppm	0.000095000	0.42314
Cu3247		0.011779	ppm	0.0010300	8.7452
Fe2599		0.76866	ppm	0.0074420	0.96818
K_7664		1.4329	ppm	0.0013010	0.090812
Mg2790		2.1983	ppm	0.0025770	0.11722
Mn2576		0.51105	ppm	0.00072900	0.14266
Mo2020		0.0017640	ppm	0.00020100	11.401
Na5895	**F**	**1,380.2**	**ppm**	**5.2034**	**0.37700**
Ni2316		0.023554	ppm	0.00055300	2.3458

720-98680-A-2-D

Acquire Date: 6/4/2020 5:10:08PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
P_1782		0.025811	ppm	0.0019640	7.6072
Pb2203		0.087196	ppm	0.0027720	3.1789
S_1820		0.90800	ppm	0.0089060	0.98083
Sb2068		0.0010780	ppm	0.000094000	8.7122
Se1960		0.012312	ppm	0.0034190	27.769
Si2881		0.50283	ppm	0.017756	3.5313
Sn1899		0.0017490	ppm	0.0017550	100.34
Sr4077		0.41044	ppm	0.0024850	0.60543
Ti3349		0.000075000	ppm	0.000051000	67.648
Tl1908		0.0029320	ppm	0.0023280	79.397
V_2924		0.0022670	ppm	0.00028600	12.602
Zn2062		0.15184	ppm	0.000068000	0.044746
Y_2243		6,445.0	Cts/S	5.8683	0.091052
Y_3600		61,072	Cts/S	15.294	0.025042
Y_3774		4,226.4	Cts/S	1.5565	0.036829

720-98680-A-3-D

Acquire Date: 6/4/2020 5:14:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0016930	ppm	0.0015540	91.755
Al3961		0.40811	ppm	0.022548	5.5251
As1890		0.0014200	ppm	0.0021350	150.40
B_2089		0.075784	ppm	0.0010260	1.3539
Ba4554		0.53138	ppm	0.0026930	0.50689
Be3130		-0.00035300	ppm	0.00024300	68.921
Ca3179		386.34	ppm	1.3894	0.35964
Cd2144		0.00077000	ppm	0.000049000	6.3192
Co2286		0.0034250	ppm	0.000028000	0.80952
Cr2677		0.021627	ppm	0.00062100	2.8718
Cu3247		0.012276	ppm	0.0013330	10.856
Fe2599		0.87247	ppm	0.0031590	0.36211
K_7664		1.5680	ppm	0.017225	1.0986
Mg2790		2.2353	ppm	0.0021460	0.096024
Mn2576		0.52430	ppm	0.0012960	0.24712
Mo2020		0.00065200	ppm	0.0000040000	0.62271
Na5895	**F**	**1,459.7**	**ppm**	**17.647**	**1.2090**
Ni2316		0.025853	ppm	0.00011000	0.42707
P_1782		0.025356	ppm	0.0055340	21.824
Pb2203		0.071759	ppm	0.0049380	6.8813
S_1820		0.87881	ppm	0.0090120	1.0255
Sb2068		-0.0025070	ppm	0.0022300	88.980
Se1960		0.011761	ppm	0.00056000	4.7638
Si2881		0.57350	ppm	0.014660	2.5562
Sn1899		0.0018230	ppm	0.0016240	89.059
Sr4077		0.41868	ppm	0.0010640	0.25410
Ti3349		-0.00087400	ppm	0.00020600	23.542

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-98680-A-3-D

Acquire Date: 6/4/2020 5:14:09PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Tl1908		0.0015260	ppm	0.0055790	365.53
V_2924		0.0023340	ppm	0.00011100	4.7522
Zn2062		0.18472	ppm	0.00097900	0.53009
Y_2243		6,397.1	Cts/S	4.7349	0.074016
Y_3600		60,456	Cts/S	173.22	0.28652
Y_3774		4,195.0	Cts/S	3.3192	0.079123

CCV 2010278

Acquire Date: 6/4/2020 5:18:12PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51866	ppm	0.0017690	0.34101	.50000	Rel(%)	Pass	
Al3961		25.727	ppm	0.0063690	0.024758	25.000	Rel(%)	Pass	
As1890		0.51574	ppm	0.0052470	1.0174	.50000	Rel(%)	Pass	
B_2089		1.0507	ppm	0.0027540	0.26210	1.0000	Rel(%)	Pass	
Ba4554		2.5881	ppm	0.0026960	0.10418	2.5000	Rel(%)	Pass	
Be3130		0.52187	ppm	0.00047400	0.090896	.50000	Rel(%)	Pass	
Ca3179		26.652	ppm	0.039772	0.14923	25.000	Rel(%)	Pass	
Cd2144		0.53217	ppm	0.00010000	0.018806	.50000	Rel(%)	Pass	
Co2286		2.5936	ppm	0.00022100	0.0085050	2.5000	Rel(%)	Pass	
Cr2677		2.6198	ppm	0.0097320	0.37148	2.5000	Rel(%)	Pass	
Cu3247		2.6034	ppm	0.0047170	0.18117	2.5000	Rel(%)	Pass	
Fe2599		26.846	ppm	0.022902	0.085307	25.000	Rel(%)	Pass	
K_7664		25.406	ppm	0.12235	0.48156	25.000	Rel(%)	Pass	
Mg2790		26.060	ppm	0.074266	0.28498	25.000	Rel(%)	Pass	
Mn2576		2.6214	ppm	0.0090690	0.34595	2.5000	Rel(%)	Pass	
Mo2020		1.0244	ppm	0.0014520	0.14176	1.0000	Rel(%)	Pass	
Na5895		26.642	ppm	0.10708	0.40194	25.000	Rel(%)	Pass	
Ni2316		2.6505	ppm	0.0062060	0.23414	2.5000	Rel(%)	Pass	
P_1782		2.5428	ppm	0.0037360	0.14691	2.5000	Rel(%)	Pass	
Pb2203		0.52777	ppm	0.00078000	0.14781	.50000	Rel(%)	Pass	
S_1820		2.5231	ppm	0.0020480	0.081165	2.5000	Rel(%)	Pass	
Sb2068		0.51951	ppm	0.0029220	0.56251	.50000	Rel(%)	Pass	
Se1960		0.52839	ppm	0.00069300	0.13121	.50000	Rel(%)	Pass	
Si2881		2.6312	ppm	0.011074	0.42085	2.5000	Rel(%)	Pass	
Sn1899		2.6142	ppm	0.00021400	0.0081860	2.5000	Rel(%)	Pass	
Sr4077		2.6037	ppm	0.0010780	0.041391	2.5000	Rel(%)	Pass	
Ti3349		1.0375	ppm	0.0027690	0.26694	1.0000	Rel(%)	Pass	
Tl1908		0.52489	ppm	0.0057280	1.0912	.50000	Rel(%)	Pass	
V_2924		2.5967	ppm	0.0084640	0.32595	2.5000	Rel(%)	Pass	
Zn2062		2.6677	ppm	0.0058870	0.22069	2.5000	Rel(%)	Pass	
Y_2243		7,125.4	Cts/S	12.918	0.18130				
Y_3600		70,071	Cts/S	92.975	0.13269				
Y_3774		4,280.2	Cts/S	17.974	0.41994				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

CCB 1815536

Acquire Date: 6/4/2020 5:21:56PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0020740	ppm	0.00051500	24.836	.00000	Abs	Pass	
Al3961		0.030805	ppm	0.017562	57.011	.00000	Abs	Pass	
As1890		-0.00047200	ppm	0.0023930	506.82	.00000	Abs	Pass	
B_2089		0.013436	ppm	0.00026000	1.9335	.00000	Abs	Pass	
Ba4554		0.0010380	ppm	0.00032700	31.537	.00000	Abs	Pass	
Be3130		0.000041000	ppm	0.000031000	76.699	.00000	Abs	Pass	
Ca3179		0.14317	ppm	0.013234	9.2436	.00000	Abs	Pass	
Cd2144		0.00011800	ppm	0.0000020000	1.9316	.00000	Abs	Pass	
Co2286		0.00058400	ppm	0.000020000	3.3605	.00000	Abs	Pass	
Cr2677		0.00029900	ppm	0.00024700	82.541	.00000	Abs	Pass	
Cu3247		0.000086000	ppm	0.000050000	57.973	.00000	Abs	Pass	
Fe2599		0.034383	ppm	0.0050990	14.831	.00000	Abs	Pass	
K_7664		0.047411	ppm	0.073874	155.81	.00000	Abs	Pass	
Mg2790		0.015435	ppm	0.0033560	21.742	.00000	Abs	Pass	
Mn2576		0.0012470	ppm	0.00014800	11.849	.00000	Abs	Pass	
Mo2020		0.0036850	ppm	0.0010170	27.596	.00000	Abs	Pass	
Na5895	**F**	**1.0965**	**ppm**	**0.035825**	**3.2673**	**.00000**	**Abs**	**Fail High**	**1.0000**
Ni2316		0.0010320	ppm	0.00050600	49.034	.00000	Abs	Pass	
P_1782		0.0014590	ppm	0.0016900	115.83	.00000	Abs	Pass	
Pb2203		0.0012730	ppm	0.0014160	111.19	.00000	Abs	Pass	
S_1820		0.0047760	ppm	0.0019390	40.594	.00000	Abs	Pass	
Sb2068		0.0036380	ppm	0.000056000	1.5429	.00000	Abs	Pass	
Se1960		0.0020430	ppm	0.0043620	213.49	.00000	Abs	Pass	
Si2881		-0.00097100	ppm	0.011905	1,226.3	.00000	Abs	Pass	
Sn1899		0.0031560	ppm	0.00075000	23.768	.00000	Abs	Pass	
Sr4077		0.00081800	ppm	0.00031300	38.200	.00000	Abs	Pass	
Ti3349		0.0034250	ppm	0.00016900	4.9470	.00000	Abs	Pass	
Tl1908		0.0057690	ppm	0.000046000	0.79052	.00000	Abs	Pass	
V_2924		-0.00041600	ppm	0.00012800	30.738	.00000	Abs	Pass	
Zn2062		0.0016560	ppm	0.00049800	30.052	.00000	Abs	Pass	
Y_2243		7,294.0	Cts/S	16.135	0.22121				
Y_3600		72,666	Cts/S	93.100	0.12812				
Y_3774		4,297.1	Cts/S	3.1294	0.072825				

720-98680-A-4-D

Acquire Date: 6/4/2020 5:25:56PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0015680	ppm	0.00026900	17.146
Al3961		0.35298	ppm	0.0091620	2.5956
As1890		0.0028760	ppm	0.00020300	7.0430
B_2089		0.064831	ppm	0.00026700	0.41248
Ba4554		0.45311	ppm	0.0022710	0.50114
Be3130		-0.00013800	ppm	0.00011400	82.471
Ca3179		329.22	ppm	1.4351	0.43592
Cd2144		0.00070300	ppm	0.000036000	5.0939
Co2286		0.0030160	ppm	0.00035400	11.742
Cr2677		0.017774	ppm	0.00056300	3.1666

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

720-98680-A-4-D

Acquire Date: 6/4/2020 5:25:56PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Cu3247		0.0098940	ppm	0.000018000	0.18101
Fe2599		0.74325	ppm	0.0075130	1.0109
K_7664		1.3107	ppm	0.0083040	0.63360
Mg2790		1.9088	ppm	0.014142	0.74091
Mn2576		0.43455	ppm	0.00088700	0.20404
Mo2020		0.0012300	ppm	0.00012100	9.8228
Na5895	**F**	**1,350.6**	**ppm**	**15.796**	**1.1696**
Ni2316		0.021605	ppm	0.00086900	4.0246
P_1782		0.022643	ppm	0.0028610	12.637
Pb2203		0.057685	ppm	0.00020200	0.34990
S_1820		0.72292	ppm	0.0045280	0.62641
Sb2068		0.00079200	ppm	0.0027020	340.96
Se1960		0.0092310	ppm	0.0041770	45.248
Si2881		0.49131	ppm	0.051580	10.498
Sn1899		0.0021460	ppm	0.00040600	18.933
Sr4077		0.34966	ppm	0.0011370	0.32514
Ti3349		-0.0011730	ppm	0.00020600	17.547
Tl1908		0.0046260	ppm	0.0025200	54.470
V_2924		0.0021320	ppm	0.00014500	6.8176
Zn2062		0.16077	ppm	0.00098200	0.61100
Y_2243		6,515.2	Cts/S	2.2783	0.034969
Y_3600		61,899	Cts/S	186.41	0.30115
Y_3774		4,214.3	Cts/S	21.707	0.51509

blank1

Acquire Date: 6/4/2020 5:29:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0044040	ppm	0.00090300	20.514
Al3961		0.016776	ppm	0.0048970	29.190
As1890		0.00050700	ppm	0.00057000	112.39
B_2089		0.0074130	ppm	0.000078000	1.0460
Ba4554		0.00058400	ppm	0.00013300	22.763
Be3130		-0.00011000	ppm	0.00017900	161.96
Ca3179		0.15922	ppm	0.015517	9.7456
Cd2144		0.000065000	ppm	0.0000090000	14.309
Co2286		0.00018500	ppm	0.00017600	94.982
Cr2677		0.00079500	ppm	0.00092800	116.64
Cu3247		-0.0010380	ppm	0.0015600	150.26
Fe2599		0.0013300	ppm	0.0072730	546.80
K_7664		-0.0074930	ppm	0.021394	285.51
Mg2790		0.011449	ppm	0.0076060	66.432
Mn2576		0.00082600	ppm	0.000043000	5.1553
Mo2020		0.000097000	ppm	0.000092000	94.042
Na5895		1.4274	ppm	0.11814	8.2766
Ni2316		0.0010940	ppm	0.00084600	77.338
P_1782		-0.0027230	ppm	0.0010890	39.998

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

blank1

Acquire Date: 6/4/2020 5:29:59PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Pb2203		-0.0019450	ppm	0.0029580	152.10
S_1820		0.0069040	ppm	0.00069300	10.030
Sb2068		0.0045830	ppm	0.0034250	74.736
Se1960		0.0025800	ppm	0.0063870	247.51
Si2881		0.0099440	ppm	0.039159	393.79
Sn1899		0.00098000	ppm	0.00031600	32.260
Sr4077		0.00040700	ppm	0.00019200	47.248
Ti3349		0.000034000	ppm	0.00047100	1,393.0
Tl1908		0.0030780	ppm	0.0016570	53.830
V_2924		-0.0010290	ppm	0.00042200	41.004
Zn2062		0.0011350	ppm	0.0000050000	0.43157
Y_2243		7,331.7	Cts/S	12.142	0.16562
Y_3600		72,664	Cts/S	310.04	0.42667
Y_3774		4,308.6	Cts/S	23.222	0.53896

blank2

Acquire Date: 6/4/2020 5:33:58PM Sample Type: Unknown

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
Ag3280		0.0029940	ppm	0.00036800	12.295
Al3961		0.0066530	ppm	0.018344	275.73
As1890		0.0013110	ppm	0.0031700	241.83
B_2089		0.0054660	ppm	0.00029000	5.3055
Ba4554		0.00035800	ppm	0.00015500	43.427
Be3130		-0.00021200	ppm	0.00010400	49.310
Ca3179		0.088059	ppm	0.012116	13.759
Cd2144		0.000061000	ppm	0.000027000	43.309
Co2286		0.00048700	ppm	0.00028300	58.237
Cr2677		-0.00022700	ppm	0.00092900	408.82
Cu3247		-0.00084800	ppm	0.00031600	37.296
Fe2599		-0.015633	ppm	0.0046400	29.681
K_7664		0.0029570	ppm	0.083878	2,837.0
Mg2790		0.014014	ppm	0.0043310	30.904
Mn2576		0.00050500	ppm	0.00019500	38.624
Mo2020		-0.00020600	ppm	0.000089000	43.145
Na5895		0.77719	ppm	0.026086	3.3564
Ni2316		0.0020850	ppm	0.00038300	18.386
P_1782		-0.0021570	ppm	0.0017910	83.012
Pb2203		0.00020000	ppm	0.00052200	261.10
S_1820		0.0042900	ppm	0.0099050	230.88
Sb2068		0.0045980	ppm	0.0037680	81.949
Se1960		0.0036500	ppm	0.00062800	17.214
Si2881		-0.045620	ppm	0.00078000	1.7108
Sn1899		0.00078700	ppm	0.00029700	37.729
Sr4077		0.00019600	ppm	0.000072000	36.920
Ti3349		0.000075000	ppm	0.00019800	264.43
Tl1908		0.00018100	ppm	0.0015860	873.92

blank2

Acquire Date: 6/4/2020 5:33:58PM   Sample Type: Unknown

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD
V_2924		0.00036800	ppm	0.00014700	40.025
Zn2062		0.00054100	ppm	0.000017000	3.0571
Y_2243		7,347.0	Cts/S	2.9238	0.039796
Y_3600		73,026	Cts/S	92.407	0.12654
Y_3774		4,324.8	Cts/S	7.0966	0.16409

CCV 2010278

Acquire Date: 6/4/2020 5:37:57PM   Sample Type: QC

Correction Factor: 1.0000   SW: 1.0000   NW: 1.0000   IV: 1.0000   FV: 1.0000   AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1   Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.51861	ppm	0.0018660	0.35972	.50000	Rel(%)	Pass	
Al3961		25.567	ppm	0.080004	0.31293	25.000	Rel(%)	Pass	
As1890		0.51261	ppm	0.0029700	0.57933	.50000	Rel(%)	Pass	
B_2089		1.0408	ppm	0.0014560	0.13989	1.0000	Rel(%)	Pass	
Ba4554		2.5686	ppm	0.012914	0.50276	2.5000	Rel(%)	Pass	
Be3130		0.51807	ppm	0.0021330	0.41172	.50000	Rel(%)	Pass	
Ca3179		26.333	ppm	0.12088	0.45903	25.000	Rel(%)	Pass	
Cd2144		0.53039	ppm	0.00095300	0.17968	.50000	Rel(%)	Pass	
Co2286		2.5832	ppm	0.0037130	0.14373	2.5000	Rel(%)	Pass	
Cr2677		2.6034	ppm	0.0049690	0.19089	2.5000	Rel(%)	Pass	
Cu3247		2.6024	ppm	0.0050390	0.19365	2.5000	Rel(%)	Pass	
Fe2599		26.700	ppm	0.15872	0.59445	25.000	Rel(%)	Pass	
K_7664		25.204	ppm	0.057145	0.22673	25.000	Rel(%)	Pass	
Mg2790		25.957	ppm	0.061489	0.23689	25.000	Rel(%)	Pass	
Mn2576		2.6068	ppm	0.0096530	0.37030	2.5000	Rel(%)	Pass	
Mo2020		1.0193	ppm	0.0027780	0.27250	1.0000	Rel(%)	Pass	
Na5895		26.085	ppm	0.13725	0.52617	25.000	Rel(%)	Pass	
Ni2316		2.6431	ppm	0.0027240	0.10306	2.5000	Rel(%)	Pass	
P_1782		2.5379	ppm	0.0068350	0.26932	2.5000	Rel(%)	Pass	
Pb2203		0.52464	ppm	0.00098400	0.18755	.50000	Rel(%)	Pass	
S_1820		2.5147	ppm	0.00058600	0.023284	2.5000	Rel(%)	Pass	
Sb2068		0.51802	ppm	0.0019500	0.37642	.50000	Rel(%)	Pass	
Se1960		0.52368	ppm	0.0021840	0.41706	.50000	Rel(%)	Pass	
Si2881		2.5769	ppm	0.042728	1.6582	2.5000	Rel(%)	Pass	
Sn1899		2.6042	ppm	0.0011130	0.042731	2.5000	Rel(%)	Pass	
Sr4077		2.5845	ppm	0.012726	0.49238	2.5000	Rel(%)	Pass	
Ti3349		1.0308	ppm	0.00026600	0.025797	1.0000	Rel(%)	Pass	
Tl1908		0.51901	ppm	0.0064210	1.2371	.50000	Rel(%)	Pass	
V_2924		2.5808	ppm	0.0054140	0.20977	2.5000	Rel(%)	Pass	
Zn2062		2.6508	ppm	0.0080490	0.30364	2.5000	Rel(%)	Pass	
Y_2243		7,146.0	Cts/S	2.3671	0.033124				
Y_3600		70,472	Cts/S	57.654	0.081811				
Y_3774		4,291.2	Cts/S	7.8872	0.18380				

CCB 1815536

Acquire Date: 6/4/2020 5:41:42PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0024440	ppm	0.0013860	56.684	.00000	Abs	Pass	
Al3961		0.018273	ppm	0.048804	267.08	.00000	Abs	Pass	
As1890		0.0024570	ppm	0.00056100	22.855	.00000	Abs	Pass	
B_2089		0.0071290	ppm	0.00011400	1.5924	.00000	Abs	Pass	
Ba4554		0.00051900	ppm	0.000030000	5.7187	.00000	Abs	Pass	
Be3130		-0.00029100	ppm	0.00016400	56.481	.00000	Abs	Pass	
Ca3179		0.060340	ppm	0.0013730	2.2758	.00000	Abs	Pass	
Cd2144		0.000076000	ppm	0.0000010000	1.5203	.00000	Abs	Pass	
Co2286		0.00043400	ppm	0.00032300	74.491	.00000	Abs	Pass	
Cr2677		0.0011760	ppm	0.000040000	3.3919	.00000	Abs	Pass	
Cu3247		0.000062000	ppm	0.0010200	1,644.6	.00000	Abs	Pass	
Fe2599		0.032978	ppm	0.0079790	24.194	.00000	Abs	Pass	
K_7664		-0.038252	ppm	0.037994	99.328	.00000	Abs	Pass	
Mg2790		0.0060370	ppm	0.0019180	31.762	.00000	Abs	Pass	
Mn2576		0.00076100	ppm	0.000022000	2.8306	.00000	Abs	Pass	
Mo2020		0.0038510	ppm	0.00044500	11.563	.00000	Abs	Pass	
Na5895	**W**	**0.56559**	**ppm**	**0.034567**	**6.1117**	**.00000**	**Abs**	**Warn High**	**0.50000**
Ni2316		0.0014900	ppm	0.00066600	44.673	.00000	Abs	Pass	
P_1782		-0.0015880	ppm	0.00083900	52.813	.00000	Abs	Pass	
Pb2203		0.00098900	ppm	0.0012770	129.05	.00000	Abs	Pass	
S_1820		0.00053200	ppm	0.0016300	306.56	.00000	Abs	Pass	
Sb2068		0.0057790	ppm	0.0018580	32.159	.00000	Abs	Pass	
Se1960		0.0045750	ppm	0.00040300	8.8194	.00000	Abs	Pass	
Si2881		-0.017866	ppm	0.055324	309.65	.00000	Abs	Pass	
Sn1899		0.0023820	ppm	0.00013600	5.6970	.00000	Abs	Pass	
Sr4077		0.00090600	ppm	0.00037000	40.848	.00000	Abs	Pass	
Ti3349		0.0039250	ppm	0.00059800	15.234	.00000	Abs	Pass	
Tl1908		0.0079800	ppm	0.00064800	8.1259	.00000	Abs	Pass	
V_2924		-0.00037800	ppm	0.00048600	128.72	.00000	Abs	Pass	
Zn2062		0.0015110	ppm	0.00012700	8.3801	.00000	Abs	Pass	
Y_2243		7,321.6	Cts/S	16.169	0.22085				
Y_3600		72,847	Cts/S	187.91	0.25796				
Y_3774		4,296.4	Cts/S	16.744	0.38972				

CCVL 1827892

Acquire Date: 6/4/2020 5:45:43PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280	**F**	**0.0089580**	**ppm**	**0.00017700**	**1.9784**	**.00500**	**Rel(%)**	**Fail High**	**30.000**
Al3961		0.21871	ppm	0.018480	8.4496	.20000	Rel(%)	Pass	
As1890		0.039481	ppm	0.0019920	5.0454	.04000	Rel(%)	Pass	
B_2089		0.21211	ppm	0.00062700	0.29578	.20000	Rel(%)	Pass	
Ba4554		0.021855	ppm	0.00055400	2.5339	.02000	Rel(%)	Pass	
Be3130		0.0029210	ppm	0.00025100	8.6047	.00300	Rel(%)	Pass	
Ca3179		0.60587	ppm	0.0086210	1.4229	.50000	Rel(%)	Pass	
Cd2144		0.0033980	ppm	0.000041000	1.2059	.00300	Rel(%)	Pass	
Co2286		0.011184	ppm	0.00036600	3.2710	.01000	Rel(%)	Pass	
Cr2677		0.011316	ppm	0.00044700	3.9472	.01000	Rel(%)	Pass	

CCVL 1827892

Acquire Date: 6/4/2020 5:45:43PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Cu3247		0.015533	ppm	0.00036700	2.3657	.01500	Rel(%)	Pass	
Fe2599		0.11249	ppm	0.0015310	1.3609	.10000	Rel(%)	Pass	
K_7664		1.0471	ppm	0.029281	2.7964	1.0000	Rel(%)	Pass	
Mg2790		0.54986	ppm	0.0044020	0.80060	.50000	Rel(%)	Pass	
Mn2576		0.011920	ppm	0.00010900	0.91820	.01000	Rel(%)	Pass	
Mo2020		0.021839	ppm	0.00031200	1.4265	.02000	Rel(%)	Pass	
Na5895	**F**	**0.99173**	**ppm**	**0.026637**	**2.6859**	**.50000**	**Rel(%)**	**Fail High**	**30.000**
Ni2316		0.012436	ppm	0.00080000	6.4334	.01000	Rel(%)	Pass	
P_1782		0.51759	ppm	0.00045900	0.088635	.50000	Rel(%)	Pass	
Pb2203		0.0073750	ppm	0.00042600	5.7826	.01000	Rel(%)	Pass	
S_1820		0.51746	ppm	0.0024660	0.47659	.50000	Rel(%)	Pass	
Sb2068		0.038179	ppm	0.0022670	5.9381	.03000	Rel(%)	Pass	
Se1960		0.045582	ppm	0.00061900	1.3584	.04000	Rel(%)	Pass	
Si2881		0.53364	ppm	0.016187	3.0333	.50000	Rel(%)	Pass	
Sn1899		0.025602	ppm	0.00098500	3.8475	.02000	Rel(%)	Pass	
Sr4077		0.054404	ppm	0.00014800	0.27113	.05000	Rel(%)	Pass	
Ti3349		0.011777	ppm	0.000088000	0.74550	.01000	Rel(%)	Pass	
Tl1908		0.034938	ppm	0.0013400	3.8361	.03000	Rel(%)	Pass	
V_2924		0.021223	ppm	0.000063000	0.29466	.02000	Rel(%)	Pass	
Zn2062		0.023709	ppm	0.00051500	2.1725	.02000	Rel(%)	Pass	
Y_2243		7,366.8	Cts/S	13.973	0.18967				
Y_3600		73,260	Cts/S	303.09	0.41373				
Y_3774		4,314.2	Cts/S	13.178	0.30546				

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Acquire Date: 6/4/2020 5:49:40PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0030420	ppm	0.0011790	38.745	.00000	Abs	Pass	
Al3961		-0.0071570	ppm	0.010478	146.42	.00000	Abs	Pass	
As1890		0.0012080	ppm	0.00093300	77.205	.00000	Abs	Pass	
B_2089		0.0066740	ppm	0.00083700	12.535	.00000	Abs	Pass	
Ba4554		0.00027000	ppm	0.00089700	332.65	.00000	Abs	Pass	
Be3130		-0.00023100	ppm	0.00011000	47.838	.00000	Abs	Pass	
Ca3179		0.033083	ppm	0.0049850	15.068	.00000	Abs	Pass	
Cd2144		0.000076000	ppm	0.000049000	65.014	.00000	Abs	Pass	
Co2286		0.00080800	ppm	0.00042400	52.524	.00000	Abs	Pass	
Cr2677	**F**	**0.010065**	**ppm**	**0.00023400**	**2.3261**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247		-0.00054700	ppm	0.00017400	31.782	.00000	Abs	Pass	
Fe2599		0.042438	ppm	0.00029700	0.69904	.00000	Abs	Pass	
K_7664		0.042075	ppm	0.0082640	19.641	.00000	Abs	Pass	
Mg2790		0.0060930	ppm	0.00096100	15.779	.00000	Abs	Pass	
Mn2576		0.0011740	ppm	0.00022800	19.390	.00000	Abs	Pass	
Mo2020		0.0011120	ppm	0.00040600	36.485	.00000	Abs	Pass	
Na5895		0.34678	ppm	0.0033730	0.97261	.00000	Abs	Pass	
Ni2316	**W**	**0.0067080**	**ppm**	**0.000020000**	**0.30264**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0031140	ppm	0.00072400	23.247	.00000	Abs	Pass	
Pb2203		0.0013200	ppm	0.00087400	66.239	.00000	Abs	Pass	

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 6/4/2020 5:49:40PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
S_1820		0.0028300	ppm	0.0018230	64.427	.00000	Abs	Pass	
Sb2068		0.0039580	ppm	0.0030820	77.856	.00000	Abs	Pass	
Se1960		0.0055990	ppm	0.0040420	72.194	.00000	Abs	Pass	
Si2881		-0.014248	ppm	0.0047070	33.034	.00000	Abs	Pass	
Sn1899		0.0010450	ppm	0.00034800	33.288	.00000	Abs	Pass	
Sr4077		0.00044400	ppm	0.00013800	30.954	.00000	Abs	Pass	
Ti3349		0.000036000	ppm	0.00086900	2,404.3	.00000	Abs	Pass	
Tl1908		0.0033990	ppm	0.0012260	36.054	.00000	Abs	Pass	
V_2924		0.00041600	ppm	0.00025500	61.408	.00000	Abs	Pass	
Zn2062		0.00056000	ppm	0.0000050000	0.83481	.00000	Abs	Pass	
Y_2243		7,291.8	Cts/S	2.9528	0.040495				
Y_3600		72,769	Cts/S	178.24	0.24495				
Y_3774		4,296.2	Cts/S	9.5690	0.22273				

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Acquire Date: 6/4/2020 5:53:41PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0034030	ppm	0.0016180	47.554	.00000	Abs	Pass	
Al3961		0.024601	ppm	0.00058600	2.3802	.00000	Abs	Pass	
As1890		0.00032400	ppm	0.0011230	346.56	.00000	Abs	Pass	
B_2089		0.0046610	ppm	0.00056700	12.175	.00000	Abs	Pass	
Ba4554		0.000046000	ppm	0.00030200	661.79	.00000	Abs	Pass	
Be3130		-0.00014200	ppm	0.00018300	128.93	.00000	Abs	Pass	
Ca3179		0.031644	ppm	0.010914	34.491	.00000	Abs	Pass	
Cd2144		0.000051000	ppm	0.000043000	84.019	.00000	Abs	Pass	
Co2286		0.00066400	ppm	0.00029200	44.011	.00000	Abs	Pass	
Cr2677	**F**	**0.010449**	**ppm**	**0.00073500**	**7.0373**	**.00000**	**Abs**	**Fail High**	**.01000**
Cu3247		-0.0012960	ppm	0.00047700	36.799	.00000	Abs	Pass	
Fe2599		0.047389	ppm	0.010186	21.494	.00000	Abs	Pass	
K_7664		-0.020481	ppm	0.017311	84.523	.00000	Abs	Pass	
Mg2790		0.0045640	ppm	0.00085600	18.759	.00000	Abs	Pass	
Mn2576		0.0012000	ppm	0.000055000	4.5466	.00000	Abs	Pass	
Mo2020		0.0010210	ppm	0.00014200	13.909	.00000	Abs	Pass	
Na5895		0.31826	ppm	0.023510	7.3870	.00000	Abs	Pass	
Ni2316	**W**	**0.0067420**	**ppm**	**0.00032700**	**4.8475**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0017940	ppm	0.00063500	35.412	.00000	Abs	Pass	
Pb2203		0.00017500	ppm	0.0025430	1,451.5	.00000	Abs	Pass	
S_1820		0.0028830	ppm	0.000047000	1.6395	.00000	Abs	Pass	
Sb2068		-0.0023270	ppm	0.0022200	95.362	.00000	Abs	Pass	
Se1960		0.0071170	ppm	0.00096000	13.495	.00000	Abs	Pass	
Si2881		-0.062833	ppm	0.0024160	3.8458	.00000	Abs	Pass	
Sn1899		0.00042500	ppm	0.00061300	144.28	.00000	Abs	Pass	
Sr4077		0.000051000	ppm	0.000091000	177.69	.00000	Abs	Pass	
Ti3349		-0.00036300	ppm	0.000033000	9.1107	.00000	Abs	Pass	
Tl1908		-0.00017100	ppm	0.00052800	308.71	.00000	Abs	Pass	
V_2924		-0.00028300	ppm	0.00028600	101.17	.00000	Abs	Pass	
Zn2062		0.00064500	ppm	0.00096100	148.98	.00000	Abs	Pass	

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Acquire Date: 6/4/2020 5:53:41PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Y_2243		7,272.5	Cts/S	8.4823	0.11663				
Y_3600		72,211	Cts/S	240.48	0.33303				
Y_3774		4,258.5	Cts/S	12.808	0.30076				

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Acquire Date: 6/4/2020 5:57:41PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0032110	ppm	0.00029400	9.1536	.00000	Abs	Pass	
Al3961		-0.0026450	ppm	0.011605	438.74	.00000	Abs	Pass	
As1890		0.0015780	ppm	0.0038740	245.45	.00000	Abs	Pass	
B_2089		0.0047960	ppm	0.00031100	6.4854	.00000	Abs	Pass	
Ba4554		0.00044700	ppm	0.00045600	102.18	.00000	Abs	Pass	
Be3130		.0000080000	ppm	0.00029000	3,721.7	.00000	Abs	Pass	
Ca3179		0.022538	ppm	0.0071380	31.671	.00000	Abs	Pass	
Cd2144		0.00013300	ppm	0.000068000	50.926	.00000	Abs	Pass	
Co2286		0.00084100	ppm	0.00041400	49.294	.00000	Abs	Pass	
Cr2677	**W**	**0.0099900**	**ppm**	**0.000068000**	**0.67597**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.00021200	ppm	0.00012600	59.366	.00000	Abs	Pass	
Fe2599		0.037437	ppm	0.012829	34.268	.00000	Abs	Pass	
K_7664		0.0084280	ppm	0.059012	700.19	.00000	Abs	Pass	
Mg2790		0.0052510	ppm	0.0061400	116.91	.00000	Abs	Pass	
Mn2576		0.0011360	ppm	0.000072000	6.3173	.00000	Abs	Pass	
Mo2020		0.00096200	ppm	0.00068700	71.442	.00000	Abs	Pass	
Na5895		0.29909	ppm	0.0050810	1.6987	.00000	Abs	Pass	
Ni2316	**W**	**0.0072920**	**ppm**	**0.00042300**	**5.8006**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.00072100	ppm	0.00081400	112.86	.00000	Abs	Pass	
Pb2203		-0.0018910	ppm	0.000018000	0.96547	.00000	Abs	Pass	
S_1820		0.0048850	ppm	0.0042220	86.433	.00000	Abs	Pass	
Sb2068		0.0031710	ppm	0.0025660	80.927	.00000	Abs	Pass	
Se1960		0.0037170	ppm	0.00066400	17.867	.00000	Abs	Pass	
Si2881		-0.036430	ppm	0.015010	41.202	.00000	Abs	Pass	
Sn1899		0.00068700	ppm	0.00075000	109.07	.00000	Abs	Pass	
Sr4077		0.00032900	ppm	0.00012900	39.244	.00000	Abs	Pass	
Ti3349		-0.00096300	ppm	0.00020200	21.014	.00000	Abs	Pass	
Tl1908		0.0028000	ppm	0.0036090	128.88	.00000	Abs	Pass	
V_2924		-0.00023300	ppm	0.00023500	100.90	.00000	Abs	Pass	
Zn2062		0.00071300	ppm	0.00019300	27.004	.00000	Abs	Pass	
Y_2243		7,284.4	Cts/S	30.494	0.41862				
Y_3600		72,134	Cts/S	60.067	0.083271				
Y_3774		4,293.9	Cts/S	9.7634	0.22738				

Color Legend Pass/Unchecked Internal Standard Check Fail Check Warn

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Acquire Date: 6/4/2020 6:01:41PM Sample Type: QC

Correction Factor: 1.0000 SW: 1.0000 NW: 1.0000 IV: 1.0000 FV: 1.0000 AF: 1.0000

Analyst Name: admin

Method Name: Thermo6010_EK1 Method Revision: 776

Elem	Flags	Avg	Units	Stddev	%RSD	Check Value	Units	Outcome	Flag Value
Ag3280		0.0018120	ppm	0.00054300	29.951	.00000	Abs	Pass	
Al3961		0.012150	ppm	0.019072	156.97	.00000	Abs	Pass	
As1890		0.00022300	ppm	0.0013920	623.80	.00000	Abs	Pass	
B_2089		0.0039260	ppm	0.00023400	5.9725	.00000	Abs	Pass	
Ba4554		0.00052000	ppm	0.00037900	72.778	.00000	Abs	Pass	
Be3130		-0.00025700	ppm	0.00054800	213.07	.00000	Abs	Pass	
Ca3179		0.018213	ppm	0.0073890	40.572	.00000	Abs	Pass	
Cd2144		0.000051000	ppm	0.000050000	96.761	.00000	Abs	Pass	
Co2286		0.00054000	ppm	0.00012600	23.383	.00000	Abs	Pass	
Cr2677	**W**	**0.0095960**	**ppm**	**0.00034800**	**3.6286**	**.00000**	**Abs**	**Warn High**	**0.00500**
Cu3247		-0.0011860	ppm	0.00074500	62.867	.00000	Abs	Pass	
Fe2599		0.035750	ppm	0.0013320	3.7257	.00000	Abs	Pass	
K_7664		-0.0053350	ppm	0.036772	689.25	.00000	Abs	Pass	
Mg2790		0.0051750	ppm	0.0014310	27.657	.00000	Abs	Pass	
Mn2576		0.0010210	ppm	0.00010800	10.551	.00000	Abs	Pass	
Mo2020		0.0012110	ppm	0.000049000	4.0683	.00000	Abs	Pass	
Na5895		0.26094	ppm	0.0081820	3.1355	.00000	Abs	Pass	
Ni2316	**W**	**0.0063500**	**ppm**	**0.00095200**	**14.997**	**.00000**	**Abs**	**Warn High**	**0.00500**
P_1782		-0.0016880	ppm	0.0018140	107.49	.00000	Abs	Pass	
Pb2203		-0.00070600	ppm	0.0015300	216.89	.00000	Abs	Pass	
S_1820		0.00062400	ppm	0.0026790	429.41	.00000	Abs	Pass	
Sb2068		0.0029830	ppm	0.00010300	3.4413	.00000	Abs	Pass	
Se1960		0.0064390	ppm	0.0017670	27.438	.00000	Abs	Pass	
Si2881		-0.030179	ppm	0.014330	47.483	.00000	Abs	Pass	
Sn1899		0.00021100	ppm	0.00038000	180.28	.00000	Abs	Pass	
Sr4077		0.00026700	ppm	0.00014100	52.587	.00000	Abs	Pass	
Ti3349		0.000086000	ppm	0.00035200	409.15	.00000	Abs	Pass	
Tl1908		0.0026970	ppm	0.0018830	69.806	.00000	Abs	Pass	
V_2924		-0.00015500	ppm	0.00010600	68.826	.00000	Abs	Pass	
Zn2062		0.00021300	ppm	0.000028000	13.348	.00000	Abs	Pass	
Y_2243		7,310.2	Cts/S	10.794	0.14766				
Y_3600		72,601	Cts/S	49.845	0.068656				
Y_3774		4,286.6	Cts/S	11.270	0.26291				

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston   Job Number: 600-205895-1

SDG No.:

Project: San Jacinto River Waste Pits Superfund

Client Sample ID	Lab Sample ID
AFINF	600-205895-1
AFEFF5	600-205895-2
AFEFF10	600-205895-3
DUP	600-205895-4

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: AFINF

Lab Sample ID: 600-205895-1

Lab Name: Eurofins TestAmerica, Houston

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 10:30

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Total Suspended Solids	11	2.0	2.0	mg/L			1	2540 D-1997

FORM IB-IN

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID:	AFEFF5	Lab Sample ID:	600-205895-2
Lab Name:	Eurofins TestAmerica, Houston	Job No.:	600-205895-1
SDG ID.:			
Matrix:	Water	Date Sampled:	05/28/2020 11:15
Reporting Basis:	WET	Date Received:	05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Total Suspended Solids	ND	2.0	2.0	mg/L			1	2540 D-1997

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID:	AFEFF10	Lab Sample ID:	600-205895-3
Lab Name:	Eurofins TestAmerica, Houston	Job No.:	600-205895-1
SDG ID.:			
Matrix:	Water	Date Sampled:	05/28/2020 16:00
Reporting Basis:	WET	Date Received:	05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Total Suspended Solids	3.8	2.0	2.0	mg/L			1	2540 D-1997

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DUP

Lab Sample ID: 600-205895-4

Lab Name: Eurofins TestAmerica, Houston

Job No.: 600-205895-1

SDG ID.:

Matrix: Water

Date Sampled: 05/28/2020 00:00

Reporting Basis: WET

Date Received: 05/29/2020 09:11

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Total Suspended Solids	ND	2.0	2.0	mg/L			1	2540 D-1997

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston

Job No.: 600-205895-1

SDG No.:

Analyst: TNL

Batch Start Date: 06/01/2020

Reporting Units: mg/L

Analytical Batch No.: 295566

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
3	CCV	08:38	Total Suspended Solids	584	600	97	90-110		TSSICCV_00981

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Analyst: TNL Batch Start Date: 06/02/2020

Reporting Units: mg/L Analytical Batch No.: 295666

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
3	CCV	08:23	Total Suspended Solids	563	600	94	90-110		TSSICCV_00981

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 295566 Date: 06/01/2020 08:38							
2540 D-1997	MB 600-295566/1	Total Suspended Solids	ND		mg/L	2.0	1
Batch ID: 295666 Date: 06/02/2020 08:23							
2540 D-1997	MB 600-295666/1	Total Suspended Solids	ND		mg/L	2.0	1

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 295666 Date: 06/02/2020 08:23								
2540 D-1997	DUP	600-205895-4	Total Suspended Solids	ND	mg/L			
2540 D-1997	DUP	600-205895-4 DU	Total Suspended Solids	ND	mg/L	NC	10	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston   Job No.: 600-205895-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 295566 Date: 06/01/2020 08:38											
					LCS Source: TSSILCS_01032						
2540 D-1997	LCS 600-295566/2	Total Suspended Solids	1110		mg/L	1200	92	90-110			
Batch ID: 295666 Date: 06/02/2020 08:23											
					LCS Source: TSSILCS_01032						
2540 D-1997	LCS 600-295666/2	Total Suspended Solids	1160		mg/L	1200	97	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston Job Number: 600-205895-1

SDG Number:

Matrix: Water Instrument ID: B1

Method: 2540 D-1997 MDL Date: 07/24/2012 15:15

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Total Suspended Solids		2	0.613

FORM IX - IN

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston Job Number: 600-205895-1

SDG Number:

Matrix: Water Instrument ID: B1

Method: 2540 D-1997 XMDL Date: 07/24/2012 15:15

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Total Suspended Solids		2	0.613

FORM IX - IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Instrument ID: B1 Analysis Method: 2540 D-1997

Start Date: 06/01/2020 08:38 End Date: 06/01/2020 08:40

Lab Sample Id	D/F	Type	Time	Analytes TSS
MB 600-295566/1	1	T	08:38	X
LCS 600-295566/2	1	T	08:38	X
CCV 600-295566/3	1		08:38	X
ZZZZZZ			08:38	
ZZZZZZ			08:38	
ZZZZZZ			08:38	
ZZZZZZ			08:38	
ZZZZZZ			08:38	
ZZZZZZ			08:39	
ZZZZZZ			08:39	
ZZZZZZ			08:39	
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ZZZZZZ			08:39	
ZZZZZZ			08:39	
ZZZZZZ			08:39	
ZZZZZZ			08:39	
ZZZZZZ			08:39	
600-205895-2	1	T	08:40	X
600-205895-3	1	T	08:40	X
ZZZZZZ			08:40	
ZZZZZZ			08:40	
600-205895-1	1	T	08:40	X

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Houston
Job No.: 600-205895-1
SDG No.:
Instrument ID: B1
Analysis Method: 2540 D-1997
Start Date: 06/02/2020 08:23
End Date: 06/02/2020 08:25

Lab Sample Id	D/F	Type	Time	Analytes																									
				TSS																									
MB 600-295666/1	1	T	08:23	X																									
LCS 600-295666/2	1	T	08:23	X																									
CCV 600-295666/3	1		08:23	X																									
600-205895-4	1	T	08:23	X																									
600-205895-4 DU	1	T	08:23	X																									
ZZZZZZ			08:23																										
ZZZZZZ			08:23																										
ZZZZZZ			08:23																										
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ZZZZZZ			08:25																										

Prep Types:
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Batch Number: 295566 Batch Start Date: 06/01/20 08:38 Batch Analyst: Le, Tony N

Batch Method: 2540 D-1997 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	CrucibleID	TareWeight	InitialAmount	Weight1	Weight2	Weight3
MB 600-295566/1		2540 D-1997		26	0.1211 g	500 g	0.121 g	0.121 g	0 g
LCS 600-295566/2		2540 D-1997		27	0.1185 g	100 g	0.2294 g	0.2293 g	0 g
CCV 600-295566/3		2540 D-1997		28	0.1263 g	100 g	0.1848 g	0.1847 g	0 g
600-205895-D-2	AFEFF5	2540 D-1997	T	46	0.1191 g	500 g	0.1198 g	0.1198 g	0 g
600-205895-D-3	AFEFF10	2540 D-1997	T	47	0.1246 g	500 g	0.1266 g	0.1265 g	0 g
600-205895-D-1	AFINF	2540 D-1997	T	50	0.1224 g	500 g	0.1282 g	0.1281 g	0 g

Lab Sample ID	Client Sample ID	Method Chain	Basis	WeightOne%Diff	Residue	Residue2	FinalAmount	ResDishWt	DishWeight
MB 600-295566/1		2540 D-1997		PASS <0.5mg	-0.0001 g	-0.0001 g	500 mL	0.121 g	0.1211 g
LCS 600-295566/2		2540 D-1997		PASS <0.5mg	0.1109 g	0.1108 g	500 mL	0.2293 g	0.1185 g
CCV 600-295566/3		2540 D-1997		PASS <0.5mg	0.0585 g	0.0584 g	500 mL	0.1847 g	0.1263 g
600-205895-D-2	AFEFF5	2540 D-1997	T	PASS <0.5mg	0.0007 g	0.0007 g	500 mL	0.1198 g	0.1191 g
600-205895-D-3	AFEFF10	2540 D-1997	T	PASS <0.5mg	0.002 g	0.0019 g	500 mL	0.1265 g	0.1246 g
600-205895-D-1	AFINF	2540 D-1997	T	PASS <0.5mg	0.0058 g	0.0057 g	500 mL	0.1281 g	0.1224 g

Lab Sample ID	Client Sample ID	Method Chain	Basis	TSSICCV 00981	TSSILCS 01032				
MB 600-295566/1		2540 D-1997							
LCS 600-295566/2		2540 D-1997			100 mL				
CCV 600-295566/3		2540 D-1997		100 mL					
600-205895-D-2	AFEFF5	2540 D-1997	T						
600-205895-D-3	AFEFF10	2540 D-1997	T						
600-205895-D-1	AFINF	2540 D-1997	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Batch Number: 295566 Batch Start Date: 06/01/20 08:38 Batch Analyst: Le, Tony N

Batch Method: 2540 D-1997 Batch End Date:

Batch Notes	
Balance ID	b-31
Date/Time - In - CW (WT2)	06/01/2020 11:00
Date/Time - Out - CW (WT2)	06/01/2020 12:00
Temperature - Start - CW (WT2) - Correct	103.4 Celsius
Temperature - End - CW (WT2) - Correct	103.4 Celsius
Temperature - Start-CW(WT2) -Uncorrected	103 Celsius
Temperature - End-CW(WT2) -Uncorrected	103 Celsius
Temperature - Start - Corrected	103.4 Celsius
Temperature - End - Corrected	103.4 Celsius
Date/Time - In	06/01/2020 09:50
Date/Time - Out	06/01/2020 10:50
Filter ID	600024-0130-R2
Nominal Amount Used	500 mL
Oven ID	o-10
Pipette/Syringe/Dispenser ID	wc73
Perform Calculation (0=No, 1=Yes)	1
Thermometer ID	367
Temperature - Start - Uncorrected	103 Celsius
Temperature - End - Uncorrected	103 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Houston Job No.: 600-205895-1

SDG No.:

Batch Number: 295666 Batch Start Date: 06/02/20 08:23 Batch Analyst: Le, Tony N

Batch Method: 2540 D-1997 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	CrucibleID	TareWeight	InitialAmount	Weight1	Weight2	Weight3
MB 600-295666/1		2540 D-1997		1	0.1207 g	500 g	0.1208 g	0.1208 g	0 g
LCS 600-295666/2		2540 D-1997		2	0.1222 g	100 g	0.2386 g	0.2385 g	0 g
CCV 600-295666/3		2540 D-1997		3	0.121 g	100 g	0.1774 g	0.1773 g	0 g
600-205895-D-4	DUP	2540 D-1997	T	4	0.1211 g	500 g	0.1217 g	0.1217 g	0 g
600-205895-D-4 DU	DUP	2540 D-1997	T	5	0.1229 g	500 g	0.1236 g	0.1236 g	0 g

Lab Sample ID	Client Sample ID	Method Chain	Basis	WeightOne%Diff	Residue	Residue2	FinalAmount	ResDishWt	DishWeight
MB 600-295666/1		2540 D-1997		PASS <0.5mg	0.0001 g	0.0001 g	500 mL	0.1208 g	0.1207 g
LCS 600-295666/2		2540 D-1997		PASS <0.5mg	0.1164 g	0.1163 g	500 mL	0.2385 g	0.1222 g
CCV 600-295666/3		2540 D-1997		PASS <0.5mg	0.0564 g	0.0563 g	500 mL	0.1773 g	0.121 g
600-205895-D-4	DUP	2540 D-1997	T	PASS <0.5mg	0.0006 g	0.0006 g	500 mL	0.1217 g	0.1211 g
600-205895-D-4 DU	DUP	2540 D-1997	T	PASS <0.5mg	0.0007 g	0.0007 g	500 mL	0.1236 g	0.1229 g

Lab Sample ID	Client Sample ID	Method Chain	Basis	TSSICCV 00981	TSSILCS 01032				
MB 600-295666/1		2540 D-1997							
LCS 600-295666/2		2540 D-1997			100 mL				
CCV 600-295666/3		2540 D-1997		100 mL					
600-205895-D-4	DUP	2540 D-1997	T						
600-205895-D-4 DU	DUP	2540 D-1997	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Houston   Job No.: 600-205895-1

SDG No.:

Batch Number: 295666   Batch Start Date: 06/02/20 08:23   Batch Analyst: Le, Tony N

Batch Method: 2540 D-1997   Batch End Date:

Batch Notes	
Balance ID	b-31
Date/Time - In - CW (WT2)	06/02/2020 10:10
Date/Time - Out - CW (WT2)	06/02/2020 11:10
Temperature - Start - CW (WT2) - Correct	103.4 Celsius
Temperature - End - CW (WT2) - Correct	103.4 Celsius
Temperature - Start-CW(WT2) -Uncorrected	103 Celsius
Temperature - End-CW(WT2) -Uncorrected	103 Celsius
Temperature - Start - Corrected	103.4 Celsius
Temperature - End - Corrected	103.4 Celsius
Date/Time - In	06/02/2020 09:00
Date/Time - Out	06/02/2020 10:00
Filter ID	600024-0129-R-2
Nominal Amount Used	500 mL
Oven ID	o-10
Perform Calculation (0=No, 1=Yes)	1
Thermometer ID	367
Temperature - Start - Uncorrected	103 Celsius
Temperature - End - Uncorrected	103 Celsius

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Subcontract Data

Shipping and Receiving Documents

Eurofins T‑ America, Pittsburgh
301 Alpha Drive C Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody .ecord

eurofins
E. ment Testing America

Client Information	Sampler:	Lab PM: Gamber, Carrie L	Carrier Tracking No(s):	COC No: 180-60965-11340.1 KISHOR NAMAR
Client Contact: Janie Smith	Phone:	E-Mail: carrie.gamber@testamericainc.com		Page: Page 1 of 2 KISHOR NAMAR
Company: GHD Services Inc.		**Analysis Requested**		Job #:
Address: 5551 Corporate Boulevard Suite 200	**Due Date Requested:**			**Preservation Codes:**
City: Baton Rouge	**TAT Requested (days):**			
State, Zip: LA, 70808				
Phone: 225-292-9007(Tel)	PO #: d 34040129, p 34040708, t 34040986, w 34			
Email: janie.smith@ghd.com	WO #: 11187072-2019-001			
Project Name: San Jacinto River Waste Pits Superfund S	Project #: 18020662			
Site:	SSOW#:			**Other:**

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B Dioxin	TSS	Metals total	~~LL Mercury total~~	Metals dissolved field filtered	~~LL Mercury dissolved field filtered~~	EXTRA 1L FOR LAB	Total Number of containers	Special Instructions/Note:
				Preservation Code:											
AFINF	5/29/20	10:30 am	G	W Y FF	X	N	2	1	1	0	1	0	1	6	ALL 3 FIELD FILTERED
AFEFF5	5/28/20	11:15 am	G	W Y	X	N	2	1	1	0	1	0	1	6	~~MS/MSD~~
AFEFF10	5/28/20	4:00PM	G	W Y	Y	X	2	1	1	0	1	0	1	6	MS/MSD

600-205895 Chain of Custody

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:
Relinquished by: KISHOR NAMAR	Date/Time: ~~5-30 PM~~ 5/29 9:11AM KCN	Company GHD	Received by:	Date/Time: 5/29/20 911	Company ETA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins T[illegible]America, Pittsburgh
301 Alpha Drive [illegible] Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

Client Information	Sampler:	Lab PM: Gamber, Carrie L	Carrier Tracking No(s):	COC No: 180-60965-11340.2
Client Contact: Janie Smith	Phone:	E-Mail: carrie.gamber@testamericainc.com		Page: Page 2 of 2
Company: GHD Services Inc.		**Analysis Requested**		Job #:
Address: 5551 Corporate Boulevard Suite 200	**Due Date Requested:**			
City: Baton Rouge	**TAT Requested (days):**			
State, Zip: LA, 70808				
Phone: 225-292-9007(Tel)	PO #: d 34040129, p 34040708, t 34040986, w 34			
Email: janie.smith@ghd.com	WO #: 11187072-2019-001			
Project Name: San Jacinto River Waste Pits Superfund S	Project #: 18020662			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B Dioxin	TSS	Metals total	~~LL Mercury total~~	~~Metals dissolved field filtered~~	~~LL Mercury dissolved field filtered~~	EXTRA AL								Total Number of containers	Special Instructions/Note:
			Preservation Code:		☒	☒															☒	
DUP	5/28/20		G	W	N	N	2	1	1	0	0	0	1								5	
MS	5/28/20	4:15PM	G	W	N	Y	2	0	1	0	0	0	0								3	AFEFF10 MS
MSD	5/28/20	4:15PM	G	W	N	Y	2	0	1	0	0	0	0								3	AFEFF10 MSD

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: KISHOR NAIR	Date/Time: ~~5/30pm~~ 5/29, 9:11 AM KAN	Company: GHD	Received by:	Date/Time: 5/29/20 911	Company: ETA
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

'20 MAY 29 9:11

Loc: 600
205895

eurofins | Environment Testing TestAmerica

Eurofins TestAmerica Houston

Sample Receipt Checklist

Date/Time Received: ____________

JOB NUMBER: ____________

CLIENT: GHD

UNPACKED BY: JP

CARRIER/DRIVER: client

Custody Seal Present: ☒YES ☐NO

Number of Coolers Received: 2

Cooler ID	Temp Blank	Trip Blank	Observed Temp (℃)	Therm ID	Therm CF	Corrected Temp (℃)
1	Y / [✓ N]	Y / [✓ N]	17.7	678	-0.1	17.6
2	Y / [✓ N]	Y / [✓ N]	17.8	↓	+	17.7
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CJM 5/29/20

CF = correction factor

Samples received on ice? ☒YES ☐NO melted

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒NO ☐YES

Base samples are>pH 12: ☐YES ☐NO

Acid preserved are<pH 2: ☐YES ☐NO

TX1005 samples frozen upon receipt: ☐ YES

DATE & TIME PUT IN FREEZER: ____________

pH paper Lot #____________

VOA headspace acceptable (5-6mm): ☐YES ☐NO ☐NA

Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	☐YES	☐ NO

COMMENTS: ice melted in both coolers per client, please proceed with analyses

CJM 5/29/20

124596, 597

Eurofins TestAmerica, Houston
6310 Rothway Street
Houston, TX 77040
Phone: 713-690-4444 Fax: 713-690-5646

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Gamber, Carrie L	Carrier Tracking No(s):	COC No: 600-44946.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: carrie.gamber@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Texas		Job #: 600-205895-1
Address: 880 Riverside Parkway, ,	**Due Date Requested:** 6/16/2020			
City: West Sacramento	**TAT Requested (days):**			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: San Jacinto River Waste Pits Superfund	Project #: 18020662			
Site:	SSOW#:			

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA

M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C/FIELD_FLTRD (MOD) Project List dissolved Field Filte	1613B/1613B_Sox_Sep_P Full List w/ Totals	6010C/3010A (MOD) Project List	Total_TEQ/ Total TEQ Calculation	Total Number of containers	Special Instructions/Note:
				Preservation Code:								
AFINF (600-205895-1)	5/28/20	10:30 Central		Water			X	X	X	X	5	, no E flags
AFEFF5 (600-205895-2)	5/28/20	11:15 Central		Water			X	X	X	X	5	no E flags
AFEFF10 (600-205895-3)	5/28/20	16:00 Central		Water			X	X	X	X	5	no E flags
AFEFF10 (600-205895-3MS)	5/28/20	16:00 Central	MS	Water				X	X		3	no E flags
AFEFF10 (600-205895-3MSD)	5/28/20	16:00 Central	MSD	Water				X	X		3	no E flags
DUP (600-205895-4)	5/28/20	Central		Water				X	X	X	4	no E flags

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ________ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Sandra Jones	Date/Time: 6/1/20 16:00	Company ETA	Received by:	Date/Time: 06/02/20 925	Company eta sac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.2 5.5

Ver: 01/16/2019

eurofins | Environment Testing
TestAmerica

Sacramento
Sample Receiving Notes

Place Field Sheet Label Here

Job:

Tracking # : 1684 2643 0329

SO / [✓ PO] / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSO / OnTrac / Goldstreak / USPS / Other

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: AK5 Corr. Factor: (+ / -) 0 °C

Ice ✓ Wet ✓ Gel Other

Cooler Custody Seal: 1075161

Cooler ID: 1 of 2

Temp Observed: 4.2 °C Corrected: 4.2 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Samples received within holding time?	☑	☐	☐

Initials: MAN Date: 06/02/20

Unpacking/Labeling The Samples	Yes	No	NA
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: PK Date: 6/2/20

Notes:

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☑	☐	☐

Initials: PK Date: 6/2/20

W15C.

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 600-205895-1

Login Number: 205895

List Source: Eurofins TestAmerica, Houston

List Number: 1

Creator: Rubio, Yuri

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	Water present in cooler; indicates evidence of melted ice.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17.6,17.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 600-205895-1

Login Number: 205895
List Number: 2
Creator: Kintaudi, Pauline W

List Source: Eurofins TestAmerica, Sacramento
List Creation: 06/02/20 04:15 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1075160/1075161
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.5c and 4.2c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C-5

Additional Treatability Studies Data Validation Memorandum

Technical Memorandum

May 2, 2022

To	Charles Munce	**Tel**	561-688-9008
Copy to	Janie Smith, Sophia Dore	**Email**	Marisa.Oriaku@ghd.com
From	Marisa Oriaku/cs/4-NF	**Ref. No.**	11215702
Subject	Analytical Results and Reduced Validation San Jacinto River Waste Pits Superfund Site Investigation Field Filtration Testing San Jacinto, Harris County, Texas May 2020		

1. Introduction

This document details a reduced validation of analytical results for water samples collected in support of the Field Filtration Testing at the San Jacinto River Waste Pits Superfund Site Investigation during May 2020. Samples were submitted to Eurofins/TestAmerica Laboratories located in Pittsburg, Pennsylvania. Sample collection and analysis summaries are presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) Quality Assurance Project Plan, Final Second Phase Pre-Design Investigation",
San Jacinto River Waste Pits Site, Harris County, Texas, Report No 6, June 3 2019

ii) "National Functional Guidelines for High Resolution Superfund Methods Data Review",
OLEM 9200.3-115, EPA 542-B-16-001, April 2016

iii) “USEPA National Functional Guidelines for Superfund Inorganic Methods Data Review,”
USEPA 540-R-2016-001, September 2016

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, method blanks were analyzed at a minimum frequency of 1 per analytical batch.

Organic Analyses

Most method blank results were non-detect indicating that laboratory contamination was not a factor for this investigation. Low levels of some polychlorinated dibenzodioxins/polychlorinated dibenzo-p-furans (PCDDs/PCDFs) were detected in the method blank. Table 4 presents the sample results that were qualified as non-detect due to analyte concentrations in the method blank.

Inorganic Analyses

All method blank results were non-detect indicating that laboratory contamination was not a factor for this investigation.

4. Spiked C-13 Labeled PCDDs/PCDFs - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for PCDDs/PCDFs are spiked with labeled compounds prior to extraction to be an internal standard for the quantitation of native compounds, and to serve as surrogates for the assessment of method performance in the sample matrix.

All samples submitted for PCDDs/PCDFs determinations were spiked with the appropriate number of labeled compounds prior to sample extraction and/or analysis.

Labeled compound recoveries were assessed against laboratory control limits. All recoveries were within the laboratory control limits.

5. Laboratory Control Sample Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per analytical batch.

Organic Analyses

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries (and RPDs) were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analytes of concern and analyzed as MS or MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS or MS/MSD analyses were performed as specified in Table 1. The laboratory performed additional site-specific MS or MS/MSD analyses internally.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

7. Duplicate Sample Analyses – Inorganic Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for inorganic analyses as specified in Table 1. The duplicate results were evaluated per the "Guidelines". All duplicate analyses performed were acceptable, demonstrating acceptable analytical precision.

8. Field QA/QC Samples – Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted “blind” to the laboratory as specified in Table 1. The RPDs associated with the duplicate samples must be less than 50 percent for water. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

9. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the MDL in Table 2.

10. Target Compound Identification/Sample Quantitation

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time, ion abundance ratio, and chromatography were evaluated according to the identification criteria established by the methods. An erroneous identification can be either a false-positive (reporting a target compound when it is not present in the sample) or false-negative (not reporting a compound that is present in the sample).

The samples identified in Table 1 were reviewed. Most congeners reported adhered to the specified identification criteria.

Some sample results were reported as positive hits although the ion abundance ratio was not met. The associated results were qualified as the estimated maximum possible concentration. A summary of these qualified data is presented in Table 5.

11. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Regards,

Marisa Oriaku
Digital Intelligence-Data Management-Chemist

Table 1

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters PCDDs & PCDFs	Metals	TSS	Comments
600-205895-1	AFEFF10	Stream 3	Water	05/28/2020	16:00	X	X	X	
	AFEFF5	Stream 2	Water	05/28/2020	11:15	X	X	X	
	AFINF	Stream 1	Water	05/28/2020	10:30	X	X	X	MS/MSD
	DUP	Stream 2	Water	05/28/2020	00:00	X	X	X	FD(AFEFF5)/DUP

Notes:

DUP	- Laboratory Duplicate
FD	- Field Duplicate sample of sample in parenthesis
MS/MSD	- Matrix Spike/Matrix Spike Duplicate
PCDDs	- Polychlorinated Dibenzodioxins
PCDFs	- Polychlorinated Dibenzofurans
TSS	- Total Suspended Solids

Table 2

Analytical Results Summary
San jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

Sample Location		Stream 1	Stream 2	Stream 2	Stream 3
Sample Identification		AFINF	AFEFF5	DUP	AFEFF10
Sample Date		05/28/2020	05/28/2020	05/28/2020	05/28/2020
				Duplicate	
Parameters	**Units**				
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	8.7 U	0.99 U	3.2 U	2.6 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	23 U	7.4 U	7.4 U	8.3 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	13 U	3.8 U	3.8 U	3.8 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	2.4 J	0.44 U	1.1 J	1.3 J
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	2.1 J	0.41 U	0.53 U	0.62 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	15 J	1.2 J	0.81 U	6.7 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.6 J	1.3 J	1.5 J	1.4 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	5.2 J	0.60 U	0.82 U	1.1 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.53 U	0.40 U	0.47 U	0.70 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.96 U	0.59 J	0.71 U	1.0 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.48 U	0.36 U	0.42 U	0.63 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	13 J	0.61 U	0.99 J	5.4 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.50 U	0.55 U	0.50 U	0.81 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.8 J	0.47 U	0.63 U	0.92 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	4.0 J	0.53 U	0.45 U	2.1 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	12	0.96 J	0.41 U	3.4 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	1.9 J	0.56 U	0.53 U	0.72 U
Total heptachlorodibenzofuran (HpCDF)	pg/L	19 J	1.6 J	1.3 J	5.5 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	6.6 J	0.44 U	1.1 J	1.3 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	22 J	1.8 J	0.82 U	6.7 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.0 J	1.3 J	1.5 J	1.4 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	29 J	0.61 U	0.99 J	12 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.50 U	0.55 U	0.50 U	0.81 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	20 J	0.96 J	0.41 U	5.6 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	6.5 J	3.8 J	1.9 J	3.6 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	7.095 J	0.405 J	0.191 J	1.96 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	7.51 J	1.16 J	1.001 J	2.96 J

Table 2

Analytical Results Summary
San jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

Sample Location		Stream 1	Stream 2	Stream 2	Stream 3
Sample Identification		AFINF	AFEFF5	DUP	AFEFF10
Sample Date		05/28/2020	05/28/2020	05/28/2020	05/28/2020
				Duplicate	
Parameters	**Units**				
Metals					
Antimony	mg/L	0.0098 U	0.0098 U	0.0098 U	0.0098 U
Antimony (dissolved)	mg/L	0.0098 U	0.0098 U	--	0.0098 U
Arsenic	mg/L	0.012 U	0.012 U	0.012 U	0.012 U
Arsenic (dissolved)	mg/L	0.012 U	0.012 U	--	0.012 U
Barium	mg/L	0.28	0.25	0.25	0.25
Barium (dissolved)	mg/L	0.26	0.25	--	0.25
Beryllium	mg/L	0.00030 U	0.00030 U	0.00030 U	0.00030 U
Beryllium (dissolved)	mg/L	0.00030 U	0.00030 U	--	0.00030 U
Boron	mg/L	0.22	0.20	0.21	0.20
Boron (dissolved)	mg/L	0.22	0.21	--	0.21
Cadmium	mg/L	0.00050 U	0.00050 U	0.00050 U	0.00050 U
Cadmium (dissolved)	mg/L	0.00050 U	0.00050 U	--	0.00050 U
Calcium	mg/L	55	52	51	51
Calcium (dissolved)	mg/L	53	51	--	51
Chromium	mg/L	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Chromium (dissolved)	mg/L	0.0012 U	0.0012 U	--	0.0012 U
Cobalt	mg/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Cobalt (dissolved)	mg/L	0.0030 U	0.0030 U	--	0.0030 U
Copper	mg/L	0.0071 J	0.0021 U	0.0021 U	0.0029 J
Copper (dissolved)	mg/L	0.0021 U	0.0021 U	--	0.0029 J
Iron	mg/L	2.7	0.13	0.12	0.80
Iron (dissolved)	mg/L	0.025 J	0.13	--	0.82
Lead	mg/L	0.0025 U	0.0025 U	0.0025 U	0.0025 U
Lead (dissolved)	mg/L	0.0025 U	0.0025 U	--	0.0025 U
Magnesium	mg/L	35	34	33	33
Magnesium (dissolved)	mg/L	35	33	--	34
Manganese	mg/L	0.15	0.0094	0.0081	0.050
Manganese (dissolved)	mg/L	0.0038 J	0.0092	--	0.050
Molybdenum	mg/L	0.0086 J	0.0085 J	0.0095 J	0.0078 J
Molybdenum (dissolved)	mg/L	0.0094 J	0.0094 J	--	0.0084 J
Nickel	mg/L	0.0049 J	0.0024 U	0.0024 U	0.0024 U
Nickel (dissolved)	mg/L	0.0024 U	0.0026 J	--	0.0036 J

Table 2

Analytical Results Summary
San jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

Sample Location		**Stream 1**	**Stream 2**	**Stream 2**	**Stream 3**
Sample Identification		**AFINF**	**AFEFF5**	**DUP**	**AFEFF10**
Sample Date		**05/28/2020**	**05/28/2020**	**05/28/2020**	**05/28/2020**
				Duplicate	
Parameters	**Units**				
Metals					
Phosphorus	mg/L	0.050 U	0.050 U	0.050 U	0.050 U
Phosphorus (dissolved)	mg/L	0.050 U	0.050 U	--	0.050 U
Potassium	mg/L	15	14	14	14
Potassium (dissolved)	mg/L	14	14	--	14
Selenium	mg/L	0.013 U	0.013 U	0.013 U	0.013 U
Selenium (dissolved)	mg/L	0.013 U	0.013 U	--	0.013 U
Silver	mg/L	0.00084 U	0.00084 U	0.00084 U	0.00084 U
Silver (dissolved)	mg/L	0.00084 U	0.00084 U	--	0.00084 U
Sodium	mg/L	380	370	360	360
Sodium (dissolved)	mg/L	380	360	--	370
Strontium	mg/L	0.50	0.48	0.47	0.47
Strontium (dissolved)	mg/L	0.49	0.47	--	0.47
Thallium	mg/L	0.0090 U	0.0090 U	0.0090 U	0.0090 U
Thallium (dissolved)	mg/L	0.0090 U	0.0090 U	--	0.0090 U
Tin	mg/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Tin (dissolved)	mg/L	0.0050 U	0.0050 U	--	0.0050 U
Titanium	mg/L	0.0021 U	0.0021 U	0.0021 U	0.0021 U
Titanium (dissolved)	mg/L	0.0021 U	0.0021 U	--	0.0021 U
Vanadium	mg/L	0.0037 J	0.0019 U	0.0019 U	0.0019 U
Vanadium (dissolved)	mg/L	0.0019 U	0.0019 U	--	0.0019 U
Zinc	mg/L	0.034	0.0076 J	0.0055 J	0.0094 J
Zinc (dissolved)	mg/L	0.0065 J	0.0086 J	--	0.0096 J
General Chemistry					
Total suspended solids (TSS)	mg/L	11	2.0 U	2.0 U	3.8

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
-- - Not applicable
TEQ - Toxic Equivalent
WHO - World Health Organization

Table 3

Analytical Methods
San Jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

			Holding Time
Parameter	**Method**	**Matrix**	**Collection to Analysis (Days)**
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)	EPA 1613B	Water	365
Metals	SW6010C	Water	180
Total Suspended Solids (TSS)	SM 2540 D	Water	7

Notes:

SW-846	- "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions
EPA	- '"Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983 (with all subsequent revisions)

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
PCDDs & PCDFs	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	06/24/2020	2.6J	AFINF	8.7 J	8.7 U	pg/L
				AFEFF10	2.3 J	2.6 U	pg/L
				DUP	3.2 J	3.2 U	pg/L
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	06/24/2020	7.4J	AFINF	23 J	23 U	pg/L
				AFEFF5	3.4 J	7.4 U	pg/L
				AFEFF10	8.3 J	8.3 U	pg/L
				DUP	0.72 J	7.4 U	pg/L
	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	06/24/2020	3.8J	AFINF	13 J	13 U	pg/L
				AFEFF5	1.6 J	3.8 U	pg/L
				AFEFF10	3.6 J	3.8 U	pg/L
				DUP	1.3 J	3.8 U	pg/L

Notes:

*	- Blank result adjusted for sample factors where applicable
U	- Not detected at the associated reporting limit
J	- Estimated concentration
PCDDs	- Polychlorinated Dibenzodioxins
PCDFs	- Polychlorinated Dibenzofurans

Table 5

Qualified Sample Results Due to Outlying Identification Criteria
San Jacinto River Waste Pits Superfund Site Investigation
Field Filtration Testing
San Jacinto, Harris County, Texas
May 2020

Parameter	Sample ID	Analyte	Qualified Result		Units
PCDDs & PCDFs	AFINF	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4	J	pg/L
		1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.1	J	pg/L
		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.8	J	pg/L
		2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.0	J	pg/L
		2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.9	J	pg/L
	AFEFF5	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.59	J	pg/L
		2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.96	J	pg/L
	AFEFF10	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.4	J	pg/L
	DUP	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.99	J	pg/L

Notes:

J	- Estimated concentration
PCDDs	- Polychlorinated Dibenzodioxins
PCDFs	- Polychlorinated Dibenzofurans
DUP	- Duplicate

Technical Memorandum

2 May 2022

To	Charles Munce	**Tel**	561-688-9008
Copy to	Janie Smith, Sophia Dore	**Email**	Marisa.Oriaku@ghd.com
From	Marisa Oriaku/cs/1-NF	**Ref. No.**	11215702
Subject	Analytical Results and Reduced Validation San Jacinto River Waste Pits Superfund Site Investigation Approach B Water Filtration Study San Jacinto, Harris County, Texas July 2020 – March 2021		

1. Introduction

This document details a reduced validation of analytical results for water and soil samples collected in support of the Approach B Water Filtration Study at the San Jacinto River Waste Pits Superfund Site Investigation from July 2020 through March 2021. Samples were submitted to Eurofins/TestAmerica Laboratories located in Pittsburgh, Pennsylvania. Sample collection and analysis summaries are presented in Table 1. The validated analytical results are summarized in Tables 2A and 2B. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, and recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) Quality Assurance Project Plan, Final Second Phase Pre-Design Investigation",
San Jacinto River Waste Pits Site, Harris County, Texas, Report No 6, June 3, 2019

ii) "National Functional Guidelines for High Resolution Superfund Methods Data Review",
OLEM 9200.3-115, EPA 542-B-16-001, April 2016

iii) "USEPA National Functional Guidelines for Superfund Inorganic Methods Data Review",
United States Environmental Protection Agency (USEPA) 540-R-2016-001, September 2016

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

Most samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C) with the exception of samples analyzed for total organic carbon. The sample vials were received with headspace present, and therefore all data was qualified as estimated as shown in Table 4.

3. Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, method blanks were analyzed at a minimum frequency of one per analytical batch.

Organic Analyses

Most method blank results were non-detect indicating that laboratory contamination was not a factor for this investigation. Low levels of polychlorinated dibenzodioxins/polychlorinated dibenzo-p-furans (PCDDs/PCDFs) were detected in the method blanks. Table 5 presents the sample results that were qualified as non-detect due to analyte concentrations in the method blank.

Inorganic Analyses

Most method blank results were non-detect indicating that laboratory contamination was not a factor for this investigation with the exception of low-level concentrations of iron and silver. All associated sample results with similar concentrations to the blank values were qualified as non-detect (Table 5).

4. Spiked C-13 Labeled PCDDs/PCDFs - Organic Analyses

In accordance with the method employed, all samples, blanks, and QC samples analyzed for PCDD/PCDF are spiked with labeled congeners prior to extraction to be an internal standard for the quantitation of native congeners, and to serve as surrogates for the assessment of method performance in the sample matrix.

All samples submitted for PCDD/PCDF determinations were spiked with the appropriate number of labeled compounds prior to sample extraction and analysis.

Labeled congener recoveries and ion abundance ratios were assessed against method control limits. All Dioxin/Furan recoveries were within the method acceptance ranges. However, one abundance ratio was outside of the acceptable limits, and the associated sample result was qualified as estimated as shown in Table 6.

5. Laboratory Control Sample Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of one per analytical batch.

Organic Analyses

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the method control limits with the exception of slightly low recoveries for some compounds. All associated data were qualified as estimated to indicate the potential low bias (Table 7).

Inorganic Analyses

The LCS/LCSD contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries (and RPDs) were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analytes of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS/MSD analyses were performed as specified in Table 1.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the exception of those shown in Table 8.

7. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the reporting limit (RL) but greater than the MDL were reported as estimated (J) in Tables 2A and 2B. Non-detect results were presented as non-detect at the MDL in Tables 2A and 2B.

8. Target Compound Identification/Sample Quantitation

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time, ion abundance ratio, and chromatography were evaluated according to the identification criteria established by the methods. An erroneous identification can be either a false-positive (reporting a target compound when it is not present in the sample) or false-negative (not reporting a compound that is present in the sample).

The samples identified in Table 1 were reviewed. Most congeners reported adhered to the specified identification criteria.

Some sample results were reported as positive hits although the ion abundance ratio was not met. The associated results were qualified as the estimated maximum possible concentration. A summary of these qualified data is presented in Table 9.

Some sample results exceeded the range of the calibration curve and were qualified as estimated (J) in Table 10.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Tables 2A and 2B are acceptable with the specific qualifications noted herein.

Regards,

Marisa Oriaku
Digital Intelligence-Data Management-Chemist

Table 1

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

						Analysis/Parameters			
Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	PCDDs and PCDFs	Total Organic Carbon	Metals	Comments
180-110097-1	11215702-GW-TANK#1	Tank-1	Water	08/26/2020	13:00	--	X	--	
	11215702-GW-TANK#2	Tank-2	Water	08/26/2020	14:00	--	X	--	
320-62886-1	11215702-Initial	INITIAL	Water	07/20/2020	10:00	X	--	X	MS/MSD
	11215702-Control	Control	Water	07/20/2020	11:00	X	--	X	
	11215702-Treatment-1	Treatment-1	Water	07/20/2020	13:00	X	--	X	
	11215702-Treatment-2	Treatment-2	Water	07/20/2020	14:30	X	--	X	
320-63525-1	11215702-Treatment-3	Treatment-3	Water	08/07/2020	12:30	X	--	X	MS/MSD
	11215702-Treatment-4	Treatment-4	Water	08/07/2020	13:00	X	--	X	
320-64049-1	11215702-GW-Tank#1	Tank-1	Water	08/26/2020	13:00	X	--	--	
	11215702-GW-Tank#2	Tank-2	Water	08/26/2020	14:00	X	--	--	
	11215702-Soil-Tank#1	Tank-1	Soil	08/26/2020	13:00	X	--	--	
	11215702-Soil-Tank#2	Tank-2	Soil	08/26/2020	14:00	X	--	--	

Table 1

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters PCDDs and PCDFs	 Total Organic Carbon	 Metals	Comments
320-65130-1	11215702-Tank#1-valve-2-1	Tank-1	Water	09/11/2020	12:30	X	--	--	
	11215702-Tank#1-valve-3-3	Tank-1	Water	09/11/2020	14:30	X	--	--	
	11215702-Tank#1-valve-4-3	Tank-1	Water	09/11/2020	14:30	X	--	--	
	11215702-Tank#1-valve-5-3	Tank-1	Water	09/11/2020	14:30	X	--	--	
	11215702-Tank#1-T=0	Tank-1	Water	09/11/2020	11:30	X	--	--	
	11215702-Tank#2-T=0	Tank-2	Water	09/09/2020	09:30	X	--	--	
	11215702-Tank#2-valve-2-1	Tank-2	Water	09/10/2020	09:30	X	--	--	
	11215702-Tank#2-valve-3-1	Tank-2	Water	09/10/2020	09:30	X	--	--	
	11215702-Tank#2-valve-4-1	Tank-2	Water	09/10/2020	09:30	X	--	--	
	11215702-Tank#2-valve-5-1	Tank-2	Water	09/10/2020	09:30	X	--	--	
	11215702-Tank#2-valve-2-2	Tank-2	Water	09/11/2020	09:30	X	--	--	
	11215702-Tank#1-valve-3-1	Tank-1	Water	09/11/2020	12:30	X	--	--	
	11215702-Tank#2-valve-3-2	Tank-2	Water	09/11/2020	09:30	X	--	--	
	11215702-Tank#2-valve-4-2	Tank-2	Water	09/11/2020	09:30	X	--	--	
	11215702-Tank#2-valve-5-2	Tank-2	Water	09/11/2020	09:30	X	--	--	
	11215702-Tank#1-valve-4-1	Tank-1	Water	09/11/2020	12:30	X	--	--	
	11215702-Tank#1-valve-5-1	Tank-1	Water	09/11/2020	12:30	X	--	--	
	11215702-Tank#1-valve-2-2	Tank-1	Water	09/11/2020	13:30	X	--	--	
	11215702-Tank#1-valve-4-2	Tank-1	Water	09/11/2020	13:30	X	--	--	
	11215702-Tank#1-valve-5-2	Tank-1	Water	09/11/2020	13:30	X	--	--	
	11215702-Tank#1-valve-2-3	Tank-1	Water	09/11/2020	14:30	X	--	--	

Table 1

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters PCDDs and PCDFs	Analysis/Parameters Total Organic Carbon	Analysis/Parameters Metals	Comments
320-65247-1	11215702-Tank#1-Valve-3-2-Repl	Tank-1	Water	09/11/2020	13:30	X	--	--	
320-66850-1	11215702-Tank #1-1um	Tank-1	Water	11/10/2020	10:00	X	--	--	
	11215702-Tank #2 1um	Tank-2	Water	11/10/2020	11:00	X	--	--	
320-66850-2	11215702-Tank #1 Drum	Tank-1 Drum	Water	11/09/2020	12:00	X	--	--	
	11215702-Tank #2 Drum	Tank-2 Drum	Water	11/09/2020	12:00	X	--	--	
	11215702-Tank #1 Tank	Tank-1	Water	11/09/2020	13:00	X	--	--	
	11215702-Tank #2 Tank	Tank-2	Water	11/09/2020	13:00	X	--	--	
320-68943-1	11215702-Tank#1-1-8-21	Tank-1	Water	01/08/2021	14:00	X	--	--	
	11215702-Tank#2-1-8-21	Tank-2	Water	01/08/2021	14:30	X	--	--	

Table 1

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

						Analysis/Parameters			
Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	PCDDs and PCDFs	Total Organic Carbon	Metals	Comments
320-70797-1	11215702-Tank1-100mm	Tank-1	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank1-41mm	Tank-1	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank1-10mm	Tank-1	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank1-1mm	Tank-1	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank1-0.45mm	Tank-1	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank1-0.1mm	Tank-1	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank2-1mm	Tank-2	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank2-0.45mm	Tank-2	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank2-0.1mm	Tank-2	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank2-100mm	Tank-2	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank2-41mm	Tank-2	Water	03/03/2021	15:00	X	--	--	
	11215702-Tank2-10mm	Tank-2	Water	03/03/2021	15:00	X	--	--	

Notes:

MS/MSD	- Matrix Spike/Matrix Spike Duplicate
PCDDs	- Polychlorinated Dibenzodioxins
PCDFs	- Polychlorinated Dibenzofurans
--	- Not applicable

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	INITIAL	Control	Treatment-1	Treatment-2
	Sample Name:	11215702-Initial	11215702-Control	11215702-Treatment-1	11215702-Treatment-2
	Sample Date:	07/20/2020	07/20/2020	07/20/2020	07/20/2020
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	3100	12000	240	120
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	610	710	110	7.9 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	190	840	38 J	15 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	1000	1100	65	5.1 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	240	370	18 J	0.36 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.3 U	2.7 U	15 J	2.8 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1600	3300	18 J	7.5 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	5.9 J	21 J	16 J	0.34 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	670	960	18 J	2.6 J
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.7 J	9.6 J	17 J	1.7 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	25 J	58	20 J	1.2 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	37 J	160	12 J	0.94 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	560	2100	11 J	4.7 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	75	110	14 J	1.5 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	270	1200	9.4 J	3.1 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	3500	17000	9.2 J	36
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	11000	46000	24	89
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	380 J	1700 J	72 J	49 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	1400 J	1900 J	94 J	7.3 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	41 J	140 J	51 J	6.9 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	2500 J	4900 J	78 J	14 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	41 J	160 J	12 J	0.94 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	1300 J	5000 J	20 J	10 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	4100 J	19000 J	9.2 J	36 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	21000 J	94000 J	43 J	170 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	4988 J	22656 J	39.9 J	47.6 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	4988 J	22656 J	39.9 J	48.3 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**INITIAL**	**Control**	**Treatment-1**	**Treatment-2**
	Sample Name:	**11215702-Initial**	**11215702-Control**	**11215702-Treatment-1**	**11215702-Treatment-2**
	Sample Date:	**07/20/2020**	**07/20/2020**	**07/20/2020**	**07/20/2020**
Parameters	**Unit**				
Metals					
Antimony	mg/L	0.0098 UJ	0.0098 UJ	0.0098 UJ	0.0098 UJ
Arsenic	mg/L	0.012 U	0.012 U	0.012 U	0.012 U
Barium	mg/L	0.52	0.36	0.10	0.099
Beryllium	mg/L	0.0013 J	0.00097 J	0.00030 U	0.00030 U
Boron	mg/L	0.12	0.12	0.075 J	0.13
Cadmium	mg/L	0.0029	0.0020	0.00071 J	0.00060 J
Calcium	mg/L	280	200	99	97
Chromium	mg/L	0.048	0.035	0.0012 J	0.0012 U
Cobalt	mg/L	0.013	0.0085	0.0030 U	0.0030 U
Copper	mg/L	0.16	0.11	0.0067 J	0.0029 J
Iron	mg/L	26	19	0.16	0.055 U
Lead	mg/L	0.10	0.066	0.0025 U	0.0025 U
Magnesium	mg/L	200	210	160	160
Manganese	mg/L	1.6	0.95	0.20	0.18
Molybdenum	mg/L	0.0048 J	0.0043 J	0.0027 U	0.0027 U
Nickel	mg/L	0.044	0.034	0.0068	0.0068
Phosphorus	mg/L	2.6	1.7	0.050 U	0.050 U
Potassium	mg/L	100	100	79	80
Selenium	mg/L	0.013 U	0.013 U	0.013 U	0.013 U
Silver	mg/L	0.00084 U	0.00084 U	0.00084 U	0.00084 J
Sodium	mg/L	2500	2500	2500	2200
Strontium	mg/L	0.71	0.48	0.19	0.18
Thallium	mg/L	0.0090 U	0.0090 U	0.0090 U	0.0090 U
Tin	mg/L	0.0072 J	0.0055 J	0.0050 U	0.0050 U
Titanium	mg/L	0.23 J+	0.19 J+	0.0021 U	0.0021 U
Vanadium	mg/L	0.058	0.046	0.0019 U	0.0019 U
Zinc	mg/L	0.49	0.34	0.047	0.049

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**INITIAL**	**Control**	**Treatment-1**	**Treatment-2**
	Sample Name:	**11215702-Initial**	**11215702-Control**	**11215702-Treatment-1**	**11215702-Treatment-2**
	Sample Date:	**07/20/2020**	**07/20/2020**	**07/20/2020**	**07/20/2020**
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Treatment-3	Treatment-4	Tank-1	Tank-2
	Sample Name:	11215702-Treatment-3	11215702-Treatment-4	11215702-GW-Tank#1	11215702-GW-Tank#2
	Sample Date:	08/07/2020	08/07/2020	08/26/2020	08/26/2020
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	30 U	19 U	0.79 U	4.0 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	2.1 U	1.9 U	0.74 U	0.61 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	2.8 J	2.1 J	0.55 U	0.89 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	2.8 U	2.8 U	0.56 U	0.46 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	0.51 U	0.52 U	0.91 U	0.79 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.3 J	2.1 J	2.4 J	0.62 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	2.7 J	0.98 U	0.92 U	0.89 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.79 U	0.87 U	0.74 U	0.48 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.0 U	1.1 U	0.66 U	0.64 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.63 U	0.68 U	0.76 U	0.48 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	1.5 J	0.74 U	0.53 U	0.53 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.2 U	1.4 U	1.2 U	0.84 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	1.9 J	0.90 U	0.75 U	0.66 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.2 J	0.74 U	0.50 U	0.48 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.80 U	0.78 U	1.1 U	0.88 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	9.8	13	0.80 U	0.60 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	27	23	0.49 U	0.44 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	4.6 J	4.8 J	0.55 U	0.89 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	2.8 J	2.8 J	0.91 U	0.79 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.3 J	2.1 J	2.4 J	1.8 U
Total hexachlorodibenzofuran (HxCDF)	pg/L	5.3 J	1.1 U	0.92 U	0.89 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.2 U	1.4 U	1.2 U	0.84 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	1.9 J	0.91 U	1.4 U	1.1 U
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	9.8 J	13 J	1.2 J	3.1 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	61 J	62 J	0.49 U	0.44 U
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	13.4 J	15.5 J	0.24 J	0.0089 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	14.2 J	16.6 J	1.66 J	1.11 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Treatment-3**	**Treatment-4**	**Tank-1**	**Tank-2**
	Sample Name:	**11215702-Treatment-3**	**11215702-Treatment-4**	**11215702-GW-Tank#1**	**11215702-GW-Tank#2**
	Sample Date:	**08/07/2020**	**08/07/2020**	**08/26/2020**	**08/26/2020**
Parameters	**Unit**				
Metals					
Antimony	mg/L	0.0098 U	0.0098 U	--	--
Arsenic	mg/L	0.012 U	0.012 U	--	--
Barium	mg/L	0.11	0.11	--	--
Beryllium	mg/L	0.00042 J	0.00033 J	--	--
Boron	mg/L	0.17	0.16	--	--
Cadmium	mg/L	0.00060 J	0.00062 J	--	--
Calcium	mg/L	100	100	--	--
Chromium	mg/L	0.0012 U	0.0012 U	--	--
Cobalt	mg/L	0.0030 U	0.0030 U	--	--
Copper	mg/L	0.0089 J	0.0062 J	--	--
Iron	mg/L	0.26	0.11	--	--
Lead	mg/L	0.0025 U	0.0027 J	--	--
Magnesium	mg/L	180	180	--	--
Manganese	mg/L	0.016	0.035	--	--
Molybdenum	mg/L	0.0043 J	0.0037 J	--	--
Nickel	mg/L	0.0038 J	0.0031 J	--	--
Phosphorus	mg/L	0.050 U	0.050 U	--	--
Potassium	mg/L	89	86	--	--
Selenium	mg/L	0.013 U	0.013 U	--	--
Silver	mg/L	0.0012 U	0.00084 U	--	--
Sodium	mg/L	2400	2400	--	--
Strontium	mg/L	0.19	0.20	--	--
Thallium	mg/L	0.0090 U	0.0090 U	--	--
Tin	mg/L	0.0050 U	0.0050 U	--	--
Titanium	mg/L	0.0028 J	0.0021 U	--	--
Vanadium	mg/L	0.0046 J	0.0032 J	--	--
Zinc	mg/L	0.036	0.041	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Treatment-3**	**Treatment-4**	**Tank-1**	**Tank-2**
	Sample Name:	**11215702-Treatment-3**	**11215702-Treatment-4**	**11215702-GW-Tank#1**	**11215702-GW-Tank#2**
	Sample Date:	**08/07/2020**	**08/07/2020**	**08/26/2020**	**08/26/2020**
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	0.51 UJ	0.51 UJ

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Location ID:		Tank-2	Tank-2	Tank-2	Tank-2
Sample Name:		11215702-Tank#2-T=0	11215702-Tank#2-valve-2-1	11215702-Tank#2-valve-3-1	11215702-Tank#2-valve-4-1
Sample Date:		09/09/2020	09/10/2020	09/10/2020	09/10/2020
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	74000	780	780	670
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	7200	83 J	78 J	59 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	5200	33 J	40 J	33 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	12000	100	110	88
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	3900	37 J	40 J	32 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	38 U	2.2 U	5.1 U	2.6 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	39000	270	270	240
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	210 J	0.81 U	3.0 J	1.6 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	9600	75	71	61
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	70 J	0.60 U	2.8 J	1.4 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	650	3.9 U	7.2 J	5.4 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	2100	13 J	16 J	13 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	24000	120	120	110
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1100	9.0 J	11 J	8.1 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	15000	87	87	78
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	180000	1200	1200	1100
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	6500 J	3100	3400	3100
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	10000 J	73 J	85 J	71 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	20000 J	170 J	180 J	150 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1200 J	7.0 J	15 J	7.9 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	59000 J	400 J	390 J	350 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	2100 J	13 J	16 J	13 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	54000 J	330 J	330 J	290 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	190000 J	1300 J	1300 J	1100 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	1200000 J	6600 J	6100 J	5900 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	193266 J	1590 J	1624 J	1483 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	193270 J	1590 J	1625 J	1483 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2**	**Tank-2**	**Tank-2**	**Tank-2**
	Sample Name:	**11215702-Tank#2-T=0**	**11215702-Tank#2-valve-2-1**	**11215702-Tank#2-valve-3-1**	**11215702-Tank#2-valve-4-1**
	Sample Date:	**09/09/2020**	**09/10/2020**	**09/10/2020**	**09/10/2020**
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-2	Tank-2	Tank-2
	Sample Name:	11215702-Tank#2-T=0	11215702-Tank#2-valve-2-1	11215702-Tank#2-valve-3-1	11215702-Tank#2-valve-4-1
	Sample Date:	09/09/2020	09/10/2020	09/10/2020	09/10/2020
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank#2-valve-5-1	11215702-Tank#1-T=0	11215702-Tank#1-valve-2-1	11215702-Tank#1-valve-2-2
	Sample Date:	09/10/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	2100	51000	130 U	28 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	170	2800	21 U	21 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	130	3700	15 U	9.9 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	290	5300	10 U	9.0 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	100	1900	10 U	10 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	5.9 U	22 U	8.5 U	0.55 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	910	17000	29 U	6.6 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	8.2 J	110	6.2 U	0.62 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	230	4300	8.9 U	0.34 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	5.0 J	49	6.4 U	0.54 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	18 J	320	8.7 U	8.7 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	52	850	4.6 U	0.44 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	510	10000	17 U	3.8 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	28 J	490	0.74 U	0.37 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	330	6600	7.8 U	4.0 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	5400	86000	94	24
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	15000	150000	230	64
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	280 J	7300 J	24 J	4.7 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	490 J	9400 J	19 J	2.9 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	30 J	950 J	11 J	0.62 U
Total hexachlorodibenzofuran (HxCDF)	pg/L	1300 J	30000 J	42 J	5.2 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	52 J	1000 J	3.2 J	0.44 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	1300 J	27000 J	34 J	4.9 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	5600 J	94000 J	100 J	30 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	28000 J	500000 J	460 J	120 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	7192 J	106500	117	30.4
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	7192 J	106483	124	32.3

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank#2-valve-5-1	11215702-Tank#1-T=0	11215702-Tank#1-valve-2-1	11215702-Tank#1-valve-2-2
	Sample Date:	09/10/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID: Sample Name: Sample Date:	Tank-2 11215702-Tank#2-valve-5-1 09/10/2020	Tank-1 11215702-Tank#1-T=0 09/11/2020	Tank-1 11215702-Tank#1-valve-2-1 09/11/2020	Tank-1 11215702-Tank#1-valve-2-2 09/11/2020
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Location ID: **Sample Name:** **Sample Date:**		**Tank-1** **11215702-Tank#1-valve-2-3** **09/11/2020**	**Tank-1** **11215702-Tank#1-valve-3-1** **09/11/2020**	**Tank-1** **11215702-Tank#1-Valve-3-2-Repl** **09/11/2020**	**Tank-1** **11215702-Tank#1-valve-3-3** **09/11/2020**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	89 U	240	87 U	1000
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	21 U	21 U	9.4 U	55 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	9.9 U	19 U	6.8 U	64
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	9.0 U	15 U	9.3 U	80
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	10 U	10 U	4.2 U	31 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	8.5 U	8.5 U	6.5 U	8.5 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	6.6 U	34 J	34 U	270
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.98 U	6.2 U	0.93 U	6.2 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	7.6 U	11 U	7.8 U	68
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.90 U	6.4 U	0.83 U	6.4 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	8.7 U	8.7 U	0.87 U	8.7 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.71 U	4.6 U	4.5 U	16 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	9.8 U	20 J	22 U	180
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.92 U	7.0 U	1.0 U	9.0 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	5.7 U	13 U	12 U	120
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	82	170	210	1600
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	230	430	570	4800
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	13 J	33 J	13 J	130 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	12 J	26 J	16 J	140 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.6 J	9.2 J	3.5 J	15 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	27 J	57 J	41 J	390 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.71 U	4.1 J	2.7 J	16 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	21 J	47 J	48 J	480 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	87 J	190 J	240 J	1700 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	410 J	870 J	1300 J	9100 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	105	217 J	267	215
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	108	224 J	274	216

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank#1-valve-2-3	11215702-Tank#1-valve-3-1	11215702-Tank#1-Valve-3-2-Repl	11215702-Tank#1-valve-3-3
	Sample Date:	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank#1-valve-2-3	11215702-Tank#1-valve-3-1	11215702-Tank#1-Valve-3-2-Repl	11215702-Tank#1-valve-3-3
	Sample Date:	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Location ID:		Tank-1	Tank-1	Tank-1	Tank-1
Sample Name:		11215702-Tank#1-valve-4-1	11215702-Tank#1-valve-4-2	11215702-Tank#1-valve-4-3	11215702-Tank#1-valve-5-1
Sample Date:		09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	37 U	280	200 U	760
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	21 U	21 U	21 U	32 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	9.9 U	18 U	13 U	51
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	9.0 U	22 U	17 U	63
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	10 U	10 U	10 U	21 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.63 U	0.66 U	8.5 U	8.5 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	6.6 U	65	60	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.68 U	0.72 U	1.1 U	6.2 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	7.6 U	17 U	16 U	52
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.60 U	6.4 U	1.0 U	0.69 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.32 U	8.7 U	0.97 U	8.7 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.47 U	4.6 U	4.6 U	11 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	3.8 U	38 J	33 J	120
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.47 U	7.0 U	1.3 U	7.0 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	4.0 U	24 J	18 U	79
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	17 J	370	240	1100
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	51	1000	630	3300
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	6.2 J	34 J	28 J	100 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	2.3 J	39 J	31 J	110 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.68 U	3.6 J	1.6 J	12 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	5.1 J	99 J	76 J	300 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.47 U	5.8 J	3.3 J	13 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	4.6 J	99 J	74 J	320 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	24 J	400 J	260 J	1200 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	110 J	2000 J	1400 J	6300 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	22.1 J	485 J	310 J	1484
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	24 J	490 J	317 J	1491

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank#1-valve-4-1	11215702-Tank#1-valve-4-2	11215702-Tank#1-valve-4-3	11215702-Tank#1-valve-5-1
	Sample Date:	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank#1-valve-4-1	11215702-Tank#1-valve-4-2	11215702-Tank#1-valve-4-3	11215702-Tank#1-valve-5-1
	Sample Date:	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-1**	**Tank-1**	**Tank-2**	**Tank-2**
	Sample Name:	**11215702-Tank#1-valve-5-2**	**11215702-Tank#1-valve-5-3**	**11215702-Tank#2-valve-2-2**	**11215702-Tank#2-valve-3-2**
	Sample Date:	**09/11/2020**	**09/11/2020**	**09/11/2020**	**09/11/2020**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	400	300	560	810
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	21 U	62 U	51 J	79 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	25 U	25 U	27 J	42 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	27 U	46 J	73	110
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	10 U	16 U	25 J	38 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	8.5 U	8.5 U	2.2 U	2.2 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	100	90	190	300
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.75 U	6.2 U	0.44 U	2.0 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	24 U	23 U	48	77
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.67 U	6.4 U	0.36 U	0.33 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.63 U	8.7 U	3.8 U	5.1 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	5.4 U	5.1 U	9.5 J	14 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	68	52	83	140
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	7.0 U	0.86 U	5.5 J	9.0 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	39 J	32 J	64	100
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	590	510	850	1400
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	1700	1400	2400	3800
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	49 J	46 J	59 J	92 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	47 J	74 J	120 J	180 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	5.4 J	10 J	1.9 J	6.9 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	140 J	130 J	260 J	440 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	5.4 J	6.4 J	9.5 J	14 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	170 J	130 J	230 J	380 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	650 J	550 J	910 J	1500 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	3300 J	2900 J	4400 J	7200 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	784 J	671 J	1147 J	1870 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	789 J	676 J	1147 J	1870 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Location ID:		Tank-1	Tank-1	Tank-2	Tank-2
Sample Name:		11215702-Tank#1-valve-5-2	11215702-Tank#1-valve-5-3	11215702-Tank#2-valve-2-2	11215702-Tank#2-valve-3-2
Sample Date:		09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-1	Tank-2	Tank-2
	Sample Name:	11215702-Tank#1-valve-5-2	11215702-Tank#1-valve-5-3	11215702-Tank#2-valve-2-2	11215702-Tank#2-valve-3-2
	Sample Date:	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2**	**Tank-2**	**Tank-1**	**Tank-1 Drum**
	Sample Name:	**11215702-Tank#2-valve-4-2**	**11215702-Tank#2-valve-5-2**	**11215702-Tank #1 Tank**	**11215702-Tank #1 Drum**
	Sample Date:	**09/11/2020**	**09/11/2020**	**11/09/2020**	**11/09/2020**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	600	690	2800 J-	3500 J-
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	54 J	64 J	160 U	130 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	30 J	35 J	170	190
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	84	97	240 J-	180 J-
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	30 J	34 J	94 U	69 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	3.0 U	2.4 U	28 U	28 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	210	260	720	530
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.43 U	1.5 J	25 U	25 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	55	67	180 J-	130 J-
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.9 J	0.84 J	28 U	0.64 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	4.2 U	4.8 J	29 U	29 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	11 J	13 J	36 U	21 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	92	120	380	250
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	8.0 J	7.6 J	30 U	30 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	66	88	230	150
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	940	1300	2800	1900
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	2500	3500	6600 J	4800 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	65 J	79 J	340 J	390 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	140 J	160 J	430 J	320 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	8.6 J	7.5 J	61 J	35 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	310 J	370 J	1100 J	790 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	11 J	13 J	36 J	21 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	250 J	340 J	970 J	650 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	1000 J	1400 J	3100 J	2100 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	5000 J	6500 J	15000 J	10000 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	1253 J	1729 J	3640 J	2503 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	1253 J	1729 J	3661 J	2520 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-2	Tank-1	Tank-1 Drum
	Sample Name:	11215702-Tank#2-valve-4-2	11215702-Tank#2-valve-5-2	11215702-Tank #1 Tank	11215702-Tank #1 Drum
	Sample Date:	09/11/2020	09/11/2020	11/09/2020	11/09/2020
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2**	**Tank-2**	**Tank-1**	**Tank-1 Drum**
	Sample Name:	**11215702-Tank#2-valve-4-2**	**11215702-Tank#2-valve-5-2**	**11215702-Tank #1 Tank**	**11215702-Tank #1 Drum**
	Sample Date:	**09/11/2020**	**09/11/2020**	**11/09/2020**	**11/09/2020**
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2 Drum**	**Tank-1**	**Tank-1**	**Tank-1**
	Sample Name:	**11215702-Tank #2 Drum**	**11215702-Tank #1-1um**	**11215702-Tank#1-1-8-21**	**11215702-Tank1-0.1mm**
	Sample Date:	**11/09/2020**	**11/10/2020**	**01/08/2021**	**03/03/2021**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	3000 J-	58 UJ	11000	20 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	210 U	50 U	680	3.0 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	140	26 U	700	6.0 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	290 J-	25 UJ	1300	3.3 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	100 U	26 U	540	2.0 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	28 U	28 U	3.9 J	1.8 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	820	23 U	4500	2.6 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	25 U	25 U	17 J	0.40 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	200 J-	24 UJ	1000	1.2 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	28 U	28 U	12 J	0.21 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	29 U	29 U	57	0.18 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	37 U	0.57 U	120	0.40 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	400	15 U	1800	1.5 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	30 U	30 U	88	1.8 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	270	0.47 U	990	0.92 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	3300	0.58 U	15000	11
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	8400 J	0.32 U	39000	31
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	310 J	4.7 J	1400 J	5.8 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	480 J	7.2 J	2300 J	4.4 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	37 J	8.8 J	160 J	2.2 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	1200 J	11 J	6400 J	4.2 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	37 J	0.57 U	140 J	1.6 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	1100 J	3.2 J	4500 J	2.4 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	3700 J	0.58 U	17000 J	13 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	21000 J	0.32 U	84000 J	49 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	4340 J	0	20000 J	15 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	4366 J	10.6 J	20000 J	15 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2 Drum	Tank-1	Tank-1	Tank-1
	Sample Name:	11215702-Tank #2 Drum	11215702-Tank #1-1um	11215702-Tank#1-1-8-21	11215702-Tank1-0.1mm
	Sample Date:	11/09/2020	11/10/2020	01/08/2021	03/03/2021
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2 Drum**	**Tank-1**	**Tank-1**	**Tank-1**
	Sample Name:	**11215702-Tank #2 Drum**	**11215702-Tank #1-1um**	**11215702-Tank#1-1-8-21**	**11215702-Tank1-0.1mm**
	Sample Date:	**11/09/2020**	**11/10/2020**	**01/08/2021**	**03/03/2021**
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Location ID:		**Tank-1**	**Tank-1**	**Tank-1**	**Tank-1**
Sample Name:		**11215702-Tank1-0.45mm**	**11215702-Tank1-100mm**	**11215702-Tank1-10mm**	**11215702-Tank1-1mm**
Sample Date:		**03/03/2021**	**03/03/2021**	**03/03/2021**	**03/03/2021**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	16 U	13000	110	22 U
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	3.9 U	310	4.1 U	3.0 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	6.0 U	1600	17 U	6.0 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	3.3 U	630	5.4 U	3.3 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	0.23 U	240	2.0 U	2.0 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.9 J	7.2 J	2.0 J	2.0 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.8 U	2200	10 J	2.6 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.25 U	31 J	0.87 J	0.67 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.2 U	580	2.3 U	1.2 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.22 U	14 J	1.2 J	0.67 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	1.6 U	34 J	0.18 U	0.14 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.40 U	98	0.46 U	0.38 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	1.1 J	1300	4.8 J	1.6 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.8 U	61	0.18 U	0.15 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.33 U	720	3.0 J	0.30 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	6.1 J	12000	37	12
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	19	35000	97	34
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	6.3 J	2800 J	28 J	7.2 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	2.6 J	1100 J	9.2 J	3.7 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.9 J	300 J	5.3 J	3.3 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	2.8 J	3300 J	13 J	3.6 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.40 U	150 J	0.46 U	0.38 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	1.1 J	3100 J	7.8 J	1.6 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	11 J	13000 J	42 J	17 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	29 J	68000 J	160 J	59 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	8.2 J	160000 J	49 J	16 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	8.9 J	16000 J	50 J	16 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-1**	**Tank-1**	**Tank-1**	**Tank-1**
	Sample Name:	**11215702-Tank1-0.45mm**	**11215702-Tank1-100mm**	**11215702-Tank1-10mm**	**11215702-Tank1-1mm**
	Sample Date:	**03/03/2021**	**03/03/2021**	**03/03/2021**	**03/03/2021**
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-1**	**Tank-1**	**Tank-1**	**Tank-1**
	Sample Name:	**11215702-Tank1-0.45mm**	**11215702-Tank1-100mm**	**11215702-Tank1-10mm**	**11215702-Tank1-1mm**
	Sample Date:	**03/03/2021**	**03/03/2021**	**03/03/2021**	**03/03/2021**
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Location ID:		**Tank-1**	**Tank-2**	**Tank-2**	**Tank-2**
Sample Name:		**11215702-Tank1-41mm**	**11215702-Tank #2 Tank**	**11215702-Tank #2 1um**	**11215702-Tank#2-1-8-21**
Sample Date:		**03/03/2021**	**11/09/2020**	**11/10/2020**	**01/08/2021**
Parameters	**Unit**				
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans					
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	9000	4200 J-	240 UJ	4400
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	320	650	50 U	270
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	560	240	26 U	280
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	620	1500 J-	25 UJ	490
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	230	770	26 U	190
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	3.8 J	28 U	28 U	3.0 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1900	5900	23 U	1800
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	13 J	25 U	0.36 U	8.4 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	490	1400 J-	24 UJ	420
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	7.1 J	28 U	0.34 U	5.0 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	26 J	100 U	29 U	29 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	70	84 U	0.57 U	52
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	860	1300	15 U	910
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	47 J	110 U	30 U	50
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	490	660	20 U	470
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	8000	7700 J	37	6600
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	23000	19000 J	75	17000
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	1100 J	510 J	16 J	540 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	1100 J	2700 J	12 J	840 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	110 J	74 J	1.8 J	61 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	2800 J	8400 J	20 J	2500 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	82 J	84 J	0.57 U	58 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	2100 J	3100 J	13 J	2300 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	8600 J	8500 J	37 J	7300 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	41000 J	44000 J	150 J	36000 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	11000 J	10594 J	44.5 J	8800 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	11000 J	10650 J	55.2 J	8800 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-2	Tank-2	Tank-2
	Sample Name:	11215702-Tank1-41mm	11215702-Tank #2 Tank	11215702-Tank #2 1um	11215702-Tank#2-1-8-21
	Sample Date:	03/03/2021	11/09/2020	11/10/2020	01/08/2021
Parameters	**Unit**				
Metals					
Antimony	mg/L	--	--	--	--
Arsenic	mg/L	--	--	--	--
Barium	mg/L	--	--	--	--
Beryllium	mg/L	--	--	--	--
Boron	mg/L	--	--	--	--
Cadmium	mg/L	--	--	--	--
Calcium	mg/L	--	--	--	--
Chromium	mg/L	--	--	--	--
Cobalt	mg/L	--	--	--	--
Copper	mg/L	--	--	--	--
Iron	mg/L	--	--	--	--
Lead	mg/L	--	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Molybdenum	mg/L	--	--	--	--
Nickel	mg/L	--	--	--	--
Phosphorus	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Selenium	mg/L	--	--	--	--
Silver	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Thallium	mg/L	--	--	--	--
Tin	mg/L	--	--	--	--
Titanium	mg/L	--	--	--	--
Vanadium	mg/L	--	--	--	--
Zinc	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-1	Tank-2	Tank-2	Tank-2
	Sample Name:	11215702-Tank1-41mm	11215702-Tank #2 Tank	11215702-Tank #2 1um	11215702-Tank#2-1-8-21
	Sample Date:	03/03/2021	11/09/2020	11/10/2020	01/08/2021
Parameters	**Unit**				
General Chemistry					
TOC average duplicates	mg/L	--	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID: Sample Name: Sample Date:	Tank-2 11215702-Tank2-0.1mm 03/03/2021	Tank-2 11215702-Tank2-0.45mm 03/03/2021	Tank-2 11215702-Tank2-100mm 03/03/2021
Parameters	**Unit**			
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans				
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	25 U	15.6 U	4200
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	5.5 U	2.0 U	130
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	6.0 U	6.0 U	590
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	3.7 U	3.3 U	230
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	2.0 U	2.0 U	77
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.9 J	2.0 J	3.1 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	4.2 U	2.0 U	670
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.4 J	1.2 J	9.9 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	2.2 U	1.2 U	170
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.6 J	1.1 J	4.5 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	1.9 U	1.6 U	11 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.5 J	0.46 U	28 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.37 U	1.4 J	350
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.8 U	1.8 U	19 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	2.1 J	0.34 U	200
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	15	4.5 J	2700
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	48	11	9500
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	9.1 J	6.8 J	980 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	6.7 J	2.6 J	380 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	4.9 J	4.3 J	92 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	9.1 J	5.2 J	960 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.5 J	0.52 U	36 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	2.1 J	1.4 J	870 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	15 J	4.5 J	3000 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	81 J	21 J	16000 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	22 J	6.1 J	3800 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	23 J	6.7 J	3800 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2**	**Tank-2**	**Tank-2**
	Sample Name:	**11215702-Tank2-0.1mm**	**11215702-Tank2-0.45mm**	**11215702-Tank2-100mm**
	Sample Date:	**03/03/2021**	**03/03/2021**	**03/03/2021**
Parameters	**Unit**			
Metals				
Antimony	mg/L	--	--	--
Arsenic	mg/L	--	--	--
Barium	mg/L	--	--	--
Beryllium	mg/L	--	--	--
Boron	mg/L	--	--	--
Cadmium	mg/L	--	--	--
Calcium	mg/L	--	--	--
Chromium	mg/L	--	--	--
Cobalt	mg/L	--	--	--
Copper	mg/L	--	--	--
Iron	mg/L	--	--	--
Lead	mg/L	--	--	--
Magnesium	mg/L	--	--	--
Manganese	mg/L	--	--	--
Molybdenum	mg/L	--	--	--
Nickel	mg/L	--	--	--
Phosphorus	mg/L	--	--	--
Potassium	mg/L	--	--	--
Selenium	mg/L	--	--	--
Silver	mg/L	--	--	--
Sodium	mg/L	--	--	--
Strontium	mg/L	--	--	--
Thallium	mg/L	--	--	--
Tin	mg/L	--	--	--
Titanium	mg/L	--	--	--
Vanadium	mg/L	--	--	--
Zinc	mg/L	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-2	Tank-2
	Sample Name:	11215702-Tank2-0.1mm	11215702-Tank2-0.45mm	11215702-Tank2-100mm
	Sample Date:	03/03/2021	03/03/2021	03/03/2021
Parameters	**Unit**			
General Chemistry				
TOC average duplicates	mg/L	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-2	Tank-2
	Sample Name:	11215702-Tank2-10mm	11215702-Tank2-1mm	11215702-Tank2-41mm
	Sample Date:	03/03/2021	03/03/2021	03/03/2021
Parameters	**Unit**			
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans				
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	130 U	170	21000
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	3.8 U	6.7 U	680
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	23 U	29 U	2100
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	5.6 U	10 U	1300
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	2.2 U	3.2 U	430
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.0 J	1.5 J	7.3 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	12 J	26 J	4000
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.69 J	1.1 J	38 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	3.1 U	6.5 J	1000
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.55 J	0.24 U	15 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.23 U	1.6 U	71
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	0.40 U	1.3 J	200
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	6.1 J	14 J	2300
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.8 U	1.8 U	110
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	3.8 J	8.5 J	1400
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	52	110	26000
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	140	350	60000
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	35 J	46 J	3700 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	10 J	17 J	2200 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	8.0 J	8.0 J	320 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	17 J	36 J	6000 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.4 U	1.3 J	260 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	14 J	33 J	5800 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	59 J	120 J	28000 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	260 J	600 J	130000 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	68 J	150 J	33000 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	70 J	150 J	33000 J

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	Tank-2	Tank-2	Tank-2
	Sample Name:	11215702-Tank2-10mm	11215702-Tank2-1mm	11215702-Tank2-41mm
	Sample Date:	03/03/2021	03/03/2021	03/03/2021
Parameters	**Unit**			
Metals				
Antimony	mg/L	--	--	--
Arsenic	mg/L	--	--	--
Barium	mg/L	--	--	--
Beryllium	mg/L	--	--	--
Boron	mg/L	--	--	--
Cadmium	mg/L	--	--	--
Calcium	mg/L	--	--	--
Chromium	mg/L	--	--	--
Cobalt	mg/L	--	--	--
Copper	mg/L	--	--	--
Iron	mg/L	--	--	--
Lead	mg/L	--	--	--
Magnesium	mg/L	--	--	--
Manganese	mg/L	--	--	--
Molybdenum	mg/L	--	--	--
Nickel	mg/L	--	--	--
Phosphorus	mg/L	--	--	--
Potassium	mg/L	--	--	--
Selenium	mg/L	--	--	--
Silver	mg/L	--	--	--
Sodium	mg/L	--	--	--
Strontium	mg/L	--	--	--
Thallium	mg/L	--	--	--
Tin	mg/L	--	--	--
Titanium	mg/L	--	--	--
Vanadium	mg/L	--	--	--
Zinc	mg/L	--	--	--

Table 2A

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

	Location ID:	**Tank-2**	**Tank-2**	**Tank-2**
	Sample Name:	**11215702-Tank2-10mm**	**11215702-Tank2-1mm**	**11215702-Tank2-41mm**
	Sample Date:	**03/03/2021**	**03/03/2021**	**03/03/2021**
Parameters	**Unit**			
General Chemistry				
TOC average duplicates	mg/L	--	--	--

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
UJ - Not detected; associated reporting limit is estimated
J+ - Estimated concentration; result may be biased high
-- - Not applicable
TOC - Total Organic Carbon
WHO - World Health Organization
TEQ - Toxic Equivalent

Table 2B

Analytical Results Summary
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameters	Unit	Tank-1	Tank-2
Location ID:		**Tank-1**	**Tank-2**
Sample Name:		**11215702-Soil-Tank#1**	**11215702-Soil-Tank#2**
Sample Date:		**08/26/2020**	**08/26/2020**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	6400	7900
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	320	510
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	500	590
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	550	930
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	190	310
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.8 U	5.1 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1900	3000
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	15 J	19 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	460	740
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.8 J	7.6 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	32 J	48 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	100	160
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1200	1900
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	55 J	85
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	730	1100
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	11000	17000
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	32000	47000
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	940 J	1100 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	960 J	1500 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	98 J	130 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	2700 J	4300 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	120 J	180 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	3000 J	4800 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	13000 J	20000 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	63000 J	100000 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	14816 J	22658 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	14816 J	22658 J

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
WHO - World Health Organization
TEQ - Toxic Equivalent

Table 3

Analytical Methods
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Method	Matrix	Holding Time Collection to Extraction (Days)	Holding Time Collection or Extraction to Analysis (Days)
			365	365
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)	EPA 1613B	Water/Soil		
Metals	SW-846 6010C	Water	--	180
Total Organic Carbon	SW-846 5310C	Water	--	28

Notes:

SW-846	- "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions
EPA 1613B	- "Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS", EPA, October 1994, with subsequent revisions
EPA	- Environmental Protection Agency Office of Water
--	- Not applicable

Table 4

Qualified Sample Data Due to Insufficient Sample Preservation - Headspace
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Sample ID	Analyte	Qualified Result		Units
General Chemistry	11215702-GW-TANK#1	TOC average duplicates	0.51	UJ	mg/L
	11215702-GW-TANK#2	TOC average duplicates	0.51	UJ	mg/L

Notes:

UJ - Not detected; associated reporting limit is estimated
TOC - Total organic carbon

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	10/01/2020	21 J	11215702-Tank#1-valve-2-1	15 J	21 U	pg/L
				11215702-Tank#1-valve-3-3	55 J	55 U	pg/L
				11215702-Tank#1-valve-4-3	11 J	21 U	pg/L
				11215702-Tank#1-valve-5-3	62 J	62 U	pg/L
				11215702-Tank#1-valve-3-1	14 J	21 U	pg/L
				11215702-Tank#1-valve-5-1	32 J	32 U	pg/L
				11215702-Tank#1-valve-4-2	14 J	21 U	pg/L
				11215702-Tank#1-valve-5-2	15 J	21 U	pg/L
				11215702-Tank#1-valve-2-2	1.5 J	21 U	pg/L
				11215702-Tank#1-valve-2-3	7.7 J	21 U	pg/L
				11215702-Tank#1-valve-4-1	1.4 J	21 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/01/2020	27 J	11215702-Tank#1-valve-2-1	130	130 U	pg/L
				11215702-Tank#1-valve-4-3	200	200 U	pg/L
				11215702-Tank#1-valve-4-1	37 J	37 U	pg/L
				11215702-Tank#1-valve-2-2	28 J	28 U	pg/L
				11215702-Tank#1-valve-2-3	89 J	89 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	10/01/2020	9.0 J	11215702-Tank#1-valve-2-1	10 J	10 U	pg/L
				11215702-Tank#1-valve-4-3	17 J	17 U	pg/L
				11215702-Tank#1-valve-3-1	15 J	15 U	pg/L
				11215702-Tank#1-valve-4-1	1.8 J	9.0 U	pg/L
				11215702-Tank#1-valve-4-2	22 J	22 U	pg/L
				11215702-Tank#1-valve-5-2	27 J	27 U	pg/L
				11215702-Tank#1-valve-2-2	1.6 J	9.0 U	pg/L
				11215702-Tank#1-valve-2-3	6.4 J	9.0 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	10/01/2020	9.9 J	11215702-Tank#1-valve-2-1	15 J	15 U	pg/L
				11215702-Tank#1-valve-4-3	13 J	13 U	pg/L
				11215702-Tank#1-valve-5-3	25 J	25 U	pg/L
				11215702-Tank#1-valve-3-1	19 J	19 U	pg/L
				11215702-Tank#1-valve-4-1	3.4 J	9.9 U	pg/L
				11215702-Tank#1-valve-2-2	2.4 J	9.9 U	pg/L
				11215702-Tank#1-valve-4-2	18 J	18 U	pg/L
				11215702-Tank#1-valve-5-2	25 J	25 U	pg/L
				11215702-Tank#1-valve-2-3	7.8 J	9.9 U	pg/L
Dioxins/Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	10/01/2020	10 J	11215702-Tank#1-valve-2-1	6.8 J	10 U	pg/L
				11215702-Tank#1-valve-3-3	31 J	31 U	pg/L
				11215702-Tank#1-valve-4-3	8.1 J	10 U	pg/L
				11215702-Tank#1-valve-5-3	16 J	16 U	pg/L
				11215702-Tank#1-valve-3-1	7.8 J	10 U	pg/L
				11215702-Tank#1-valve-5-1	21 J	21 U	pg/L
Dioxins/Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	10/01/2020	10 J	11215702-Tank#1-valve-2-2	0.85 J	10 U	pg/L
				11215702-Tank#1-valve-4-2	8.9 J	10 U	pg/L
				11215702-Tank#1-valve-5-2	10 J	10 U	pg/L
				11215702-Tank#1-valve-2-3	3.2 J	10 U	pg/L
				11215702-Tank#1-valve-4-1	0.51 J	10 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	10/01/2020	6.6 J	11215702-Tank#1-valve-2-1	29 J	29 U	pg/L
				11215702-Tank#1-valve-4-1	3.7 J	6.6 U	pg/L
				11215702-Tank#1-valve-2-2	4.7 J	6.6 U	pg/L
				11215702-Tank#1-valve-2-3	17 J	6.6 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/01/2020	8.5 J	11215702-Tank#1-valve-2-1	4.5 J	8.5 U	pg/L
				11215702-Tank#1-valve-5-3	3.4 J	8.5 U	pg/L
				11215702-Tank#1-T=0	22 J	22 U	pg/L
				11215702-Tank#1-valve-5-1	1.6 J	8.5 U	pg/L
				11215702-Tank#1-valve-5-2	1.9 J	8.5 U	pg/L
				11215702-Tank#1-valve-2-3	2.6 J	8.5 U	pg/L
				11215702-Tank#1-valve-3-1	3.4 J	8.5 U	pg/L
				11215702-Tank#1-valve-3-3	2.5 J	8.5 U	pg/L
				11215702-Tank#1-valve-4-3	1.6 J	8.5 U	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/01/2020	7.6 J	11215702-Tank#1-valve-2-1	8.9 J	8.9 U	pg/L
				11215702-Tank#1-valve-4-3	16 J	16 U	pg/L
				11215702-Tank#1-valve-5-3	23 J	23 U	pg/L
				11215702-Tank#1-valve-3-1	11 J	11 U	pg/L
				11215702-Tank#1-valve-4-1	1.4 J	7.6 U	pg/L
				11215702-Tank#1-valve-4-2	17 J	17 U	pg/L
				11215702-Tank#1-valve-5-2	24 J	24 U	pg/L
				11215702-Tank#1-valve-2-3	4.8 J	7.6 U	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/01/2020	6.2 J	11215702-Tank#1-valve-2-1	3.3 J	6.2 U	pg/L
				11215702-Tank#1-valve-5-3	2.9 J	6.2 U	pg/L
				11215702-Tank#1-valve-3-1	3.1 J	6.2 U	pg/L
				11215702-Tank#1-valve-5-1	1.7 J	6.2 U	pg/L
				11215702-Tank#1-valve-3-3	2.5 J	6.2 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/01/2020	8.7 J	11215702-Tank#1-valve-2-1	3.4 J	8.7 U	pg/L
				11215702-Tank#1-valve-2-2	0.49 J	8.7 U	pg/L
				11215702-Tank#1-valve-2-3	1.8 J	8.7 U	pg/L
				11215702-Tank#1-valve-3-3	6.5 J	8.7 U	pg/L
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/01/2020	8.7 J	11215702-Tank#1-valve-5-3	3.9 J	8.7 U	pg/L
				11215702-Tank#1-valve-3-1	3.7 J	8.7 U	pg/L
				11215702-Tank#1-valve-5-1	3.8 J	8.7 U	pg/L
				11215702-Tank#1-valve-4-2	2.6 J	8.7 U	pg/L
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	10/01/2020	6.4 J	11215702-Tank#1-valve-2-1	2.8 J	6.4 U	pg/L
				11215702-Tank#1-valve-5-3	2.4 J	6.4 U	pg/L
				11215702-Tank#1-valve-3-1	2.7 J	6.4 U	pg/L
				11215702-Tank#1-valve-3-3	1.9 J	6.4 U	pg/L
				11215702-Tank#1-valve-4-2	1.2 J	6.4 U	pg/L
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	10/01/2020	3.8 J	11215702-Tank#1-valve-2-2	2.4 J	3.8 U	pg/L
				11215702-Tank#1-valve-2-3	9.8 J	9.8 U	pg/L
				11215702-Tank#1-valve-2-1	17 J	17 U	pg/L
				11215702-Tank#1-valve-4-1	2.4 J	3.8 U	pg/L
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	10/01/2020	4.6 J	11215702-Tank#1-valve-2-1	3.2 J	4.6 U	pg/L
				11215702-Tank#1-valve-3-3	16 J	16 U	pg/L
				11215702-Tank#1-valve-4-3	2.6 J	4.6 U	pg/L
				11215702-Tank#1-valve-3-1	4.1 J	4.6 U	pg/L
				11215702-Tank#1-valve-5-1	11 J	11 U	pg/L
				11215702-Tank#1-valve-4-2	4.5 J	4.6 U	pg/L
				11215702-Tank#1-valve-5-2	5.4 J	5.4 U	pg/L
				11215702-Tank#1-valve-5-3	5.1 J	5.1 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/01/2020	7.0 J	11215702-Tank#1-valve-3-1	3.3 J	7.0 U	pg/L
				11215702-Tank#1-valve-3-3	9.0 J	9.0 U	pg/L
				11215702-Tank#1-valve-5-1	6.1 J	7.0 U	pg/L
				11215702-Tank#1-valve-4-2	3.2 J	7.0 U	pg/L
				11215702-Tank#1-valve-5-2	2.6 J	7.0 U	pg/L
Dioxins/Furans	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	10/01/2020	4.0 J	11215702-Tank#1-valve-2-2	1.5 J	4.0 U	pg/L
				11215702-Tank#1-valve-2-1	7.8 J	7.8 U	pg/L
				11215702-Tank#1-valve-4-3	18 J	18 U	pg/L
				11215702-Tank#1-valve-3-1	13 J	13 U	pg/L
				11215702-Tank#1-valve-2-3	5.7 J	5.7 U	pg/L
				11215702-Tank#1-valve-4-1	1.6 J	4.0 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/02/2020	2.2 J	11215702-Tank#2-T=0	38 J	38 U	pg/L
				11215702-Tank#2-valve-2-1	1.6 J	2.2 U	pg/L
				11215702-Tank#2-valve-3-1	5.1 J	5.1 U	pg/L
				11215702-Tank#2-valve-5-1	5.9 J	5.9 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/02/2020	2.2 J	11215702-Tank#2-valve-2-2	1.9 J	2.2 U	pg/L
				11215702-Tank#2-valve-4-2	3.0 J	3.0 U	pg/L
				11215702-Tank#2-valve-5-2	2.4 J	2.4 U	pg/L

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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/02/2020	0.91 J	11215702-Tank#2-valve-2-2	3.8 J	3.8 U	pg/L
				11215702-Tank#2-valve-2-1	3.9 J	3.9 U	pg/L
				11215702-Tank#2-valve-4-2	4.2 J	4.2 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/02/2020	2.2 J	11215702-Tank#2-valve-3-2	2.1 J	2.2 U	pg/L
				11215702-Tank#2-valve-4-1	2.6 J	2.6 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	10/05/2020	9.4 J	11215702-Tank#1-Valve-3-2-Repl	4.7 J	9.4 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/05/2020	9.4 J	11215702-Tank#1-Valve-3-2-Repl	87 J	87 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	10/05/2020	5.1 J	11215702-Tank#1-Valve-3-2-Repl	9.3 J	9.3 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	10/05/2020	5.7 J	11215702-Tank#1-Valve-3-2-Repl	6.8 J	6.8 U	pg/L
Dioxins/Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	10/05/2020	4.2 J	11215702-Tank#1-Valve-3-2-Repl	3.7 J	4.2 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	10/05/2020	5.5 J	11215702-Tank#1-Valve-3-2-Repl	34 J	34 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/05/2020	6.5 J	11215702-Tank#1-Valve-3-2-Repl	3.5 J	6.5 U	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/05/2020	5.3 J	11215702-Tank#1-Valve-3-2-Repl	7.8 J	7.8 U	pg/L
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	10/05/2020	4.8 J	11215702-Tank#1-Valve-3-2-Repl	22 J	22 U	pg/L

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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	10/05/2020	4.5 J	11215702-Tank#1-Valve-3-2-Repl	2.7 J	4.5 U	pg/L
Dioxins/Furans	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	10/05/2020	4.9 J	11215702-Tank#1-Valve-3-2-Repl	12 J	12 U	pg/L
Dioxin/Furan	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	07/24/2020	1.14 J	11215702-Treatment-2	5.1 J	5.1 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	07/24/2020	1.92 J	11215702-Initial	2.3 J	2.3 U	pg/L
				11215702-Treatment-2	2.8 J	2.8 U	pg/L
				11215702-Treatment-3	2.1 J	2.1 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	08/17/2020	1.95 J	11215702-Treatment-3	2.1 J	2.1 U	pg/L
				11215702-Treatment-4	1.9 J	1.9 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	08/17/2020	3.22 J	11215702-Treatment-3	30 J	30 U	pg/L
				11215702-Treatment-4	19 J	19 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	08/17/2020	0.825 J	11215702-Treatment-3	2.8 J	2.8 U	pg/L
				11215702-Treatment-4	2.8 J	2.8 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	08/28/2020	4.0 J	11215702-GW-Tank#2	2.7 J	4.0 U	pg/L

Table 5

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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	09/17/2020	0.182 J	11215702-Soil-Tank#1	3.8 J	3.8 U	pg/g
				11215702-Soil-Tank#2	5.1 J	5.1 U	pg/g
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	11/18/2020	50 J	11215702-Tank #1 Drum	130	130 U	pg/L
				11215702-Tank #1 Tank	160	160 U	pg/L
				11215702-Tank #1-1um	7.2 J	50 U	pg/L
				11215702-Tank #2 1um	15 J	50 U	pg/L
				11215702-Tank #2 Drum	210	210 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/18/2020	58 J	11215702-Tank #1-1um	13 J	58 U	pg/L
				11215702-Tank #2 1um	240	240 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11/18/2020	25 J	11215702-Tank #1-1um	3.7 J	25 U	pg/L
				11215702-Tank #2 1um	7.7 J	25 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	11/18/2020	26 J	11215702-Tank #1-1um	4.7 J	26 U	pg/L
				11215702-Tank #2 1um	8.3 J	26 U	pg/L
Dioxins/Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	11/18/2020	26 J	11215702-Tank #1 Drum	69	69 U	pg/L
				11215702-Tank #1 Tank	94	94 U	pg/L
				11215702-Tank #1-1um	3.5 J	26 U	pg/L
				11215702-Tank #2 1um	2.6 J	26 U	pg/L
				11215702-Tank #2 Drum	100	100 U	pg/L
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	11/18/2020	23 J	11215702-Tank #1-1um	2.2 J	23 U	pg/L
				11215702-Tank #2 1um	12 J	23 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	11/18/2020	28 J	11215702-Tank #1 Drum	2.7 J	28 U	pg/L
				11215702-Tank #1 Tank	8.5 J	28 U	pg/L
				11215702-Tank #1-1um	3.6 J	28 U	pg/L
				11215702-Tank #2 1um	1.8 J	28 U	pg/L
				11215702-Tank #2 Drum	2.5 J	28 U	pg/L
				11215702-Tank #2 Tank	5.8 J	28 U	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	11/18/2020	24 J	11215702-Tank #1-1um	2.0 J	24 U	pg/L
				11215702-Tank #2 1um	3.8 J	24 U	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	11/18/2020	25 J	11215702-Tank #1 Drum	5.3 J	25 U	pg/L
				11215702-Tank #1 Tank	11 J	25 U	pg/L
				11215702-Tank #1-1um	3.0 J	25 U	pg/L
				11215702-Tank #2 Drum	5.1 J	25 U	pg/L
				11215702-Tank #2 Tank	11 J	25 U	pg/L
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	11/18/2020	29 J	11215702-Tank #1 Drum	11 J	29 U	pg/L
				11215702-Tank #1 Tank	20 J	29 U	pg/L
				11215702-Tank #1-1um	4.5 J	29 U	pg/L
				11215702-Tank #2 1um	3.0 J	29 U	pg/L
				11215702-Tank #2 Drum	14 J	29 U	pg/L
				11215702-Tank #2 Tank	100	100 U	pg/L
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	11/18/2020	28 J	11215702-Tank #1 Tank	8.4 J	28 U	pg/L
				11215702-Tank #1-1um	2.2 J	28 U	pg/L
				11215702-Tank #2 Drum	2.6 J	28 U	pg/L
				11215702-Tank #2 Tank	8.5 J	28 U	pg/L
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	11/18/2020	15 J	11215702-Tank #1-1um	3.2 J	15 U	pg/L
				11215702-Tank #2 1um	6.5 J	15 U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	11/18/2020	20 J	11215702-Tank #1 Drum	21 J	21 U	pg/L
				11215702-Tank #1 Tank	36 J	36 U	pg/L
				11215702-Tank #2 Drum	37 J	37 U	pg/L
				11215702-Tank #2 Tank	84	84 U	pg/L
Dioxins/Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	11/18/2020	30 J	11215702-Tank #1 Drum	17 J	30 U	pg/L
				11215702-Tank #1 Tank	28 J	30 U	pg/L
				11215702-Tank #1-1um	2.5 J	30 U	pg/L
				11215702-Tank #2 1um	1.6 J	30 U	pg/L
				11215702-Tank #2 Drum	24 J	30 U	pg/L
				11215702-Tank #2 Tank	110	110 U	pg/L
Dioxins/Furans	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	11/18/2020	20 J	11215702-Tank #2 1um	3.8 J	20 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	03/05/2021	4.48J	11215702-Tank2-1mm	6.7 J	6.7 U	pg/L
				11215702-Tank2-0.45mm	2.0 J	2.0 U	pg/L
				11215702-Tank2-0.1mm	2.0 J	5.5 U	pg/L
				11215702-Tank1-10mm	4.1 J	4.1 U	pg/L
				11215702-Tank1-1mm	3.0 J	3.0 U	pg/L
				11215702-Tank1-0.45mm	3.9 J	3.9 U	pg/L
				11215702-Tank1-0.1mm	3.0 J	3.0 U	pg/L
				11215702-Tank2-10mm	3.8 J	3.8 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	03/05/2021	15.6J	11215702-Tank2-0.45mm	15 J	15.6 U	pg/L
				11215702-Tank2-0.1mm	25 J	25 U	pg/L
				11215702-Tank1-1mm	22 J	22 U	pg/L
				11215702-Tank1-0.45mm	16 J	16 U	pg/L
				11215702-Tank1-0.1mm	20 J	20 U	pg/L
				11215702-Tank2-10mm	130	130 U	pg/L

Table 5

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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	03/05/2021	3.29J	11215702-Tank2-1mm	10 J	10 U	pg/L
				11215702-Tank2-0.45mm	1.6 J	3.3 U	pg/L
				11215702-Tank2-0.1mm	3.7 J	3.7 U	pg/L
				11215702-Tank1-10mm	5.4 J	5.4 U	pg/L
				11215702-Tank1-1mm	1.9 J	3.3 U	pg/L
				11215702-Tank1-0.45mm	1.5 J	3.3 U	pg/L
				11215702-Tank1-0.1mm	2.3 J	3.3 U	pg/L
				11215702-Tank2-10mm	5.6 J	5.6 U	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	03/05/2021	5.95J	11215702-Tank2-1mm	29 J	29 U	pg/L
				11215702-Tank2-0.45mm	3.7 J	6.0 U	pg/L
				11215702-Tank2-0.1mm	5.7 J	6.0 U	pg/L
				11215702-Tank1-10mm	17 J	17 U	pg/L
				11215702-Tank1-1mm	4.1 J	6.0 U	pg/L
				11215702-Tank1-0.45mm	3.8 J	6.0 U	pg/L
				11215702-Tank1-0.1mm	3.7 J	6.0 U	pg/L
				11215702-Tank2-10mm	23 J	23 U	pg/L
Dioxins/Furans	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	03/05/2021	1.98J	11215702-Tank2-1mm	3.2 J	3.2 U	pg/L
				11215702-Tank2-0.45mm	1.0 J	2.0 U	pg/L
				11215702-Tank2-0.1mm	2.0 J	2.0 U	pg/L
				11215702-Tank1-10mm	1.9 J	2.0 U	pg/L
				11215702-Tank1-1mm	0.87 J	2.0 U	pg/L
				11215702-Tank1-0.1mm	0.97 J	2.0 U	pg/L
				11215702-Tank2-10mm	2.2 J	2.2 U	pg/L

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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result		Qualified Result		Units
Dioxins/Furans	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	03/05/2021	1.77J	11215702-Tank2-0.45mm	2.0	J	2.0	U	pg/L
				11215702-Tank2-0.1mm	4.2	J	4.2	U	pg/L
				11215702-Tank1-1mm	2.6	J	2.6	U	pg/L
				11215702-Tank1-0.45mm	1.4	J	1.8	U	pg/L
				11215702-Tank1-0.1mm	2.6	J	2.6	U	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	03/05/2021	1.22J	11215702-Tank2-0.45mm	0.90	J	1.2	U	pg/L
				11215702-Tank2-0.1mm	2.2	J	2.2	U	pg/L
				11215702-Tank1-10mm	2.3	J	2.3	U	pg/L
				11215702-Tank1-1mm	0.98	J	1.2	U	pg/L
				11215702-Tank1-0.45mm	0.43	J	1.2	U	pg/L
				11215702-Tank1-0.1mm	1.0	J	1.2	U	pg/L
				11215702-Tank2-10mm	3.1	J	3.1	U	pg/L
Dioxins/Furans	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	03/05/2021	1.61J	11215702-Tank2-1mm	0.71	J	1.6	U	pg/L
				11215702-Tank2-0.45mm	1.4	J	1.6	U	pg/L
				11215702-Tank2-0.1mm	1.9	J	1.9	U	pg/L
				11215702-Tank1-0.45mm	0.49	J	1.6	U	pg/L

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
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Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	03/05/2021	1.83J	11215702-Tank2-1mm	0.83 J	1.8 U	pg/L
				11215702-Tank2-0.45mm	0.93 J	1.8 U	pg/L
				11215702-Tank2-0.1mm	0.86 J	1.8 U	pg/L
				11215702-Tank1-0.45mm	0.49 J	1.8 U	pg/L
				11215702-Tank1-0.1mm	0.66 J	1.8 U	pg/L
				11215702-Tank2-10mm	0.59 J	1.8 U	pg/L
Metals	Iron	07/24/2020	0.027 J	11215702-Treatment-2	0.055 J	0.055 U	mg/L
Metals	Silver	08/13/2020	0.00101 J	11215702-Treatment-3	0.0012 J	0.0012 U	mg/L

Notes:

*	- Blank result adjusted for sample factors where applicable
U	- Not detected at the associated reporting limit
J	- Estimated concentration

Table 6

Qualified Sample Data Due to Outlying of Surrogate Recoveries and Ratios
San Jacinto River Waste Pits Superfund Site Investigation
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Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Ratio	Control Limits Ratio	Analyte	Qualified Result		Units
Dioxins/Furans	11215702-Tank#2-T=0	2,3,7,8-Tetrachlorodibenzofuran (TCDF) C13	117	24-169	0.52	0.65-0.89	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6500	J	pg/L

Notes:

J - Estimated concentration

Table 7

Qualified Sample Results Due to Outlying LCS/LCSD Results
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		LCS Date	LCS	LCSD	RPD	Control Limits			Qualified	
Parameter	**Analyte**	**(mm/dd/yyyy)**	**% Recovery**	**% Recovery**	**(percent)**	**% Recovery**	**RPD**	**Associated Sample ID**	**Result**	**Units**
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11/18/2020	83	80	6	84-130	50	11215702-Tank #1 Drum	3500 J-	pg/L
								11215702-Tank #1-1um	58 UJ	pg/L
								11215702-Tank #2 1um	240 UJ	pg/L
								11215702-Tank #1 Tank	2800 J-	pg/L
								11215702-Tank #2 Drum	3000 J-	pg/L
								11215702-Tank #2 Tank	4200 J-	pg/L
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	11/18/2020	85	78	9	82-122	50	11215702-Tank #1 Drum	180 J-	pg/L
								11215702-Tank #1-1um	25 UJ	pg/L
								11215702-Tank #1 Tank	240 J-	pg/L
								11215702-Tank #2 1um	25 UJ	pg/L
								11215702-Tank #2 Drum	290 J-	pg/L
								11215702-Tank #2 Tank	1500 J-	pg/L
Dioxins/Furans	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	11/18/2020	85	75	7	78-144	50	11215702-Tank #1-1um	24 UJ	pg/L
								11215702-Tank #2 1um	24 UJ	pg/L
								11215702-Tank #1 Drum	130 J-	pg/L
								11215702-Tank #1 Tank	180 J-	pg/L
								11215702-Tank #2 Drum	200 J-	pg/L
								11215702-Tank #2 Tank	1400 J-	pg/L

Notes:

LCS	- Laboratory Control Sample
LCSD	- Laboratory Control Sample Duplicate
RPD	- Relative Percent Difference
J-	- Estimated concentration; result is biased low
UJ	- Not detected; associated reporting limit is estimated

Table 8

Qualified Sample Results Due to Outlying MS/MSD Results
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result		Units
Metals	11215702-Initial	Antimony	73	74	1	75-125	20	0.0098	UJ	mg/L
	11215702-Control							0.0098	UJ	mg/L
	11215702-Treatment-1							0.0098	UJ	mg/L
	11215702-Treatment-2							0.0098	UJ	mg/L
Metals	11215702-Initial	Titanium	143	134	4	75-125	20	0.23	J+	mg/L
	11215702-Control							0.19	J+	mg/L

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
J+ - Estimated concentration; result is biased high
UJ - Not detected; associated reporting limit is estimated

Table 9

Qualified Sample Results Due to Outlying Identification Criteria
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215702-Tank#2-T=0	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	70 J	pg/L
	11215702-Tank#1-valve-4-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	17 J	pg/L
	11215702-Tank#2-valve-2-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	13 J	pg/L
	11215702-Tank#2-valve-3-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.0 J	pg/L
	11215702-Tank#2-valve-4-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6 J	pg/L
	11215702-Tank#2-valve-4-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4 J	pg/L
	11215702-Tank#2-valve-5-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.2 J	pg/L
	11215702-Tank#2-valve-5-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.0 J	pg/L
	11215702-Tank#2-valve-5-2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.84 J	pg/L
	11215702-Control	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	21 J	pg/L
	11215702-Control	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	9.6 J	pg/L
	11215702-Initial	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7 J	pg/L
	11215702-Treatment-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	12 J	pg/L
	11215702-Treatment-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	11 J	pg/L
	11215702-Treatment-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	9.2 J	pg/L
	11215702-Treatment-2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.6 J	pg/L
	11215702-Treatment-2	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.2 J	pg/L
	11215702-Treatment-2	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.7 J	pg/L
	11215702-Treatment-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.1 J	pg/L
	11215702-Treatment-3	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.5 J	pg/L
	11215702-Treatment-3	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2 J	pg/L
	11215702-Treatment-4	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.1 J	pg/L
	11215702-GW-Tank#1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4 J	pg/L

Table 9

Qualified Sample Results Due to Outlying Identification Criteria
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Sample ID	Analyte	Qualified Result		Units
Dioxins/Furans	11215702-Tank#1-1-8-21	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.9	J	pg/L
	11215702-Tank#1-1-8-21	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	17	J	pg/L
	11215702-Tank#1-1-8-21	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	12	J	pg/L
	11215702-Tank2-1mm	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5	J	pg/L
	11215702-Tank2-1mm	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1	J	pg/L
	11215702-Tank2-0.45mm	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1	J	pg/L
	11215702-Tank2-0.45mm	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4.5	J	pg/L
	11215702-Tank1-1mm	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.67	J	pg/L
	11215702-Tank1-0.45mm	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	6.1	J	pg/L
	11215702-Tank1-0.1mm	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.40	J	pg/L
	11215702-Tank1-0.1mm	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.92	J	pg/L
	11215702-Tank2-10mm	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.69	J	pg/L
	11215702-Tank2-10mm	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.55	J	pg/L

Notes:

J - Estimated concentration

Table 10

Qualified Sample Data Due to Exceedance of Calibration Range
San Jacinto River Waste Pits Superfund Site Investigation
Approach B Water Filtration Study
San Jacinto, Harris County, Texas
July 2020 - March 2021

Parameter	Sample ID	Analyte	Qualified Result		Units
Dioxins/Furans	11215702-Tank #1 Drum	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4800	J	pg/L
	11215702-Tank #1 Tank	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6600	J	pg/L
	11215702-Tank #2 Drum	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8400	J	pg/L
	11215702-Tank #2 Tank	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	19000	J	pg/L
	11215702-Tank #2 Tank	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	7700	J	pg/L

Notes:

J - Estimated concentration

Technical Memorandum

May 2, 2022

To	Charles Munce	**Tel**	561-688-9008
Copy to	Janie Smith, Sophia Dore	**Email**	Marisa.Oriaku@ghd.com
From	Marisa Oriaku/cs/5-NF	**Ref. No.**	11215702
Subject	Analytical Results and Reduced Validation San Jacinto River Waste Pits Superfund Site Investigation Supplemental Water Treatment System Design Testing San Jacinto, Harris County, Texas October 2021		

1. Introduction

This document details a reduced validation of analytical results for water samples collected in support of the Supplemental Water Treatment System Design Testing at the San Jacinto River Waste Pits Superfund Site Investigation during October 2021. Samples were submitted to Eurofins/TestAmerica Laboratories located in West Sacramento, California. Sample collection and analysis summaries are presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, and recovery data from surrogate spikes/laboratory control samples (LCS).

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) Quality Assurance Project Plan, Final Second Phase Pre-Design Investigation",
San Jacinto River Waste Pits Site, Harris County, Texas, Report No 6, June 3, 2019

ii) "National Functional Guidelines for High Resolution Superfund Methods Data Review",
OLEM 9200.3-115, EPA 542-B-16-001, April 2016

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, method blanks were analyzed at a minimum frequency of one per analytical batch.

Most method blank results were non-detect indicating that laboratory contamination was not a factor for this investigation. Low levels of polychlorinated dibenzodioxins/polychlorinated dibenzo-p-furans (PCDDs/PCDFs) were detected in the method blank. Table 4 presents the sample results that were qualified as non-detect due to analyte concentrations that were similar to the method blank values.

4. Spiked C-13 Labeled PCDDs/PCDFs

In accordance with the method employed, all samples, blanks, and QC samples analyzed for PCDD/PCDF are spiked with labeled congeners prior to extraction to be an internal standard for the quantitation of native congeners, and to serve as surrogates for the assessment of method performance in the sample matrix.

All samples submitted for PCDD/PCDF determinations were spiked with the appropriate number of labeled compounds prior to sample extraction and analysis.

Labeled congener recoveries and ion abundance ratios were assessed against method control limits. All labelled PCDD/PCDF recoveries and ratios were within the method acceptance ranges.

5. Laboratory Control Sample Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of one per analytical batch.

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPD values were within the method control limits demonstrating acceptable analytical accuracy and precision.

6. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the reporting limit (RL) but greater than the MDL were reported as estimated (J) in Table 2. Non-detect results were presented as non-detect at the MDL in Table 2.

7. Target Compound Identification/Sample Quantitation

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time, ion abundance ratio, and chromatography were evaluated according to the identification criteria established by the methods. An erroneous identification can be either a false-positive (reporting a target compound when it is not present in the sample) or false-negative (not reporting a compound that is present in the sample).

The samples identified in Table 1 were reviewed. Most congeners reported adhered to the specified identification criteria.

Some sample results were reported as positive hits although the ion abundance ratio was not met. The associated results were qualified as the estimated maximum possible concentration. A summary of these qualified data is presented in Table 5.

8. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Regards,

Marisa Oriaku
Digital Intelligence-Data Management-Chemist

Table 1

Sample Collection and Analysis Summary
San Jacinto River Waste Pits Superfund Site Investigation
Supplemental Water Treatment System Design Testing
San Jacinto, Harris County, Texas
October 2021

						Analysis/Parameters
Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	PCDDs and PCDFs
320-79918-1	11215702-1Mm	Effluent from 1 micron filter	Water	10/05/2021	15:00	X
	11215702-5Mm	Effluent from 5 micron filter	Water	10/05/2021	15:00	X
	11215702-T=1hr-Settle	Tank After Settling before filtration	Water	10/05/2021	15:00	X
	11215702-Pretreatment	Tank prior to settling	Water	10/05/2021	15:00	X

Notes:

PCDDs - Polychlorinated Dibenzodioxins
PCDFs - Polychlorinated Dibenzofurans

Table 2

Analytical Results Summary
Supplemental Water Treatment System Design Testing
San Jacinto, Harris County, Texas
October 2021

Sample Location		Effluent from 1 micron filter	Effluent from 5 micron filter
Sample Identification		**11215702-1Mm**	**11215702-5Mm**
Sample Date		**10/05/2021**	**10/05/2021**
	Units		
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	1.9 U	2.7 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	19 J	16 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	1.7 U	1.4 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	2.6 U	3.6 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	0.70 U	1.6 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.43 U	1.3 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	2.13 U	3.6 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.39 U	1.3 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.76 U	0.95 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	0.38 U	1.2 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	0.74 U	2.0 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.52 U	1.1 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.0 U	1.1 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.33 U	1.3 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	0.62 U	0.59 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	2.4 J	2.5 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	0.96 U	1.1 U
Total heptachlorodibenzofuran (HpCDF)	pg/L	1.7 J	3.0 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	5.7 J	6.8 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	0.43 U	5.0 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.9 J	5.6 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	0.62 U	1.1 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.0 U	1.1 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	2.4 J	2.5 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	0.96 U	1.1 U
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	0.246 J	0.629 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	1.61 J	2.26 J

Table 2

Analytical Results Summary
Supplemental Water Treatment System Design Testing
San Jacinto, Harris County, Texas
October 2021

Sample Location		Tank After Settling before filtration	Tank prior to settling
Sample Identification		11215702-T=1hr-Settle	11215702-Pretreatment
Sample Date		10/05/2021	10/05/2021
	Units		
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans			
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	3.8 U	30 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	36 J	1000
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	3.1 U	52
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	5.0 J	55
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	2.8 J	22 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	4.4 J	160
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	3.2 U	2.9 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	2.0 J	37 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.4 J	2.3 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	2.1 U	3.0 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.4 J	1.9 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	2.8 J	70
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.8 J	6.3 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	1.6 J	4.8 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	2.6 J	44 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	56	1600
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	19	600
Total heptachlorodibenzofuran (HpCDF)	pg/L	5.9 J	91 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	9.5 J	120 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	10 J	230 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	6.1 J	19 J
Total pentachlorodibenzofuran (PeCDF)	pg/L	6.3 J	180 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.8 J	7.4 J
Total tetrachlorodibenzofuran (TCDF)	pg/L	99 J	2900 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	19 J	650 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	28.4 J	804 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	28.7 J	804 J

Notes:

U - Not detected at the associated reporting limit.
J - Estimated concentration.
WHO - World Health Organization
TEQ - Toxic Equivalent

Table 3

Analytical Methods
San Jacinto River Waste Pits Superfund Site Investigation
Supplemental Water Treatment System Design Testing
San Jacinto, Harris County, Texas
October 2021

Parameter	Method	Matrix	Holding Time: Collection to Extraction (Days)	Holding Time: Collection or Extraction to Analysis (Days)
Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Dibenzofurans (PCDFs)	EPA 1613B	Water	365	365

Notes:

EPA 1613B	- "Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS", EPA, October 1994, with subsequent revisions
EPA	- Environmental Protection Agency Office of Water

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
San Jacinto River Waste Pits Superfund Site Investigation
Supplemental Water Treatment System Design Testing
San Jacinto, Harris County, Texas
October 2021

Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	10/11/2021	1.61J	11215702-T=1hr-Settle	3.8 J	3.8 U	pg/L
				11215702-5Mm	2.7 J	2.7 U	pg/L
				11215702-1Mm	1.9 J	1.9 U	pg/L
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10/11/2021	3.66J	11215702-5Mm	16 J	16 U	pg/L
	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	10/11/2021	0.917J	11215702-T=1hr-Settle	3.1 J	3.1 U	pg/L
				11215702-5Mm	1.4 J	1.4 U	pg/L
				11215702-1Mm	1.7 J	1.7 U	pg/L
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	10/11/2021	0.919J	11215702-5Mm	3.6 J	3.6 U	pg/L
				11215702-1Mm	2.6 J	2.6 U	pg/L
	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	10/11/2021	0.395J	11215702-5Mm	1.3 J	1.3 U	pg/L
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	10/11/2021	2.13J	11215702-Pretreatment	2.9 J	2.9 U	pg/L
				11215702-T=1hr-Settle	3.2 J	3.2 U	pg/L
				11215702-5Mm	3.6 J	3.6 U	pg/L
				11215702-1Mm	1.9 J	2.13 U	pg/L
	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	10/11/2021	0.336J	11215702-5Mm	1.3 J	1.3 U	pg/L
	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	10/11/2021	0.642J	11215702-Pretreatment	3.0 J	3.0 U	pg/L
				11215702-T=1hr-Settle	2.1 J	2.1 U	pg/L
				11215702-5Mm	1.2 J	1.2 U	pg/L

Notes:

*	- Blank result adjusted for sample factors where applicable
U	- Not detected at the associated reporting limit
J	- Estimated concentration

Table 5

Qualified Sample Results Due to Outlying Identification Criteria
San Jacinto River Waste Pits Superfund Site Investigation
Supplemental Water Treatment System Design Testing
San Jacinto, Harris County, Texas
October 2021

Parameter	Sample ID	Analyte	Qualified Result		Units
Dioxins/Furans	11215702-T=1hr-Settle	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.8	J	pg/L
	11215702-5Mm	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.6	J	pg/L
	11215702-T=1hr-Settle	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.4	J	pg/L
	11215702-T=1hr-Settle	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4	J	pg/L
	11215702-T=1hr-Settle	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4	J	pg/L
	11215702-5Mm	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.1	J	pg/L

Notes:

J - Estimated concentration